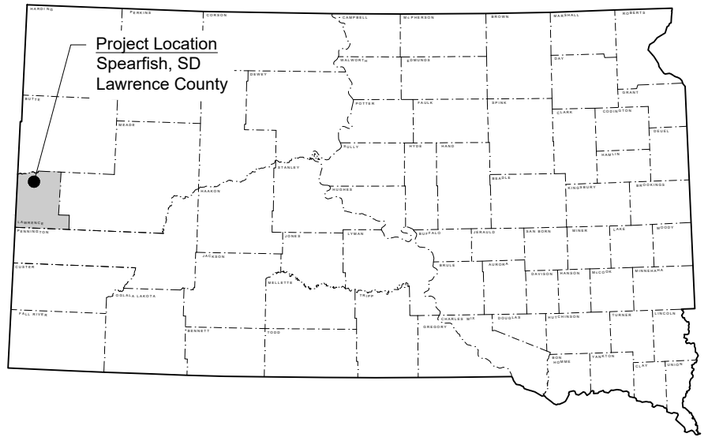


State of South Dakota
Department of Transportation
Plans for Proposed

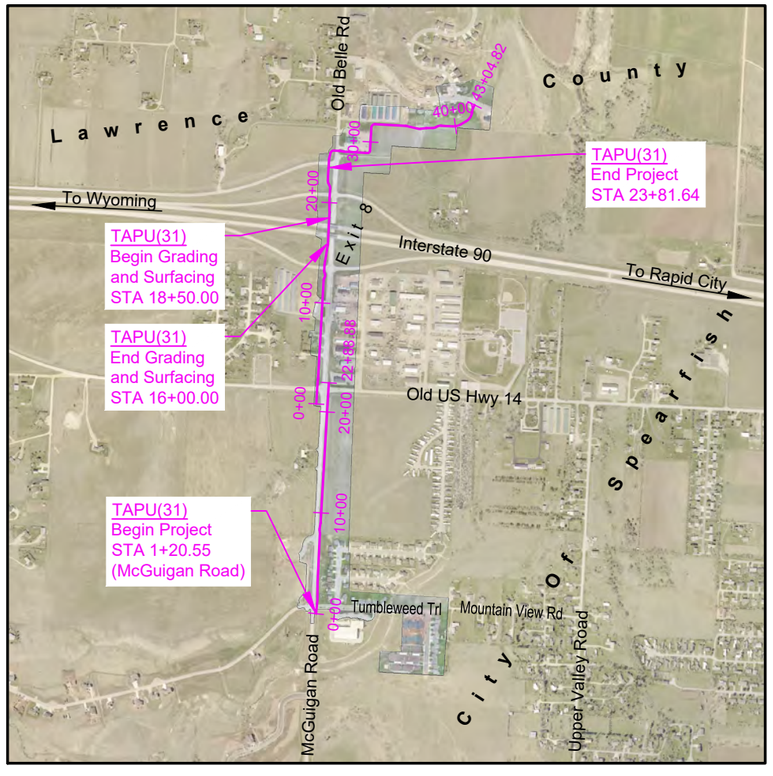
FOR BIDDING PURPOSES ONLY

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	1	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

Project TAPU(31)
Exit 8 Area Community Pathway
Lawrence County

Grading, Asphalt Pavement
Pavement Markings, Permanent Signing and Structures
PCN 08E7



Vicinity Map
Not To Scale

Index of Sheets

Gross Length:	4,344.76 Ft.	0.823 Miles
Exceptions:	250.00 Ft.	0.047 Miles
Net Length:	4,094.76 Ft.	0.775 Miles

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

STORM WATER PERMIT
Major Receiving Body of Water: Higgins Creek
Area Disturbed: 3.75 Acres
Total Project Area: 4.80 Acres
Approx. Begin 44°30'43"N, 103°53'24"W

FMG ENGINEERING
3700 Sturgis Road
Rapid City, SD 57702
605.342.4105 • fmgengineering.com

December 13, 2023

FOR BIDDING PURPOSES ONLY

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	0.390	Mile
009E3250	Miscellaneous Staking	0.778	Mile
009E3280	Slope Staking	0.778	Mile
009E3301	Engineer Directed Surveying/Staking	60.0	Hour
100E0100	Clearing	Lump Sum	LS
110E0130	Remove Traffic Sign	3	Each
110E0600	Remove Fence	139	Ft
110E1010	Remove Asphalt Concrete Pavement	371.3	SqYd
110E1600	Remove Riprap	12.5	SqYd
110E1690	Remove Sediment	4.1	CuYd
110E1695	Remove Sediment Filter Bag	36	Ft
110E1700	Remove Silt Fence	376	Ft
110E7150	Remove Sign for Reset	3	Each
110E7510	Remove Pipe End Section for Reset	12	Each
110E7800	Remove Chain Link Fence for Reset	163	Ft
120E0010	Unclassified Excavation	1,873	CuYd
120E0300	Borrow Unclassified Excavation	2,680	CuYd
120E6100	Water for Embankment	56.9	MGal
230E0010	Placing Topsoil	1,261	CuYd
250E0020	Incidental Work, Grading	Lump Sum	LS
260E1010	Base Course	3,131.0	Ton
260E3010	Gravel Surfacing	30.0	Ton
320E1200	Asphalt Concrete Composite	649.0	Ton
450E0123	18" RCP Class 3, Furnish	186	Ft
450E0130	18" RCP, Install	186	Ft
450E0142	24" RCP Class 2, Furnish	22	Ft
450E0150	24" RCP, Install	22	Ft
450E0202	48" RCP Class 2, Furnish	18	Ft
450E0210	48" RCP, Install	18	Ft
450E0408	18" RCP Bend, Furnish	1	Each
450E0409	18" RCP Bend, Install	1	Each
450E0700	RCP Tee, Furnish	1	Each
450E0701	RCP Tee, Install	1	Each
450E4759	18" CMP 16 Gauge, Furnish	138	Ft
450E4760	18" CMP, Install	138	Ft
450E4769	24" CMP 16 Gauge, Furnish	22	Ft
450E4770	24" CMP, Install	22	Ft
450E5010	18" CMP Elbow, Furnish	6	Each
450E5011	18" CMP Elbow, Install	6	Each
450E5211	18" CMP Flared End, Furnish	2	Each
450E5212	18" CMP Flared End, Install	2	Each
450E5215	24" CMP Flared End, Furnish	1	Each
450E5216	24" CMP Flared End, Install	1	Each
450E5405	18" CMP Safety End with Bars, Furnish	2	Each
450E5407	18" CMP Safety End, Install	2	Each
450E9001	Reset Pipe End Section	12	Each
451E6080	Adjust Water Valve Box	2	Each
462E0100	Class M6 Concrete	9.4	CuYd
480E0200	Epoxy Coated Reinforcing Steel	899	Lb
600E0200	Type II Field Laboratory	1	Each
621E0520	Reset Chain Link Fence	163	Ft
632E1320	2.0"x2.0" Perforated Tube Post	197.3	Ft
632E2510	Type 2 Object Marker Back to Back	15	Each
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	86.1	SqFt
632E3500	Reset Sign	3	Each
633E0030	Cold Applied Plastic Pavement Marking, 24"	369	Ft
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	369	Ft
634E0010	Flagging	100.0	Hour
634E0110	Traffic Control Signs	271.5	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	10	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	127	Ft
634E2000	Longitudinal Pedestrian Barricade	30	Ft
651E0060	6" Concrete Sidewalk	4,456	SqFt
651E7000	Type 1 Detectable Warnings	274	SqFt
670E2200	Type C Frame and Grate	2	Each
671E7010	Adjust Manhole	2	Each
700E0110	Class A Riprap	9.6	Ton
720E1015	Bank and Channel Protection Gabion	13.5	CuYd
730E0100	Cover Crop Seeding	3.8	Bu
730E0200	Type A Permanent Seed Mixture	54	Lb
731E0100	Fertilizing	2,242	Lb
732E0350	Bonded Fiber Matrix	3,350	Lb
734E0102	Type 2 Erosion Control Blanket	3,078	SqYd
734E0151	9" Diameter Erosion Control Wattle	956	Ft
734E0154	12" Diameter Erosion Control Wattle	332	Ft
734E0165	Remove and Reset Erosion Control Wattle	258	Ft
734E0170	Temporary Sediment Barrier	1,724	Ft
734E0180	Sediment Filter Bag	36	Ft
734E0510	Shaping for Erosion Control Blanket	2,047	Ft
734E0602	Low Flow Silt Fence	642	Ft
734E0604	High Flow Silt Fence	242	Ft
734E0610	Mucking Silt Fence	52	CuYd
734E0620	Repair Silt Fence	221	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	2	Each

Revsed By: RS 11/14/23

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
734E5010	Sweeping	20	Hour
831E0110	Type B Drainage Fabric	73	SqYd
900E1320	Construction Entrance	4	Each

SPECIFICATIONS

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

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
11-14-23

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 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:
< http://sdleastwanted.com/maps/default.aspx >

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

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

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

Action Taken/Required:

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

COMMITMENT D2: SURFACE WATER DISCHARGE

The DANR General Permit for Temporary Discharge 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 not required to be covered under a General Permit for Stormwater Discharges Associated with Construction Activities, the Contractor will obtain the General Permit for Temporary Discharge Activities from the DANR Surface Water Program, 605-773-3351.
< https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_TemporaryDischargeNOI2018Fillable.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/Conservation/WatershedProtection/TMDL/default.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 >

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

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 Environment and Natural Resources.

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

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

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

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

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

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

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

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

Action Taken/Required:

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

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

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

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

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

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

COORDINATION OF WORK

There is a project proposed in combination with this project. It is TAPU(41), PCN 09FY which proposes to construct a concrete retaining wall under the interstate highway that will connect to this project and additional pathway north of this projects limits.

The Contractor will be required to coordinate sequences and work between these projects.

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 12 gallons of water per cubic yard of Embankment minus Waste.

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 pathway 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 will be placed ahead of the grading operation unless otherwise directed by the Engineer.

A copy of the Geotechnical Evaluation is available for review on the DOT's Contractor SharePoint Site. If you don't already have access to the DOT's SharePoint site please email DOTBids@state.sd.us to obtain access."

TYPE II FIELD LABORATORY

The lab will be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection will be provided with a multi-port wireless router. The internet connection will be a minimum speed of 20 Mbps unless limited by job location and approved by the DOT. Prior to installing the wireless router, the Contractor will submit the wireless router's technical data to the Area Office to check for compatibility with the state's computer equipment. The internet connection is intended for state personnel usage only. The Contractor's personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer. These items will be incidental to the contract unit price per each for "Type II Field Laboratory".

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.

PRIVATE UTILITY CONTACTS

Black Hills Energy Ken Meirose (605) 206-2986	City of Spearfish Miles Burtzlaff (605) 645-1395
Butte Electric Adam Zvorak (605) 642-4855	Vast Communications Julie Burckhard (605) 415-0692
MidCo Blake Sandidge (605) 787-3935	MDU Evan Woolston (605) 639-5970
Century Link Arthur Turner (605) 645-3757	SDN Ryan Smith (605) 343-1628

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-22-23

TREE REMOVAL (CLEARING)

There are numerous trees that will be required to be removed for this project. Trees located within the works limits will be required to be removed or limbed. If limbed where will be a clearance of 12' vertically and 6' horizontally from the branches. It will be the responsibility of the Contractor in coordination with the Engineer to determine tree removals.

Payment for tree removal including stumps will be under the contract lump sum price for "Clearing". No separate measurement will be made.
SHRINKAGE FACTOR: Embankment +20%

TABLE OF EXCAVATION QUANTITIES BY BALANCES

Eastside Pathway

Station to	Station	Excavation (CuYd)	* Borrow Unclass. Exc. (CuYd)	Total Excavation (CuYd)
1+21	21+83	267	1489	1756
	Totals:	267	1489	1756

Westside Pathway

Station to	Station	Excavation (CuYd)	* Borrow Unclass. Exc. (CuYd)	Total Excavation (CuYd)
0+99	16+00	297	482	779
18+50	23+82	48	709	757
	Totals:	345	1191	1536

* The quantities for these items are in the Estimate of Quantities under their respective contract items.

TABLE OF UNCLASSIFIED EXCAVATION (TOTAL FOR PROJECT)

	(CuYd)
Excavation	612
Topsoil	1261
Total	1873

REGISTERED PROFESSIONAL ENGINEER
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SOUTH DAKOTA
6-23-23

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

When plan quantities are used for payment, the Unclassified Excavation quantity will be used for final payment and the plans quantity of Topsoil and salvaged surfacing items listed in the Table of Unclassified Excavation will not be adjusted according to field measurements.

The following paragraphs are general earthwork information and information in regard to computing the Unclassified Excavation quantity when final cross sections are taken in the field:

The Unstable Material Excavation quantity is included in the Excavation quantity listed in the Table of Unclassified Excavation. When finaling a project, the Unstable Material Excavation quantity will be added to the Excavation quantity to compute the Unclassified Excavation quantity.

The Topsoil quantity in the Table of Unclassified Excavation is an estimate. When finaling a project, the total quantity of field measured Topsoil will be used in place of the estimated Topsoil quantity. The quantity of Topsoil from the cuts will be paid for twice as Unclassified Excavation, as it will be in both the Excavation and Topsoil quantities. This will be full compensation for Excavation, which includes necessary undercutting to provide space for placement of topsoil.

The Excavation quantities from individual balances and the Table of Unclassified Excavation have been reduced by the volume of in place surfacing that will be removed and/or salvaged.

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

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

TABLE OF BORROW UNCLASSIFIED EXCAVATION

	(CuYd)
Borrow Unclassified Excavation	2680
Total:	2680

SCARIFY AND RECOMPACT SUBGRADE

In all cut sections the earthen subgrade will be scarified 8” below the earthen subgrade surface. The subgrade will then be re-compacted to the density specified for the section being constructed.

Payment for Scarify and Recompact Subgrade will be incidental to the contract unit price for Unclassified Excavation.

BORROW SITE

The City of Spearfish is providing stockpiled material to be used as borrow excavation for this project. These materials are stockpiled at the location shown on the borrow location site map with the plan drawings.

The borrow location is within the Spearfish Airport property and requires the security and wildlife exclusion fence to be maintained at all times. The Contractor will coordinate in advance with city staff to enter the site. If the contractor is not on site actively loading material the gate to the site will be closed. Contact Kyle Mathis with the city, 605-717-1129 or kyle.mathis@cityofspearfish.com for access.

Information on the material properties can be found in the Geotechnical Evaluation Report located within the proposal.

Additionally, there is proposed to be approximately 1180 CuYds. of waste from the companion project. The Contractor will coordinate with the combination project to obtain the waste material from the companion project to be used for Borrow Excavation.

PIPE CULVERT UNDERCUT

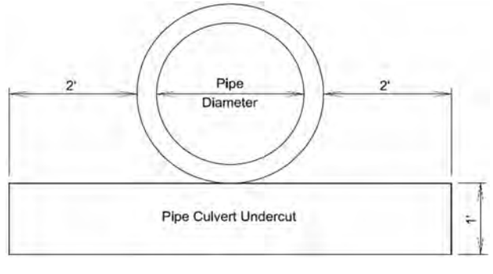
Pipe culvert undercut may be required for this project. The Engineer will determine which pipe will be undercut in accordance with Section 421 of the Specifications.

If pipe culvert undercut is required, the table below contains the rate for one-foot depth of pipe culvert undercut per foot of pipe length. When calculating pipe culvert undercut, the length of pipe ends should be included in the overall pipe length.

The table below contains the rate for one-foot depth of pipe culvert undercut per foot of pipe length and should be used as an aid in determining the actual amount of undercut to be performed during construction. The table is derived from the drawing below and conforms to the Specifications. When calculating pipe culvert undercut, the length of pipe ends should be included in the overall pipe length.

Storm sewer and approach pipes do not require undercutting unless specified otherwise in these plans.

Pipe Diameter (In)	Round Pipe Undercut Rate for 1’ Depth (CuYd/Ft)	Arch Pipe Undercut Rate for 1’ Depth (CuYd/Ft)
24	0.2407	0.2577
30	0.2623	0.2847
36	0.2840	0.3110
42	0.3056	0.3337
48	0.3272	0.3596
54	0.3488	0.3827
60	0.3704	0.4105
66	0.3920	---
72	0.4136	0.4630
78	0.4352	---
84	0.4568	0.5123
90	0.4784	---



INCIDENTAL WORK, GRADING

Station	L/R	Remarks
Eastside Pathway		
21+53.1	L	Take Out 24” CMP Flared End
Westside Pathway		
14+06.1	R	Take Out 18” RCP End Section

TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL

Station	to Station	L/R	Quantity (SqYd)
Westside Pathway			
4+66.1	5+02.7	R	53.1
5+51.4	5+72.8	R	27.2
6+65.5	6+86.9	R	22.4
8+12.8	8+60.6	L/R	105.9
9+56.1	10+31.1	L/R	162.7
		Total:	371.3

CORRUGATED METAL PIPE

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

The gauge of the corrugated metal elbows and ends will match the thickest gauge of corrugated metal pipe it is connected to.

PIPE COVER

The earthen subgrade cover for some pipe installations is less than one foot. The Contractor will take the necessary precautions to ensure the structural properties of the pipes are not damaged after installation and prior to the placement of final surfacing. Any additional costs for preventing damage to these pipes will be incidental to the contract unit price per foot for the corresponding pipe installation contract item.

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STORM SEWER

Reinforced concrete pipe may be bell and spigot. The pipe sections will be adjoined such that the ends are fully entered and the inner surfaces are reasonably flush and even.

Lift holes in the reinforced concrete pipe will be plugged with grout.

Watertight joints are required for reinforced concrete pipe, drop inlets, manholes, and junction boxes where storm sewers run parallel to and within 10 feet horizontally from existing or proposed water mains.

Watertight joints are required where reinforced concrete pipes, drop inlets, manholes, or junction boxes cross water mains and are separated a distance of 18 inches or less, above or below, the water main.

If watertight joints are required then the watertight joints will extend for a distance of 10 feet beyond the water main. This measurement will be from the sealed concrete joint to the outer most surface of the water main.

Watertight joint seals will conform to the following requirements:

1. Reinforced Concrete Pipe (Circular): Gasketed pipe will conform to the requirements of ASTM C443 and the gasket will be in conformance with Section 990 of the Specifications. Non-gasketed concrete pipe will be sealed with a mastic joint seal conforming to the requirements of ASTM C990 and encased with a minimum 2-foot wide by 6-inch thick M6 concrete collar reinforced with 6x6 W2.9 x W2.9 wire mesh.

2. Reinforced Concrete Pipe (Arch): Gasketed pipe will conform to the requirements of ASTM C443 and the gasket will be in conformance with Section 990 of the Specifications. Non-gasketed concrete pipe joints will be sealed with a hydrophilic flexible water stop seal and wrapped with a 1-foot wide strip of fabric above the cradle. The fabric will conform to the requirements of Section 831 of the Specifications for Type A Drainage Fabric. The hydrophilic flexible water stop will be from the list below.

3. Drop Inlets, Manholes, and Junction Boxes: Joints will be sealed with one of the following methods:

   A. A flexible strip seal placed in the joints conforming to the requirements of ASTM C990 and the perimeter encased with a minimum 2-foot wide by 6-inch thick M6 concrete collar reinforced with 6x6 W2.9 x W2.9 wire mesh.

   B. A hydrophilic flexible water stop seal placed in the joints and a 1-foot wide strip of fabric wrapped around the perimeter of the pipe. The fabric will conform to the requirements of Section 831 of the Specifications for Type A Drainage Fabric. The hydrophilic flexible water stop will be from the list below.

   C. A self-adhesive external joint seal wrap. The seal wrap will be from the list below.

Approved List of Self-adhesive Joint Wrap

Product	Manufacturer
Mar Mac Seal Wrap	Mar Mac Construction Products McBee, SC 843-335-5909 www.marmac.com
ConWrap CS-212	Concrete Sealants, Inc. Tipp City, OH 800-332-7325 conseal.com

Approved List of Hydrophilic Flexible Water Stop Seal:

Product	Manufacturer
Waterstop RX	Cetco Hoffman Estates, IL 800-527-9948 www.cetco.com
Conseal CS-231	Concrete Sealants, Inc. Tipp City, OH 800-332-7325 conseal.com

Gaskets and seals (mastic, waterstop, and seal wraps) will be installed in accordance with the Manufacturer's recommendations.

The cost for furnishing and installing all gaskets, mastic joint seal, water stop seal, seal wrap, concrete collars, and for plugging the lift holes will be incidental to the contract unit price per foot for the corresponding pipe contract item.

DROP INLETS

The plan shown quantities of the drop inlet components such as Class M6 Concrete, Reinforcing Steel, and Type C Frame and Grate Assembly will be the basis of payment for these items.

If additions or reductions to the number of drop inlets are ordered by the Engineer, payment for the components required to construct the drop inlets will be made at the contract unit prices for the components of the drop inlets.

TABLE OF DROP INLETS AND QUANTITIES

Station	L / R	Drop Inlet Size	Drop Inlet Type	Class M6 Concrete (CuYd)	Epoxy Reinf. Steel (Lb)	Frame and Grate/Lid Type
Eastside Pathway						
12+65	L	3'x4'	C	1.11	182	C
Westside Pathway						
14+02	R	3'x4'	C	1.69	249	C
			Totals:	2.80	431	

Total Type C Frame and Grate

ADJUSTMENT OF MANHOLES

The Contractor will adjust manholes to the extent necessary on this project. Adjusting the manholes may consist of removing the upper course of brick or removing the concrete walls, replacing the removed materials with brick or Class M6 concrete, placing adjusting rings if necessary, and resetting the manhole frame and lid. The elevation of the lid will be set at the same elevation of the adjacent new pavement or surrounding ground. All manhole frames, lids, and rings that are cracked or broken due to carelessness of the Contractor will be replaced with new manhole frames, lids, and rings that conform with the Specifications at the Contractor's expense. Manholes will be adjusted to the satisfaction of the Engineer. All costs involved in adjusting the manholes will be incidental to the contract unit price per each for "Adjust Manhole".

The Engineer may direct adjustment of manholes that were not included in these plans. Payment for adjusting manholes that were not included in the plans will be at the contract unit price per each for "Adjust Manhole".

TABLE OF ADJUST MANHOLES

Station	L/R	Approximate Rim Adjustment	Quantity (Each)
Westside Pathway			
8+04.1	R	Raise 0.5'	1
10+73.5	R	Raise 0.12'	1
	Total:		2

TABLE OF ADJUSTMENT OF WATER VALVE BOXES

Station	L/R	Approximate Adjustment (Ft)	Quantity (Each)
Eastside Pathway			

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5+20.9	R	2.45	2
	Total:		2

TABLE OF BANK AND CHANNEL PROTECTION GABIONS AND DRAINAGE FABRIC

Station	L/R	Bank and Channel Protection Gabion (CuYd)	Type B Drainage Fabric (SqYd)
Eastside Pathway			
12+65.60	R	4.5	15.0
21+52.67	R		
Westside Pathway			
22+03.07	R	4.5	15.0
23+43.17	R	4.5	15.0
Totals:		13.5	45.0

TABLE OF RIPRAP AND DRAINAGE FABRIC

Station	L/R	Class A Riprap (Ton)	Type B Drainage Fabric (SqYd)
Eastside Pathway			
21+53.39	R	2.4	7.1
Westside Pathway			
5+26.21	R	2.4	7.1
7+06.97	R	2.4	7.1
10+36.35	R	2.4	7.1
Totals:		9.6	28.4

TYPE 1 DETECTABLE WARNINGS

Detectable warnings will be in compliance with the Americans with Disabilities Act regulations.

The detectable warnings will be installed according to the manufacturer's installation instructions.

A concrete thickness equal to the adjacent concrete sidewalk thickness and 2 inches of granular cushion material will be placed below the Type 1 Detectable Warnings. When concrete is placed below the detectable warnings then the concrete thickness will be transitioned at the rate of 1" per foot to match the adjacent concrete sidewalk thickness.

The detectable warnings will be a brick red color for application in concrete curb ramps.

Type 1 Detectable Warning Panels will be one of the following products:

Type 1 Detectable Warnings

Product	Manufacturer
Detectable Warning Plate Cast Iron Plate	Neenah Foundry Company Neenah, WI 800-558-5075 http://www.neenahfoundry.com/
Detectable Warning Plate	Deeter Foundry
Cast Iron Plate	Lincoln, NE 800-234-7466 http://www.deeter.com/
Detectable Warning Plate Cast Iron Plate(No Coating)	East Jordan Iron Works, Inc. 301 Spring Street East Jordan, MI 49727 800-626-4653 http://www.ejiw.com
Iron Dome Cast Iron Detectable Warning Tile	ADA Solutions, Inc. 323 Andover Street Suite 3 Wilmington, MA 01887 800-372-0519 https://adatile.com

TABLE OF TYPE 1 DETECTABLE WARNINGS

Station	L/R	Quantity (SqFt)
Eastside Pathway		
21+78.56	8.13'R	24
Westside Pathway		
1+04.53	22.47'R	20
1+20.83	5.00'R	20
1+84.71	5.00'R	20
8+14.97	5.00'R	20
8+60.00	5.00'R	20
9+62.90	5.00'R	25
10+31.62	5.00'R	20
13+22.51	5.00'R	20
13+74.95	5.00'R	20
20+54.15	5.00'R	25
21+04.85	5.00'R	20
23+75.93	5.00'R	20
	Total:	274

6" CONCRETE SIDEWALK

Concrete Sidewalk 6" thick will be placed at locations shown on the plan drawings. 4" of Gravel Cushion will be placed beneath the concrete sidewalk in accordance Section 651. Payment for gravel cushion under the sidewalk will be considered incidental to the contract unit price per square foot for "6" Concrete Sidewalk".

TABLE OF 6" CONCRETE SIDEWALK

Station	to	Station	L/R	Quantity (SqFt)
Eastside Pathway				
16+96.00		17+04.00	R	48
21+67.85		21+82.71	L/R	272
Westside Pathway				
0+99.50		1+27.58	R	348
1+79.32		1+92.71	R	118
4+58.32		5+09.4	R	511
5+46.93		6+05.00	R	581
6+46.89		6+96.80	R	498
8+00.00		8+69.91	R	699
9+59.18		10+36.62	R	774
13+16.27		13+30.52	R	110
13+70.78		13+81.65	R	96
20+45.37		20+60.43	R	117
20+98.74		21+18.49	R	165
23+67.93		23+81.18	R	119
			Total:	4456

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TABLE OF CONSTRUCTION STAKING

(See Special Provision for Contractor Staking)

Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Grade Staking				Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)
					Length (Mile)	Lane Factor	*Sets of Stakes	**Grade Staking Quantity (Mile)		
Eastside Pathway (1 Lane AC Pavement)	1+20	22+83	1	2163	0.410	0.5	1	0.205	0.410	0.410
Westside Pathway (1 Lane AC Pavement)	0+99	1+27	1	28	0.005	0.5	1	0.003	0.005	0.005
Westside Pathway (1 Lane AC Pavement)	1+79	13+31	1	1152	0.218	0.5	1	0.109	0.218	0.218
Westside Pathway (1 Lane AC Pavement)	13+71	16+21	1	250	0.047	0.5	1	0.024	0.047	0.047
Westside Pathway (1 Lane AC Pavement)	18+30	20+60	1	230	0.044	0.5	1	0.022	0.044	0.044
Westside Pathway (1 Lane AC Pavement)	20+97	23+81	1	284	0.054	0.5	1	0.027	0.054	0.054
							Totals:	0.390	0.778	0.778

* 1 = Blue Top Stakes Only (Asphalt Concrete Pavement)

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

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting.

GENERAL TRAFFIC CONTROL

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

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

Portable sign supports will not be located on sidewalks, bicycle facilities, or other areas designated for pedestrian or bicycle traffic.

All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

The Contractor will notify businesses/homeowners a minimum of two weeks prior to construction to inform them of upcoming construction and again a minimum of 48 hours prior to any blocked access to make appropriate arrangements.

TRAFFIC CONTROL SIGNS

The quantity of signs shown within the table below is the anticipated amount of signing that will be needed to sign work along McGuigan Road, I-90 on and off ramps, and Old Belle Road.

Road Work Ahead Signs will be placed on the off ramps from Interstate 90 when work near the within and near the off ramps.

Road Work Ahead Signs will be placed before the project along McGuigan Road, Old Belle Road, and Old Highway 14.

It is anticipated work near the intersections of McGuigan Road and Old Highway 14 will require lane size reduction and shifts to allow for room to work at the intersections. The Contractor will provide temporary delineation to allow traffic to flow freely around the work. The Contractor will be allowed to only work within on quadrant of the intersection at one time. Flagging and temporary stops signs may be utilized as required.

Refer to the standard plates for signing requirements

WORK WITHIN I-90 RIGHT-OF-WAY

Prior authorization for work within the I-90 right-of-way will be required. The Contractor will notify and Engineer of anticipated work within the I-90 right-of-way which will generally be referred to the work area located from stations 12+50 to 22+00. The Contractor will provide a detailed sequence of operations for work within the I-90 right-of-way for approval by the Engineer.

TRAFFIC CONTROL AND DRIVEWAY CROSSINGS

The Contractor will allow continues access to residents and businesses along the project. The Contractor will notify residents and businesses located along the Westside Pathway Alignment of anticipated work that will affect access to their business or residence.

Closure of one half of driveway will be allowed. The Contractor will provide delineation around the work area for traffic in and out of residential and commercial driveways.

Two-way traffic through the driveway(s) will be maintained at the gas station located at 3275 Old Belle Road.

LONGITUDINAL PEDESTRIAN BARRICADE

Longitudinal pedestrian barricades should not be used to provide positive protection for pedestrians.

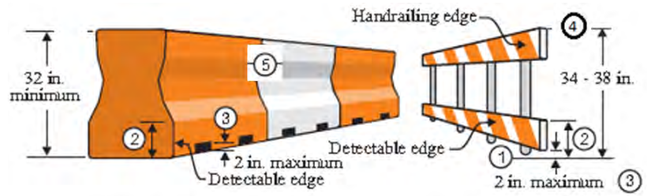
To prevent any tripping hazard to pedestrians, ballast will be located behind or internal to the device.

When longitudinal pedestrian barricades are combined in a series, the maximum gap between devices that do not interlock will be one inch. Joints between devices that do interlock will be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing. When used as a sidewalk closure mechanism, longitudinal pedestrian barricade must run the entire width of the sidewalk. Longitudinal pedestrian barricade should provide a color contrasting pattern. Black should not be used to color any base on a device. The devices should comply with the general color and stripe pattern requirements of Section 6F.68 of the MUTCD.

Longitudinal pedestrian barricade will have continuous bottom and top surfaces. The top surface will be smooth to allow safe hand trailing. Both upper and lower surfaces will share a common vertical plane.

All costs will be incidental to the contract unit price per foot for “Longitudinal Pedestrian Barricade”

PEDESTRIAN CHANNELIZING DEVICE DETAILS



Longitudinal Pedestrian Barrier Longitudinal Pedestrian Barricade

1. Barricade rail supports may not extend into the pedestrian walkway more than 4 inches from the face of the barricade.

2. The top edge of the bottom portion will be a minimum of 8 inches above the walkway.

3. Devices will not block water drainage from the walkway. A gap height or opening from the walkway surface up to a maximum of 2 inches in height is allowed for drainage purposes.

4. The top edge of the longitudinal pedestrian barricade is to be used as a guiderail to provide visual and tactile guidance to pedestrians along a designated route. The top surface should have a minimum width of 0.5 inches to allow the hand to feel the surface. The surface should be smooth and free of any sharp or abrasive elements to allow safe hand trailing.

5. Longitudinal pedestrian barrier used to provide positive protection from traffic to pedestrians should be crashworthy.

TABLE OF TRAFFIC CONTROL SIGNS

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	4	48" x 48"	16.0	64.0
W20-1	ROAD WORK AHEAD	7	48" x 48"	16.0	112.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	7	36" x 18"	4.5	31.5
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			271.5

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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)
Eastside Pathway			
1+21		21+86	708
Westside Pathway			
0+90		23+81	532
		Total:	1261

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 the following fungal species:

25% *Glomus intraradices*
25% *Glomus aggregatum or deserticola*
25% *Glomus mosseae*
25% *Glomus etunicatum*

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

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.

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

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 A Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	14
Green Needlegrass	Lodorm, AC Mallard Ecovar	8
Sideoats Grama	Butte, Pierre	6
Blue Grama	Bad River	4
Canada Wildrye	Mandan	4
	Total:	36

COVER CROP SEEDING

Cover crop seeding may be used on this project as a temporary erosion control measure. The actual limits and use of cover crop seeding will be determined by the Engineer during construction.

BONDED FIBER MATRIX

Bonded fiber matrix will be hydraulically applied to the areas listed in the table and any other areas deemed necessary by the Engineer.

The Contractor will use a bonded fiber matrix from the approved products list, or an approved equal. The approved product list for bonded fiber matrix may be viewed at the following internet site:

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

TABLE OF BONDED FIBER MATRIX

Station	Location	Quantity (Lb)
Eastside Pathway		
1+21 to 21+86	Sideslopes	1007
Westside Pathway		
0+90 to 23+81	Sideslopes	2343
	Total:	3350

TEMPORARY SEDIMENT BARRIER

The Temporary Sediment Barrier 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

Temporary sediment barriers will be installed at locations noted in the table and at locations determined by the Engineer during construction.

Installation of the temporary sediment barrier will be in accordance with the manufacturer's installation instructions. It is the Contractor's responsibility to select product(s) best suited as perimeter control, slope interrupters, and ditch checks based on site conditions.

All costs for furnishing, installing, and maintaining the temporary sediment barrier including hauling, materials, equipment, labor, and incidentals

necessary will be paid for at the contract unit price per foot for "Temporary Sediment Barrier".

An additional quantity of Temporary Sediment Barrier has been added to the Estimate of Quantities for other areas requiring sediment control.

TABLE OF TEMPORARY SEDIMENT BARRIER

Station	Location	Quantity (Ft)
Eastside Pathway		
6+51 to 12+00 R	Outside Work Limits	549
12+00 to 18+00 R	Outside Work Limits	600
18+00 to 21+48 R	Outside Work Limits	349
21+60 to 21+78 R	Outside Work Limits	26
	Additional Quantity:	200
	Total:	1724

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 until vegetation has been established and then they will be removed in accordance with the Engineer.

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)
Eastside Pathway			
2+00 L	Ditch Bottom	9	10
3+00 L	Ditch Bottom	9	10
4+00 L	Ditch Bottom	9	10
5+00 L	Ditch Bottom	9	10
6+00L	Ditch Bottom	9	10
9+00 L	Ditch Bottom	9	10
10+00 L	Ditch Bottom	9	10
11+00 L	Ditch Bottom	9	10
12+00 L	Ditch Bottom	9	10
13+84 to 18+00 L	Edge of Pathway	9	416
18+00 to 21+50 L	Edge of Pathway	9	350
21+50 L	Culvert	12	36
Westside Pathway			
4+46 R	Culvert	12	36
6+48 R	Culvert	12	36
9+52 R	Culvert	12	36
12+41 to 12+60 R	Upstream Sidewalk Drain	12	20
12+94 L	Culvert	12	36
21+59 L	Culvert	12	16
23+51 L	Culvert	12	16
	Additional Quantity 9":		100
	Additional Quantity 12":		100
	Total 9":		956
	Total 12":		332

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)
Eastside Pathway		
1+58 to 6+00 R	Outside Work Limits	442
	Additional Quantity:	200
	Total:	642

HIGH FLOW SILT FENCE

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

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

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

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

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TABLE OF HIGH FLOW SILT FENCE

Station	Location	Quantity (Ft)
Eastside Pathway		
1+36 L	Inlet	15
12+54 L	Culvert	7
Westside Pathway		
15+87 L	Culvert	17
18+55 to 18+87 L	Culverts	43
21+59 L	Culvert	16
23+50 R	Culvert	16
23+51 L	Culvert	16
	Quantity from Interim Sediment Control at Inlets:	62
	Additional Quantity:	50
	Total:	242

EROSION CONTROL BLANKET

Erosion control blanket placed in ditch bottoms will be installed 8 feet wide at the locations noted in the table and at locations determined by the Engineer during construction. Erosion Control Blanket placed on foreslopes will cover the entire foreslope.

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)
Eastside Pathway			
1+36 to 6+00 R	Foreslope	2	915.3
2+00 to 6+00 L	Ditch / Foreslope	2	354.8
6+00 to 12+00 R	Foreslope	2	854.3
6+00 to 7+00 L	Ditch Bottom	2	88.9
9+14 to 12+00 L	Ditch Bottom / Foreslope	2	319.7
12+00 to 12+69 R	Foreslope	2	92.3
12+00 to 12+62 L	Ditch Bottom/ Foreslope	2	68.1
21+25 to 21+81 R	Foreslope	2	84.9
	Additional Quantity:	2	300.0
	Total Type 2 Erosion Control Blanket:		3078.3

SHAPING FOR EROSION CONTROL BLANKET

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

INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES AFTER SURFACING REMOVAL AND BEFORE PLACEMENT OF SURFACING

Refer to Standard Plate 734.05 for details of installation of high flow silt fence at drop inlets, manholes, and junction boxes.

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

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

In addition, the Contractor will do the following for this installation:

- A space of at least 1' will be provided between the silt fence installation and the inlet. This space will be filled completely with a 2" depth of aggregate, 2" minus or smaller.
- The top elevation of the silt fence will be such that a 12" horizontal flap of silt fence will remain at the bottom.
- The base of the silt fence will conform to the natural ground profile but does not need to be trenched in at the bottom.
- The extra 12" of the silt fence material may be cut so that the material will lay flat upon the subgrade.
- Sediment filter bags will be placed on the 12" flap around the perimeter of the silt fence installation. The sediment filter bags will overlap 6" at the ends and be placed tightly together.
- The sediment filter bags will be filled with clean aggregate 2" minus or smaller.

The Sediment Filter Bag will be as shown below or an approved equal:

Product	Manufacturer
Snake Bag	Sacramento Bag Manufacturing Co. Sacramento, CA Phone: 1-800-287-2247 www.sacbag.com
Rock Log	SRW Products Princeton, MN Phone: 1-763-260-7822 www.srwproducts.com

All costs for furnishing and installing the sediment filter bags will be incidental to the contract unit price per foot for "Sediment Filter Bag."

All costs for removing the sediment filter bags will be incidental to the contract unit price per foot for "Remove Sediment Filter Bag".

Payment for high flow silt fence will be as stated in Section 734.5 of the Specifications.

All costs for furnishing, installing, and removing the 2" depth of aggregate will be incidental to other erosion and sediment control contract items.

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

The removed sediment will be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

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

TABLE OF INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES AFTER SURFACING REMOVAL AND BEFORE PLACEMENT OF SURFACING

Station	High Flow Silt Fence Quantity (Ft)	Sediment Filter Bag Quantity (Ft)	Remove Sediment Quantity (CuYd)
Eastside Pathway 12+66 L	31	18	0.1
Westside Pathway 14+02 R	31	18	0.1
Totals:	62	36	0.2

SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

This type of sediment control device should be used where there is pavement in the vicinity of the drop inlets and storm water or sediment could possibly enter the frame and grate. Sediment Control at Inlet with Frame and Grate will be installed prior to working in the vicinity of the drop inlets.

The Contractor will be responsible for maintaining and repairing the sediment control device for the duration of the project for which sediment control measures are required. Maintenance will be scheduled to prevent storm water from backing up into the driving lane.

"Sediment Control at Inlet with Frame and Grate" will be paid for one time at each location, regardless of the number of times the sediment control devices are installed, inspected, cleaned, removed, repaired, or replaced. All costs associated with furnishing, installing, inspecting, maintaining, cleaning, sediment removal, and repairing Sediment Control at Inlet with Frame and Grate will be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

Sediment collection device will be:

A commercial made sediment collection device from the "Sediment Control at Inlet with Frame and Grate" list or an approved equal. The device will be installed in reinforced concrete drop inlets in accordance with the manufacturer's recommendations.

Sediment Control at Inlet with Frame and Grate Approved List:

Product	Manufacturer
InfraSafe Debris Collection Device with filter sock	Royal Environmental Systems, Inc. Stacy, MN Phone: 1-800-817-3240 www.royalenterprises.net
Dandy Curb Sack and Dandy Curb Bag for curb inlets. Dandy Bag, Dandy Sack, and Dandy Pop for median drains.	Dandy Products Inc. Powell, OH Phone: 1-800-591-2284 www.dandyproducts.com
Silt Trapper	Storm Water Solutions Lakeville, MN Phone: 1-952-461-4376 www.silttrapper.com
DIP Basket	Skyview Construction Co., LLC Summit, SD Phone: 1-605-520-0555
FLEXSTORM Inlet Filters	Inlet and Pipe Protection, Inc. Naperville, IL Phone: 1-866-287-8655 www.inletfilters.com
GR-8 Guard or Combo Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com

Sediment Control at Inlet with Frame and Grate Approved List: (Continued):

Sediment Catchers	Shaun Jensen Brookings, SD Phone: 1-605-690-4950
Grate FX, Slammer, or VertiPro	Enviroscape ECM, Ltd. Deshler, OH Phone: 1-419-278-2000 www.strawblanket.com
BX Inlet Sediment Boxes	BX Civil and Construction Dell Rapids, SD Phone: 1-605-428-5483 bx-cc.com
EZ-Flo and EZ-Catch	Flo-Water, LLC West Des Moines, IA Phone: 1-515-577-6763 www.flo-water.net
Basin Bag	CSI Geoturf Highland, MI Phone: 1-248-887-0855 https://geoturf.com/

TABLE OF SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

Station	Quantity (Each)
Eastside Pathway	
12+66 L	1
Westside Pathway	
14+02 R	1
	2

STREET SWEEPING

Vehicle tracking of sediment from the construction site will be minimized. Street sweeping will be used if erosion and sediment control best management practices are not adequate to prevent sediment from being tracked onto the street.

The Contractor will use a pickup broom having integral self-contained storage to clean the roadway. The pickup broom used will be a minimum of 6 feet wide and have working gutter brooms.

At a minimum, sweeping will be required:
1. Prior to opening any segment or roadway to traffic.
2. Following pavement grooving operations and prior to the application of the pavement marking tape.

All costs for cleaning the roadway with a pickup broom will be incidental to the contract unit price per hour for “Sweeping”.

CONSTRUCTION ENTRANCE

The Contractor will install a Construction Entrance at locations where there is a potential for mud tracking and sediment flow from the construction site and work area onto a paved public roadway.

It is the Contractor’s option to use the SDDOT Construction Entrance (See SDDOT Construction Entrance notes and details), a product from the list provided in these notes, or other products or processes as approved by the Engineer during construction.

If the Contractor elects to use one of the products listed in the table, then the Contractor will install the construction entrance product in accordance with the manufacturer’s installation instructions or as directed by the Engineer.

The Contractor will maintain the construction entrance such that mud tracking and sediment flow will not enter the roadway or adjacent drainage areas. The construction entrance will be routinely inspected, and the Contractor will repair or replace material as deemed necessary by the Engineer.

All costs for furnishing, installing, maintaining, and removal of the construction entrance including equipment, labor, materials, and incidentals will be included in the contract unit price per each for “Construction Entrance”.

The following table is a list of known construction entrance products available for use:

Product	Manufacturer
Grizzly Rumble Grate (10’ width and 24’ length required)	Trackout Control, LLC Tempe, AZ Phone: 1-800-761-0056 www.trackoutcontrol.com
Rumble Grid (12’ width and 24’ length including combination of grids and ramps required)	Pro-Tec Equipment, Inc. Charlotte, MI Phone: 1-800-292-1225 www.pro-tecequipment.com
Tracking Pad (12’ width and 24’ length (2 – 12’x12’ pads) and 2 – 4’x4’ turning flares)	Tracking Pads LLC Commerce City, CO Phone: 1-303-501-5640 www.trackingpads.com
FODS Trackout Control Mat (12’ width and 5 mats to get a 35’ length)	FODS, LLC Denver, CO Phone: 1-844-200-3637 getfods.com
DuraDeck and MegaDeck HD An adequate quantity is needed to prevent tires from becoming muddy (does not remove mud)	Signature Systems Group, LLC Flower Mound, TX Phone: 1-800-931-7301 https://www.signature-systems.com/

SDDOT CONSTRUCTION ENTRANCE

If the SDDOT Construction Entrance is utilized, then the Contractor will install the SDDOT Construction Entrance in accordance with these notes and the detail drawings.

Pit run material will be obtained from a granular source and will conform to the following gradation:

Sieve Size	Percent Passing
6”	100%
#4	0-60%
#200	0-20%

The pit run material will be compacted to the satisfaction of the Engineer.
The aggregate for the granular material will conform to the following gradation requirements:

Sieve Size	Percent Passing
3”	100%
2 ½”	90-100%
1 ½”	25-60%
¾”	0-10%
½”	0-5%

The granular material will be placed in 6” maximum lifts.

It is anticipated that the granular material will need to be periodically removed and replaced as it becomes inundated with mud and sediment.

The Reinforcement Fabric (MSE) will be in conformance with Section 831 of the Specifications. The Reinforcement Fabric (MSE) will be on the Approved Products List for this material or will be certified by the supplier to meet this specification prior to installation.

The Reinforcement Fabric (MSE) should be kept as taut as possible prior to placing.

Equipment will not be allowed on the Reinforcement Fabric (MSE) until the first lift of granular material is in place.

All seams in the Reinforcement Fabric (MSE) will be overlapped at least 2’ and shingled.

DEWATERING AND SEDIMENT COLLECTING

The Contactor has the option to treat sediment laden water trapped within the project limits or the Contractor may elect to transport sediment laden water off the project. Refer to the OPTIONS FOR DEWATERING AND SEDIMENT COLLECTING detail sheet for more information.

Water transported off the project limits will not be disposed of in an area where it can enter a waterway. The disposal site must be approved by the Engineer.

Separate payment will not be made for any Dewatering and Sediment Collection efforts. All costs involved with necessary Dewatering and Sediment Collection efforts will be incidental to other contract items.

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	TAPU(31)	15	120

FOR BIDDING PURPOSES ONLY

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** 4.80 acres
- **5.3 (3b): Total Area to be Disturbed** 3.75 acres
- **5.3 (3c): Maximum Area Disturbed at One Time**
- **5.3 (3d): Existing Vegetative Cover (%)** 80
- **5.3 (3d): Description of Vegetative Cover**: Road ditch grasses and pasture lands.
- **5.3 (3e): Soil Properties:** AASHTO Soil or USDA-NRCS Soil Series Classification CL (Clay)
- **5.3 (3f): Name of Receiving Water Body/Bodies** Higgins Creek
- **5.3 (3g): Location of Construction Support Activity Areas**

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install stabilized construction entrance(s).	
Install perimeter protection where runoff may exit site.	
Install perimeter protection around stockpiles.	
Install channel and ditch bottom protection.	
Clearing and grubbing.	
Remove and stockpile topsoil.	
Grade Pathway	
Install culverts	
Install inlet and culvert protection after completing storm drainage and other utility installations.	
Final grading.	
Final paving.	
Removal of protection devices.	
Reseed areas disturbed by removal activities.	

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:	

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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 SDDENR.
- 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 SDDENR 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 SDDENR 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 SDDENR 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 SDDENR within 14 days of the discharge.

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RICHARD A. SUDMEIER
SOUTH DAKOTA
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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: _____

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

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

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

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

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-22-23

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, SDDENR, 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.

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite will be Class E, Type 1.

Asphalt Binder will be PG 64-28.

Asphalt Concrete Composite will include MC-70 Asphalt for Prime placed at the rate of 0.30 gallons per square yard. The Asphalt for Prime will be applied to the Base Course for the full width of the bottom layer of Asphalt Concrete Composite plus one foot additional on the outside shoulder.

COLD APPLIED PLASTIC PAVEMENT MARKING

All materials will be applied as per the manufacturer's recommendations.

Cold Applied Plastic Pavement Markings will be 3M Series 380 AW or an approved equal.

GROOVING FOR COLD APPLIED PLASTIC PAVEMENT MARKING

The Contractor will establish a positive means for the removal of the grinding and/or grooving residue. Residue from dry grooving will be vacuumed. Solid residue will be removed from the pavement surfaces before being blown by traffic action or wind. The Contractor will conduct this work to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or nuisance to property owners. Residue from wet grooving will not be permitted to flow across lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, will be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state. The cleaning of the residue for grooving will be to the satisfaction of the Engineer and may require more than one pass to adequately remove material. All costs for removal of grinding and/or grooving residue will be included in the contract unit price per foot or square foot for "Grooving for Cold Applied Plastic Pavement Marking" contract items.

REMOVE PAVEMENT MARKING, 4" OR EQUIVALENT

Markings that fall outside of the new groove will be obliterated using additional methods approved by the Engineer. Removal of the existing markings will be accomplished without causing damage to the pavement, pavement joints, or joint sealant. The Contractor will repair any damage to the pavement, pavement joints, or joint sealant for no additional payment and at no cost to the State. All costs for materials, labor, and equipment necessary to remove the existing markings will be incidental to the contract unit price per foot for "Remove Pavement Marking, 4" or Equivalent".

GENERAL PERMANENT SIGNING

New sign installations will be staked in the field by the Contractor and checked by the Engineer. The Contractor will give the Engineer a minimum of one week to check staked locations prior to signpost installation. Lateral offset of signs will be as shown in the plans or as directed by the Engineer.

The Contractor will be responsible for contacting South Dakota One Call to locate the utilities at the staked sign installation locations.

When signs are mounted in an assembly, they will be 1-2 inches apart vertically and horizontally.

The height of the post must not exceed the minimum height needed by more than 0.5 feet. Any portion that extends above the sign will be cut off. No separate payment will be made for cutting the post or for that length cut off.

Aluminum U-Channel stiffeners will be used on all signs 36 inches or greater in width and will conform to ASTM B221 Alloy 6063-T6 or 6061-T6. The U-Channel will be 2 inches in width and free of holes. The U-Channel stiffeners will also be used to connect various signs together so that an entire sign assembly can be erected on a single installation. Stiffeners may be fastened to signs by use of 1/4-inch diameter drive rivets.

The Contractor will use 3/8-inch diameter rust proof machine sign bolts, flat metal washers, neoprene washers (against the sign sheeting), lock washers, and nuts to fasten the sign to the channel aluminum and posts. A minimum of two bolts will extend through each post.

Prior to ordering signs, the Contractor will verify dimensions, background, border, and legend of the signs.

Prior to use, the Contractor will provide documentation for the sign support devices showing they meet the applicable NCHRP 350 or MASH requirements.

REMOVE SIGN FOR RESET AND RESET SIGN

Signs that are scheduled for reset will be dismantled and reassembled to the extent needed by the Contractor to properly reset the sign. Signs will be handled with care so that the existing signs, posts, and bases are not damaged during the relocation process. The Contractor will replace and pay for any reset signs damaged in their care. The Contractor will remove and dispose of any existing posts for all reset signs that require use of new posts as shown in the Table of Permanent Signing.

All costs for removing, dismantling, and disposing of any existing posts will be incidental to the contract unit price per each for "Remove Sign for Reset". All costs for resetting the existing signs will be incidental to the contract unit price per each for "Reset Sign". All quantities for Remove Sign for Reset and Reset Sign will be per assembly at the contract unit price per each.

NEW PERMANENT SIGNING

All signs will be manufactured in accordance with the sheeting manufacturer's recommendations utilizing a matched component system, including inks, electronic cuttable films, and protective overlay films.

All Flat Aluminum Signs, Nonremovable Copy High Intensity will have sheeting in conformance with the requirements of ASTM D4956 Type IV.

All costs associated with furnishing and installing the new permanent signs, and with furnishing and installing stiffeners and hardware will be incidental to the contract unit price per square foot for "Flat Aluminum Sign, Nonremovable Copy High Intensity".

DIGITALLY PRINTED SIGNS

Digitally printed signs will be allowed on this project. If the Contractor elects to provide digitally printed signs, such signs will adhere to the following specifications.

PROTECTIVE OVERLAY FILM

Permanent traffic signs printed with digital ink systems will be fabricated with a full sign protective overlay film designed to provide a smooth surface needed for retroreflectivity, and to protect the sign from fading and UV degradation. The overlaminate will comply with the retroreflective sheeting manufacturer's recommendations to ensure proper adhesion and transparency and will also meet the reflective film durability as identified in Table 1.

Table 1: Retroreflective Film Minimum Durability Requirements

ASTM D4956 Type	Full Sign Replacement Term (years)	Sheeting Replacement Term (years)
I	0	7
III	7	10
IV	7	10
VIII	7	10
IX	7	12
XI	7	12

REGISTERED PROFESSIONAL ENGINEER
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6-23-23

FABRICATION

Retroreflective sheeting will be applied to a properly cleaned and prepared aluminum sign blank in accordance with the retroreflective sheeting manufacturer's recommendations. Sign legend will be applied using digital print technologies and systems in accordance with the retroreflective sheeting manufacturer's recommendations and the requirements of these plans.

Finished signs will be free of ragged edges and must be supplied clean and free of scratches, grease, oil, lubricants or other contaminants. Minor blemishes (dirt speck, dust, etc.) may settle on the fresh ink surface or become entrapped between the sheeting surface and transparent overlay film due to static charge within the sign shop environment. Any blemish must be minor and not interfere with the communication of the sign message to the motorist. The blemish must not be visible to the naked eye when viewed from 30 feet or greater.

After application of the retroreflective sheeting, sign blanks will be stacked and packaged face to face, back to back, and protected in accordance with the sheeting manufacturer's recommendations. Finished signs will be securely packaged to prevent damage during transit or storage according to the sheeting manufacturer's recommendations.

TRAFFIC SIGN PERFORMANCE WARRANTY PROVISIONS

Based on the ASTM Type of sheeting specified, traffic control signs will be warranted for the duration shown in Table 1. Full product terms and conditions are as established by each sheeting manufacturer and may contain certain limitations based on sheeting and ink colors, and geographic exposure of the sign. A copy of the warranty document with complete details of terms and conditions will be supplied if requested by the Engineer.

FOR BIDDING PURPOSES ONLY

DIGITALLY PRINTED SIGNS (CONTINUED)

CERTIFIED DIGITAL SIGN FABRICATOR

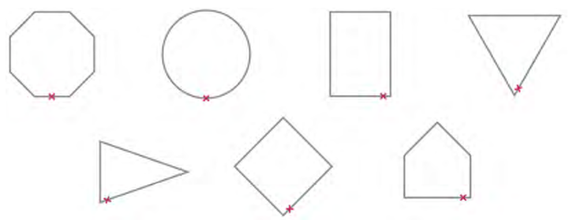
Sign fabricators using digital imaging methods to produce regulated traffic signs must be certified by the reflective sheeting manufacturer whose materials are used to produce the delivered signs.

DATE TAGGING SIGNS WITH PERTINENT INFORMATION

All digitally printed signs are required to be date-tagged with the following 2 components:

1. Date tags on the back of signs
   Tags will have the following information and be fabricated with material and printing system that are as durable as the warranted sign.
   - Name of Sign Fabricator
   - Date the sign was fabricated (month and year)
   - Process that was used for sign fabrication (digitally printed)
   - Supplier of sheeting that was used for fabricating the sign.
2. Border date

The month and year (mm/yyyy) of sign fabrication will be printed in the border of the sign in 3/8” sans serif font. Border date will be printed with the same warranted printed system as the sign face. The date should be printed in the locations indicated below.



SQUARE TUBE ANCHOR SLEEVE

The Contractor will furnish and install new 2.5” x 2.5” x 18”, 12 Gauge square tube anchor sleeve or equivalent components as approved by the Engineer for 2.0” x 2.0” perforated tube posts. A 2.25” x 2.25” x 4’, 12 Gauge perforated tube post will be used as the anchor post for installation with the square tube anchor sleeve.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

State Of South Dakota	Project	Sheet No.	Total Sheets
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Prepared by FMG Engineering

FOR BIDDING PURPOSES ONLY

TABLE OF PIPE QUANTITIES

			Reinforced Concrete												Corrugated Metal Pipe													Remove and Reset Pipe End Section			
			Circular							Tee		Circular Bends			Circular			Circular Flared Ends			Circular Safety Ends			Elbows					Remove	Reset		
Station	to Station	Offset (L/R)		18" Cl. 3 Ft	24" Cl. 2 Ft	48" Cl. 2 Ft				24" x 18" Each		18" 45° Each				18" 16 Ga Ft	24" 16 Ga Ft	18" Each	24" Each		18" with Bars Each			18" 15° Each	18" 30° Each	18" 35° Each	18" 40° Each		Pipe End Section for Reset Each	Pipe End Section Each		
East Pathway Alignment																														
12+65.61	12+65.63	L/R			14																									
12+65.63	12+65.65	L			8																							1	1	
21+53.37	21+53.39	L/R															22		1											
West Side Pathway Alignment																														
4+47.18	4+56.40	R														12											1	1	1	
5+14.00	5+24.41	R														12									1			1	1	
6+49.81	6+58.55	R														10									1			1	1	
6+97.48	7+05.20	R														8									1			1	1	
9+53.52	9+65.90	R														12										1		1	1	
10+29.55	10+34.35	R														4								1				1	1	
12+97.26	12+99.75	R		6																								1	1	
14+03.85	14+08.98	R		8																										
14+11.50		R										1																		
14+15.47	15+84.10	R/L		172																										
15+87.82		L								1																		1	1	
18+59.38	18+59.40	L				6																						1	1	
18+71.21	18+71.33	L				6																						1	1	
18+82.22	18+82.34	L				6																						1	1	
21+63.85	22+00.03	L/R														48		2												
23+43.63	23+49.23	L/R														32					2									
		Total:		186	22	18				1		1				138	22	2	1		2				1	3	1	1	12	12	

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	22	120

Plotting Date: June 20, 2023
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TABLE OF FENCE QUANTITIES

FOR BIDDING PURPOSES ONLY

Station to Station		Side (L/R)	Chain Link									
			Remove Fence (Ft)	Remove Chainlink Fence for Reset (Ft)	Reset Chainlink Fence (Ft)							
Westside Pathway												
21+97.7	23+56.4	L		163								
21+97.86	23+56.63	L			163							
24+79.0	25+38.7	L	139									
TOTALS:			139	163	163							

PERMANENT SIGNING TABLE

FOR BIDDING PURPOSES ONLY

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	TAPU(31)	23	120

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EXISTING STATION	NEW STATION	SIGN							POST					DESCRIPTION	REMARKS
		Width (in)	Height (in)	Number	Facing Traffic	New Sign	Remove Existing	Square Footage	Sheeting Type	New Post	Length (ft)	Size (in)	#	Break Away Base		
EAST SIDE ALIGNMENT																
-	1+25.0 RT	24	18	D11-1	NORTHBOUND	FLAT ALUM	-	3	IV	YES	6.0	2.00	1	Yes	BIKE ROUTE, WITH BIKE SYMBOL	INSTALL NEW SIGN ON NEW POST
-	2+43.8 LT	18	18	W3-1	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	7.1	2.00	1	Yes	STOP AHEAD (SYMBOL)	INSTALL NEW SIGN ON NEW POST
-	21+00 RT	18	18	W3-1	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	7.1	2	1	Yes	STOP AHEAD (SYMBOL)	INSTALL NEW SIGN ON NEW POST
-	21+23.0 RT	18	18	W1-1L	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	7.1	2.00	1	Yes	LEFT TURN (SYMBOL)	INSTALL NEW SIGN ON NEW POST
-	21+85.6 LT	18	18	R1-1	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.6	2.00	1	Yes	STOP SIGN	INSTALL NEW SIGN ON NEW POST
WEST SIDE ALIGNMENT																
-	0+96.8 RT	18	18	R1-1	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.6	2.00	1	Yes	STOP SIGN	INSTALL NEW SIGN ON NEW POST
1+17.3 RT	1+17.3 LT	-	-	R1-1	EASTBOUND	NO	-	-	-	NO	-	-			STOP SIGN AND STREET NAME ASSEMBLY	REMOVE AND RESET STOP SIGN AND STREET NAME ASSEMBLY AND POST
-	1+18.5 RT	18	18	R1-1	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.6	2.00	1	Yes	STOP SIGN	INSTALL NEW SIGN ON NEW POST
-	1+87.1 LT	18	18	R1-1	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.6	2.00	1	Yes	STOP SIGN	INSTALL NEW SIGN ON NEW POST
-	3+04.3 LT	18	18	W3-1	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	7.1	2.00	1	Yes	STOP AHEAD (SYMBOL)	INSTALL NEW SIGN ON NEW POST
-	4+65.7 RT	18	18	R1-2	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.8	2.00	1	Yes	YIELD SIGN	INSTALL NEW SIGN ON NEW POST
-	5+05.2 LT	18	18	R1-2	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.8	2.00	1	Yes	YIELD SIGN	INSTALL NEW SIGN ON NEW POST
-	5+49.2 RT	18	18	R1-2	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.8	2.00	1	Yes	YIELD SIGN	INSTALL NEW SIGN ON NEW POST
-	5+92.4 LT	18	18	R1-2	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.8	2.00	1	Yes	YIELD SIGN	INSTALL NEW SIGN ON NEW POST
-	6+54.1 RT	18	18	R1-2	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.8	2.00	1	Yes	YIELD SIGN	INSTALL NEW SIGN ON NEW POST
-	6+91.6 LT	18	18	R1-2	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.8	2.00	1	Yes	YIELD SIGN	INSTALL NEW SIGN ON NEW POST
-	8+12.2 RT	18	18	R1-2	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.8	2.00	1	Yes	YIELD SIGN	INSTALL NEW SIGN ON NEW POST
-	8+62.8 LT	18	18	R1-2	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.8	2.00	1	Yes	YIELD SIGN	INSTALL NEW SIGN ON NEW POST
-	9+56.4 RT	18	18	R1-2	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.8	2.00	1	Yes	YIELD SIGN	INSTALL NEW SIGN ON NEW POST
-	10+34.4 LT	18	18	R1-2	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.8	2.00	1	Yes	YIELD SIGN	INSTALL NEW SIGN ON NEW POST
10+38.8 RT	10+39.4 RT	-	-	W3-1	SOUTHBOUND	YES		-	-	NO	-	-	-	-	STOP AHEAD	REMOVE AND RESET STOP AHEAD SIGN AND POST
-	11+13.1 RT	24	18	R9-11	NORTHBOUND	FLAT ALUM		3.0	IV	YES	7.1	2.00	1	Yes	SIDEWALK CLOSED AHEAD	INSTALL NEW SIGN ON NEW POST
-	11+98.8 LT	18	18	W3-1	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	7.1	2.00	1	Yes	STOP AHEAD (SYMBOL)	INSTALL NEW SIGN ON NEW POST
13+00.2 LT							Yes								TYPE 2 BACK TO BACK OBJECT MARKER	REMOVE TRAFFIC SIGN
-	13+19.1 RT	18	18	R1-1	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.6	2.00	1	Yes	STOP SIGN	INSTALL NEW SIGN ON NEW POST
-	13+77.3 LT	18	18	R1-1	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.6	2.00	1	Yes	STOP SIGN	INSTALL NEW SIGN ON NEW POST
	13+78.2 RT	24	18	R9-9	NORTHBOUND	FLAT SLUM	-	3.0	IV	NO	-	-	-	Yes	SIDEWALK CLOSED	INSTALL NEW SIGN ON TYPE III BARRICADE
-	14+95.6 LT	18	18	W3-1	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	7.1	2.00	1	Yes	STOP AHEAD (SYMBOL)	INSTALL NEW SIGN ON NEW POST
15+87.6 LT							Yes								TYPE 2 BACK TO BACK OBJECT MARKER	REMOVE TRAFFIC SIGN
-	16+04.3 RT	24	18	R9-9	NORTHBOUND	FLAT ALUM	-	3.0	IV	NO	-	-	-	-	SIDEWALK CLOSED	INSTALL NEW SIGN ON TYPE III BARRICADE
-	18+46.7 RT	24	18	R9-9	SOUTHBOUND	FLAT AMUM	-	3.0	IV	NO	-	-	-	-	SIDEWALK CLOSED	INSTALL NEW SIGN ON TYPE III BARRICADE
18+86.4 LT							Yes								TYPE 2 BACK TO BACK OBJECT MARKER	REMOVE TRAFFIC SIGN

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	24	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

FOR BIDDING PURPOSES ONLY

PERMANENT SIGNING TABLE

EXISTING STATION	WEST SIDE STATION	SIGN								POST					DESCRIPTION	REMARKS
		Width (in)	Height (in)	Number	Facing Traffic	New Sign	Remove Existing	Square Footage	Sheeting Type	New Post	Length (ft)	Size (in)	#	Break Away Base		
-	19+28.4 RT	18	18	W3-1	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	7.1	2.00	1	Yes	STOP AHEAD (SYMBOL)	INSTALL NEW SIGN ON NEW POST
19+94.3 RT	19+94.3 RT				SOUTHBOUND		-			NO					I-90 AND DIRECTIONAL SIGNS	REMOVE AND RESET SIGNS AND POST
-	20+48.0 RT	24	18	R9-9	SOUTHBOUND	FLAT ALUM	-	3.0	IV	NO	-	-	-	-	SIDEWALK CLOSED	INSTALL NEW SIGN ON TYPE III BARRICADE
-	20+48.0 RT	18	18	R1-1	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.6	2.00	1	Yes	STOP SIGN	INSTALL NEW SIGN ON NEW POST
-	21+08.9 RT	24	18	R9-9	NORTHBOUND	FLAT ALUM	-	3.0	IV	NO	-	-	-	-	SIDEWALK CLOSED	INSTALL NEW SIGN ON TYPE III BARRICADE
-	21+10.8 LT	18	18	R1-1	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.6	2.00	1	Yes	STOP SIGN	INSTALL NEW SIGN ON NEW POST
-	22+32.4 LT	18	18	W3-1	SOUTHBOUND	FLAT ALUM	-	2.3	IV	YES	7.1	2.00	1	Yes	STOP AHEAD (SYMBOL)	INSTALL NEW SIGN ON NEW POST
-	23+68.5 RT	18	18	R1-1	NORTHBOUND	FLAT ALUM	-	2.3	IV	YES	6.6	2.00	1	Yes	STOP SIGN	INSTALL NEW SIGN ON NEW POST
-	23+71.0 RT	24	18	R9-9	SOUTHBOUND	FLAT ALUM	-	3.0	IV	NO	-	-	-	-	SIDEWALK CLOSED	INSTALL NEW SIGN ON NEW POST
						TOTALS:		86.1			197.3					

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Prepared by FMG Engineering

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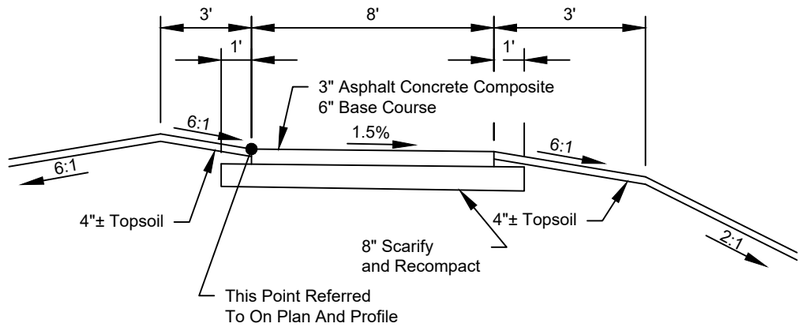
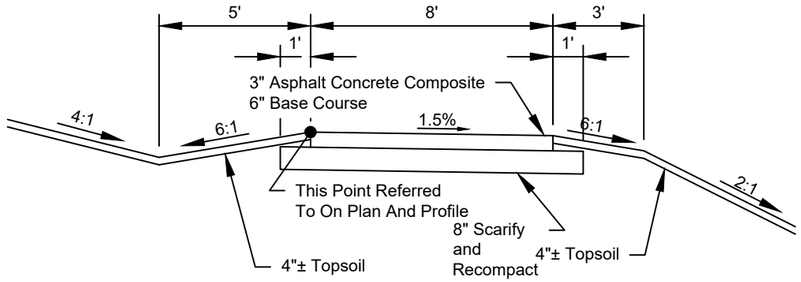
Typical Sections

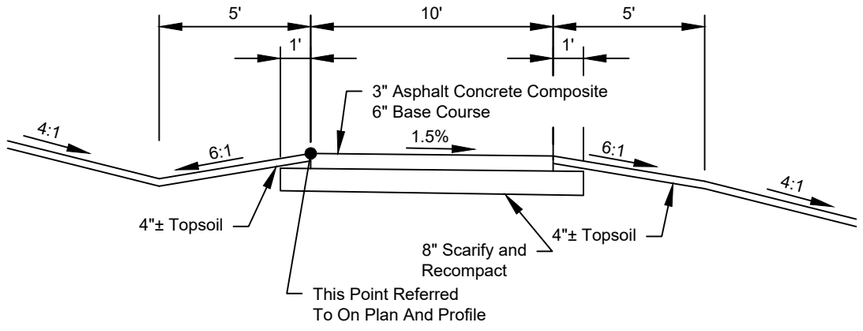
Eastside Alignment



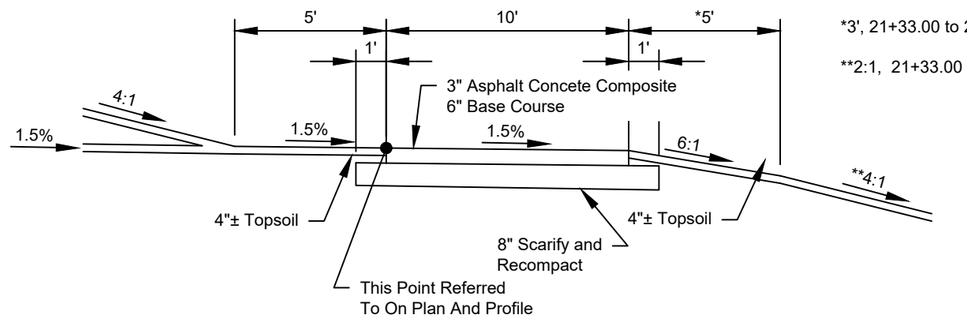
Typical Section No. 1
Eastside Pathway
Sta 1+20.55 to 2+75.00



Typical Section No. 2
Eastside Pathway
Sta 3+00.00 to 9+00.00



Typical Section No. 3
Eastside Pathway
Sta 9+25.00 to 12+50.00



*3', 21+33.00 to 21+82.85

**2:1, 21+33.00 to 21+82.85

Typical Section No. 4
Eastside Pathway
Sta 12+75.00 to 21+83.56

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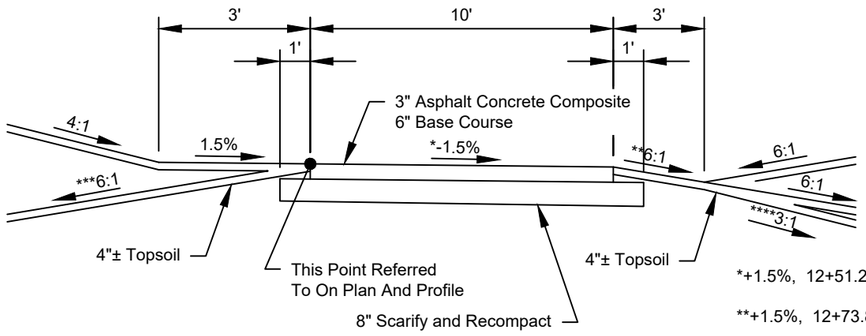
Typical Sections

Westside Pathway Alignment



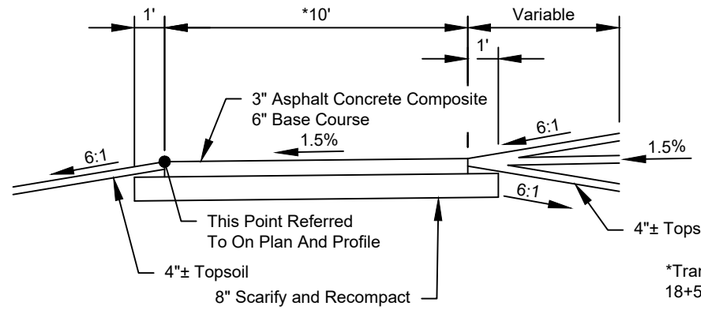
*+1.5%, 12+51.24 to 13+13.54

**+1.5%, 12+73.84 to 13+16.27

***3:1, 12+51.24 to 13+16.27

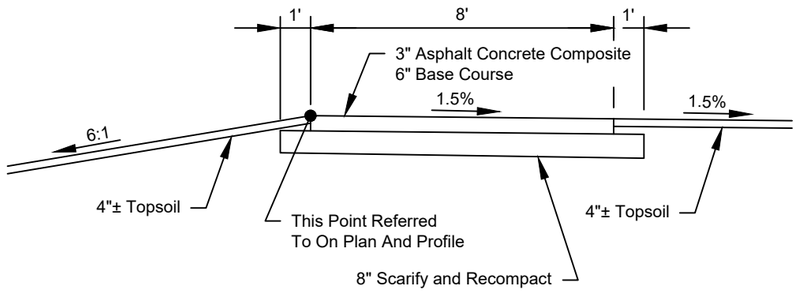
****4:1, 23+50.00 to 23+81.33

Typical Section No. 1
Westside Pathway
Sta 1+92.70 to 13+30.52 and Sta 21+00.00 to 23+81.33



*Transition from 9' to 10'
18+50.00 to 19+19.50

Typical Section No. 2
Westside Pathway
Sta 13+70.70 to 15+75.00 and 18+50.00 to 20+58.73



Typical Section No. 3
Westside Pathway
Sta 15+90.00 to 16+00.00

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	27	120

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REG. NO.
8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-20-23

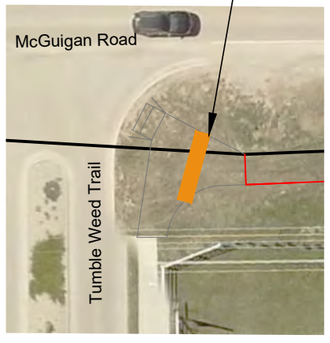
McGuigan Road
Tumble Weed Trail
Old Highway 14
Westview Drive
Russell Street
EXIT 8
INTERSTATE 90

See Detail "A"

ROAD WORK AHEAD W20-1
END ROAD WORK G20-2

0+00 5+00 10+00 15+00 20+00 22+89
0+00 5+00 10+00 15+00 20+00 25+00 30+00 35+00 40+00 43+05

Install 30' of Pedestrian Barricade



DETAIL "A"

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BORROW SITE TRUCK CROSSING

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	TAPU(31)	28	120

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	29	120

Plotting Date: June 20, 2023
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REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

FINAL STABILIZATION

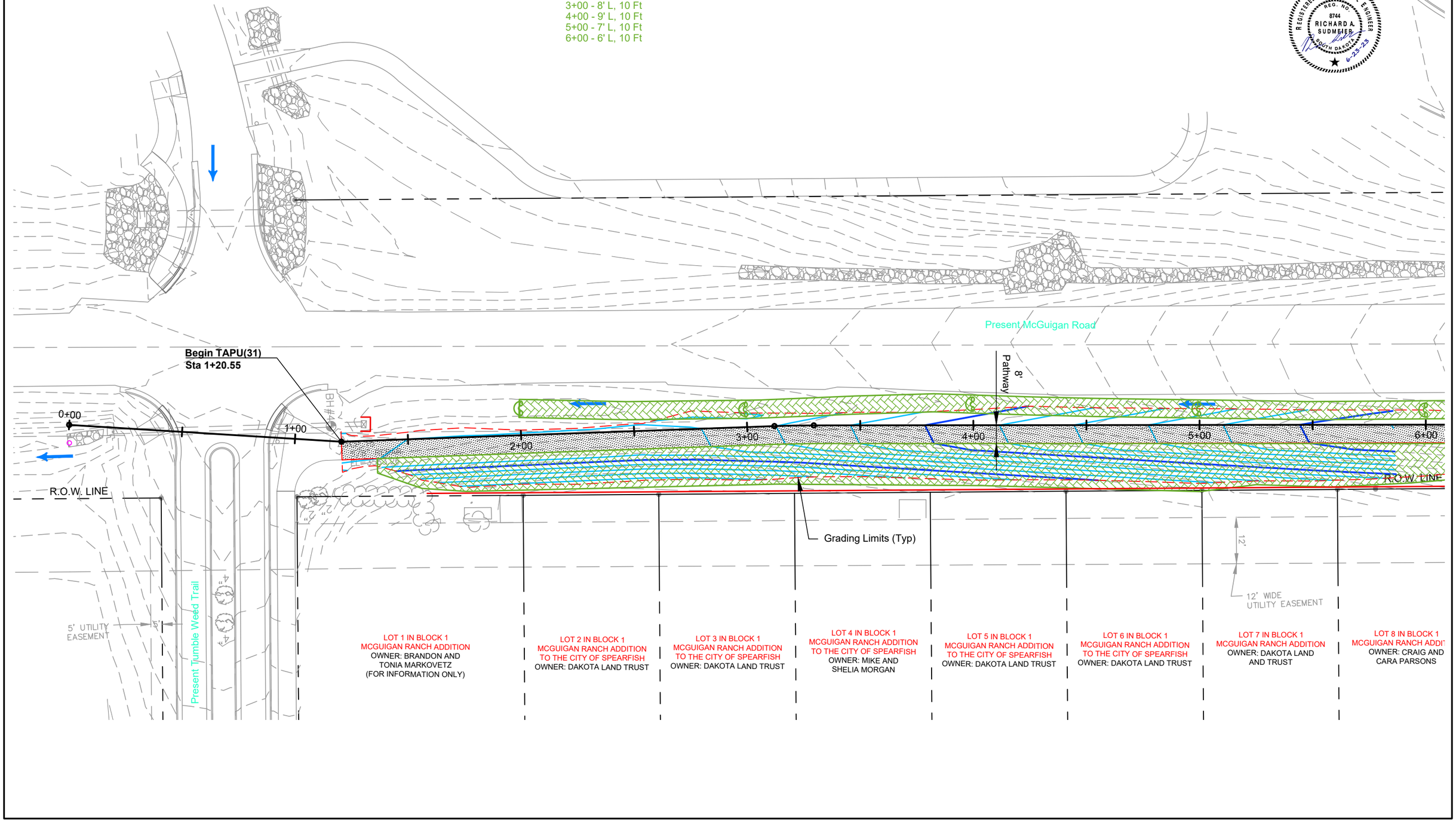
Install Type 2 Erosion Control Blanket
At The Following Locations:
1+36 - 12' R to 6+00 - 12' R, 915.3 SqYd
2+00 - 12' L to 6+00 - 5' L, 354.8 SqYd

Install 9" Erosion Control Wattles
At The Following Locations:
2+00 - 12' L, 10 Ft
3+00 - 8' L, 10 Ft
4+00 - 9' L, 10 Ft
5+00 - 7' L, 10 Ft
6+00 - 6' L, 10 Ft

PERIMETER CONTROL

Install High Flow Silt Fence
At The Following Locations:
1+34 - 7' L, 15 Ft

Install Low Flow Silt Fence
At The Following Locations
1+58 - 24' R to 6+00 - 27' R, 442 Ft



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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	30	120

Plotting Date: June 20, 2023
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PERIMETER CONTROL

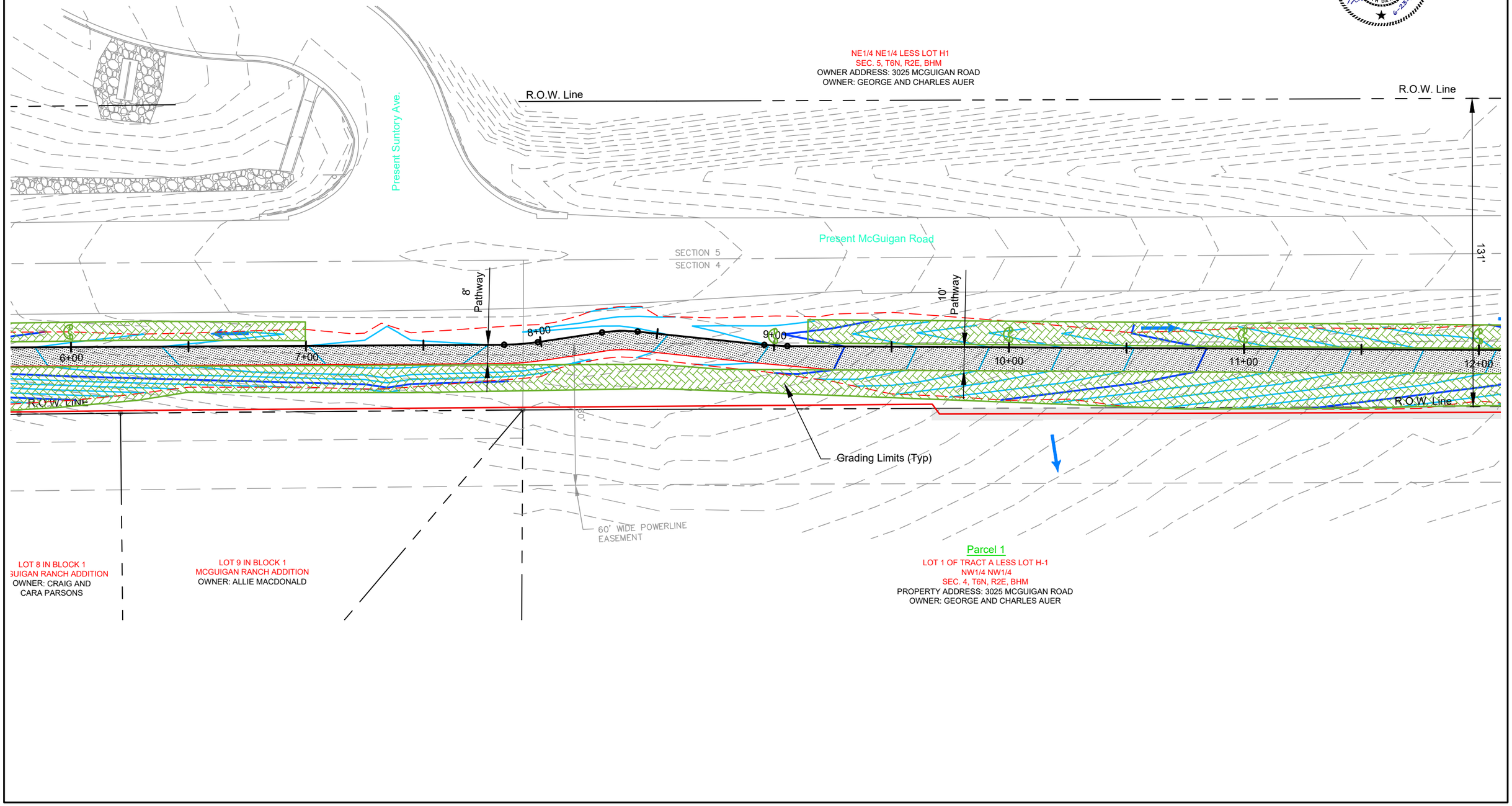
Install Temporary Sediment Barrier at the following locations:
6+51 - 27' R to 12+00 - 27' R, 549 Ft

FINAL STABILIZATION

Install Type 2 Erosion Control Blanket At The Following Locations:
6+00 - 12' R to 12+00 - 17' R, 854.3 SqYd
6+00 - 6' L to 7+00 - 5' L, 88.9 SqYd
9+14 - 7' L to 12+00 - 6' L, 319.7 SqYd

Install 9" Erosion Control Wattes At The Following Locations:
9+00 - 4' L, 10 Ft
10+00 - 5' L, 10 Ft
11+00 - 5' L, 10 Ft
12+00 - 5' L, 10 Ft

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23



State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	31	120

Plotting Date: June 20, 2023
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FINAL STABILIZATION

Install Type 2 Erosion Control Blanket
At the Following Locations:
12+00 - 17' R to 12+69 - 12' R, 92.3 SqYd
12+00 - 6' L to 12+62 - 6' L, 68.1 SqYd

Install 9" Diameter Erosion Control Wattle
At The Following Locations:
13+84 - 2' L to 18+00 - 2' L, 416 Ft

INTERIM STABILIZATION

Install High Flow Silt Fence
At The Following Locations:
12+66 - 5' L - 31 Ft

Install Inlet Grate Protection
At The Following Locations:
12+66 - 5' L, 1 Ea

PERIMETER CONTROL

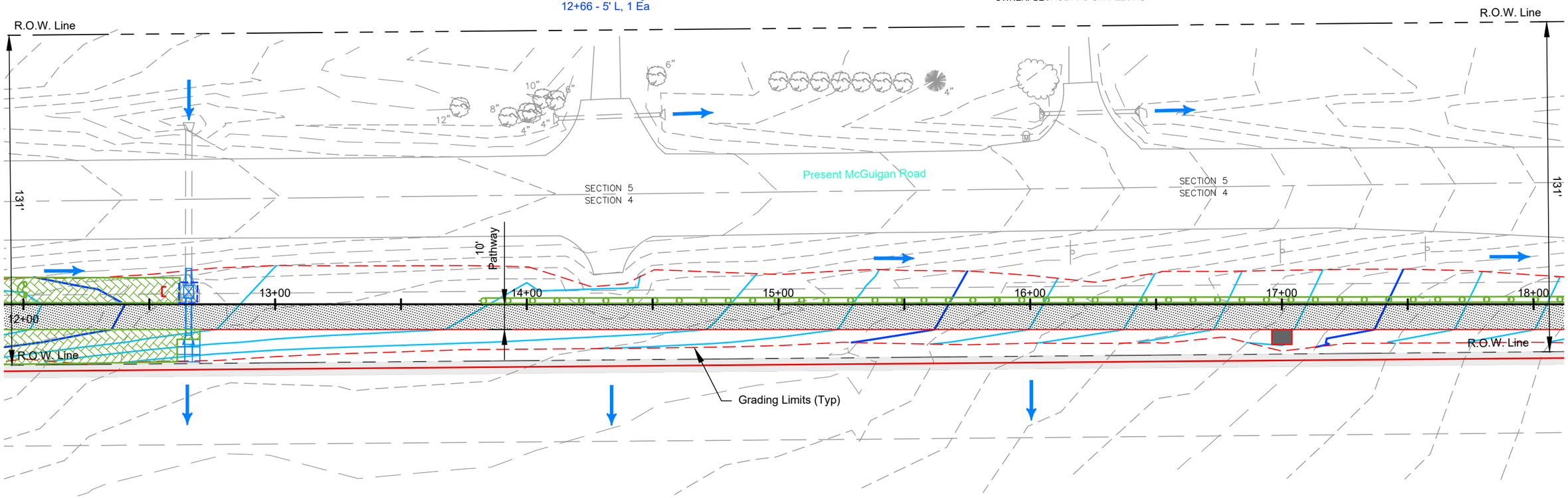
Install High Flow Silt Fence
At The Following Locations:
12+54 - 5' L, 7 Ft

PERIMETER CONTROL

Install Temporary Sediment Barrier at
the following locations:
12+00 - 27'R to 18+00 - 22'R, 600 Ft

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

NE1/4 NE1/4 LESS LOT H1
SEC. 5, T6N, R2E, BHM
OWNER ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER



Parcel 1

LOT 1 OF TRACT A LESS LOT H-1
NW1/4 NW1/4
SEC. 4, T6N, R2E, BHM
PROPERTY ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	32	120

Plotting Date: June 20, 2023
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FINAL STABILIZATION

Install Type 2 Erosion Control Blanket
At The Following Locations:
21+25 - 15' R to 21+91 - 5' R, 84.9 SqYd

Install 9" Diameter Erosion Control Wattle
At The Following Locations:
18+00 - 2' L to 21+50 - 2' L, 350 Ft

PERIMETER CONTROL

Install Temporary Sediment Barrier at
the following locations:
18+00 - 22'R to 21+48 - 30'R, 349 Ft
21+60 - 24'R to 21+78 - 42'R, 26 Ft

Install 12" Diameter Erosion Control Wattle
At The Following Locations:
21+50 - 91' L, 36 Ft

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

NE1/4 NE1/4 LESS LOT H1
SEC. 5, T6N, R2E, BHM
OWNER ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER

R.O.W. Line
0+00
1+00
2+00
3+00
R.O.W. Line
131'
McGuigan Road
Present McGuigan Road
Present Old Highway 14
SECTION 32
SECTION 5
SECTION 4
10' Pathway
18+00
19+00
20+00
21+00
22+00
22+89
R.O.W. Line
R.O.W. Line
Grading Limits (Typ)
60' WIDE POWERLINE EASEMENT
Present Old Highway 14
SECTION 33
R.O.W. Line

Parcel 1
LOT 1 OF TRACT A LESS LOT H-1
NW1/4 NW1/4
SEC. 4, T6N, R2E, BHM
PROPERTY ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER

LOT 28 OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3105 W. FAIRGOUNDS LOOP
OWNER: BVD ENTERPRISES, LLC

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	33	120

Plotting Date: June 20, 2023
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PERIMETER CONTROL

Install 12" Diameter Erosion Control Wattle
At The Following Locations:
4+46 - 26' R, 36 Ft

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REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

Parcel 2
NE1/4 NE1/4 LESS LOT H1
SEC. 5, T6N, R2E, BHM
OWNER ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER

Parcel 3
TRACT B1C REVISED
PROPERTY ADDRESS: 3215 OLD BELLE ROAD
OWNER: ALBERTO AND CASSANDRA GOMEZ

Parcel 4
TRACT B2 REVISED
PROPERTY ADDRESS: 3225 OLD BELLE ROAD
OWNER: DST ENTERPRISES, LLC

S. 14

Present Highway 14

R.O.W. Line
0+00
1+00
2+00
3+00
4+00
5+00
6+00
R.O.W. Line

10' Pathway

8"
4"
21"

DP
DP
DP

Grading Limits (Typ)

131'

SECTION 5
SECTION 4

SECTION 32

115'

Present McGuigan Road

21+00
22+00
22+89

R.O.W. Line
R.O.W. Line
R.O.W. Line

60'

60' WIDE POWERLINE EASEMENT

Parcel 1

SECTION 33

LOT 28 OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3105 W. FAIRGOUNDS LOOP
OWNER: BVD ENTERPRISES, LLC

LOT 29 OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3115 W. FAIRGOUNDS LOOP
OWNER: GENE AND JUDY JOHNER

LOT 30 LESS THE NORTH 5 FEET OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3125 W. FAIRGOUNDS LOOP
OWNER: SHANE LABRIER

N5' OF LOT 30 (LOT H2)

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	34	120

Plotting Date: June 20, 2023
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FINAL STABILIZATION

Install 12" Diameter Erosion Control Wattle
At The Following Locations:
6+48 - 21' R, 36 Ft
9+52 - 19' R, 36 Ft

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-25-23

Parcel 4
TRACT B2 REVISED
PROPERTY ADDRESS: 3225 OLD BELLE ROAD
OWNER: DST ENTERPRISES, LLC

Parcel 5
TRACT B1B REVISED
PROPERTY ADDRESS: NA
OWNER: DARYL D. JOHNSON

Parcel 6
PARCEL 2A
PROPERTY ADDRESS: 3275 OLD BELLE ROAD
OWNER: SPEEDY MART, INC

Parcel 7

CP 18
5/8" REBAR
EL=3530.89

6+00 7+00 8+00 9+00 10+00 11+00 12+00

R.O.W. Line

Present McGuigan Road

Grading Limits (Typ)

115'

SECTION 32
SECTION 33

R.O.W. LINE

N5' OF LOT 30 (LOT H2)

NORTH 5 FEET OF LOT 30 AND LOT 31 OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3207 W. FAIRGOUNDS LOOP
OWNER: REDWATER RENTALS, LLC

LOT 32 OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3217 W. FAIRGOUNDS LOOP
OWNER: RANDALL AND GRETA STEWART

LOT 33 OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3227 W. FAIRGOUNDS LOOP
OWNER: LOGY D, LLC

LOT 34B OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3435 N. FAIRGOUNDS LOOP
OWNER:
LONE ELK ENTERPRISES, LLC

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	35	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

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REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

FINAL STABILIZATION

Install 12" Diameter Erosion Control Wattle
At The Following Locations:
12+94 - 7' L, 36 Ft
12+41 - 14' R to 12+60 - 15' R, 20 Ft

PERIMETER CONTROL

Install High Flow Silt Fence
At The Following Locations:
15+87 - 25' L, 17 Ft

INTERIM STABILIZATION

Install High Flow Silt Fence
At The Following Locations:
14+02 - 18' R - 31 Ft

Install Inlet Grate Protection
At The Following Locations:
14+02 - 18' R, 1 Ea

Parcel 7
PARCEL 2B
PROPERTY ADDRESS:
OWNER: SPEEDY MART, INC.

TRACT A
PROPERTY ADDRESS: NA
OWNER: STATE OF SOUTH DAKOTA

I-90 R.O.W. Line

R.O.W. Line

12+00

13+00

14+00

15+00

16+00

17+00

18+00

10' Pathway

8' Pathway

Grading Limits (Typ)

Present Old Belle Road

SECTION 32
SECTION 33

115'

R.O.W. Line

LOT 35, OF THE SUBDIVSION
SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3435 N. FAIRGOUNDS LOOP
OWNER:
M & A ANDERSON PROPERTIES, LLC

I-90 R.O.W. Line

Interstate 90
(Eastbound)

Interstate 90
(Westbound)

SDDOT BM
EL = 3541.26

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	36	120

Plotting Date: June 20, 2023
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FINAL STABILIZATION

Install 12" Diameter Erosion Control Wattle
At The Following Locations:
21+59 - 20' L, 16 Ft
23+51 - 19' L, 16 Ft

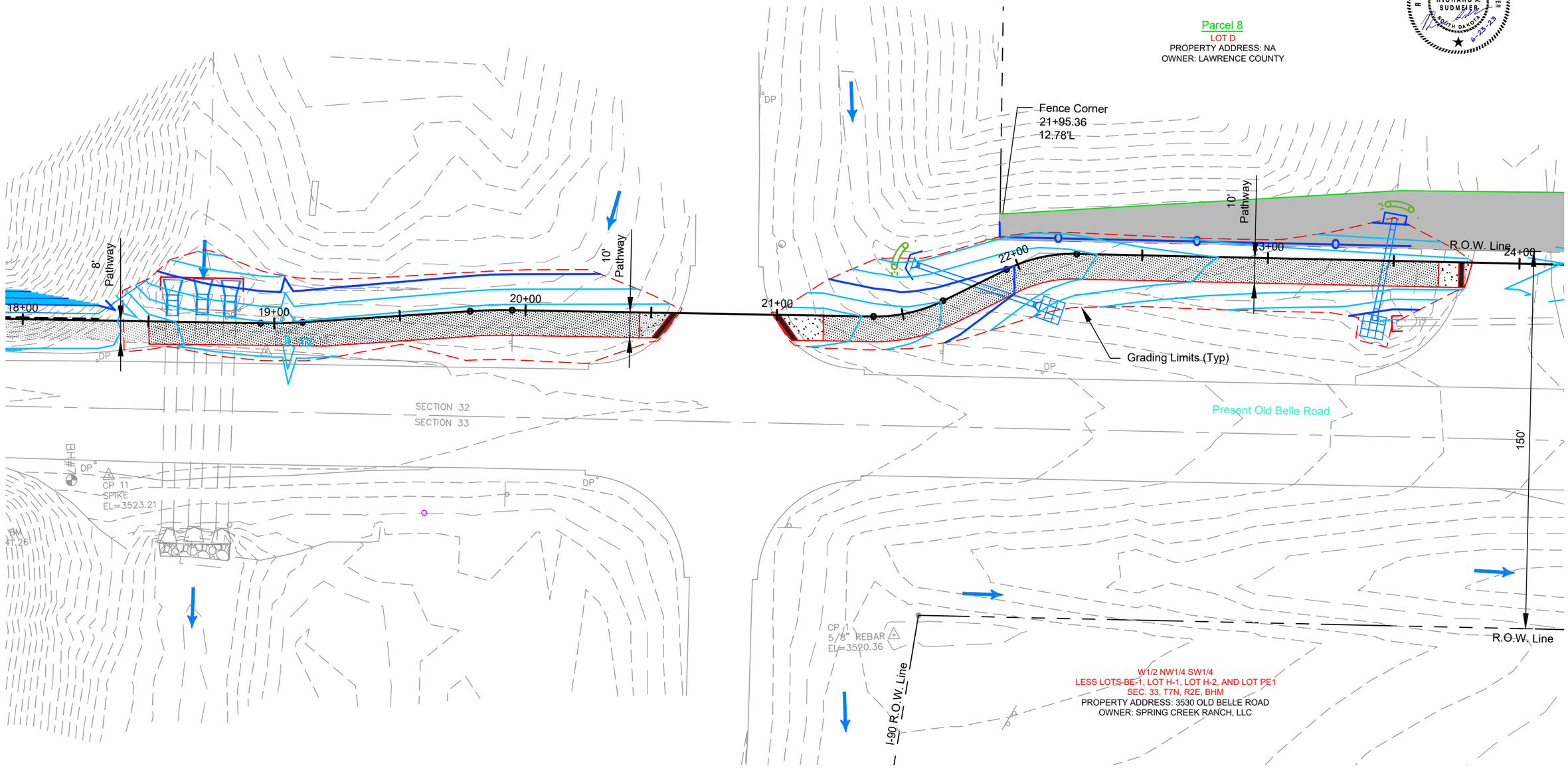
PERIMETER CONTROL

Install High Flow Silt Fence
At The Following Locations:
18+55 - 13' L to 18+87 - 13' L, 43 Ft
23+50 - 25' R, 16 Ft

INTERIM STABILIZATION

Install High Flow Silt Fence
At The Following Locations:
21+59 - 20' L, 16 Ft
23+51 - 19' L, 16 Ft

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23



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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	37	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

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Horizontal Alignment Control Plans

Eastside Pathway Alignment

Type	Station	Delta	Radius	Tangent	Length	Bearing	Northing	Easting
POB	0+00.00				120.55	N 06°20′13″ E	271750.7359	954059.3707
PI	1+20.55				14.63	N 00°44′57″ E	271870.5484	954112.6762
PI	1+35.18				176.92	N 00°44′57″ E	271885.1754	954112.8675
PC	3+12.10						272062.0867	954115.1812
PI	3+20.81	01°59′40″ R	500.00	8.70			272070.7891	954115.2950
PT	3+29.51				462.09	N 02°44′37″ E	272079.4822	954115.7116
PC	7+84.38						272533.8309	954137.4854
PI	7+91.60	08°15′22″ L	100.00	7.22			272541.0401	954137.8309
PT	7+98.79				27.60	N 05°30′45″ W	242547.2241	954137.1376
PC	8+26.39						272575.6973	954134.4861
PI	8+34.02	14°29′58″ R	60.00	7.63			272583.2900	954133.7500
PT	8+41.57				54.25	N 08°59′13″ E	272590.8337	954134.9452
PC	8+95.82						272644.4138	954143.4190
PI	9+00.72	05°36′56″	100.00	4.90			272649.2600	954144.1900
PT	9+05.62				1383.26	N03°22′17″ E	272654.1538	954144.4735
POE	22+88.17						274035.0233	954225.8233

Westside Pathway Alignment

Type	Station	Delta	Radius	Tangent	Length	Bearing	Northing	Easting
POB	0+00.00				194.00	S 87°36′55″ E	273827.0276	954102.6228
PC	1+94.00						274020.7107	954113.7485
PI	2+00.00	02°17′26″ R	300.00	6.00			274026.6984	954114.0924
PT	2+06.00				38.06	N 05°34′41″ E	274032.6676	954114.6754
PC	2+44.06						274070.5466	954118.3750
PI	2+50.04	06°37′43″ L	300.00	6.88			274076.5014	954118.9565
PT	2+56.02				966.74	N 03°17′35″ E	274082.4748	954119.3002
PC	12+22.76						275047.6231	954174.8337
PI	12+34.15	21°29′12″ R	60.00	11.38			275058.9884	954175.4876
PT	12+45.27				5.97	N 24°46′47″ E	275069.3244	954180.2591
PC	12+51.24						275074.7461	954182.7620
PI	12+74.97	43°09′42″ L	60.00	23.73			275096.2935	954192.7090
PT	12+96.44				5.81	N 18°22′55″ W	275118.8150	954185.2250
PC	13+02.24						275124.3265	954183.3935
PI	13+13.73	21°40′10″ R	60.00	11.48			275135.2239	954179.7723
PT	13+24.94				55.45	N 03°17′15″ E	275146.6883	954180.4308
PC	13+80.39						275202.0480	954183.6108
PI	13+85.65	06°01′42″ R	100.00	5.27			275207.3052	954183.9128
PT	13+90.91				192.73	N 09°18′58″ E	275212.5015	954184.7652

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Horizontal Alignment Control Plans

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	38	120

Plotting Date: June 20, 2023
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PC	15+81.64						275400.7175	954215.6414
PI	15+87.16	06°18’52” L	100.00	5.52			275406.1607	954216.5343
PT	15+92.66				301.96	N 03°00’06” E	275411.6692	954216.8232
PC	18+94.62						275713.2178	954232.6359
PI	19+02.98	04°47’02” L	200.00	8.35			275721.5608	954233.0734
PT	19+011.32				66.69	N 01°46’56” W	275729.9112	954232.8135
PC	19+78.01						275796.5671	954230.7395
PI	19+86.37	04°47’05” R	200.00	8.36			275804.9189	954230.4796
PT	19+94.71				143.64	N 03°00’09” E	275813.2633	954230.9173
PC	21+38.36						275956.7092	954238.4415
PI	21+52.93	27°18’23” L	60.00	14.57			275971.2638	954239.2049
PT	21+66.95				28.15	N 24°18’15” W	275984.5467	954233.2063
PC	21+95.10						276010.1991	954221.6217
PI	22+09.82	27°34’17” R	60.00	14.72			276023.6160	954215.5626
PT	22+23.97				207.23	N 03°16’02” E	276038.3136	954216.4017
PC	24+31.20						276245.2089	954228.2133
PI	24+37.72	10°38’21” R	70.00	6.52			276251.7162	954228.5848
PT	24+44.20				50.90	N 13°54’24” E	276258.0431	954230.1514
PC	24+95.10						276307.4494	954242.3844
PI	25+24.14	79°21’38” R	35.00	29.04			276335.6356	954249.3633
PT	25+43.58				39.73	S 86°43’57” E	276333.9805	954278.3534
PI	25+83.31				17.24	S 89°43’57” E	276331.7159	954318.0214
PC	26+00.55						276330.7335	954335.2290
PI	26+02.84	07°28’43” R	35.00	2.29			276330.6031	954337.5128
PT	26+05.12				35.25	S 79°15’14” E	276330.1766	954339.7601
PC	26+40.37						276323.6035	954374.3941
PI	26+42.61	07°20’17” L	35.00	2.24			276323.1851	954376.5992
PT	26+44.85				228.87	S 86°35’31” E	276323.0516	954378.8396
PC	28+73.72						276309.4461	954607.3088
PI	28+98.77	90°06’17” L	25.00	25.05			276307.9572	954632.3103
PT	29+13.04				228.74	N 03°18’11” E	276332.9614	954633.7534
PC	31+41.78						276561.3200	954646.9329
PI	31+76.55	89°37’45” R	35.00	34.77			276596.0365	954648.9366
PT	31+96.53				302.19	S 87°04’03” E	276594.2575	954683.6654
PC	34+98.72						276578.7974	954985.4597
PI	35+06.14	10°35’52” R	80.00	7.42			276578.4178	954992.8698
PT	35+13.52				109.07	S 76°28’11” E	276576.6818	955000.0838
PC	36+22.59						276551.1632	955106.1281
PI	36+36.76	20°05’33” L	80.00	14.17			276547.8473	955119.9077
PT	36+50.64				54.45	N 96°33’45” E	276549.4670	955133.9877
PC	37+05.10						276555.6898	955188.0819
PI	37+08.02	05°34’59” R	60.00	2.93			276556.0242	955190.9885

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SOUTH DAKOTA
6-23-23

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Horizontal Alignment Control Plans

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	39	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

PT	37+10.94				57.96	S 89°01’15” E	276556.0742	955193.9138
PC	37+68.90						276557.0644	955251.8650
PI	37+84.66	23°44’13” L	75.00	15.76			276557.3337	955267.6246
PT	37+99.97				22.21	N 65°17’02” E	276563.9241	955281.9426
PC	38+22.18						276573.2087	955302.1142
PI	38+40.69	27°43’45” R	75.00	18.51			276580.9487	955318.9298
PT	38+58.48				112.05	S 86°59’13” E	276579.9756	955337.4157
PC	39+70.52						276574.0856	955449.3081
PI	40+15.22	33°11’06” L	150.00	44.70			276571.7361	955493.9422
PT	40+57.40				61.35	N 59°49’40” E	276594.2001	955532.5828
PC	41+18.75						276625.0331	955585.6188
PI	41+72.76	50°19’02” L	115.00	54.01			276652.1802	955632.3147
PT	42+19.74				19.60	N 09°30’38” E	276705.4514	955641.2394
PC	42+39.34						276724.7821	955644.4780
PI	42+57.08	16°48’57” R	120.00	17.74			276742.2756	955647.4087
PT	42+74.56				30.25	N 29°19’36” E	276758.1731	955655.2750
POE	43+04.82						276785.2891	955668.6923

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6-23-23

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	40	120

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Control Data Plan

Horizontal And Vertical Control Point Information						
North Section Alignment						
Point	Station	Offset	Northing	Easting	Elevation	Description
CP 15	1+23.09	4.88'R	271,871.3330	954,113.2480	3563.26	⅝" Rebar
West Side Pathway Alignment						
CP 3	15+58.98	12.24'R	275,378.8410	954,224.4590	3524.52	Spike
SDDOT BM	17+77.27	90.11'R	275,593.7975	954,316.6070	3541.05	SDDOT BM
CP 11	18+32.88	61.49'R	275,650.8350	954,290.9380	3523.21	Spike
CP 4	18+94.39	11.20' R	275,715.0230	954,243.9350	3523.13	Spike
CP 1	21+39.21	126.60' R	275,960.4920	954,365.1270	3520.36	⅝" Rebar
CP 17	26+39.43	69.02' R	276,255.0350	954,366.0970	3514.95	⅝" Rebar

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North Zone (NAD 83/2011) SF = 0.999984234

BORROW LOCATIONS

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	41	120

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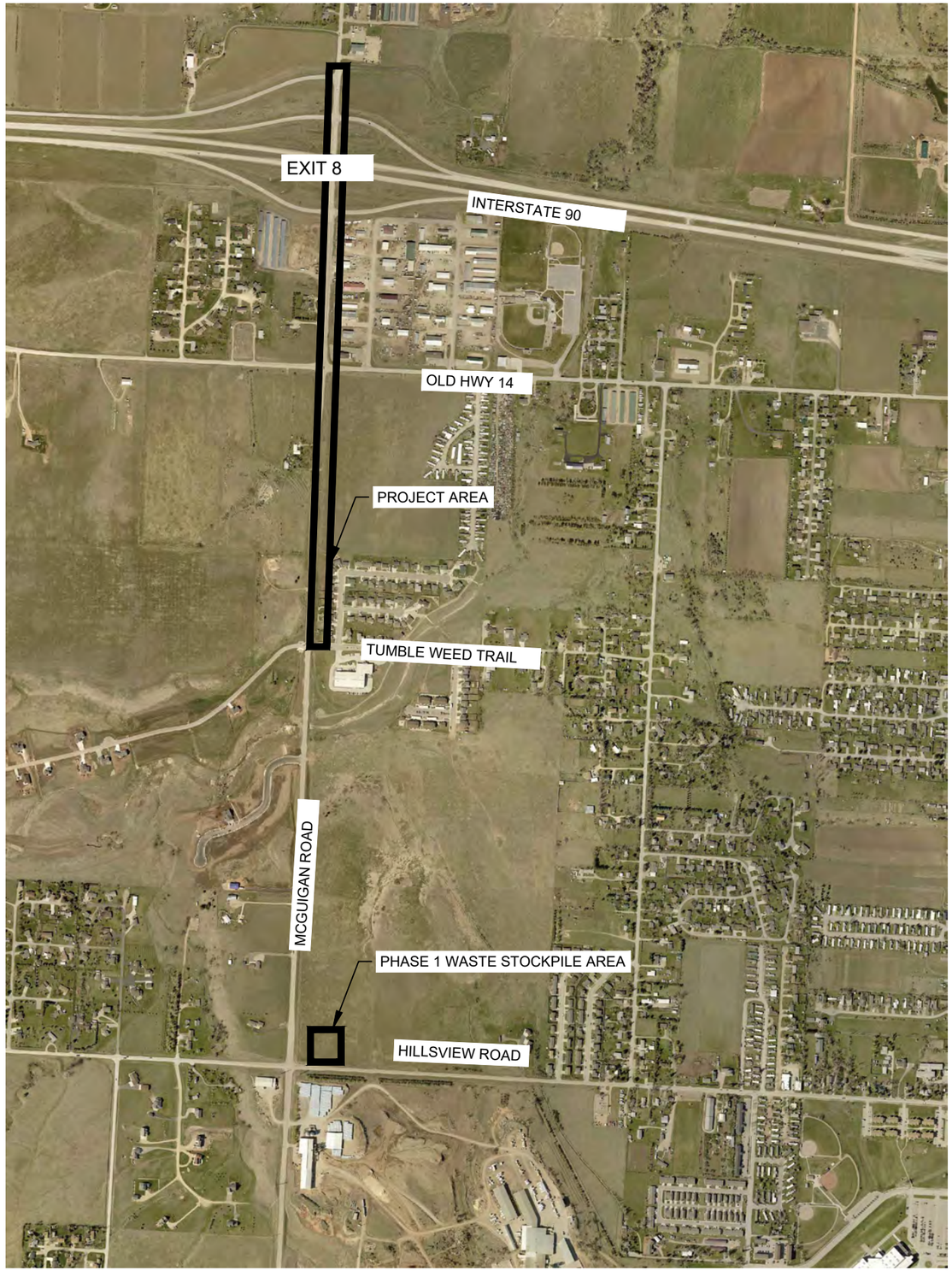

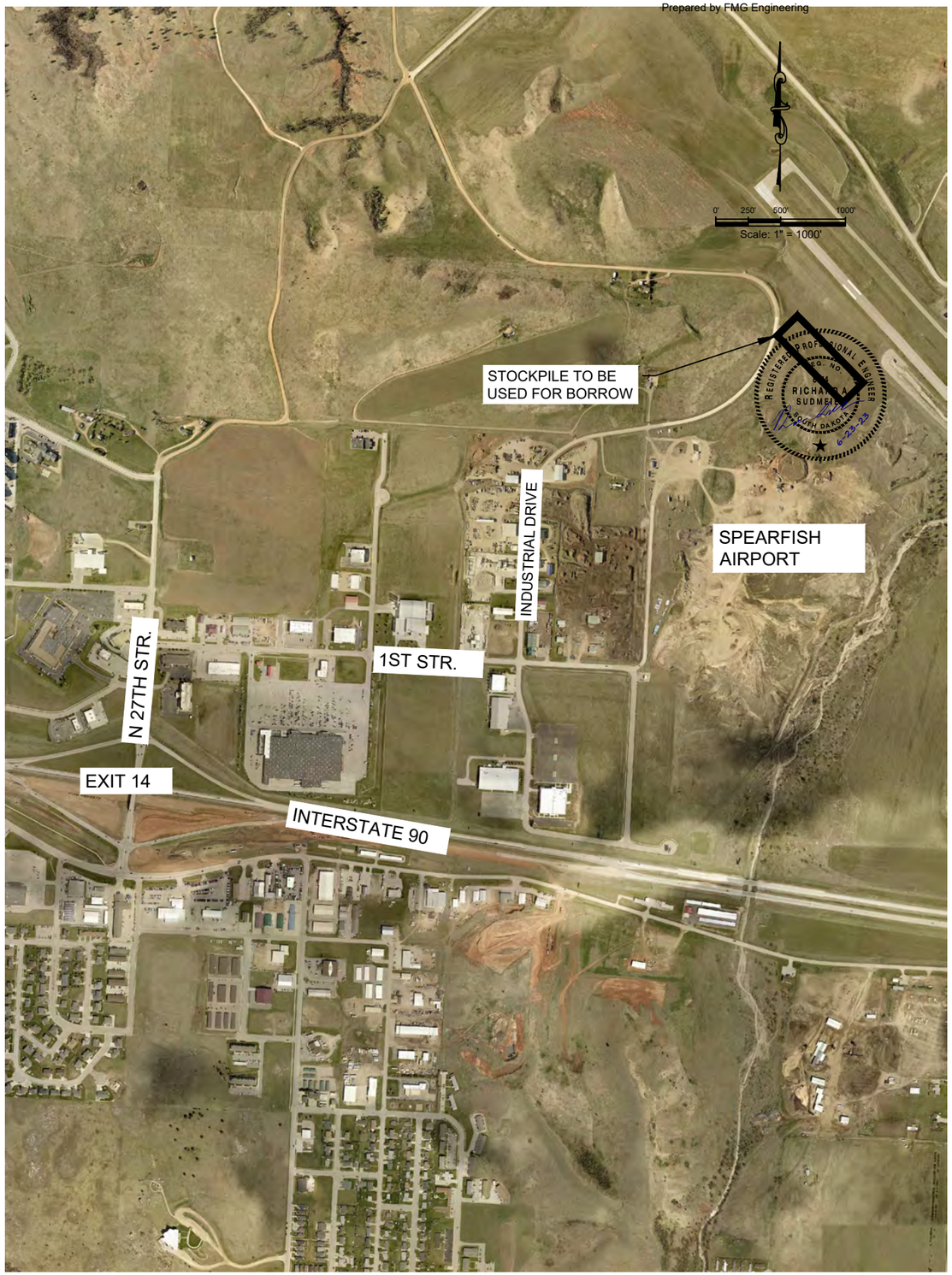

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	42	120

Plotting Date: June 20, 2023
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Legend

Existing Legend

- CP 1 — Survey Control Point
- Bench Mark
- Found Survey Monument
- BH#1 — Borehole
- CO — Clean Out
- S — Sanitary Sewer Manhole
- WV — Water Valve
- Power Pole
- Guy Wire Anchor
- Light Pole
- E — Electric Meter
- JB — Electric Junction Box
- R — Cable Tv Or Telephone Riser
- M — Mailbox
- Sign
- Delineator Post
- 4" — Tree (deciduous) Plus Trunk Diameter
- 10" — Tree (coniferous) Plus Trunk Diameter
- Bush
- Curb & Gutter
- Guardrail
- Chain Link Fence
- X — Wire Fence
- Wood Fence
- W — Water Line
- OH — Overhead Power Line
- UP — Underground Power Line
- G — Gas Line
- S — Sanitary Sewer Line
- T — Telephone Line
- FO — Fiber Optic Line
- Drainage Flow Line
- Riprap
- Property Line

Proposed Legend

- Fire Hydrant
- Water Valve
- Bank And Channel Protection Baskets
- Storm Sewer Line Or Culvert
- Drainage Direction
- Sign
- Curb & Gutter
- Guardrail
- Barbed Wire Fence
- Chain Link Fence
- Smooth Wire Fence
- 3PP — 3 Post Panel On Fence
- 2PP — 2 Post Panel On Fence
- Grading Limits
- Asphalt Pathway

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	43	120

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5+20.9 - 11.2'R
Adjust Water Valve Boxes
to Match Proposed Grade

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0' 10' 20' 40'
Scale: 1" = 40'

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RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

SIGN ON CONCRETE

ELECTRIC BOXES

GV

(ASPHALT)

18" RCP
FL W=3560.04
FL E=3559.86

TELEPHONE PEDESTALS

SIDEWALK

36" RCP
PIPE FL=3563.95
FLARED END=3563.68

1+29.5-5.5'L
Do Not Disturb
Area Inlet

1+59.4-23.5'R to
1+82.8-27.7'R
Do Not Disturb Electric and
Telephone Equipment

2+61.0-28.8'R to
3+19.7-30.2'R
Do Not Disturb
Wooden Fence

3+26.2-30.3'R to
3+80.6-29.9 'R
Do Not Disturb
Chainlink Fence

3+83.1-30.1'R to
5+01.9-29.2'R
Do Not Disturb
Wooden Fence

5+51.7-23.1'R
Do Not Disturb
Telephone Pedestals

5+62.4-29.5'R to
6+20.2-28.6'R
Do Not Disturb
Wooden Fence

PI 3+20.81
Δ=1°59'40"
R=500.000
N 272070.79
E 954115.30
DC 11°27'33"
T 8.70
L 17.40

PC: 3+12.10

PT: 3+29.51

Present McGuigan Road

8' Pathway

Edge Of Asphalt (Typ)

Begin TAPU(31)
Sta 1+20.55

PI: 1+20.55

PI: 1+35.18

AREA INLET
RIM=3560.39

FIBER OPTIC, TELEPHONE
AND ELECTRIC BOXES

BH ##

0+00

1+00

2+00

3+00

4+00

5+00

6+00

N0°20'13"E

N0°44'57"E

R.O.W. LINE

OH

G

W

SHED

Grading Limits (Typ)

TREE
C 1"

18" RCP
FL=3555.91
ND=3556.29

5' UTILITY EASEMENT

Present Tumble Weed Trail

12'

TELEPHONE PEDESTALS

12' WIDE
UTILITY EASEMENT

LOT 1 IN BLOCK 1
MCGUIGAN RANCH ADDITION
OWNER: BRANDON AND
TONIA MARKOVETZ
(FOR INFORMATION ONLY)

LOT 2 IN BLOCK 1
MCGUIGAN RANCH ADDITION
TO THE CITY OF SPEARFISH
OWNER: DAKOTA LAND TRUST

LOT 3 IN BLOCK 1
MCGUIGAN RANCH ADDITION
TO THE CITY OF SPEARFISH
OWNER: DAKOTA LAND TRUST

LOT 4 IN BLOCK 1
MCGUIGAN RANCH ADDITION
TO THE CITY OF SPEARFISH
OWNER: MIKE AND
SHELIA MORGAN

LOT 5 IN BLOCK 1
MCGUIGAN RANCH ADDITION
TO THE CITY OF SPEARFISH
OWNER: DAKOTA LAND TRUST

LOT 6 IN BLOCK 1
MCGUIGAN RANCH ADDITION
TO THE CITY OF SPEARFISH
OWNER: DAKOTA LAND TRUST

LOT 7 IN BLOCK 1
MCGUIGAN RANCH ADDITION
OWNER: DAKOTA LAND
AND TRUST

LOT 8 IN BLOCK 1
MCGUIGAN RANCH ADDIT
OWNER: CRAIG AND
CARA PARSONS

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	44	120

Plotting Date: June 20, 2023
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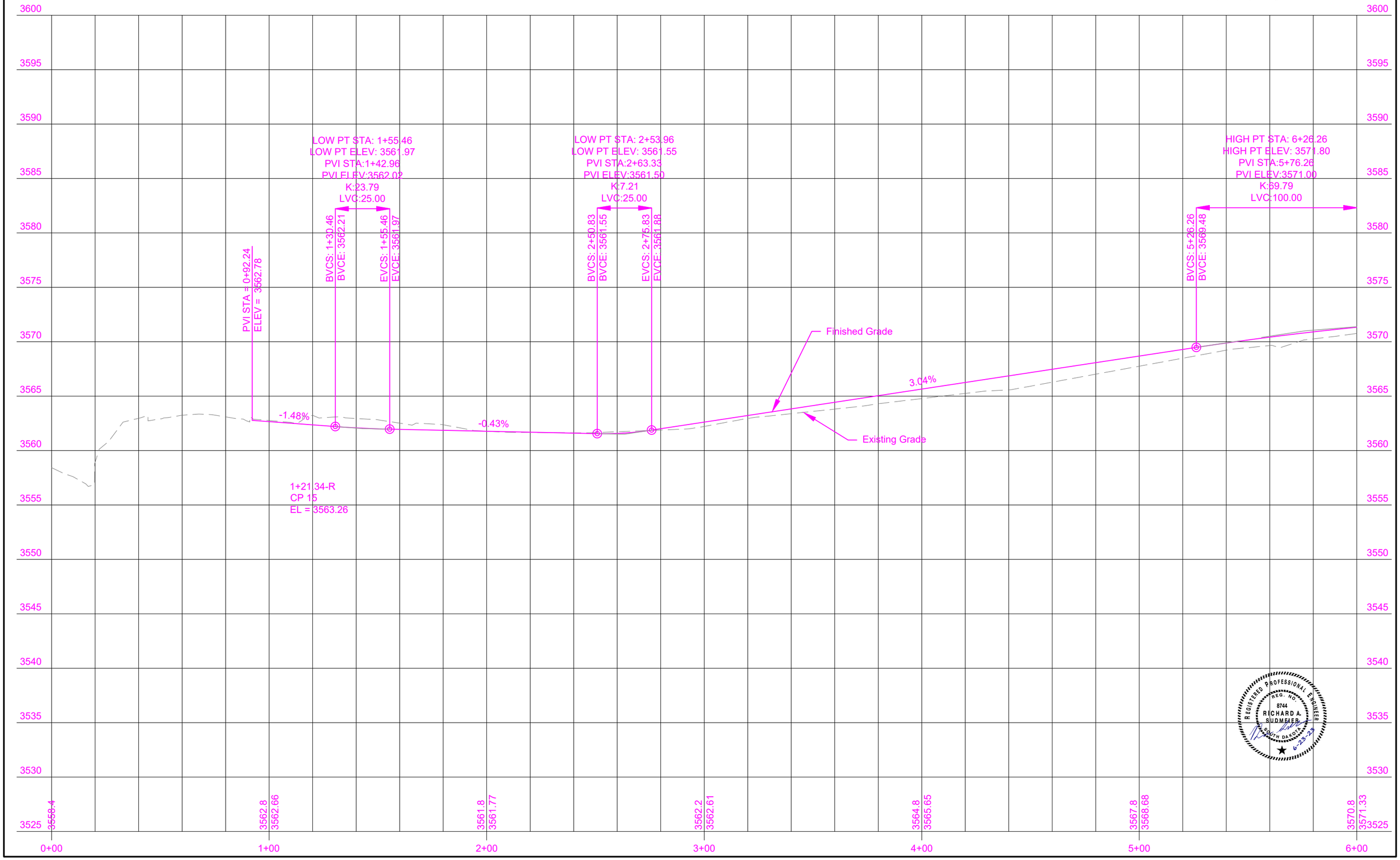

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	45	120

Plotting Date: June 20, 2023
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0' 10' 20' 40'
Scale: 1" = 40'

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REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

8+30 - 18'R
Do Not Disturb
Water Valve Boxes
and Manhole

NE1/4 NE1/4 LESS LOT H1
SEC. 5, T6N, R2E, BHM
OWNER ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER

R.O.W. Line

CONCRETE PAN

Present Suntory Ave.

PI 7+91.60
Δ=8°15'22"
R=100.000
N 272541.04
E 954137.83
DC 57°17'45"
T 7.22
L 14.41

PI 8+34.02
Δ=14°29'58"
R=60.000
N 272583.29
E 954133.75
DC 95°29'35"
T 7.63
L 15.18

8+54.4-27.3'R to
8+61.8-27.0'R
Do Not Disturb
Telephone Pedestals

PI 9+00.72
Δ=5°36'56"
R=100.000
N 272649.26
E 954144.19
DC 57°17'45"
T 4.90
L 9.80

6+22.6-28.5'R to
7+92.0-29.1'R
Do Not Disturb
Chain Link Fence

Present McGuigan Road

131'

(ASPHALT)

Edge Of Asphalt (Typ)

8' Pathway

10' Pathway

PC: 7+84.38
PT: 7+98.79
PC: 8+26.39
PT: 8+41.57
PC: 8+95.82
PT: 9+05.62

SECTION 5
SECTION 4

6+00 7+00 8+00 9+00 10+00 11+00 12+00

R.O.W. LINE

TELEPHONE PEDESTALS

Grading Limits (Typ)

60' WIDE POWERLINE EASEMENT

LOT 9

LOT 8 IN BLOCK 1
GUIGAN RANCH ADDITION
OWNER: CRAIG AND
CARA PARSONS

LOT 9 IN BLOCK 1
MCGUIGAN RANCH ADDITION
OWNER: ALLIE MACDONALD

Parcel 1 (Omitted)
LOT 1 OF TRACT A LESS LOT H-1
NW1/4 NW1/4
SEC. 4, T6N, R2E, BHM
PROPERTY ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	46	120

Plotting Date: June 20, 2023
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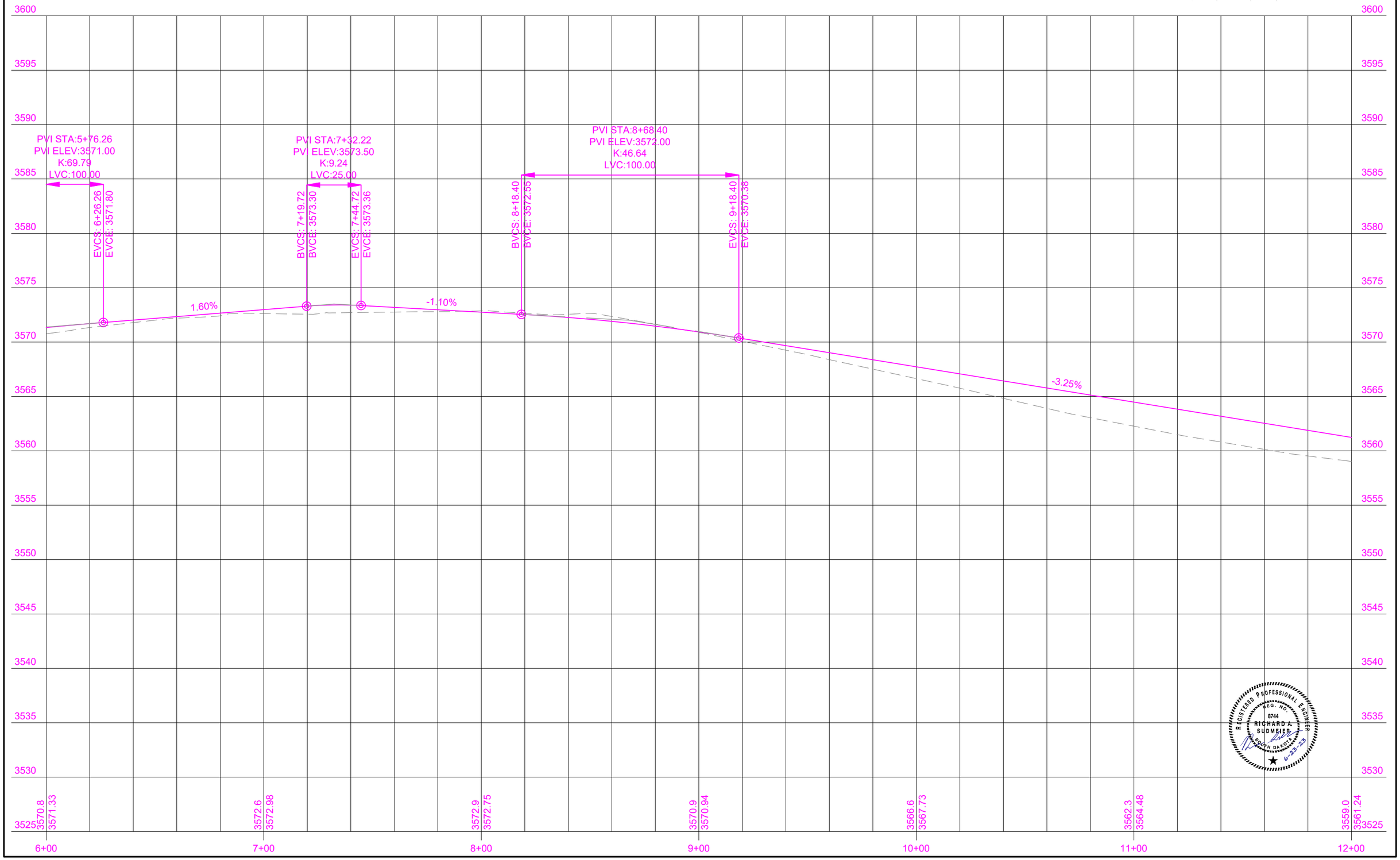

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-22-23

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12+65.6-8.3'L
Remove 24" RCP Flared End
For Reset

12+65.6-8.3'L
Remove Riprap, 5.9 SqYd

12+65.60-13.90'R
Install Bank and Channel
Protection Gabions,4.5 CuYd, 15.0
SqYd Type B Drainage Fabric

12+65.65 -14.23'L to
12+65.63- 5.00'L
Install 8' - 24" RCP
Between Existing Pipe and Inlet

12+65.63 - 5.00'L
Install 3' x 4' Type C Inlet with Frame
and Grate

12+65.63 - 5.00'L to
12+65.61 - 9.79'R
Install 14' - 24" RCP and Reset Flared
End Section

16+38.2-16.4'R
Coordinate with Utility for
adjustment of Telephone Pedestal

FOR BIDDING PURPOSES ONLY

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	47	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

0' 10' 20' 40'
Scale: 1" = 40'

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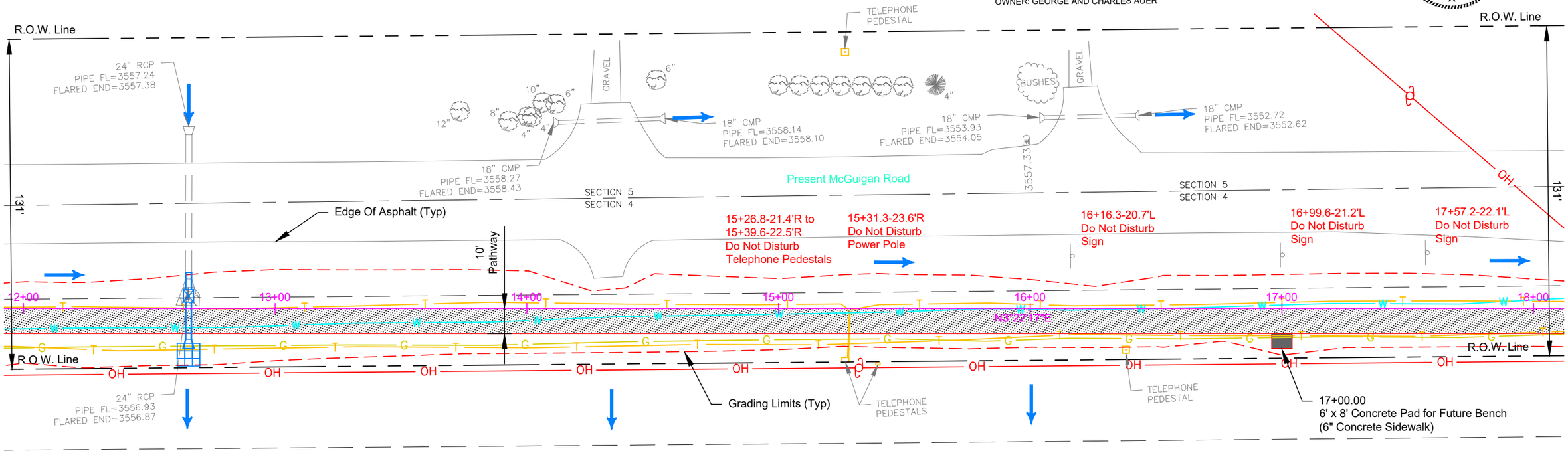
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

NE1/4 NE1/4 LESS LOT H1
SEC. 5, T6N, R2E, BHM
OWNER ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER



Parcel 1 (Omitted(
LOT 1 OF TRACT A LESS LOT H-1
NW1/4 NW1/4
SEC. 4, T6N, R2E, BHM
PROPERTY ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER

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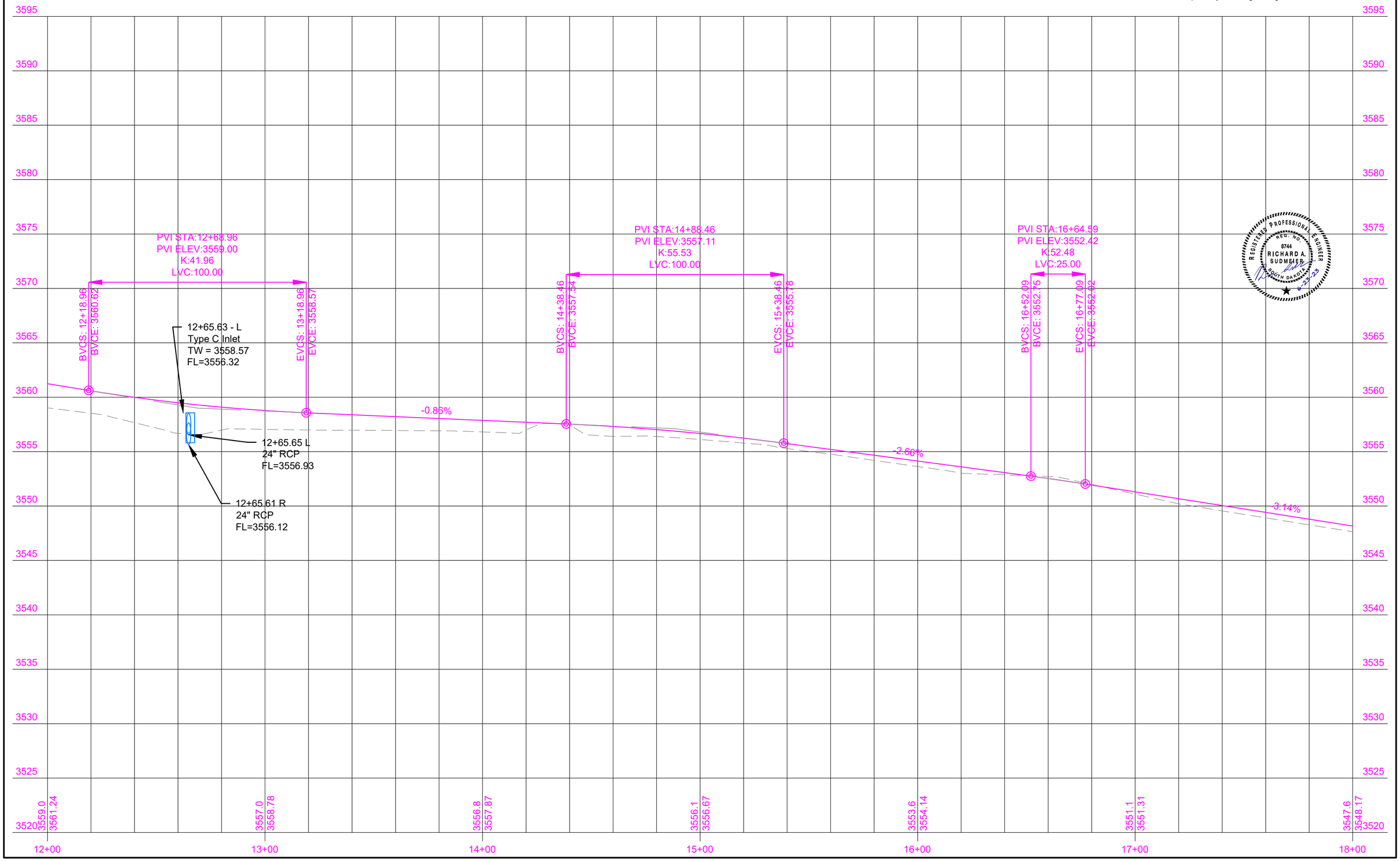
State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	48	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering



REGISTERED PROFESSIONAL ENGINEER
REG. NO.
8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-19-23

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	49	120

Plotting Date: June 20, 2023
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21+53.1-4.1'R
Remove Riprap, 6.6 SqYd

21+53.1-4.1'R
Take Out 24" CMP Flared End
(Incidental Work, Grading)

21+53.37-0.76'L to 21+53.39-21'R
Install 22' - 24" CMP and 1 - 24" CMP Flared End

21+53.39-24.42'R
Install Class A Riprap, 5' x 5' x 1.5' Thick,
2.4 Tons, and 7.1 SqYd Type B Drainage Fabric

20+97.9-14.7'R
Coordinate with Utility for Adjustment
of Telephone Pedestal

Scale: 1" = 40'

NE1/4 NE1/4 LESS LOT H1
SEC. 5, T6N, R2E, BHM
OWNER ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER

R.O.W. Line

TELEPHONE PEDESTALS, ELECTRIC BOX AND GAS METER

24" CMP
PIPE FL=3543.11
FLARED END=3543.26

STEEL T-POSTS

0+00

1+00

Present Old Highway 14

N3°17'15"E

1+99.90
5.06'L

2+00

N3°34'42"E

2+74.
16.86'

3+00.03
6.70'L

R.O.W. Line

Present McGuigan Road

SECTION 5
SECTION 4

SECTION 32

SECTION 5
SECTION 4

131'

18+73.2-20.3'R
Do Not Disturb
Power Pole

10' Pathway

Edge Of Asphalt (Typ)

20+53.7-13.2'L
Do Not Disturb
Sign

24" CMP
PIPE FL=3540.88
FLARED END=3540.94

Section Corner
22+25.02
53.61' L

Edge Of Asphalt (Typ)

18+00 19+00 20+00 21+00 22+00 22+89

R.O.W. Line

60'

Grading Limits (Typ)

20+96.67
16.28'R

TELEPHONE PEDESTAL

R.O.W. Line

21+75.06
32.10'R

21+75.15
42.10'R

TELEPHONE PEDESTALS

21+72.7-29.5'R
Do Not Disturb
Telephone Pedestal

21+45.6-19.4'R
Do Not Disturb
Power Pole

TELEPHONE PEDESTALS

Present Old Highway 14

SECTION 33

R.O.W. Line

ASPHALT

CONCRETE

BUILDING

STEPS

60' WIDE POWERLINE EASEMENT

Parcel 1 (Omitted)
LOT 1 OF TRACT A LESS LOT H-1
NW1/4 NW1/4
SEC. 4, T6N, R2E, BHM
PROPERTY ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER

LOT 28 OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3105 W. FAIRGOUNDS LOOP
OWNER: BVD ENTERPRISES, LLC

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	50	120

Plotting Date: June 20, 2023
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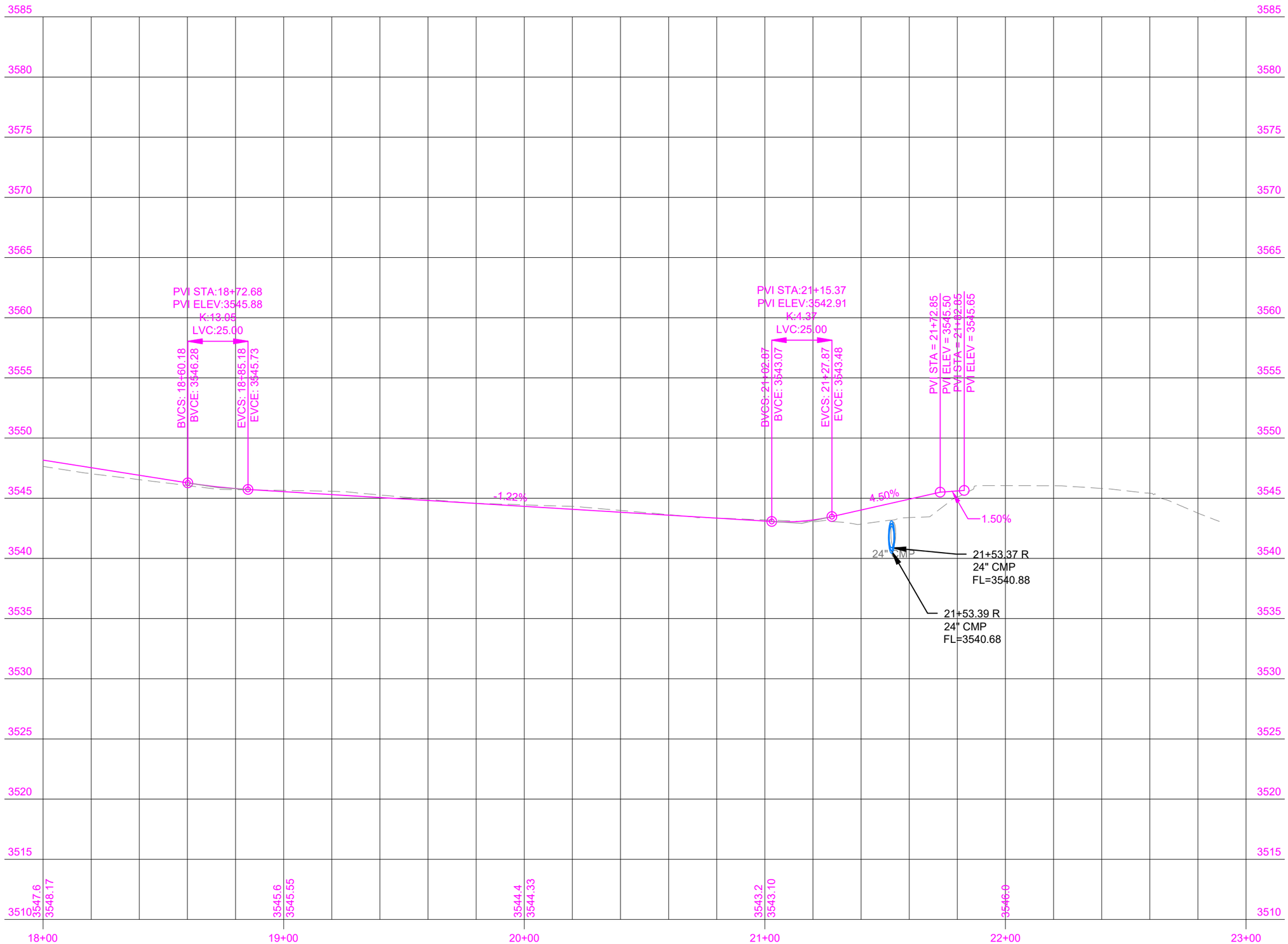

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
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SOUTH DAKOTA
6-23-23

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	51	120

Plotting Date: June 20, 2023
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Scale: 1" = 40'

1+03.6-.8'L to
1+04.8-3.5'L
Coordinate with Utility for Adjustment of Utilities

4+55.9-15.9'R
Remove Pipe End Section for Reset

5+14.6-15.7'R
Remove Pipe End Section for Reset

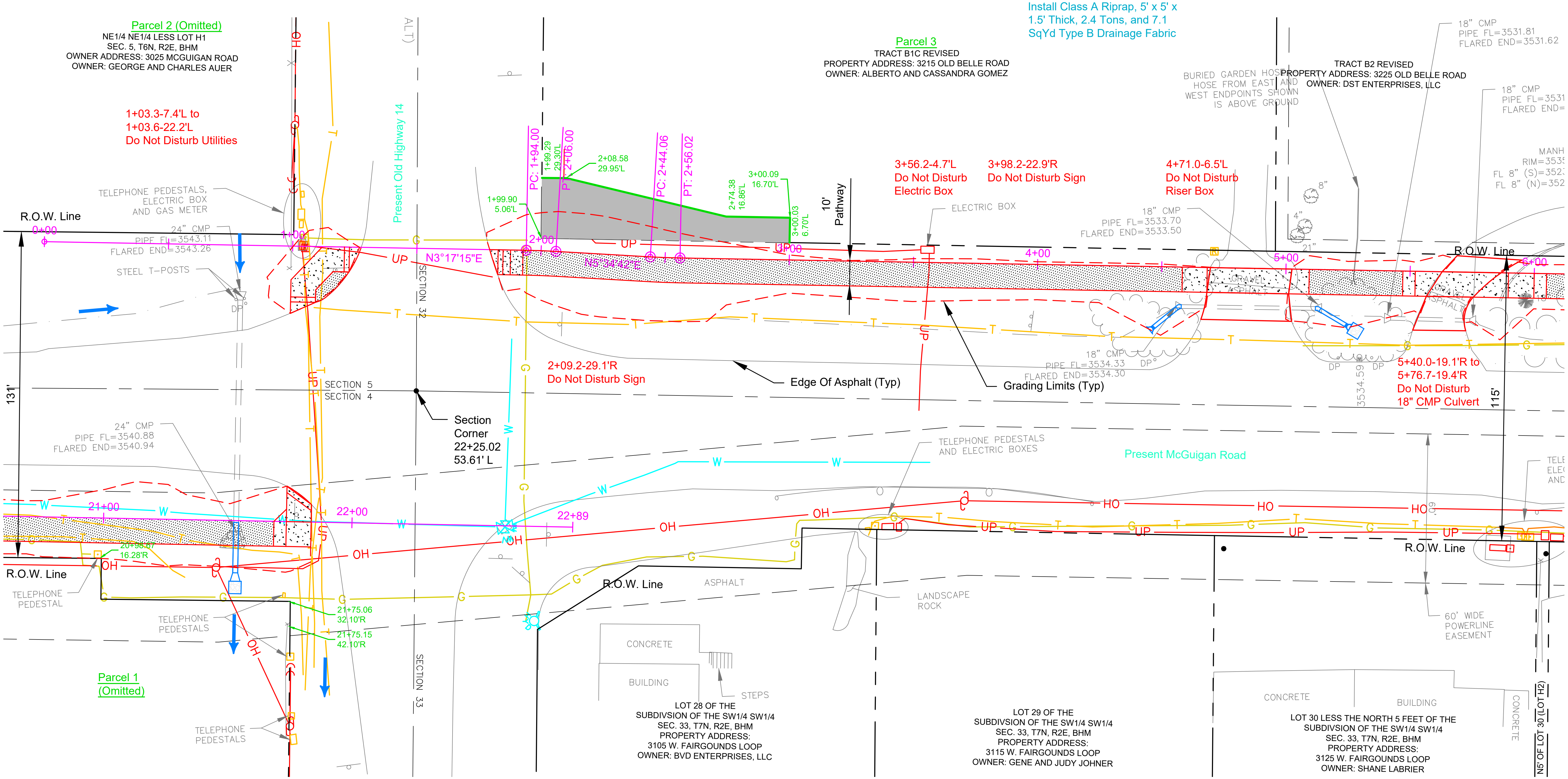
4+47.18-24.31'R
4+56.4-16.55'R
Install 12' - 18" CMP and Reset Flared End

4+57.10-15.91'R
Install 40° x 18" CMP Elbow
2' Lay Length

5+13.xx-15.68'R
Install 30° x 18" CMP Elbow
2' Lay Length

5+14.00-16.18'R to
5+24.41-22.14'R
Install 12' - 18" CMP and Reset Flared End

5+26.21-23.17'R
Install Class A Riprap, 5' x 5' x 1.5' Thick, 2.4 Tons, and 7.1 SqYd Type B Drainage Fabric



Parcel 2 (Omitted)
NE1/4 NE1/4 LESS LOT H1
SEC. 5, T6N, R2E, BHM
OWNER ADDRESS: 3025 MCGUIGAN ROAD
OWNER: GEORGE AND CHARLES AUER
Parcel 3
TRACT B1C REVISED
PROPERTY ADDRESS: 3215 OLD BELLE ROAD
OWNER: ALBERTO AND CASSANDRA GOMEZ
TRACT B2 REVISED
PROPERTY ADDRESS: 3225 OLD BELLE ROAD
OWNER: DST ENTERPRISES, LLC
1+03.3-7.4'L to
1+03.6-22.2'L
Do Not Disturb Utilities
3+56.2-4.7'L
Do Not Disturb Electric Box
3+98.2-22.9'R
Do Not Disturb Sign
4+71.0-6.5'L
Do Not Disturb Riser Box
2+09.2-29.1'R
Do Not Disturb Sign
5+40.0-19.1'R to
5+76.7-19.4'R
Do Not Disturb 18" CMP Culvert
Present Old Highway 14
Present McGuigan Road
10' Pathway
R.O.W. Line
Edge Of Asphalt (Typ)
Grading Limits (Typ)
Section Corner
22+25.02
53.61' L
SECTION 5
SECTION 4
SECTION 32
SECTION 33
N3°17'15"E
N5°34'42"E
PC: 1+94.00
PT: 2+06.00
PC: 2+44.06
PT: 2+56.02
2+08.58 29.95'L
1+99.90 5.06'L
3+00.09 16.70'L
2+74.38 16.86'L
3+00.03 6.70'L
20+98.07 16.28'R
21+75.06 32.10'R
21+75.15 42.10'R
TELEPHONE PEDESTALS, ELECTRIC BOX AND GAS METER
24" CMP PIPE FL=3543.11 FLARED END=3543.26
STEEL T-POSTS
24" CMP PIPE FL=3540.88 FLARED END=3540.94
18" CMP PIPE FL=3533.70 FLARED END=3533.50
18" CMP PIPE FL=3534.33 FLARED END=3534.30
18" CMP PIPE FL=3531.81 FLARED END=3531.62
BURIED GARDEN HOSE FROM EAST AND WEST ENDPOINTS SHOWN IS ABOVE GROUND
ELECTRIC BOX
TELEPHONE PEDESTALS AND ELECTRIC BOXES
TELEPHONE PEDESTAL
TELEPHONE PEDESTALS
60' WIDE POWERLINE EASEMENT
LANDSCAPE ROCK
ASPHALT
CONCRETE
BUILDING
STEPS
131'
115'
Parcel 1 (Omitted)
LOT 28 OF THE SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS: 3105 W. FAIRGOUNDS LOOP
OWNER: BVD ENTERPRISES, LLC
LOT 29 OF THE SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS: 3115 W. FAIRGOUNDS LOOP
OWNER: GENE AND JUDY JOHNER
LOT 30 LESS THE NORTH 5 FEET OF THE SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS: 3125 W. FAIRGOUNDS LOOP
OWNER: SHANE LABRIER
N5' OF LOT 30 (LOT H2)

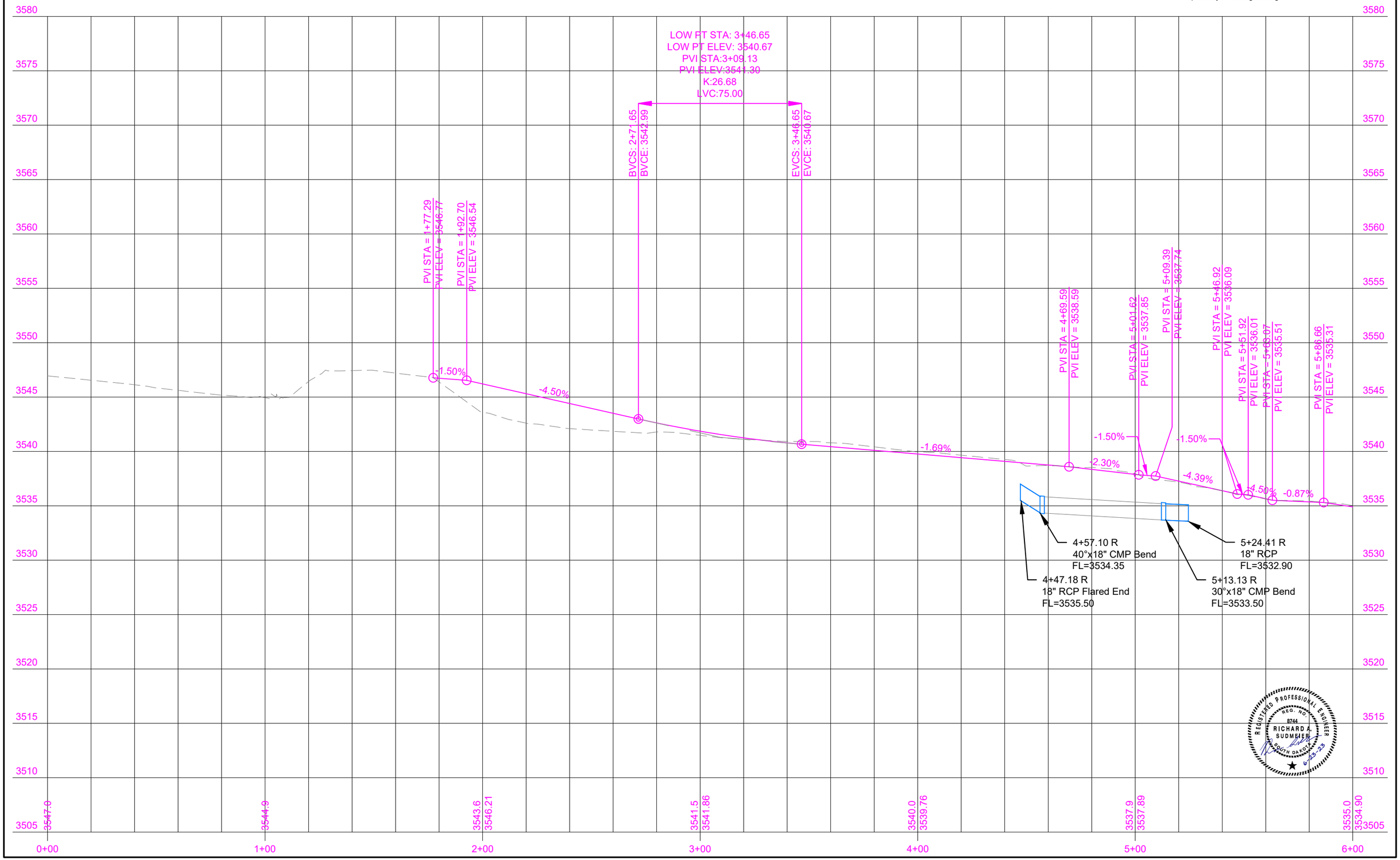
Parcel 3
1+99.29 L to 3+00.09 L
Temporary Easement Containing
0.04 AC or 1,603 SqFt More or Less

Z:\180668.01 Spearfish Exit 8 Area Community Path\CAD\Design Drawings\Phase 2\180668.01 Phase 2 P&P.dwg - 51 Plan Layout - Tuesday, June 20, 2023 1:36:51 PM

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	52	120

FOR BIDDING PURPOSES ONLY

Plotting Date: June 20, 2023
Prepared by FMG Engineering



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-25-23

Z:\180668.01 Spearfish Exit 8 Area Community Path\CAD\Design Drawings\Phase 2\180668.01 Phase 2 P&P.dwg - 52 Profile Sheet - Tuesday, June 20, 2023 1:36:56 PM

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	53	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

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REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

0' 10' 20' 40'
Scale: 1" = 40'

6+58.1-14.3'R
Remove Pipe End Section for Reset

6+98.7-14.3'R
Remove Pipe End Section for Reset

9+67.7-18.7'R
Remove Pipe End Section for Reset

10+30.9-19.9'R
Remove Pipe End Section for Reset

6+49.81-19.65'R to
6+58.55-14.81'R
Install 10'-18" CMP and
Reset End Section

6+59.43-14.32'R
Install 30°x18" CMP Elbow
2' Lay Length

6+97.48-14.28-R
Install 30°x18" CMP Elbow
2' Lay Length

6+98.34-14.80'R to
7+05.20-18.91'R
Install 8'-18" CMP and
Reset Flared End

7+06.97-19.99'R
Install Class A Riprap, 5' x 5' x
1.5' Thick, 2.4 Tons, and 7.1
SqYd Type B Drainage Fabric

9+53.52-17.91'R to
9+64.48-13.04'R
Install 12' - 18" CMP and
Reset End Section

9+65.90-12.63'R
Install 35° x 18" CMP Elbow
2' Lay Length

10+29.55-13.80'R
Install 15° x 18" CMP Elbow
2' Lay Length

10+30.51-14.08'R to
10+34.35-15.19'R
Install 4' - 18" CMP and
Reset End Section

10+36.35-15.77'R
Install Class A Riprap, 5' x 5' x
1.5' Thick, 2.4 Tons, and 7.1
SqYd Type B Drainage Fabric

8+04.08-2.60'R
Adjust Manhole

10+73.52-0.71'R
Adjust Manhole

TRACT B2 REVISED
PROPERTY ADDRESS: 3225 OLD BELLE ROAD
OWNER: DST ENTERPRISES, LLC

Parcel 4

TRACT B1B REVISED
PROPERTY ADDRESS: NA
OWNER: DARYL D. JOHNSON

PARCEL 2A
PROPERTY ADDRESS: 3275 OLD BELLE ROAD
OWNER: SPEEDY MART, INC

1.81
=3531.62
CMP
E FL=3531.22
RED END=3530.86
MANHOLE
RIM=3535.06
(S)=3523.83
" (N)=3523.81
CONCRETE RETAINING WALL (PARTIALLY BURIED)
18" CMP
PIPE FL=3529.32
FLARED END=3529.30
CONCRETE RETAINING WALL
18" CMP
PIPE FL=3528.57
FLARED END=3528.50
MANHOLE
RIM=3529.60
FL 8" (S)=3521.60
FL 8" (W)=3521.42
FL 8" (N)=3521.30
CP 18
5/8" REBAR
EL=3530.89
STEEL T-POSTS
FUEL FILL LIDS
MANHOLE
RIM=3526.12
FL 8" (S)=3518.04
FL 8" (N)=3517.90
WIRES STICKING OUT OF GROUND, UNKNOWN PURPOSE
SIGN IN CONCRETE BASE
18" CMP
PIPE FL=3525.15
FLARED END=3524.98
INLET
FL=3519.16
18" CMP
FL=3523.27
SILT FENCE
6+20.6-2.2'L
Do Not Disturb
Manhole
R.O.W. Line
6+00
7+00
8+00
9+00
10+00
11+00
12+00
GRAVEL
ASPHALT
CONCRETE
ELECTRIC BOX
DP
7+10.3-15.8'R
Do Not Disturb
Power Pole
7+17.4-32.0'R
Do Not Disturb Sign
8+00.5-22.7R
Do Not Disturb Sign
8+86.7-25.7'R
Do Not Disturb Sign
9+46.0-23.0'R
Do Not Disturb Sign
9+62.9-20.7'R
Do Not Disturb Sign
Grading Limits (Typ)
Edge Of Asphalt (Typ)
115'
SECTION 32
SECTION 33
18" CMP
PIPE FL=3524.85
FLARED END=3524.58
UP
TELEPHONE PEDESTALS, ELECTRIC BOXES AND ELECTRIC METER
TELEPHONE PEDESTALS AND ELECTRIC BOX
Present McGuigan Road
TELEPHONE PEDESTALS AND ELECTRIC BOXES
HO
OH
FO
UP
BH #3
R.O.W. LINE
R.O.W. Line
TELEPHONE PEDESTAL
GRAVEL
CONCRETE
SIGN
SIDEWALK
BUILDING
RETAINING WALL
TELEPHONE PEDESTALS AND ELECTRIC BOXES
N5 OF LOT 30 (LOT H2)

NORTH 5 FEET OF LOT 30 AND LOT 31 OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3207 W. FAIRGOUNDS LOOP
OWNER: REDWATER RENTALS, LLC

LOT 32 OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3217 W. FAIRGOUNDS LOOP
OWNER: RANDALL AND GRETA STEWART

LOT 33 OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3227 W. FAIRGOUNDS LOOP
OWNER: LOGY D, LLC

LOT 34B OF THE
SUBDIVSION OF THE SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3435 N. FAIRGOUNDS LOOP
OWNER:
LONE ELK ENTERPRISES, LLC

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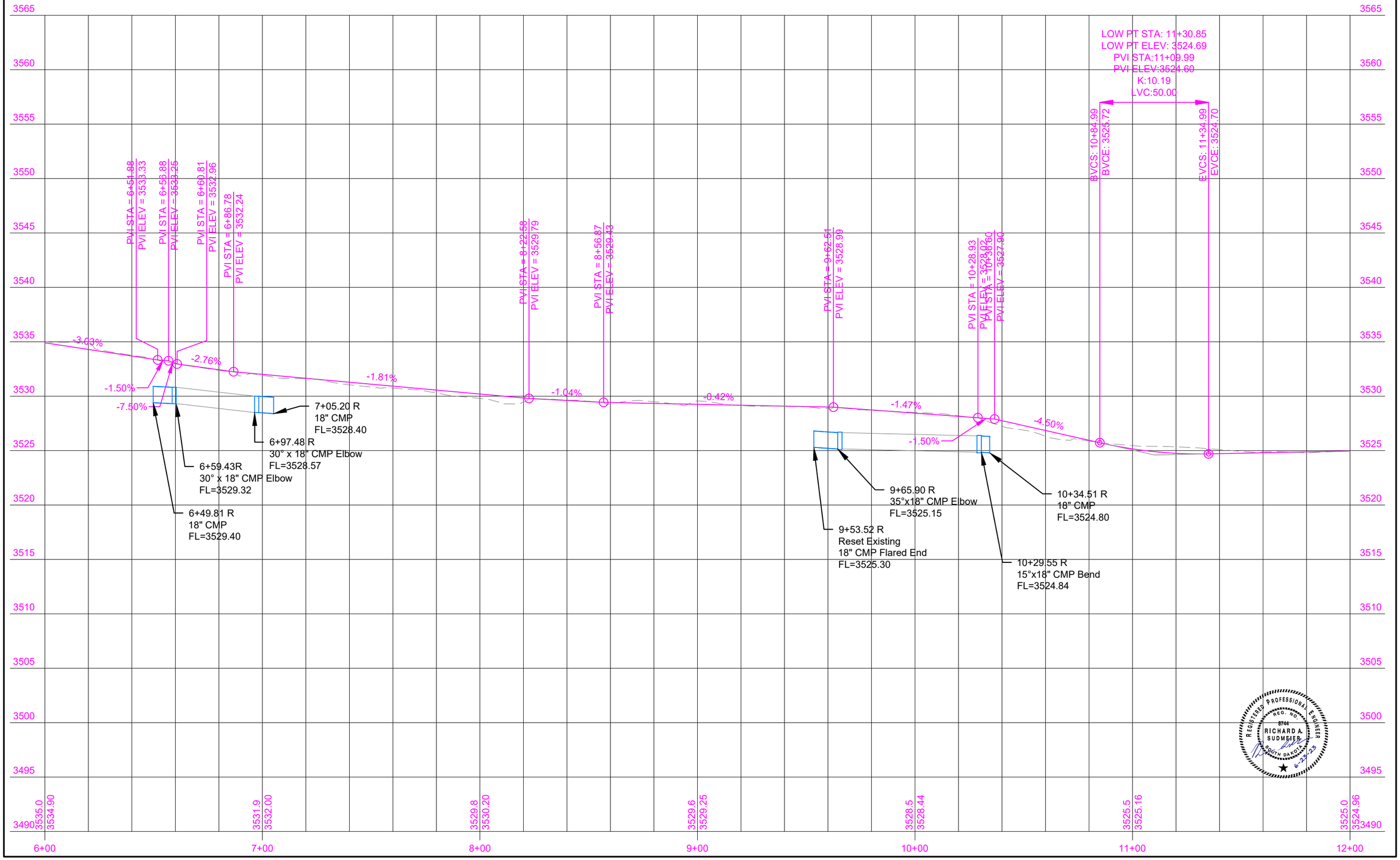
State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	54	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-21-23

Z:\180668.01 Spearfish Exit 8 Area Community Path\CAD\Design Drawings\Phase 2\180668.01 Phase 2 P&P.dwg - 54 Profile Sheet - Tuesday, June 20, 2023 1:37:05 PM

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	55	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

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12+97.0-1.5'L
Remove Pipe End Section for Reset

14+06.1-13.0'R
Take Out 18" RCP End Section (Incidental Work, Grading

15+85.6-6.6'L
Remove Pipe End Section for Reset

Install 3'x4' Type C Inlets at the Following Location:
14+02.27-17.70'R

12+54.22-10.00'R to 12+65.31-0.00'
Install Concrete Sidewalk Drain

12+97.26-1.07'L to 12+99.75-3.93'R
Install 6'-18" RCP and Reset End Section

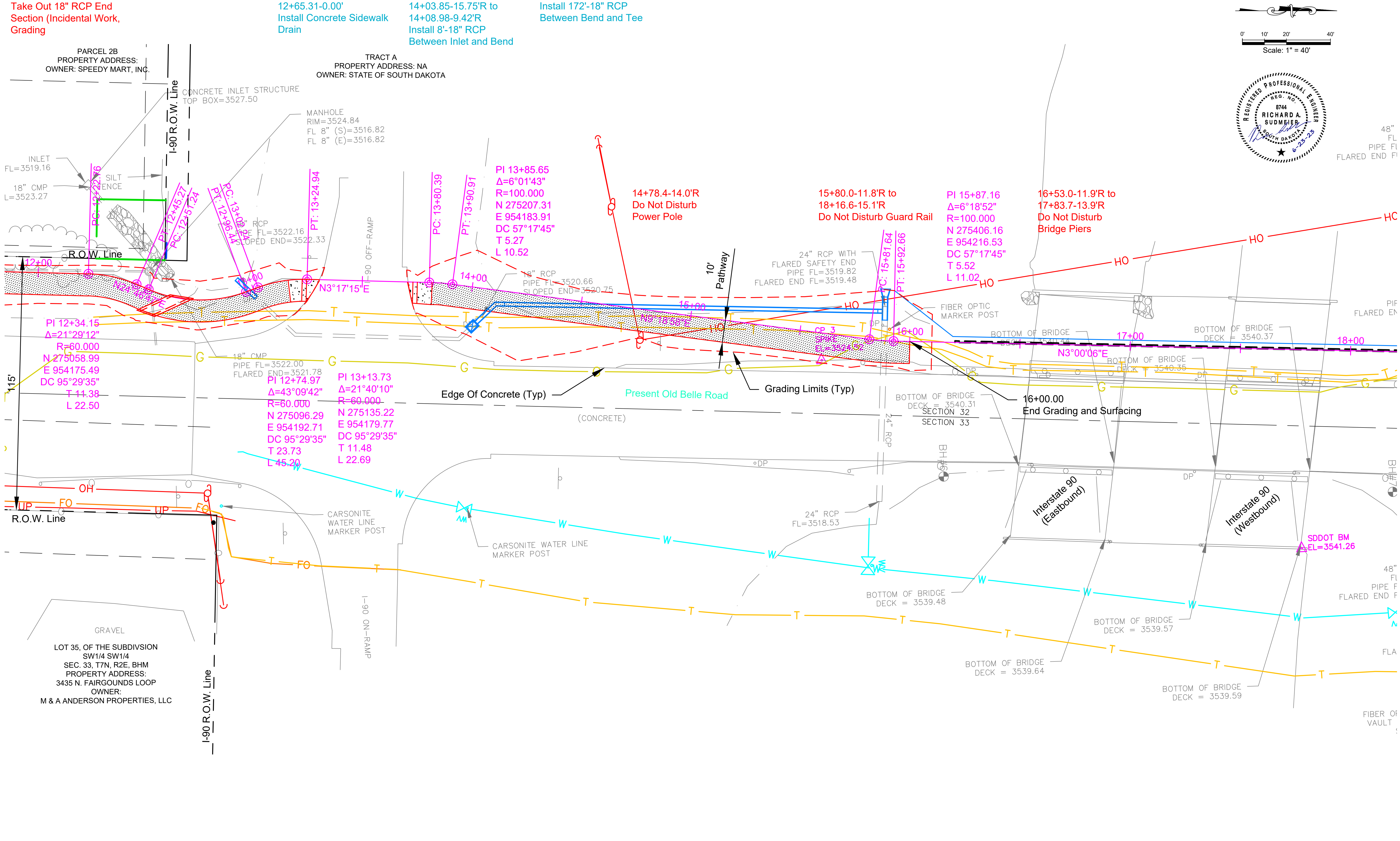
14+03.85-15.75'R to 14+08.98-9.42'R
Install 8'-18" RCP Between Inlet and Bend

14+11+50-6.32'R
Install 18"x45° RCP Bend

14+15.47-5.87'R to 15+84.0-13.11' L
Install 172'-18" RCP Between Bend and Tee

15+87.82-13.34'L
Install 24"x18" RCP Tee

15+87.24-23.46'L
Reset Pipe End Section



0' 10' 20' 40'
Scale: 1" = 40'
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23
PARCEL 2B
PROPERTY ADDRESS:
OWNER: SPEEDY MART, INC.
TRACT A
PROPERTY ADDRESS: NA
OWNER: STATE OF SOUTH DAKOTA
CONCRETE INLET STRUCTURE
TOP BOX=3527.50
MANHOLE
RIM=3524.84
FL 8" (S)=3516.82
FL 8" (E)=3516.82
I-90 R.O.W. Line
INLET
FL=3519.16
18" CMP
L=3523.27
SILT FENCE
R.O.W. Line
12+00
PC: 12+22.76
PT: 12+45.27
PC: 12+51.24
PC: 13+02.21
PT: 12+96.44
PT: 13+24.94
PC: 13+80.39
PT: 13+90.91
PI 13+85.65
Δ=6°01'43"
R=100.000
N 275207.31
E 954183.91
DC 57°17'45"
T 5.27
L 10.52
14+78.4-14.0'R
Do Not Disturb
Power Pole
15+80.0-11.8'R to
18+16.6-15.1'R
Do Not Disturb Guard Rail
PI 15+87.16
Δ=6°18'52"
R=100.000
N 275406.16
E 954216.53
DC 57°17'45"
T 5.52
L 11.02
16+53.0-11.9'R to
17+83.7-13.9'R
Do Not Disturb
Bridge Piers
PC: 15+81.64
PT: 15+92.66
24" RCP WITH
FLARED SAFETY END
PIPE FL=3519.82
FLARED END FL=3519.48
18" RCP
PIPE FL=3522.16
SLOPED END=3522.33
18" RCP
PIPE FL=3520.66
SLOPED END=3520.75
13+00
14+00
15+00
16+00
17+00
18+00
N3°17'15"E
N9°18'58"E
N3°00'06"E
N24°48'27"E
10' Pathway
FIBER OPTIC
MARKER POST
CP 3
SPIKE
EL=3524.52
BOTTOM OF BRIDGE
DECK = 3540.37
BOTTOM OF BRIDGE
DECK = 3540.35
BOTTOM OF BRIDGE
DECK = 3540.31
SECTION 32
SECTION 33
PI 12+34.15
Δ=21°29'12"
R=60.000
N 275058.99
E 954175.49
DC 95°29'35"
T 11.38
L 22.50
18" CMP
PIPE FL=3522.00
FLARED END=3521.78
PI 12+74.97
Δ=43°09'42"
R=60.000
N 275096.29
E 954192.71
DC 95°29'35"
T 23.73
L 45.20
PI 13+13.73
Δ=21°40'10"
R=60.000
N 275135.22
E 954179.77
DC 95°29'35"
T 11.48
L 22.69
Edge Of Concrete (Typ)
Present Old Belle Road
Grading Limits (Typ)
16+00.00
End Grading and Surfacing
(CONCRETE)
I-90 OFF-RAMP
I-90 ON-RAMP
115'
OH
FO
UP
R.O.W. Line
CARSONITE WATER LINE MARKER POST
CARSONITE WATER LINE MARKER POST
24" RCP
FL=3518.53
24" RCP
Interstate 90 (Eastbound)
Interstate 90 (Westbound)
SDDOT BM
EL=3541.26
BOTTOM OF BRIDGE
DECK = 3539.48
BOTTOM OF BRIDGE
DECK = 3539.57
BOTTOM OF BRIDGE
DECK = 3539.64
BOTTOM OF BRIDGE
DECK = 3539.59
GRAVEL
LOT 35, OF THE SUBDIVSION
SW1/4 SW1/4
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS:
3435 N. FAIRGOUNDS LOOP
OWNER:
M & A ANDERSON PROPERTIES, LLC
I-90 R.O.W. Line
FIBER OPTIC VAULT

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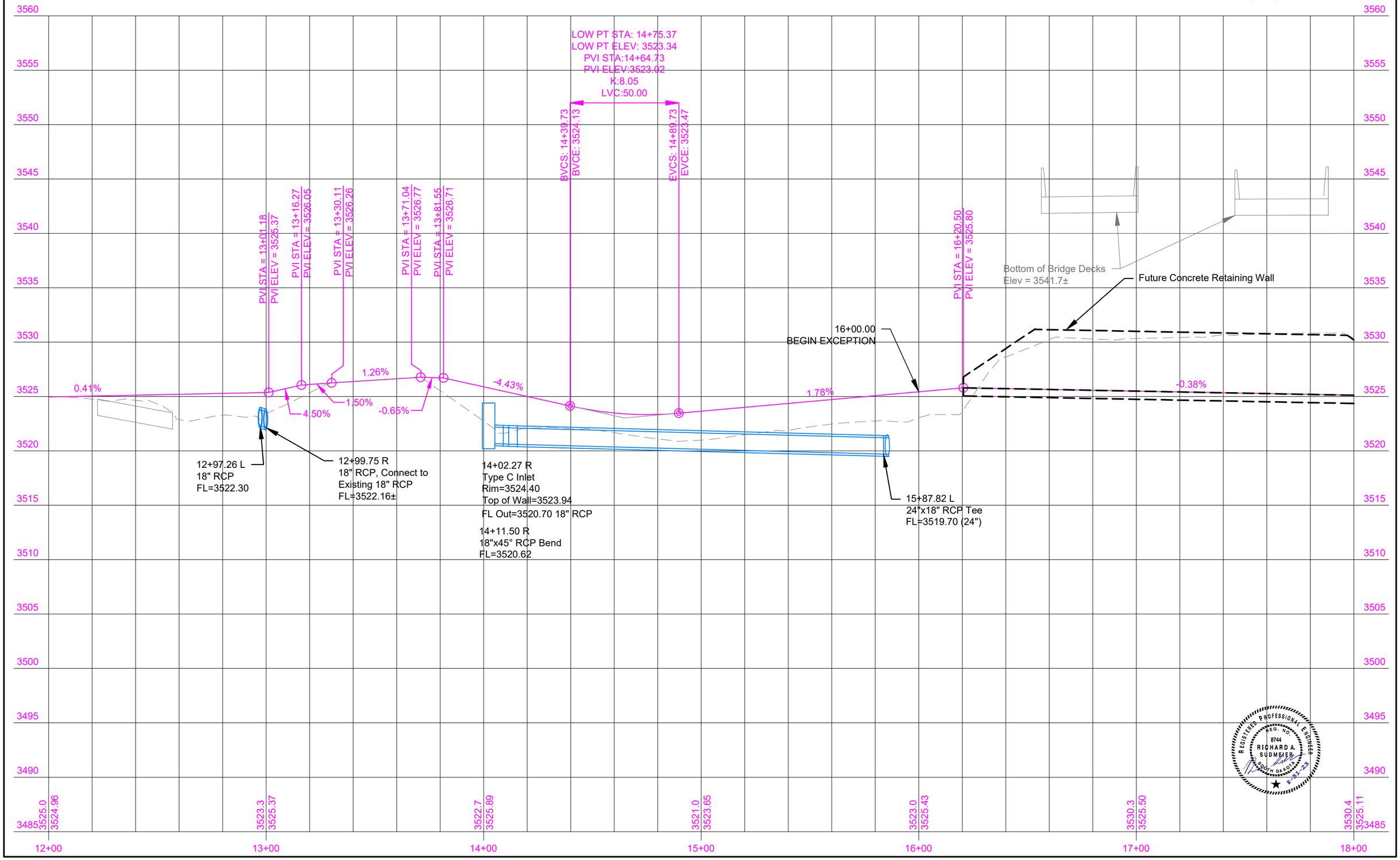
State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	56	120

Plotting Date: August 31, 2023
Prepared by FMG Engineering



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
8-31-23

Z:\180668.01 Spearfish Exit 8 Area Community Path\CAD\Design Drawings\Phase 2\180668.01 Phase 2 P&P.dwg - 56 Profile Sheet - Thursday, August 31, 2023 8:25:29 AM

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	57	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

FOR BIDDING PURPOSES ONLY

18+59.4-10.6'L
Remove Pipe End Section
for Reset

18+71.4-11.1'L
Remove Pipe End Section
for Reset

18+82.4-10.7'L
Remove Pipe End Section
for Reset

18+59.38-2.45'L to
18+59.40-8.45'L
Install 6'-48" RCP and
Reset End Section

18+71.21-2.97'L to
18+71.33-8.97'L
Install 6'-48" RCP and
Reset End Section

18+82.22-2.52'L to
18+82.34-8.52'L
Install 6'-48" RCP and
Reset End Section

21+63.85-16.69'L to
22+00.03-17.00'R
Install 48'-18" CMP and
2 Flared Ends

22+03.07-18.75-R
Install Bank and Channel
Protection Baskets, 4.5
CuYd, and Type B Drainage
Fabric, 15.0 SqYd

23+43.63-19.22'R to
23+49.23-12.29'L
Install 32'-18" CMP
and 2- Safety Ends
w/Bars

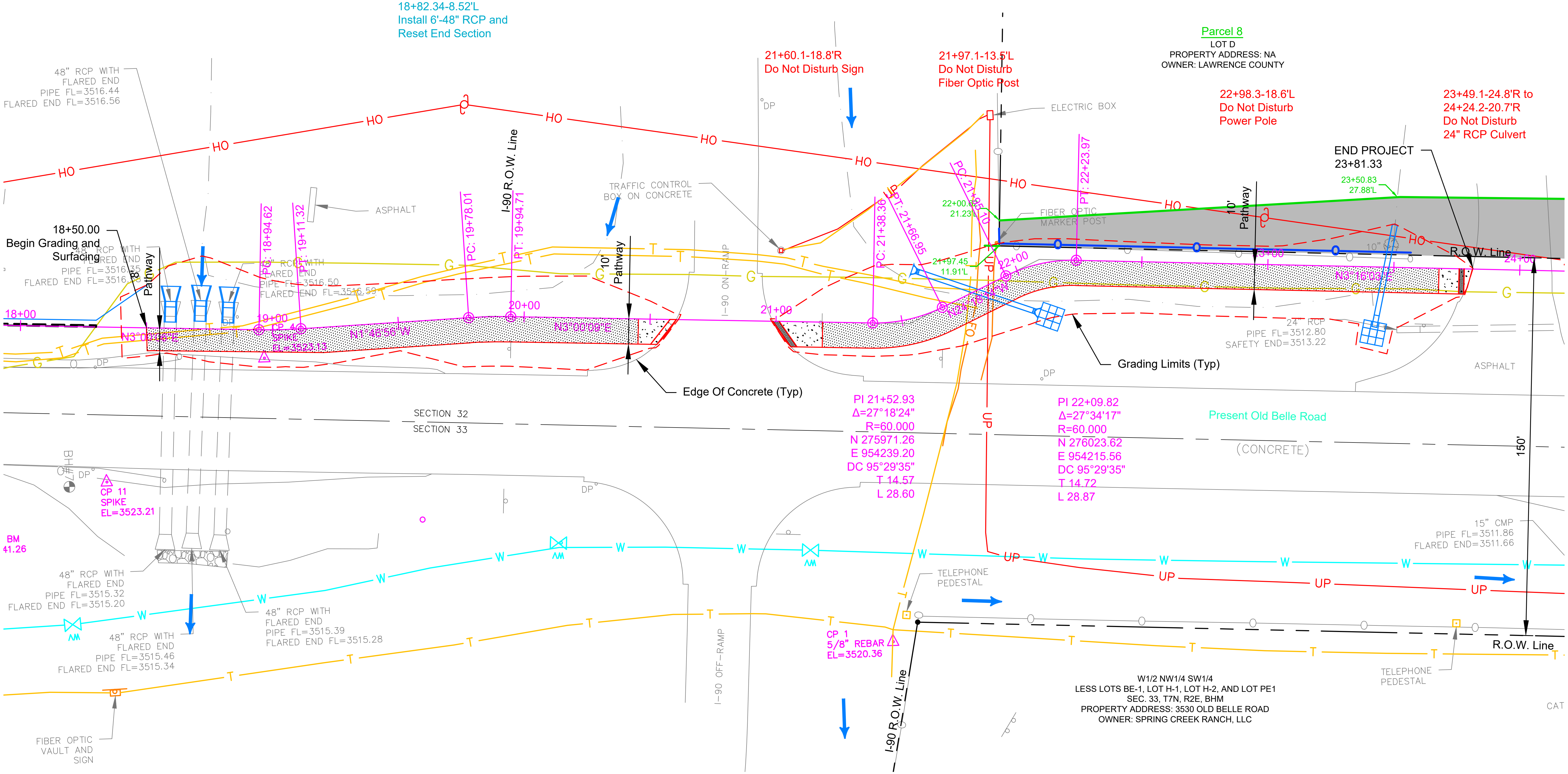
23+43.17-21.85'R
Install Bank and Channel
Protection Baskets, 4.5
CuYd, and Type B Drainage
Fabric, 15.0 SqYd

21+97.7-12.2'L to
23+56.4-3.4'L
Remove Chainlink Fence
for Reset, 163 Ft

21+97.86-12.79'L to
23+56.63-6.00'L
Reset Chainlink
Fence, 163 Ft

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

Scale: 1" = 40'



Parcel 8
LOT D
PROPERTY ADDRESS: NA
OWNER: LAWRENCE COUNTY
48" RCP WITH FLARED END
PIPE FL=3516.44
FLARED END FL=3516.56
21+60.1-18.8'R
Do Not Disturb Sign
21+97.1-13.5'L
Do Not Disturb
Fiber Optic Post
ELECTRIC BOX
22+98.3-18.6'L
Do Not Disturb
Power Pole
23+49.1-24.8'R to
24+24.2-20.7'R
Do Not Disturb
24" RCP Culvert
END PROJECT
23+81.33
23+50.83
27.88'L
I-90 R.O.W. Line
TRAFFIC CONTROL BOX ON CONCRETE
ASPHALT
18+50.00
Begin Grading and
Surfacing
Pathway
10' Pathway
PC: 18+94.62
PT: 19+11.32
PC: 19+78.01
PT: 19+94.71
PC: 21+38.36
PT: 21+66.95
PC: 21+95.10
PT: 22+23.97
22+00.85
21.23'L
21+97.45
11.91'L
FIBER OPTIC MARKER POST
R.O.W. Line
18+00
19+00
20+00
21+00
22+00
23+00
24+00
N3°00'08"E
N1°48'56"W
N3°00'09"E
N3°16'03"E
CP 4
SPIKE
EL=3523.13
24" RCP
PIPE FL=3512.80
SAFETY END=3513.22
Grading Limits (Typ)
Edge Of Concrete (Typ)
ASPHALT
SECTION 32
SECTION 33
PI 21+52.93
Δ=27°18'24"
R=60.000
N 275971.26
E 954239.20
DC 95°29'35"
T 14.57
L 28.60
PI 22+09.82
Δ=27°34'17"
R=60.000
N 276023.62
E 954215.56
DC 95°29'35"
T 14.72
L 28.87
Present Old Belle Road
(CONCRETE)
150'
I-90 ON-RAMP
I-90 OFF-RAMP
CP 11
SPIKE
EL=3523.21
BM
41.26
15" CMP
PIPE FL=3511.86
FLARED END=3511.66
48" RCP WITH FLARED END
PIPE FL=3515.32
FLARED END FL=3515.20
48" RCP WITH FLARED END
PIPE FL=3515.39
FLARED END FL=3515.28
48" RCP WITH FLARED END
PIPE FL=3515.46
FLARED END FL=3515.34
TELEPHONE PEDESTAL
CP 1
5/8" REBAR
EL=3520.36
I-90 R.O.W. Line
R.O.W. Line
W1/2 NW1/4 SW1/4
LESS LOTS BE-1, LOT H-1, LOT H-2, AND LOT PE1
SEC. 33, T7N, R2E, BHM
PROPERTY ADDRESS: 3530 OLD BELLE ROAD
OWNER: SPRING CREEK RANCH, LLC
TELEPHONE PEDESTAL
FIBER OPTIC VAULT AND SIGN
CAT

Parcel 8
21+97.45 L to 24+81.63 L
Temporary Easement Containing
0.13 AC or 5,725 SqFt More or Less

Z:\180668.01 Spearfish Exit 8 Area Community Path\CAD\Design Drawings\Phase 2\180668.01 Phase 2 P&P.dwg - 57 Plan Layout - Tuesday, June 20, 2023 1:37:21 PM

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	58	120

Plotting Date: August 31, 2023
Prepared by FMG Engineering

LOW PT STA: 19+07.12
LOW PT ELEV: 3522.42
PVI STA:18+83.20
PVI ELEV:3522.39
K:9.98
LVC:50.00

LOW PT STA: 23+05.79
LOW PT ELEV: 3517.73
PVI STA:22+63.23
PVI ELEV:3518.00
K:34.74
LVC:85.00

PVI STA = 18+30.00
PVI ELEV = 3524.00

BVCS: 18+58.20
BVCE: 3523.62

EVCS: 19+08.20
EVCE: 3522.42

18+50.00
END EXCEPTION

PVI STA = 20+60.43
PVI ELEV = 3522.58

PVI STA = 21+18.49
PVI ELEV = 3522.47

BVCS: 22+20.79
BVCE: 3519.31

EVCS: 23+05.79
EVCE: 3517.73

PVI STA = 23+81.64
PVI ELEV = 3517.24

END PROJECT
23+81.33

-4.00%
0.11%
-0.20%
-3.09%
-0.64%

Future
Concrete Retaining Wall

18+82.22 L
48" RCP Flared End, FL=3516.28
Connect to Existing 48" RCP, FL=3516.50

18+71.21 L
48" RCP Flared End, FL=3516.56
Connect to Existing 48" RCP, FL=3516.44

18+59.38 L
48" RCP Flared End, FL=3516.58
Connect to Existing 48" RCP, FL=3516.35

24" CMP

21+63.35 R
24" CMP
FL=3517.70

22+00.03 R
24" CMP
FL=3517.30

23+43.63 R
18" CMP
FL=3514.00

23+49.23 L
18" CMP
FL=3514.50

CP 4
18+96.89 R
Elev = 3523.13

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
8-31-23

3555 3550 3545 3540 3535 3530 3525 3520 3515 3510 3505 3500 3495 3490 3485 3480

3530.4 3525.11 | 3521.5 3522.45 | 3520.3 3522.52 | 3522.4 3522.51 | 3517.2 3519.95 | 3515.8 3517.77 | 3517.3 3517.11

18+00 19+00 20+00 21+00 22+00 23+00 24+00

Z:\180668.01 Spearfish Exit 8 Area Community Path\CAD\Design Drawings\Phase 2\180668.01 Phase 2 P&P.dwg - 58 Profile Sheet - Thursday, August 31, 2023 8:24:27 AM

CURB RAMP LAYOUT

FOR BIDDING PURPOSES ONLY

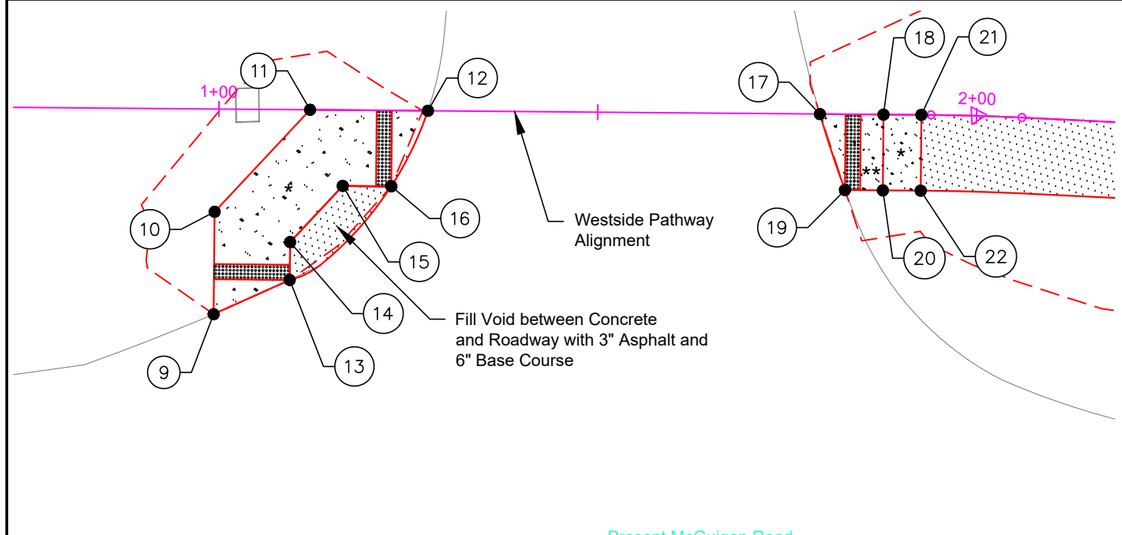
State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	59	120

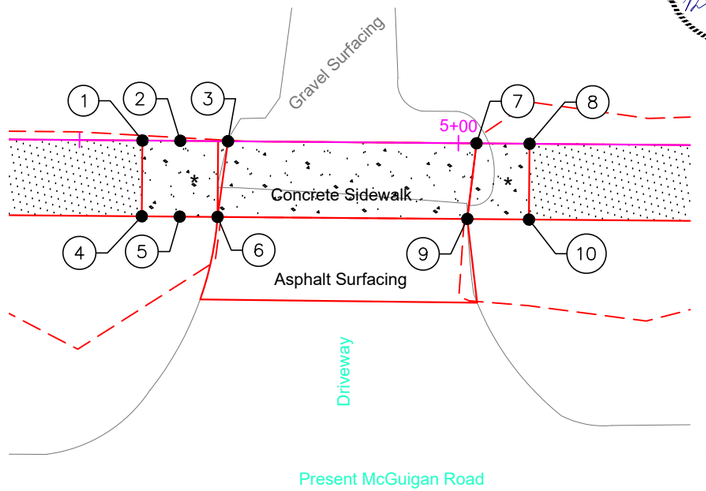
Plotting Date: June 20, 2023
Prepared by FMG Engineering

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-20-23

0' 5' 10' 20'
Scale: 1" = 20'

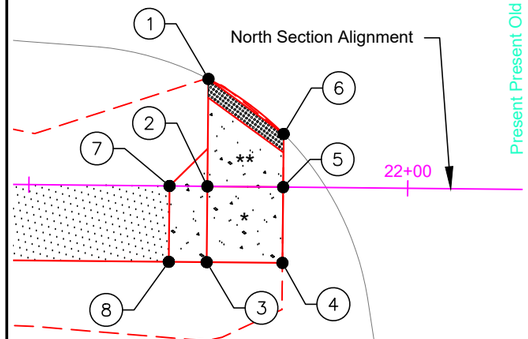
* Turning Space with 1.50% slope
** Curb Ramp with 7.5% max. slope and 1.5% cross slope
All concrete sidewalk is 6" thick
Detectable Warning Panel





1	4+58.30-0.00' End Asphalt Pathway Begin Asphalt Landing TSW= 3538.78	6	4+68.30-10.00'R TSW=3538.46
2	4+63.30-0.00' TSW=3538.70	7	5+02.40-0.00' TSW=3537.84
3	4+69.60-0.00' TSW=3538.59	8	5+09.40-0.00' End Concrete Sidewalk Begin Asphalt Pathway TSW= 3537.74
4	4+58.30-10.00'R End Asphalt Pathway Begin Concrete Sidewalk TSW= 3538.64	9	5+01.27-9.98'R TSW=3537.71
5	4+63.30-10.00'R TSW=3538.55	10	5+09.40-10.00'R End Concrete Sidewalk Begin Asphalt Pathway TSW= 3537.59

Driveway Crossing

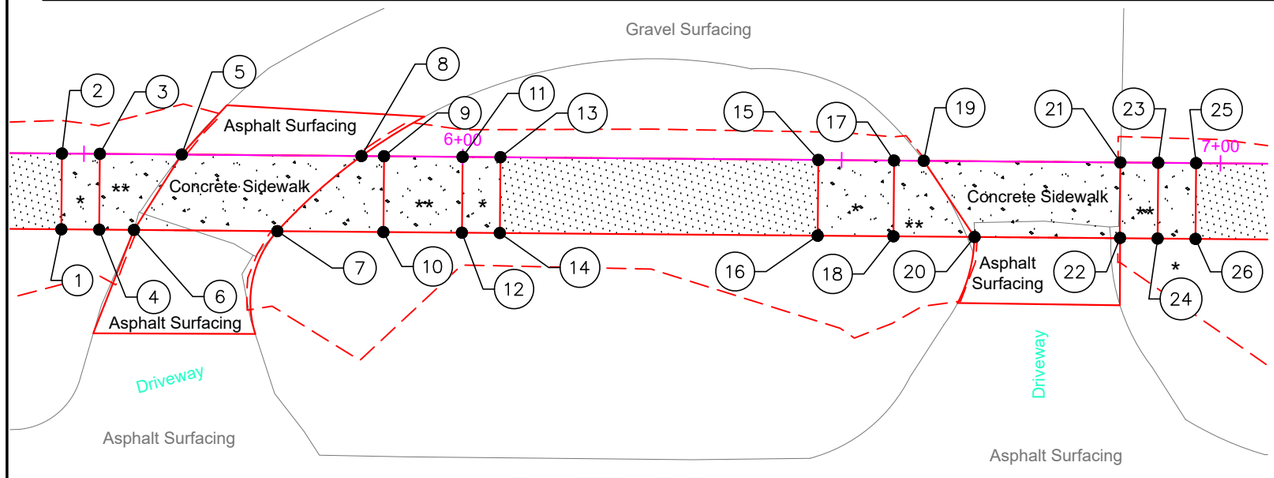


1	21+73.56-14.17'L End Concrete Sidewalk TSW= Match Existing (3546.59)±	4	21+83.56-10.00'R TSW=3445.50
2	21+73.56-0.00'R Begin Ramp Slope TSW= 3545.50	5	21+83.56-0.00'R Begin Ramp Slope TSW= 3545.65
3	21+73.56-10.00'R TSW=3545.35	6	21+83.56-7.01'L End Concrete Sidewalk TSW= Match Existing (3546.17)±

Present McGuigan Road

7	21+68.56-0.00'R End Asphalt Asphalt Pathway Begin Concrete Sidewalk TSW= 3545.25	16	1+22.83-10.00'R End Concrete Sidewalk TSW= Match Existing (3547.13)±
8	21+68.56-10.00'R End Asphalt Pathway Begin Concrete Sidewalk TSW= 3545.10	17	1+79.32-0.00' Begin Concrete Sidewalk TSW= Match Existing (3546.48)±
9	0+99.52-27.08'R Begin Concrete Sidewalk TSW= Match Existing (3546.77)±	18	1+87.71-0.00' TSW=3546.61
10	0+99.54-13.57'R TSW=3546.96	19	1+82.71-10.00'R Begin Concrete Sidewalk TSW= Match Existing (3546.49)±
11	1+12.03-0.00' TSW=3547.22	20	1+87.71-10.00'R TSW=3546.39
12	1+27.58-0.00' End Concrete Sidewalk TSW= Match Existing (3547.44)±	21	1+92.71-0.00' End Concrete Sidewalk Begin Asphalt Pathway TSW= 3546.54
13	1+09.53-22.48'R Begin Concrete Sidewalk TSW= Match Existing (3546.91)±	22	1+92.71-10.00'R End Concrete Sidewalk Begin Asphalt Pathway TSW= 3546.39
14	1+09.53-17.48'R TSW=3546.96		
15	1+16.41-10.00'R TSW=3547.07		

Old Highway 14 and McGuigan Road Crossings



1	5+47.10-10.00'R End Asphalt Pathway Begin Concrete Sidewalk TSW= 3535.94	6	5+56.69-10.00'R TSW=3535.65	12	5+99.97-10.00'R TSW=3534.75	16	6+46.93-10.00'R End Asphalt Pathway Begin Concrete Sidewalk TSW= 3533.33	22	6+86.84-9.96'R TSW=3532.09
2	5+47.10-0.00' End Asphalt Pathway Begin Concrete Sidewalk TSW= 3536.09	7	5+75.60-10.00'R TSW=3535.25	13	6+04.97-0.00' End Concrete Sidewalk Begin Asphalt Pathway TSW= 3534.75	17	6+56.93-0.00' TSW=3533.25	23	6+91.80-0.00' TSW=3532.15
3	5+52.10-0.00' TSW=3536.01	8	5+86.63-0.00' TSW=3535.31	14	6+04.97-10.00'R End Concrete Sidewalk Begin Asphalt Pathway TSW= 3534.60	18	6+56.93-10.00'R TSW=3533.10	24	6+91.80-10.00'R TSW=3532.00
4	5+52.10-10.00'R TSW=3535.86	9	5+89.61-0.00' TSW=3535.22	15	6+46.93-0.00' End Asphalt Pathway Begin Concrete Sidewalk TSW= 3533.48	19	6+60.85-0.00' TSW=3532.96	25	6+96.80-0.00'L End Concrete Sidewalk Begin Asphalt Pathway TSW= 3532.06
5	5+62.90-0.00' TSW=3535.52	10	5+89.61-10.00'R TSW=3535.07			20	6+67.64-10.00'R TSW=3532.62	26	6+96.80-10.00'R End Concrete Sidewalk Begin Asphalt Pathway TSW= 3531.91
		11	5+99.97-0.00' TSW=3534.90			21	6+86.80-0.00' TSW=3532.24		

Driveway Crossings

CURB RAMP LAYOUT

FOR BIDDING PURPOSES ONLY

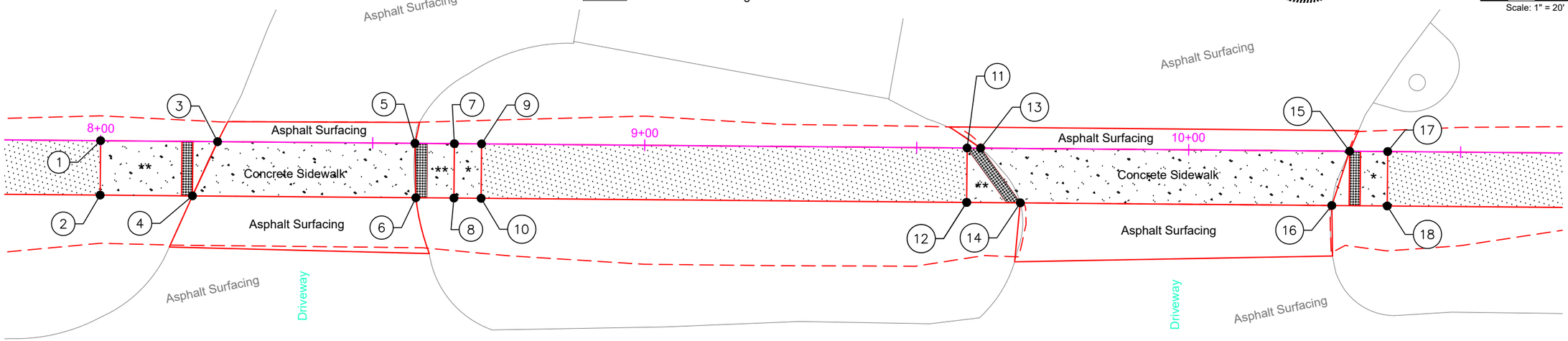
State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	60	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

REGISTERED PROFESSIONAL ENGINEER — REG. NO. 8744 — RICHARD A. SUDMEIER — SOUTH DAKOTA — 6-23-23

0' 5' 10' 20'
Scale: 1" = 20'

* Turning Space with 1.50% slope
** Curb Ramp with 7.5% max. slope and 1.5% cross slope
All concrete sidewalk is 6" thick
Detectable Warning Panel



1 — 7+99.97-0.00'
End Asphalt Pathway
Begin Concrete Sidewalk
TSW= 3530.20

2 — 7+99.97-10.00'R
End Asphalt Pathway
Begin Concrete Sidewalk
TSW= 3530.15

3 — 8+21.48-0.00'
TSW=3529.81

4 — 8+16.94-10.00'R
TSW=3529.74

5 — 8+57.76-0.00'
TSW=3529.43

6 — 8+58.01-10.00'R
TSW=3529.28

7 — 8+65.01-0.00'
TSW=3529.40

8 — 8+65.01-10.00'R
TSW=3529.25

9 — 8+70.01-0.00'
End Concrete Sidewalk
Begin Asphalt Pathway
TSW= 3529.38

10 — 8+70.01-10.00'R
End Concrete Sidewalk
Begin Asphalt Pathway
TSW= 3529.23

11 — 9+59.26-0.00'
End Asphalt Pathway
Begin Concrete Sidewalk
TSW= 3529.00

12 — 9+59.26-10.00'R
End Asphalt Pathway
Begin Concrete Sidewalk
TSW= 3528.85

13 — 9+61.75-0.00'
TSW=3528.99

14 — 9+69.14-10.00'R
TSW=3528.84

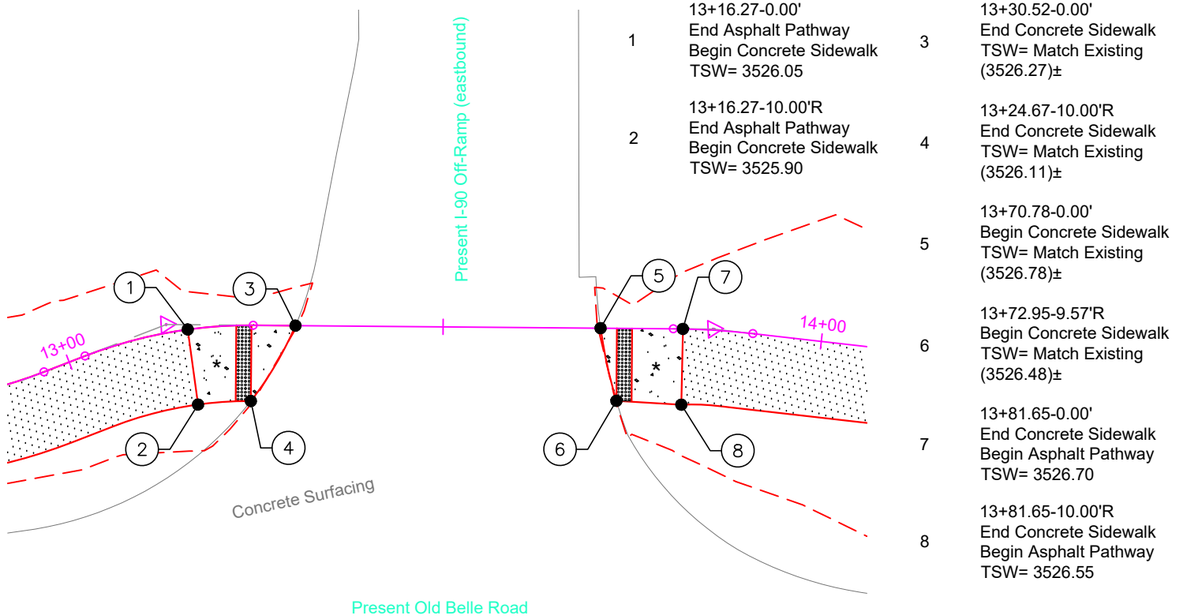
15 — 10+29.58-0.00'
TSW=3528.01

16 — 10+26.40-10.00'R
TSW=3527.90

17 — 10+36.58-0.00'
End Concrete Sidewalk
Begin Asphalt Pathway
TSW= 3527.90

18 — 10+36.58-10.00'R
End Concrete Sidewalk
Begin Asphalt Pathway
TSW= 3527.75

Phillips 66 Gas Station Crossing



1 — 13+16.27-0.00'
End Asphalt Pathway
Begin Concrete Sidewalk
TSW= 3526.05

2 — 13+16.27-10.00'R
End Asphalt Pathway
Begin Concrete Sidewalk
TSW= 3525.90

3 — 13+30.52-0.00'
End Concrete Sidewalk
TSW= Match Existing
(3526.27)±

4 — 13+24.67-10.00'R
End Concrete Sidewalk
TSW= Match Existing
(3526.11)±

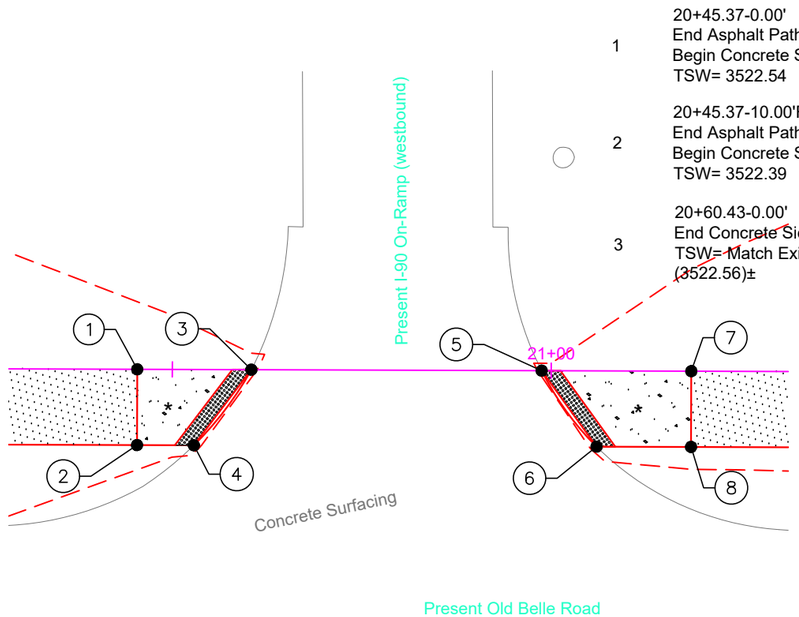
5 — 13+70.78-0.00'
Begin Concrete Sidewalk
TSW= Match Existing
(3526.78)±

6 — 13+72.95-9.57'R
Begin Concrete Sidewalk
TSW= Match Existing
(3526.48)±

7 — 13+81.65-0.00'
End Concrete Sidewalk
Begin Asphalt Pathway
TSW= 3526.70

8 — 13+81.65-10.00'R
End Concrete Sidewalk
Begin Asphalt Pathway
TSW= 3526.55

Interstate 90 Off-Ramp Crossing



1 — 20+45.37-0.00'
End Asphalt Pathway
Begin Concrete Sidewalk
TSW= 3522.54

2 — 20+45.37-10.00'R
End Asphalt Pathway
Begin Concrete Sidewalk
TSW= 3522.39

3 — 20+60.43-0.00'
End Concrete Sidewalk
TSW= Match Existing
(3522.56)±

4 — 20+52.88-10.00'R
End Concrete Sidewalk
TSW= Match Existing
(3522.48)±

5 — 20+98.74-0.00'
Begin Concrete Sidewalk
TSW= Match Existing
(3522.48)±

6 — 21+06.01-10.00'R
Begin Concrete Sidewalk
TSW= Match Existing
(3522.36)±

7 — 21+18.49-0.00'
End Concrete Sidewalk
Begin Asphalt Pathway
TSW= 3522.47

8 — 21+18.49-10.00'R
End Concrete Sidewalk
Begin Asphalt Pathway
TSW= 3522.32

Interstate 90 On-Ramp Crossing

CURB RAMP LAYOUT

FOR BIDDING PURPOSES ONLY

State Of South Dakota	Project	Sheet No.	Total Sheets
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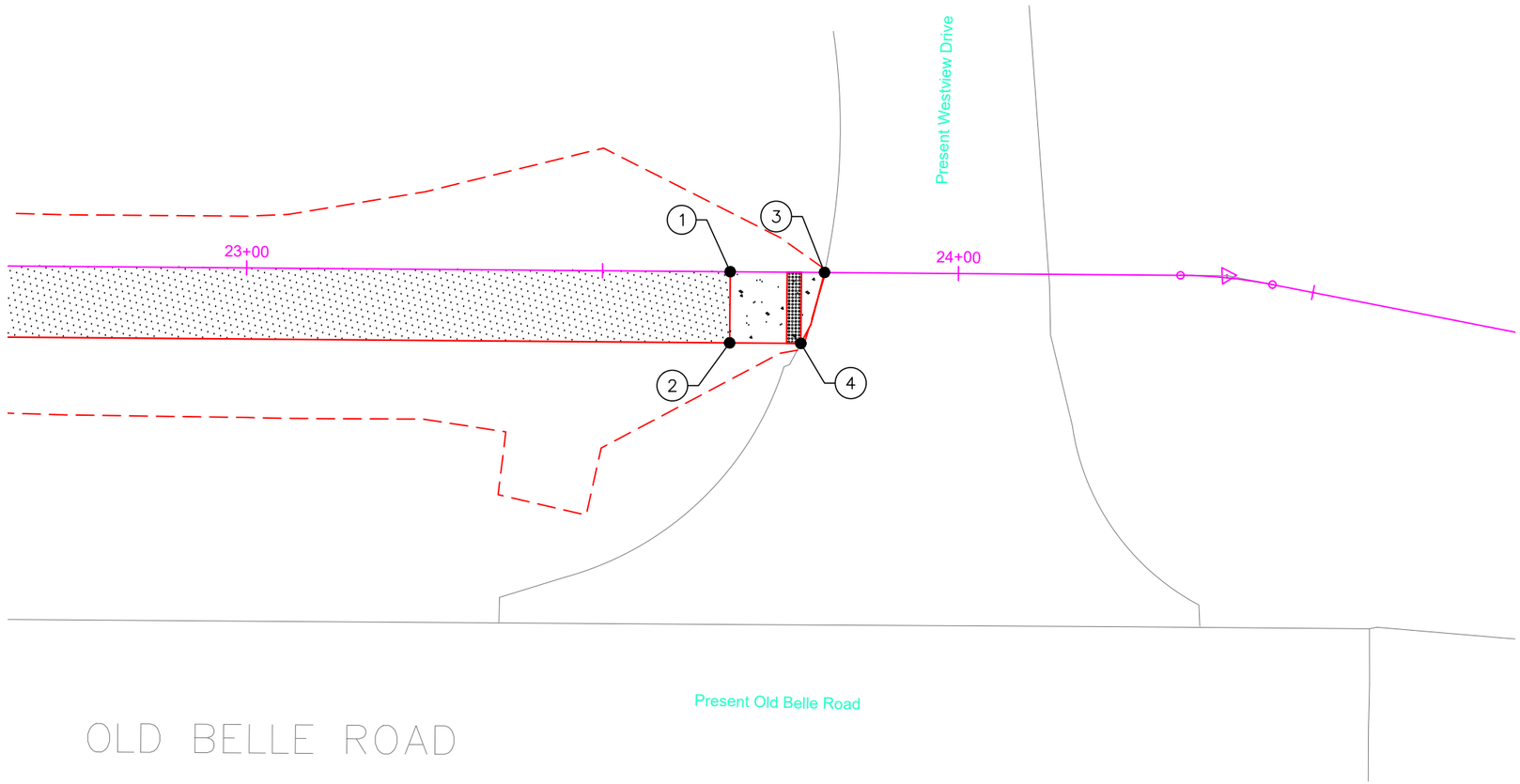
* Turning Space with 1.50% slope
** Curb Ramp with 7.5% max. slope and 1.5% cross slope
All concrete sidewalk is 6" thick
Detectable Warning Panel

0' 5' 10' 20'
Scale: 1" = 20'



1 — 23+67.93-0.00'
End Asphalt Pathway
Begin Concrete Sidewalk
TSW= 3517.33

2 — 23+67.93-10.00'R
End Asphalt Pathway
Begin Concrete Sidewalk
TSW= 3517.18

3 — 23+81.18-0.00'
End Concrete Sidewalk
TSW= Match Existing
(3517.20)±

4 — 23+77.93-10.00'R
End Concrete Sidewalk
TSW= Match Existing
(3517.06)±

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

Westview Drive and Old Belle Road Crossings

Z:\180668.01 Spearfish Exit 8 Area Community Path\CAD\Design Drawings\Phase 2\180668.01 Phase 2 C&G.dwg - 61 Curb Ramp Layout - Tuesday, June 20, 2023 1:37:51 PM

CONCRETE SIDEWALK DRAIN
(Sheet 1 of 2)

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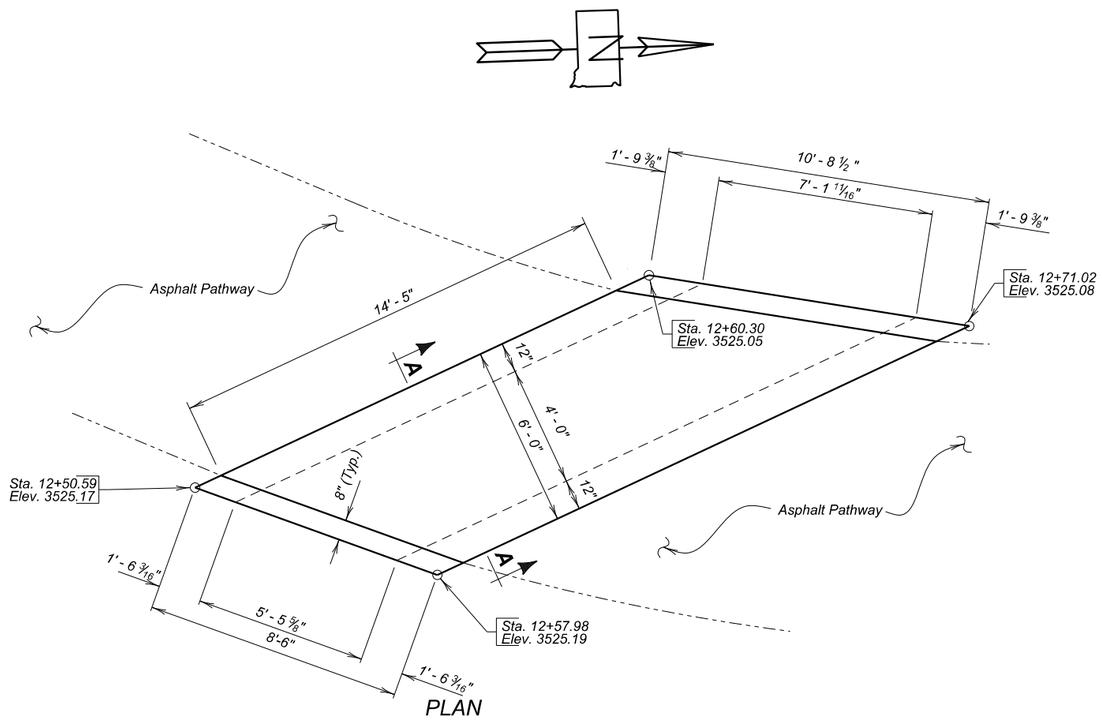
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	TAPU(31)	62	120

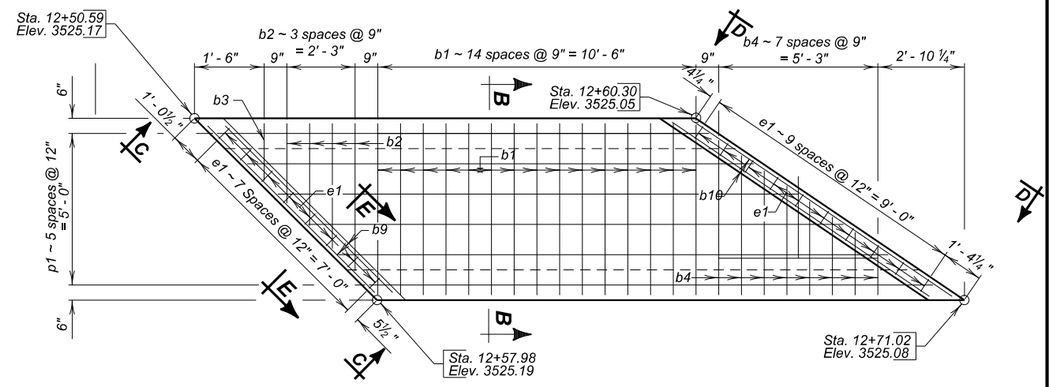
Plotting Date: 6/20/2023

Revised By: RS 5/27/2022

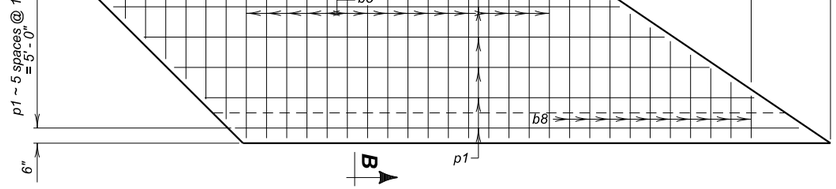
The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).



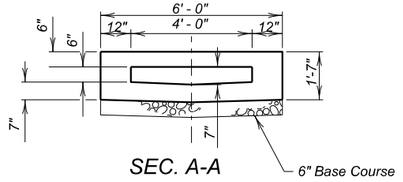
PLAN



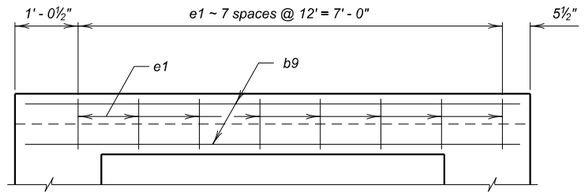
REINFORCING PLAN (Top Slab)



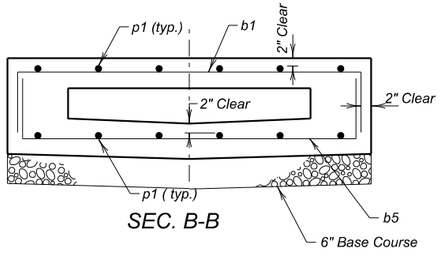
REINFORCING PLAN (Bottom Slab)



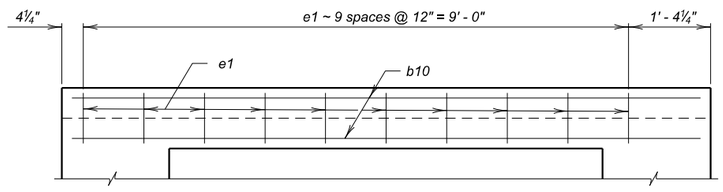
SEC. A-A



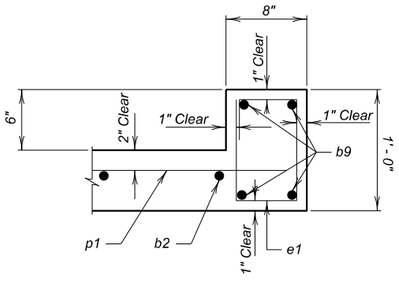
VIEW C-C



SEC. B-B



VIEW D-D



SEC. E-E

NOTE:

1) All reinforcing steel is No.4 deformed bar, epoxy coated.
2) Cut reinforcing steel as necessary in the field.

Plot Scale - 1:1

Plotted From - rsudmeier

File - ...\Details_Concrete Drain Structure.dgn

CONCRETE SIDEWALK DRAIN
(Sheet 2 of 2)

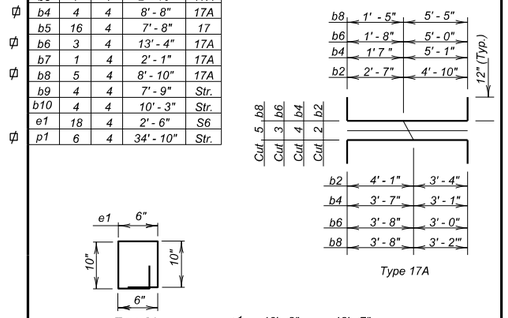
FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	TAPU(31)	63	120

Plotting Date: 6/20/2023
Revised By: RS 5/27/2022

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
b1	15	4	7' - 8"	17	
b2	2	4	9' - 5"	17A	
b3	1	4	2' - 10"	17A	
b4	4	4	8' - 8"	17A	
b5	16	4	7' - 8"	17	
b6	3	4	13' - 4"	17A	
b7	1	4	2' - 1"	17A	
b8	5	4	8' - 10"	17A	
b9	4	4	7' - 9"	Str.	
b10	4	4	10' - 3"	Str.	
e1	18	4	2' - 6"	S6	
p1	6	4	34' - 10"	Str.	



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

SPECIFICATIONS

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

GENERAL NOTES

1. *All concrete must be Class M6 in accordance with Section 462.*
2. *All reinforcing steel must be epoxy coated and must conform to ASTM A615, Grade 60. Epoxy coating must conform to AASHTO M284.*
3. *Use 2" clear cover on all reinforcing steel except as shown.*
4. *All concrete will be thoroughly tamped and spaded against forms to leave smooth surface without honeycomb. All exposed edges must be chamfered ¾ " except as shown.*
5. *Place concrete on undisturbed soil. If backfilling is necessary, compact with mechanical tampers to satisfaction of the Engineer.*
6. *The concrete sidewalk must be constructed in accordance with Section 651.*
7. *All rail posts will be built vertical.*
8. *All structural steel parts for railing must conform to ASTM A500, Grade B. Material less than ¼ " thick may be ASTM A1011, Grade 36. Rail post base plates must conform to ASTM A709, Grade 36.*
9. *All anchor bolts and nuts for railing must conform to ASTM A307. Washers must conform to ASTM F436 and all components will be galvanized in accordance with ASTM A153 or ASTMF2329, as applicable. The bolts must be hex head "structural" type with heavy hex nuts and round washers.*
10. *The non-shrink grout used to fill the recess beneth the rail post base plates will be commercially available non-shrink grout containing no metallic particles and capable of attaining a 28-day compressive strength of 3000 psi. The non-shrink grout must be mixed according to the manufacturer's recommendations. The cost of furnishing and placing the non-shrink grout will be incidental to the contract unit price per foot of "Steel Pedestrial Railing."*
11. *All anchor bolts must be tightened to a torque of 120 ft.-lbs. (approximated without the use of a calibrated torque wrench).*
12. *All steel railing must be painted in accordance with Section 411 of the South Dakota Standard Specifications and the color must be an approved semi-gloss black (Federal Standard 595B Color 27038) unless stated otherwise in the plans.*
13. *Welding & Weld Inspection must be done in accordance with the current edition of AWS D1.1 Structural Welding Code-Steel.*
14. *The costs of structural steel, welding, weld inspection, anchor bolts, painting, galvanizing, and installation will be incidental to the contract unit price per foot for "Steel Pedestrian Railing".*
15. *Alternate rail design, including aluminum rail, may be submitted through propoer channels to the Office of Bridge Design for approval.*

SHOP PLANS

The fabricator must submit plans in accordance with the Specifications.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Class M6 Concrete	CuYd	6.6
Epoxy Coated Reinforcing Steel	Lb.	468

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

PAVEMENT MARKING AND PERMANENT SIGNING LAYOUT

FOR BIDDING PURPOSES ONLY

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	64	120

Plotting Date: June 20, 2023
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0' 10' 20' 40'
Scale: 1" = 40'

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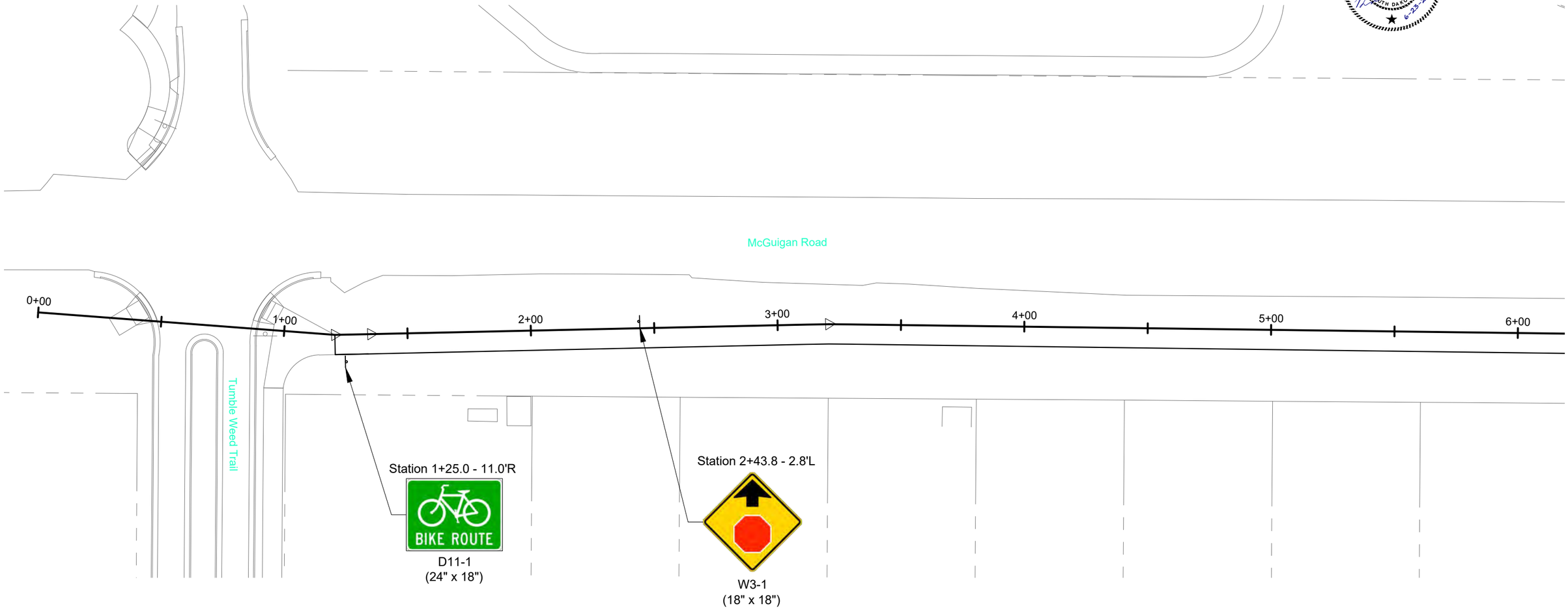
SOUTH DAKOTA
6-23-23



Note:
Remove 4" Yellow and 4" White Existing Pavement Markings as Necessary for Placement of Cross Walk Pavement Markings

Z:\180668.01 Spearfish Exit 8 Area Community Path\CAD\Design Drawings\Phase 2\180668.01 Phase 2 Signing.dwg - 64 PAVEMENT MARKING AND PERMANENT SIGNING LAYOUT - Tuesday, June 20, 2023 1:38:02 PM

PAVEMENT MARKING AND PERMANENT SIGNING LAYOUT

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	65	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

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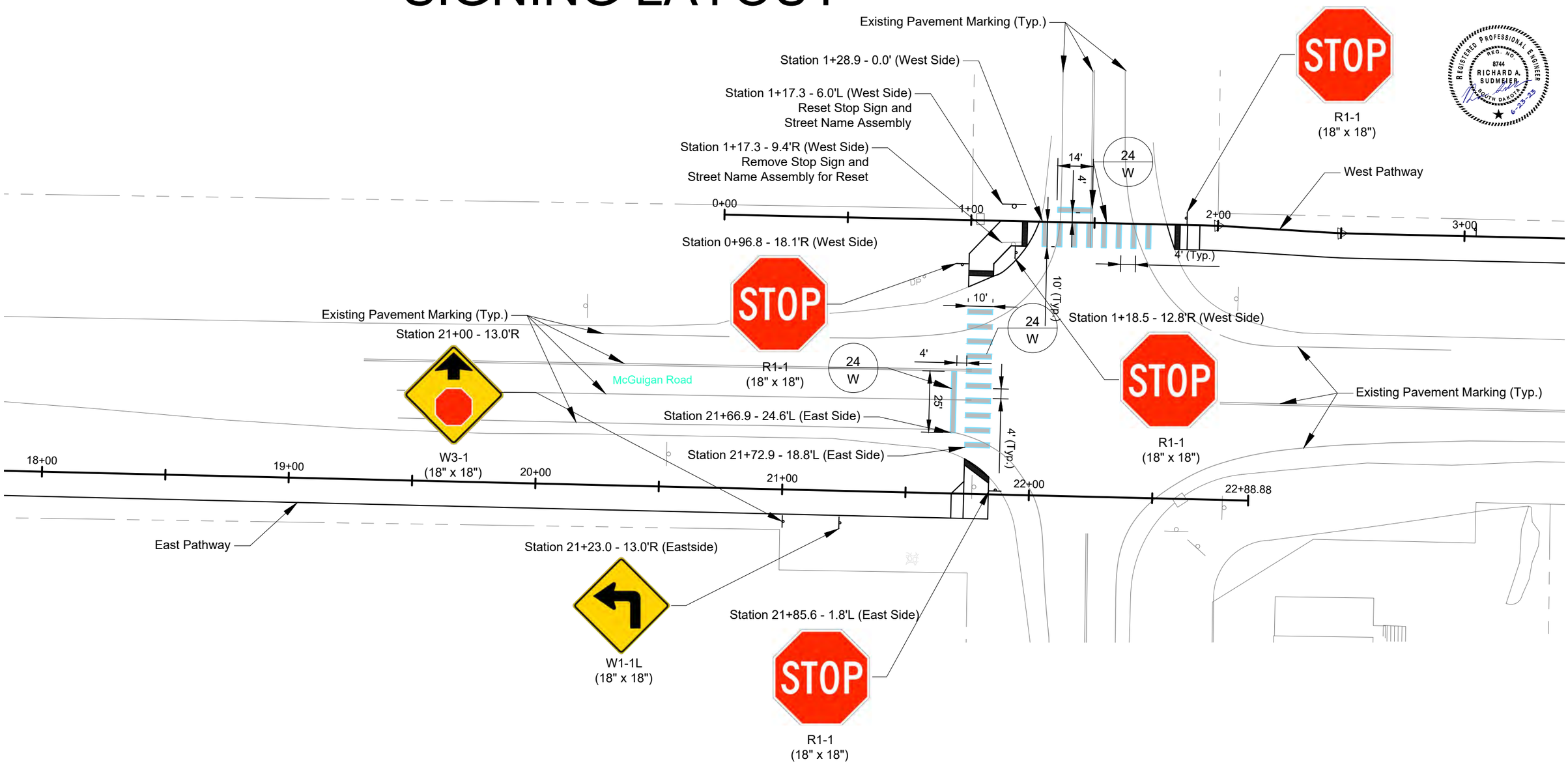
Scale: 1" = 40'



Note:
Remove 4" Yellow and 4" White Existing Pavement Markings as Necessary for Placement of Cross Walk Pavement Markings

Z:\180668.01 Spearfish Exit 8 Area Community Path\CAD\Design Drawings\Phase 2\180668.01 Phase 2 Signing.dwg - 65 PAVEMENT MARKING AND PERMANENT SIGNING LAYOUT - Tuesday, June 20, 2023 1:36:06 PM

PAVEMENT MARKING AND PERMANENT SIGNING LAYOUT

FOR BIDDING PURPOSES ONLY

State Of South Dakota	Project	Sheet No.	Total Sheets
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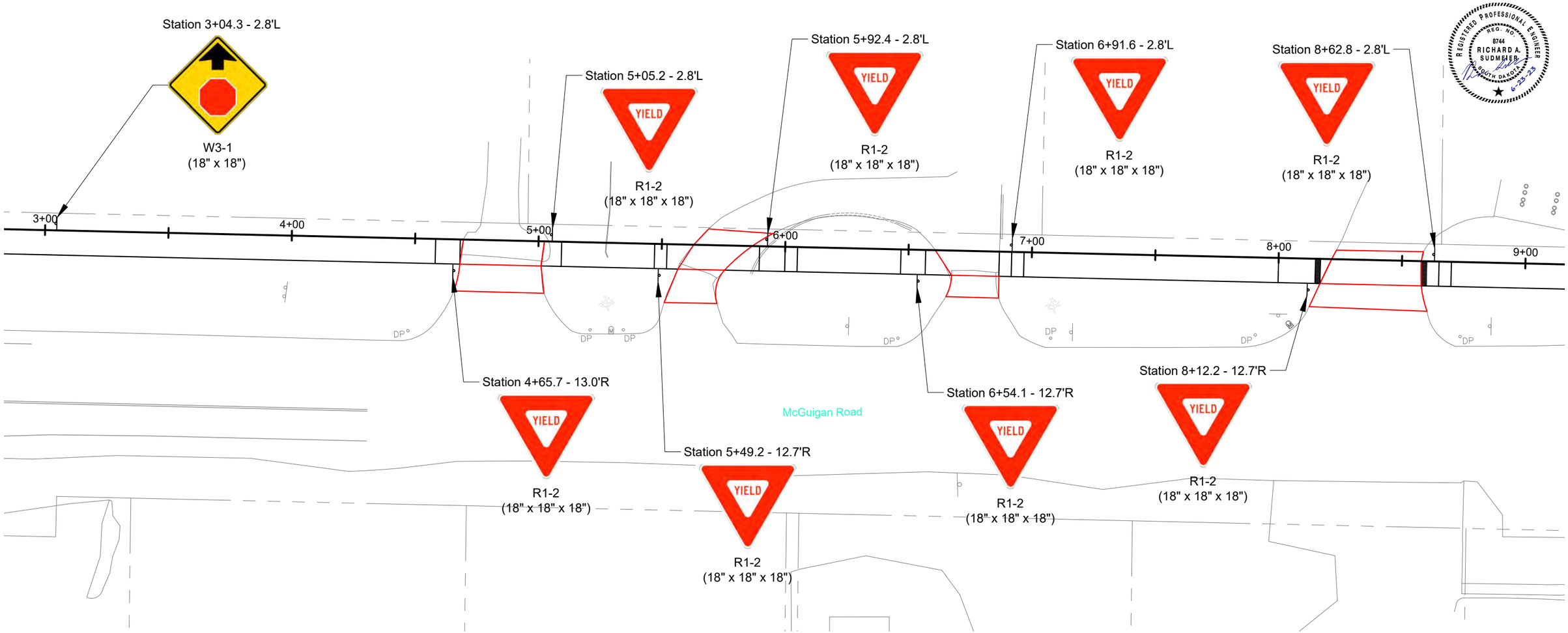
Plotting Date: June 20, 2023
Prepared by FMG Engineering

0' 10' 20' 40'
Scale: 1" = 40'

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23



Note:
Remove 4" Yellow and 4" White Existing Pavement Markings as Necessary for Placement of Cross Walk Pavement Markings

PAVEMENT MARKING AND PERMANENT SIGNING LAYOUT

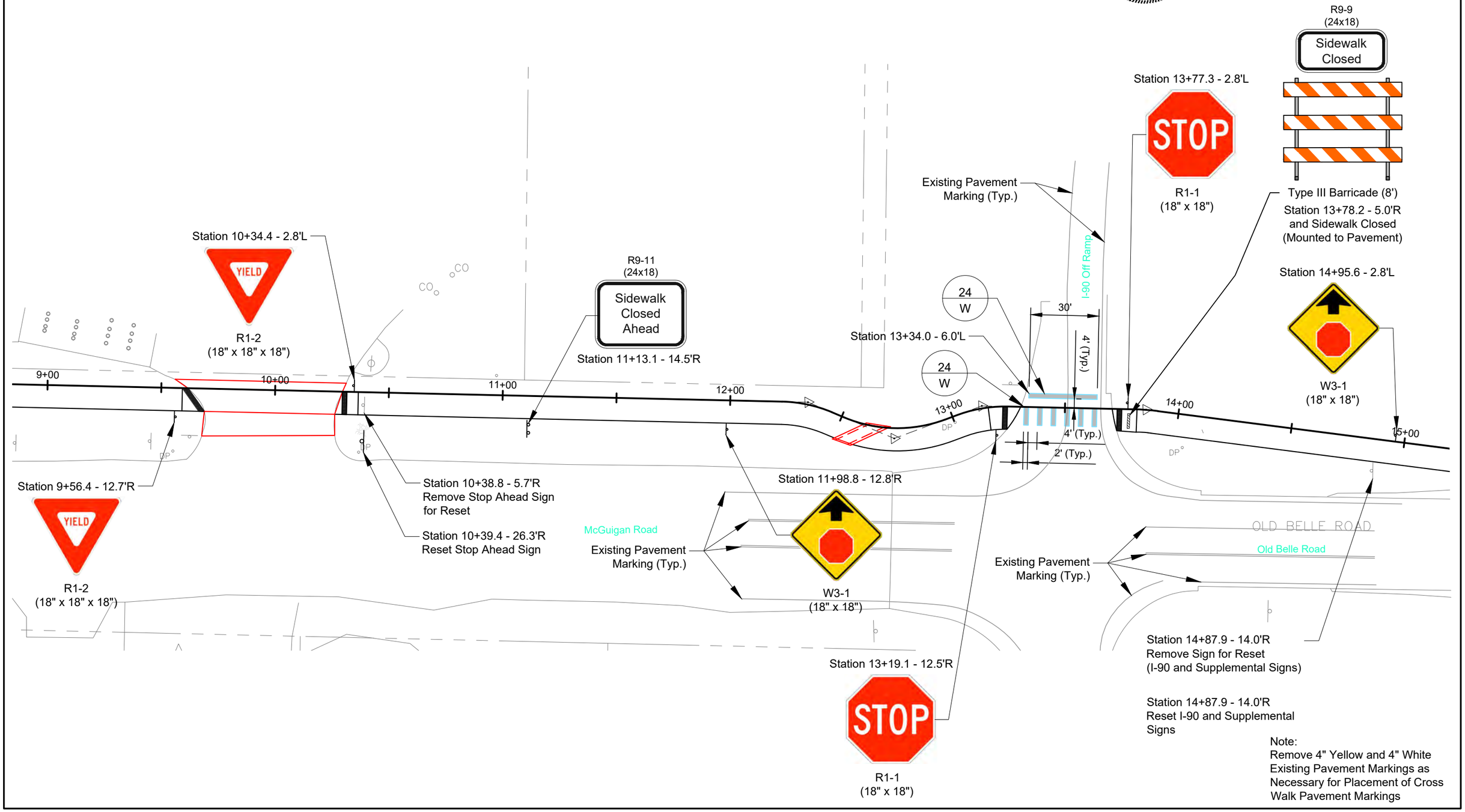
FOR BIDDING PURPOSES ONLY

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	67	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-22-23

0' 10' 20' 40'
Scale: 1" = 40'



Note:
Remove 4" Yellow and 4" White Existing Pavement Markings as Necessary for Placement of Cross Walk Pavement Markings

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	68	120

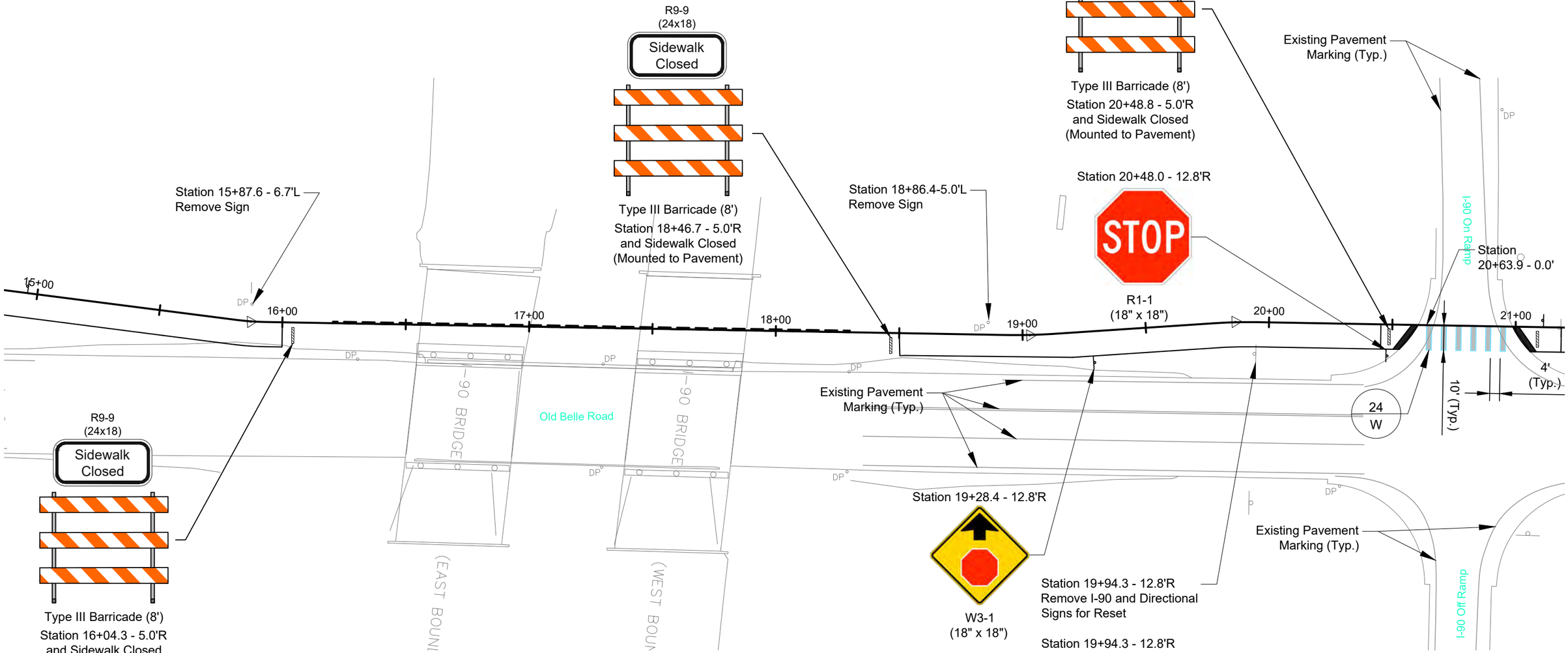
Plotting Date: June 20, 2023
Prepared by FMG Engineering

0' 10' 20' 40'
Scale: 1" = 40'

FOR BIDDING PURPOSES ONLY

PAVEMENT MARKING AND PERMANENT SIGNING LAYOUT

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23



Note:
Remove 4" Yellow and 4" White Existing Pavement Markings as Necessary for Placement of Cross Walk Pavement Markings

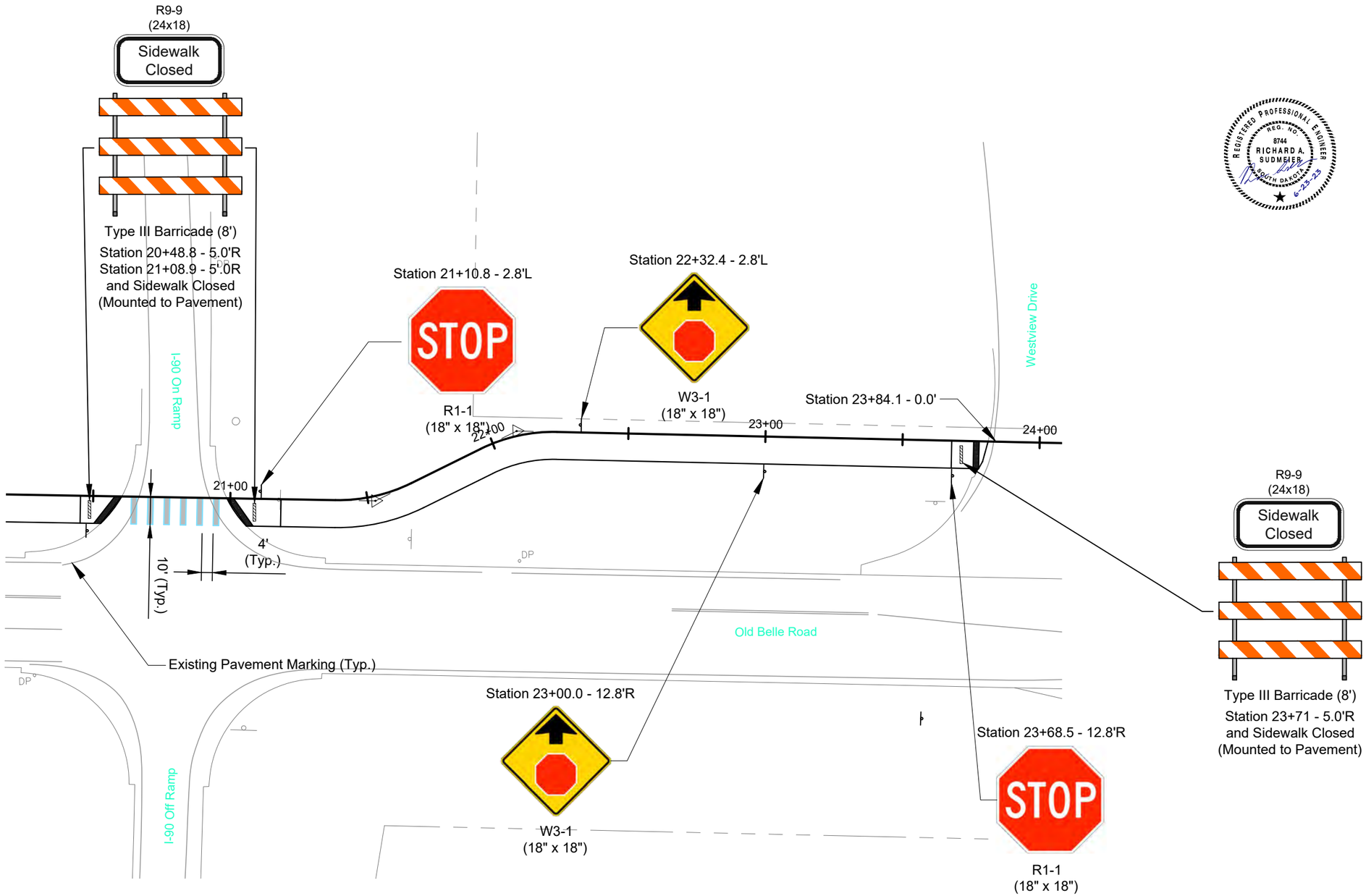
PAVEMENT MARKING AND PERMANENT SIGNING LAYOUT

FOR BIDDING PURPOSES ONLY

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	69	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

0' 10' 20' 40'
Scale: 1" = 40'



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

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State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	70	120

Plotting Date: June 20, 2023
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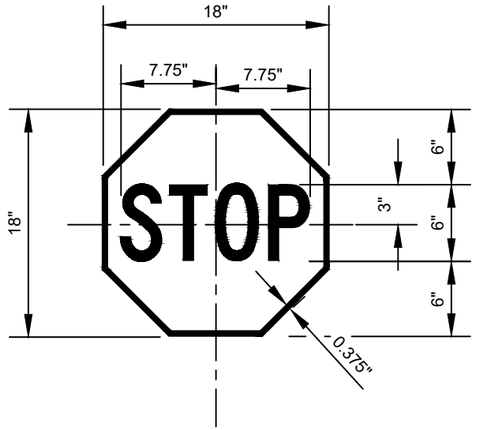
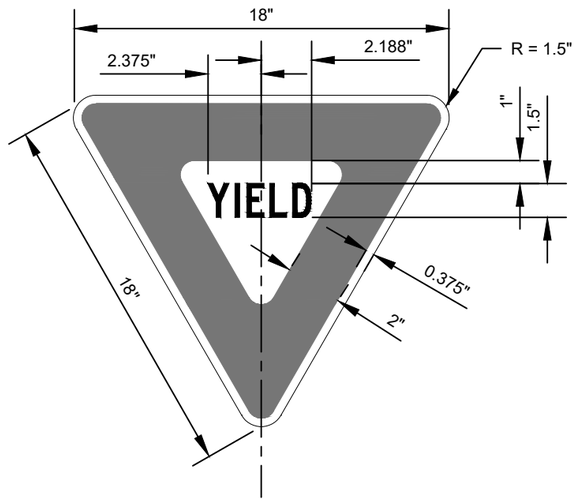
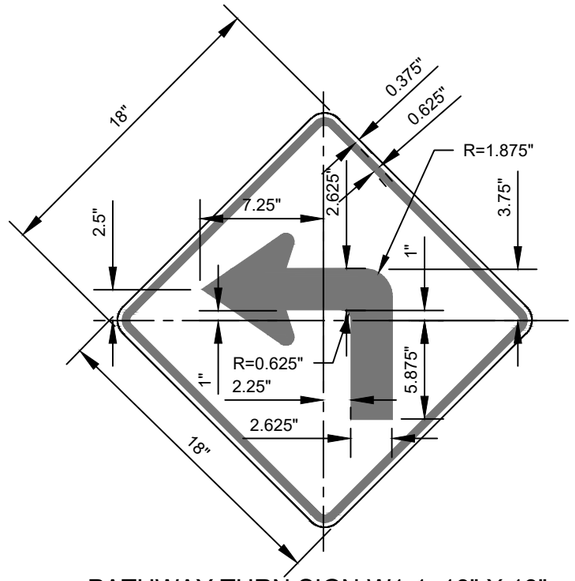


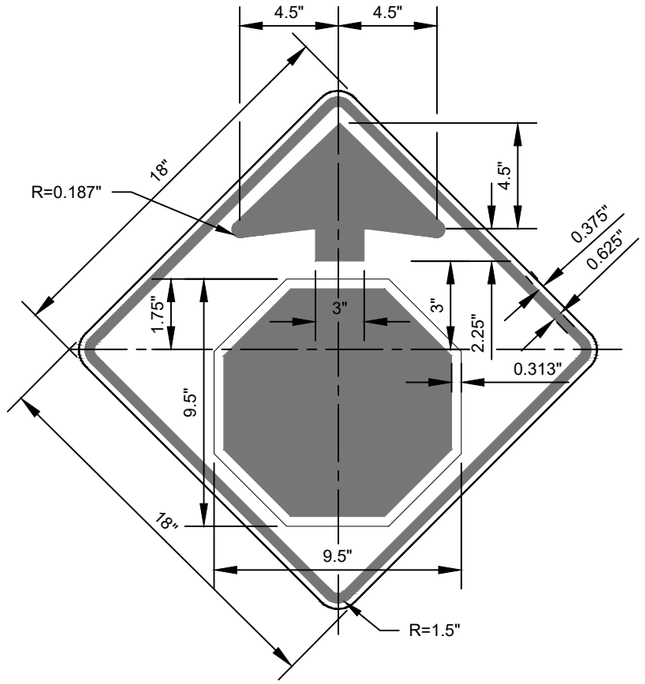
PATHWAY STOP SIGN R1-1, 18" X 18"



PATHWAY YIELD SIGN R1-2, 18" X 18"



PATHWAY TURN SIGN W1-1, 18" X 18"



PATHWAY STOP AHEAD SIGN W3-1, 18" X 18"

Note: All fonts and colors shall meet the requirements of the latest edition of the MUTCD.

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	71	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

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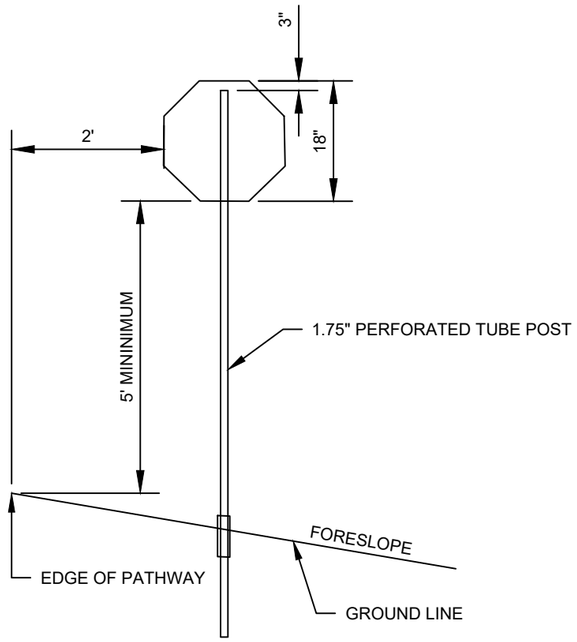
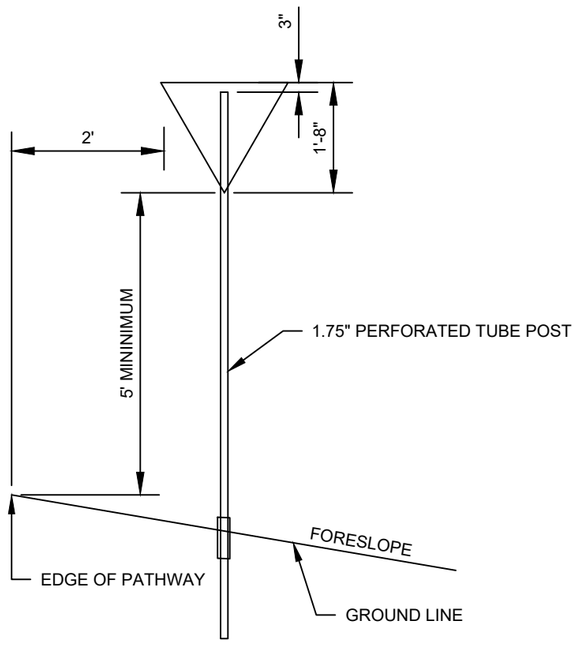
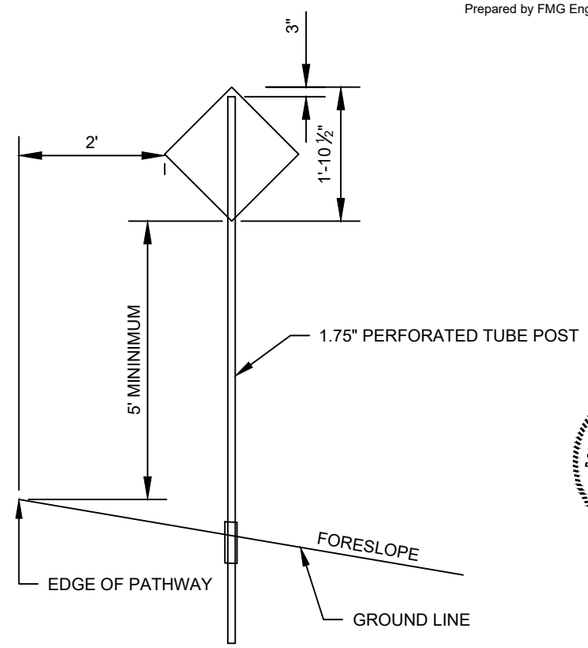


TYPICAL ERECTION DETAILS FOR PATHWAY STOP SIGNS

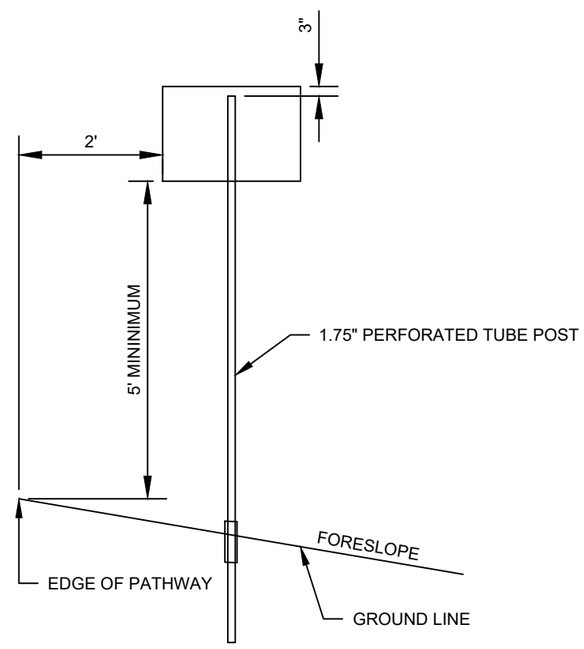


TYPICAL ERECTION DETAILS FOR PATHWAY YIELD SIGNS



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

TYPICAL ERECTION DETAILS FOR PATHWAY WARNING SIGNS



TYPICAL ERECTION DETAILS FOR PATHWAY RECTANGULAR SIGNS

OPTIONS FOR DEWATERING AND SEDIMENT COLLECTING

FOR BIDDING PURPOSES ONLY

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	72	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

OPTIONS ARE NOT LIMITED TO WHAT IS SHOWN ON THIS SHEET

Various systems, devices, and products are shown on this sheet to give the Contractor ideas of what may be used for water treatment. Other systems, devices, and products are available and can be used with approval from the Engineer. Minnesota DOT also has options and practices available at: ftp://ftp2.dot.state.mn.us/pub/outbound/erosion/CSM2017

The Contractor may elect to block a portion of storm sewer near the outfall with sand bags and pump the water out to be treated with a flocculent or allow the water to set in a lined dumpster until sediment to falls out of suspension before discharging the water. Drop inlet protection devices could also be used as part of a treatment train. The Contractor may pump dirty water into a hydroseeder and mix it with a flocculent, and spray the mixture back onto a sediment pond. No matter the system or method used, the Contractor must meet the terms of the Temporary Discharge Permit and the Stormwater Permit for Construction Activities.

PURPOSE

The purpose of a dewatering and sediment collection system is to collect turbid storm water on the project, treat it with flocculents as needed, and capture the sediment that falls out of suspension before the water is discharged into "Waters of the US" or "Waters of the State". Refer to the Environmental Commitments for the specific requirements for each body of water on this project.

The Contractor will need to create a Pollution Prevention Plan (PPP) for dewatering and sediment collection if the Contractor choses to discharge the water into "Waters of the US" or "Waters of the State" instead of disposing of the water off-site, using it for irrigation, or using it for hydroseeding. The Contractor will also need to obtain a Temporary Discharge Permit from the South Dakota Department of Environment & Natural Resources (DENR) on all projects outside of Indian Reservation boundaries.

Suggestions for dewatering and sediment collection may be shown on the plan sheets. It is ultimately the Contractor's responsibility to dewater and collect sediment. The Contractor will have to intercept and treat the stormwater before storm sewer outfalls into "Waters of the US" or "Waters of the State". The Contractor may need more than one dewatering and sediment collection system to capture and treat stormwater at multiple outfalls and/or locations simultaneously during each phase of the project.

PAYMENT

No additional payment will be made for Dewatering and Sediment Collecting. Dewatering and Sediment Collecting shall be incidental to other items on the project.

DEWATERING BAGS AND SOCKS capture sediment and should be placed on pavement, vegetated areas, or gravel.

Dandy Dewatering Bag
Dandy Products, Inc.
Powell, OH
Phone: 1.800.591.2284
www.dandyproducts.com

Non-woven Sediment Filter Bags
Indian Valley Industries, Inc.
Johnson City, NY
Phone: 1.800.659.5111
www.iviindustries.com

Taurus Dewatering Bags/Socks
SolHuTec Group, Inc.
Sebastian, FL
Phone: 1.888.703.9889
www.solhutec.com

Ultra-Dewatering Bag
UltraTech International, Inc
Jacksonville, FL
Phone: 1.800.764.9563
www.spillcontainment.com

Heavy Duty Dirtbag 55
ACF Environmental
Richmond, VA
Phone: 1.800.223.9021
www.acfenvironmental.com

Pump-It Tube
Flo-Water, LLC
West Des Moines, IA
Phone: 1.515.577.6763
www.flo-water.net

FLOCCULENTS listed below are considered to be safe for the environment, if used as directed:

APS 700 Series Floc Logs
Applied Polymer Systems, Inc.
Woodstock, GA
Phone: 1.866.200.9868
http://www.siltstop.com

Floc, Floc Soc, Floc Bag
Innovative Turf Solutions Products
Cincinnati, OH
Phone: 1.513.317.8311
http://www.innovativeturfsolutions.com

Biostar CH
Hild & Associates, Inc.
Stillwater, MN
Phone: 1.715.426.5131
www.biostarch.com

Terra-Tubes
ACF Environmental
Buffalo Grove, IL
Phone: 1.800.366.1180
www.terratubes.com

FI-3500 Tablets
JRM Chemical, Inc.
Cleveland, OH
Phone: 1.216.475.8488
http://www.soilmoist.com

Tigerdice
Floc Systems Inc.
Surrey, British Columbia
Phone: 1.604.543.2036
www.flocsystems.com

PORTABLE FLOCCULENT SYSTEMS

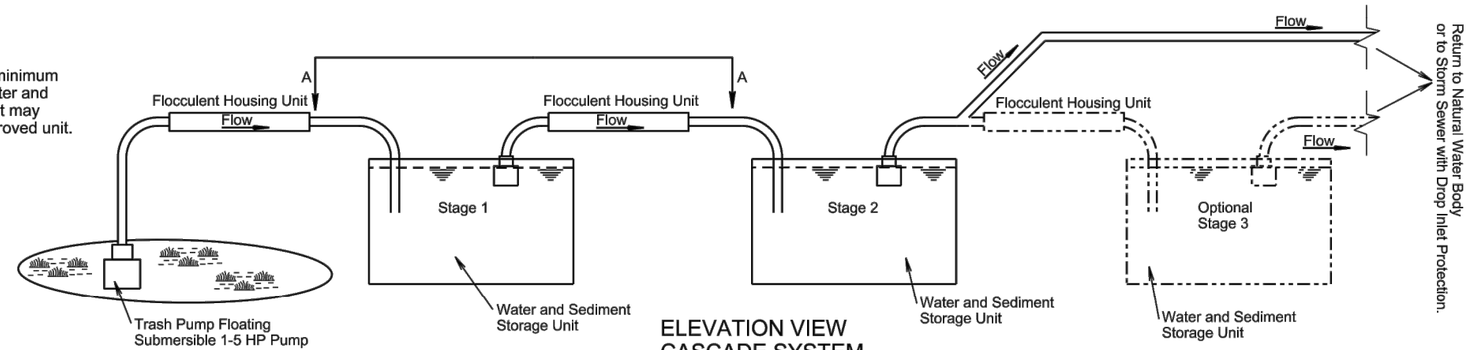
Eco Pond Rescue Water Wagon
Eco Pond Rescue LLC
Seminole, Florida
Phone: 1.727.412.4323
www.ecopondrescue.com

WTS2000 Portable Sediment Tank
Aqualete Industries, LLC
Ocean, New Jersey
Phone: 1.732.695.6336
http://aqualeteindustries.com

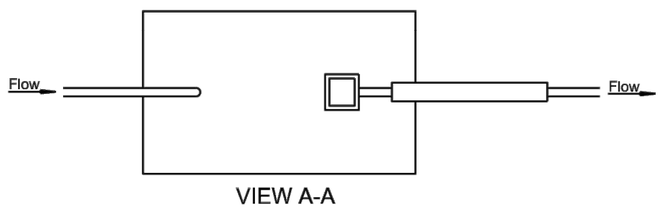
Dry Flocculent Mixing System
Innovative Equipment Solutions
Hot Springs, Arkansas
Phone: 1.501.525.8484
http://www.neptunewash.com

THE CASCADE SYSTEM

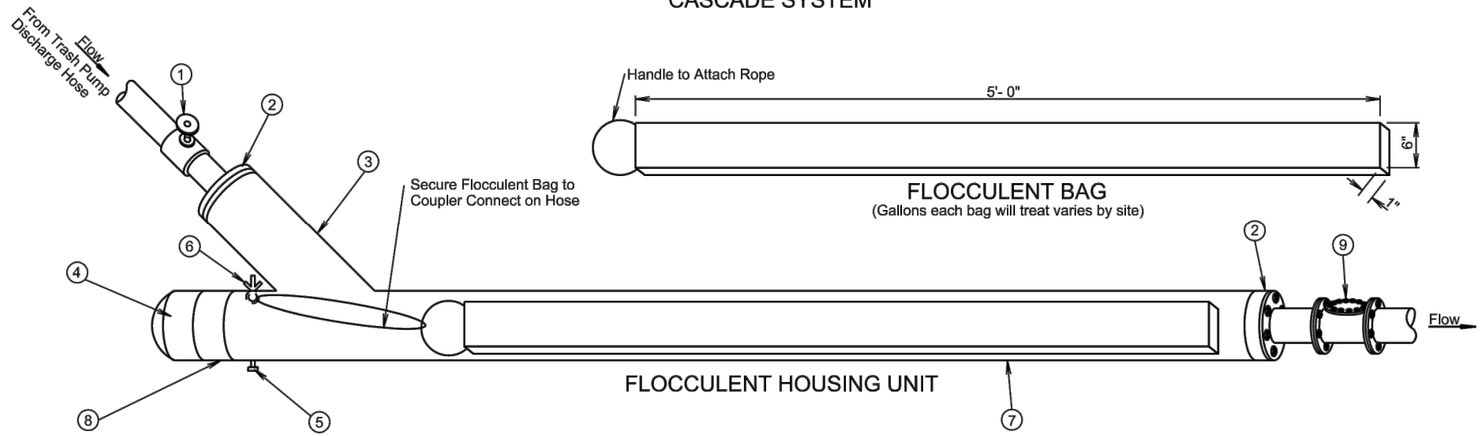
The cascade system is shown below and to the right for conceptual purposes only; however, the cascade system shall at a minimum incorporate the use of 2 flocculent housing units and 2 water and sediment storage units. Design and construction of the water and sediment storage units are project site specific and shall be the Contractor's responsibility. A water and sediment storage unit may consist of a storage bin lined with plastic, the bed of a dump truck lined with plastic, a sediment basin, or other Engineer approved unit. The treatment flocculent bag may be from the list or an approved equal.



ELEVATION VIEW
CASCADE SYSTEM



VIEW A-A



FLOCCULENT BAG
(Gallons each bag will treat varies by site)

FLOCCULENT HOUSING UNIT

FLOCCULENT HOUSING UNIT
(estimated quantities for information only)

NO.	DESCRIPTION	QUANTITY	UNIT
1	4" or 6" Dia. Sch. 40 Gate Valve	1	Each
2	4" X 6" or 6" X 8" Sch. 40 PVC Bushing	2	Each
3	6" or 8" Dia. Sch. 40 PVC "Y"	1	Each
4	6" or 8" Dia. Sch. 40 PVC Female Threaded Cap	1	Each
5	1" Dia. Sch. 80 PVC Drain Valve	1	Each
6	1/2" Eye Bolt with Wing Nut and Rubber Gromets	1	Each
7	6" or 8" Dia. Sch. 40 PVC Pipe	10	Ft.
8	6" or 8" Dia. Sch. 40 PVC Male Adapter	1	Each
9	4" or 6" Dia. Sch. 40 PVC Swing Check Valve	1	Each

FLOW RATE ESTIMATE

Pump Type	Flow Rate (gpm)
2"	50-250
3" Gas	250-350
4" Diesel	500-750
6" Diesel	750-1000

Set your "FieldEra" system variable to 31 for this stamp to work.
Z:\180668.01 Spearfish Exit 8 Area Community Path\CAD\Design Drawings\Phase 2\180668.01 Phase 2 Details.dwg - 72 Project Details - Tuesday, June 20, 2023 1:38:40 PM

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	73	120

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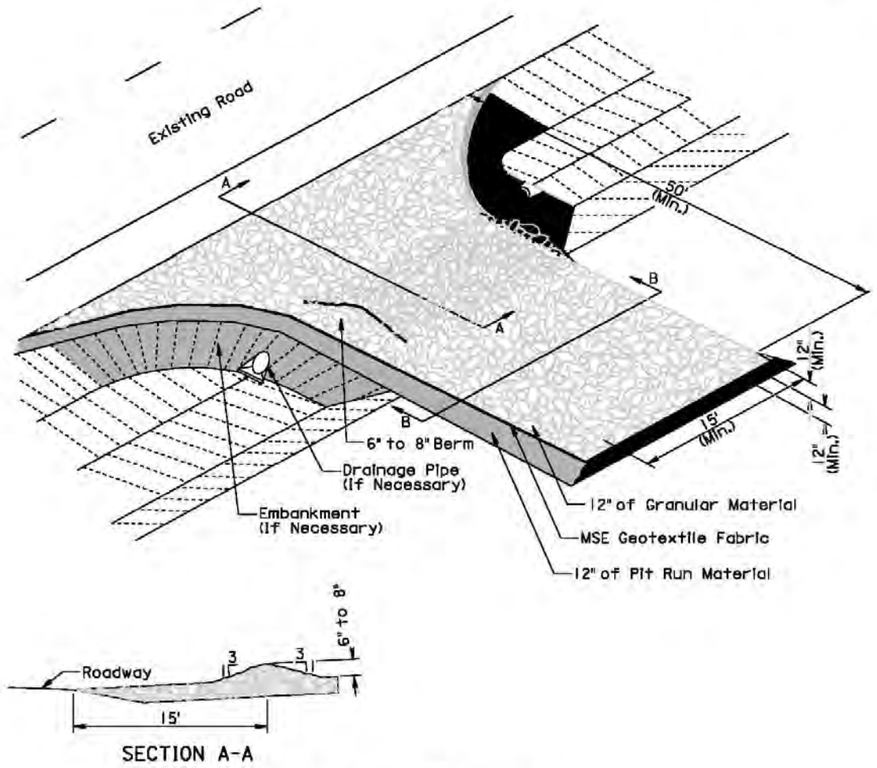
CONSTRUCTION ENTRANCE



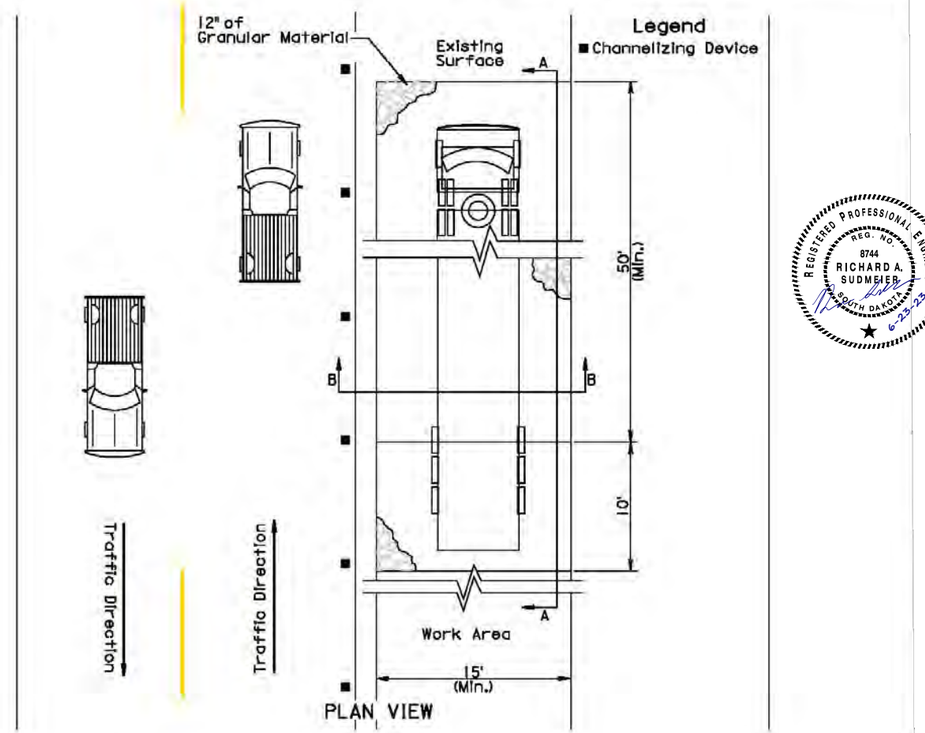
GENERAL NOTES:

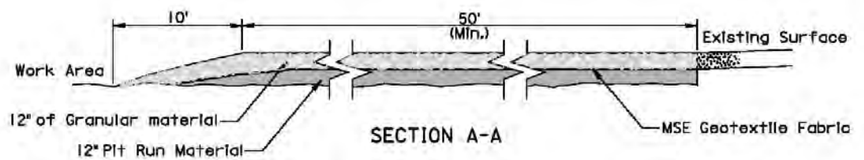
If the grade of the entrance slopes down to the roadway, a berm of extra rock shall be used to prevent sediment or mud from being deposited on the roadway. See SECTION A-A.

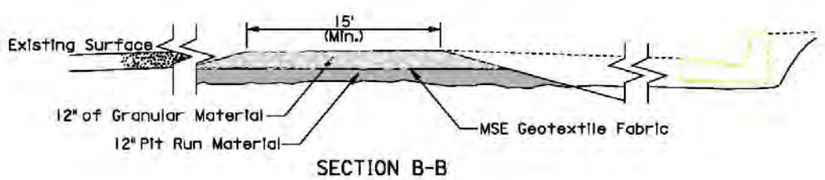
If a drainage pipe is necessary the size and type shall be determined by the Contractor to meet field conditions. All cost shall be incidental to the various bid items.

If embankment is necessary it shall be pit run material.

TRANSVERSE TO ROADWAY







PARALLEL TO ROADWAY

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 8744
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

Set your "FieldEval" system variable to 31 for this stamp to work.
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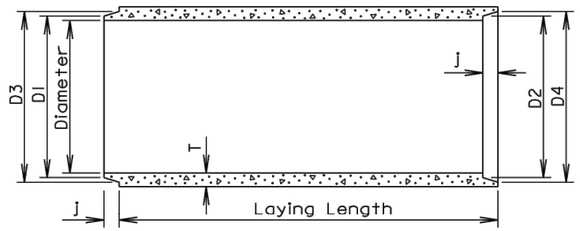
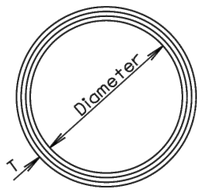
TOLERANCES IN DIMENSIONS

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

Published Date: 2024	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
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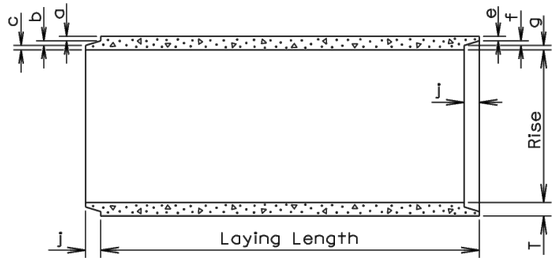
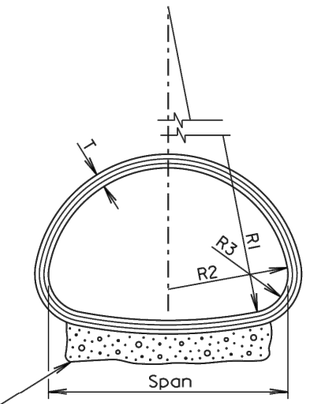


LONGITUDINAL SECTION



END VIEW

TOLERANCES IN DIMENSIONS

Radial dimensions at joints: ± 1/8" for 65" span or less and ± 1/4" for longer spans.
Rise and Span: ±2% of tabular values.
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".

Gravel Bedding Material shall be supplied for 102" to 169" spans. It shall be placed to a thickness of 6" (Min.) x 85% of the Span x Length of culvert and shall conform to the gradation requirements for gravel surfacing except material may be screened or may be plan provided material.

* Size (in.)	Approx. Wt./Ft. (lb.)	Rise (in.)	Span (in.)	T (in.)	a (in.)	b (in.)	c (in.)	j (in.)	e (in.)	f (in.)	g (in.)	R1 (in.)	R2 (in.)	R3 (in.)
18	170	13 1/2	22	2 1/2	1 3/8	3/8	3/4	2	1 1/8	3/8	1	27 1/2	13 3/4	5 1/4
24	320	18	28 1/2	3 1/2	1 5/8	1/2	1 3/8	3	1 3/8	1/2	1 5/8	40 11/16	14 3/4	4 5/8
30	450	22 1/2	36 1/4	4	1 13/16	5/8	1 9/16	3 1/2	1 9/16	5/8	1 13/16	51	18 3/4	6 1/8
36	600	26 5/8	43 3/4	4 1/2	2	3/4	1 3/4	4	1 3/4	3/4	2	62	22 1/2	6 1/2
42	740	31 5/16	51 1/8	4 1/2	2	3/4	1 3/4	4	1 3/4	3/4	2	73	26 1/4	7 3/4
48	890	36	58 1/2	5	2 1/4	3/4	2	5	2	3/4	2 1/4	84	30	8 7/8
54	1100	40	65	5 1/2	2 1/2	3/4	2 1/4	5	2 1/4	3/4	2 1/2	92 1/2	33 3/8	10
60	1400	45	73 1/2	6	3 5/16	3/4	1 15/16	5	2 3/4	3/4	2 1/2	105	37 1/2	11
72	1900	54	88	7	3 13/16	1	2 3/16	6	3 1/4	1	2 3/4	126	45	13 5/16
84	2500	62	102	8	4 1/8	1	2 7/8	6	3 1/2	1	3 1/2	162 1/2	52	14 1/2
96	3300	78	122 3/8	9	4 1/2	1	3 1/2	7	4	1	4	218	62	20
108	4200	88	138 1/2	10	5	1	4	7	4 1/2	1	4 1/2	269	70	22
120	5100	96 7/8	154	11	5 1/2	1	4 1/2	7	5	1	5	301 3/8	78	24
132	5100	106 1/2	168 3/4	10		1	4	7	4 1/2	1	4 1/2	329	85 5/8	26 7/8

* Equivalent Diameter of Circular R. C. P.

GENERAL NOTES:

Construction of R.C.P. Arch 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.

June 26, 2015

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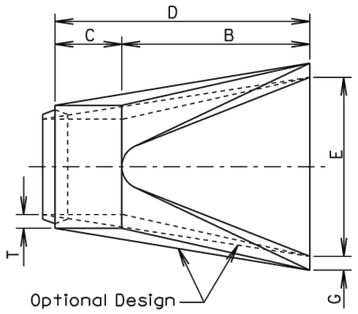
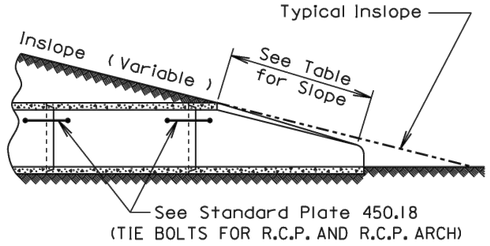
			Sheet 1 of 1

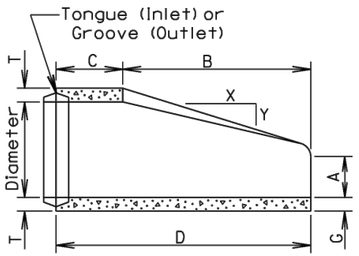
FOR BIDDING PURPOSES ONLY



TOP VIEW



SLOPE DETAIL

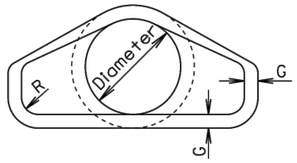


LONGITUDINAL SECTION

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.

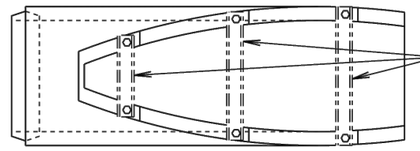


END VIEW

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

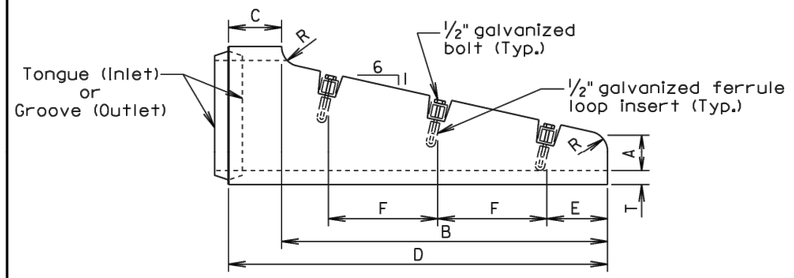
June 26, 2015

Published Date: 2024	SDDOT	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
			Sheet 1 of 1

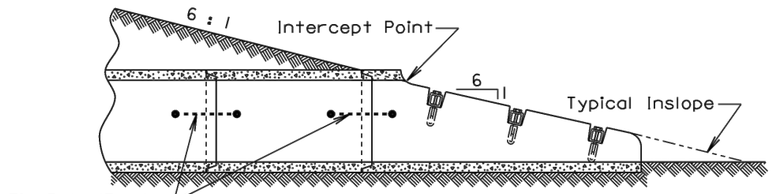


TOP VIEW

If bars are specified in the plans then provide HSS 2.5X2.5X.1875 Structural Steel Tubing in conformance with ASTM A500, Grade B or 3" Diameter Schedule 40 Pipe in conformance with ASTM A53, Grade B.



SIDE VIEW



ELEVATION VIEW

Dia. (in.)	T (in.)	R (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	No. Sections	No. Bars
FOR CIRCULAR PIPE										
15	2 1/4	3	6	48	9	57	6	18	1	3
18	2 1/2	3	6	69	9	78	9	24	1	3
*24	3	3	6	111	9	120	6	24	1 or 2	5
FOR ARCH PIPE										
**18	2 1/2	1	6	39	33	72	6	24	1	2

*The use of 2 sections must be an approved design.
**Equivalent Diameter of Circular R. C. P.

GENERAL NOTES:

The length of concrete pipe shown on the plans is between safety ends.

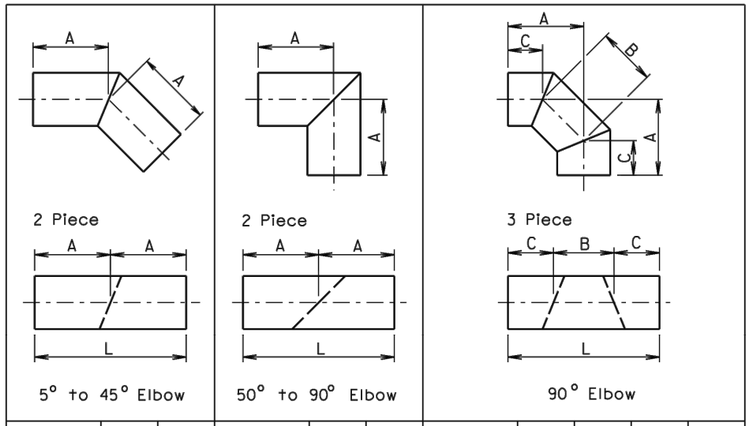
Safety ends without bars are acceptable with or without the bar notches.

Bars shall be galvanized after fabrication in accordance with ASTM A123.

August 31, 2013

Published Date: 2024	SDDOT	R. C. P. SAFETY ENDS WITH OR WITHOUT BARS	PLATE NUMBER 450.12
			Sheet 1 of 1

FOR BIDDING PURPOSES ONLY



Diameter	A	L	Diameter	A	L	Diameter	A	B	C	L
Inches	Feet	Feet	Inches	Feet	Feet	Inches	Inches			Feet
12	1	2	12	2	4	12	25½	11	18½	4
15	1	2	15	2	4	15	26½	12	18	4
18	1	2	18	2	4	18	27	14	17	4
21	2	4	21	2	4	21	27	15	16½	4
24	2	4	24	2	4	24	27½	16	16	4
27	2	4	27	2	4	27	27½	17	15½	4
30	2	4	30	3	6	30	40	19	26½	6
33	2	4	33	3	6	33	40	20	26	6
36	2	4	36	3	6	36	40½	21	25½	6
42	2	4	42	3	6	42	41	23	24½	6
48	2	4	48	4	8	48	53½	26	35	8
54	3	6	54	4	8	54	54	28	34	8
60	3	6	60	4	8	60	54½	31	32½	8
66	3	6	66	4	8	66	54	33	31½	8
72	3	6	72	5	10	72	67½	36	42	10
78	3	6	78	5	10	78	68	39	40½	10
84	3	6	84	5	10	84	68½	41	39½	10
90	3	6	90	6	12	90	70	46	37	10
96	3	6	96	6	12	96	82	46	49	12

FABRICATED ELBOW LENGTHS FOR ALL CORRUGATIONS

GENERAL NOTES:

All dimensions shown are nominal.

L = Linear Feet of C.M.P. required to fabricate fitting.

June 26, 2001

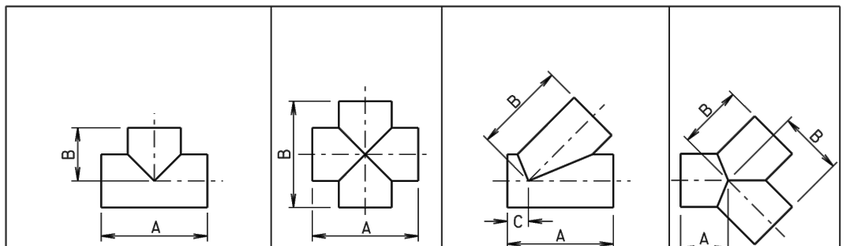
Published Date: 2024

SDDOT

C.M.P. FABRICATED LENGTHS FOR ELBOWS

PLATE NUMBER
450.32

Sheet 1 of 1



	Tee			Cross			45° Lateral				45° Wye		
Diameter	A	B	L	A	B	L	A	B	C	L	A	B	L
Inches	Feet			Feet			Feet		Inches	Feet	Feet		
12	4	2	6	4	4	8	4	2	17	6	2	2	6
15	4	2	6	4	4	8	4	4	18	8	2	2	6
18	4	2	6	4	4	8	4	4	13	8	2	2	6
21	4	2	6	4	4	8	6	4	22	10	2	2	6
24	4	2	6	4	4	8	6	4	23	10	2	2	6
27	4	2	6	4	4	8	6	4	20	10	2	2	6
30	4	2	6	4	4	8	6	4	21	10	2	2	6
33	6	4	10	6	6	12	6	6	19	12	2	3	8
36	6	4	10	6	6	12	8	6	19	14	2	3	8
42	6	4	10	6	6	12	8	6	21	14	2	3	8
48	6	4	10	6	6	12	10	8	28	18	2	3	8
54	6	4	10	6	6	12	10	8	23	18	4	4	12
60	8	4	12	8	8	16	12	10	30	22	4	4	12
66	8	4	12	8	8	16	12	10	32	22	4	4	12
72	8	4	12	8	8	16	14	10	45	24	4	5	14
78	10	6	16	10	10	20	14	10	46	24	4	5	14
84	10	6	16	10	10	20	16	12	47	28	4	5	14
90	10	6	16	10	10	20	16	12	49	28	4	5	14
96	10	6	16	10	10	20	16	12	50	28	4	6	16

FABRICATED LENGTHS FOR TEES, CROSSES, AND WYES FOR ALL CORRUGATIONS

GENERAL NOTES:

All dimensions shown are nominal.

L = Linear Feet of C.M.P. required to fabricate fitting.

June 26, 2001

Published Date: 2024

SDDOT

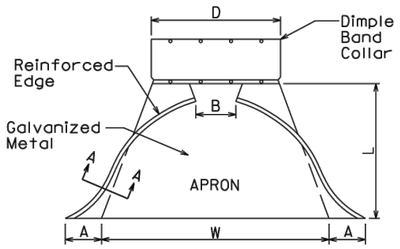
C.M.P. FABRICATED LENGTHS FOR TEES, CROSSES, AND WYES

PLATE NUMBER
450.33

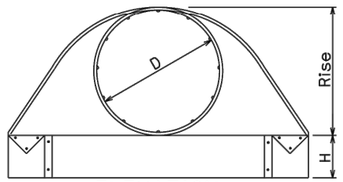
Sheet 1 of 1

FOR BIDDING PURPOSES ONLY

Alternate Type Connector Sections may be used with approval of the Engineer.



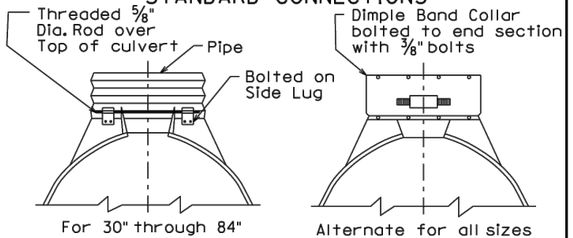
PLAN

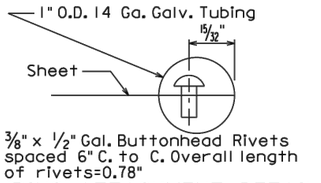


ELEVATION

Dia. D (In.)	Ga.	DIMENSIONS (In.) A	B	H	L	W	Approx. Slope	Body
12	16	6	6	6	21	24	2½:1	1 Pc.
15	16	7	8	6	26	30	2½:1	1 Pc.
18	16	8	10	6	31	36	2½:1	1 Pc.
21	16	9	12	6	36	42	2½:1	1 Pc.
24	16	10	13	6	41	48	2½:1	1 Pc.
30	14	12	16	8	46	60	2½:1	1 Pc.
36	14	14	19	9	51	72	2½:1	2 Pc.
42	12	16	22	11	60	84	2½:1	2 Pc.
48	12	18	27	12	69	90	2¼:1	2 Pc.
54	12	18	30	12	78	102	2:1	3 Pc.
60	12	18	33	12	84	114	1¾:1	3 Pc.
66	12	18	36	12	87	120	1½:1	3 Pc.
72	12	18	39	12	87	126	1⅓:1	3 Pc.
78	12	18	42	12	87	132	1¼:1	3 Pc.
84	12	18	45	12	87	138	1⅙:1	3 Pc.

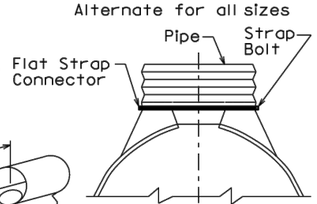
STANDARD CONNECTIONS

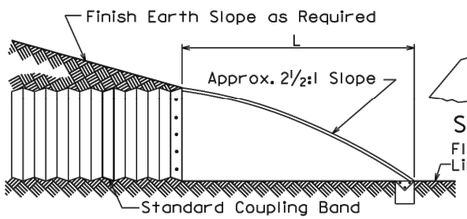




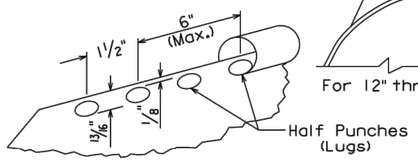
TUBING ATTACHMENT DETAILS
SECTION A-A

NOTE:
Tubing is slipped over the sheet and rivets or lugs prior to forming operations of the apron.

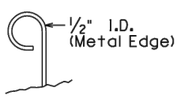




TYPICAL CROSS-SECTION



SECTION A-A (alternate)



SECTION A-A (alternate)

GENERAL NOTES:

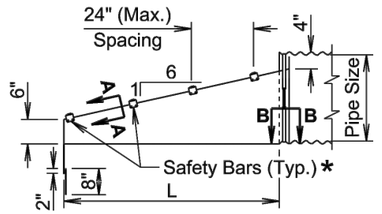
All 3 pc. bodies shall have 12 Ga. sides and 10 Ga. center panels. Width of center panels shall be greater than 20% of the pipe periphery. Multiple panel bodies to have lap seams tightly joined by ⅜" Dia. galvanized rivets or bolts.

For 60" through 84" sizes, reinforced edges shall be supplemented with galvanized stiffener angles. The angles will be 2" x 2" x ¼" for 60" through 72" diameters and 2½" x 2½" x¼" for 78" and 84" diameters. The angles shall be attached by ⅜" diameter galvanized nuts and bolts.

Rivets and Bolts shall be ⅜" Dia. Min. for 10 Ga. and 12 Ga. sheet, and 5/16" Dia. Min. for 14 Ga. and 16 Ga. sheets. Tighten nuts with torque wrench to 25 lbs. torque.

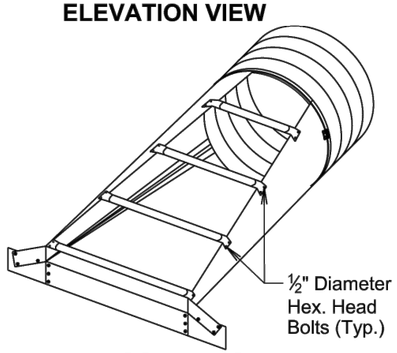
March 31, 2000

Published Date: 2024	SDDOT	C.M.P. FLARED ENDS	PLATE NUMBER 450.35
			Sheet 1 of 1

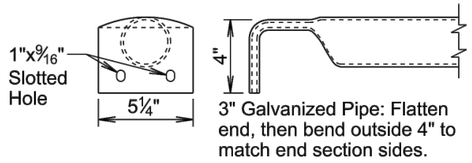


*Number of bars required will vary depending on the length of the end section.

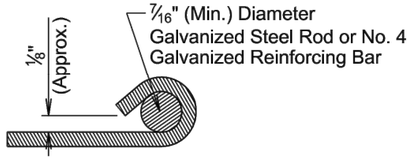
ELEVATION VIEW



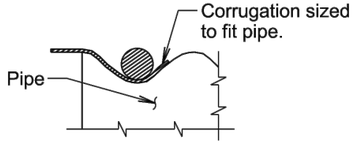
ISOMETRIC VIEW



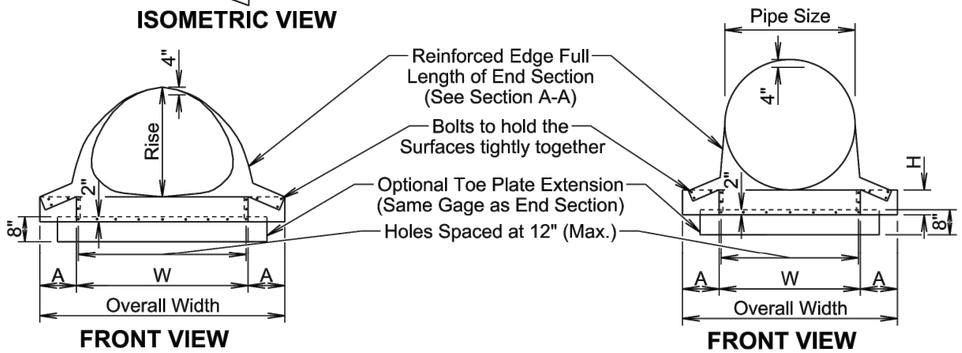
DETAIL OF SAFETY BARS



SECTION A-A

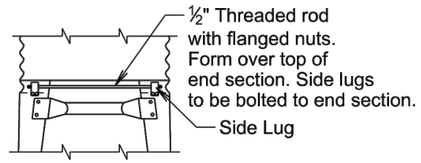


SECTION B-B

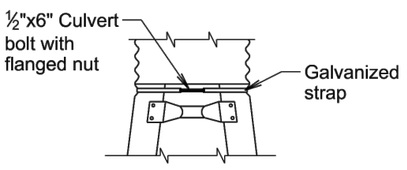


FRONT VIEW

FRONT VIEW



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



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

August 31, 2022

Published Date: 2024	SDDOT	C.M.P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 1 of 2

FOR BIDDING PURPOSES ONLY

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

CIRCULAR C.M.P. SAFETY ENDS								
Pipe Dia. (Inch)	(Min.) Thick.		Dimensions (Inches)				L Dimensions	
	Inch	Gage	A	H	W	Overall Width	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.

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.

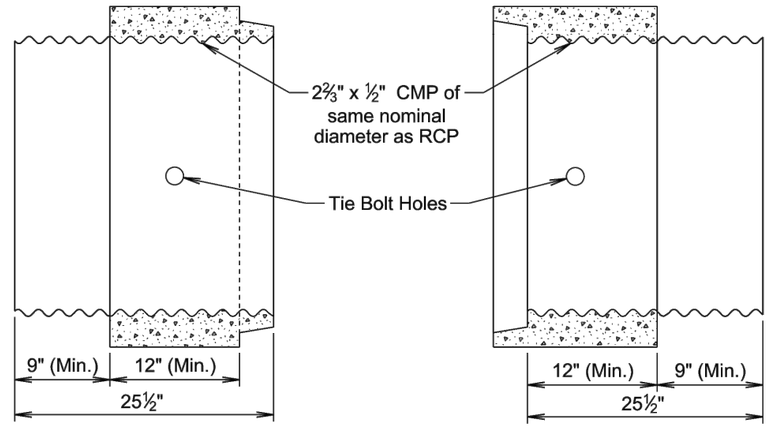
When stated in the plans, optional toe plate extension will be punched and bolted to end section apron lip with ⅜" diameter galvanized bolts. Steel for toe plate extension will be same gauge as end section. Dimensions will be overall width less 6" by 8" high.

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.

August 31, 2022

Published Date: 2024	SDDOT	C.M.P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 2 of 2



INLET
(CMP to RCP Transition)

OUTLET
(RCP to CMP Transition)

GENERAL NOTE:

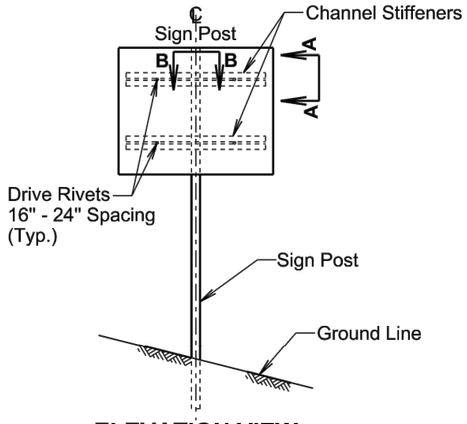
Arch pipe transitions will be fabricated similar to the round transition shown above.

All pipe transitions will be precast as shown. Alternate designs other than shown will need to be approved by the Engineer.

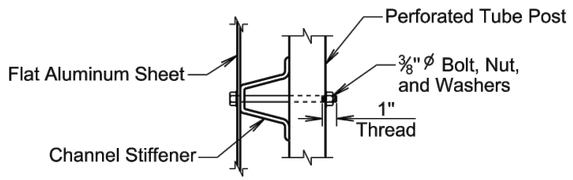
November 19, 2022

Published Date: 2024	SDDOT	C.M.P. TO R.C.P. TRANSITION AND R.C.P. TO C.M.P. TRANSITION	PLATE NUMBER 450.50
			Sheet 1 of 1

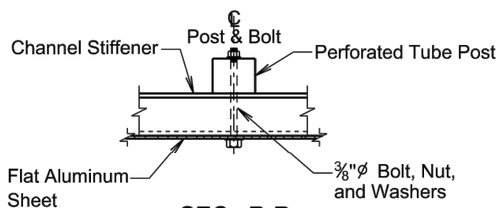
FOR BIDDING PURPOSES ONLY



ELEVATION VIEW
(One post breakaway sign supports.)



SEC. A-A

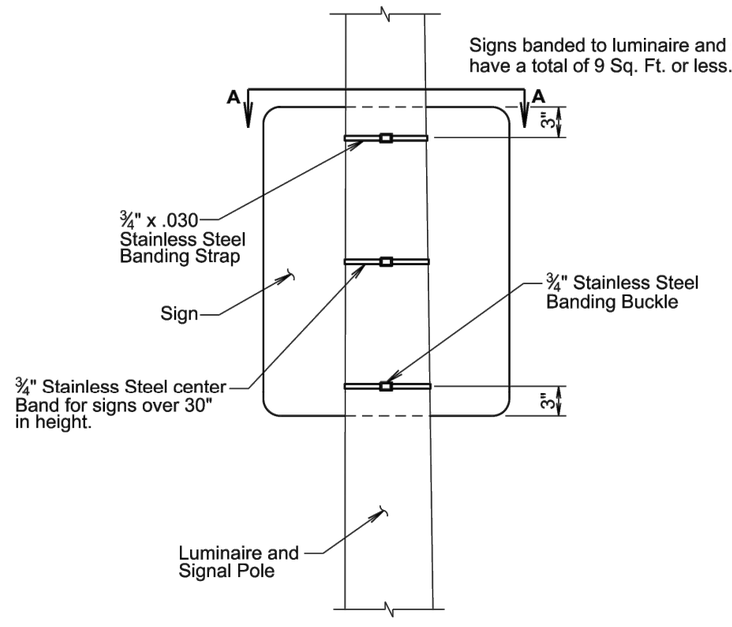


SEC. B-B
(Typical sign and stiffener details.)

ø A plastic washer, as recommended by the sheeting manufacturer, will be installed between the sign face and the metal washer shown.

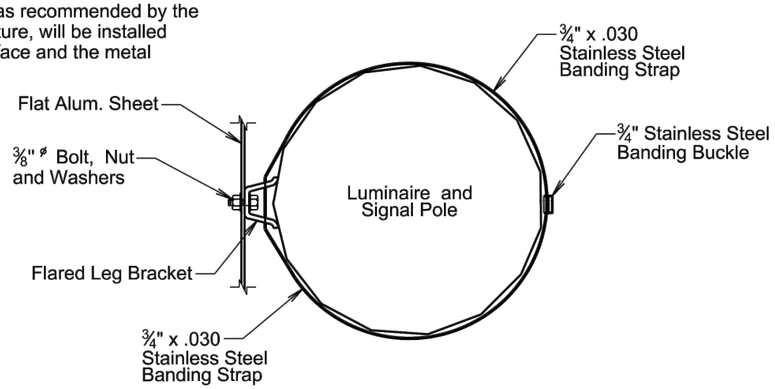
November 19, 2020

Published Date: 2024	SDDOT	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
			Sheet 1 of 2



Back View

ø A plastic washer, as recommended by the sheeting manufacture, will be installed between the sign face and the metal washer shown.

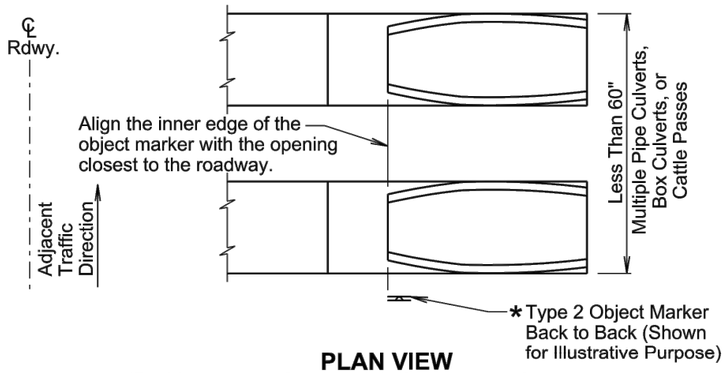


View A - A

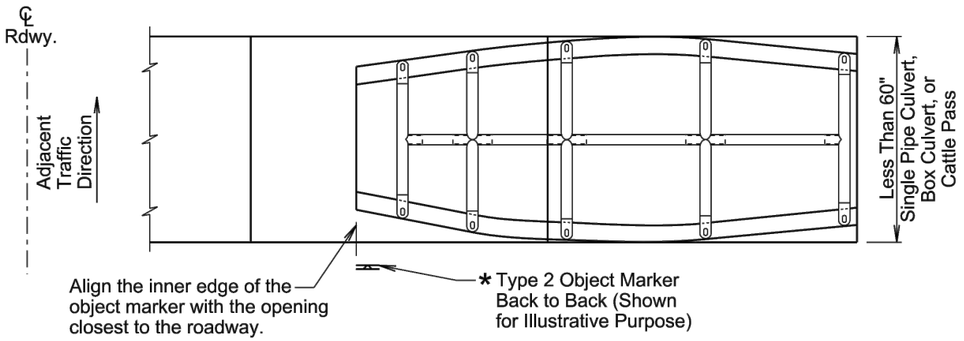
November 19, 2020

Published Date: 2024	SDDOT	BANDING SIGN TO LUMINAIRE AND SIGNAL POLE	PLATE NUMBER 632.80
			Sheet 1 of 1

FOR BIDDING PURPOSES ONLY



PLAN VIEW
(For Multiple Pipe Culverts, Box Culverts, and Cattle Passes)
(Pipe culverts shown for illustrative purpose.)
(Embankment is not shown.)



PLAN VIEW
(For Single Pipe Culvert, Box Culvert, and Cattle Pass)
(Pipe culvert shown for illustrative purpose.)
(Embankment is not shown.)

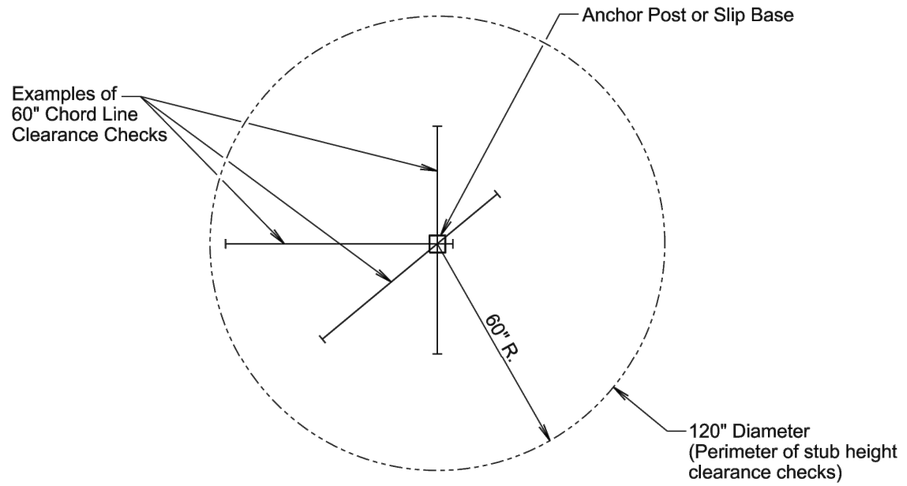
GENERAL NOTES:

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

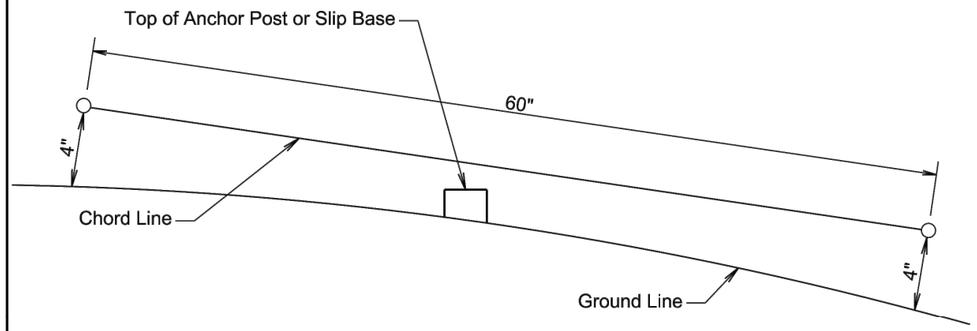
* The type 2 object markers will be installed at the locations shown above. The type 2 object markers, single faced or back to back, will be as specified in the plans.

December 23, 2019

Published Date: 2024	SDDOT	TYPE 2 OBJECT MARKER AT PIPE CULVERTS, BOX CULVERTS, AND CATTLE PASSES (Less than 60" Overall Width)	PLATE NUMBER 632.03
			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.

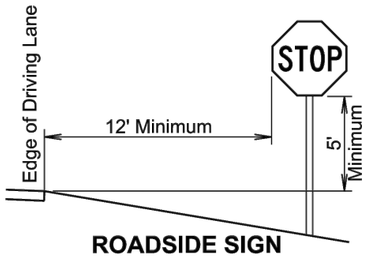
January 22, 2021

Published Date: 2024	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 632.18
			Sheet 1 of 1

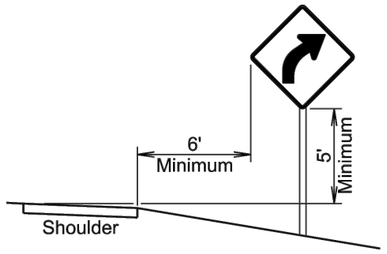
State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	81	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

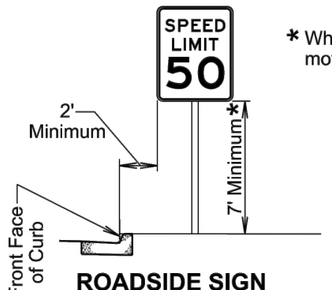
FOR BIDDING PURPOSES ONLY



ROADSIDE SIGN IN RURAL AREA

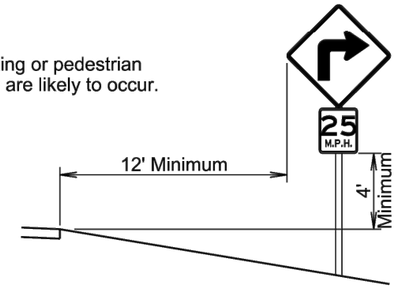


ROADSIDE SIGN IN RURAL AREA
(If shoulder width is greater than 6 foot)

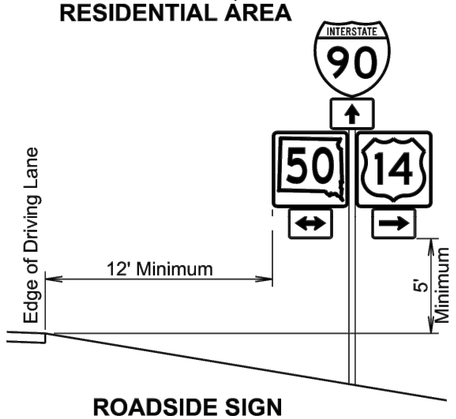


ROADSIDE SIGN IN BUSINESS, COMMERCIAL, OR RESIDENTIAL AREA

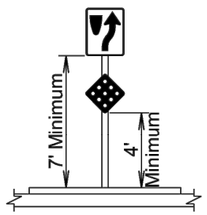
* Where parking or pedestrian movements are likely to occur.



WARNING SIGN ADVISORY SPEED PLAQUE IN RURAL AREA



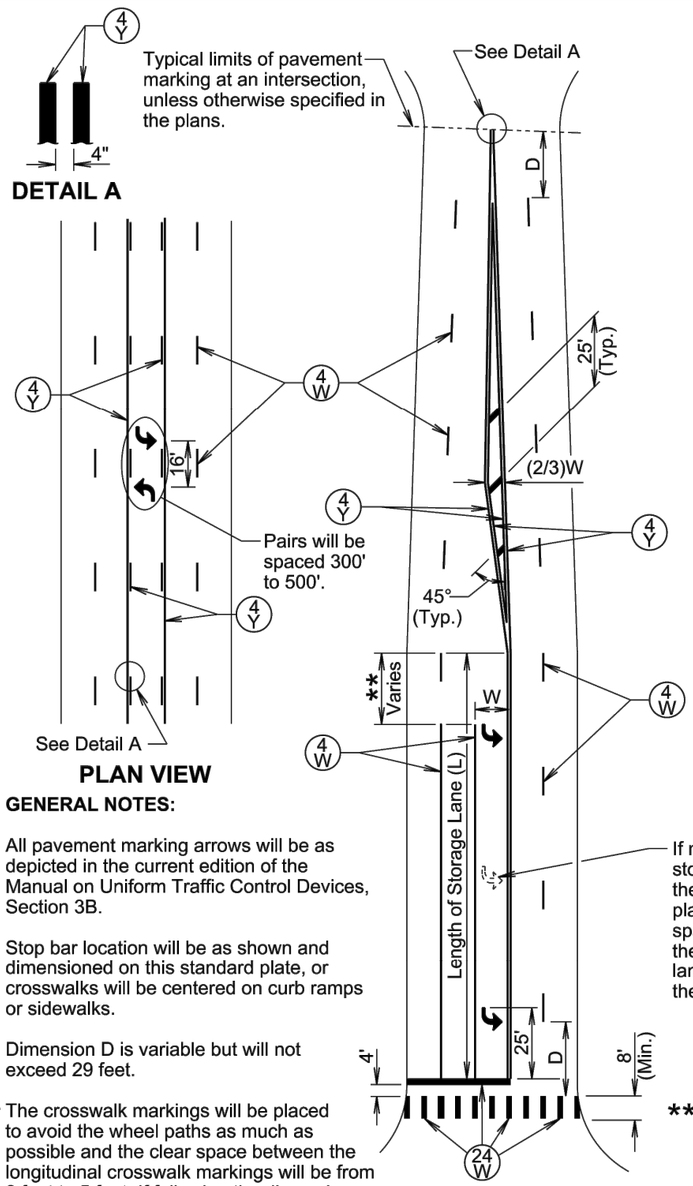
ROADSIDE SIGN IN RURAL AREA



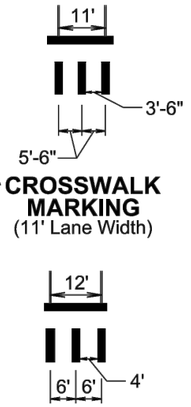
SIGN ON NOSE OF MEDIAN

November 19, 2020

Published Date: 2024	SDDOT	OFFSETS FOR SIGN INSTALLATION	PLATE NUMBER 632.90
			Sheet 1 of 1



KEY	ITEM
4W	4" White
4Y	4" Yellow
12W	12" White
24W	24" White
24Y	24" Yellow
	Arrow



***CROSSWALK MARKING**
(11' Lane Width)

***CROSSWALK MARKING**
(12' Lane Width)

GENERAL NOTES:

All pavement marking arrows will be as depicted in the current edition of the Manual on Uniform Traffic Control Devices, Section 3B.

Stop bar location will be as shown and dimensioned on this standard plate, or crosswalks will be centered on curb ramps or sidewalks.

Dimension D is variable but will not exceed 29 feet.

* The crosswalk markings will be placed to avoid the wheel paths as much as possible and the clear space between the longitudinal crosswalk markings will be from 2 feet to 5 feet. If following the dimensions shown, crosswalk markings will begin on a lane line or centerline.

If more than 2 arrows per storage lane are shown, then the additional arrows will be placed at approximately equal spaces between the arrow at the beginning of the storage lane and the arrow nearest the stop bar.

** The length of the gap will be as shown elsewhere in the plans.

September 22, 2021

Published Date: 2024	SDDOT	PAVEMENT MARKINGS FOR ADJACENT INTERSECTIONS AND CENTER TURN LANE	PLATE NUMBER 633.01
			Sheet 1 of 1

FOR BIDDING PURPOSES ONLY

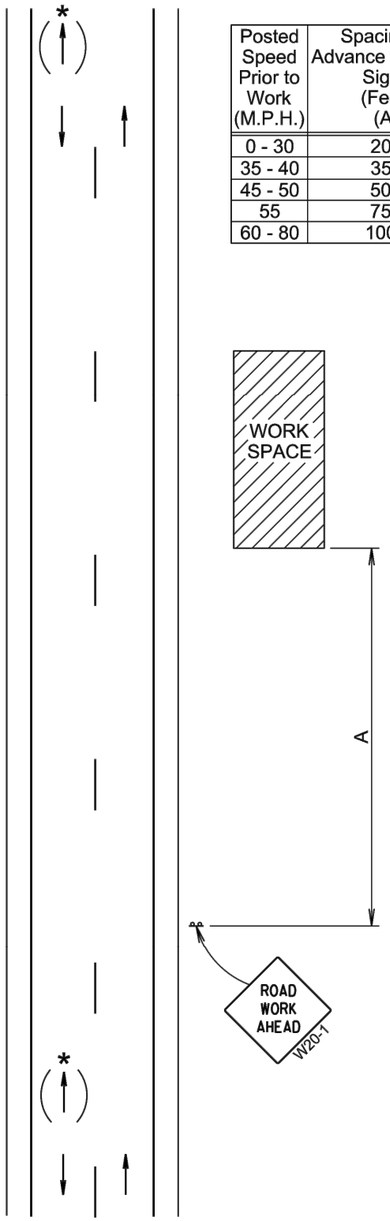
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated will be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

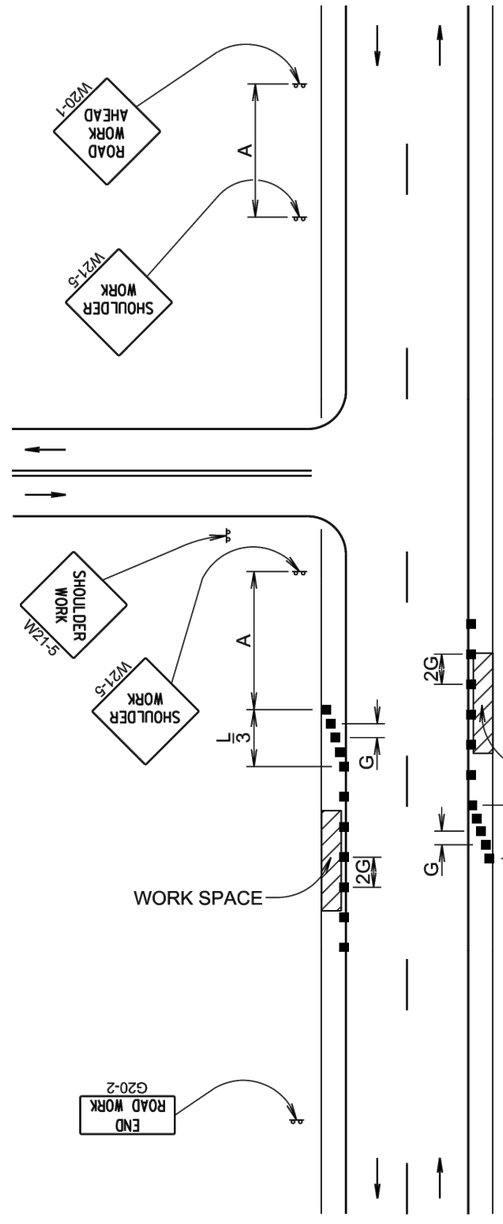
For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



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 - 80	1000

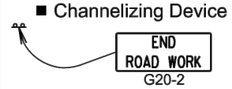
January 22, 2021

Published Date: 2024	SDDOT	WORK BEYOND THE SHOULDER	PLATE NUMBER 634.01
			Sheet 1 of 1



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device



The channelizing devices will be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

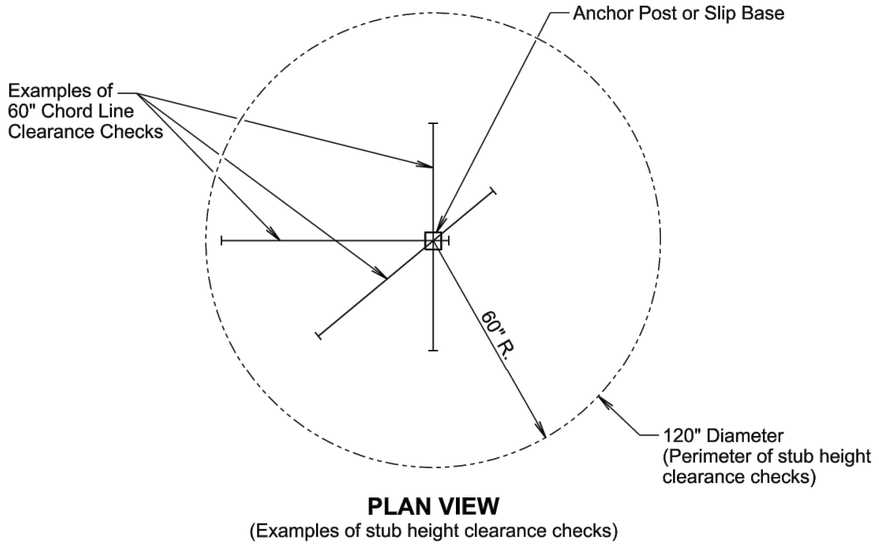
A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

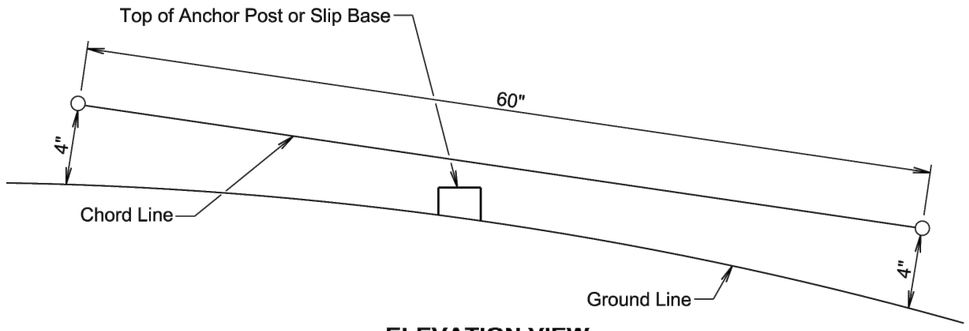
January 22, 2021

Published Date: 2024	SDDOT	WORK ON SHOULDERS	PLATE NUMBER 634.03
			Sheet 1 of 1

FOR BIDDING PURPOSES ONLY



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

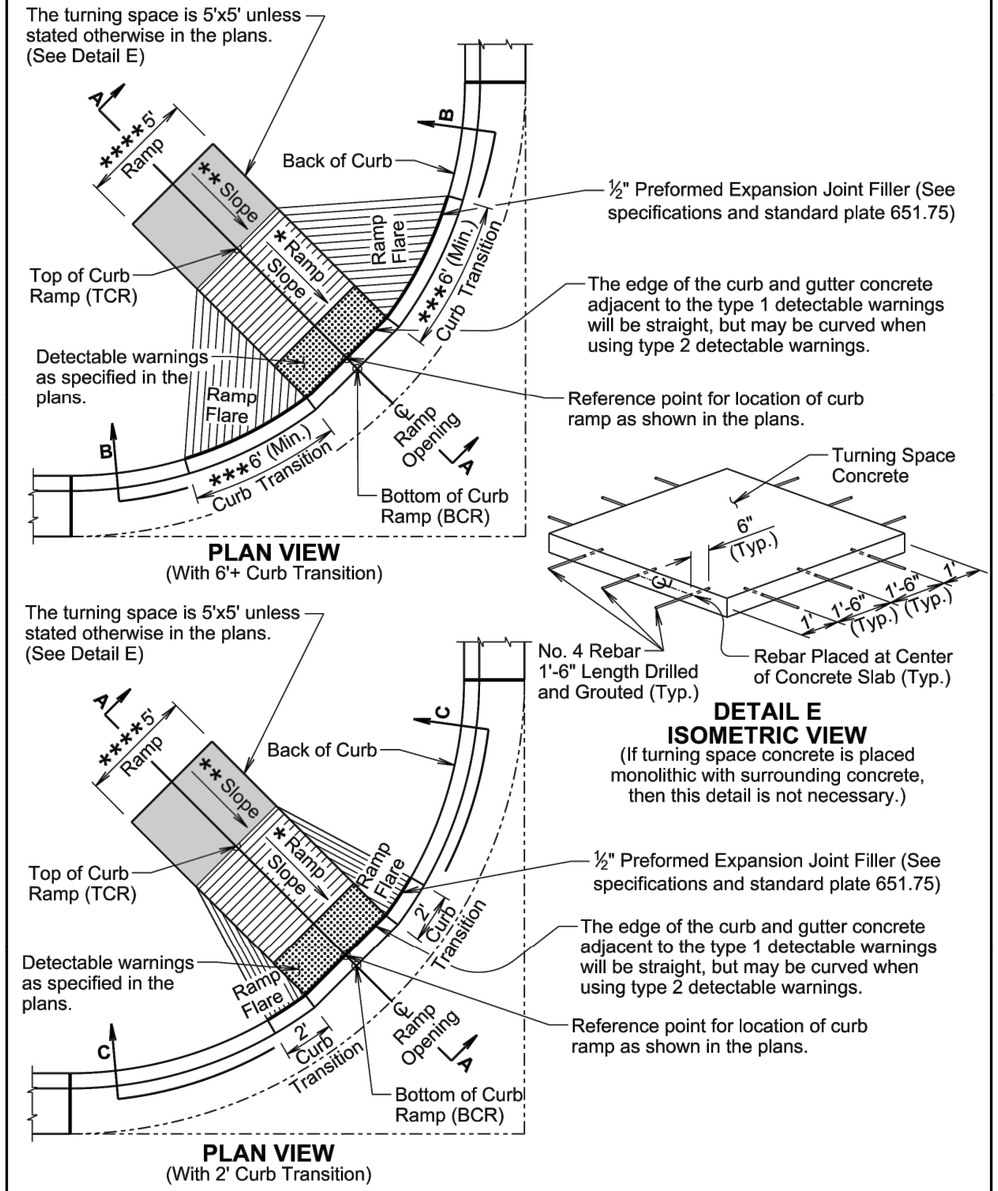
The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

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: 2024	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1



PLAN VIEW
(With 6'+ Curb Transition)

DETAIL E
ISOMETRIC VIEW
(If turning space concrete is placed monolithic with surrounding concrete, then this detail is not necessary.)

PLAN VIEW
(With 2' Curb Transition)

February 14, 2020

Published Date: 2024	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 1 of 3

Curb ramp slopes are designed at 7.5% unless stated otherwise in the plans. The curb ramp may have a maximum slope of 8.3% and will not exceed 15' in length unless stated otherwise in the plans.

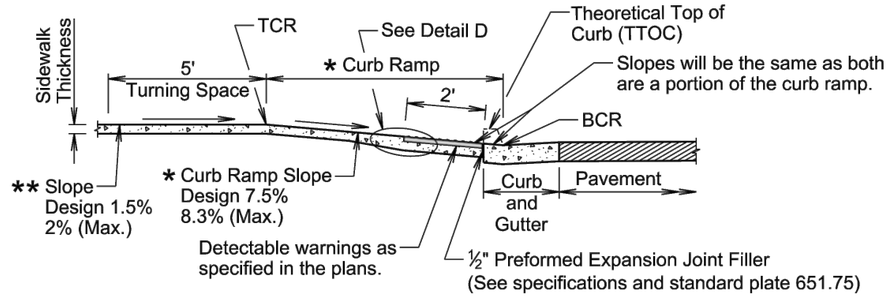
The curb ramp length may be computed based on the intersection of a continuous 1.5% theoretical slope from theoretical top of curb (TTOC) with the curb ramp using a continuous 7.5% curb ramp slope. The * elevation of point TCR will always be higher than the elevation of point TTOC unless specified otherwise in the plans. The curb ramp length dimension as shown in the plans will be adjusted as necessary to meet all slope and length requirements based on field geometrics.

The cross slope of the ramp will not be steeper than 2%. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

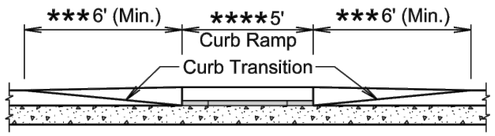
** The slope in the turning space will not be steeper than 2% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

*** The curb transition will be a minimum of 6' long, a maximum of 10' long, and the curb transition slope will not be steeper than 10% unless stated otherwise in the plans. The curb transition length will be adjusted as necessary to meet slope and length requirements based on field geometrics.

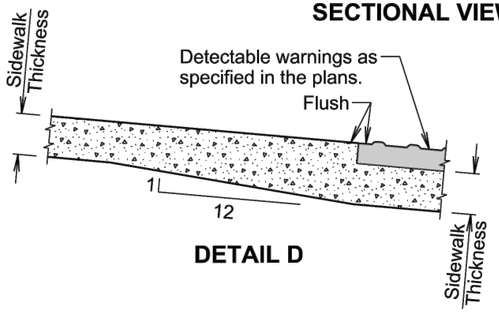
**** The ramp width is 5' unless stated otherwise in the plans.



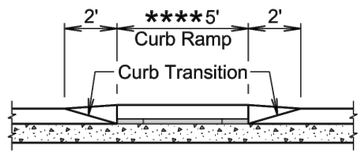
SECTION A-A



SECTIONAL VIEW B-B



DETAIL D



SECTIONAL VIEW C-C

February 14, 2020

Published Date: 2024	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 2 of 3

GENERAL NOTES:

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

For illustrative purpose only, PCC fillet sections are shown in the drawings. The curb ramp depicted on this standard plate may be used with a PCC fillet section or curb and gutter.

For illustrative purpose only, the curb ramp location is shown at the center of a PCC fillet section. The curb ramp will be placed at the location stated in the plans.

Sidewalk will not be placed adjacent to the curb ramp flares when a 2-foot curb transition is used unless shown otherwise in the plans.

* Care will be taken to ensure a uniform grade on the curb ramp, free of sags and short grade changes.

Surface texture of the curb ramp will be obtained by coarse brooming transverse to the slope of the curb ramp.

The normal gutter line profile will be maintained through the area of the ramp opening.

Joints will be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking.

Care will be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

The detectable warnings will be cut as necessary to fit the plan specified limits of the detectable warnings. Cost for cutting the detectable warnings will be incidental to the corresponding detectable warning contract item.

There will be no separate payment for curb ramps. The curb ramp will be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk contract item. The square foot area of the detectable warnings will be included in the measured and paid for quantity of sidewalk.

If rebar is placed in the turning space as depicted in detail E, the cost of the materials, labor, and equipment to furnish and install the rebar will be incidental to the contract unit price per square foot for the corresponding concrete sidewalk contract item.

The curb transitions and ramp opening will be measured and paid for at the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used. The curb transitions and ramp opening will be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section contract item when a PCC fillet section is used.

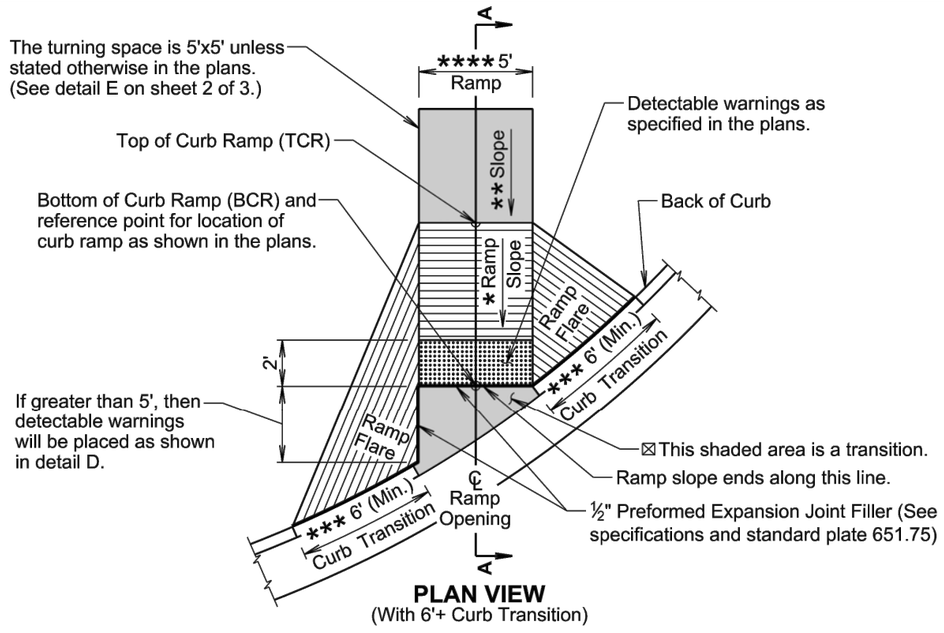
The type 1 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals will be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

The type 2 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding will be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

February 14, 2020

Published Date: 2024	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 3 of 3

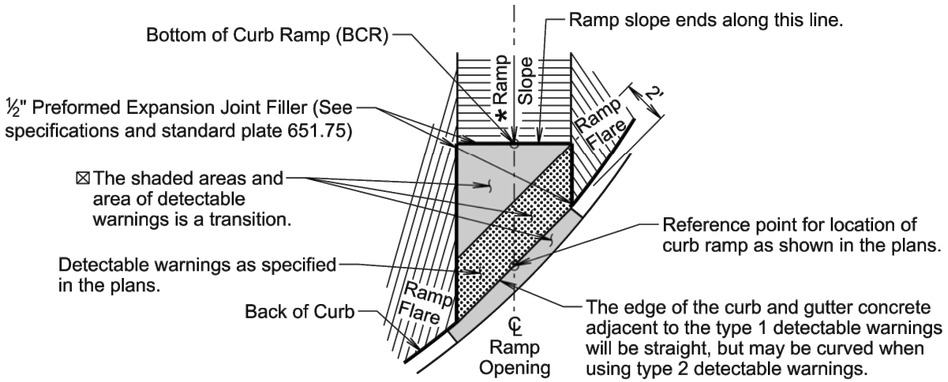
FOR BIDDING PURPOSES ONLY



PLAN VIEW
(With 6'+ Curb Transition)

☒The slope within the transition area will not be steeper than 5%. The concrete within the transition will be placed monolithic with the curb and gutter or fillet section concrete. The concrete thickness within the transition will be the same as the curb and gutter or fillet section concrete thickness.

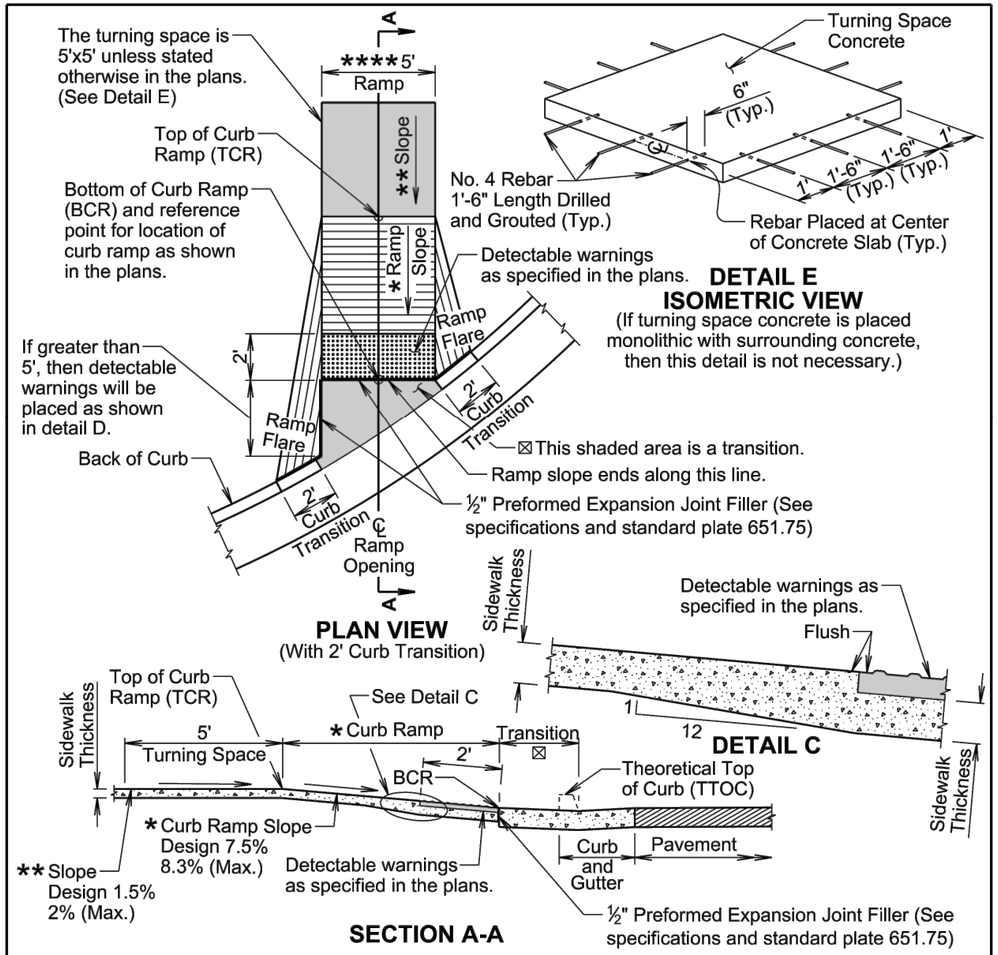
*** The curb transition will be a minimum of 6' long, a maximum of 10' long, and the curb transition slope will not be steeper than 10% unless stated otherwise in the plans. The curb transition length will be adjusted as necessary to meet slope and length requirements based on field geometrics.



DETAIL D

February 14, 2020

Published Date: 2024	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02
			Sheet 1 of 3



Curb ramp slopes are designed at 7.5% unless stated otherwise in the plans. The curb ramp may have a maximum slope of 8.3% and will not exceed 15' in length unless stated otherwise in the plans.

* The elevation of point TCR will always be higher than the elevation of point TTOC unless specified otherwise in the plans. The curb ramp length dimension as shown in the plans will be adjusted as necessary to meet all slope and length requirements based on field geometrics.

The cross slope of the ramp will not be steeper than 2%. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

** The slope in the turning space will not be steeper than 2% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

**** The ramp width is 5' unless stated otherwise in the plans.

February 14, 2020

Published Date: 2024	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02
			Sheet 2 of 3

FOR BIDDING PURPOSES ONLY

GENERAL NOTES:

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

The curb ramp depicted on this standard plate may be used with a PCC fillet section or curb and gutter. The curb ramp will be placed at the location stated in the plans.

Sidewalk will not be placed adjacent to the curb ramp flares when a 2-foot curb transition is used unless shown otherwise in the plans.

* Care will be taken to ensure a uniform grade on the curb ramp, free of sags and short grade changes.

Surface texture of the curb ramp will be obtained by coarse brooming transverse to the slope of the curb ramp.

The normal gutter line profile will be maintained through the area of the ramp opening.

Joints will be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking.

Care will be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

The detectable warnings will be cut as necessary to fit the plan specified limits of the detectable warnings. Cost for cutting the detectable warnings will be incidental to the corresponding detectable warning contract item.

There will be no separate payment for curb ramps. The curb ramp will be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk contract item. The square foot area of the detectable warnings will be included in the measured and paid for quantity of sidewalk.

If rebar is placed in the Turning Space as depicted in DETAIL E, the cost of the materials, labor, and equipment to furnish and install the rebar will be incidental to the contract unit price per square foot for the corresponding concrete sidewalk contract item.

The curb transitions and ramp opening will be measured and paid for at the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used. The curb transitions and ramp opening will be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section contract item when a PCC fillet section is used.

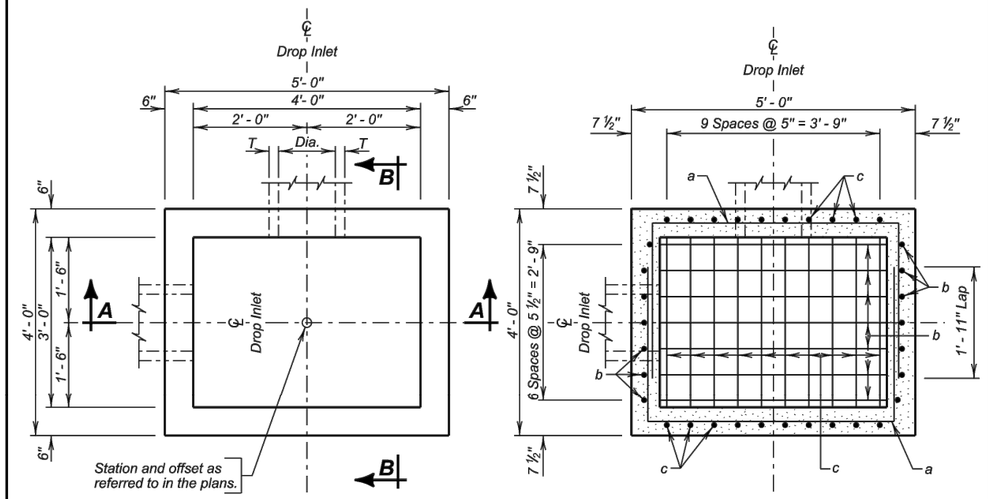
All costs for furnishing and installing the transition area at the base of the curb ramp will be incidental to the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used and will be incidental to the contract unit price per square yard for the corresponding PCC fillet section contract item when a PCC fillet section is used.

The type 1 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals will be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

The type 2 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding will be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

February 14, 2020

Published Date: 2024	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02
			Sheet 3 of 3



ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
⚹ Class M6 Concrete	Cu. Yd.	0.43	0.30H
Reinforcing Steel	Lb.	90.90	40.53H
Frame and Grate Assembly	Each	1	——

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

⚹ *Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.*

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

Maximum R.C.P. diameter shall not exceed 24 inches (24 inches for R. C. arch) on the 3-foot wide side and shall not exceed 36 inches (30 inches for R. C. arch) on the 4-foot wide side of the drop inlet.

The dimension of H is in feet. Maximum H is 10 feet.

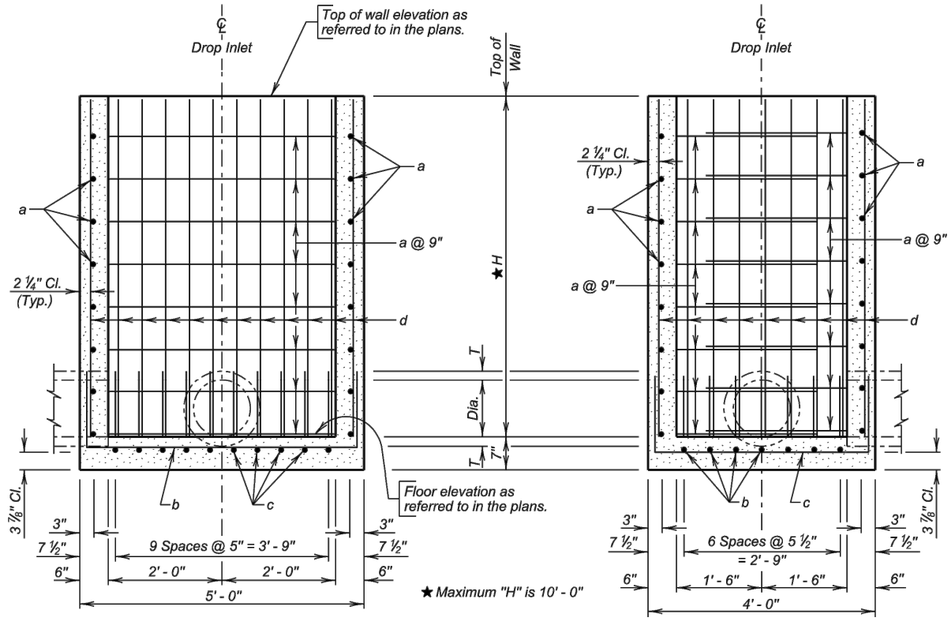
PIPE DISPLACEMENT REDUCTIONS

	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14

December 16, 2015

Published Date: 2024	SDDOT	3' X 4' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.10
			Sheet 1 of 2

FOR BIDDING PURPOSES ONLY



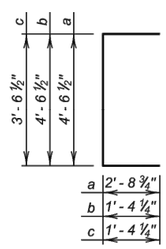
SEC. A - A

SEC. B - B

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	10' - 0"	17	
b	7	5	7' - 3"	17	
c	10	4	6' - 3"	17	
d	34	4	H - 2"	Str.	

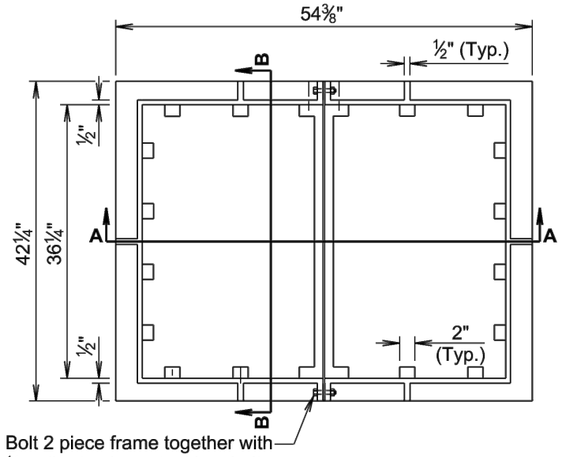
NOTE:
All dimensions are out to out of bars.



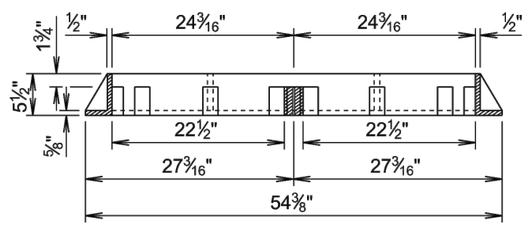
Type 17

December 16, 2015

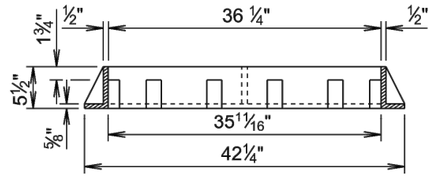
Published Date: 2024	SDDOT	3' X 4' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.10
			Sheet 2 of 2



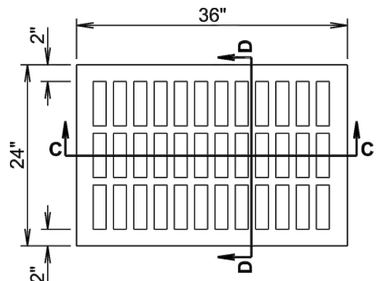
PLAN VIEW
(Frame)



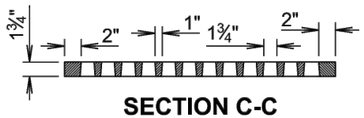
SECTION A-A



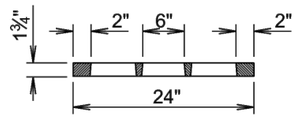
SECTION B-B



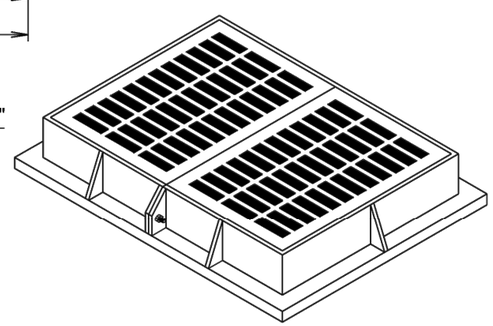
PLAN VIEW
(Grate)



SECTION C-C



SECTION D-D



ISOMETRIC VIEW

GENERAL NOTES:

The product dimensions may vary from those shown on the standard plate depending on the manufacturer. Grate size and configuration will be similar to the standard plate for hydraulic capacity. Any variation in dimensions will be approved by the Engineer and the type C frame and grate will be from a manufacturer on the approved products list.

Design load for the grate will meet the requirements of AASHTO HL-93.

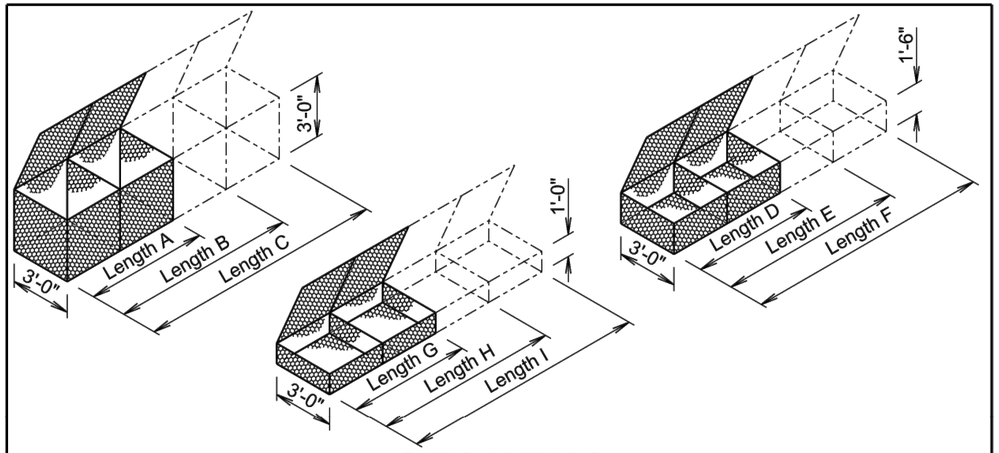
June 1, 2022

Published Date: 2024	SDDOT	TYPE C FRAME AND GRATE	PLATE NUMBER 670.82
			Sheet 1 of 1

FOR BIDDING PURPOSES ONLY

State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	88	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering



GABION DETAILS

STANDARD SIZES

SIZE	LENGTH	WIDTH	HEIGHT	NUMBER OF CELLS	CAPACITY (Cu. Yd.)
A	6'-0"	3'-0"	3'-0"	2	2.0
B	9'-0"	3'-0"	3'-0"	3	3.0
C	12'-0"	3'-0"	3'-0"	4	4.0
D	6'-0"	3'-0"	1'-6"	2	1.0
E	9'-0"	3'-0"	1'-6"	3	1.5
F	12'-0"	3'-0"	1'-6"	4	2.0
G	6'-0"	3'-0"	1'-0"	2	0.7
H	9'-0"	3'-0"	1'-0"	3	1.0
I	12'-0"	3'-0"	1'-0"	4	1.3

GENERAL NOTES: Above dimensions subject to mill tolerances.

Lacing and internal connecting wire will be 0.0866 inch diameter steel wire ASTM A641, Class 3 soft temper measured after galvanizing and for PVC coated gabions will be 0.0866 inch diameter steel wire measured after galvanizing but before PVC coating.

The lacing procedure is as follows:

1. Cut a length of lacing wire approximately 1½ times the distance to be laced but not exceeding 5 feet.
2. Secure the wire terminal at the corner by looping and twisting.
3. Proceed lacing with alternating single and double loops at a spacing not to exceed 6 inches.
4. Securely fasten the other lacing wire terminal.

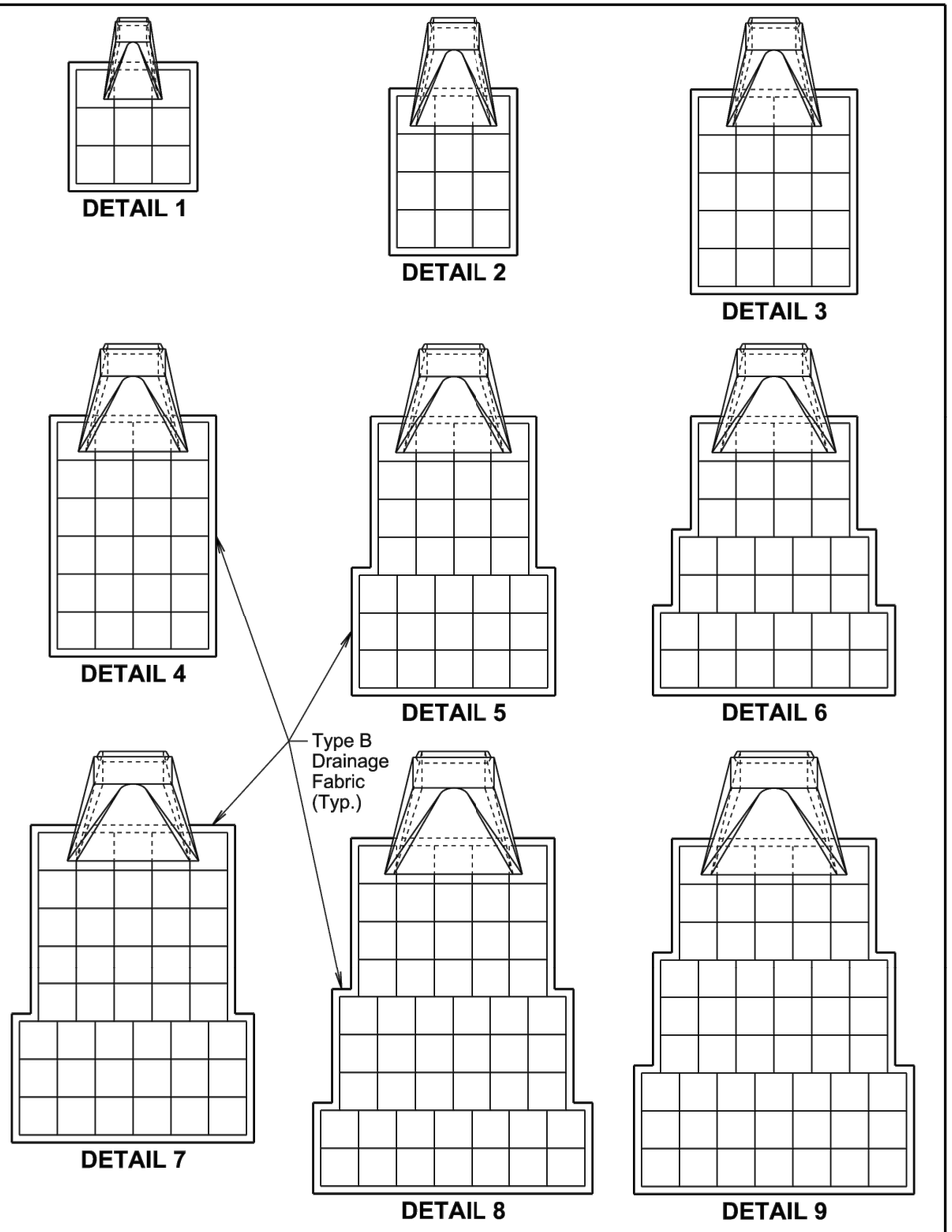
Wire lacing or interlocking type fasteners will be used for gabion assembly and final construction of gabion structures. Interlocking fasteners for galvanized gabions will be high tensile 0.120 inch diameter galvanized steel wire measured after galvanizing. The galvanizing will conform to ASTM A641-92, Class 3 coating. Fasteners will also be in accordance with ASTM A764, Class II, Type III.

Interlocking fasteners for PVC coated gabions will be high tensile 0.120 inch diameter stainless steel wire conforming to ASTM A313, Type 302, Class 1. The spacing of the interlocking fasteners during all phases of assembly and construction will not exceed 6 inches.

All fasteners will be placed where the mesh weaves around the selvage wire at the vertical and horizontal joints.

February 14, 2020

Published Date: 2024	SDDOT	BANK AND CHANNEL PROTECTION GABIONS	PLATE NUMBER 720.01
			Sheet 1 of 1



February 14, 2020

Published Date: 2024	SDDOT	BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS	PLATE NUMBER 720.03
			Sheet 1 of 2

FOR BIDDING PURPOSES ONLY

	Detail	Pipe Diameter (Inches)	Gabion (Cu. Yd.)	Type B Drainage Fabric (Sq. Yd.)
		* ESTIMATED QUANTITIES		
RCP, RCP Arch, CMP, and CMP Arch	1	12, 18, and 24	4.5	15
	2	30 and 36	6.0	19
	3	42	10.0	29
	4	48 and 54	12.0	34
	5	60	15.5	43
	6	66	17.0	47
	7	72	21.5	57
	8	78	26.0	68
	9	84	27.0	70

GENERAL NOTES:

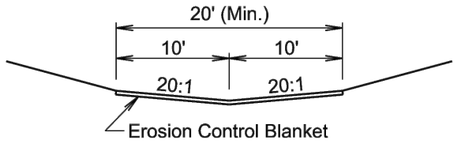
Gabions at outlets of CMP and RCP will be placed under the end section a distance of 2 feet from the outlet end. For CMP end section installations, the upper fabric of the gabions will be modified to accommodate the metal end section as approved by the Engineer.

* Gabion and type B drainage fabric quantities on this standard plate are based on standard gabion sizes D, E, and F as depicted on standard plate 720.01.

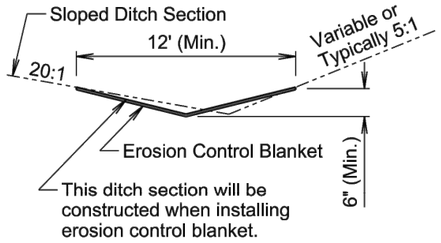
Type B drainage fabric will be placed under the gabions and around the exterior sides (perimeter) of the gabions as approved by the Engineer. The type B drainage fabric will be in conformance with Section 831 of the Specifications. Measurement and payment of the type B drainage fabric will be in conformance with Section 720 of the Specifications.

February 14, 2020

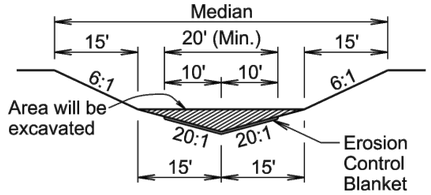
Published Date: 2024	SDDOT	BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS	PLATE NUMBER 720.03 Sheet 2 of 2



STANDARD DITCH SECTION

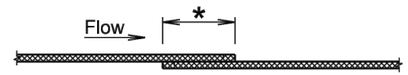


SLOPED DITCH SECTION



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

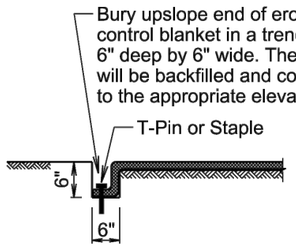
MEDIAN SECTION



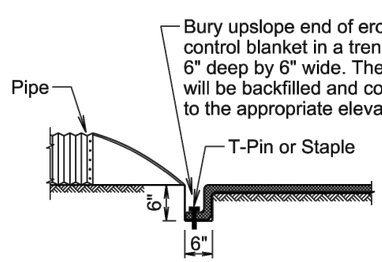
* Use a 4" (Min.) overlap wherever two widths of erosion control blanket are applied side by side.

* 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

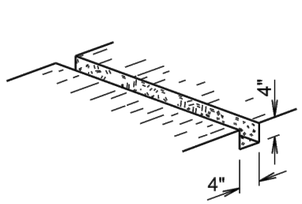
Published Date: 2024	SDDOT	EROSION CONTROL BLANKET	PLATE NUMBER 734.01 Sheet 1 of 1

FOR BIDDING PURPOSES ONLY

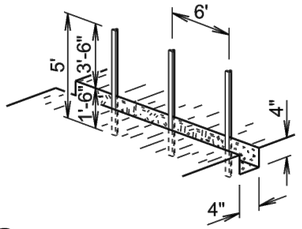
State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	90	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

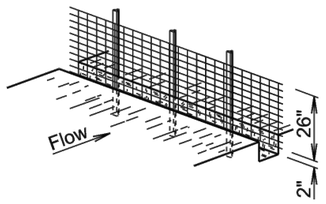
MANUAL LOW FLOW SILT FENCE INSTALLATION



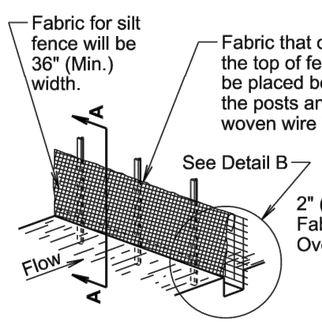
① EXCAVATE TRENCH



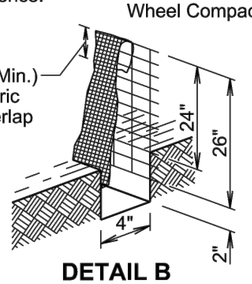
② DRIVE STEEL T FENCE POSTS



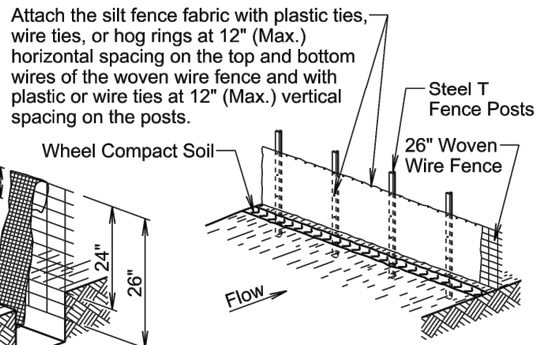
③ ATTACH 26" WOVEN WIRE FENCE TO POSTS



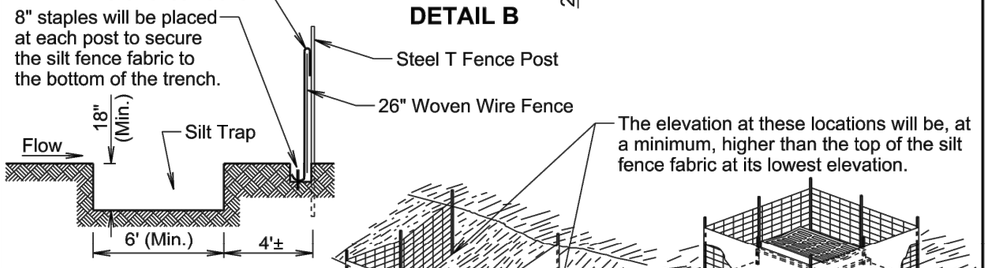
④ ATTACH SILT FENCE FABRIC



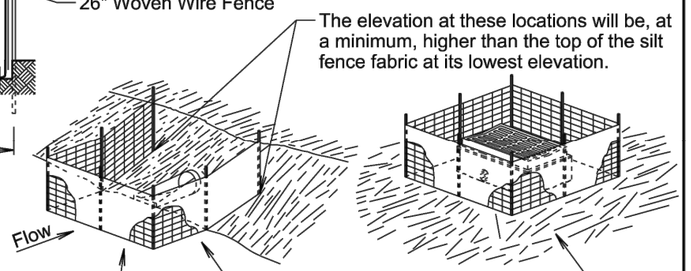
DETAIL B



⑤ BACKFILL TRENCH AND WHEEL COMPACT SOIL



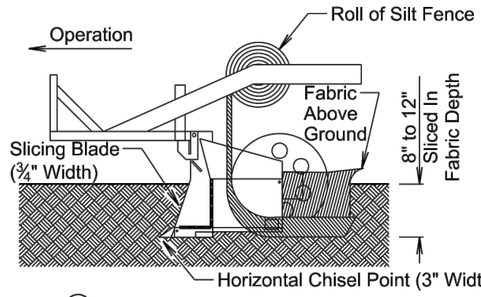
SECTION A-A



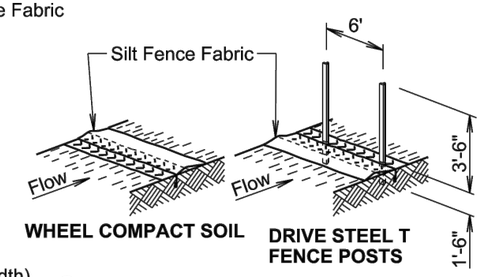
February 14, 2020

Published Date: 2024	SDDOT	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 1 of 2

MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



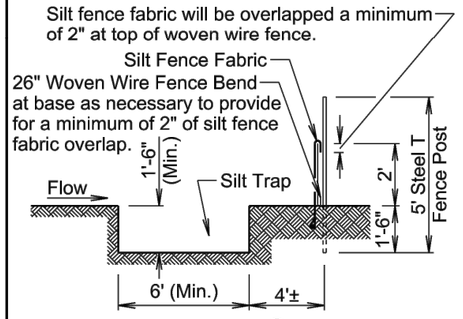
① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

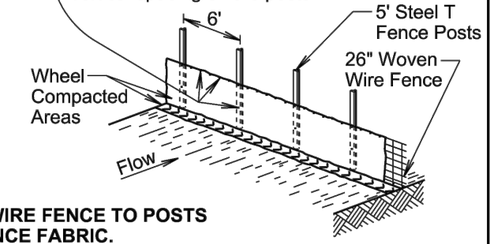


WHEEL COMPACT SOIL

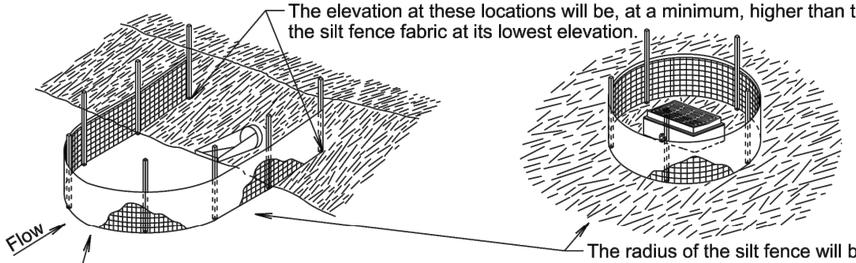
DRIVE STEEL T FENCE POSTS

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





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



GENERAL NOTES:

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

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

February 14, 2020

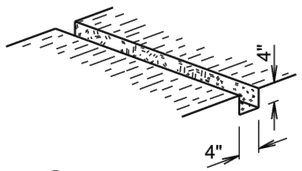
Published Date: 2024	SDDOT	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 2 of 2

FOR BIDDING PURPOSES ONLY

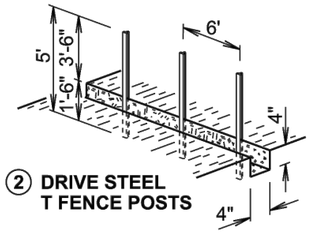
State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	91	120

Plotting Date: June 20, 2023
Prepared by FMG Engineering

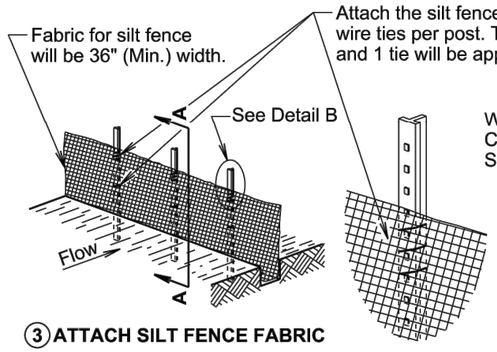
MANUAL HIGH FLOW SILT FENCE INSTALLATION



① EXCAVATE TRENCH

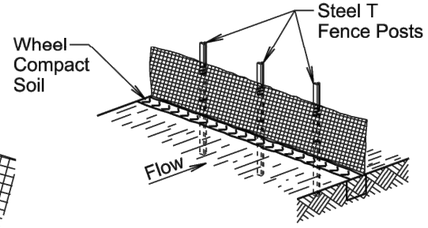


② DRIVE STEEL T FENCE POSTS

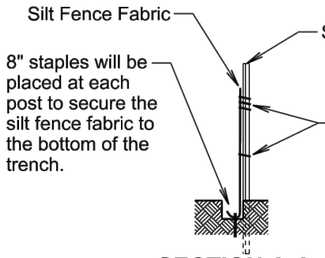


③ ATTACH SILT FENCE FABRIC

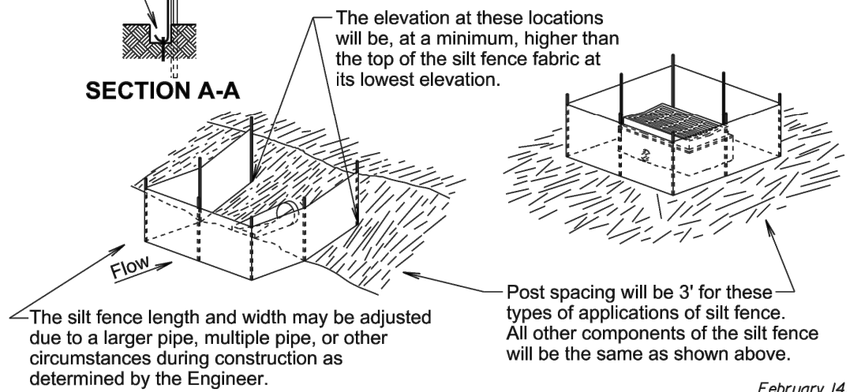
DETAIL B



④ BACKFILL TRENCH AND WHEEL COMPACT SOIL



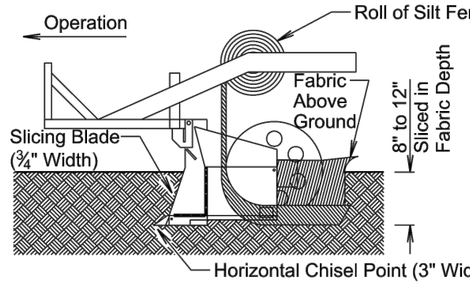
SECTION A-A



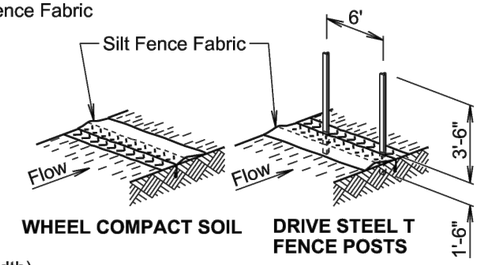
February 14, 2020

Published Date: 2024	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



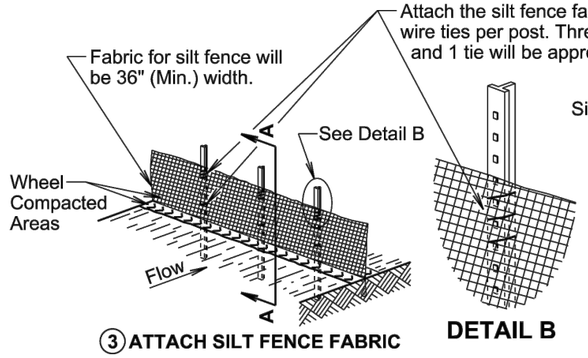
① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.



WHEEL COMPACT SOIL

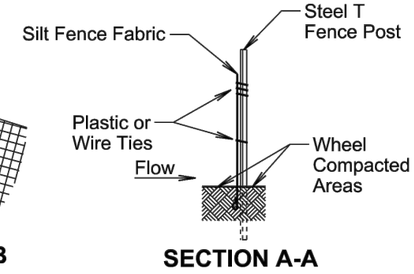
DRIVE STEEL T FENCE POSTS

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

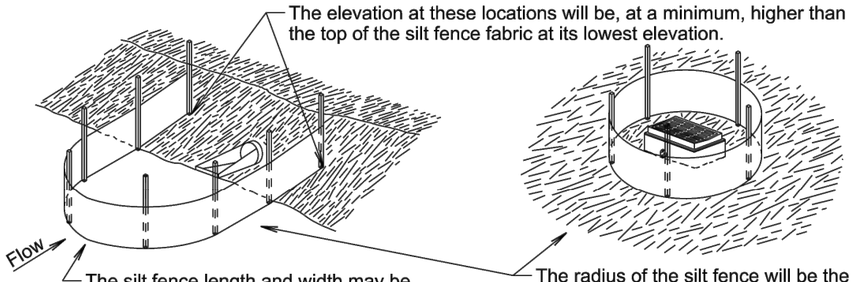


③ ATTACH SILT FENCE FABRIC

DETAIL B



SECTION A-A



GENERAL NOTE:

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

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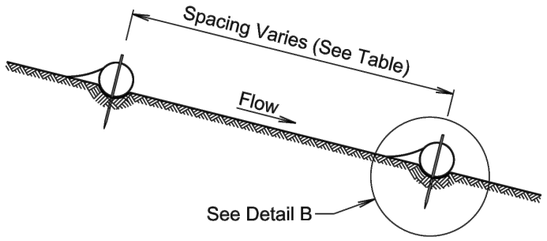
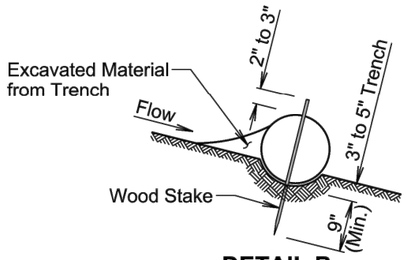
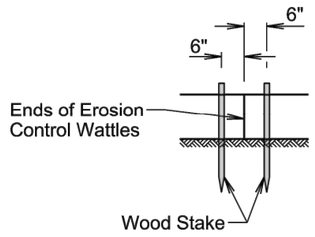


ELEVATION VIEW
(Cut or Fill Slope Installation)

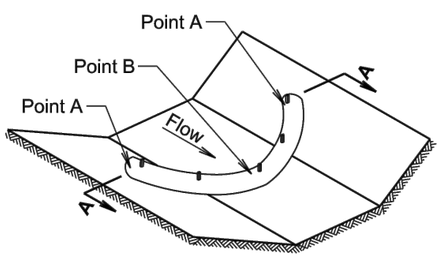
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40



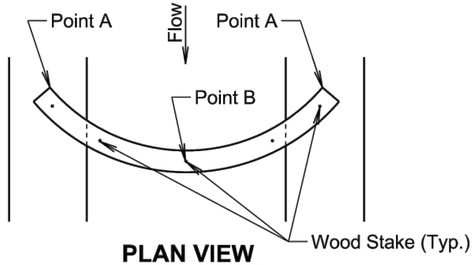
DETAIL B
(Typical of All Installations)



DETAIL C
(See General Notes)

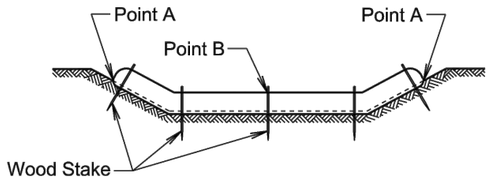


ISOMETRIC VIEW
(Ditch Installation)



PLAN VIEW
(Ditch Installation)

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



SECTION A-A

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Published Date: 2024	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".

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			Sheet 2 of 2

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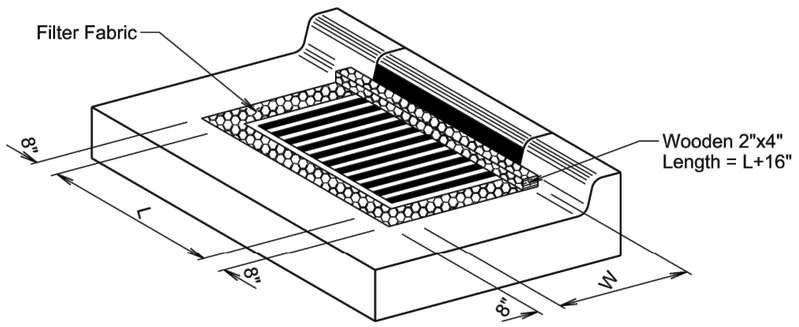
L = Length of Grate
W = Width of Grate



ISOMETRIC VIEW

GENERAL NOTES:

The grate and curb and gutter shown are for illustrative purposes only.

The sediment control at inlet with frame and grate will be placed at locations stated in the plans or at locations determined by the Engineer.

The filter fabric will be the type specified in the plans.

The filter fabric will be placed in the inlet opening prior to placing the grate. Approximately 18 inches of excess filter fabric will be wrapped around the 2"x4" and stapled securely to the 2"x4" after the grate has been placed.

The Contractor and Engineer will inspect the sediment control device in accordance with the storm water permit. The Contractor will maintain the sediment control device by removing accumulated sediment and replacing torn filter fabric with new filter fabric.

The removed sediment will be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

All costs for furnishing, installing, inspecting, maintaining, removing, and replacing the sediment control device at the inlet including labor, equipment, and materials will be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

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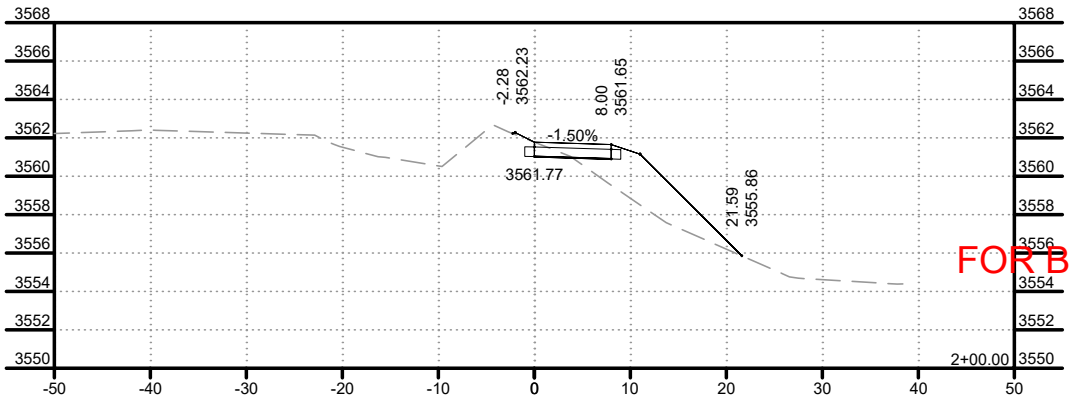
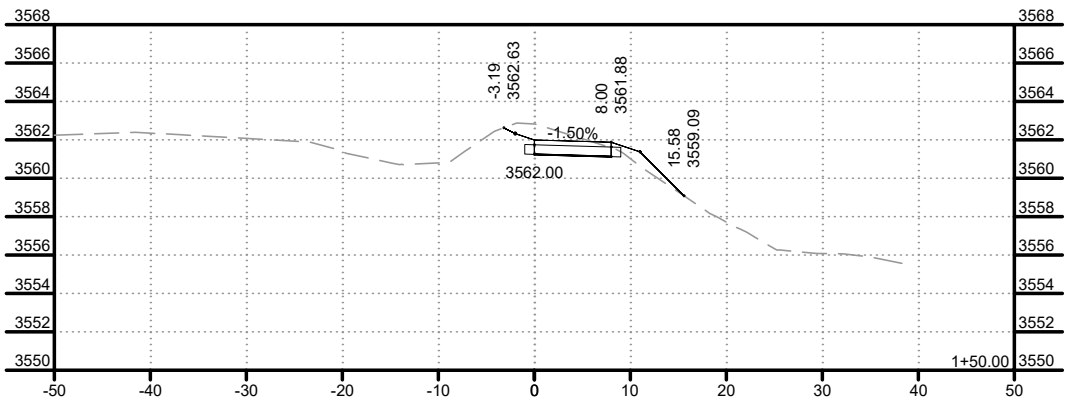
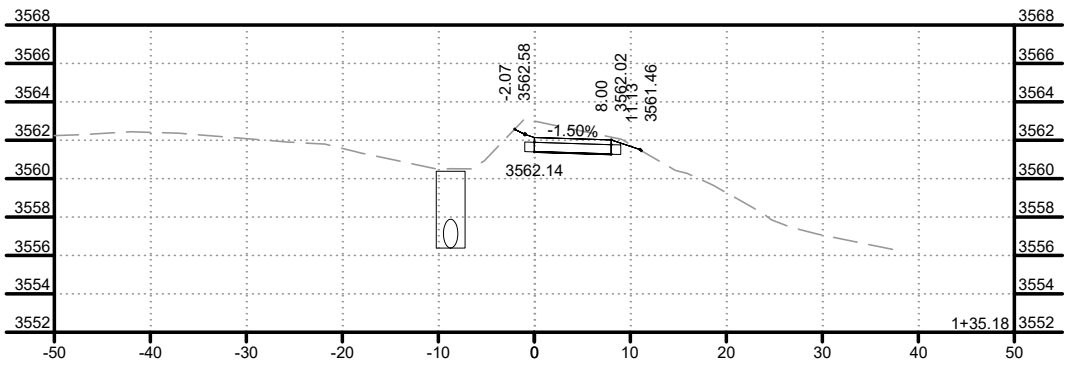
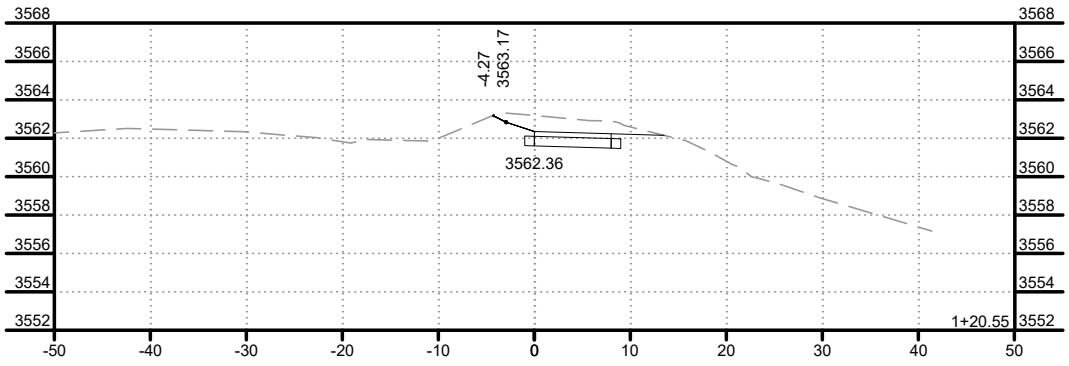
Published Date: 2024	SDDOT	SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES	PLATE NUMBER 734.10
			Sheet 1 of 1

North Section Alignment









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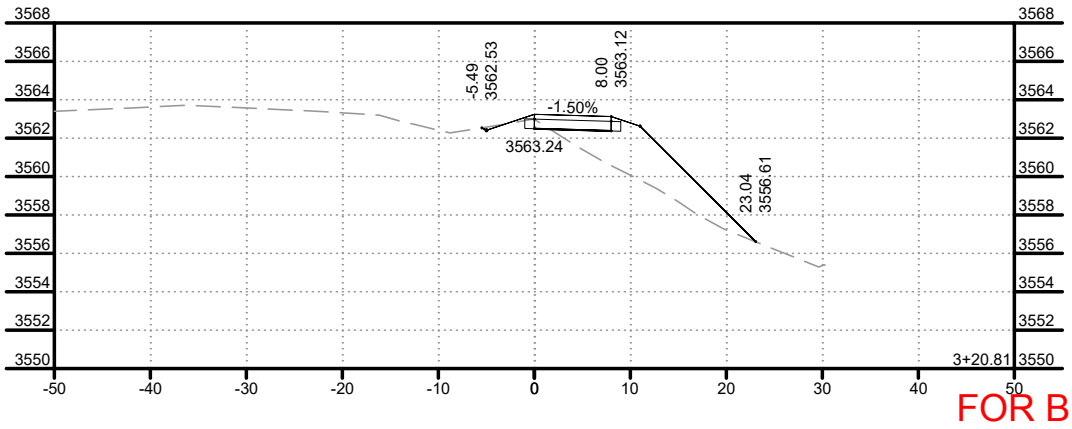
North Section Alignment



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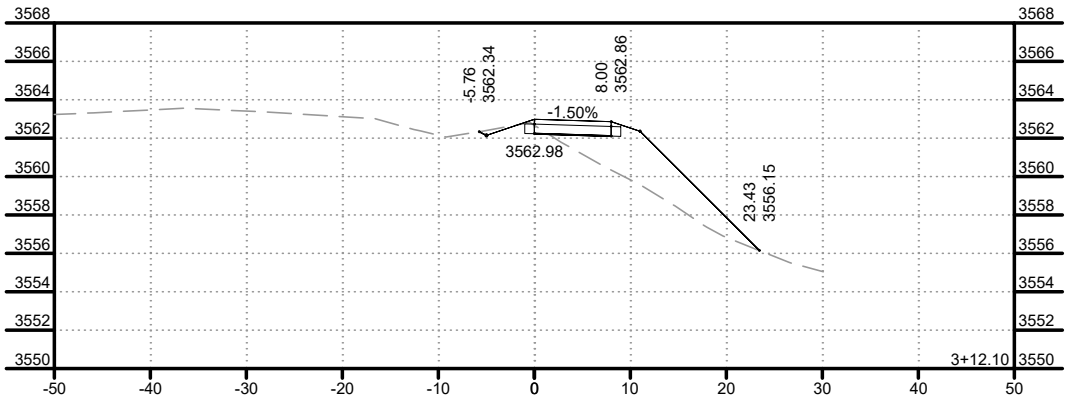

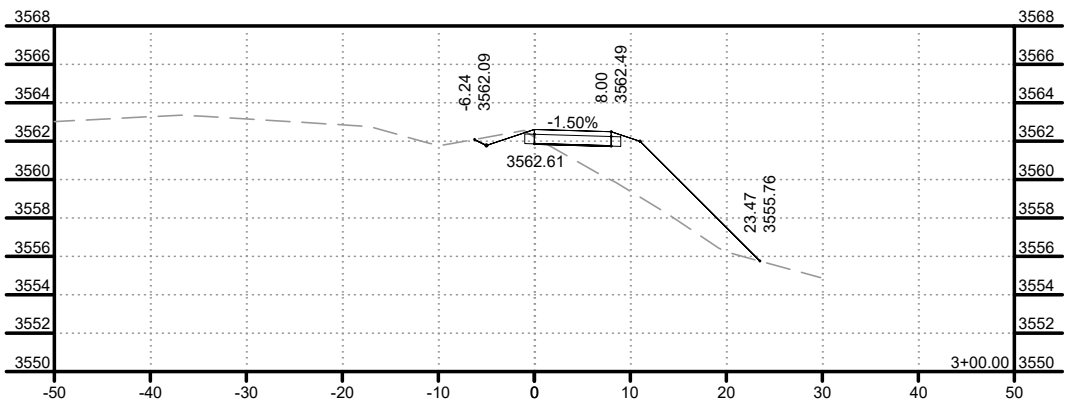

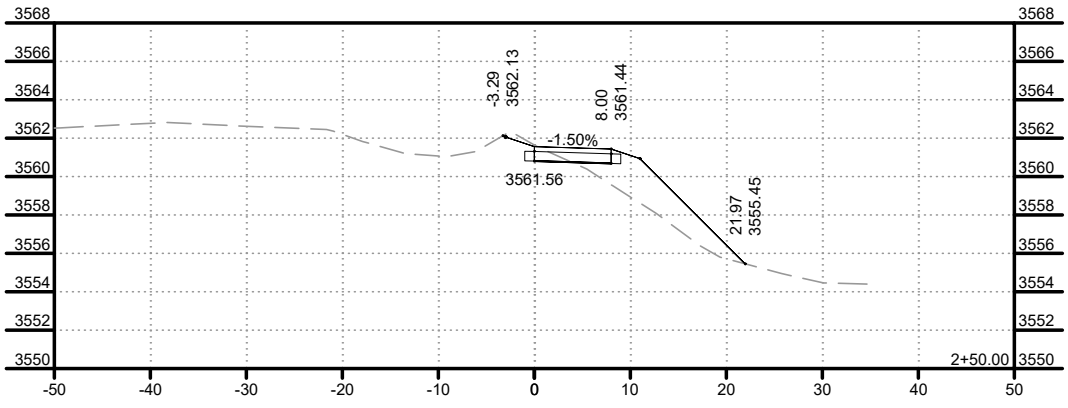

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North Section Alignment

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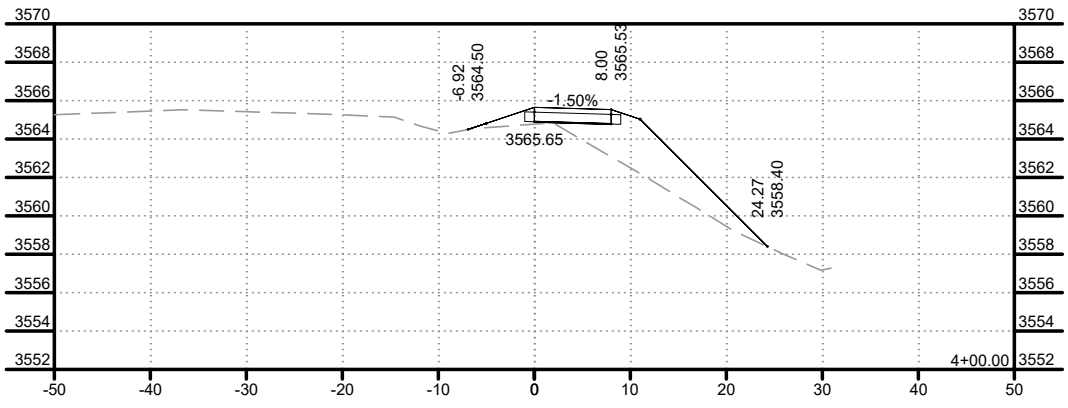

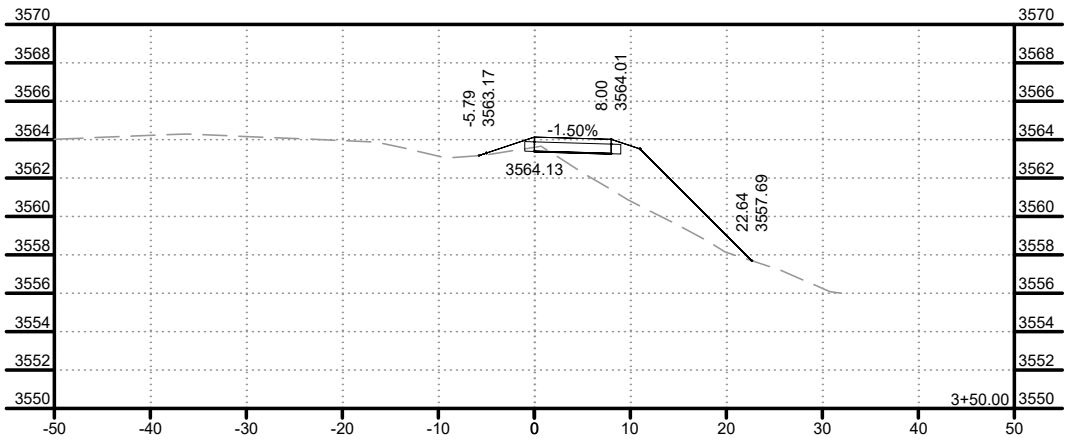

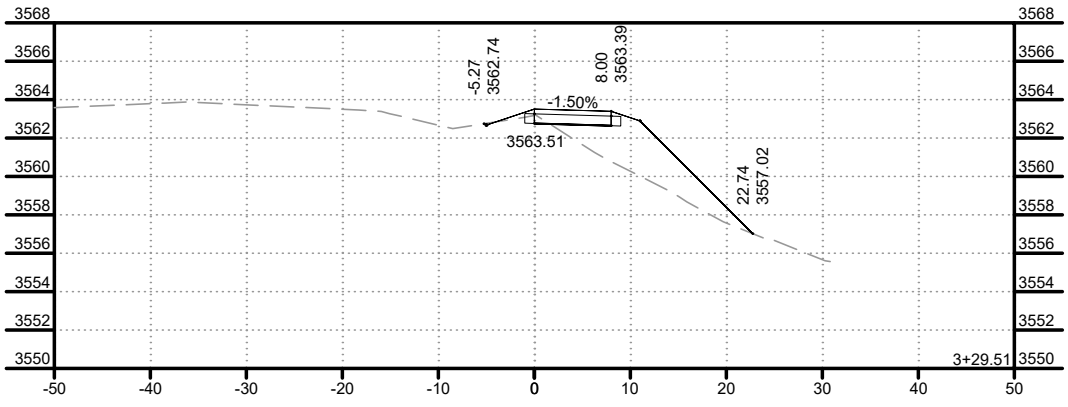

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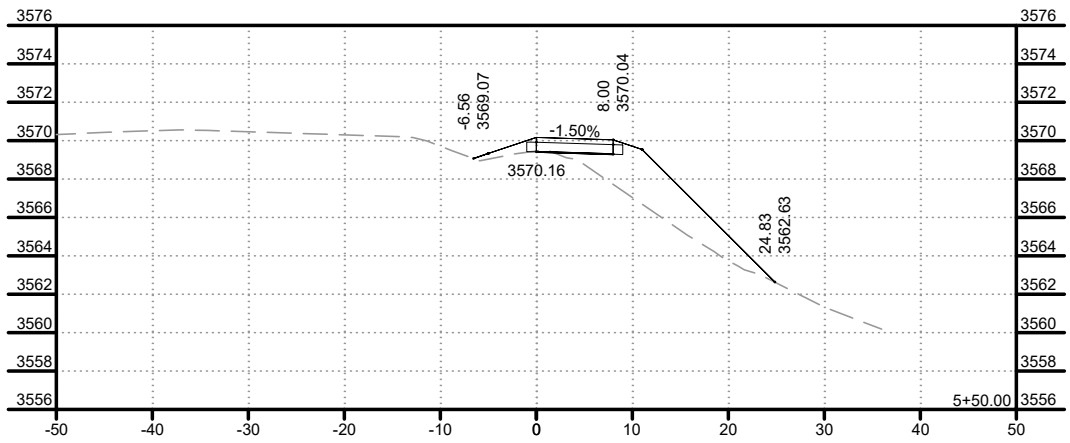

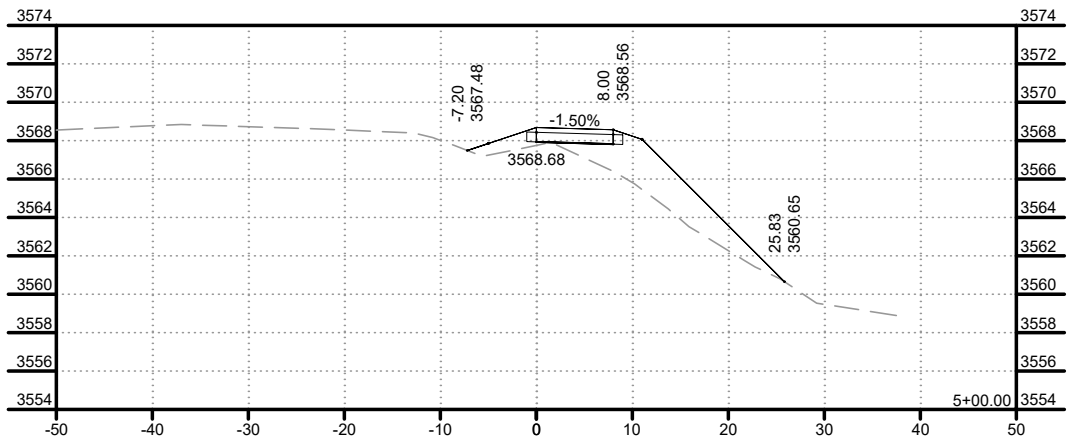

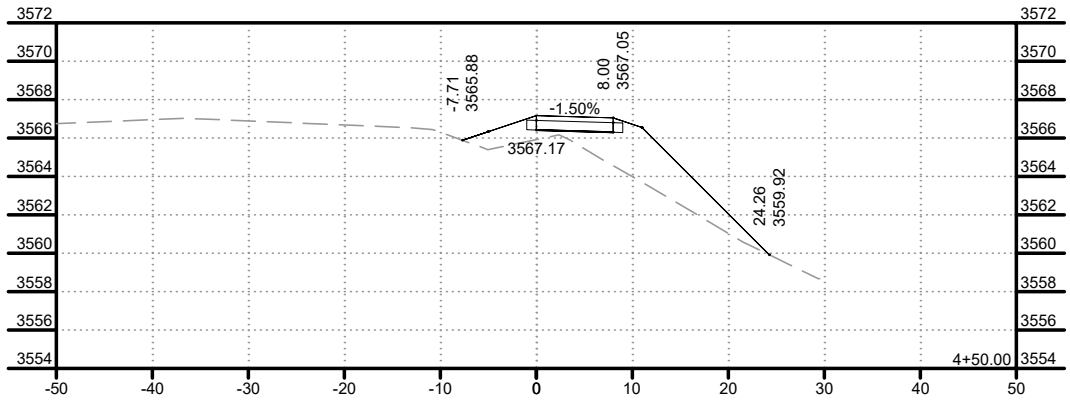

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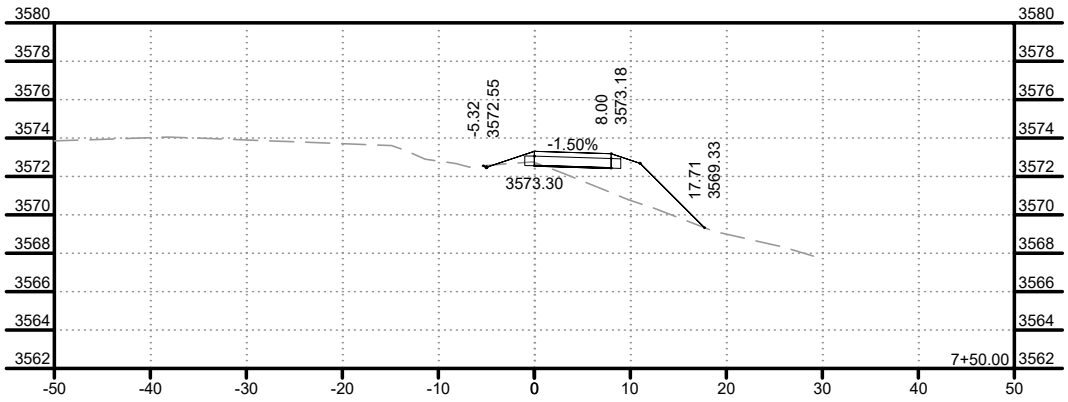

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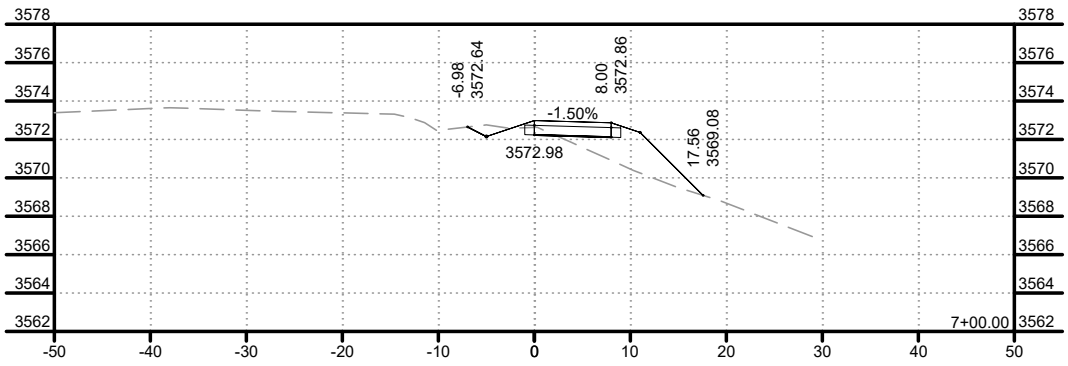

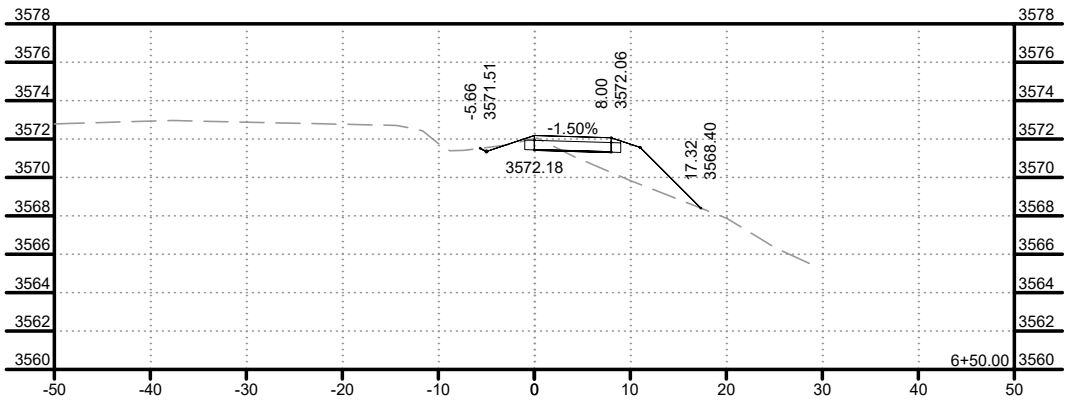

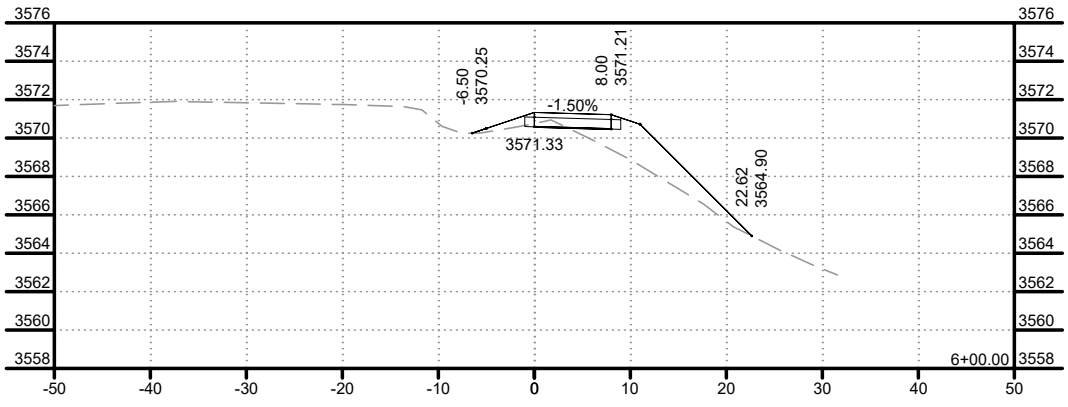

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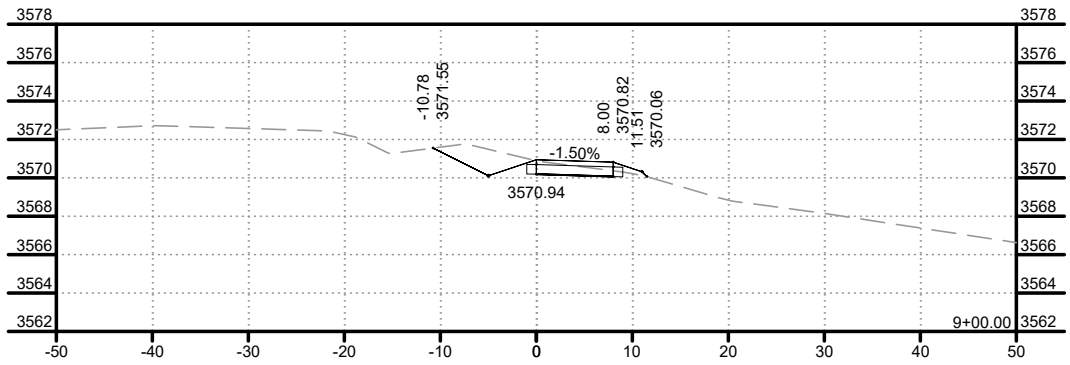

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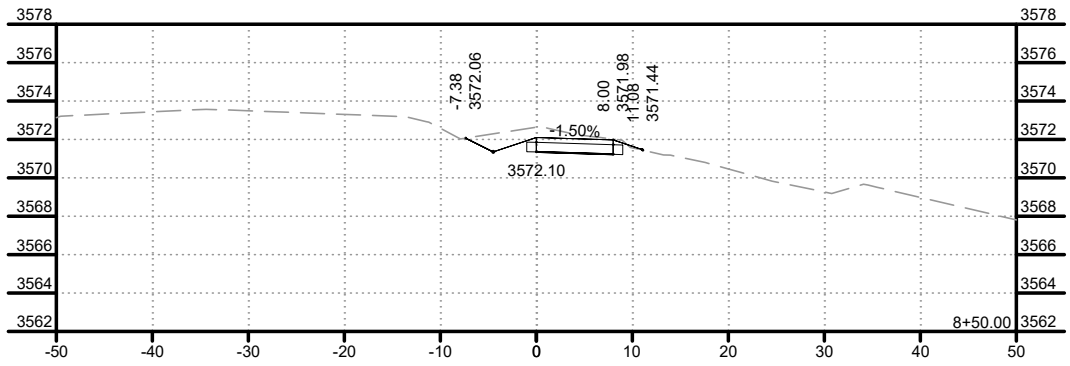

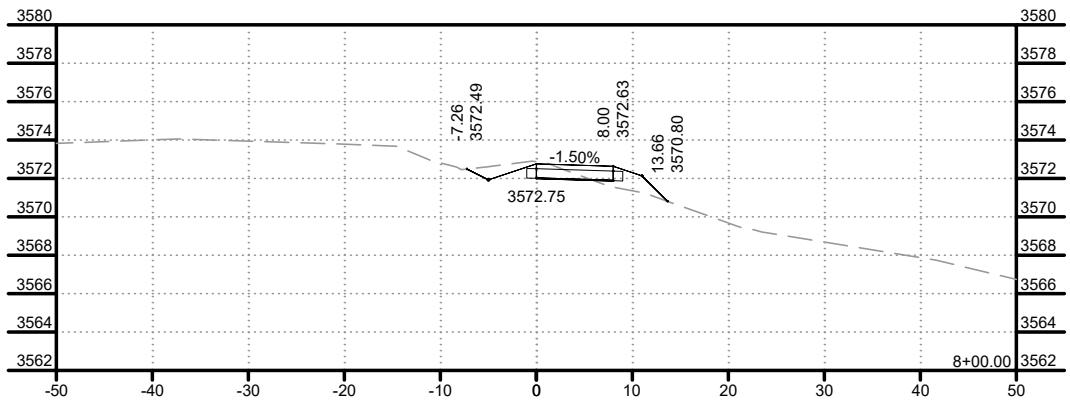

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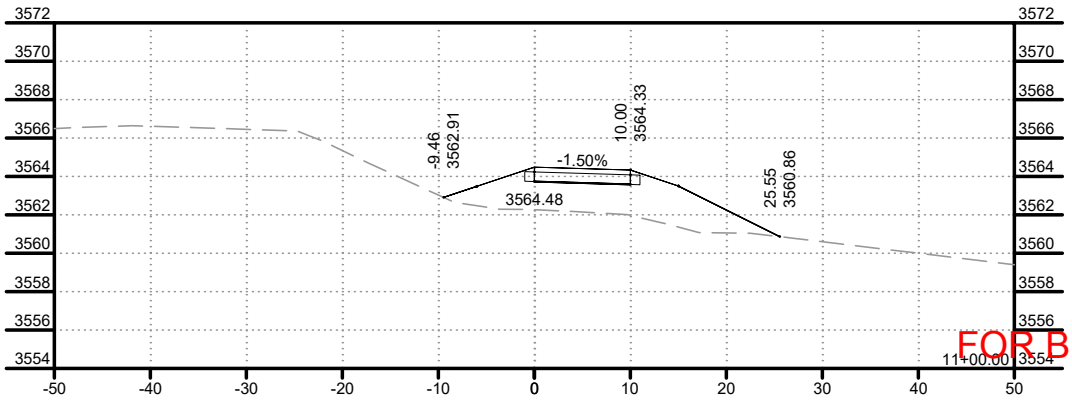

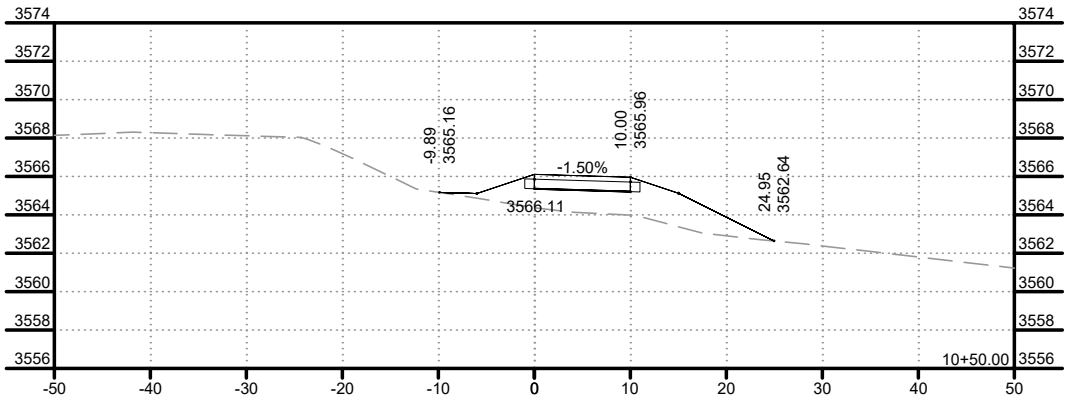

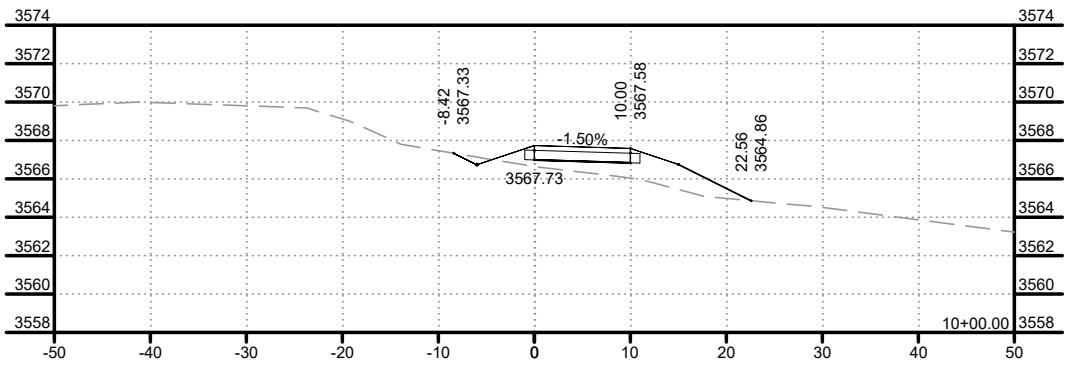

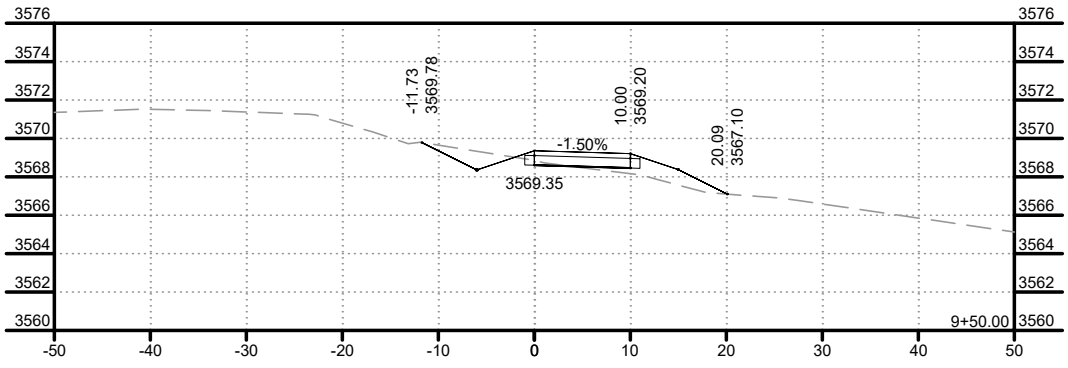

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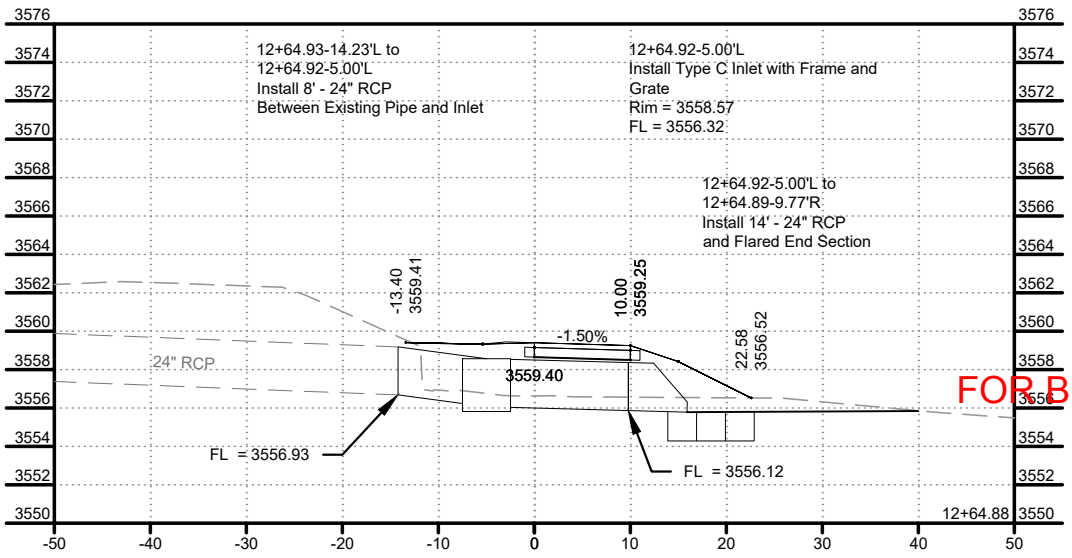

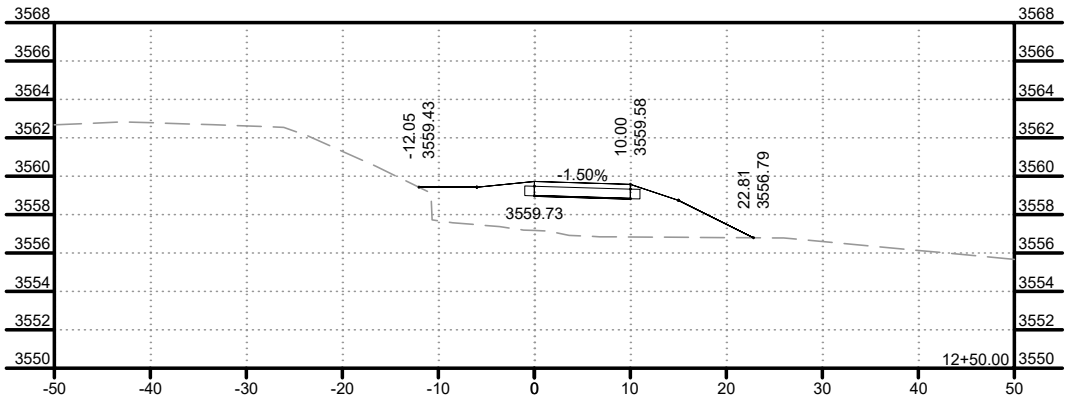

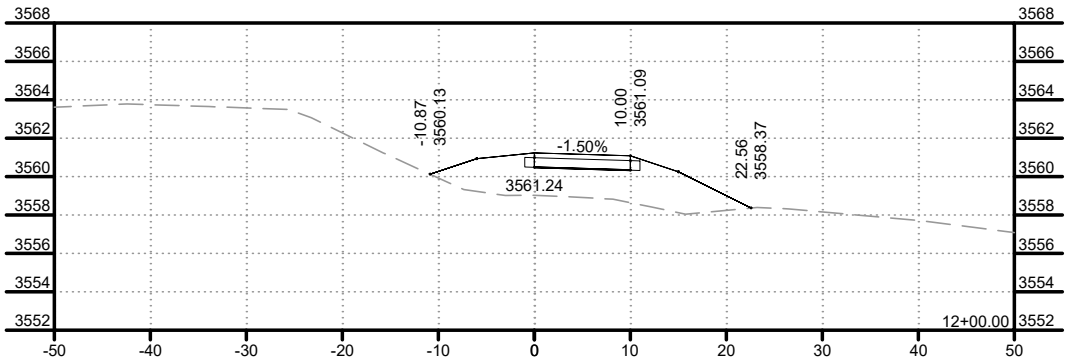

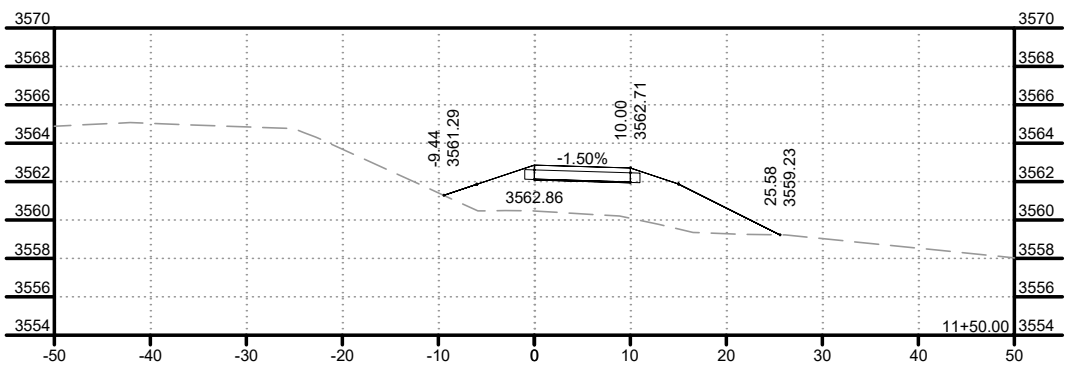

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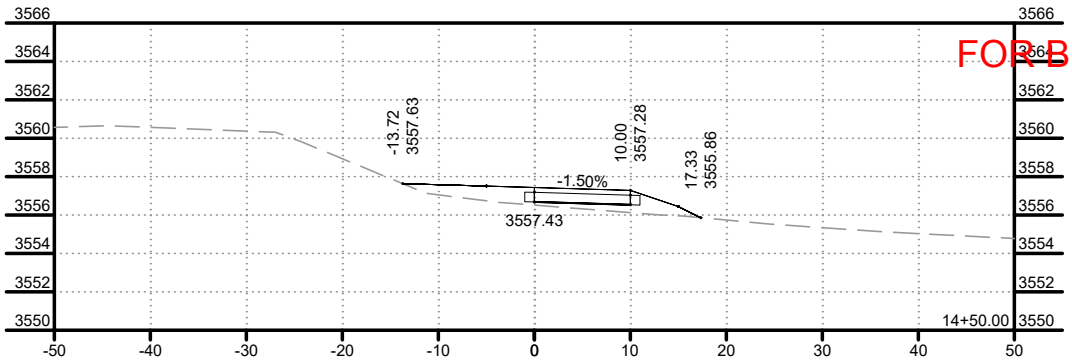

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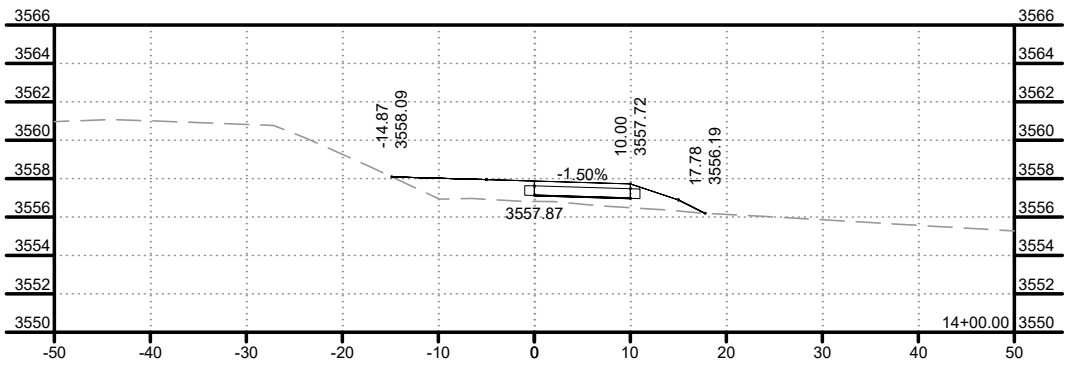

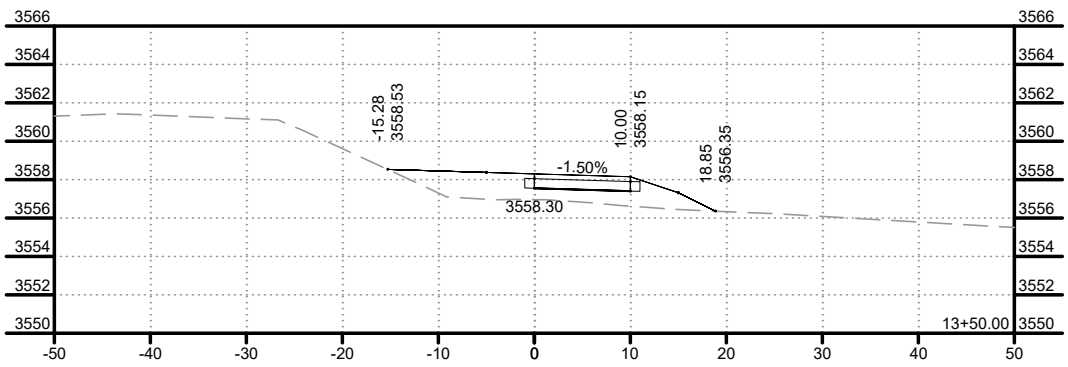

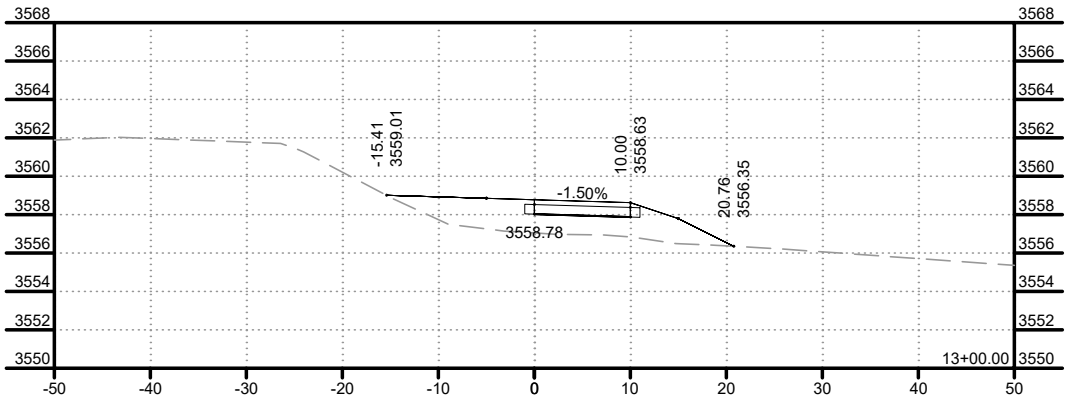

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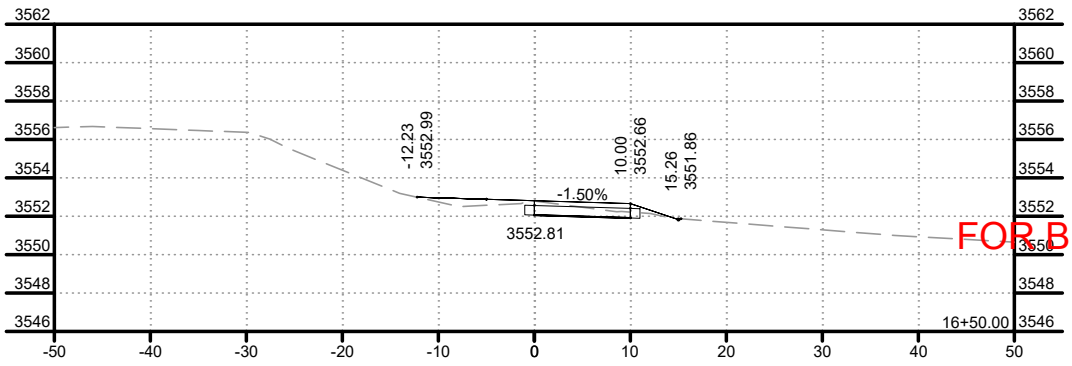

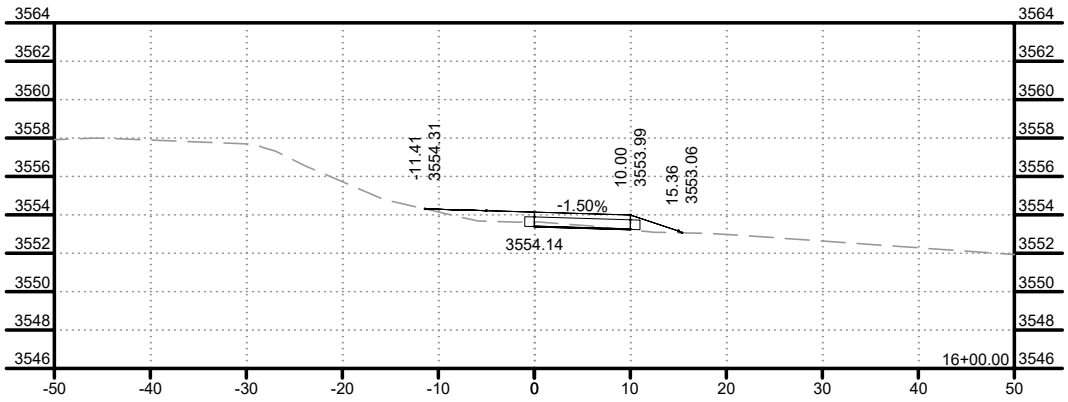

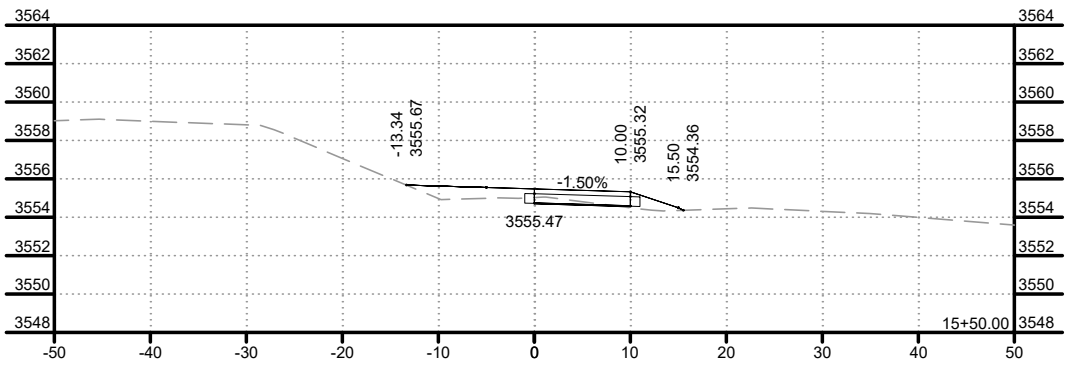

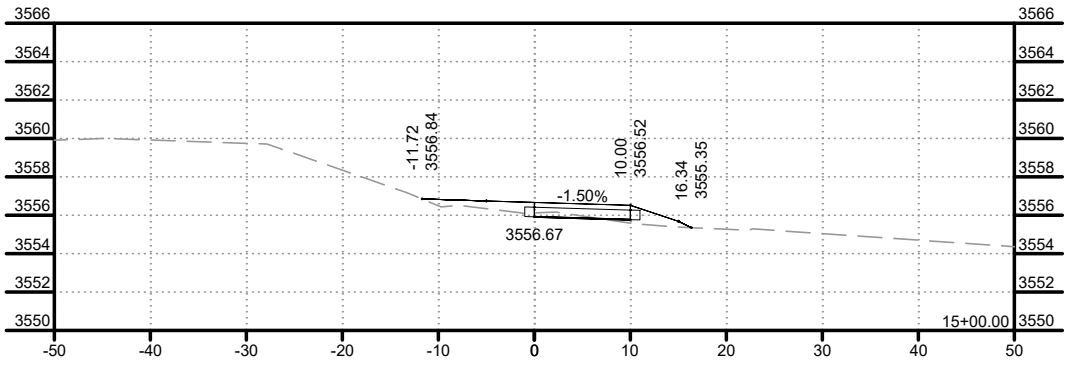

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	TAPU(31)	103	120

North Section Alignment

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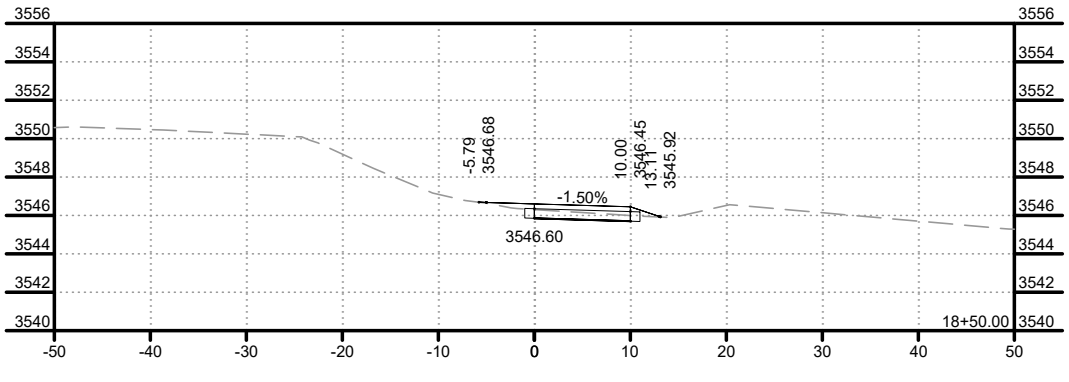

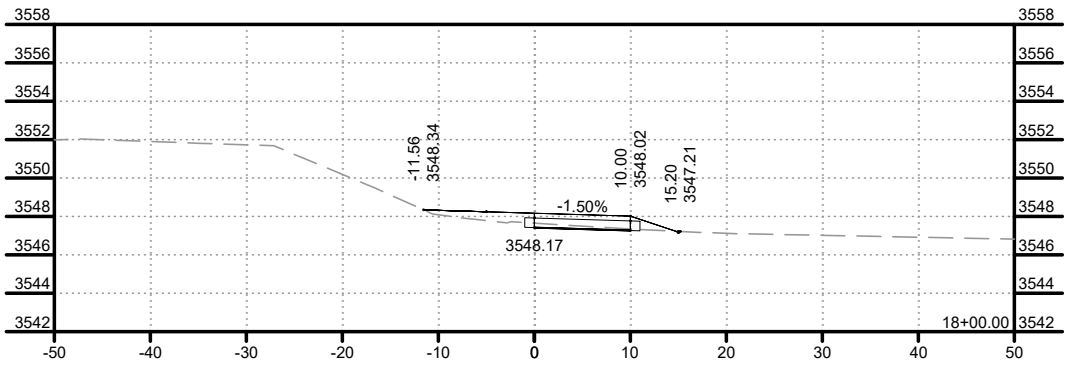

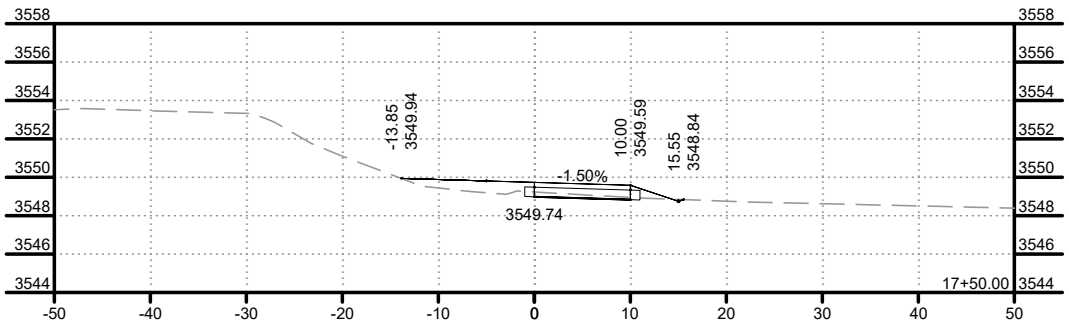

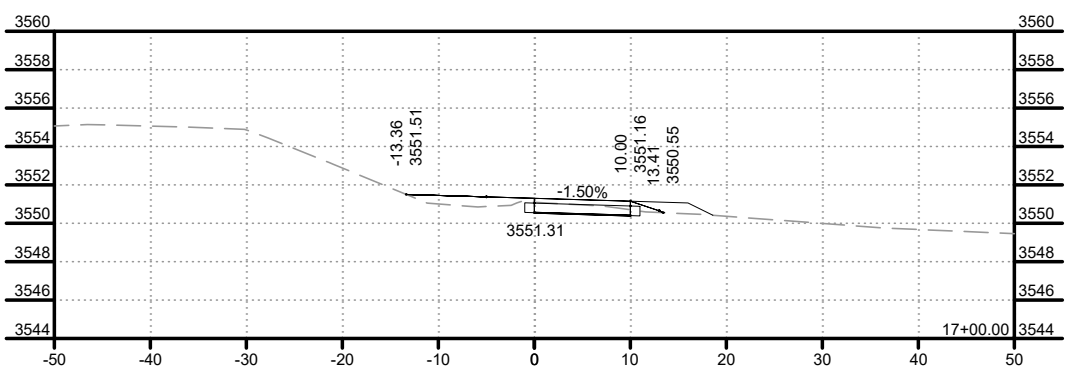

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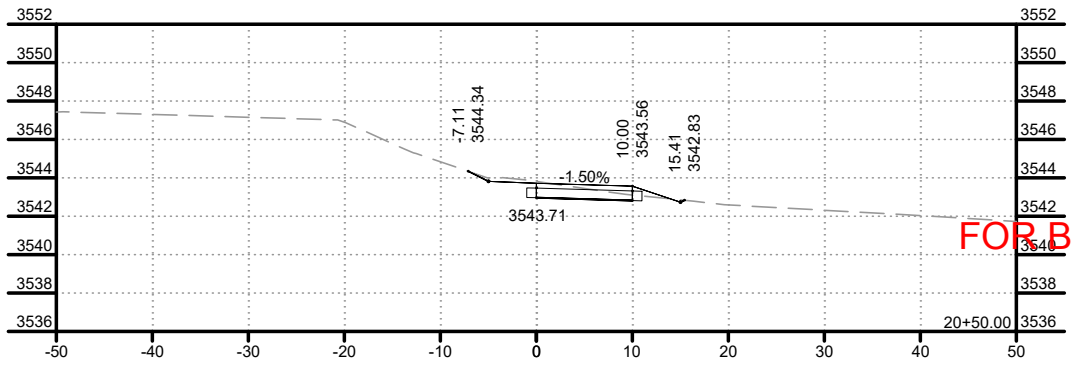
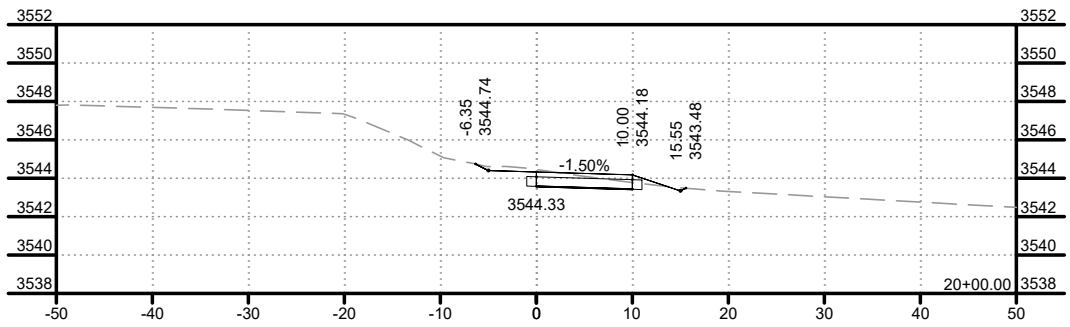
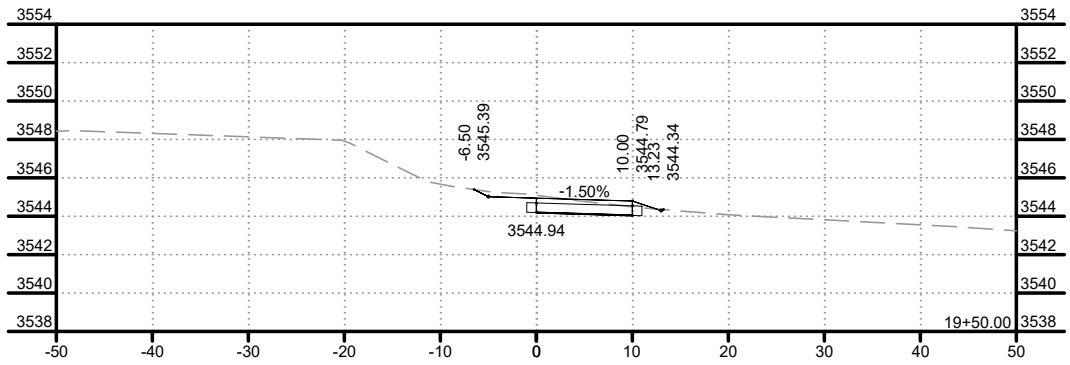
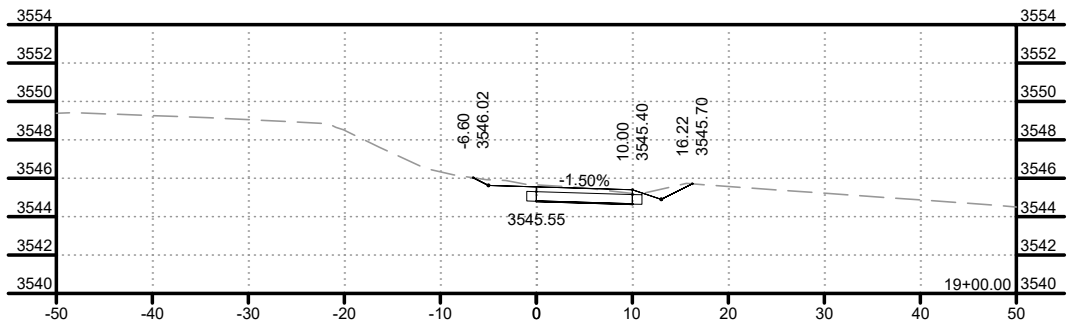
North Section Alignment









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North Section Alignment

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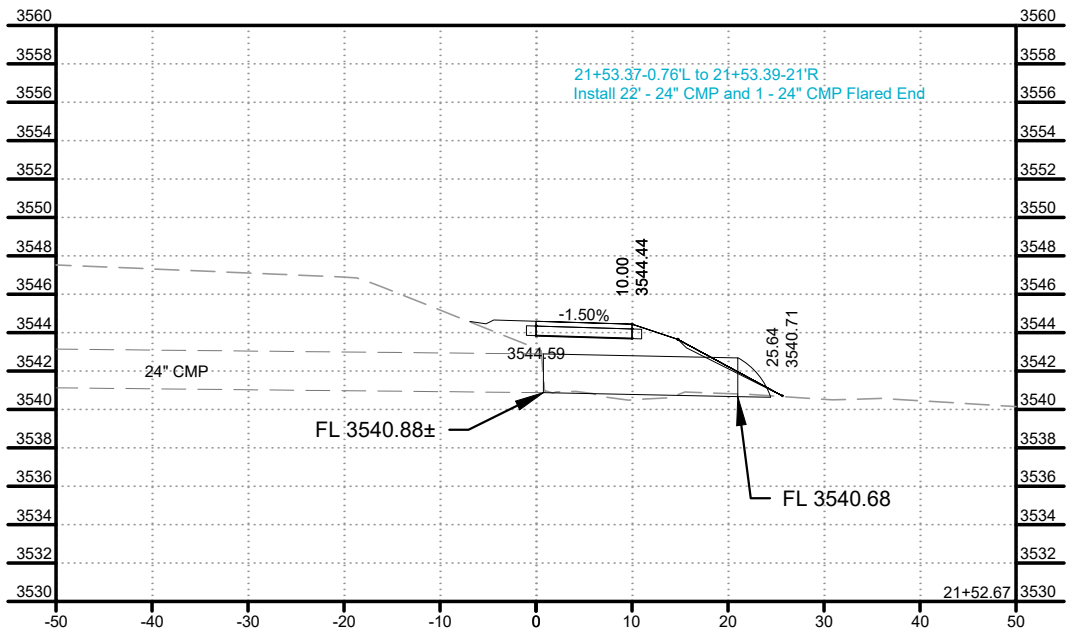

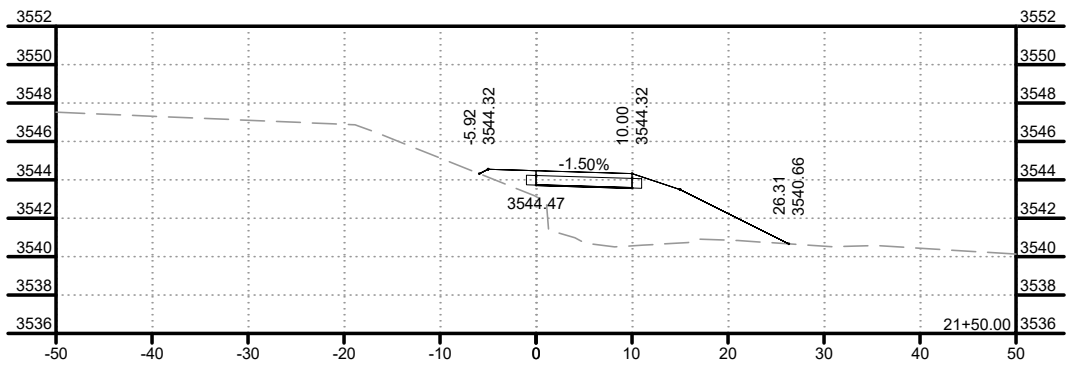

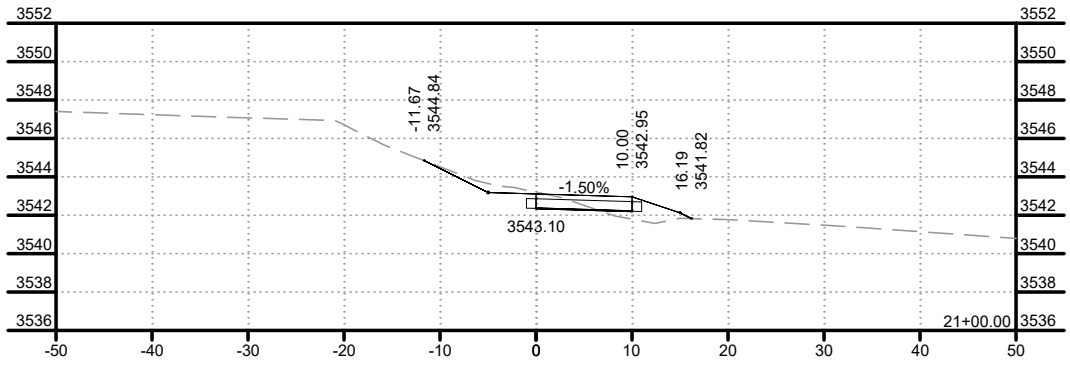

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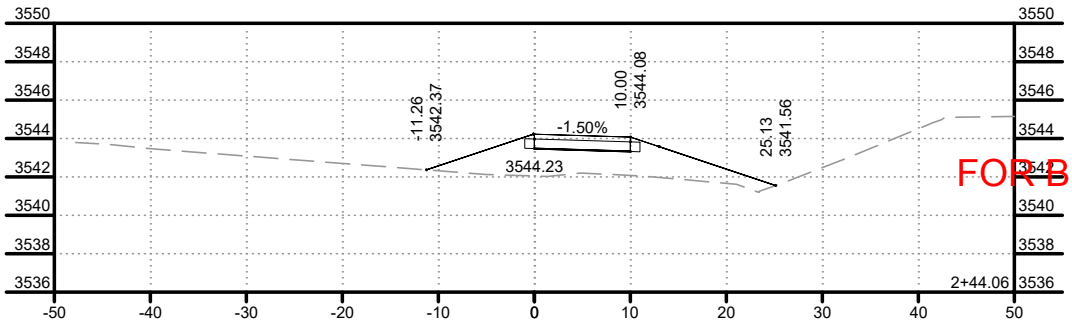
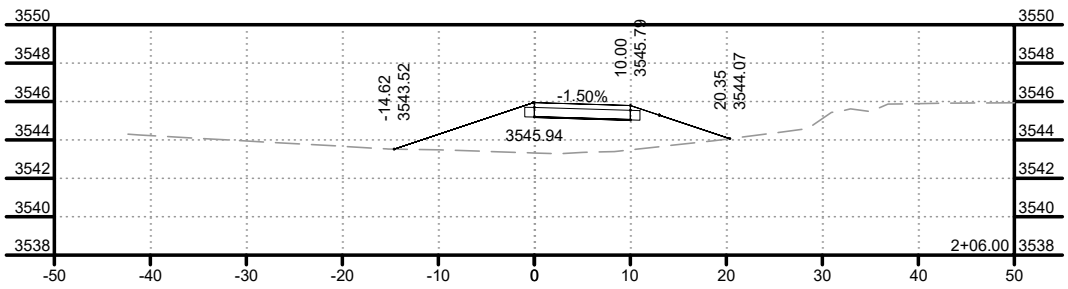
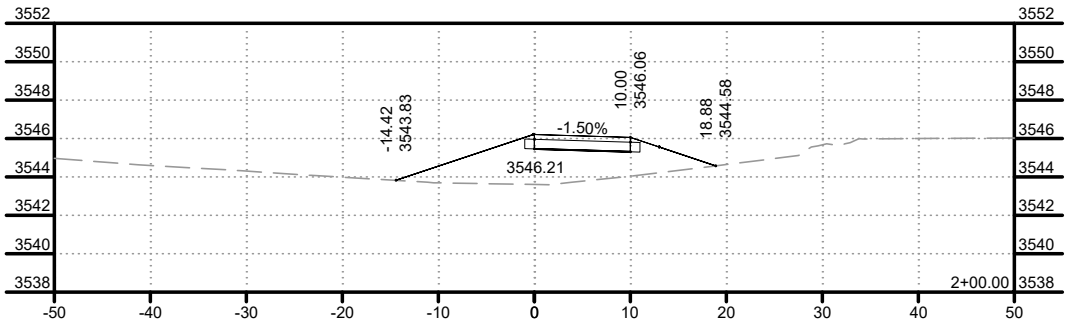
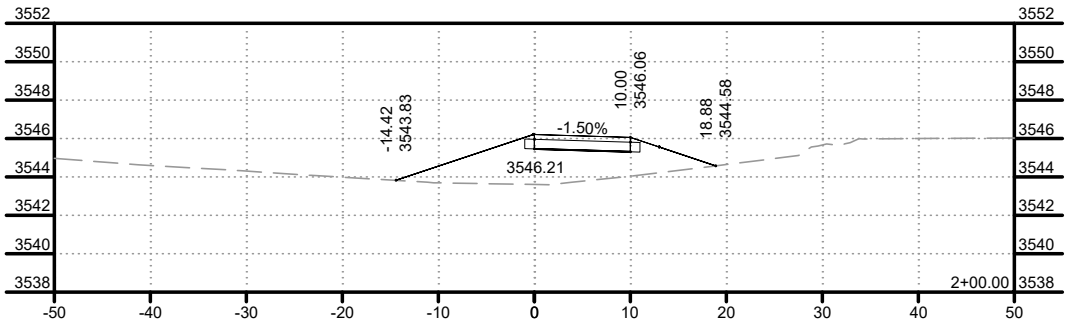
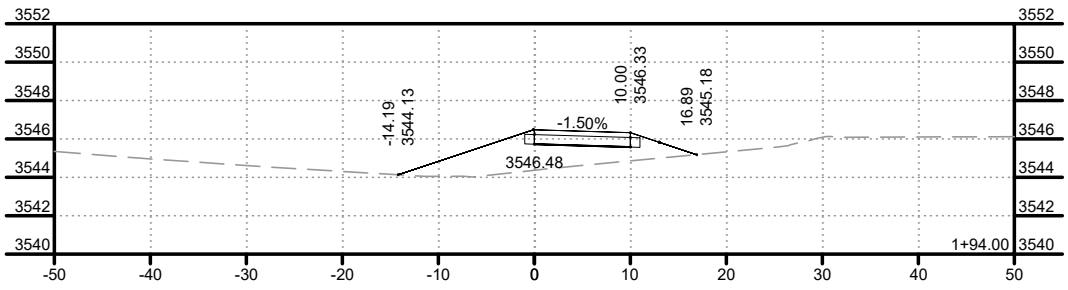
Westside Pathway Alignment











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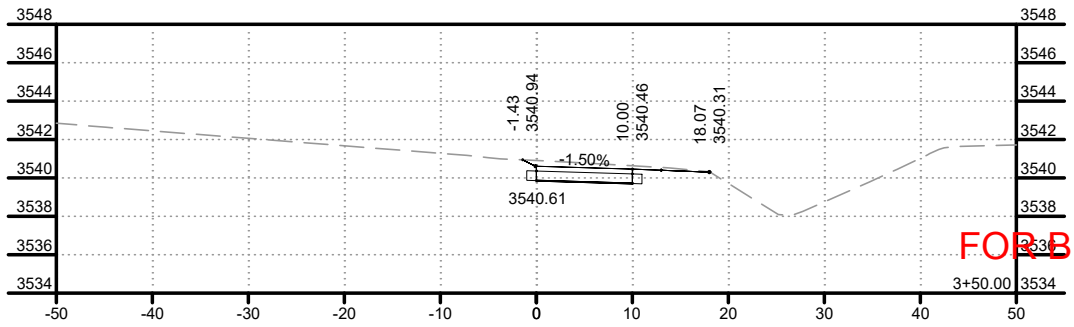
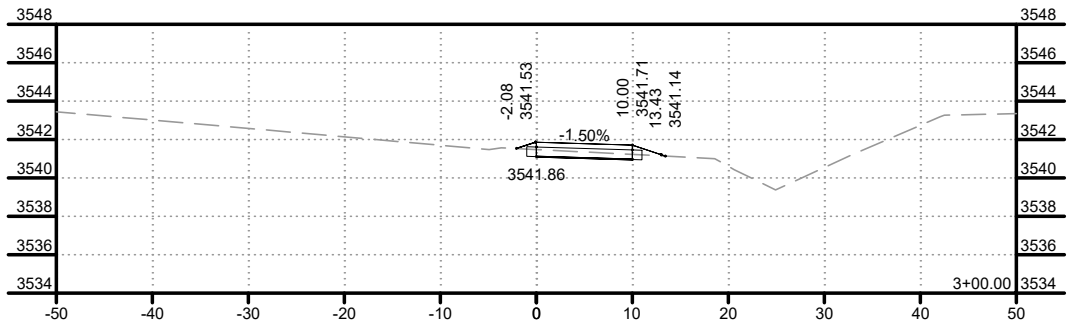
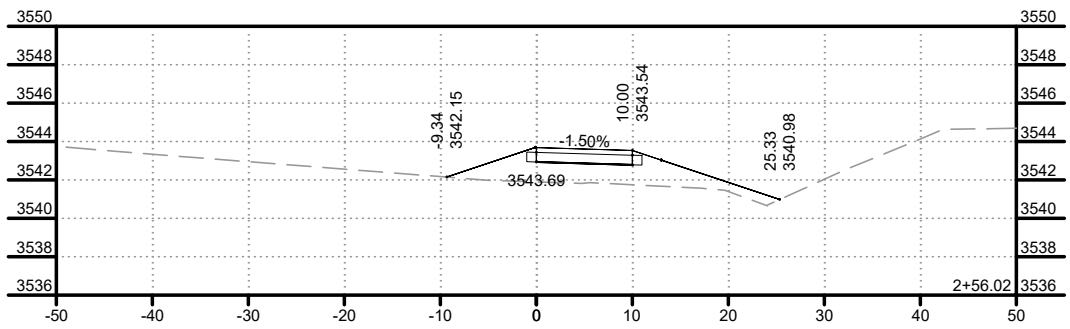
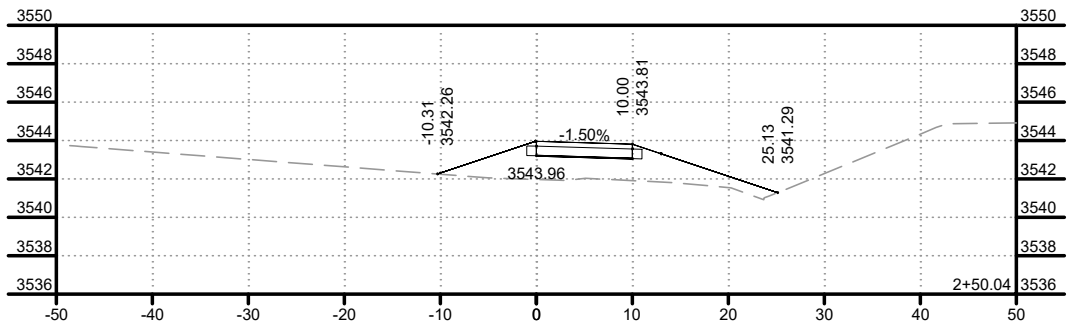
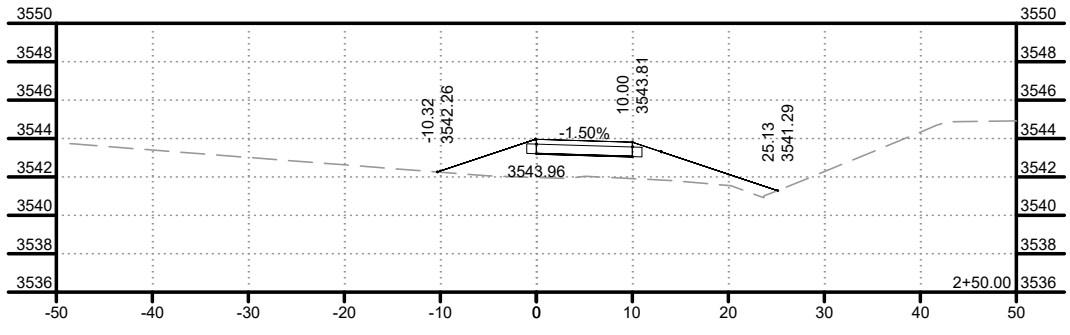
Westside Pathway Alignment











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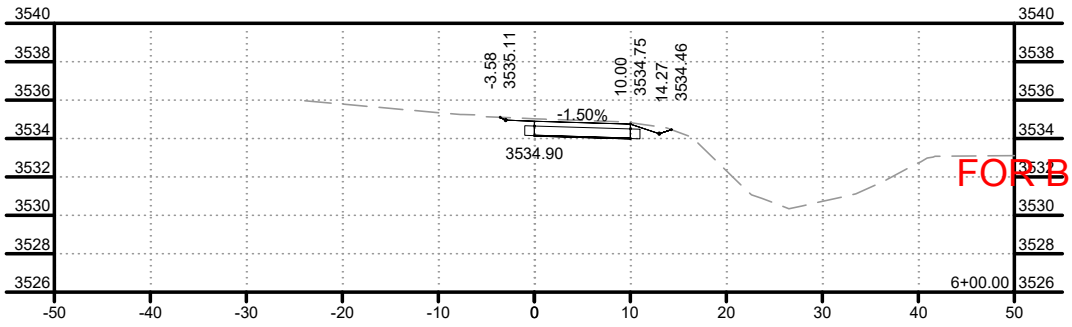
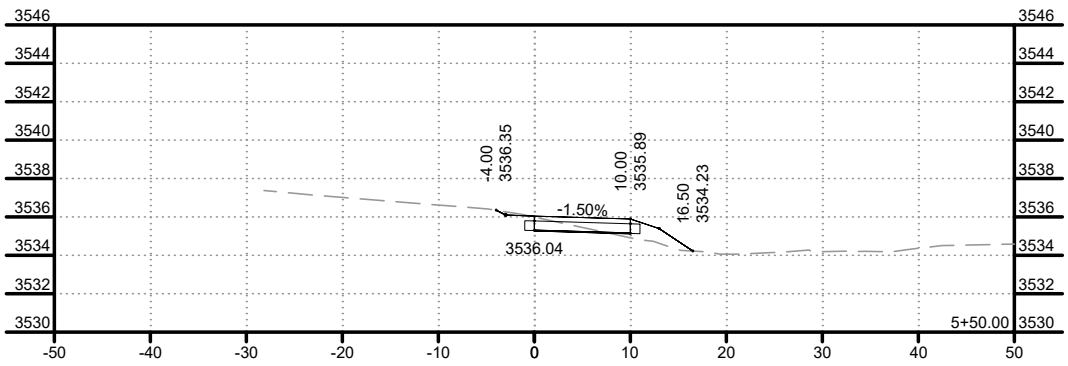
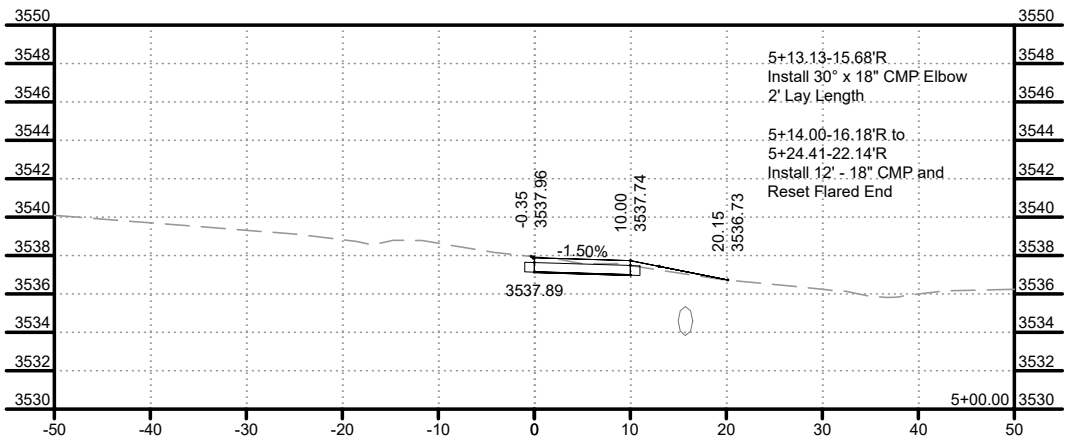
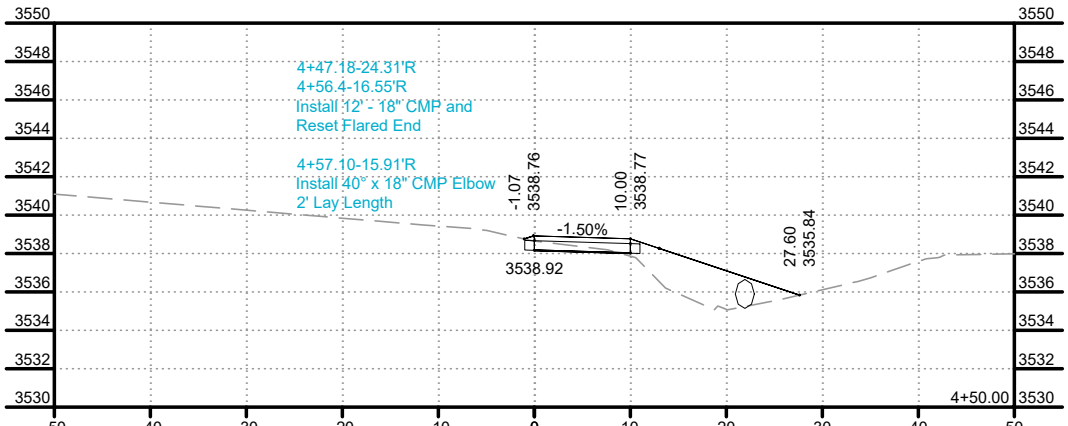
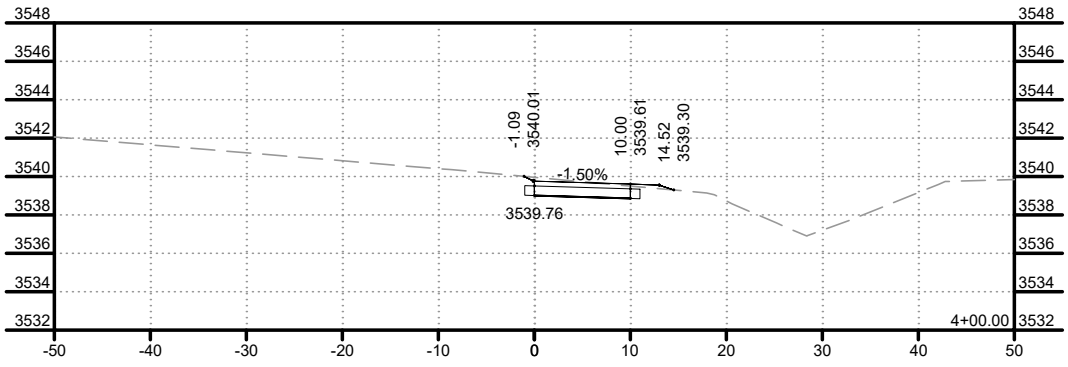
Westside Pathway Alignment











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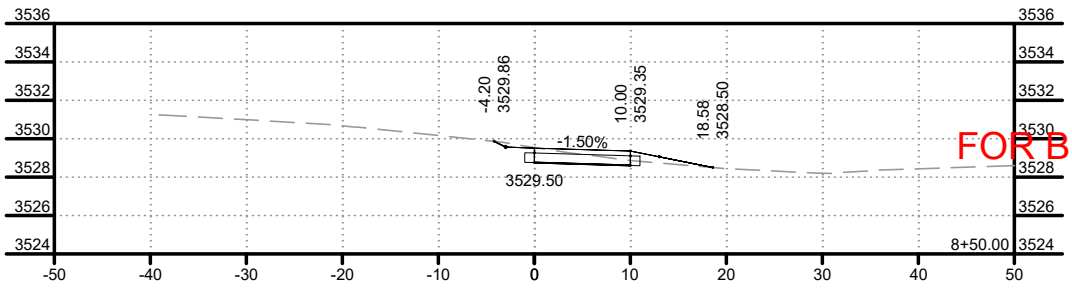
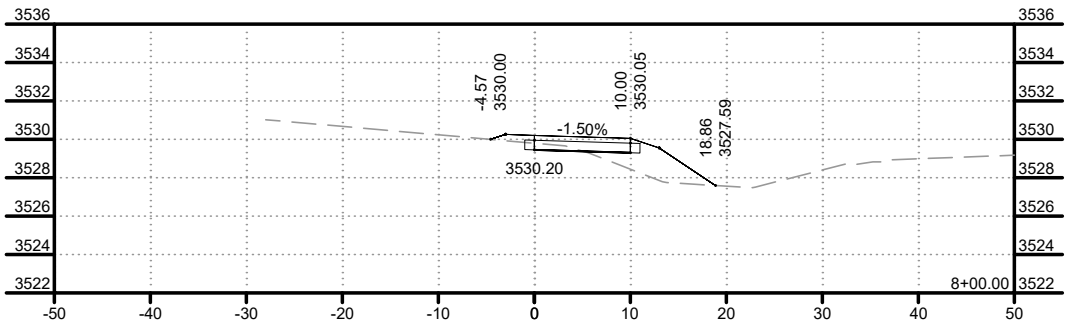
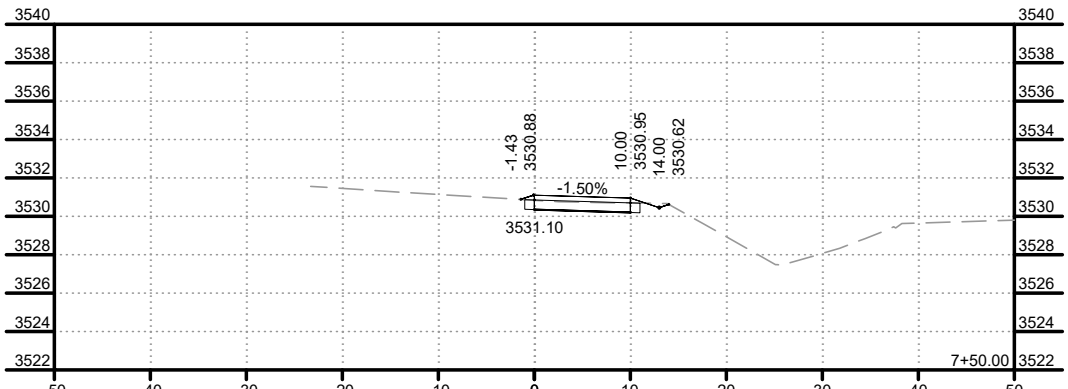
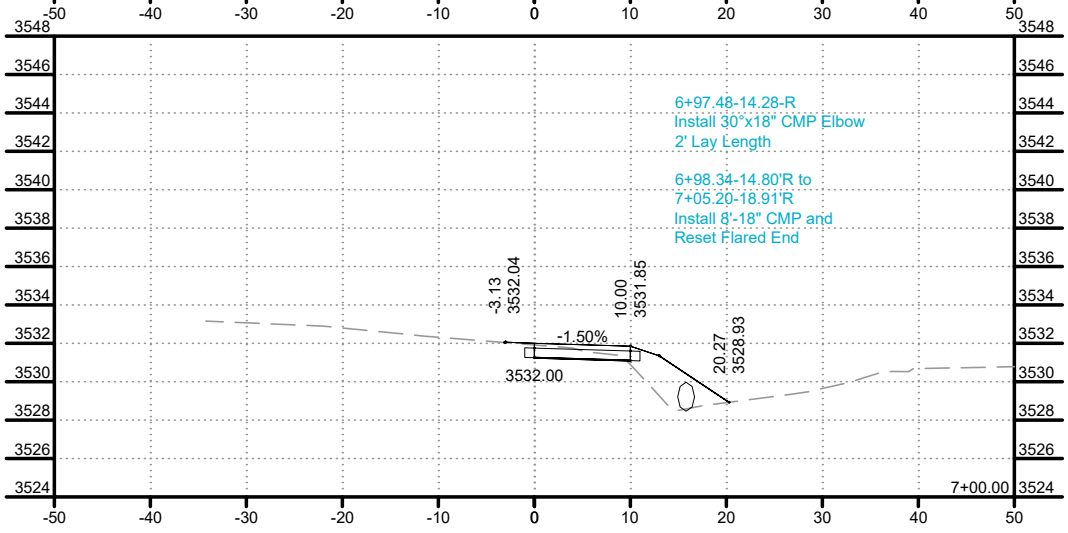
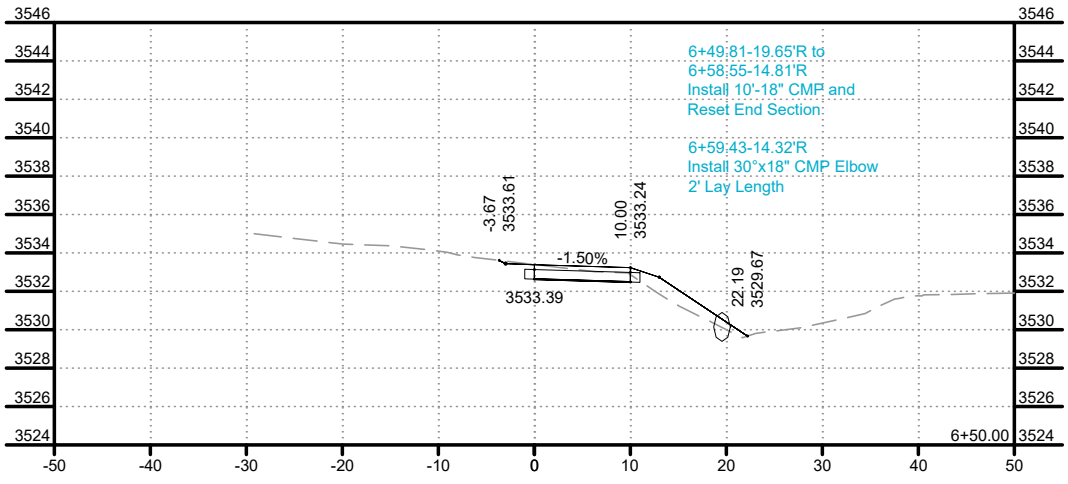
Westside Pathway Alignment











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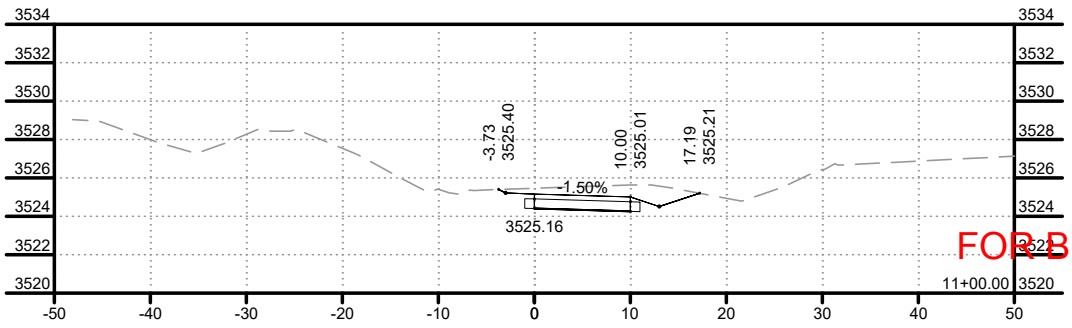
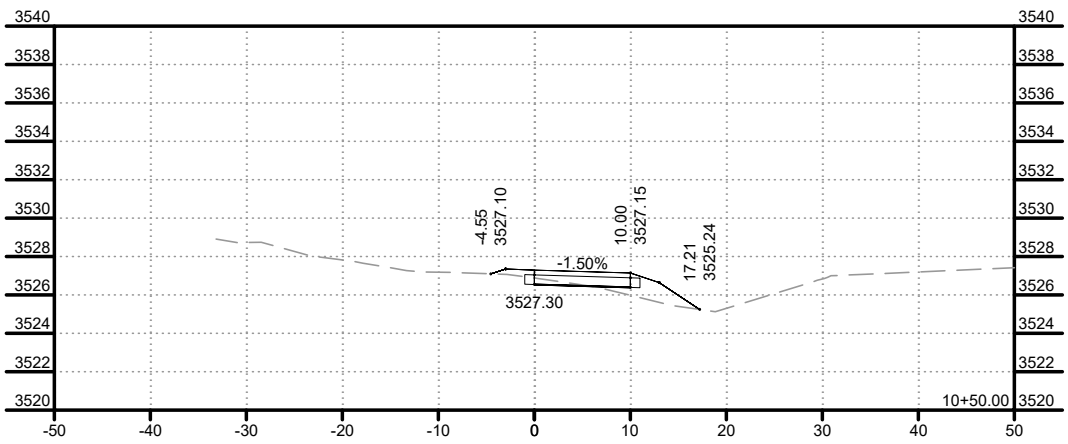
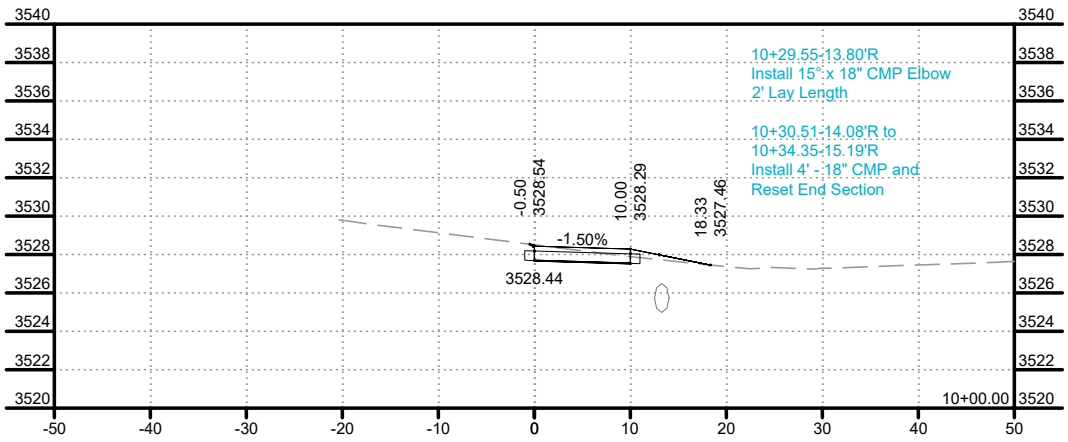
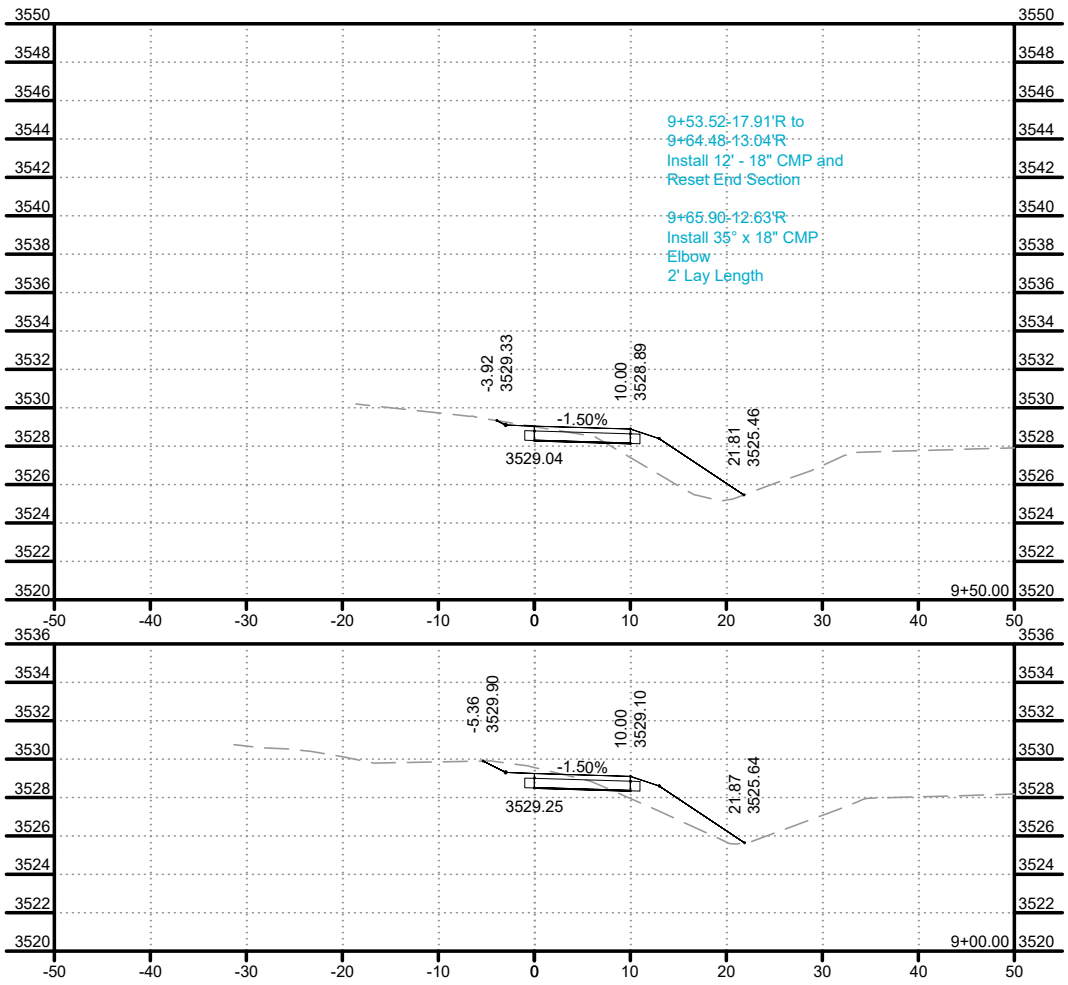
Westside Pathway Alignment









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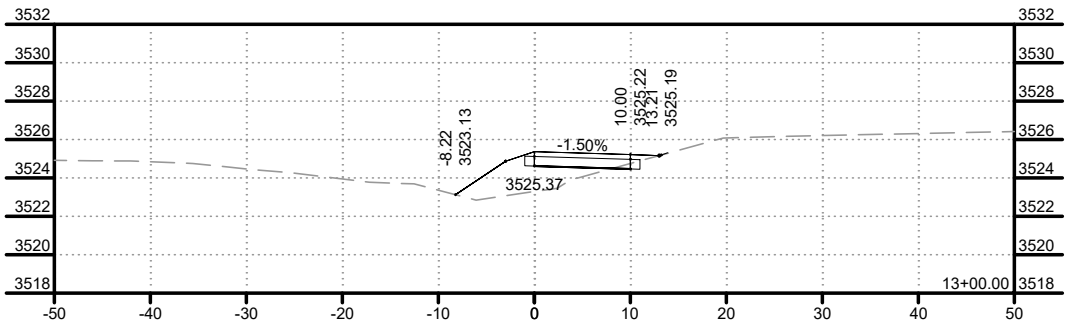

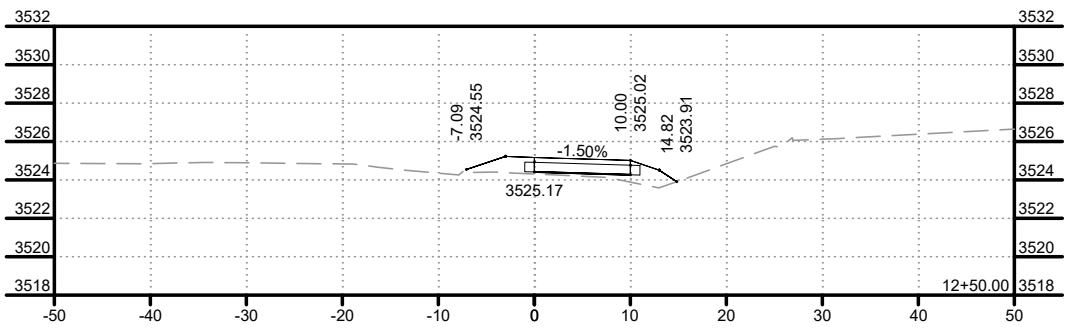

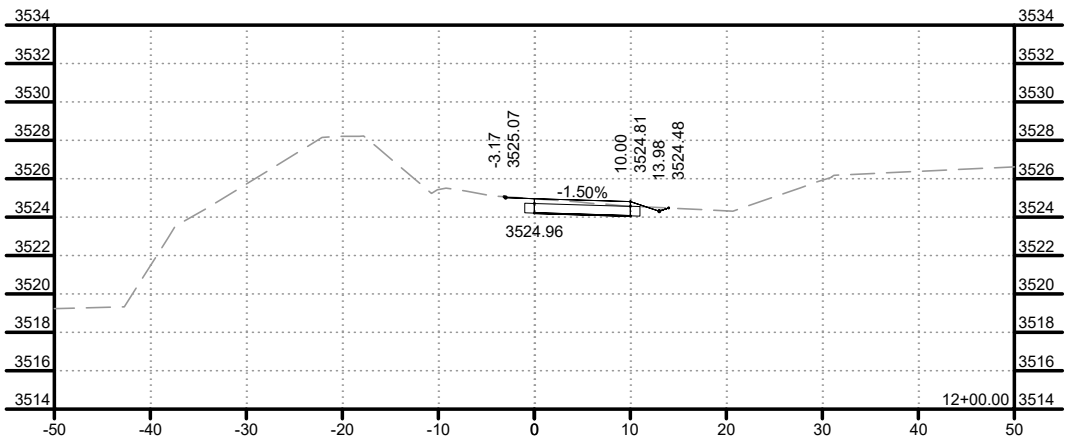

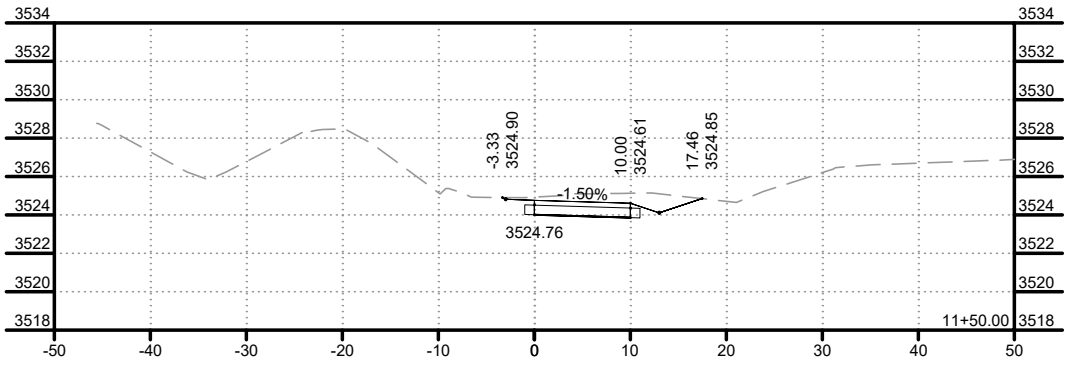

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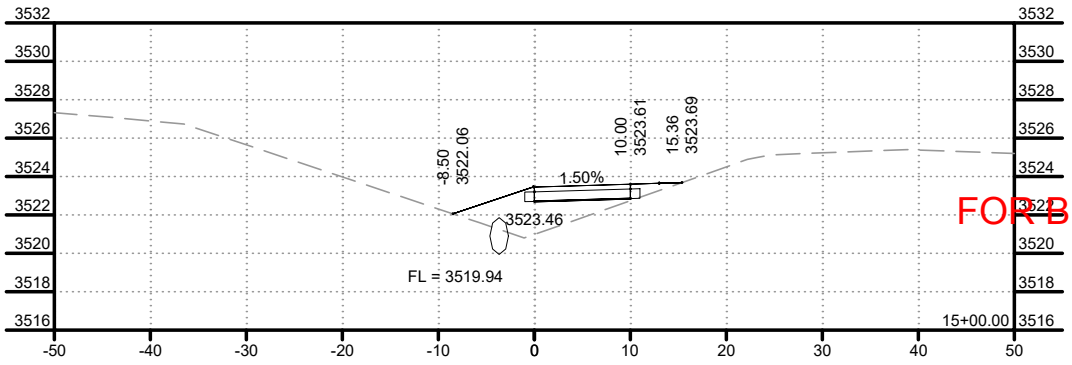

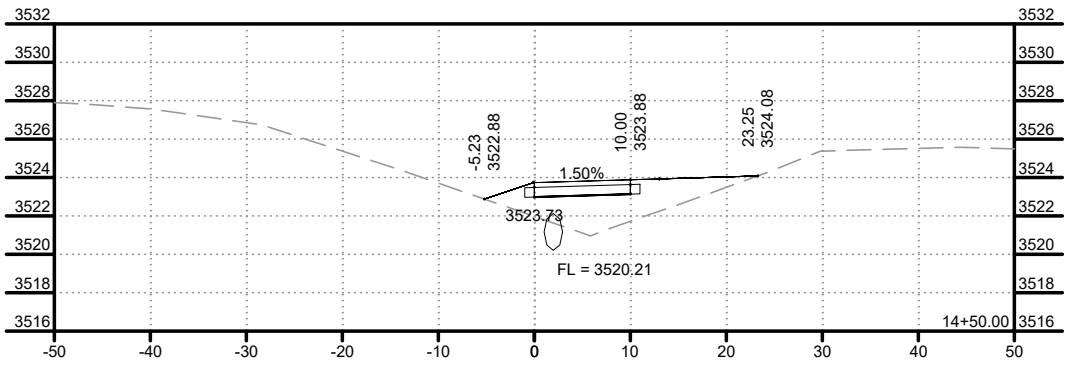

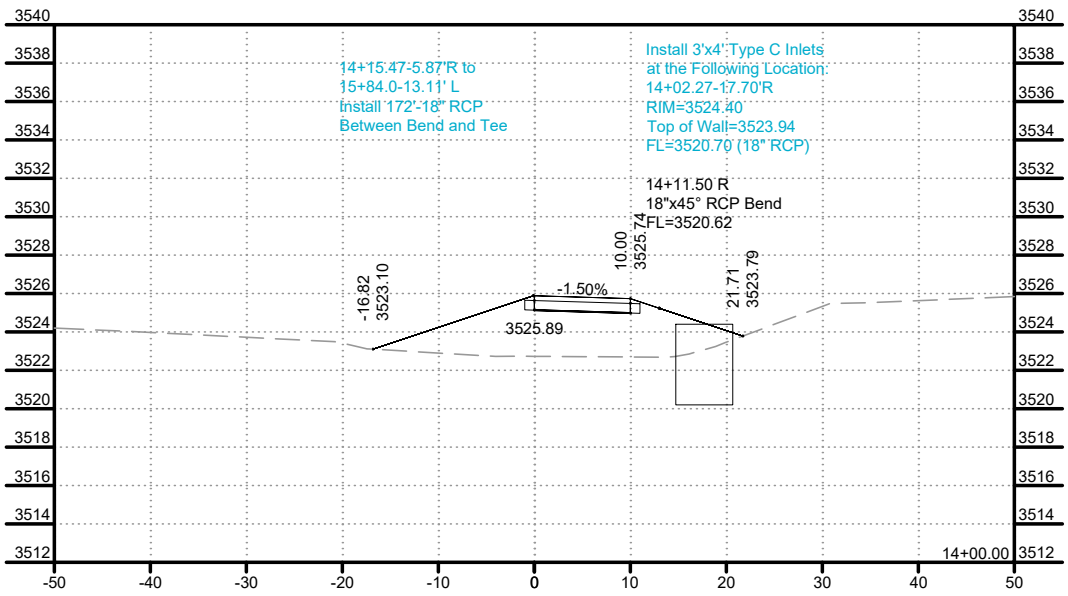

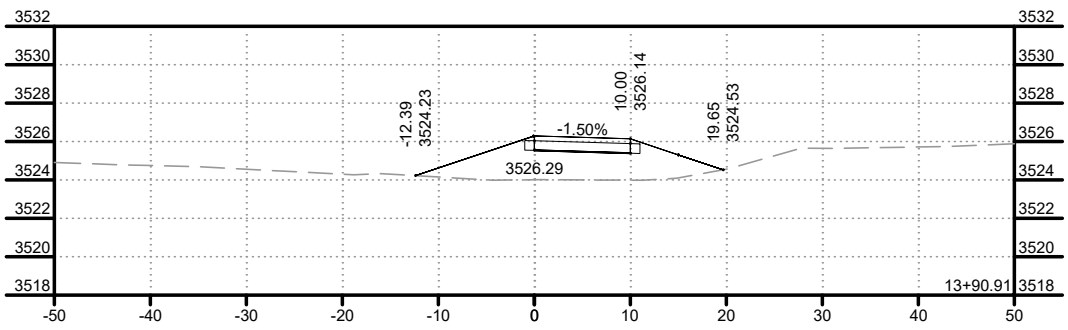

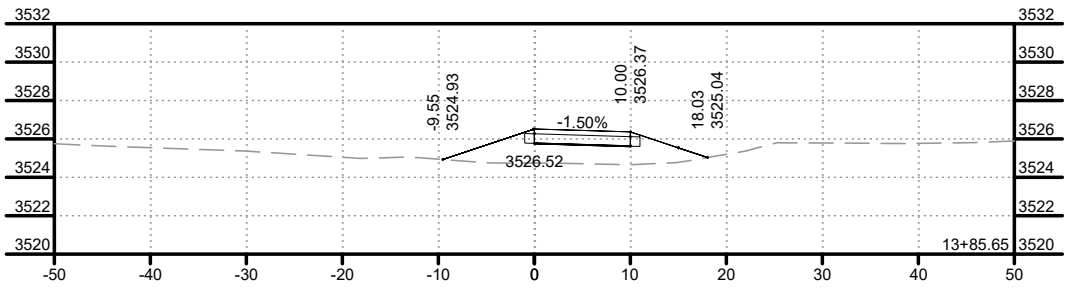

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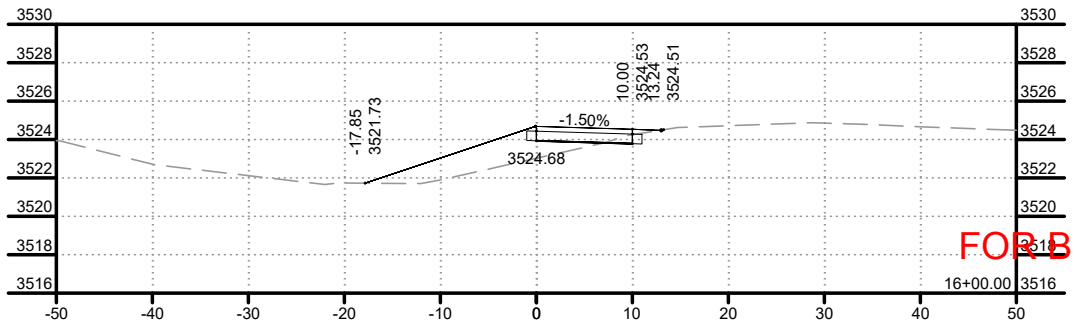
Westside Pathway Alignment



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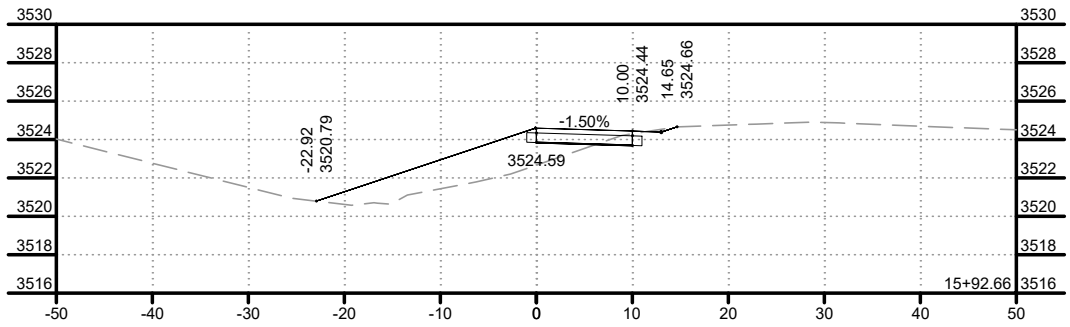

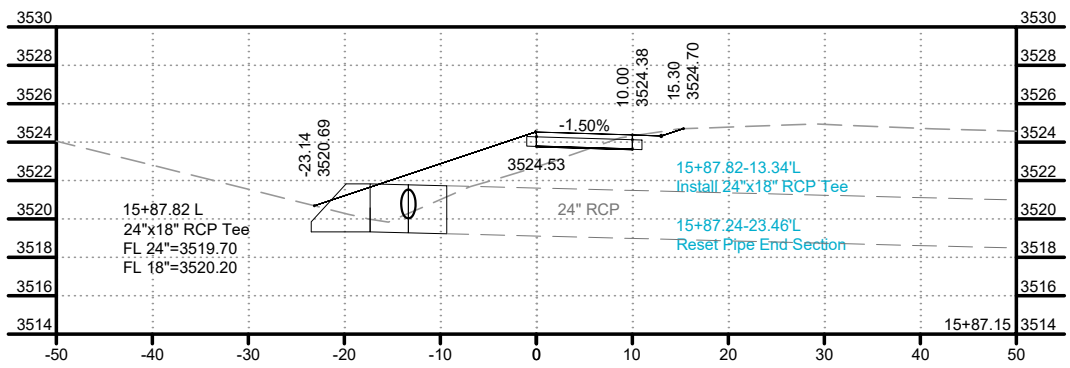

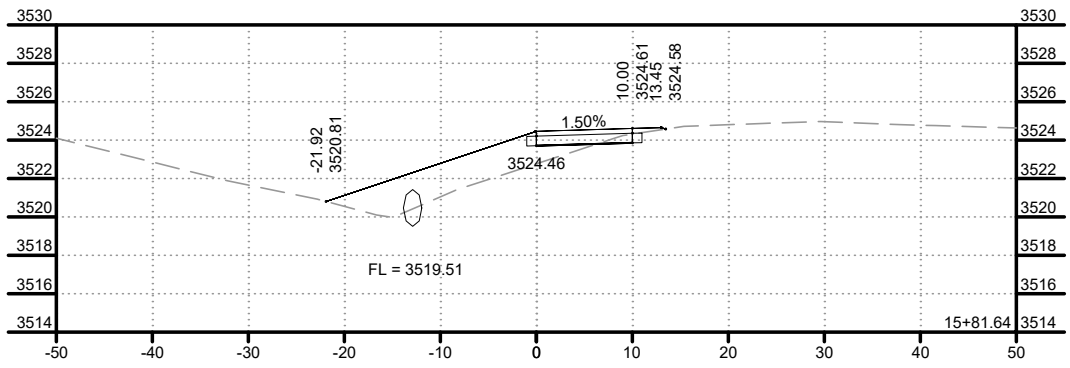

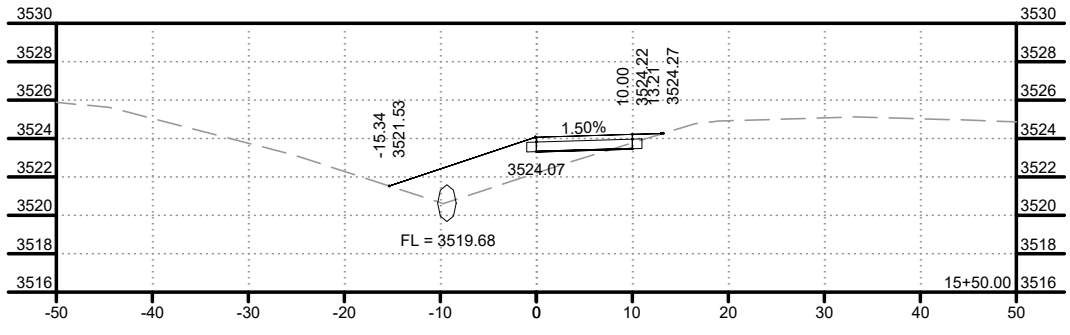

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Westside Pathway Alignment

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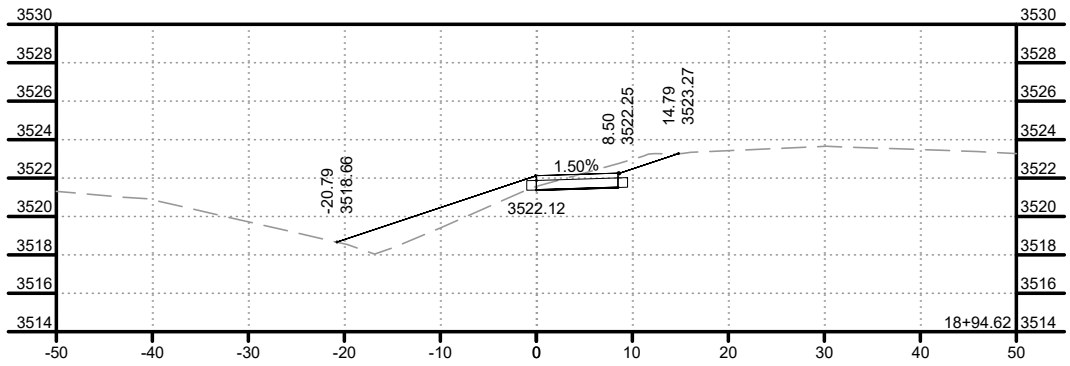

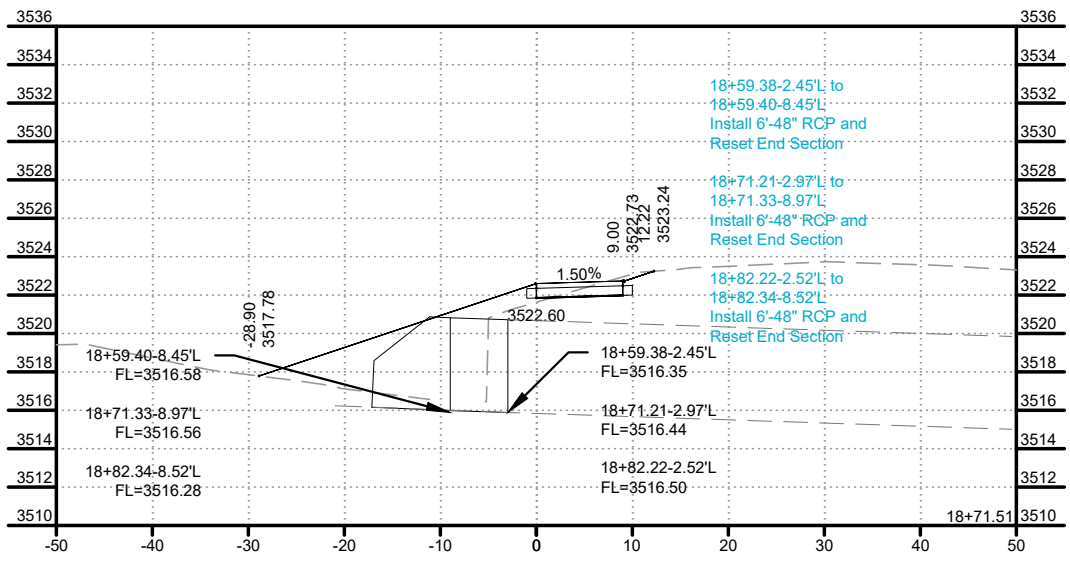

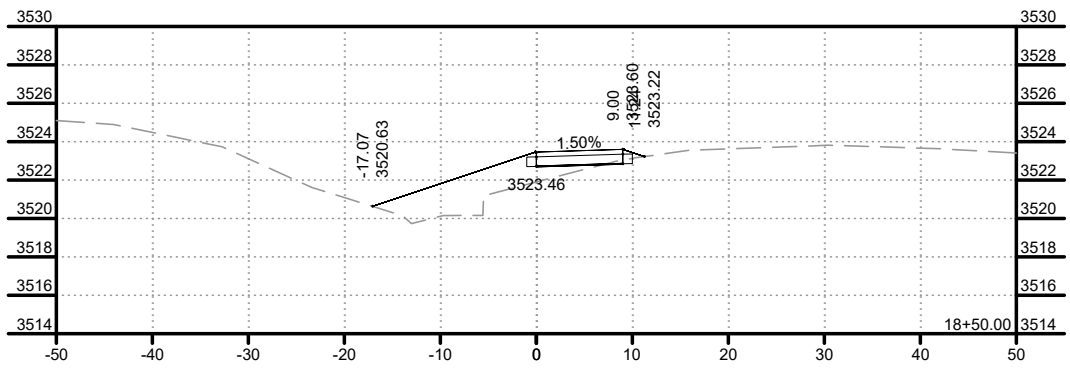

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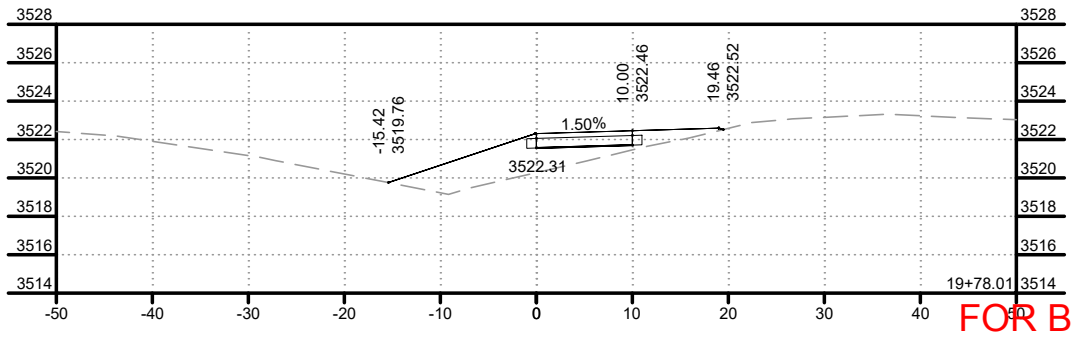
RICHARD A. SUDMEIER
SOUTH DAKOTA
6-23-23

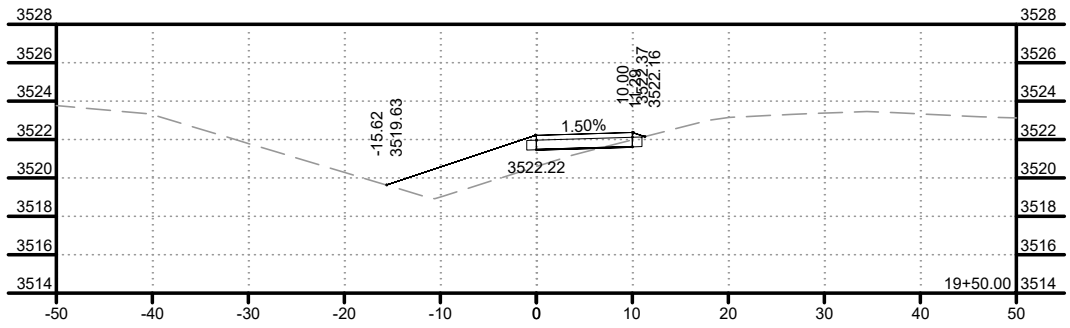
Plotting Date: June 4, 2021 Revised By: RS 5/27/2022

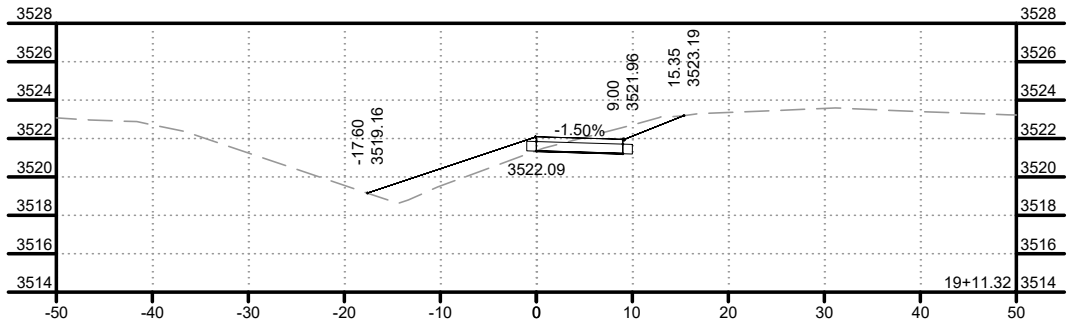
State Of South Dakota	Project	Sheet No.	Total Sheets
	TAPU(31)	115	120

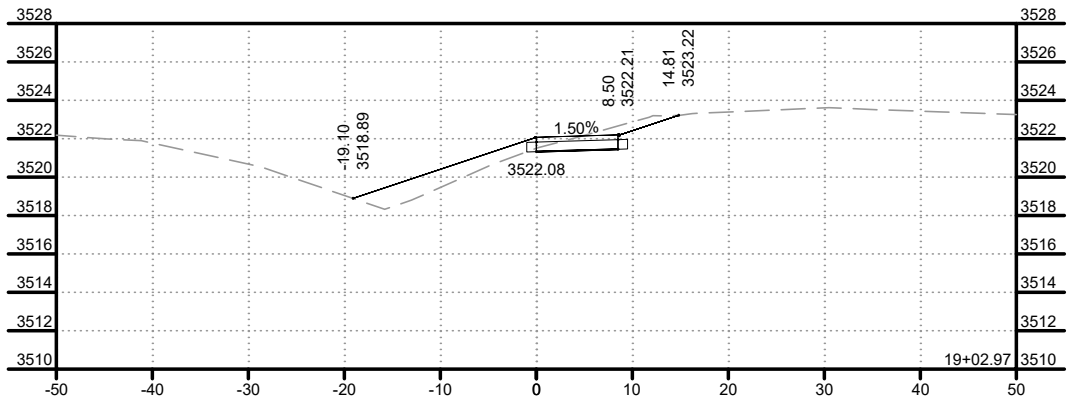
Westside Pathway Alignment

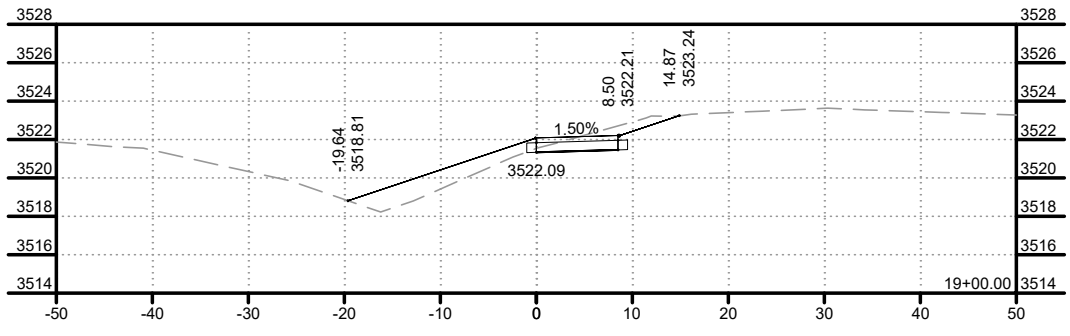


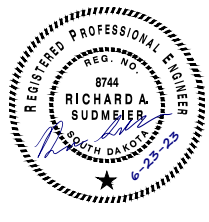
FOR BIDDING PURPOSES ONLY











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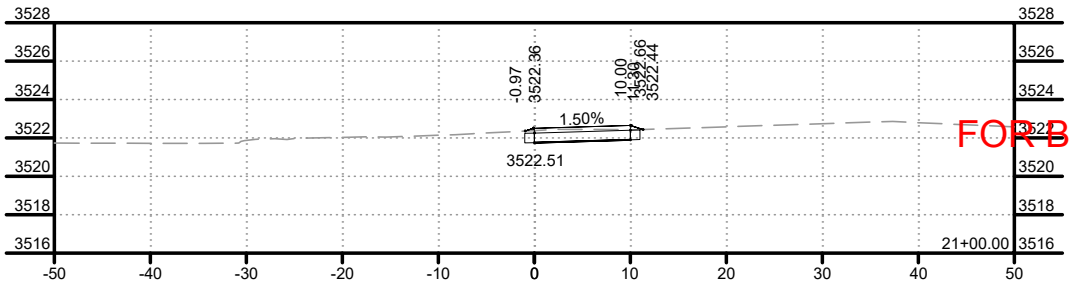

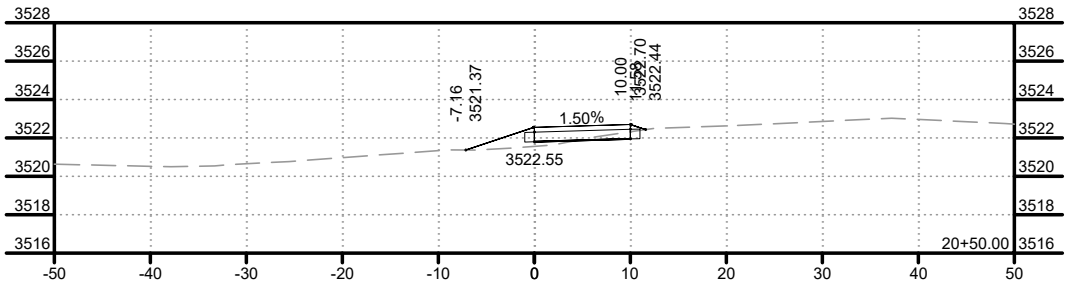

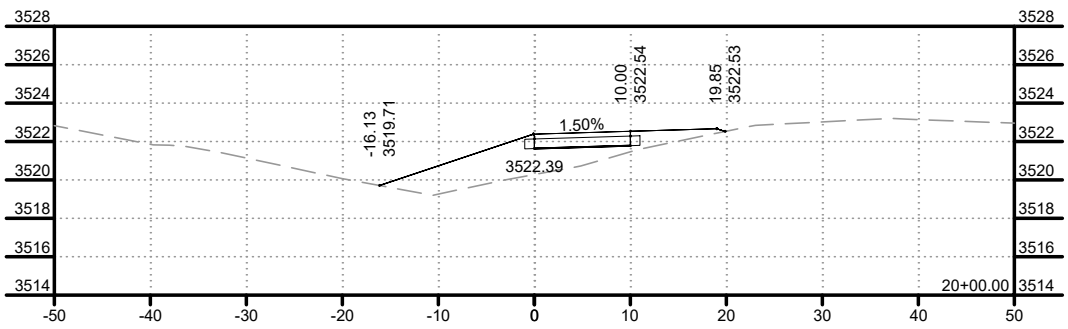

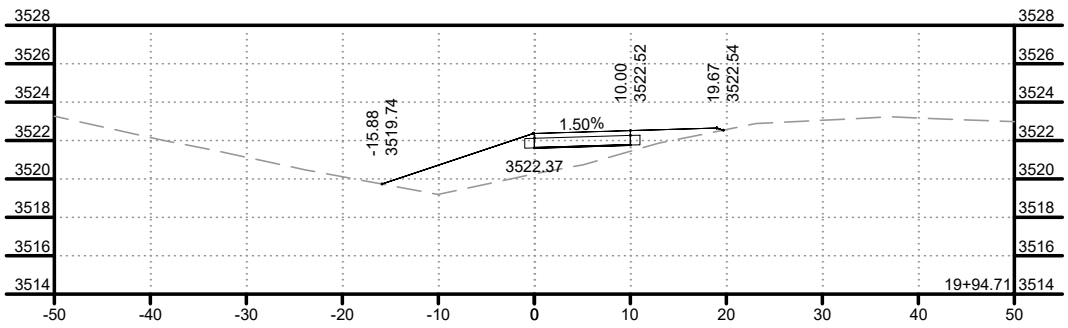

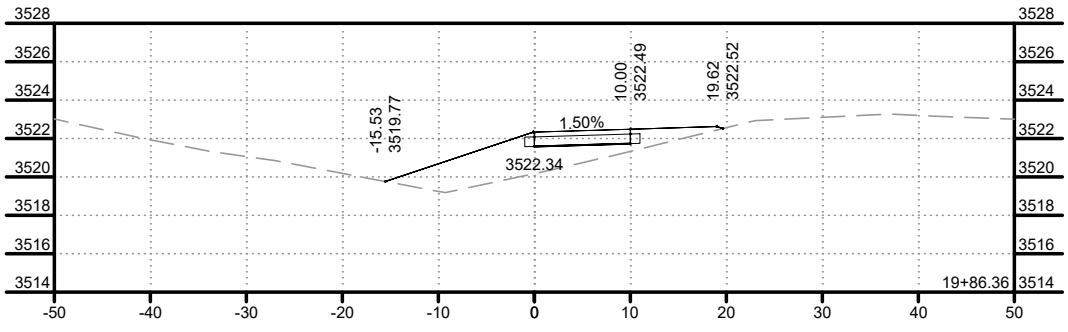

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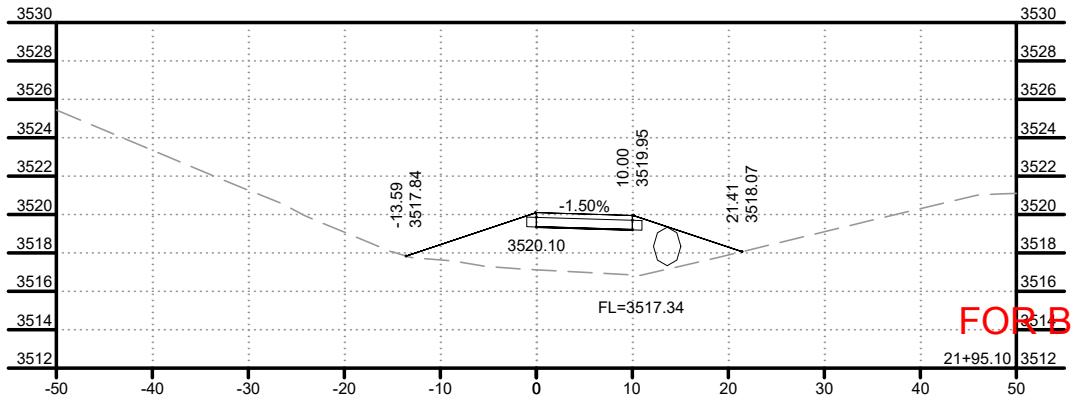

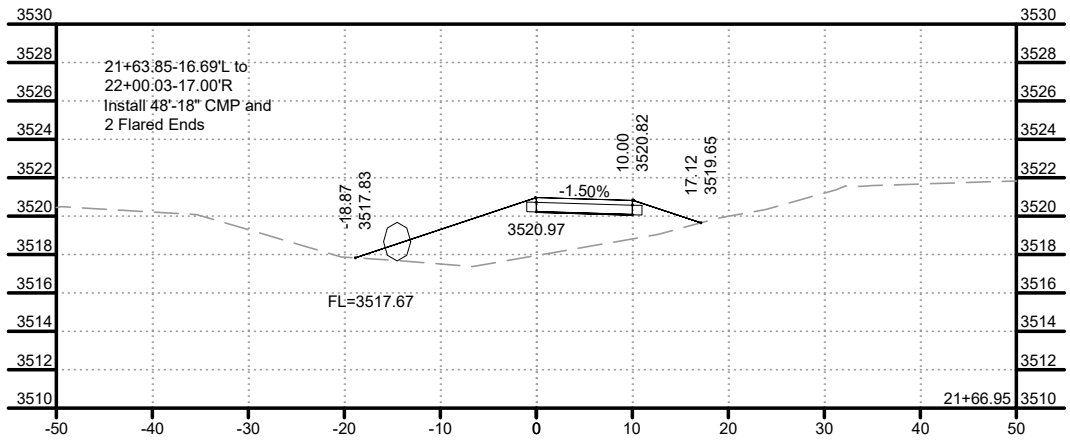

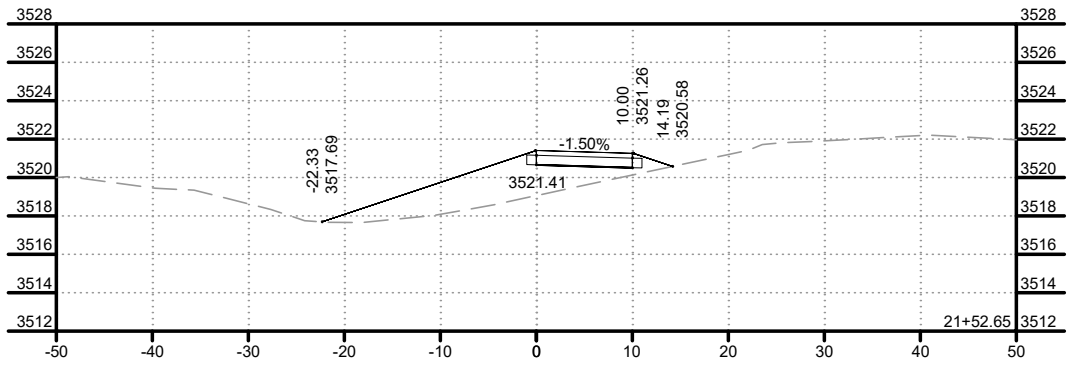

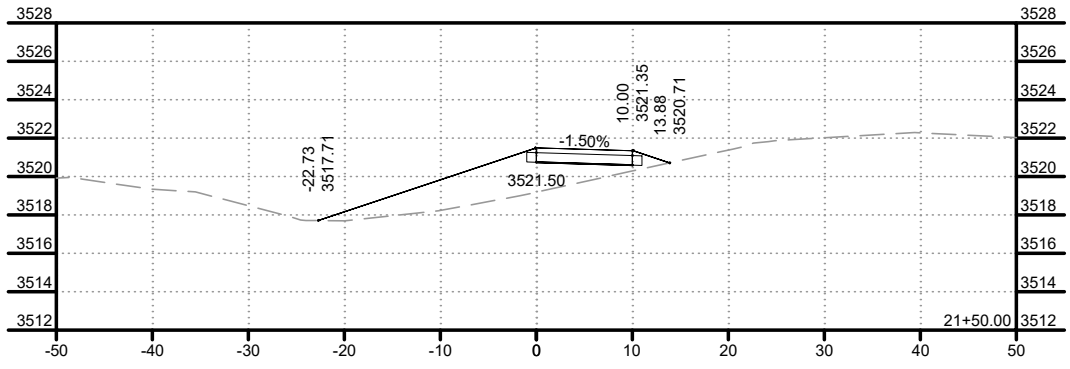

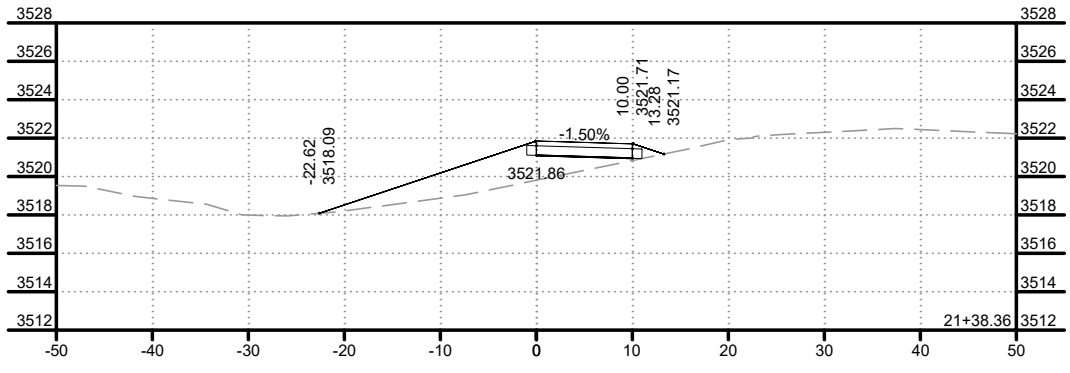

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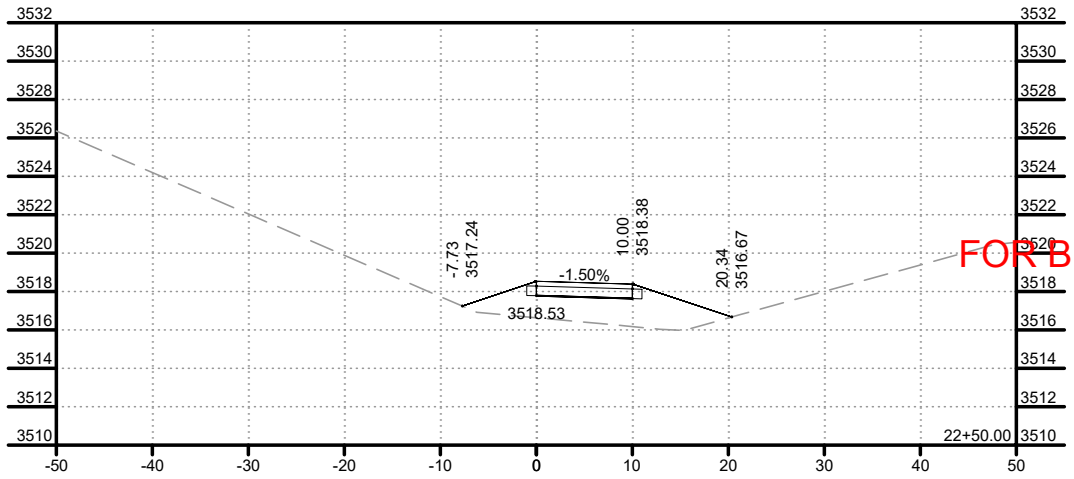

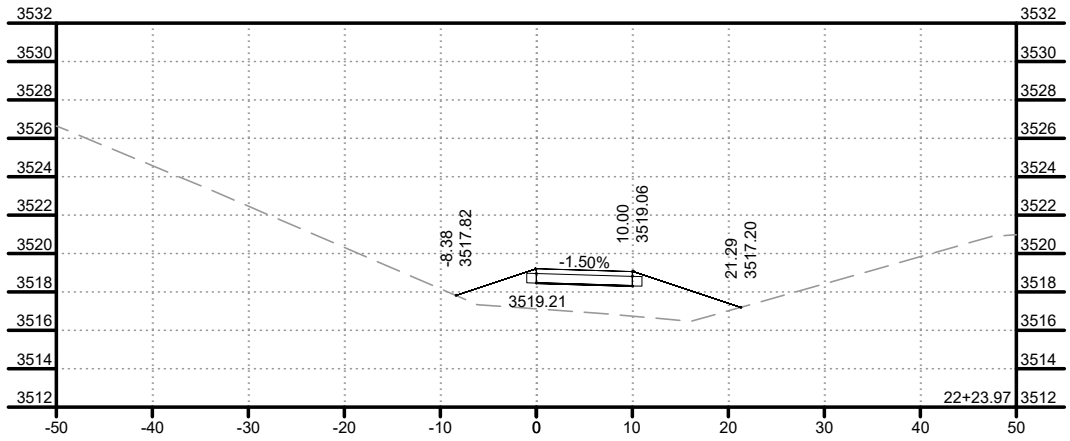

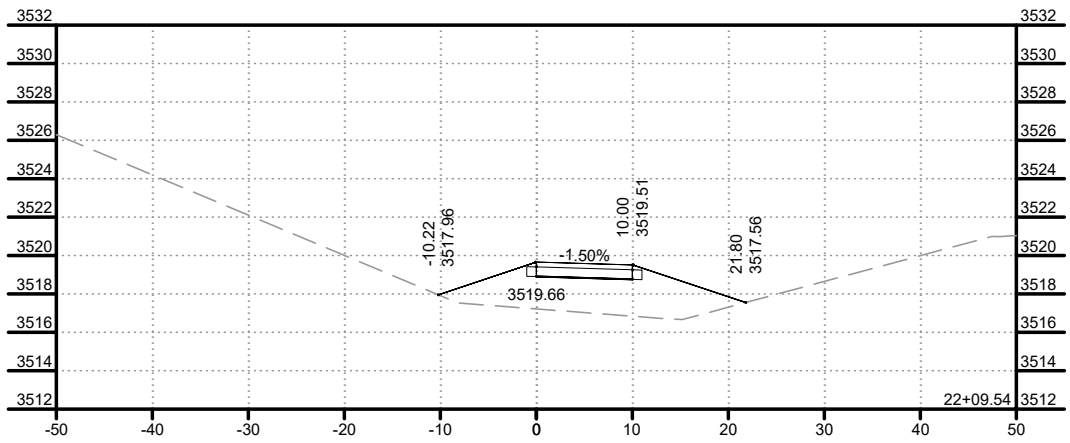

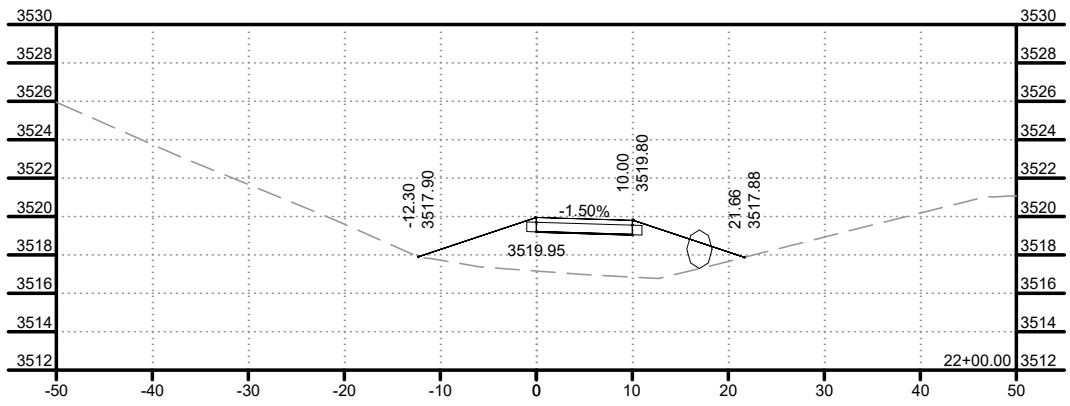

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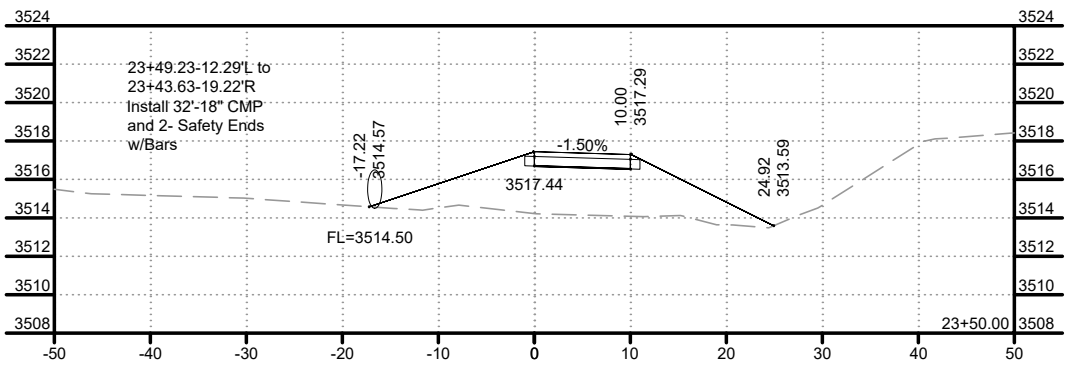

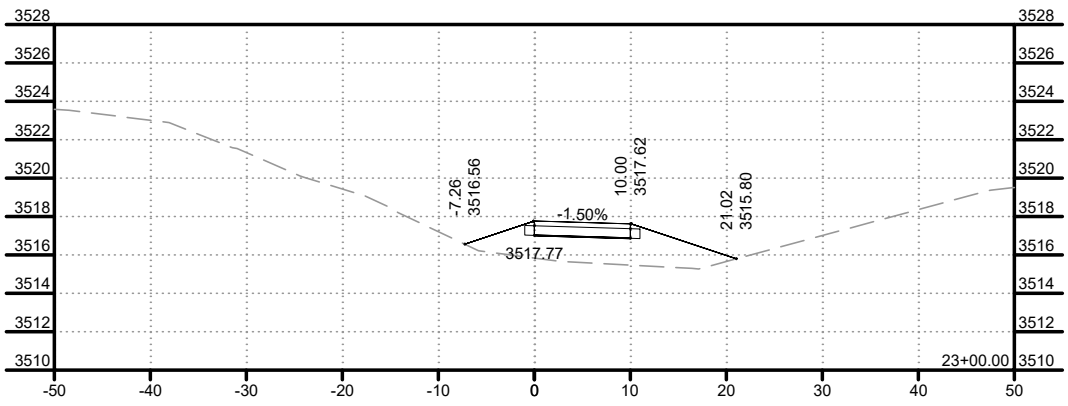

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