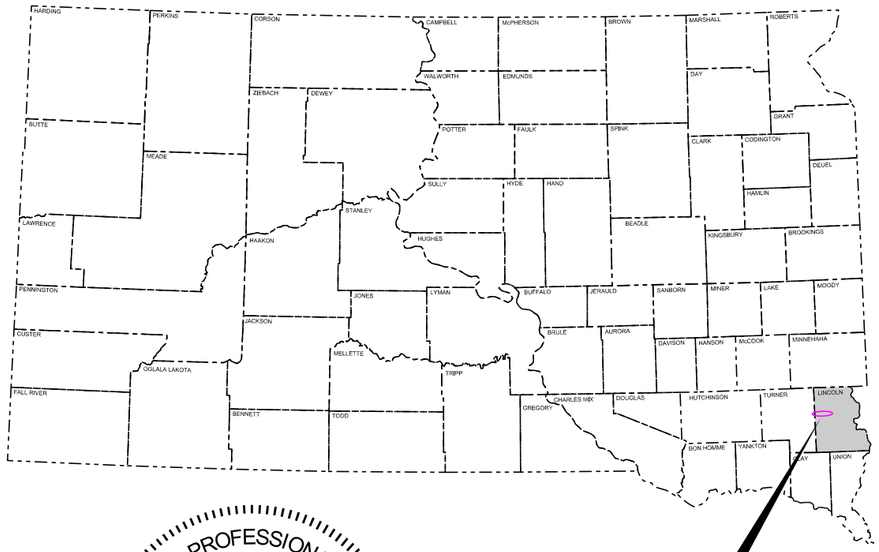

PROJECT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	1	194

Plotting Date: 11/5/2025

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

PROJECT P 0044(233)406
SD HIGHWAY 44
LINCOLN COUNTY

MILLING & ASPHALT CONCRETE RESURFACING,
GRADING, LIGHTING, PIPE WORK & ROW PLANS
PCN 08GM

REGISTERED PROFESSIONAL ENGINEER
REG NO.
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

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Sheets 33-39	Additional Materials and Milling Taper
Sheets 40-44	Typical Sections
Sheets 45-52	Traffic Control
Sheets 53-62	Erosion Control Sheets
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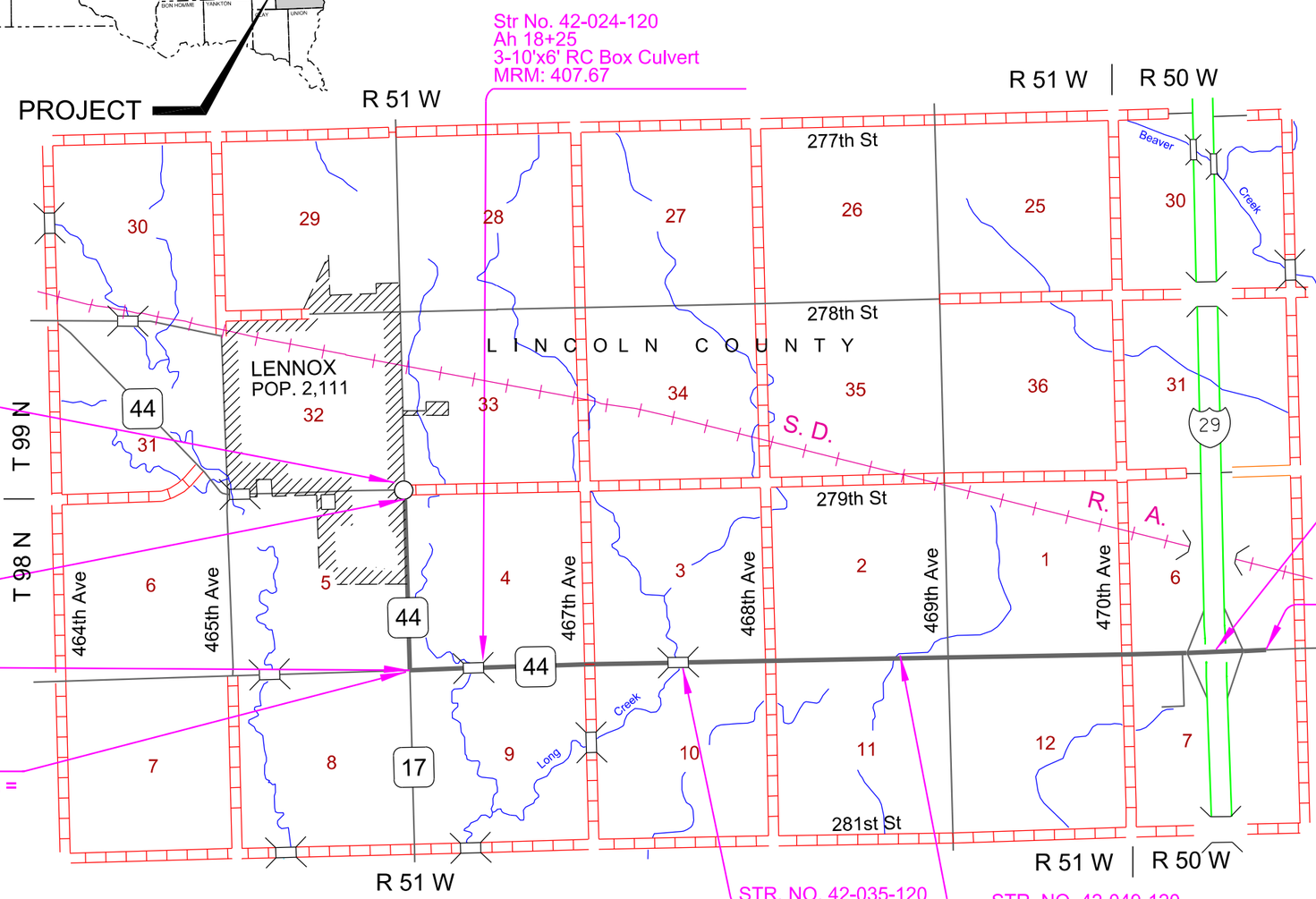


Str No. 42-024-120
Ah 18+25
3-10'x6' RC Box Culvert
MRM: 407.67

BEGIN P 0044(233)406
Station -0+44.54 = Station -0+44.54 on P 0044(74)406
Located 44.54' feet North and 0.87 feet East of the Northeast corner of Section 5, Township 98 North, Range 51 West of the 5th P.M.
MRM: 406.32+0.022

0+12.00
Begin Grading

52+93.24
End Grading
Begin Resurfacing

EQUATION
53+05.03 Bk. =
Ah 0+00.00

STR. NO. 42-035-120
Ah 79+05
2-10'x9'RC Box Culvert
MRM: 408.25

STR. NO. 42-049-120
Ah 151+24
2-12'x3'RC Box Culvert
MRM: 409.62

STR. NO. 42-065-120
CONT. CONCRETE BRIDGE
MRM: 411.84
(No Work)

END P 0044(233)406
Ah 245+14.54
MRM: 411.84+0.120

DESIGN DESIGNATION
SD 44

ADT (2024)	2276
ADT (2049)	4247
DHV	490
D	51%
T DHV	6.4%
T ADT	14.0%
V	65 MPH

STORM WATER PERMIT

Major Receiving
Body of Water: Long Creek
Area Disturbed: 11.5 Acres
Total Project Area: 17.7 Acres
Approx. Begin Lat,Long: 43.34480, -96.88578

Gross Length	29881.3 Feet	5.660 Miles
Length of Exceptions	254 Feet	0.048 Miles
Net Length	29627.3 Feet	5.611 Miles

McLaury ENGINEERING

2

January 21, 2026

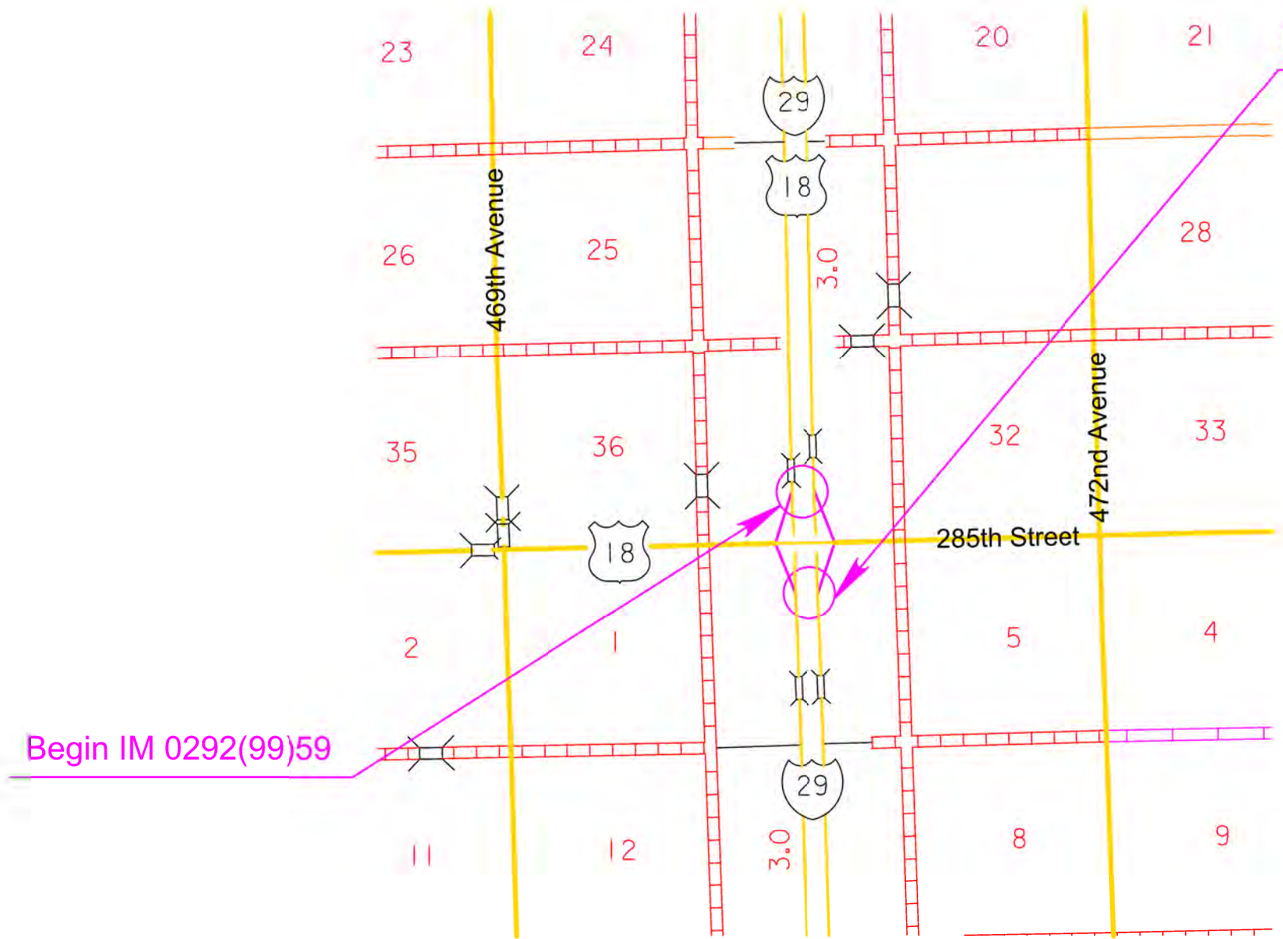
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	2	194

Plotting Date: 11/5/2025 Rev 11/17/2025 RJM

FOR BIDDING PURPOSES ONLY

PROJECT IM 0292(99)59
INTERSTATE 29
LINCOLN COUNTY

MILLING & ASPHALT CONCRETE RESURFACING
PCN 09VC



McLaury ENGINEERING

DESIGN DESIGNATION

I29 NB ON RAMP	
ADT (2022)	215
ADT (2047)	378
DHV	0
D	99%
T DHV	4.6%
T ADT	10.0%
V	80 MPH

I29 NB OFF RAMP	
ADT (2022)	904
ADT (2047)	1589
DHV	0
D	99%
T DHV	4.6%
T ADT	10.0%
V	80 MPH

I29 SB ON RAMP	
ADT (2022)	671
ADT (2047)	1180
DHV	0
D	99%
T DHV	4.6%
T ADT	10.0%
V	80 MPH

I29 SB OFF RAMP	
ADT (2022)	253
ADT (2047)	445
DHV	0
D	99%
T DHV	4.6%
T ADT	10.0%
V	80 MPH

Gross Length	2947.4 Feet	0.558 Miles
Length of Exceptions	0.0 Feet	0.000 Miles
Net Length	2947.4 Feet	0.558 Miles

REGISTERED PROFESSIONAL ENGINEER
REG NO.
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RYAN J.
MURTHA
11-17-25
SOUTH DAKOTA

ESTIMATE OF QUANTITIES – PCN 08GM

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	3	194

Plotting Date: 11/5/2025 Rev 11/17/2025 RJM

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
004E0030	Maintenance of Traffic Diversion(s)	Lump Sum	LS
004E0050	Remove Traffic Diversion(s)	Lump Sum	LS
009E0010	Mobilization	Lump Sum	LS
009E3220	Reestablish Right-of-Way and Property Corner	8	Each
009E3225	Reestablish Public Land Survey System Corner	1	Each
009E3230	Grade Staking	1.500	Mile
009E3245	Final Cross Section Survey	1.000	Mile
009E3250	Miscellaneous Staking	5.643	Mile
009E3280	Slope Staking	1.000	Mile
009E3290	Structure Staking	1	Each
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E3320	Checker	Lump Sum	LS
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E0100	Remove Concrete Footing(s)	Lump Sum	LS
110E0130	Remove Traffic Sign	58	Each
110E0135	Remove Delineator	28	Each
110E0300	Remove Concrete Curb and/or Gutter	139	Ft
110E0600	Remove Fence	6,194	Ft
110E0730	Remove Beam Guardrail	369.0	Ft
110E1010	Remove Asphalt Concrete Pavement	4,885.1	SqYd
110E1540	Remove Luminaire Pole Footing	4	Each
110E1690	Remove Sediment	1.0	CuYd
110E1693	Remove Erosion Control Wattle	50	Ft
110E1700	Remove Silt Fence	2,115	Ft
110E5100	Salvage Luminaire Pole	4	Each
110E5105	Salvage Luminaire	4	Each
110E7150	Remove Sign for Reset	11	Each
110E7500	Remove Pipe for Reset	83	Ft
110E7510	Remove Pipe End Section for Reset	3	Each
120E0010	Unclassified Excavation	43,233	CuYd
120E0100	Unclassified Excavation, Digouts	233	CuYd
120E0600	Contractor Furnished Borrow Excavation	28,313	CuYd
120E1000	Muck Excavation	843	CuYd
120E2000	Undercutting	21,467	CuYd
120E4100	Reprofiling Ditch	1.5	Sta
120E6100	Water for Embankment	534.0	MGal
120E6200	Water for Granular Material	248.4	MGal
230E0010	Placing Topsoil	6,163	CuYd
250E0020	Incidental Work, Grading	Lump Sum	LS
260E1010	Base Course	10,531.6	Ton
260E1030	Base Course, Salvaged	15,548.0	Ton
260E3010	Gravel Surfacing	1,059.3	Ton
260E3500	Temporary Gravel Surfacing	300.0	Ton

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
260E6010	Granular Material	50.0	Ton
270E0040	Salvage and Stockpile Asphalt Mix and Granular Base Material	15,548.0	Ton
320E0032	PG 58H-34 Asphalt Binder	1,270.3	Ton
320E1200	Asphalt Concrete Composite	414.2	Ton
320E1203	CLASS Q3R HOT MIXED ASPHALT CONCRETE	24,533.1	Ton
320E1800	Asphalt Concrete Blade Laid	1,050.5	Ton
320E4000	Hydrated Lime	252.2	Ton
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	11.2	Mile
320E7028	Grind Centerline Rumble Stripe in Asphalt Concrete	1.5	Mile
320E7030	Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete	3.1	Mile
320E7040	Grind 6" Transverse Rumble Strip in Asphalt Concrete	442.0	Ft
330E0010	MC-70 Asphalt for Prime	45.0	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	85.0	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	4.7	Ton
330E1000	Blotting Sand for Prime	114.6	Ton
332E0010	Cold Milling Asphalt Concrete	96,644	SqYd
421E0100	Pipe Culvert Undercut	92	CuYd
450E0142	24" RCP Class 2, Furnish	154	Ft
450E0150	24" RCP, Install	154	Ft
450E0162	30" RCP Class 2, Furnish	222	Ft
450E0170	30" RCP, Install	222	Ft
450E2016	24" RCP Flared End, Furnish	1	Each
450E2017	24" RCP Flared End, Install	1	Each
450E2024	30" RCP Flared End, Furnish	2	Each
450E2025	30" RCP Flared End, Install	2	Each
450E2032	42" RCP Flared End, Furnish	2	Each
450E2033	42" RCP Flared End, Install	2	Each
450E2200	24" RCP Sloped End, Furnish	4	Each
450E2201	24" RCP Sloped End, Install	4	Each
450E2204	30" RCP Sloped End, Furnish	6	Each
450E2205	30" RCP Sloped End, Install	6	Each
450E3042	42" RCP Arch Class 2, Furnish	176	Ft
450E3050	42" RCP Arch, Install	176	Ft
450E4516	42" RCP Arch Flared End, Furnish	4	Each
450E4517	42" RCP Arch Flared End, Install	4	Each
450E4759	18" CMP 16 Gauge, Furnish	116	Ft
450E4760	18" CMP, Install	116	Ft
450E5406	18" CMP Safety End, Furnish	4	Each
450E5407	18" CMP Safety End, Install	4	Each
450E5509	18" CMP Arch 16 Gauge, Furnish	34	Ft
450E5510	18" CMP Arch, Install	34	Ft
450E5519	24" CMP Arch 16 Gauge, Furnish	184	Ft

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
450E5520	24" CMP Arch, Install	184	Ft
450E6006	18" CMP Arch Safety End, Furnish	2	Each
450E6007	18" CMP Arch Safety End, Install	2	Each
450E6010	24" CMP Arch Safety End, Furnish	4	Each
450E6011	24" CMP Arch Safety End, Install	4	Each
450E9000	Reset Pipe	83	Ft
450E9001	Reset Pipe End Section	3	Each
451E6080	Adjust Water Valve Box	3	Each
464E0100	Controlled Density Fill	28.6	CuYd
600E0300	Type III Field Laboratory	1	Each
620E0020	Type 2 Right-of-Way Fence	6,194	Ft
620E0515	Type 1A Temporary Fence	310	Ft
620E1020	2 Post Panel	15	Each
620E1030	3 Post Panel	11	Each
630E0500	Type 1 MGS	100.0	Ft
630E1501	Type 1 Retrofit Guardrail Transition	4	Each
630E2017	MGS MASH Flared End Terminal	4	Each
632E1320	2.0"x2.0" Perforated Tube Post	451.6	Ft
632E1330	2.25"x2.25" Perforated Tube Post	194.6	Ft
632E1340	2.5"x2.5" Perforated Tube Post	140.5	Ft
632E2022	4"x4" White Delineator Back to Back with 1.12 Lb/Ft Post	56	Each
632E2028	4" Tubular White Delineator with 1.12 Lb/Ft Post	28	Each
632E2220	Guardrail Delineator	16	Each
632E2510	Type 2 Object Marker Back to Back	32	Each
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	390.9	SqFt
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	134.0	SqFt
632E3500	Reset Sign	11	Each
633E1200	High Build Waterborne Pavement Marking Paint, White	279	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	43	Gal
634E0010	Flagging	700.0	Hour
634E0020	Pilot Car	300.0	Hour
634E0110	Traffic Control Signs	1,471.3	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	20	Each
634E0630	Temporary Pavement Marking	23.2	Mile
634E0900	Portable Temporary Traffic Control Signal	4	Unit
634E1002	Detour and Restriction Signing	693.6	SqFt
634E1020	Temporary Business Signing	47.3	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	2	Each
635E0050	Breakaway Base Luminaire Pole with Arm, 50' Mounting Height	27	Each
635E3700	Roadway Luminaire, LED with Photoelectric Cell	27	Each
635E5020	2' Diameter Footing	243.0	Ft

REGISTERED PROFESSIONAL ENGINEER
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ESTIMATE OF QUANTITIES – PCN 08GM (CONTINUED)

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
635E5301	Type 1 Electrical Junction Box	15	Each
635E5302	Type 2 Electrical Junction Box	1	Each
635E5400	Electrical Service Cabinet	2	Each
635E8120	2" Rigid Conduit, Schedule 40	4,880	Ft
635E8220	2" Rigid Conduit, Schedule 80	1,440	Ft
635E9014	1/C #4 AWG Copper Wire	24,740	Ft
635E9016	1/C #6 AWG Copper Wire	8,400	Ft
635E9018	1/C #8 AWG Copper Wire	5,095	Ft
635E9022	1/C #12 AWG Copper Wire	2,565	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	1,755	Ft
680E2502	Crushed Rock	69.4	Ton
700E0110	Class A Riprap	145.9	Ton
730E0100	Cover Crop Seeding	1.0	Bu
730E0212	Type G Permanent Seed Mixture	300	Lb
731E0200	Fertilizing	8.60	Ton
732E0100	Mulching	26.2	Ton
732E0200	Fiber Mulching	6.0	Ton
734E0103	Type 3 Erosion Control Blanket	300	SqYd
734E0154	12" Diameter Erosion Control Wattle	200	Ft
734E0510	Shaping for Erosion Control Blanket	135	Ft
734E0602	Low Flow Silt Fence	2,044	Ft
734E0604	High Flow Silt Fence	774	Ft
734E0610	Mucking Silt Fence	147	CuYd
734E0620	Repair Silt Fence	529	Ft
831E0110	Type B Drainage Fabric	1,160	SqYd
831E1010	Geogrid Reinforcement	714	SqYd
900E0012	Refurbish Double Mailbox	1	Each
900E1320	Construction Entrance	1	Each
900E1980	Storage Unit	1	Each

ESTIMATE OF QUANTITIES – STRUCTURE NUMBER 42-024-120

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0010	Incidental Work	Lump Sum	LS
450E8300	Culvert Joint Cleaning	96.0	Ft
450E8305	Repair Culvert Joint	96.0	Ft

ESTIMATE OF QUANTITIES – STRUCTURE NUMBER 42-035-120

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0010	Incidental Work	Lump Sum	LS
450E8300	Culvert Joint Cleaning	43.0	Ft
450E8305	Repair Culvert Joint	43.0	Ft

ESTIMATE OF QUANTITIES – STRUCTURE NUMBER 42-049-120

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	66	CuYd
421E0200	Box Culvert Undercut	223	CuYd
560E2160	2-12'x3' Precast Concrete Box Culvert, Furnish	80.0	Ft
560e2161	2-12'x3' Precast Concrete Box Culvert, Install	80.0	Ft
560E3160	2-12'x3' Precast Concrete Box Culvert End Section, Furnish	2	Each
560E3161	2-12'x' Precast Concrete Box Culvert End Section, Install	2	Each
700E0110	Class A Riprap	43.1	Ton
831E0110	Type B Drainage Fabric	63	SqYd

ESTIMATE OF QUANTITIES – PCN 09VC

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	42.0	SqYd
120E0100	Unclassified Excavation, Digouts	28	CuYd
120E6200	Water for Granular Material	0.5	MGal
260E1010	Base Course	56.0	Ton
320E0032	PG 58H-34 Asphalt Binder	47.1	Ton
320E1200	Asphalt Concrete Composite	14.0	Ton
320E1203	CLASS Q3R HOT MIXED ASPHALT CONCRETE	777.8	Ton
320E1800	Asphalt Concrete Blade Laid	125.6	Ton
320E4000	Hydrated Lime	9.0	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	5.8	Ton
332E0010	Cold Milling Asphalt Concrete	6,714	SqYd
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	3,078	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	2,980	Ft
634E0110	Traffic Control Signs	310.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	4	Each

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 4public 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 A: AQUATIC RESOURCES

COMMITMENT A1: WETLANDS

All efforts to avoid and minimize wetland impacts from the project have resulted in approximately 0.58 acre of wetlands (includes temporary and permanent) becoming impacted. Refer to the plans for location and boundaries of the impacted wetlands.

Table of Impacted Wetlands

Wetland No.	Station	Perm. Impact Left (Acres)	Perm. Impact Right (Acres)	Temp. Impact Left (Acres)	Temp. Impact Right (Acres)	Total Impact (Acres)
1	1+50 – 2+00 R	0.00	0.08	0.00	0.00	0.08
2	1+00 – 2+75 L	0.09	0.00	0.00	0.00	0.09
3	12+30 – 12+80 L	0.04	0.00	0.00	0.00	0.04
4	25+45 – 27+15 R	0.00	0.11	0.00	0.00	0.11
5	30+15 – 32+20 R	0.00	0.24	0.00	0.00	0.24
6	136+00 – 144+40 L	0.00	0.00	0.00	0.00	0.00
7	139+80 – 145+00 R	0.00	0.00	0.00	0.02	0.02
8	186+10 – 187+70 L/R	0.00	0.00	0.00	0.00	0.00

Action Taken/Required:

Mitigation is required in accordance with the "*Statewide Finding Regarding Wetlands for South Dakota Federal-Aid Highway Projects (February 2018)*". Replacement of 0.58 acre of permanent wetland impacts will be completed through another wetland mitigation opportunity in a manner which considers FHWA's program-wide goal of 'net gain' of wetlands through enhancement, creation, and preservation.

Temporary impacts identified in the Table of Impacted Wetlands will not be mitigated as original contours and elevations will be re-established as designated in the plans. Prior to initiating temporary work in wetlands, the Contractor will submit a plan to the Project Engineer in accordance with Section 7.21 D of the Specifications.

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

COMMITMENT A2: STREAMS

All efforts to avoid and minimize stream impacts from the project have resulted in approximately 0.05 acre of stream (includes temporary and permanent) becoming impacted. Refer to the plans for location and boundaries of the impacted streams.

Table of Impacted Streams

Stream Name	Station	Perm. Impact Left (Acres)	Perm. Impact Right (Acres)	Temp. Impact Left (Acres)	Temp. Impact Right (Acres)	Total Impact (Acres)
Snake Creek	151+24 L/R	0.02	0.01	0.02	0.00	0.05

Action Taken/Required:

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

COMMITMENT C: WATER SOURCE

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

Action Taken/Required:

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

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

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

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

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

Action Taken/Required:

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

COMMITMENT D2: SURFACE WATER DISCHARGE

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

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

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

Action Taken/Required:

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

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

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

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

COMMITMENT E: STORM WATER

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

Action Taken/Required:

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

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

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

The form can be found at:
<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_CGPAppendixCCA2018Fillable.pdf >

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

Storm Water Pollution Prevention Plan

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

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

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

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

SDDOT: < https://dot.sd.gov/doing-business/environmental/stormwater >
DANR:<
https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/stormwater/default.aspx >
EPA: < https://www.epa.gov/npdes >

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

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

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

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

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

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

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

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

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

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

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

Action Taken/Required:

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

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

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

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

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

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

COMMITMENT N: SECTION 404 PERMIT

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

Action Taken/Required:

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

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

SEQUENCE OF OPERATIONS

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

PCN 08GM

1. The project will be separated into two phases for the purpose of sequencing.
    a. Phase 1a: SD44 (North/South Section) from Industrial Avenue to the North: Sta. 0+12.00 to Sta. 7+50.00 Grading Operations
    b. Phase 1b: SD44 (North/South Section) South of Industrial Avenue: Sta. 7+50.00 to Sta. 52+93.24 Grading Operations
    c. Phase 2: SD44 (East/West Section) Sta. Ah 0+00 to Sta. Ah 245+14.54 Milling and Overlay Operations
2. Phase 1 Construction will be supported by a detour on 280th Street from 466th Avenue to 465th Avenue and on 456th Avenue from 280th Street north to SD44.
3. Phase 1a Requirements: See Special Provision for Contract Time
4. Parcel A2 Access Requirements: Access to Parcel A2 will be maintained at all times. Construction of the driveway will be completed one half at a time and in accordance with Special Provision for Contract Time. These operations will be coordinated with and approved by the Engineer.
5. Phase 1b Requirements: A minimum 20' wide gravel surfaced access to Parcel A9 and A10 will be maintained at all times during construction. The Contractor will be responsible for developing the necessary phasing to maintain access.
6. Phase 2 will be open to traffic at all times during construction.
7. Phase 2 Requirements: Where culvert or box culvert repairs/replacements conflict with the lanes of travel, the repairs/replacements will be completed one half at a time with Lane Closures Using Stop Signs. The Contractor will be responsible for developing the necessary phasing to maintain traffic at all times.

Phase 1 Sequencing:

1. Install overwidth restriction and detour signing
2. Install traffic control signing
3. Install erosion control
4. Complete removal operations
5. Remove and replace culverts
6. Complete grading operations
7. Install conduit/wire/lighting
8. Install base course and asphalt for prime
9. Open Phase 1 to traffic
10. Complete paving operations
11. Complete permanent pavement markings
12. Remove traffic control signing
13. Remove overwidth and restriction and detour signing
14. Complete all miscellaneous items and clean up work

Phase 2 Sequencing:

1. Install traffic control signing
2. Install erosion control
3. Complete culvert repairs\replacements.
4. Install traffic diversion
5. Install reinforced concrete box culvert
6. Remove traffic diversion
7. Repair existing reinforced concrete box culvert
8. Complete embankment and guardrail
9. Complete milling and asphalt paving operations
10. Complete permanent pavement markings
11. Remove traffic control signing
12. Remove overwidth and restriction and detour signing
13. Complete all miscellaneous items and clean up work

PCN 09VC

Sequencing:

1. Install appropriate traffic control for short term ramp closures. Once work has started, the work will be actively pursued to completion.
2. Complete milling and asphalt resurfacing of the interchange ramps
3. Open interchange ramps to traffic
4. Complete permanent pavement markings
5. Complete all miscellaneous items and clean up work

COORDINATION BETWEEN CONTRACTORS

A separate contract for the Oriole Avenue Reconstruction Project in the City of Lennox will be awarded to another Contractor for roadway reconstruction and utility update work on Oriole Avenue adjacent to this project. This contract is scheduled to bid in January 2026 with construction projected between May and August 2026.

The Contractor will schedule work so as not to interfere with or hinder the progress of the work performed by the other Contractor. Conflicting traffic control devices may need to be temporarily adjusted or removed as directed by the Engineer and at no additional cost to the contract.

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.

All temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports.

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.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

Traffic will be maintained on the driving lanes. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to rerouted traffic or Contractor's equipment will be repaired at no expense to the Department.

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.

OVERWIDTH RESTRICTION AND DETOUR SIGNING

The Contractor will furnish and install the overwidth restriction and detour signs as shown in these plans. Prior to installing the signs, the Contractor will mark the sign locations and review them with the Engineer. Overwidth restriction and detour signs will be installed on fixed location, ground mounted, breakaway supports. It will be the responsibility of the Contractor to maintain and reinstall these signs during the project as required by the construction progress. Upon completion of the project, the Contractor will remove the overwidth restriction and detour signs.

All costs for furnishing the signs, posts, and mounting hardware, and for installing, maintaining, covering, and removing the overwidth restriction and detour signs will be incidental to the contract unit price per square foot for "Detour and Restriction Signing".

TEMPORARY BUSINESS SIGNS

The Contractor will install temporary business signs per the details and at the locations shown on the plans.

All costs for the temporary business signs to include furnishing, labor, materials, erecting, maintaining, and removal will be included in the contract unit price per square foot for "Temporary Business Signing".

FLAGGING

Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

Additional flagger warning signs and flagger hours have been included in the Estimate of Quantities for use on intersecting roads. These flaggers will be used as directed by the Engineer and will be used primarily during daytime hours. Also included in the Estimate of Quantities are WAIT FOLLOW PILOT CAR signs for use on low volume intersecting roads as determined by the Engineer. WAIT FOLLOW PILOT CAR signs will not block the view of the stop sign.

It is required that the flaggers and pilot car operators be able to communicate with one another. If an emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movement. All costs associated with this will be incidental to the contract unit price per hour for “Flagging”.

TEMPORARY PAVEMENT MARKING

Temporary Pavement Marking Paint will be used on milled and leveling surfaces for centerlines, lane lines, skips, and as directed by the Engineer. The Temporary Pavement Marking Paint will be placed at the location of the existing pavement markings except that centerline will be double yellow the entire project length and will be offset 6-inches from centerline of the roadway. It will be the Contractor’s responsibility to determine which direction to offset so that the markings do not get covered up when the first half of the roadway is paved. Any markings that get covered by the paving operation will be reestablished as directed by the Engineer at the Contractor’s expense. The Contractor will be responsible for marking out those exact locations.

Temporary Flexible Vertical Markers (Tabs) will be used on the top lift of asphalt surfacing for centerline delineation, lane lines, skips, and as directed by the Engineer. Tabs will be offset 6-inches from the location shown for permanent pavement markings. Centerline will be double yellow lines with tabs spaced at 5’ the entire project length.

Temporary pavement marking paint will not be allowed on the final lift of asphalt surfacing. Temporary pavement marking paint will not be allowed on the chip seal, fog seal, or flush seal. Temporary flexible vertical markers (tabs) must be used on the final lift of asphalt surfacing. The Contractor may use tabs with covers, uncovering them for the chip seal, fog seal, or flush seal. As an alternative, the Contractor may install new tabs for the fog seal or flush seal.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

Full reflectivity of all temporary flexible vertical markers (tabs) is required at all times. The Contractor will be required to replace any missing or non-reflective tabs after each installation as detailed below at no additional cost to the State.

Quantities of Temporary Pavement Markings consist of:

Phase 1
- One pass on top of the primed surface
- One pass on top of the first lift of asphalt concrete
- One pass on top of the second lift of asphalt concrete
- One pass on top of the final lift of asphalt concrete
- One pass after the flush seal

Phase 2
- One pass on top of the milled surface
- One pass on top of the final lift of asphalt concrete
- One pass prior to the flush seal, length as determined by the Engineer
- One pass after the flush seal

If the Engineer determines that an additional pass prior to the flush seal is not required, this application of the temporary pavement marking will be eliminated. If the flush seal is eliminated for the project, the application of the temporary pavement marking on top of the flush seal as well as the additional pass prior to the flush seal will be eliminated.

No adjustment in the contract unit price for “Temporary Pavement Marking” will be made because of a variation in quantities.

In the absence of a signed lane closure or pilot car operation, FLAGGER (W20-7) symbol signs and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights will be positioned on the shoulder in advance of workers for both directions of traffic during the installation and removal of the temporary flexible vertical markers (tabs). The traffic control device used will be moved intermittently to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1) sign, a WORKER (W21-1) symbol sign or a BE PREPARED TO STOP (W3-4) sign will be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work must be approved by the Engineer.

Prior to nightfall, tabs will be required to mark centerline on segments of roadway where existing centerline markings have been removed and new markings have not been installed.

TRAFFIC CONTROL FOR ASPHALT CONCRETE RESURFACING

The Contractor will need to install LOOSE GRAVEL (W8-7) signs with advisory speed plaques (W13-1P) in areas where loose sand is present during the flush seal operation. LOOSE GRAVEL signs have been included in these plans for this.

PORTABLE TEMPORARY TRAFFIC CONTROL SIGNAL

The Contractor will install portable temporary traffic control signals as directed. A location for the signals is not specified, and they will be used at the direction of the Engineer.

All vehicle signal heads will have backplates with retroreflective border. The vehicle signal head backplates will have a factory applied 3-inch wide yellow retroreflective border. Sheeting for the border will be Type IX or Type XI in conformance with ASTM D4956.

Signal backplates will be polycarbonate, aluminum, or aluminum-composite. Minimum material thicknesses are:

Polycarbonate, 0.10-inch
Aluminum, 0.06-inch
Aluminum-Composite, 0.08-inch

All traffic signal equipment and materials will meet the requirements of Sections 635 and 985 of the Specifications except the controller requirements.

Signal backplates will extend not less than 5 inches from the edge of the signal head at the top, bottom, and sides.

Initial signal timings for the portable temporary traffic control signal will be as provided in the plans.

All costs involved with constructing the portable temporary traffic control signal as specified above and on the plans, will be included in the contract unit price per unit for “Portable Temporary Traffic Control Signal”.

CONTRACTOR FURNISHED PORTABLE CHANGEABLE MESSAGE SIGN

One week prior to starting work affecting the traveling public, portable changeable message signs (PCMS) will be installed at detailed in the plans to notify drivers of the upcoming construction. The Contractor will program the portable changeable message signs with the following message:

ROAD WORK
STARTS (Date)

When work begins that will affect traffic patterns, the Contractor will re-program the PCMS as directed by the Engineer.

INCIDENTS

An incident is an emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic such as a crash, hazardous materials spill, or other event.

The Contractor will set up a meeting prior to start of work to plan and coordinate responses to an incident. The Contractor will invite the Department of Transportation, the South Dakota Highway Patrol, the Lincoln County Sheriff and local emergency response entities to the meeting.

The Contractor will assist to maintain traffic as required by these plan notes and as agreed to at that meeting.

Emergency vehicle access through the project will be considered and discussed at the meeting.

The Contractor may be required to modify messages on portable changeable message signs or relocate portable changeable message signs, and to provide flaggers to direct or detour traffic. The Contractor should be prepared to relocate advance warning signs if determined to be necessary for a major traffic incident lasting more than two hours. Fixed location ground mounted signs may be covered and additional portable signs provided.

No additional payment will be made for the modification of portable changeable message sign messages or the relocation of portable changeable message signs. Cost for the relocation of an advance warning sign due to an incident will be 50% of the designated sign rate. Flaggers will be paid for at the contract unit price per hour for “Flagging”

MACHINE CONTROL GRADING & MODEL INFORMATION

Electronic design files are made available by the SDDOT Bid Letting Office through the SDDOT’s SharePoint Directory for Contractors. The roadway subgrade models and xml files provided for this project include the following highway features: intersecting roads and entrances and traffic diversions.

Highway features not included in the roadway subgrade model(s) xml file(s) are the following: inslope transitions at pipes, guardrail widening, mailbox turnouts, historical marker turnouts, ditch blocks, muck excavation, and unstable excavation.

These files are provided for informational purposes only. The information shown in the plans will govern over the provided electronic information. The Contractor assumes the risk of error if the information is used for any purposes for which the information was not intended. The Contractor assumes all risk of any assumptions or manipulations made of the electronic information.

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 10 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 roadway different than the typical sections will be constructed to the limits shown on the cross sections. If significant changes to the cross sections are necessary during construction, the Engineer will contact the Designer for the proposed change.

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

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

A copy of the subsurface/subgrade investigation for this project is available for review at the Mitchell Region and Sioux Falls Area offices.

TYPE III FIELD LABORATORY

The Contractor will provide high-speed broadband internet connection to the field lab. The multiport internet connection may be hardwired, through a cellular method, or other approved service that allows Wi-Fi connection. Prior to obtaining the internet connection, the Contractor will submit the internet connection’s technical data to the Area Office to check for compatibility with the state’s computer equipment. The Contractor’s personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer. The internet service will be incidental to the contract unit price per each for “Type III 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.

CHECKING SPREAD RATES

The Contractor will be responsible for checking the Base Course/Base Course, Salvaged and Asphalt Concrete spread rates and taking the weigh delivery tickets as the surfacing material arrives on the project and is placed onto the roadway.

The Contractor will compute the required spread rates for each typical surfacing section and create a spread chart prior to the start of material delivery and placement. The Engineer will review and check the Contractor’s calculations and spread charts. The station to station spread will be written on each ticket as the surfacing material is delivered to the roadway.

At the end of each day’s shift, the Contractor will verify the following:

- All tickets are present and accounted for,
- The quantity summary for each item is calculated,
- The amount of material wasted if any,
- Each day’s ticket summary is marked with the corresponding ‘computed by’,
- The ticket summary is initialed and certified that the delivered and placed quantity is correct.

All daily tickets and the summary by item will be given to the Engineer no later than the following morning.

If the checker is not properly and accurately performing the required duties, the Contractor will correct the problem or replace the checker with an individual capable of performing the duties to the satisfaction of the Engineer. Failure to do so will result in suspension of the work.

The Department will perform depth checks. The Contractor will be responsible for placement of material to the correct depth unless otherwise directed by the Engineer. If the placed material is not within a tolerance of ±1/2 inch of the plan shown depth, the Contractor will correct the problem at no additional cost to the Department. Excess material above the tolerance will not be paid for. Achieving the correct depth may require picking up and moving material or other action as required by the Engineer. All costs for providing the Contractor furnished checker and performing all related duties will be incidental to the contract lump sum price for the “Checker”. No allowances will be made to the contract lump sum price for Checker due to authorized quantity variations unless the quantities for the material being checked vary above or below the estimated quantities by more than 25 percent. Payment for the Checker will then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

TRAFFIC DIVERSIONS

The traffic diversion is located at Sta. Ah 151+24. The traffic diversion will be constructed according to Section 4.5 A of the Specifications. Installation and removal of the traffic diversions will meet all requirements as set forth in the South Dakota Surface Water Quality Standards.

The traffic diversion located at Station Ah 151+24 will be constructed according to the geometric layouts shown in the plans with the temporary drainage structure(s) provided in the following table. The temporary structure sizes are designed to pass the design flood frequency flows without overtopping the traffic diversion grade, to minimize potential upstream flooding, and are sized to meet FEMA (Federal Emergency Management Agency) requirements where applicable. The structure(s) will be placed at the flowline elevation and location as stated in the "Table of Temporary Drainage Structures in Traffic Diversions". If the Contractor proposes to use a different size drainage structure and/or a different geometric layout for the temporary diversion, the proposal must be submitted to the Engineer during the project preconstruction meeting. This information will be forwarded to the DOT Hydraulics Office for review. Construction of the traffic diversion(s) will not be allowed until approval of the proposal is obtained from the Hydraulics Office.

Table of Temporary Drainage Structures in Traffic Diversions

Traffic Diversion Location	Design Flood Frequency	* Flowline Elevation	Ordinary High Water Elevation	Temporary Structure
Ah 151+24	2 year	1323.68	1324.50	2-36" CMP

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

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

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

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

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

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

TABLE OF TRAFFIC DIVERSION RIPRAP AND DRAINAGE FABRIC

Station	L/R	Ordinary High Water Elevation	Traffic Diversion Riprap (Ton)	Structure Class A Riprap (Ton)	Type B Drainage Fabric (SqYd)
151+24	L	1324.50	189	43.1	1160
		Totals:	*189	43.1	1160

* Note: 43.1 tons of riprap to be reused as permanent riprap on RCBC at Ah 151+24

INSLOPE TRANSITIONS

Inslope transitions will be required at various drainage structures and pipe locations. Refer to Standard Plate 120.05 for details.

TABLE OF INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS

Station	L/R	Type
1+91	L&R	1
14+56	L&R	2
30+94	L&R	1

TABLE OF CURB AND GUTTER REMOVAL

Station	to	Station	L/R	Quantity (Ft)
0-44		0-37	R	7
6+32		6+32	R	31
6+67		6+67	R	9
12+29		12+29	R	65
12+67		12+67	R	27
				139

GENERAL GEOLOGY

The project alignment traverses glacial terrain typical of eastern South Dakota. Included within this terrain may be areas of loess, shale, sand, gravel, glacial till and boulder till. As is the case with most glacial terrain, the materials throughout the project can vary greatly in a short distance.

CLASSIFICATION OF EXCAVATION

Most of the material encountered should be able to be excavated using conventional methods associated with normal Unclassified Excavation. Muck Excavation will be required at the areas shown in the plans or as directed by the Engineer.

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025 Rev 11/17/2025 RJM

SHRINKAGE FACTOR: Embankment +35%

TABLE OF EXCAVATION QUANTITIES BY BALANCES

Station to	Station	Excavation (CuYd)	* Undercut (CuYd)	* Muck Exc. (CuYd)	* Contractor Furnished Borrow Exc. (CuYd)	Total Excavation (CuYd)	** Waste (CuYd)	** Haul (CuYdSta)
0+12	52+93.24	7027	21467	843	24041	53378	843	2300
2+00 Div	9+00 Div	0	0	0	4122	4122	4122	0
RCBC Joint Repair					150			
	Totals:	7027	21467	843	28313	57500	4965	2300

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

TABLE OF UNCLASSIFIED EXCAVATION

	(CuYd)
Excavation	7027
Undercut	21467
Topsoil	6163
Exc. for RCBC Installation	150
Exc. for RCBC Joint Repair	200
Added Traffic Diversion Excavation	0
Salvaged Asphalt Mix and Granular Base Material (from cut sections)	8226
Salvaged Asphalt Mix and Granular Base Material (from fill sections)	0
Total:	43233

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.

Out-of-Balance Excavation is material obtained from waste generated from excavation from other balances. The quantity of Out-of-Balance Excavation is included in the Excavation quantity in the balance where it is excavated and is paid for once as Unclassified Excavation.

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.

Salvaged Asphalt Mix and Granular Base Material will be paid for at the contract unit price per ton and is also included in and paid for once as Unclassified Excavation. As shown in the Table of Unclassified Excavation, the estimated quantity of 0 cubic yards of Salvaged Asphalt Mix and Granular Base Material from fill sections and 0 cubic yards of Salvaged Asphalt Mix and Granular Base Material from off-alignment roadways or obliterated old roads will be added to the Excavation quantity to determine the Unclassified Excavation quantity. When finaling a project, the quantities of Salvaged Asphalt Mix and Granular Base Material from fill sections and off-alignment roadways or obliterated old roads will not be adjusted according to field measurements. The quantity of Salvaged Asphalt Mix and Granular Base Material from cut sections will not be added to the Excavation quantity as it is already in the cuts on the final cross sections.

WASTE EXCAVATION

The quantity of waste in the Table of Excavation Quantities by Balances that is muck excavation or excess excavation material will be disposed of at a Contractor furnished site acceptable to the Engineer.

HAUL

Haul is included in the Table of Excavation Quantities. Haul is not a pay item and is for informational purposes only. Haul was not estimated for moving Contractor Furnished Borrow Excavation. The mass haul diagram is available as part of the bid package for use in figuring this haul.

Haul: Estimated quantity (CuYdSta) for moving unclassified excavation material to the locations where it is needed throughout the earthwork balance.

For Purpose of Extra Haul Computations:

Average Haul = (Haul + Out-of-Balance Haul)/Unclassified Excavation = 2300/7027 = 0.3 Sta.

Compensation for “Extra Haul” will not be made for haul distances less than 5 stations. When payment for “Extra Haul” is authorized, the distance used for “Extra Haul” calculations will be that in excess of 5 stations.

UNDERCUTTING

In all cut sections the earthen subgrade will be undercut 2 feet below the earthen subgrade surface. The undercut material or other suitable material, as directed by the Engineer, will then be replaced and compacted to the density specified for the section being constructed.

Shallow embankment sections, fills less than 2 feet in height measured at the finished subgrade shoulders, will be undercut to ensure a minimum 2-foot height of earth embankment for the entire width of roadbed. The upper 6 inches of undercut material that consists of topsoil with a high humus content will be used as topsoil, placed in the fill slopes outside the shoulders of the earthen subgrade, or placed in the lower portion (below 4 foot depth) in fills which are greater than 4 feet in height. The remaining undercut soil and soil obtained from adjacent excavation (excluding the upper 6 inches) will then be replaced and compacted to the density specified for the section being constructed.

TABLE OF UNDERCUTTING LOCATIONS

Station	to	Station
0+12		52+93

UNSTABLE MATERIAL EXCAVATION

The areas of unstable material excavation are drawn on the cross sections with a normal depth of 2 feet. The estimated quantity of 2566 cubic yards of unstable material excavation will be paid for at the contract unit price per cubic yard for “Unclassified Excavation”.

All areas designated as Unstable will be excavated. The unstable material excavated on this project will be placed outside the subgrade shoulder in fill sections or stockpiled and used as topsoil.

Field measurement of unstable material excavation will not be made. However, if there are additional areas of unstable material excavation other than what is shown in the plans, the Engineer will direct removal of these areas and the additional areas will be measured according to the Engineer.

TABLE OF UNSTABLE MATERIAL EXCAVATION

Station	to	Station	L/R	Depth (Ft)	Quantity (CuYd)
2+25		6+00	L	2	563
7+50		11+50	R	2	521
12+00		15+75	L	2	577
28+50		33+00	L	2	388
32+75		36+50	R	2	517
			Total:		2566

MUCK EXCAVATION

The areas of muck excavation are drawn on the cross sections with a normal depth of 3 feet. The estimated quantity of 843 cubic yards of muck excavation will be paid for at the contract unit price per cubic yard for “Muck Excavation”.

Muck excavation consists of the removal of highly organic and/or highly saturated material from the designated areas shown on the cross sections. Highly organic muck material will not be used in the embankment but may be used as topsoil. Non-organic muck material may be used as embankment outside of the fill subgrade shoulder if it is properly handled and dried prior to placement in the embankment.

Field measurement of muck excavation will not be made unless the Engineer orders additional excavation, or when the Engineer determines, in accordance with Section 120.3 A.1 of the Specifications, that the classification of excavation be changed.

If the areas designated as muck excavation can be removed with similar equipment and procedures as used for unclassified excavation, the material will be measured and paid for as “Unclassified Excavation”.

TABLE OF MUCK EXCAVATION

Station	to	Station	L/R	Depth (Ft)	Quantity (CuYd)
26+50		29+75	R	3	663
30+25		31+75	R	3	180
				Total:	843

CONTRACTOR FURNISHED BORROW EXCAVATION

The Contractor will provide a suitable site for Contractor furnished borrow excavation material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site.

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

The Contractor furnished borrow excavation material will be uniform in texture and free from organic material. The liquid limit will not exceed 45 and the plastic index will be at least 10 but not exceed 25.

The Contractor will be responsible for the following minimum testing prior to use of each borrow site:

> A minimum of one test for liquid limit and plastic index for each location and soil type, with samples obtained according to SD201.

The Department will be responsible for the following minimum testing:

> A minimum of one test for liquid limit and plastic index for every 10,000 cubic yards or a major change in soil type. Independent Assurance testing will not be required.

SURFACING THICKNESS DIMENSIONS

The plans shown spread rates will be applied even though the thickness may vary from that shown in the plans.

At those locations where material must be placed to achieve a required elevation, the depth/quantity may be varied to achieve the required elevation.

STORAGE UNIT

The use of a storage unit for sample storage is allowed on certain QC/QA and Gyratory Controlled QC/QA asphalt concrete paving projects. Not all projects will need a storage unit. Projects that exceed 50,000 tons of QC/QA asphalt concrete and all Gyratory Controlled QC/QA projects (no minimum tonnage) may use the storage unit note if the applicable Area Office determines it is necessary. For less than 50,000 ton projects, check with the applicable Area Office for guidance regarding inclusion of the storage unit note.

The Contractor will provide a storage unit such as a portable storage container or a semi-trailer meeting the minimum size requirements from the table below:

Project Total Asphalt Concrete Tonnage	Minimum Internal Size (Cu Ft)	Minimum External Size (L x W x H)
Less than 50,000 ton	1,166	20’ x 8’ x 8.6’ std
More than 50,000 ton	2,360	40’ x 8’ x 8.6’ std
All Gyratory Controlled QC/QA Projects	2,360	40’ x 8’ x 8.6’ std

The storage unit is intended for use only by the Engineer for the duration of the project. The QC lab personnel or the Contractor will not be allowed to use the storage container while it is on the project, without permission of the Engineer.

The storage unit will be on site and operational prior to asphalt concrete production. Upon completion of asphalt concrete production, the Engineer will notify the Contractor when the storage unit can be removed from the project. The storage unit use will not exceed 30 calendar days from the completion of asphalt concrete production. The storage unit will remain the property of the Contractor.

The storage unit will be weather proof and will be set in a level position. The storage unit will be able to be locked with a padlock.

The storage unit will be placed adjacent to the QA lab, as approved by the Engineer.

The following will apply when the storage unit provided on the project is a portable storage container:

The portable storage container will be constructed of steel.
The portable storage container will be set such that it is raised above the surrounding ground level to keep water from ponding under or around the storage container.

The following will apply when the storage unit provided on the project is a semi-trailer:

A set of steps and hand railings will be provided at the exterior door.
If the floor of the semi-trailer is 18 inches or more above the ground, a landing will be constructed at the exterior door. The minimum dimensions for the landing will be 4 feet by 5 feet. The top of the landing will be level with the threshold or opening of the doorway.

The semi-trailer may be connected to the QA lab by a stable elevated walkway. The walkway will be a minimum of 48 inches wide and contain handrails installed at 32 inches above the deck of the walkway. The walkway will be constructed such that it is stable and the deck does not deform during use and allows for proper door operation. Walkway construction will be approved by the Engineer.

All cost for furnishing, maintaining, and removing the storage unit including labor, equipment, and materials including any necessary walkways, landings, stairways, and handrails will be included in the contract unit price per each for “Storage Unit”.

INTERSECTING ROADS AND ENTRANCES

In areas where granular material has been placed adjacent to the existing asphalt concrete, the Contractor will be required to remove the granular material to a depth below the existing asphalt concrete to allow for the placement of the new asphalt concrete. New asphalt concrete will be placed flush with the existing asphalt concrete. The existing granular material removed will be placed on the entrances, intersecting roads or other locations as directed by the Engineer.

All costs to remove and place the granular material including labor, equipment and incidentals will be incidental to the various related contract items.

COLD MILLING ASPHALT CONCRETE

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was 25. This value was obtained from testing during construction of the in-place asphalt concrete.

Cold milling asphalt concrete will be done according to the typical section(s). In areas where maintenance patches have raised and/or widened the road, additional asphalt concrete will be milled to provide a uniform typical section from centerline to the edge of the finished shoulder. These areas also include farm, residential, field entrances and intersecting roads. Milling will be daylighted to the outside edge of the roadway. Any additional costs associated with this additional cold milling will be incidental to the contract unit price per square yard for “Cold Milling Asphalt Concrete”.

Cold milling asphalt is estimated to produce 5,308 tons of cold milled asphalt concrete material. An estimated 3,368 tons of cold milled asphalt concrete material will be used on this project as RAP in the Class Q3R Hot Mixed Asphalt Concrete mixture. The Contractor is responsible to assure enough asphalt concrete salvage is available for the Class Q3R Hot Mixed Asphalt Concrete.

The remainder of the salvaged asphalt concrete material produced from cold milling will become the property of the Contractor for disposal.

RAP achieved for project use and/or other uses is based on the dimensions given in the typical section(s). Field conditions will vary from that given in the typical section(s). Therefore, the Contractor may be required to adjust the mill depth, as necessary, to provide the quantity of RAP specified by the plans, if approved by the Engineer.

SALVAGE AND STOCKPILE ASPHALT MIX AND GRANULAR BASE MATERIAL

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was 25. This value was obtained from testing during construction of the in-place asphalt concrete.

An estimated 15,548 tons (8,226 Cubic Yards) of asphalt mix and granular base material will be salvaged from the existing highway according to the in-place surfacing typical sections and stockpiled at a site furnished by the Contractor and satisfactory to the Engineer.

Salvaged material will be processed to meet the requirements of Section 884.2 D.7 prior to stockpiling. The Contractor will ensure that no vegetation, topsoil, subgrade, or other foreign material is incorporated into the salvaged asphalt mix and granular base material.

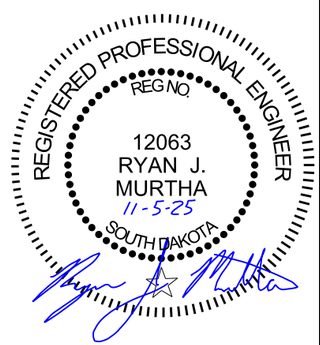
The quantity of salvaged asphalt mix and granular base material may vary from the plans.

The quantity of salvageable material is estimated from the in-place surfacing typical sections. This estimated quantity was included in the unclassified excavation quantities.

The quantity of salvage asphalt mix and granular base material may vary from the plans. No adjustment will be made to the contract unit price for variations of the quantity of “Salvage and Stockpile Asphalt Mix and Granular Base Material.”

The following table is furnished for information only.

MRM	Centerline Offset (ft)	Thickness (in) AC	Thickness (in) Base Course
406.41	9.0 LT	7.0	12.0
406.50	7.0 LT	6.0	10.0
406.75	8.2 RT	7.0	8.0
406.84	9.6 LT	6.0	10.0
407.00	7.4 RT	7.0	9.0
407.25	9.6 LT	4.0	11.0



CLASS Q3R HOT MIXED ASPHALT CONCRETE

Mineral Aggregate:

Asphalt concrete aggregates will consist of reclaimed asphalt pavement (RAP) and virgin aggregate.

Virgin mineral aggregate for Class Q3R Hot Mixed Asphalt Concrete will conform to the requirements of Class Q3.

The Class Q3R Hot Mixed Asphalt Concrete will include 15 percent RAP in the mixture.

RAP will be obtained from the material produced by cold milling on this project. An estimated 3,368 tons will be required for use as RAP.

Mix Design Criteria:

Gyratory Controlled QC/QA Mix Design requirements for the Class Q3R Hot Mixed Asphalt Concrete will conform to the requirements of Class Q3 except as modified by the following:

Gyratory Compactive Effort:

	$N_{initial}$	N_{design}	$N_{maximum}$
Class Q3R	6	50	75

All remaining requirements for Class Q3 will apply.

ASPHALT CONCRETE BLADE LAID

Included in the Estimate of Surfacing Quantities are 225 tons of Asphalt Concrete Blade Laid, 2.3 tons of Hydrated Lime, and 16.7 tons of PG 58H-34 Asphalt Binder per mile and will be tight bladed on the existing surface 36 feet wide prior to the overlay of Section 1.

Included in the Estimate of Surfacing Quantities are 150 tons of Asphalt Concrete Blade Laid, 1.5 tons of Hydrated Lime, and 11.1 tons of PG 58H-34 Asphalt Binder per mile and will be tight bladed on the existing surface 25 feet wide prior to the overlay of Section 3.

Included in the Estimate of Surfacing Quantities are 94 tons of Asphalt Concrete Blade Laid, 1 tons of Hydrated Lime, and 6.9 tons of PG 58H-34 Asphalt Binder per mile and will be tight bladed on the existing surface 15 feet wide prior to the overlay of Section 4.

Gaps at centerline will not be permitted.

Mineral Aggregate for tight bladed material will use only the fine aggregate components combined in the same proportions as the Class Q3R Hot Mixed Asphalt Concrete mix. Mineral Aggregate for tight bladed material will meet the gradation requirements of the Job Mix Formula. Fine Aggregate Angularity and Sand Equivalent requirements will be the same as the Class Q3R Hot Mixed Asphalt Concrete mix. Quality testing is not required on the coarse aggregate (+No. 4 sieve) in this mixture.

The Asphalt Concrete Blade Laid Lift will be designed using an N_{design} Gyratory Compactive Effort of 65. The asphalt binder content will be determined so that the air voids of Asphalt Concrete Blade Laid Lift are between 3.0% and 5.0%.

Included in the Estimate of Surfacing Quantities are 27.6 tons of SS-1h or CSS-1h Asphalt for Tack for use prior to the application of the Blade Laid lift. (Rate = 0.09 Gal./SqYd)

PERFORMANCE GRADED ASPHALT BINDER

Performance Graded Asphalt Binder will conform to Section 890, AASHTO M 332, and the Combined State Binder Group Method of Acceptance for Asphalt Binders, available from the Department's Bituminous Engineer.

UNCLASSIFIED EXCAVATION, DIGOUTS

The locations and extent of digout areas will be determined in the field by the Engineer. The backfilling material for the digouts will be Asphalt Concrete Composite and Base Course. The depth of asphalt will match the in-place thickness.

Included in the Estimate of Quantities are 50 cubic yards of Unclassified Excavation, Digouts and 75 square yards of Remove Asphalt Concrete Pavement per mile for the removal of asphalt and unstable material for Sections 1, 3, and 4.

Included in the Estimate of Quantities are 100 tons of Base Course and 25 tons of Asphalt Concrete Composite per mile for backfill of Unclassified Excavation, Digouts.

The digouts will be extended through the shoulder and backfilled with granular material that will daylight to the inslope to allow water to escape the subsurface.

ASPHALT CONCRETE COMPOSITE

Section 324 will apply except that Class Q3R Hot Mixed Asphalt Concrete as specified elsewhere in the plans may be used as Asphalt Concrete Composite.

Plans specified locations for Asphalt Concrete Composite will be paid for at the contract unit price per ton for "Asphalt Concrete Composite" regardless of the class of asphalt concrete used at such locations.

The asphalt binder used in the mixture can be PG 58H-34 or PG 58V-34 Asphalt Binder.

BASE COURSE, SALVAGED

Base Course, Salvaged will be obtained from the stockpile site provided by the Contractor and may be used without further gradation testing. The Contractor will ensure all Base Course, Salvaged stockpiled from this project is utilized prior to use of virgin Base Course.

The Contractor will ensure the Base Course, Salvaged material contains no more than 50% salvaged asphalt mix material and at least 50% granular material. Blended material will be to the satisfaction of the Engineer.

All other requirements for Base Course, Salvaged will apply.

PREPARATION OF GRANULAR MATERIAL PRIOR TO ASPHALT CONCRETE PLACEMENT

After the Base Course and Base Course, Salvaged is initially placed and primed, no additional payment will be made for reshaping the primed granular material prior to placing the asphalt concrete on Section 2. It will be the responsibility of the Contractor to ensure the primed Base Course and Base Course, Salvaged is uniform and stable. Any additional work needed to reshape, prepare, and prime the granular material prior to the asphalt concrete placement will be incidental to the contract unit price per ton for Base Course and Base Course, Salvaged.

TEMPORARY GRAVEL SURFACING (TRAVEL GRAVEL)

An estimated 300 tons of Temporary Gravel Surfacing is provided for this project and may be used as determined necessary and at locations approved by the Engineer. The Temporary Gravel Surfacing is provided to protect completed subgrade work from damage by traffic or equipment during wet weather. Temporary Gravel Surfacing may be used on the finished subgrade prior to Base Course or Base Course, Salvaged installation and/or to protect exposed subgrade prior to the completion of the finished subgrade surface. The Engineer will direct the Contractor to place Temporary Gravel Surfacing if adverse weather is imminent and/or the usage of the material will help prevent road closures.

The Temporary Gravel Surfacing will be obtained from the stockpile site(s) provided by the Contractor from the blended and salvaged granular material produced on this project and may be used without further gradation testing.

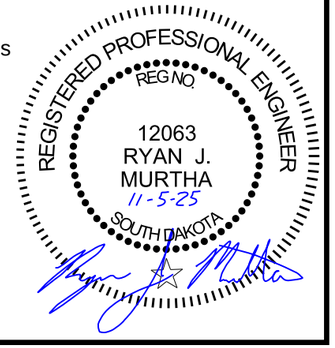
Compaction to a specified density is not required.

The Contractor will be required to salvage as much of the Temporary Gravel Surfacing as possible prior to resuming construction of the subgrade. The salvaged Temporary Gravel Surfacing may be used again on the project.

Temporary gravel surfacing will be paid for at the contract unit price per ton for Temporary Gravel Surfacing. Measurement of the Temporary Gravel Surfacing will be by use of scale, loader scale, or as approved by the Engineer. The contract unit price will include all costs associated with hauling, placing, compacting, maintaining, salvaging and stockpiling the material. For Temporary Gravel Surfacing salvaged after use on the subgrade and used again on the project, the amount used again will be measured and paid for again at the contract unit price per ton.

BLOTTING SAND FOR PRIME

Included in the Estimate of Quantities are 10 tons of Blotting Sand for Prime to be used where necessary for maintenance of traffic as directed by the Engineer.
(Rate = 10 pounds per square yard)



GRIND RUMBLE STRIPS IN ASPHALT CONCRETE

Asphalt concrete rumble strips will be constructed on the shoulders. Rumble strips will be paid for at the contract unit price per mile for Grind 12" Rumble Strip or Stripe in Asphalt Concrete. It is estimated that 11.2 miles of asphalt concrete rumble strips will be required.

Rumble strip installation will be completed prior to application of the flush seal and permanent pavement markings. A flush seal will be applied to the newly installed 12" rumble strips at a width of 18" and a rate of 0.05 Gal/SqYd. All costs associated with placing the flush seal will be incidental to the contract unit price per ton for "SS-1h or CSS-1h Asphalt for Flush Seal".

GRIND CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE

Rumble stripes will be constructed on the centerline of the two-lane sections, as detailed in the plans. Centerline rumble stripe installation will be completed prior to application of the flush seal and permanent pavement markings. Rumble stripes will be paid for at the contract unit price per mile for "Grind Centerline Rumble Stripe in Asphalt Concrete". It is estimated that 1.5 miles of centerline rumble stripes will be required.

Centerline rumble stripes will be constructed according to the details of Standard Plate 320.18 outside the limits shown in the Table of Sinusoidal Centerline Rumble Stripes.

GRIND SINUSOIDAL CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE

Sinusoidal rumble stripes will be constructed on the centerline of the two-lane sections, as detailed in the plans. Sinusoidal centerline rumble stripe installation will be completed prior to application of the flush seal and permanent pavement markings. Sinusoidal centerline rumble stripes will be paid for at the contract unit price per mile for "Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete". It is estimated that 3.1 miles of sinusoidal centerline rumble stripes will be required.

This sinusoidal centerline rumble stripes will be constructed according to the details of Standard Plate 320.40.

TABLE OF SINUSOIDAL CENTERLINE RUMBLE STRIPES

Location of Sinusoidal Rumble Stripes	Length (feet)	Length (miles)
Sta. Ah 0+88 to Sta. Ah 35+67	3479	0.659
Sta. Ah 63+52 to Sta. Ah 117+48	5396	1.022
Sta. Ah 169+85 to Sta. Ah 236+31	6647	1.259
Sta. Ah 238+80 to Sta. Ah 245+13	633	0.120
TOTAL	16,155	3.060

CENTERLINE RUMBLE STRIPES – ASPHALT FOR FLUSH SEAL

Asphalt for Flush Seal will be applied after the centerline rumble stripes have been installed and prior to the application of permanent pavement markings. The asphalt for flush seal will be applied at a width of 24" and a rate of 0.10 Gal/SqYd. All costs associated with placing the flush seal will be incidental to the contract unit price per ton for "SS-1h or CSS-1h Asphalt for Flush Seal".

GRIND 6" TRANSVERSE RUMBLE STRIP IN ASPHALT CONCRETE

Advance intersection warning transverse rumble strips will be constructed on the mainline pavement, as detailed in the plan set. Transverse rumble strips will be paid for at the contract unit price per foot for "Grind 6" Transverse Rumble Strip in Asphalt Concrete". Transverse rumble strips will be installed on SD Hwy 44 for westbound traffic approaching the intersection of 466th Avenue/SD Hwy 44 N. It is estimated that 442.0 feet of transverse rumble strips will be required.

Transverse rumble strip installation will be completed prior to application of the flush seal and permanent pavement markings. A flush seal will be applied to the newly installed transverse rumble strips at a width that extends 3" beyond the perimeter of the total area of the transverse rumble strips and at a rate of 0.10 Gal/SqYd All costs associated with placing the flush seal will be incidental to the contract unit price per ton for "SS-1h or CSS-1h Asphalt for Flush Seal".

EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Included in the quantity of "Unclassified Excavation" are 150 cubic yards of excavation for installation of reinforced concrete box culverts.

All work necessary to excavate a trench for installation of reinforced concrete box culverts including labor, equipment, and incidentals will be incidental to the contract unit price per cubic yard for "Unclassified Excavation". Payment for excavation of reinforced concrete box culverts will be based only on plans quantity and measurement of these excavation quantities during construction will not be performed.

The excavation quantities for installation of reinforced concrete box culverts are not included with the earthwork balance quantities on the plans profile sheets. The quantities computed for excavation of the reinforced concrete box culverts are based on the limits shown in the drawing below.

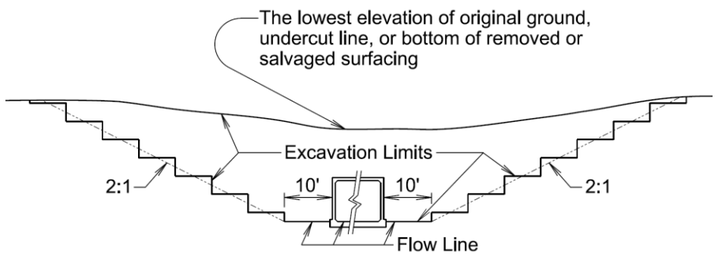
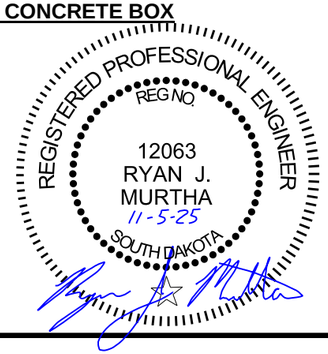


TABLE OF EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Station	Quantity (CuYd)
Ah 151+24	150
Total:	150



MAINLINE CROSS PIPE REPLACEMENT

Pipe culverts at Station Ah 126+95 and Station Ah 142+00 will be installed in accordance with the following notes and as shown on the Pipe Installation Detail. This work will be completed prior to beginning cold milling on the project.

After the existing pipe has been removed, the new pipe culvert will be undercut to a minimum depth of 1 foot. The depth of undercut is an estimate and the actual depth necessary will be determined during construction. The Engineer will determine how much undercut will be done in accordance with Section 421 of the specifications but will not reduce the undercut to less than 1 foot in depth. Select fill material for backfilling the undercut area will conform to the gradation requirements of Base Course in Section 882. If groundwater is encountered during construction, the select fill material for backfilling the undercut area and Class B Bedding will conform to the gradation requirements of Section 421.2 A. until backfill placement is above the groundwater level. The Engineer will process a CCO to provide for compensation to the Contractor for the added cost of the changed material. All other requirements of Section 421 will apply.

Pipe culverts will be bedded in accordance with Section 450.3 F.2, Class B Bedding with the following exceptions. The excavated area will extend 2 feet from the outermost diameter on both sides of the pipe with the back of the excavated area being sloped 2:1 upward to the top of the roadway surface. Select fill material for Class B Bedding will conform to the gradation requirements of Base Course in Section 882.

After the minimum testing requirements of M.S.T.R Section 4.1.F.3.a.1 (SDDOT Materials Manual) have been met, the minimum density testing requirements will be one test per zone. Each zone from the top of the pipe to the top of the subgrade will be 2 feet in depth. Moisture testing will remain as per M.S.T.R.

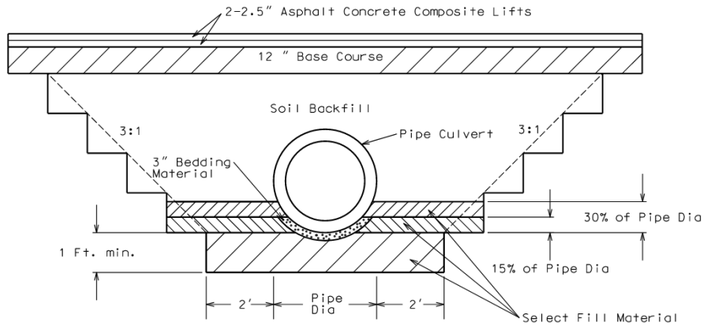
The remainder of the pipe culvert excavation will be backfilled with soils taken from the pipe removal excavation or other suitable material as approved by the Engineer. The backfill will be benched into 2:1 excavation slope. Compaction of the backfill material will be governed by the Specified Density Method.

After the new pipe has been backfilled to the top of the subgrade, a 12" depth of Base Course and 5" (2-2.5" lifts) depth of asphalt concrete composite will be placed as a patch matching the existing asphalt concrete.

All costs to remove and dispose of asphalt concrete pavement, including full depth saw cutting of the asphalt concrete pavement, will be incidental to the contract unit price per square yard to Remove Asphalt Concrete Pavement. All excavation necessary for Class B Bedding and the pipe installation will be incidental to the contract unit price per foot for the corresponding pipe installation contract items. The excavation of material for pipe culvert undercut will be paid for at the contract unit price per cubic yard for Pipe Culvert Undercut.

The select fill material used for backfilling the pipe culvert undercut and Class B Bedding will be paid for at the contract unit price per ton for Base Course. The 3" layer of bedding material to form the cradle in the pipe foundation will be incidental to the corresponding pipe installation contract items. The cost for asphalt concrete composite installed over the pipe replacement will be paid for at the contract unit price per ton for Asphalt Concrete Composite.

MAINLINE CROSS PIPE REPLACEMENT (CONTINUED)



Pipe Installation Detail

PIPE CULVERT UNDERCUT

The table includes undercut for 36 inch and larger pipe culverts. The depth of undercut is an estimate and the actual depth necessary will be determined during construction. Pipes listed may or may not require undercutting and pipes not listed may require undercutting. The Engineer will determine which pipe will be undercut in accordance with Section 421 of the Specifications.

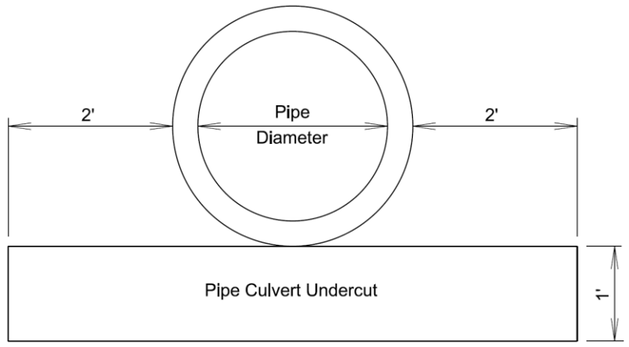
Station	Undercut Depth (Ft)	Pipe Culvert Undercut (CuYd)
1+91	1	63
Ah 126+95	1	15
Ah 142+00	1	14
Totals:		92

Granular material may be required for backfilling the pipe culvert undercut areas where site conditions warrant. Granular material will conform to the gradation requirements in Section 421.2.A of the Specifications and will be paid for at the contract unit price per ton for "Granular Material". A quantity of 50 tons of granular material is included in the estimate of quantities for use where it is determined to be needed. The quantity will be adjusted or eliminated by construction change order, depending on field conditions.

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	Remarks
1+88	Take Out 36"-91 RCP & 2 Flared Ends
12+48 R	Take Out 18"-83' RCP & 2 Safety Ends
14+56	Take Out 24"-46'RCP & 2 Flared Ends
30+03 R	Take Out 18"-34' RCP & 2 Safety Ends
30+94	Take Out 18"-47' RCP & 2 Safety Ends
32+28 R	Take Out 18"-44' RCP & 2 Safety Ends
39+24 R	Take Out 15"-30' RCP & 2 Safety Ends
42+89 L	Take Out 18"-65' HDPE & 2 Safety Ends
Ah 47+69	Take Out 2 End Sections
Ah 56+00 L	Take Out 1 End Section
Ah 71+42 L	Remove 1 End Section
Ah 126+95	Take Out 24"-62' RCP & 2 Flared Ends
Ah 142+00	Take Out 24"-52' RCP & 2 Flared Ends
Ah 151+24	Take Out Twin 42"-72' RCP Arch & 2 Flared Ends
Ah 187+25	Take Out 2 End Sections

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 end sections will match the thickest gauge of corrugated metal pipe it is connected to.

PIPE FOR APPROACHES AND INTERSECTING ROADS

Class 2 reinforced concrete pipe, high density polyethylene pipe, polypropylene pipe (will be in conformance with AASHTO M330), or steel reinforced polyethylene pipe may be substituted for corrugated metal pipe at approaches and intersecting roads at no additional cost to the State.

If corrugated metal pipes are provided, the pipes will be as specified in the CORRUGATED METAL PIPE note.

Pipe material substitution will not be allowed at the following locations:

If high density polyethylene pipe, polypropylene pipe (will be in conformance with AASHTO M330), or steel reinforced polyethylene pipe are provided, then the end sections will be metal, be compatible, and conform to the type of end section as shown in the plans.

CONTROLLED DENSITY FILL FOR PIPE

Controlled density fill will be in conformance with Section 464 of the Specifications.

The controlled density fill will be placed between the pipes from the base of pipe elevation to the haunch of the pipes and extend to the end of the end section.

TABLE OF CONTROLLED DENSITY FILL FOR PIPE

Station	Quantity (CuYd)
1+91	13.3
12+48	6.3
30+94	9.0
Total:	28.6

FOR BIDDING PURPOSES ONLY

REPROFILING DITCH

The Contractor will reprofile the ditch at the locations detailed in the plans. The ditches will be excavated from the pipe ends to obtain proper water flow through the pipe. The excavated material may be used as fill material as approved by the Engineer.

All costs associated with clearing and reshaping of the existing ditch, labor excavation, placing material, equipment, and incidentals will be paid for at the contract unit price per station for “Reprofiling Ditch”.

MAILBOXES

The Contractor will reset the existing mailboxes on new posts with the necessary support hardware for double mailbox assemblies. The local Postmaster will determine the recommended mounting height of the mailboxes throughout the project. The Contractor will coordinate with the Engineer on the proper postal representative to contact.

All costs for removing existing mailboxes, providing temporary mailboxes, and resetting mailboxes with new posts and necessary support hardware will be incidental to the contract unit price per each for “Refurbish Double Mailbox”.

TABLE OF REFURBISH MAILBOX

Station	L/R	Single (Each)	Double (Each)
42+86	R	0	1
Totals:		0	1

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.

TEMPORARY FENCE

The Contractor will verify the location of the temporary fence with the landowner prior to installation of the fence.

CRUSHED ROCK

The Crushed Rock bid item shall be clean white limestone with approximate size of 3/4” - 1”.

BRACE PANELS FOR ROW FENCE

The E-Z Brace or an approved equal may be utilized as an alternate horizontal brace in the brace panels if approved by the Engineer. The E-Z Brace will be attached to each wood post utilizing two 5/16” x 3” lag screws. Holes of appropriate diameter, based on wood post condition, will be drilled before placement of lag screws. The following is the contact regarding the E-Z Brace:

Charlie Mack
Macksteel E-Z Braces
415 20th Ave. SE.
Watertown, SD 57201
605-882-2177

PUBLIC LANDS SURVEY SYSTEM, RIGHT OF WAY, AND PROPERTY CORNERS

The Contractor will have a Land Surveyor, licensed in the State of South Dakota, to set, reestablish or verify public land survey system (PLSS) corners, right of way (ROW) corners, and property corners as directed by the appropriate SDDOT Region Land Surveyor. It is estimated that 1 PLSS corners and 8 ROW and property corners will be set, reestablished, or verified for this project. The Contractor’s Land Surveyor, under the direction of the Region Land Surveyor, will set, reestablish, or verify all corner monuments after surfacing and fencing operations are completed in accordance with the PUBLIC LANDS SURVEY SYSTEM CORNERS section and the RIGHT OF WAY AND PROPERTY CORNERS section in Chapter 8 of the SDDOT Survey Manual.

<https://dot.sd.gov/doing-business/engineering-design-services/surveyors/>

The SDDOT Region Land Surveyor will furnish the ROW corner caps, property corner caps, and guard posts for ROW corners in rural areas. All costs associated with furnishing and installing rebar, PLSS corner caps, and all other materials associated with setting, reestablishing, or verifying PLSS corners, ROW corners, and property corners in accordance with the SDDOT Survey Manual will be incidental to the contract unit price per each for “Reestablish Public Land Survey System Corner” and/or “Reestablish Right-of-Way and Property Corner”.

TABLE OF GUARDRAIL

Location	Remove Beam Guardrail (Feet)	* Remove Flared End Terminal (Each)	Type 1 MGS (Feet)	Type 1 Retrofit Guardrail Transition (Each)	MGS MASH Flared End Terminal (Each)	Guardrail Delineator (Each)	Comments
Str. No. 42-065-120							
Eastbound Approach End	106	1	25	1	1	4	16:1 Flare Rate
Westbound Trailing End	82	1	25	1	1	4	16:1 Flare Rate
Westbound Approach End	103	1	25	1	1	4	16:1 Flare Rate
Eastbound Trailing End	78	1	25	1	1	4	16:1 Flare Rate
Total:	**369**	**4**	**100**	**4**	**4**	**16**	

* For Information Purposes Only: All cost to remove these items will be incidental to the contract unit price per foot for "Remove Beam Guardrail"

REGISTERED PROFESSIONAL ENGINEER
REG NO.
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

TABLE OF CONSTRUCTION STAKING

(See Special Provision for Contractor Staking)

Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Grade Staking: Length (Mile)	Grade Staking: Lane Factor	Grade Staking: *Sets of Stakes	Grade Staking: **Grade Staking Quantity (Mile)	Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)	Final Cross Section Survey Quantity (Mile)	Graded Centerline Staking Quantity (Mile)	Structure Staking Quantity (Each)
SD 44 (3 Lanes AC Pavement)	0+12	52+93	3	5281	1.000	1.5	1	1.500	1.000	1.000	1.000		
SD 44 (2 Lanes AC Mill and Overlay)	Ah 0+00	Ah 245+15	2	24515	4.643	1.0	1	0	4.643	0	0		1
							Totals:	1.500	5.643	1.000	1.000		1

* 1 = Blue Top Stakes Only (Asphalt Concrete Pavement)
2 = Blue Top and Paving Hub Stakes (PCC Pavement)

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

PLACING TOPSOIL

The thickness will be approximately 4 inches within the right-of-way and 6 inches on temporary easements. The topsoil thickness for the option borrow pits will be as stated on the option borrow pit sheets.

The estimated amount of topsoil to be placed is as follows:

Station	to	Station	Topsoil (CuYd)
0+76		26+00	3177
26+00		52+93	2986
		Subtotal:	6163

MYCORRHIZAL INOCULUM

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

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

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

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

FERTILIZING

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (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 Fertilizer provided will be from the approved product list. The approved product list may be viewed at the following internet site:

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

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 G Permanent Seed Mixture will consist of the following:

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

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.

MULCHING (GRASS HAY OR STRAW)

Grass Hay or Straw Mulch for stabilization is to be used on this project at locations noted in the table and at locations determined by the Engineer during construction.

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

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

TABLE OF MULCHING (GRASS HAY OR STRAW) APPLIED AT 2 TONS/ACRE

Station	Location	Quantity (Ton)
0+00 to 53+00 L/R	All disturbed Areas	23.0
71+82 L&R	Disturbed Areas	0.2
78+98 L&R	Disturbed Areas	0.2
126+87 L&R	Disturbed Areas	0.2
141+99 L&R	Disturbed Areas	0.2
148+00 to 154+70 L	Traffic Diversion	0.2
187+25 L&R	Disturbed Areas	0.2
	Additional Quantity:	2.0
	Total Quantity:	**26.2**

FIBER MULCHING

Fiber mulch will be applied in a separate operation following permanent seeding.

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

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

All costs for the additional tackifier added to the fiber mulch including labor, equipment, and materials will be incidental to the contract unit price per ton for "Fiber Mulching".

The fiber mulch provided will be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

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

TABLE OF FIBER MULCHING

Station	Location	Quantity (Ton)
As Directed by Engineer	NA	6.0
	Total:	6.0

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.

An estimated quantity of erosion control wattles will remain on the project until vegetation has been established. It is estimated that some of the erosion control wattles will remain on the project to decompose.

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:

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

TABLE OF EROSION CONTROL WATTLE

Station	Location	Diameter (Inch)	Quantity (Ft)
As Directed by Engineer	NA	12	200
		Total:	200

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:

https://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.

TABLE OF LOW FLOW SILT FENCE

Station	Location	Quantity (Ft)
0+00 L	Left Ditch	50
22+00 to 23+90 L	Perimeter Control	190
28+20 to 31+60 L	Perimeter Control	340
39+15 to 42+40 L	Perimeter Control	325
Div 0+84 to 9+92L	Perimeter Control	855
Div 4+35 to 7+40 R	Perimeter Control	284
	Total:	2044

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:

https://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.

TABLE OF HIGH FLOW SILT FENCE

Station	Location	Quantity (Ft)
1+92 L&R	Across ditch at Inlet and Outlet ends of Pipe (60 Ft each end)	120
12+48 R	Inlet end of pipe	18
14+56 L	Inlet end of pipe	18
16+54 R	Inlet end of pipe	18
30+94 L&R	Inlet and Outlet ends of Pipe (60 Ft each end)	120
32+28 R	Inlet end of pipe	18
39+24 R	Inlet end of pipe	18
42+87 L	Inlet end of pipe	18
46+65 L	Inlet end of pipe	18
Ah 18+24 L&R	Across ditch at Inlet and Outlet ends of Pipe (60 Ft each end)	120
Ah 47+69 L	Inlet end of pipe	18
Ah 56+00 L	Inlet end of pipe	18
Ah 71+42 L	Inlet end of pipe	18
Ah 78+98 L	Across ditch at Inlet End	60
Ah 126+87 L	Inlet end of pipe	18
Ah 141+99 L	Inlet end of pipe	18
Ah 151+24 L&R	Across ditch at Inlet and Outlet ends of Pipe (60 Ft each end)	120
Ah 187+25 L	Inlet end of pipe	18
	Total:	774

EROSION CONTROL BLANKET

Erosion control blanket will be installed 20 feet wide at the locations noted in the table and at locations determined by the Engineer during construction.

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

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

TABLE OF EROSION CONTROL BLANKET

Station	Location	Type	Quantity (SqYd)
1+92 L	Pipe Outlet	3	60
14+56 R	Pipe Outlet	3	60
30+94 L	Pipe Outlet	3	60
Ah 126+87 R	Pipe Outlet	3	60
Ah 141+99 R	Pipe Outlet	3	60
		Total Type 3 Erosion Control Blanket:	300

SHAPING FOR EROSION CONTROL BLANKET

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

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.

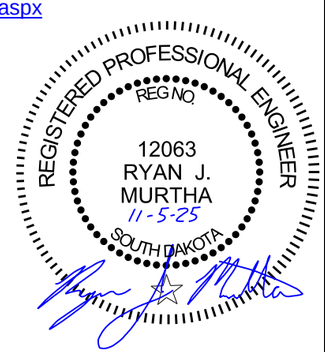
If the Contractor elects to use one of the products listed in the table, then the Contractor will install the construction entrance product in accordance with the manufacturer's installation instructions or as directed by the Engineer.

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.

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

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

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".



FOR BIDDING PURPOSES ONLY

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.

EXCAVATION REQUIRED FOR REINFORCED CONCRETE BOX CULVERT JOINT REPAIR

The subgrade, base, and surfacing material surrounding Structure No. 42-024-120, the Triple 10’ x 6’ Reinforced Concrete Box Culvert (RCBC) located at Sta. Ah 18+25, will be removed to expose the two separate joints, both approximately 26’ on either side of the roadway centerline. The existing cover is estimated at approximately 3 ft over the Triple 10’ x 6’ RCBC.

The subgrade, base, and surfacing material surrounding Structure No. 42-035-120, the Twin 10’ x 9’ RCBC at Sta. Ah 79+05, will be removed to expose the joint near the roadway centerline. The existing cover is estimated at approximately 2 ft over the Twin 10’ x 9’ RCBC.

Included in the quantity of “Unclassified Excavation” are 200 Cu.Yds. of excavation. The above quantities were calculated based on the amount of excavation required around the structure using the surfacing removal limits shown in the plans. The Contractor may propose other acceptable methods for approval by the Engineer. These operations will be completed in order to maintain one lane of traffic at all times and may require the use of trench boxes or other means of shoring the sidewalls of the excavation.

All work necessary to excavate a trench below the asphalt surfacing for work required on the RCBC including labor, equipment, and incidentals will be incidental to the contract unit price per cubic yard for “Unclassified Excavation”. Removal of the asphalt surfacing will be incidental to the contract unit price per square yard for “Remove Asphalt Concrete Pavement”, estimated at 525 SqYd. Payment for this excavation will be based only on plans quantity and measurement of these excavation quantities during construction will not be performed.

REINFORCED CONCRETE BOX CULVERT JOINT REPAIR AND VOID GROUTING AND REINFORCING

A. CULVERT JOINT CLEANING

1. This work will consist of cleaning the culvert joints, washing the culvert within 5 feet of the joints on the outside of the box and the joints with a high-pressure washer, and if needed, wire brush cleaning of each joint to be repaired as directed by the Engineer. The entire area will be clean and dry and most notably the specified joints will be thoroughly cleaned to the satisfaction of the Engineer using a power washer with water pressure of at least 2500 psi. The culvert must be in a clean condition so that no deleterious material is trapped in the joints that are being repaired. The Contractor will dispose of all debris removed from the culverts during the cleaning operation as approved by the Engineer.

2. All costs for equipment, material and labor for the culvert joint cleaning work will be incidental to the contract unit price per foot for Culvert Joint Cleaning which will be compensation in full for all equipment.

3. The Contractor will visit the project to determine the extent of cleaning needed for Culvert Joint Cleaning prior to bidding work.

B. REPAIR CULVERT JOINT

This work will consist of repairing culvert joints in accordance with the Chemical Grout Manufacturer’s directions for the sealing of each joint to prevent future infiltration/exfiltration of soils and water. Joint Sealing also prevents the soil stabilization and void filling grout from expanding back into the structure during injection. The following will apply:

1. The work will consist of repairing the concrete culvert joint with sealant comprised of water reactive hydrophilic polyurethane resin and dry oil free oakum. The work will include the furnishing by the Contractor, of all supervision, training, labor, materials, tools, lighting and equipment for the performance of all operations necessary to repair or seal joints between concrete pipe sections throughout the culvert. All grout will be injected under such pressure so as not to damage the existing drainage structure or roadway structure.

2. The Contractor will provide a notarized statement, from the Manufacturer, that the polyurethane foam resin meets the specified requirements, along with submitting the Manufacturer's current product specification and installation instructions. The grout materials will be non-flammable and non-toxic when cured.

3. The Contractor will be an Approved Contractor of the Manufacturer of the specified product and will provide written certification from the Manufacturer attesting to their Approved Contractor status.

4. All product documentation and Contractor submittals must be submitted to the Engineer prior to or at the preconstruction meeting. The Contractor must have the Engineer's approval prior to commencing any of this work.

5. The Contractor will follow the Manufacturer's installation instructions throughout the repair process and install components in accordance with Manufacturer's specifications.

6. The Contractor will provide safe storage and handling of materials prior to delivery and at the project site. All material installation, handling and storage will be in accordance with Manufacturer's recommendations.

7. Temperature of the resin is critical from the point of pumping to the point of injection. All polyurethanes react faster at higher temperatures. Drum heaters and heated hoses are required when ambient or ground temperatures are below 70 degrees Fahrenheit. The optimum hose temperature will vary with the weather conditions and the particular job site conditions with the minimum hose temperature being 75 degrees Fahrenheit and the maximum hose temperature being 95 degrees Fahrenheit and the drum temperature not to exceed 90 degrees Fahrenheit.

8. The Contractor will provide worker and inspector safety and worker protective gear in accordance with the manufacturer, including but not limited to chemical goggles, face shields, eye wash system and NBR gloves.

9. The Contractor will submit to the Engineer for approval a detailed procedure for the installation of the polyurethane grout.

10. The work will include, but is not limited to sealing each pipe joint with a hydrophilic polyurethane grout meeting the following specifications:

• GEL FOAM II (Saturated Oakum Rope Joint Packing) as manufactured by Green Mountain International, LLC or equal.

• ULTRA (Single Component Grout for Joint Injection) as manufactured by Green Mountain International, LLC or equal.

REINFORCED CONCRETE BOX CULVERT JOINT REPAIR AND VOID GROUTING AND REINFORCING (CONTINED)

11. UV Protection (Gel Coat) - The work will consist of trimming excess grout and oakum from the interior face of the joint prior to applying the Gel Coat. The epoxy gel compound will be recommended by the Manufacturer for both surface sealing and protecting the hydrophilic
grout from UV exposure. The epoxy gel compound will be mixed and handled in accordance with the Manufacturer's recommendations and will meet the following requirements:

• Epoxy gel sealant compounds manufactured by Green Mountain Grouts, LLC or equal.

12. All costs for all equipment, material and labor required to complete the work will be incidental to the contract unit price per foot for Repair Culvert Joint. Completion of the work includes initial saturated oakum rope packing of each joint, follow up injection of resin into the back side of each joint, trimming the excess grout and oakum from the interior face of the joint, application of the epoxy gel coat and site clean-up.

13. The Contractor will visit the project to determine the extent of work needed for Repairing the Culvert Joints prior to bidding the work.

C. CULVERT JOINT SHEETING

After the RCBC joint has been cleaned and sealed, the Contractor will be required to anchor salvaged aluminum sheeting around the exterior RCBC joints that have been experiencing infiltration, estimated length for both sides and top surface is listed in the table below. The joints will be identified by the Engineer. The salvaged aluminum sheeting will be provided by the State at no cost to the Contractor. The salvaged aluminum sheeting is to be picked up from the Sioux Falls Maintenance Yard. The Contractor will contact Chris Peters at 605-906-2030 for coordination. The Contractor will be required to use bolts approved by the Engineer for anchoring the aluminum sheeting to the exterior walls of the RCBC. The Contractor will completely cover both sides and the top joint of the RCBC with the aluminum sheeting and will ensure the sheeting is securely fastened to the RCBC and is not displaced during backfilling operations. The cost of the bolts and all work necessary to anchor the salvaged aluminum sheeting to the exterior of the RCBC will be incidental to the contract lump sum price for “Incidental Work”.

TABLE OF REINFORCED CONCRETE BOX CULVERT JOINT REPAIR

Location	RCBC Size	No. Joints to Repair	Culvert Joint Cleaning	Repair Culvert Joint	Incidental Work	Base Course	Geogrid Reinf.
		Each	Ft	Ft	LS	Ton	SqYd
Ah 18+25	Triple 10'x6'	2	96	96	1	353.6	387.4
Ah 79+05	Twin 10'x9'	1	43	43	1	298.1	326.5
	Totals:		**139**	**139**	**2**	**651.7**	**713.9**

BACKFILLING AND WORK REQUIRED FOR REINFORCED CONCRETE BOX CULVERT REPAIR

The quantity of Contractor Furnished Borrow Excavation (estimated at 150 Cu.Yds.) provided will be used to backfill the trench. The material removed during the Unclassified Excavation work may be reused if suitable as Contractor Furnished Borrow Excavation if approved by the Engineer. Unsuitable material will be wasted by the Contractor and will be incidental to the bid item Contractor Furnished Borrow Excavation. This fill material will be compacted according to the Specified Density Method.

The base course portion of the surfacing section will be reinforced with geogrid from Sta Ah 17+88.3 to Sta Ah 18+59.3 for the Triple 10’ x 6’ RCBC and Sta Ah 78+66.8 to Sta Ah 79+28.8 for the Twin 10’ x 9’ RCBC. After the subgrade has been rebuilt, 4 inches of base course will be placed and compacted in preparation for geogrid placement. Place biaxial geogrid followed by 8 inches of base course. Place an additional layer of biaxial geogrid followed by the remaining 8 inches of base course. Install base course and geogrid according to the following installation procedure:

1. Level and compact the first lift of granular material.
2. Remove any protrusions that might damage the geogrid prior to placing the geogrid.
3. The geogrid can be rolled out parallel to the centerline. The geogrid may be cut and realigned to prevent the propagation of wrinkles as the geogrid is unrolled.
4. All seams in the geogrid will overlap at least 2 feet and shingled to prevent granular material being forced between the geogrid layers.
5. No equipment will be allowed directly on geogrid. The Geogrid must be backfilled with a minimum of 4 inches of granular material before equipment will be allowed to operate the grid from reinforced area.
6. The geogrid should be kept as taut as possible prior to backfilling.
7. Damaged areas may be repaired by placing additional geogrid over the damaged area. The geogrid patch will cover the damaged area plus 2 feet minimum in all directions as directed by the Engineer. Granular material will be dumped at least 20 feet behind the leading edge of the fill and pushed into place with a loader or dozer.
8. Granular material will be placed in 4-inch maximum lifts and compacted as per the Specified Density Method.

The Geogrid will be biaxial grid of single layer construction. Vibratory welded, integrally formed or woven and coated geogrids will be acceptable. Grids with laser welded junctions will not be allowed. The geogrid will be certified by the supplier to meet the following specification prior to installation:

Property: Wide Width Strip Tensile Strength (Ultimate)
Test: ASTM D6637
MARV: 850 lb/ft MD and XD

Quantities for 20” of Base Course (estimated at 651.7 tons), Geogrid Reinforcement (estimated at 620.7 sq.yds.), and 6” of Asphalt Concrete Composite (estimated at 175.0 tons) have been provided for final surfacing of the roadway after the trench has been backfilled to the correct elevation.

SUPPLYING AS BUILT PLANS

If the roadway lighting system is constructed differently than what is stated in the plans, the Contractor will supply as built plans to the Engineer and a copy will be sent to the Traffic Design Engineer. The as built plans may include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans.

SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor will submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications.

PDF submittals will be sent to the following email addresses:

Stacy.Bartlett@state.sd.us
Ryley.Rapp@state.sd.us
Joseph.Updike@state.sd.us

REMOVE LUMINAIRE POLE FOOTING

The footings of existing luminaire poles on EL1-EL4 will be removed by the Contractor to a minimum of 2 feet below the ground surface. Restoration of the disturbed area will be to the satisfaction of the Engineer.

All costs for removing the footings of the existing luminaire poles will be incidental to the contract unit price per each for “Remove Luminaire Pole Footing”.

SALVAGE LUMINAIRE

Existing luminaires on poles EL1-EL4 will be salvaged and delivered to the City of Lennox by the Contractor. The Contractor will notify the city 5 days before the delivery of the salvaged luminaires. The City contact is Brian Lathrop at (605) 647-2286. The luminaires will be delivered to:

810 W 1st Avenue
Lennox, SD 57039

Luminaires damaged during salvaging or delivery will be repaired or replaced by the Contractor at no cost to the State.

All costs for work involved in the salvage and delivery of the existing luminaire will be incidental to the contract unit price per each for “Salvage Luminaire”.

SALVAGE LUMINAIRE POLE

Existing luminaire poles EL1-EL4 will be salvaged and delivered to the City of Lennox by the Contractor. The Contractor will notify the city 5 days before the delivery of the salvaged luminaire poles. The City contact is Brian Lathrop at (605) 647-2286. The poles will be delivered to:

810 W 1st Avenue
Lennox, SD 57039

Poles damaged during salvaging or delivery will be repaired or replaced by the Contractor at no cost to the State.

All costs for work involved in the salvage and delivery of the existing luminaire poles will be incidental to the contract unit price per each for “Salvage Luminaire Pole”.

LUMINAIRE POLES

Luminaire poles L1 to L27 will have a mounting height of 50 feet with 8 feet arms.

The pole fabricator will be responsible for determining the diameter, length, and number of anchor bolts.

Luminaire poles L1 to L27 will be designed to include 2 -2” steel rings located at 6 feet and 30 feet up from the base of the pole. They will be used as attachment points for Christmas lights that are 30 feet long with a weight of 15 pounds.

Luminaire poles L1 to L27 will have a convenience duplex festoon outlet receptacle (15-amp, 3 wire) suitable for outdoor use. Festoon will be placed 90° counterclockwise to the pole arm. All costs associated with making the festoon receptacles operational including, but not limited to, the necessary hardware, will be incidental to the contract unit price per each “Breakaway Base Luminaire Pole with Arm, 50’ Mounting Height”.

Luminaire poles L3 and L5 will be equipped with House-Side Shields.

LUMINAIRES

The lighting design for roadway luminaires L1-L27 used the following parameters to provide 1.2 and greater average maintained foot-candles and uniformity ratios of 3:1 (average maintained to minimum maintained foot-candles) and 5:1 (maximum to minimum maintained foot candles):

Pole Setback:	5 feet
Lamp Loss Factor (LLF):	0.8
Width of Lighted Area:	52 feet
Luminaire Cycle Length:	440 feet
Configuration:	Staggered
Mounting Height:	50 feet
Arm Length	8 feet

The following luminaire, or an approved equal, will be used for this project.

a.) American Electric Lighting: ATB2-P603-MVOLT-R2-4K-P7-PCLL

b.) Cooper - Streetworks: ARCH-L-PA3-210-740-U-T2R-PR7-LLPC

TABLE OF FOOTING DATA

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
L1-L27	2’ - 0”	9’ - 0”	1’ - 8”	60’ - 0”	8-#7 x 8’ - 6”

* Footing depth will be below ground level.
** The size of all spirals will be #3.

Soils along the project corridor consist of brown to gray clay. Groundwater was encountered at a depth of 6.5 feet during the subsurface investigation conducted in April 2024.

During construction of the cylindrical footings, concrete placement operations should closely follow excavation procedures. The longer the excavations are left open, the more likely caving may occur.

Concrete will not be dropped through standing water. If water is present in the excavation it will be removed prior to concrete placement or the concrete will be tremied.

WIRE SPLICING FOR LIGHTING

All wire splices for lighting to be completed utilizing multi-port, EPDM rubber pedestal connectors with pre-filled oxide inhibitor gel and will be manufactured by TE Connectivity GTAP connectors, NSI Industries Polaris Blue connectors, or an approved equal.

ELECTRICAL SERVICE CABINET

The Contractor will contact and coordinate work with Southeastern Electric Cooperative, Inc. and Xcel Energy regarding hookup requirements, fees, materials, and equipment necessary two weeks prior to needing service.

The contact for Southeastern Electric Cooperative, Inc is:
John Euchner
800-333-2859
johne@southeastern.coop

The contact for Xcel Energy is:
Aaron Bickett
(605) 339-8315
aaron.m.bickett@xcelengery.com

The Contractor will also terminate the existing electrical wires to EL1 and ensure the light poles north of the Hwy 44 and 279th Street intersection are operating properly.

The Electrical Service Cabinet will include all items shown on the Electrical Pedestal Detail to include the Festoon Receptacle Contactor Panel, junction boxes, support, and footing.

All costs for furnishing and installing materials from the electrical service cabinet to the transformer including labor, equipment, hookup fees, all items within the cabinet and on the electrical pedestal, lockable enclosure with receptacle outlet, lock and keys, post, concrete footing, post cap, meter socket, conduit, incidentals, coordinating with Southeastern Electric Coop, Inc. and Xcel Energy, and terminating the existing electrical wires will be incidental to the contract unit price per each for "Electrical Service Cabinet".

PAVEMENT MARKING PAINT

The Contractor will advise the Engineer a minimum of 3 weeks prior to the application of the permanent pavement marking to allow the State to check and mark the location of no passing zones.

Cold weather waterborne paint will not be required after October 15th per Supplemental Specification Section 633.3 B.

The application of permanent pavement marking will begin no sooner than 7 calendar days following completion of the fog or flush seal. Application of permanent pavement marking will be completed within 14 calendar days following completion of the final surfacing.

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

All materials will be applied as per manufacturer’s recommendations. High build waterborne pavement marking paint will conform to the supplemental specifications for Section 980.1 B.

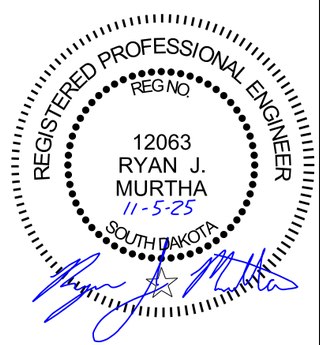
Reflective media will consist of glass beads. Reflective media will require a Certificate of Compliance for Certification for each source and lot. Acceptance sampling will not be required.

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

Composite reflective elements will not be installed in markings placed on an asphalt surface treatment or on surface applied waterborne pavement marking paint with high grade polymer. If either of these conditions will occur, then use only the second set of rates without the Composite Reflective Elements as shown below.

Solid 4” line = 22.5Gals/Mile
Dashed 4” line = 6.2 Gal/Mile
Glass Beads = 8 Lbs/Gal.

All cost for materials, labor, and equipment necessary to furnish and install the pavement markings will be incidental to the contract unit price for the respective High Build Waterborne Pavement Marking Paint items.



RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT

The Department may take retroreflectivity readings on the pavement marking lines after 14 days and within 42 days of the line application using either a portable or mobile retroreflectometer that conforms to 30-meter geometry. If the Department chooses to take retroreflectivity readings, three retroreflectivity readings will be taken on each line at each test location. The three readings will be averaged and become the reading for that test location.

If the Department chooses to take retroreflectivity readings, three readings will be taken on the edge lines and lane lines in the direction of application. For combination solid yellow and skip yellow lines for turn lanes and for centerline markings on two-way roadways, three readings will be taken in one direction, the reflectometer will be turned 180 degrees and three more readings will be taken. The six readings for the centerline markings will be averaged and become the test reading for that test location.

If the Department chooses to take readings, the minimum retroreflectivity values will be 275 mc/m^2/lux for white and 170 mc/m^2/lux for yellow.

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 TRAFFIC SIGN

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

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

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.

Any 911 Emergency Number signs within the project work limits will not be stockpiled but temporarily repositioned at a location outside the work limits but within the immediate proximity of the existing location. To complete the project sign work, the 911 Emergency Number signs will be permanently installed at their original locations, or as near as practicable where entrances have been reconfigured by the project. The existing supports will be reused. Cost for removing, temporarily repositioning, and permanently resetting 911 Emergency Number signs will be included in the contract unit price per each for “Remove Sign for Reset” and “Reset Sign”.

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 Flat Aluminum Signs, Nonremovable Copy Super/Very High Intensity will have sheeting in conformance with the requirements of ASTM D4956 Type XI.

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” or “Flat Aluminum Sign, Nonremovable Copy Super/Very 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

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11-5-25
SOUTH DAKOTA

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.

DIGITALLY PRINTED SIGNS (CONTINUED)

CERTIFIED DIGITAL SIGN FABRICATOR

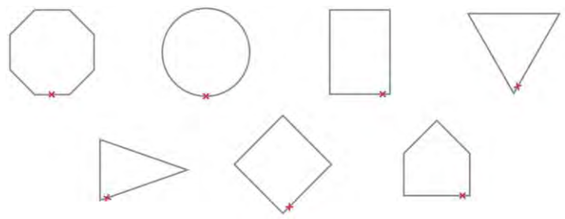
Sign fabricators using digital imaging methods to produce regulated traffic signs must be certified by the reflective sheeting manufacturer whose materials are used to produce the delivered signs.

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.

SQUARE TUBE POST SLEEVE

All 2.5” x 2.5”, 10 Gauge perforated tube post will be sleeved with a 2-3/16” x 2-3/16” x 4’, 10 Gauge perforated tube post.

WINGED SLIP BASE ANCHOR

The Contractor will furnish and install new winged slip base anchors for 2.5” x 2.5” perforated tube posts as required in the Permanent Signing Table. Winged slip base anchors will be installed using the direct drive method. Winged slip base anchors will consist of a slip base (upper), a 48-inch long winged anchor (lower), and a hardware kit.

INSTALLATION OF OVERLAY

Some of the in place extruded aluminum panels have been previously overlaid. Any rivets and overlay pieces remaining from previous overlays will be removed.

Excess amounts of dirt or other foreign material will be removed from the surface of the extruded aluminum panels. Any surface irregularities (bullet holes) will be repaired prior to the installation of the new overlay.

The new overlays will be installed on the in place extruded aluminum panels. The overlay sections will be fabricated as to minimize the number of seams.

Overlays will be attached to the extruded aluminum panels beginning with the pieces along the top of the sign. Fastening will proceed from the top of the overlay downward working out any bulges.

Fasteners will be aluminum rivets 5/32” in diameter. Rivets will be placed at 9” +/- 1” centers along the horizontal and vertical seams. Rivets will be placed ¼” to ½” from the edges of the overlay pieces. Adjoining overlays will be butted tightly together before fastening begins. In addition to the perimeter rivets, fasteners are required inside the overlay spaced approximately 1’ vertically and 2’ horizontally from the overlay piece edges.

Prior to installing overlays, all in place extruded aluminum panels will be level and edges plumb. Post clips on the back of the sign will be tightened to the post.

All costs for leveling, plumbing and tightening will be incidental to the contract unit price per square foot for “Aluminum Overlay, Nonremovable Copy Super/Very High Intensity”.

MILEAGE REFERENCE MARKERS

Mileage Reference Markers (MRMs) are not to be disturbed. If an MRM is attached to a sign listed for replacement it will be salvaged and reattached to the new sign in the same location. Payment for this work will be incidental to the various signing contract items.

DELINEATION TABLES

4"x4" White Delineator Back to Back with 1.12 Lb/Ft Post 632E2022			
HWY	**Station to Station**	**Spacing**	**Quantity**
SD44	0+12 to 52+93	528 #	10
SD44	Ah 0+00 to Ah 245+14	528 #	46
		TOTAL	56

- Alternating

4" Tubular White Delineator with 1.12 Lb/Ft Post 632E2028			
HWY	**Station**	**Intersection Route**	**Quantity**
SD44	52+93	SD 44 & 466th Ave	16
SD44	Ah 158+25	SD 44 & 469th Ave	12
		TOTAL	28

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	26	194

Plotting Date: 11/5/2025

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** PCN 08GM 17.7 ac PCN 09VC - 5ac
- **5.3 (3b): Total Area to be Disturbed** PCN08GM 11.5 ac
- **5.3 (3c): Maximum Area Disturbed at One Time**
- **5.3 (3d): Existing Vegetative Cover (%)** 90%
- **5.3 (3d): Description of Vegetative Cover** Typical East River native and introduced roadside vegetation
- **5.3 (3e): Soil Properties:**
- **5.3 (3f): Name of Receiving Water Body/Bodies** Missouri River
- **5.3 (3g): Location of Construction Support Activity Areas**

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

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

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install perimeter protection where runoff may exit site.	
Clearing and grubbing.	
Remove and stockpile topsoil.	
Install perimeter protection around stockpiles.	
Stabilize disturbed areas.	
Final grading.	
Final paving.	
Removal of protection devices.	
Reseed areas disturbed by removal activities.	

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5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES

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

Perimeter Controls (See Detail Plan Sheets)

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

Structural Erosion and Sediment Controls

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

Dust Controls

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

Dewatering BMPs

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

Stabilization Practices (See Detail Plan Sheets)

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

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

Wetland Avoidance

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

5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches $^1/_3$ of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches ½ the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The SDDOT Project Engineer and Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

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

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

Material Management

Housekeeping

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

Hazardous Materials

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

Spill Control Practices

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

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

Spill Response

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

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

5.3 (8b): WASTE MANAGEMENT PROCEDURES

Waste Disposal

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

Hazardous Waste

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

Sanitary Waste

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

5.3 (9): CONSTRUCTION SITE POLLUTANTS

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

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

Product Specific Practices

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

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

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

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

5.3 (10): NON-STORMWATER DISCHARGES

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

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

5.3 (11): INFEASIBILITY DOCUMENTATION

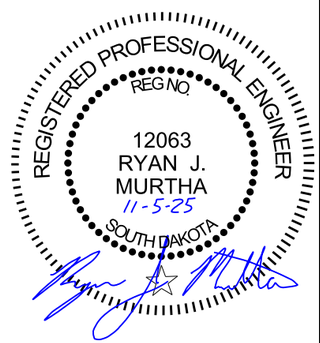
If it is determined to be infeasible to comply with any of the requirements of the Stormwater Permit, the infeasibility determination must be thoroughly documented in the SWPPP.

7.0: SPILL NOTIFICATION

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

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

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



5.4: SWPPP CERTIFICATIONS

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

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

➢ **South Dakota Department of Transportation**

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

_____

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

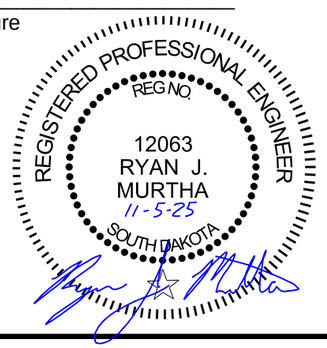
➢ **Prime Contractor**

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

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

_____

Authorized Signature



CONTACT INFORMATION

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

➢ **Contractor Information**:

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

➢ **Erosion Control Supervisor**

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

➢ **SDDOT Project Engineer**

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

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

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

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

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

5.5: REQUIRED SWPPP MODIFICATIONS

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

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

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

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

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

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

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

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

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

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

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

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

PIPE QUANTITIES

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	30	194

Plotting Date: 11/5/2025

		Reinforced Concrete																Corrugated Metal										Object Marker					
		Circular					Arch		Circular Sloped Ends			Circular Flared Ends			Arch Flared Ends			Circular			Arch			Circular Safety Ends			Arch Safety Ends			Type 2 & Post					
Station	Offset (L/R)	24" Cl. 2 Ft	30" Cl. 2 Ft				42" Cl. 2 Ft		24" Each	30" Each	24" Rem and Reset Each	24" Each	30" Each	42" Each		42" Each		18" 16 Ga Ft	18" Rem and Reset Ft			18" Each	24" Each		18" Each	18" Rem and Reset Each		18" Each	24" Each		Remove Delineator Each	Back to Back Each				
1+91							176									4															2	4				
12+48-52' R																							184						4		2	2				
14+56		80							2																						2	2				
30+94			160							4																					2	4				
32+28-58' R																		58							2						2	2				
39+24-55' R																						34						2			2	2				
42+86-53' L																		54							2						2	2				
46+65-55' L																		4	83							2					2	2				
Ah 47+69														2																	2	2				
Ah 56+00 L												1																			2	2				
Ah 71+42 L		12									1																				2	2				
Ah 126+95		62							2																						2	2				
Ah 142+00			62							2																					2	2				
Ah 187+25													2																		2	2				
Total:		154	222				176		4	6	1	1	2	2		4		116	83			34	184		4	2		2	4		28	32				

REGISTERED PROFESSIONAL ENGINEER
REG NO.
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

FENCE QUANTITIES

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406		
	IM 0292(99)59	31	194

Plotting Date: 11/5/2025

Station to Station		Side (L/R)	Right-of-Way Fence Type 2 (Ft)					Temporary Fence Type 1A (Ft)		Post Panels 2 Post Panel (Each)	3 Post Panel (Each)		Gates N.A.B.I. 24' Barbed Wire Gate				Fence Remove (Ft)	
1+26	4+36	L	310						310		5						310	
7+68	40+98	L	3330								6	6		2			3330	
46+81	52+25	L	544								4						544	
32+40	52+50	R	2010									5		1			2010	
TOTALS:			6194						310		15	11		3			6194	

Post Type and Sequence:

Right-of-way fence will be constructed using alternate wood and steel posts except as noted.

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	32	194

Plotting Date: 11/5/2025 Rev 11/17/2025 RJM

TABLE OF MAINLINE CULVERT WORK

CULVERT															DITCH / CHANNEL CLEANOUT/SHAPING
LOCATION					PIPE DATA										
SITE NO	CUL-VERT ID	HWY	MRM	STATION	NO of PIPE - SIZE (DIA or W x H) DIA = IN W x H = FT	LENGTH FT	TYPE	DRAINAGE AREA ACRES	DRAINAGE DIRECTION	CLEAR ZONE 15 FT** SIDE OF ROAD Φ	ROW* FT	CLEAR ZONE** FT	WORK DESCRIPTION	REPROFILE DITCH STATIONS
08GM															
1	21802	044	406.31+0.027	1+91	2 - 42 DIA	88	RCP ARCH	171	E	E	75'		Replace	
										W	75'			
-	-	044	-	12+48 R	2 - 24 DIA	106	CMP ARCH	25	S	E	75'		Replace	
										W	75'			
2	21803	044	406.31+0.278	14+56	1 - 24 DIA	94	RCP	8	W	E	75'		Replace	
										W	75'			
3	21804	044	406.31+0.586	30+94	2 - 30 DIA	94	RCP	81	E	E	75'		Replace	
										W	75'			
-	-	044	-	32+28 R	1 - 18 DIA	76	CMP	7	N	E	75'		Replace	
										W	75'			
-	-	044	-	39+24 R	1 - 18 DIA	46	CMP	2	N	E	75'		Replace	
										W	75'			
-	-	044	-	42+86 L	1 - 18 DIA	70	CMP	-	-	E	75'		Replace	
										W	75'			
-	-	044	-	46+65 L	1 - 18 DIA	87	CMP	-	S	E	75'		Remove and Reset Existing Pipe (83'); Install additional 4 feet of CMP	
										W	75'			
4	21805	044	407.00+0.635	Ah 18+25	3 - 10 x 6 FT	82	RCBC	-	N	N	75'		Excavate, Clean & Repair Culvert Joints, Install Joint Sheeting, Backfill & Install Geogrid, Repave Asphalt Surfacing	
										S	75'			
5	21806	044	408.00+0.206	Ah 47+69	1 - 42 DIA	87	RCP	176	S	N	75'		Reprofile Ditch, Replace Flared End	0.5
										S	75'		Replace Flared End	
6	22472	044	408.00+0.458	Ah 56+00	1 - 24 DIA	60	RCP	40	S	N	75'		Replace Flared End	
										S	75'		Reprofile Ditch	0.5
7	22473	044	408.00+0.625	Ah 71+42	1 - 30 DIA	81	RCP	74	S	N	75'		Remove F.E., Install 2 sections, Reset F.E., Inslope Repair	
										S	75'		Reprofile Ditch	0.5
8	22474	044	408.00+0.803	Ah 79+05	2 - 10 x 9 FT	82	RCBC	-	S	N	75'		Excavate, Clean & Repair Culvert Joints, Install Joint Sheeting, Backfill & Install Geogrid, Repave Asphalt Surfacing	
										S	75'			
9	22475	044	409.00+0.717	Ah 126+95	1 - 24 DIA	62	RCP	39	S	N	75'		Replace	
										S	75'			
10	22476	044	409.00+0.988	Ah 142+00	1 - 30 DIA	52	RCP	55	S	N	75'		Replace	
										S	75'			
11	23024	044	410.00+0.158	Ah 151+28	2 - 6 x 3 FT	88	RCP	2,009	S	N	75'		Replace	
										S	75'			
12	23025	044	410.00+0.846	Ah 187+25	1 - 30 DIA	71	RCP	72	S	N	75'		Replace Flared End	
										S	75'		Replace Flared End	
13	23630	044	411.00+0.640	Ah 227+49	1 - 24 DIA	-	CMP ARCH	-	S	N	75'		No Work	
										S	75'		No Work	

REGISTERED PROFESSIONAL ENGINEER
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	33	194

Plotting Date: 9/20/2025

TABLE OF PROJECT STATIONING FOR BIDDING PURPOSES ONLY

Hwy 44 RECONSTRUCTION (N-S) – PCN 08GM

SECTION	STATION	TO	STATION	DESCRIPTION	GROSS SECTION LENGTHS	EXCEPTION LENGTH	NET SECTION LENGTHS
1	-0+37.26	to	0+75.78	Rural 3-Lane	113.04'	-	113.04'
2	0+75.78	to	53+05.03	Rural 3-Lane	5229.25'	-	5229.25'
				TOTALS =	5342.29' **1.012 Miles**	0.00' **0.000 Miles**	5342.29' **1.012 Miles**

HWY 44 RESURFACING (E-W) – PCN 08GM

SECTION	STATION		TO	STATION	DESCRIPTION	GROSS SECTION LENGTHS	EXCEPTION LENGTH	NET SECTION LENGTHS
3	Ah	0+00.00	to	Ah 245+39.00	Rural 2-Lane	24539.00'	254.00	24539.00'
					TOTALS =	24539.00' **4.648 Miles**	254.00' **0.048 Miles**	24539.00' **4.648 Miles**

EXIT 59 RAMPS RESURFACING – PCN 09VC

SECTION	STATION	TO	STATION	DESCRIPTION	GROSS SECTION LENGTHS	EXCEPTION LENGTH	NET SECTION LENGTHS
4 - NE Ramp	3+52.50	to	10+72.50	Rural Ramp	720.00'	-	720.00'
4 - SE Ramp	0+12.00	to	7+65.60	Rural Ramp	753.60'	-	753.60'
4 - SW Ramp	0+12.00	to	7+31.30	Rural Ramp	719.30'	-	719.30'
4 - NW Ramp	6+32.40	to	13+86.90	Rural Ramp	754.50'	-	754.50'
				TOTALS =	2947.40' **0.558 Miles**	0.00' **0.000 Miles**	2947.40' **0.558 Miles**

RATES OF MATERIALS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	34	194

Plotting Date: 9/20/2025

SECTION 1

Station -0+37.26 to Station 0+75.78

The Estimate of quantities is based on the following quantities of materials per mile.

Asphalt Concrete (Blade Laid)

Crushed Aggregate (100% Furnished)	206.0	Tons
PG 58H-34 Asphalt Binder	16.7	Tons
Total	**222.7**	Tons
Hydrated Lime	2.3	Tons
Total	**225.0**	Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 0.20 ton applied 37 feet wide (Rate 0.09 gal./sq.yd.)

The Estimate of quantities is based on the following quantities of materials per station.

Class Q3R Asphalt Concrete (2" Mainline Lift)

Crushed Aggregate (85% Furnished)	49.76	Tons
Salvage Asphalt Concrete (15%)	8.78	Tons
PG 58H-34 Asphalt Binder	3.05	Tons
Total	**61.56**	Tons
Hydrated Lime	0.62	Tons
Total	**62.18**	Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 0.20 ton applied 52 feet wide (Rate 0.06 gal./sq.yd.)

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11-5-25
SOUTH DAKOTA

SECTION 2

Station 0+75.78 to Station 53+05.03

The Estimate of quantities is based on the following quantities of materials per mile.

Class Q3R Asphalt Concrete (2" Mainline Lift)

Crushed Aggregate (85% Furnished)	2738	Tons
Salvage Asphalt Concrete (15%)	483	Tons
PG 58H-34 Asphalt Binder	166	Tons
Total	**3387**	Tons
Hydrated Lime	34	Tons
Total	**3421**	Tons

The exact proportions of these materials will be determined on construction.

Provide MC-70 Asphalt for Prime at the rate of 43.4 ton applied 58 feet wide (Rate - 0.30 gallon per square yard).

Provide Blotting Sand for Prime at the rate of 105.6 ton applied 36 feet wide (Rate - 10 pounds per square yard).

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 8.5 tons applied between 57 feet wide (Rate 0.06 gal./sq.yd.)

Class Q3R Asphalt Concrete (1.5" Mainline Lift)

Crushed Aggregate (85% Furnished)	2027	Tons
Salvage Asphalt Concrete (15%)	358	Tons
PG 58H-34 Asphalt Binder	123	Tons
Total	**2508**	Tons
Hydrated Lime	25	Tons
Total	**2533**	Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 8.5 tons applied between 57 feet wide (Rate 0.06 gal./sq.yd.)

Class Q3R Asphalt Concrete (2.0" Mainline Lift)

Crushed Aggregate (85% Furnished)	2751	Tons
Salvage Asphalt Concrete (15%)	485	Tons
PG 58H-34 Asphalt Binder	167	Tons
Total	**3403**	Tons
Hydrated Lime	34	Tons
Total	**3437**	Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 8.5 tons applied between 57 feet wide (Rate 0.06 gal./sq.yd.)

RATES OF MATERIALS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	35	194

Plotting Date: 11/5/2025 Rev 11/17/2025 RJM

SECTION 3

Station Ah 0+00.00 to Station Ah 245+39.00

The Estimate of quantities is based on the following quantities of materials per mile.

Asphalt Concrete (Blade Laid)

Crushed Aggregate (100% Furnished)	137.4	Tons
PG 58H-34 Asphalt Binder	11.1	Tons
Total	**148.5**	Tons
Hydrated Lime	1.5	Tons
Total	**150.0**	Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 0.10 ton applied 25 feet wide (Rate 0.09 gal./sq.yd.)

Class Q3R Asphalt Concrete (2.5" Mainline Lift)

Crushed Aggregate (85% Furnished)	2370	Tons
Salvage Asphalt Concrete (15%)	418	Tons
PG 58H-34 Asphalt Binder	144	Tons
Total	**2932**	Tons
Hydrated Lime	29	Tons
Total	**2961**	Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 0.90 ton applied 39 feet wide (Rate 0.06 gal./sq.yd.)

SECTION 4

Exit 59 Ramps
Station 3+52.50 to Station 10+72.50 NE Ramp
Station 0+12.00 to Station 7+65.6. SE Ramp
Station 0+12.00 to Station 7+31.30 SW Ramp
Station 6+32.40 to Station 13+86.90 NW Ramp

The Estimate of quantities is based on the following quantities of materials per mile.

Asphalt Concrete (Blade Laid)

Crushed Aggregate (100% Furnished)	86.1	Tons
PG 58H-34 Asphalt Binder	6.9	Tons
Total	**93.0**	Tons
Hydrated Lime	1.0	Tons
Total	**94.0**	Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 0.10 ton applied 16 feet wide (Rate 0.09 gal./sq.yd.)

The Estimate of quantities is based on the following quantities of materials per station.

Class Q3R Asphalt Concrete (2" Mainline Lift)

Crushed Aggregate (85% Furnished)	19.61	Tons
Salvage Asphalt Concrete (15%)	3.46	Tons
PG 58H-34 Asphalt Binder	1.19	Tons
Total	**24.26**	Tons
Hydrated Lime	0.24	Tons
Total	**24.50**	Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 0.10 ton applied 23 feet wide (Rate 0.06 gal./sq.yd).

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TABLE OF MATERIALS QUANTITIES - PCN 08GM

Location	Remove Asphalt Concrete Pavement (SqYd)	Remove Asphalt Concrete Pavement (for info only) (Ton)	Water for Granular Material (MGal)	Cold Milling Asphalt Concrete (SqYd)	Cold Milling Asphalt Concrete (for info only) (Ton)	Unclass Ex - Digouts (CuYd)	Base Course, Salvaged (Ton)	Base Course (Ton)	Gravel Surfacing (Ton)	Crushed Rock (Ton)	Salvage & Stockpile Aspahlt Mix & Granular Material (Ton)	MC-70 Asphalt for Prime (Ton)	Blotting Sand for Prime (Ton)	Asphalt Concrete Composite (Ton)	SS-1h or CSS-1h Asphalt for Tack (Ton)	Asphalt Concrete Blade Laid (Ton)	Hyd Lime (Ton)	PG 58H-34 Asphalt Binder (Ton)	**Class Q3R** Hot Mixed Asphalt Concrete (Ton)	Hyd Lime (Ton)	PG 58H-34 Asphalt Binder (Ton)	SS-1h or CSS-1h Asphalt for Flush Seal (Ton)
Section 1	2.0	1.0	-	637.0	33.2	1.0	-	2.0	-	-	-	-	-	1.0	0.4	4.8	0.1	0.4	70.3	0.7	3.4	0.1
Section 2	-	-	212.5	-	-	-	14565.1	7587.4	-	-	14385.0	43.0	104.6	-	29.4	-	-	-	9300.9	92.2	451.6	0.4
Section 3	349.0	73.0	-	92703.0	4726.0	232.0	-	465.0	-	-	-	-	-	116.0	51.5	1045.7	10.7	77.6	13761.2	134.8	669.2	4.2
Subtotal =	351.0	74.0	212.5	93340.0	4759.2	233.0	14565.1	8054.4	-	-	14385.0	43.0	104.6	117.0	81.3	1050.5	10.8	78.0	23132.4	227.7	1124.2	4.7
Table of Additional Quantities Totals =	4534.1	557.0	35.9	3304.0	216.0	-	982.9	2482.2	1059.3	69.4	1163.0	2.0	10.0	297.2	3.7	-	-	-	1400.7	13.7	68.1	-
Totals:	**4885.1**	**631.0**	**248.4**	**96644.0**	**4975**	**233.0**	**15548.0**	**10531.6**	**1059.3**	**69.4**	**15548.0**	**45.0**	**114.6**	**414.2**	**85.0**	**1050.5**	**10.8**	**78.0**	**24533.1**	**241.4**	**1192.3**	**4.7**

FOR BIDDING PURPOSES ONLY

Plotting Date: 9/20/2025

TABLE OF MATERIALS QUANTITIES - PCN 09VC

Location	Remove Asphalt Concrete Pavement (SqYd)	Remove Asphalt Concrete Pavement (for info only) (Ton)	Water for Granular Material (MGal)	Cold Milling Asphalt Concrete (SqYd)	Cold Milling Asphalt Concrete (for info only) (Ton)	Unclass Ex - Digouts (CuYd)	Base Course, Salvaged (Ton)	Base Course (Ton)	Gravel Surfacing (Ton)	Crushed Rock (Ton)	Salvage & Stockpile Granular Material (Ton)	MC-70 Asphalt for Prime (Ton)	Blotting Sand for Prime (Ton)	Asphalt Concrete Composite (Ton)	SS-1h or CSS-1h Asphalt for Tack (Ton)	Asphalt Concrete Blade Laid (Ton)	Hyd Lime (Ton)	PG 58H-34 Asphalt Binder (Ton)	**Class Q3R** Hot Mixed Asphalt Concrete (Ton)	Hyd Lime (Ton)	PG 58H-34 Asphalt Binder (Ton)	SS-1h or CSS-1h Asphalt for Flush Seal (Ton)
Section 4	42.0	8.0	0.5	6714.0	332.5	28.0	-	56.0	-	-	-	-	-	14.0	5.8	125.6	1.3	9.3	722.0	7.1	35.1	-
Subtotal =	42.0	8.0	0.5	6714.0	332.5	28.0	-	56.0	-	-	-	-	-	14.0	5.8	125.6	1.3	9.3	722.0	7.1	35.1	-
Table of Additional Quantities Totals =	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55.8	0.6	2.7	-
Totals:	**42.0**	**8.0**	**0.5**	**6714.0**	**332.5**	**28.0**	**-**	**56.0**	**-**	**-**	**-**	**-**	**-**	**14.0**	**5.8**	**125.6**	**1.3**	**9.3**	**777.8**	**7.7**	**37.8**	**-**

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TABLE OF ADDITIONAL MATERIALS QUANTITIES - PCN 08GM

	Remove Asphalt Concrete Pavement (SqYd)	Remove Asphalt Concrete Pavement (for info only) (Ton)	Water for Granular Material (MGal)	Cold Milling Asphalt Concrete (SqYd)	Cold Milling Asphalt Concrete (for info only) (Ton)	Unclass Ex - Digouts (CuYd)	Base Course, Salvaged (Ton)	Base Course (Ton)	Gravel Surfacing (Ton)	Crushed Rock (Ton)	Salvage & Stockpile Aspahlt Mix & Granular Material (Ton)	MC-70 Asphalt for Prime (Ton)	Blotting Sand for Prime (Ton)	Asphalt Concrete Composite (Ton)	SS-1h or CSS-1h Asphalt for Tack (Ton)	Asphalt Concrete Blade Laid (Ton)	Hyd Lime (Ton)	PG 58H-34 Asphalt Binder (Ton)	**Class Q3R** Hot Mixed Asphalt Concrete (Ton)	Hyd Lime (Ton)	PG 58H-34 Asphalt Binder (Ton)	SS-1h or CSS-1h Asphalt for Flush Seal (Ton)
Spot Leveling, Strengthening, Repair																						
Mainline	-	-	-	-	17	-	-	-	-	-	-	-	10.0	-	1.3	-	-	-	466.9	4.7	22.9	-
Guardrail Locations																						
See Guardrail Table	3762.3	395.0	4.1	-	-	-	-	432.5	-	-	-	-	-	68.9	-	-	-	-	-	-	-	-
Culvert Locations																						
Box Culvert Joint Repairs	558.0	117.0	3.8	-	-	-	-	651.7	-	-	-	-	-	175.0	-	-	-	-	-	-	-	-
Box Culvert Install (Ah 151+24)	213.8	45.0	1.3	-	-	-	-	134.7	-	-	-	-	-	53.3	-	-	-	-	-	-	-	-
Traffic Diversion	-	-	5.1	-	25	-	-	-	1059.3	-	-	-	-	-	-	-	-	-	-	-	-	-
Intersecting Roads																						
Hwy 44N	-	-	1.9	367	19	-	196.1	-	-	-	232.0	0.4	-	-	0.4	-	-	-	137.1	1.3	6.7	-
Industrial Ave	-	-	2.9	-	-	-	298.2	-	-	-	353.0	0.6	-	-	0.3	-	-	-	146.0	1.4	7.1	-
Oriole Ave	-	-	2.9	-	-	-	301.6	-	-	-	357.0	0.6	-	-	0.3	-	-	-	147.7	1.4	7.1	-
280th St	-	-	1.8	-	-	-	187.0	-	-	-	221.0	0.4	-	-	0.3	-	-	-	91.6	0.8	4.4	-
466th Ave	-	-	-	316	17	-	-	-	-	-	-	-	-	-	0.1	-	-	-	44.2	0.4	2.1	-
469th Ave	-	-	-	483	25	-	-	-	-	-	-	-	-	-	0.2	-	-	-	67.7	0.7	3.3	-
Boondock Ave	-	-	-	186	10	-	-	-	-	-	-	-	-	-	0.1	-	-	-	26.1	0.3	1.3	-
*** Special Driveway**																						
Flowers By Bob	-	-	0.8	-	-	-	-	88.3	-	69.4	-	-	-	-	-	-	-	-	-	-	-	-
*** Asphalt to Radius**																						
3 Private Driveways	-	-	0.3	563	30	-	-	30.0	-	-	-	-	-	-	0.2	-	-	-	78.8	0.8	3.8	-
7 Intersecting Roads	-	-	0.7	1389	73	-	-	70.0	-	-	-	-	-	-	0.5	-	-	-	194.6	1.9	9.4	-
*** Base Course to R.O.W**																						
17 Private Driveways	-	-	4.1	-	-	-	-	425.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26 Farm & Field Entrances	-	-	6.2	-	-	-	-	650.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS =	**4534.1**	**557**	**35.9**	**3304**	**216**	**-**	**982.9**	**2482.2**	**1059.3**	**69.4**	**1163.0**	**2.0**	**10.0**	**297.2**	**3.7**	**-**	**-**	**-**	**1400.7**	**13.7**	**68.1**	**-**

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Plotting Date: 9/20/2025

TABLE OF ADDITIONAL MATERIALS QUANTITIES - PCN 09VC

Location	Remove Asphalt Concrete Pavement (SqYd)	Remove Asphalt Concrete Pavement (for info only) (Ton)	Water for Granular Material (MGal)	Cold Milling Asphalt Concrete (SqYd)	Cold Milling Asphalt Concrete (for info only) (Ton)	Unclass Ex - Digouts (CuYd)	Base Course, Salvaged (Ton)	Base Course (Ton)	Gravel Surfacing (Ton)	Crushed Rock (Ton)	Salvage & Stockpile Asphalt Mix & Granular Material (Ton)	MC-70 Asphalt for Prime (Ton)	Blotting Sand for Prime (Ton)	Asphalt Concrete Composite (Ton)	SS-1h or CSS-1h Asphalt for Tack (Ton)	Asphalt Concrete Blade Laid (Ton)	Hyd Lime (Ton)	PG 58H-34 Asphalt Binder (Ton)	**Class Q3R** Hot Mixed Asphalt Concrete (Ton)	Hyd Lime (Ton)	PG 58H-34 Asphalt Binder (Ton)	SS-1h or CSS-1h Asphalt for Flush Seal (Ton)
Spot Leveling, Strengthening, Repair																						
Mainline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55.8	0.6	2.7	-
TOTALS =	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**55.8**	**0.6**	**2.7**	**-**

Tonnage shown in the tables above for Class Q3 Hot Mixed Asphalt Concrete is based on a compacted depth as detailed in the plans.

*** Asphalt to Radius** - The material placed will match the limits of the existing in-place material. For locations with existing asphalt surfacing, the surface will have 1" Cold Milling with one 2" or 2.5" lift of asphalt to match the surfacing section. Locations without existing asphalt will have two 2" lifts of asphalt placed with the lift transitioning from 2" to feathering out at the paving limit with Base Course being used to blend the existing surface at the R.O.W. with the "feathered out" asphalt surface.

Approximately 10 tons of Base Course per site has been estimated. All work at the sites will be completed to the satisfaction of the Engineer.

*** Base Course to R.O.W**. - Base Course will be placed on the approach surface from the shoulder to the R.O.W. Approximately 25 tons of Base Course per site has been estimated. All work at the sites will be completed to the satisfaction of the Engineer.

** footnote - All asphalt placed throughout these areas will be compacted to the Specified Density Compaction Effort at a depth as detailed in the plans.

The quantities above are included in the Material Quantities table in the "Table of Material Quantities" sheet.

SUMMARY OF ASPHALT CONCRETE - PCN 08GM

Description / Location	Blade Laid	AC Composite	Class Q3R	
	Compaction Without Specified Density (Ton)	Compaction Without Specified Density (Ton)	Compaction With Specified Density (Ton)	Compaction Without Specified Density (Ton)
Section 1	4.8	1.0	50.7	19.6
Section 2	-	-	6451.1	2849.8
Section 3	1045.7	116.0	9174.6	4586.6
Spot Leveling, Strengthening, Repair	-	-	-	466.9
Guardrail Locations	-	68.9	-	-
Culvert Locations	-	228.3	-	-
Intersecting Roads	-	-	397.1	263.3
Approaches	-	-	-	273.4
	1050.5	414.2	16073.5	8459.6

SUMMARY OF ASPHALT CONCRETE - PCN 09VC

Description / Location	Blade Laid	AC Composite	Class Q3R	
	Compaction Without Specified Density (Ton)	Compaction Without Specified Density (Ton)	Compaction With Specified Density (Ton)	Compaction Without Specified Density (Ton)
Section 4	125.6	14.0	722.0	-
Spot Leveling, Strengthening, Repair	-	-	-	55.8
	125.6	14.0	722.0	55.8

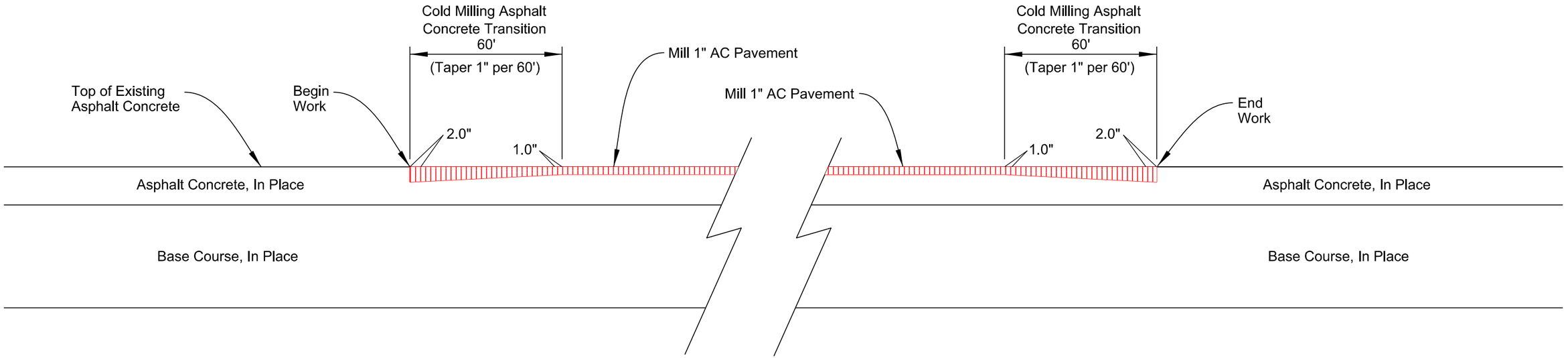
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	38	194

Plotting Date: 11/5/2025

LAYOUT FOR COLD MILLING TAPERS

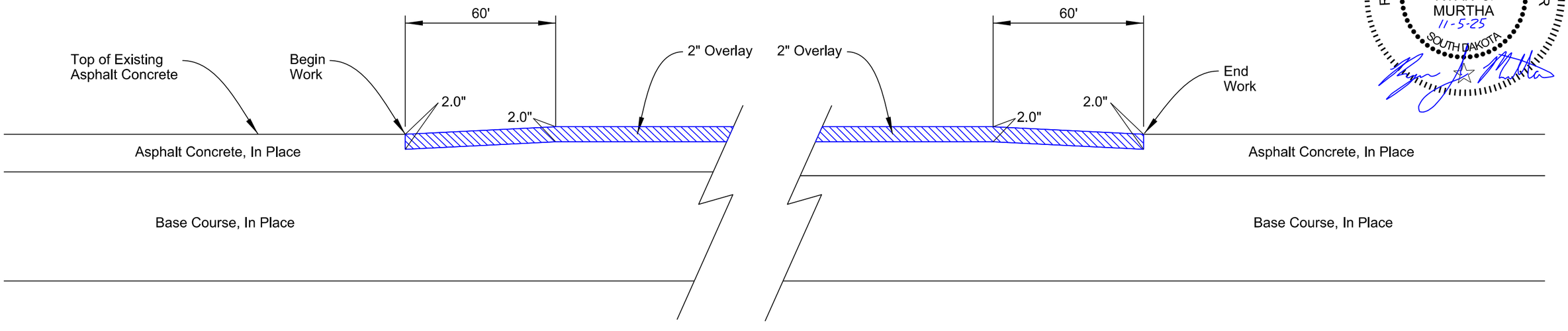
FOR BIDDING PURPOSES ONLY

SECTIONS 1 & 4
BEGIN & END OF PAVING
Not to Scale



LAYOUT FOR RESURFACING TAPERS

SECTIONS 1 & 4
BEGIN & END OF PAVING
Not to Scale



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	39	194

Plotting Date: 11/5/2025

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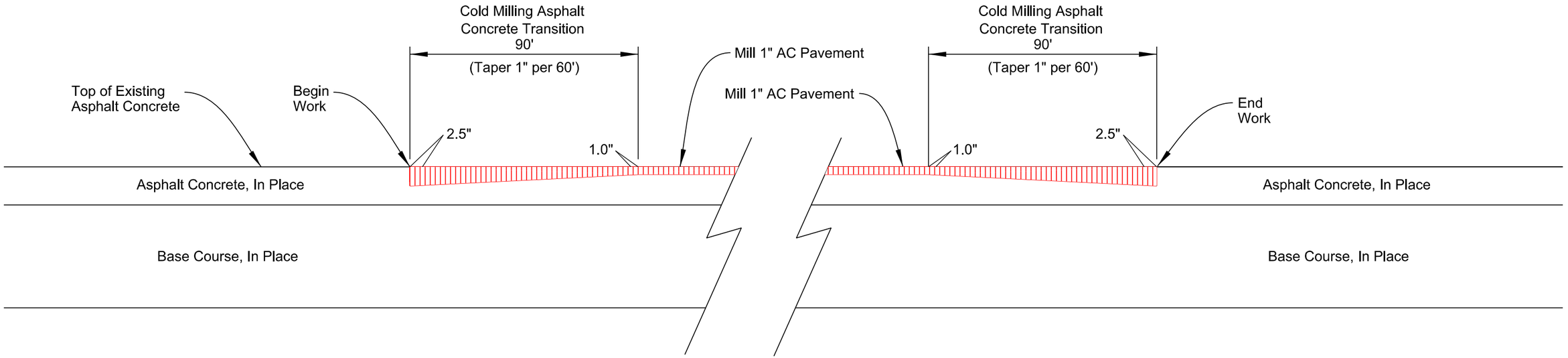
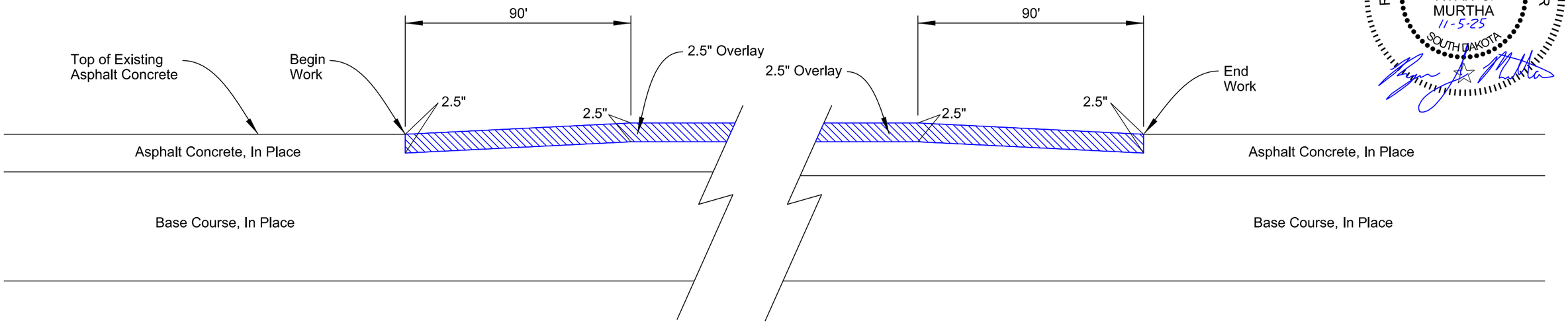
LAYOUT FOR COLD MILLING TAPERS

SECTION 3
BEGIN & END OF PAVING
Not to Scale



LAYOUT FOR RESURFACING TAPERS

SECTION 3
BEGIN & END OF PAVING
Not to Scale



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	40	194

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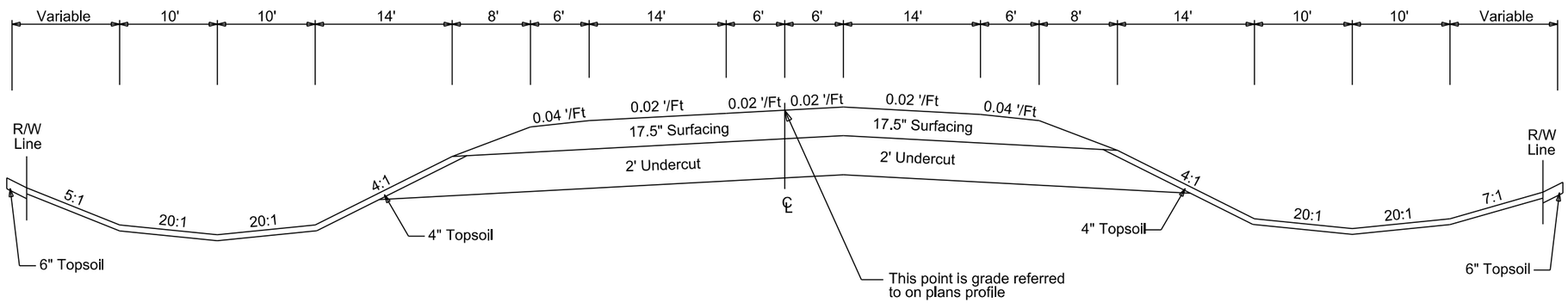
FOR BIDDING PURPOSES ONLY

TYPICAL GRADING SECTION

Section 2

Sta. 0+75.78 to Sta. 52+93.24



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SOUTH DAKOTA

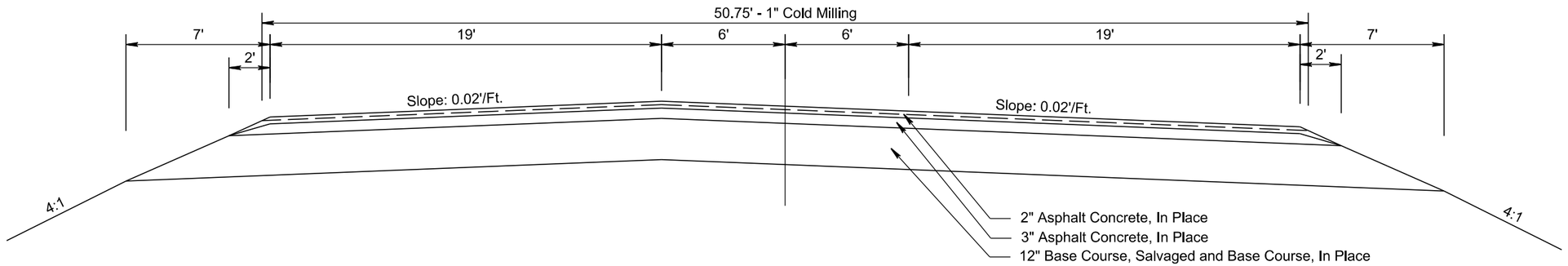
TYPICAL SURFACING SECTION

FOR BIDDING PURPOSES ONLY

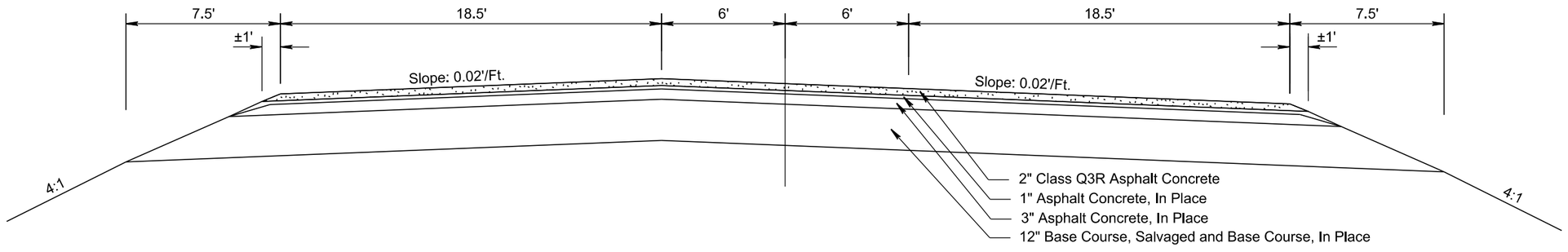
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	41	194

Plotting Date: 11/5/2025

Section 1
Sta. -0+37.26 to Sta. 0+75.78
In Place & Cold Milling Section



Section 1
Sta. -0+37.26 to Sta. 0+75.78
Resurfacing Section



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TYPICAL SURFACING SECTION

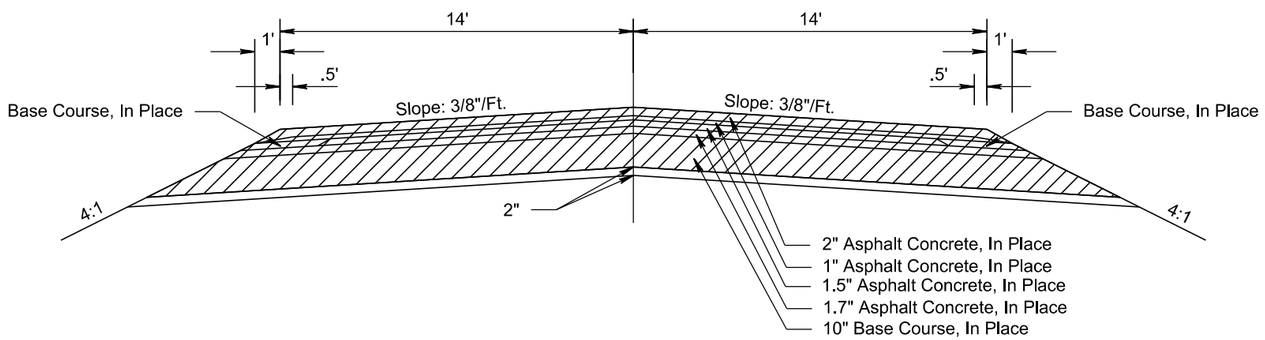
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	42	194

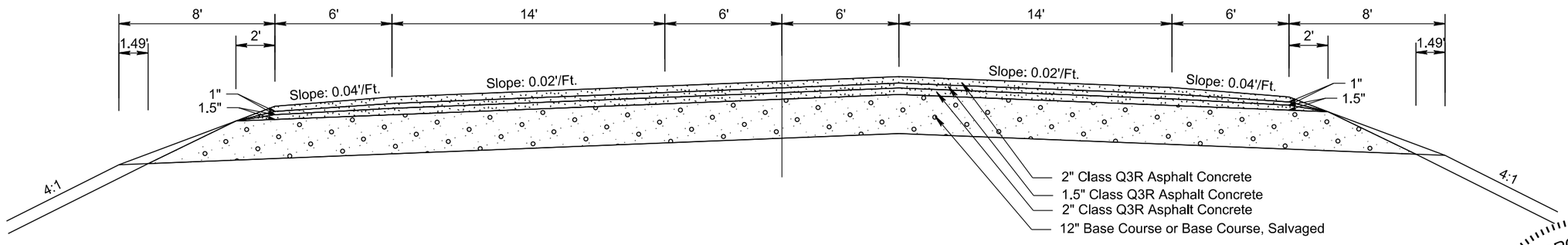
Plotting Date: 11/5/2025

Salvage & Stockpile Asphalt Mix
& Granular Base Material

Section 2
Sta. 0+75.78 to Sta. 53+05.03
In Place Section



Section 2
Sta. 0+75.78 to Sta. 53+05.03
Surfacing Section



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TYPICAL SURFACING SECTION

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	43	194

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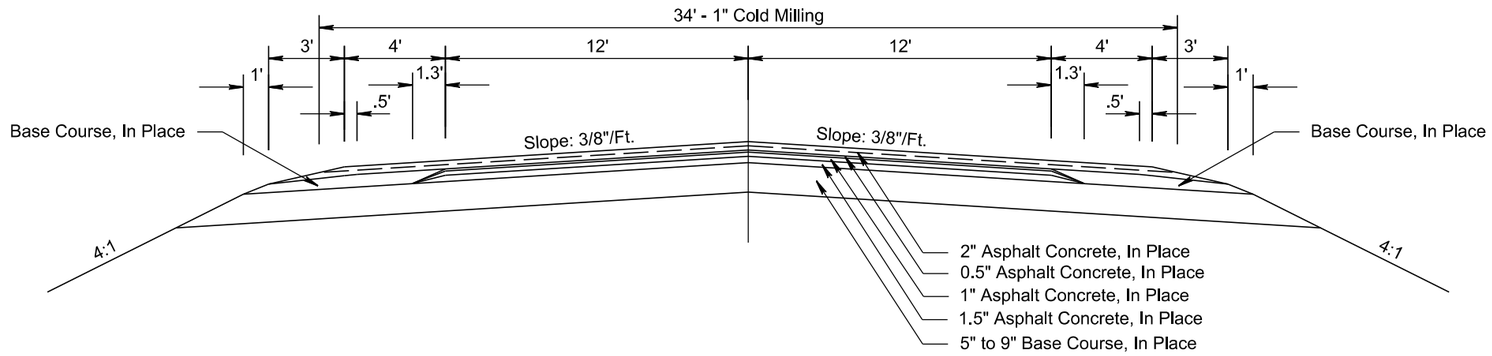
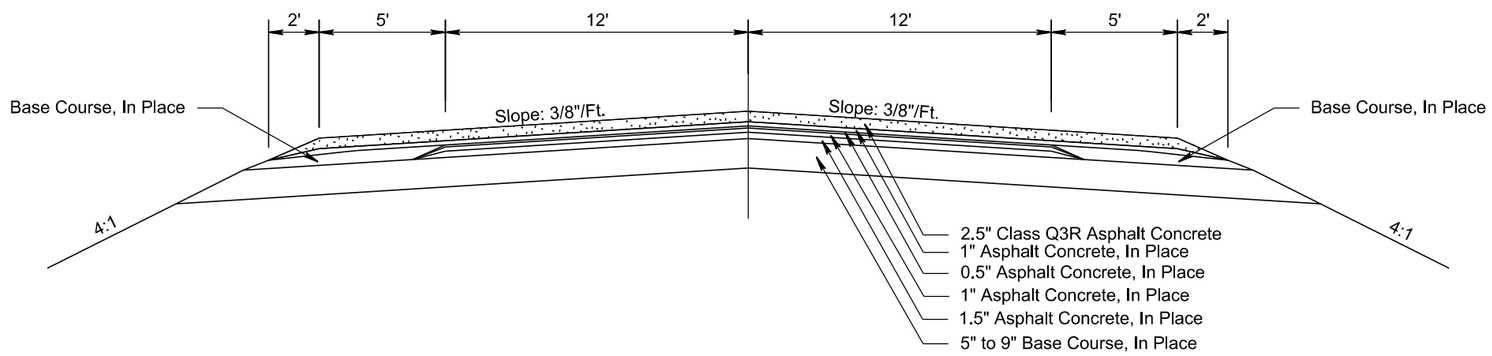
Bridge Exception:

Sta. a 236+18 to Sta. a 239+18

Section 3
Sta. Ah 0+00 to Sta. Ah 245+39
In Place & Cold Milling Section



Section 3
Sta. Ah 0+00 to Sta. Ah 245+39
Resurfacing Section



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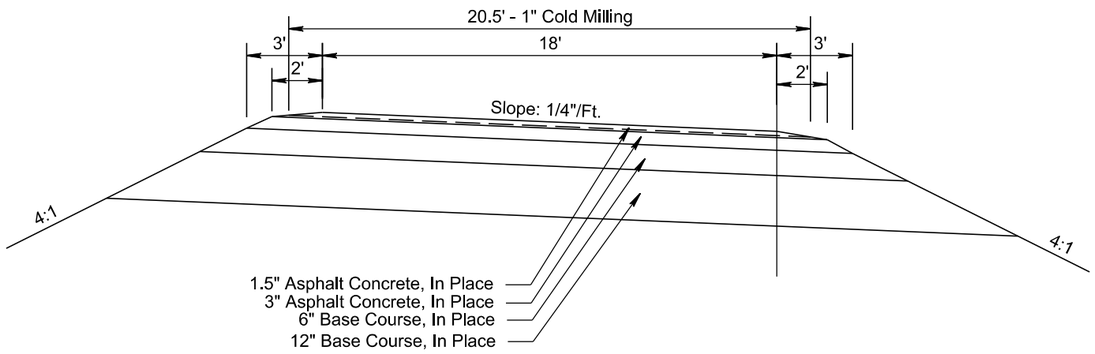
TYPICAL SURFACING SECTION

FOR BIDDING PURPOSES ONLY

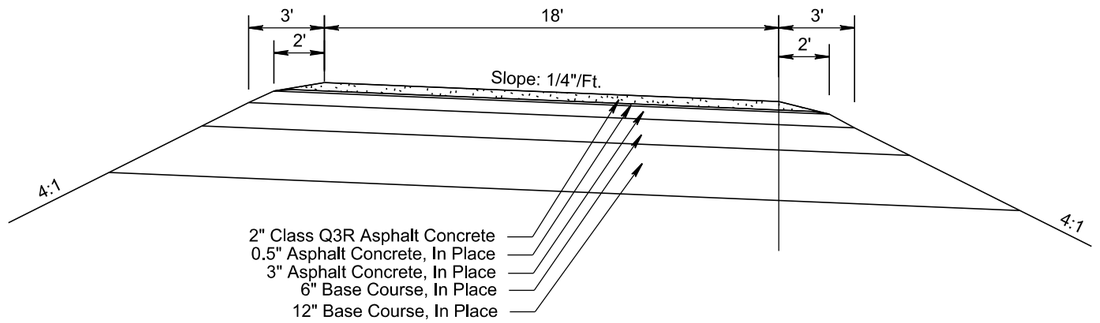
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	44	194

Plotting Date: 11/5/2025

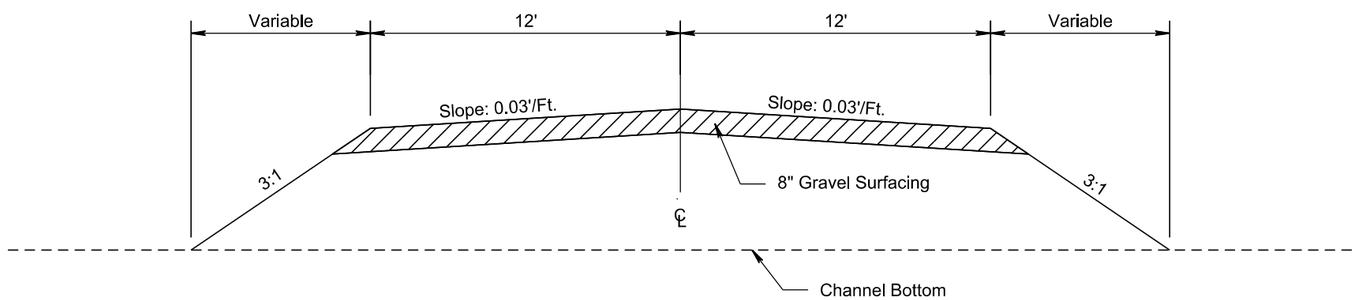
Section 4
Exit 59 Ramps
Sta. 3+52.5 to Sta. 10+72.5 NE Ramp
Sta. 0+12 to Sta. 7+65.6 SE Ramp
Sta. 0+12 to Sta. 7+31.3 SW Ramp
Sta. 6+32.4 to Sta. 13+86.9 NW Ramp
In Place & Cold Milling Section



Section 4
Exit 59 Ramps
Sta. 3+52.5 to Sta. 10+72.5 NE Ramp
Sta. 0+12 to Sta. 7+65.6 SE Ramp
Sta. 0+12 to Sta. 7+31.3 SW Ramp
Sta. 6+32.4 to Sta. 13+86.9 NW Ramp
Resurfacing Section



Traffic Diversion
Sta. 0+00 (Div1) = Ah 146+00 to Sta. 10+28 (Div1) = Ah 156+00
Proposed Section



PCN 08GM

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	4	30"	5.2	20.8
R11-2	ROAD CLOSED	4	48" x 30"	10.0	40.0
R11-4	ROAD CLOSED TO THRU TRAFFIC	2	60" x 30"	12.5	25.0
W1-4	REVERSE CURVE (L or R)	6	48" x 48"	16.0	96.0
W1-6	LARGE ARROW (one direction)	8	48" x 24"	8.0	64.0
W3-1	STOP AHEAD (symbol)	4	48" x 48"	16.0	64.0
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W8-1	BUMP	11	48" x 48"	16.0	176.0
W8-7	LOOSE GRAVEL	4	48" x 48"	16.0	64.0
W8-11	UNEVEN LANES	4	48" x 48"	16.0	64.0
W13-1P	ADVISORY SPEED (plaque)	8	30" x 30"	6.3	50.4
W20-1	ROAD WORK AHEAD	24	48" x 48"	16.0	384.0
W20-3	ROAD CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	6	48" x 48"	16.0	96.0
W20-7	FLAGGER (symbol)	6	48" x 48"	16.0	96.0
W21-2	FRESH OIL	4	48" x 48"	16.0	64.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-1	ROAD WORK NEXT 5 MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	5	36" x 18"	4.5	22.5
SPECIAL	Special Sign (Wait Follow Pilot Car)	2	18" x 30"	3.8	7.6
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			1471.3

PCN 08GM

ITEMIZED LIST FOR TEMPORARY BUSINESS SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
SPECIAL	Access to Flowers by Bob (ARROW Up)	1	30" x 54"	11.3	11.3
SPECIAL	Access to Flowers by Bob (ARROW L or R)	4	24" x 54"	9.0	36.0
		TEMPORARY BUSINESS SIGNS SQFT			47.3

PCN 09VC

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R3-1	RIGHT TURN PROHIBITION (symbol)	6	36" x 36"	9.0	54.0
W5-4	RAMP NARROWS	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
SPECIAL	RAMP WORK AHEAD	4	48" x 48"	16.0	64.0
SPECIAL	RAMP CLOSE AHEAD	4	48" x 48"	16.0	64.0
G20-2	END ROAD WORK	4	48" x 24"	8.0	32.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			310.0

PCN 08GM

ITEMIZED LIST FOR DETOUR AND RESTRICTION SIGNING

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	3	30"	5.2	15.6
R3-1	RIGHT TURN PROHIBITION (symbol)	2	24" x 24"	4.0	8.0
R3-2	LEFT TURN PROHIBITION (symbol)	2	24" x 24"	4.0	8.0
SPECIAL	NO VEHICLES OVER 11 FT WIDE	3	78" x 24"	13.0	39.0
W20-2	DETOUR AHEAD	5	48" x 48"	16.0	80.0
M1-5	SD ROUTE MARKER (1 or 2 digits)	10	24" x 24"	4.0	40.0
M3-2	DIRECTION MARKER - EAST	5	24" x 12"	2.0	10.0
M3-4	DIRECTION MARKER - WEST	4	24" x 12"	2.0	8.0
M4-8	DETOUR	2	24" x 12"	2.0	4.0
M4-8a	END DETOUR	6	24" x 18"	3.0	18.0
M4-9	DETOUR (ARROW L or R)	6	30" x 24"	5.0	30.0
M6-3	DIRECTION ARROW - Vertical Single Head	2	21" x 15"	2.2	4.4
SPECIAL	WIDTH RESTRICTION 11 FT WIDE 5 MILES AHEAD	2	108" x 96"	72.0	144.0
SPECIAL	WIDTH RESTRICTION 11 FT WIDE 6 MILES AHEAD	2	150" x 102"	106.3	212.6
SPECIAL	WIDTH RESTRICTION 11 FT WIDE 14 MILES AHEAD	1	108" x 96"	72.0	72.0
		CONVENTIONAL ROAD DETOUR AND RESTRICTION SIGNING SQFT			693.6

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11-5-25
SOUTH DAKOTA

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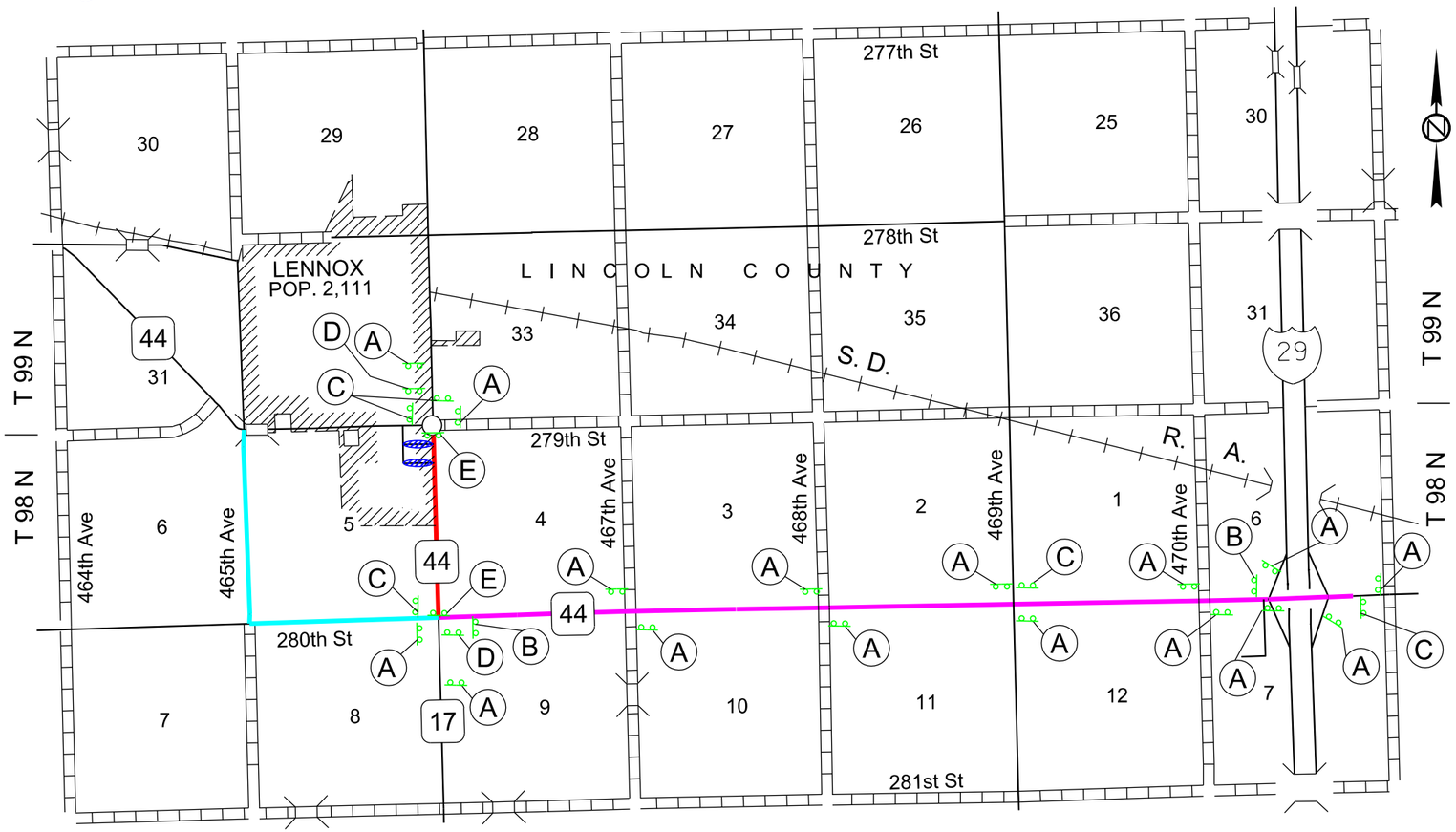
Traffic Control 08GM

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	46	194

Plotting Date: 11/5/2025

Fixed Location Signs
(Ground Mounted, Breakaway Supports)



ROAD WORK AHEAD W20-1 — A

ROAD WORK NEXT 5 MILE G20-1 — B

END ROAD WORK G20-2 — C

ROAD CLOSED AHEAD W20-3 — D

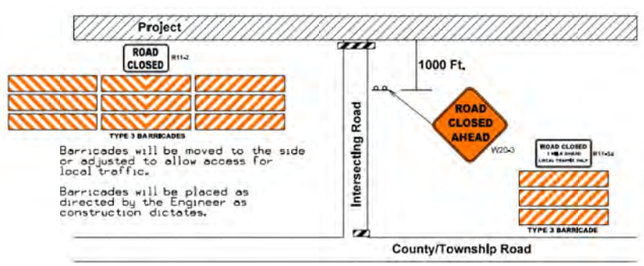
NOTE:
W20-1 signs are also to be used per the applicable standard plates

ROAD CLOSED R11-2

TYPE 3 BARRICADE — E

Project Location - Mill and Resurface
Project Location - Regrading
Detour

Typical Intersecting Road Detail



Intersecting Roads to be closed during construction, install only when applicable

NOTES:

All Fixed Location signs shall remain In place until the permanent pavement marking is complete.

Signs shall be placed 50' to 150' from end of project. Exact location to be approved by the Engineer.

Construction signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 70	1000
75	1000

Traffic Control 09VC

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	47	194

Plotting Date: 11/5/2025

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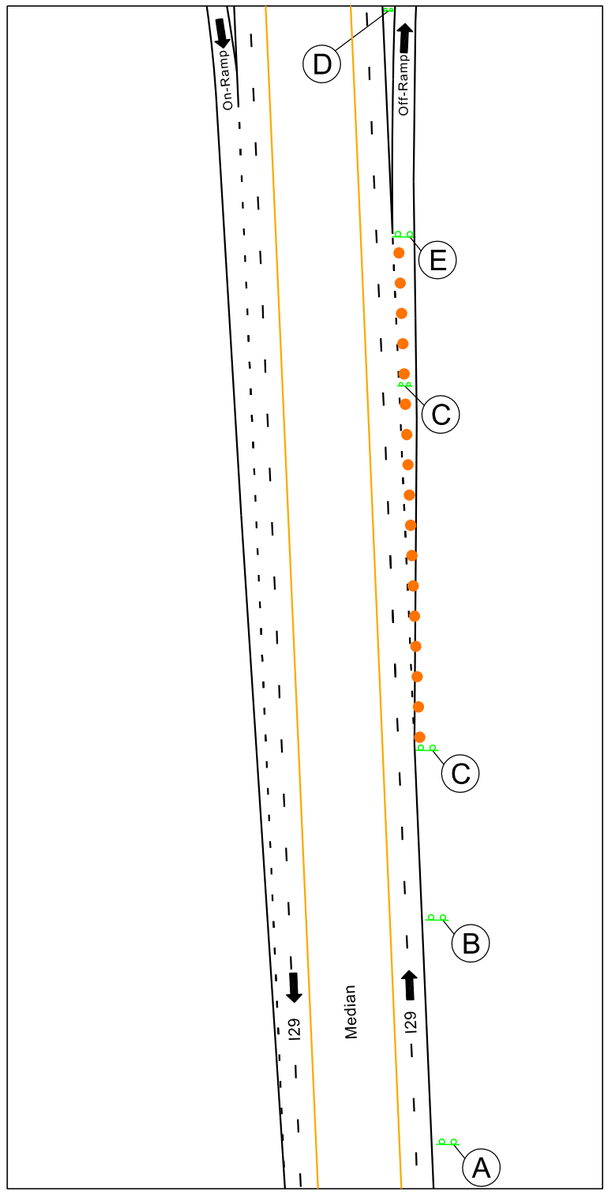
Off Ramp Closure Detail (Typ)



A

B

C

D

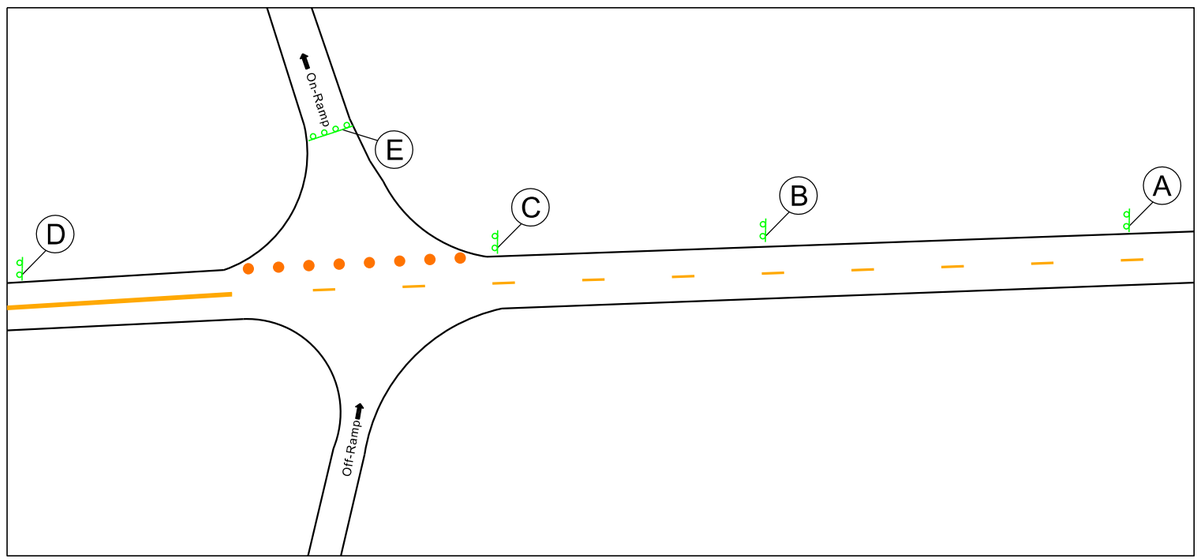
CHANNELIZING DEVICES

Signs shall be placed 50' to 150' from end of project. Exact location to be approved by the Engineer.

TYPE 3 BARRICADE

E

On Ramp Closure Detail (Typ)



Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (FEET)
0 - 30	25
35 - 45	25
50	50 *
55	50 *
60 - 80	50 *

* Spacing is 40' for 42" cones

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 70	1000
75	1000

Width Restriction Signing

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	48	194

Plotting Date: 11/5/2025

Fixed Location Signs
(Ground Mounted, Breakaway Supports)

Project Location - Mill and Resurface

Project Location - Regrading

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WIDTH RESTRICTION
11 FT MAX
44 EAST
14 MILES AHEAD
USE ALT ROUTE

SPECIAL
(108" X 96")

A

WIDTH RESTRICTION
11 FT MAX
44 WEST
6 MILES AHEAD
USE ALT ROUTE

SPECIAL
(150" X 102")

B

WIDTH RESTRICTION
11 FT MAX
44 EAST
5 MILES AHEAD
USE ALT ROUTE

SPECIAL
(108" X 96")

C

NO VEHICLES OVER 11 FT WIDE

SPECIAL
(78" X 24")

D

Detour Layout

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	49	194

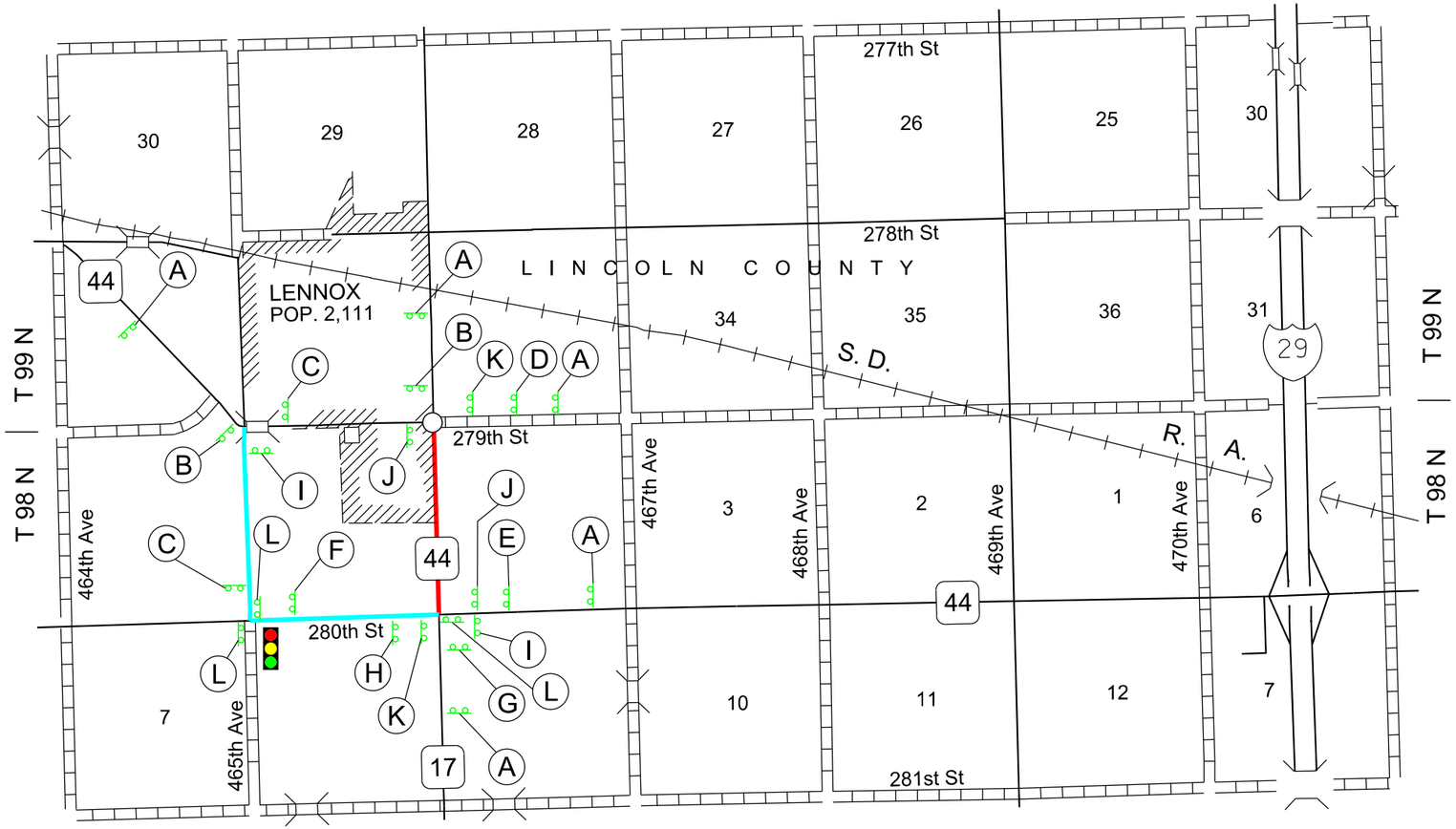
Plotting Date: 11/5/2025

Fixed Location Signs
(Ground Mounted, Breakaway Supports)

Detour Route

Road Closure

Portable Temporary Traffic Control Signal



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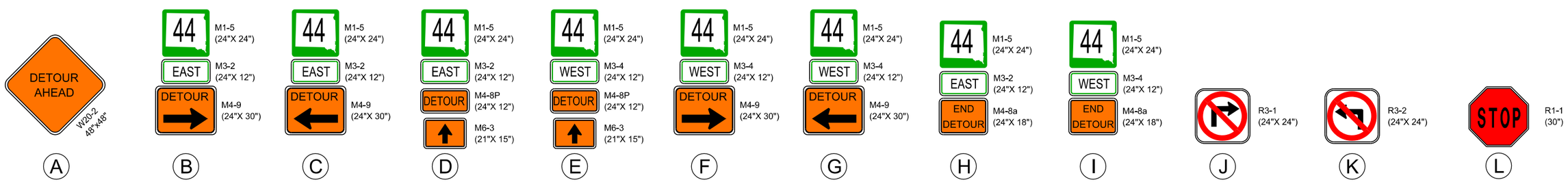


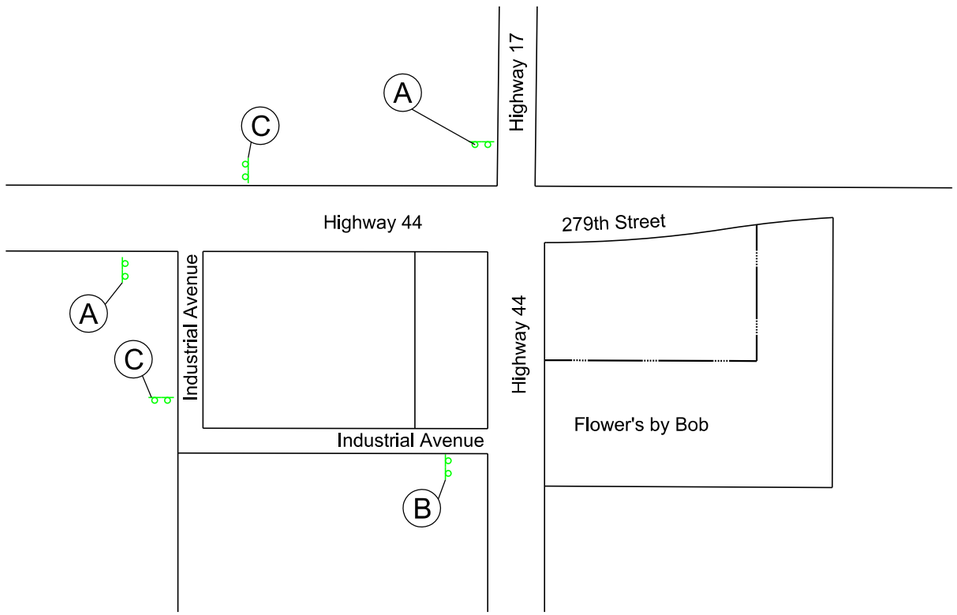
Temporary Business Sign Layout

FOR BIDDING PURPOSES ONLY

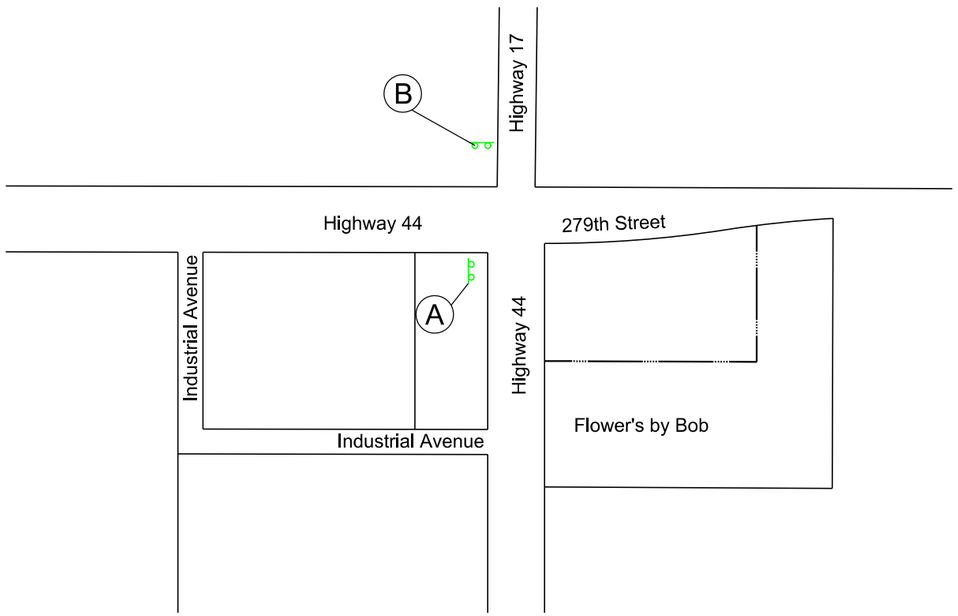
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	50	194

Plotting Date: 11/5/2025

Alternate 1



Alternate 2



NOTES:

See General Notes for contract time provision work restrictions for more details.

Alternate 1: Use this option when Highway 44 is closed north of Industrial Avenue.

Alternate 2: Use this option when Highway 44 is closed south of Industrial Avenue and open north of Industrial Avenue

SPECIAL
(54" X 24")

A

SPECIAL
(54" X 30")

B

SPECIAL
(54" X 24")

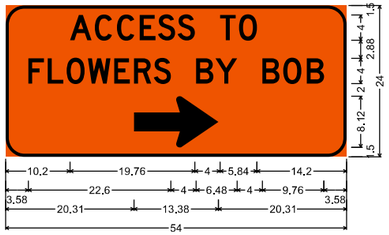
C

Special Sign Details

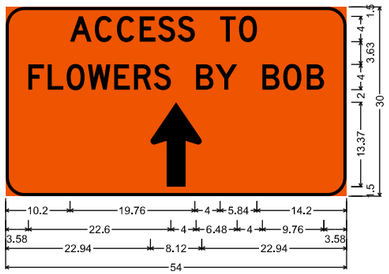
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	51	194

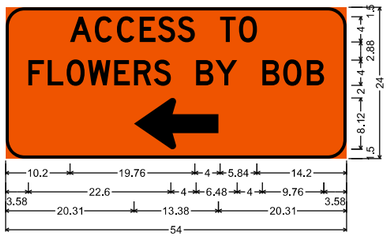
Plotting Date: 11/5/2025



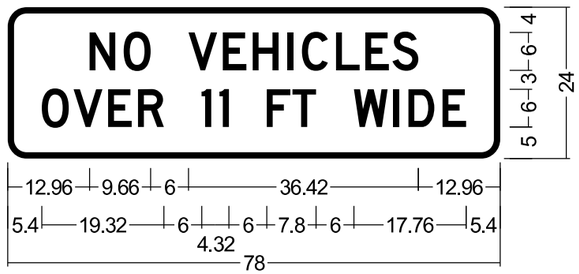
3.00" Radius, 0.50" Border, Black on Orange;
"ACCESS TO ", D 2K; "FLOWERS BY BOB", D 2K;
Standard Arrow 3 13,38" X 8,13" 0°;



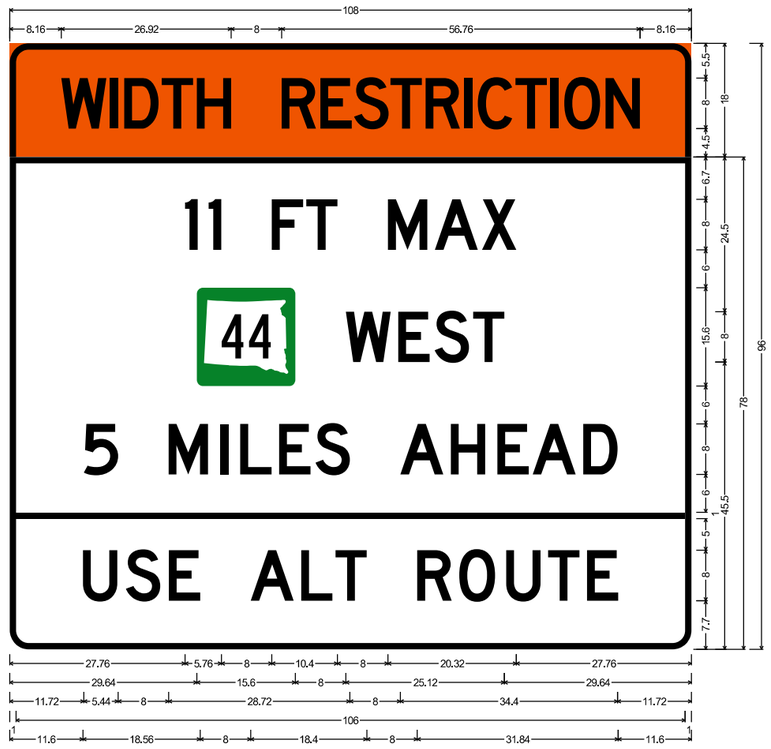
3.00" Radius, 0.50" Border, Black on Orange;
"ACCESS TO ", D 2K; "FLOWERS BY BOB", D 2K;
Standard Arrow 3 13,38" X 8,13" 90°;



3.00" Radius, 0.50" Border, Black on Orange;
"ACCESS TO ", D 2K; "FLOWERS BY BOB", D 2K;
Standard Arrow 3 13,38" X 8,13" 180°;



3.00" Radius, 1.00" Border, Black on White;
"NO VEHICLES", D 2K; "OVER 11 FT WIDE", D 2K;



3.00" Radius, 1.00" Border, Black on Orange;
"WIDTH RESTRICTION", D 2K 50% spacing;

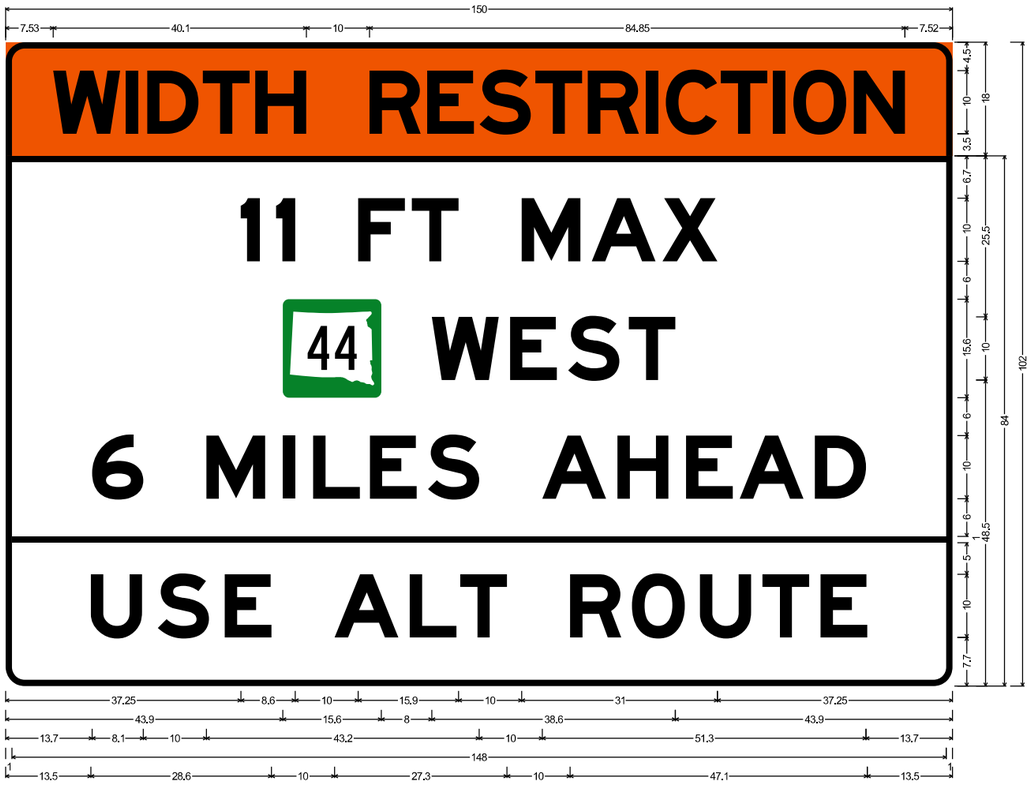
3.00" Radius, 1.00" Border, Black on White;
"11 FT MAX", D 2K; State Highway 44 M1-5 7.00" B 2K; "WEST", D 2K; "5 MILES AHEAD", D 2K; "USE ALT ROUTE", D 2K;

Special Sign Details

FOR BIDDING PURPOSES ONLY

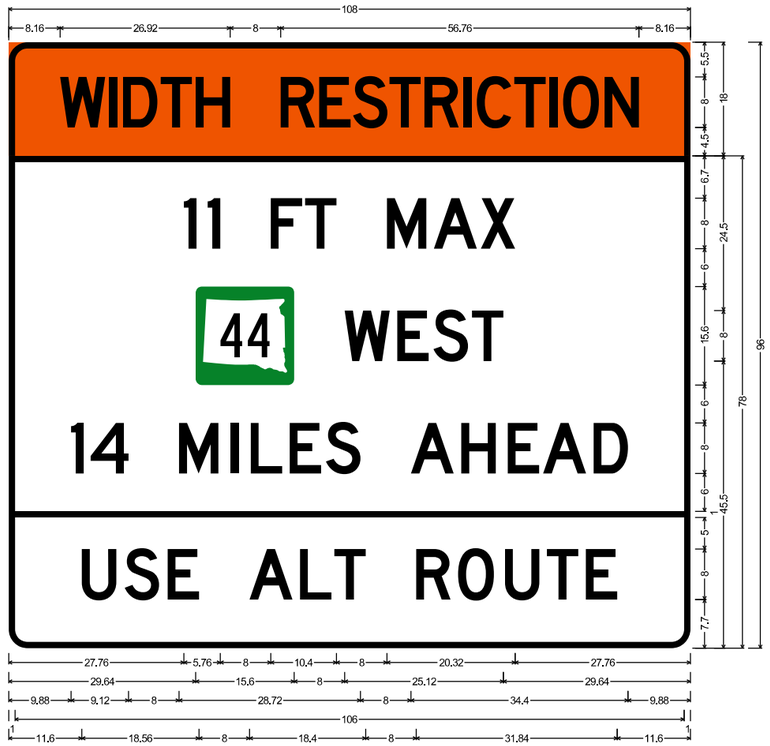
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	52	194

Plotting Date: 11/5/2025



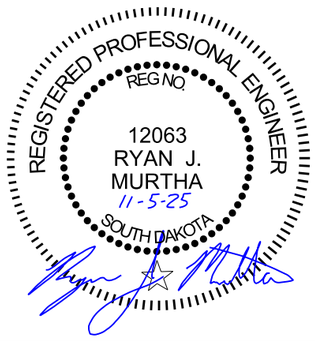
3.00" Radius, 1.00" Border, Black on Orange;
"WIDTH RESTRICTION", E Mod 2K 50% spacing;

3.00" Radius, 1.00" Border, Black on White;
"11 FT MAX", E Mod 2K; State Highway 44 M1-5 7.00" B 2K; "WEST", E Mod 2K; "6 MILES AHEAD", E Mod 2K; "USE ALT ROUTE", E Mod 2K;



3.00" Radius, 1.00" Border, Black on Orange;
"WIDTH RESTRICTION", D 2K 50% spacing;

3.00" Radius, 1.00" Border, Black on White;
"11 FT MAX", D 2K; State Highway 44 M1-5 7.00" B 2K; "WEST", D 2K; "14 MILES AHEAD", D 2K; "USE ALT ROUTE", D 2K;



EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

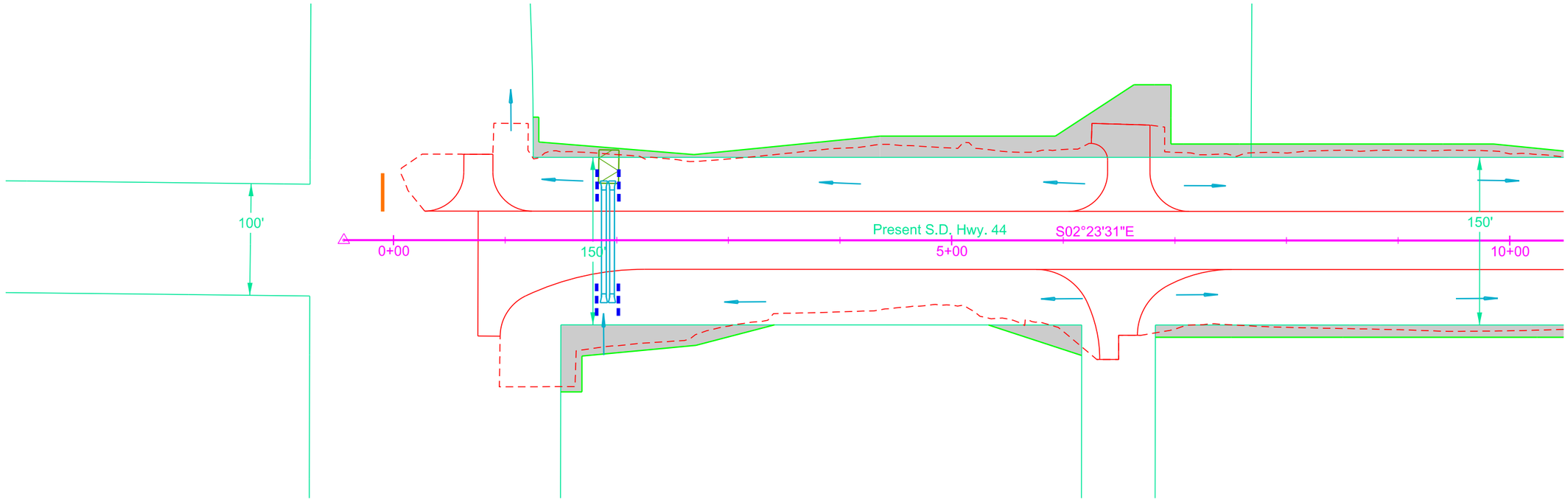
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	53	194

Plotting Date: 11/5/2025

Install Low Flow Silt Fence at the following locations:
0+00 L Perimeter control 50 Ft

Install High Flow Silt Fence
at the following locations:
1+92 L/R Across ditch at Inlet and Outlet ends of Pipe
(60 Ft each end) 120 Ft

Install Type 3 Erosion Control Blanket
at the following locations:
1+92 L Pipe Outlet 60 SqYd



REGISTERED PROFESSIONAL ENGINEER
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11-5-25
SOUTH DAKOTA

EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

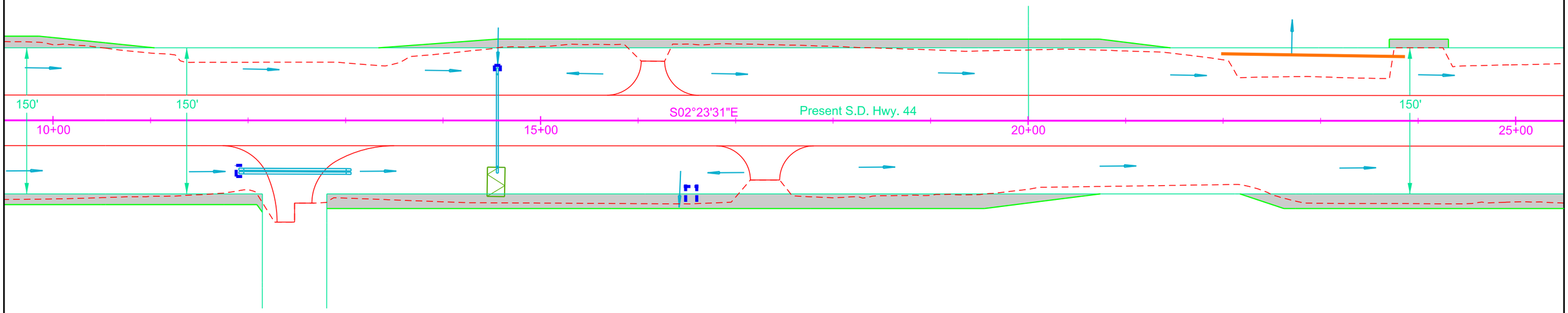
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	54	194

Plotting Date: 11/5/2025

Install Low Flow Silt Fence at the following locations:
22+00 to 23+90 L Perimeter control 190 Ft

Install High Flow Silt Fence
at the following locations:
12+48 R Inlet end of pipe 18 Ft
14+56 L Inlet end of pipe 18 Ft
16+54 R Inlet end of pipe 18 ft

Install Type 3 Erosion Control Blanket
at the following locations:
14+56 R Pipe Outlet 60 SqYd



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EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

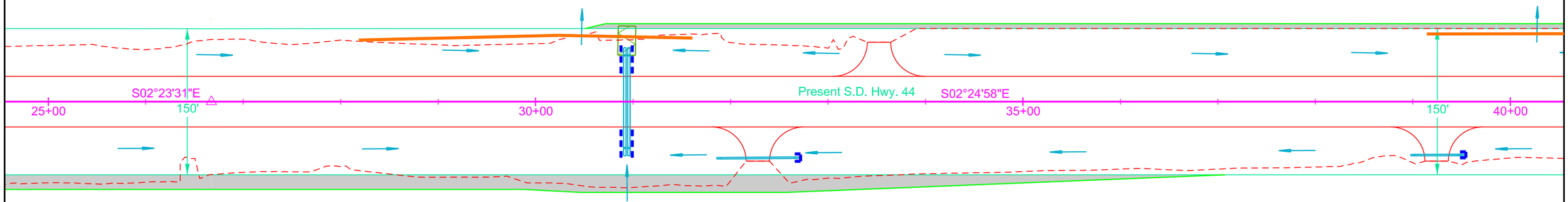
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	55	194

Plotting Date: 11/5/2025

Install Low Flow Silt Fence at the following locations:
28+20 to 31+60 L Perimeter control 340 Ft

Install High Flow Silt Fence
at the following locations:
30+94 L/R at Inlet and Outlet ends of Pipe (60 Ft each end) 120 Ft
32+28 R Inlet end of pipe 18 Ft
39+24 R Inlet end of pipe 18 Ft

Install Type 3 Erosion Control Blanket
at the following locations:
30+94 L Pipe Outlet 60 SqYd



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SOUTH DAKOTA

EROSION AND SEDIMENT CONTROL PLAN

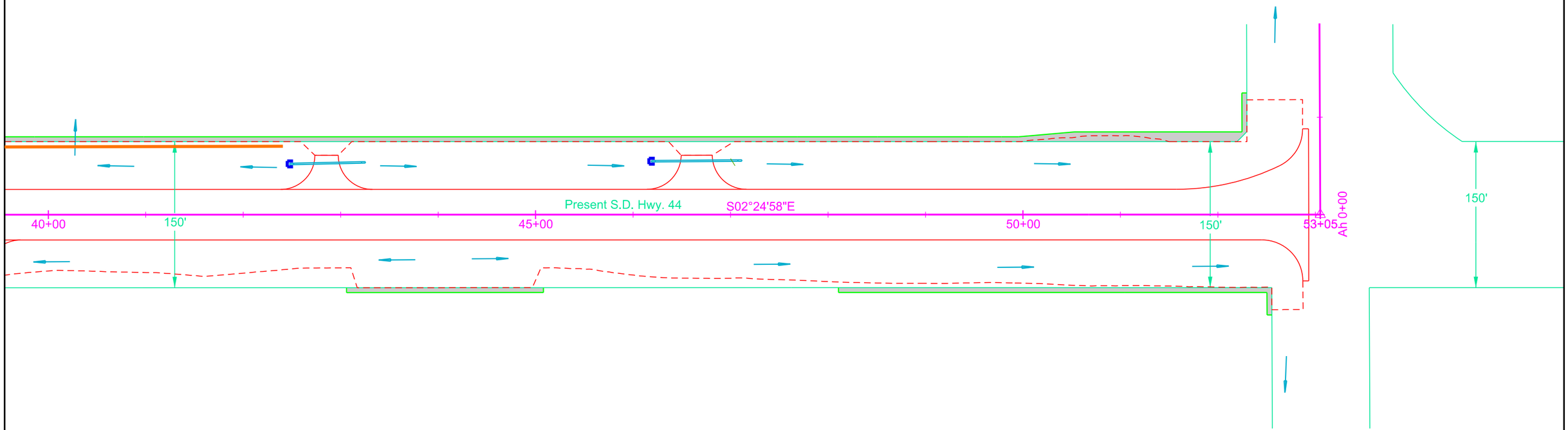
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	56	194

Plotting Date: 11/5/2025

Install Low Flow Silt Fence at the following locations:
39+15 to 42+40 L Perimeter control 325 Ft

Install High Flow Silt Fence
at the following locations:
42+87 L Inlet end of pipe 18 Ft
46+65 L Inlet end of pipe 18 Ft



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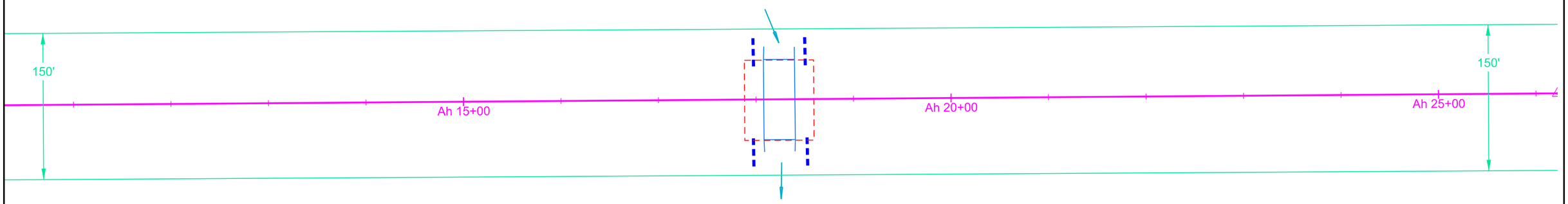
EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	57	194

Plotting Date: 11/5/2025

Install High Flow Silt Fence
at the following locations:
Ah 18+24 L&R Across ditch at Inlet and Outlet ends of pipe (60 ft each end) 120 ft



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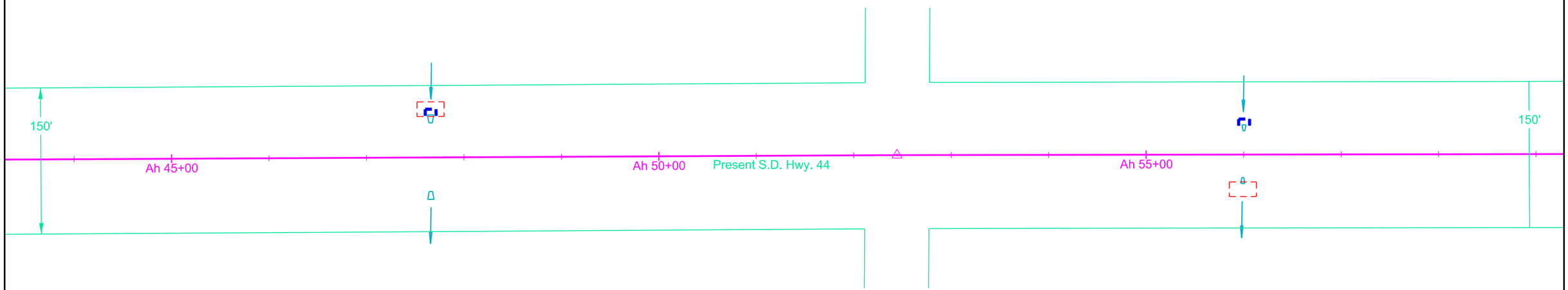
EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	58	194

Plotting Date: 11/5/2025

Install High Flow Silt Fence
at the following locations:
Ah 47+69 L Inlet End of Pipe 18 Ft
Ah 56+00 L Inlet End of PIpe 18 ft



REGISTERED PROFESSIONAL ENGINEER
REG NO
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

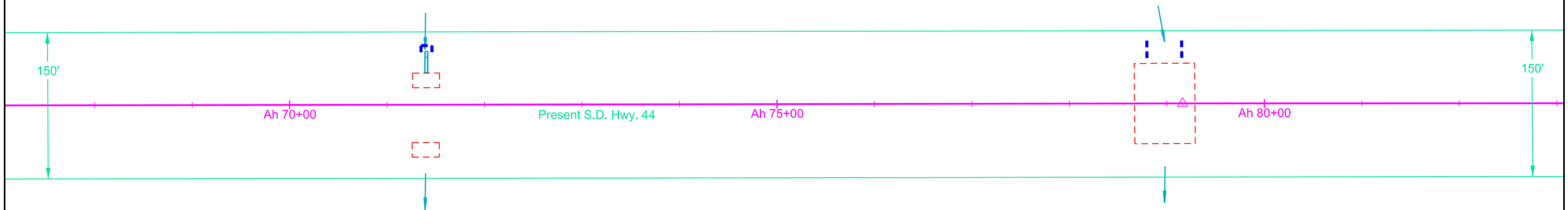
EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	59	194

Plotting Date: 11/5/2025

Install High Flow Silt Fence
at the following locations:
Ah 71+42 L Inlet end of pipe 18 Ft
Ah 78+98 L across ditch at Inlet end of pipe 60 ft



REGISTERED PROFESSIONAL ENGINEER
REG NO
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RYAN J.
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11-5-25
SOUTH DAKOTA

EROSION AND SEDIMENT CONTROL PLAN

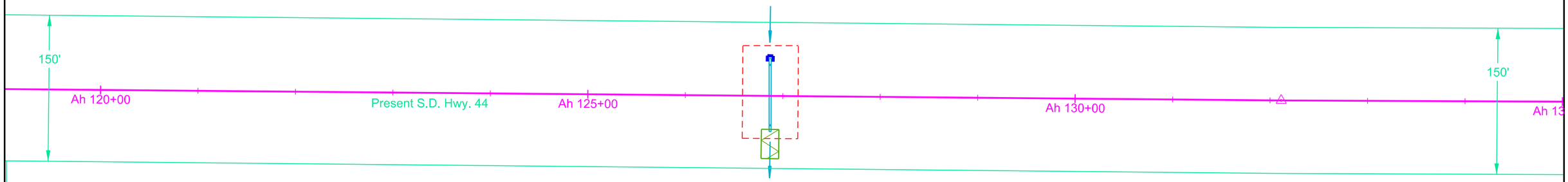
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	60	194

Plotting Date: 11/5/2025

Install High Flow Silt Fence
at the following locations:
Ah 126+87 L Inlet end of pipe 18 Ft

Install Type 3 Erosion Control Blanket
at the following locations:
Ah 126+87 R Pipe Outlet 60 SqYd



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SOUTH DAKOTA

EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

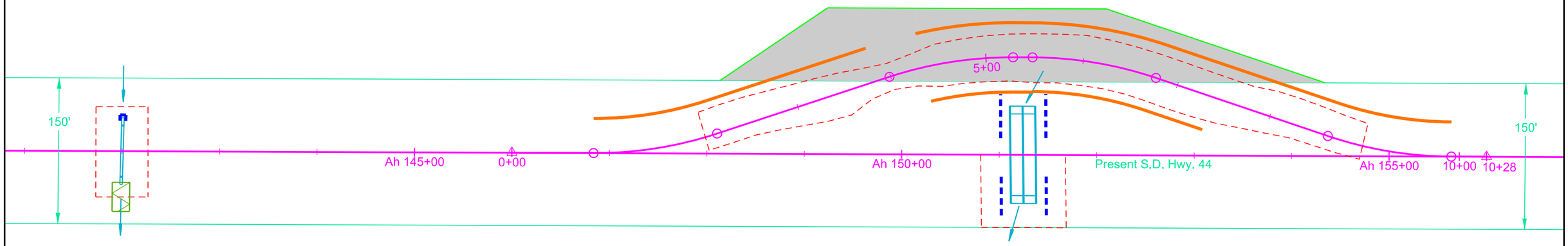
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	61	194

Plotting Date: 11/5/2025

Install Low Flow Silt Fence at the following locations:
Div 0+84 to 9+92 L Perimeter control 855 Ft
Div 4+35 to 7+40 R Perimeter control 284 Ft

Install High Flow Silt Fence
at the following locations:
Ah 141+99 L Inlet end of pipe 18 Ft
Ah 151+24 L/R At Inlet and Outlet ends of Pipe (60 Ft each end) 120 Ft

Install Type 3 Erosion Control Blanket
at the following locations:
Ah 141+99 R Pipe Outlet 60 SqYd



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11-5-25
SOUTH DAKOTA

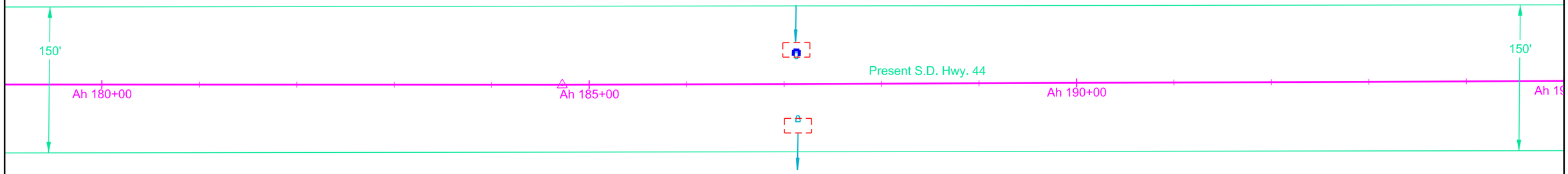
EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	62	194

Plotting Date: 11/5/2025

Install High Flow Silt Fence
at the following locations:
Ah 187+25 Inlet end of pipe 18 Ft



REGISTERED PROFESSIONAL ENGINEER
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11-5-25
SOUTH DAKOTA

HORIZONTAL ALIGNMENT DATA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	63	194

Plotting Date: 11/5/2025

SD Highway 44 Mainline

Type	Station			Northing	Easting
POB	-0+44.54			387818.862	2885282.918
		TL= 2711.85	S 2°23'31" E		
PI	26+67.31			385109.379	2885396.093
		TL= 2637.72	S 2°24'58" E		
PI	53+05.03= Ah 0+00.00			382474.003	2885507.290
		TL= 2622.01	N 87°20'22" E		
PI	Ah 26+22.01			382595.710	2888126.477
		TL= 2622.42	N 87°29'18" E		
PI	Ah 52+44.43			382710.637	2890746.375
		TL= 2671.76	N 87°40'52" E		
PI	Ah 79+16.19			382818.743	2893415.943
		TL= 2655.20	N 87°44'46" E		
PI	Ah 105+71.39			382923.166	2896069.089
		TL= 2640.04	N 88°17'06" E		
PI	Ah 132+11.43			383002.175	2898707.949
		TL= 2626.56	N 88°00'34" E		
PI	Ah 158+37.99			383093.412	2901332.926
		TL= 2634.39	N 87°48'53" E		
PI	Ah 184+72.38			383193.866	2903965.403
		TL= 2637.27	N 87°33'04" E		
PI	Ah 211+09.66			383306.553	2906600.268
		TL= 2647.95	N 88°02'14" E		
PI	Ah 237+57.61			383397.250	2909246.668
		TL= 756.93	N 87°53'26" E		
POE	Ah 245+14.54			383425.110	2910003.082

Div1

Type	Station			Northing	Easting
POB	0+00.00			383050.409	2900095.682
		TL= 83.75	N 88°00'34" E		
PC	0+83.75			383053.318	2900179.382
PI	1+48.79	R = 400.00	Delta = 18°28'15" L	383055.577	2900244.382
PT	2+12.70			383078.313	2900305.318
		TL= 186.19	N 69°32'19" E		
PC	3+98.89			383143.399	2900479.756
PI	4+63.96	R = 400.00	Delta = 18°28'45" R	383166.146	2900540.720
PT	5+27.89			383168.397	2900605.750
		TL= 19.93	N 88°01'04" E		
PC	5+47.83			383169.086	2900625.673
PI	6+12.83	R = 400.00	Delta = 18°27'31" R	383171.334	2900690.630
PT	6+76.69			383152.900	2900752.957
		TL= 186.26	S 73°31'25" E		
PC	8+62.96			383100.072	2900931.573
PI	9+27.99	R = 400.00	Delta = 18°28'01" L	383081.629	2900993.929
PT	9+91.88			383083.888	2901058.916
		TL= 36.18	N 88°00'34" E		
POE	10+28.07			383085.145	2901095.078

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. South Zone (NAD 1983/2011); epoch 2010.00; Geoid 12A; SF = 0.9998588970
The elevations Shown on this sheet are based on NAVD 88.

REGISTERED PROFESSIONAL ENGINEER
REG NO
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

FOR BIDDING PURPOSES ONLY

CONTROL DATA

SD HIGHWAY 44 - HORIZONTAL AND VERTICAL CONTROL POINTS

POINT	STATION	OFFSET		NORTHING	EASTING	ELEVATION
1	-0+04.89	2650.07' R	N1/4 Corner - Sec 5 T98N R51W	387667.630	2882635.867	1332.99
2	0+10.82	2641.62' L	5/8" Rebar, N1/4 Corner - Sec 4 T98N R51W	387874.731	2887923.532	1335.33
3	26+67.31	0.00' R	5/8" Rebar, E1/4 Corner - Sec 5 T98N R51W	385109.379	2885396.093	1326.01
4	53+05.03	0.00' R	5/8" Rebar, SE1/4 Corner - Sec 5 T98N R51W	382474.003	2885507.290	1323.54
5	52+97.90	2621.91' L	5/8" Rebar, S1/4 Corner - Sec 4 T98N R51W	382591.659	2888126.633	1321.10
6	52+89.91	5244.40' L	SE1/4 Corner - Sec 4 T98N R51W	382710.190	2890746.391	1320.26

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SOUTH DAKOTA

LEGEND

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	65	194

Plotting Date: 11/5/2025

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

- State and National Line
- County Line
- Section Line
- Quarter Line
- Sixteenth Line
- Property Line
- Construction Line
- R. O. W. Line
- New R. O. W. Line
- Cut and Fill Limits
- Control of Access
- New Control of Access
- Proposed ROW (After Property Disposal)

Drainage Arrow

- Remove Concrete Pavement
- Remove Concrete Driveway Pavement
- Remove Asphalt Concrete Pavement
- Remove Concrete Sidewalk
- Remove Concrete Median Pavement
- Remove Concrete Curb and/or Gutter

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

REGISTERED PROFESSIONAL ENGINEER
REG NO
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RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	66	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

1+88
Take Out 36"-91' RCP
& 2 Flared Ends
(Incidental Work, Grading)

1+91 (171 ac)
Install Twin 42"-88' RCP Arch
(Spaced 7.3' C to C)
& 4 Flared Ends & 13.3 CuYd of
Controlled Density Fill

1+66-92' R
Do Not Disturb Sign

4+72-78' L
Do Not Disturb Sign

8+83-84' R
Do Not Disturb Sign

5+13-82' L
Do Not Disturb
Landscaping & Sign

5+76-82' R
Do Not Disturb
Landscaping & Sign

LINCOLN COUNTY

Sec 33 - T99N - R51W

Kurt H. Schneiderman
(INFORMATION ONLY)

S1/2 SW1/4

0+12.00
Begin Grading

75'

0+00

279th Street

R.O.W. Line

1+25.10-74.17'
1+25.01-110.17'
1+30-110'
1+30-88'

1+26 L
Begin Type 2
Fence

2-2PP

2PP

2+69-77'

S.D. Hwy. 17

100'

0+00

Sec 4 - T98N - R51W

Payton Lee Nordman,
Jessica Marie Nordman &
Preston LaVane Nordman

The West 635.18 feet
of the North 435.66 feet
of Knock Tract 1 in the
NW1/4 NW1/4 of Section 4 -
Township 98 North -
Range 51 West of the 5th P.M.,
except Lot H1 thereof

Parcel A1

KNOCK TRACT 1

635.18 feet

Property Line

4+35.77-74.27'
4+35.84-93.27'

4+36 L
End Type 2 Fence

2-2PP

Robert Joseph Kramer & Patti Lynn Kramer

Knock Tract 1
in the NW1/4 NW1/4 of Section 4 -
Township 98 North - Range 51 West of the 5th P.M.,
except the West 635.18 feet of
the North 435.66 feet &
except Lot H1 thereof

Parcel A2

5+93-93'

6+63-139'

6+97-139'

6+96-86'

7+68.32-74.38'
7+68.37-86.38'

7+68 L
Begin Type 2 Fence
2-3PP

9+86-86'

N1/2 NW1/4

Paul Van Bockern Trust

Government Lot 2 of
Section 4 - Township 98 North -
Range 51 West of the 5th P.M.,
except Knock Tract 1 therein &
except Lot H1 thereof

Parcel A3

Section Line

Present S.D. Hwy. 44

S02°23'31"E

5+00

10+00

150'

150'

Lennox Independent School
(INFORMATION ONLY)

LOT 1

SINNING'S ADDITION

75'

Section Line

150'

Present S.D. Hwy. 44

1+49.88-75.82'
1+49.80-135.82'
1+69-136'
1+69-104'

2+71-94'

3+41.31-75.76'

Sioux Steel Company

Lot 2 in Block 1 of
Lennox Industrial Park to
the City of Lennox
except Lot H1 thereof

Parcel A5

5+33.14-75.69'

6+16.50-102.99'

6+16.54-75.67'

66'

Industrial Avenue

6+82.54-75.65'
6+82.53-86.65'

Sioux Steel Company

Block 2 of
Lennox Industrial Park
to the City of Lennox
except the West 66 feet thereof

Parcel A6

LOT 2

BLOCK 1

LENNOX INDUSTRIAL PARK

BLOCK 2

LOT 1

Sec 32 - T99N - R51W

Sec 5 - T98N - R51W

LENNOX

REGISTERED PROFESSIONAL ENGINEER
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11-5-25
SOUTH DAKOTA

Parcel A1
1+25.01 to 4+35.84 L
Temporary Easement containing
3104 sq ft, more or less

Parcel A2
4+35.77 to 7+68.37 L
Temporary Easement containing
8960 sq ft, more or less

Parcel A3
7+68.32 to 11+04.06 L
Temporary Easement containing
3318 sq ft, more or less

Parcel A5
1+49.80 to 3+41.31 R
Temporary Easement containing
4144 sq ft, more or less

Parcel A5
5+33.14 to 6+16.54 R
Temporary Easement containing
1140 sq ft, more or less

Parcel A6
6+82.53 to 12+14.84 R
Temporary Easement containing
5878 sq ft, more or less

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	67	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

0+76 R
36' Int Rd
(Large Radius Rt)
0+76 L
26' Int Rd

6+50 R
34' Int Rd
(Large Radii Rt & Lt)
6+50 L
24' Ent

PVI -0+44.54
Elev 1332.92

PVI 0+75.46
Elev 1332.80

L 400.00ft
G1 0.0000%
G2 1.2050%
K 331.95

PVI 8+41.69
Elev 1338.37

-0.1041%

0.0000%

1.2050%

RDGPI 7+33
Elev 1332.20

RDGPI 5+78
Elev 1329.70

RDG 1.6232%

RDG -0.3000%

LDG 1.5995%

LDG -0.3000%

LDGPI 7+17
Elev 1331.35

L 500.00ft
G1 1.2050%
G2 -0.8900%
K 238.66

PVI 3+79.04
Elev 1332.80

FLR 1325.96

RDGPI 1+88
Elev 1325.96

RDG 0.9582%

LDG 1.2473%

LDGPI 6+24
Elev 1329.87

LDGPI 1+25
Elev 1325.18

LDG 0.5000%

LDG 0.9062%

LDGPI 4+99
Elev 1328.30

FLL 1325.46

LDGPI 1+88
Elev 1325.49

Q81=174 Cfs
El=1332.30

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1332.80 1332.80 1332.94 1333.38 1334.12 1335.17 1336.22 1336.86 1337.09 1336.89 1336.28

-5+00 0+00 5+00 10+00

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	68	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

12+48 R
Take Out 18"-83' RCP
& 2 Safety Ends
(Incidental Work, Grading)

12+48-52' R (25 ac)
Install Twin 24"-92' CMP Arch
(Spaced 3.5' C to C)
& 4 Safety Ends & 6.3 CuYd of
Controlled Density Fill

14+56
Take Out 24"-46' RCP
& 2 Flared Ends
(Incidental Work, Grading)

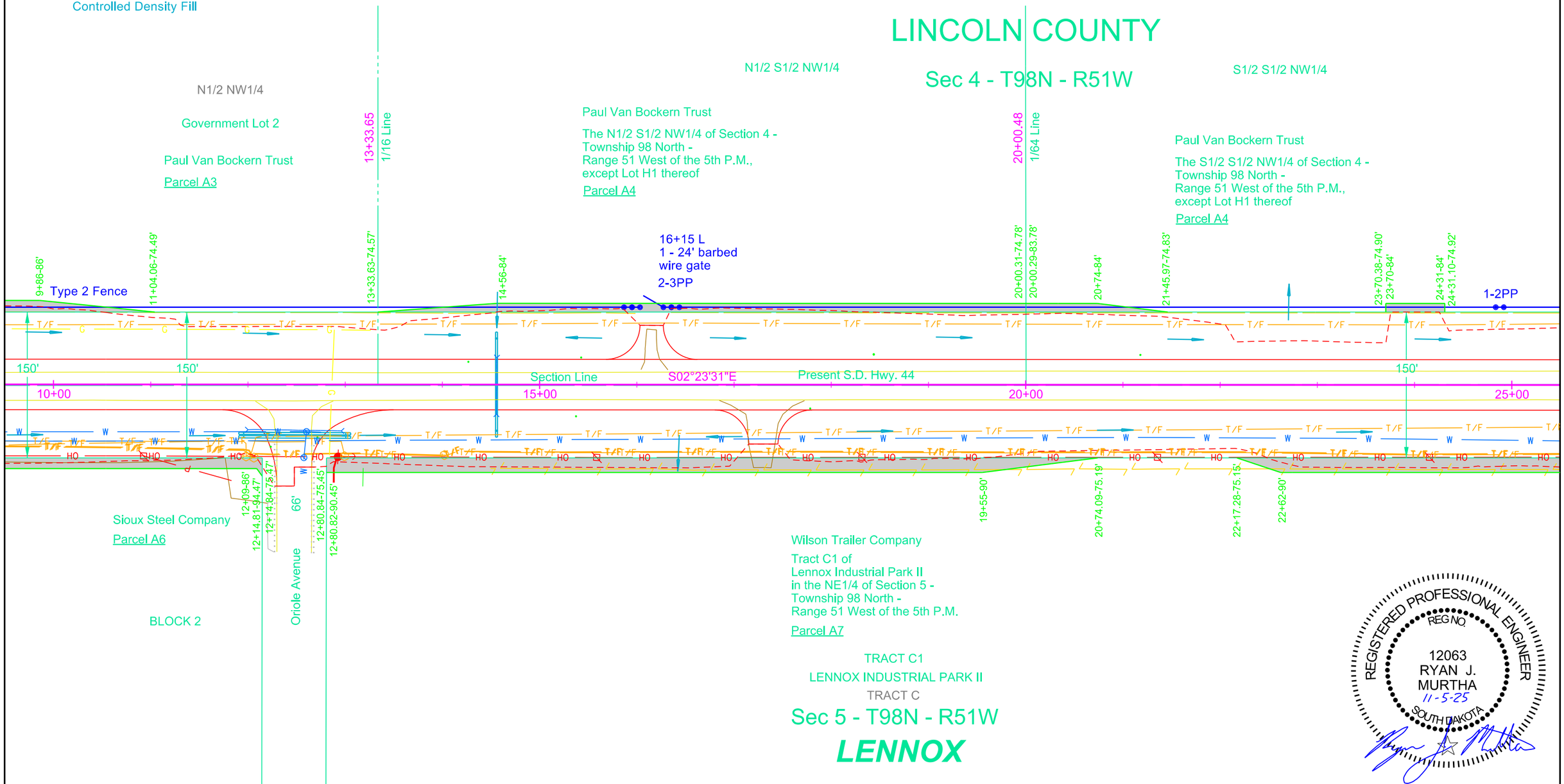
14+56 (6 ac)
Install 24"-80' RCP
& 2 Sloped Ends

13+18-95' R
Do Not Disturb Sign

14+50-86' R to 26+26-87' R
Do Not Disturb Fence

LINCOLN COUNTY

Sec 4 - T98N - R51W



Sec 5 - T98N - R51W

LENNOX

REGISTERED PROFESSIONAL ENGINEER
REG NO.
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

Parcel A4
13+33.63 to 20+00.31 L
Temporary Easement containing
5447 sq ft, more or less

Parcel A4
20+00.29 to 21+45.97 L
Temporary Easement containing
985 sq ft, more or less

Parcel A4
23+70 to 24+31.10 L
Temporary Easement containing
547 sq ft, more or less

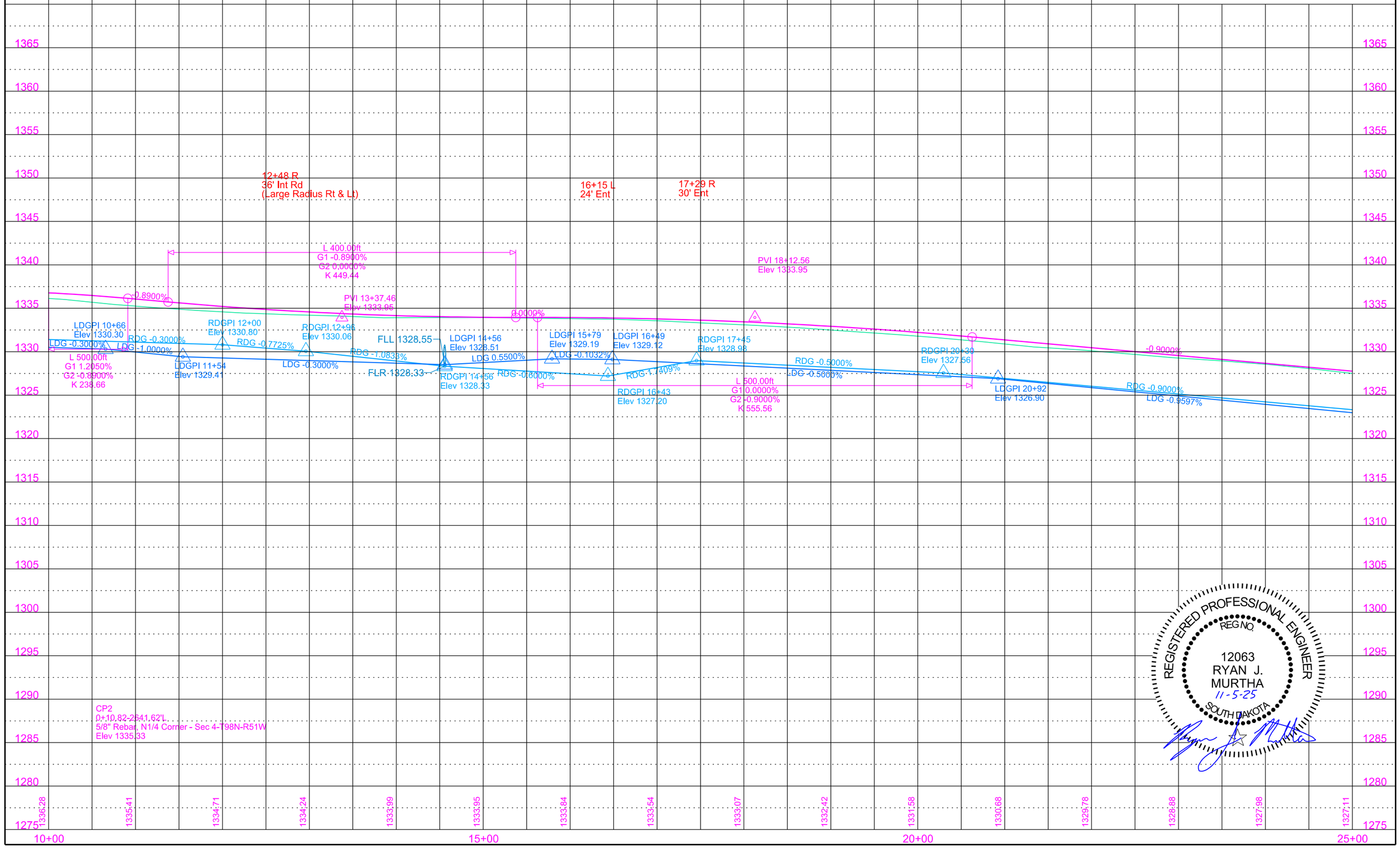
Parcel A7
12+80.82 to 20+74.09 R
Temporary Easement containing
11008 sq ft, more or less

Parcel A7
22+17.28 to 26+67.24 R
Temporary Easement containing
6411 sq ft more or less

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	69	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025



CP2
0+10.82-2641.62'L
5/8" Rebar, N1/4 Corner - Sec 4-T98N-R51W
Elev 1335.33

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	70	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

26+45-57'R
Retain 2-42'-38' RCP

30+03 R
Take Out 18"-34' RCP
& 2 Safety Ends
(Incidental Work, Grading)

30+94
Take Out Twin 30"-47' RCP
& 4 Flared Ends
(Incidental Work, Grading)

30+94 (81 ac)
Install Twin 30"-80' RCP
(Spaced 4.1 ft C to C)
& 4 Sloped Ends & 9.0 CuYd of
Controlled Density Fill

32+28 R
Take Out 18"-44' RCP
& 2 Safety Ends
(Incidental Work, Grading)

32+28-58' R (7 ac)
Install 18"-58' CMP
& 2 Safety Ends

39+24 R
Take Out 15"-30' RCP
& 2 Safety Ends
(Incidental Work, Grading)

39+24-55' R (2 ac)
Install 18"-34' CMP Arch
& 2 Safety Ends

LINCOLN COUNTY

Sec 4 - T98N - R51W

N1/2 SW1/4

S1/2 S1/2 NW1/4

Paul Van Bockern Trust

Parcel A4

Schneiderman Family Trust

The N1/2 SW1/4 of Section 4 -
Township 98 North -
Range 51 West of the 5th P.M.,
except Lot H1 thereof

Parcel A8

26+67.31
1/4 Line

39+86.17
1/16 Line

30+50.37-75.00'
30+72-80'

39+85.92-75.00'
39+85.91-80.00'

33+52 L
1 - 24' barded
wire gate
2-3PP

3-2PP

Type 2 Fence

S02°23'31"E

Section Line

Present S.D. Hwy. 44

S02°24'58"E

25+00 150' 30+00 35+00 150' 40+00

29+99 R
Elim Ent
29+28 R
Elim Ent

29+89-90'

30+46-93'

32+57-93'

37+07.27-75.00'

2-3PP

39+24 R
1 - 24' barded
wire gate

3PP
32+40 R
Begin Type 2 Fence

26+67.23-90.00'
26+67.24-75.00'

Wilson Trailer Company

Parcel A7

TRACT C1
LENNOX INDUSTRIAL PARK II

TRACT C

Galen R. Kuper & Lou Ann Kuper, Gary G. Kuper,
KFL Partnership, & Elonde Kuper Schneiderman

The SE1/4 of Section 5 - Township 98 North -
Range 51 West of the 5th P.M.

Parcel A11

SE1/4

Sec 5 - T98N - R51W

LENNOX

Parcel A8
30+50.37 to 39+85.92 L
Temporary Easement containing
4624 sq ft, more or less

Parcel A11
26+67.23 to 37+07.27 R
Temporary Easement containing
13650 sq ft, more or less

REGISTERED PROFESSIONAL ENGINEER
REG NO
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	71	194

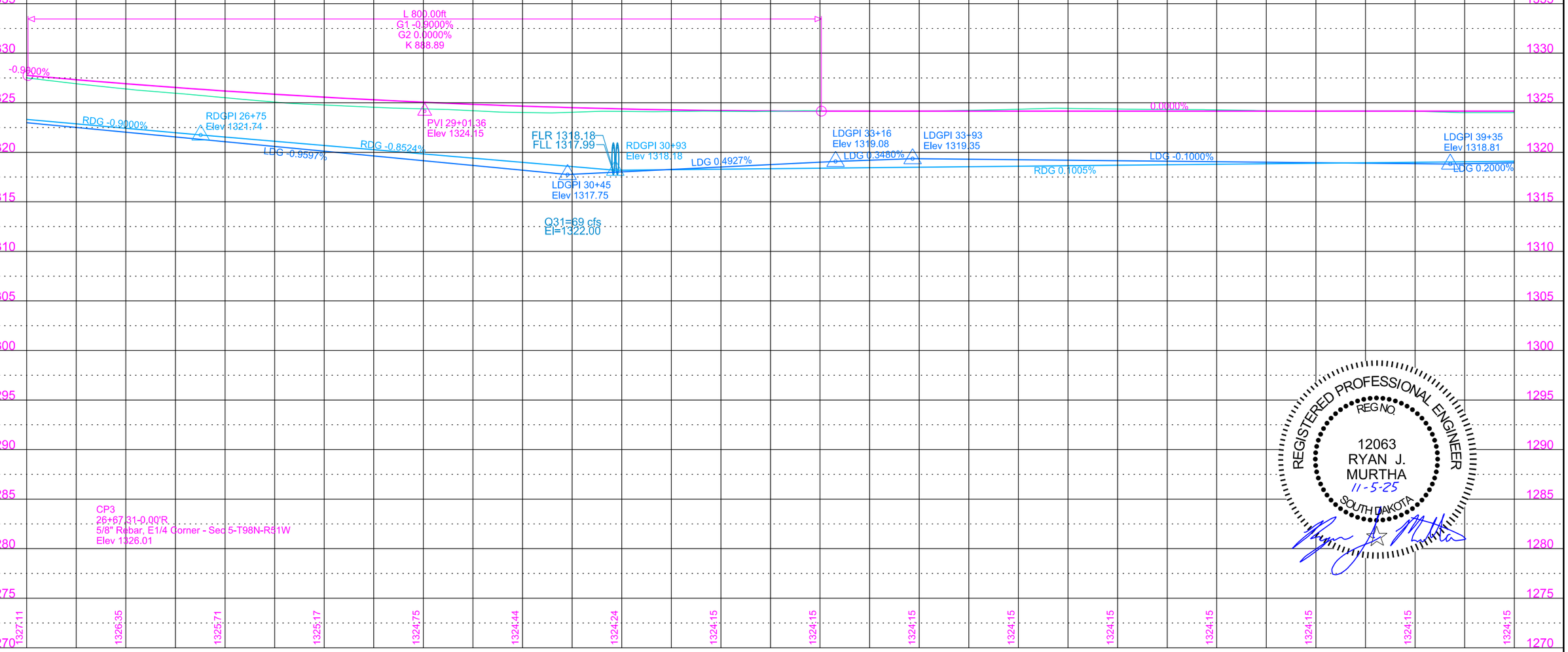
FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

Earthwork Balance

Exc=	7027	Emb=	17448	
Undercut=	21467	35.00%	6107	23555
Muck=	843	Undercut=	21467	
Borrow=	24041	35.00%	7513	28980
Total=	53378	Waste=		843
			Total=	53378

24041 cy Borrow to be Furnished by Contractor
Haul=2300 cys
Borrow Haul= N/A
Dead Haul=N/A
Waste is Muck Excavation to be disposed of at a site approved by the Engineer



CP3
26+67.31-0.00'R
5/8" Rebar, E1/4 Corner - Sec 5-T98N-R51W
Elev 1326.01

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11-5-25
SOUTH DAKOTA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	72	194

Plotting Date: 11/5/2025

FOR BIDDING PURPOSES ONLY

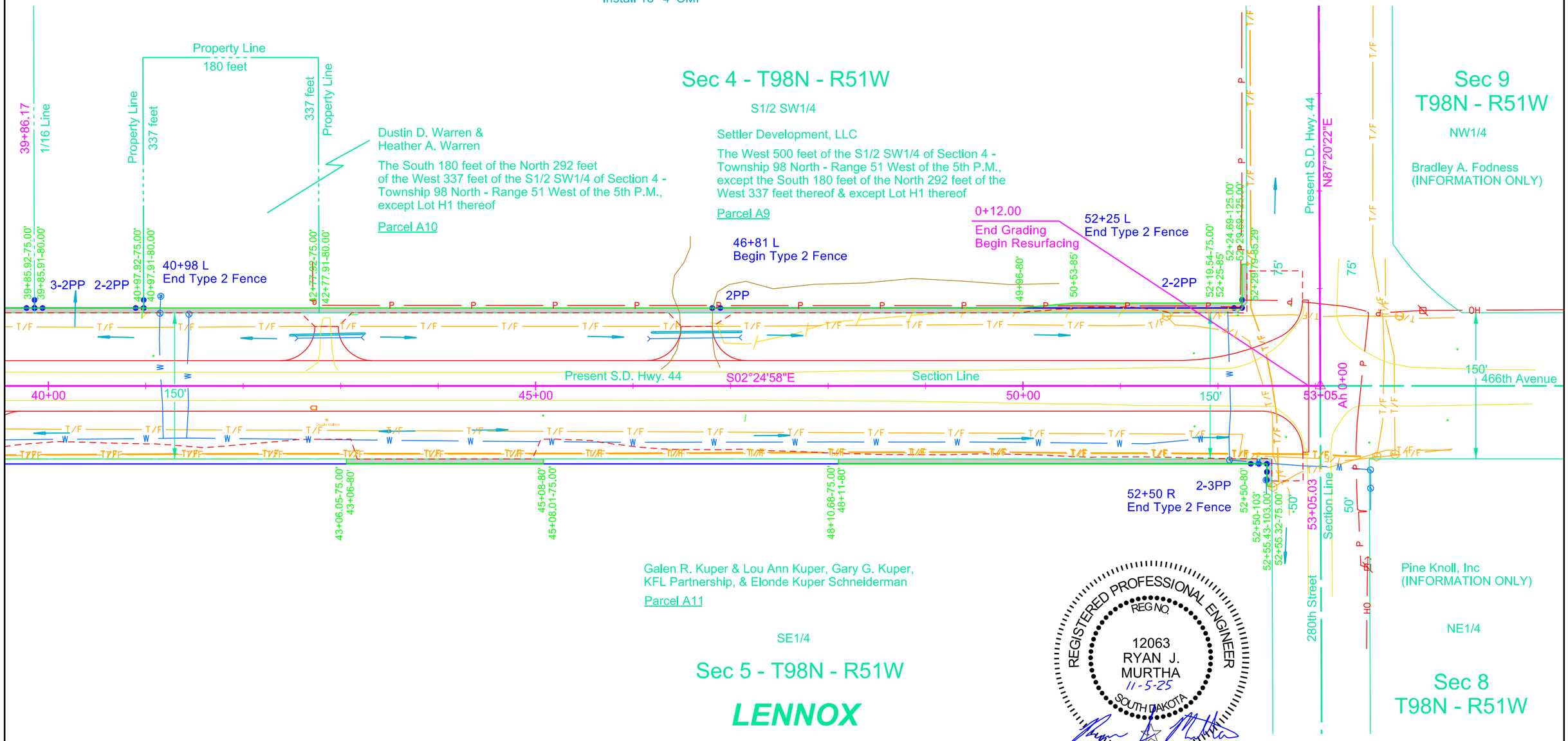
42+89 L
Take Out 18"-65' HDPE
& 2 Safety Ends
(Incidental Work, Grading)

42+86-53' L
Install 18"-54' CMP
& 2 Safety Ends

46+63 L
Remove 18"-83' CMP
& 2 Safety Ends
for Reset

46+65-55' L
Reset 18"-83' CMP
& 2 Safety Ends
Install 18"-4' CMP

42+73 R
Refurbish Double Mailbox



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11-5-25
SOUTH DAKOTA

Parcel A9
39+85.91 to 40+97.92 L
Temporary Easement containing
560 sq ft, more or less

Parcel A9
42+77.91 to 52+29.79 L
Temporary Easement containing
5935 sq ft, more or less

Parcel A10
40+97.91 to 42+77.92 L
Temporary Easement containing
900 sq ft, more or less

Parcel A11
43+06 to 45+08.01 L
Temporary Easement containing
1010 sq ft, more or less

Parcel A11
48+10.68 to 52+55.43 L
Temporary Easement containing
2338 sq ft, more or less

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	73	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

42+86 L
24' Ent

46+65 L
32' Ent

53+05 L
36' Int Rd
(Large Radius Lt)

53+05 R
24' Int Rd

PVI 53+43.63
Elev 1324.15

0.0000%

LDGPI 42+50
Elev 1319.44

LDGPI 43+22
Elev 1319.06

RDGPI 44+05
Elev 1319.50

LDGPI 46+11
Elev 1318.77

LDG 0.2000%

LDG -0.5296%

RDG 0.1005%

LDG -0.1000%

RDG -0.2379%

LDG -0.2000%

LDGPI 52+93
Elev 1317.41

L 400.00ft
G1 0.0000%
G2 -0.9100%
K 439.56

RDGPI 52+93
Elev 1317.39

CP5
52+97.90-2621.91'L
5/8" Rebar, S1/4 Corner - Sec 4-T98N-R51W
Elev 1321.10

CP6
52+89.71-5244.40'L
5/8" Rebar, SE1/4 Corner - Sec 4-T98N-R51W
Elev 1320.26

CP4
53+05.03-0.00'R
5/8" Rebar, SE1/4 Corner - Sec 5-T98N-R51W
Elev 1323.54

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11-5-25
SOUTH DAKOTA

1360 1355 1350 1345 1340 1335 1330 1325 1320 1315 1310 1305 1300 1295 1290 1285 1280 1275 1270

1324.15 1324.15 1324.15 1324.15 1324.15 1324.15 1324.15 1324.15 1324.15 1324.15 1324.15 1324.15 1324.14 1323.95 1323.54 1322.90

40+00 45+00 50+00 55+00

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	74	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

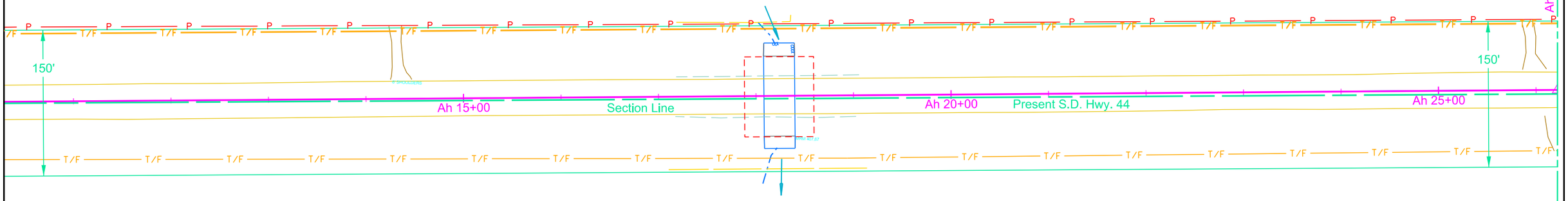
Ah 18+24
Clean and Repair Culvert Joint

LINCOLN COUNTY

Sec 4 - T98N - R51W

West 500' S1/2 SW1/4

Settler Development, LLC
Parcel A9



Bradley A. Fodness
(INFORMATION ONLY)

NW1/4

Sec 9 - T98N - R51W

REGISTERED PROFESSIONAL ENGINEER
REG NO.
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	75	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

Ah 47+69
Take Out 2 End Sections
(Incidental Work, Grading)

Ah 47+69
Install 2-42" RCP Flared End Sections

Ah 47+69 L
Ditch Cleanout

Ah 56+00 L
Take Out 1 End Section
(Incidental Work, Grading)

Ah 56+00 L
Install 24" RCP Flared End Section

Ah 56+00 R
Ditch Cleanout

LINCOLN COUNTY

Sec 4 - T98N - R51W

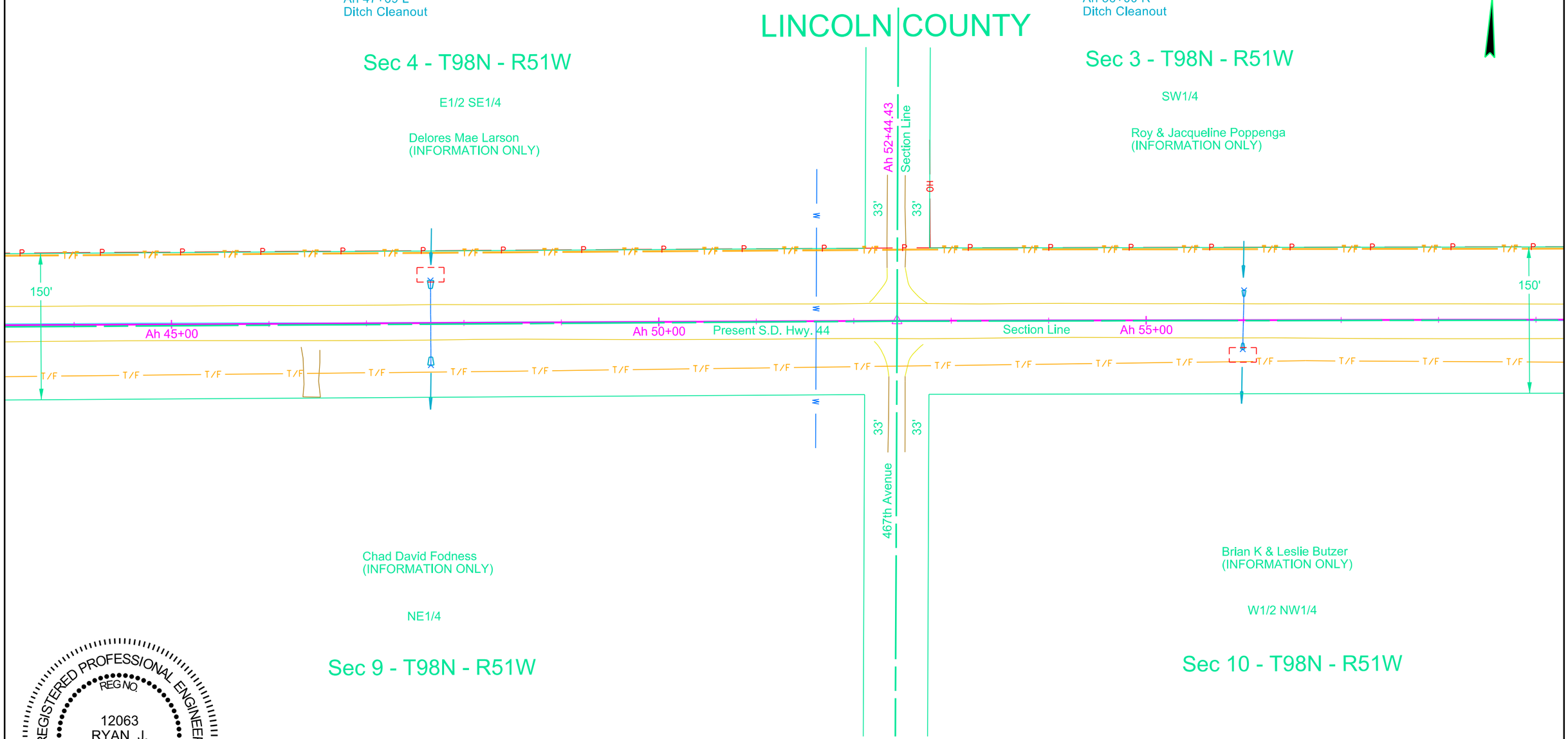
E1/2 SE1/4

Delores Mae Larson
(INFORMATION ONLY)

Sec 3 - T98N - R51W

SW1/4

Roy & Jacqueline Poppenga
(INFORMATION ONLY)



Chad David Fodness
(INFORMATION ONLY)

NE1/4

Sec 9 - T98N - R51W

Brian K & Leslie Butzer
(INFORMATION ONLY)

W1/2 NW1/4

Sec 10 - T98N - R51W

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REG NO
12063
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MURTHA
11-5-25
SOUTH DAKOTA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	76	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

Ah 71+42 L
Remove 1 End Section
(Incidental Work, Grading)

Ah 71+42 L
Install 2-24" RCP Sections
Reset 1 End Section
(Reset Pipe End Section)
Inslope Repair

Ah 71+42 R
Ditch Cleanout

Ah 78+98
Clean and Repair Culvert Joint

LINCOLN COUNTY

Property Line
500 feet

Property Line
290 feet

Ah 79+07.41
1/4 Line

SW1/4

S290' E500' SE1/4 SW1/4

W1/2 SE1/4

Roy & Jacqueline Poppenga
(INFORMATION ONLY)

Jesse Jacobson
(INFORMATION ONLY)

Bradley S Smidt
(INFORMATION ONLY)

150'

150'

Ah 70+00

Present S.D. Hwy. 44

Ah 75+00

Section Line

Ah 80+00

T/F

Brenda Bakken
(INFORMATION ONLY)

Property Line
650 feet

Brian K & Leslie Butzer
(INFORMATION ONLY)

Patrick & Deborah Miller
(INFORMATION ONLY)

N280.5' W487.5' NE1/4

Property Line
487.5 feet

W450' N650' E1/2 NW1/4

E1/2 NW1/4

E1/2 NW1/4

REGISTERED PROFESSIONAL ENGINEER
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12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	77	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

Ah 126+95
Take Out 24"-62' RCP
& 2 Flared Ends
(Incidental Work, Grading)

Ah 126+95 (39 ac)
Install 24"-62' RCP
& 2 Sloped Ends

LINCOLN COUNTY

Sec 2 - T98N - R51W

SW1/4

SE1/4

Barbara & Daryl Hammerstrom
(INFORMATION ONLY)

Lloyd E & Betty A Hammerstrom
(INFORMATION ONLY)

Ah 132+06.00
1/4 Line

150'

150'

Ah 120+00

Present S.D. Hwy. 44

Ah 125+00

Section Line

Ah 130+00

Ah 13

Saddle Creek Farm Inc
(INFORMATION ONLY)

Gail L Sletten - Living Trust
(INFORMATION ONLY)

NW1/4

W1/2 NE1/4

Sec 11 - T98N - R51W

REGISTERED PROFESSIONAL ENGINEER
REG NO.
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	78	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

Ah 142+00
Take Out 24"-52' RCP
& 2 Flared Ends
(Incidental Work, Grading)

Ah 142+00 (55 ac)
Install 30"-62' RCP
& 2 Sloped Ends

Ah 151+24
Take Out Twin 42"-72' RCP Arch
& 2 Flared Ends
(Incidental Work, Grading)

Ah 151+24 (3.1 sq mi)
Install 2 - 12'x3'x92'
Reinforced Concrete
Box Culvert (Precast)

Kuper Investment Property, LLC

Lot 1 of Kuper Addition
in the SE1/4 of Section 2 -
Township 98 North -
Range 51 West of the 5th P.M.,
except Lot H1 thereof

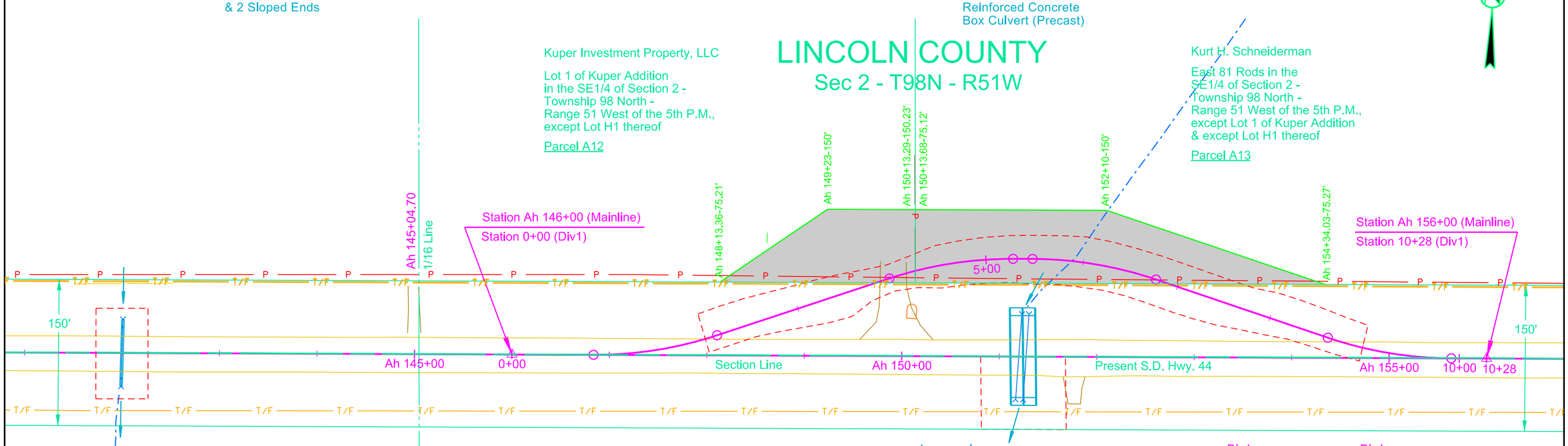
Parcel A12

LINCOLN COUNTY
Sec 2 - T98N - R51W

Kurt H. Schneiderman

East 81 Rods in the
SE1/4 of Section 2 -
Township 98 North -
Range 51 West of the 5th P.M.,
except Lot 1 of Kuper Addition
& except Lot H1 thereof

Parcel A13



Div1
PI 1+48.79
N 383055.577
E 2900244.382
Del 18°28'15" Left
Dc 14°19'26"
T 65.04
L 128.95
R 400.00

Div1
PI 4+63.96
N 383166.146
E 2900540.720
Del 18°28'45" Right
Dc 14°19'26"
T 65.07
L 129.01
R 400.00

Janine S. Schneiderman
(INFORMATION ONLY)

E1/2 NE1/4

Sec 11 - T98N - R51W

Div1
PI 6+12.83
N 383171.334
E 2900690.630
Del 18°27'31" Right
Dc 14°19'26"
T 65.00
L 128.87
R 400.00

Div1
PI 9+27.99
N 383081.629
E 2900993.929
Del 18°28'01" Left
Dc 14°19'26"
T 65.03
L 128.92
R 400.00

Parcel A12
Ah 148+13.36 to Ah 150+13.68 L
Temporary Easement containing
0.2 ac, more or less

Parcel A13
Ah 150+13.29 to Ah 154+34.03 L
Temporary Easement containing
0.5 ac, more or less

REGISTERED PROFESSIONAL ENGINEER
REG NO
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RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	79	194

FOR BIDDING PURPOSES ONLY

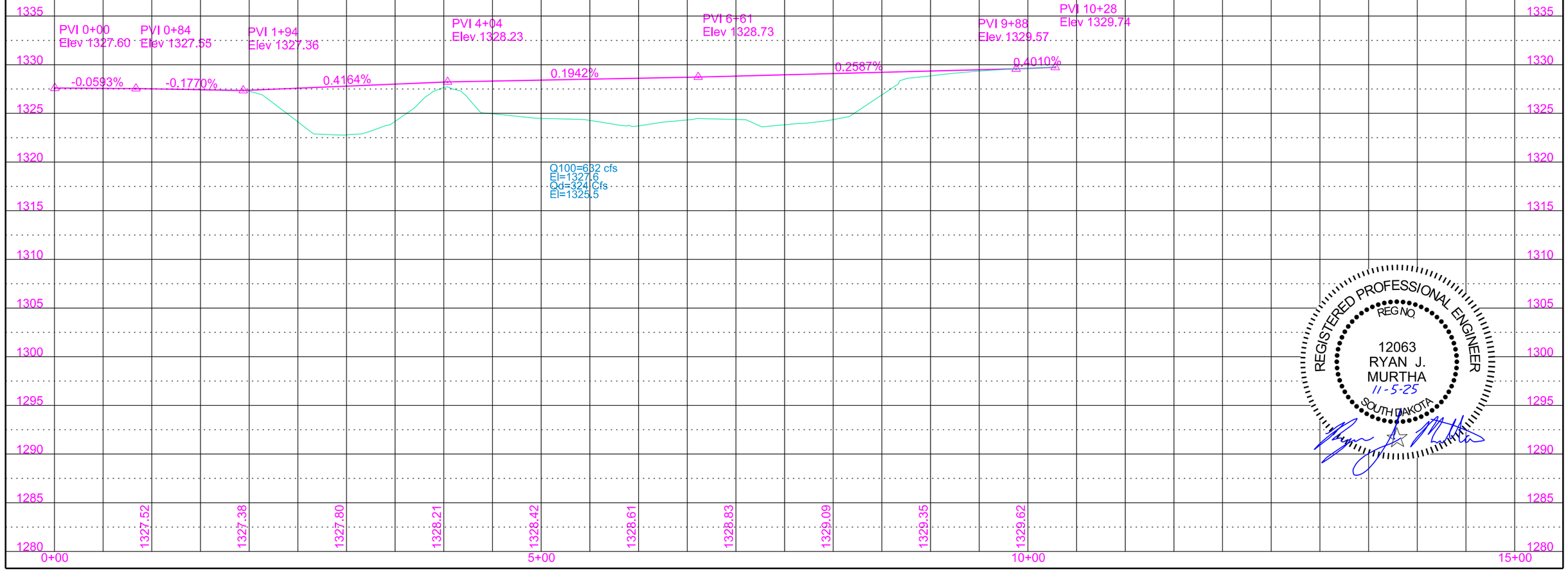
Plotting Date: 11/5/2025

Diversion Earthwork Balance

Exc=	0	Emb=	3054	
Undercut=	0	35.00%	1069	4123
Muck=	0	Undercut=	0	
Borrow=	4122	35.00%	0	0
Total=	4122	Waste=		0
			Total=	4123

4122 cy Borrow to be Furnished by Contractor - can be hauled to Grading Portion or Wasted
Haul=000 cys
Borrow Haul= N/A
Dead Haul=N/A

Diversion Profile

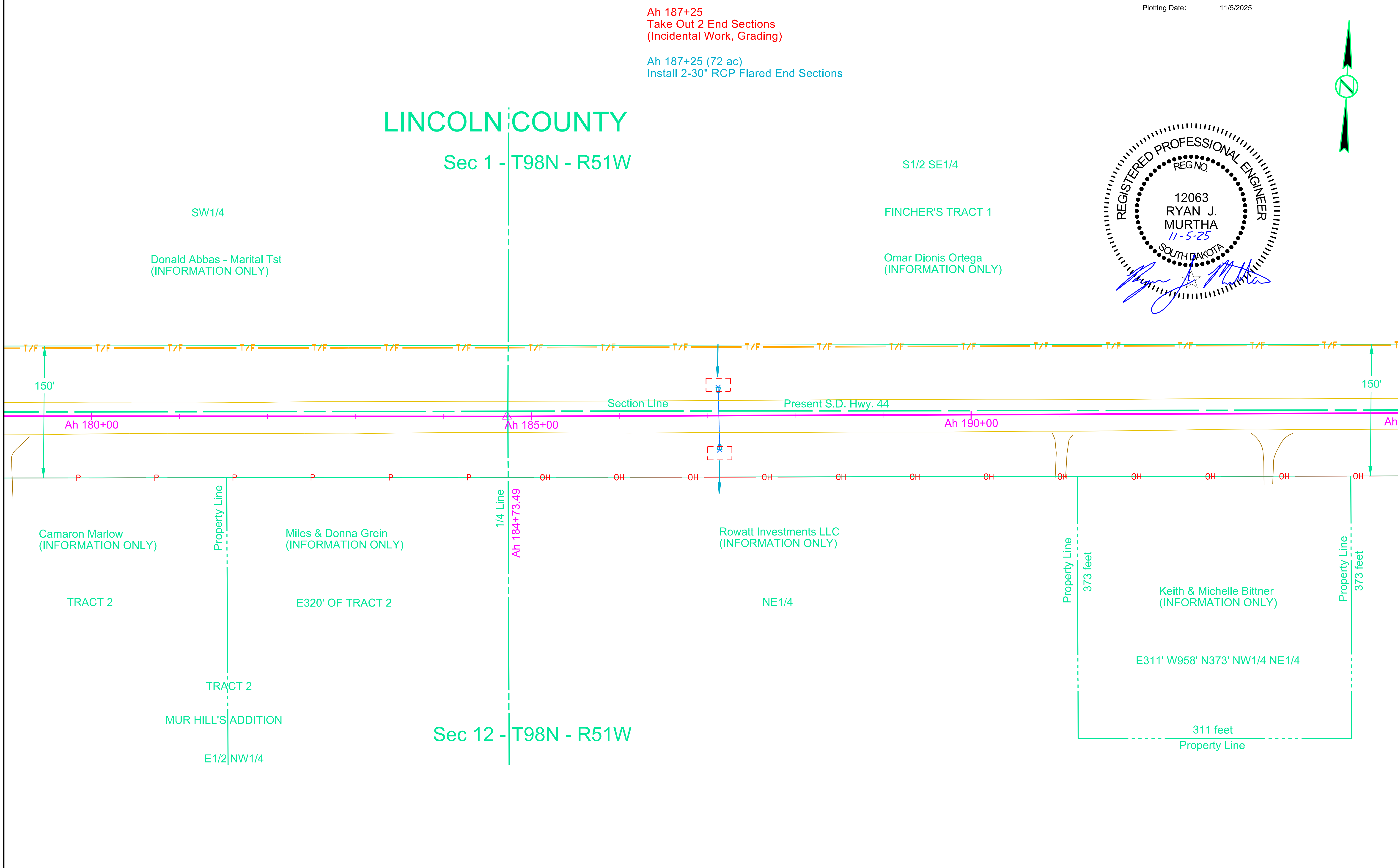


REGISTERED PROFESSIONAL ENGINEER
REG NO.
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	80	194

Plotting Date: 11/5/2025



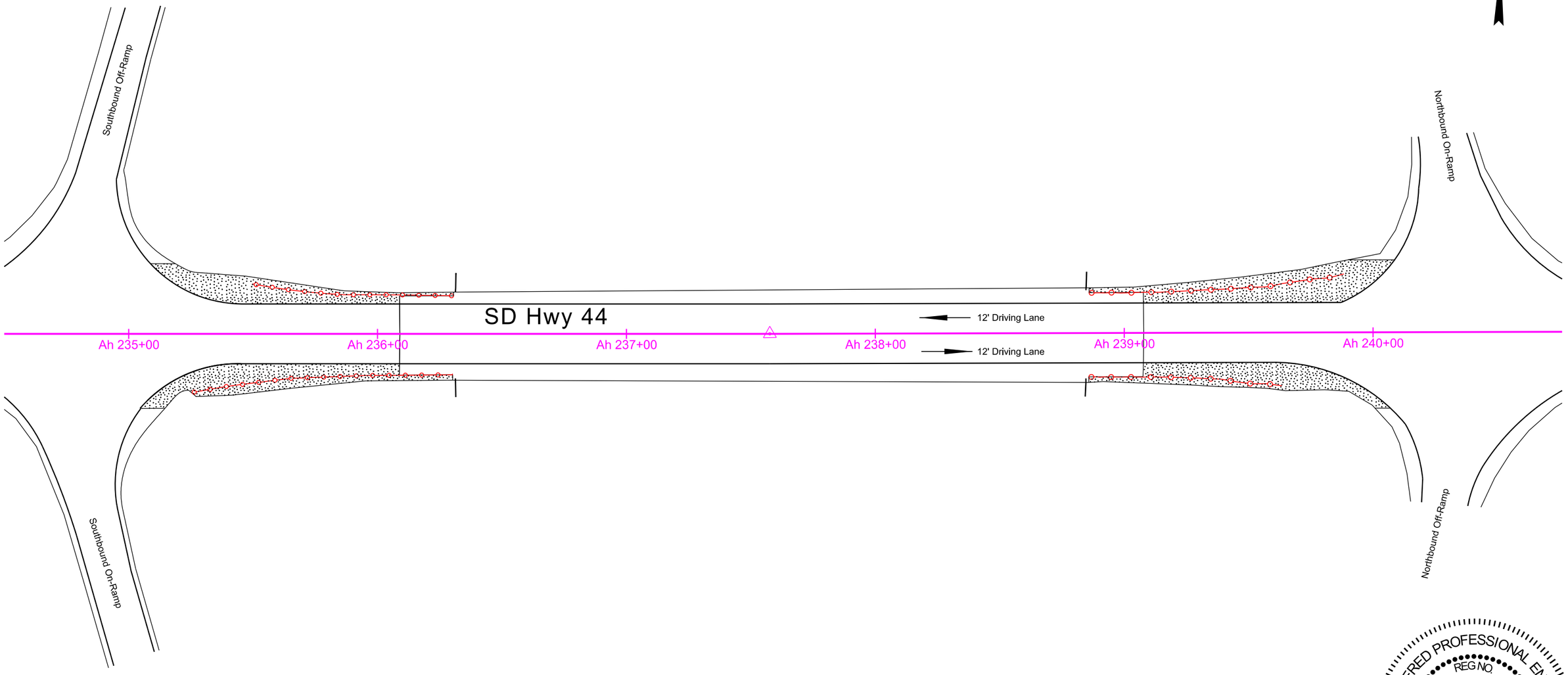
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	81	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

GUARDRAIL REMOVAL

SD Hwy 44, Structure No. 42-065-120, Over I29 at Exit 64



Asphalt Removal

Guardrail Removal

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11-5-25
SOUTH DAKOTA

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	82	194

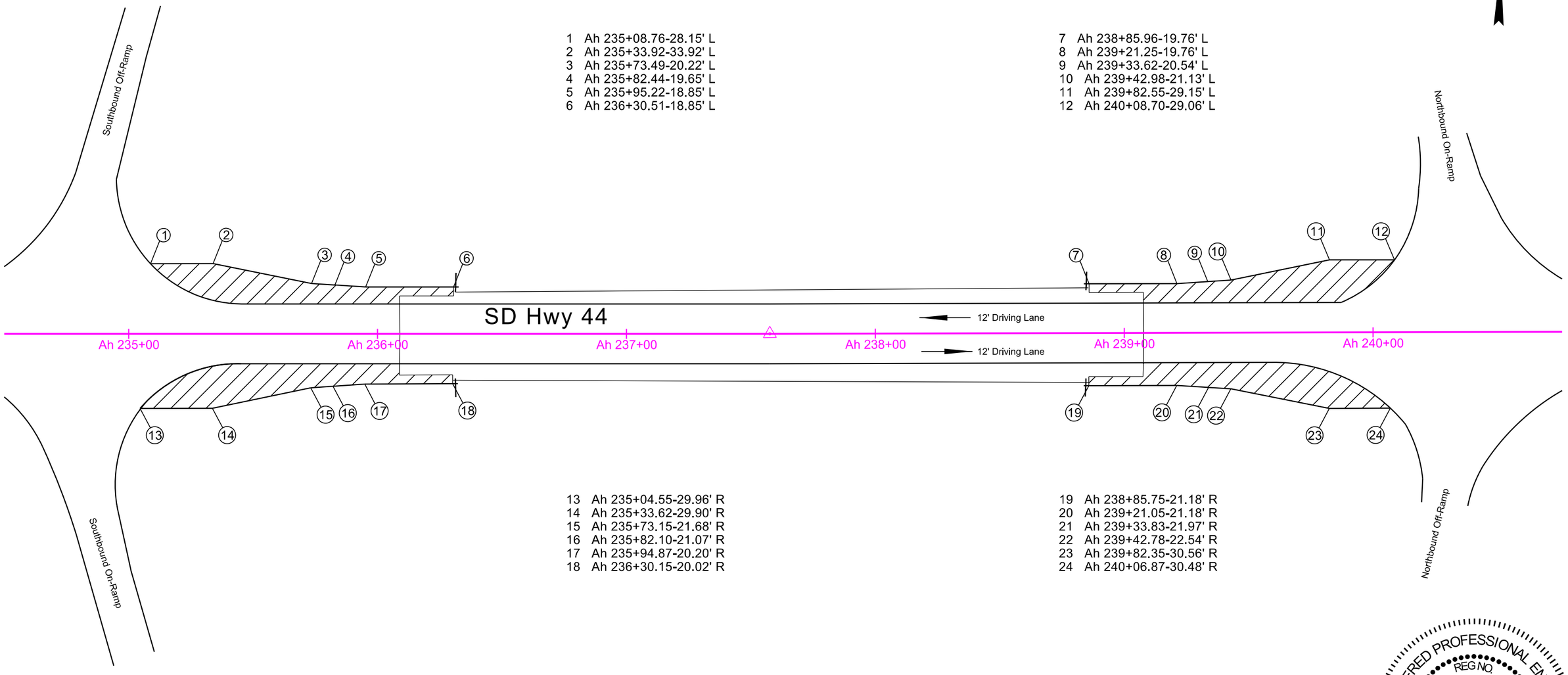
Plotting Date: 11/5/2025

GUARDRAIL EMBANKMENT

SD Hwy 44, Structure No. 42-065-120, Over I29 at Exit 64

Note: Numbered points are top of surfacing out edge.

1 Ah 235+08.76-28.15' L
2 Ah 235+33.92-33.92' L
3 Ah 235+73.49-20.22' L
4 Ah 235+82.44-19.65' L
5 Ah 235+95.22-18.85' L
6 Ah 236+30.51-18.85' L
7 Ah 238+85.96-19.76' L
8 Ah 239+21.25-19.76' L
9 Ah 239+33.62-20.54' L
10 Ah 239+42.98-21.13' L
11 Ah 239+82.55-29.15' L
12 Ah 240+08.70-29.06' L



13 Ah 235+04.55-29.96' R
14 Ah 235+33.62-29.90' R
15 Ah 235+73.15-21.68' R
16 Ah 235+82.10-21.07' R
17 Ah 235+94.87-20.20' R
18 Ah 236+30.15-20.02' R
19 Ah 238+85.75-21.18' R
20 Ah 239+21.05-21.18' R
21 Ah 239+33.83-21.97' R
22 Ah 239+42.78-22.54' R
23 Ah 239+82.35-30.56' R
24 Ah 240+06.87-30.48' R

2" Lift of Asphalt Concrete Composite Over Base Course

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SOUTH DAKOTA

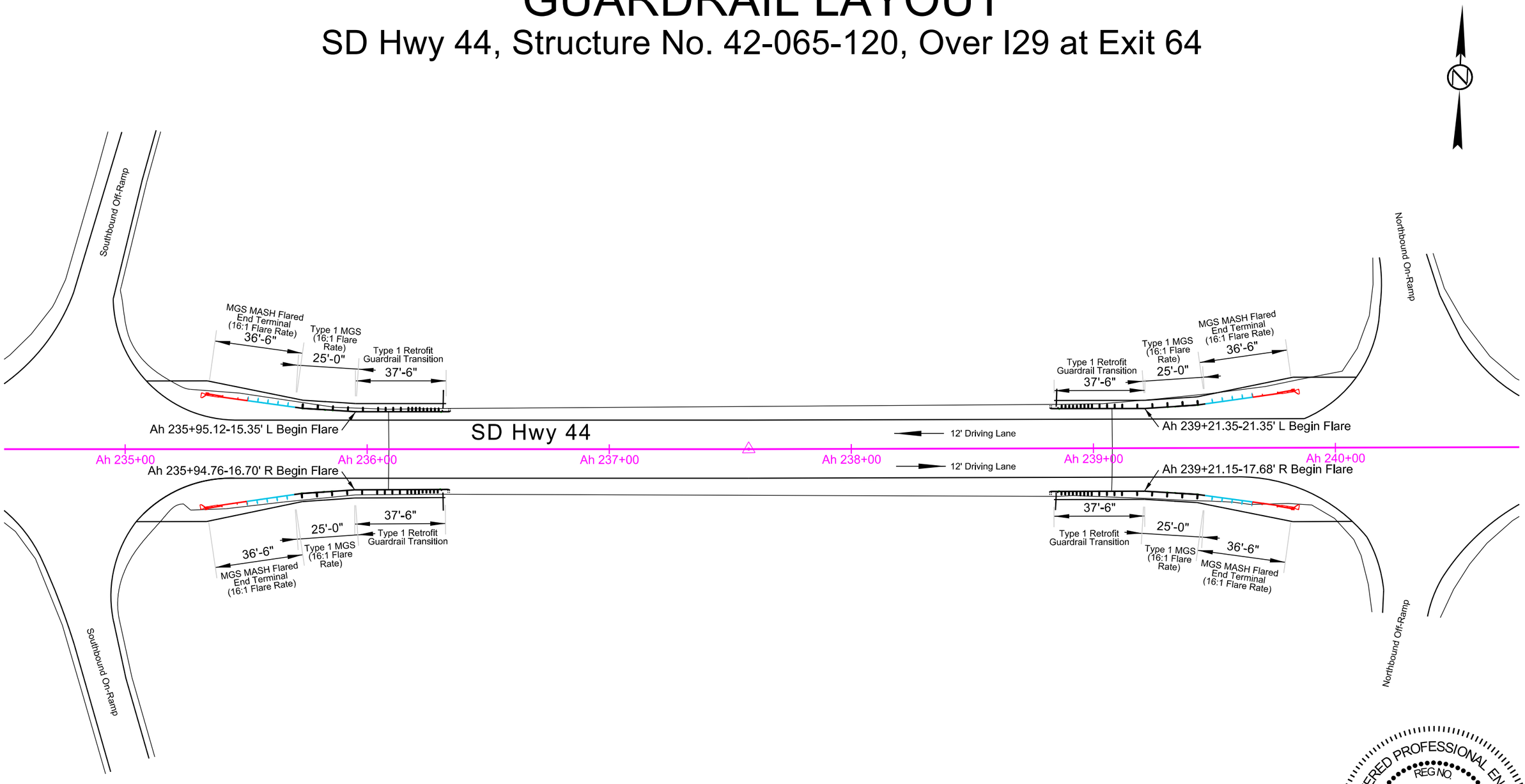
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	83	194

FOR BIDDING PURPOSES ONLY

Plotting Date: 11/5/2025

GUARDRAIL LAYOUT

SD Hwy 44, Structure No. 42-065-120, Over I29 at Exit 64



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SOUTH DAKOTA

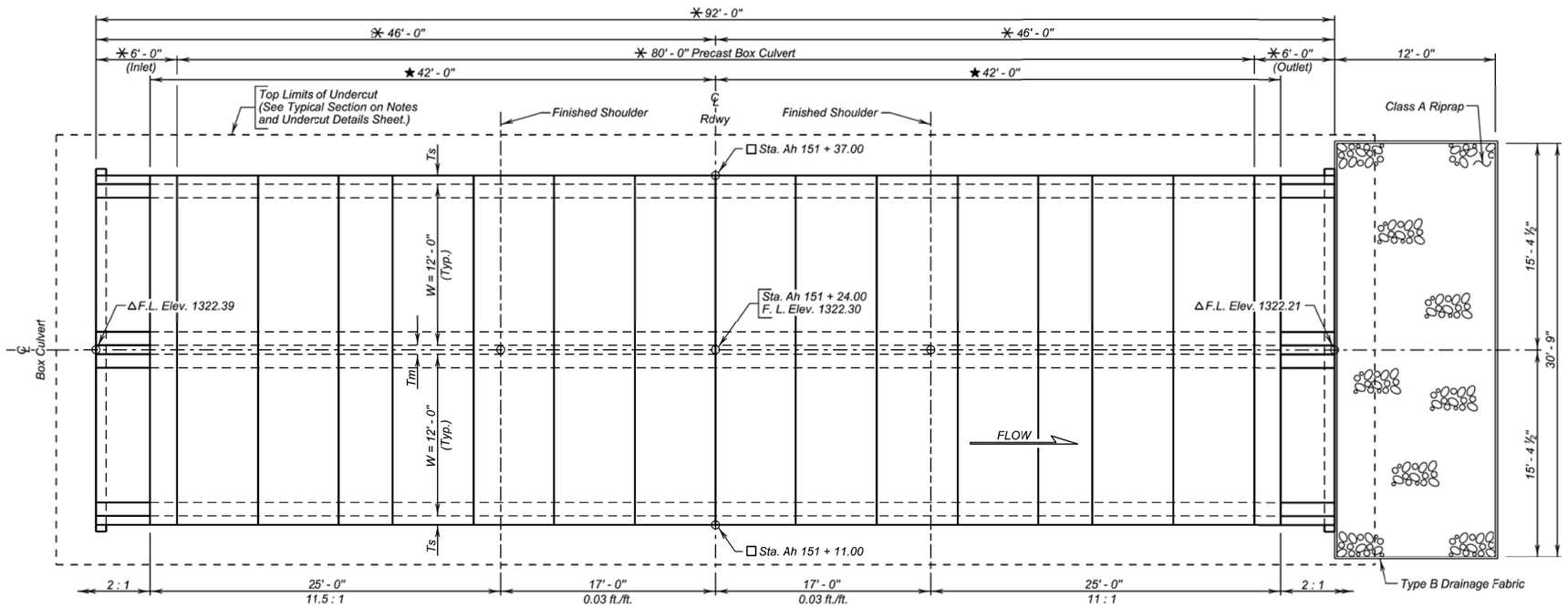
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	84	194

FOR BIDDING PURPOSES ONLY

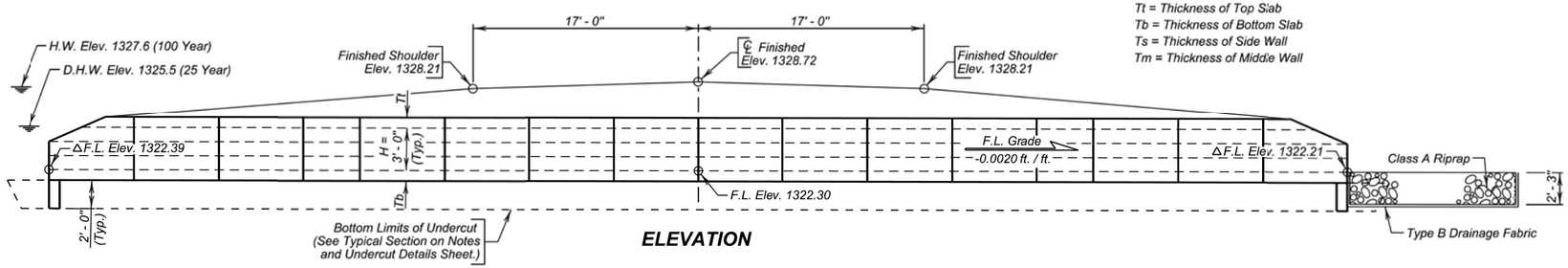
Plotting Date: 11/5/2025

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

✳ Dimension may vary with fabricator and/or installation. See Shop Plans for actual installation length.
★ Minimum distance to satisfy clear zone.
△ Based on dimensions shown.
☐ Based on Ts = 8" and Tm = 8".



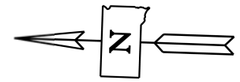
PLAN



ELEVATION

LEGEND

W = Width of Opening
H = Height of Opening
Tt = Thickness of Top Slab
Tb = Thickness of Bottom Slab
Ts = Thickness of Side Wall
Tm = Thickness of Middle Wall



-X028-
INDEX OF CULVERT SHEETS-

Sheet No. 1 - General Drawing and Quantities
Sheet No. 2 - Notes and Undercut Details
Sheet No. 3 - Details of Standard Plate No.'s 460.02 & 560.01
Sheet No. 4 - Details of Standard Plate No.'s 560.20 & 620.16

HYDRAULIC DATA

Q_d	324 cfs
A_d	43 sq ft
V_d	7.6 fps
Q_F	324 cfs
Q_{100}	632 cfs
Q_{OT}	701 cfs
V_{max}	9.5 fps

Q_d = Design discharge for the proposed culvert based on 25 year frequency. El. 1325.5.
Q_{OT} = Overtopping discharge and frequency > Q_{100} year recurrence interval. El. 1328.6 @ Sta. 150 + 24.00.
Q_F = Designated peak discharge for the basin approaching proposed project based on 25 year frequency.
Q_{100} = Computed discharge for the basin approaching proposed project based on 100 year frequency. El. 1327.6.
V_{max} = Maximum computed outlet velocity for the proposed culvert, based on 100 year frequency.

ESTIMATED QUANTITIES

	ITEM	UNIT	QUANTITY
∢	Structure Excavation, Box Culvert	Cu. Yd.	66
	Box Culvert Undercut	Cu. Yd.	223
≠	Class A Riprap	Ton	43.1
	Type B Drainage Fabric	Sq. Yd.	63
	2 - 12' X 3' Precast Concrete Culvert, Furnish	Ft.	80
	2 - 12' X 3' Precast Concrete Culvert, Install	Ft.	80
	2 - 12' X 3' Precast Concrete Culvert End Section, Furnish	Each	2
	2 - 12' X 3' Precast Concrete Culvert End Section, Install	Each	2

∢ Quantity is based on 9" bottom slab, 9" top slab, 8" outside walls, and 8" middle wall.
≠ For estimating purposes only, a factor of 1.4 tons/cu. yd. was used to convert Cu. Yd. to Tons.

PLANS BY :
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

GENERAL DRAWING AND QUANTITIES
FOR
2 - 12' X 3' BOX CULVERT (PRECAST)

OVER SNAKE CREEK — 0° SKEW
STA. Ah 151 + 24.00 — SEC. 2/11-T98N-R51W
STR. NO. 42-049-120 — P 0044(233)406
PCN 08GM — HL-93

LINCOLN COUNTY
S. D. DEPT. OF TRANSPORTATION
JUNE 2025

-X028- 1 OF 4

DESIGNED BY	CK. DES. BY	DRAFTED BY	
SD	BM	BT	Steve A Johnson BRIDGE ENGINEER
LINC08GM	08GMTA01		

SPECIFICATIONS

Use South Dakota Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges are available for download and viewing at: https://dot.sd.gov/doing-business/contractors/standard-specifications

GENERAL NOTES

Design will be in accordance with Section 560 of the Specifications with the following criteria:

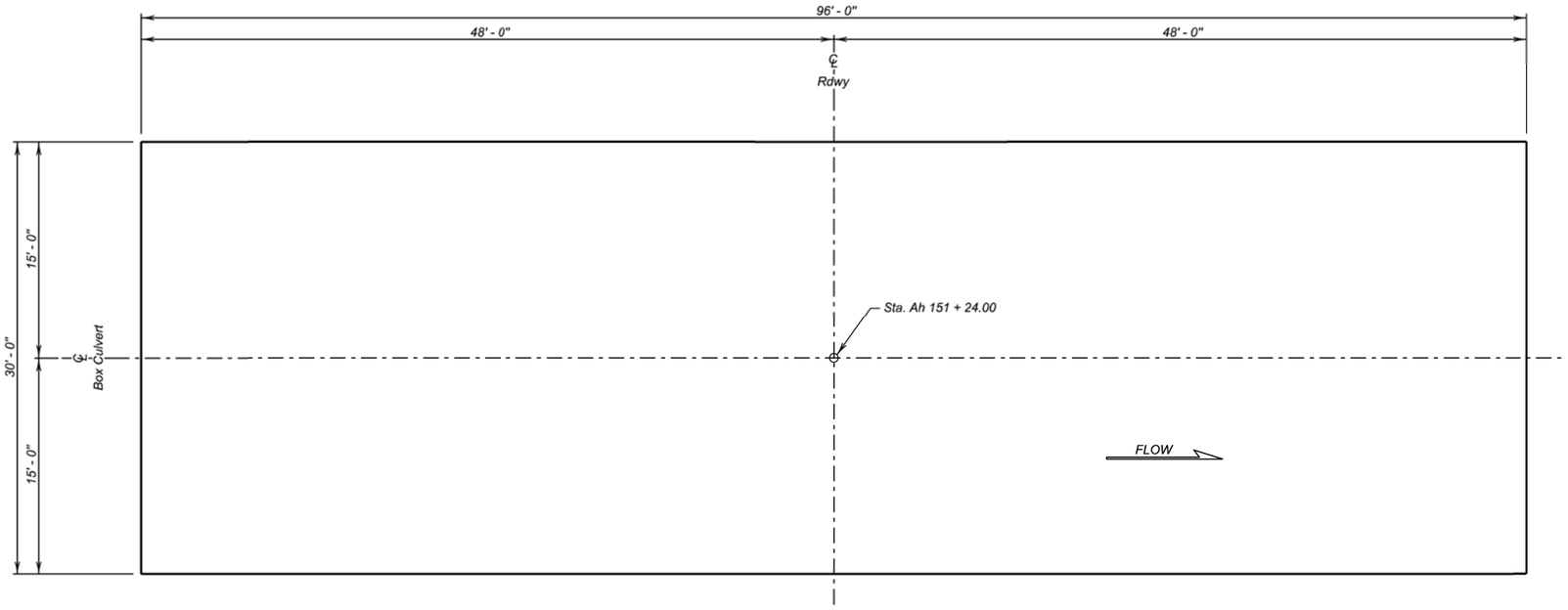
1. *Box culvert and box culvert end section design will conform to the AASHTO LRFD Bridge Design Specifications, 10th Edition.*
2. *Design Live Load: HL-93 and construction loading consisting of one 7' - 6" gage axle with gross weight = 95,850 lbs. The construction load shall not be applied until a minimum of 4 ft. of fill has been placed over the box culvert. If other construction loads in excess of legal load are anticipated by the Contractor, the Contractor will submit a design analysis for the anticipated construction loading, through the proper channels, to the Office of Bridge Design for approval.*
3. *The box culvert will be load rated in accordance with the AASHTO Manual for Bridge Evaluation, 2018 Edition with the latest Interim Revisions using the LRFR method. The rating will include evaluation of the Design HL-93 truck at both Inventory and Operating levels and a Legal Load rating for three SD legal trucks (Type 3, 3S2 and 3-2) as well as the notional rating load and four specialized hauling vehicles. The structure will also be evaluated for the emergency vehicles, EV2 and EV3, at the legal load rating level. All sections of the box culvert will rate at HL-93 or better (Inventory Level). The three SD legal loads, the notional rating load, the four specialized hauling vehicles, and two emergency vehicles will rate greater than 1.0 at legal load rating level. AASHTOWare Bridge Rating (BrR) is required to be used to rate the box culvert. Include the BrR rating model and a load rating summary table with load rating calculations. Submit load rating calculations with the design and independent check design calculations or shop plans, as appropriate.*
4. *The design of the barrel sections will be based on a minimum fill height of 1 foot and include all subsequent fill heights up to and including the maximum fill height of 5 ft. over the box culvert.*
5. *Minimum inside corner fillet will be 6 in.*
6. *Minimum precast barrel section length will be 6 - foot sections; however, no more than two 4 - foot sections are allowed in any one length of precast barrel.*
7. *Lift holes will be plugged with an approved nonshrinkable grout.*
8. *The Fabricator will imprint on the structure the date of construction as specified and detailed on Standard Plate No. 460.02.*
9. *Alternate end section details will be allowed, subject to the approval of the Bridge Construction Engineer. No additional payment will be made for any change in the barrel/end section configuration.*
10. *Installation of the precast sections will be in accordance with the final approved shop plans.*
11. *Care will be taken when placing sections. Sections will be only moved using the lifting holes by aproved equipment.*
12. *Soils below the bottom of the proposed RCBC consist of brown silt clay. Groundwater was encountered in the borings at an elevation of 1319.6 feet during the subsurface investigation conducted in December 2024. Dewatering will be required during construction.*

DESIGN MIX OF CONCRETE

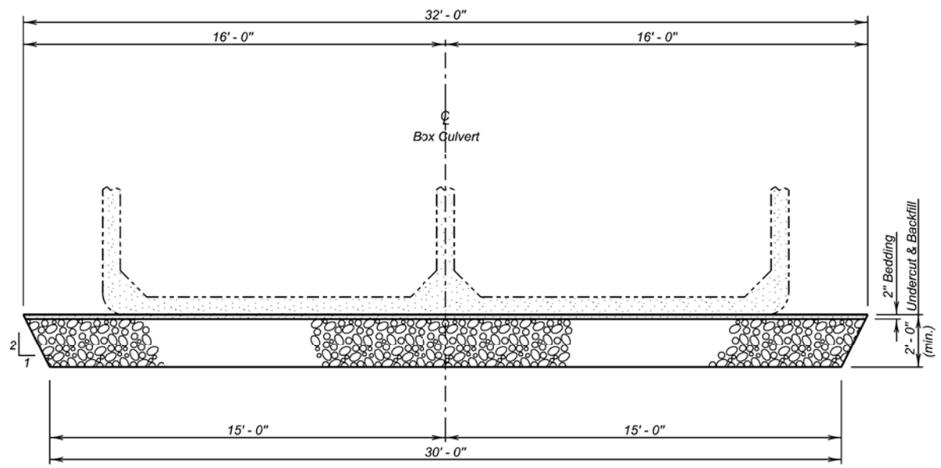
1. *Mix will be as per fabricator's design, however minimum compressive strength will not be less than 4500 p.s.i. at 28 days.*
2. *Type II cement is required.*

SHOP PLANS

The fabricator will submit shop plans in accordance with the Construction Specifications. Include design and independent check design, if applicable, with initial submittal.



UNDERCUT LAYOUT
(Bottom Dimensions)



TYPICAL SECTION
(For Limits of Undercut)

ESTIMATED QUANTITIES

	ITEM	UNIT	QUANTITY
₡	Box Culvert Undercut	Cu. Yd.	223

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

NOTES AND UNDERCUT DETAILS

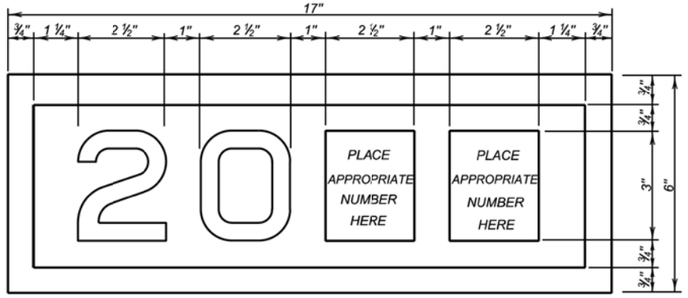
FOR

2 - 12' X 3' BOX CULVERT (PRECAST)

OVER SNAKE CREEK — 0° SKEW
STA. Ah 151 + 24.00 — SEC. 2/11-T98N-R51W
STR. NO. 42-049-120 — P 0044(233)406
HL-93

LINCOLN COUNTY
S. D. DEPT. OF TRANSPORTATION
JUNE 2025

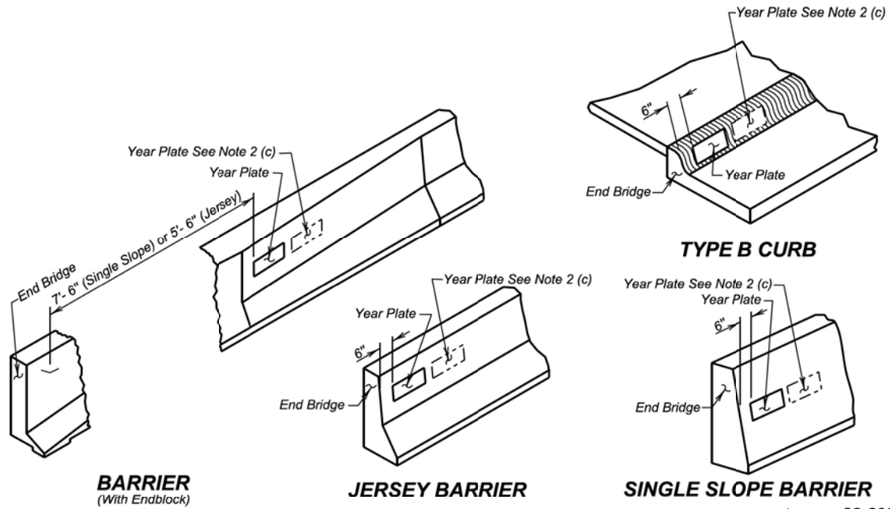
DESIGNED BY	CK. DES. BY	DRAFTED BY	
SD	BM	BT	Steve A Johnson BRIDGE ENGINEER
LINC08GM	08GMTA02		



YEAR PLATE DETAILS

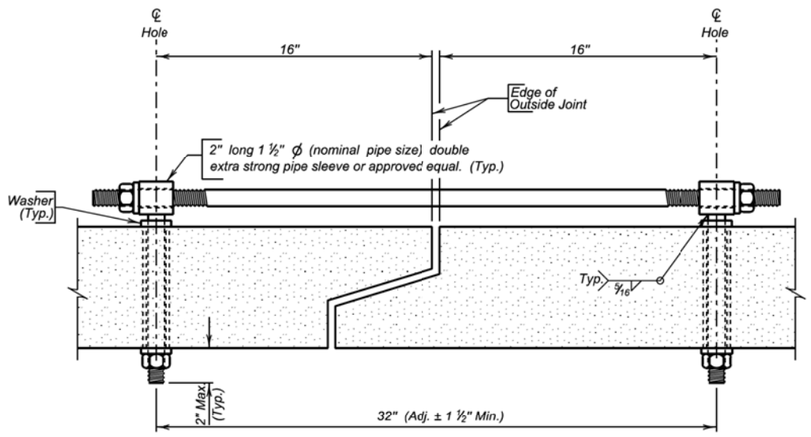
GENERAL NOTES:

1. Year plates of the general dimensions shown will be constructed on all box culverts and bridges. The year plates will be constructed in reverse and attached to the forms in such a manner that the finished imprint in the concrete does not exceed one-half (1/2) inch in depth.
2. Year plates will be located on structure(s) as follows:
   a. On cast-in-place box culverts the year plates will be four and one - half (4 ½) inches below the top of the upstream parapet wall and centered laterally on the upstream face. On precast box culverts the year plate will be centered laterally on the upstream face of the top slab. Where an extended interior wall interferes with this location, the year plate will be centered in an adjacent barrel.
   b. On bridges with six (6) inch curbs, "Jersey" shaped barriers with no endblocks, or "Single Slope" shaped barriers with no endblocks, the year plate will be centered vertically on the curb face approximately six (6) inches from the end of the bridge, or as designated by the Engineer. On bridges with barrier endblocks, the year plate will be centered on the upper sloped portion of the barrier approximately 5'- 6" for "Jersey" shaped barriers from the end of the bridge and 7'-6" for "Single Slope" shaped barriers from the end of bridge, or as designated by the Engineer. There will be one year plate at each end of the bridge on opposite sides.
   c. When the plans specify that both the original date of construction and the date of reconstruction are to be shown, one date will be placed as listed above and the other located adjacent to it. Both year plates will be shown at each end of the bridge on opposite sides.
3. There will be no separate measurement or payment made for year plates on box culverts and bridges. All costs for this work will be incidental to other contract items.



January 22, 2021

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



TIE BOLT ASSEMBLY

GENERAL NOTES:

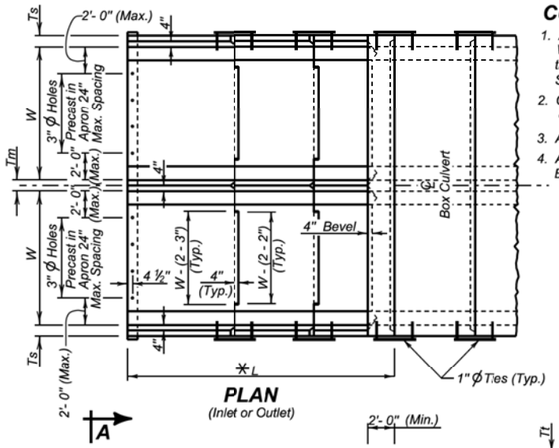
1. All holes for tie bolts shall be cast-in-place,16 inches from outside edge of joint. Cast in inserts or sleeves, if used, shall be made of a corrosion resistant material.
2. Ties shall be 1 inch ϕ and conform to the requirements of ASTM A36, ASTM A307, or ASTM F1554, Gr. 36. Nuts shall be heavy hex in conformance with ASTM A563. Washers shall conform to ASTM F436, Type 1. The welded pipe sleeve shall conform to ASTM A53, Grade B.
3. Welding and weld inspection shall be in conformance with AWS/ANSI D1.1 - (Current Year) Structural Welding Code - Steel.
4. Tie Bolt Assembly shall be galvanized in accordance with ASTM A153 or ASTM F2329 as applicable.
5. Tie Bolt Assembly details may vary from that shown, but alternate tie bolt assemblies are subject to testing to demonstrate equal strength. Submit details, through proper channels, to the Office of Bridge Design for approval.
6. All costs for furnishing and installing the precast box culvert tie bolt assembly shall be incidental to the contract unit price per Foot for "Precast Concrete Box Culvert, Furnish".

March 21, 2016

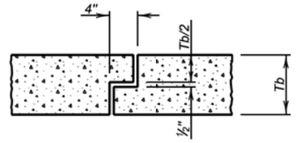
Published Date: 2026	SDDOT	PRECAST BOX CULVERT TIE BOLT ASSEMBLY DETAILS	PLATE NUMBER 560.01
			Sheet 1 of 1

CUTOFF WALL

1. All costs associated with furnishing and installing the Cutoff Wall, whether precast or cast-in-place, shall be incidental to the contract unit price per each for "Precast Box Culvert End Section, Furnish".
2. Concrete for cast-in-place cutoff wall shall be Class M6 concrete in accordance with Section 462 of the Specifications.
3. All reinforcing steel shall conform to ASTM A615 Grade 60.
4. Alternate details will be allowed, subject to the approval of the Bridge Construction Engineer.

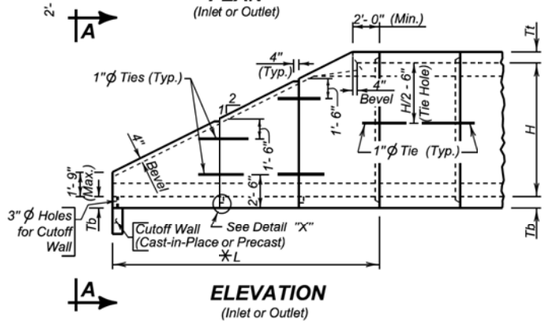


PLAN
(Inlet or Outlet)

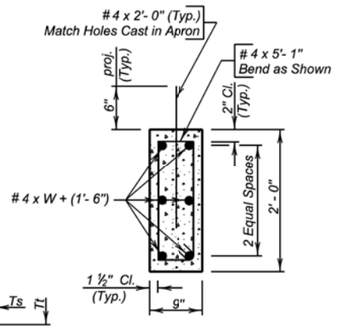


DETAIL "X"

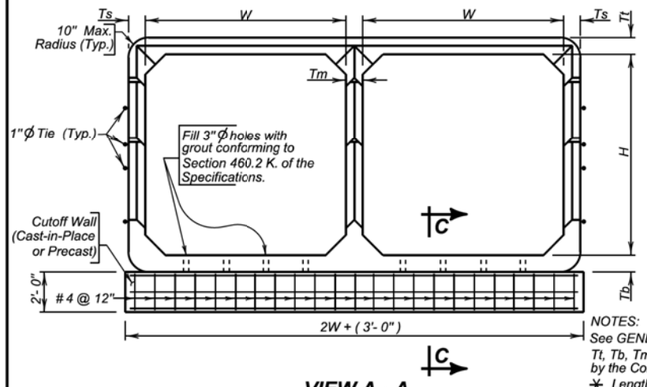
NOTE: Joint details may vary from that shown, according to the manufacturer's design. Submit details with shop plans for approval.



ELEVATION
(Inlet or Outlet)



SEC. C - C



VIEW A - A

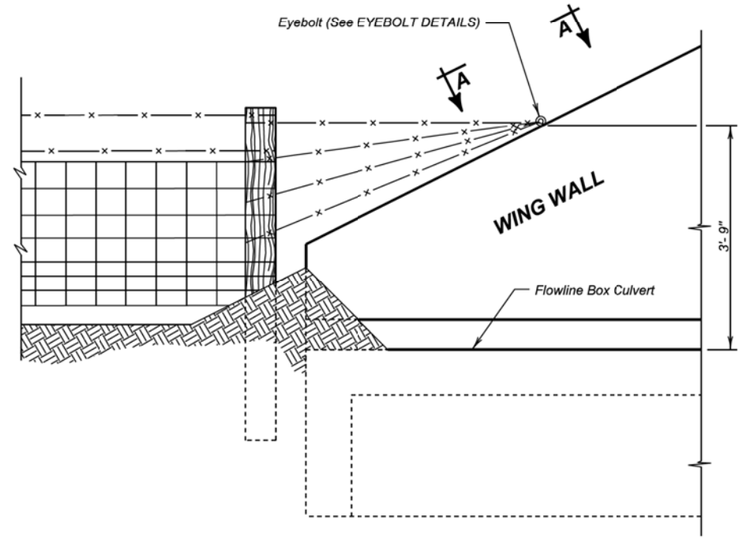
LEGEND

W = Width of Opening
H = Height of Opening
Tt = Thickness of Top Slab
Tb = Thickness of Bottom Slab
Ts = Thickness of Side Wall
Tm = Thickness of Middle Wall
L = Length of End Section

NOTES:
See GENERAL DRAWING for W and H dimensions.
Tt, Tb, Tm, L, and Ts dimensions shall be furnished by the Contractor.
✳ Length and number of units may vary from that shown.

June 26, 2015

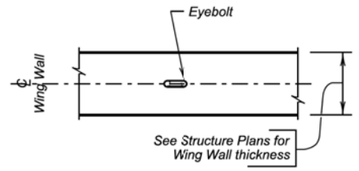
Published Date: 2026	SDDOT	PRECAST DOUBLE BOX CULVERT SLOPED END SECTION DETAILS WITH 2'–0" CUTOFF WALL	PLATE NUMBER 560.20 Sheet 1 of 1



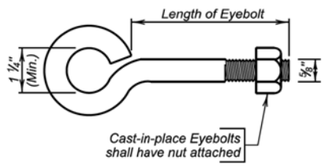
DETAIL FOR FENCE ANCHORS

GENERAL NOTES:

1. The fence and post details shown are for illustrative purpose only. The fence shall be as specified elsewhere in the plans.
2. Eyebolts shall be placed on all of the box culvert wing walls.
3. Eyebolts shall be ⅝ inch diameter and shall conform to ASTM A307.
4. Eyebolts, nuts, and concrete inserts shall be galvanized in accordance with AASHTO M232 (ASTM A153). Concrete inserts of corrosion resistant material need not be galvanized.
5. Cast-in-place eyebolts shall have a nut attached, be 4 ½ inches (Min.) in length and shall be embedded such that the eye of the bolt is flush with the concrete surface. (See Eyebolt Details) As an alternate, cast-in-place concrete inserts, capable of developing the full strength of the ⅝ inch diameter threaded eyebolt, may be used and shall be set in the concrete in accordance with the manufacturer's recommendations. The eyebolt shall be of sufficient length to develop its full strength. The eye of the eyebolt shall be flush with the concrete surface.
6. The cost for furnishing and installing eyebolts and/or concrete inserts shall be incidental to various contract items.



VIEW A - A



EYEBOLT DETAILS

December 23, 2012

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

CONDUIT AND CABLE QUANTITIES

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	88	194

Plotting Date: 11/5/2025

Location to Location				Rigid Conduit Schedule 40 2" Ft		Rigid Conduit Schedule 80 2" Ft			1/C #4 AWG Ft	1/C #6 AWG Ft	1/C #8 AWG Ft	1/C #12 AWG Ft		Pole and Bracket Cable 2/C #10 AWG Ft		Junction Boxes Type 1 Each	Junction Boxes Type 2 Each	Electrical Service Cabinet Each	
LINC08GM																			
Conduit																			
L1	JL1			130		60			1030							1			
JL1	L2					65			390										
L2	JL2			185					1005							1			
JL2	L3					65					390								
JL2	L4			185					1005										
L4	JL3			105		120			1215							1			
JL3	L5					65					390								
JL3	L6			220					1185										
L6	JL4			160					880							1			
JL4	JL5					65					390					1			
JL5	L7			70							415								
JL4	L8			150		120			1445										
L8	JL6			220					1185							1			
JL6	L9					65					390								
JL6	L10			220					1185										
L10	JL7			220					1660							1			
JL7	L11					65					390								
JL7	L12			220					1660										
L12	JL8			220					1660							1			
JL8	L13					65					390								
JL8	L14			220					1660										
L14	JA1			210					1590								1		
JA1	SC1			45					545	235								1	
JA1	L15					65					390								
JA1	L16			210					455	680									
L16	JL9			220					475	715						1			
JL9	L17					65					390								
JL9	L18			220					475	715									
L18	JL10			220					475	715						1			
JL10	L19					65			155	235									
L20	JL11					65			155	235						1			
JL11	L21			200					435	650									
L21	JL12			185					405	605						1			
JL12	L22					65					390								
JL12	L23			185					405	605									
L23	SC2			45					310	465								1	
L23	JL13			215					465	700						1			
JL13	L24					65					390								
JL13	L25			185					405	605									
L25	JL14			150					330	495						1			
JL14	JL15					65					390					1			
JL15	L26			65							390								
JL14	L27					230			495	745									
Totals This Sheet:				4,880		1,440			24,740	8,400	5,095					15	1	2	

REGISTERED PROFESSIONAL ENGINEER
REG NO.
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RYAN J.
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11-5-25
SOUTH DAKOTA

CONDUIT AND CABLE QUANTITIES

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	89	194

Plotting Date: 11/5/2025 Rev 11/17/2025 RJM

Location to Location			Rigid Conduit Schedule 40 2" Ft		Rigid Conduit Schedule 80 2" Ft			1/C #4 AWG Ft	1/C #6 AWG Ft	1/C #8 AWG Ft	1/C #12 AWG Ft	Pole and Bracket Cable 2/C #10 AWG Ft		Junction Boxes Type 1 Each	Junction Boxes Type 2 Each	Electrical Service Cabinet Each	
LINC08GM																	
Luminaires																	
L1											95	65					
L2											95	65					
L3											95	65					
L4											95	65					
L5											95	65					
L6											95	65					
L7											95	65					
L8											95	65					
L9											95	65					
L10											95	65					
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L15											95	65					
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L23											95	65					
L24											95	65					
L25											95	65					
L26											95	65					
L27											95	65					
Totals This Sheet:			0		0			0	0	0	2,565	1,755		0	0	0	
Totals:			4,880		1,440			24,740	8,400	5,095	2,565	1,755		15	1	2	

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	90	194

Plotting Date: 11/5/2025

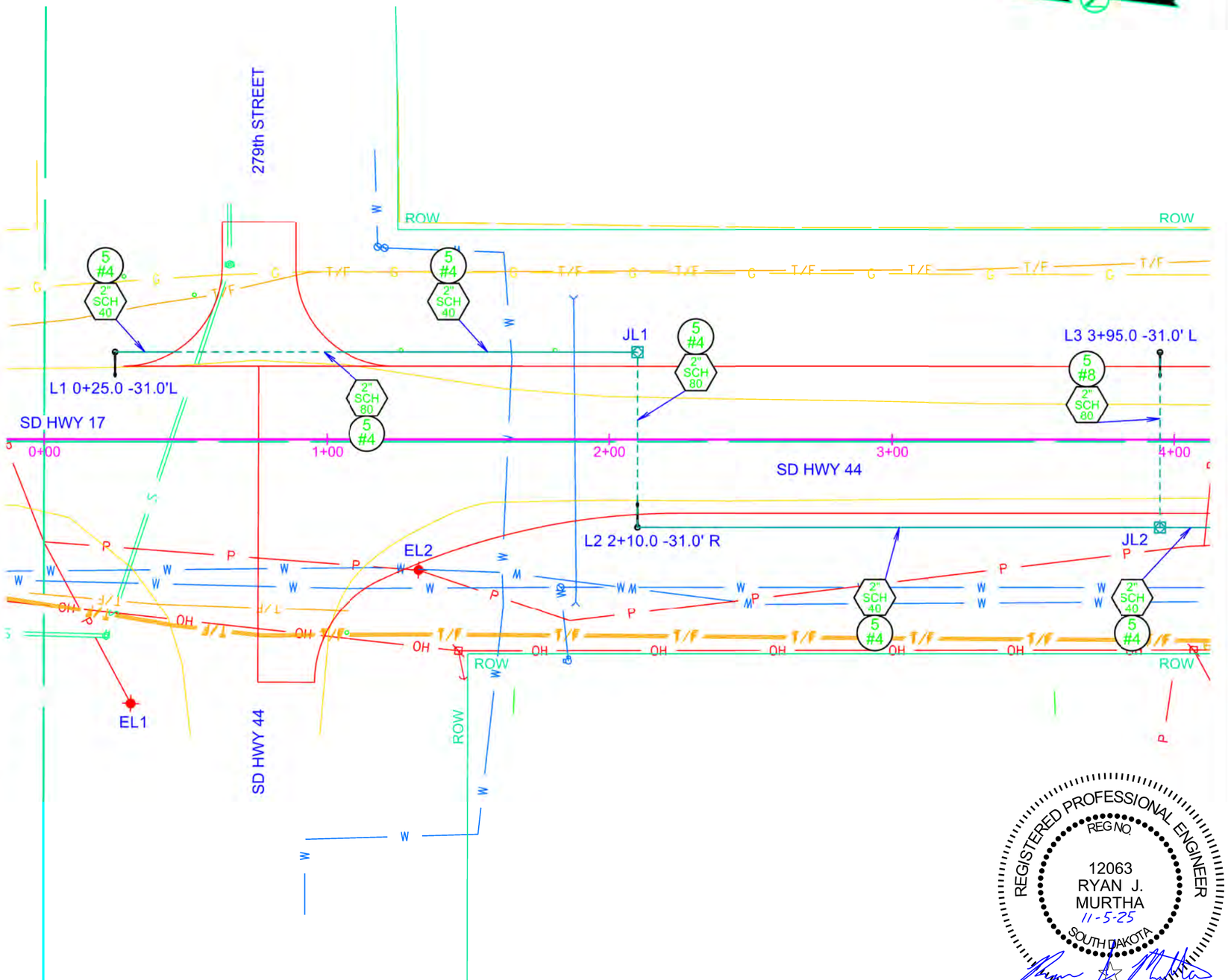
FOR BIDDING PURPOSES ONLY

CONDUIT LAYOUT

SD HWY 44

ESTIMATE OF QUANTITIES

KEY	ITEM	EST QUANT	UNIT
	Remove Luminaire Pole Footing (EL1-EL4)	4	EACH
	Salvage Luminaire Pole (EL1-EL4)	4	EACH
	Salvage Luminaire (EL1-EL4)	4	EACH
	Breakaway Base Luminaire Pole w/8' Arm 50' Mounting Height (L1-L27)	27	EACH
	Roadway Luminaire, LED with P.E. (L1-L27)	27	EACH
	2' Diameter Footing (L1-L27)	243	FT
	Type 1 Electrical Junction Box (JL1-JL15)	15	EACH
	Type 2 Electrical Junction Box (JA1)	1	EACH
	Electrical Service Cabinet	2	EACH
	Galvanized Steel Utility Pole Not a Bid Item	2	EACH
M	Meter Socket Not a Bid Item	2	EACH
2" SCH 40	2" Rigid Conduit, Schedule 40	4,880	FT
2" SCH 80	2" Rigid Conduit, Schedule 80	1,440	FT
#4	1/C #4 AWG Copper Wire	24,740	FT
#6	1/C #6 AWG Copper Wire	8,400	FT
#8	1/C #8 AWG Copper Wire	5,095	FT
	1/C #12 AWG Copper Wire (Wire for Festoons)	2,565	FT
	2/C #10 AWG Copper Pole & Bracket Cable	1,755	FT



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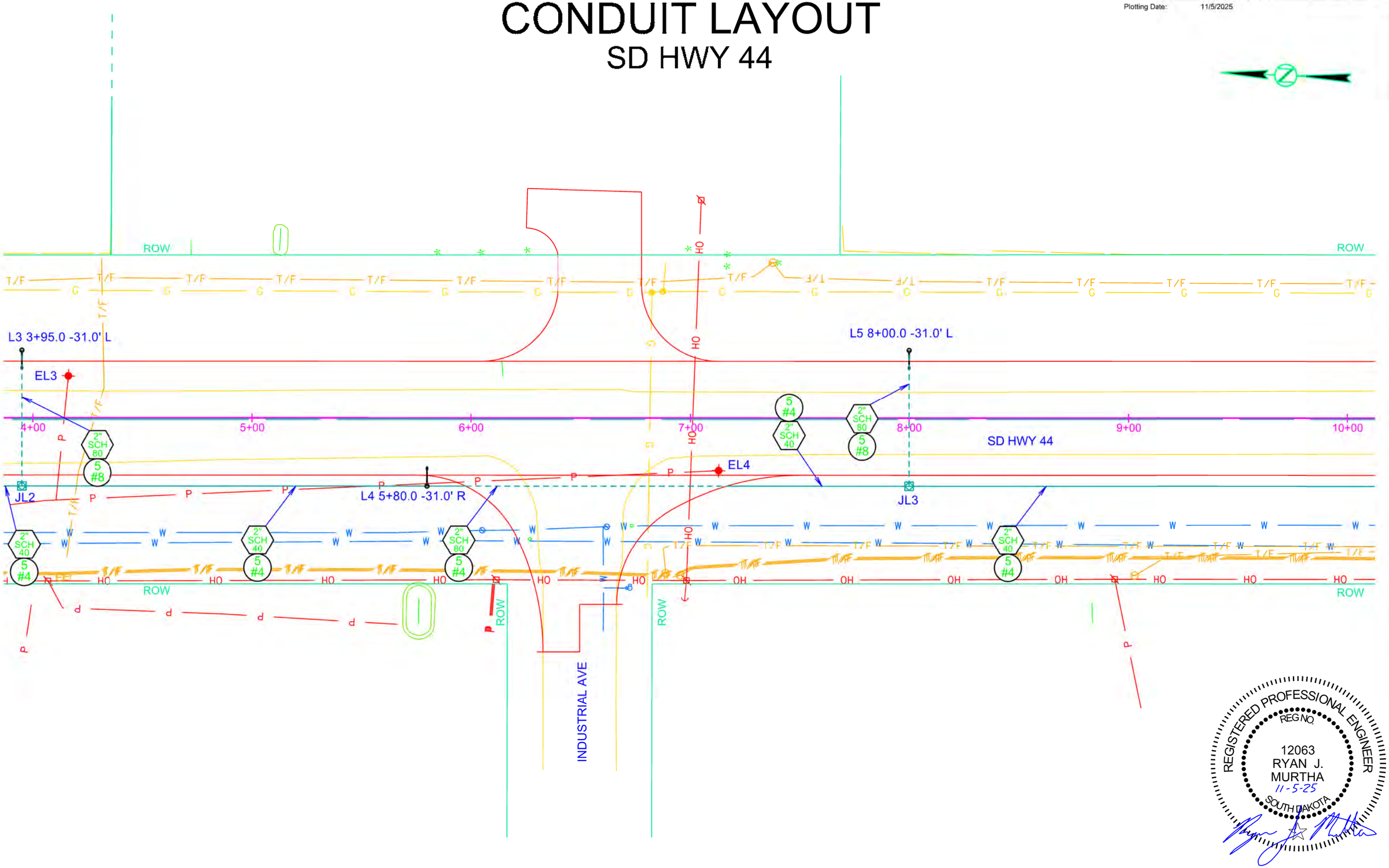
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	91	194

Plotting Date: 11/5/2025

CONDUIT LAYOUT

SD HWY 44



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	P 0044(233)406 IM 0292(99)59	92	194

Plotting Date: 11/5/2025

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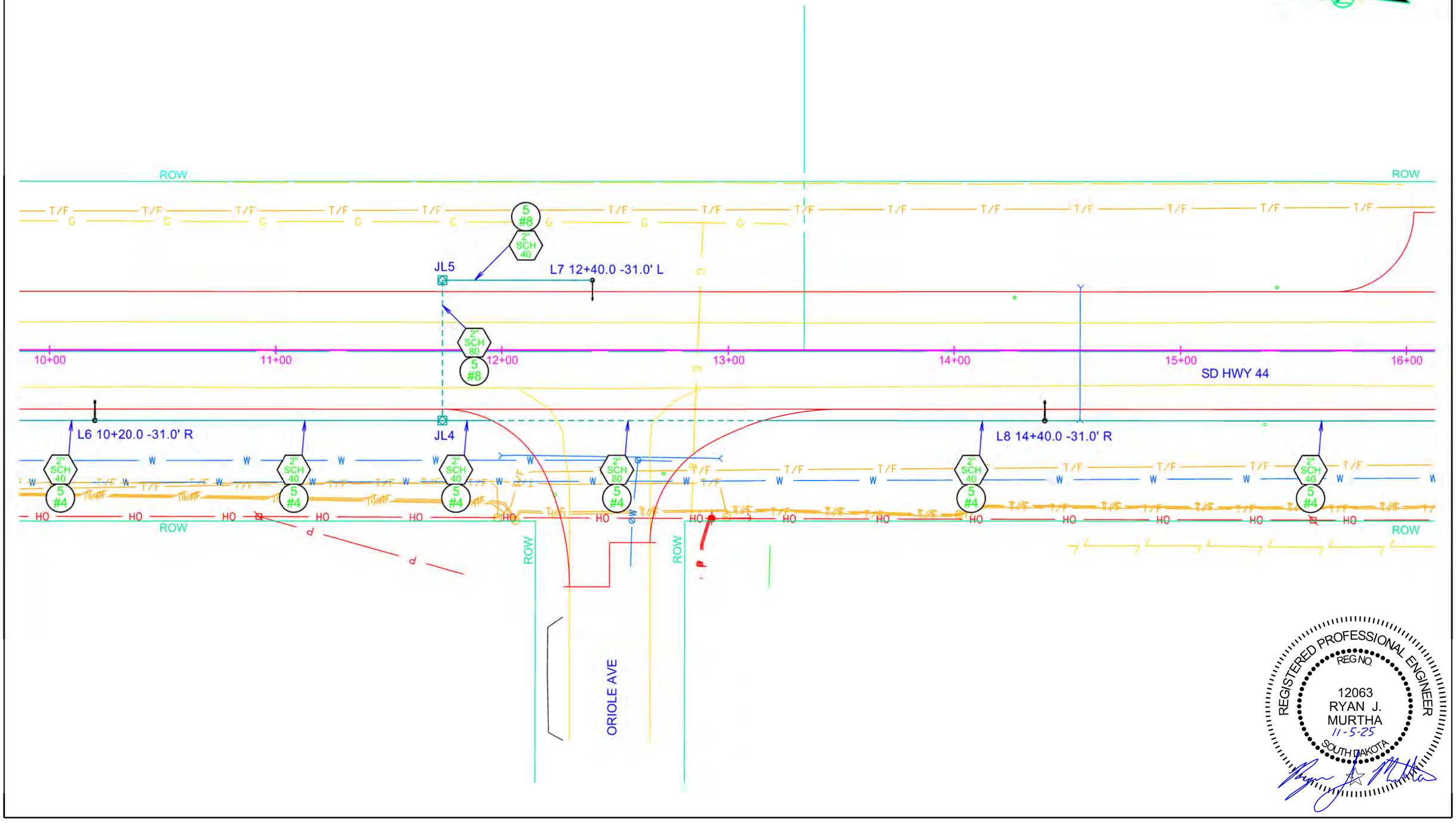
CONDUIT LAYOUT

SD HWY 44



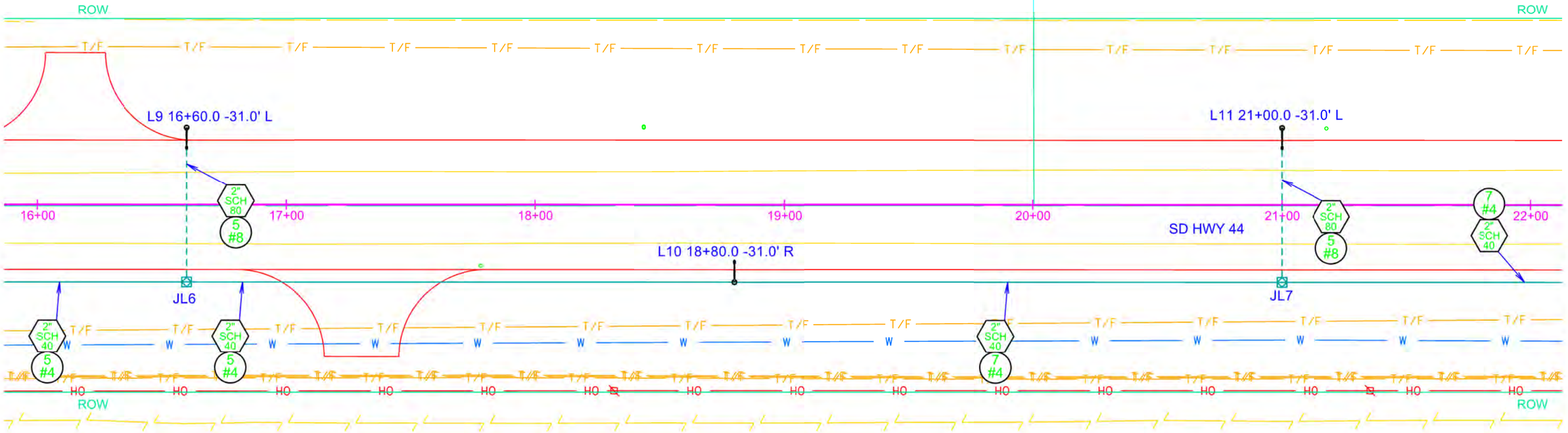
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	93	194

Plotting Date: 11/5/2025

CONDUIT LAYOUT

SD HWY 44



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SOUTH DAKOTA

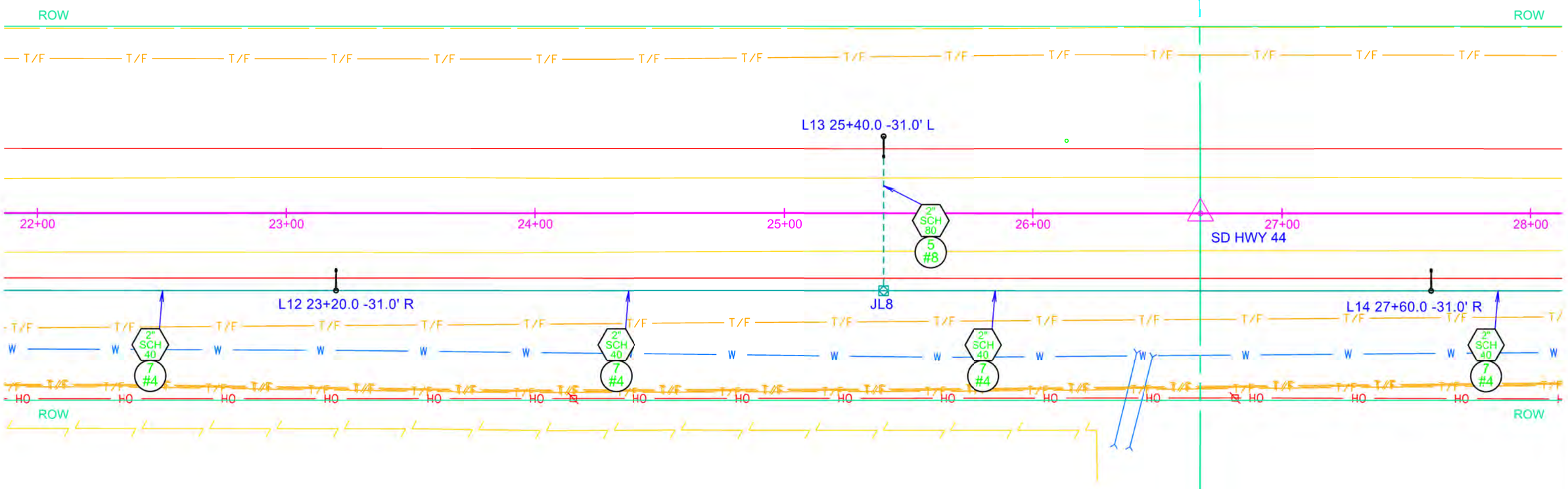
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	94	194

Plotting Date: 11/5/2025

FOR BIDDING PURPOSES ONLY

CONDUIT LAYOUT

SD HWY 44



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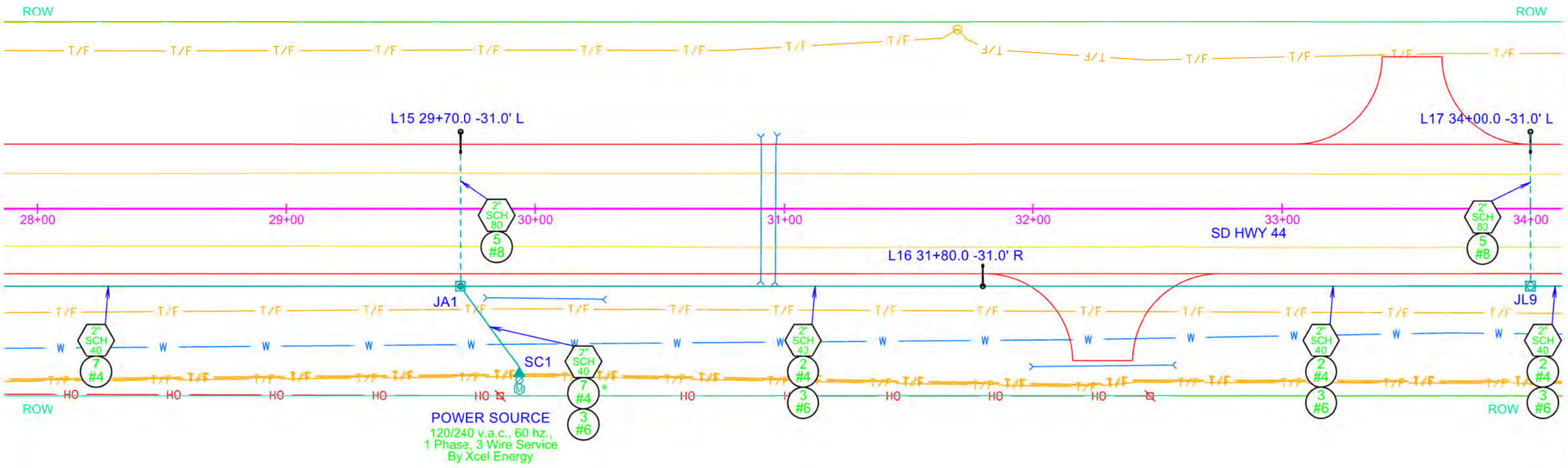
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	95	194

Plotting Date: 11/5/2025

FOR BIDDING PURPOSES ONLY

CONDUIT LAYOUT

SD HWY 44



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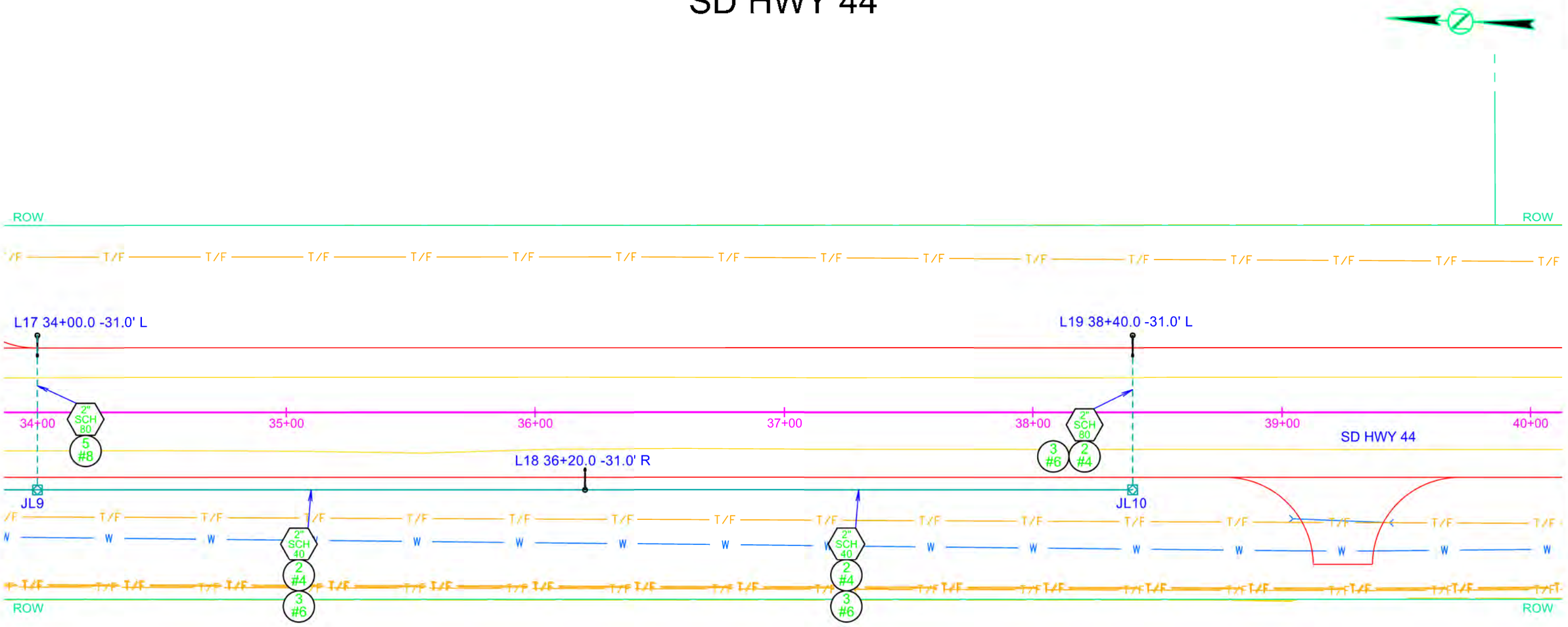
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	96	194

Plotting Date: 11/5/2025

CONDUIT LAYOUT

SD HWY 44



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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	97	194

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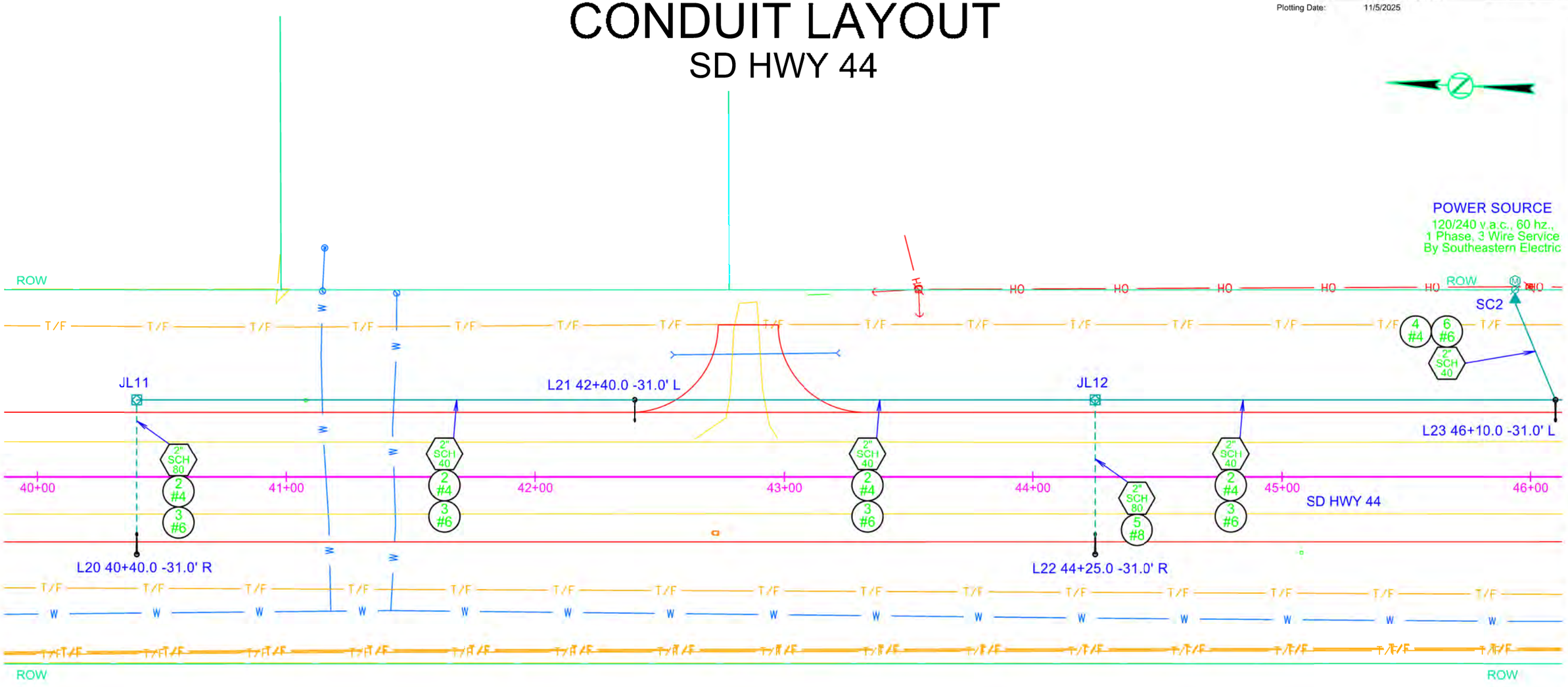
CONDUIT LAYOUT

SD HWY 44



REGISTERED PROFESSIONAL ENGINEER
REG NO.
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

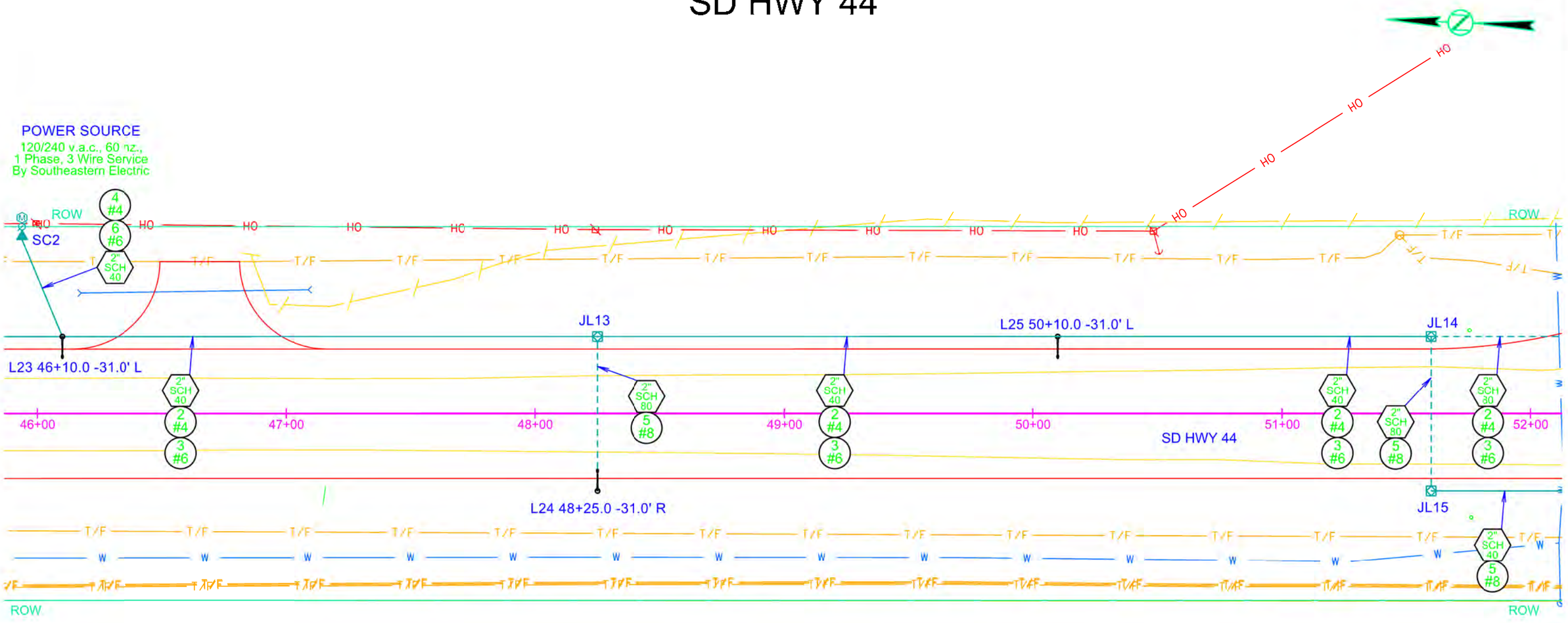
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	98	194

Plotting Date: 11/5/2025

FOR BIDDING PURPOSES ONLY

CONDUIT LAYOUT

SD HWY 44



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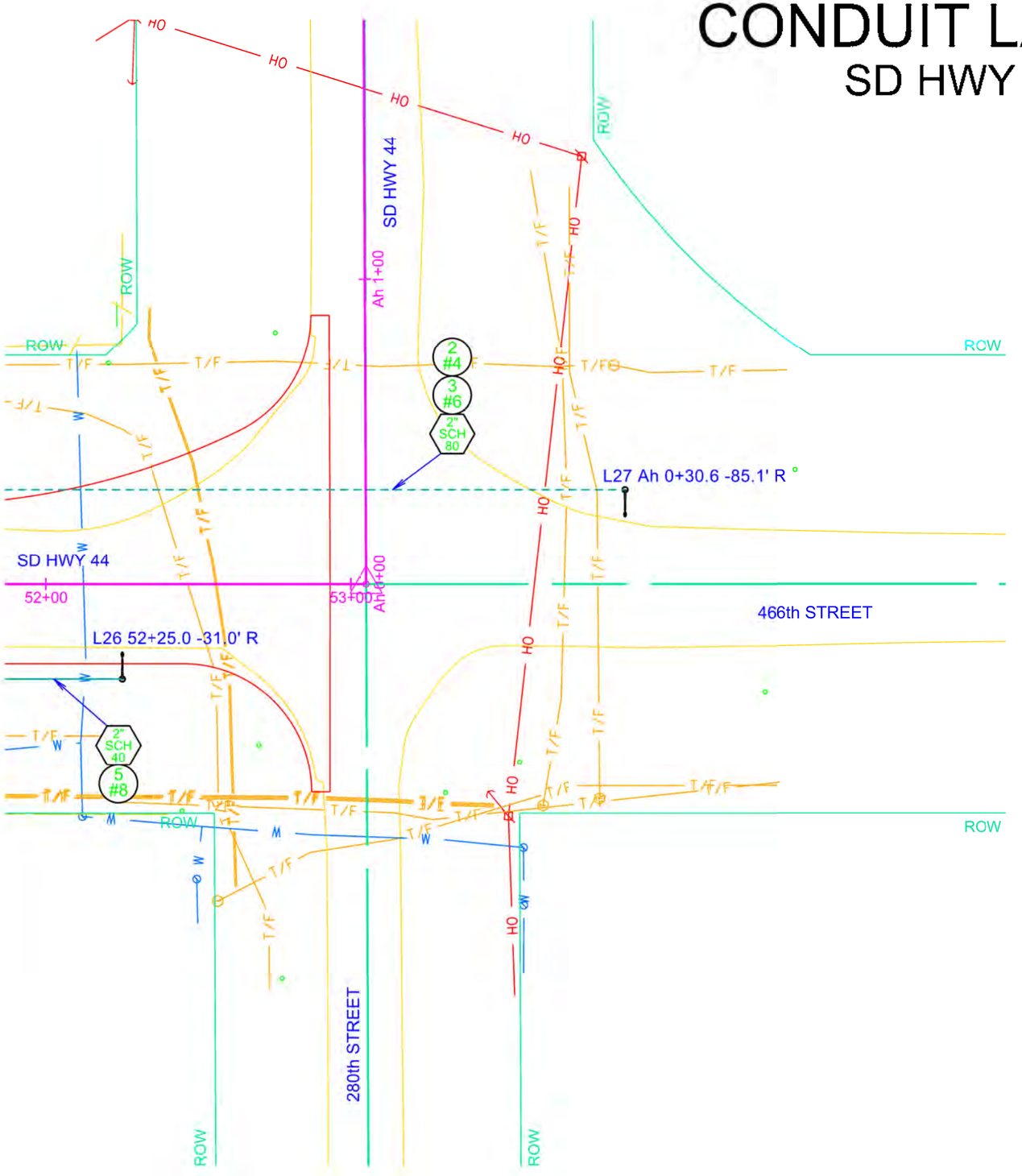
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	99	194

Plotting Date: 11/5/2025

CONDUIT LAYOUT

SD HWY 44



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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	100	194

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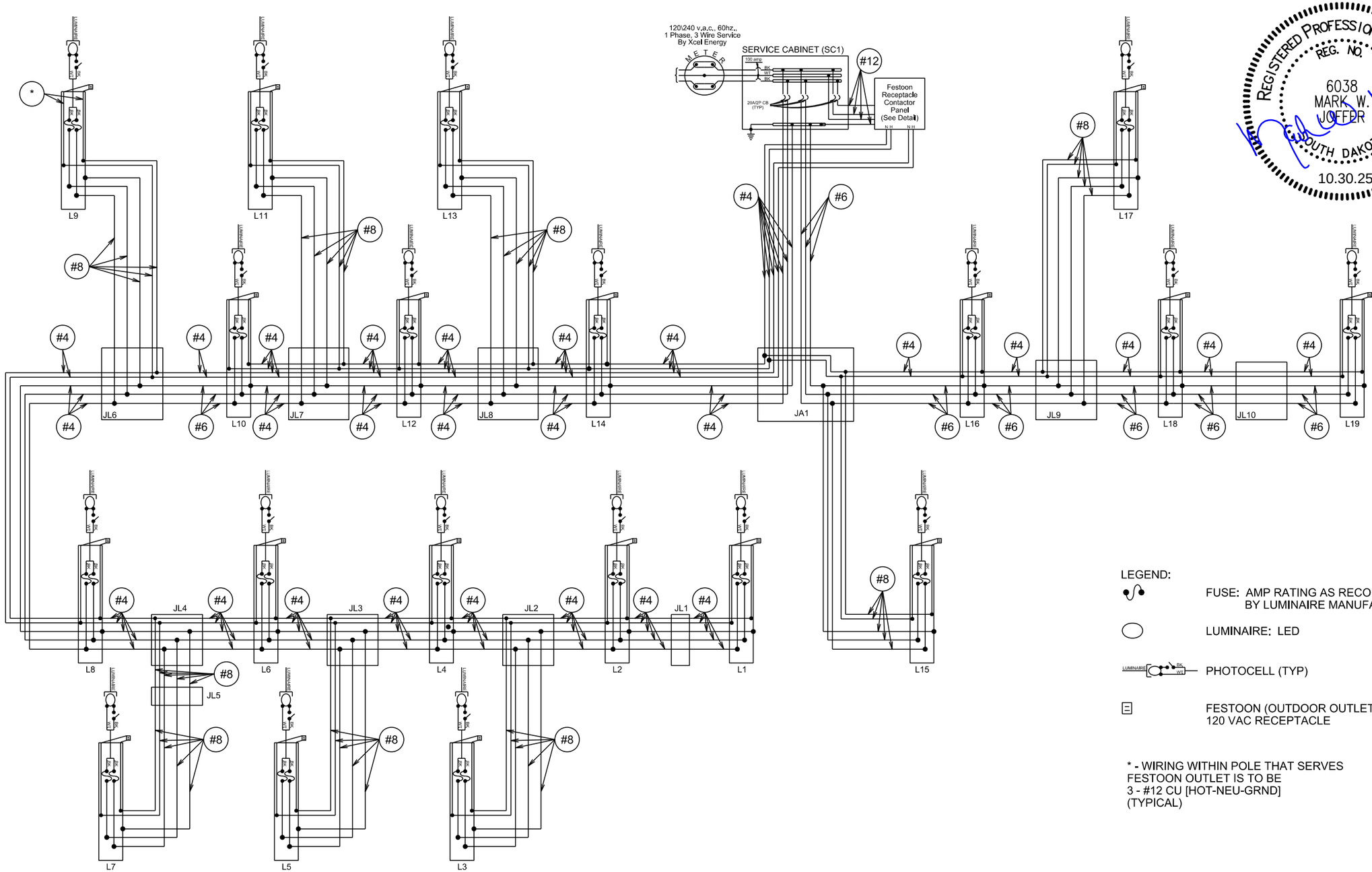
Plotting Date: 11/5/2025

WIRE DIAGRAM
SD HWY 44



LEGEND:

- FUSE: AMP RATING AS RECOMMENDED BY LUMINAIRE MANUFACTURER
- LUMINAIRE: LED
- PHOTOCELL (TYP)
- FESTOON (OUTDOOR OUTLET) 120 VAC RECEPTACLE

* - WIRING WITHIN POLE THAT SERVES FESTOON OUTLET IS TO BE 3 - #12 CU [HOT-NEU-GRND] (TYPICAL)

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 6038
MARK W. JOFFER
SOUTH DAKOTA
10.30.25

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	101	194

Plotting Date: 11/5/2025

WIRE DIAGRAM
SD HWY 44

LEGEND:

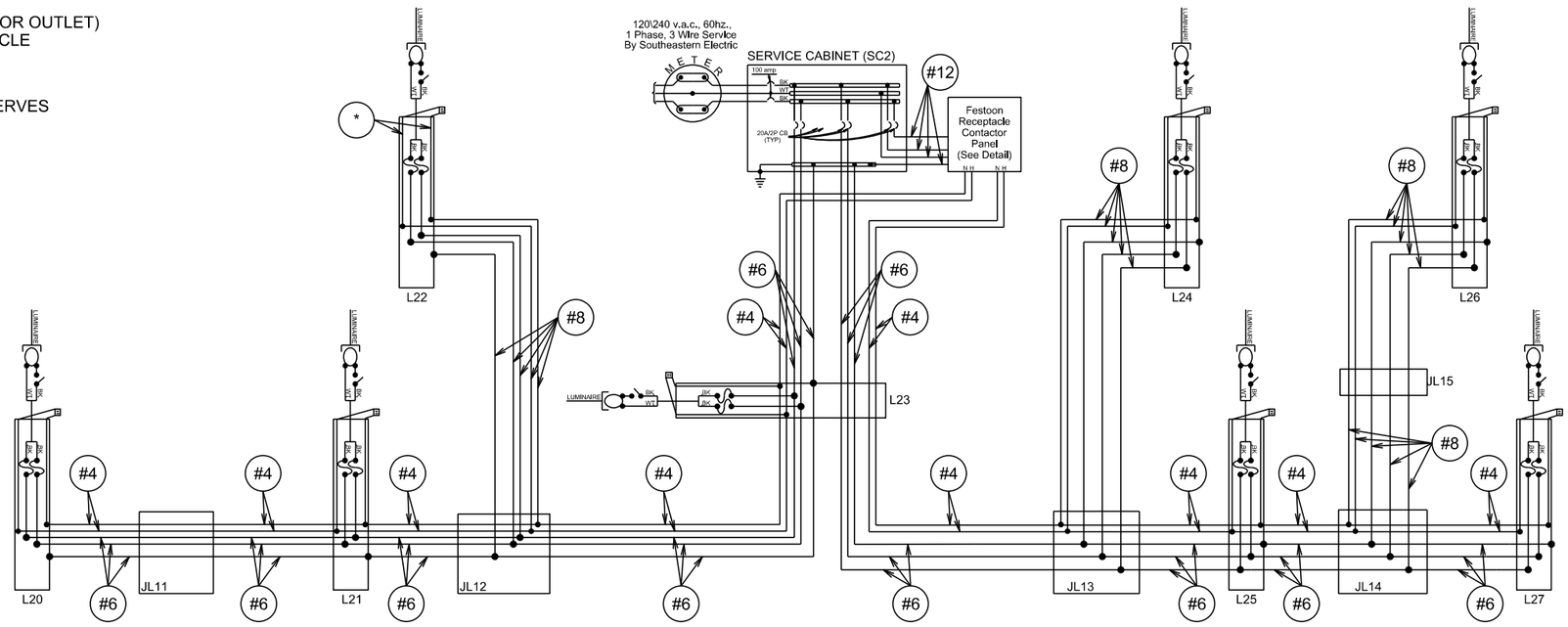
FUSE: AMP RATING AS RECOMMENDED BY LUMINAIRE MANUFACTURER

LUMINAIRE: LED

PHOTOCELL (TYP)

FESTOON (OUTDOOR OUTLET)
120 VAC RECEPTACLE

* - WIRING WITHIN POLE THAT SERVES FESTOON OUTLET IS TO BE 3 - #12 CU [HOT-NEU-GRND] (TYPICAL)



REGISTERED PROFESSIONAL ENGINEER
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6038
MARK W.
JOFFER
SOUTH DAKOTA
10.30.25

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	102	194

Plotting Date: 11/5/2025

FOR BIDDING PURPOSES ONLY

PANELBOARD AND LIGHT FIXUTRE SCHEDULES

* REFER TO LIGHTING PLANS FOR PROPER WIRE SIZE.

** PROVIDE PANELBOARD WITH FACTORY INSTALLED SURGE PROTECTION DEVICE (100kA)

*** PROVIDE GFCI BREAKER

Hwy 44

Luminaire Schedule

Qty	Label	Arrangement	Description	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Mounting Height	Arm
2	ARCH-L-PA3 (COOPER)	Single	**ARCH-L-PA3-210-740-U-T2R-HSS**	0.800	23866	211	422	50	8
25	ARCH-L-PA3 (COOPER)	Single	**ARCH-L-PA3-210-740-U-T2R**	0.800	30114	211	5275	50	8

Luminaire Schedule

Qty	Label	Arrangement	Description	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Mounting Height	Arm
2	ATB2-P603 (AMERICAN)	Single	**ATB2-P603-R2-4K-HSS**	0.800	28417	233	466	50	8
25	ATB2-P603 (AMERICAN)	Single	**ATB2-P603-R2-4K**	0.800	34019	233	5825	50	8

PANEL "SC1" ** (NEMA 4X - GASKETED)		VOLTS - 120/240V PHASE - 1 WIRE - 3 MAIN CAPACITY - 100 AMPERES MOUNTING - SURFACE FEEDER SIZE - SEE ONELINE DIAGRAM MAIN CONNECTION - MCB												
CCT NO	ITEM FED	DISTRIBUTION WATTS	WIRE SIZE	CIRCUIT BREAKER AMP	CIRCUIT BREAKER POLES	CIRCUIT BREAKER FRAME	N	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER AMP	WIRE SIZE	DISTRIBUTION WATTS	ITEM FED	CCT NO
1	WEST LIGHTS	1000	*	20	2	10KAIC	L1	10KAIC	2	20	*	1000	EAST LIGHTS	2
3		1000	*	20		10KAIC	L2	10KAIC		20	*	1000		4
5	FESTOON RECEPT. ***	1000	*	20	2	10KAIC	L1	10KAIC	2	20	N/A	0	SPARE	6
7		1000	*	20		10KAIC	L2	10KAIC		20	N/A	0		8
9	SPARE	0	N/A	20	1	10KAIC	L1	10KAIC	1	20	N/A	0	SPARE	10
11	SPARE	0	N/A	20	1	10KAIC	L2	10KAIC	1	20	N/A	0	SPARE	12

PANEL "SC2" ** (NEMA 4X - GASKETED)		VOLTS - 120/240V PHASE - 1 WIRE - 3 MAIN CAPACITY - 100 AMPERES MOUNTING - SURFACE FEEDER SIZE - SEE ONELINE DIAGRAM MAIN CONNECTION - MCB												
CCT NO	ITEM FED	DISTRIBUTION WATTS	WIRE SIZE	CIRCUIT BREAKER AMP	CIRCUIT BREAKER POLES	CIRCUIT BREAKER FRAME	N	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER AMP	WIRE SIZE	DISTRIBUTION WATTS	ITEM FED	CCT NO
1	WEST LIGHTS	1000	*	20	2	10KAIC	L1	10KAIC	2	20	*	1000	EAST LIGHTS	2
3		1000	*	20		10KAIC	L2	10KAIC		20	*	1000		4
5	FESTOON RECEPT. ***	500	*	20	2	10KAIC	L1	10KAIC	2	20	N/A	0	SPARE	6
7		500	*	20		10KAIC	L2	10KAIC		20	N/A	0		8
9	SPARE	0	N/A	20	1	10KAIC	L1	10KAIC	1	20	N/A	0	SPARE	10
11	SPARE	0	N/A	20	1	10KAIC	L2	10KAIC	1	20	N/A	0	SPARE	12

REGISTERED PROFESSIONAL ENGINEER
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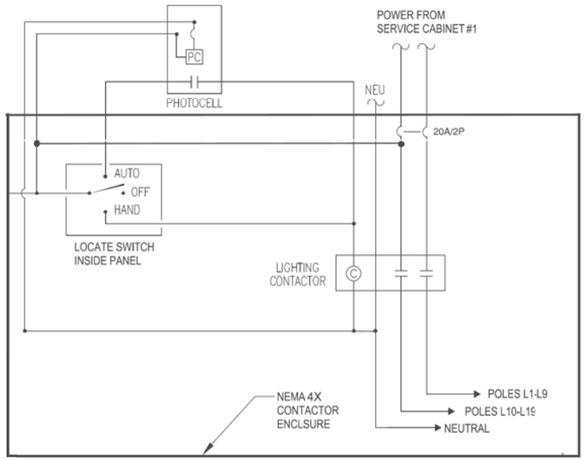
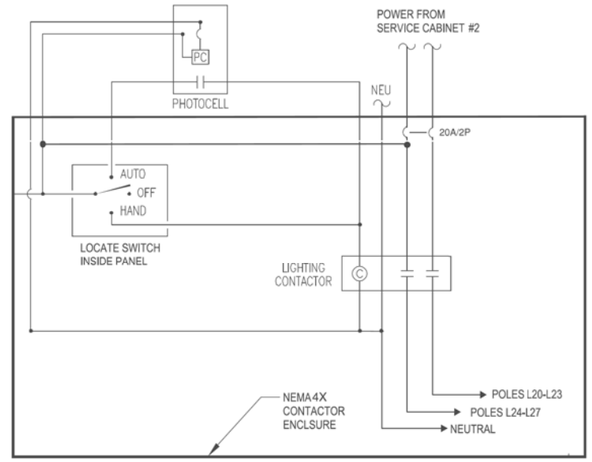
NOTES:

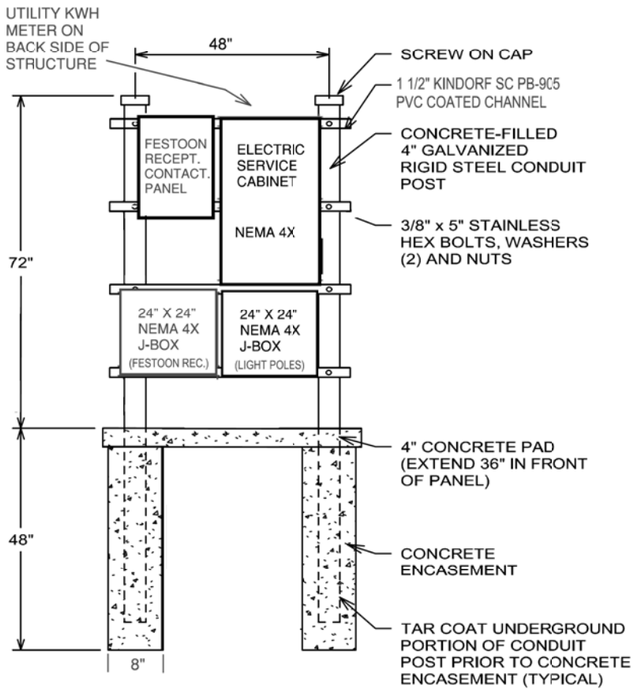
1. COORDINATE ALL SERVICE DETAILS WITH SERVING UTILITY. PROVIDE MATERIAL AND LABOR ACCORDINGLY.
2. OVERSIZE CONDUCTORS ARE REQUIRED TO ACCOMMODATE VOLTAGE DROP ON BRANCH CIRCUITS POWERING LIGHT POLES. THESE CONDUCTORS ARE TOO LARGE TO TERMINATE UNDER ASSOCIATED BRANCH CIRCUIT BREAKER LUGS. PROVIDE PROPERLY SIZED BRANCH CIRCUIT CONDUCTOR FROM BREAKER TO J-BOX (I.E. #12 CU - 20A CB/#10 CU - 30A CB). SPLICE THESE SMALLER CONDUCTORS TO ASSOCIATED LARGER CONDUCTORS RUNNING FROM J-BOX TO LIGHT POLES.
3. SPLICE CONDUCTORS UTILIZING MULTI-PORT, EPDM RUBBER PEDESTAL CONNECTORS WITH PRE-FILLED OXIDE INHIBITOR GEL, BY NSI INDUSTRIES (OR EQUAL).



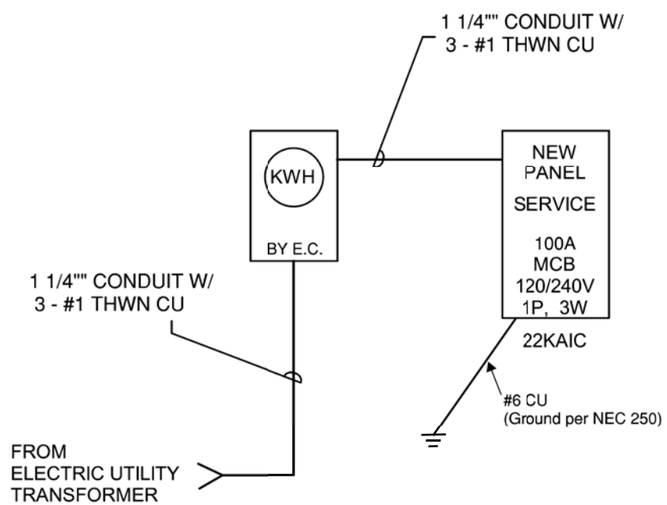
FESTOON RECEPTACLE CONTACTOR PANEL (POLES L1-L19)



FESTOON RECEPTACLE CONTACTOR PANEL (POLES L20-L27)



ELECTRIC PEDESTAL DETAIL



TYPICAL ELECTRIC SERVICE POWER 1 - LINE

* SERVICE CHARACTERISTICS:

100 AMP
120/240V
1 PHASE, 3 WIRE

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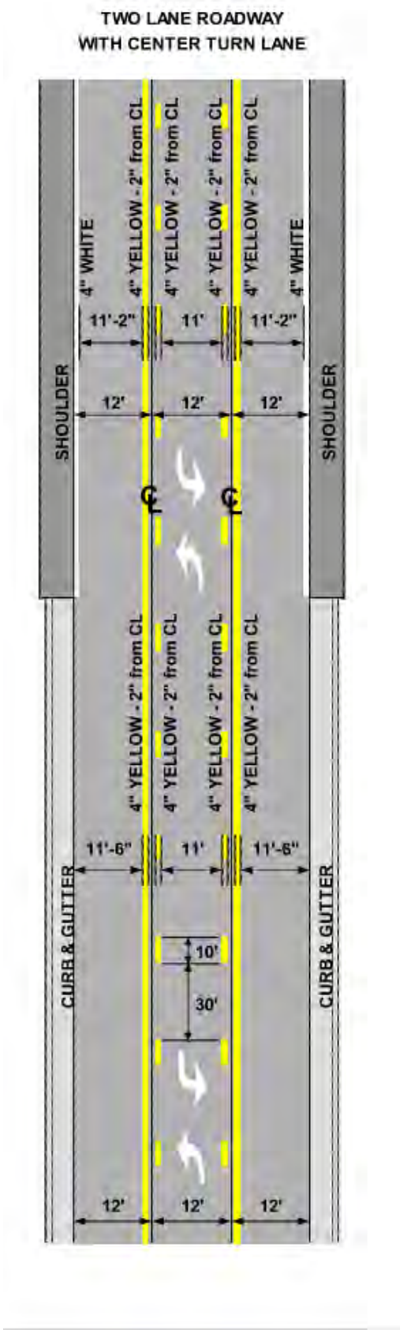

PAVEMENT MARKING – PCN08GM

Typical pavement marking as shown on this sheet will be applied throughout the entire length of two lane roadway, and two lane with center turn lane roadway.

Traffic Control will be incidental to the cost of application. The striper and advance or trailing warning vehicle will be equipped with flashing amber lights and advance warning arrow board.

Application rates for will be as follows:

08GM - SD 44 (North-South)

Two Lane Roadway with Center Turn Lane (Rates for one line)	
Solid Yellow Centerline	Rate = 16.9 Gals./Pass-Mile
Dashed Yellow Centerline	Rate = 4.6 Gals./Pass-Mile
Solid White Edgeline	Rate = 16.9 Gals./Pass-Mile
(Not applicable in curb and gutter)	

ESTIMATED QUANTITIES (BASED ON ONE APPLICATION)	
PAINT	**QUANTITY**
WHITE	**73.3 GALLONS**
YELLOW	**10.1 GALLONS**

Included in the above quantities are:

Additional White (1 Application)

Description		Gallons
4" Lines	11407'	48.6
8" Lines	-	-
12" Gore Lines	-	-
Crosswalks	-	-
12" Lines	-	-
24" Lines	100'	4
Solid Areas	-	-
Arrows		
Left Arrows	31 Ea	20.7
Right Arrows	-	-
Straight Arrows	-	-
Combo Arrows	-	-
Lane Drop Arrows	-	-
Messages		
STOP	-	-
STOP AHEAD	-	-
R X R with Bars	-	-
SCHOOL X-ING	-	-
	White:	73.3

Additional Yellow (1 Application)

Description		Gallons
4" Lines	1160'	4.9
Transitions	0'	0
4" Skip Lines	4396'	5.2
8" Lines	-	-
12" Lines	-	-
24" Lines	0'	0
Solid Areas	-	-
	Yellow:	10.1

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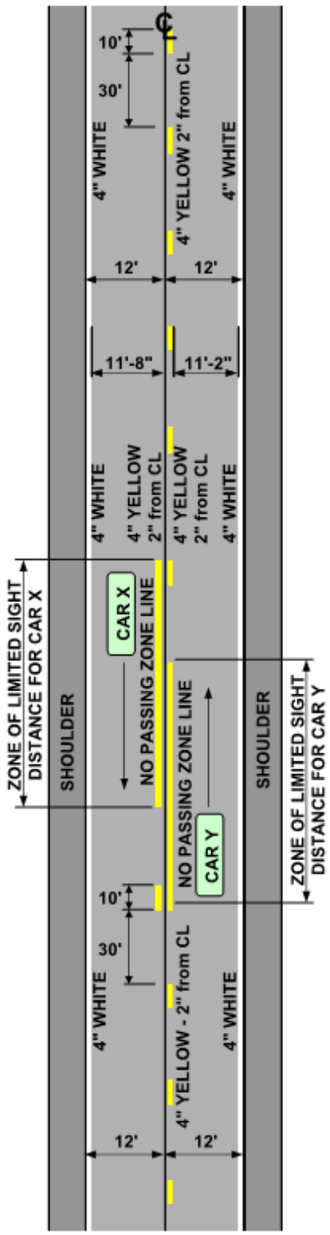
TWO LANE ROADWAY



PAVEMENT MARKING – PCN 08GM

Typical pavement marking as shown on this sheet will be applied throughout the entire length of two lane roadway.

Traffic Control will be incidental to the cost of application. The striper and advance or trailing warning vehicle will be equipped with flashing amber lights and advance warning arrow board.

Application rates for will be as follows:

08GM - SD 44 (East-West)

Two Lane Roadway (Rates for one line)
Dashed Yellow Centerline Rate = 6.2 Gals./Pass-Mile
Solid Yellow Centerline Rate = 22.5 Gals./Pass-Mile
Solid White Edgeline Rate = 22.5 Gals./Pass-Mile

ESTIMATED QUANTITIES (BASED ON ONE APPLICATION)		
PAINT		QUANTITY
WHITE	205.5	GALLONS
YELLOW	32.4	GALLONS

Included in the above quantities are:					
Additional White (1 Application)			Additional Yellow (1 Application)		
Description		Gallons	Description		Gallons
4" Lines	47906'	204.1	4" Lines	1056'	4.5
8" Lines	-	-	Transitions	0'	0
12" Gore Lines	-	-	4" Skip Lines	23755'	27.9
Crosswalks	-	-	8" Lines	-	-
12" Lines	-	-	12" Lines	-	-
24" Lines	33'	1.3	24" Lines	0'	0
Solid Areas	-	-	Additional Yellow:		32.4
Arrows					
Left Arrows	0 Ea	-			
Right Arrows	-	-			
Straight Arrows	-	-			
Combo Arrows	-	-			
Lane Drop Arrows	-	-			
Messages					
STOP	-	-			
STOP AHEAD	-	-			
R X R with Bars	-	-			
SCHOOL X-ING	-	-			
Additional White:		205.5			

Additional Quantities

Rates of Coverage:	SqFt/Gal
4", 8" and 12" Lines -	80
24" Lines and Bars -	50
Arrows, Messages and Solid Areas -	30

All pavement marking dimensions are based on 12' driving lanes.

PAVEMENT MARKING – PCN09VC

Typical pavement marking as shown will be applied throughout the entire length of the ramps.

Traffic Control will be incidental to the cost of application. The striper and advance or trailing warning vehicle will be equipped with flashing amber lights and advance warning arrow board.

Application rates for will be as follows:

ESTIMATED QUANTITIES (BASED ON ONE APPLICATION)	
PAINT	QUANTITY
WHITE	3078 FT
YELLOW	2980 FT

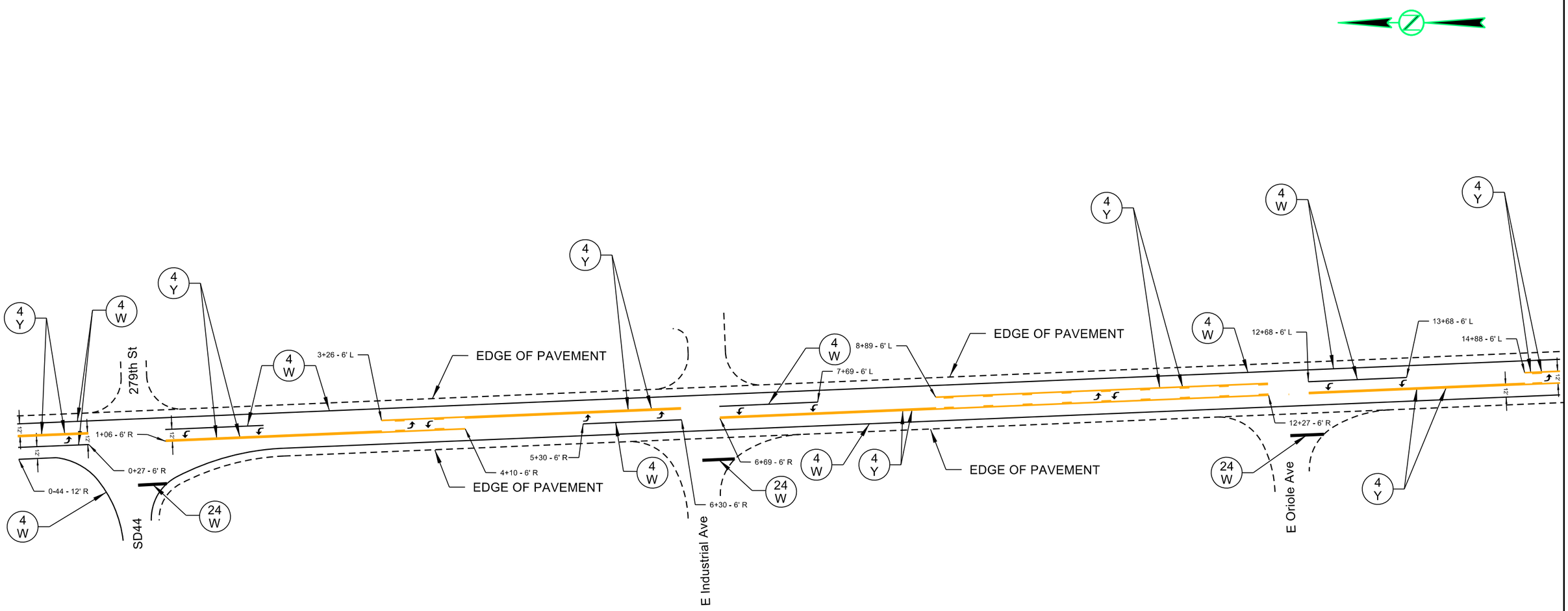
Included in the above quantities are:			
Additional White (1 Application)		Additional Yellow (1 Application)	
Description	Feet	Description	Feet
4" Lines	3078	4" Lines	2980
8" Lines	-	Transitions	-
12" Gore Lines	-	4" Skip Lines	-
Crosswalks	-	8" Lines	-
12" Lines	-	12" Lines	-
24" Lines	-	24" Lines	-
Solid Areas	-	Solid Areas	-
Arrows		Yellow:	2980
Left Arrows	-		
Right Arrows	-		
Straight Arrows	-		
Combo Arrows	-		
Lane Drop Arrows	-		
Messages			
STOP	-		
STOP AHEAD	-		
R X R with Bars	-		
SCHOOL X-ING	-		
White:	3078		

Pavement Marking Layout

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	106	194

Plotting Date: 11/5/2025



REGISTERED PROFESSIONAL ENGINEER
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11-5-25
SOUTH DAKOTA

Sign Removal Table

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	107	194

Plotting Date: 11/5/2025 Rev 11/17/2025 RJM

STATION	SIGN ASSEMBLY DESCRIPTION	SIGN SIZE (IN)	REMOVE 110E0130	REMOVE SIGN FOR RESET 110E7150	RESET 632E3500	TYPE OF POST	FIXED	BREAKAWAY	REMOVE CONC FOOTING
SD 44 EAST									
1+06 R	STOP	48 X 48	1			PT		1	
	MRM 407.31	4.5 X 21							
1+26 L	EAST	24 X 12	1			PT		1	
	44	24 X 24							
	→	21 X 15							
2+14 R	EAST	24 X 24	1			PT		1	
	44	21 X 15							
6+72 R	STOP	30 X 30	1			PT		1	
	Street Signs	30 X 6		1	1				
12+72 R	STOP	30 X 30	1			PT		1	
	Street Signs	30 X 6		1	1				
15+37 R	SPEED LIMIT 65	24 X 30	1			W		1	
41+08 L	NO PASSING ZONE	48X48X36	1			PT		1	
45+07 R	JCT	21 X15	1			PT		1	
	44	24 X 24							
47+15 R	←TO 29 5 ←Worthing 6	72 X 30	1			PT		2	
	LINCOLN COUNTY 124	24 X 24		1	1				
	→	21 X 15							
51+76 R	EAST	24 X 12	1			PT		1	
	44	24 X 24							
	←┌	21 X 15							
3+50 R	OFF ROAD VEHICLES PROHIBITED IN DITCH	18 X 36	1			PT		1	
54+90 R	OFF ROAD VEHICLES PROHIBITED IN DITCH	18 X 36	1			PT		1	
108+90 R	OFF ROAD VEHICLES PROHIBITED IN DITCH	18 X 36	1			PT		1	
153+18 R	← Tea 8	60 X 18	1			PT		1	
	LINCOLN COUNTY 111	24 X 24		1	1				
	↔	21 X 15							
163+58 R	OFF ROAD VEHICLES PROHIBITED IN DITCH	18 X 36	1			PT		1	
214+74 R	↑ SPEED LIMIT 40	30 X 30	1			PT		1	
221+37 R	SPEED LIMIT 40	24 X 30	1			W		1	
	NO PASSING ZONE	48X48X36	Installed on back of Westbound D-Board						
	SUBTOTALS		17	4	4		0	18	0

STATION	SIGN ASSEMBLY DESCRIPTION	SIGN SIZE (IN)	REMOVE 110E0130	REMOVE SIGN FOR RESET 110E7150	RESET 632E3500	TYPE OF POST	FIXED	BREAKAWAY	REMOVE CONC FOOTING
SD 44 EAST									
227+41 R	JCT	21 X 15	1			PT		1	
	29	24 X 24							
230+37 R	↑ Worthing ↑ Sioux Falls Beresford →	108 X 60	1			PT		2	
233+43 R	END SOUTH	48 X 12	1			PT		1	
	44 29	48 X 24							
	→	21 X 15							
235+99 R	↑ Worthing ←Sioux Falls	108 X 36	1			REMOVE OVERLAY			
239+00 R	NORTH	24 X 12	1			R	1		1
	29	24 X 24							
	←	21 X 15							
242+39 R	LINCOLN COUNTY 124	24 X 24		1	1	PT		1	
244+78 R	END	24 X 12	1			W		1	
	44	24 X 24							
SD 44 WEST									
243+33	↑ Lennox ↑ Beresford Sioux Falls →	108 X 60	1			PT		2	
245+55 L	WEST NORTH	48 X 12	1			W		1	
	44 29	48 X 24							
	↑ →	21 X 15							
238+98 L	↑ Lennox ←Beresford	108 X 36	1			REMOVE OVERLAY			
235+95 L	SOUTH WEST	48 X 12	1			R	1		1
	29 44	48 X 24							
	←	21 X 15							
230+34 L	WEST	24 X 12	1			PT		1	
	44	24 X 24							
255+87 L	Lennox 5	72 X 24	1			PT		2	
221+36 L	SPEED LIMIT 65	24 X 30	1			PT		1	
163+55 L	Tea 8 →	60 X 18	1			PT		1	
	LINCOLN COUNTY 111	24 X 24		1	1				
	↔	21 X 15							
156+09 L	WEST	24 X 12	1			W		1	
	44	24 X 24							
102+61 L	OFF ROAD VEHICLES PROHIBITED IN DITCH	18 X 36	1			PT		1	
50+03 L	OFF ROAD VEHICLES PROHIBITED IN DITCH	18 X 36	1			PT		1	
10+53 L	LINCOLN COUNTY 124	24 X 24		1	1	PT		1	
	↔	21 X 15							
8+73 L	STOP AHEAD (SYM)	48 X 48	1			PT		1	
	SUBTOTALS		17	3	3		2	17	2

STATION	SIGN ASSEMBLY DESCRIPTION	SIGN SIZE (IN)	REMOVE 110E0130	REMOVE SIGN FOR RESET 110E7150	RESET 632E3500	TYPE OF POST	FIXED	BREAKAWAY	REMOVE CONC FOOTING
SD 44 WEST									
8+21 R	NO PASSING ZONE	48X48X36	1			PT		1	
5+90 L	Lennox →	84 X 24	1			PT		2	
3+32 L	WEST	24 X 12	1			PT		1	
	44	24 X 24							
	↱	21 X 15							
0+82 L	STOP	48 X 48	1			PT		1	
52+70 R	44	24 X 24	1			P1		1	
	→	21 X 15							
52+20 L	WEST	24 X 12	1			W		1	
	44	24 X 24							
43+15 L	911 sign	24 X 6	1	1	1	U		1	
42+60 L	911 sign	24 X 6	1	1	1	U		1	
26+14 L	↑ SPEED LIMIT 45	48 X 48	1			PT		1	
21+18 L	DYNAMIC ENGINE BRAKING PROHIBITED	30 X 36	1			PT		1	
18+44 L	Lennox Pop 2111	60 x 24	1			PT		1	
17+78 R	NO PASSING ZONE	48X48X36	1			PT		1	
15+42 L	SPEED LIMIT 45	24 X 30	1			W		1	
14+27 L	44	24 X 24	1			PT		1	
	←┌	21 X 15							
6+85 L	911 sign	24 X 6	1	1	1	U		1	
6+14 L	↑ TO 42 14 ← Chancellor 6	72 X 30		1	1	PT		2	
1+80 L	WEST	24 X 12	1			PT		1	
	44	24 X 24							
	←	21 X 15							
467TH AVE									
52+20 L	STOP	30 X 30	1			W		1	
52+57 R	STOP	30 X 30	1			W		1	
468TH AVE									
105+52 L	STOP	30 X 30	1			PT		1	
105+82 R	STOP	30 X 30	1			W		1	
469TH AVE									
158+12 L	STOP	36 X 36	1			W		1	
158+58 R	STOP	36 X 36	1			PT		1	
470TH AVE									
210+85 L	STOP	30 X 30	1			PT		1	
21+24 R	STOP	30 X 30	1			PT		1	
	SUBTOTALS		24	4	4		0	27	0
	TOTALS THIS SHEET		58	11	11		2	62	2

SHEET 1 OF 1

Sign InstallationTable

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	108	194

Plotting Date: 11/5/2025

SIGN DATA									POST DATA				
STATION	DESCRIPTION	SIGN CODE	SIGN SIZE (Ft)	SIGN AREA (SqFt) Type IV	SIGN AREA (SqFt) TYPE XI	OFFSET* (R)IGHT/ (L)EFT	SIGN FACES	COMMENTS	POST LENGTHS X INSIDE	POST LENGTHS X OUTSIDE	BREAK-AWAY #	SIZE/QUANTITY {Ft} 2.0"x2.0" TUBE	SIZE/QUANTITY {Ft} 2.25"x2.25" TUBE	SIZE/QUANTITY {Ft} 2.5"x2.5" TUBE
SD 44 EB				632E3203	632E3205							632E1320	632E1330	632E1340
1+06 R	STOP MRM 407.31	R1-1 D10-2	4.0 X 4.0 0.375 X 1.75	0.656	13.3	12' R	WEST	INSTALL NEW SIGN ON NEW POST	12.8'		A			12.8
1+26 L	EAST 44 →	M3-2 M1-5 M6-1	2.0 X 1.0 2.0 X 2.0 1.75 X 1.25	2.0 4.0 2.18		16' L	WEST	INSTALL NEW SIGN ON NEW POST	13.8'		A		13.8	
2+14 R	EAST 44	M3-2 M1-5	2.0 X 1.0 2.0 X 2.0	2.0 4.0		16' R	NORTH	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
6+72 R	STOP Street Signs	R1-1 Street	2.5 X 2.5 2.5 X 0.5		5.2	12' R	EAST	INSTALL NEW SIGN ON NEW POST INSTALL EXISTING STREET SIGNS ON SAME POST	13.0		A		13.0	
12+72 R	STOP Street Signs	R1-1 Street	2.5 X 2.5 3.0 X 0.5		5.2	12' R	EAST	INSTALL NEW SIGN ON NEW POST INSTALL EXISTING STREET SIGNS ON SAME POST	13.0		A		13.0	
15+37 R	SPEED LIMIT 65	R2-1	2.0 X 2.5	5.0		16' R	NORTH	INSTALL NEW SIGN ON NEW POST	12'		A	12.0		
41+08 L	NO PASSING ZONE	W14-3	4.0 X 4.0 X 3.0		5.6	16' L	NORTH	INSTALL NEW SIGN ON NEW POST	12.6'		A	12.6		
45+00 R	EAST 44 ←	M3-2 M1-5	2.0 X 1.0 2.0 X 2.0 1.75 X 1.25	2.0 4.0 2.18		16' R	NORTH	INSTALL NEW SIGN ON NEW POST	13.8'		A		13.8	
47+00 R	←TO 29 5 ←Worthing 6	SPECIAL	7.0 X 2.5	17.5		16' R	NORTH	INSTALL NEW SIGN ON NEW POST	11.6' 12.6'		A		24.2	
49+00 R	LINCOL COUNTY 124 →	COUNTY	1.5 X 2.0			16' R	NORTH	RESET EXISTING SIGN ON NEW POST	12.3'		A	12.3		
51+75 R	EAST 44 ←	M3-2 M1-5 M6-1	2.0 X 1.0 2.0 X 2.0 1.75 X 1.25	2.0 4.0 2.18		16' R	NORTH	INSTALL NEW SIGN ON NEW POST	13.8'		A		13.8	
3+50 R	OFF ROAD VEHICLES PROHIBITED IN DITCH	R5-7B	1.5 X 3.0	4.5		16' R	WEST	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
54+90 R	OFF ROAD VEHICLES PROHIBITED IN DITCH	R5-7B	1.5 X 3.0	4.5		16' R	WEST	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
108+90 R	OFF ROAD VEHICLES PROHIBITED IN DITCH	R5-7B	1.5 X 3.0	4.5		16' R	WEST	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
151+13 R	LINCOL COUNTY 111 ↔	COUNTY	1.5 X 2.0			16' R	NORTH	RESET EXISTING SIGN ON NEW POST	12.3'		A	12.3		
153+18 R	← Tea 8	SPECIAL	5.0 X 1.5	7.5		16' R	WEST	INSTALL NEW SIGN ON NEW POST	9.0'		A	9.0		
TOTALS THIS SHEET				74.7	29.3							109.4	91.6	12.8

* - distance from back of curb to edge of sign

X -Plan post lengths are estimates. The post lengths shall be field verified by the Contractor.

- (S)lip Base on winged (A)nchor

Sign InstallationTable

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	109	194

Plotting Date: 11/5/2025

SIGN DATA									POST DATA				
STATION	DESCRIPTION	SIGN CODE	SIGN SIZE (Ft)	SIGN AREA (SqFt)		OFFSET* (R)IGHT/ (L)EFT	SIGN FACES	COMMENTS	POST LENGTHS X		BREAK-AWAY	SIZE/QUANTITY {Ft}		
				Type IV	TYPE XI				INSIDE	OUTSIDE	#	2.0"x2.0" TUBE	2.25"x2.25" TUBE	2.5"x2.5" TUBE
				632E3203	632E3205							632E1320	632E1330	632E1340
SD 44 EB														
163+58 R	OFF ROAD VEHICLES PROHIBITED IN DITCH	R5-7B	1.5 X 3.0	4.5		16' R	WEST	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
214+74 R	↑ SPEED LIMIT 40	W3-5	3.0 X 3.0		9.0	16' R	WEST	INSTALL NEW SIGN ON NEW POST	13.3'		A		13.3	
221+37 R	SPEED LIMIT 40	R2-1	2.0 X 2.5	5.0		16' R	WEST	INSTALL NEW SIGN ON NEW POST	12'		A	12.0		
227+41 R	JCT 29	M2-1 M1-1	2.0 X 1.0 2.0 X 2.0	2.0 4.0		16' R	WEST	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
230+37 R	↑ Worthing ↑ Sioux Falls Sioux City →	SPECIAL	9.0 X 5.0	45.0		16' R	WEST	INSTALL NEW SIGN ON NEW POST	14.0'	15.6'	A			29.6
233+43 R	END SOUTH 44 29 →	M4-6 & M3-3 M1-5 & M1-1 M6-1	4.0 X 1.0 4.0 X 2.0 1.75 X 1.25	2.0 4.0 2.18		16' R	WEST	INSTALL NEW SIGN ON NEW POST	13.8'		A			13.8
235+99 R	↑ Worthing ←Sioux Falls	SPECIAL	9.0 X 3.0	27.0		16' R	WEST	INSTALL NEW OVERLAY USE EXISTING PANELS & SUPPORTS						
239+00 R	NORTH 29 ←	M3-1 M1-1 M6-1	2.0 X 1.0 2.0 X 2.0 1.75 X 1.25	2.0 4.0 2.18		16' R	WEST	INSTALL NEW SIGN ON NEW POST	13.8'		A		13.8	
SD 44 WB														
243+33 L	↑ Lennox ↑ Sioux City Sioux Falls →	SPECIAL	9.0 X 5.0	45.0		16' L	EAST	INSTALL NEW SIGN ON NEW POST	14.0'	15.6'	A			29.6
245+55 L	WEST NORTH 44 29 ↑ →	M3-4 & M3-1 M1-5 & M1-1 M6-3 & M6-1	4.0 X 1.0 4.0 X 2.0 3.5 X 1.25	4.0 8.0 4.38		16' L	EAST	INSTALL NEW SIGN ON NEW POST	13.8'		A			13.8
238+98 L	↑ Lennox ←Sioux City	SPECIAL	9.0 X 3.0	27.0		16' L	EAST	INSTALL NEW OVERLAY USE EXISTING PANELS & SUPPORTS						
235+95 L	SOUTH WEST 29 44 ←	M3-3 & M3-4 M1-1 & M1-5 M6-1	4.0 X 1.0 4.0 X 2.0 1.75 X 1.25	4.0 8.0 4.38		16' L	EAST	INSTALL NEW SIGN ON NEW POST	13.8'		A			13.8
TOTALS THIS SHEET				208.6	9.0							37.6	27.1	100.6

*** - distance from back of curb to edge of sign**

X -Plan post lengths are estimates. The post lengths shall be field verified by the Contractor.

- (S)lip Base on winged (A)nchor

Sign InstallationTable

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	110	194

Plotting Date: 11/5/2025

SIGN DATA									POST DATA				
STATION	DESCRIPTION	SIGN CODE	SIGN SIZE (Ft)	SIGN AREA (SqFt) Type IV	SIGN AREA (SqFt) TYPE XI	OFFSET* (R)IGHT/ (L)EFT	SIGN FACES	COMMENTS	POST LENGTHS X INSIDE	POST LENGTHS X OUTSIDE	BREAK-AWAY #	SIZE/QUANTITY {Ft} 2.0"x2.0" TUBE	SIZE/QUANTITY {Ft} 2.25"x2.25" TUBE	SIZE/QUANTITY {Ft} 2.5"x2.5" TUBE
SD 44 WB				632E3203	632E3205							632E1320	632E1330	632E1340
230+34 L	WEST 44	M3-4 M1-5	2.0 X 1.0 2.0 X 2.0	2.0 4.0		16' L	EAST	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
255+87 L	Lennox 5	SPECIAL	6.0 X 1.5	9.0		16' L	EAST	INSTALL NEW SIGN ON NEW POST	10.8'		A		10.8	
221+36 L	SPEED LIMIT 65	R2-1	2.0 X 2.5	5.0		16' L	EAST	INSTALL NEW SIGN ON NEW POST	12'		A	12.0		
165+55 L	LINCOL COUNTY 111 ↔	COUNTY	1.5 X 2.0			16' R	NORTH	RESET EXISTING SIGN ON NEW POST	12.3'		A	12.3		
163+55 L	Tea 8 →	SPECIAL	5.0 X 1.5			16' L	EAST	INSTALL NEW SIGN ON NEW POST	9.0'		A	9.0		
156+00 L	WEST 44	M3-4 M1-5	2.0 X 1.0 2.0 X 2.0	2.0 4.0		16' L	EAST	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
154+00 L	OFF ROAD VEHICLES PROHIBITED IN DITCH	R5-7B	1.5 X 3.0	4.5		16' L	EAST	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
102+61 L	OFF ROAD VEHICLES PROHIBITED IN DITCH	R5-7B	1.5 X 3.0	4.5		16' L	EAST	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
50+03 L	OFF ROAD VEHICLES PROHIBITED IN DITCH	R5-7B	1.5 X 3.0	4.5		16' L	EAST	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
10+53 L	LINCOL COUNTY 124 ↔	COUNTY	1.5 X 2.0			16' L	EAST	RESET EXISTING SIGN ON NEW POST	12.3'		A	12.3		
8+73 L	STOP AHEAD (SYM)	W3-1A	4.0 X 4.0		16.0	16' L	EAST	INSTALL NEW SIGN ON NEW POST	14.3'		A			14.3
8+21 R	NO PASSING ZONE	W14-3	4.0 X ## X3.0		5.6	16' R	EAST	INSTALL NEW SIGN ON NEW POST	12.6'		A	12.6		
5+90 L	Lennox →	SPECIAL	6.0 X 1.5	9.0		16' L	EAST	INSTALL NEW SIGN ON NEW POST	10.8'		A		10.8	
3+32 L	WEST 44 ↱	M3-4 M1-5 M5-1R	2.0 X 1.0 2.0 X 2.0 1.75 X 1.25	2.0 4.0 2.18		16' L	EAST	INSTALL NEW SIGN ON NEW POST	13.8'		A		13.8	
0+82 L	STOP	R1-1	4.0 X 4.0		13.3	12' L	EAST	INSTALL NEW SIGN ON NEW POST	12.8'		A			12.8
52+70 R	44 →	M1-5 M6-1	2.0 X 2.0 1.75 X 1.25	2.0 4.0		16' R	SOUTH	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
52+20 L	WEST 44	M3-4 M1-5	2.0 X 1.0 2.0 X 2.0	2.0 4.0		16' L	SOUTH	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
43+15 L	911 sign	911	2.0 X 0.50				EAST	RESET EXISTING SIGN ON EXISTING POST						
42+60 L	911 sign	911	2.0 X 0.50				EAST	RESET EXISTING SIGN ON EXISTING POST						
TOTALS THIS SHEET				68.7	34.9							147.8	24.6	27.1

*** - distance from back of curb to edge of sign**
\# - (S)lip Base on winged (A)nchor

X -Plan post lengths are estimates. The post lengths shall be field verified by the Contractor.

Sign InstallationTable

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	111	194

Plotting Date: 11/5/2025

SIGN DATA									POST DATA				
STATION	DESCRIPTION	SIGN CODE	SIGN SIZE (Ft)	SIGN AREA (SqFt)		OFFSET* (R)IGHT/ (L)EFT	SIGN FACES	COMMENTS	POST LENGTHS ⧗		BREAK-AWAY #	SIZE/QUANTITY {Ft}		
				Type IV	TYPE XI				INSIDE	OUTSIDE		2.0"x2.0" TUBE	2.25"x2.25" TUBE	2.5"x2.5" TUBE
SD 44 WB				632E3203	632E3205							632E1320	632E1330	632E1340
26+14 L	↑ SPEED LIMIT 45	W3-5	3.0 X 3.0		9.0	16' L	SOUTH	INSTALL NEW SIGN ON NEW POST	13.3'		A		13.3	
21+18 L	DYNAMIC ENGINE BRAKING PROHIBITED	R5-7B	2.5 X 3.0	7.5		16' L	SOUTH	INSTALL NEW SIGN ON NEW POST	12.6'		A		12.6	
18+44 L	Lennox Pop 2111	SPECIAL	6.0 X 2.0	12.0		16' L	SOUTH	INSTALL NEW SIGN ON NEW POST	11.6'		A		11.6	
17+78 R	NO PASSING ZONE	W14-3	4.0 X ## X3.0		5.6	16' R	SOUTH	INSTALL NEW SIGN ON NEW POST	12.6'		A	12.6		
15+42 L	SPEED LIMIT 45	R2-1	2.0 X 2.5	5.0		16' L	SOUTH	INSTALL NEW SIGN ON NEW POST	12'		A	12.0		
14+27 L	44 ←	M1-5 M5-1L	2.0 X 2.0 1.75 X 1.25	4.0 2.18		16' L	SOUTH	INSTALL NEW SIGN ON NEW POST	12.8'		A	12.8		
6+85 L	911 sign	911	2.0 X 0.50				EAST	RESET EXISTING SIGN ON EXISTING POST						
6+14 L	↑ TO 42 14 ← Chancellor 6	SPECIAL	6.0 X 2.5			16' L	SOUTH	RESET EXISTING SIGN INSTALLED ON 3/20/25 ON NEW POSTS	11.6'	12.0'	A	23.6		
1+80 L	WEST 44 ←	M3-4 M1-5 M6-1	2.0 X 1.0 2.0 X 2.0 1.75 X 1.25	2.0 4.0 2.18		16' L	SOUTH	INSTALL NEW SIGN ON NEW POST	13.8'		A		13.8	
467TH AVE														
52+20 L	STOP	R1-1	2.5 X 2.5		5.2	12' L	NORTH	INSTALL NEW SIGN ON NEW POST	11.8'		A	11.8		
52+57 R	STOP	R1-1	2.5 X 2.5		5.2	12' R	SOUTH	INSTALL NEW SIGN ON NEW POST	11.8'		A	11.8		
468TH AVE														
105+52 L	STOP	R1-1	2.5 X 2.5		5.2	12' L	NORTH	INSTALL NEW SIGN ON NEW POST	11.8'		A	11.8		
105+82 R	STOP	R1-1	2.5 X 2.5		5.2	12' R	SOUTH	INSTALL NEW SIGN ON NEW POST	11.8'		A	11.8		
469TH AVE														
158+12 L	STOP	R1-1	3.0 X 3.0		7.5	12' L	NORTH	INSTALL NEW SIGN ON NEW POST	12.5'		A	12.5		
158+58 R	STOP	R1-1	3.0 X 3.0		7.5	12' R	SOUTH	INSTALL NEW SIGN ON NEW POST	12.5'		A	12.5		
470TH AVE														
210+85 L	STOP	R1-1	2.5 X 2.5		5.2	12' L	NORTH	INSTALL NEW SIGN ON NEW POST	11.8'		A	11.8		
21+24 R	STOP	R1-1	2.5 X 2.5		5.2	12' R	SOUTH	INSTALL NEW SIGN ON NEW POST	11.8'		A	11.8		
TOTALS THIS SHEET				38.9	60.8							156.8	51.3	0.0
PROJECT TOTALS				**390.9**	**134.0**							**451.6**	**194.6**	**140.5**

*** - distance from back of curb to edge of sign**
# - (S)lip Base on winged (A)nchor

⧗ -Plan post lengths are estimates. The post lengths shall be field verified by the Contractor.

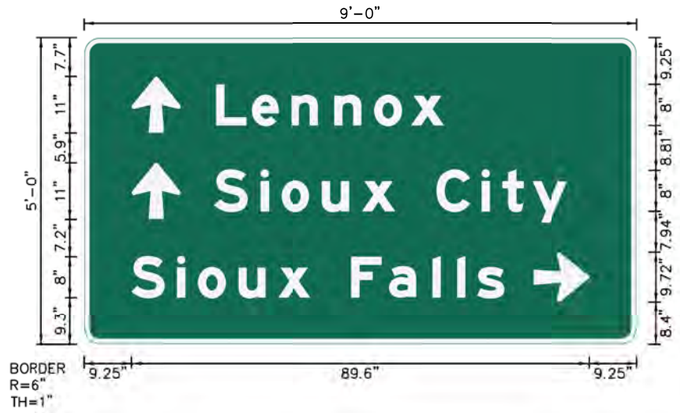
Sign Details

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	112	194

Plotting Date: 11/5/2025

SIGN NUMBER	SPECIAL	
WIDTH x HGHT.	9'–0" x 5'–0"	
BORDER WIDTH	1.5"	
CORNER RADIUS	6"	
MOUNTING	Shoulder Mounted	
BACKGROUND	TYPE:	Reflective
	COLOR:	Green
LEGEND/BORDER	TYPE:	Reflective
	COLOR:	White/White



SIGN NUMBER	SPECIAL	
WIDTH x HGHT.	9'–0" x 5'–0"	
BORDER WIDTH	1.5"	
CORNER RADIUS	6"	
MOUNTING	Shoulder Mounted	
BACKGROUND	TYPE:	Reflective
	COLOR:	Green
LEGEND/BORDER	TYPE:	Reflective
	COLOR:	White/White

SIGN NUMBER	SPECIAL	
WIDTH x HGHT.	9'–0" x 3'–0"	
BORDER WIDTH	1'5"	
CORNER RADIUS	3"	
MOUNTING	Shoulder Mounted	
BACKGROUND	TYPE:	Reflective
	COLOR:	Green
LEGEND/BORDER	TYPE:	Reflective
	COLOR:	White/White

SIGN NUMBER	SPECIAL	
WIDTH x HGHT.	9'–0" x 3'–0"	
BORDER WIDTH	1.5"	
CORNER RADIUS	3"	
MOUNTING	Shoulder Mounted	
BACKGROUND	TYPE:	Reflective
	COLOR:	Green
LEGEND/BORDER	TYPE:	Reflective
	COLOR:	White/White

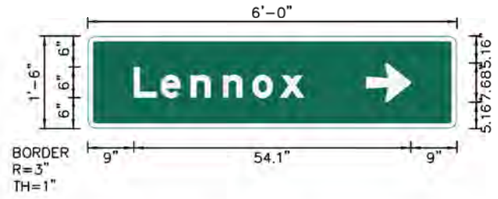
Sign Details

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	113	194

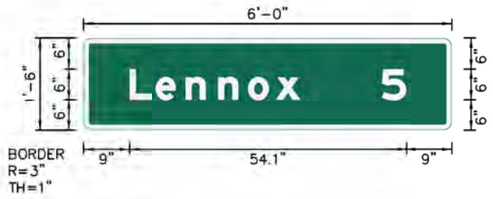
Plotting Date: 11/5/2025

SIGN NUMBER	SPECIAL
WIDTH x HGHT.	7'–0" x 2'–6"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Shoulder Mounted
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

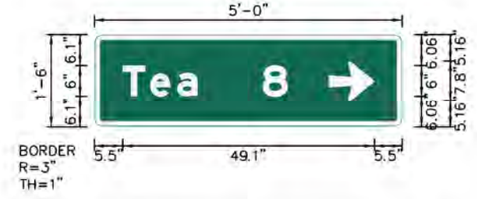


SIGN NUMBER	SPECIAL
WIDTH x HGHT.	6'–0" x 1'–6"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Shoulder Mounted
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SIGN NUMBER	SPECIAL
WIDTH x HGHT.	5'–0" x 1'–6"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Shoulder Mounted
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White



SIGN NUMBER	SPECIAL
WIDTH x HGHT.	6'–0" x 1'–6"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Shoulder Mounted
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White



SIGN NUMBER	SPECIAL
WIDTH x HGHT.	5'–0" x 1'–6"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Shoulder Mounted
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

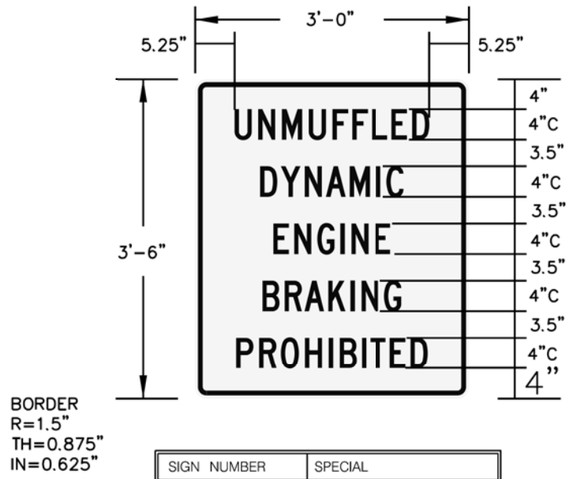
Sign Details

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	114	194

Plotting Date: 11/5/2025

SIGN NUMBER	SPECIAL
WIDTH x HGHT.	6'-0" x 2'-0"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Shoulder Mounted
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White



SIGN NUMBER	SPECIAL
WIDTH x HGHT.	3'-0" x 3'-6"
BORDER WIDTH	0.875"
CORNER RADIUS	1.5"
MOUNTING	Shoulder
BACKGROUND	TYPE: Reflective
	COLOR: White
LEGEND/BORDER	TYPE: Reflective
	COLOR: Black/Black

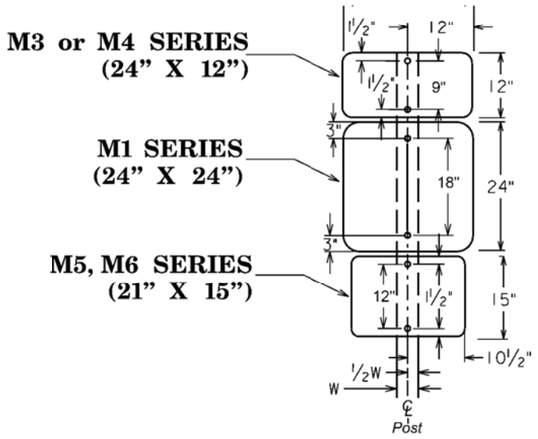
BACKGROUND/LEGEND/BORDER - TYPE IV SHEETING

Typical Sign Installation Details

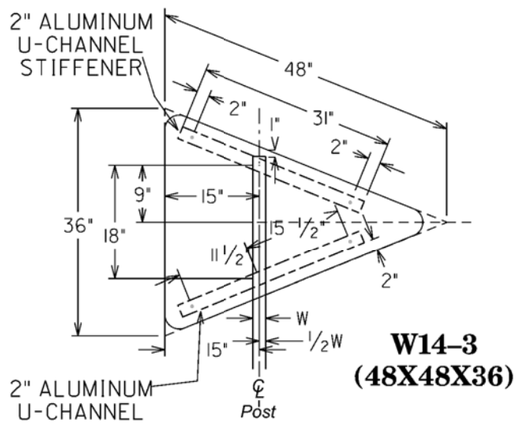
Perforated Tube Supports

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	115	194

Plotting Date: 11/5/2025

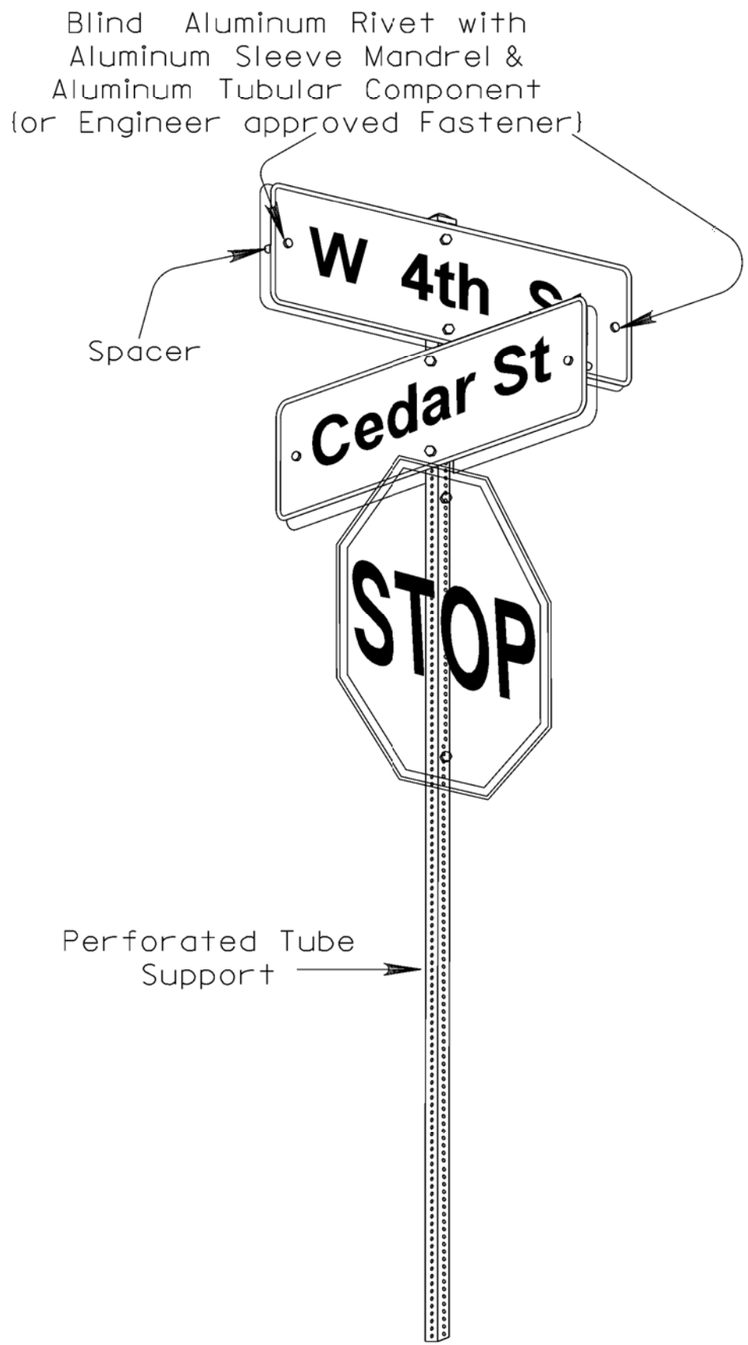


W/SIGN MOUNTED ON SUPPORT
{TYPICAL OF FASTENER LOCATIONS IN ANY MOUNTING CONFIGURATION}



W14-3
(48X48X36)

SQUARE TUBE SUPPORT
W/ALUMINUM CHANNEL BACKING



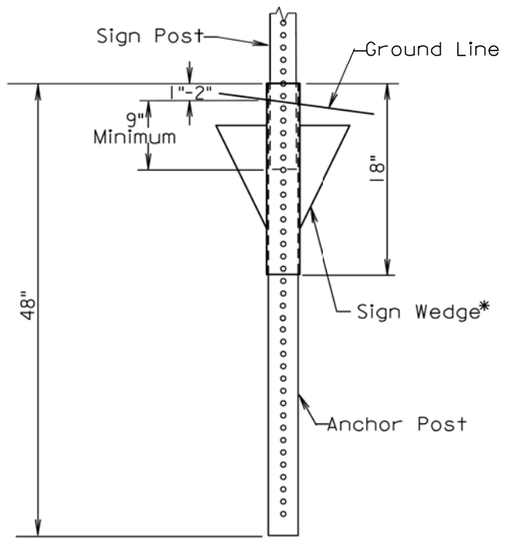
TYPICAL STOP SIGN WITH STREET SIGNS ASSEMBLY

Typical Sign Installation Details

FOR BIDDING PURPOSES ONLY

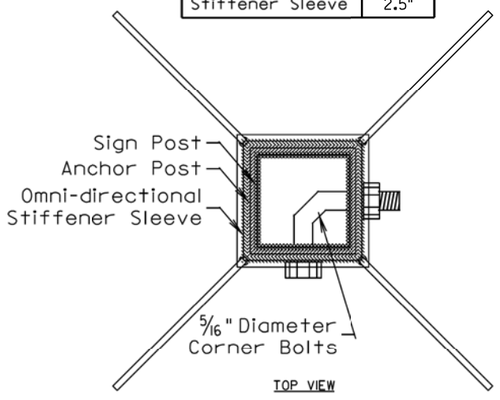
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	116	194

Plotting Date: 11/5/2025



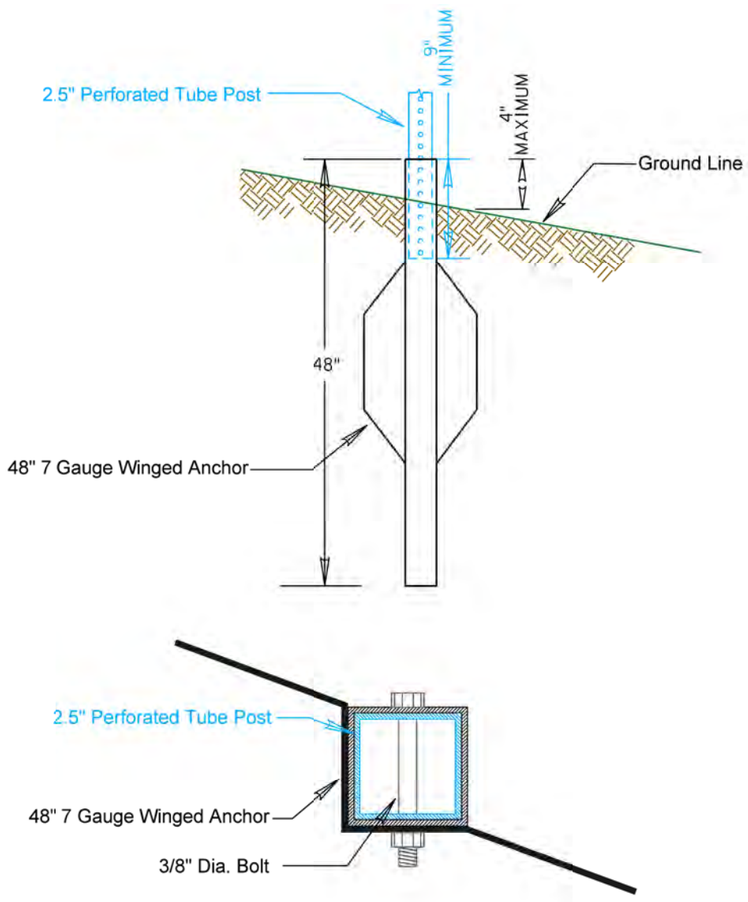
* - 18" Omni-directional Sleeve w/4 Blades, or Equivalent.
Manufacturer Recommended Dimensions and Installation.

POST SIZE	
Sign Post	2"
Anchor Post	2.25"
Stiffener Sleeve	2.5"



NOTE:
Sign installations must meet or exceed NCHRP 350 or MASH breakaway requirements.

2" PERFORATED TUBE POST WINGED ANCHOR BASE DETAILS (Typical)



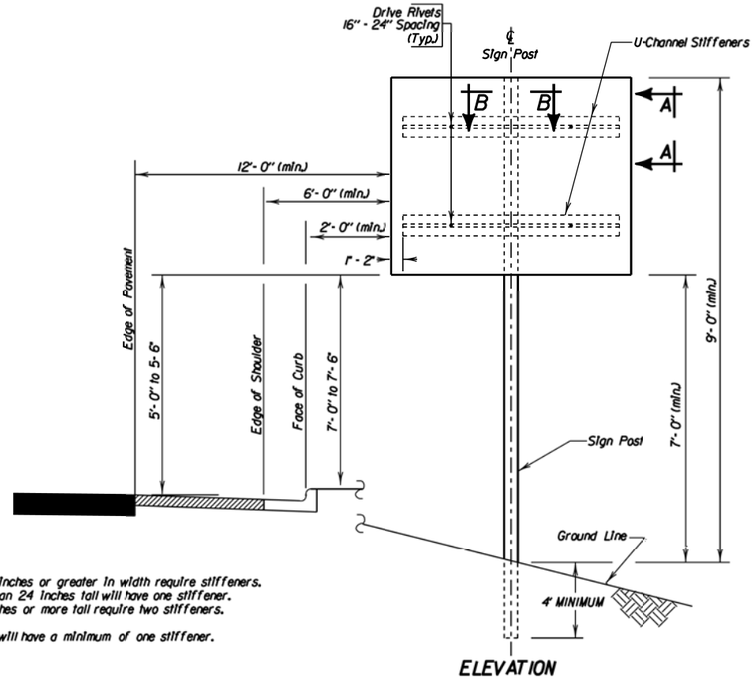
Configuraton of Anchor Blade may vary with Manufacturer.
Manufacturer's Installation Recommendations will be followed.
Installatios will meet NCHRP350 and MASH Requirements.

2.5" PERFORATED TUBE POST WITH 7 GAUGE HEAVY DUTY ANCHOR (Typical)

Typical Sign Installation Details

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	117	194

Plotting Date: 11/5/2025

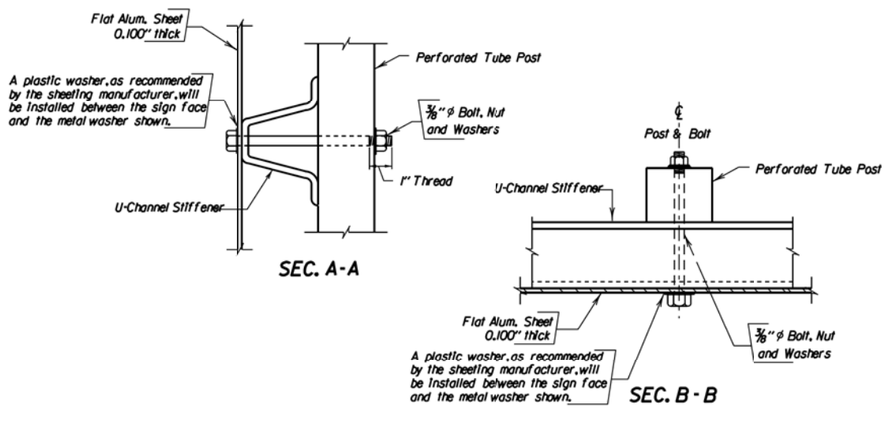


NOTES:

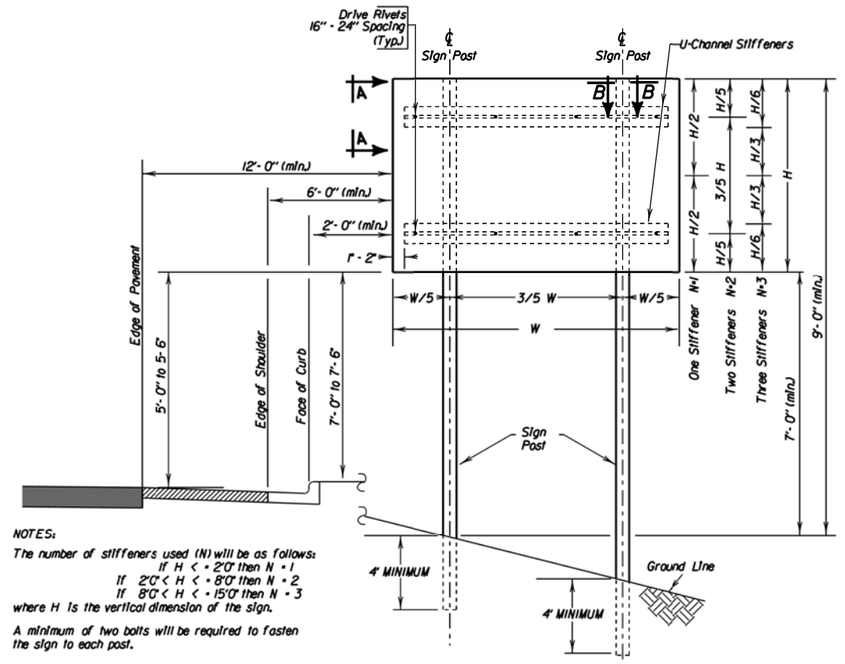
All signs 36 inches or greater in width require stiffeners.
Signs less than 24 inches tall will have one stiffener.
Signs 24 inches or more tall require two stiffeners.

W14-3 signs will have a minimum of one stiffener.

ELEVATION



SINGLE POST BREAKAWAY SIGN SUPPORT
(Typical Sign and Stiffener Details)

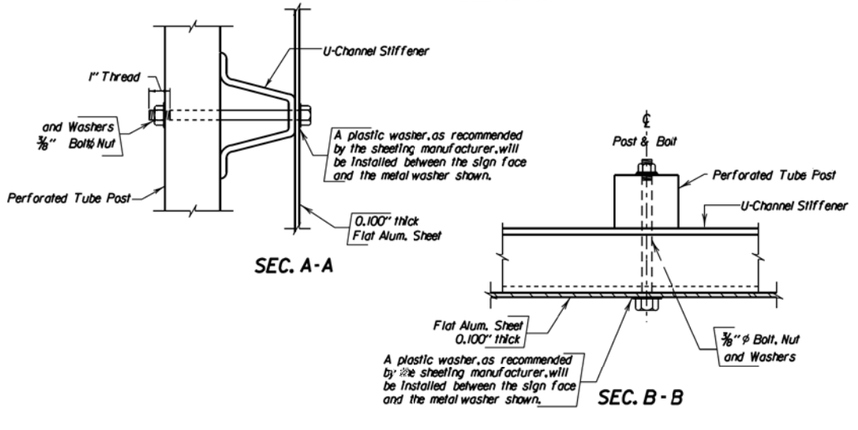


NOTES:

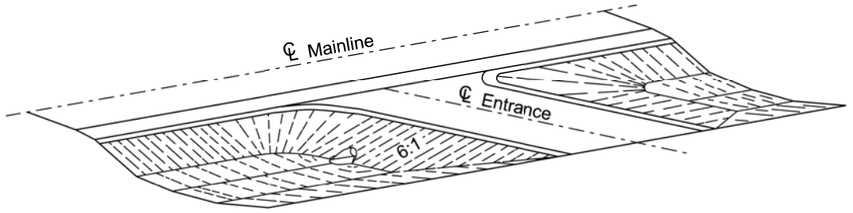
The number of stiffeners used (N) will be as follows:
If H < = 2'0" then N = 1
If 2'0" < H < = 8'0" then N = 2
If 8'0" < H < = 15'0" then N = 3
where H is the vertical dimension of the sign.

A minimum of two bolts will be required to fasten the sign to each post.

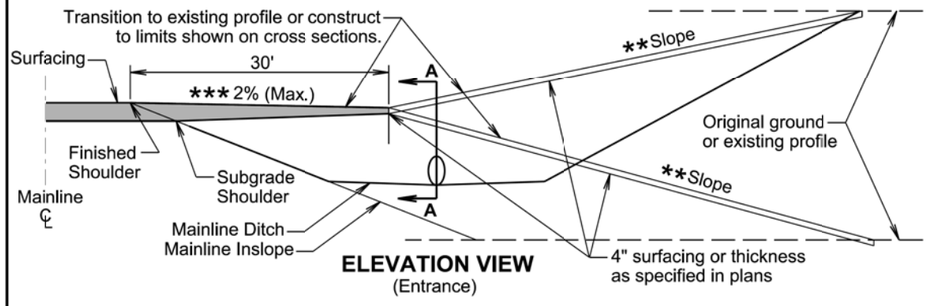
ELEVATION



TWO POST BREAKAWAY SIGN SUPPORTS
(Typical Sign and Stiffener Details)



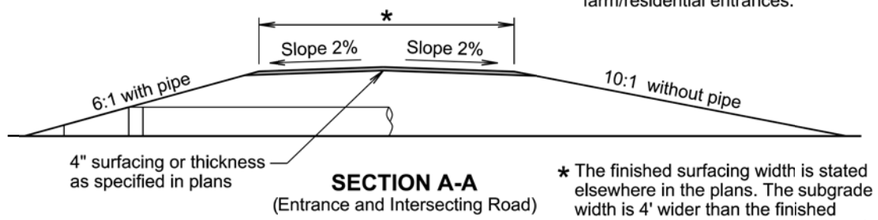
PERSPECTIVE OF ENTRANCE



ELEVATION VIEW
(Entrance)

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

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



SECTION A-A
(Entrance and Intersecting Road)

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

GENERAL NOTES:

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

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

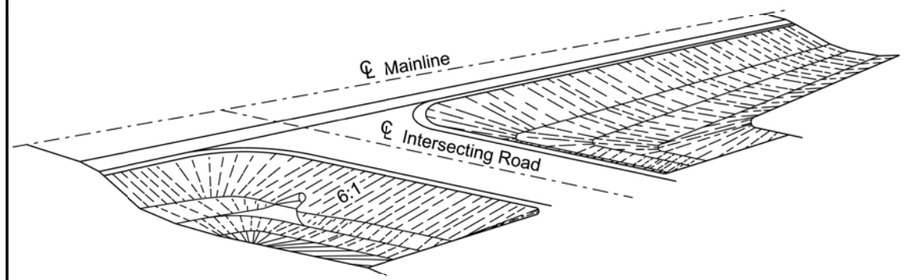
Pipe length will be adjusted if necessary during construction to obtain the 6:1 slope. For grading projects, the pipe length is estimated typically using a 4" thickness of surfacing directly over the subgrade above the pipe.

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

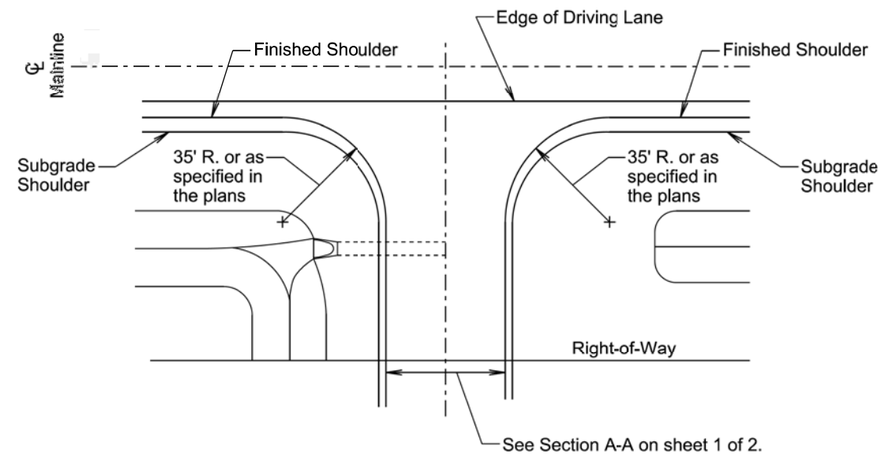
The turning radii will be 35' for intersecting roads and entrances unless stated otherwise in the plans.

November 19, 2021

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



PERSPECTIVE OF INTERSECTING ROAD



PLAN VIEW

GENERAL NOTES:

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

November 19, 2021

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

Published Date: 2026

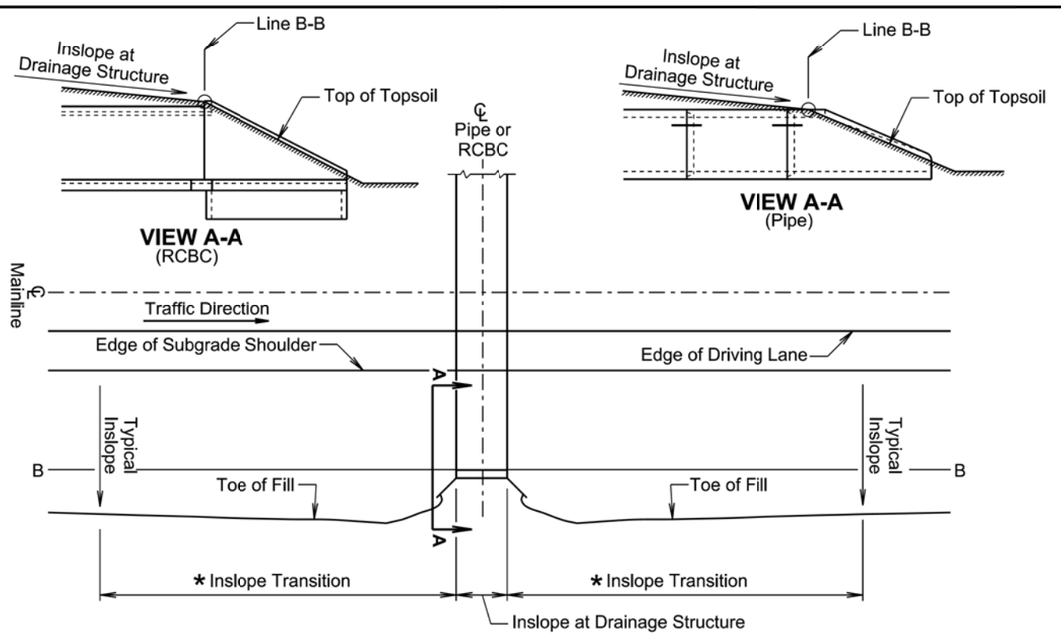
SDDOT

INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS

PLATE NUMBER 120.05

Sheet 1 of 2

September 14, 2018



TYPE 1 INSLOPE TRANSITION

GENERAL NOTES:

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

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

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

Published Date: 2026

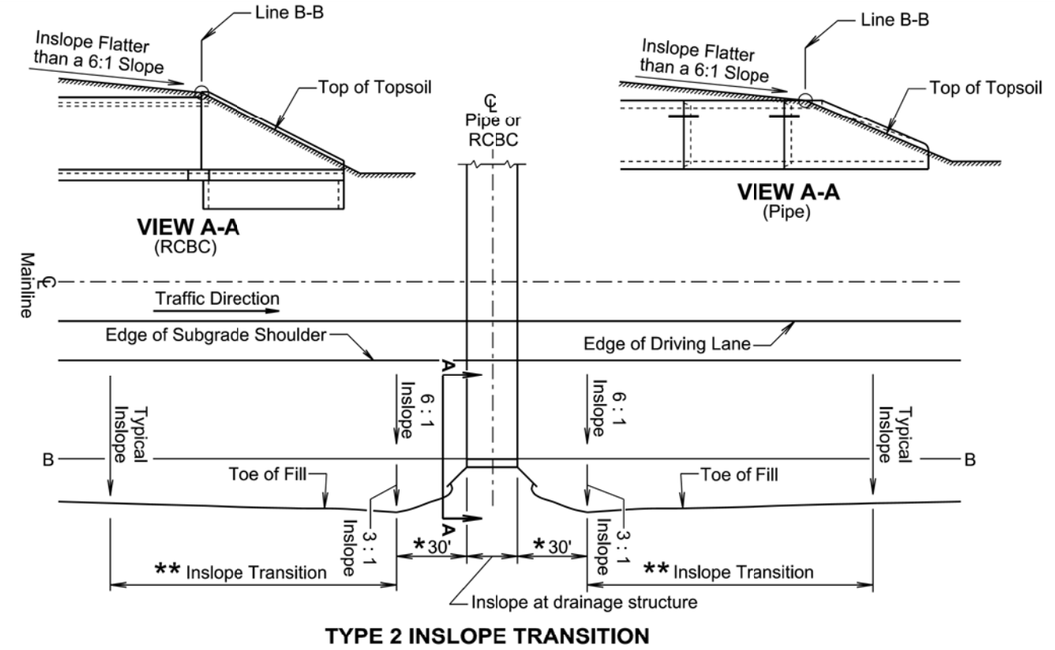
SDDOT

INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS

PLATE NUMBER 120.05

Sheet 2 of 2

September 14, 2018



TYPE 2 INSLOPE TRANSITION

GENERAL NOTES:

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

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

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

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

FOR BIDDING PURPOSES ONLY

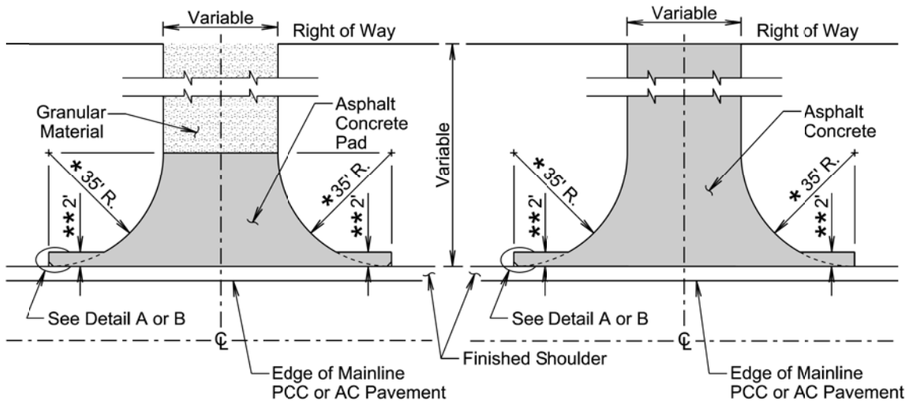
Plotting Date: 11/5/2025

STATE OF SOUTH DAKOTA

PROJECT P 0044(233)406 IM 0292(99)59

SHEET 119

TOTAL SHEETS 194



PLAN VIEW
(Intersecting Road)
(No Asphalt Concrete Surfacing Beyond Right of Way)

PLAN VIEW
(Intersecting Road)
(Asphalt Concrete Surfacing Beyond Right of Way)

GENERAL NOTES:

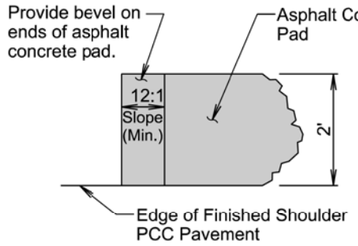
The precise construction limits for situations other than shown above will be determined by the Engineer during construction.

* For new construction, 35' radius typical or as specified in the plans. For resurfacing projects, radius is variable depending on existing conditions.

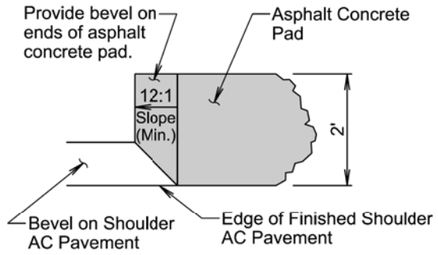
** The Contractor may adjust the screed of the paver during mainline paving operations to provide the 2-foot asphalt concrete pad or the Contractor may provide the 2-foot asphalt concrete pad during paving of the intersecting roads as shown above. The Engineer may eliminate the 2-foot asphalt concrete pads if the Engineer, in the Engineer's sole discretion, determines the pads are infeasible to construct due to site specific reasons including, but not limited to; existing inslope configuration, borrow and material availability, and right-of-way constraints.

August 27, 2020

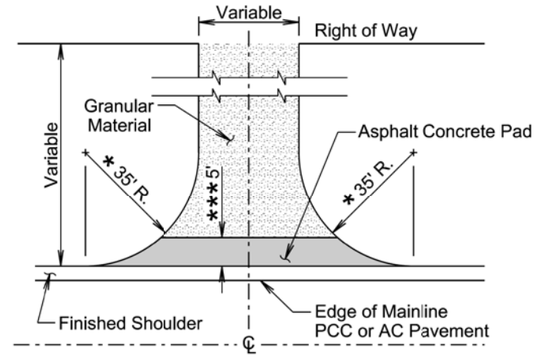
Published Date: 2026	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04
			Sheet 1 of 2



DETAIL A
(Typ. for Projects with PCC Pavement on Shoulder)



DETAIL B
(Typ. for Projects with AC Pavement on Shoulder)

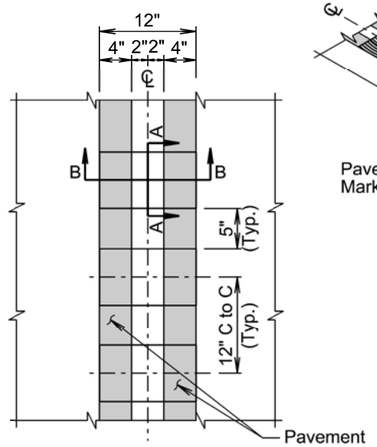


PLAN VIEW
(Entrance)

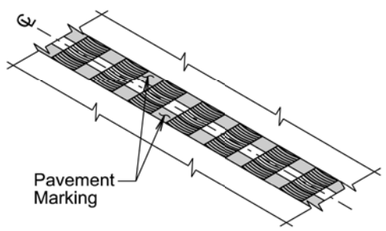
*** Not required if finished shoulder width is 4' or greater.

August 27, 2020

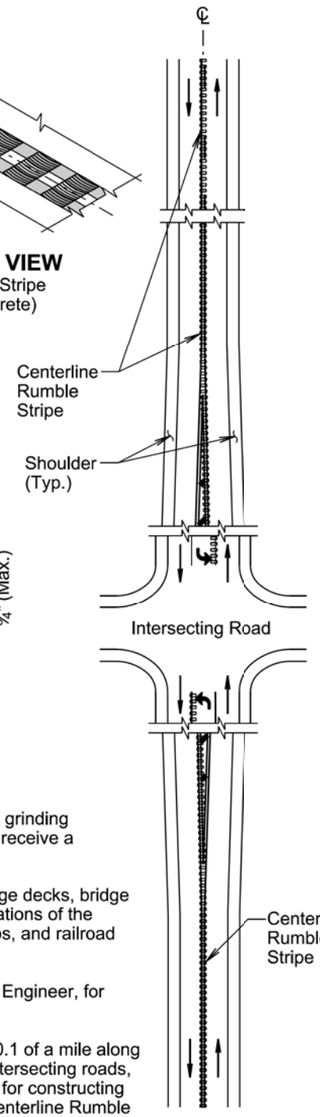
Published Date: 2026	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04
			Sheet 2 of 2



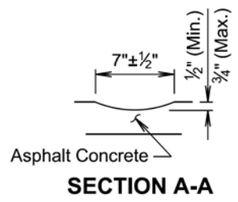
PLAN VIEW
(Typical Rumble Stripe in Asphalt Concrete)



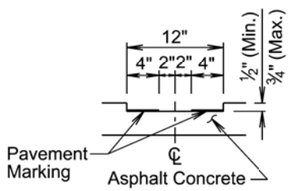
PERSPECTIVE VIEW
(Typical Rumble Stripe in Asphalt Concrete)



PLAN VIEW



SECTION A-A



SECTION B-B

GENERAL NOTES:

A rumble stripe will be constructed on the centerline of the roadway by grinding continuous indentations in the asphalt concrete. The rumble stripe will receive a flush seal or asphalt surface treatment as specified in the plans.

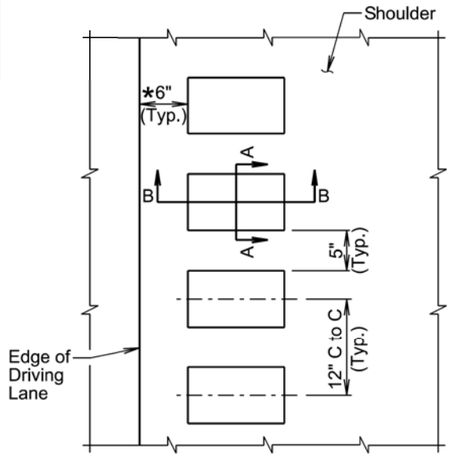
A rumble stripe will not be constructed through intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. The beginning and ending locations of the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

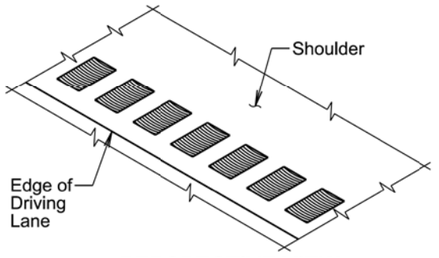
Measurement and payment of the rumble stripe will be to the nearest 0.1 of a mile along the centerline and will include segments without the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind Centerline Rumble Stripe in Asphalt Concrete".

November 19, 2020

Published Date: 2026	SDDOT	12" CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE	PLATE NUMBER 320.18 Sheet 1 of 1

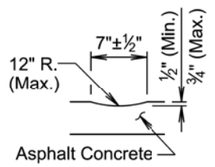


PLAN VIEW
(Typical Rumble Strip in Asphalt Concrete)

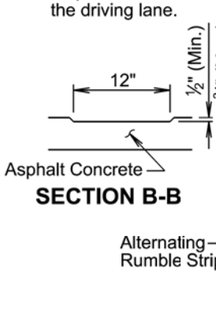


PERSPECTIVE VIEW
(Typical Rumble Strip in Asphalt Concrete)

*When PCC pavement width from centerline to edge of pavement is 12', the rumble strip may be placed a maximum of 2' from the edge of the driving lane.



SECTION A-A



SECTION B-B

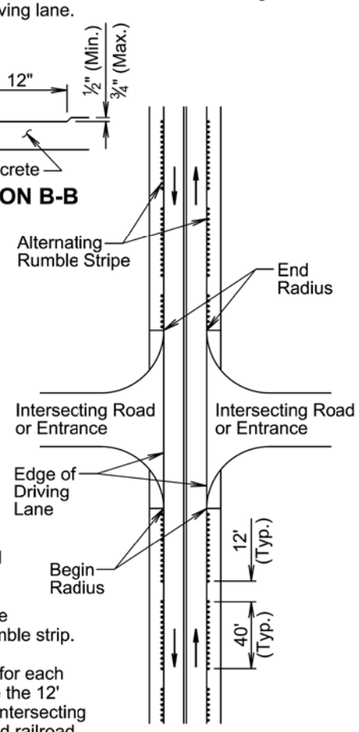
GENERAL NOTES:

A rumble strip will be constructed on all of the asphalt concrete shoulders by grinding alternating patterns of 40' continuous indentations in the asphalt concrete. The rumble strip will receive a flush seal or asphalt surface treatment as specified in the plans.

A rumble strip will not be constructed through intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings. The lengths of the 40' segments with continuous indentations and the 12' segments without a rumble strip adjacent to the intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble strip the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble strip.

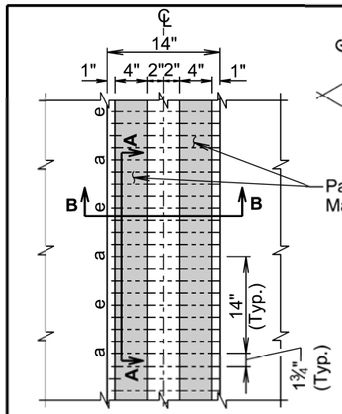
Measurement of the rumble strip will be to the nearest 0.1 of a mile for each shoulder. Measurement and payment of the rumble strip will include the 12' long segments without rumble strips and the segments adjacent to intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings without rumble strips. Payment for constructing the rumble strip will be at the contract unit price per mile for "Grind 12" Rumble Strip or Stripe in Asphalt Concrete".



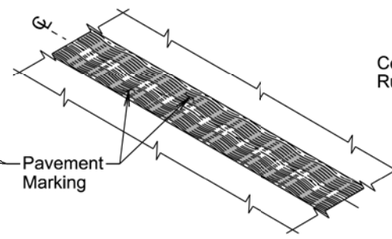
PLAN VIEW

September 14, 2019

Published Date: 2026	SDDOT	12" RUMBLE STRIP IN ASPHALT CONCRETE ON NONDIVIDED HIGHWAY SHOULDERS	PLATE NUMBER 320.24 Sheet 1 of 1

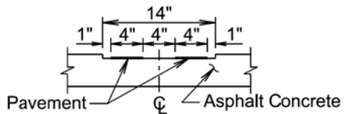


PLAN VIEW
(Typical Rumble Strip in Asphalt Concrete)

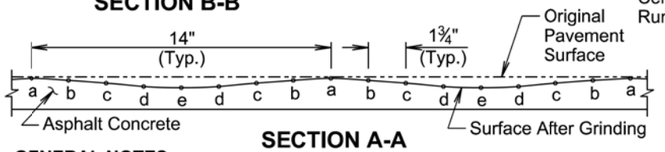


PERSPECTIVE VIEW
(Typical Rumble Strip in Asphalt Concrete)

SINUSOIDAL GRINDING	
Location	* Depth (In.)
a	1/16
b	5/32
c	9/32
d	7/16
e	½



SECTION B-B



SECTION A-A

GENERAL NOTES:

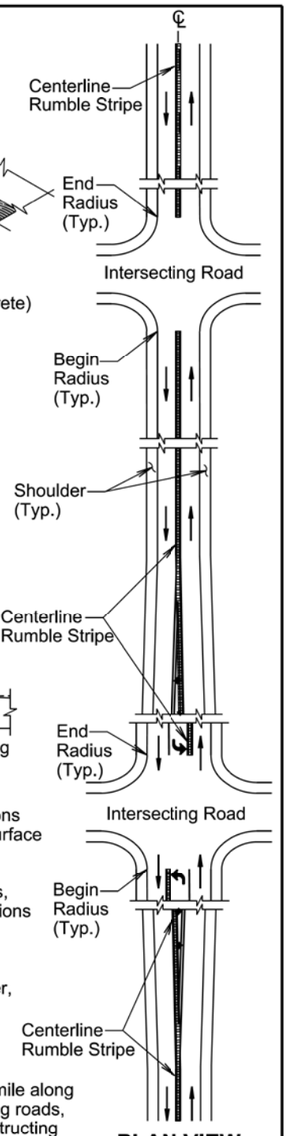
A rumble stripe will be constructed by grinding continuous sinusoidal indentations in the asphalt concrete. The rumble stripe will receive a flush seal or asphalt surface treatment as specified in the plans.

A rumble stripe will not be constructed through intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. The beginning and ending locations of the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

* The sinusoidal rumble stripe construction grinding tolerance will be ± 1/16 inch.

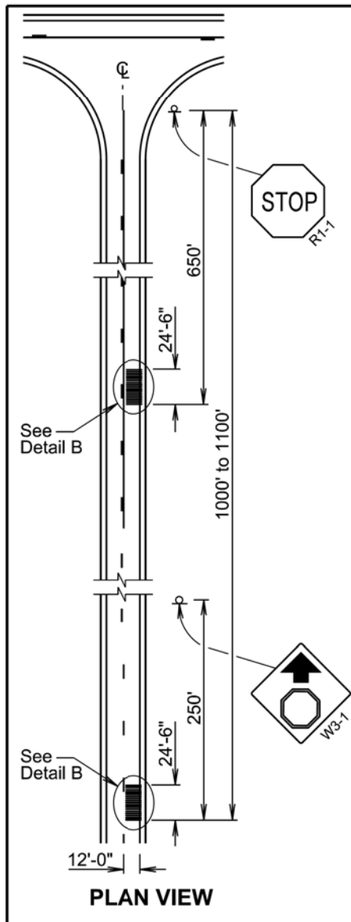
Measurement and payment of the rumble stripe will be to the nearest 0.1 of a mile along the centerline and will include segments without the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete".



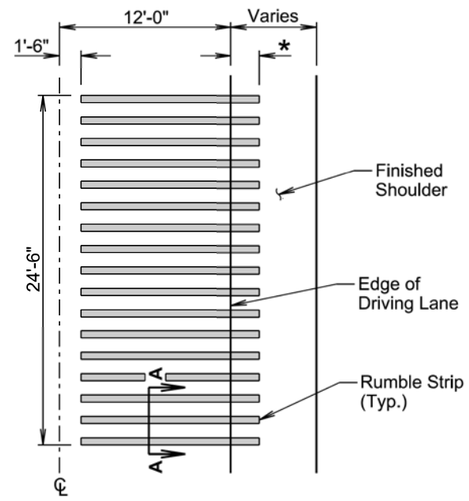
PLAN VIEW

September 14, 2019

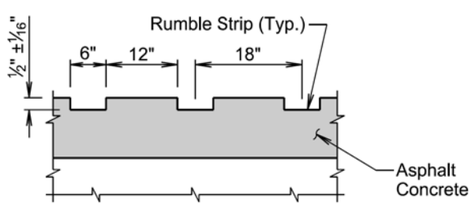
Published Date: 2026	SDDOT	SINUSOIDAL CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE	PLATE NUMBER 320.40
			Sheet 1 of 1



PLAN VIEW



DETAIL B
PLAN VIEW



SECTION A-A
(All dimensions are typical.)

GENERAL NOTES:

Transverse rumble strips will be constructed by grinding, routing, or cutting recessed indentations into the asphalt concrete as approved by the Engineer. The transverse rumble strips will receive a flush seal or fog seal as specified in the plans.

* The transverse rumble strips will extend into the finished shoulder as approved by the Engineer.

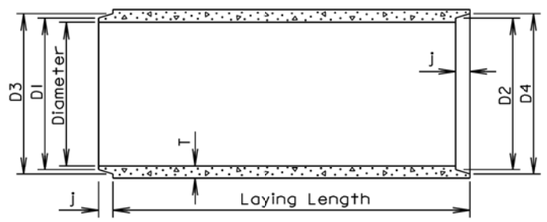
Measurement of the recessed transverse rumble strips will be to the nearest foot. Payment for constructing the recessed transverse rumble strips will be at the contract unit price per foot for "Grind 6" Transverse Rumble Strip in Asphalt Concrete".

January 22, 2021

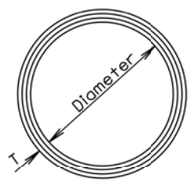
Published Date: 2026	SDDOT	TRANSVERSE RUMBLE STRIP IN ASPHALT CONCRETE HIGHWAY ADJACENT TO STOP CONTROLLED INTERSECTION	PLATE NUMBER 320.45
			Sheet 1 of 1

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:

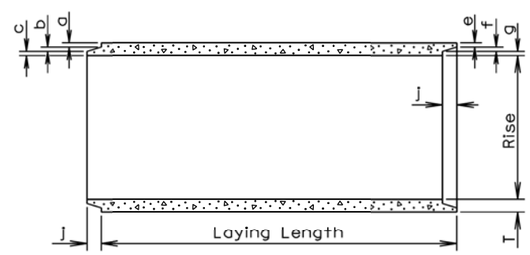
Construction of R. C. P. shall conform to the requirements of Section 990 of the Specifications.

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.

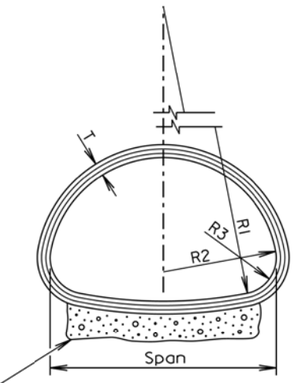
Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	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	2093	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: 2026	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1



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

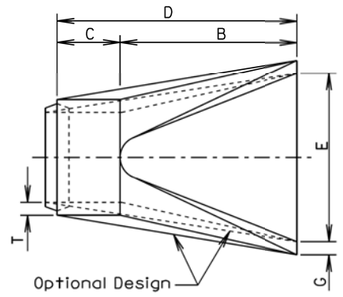
* Equivalent Diameter of Circular R. C. P.

GENERAL NOTES:

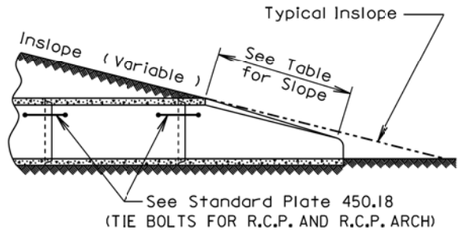
Construction of R.C.P. Arch shall conform to the requirements of Section 990 of the Specifications. Not more than 2 four-foot sections shall be permitted near the ends of any culvert. Four-foot lengths shall be used only to secure the required length of culvert.

June 26, 2015

Published Date: 2026	SDDOT	REINFORCED CONCRETE PIPE ARCH	PLATE NUMBER 450.02
			Sheet 1 of 1



TOP VIEW

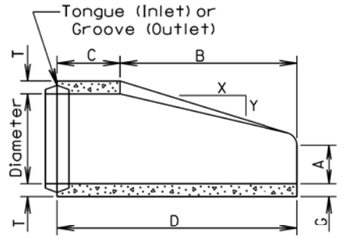


SLOPE DETAIL

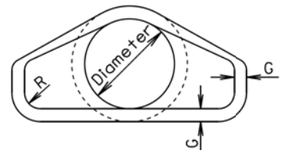
GENERAL NOTES:

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

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



LONGITUDINAL SECTION

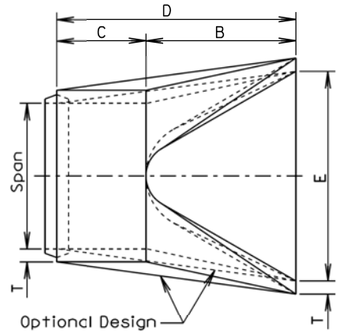


END VIEW

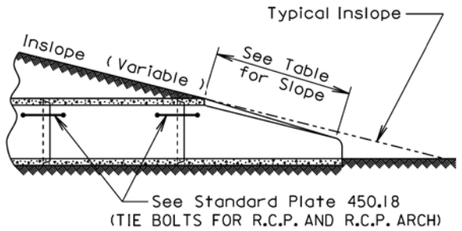
Dia. (in.)	Approx. Wt. of Section (lbs.)	Approx. Slope (X to Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)	R (in.)
12	530	2.4:1	2	4	24	48 7/8	72 7/8	24	2	1 1/2
15	740	2.4:1	2 1/4	6	27	46	73	30	2 1/4	1 1/2
18	990	2.3:1	2 1/2	9	27	46	73	36	2 1/2	1 1/2
21	1280	2.4:1	2 3/4	9	36	37/2	73 1/2	42	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

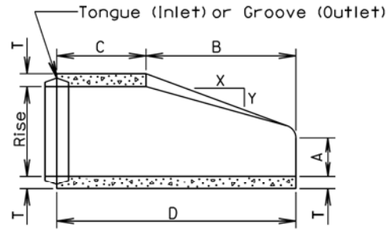
Published Date: 2026	SDDOT	R. C. P. FLARED ENDS	PLATE NUMBER 450.10 Sheet 1 of 1



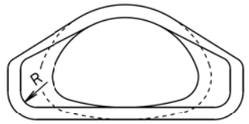
TOP VIEW



SLOPE DETAIL



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

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

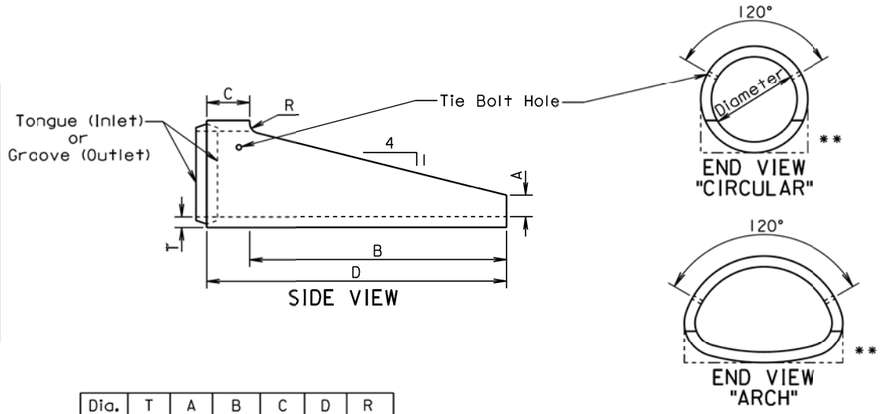
Construction of R.C.P. Arch Flared End shall conform to the requirements of Section 990 of the Specifications.

* Size (in.)	Approximate Weight of Section (lbs.)	Rise (in.)	Span (in.)	Slope (X:Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	R (in.)
18	1100	13 1/2	22	3:1	2 1/2	7	27	45	72	36	2
24	1750	18	28 1/2	3:1	3 1/2	8 1/2	39	33	72	48	3
30	3300	22 1/2	36 1/4	3:1	4	9 1/2	50	46	96	60	3
36	4350	26 5/8	43 3/4	3:1	4 1/2	1 11/8	60	36	96	72	6
42	5250	31 5/16	51 1/8	3:1	4 1/2	15 13/16	60	36	96	78	6
48	6400	36	58 1/2	3:1	5	21	60	36	96	84	6
54	7850	40	65	3:1	5 1/2	25 1/2	60	36	96	90	6
60	9500	45	73 1/2	3:1	6	31	60	36	96	96	6
72	13550	54	88	2:1	7	31	60	39	99	120	6
84	17950	62	102	2:1	8	28 1/2	83	19	102	144	6

*Equivalent Diameter of Circular R. C. P.

June 26, 2015

Published Date: 2026	SDDOT	R. C. P. ARCH FLARED ENDS	PLATE NUMBER 450.11 Sheet 1 of 1



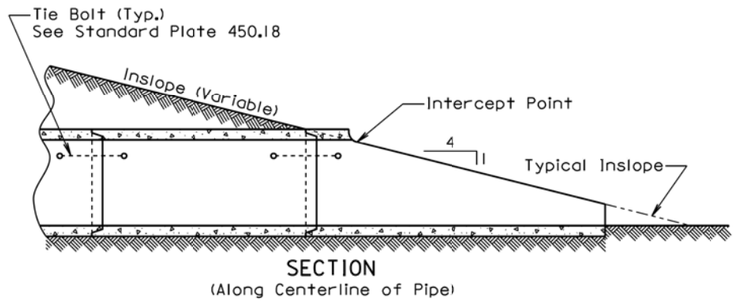
Dia. (in.)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	R (in.)
FOR CIRCULAR PIPE						
24	3	6	72	12	84	3
30	3½	7½	90	12	102	3½
FOR ARCH PIPE						
* 24	3	6	48	12	60	3
* 30	3½	7½	60	12	72	3½
* 36	4½	8⅝	66	30	96	0
* 42	4½	10	77¼	18¾	96	0

ALTERNATE

Dia. (in.)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	R (in.)
FOR CIRCULAR PIPE						
24	3	9	72	12	84	0
30	3½	11	90	12	102	0
FOR ARCH PIPE						
* 24	3	9	48	12	60	0
* 30	3½	11	60	12	72	0

* Equivalent Diameter of Circular R.C.P.

** Acceptable Flat Bottom Alternate.

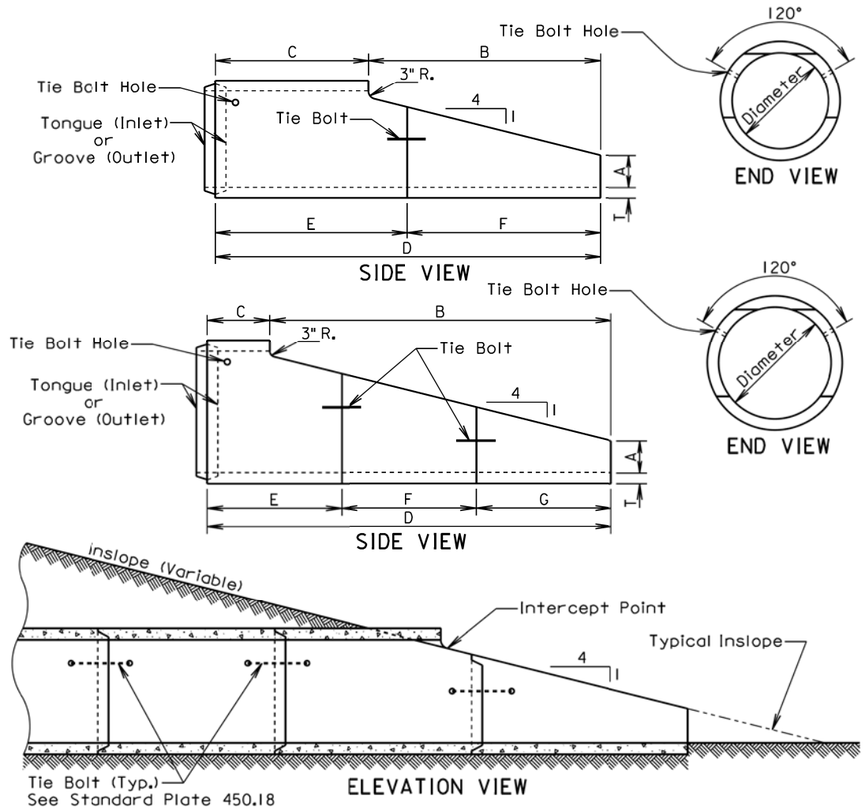


GENERAL NOTE:

The length of concrete pipe shown in the construction plans is between sloped ends.

September 22, 2006

Published Date: 2026	SDDOT	R. C. P. SLOPED ENDS	PLATE NUMBER 450.13
			Sheet 1 of 1



Dia. (in.)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)
36	4	12	86.5	57.5	144	72	72	
42	4.5	12	110.5	33.5	144	72	72	
48	5	12	134.5	33.5	168	96	72	
54	5.5	12	158.5	33.5	192	96	96	
60	6	12	182.5	33.5	216	72	72	72

GENERAL NOTE:

The length of concrete pipe shown in the construction plans is between sloped ends.

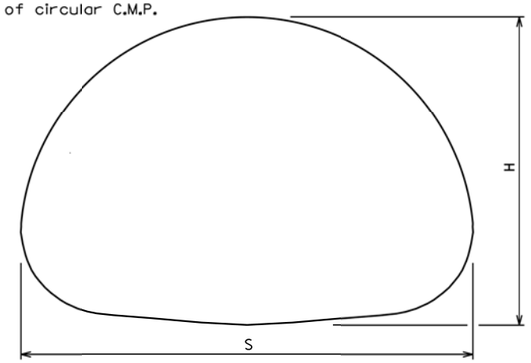
If bars are specified in the plans, then the bar assemblies shall be constructed in accordance with Standard Plate 450.15.

August 31, 2013

Published Date: 2026	SDDOT	R. C. P. SLOPED ENDS WITH OR WITHOUT BARS	PLATE NUMBER 450.14
			Sheet 1 of 1

* Dia. (in.)	2⅔" x ½" CORRUGATIONS S Span (in.)	H Rise (in.)	Area (Sq. Ft.)	3" X 1" CORRUGATIONS S Span (in.)	H Rise (in.)	Area (Sq. Ft.)
15	17	13	1.1			
18	21	15	1.6			
21	24	18	2.2			
24	28	20	2.8			
30	35	24	4.4			
36	42	29	6.4	40	31	7.0
42	49	33	8.7	46	36	9.4
48	57	38	11.4	53	41	12.3
54	64	43	14.3	60	46	15.6
60	71	47	17.6	66	51	19.3
66	77	52	21.3	73	55	23.2
72	83	57	25.3	81	59	27.4
78				87	63	32.1
84				95	67	37.0
90				103	71	42.4
96				112	75	48.0
102				117	79	54.2
108				128	83	60.8
114				137	87	67.4
120				142	91	74.5

* Equivalent diameter of circular C.M.P.



GENERAL NOTE:
All dimensions measured from inside crest.

March 31, 2000

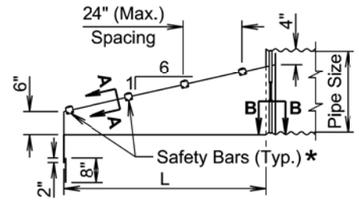
Published Date: 2026

SDDOT

CORRUGATED METAL PIPE ARCH CULVERT

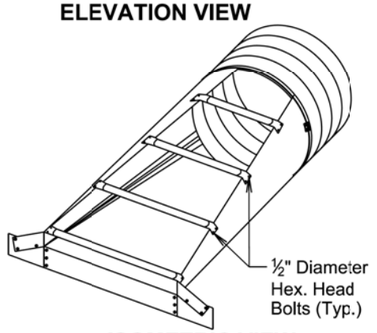
PLATE NUMBER 450.30

Sheet 1 of 1

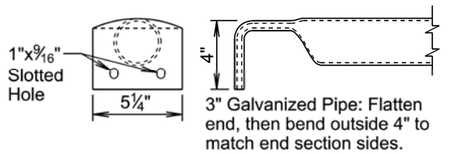


* Number of bars required will vary depending on the length of the end section.

ELEVATION VIEW

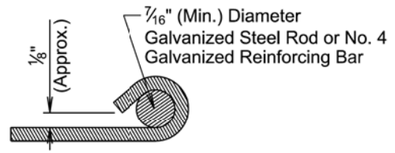


ISOMETRIC VIEW

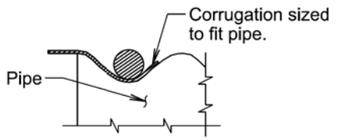


3" Galvanized Pipe: Flatten end, then bend outside 4" to match end section sides.

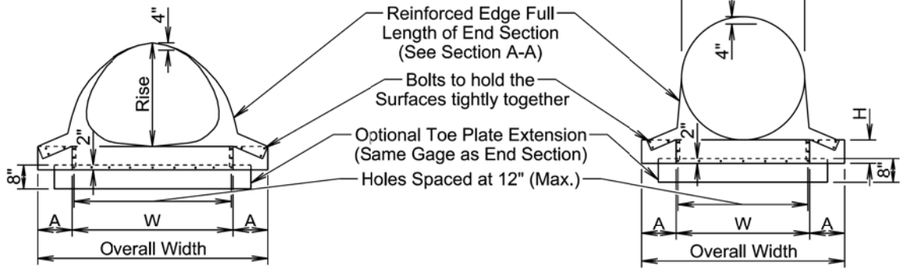
DETAIL OF SAFETY BARS



SECTION A-A

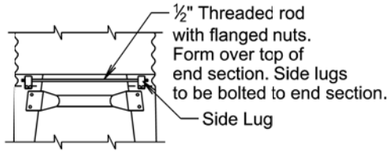


SECTION B-B

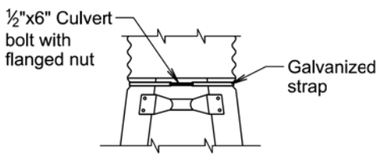


FRONT VIEW

FRONT VIEW



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



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

April 8, 2025

Published Date: 2026

SDDOT

C.M.P. SAFETY ENDS

PLATE NUMBER 450.38

Sheet 1 of 2

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

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

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

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

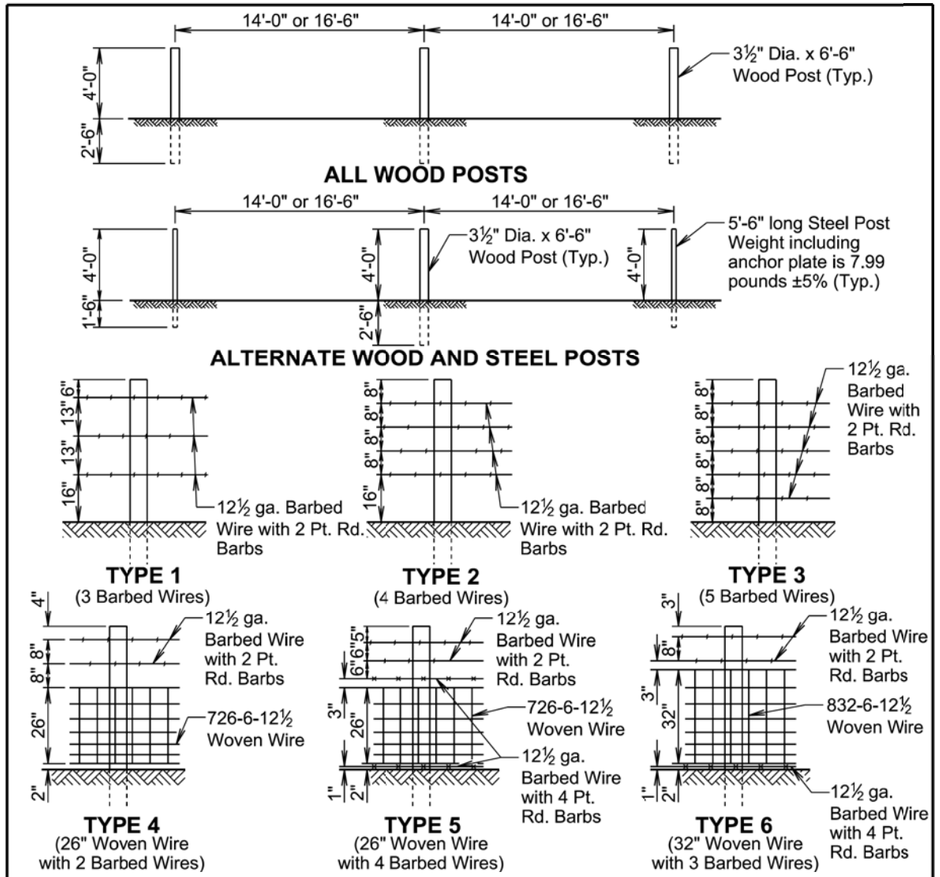
When stated in the plans, optional toe plate extension will be punched and bolted to end section apron lip with ⅜" diameter galvanized bolts. Steel for toe plate extension will be same gauge as end section. Dimensions will be overall width less 6" by 8" high.

Installation will be performed in accordance with the Specifications.

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

April 8, 2025

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



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

GENERAL NOTES:

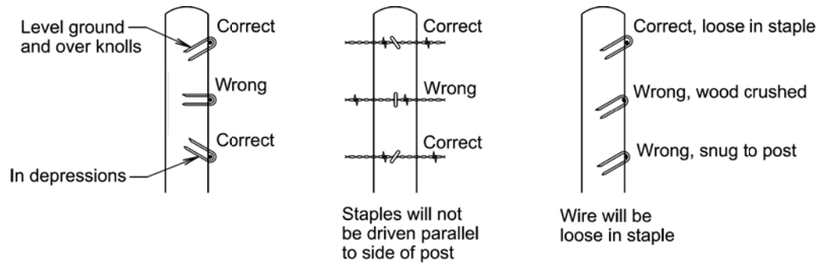
Fence types designated on the plans that are followed by the letter S will have smooth (barbless) wires.

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

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

April 8, 2025

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



STAPLE INSTALLATION

GENERAL NOTES:

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

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

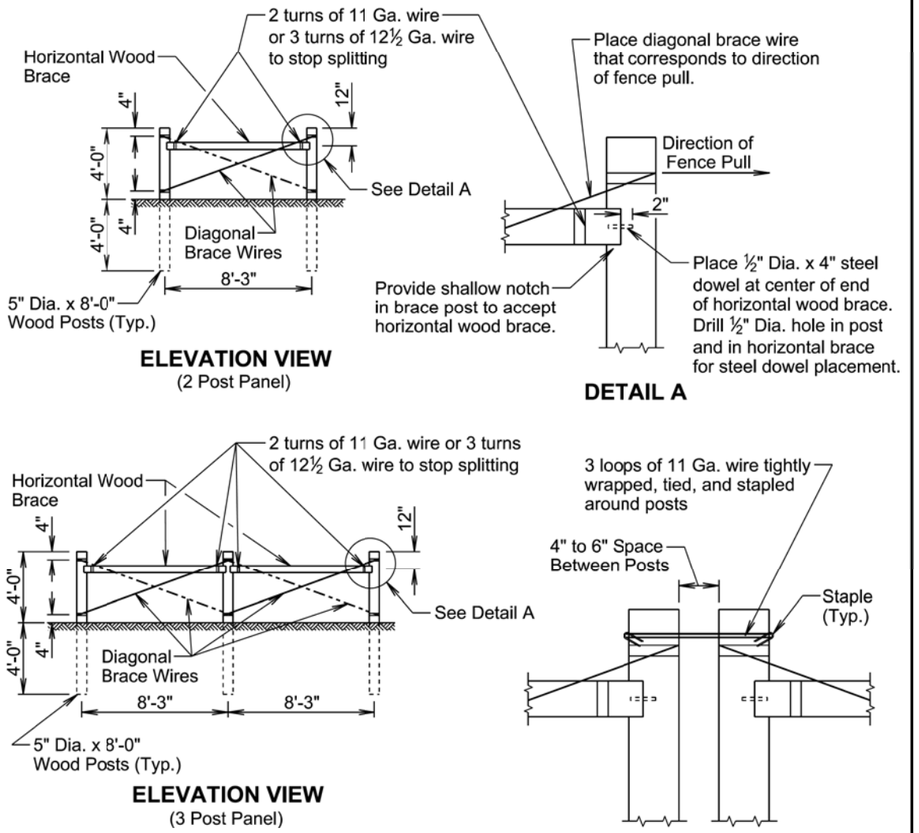
Right-of-Way fence other than on Interstate Projects will be constructed within one foot of the Right-of-Way on the Landowner's side except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

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

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

June 26, 2019

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



ELEVATION VIEW
(2 Post Panel)

DETAIL A

ELEVATION VIEW
(3 Post Panel)

DETAIL B

GENERAL NOTES:

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

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

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

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

March 31, 2024

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

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

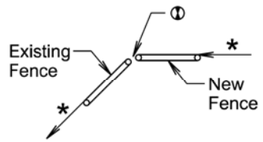
** Fence lengths greater than 1320' and less than 2640' place 2 Post Panel approximately at midpoint.

① See Detail B on Sheet 1 of 3.

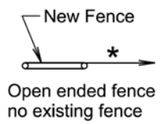
GENERAL NOTE:

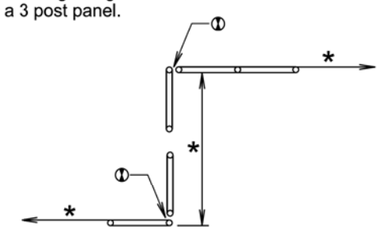
All radius of curvature stated for fence are at centerline of roadway.

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

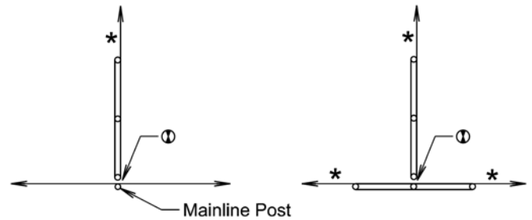


BEGIN OR END FENCE
(Where new fence ties into existing fence)

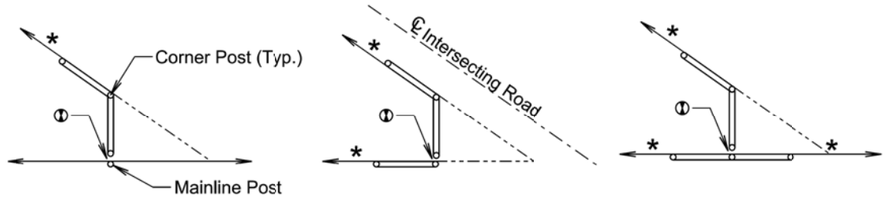




SHORT JOGS IN FENCE



CROSS FENCE



SHARP ANGLES IN CROSS FENCE

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

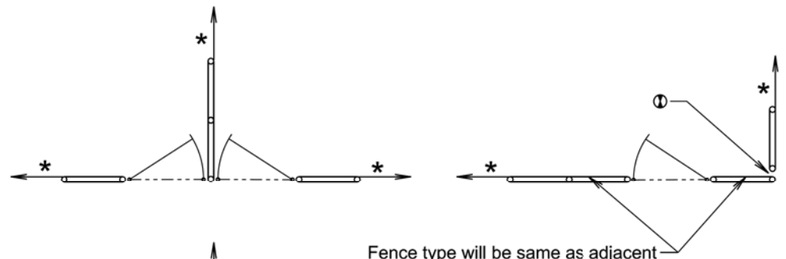
Additional fence panel is required when an angle in the mainline fence is greater than 10°.

ANGLES IN MAINLINE FENCE

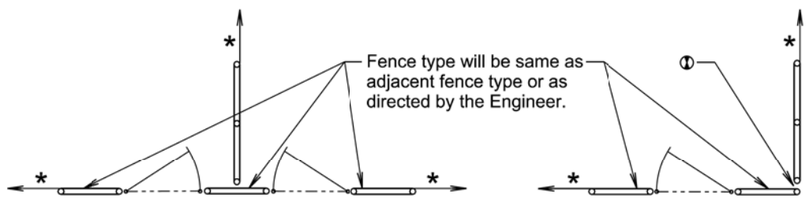
March 31, 2024

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

ENTRANCE
(Not on corner)



Fence type will be same as adjacent fence type or as directed by the Engineer.



DOUBLE ENTRANCES

ENTRANCES AT CORNERS

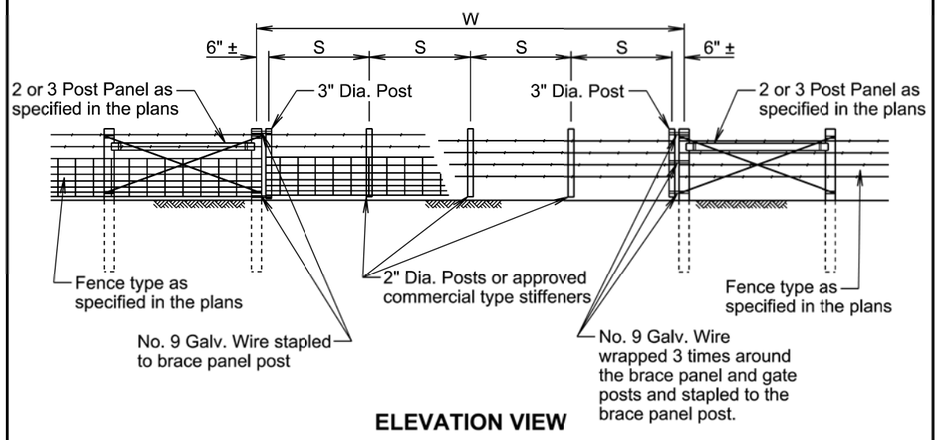
GATES

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

① See Detail B on Sheet 1 of 3.

March 31, 2024

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



ELEVATION VIEW

W Gate Width (Ft.)	S Post Spacing
16	3 @ 5'-0" ±
20	4 @ 4'-9" ±
24	4 @ 5'-9" ±
30	5 @ 5'-10" ±
40	6 @ 6'-6" ±

GENERAL NOTES:

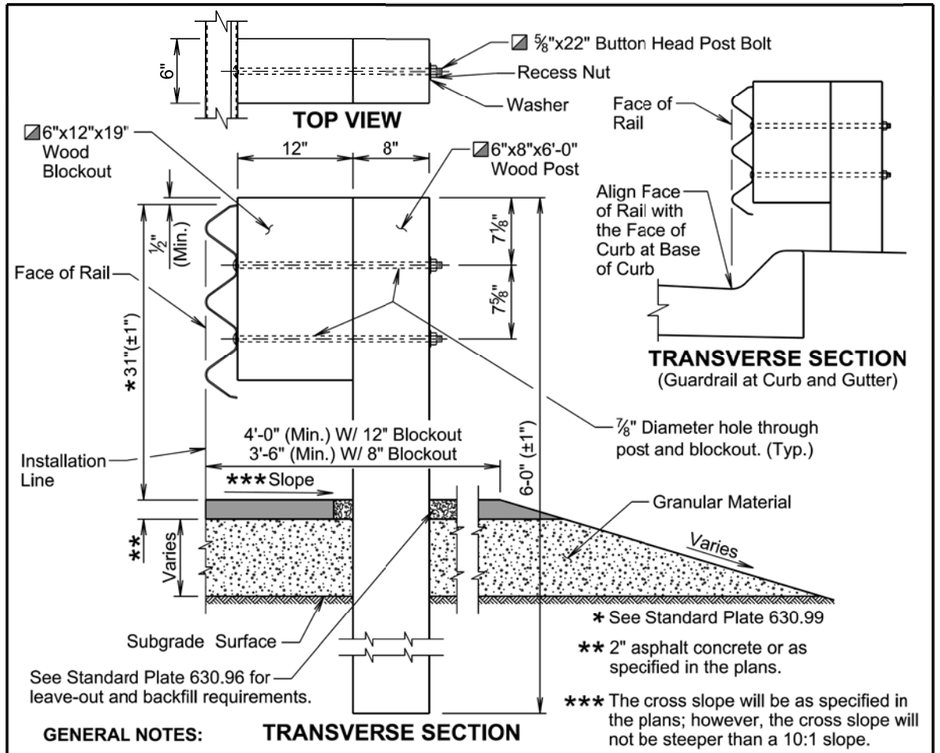
Creosote treatment of the gate posts will not be accepted.

The type of fencing in the gate will be of the same type as specified for the adjacent Right-of-Way fence.

All costs for furnishing and constructing the wire gate(s) will be incidental to the contract unit price per foot for the respective Right-of-Way fence contract item.

June 26, 2019

Published Date: 2026	SDDOT	WIRE GATES	PLATE NUMBER 620.20 Sheet 1 of 1



GENERAL NOTES:

Asphalt concrete will be the same type used elsewhere on the project or will be as specified in the plans. If asphalt concrete is not specified in the plans, the asphalt concrete will conform to the Specifications for "Asphalt Concrete Composite."

Granular material will be the same type used elsewhere on the project or will be as specified in the plans. If granular material type is not specified in the plans, the material will conform to the Specifications for "Base Course". The granular material will be placed the same thickness as the mainline surfacing or as specified in the plans.

Topsoil is not shown in the transverse section drawing.

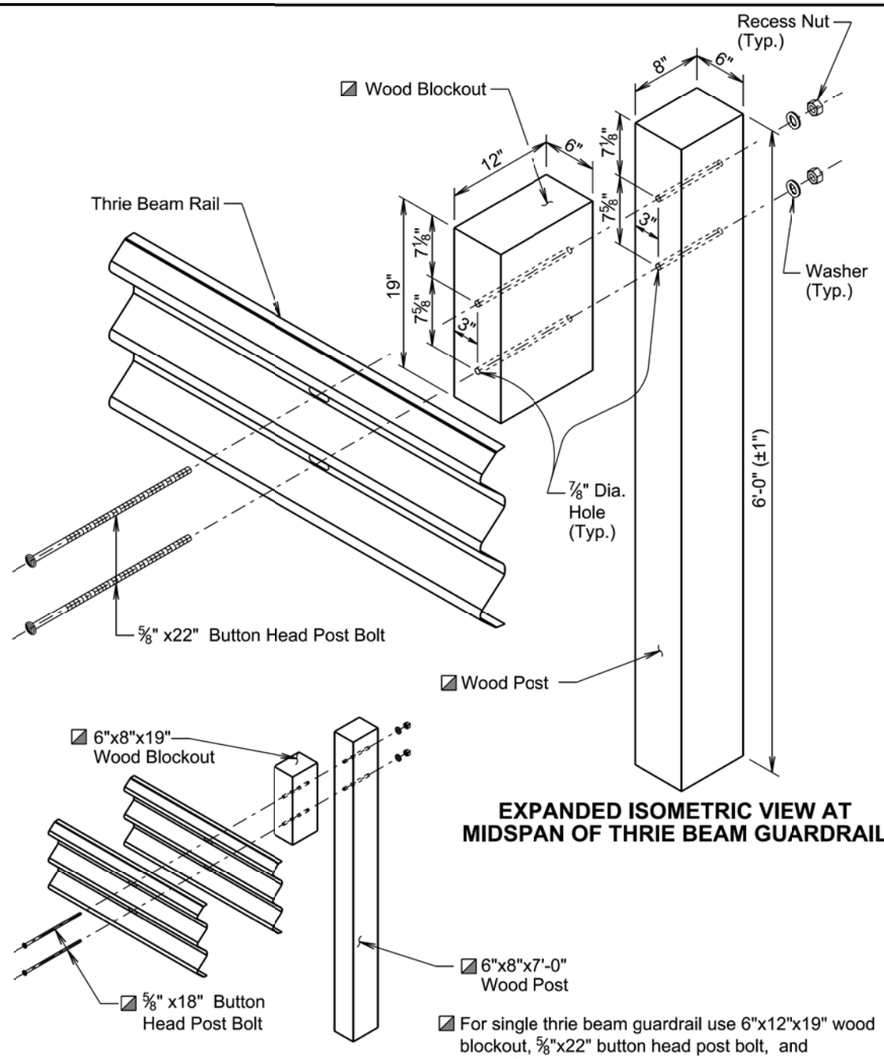
☑ The post and blockout illustrated above is typical for single thrie beam guardrail. When other variations of posts and blockouts are specified on other standard plates (e.g. transitions) then the posts and blockouts will be as specified on the other standard plates or as specified in the plans.

Slots in the rails will be provided as specified in the plans and by the manufacturer. A drilled hole through the rail is not allowed as a replacement for a slot. If the Contractor must create a slot, a cutting torch or plasma cutter is not allowed. The slot edges will be smooth and free of burrs or notches.

The top of post and top of block will have a true square cut. The top of block will be a maximum of ±½ inch from the top of the post.

April 8, 2025

Published Date: 2026	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01 Sheet 1 of 5



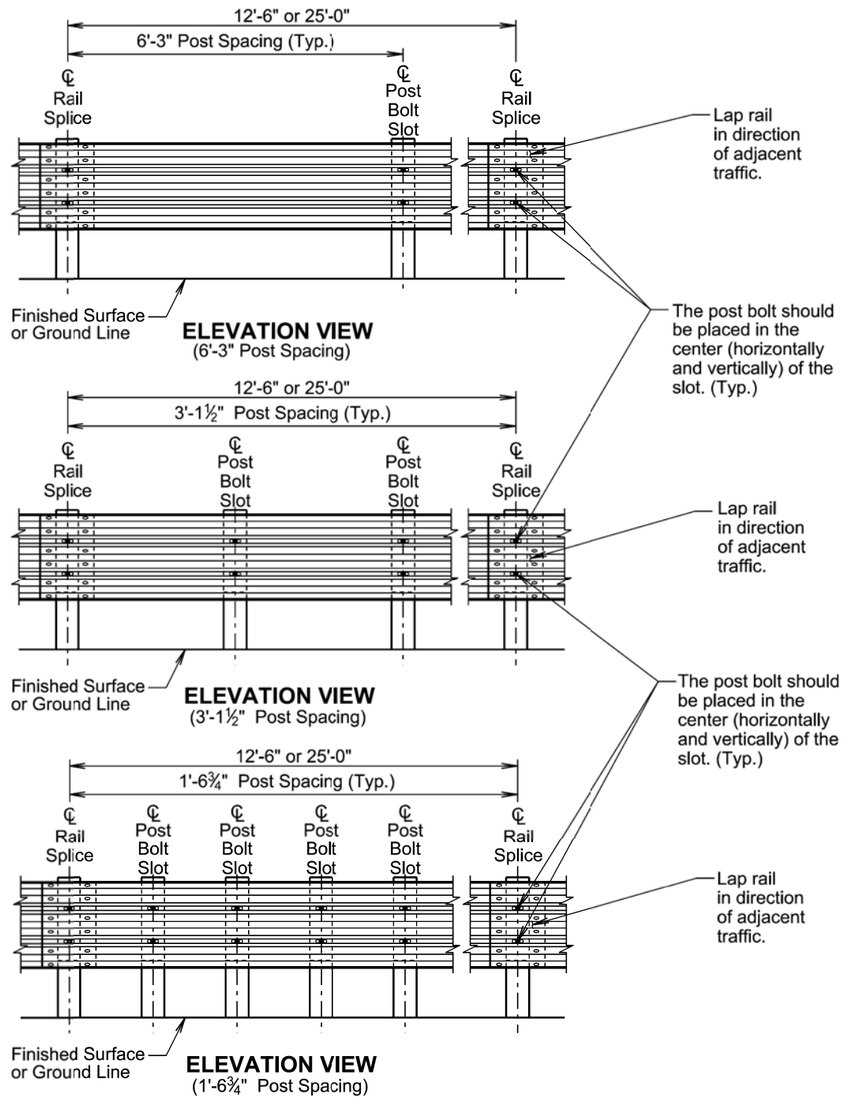
EXPANDED ISOMETRIC VIEW AT MIDSPAN OF THRIE BEAM GUARDRAIL

EXPANDED ISOMETRIC VIEW OF DOUBLE (NESTED) THRIE BEAM GUARDRAIL AT MIDSPAN
(For Information Only, Not to Scale)

For single thrie beam guardrail use 6"x12"x19" wood blockout, ⅝"x22" button head post bolt, and 6"x8"x6'-0" wood post. For double (nested) thrie beam guardrail use 6"x8"x19" wood blockout, ⅝"x18" button head post bolt, and 6"x8"x7'-0" wood post.

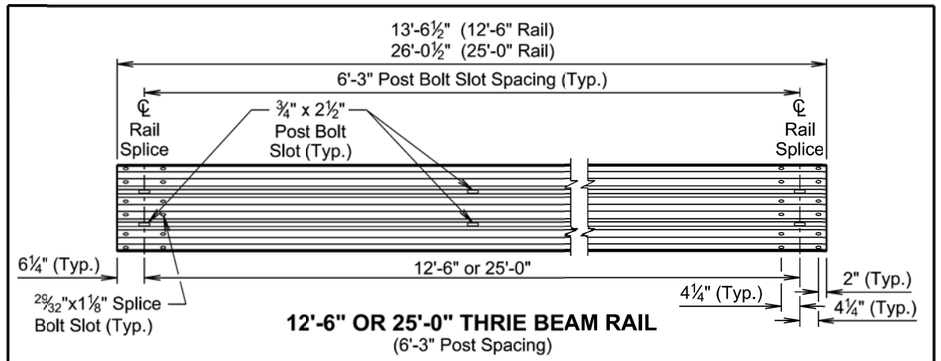
April 8, 2025

Published Date: 2026	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 2 of 5

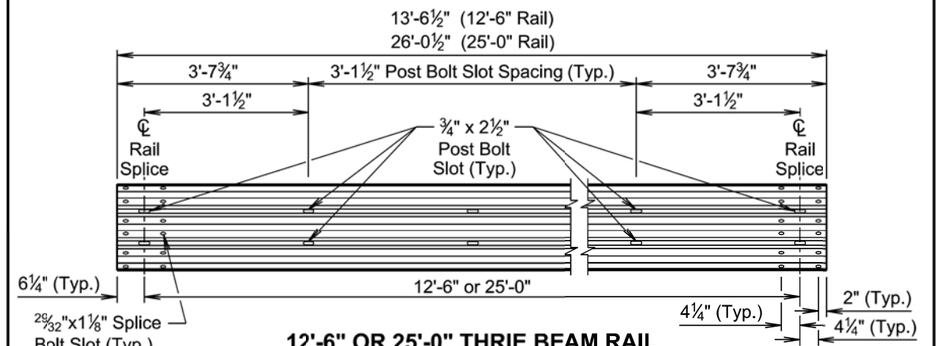


April 8, 2025

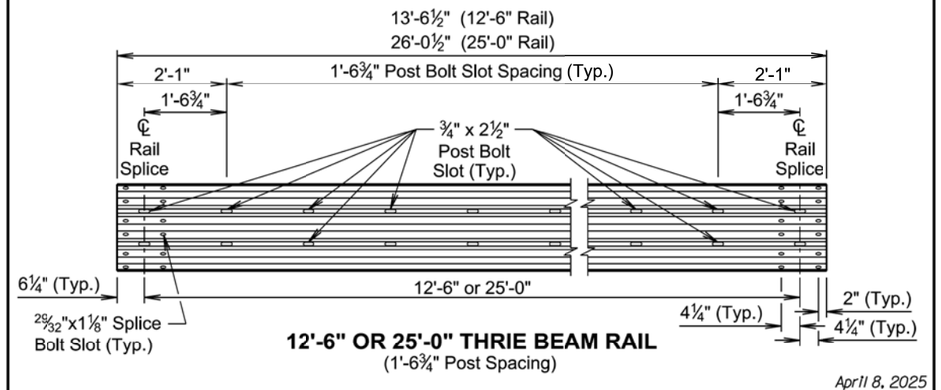
Published Date: 2026	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 3 of 5



12'-6" OR 25'-0" THRIE BEAM RAIL
(6'-3" Post Spacing)



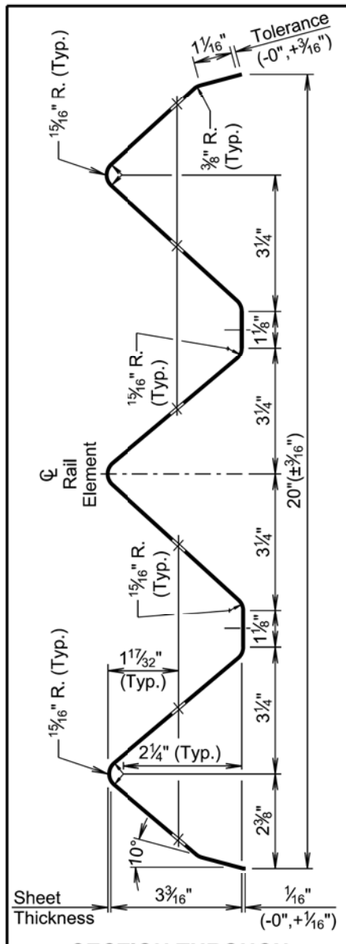
12'-6" OR 25'-0" THRIE BEAM RAIL
(3'-1½" Post Spacing)



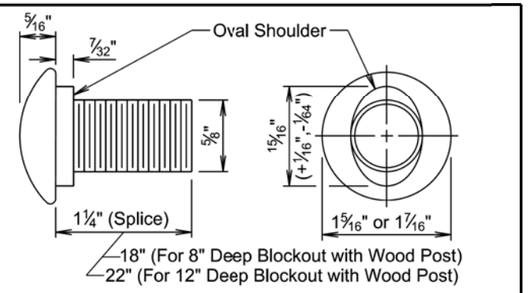
12'-6" OR 25'-0" THRIE BEAM RAIL
(1'-6¾" Post Spacing)

April 8, 2025

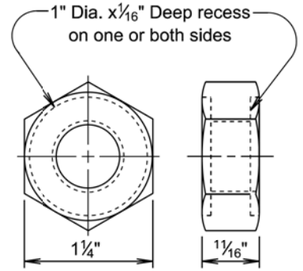
Published Date: 2026	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 4 of 5



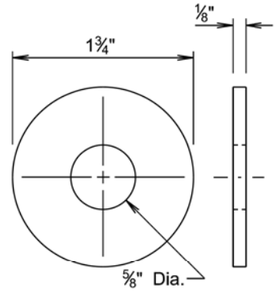
SECTION THROUGH THRIE BEAM RAIL



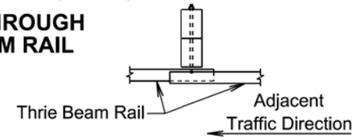
SPLICE BOLT AND POST BOLT
(⅝" Button Head Bolt)



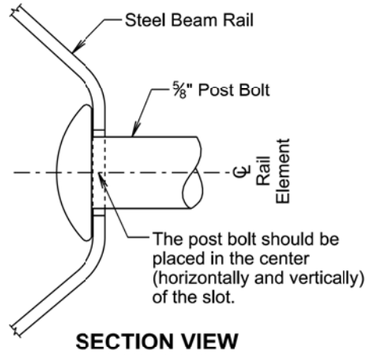
RECESS NUT
(At lap splices, the recess will be placed against the steel rail.)



WASHER
(The washer will be placed between the back side of wood post and the recess nut, see sheet 1 and 2.)



PLAN VIEW
(Lap Splice)
(Lap rail in direction of adjacent traffic.)
(12 splice bolts and 12 recess nuts per splice, NO washers)



SECTION VIEW
(At Post Bolt)

April 8, 2025

Published Date: 2026	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 5 of 5

TYPE AND DETAILS OF MGS						
Type of MGS	W Beam Rail Single or Double (Nested)	Blockout Size	Blockout Material	Post Size	Post Material	Post Spacing
1	Single	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	6'-3"
1C	Single	6"x12"x14"	Wood	6"x8"x7'-6"	Wood	6'-3"
2	Single	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	3'-1½"
3	Single	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	1'-6¾"
4	Double	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	6'-3"

STANDARD PLATE REFERENCE	
Type of MGS	See Standard Plate(s)
1	630.20, 630.22
1C	630.20, 630.25
2	630.20
3	630.20
4	630.20

GENERAL NOTES:

Asphalt concrete will be the same type used elsewhere on the project or will be as specified in the plans. If asphalt concrete is not specified in the plans, the asphalt concrete will conform to the Specifications for "Asphalt Concrete Composite".

Granular material will be the same type used elsewhere on the project or will be as specified in the plans. If granular material type is not specified in the plans, the material will conform to the Specifications for "Base Course". The granular material will be placed the same thickness as the mainline surfacing or as specified in the plans.

Topsoil is not shown in the transverse section drawing on sheet 2 of 6.

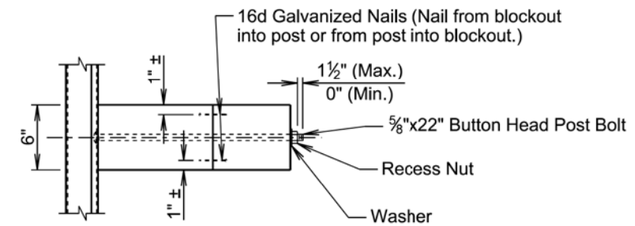
All W beam rail will be Type 1 and Class A (12 Ga.) unless specified otherwise in the plans.

W beam rail section lengths may be 12'-6" and/or 25'-0". The combination of section lengths used will be compatible with the total length of rail per site as shown in the plans.

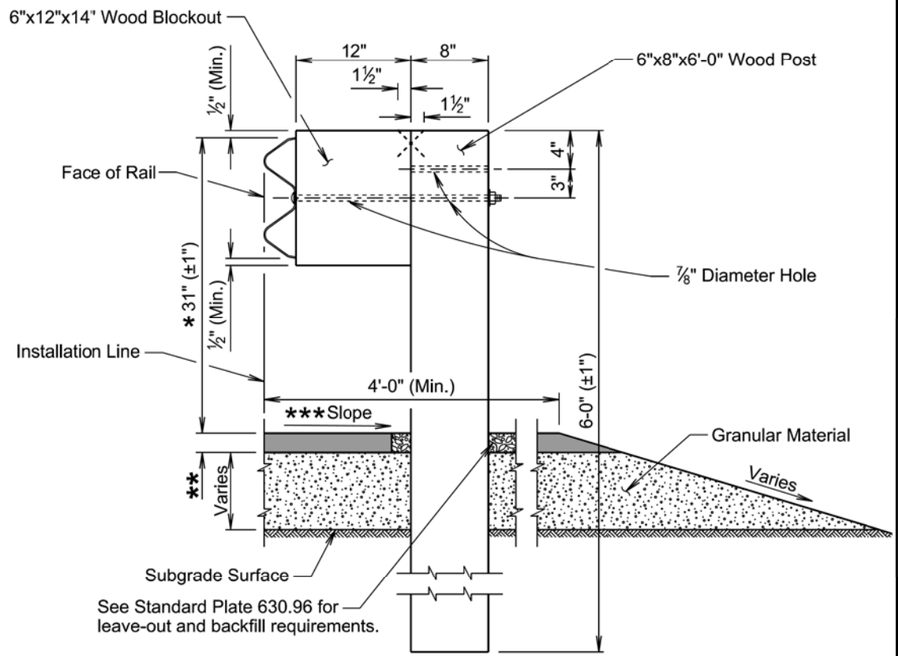
Slots in the rails will be provided as specified in the plans and by the manufacturer. A drilled hole through the rail is not allowed as a replacement for a slot. If the Contractor must create a slot, a cutting torch or plasma cutter is not allowed. The slot edges will be smooth and free of burrs or notches.

All costs for constructing the MGS including labor, equipment, and materials including all posts, blockouts, steel beam rail, and hardware will be incidental to the contract unit price per foot for the respective MGS contract item.

April 8, 2025



TOP VIEW
(Type 1, 2, or 3 MGS Installation)



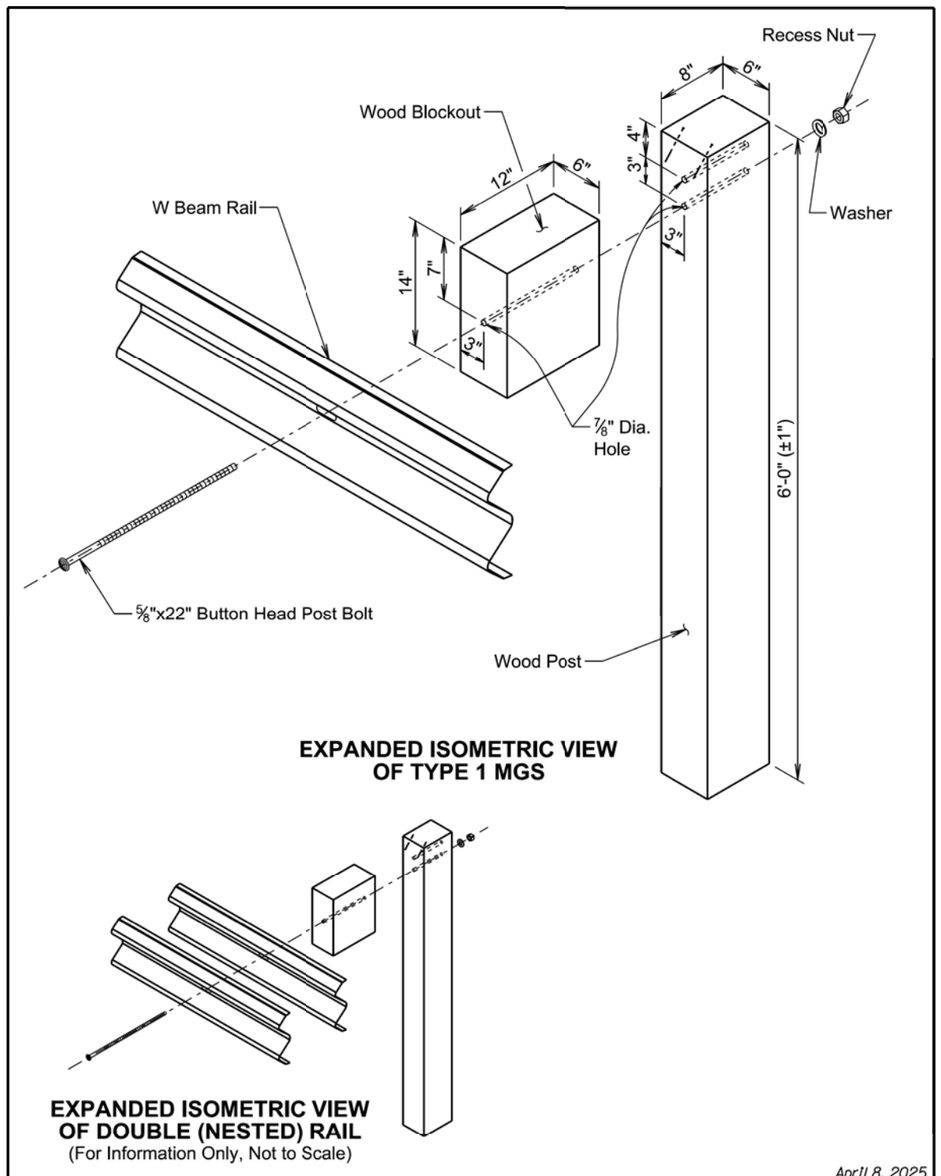
TRANSVERSE SECTION
(Type 1, 2, or 3 MGS Installation)

* See Standard Plate 630.99

** 2" asphalt concrete or as specified in the plans.

*** The cross slope will be as specified in the plans; however, the cross slope will not be steeper than a 10:1 slope.

April 8, 2025

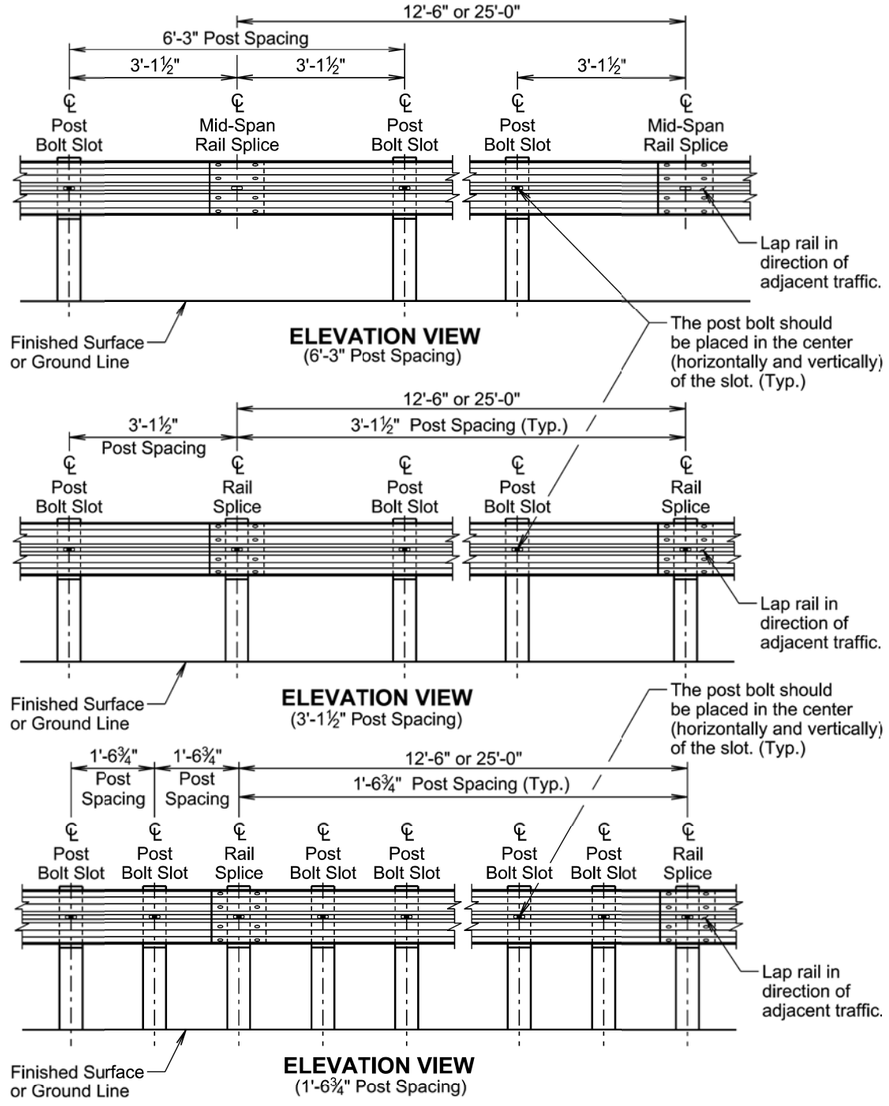


EXPANDED ISOMETRIC VIEW OF TYPE 1 MGS

EXPANDED ISOMETRIC VIEW OF DOUBLE (NESTED) RAIL
(For Information Only, Not to Scale)

April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 3 of 6



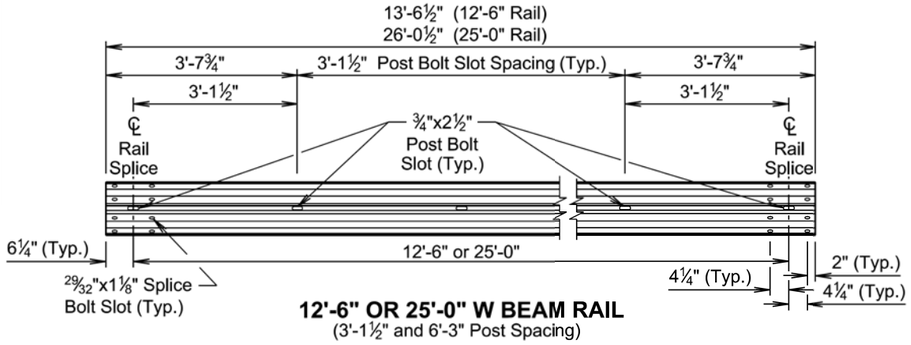
ELEVATION VIEW
(6'-3" Post Spacing)

ELEVATION VIEW
(3'-1½" Post Spacing)

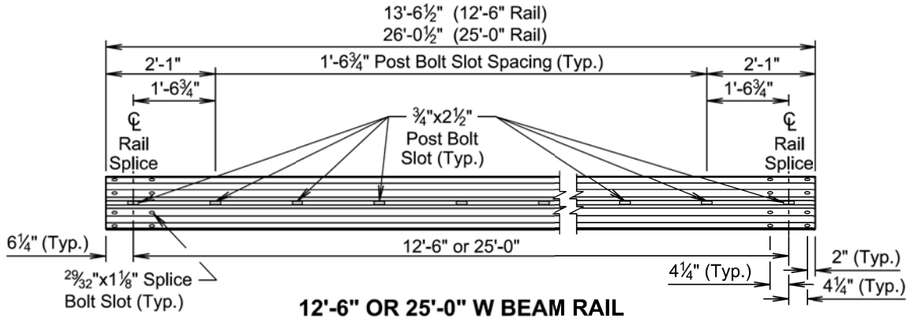
ELEVATION VIEW
(1'-6¾" Post Spacing)

April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 4 of 6



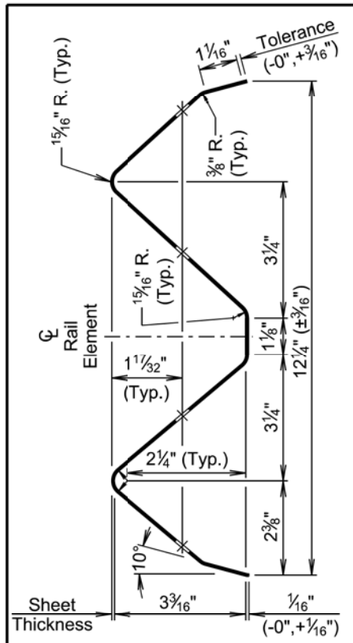
12'-6" OR 25'-0" W BEAM RAIL
(3'-1½" and 6'-3" Post Spacing)



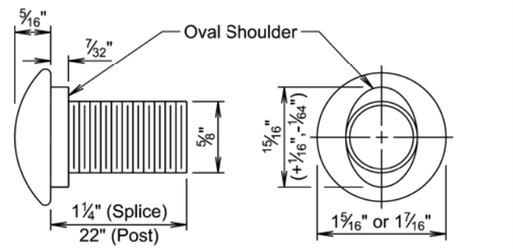
12'-6" OR 25'-0" W BEAM RAIL
(1'-6¾" Post Spacing)

April 8, 2025

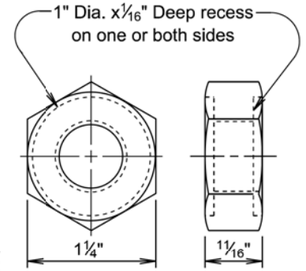
Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 5 of 6



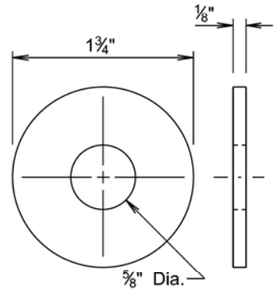
SECTION THROUGH W BEAM RAIL



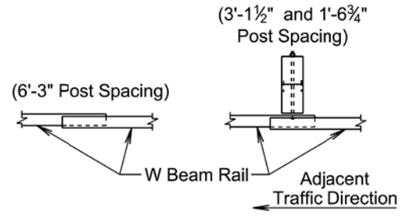
SPLICE BOLT AND POST BOLT
(⅝" Button Head Bolt)



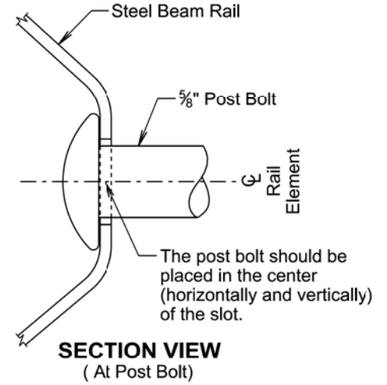
RECESS NUT
(At lap splices, the recess will be placed against the steel rail.)



WASHER
(The washer will be placed between the back side of wood post and the recess nut, see sheet 2 and 3.)



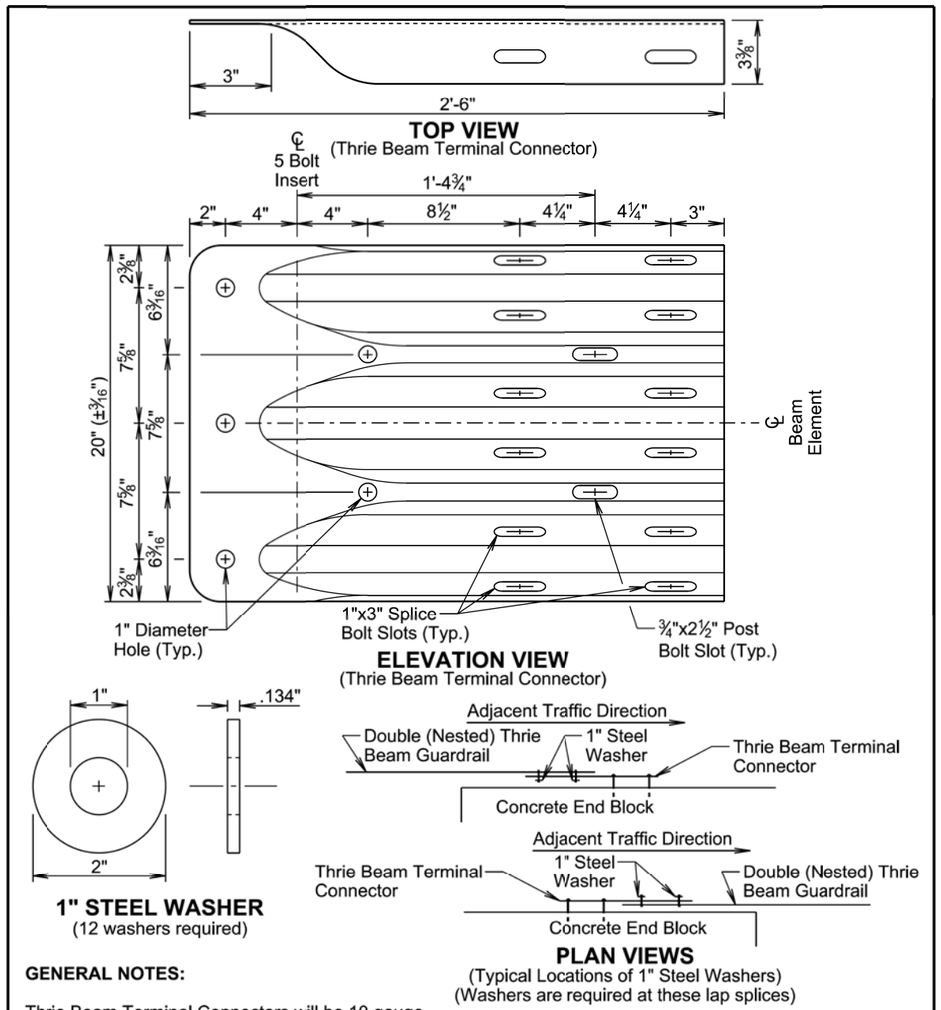
PLAN VIEW
(Lap Splice)
(Lap rail in direction of adjacent traffic.)
(8 splice bolts and 8 recess nuts per splice, NO washers)



SECTION VIEW
(At Post Bolt)

April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 6 of 6



GENERAL NOTES:

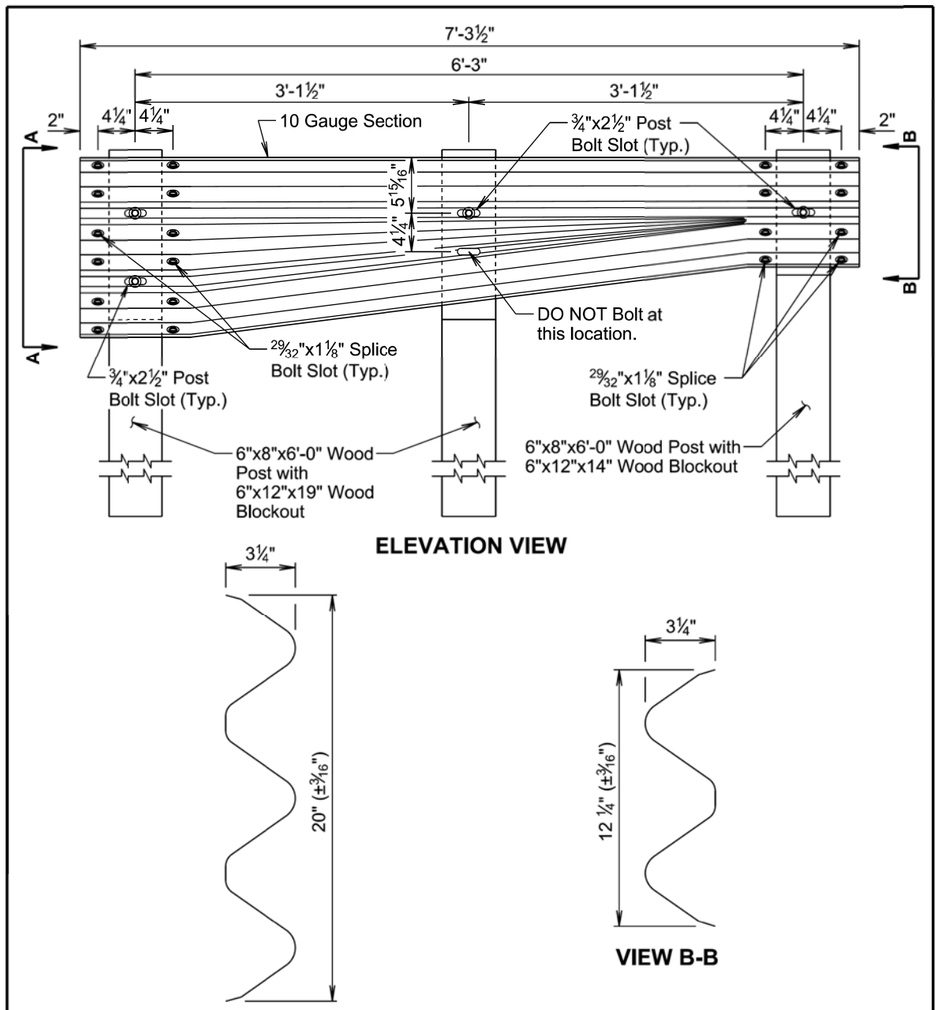
Thrie Beam Terminal Connectors will be 10 gauge.

When the thrie beam terminal connector is used to connect the rail to the bridge or concrete end block, 1" steel washers will be used at the lap splice and the washers will be in direct contact with the 3" slots of the thrie beam terminal connector. See the drawings above for the typical locations of the 1" steel washers.

There will be no separate payment for furnishing and installing the thrie beam terminal connector. All costs for furnishing and installing the thrie beam terminal connector will be incidental to the contract unit price of the respective guardrail item it is attached to.

September 14, 2019

Published Date: 2026	SDDOT	*THRIE BEAM TERMINAL CONNECTOR*	*PLATE NUMBER* 630.47 *Sheet 1 of 1*

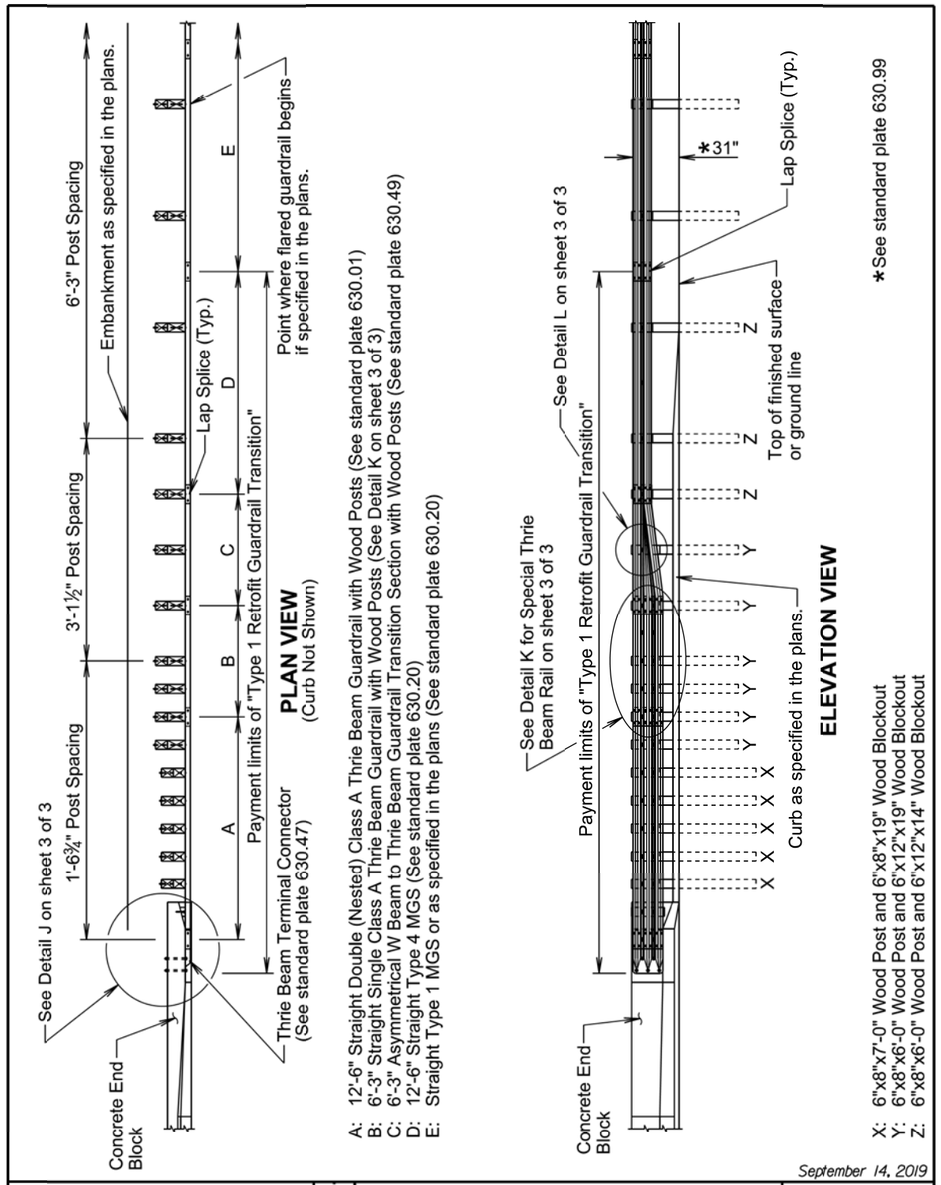


GENERAL NOTES:

All costs for furnishing and installing the asymmetrical W beam to thrie beam guardrail transition including labor, equipment, and materials including two posts, two blocks, asymmetrical W beam to thrie beam transition section, and hardware will be incidental to the contract unit price per each for the corresponding guardrail transition contract item.

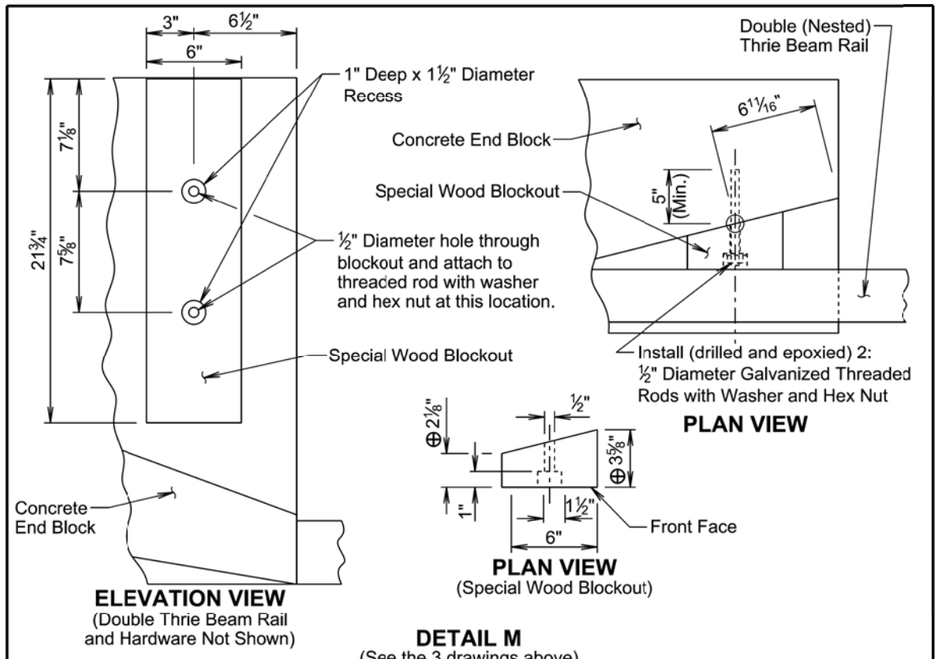
September 14, 2019

Published Date: 2026	SDDOT	*ASYMMETRICAL W BEAM TO THRIE BEAM GUARDRAIL TRANSITION SECTION*	*PLATE NUMBER* 630.49 *Sheet 1 of 1*



September 14, 2019

Published Date: 2026	SDDOT	TYPE 1 RETROFIT GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.51 Sheet 1 of 3



GENERAL NOTES FOR INSTALLING THREADED RODS INTO CONCRETE:

⊕ The dimensions shown are estimated based on original construction plans of the concrete end block. The special wood blockout will be cut as necessary such that the front face of the special wood blockout will align with the vertical front face of the concrete end block ±½".

The threaded rods will be ½" diameter and conform to ASTM F1554, Grade 55. The threaded rods will be embedded a minimum of 5" into the concrete.

The diameter of the drilled holes will not be less than ⅛" greater or more than ⅜" greater than the diameter of the threaded rods or as per the Manufacturer's recommendations. The holes will not be drilled using core bits. The drilled holes will be blown out with compressed air using a device that will reach the back of the hole to ensure that all debris or loose material has been removed prior to the epoxy injection.

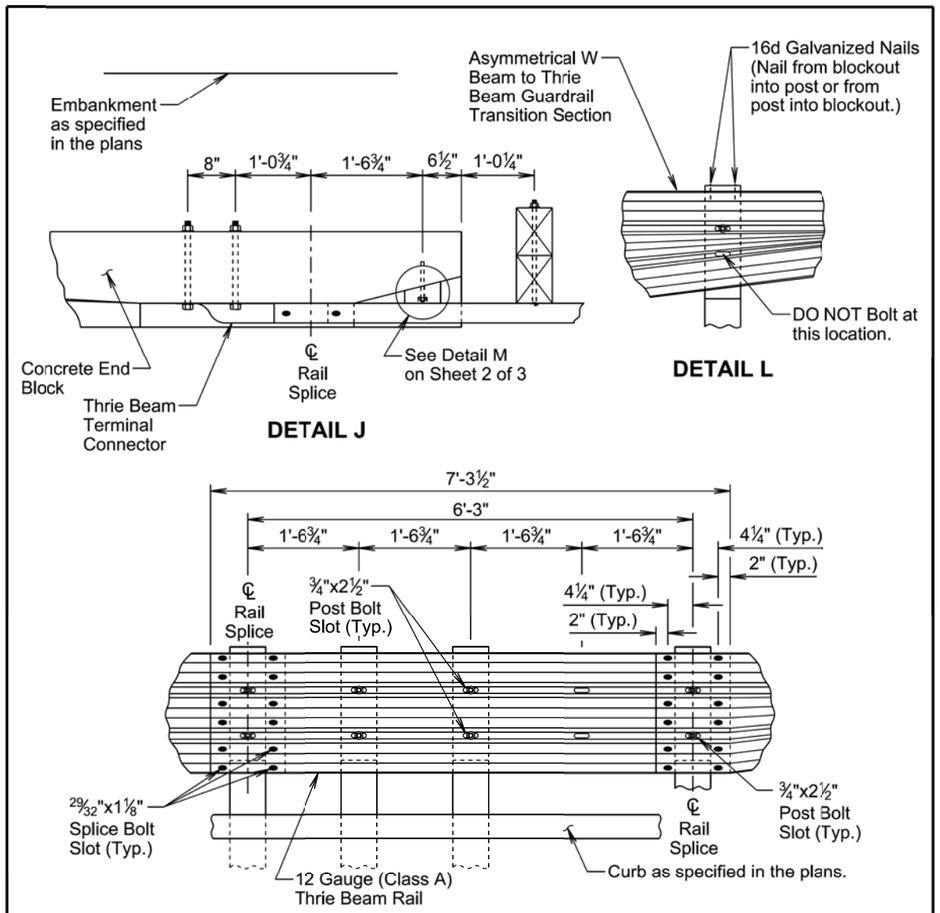
The epoxy resin mixture will be of a type for bonding steel to hardened concrete and will conform to AASHTO M235 Type IV, Grade 3 (Equivalent to ASTM C881, Type IV, Grade 3).

Mix epoxy resin as recommended by the Manufacturer and apply by an injection method as approved by the Engineer. Beginning at the back of the drilled holes, fill the holes ⅓ to ½ full of epoxy, or as recommended by the Manufacturer, prior to insertion of the steel rod. Rotate the steel rod during installation to eliminate voids and ensure complete bonding of the rod. Insertion of the rods by the dipping or painting methods will not be allowed.

Loads will not be applied to the epoxy grouted threaded rods until the epoxy resin has had sufficient time to cure as specified by the epoxy resin Manufacturer.

September 14, 2019

Published Date: 2026	SDDOT	TYPE 1 RETROFIT GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.51 Sheet 2 of 3



DETAIL K
(Special Thrie Beam Rail)

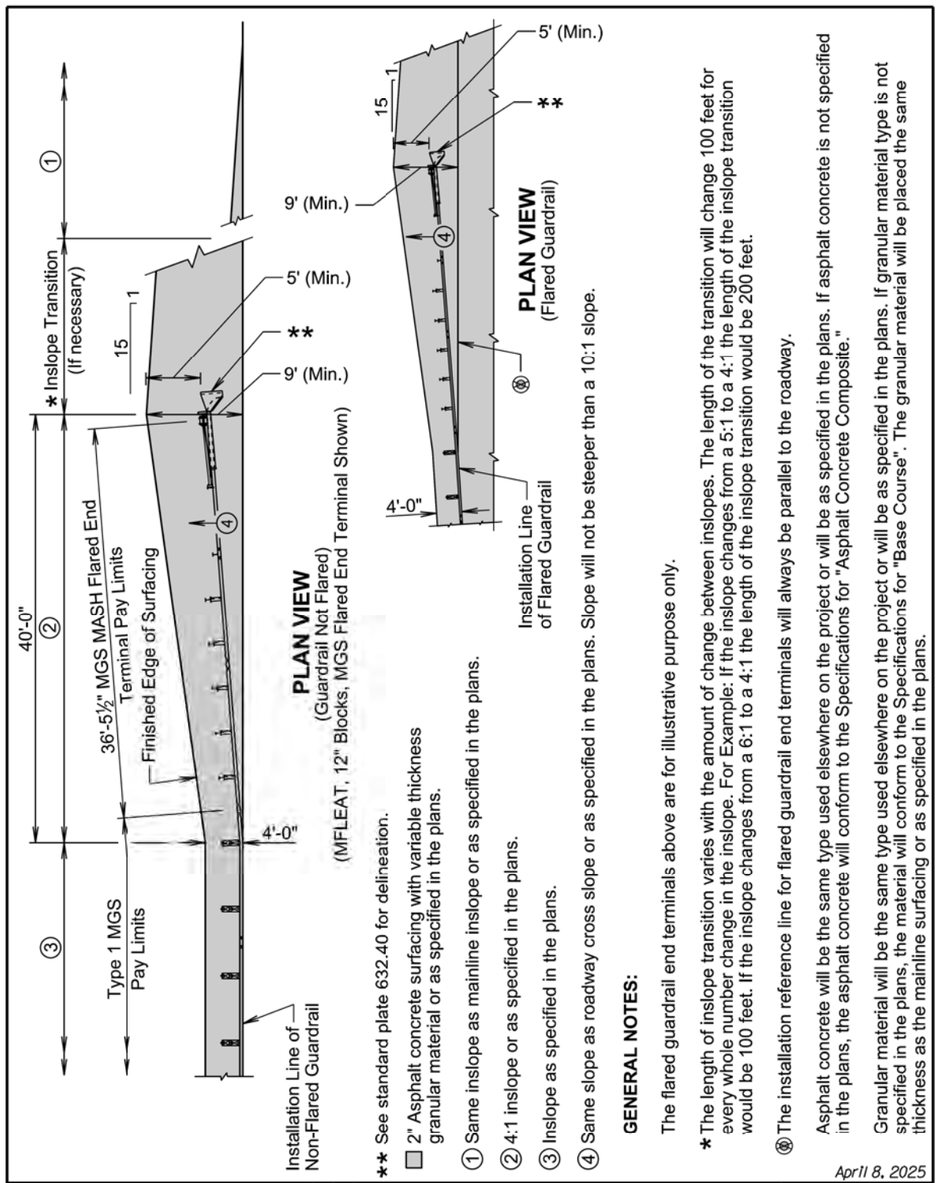
GENERAL NOTES:

Throughout the type 1 retrofit guardrail transition, slots in the rails will be provided as specified in the plans and by the Manufacturer. A drilled hole through the rail is not allowed as a replacement for a slot. If the Contractor must create a slot, a cutting torch or plasma cutter is not allowed. The slot edges will be smooth and free of burrs or notches.

All costs for furnishing and installing the type 1 retrofit guardrail transition including labor, equipment, and materials which includes all rail sections, posts and blockouts, special blockout, hardware, and incidentals will be included in the contract unit price per each for "Type 1 Retrofit Guardrail Transition".

September 14, 2019

Published Date: 2026	SDDOT	TYPE 1 RETROFIT GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.51
			Sheet 3 of 3



GENERAL NOTES:

The flared guardrail end terminals above are for illustrative purpose only.

* The length of inslope transition varies with the amount of change between inslopes. The length of the transition will change 100 feet for every whole number change in the inslope. For Example: If the inslope changes from a 5:1 to a 4:1 the length of the inslope transition would be 200 feet. If the inslope changes from a 6:1 to a 4:1 the length of the inslope transition would be 400 feet.

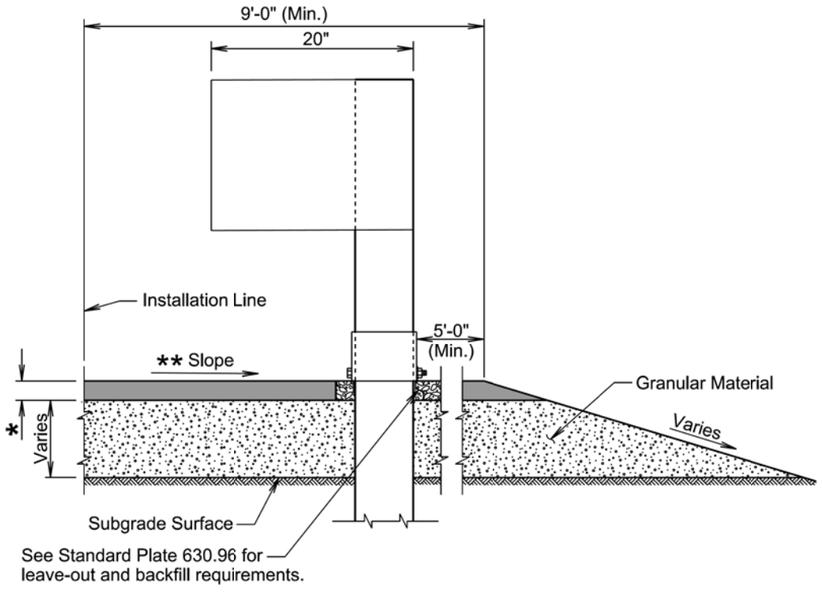
⑧ The installation reference line for flared guardrail end terminals will always be parallel to the roadway.

Asphalt concrete will be the same type used elsewhere on the project or will be as specified in the plans. If asphalt concrete is not specified in the plans, the asphalt concrete will conform to the Specifications for "Asphalt Concrete Composite."

Granular material will be the same type used elsewhere on the project or will be as specified in the plans. If granular material type is not specified in the plans, the material will conform to the Specifications for "Base Course". The granular material will be placed the same thickness as the mainline surfacing or as specified in the plans.

April 8, 2025

Published Date: 2026	SDDOT	EMBANKMENT, SURFACING, AND PAYMENT LIMITS FOR MGS MASH FLARED END TERMINAL	PLATE NUMBER 630.87
			Sheet 1 of 2



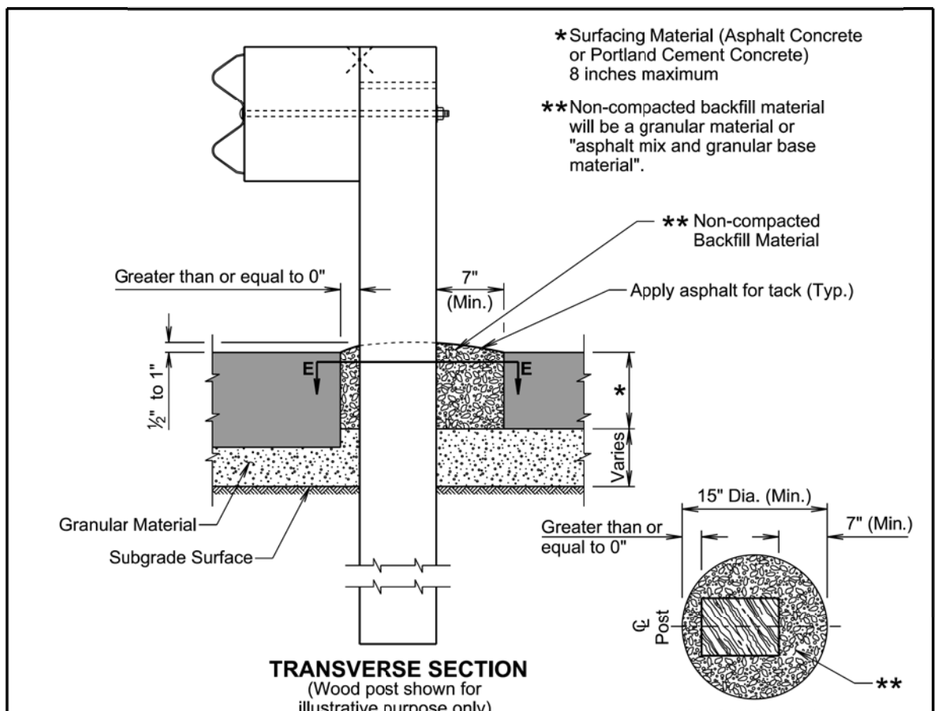
TRANSVERSE SECTION
(MFLEAT MGS Flared End Terminal Shown)

* 2" asphalt concrete or as specified in the plans.

** The cross slope will be as specified in the plans; however, the cross slope will not be steeper than a 10:1 slope.

April 8, 2025

Published Date: 2026	SDDOT	EMBANKMENT, SURFACING AND PAYMENT LIMITS FOR MGS MASH FLARED END TERMINAL	PLATE NUMBER 630.87 Sheet 2 of 2



TRANSVERSE SECTION
(Wood post shown for illustrative purpose only)

SECTION E-E
(Round option for leave-out and backfill limits)
(Wood post shown for illustrative purpose only)

GENERAL NOTES:

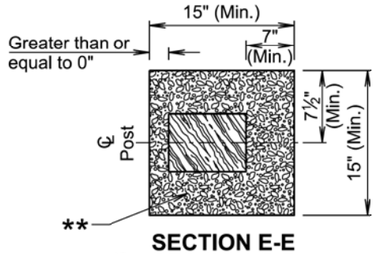
The leave-out limits may be increased to accommodate construction equipment and tolerances.

When posts are installed in augured or dug holes, the backfill material will be compacted to the bottom of the pavement surfacing material to the satisfaction of the Engineer. The backfill material for the thickness of the pavement surfacing material will be non-compacted.

The backfill material will be mounded ½ inch to 1 inch above the top of the adjacent surfacing as illustrated above.

Asphalt for tack will be applied to the surface of the backfill material at the rate of 0.15 to 0.20 gallons per square yard.

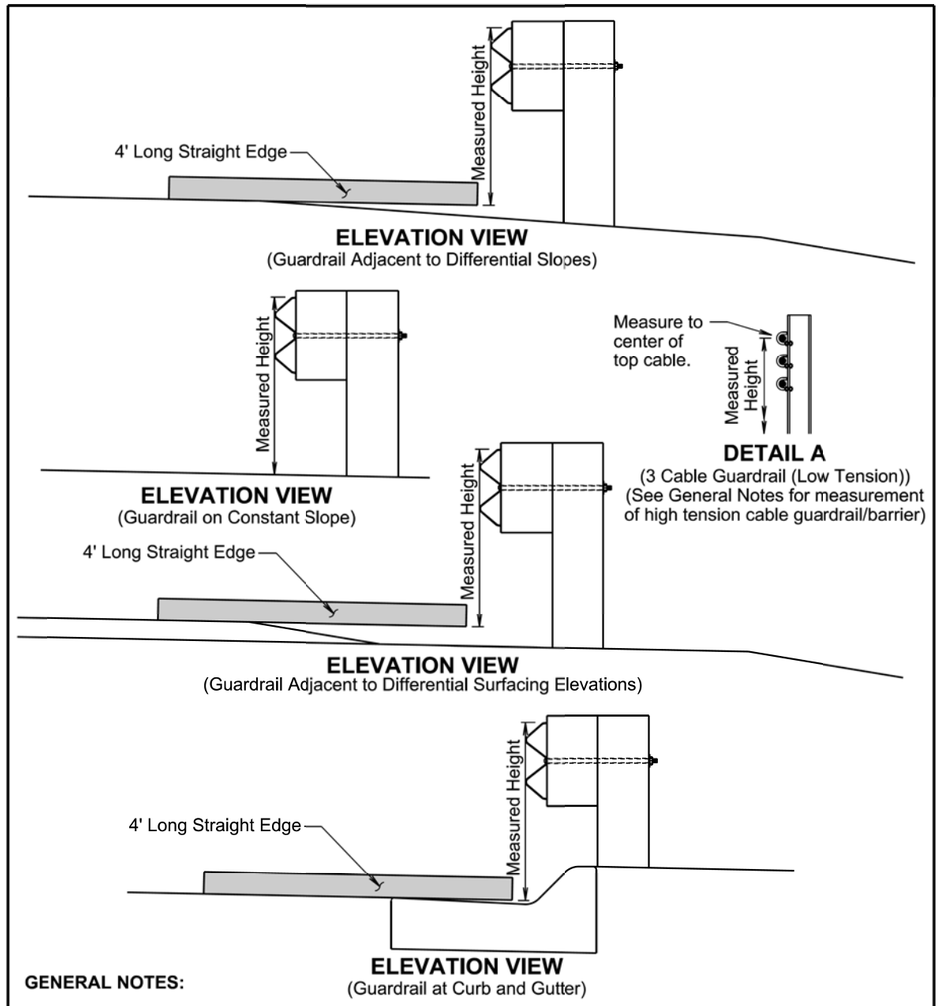
All costs for constructing the leave-out including labor, equipment, and materials which includes the backfill material and tack coat will be incidental to the contract unit price for the respective guardrail contract item.



SECTION E-E
(Square option for leave-out and backfill limits)
(Wood post shown for illustrative purpose only)

November 19, 2021

Published Date: 2026	SDDOT	GUARDRAIL POST INSTALLED IN ASPHALT CONCRETE OR PORTLAND CEMENT CONCRETE	PLATE NUMBER 630.96 Sheet 1 of 1



GENERAL NOTES:

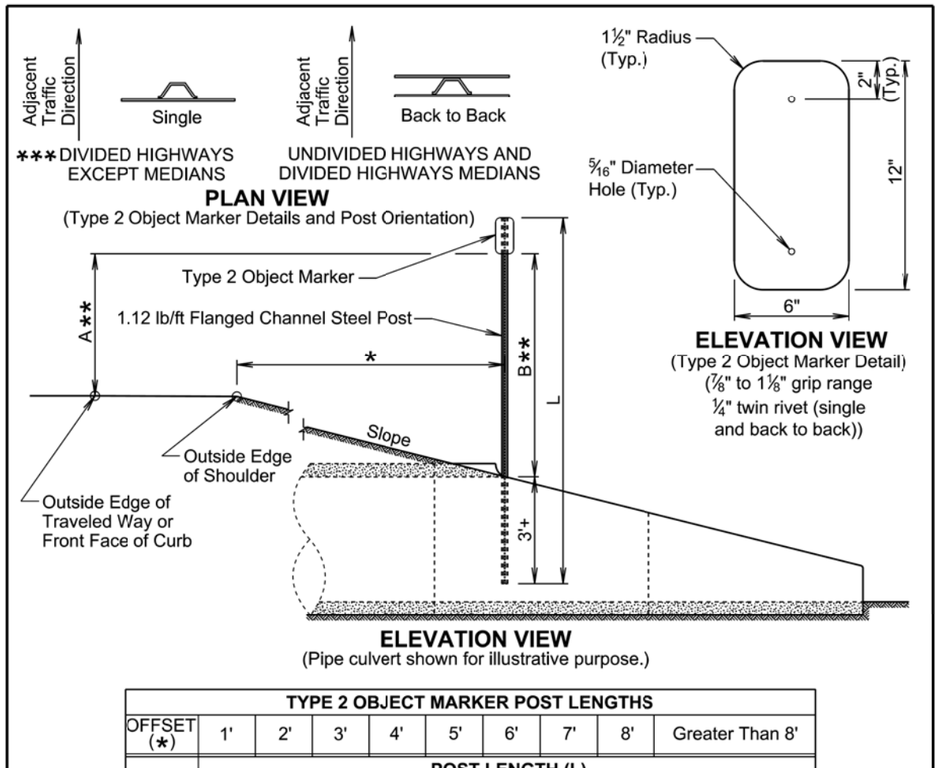
The W Beam guardrail shown is for illustrative purpose. The guardrail height for all types of guardrail systems except for high tension cable guardrail/barrier will be measured in accordance with this standard plate.

When measuring height of 3 cable guardrail (low tension) the height will be measured to the center of the top cable. See Detail A.

The height of high tension cable guardrail/barrier will be measured in accordance with the Manufacturer's installation instructions.

September 14, 2019

Published Date: 2026	SDDOT	MEASURING GUARDRAIL HEIGHT	PLATE NUMBER 630.99 Sheet 1 of 1



TYPE 2 OBJECT MARKER POST LENGTHS

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

GENERAL NOTES:

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

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

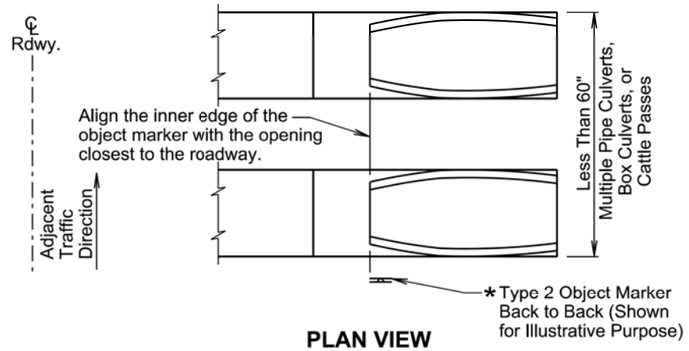
** Dimension A is 4 feet when the Offset * is 8 feet and less. Dimension B is 4 feet when Offset * is greater than 8 feet.

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

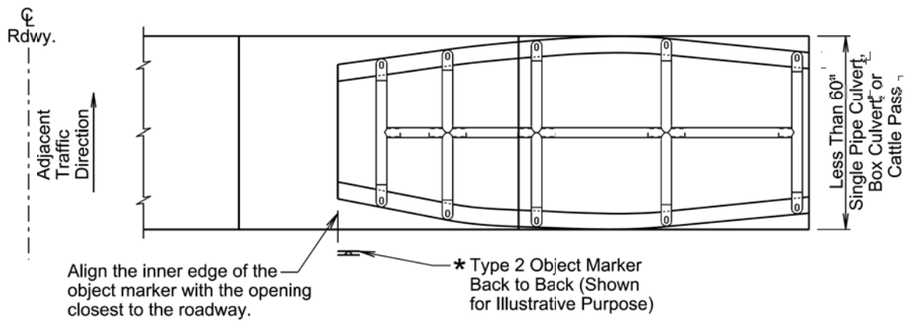
Payment for the type 2 object marker will be in conformance with Specification Section 632.5 B.

December 23, 2019

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



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.)

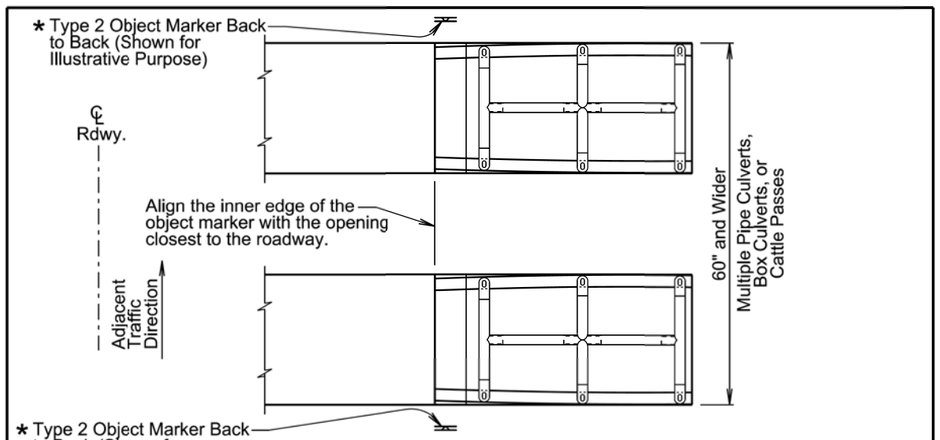
GENERAL NOTES:

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

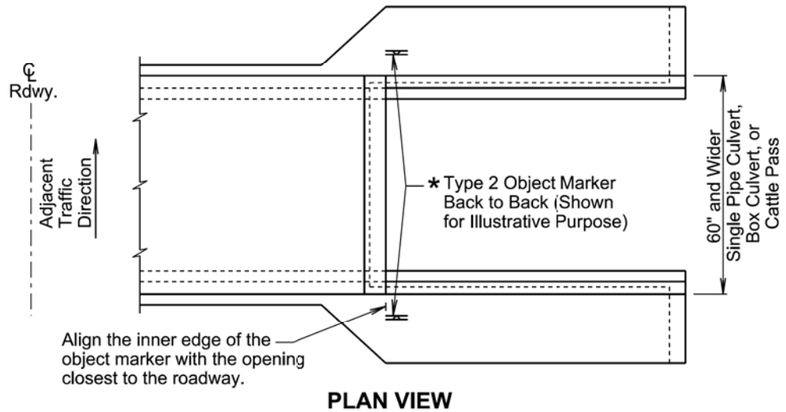
* The type 2 object markers will be installed at the locations shown above. The type 2 object markers, single faced or back to back, will be as specified in the plans.

December 23, 2019

Published Date: 2026	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
(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)
(Box culvert shown for illustrative purpose.)
(Embankment is not shown.)

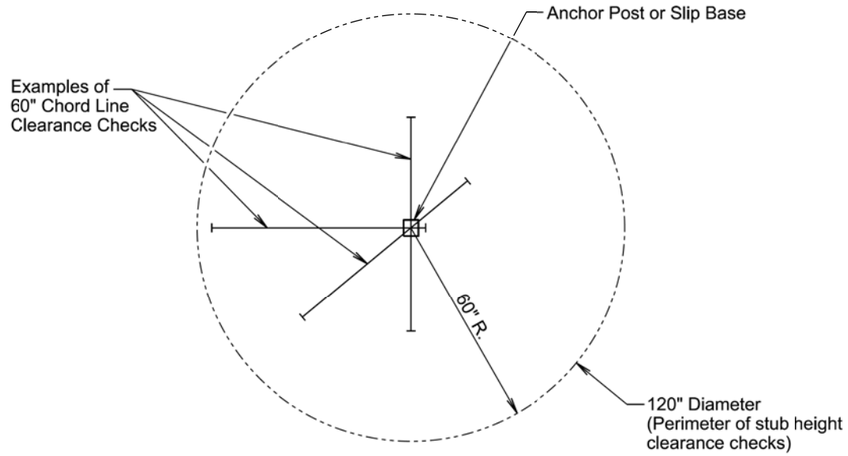
GENERAL NOTES:

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

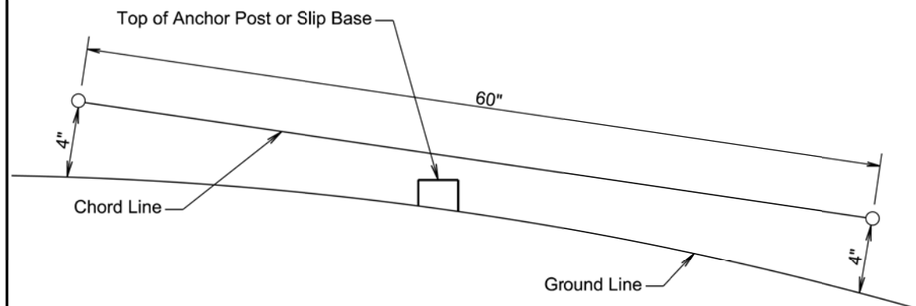
* The type 2 object markers will be installed at the locations shown above. The type 2 object markers, single faced or back to back, will be as specified in the plans.

December 23, 2019

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



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

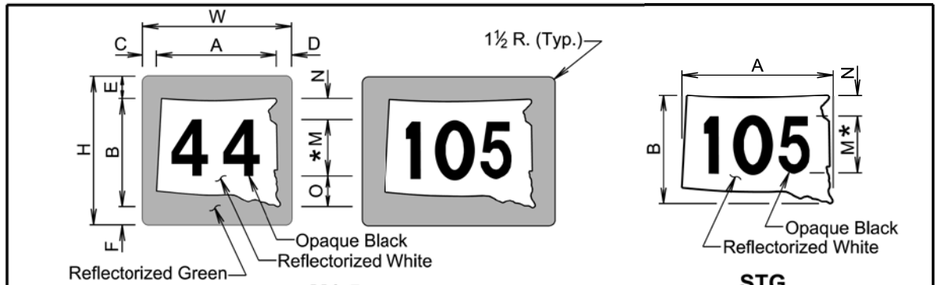
GENERAL NOTES:

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: 2026	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 632.18
			Sheet 1 of 1



M1-5

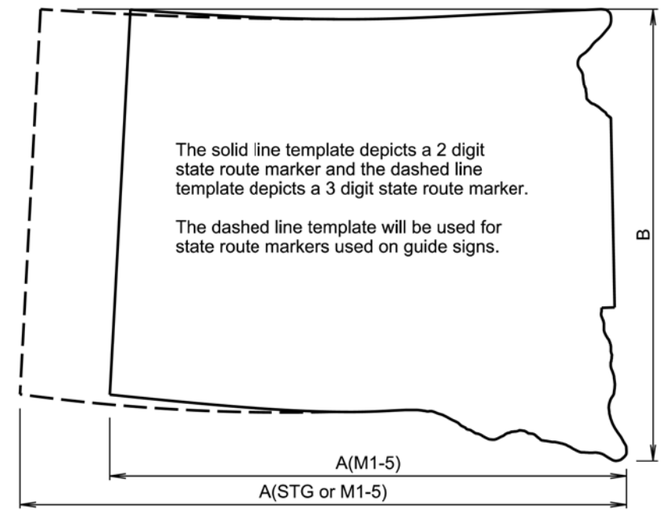
SIGN CODE	WxH	A	B	C	D	E	F	M*	N	O
M1-5	24x24	20½	18	2	1½	3½	2½	12D	2	4
M1-5 **	30x24	24	18	2¼	1¾	3½	2½	12D	2	4
M1-5	30x30	25⅝	22½	2½	1⅞	4⅜	3⅛	15D	2½	5
M1-5	36x36	30¾	27	3	2¼	5¼	3¾	18D	3	6

STG

SIGN CODE	AxB	M*	N
STG-24	24x18	10D	4
STG-32	32x24	12D	4¾
STG-48	48x36	18D	7
STG-64	64x48	24D	9½

* In the few cases where there is not enough space for the numerals, the standard D series font may be replaced with C series font if approved by the Engineer.

** 3 Digits



TEMPLATE FOR STATE ROUTE MARKER

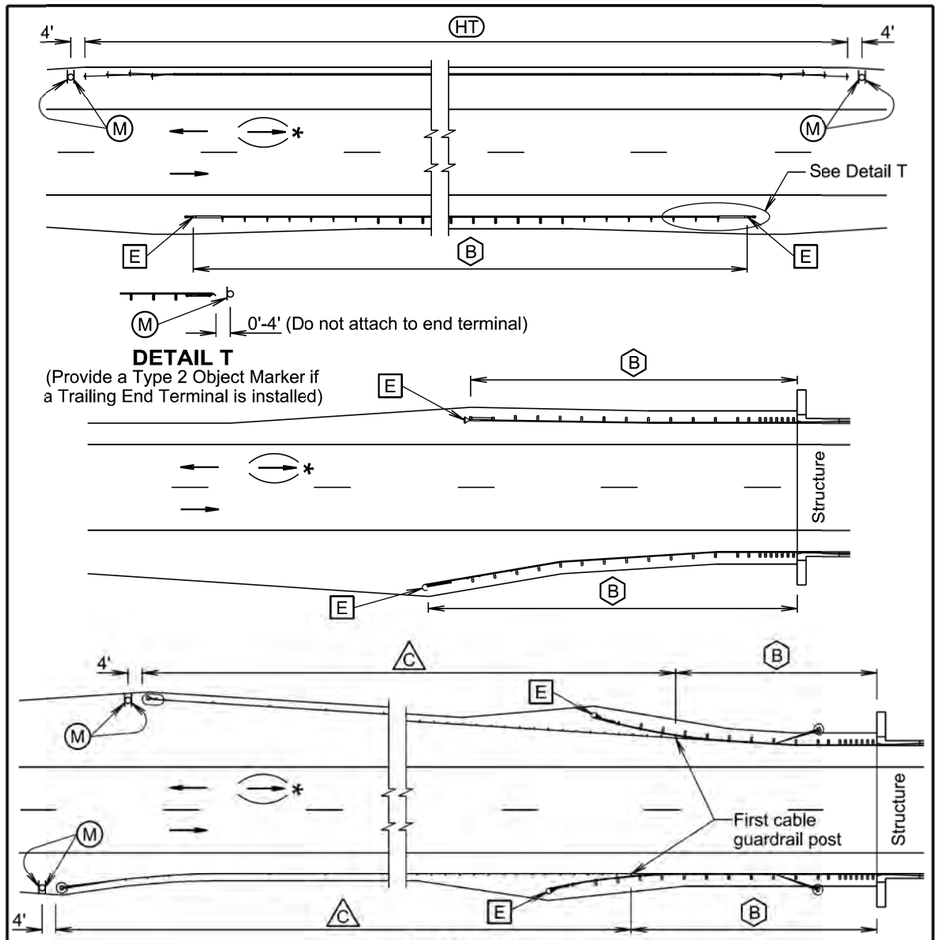
GENERAL NOTES:

The unit for all dimensions shown is inches.

Numerals will be D series font for all state route markers except as noted above.

December 23, 2019

Published Date: 2026	SDDOT	STATE ROUTE MARKERS	PLATE NUMBER 632.20
			Sheet 1 of 1



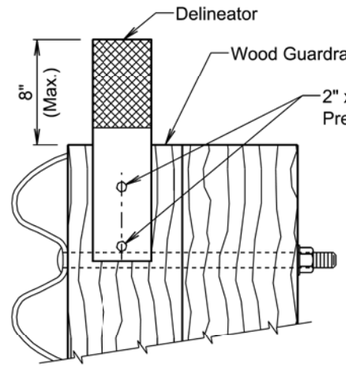
PLAN VIEW
(Typical Guardrail Layouts)

(B) Steel Beam Guardrail Delineation
(HT) High Tension Cable Guardrail Delineation
[E] Guardrail End Terminal Object Marker
(M) Type 2 Object Marker
[C] 3 Cable Guardrail (Low Tension) Delineation

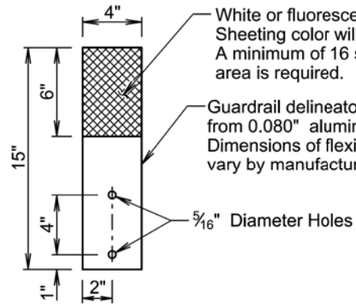
*For two-way traffic, install delineation at the opposite end of structure the same as shown. Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

April 8, 2025

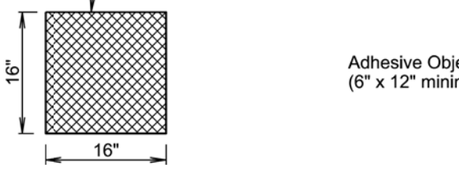
Published Date: 2026	SDDOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 1 of 4



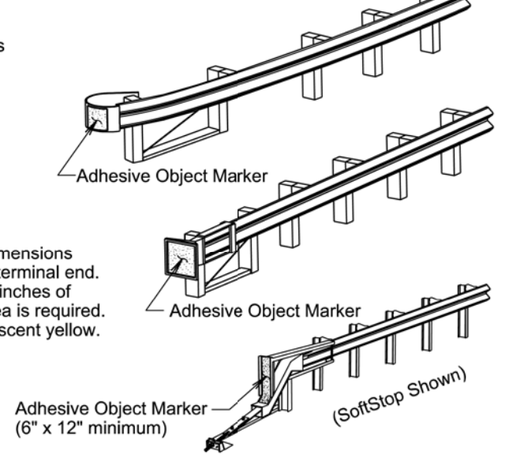
(B) STEEL BEAM GUARDRAIL DELINEATION



DELINEATOR
(For Steel Beam Guardrail)



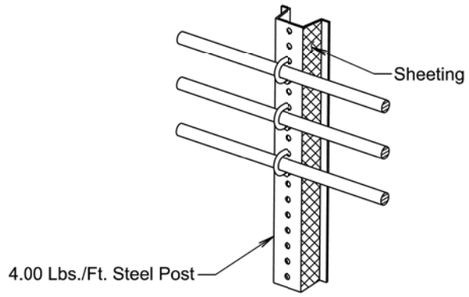
ADHESIVE OBJECT MARKER



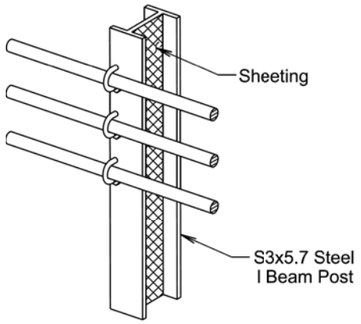
[E] GUARDRAIL END TERMINAL OBJECT MARKER

April 8, 2025

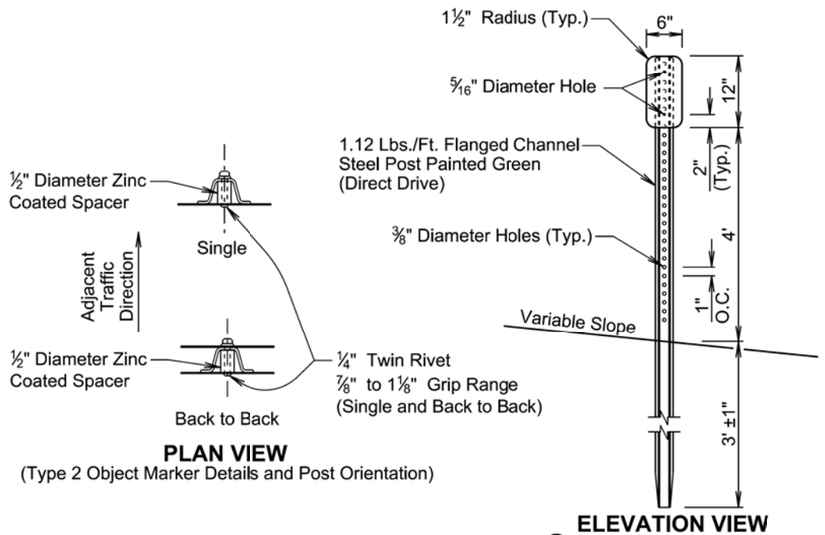
Published Date: 2026	SDDOT	DELINEATION GUARDRAIL	PLATE NUMBER 632.40
			Sheet 2 of 4



Ⓒ 3 CABLE GUARDRAIL (LOW TENSION) DELINEATION



Ⓒ 3 CABLE GUARDRAIL (LOW TENSION) DELINEATION



PLAN VIEW
(Type 2 Object Marker Details and Post Orientation)

ELEVATION VIEW
Ⓜ (Type 2 Object Marker)
(For Marking 3 Cable Guardrail (Low Tension) Anchor, High Tension Cable Guardrail Anchor, and Trailing End Terminal)

April 8, 2025

Published Date: 2026	SDDOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 3 of 4

GENERAL NOTES:

The delineation of high tension cable guardrail will be reflective sheeting placed back to back on every third post cap or cable spacer. Maximum spacing of delineation will not exceed 35 feet. The sheeting will be type XI in conformance with ASTM D4956. The color of the reflective sheeting will be the same as the nearest pavement marking.

The delineators for steel beam guardrail and sheeting on 3 cable guardrail (low tension) posts will be covered with a minimum of 16 square inches of reflective sheeting. The reflective sheeting will be type XI in conformance with ASTM D4956. Along two-way roadways the sheeting will be on both sides of the delineators and guardrail posts and will be white in color. For one-way roadways the sheeting will only be required on the side facing traffic and the color will be the same as the nearest pavement marking, yellow on the left side of the roadway and white on the right side.

When steel beam guardrail is attached to a bridge the first delineator will be attached to the post nearest the bridge.

At bridges with guardrail less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object marker. The spacing between the delineators will be approximately one third of the length of the guardrail.

At bridges with guardrail 200 feet and greater in length, including bridges that have steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

Steel beam guardrail that is not attached to a bridge and is less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object markers. The spacing between the delineators will be approximately one third of the length of the guardrail.

Steel beam guardrail that is not attached to a bridge and is 200 feet and greater in length, including steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

All costs for furnishing and installing single or back to back guardrail delineation on 3 cable guardrail and steel beam guardrail will be included in the contract unit price per each for "Guardrail Delineator".

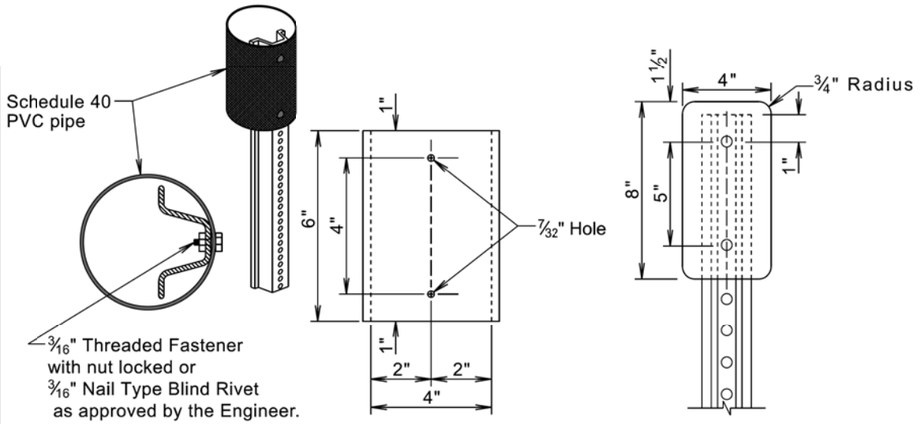
All costs for furnishing and installing the reflective sheeting on the cable spacers or post caps for the high tension cable guardrail will be incidental to the respective high tension cable guardrail contract item.

An adhesive object marker will be placed on the end of the W beam guardrail or MGS end terminal. The adhesive object marker dimensions may vary due to the shape of the terminal end. A minimum of 256 square inches of object marker reflective sheeting area is required on end terminals with sufficient surface area. Other end terminals (SoftStop) will require an adhesive object marker with a minimum size of 6" x 12". The reflective sheeting will be fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the adhesive object marker will be incidental to various contract items.

A type 2 object marker will be placed such that the edges of the type 2 object marker and the 3 cable guardrail (low tension) anchor, high tension cable guardrail anchor, or the trailing end terminal that are nearest to the roadway will be installed in line with the same lateral offset from the traveled way at the location as noted on sheet 1 of this standard plate. The type 2 object marker (6" x 12") will have fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the type 2 object marker including the steel post, 6" x 12" reflective panel, and hardware will be included in the contract unit price per each for "Type 2 Object Marker" for single-sided and "Type 2 Object Marker Back to Back" for back to back type 2 object markers.

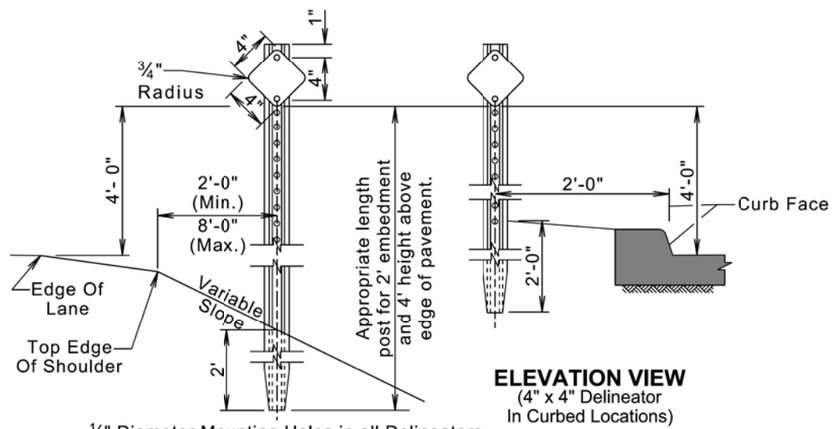
April 8, 2025

Published Date: 2026	SDDOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 4 of 4



ELEVATION VIEW
(4" Tubular delineator
mounted on post)

ELEVATION VIEW
(4" x 8" Delineator)



ELEVATION VIEW
(4" x 4" Delineators)

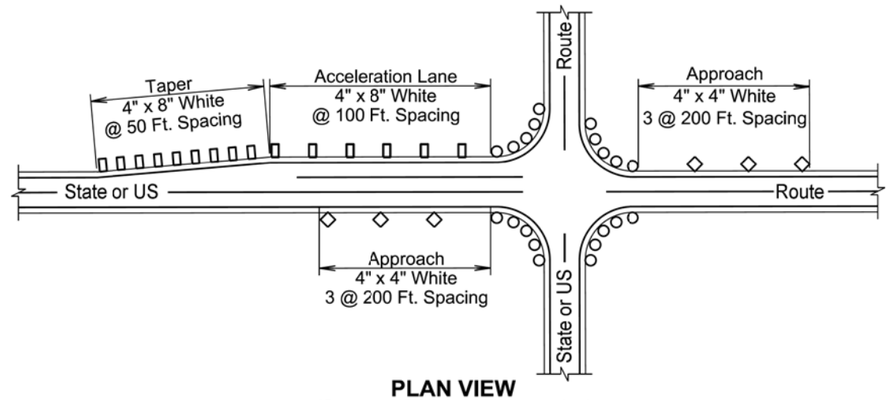
ELEVATION VIEW
(4" x 4" Delineator
In Curbed Locations)

GENERAL NOTES:

Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

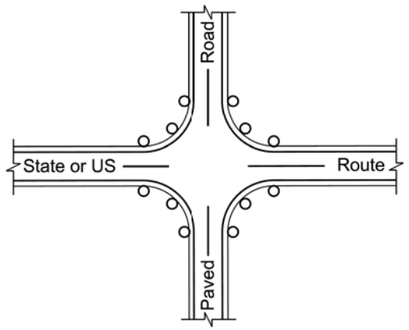
March 31, 2024

Published Date: 2026	SDDOT	DELINEATOR INSTALLATION DETAIL	PLATE NUMBER 632.42 Sheet 1 of 1



PLAN VIEW
(State or US Highway Intersection)

LEGEND
◇ 4" x 4" White Delineator
▯ 4" x 8" White Delineator
○ 4" x 6" White Tubular Delineator



PLAN VIEW
(Paved County Crossroad)

GENERAL NOTES:

At all intersections with State or US highways and paved county roads:

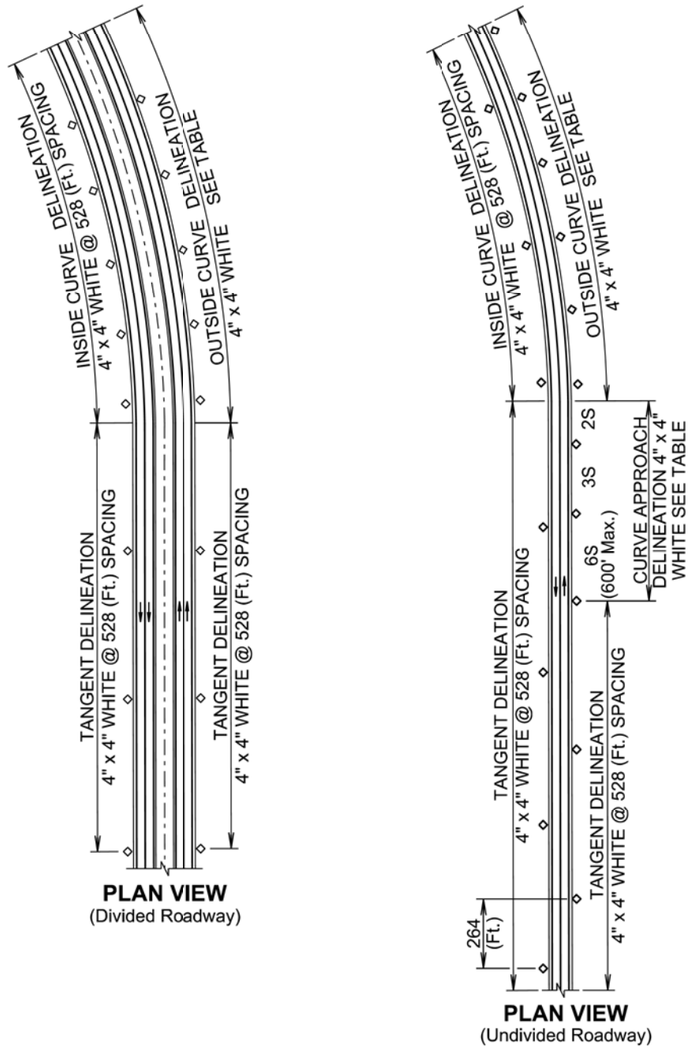
For radii greater than 100 feet, place 5 tubular white delineators on equally spaced posts around the turning radius.

For radii greater than 50 feet up to 100 feet, place 4 tubular white delineators on equally spaced posts around the turning radius.

For radii of 50 feet or less, place 3 tubular white delineators on equally spaced posts around the turning radius.

November 19, 2020

Published Date: 2026	SDDOT	DELINEATOR AT INTERSECTIONS	PLATE NUMBER 632.44 Sheet 1 of 1



PLAN VIEW
(Divided Roadway)

PLAN VIEW
(Undivided Roadway)

March 31, 2024

Published Date: 2026	SDDOT	DELINEATOR INSTALLATION SPACING	PLATE NUMBER 632.46
			Sheet 1 of 2

GENERAL NOTES:

Delineators will be located from 2 to 8 feet outside of the outer edge of shoulder. When a roadside barrier or other obstruction intrudes into the space between the pavement edge and the extension of the line of delineators, the delineators should be in line with the barrier or in line with the innermost edge of the obstruction.

When normal spacing is interrupted by driveways, crossroads, or approaches, delineators falling within such areas may be moved in either direction a distance not exceeding one-quarter of the standard spacing. Delineators still falling within such areas should be eliminated.

The spacing for specific radii may be interpolated from the table. The minimum spacing should be 20 feet. The spacing on curves should not exceed 300 feet. In advance of or beyond a curve, and proceeding away form the end of the curve, the spacing of the first delineator is 2S, the second 3S, and the third 6S, but not to exceed 300 feet. S refers to the delineator spacing for specific radii computed from the formula $S = 3\sqrt{R - 50}$. The distances for S shown in the table were rounded to the nearest 5 feet.

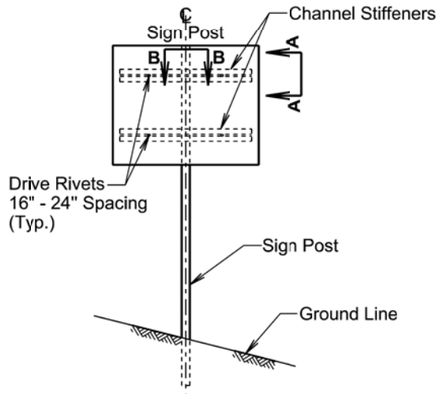
Curve approach delineation is not required if curve delineation spacing exceeds 100 ft.

Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

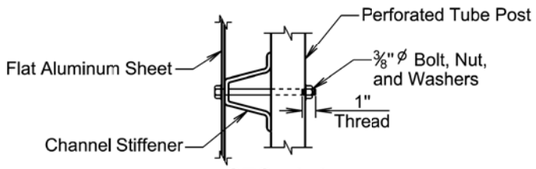
DELINEATOR SPACING OUTSIDE CURVE				
Radius of Curve (Ft.)	Curve Delineator Spacing (Ft.)	Curve Approach Spacing (Ft.)		
		A	B	C
50	20	40	65	125
115	25	50	75	150
150	30	60	90	180
180	35	70	110	215
250	40	85	125	250
300	45	95	140	285
400	55	110	170	300
500	65	125	190	300
600	70	140	210	300
700	75	150	230	300
800	80	165	245	300
900	85	175	260	300
1000	90	185	275	300

March 31, 2024

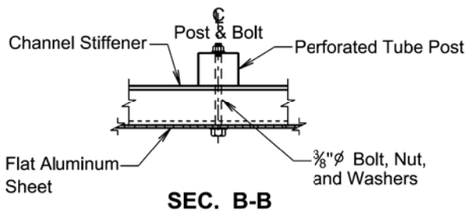
Published Date: 2026	SDDOT	DELINEATOR INSTALLATION SPACING	PLATE NUMBER 632.46
			Sheet 2 of 2



ELEVATION VIEW
(One post breakaway sign supports.)



SEC. A-A

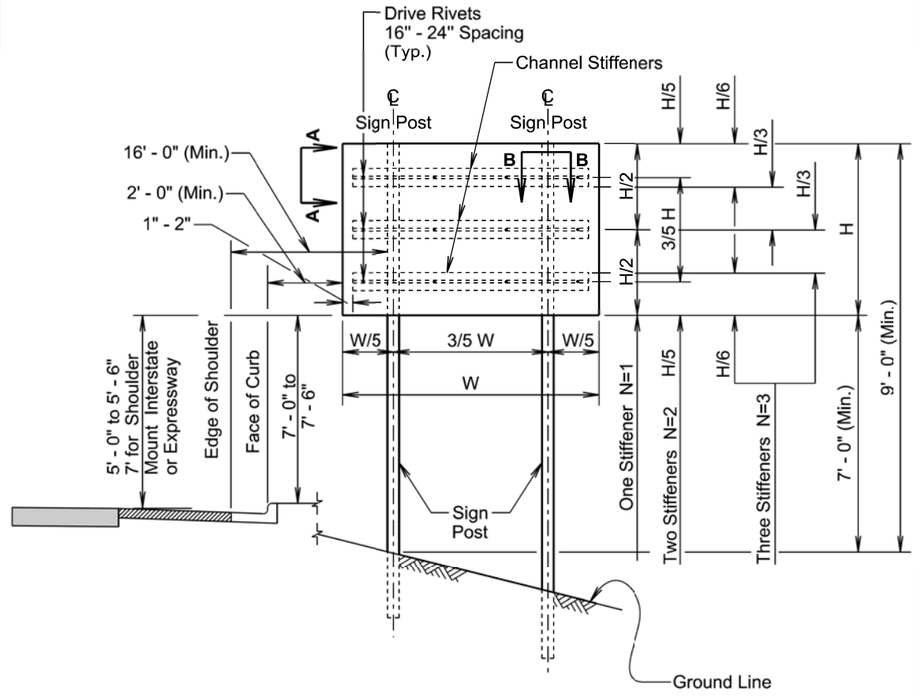


SEC. B-B
(Typical sign and stiffener details.)

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: 2026	SDDOT	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
			Sheet 1 of 2



TWO POST BREAKAWAY SIGN SUPPORTS

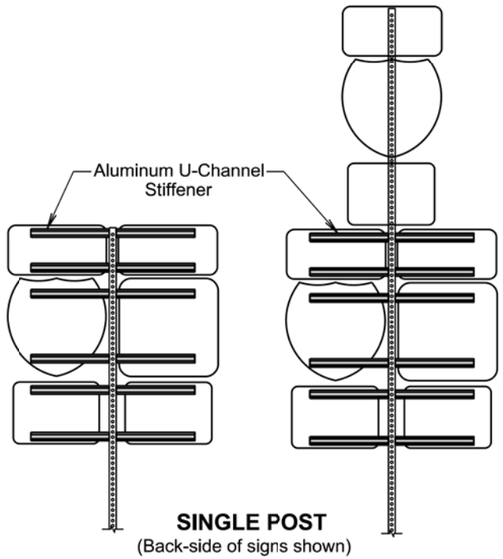
GENERAL NOTES:

The number of stiffeners used (N) will be as follows:
If H < = 2' - 0" then N = 1
if 2' - 0" < H < = 8' - 0" then N = 2
if 8' - 0" < H < = 15' - 0" then N = 3
where H is the vertical dimension of the sign.

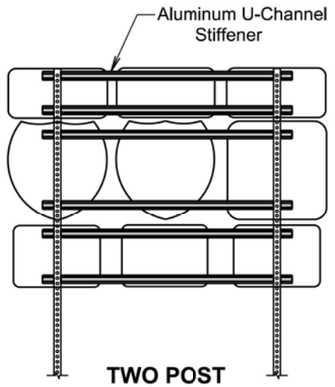
A minimum of two bolts will be required to fasten the sign to each post.

November 19, 2020

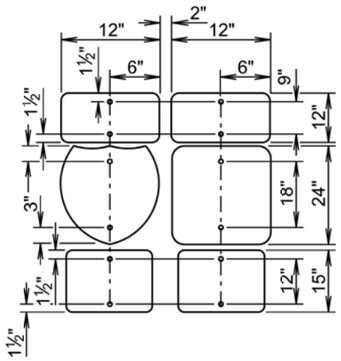
Published Date: 2026	SDDOT	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
			Sheet 2 of 2



SINGLE POST
(Back-side of signs shown)



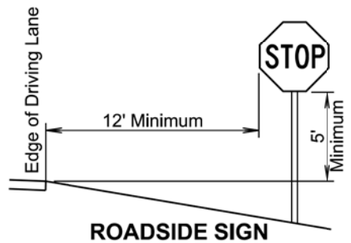
TWO POST
(Back-side of signs shown)



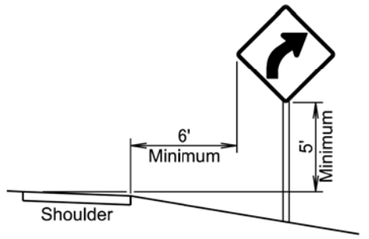
TYPICAL ROUTE MARKER BOLT HOLE LOCATIONS

November 19, 2020

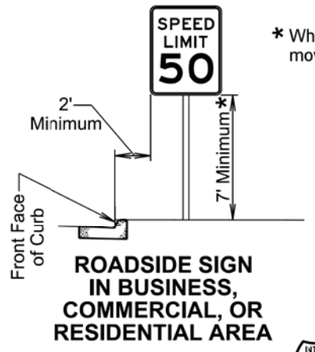
Published Date: 2026	SDDOT	MULTIPLE ROUTE MARKER SIGN STIFFENER INSTALLATION DETAILS	PLATE NUMBER 632.62
			Sheet 1 of 1



ROADSIDE SIGN IN RURAL AREA

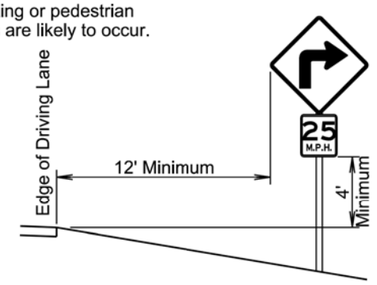


ROADSIDE SIGN IN RURAL AREA
(If shoulder width is greater than 6 foot)

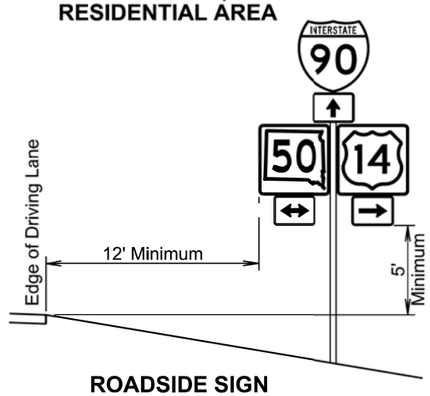


ROADSIDE SIGN IN BUSINESS, COMMERCIAL, OR RESIDENTIAL AREA

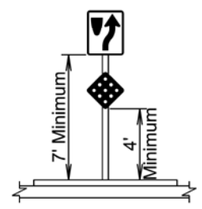
* Where parking or pedestrian movements are likely to occur.



WARNING SIGN ADVISORY SPEED PLAQUE IN RURAL AREA



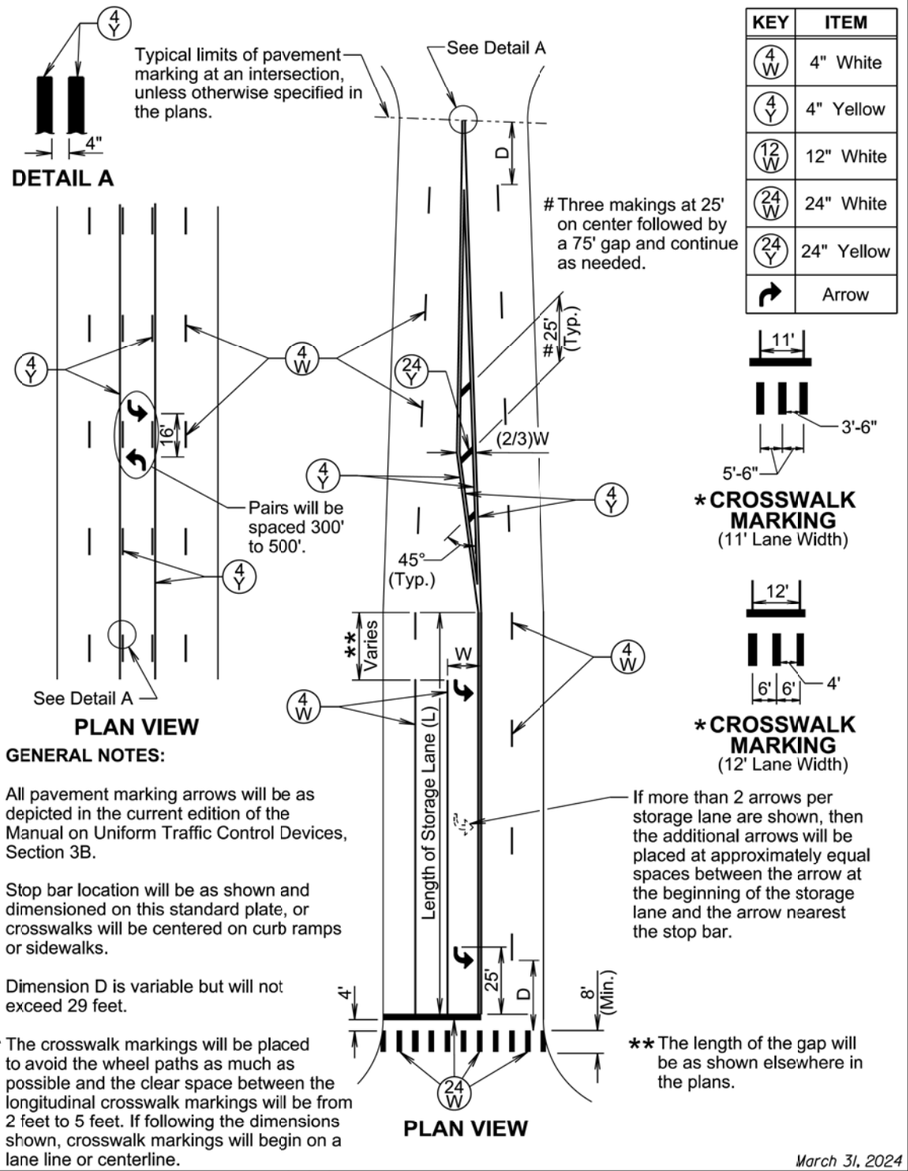
ROADSIDE SIGN IN RURAL AREA



SIGN ON NOSE OF MEDIAN

April 8, 2025

Published Date: 2026	SDDOT	OFFSETS FOR SIGN INSTALLATION	PLATE NUMBER 632.90
			Sheet 1 of 1



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.

March 31, 2024

Published Date: 2026	SDDOT	PAVEMENT MARKINGS FOR ADJACENT INTERSECTIONS AND CENTER TURN LANE	PLATE NUMBER 633.01
			Sheet 1 of 1

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.

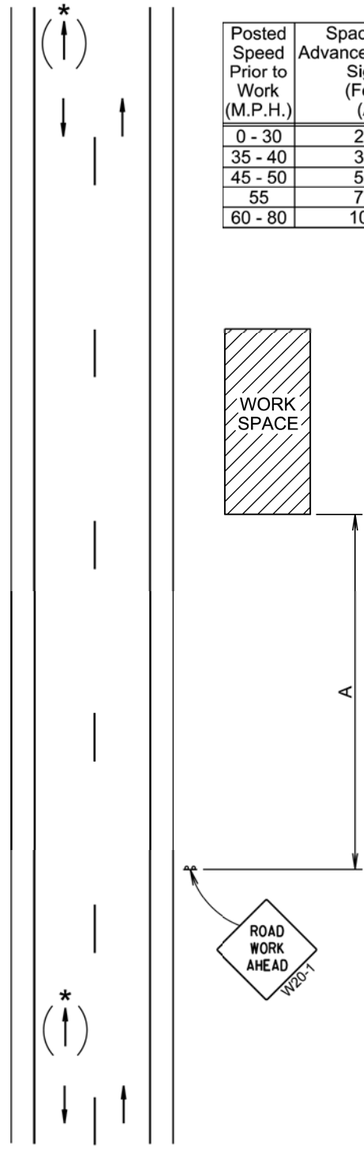
The signs illustrated will be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

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.

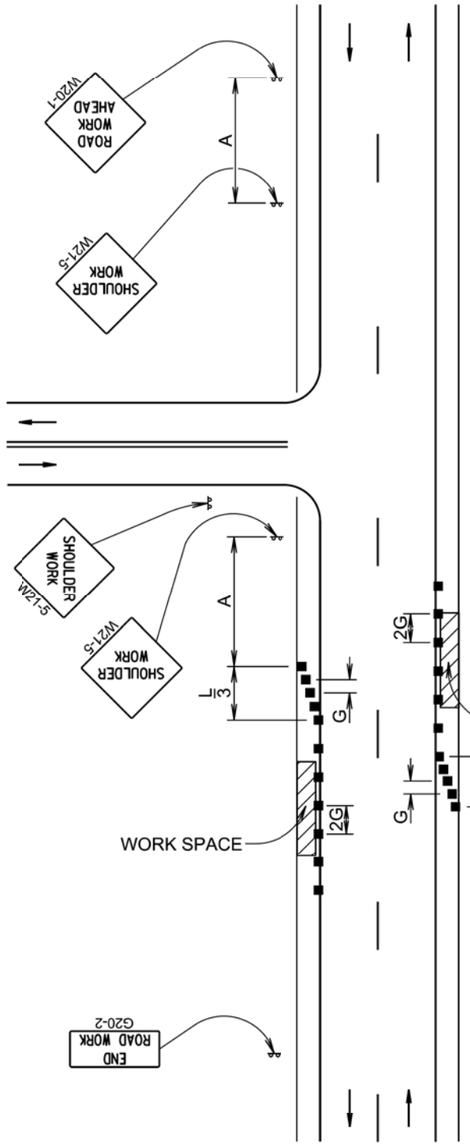
For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

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



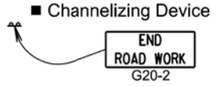
January 22, 2021

Published Date: 2026	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: 2026	SDDOT	WORK ON SHOULDERS	PLATE NUMBER 634.03 Sheet 1 of 1

*In situations where multiple work locations in a limited distance make it practical to place stationary signs, the distance between the advance warning sign and the work should not exceed 5 miles.

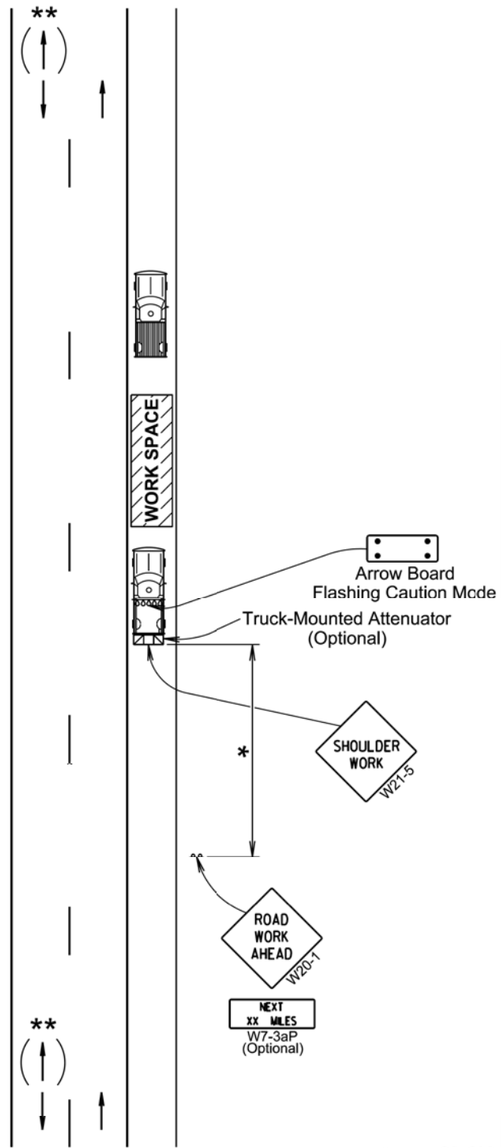
The ROAD WORK NEXT xx MILES sign may be used instead of the ROAD WORK AHEAD sign if the work locations occur over a distance of more than 2 miles.

Arrow board is required for intermittently and continuously moving mobile operations when work exceeds 1 hour.

**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.

In situations where the distance between the advance warning signs and the work is 2 miles to 5 miles, a Supplemental Distance plaque should be used with the ROAD WORK AHEAD sign.

All costs associated with the traffic control for mobile operation including signs, arrow boards and equipment will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".



January 22, 2021

Published Date: 2026	SDDOT	MOBILE OPERATIONS ON SHOULDERS	PLATE NUMBER 634.04 Sheet 1 of 1

* Messages on signs will vary depending on the operation being conducted.

Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

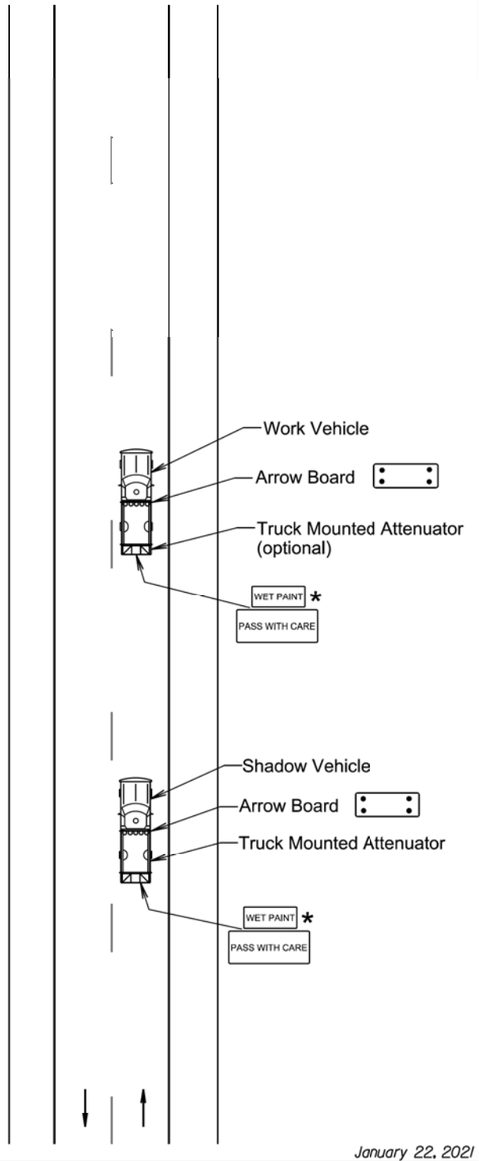
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

Vehicle hazard warning signals will not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.

When an arrow board is used, it will be used in the caution mode. Marching Diamonds are acceptable.

Arrow boards will, as a minimum, be Type B, with a size of 60" x 30".

All costs associated with the traffic control for mobile operation including signs, arrow boards and equipment will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".



January 22, 2021

Published Date: 2026

SDDOT

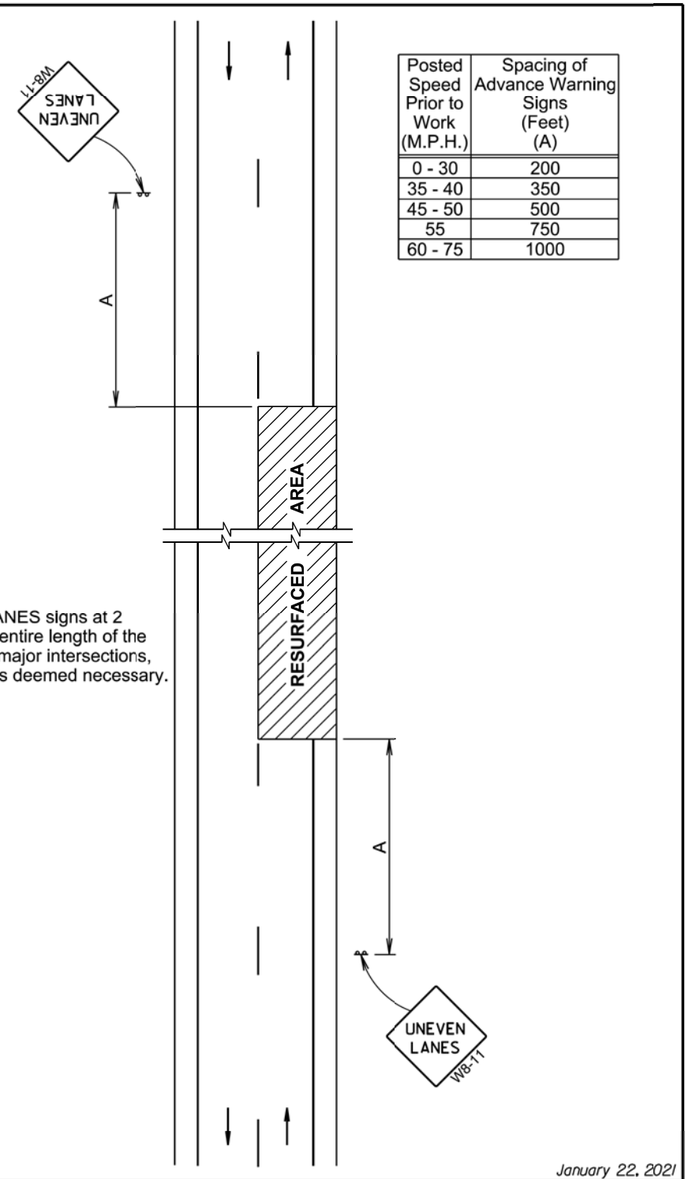
MOBILE OPERATIONS ON 2-LANE ROAD

PLATE NUMBER 634.06

Sheet 1 of 1

Install additional UNEVEN LANES signs at 2 mile intervals throughout the entire length of the uneven area and at affected major intersections, edge of towns, and other sites deemed necessary.

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 - 75	1000



January 22, 2021

Published Date: 2026

SDDOT

UNEVEN ROAD SURFACE

PLATE NUMBER 634.22

Sheet 1 of 1

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

Flagger

Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) will be displayed in advance of the liquid asphalt areas.

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

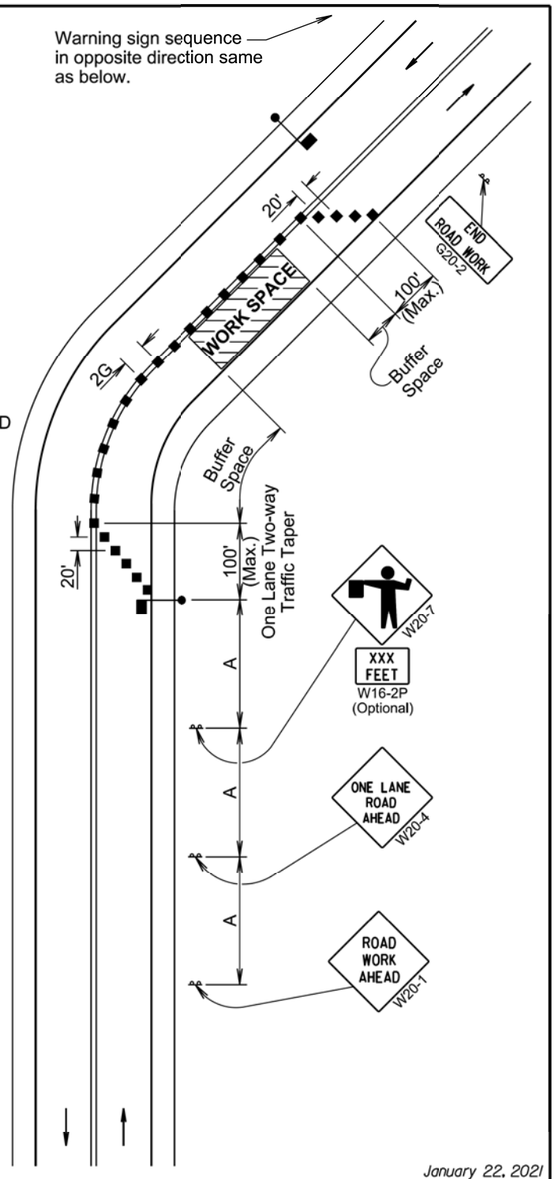
The channelizing devices will be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

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



January 22, 2021

Published Date: 2026	SDDOT	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			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

(24W) 24" White Temporary Pavement Marking

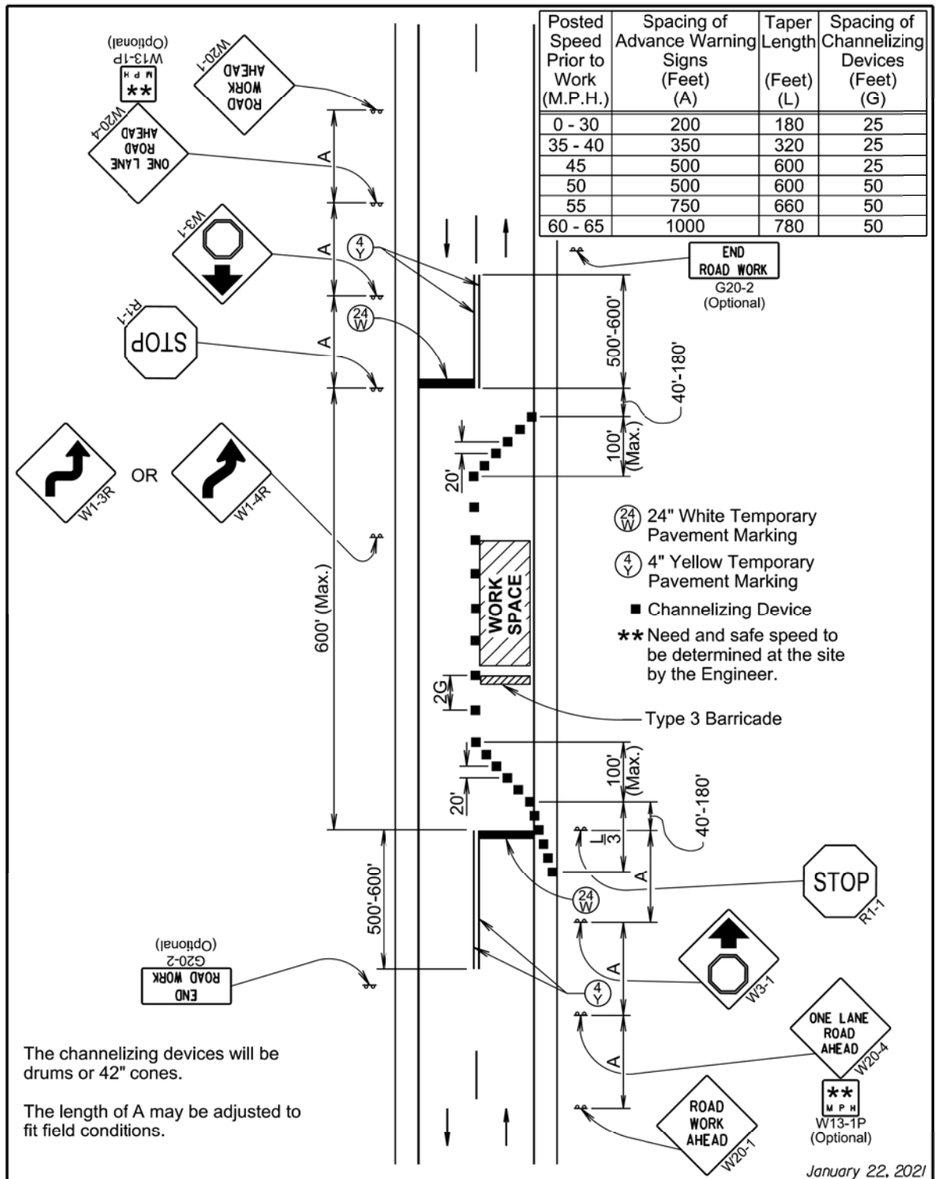
(4Y) 4" Yellow Temporary Pavement Marking

■ Channelizing Device

** Need and safe speed to be determined at the site by the Engineer.

The channelizing devices will be drums or 42" cones.

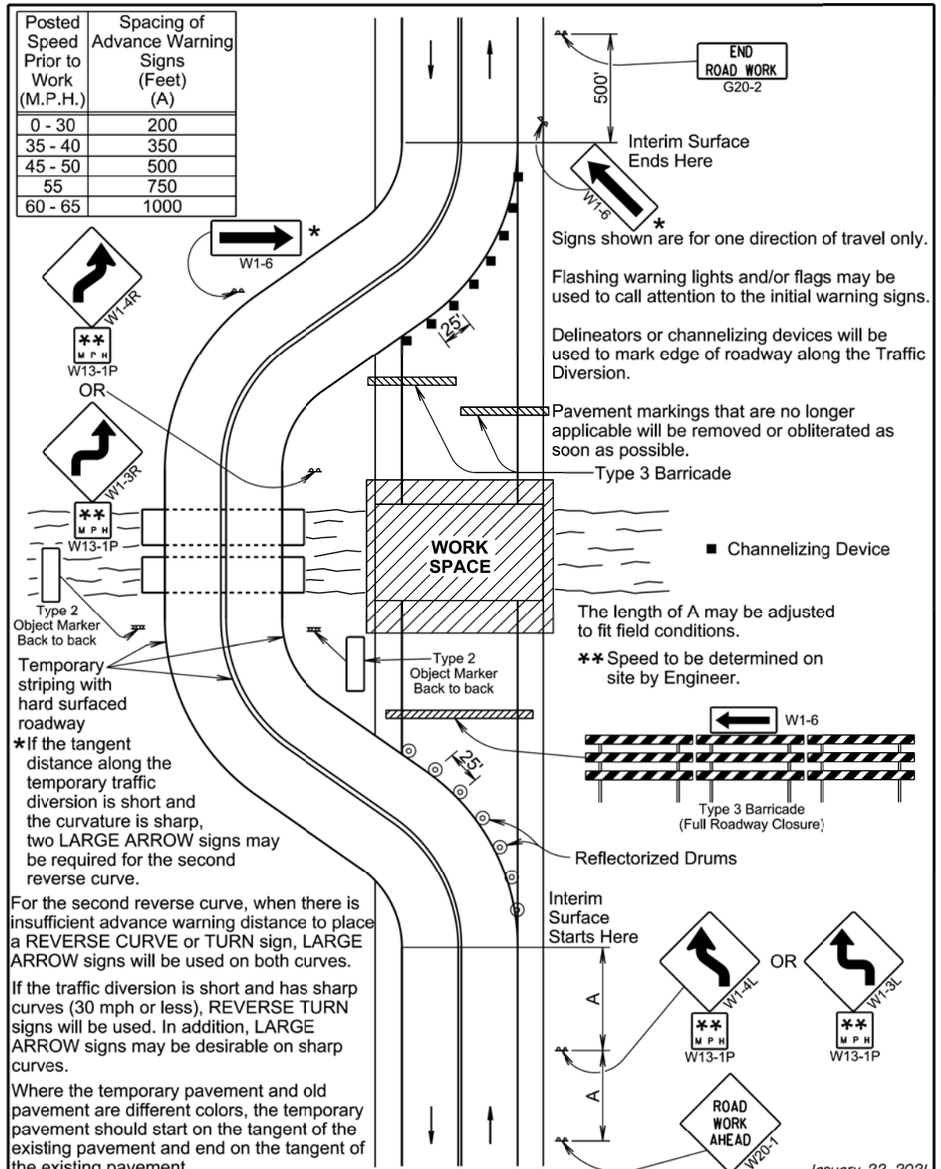
The length of A may be adjusted to fit field conditions.



January 22, 2021

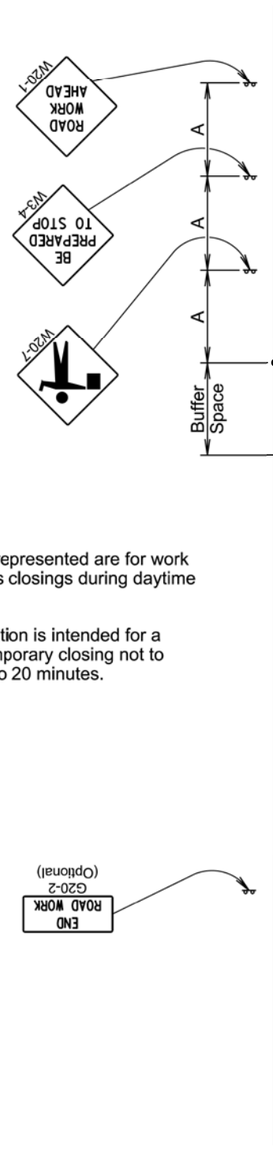
Published Date: 2026	SDDOT	LANE CLOSURE USING STOP SIGNS	PLATE NUMBER 634.25
			Sheet 1 of 1

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



January 22, 2021

Published Date: 2026	SDDOT	ROAD CLOSED WITH TRAFFIC DIVERTED	PLATE NUMBER 634.28
			Sheet 1 of 1



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

Flagger

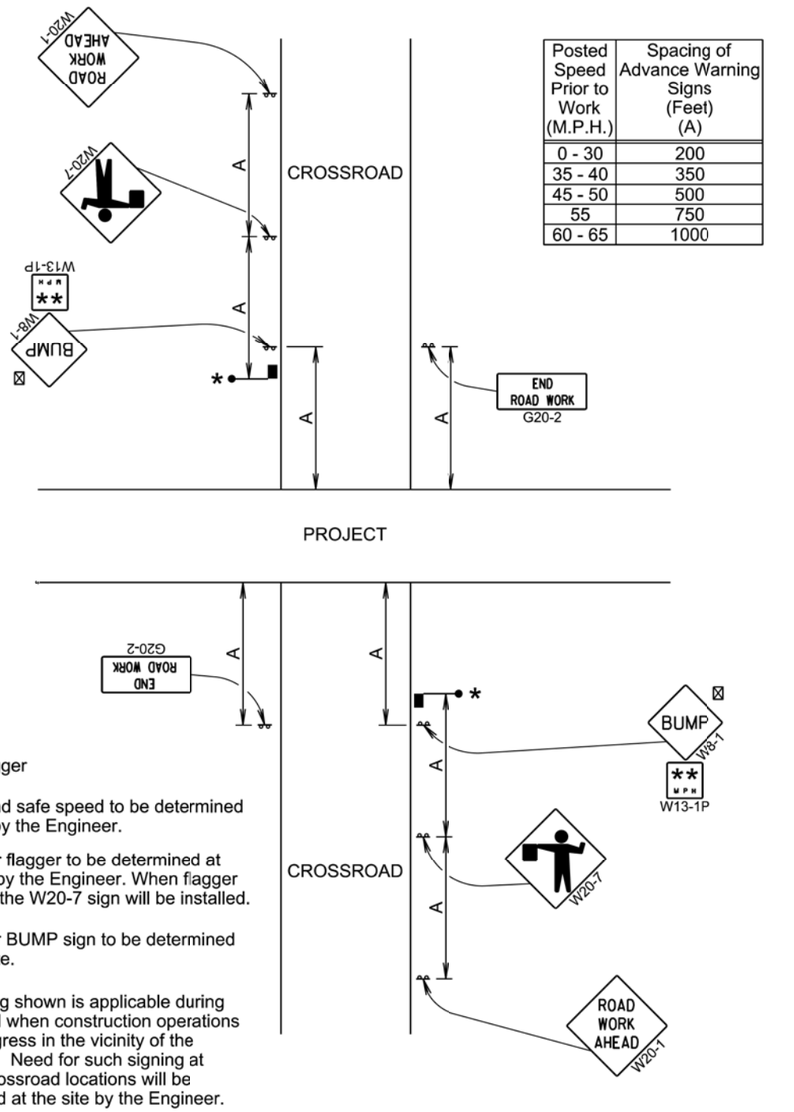
END ROAD WORK G20-2 (Optional)

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

Buffer space dependent on work site limitations.

January 22, 2021

Published Date: 2026	SDDOT	TEMPORARY ROAD WORK	PLATE NUMBER 634.30
			Sheet 1 of 1



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

** Need and safe speed to be determined on site by the Engineer.

* Need for flagger to be determined at the site by the Engineer. When flagger is used, the W20-7 sign will be installed.

⊠ Need for BUMP sign to be determined at the site.

The signing shown is applicable during that period when construction operations are in progress in the vicinity of the crossroad. Need for such signing at specific crossroad locations will be determined at the site by the Engineer.

January 22, 2021

Published Date: 2026	SDDOT	PROJECT OPEN TO TRAFFIC FROM CROSSROAD	PLATE NUMBER 634.38
			Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B)	Taper Length (Feet) (L)
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B)	
70 - 80	1000 1500	1125

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 45	25
50	50 *
55	50 *
60 - 80	50 *

* Spacing is 40' for 42" cones.

■ Channelizing Device

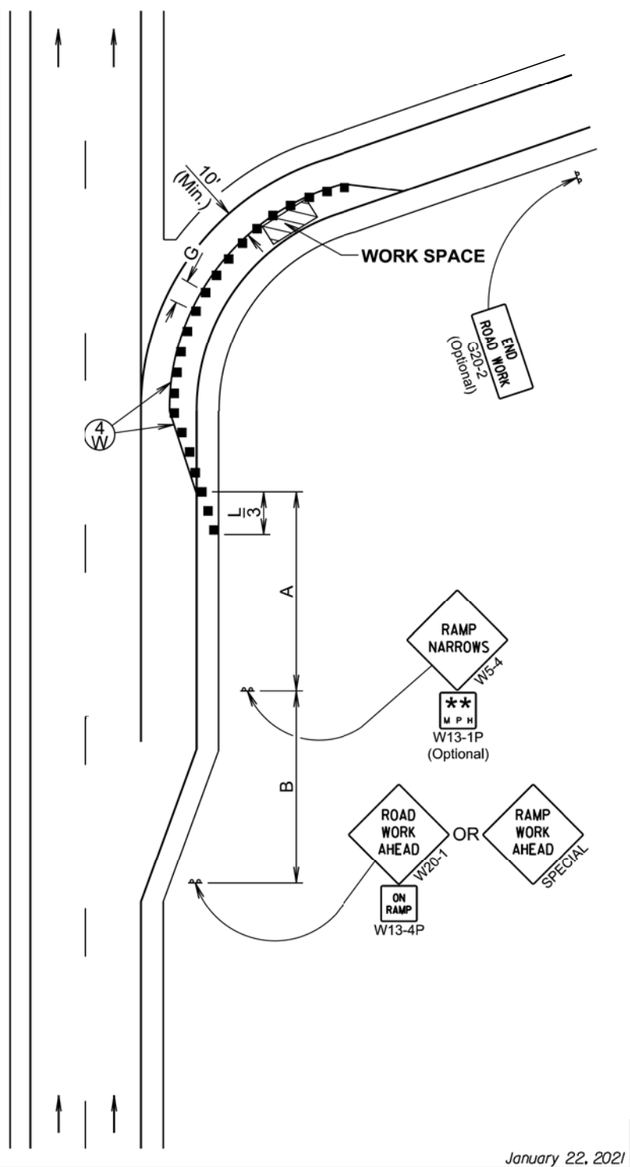
(4W) 4" White Temporary Pavement Marking

** Need and safe speed to be determined by the Engineer.

Temporary pavement markings will be used if traffic control must remain overnight.

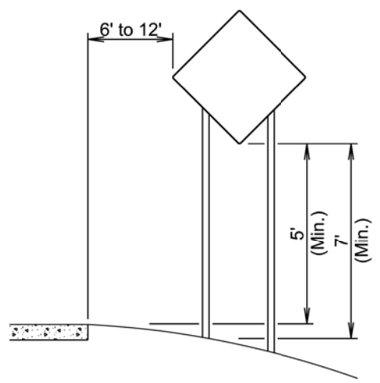
The channelizing devices will be drums or 42" cones if traffic control must remain overnight.

Truck off-tracking should be considered when determining whether the 10-foot minimum lane width is adequate.

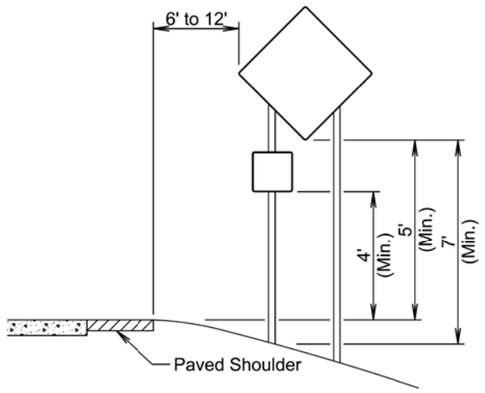


January 22, 2021

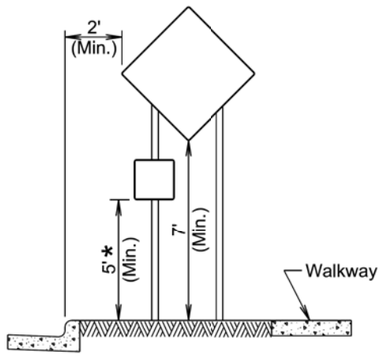
Published Date: 2026	SDDOT	PARTIAL EXIT RAMP CLOSURE	PLATE NUMBER 634.69
			Sheet 1 of 1



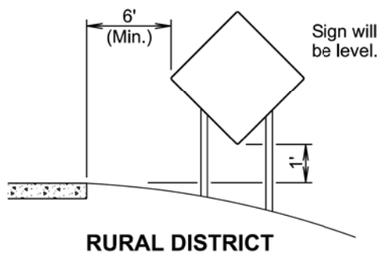
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

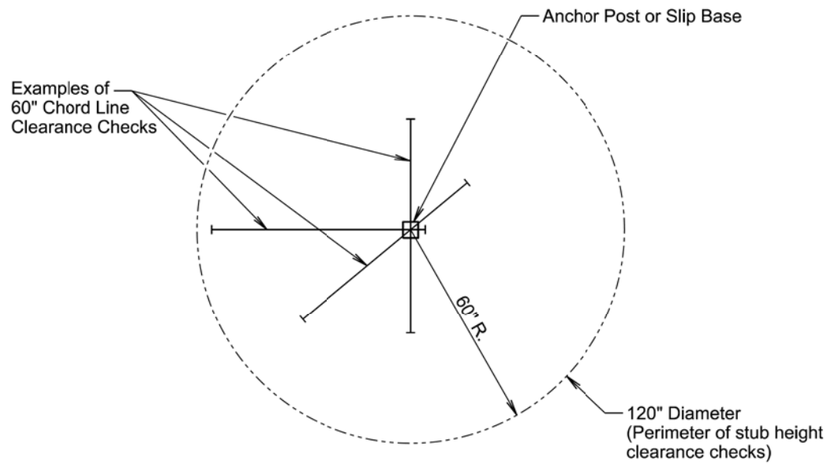


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

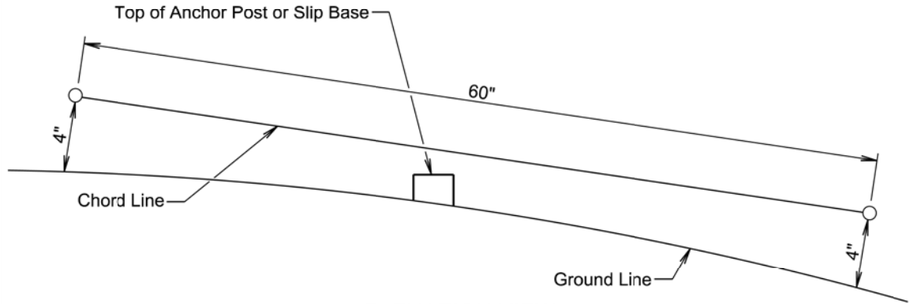
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

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



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

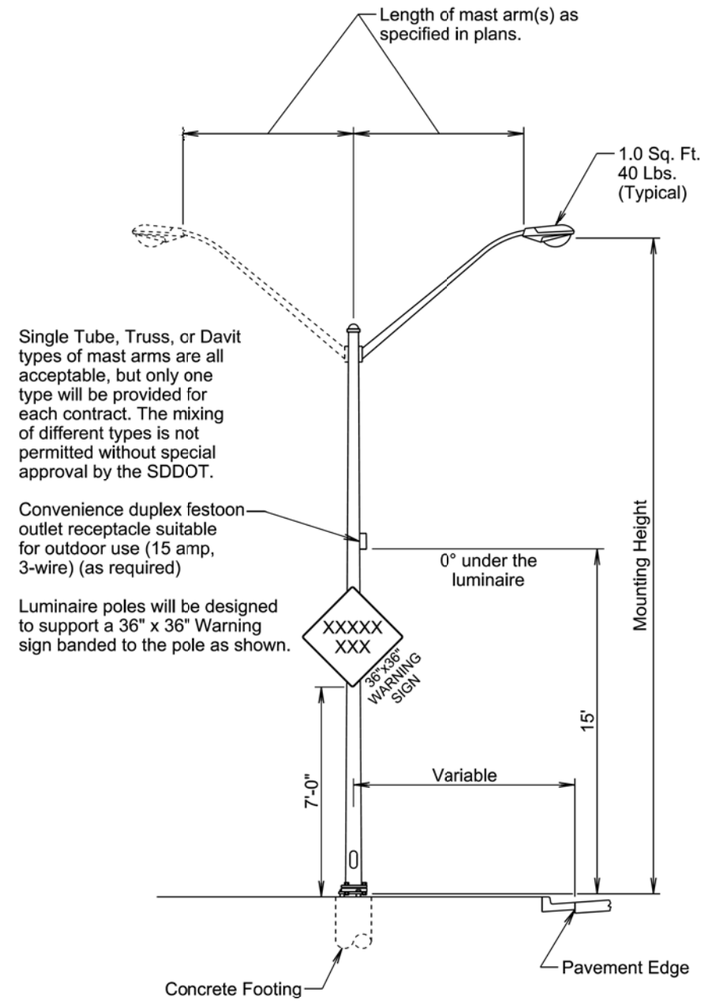
The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

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

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

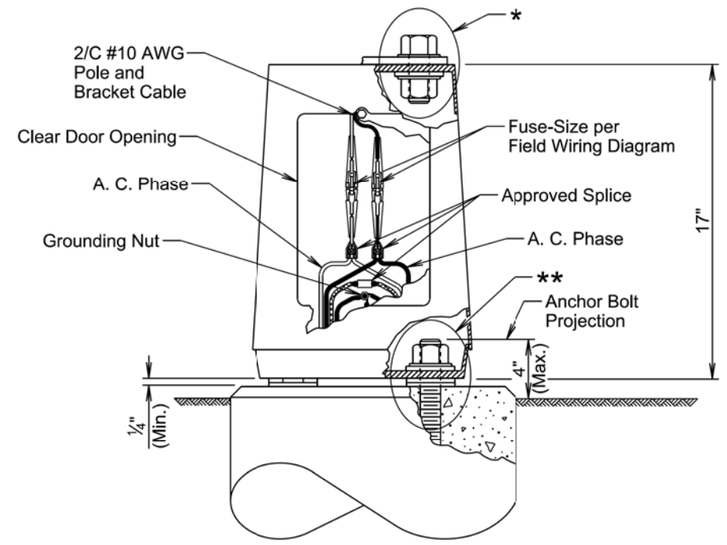
January 22, 2021

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



November 19, 2022

Published Date: 2026	SDDOT	STEEL ROADWAY LUMINAIRE POLE WITH MAST ARM(S)	PLATE NUMBER 635.01 Sheet 1 of 1



GENERAL NOTES:

Base details are provided for example only and are not intended to be a complete design.

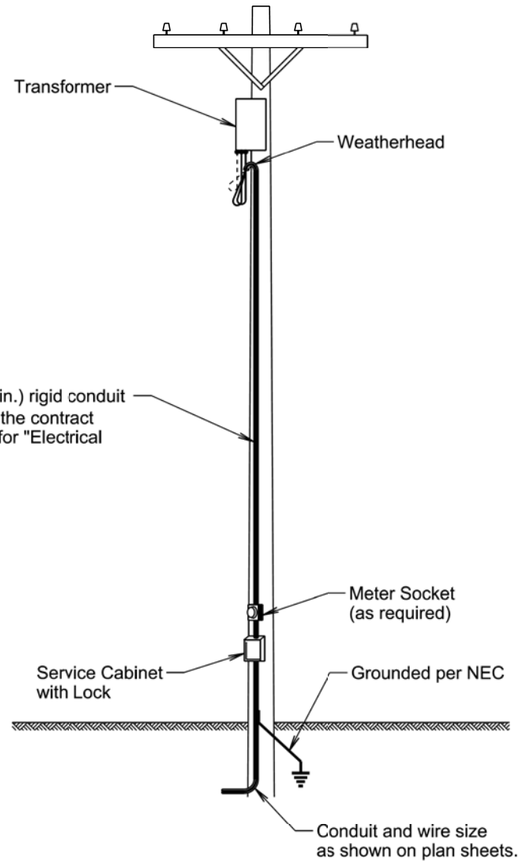
Fused connectors will be breakaway type.

* Hardware connecting the pole to the base will be installed in accordance with the manufacturer's recommendation.

** Hardware connecting the base to the footing will be installed in accordance with the manufacturer's recommendation. The Contractor will install leveling devices in accordance with the manufacturer's recommendation if shimming is necessary to install the light poles plumb and level. The washers and shims will be installed around the anchor bolts.

November 19, 2022

Published Date: 2026	SDDOT	ROADWAY LUMINAIRE POLE BREAKAWAY TRANSFORMER BASE	PLATE NUMBER 635.21 Sheet 1 of 1



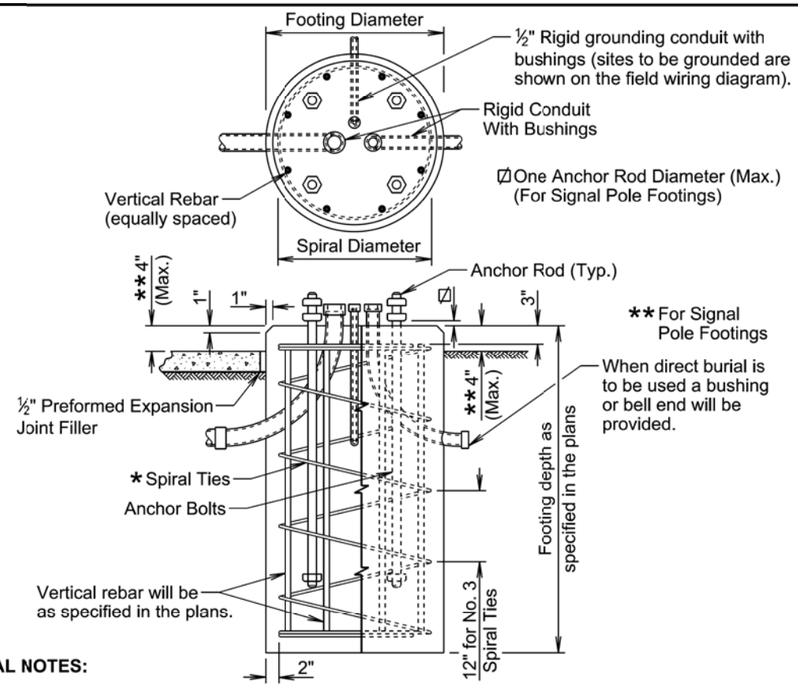
ELEVATION VIEW

GENERAL NOTES:

All costs for furnishing and installing all materials from the electrical service cabinetto the transformer including labor, wire, equipment, hookup fees, all items within the cabinet, lockable enclosure with receptacle outlet, lock and keys, meter socket if required, conduit and incidentals will be incidental to the contract unit price per each for "Electrical Service Cabinet."

March 31, 2024

Published Date: 2026	SDDOT	SERVICE CABINET ON OVERHEAD UTILITY POLE	PLATE NUMBER 635.40 Sheet 1 of 1



GENERAL NOTES:

* Circular ties may be used in lieu of the spiral ties. The No. 3 ties will be spaced 12 inches apart except for the top two which will be spaced 6 inches apart. The ties will be lapped 18 inches and the laps will be staggered around the cage.

Spiral ties will have 1-1/2 extra turns at each end.

See Section 985 of the Specifications for footing materials.

Conduits and bushings may project 2½ inches to 6 inches above footing for fixed base poles but will not project above the slip plane or fracture plane for breakaway poles.

Conduits will be sealed water-tight during all phases of construction until poles are in place.

The anchor rods will fit inside the reinforcing steel cage. If the anchor rods designed by the Pole Manufacturer do not fit, contact the Office of Bridge Design for footing redesign. No additional payment will be made for the redesigned footing.

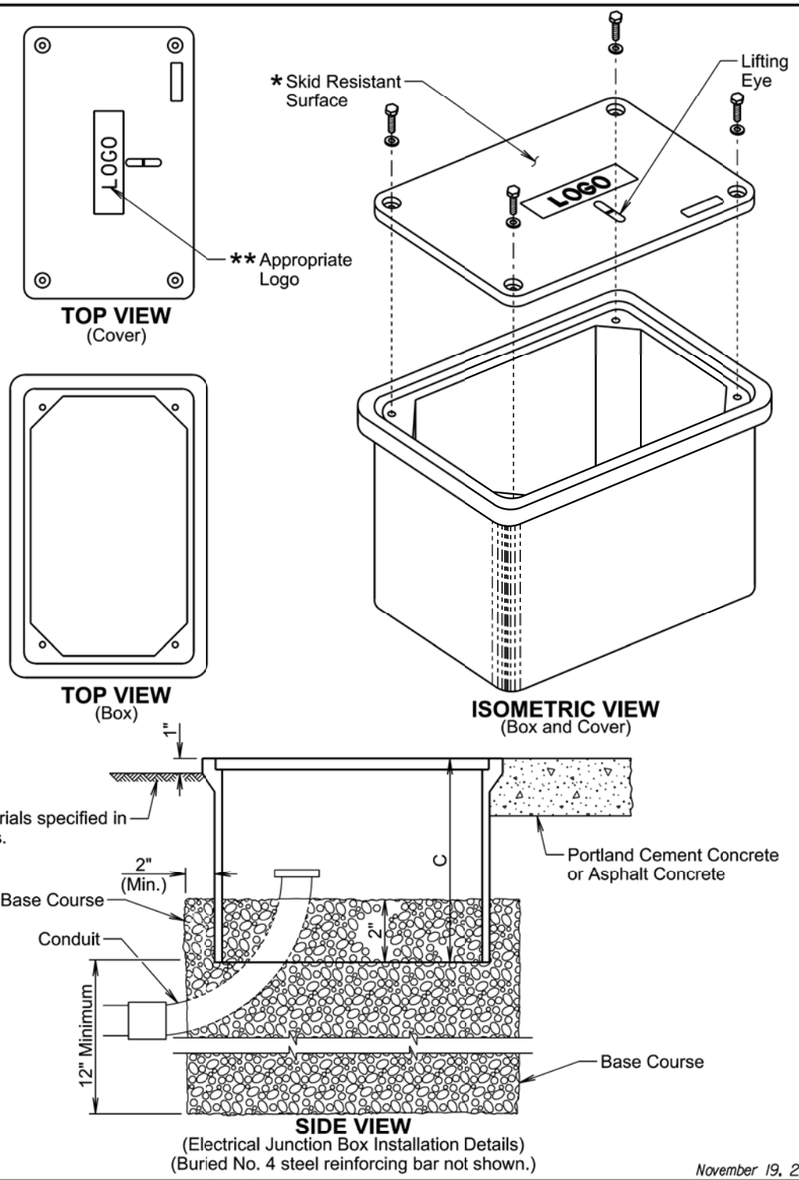
Costs of conduit and conduit bushings shown on footing detail will be incidental to the footing bid item(s).

The pole will not be installed until the concrete has attained design strength (4000 psi).

The contour of the area surrounding the breakaway pole will be flat, though not necessarily level for a distance of 5 feet in all directions. The Contractor may be required to provide finish grading at some breakaway pole locations.

November 19, 2022

Published Date: 2026	SDDOT	POLE FOOTING	PLATE NUMBER 635.55 Sheet 1 of 1



November 19, 2020

Published Date: 2026	SDDOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 1 of 2

ELECTRICAL JUNCTION BOX			
TYPE	DESCRIPTION	APPROXIMATE COVER SIZE	MINIMUM DEPTH (C)
1	Open Bottom with Gasket	11"x18"	18"
2	Open Bottom with Gasket	13"x24"	18"
3	Open Bottom with Gasket	17"x30"	18"
3A	Open Bottom with Gasket	24"x36"***	24"
4	Open Bottom with Gasket	30"x48"***	24"

GENERAL NOTES:

The cover will be gasketed with a minimum of two stainless steel bolts and washers.

The cover will have a lifting eye.

* The surface of the cover will have a minimum wet and dry coefficient of friction value of 0.5 as determined by ASTM F609.

** The cover of the junction box will have the appropriate logo in one inch size letters and will be recessed. When the junction box contains cables or wires for a traffic signal then the logo will be "Signal". When the junction box contains lighting conductors then the logo will be "Lighting".

*** Two piece covers will be used for Type 3A and Type 4 junction boxes.

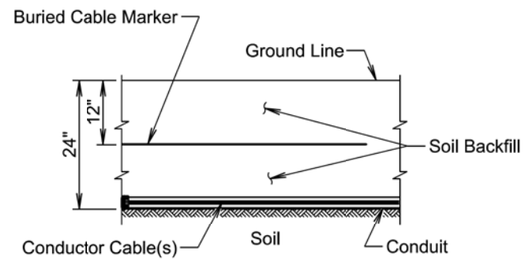
The electrical junction boxes will comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all electrical junction boxes and covers will be Tier 22 of ANSI/SCTE 77 2007.

The electrical junction boxes will be UL listed.

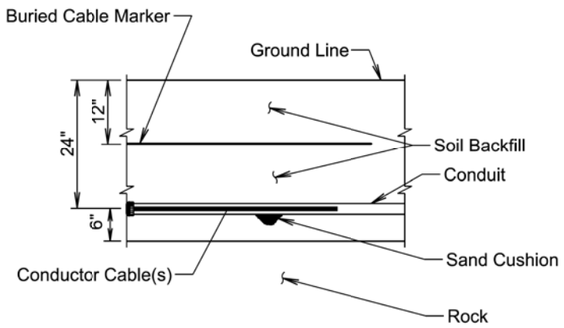
For junction boxes located outside of pavement, a No. 4 steel reinforcing bar with a minimum length of 18" will be buried adjacent to the long side of the junction box. All costs associated with furnishing and placing the steel reinforcing bar will be incidental to the contract unit price per each for "Type _ Electrical Junction Box".

November 19, 2020

Published Date: 2026	SDDOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 2 of 2



SECTION VIEW



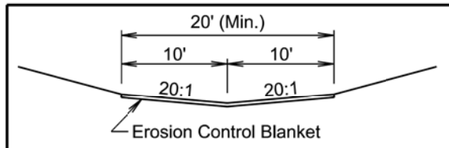
SECTION VIEW

GENERAL NOTE:

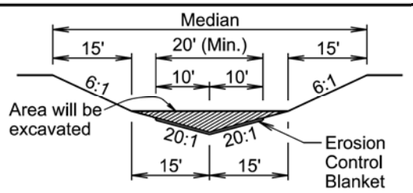
The Buried Cable Marker will be plastic, approximately 6" wide, and will be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker will have a life expectancy approximately equal to that of the conductor(s) beneath it. A phrase indicating the presence of a buried electric circuit below will be printed in a contrasting color on the cable marker. The Buried Cable Marker will be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker will be incidental to the contract unit price per foot for the bid item used for the electrical conductor.

November 19, 2022

Published Date: 2026	SDDOT	**CONDUIT INSTALLATION**	PLATE NUMBER 635.76 Sheet 1 of 1

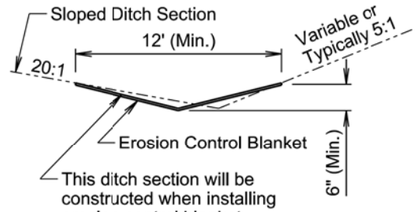


STANDARD DITCH SECTION

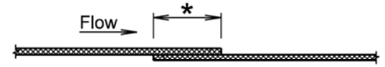


The median will be shaped to the limits shown in this detail where the erosion control blanket will be placed.

MEDIAN SECTION



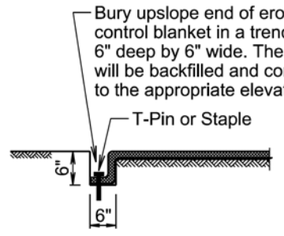
SLOPED DITCH SECTION



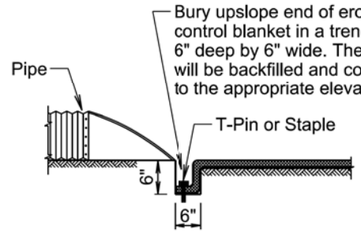
* Use a 4" (Min.) overlap wherever two widths of erosion control blanket are applied side by side.

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

OVERLAP DETAIL



TRENCH DETAIL



PIPE END DETAIL

GENERAL NOTES:

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

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

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

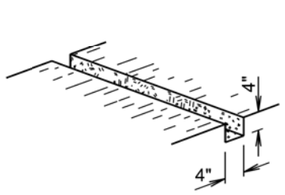
After the placement of the erosion control blanket, the Contractor will fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.

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

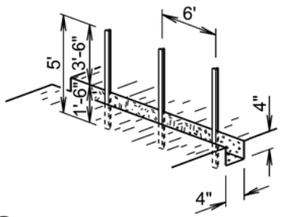
February 14, 2020

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

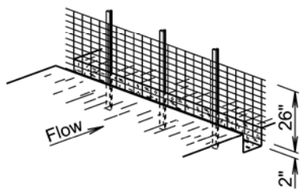
MANUAL LOW FLOW SILT FENCE INSTALLATION



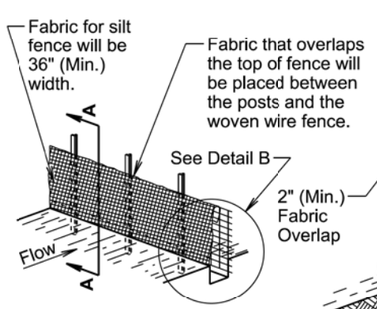
① EXCAVATE TRENCH



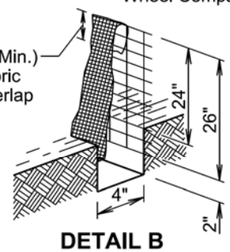
② DRIVE STEEL T FENCE POSTS



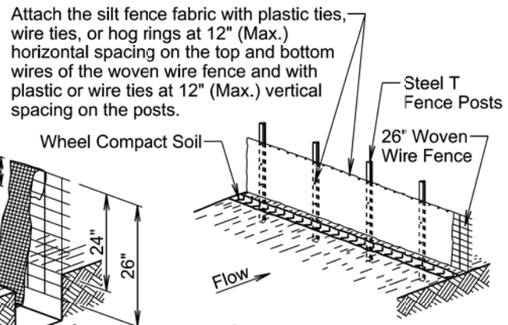
③ ATTACH 26" WOVEN WIRE FENCE TO POSTS



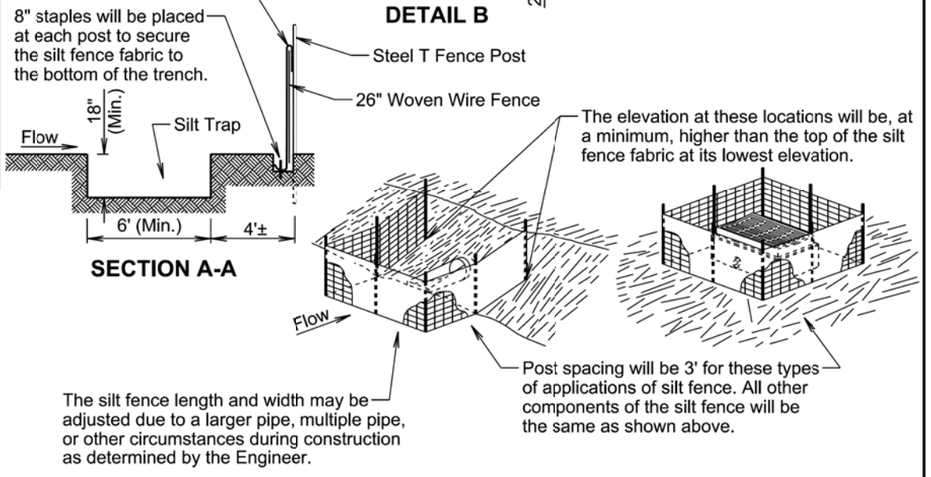
④ ATTACH SILT FENCE FABRIC



DETAIL B



⑤ BACKFILL TRENCH AND WHEEL COMPACT SOIL

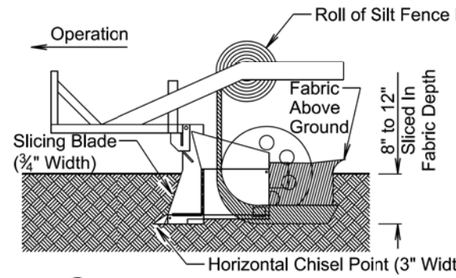


SECTION A-A

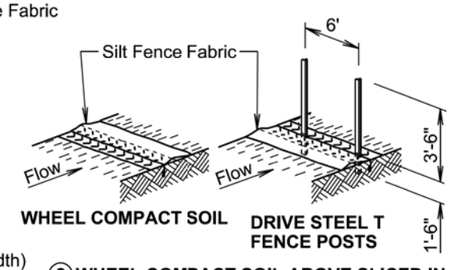
February 14, 2020

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

MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



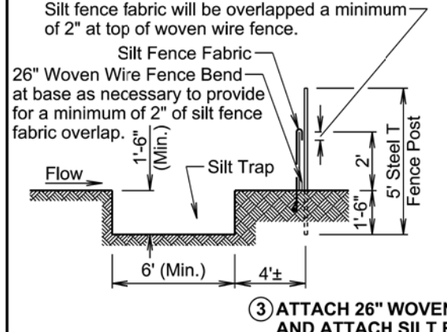
① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

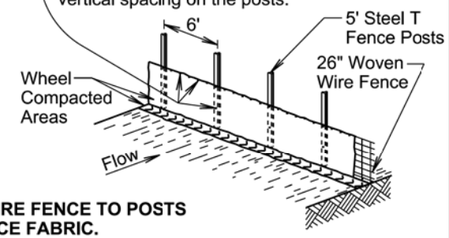


WHEEL COMPACT SOIL

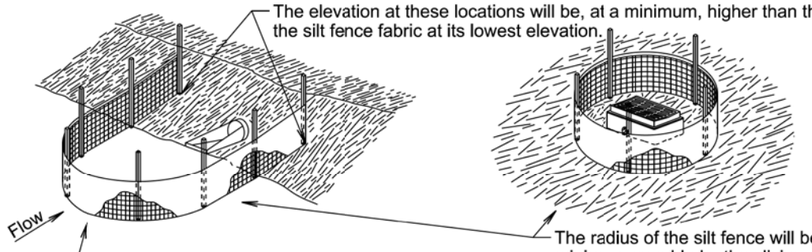
DRIVE STEEL T FENCE POSTS

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





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



GENERAL NOTES:

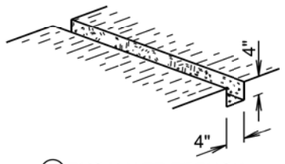
A silt trap will be provided when specified by a plan note. All costs for constructing the silt trap will be incidental to the contract unit price per cubic yard for "Silt Trap".

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

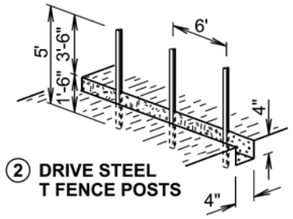
February 14, 2020

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

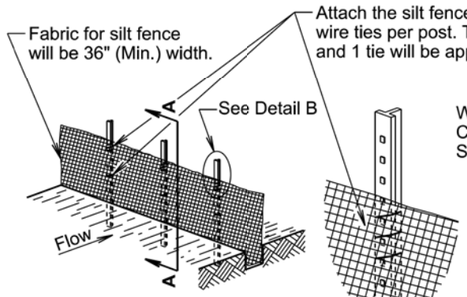
MANUAL HIGH FLOW SILT FENCE INSTALLATION



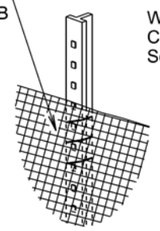
① EXCAVATE TRENCH



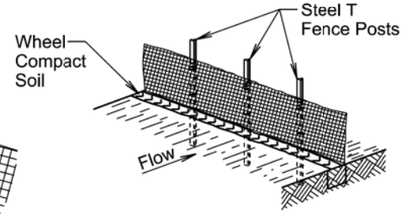
② DRIVE STEEL T FENCE POSTS



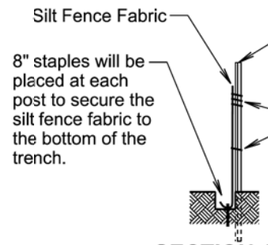
③ ATTACH SILT FENCE FABRIC



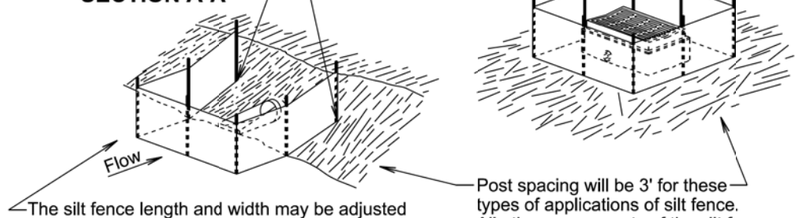
DETAIL B



④ BACKFILL TRENCH AND WHEEL COMPACT SOIL



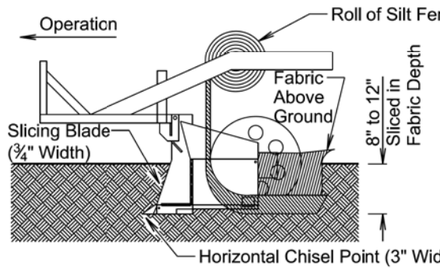
SECTION A-A



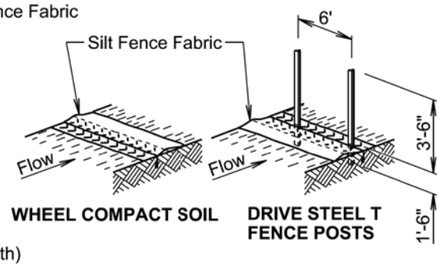
February 14, 2020

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

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION

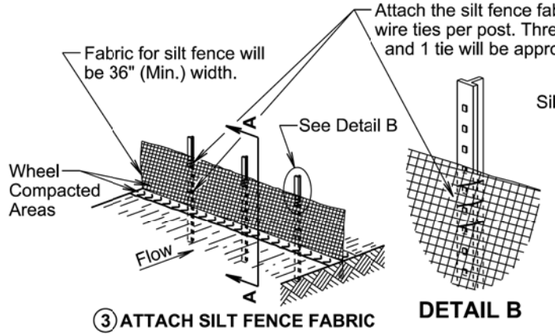


① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.



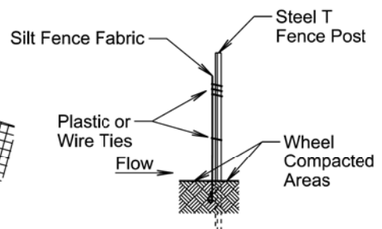
WHEEL COMPACT SOIL — DRIVE STEEL T FENCE POSTS

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

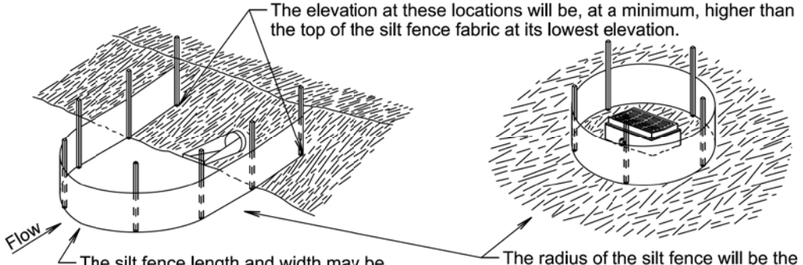


③ ATTACH SILT FENCE FABRIC

DETAIL B



SECTION A-A

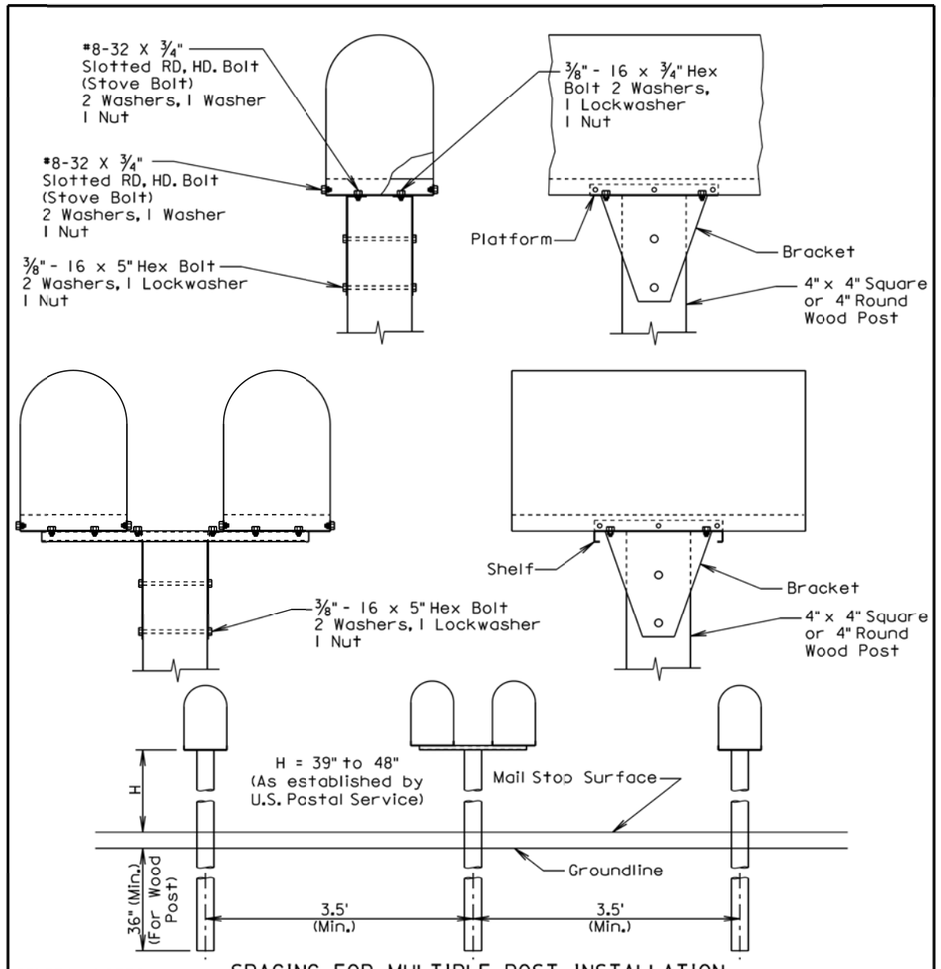


GENERAL NOTE:

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.

February 14, 2020

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



SPACING FOR MULTIPLE POST INSTALLATION

GENERAL NOTES:

The post support assemblies provided should be consistant throughout the project.

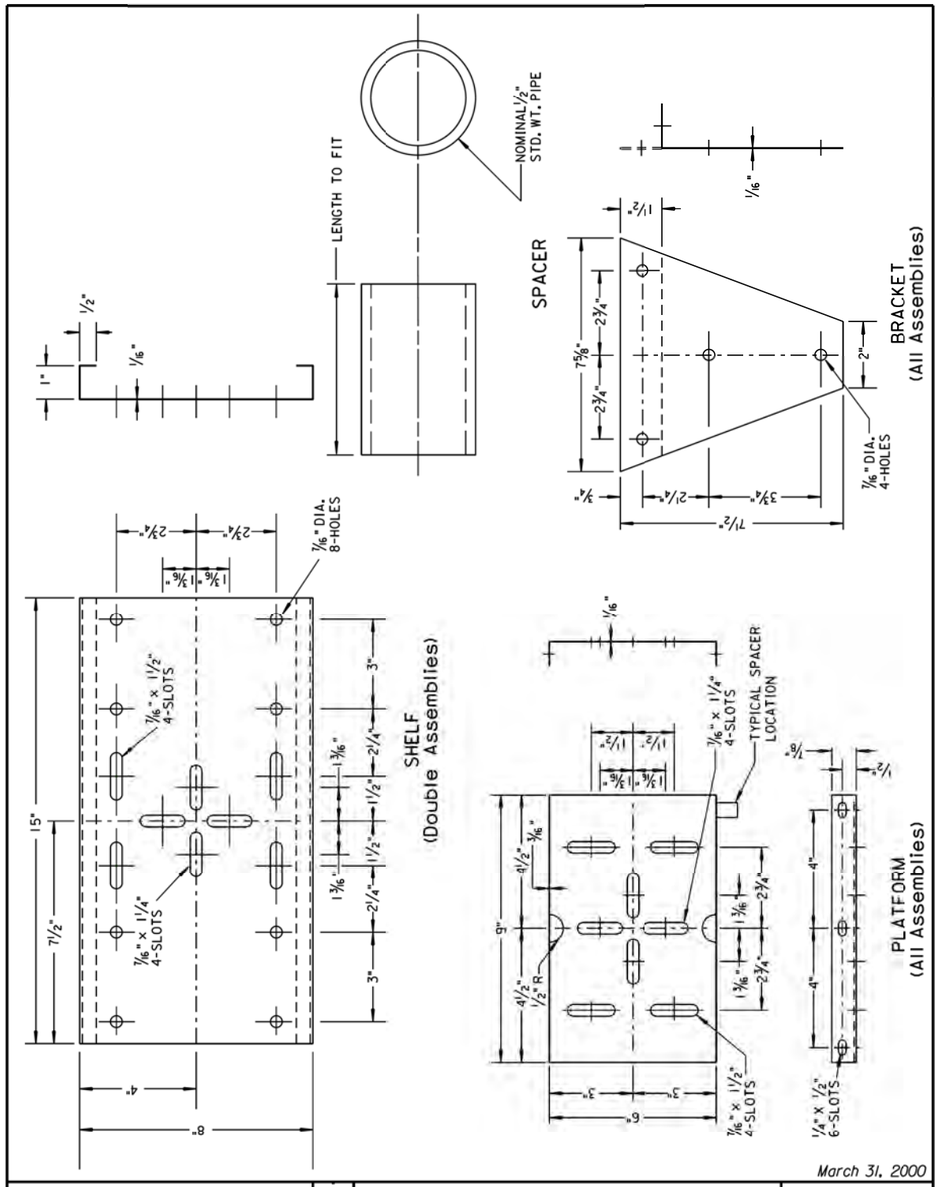
Single and double mailboxes may be in any sequence.

Post support assemblies shall be one from the approved products list, a 4"x4" or 4" round wood post, or an alternate post support assembly that meets the test level 3 crash testing requirements of NCHRP 350 or MASH.

Alternate mailbox support assemblies shall be approved by the Engineer prior to installation. The Contractor shall provide the Engineer written certification that the mailbox support assembly has met the crash testing requirements and will be installed in accordance with the manufacturer's installation instructions.

September 6, 2013

Published Date: 2026	SDDOT	SINGLE AND DOUBLE MAILBOX ASSEMBLIES	PLATE NUMBER 900.02
			Sheet 1 of 1



March 31, 2000

Published Date: 2026	SDDOT	MAILBOX SUPPORT HARDWARE	PLATE NUMBER 900.03
			Sheet 1 of 1

Soil Legend

1. Clay Silt
2. Silt Clay
3. Clay
4. Sandy Clay
5. Clay Sand
6. Silty Sand
7. Sandy Silt
8. Sand
9. Silt
10. Gravel

The soils information presented is representative of the material encountered at the specific bore hole location.

The Geotechnical Engineering Activity has on file all of the boring logs for this project. These logs and additional results of laboratory tests, if any, are available for review at the Central Office in Pierre.

Water levels encountered in the borings when drilled in April 2024 are annotated on the cross-sections.

▽ Water Level

Hole Number	1	1	1
Station	4+50	4+50	4+50
Offset	9.0'LT	9.0'LT	9.0'LT
Depth, ft	1.5-3.6	3.6-6.0	6.0-15.0
Moisture Depth, ft	3.0	6.0	12.0
Moisture, %	23.5	30.4	29.5
Dry Loose Wt, lbs/cuft	76.9	71.3	73.0
% Passing 3/8	100.0	100.0	99.6
% Passing #4	99.5	100.0	99.2
% Passing #10	98.1	99.9	98.6
% Passing #40	89.2	98.9	90.6
% Passing #200	80.1	96.4	74.8
% Sand	18.0	3.5	23.7
% Silt	44.6	61.2	35.2
% Clay	35.5	35.2	39.6
Liquid Limit	44	42	42
Plastic Limit	20	20	19
Plasticity Index	24	21	23
Soil Color	Brown	Dark Gray	Light Brown
Textural Class.	Silt Clay	Silt Clay	Silt Clay
AASHTO Class.	A-7-6 (14)	A-7-6 (13)	A-7-6 (14)

Hole Number	2	2	2	2
Station	9+30	9+30	9+30	9+30
Offset	7.0'LT	7.0'LT	7.0'LT	7.0'LT
Depth, ft	1.6-3.8	3.8-7.0	7.0-10.0	10.0-15.0
Moisture Depth, ft	3.0	6.0	9.0	12.0
Moisture, %	31.0	20.3	25.2	25.4
Dry Loose Wt, lbs/cuft	76.2	77.3	72.3	73.4
% Passing 3/8	99.8	100.0	99.1	99.7
% Passing #4	99.4	99.1	98.7	99.4
% Passing #10	98.2	97.4	97.6	98.5
% Passing #40	89.6	87.0	90.9	92.6
% Passing #200	80.5	74.9	75.8	77.0
% Sand	17.7	22.4	21.8	21.5
% Silt	43.0	41.6	27.8	31.5
% Clay	37.5	33.3	48.0	45.5
Liquid Limit	44	41	47	47
Plastic Limit	21	20	19	19
Plasticity Index	23	21	28	28
Soil Color	Brown	Dark Gray	Brown	Light Brown
Textural Class.	Silt Clay	Silt Clay	Silt Clay	Silt Clay
AASHTO Class.	A-7-6 (14)	A-7-6 (13)	A-7-6 (17)	A-7-6 (16)

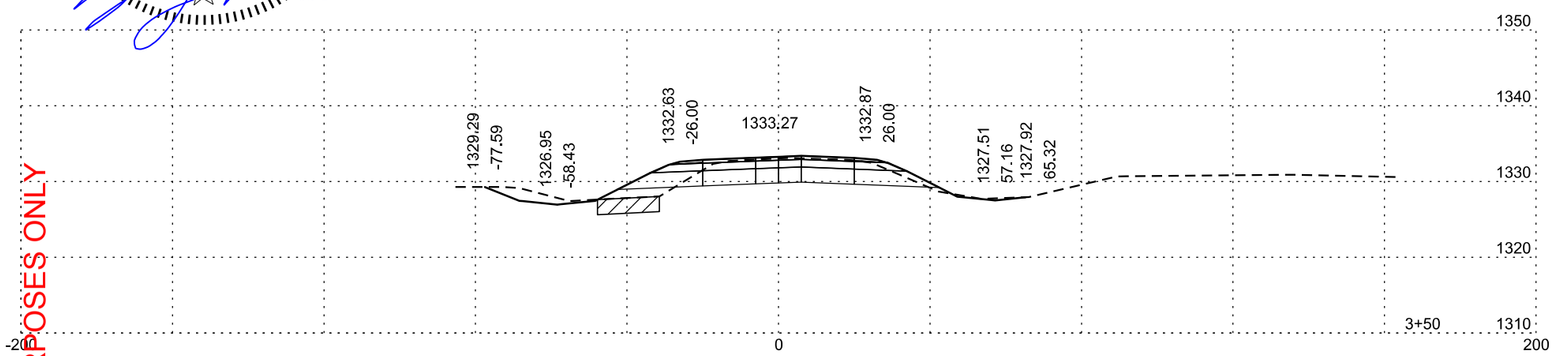
Hole Number	3	3	3
Station	22+50	22+50	22+50
Offset	8.2'RT	8.2'RT	8.2'RT
Depth, ft	1.3-3.9	3.9-10.0	10.0-15.0
Moisture Depth, ft	3.5	8.0	12.0
Moisture, %	30.4	21.7	23.4
Dry Loose Wt, lbs/cuft	76.8	73.6	72.9
% Passing 3/8	96.5	100.0	99.1
% Passing #4	95.9	100.0	98.5
% Passing #10	95.0	99.3	98.0
% Passing #40	86.7	89.4	90.2
% Passing #200	75.7	71.1	72.2
% Sand	19.3	28.2	25.7
% Silt	39.4	29.2	27.9
% Clay	36.3	41.9	44.3
Liquid Limit	42	47	49
Plastic Limit	21	18	19
Plasticity Index	21	28	30
Soil Color	Dark Gray	Light Brown	Brown
Textural Class.	Silt Clay	Silt CLay	Silt Clay
AASHTO Class.	A-7-6 (13)	A-7-6 (16)	A-7-6 (17)

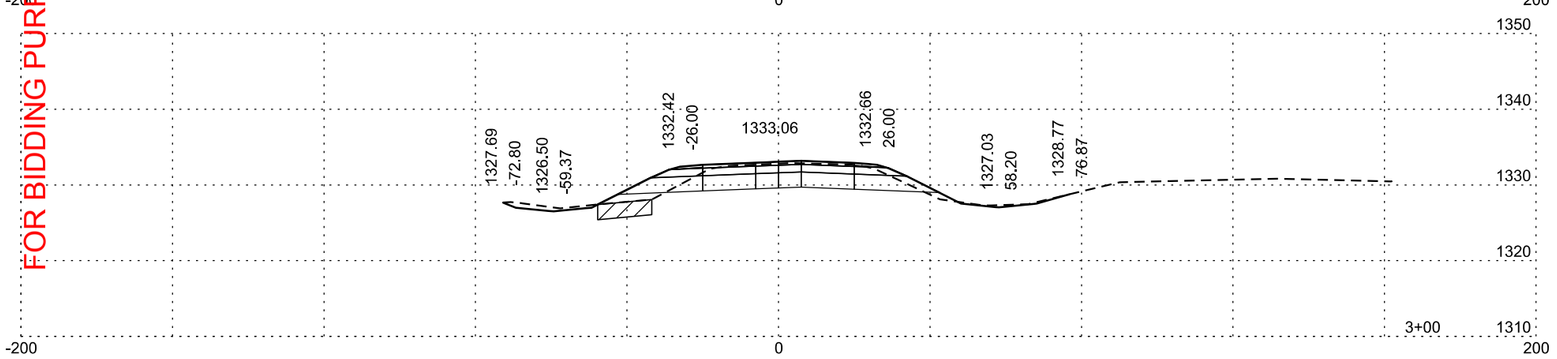
Hole Number	4	4	4	4
Station	27+30	27+30	27+30	27+30
Offset	9.6'LT	9.6'LT	9.6'LT	9.6'LT
Depth, ft	1.4-3.8	3.8-7.0	7.0-13.0	13.0-15.0
Moisture Depth, ft	3.0	6.0	8.0	13.0
Moisture, %	22.8	22.1	25.9	27.7
Dry Loose Wt, lbs/cuft	77.0	76.9	73.1	74.6
% Passing 3/8	100.0	99.7	100.0	99.3
% Passing #4	99.7	99.3	99.3	98.9
% Passing #10	98.0	98.0	97.9	97.8
% Passing #40	90.0	89.3	90.1	90.2
% Passing #200	77.8	79.0	74.3	75.4
% Sand	20.2	19.0	23.7	22.4
% Silt	40.3	43.5	38.8	28.3
% Clay	37.4	35.5	35.5	47.1
Liquid Limit	43	47	42	51
Plastic Limit	20	23	18	21
Plasticity Index	23	23	23	30
Soil Color	Dark Gray	Dark Gray	Light Brown	Light Brown
Textural Class.	Silt Clay	Silt Clay	Silt Clay	Silt Clay
AASHTO Class.	A-7-6 (14)	A-7-6 (15)	A-7-6 (13)	A-7-6 (18)

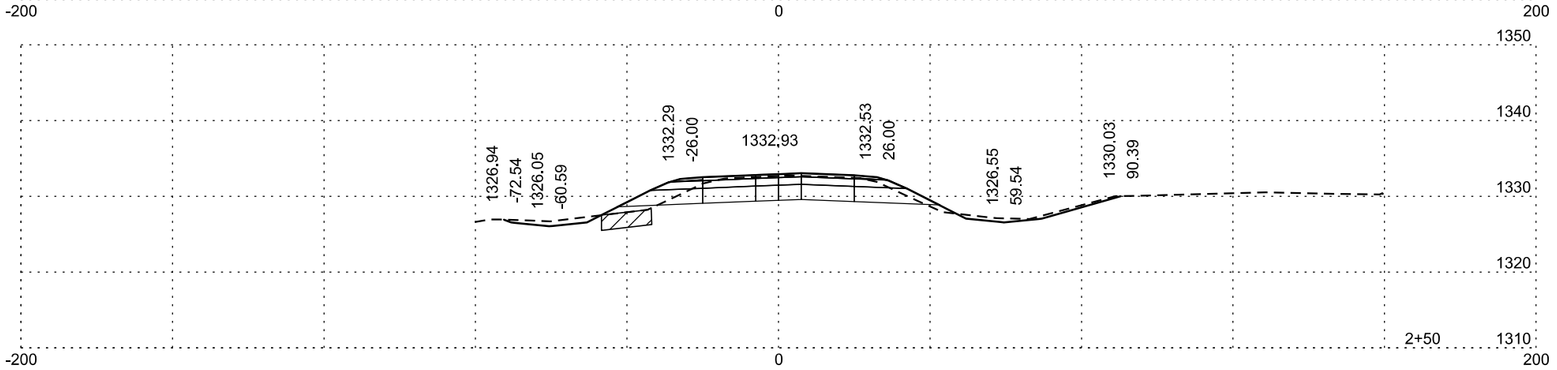
Hole Number	5	5	5
Station	35+70	35+70	35+70
Offset	7.0'RT	7.0'RT	7.0'RT
Depth, ft	1.4-5.0	5.0-10.0	10.0-15.0
Moisture Depth, ft	3.0	7.0	13.0
Moisture, %	25.5	25.0	24.2
Dry Loose Wt, lbs/cuft	80.3	75.6	76.4
% Passing 3/8	98.8	99.3	98.5
% Passing #4	98.4	98.9	98.3
% Passing #10	97.1	98.1	97.8
% Passing #40	84.7	91.1	91.0
% Passing #200	73.6	78.8	73.5
% Sand	23.5	19.3	24.3
% Silt	40.4	38.4	31.1
% Clay	33.2	40.4	42.5
Liquid Limit	42	48	46
Plastic Limit	20	20	19
Plasticity Index	23	28	28
Soil Color	Dark Brown	Brown	Light Brown
Textural Class.	Silt Clay	Silt Clay	Silt Clay
AASHTO Class.	A-7-6 (13)	A-7-6 (17)	A-7-6 (16)

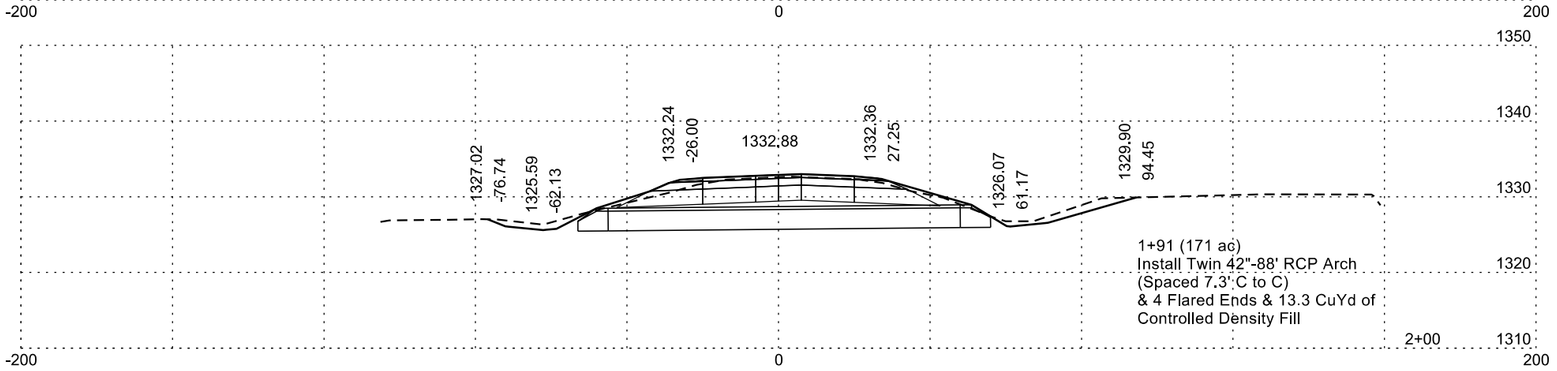
Hole Number	6	6	6	6
Station	48+90	48+90	48+90	48+90
Offset	9.6'LT	9.6'LT	9.6'LT	9.6'LT
Depth, ft	1.3-3.8	3.8-8.0	8.0-11.0	11.0-15.0
Moisture Depth, ft	3.0	6.0	10.0	13.0
Moisture, %	21.8	21.0	29.4	29.1
Dry Loose Wt, lbs/cuft	76.6	74.8	70.0	72.7
% Passing 3/8	99.5	99.8	100.0	99.6
% Passing #4	99.1	99.6	100.0	99.5
% Passing #10	97.8	98.1	100.0	98.6
% Passing #40	89.6	90.1	98.5	95.6
% Passing #200	74.0	79.4	96.7	87.9
% Sand	23.8	18.8	3.3	10.8
% Silt	38.6	42.9	60.5	52.2
% Clay	35.4	36.5	36.2	35.7
Liquid Limit	38	45	43	40
Plastic Limit	18	21	21	19
Plasticity Index	21	24	23	21
Soil Color	Brown to Black	Drak Gray	Gray	Brown to Gray
Textural Class.	Silt Clay	Silt Clay	Silt Clay	Silt Clay
AASHTO Class.	A-6 (12)	A-7-6 (15)	A-7-6 (14)	A-6 (13)

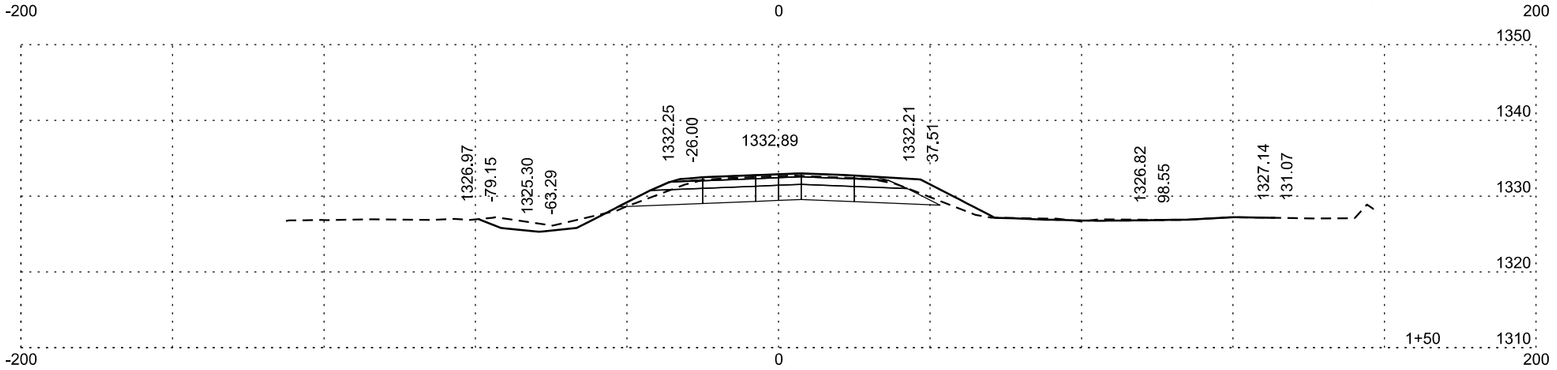
FOR BIDDING PURPOSES ONLY

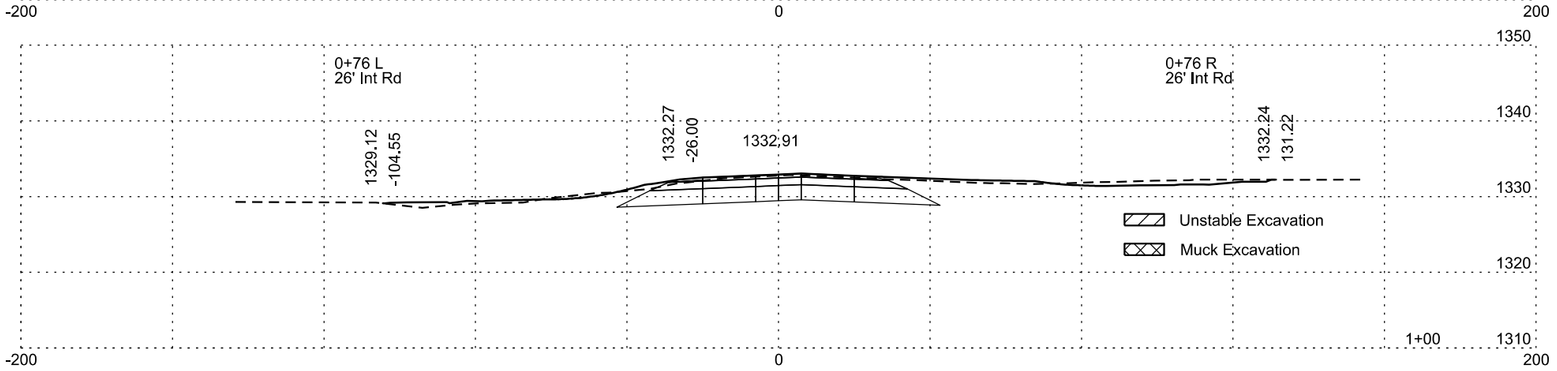












Plotting Date: 11/5/2025

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0044(233)406	164	194

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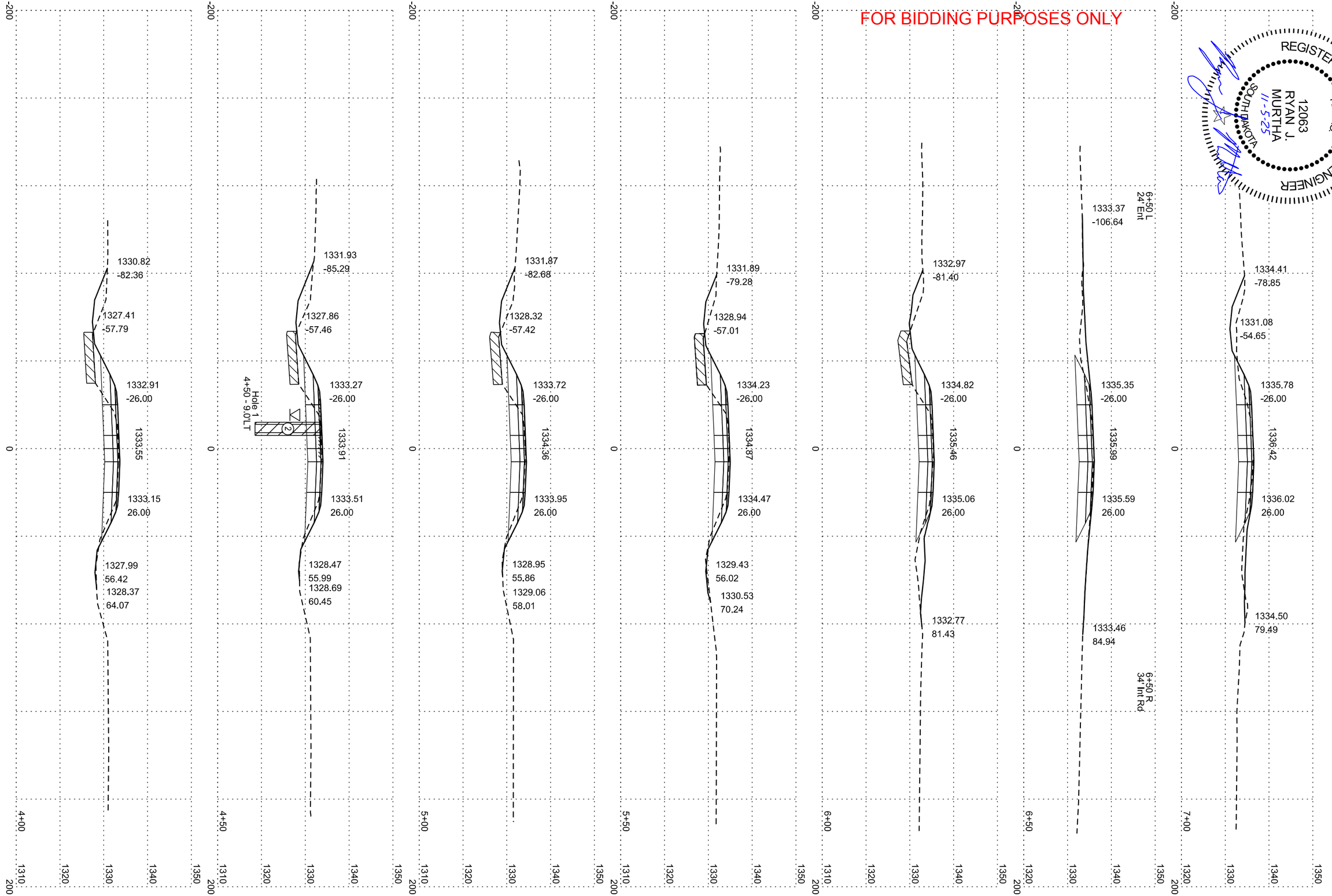

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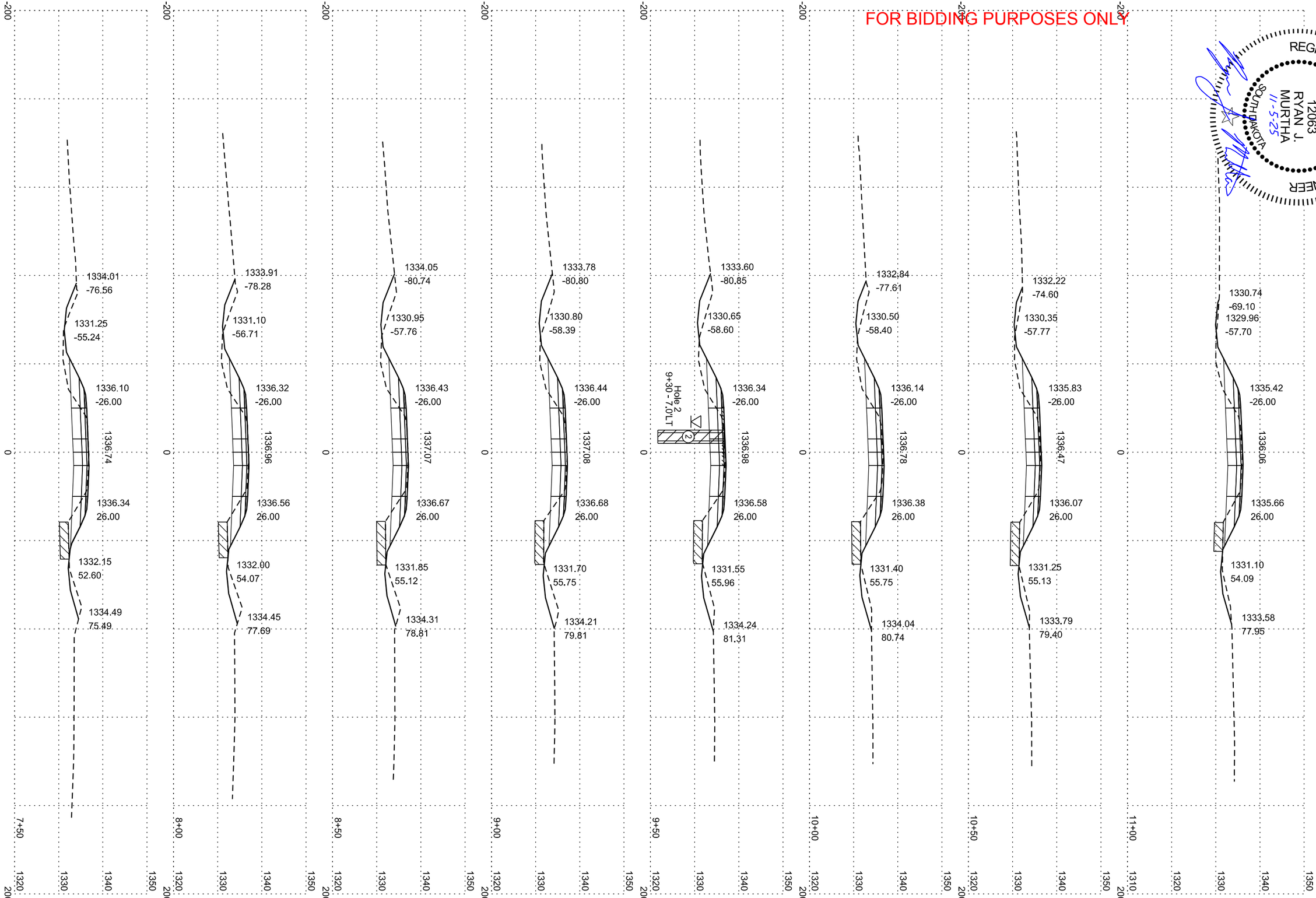

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REGISTERED PROFESSIONAL ENGINEER
REG NO.
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

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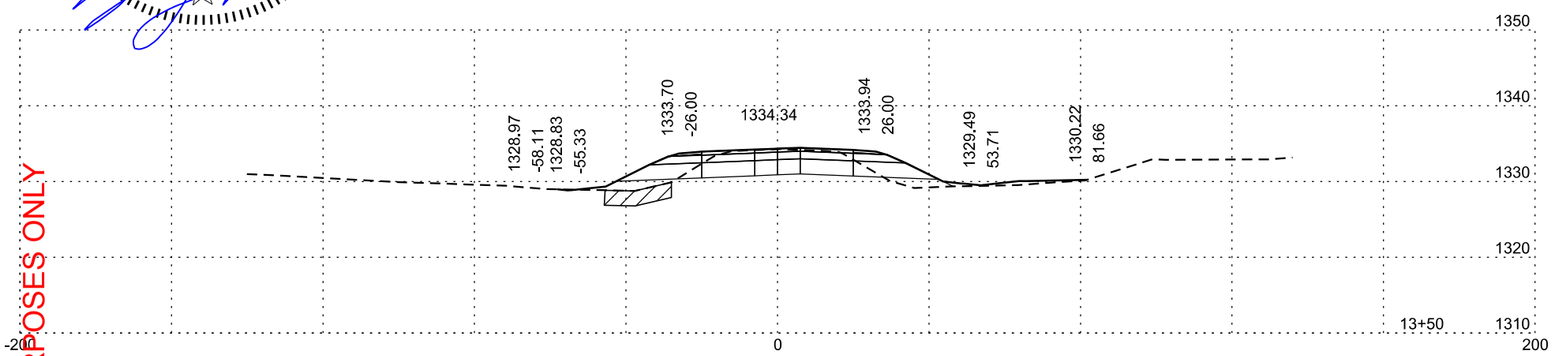

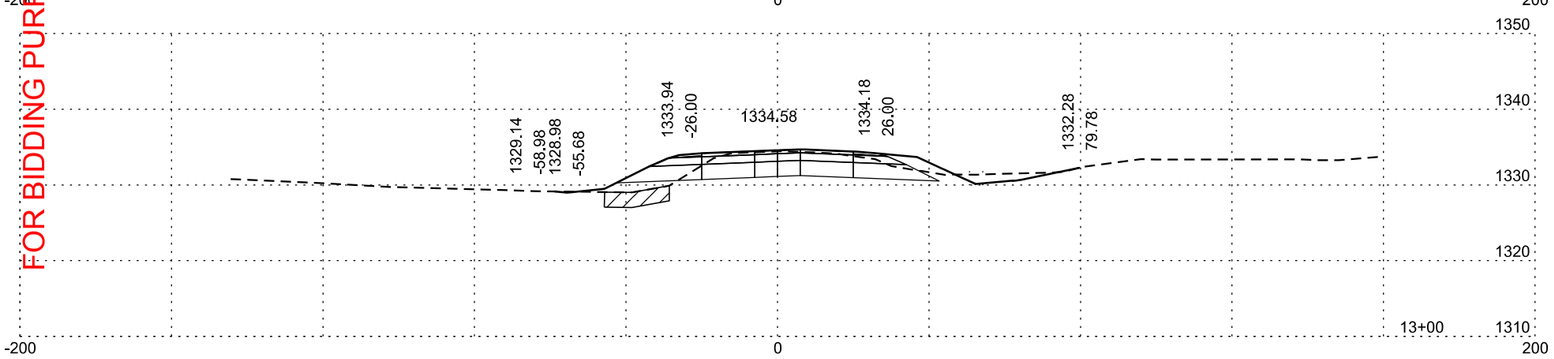

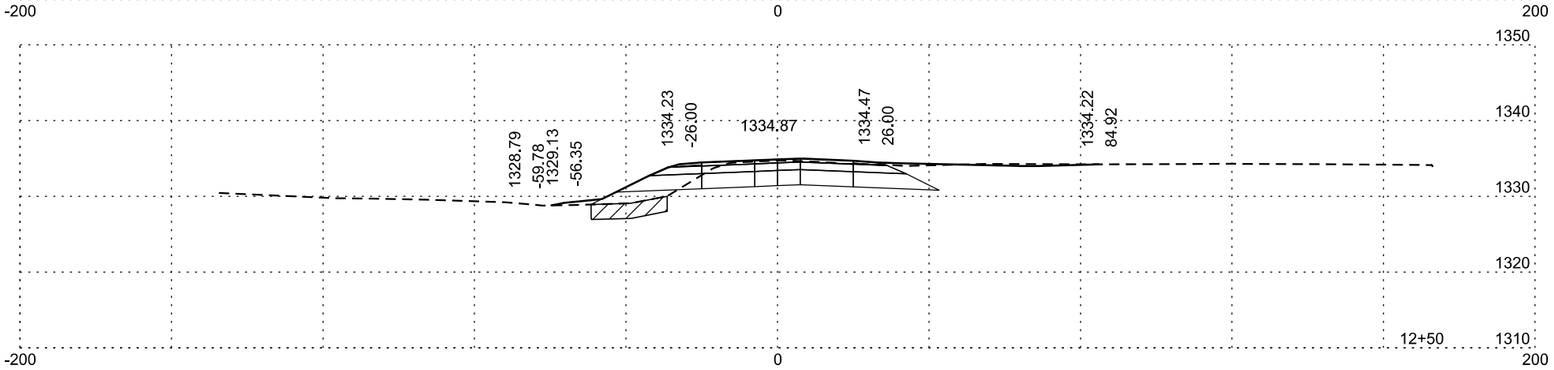

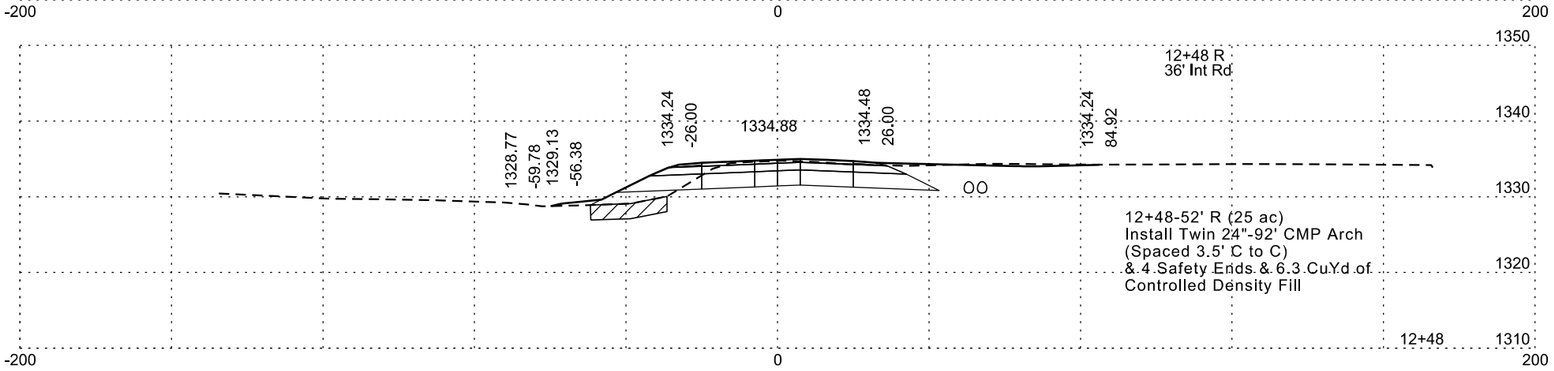

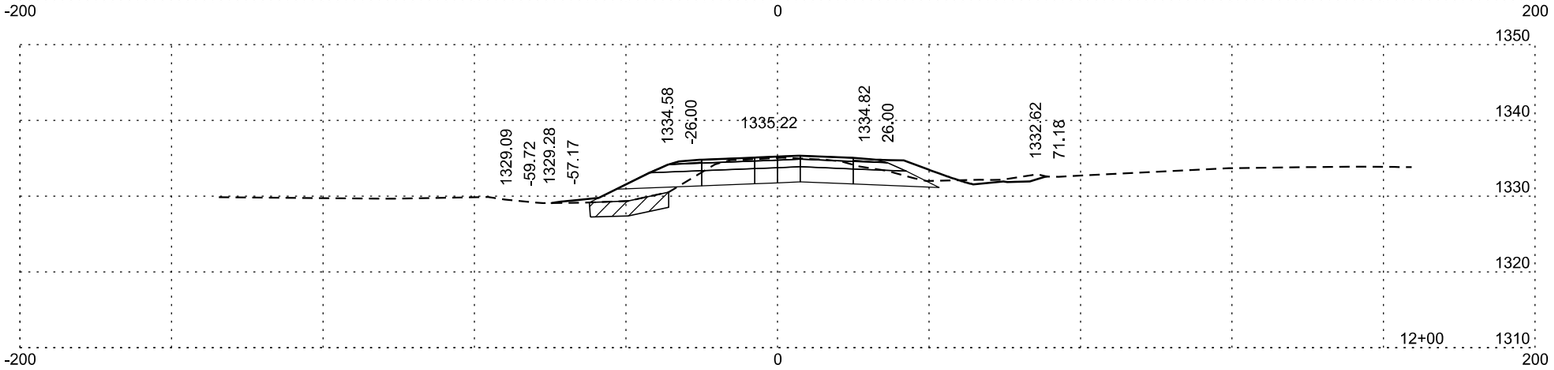

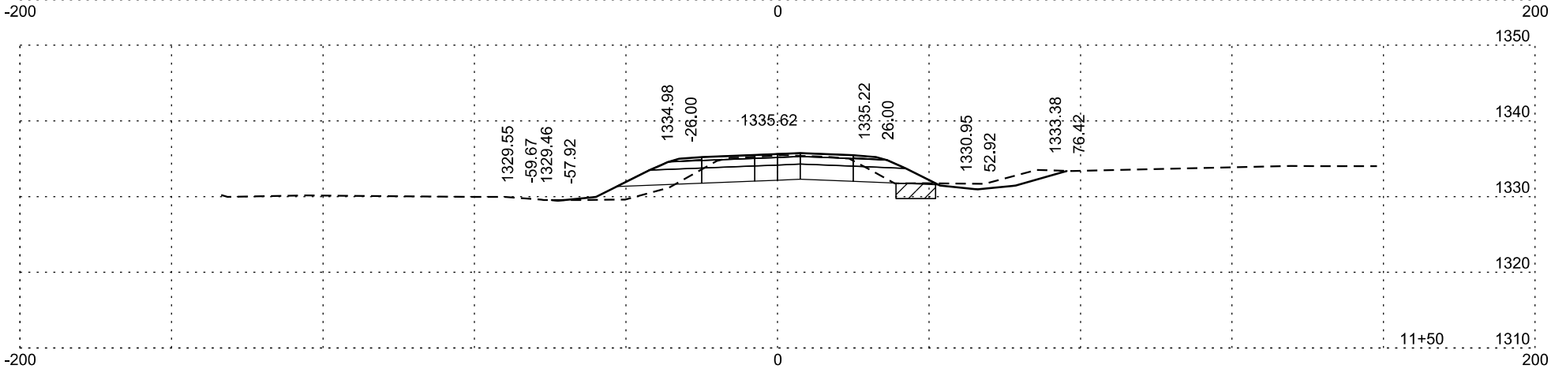

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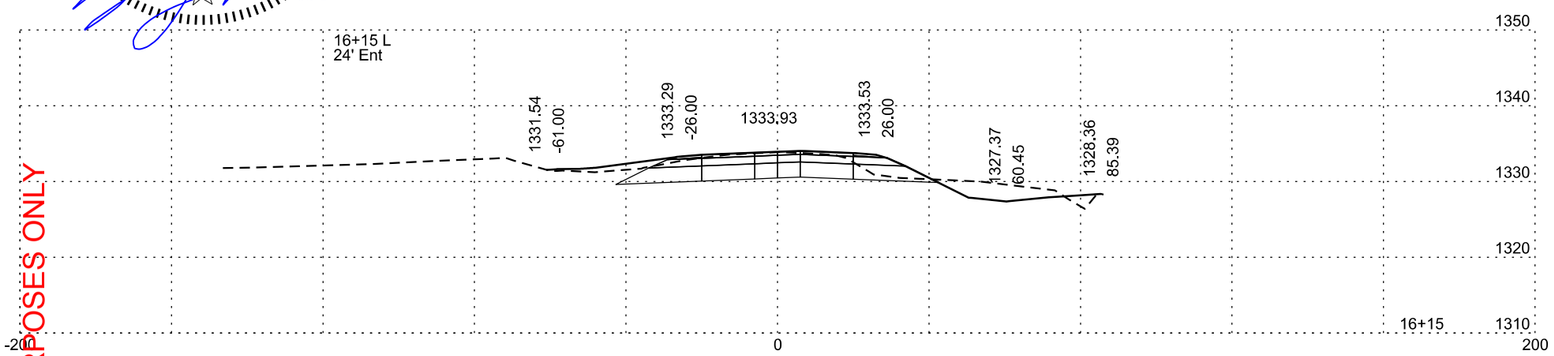

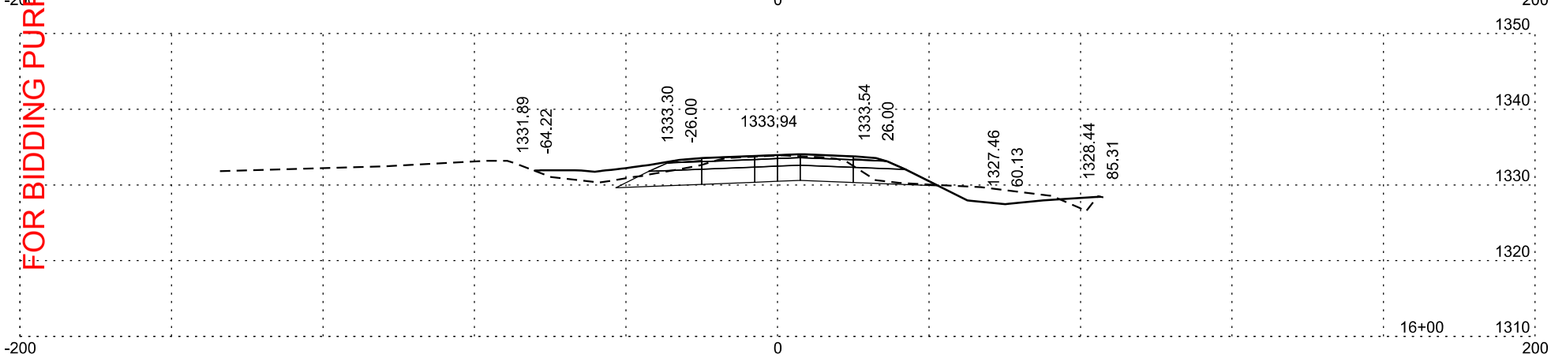

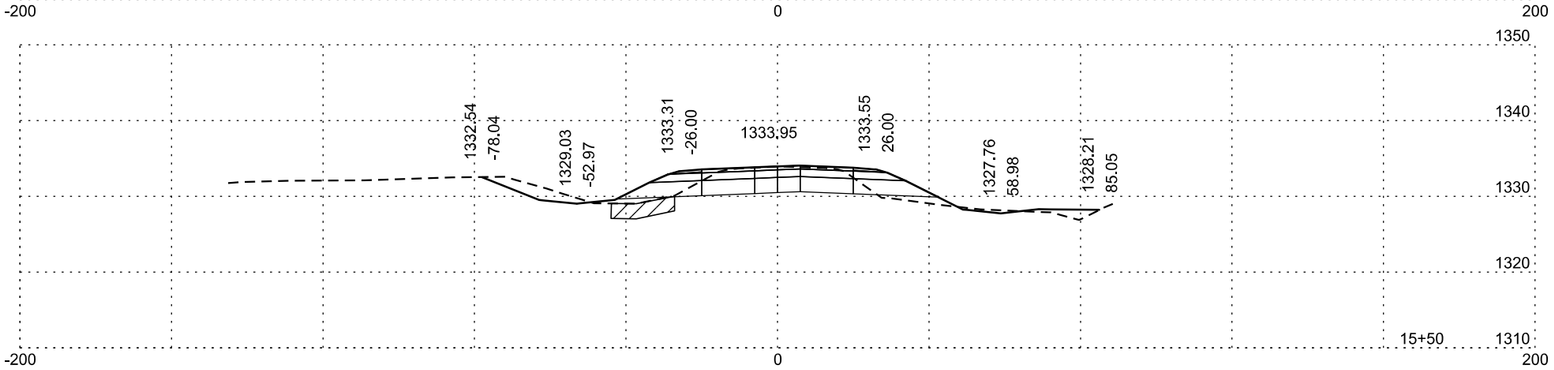

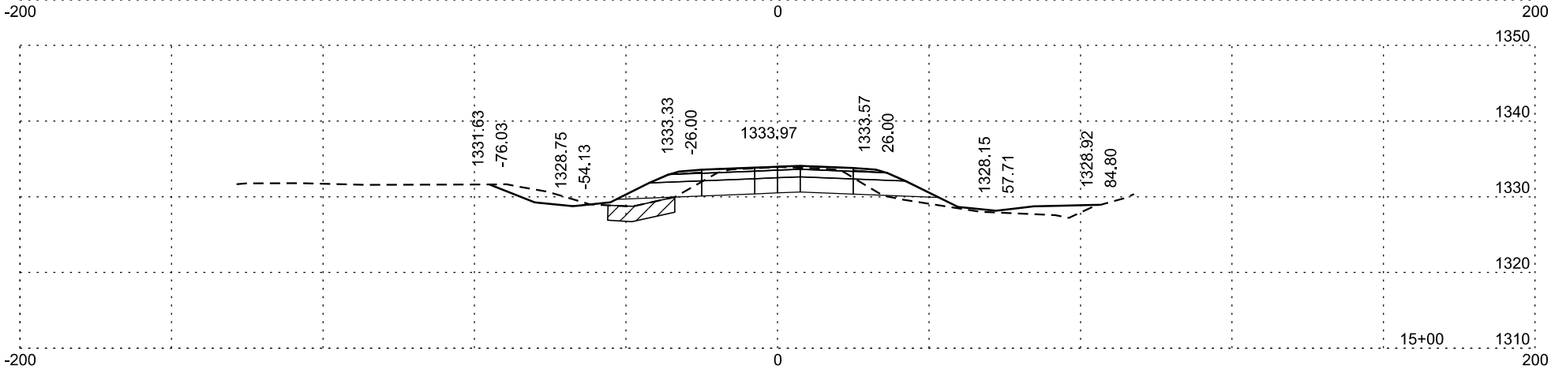

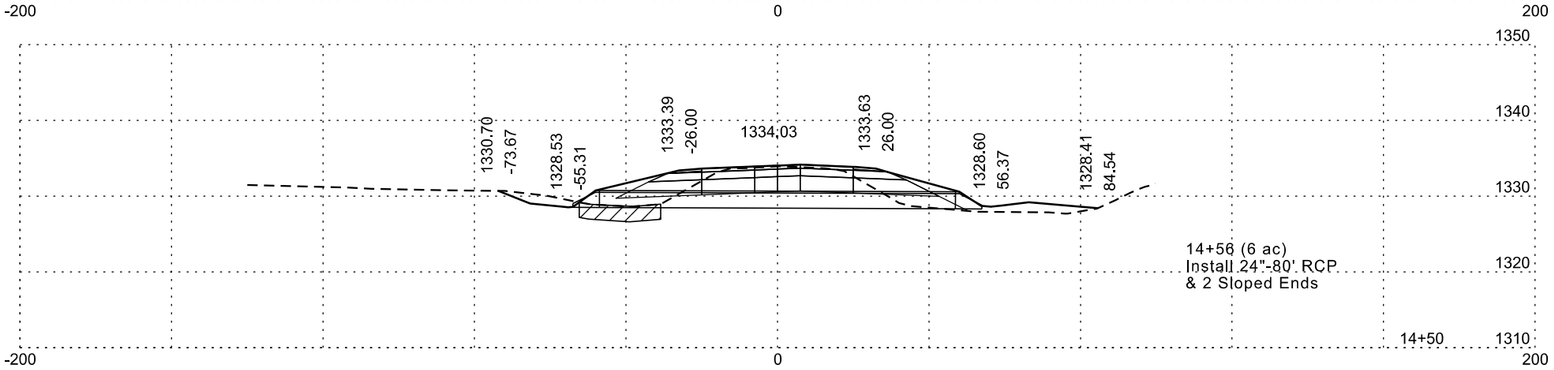

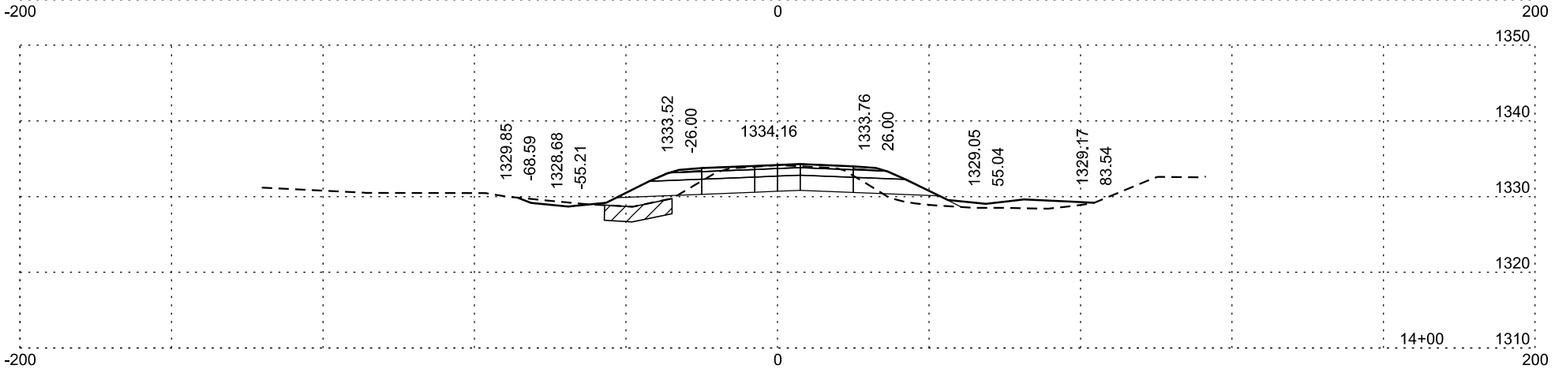

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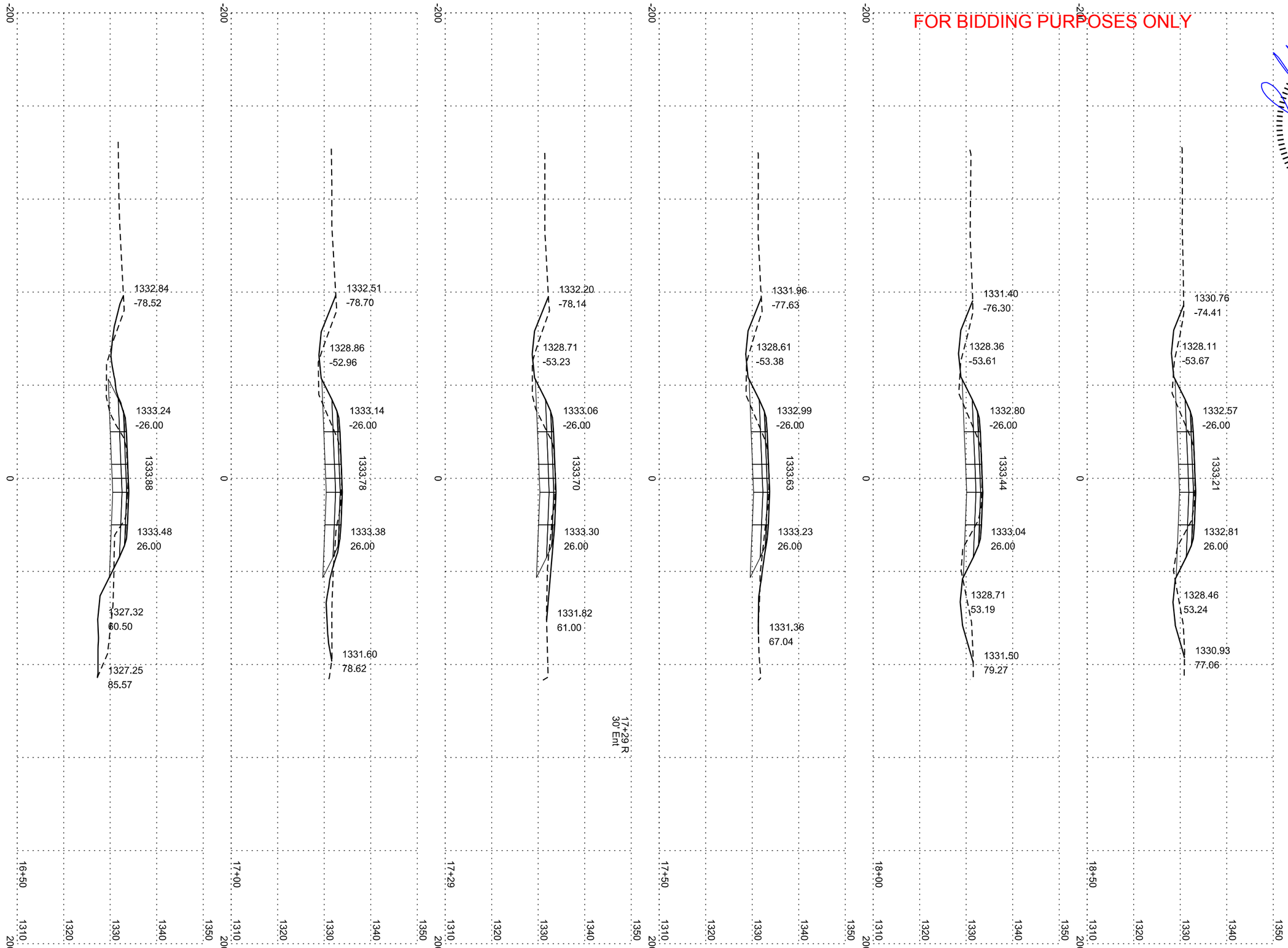

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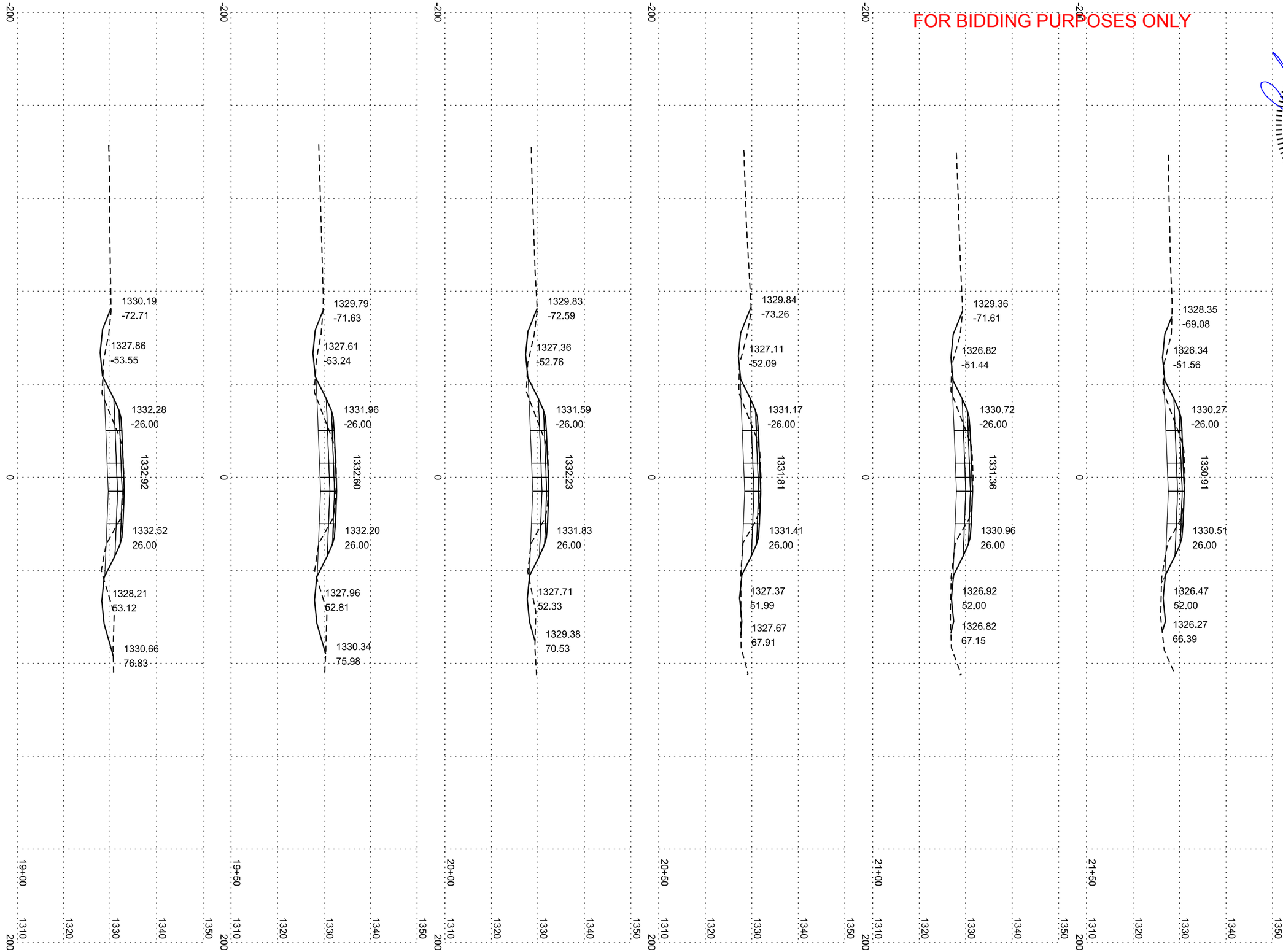

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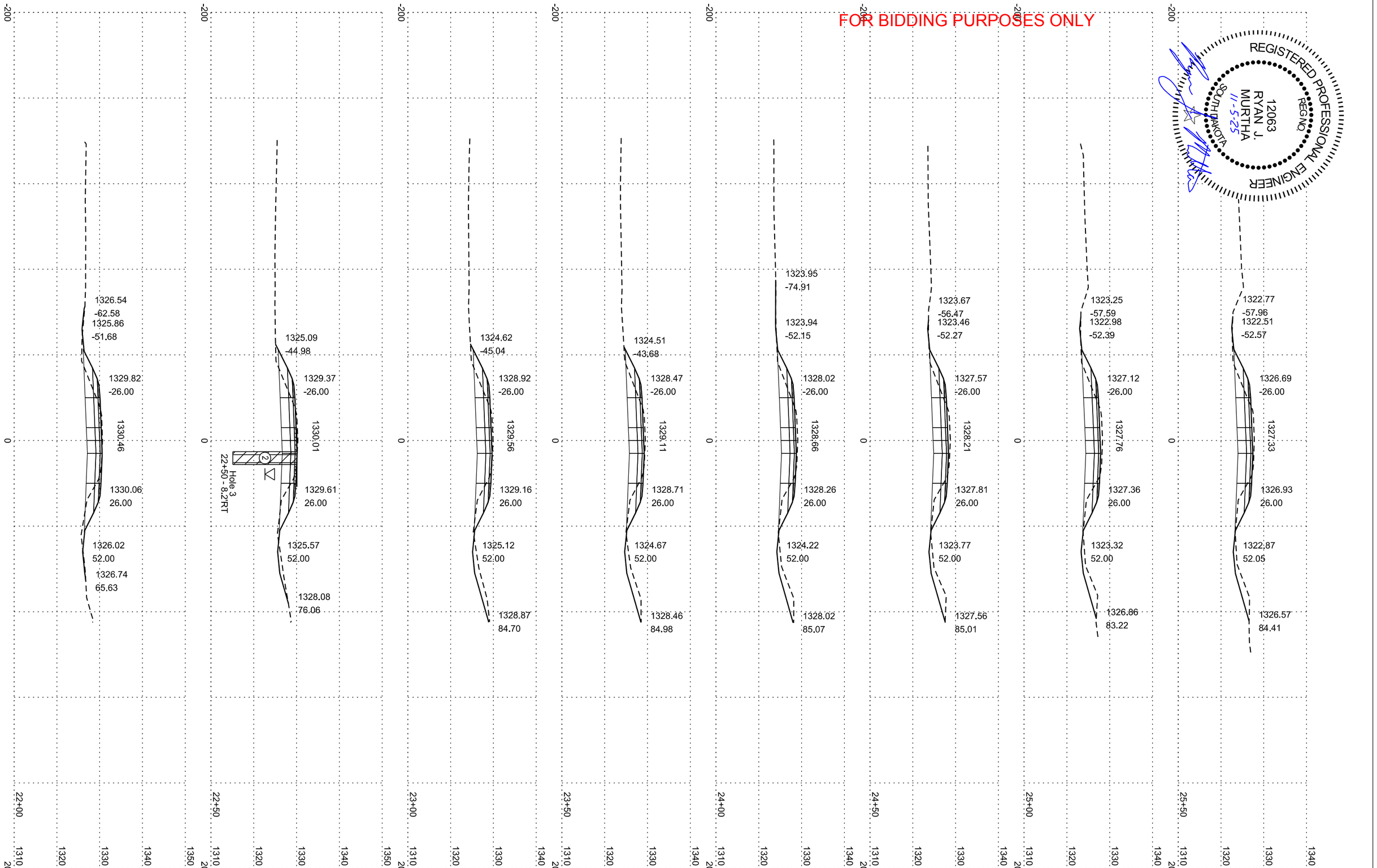

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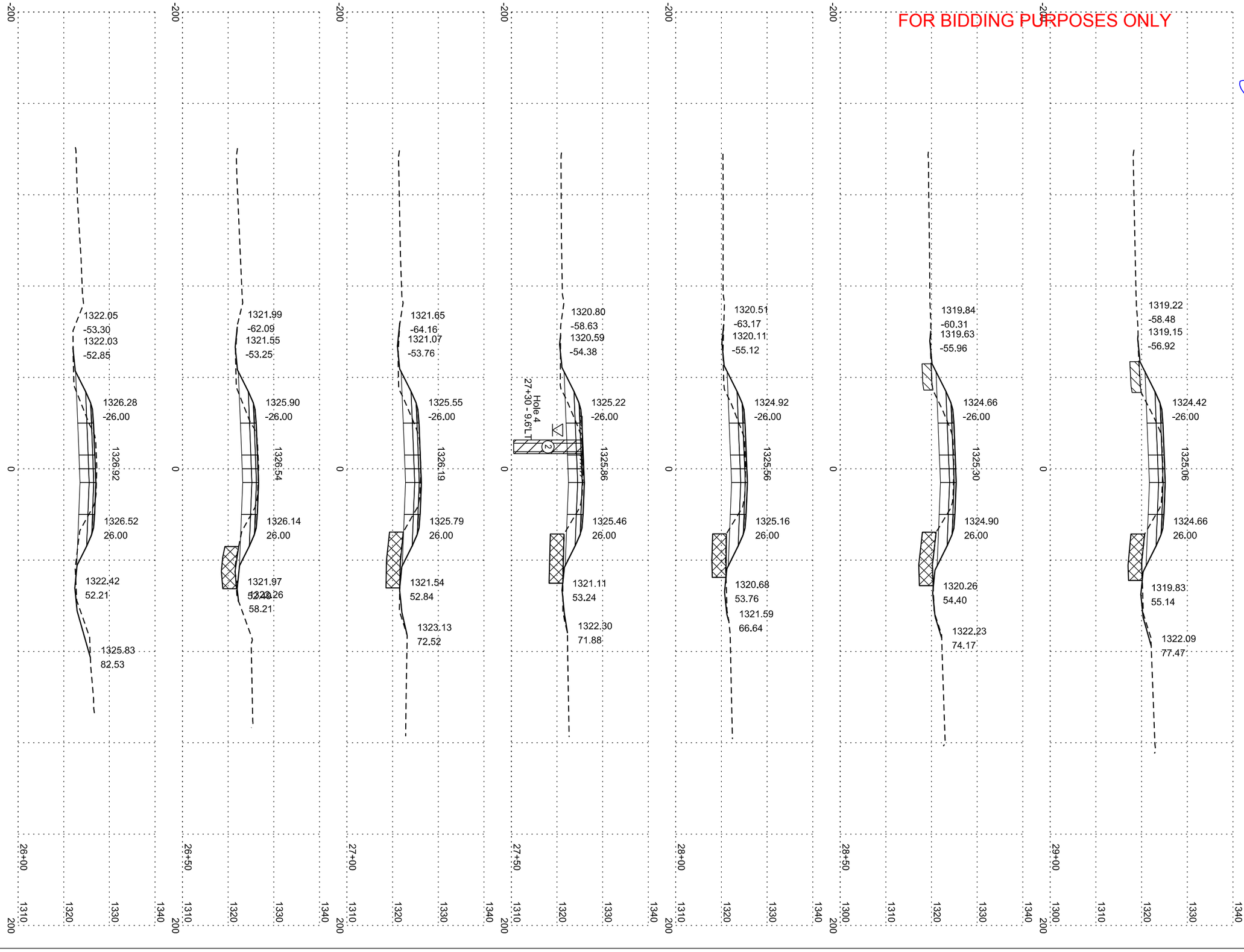

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SOUTH DAKOTA

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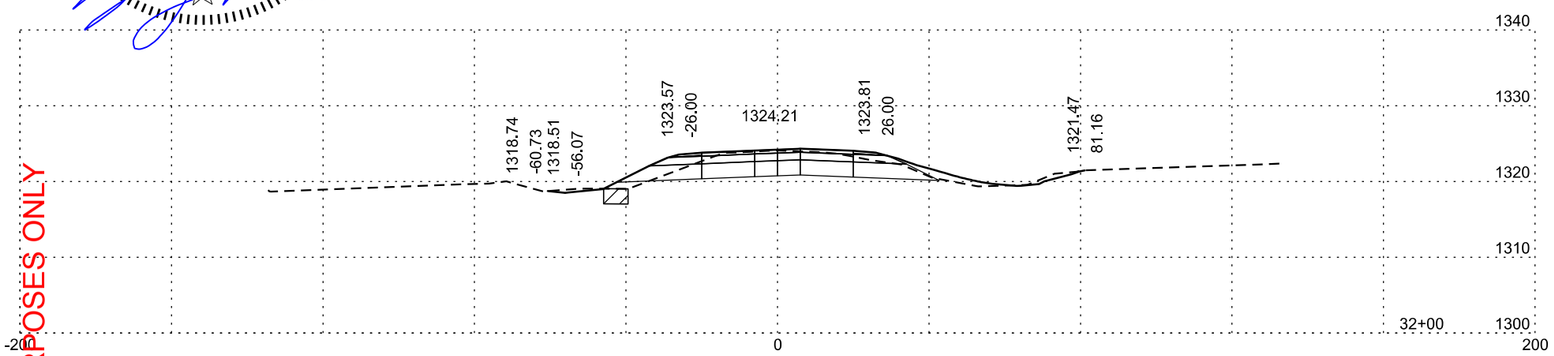

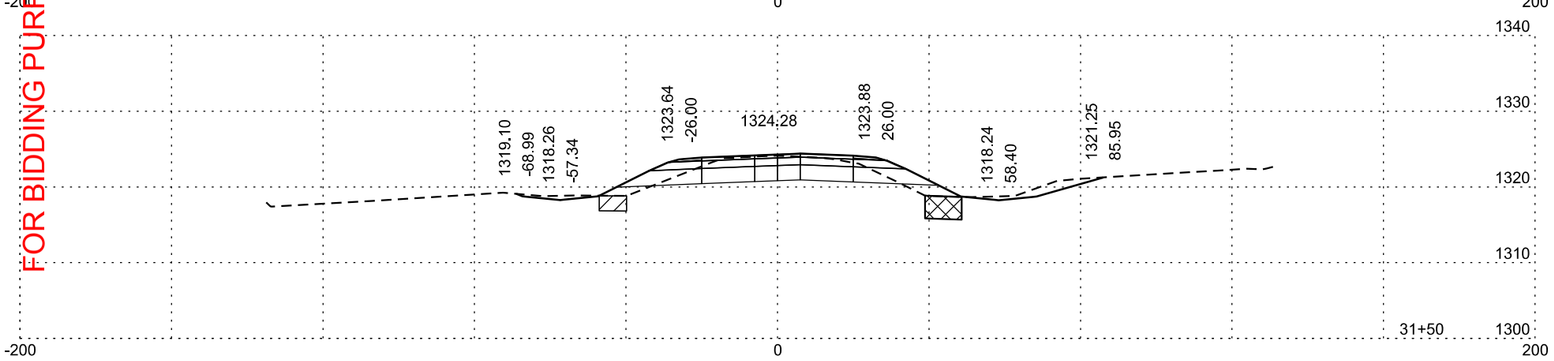

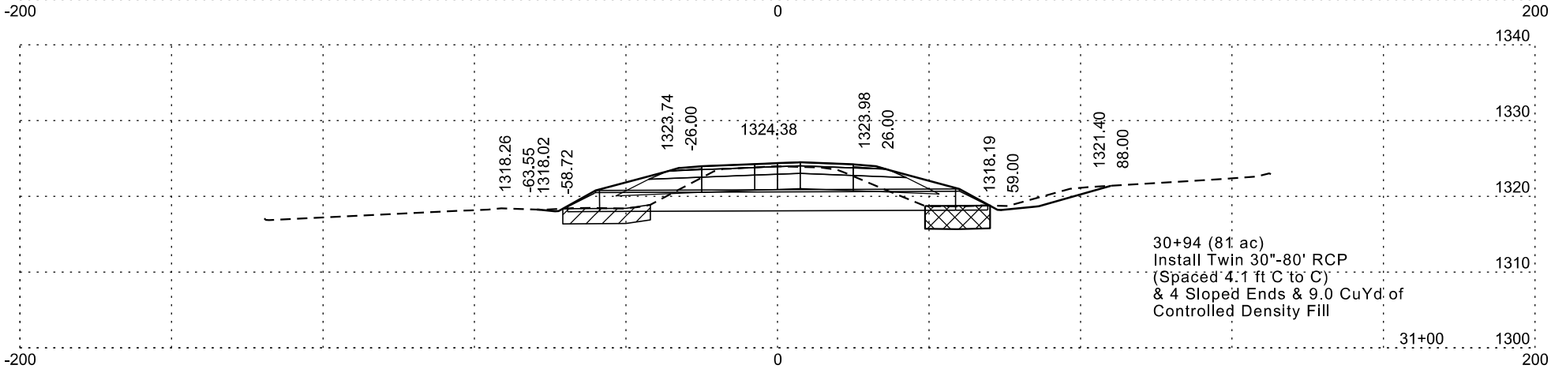

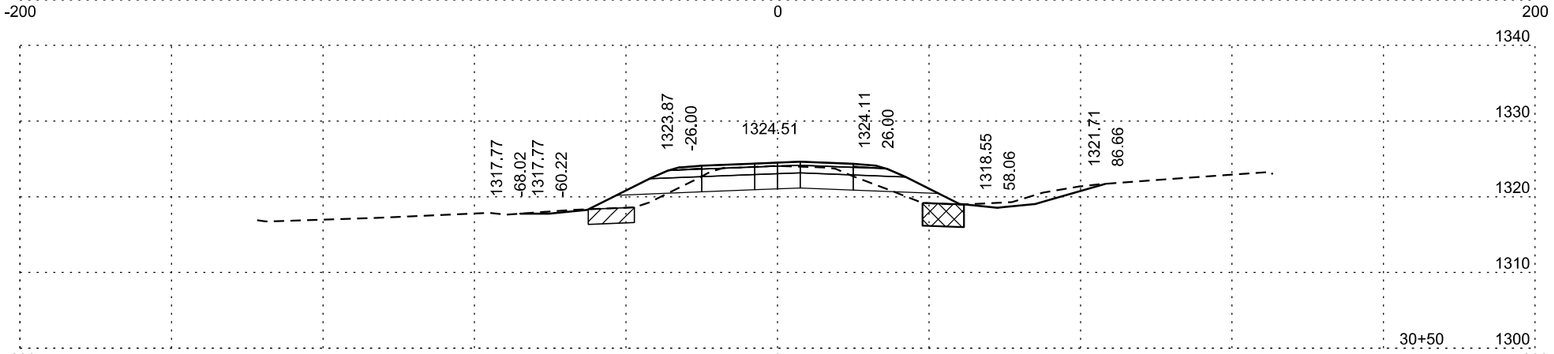

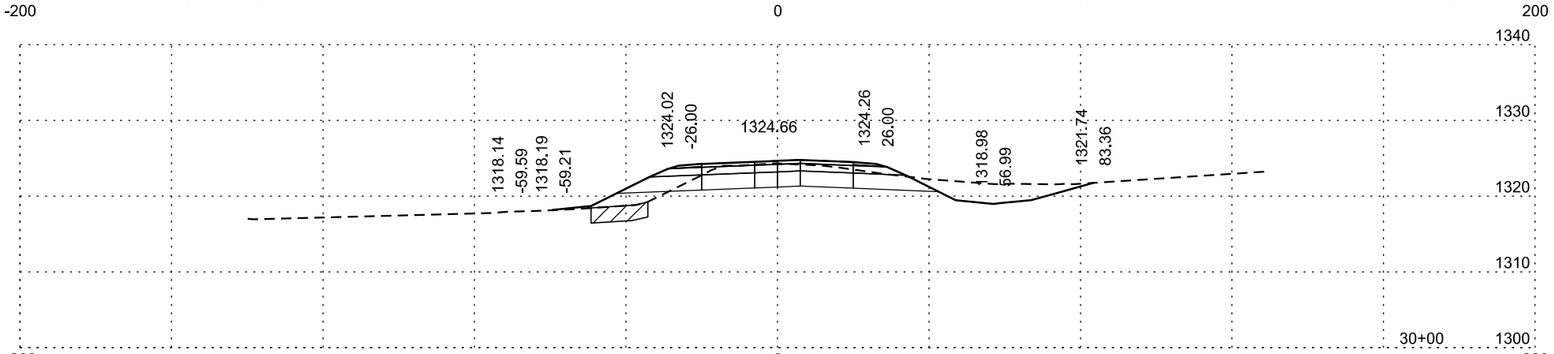

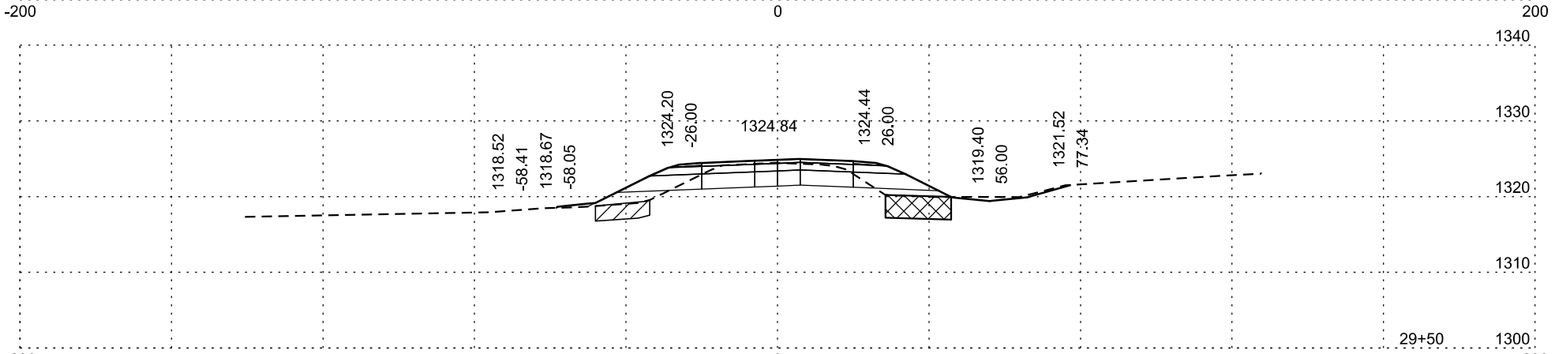

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	P 0044(233)406	173	194

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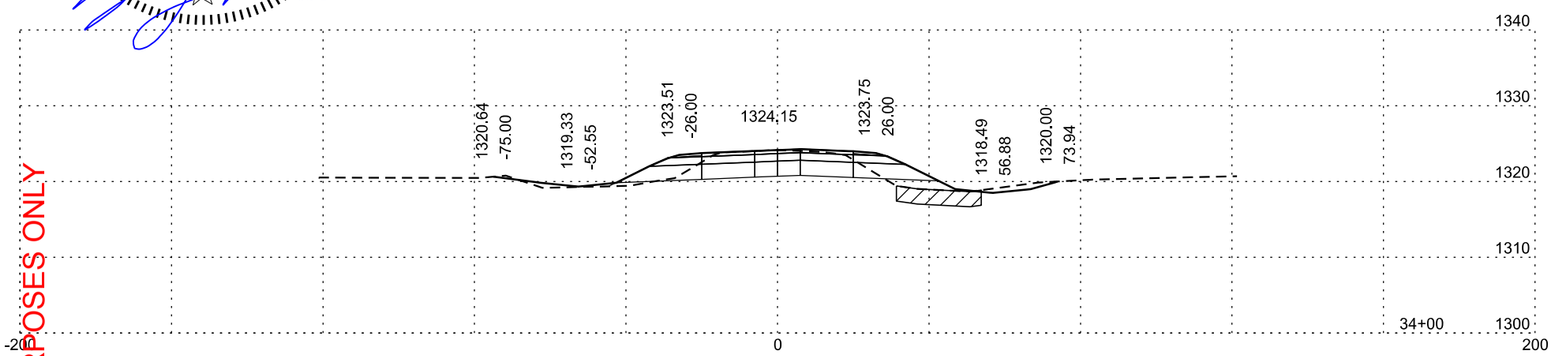

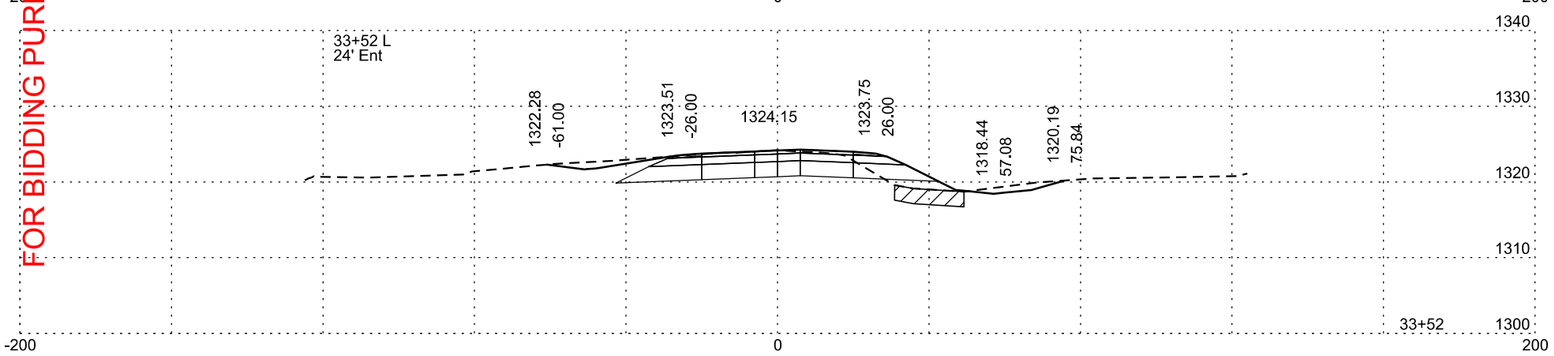

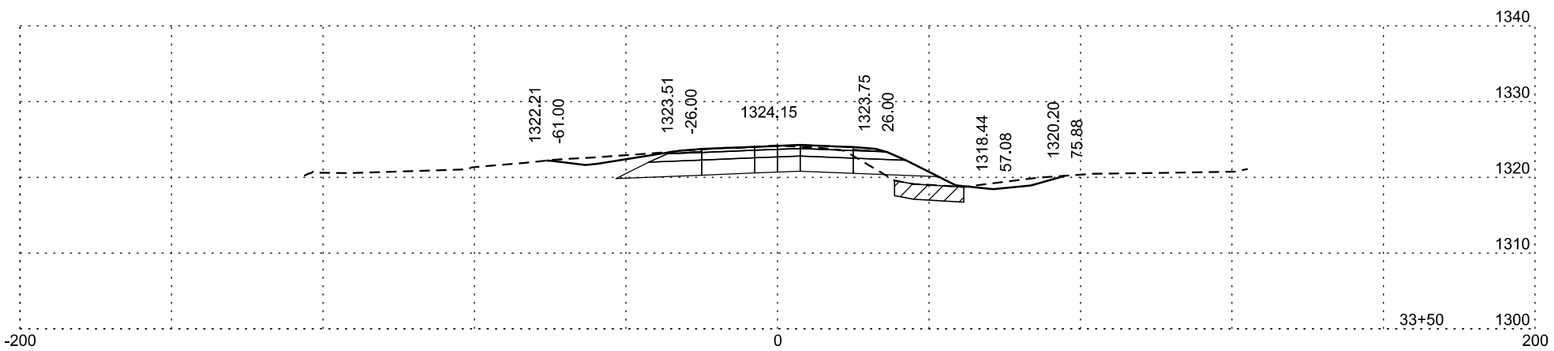

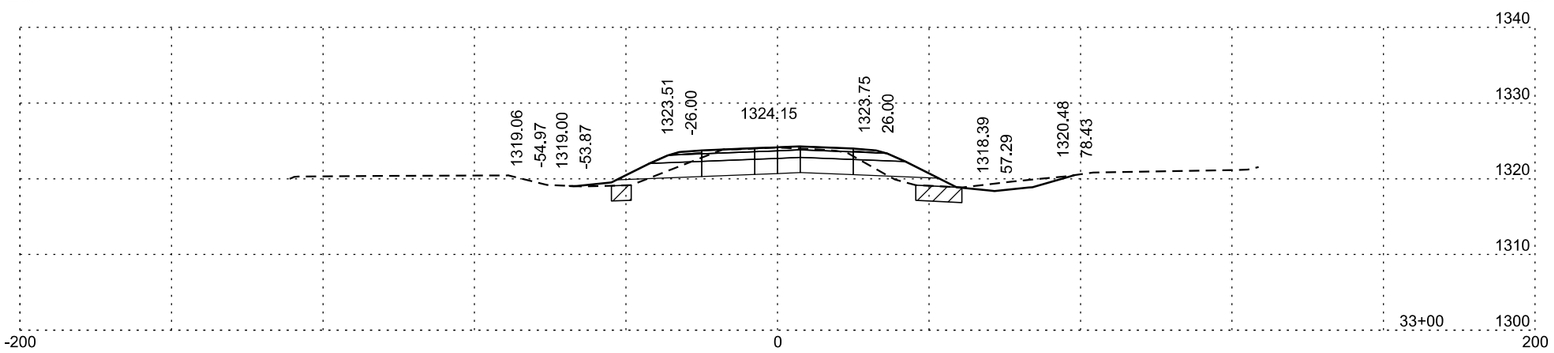

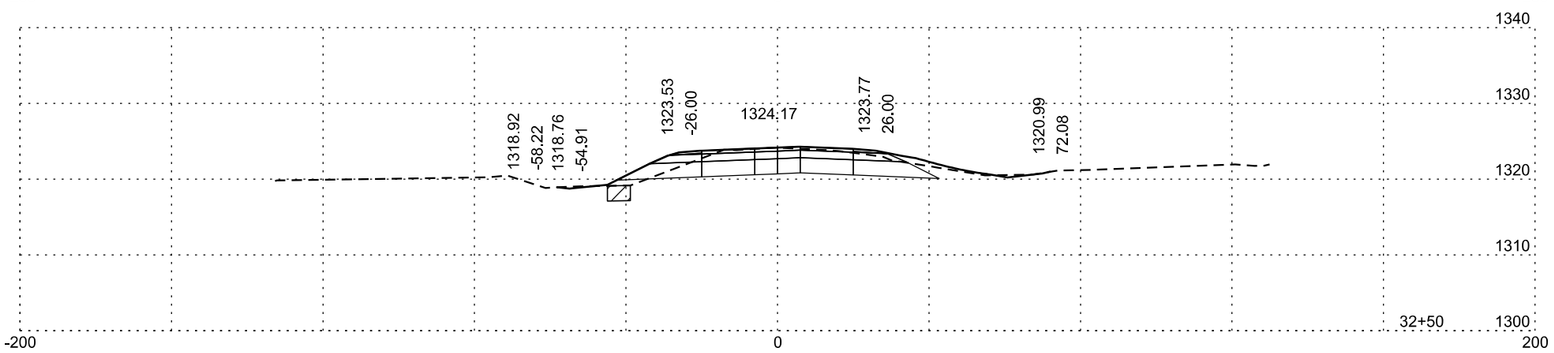

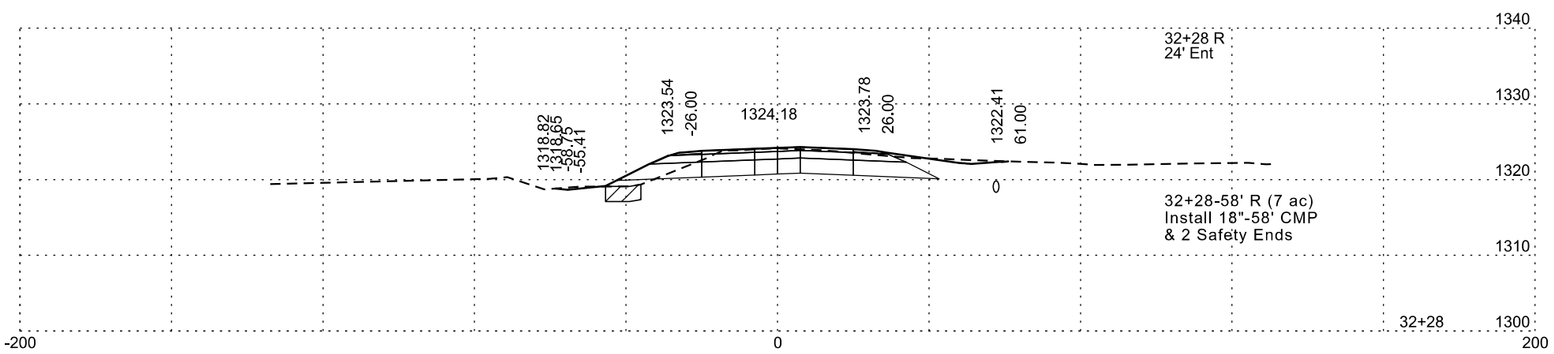

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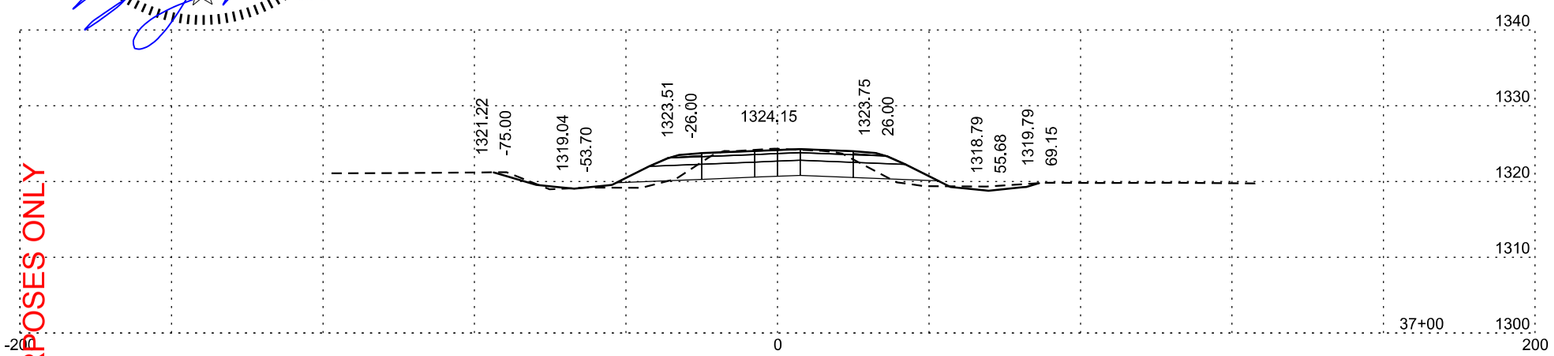

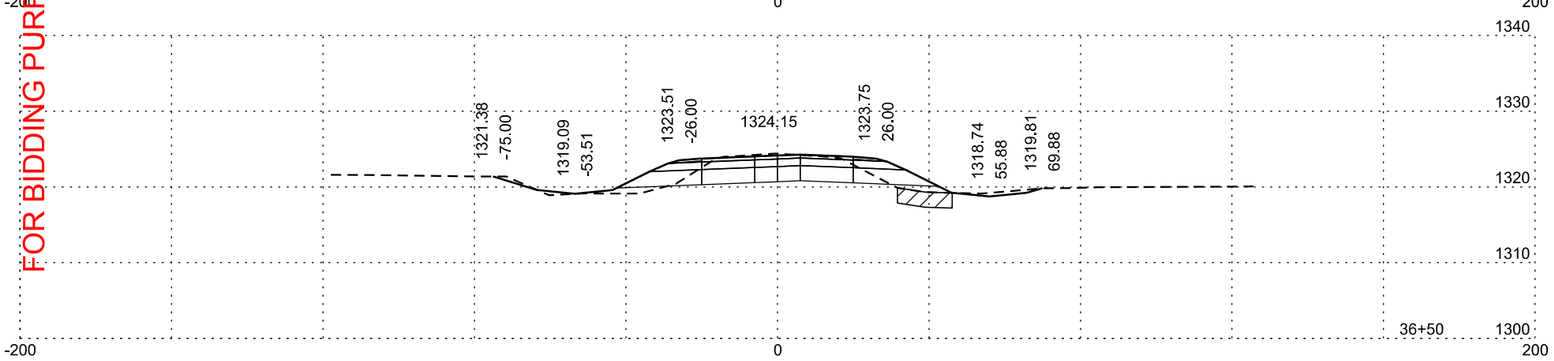

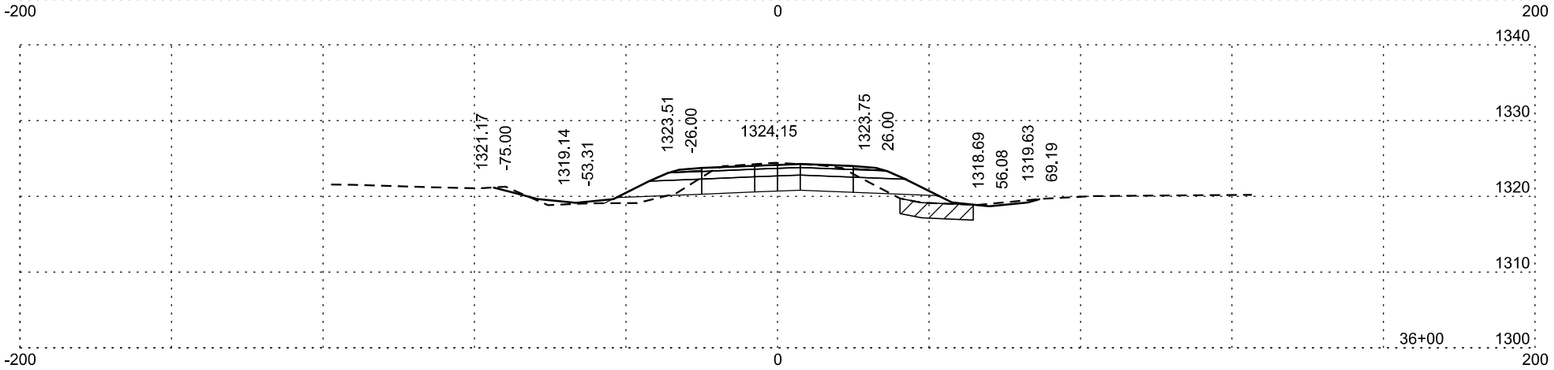

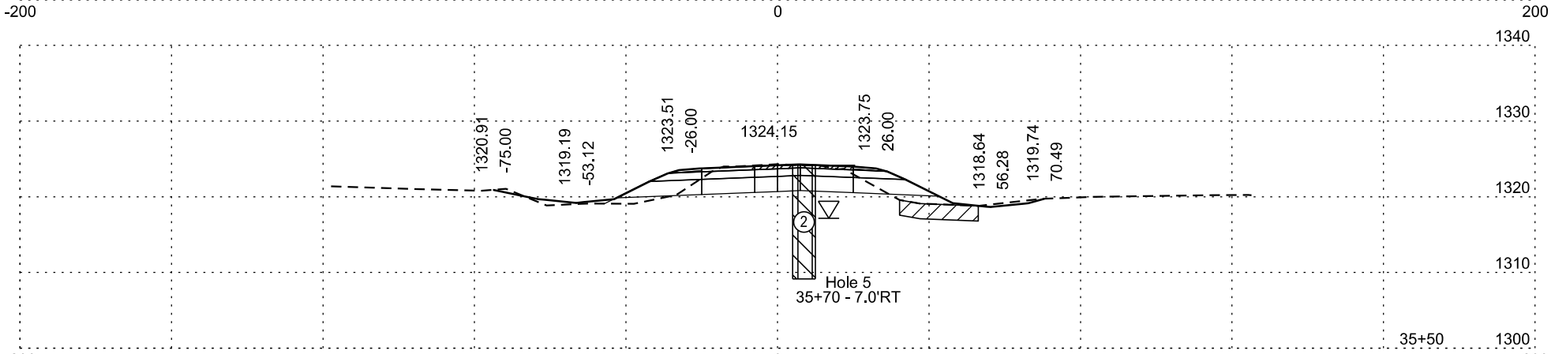

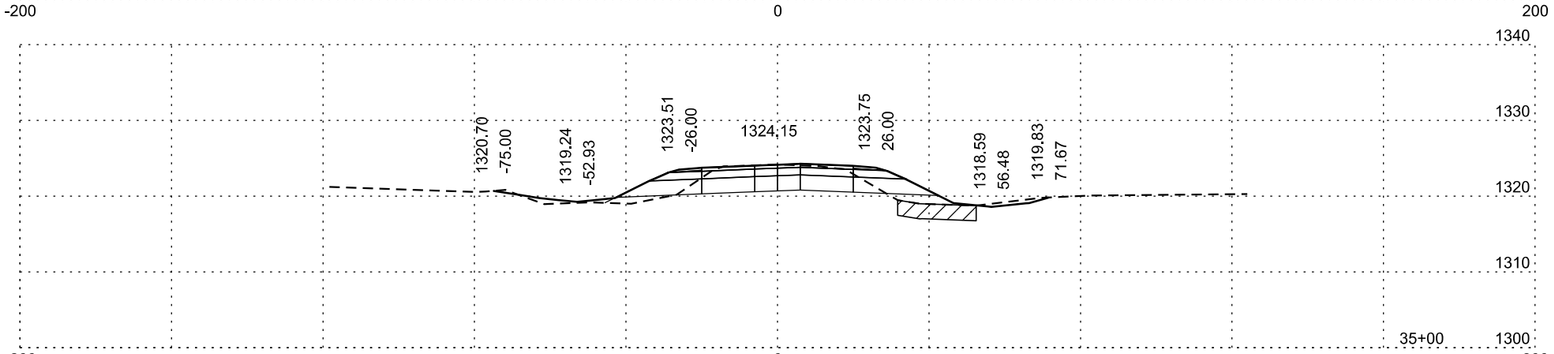

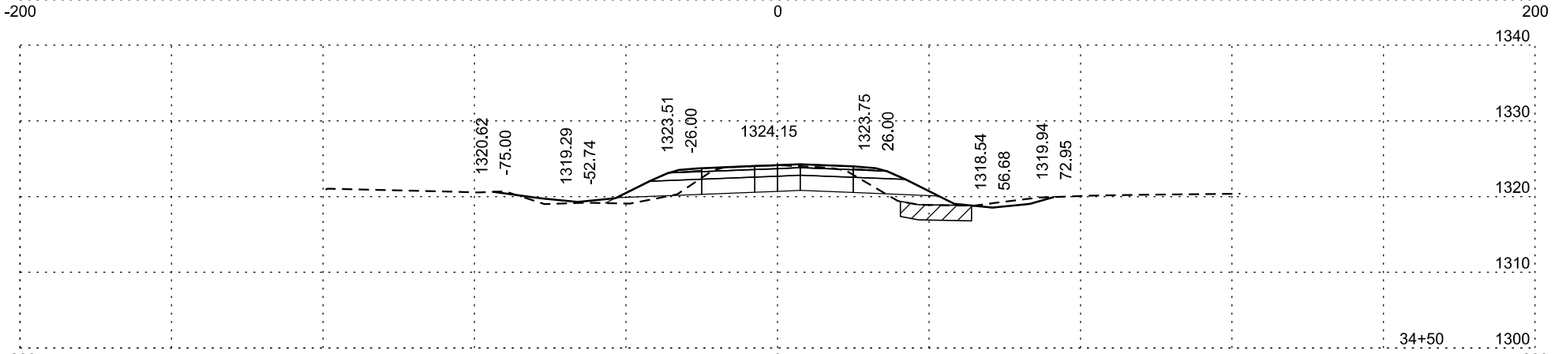

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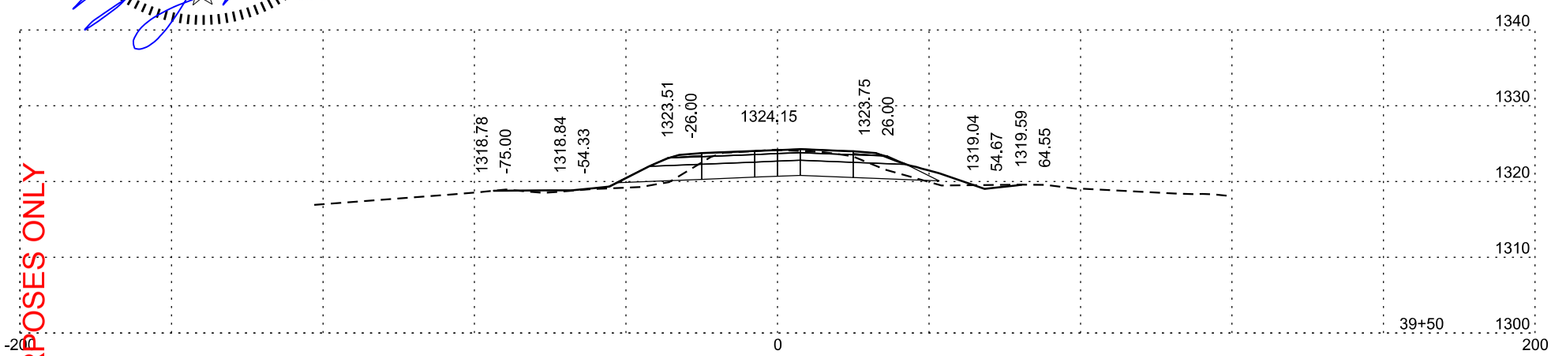

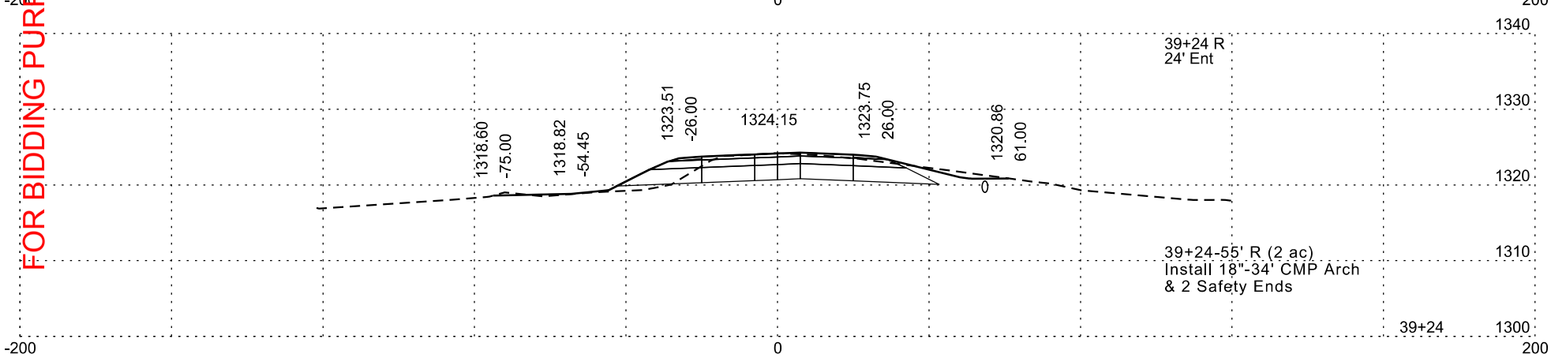

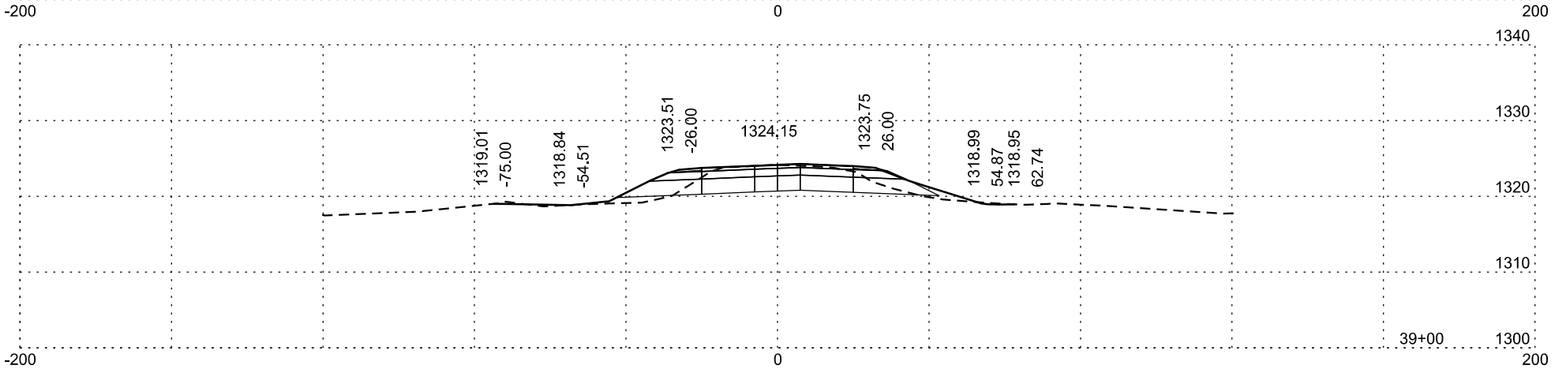

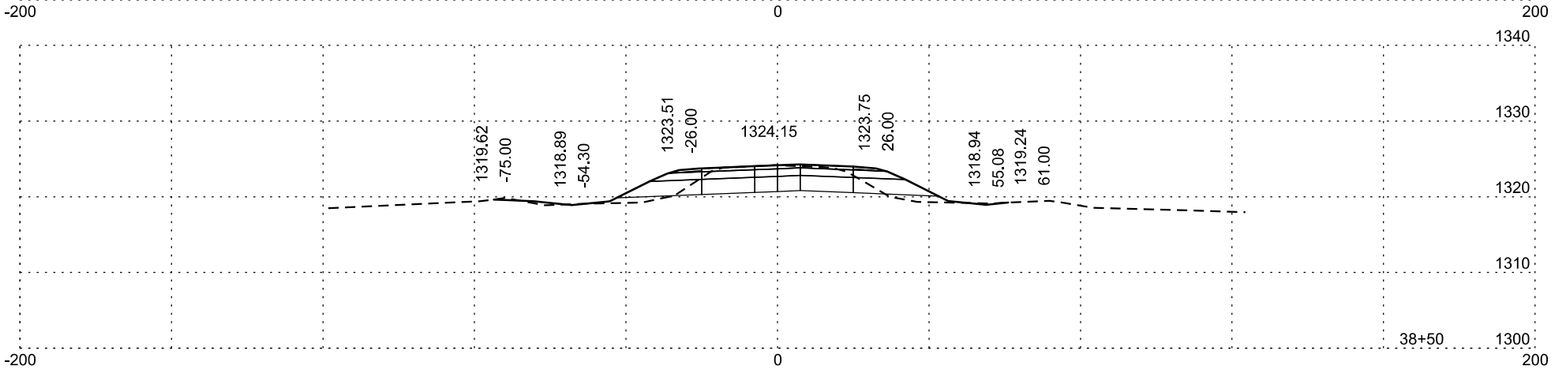

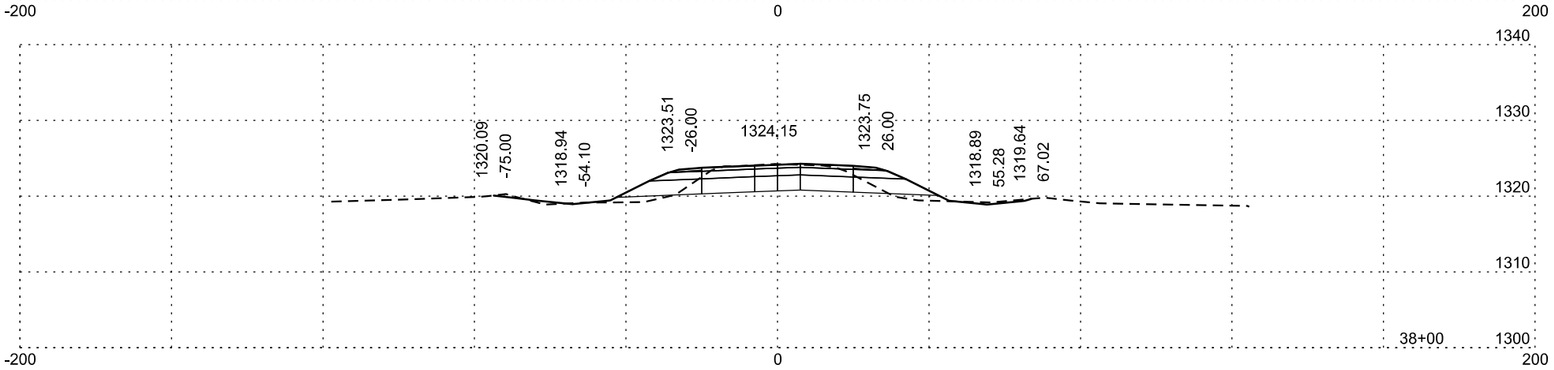

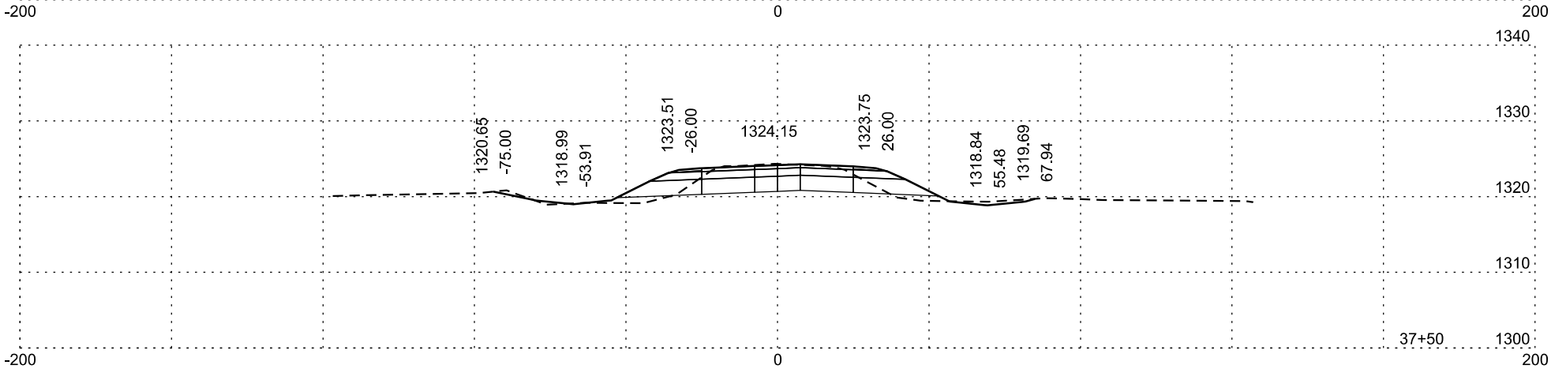

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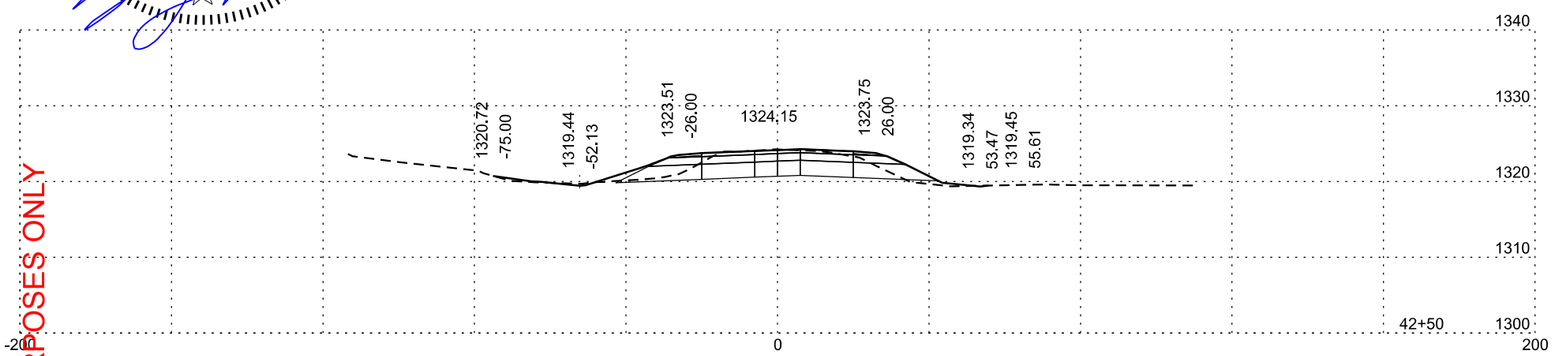

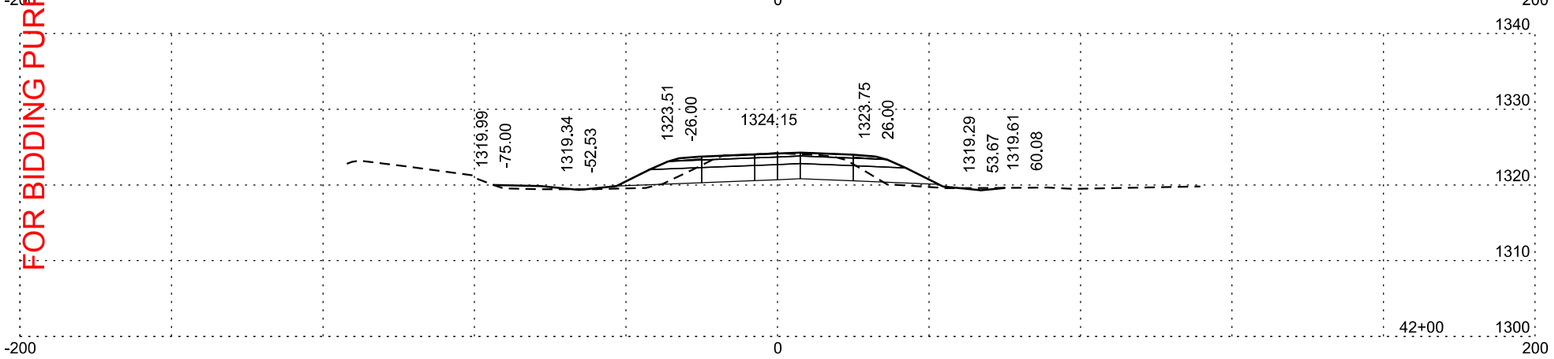

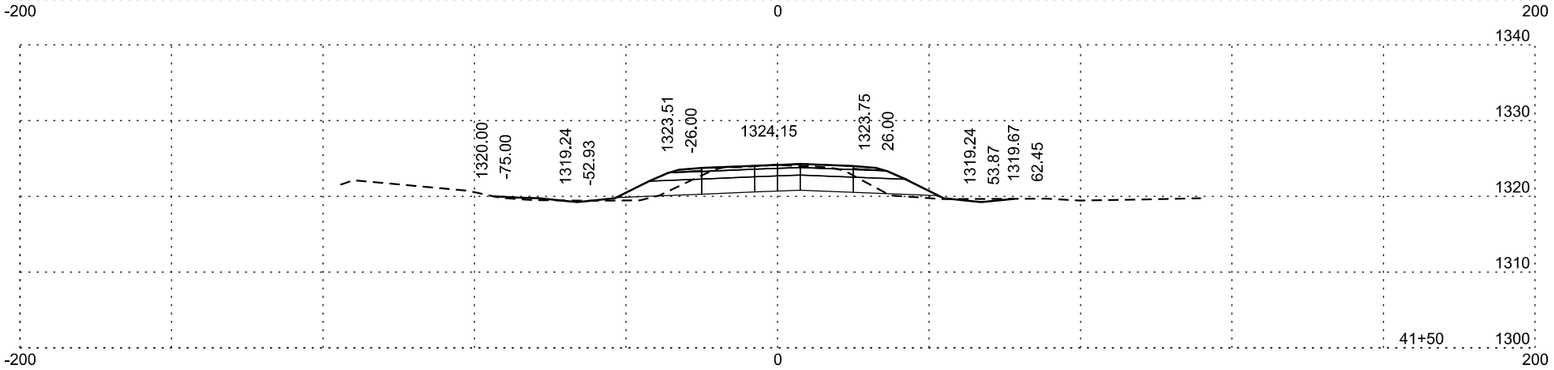

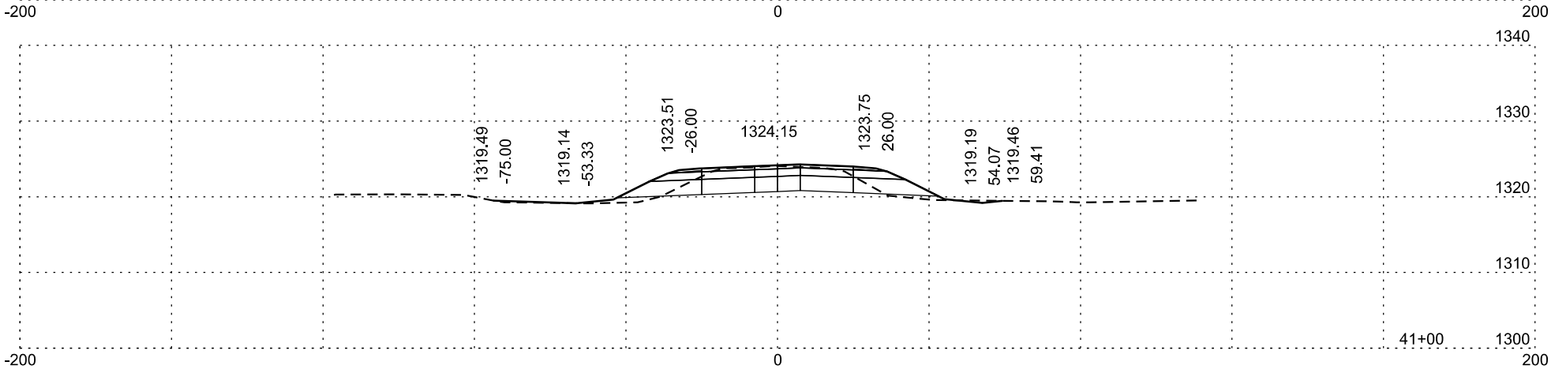

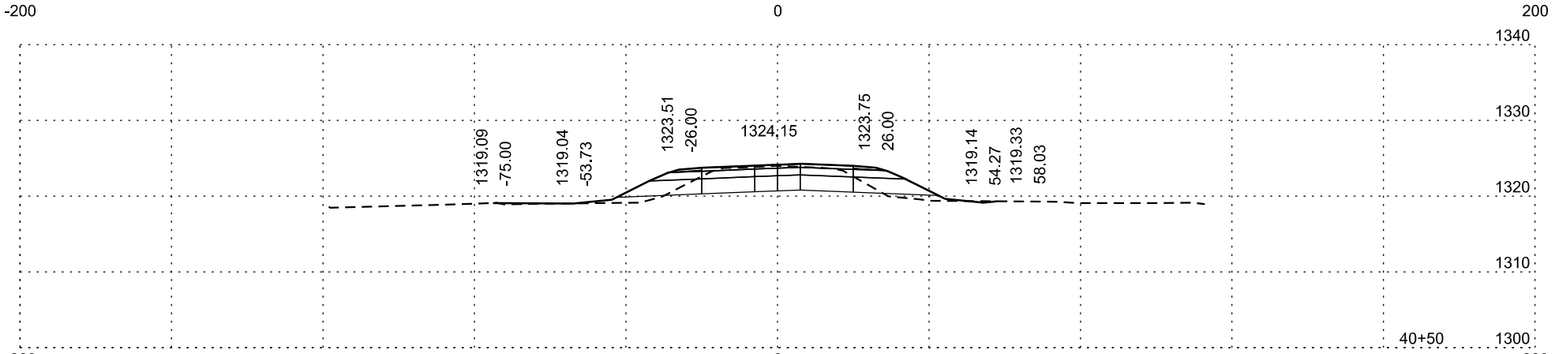

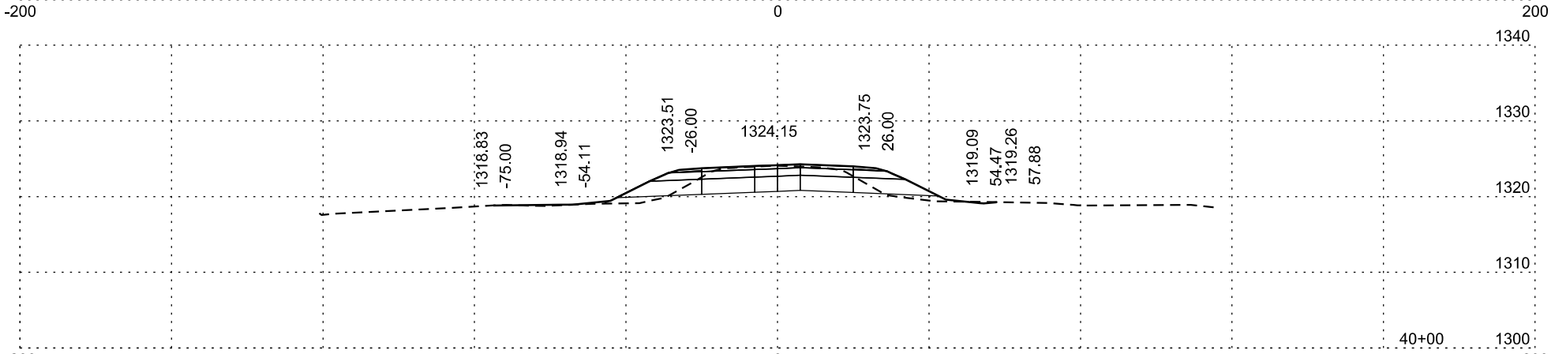

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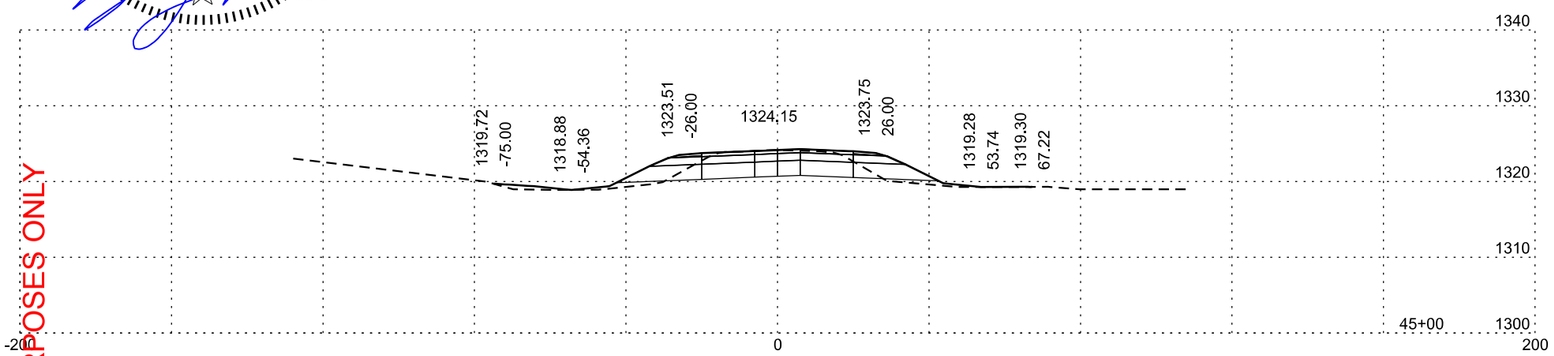

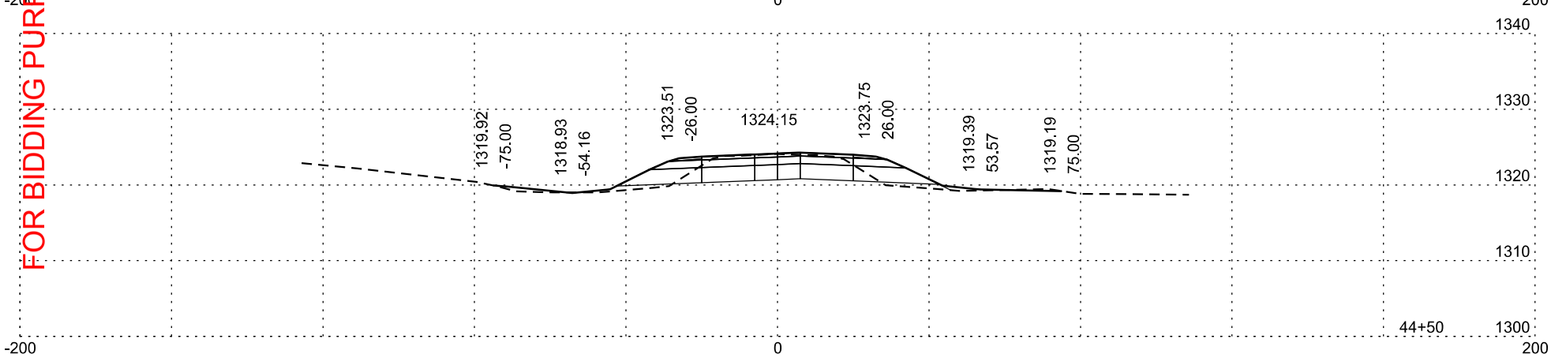

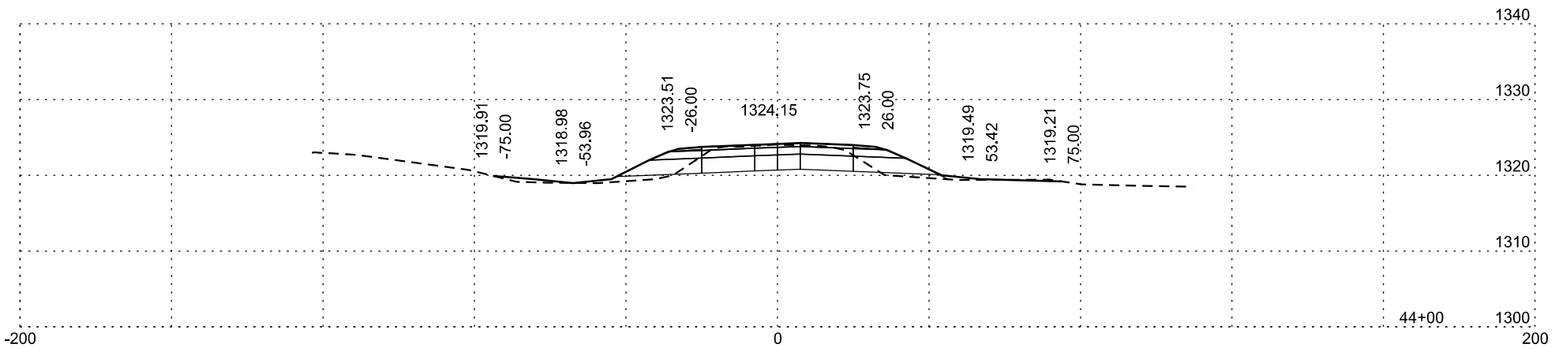

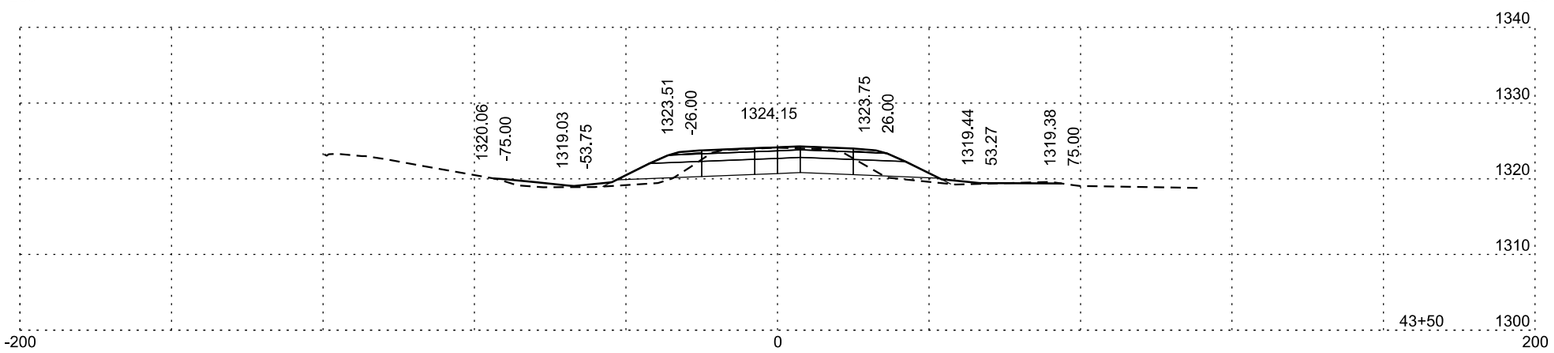

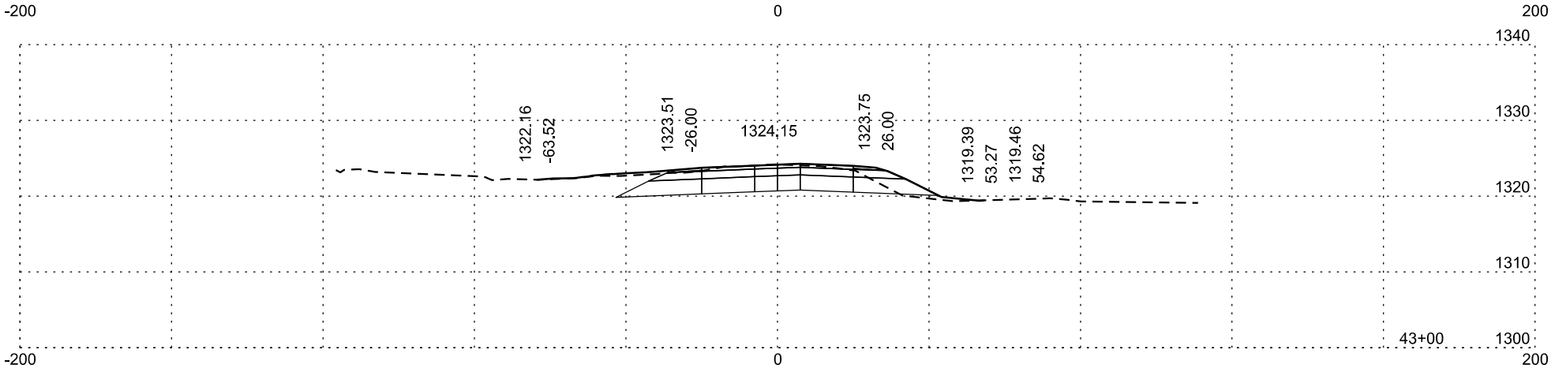

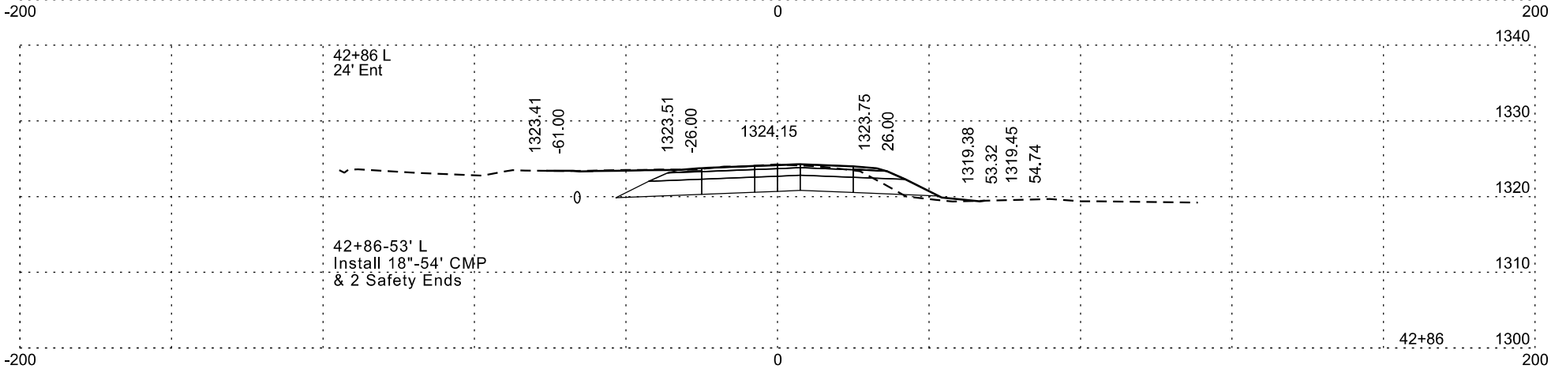

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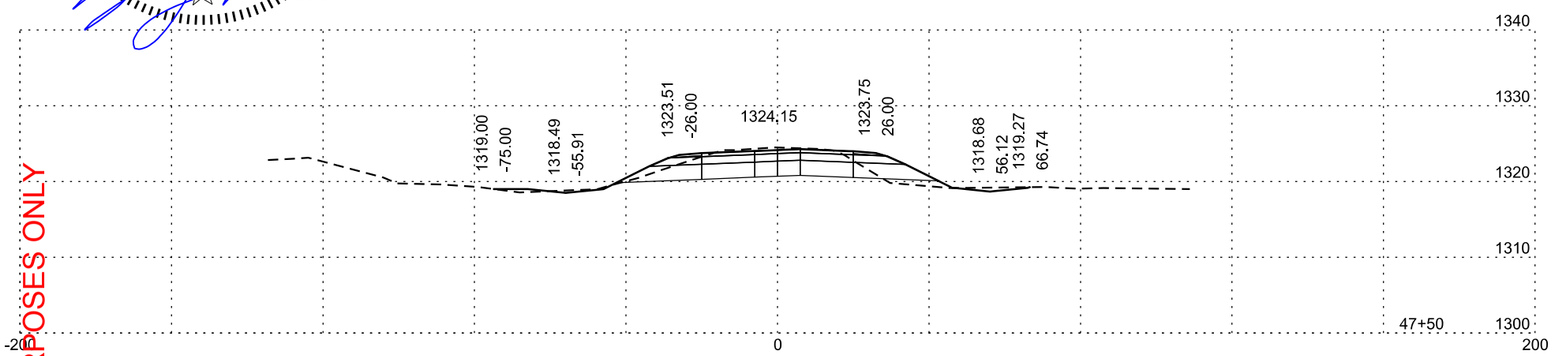

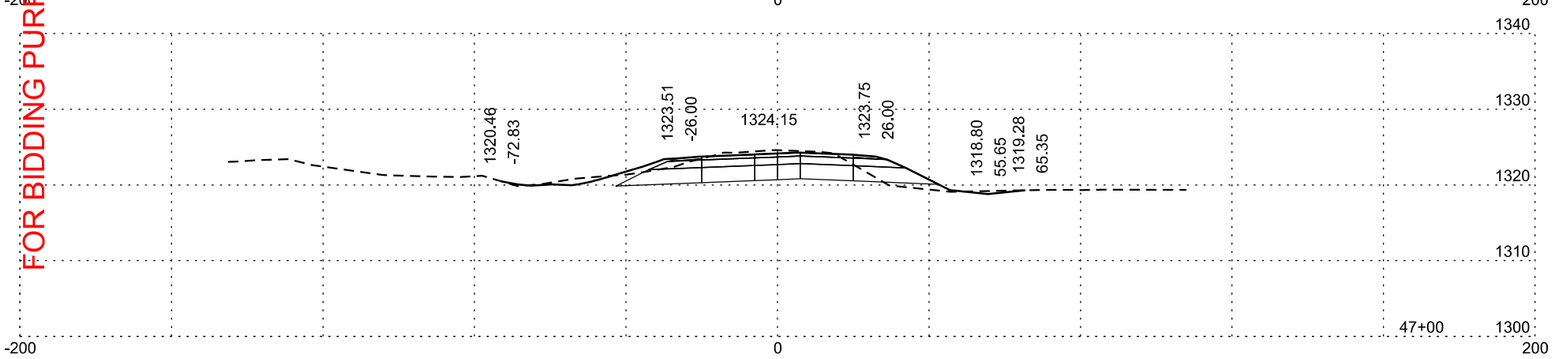

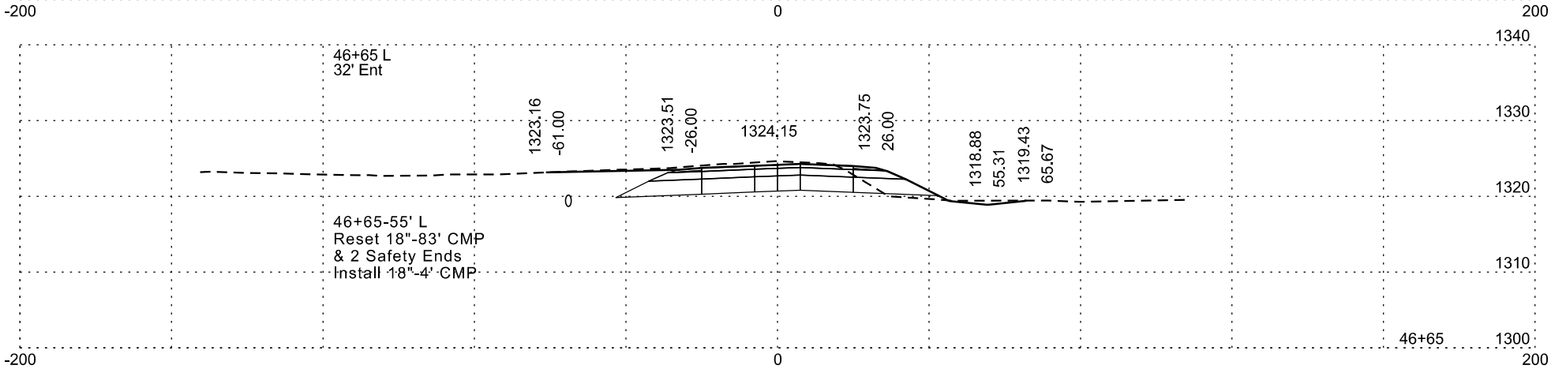

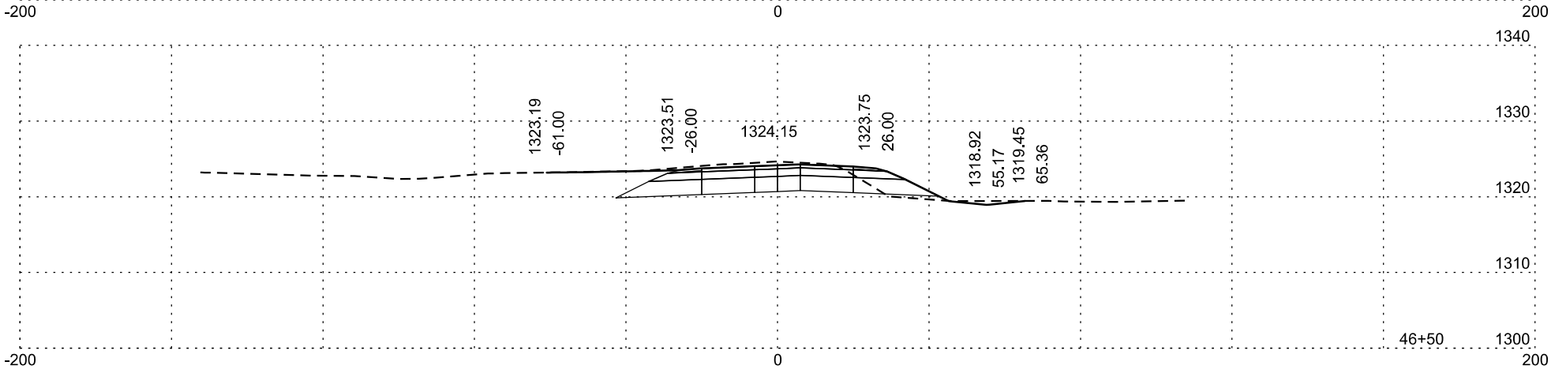

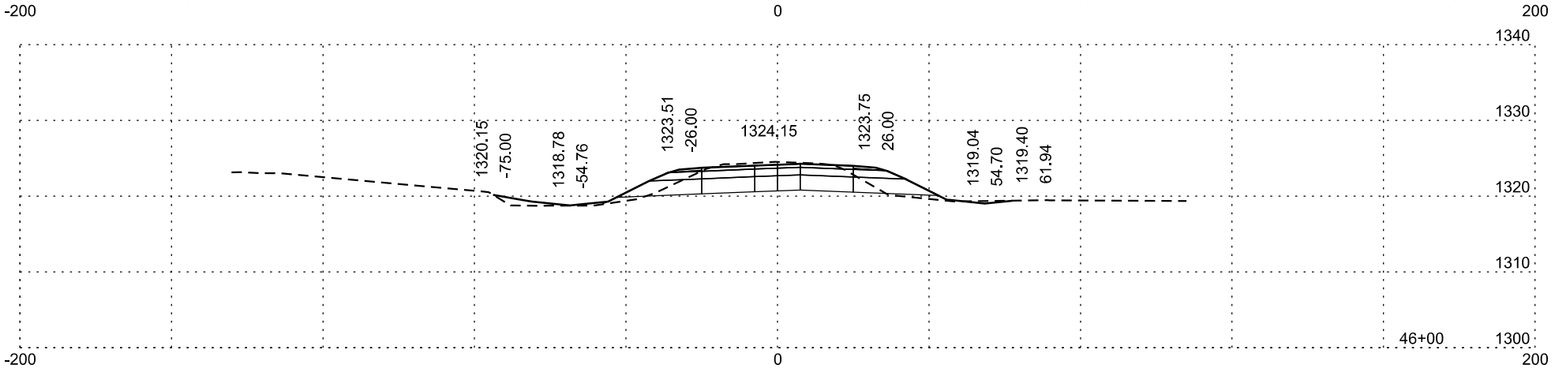

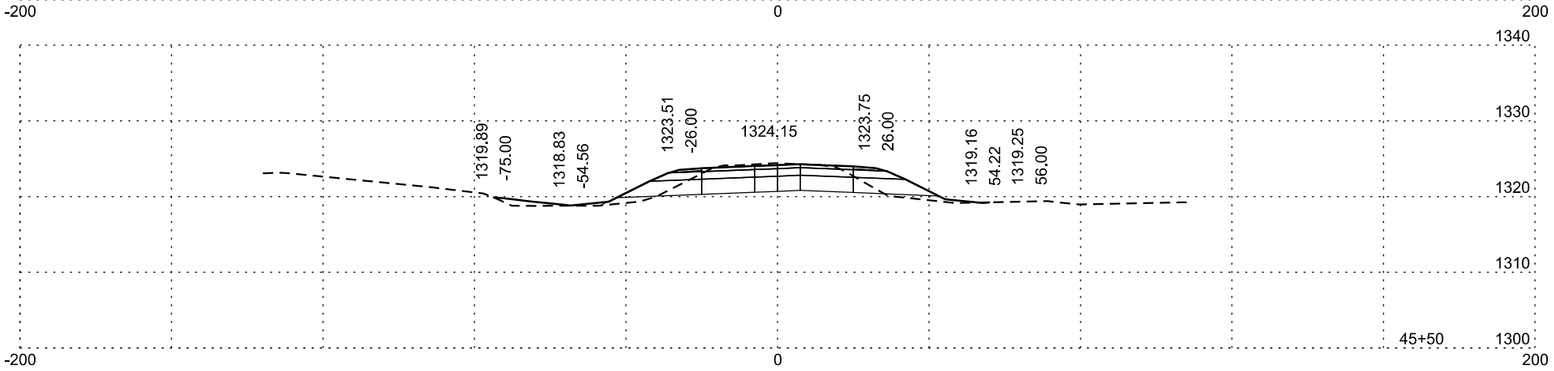

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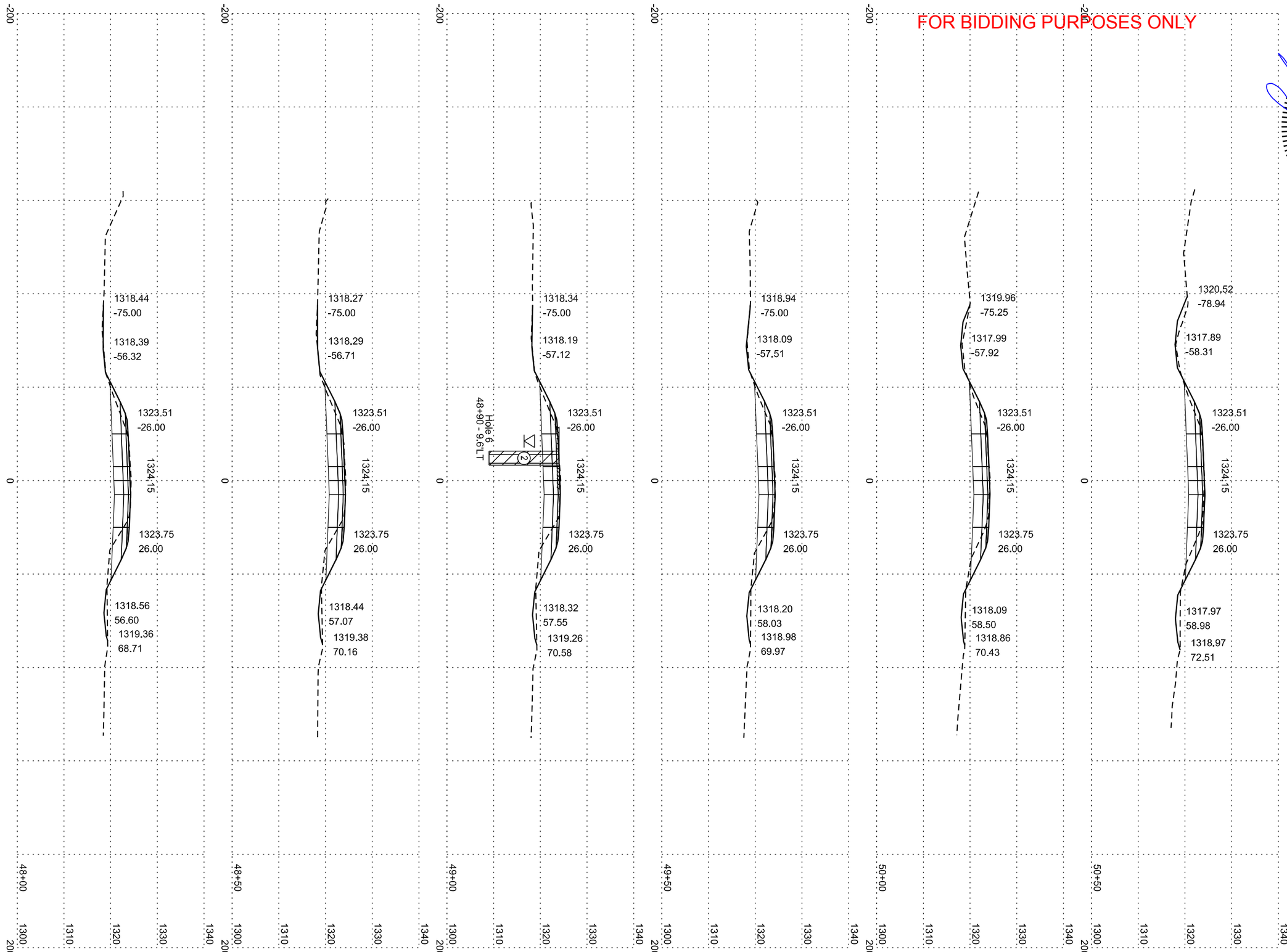

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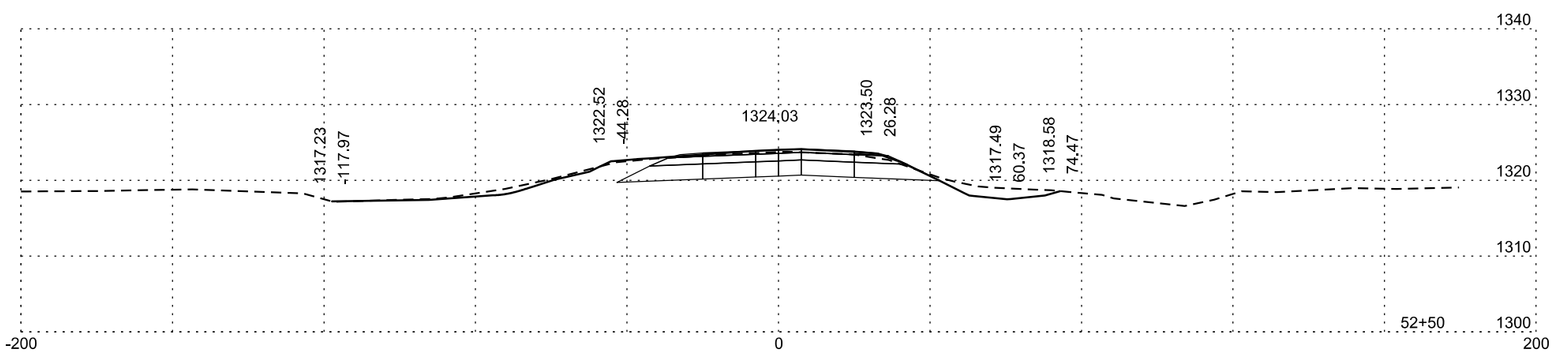

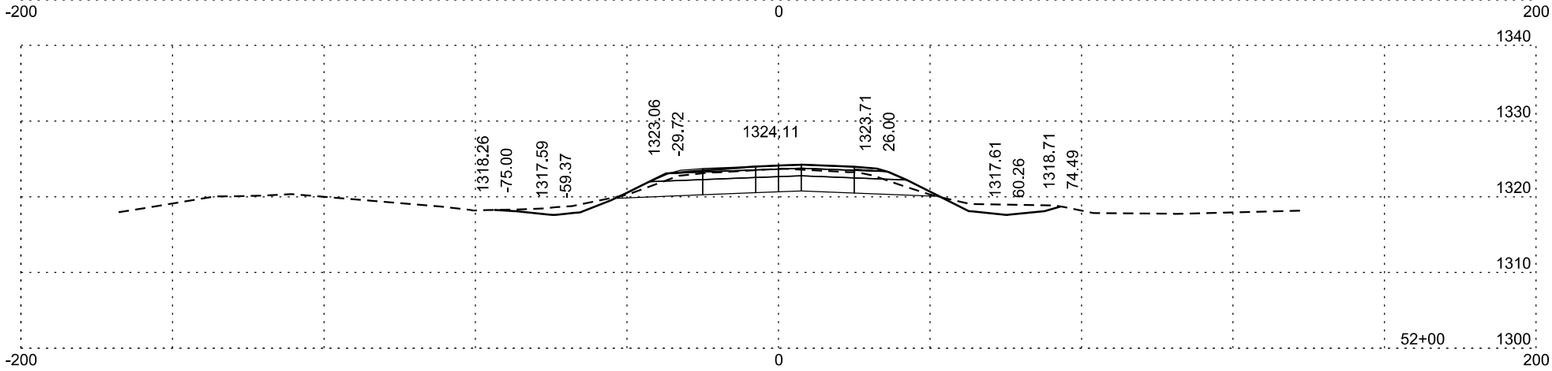

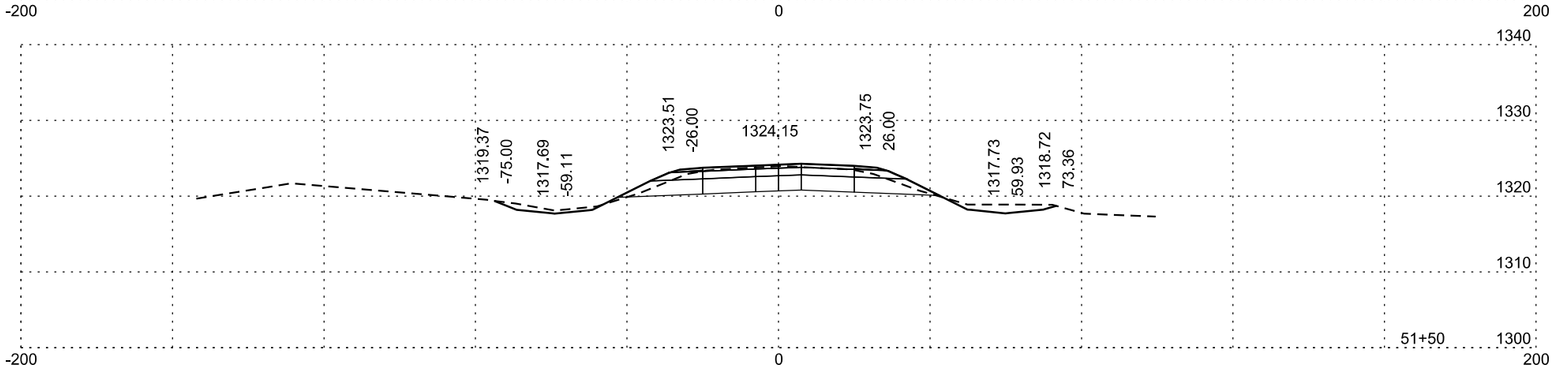

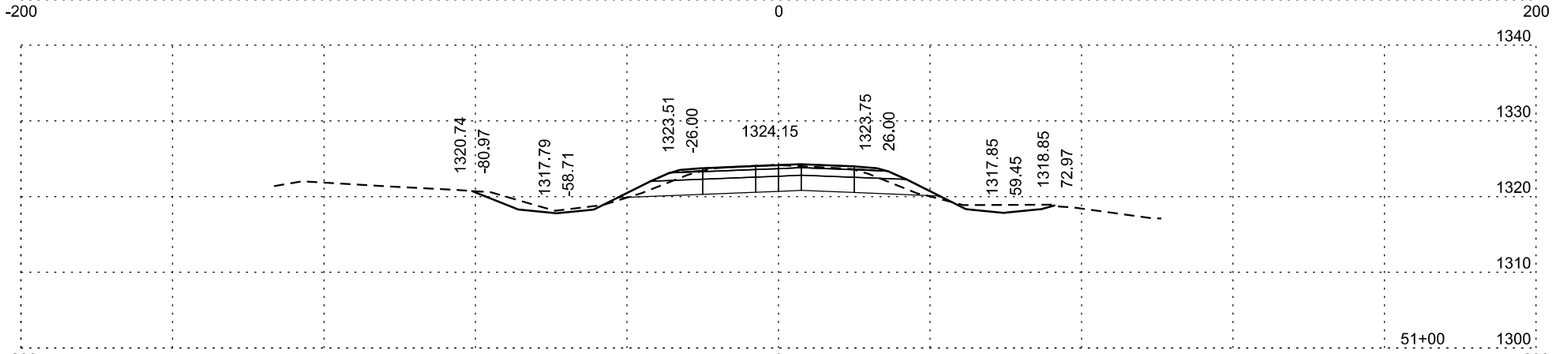

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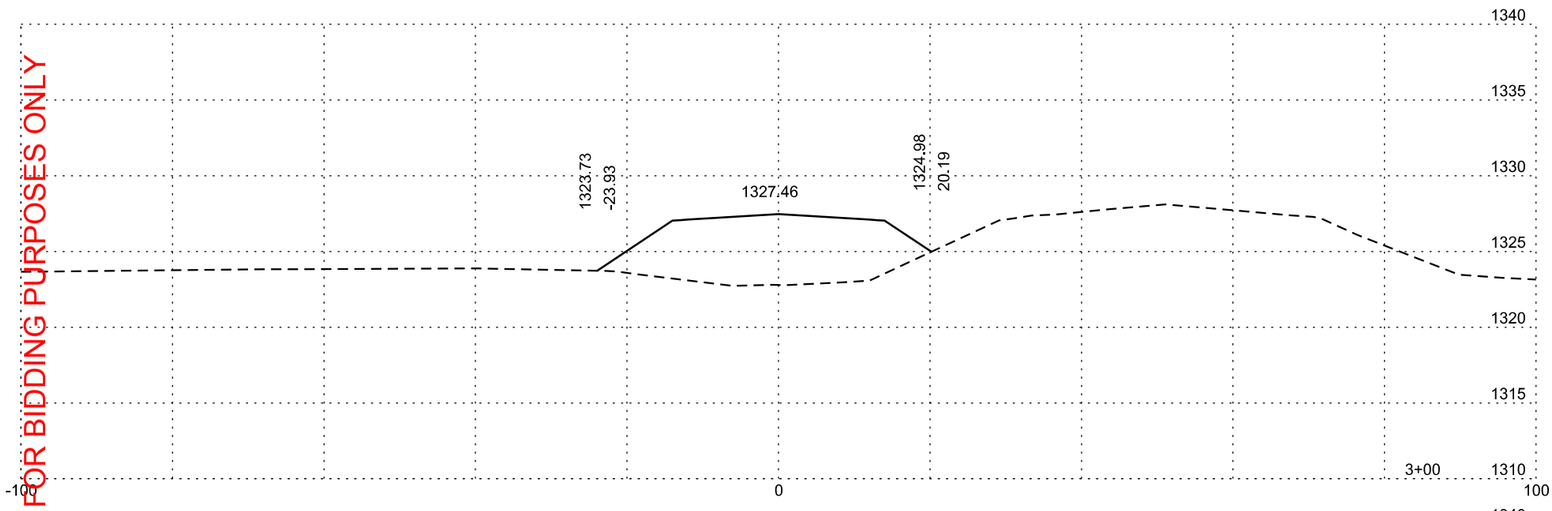

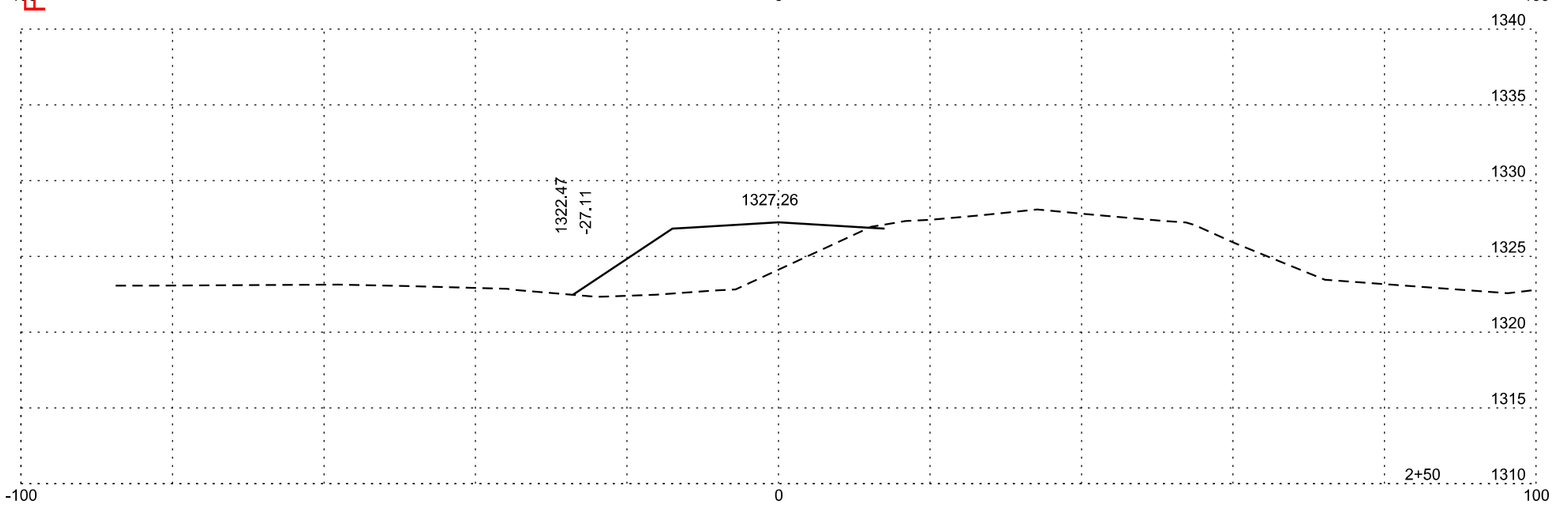

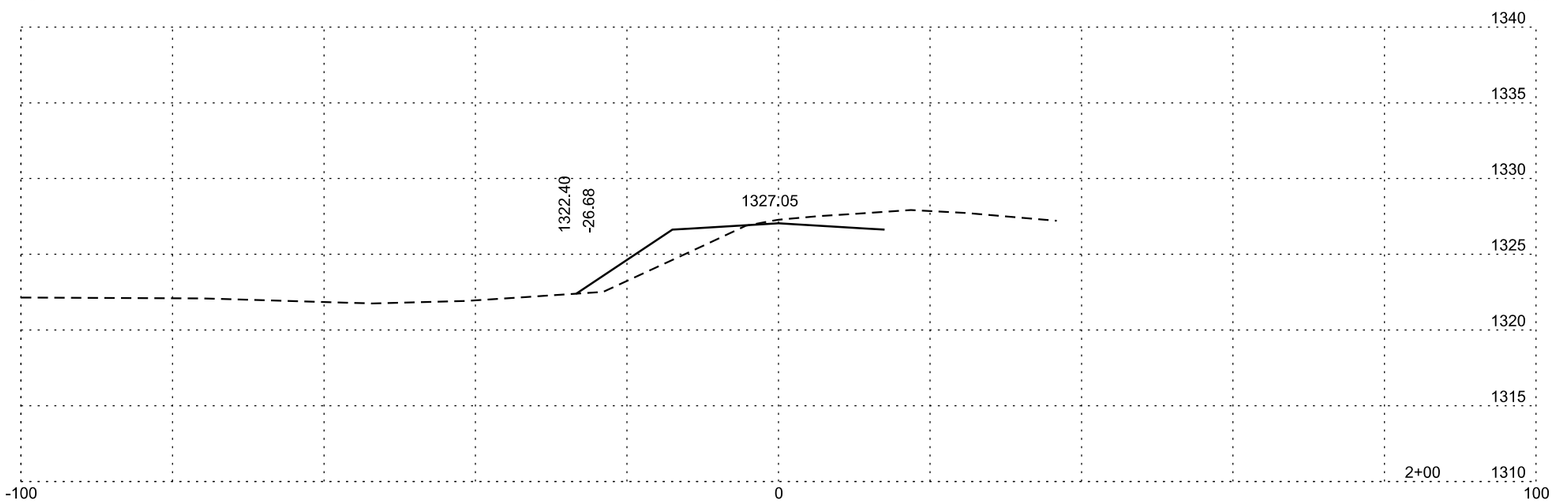

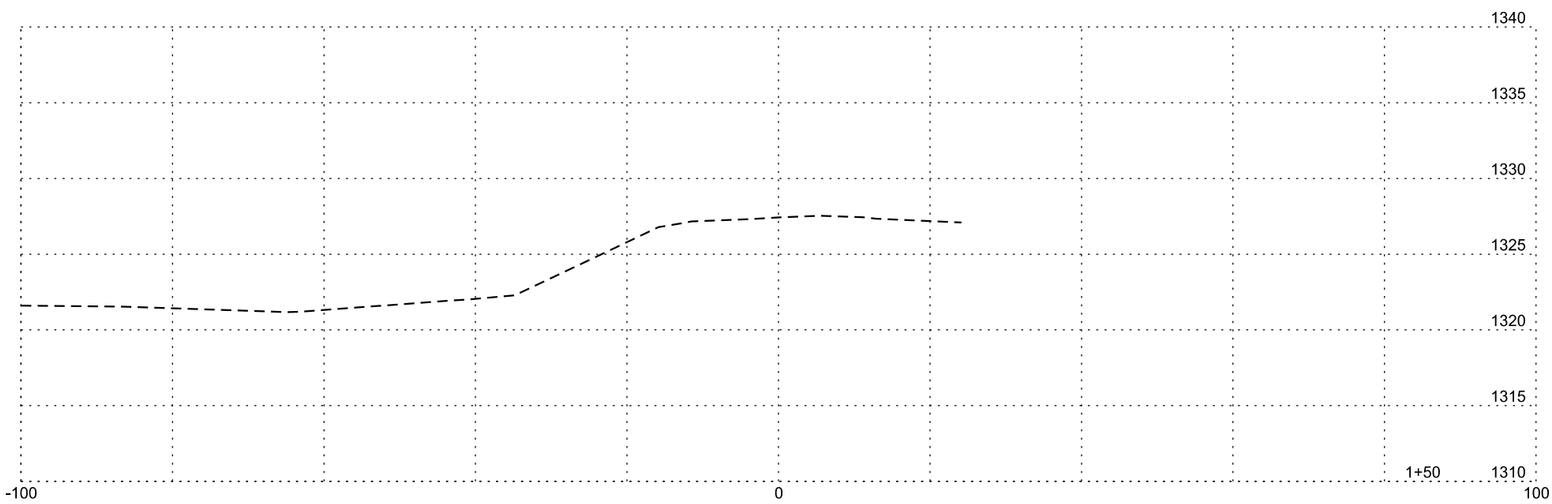

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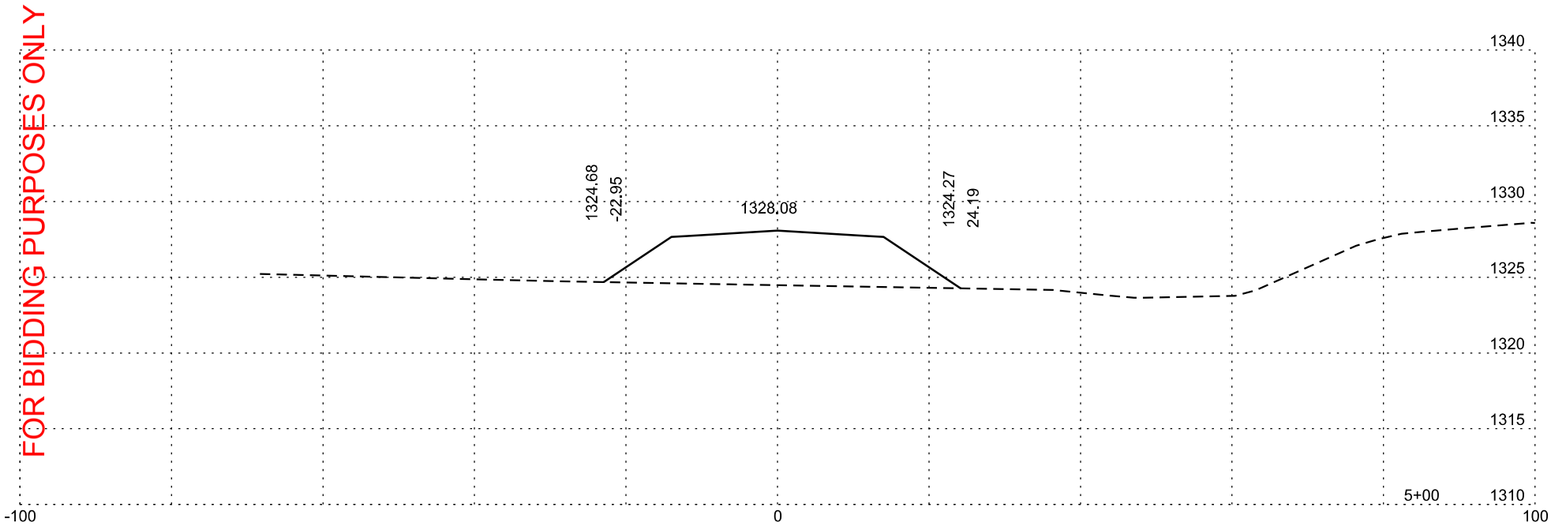

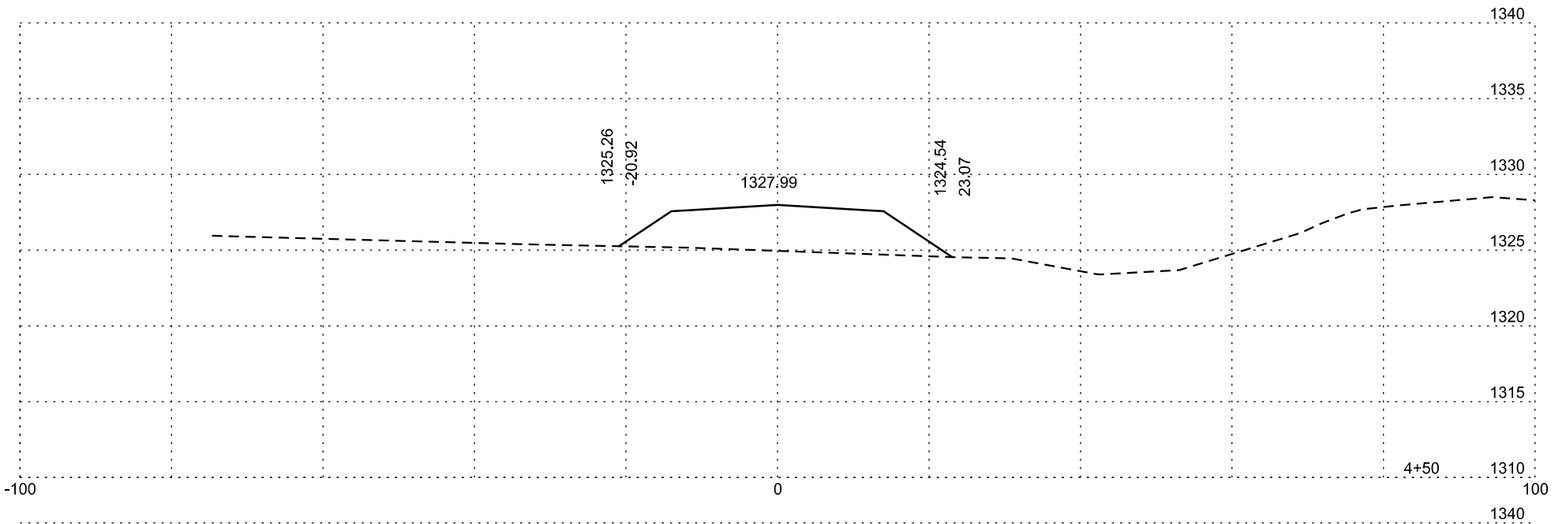

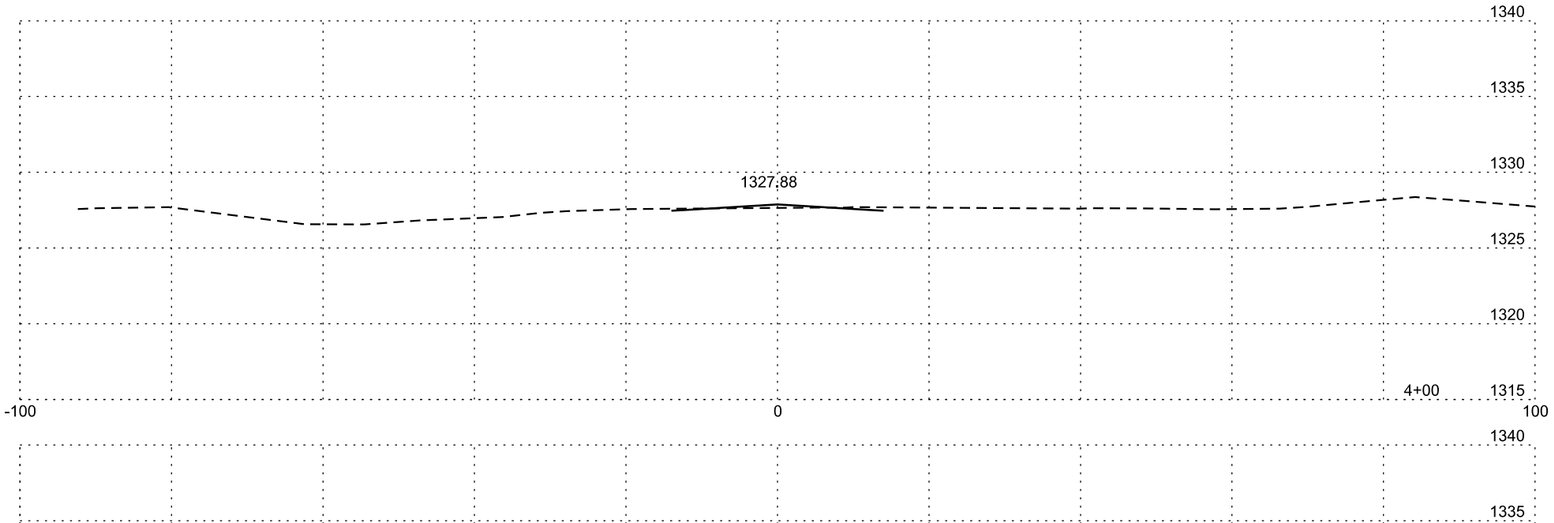

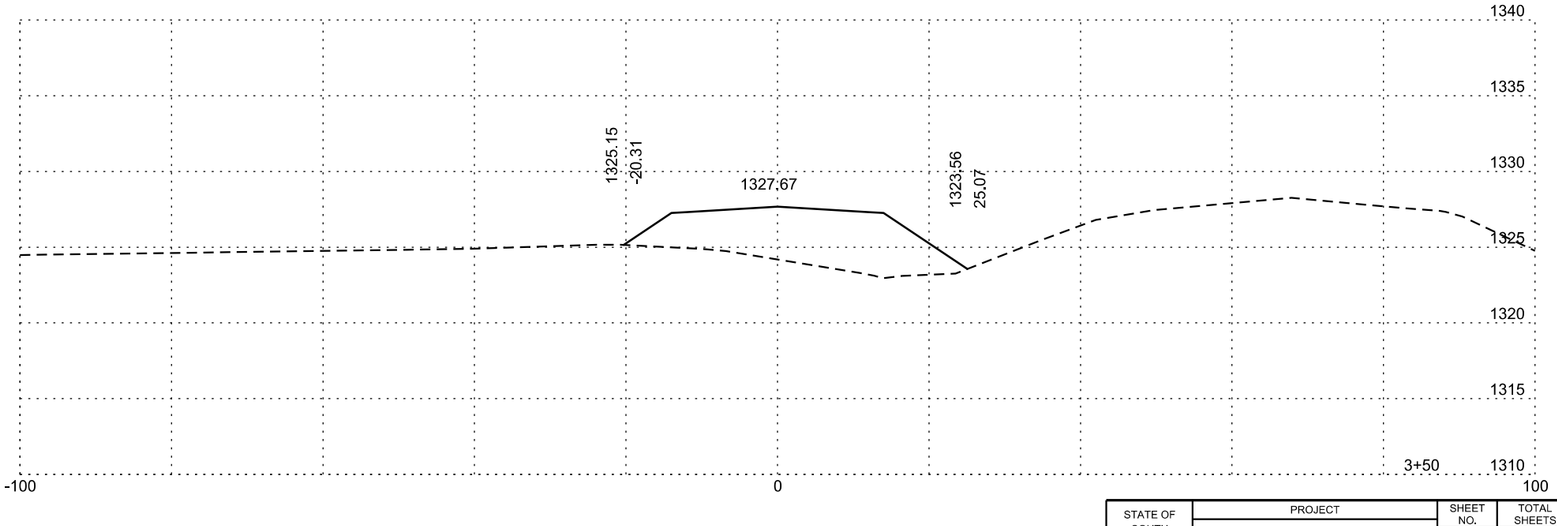

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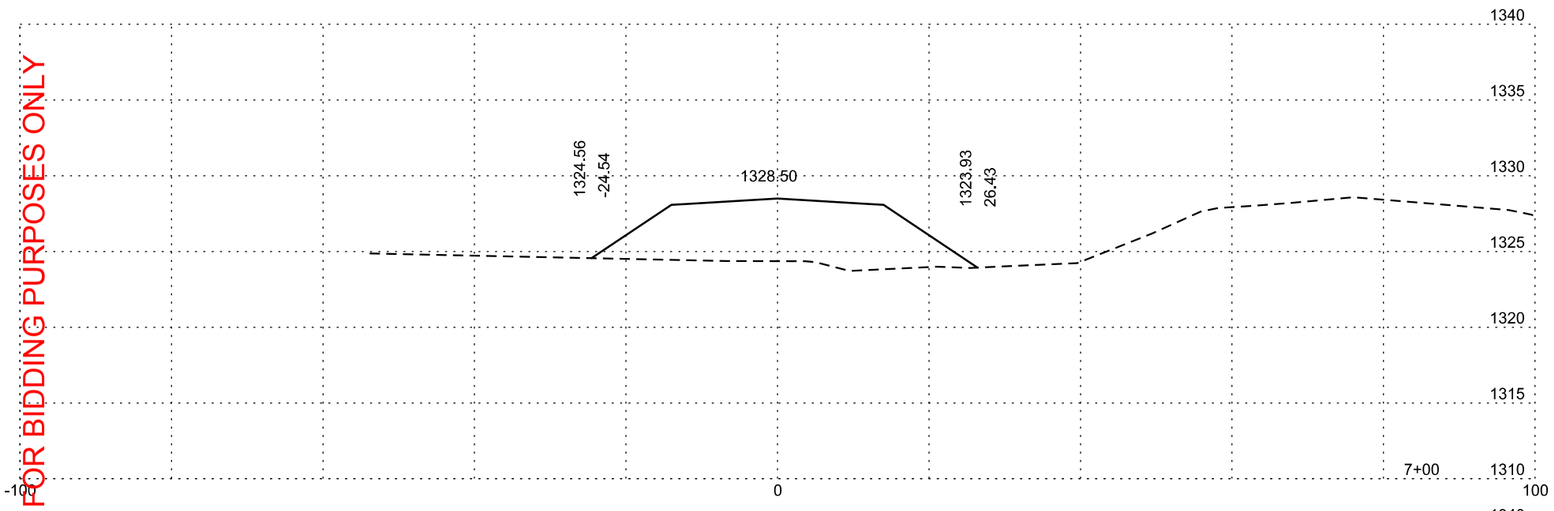

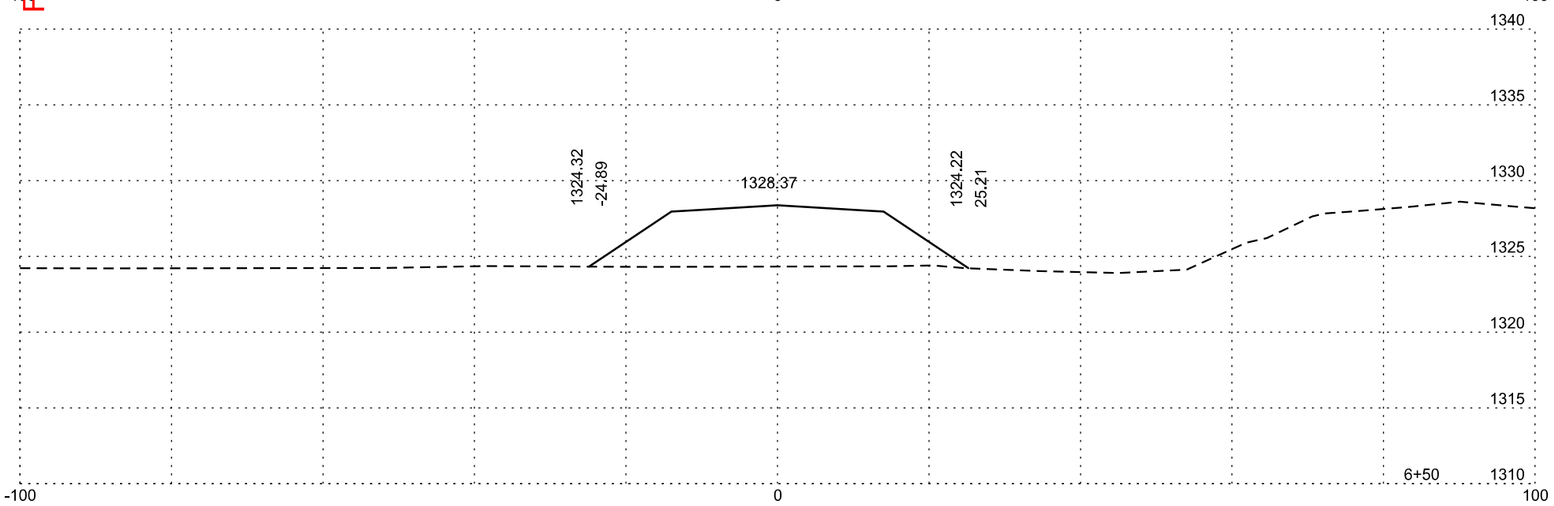

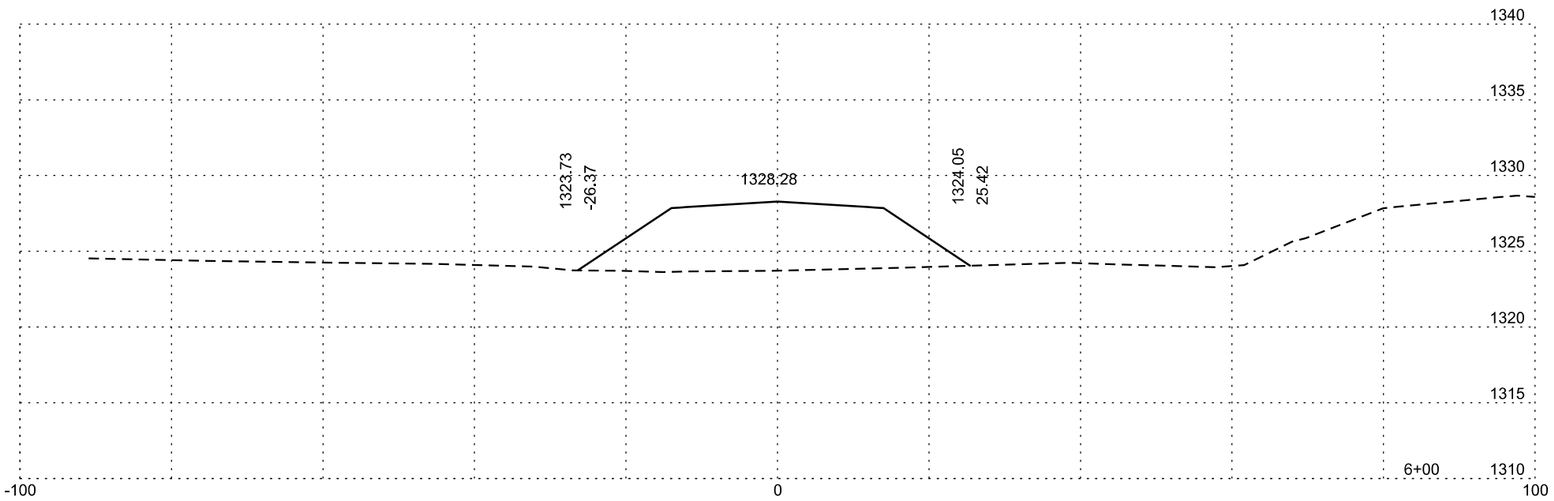

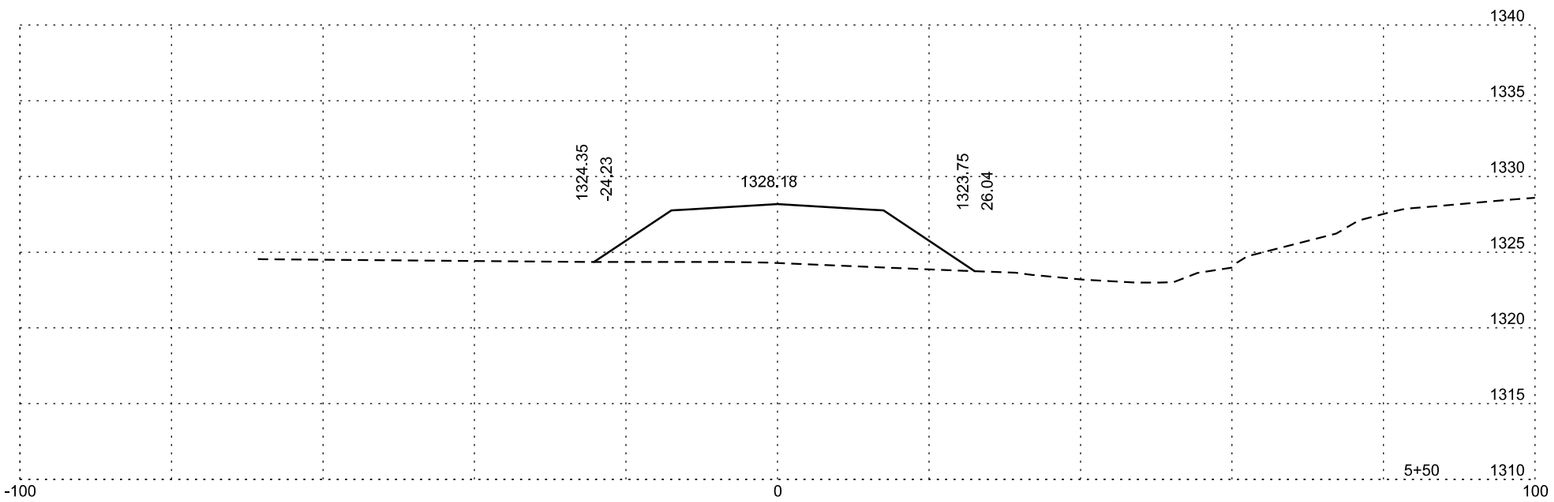

Plotting Date: 11/5/2025

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0044(233)406	184	194

TRAFFIC DIVERSION

REGISTERED PROFESSIONAL ENGINEER
REG NO.
12063
RYAN J.
MURTHA
11-5-25
SOUTH DAKOTA

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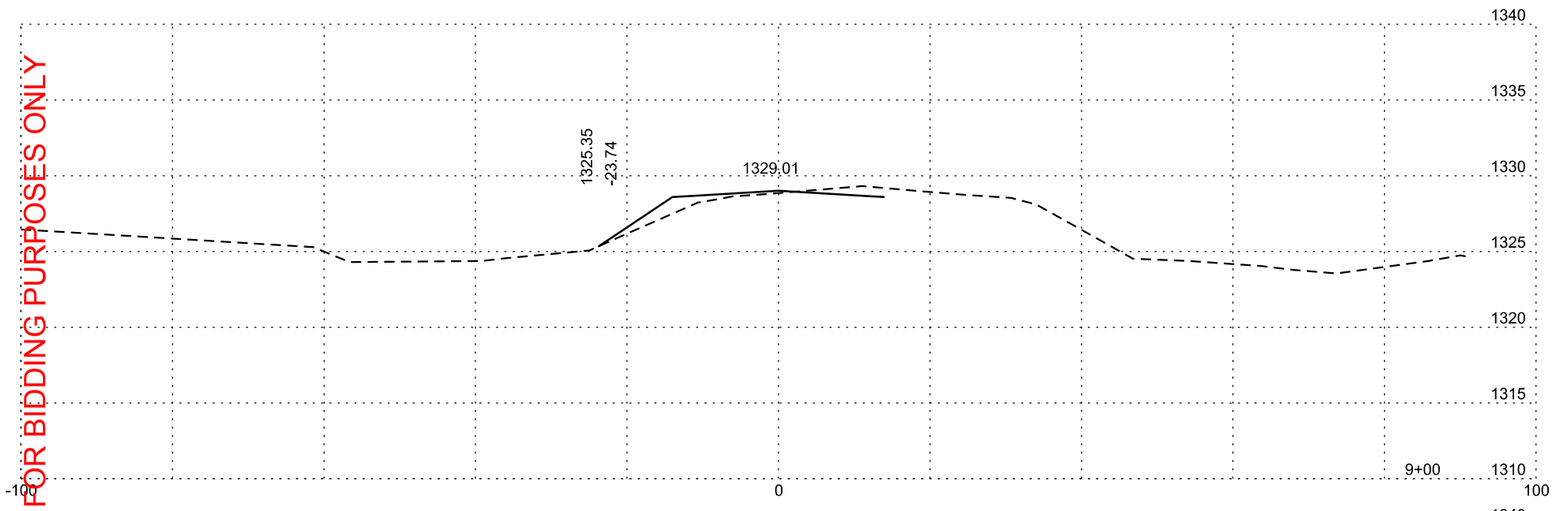

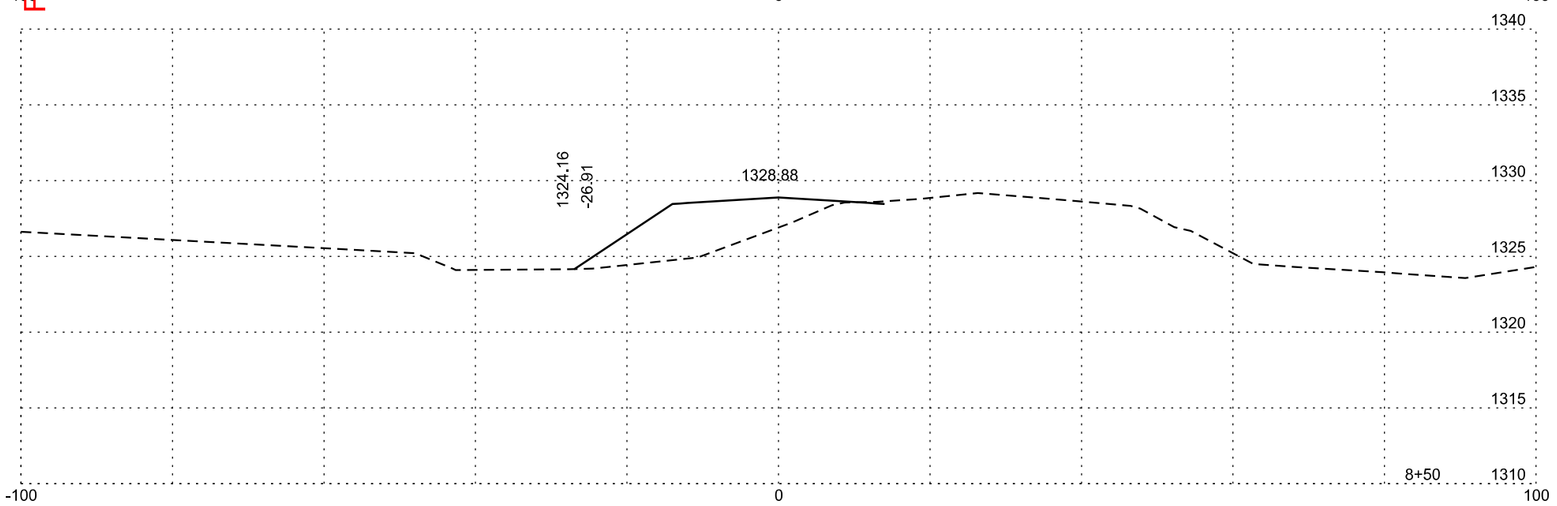

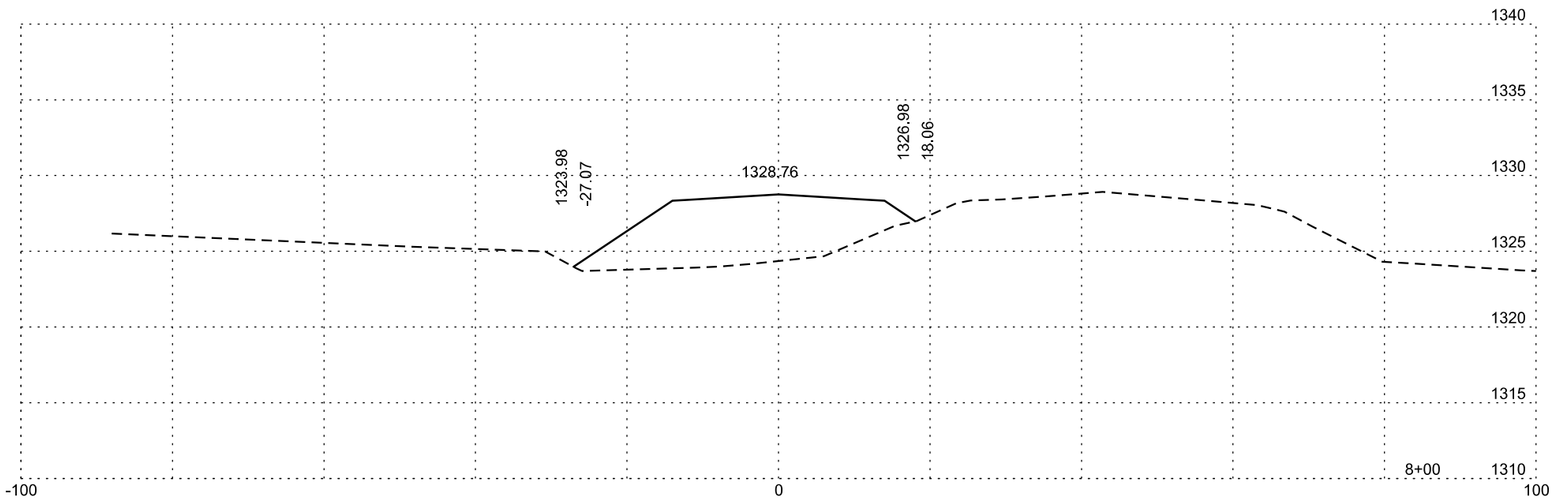

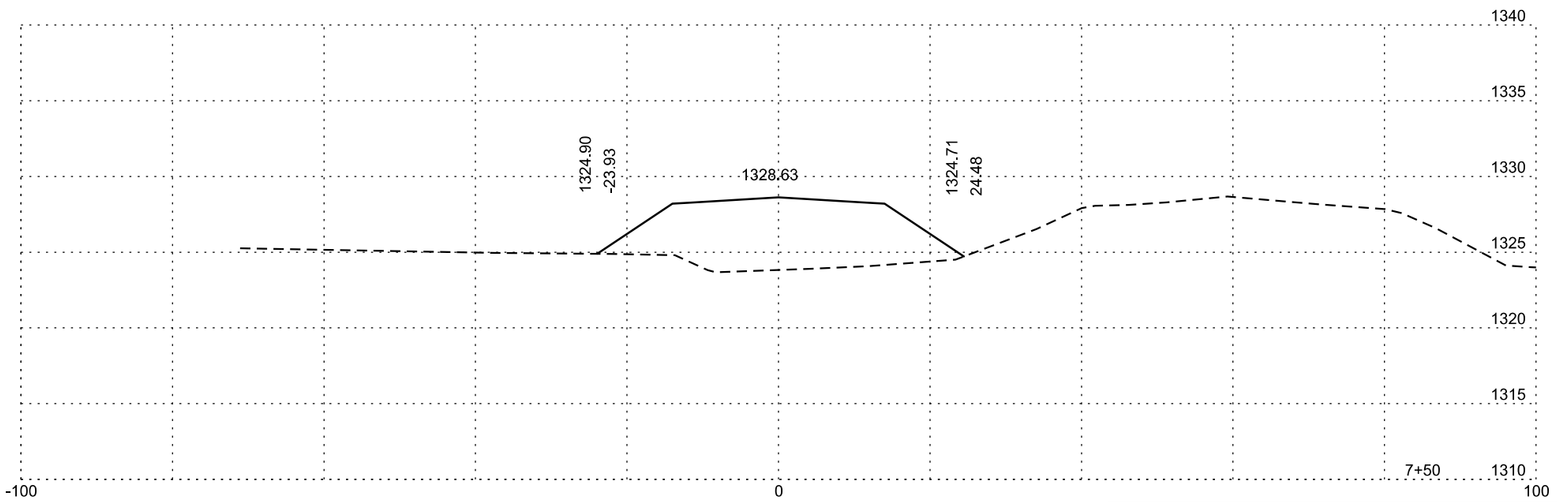

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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0044(233)406	185	194

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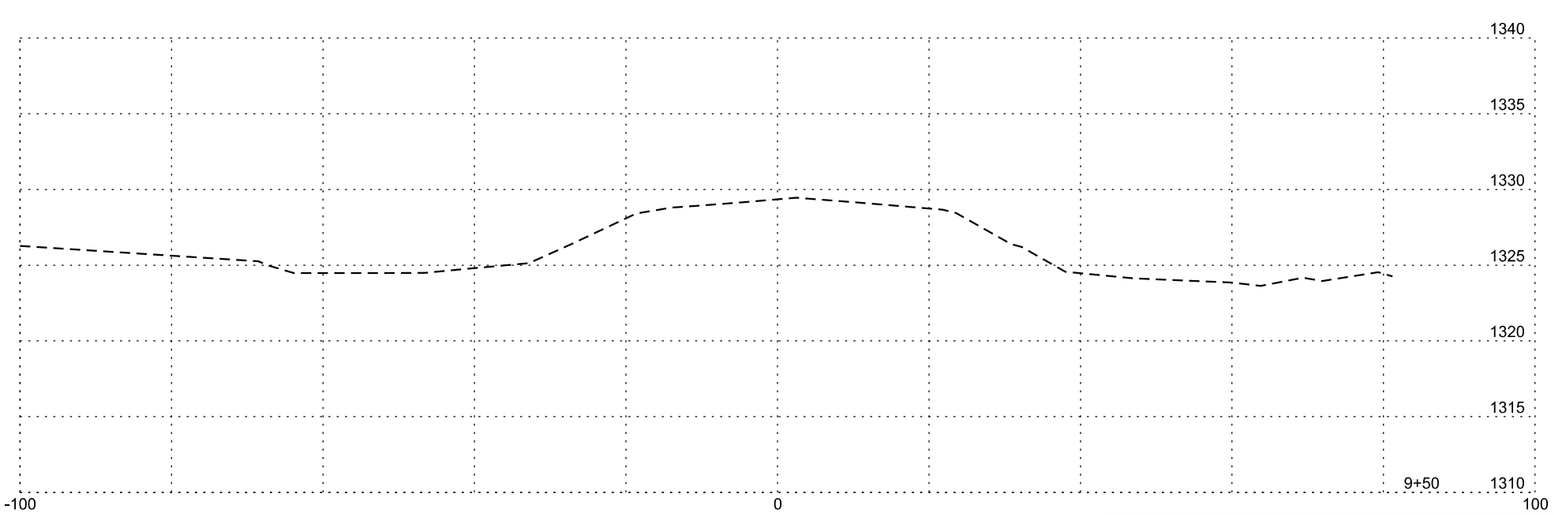

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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0044(233)406	186	194

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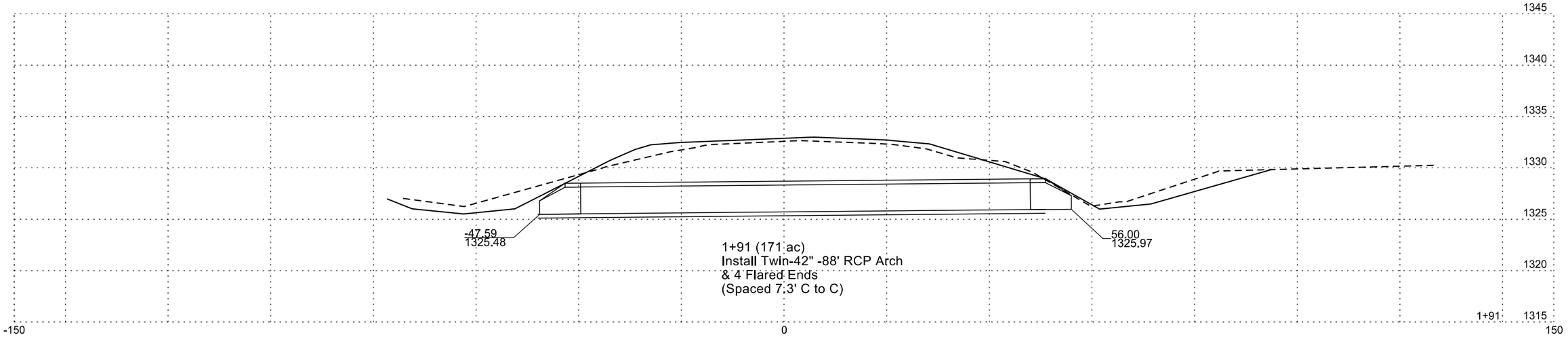
SD HWY 44 MAINLINE PIPE SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	187	194

Plotting Date: 11/5/2025



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SD HWY 44 MAINLINE PIPE SECTIONS

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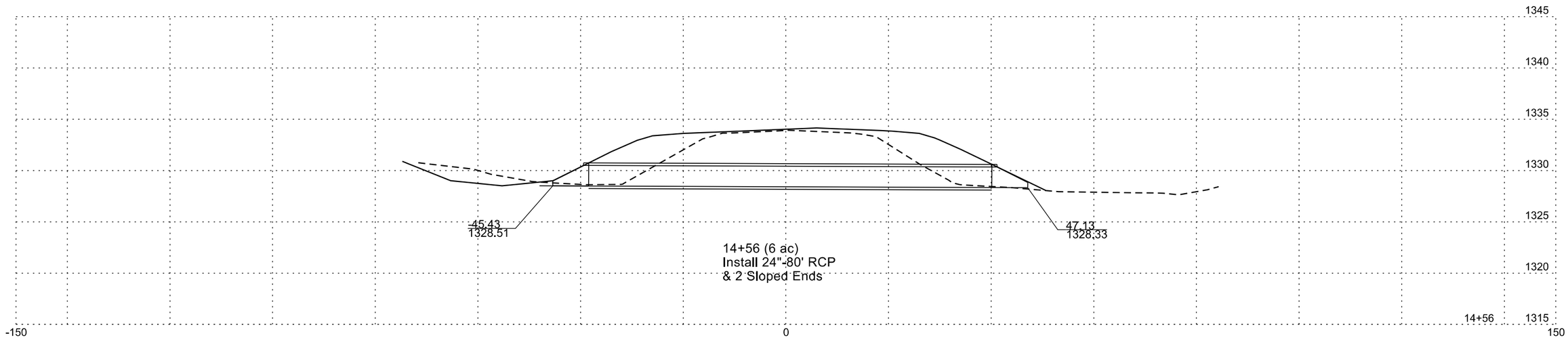
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	188	194

Plotting Date: 11/5/2025



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	P 0044(233)406 IM 0292(99)59	189	194

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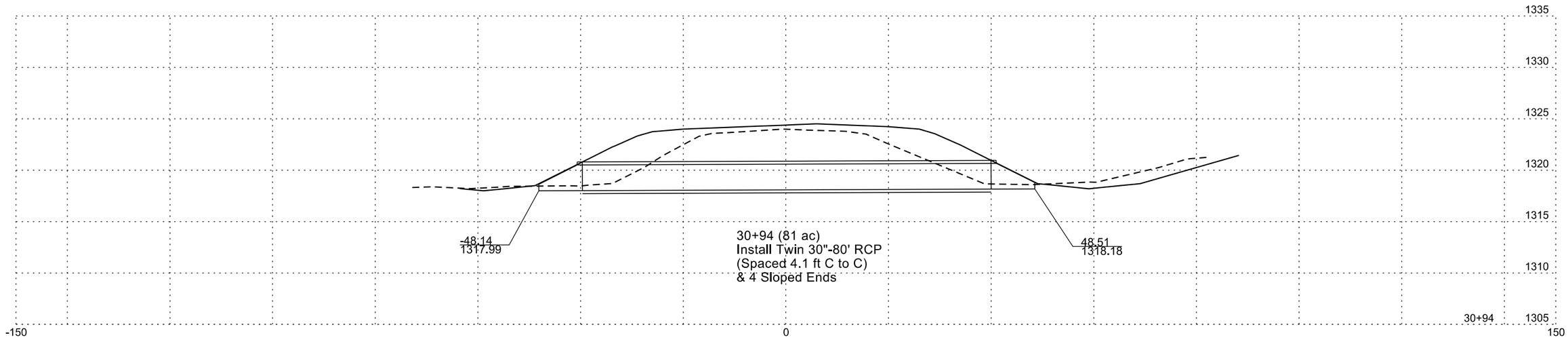

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	190	194

Plotting Date: 11/05/2025 Rev 11/17/2025 RJM

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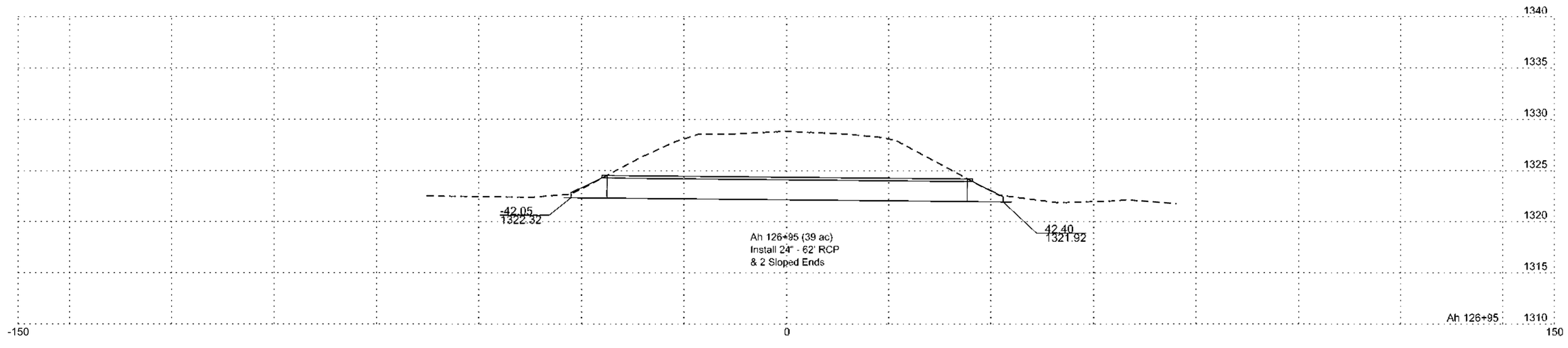

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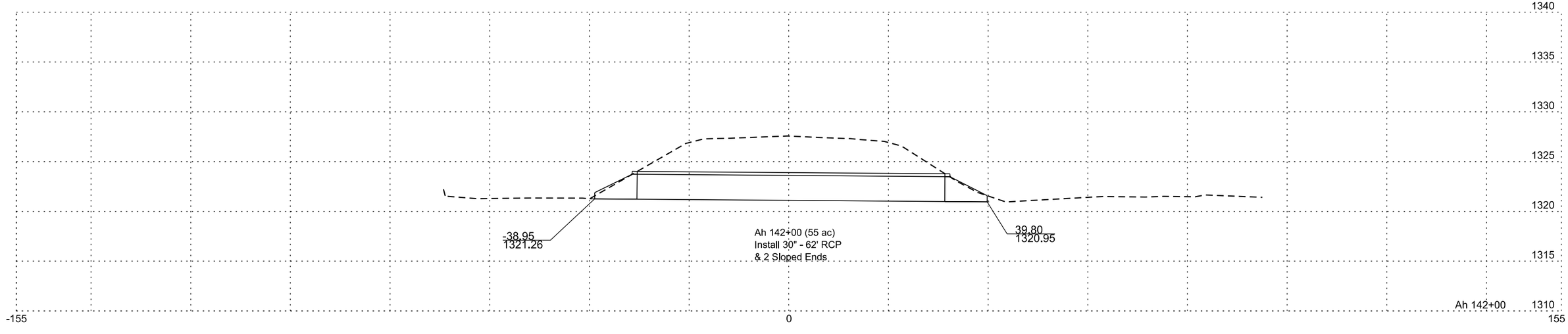
	P 0044(233)406 IM 0292(99)59	191	194

Plotting Date: 11/5/2025



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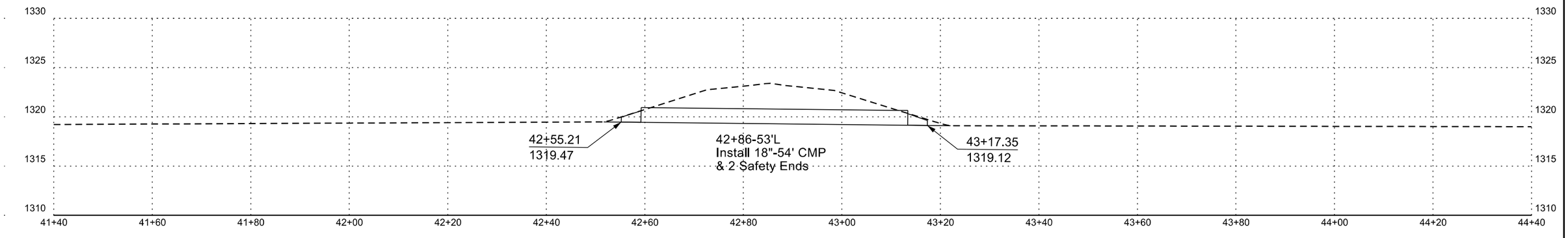
SD HWY 44 APPROACH PIPE SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(233)406 IM 0292(99)59	192	194

Plotting Date: 11/5/2025



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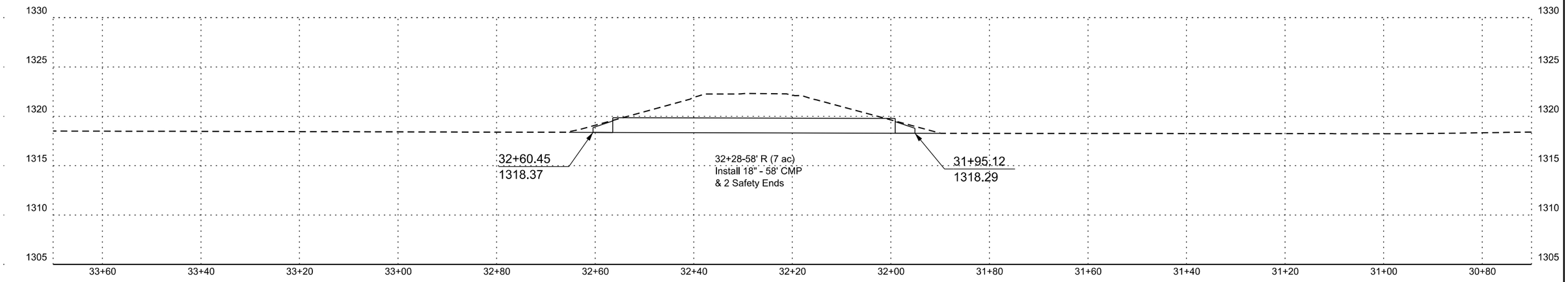

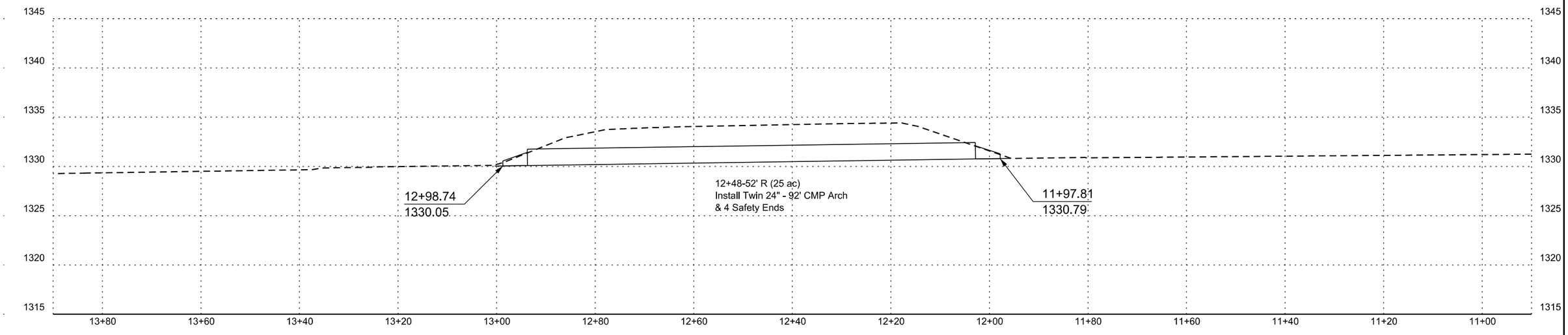

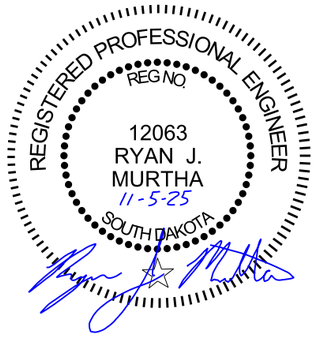

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