SECTION F: SURFACING PLANS

SD DOT	PROJECT	SECTION	SHEET
	NH-PH 0385(50)96	F	1/42

Plotting Date: 1/28/2026

INDEX OF SHEETS

F1	General Layout with Index
F2-F10	Estimate, Notes, & Tables
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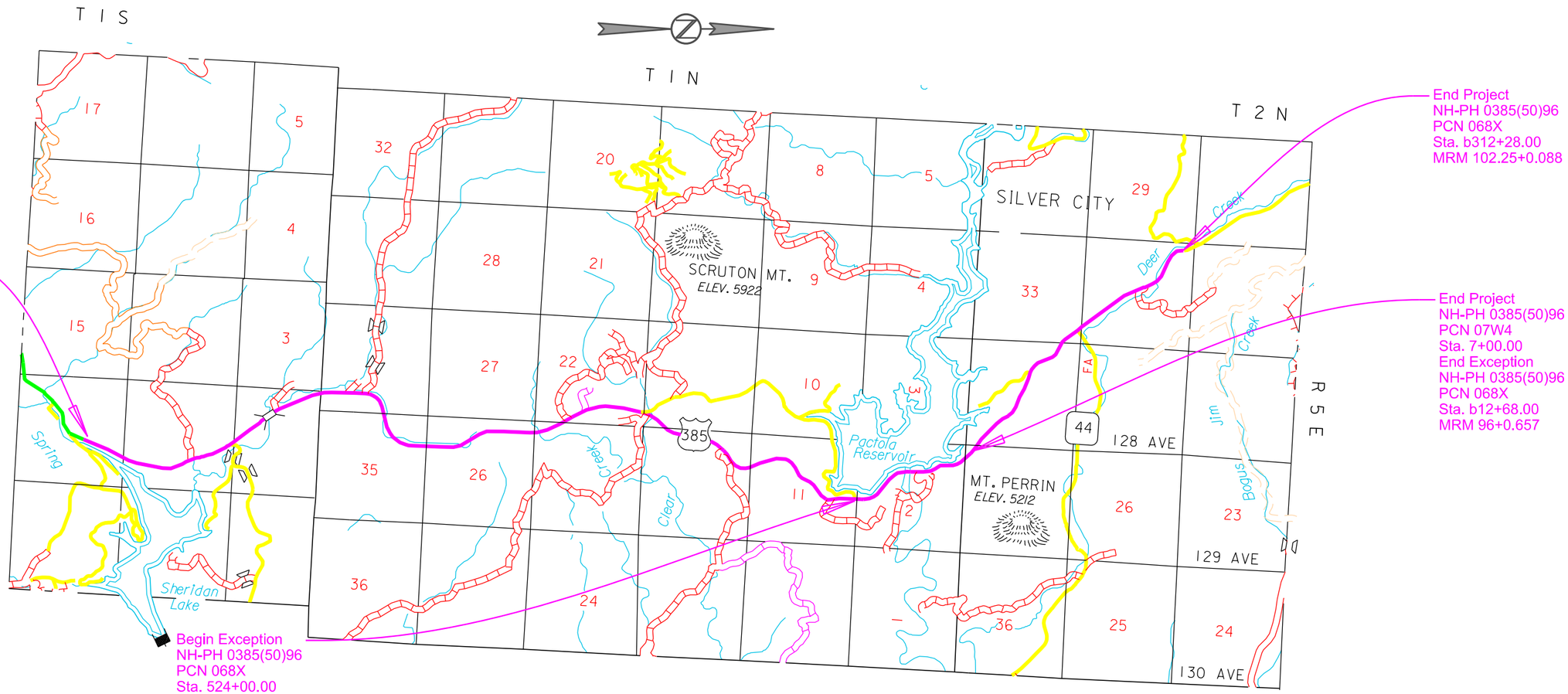

DESIGN DESIGNATION

ADT (2024)	2247
ADT (2044)	3544
DHV	580
D	51%
T DHV	1.7%
T ADT	3.8%
V	55 MPH

STORM WATER PERMIT

None Required

ESTIMATE OF QUANTITIES SECTION F

Revised 2/27/26 GDS

PCN 07W4

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E1350	Restoration of Stockpile Site	Lump Sum	LS
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E0730	Remove Beam Guardrail	8,000.0	Ft
110E0760	Remove Beam Guardrail Trailing End Terminal	1	Each
110E0800	Remove W Beam Guardrail End Terminal	3	Each
110E1010	Remove Asphalt Concrete Pavement	388.8	SqYd
110E6230	Remove W Beam Guardrail for Reset	50.0	Ft
210E1000	Shoulder Preparation	0.200	Mile
320E1080	Class S Asphalt Concrete	992.1	Ton
320E1200	Asphalt Concrete Composite	74.5	Ton
320E3000	Compaction Sample	3	Each
320E3100	Stabilizing Additive for Asphalt Concrete	3.0	Ton
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	2.4	Mile
320E7030	Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete	1.2	Mile
330E0100	SS-1h or CSS-1h Asphalt for Tack	11.4	Ton
380E6450	Saw Joint in PCC Pavement	1,425.0	Ft
380E6500	Planing PCC Pavement	4,897.2	SqYd
393E0100	Cracking and Seating PCC Pavement	23,824.0	SqYd
630E0513	Type 1C MGS	7,937.5	Ft
630E2005	W Beam Guardrail to MGS Transition	4	Each
630E2018	MGS MASH Tangent End Terminal	3	Each
630E2065	MGS Trailing End Terminal	1	Each
630E2110	Beam Guardrail Post and Block	10	Each
630E5160	Reset W Beam Rail	50.0	Ft
632E2220	Guardrail Delineator	170	Each
650E2100	Special Concrete Curb and Gutter	100	Ft

Alternate A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0033	PG 58V-34 Asphalt Binder	247.2	Ton
320E1203	CLASS Q3R HOT MIXED ASPHALT CONCRETE	3,896.4	Ton
320E1810	Asphalt Concrete Leveling Lift	301.7	Ton
320E4000	Hydrated Lime	41.9	Ton

Alternate B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0033	PG 58V-34 Asphalt Binder	214.5	Ton
320E1203	CLASS Q3R HOT MIXED ASPHALT CONCRETE	4,000.9	Ton
320E1810	Asphalt Concrete Leveling Lift	309.7	Ton
320E4000	Hydrated Lime	43.0	Ton

PCN 068X

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E1350	Restoration of Stockpile Site	Lump Sum	LS
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	992.2	SqYd
120E0100	Unclassified Excavation, Digouts	410	CuYd
210E1005	Surface Preparation	2.000	Mile
260E1010	Base Course	1,023.7	Ton
320E1080	Class S Asphalt Concrete	18,901.1	Ton
320E1200	Asphalt Concrete Composite	204.9	Ton
320E3100	Stabilizing Additive for Asphalt Concrete	57.0	Ton
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	27.6	Mile
320E7030	Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete	13.8	Mile
330E0010	MC-70 Asphalt for Prime	289.2	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	185.6	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	1.1	Ton
330E1000	Blotting Sand for Prime	588.9	Ton
330E2000	Sand for Flush Seal	15.5	Ton
332E0010	Cold Milling Asphalt Concrete	804	SqYd
600E0300	Type III Field Laboratory	1	Each
630E0513	Type 1C MGS	2,425.0	Ft
630E1010	Straight Class A W Beam Guardrail with Wood Posts	125.0	Ft
630E1020	Curved Class A W Beam Guardrail with Wood Posts	100.0	Ft
630E2005	W Beam Guardrail to MGS Transition	2	Each
630E2018	MGS MASH Tangent End Terminal	4	Each
632E2220	Guardrail Delineator	60	Each
900E1980	Storage Unit	1	Each

Alternate A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0033	PG 58V-34 Asphalt Binder	3,782.6	Ton
320E1203	CLASS Q3R HOT MIXED ASPHALT CONCRETE	45,935.0	Ton
320E4000	Hydrated Lime	461.5	Ton

Alternate B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0033	PG 58V-34 Asphalt Binder	3,417.1	Ton
320E1203	CLASS Q3R HOT MIXED ASPHALT CONCRETE	47,184.8	Ton
320E4000	Hydrated Lime	463.9	Ton

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.

STORAGE UNIT

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:

1. The portable storage container will be constructed of steel.
2. 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:

1. A set of steps and hand railings will be provided at the exterior door.
2. 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.
3. 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”.

UTILITIES

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

If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor will contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

COLD MILLING ASPHALT CONCRETE

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was unknown.

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 90 tons of cold milled asphalt concrete material.

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

REMOVE ASPHALT CONCRETE PAVEMENT

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was unknown.

An estimated 110 Cubic Yards of the in-place asphalt concrete surfacing will be removed from the existing highway according to the in-place surfacing typical sections and the digouts and wasted as directed by the Engineer. Care will be taken not to waste the in-place granular material. The remaining in-place granular material will be recompacted prior to the placement of Asphalt Concrete Composite.

The quantity of removed asphalt material is estimated from the in-place surfacing typical sections and digouts. This estimated quantity is not included in the unclassified excavation quantities.

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 - Alternate A will conform to the requirements of Class Q3.

Virgin mineral aggregate for Class Q3R Hot Mixed Asphalt Concrete - Alternate B will consist of a minimum of 80 percent crushed limestone ledgerock and will conform to the requirements of Class Q3.

The Class Q3R Hot Mixed Asphalt Concrete will include 20 percent RAP in the mixture.

RAP will be obtained from the stockpiled salvaged asphalt mix material produced from project PCN 03VD, estimated at 11,000 tons, located in the Southwest 1/4 of Section 14, Township 1 North, Range 5 East of the 5th P.M.in Pennington County, and in the Northwest 1/4 of Section 14, Township 1 North, Range 5 East of the 5th P.M. south of Victoria Lake Road in Pennington County on the east side of US385. The RAP produced from PCN 03VD was planned to be removed and stockpiled the year prior to this project. The RAP was processed to meet the requirements of Section 884.2 C.1 prior to stockpiling. There is potential that some of the RAP has clumped or gummed together since the time it was processed and stockpiled. The Contractor may be required to re-process the material to meet the requirements of Section 884.2 C.1, prior to incorporating into the mixture. This determination will be made by the Engineer during construction. All costs to process the material will be incidental to “Class Q3R Hot Mixed Asphalt Concrete

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

Mix Design Criteria – Alternate B:

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:

Voids in Mineral Aggregate (VMA):

	Minimum VMA (%):
Class Q3R	13.0

Pay Factor Attributes – Alternate B:

Air Voids:

	Air Voids (%):
Class Q3R	3.5 ±1.0

All remaining requirements for Class Q3 will apply.

RATES OF MATERIALS

Rates of application will not be provided for Section 4, 5, 8, 11, 12 because of their short lengths or transitions. Quantities for these sections are provided in the Table of Material Quantities.

Section 1: Mainline Lifts 1 & 2				
Asphalt Concrete				
Type: Class Q3RHot Mixed Asphalt Concrete		Alt. A	Alt B.	
Basic Quantity of Aggregate: 80%	=	40.82	42.32	Ton/sta.
Salvaged Asphalt Concrete: 20%	=	10.21	10.58	Ton/sta.
PG 58V-34 Asphalt Binder	=	2.46	2.03	Ton/sta.
Total Mix	=	53.49	54.93	Ton/sta.
Hydrated Lime	=	0.53	0.55	Ton/sta.
Total Mix With Hydrated Lime	=	54.02	55.48	Ton/sta.
Laid 2 inches compacted depth; 45’ bottom, 41.6' top.				

MC-70 Asphalt for Prime at the rate of 0.7 tons per station applied 52 feet wide (Rate = 0.30 Gallon per square yard)

Blotting Sand for Prime applied 24 feet wide at the rate of 1.3 tons per station (10 lbs./SqYd)

SS-1h or CSS-1h Emulsified Asphalt for Tack at the rate of 0.1 tons per station applied 46 feet wide per lift (Rate = 0.06 Gallon per square yard)

Section 2 Mainline Lifts 1 & 2				
Asphalt Concrete				
Type: Class Q3RHot Mixed Asphalt Concrete		Alt. A	Alt B.	
Basic Quantity of Aggregate: 80%	=	2114.0	2192.0	Ton/mile
Salvaged Asphalt Concrete: 20%	=	528.0	548.0	Ton/mile
PG 58V-34 Asphalt Binder	=	127.0	105.0	Ton/mile
Total Mix	=	2769.0	2845.0	Ton/mile
Hydrated Lime: 1.0 %: furnished by the Contractor	=	28.0	28.0	Ton/mile
Total Mix With Hydrated Lime	=	2797.0	2873.0	Ton/mile
Laid 2 inches compacted depth; 45’ bottom, 40' top.				

MC-70 Asphalt for Prime at the rate of 35.2 tons per mile applied 47 feet wide (Rate = 0.30 Gallon per square yard)

Blotting Sand for Prime applied 24 feet wide at the rate of 70.4 tons per mile (10 lbs./SqYd)

SS-1h or CSS-1h Emulsified Asphalt for Tack at the rate of 6.9 tons per mile applied 46 feet wide per lift (Rate = 0.06 Gallon per square yard)

Section 3: Mainline Lifts 1 & 2				
Asphalt Concrete				
Type: Class Q3RHot Mixed Asphalt Concrete		Alt. A	Alt B.	
Basic Quantity of Aggregate: 80%	=	51.34	53.23	Ton/sta.
Salvaged Asphalt Concrete: 20%	=	12.84	13.31	Ton/sta.
PG 58V-34 Asphalt Binder	=	3.09	2.56	Ton/sta.
Total Mix	=	67.27	69.10	Ton/sta.
Hydrated Lime	=	0.67	0.69	Ton/sta.
Total Mix With Hydrated Lime	=	67.94	69.79	Ton/sta.
Laid 2 inches compacted depth; 57’ bottom, 52' top.				

MC-70 Asphalt for Prime at the rate of 0.8 tons per station applied 59 feet wide (Rate = 0.30 Gallon per square yard)

Blotting Sand for Prime applied 36 feet wide at the rate of 2.0 tons per station (10 lbs./SqYd)

SS-1h or CSS-1h Emulsified Asphalt for Tack at the rate of 0.2 tons per station applied 58 feet wide per lift (Rate = 0.06 Gallon per square yard)

Section 6: Mainline Lifts 1 & 2				
Asphalt Concrete				
Type: Class Q3RHot Mixed Asphalt Concrete		Alt. A	Alt B.	
Basic Quantity of Aggregate: 80%	=	24.49	25.39	Ton/sta.
Salvaged Asphalt Concrete: 20%	=	6.12	6.35	Ton/sta.
PG 58V-34 Asphalt Binder	=	1.48	1.22	Ton/sta.
Total Mix	=	32.09	32.96	Ton/sta.
Hydrated Lime	=	0.32	0.33	Ton/sta.
Total Mix With Hydrated Lime	=	32.41	33.29	Ton/sta.
Laid 2 inches compacted depth; 28’ bottom, 24' top.				

MC-70 Asphalt for Prime at the rate of 0.4 tons per station applied 30 feet wide (Rate = 0.30 Gallon per square yard)

Blotting Sand for Prime applied 24 feet wide at the rate of 1.3 tons per station (10 lbs./SqYd)

SS-1h or CSS-1h Emulsified Asphalt for Tack at the rate of 0.1 tons per station applied 29 feet wide per lift (Rate = 0.06 Gallon per square yard)

Section 7: Mainline Lift				
Asphalt Concrete				
Type: Class Q3RHot Mixed Asphalt Concrete		Alt. A	Alt B.	
Basic Quantity of Aggregate: 80%	=	48.65	50.44	Ton/sta.
Salvaged Asphalt Concrete: 20%	=	12.16	12.61	Ton/sta.
PG 58V-34 Asphalt Binder	=	2.93	2.42	Ton/sta.
Total Mix	=	63.74	65.47	Ton/sta.
Hydrated Lime	=	0.64	0.65	Ton/sta.
Total Mix With Hydrated Lime	=	64.38	66.12	Ton/sta.
Laid 2.5 inches compacted depth; 40’ bottom, 37' top.				

SS-1h or CSS-1h Emulsified Asphalt for Tack at the rate of 0.1 tons per station applied 41 feet wide (Rate = 0.06 Gallon per square yard)

Section 1, 2, 9: 1.25” Class SLift			
Type: Class SAsphalt Concrete			
Basic Quantity of Aggregate	=	1223.0	Ton/mile
PG 58V-34 Asphalt Binder	=	73.9	Ton/mile
TOTAL MIX (152 lb/ft3)	=	1296.9	Ton/mile
Stabilizing Additive For Asphalt Concrete	=	3.9	Ton/mile
TOTAL MIX with Stabilizing Additive	=	1300.8	Ton/mile
Laid 1.25 inches compacted depth; 34’ bottom, 28' top.			

1h or CSS-1h Emulsified Asphalt for Tack at the rate of 5.2 tons per mile applied 35 feet wide (Rate = 0.06 Gallon per square yard)

Section 3: 1.25” Class SLift			
Asphalt Concrete			
Type: Class SAsphalt Concrete			
Basic Quantity of Aggregate	=	33.62	Ton/sta.
PG 58V-34 Asphalt Binder	=	2.03	Ton/sta.
TOTAL MIX	=	35.65	Ton/sta.
Stabilizing Additive For Asphalt Concrete	=	0.12	Ton/sta.
TOTAL MIX with Stabilizing Additive	=	35.77	Ton/sta.
Laid 1.25 inches compacted depth; 48’ bottom, 42' top.			

1h or CSS-1h Emulsified Asphalt for Tack at the rate of 0.1 tons per station applied 49 feet wide (Rate = 0.06 Gallon per square yard)

Section 7: 1.25” Class SLift			
Asphalt Concrete			
Type: Class SAsphalt Concrete			
Basic Quantity of Aggregate	=	25.40	Ton/sta.
PG 58V-34 Asphalt Binder	=	1.54	Ton/sta.
TOTAL MIX	=	26.94	Ton/sta.
Stabilizing Additive For Asphalt Concrete	=	0.08	Ton/sta.
TOTAL MIX with Stabilizing Additive	=	27.02	Ton/sta.
Laid 1.25 inches compacted depth; 37’ bottom, 31' top.			

SS1h or CSS-1h Emulsified Asphalt for Tack at the rate of 0.1 tons per station applied 38 feet wide (Rate = 0.06 Gallon per square yard)

RATES OF MATERIALS (CONTINUED)

Section 10: 1.25” Class SLift			
Asphalt Concrete			
Type: Class SAsphalt Concrete			
Basic Quantity of Aggregate	=	32.13	Ton/sta.
PG58V-34 Asphalt Binder	=	1.94	Ton/sta.
TOTAL MIX	=	34.07	Ton/sta.
Stabilizing Additive For Asphalt Concrete	=	0.10	Ton/sta.
TOTAL MIXwith Stabilizing Additive	=	34.17	Ton/sta.
Laid 1.25 inches compacted depth; 46’ bottom, 40' top.			

SS1h or CSS-1h Emulsified Asphalt for Tack at the rate of 0.1 tons per station applied 47 feet wide (Rate = 0.06 Gallon per square yard)

Section 7: 0.5” Asphalt Concrete Leveling Lift				
Asphalt Concrete.				
Type: Asphalt Concrete Leveling Lift		Alt. A	Alt. B	
Basic Quantity of Aggregate	=	8.82	9.12	Ton/sta.
PG58V-34 Asphalt Binder	=	0.58	0.53	Ton/sta.
TOTAL MIX	=	9.40	9.65	Ton/sta.
Hydrated Lime	=	0.09	0.10	Ton/sta.
TOTAL MIXwith Hydrated Lime	=	9.49	9.75	Ton/sta.
Laid 0.5 inches compacted depth: 31’ bottom, 30' top.				

SS1h or CSS-1h Emulsified Asphalt for Tack at the rate of 0.1 tons per station applied 32 feet wide (Rate = 0.07 Gallon per square yard)

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 of Sections 1, 2, 3, 5, and 6 will be Base Course. The backfilling material for the digouts on the shoulders of Section 7 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 unstable material of Sections 1, 2, 3, 5, and 6.

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 of Sections 1, 2, 3, 5, and 6.

Included in the Estimate of Quantities are 25 cubic yards of Unclassified Excavation, Digouts and 38 square yards of Remove Asphalt Concrete Pavement per mile for the removal of asphalt and unstable material for the shoulders of Section 7.

Included in the Estimate of Quantities are 50 tons of Base Course and 13 tons of Asphalt Concrete Composite per mile for backfill of Unclassified Excavation, Digouts for Section 7.

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.

SURFACE PREPARATION

Prior to placement of the Class Q3R Hot Mixed Asphalt Concrete on Sections 1, 2, 3, 5, and 6, the Contractor will be required to prepare the existing surface according to the Surface Preparation specifications provided in Section 210, at locations determined by the Engineer.

The locations provided on the typical sections for Asphalt Surface Treatment, In Place, represent the locations where an asphalt surface treatment is anticipated to be in place at the time of construction. The Contractor is advised that locations and dimensions of actual Asphalt Surface Treatment, In Place, may vary from that given on the typical sections. There will be no increase in the payment for Surface Preparation based on the actual surface treatment in place at the time of construction.

Quantities for Surface Preparation, MC-70 Asphalt for Prime, and Blotting Sand for Prime have been provided for 2 miles of the asphalt surfacing project. Actual limits to receive Surface Preparation, MC-70 Asphalt for Prime, and Blotting Sand for Prime ahead of Class Q3R Hot Mixed Asphalt Concrete placement will be limited to particular project conditions and will be subject to approval by the Engineer. In no case will Surface Preparation operations ahead of Class Q3R Hot Mixed Asphalt Concrete placement operations exceed fourteen calendar days.

The Contractor will ensure excess in place granular material is removed at locations (end of project, bridges, intersecting roads and entrances) to achieve the required elevation for the placement of the asphalt concrete. Payment for the removal of excess in place granular material will be incidental to the contract unit price per mile for Surface Preparation. This material may be reused as Base Course at the discretion of the Engineer. Payment for this material will be at the contract unit price per ton for Base Course. The material will meet the requirements of Base Course, Salvaged.

BLOTTING SAND FOR PRIME

Included in the Estimate of Quantities are 5 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)

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 CONCRETE LEVELING LIFT

The Asphalt Concrete Leveling Lift will conform to the requirements for a Class Q3 Hot Mixed Asphalt Concrete except the gradation will be as follows:

Passing 1/2” sieve	100%
Passing 3/8” sieve	97-100%
Passing No. 4 sieve	75-95%
Passing No. 8 sieve	45-65%
Passing No. 16 sieve	28-48%
Passing No. 40 sieve	14-30%
Passing No. 200 sieve	4.0-8.0%

The Asphalt Concrete Leveling Lift will be compacted by the Specified Roller Coverage Method.

All remaining requirements for Class Q3 Hot Mixed Asphalt Concrete will apply.

SAW JOINT IN PCC PAVEMENT

Prior to Cracking and Seating PCC Pavement the Contractor will saw a joint in the PCC pavement at the face of the gutter as shown by typical section 8a. The saw depth will be for the full thickness of the PCC pavement breaking the bond between the concrete gutter and the mainline PCC pavement. Care will be taken not to damage the curb and gutter. 1425 ft of Saw Joint in PCC Pavement has been included in the estimate of quantities. All costs associated with this work will be incidental to the unit price bid for Saw Joint in PCC Pavement.

CRACKING AND SEATING PCC PAVEMENT

Provide for Crack and Seating PCC Pavement for Sections 7 and 8 in accordance with Section 393 of the Standard Specifications. The cracking and seating of the PCC pavement of Section 8 will be done after the concrete planing has been completed.

CURB AND GUTTER

100 feet of PCC curb and gutter replacement for Section 8 has been added to the plans to be used at locations determined by the Engineer to replace any broken curb and gutter. All costs associated with this work will be incidental to the contract unit price per foot for Special Concrete Curb and Gutter.

Revised 3/10/26 GDS

SHOULDER PREPARATION

Prior to placement of asphalt concrete on the shoulders of Section 8b, the upper 4” of existing granular shoulder material will be scarified, reworked, shaped, watered, and compacted to obtain a uniform and stable surface according to Section 260.3 C. The cross slope requirements will meet what is shown in the typical sections. The final shaping of the granular material on the shoulder must be completed after Planing PCC Pavement and Special Concrete Curb and Gutter replacement. Any removal of the in place granular material to meet the typical section will be incidental to the “Shoulder Preparation” bid item. All other costs to complete this work will be incidental to the contract unit price per mile for Shoulder Preparation.

Water needed for compaction will be incidental to the contract unit price per mile for Shoulder Preparation.

All costs associated with blending, scarifying, reworking, shaping, and compacting the existing granular material will be incidental to the contract unit price per mile for Shoulder Preparation.

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.

CLASS S ASPHALT CONCRETE

Mineral aggregate for Class S Asphalt Concrete will consist of a minimum of 95% crushed limestone ledge rock and will conform to the requirements of Class S, Type 1.

When directed by the Engineer, the Contractor will saw and remove a total of three undamaged compaction cores from designated area(s) and repair the hole(s) to the satisfaction of the Engineer. All costs associated with the compaction cores will be incidental to the contract unit price per each for Compaction Sample.

A flush seal will not be applied for the width of the Class S

All other requirements for Class S Asphalt Concrete will apply.

PLANING PCC PAVEMENT

This work will consist of removing a portion of the existing PCC pavement surfacing at the areas specified in these plans or at the approximate locations:

Material resulting from Planing PCC Pavement will be disposed of as directed by the Engineer.

Planing PCC Pavement will be paid for at the contract unit price per square yard of pavement surface planed. Payment for this item will be full payment for furnishing all equipment, labor and incidentals required to plane, pickup, haul and dispose of the removed material, and broom the surface.

RESTORATION OF STOCKPILE SITE

The Contractor will be responsible for the removal of any remaining stockpiled material.

The Contractor will remove the entrance (including pipe) used for access and clean up the stockpile site. The Contractor will scarify, replace and blade smooth the upper six inches of topsoil in the stockpile site upon completion of the project.

All costs associated with this work will be incidental to the lump sum unit price bid for Restoration of Stockpile Site.

DROP INLET AT MRM 96+0.035- R 0 PCN 07W4

A drop inlet is located at MRM 96+0.035 – R. The Contractor will take care not to damage this inlet during construction. The new asphalt shoulder will be placed at this location to maintain positive drainage to the inlet as directed by the Engineer.

GRIND RUMBLE STRIPS/STRIPES IN ASPHALT CONCRETE

Asphalt concrete rumble strips/stripes will be constructed on the shoulders. Rumble strips/stripes will be paid for at the contract unit price per mile for Grind 8” Rumble Strip or Stripe in Asphalt Concrete. It is estimated that 27.6 and 2.4 miles of asphalt concrete rumble strips/stripes will be required respectively for PCN 068X and PCN 07W4.

Rumble strip/stripe installation will be completed prior to application of the permanent pavement markings. The Contractor will be required to apply a flush seal to the newly installed 12” rumble strips/stripes at a width of 24” at an application rate of 0.05 Gal/SqYd. No adjustment in payment will be made and SS-1h or CSS-1h Asphalt for Flush Seal will be paid at the contract unit price per ton.

GRIND SINUSOIDAL CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE

Sinusoidal rumble stripes will be constructed on the centerline, 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.

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

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 application width will extend 1 ft beyond the centerline of the roadway in each direction to create a total application rate of 0.05 Gal/SqYd on the centerline rumble stripes.

In the event the flush seal is eliminated from the contract, the Contractor will still be required to apply asphalt for flush seal to the newly installed centerline rumble stripes at a width of 24” and a rate of 0.10 Gal/SqYd. No adjustment in payment will be made and SS-1h or CSS-1h Asphalt for Flush Seal will be paid at the contract unit price per ton.

GUARDRAIL (Weathering Steel)

The new guardrail will be AASHTO M180 Type 4 Weathering Steel. The end terminals will be stained to match the color of the adjacent weathering steel rails as approved by the Engineer. Natina Steel Solution is a possible product for staining the galvanized end terminals. Bolts, washers, nuts, and all other hardware may be galvanized.

Revised 2/27/26 GDS

Table of Material Quantities

PCN 07W4 Section		Station	to	Station	Length ft	Length Stations	Length Miles	Side	Cold Milling Asphalt Concrete (SqYd)	Remove Asphalt Concrete Pavement (SqYd)	Unclassified Excavation, Digouts (CuYd)	Base Course (Ton)	Base Course, Salvaged (Ton)	Class S Asphalt Concrete (Ton)	Stabilizing Additive for Asphalt Concrete (Ton)	Alt A Asphalt Concrete Leveling Lift (Ton)	Alt B Asphalt Concrete Leveling Lift (Ton)	Alt A Class QR Hot Mixed Asphalt Concrete (Ton)	Alt B Class QR Hot Mixed Asphalt Concrete (Ton)	Alt A PG 58V-34 Asphalt Binder (Ton)	Alt B PG 58V-34 Asphalt Binder (Ton)	Alt A Hydrated Lime (Ton)	Alt B Hydrated Lime (Ton)	MC-70 Asphalt for Prime (Ton)	Blotting Sand for Prime (Ton)	SS-1h or CSS-1h Asphalt for Tack (Ton)	Asphalt Concrete Composite (Ton)	SS-1h or CSS-1h Asphalt for Flush Seal (Ton)	Sand for Flush Seal (Ton)	Saw Joint in PCC Pavement (Ft)	Cracking and Seating PCC Pavement (SqYd)	Surface Preparation (Mile)	Shoulder Preparation (Mile)	Planing PCC Pavement (SqYd)
7	a	700	a	3550	2850.00	28.50	0.54							767.8	2.3	267.9	275	1816.6	1865.9	143.9	128	20.8	21.4			3.0	7.0				9500			
8a	a	3550	a	3975	425.00	4.25	0.08	Right						10.3	0.03			146.6	150.5	6.7	5.6	1.5	1.5			0.6				425.0	1056.6			1056.6
Transition	a	3975	a	4100	125.00	1.25	0.02	Right						2.9	0.01			41.9	43	1.9	1.6	0.4	0.4			0.2					302.1			
8b	a	4100	a	4600	500.00	5.00	0.09	Right		194.4				8.6	0.03			123.3	126.6	5.7	4.7	1.2	1.3			0.5	33.3				888.9		0.09	888.9
Transition	a	4600	a	6450	1850.00	18.50	0.35	Right						36.9	0.11			527.6	541.8	24.3	20	5.3	5.4			2.1					3802.8			
8a	a	6450	a	6690	240.00	2.40	0.05	Right						5.7	0.02			81.4	83.6	3.7	3.1	0.8	0.8			0.3				240.0	586.7			586.7
Transition	a	3550	a	3760	210.00	2.10	0.04	Left						4	0.01			57.5	59	2.6	2.2	0.6	0.6			0.2					414.2			
8b	a	3760	a	4260	500.00	5.00	0.09	Left		194.4				9.8	0.03			140.7	144.5	6.5	5.3	1.4	1.4			0.6	33.3				1013.9		0.09	1013.9
Transition	a	4260	a	4600	340.00	3.40	0.06	Left						5.9	0.02			83.9	86.1	3.9	3.2	0.8	0.9			0.3					604.4			
8a	a	4600	a	5360	760.00	7.60	0.14	Left						13.1	0.04			187.4	192.5	8.6	7.1	1.9	1.9			0.7				760.0	1351.1			1351.1
Transition	a	5360	a	6690	1330.00	13.30	0.25	Left						30.1	0.09			430.5	442.2	19.8	16.4	4.3	4.4			1.7					3103.3			
7	a	6690	a	7050	360.00	3.60	0.07							97	0.3	33.8	34.7	229.5	235.7	18.2	16.2	2.6	2.7			1.2	0.9				1200			
Additional Quantities																		29.5	29.5	1.4	1.1	0.3	0.3											
Total							1.20			388.8				992.1	3	301.7	309.7	3896.4	4000.9	247.2	214.5	41.9	43			11.4	74.5			1425	23824		0.2	4897.2
PCN 068X																																		
1		10672.48		13400	2727.52	27.28	0.52			39.0	26.0	52.0		674.4	2.0			2918.4	2997	211	187.6	29.0	30.0	20.1	36.4	9.8	13.0					0.12		
2		13400		40285	26885.00	268.85	5.09			381.8	254.5	509.0		6601.2	19.9			28188.4	28962.2	2045.2	1821.2	285.0	285.0	179.0	358.5	96.7	127.3					1.21		
3		40285		42484	2199.00	21.99	0.42			31.5	21.0	42.0		783.9	2.6			2958.6	3039	225.2	201.8	29.4	30.4	18.4	44.0	10.3	10.5					0.10		
2		42480		52400	9920.00	99.20	1.88			141.0	94.0	188.0		2438.2	7.3			10411.4	10697.2	755.4	672.6	105.2	105.2	66.1	132.3	35.7	47.0					0.46		
4		52400		53568.17	1168.17	11.68	0.22							499.4	1.5					28.5	28.5					1.8								
Exception																																		
9	b	1268	b	5520	4252.00	42.52	0.81							1050.5	3.2					59.9	59.9					3.7								
10	b	5520	b	6655	1135.00	11.35	0.21							386.7	1.1					22.0	22.0					1.5								
9	b	6655	b	8917	2262.00	22.62	0.43							557.7	1.7					31.8	31.8					2.0								
11	b	8917	b	10257	1340.00	13.40	0.25							583.7	1.7					33.2	33.2					2.1								
9	b	10257	b	15937	5680.00	56.80	1.08							1400.7	4.2					79.8	79.8					5.0								
10	b	15937	b	17121	1184.00	11.84	0.22							403.4	1.2					23.0	23.0					1.6								
9	b	17121	b	31228	14107.00	141.07	2.67							3462.7	10.4					197.3	197.3					12.4								
						Total	13.80																												
5		131.45		300	168.55	1.69	0.03			2.3	1.5	3.0						191.8	197	8.8	7.4	0.2	0.2			0.4	0.8	0.2	2.5		0.01			
6		23		1348	1325.00	13.25	0.25			18.8	12.5	25.0						850.4	873.4	39.2	32.4	8.4	8.8	5.6	17.7	2.2	6.3	0.9	13.0		0.06			
12		2000		2200	200.00	2.00	0.04							58.6	0.2					3.3	3.3					0.2								
Additional Quantities									804	377.8		204.7						416	419	19	15.3	4.3	4.3			0.2								
Total									804	992.2	409.5	1023.7		18901.1	57			45935	47184.8	3782.6	3417.1	461.5	463.9	289.2	588.9	185.6	204.9	1.1	15.5		2			

Table of Additional Quantities

							Alt A	Alt B	Alt A	Alt B	Alt A	Alt B		
					Remove Asphalt Concrete Pavement	Cold Milling Asphalt Concrete	Class Q3R Hot Mixed Asphalt Concrete		PG 58V-34 Asphalt Binder		Hydrated Lime		Base Course	SS-1h or CSS-1h Asphalt for Tack
					(SqYd)	(SqYd)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)
Section				Length										
PCN 07W4				(Miles)										
Spot Leveling and Repair														
8				0.59			29.5	29.5	1.4	1.1	0.3	0.3		
				Total			29.5	29.5	1.4	1.1	0.3	0.3		
PCN 068X														
4				0.22			11.0	11.0	0.5	0.4	0.11	0.11		
9				4.99			249.5	249.5	11.5	9.5	2.50	2.50		
10				0.43			21.5	21.5	1.0	0.8	0.22	0.22		
11				0.25			12.5	12.5	0.6	0.5	0.13	0.13		
12				0.04			2.0	2.0	0.1	0.1	0.02	0.02		
Intersecting Roads														
(Pave to ROW)														
	MRM	Disp	Side											
Sheridan Lake	87	+0.400	R			80.4	9.1	9.4	0.4	0.3	0.1	0.1		0.02
Sheridan Lake	87	+0.500	R			80.4	9.1	9.4	0.4	0.3	0.1	0.1		0.02
Wrinkle Valley Rd	89	+0.950	L			80.4	9.1	9.4	0.4	0.3	0.1	0.1		0.02
Horse Creek Rd	90	+0.140	L			80.4	9.1	9.4	0.4	0.3	0.1	0.1		0.02
Custer Gulch Rd	93	+0.100	L			80.4	9.1	9.4	0.4	0.3	0.1	0.1		0.02
Taylor Ranch Rd	93	+0.100	R			80.4	9.1	9.4	0.4	0.3	0.1	0.1		0.02
Pactola Parking Lot	95	+0.250	L			80.4	9.1	9.4	0.4	0.3	0.1	0.1		0.02
Pactola Parking Lot	95	+0.350	L			80.4	9.1	9.4	0.4	0.3	0.1	0.1		0.02
Pactola Boat Dock Rd	95	+0.260	L			80.4	9.1	9.4	0.4	0.3	0.1	0.1		0.02
Smoker Gulch	95	+0.350	L			80.4	9.1	9.4	0.4	0.3	0.1	0.1		0.02
Intersecting Roads and Approaches														
Granular Surfacing Only														
23 Entrances													204.7	
Guardrail Installations	**Begin**	**End**												
	Station	**Station**												
	106+38	120+67	R				12	12	0.6	0.4	0.1	0.1		0.01
	120+27	125+04	R				4.5	4.5	0.2	0.2	0.1	0.1		0.01
	124+63	134+58	R				12	12	0.6	0.4	0.1	0.1		0.01
South End of Project - Remove Temporary Asphalt Transition					377.8									
				Total	377.8	804	416	419	19	15.3	4.3	4.3	204.7	0.2

Table of Specified Compaction

PCN 07W4 Section		Station		Station	Length ft	Length Stations	Length Miles	Side	Class Q3R Asphalt Concrete Alt. A with Specified Density (Ton)	Class Q3R Asphalt Concrete Alt. A without Specified Density (Ton)	Class Q3R Asphalt Concrete Alt. B with Specified Density (Ton)	Class Q3R Asphalt Concrete Alt. B without Specified Density (Ton)
7	a	7+00	a	35+50	2850	28.5	0.54		1,223.2	593.4	1,256.3	609.6
8a	a	35+50	a	39+75	425	4.25	0.08	Right	126.9	19.7	130.4	20.1
Transition	a	39+75	a	41+00	125	1.25	0.02	Right	36.1	5.8	37.1	5.9
8b	a	41+00	a	46+00	500	5	0.09	Right	100.2	23.1	102.9	23.7
Transition	a	46+00	a	64+50	1850	18.5	0.35	Right	442.0	85.6	453.9	87.9
8a	a	64+50	a	66+90	240	2.4	0.05	Right	70.3	11.1	72.2	11.4
Transition	a	35+50	a	37+60	210	2.1	0.04	Left	47.7	9.8	49.0	10.0
8b	a	37+60	a	42+60	500	5	0.09	Left	117.5	23.2	120.7	23.8
Transition	a	42+60	a	46+00	340	3.4	0.06	Left	68.1	15.8	70.0	16.1
8a	a	46+00	a	53+60	760	7.6	0.14	Left	152.3	35.1	156.4	36.1
Transition	a	53+60	a	66+90	1330	13.3	0.25	Left	369.0	61.5	379.0	63.2
7	a	66+90	a	70+50	360	3.6	0.07		154.5	75.0	158.7	77.0
Additional Quantities										29.5		29.5
								Total	2,907.8	988.6	2,986.6	1,014.3
PCN 068X												-
1		106+72		134+00	2727.52	27.28	0.52		1,897.2	1,021.2	1,948.5	1,048.5
2		134+00		402+85	26885	268.85	5.09		19,060.0	9,128.4	19,575.1	9,387.1
3		402+85		424+84	2199	21.99	0.42		1,923.8	1,034.8	1,975.7	1,063.3
2		424+80		524+00	9920	99.2	1.88		6,849.0	3,562.4	7,034.1	3,663.1
5		1+31		3+00	168.55	1.69	0.03		149.7	42.1	153.7	43.3
6		0+23		13+48	1325	13.25	0.25		784.4	66.0	805.6	67.8
Additional Quantities									-	416.0	-	419.0
								Total	30,664.1	15,270.9	31,492.7	15,692.1

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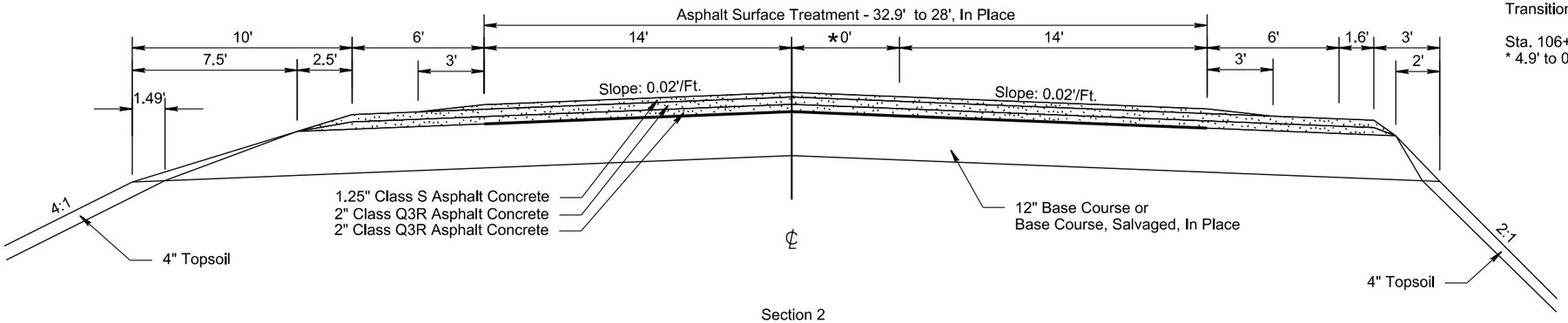
Table of Guardrail

PCN 068X					Remove Beam Guardrail	Remove Beam Guardrail Trailing End Terminal	Remove W Beam Guardrail End Terminal	Remove W Beam Guardrail for Reset	Type 1C MGS	W Beam Guardrail to MGS Transition	MGS MASH Tangent End Terminal	MGS Trailing End Terminal	Straight Class A W Beam Guardrail with Wood Posts	Curved Class A W Beam Guardrail with Wood Posts	Reset W Beam Rail	Beam Guardrail Post and Block	Guardrail Delineator
Station	to	Station		Side	Ft	Each	Each	Ft	Ft	Each	Each	Each	Ft	Ft	Ft	Each	Each
106+38		120+67		R					1262.5	1	1		62.5	50			30
120+27		125+04		R					337.5		2						9
124+63		134+58		R					825	1	1		62.5	50			21
				Total					2425	2	4		125	100			60
PCN 07W4																	
MRM	Disp	to	MRM	Disp	Side												
95	+0.562		96	+0.055	L	#REF!	1		25	2350	1		1			25	5	50
96	+0.119		96	+0.625	L	#REF!		1	25	2512.5	1	1				25	5	54
95	+0.557		95	+0.793	R	#REF!		1		1137.5	1	1						25
96	+0.231		96	+0.623	R	#REF!		1		1937.5	1	1						41
					Total	#REF!	1	3	50	7937.5	4	3	1			50	10	170

TYPICAL SURFACING SECTIONS

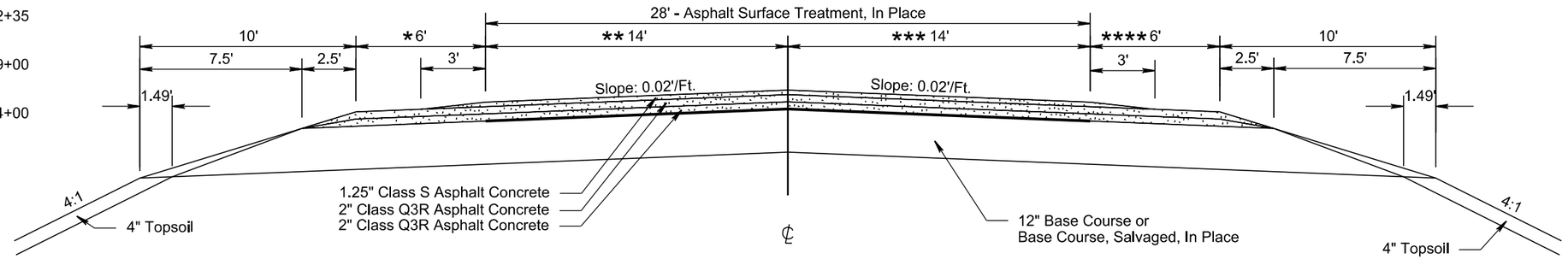
Section 1
US HWY 385
Sta. 106+72.48 to Sta. 134+00



Transitions:

Sta. 106+72.48 to Sta. 109+05
* 4.9' to 0'

Section 2
US HWY 385
Sta. 134+00 to Sta. 402+85
Sta. 424+80 to Sta. 524+00



Transitions:

Sta. 179+70 to Sta. 186+30
** 14' to 26'

Sta. 186+30 to Sta. 192+35
** 26'

Sta. 192+35 to Sta. 199+00
** 26' to 14'

Sta. 522+50 to Sta. 524+00
* 6' to 2'

Transitions:

Sta. 182+00 to Sta. 183+20
*** 14' to 26'

Sta. 182+00 to Sta. 182+40
**** 6' to 2'

Sta. 183+20 to Sta. 185+70
*** 26'

Sta. 182+40 to Sta. 185+70
**** 2'

Sta. 185+70 to Sta. 187+80
*** 26' to 14'

Sta. 185+70 to Sta. 187+80
**** 2' to 6'

Sta. 522+50 to Sta. 524+00
**** 6' to 2'

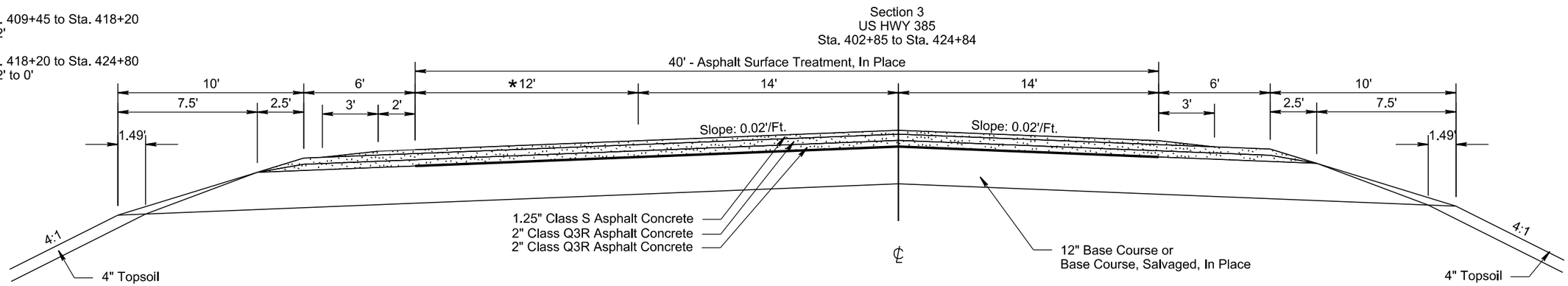
Transitions:

Sta. 402+85 to Sta. 409+45
* 0' to 12'

Sta. 409+45 to Sta. 418+20
* 12'

Sta. 418+20 to Sta. 424+80
* 12' to 0'

Section 3
US HWY 385
Sta. 402+85 to Sta. 424+84



PLOT SCALE - 1:6.00001
PLOTTED FROM - TRRC12608
PLOT NAME - 1
FILE - ...\068X_TYPSECT_TJD3.DGN

TYPICAL SURFACING SECTIONS

PROJECT	SECTION	SHEET
NH-PH 0385(50)96	F	12/42

Plotting Date: 01/27/2026

Revised: 3Sep24, RML

Transitions:

Sta. 524+00 to Sta. 525+10.3
* 4'

Sta. 525+10.3 to Sta. 526+41.1
* 4' to 2'

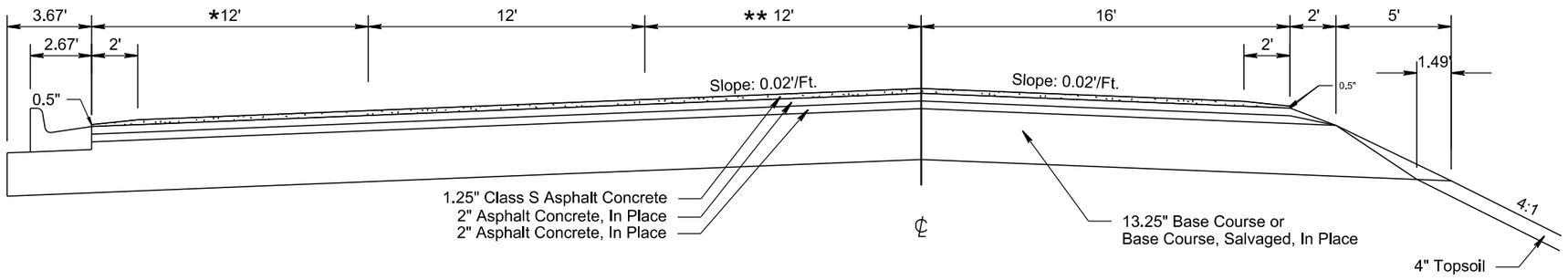
Sta. 526+41.1 to Sta. 533+80
* 2'

Sta. 533+80 to Sta. 534+80
* 2' to 12'

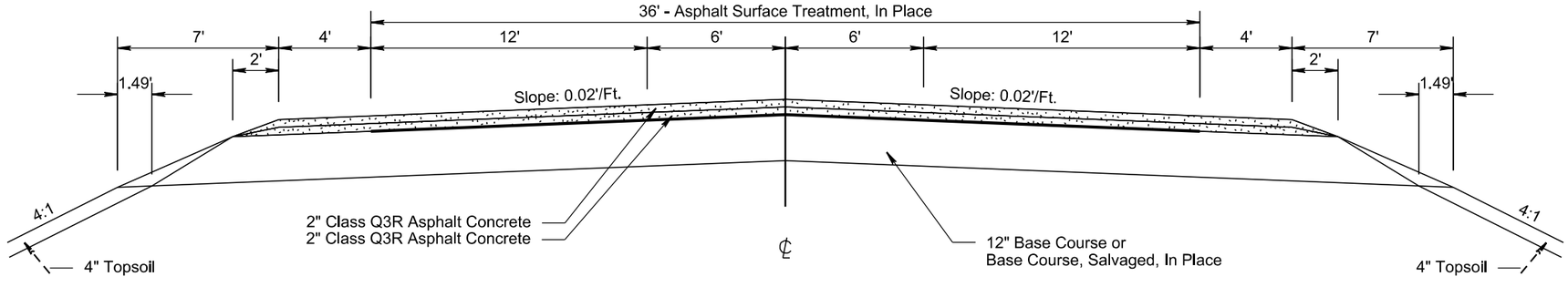
Sta. 524+00 to Sta. 525+20
** 0'

Sta. 525+20 to Sta. 531+80
** 0' to 12'

Section 4
US HWY 385
Sta. 524+00 to Sta. 535+68.17



Section 5
Sheridan Lake Road
Sta. 1+31.45 to Sta. 3+00



PLOT SCALE - 1:6.00001

PLOTTED FROM - TRRC12608

PLOT NAME - 2

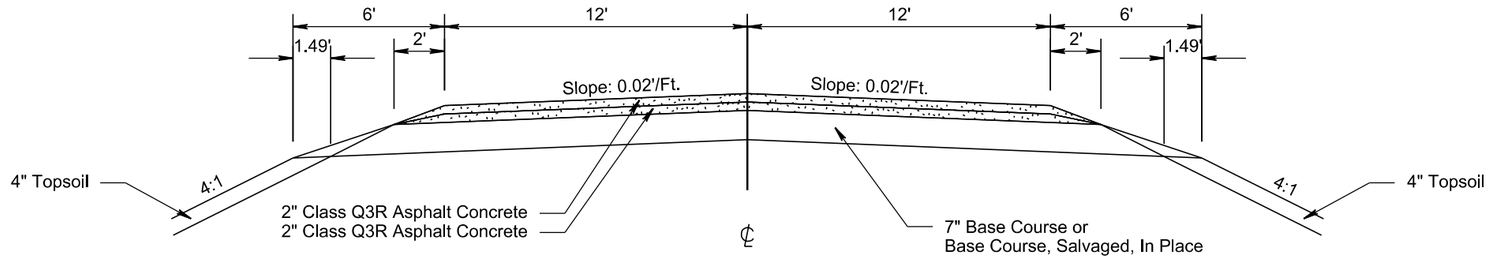
FILE - ...\068X_TYPSECT_TJ03.DGN

TYPICAL SURFACING SECTIONS

SD DOT	PROJECT	SECTION	SHEET
	NH-PH 0385(50)96	F	13/42

Plotting Date: 01/27/2026

Section 6
Victoria Lake Road
Sta. 0+23 to Sta. 13+48



TYPICAL SURFACING SECTIONS

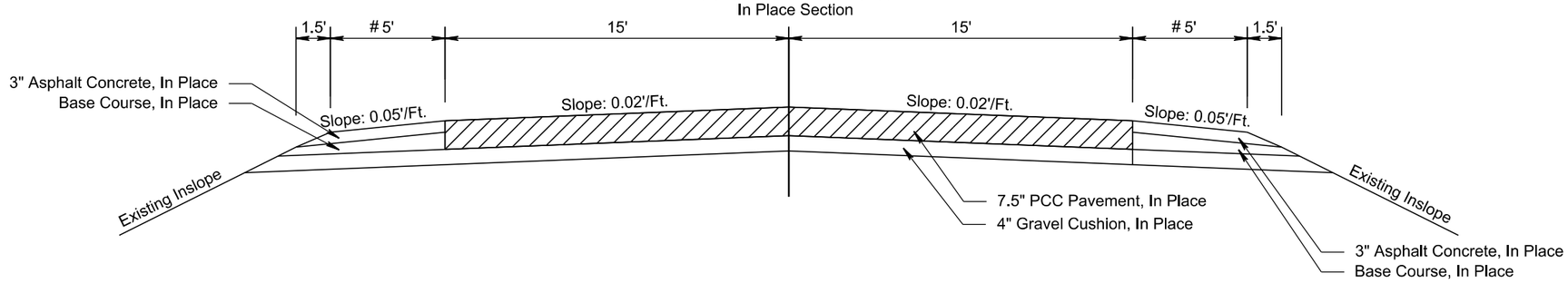
SD DOT	PROJECT	SECTION	SHEET
	NH-PH 0385(50)96	F	14/42

Plotting Date: 01/27/2026

Cracking & Seating PCC Pavement

Section 7
US HWY 385

Sta. a 7+00 to Sta. a 70+50
In Place Section



See Section 8 at the following locations:

Sta. a 35+50 to Sta. a 39+75
Curb & Gutter Rt Side

Sta. a 37+60 to Sta. a 42+60
Curb & Gutter Lt Side

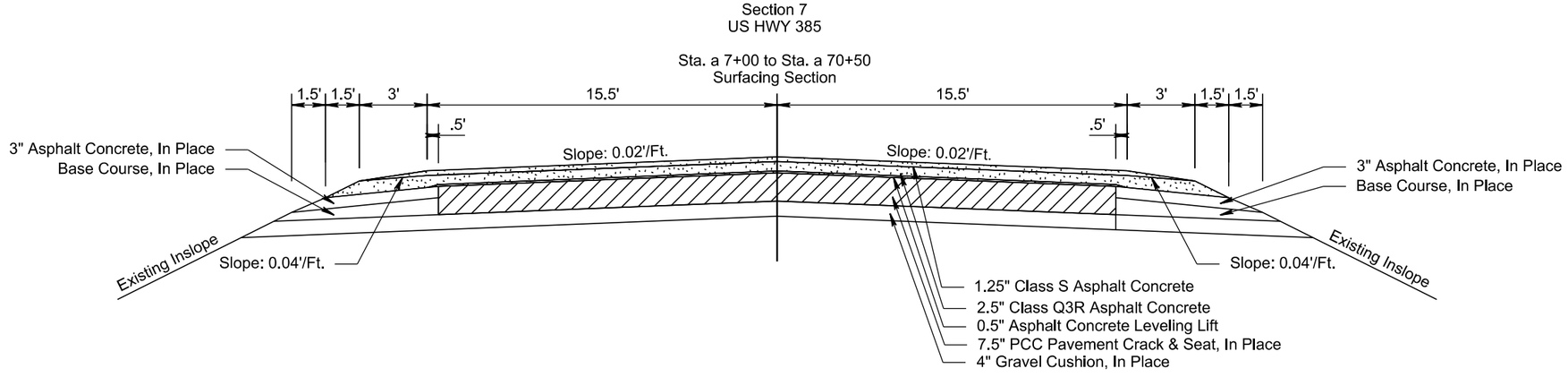
Sta. a 41+00 to Sta. a 46+00
Curb & Gutter Rt Side

Sta. a 46+00 to Sta. a 53+60
Curb & Gutter Lt Side

Sta. a 64+50 to Sta. a 66+90
Curb & Gutter Rt Side

Section 7
US HWY 385

Sta. a 7+00 to Sta. a 70+50
Surfacing Section



PLOT SCALE - 1:6.00001
PLOTTED FROM - TRRC12608
PLOT NAME - 4
FILE - ...\068x_TYPSECT_TJ03.DGN

TYPICAL SURFACING SECTIONS

SD DOT	PROJECT	SECTION	SHEET
	NH-PH 0385(50)96	F	15/42

Plotting Date: 01/27/2026

Section 8
US HWY 385

Remove Asphalt Concrete Pavement

Cracking & Seating PCC Pavement

Planing PCC Pavement

Shoulder Preparation

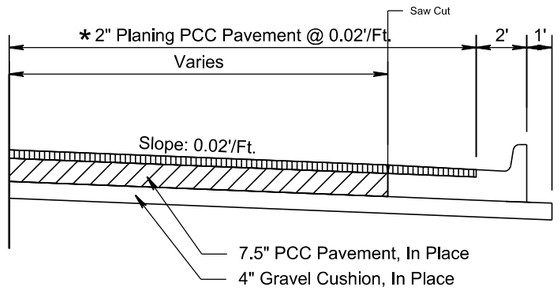
* See Concrete Planing Transition sheet for the transition locations

Section 8a - In Place Section

Sta. a 35+50 to Sta. a 39+75
Curb & Gutter Rt Side

Sta. a 46+00 to Sta. a 53+60
Curb & Gutter Lt Side

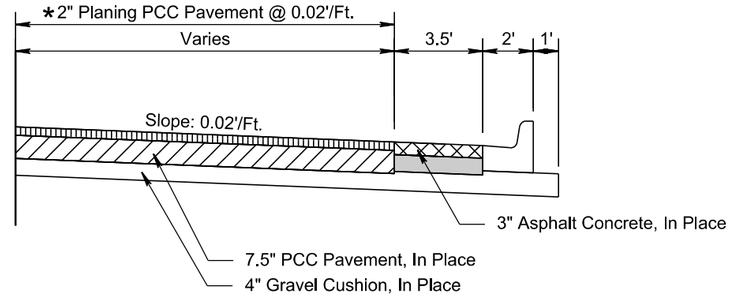
Sta. a 64+50 to Sta. a 66+90
Curb & Gutter Rt Side



Section 8b - In Place Section

Sta. a 37+60 to Sta. a 42+60
Curb & Gutter Lt Side

Sta. a 41+00 to Sta. a 46+00
Curb & Gutter Rt Side

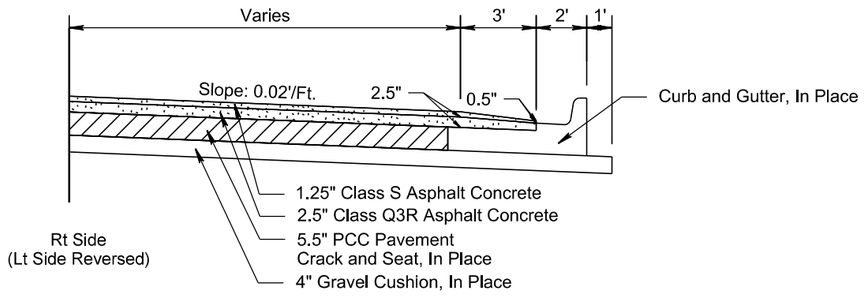


Section 8a - Surfacing Section

Sta. a 35+50 to Sta. a 39+75
Curb & Gutter Rt Side

Sta. a 46+00 to Sta. a 53+60
Curb & Gutter Lt Side

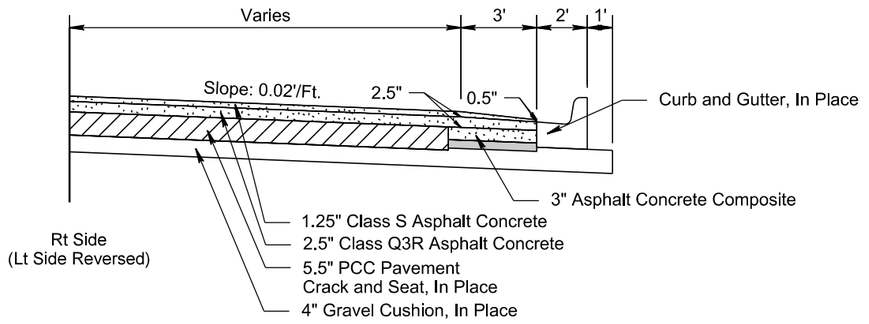
Sta. a 64+50 to Sta. a 66+90
Curb & Gutter Rt Side



Section 8b - Surfacing Section

Sta. a 37+60 to Sta. a 42+60
Curb & Gutter Lt Side

Sta. a 41+00 to Sta. a 46+00
Curb & Gutter Rt Side



PLOT SCALE - 1:6.00001

PLOT NAME - 5

FILE - ...\068X_TYPSECT_TJD3.DGN

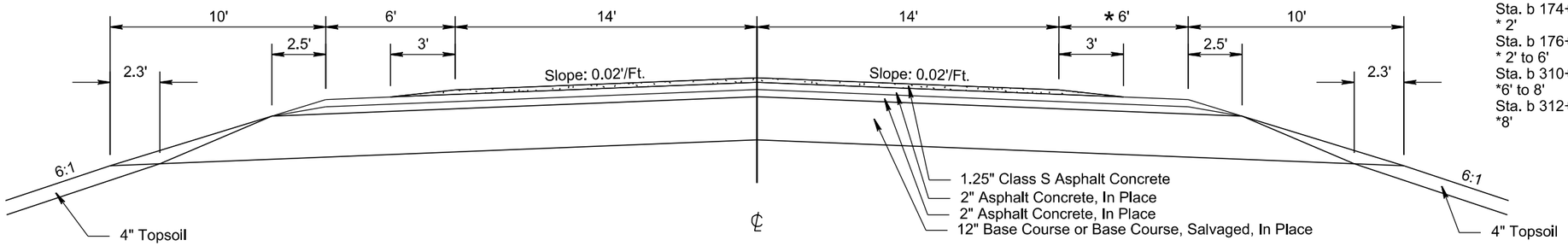
PLOTTED FROM - TRRC12608

TYPICAL SURFACING SECTIONS

SD DOT	PROJECT	SECTION	SHEET
	NH-PH 0385(50)96	F	16/42

Plotting Date: 01/27/2026

Section 9
US HWY 385
Sta. b 12+68 to Sta. b 55+20
Sta. b 66+55 to Sta. b 89+17
Sta. b 102+57 to Sta. b 159+37
Sta. b 171+21 to Sta. b 312+28



Transition:

Sta. b 174+50 to Sta. b 174+95
* 6' to 2'
Sta. b 174+95 to Sta. b 176+23
* 2'
Sta. b 176+23 to Sta. b 176+82
* 2' to 6'
Sta. b 310+00 to Sta. b 312+00
*6' to 8'
Sta. b 312+00 to b 312+28
*8'

Transitions:

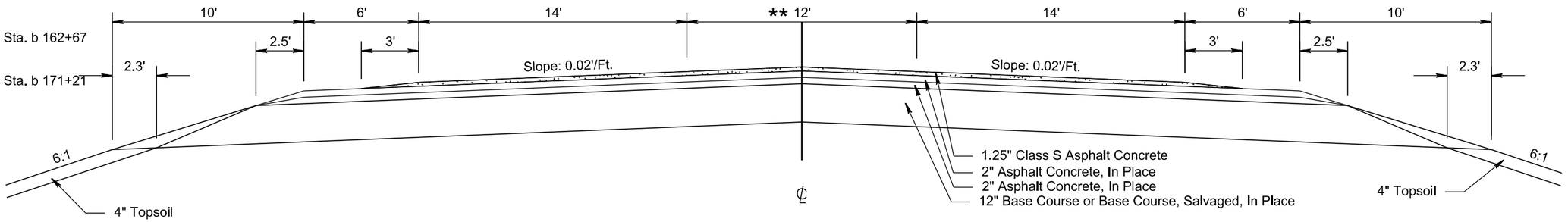
Sta. b 55+20 to Sta. b 58+50
** 0' to 12'

Sta. b 63+25 to Sta. b 66+55
** 12' to 0'

Sta. b 159+37 to Sta. b 162+67
** 0' to 12'

Sta. b 167+91 to Sta. b 171+21
** 12' to 0'

Section 10
US HWY 385
Sta. b 55+20 to Sta. b 66+55
Sta. b 159+37 to Sta. b 171+21



Transitions:

Sta. b 89+17 to Sta. b 89+92
* 0'

Sta. b 89+92 to Sta. b 93+22
* 0' to 12'

Sta. b 99+27 to Sta. b 102+57
* 12' to 0'

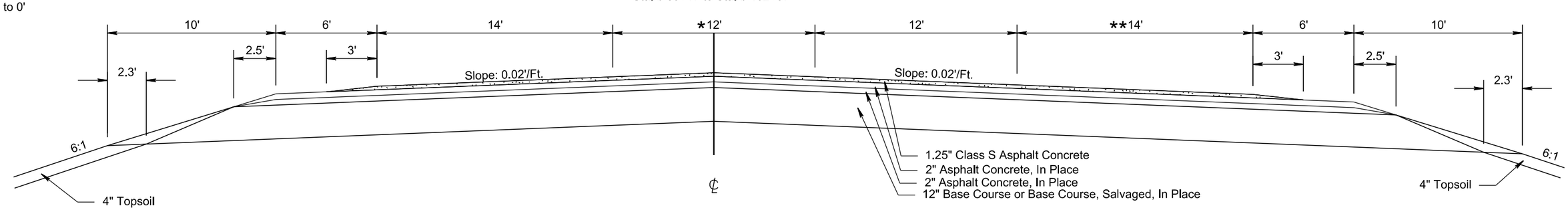
Transitions:

Sta. b 89+17 to Sta. b 90+36
** 2' to 14'

Sta. b 90+36 to Sta. b 93+91
** 14'

Sta. b 93+91 to Sta. b 102+57
** 14' to 2'

Section 11
US HWY 385
Sta. b 89+17 to Sta. b 102+57



PLOT SCALE - 1:6.00001

PLOT NAME - 6

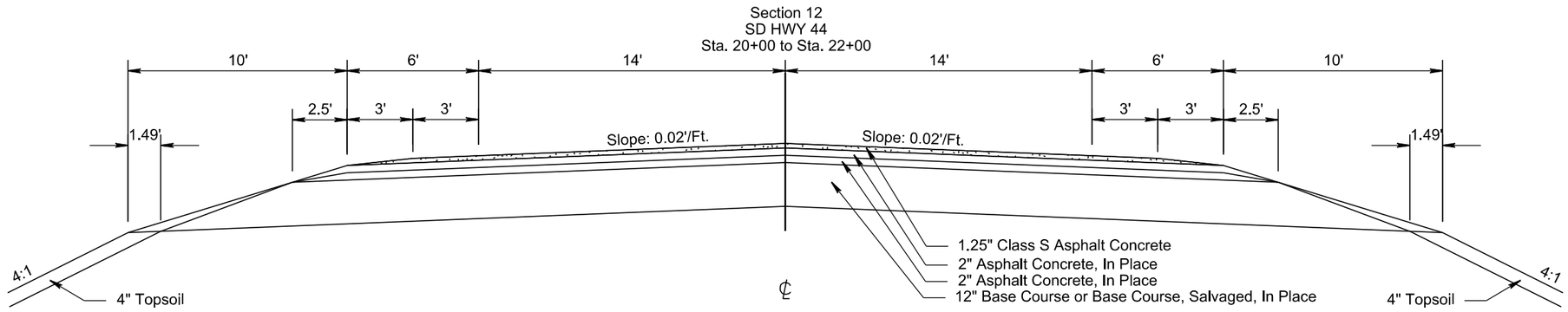
FILE - ...\068X_TYPSECT_TJD3.DGN

PLOTTED FROM - TRRC12608

TYPICAL SURFACING SECTIONS

SD DOT	PROJECT	SECTION	SHEET
	NH-PH 0385(50)96	F	17/42

Plotting Date: 01/27/2026

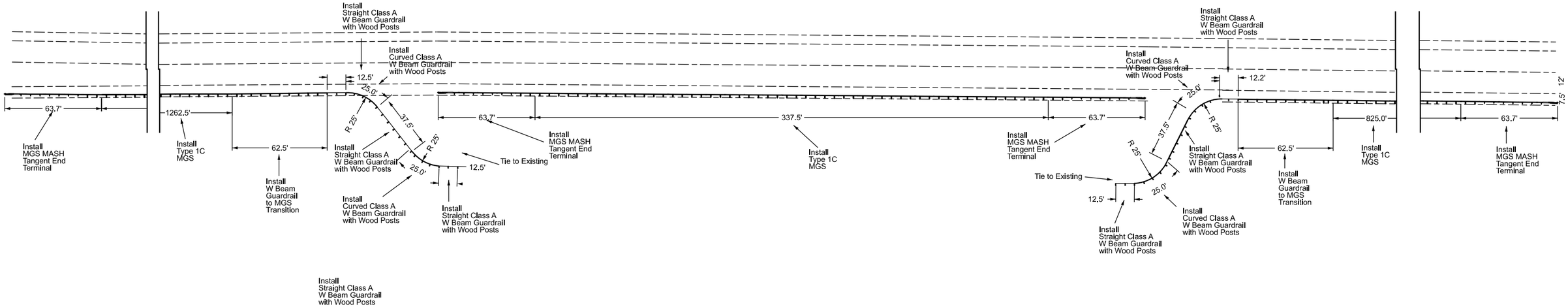


SD DOT	PROJECT	SECTION	SHEET
	NH-PH 0385(50)96	F	18/42

Plotting Date: 3/4/2026 Revised 3/4/26 GDS

GUARDRAIL LAYOUT

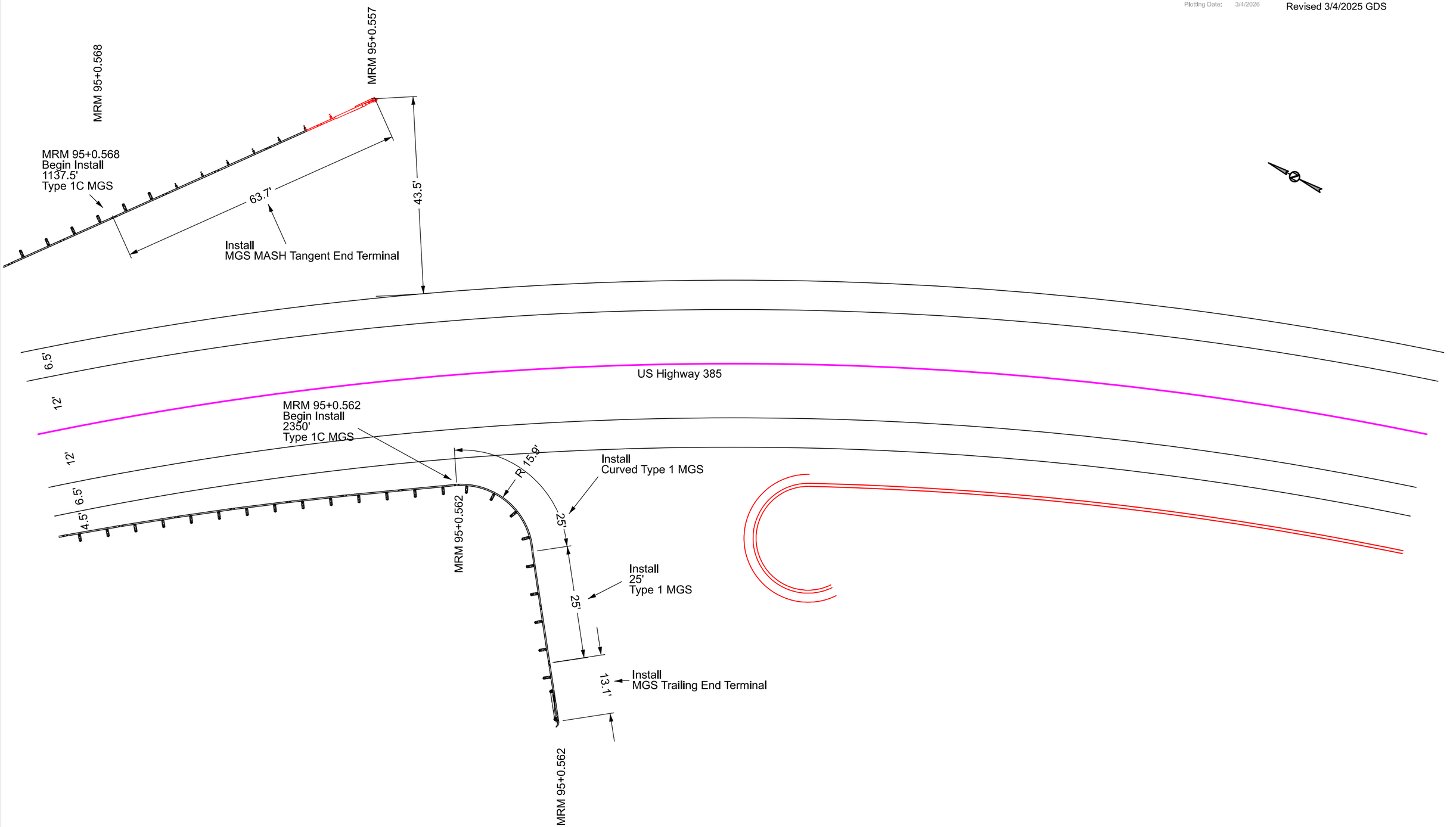
SHERIDAN LAKE FISHING ACCESS

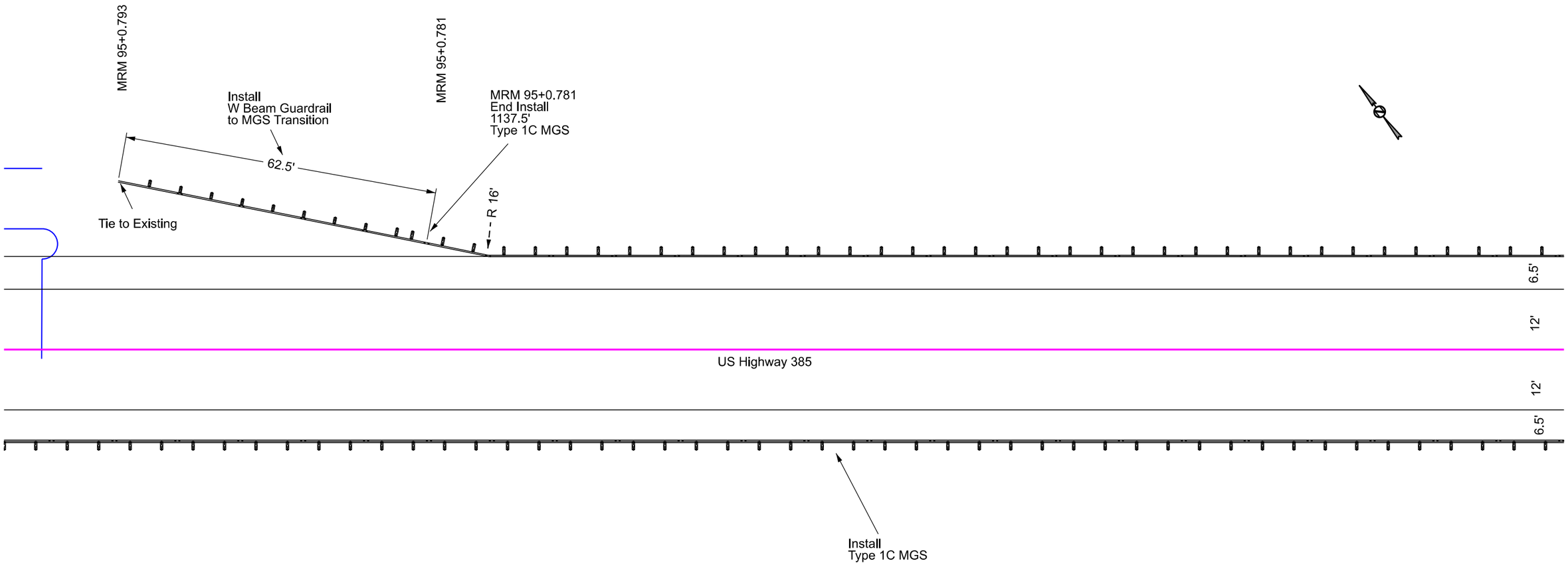


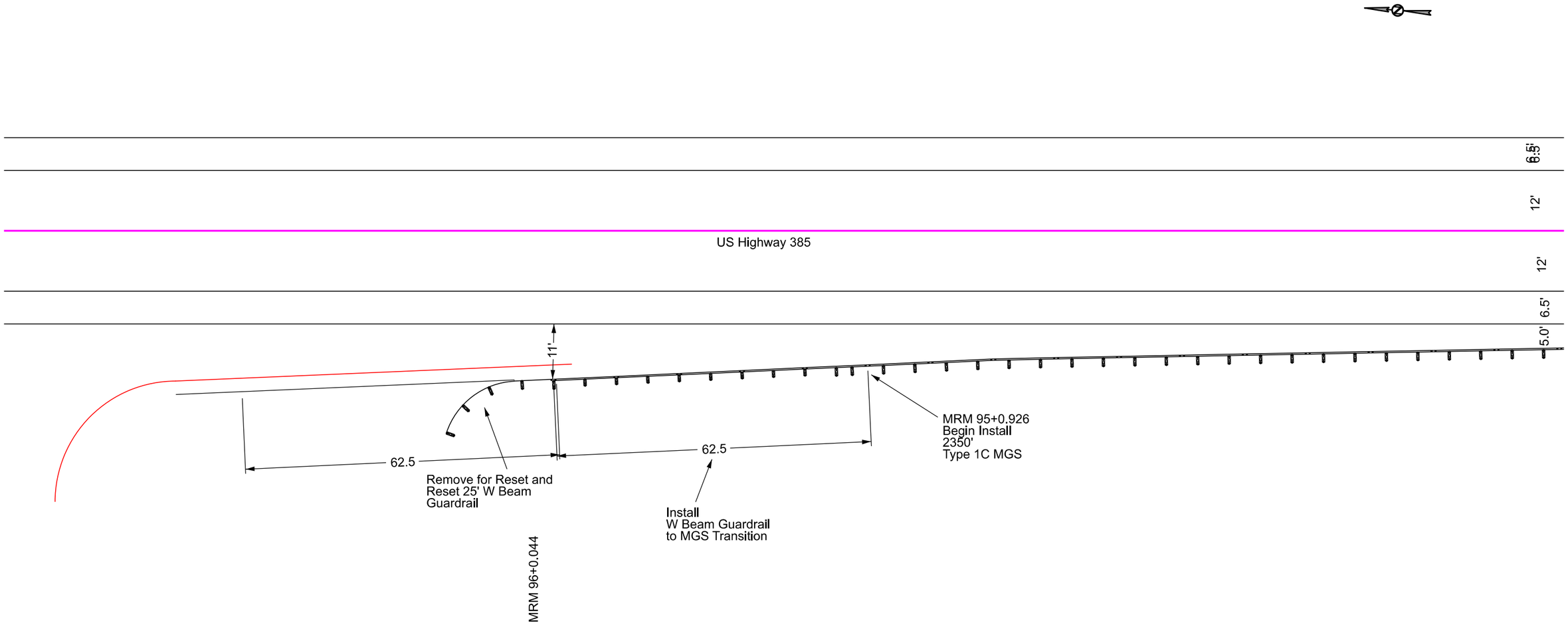
SD DOT	PROJECT	SECTION	SHEET
	NH-PH 0385(50)96	F	19/42

Plotting Date: 3/4/2026

Revised 3/4/2025 GDS

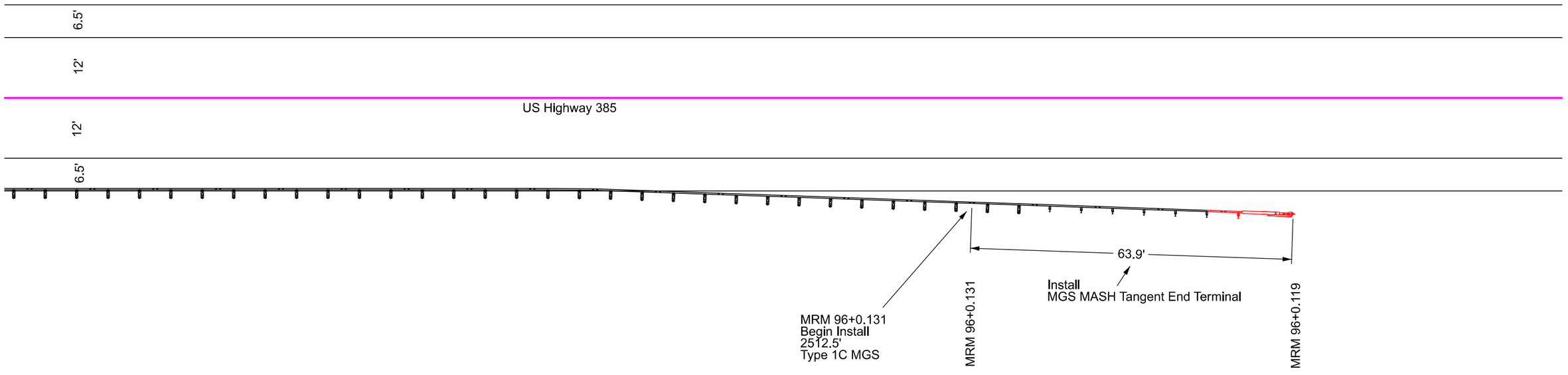



MRM 95+0.793
MRM 95+0.781
Install
W Beam Guardrail
to MGS Transition
62.5'
MRM 95+0.781
End Install
1137.5'
Type 1C MGS
R 16'
Tie to Existing
6.5'
12'
US Highway 385
12'
6.5'
Install
Type 1C MGS


6.5'
12'
US Highway 385
12'
6.5'
5.0'
11'
62.5
Remove for Reset and
Reset 25' W Beam
Guardrail
62.5
Install
W Beam Guardrail
to MGS Transition
MRM 95+0.926
Begin Install
2350'
Type 1C MGS
MRM 96+0.044

SD DOT	PROJECT	SECTION	SHEET
	NH-PH 0385(50)96	F	22/42

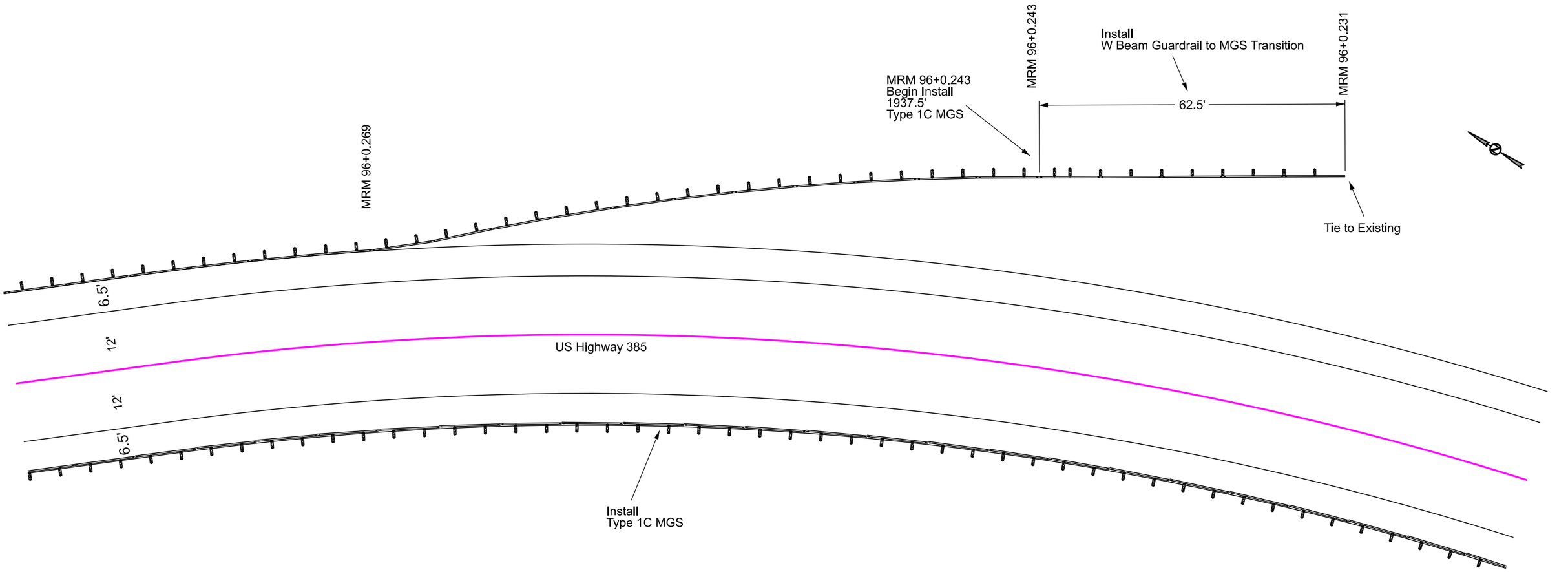
Plotting Date: 3/4/2026 Revised 3/4/2026 GDS

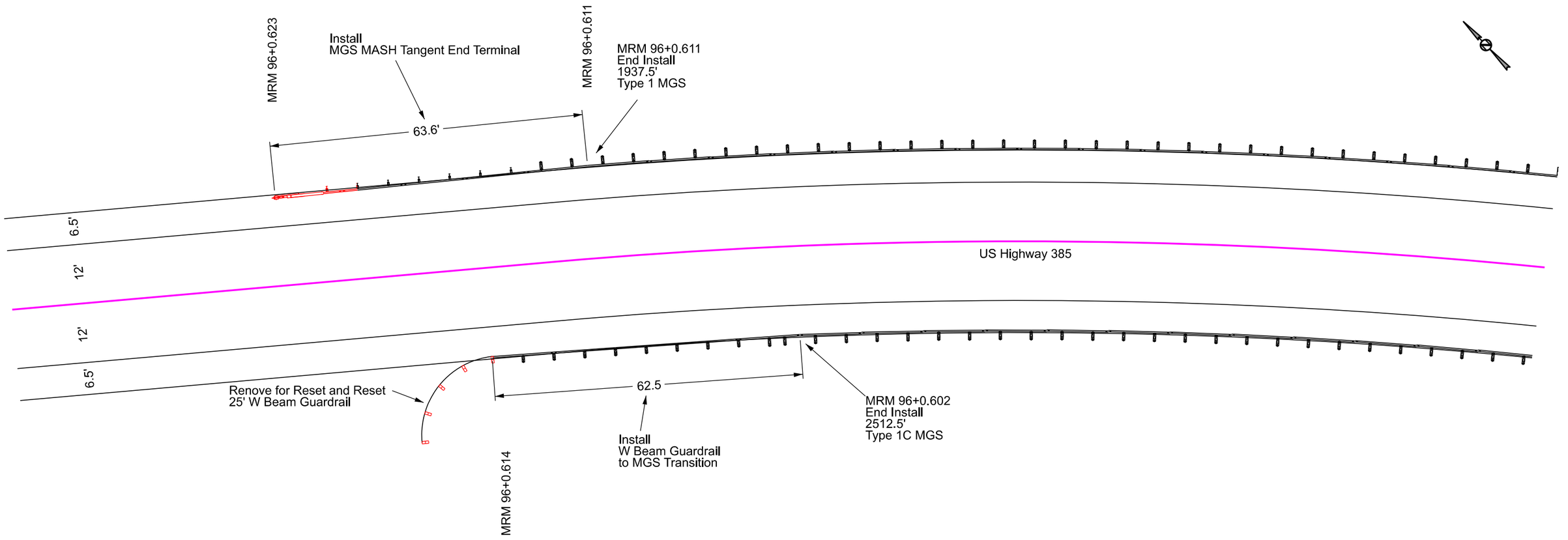


SD DOT	PROJECT	SECTION	SHEET
	NH-PH 0385(50)96	F	23/42

Plotting Date: 3/4/2026

Revised 3/4/2026 GDS

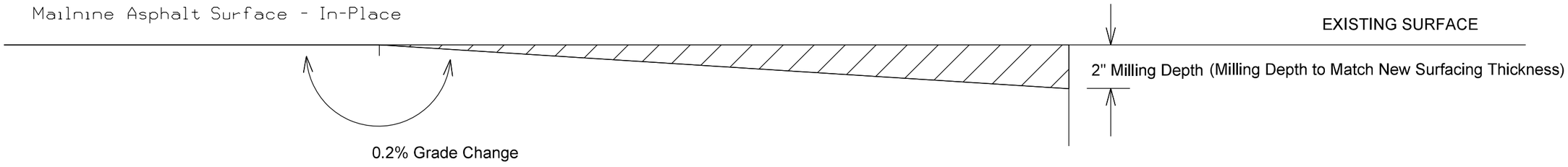



MRM 96+0.623
Install
MGS MASH Tangent End Terminal
MRM 96+0.611
MRM 96+0.611
End Install
1937.5'
Type 1 MGS
63.6'
6.5'
12'
US Highway 385
12'
6.5'
Renove for Reset and Reset
25' W Beam Guardrail
62.5
Install
W Beam Guardrail
to MGS Transition
MRM 96+0.602
End Install
2512.5'
Type 1C MGS
MRM 96+0.614

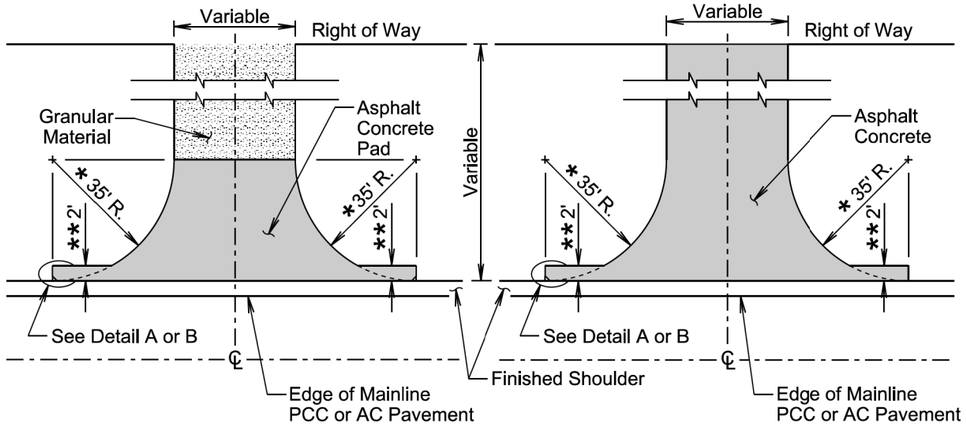
COLD MILLING ASPHALT CONCRETE TO MATCH EXISTING SURFACES

COLD MILLING DEPTH TRANSITION LENGTH

(40' per 1" milling depth change)



Cold Milling



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:

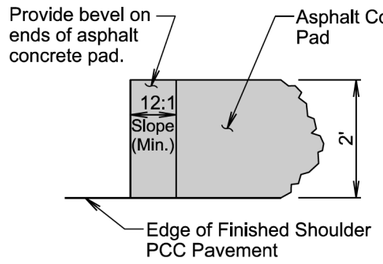
The precise construction limits for situations other than shown above will be determined by the Engineer during construction.

* For new construction, 35' radius typical or as specified in the plans. For resurfacing projects, radius is variable depending on existing conditions.

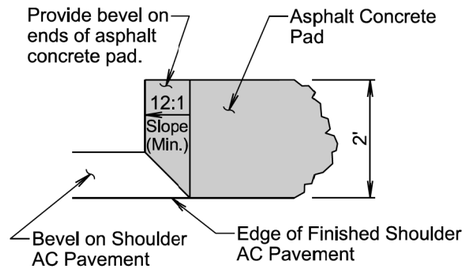
** The Contractor may adjust the screed of the paver during mainline paving operations to provide the 2-foot asphalt concrete pad or the Contractor may provide the 2-foot asphalt concrete pad during paving of the intersecting roads as shown above. The Engineer may eliminate the 2-foot asphalt concrete 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

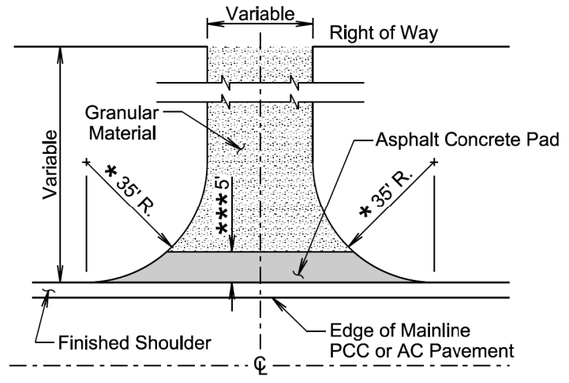
Published Date: 2026	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04 Sheet 1 of 2



DETAIL A
(Typ. for Projects with PCC Pavement on Shoulder)



DETAIL B
(Typ. for Projects with AC Pavement on Shoulder)

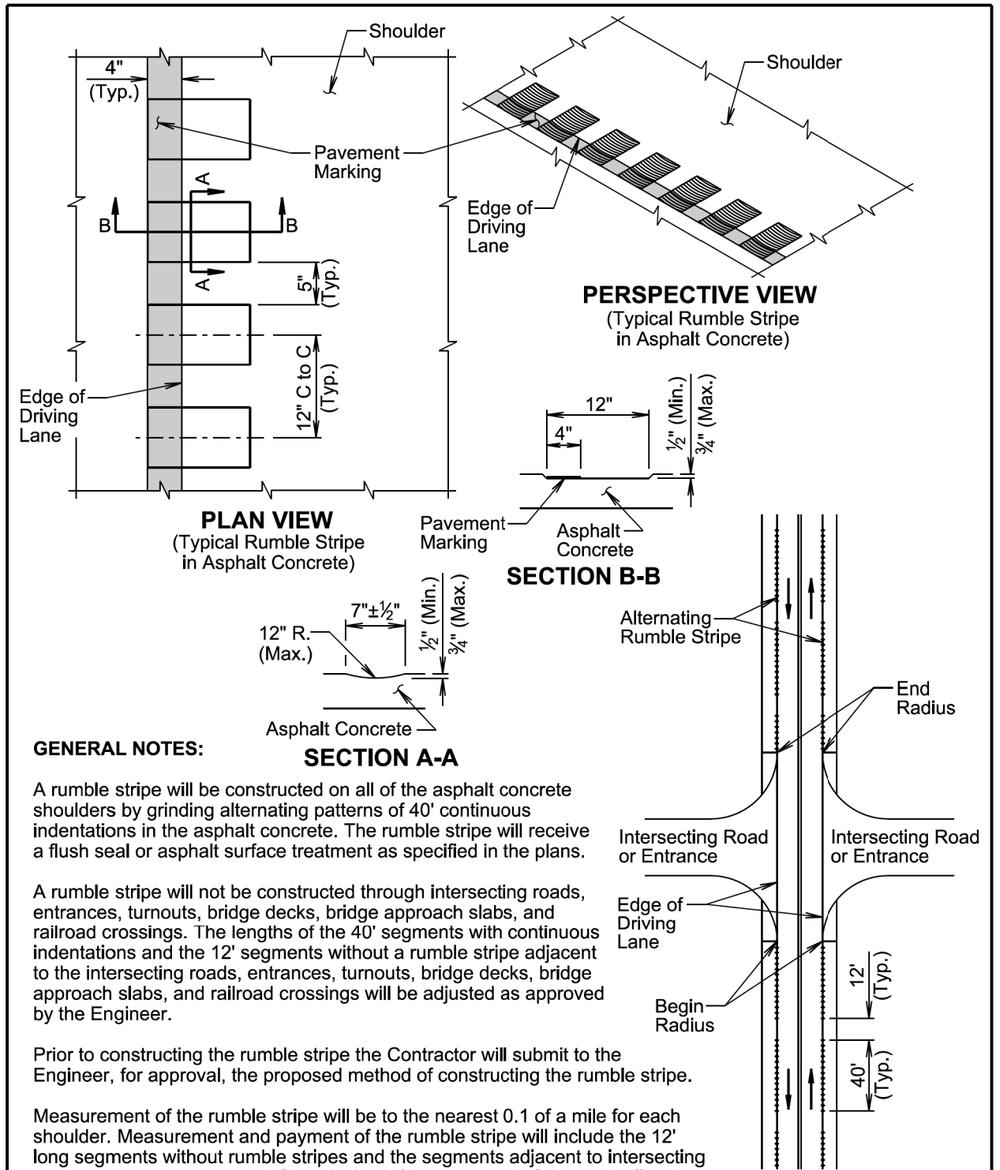


PLAN VIEW
(Entrance)

*** 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



GENERAL NOTES:

A rumble stripe will be constructed on all of the asphalt concrete shoulders by grinding alternating patterns of 40' continuous indentations in the asphalt concrete. The rumble stripe will receive a flush seal or asphalt surface treatment as specified in the plans.

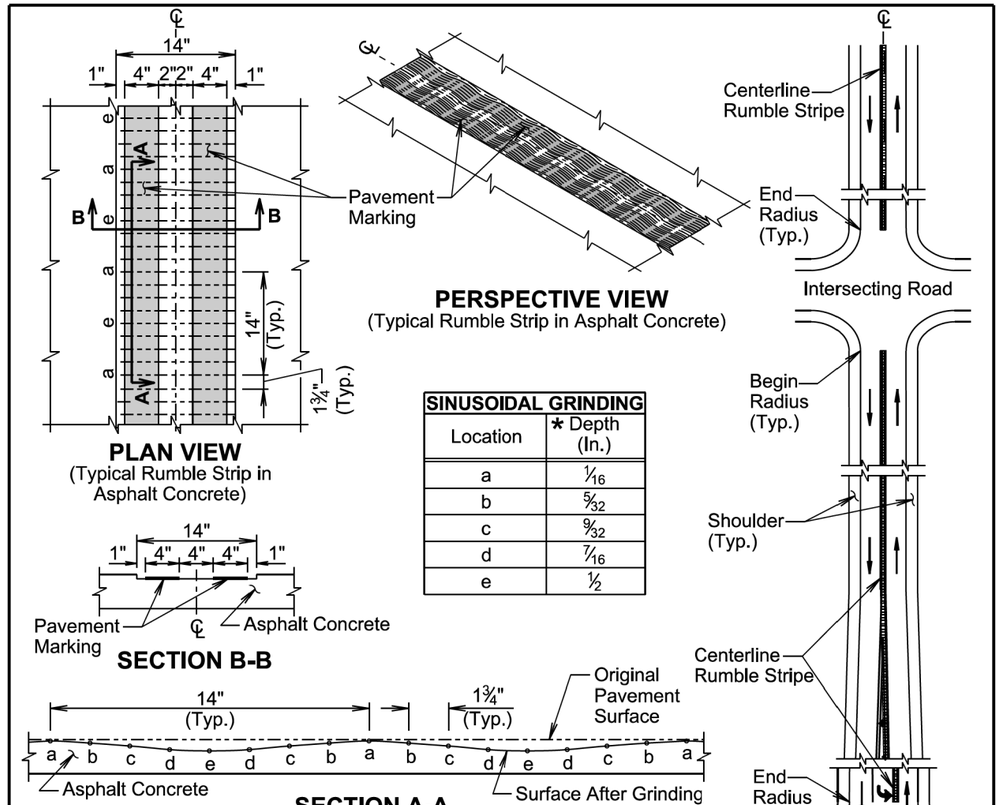
A rumble stripe will not be constructed through intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings. The lengths of the 40' segments with continuous indentations and the 12' segments without a rumble stripe adjacent to the intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

Measurement of the rumble stripe will be to the nearest 0.1 of a mile for each shoulder. Measurement and payment of the rumble stripe will include the 12' long segments without rumble stripes and the segments adjacent to intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings without rumble stripes. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind 12" Rumble Strip or Stripe in Asphalt Concrete".

September 14, 2019

Published Date: 2026	SDDOT	12" RUMBLE STRIPE IN ASPHALT CONCRETE ON NONDIVIDED HIGHWAY SHOULDERS	PLATE NUMBER 320.22
			Sheet 1 of 1



SINUSOIDAL GRINDING	
Location	* Depth (In.)
a	1/16
b	5/32
c	9/32
d	7/16
e	½

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.

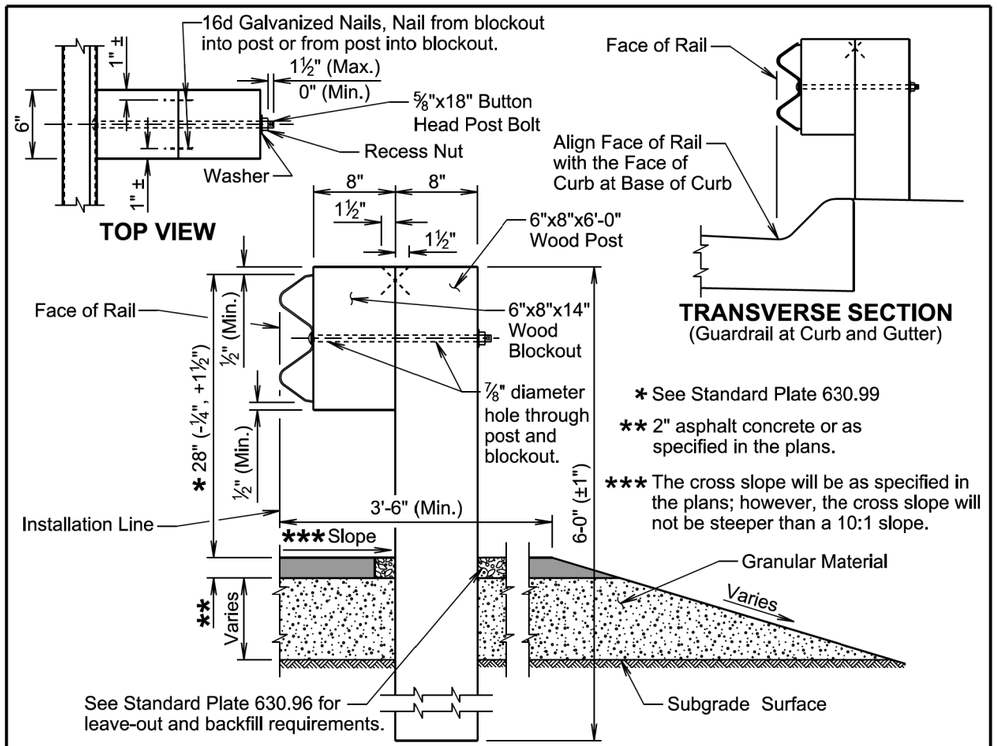
Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

* 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".

September 14, 2019

Published Date: 2026	SDDOT	SINUSOIDAL CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE	PLATE NUMBER 320.40
			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.

All W beam rail will be Type 1 and Class A (12 Ga.) unless specified otherwise in the plans.

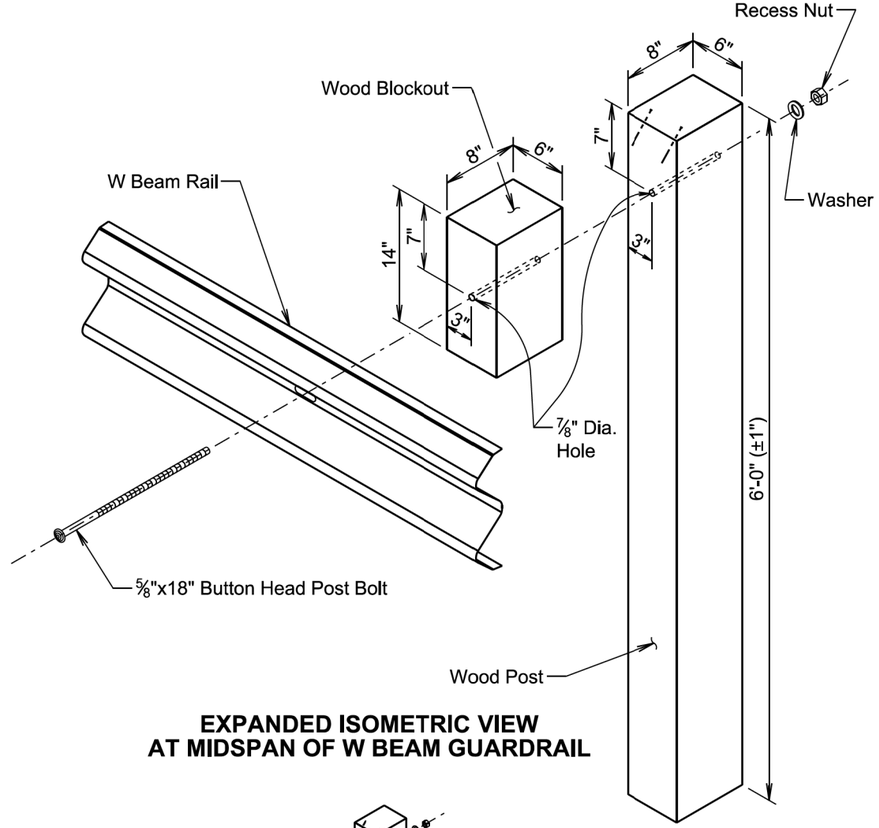
W beam rail section lengths may be 12'-6" and/or 25'-0". The combination of section lengths used will be compatible with the total length of rail per site as shown in the plans.

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.

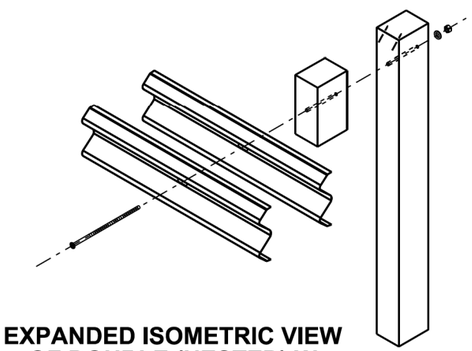
The top of post and top of block will have a true square cut. The top of block will be a maximum of ± ½ inch from the top of the post.

September 14, 2019

Published Date: 2026	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			Sheet 1 of 5



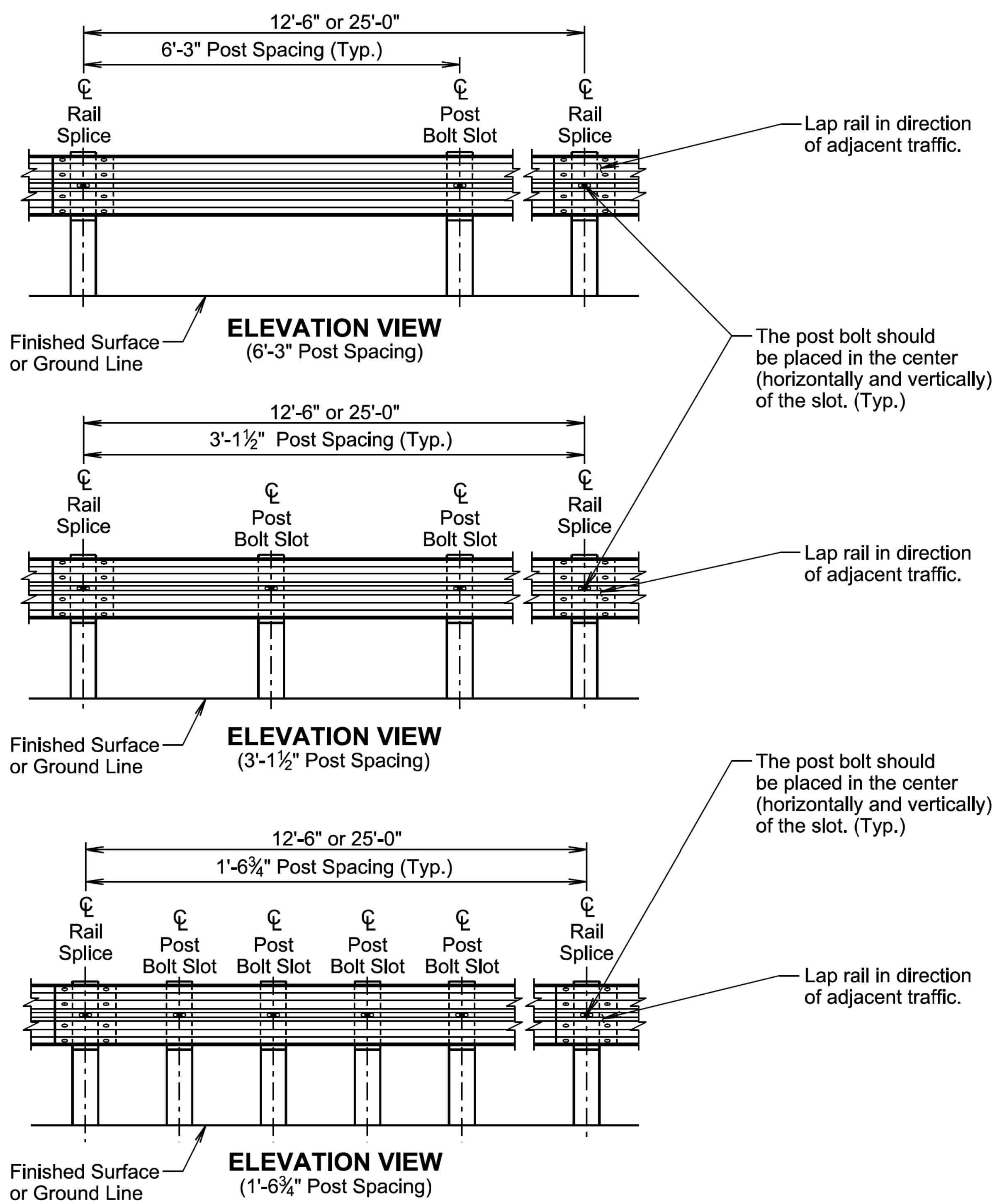
EXPANDED ISOMETRIC VIEW AT MIDSPAN OF W BEAM GUARDRAIL



EXPANDED ISOMETRIC VIEW OF DOUBLE (NESTED) W BEAM GUARDRAIL AT MIDSPAN
(For Information Only, Not to Scale)

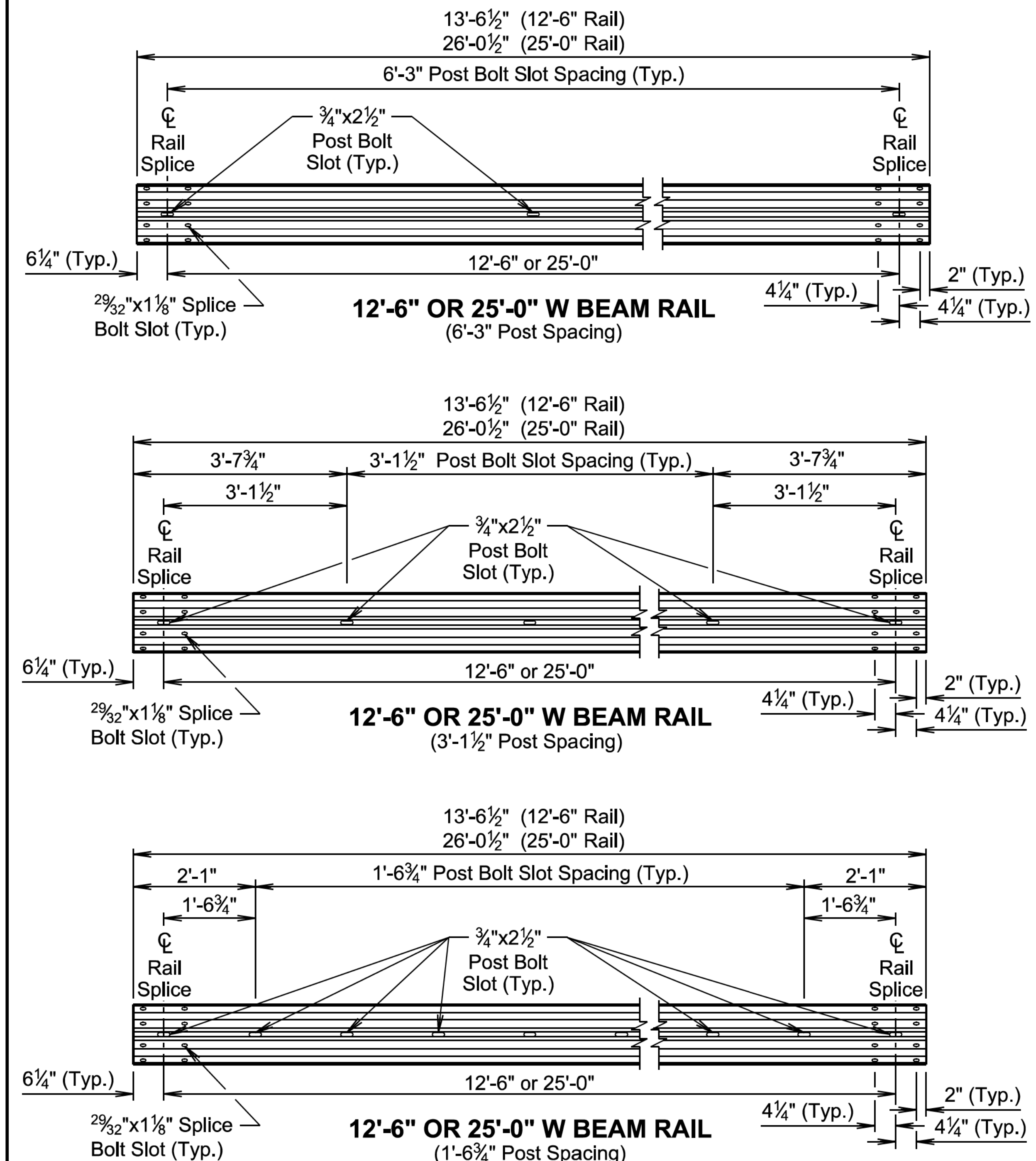
September 14, 2019

Published Date: 2026	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			Sheet 2 of 5



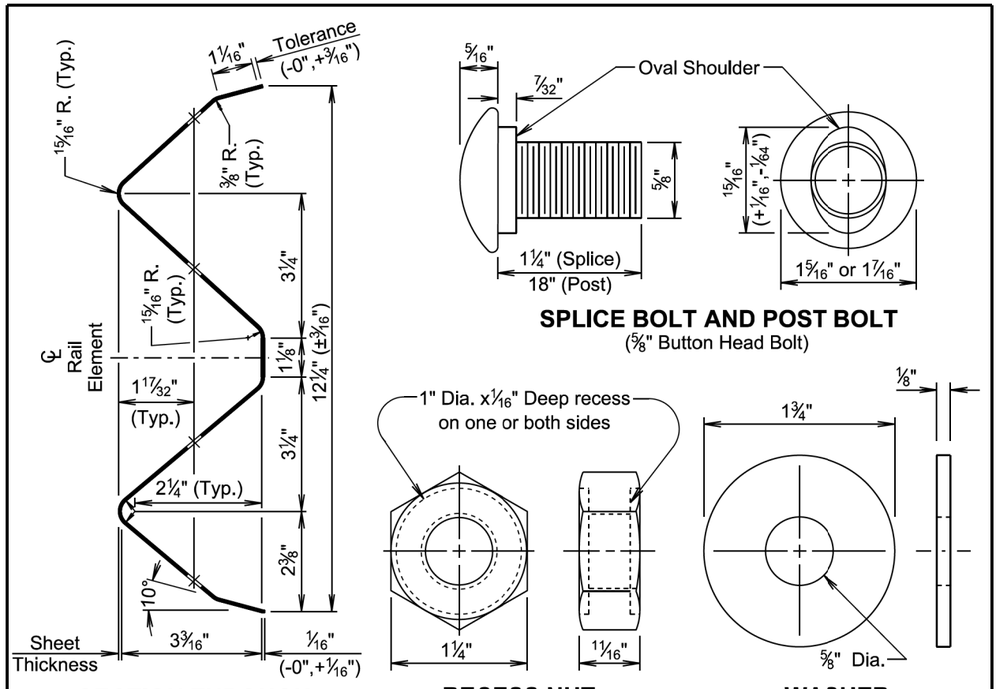
September 14, 2019

Published Date: 2026	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10 Sheet 3 of 5



September 14, 2019

Published Date: 2026	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10 Sheet 4 of 5

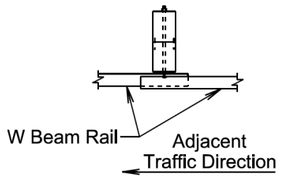


SECTION THROUGH W BEAM RAIL

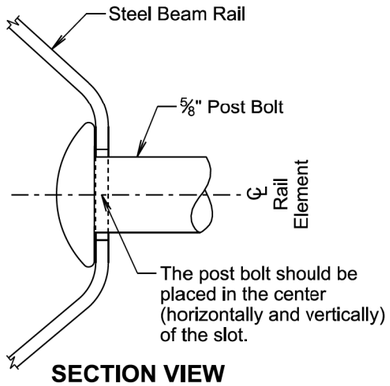
SPLICE BOLT AND POST BOLT
(5/8" Button Head Bolt)

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.)
(8 splice bolts and 8 recess nuts per splice, NO washers)



SECTION VIEW
(At Post Bolt)

September 14, 2019

Published Date: 2026	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			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.

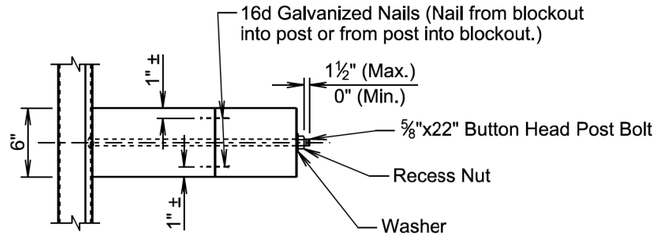
All W beam rail will be Type 1 and Class A (12 Ga.) unless specified otherwise in the plans.

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.

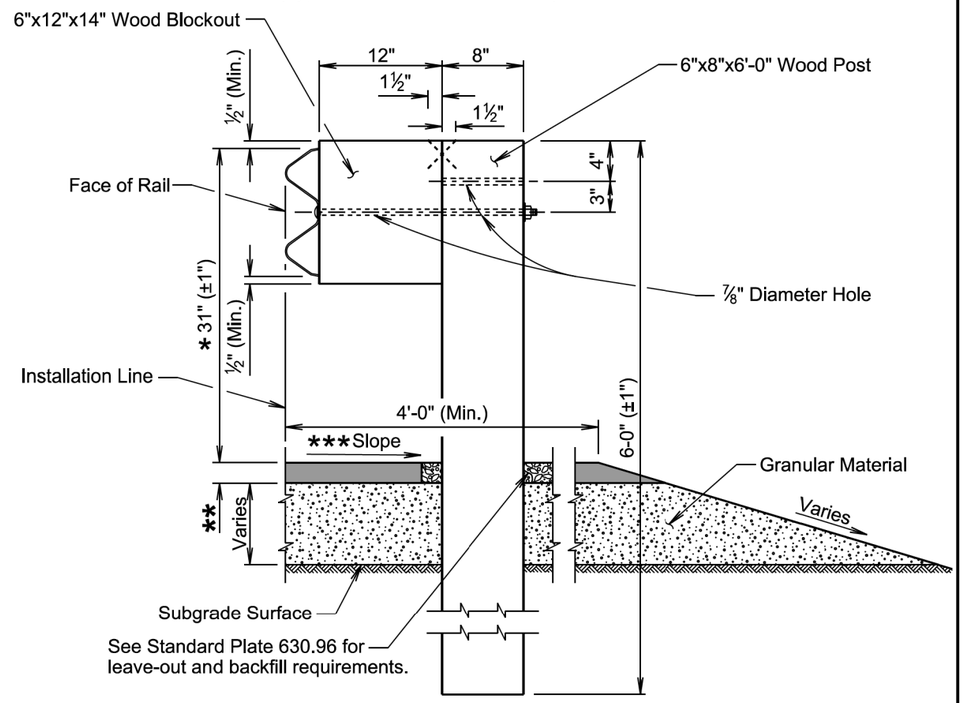
Slots in the rails will be provided as specified in the plans and by the manufacturer. A drilled hole through the rail is not allowed as a replacement for a slot. If the Contractor must create a slot, a cutting torch or plasma cutter is not allowed. The slot edges will be smooth and free of burrs or 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)



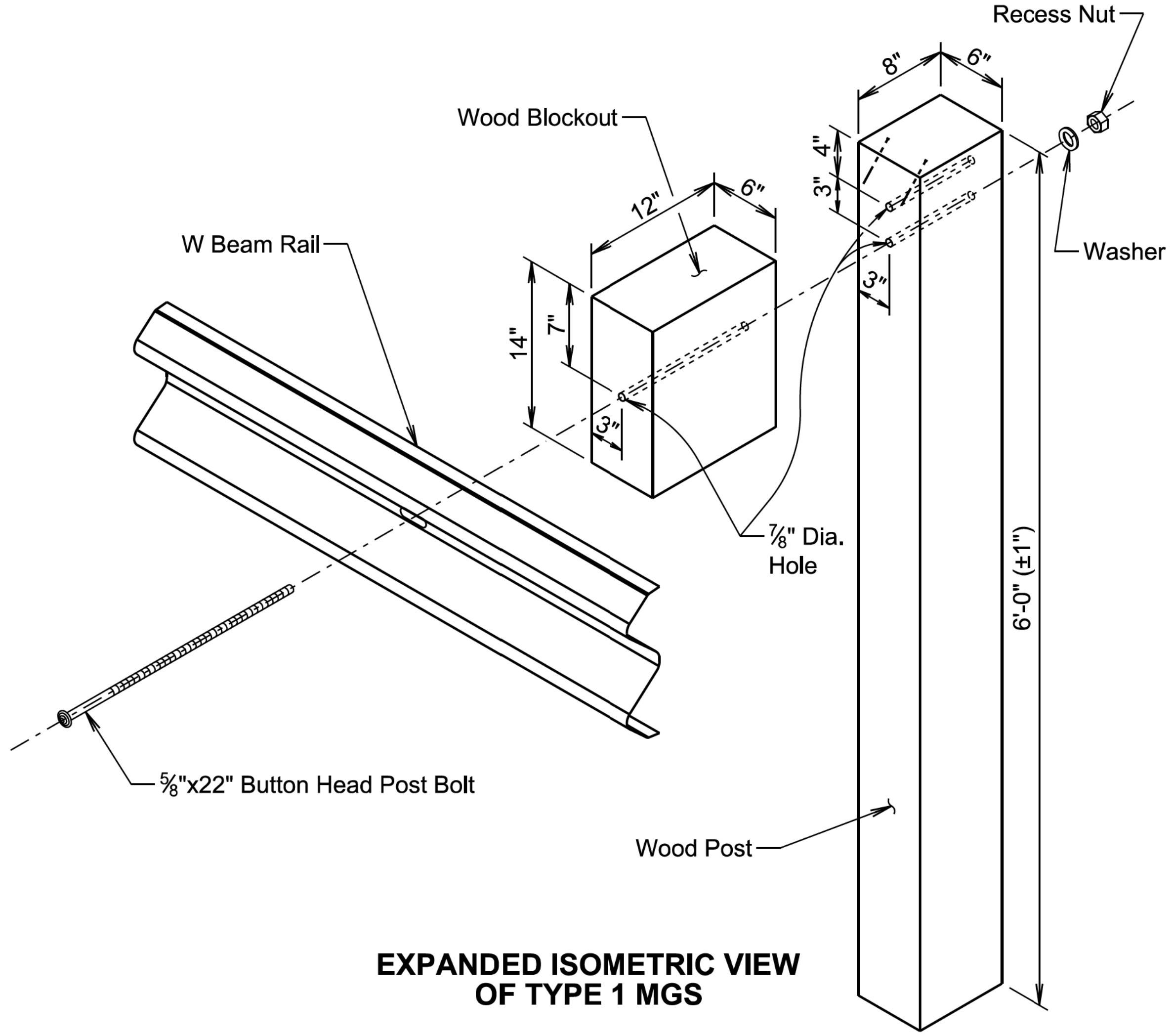
TRANSVERSE SECTION
(Type 1, 2, or 3 MGS Installation)

* See Standard Plate 630.99

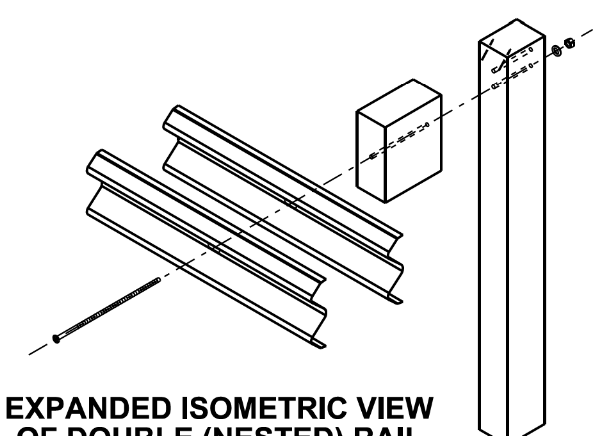
** 2" asphalt concrete or as specified in the plans.

*** 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

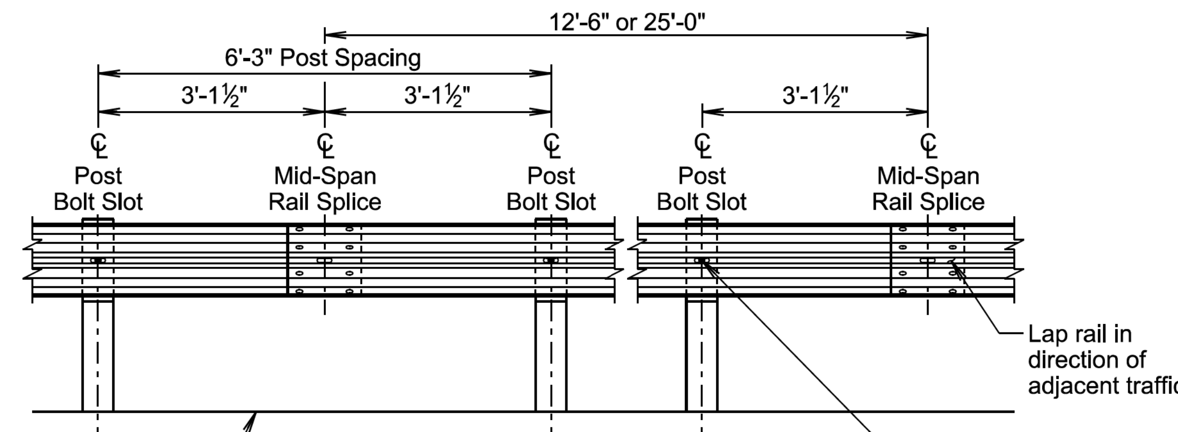


EXPANDED ISOMETRIC VIEW OF DOUBLE (NESTED) RAIL

(For Information Only, Not to Scale)

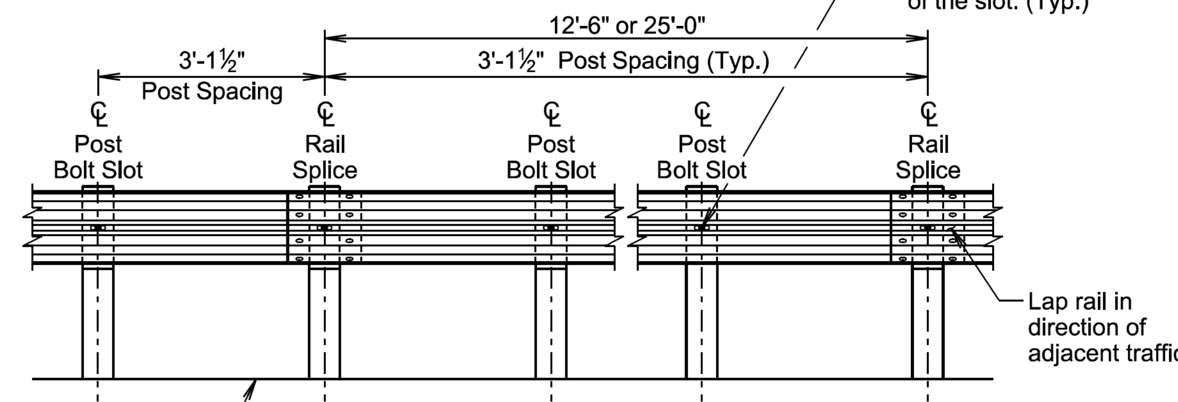
April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 3 of 6



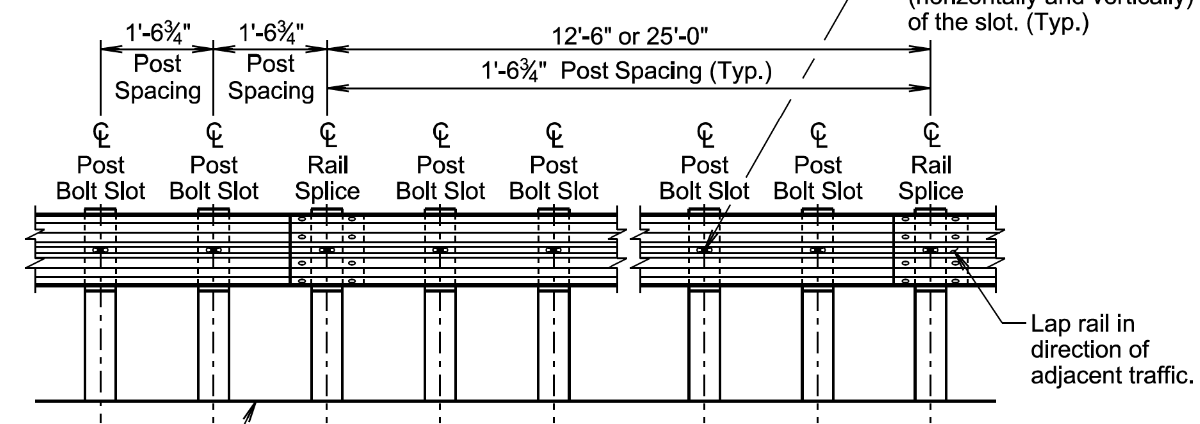
ELEVATION VIEW

(6'-3" Post Spacing)



ELEVATION VIEW

(3'-1½" Post Spacing)

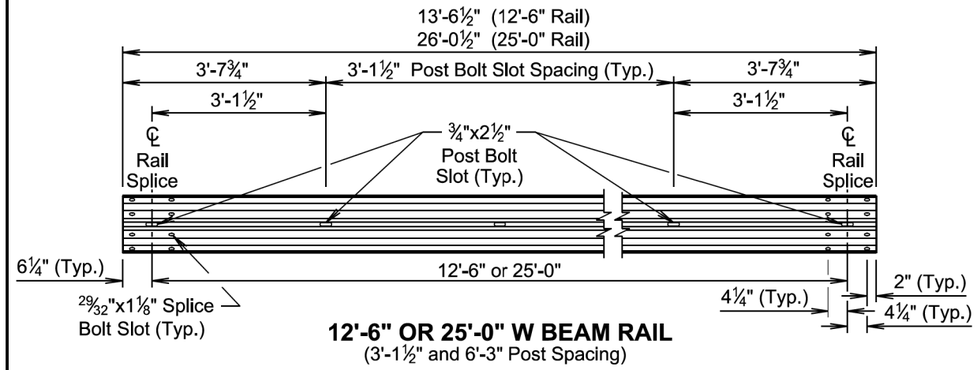


ELEVATION VIEW

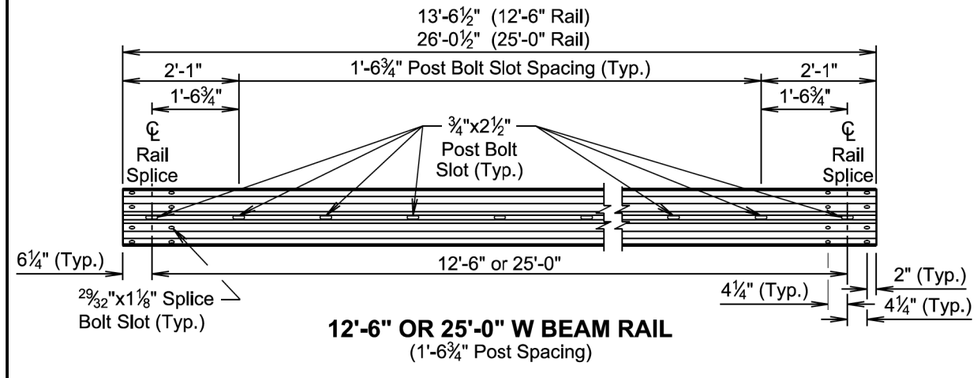
(1'-6¾" Post Spacing)

April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 4 of 6



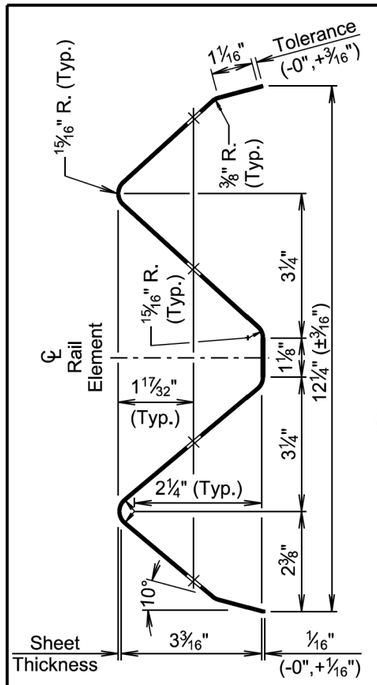
12'-6" OR 25'-0" W BEAM RAIL
(3'-1½" and 6'-3" Post Spacing)



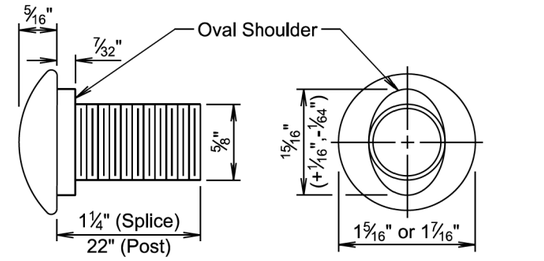
12'-6" OR 25'-0" W BEAM RAIL
(1'-6¾" Post Spacing)

April 8, 2025

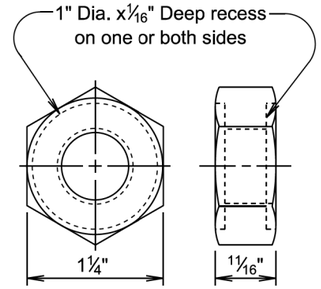
Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20	Sheet 5 of 6



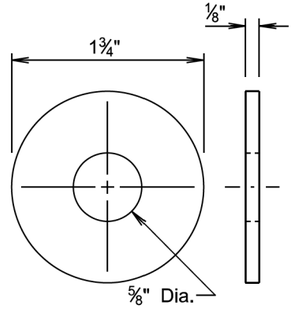
SECTION THROUGH W BEAM RAIL



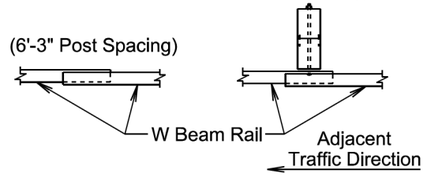
SPLICE BOLT AND POST BOLT
(⅝" Button Head Bolt)



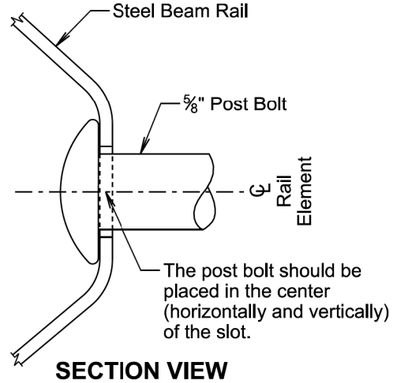
RECESS NUT
(At lap splices, the recess will be placed against the steel rail.)



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)

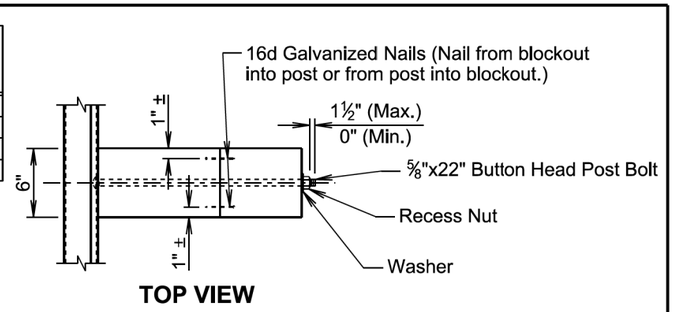


SECTION VIEW
(At Post Bolt)

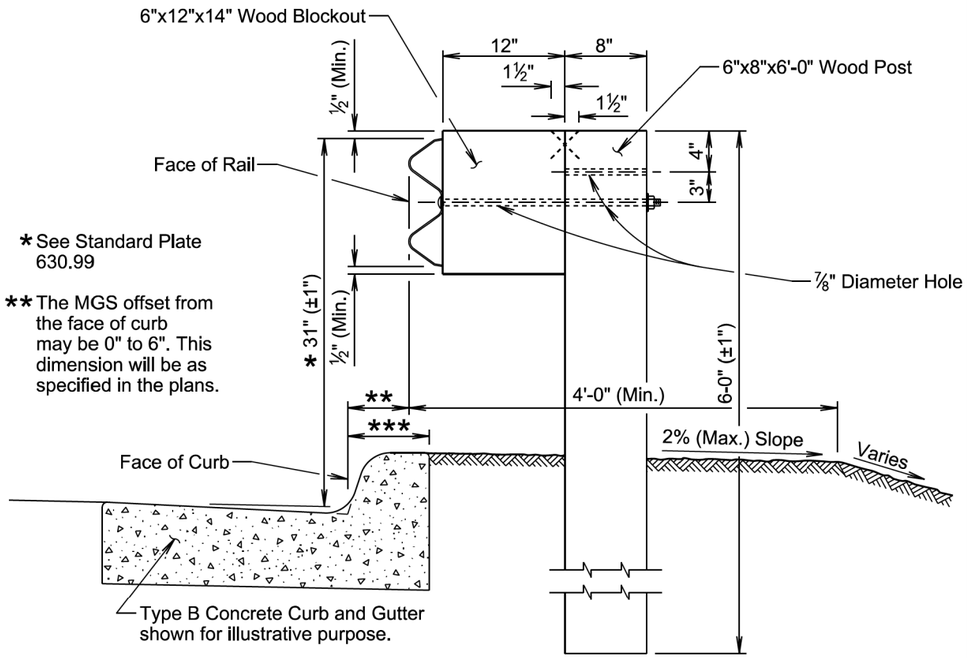
April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20	Sheet 6 of 6

CONCRETE CURB AND GUTTER TYPE	DIMENSION *** (in.)
B and BL	8
D	12
F and FL	10
R	11



TOP VIEW



TRANSVERSE SECTION

* See Standard Plate 630.99

** The MGS offset from the face of curb may be 0" to 6". This dimension will be as specified in the plans.

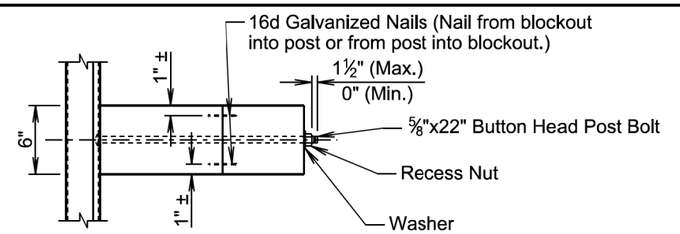
GENERAL NOTES:

The guardrail on this standard plate is Type 1 MGS. See standard plate 630.20 for specifications regarding Type 1 MGS.

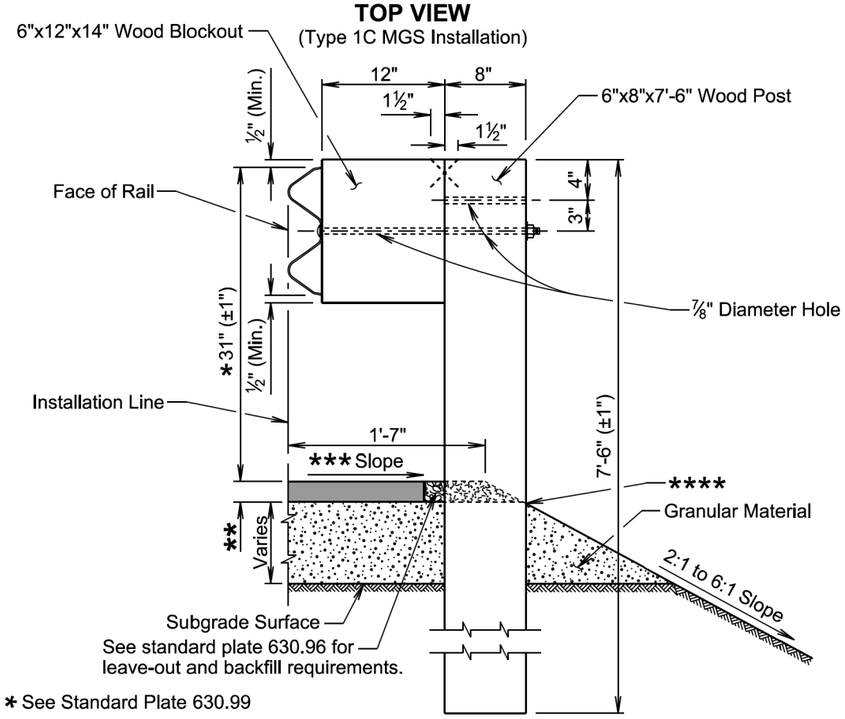
When PCC pavement or asphalt concrete pavement is adjacent to the post, see standard plate 630.96 for leave-out and backfill requirements.

April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS) AT CURB AND GUTTER	PLATE NUMBER 630.22 Sheet 1 of 1



TOP VIEW
(Type 1C MGS Installation)



* See Standard Plate 630.99

** 2" asphalt concrete or as specified in the plans.

TRANSVERSE SECTION
(Type 1C MGS Installation)

*** The cross slope will be as specified in the plans; however, the cross slope will not be steeper than a 10:1 slope.

**** For guardrail post installation purposes, the asphalt concrete sluff will end at this location. It will not be allowed to extend down the slope of the granular material.

GENERAL NOTES:

The guardrail on this standard plate is Type 1C MGS. See standard plate 630.20 for specifications regarding Type 1C MGS.

Topsoil is not shown in the transverse section drawing.

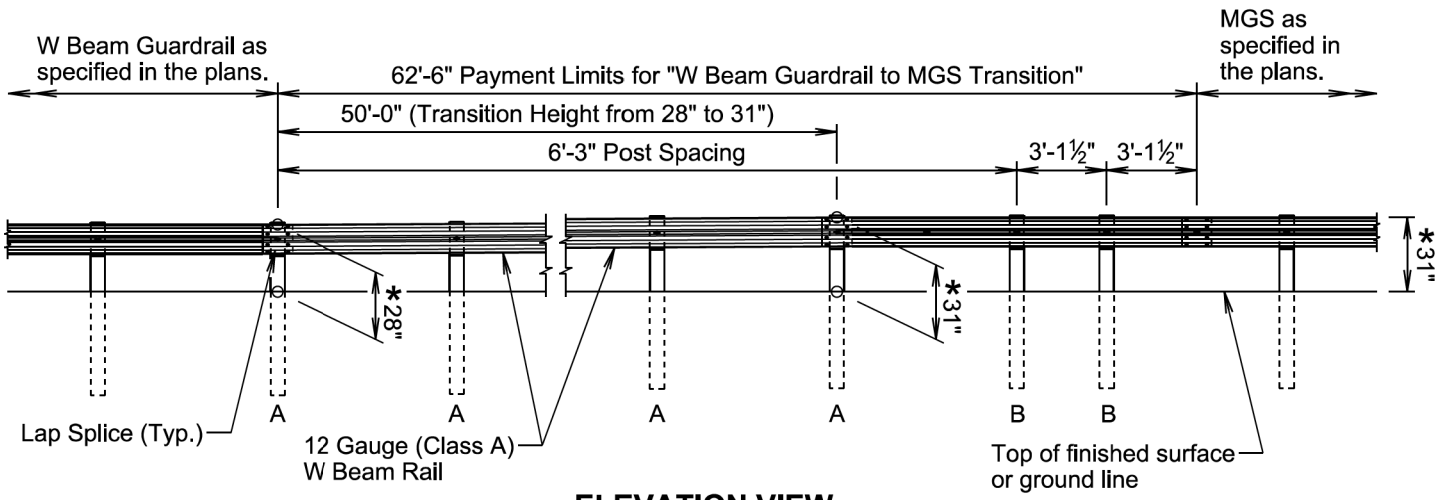
November 19, 2021

Published Date: 2026	SDDOT	TYPE 1C MIDWEST GUARDRAIL SYSTEM (MGS) INSTALLATION AT BREAK POINT OF SLOPE	PLATE NUMBER 630.25 Sheet 1 of 1

Published Date: 2026

SDDOT

W BEAM GUARDRAIL TO MGS (MIDWEST GUARDRAIL SYSTEM) TRANSITION



ELEVATION VIEW

A: 6"x8"x 6'-0" Wood Post and 6"x8"x14" Wood Blockout (See standard plate 630.10)
B: 6"x8"x 6'-0" Wood Post and 6"x12"x14" Wood Blockout (See standard plate 630.20)

* See standard plate 630.99

GENERAL NOTES:

All costs for furnishing and installing the W beam guardrail to MGS transition including labor, equipment, and materials which includes all rail sections, posts and blockouts, hardware, and incidentals will be included in the contract unit price per each for "W Beam Guardrail to MGS Transition".

PLATE NUMBER 630.64

Sheet 1 of 1

September 14, 2019

Published Date: 2026

SDDOT

MIDWEST GUARDRAIL SYSTEM (MGS) TRAILING END TERMINAL

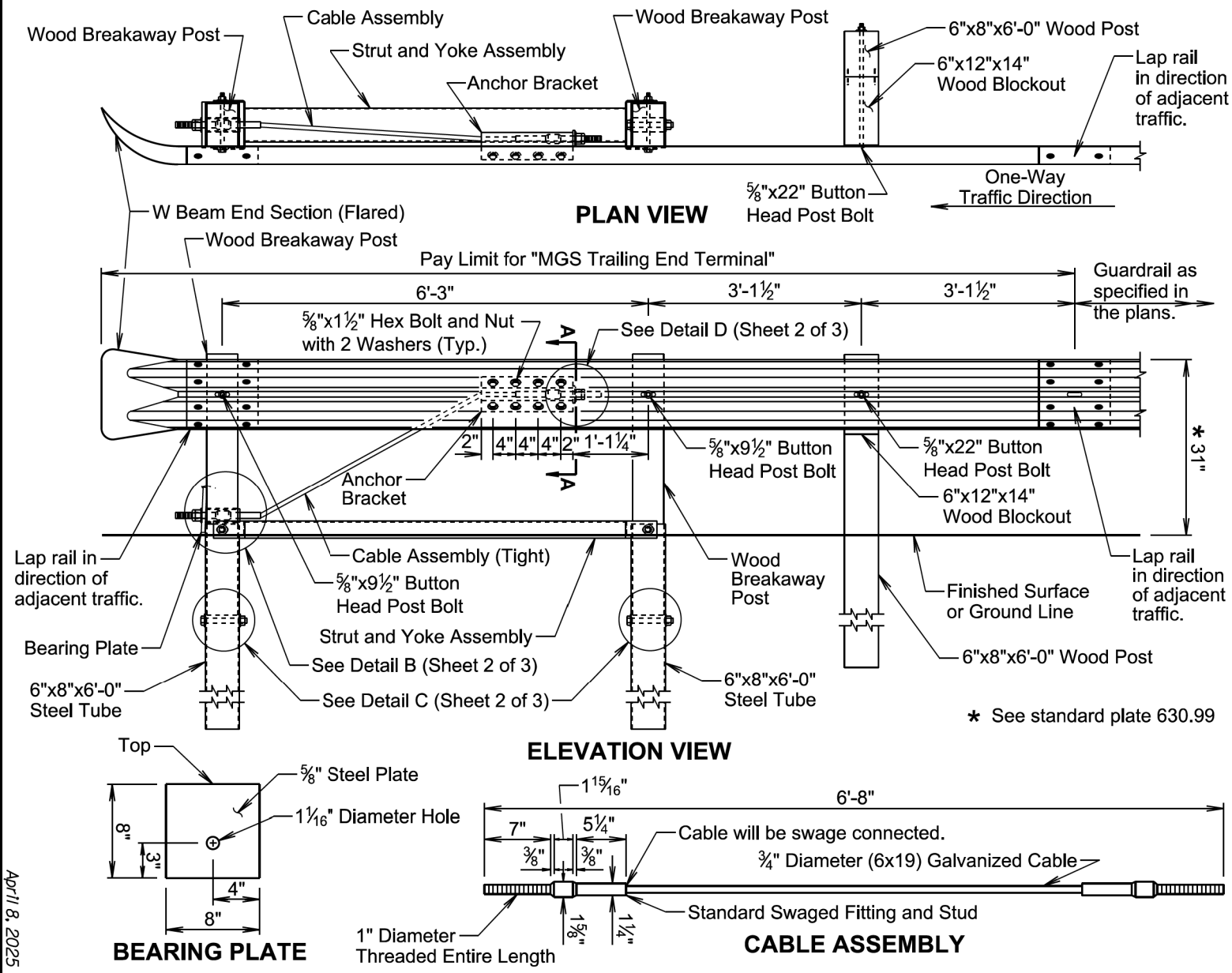


PLATE NUMBER 630.82

Sheet 1 of 3

April 8, 2025

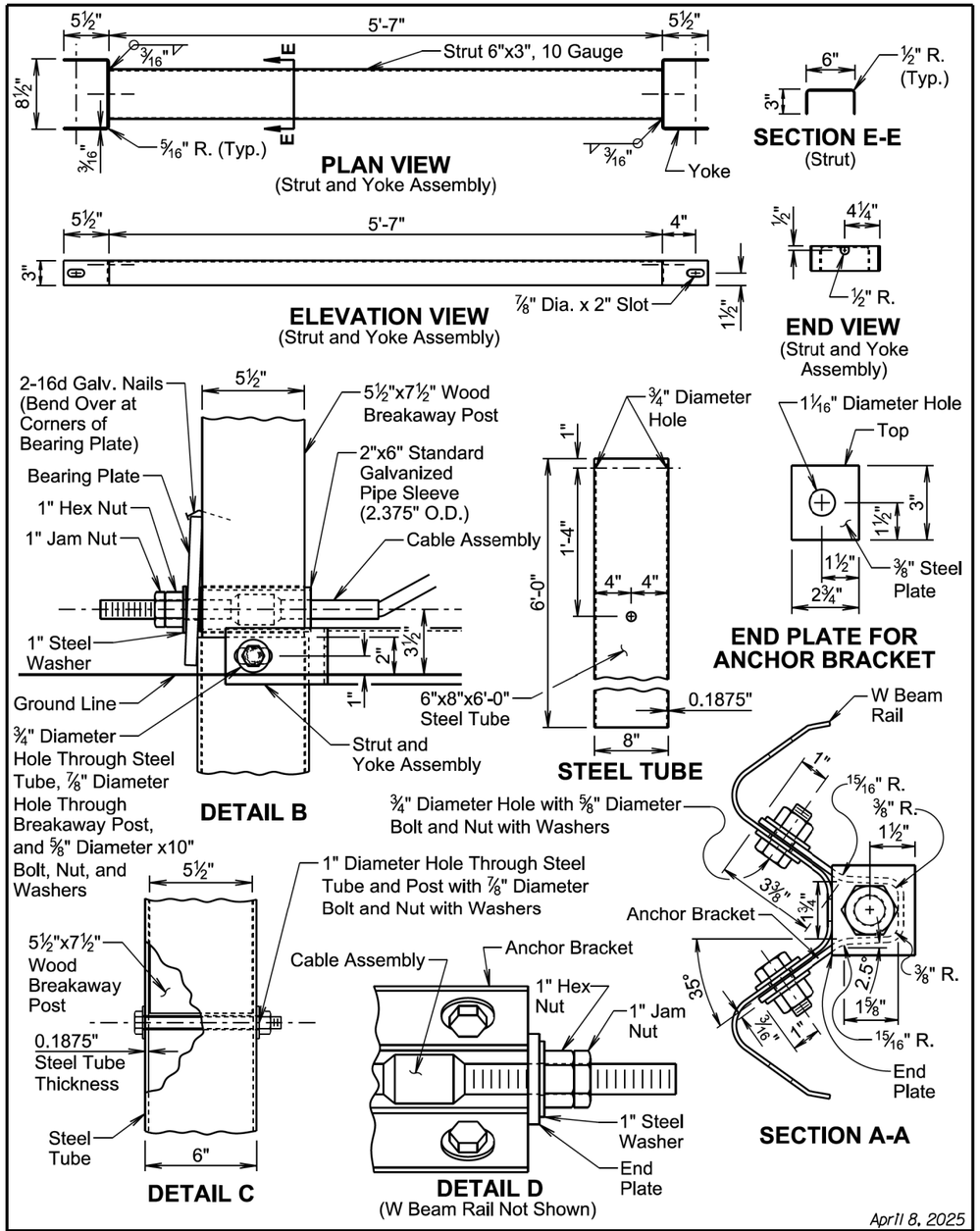
Plotting Date: 1/28/2026

SD DOT

PROJECT NH-PH 0385(50)96

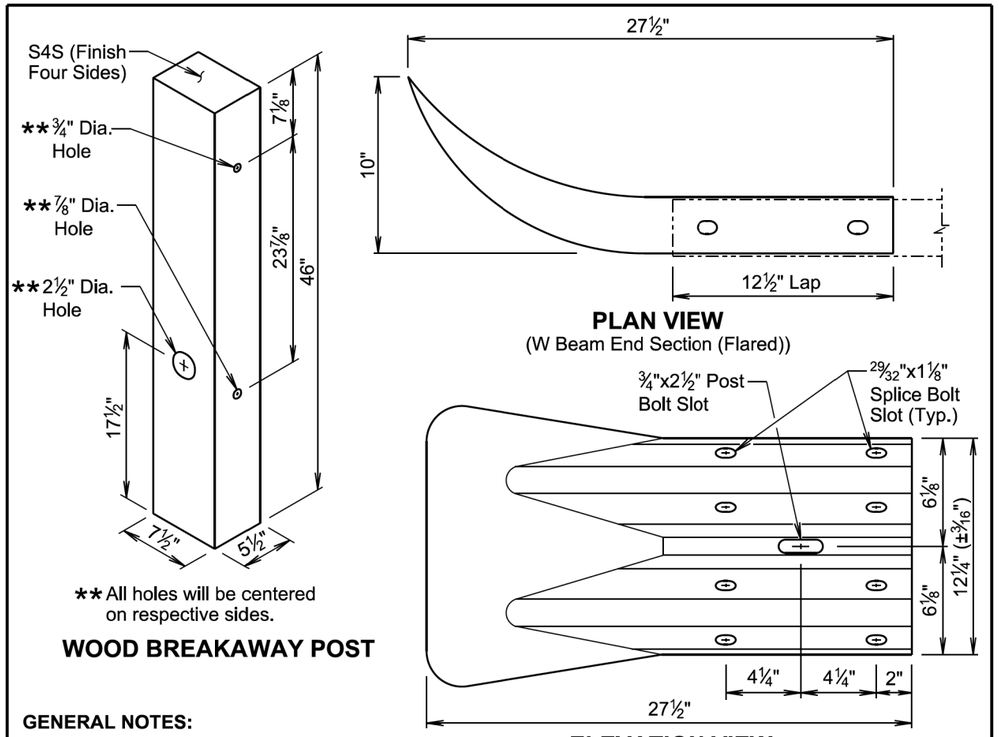
SECTION F

SHEET 35/42



April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS) TRAILING END TERMINAL	PLATE NUMBER 630.82
			Sheet 2 of 3



GENERAL NOTES:

The MGS trailing end terminal will only be used in a one-way traffic situation on the downstream traffic flow end.

W beam end section (flared) will be 12 gauge.

The cable will be ¾", Type II, with Class A coating in conformance with AASHTO M30.

The steel tube will meet the requirements of ASTM A500, Grade B or C, and will be galvanized after fabrication in accordance with the requirements of AASHTO M111.

All hardware will be galvanized in accordance with ASTM A153.

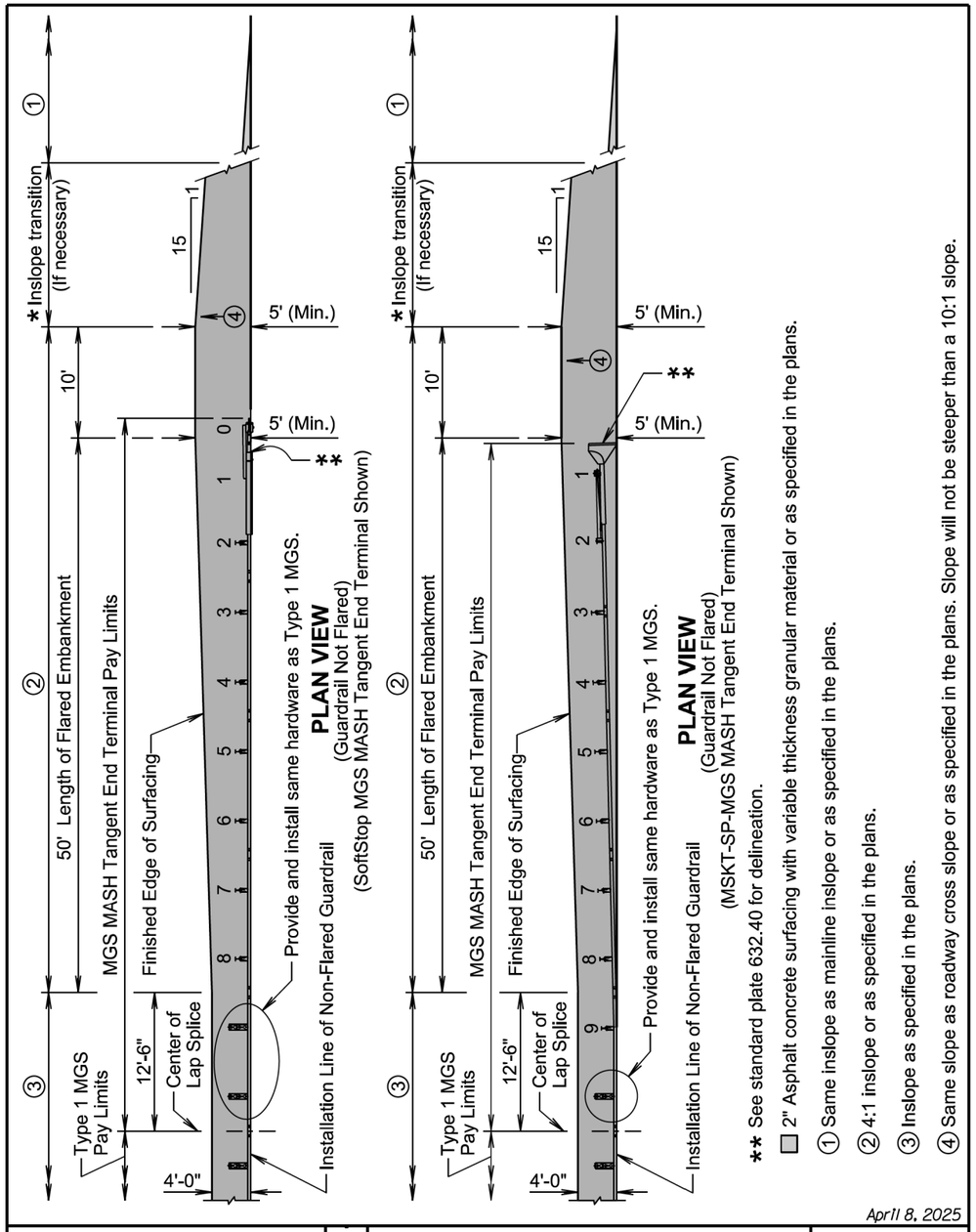
The anchor bracket, strut and yoke assembly, and bearing plate will be fabricated from steel that meets ASTM A36 Specifications. They will be galvanized after fabrication in accordance with ASTM A123.

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 constructing the MGS trailing end terminal including labor, equipment, materials which includes W beam rail section, two wood breakaway posts, steel tubes, strut and yoke assembly, cable assembly, bearing plate, anchor bracket, W beam end section (flared), one MGS wood post and blockout, hardware, and incidentals will be included in the contract unit price per each for "MGS Trailing End Terminal".

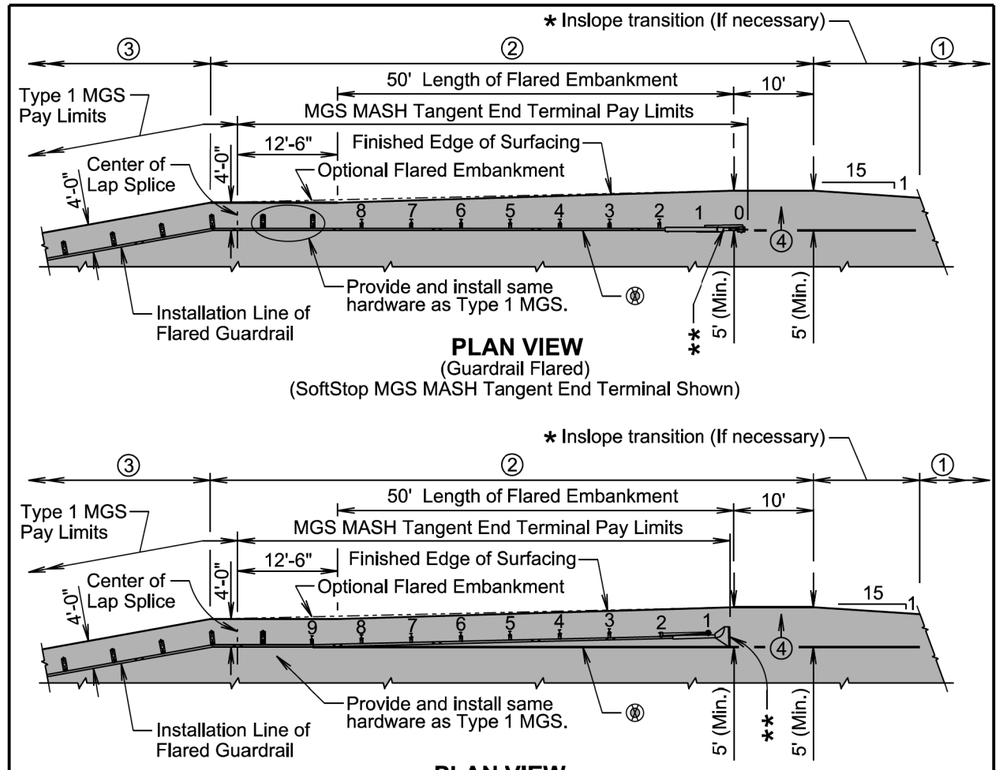
April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS) TRAILING END TERMINAL	PLATE NUMBER 630.82
			Sheet 3 of 3



April 8, 2025

Published Date: 2026	SDDOT	EMBANKMENT, SURFACING, AND PAYMENT LIMITS FOR MGS MASH TANGENT END TERMINAL	PLATE NUMBER 630.89
			Sheet 1 of 3



GENERAL NOTES:

The MGS MASH tangent end terminals above are for illustrative purpose only. Pay limit length of the MGS MASH tangent end terminal is 62'-6".

* The length of inslope transition varies with the amount of change between inslopes. The length of the transition will change 100' 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 100'. If the inslope changes from a 6:1 to a 4:1 the length of the inslope transition would be 200'.

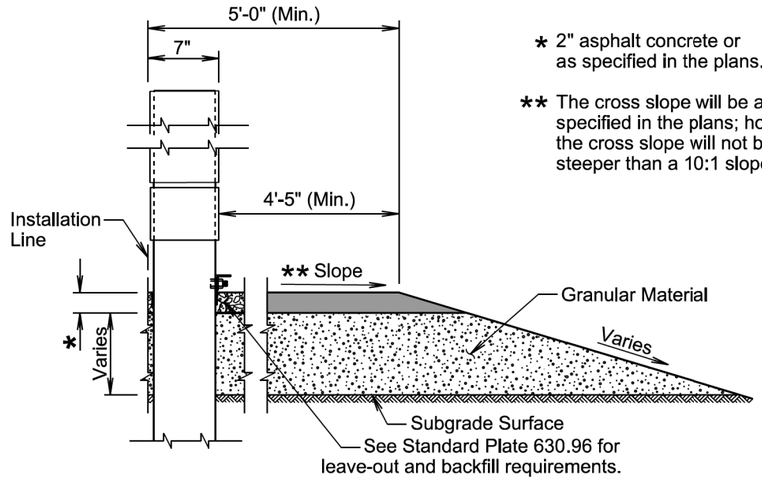
Ⓚ The installation reference line for MGS MASH tangent end terminals will always be parallel to the roadway.

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

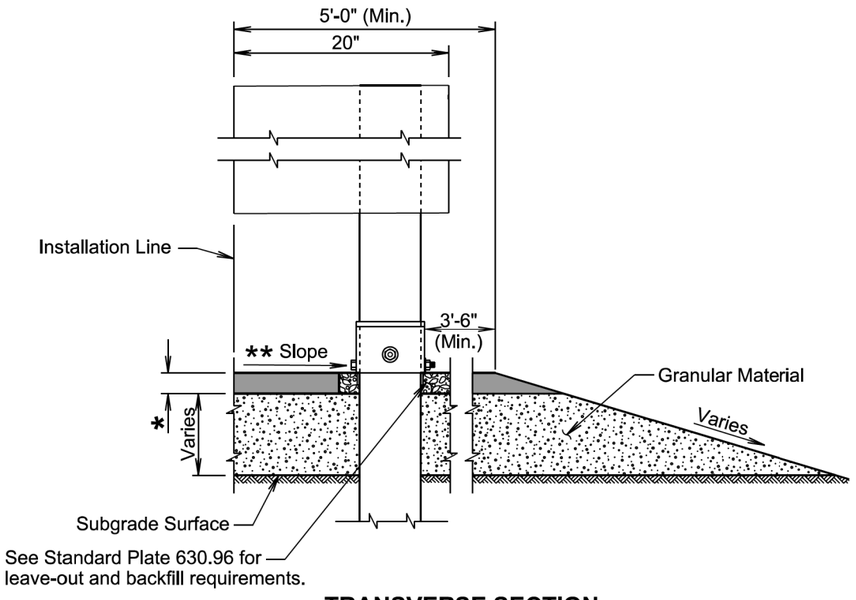
Published Date: 2026	SDDOT	EMBANKMENT, SURFACING, AND PAYMENT LIMITS FOR MGS MASH TANGENT END TERMINAL	PLATE NUMBER 630.89
			Sheet 2 of 3



* 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.

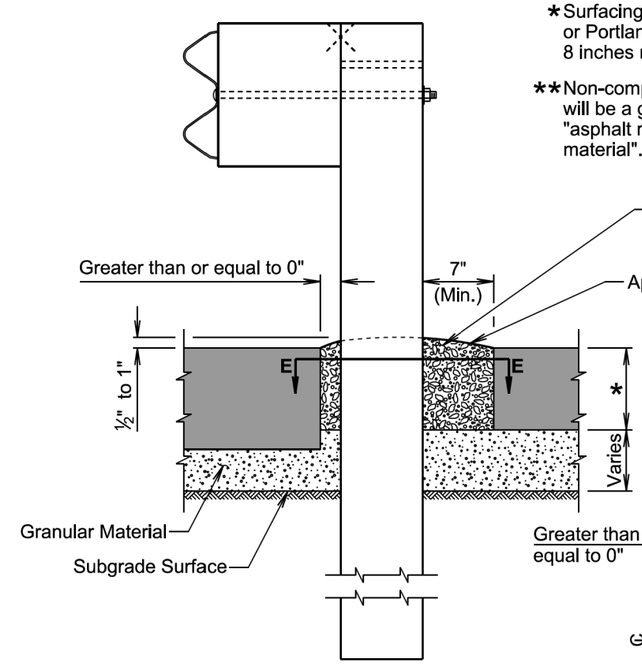
TRANSVERSE SECTION
(SoftStop MGS MASH Tangent End Terminal Shown)



TRANSVERSE SECTION
(MSKT-SP-MGS MASH Tangent End Terminal Shown)

April 8, 2025

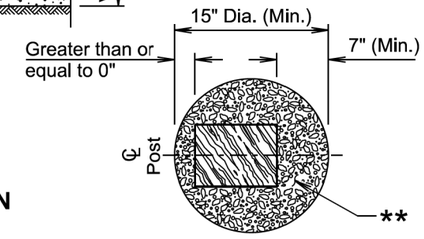
Published Date: 2026	SDDOT	EMBANKMENT, SURFACING, AND PAYMENT LIMITS FOR MGS MASH TANGENT END TERMINAL	PLATE NUMBER 630.89 Sheet 3 of 3



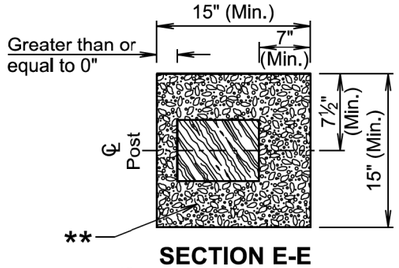
* Surfacing Material (Asphalt Concrete or Portland Cement Concrete) 8 inches maximum

** Non-compacted backfill material will be a granular material or "asphalt mix and granular base material".

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)



SECTION E-E
(Square 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.

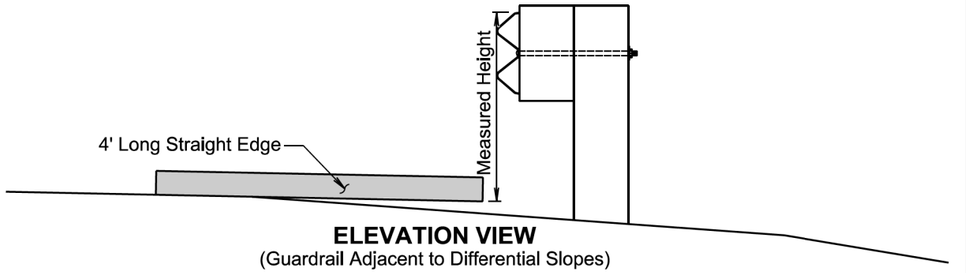
The backfill material will be mounded ½ inch to 1 inch above the top of the adjacent surfacing as illustrated above.

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.

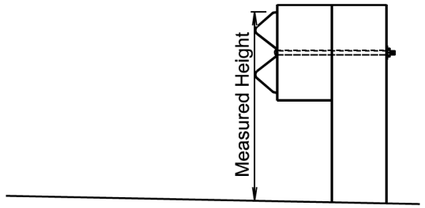
All costs for constructing the leave-out including labor, equipment, and materials which includes the backfill material and tack coat will be incidental to the contract unit price for the respective guardrail contract item.

November 19, 2021

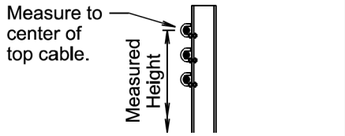
Published Date: 2026	SDDOT	GUARDRAIL POST INSTALLED IN ASPHALT CONCRETE OR PORTLAND CEMENT CONCRETE	PLATE NUMBER 630.96 Sheet 1 of 1



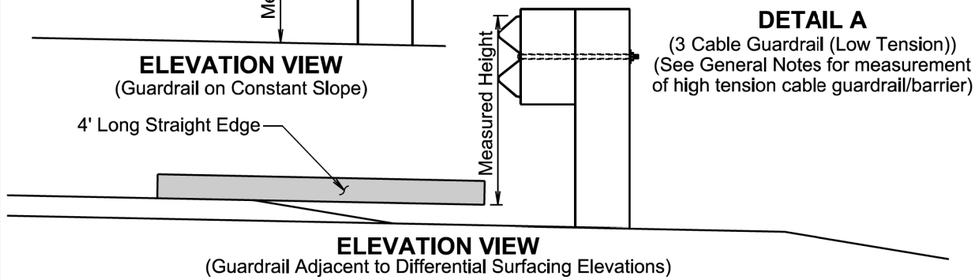
ELEVATION VIEW
(Guardrail Adjacent to Differential Slopes)



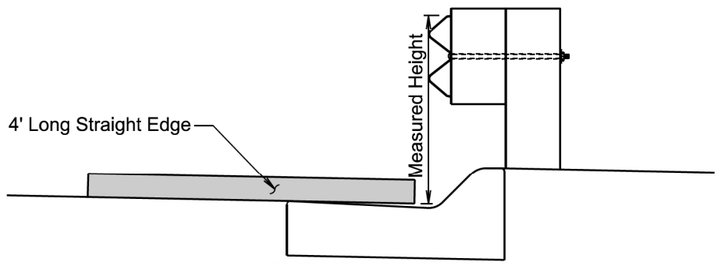
ELEVATION VIEW
(Guardrail on Constant Slope)



DETAIL A
(3 Cable Guardrail (Low Tension))
(See General Notes for measurement of high tension cable guardrail/barrier)



ELEVATION VIEW
(Guardrail Adjacent to Differential Surfacing Elevations)



ELEVATION VIEW
(Guardrail at Curb and Gutter)

GENERAL NOTES:

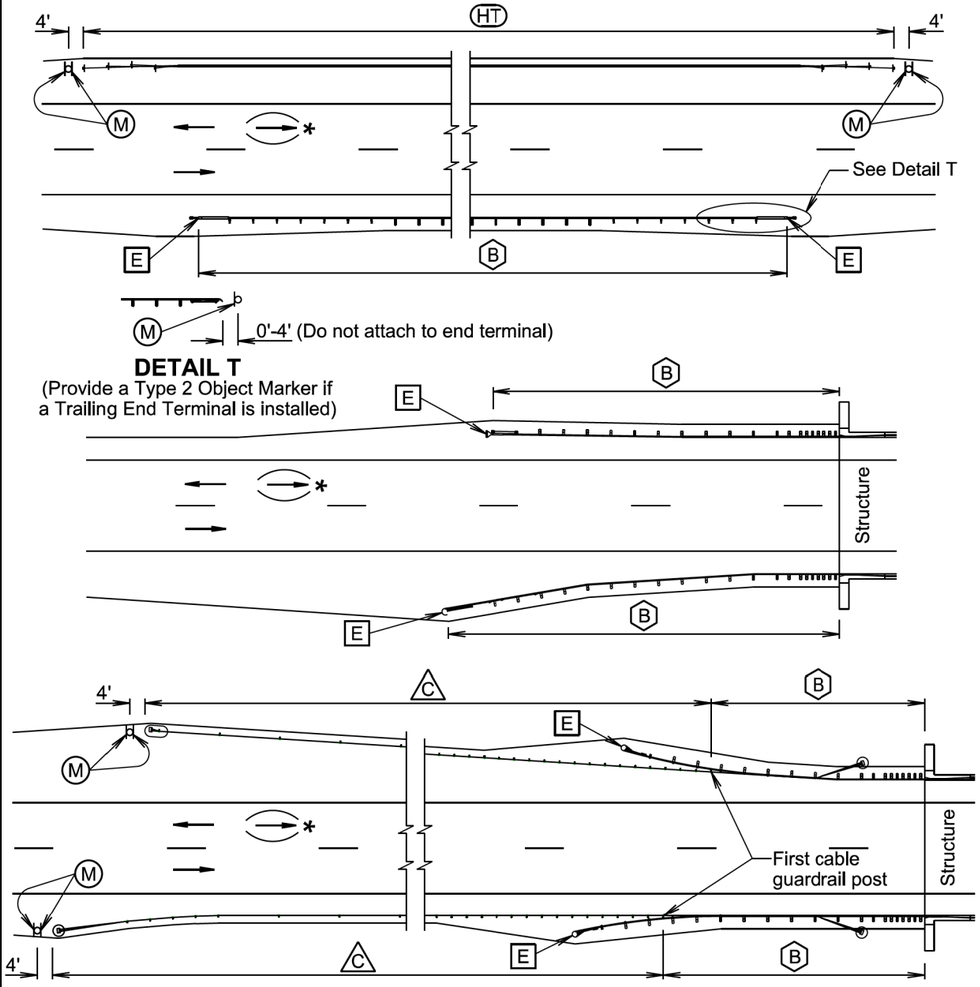
The W Beam guardrail shown is for illustrative purpose. The guardrail height for all types of guardrail systems except for high tension cable guardrail/barrier will be measured in accordance with this standard plate.

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



PLAN VIEW
(Typical Guardrail Layouts)

- (B) Steel Beam Guardrail Delineation
- [E] Guardrail End Terminal Object Marker
- (C) 3 Cable Guardrail (Low Tension) Delineation
- (HT) High Tension Cable Guardrail Delineation
- (M) Type 2 Object Marker

*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.

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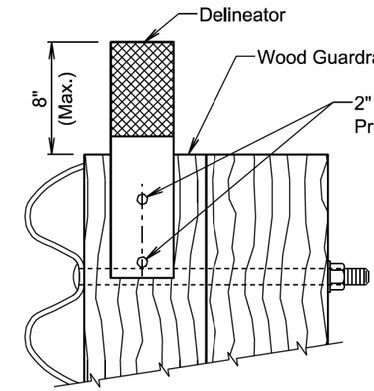
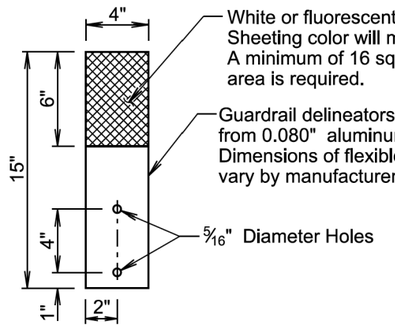
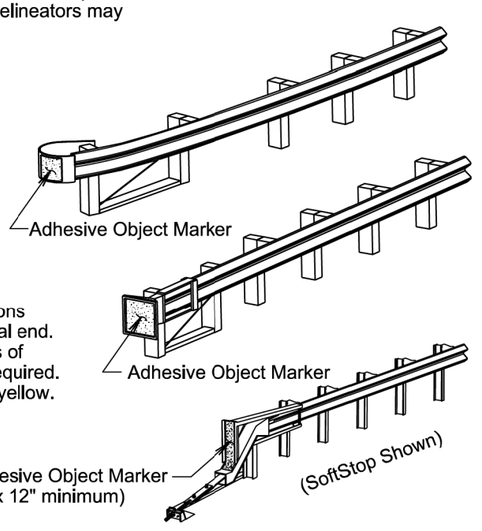
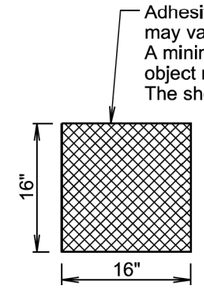


(B) STEEL BEAM GUARDRAIL DELINEATION



DELINEATOR
(For Steel Beam Guardrail)





[E] GUARDRAIL END TERMINAL OBJECT MARKER

ADHESIVE OBJECT MARKER

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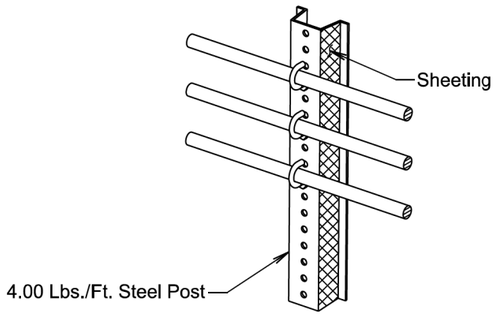
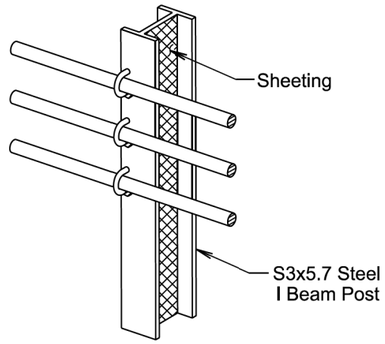


Ⓒ 3 CABLE GUARDRAIL (LOW TENSION) DELINEATION



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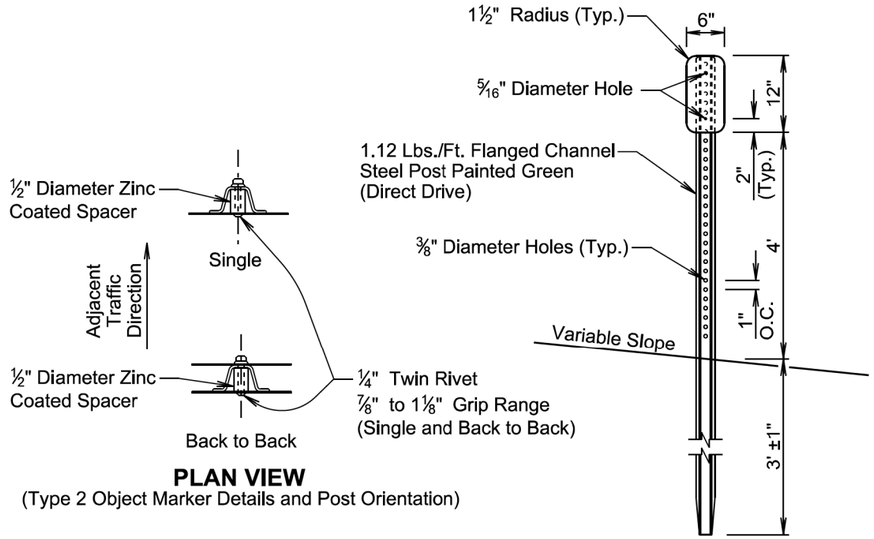

PLAN VIEW
(Type 2 Object Marker Details and Post Orientation)

ELEVATION VIEW
Ⓜ (Type 2 Object Marker)
(For Marking 3 Cable Guardrail (Low Tension) Anchor, High Tension Cable Guardrail Anchor, and Trailing End Terminal)

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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.

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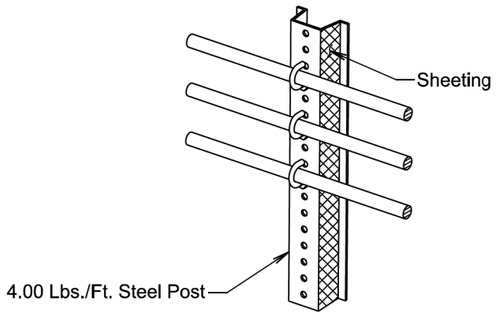
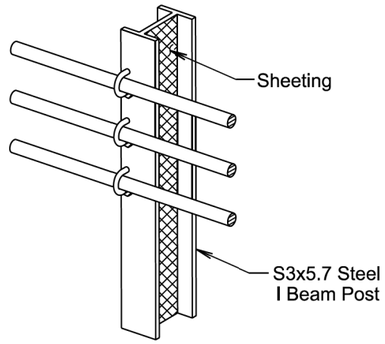
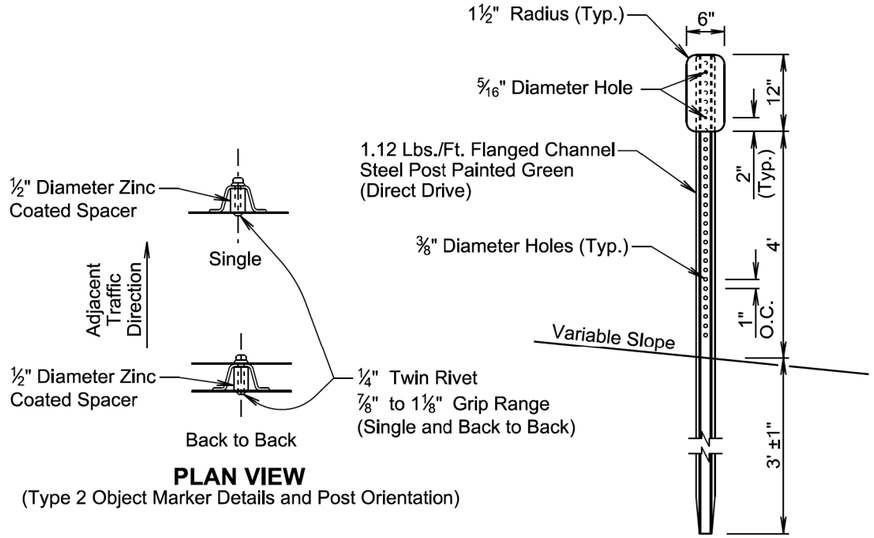


Ⓒ 3 CABLE GUARDRAIL (LOW TENSION) DELINEATION



Ⓒ 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)

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			Sheet 3 of 4

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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.

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