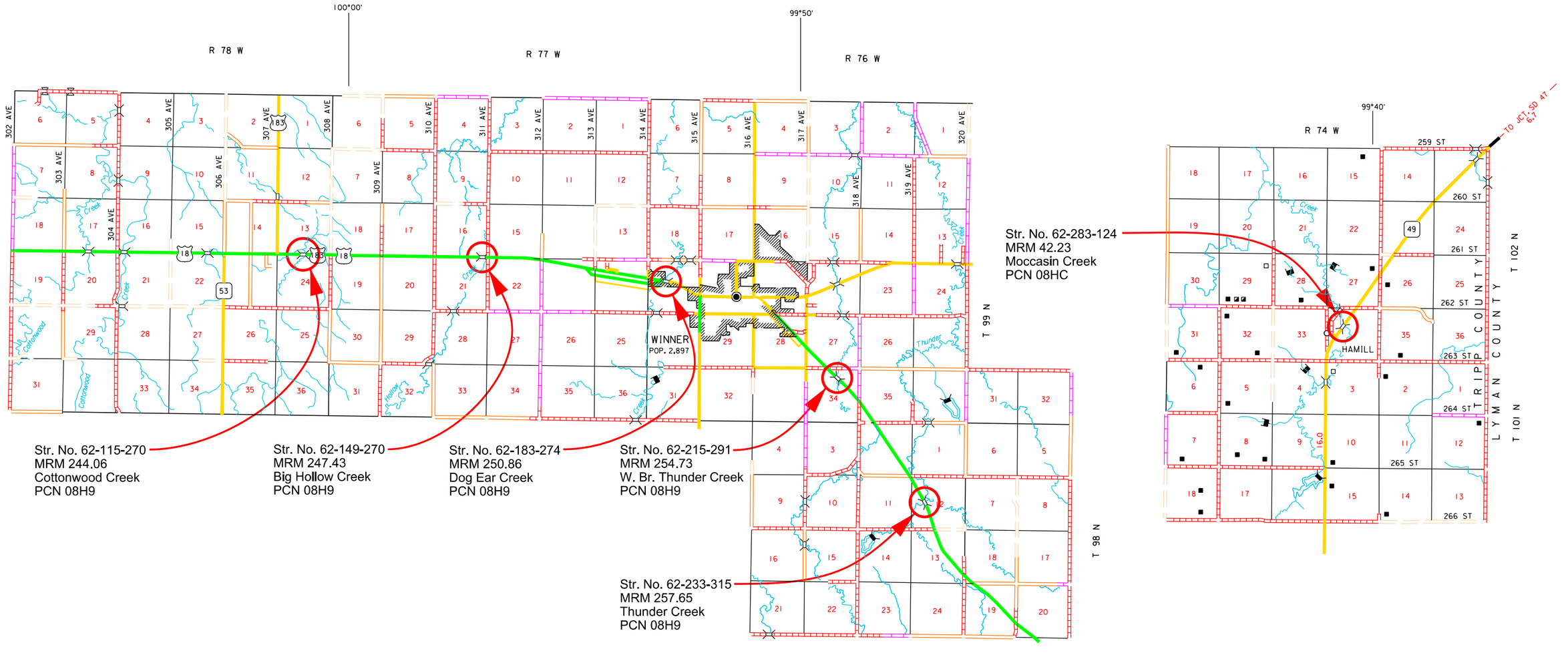
Section F: Surfacing Plans

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F1	F39

Plotting Date: 02/07/2025

INDEX OF SHEETS



SECTION F – ESTIMATE OF QUANTITIES

PCN 08H9 – Strs. No. 62-233-315, 62-215-291, 62-149-270, 62-115-270, 62-183-274

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E0300	Remove Concrete Curb and/or Gutter	49	Ft
110E0730	Remove Beam Guardrail	1,068.8	Ft
110E0810	Remove Rubrail	96.0	Ft
110E1010	Remove Asphalt Concrete Pavement	2,164.0	SqYd
110E1140	Remove Concrete Sidewalk	26.1	SqYd
120E0010	Unclassified Excavation	409	CuYd
120E3000	Placing Embankment	10	CuYd
260E1010	Base Course	232.2	Ton
260E1030	Base Course, Salvaged	340.4	Ton
270E0022	Salvage Asphalt Mix Material	137.2	Ton
270E0110	Salvage and Stockpile Granular Material	340.4	Ton
270E0230	Haul and Stockpile Asphalt Mix Material	137.2	Ton
320E1200	Asphalt Concrete Composite	191.8	Ton
380E0060	8.5" Nonreinforced PCC Pavement	486.2	SqYd
380E6000	Dowel Bar	231	Each
380E6110	Insert Steel Bar in PCC Pavement	56	Each
630E0110	Straight Double Class A Thrie Beam Guardrail with Wood Posts	12.5	Ft
630E0500	Type 1 MGS	612.5	Ft
630E1010	Straight Class A W Beam Guardrail with Wood Posts	75.0	Ft
630E1015	Straight Class A W Beam Guardrail with CRT Posts	12.5	Ft
630E1025	Curved Class A W Beam Guardrail with CRT Posts	50.0	Ft
630E1500	Type 1 Guardrail Transition	12	Each
630E2000	W Beam to Thrie Beam Guardrail Transition	1	Each
630E2017	MGS MASH Flared End Terminal	1	Each
630E2018	MGS MASH Tangent End Terminal	11	Each
630E2035	W Beam Guardrail Special Anchor Assembly	1	Each
630E2095	Assembly for Missing Post in Transition Retrofit	2	Each
632E2220	Guardrail Delineator	52	Each
650E0085	Type B68.5 Concrete Curb and Gutter	49	Ft
651E0040	4" Concrete Sidewalk	235	SqFt
831E0300	Reinforcement Fabric (MSE)	706	SqYd

PCN 08HC – Str. No. 62-283-124

There are no guardrail or surfacing bid items at the PCN 08HC site.

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.

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.

HAUL AND STOCKPILE ASPHALT MIX MATERIAL

Salvaged asphalt concrete material estimated at 137.2 tons (for informational purposes only) will remain property of the State. The material will be hauled to the Winner Maintenance Yard, East Hwy. 44, Winner, SD; and stockpiled there. The Contractor will have approval from the Engineer of the stockpile location prior to stockpiling the material.

A computerized scale, portable platform scale, stationary commercial scale, stationary commercial plant, portable plant scale, or a belt scale along with a scale operator will be provided by the Contractor at the stockpile site to weigh the salvaged material prior to stockpiling. The salvaged asphalt material will be stockpiled with a stacking conveyor. Equipment will not be allowed on the stockpile.

The salvaged asphalt concrete material will be crushed to meet the requirements of Section 884.2 C.1 prior to stockpiling.

No further gradation testing of the material will be required.

All other costs for crushing, hauling, and stockpiling the salvaged asphalt concrete material will be incidental to the contract unit price per ton for Haul and Stockpile Asphalt Mix Material.

SALVAGE AND STOCKPILE GRANULAR MATERIAL

An estimated 295.4 tons (156.3 cubic yards) of granular material will be salvaged from US18 according to the in-place surfacing typical sections and stockpiled at a site furnished by the Contractor and satisfactory to the Engineer. An additional 45 tons of granular material will be salvaged from guardrail sites at Structures No. 62-215-291 and No. 62-149-270 and stockpiled for use within each of those sites for guardrail surfacing.

Salvaged granular material will be processed to meet the requirements of Section 884.2 D.8 prior to stockpiling.

The salvaged granular material not used on the project will be stockpiled or disposed of as directed by the Engineer.

The quantity of salvaged granular 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 Granular Material."

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

TABLE OF CONCRETE CURB AND/OR GUTTER REMOVAL

Station	to	Station	L/R	Quantity (Ft)
12+70		12+94	R	24
14+77		15+02	R	25
			Total:	49

UNCLASSIFIED EXCAVATION

Payment will be based on plans quantity. Further measurements will not be made unless there is a change made in the limits of work.

TABLE OF UNCLASSIFIED EXCAVATION

	Salvaged Asphalt Concrete Material	Salvaged Granular Base Material	Waste Material
Location	CuYd	CuYd	CuYd
Sta. 14+76.59 to Sta. 15+59 (US 18) Mainline including Shoulders	69	156	184
Subtotals	69	156	184
Total Unclassified Excavation	409		

REINFORCEMENT FABRIC (MSE)

The top of the subgrade will be covered with a layer of Reinforcement Fabric (MSE).

Reinforcement Fabric (MSE) Specification:

The fabric will conform to Section 831 of the Specifications. The fabric will be on the Approved Products List for this material or will be certified by the supplier to meet this specification prior to installation.

Fabric will be paid for at the contract unit price per SqYd for Reinforcement Fabric (MSE). Payment quantities will be based on area covered plus 15%. Overlaps are accounted for by the additional 15%. Payment will be full compensation for furnishing and installing the fabric only. Granular backfill materials will be paid for under a separate bid item.

Installation Procedure:

The top of the subgrade will be prepared by smoothing the surface of the subgrade to minimize any ruts, ridges, and depressions. Any rocks or other protrusions will be removed prior to placement of Reinforcement Fabric (MSE).

The fabric will be placed as taut as possible with minimal wrinkles. Placement will be done so that subsequent granular cover material does not shove, wrinkle or distort the in-place fabric. The fabric will be overlapped a minimum of 2 feet. The overlaps will be shingled in a manner that assures granular material will not be forced under the fabric during backfilling operations.

The fabric may be held in place with small piles of granular material or staples. No traffic or equipment will be allowed on the uncovered fabric.

Granular material will be dumped at least 20 feet behind the leading edge of the backfill and pushed into place with a loader or dozer from the covered areas to the uncovered areas.

The granular material will conform to the requirements of Base Course and will be compacted to 97% of the maximum dry density.

TABLE OF REINFORCEMENT FABRIC (MSE)

Location	Area (SqYd)
US Highway 18 PCN 08H9	
Sta. 14+77 to Sta. 15+59	614
Total Area Covered	614
Plus 15% Overlaps Allowance	92
Total Material Pay Quantity	706

PLACING EMBANKMENT

Embankment material is available from the excess waste material left over from the grading or the Contractor may furnish embankment material for this project.

Whether the Contractor elects to use the excess material and/or material from other sources, payment will be made at the contract unit price per cubic yard for “Placing Embankment”.

If the Contractor elects not to use the waste material, the waste material will become the property of the Contractor for disposal.

Prior to placement or removal of fill material, the Contractor will be required to remove four inches of topsoil and replace it following the placement of the new fill material. Removal and replacement of topsoil will not be measured for payment but will be incidental to the contract unit price per cubic yard for “Placing Embankment”.

Compaction of the fill material will be to the satisfaction of the Engineer.

It is not anticipated that water for compaction will be required, however; if in the opinion of the Engineer the fill material is extremely dry, water may be ordered and placed to the satisfaction of the Engineer. Cost for water will be incidental to the contract unit price per cubic yard for “Placing Embankment”.

A quantity of 10 cubic yards of Placing Embankment is estimated for the MGS Guardrail System installations, to be shared throughout all sites on PCN 08H9.

The basis for payment for Placing Embankment will be plans quantity. No separate measurements will be taken. Additional quantities will be included for payment only if work sites other than those shown in the plans are added to the contract.

ADDITIONAL EMBANKMENT

Additional embankment is necessary to accommodate the MGS Guardrail System installations.

The existing embankments are to be reshaped according to the details provided in these plans.

Seeding of all disturbed areas will be done by the Contractor.

Payment for the aforementioned work including labor, equipment, materials, and incidentals will be incidental to the various bid items of the contract.

WATER FOR COMPACTION

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

BASE COURSE, SALVAGED

Base Course, Salvaged will be obtained from the Contractor’s stockpile and may be used without further gradation testing.

All other requirements for Base Course, Salvaged will apply.

TABLE OF TYPE B68.5 CONCRETE CURB AND GUTTER

Station	to	Station	L/R	Quantity (Ft)
12+70		12+94	R	24
14+77		15+02	R	25
			Total:	49

SURFACING THICKNESS DIMENSIONS

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

8.5" NONREINFORCED PCC PAVEMENT

The aggregate may require screening as determined by the Engineer.

The concrete mix used in the PCC Pavement will conform to Section 380.

In lieu of an automatic subgrader operating from a preset line, a motor grader or other suitable equipment may be used to trim the base course to final grade prior to placement of concrete. There will be no direct payment for trimming of the gravel cushion for PCC pavement. The trimming will be considered incidental to the related items required for PCC Pavement.

A construction joint will be sawed whenever new concrete pavement is placed adjacent to existing concrete pavement.

The transverse construction joints will be handled in accordance with Standard Plate 380.15.

The location of joints, as shown and designated on the PCC Pavement Joint Layout(s) are only approximate locations to be used as a guide and to afford bidders a basis for estimating the construction cost of the joints. The final locations of the joints are to be designated by the Engineer during construction.

The entire surface of the mainline paving will be a heavy carpet drag. The surface of the mainline paving will receive a heavy carpet drag to within 2 or 3 feet of the face of the curb. All other areas will be textured as directed by the Engineer.

Mainline and shoulder will be tested using the 10' straight edge as per Specifications 380.3.O.1.

STEEL BAR INSERTION

The Contractor will insert the Steel Bars (No. 5 x 24 inch epoxy coated deformed tie bars or 1¼ inch x 18 in epoxy coated plain round dowel bars) into drilled holes in the existing concrete pavement. Anchoring of the steel bars in the drilled holes will conform to the Specifications.

The steel bars will be cut to the specified length by sawing or shearing and will be free from burring or other deformations.

Epoxy coated plain round steel bars will be inserted on 18-inch centers in the transverse joint. The first steel bar will be placed a minimum of 3 inches and a maximum of 6 inches from the outside edge of the slab.

Epoxy coated deformed steel bars will be inserted on 30-inch centers in the longitudinal joint and will be placed a minimum of 15 inches from the existing transverse contraction joint.

TABLE OF STEEL BAR INSERTION

LOCATION		QUANTITY OF BARS No. 5 x 24" Deformed Tie Bars	QUANTITY OF BARS 1-1/4" x 18" Plain Round Dowel Bars
Sta. 15+59		---	33
Sta. 15+02 to Sta 15+59	25'Rt.	23	---
	Totals:	23	33

TABLE OF DOWEL BARS

Location	12 Bar Assembly Dowel Bar (Size 1 ¼") Each
Mainline	
Sta. 14+77 to Sta. 15+59	231
Total:	231

TRANSVERSE CONTRACTION JOINTS

Unless specified otherwise in the PCC Pavement Joint Layout Sheets or elsewhere in the plans, the typical joint spacing for the 8.5" Nonreinforced PCC Pavement will be 13'. Joint spacing in the PCC Shoulder Pavement will match adjacent mainline pavement.

See Standard Plate 380.04 for placement of Dowel Bars.

The transverse contraction joints will be perpendicular to the centerline. In multilane areas the transverse contraction joints will be perpendicular to the centerline and be in a straight line across the entire width of pavement. In special situations the Engineer may pre-approve transverse contraction joints that do not meet these requirements. All nonconforming transverse contraction joints will be removed at the Contractor's expense. Any method of placement that cannot produce these requirements will not be allowed.

POLY-ALPHA METHYLSTYRENE (AMS) MEMBRANE CURING COMPOUND

Provide poly-alpha methylstyrene liquid membrane curing compounds for spray application on portland cement concrete surfaces exposed to the air.

The AMS membrane curing compound will conform to section 821 of the Specifications and the following requirements:

1. The AMS membrane curing compound will be successfully reviewed by the Department before use.
2. Meets the requirements of ASTM C 309 for white pigmented Type 2, Class B.
3. The Engineer will not allow the use of curing compound that is over 1 year from the manufacture date.
4. Resin is 100 percent poly-alpha methylstyrene and formulated to maintain the specified properties of the following Table.

REQUIREMENTS FOR AMS MEMBRANE CURING COMPOUND

Properties	Range
Total solids, % by weight of compound	≥ 42
% reflectance in 72 h (ASTM E 1247)	≥ 65
Loss of Water, kg/sq. m in 24 h (AASHTO T 155)	≤ 0.15
Loss of Water, kg/sq. m in 72 h (AASHTO T 155)	≤ 0.40
Settling Test, ml/100 ml in 72 h *	≤ 2
V.O.C. Content, g/L	≤ 350
Infrared Spectrum, vehicle	100% α methylstyrene
*Test in accordance with MNDOT method.	

The application will be in accordance with section 380.3 M plus the following:

Before application, agitate the curing compound as received in the shipping container to obtain a homogenous mixture. Protect membrane curing compounds from freezing before application. Handle and apply the membrane curing compound in accordance with the manufacturer's recommendations.

1. Apply curing compound homogeneously to provide a uniform, solid, white opaque coverage on all exposed concrete surfaces (equal to a white sheet of typing paper) at the time of application.
2. If the Engineer determines that the initial or corrective spraying result in unsatisfactory curing, the Engineer may require the Contractor to use the blanket curing method, at no additional cost to the Department.

Use the fully-automatic, self-propelled mechanical power sprayer to apply the curing compound:

1. Operate the equipment to direct the curing compound to the surface from two different lateral directions.
2. If puddling, dripping, or non-uniform application occurs, suspend the operation to perform corrections as approved by the Engineer.
3. A re-circulating bypass system that provides for continuous agitation of the reservoir material.
4. Separate filters for the hose and nozzle.
5. Check valve nozzles.
6. Multiple or adjustable nozzle system that provides for variable spray patterns.
7. A spray-bar drive system that operates independently of the wheels or track drive system.

Equipment for hand spraying of odd width or shapes and surfaces exposed by form removal will be:

1. Used from two directions to ensure coverage equal to a white sheet of typing paper as visible from any direction immediately after spraying.
2. A re-circulating bypass system that provides for continuous agitation of the reservoir material.
3. Separate filters for the hose and nozzle.
4. Multiple or adjustable nozzle system that provides for variable spray patterns.

A recommended practice for using AMS membrane curing compound is to clean out the sprayer including tank and nozzles each day after use.

Payment for AMS membrane curing compound, including labor, materials and incidentals will be incidental to the contract unit price per square yard for “8.5" Nonreinforced PCC Pavement”.

ASPHALT CONCRETE COMPOSITE

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

Asphalt for tack SS-1h or CSS-1h will be applied prior to each lift of Asphalt Concrete Composite. Asphalt for tack will be applied at a rate of 0.09 gallons per square yard on existing pavement or milled asphalt concrete surfaces and at a rate of 0.06 gallons per square yard on primed base course or new asphalt concrete pavement. The Asphalt for tack will be applied for the full width of the bottom layer of Asphalt Concrete Composite plus one-half foot additional on the outside shoulder.

TABLE OF GUARDRAIL

Description	Item Number	Str. No. 62-233-315 MRM 257.65	Str. No. 62-215-291 MRM 254.73	Str. No. 62-149-270 MRM 247.43	Str. No. 62-183-274 MRM 250.86	Total	Units
Remove Beam Guardrail	110E0730	300.0	337.5	350.0	81.3	1068.8	Ft
Remove Rubrail	110E0810	48	48	0	0	96	Ft
Remove Asphalt Concrete Pavement	110E1010	724	511	834	95	2164	SqYd
Base Course	260E1010	0	0	0	10	10	Ton
Base Course, Salvaged	260E1030	0	35	10	0	45	Ton
Salvage and Stockpile Granular Material	270E0110	0	35	10	0	45	Ton
Asphalt Concrete Composite	320E1200	59.3	56.9	62.5	13.1	191.8	Ton
Straight Double Class A Thrie Beam Guardrail with Wood Posts	630E0110	0	12.5	0	0	12.5	Ft
Type 1 MGS	630E0500	212.5	137.5	250	12.5	612.5	Ft
Straight Class A W Beam Guardrail with Wood Posts	630E1010	0	75	0	0	75	Ft
Straight Class A W Beam Guardrail with CRT Posts	630E1015	0	12.5	0	0	12.5	Ft
Curved Class A W Beam Guardrail with CRT Posts	630E1025	0	50	0	0	50	Ft
Type 1 Guardrail Transition	630E1500	4	3	4	1	12	Each
W Beam to Thrie Beam Guardrail Transition	630E2000	0	1	0	0	1	Each
MGS MASH Flared End Terminal	630E2017	0	0	0	1	1	Each
MGS MASH Tangent End Terminal	630E2018	4	3	4	0	11	Each
W Beam Guardrail Special Anchor Assembly	630E2035	0	1	0	0	1	Each
Assembly for Missing Post in Transition Retrofit	630E2095	1	1	0	0	2	Each
Guardrail Delineator	632E2220	16	16	16	4	52	Each

Note: Existing guardrail that is removed will become the property of the contractor.

TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F7	F39

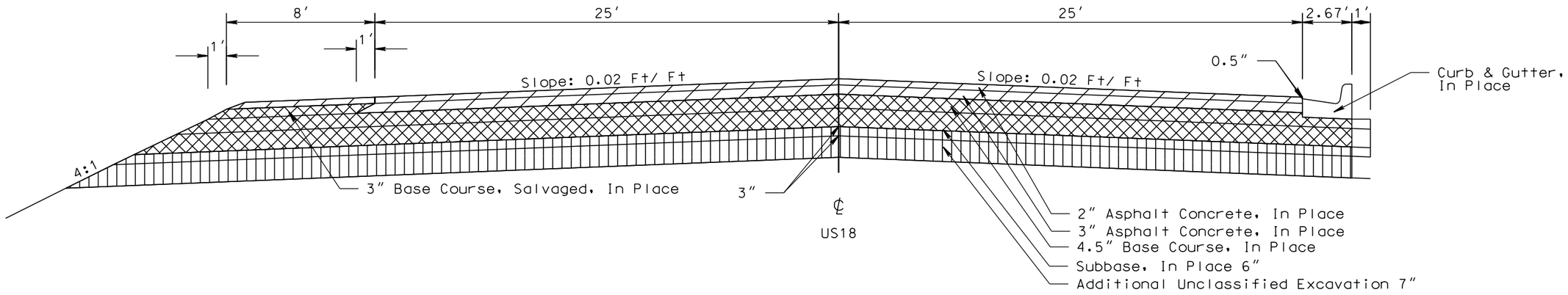
Plotting Date: 02/24/2025 Revised 2/24/2025 JPJ

Salvage & Stockpile Asphalt Mix Material

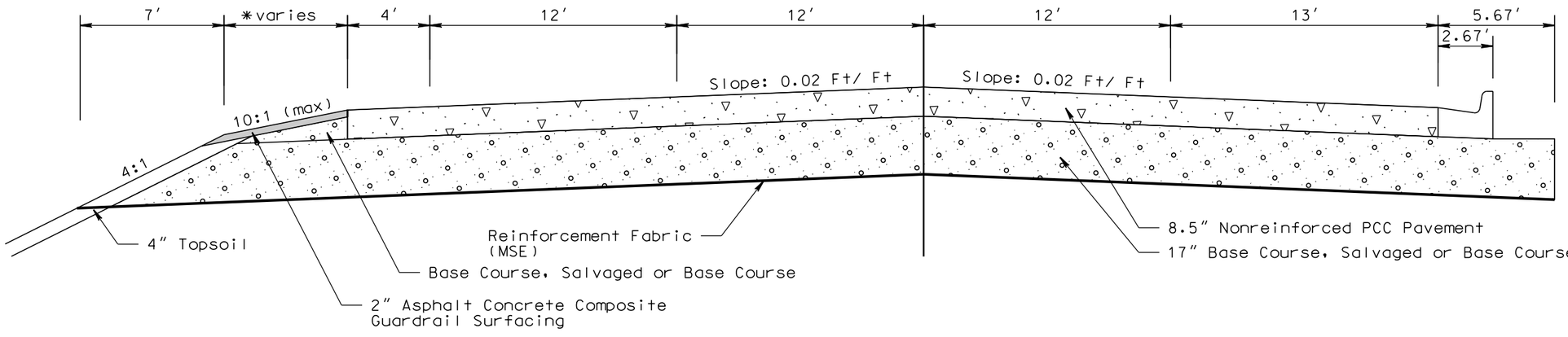
Salvage & Stockpile Granular Base Material

Unclassified Excavation

In Place Surfacing
US 18 Near Structure 62-183-274 over Dog Ear Creek
Sta. 465+71.41 to Sta. 466+53.82'



Surfacing Section
of US 18 work near
Structure 62-183-274 over Dog Ear Creek
Sta. 14+76.59 to Sta. 15+59'



Transitions:

Sta. 15+00 to Sta. 15+50
* 2.5' to 9'

Note:

Curb & Gutter will be
Type B68.5

NOTE:

'The stationings shown for the "In Place Section Showing Material To Be Removed" are from the underlying plans.

The stationings shown for the "Surfacing Sections" are based off these plans.

They are the same location.

Plot Scale - 1:6.00001

Plotted From - TRPR22410

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F8	F39

Plotting Date: 02/24/2025 Revised 2/24/2025 JPJ

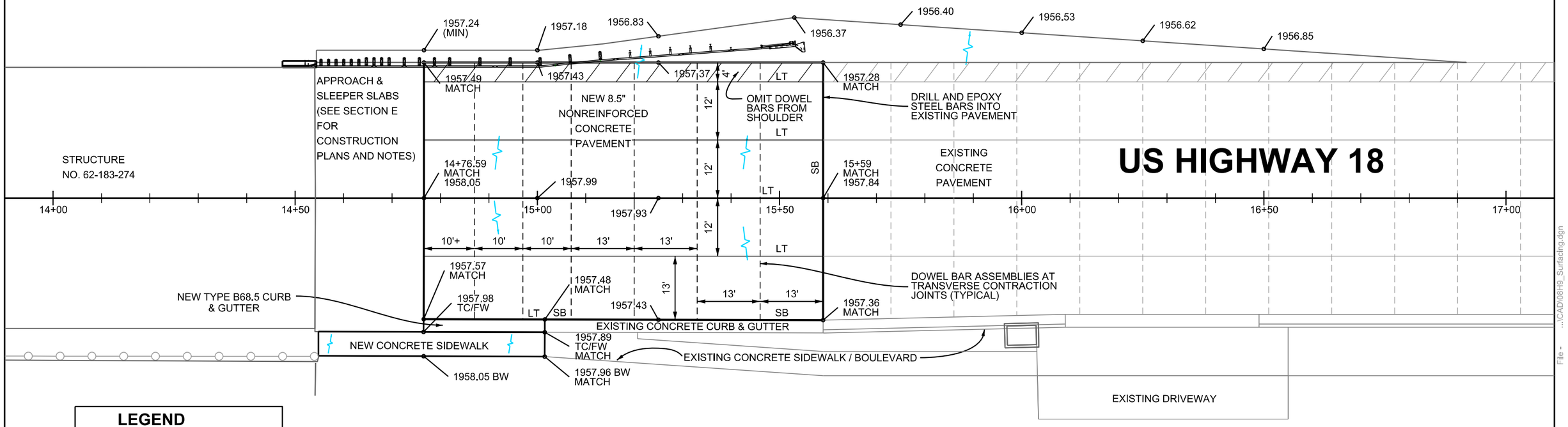
SURFACING LAYOUT & GRADING DETAILS

THE EASTERLY ROADWAY APPROACH
STRUCTURE NO. 62-183-274
OVER DOG EAR CREEK
US HIGHWAY 18, MRM 250.86

PCN 08H9

NOTE: HATCHING DENTOES SHOULDER AREA OF CONCRETE SLAB

LOWEST ALLOWABLE PAVEMENT GRADES FOR 10:1 LATERAL SLOPE



LEGEND

BW	BACK OF SIDEWALK
FW	FRONT OF SIDEWALK
LT	LONGITUDINAL JOINT WITH #5 TIE BARS
SB	INSERT STEEL BARS IN JOINT
TC	TOP OF CURB

TABLE OF QUANTITIES		
Remove Concrete Curb and/or Gutter	25	Ft
Remove Concrete Sidewalk	26.1	SqYd
Unclassified Excavation	409	CuYd
Base Course	222.2	Ton
Base Course, Salvaged	295.4	Ton
Salvage Asphalt Mix Material	137.2	Ton
Salvage and Stockpile Granular Material	295.4	Ton
8.5" Nonreinforced PCC Pavement	486.2	SqYd
Dowel Bar	231	Each
Insert Steel Bar in PCC Pavement	56	Each
Type B68.5 Concrete Curb and Gutter	25	Ft
4" Concrete Sidewalk	235	SqFt

NOTE: PAVEMENT GRADES CALCULATED FROM THE PROPOSED PLAN, PROFILE, AND CROSS SECTIONS IN PCN 03TK CONSTRUCTION PLANS. THE CONTRACTOR AND ENGINEER SHOULD FIELD-VERIFY THE ELEVATIONS AND ADJUST AS NECESSARY TO MATCH EXISTING CONDITIONS AND PROMOTE DRAINAGE.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F9	F39

Plotting Date: 02/24/2025 Revised 2/24/2025 JPJ

GRADING DETAILS

SIDEWALK & CURB/GUTTER
STATION 12+70 TO STRUCTURE NO. 62-183-274
OVER DOG EAR CREEK
US HIGHWAY 18, MRM 250.86

PCN 08H9

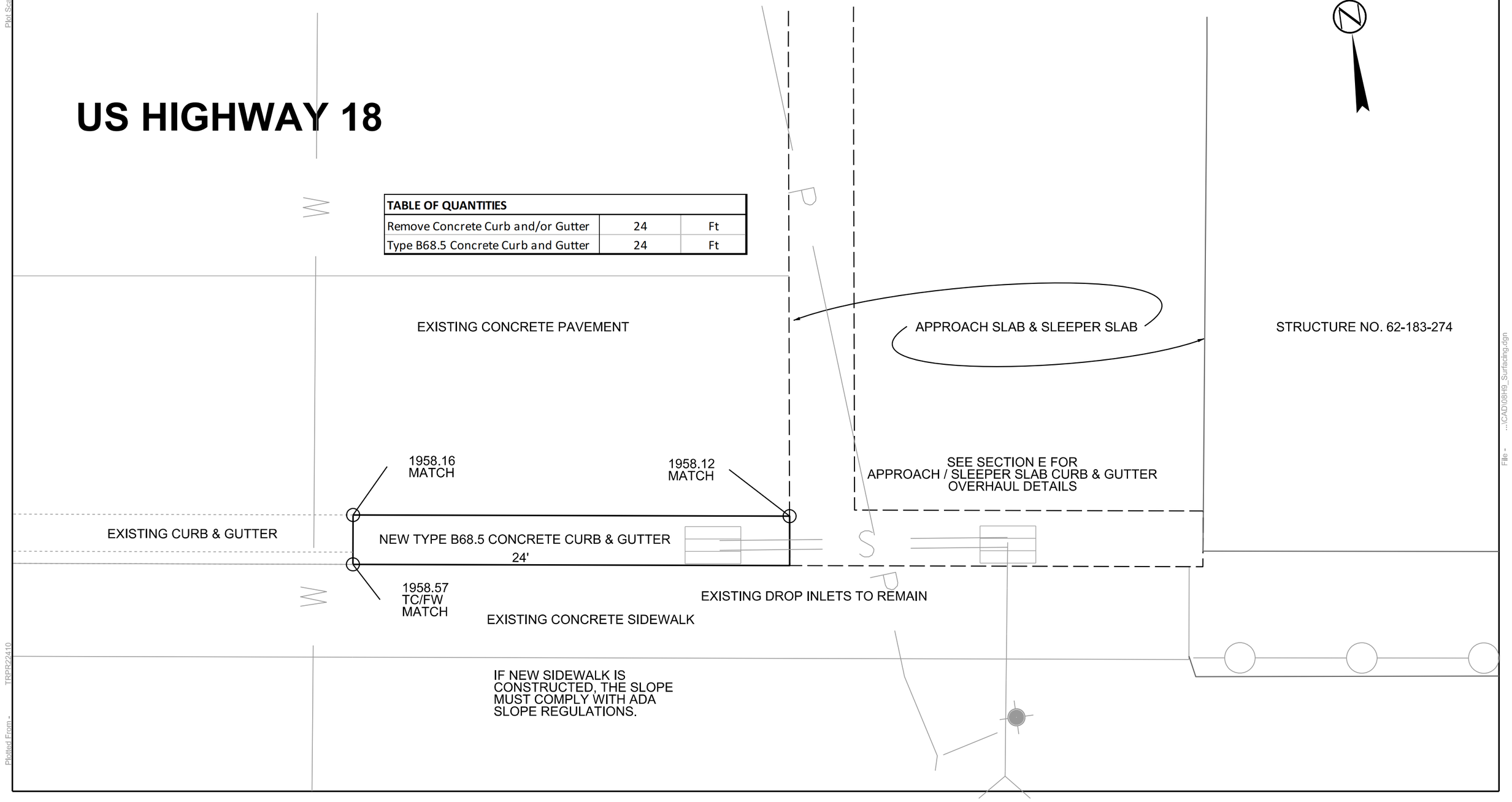


TABLE OF QUANTITIES		
Remove Concrete Curb and/or Gutter	24	Ft
Type B68.5 Concrete Curb and Gutter	24	Ft

Plot Scale - 1:5

Plotted From - TRPR22410

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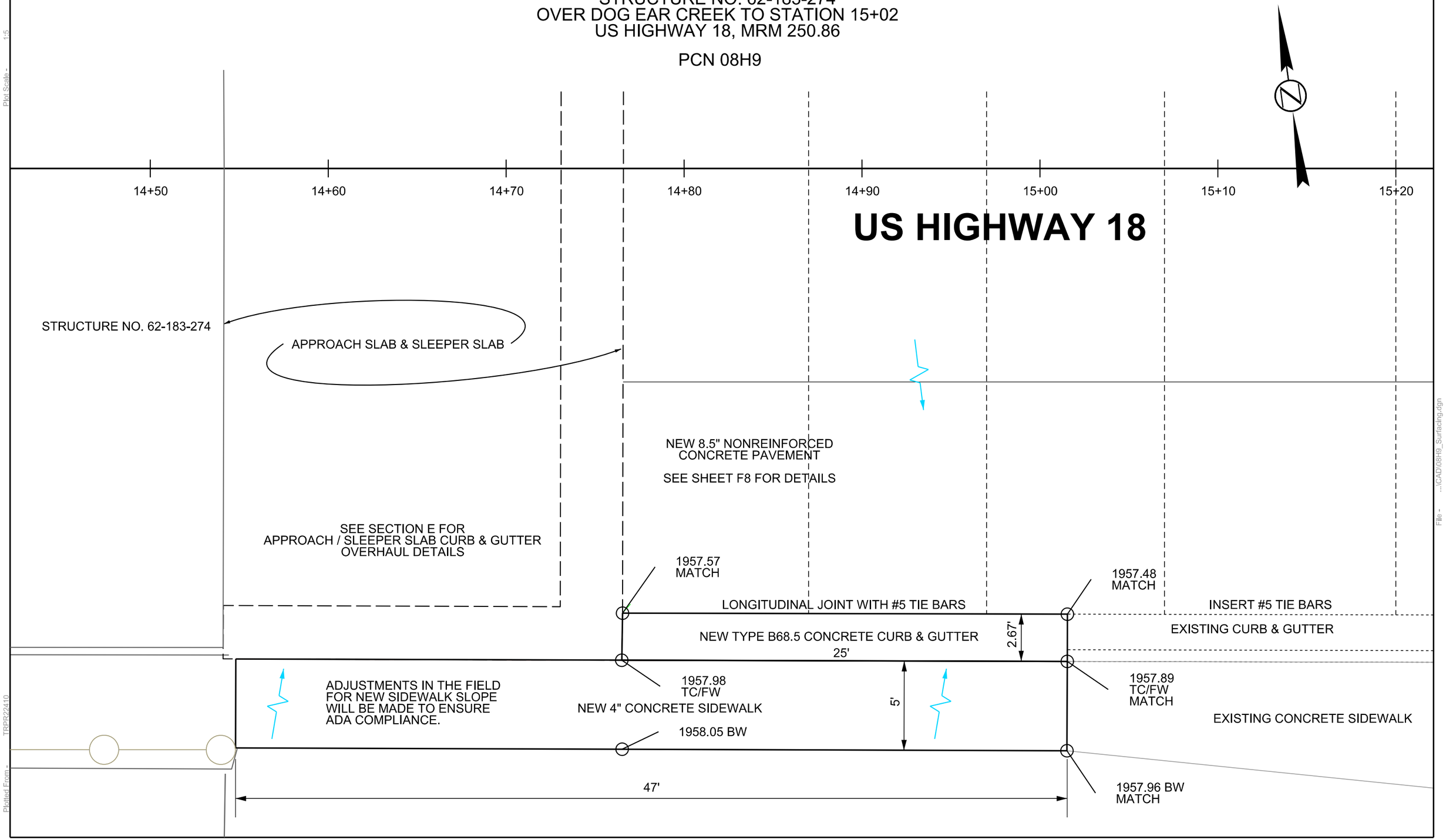
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F10	F39

Plotting Date: 02/07/2025

GRADING DETAILS

SIDEWALK & CURB/GUTTER
STRUCTURE NO. 62-183-274
OVER DOG EAR CREEK TO STATION 15+02
US HIGHWAY 18, MRM 250.86

PCN 08H9



GUARDRAIL LAYOUT

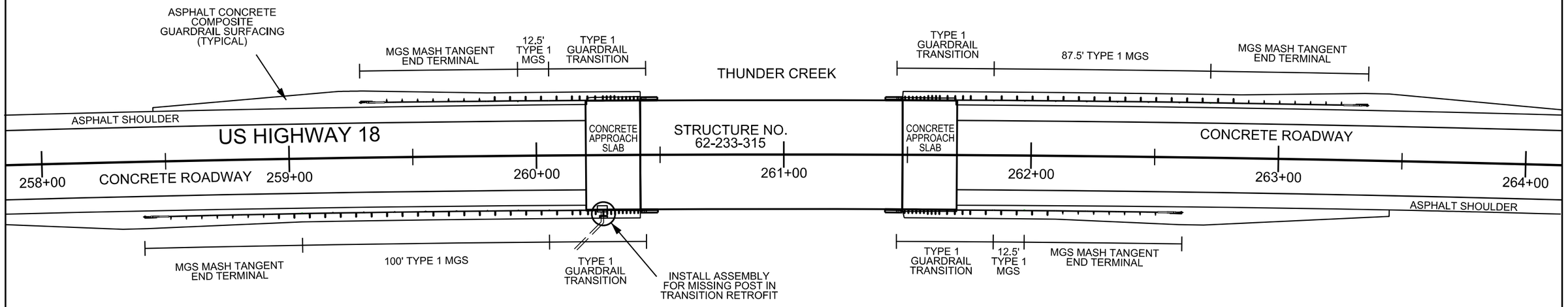
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F11	F39

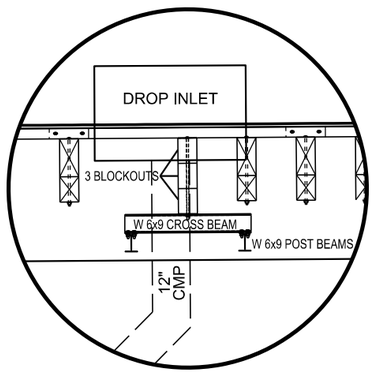
Plotting Date: 02/24/2025 Revised 2/24/2025 JPJ

STRUCTURE 62-233-315 OVER THUNDER CREEK
US 18 MRM 257.65
TRIPP COUNTY

QUANTITY TABLE FOR INFORMATION ONLY

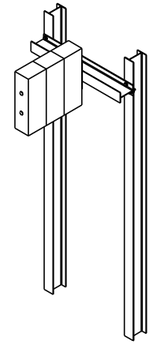
PCN 08H9 Structure 62-233-315 MRM 257.65	Remove Beam Guardrail 110E0730 (Ft)	Remove Rubrail 110E0810 (Ft)	Remove Asphalt Concrete Pavement 110E1010 (SqYd)	Asphalt Concrete Composite 320E1200 (Ton)	Type 1 MGS 630E0500 (Ft)	Type 1 Guardrail Transition 630E1500 (Each)	MGS MASH Tangent End Terminal 630E2018 (Each)	Assembly for Missing Post in Transition Retrofit 630E2095 (Each)	Guardrail Delineator 632E2220 (Each)
EB entry (NW) leg	112.5	12	211	18.5	100	1	1	1	4
EB departure (SW) leg	37.5	12	170	12.7	12.5	1	1	0	4
WB entry (SE) leg	112.5	12	228	16.8	87.5	1	1	0	4
WB departure (NE) leg	37.5	12	115	11.3	12.5	1	1	0	4
TOTALS:	**300.0**	**48**	**724**	**59.3**	**212.5**	**4**	**4**	**1**	**16**





INSTALL ASSEMBLY FOR MISSING POST IN TRANSITION RETROFIT IN PLACE OF POST AT CONFLICT WITH INLET DRAINAGE PIPE. SEE SHEETS F15 & F16 FOR DETAILS.

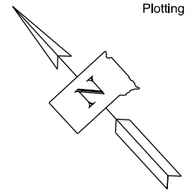
ISOMETRIC VIEW OF ASSEMBLY FOR MISSING POST IN TRANSITION RETROFIT



Plot Scale - 1:40
Plotted From - TRPR22410
File - ...\CAD\08H9_Guardrails.dgn

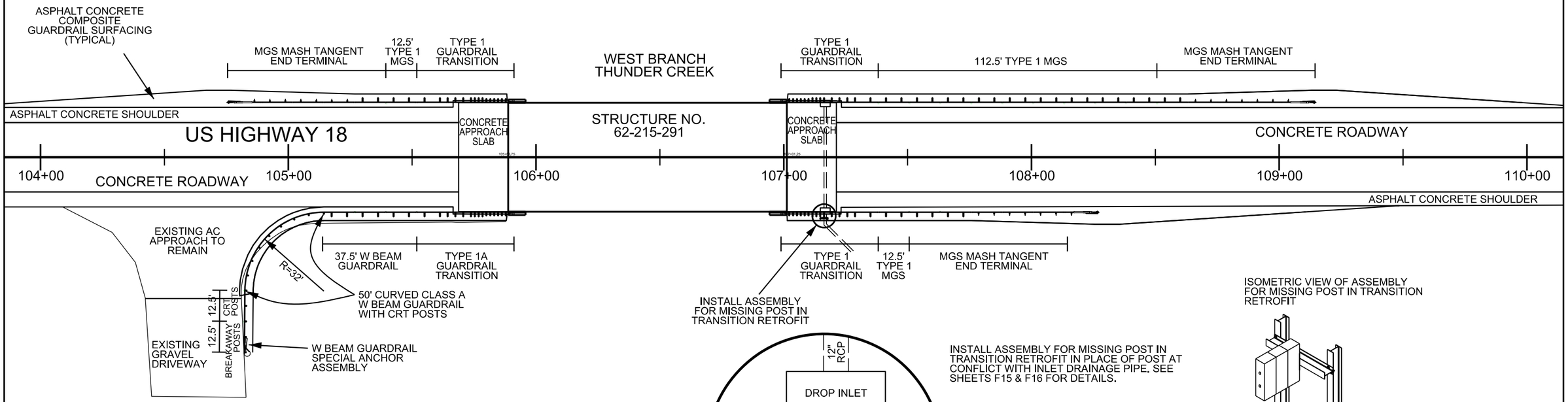
GUARDRAIL LAYOUT

STRUCTURE 62-215-291 OVER WEST BRANCH THUNDER CREEK
US 18 MRM 254.73
TRIPP COUNTY



QUANTITY TABLE FOR INFORMATION ONLY

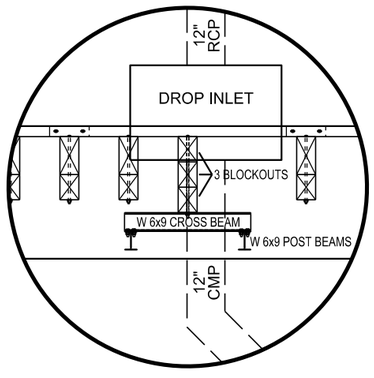
PCN 08H9 Structure 62-215-291 MRM 254.73	Remove Beam Guardrail 110E0730 (Ft)	Remove Rubrail 110E0810 (Ft)	Remove Asphalt Concrete Pavement 110E1010 (SqYd)	Base Course, Salvaged 260E1030 (Ton)	Salvage and Stockpile Granular Material 270E0110 (Ton)	Asphalt Concrete Composite 320E1200 (Ton)	Straight Double Class A Thrie Beam Guardrail with Wood Posts 630E0110 (Ft)	Type 1 MGS 630E0500 (Ft)	Straight Class A W Beam Guardrail with Wood Posts 630E1010 (Ft)	Straight Class A W Beam Guardrail with CRT Posts 630E1015 (Ft)	Curved Class A W Beam Guardrail with CRT Posts 630E1025 (Ft)	Type 1 Guardrail Transition 630E1500 (Each)	W Beam to Thrie Beam Guardrail Transition 630E2000 (Each)	MGS MASH Tangent End Terminal 630E2018 (Each)	W Beam Guardrail Special Anchor Assembly 630E2035 (Each)	Assembly for Missing Post in Transition Retrofit 630E2095 (Each)	Guardrail Delineator 632E2220 (Each)
EB entry (SW) leg	150.0	12	65	10	15	7.3	12.5	0	75	12.5	50	0	1	0	1	0	4
EB departure (SE) leg	37.5	12	131	10	10	14.6	0	12.5	0	0	0	1	0	1	0	1	4
WB entry (NE) leg	112.5	12	179	15	10	19.9	0	112.5	0	0	0	1	0	1	0	0	4
WB departure (NW) leg	37.5	12	136	0	0	15.1	0	12.5	0	0	0	1	0	1	0	0	4
TOTALS:	**337.5**	**48**	**511**	**35**	**35**	**56.9**	**12.5**	**137.5**	**75**	**12.5**	**50**	**3**	**1**	**3**	**1**	**1**	**16**



NOTES ON SHORT RADIUS GUARDRAIL:

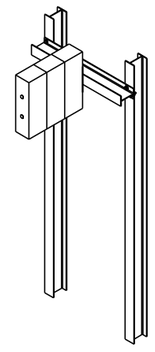
THE TYPE 1A GUARDRAIL TRANSITION IS PAID PER PIECE. THERE IS NO STAND-ALONE BID ITEM FOR TYPE 1A GUARDRAIL TRANSITION. SEE STANDARD PLATE 630.52 FOR DETAILS.

THE SPECIAL ANCHOR ASSEMBLY IS PAID AS ITS OWN BID ITEM. THE 12.5-FOOT RUN OF RAIL IS PAID FOR SEPARATELY AS STRAIGHT CLASS A W BEAM GUARDRAIL WITH WOOD POSTS. SEE STANDARD PLATE 630.84 FOR DETAILS.



INSTALL ASSEMBLY FOR MISSING POST IN TRANSITION RETROFIT IN PLACE OF POST AT CONFLICT WITH INLET DRAINAGE PIPE. SEE SHEETS F15 & F16 FOR DETAILS.

ISOMETRIC VIEW OF ASSEMBLY FOR MISSING POST IN TRANSITION RETROFIT



GUARDRAIL LAYOUT

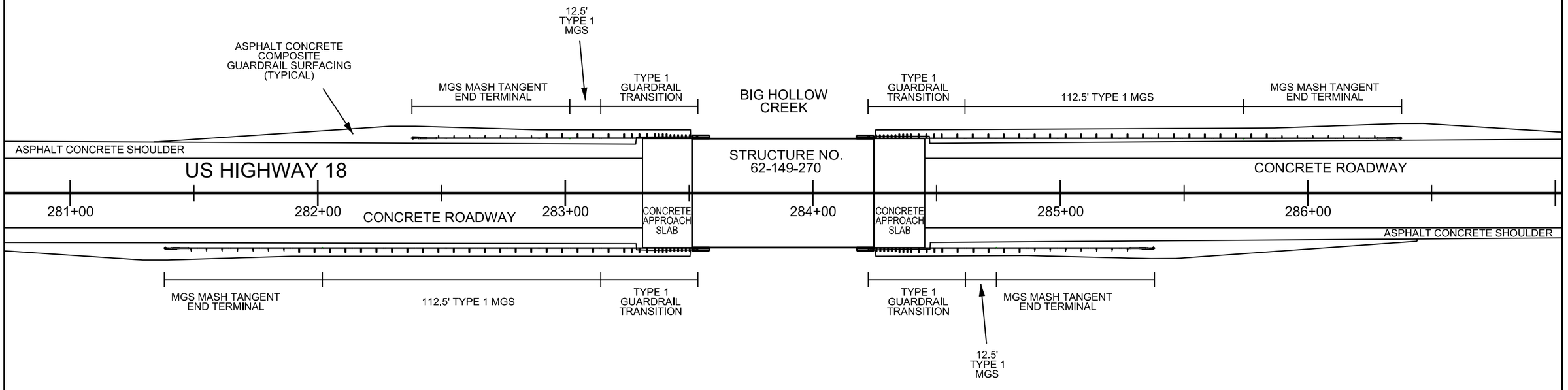
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F13	F39

Plotting Date: 02/03/2025

STRUCTURE 62-149-270 OVER BIG HOLLOW CREEK
US 18 MRM 247.43
TRIPP COUNTY

QUANTITY TABLE FOR INFORMATION ONLY

PCN 08H9 Structure 62-149-270 MRM 247.43	Remove Beam Guardrail 110E0730 (Ft)	Remove Asphalt Concrete Pavement 110E1010 (SqYd)	Base Course, Salvaged 260E1030 (Ton)	Salvage and Stockpile Granular Material 270E0100 (Ton)	Asphalt Concrete Composite 320E1200 (Ton)	Type 1 MGS 630E0500 (Ft)	Type 1 Guardrail Transition 630E1500 (Each)	MGS MASH Tangent End Terminal 630E2018 (Each)	Guardrail Delineator 632E2220 (Each)
EB entry (SW) leg	93.8	288	0	0	18.7	112.5	1	1	4
EB departure (SE) leg	81.2	165	0	0	13.1	12.5	1	1	4
WB entry (NE) leg	93.8	242	10	10	18.5	112.5	1	1	4
WB departure (NW) leg	81.2	139	0	0	12.2	12.5	1	1	4
TOTALS:	**350.0**	**834**	**10**	**10**	**62.5**	**250**	**4**	**4**	**16**



GUARDRAIL LAYOUT

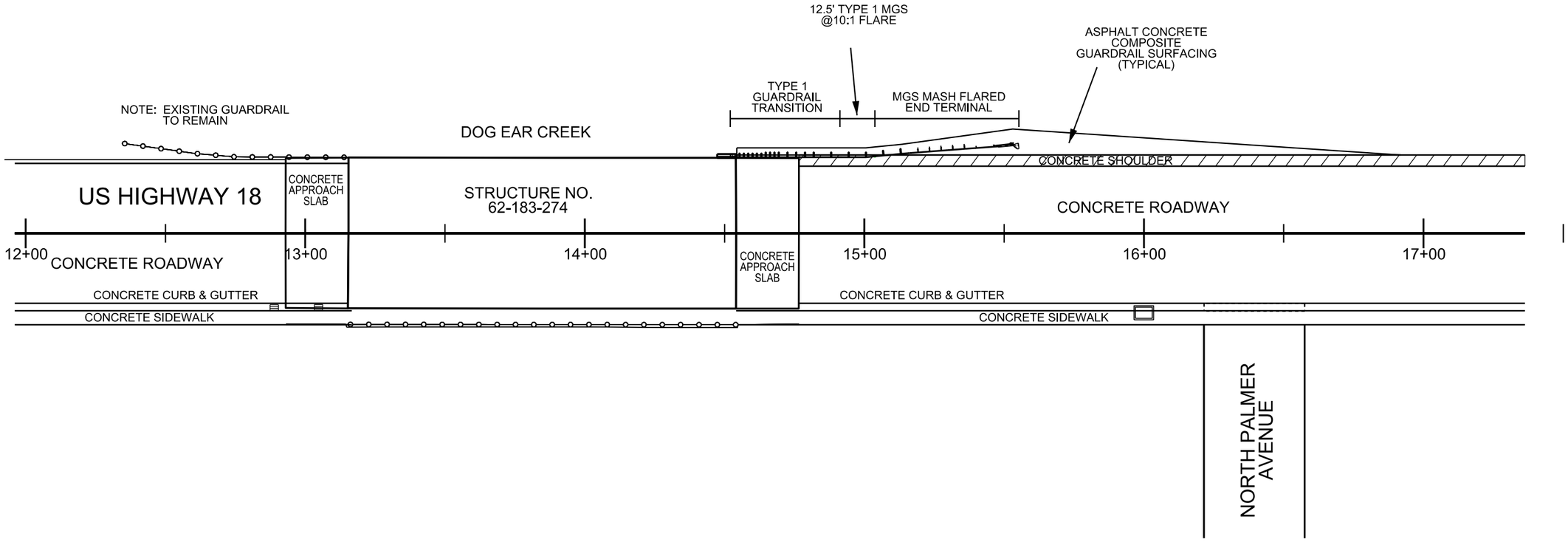
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F14	F39

Plotting Date: 02/03/2025

STRUCTURE 62-183-274 OVER DOG EAR CREEK
US 18 MRM 250.86
TRIPP COUNTY

QUANTITY TABLE FOR INFORMATION ONLY

PCN 08H9 Structure 62-183-274 MRM 250.86	Remove Beam Guardrail 110E0730 (Each)	Remove Asphalt Concrete Pavement 110E1010 (SqYd)	Base Course 260E1010 (Ton)	Asphalt Concrete Composite 320E1200 (Ton)	Type 1 MGS 630E0500 (Ft)	Type 1 Guardrail Transition 630E1500 (Each)	MGS MASH Flared End Terminal 630E2017 (Each)	Guardrail Delineator 632E2220 (Each)
WB entry (NE) leg	81.3	95	10	13.1	12.5	1	1	4
TOTALS:	**81.3**	**95**	**10**	**13.1**	**12.5**	**1**	**1**	**4**



Plot Scale - 1:40

Plotted From - TRPR22410

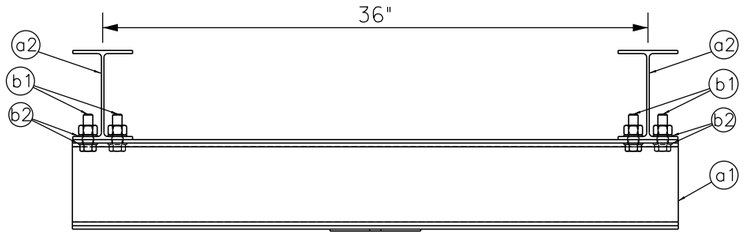
File - ...\CAD\08H9_Guardrails.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F15	F39

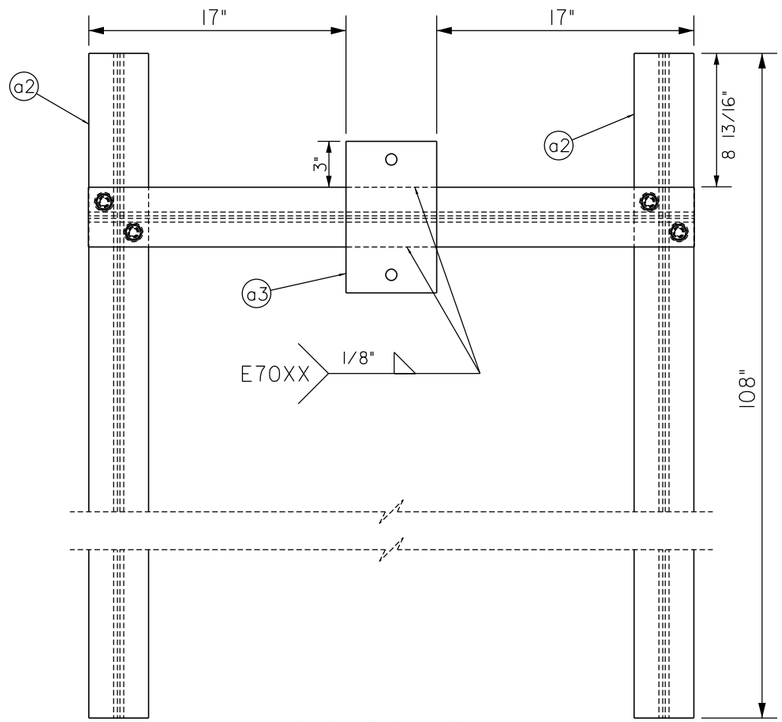
Plotting Date: 02/24/2025 Revised 2/24/2025 JPJ

DETAILS FOR ASSEMBLY FOR MISSING POST IN TRANSITION RETROFIT

CROSS-BEAM DETAIL

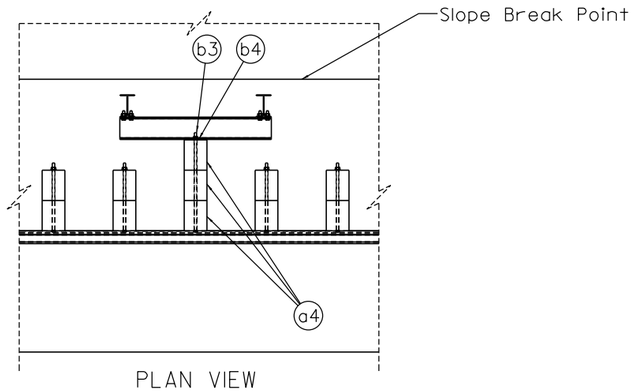


PLAN VIEW

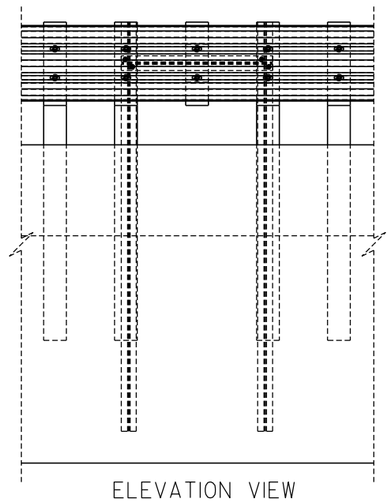


ELEVATION VIEW

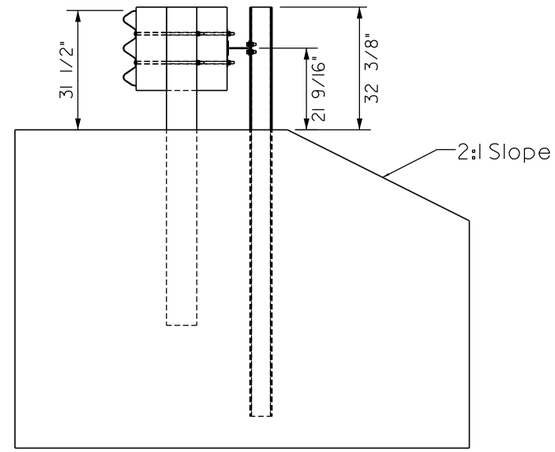
INSTALLATION DETAIL



PLAN VIEW



ELEVATION VIEW



SIDE VIEW

Notes: (1) To be used as replacement post for any 7' long 6"x8" post in thrie-beam transition region.

(2) Only one such post retrofit per system.

(3) Slope break point can be anywhere behind original post line and slopes allowed up to 2H:1V

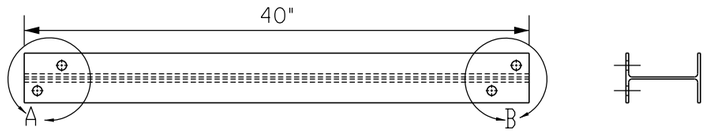
Plot Scale - 1:10

Plotted From - TRPR22410

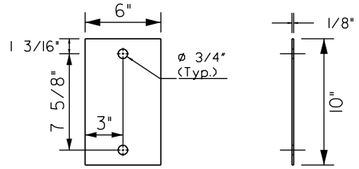
File - ...\CAD\08H9_Guardrails.dgn

DETAILS FOR ASSEMBLY FOR MISSING POST IN TRANSITION RETROFIT

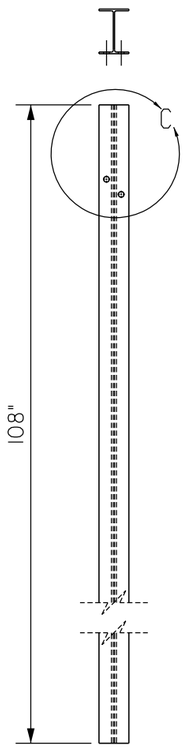
CROSS-BEAM ASSEMBLY



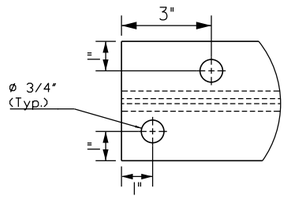
W6x9 [W152x13.4] Cross-Beam
Part a1



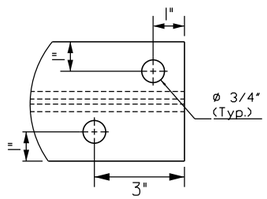
Backup Plate
Part a3



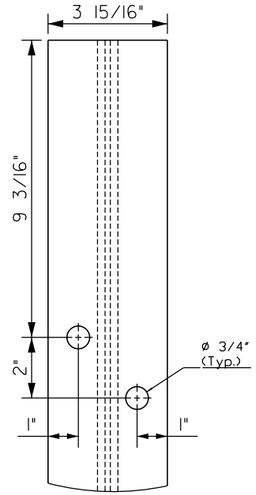
W6x9 [W152x13.4]
Beam
Part a2
SCALE 1 : 20



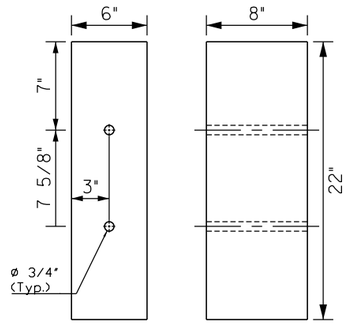
DETAIL A
SCALE 1 : 5



DETAIL B
SCALE 1 : 5

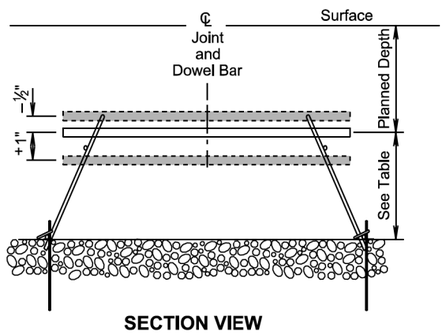


DETAIL C
SCALE 1 : 5



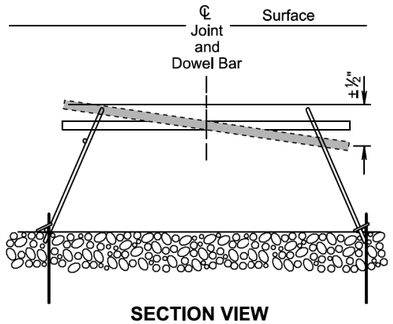
Standard Blockout
Part a4

Assembly for Missing Post in Transition Retrofit Bill of Materials				
Item No.	QTY.	Description	Material Specification	Comment
a1	1	40" [1016] Long W6x9 [W152x13.4] Cross-Beam	ASTM A992 Gr. 50	–
a2	2	108" [2591] Long W6x9 [W152x13.4] Post	ASTM A992 Gr. 50	–
a3	1	6"x10"x1/8" [152x254x3] Backup Plate	ASTM A36	Use ASTM A36 or any 50 ksi steel, which ever is more cost efficient
a4	3	6"x8"x22" [152x203x559] Blockout	SYP Grade No. 1 or better	PDB02
b1	4	2" [51] long x Dia. 5/8" [16] – 11 UNC Hex Head Bolt	Bolt ASTM A307 or Grade 2 Steel/ Nut ASTM A563 A	FBX16a
b2	8	5/8" [16] Dia. Narrow Flat Washer	ASTM F436	
b3	2	26" [660] Long, Dia. 5/8" [16] – 11 UNC Guardrail Bolt and Nut	SAE J429 Grade 2/ASTM A307 Grade C/ASTM F1554 Grade 36	–
b4	2	5/8" [16] Dia. Plain Round Washer	ASTM F844 or Grade 2 Steel	FWC16a



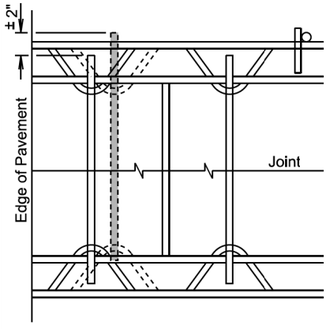
SECTION VIEW
VERTICAL TRANSLATION

Depth: mid-depth + 1 inch or – ½ inch



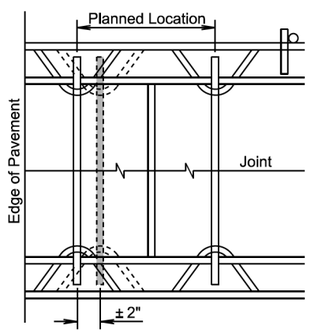
SECTION VIEW
VERTICAL TILT

Vertical rotational alignment: ½ inch over 18 inch



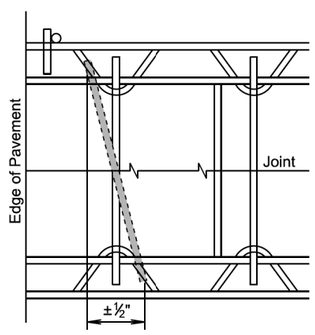
PLAN VIEW
LONGITUDINAL TRANSLATION

Longitudinal side shift: ± 2 inch for 18 inch bars



PLAN VIEW
HORIZONTAL TRANSLATION

Side shift ± 2 inch



PLAN VIEW
HORIZONTAL SKEW

Horizontal rotational alignment: ½ inch over 18 inch

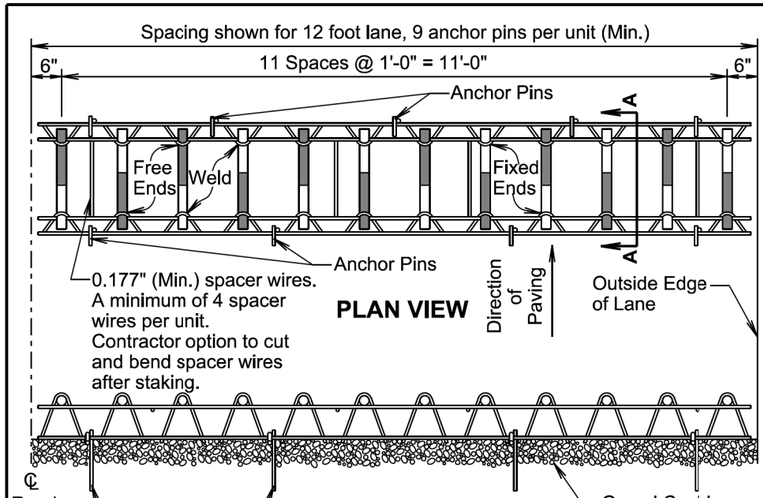
PAVEMENT THICKNESS	EPOXY COATED DOWEL BAR SIZE	HEIGHT TO CENTER
7" to 7½"	1" x 18"	3.0"
8" to 10"	1¼" x 18"	4.0"
10½" to 13"	1½" x 18"	5.0"

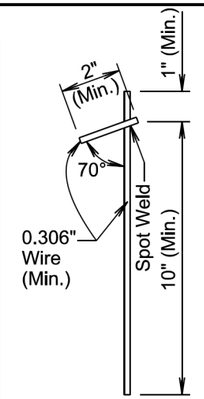
GENERAL NOTE:

The tolerances shown above represent the maximum deviation for acceptance of dowel bar placement.

November 19, 2022

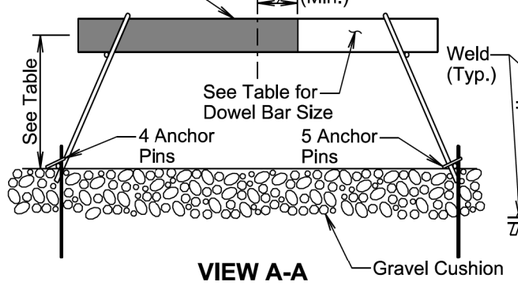
Published Date: 2025	SDDOT	**PCC PAVEMENT DOWEL BAR ALIGNMENT TOLERANCES**	PLATE NUMBER 380.01 Sheet 1 of 1



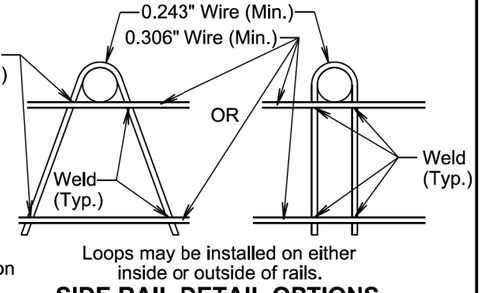


TYPICAL ANCHOR PIN

PAVEMENT THICKNESS	EPOXY COATED DOWEL BAR SIZE	HEIGHT TO CENTER
7" to 7½"	1" x 18"	3.0"
8" to 10"	1¼" x 18"	4.0"
10½" to 13"	1½" x 18"	5.0"



VIEW A-A



Loops may be installed on either inside or outside of rails.

SIDE RAIL DETAIL OPTIONS

GENERAL NOTES:

Longitudinal joint tie bars will be placed a minimum of 15 inches from the transverse contraction joint.

The transverse contraction joints will be sawed perpendicular to the centerline of the roadway. The transverse sawed joint will be centered over the dowel bars.

Supporting devices as shown on this sheet, or equivalent as approved by the Engineer, will be used to maintain proper horizontal and vertical alignment of the dowel bars.

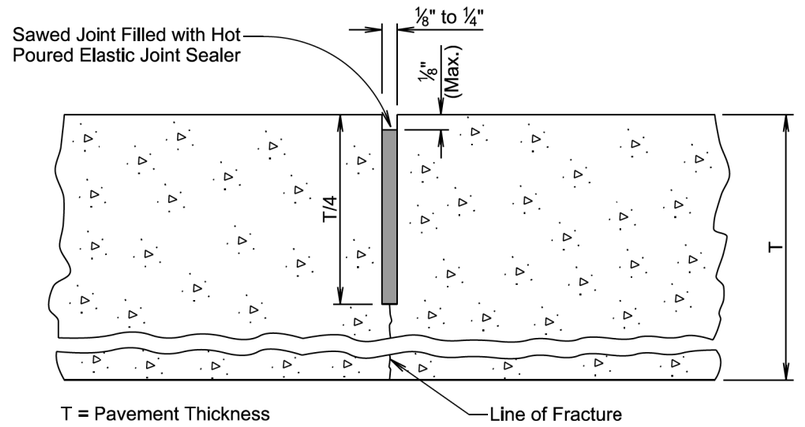
All dowel bar alignment tolerances will be as shown in the PCC Pavement Dowel Bar Alignment Tolerances standard plate.

November 19, 2022

Published Date: 2025	SDDOT	**PCC PAVEMENT DOWEL BAR ASSEMBLY FOR TRANSVERSE CONTRACTION JOINTS 12 Bar Assembly on Granular Base Material**	PLATE NUMBER 380.04 Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F18	F39

Plotting Date: 01/30/2025



GENERAL NOTES:

If an early entrance saw cut does not develop the full transverse crack, then the saw cut to control cracking will be a minimum ¼ of the thickness of the pavement.

All hot poured elastic joint sealer material spilled on the surface of the concrete pavement will be removed as soon as the material has cooled. The extent of removal of material will be to the satisfaction of the Engineer. All costs for removal of the spilled joint sealer material will be borne by the Contractor.

November 19, 2022

Published Date: 2025	SDDOT	PCC PAVEMENT TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY	PLATE NUMBER 380.12 Sheet 1 of 1

Plot Scale - 1:200

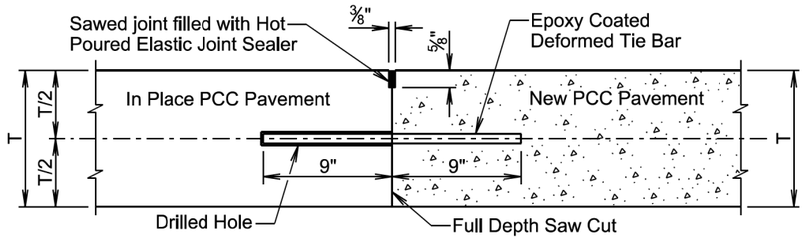
Plotted From - TRPR22410

File - ...\CAD\08H9_Std Plates.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F19	F39

Plotting Date: 01/30/2025

DETAIL A
TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS



T = In Place PCC Pavement and New PCC Pavement Thickness

GENERAL NOTES:

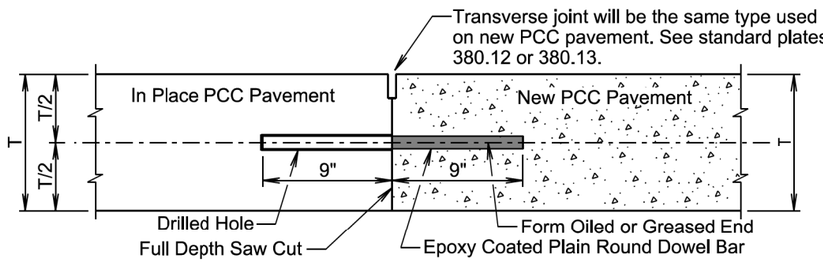
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

See sheet 2 of 2 of this standard plate to determine if Detail A will be used.

The tie bars will be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive or a non-shrink grout.

No. 9 epoxy coated deformed tie bars will be used in 10 inch thickness and less PCC Pavement and No. 11 epoxy coated deformed tie bars will be used in 10.5 inch thickness and greater PCC Pavement. The tie bar spacing will be 18 inches center to center and will be a minimum of 3 inches and a maximum of 9 inches from the pavement edges.

DETAIL B
TRANSVERSE CONSTRUCTION JOINT WITH DOWEL BARS



GENERAL NOTES: T = In Place PCC Pavement and New PCC Pavement Thickness

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

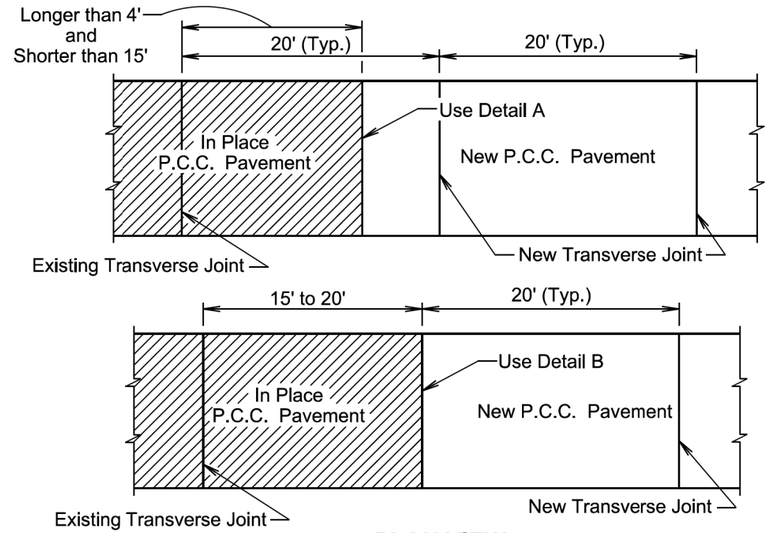
See sheet 2 of 2 of this standard plate to determine if Detail B will be used.

The plain round dowel bars will be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive or a non-shrink grout.

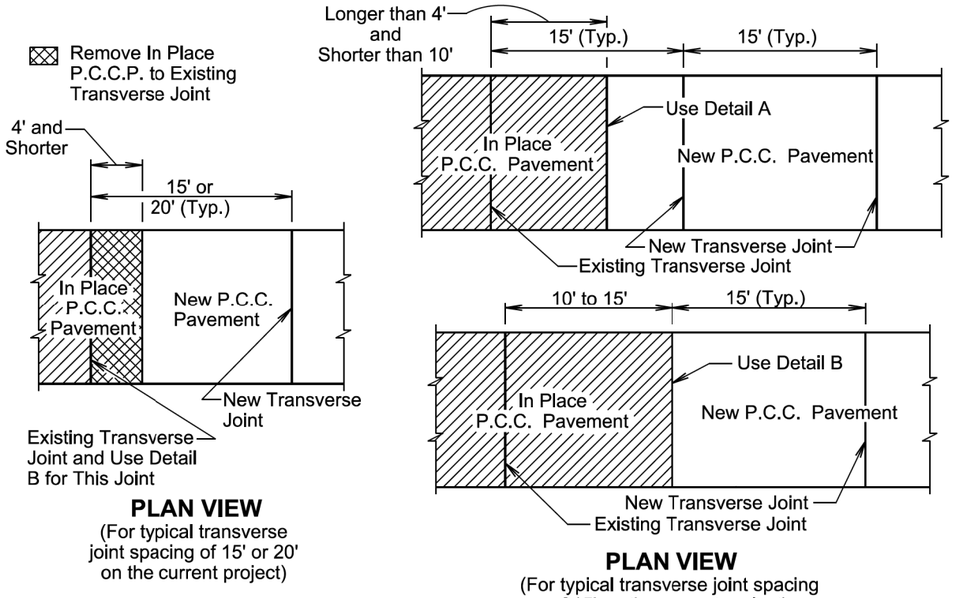
The epoxy coated plain round dowel bar size, number, and spacing will be the same as detailed on the corresponding dowel bar assembly standard plate (380.04, 380.05, 380.06, or 380.07). The epoxy coated plain round dowel bars will be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

January 22, 2023

Published Date: 2025	SDDOT	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER 380.15
			Sheet 1 of 2



PLAN VIEW
(For typical transverse joint spacing of 20' on the current project)



PLAN VIEW
(For typical transverse joint spacings of 15' or 20' on the current project)

PLAN VIEW
(For typical transverse joint spacing of 15' on the current project)

January 22, 2023

Published Date: 2025	SDDOT	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER 380.15
			Sheet 2 of 2

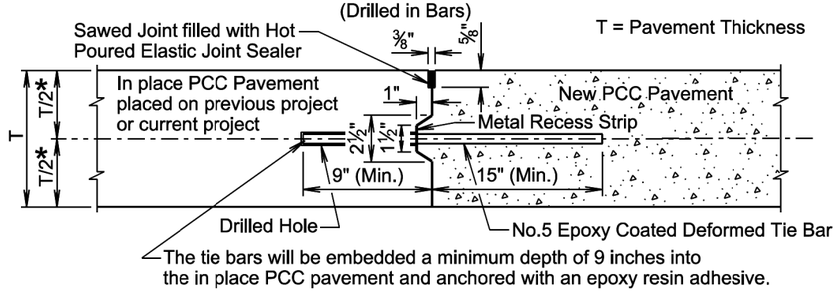
Plot Scale - 1:200

Plotted From - TRPR22410

File - ...\CAD\08H9_Std Plates.dgn

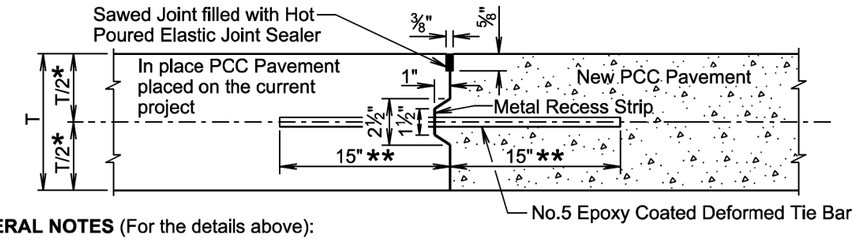
LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS

(Drilled in Bars)



LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS

(Inserted or Formed in Bars)



GENERAL NOTES (For the details above):

The epoxy coated deformed tie bars will be spaced in accordance with the following tables:

TIE BAR SPACING 48" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

TIE BAR SPACING 30" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
5' to 7'	2
7.5' to 9.5'	3
10' to 12'	4
12.5' to 14.5'	5
15' to 17'	6
17.5' to 19.5'	7
20' to 22'	8

The tie bars will be placed a minimum of 15 inches from transverse contraction joints.

The required number of tie bars as shown in the table will be uniformly spaced within each panel. The uniformly spaced tie bars will be spaced a maximum of 48 inches center to center for a female keyway and will be spaced a maximum of 30 inches center to center for a vertical face and male keyway. The maximum tie bar spacing will apply to tie bars within each panel.

The keyway illustrated in the above details depict a female keyway.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip will be used. When concrete pavement is slip formed, a metal recess strip is not required.

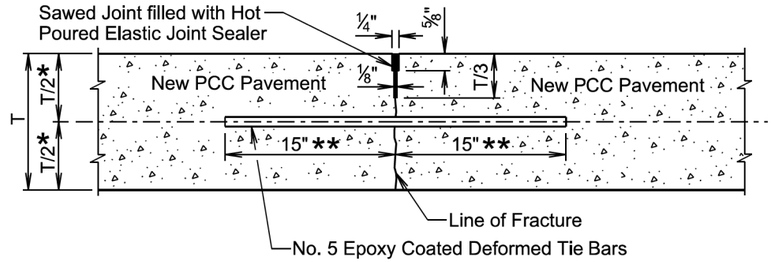
* The vertical placement tolerance for any part of the tie bar will be ± T/6.
** The transverse placement (side shift) tolerance will be ± 3 inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2025	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITH TIE BARS

(Poured Monolithically)



T = Pavement Thickness

GENERAL NOTES (For the detail above):

The epoxy coated deformed tie bars will be spaced in accordance with the following table:

TIE BAR SPACING 48" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

The tie bars will be placed a minimum of 15 inches from the transverse contraction joints.

The required number of tie bars as shown in the table will be uniformly spaced within each panel with a maximum space of 48 inches center to center. The maximum tie bar spacing will apply to tie bars within each panel.

The first saw cut to control cracking will be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer is necessary.

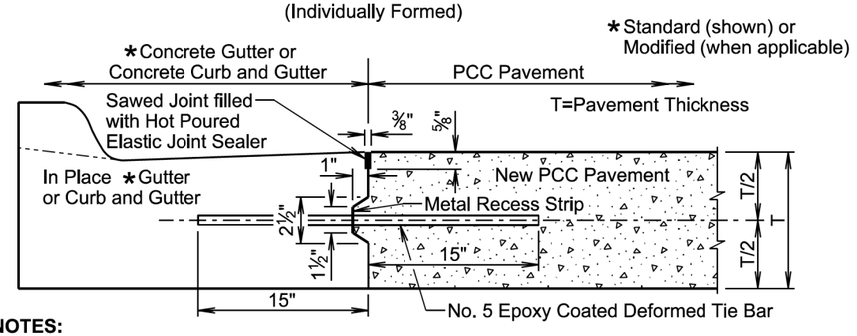
* The vertical placement tolerance for any part of the tie bar will be ± T/6.
** The transverse placement (side shift) tolerance will be ± 3 inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2025	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 2 of 2

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS

(Individually Formed)



GENERAL NOTES:

No. 5 epoxy coated deformed tie bars will be spaced 48 inches center to center. The tie bars will be placed a minimum of 15 inches from existing transverse contraction joints. The keyway shown above is a female keyway.

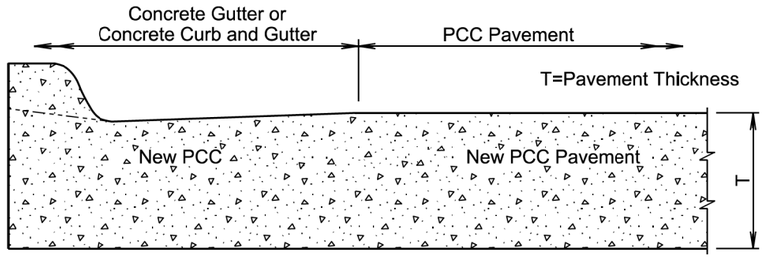
The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip will be used. When concrete pavement is slip formed, a metal recess strip is not required.

The transverse contraction joints in the concrete gutter or concrete curb and gutter will be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter will be 1½ inches deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint will be at least ¼ the thickness of the concrete gutter or concrete curb and gutter.

Standard curb and gutter may not be placed monolithically with PCC pavement if the mainline lane width is greater than 12 feet.

The term "In Place *Gutter or Curb and Gutter" in the above drawing indicates that the in place *concrete gutter and concrete curb and gutter was placed on the current project.

POURED MONOLITHICALLY (Standard Concrete Curb and Gutter)



GENERAL NOTES:

The mainline curb and gutter may be placed monolithically with the PCC pavement if the mainline lane width is less than or equal to 12 feet. If this method of construction is used, the tie bars and the sawed joint between the curb and gutter and the PCC pavement will be eliminated.

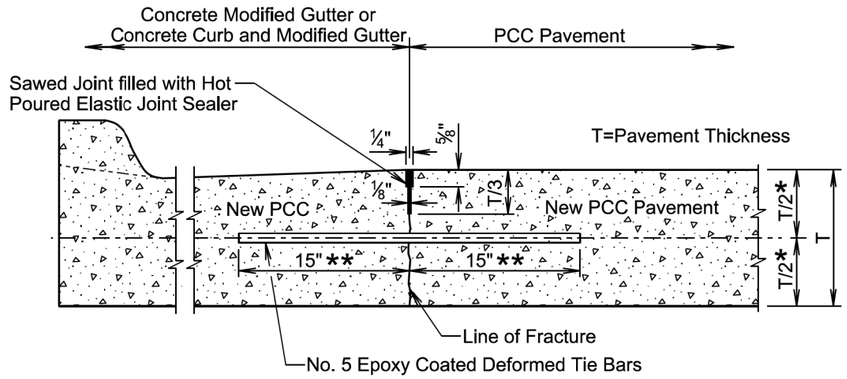
The gutter or curb and gutter will be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter will be sawed and sealed same as the transverse contraction joints in the PCC pavement.

The slope of the gutter will be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter will be constructed at the same slope as the mainline concrete pavement.

March 31, 2024

Published Date: 2025	SDDOT	PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER	PLATE NUMBER 380.21	Sheet 1 of 2

POURED MONOLITHICALLY (Concrete Curb and Modified Gutter)



GENERAL NOTES:

No. 5 epoxy coated deformed tie bars will be spaced 48 inches center to center.

The tie bars will be placed a minimum of 15 inches from existing transverse contraction joints.

The mainline curb and modified gutter may be placed monolithically with the PCC pavement if the mainline lane width is less than or equal to 14 feet.

The first saw cut to control cracking will be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer is necessary.

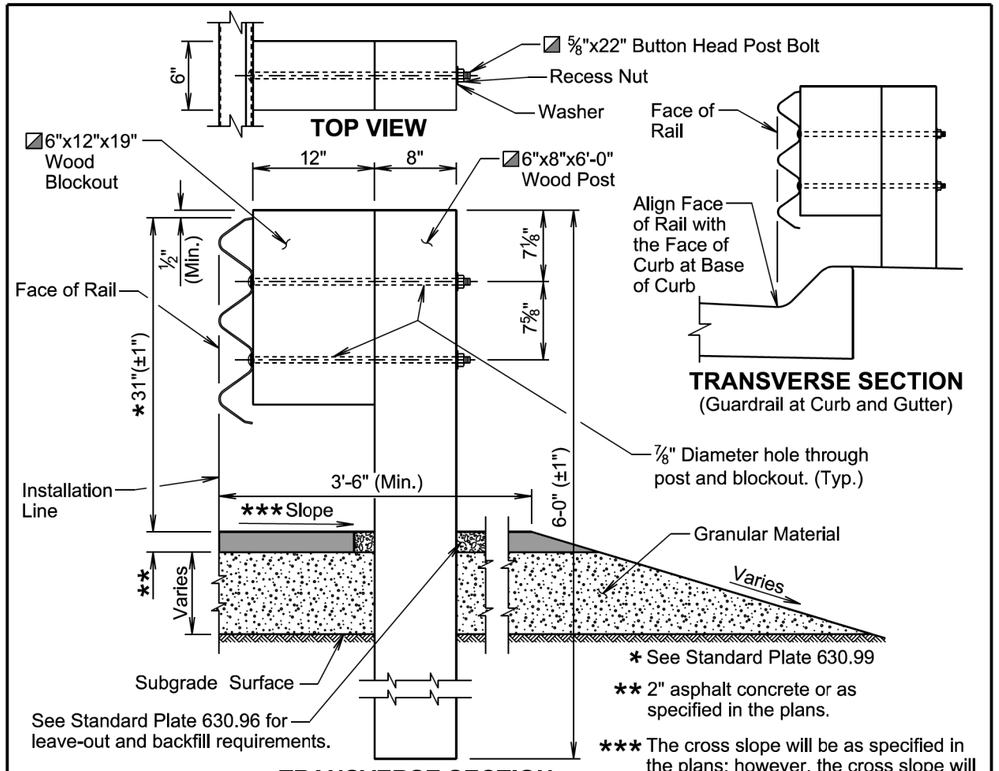
The gutter or curb and gutter will be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter will be sawed and sealed same as the transverse contraction joints in the PCC pavement.

The slope of the gutter will be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter will be constructed at the same slope as the mainline concrete pavement.

* The vertical placement tolerance for any part of the tie bar will be ± T/6.
** The transverse placement (side shift) tolerance will be ± 3 inches when measured perpendicular to the longitudinal joint line.

March 31, 2024

Published Date: 2025	SDDOT	PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER	PLATE NUMBER 380.21	Sheet 2 of 2



* 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.

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.

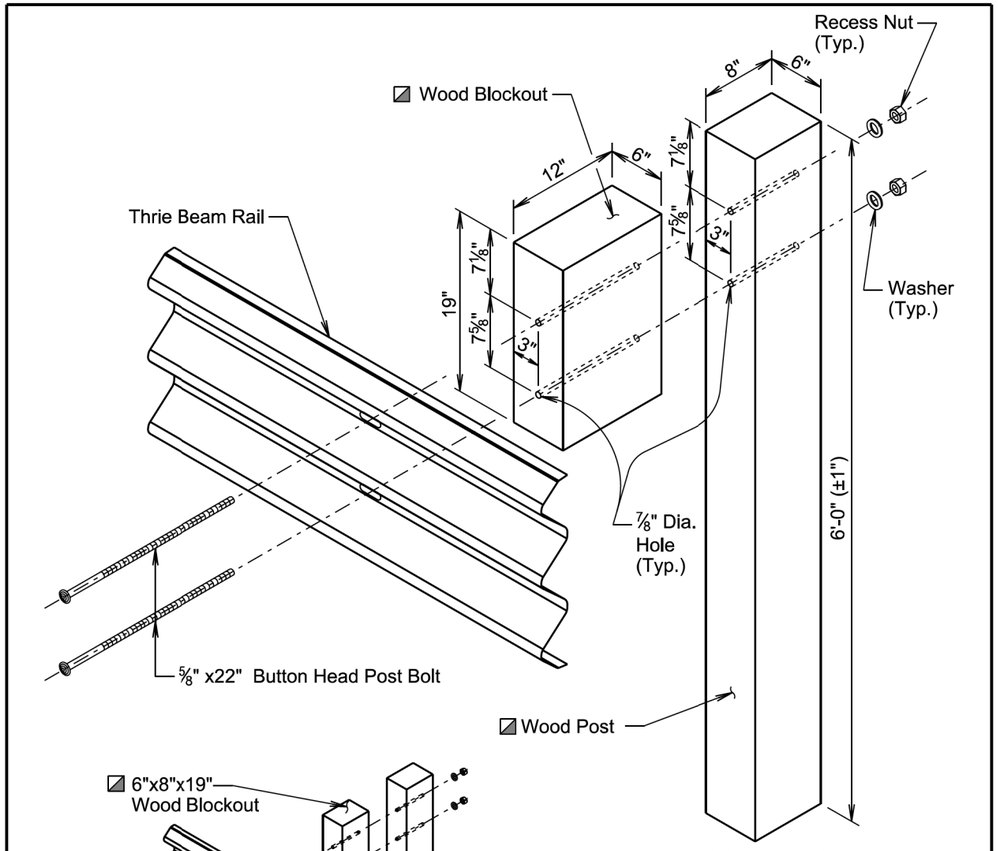
☑ The post and blockout illustrated above is typical for single thrie beam guardrail. When other variations of posts and blockouts are specified on other standard plates (e.g. transitions) then the posts and blockouts will be as specified on the other standard plates or as specified in the plans.

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.

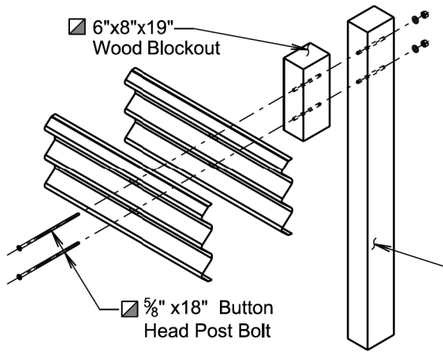
The top of post and top of block will have a true square cut. The top of block will be a maximum of ±½ inch from the top of the post.

September 14, 2019

Published Date: 2025	SDDOT	***THRIE BEAM GUARDRAIL***	***PLATE NUMBER 630.01*** *Sheet 1 of 5*



EXPANDED ISOMETRIC VIEW AT MIDSPAN OF THRIE BEAM GUARDRAIL

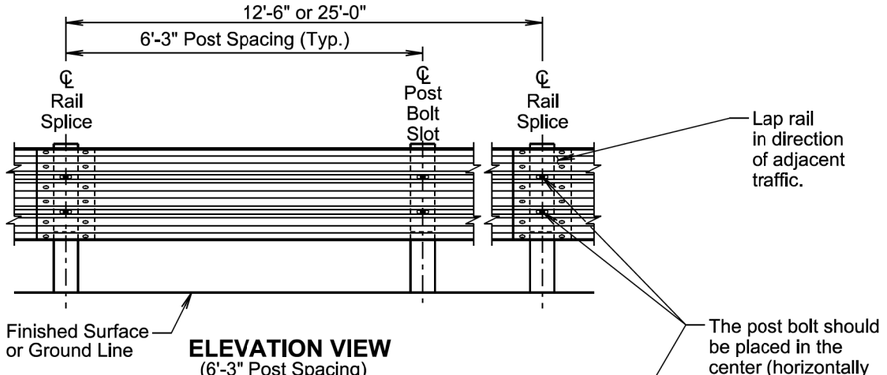


EXPANDED ISOMETRIC VIEW OF DOUBLE (NESTED) THRIE BEAM GUARDRAIL AT MIDSPAN
(For Information Only, Not to Scale)

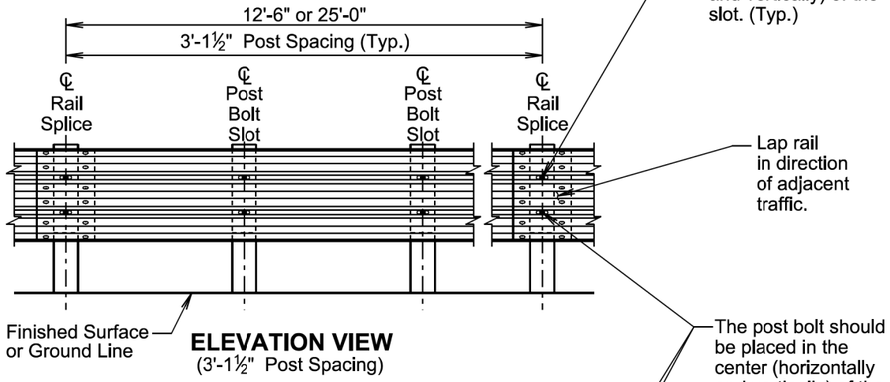
☑ For single thrie beam guardrail use 6"x12"x19" wood blockout, ⅝"x22" button head post bolt, and 6"x8"x6'-0" wood post. For double (nested) thrie beam guardrail use 6"x8"x19" wood blockout, ⅝"x18" button head post bolt, and 6"x8"x7'-0" wood post.

September 14, 2019

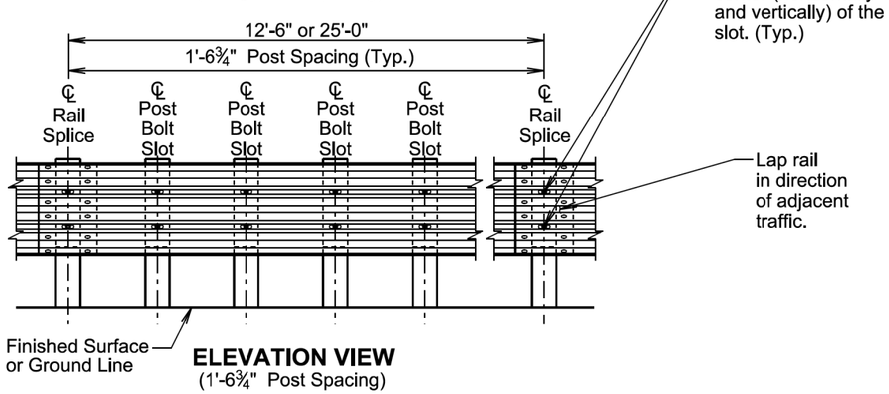
Published Date: 2025	SDDOT	***THRIE BEAM GUARDRAIL***	***PLATE NUMBER 630.01*** *Sheet 2 of 5*



ELEVATION VIEW
(6'-3" Post Spacing)

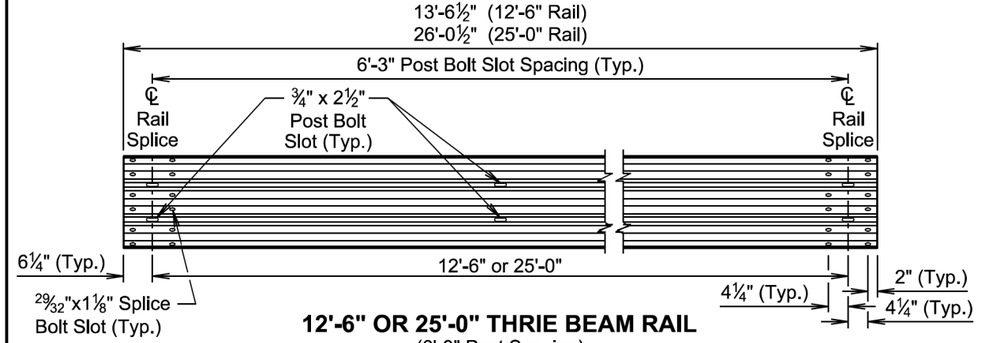


ELEVATION VIEW
(3'-1½" Post Spacing)

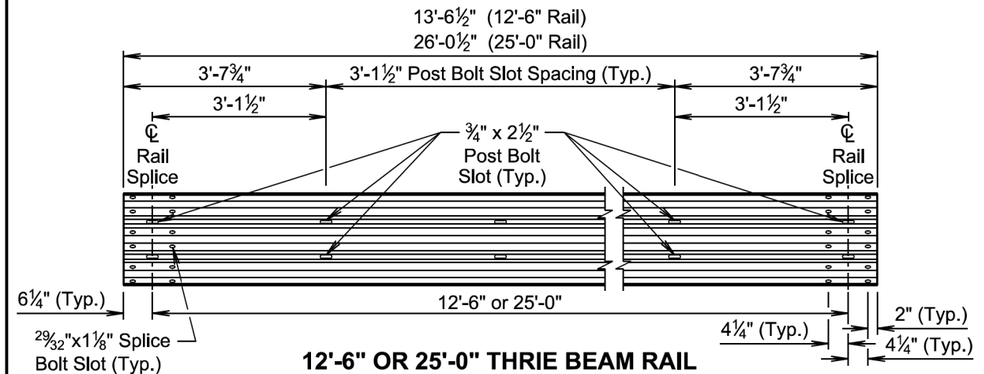


ELEVATION VIEW
(1'-6¾" Post Spacing)

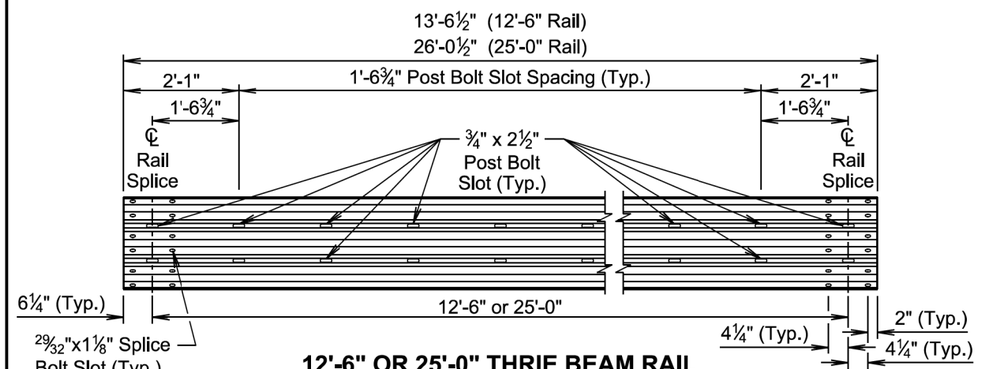
September 14, 2019



12'-6" OR 25'-0" THRIE BEAM RAIL
(6'-3" Post Spacing)

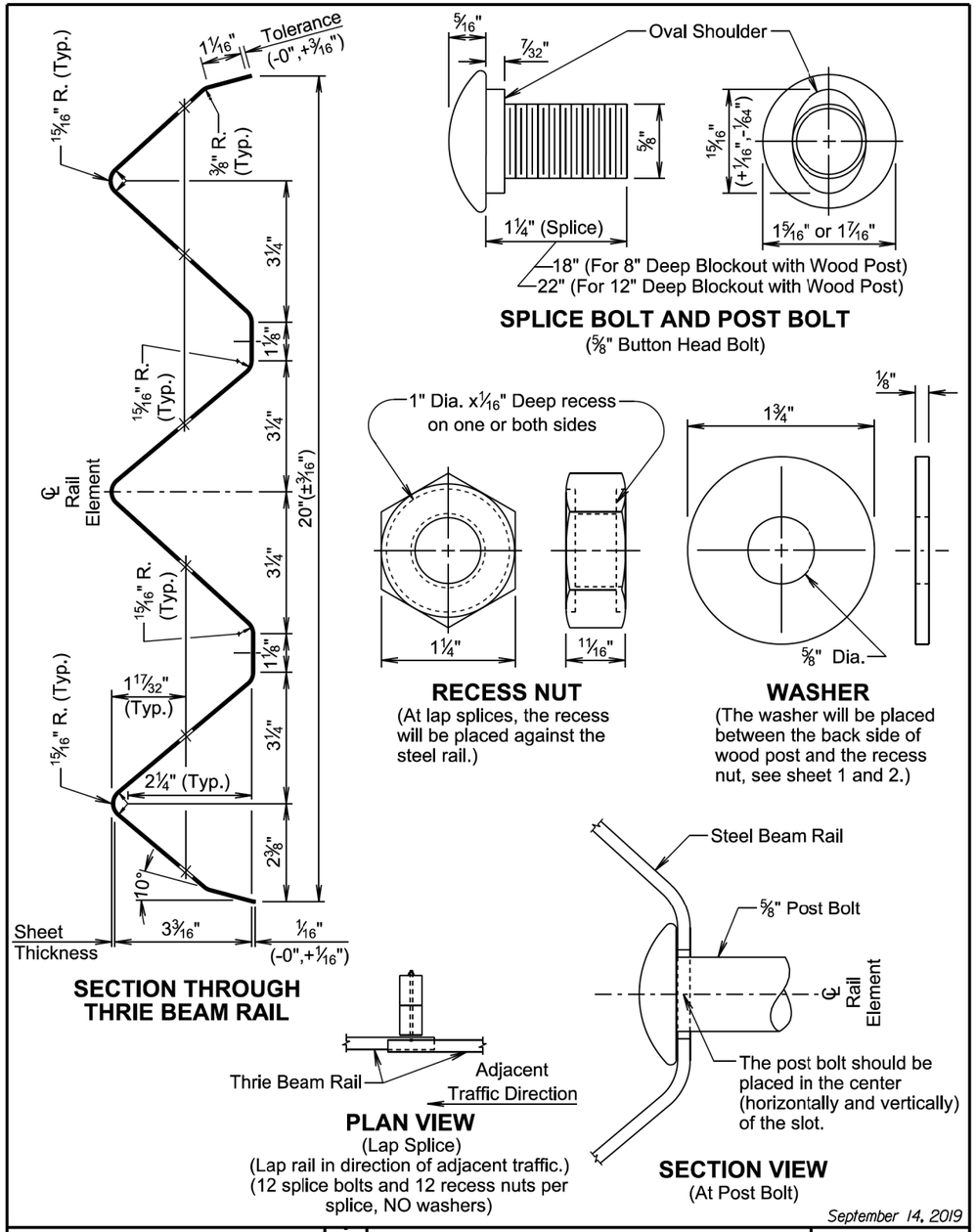


12'-6" OR 25'-0" THRIE BEAM RAIL
(3'-1½" Post Spacing)



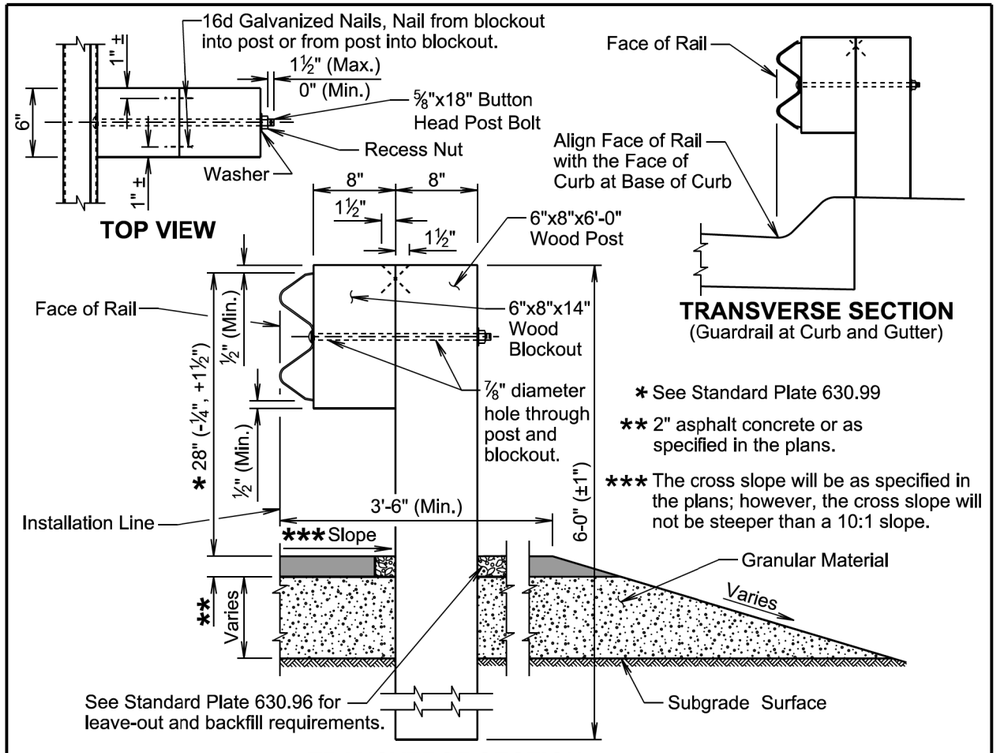
12'-6" OR 25'-0" THRIE BEAM RAIL
(1'-6¾" Post Spacing)

September 14, 2019



September 14, 2019

Published Date: 2025	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 5 of 5



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.

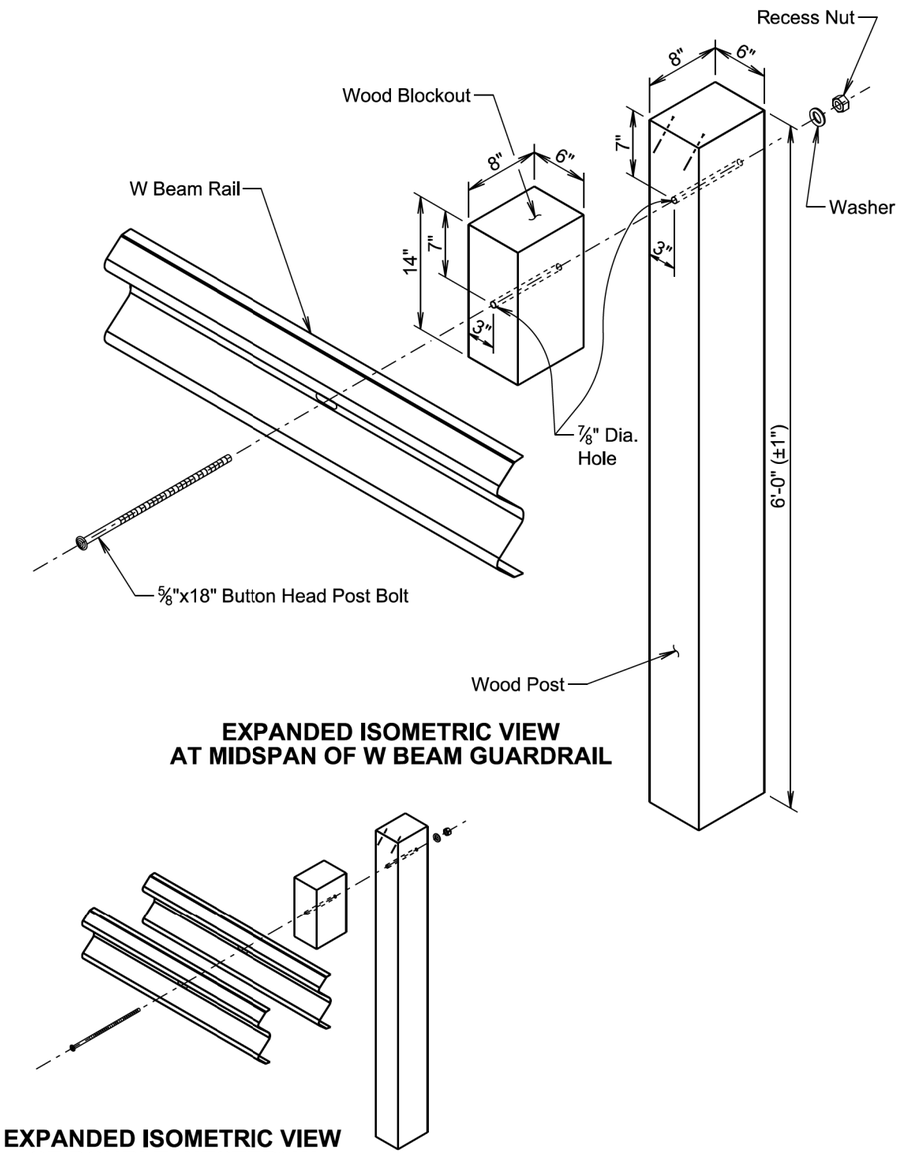
W beam rail section lengths may be 12'-6" and/or 25'-0". The combination of section lengths used will be compatible with the total length of rail per site as shown in the plans.

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: 2025	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			Sheet 1 of 5

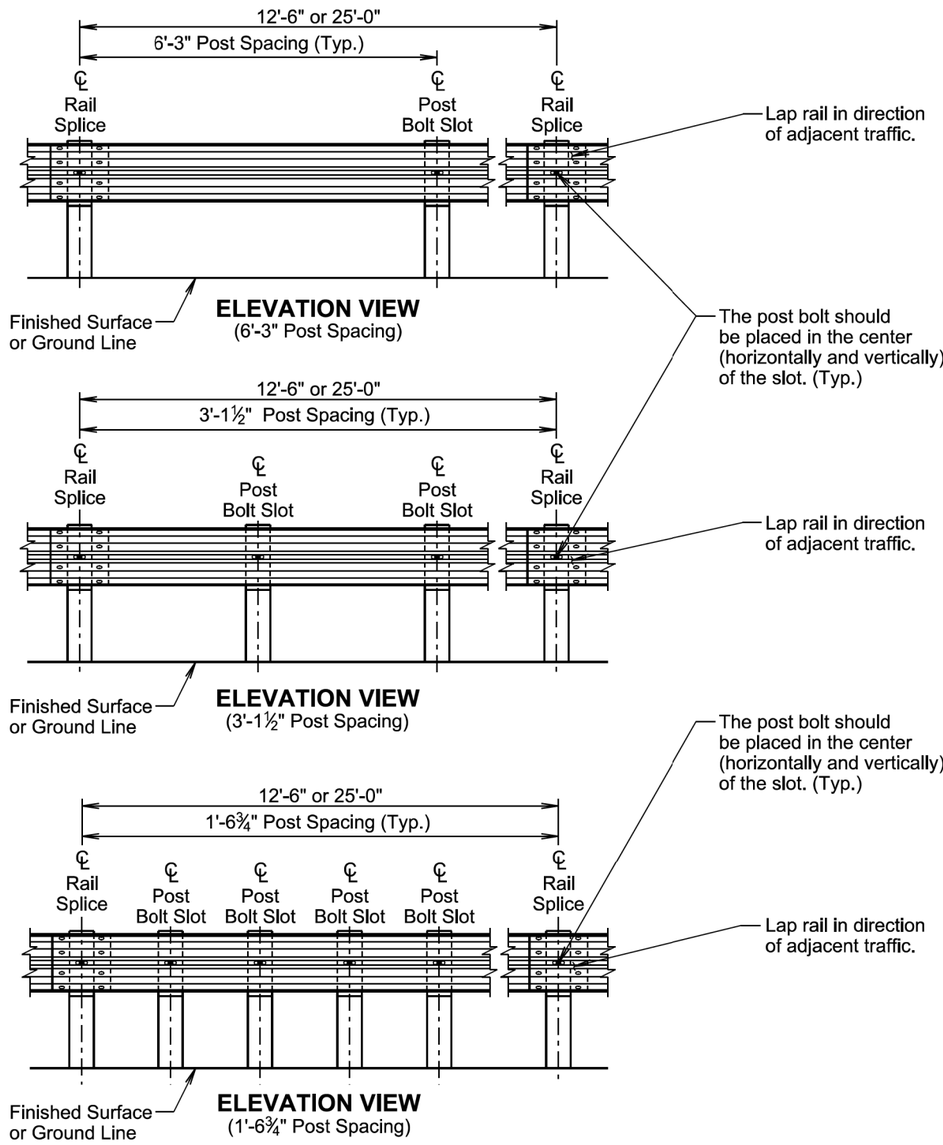


EXPANDED ISOMETRIC VIEW AT MIDSPAN OF W BEAM GUARDRAIL

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

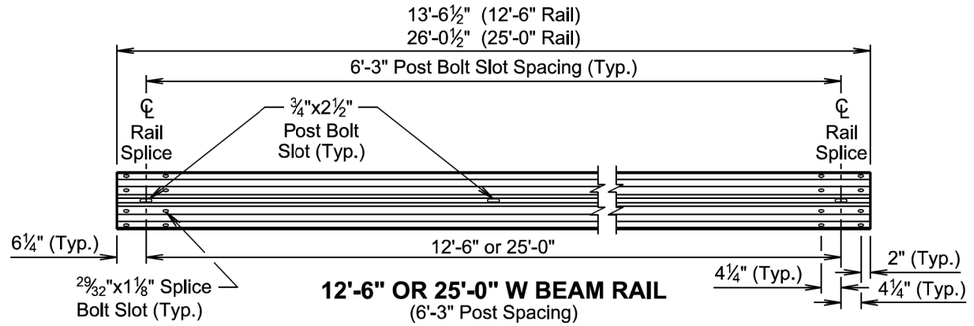
September 14, 2019

Published Date: 2025	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			Sheet 2 of 5

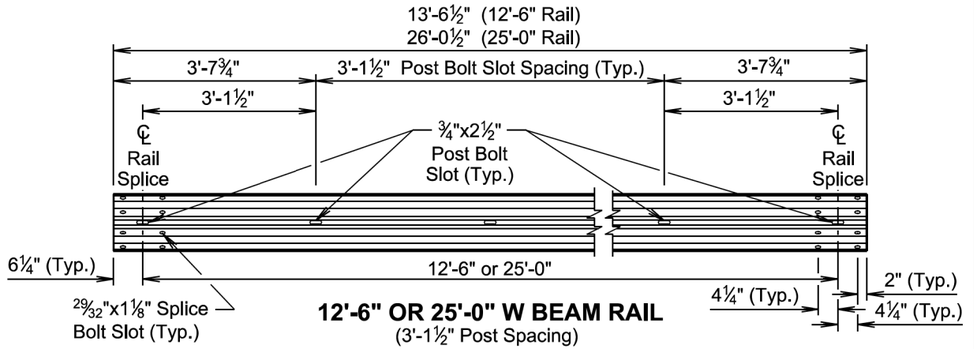


September 14, 2019

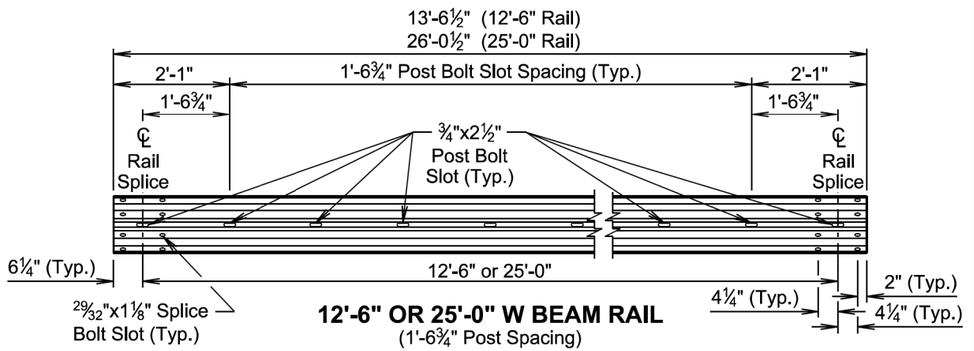
Published Date: 2025	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			Sheet 3 of 5



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



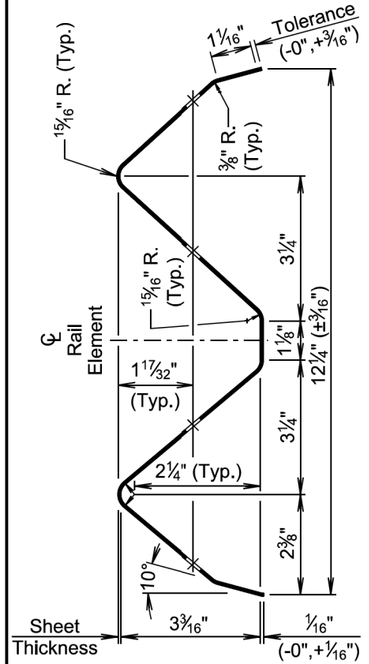
12'-6" OR 25'-0" W BEAM RAIL
(3'-1½" Post Spacing)



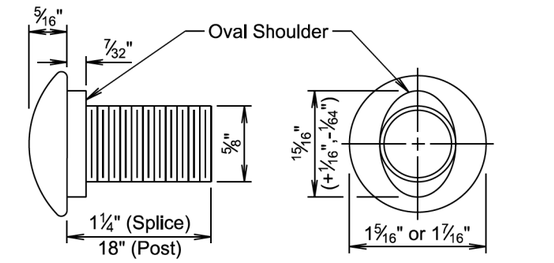
12'-6" OR 25'-0" W BEAM RAIL
(1'-6¾" Post Spacing)

September 14, 2019

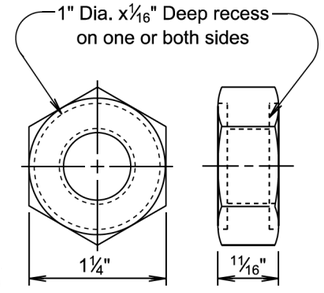
Published Date: 2025	SDDOT	***W BEAM GUARDRAIL***	*PLATE NUMBER* 630.10 *Sheet 4 of 5*



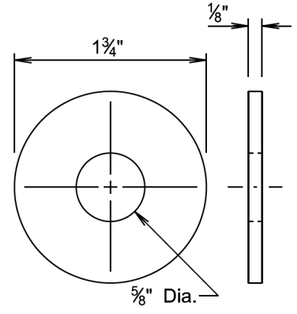
SECTION THROUGH W BEAM RAIL



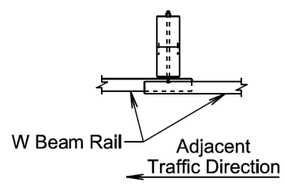
SPLICE BOLT AND POST BOLT
(⅝" Button Head Bolt)



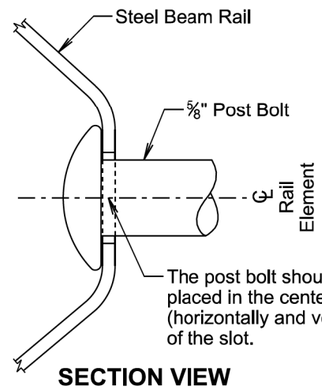
RECESS NUT
(At lap splices, the recess will be placed against the steel rail.)



WASHER
(The washer will be placed between the back side of wood post and the recess nut, see sheet 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: 2025	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.

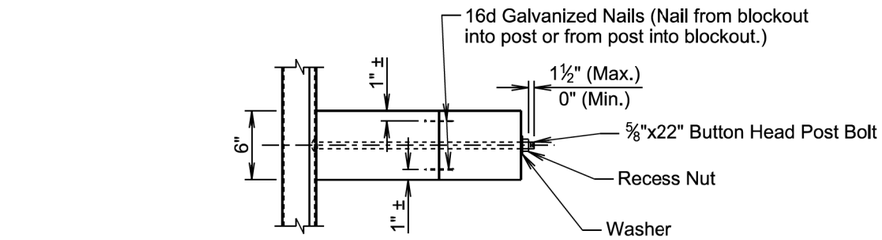
W beam rail section lengths may be 12'-6" and/or 25'-0". The combination of section lengths used will be compatible with the total length of rail per site as shown in the plans.

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.

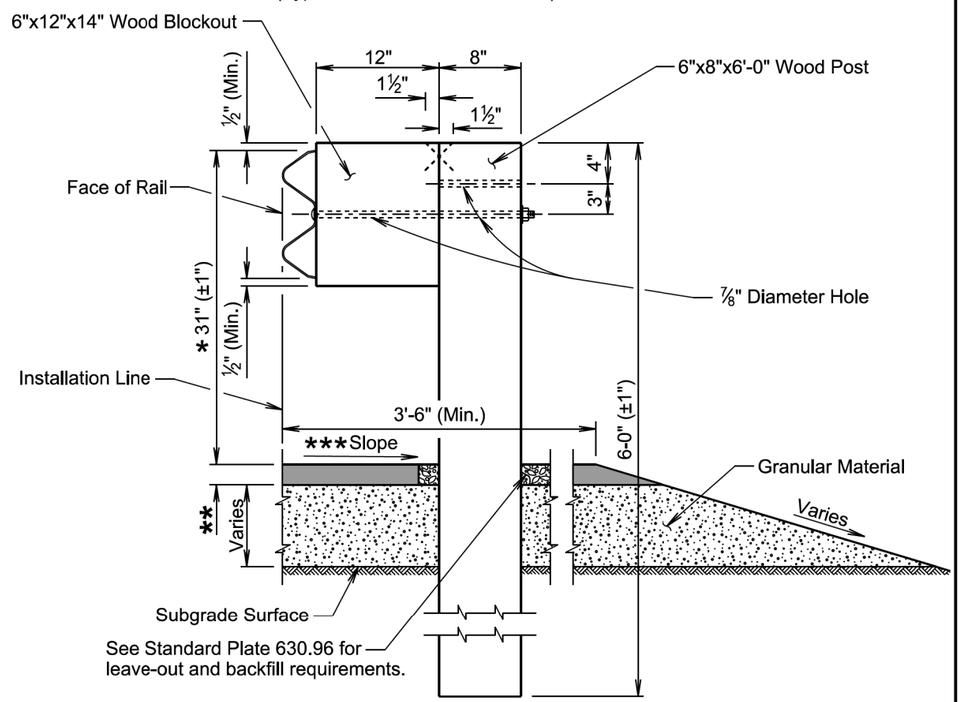
All costs for constructing the MGS including labor, equipment, and materials including all posts, blockouts, steel beam rail, and hardware will be incidental to the contract unit price per foot for the respective MGS contract item.

September 14, 2019

Published Date: 2025	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20 Sheet 1 of 6



TOP VIEW
(Type 1, 2, or 3 MGS Installation)



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

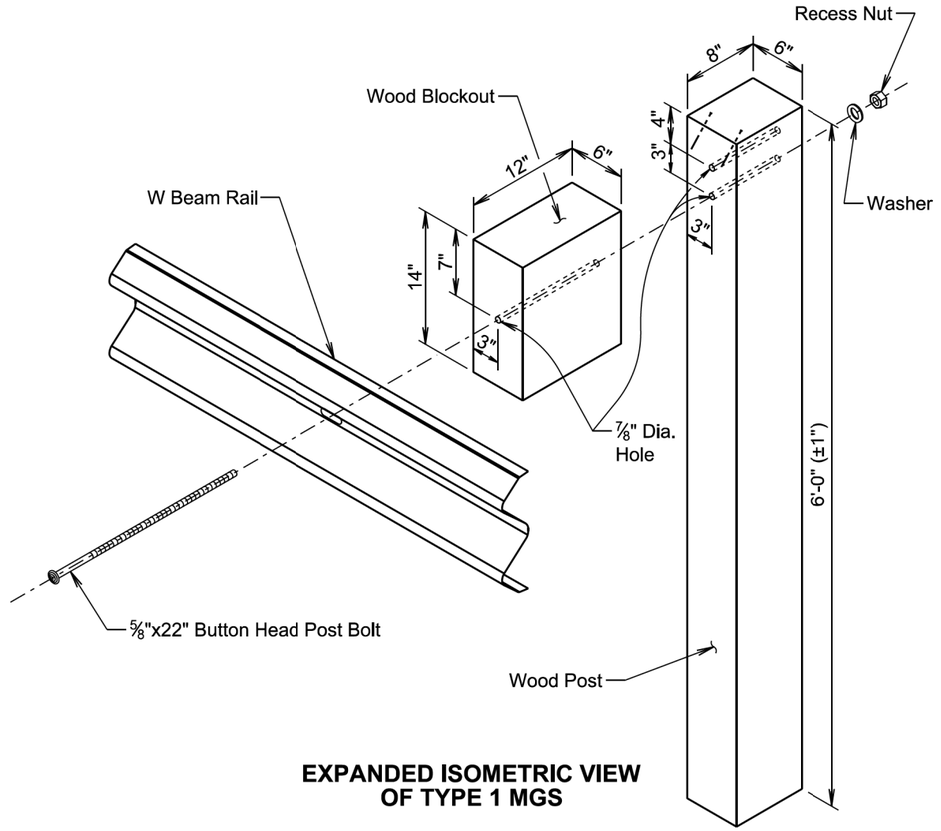
* See Standard Plate 630.99

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

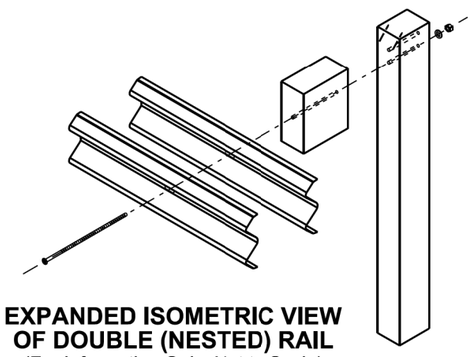
*** The cross slope will be as specified in the plans; however, the cross slope will not be steeper than a 10:1 slope.

September 14, 2019

Published Date: 2025	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20 Sheet 2 of 6

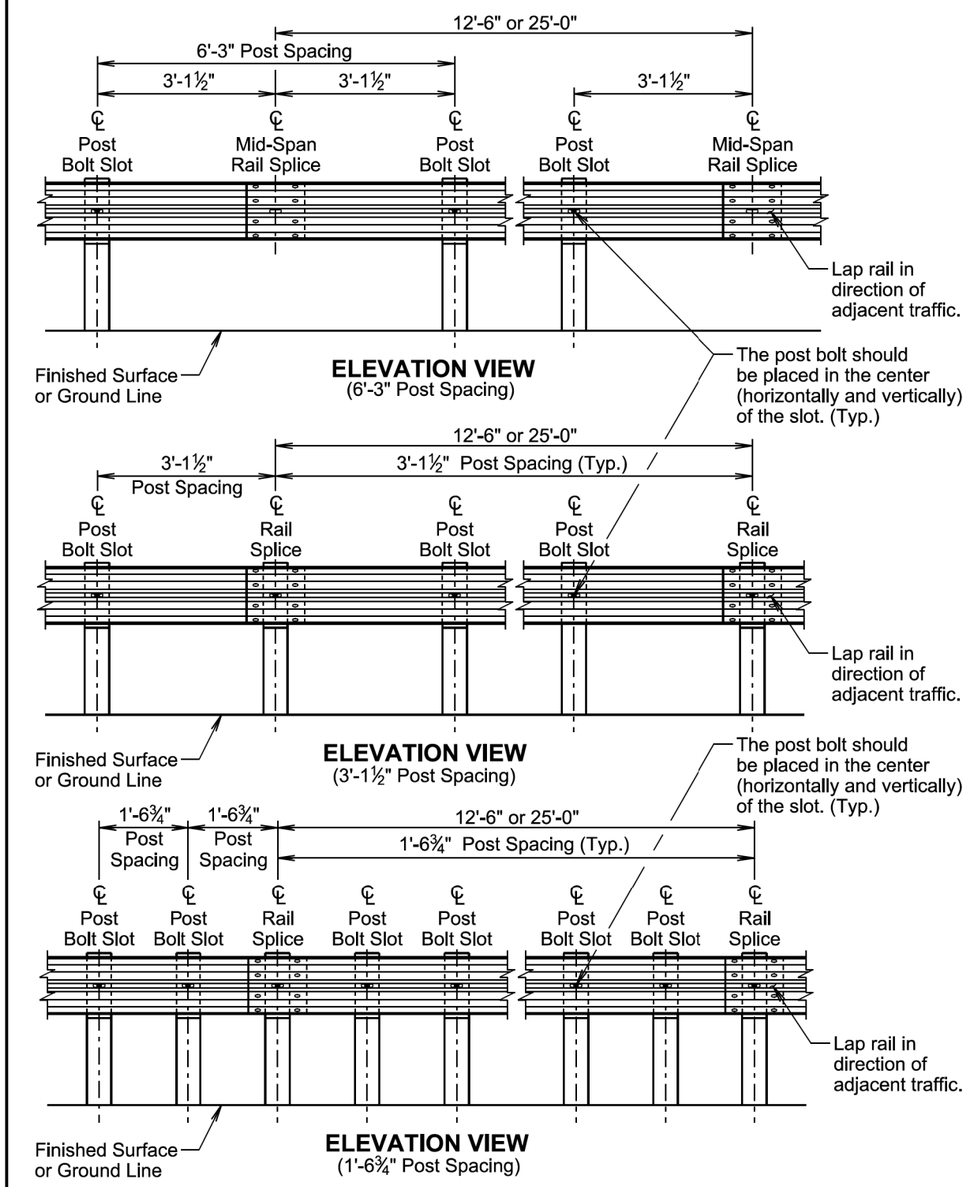


EXPANDED ISOMETRIC VIEW OF TYPE 1 MGS



EXPANDED ISOMETRIC VIEW OF DOUBLE (NESTED) RAIL
(For Information Only, Not to Scale)

September 14, 2019

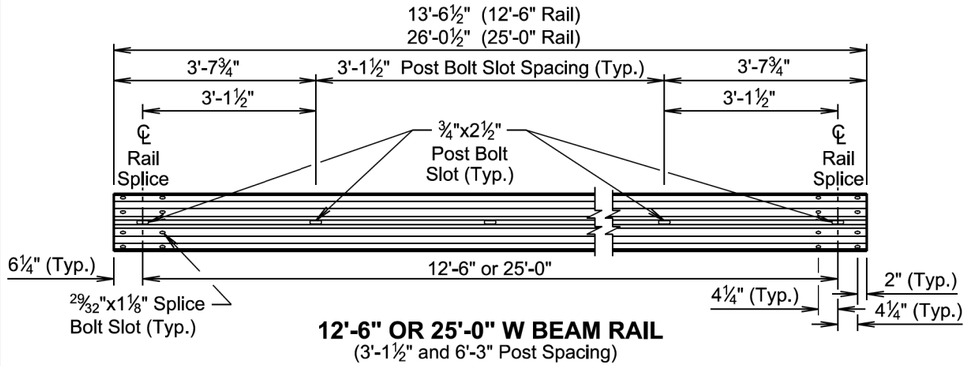


ELEVATION VIEW
(6'-3" Post Spacing)

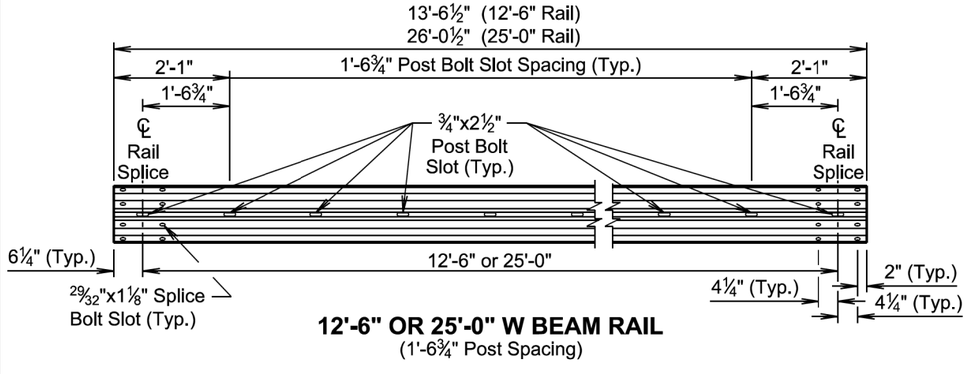
ELEVATION VIEW
(3'-1½" Post Spacing)

ELEVATION VIEW
(1'-6¾" Post Spacing)

September 14, 2019



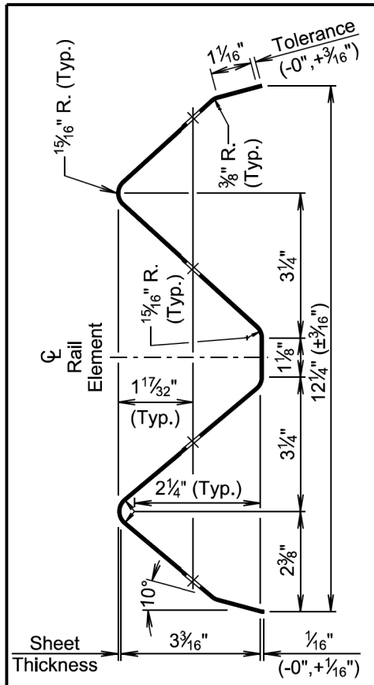
12'-6" OR 25'-0" W BEAM RAIL
(3'-1½" and 6'-3" Post Spacing)



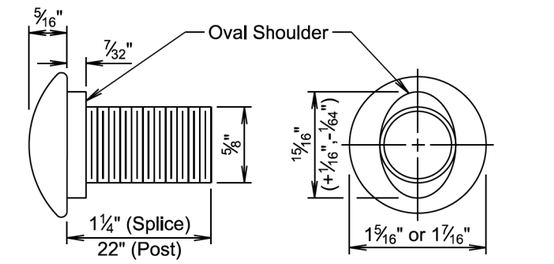
12'-6" OR 25'-0" W BEAM RAIL
(1'-6¾" Post Spacing)

September 14, 2019

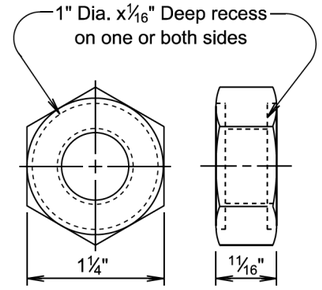
Published Date: 2025	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 5 of 6



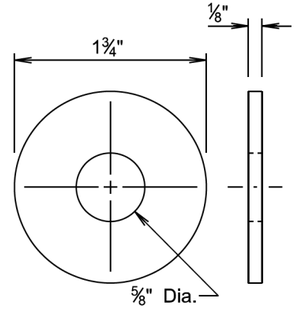
SECTION THROUGH W BEAM RAIL



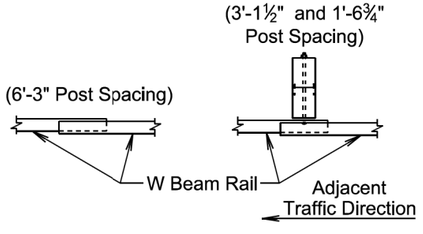
SPLICE BOLT AND POST BOLT
(⅝" Button Head Bolt)



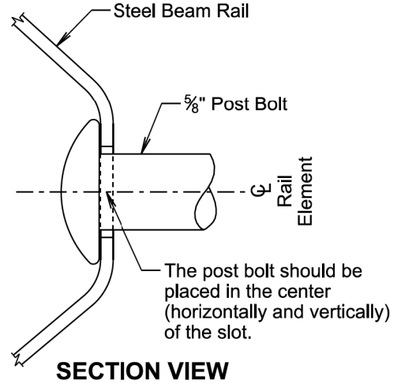
RECESS NUT
(At lap splices, the recess will be placed against the steel rail.)



WASHER
(The washer will be placed between the back side of wood post and the recess nut, see sheet 2 and 3.)



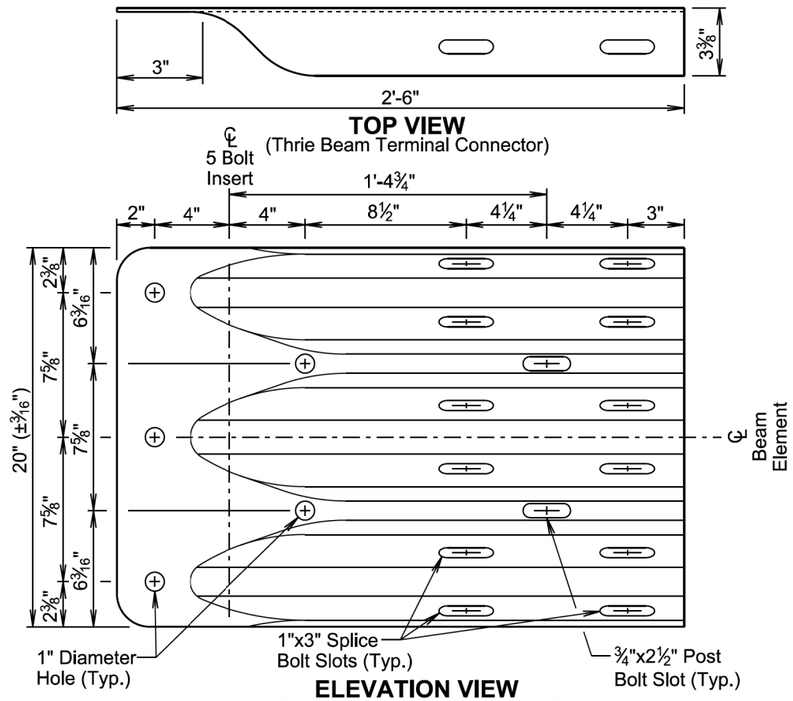
PLAN VIEW
(Lap Splice)
(Lap rail in direction of adjacent traffic.)
(8 splice bolts and 8 recess nuts per splice, NO washers)



SECTION VIEW
(At Post Bolt)

September 14, 2019

Published Date: 2025	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 6 of 6



GENERAL NOTES:

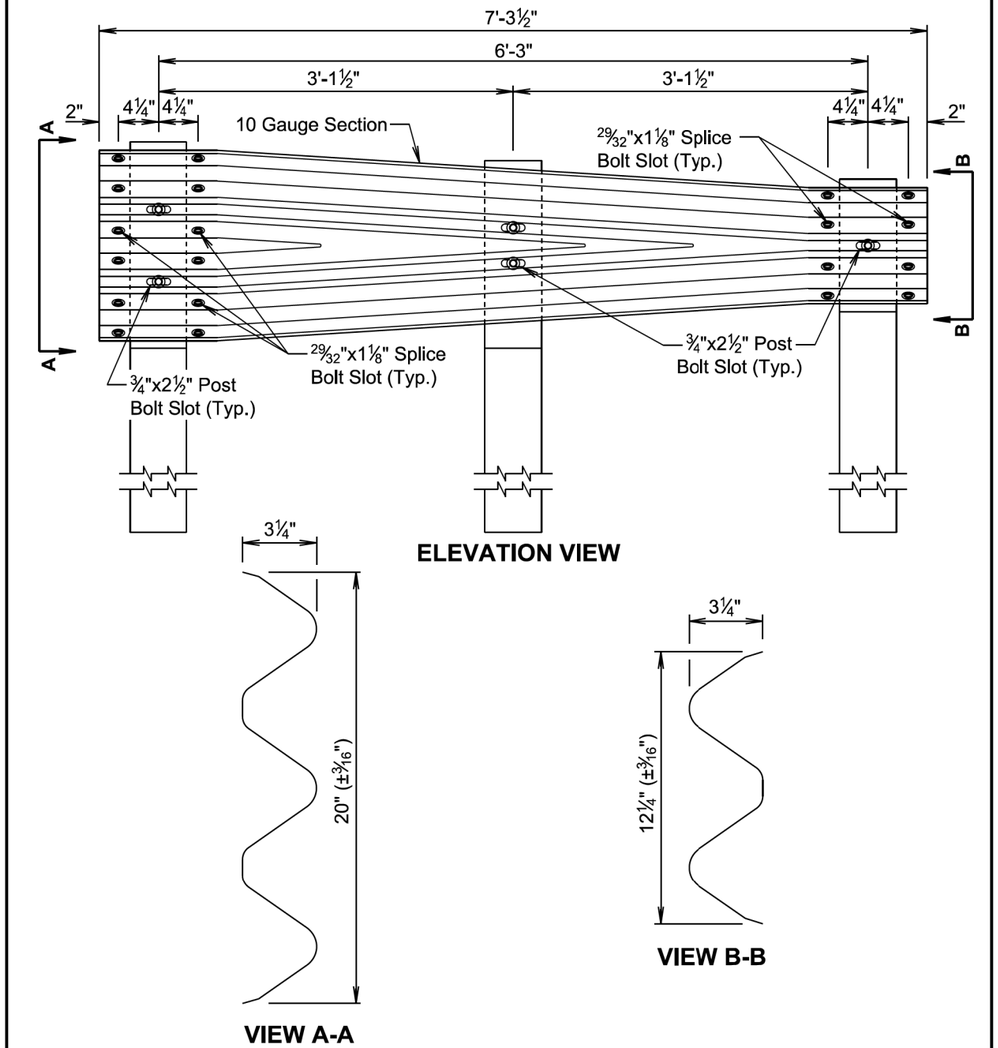
Thrie Beam Terminal Connectors will be 10 gauge.

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: 2025	SDDOT	*THRIE BEAM TERMINAL CONNECTOR*	*PLATE NUMBER* 630.47 *Sheet 1 of 1*

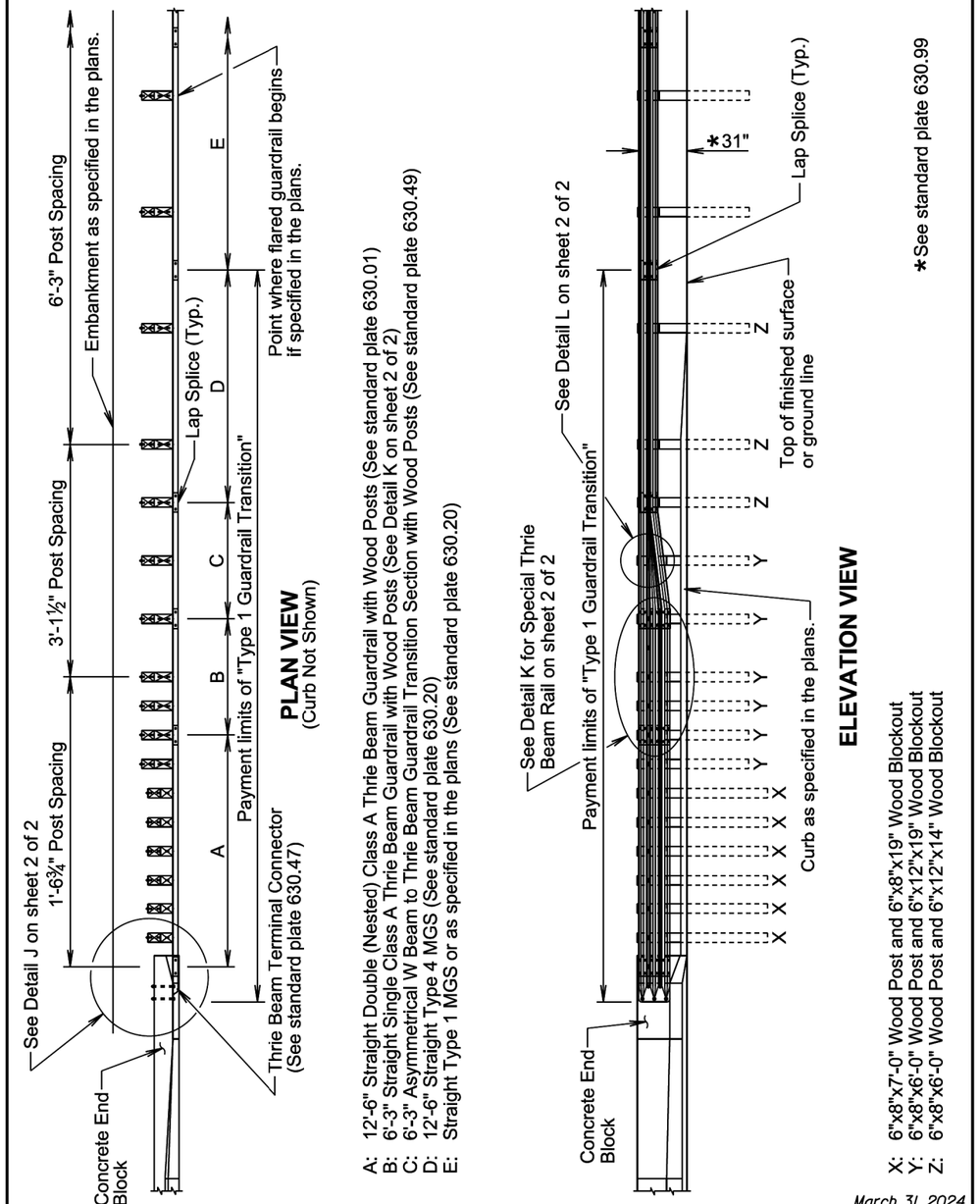


GENERAL NOTES:

All costs for furnishing and installing the W beam to thrie beam guardrail transition including labor, equipment, and materials including two posts, two blocks, W beam to thrie beam transition section, and hardware will be incidental to the contract unit price per each for "W Beam to Thrie Beam Guardrail Transition".

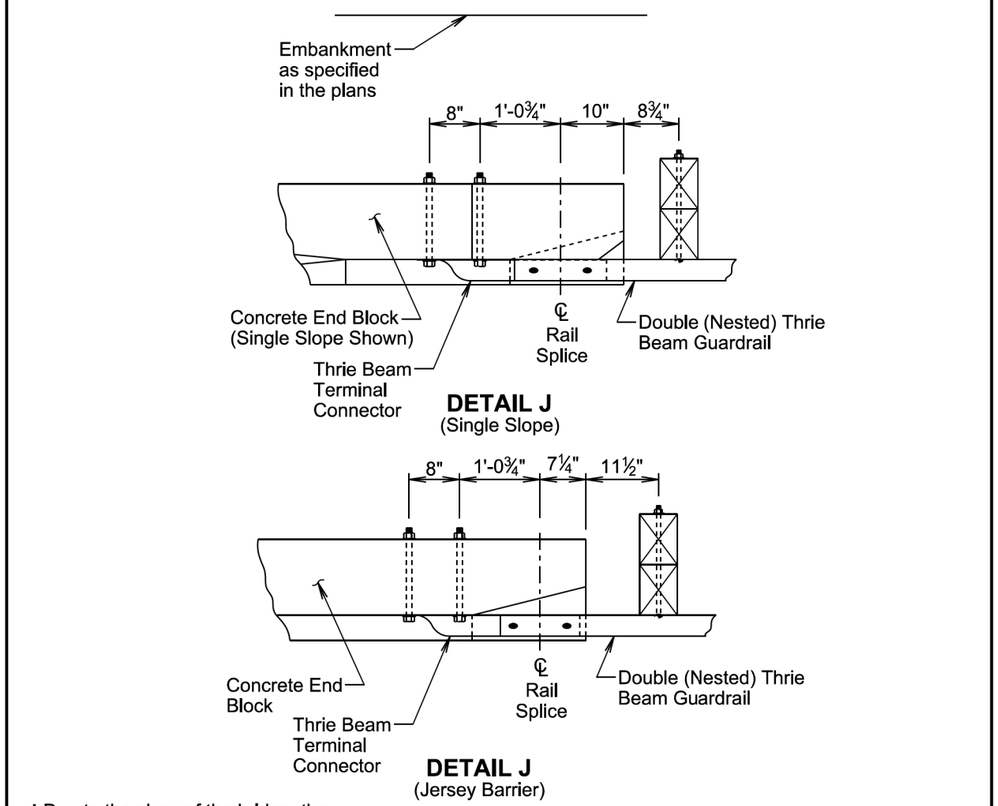
September 14, 2019

Published Date: 2025	SDDOT	*W BEAM TO THRIE BEAM GUARDRAIL TRANSITION SECTION*	*PLATE NUMBER* 630.48 *Sheet 1 of 1*

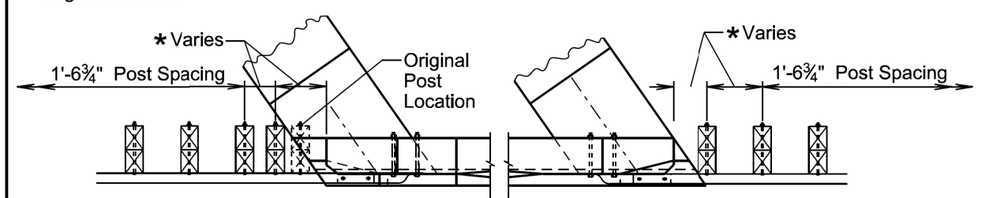


March 31, 2024

Published Date: 2025	SDDOT	TYPE 1 GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.50
			Sheet 1 of 3



*Due to the skew of the bridge, the placement of the first "X" post and blockout will need to be moved from the original location. It will need to be installed as close as possible to the wingwall provided that the second "X" post and blockout is located in it's original location.



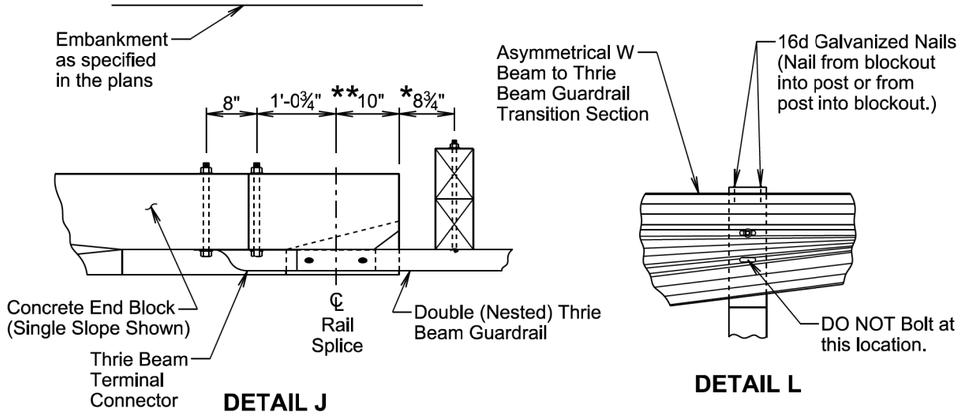
DETAIL J
(Skewed Bridge)

March 31, 2024

Published Date: 2025	SDDOT	TYPE 1 GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.50
			Sheet 2 of 3

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(239)244 P 0049(10)42	F32	F39

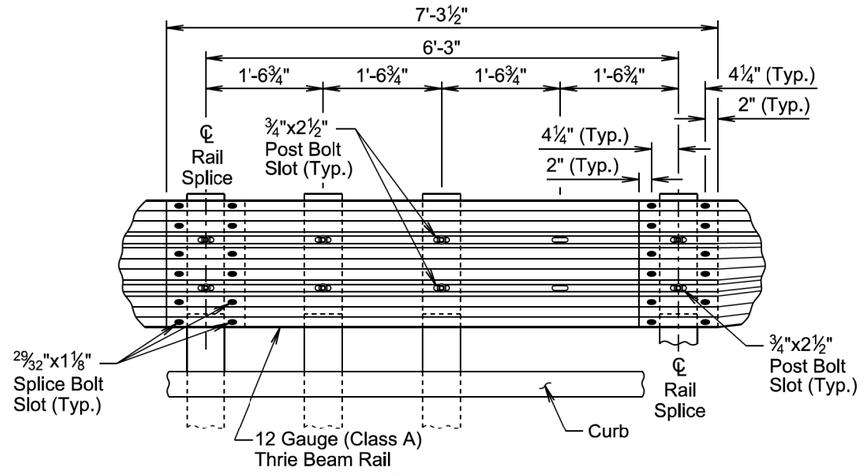
Plotting Date: 01/30/2025



DETAIL J

DETAIL L

Jersey Barrier Dimensions are **7¼" and *11½"



DETAIL K
(Special Thrie Beam Rail)

GENERAL NOTES:

Throughout the type 1 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 guardrail 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 "Type 1 Guardrail Transition".

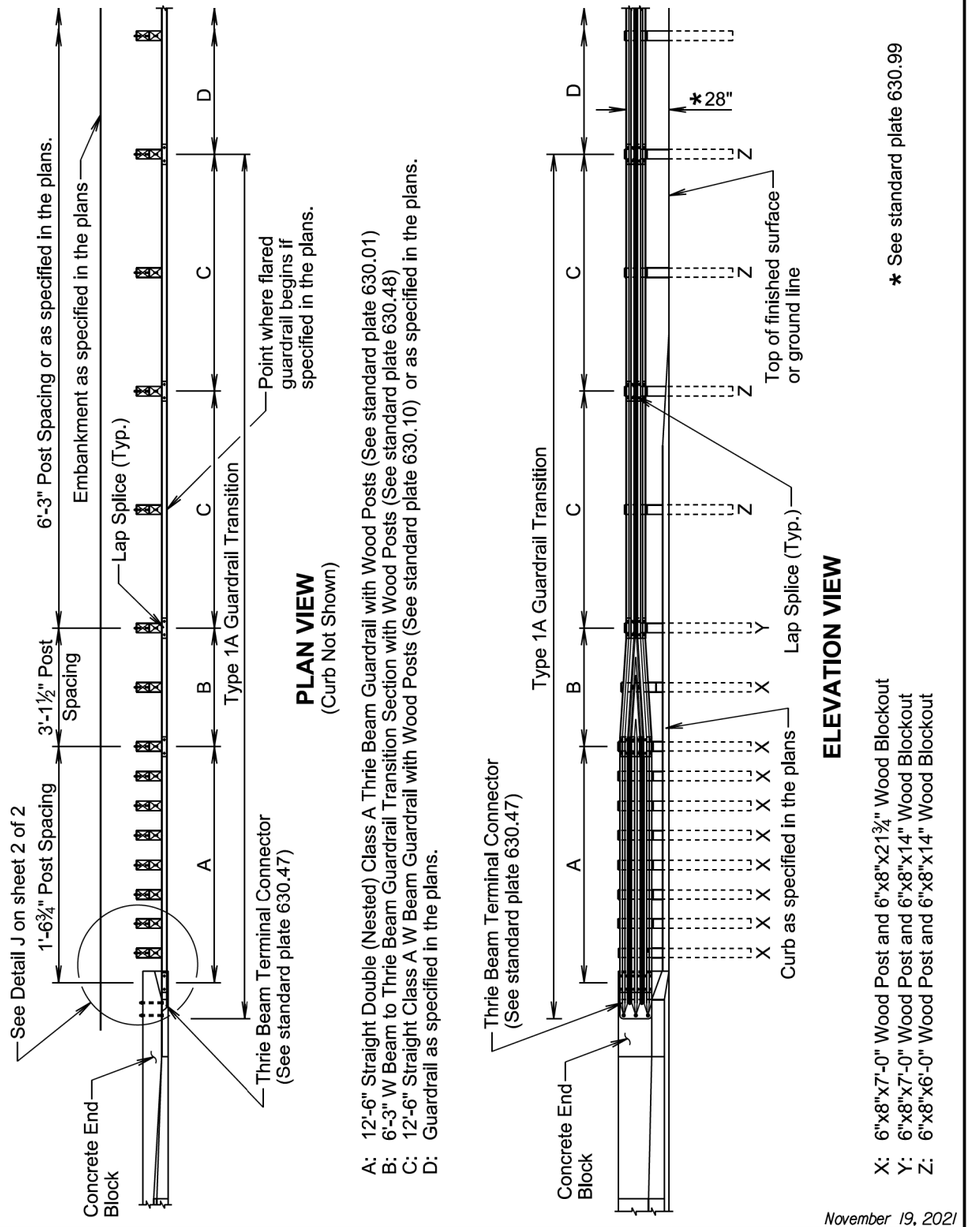
March 31, 2024

Published Date: 2025	SDDOT	TYPE 1 GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.50 Sheet 3 of 3

Plot Scale - 1:200

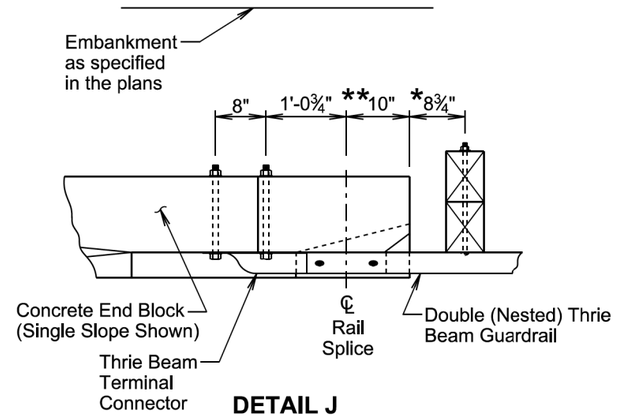
Plotted From - TRPR22410

File - ...\CAD\08H9_Std Plates.dgn



November 19, 2021

Published Date: 2025	SDDOT	TYPE 1A GUARDRAIL TRANSITION (CONCRETE END BLOCK TO W BEAM GUARDRAIL)	PLATE NUMBER 630.52
			Sheet 1 of 2



DETAIL J

Jersey Barrier Dimensions are **7¼" and *11½"

GENERAL NOTES:

Throughout the type 1A 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 straight double class A thrie beam guardrail including labor, equipment, and materials including the thrie beam rails, posts, blockouts, thrie beam terminal connector, and hardware will be incidental to the contract unit price per foot for "Straight Double Class A Thrie Beam Guardrail with Wood Posts".

All costs for furnishing and installing the type 1A guardrail transition including labor, equipment, and materials will be included in the contract unit price for the respective guardrail contract items.

November 19, 2021

Published Date: 2025	SDDOT	TYPE 1A GUARDRAIL TRANSITION (CONCRETE END BLOCK TO W BEAM GUARDRAIL)	PLATE NUMBER 630.52
			Sheet 2 of 2

Published Date: 2025

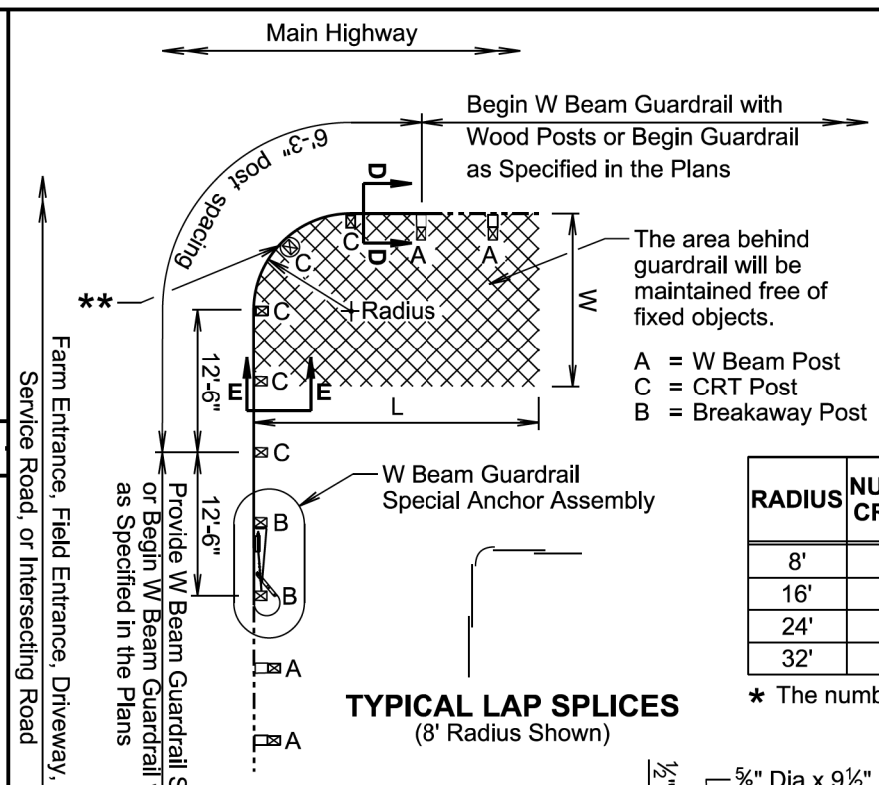
SDDOT

SHORT RADIUS W BEAM GUARDRAIL AND SPECIAL ANCHOR ASSEMBLY

PLATE NUMBER 630.84

Sheet 1 of 4

September 14, 2019



TYPICAL LAP SPLICES
(8' Radius Shown)

GENERAL NOTES:

Washers will NOT be used on the face of the rail under the ⅝" button head bolts connecting the rail to the Controlled Releasing Terminal (CRT) posts.

** The rail will NOT be bolted to the CRT post at the center of the 8' radius nose only.

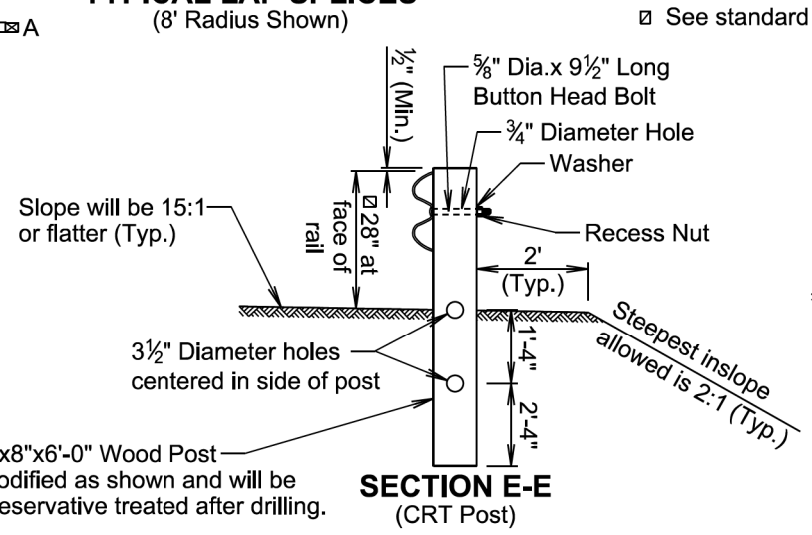
The curved guardrail sections will be shop bent.

The W Beam Guardrail Special Anchor has NOT been tested as a crashworthy end treatment for approaching traffic on the intersecting roadway. Therefore, its use will be limited to farm and field entrances, driveways, or service roads.

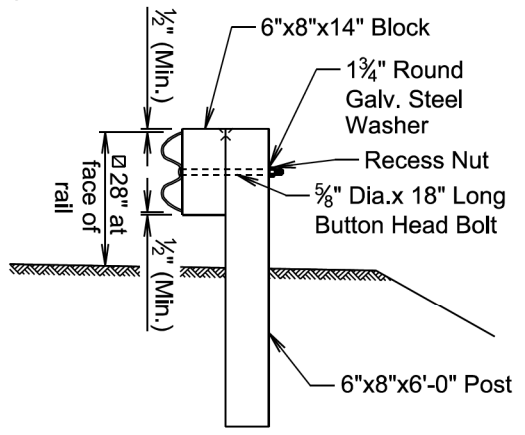
RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (L x W)
8'	5	1 @ 12.5'	25' x 15'
16'	7	1 @ 25'	30' x 15'
24'	9	1 @ 25' and 1 @ 12.5'	40' x 20'
32'	11	2 @ 25'	50' x 20'

* The number of rails is based on a 90° intersection.

⧄ See standard plate 630.99



SECTION E-E
(CRT Post)



SECTION D-D
(W Beam Guardrail Post)

Published Date: 2025

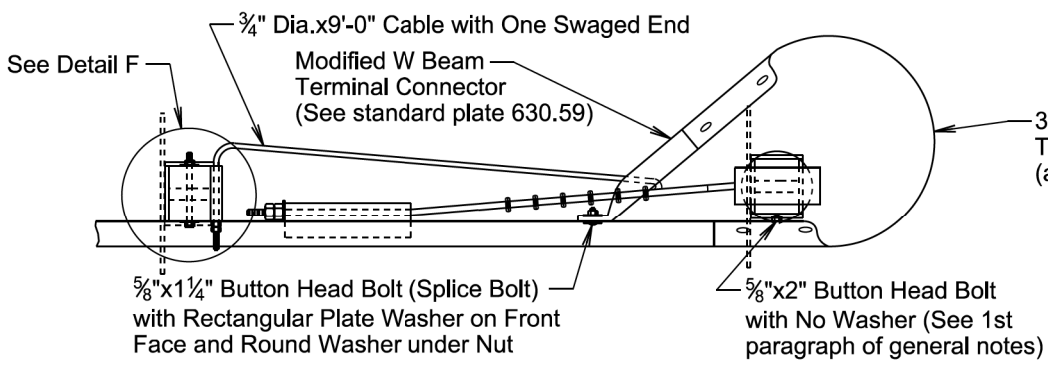
SDDOT

SHORT RADIUS W BEAM GUARDRAIL AND SPECIAL ANCHOR ASSEMBLY

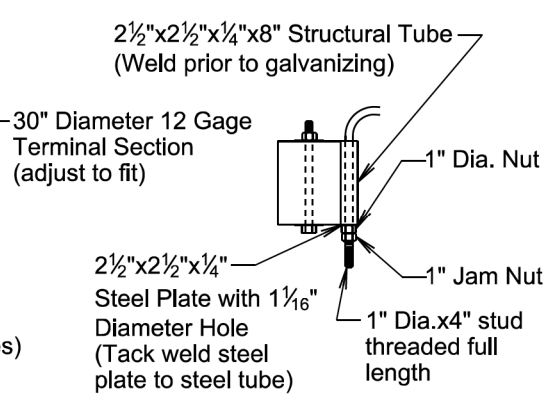
PLATE NUMBER 630.84

Sheet 2 of 4

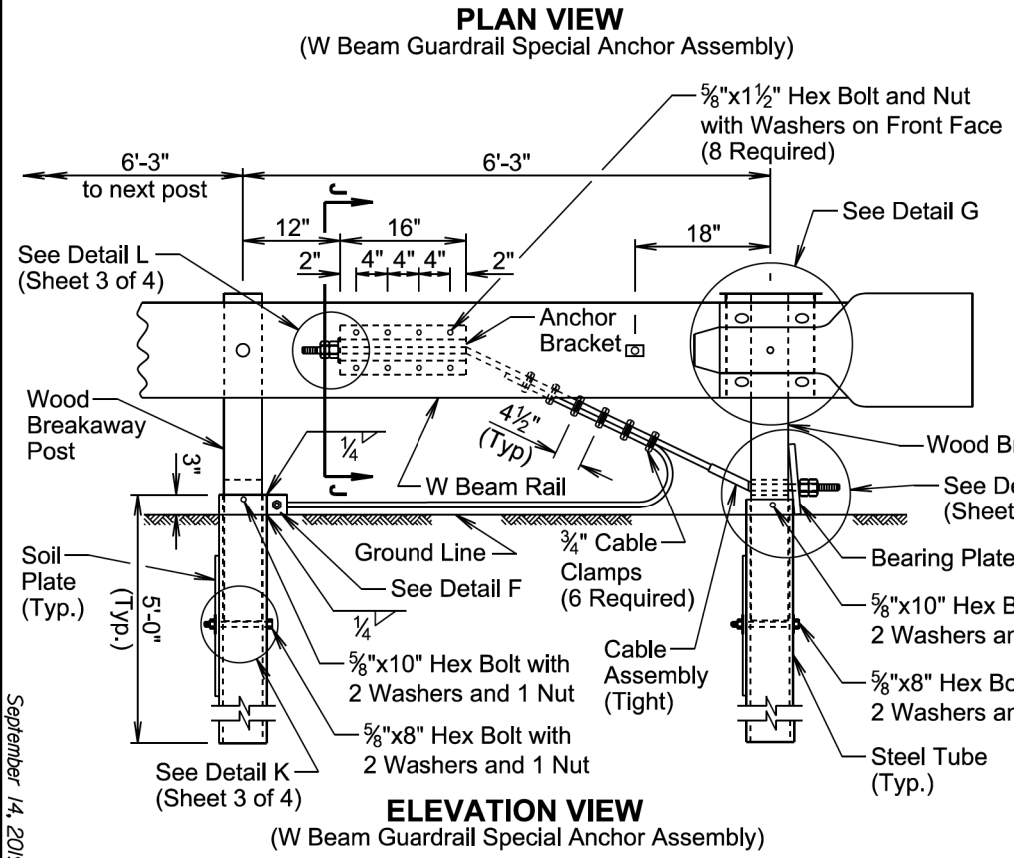
September 14, 2019



PLAN VIEW
(W Beam Guardrail Special Anchor Assembly)



DETAIL F
PLAN VIEW

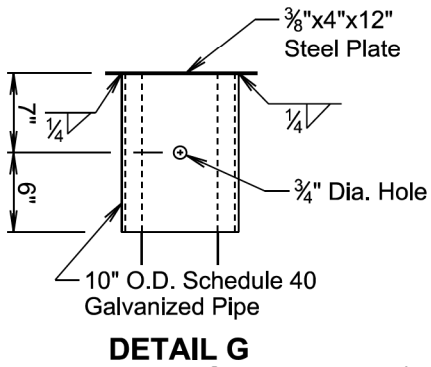


ELEVATION VIEW
(W Beam Guardrail Special Anchor Assembly)

GENERAL NOTES:

Attach W beam rail to the steel pipe with a ⅝"x2" button head bolt with no washer. Connection to the post is NOT required.

Wire rope will conform to the requirements of AASHTO M 30, will be ¾ inch (6x19) preformed wire strand core or independent wire rope core, and will be galvanized. The wire rope will be manufactured of improved plow steel with a minimum breaking strength of 42,800 pounds.



DETAIL G
(Guardrail and Terminal Section not shown)

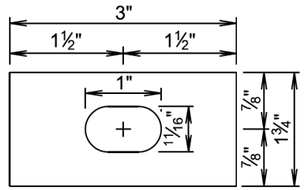
STATE OF SOUTH DAKOTA

PROJECT NH 0018(239)244 P 0049(10)42

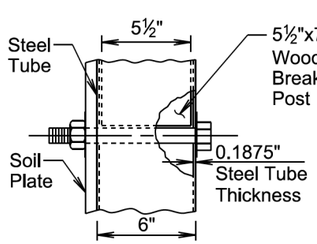
SHEET F34

TOTAL SHEETS F39

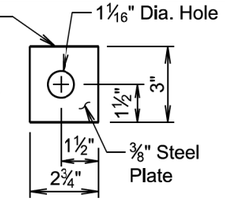
Plotting Date: 01/30/2025



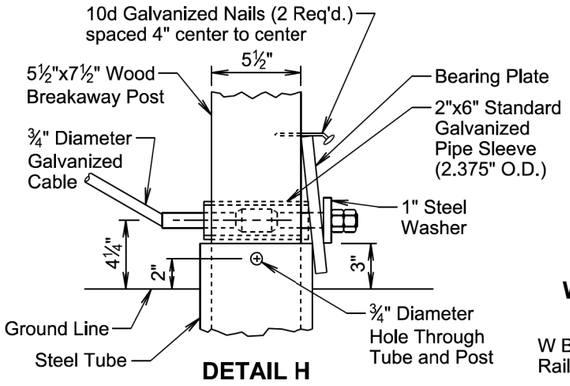
RECTANGULAR PLATE WASHER



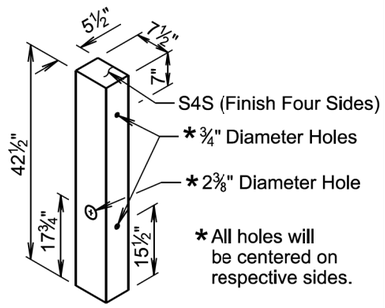
DETAIL K



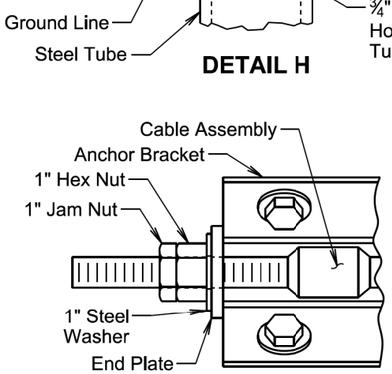
END PLATE FOR ANCHOR BRACKET



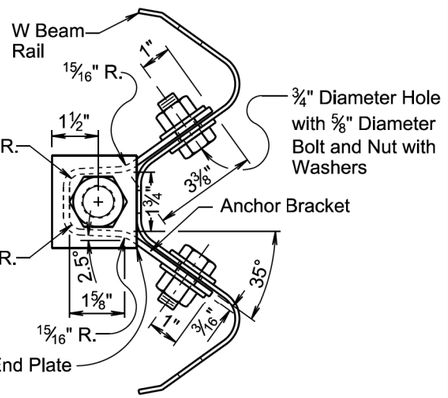
DETAIL H



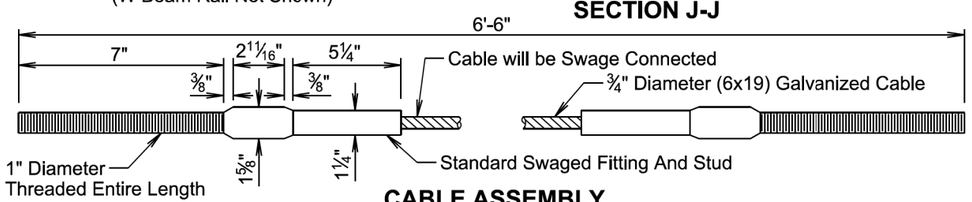
WOOD BREAKAWAY POST



DETAIL L
(W Beam Rail Not Shown)



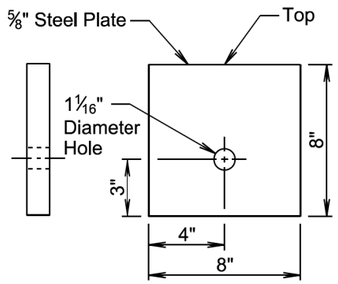
SECTION J-J



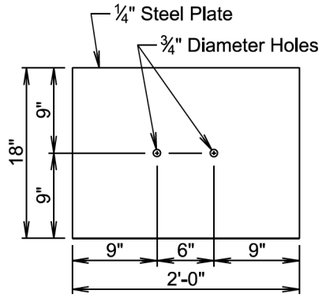
CABLE ASSEMBLY

September 14, 2019

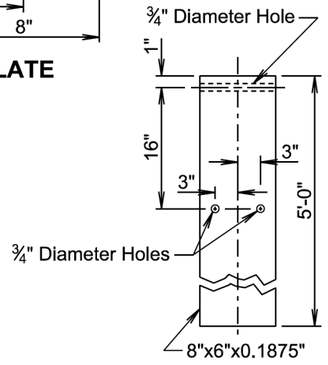
Published Date: 2025	SDDOT	*SHORT RADIUS W BEAM GUARDRAIL AND SPECIAL ANCHOR ASSEMBLY*	*PLATE NUMBER* 630.84 *Sheet 3 of 4*



BEARING PLATE



SOIL PLATE



STEEL TUBE

GENERAL NOTES:

The wood breakaway post will be in conformance with Section 630.2 A of the Specifications.

The bolts will be in conformance with ASTM A307 and the nuts will be in conformance with ASTM A563, Grade A or better. The bolts and nuts will be galvanized in accordance with ASTM A153.

All angles, channels, and plates will conform to the requirements of ASTM A36 and the structural tubing will conform to ASTM A500. Welding will meet the current requirements of the Structural Welding Code AWS D1.1. All structural steel will be galvanized in accordance with ASTM A123. Punching, drilling, cutting, or welding will NOT be permitted after galvanizing.

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 straight W beam guardrail with CRT posts including labor, equipment, and materials including all posts, blocks, steel beam rail, and hardware will be incidental to the contract unit price per foot for "Straight Class A W Beam Guardrail with CRT Posts".

All costs for constructing the curved W beam guardrail with CRT posts including labor, equipment, and materials including all CRT posts, steel beam rail, and hardware will be incidental to the contract unit price per foot for "Curved Class A W Beam Guardrail with CRT Posts".

All costs for constructing the W beam guardrail special anchor assembly including labor, equipment, hardware, and all components of the W beam guardrail special anchor assembly except the W beam rail will be incidental to the contract unit price per each for "W Beam Guardrail Special Anchor Assembly". The 12'-6" length of W beam rail located within the W beam guardrail special anchor assembly will be paid for per foot with the contract item "Straight Class A W Beam Guardrail with Wood Posts".

September 14, 2019

Published Date: 2025	SDDOT	*SHORT RADIUS W BEAM GUARDRAIL AND SPECIAL ANCHOR ASSEMBLY*	*PLATE NUMBER* 630.84 *Sheet 4 of 4*

Published Date: 2025

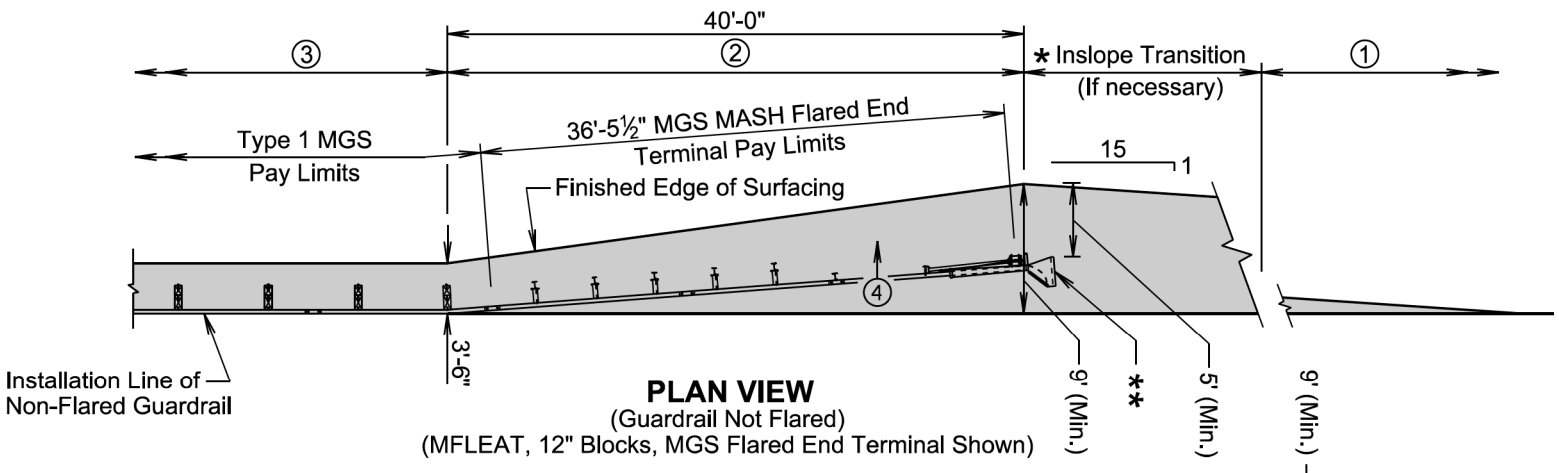
SDDOT

EMBANKMENT, SURFACING, AND PAYMENT LIMITS FOR MGS MASH FLARED END TERMINAL

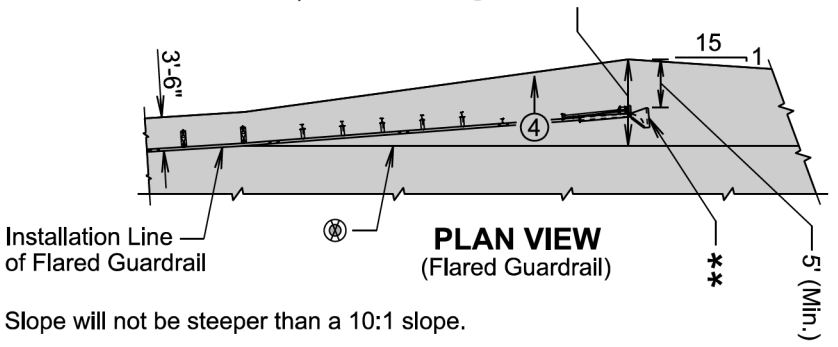
PLATE NUMBER 630.87

Sheet 1 of 1

June 26, 2019



PLAN VIEW
(Guardrail Not Flared)
(MFLEAT, 12" Blocks, MGS Flared End Terminal Shown)



PLAN VIEW
(Flared Guardrail)

** See standard plate 632.40 for delineation.

2" Asphalt concrete surfacing with variable thickness granular material or as specified in the plans.

① Same inslope as mainline inslope or as specified in the plans.

② 4:1 inslope or as specified in the plans.

③ Inslope as specified in the plans.

④ Same slope as roadway cross slope or as specified in the plans. Slope will not be steeper than a 10:1 slope.

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 100 feet. If the inslope changes from a 6:1 to a 4:1 the length of the inslope transition would be 200 feet.

Ⓐ 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.

Published Date: 2025

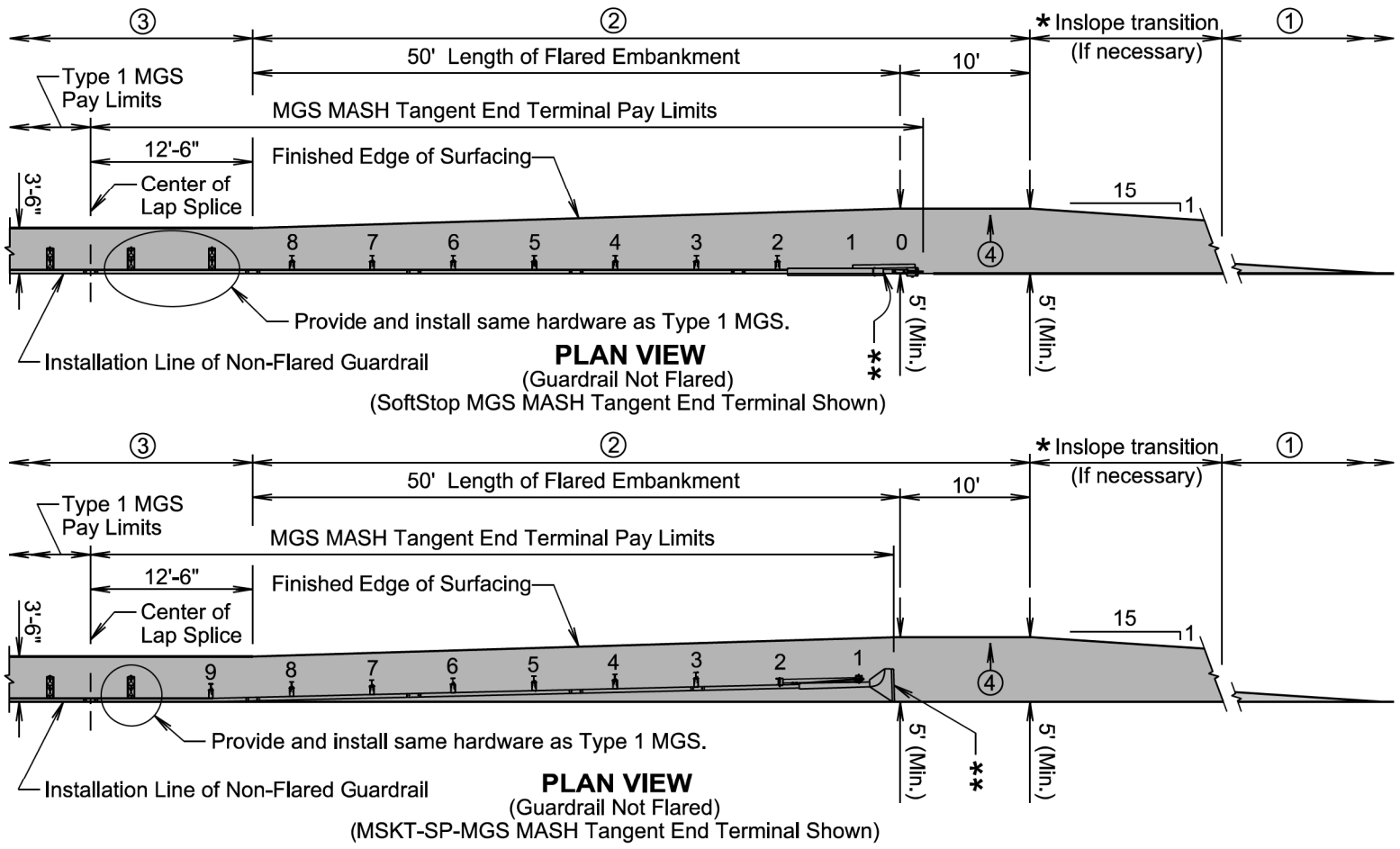
SDDOT

EMBANKMENT, SURFACING, AND PAYMENT LIMITS FOR MGS MASH TANGENT END TERMINAL

PLATE NUMBER 630.89

Sheet 1 of 2

November 19, 2021



PLAN VIEW
(Guardrail Not Flared)
(SoftStop MGS MASH Tangent End Terminal Shown)

PLAN VIEW
(Guardrail Not Flared)
(MSKT-SP-MGS MASH Tangent End Terminal Shown)

** See standard plate 632.40 for delineation.

2" Asphalt concrete surfacing with variable thickness granular material or as specified in the plans.

① Same inslope as mainline inslope or as specified in the plans.

② 4:1 inslope or as specified in the plans.

③ Inslope as specified in the plans.

④ Same slope as roadway cross slope or as specified in the plans. Slope will not be steeper than a 10:1 slope.

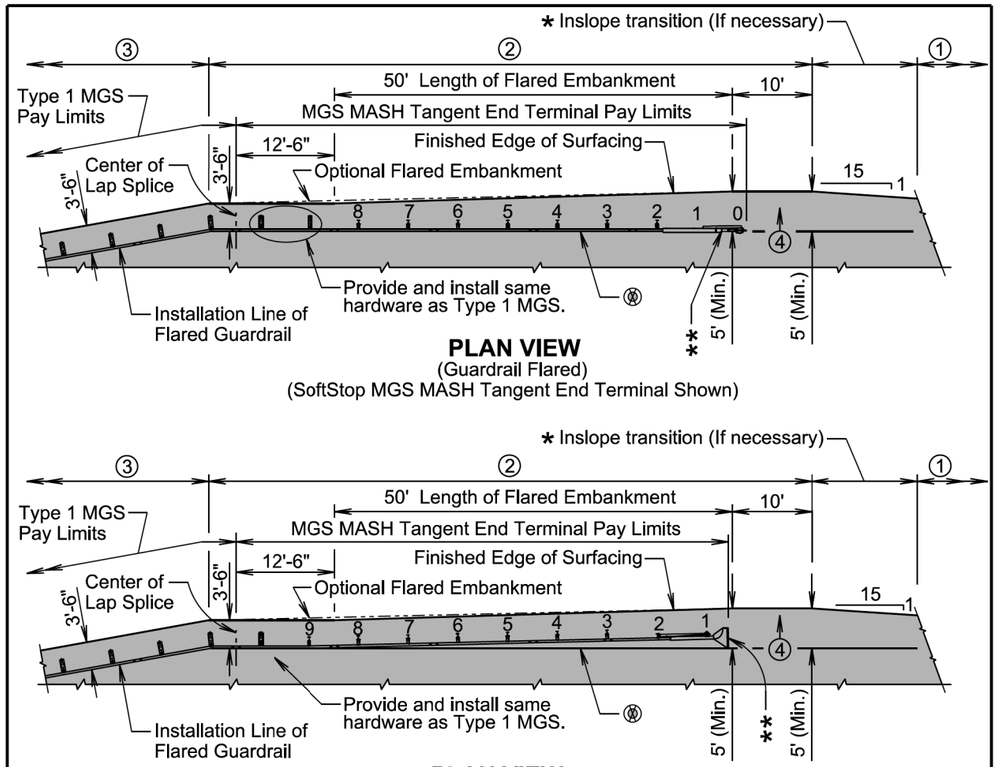
Plotting Date: 01/30/2025

STATE OF SOUTH DAKOTA

PROJECT NH 0018(239)244 P 0049(10)42

SHEET F36

TOTAL SHEETS F39



PLAN VIEW
(Guardrail Flared)
(SoftStop MGS MASH Tangent End Terminal Shown)

PLAN VIEW
(Guardrail Flared)
(MSKT-SP-MGS MASH Tangent End Terminal Shown)

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'.

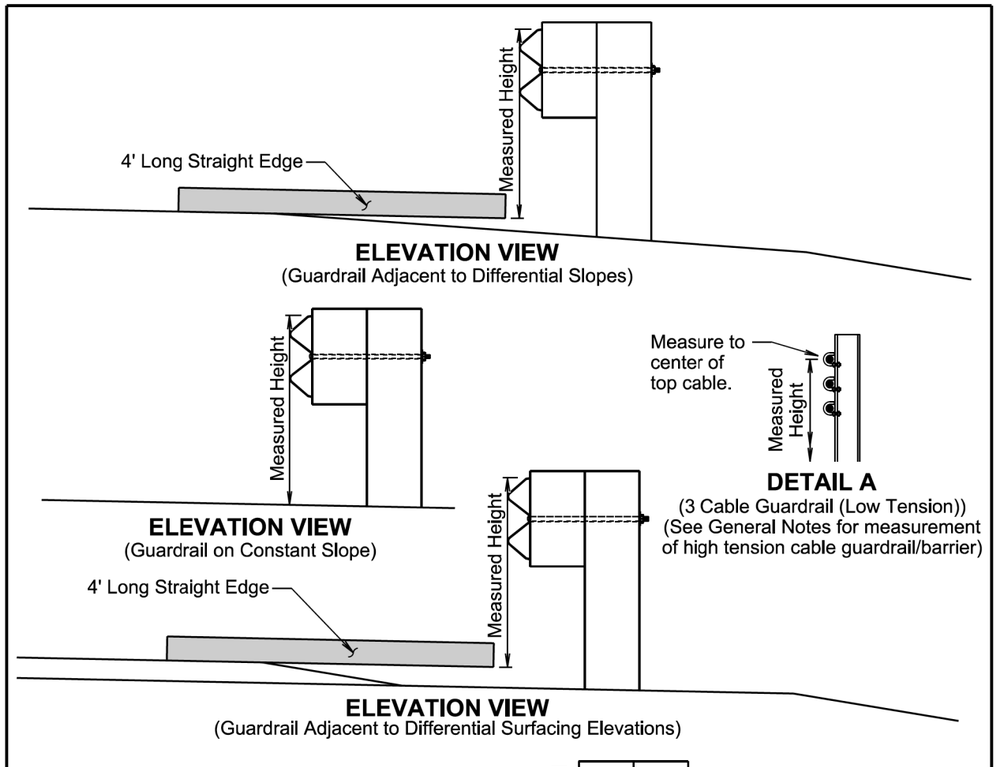
Ⓜ The installation reference line for MGS MASH tangent end terminals will always be parallel to the roadway.

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.

November 19, 2021

Published Date: 2025	SDDOT	EMBANKMENT, SURFACING, AND PAYMENT LIMITS FOR MGS MASH TANGENT END TERMINAL	PLATE NUMBER 630.89	Sheet 2 of 2

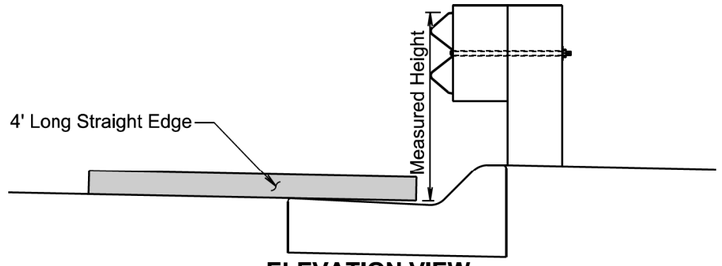


ELEVATION VIEW
(Guardrail Adjacent to Differential Slopes)

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:

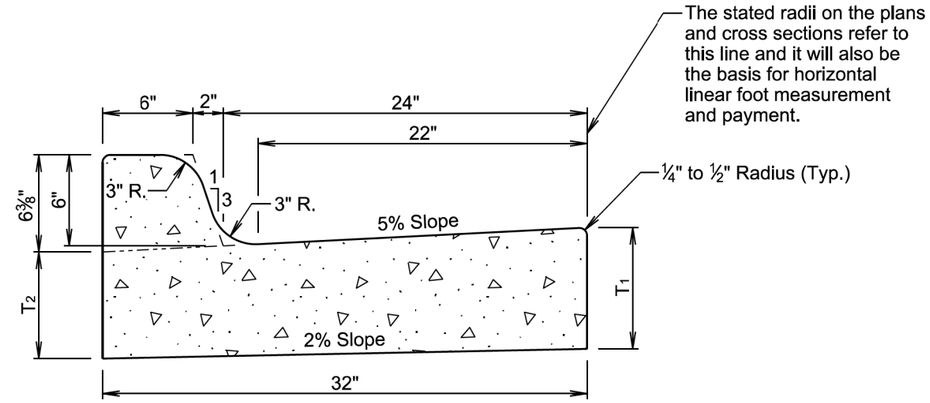
The W Beam guardrail shown is for illustrative purpose. The guardrail height for all types of guardrail systems except for high tension cable guardrail/barrier will be measured in accordance with this standard plate.

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: 2025	SDDOT	MEASURING GUARDRAIL HEIGHT	PLATE NUMBER 630.99	Sheet 1 of 1



TYPE B CONCRETE CURB AND GUTTER

Type	T_1 (Inches)	T_2 (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B66	6	5 1/16	0.057	17.7
B67	7	6 1/16	0.065	15.4
B68	8	7 1/16	0.073	13.7
B68.5	8.5	7 9/16	0.077	13.0
B69	9	8 1/16	0.081	12.3
B69.5	9.5	8 9/16	0.085	11.7
B610	10	9 1/16	0.090	11.2
B610.5	10.5	9 9/16	0.094	10.7
B611	11	10 1/16	0.098	10.2
B611.5	11.5	10 9/16	0.102	9.8
B612	12	11 1/16	0.106	9.4

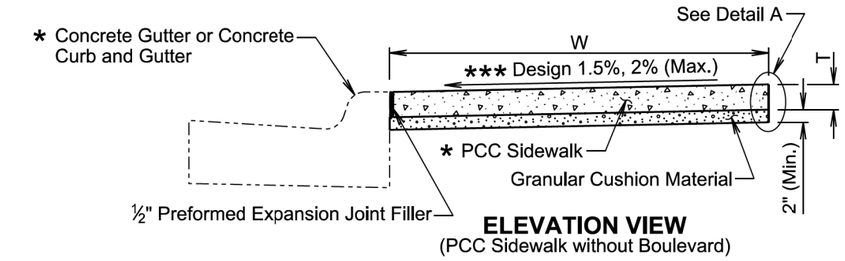
GENERAL NOTES:

When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment will be by one of the methods shown on standard plate 380.21.

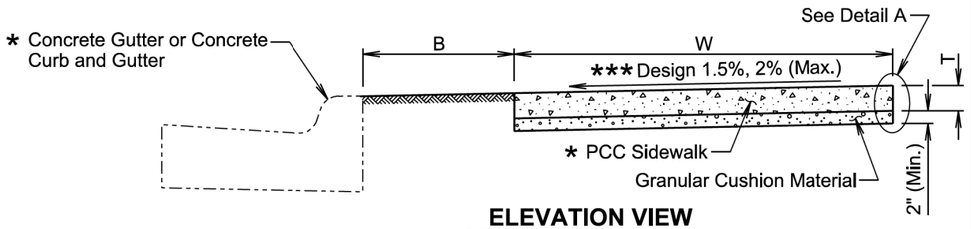
See standard plate 650.90 for expansion and contraction joints in the curb and gutter.

January 22, 2023

Published Date: 2025	SDDOT	*TYPE B CONCRETE CURB AND GUTTER*	*PLATE NUMBER* 650.01 *Sheet 1 of 1*



ELEVATION VIEW
(PCC Sidewalk without Boulevard)



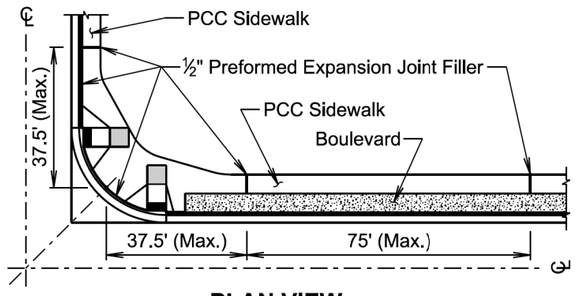
ELEVATION VIEW
(PCC Sidewalk with Boulevard)

B Width of boulevard as specified in the plans.

T Thickness of PCC sidewalk as specified in the plans.

W Width of PCC sidewalk as specified in the plans.

* Type as specified in the plans.



PLAN VIEW

GENERAL NOTES:

The PCC sidewalk will be constructed in accordance with Section 651 of the Specifications.

*** The cross slope of the sidewalk is designed at 1.5% and the maximum slope allowed is 2% unless specified otherwise in the plans.

The maximum length between expansion joints in the PCC sidewalk is 75 feet.

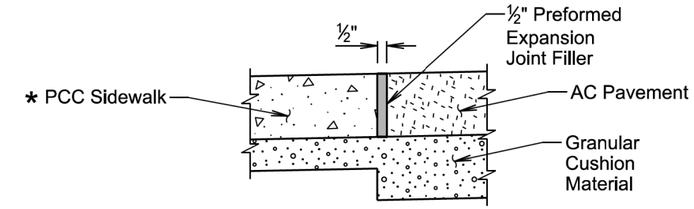
PCC sidewalk placed adjacent to intersection of roadways will have an expansion joint placed transversely a maximum of 37.5 feet from the intersection. See Plan View.

An expansion joint in the PCC sidewalk will consist of a ½ -inch thick preformed expansion joint filler material placed full depth and width of the PCC sidewalk.

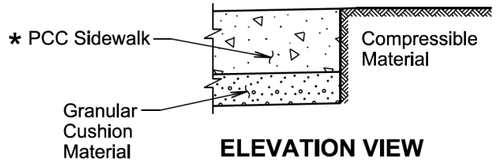
** Large areas of PCC pavement adjacent to the PCC sidewalk may require a different joint treatment than shown in the detail. If a different joint detail is necessary, plans will contain the joint detail and the Contractor will construct the joint treatment in accordance with the plans.

February 14, 2020

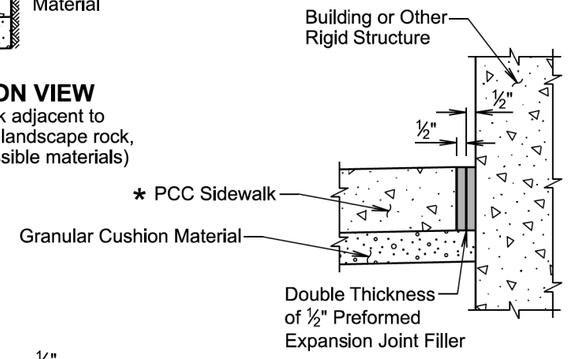
Published Date: 2025	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 1 of 2



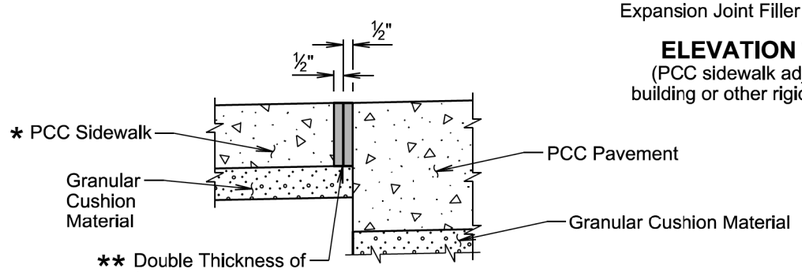
ELEVATION VIEW
(PCC sidewalk adjacent to asphalt concrete pavement)



ELEVATION VIEW
(PCC sidewalk adjacent to earthen material, landscape rock, or other compressible materials)



ELEVATION VIEW
(PCC sidewalk adjacent to building or other rigid structure)



ELEVATION VIEW
(PCC sidewalk adjacent to PCC pavement)

DETAIL A
(Use Appropriate Detail(s))

February 14, 2020

Published Date: 2025	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 2 of 2