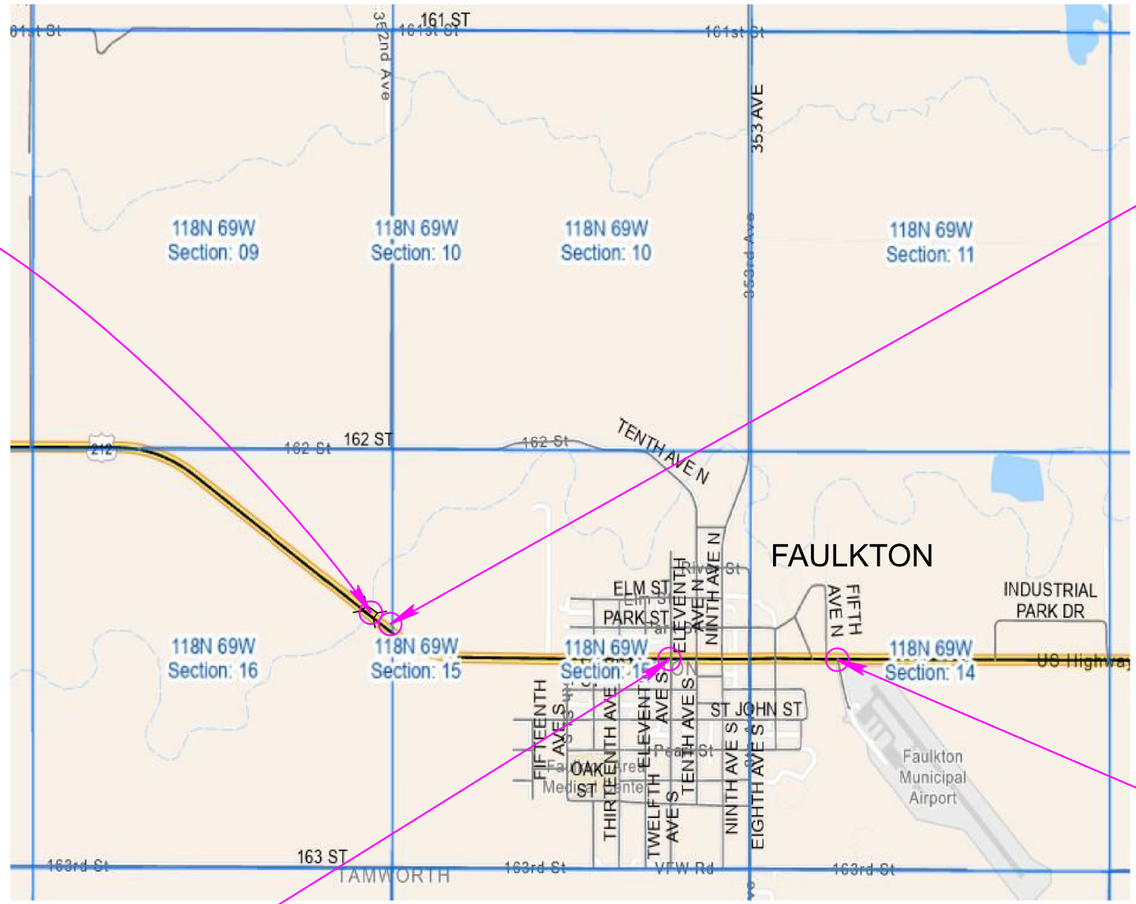
SECTION B: GRADING PLANS

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	1/50

Plotting Date: 08/14/2026 Revised 07/07/2026 JWF

INDEX OF SHEETS



BEGIN GRADING NH-B 0212(194)266
South Fork Snake Creek
Station 1114+59.11

END GRADING
BEGIN AC RESURFACING
Station 1123+26.36

END NH-B 0212(194)266
END AC RESURFACING
Station 1188+46.00

BEGIN & END ADA WORK

SECTION B ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
004E0030	Maintenance of Traffic Diversion(s)	Lump Sum	LS
004E0050	Remove Traffic Diversion(s)	Lump Sum	LS
009E0010	Mobilization	Lump Sum	LS
009E3220	Reestablish Right-of-Way and Property Corner	15	Each
009E3230	Grade Staking	0.383	Mile
009E3250	Miscellaneous Staking	0.383	Mile
009E3280	Slope Staking	0.383	Mile
009E3290	Structure Staking	1	Each
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E0300	Remove Concrete Curb and/or Gutter	54	Ft
110E0600	Remove Fence	1,903	Ft
110E0730	Remove Beam Guardrail	817.0	Ft
110E1010	Remove Asphalt Concrete Pavement	3,390.0	SqYd
110E1140	Remove Concrete Sidewalk	41.6	SqYd
120E0010	Unclassified Excavation	9,223	CuYd
120E0600	Contractor Furnished Borrow Excavation	5,407	CuYd
120E1000	Muck Excavation	195	CuYd
120E2000	Undercutting	2,980	CuYd
120E6100	Water for Embankment	131.0	MGal
250E0020	Incidental Work, Grading	Lump Sum	LS
450E0122	18" RCP Class 2, Furnish	36	Ft
450E0130	18" RCP, Install	36	Ft
450E2008	18" RCP Flared End, Furnish	1	Each
450E2009	18" RCP Flared End, Install	1	Each
450E4758	18" CMP 14 Gauge, Furnish	46	Ft
450E4760	18" CMP, Install	46	Ft
450E5010	18" CMP Elbow, Furnish	2	Each
450E5011	18" CMP Elbow, Install	2	Each
450E5406	18" CMP Safety End, Furnish	1	Each
450E5407	18" CMP Safety End, Install	1	Each
450E8009	18" RCP to CMP Transition, Furnish	1	Each
450E8010	18" Pipe Transition, Install	1	Each
462E0100	Class M6 Concrete	2.9	CuYd
480E0100	Reinforcing Steel	427	Lb
600E0300	Type III Field Laboratory	1	Each
620E0020	Type 2 Right-of-Way Fence	2,029	Ft
620E1030	3 Post Panel	21	Each
630E0500	Type 1 MGS	225.0	Ft
630E1500	Type 1 Guardrail Transition	4	Each
630E2017	MGS MASH Flared End Terminal	4	Each
650E0080	Type B68 Concrete Curb and Gutter	54	Ft
651E0040	4" Concrete Sidewalk	170	SqFt
651E0060	6" Concrete Sidewalk	185	SqFt
651E7000	Type 1 Detectable Warnings	20	SqFt
670E0200	Type A Frame and Grate	2	Each
670E5400	Precast Drop Inlet Collar	2	Each
720E1010	PVC Coated Bank and Channel Protection Gabion	4.5	CuYd
831E0110	Type B Drainage Fabric	474	SqYd

BID ITEMS FROM ENVIRONMENTAL COMMITMENTS

The following bid item(s) provided in this section of plans come from the Environmental Commitments in Section A: Temporary Diversion Channel for Fish Passage (Commitment B1, See the table below).

MACHINE CONTROL GRADING & MODEL INFORMATION

Electronic design files are made available by the SDDOT Bid Letting Office through the SDDOT's SharePoint Directory for Contractors. The roadway subgrade model xml file provided for this project includes the following highway features: guardrail widening.

Highway features not included in the roadway subgrade model xml file are the following: intersecting roads and entrances, inslope transitions at pipes and box culverts, mailbox turnouts, historical marker turnouts, ditch blocks, undercutting, muck excavation, and unstable excavation.

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

UTILITIES

The Contractor will be aware that the existing utilities shown in the plans were surveyed prior to the design of this project and might have been relocated or replaced by a new utility facility prior to construction of this project, might be relocated or replaced by a new utility facility during the construction of this project, or might not require adjustment and may remain in its current location. The Contractor will contact each utility owner and confirm the status of all existing and new utility facilities. The utility contact information is provided elsewhere in the plans or bidding documents.

REMOVE ASPHALT CONCRETE PAVEMENT

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was 23. This value was obtained from testing during construction of the in-place asphalt concrete.

An estimated 429 Cubic Yards of the in-place asphalt concrete surfacing will be removed from the existing highway according to the in-place surfacing typical sections and stockpiled according to the Blend, Haul, and Stockpile Granular Material plan note.

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

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment minus Waste.

The estimated cubic yards of excavation and/or embankment required to construct outlet ditches, ditch blocks, and approaches are included in the earthwork balance notes on the profile sheets.

The estimated excavation required for placing the Granular Bridge End Backfill and/or Bridge End Embankment, and for constructing the Bridge Berms between bridge abutments and shaping the bridge waterway channel are listed in the Table of Unclassified Excavation. Overburden Excavation for Riprap is not included in the Unclassified Excavation quantity. Refer to Section E for information regarding the Overburden Excavation for Riprap. The excavated material from the construction of the Bridge Berms and shaping the bridge waterway channel should be disposed of at a site provided by the Contractor and approved by the Engineer. This waste material is not included in the Waste shown in the Table of Excavation Quantities by Balances.

Special ditch grades and other sections of the roadway different than the typical sections will be constructed to the limits shown on the cross sections. If significant changes to the cross sections are necessary during construction, the Engineer will contact the Designer for the proposed change.

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

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

TYPE III FIELD LABORATORY

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

GENERAL GEOLOGY

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

CLASSIFICATION OF EXCAVATION

Large glacial boulders may be encountered sporadically within the project limits. Very large boulders could require more effort to excavate. Most of the material encountered should be able to be excavated using conventional methods associated with normal Unclassified Excavation. Muck Excavation will be required at the areas shown in the plans or as directed by the Engineer.

AERONAUTICAL NOTIFICATION (TEMPORARY STRUCTURE: CRANE)

It is required that the manager of the Faulkton Municipal Airport (605) 216-6969 be notified by the Contractor at least 3 business days prior to the temporary structure (crane) being erected and again when the structure is removed from the site. The advanced notice is required to allow the airport manager to file a Notice to Airmen NOTAM which alerts pilots to the presence of the crane. This information is either located in the FAA Determination or it could be as recommended by the Office of Aeronautics.

The Contractor will notify the South Dakota Department of Transportation Aberdeen Area Engineer at (605) 626-7876 by 10/15/2027 if the timeline for the crane use will need to be extended. The SDDOT will then file for a determination extension required by the FAA.

The South Dakota Department of Transportation is responsible for e-filing the FDC Notice to Airmen 3 business days prior to the temporary crane being erected and again within 3 days of it being removed from the site. The Contractor shall notify Robert Ward at the South Dakota Department of Transportation Aberdeen Area Office (605) 626-3307 and provide the following NOTAM information:

1. The date the crane will be erected.
2. Provide the date when the crane will be removed.
3. Provide a time of arrival.
4. Provide an onsite Contact Name and Cell Number.

All costs incurred to adhere to the above listed requirements will be incidental to various contract items.

CRANE OPERATIONS

The Contractor must abide by the following FAA crane determination requirements set forth in Aeronautical Study: 2024-AGL-15637-OE as listed below.

The crane height must not exceed 120 feet above ground level.

The Contractor shall notify the South Dakota Department of Transportation Aberdeen Area Engineer at (605) 626-7876 by 10/15/2027 if the timeline for the crane use will need to be extended. The SDDOT will then file for a new determination as required by the FAA.

For questions regarding the FAA Determinations, contact Thomas Koch SDDOT Office of Aeronautics at 605-773-3764.

All costs incurred to adhere to the above listed requirements will be incidental to various contract items.

CLEARING

Trees inside the existing right-of-way and inside the temporary easement will be cleared. All costs associated with clearing trees will be incidental to the contract "Clearing" bid item.

Stumps from right-of-way clearing will be buried at locations approved by the Engineer.

TRAFFIC DIVERSION

The traffic diversion is located at Sta's. 1118+26.98 to 1119+43.48. The traffic diversion will be constructed according to Section 5.14 B of the Specifications. Installation and removal of the traffic diversion will meet all requirements as set forth in the South Dakota Surface Water Quality Standards.

The traffic diversion located at Stations 1118+26.98 to 1119+43.48 will be constructed according to the geometric layouts shown in the plans with the temporary drainage structure provided in the following table. The temporary structure sizes are designed to pass the design flood frequency flows without overtopping the traffic diversion grade, to minimize potential upstream flooding, and are sized to meet FEMA (Federal Emergency Management Agency) requirements where applicable. The structure will be placed at the flowline elevation and location as stated in the "Table of Temporary Drainage Structures in Traffic Diversions". If the Contractor proposes to use a different size drainage structure and/or a different geometric layout for the temporary diversion, the proposal must be submitted to the Engineer during the project preconstruction meeting. This information will be forwarded to the Office of Bridge Design for review. Construction of the traffic diversion will not be allowed until approval of the proposal is obtained from the Hydraulics Office.

Table of Temporary Drainage Structures in Traffic Diversions

Traffic Diversion Location	Design Flood Frequency	* Flowline Elevation	Ordinary High Water Elevation	Temporary Structure Option 1
1118+27 to 1119+43	5 year	1549.3'	1552.2'	2-72" CMP

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

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

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

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

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

TABLE OF TRAFFIC DIVERSION RIPRAP AND DRAINAGE FABRIC

Station	Ordinary High Water Elevation	Section E Class C Riprap (Ton)	Type B Drainage Fabric (SqYd)
6+40 to 6+90	1552.2'	679	459
	Totals:	679	459

SHRINKAGE FACTOR: Embankment +35%

TABLE OF EXCAVATION QUANTITIES BY BALANCES

Station to	Station	Excavation (CuYd)	* Undercut (CuYd)	* Muck Exc. (CuYd)	* Contractor Furnished Borrow Exc. (CuYd)	Total Excavation (CuYd)	** Waste (CuYd)
Mainline 1114+59	1118+27	2012	1502	0	0	3514	0
Mainline 1119+43	1123+26	839	1478	195	1394	3906	195
Diversion 0+00	12+69	1708	0	0	4013	5721	0
	Totals:	4559	2980	195	5407	13042	195

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

TABLE OF UNCLASSIFIED EXCAVATION

	(CuYd)
Excavation	2851
Undercut	2980
Topsoil	1298
Added Traffic Diversion Excavation	1708
Exc. for Granular Bridge End Backfill and/or Bridge End Embankment	386
Exc. for Bridge Berm(s) between bridge abutments and channel shaping	0
Total:	9223

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

Plan quantity will be the basis of payment for Unclassified Excavation and the plans quantity of Topsoil and salvaged surfacing items listed in the Table of Unclassified Excavation will not be adjusted according to field measurements.

The total quantity of Topsoil will be added to the Unclassified Excavation quantity. The quantity of Topsoil from the cuts will be paid for twice as Unclassified Excavation, as it will be in both the Excavation and Topsoil quantities. This will be full compensation for Excavation, which includes necessary undercutting to provide space for placement of topsoil.

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

The volume of in place Asphalt Surfacing removed will NOT be paid for as Unclassified Excavation.

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

WASTE EXCAVATION

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

UNDERCUTTING

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

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

The plan shown quantity will be the basis of payment. However, if there are additional areas of undercut other than what is shown in the plans, the Engineer will direct removal of these areas and the additional areas will be measured according to the Engineer.

TABLE OF UNDERCUTTING LOCATIONS

Station	to	Station
1114+59		1118+27
1119+43		1123+26

MUCK EXCAVATION

The areas of muck excavation are drawn on the cross sections with a normal depth of 3 feet. The estimated quantity of 195 cubic yards of muck excavation will be paid for at the contract unit price per cubic yard for “Muck Excavation”.

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

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

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

TABLE OF MUCK EXCAVATION

Station	to	Station	L/R	Depth (Ft)	Quantity (CuYd)
1119+55		1120+25	L	3	195
				Total:	195

CONTRACTOR FURNISHED BORROW EXCAVATION

The Contractor will provide a suitable site for Contractor furnished borrow excavation material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material will be approved by the Engineer. The plans quantity for “Contractor Furnished Borrow Excavation” as shown in the Estimate of Quantities will be the basis of payment for this item.

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

TABLE OF CONCRETE CURB AND/OR GUTTER REMOVAL

Station	to	Station	L/R	Quantity (Ft)
1163+55.98-26.7’R		1163+58.15-55.07’R	R	54
			Total:	54

TABLE OF SIDEWALK REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
1163+52.43		1163+69.93	R	41.6
			Total:	41.6

CORRUGATED METAL PIPE

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

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

Areas within the project have soils that are highly corrosive to steel. Corrugated metal pipe in these areas will be polymer coated 14 gauge steel as specified in the Table of Pipe Quantities. Any required connection bands, elbows, tees, crosses, wyes, reducers, and transitions will also be polymer coated. The connection bands will be 24 inches wide. All polymer coated corrugated metal pipe and components will be in conformance with AASHTO M245. Riveted pipe will not be allowed.

All damage to the polymer coating will be repaired in accordance with the manufacturer’s recommendations prior to installation of the pipe.

All costs associated with the polymer coating including repair of polymer coating will be incidental to the corresponding CMP contract items.

Metal pipe end sections connected to polymer coated CMP will be aluminum-coated (Type 2) in accordance with AASHTO M36 as specified in the Table of Pipe Quantities. All costs associated for gauge, coating, and connections will be incidental to the corresponding CMP End Section contract items.

PIPE FOR DOWNSPOUTS

The substitution of Class 2 reinforced concrete pipe, high density polyethylene pipe, polypropylene pipe, or steel reinforced polyethylene pipe for corrugated metal downspout pipes is not allowed.

PIPE COVER

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

DROP INLETS

After the permanent surfacing has been placed, the Contractor will remove all debris from the drop inlet. All costs involved with the coverings, weep holes, and removing debris from the drop inlets will be incidental to the contract unit prices for the components of the drop inlets.

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

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

TABLE OF DROP INLETS AND QUANTITIES

Station	L / R	Drop Inlet Size	Drop Inlet Type	Class M6 Concrete (CuYd)	Reinf Steel (Lb)	Precast Drop Inlet Collar (Each)	Frame and Grate/Lid Type
1119+58.49	L	2'x3'	B	1.54	227	1	A
1119+58.49	R	2'x3'	B	1.33	200	1	A
			Totals	2.88	427	2	

Total Type A Frame and Grate 2

INCIDENTAL WORK, GRADING

Station	L/R	Remarks
1119+43-41'	L	Take out Power Pole

TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL

Station	to	Station	Quantity (SqYd)
114+59.11		1118+04.98	1576
1119+65.48		1120+94.00	585
1120+94.00		1123+26.36	1136
Digouts			93
			3390

TYPE 1 DETECTABLE WARNINGS

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

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

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

The detectable warnings will be a brick red color for application in concrete curb ramps. Cast iron plates may be a natural patina (weathered steel).

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

Type 1 Detectable Warnings

Product	Manufacturer
Detectable Warning Plate Cast Iron Plate	Neenah Foundry Company Neenah, WI 800-558-5075 http://www.neenahfoundry.com/
Detectable Warning Plate Cast Iron Plate	Deeter Foundry Lincoln, NE 800-234-7466 http://www.deeter.com/
Detectable Warning Plate Cast Iron Plate(No Coating)	East Jordan Iron Works, Inc. 301 Spring Street East Jordan, MI 49727 800-626-4653 http://www.ejiw.com
Advantage Tactile Detectable Warning Cast Iron Plate	Advantage Tactile Systems, Inc. 241 Main Street, Suite 100 Buffalo, NY 14203 800-679-4022 https://advantagetactile.com/

TABLE OF PVC COATED BANK AND CHANNEL PROTECTION GABIONS AND DRAINAGE FABRIC

Station	L/R	PVC Coated Bank and Channel Protection Gabion (CuYd)	Type B Drainage Fabric (SqYd)
1119+58	R	4.5	15
	Totals:	4.5	15

TABLE OF TYPE B68 CONCRETE CURB AND GUTTER

Station	to	Station	L/R	Quantity (Ft)
1116+52.43		1116+69.93	R	54.2
			Total:	54.2

TABLE OF TYPE I DETECTABLE WARNINGS

Station	L/R	Quantity (SqFt)
1163+60.59	28.74' R	10
1163+68.35	46.53' R	10
	Total:	20

TABLE OF 4" CONCRETE SIDEWALK

Station	to	Station	L/R	Quantity (SqFt)
1163+52.43		1163+69.93	R	170
			Total:	170

TABLE OF 6" CONCRETE SIDEWALK

Station	to	Station	L/R	Quantity (SqFt)
1163+52.43		1163+69.93	R	185
			Total:	185

BRACE PANELS FOR ROW FENCE

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

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

TABLE OF SUPERELEVATION

Station	to	Station		
1114+60		1122+06	-	Normal Crown Section
1122+06		1123+26	-	Superelevation Transition
1123+26		1123+26.36	-	1925' Radius Curve Left 0.0600'/' Superelevation Rate Point of Rotation at Centerline

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

The Contractor will have a Land Surveyor, licensed in the State of South Dakota, to set, reestablish or verify public land survey system (PLSS) corners, right of way (ROW) corners, and property corners as directed by the appropriate SDDOT Region Land Surveyor. It is estimated that 0 PLSS corners and 15 ROW and property corners will be set, reestablished, or verified for this project. The Contractor's Land Surveyor, under the direction of the Region Land Surveyor, will set, reestablish, or verify all corner monuments after surfacing and fencing operations are completed in accordance with the PUBLIC LANDS SURVEY SYSTEM CORNERS section and the RIGHT OF WAY AND PROPERTY CORNERS section in Chapter 8 of the SDDOT Survey Manual.

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

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

TABLE OF GUARDRAIL

Location	Remove Beam Guardrail (Ft)	Type 1 MGS (Ft)	Type 1 Guardrail Transition (Each)	MGS MASH Flared End Terminal (Each)
Sta.1117+26.17 to Sta. 1118+36.97 Lt.		25	1	1
Sta.1116+63.67 to Sta. 1118+26.97 Rt		87.5	1	1
Sta. 1119+43.57 to Sta. 1121+07.39 Lt.		87.5	1	1
Sta. 1119+43.57 to Sta. 1120+44.48 Rt.		25	1	1
Sta. 1116+36.09 to Sta. 1120+48.39 Rt	412			
Sta. 1117+18.74 to Sta. 1121+23.47 Lt	405			
Totals:	817	225	4	4

TABLE OF CONSTRUCTION STAKING

(See Special Provision for Contractor Staking)

Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Grade Staking Length (Mile)	Grade Staking Lane Factor	Grade Staking *Sets of Stakes	Grade Staking **Grade Staking Quantity (Mile)	Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)	Structure Staking Quantity (Each)
US HWY 212 (2 Lanes AC Pavement)	1114+59	1118+27	2	368	0.070	1	1	0.070	0.070	0.070	
US HWY 212 (Bridge)	1118+27	1119+43									1
US HWY 212 (2 Lanes AC Pavement)	1119+43	1123+26	2	383	0.073	1	1	0.073	0.073	0.073	
Diversion (2 lanes)	0+00	12+69	2	1269	0.240	1	1	0.240	0.240	0.240	
							Totals:	0.383	0.383	0.383	1

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

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

PIPE QUANTITIES

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	9/50

Plotting Date: 08/14/2026

NH-B 0212(194)266 PCN 05H1 Station Offset (L/R)	Reinforced Concrete Circular 18" Cl. 2 Ft	RCP Ends Circular Flared 18" Each	Corrugated Metal Pipe Circular 18" 14 Ga Polymer Coated Ft	CMP Ends Circular Safety End 18" Each	CMP Elbow 30° 18" Each	RCP to CMP Outlet Transition 18" Each
US 212						
1119+58.49 L	16		46	1	2	1
1119+58.49 R	20	1				
Total:	36	1	46	1	2	1

FENCE QUANTITIES

PROJECT	SECTION	SHEET
NH-B 0212(194)266	B	10/50

Plotting Date: 08/14/2026 Revised 07/07/2026 JWF

Station to Station		Side (L/R)	Right-of-Way Fence		Post Panels
			Type 2 (Ft)	Remove Fence (Ft)	3 Post Panel (Each)
Mainline					
1113+11	1121+33	L	974	843	12
1112+50	1122+90	R	1055	1060	9
		Total:	2029	1903	21

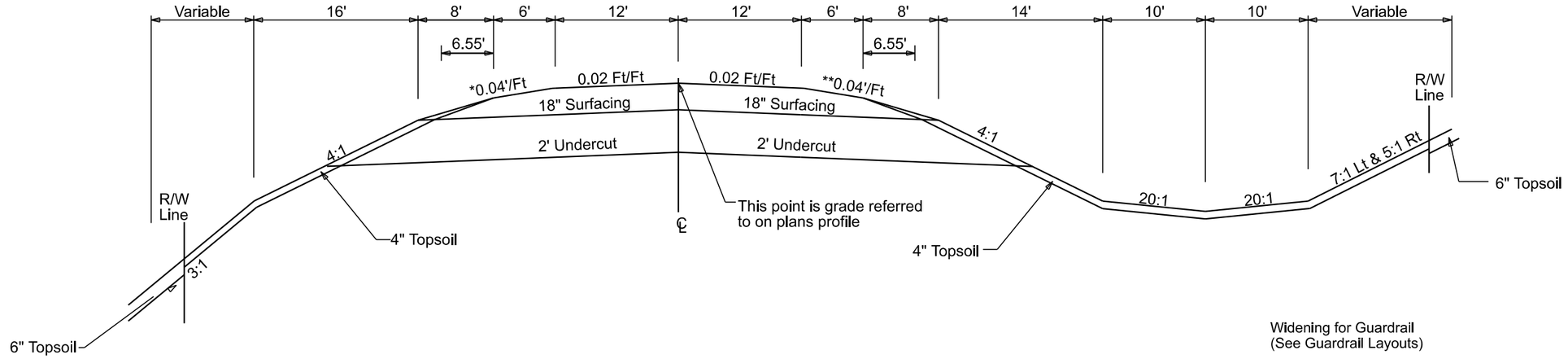
Right-of-way fence will be constructed using alternate wood and steel posts except as noted.

TYPICAL GRADING SECTIONS

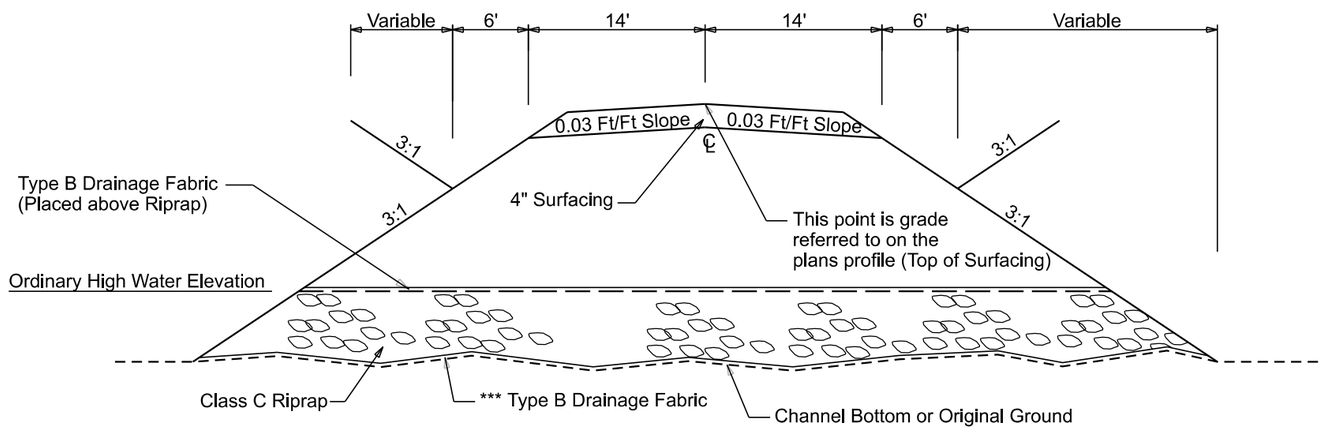
SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	11/50

Plotting Date: 08/14/2026

Mainline
1114+59.11 to 1118+26.98
1119+43.48 to 1123+26.36



Traffic Diversion
0+00.00 to 12+69.36



Widening for Guardrail
(See Guardrail Layouts)

Structure No. 25-210-144

6' to 19.92'	1114+59.11 to 1116+65.86
19.92' to 14.42'	1116+65.86 to 1117+05.86
14.42' to 14.42'	1117+05.86 to 1117+15.24
14.42' to 10.05'	1117+15.24 to 1117+80.83
10.05' to 10.05'	1117+80.83 to 1118+26.99
10.05' to 10.05'	1119+43.49 to 1120+02.26
10.05' to 15.51'	1120+02.26 to 1120+42.25
15.51' to 6'	1120+42.25 to 1122+02.20

Structure No. 25-210-144

6' to 15.55'	1115+85.21 to 1117+28.20
15.55' to 10.05'	1117+28.20 to 1117+68.20
10.05' to 10.05'	1117+68.20 to 118+26.99
10.05' to 10.05'	1119+43.47 to 1119+89.12
10.05' to 16.17'	1119+89.12 to 1120+80.22
16.17' to 16.17'	1120+80.22 to 1120+89.63
16.17' to 21.53'	1120+89.63 to 1121+29.82
21.53' to 6'	1121+29.82 to 1122+89.04

*** Place Type B Drainage Fabric under all Riprap and any embankment that is placed in wetland areas as shown in Section B.

Shoulder Slope Transitions
at the Approach Slabs:
(Finished Surface Shoulder Slopes shown in Section F)

**0.04'/Ft to 0.02'/Ft	1116+05.86 to 1116+65.86
**0.02'/Ft	1116+65.86 to 1120+42.25
**0.02'/Ft to 0.04'/Ft	1120+42.25 to 1121+02.25
*0.04'/Ft to 0.02'/Ft	1116+68.20 to 1117+28.20
*0.02'/Ft	1117+28.20 to 1121+29.82
*0.02'/Ft to 0.04'/Ft	1121+29.82 to 1121+89.82

HORIZONTAL ALIGNMENT DATA

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	12/50

Plotting Date: 08/14/2026

MAINLINE

Type	Station			Northing	Easting
PI	1062+07.30			441846.43	2184283.11
		TL= 1272.11	N89.601°E		
PC	1074+79.40			441855.28	2185555.19
PI	1081+05.44	R = 2040.00	Delta = 34.12 R	441859.64	2186181.21
PT	1086+94.25			441512.09	2186701.91
		TL= 2713.54	S56.278°E		
PI	1114+07.79			440005.63	2188958.88
		TL= 618.57	S56.211°E		
TS	1120+26.36			439661.63	2189472.96
SPI	1122+26.42		Delta = 4.46 L	439550.37	2189639.24
SC	1123+26.36			439501.37	2189726.47
PI	1127+51.22	R = 1925.00	Delta = 24.89 L	439293.29	2190096.89
CS	1131+62.67			439260.46	2190520.48
SPI	1132+62.73		Delta = 4.46 L	439252.73	2190620.24
ST	1134+62.67			439252.84	2190820.30
		TL= 476.54	N89.967°E		
PI	1139+39.21			439253.11	2191296.84
		TL= 975.66	N89.883°E		
POE	1149+14.87			439255.11	2192272.50

div1119

Type	Station			Northing	Easting
POB	0+00.000			440096.158	2188823.206
		TL= 5.197	S56.274°E		
PC	0+05.197			440093.272	2188827.528
PI	1+07.985	R = 353.000	Delta = 32.470° R	440036.201	2188913.017
PT	2+05.242			439942.157	2188954.503
		TL= 35.373	S23.804°E		
PC	2+40.616			439909.793	2188968.781
PI	3+44.775	R = 353.000	Delta = 32.879° L	439814.495	2189010.820
PT	4+43.186			439757.284	2189097.861
		TL= 273.170	S56.684°E		
PC	7+16.355			439607.242	2189326.135
PI	7+72.965	R = 353.000	Delta = 18.222° L	439576.148	2189373.441
PT	8+28.619			439561.406	2189428.098
		TL= 351.364	S74.905°E		
PC	11+79.983			439469.905	2189767.338
PI	12+12.359	R = 353.000	Delta = 10.481° R	439461.473	2189798.597
PT	12+44.554			439447.497	2189827.801
		TL= 24.806	S64.425°E		
POE	12+69.360			439436.788	2189850.176

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North Zone (NAD 83/11); epoch 2010.00; Geoid 09; SF = 0.9998619241

CONTROL DATA

PROJECT	SECTION	SHEET
NH-B 0212(194)266	B	13/50

Plotting Date: 08/14/2026

HORIZONTAL AND VERTICAL CONTROL POINTS						
POINT	**STATION**	**OFFSET**	**DESCRIPTION**	**NORTHING**	**EASTING**	**ELEVATION**
634	1120+53	18' R	REFMK	439632.294	2189485.308	1568.794
636	1132+46	57' R	REFMK	439198.732	2190601.424	1583.085

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North Zone (NAD 83/11); epoch 2010.00
Geoid 09; SF = 0.9998619241
The elevations shown on this sheet are based on NAVD 88.

LEGEND

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	14/50

Plotting Date: 08/14/2026

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

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

- Drainage Arrow

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

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

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	15/50

Plotting Date: 08/14/2026 Revised 07/07/2026 JWF

Install 2'x3' Type B Drop Inlet
with 6" Concrete Collar
and Type A Frame & Grate
at the following locations:
1119+58.49-17.44' L
1119+58.49-17.44' R

1119+58.49 L
Install 18"-16' RCP
Install 18" (14 Ga) -46' CMP (38'& 8')
& 1- 18"- RCP to CMP Transition
& 2- 18"- 30° Elbows CMP
& 1- 18"- CMP Flared End

Remove Guardrail
at the following locations:
1116+43.39 R to 1120+47.35 R
1117+18.18 L to 1121+22.44 L

Install Steel Beam Guardrail and Flared
End Terminals at the
Following locations:
1117+25.98 L to 1118+29.47 L
1116+63.67 R to 1118+29.49 R
1119+40.97 L to 1121+06.93 L
1119+40.99 R to 1120+44.48 R

1118+22.88 to 1119+44.52
Take Out 122' Steel Girder Bridge
(Incidental Work, Structure)

Install 116'-6" Prestressed Girder Bridge
1118+26.98 to 1119+43.48 (DA 252.66 sq mi)
(See Section E)

1119+58.70 R
Install PVC Coated
Bank and Channel Protection
Gabions (4.5 CuYd)
& Type B Drainage Fabric (15 Sqyd)

1119+58.49 R
Install 18" - 20' RCP
& 1 RCP Flared End

1119+30-47' L
Take Out tree
(Clearing)

1119+42 L to 1124+66 L
Take Out Trees within
Permanent Right-of-way
(Clearing)

BEGIN DIVERSION GRADING
Station 0+00.00

BEGIN NH-B 0212(194)266
Station 1114+59.11

END DIVERSION GRADING
Station 12+69.36

Sec. 15 - T118N - R69W

Sec. 16 - T118N - R69W

Bernard C. Vogel and Linda Vogel
(INFORMATION ONLY)

1113+11 Lt
Begin Type 2
Fence

PI 1114+07.79
R 0.00'

VOGEL'S
OUTLOT 1

1119+43-41' L
Take Out Power Pole
(Incidental Work, Grading)

Alice E. Sangster and Dean A. Sangster
(INFORMATION ONLY)

John Giesen and Konni Giesen
(INFORMATION ONLY)

NW1/4

Present US Hwy 212

CITY LIMITS

N89°58'03"E

PI 1139+39.21
R 0.00'

SW1/4

NE1/4

1112+50 Rt
Begin Type 2
Fence

PI 3+44.77
R 353.00'

PI 1+07.95
R 353.00'

PI 7+72.97
R 353.00'

PI 12+12.36
R 353.00'

PI 1127+62.17
R 1925.00'

SPI 1122+26.42
Δ 04°27'53" CCW
LS 300.00
LC 299.92
ST 100.06
LT 200.06

SPI 1132+62.73
Δ 04°27'53" CCW
LS 300.00
LC 299.92
ST 100.06
LT 200.06

1121+33 Lt
End Type 2
Fence

1122+90 Rt
End Type 2
Fence

LOT 13

BOSS OUTLOT 1

BOSS OUTLOT 2

Cutoff
1/4 Line

Section Line

South Fork of Snake Creek

South Fork of Snake Creek

Type 2 Fence

3 PP

2-3 PP

3-3 PP

OH

John Giesen and Konni Giesen

The NE1/4 of Section 16 - Township 118 North - Range 69 West of the 5th P.M., lying north of the center line of the Chicago Northwestern Railroad right of way, except Golay's Outlot 1 therein, except Vogel's Outlot 1 therein, except Lot H1 therein and except Lot H2, Lot H3, Lot H4 and Lot H5 therein
Parcel 1

0.12 ac, Permanent Easement
5202 sq ft, more or less

1118+47-100' R
Take Out tree
(Clearing)

1119+00 R to 1121+80 R
Take Out Trees within
Temporary Easement
(Clearing)

END NH-B 0212(194)266
Station 1123+26.36

Parcel 1
1113+85.64 to 1122+23.42 R
Temporary Easement containing
1.6 ac, more or less

Parcel 1
1114+26.15 to 1118+86.43 L
Temporary Easement containing
0.2 ac, more or less

Parcel 1
1119+88.41 to 1120+93.99 L
Temporary Easement containing
0.1 ac, more or less

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	16/50

Plotting Date: 08/14/2026

Structure No. 25-210-144

1114+59.11
Begin Grading

1123+26.36
End Grading

PVI 1113+00.00
Elev 1579.92

PVI 1117+73.88
Elev 1567.99
L 600.00
G1 -2.5174%
G2 +0.2664%
K 216

PVI 1123+26.36
Elev 1569.46

-2.5174%

+0.2664%

Q_d 2762 cfs
A_d 438 sq. ft.
V_d 6.3 fps
Q_F 2762 cfs
Q_{100} 6276 cfs
Q_{OT} >Q_{500}
V_{max} 9.6 fps

1579.92 1577.40 1574.90 1572.73 1571.03 1569.80 1569.02 1568.72 1568.86 1569.12 1569.39

1650 1640 1630 1620 1610 1600 1590 1580 1570 1560 1550 1540 1530 1520 1510 1500 1490 1480 1470

1110+00 1115+00 1120+00 1125+00 1130+00 1135+00 1140+00

Station 1114+59 to 1118+27

Exc	1,212	Emb	768	
Undercut	1,357	35.00%	269	1,037
CF Borrow	300	Undercut	1,357	
	2,869	35.00%	475	1,832
				2,869

Station 1119+43 to 1123+26

Exc	792	Emb	1,881	
Undercut	1,462	35.00%	659	2,540
CF Borrow	2,259	Undercut	1,462	
Muck	195	35.00%	511	1,973
	4,708	Waste		195
				4,708

Waste is muck excavation to be disposed of at site approved by the Engineer

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	17/50

Plotting Date: 08/14/2026

Structure No. 25-210-144

0+00.00
Begin Grading

12+69.36
End Grading

PVI 1+38.39
Elev 1577.89
L 50.00
G1 -2.5357%
G2 -4.6958%
K 23

PVI 2+94.84
Elev 1570.54
L 145.00
G1 -4.6958%
G2 -1.6828%
K 48

PVI 7+83.62
Elev 1562.31
L 175.00
G1 -1.6828%
G2 +2.6025%
K 41

PVI 10+94.96
Elev 1570.42
L 75.00
G1 +2.6025%
G2 -0.4838%
K 24

-2.5357%
-4.6958%
-1.6828%
+2.6025%
-0.4838%

PVI 0+00.00
Elev 1581.40

PVI 12+69.36
Elev 1569.57

(diversion) 0+00 to 12+69

Added Traffic Diversion Exc	1,725	Emb	4,237		
Contractor Furnished	3,995	+35.00%	1,483	5,720	
Borrow				5720	
	5720				

1650 1640 1630 1620 1610 1600 1590 1580 1570 1560 1550 1540 1530 1520 1510 1500 1490 1480 1470

1581.40 1578.86 1574.99 1570.92 1568.77 1567.09 1565.40 1563.72 1563.36 1565.34 1567.95 1570.18 1569.91

0+00 5+00 10+00 15+00 20+00 25+00 30+00

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	18/50

Plotting Date: 08/14/2026

PICKLER'S ADDITION NORTH

60' Twelfth Avenue N

BLOCK 12

Lot 6 | Lot 5 | Lot 4 | Lot 3 | Lot 2 | Lot 1

M&N Lodging, LLC
(INFORMATION ONLY)

80' Eleventh Avenue N

ORIGINAL TOWN

Kasey Kopecky and
Crystal Kopecky
(INFORMATION ONLY)

Lot 12 | Lot 11 | Lot 10

BLOCK 18

Main Street

101' N89°21'52"E 101' 102' 100' N89°50'37"E 1/4 Line

1160+00 1161+00 1162+00 Present US Hwy 212 1163+00 1164+00 1165+00

PI 1164+18.78
R 0.00'

PI 1165+37.31
R 0.00'

80' Vacated Twelfth Avenue S

BLOCK 71

Faulkton Independent School District No. 34

Block 71 of the town of Faulkton
Parcel A1

1163+46.87-50.24'
1163+47.00-67.00'
1163+51.83-67.01'
1163+51.87-50.25'

1163+54-26' R
Do Not Disturb
Drop Inlet

1163+58-44' R
Do Not Disturb
Sprinkler

80' Eleventh Avenue S

Lot 1 | Lot 2 | Lot 3

Faulkton School District 24-3
(INFORMATION ONLY)

BLOCK 19

ORIGINAL TOWN

FAULKTON

Parcel A1
1163+46.87 to 1163+51.87 R
Temporary Easement containing
82 sq ft, more or less

Plotted From - TRSF12139 File - U:\rd\prj\falk05H1\dgn\1160.dgn

CURB AND GUTTER LAYOUT

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	19/50

Plotting Date: 08/14/2026

Note: All curb and gutter shown on this sheet is Type B68 except as noted.
All sidewalk is 5' wide except as noted.

1 1163+55.99-24.04' R
Begin 16.5' Rad Fillet
TC Elev 1586.84

2 1163+72.98-40.61' R
End 16.5 Rad Fillet
Begin Str C&G
TC Elev 1587.27

3 1163+72.96-47.80' R
End Str C & G
Begin 10' Rad Fillet
TC Elev 1587.62

4 1163+62.91-57.76' R
End 10' Rad Fillet
Begin Str C&G
TC Elev 1587.93

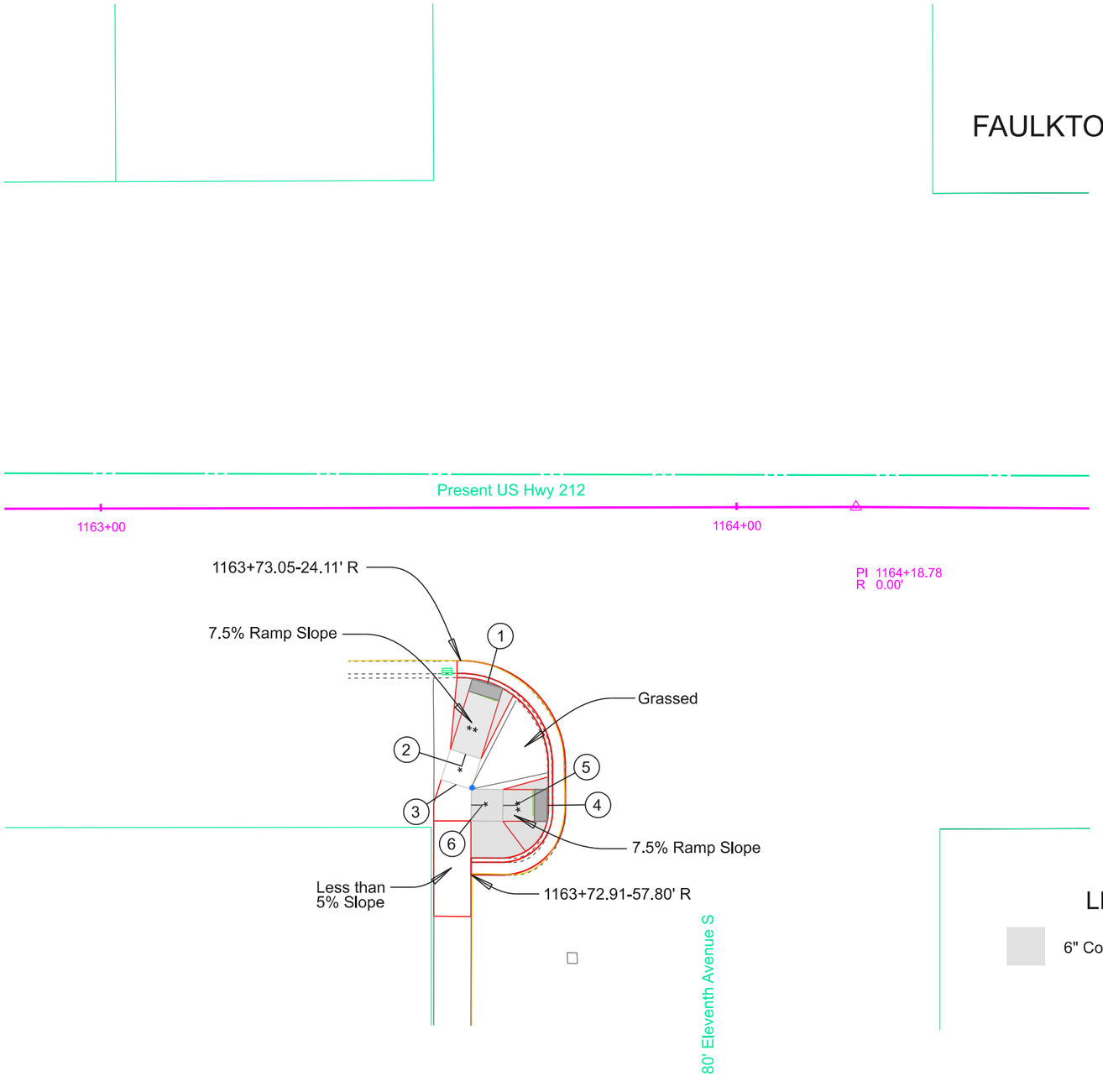
5 1163+58.14-57.74' R
End Str C & G
TC Elev 1587.98

CURB RAMP LAYOUT

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	20/50

Plotting Date: 08/14/2026

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B68 except as noted.
All sidewalk is 5' wide except as noted.



1 1163+60.78-27.68' R
Center of Detectable Warning
& Type 1 Curb Ramp

2 1163+57.31-38.75' R
End Ramp Slope

3 1163+55.82-43.52' R
Back of Landing

4 1163+70.12-46.85' R
Center of Detectable Warning
& Type 1 Curb Ramp

5 1163+63.15-46.82' R
End Ramp Slope

6 1163+58.15-46.76' R
Back of Landing

LEGEND

6" Concrete Sidewalk

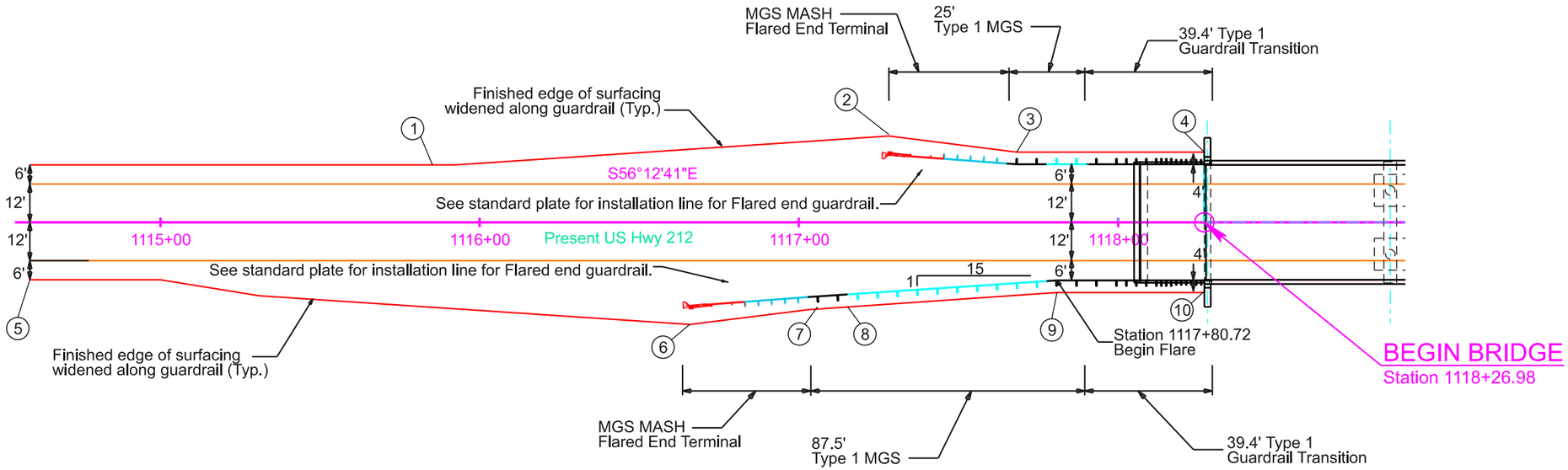
GUARDRAIL LAYOUT

Structure No. 25-210-144

MRM 266.15+0.023

SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	21/50

Plotting Date: 08/14/2026



Install Steel Beam Guardrails and Flared End Terminals at the Following locations:
1117+25.98 L to 1118+29.47 L
1116+63.67 R to 1118+29.49 R

1	1115+85.21-18.00' L
2	1117+28.20-27.55' L
3	1117+68.20-22.05' L
4	1118+26.98-22.05' L
5	1114+59.11-18.00' R
6	1116+65.86-31.92' R
7	1117+05.86-26.42' R
8	1117+15.24-26.42' R
9	1117+80.83-22.05' R
10	1118+26.98-22.05' R

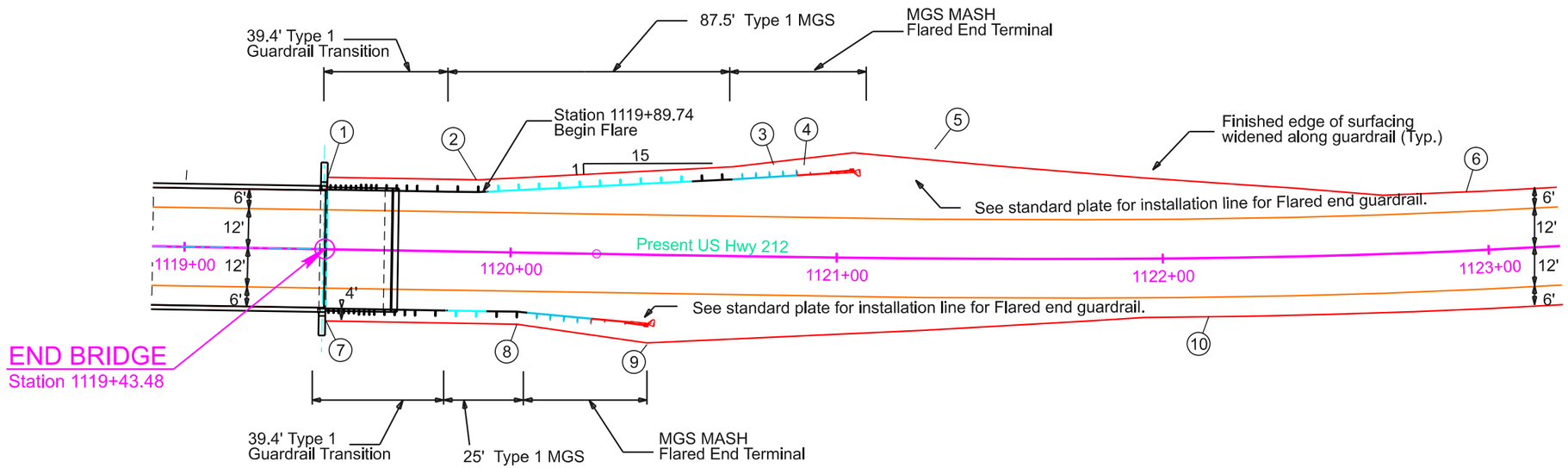
GUARDRAIL LAYOUT

Structure No. 25-210-144

MRM 266.15+0.023

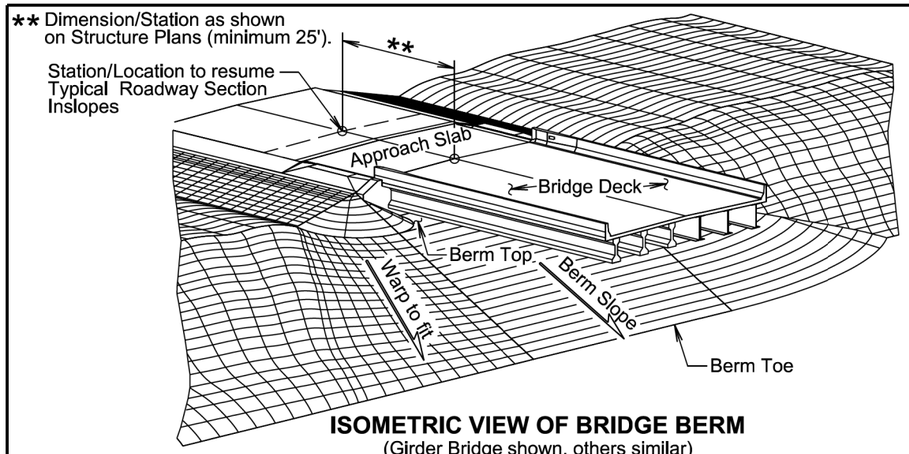
SD DOT	PROJECT	SECTION	SHEET
	NH-B 0212(194)266	B	22/50

Plotting Date: 08/14/2026

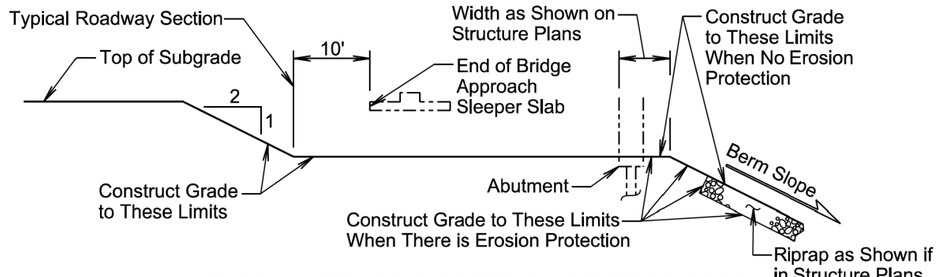


1 1119+43.48-22.05' L
2 1119+89.12-22.05' L
3 1120+80.22-28.17' L
4 1120+89.63-28.17' L
5 1121+29.82-33.53' L
6 1122+93.92-18.00' L
7 1119+43.48-22.05' R
8 1120+02.26-22.05' R
9 1120+42.25-27.50' R
10 1122+20.10-18.00' R

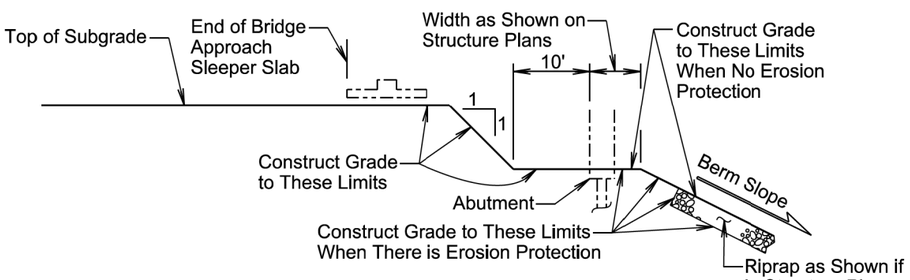
Install Steel Beam Guardrails and
Flared End Terminals at the
Following locations:
1119+40.97 L to 1121+06.93 L
1119+40.99 R to 1120+44.48 R



ISOMETRIC VIEW OF BRIDGE BERM
(Girder Bridge shown, others similar)



TYPICAL GRADING PROFILE AT BRIDGE BERM
(Normal to ℄ Abutment at ℄ Roadway)



TYPICAL GRADING PROFILE AT BRIDGE BERM
(Normal to ℄ Abutment at ℄ Roadway)

GENERAL NOTES:

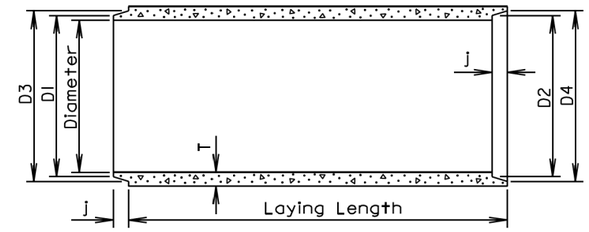
The bridge berm elevation and slope will be as shown in the Structure Plans.
See Structure Plans to determine which grading profile to use.

January 22, 2021

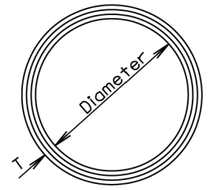
Published Date: 2027	SDDOT	BRIDGE BERM (NONPROJECTING EMBANKMENT)	PLATE NUMBER 120.10
			Sheet 1 of 1

TOLERANCES IN DIMENSIONS

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



LONGITUDINAL SECTION
(* Tongue and Groove Style Shown)



END VIEW

GENERAL NOTES:

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

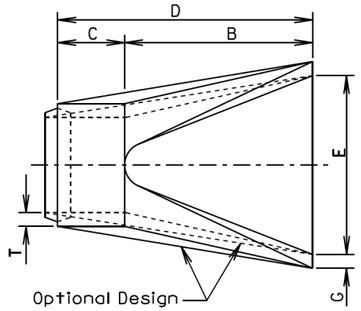
Not more than 2 four-foot sections shall be permitted near the ends of any culvert. Four-foot lengths shall be used only to secure the required length of culvert.

* Unless otherwise specified in the plans, the RCP may be either tongue and groove or bell and spigot style.

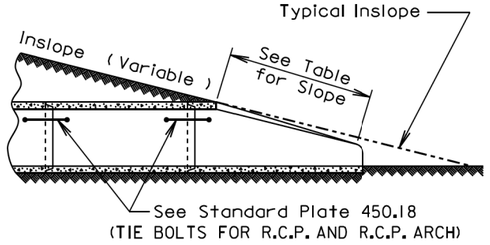
Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322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

April 17, 2026

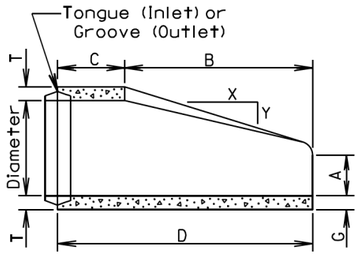
Published Date: 2027	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1



TOP VIEW



SLOPE DETAIL

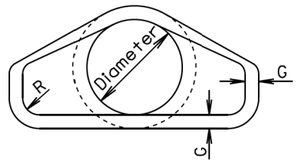


LONGITUDINAL SECTION

GENERAL NOTES:

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

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



END VIEW

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

June 26, 2015

Published Date: 2027 | SDDOT | R. C. P. FLARED ENDS | PLATE NUMBER 450.10 | Sheet 1 of 1

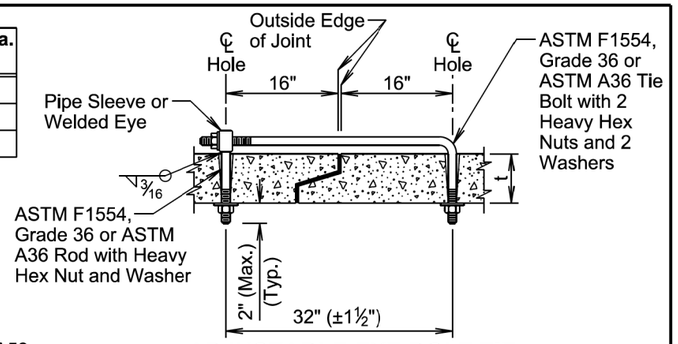
Wall "t" (in.)	Rod Dia. (in.)	Pipe Sleeve Dia. (nominal)
≤ 3 1/4	5/8	3/4
3 1/2-6 1/2	3/4	1
≥ 7	1	1 1/4

GENERAL NOTES:

Tie bolts will conform to ASTM F1554, Grade 36 or ASTM A36. Nuts will be heavy hex conforming to ASTM A563. Washers will conform to ASTM F436.

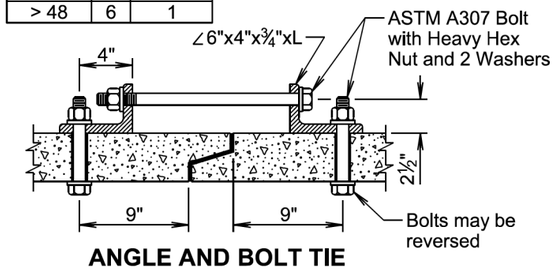
Pipe Sleeve will conform to ASTM A53, Grade B or ASTM A500, Grade B or C.

Galvanize adjustable eye bolt tie assembly in accordance with ASTM A153.



ADJUSTABLE EYE BOLT TIE

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



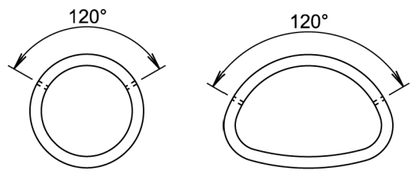
ANGLE AND BOLT TIE

GENERAL NOTES:

Angles will conform to ASTM A36.

Bolts will conform to ASTM A307. Nuts will be heavy hex conforming to ASTM A563. Washers will conform to ASTM F436.

Galvanize angles, bolts, nuts, and washers in accordance with ASTM A153.



END VIEW (Circular)

END VIEW (Arch)

GENERAL NOTES:

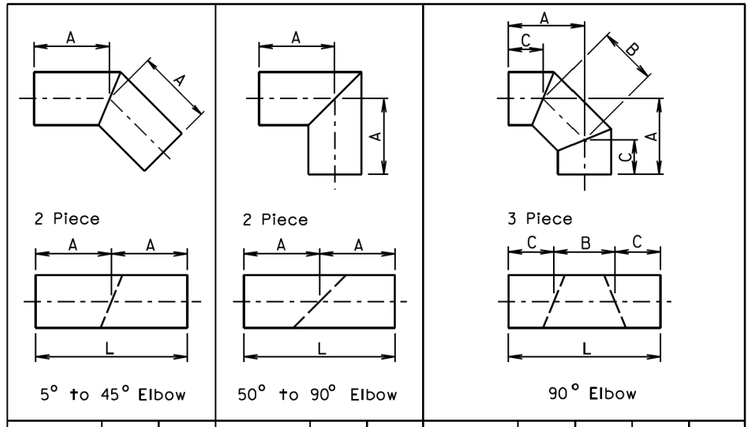
In lieu of the tie bolts detailed above other types of tie bolt connections may be installed as approved by the Office of Bridge Design.

All pipe sections of R.C.P. and R.C.P. Arch will be tied with tie bolts except for pipe located between drop inlets, manholes, and junction boxes. All pipe sections of pipes that only enter or exit drop inlets, manholes, and junction boxes will be tied with tie bolts.

There will be no separate measurement or payment for the tie bolts. The cost for furnishing and installing the tie bolts will be incidental to the contract unit price per foot for the corresponding bid item for R.C.P. or R.C.P. Arch.

April 8, 2025

Published Date: 2027 | SDDOT | TIE BOLTS FOR R.C.P. AND R.C.P. ARCH | PLATE NUMBER 450.18 | Sheet 1 of 1



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

FABRICATED ELBOW LENGTHS FOR ALL CORRUGATIONS

GENERAL NOTES:

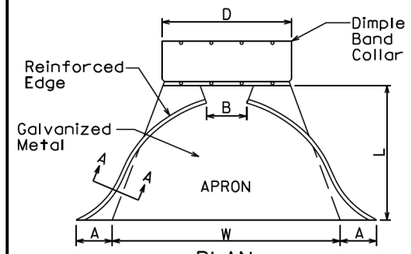
All dimensions shown are nominal.

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

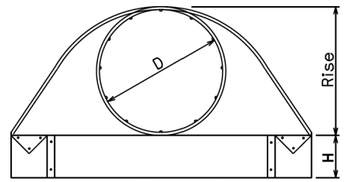
June 26, 2001

Published Date: 2027	SDDOT	*C.M.P. FABRICATED LENGTHS FOR ELBOWS*	*PLATE NUMBER* 450.32 / *Sheet 1 of 1*

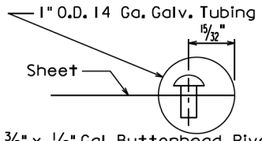
Alternate Type Connector Sections may be used with approval of the Engineer.



PLAN

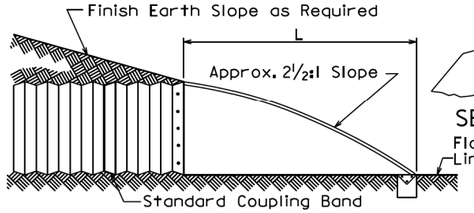


ELEVATION



⅜" x ½" Gal. Buttonhead Rivets spaced 6" C. to C. Overall length of rivets=0.78"

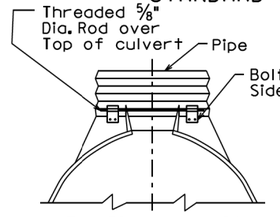
TUBING ATTACHMENT DETAILS
SECTION A-A



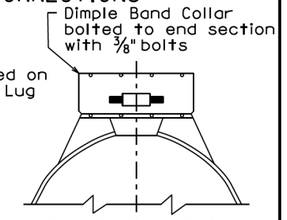
TYPICAL CROSS-SECTION

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

STANDARD CONNECTIONS

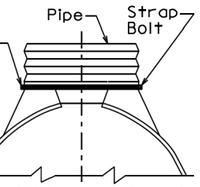


For 30" through 84"

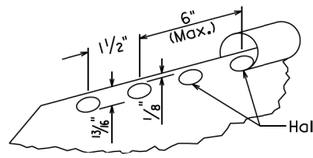


Alternate for all sizes

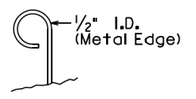
NOTE:
Tubing is slipped over the sheet and rivets or lugs prior to forming operations of the apron.



For 12" through 24" only



SECTION A-A (alternate)



SECTION A-A (alternate)

GENERAL NOTES:

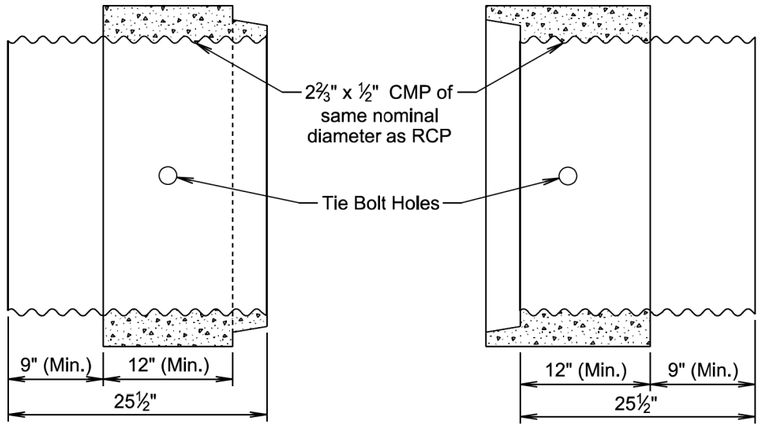
All 3 pc. bodies shall have 12 Ga. sides and 10 Ga. center panels. Width of center panels shall be greater than 20% of the pipe periphery. Multiple panel bodies to have lap seams tightly joined by ⅜" Dia. galvanized rivets or bolts.

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

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

March 31, 2000

Published Date: 2027	SDDOT	*C.M.P. FLARED ENDS*	*PLATE NUMBER* 450.35 / *Sheet 1 of 1*



INLET
(CMP to RCP Transition)

OUTLET
(RCP to CMP Transition)

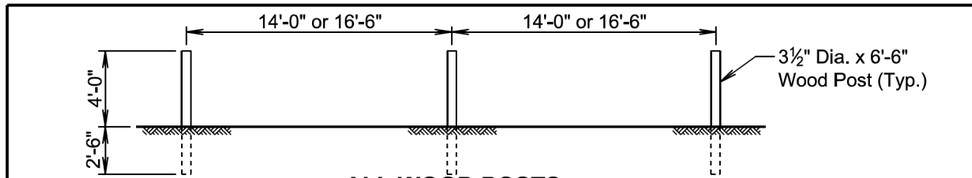
GENERAL NOTE:

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

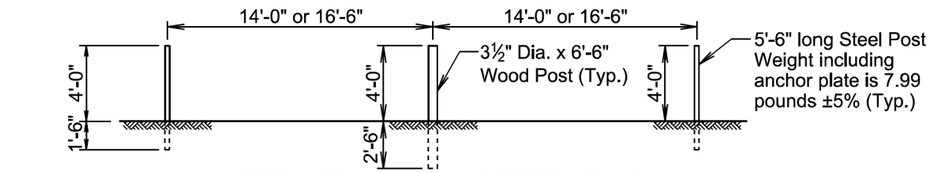
All pipe transitions will be precast as shown. Alternate designs other than shown will need to be approved by the Engineer.

November 19, 2022

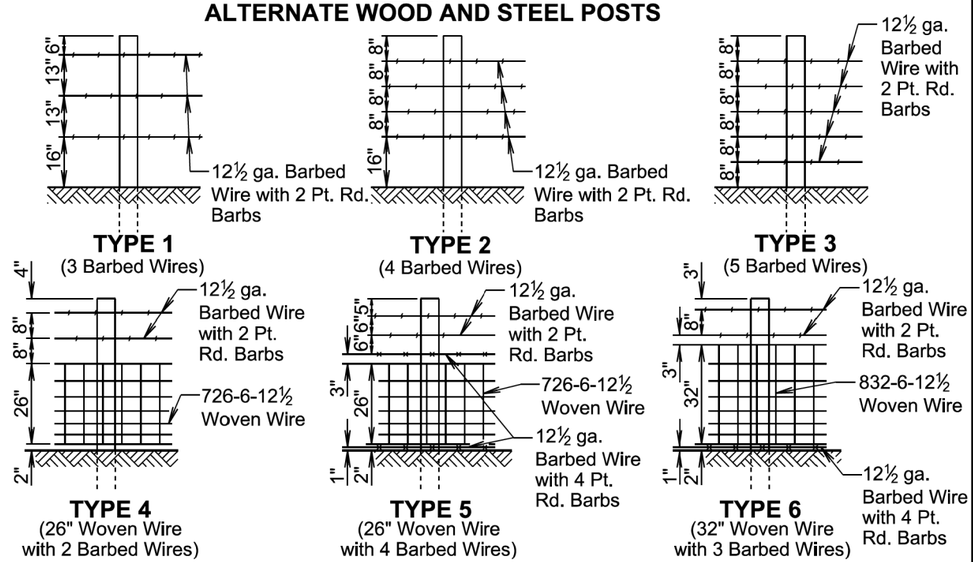
Published Date: 2027	SDDOT	**C.M.P. TO R.C.P. TRANSITION AND R.C.P. TO C.M.P. TRANSITION**	PLATE NUMBER 450.50 Sheet 1 of 1



ALL WOOD POSTS



ALTERNATE WOOD AND STEEL POSTS



TYPE OF FENCE		LINE POST SPACING	BARBED WIRE		WOVEN WIRE
TYPE	DESCRIPTION		WIRE GAGE	NUMBER AND SHAPE OF BARBS	STYLE OR DESIGN NO.
1	3 Barbed Wires	16'-6"	12½	2 Point Round	—
2	4 Barbed Wires	16'-6"	12½	2 Point Round	—
3	5 Barbed Wires	16'-6"	12½	2 Point Round	—
4	26" Woven Wire with 2 Barbed Wires	14'-0"	12½	2 Point Round	726-6-12½
5	26" Woven Wire with 4 Barbed Wires	14'-0"	12½	2 wires with 2 Pt. Rd. 2 wires with 4 Pt. Rd.	726-6-12½
6	32" Woven Wire with 3 Barbed Wires	14'-0"	12½	2 wires with 2 Pt. Rd. 1 wire with 4 Pt. Rd.	832-6-12½

GENERAL NOTES:

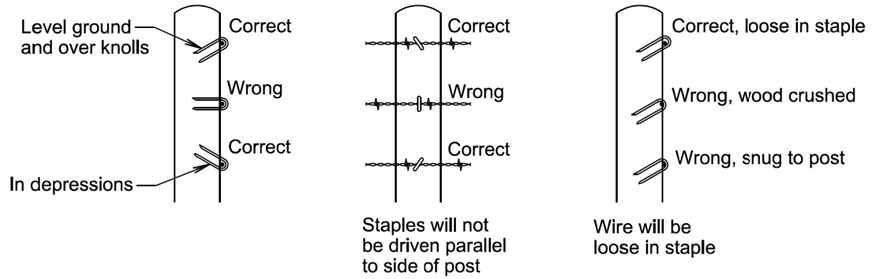
Fence types designated on the plans that are followed by the letter S will have smooth (barbless) wires.

When type 5S or 6S is designated the bottom wire may be barbed, smooth, or left off.

All radius of curvature stated for fence are at centerline of roadway.

April 8, 2025

Published Date: 2027	SDDOT	**RIGHT-OF-WAY FENCE**	PLATE NUMBER 620.01 Sheet 1 of 1



STAPLE INSTALLATION

GENERAL NOTES:

The Right-of-Way fence will consist of barbed wire or a combination of woven wire and barbed wire. The barbed wire and/or woven wire will be fastened to all wood posts or fastened to alternating wood and steel posts. Only wood posts will be used for brace panels. Gates will be of the type designated in the plans or as otherwise directed by the Engineer. Fence will be constructed conforming to the details on the standard plates and in the plans unless otherwise directed by the Engineer.

Right-of-Way fence on Interstate Projects will be constructed one foot within the Interstate Right-of-Way lines except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

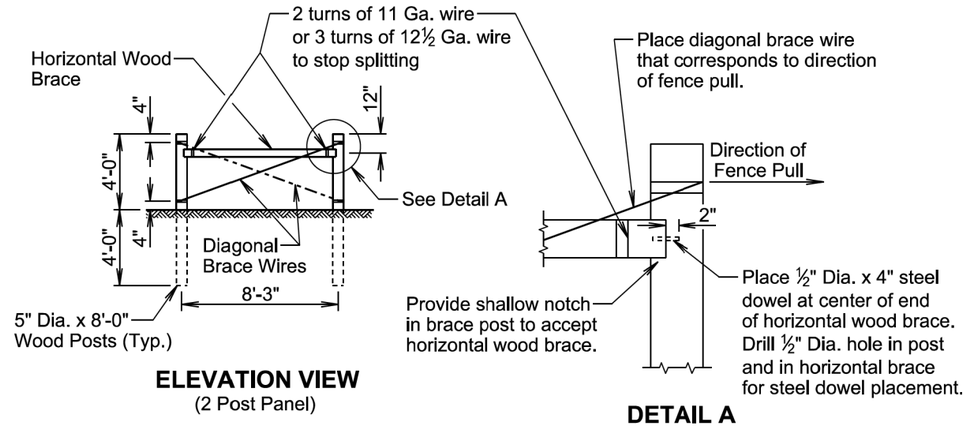
Right-of-Way fence other than on Interstate Projects will be constructed within one foot of the Right-of-Way on the Landowner's side except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

Barbs will be fabricated from zinc coated 14 ga. wire. Two point barbs will be wrapped twice around one main strand at four-inch spacings and the four point barbs will be interlocked and wrapped around both main strands at five-inch spacings.

The gages of wire and wood post lengths and sizes are the minimum acceptable unless otherwise specified in the plans. The tolerances for steel posts will be as stated in AASHTO M281. Woven wire will conform to design and specifications of ASTM A116 and barbed wire will conform to ASTM A121.

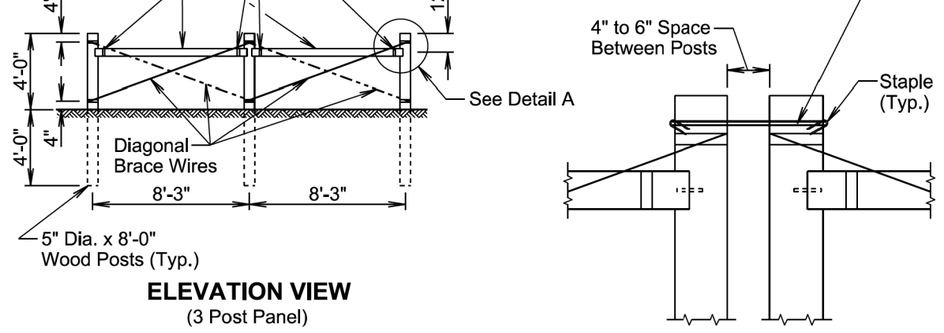
June 26, 2019

Published Date: 2027	SDDOT	STAPLE INSTALLATION AND GENERAL RIGHT-OF-WAY FENCE NOTES	PLATE NUMBER 620.02
			Sheet 1 of 1



ELEVATION VIEW
(2 Post Panel)

DETAIL A



ELEVATION VIEW
(3 Post Panel)

DETAIL B

GENERAL NOTES:

Two Post Panels will be installed at least every 1320' between corners.

Two Post Panels will be installed at any sharp vertical angle crest points and as directed by the Engineer.

Horizontal wood braces will consist of 4" dia. x 8' wood posts or rough 4" x 4" x 8' timbers.

Diagonal brace wires will be fabricated with 4 strands of 9 Ga. galvanized wire twisted tight. The diagonal brace wires will be installed in accordance with the direction of the fence pull. Two diagonal brace wires are required if fence pull is in both directions.

March 31, 2024

Published Date: 2027	SDDOT	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
			Sheet 1 of 3

SPACING OF 2 POST PANELS WITHIN CURVES	
RADIUS OF CURVE	SPACING OF 2 POST PANEL
Greater than 1800 Ft.	** 1320'
Less than 1800 Ft.	** At P.C., P.T., and at every 1320' between P.C. and P.T.

** Fence lengths greater than 1320' and less than 2640' place 2 Post Panel approximately at midpoint.

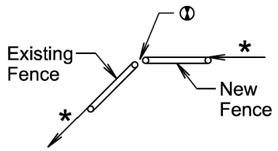
① See Detail B on Sheet 1 of 3.

GENERAL NOTE:

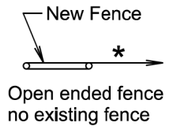
All radius of curvature stated for fence are at centerline of roadway.

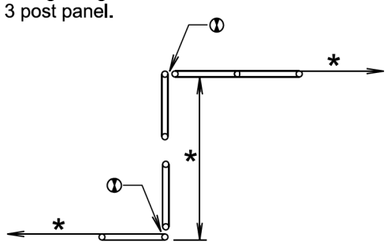
If fence length is less than 600' to next corner use a 2 post panel.

* If fence length is greater than 600' to next corner use a 3 post panel.

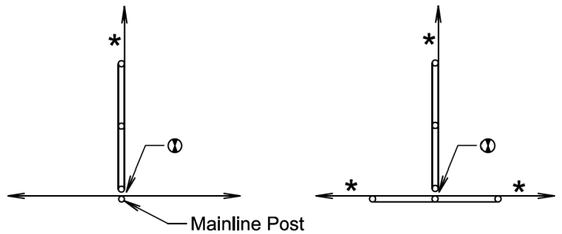


BEGIN OR END FENCE
(Where new fence ties into existing fence)

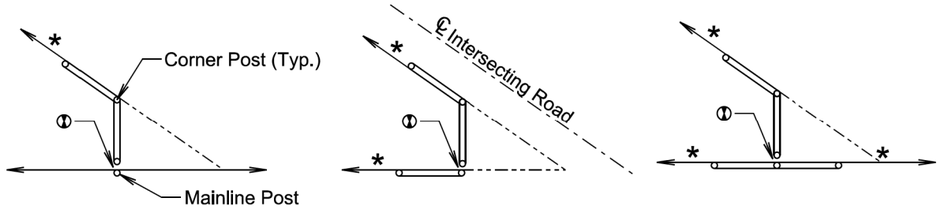




SHORT JOGS IN FENCE



CROSS FENCE



SHARP ANGLES IN CROSS FENCE

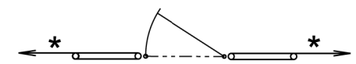
Additional fence panel is NOT required when an angle in the mainline fence is 10° and less.

Additional fence panel is required when an angle in the mainline fence is greater than 10°.

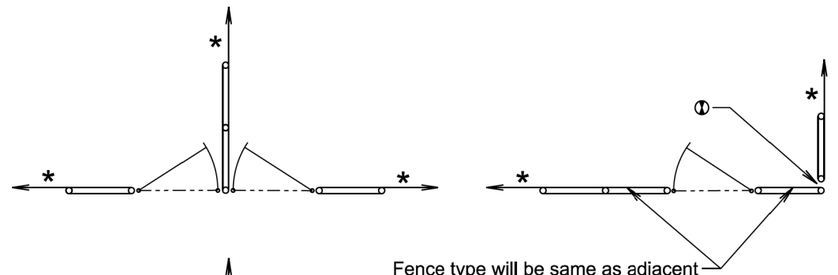
ANGLES IN MAINLINE FENCE

March 31, 2024

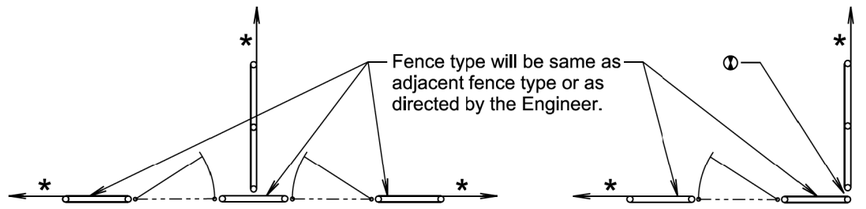
Published Date: 2027	SDDOT	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
			Sheet 2 of 3



ENTRANCE
(Not on corner)



Fence type will be same as adjacent fence type or as directed by the Engineer.



DOUBLE ENTRANCES

ENTRANCES AT CORNERS

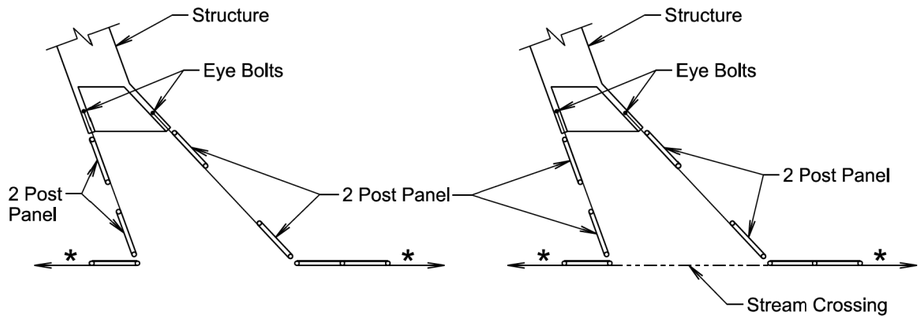
GATES

* If fence length is less than 600' to next corner use a 2 post panel.
If fence length is greater than 600' to next corner use a 3 post panel.

① See Detail B on Sheet 1 of 3.

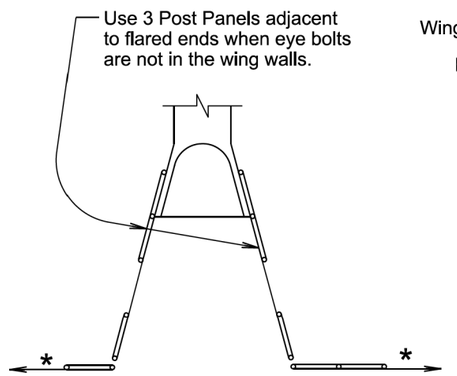
March 31, 2024

Published Date: 2027	SDDOT	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
			Sheet 3 of 3

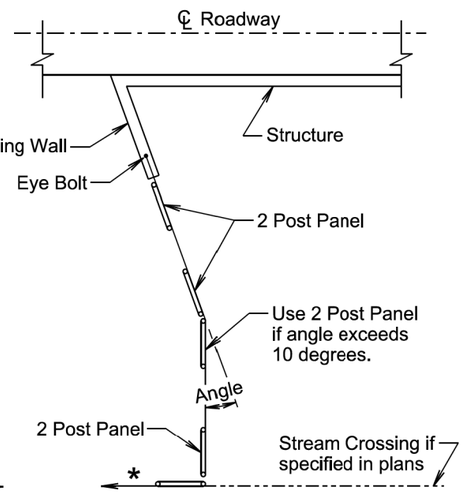


R.C. BOX CULVERT OR CATTLE PASS

STRUCTURE WITH STREAM CROSSING FENCE



R.C. BOX CULVERT OR CATTLE PASS

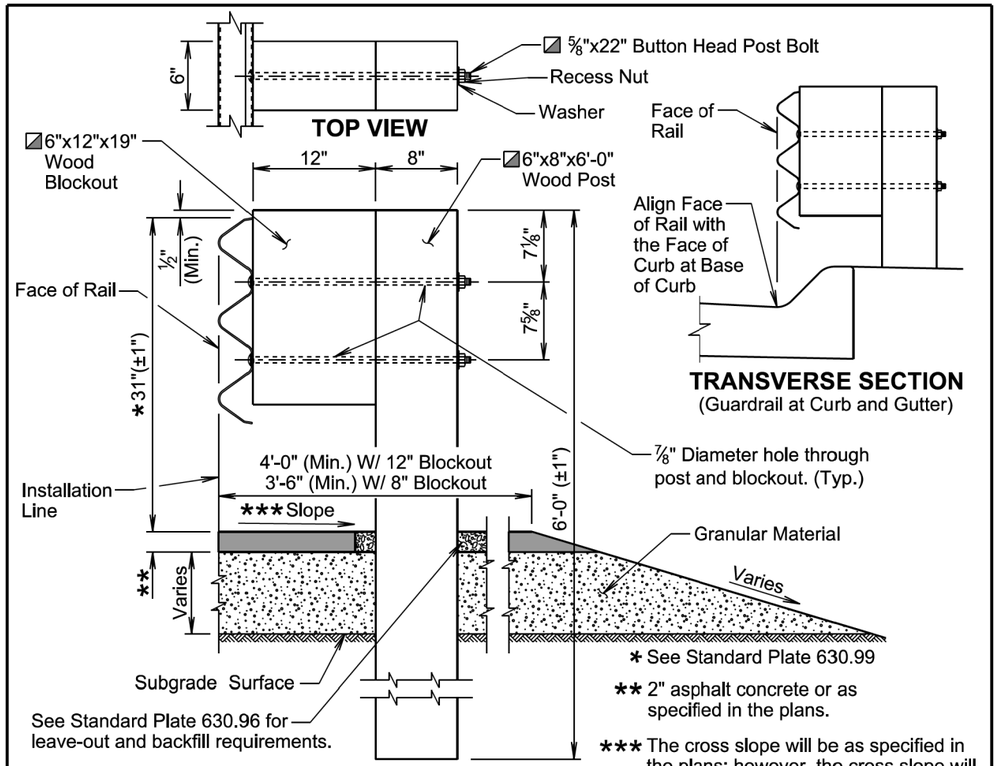


BRIDGE

* If fence length is less than 600' to next corner use a 2 post panel.
If fence length is greater than 600' use a 3 post panel.

June 26, 2019

Published Date: 2027	SDDOT	BRACE PANEL APPLICATIONS AT STRUCTURES	PLATE NUMBER 620.04
			Sheet 1 of 1



* 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.

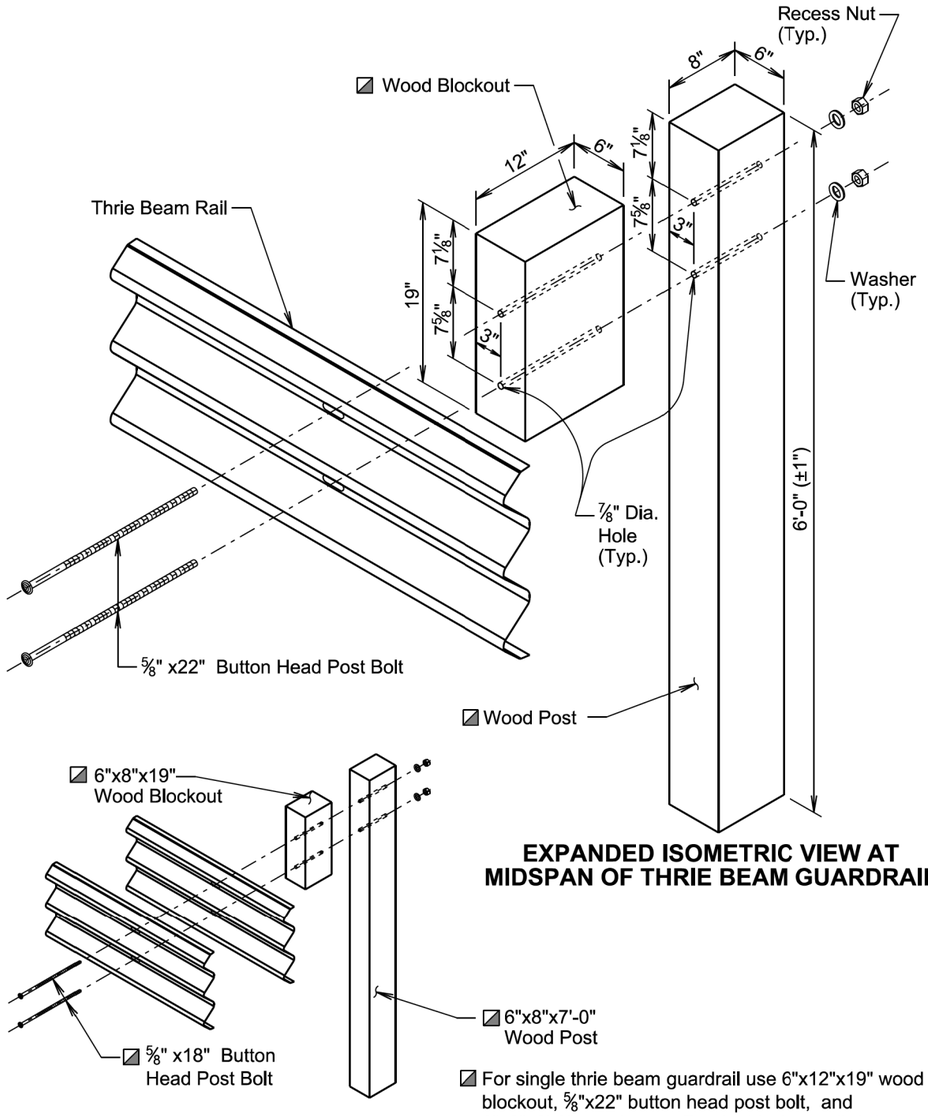
☑ The post and blockout illustrated above is typical for single thrie beam guardrail. When other variations of posts and blockouts are specified on other standard plates (e.g. transitions) then the posts and blockouts will be as specified on the other standard plates or as specified in the plans.

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.

April 8, 2025

Published Date: 2027	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 1 of 5



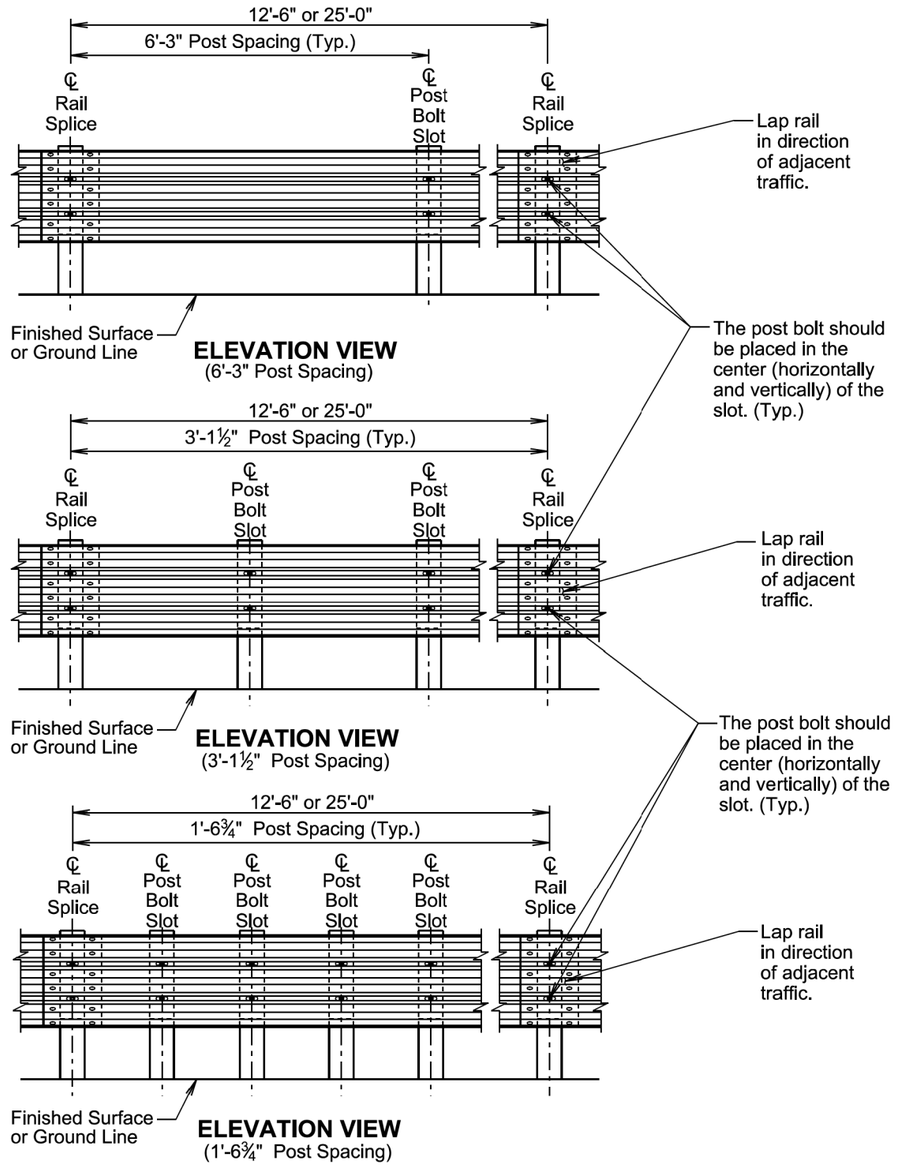
EXPANDED ISOMETRIC VIEW AT MIDSPAN OF THRIE BEAM GUARDRAIL

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

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

April 8, 2025

Published Date: 2027	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 2 of 5



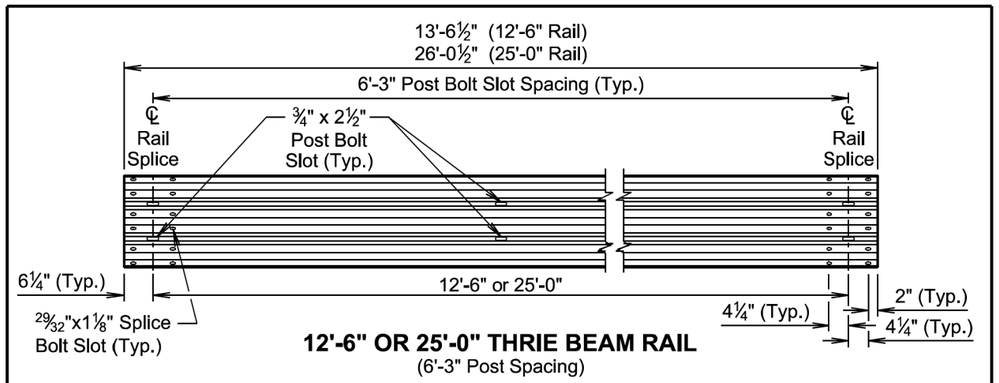
ELEVATION VIEW
(6'-3" Post Spacing)

ELEVATION VIEW
(3'-1½" Post Spacing)

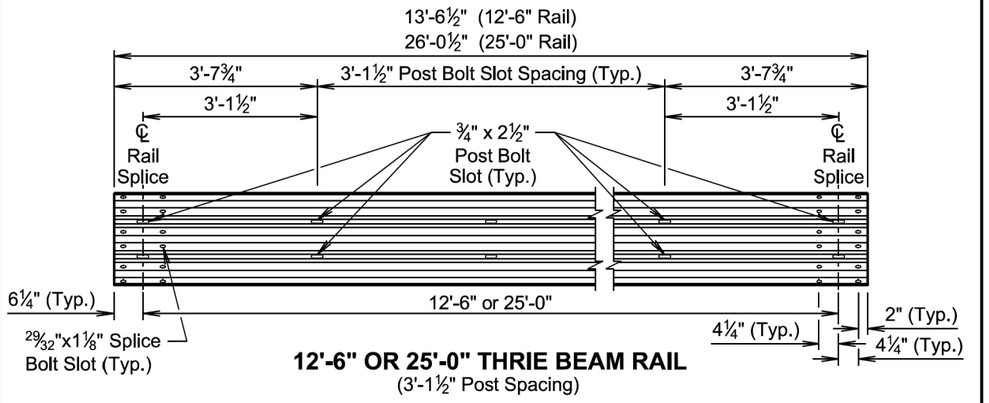
ELEVATION VIEW
(1'-6¾" Post Spacing)

April 8, 2025

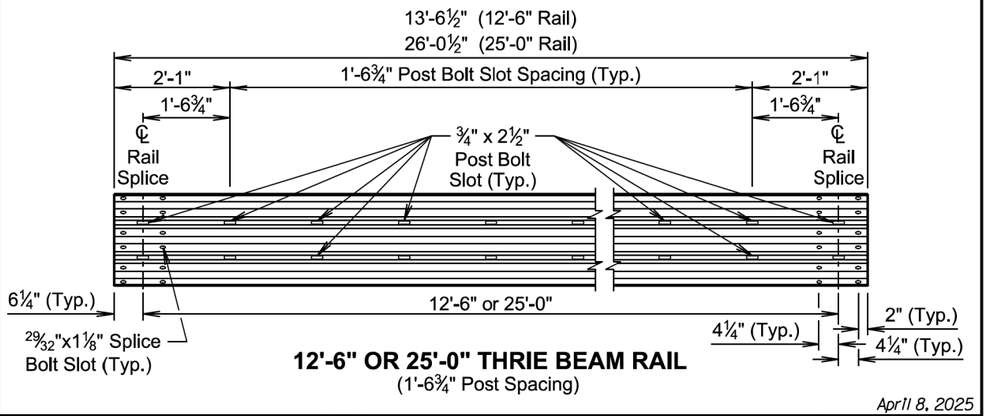
Published Date: 2027	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 3 of 5



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



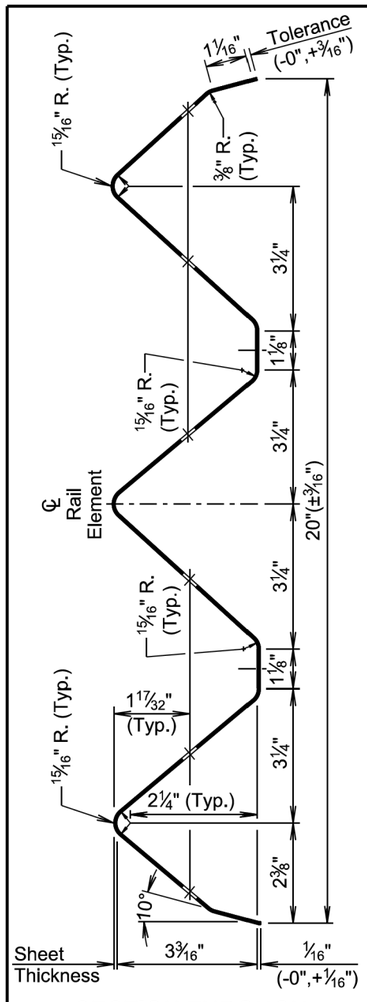
12'-6" OR 25'-0" THRIE BEAM RAIL
(3'-1½" Post Spacing)



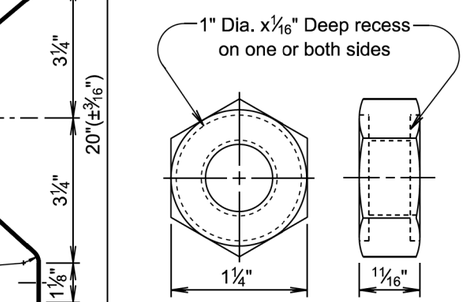
12'-6" OR 25'-0" THRIE BEAM RAIL
(1'-6¾" Post Spacing)

April 8, 2025

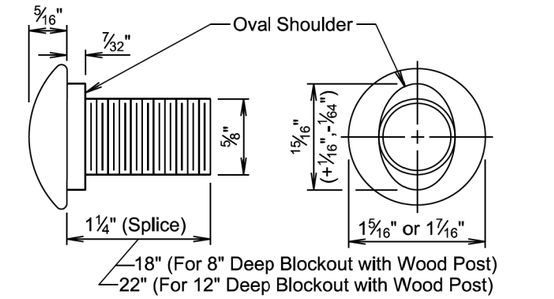
Published Date: 2027	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01	Sheet 4 of 5



SECTION THROUGH THRIE BEAM RAIL

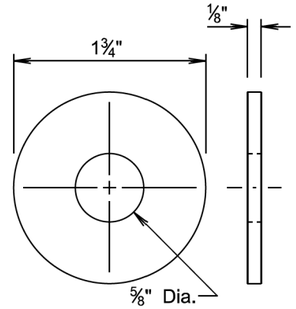


PLAN VIEW
(Lap Splice)
(Lap rail in direction of adjacent traffic.)
(12 splice bolts and 12 recess nuts per splice, NO washers)

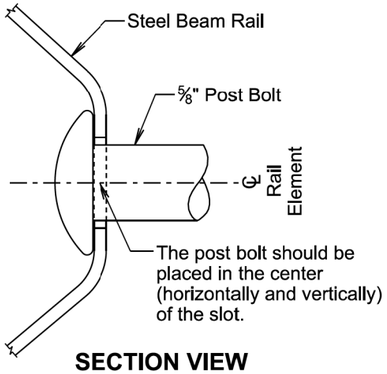


SPLICE BOLT AND POST BOLT
(⅝" Button Head Bolt)

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.)



SECTION VIEW
(At Post Bolt)

April 8, 2025

Published Date: 2027	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01	Sheet 5 of 5

TYPE AND DETAILS OF MGS						
Type of MGS	W Beam Rail Single or Double (Nested)	Blockout Size	Blockout Material	Post Size	Post Material	Post Spacing
1	Single	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	6'-3"
1C	Single	6"x12"x14"	Wood	6"x8"x7'-6"	Wood	6'-3"
2	Single	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	3'-1½"
3	Single	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	1'-6¾"
4	Double	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	6'-3"

STANDARD PLATE REFERENCE	
Type of MGS	See Standard Plate(s)
1	630.20, 630.22
1C	630.20, 630.25
2	630.20
3	630.20
4	630.20

GENERAL NOTES:

Asphalt concrete will be the same type used elsewhere on the project or will be as specified in the plans. If asphalt concrete is not specified in the plans, the asphalt concrete will conform to the Specifications for "Asphalt Concrete Composite".

Granular material will be the same type used elsewhere on the project or will be as specified in the plans. If granular material type is not specified in the plans, the material will conform to the Specifications for "Base Course". The granular material will be placed the same thickness as the mainline surfacing or as specified in the plans.

Topsoil is not shown in the transverse section drawing on sheet 2 of 6.

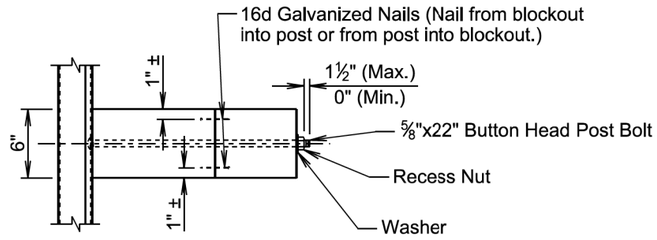
All W beam rail will be Type 1 and Class A (12 Ga.) unless specified otherwise in the plans.

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

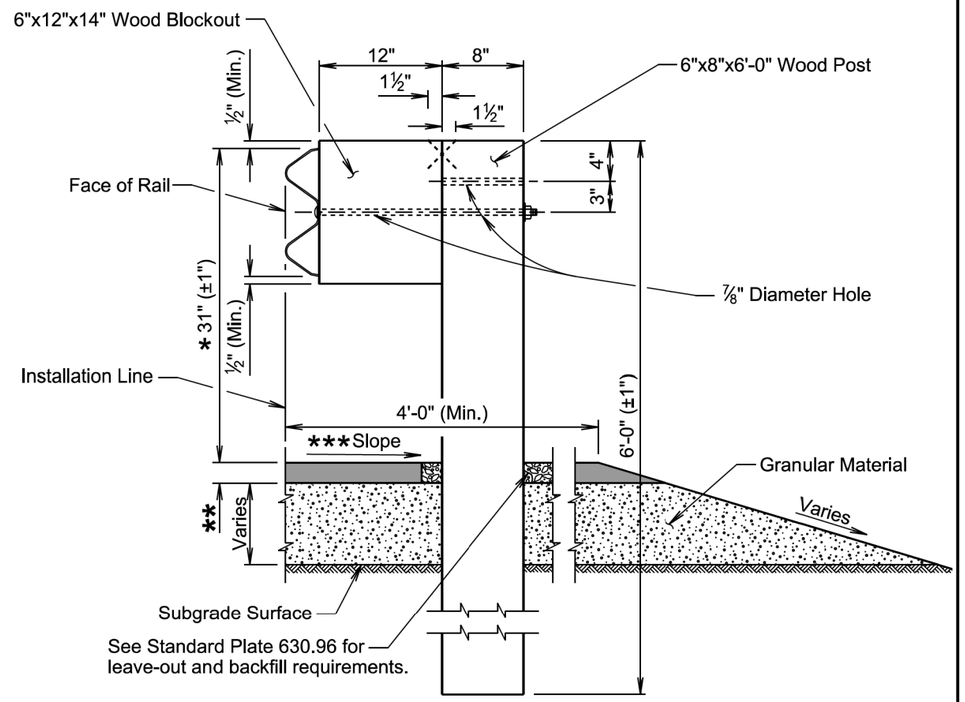
Slots in the rails will be provided as specified in the plans and by the manufacturer. A drilled hole through the rail is not allowed as a replacement for a slot. If the Contractor must create a slot, a cutting torch or plasma cutter is not allowed. The slot edges will be smooth and free of burrs or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

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

April 8, 2025



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



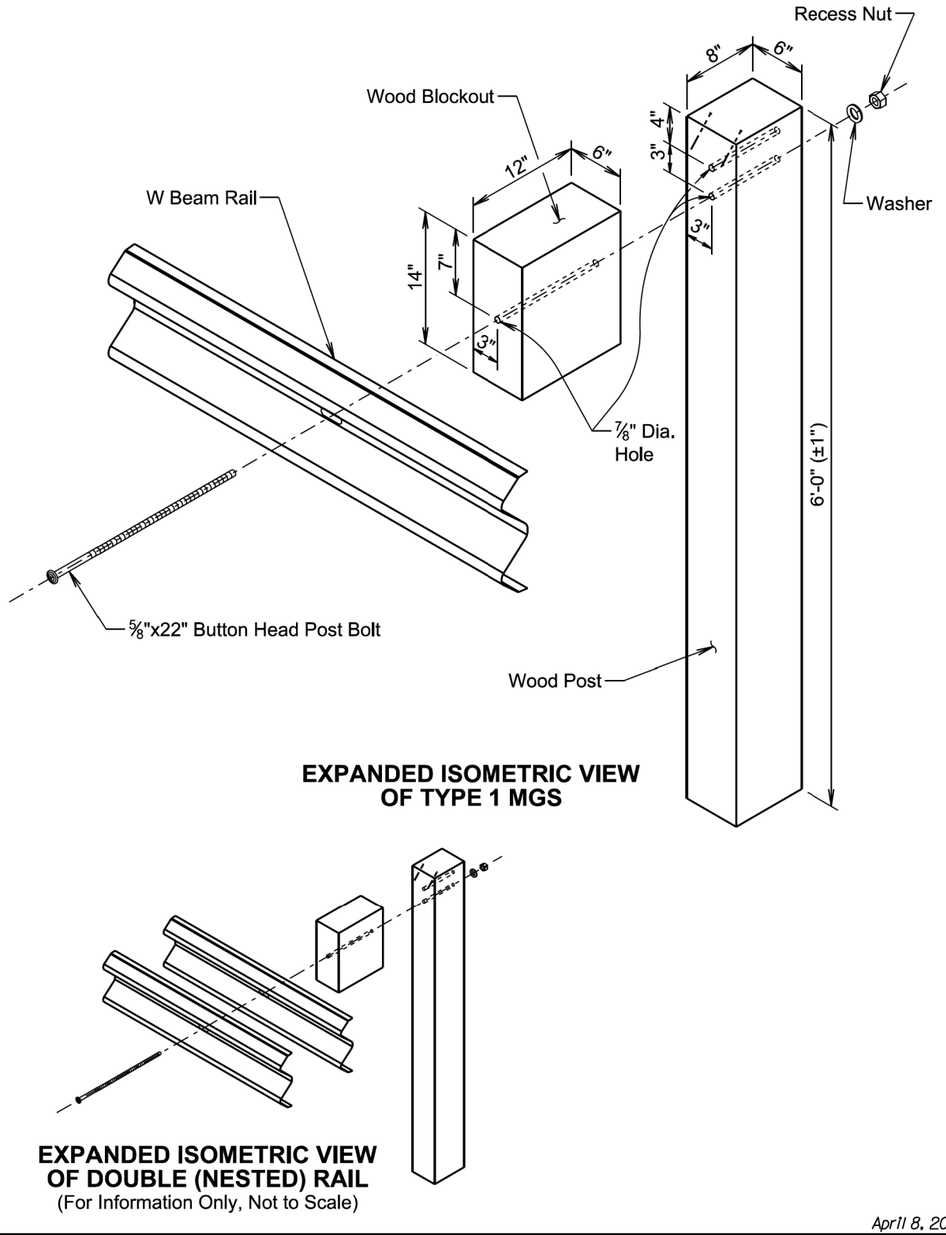
TRANSVERSE SECTION
(Type 1, 2, or 3 MGS Installation)

* See Standard Plate 630.99

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

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

April 8, 2025

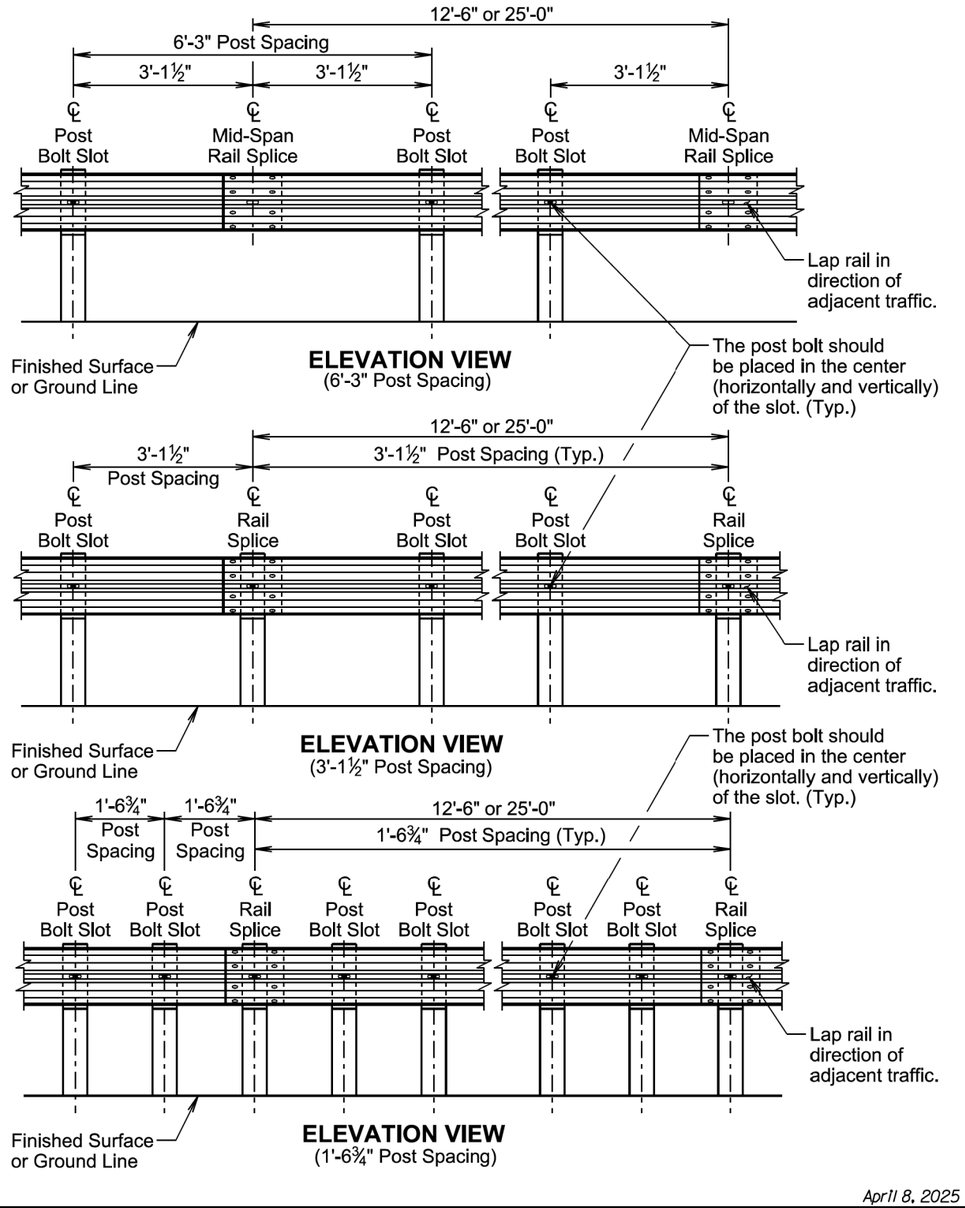


EXPANDED ISOMETRIC VIEW OF TYPE 1 MGS

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

April 8, 2025

Published Date: 2027	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 3 of 6



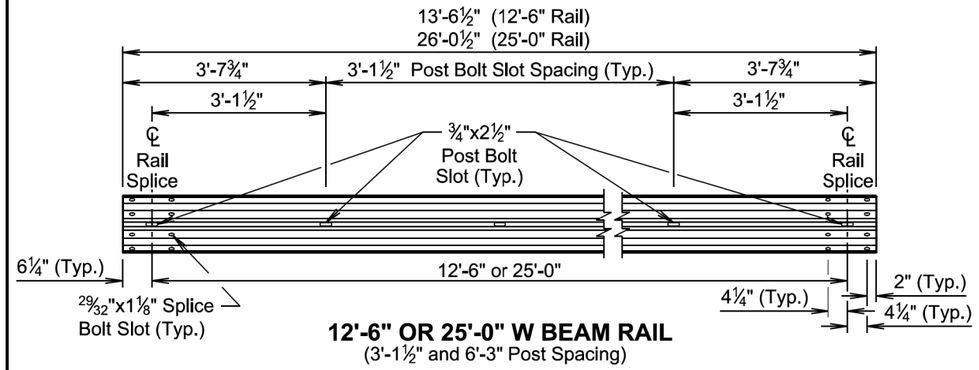
ELEVATION VIEW
(6'-3" Post Spacing)

ELEVATION VIEW
(3'-1½" Post Spacing)

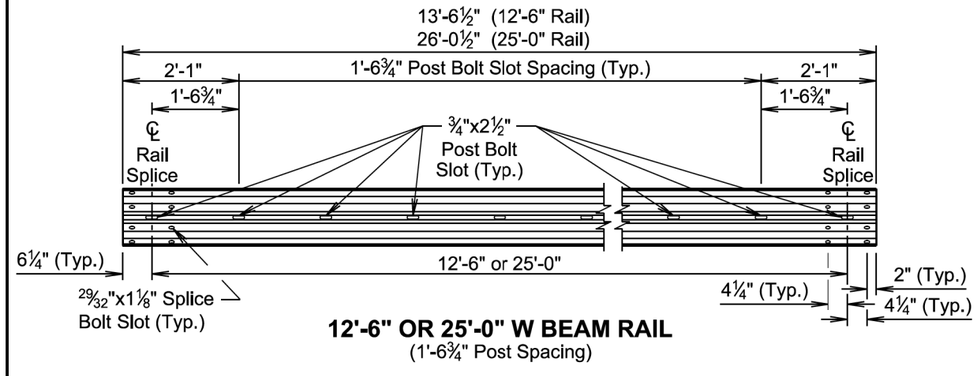
ELEVATION VIEW
(1'-6¾" Post Spacing)

April 8, 2025

Published Date: 2027	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 4 of 6



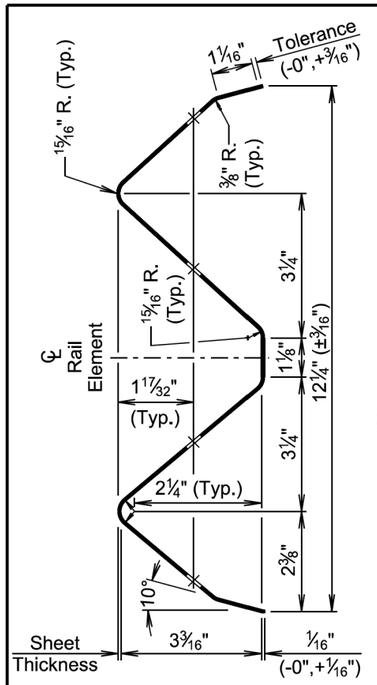
12'-6" OR 25'-0" W BEAM RAIL
(3'-1½" and 6'-3" Post Spacing)



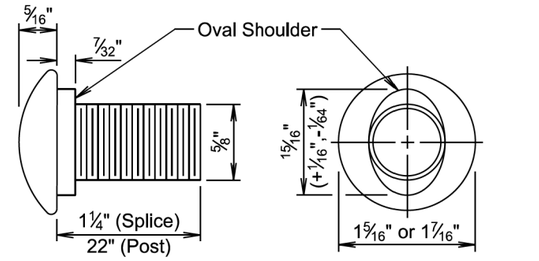
12'-6" OR 25'-0" W BEAM RAIL
(1'-6¾" Post Spacing)

April 8, 2025

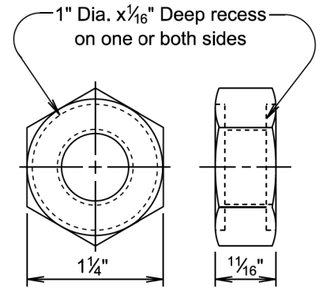
Published Date: 2027	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20	Sheet 5 of 6



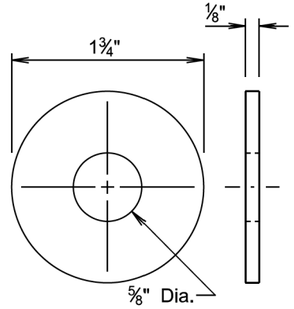
SECTION THROUGH W BEAM RAIL



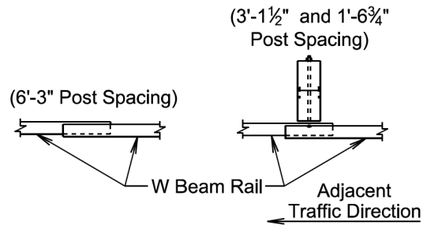
SPLICE BOLT AND POST BOLT
(⅝" Button Head Bolt)



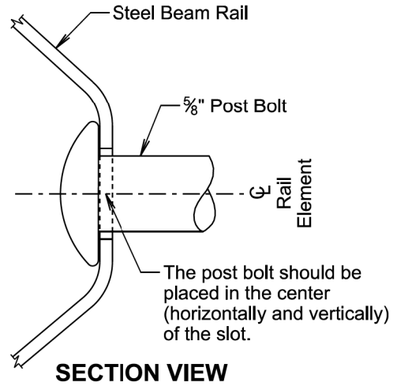
RECESS NUT
(At lap splices, the recess will be placed against the steel rail.)



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



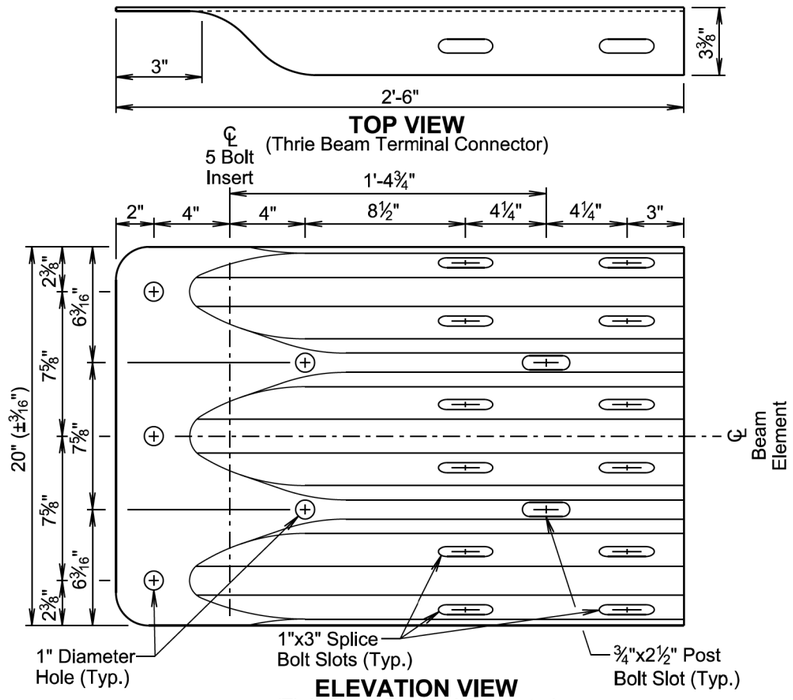
PLAN VIEW
(Lap Splice)
(Lap rail in direction of adjacent traffic.)
(8 splice bolts and 8 recess nuts per splice, NO washers)



SECTION VIEW
(At Post Bolt)

April 8, 2025

Published Date: 2027	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20	Sheet 6 of 6



GENERAL NOTES:

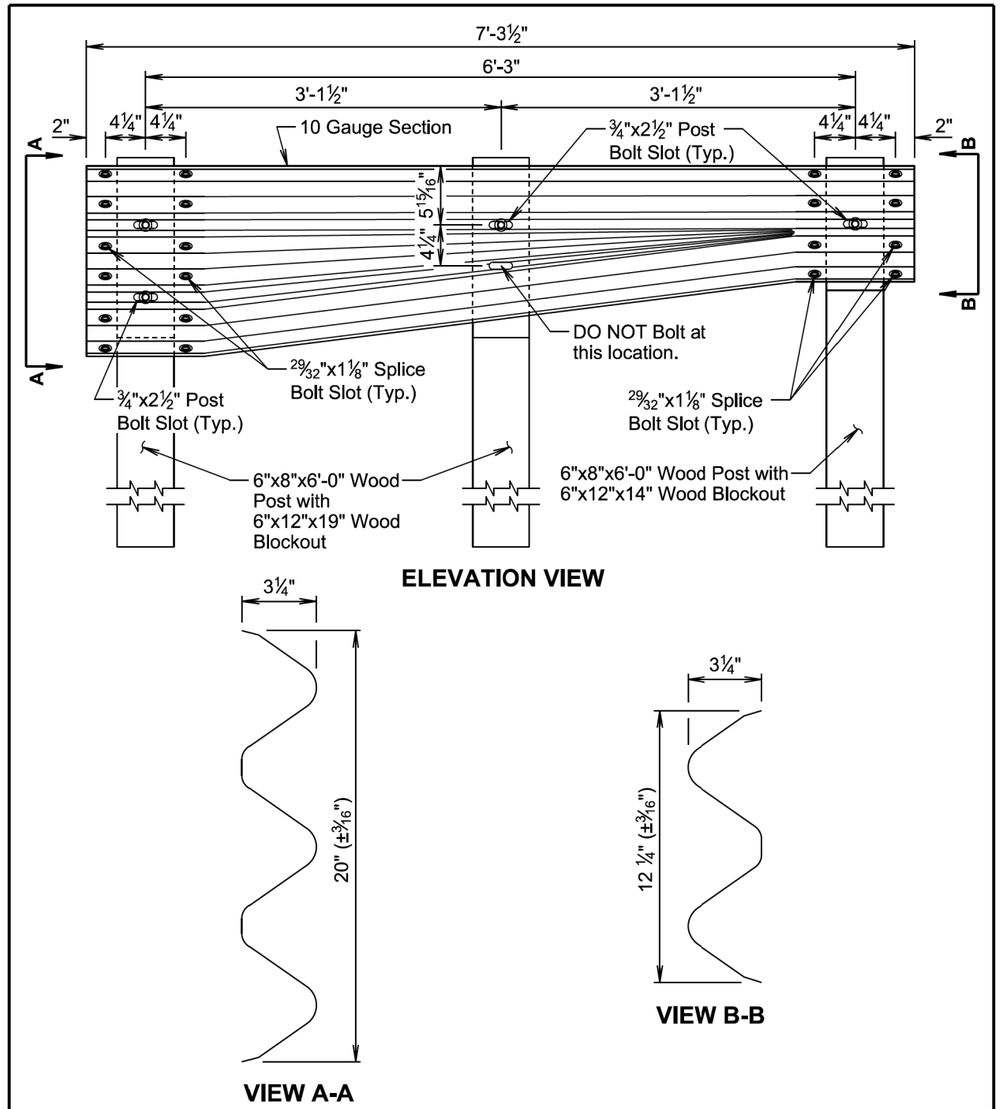
Thrie Beam Terminal Connectors will be 10 gauge.

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: 2027	SDDOT	*THRIE BEAM TERMINAL CONNECTOR*	*PLATE NUMBER* 630.47 *Sheet 1 of 1*

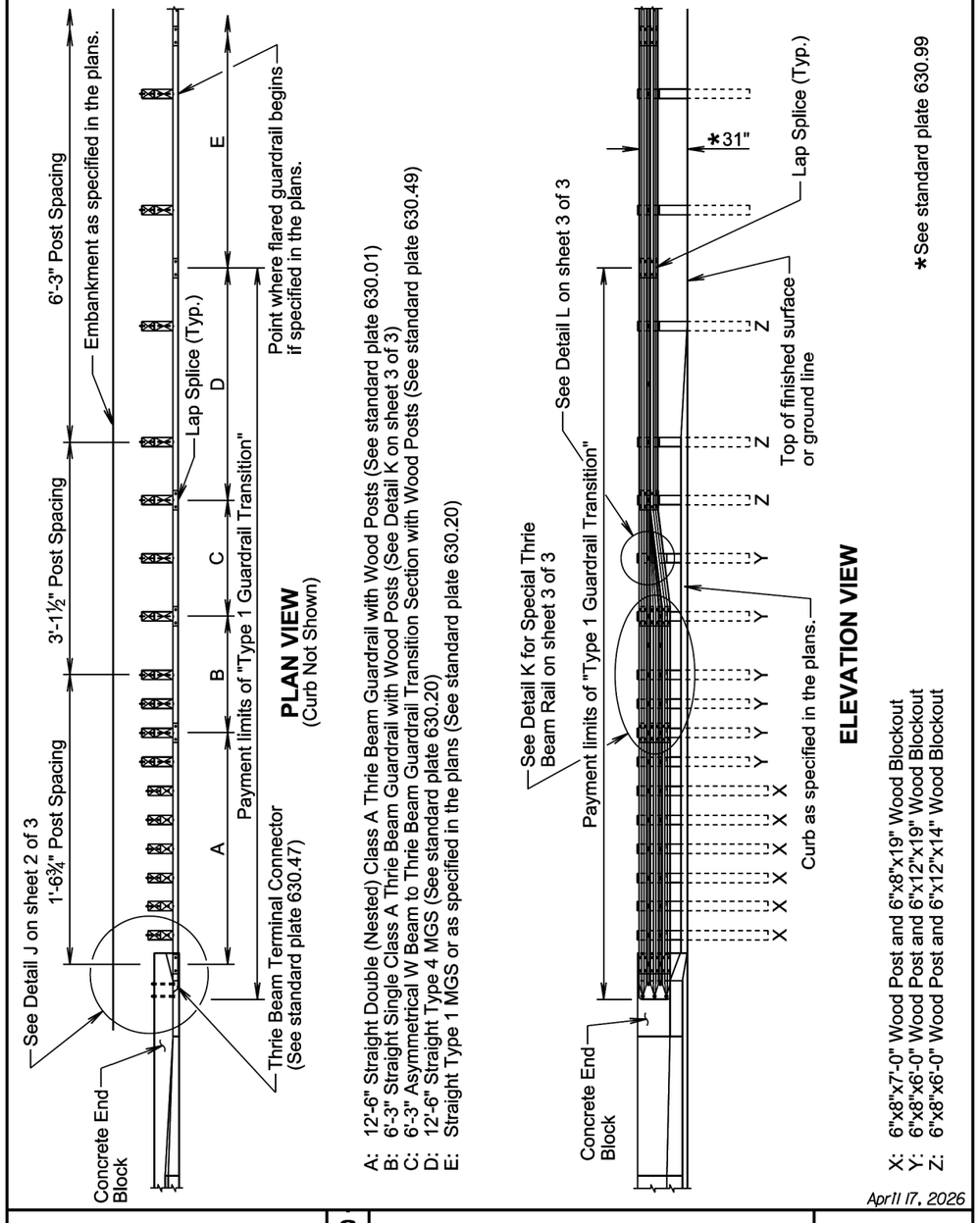


GENERAL NOTES:

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

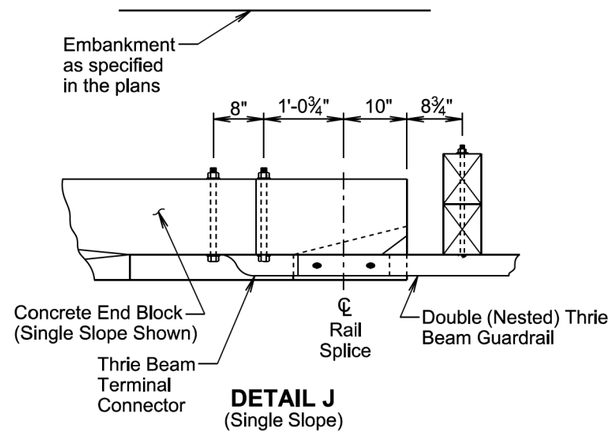
September 14, 2019

Published Date: 2027	SDDOT	*ASYMMETRICAL W BEAM TO THRIE BEAM GUARDRAIL TRANSITION SECTION*	*PLATE NUMBER* 630.49 *Sheet 1 of 1*

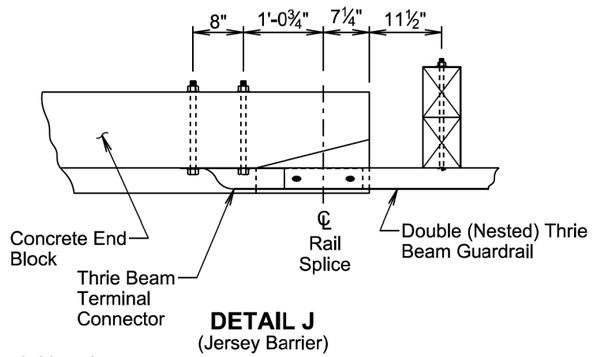


April 17, 2026

Published Date: 2027	SDDOT	TYPE 1 GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.50
			Sheet 1 of 3

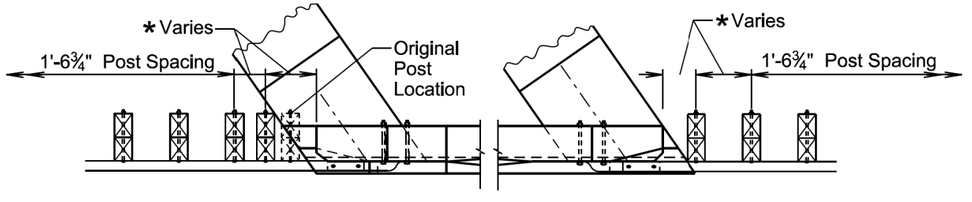


DETAIL J
(Single Slope)



DETAIL J
(Jersey Barrier)

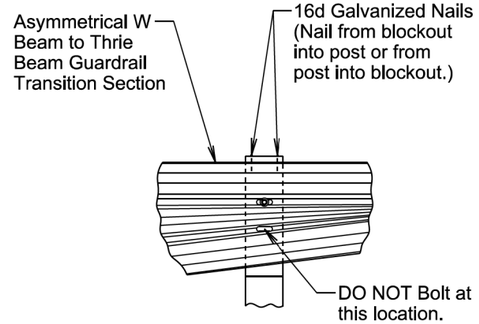
*Due to the skew of the bridge, the placement of the first "X" post and blockout will need to be moved from the original location. It will need to be installed as close as possible to the wingwall provided that the second "X" post and blockout is located in its original location.



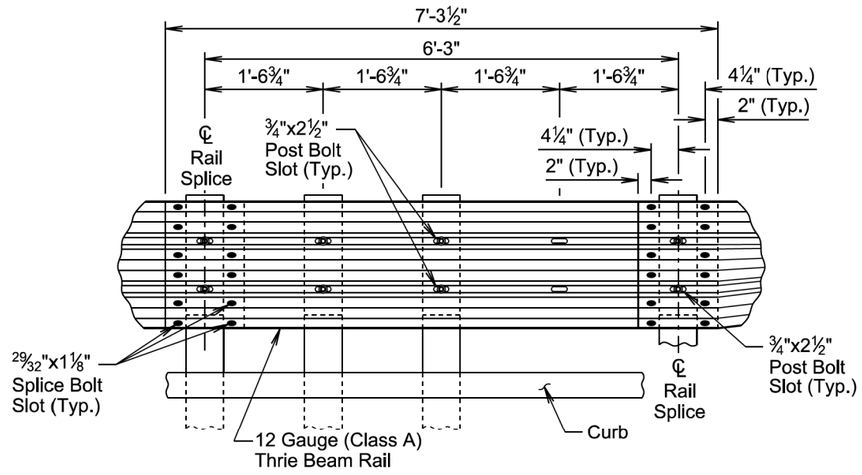
DETAIL J
(Skewed Bridge)

April 17, 2026

Published Date: 2027	SDDOT	TYPE 1 GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.50
			Sheet 2 of 3



DETAIL L



DETAIL K
(Special Thrie Beam Rail)

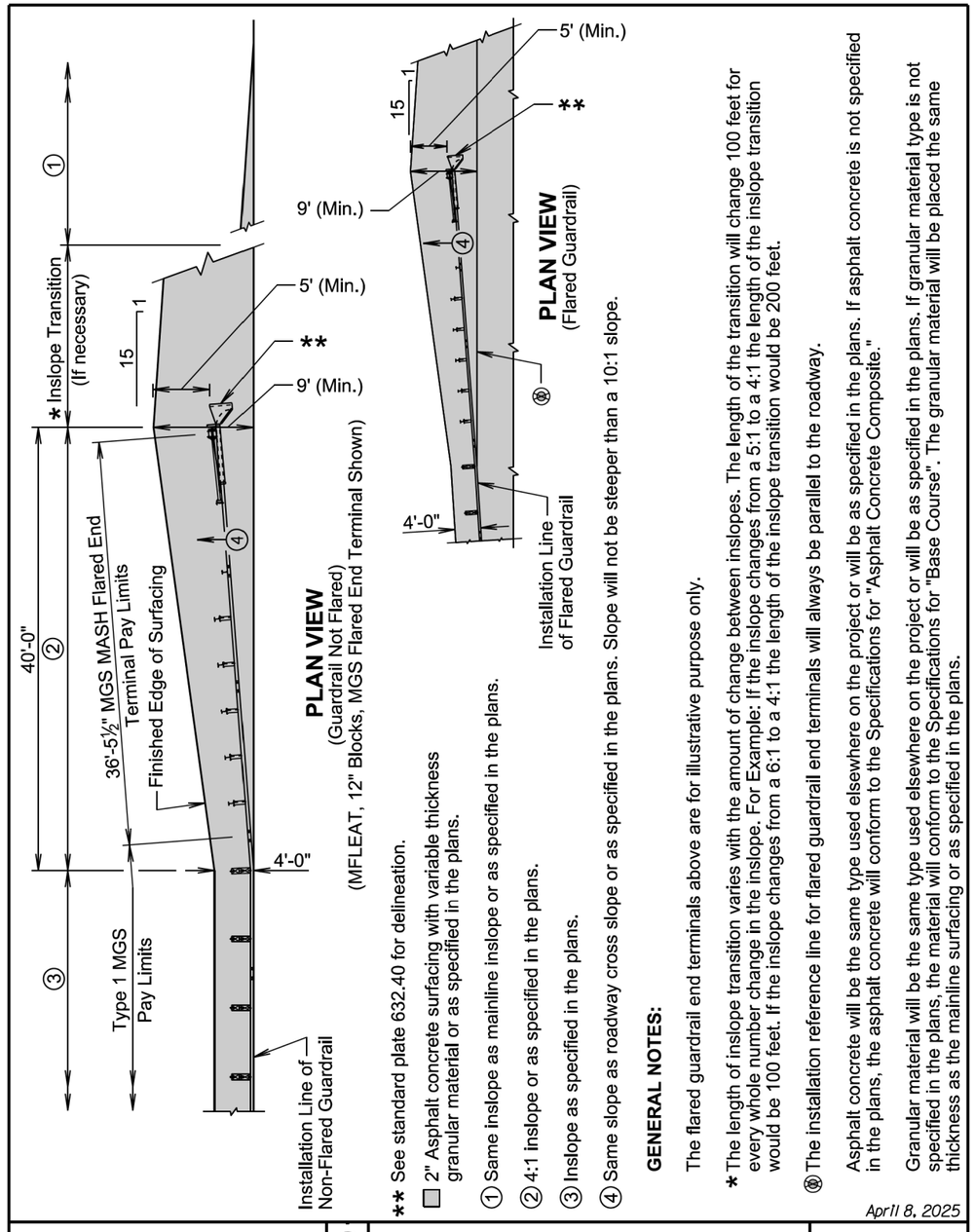
GENERAL NOTES:

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".

April 17, 2026

Published Date: 2027	SDDOT	TYPE 1 GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.50
			Sheet 3 of 3



** 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.

GENERAL NOTES:

The flared guardrail end terminals above are for illustrative purpose only.

* The length of inslope transition varies with the amount of change between inslopes. The length of the transition will change 100 feet for every whole number change in the inslope. For Example: If the inslope changes from a 5:1 to a 4:1 the length of the inslope transition would be 200 feet. If the inslope changes from a 6:1 to a 4:1 the length of the inslope transition would be 200 feet.

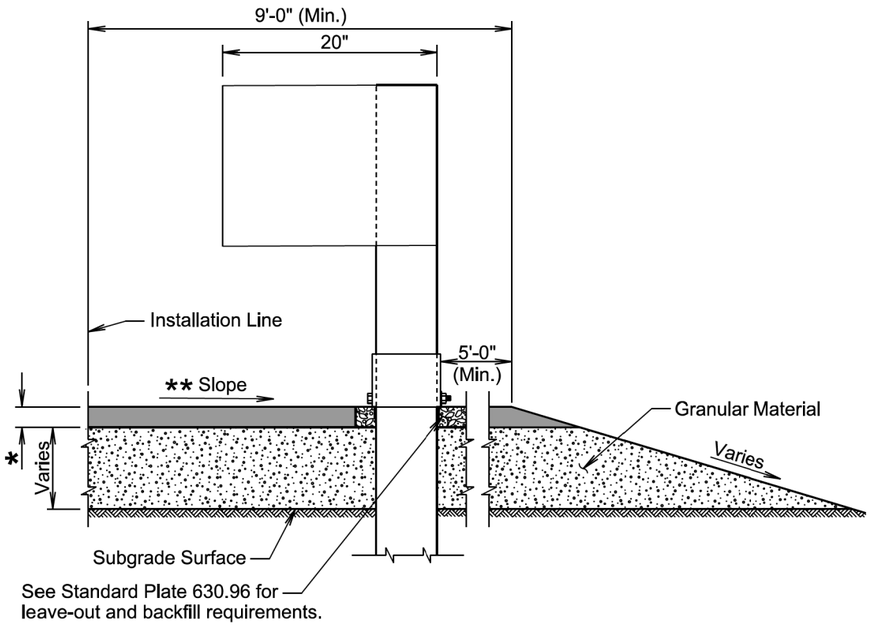
Ⓦ The installation reference line for flared guardrail end terminals will always be parallel to the roadway.

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 material will conform to the Specifications for "Asphalt Concrete Composite."

Granular material will be the same type used elsewhere on the project or will be as specified in the plans. If granular material type is not specified in the plans, the material will conform to the Specifications for "Base Course". The granular material will be placed the same thickness as the mainline surfacing or as specified in the plans.

April 8, 2025

Published Date: 2027	SDDOT	EMBANKMENT, SURFACING, AND PAYMENT LIMITS FOR MGS MASH FLARED END TERMINAL	PLATE NUMBER 630.87
			Sheet 1 of 2



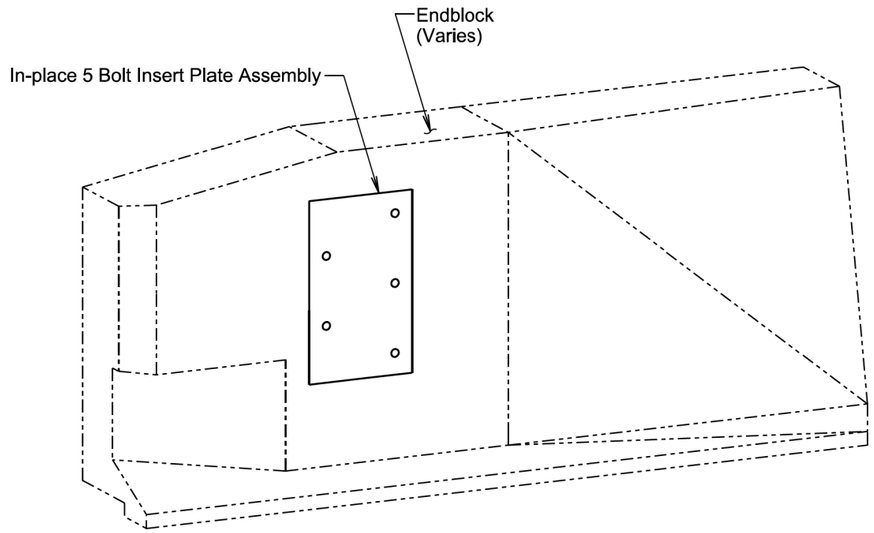
TRANSVERSE SECTION
(MFLEAT MGS Flared End Terminal Shown)

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

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

April 8, 2025

Published Date: 2027	SDDOT	EMBANKMENT, SURFACING AND PAYMENT LIMITS FOR MGS MASH FLARED END TERMINAL	PLATE NUMBER 630.87
			Sheet 2 of 2



ISOMETRIC VIEW

GENERAL NOTES:

Bolts, nuts, and washers are furnished with each new assembly. Where guardrail is to be reset, bolts will be salvaged and reset for guardrail installation. Any hardware damaged or lost from the Contractor's operation will be replaced at no additional cost to the State.

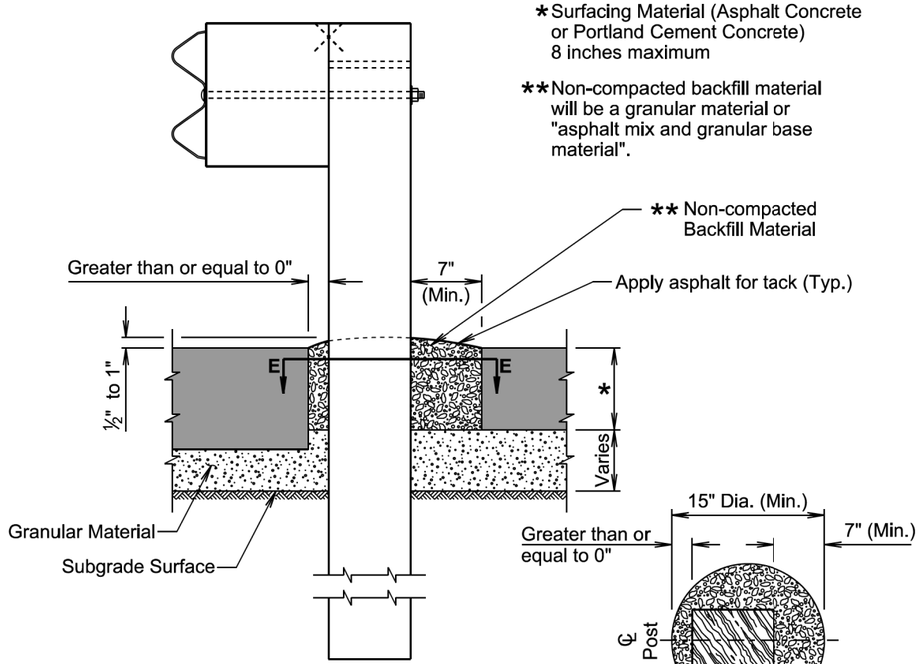
New bolts, if required, will be galvanized and conform to the requirements of ASTM A307, F3125 Grade A325, or A449. Plain washers will be galvanized and conform to ASTM F844.

Bolt heads will be placed on the traffic side of the endblock. Bolt projection at the back side of the insert will not exceed 1 inch beyond the nut.

All costs for salvaging, resetting, and refurnishing lost hardware will be incidental to the contract unit price for the respective guardrail contract item.

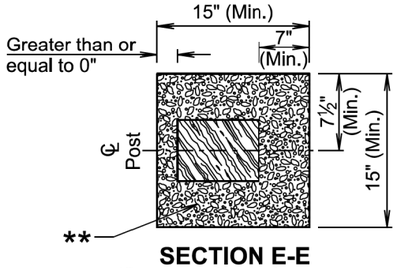
April 8, 2025

Published Date: 2027	SDDOT	GUARDRAIL ATTACHMENT TO BRIDGE ENDBLOCKS	PLATE NUMBER 630.93
			Sheet 1 of 1



TRANSVERSE SECTION
(Wood post shown for illustrative purpose only)

SECTION E-E
(Round option for leave-out and backfill limits)
(Wood post shown for illustrative purpose only)



SECTION E-E
(Square option for leave-out and backfill limits)
(Wood post shown for illustrative purpose only)

GENERAL NOTES:

The leave-out limits may be increased to accommodate construction equipment and tolerances.

When posts are installed in augured or dug holes, the backfill material will be compacted to the bottom of the pavement surfacing material to the satisfaction of the Engineer. The backfill material for the thickness of the pavement surfacing material will be non-compacted.

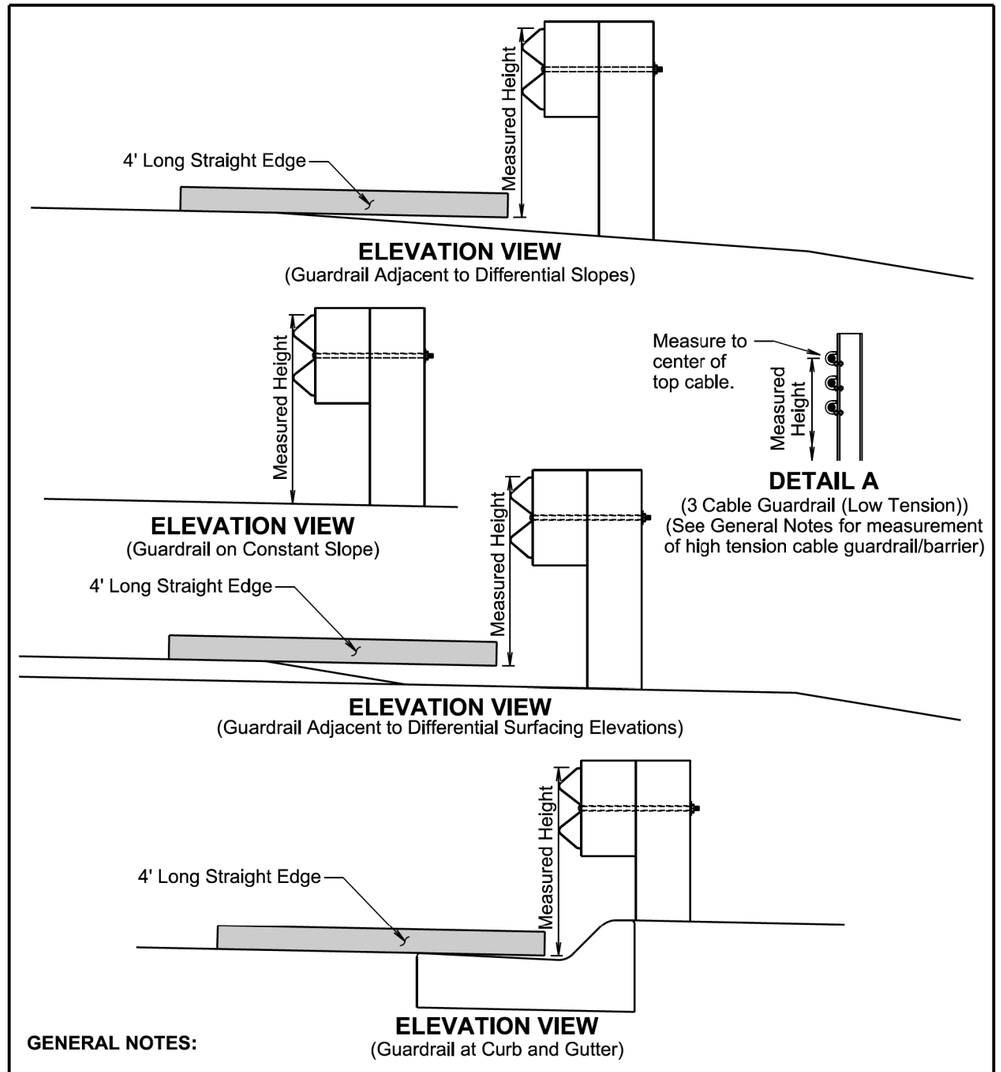
The backfill material will be mounded ½ inch to 1 inch above the top of the adjacent surfacing as illustrated above.

Asphalt for tack will be applied to the surface of the backfill material at the rate of 0.15 to 0.20 gallons per square yard.

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

November 19, 2021

Published Date: 2027	SDDOT	GUARDRAIL POST INSTALLED IN ASPHALT CONCRETE OR PORTLAND CEMENT CONCRETE	PLATE NUMBER 630.96
			Sheet 1 of 1



ELEVATION VIEW
(Guardrail Adjacent to Differential Slopes)

ELEVATION VIEW
(Guardrail on Constant Slope)

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

ELEVATION VIEW
(Guardrail Adjacent to Differential Surfacing Elevations)

ELEVATION VIEW
(Guardrail at Curb and Gutter)

GENERAL NOTES:

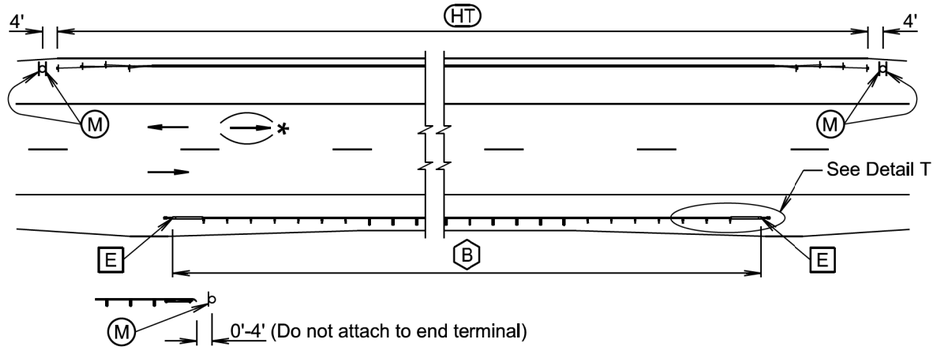
The W Beam guardrail shown is for illustrative purpose. The guardrail height for all types of guardrail systems except for high tension cable guardrail/barrier will be measured in accordance with this standard plate.

When measuring height of 3 cable guardrail (low tension) the height will be measured to the center of the top cable. See Detail A.

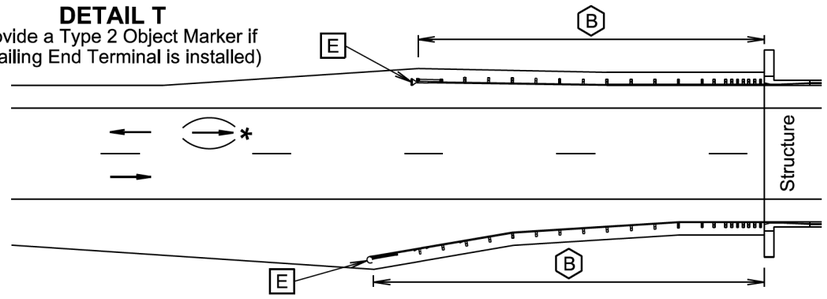
The height of high tension cable guardrail/barrier will be measured in accordance with the Manufacturer's installation instructions.

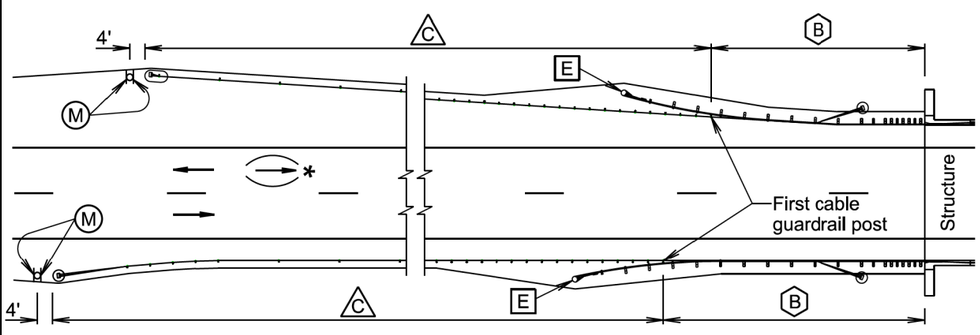
September 14, 2019

Published Date: 2027	SDDOT	MEASURING GUARDRAIL HEIGHT	PLATE NUMBER 630.99
			Sheet 1 of 1



DETAIL T
(Provide a Type 2 Object Marker if a Trailing End Terminal is installed)





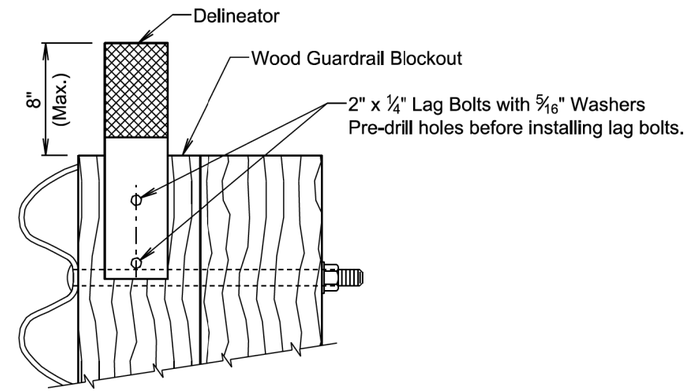
PLAN VIEW
(Typical Guardrail Layouts)

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

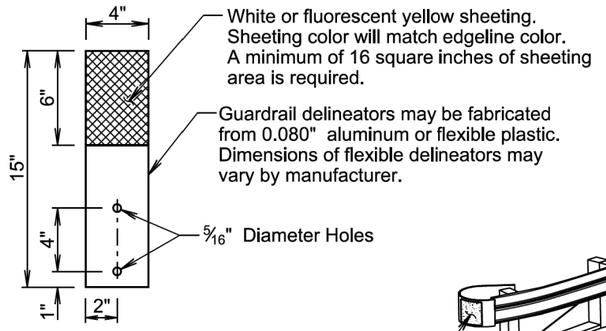
*For two-way traffic, install delineation at the opposite end of structure the same as shown. Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

April 8, 2025

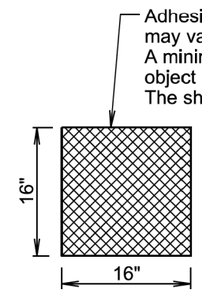
Published Date: 2027	SDDOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 1 of 4



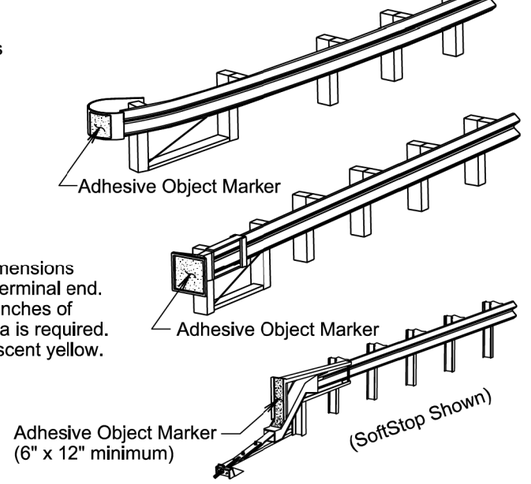
(B) STEEL BEAM GUARDRAIL DELINEATION



DELINEATOR
(For Steel Beam Guardrail)



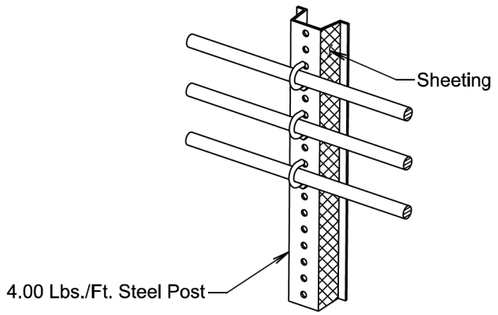
ADHESIVE OBJECT MARKER



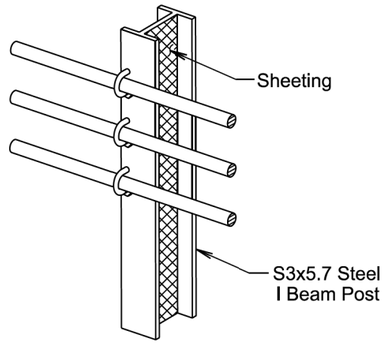
[E] GUARDRAIL END TERMINAL OBJECT MARKER

April 8, 2025

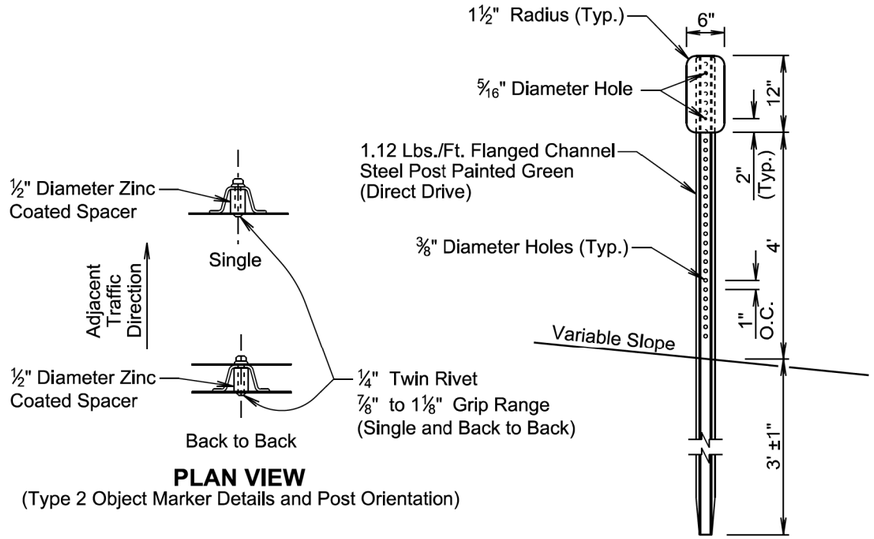
Published Date: 2027	SDDOT	DELINEATION GUARDRAIL	PLATE NUMBER 632.40
			Sheet 2 of 4



Ⓒ **3 CABLE GUARDRAIL (LOW TENSION) DELINEATION**



Ⓒ **3 CABLE GUARDRAIL (LOW TENSION) DELINEATION**



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

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

April 8, 2025

Published Date: 2027	SDDOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 3 of 4

GENERAL NOTES:

The delineation of high tension cable guardrail will be reflective sheeting placed back to back on every third post cap or cable spacer. Maximum spacing of delineation will not exceed 35 feet. The sheeting will be type XI in conformance with ASTM D4956. The color of the reflective sheeting will be the same as the nearest pavement marking.

The delineators for steel beam guardrail and sheeting on 3 cable guardrail (low tension) posts will be covered with a minimum of 16 square inches of reflective sheeting. The reflective sheeting will be type XI in conformance with ASTM D4956. Along two-way roadways the sheeting will be on both sides of the delineators and guardrail posts and will be white in color. For one-way roadways the sheeting will only be required on the side facing traffic and the color will be the same as the nearest pavement marking, yellow on the left side of the roadway and white on the right side.

When steel beam guardrail is attached to a bridge the first delineator will be attached to the post nearest the bridge.

At bridges with guardrail less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object marker. The spacing between the delineators will be approximately one third of the length of the guardrail.

At bridges with guardrail 200 feet and greater in length, including bridges that have steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

Steel beam guardrail that is not attached to a bridge and is less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object markers. The spacing between the delineators will be approximately one third of the length of the guardrail.

Steel beam guardrail that is not attached to a bridge and is 200 feet and greater in length, including steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

All costs for furnishing and installing single or back to back guardrail delineation on 3 cable guardrail and steel beam guardrail will be included in the contract unit price per each for "Guardrail Delineator".

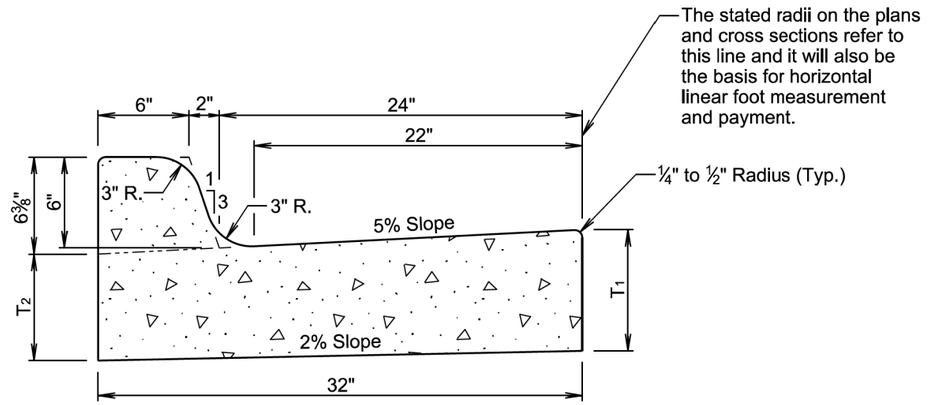
All costs for furnishing and installing the reflective sheeting on the cable spacers or post caps for the high tension cable guardrail will be incidental to the respective high tension cable guardrail contract item.

An adhesive object marker will be placed on the end of the W beam guardrail or MGS end terminal. The adhesive object marker dimensions may vary due to the shape of the terminal end. A minimum of 256 square inches of object marker reflective sheeting area is required on end terminals with sufficient surface area. Other end terminals (SoftStop) will require an adhesive object marker with a minimum size of 6" x 12". The reflective sheeting will be fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the adhesive object marker will be incidental to various contract items.

A type 2 object marker will be placed such that the edges of the type 2 object marker and the 3 cable guardrail (low tension) anchor, high tension cable guardrail anchor, or the trailing end terminal that are nearest to the roadway will be installed in line with the same lateral offset from the traveled way at the location as noted on sheet 1 of this standard plate. The type 2 object marker (6" x 12") will have fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the type 2 object marker including the steel post, 6" x 12" reflective panel, and hardware will be included in the contract unit price per each for "Type 2 Object Marker" for single-sided and "Type 2 Object Marker Back to Back" for back to back type 2 object markers.

April 8, 2025

Published Date: 2027	SDDOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 4 of 4



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

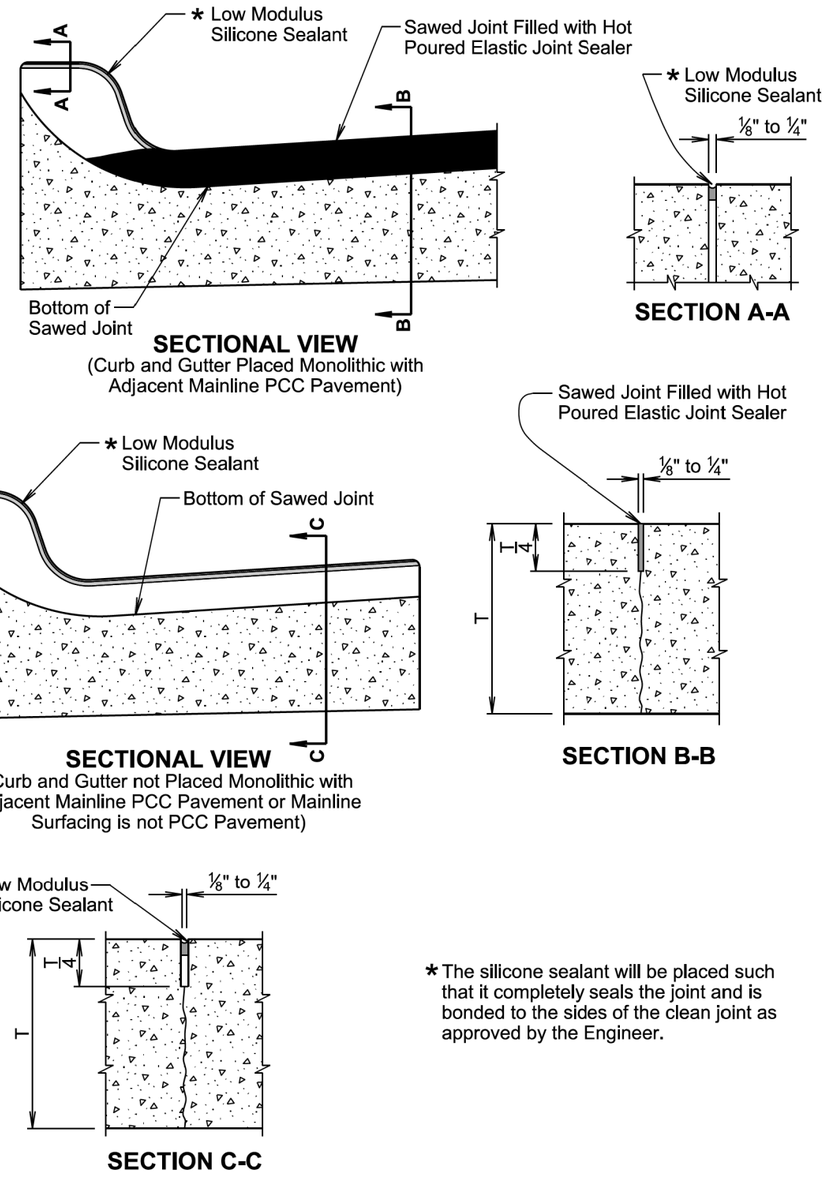
GENERAL NOTES:

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

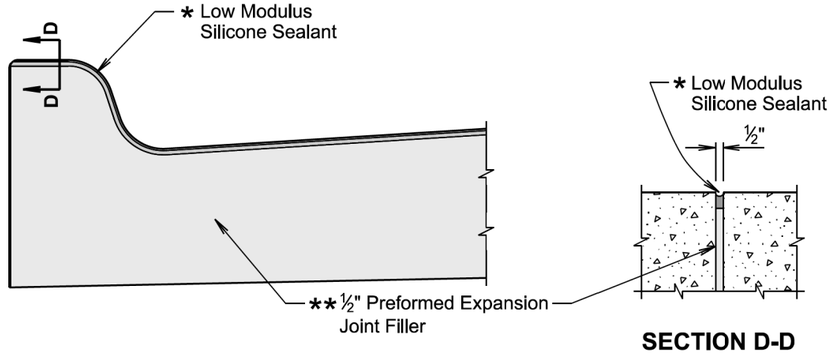
Published Date: 2027	SDDOT	TYPE B CONCRETE CURB AND GUTTER	PLATE NUMBER 650.01
			Sheet 1 of 1



* The silicone sealant will be placed such that it completely seals the joint and is bonded to the sides of the clean joint as approved by the Engineer.

December 23, 2019

Published Date: 2027	SDDOT	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 1 of 2



SECTIONAL VIEW
(Curb and Gutter at ½" Preformed Expansion Joint Filler Location)

SECTION D-D

* The silicone sealant will be placed such that it completely seals the joint and is bonded to the sides of the clean joint as approved by the Engineer.

GENERAL NOTES:

For illustrative reason, only the type B curb and gutter is shown.

** A ½-inch preformed expansion joint filler will be placed transversely in the curb and gutter at the following locations:

At each junction between the radius return of curb and gutter, and curb and gutter which is parallel to the project centerline.

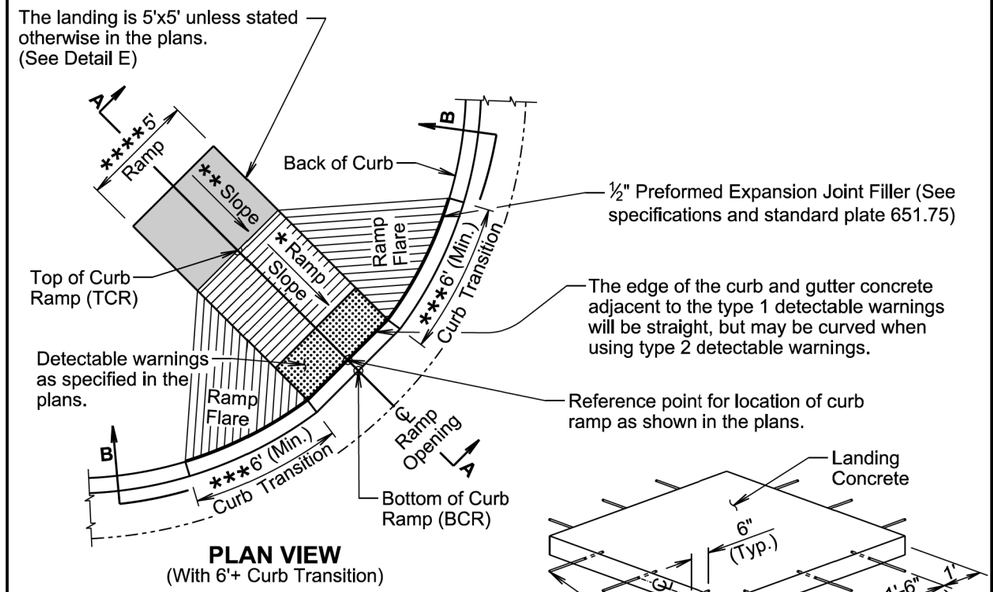
At each junction between new curb and gutter and existing curb and gutter.

Transverse contraction joints will be constructed at 10 foot intervals in the concrete curb and gutter except when the concrete curb and gutter is constructed adjacent to mainline PCC pavement. When concrete curb and gutter is constructed adjacent to mainline PCC pavement, a transverse contraction joint will be constructed in the concrete curb and gutter at each mainline PCC pavement transverse contraction joint location.

When concrete curb and gutter is not placed monolithically with the mainline PCC pavement or when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete curb and gutter will be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint will be at least ¼ the thickness of the concrete and the joint will be sealed in accordance with the details shown above.

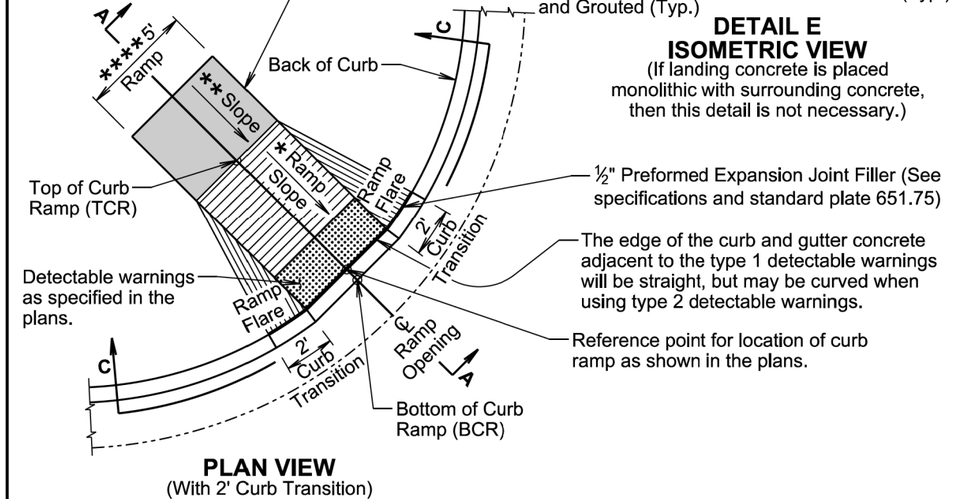
December 23, 2019

Published Date: 2027	SDDOT	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 2 of 2



PLAN VIEW
(With 6'+ Curb Transition)

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



PLAN VIEW
(With 2' Curb Transition)

April 8, 2025

Published Date: 2027	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 1 of 3

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

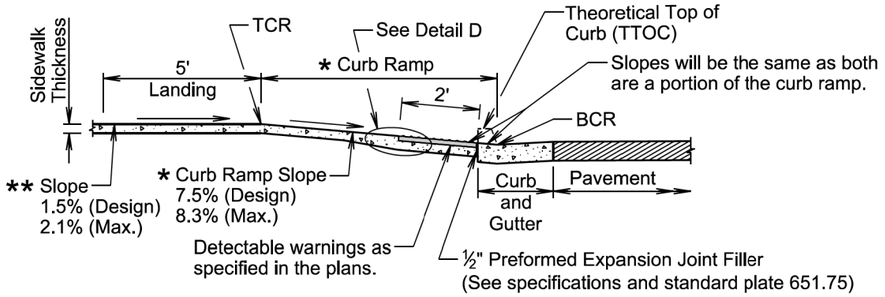
The curb ramp length may be computed based on the intersection of a continuous 1.5% theoretical slope from theoretical top of curb (TTOC) with the curb ramp using a continuous 7.5% curb ramp slope. The elevation of point TCR will always be higher than the elevation of point TTOC unless specified otherwise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

The cross slope of the ramp will not be steeper than 2.1%. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

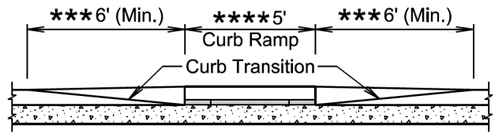
** The slope in the landing will not be steeper than 2.1% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

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

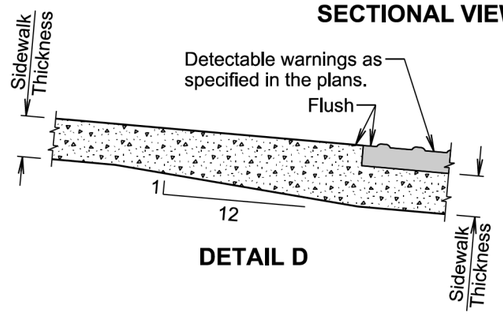
**** The ramp width is 5' unless stated otherwise in the plans.



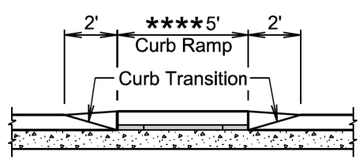
SECTION A-A



SECTIONAL VIEW B-B



DETAIL D



SECTIONAL VIEW C-C

April 8, 2025

Published Date: 2027	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 2 of 3

GENERAL NOTES:

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

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

The curb ramp will be placed at the location stated in the plans.

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

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

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

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

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

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

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

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

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

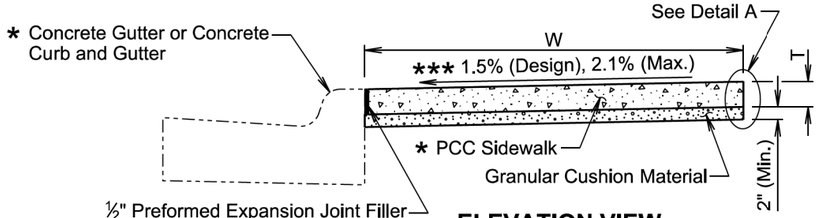
The curb transitions and ramp opening will be measured and paid for at the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used. The curb transitions and ramp opening will be measured and paid for at the contract unit price per square yard for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

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

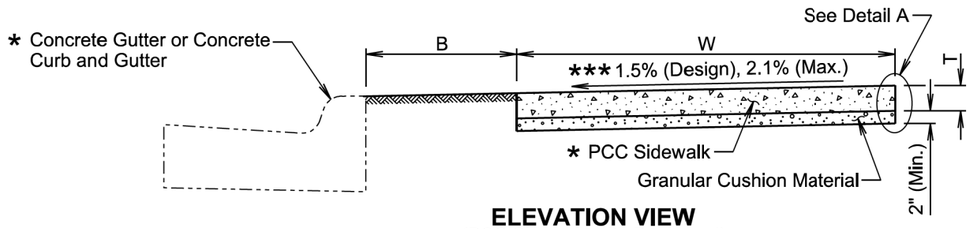
Type 2 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding will be paid for at the contract unit price per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

April 8, 2025

Published Date: 2027	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 3 of 3



ELEVATION VIEW
(PCC Sidewalk without Boulevard)



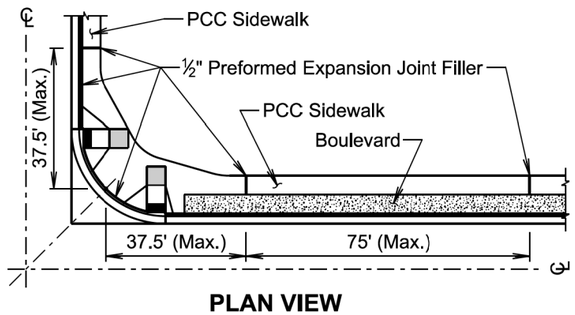
ELEVATION VIEW
(PCC Sidewalk with Boulevard)

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 2.1% unless specified otherwise in the plans.

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

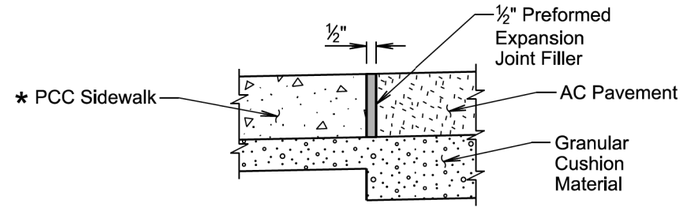
PCC sidewalk placed adjacent to intersection of roadways will have an expansion joint placed transversely a maximum of 37.5 feet from the intersection. See Plan View.

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.

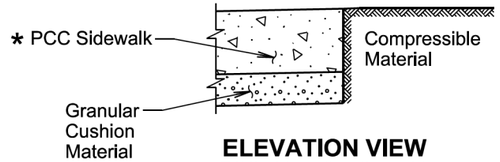
** Large areas of PCC pavement adjacent to the PCC sidewalk may require a different joint treatment than shown in the detail. If a different joint detail is necessary, plans will contain the joint detail and the Contractor will construct the joint treatment in accordance with the plans.

April 8, 2025

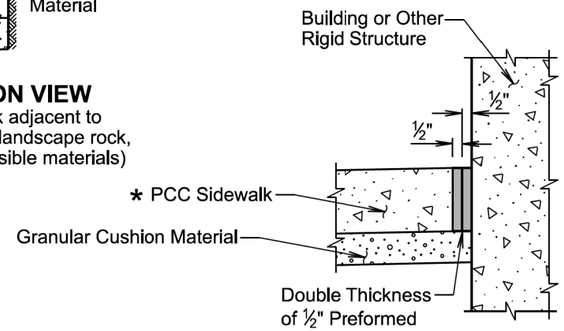
Published Date: 2027	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 1 of 2



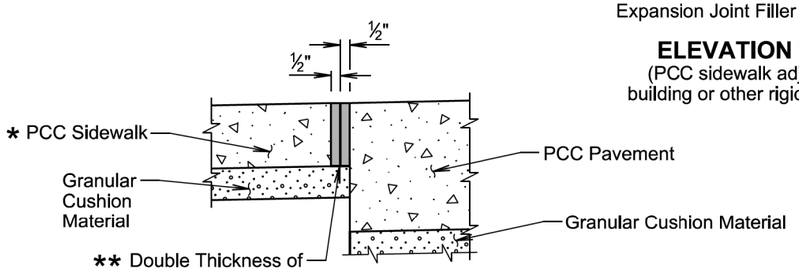
ELEVATION VIEW
(PCC sidewalk adjacent to asphalt concrete pavement)



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)

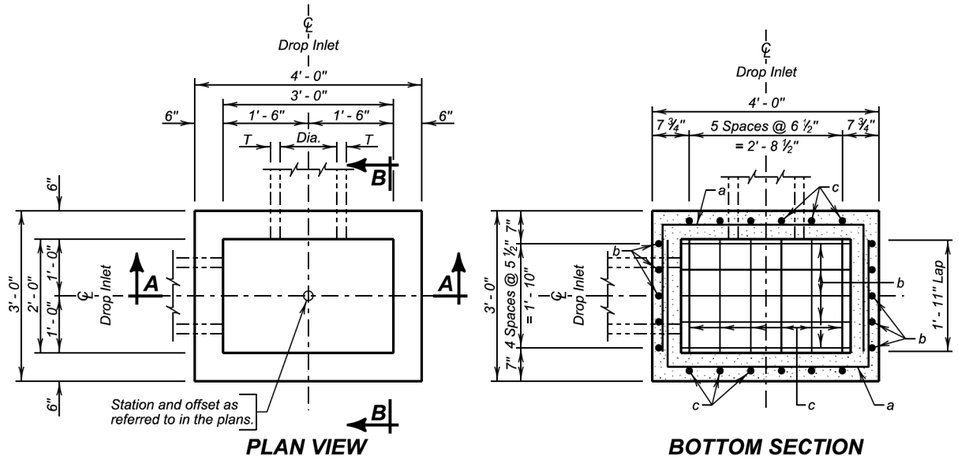


ELEVATION VIEW
(PCC sidewalk adjacent to PCC pavement)

DETAIL A
(Use Appropriate Detail(s))

April 8, 2025

Published Date: 2027	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 2 of 2



PLAN VIEW

BOTTOM SECTION

ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
⚹ Class M6 Concrete	Cu. Yd.	0.26	0.22H
Reinforcing Steel	Lb.	51.19	28.97H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 24" DIAMETER PIPE

SPECIFICATIONS

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

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

GENERAL NOTES:

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

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

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

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

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

Maximum R.C.P. diameter shall not exceed 18 inches on the 2-foot wide side and shall not exceed 24 inches (24 inches for R.C. arch) on the 3-foot wide side of the drop inlet.

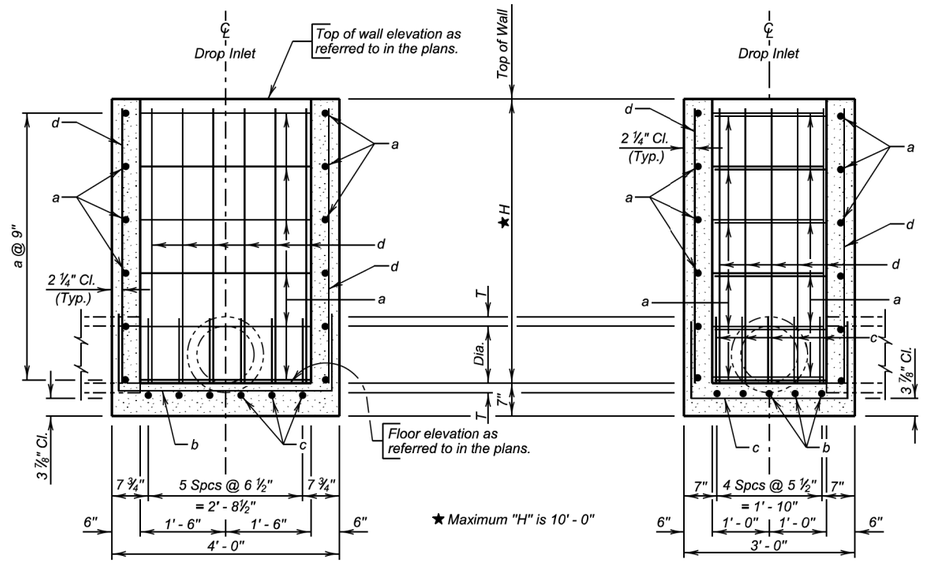
The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS

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

April 17, 2026

Published Date: 2027	SDDOT	2' X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.01 Sheet 1 of 2

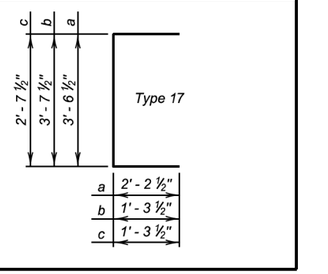


SEC. A - A SEC. B - B

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	8' - 0"	17	
b	5	5	6' - 3"	17	
c	6	4	5' - 3"	17	
d	22	4	H - 2"	Str.	

NOTE:
All dimensions are out to out of bars.

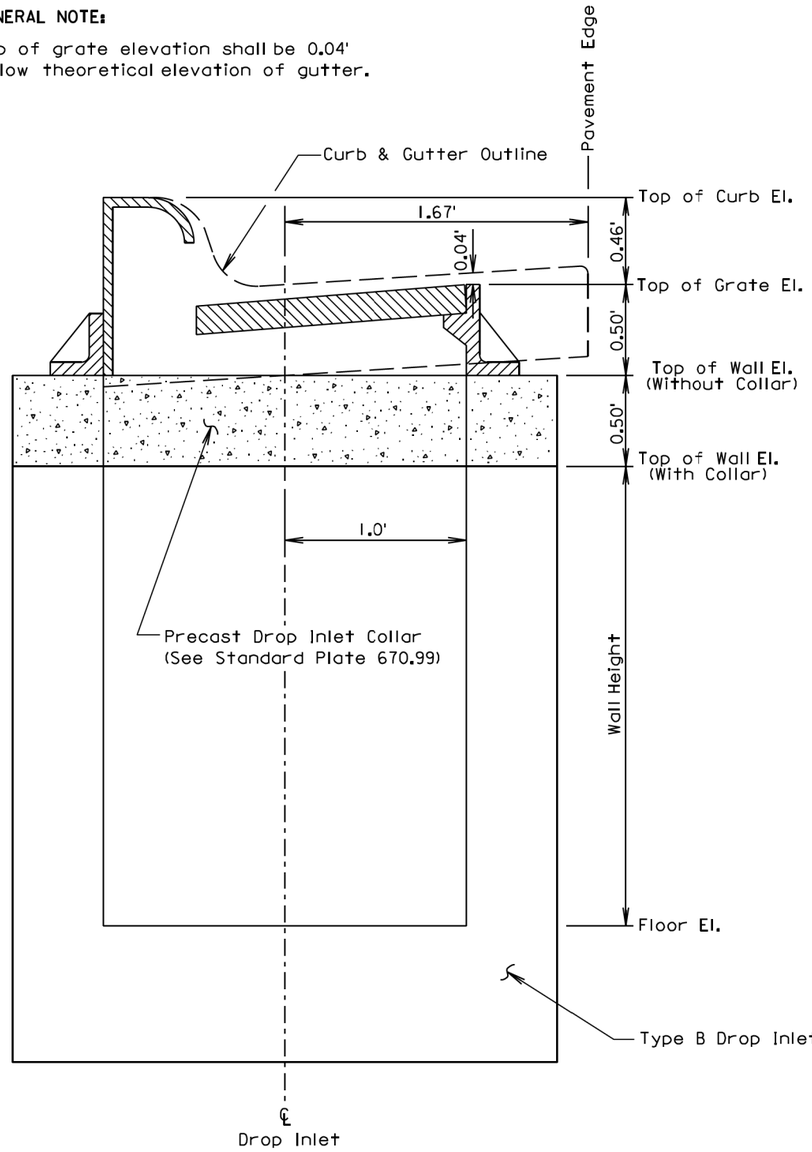


April 17, 2026

Published Date: 2027	SDDOT	2' X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.01 Sheet 2 of 2

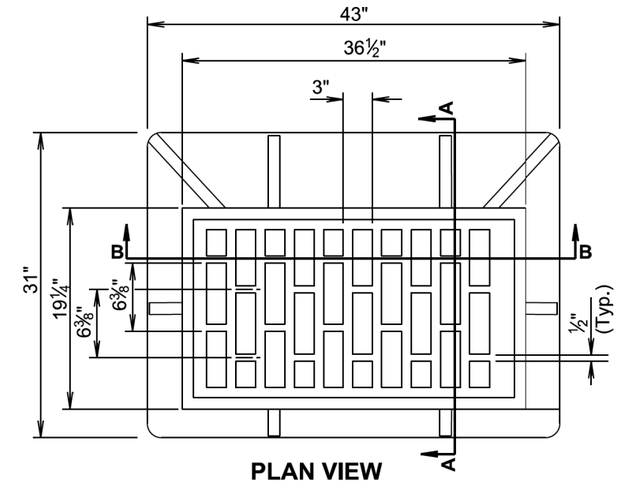
GENERAL NOTE:

Top of grate elevation shall be 0.04' below theoretical elevation of gutter.

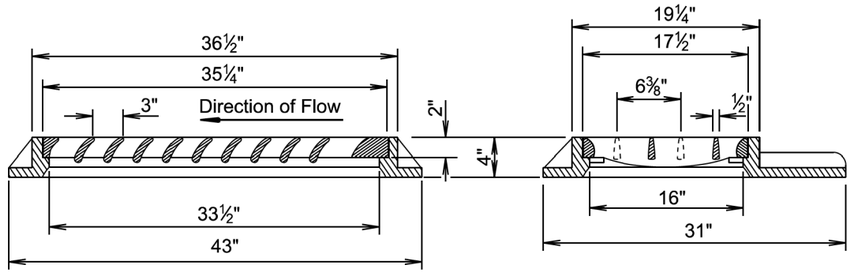


June 26, 2011

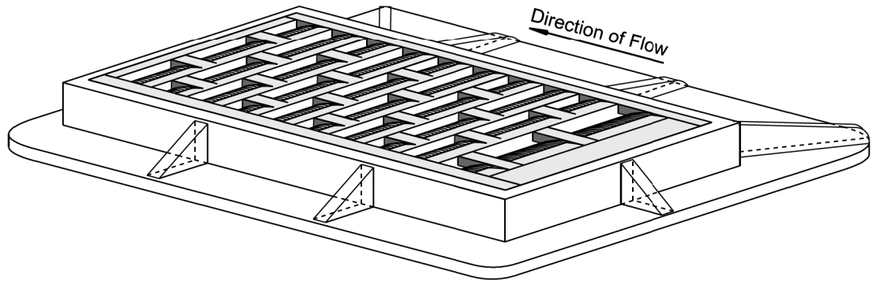
Published Date: 2027	SDDOT	INSTALLATION OF TYPE B DROP INLET	PLATE NUMBER 670.75
			Sheet 1 of 1



PLAN VIEW



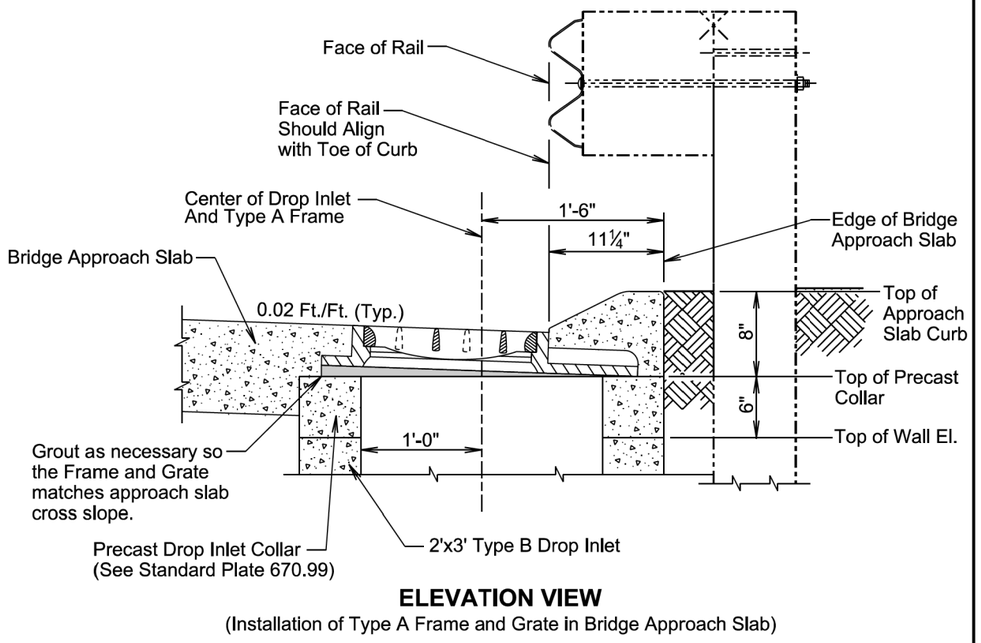
SECTION B-B **SECTION A-A**



ISOMETRIC VIEW

March 31, 2024

Published Date: 2027	SDDOT	TYPE A FRAME AND GRATE	PLATE NUMBER 670.78
			Sheet 1 of 2



ELEVATION VIEW

(Installation of Type A Frame and Grate in Bridge Approach Slab)

GENERAL NOTES:

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

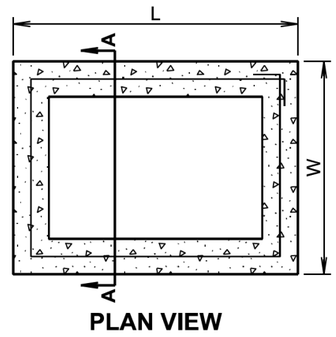
Design load for the grate will meet the requirements of AASHTO HL-93.

The type A frame and grate will be installed on a 2'x3' type B drop inlet.

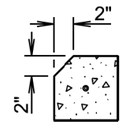
The direction of flow is shown for illustrative purpose only. The grate will be installed to intercept the direction of flow.

March 31, 2024

Published Date: 2027	SDDOT	*TYPE A FRAME AND GRATE*	*PLATE NUMBER 670.78* *Sheet 2 of 2*

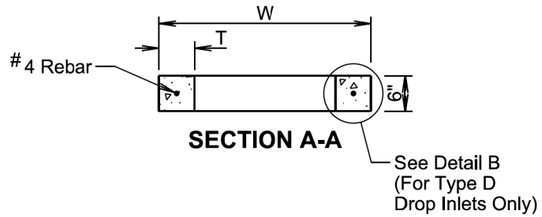


PLAN VIEW



For Type D Drop Inlets only:
Use Precast Drop Inlet Collar with 2" chamfer on L sides only.

DETAIL B



SECTION A-A

INFORMATIONAL QUANTITIES					
FRAME AND GRATE TYPE	L (Ft-in)	W (Ft-in)	T (in)	CLASS M6 CONCRETE (CuYd)	REINFORCING STEEL (Lb)
TYPE A, B, and E	4'-0"	3'-0"	6	0.11	9
TYPE C	5'-0"	4'-0"	6	0.15	11
TYPE D	4'-0"	2'-6"	6	0.10	8

GENERAL NOTES:

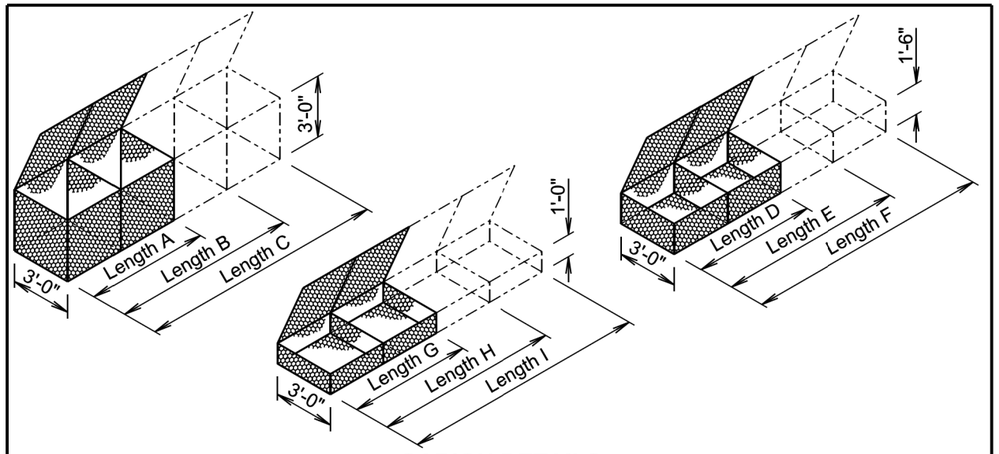
All reinforcing steel will conform to ASTM A615, Grade 60.

The ½" diameter bar will lap 6"± and will be centered in the concrete.

The cost of furnishing and installing Precast Drop Inlet Collars, including labor, materials, and incidentals will be incidental to the contract unit price per Each for "Precast Drop Inlet Collar".

June 1, 2022

Published Date: 2027	SDDOT	*PRECAST DROP INLET COLLAR*	*PLATE NUMBER 670.99* *Sheet 1 of 1*



GABION DETAILS

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

Above dimensions subject to mill tolerances.

GENERAL NOTES:

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

The lacing procedure is as follows:

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

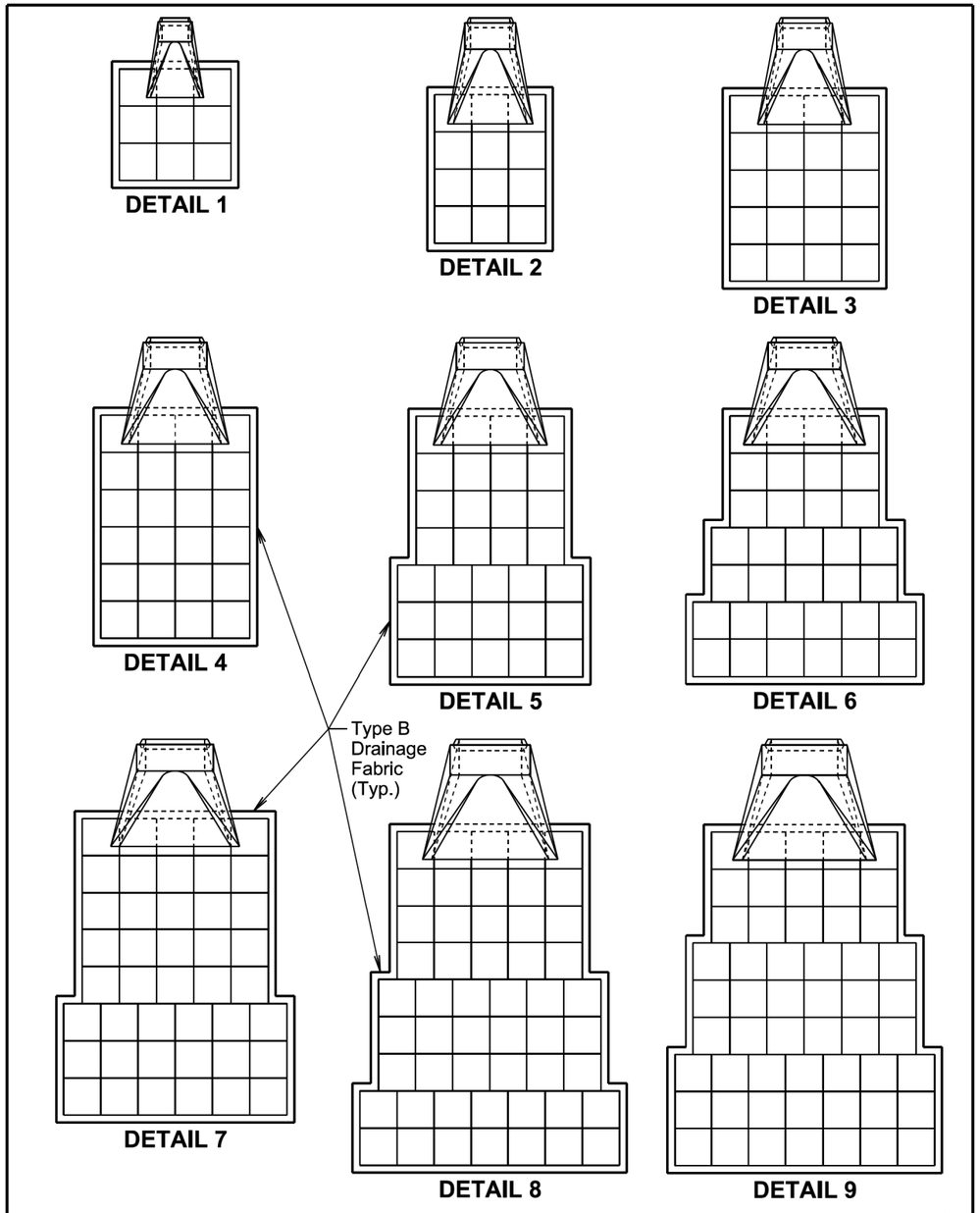
Wire lacing or interlocking type fasteners will be used for gabion assembly and final construction of gabion structures. Interlocking fasteners for galvanized gabions will be high tensile 0.120 inch diameter galvanized steel wire measured after galvanizing. The galvanizing will conform to ASTM A641-92,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

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

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

February 14, 2020

Published Date: 2027	SDDOT	BANK AND CHANNEL PROTECTION GABIONS	PLATE NUMBER 720.01	Sheet 1 of 1



February 14, 2020

Published Date: 2027	SDDOT	BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS	PLATE NUMBER 720.03	Sheet 1 of 2

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

GENERAL NOTES:

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

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

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

February 14, 2020

Published Date: 2027	SDDOT	***BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS***	***PLATE NUMBER*** *720.03*
			Sheet 2 of 2