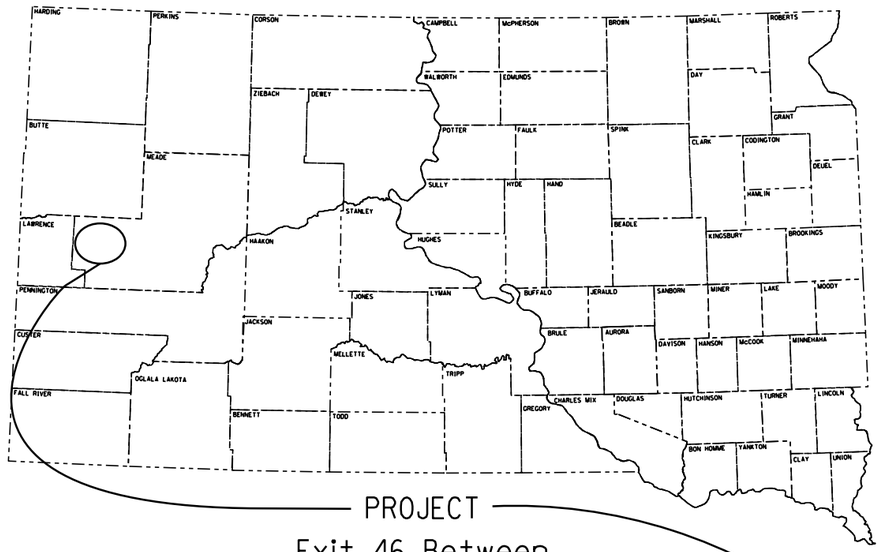
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001=469	1	12

Plotting Date: 05/09/2017

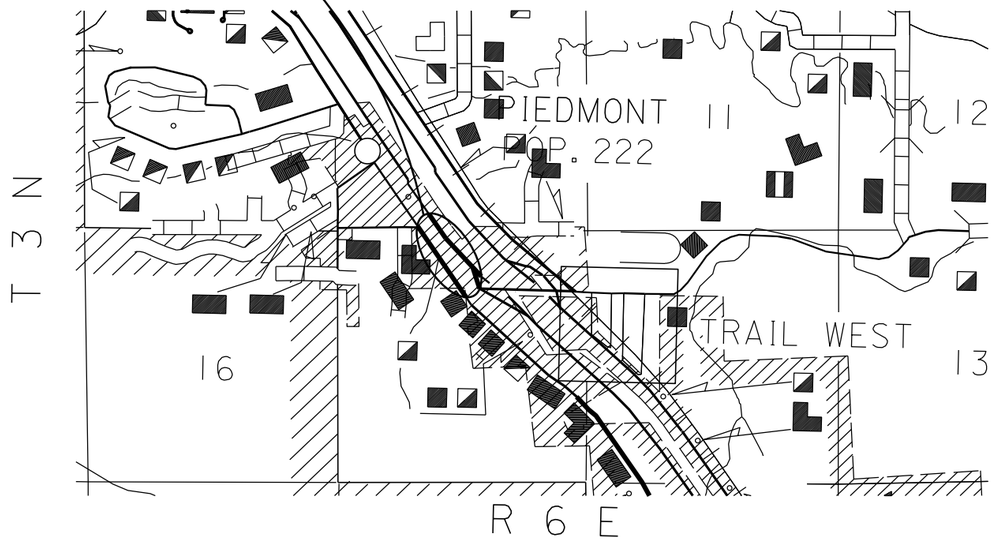
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECTS 0001–469
INTERSTATE 90 E
MEADE COUNTY

REMOVE AND RESET GUARDRAIL & INSTALL GLARE SCREEN
PCN i4tp



PROJECT
Exit 46 Between
EB Off Ramp and
Service Road
I-90 EB MRM 45.89



INDEX OF SHEETS

Storm Water Permit
No Permit Required

Plot Scale - 1:200
Plotted From - trrc12608
File - ...\New Title.dgn

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E6200	Remove Double Thrie Beam Guardrail for Reset	12.5	Ft
110E6230	Remove W Beam Guardrail for Reset	1,750.0	Ft
110E6240	Remove W Beam to Thrie Beam Guardrail Transition for Reset	1	Each
110E6280	Remove W Beam Guardrail Tangent End Terminal for Reset	1	Each
250E0010	Incidental Work	Lump Sum	LS
630E2110	Beam Guardrail Post and Block	299	Each
630E5130	Reset Double Thrie Beam Rail	12.5	Ft
630E5160	Reset W Beam Rail	1,750.0	Ft
630E5200	Reset W Beam to Thrie Beam Transition Rail	1	Each
630E5208	Reset W Beam Guardrail Tangent End Terminal	1	Each
634E0010	Flagging	20.0	Hour
634E0110	Traffic Control Signs	105.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

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

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

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

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

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

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

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

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

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

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

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

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

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

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

GLARE SCREEN

The glare screen that is present on the in-place guardrail shall be removed and disposed of by the Contractor. All costs for removal of the glare screen shall be incidental to the contract lump sum price for Incidental Work.

The new glare screen shall be installed for the full length of the guardrail run. The glare screen used shall be Screen-Safe® Glare Screen Safety Shield manufactured by Transpo Industries, Inc. or approved equivalent

All costs for furnishing and installing the glare screen shall be incidental to the contract lump sum price for Incidental Work.

Table of Material Quantities

Remove Double Thrie Beam Guardrail for Reset	Remove W Beam Guardrail for Reset	Remove W Beam to Thrie Beam Guardrail Transition for Reset	Remove W Beam Guardrail Tangent End Terminal for Reset	Reset Double Thrie Beam Rail	Reset W Beam Rail	Reset W Beam to Thrie Beam Transition Rail	Reset W Beam Guardrail Tangent End Terminal	Beam Guardrail Post and Block
)Ft)	)Ft)	(Each)	(Each)	)Ft)	)Ft)	(Each)	(Each)	(Each)
12.5	1750	1	1	12.5	1750	1	1	299

TRAFFIC CONTROL – GENERAL NOTES

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

Unless otherwise stated in these plans, no work will be allowed during hours of darkness.

Existing guide, route, informational logo, regulatory, warning signs and delineation shall be temporarily reset and maintained during construction as directed by the Engineer. Removing, relocating, salvaging and resetting of the above items shall be the responsibility of the Contractor.

Non-applicable traffic control devices shall be completely covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 2 calendar days.

All regulatory signs shall have a minimum mounting height of 5' in rural locations, even when mounted on portable supports.

All materials and equipment shall be stored a minimum distance of 30' from the traveled way during nonworking hours.

The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

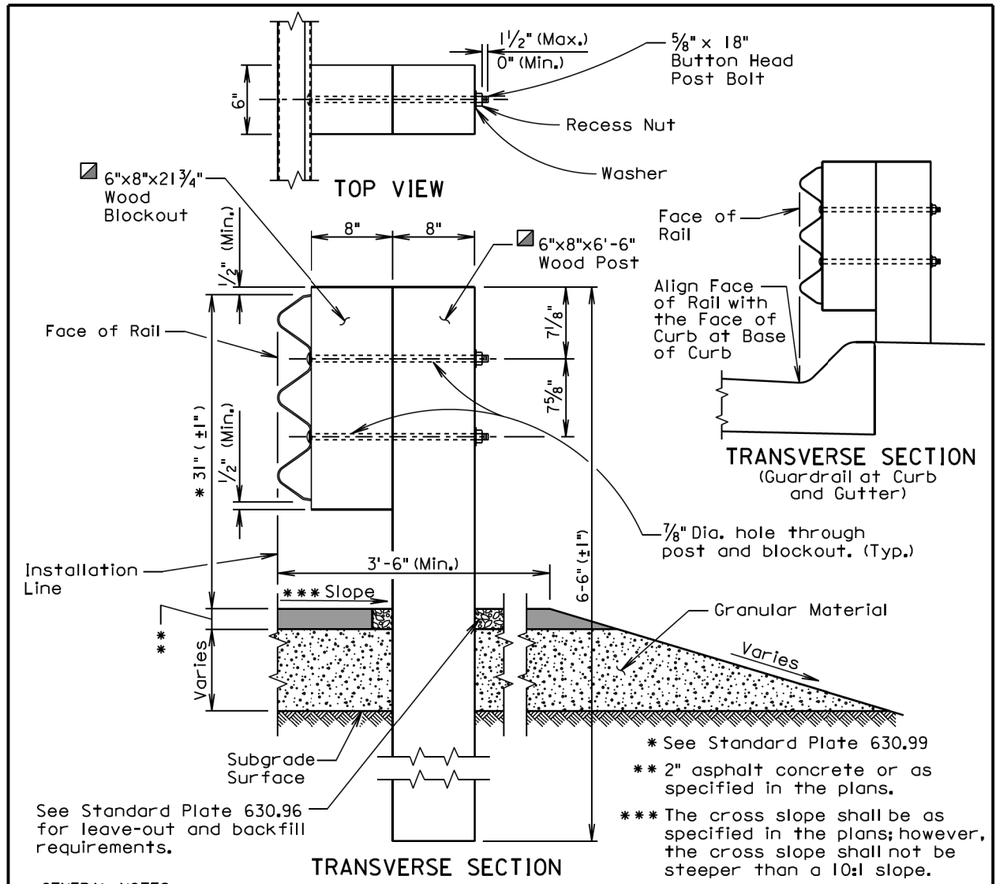
All haul trucks shall be equipped with a second flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights shall be incidental to the various related contract bid items.

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

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

INVENTORY OF TRAFFIC CONTROL DEVICES

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			105.0



GENERAL NOTES:

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

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

Topsoil is not shown in the transverse section drawing.

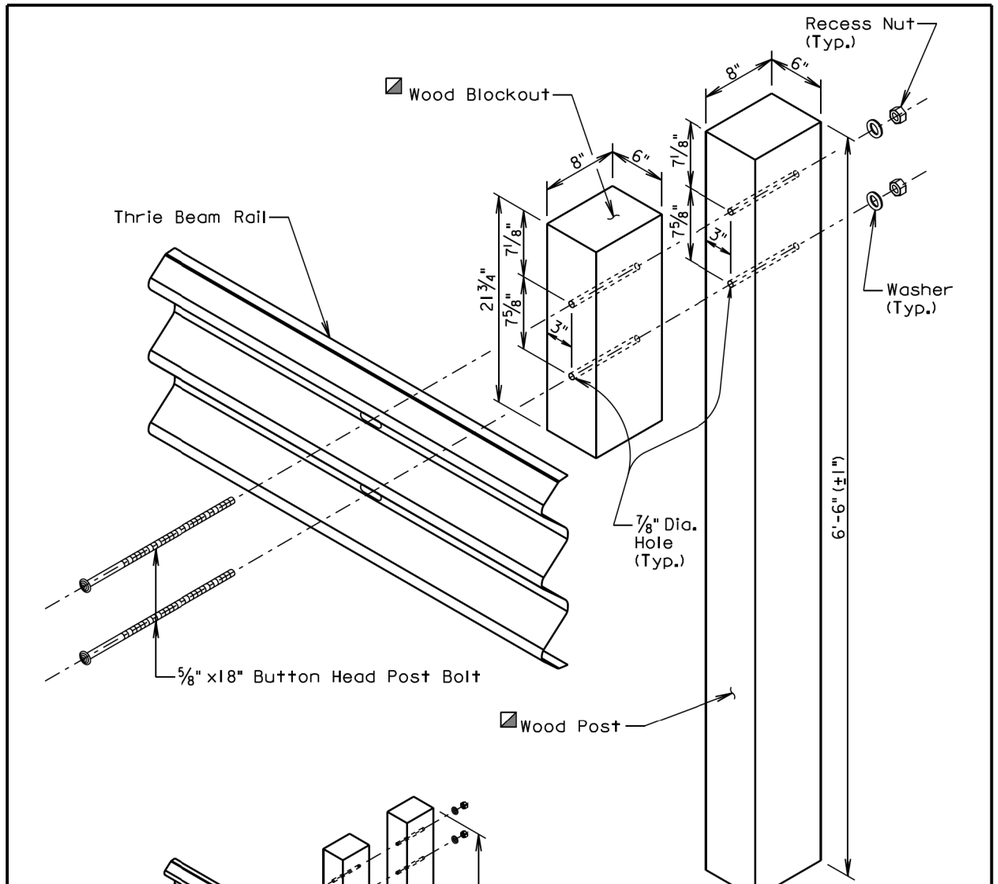
☑ The post and blockout illustrated above is typical for standard thrie beam guardrail. When other variations of posts and blockouts are specified on other standard plates (e.g. transitions) then the posts and blockouts shall be as specified on the other standard plates or as specified in the plans.

Slots in the rails shall 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 shall be smooth and free of burrs or notches.

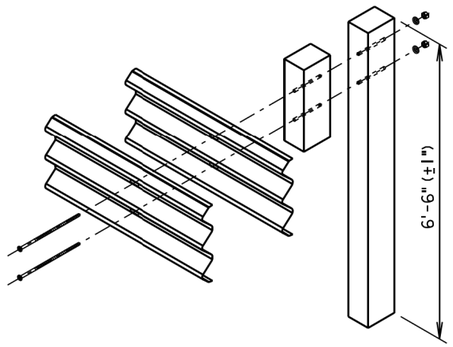
The top of post and top of block shall have a true square cut. The top of block shall be a maximum of ±½ inch from the top of the post.

February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 1 of 5



EXPANDED ISOMETRIC VIEW AT MIDSPAN OF THRIE BEAM GUARDRAIL



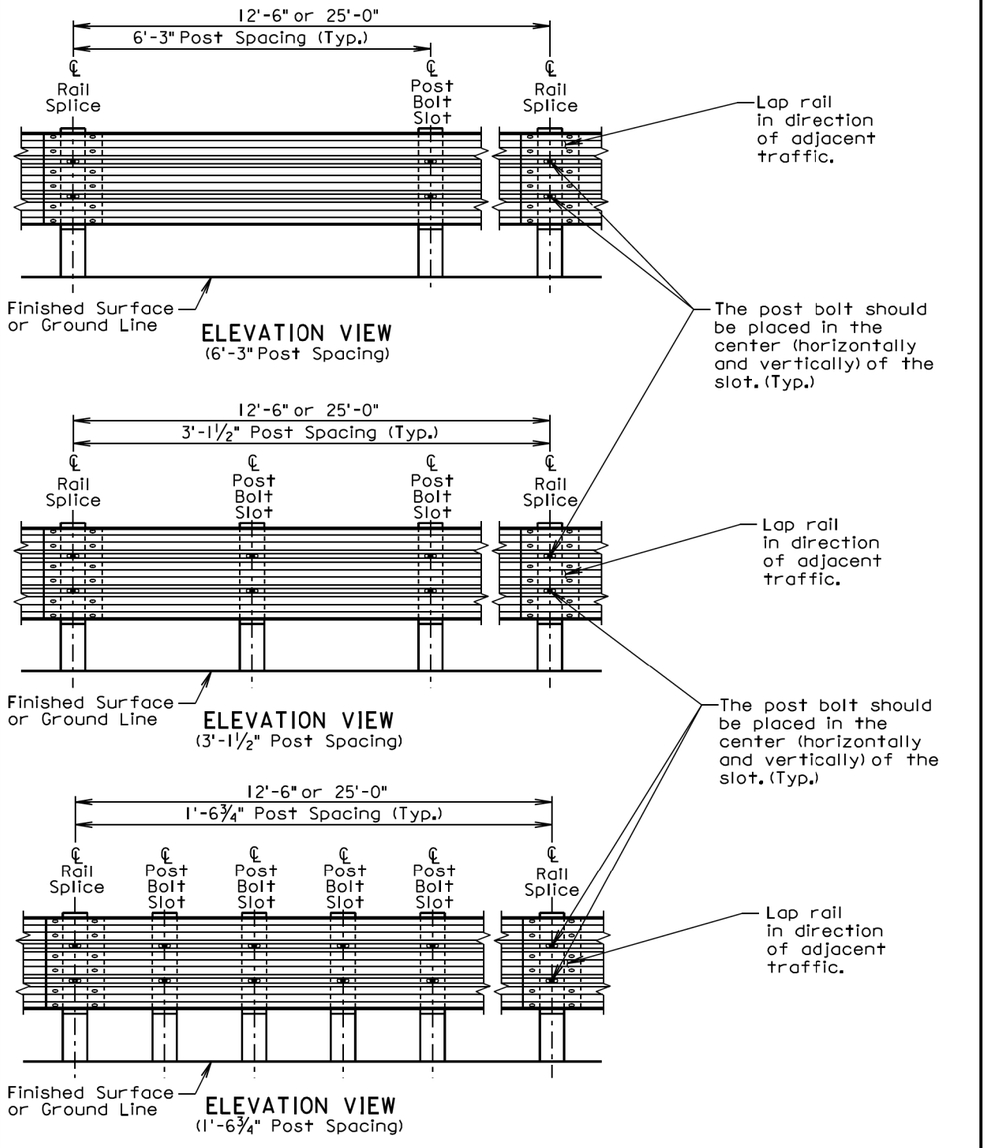
EXPANDED ISOMETRIC VIEW OF DOUBLE (NESTED) THRIE BEAM GUARDRAIL AT MIDSPAN
(For Information Only, Not to Scale)

February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 2 of 5

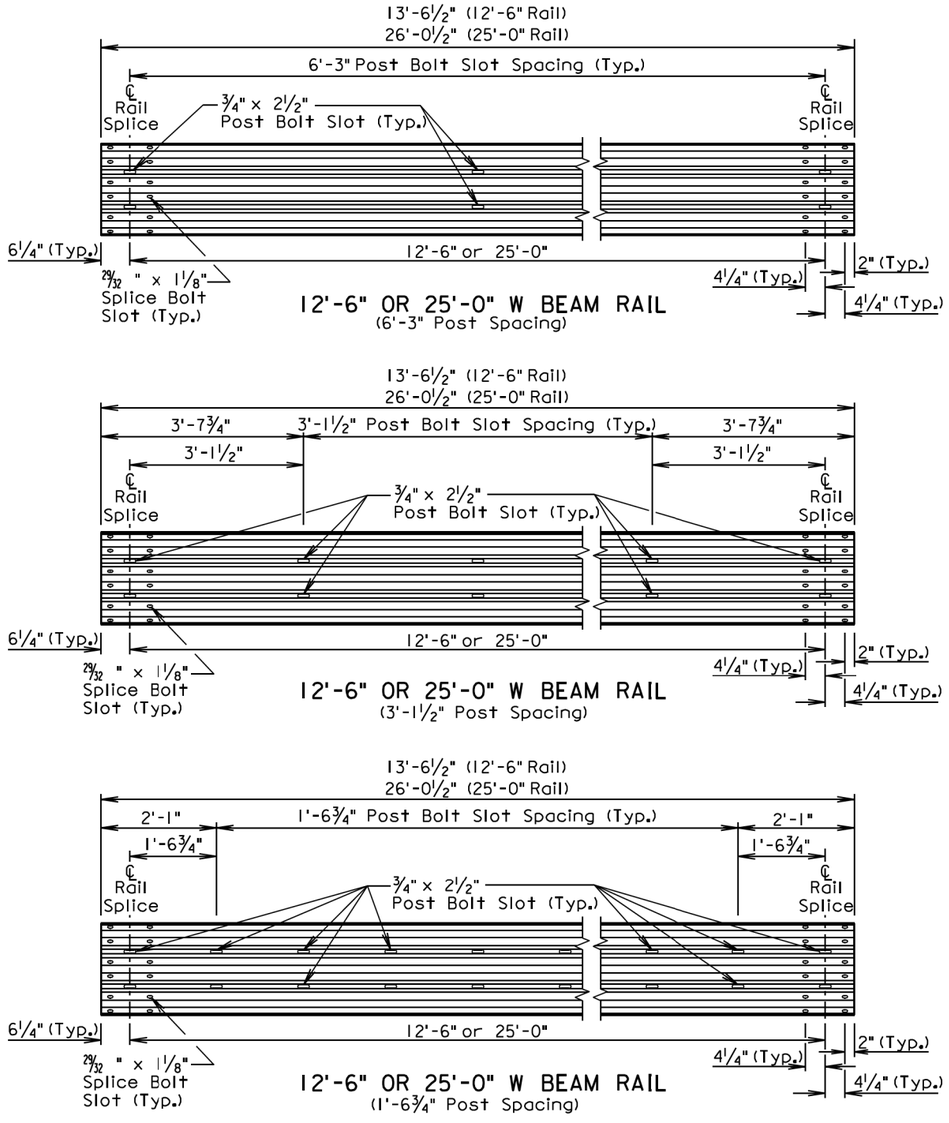
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001=469	5	12

Plotting Date: 05/09/2017



February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01 Sheet 3 of 5



February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01 Sheet 4 of 5

Plot Scale - 1:200

- Plotted From - trrc12608

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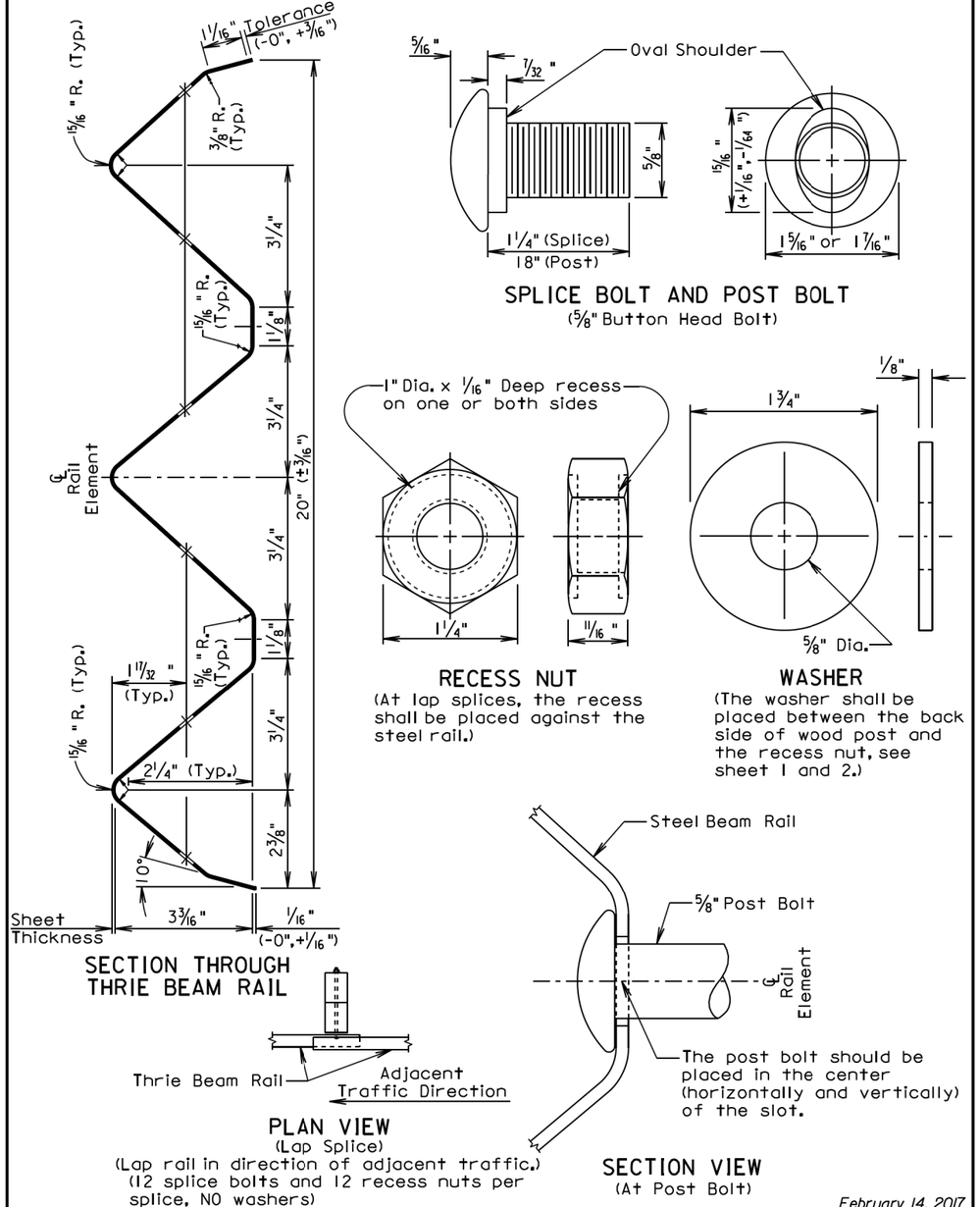


SPLICE BOLT AND POST BOLT
(5/8" Button Head Bolt)

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

WASHER
(The washer shall be placed between the back side of wood post and the recess nut, see sheet 1 and 2.)

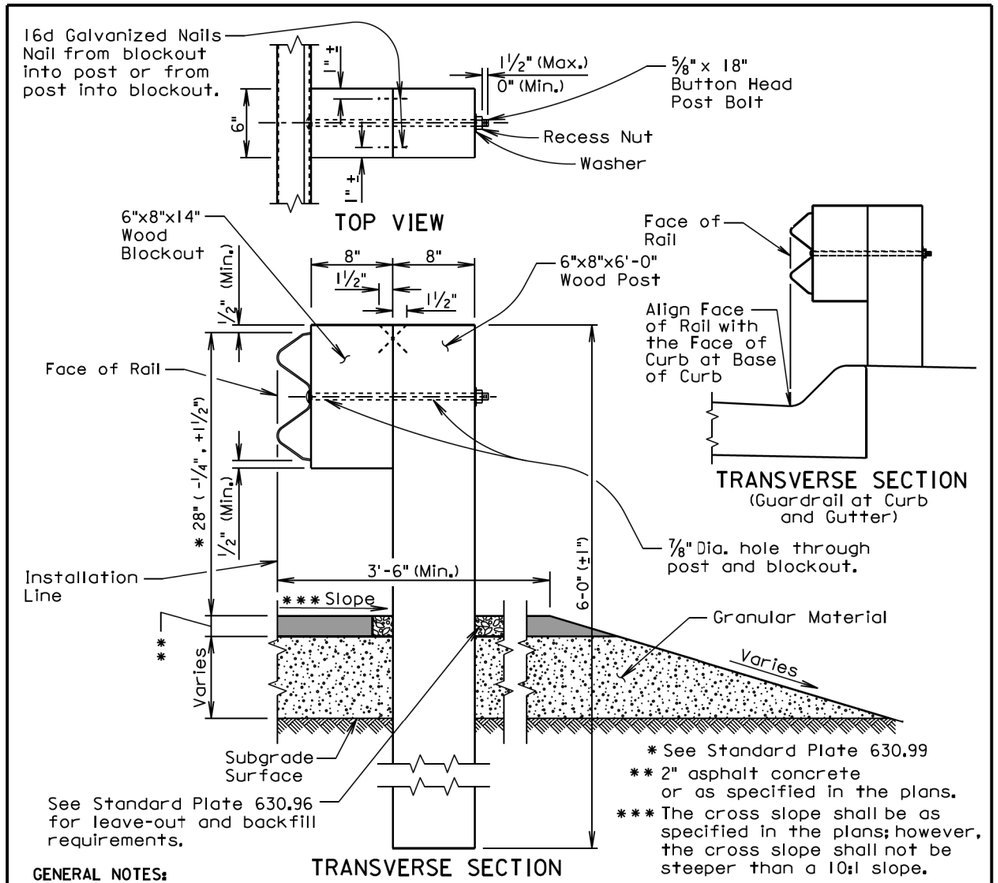
SECTION THROUGH THRIE BEAM RAIL

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

SECTION VIEW
(At Post Bolt)

February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 5 of 5



TRANSVERSE SECTION

GENERAL NOTES:

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

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

Topsoil is not shown in the transverse section drawing.

All W beam rail shall be Type I 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 shall be compatible with the total length of rail per site as shown in the plans.

Slots in the rails shall 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 shall be smooth and free of burrs or notches.

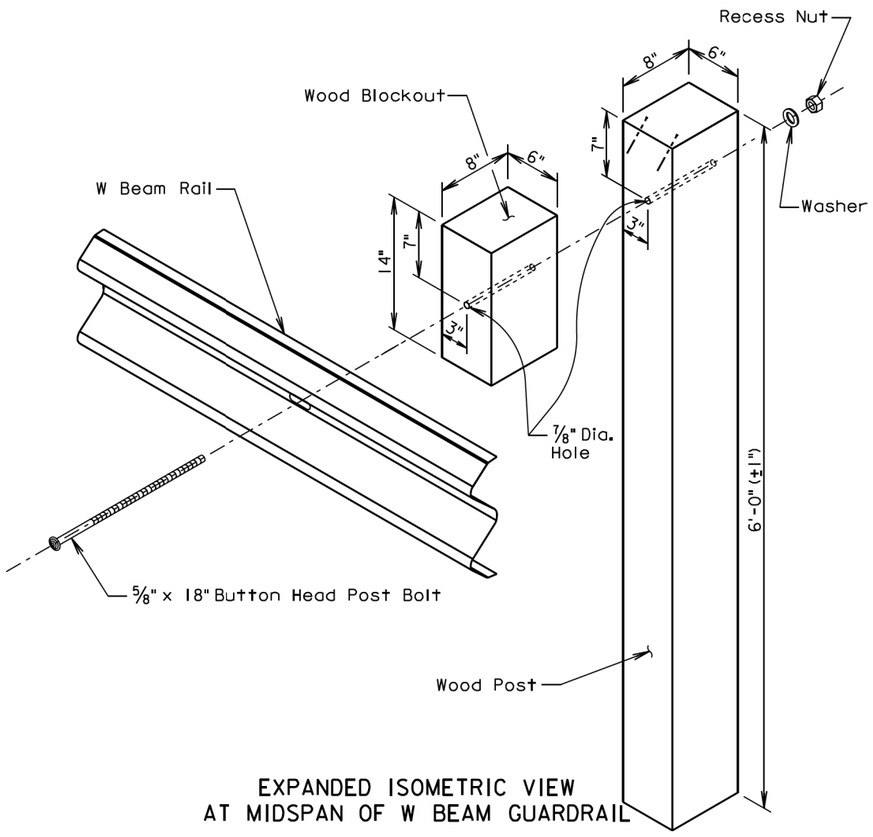
The top of post and top of block shall have a true square cut. The top of block shall be a maximum of ±1/2 inch from the top of the post.

February 14, 2017

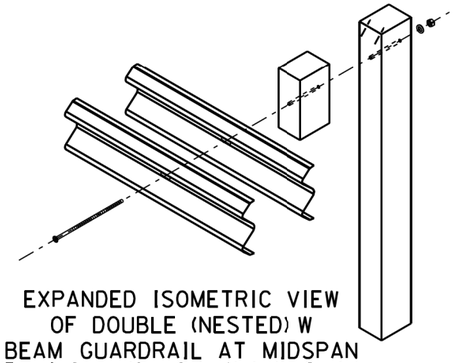
Published Date: 2nd Qtr. 2017	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			Sheet 1 of 5

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001=469	7	12

Plotting Date: 05/09/2017
Revised 5/2/2017 GDS



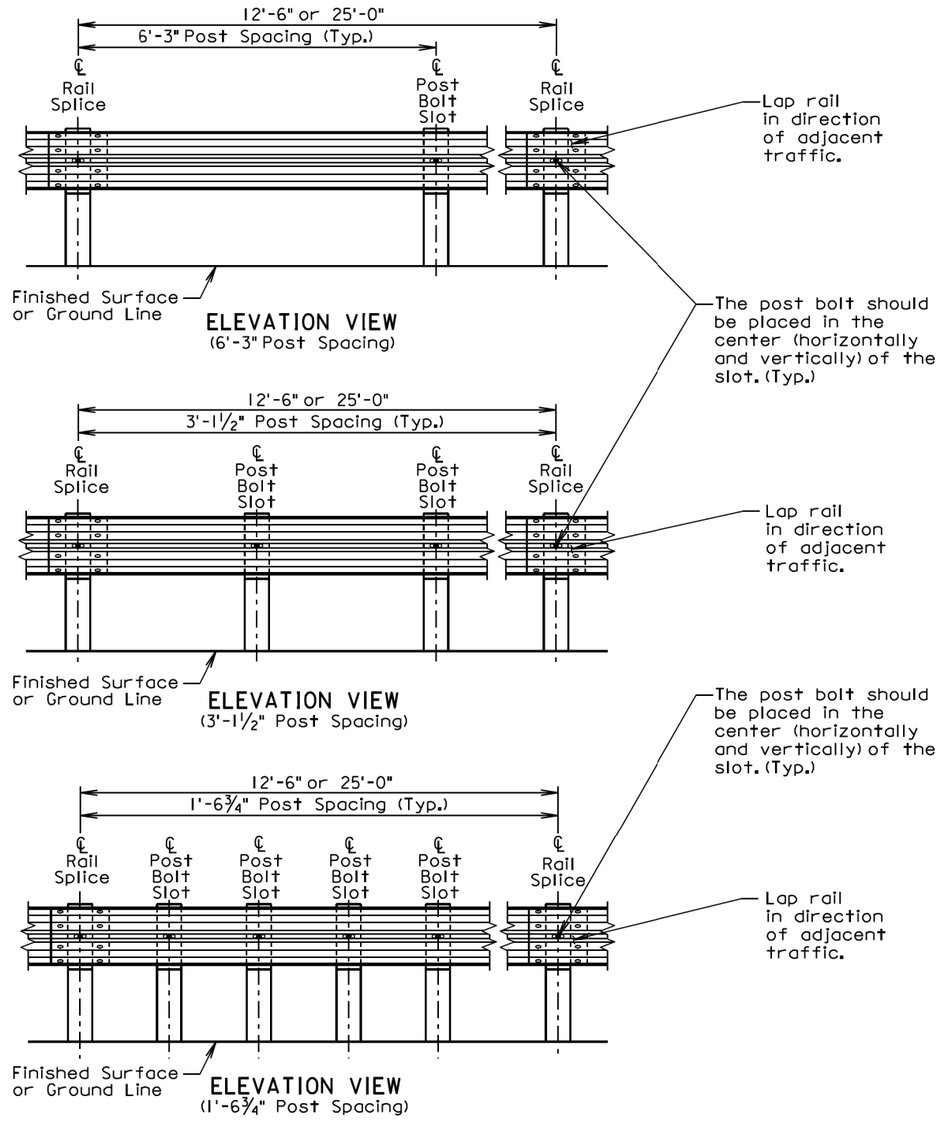
EXPANDED ISOMETRIC VIEW
AT MIDSPAN OF W BEAM GUARDRAIL



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

February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			Sheet 2 of 5



February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			Sheet 3 of 5

Plot Scale - 1:200
- Plotted From - trnc12608
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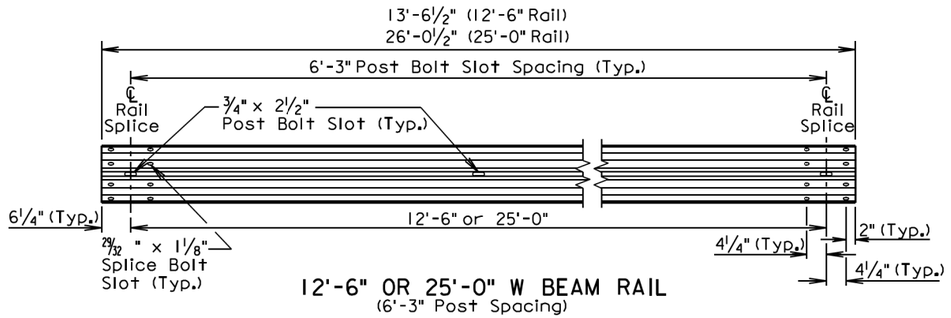
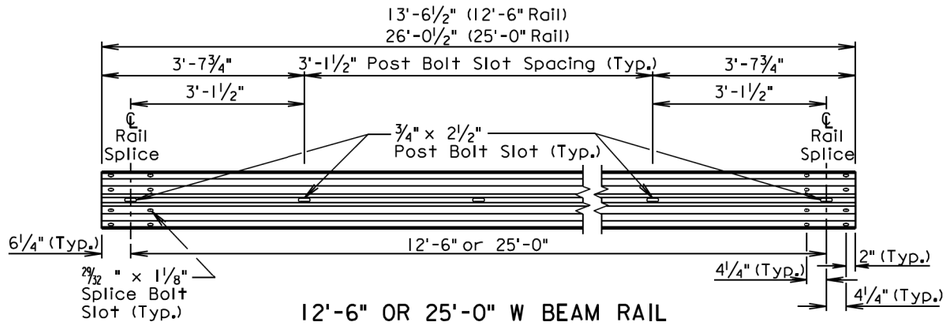
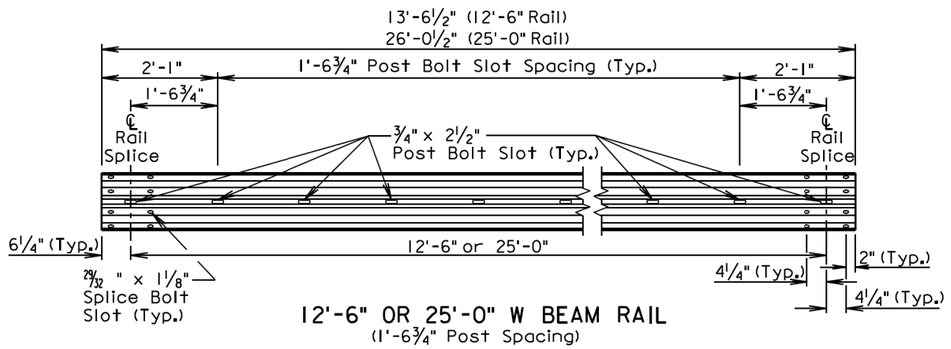


12'-6" OR 25'-0" W BEAM RAIL
(6'-3" Post Spacing)



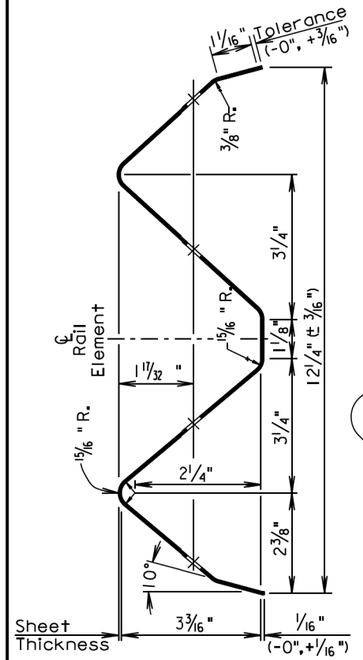
12'-6" OR 25'-0" W BEAM RAIL
(3'-1½" Post Spacing)



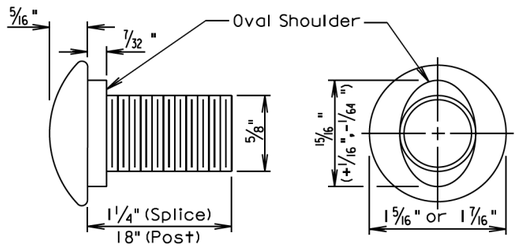
12'-6" OR 25'-0" W BEAM RAIL
(1'-6¾" Post Spacing)

February 14, 2017

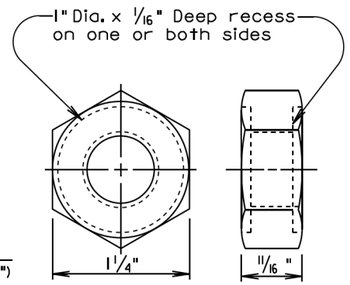
Published Date: 2nd Qtr. 2017	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			Sheet 4 of 5



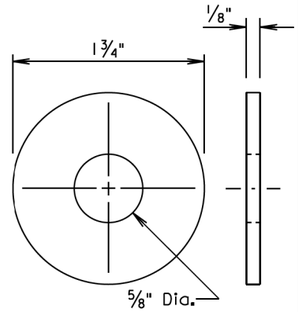
SECTION THROUGH W BEAM RAIL



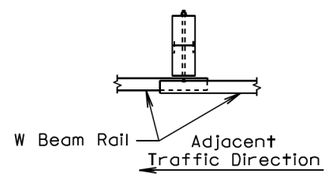
SPLICE BOLT AND POST BOLT
(⅝" Button Head Bolt)



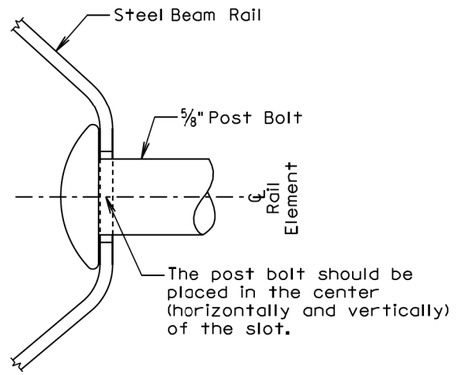
RECESS NUT
(At lap splices, the recess shall be placed against the steel rail.)



WASHER
(The washer shall be placed between the back side of wood post and the recess nut, see sheet 1 and 2.)



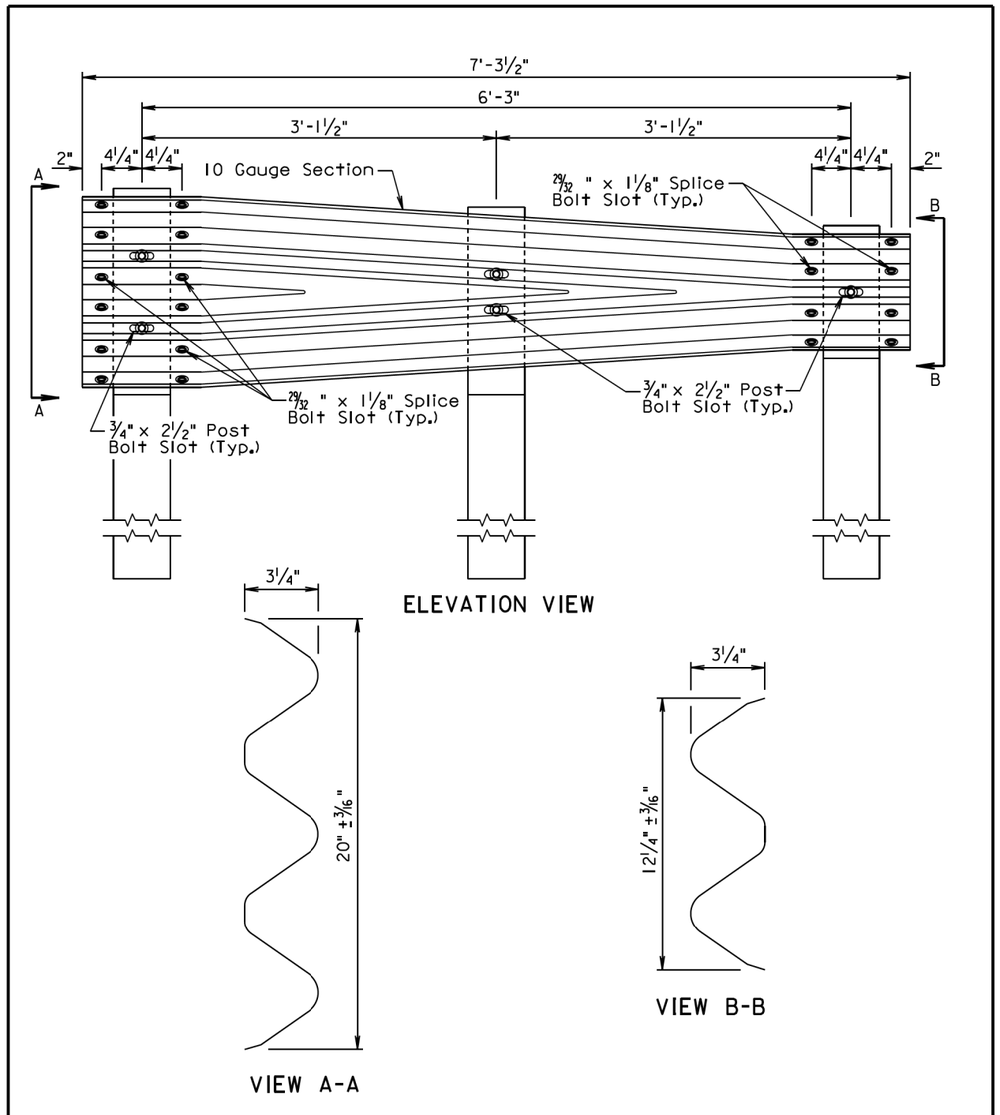
PLAN VIEW
(Lap Splice)
(Lap rail in direction of adjacent traffic.)
(8 splice bolts and 8 recess nuts per splice, NO washers)



SECTION VIEW
(At Post Bolt)

February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	W BEAM GUARDRAIL	PLATE NUMBER 630.10
			Sheet 5 of 5

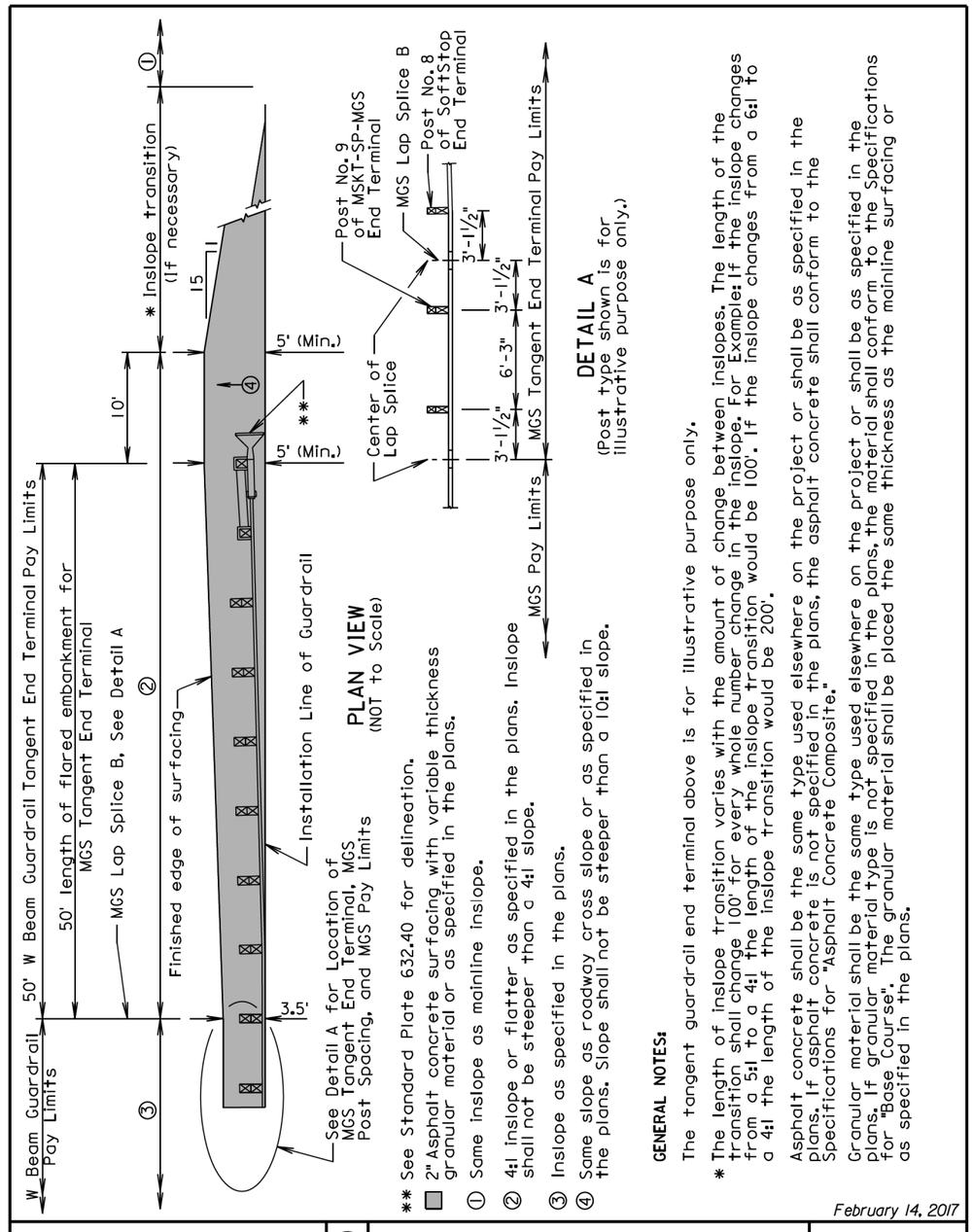


GENERAL NOTES:

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

February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	W BEAM TO THRIE BEAM GUARDRAIL TRANSITION SECTION	PLATE NUMBER 630.48
			Sheet 1 of 1



PLAN VIEW
(NOT to Scale)

DETAIL A
(Post type shown is for illustrative purpose only.)

** 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.
② 4:1 inslope or flatter as specified in the plans. Inslope shall not be steeper than a 4:1 slope.
③ Inslope as specified in the plans.
④ Same slope as roadway cross slope or as specified in the plans. Slope shall not be steeper than a 10:1 slope.

GENERAL NOTES:

The tangent guardrail end terminal above is for illustrative purpose only.

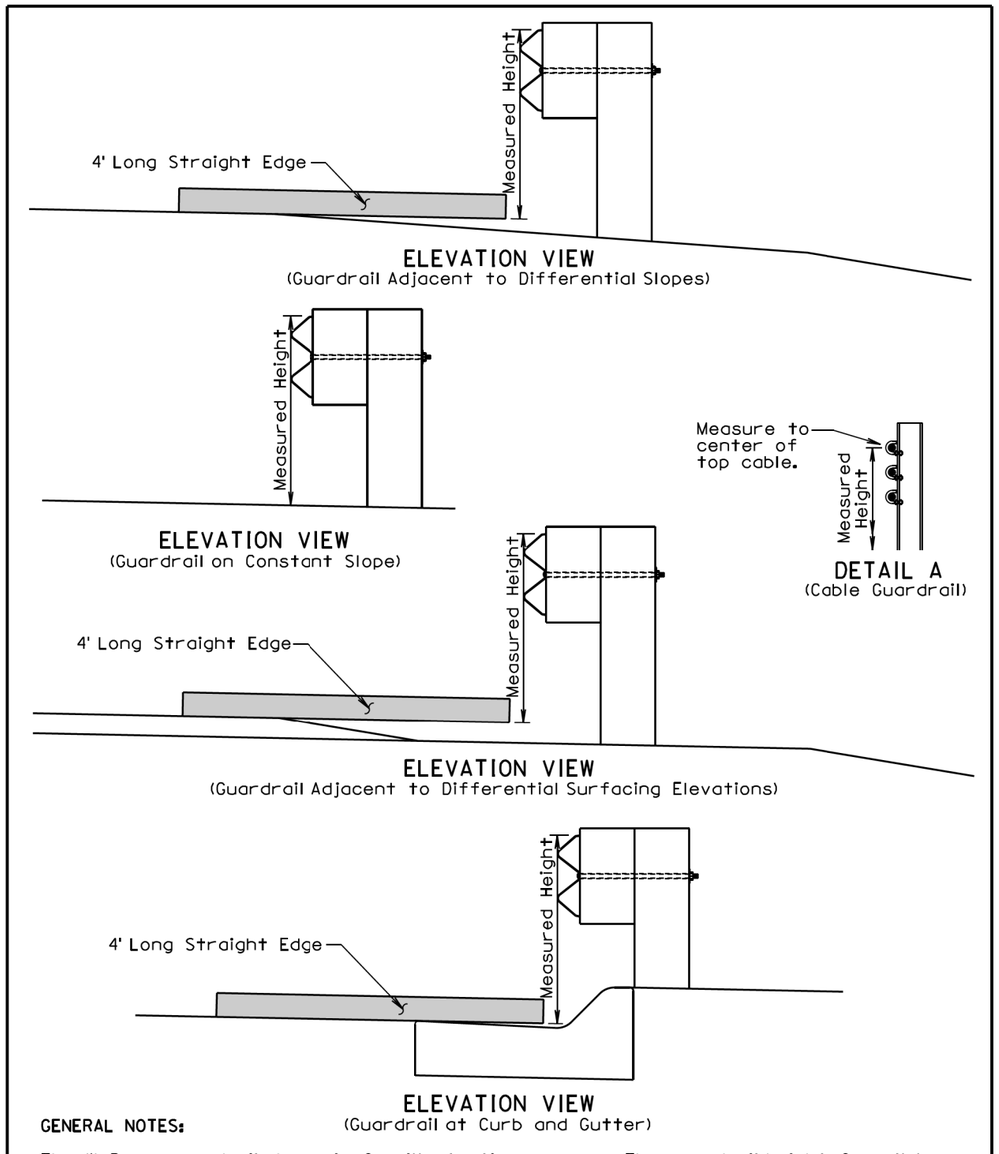
* The length of inslope transition varies with the amount of change between inslopes. The length of the transition shall change 100' for every whole number change in the inslope. For Example: If the inslope changes from a 5:1 to a 4:1 the length of the inslope transition would be 100'. If the inslope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

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

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

February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	EMBANKMENT, SURFACING, AND PAYMENT LIMITS FOR W BEAM GUARDRAIL TANGENT END TERMINAL AND MGS TANGENT END TERMINAL	PLATE NUMBER 630.88
			Sheet 1 of 1



GENERAL NOTES:

The W Beam guardrail shown is for illustrative purpose. The guardrail height for all types of guardrail systems shall be measured in accordance with this standard plate.

When measuring height of cable guardrail or cable barrier the height shall be measured to the center of the top cable. See Detail A.

February 14, 2017

Published Date: 2nd Qtr. 2017	SDDOT	***MEASURING GUARDRAIL HEIGHT***	***PLATE NUMBER*** 630.99
			Sheet 1 of 1

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

Flagger

Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

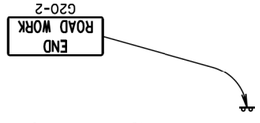
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices shall be drums or 42" cones.

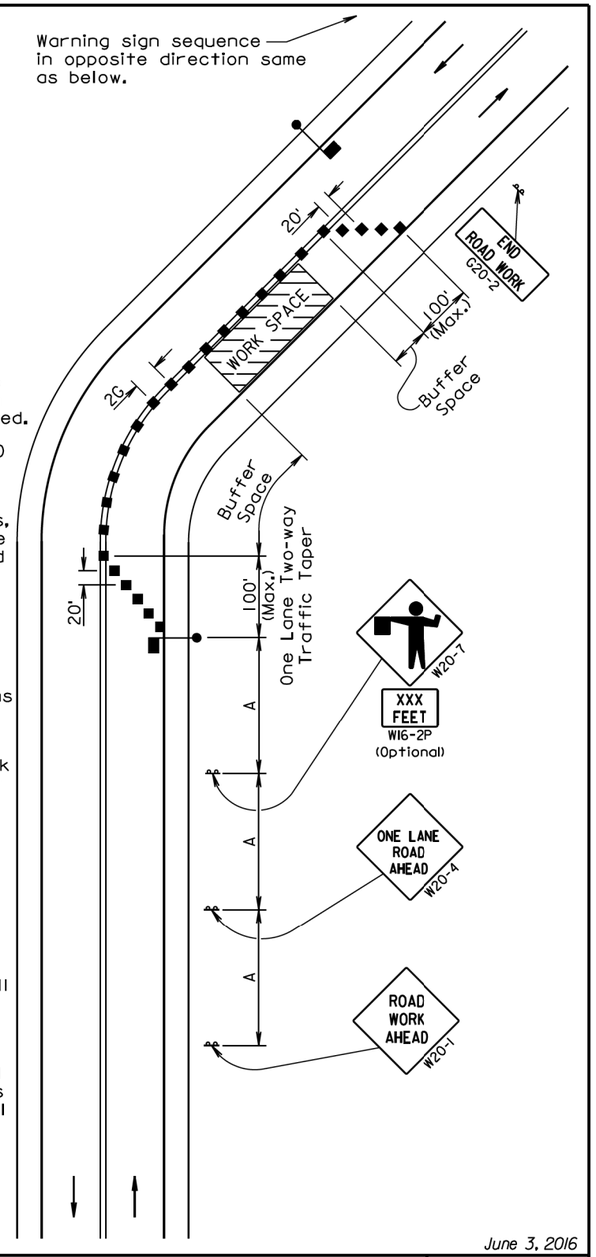
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

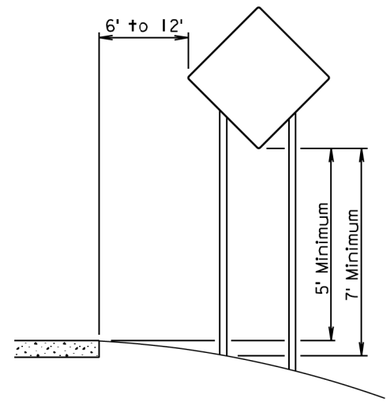
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.

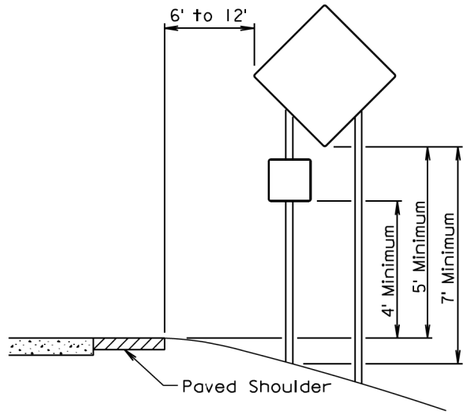


June 3, 2016

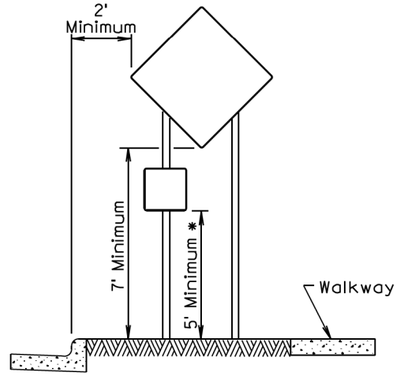
Published Date: 2nd Qtr. 2017	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1



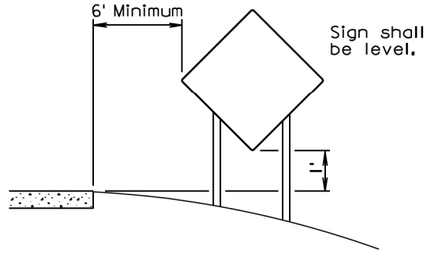
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

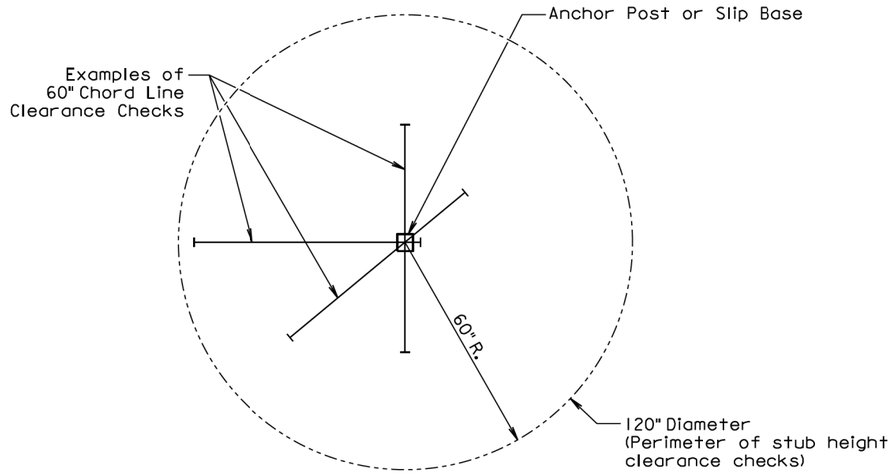


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

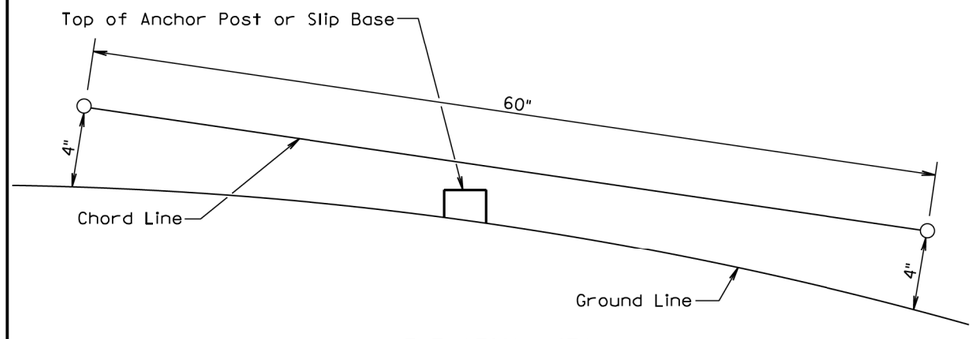
September 22, 2014

Published Date: 2nd Qtr. 2017	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW

(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

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

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

Published Date: 2nd Qtr. 2017	SDDOT	***BREAKAWAY SUPPORT STUB CLEARANCE***	***PLATE NUMBER*** 634.99
			Sheet 1 of 1