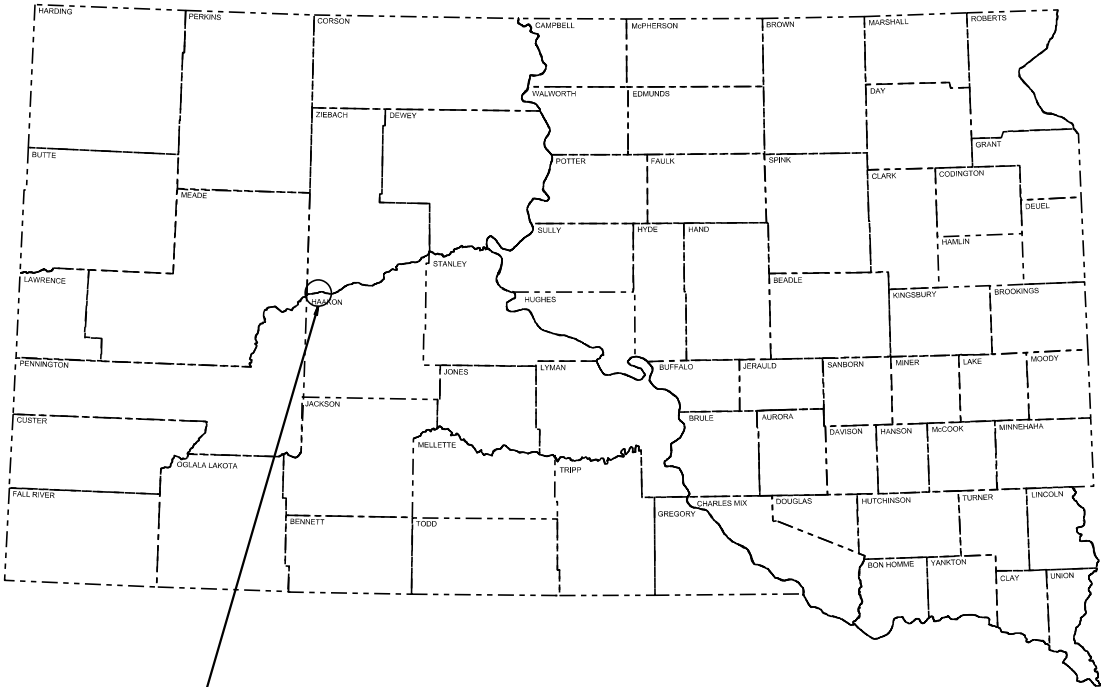


Plot Scale - 1:200

Plotted From - tpr2nt10



PROJECT

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT 034-368
ZIEBACH COUNTY
GUARDRAIL REPAIR

PCN 14G7

Plotting Date: 03/29/2017

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	034-368	1	15

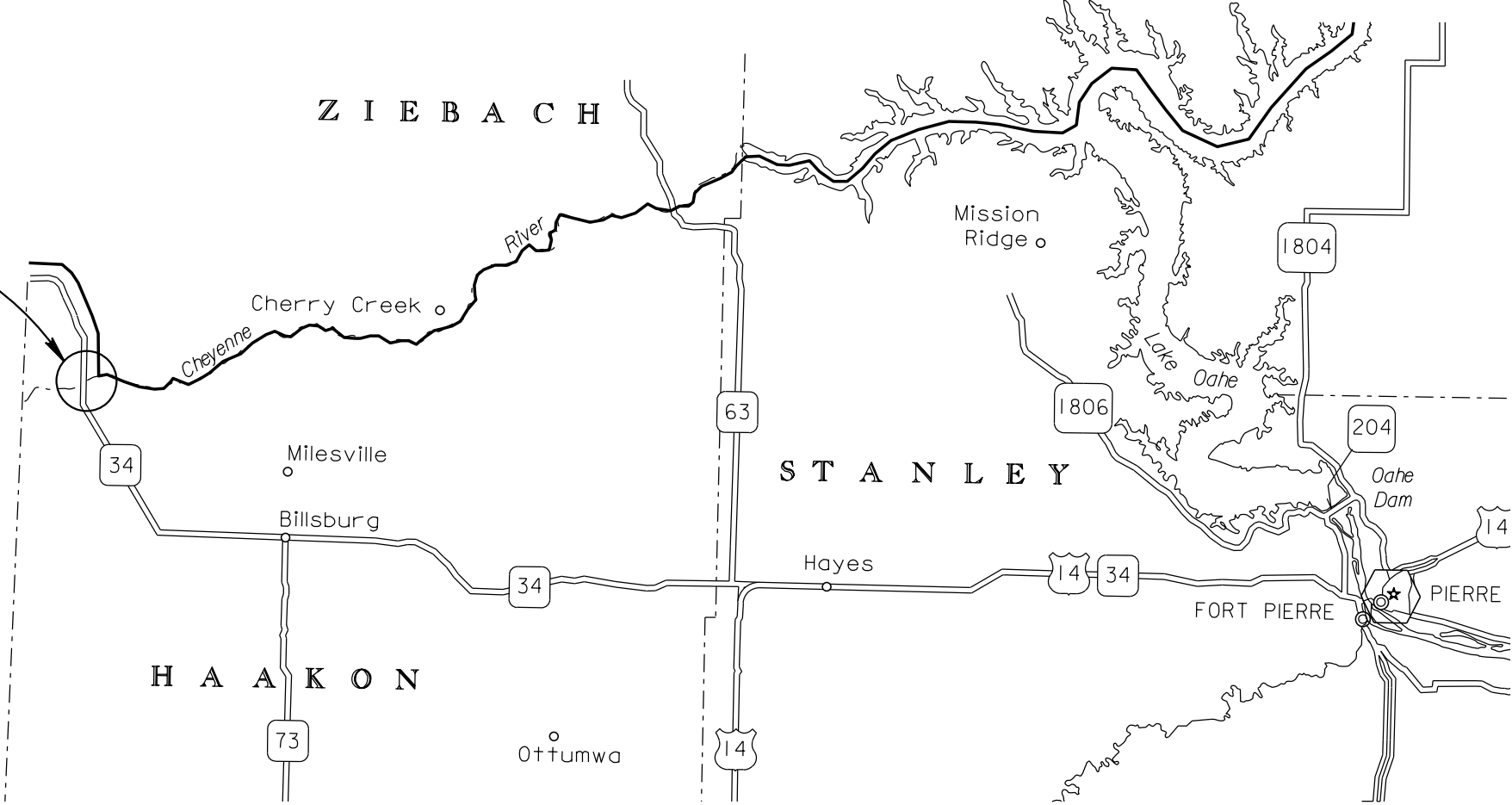
Plotting Date: 03/29/2017

INDEX OF SHEETS

Sheet 1	Title Sheet
Sheet 2	Estimate of Quantities
Sheet 3	Environmental Commitments
Sheet 4	Plan Notes
Sheet 5	Existing Structure Layout
Sheets 6-15	Standard Plates



034-368, 14G7
Structure # 28-035-151
MRM 123.64 + 0.000



STORM WATER PERMIT
NONE

Plot Name - 1

File - ...\\haak4G7\\haak4G7_title.dgn

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0020	Remove Bridge Railing	425	Ft
110E0730	Remove Beam Guardrail	237.5	Ft
470E4020	Class B Bridge Guardrail, Design 2T	425.0	Ft
630E0110	Straight Double Class A Thrie Beam Guardrail with Wood Posts	12.5	Ft
630E1010	Straight Class A W Beam Guardrail with Wood Posts	200.0	Ft
630E2000	W Beam to Thrie Beam Guardrail Transition	1	Each
630E2100	Beam Guardrail Post	1	Each
630E2105	Beam Guardrail Block	3	Each
630E2250	Flared End Terminal Rail	25.0	Ft
632E2220	Guardrail Delineator	5	Each
634E0010	Flagging	20.0	Hour
634E0110	Traffic Control Signs	202.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0640	Temporary Pavement Marking	432	Ft

ESTIMATE OF QUANTITIES

The Contractor shall furnish and install Bridge Rail and Guardrail material as per the Contract Proposal. The quantities for each item are estimated to establish a pay unit. The actual amount of work required may vary from the Estimate of Quantities.

SPECIFICATIONS

Standard Specifications for Roads & 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 B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pit, or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

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.

SCOPE OF WORK

This project consists of guardrail repair at the Cheyenne River Bridge, Structure # 28-035-151, MRM 123.64 on SD Highway 34.

The following information is provided for information only. Contractor is responsible for inspection of the site prior to bidding.

- 425’ – Remove 2T Thrie beam rail
- 200’ – Remove W Beam Guardrail

South Bound – North End of Bridge:

- 1 – Slotted SRT end rail 12.5’
(Flared End Terminal Rail)
- 100’ – W-beam, 4 sections @ 25’
(Straight Class A W Beam Guardrail with Posts)
- 25’ – Thrie Beam End Section 2 @ 12.5’ (1 nested)
(Straight Double Class A Thrie Beam Guardrail with Wood Posts)
- 400’ – Thrie Beam 16 @ 25’
(Class B Bridge Guardrail, Design 2T)
- 20 – Wood Blocks 7.5”x12”x20” (on Bridge Deck)
(Incidental to Class B Bridge Guardrail, Design 2T)

North Bound – North End of Bridge:

- 1 – Slotted SRT end rail 12.5’
(Flared End Terminal Rail)
- 100’ – W-beam, 4 sections @ 25’
(Straight Class A W Beam Guardrail with Posts)
- 1 – Wood Post
(Beam Guardrail Post)
- 3 – 6”x8”x14” Offset Blocks
(Beam Guardrail Block)

UTILITIES

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

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call process as required by South Dakota Codified Law 49-7A and administrative Rule Article 20:25; the Contractor shall contact the Project Engineer to determine if project changes are necessary to avoid utility impacts.

GENERAL MAINTENANCE OF TRAFFIC

Equipment will be confined to the work zone.

Work activities shall be conducted during daylight hours only. Traffic shall be returned to the normal driving lanes during non-working hours. All construction operations shall be conducted in the general direction of traffic movement.

All equipment and vehicles working within the right-of-way shall be equipped with an activated 360 degree, SAE J845, Class II or higher warning light to warn the traveling public.

Traffic control shall be in accordance with Section 634 of the specifications and the plan notes. All traffic control devices are to be in like new condition. Any traffic control device that warrants replacement due to its poor condition or absence shall be replaced immediately by the Contractor at his expense.

Contractor shall use flaggers and 45 MPH Advisory Speed Plates as needed to regulate traffic to provide a safe working environment for Contractor workers and inspection personnel. The flagger symbol sign (W20-7) shall be placed a minimum of 500 feet in front of flagger station.

GUARDRAIL

1. When the Contractor replaces the Flared End Terminal Rail, the costs for furnishing and installing the Flared End Terminal Rail shall be incidental to the contract unit price per foot for " Flared End Terminal Rail". All Flared End Terminal Rail that are replaced shall be listed on the South Dakota Department of Transportation Approved Product List.

2. "Beam Guardrail Block" shall include the appropriate size wood block. "Beam Guardrail Post" shall include the appropriate length wood post for the location. The Engineer shall designate the proper post length of six, six and one-half, or seven feet as needed to fit the repair situation.

3. The Contractor shall place state furnished asphalt optimix material around the posts to fill and level any voids created by the driving of the posts through the asphalt. This material will be available at the Philip SDDOT Maintenance Yard. The material shall be placed ½” high around the post to force the water to drain away from the post. This material shall be compacted to the satisfaction of the Engineer.

4. The Contractor shall replace any damaged guardrail delineation which cannot be repaired by bolting/riveting to new posts or guardrail installed by Contractor. See Standard Plate 632.40 for guardrail delineation requirements. Replacement of delineators will be paid for at the contract unit price per each for “Guardrail Delineator”.

STATE FURNISHED ASPHALT OPTIMIX MATERIAL

The Contractor may be required to place state furnished asphalt optimix on this project around the guardrail posts to ensure proper drainage.

The asphalt optimix material is located in the SDDOT Maintenance Yard located at Philip, legal description of SW1/4, NE 1/4, Section 13, T1N, R20E. This material is royalty free to the Contractor. Furnish cost to the State for state furnished asphalt optimix type material is \$81.00 per ton.

Placement of this material will be incidental to the related bid items for this contract.

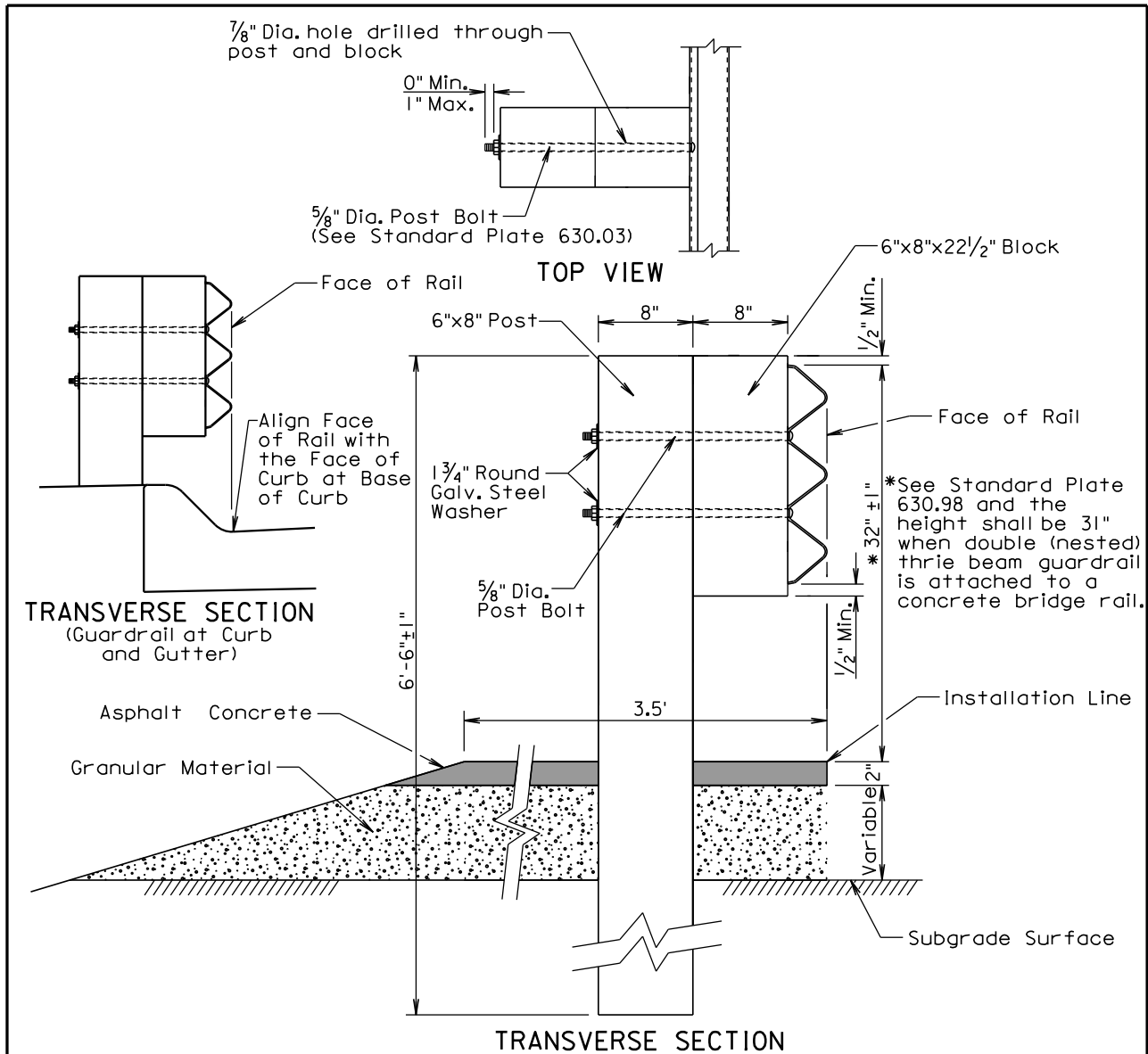
RESTORATION OF DISTURBED AREAS

Areas disturbed as a result of work necessary under this Contract shall be reshaped and/or restored to the satisfaction of the Engineer.

Slopes and berms disturbed shall be leveled and excess material removed. Area shall be tilled to the minimum depth of three inches and seeded with Intermediate Wheatgrass (Oahe) at the rate of one-half (1/2) pound “Pure Live Seed” per 1000 square feet. The seed shall be noxious weed free. Cost for reshaping, leveling, removal of excess material, tilling, and seeding disturbed areas on the slopes and berms shall be incidental to the contract unit price for the various items.

ITEMIZED LIST OF TRAFFIC CONTROL DEVICES

		034P-351, I4G7			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	2	30"	5.2	10.4
W1-3	REVERSE TURN (R)	1	48" x 48"	16.0	16.0
W1-4	REVERSE CURVE (R)	1	48" x 48"	16.0	16.0
W3-1	STOP AHEAD (symbol)	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W16-2P	FEET (supplemental distance plaque)	2	30" x 24"	5	10
W20-1	ROAD WORK AHEAD	2	48" x 48"	16	32
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
G20-2	END ROAD WORK	2	36" x 18"	4.5	9
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			
		202.0			



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." For informational purposes, the Rate of Materials for the 3.5' wide section of asphalt concrete as shown above shall be 4.80 Tons per Station.

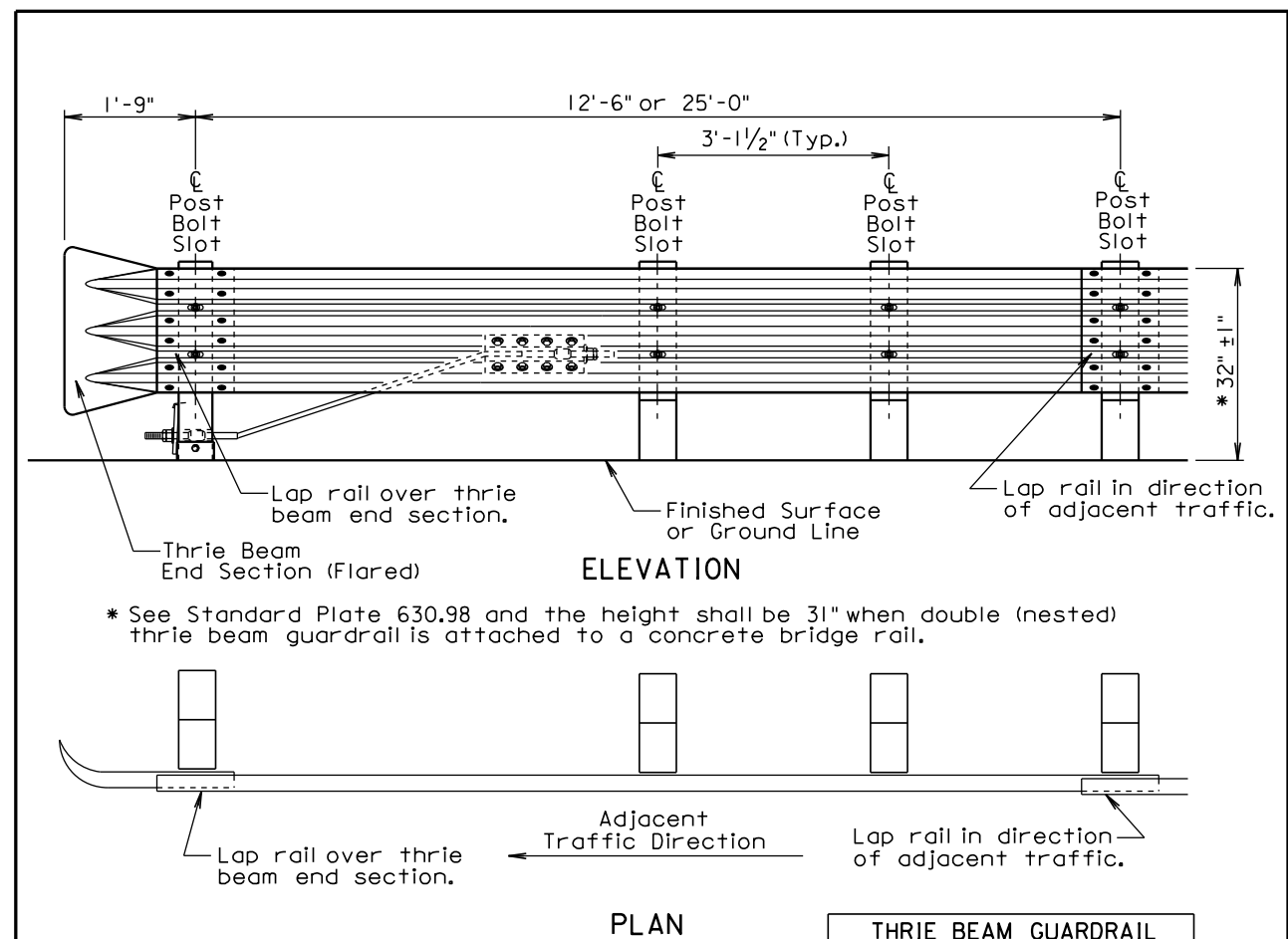
Granular material shall be the same type used elsewhere on the project or shall be as specified in the plans. If granular material type is not specified in the plans, the material shall conform to the Specifications for "Base Course". The granular material shall be placed the same thickness as the mainline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

The cross slope for the surfacing and subgrade surface shall be as specified in the plans (See Typical Sections and/or Cross Sections).

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

June 26, 2015

Published Date: 1st Qtr. 2017	S D D O T	THRIE BEAM GUARDRAIL POST INSTALLATION	PLATE NUMBER
			630.01
			Sheet 1 of 1



GENERAL NOTES:

All thrie beam rail shall be Type I.

There will be no separate payment for furnishing and installing Thrie Beam End Sections (Flared) and Thrie Beam Terminal Connectors. All costs for the Thrie Beam End Sections (Flared) and Thrie Beam Terminal Connectors shall be incidental to the contract unit price per foot for the respective "Thrie Beam Guardrail" bid item.

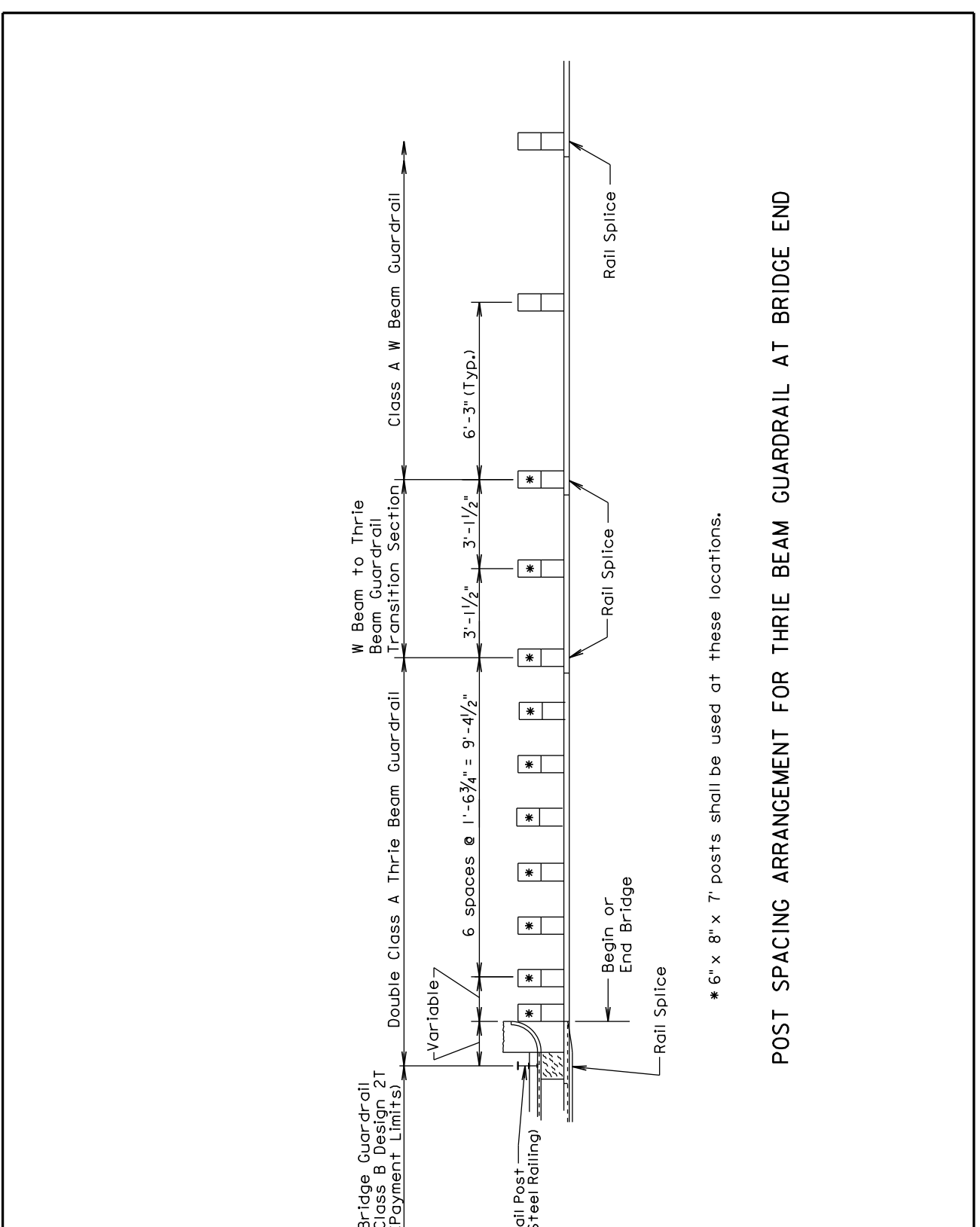
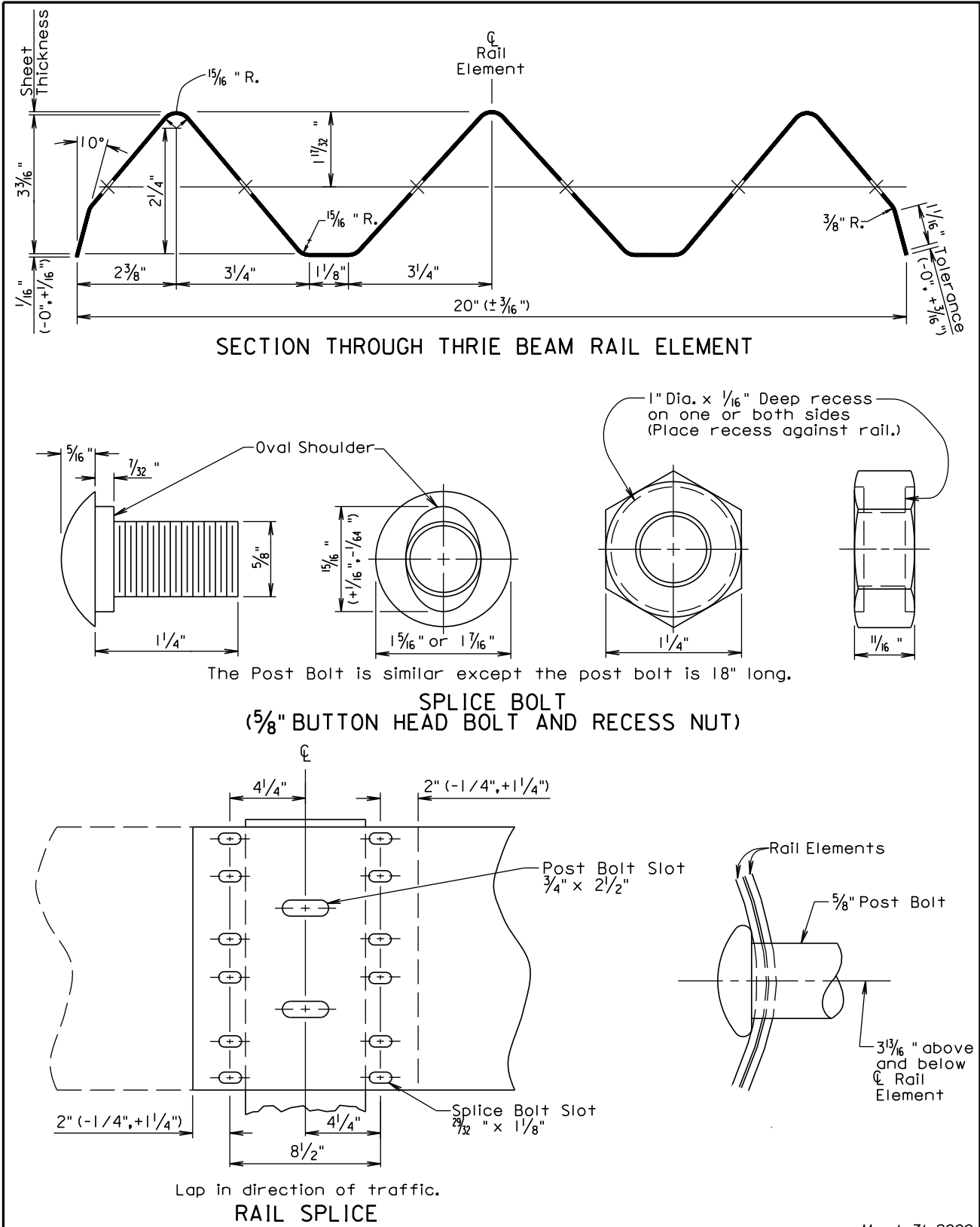
Thrie beam rail section lengths may be 12'-6" and/or 25'-0". The combination of section lengths used shall be compatible with the total length of rail per site as shown in the plans.

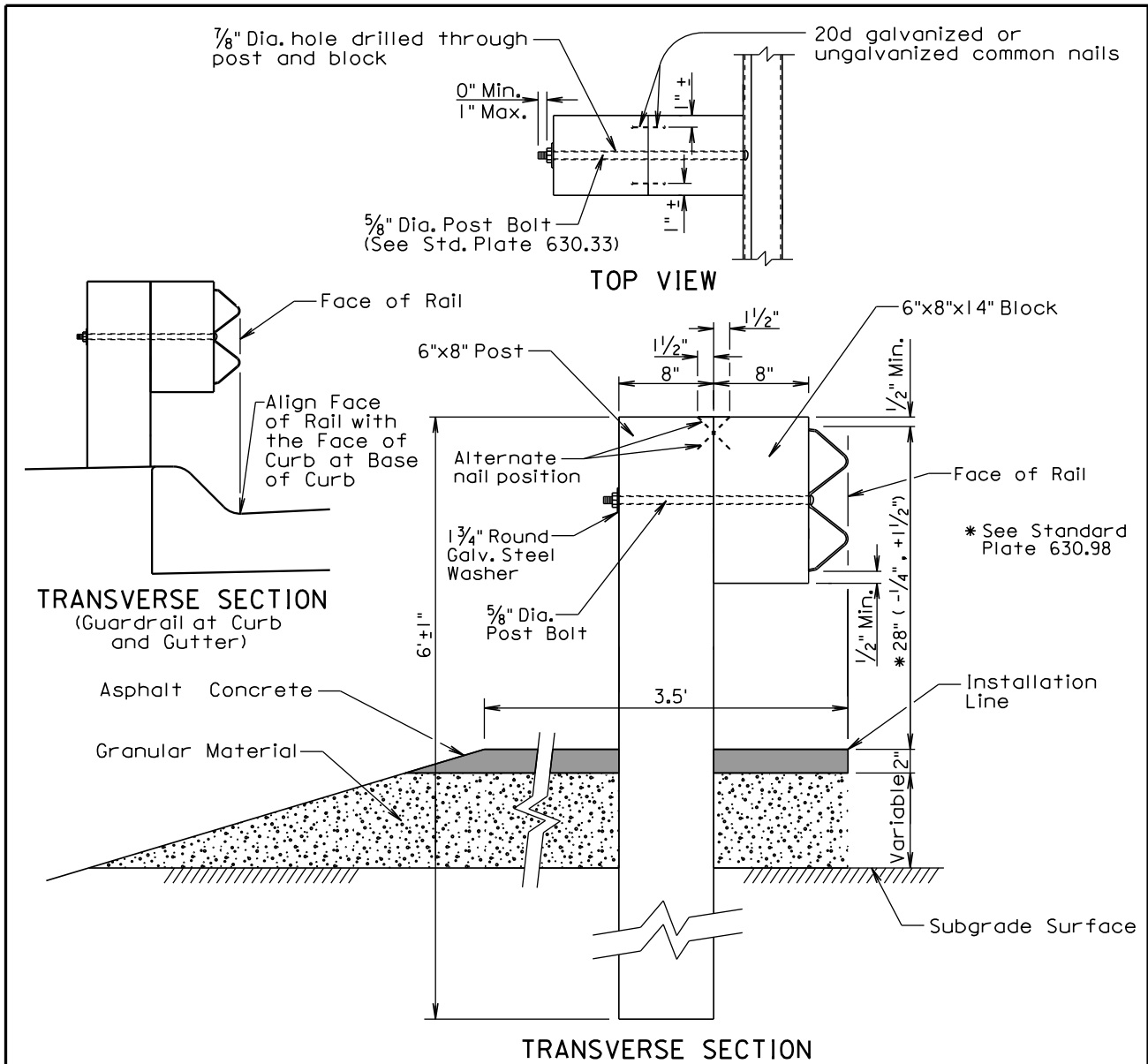
Thrie Beam End Sections (Flared) shall only be used in a one-way traffic situation. See Standard Plate 630.80 for Thrie Beam End Section (Flared) in the Beam Guardrail Trailing End Terminal.

All costs for constructing thrie beam guardrail including labor, equipment, and materials including all posts, blocks, steel beam rail, and hardware shall be incidental to the contract unit price per foot for the respective "Thrie Beam Guardrail" bid item.

June 26, 2015

Published Date: 1st Qtr. 2017	S D D O T	THRIE BEAM GUARDRAIL INSTALLATION	PLATE NUMBER
			630.02
			Sheet 1 of 1





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." For informational purposes, the Rate of Materials for the 3.5' wide section of asphalt concrete as shown above shall be 4.80 Tons per Station.

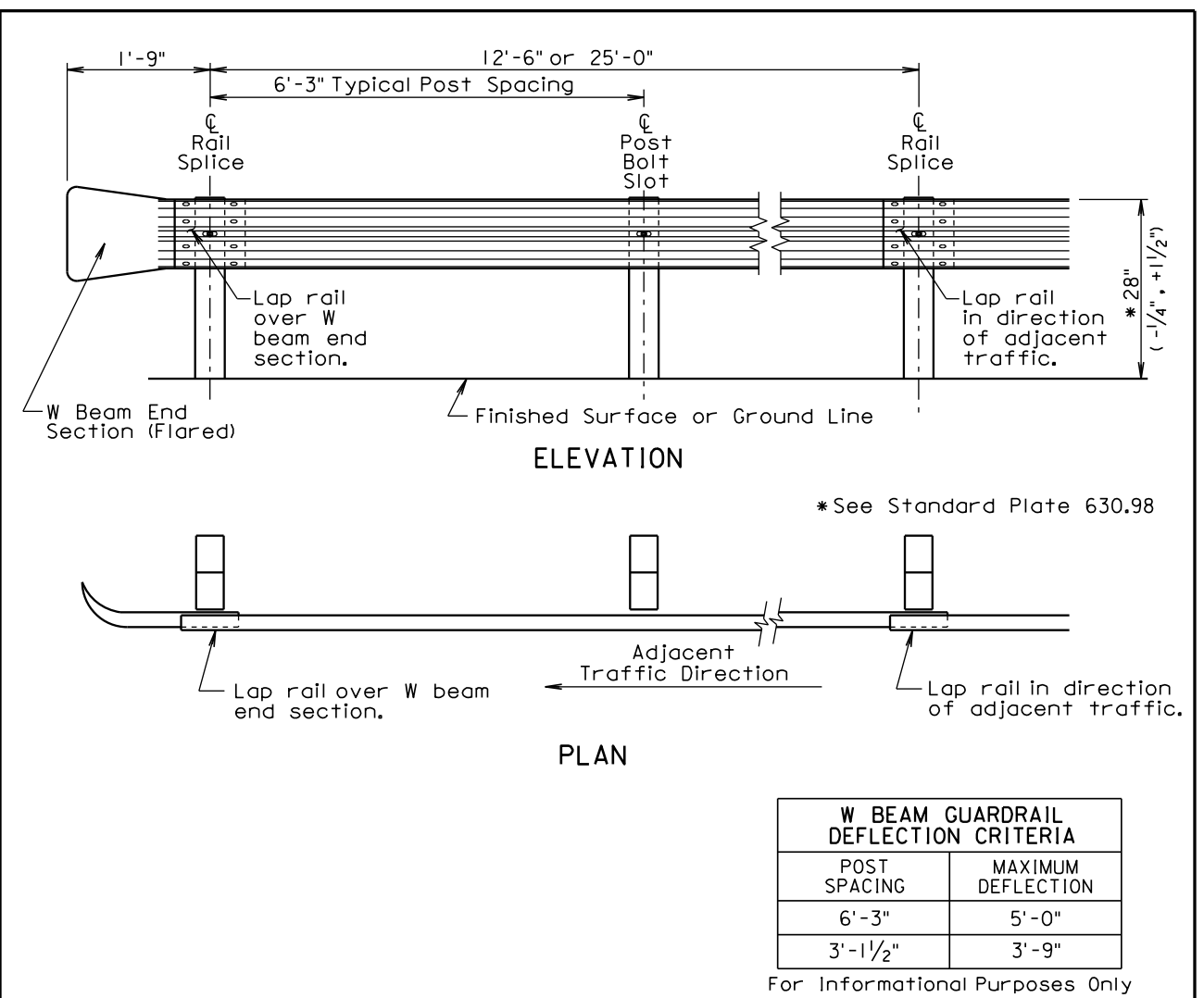
Granular material shall be the same type used elsewhere on the project or shall be as specified in the plans. If granular material type is not specified in the plans, the material shall conform to the Specifications for "Base Course". The granular material shall be placed the same thickness as the mainline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

The cross slope for the surfacing and subgrade surface shall be as specified in the plans (See Typical Sections and/or Cross Sections).

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

June 26, 2015

Published Date: 1st Qtr. 2017	S D D O T	W BEAM GUARDRAIL POST INSTALLATION	PLATE NUMBER 630.31
			Sheet 1 of 1



GENERAL NOTES:

All W beam rail shall be Type 1.

There will be no separate payment for furnishing and installing W Beam End Sections (Flared) and W Beam Terminal Connectors. All costs for the W Beam End Sections (Flared) and W Beam Terminal Connectors shall be incidental to the contract unit price per foot for the respective "W Beam Guardrail" bid item.

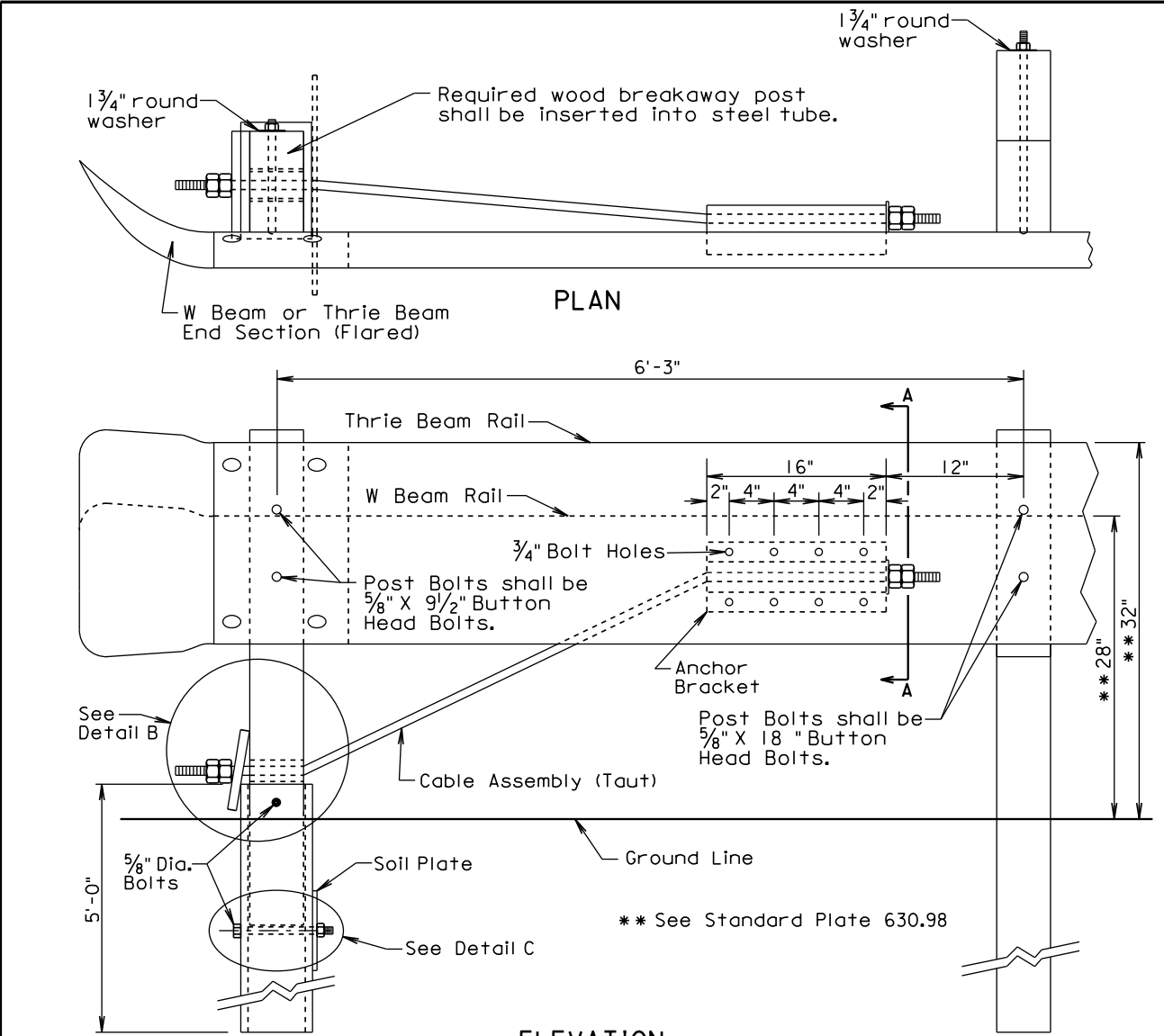
W beam rail section lengths may be 12'-6" and/or 25'-0". The combination of section lengths used shall be compatible with the total length of rail per site as shown in the plans.

W Beam End Sections (Flared) shall only be used in a one way traffic situation. See Standard Plate 630.80 for W Beam End Section (Flared) in the Beam Guardrail Trailing End Terminal.

All costs for constructing W beam guardrail including labor, equipment, and materials including all posts, blocks, steel beam rail, and hardware shall be incidental to the contract unit price per foot for the respective "W Beam Guardrail" bid item.

June 26, 2015

Published Date: 1st Qtr. 2017	S D D O T	W BEAM GUARDRAIL INSTALLATION	PLATE NUMBER 630.32
			Sheet 1 of 1



GENERAL NOTES:

All hardware shall be galvanized in accordance with ASTM A153.

The cable shall be 3/4", Type II, with Class A coating in conformance with AASHTO M30.

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

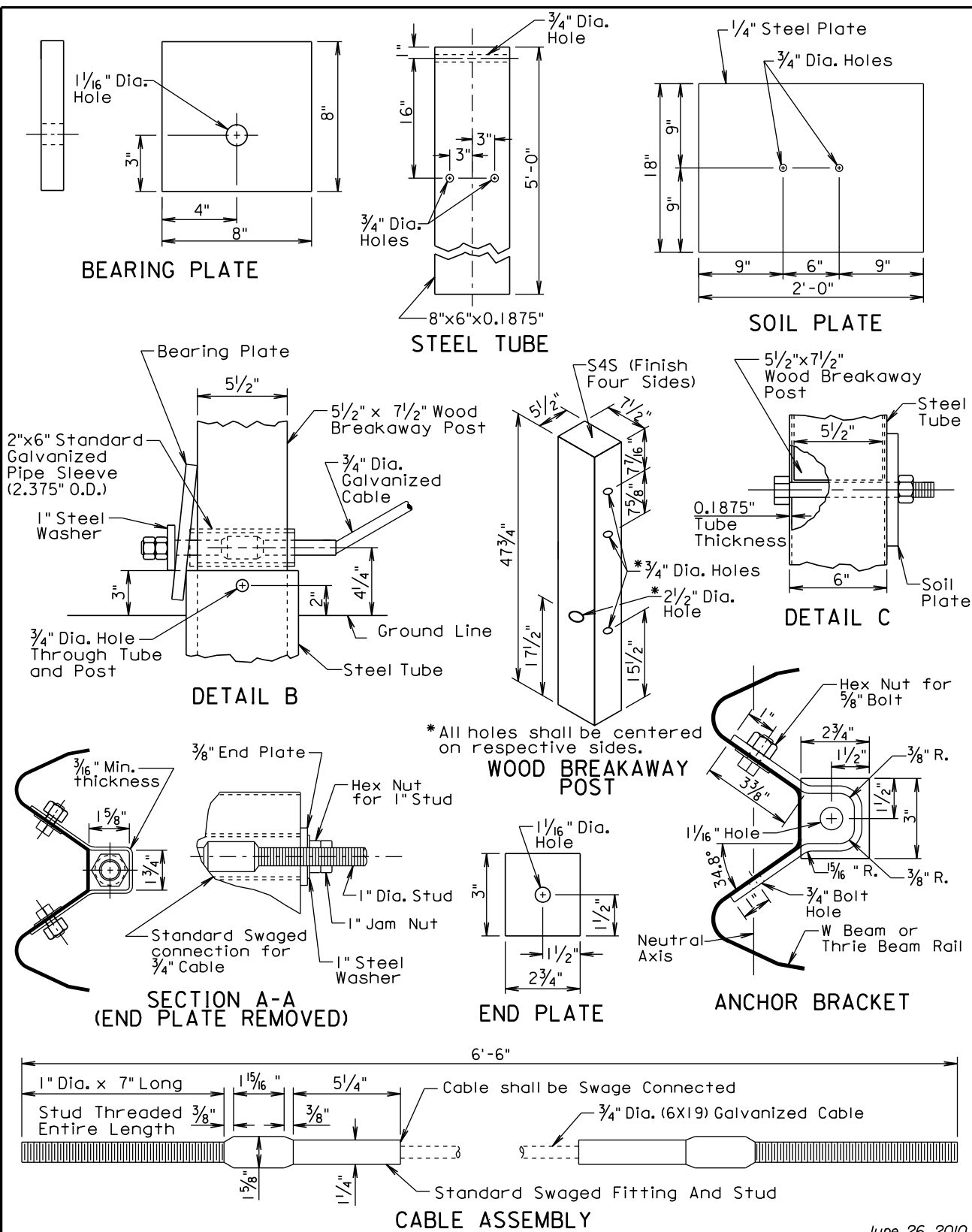
The anchor bracket, soil plate, and bearing plate shall be fabricated from steel that meets ASTM A36 Specifications. They shall be galvanized after fabrication in accordance with ASTM A123.

Costs for constructing the beam guardrail trailing end terminal and furnishing the anchor bracket, cable assembly, steel tube, soil plate, bearing plate, pipe sleeve, wood breakaway post, and all hardware necessary to attach anchor bracket, cable assembly, steel tube, soil plate, bearing plate, pipe sleeve, and wood breakaway post shall be incidental to the contract unit price per each for "Beam Guardrail Trailing End Terminal".

Costs for the thrie beam or W beam guardrail and the thrie beam or W beam end sections (Flared) shall be incidental to the contract unit price per foot for the respective "Thrie Beam Guardrail" or "W Beam Guardrail" bid items.

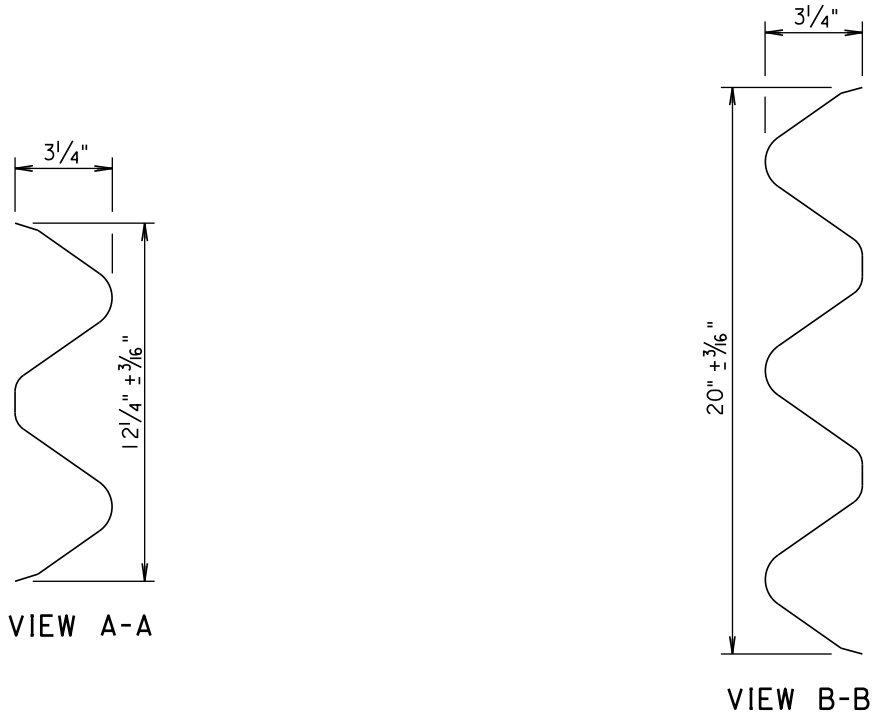
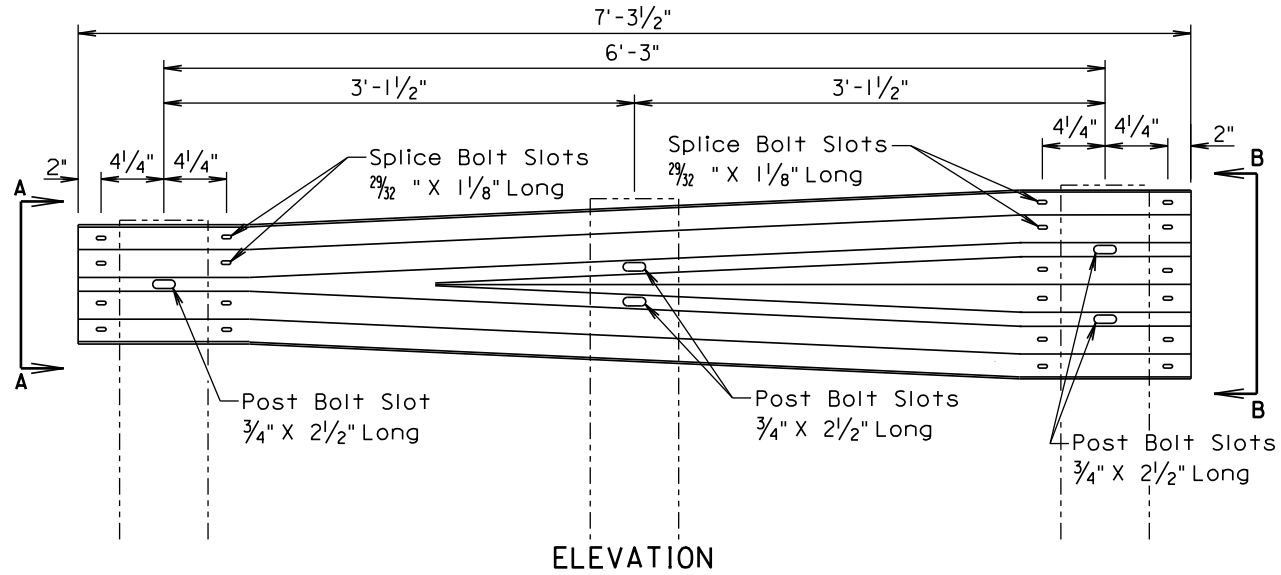
June 26, 2010

Published Date: 1st Qtr. 2017	S D D O T	BEAM GUARDRAIL TRAILING END TERMINAL	PLATE NUMBER 630.80
			Sheet 1 of 2



June 26, 2010

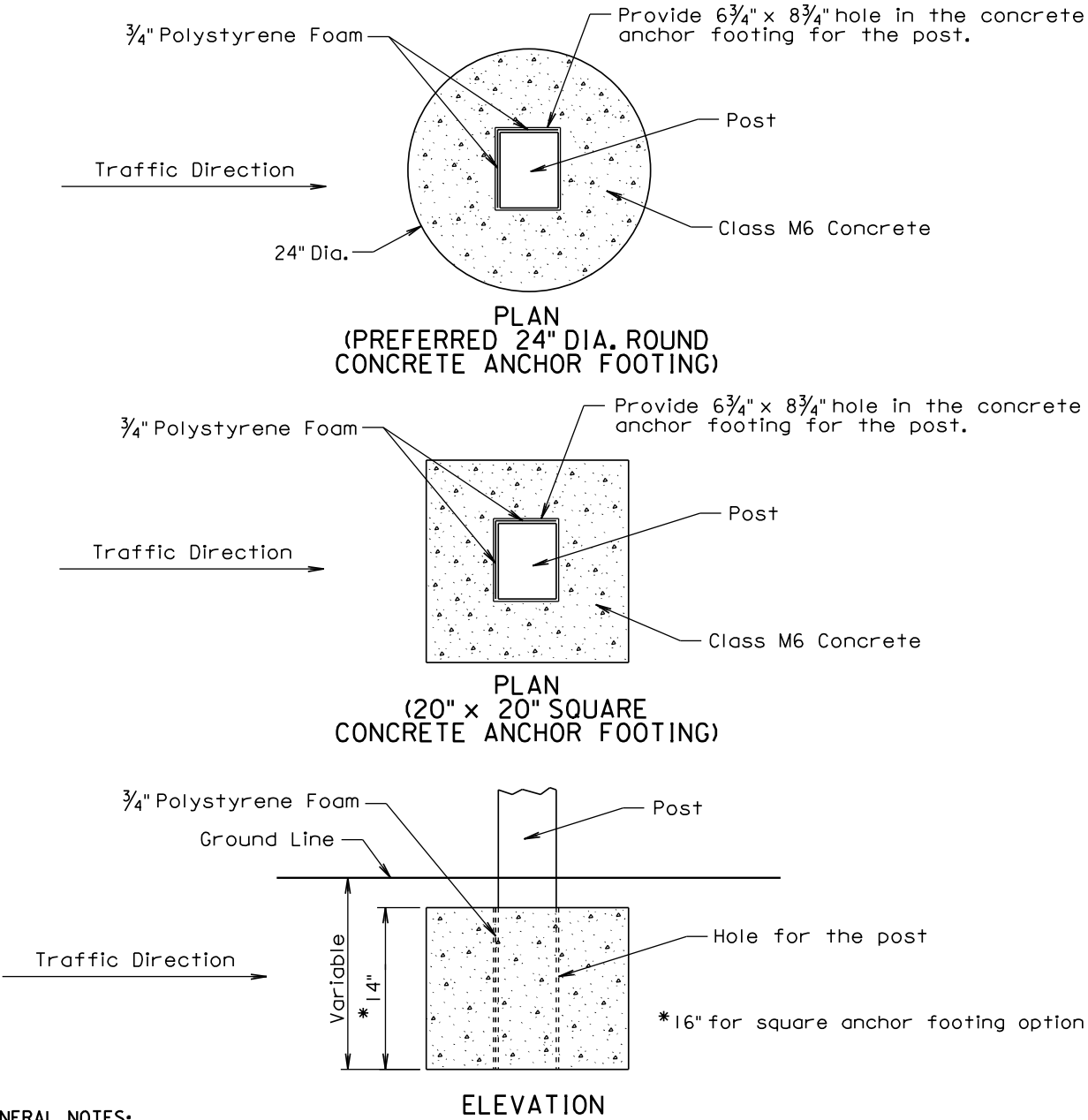
Published Date: 1st Qtr. 2017	S D D O T	BEAM GUARDRAIL TRAILING END TERMINAL	PLATE NUMBER 630.80
			Sheet 2 of 2



GENERAL NOTE:
All costs for constructing 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".

March 31, 2000

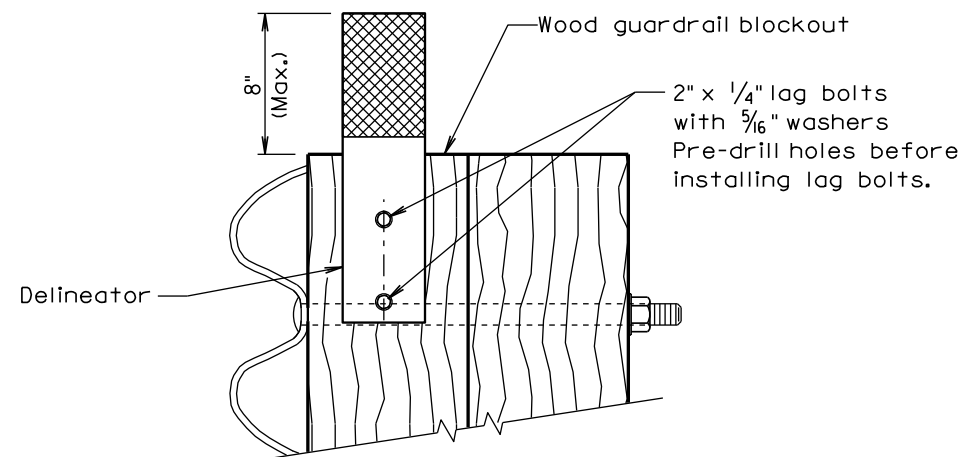
Published Date: 1st Qtr. 2017	S D D O T	W BEAM TO THRIE BEAM GUARDRAIL TRANSITION SECTION	PLATE NUMBER 630.82
			Sheet 1 of 1



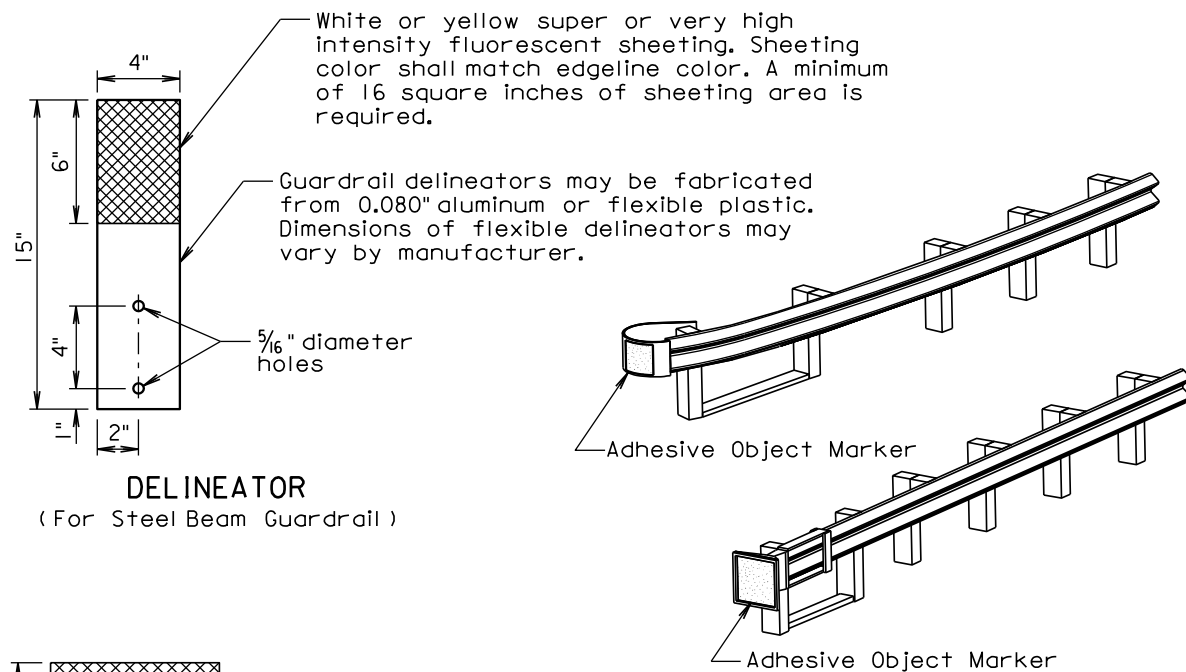
GENERAL NOTES:
In areas where the required guardrail wood post depth is not obtainable, shorter posts may be used and shall be anchored in concrete in accordance with the details shown on this standard plate.
A 20" x 20" square concrete anchor footing may be used in lieu of the 24" diameter round anchor footing.
Forms for the concrete anchor footing hole is not required.
Concrete for the concrete anchor footing shall be Class M6.
Three quarter inch polystyrene foam shall be attached to two sides of the posts. See details above for placement position of the polystyrene foam.
There will be no separate payment for furnishing and installing the concrete anchor footing for short guardrail post. All costs for concrete anchor footings shall be incidental to the contract unit price per foot for the respective "Thrie Beam or W Beam Guardrail" bid item.

March 31, 2000

Published Date: 1st Qtr. 2017	S D D O T	CONCRETE ANCHOR FOOTING FOR SHORT GUARDRAIL POST	PLATE NUMBER 630.84
			Sheet 1 of 1



B STEEL BEAM GUARDRAIL DELINEATION



ADHESIVE OBJECT MARKER

E GUARDRAIL TERMINAL END OBJECT MARKER

Adhesive object marker dimensions may vary due to shape of terminal end. A minimum of 256 square inches of object marker sheeting area is required. The sheeting shall be fluorescent yellow super or very high intensity.

June 26, 2011

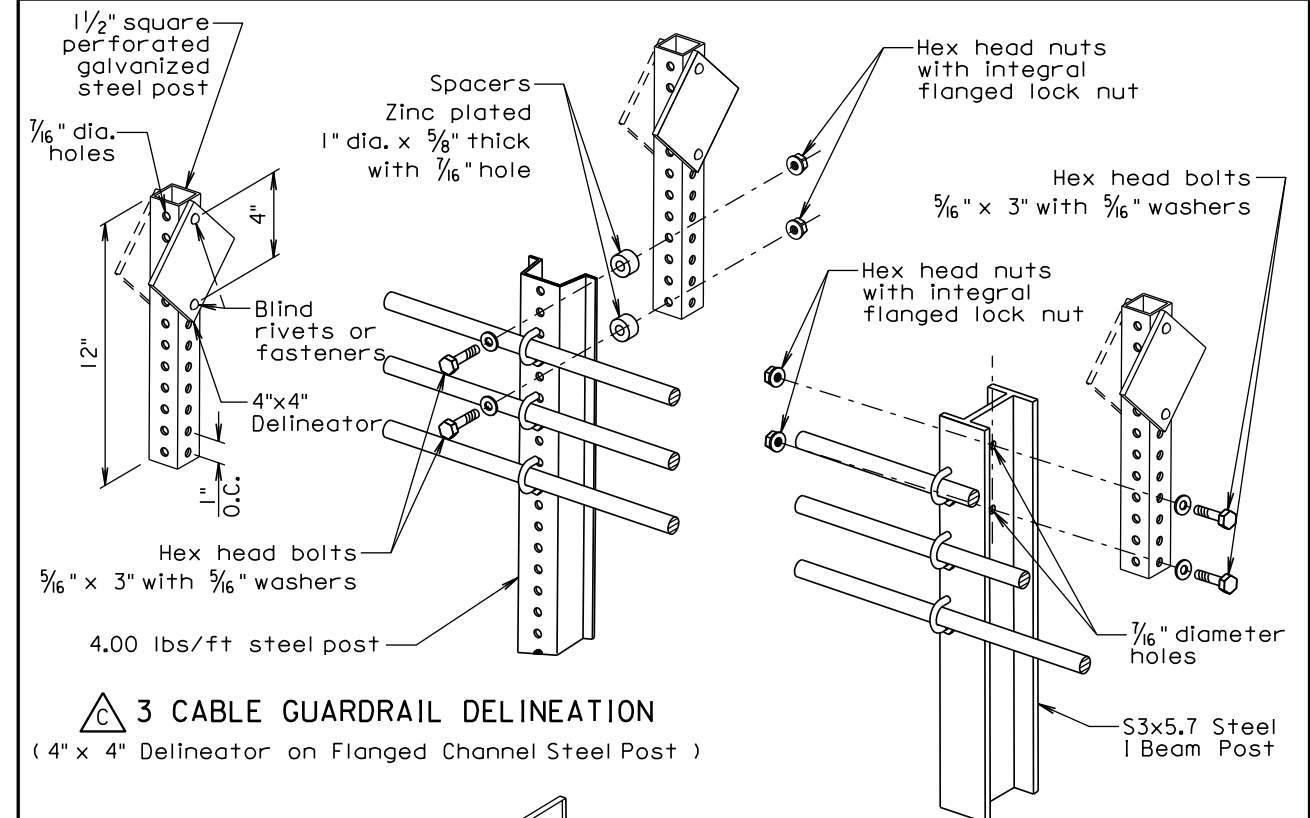
Published Date: 1st Qtr. 2017

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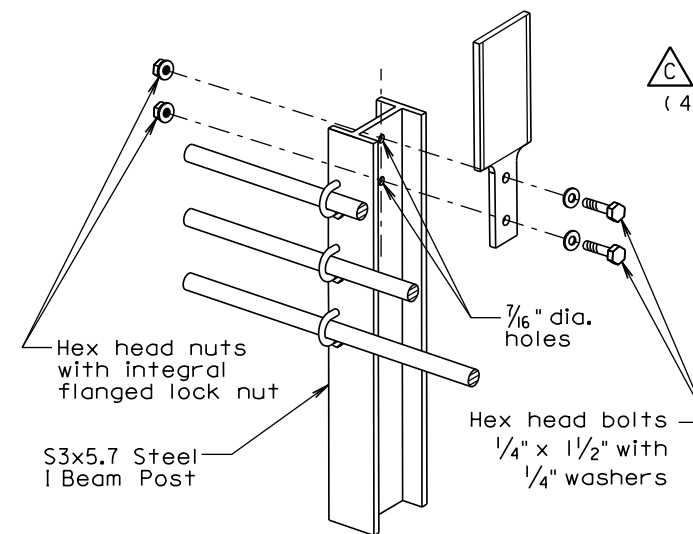
DELINEATION OF GUARDRAIL AT BRIDGES

PLATE NUMBER
632.40

Sheet 2 of 4



C 3 CABLE GUARDRAIL DELINEATION
(4" x 4" Delineator on Flanged Channel Steel Post)

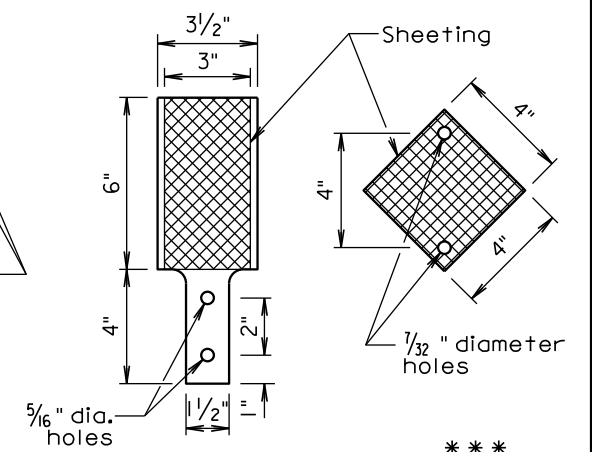


C 3 CABLE GUARDRAIL DELINEATION**
(Flexible 3" x 6" Delineator on I Beam Post)

** Flexible delineators may be attached to post with manufacturer approved adhesive instead of bolts.

*** Dimensions of flexible delineators may vary by manufacturer. A minimum of 16 square inches of sheeting area is required. The sheeting shall be white or yellow super or very high intensity fluorescent sheeting. The sheeting color shall match the edgeline color.

C 3 CABLE GUARDRAIL DELINEATION
(4" x 4" Delineator on I Beam Steel Post)



DELINEATORS***
(For 3 Cable Guardrail)

June 26, 2011

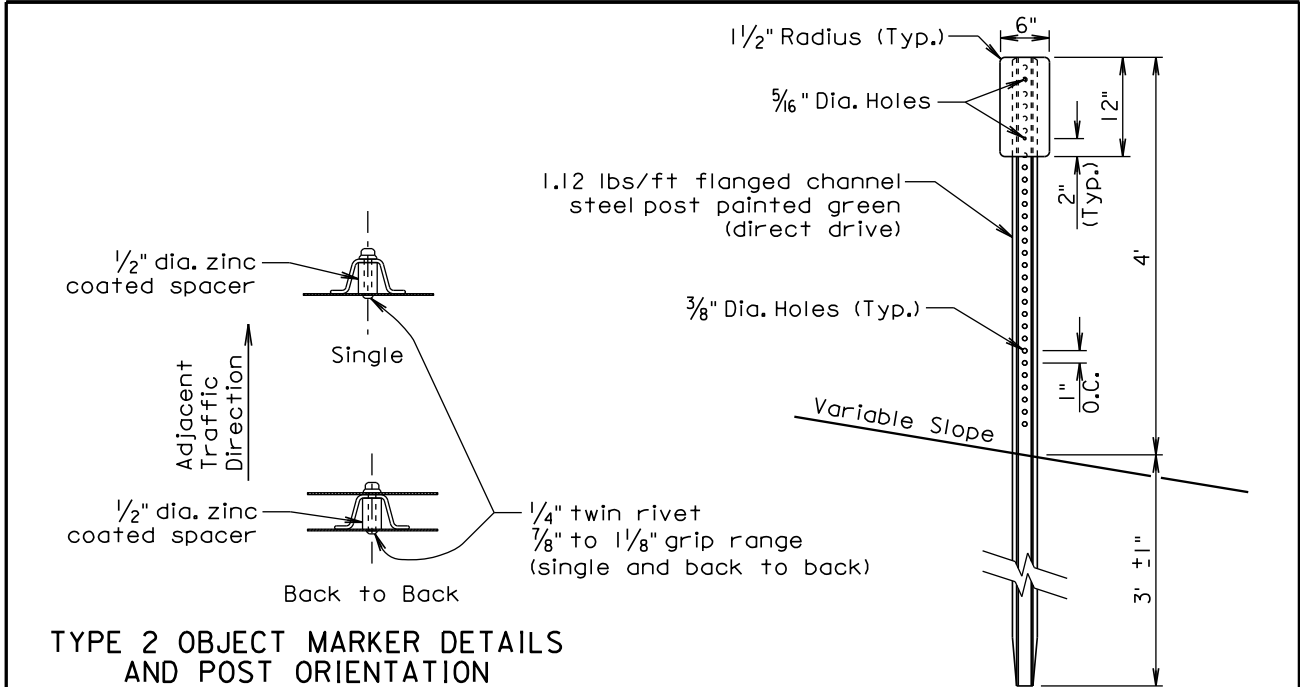
Published Date: 1st Qtr. 2017

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DELINEATION OF GUARDRAIL AT BRIDGES

PLATE NUMBER
632.40

Sheet 3 of 4



TYPE 2 OBJECT MARKER DETAILS
AND POST ORIENTATION

GENERAL NOTES:

The delineators shall be covered with a minimum of 16 square inches of reflective sheeting. The reflective sheeting shall be of either very high intensity or super high intensity material. For bridges along two-way roadways the sheeting shall be on both sides of the delineator and shall 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.

The first delineator shall be attached to the post nearest the bridge with additional delineators spaced in advance of the bridge at approximately 50 foot intervals. At bridges with short lengths of guardrail, less than 200 feet, a minimum of 4 delineators shall be placed in addition to the yellow object marker. The spacing between the delineators shall be approximately one third of the length of the guardrail. This will provide for a shorter spacing. At bridges with longer lengths of guardrail, greater than 200 feet, including bridges that have cable guardrail transitioning into the steel beam guardrail, the delineators will be placed at a spacing of approximately 50 feet. Delineation shall extend throughout the length of the guardrail system.

All costs for furnishing and installing single or back to back guardrail delineation shall be included in the contract unit price per each for "Guardrail Delineator".

An adhesive object marker shall be placed on the end of the W beam guardrail 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. The reflective sheeting shall be fluorescent yellow super or very high intensity. All costs for furnishing and installing the adhesive object marker shall be incidental to various contract items.

A type 2 object marker shall be placed adjacent to the 3 cable guardrail anchor at the location noted on sheet 1 of this standard plate. The type 2 object marker (6" x 12") shall have a fluorescent yellow very high or super high intensity reflective sheeting. All costs for furnishing and installing the type 2 object marker including the steel post, 6" x 12" reflective panel, and hardware shall 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.

June 26, 2011

Published Date: 1st Qtr. 2017

SD
DOT

DELINEATION OF GUARDRAIL AT BRIDGES

PLATE NUMBER
632.40

Sheet 4 of 4

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (C)
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.

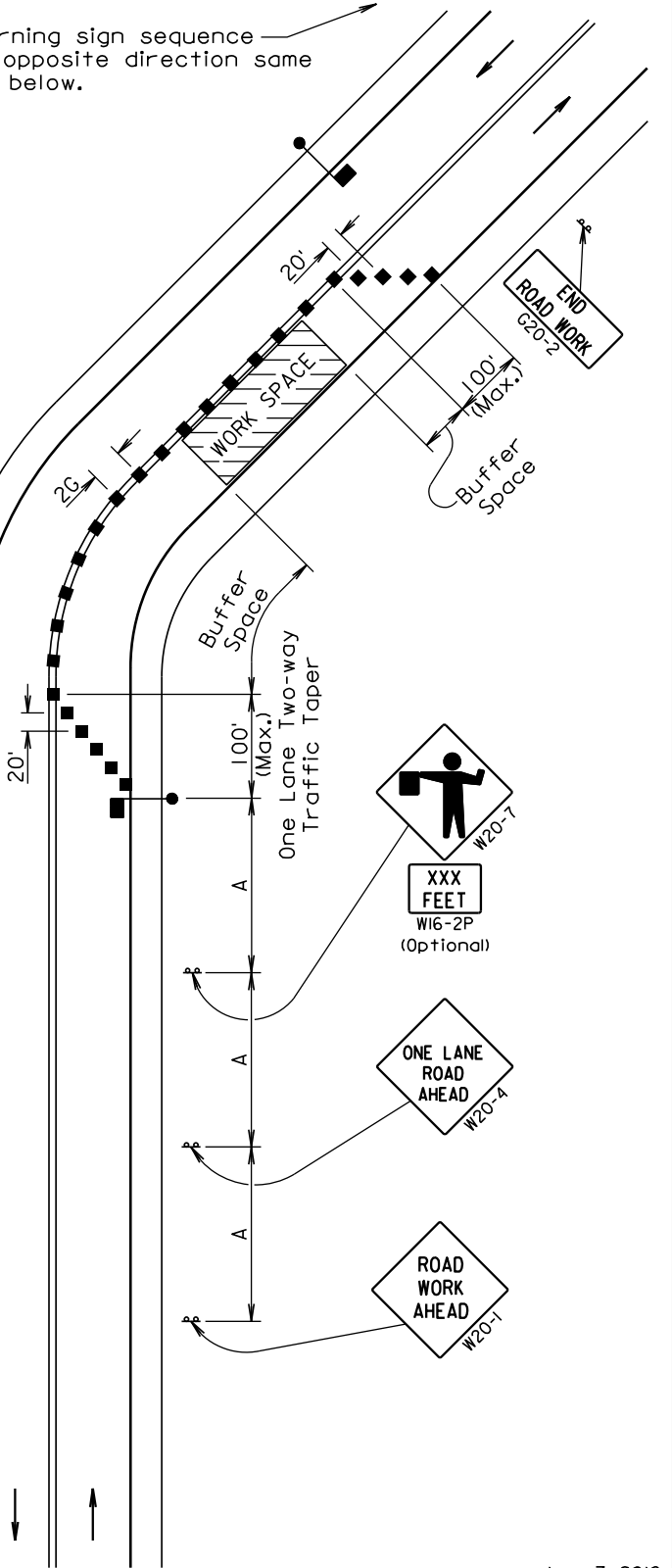
Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

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.

Warning sign sequence in opposite direction same as below.

END
ROAD WORK
G20-2



June 3, 2016

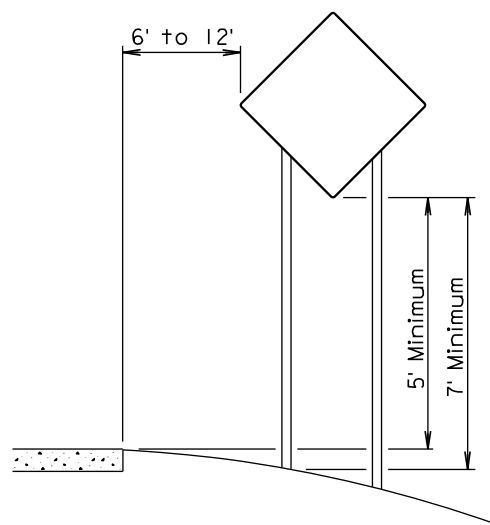
Published Date: 1st Qtr. 2017

SD
DOT

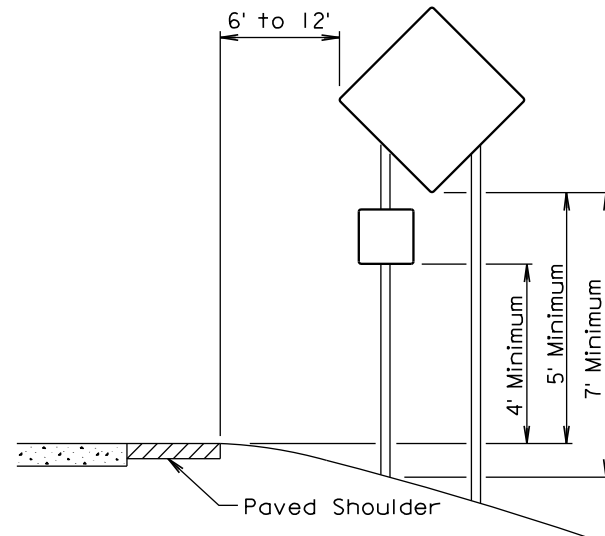
GUIDES FOR TRAFFIC CONTROL DEVICES
LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER
634.23

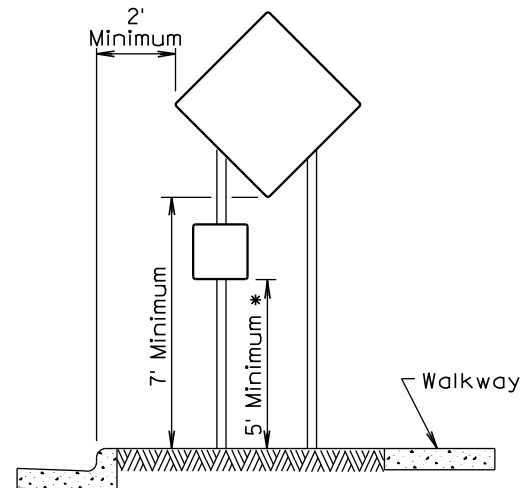
Sheet 1 of 1



RURAL DISTRICT

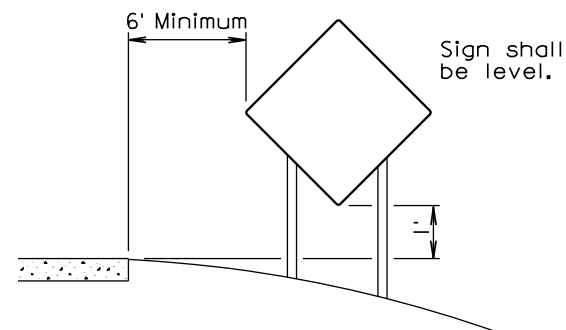


RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT

* 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.



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

September 22, 2014

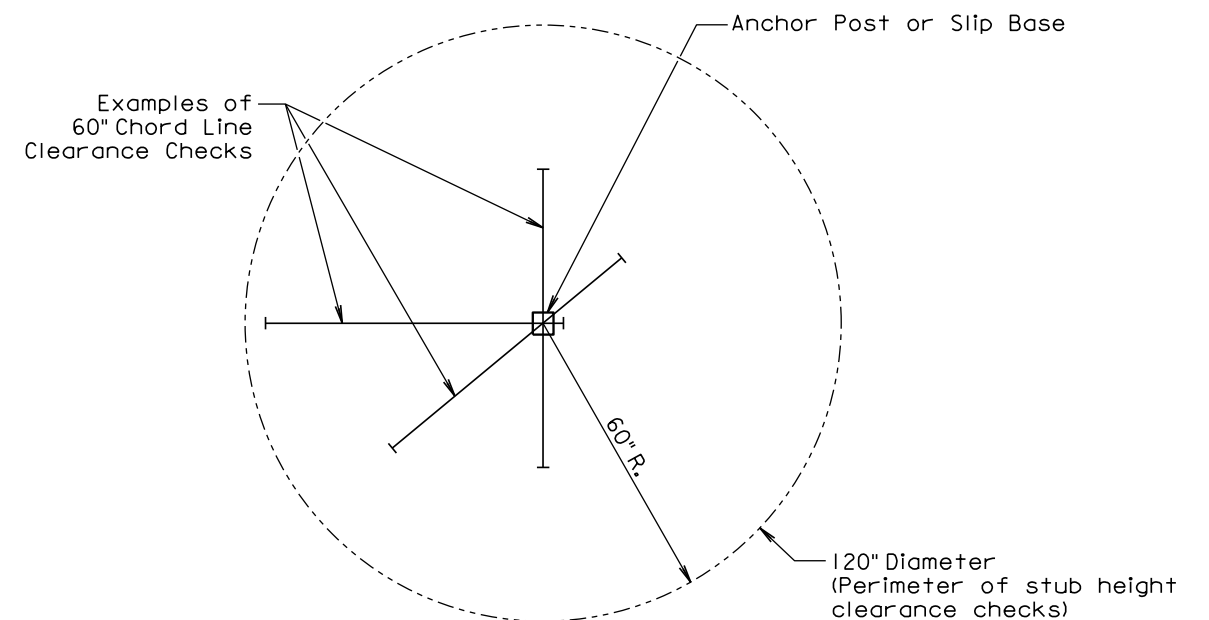
Published Date: 1st Qtr. 2017

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CRASHWORTHY SIGN SUPPORTS
(Typical Construction Signing)

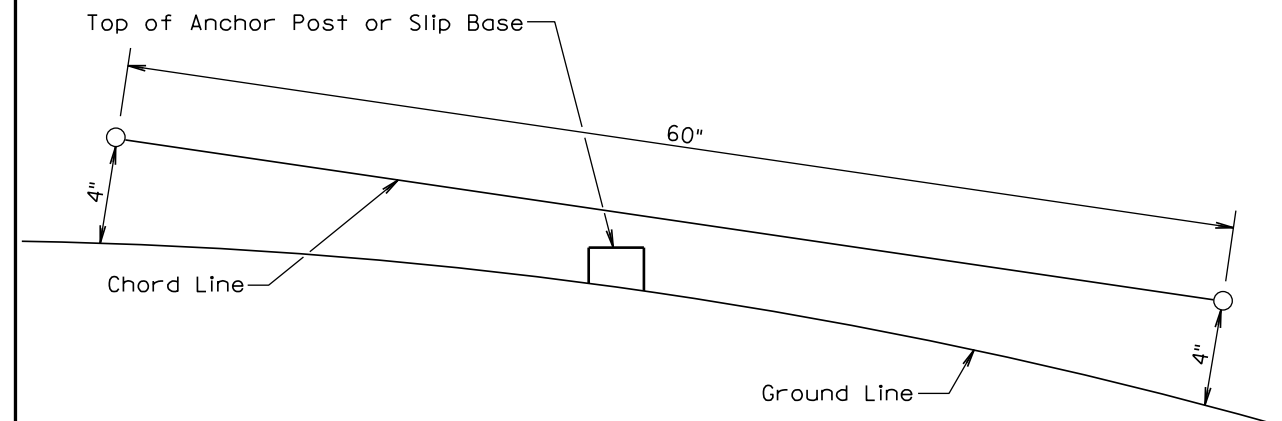
PLATE NUMBER
634.85

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: 1st Qtr. 2017

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BREAKAWAY SUPPORT STUB CLEARANCE

PLATE NUMBER
634.99

Sheet 1 of 1