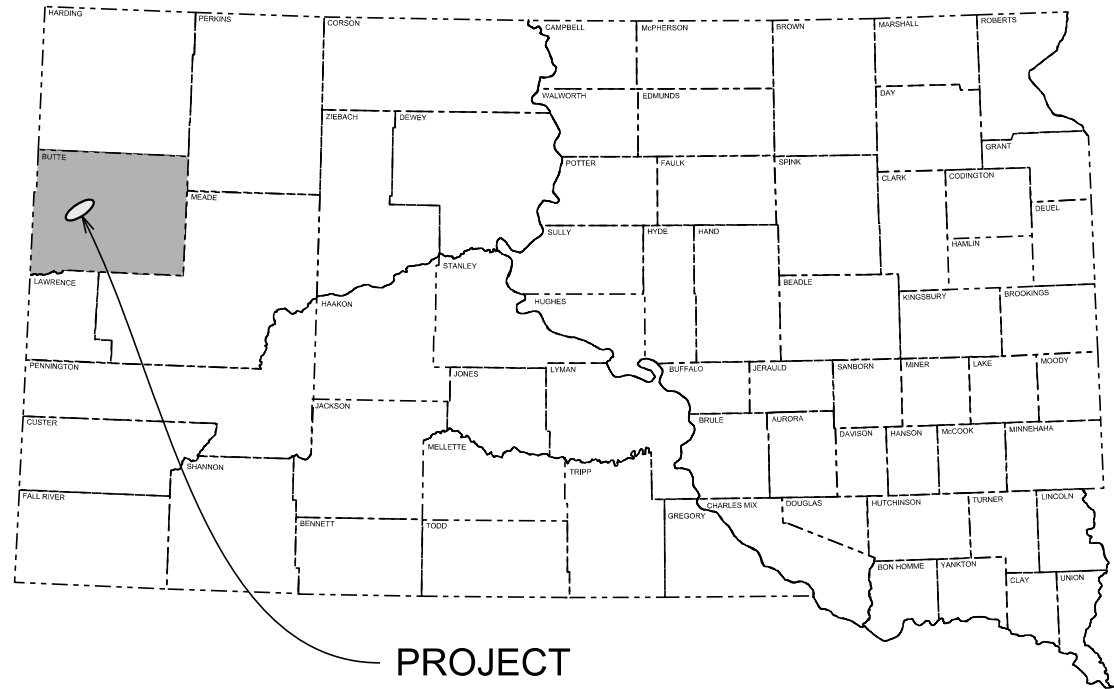


Plot Scale - 1:200

Plotted From - trc11951



US 85, MRM 75.3 and 87.8

DESIGN DESIGNATION

| | |
|------------|--------|
| ADT (2013) | 1417 |
| ADT (2033) | 1596 |
| DHV | 210.7 |
| D | 51 % |
| T DHV | 12.3 % |
| T ADT | 27.0 % |
| V | 65 MPH |

STORM WATER PERMIT

None Required

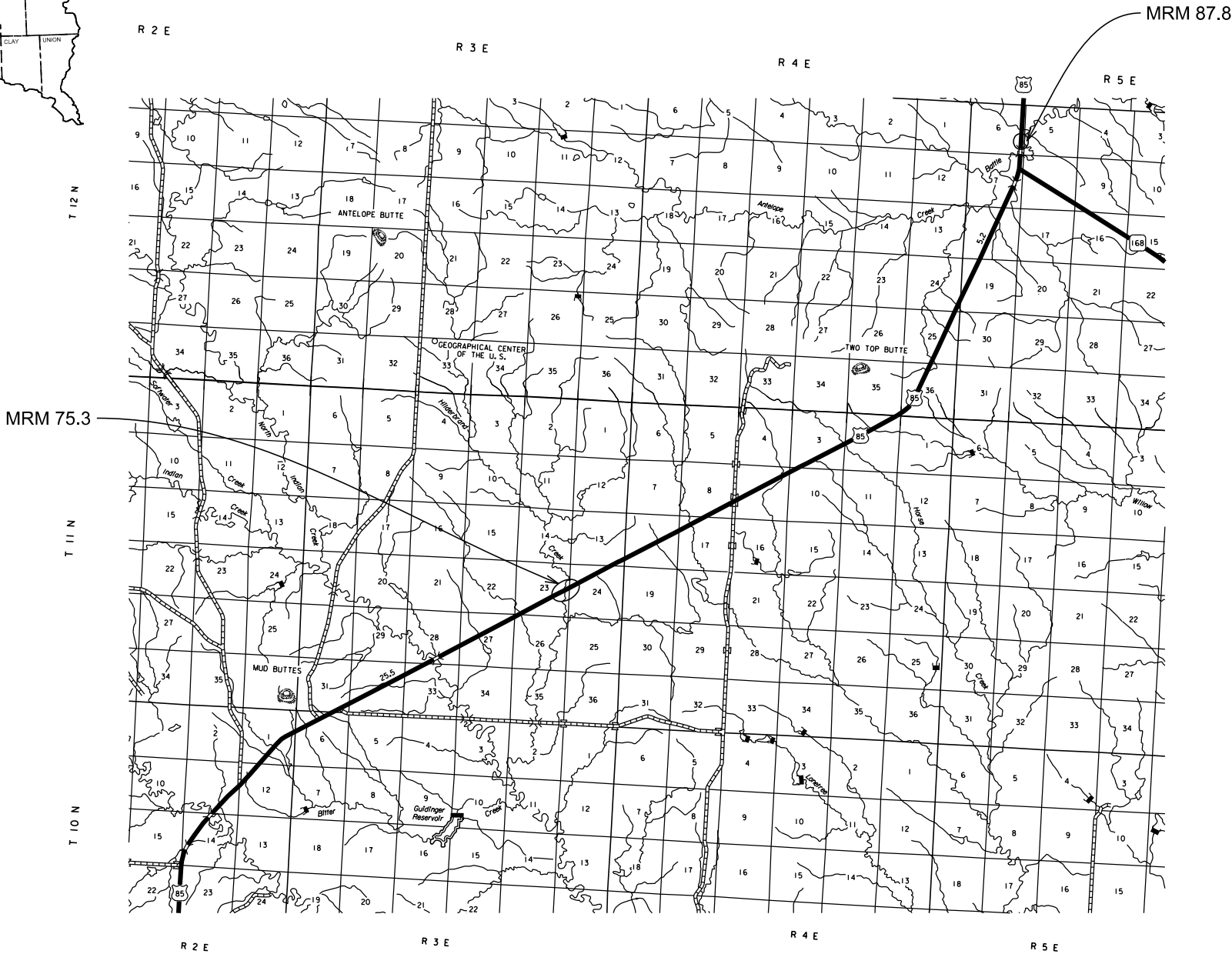
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT 085-471
US HIGHWAY 85
BUTTE COUNTY
Roadway Embankment Flood Repair
PCN I3K6

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|-----------------------------|---------|-------|-----------------|
| | 085-471 | 1 | 19 |

Plotting Date: 06/20/2014

INDEX OF SECTIONS

- B1 General Layout W/Index
- B2-B7 Estimate With General Notes & Tables
- B8-B11 Typical Sections
- B12-B14 Horizontal Alignment Sheets
- B15 Control Data Sheet
- B16 Topography Symbology & Legend
- B17-B47 Plan & Profile Sheets
- B47-B67 Standard Plates



Estimate of Quantities

| Bid Item Number | Item | Quantity | Unit |
|-----------------|--|----------|------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 110E0740 | Remove 3 Cable Guardrail Anchor Assembly | 2 | Each |
| 110E6200 | Remove Double Thrie Beam Guardrail for Reset | 12.5 | Ft |
| 110E6230 | Remove W Beam Guardrail for Reset | 25.0 | Ft |
| 110E6240 | Remove W Beam to Thrie Beam Guardrail Transition for Reset | 1 | Each |
| 120E0010 | Unclassified Excavation | 3,156 | CuYd |
| 230E0010 | Placing Topsoil | 500 | CuYd |
| 629E0200 | Reset 3 Cable Guardrail | 388 | Ft |
| 629E0400 | 3 Cable Guardrail Anchor Assembly | 2 | Each |
| 630E2110 | Beam Guardrail Post and Block | 11 | Each |
| 630E5130 | Reset Double Thrie Beam Rail | 12.5 | Ft |
| 630E5160 | Reset W Beam Rail | 25.0 | Ft |
| 630E5190 | Reset W Beam to Thrie Beam Guardrail Transition | 1 | Each |
| 632E2510 | Type 2 Object Marker Back to Back | 2 | Each |
| 634E0100 | Traffic Control | 612 | Unit |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 730E0210 | Type F Permanent Seed Mixture | 39 | Lb |
| 731E0100 | Fertilizing | 2,250 | Lb |
| 732E0200 | Fiber Mulching | 1.5 | Ton |
| 734E0154 | 12" Diameter Erosion Control Wattle | 300 | Ft |

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2004 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 C: WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

Action Taken/Required:

The Contractor shall obtain the necessary permits from the regulatory agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE) prior to executing water extraction activities.

COMMITMENT E: STORM WATER

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 State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway 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:

- 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 State 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 State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating “No Dumping Allowed”.
- 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 designated option borrow 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: staging areas, borrow sites, waste disposal sites, and all material processing sites.

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 staging areas, borrow sites, waste disposal sites, or material processing sites 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

Work on this project shall consist of the following:

- 1. Excavate material within State ROW to reconstruct roadway embankment slopes.
- 2. Construct 4:1 inslope at MRM 75.3 & MRM 87.8.
- 3. Reset guardrail
- 4. Install erosion control.

SEQUENCE OF OPERATIONS

The intent of the plan sequence of operations is to have the least amount of impact on the traveling public and adjacent landowners. 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 two weeks prior to potential implementation. Work shall proceed according .to the following sequence or as approved by the Engineer:

MRM 75.3

- 1. Set up Traffic Control.
- 2. Excavate muck/unstable material.
- 3. Salvage Topsoil
- 4. Reconstruct roadway slopes.
- 5. Shape area, seed, fertilize, mulch, and install erosion control measures
- 6. Reset 3 Cable Guardrail.
- 7. Remove Traffic Control

MRM 87.8

- 1. Set up Traffic Control.
- 2. Remove Beam Guardrail for reset
- 3. Salvage Topsoil
- 4. Excavate muck/unstable material
- 5. Reconstruct roadway slopes.
- 6. Reset Beam Guardrail.
- 7. Shape area, seed, fertilize, mulch, and install erosion control measures.
- 8. Remove Traffic Control

GRADING OPERATIONS

The Contractor shall reconstruct embankment slopes due to erosion to match existing slopes adjacent to the project area. The slopes shall be finished so that they are no greater than a 3:1 and whenever possible constructed to a 4:1 slope or flatter. The Contractor will be allowed to modify existing ditch slopes to obtain material for reconstruction. The Contractor shall make sure that positive drainage is maintained where material is excavated for roadway embankment reconstruction.

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment. The estimated quantity of Water for Embankment is 31 MGal. No separate payment will be made for the Water for Embankment and all costs associated shall be incidental to the contract unit price per cubic yard for “Unclassified Excavation”.

UTILITIES

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 modifications that will be necessary to avoid utility impacts.

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.

INSLOPE TRANSITIONS

Inslope transitions will be required at the drainage structures. Refer to Standard Plate 120.05 for details.

TABLE OF INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS

| | | |
|------|-----|------|
| MRM | L/R | Type |
| 75.3 | R | 1 |

UNCLASSIFIED EXCAVATION

The estimated quantity of 3156 cubic yards is provided for the excavation of eroded inslope material from flooding and the excavation of existing ditch slope material from within the State ROW. Topsoil shall be salvaged prior to excavation. All costs associated with this work shall be paid for at the contract unit price per cubic yard for “Unclassified Excavation”.

The estimated quantity of topsoil to salvage is 500 cuYds.

Field measurement of unclassified excavation and topsoil will not be made. Plans quantity shall be the basis of payment.

TABLE OF UNCLASSIFIED EXCAVATION

| Location | L/R | Repair Area | | Unclassified Excavaton Quantity CuYd |
|-------------|-----|--------------|-------------|---|
| | | Length Ft | Width Ft | |
| MRM 75.3 | R | 580 | 40 | 2578 |
| 87.8 | R | 100 | 20 | 222 |
| | R | 800 | 6 | 356 |
| | | | Total: | 3156 |

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum shall consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier shall provide certification of the fungal species claimed and the live propagule count. The inoculum shall include the following fungal species:

| | |
|----------------------------|-----|
| <i>Glomus intraradices</i> | 25% |
| <i>Glomus aggregatu</i> | 25% |
| <i>Glomus mosseae</i> | 25% |
| <i>Glomus etunicatum</i> | 25% |

All seed shall be inoculated with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed shall be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

FERTILIZING

The Contractor shall apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer shall have a minimum guaranteed analysis of 4-6-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 3.2%, a minimum of 6% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer shall be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer shall have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer shall also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The all-natural slow release fertilizer shall be applied according to the manufacturer’s application recommendations.

The application rate is 1,500 pounds per acre.

The all-natural slow release fertilizer shall be from the list below or an approved equal:

| | |
|----------------|---|
| <u>Product</u> | <u>Manufacturer</u> |
| Sustane | Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 http://www.sustane.com/ |

PERMANENT SEEDING

The areas to be seeded comprise of all areas in Table of Erosion Repair and areas as directed by the Engineer..

All permanent seed shall be planted in the topsoil at a depth of ¼” to ½”.

All seed broadcast must be raked or dragged in (incorporated) within the top ¼” to ½” of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

The varieties listed for the seed mixture are preferred varieties. Native harvest seed will be allowed.

Type F Permanent Seed Mixture shall consist of the following:

| Grass Species | Variety | Pure Live Seed (PLS) (Pounds/Acre) |
|---|-----------------------------------|---------------------------------------|
| Western Wheatgrass | Flintlock, Rodan, Rosana | 7 |
| Green Needlegrass | Lodorm | 4 |
| Sideoats Grama | Butte, Killdeer, Pierre, Trailway | 3 |
| Blue Grama | Bad River, Willis | 2 |
| Oats or Spring Wheat: April through May; Winter Wheat: August through November | | 10 |
| Total: | | 26 |

FIBER MULCHING

Fiber mulch shall be applied in a separate operation following permanent seeding.

An additional 2% by weight of tackifier shall be added to the fiber mulch product selected from the approved product list. If the product selected has guar gum tackifier included, then the additional 2% of tackifier shall be guar gum. If the product selected has synthetic tackifier included, then the additional 2% of tackifier shall be synthetic.

Fiber mulch shall be applied at the rate of 2000 pounds per acre.

The Contractor shall allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

All costs for the additional tackifier added to the fiber mulch including labor, equipment, and materials shall be incidental to the contract unit price per ton for “Fiber Mulching”.

The fiber mulch provided shall be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

<http://sddot.com/business/certification/products/Default.aspx>

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment shall be installed at locations where Erosion Control Blanket is installed and at locations determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

The Contractor shall provide certification that the erosion control wattles do not contain noxious weed seeds.

Erosion control wattles shall remain on the project until vegetation has been established.

300’ of 12” Diameter Erosion Control Wattles has been added to the Estimate of Quantities for temporary erosion and sediment control.

The erosion control wattle provided shall be from the approved product list. The approved product list for erosion control wattle may be viewed at the following internet site:

<http://sddot.com/business/certification/products/Default.aspx>

GUARDRAIL

Existing posts and blocks from the remove for reset beam guardrail shall become the property of the Contractor and shall be removed from the project limits.

TABLE OF GUARDRAIL

| Location | L/R | Remove Double Thrie Beam Guardrail for Reset | Remove W Beam Guardrail for Reset | Remove W Beam to Thrie Beam Guardrail Transition for Reset | Reset 3 Cable Guardrail | 3 Cable Guardrail Anchor Assembly | Beam Guardrail Post and Block | Reset Double Thrie Beam Rail | Reset W Beam Rail | Reset W Beam to Thrie Beam Guardrail Transition | Type 2 Object Marker |
|----------------|-----|--|-----------------------------------|--|-------------------------|-----------------------------------|-------------------------------|------------------------------|-------------------|---|----------------------|
| MRM | | Ft | Ft | Each | Ft | Each | Each | Ft | Ft | Each | Each |
| 75.24 to 75.31 | R | | | | 388 | 2 | | | | | 2 |
| 87.8 | R | 12.5 | 25 | 1 | | | 11 | 12.5 | 25 | 1 | |
| Total: | | 12.5 | 25 | 1 | 388 | 2 | 11 | 12.5 | 25 | 1 | 2 |

TRAFFIC CONTROL – GENERAL NOTES

1. 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.

2. Unless otherwise stated in these plans, no work will be allowed during hours of darkness. Hours of darkness are defined as ½ hour after sunset until ½ hour before sunrise.

3. Storage of vehicles and equipment shall be as near the right-of-way as possible. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage of the vegetation, surfacing, embankment, delineators, and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

4. Existing guide, route, informational logo, regulatory, and warning signs shall be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including but not limited to, traffic signal heads, delineation, and signing shall be the responsibility of the Contractor. Non-applicable signing and all traffic control devices shall be covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 48 hours. The cost of removing or covering non-applicable signs shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

5. Construction signing mounted on portable supports shall not be used for a duration of more than 3 days, unless approved by the Engineer. Construction signing that remains in the same location for more than 3 days shall be mounted on fixed location, ground mounted, breakaway supports.
6. The quantity of traffic control units paid for will be for the greatest number of installations per sign in place at any one time regardless of the number of set-ups on the project.

7. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

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

9. The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

10. The Contractor shall be required to have a person available 24 hour/day, 7 days/week to maintain traffic control devices. The name and cellular telephone number of this individual shall be given to the Engineer at the preconstruction meeting.

11. The Contractor or designated traffic control subcontractor shall make night inspections at the initial set up of traffic control and every week thereafter to ensure the adequacy, legibility and reflectivity of each sign and device. A written summary of each inspection shall be given to the Engineer within 24 hours after completion of the inspection. The cost for the nighttime inspection work shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

12. Vehicles working in traffic or alongside traffic shall be equipped with a flashing amber light visible from all directions. The amber light shall be mounted on the uppermost part of the Contractor's vehicle. Lights must have peak intensity within the range of 40 to 400 candelas and must flash at 75 ± 15 flashes per minute. Vehicle flasher/hazard lights are not acceptable. 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.
13. All construction operations shall be conducted in the general direction of traffic movement.

14. 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.

15. Drums are required in all lane closure tapers.

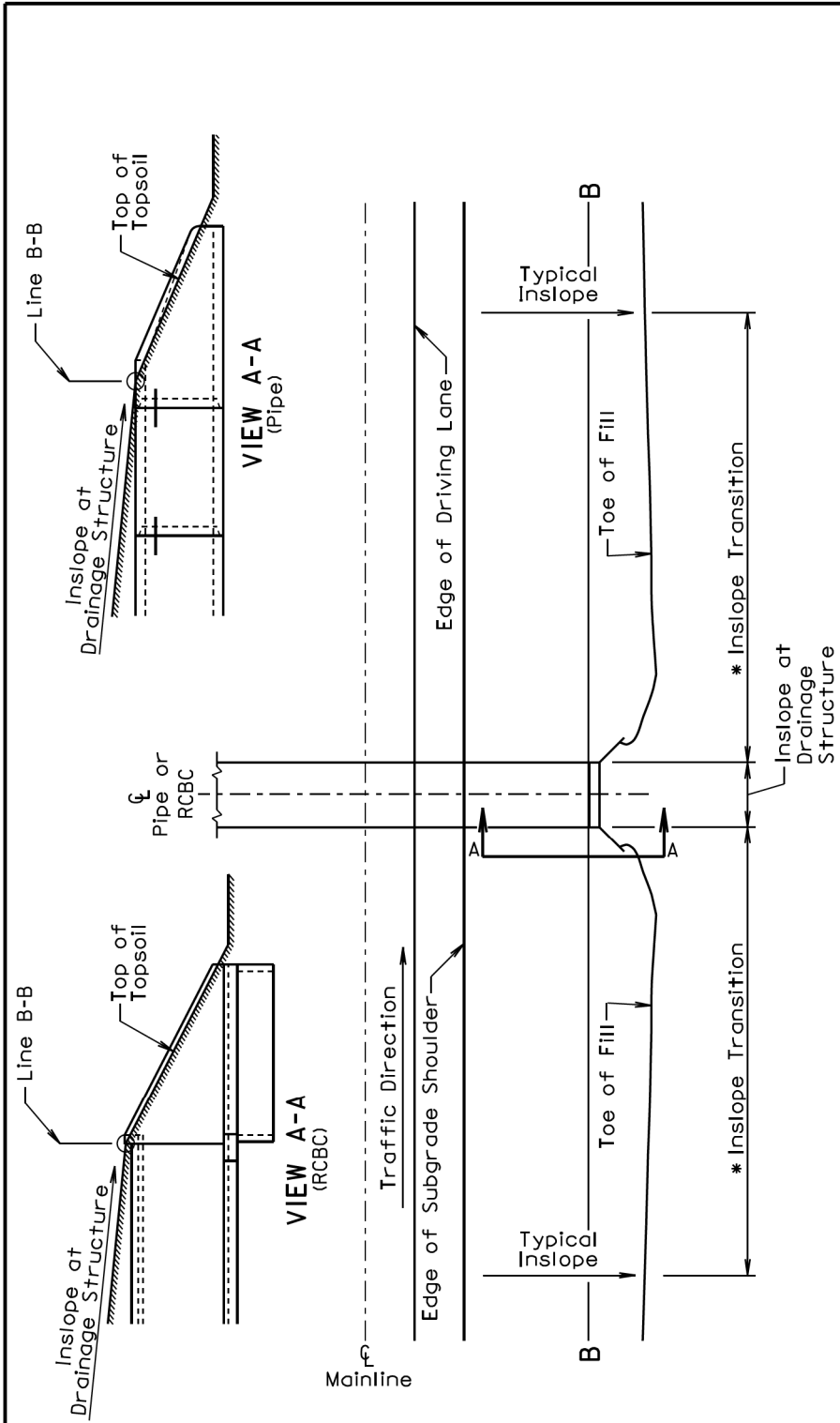
16. Hauling material to and from the project site shall be conducted in a safe manner by utilizing flaggers and appropriate traffic control devices to control traffic.

17. At the end of each day's work all traffic, control devices shall be pulled off the roadway and taken down and traffic shall be opened to two lanes. Applicable signing shall remain in place, i.e. "Road Work Ahead" etc.

TABLE OF TRAFFIC CONTROL DEVICES

| SIGN CODE | SIGN SIZE | DESCRIPTION | NUMBER REQUIRED | UNITS PER SIGN | UNITS |
|-------------|-----------|----------------------------------|-----------------|----------------|-------|
| G20-2 | 36" x 18" | END ROAD WORK | 4 | 17 | 68 |
| W20-1 | 48" x 48" | ROAD WORK ##### FT. OR AHEAD | 4 | 34 | 136 |
| W20-4 | 48" x 48" | ONE LANE ROAD ##### FT. OR AHEAD | 4 | 34 | 136 |
| W20-7a | 48" x 48" | FLAGGER | 4 | 34 | 136 |
| W21-5 | 48" x 48" | SHOULDER WORK | 4 | 34 | 136 |
| TOTAL UNITS | | | | | 612 |

| | | | | |
|-------------------------------|------|---|------------------------|--|
| Published Date: 2nd Qtr. 2014 | SDOT | INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS | February 14, 2011 | |
| | | | PLATE NUMBER 120.05 | |
| | | | Sheet 1 of 2 | |



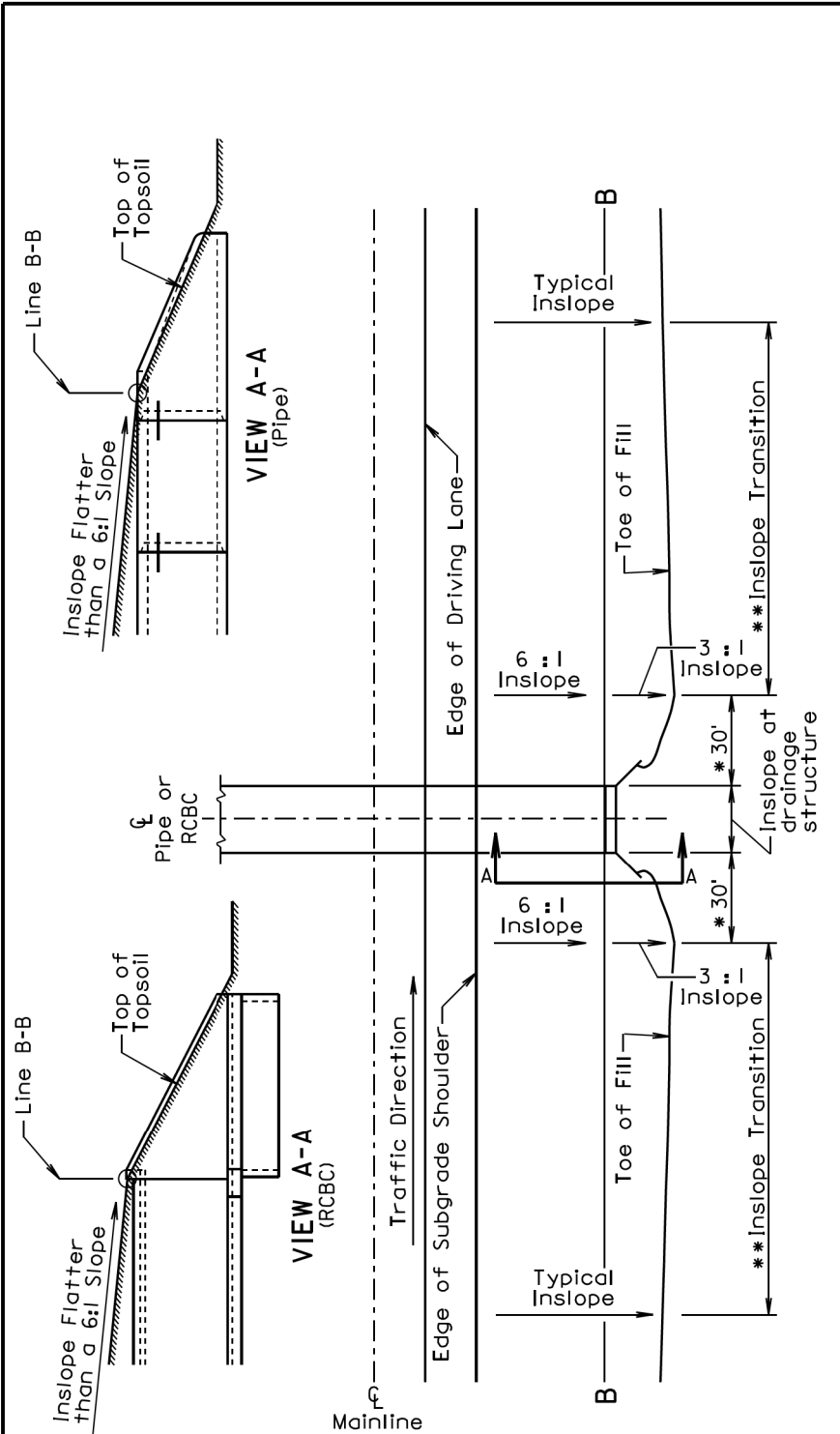
GENERAL NOTES:

TYPE 1 INSLOPE TRANSITION

This Type 1 Inslope Transition is used when the specified inslope at the drainage structure is flatter than the typical inslope and the inslope at the drainage structure is between a 4:1 slope and 6:1 slope. Line B-B represents the clear zone line, the location where soil intercepts the parapet on an RCBC, the location where the soil intercepts the top of the pipe adjacent to the opening of the pipe end section, or may represent a change in slope.

* Transition from the typical inslope to the inslope at the drainage structure, within the clear zone (area from edge of subgrade shoulder to line B-B) use 100' length for each 1:1 slope change. Example: transition from a 4:1 to a 6:1 would require a 200' length transition. The typical inslope outside of the clear zone shall be transitioned gradually to the slope necessary adjacent to the RCBC wing wall or pipe culvert end section within the transition length necessary for the transition within the clear zone.

| | | | | |
|-------------------------------|------|---|------------------------|--|
| Published Date: 2nd Qtr. 2014 | SDOT | INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS | February 14, 2011 | |
| | | | PLATE NUMBER 120.05 | |
| | | | Sheet 2 of 2 | |



GENERAL NOTES:

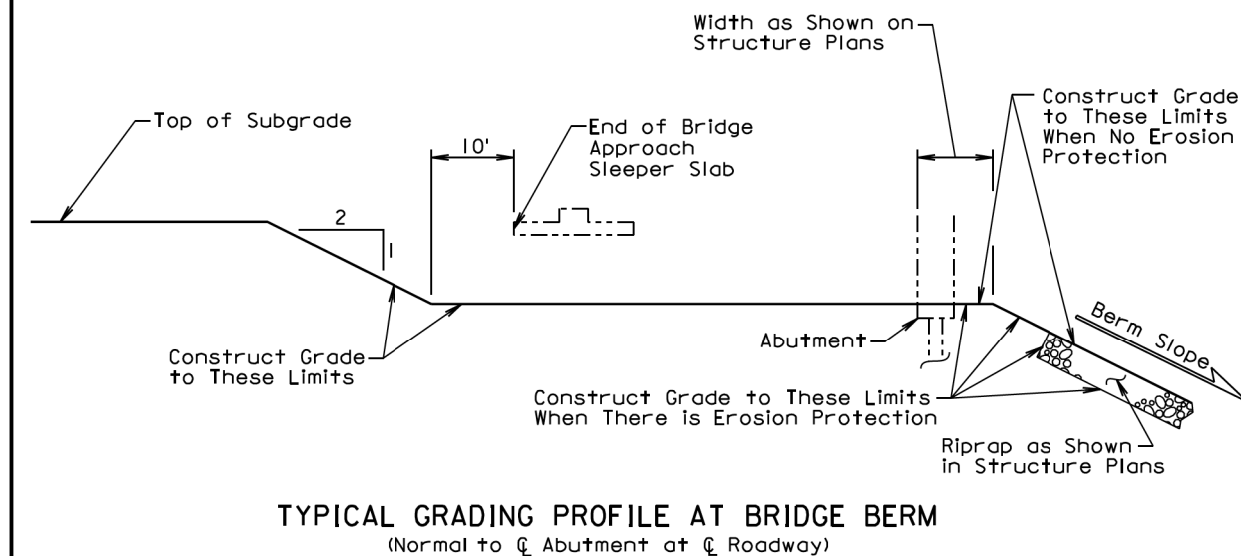
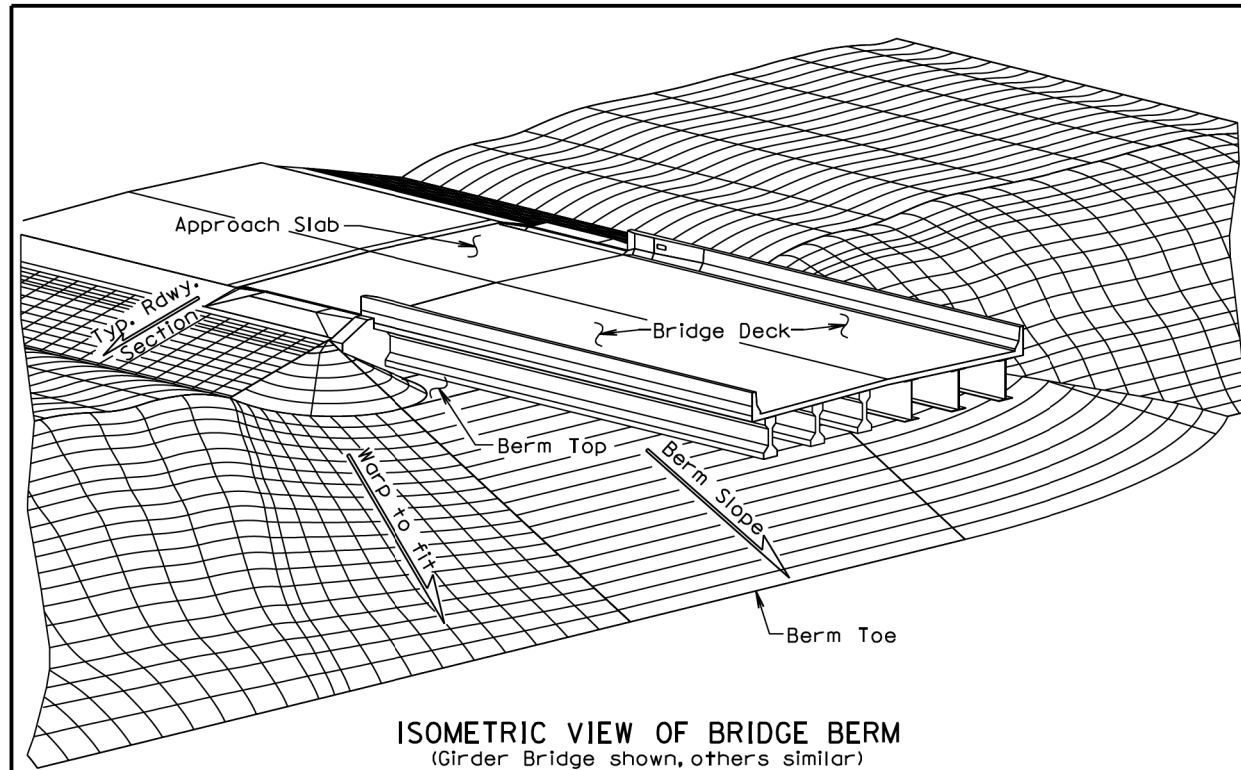
TYPE 2 INSLOPE TRANSITION

This Type 2 Inslope Transition is used when the specified inslope at the pipe or RCBC is flatter than a 6:1 slope. Line B-B represents the clear zone line, the location where soil intercepts the parapet on an RCBC, the location where the soil intercepts the top of the pipe adjacent to the opening of the pipe end section, or may represent a change in slope.

* Transition from inslope at drainage structure to a 6:1 inslope and 3:1 inslope.

* Transition from typical inslope to the inslopes adjacent to the drainage structure. Within the clear zone (area from edge of subgrade shoulder to line B-B) use 100' length for each 1:1 slope change. Example: transition from a 4:1 to a 6:1 would require a 200' length transition. The typical inslope outside of the clear zone shall be transitioned to a 3:1 inslope within the transition length necessary for the transition within the clear zone.

| | | | |
|-----------------------------|---------|-------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
| | 085-471 | | |
| Plotting Date: 06/20/2014 | | 6 | 19 |

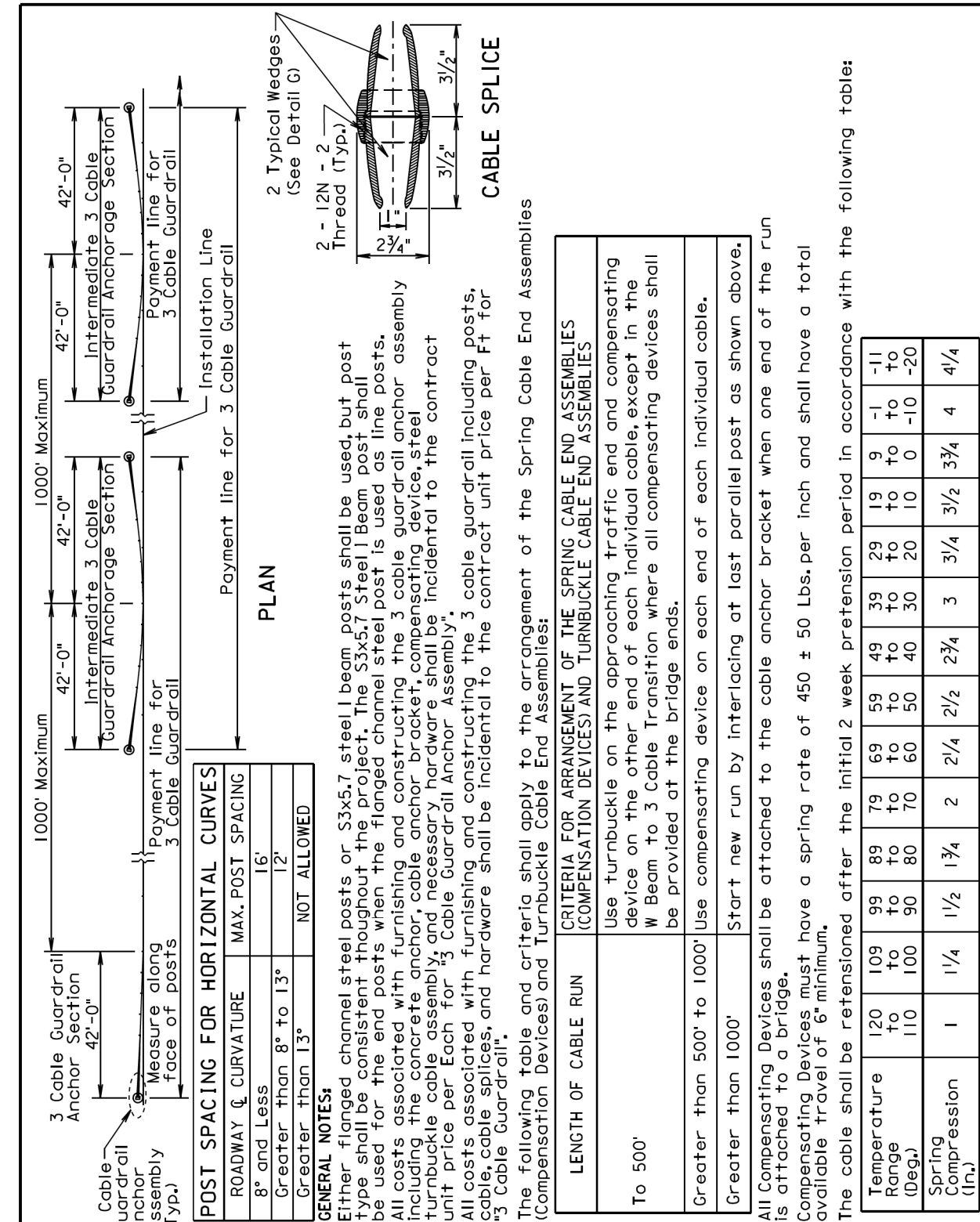


GENERAL NOTE:

The bridge berm elevation and slope shall be as shown in the structure plans.

September 6, 2006

| | | | |
|-------------------------------|-----------------------|---|------------------------|
| Published Date: 2nd Qtr. 2014 | S D D O T | BRIDGE BERM (NONPROJECTING EMBANKMENT) | PLATE NUMBER 120.10 |
| | | | Sheet 1 of 1 |



December 23, 2010

| | | | |
|-------------------------------|-----------------------|-------------------|------------------------|
| Published Date: 2nd Qtr. 2014 | S D D O T | 3 CABLE GUARDRAIL | PLATE NUMBER 629.01 |
| | | | Sheet 1 of 6 |

Published Date: 2nd Qtr. 2014

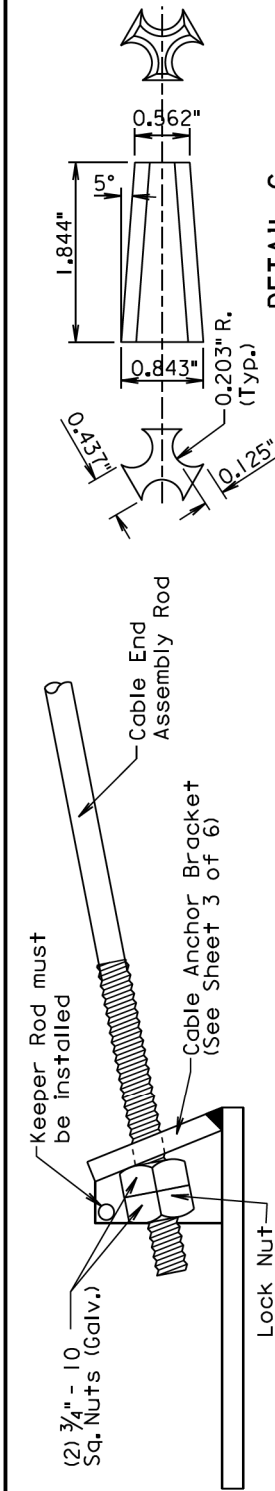
SDOT

3 CABLE GUARDRAIL

PLATE NUMBER
629.01

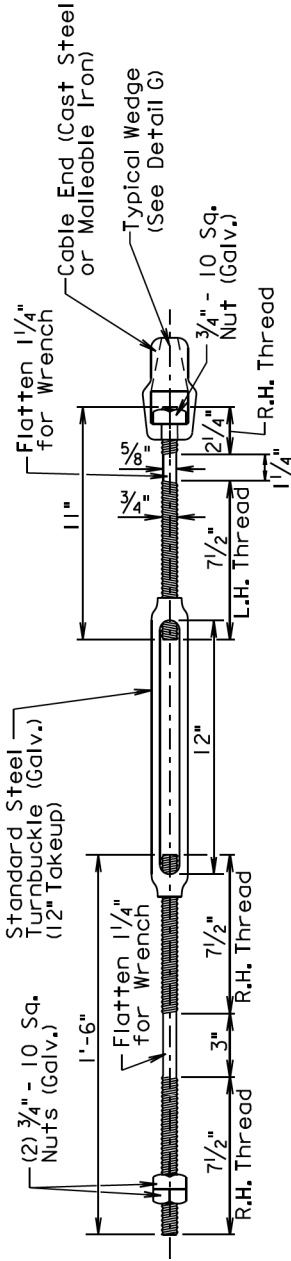
Sheet 4 of 6

December 23, 2010

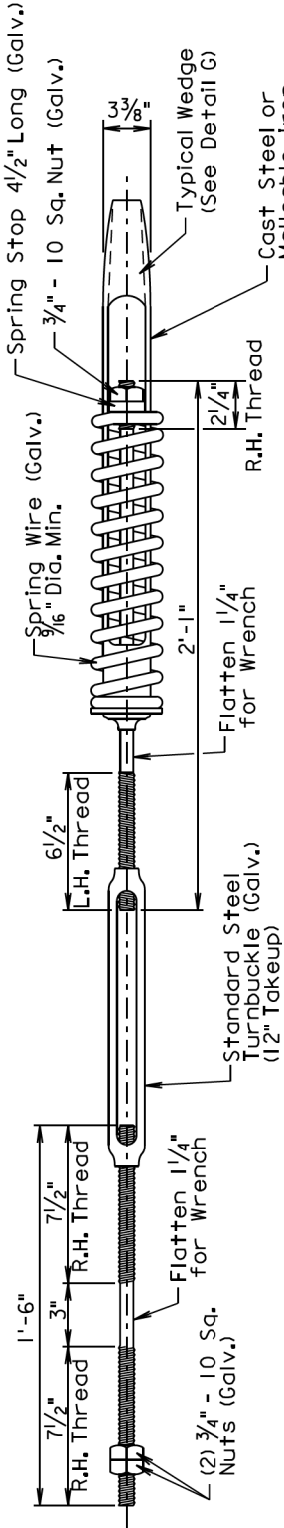


DETAIL H
(CABLE END ASSEMBLY ROD
CONNECTION TO CABLE ANCHOR BRACKET)

DETAIL G
(TYPICAL WEDGE FOR ALL
SPICES AND CABLE
FITTINGS)



DETAIL A
(STEEL TURNBUCKLE CABLE END ASSEMBLY)
Minimum Tensile Strength = 25,000 Lbs.



DETAIL B
(SPRING CABLE END ASSEMBLY WITH TURNBUCKLE)
(COMPENSATING DEVICE)

Published Date: 2nd Qtr. 2014

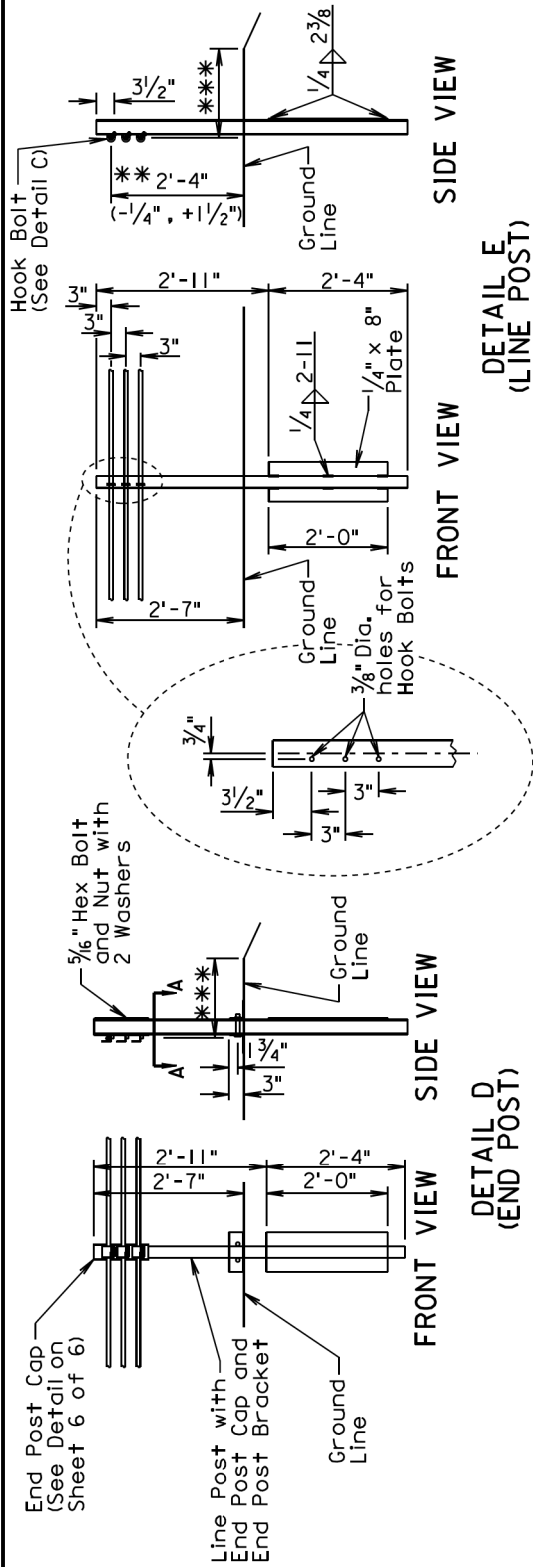
SDOT

3 CABLE GUARDRAIL

PLATE NUMBER
629.01

Sheet 5 of 6

December 23, 2010



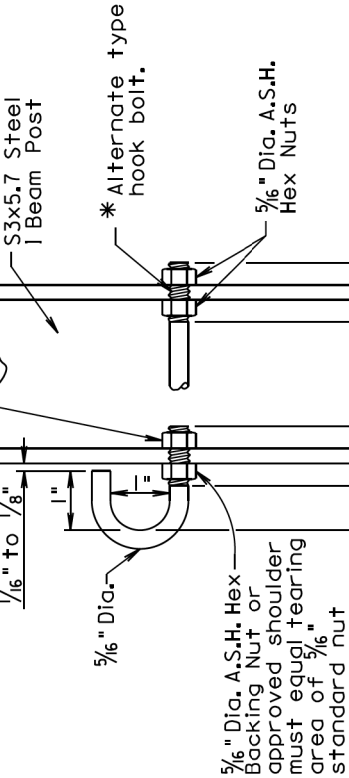
DETAIL D
(END POST)

DETAIL E
(LINE POST)

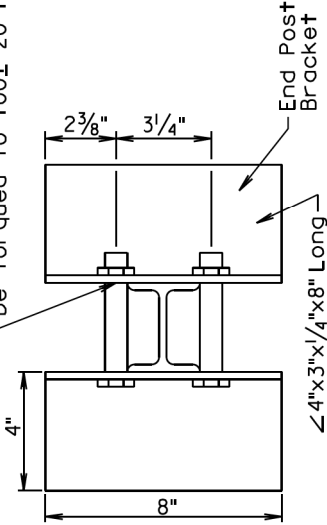
FRONT VIEW SIDE VIEW

** See Standard Plate 630.98
*** 2' (Min.) or as shown in plans

13/16\"/>

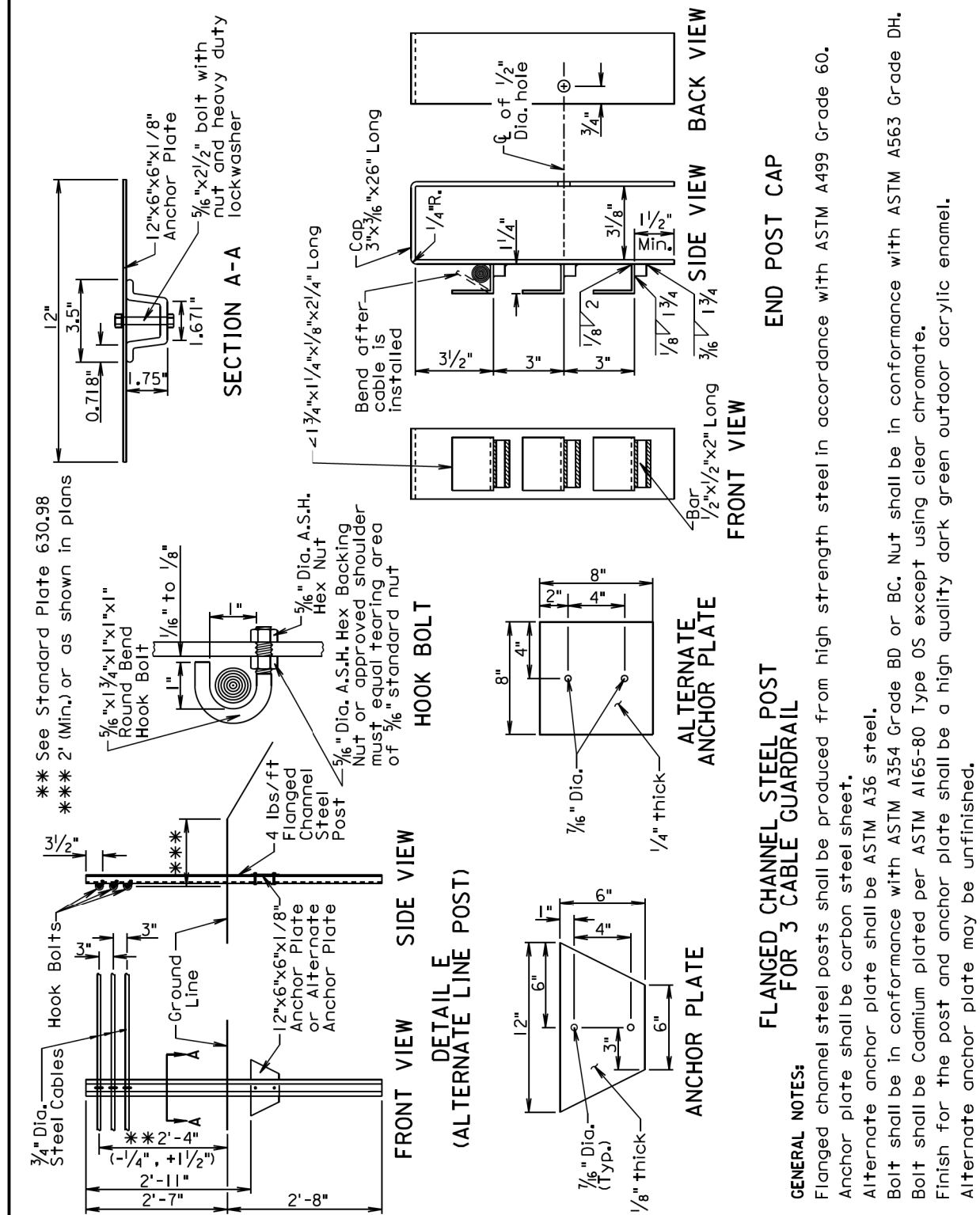


DETAIL C
(HOOK BOLT)



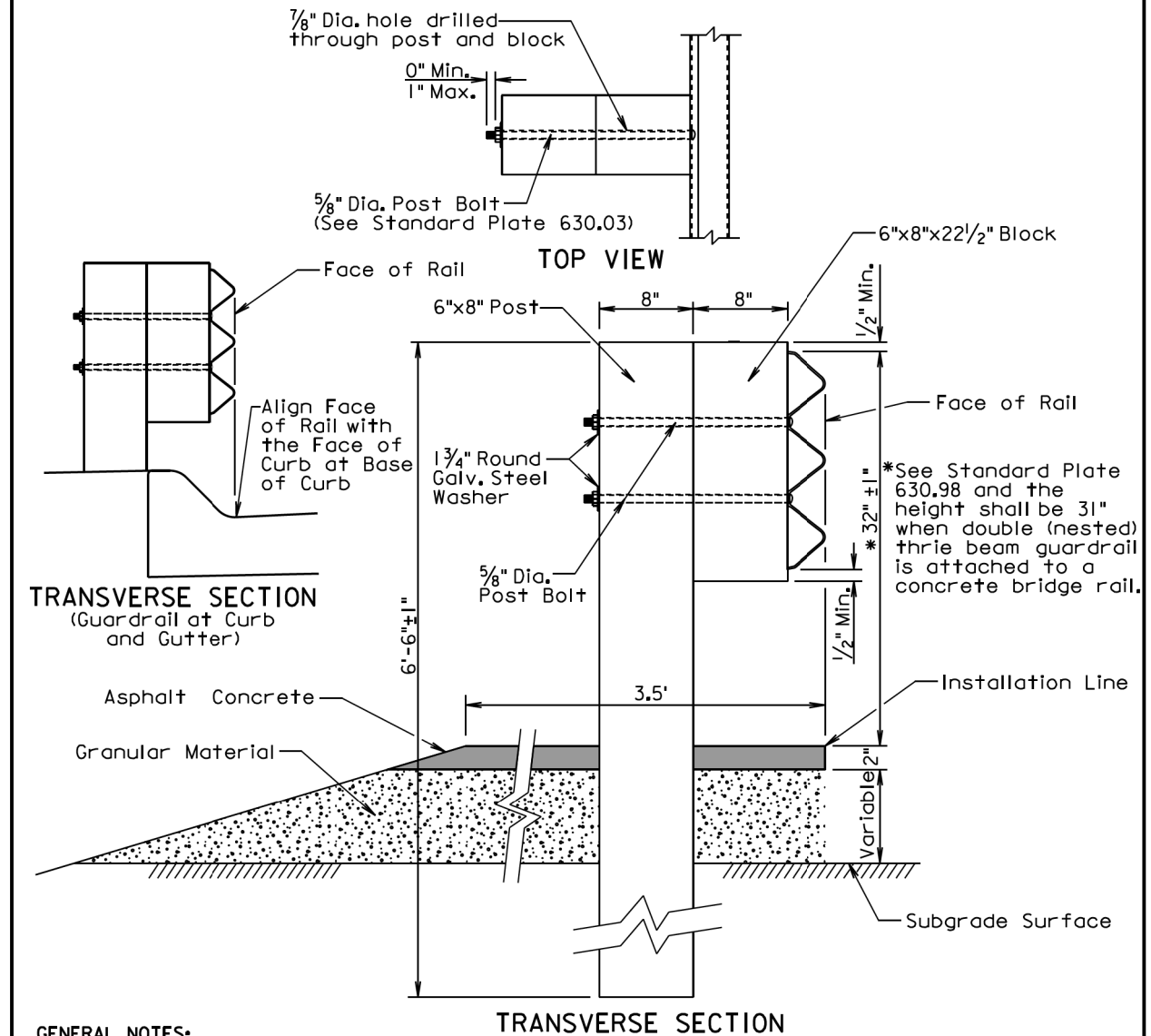
SECTION A-A

S3x5.7 STEEL I BEAM POST
FOR 3 CABLE GUARDRAIL



December 23, 2010

| | | | |
|-------------------------------|-----------------------|-------------------|------------------------|
| Published Date: 2nd Qtr. 2014 | S D D O T | 3 CABLE GUARDRAIL | PLATE NUMBER 629.01 |
| | | | Sheet 6 of 6 |



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 SD Standard 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 SD Standard Specifications for "Base Course". The granular material shall be placed the same thickness as the mainline surfacing or as specified in the plans.

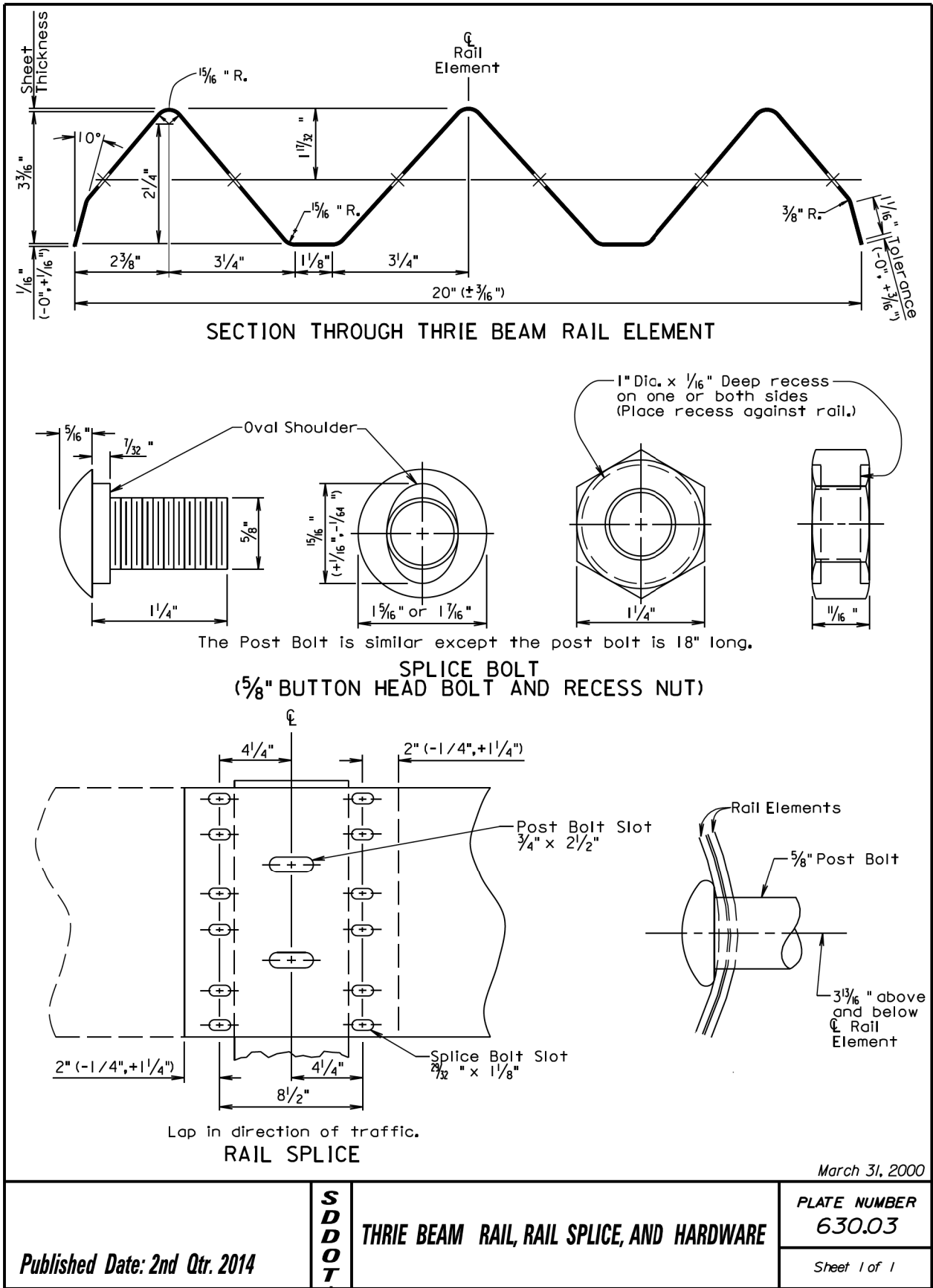
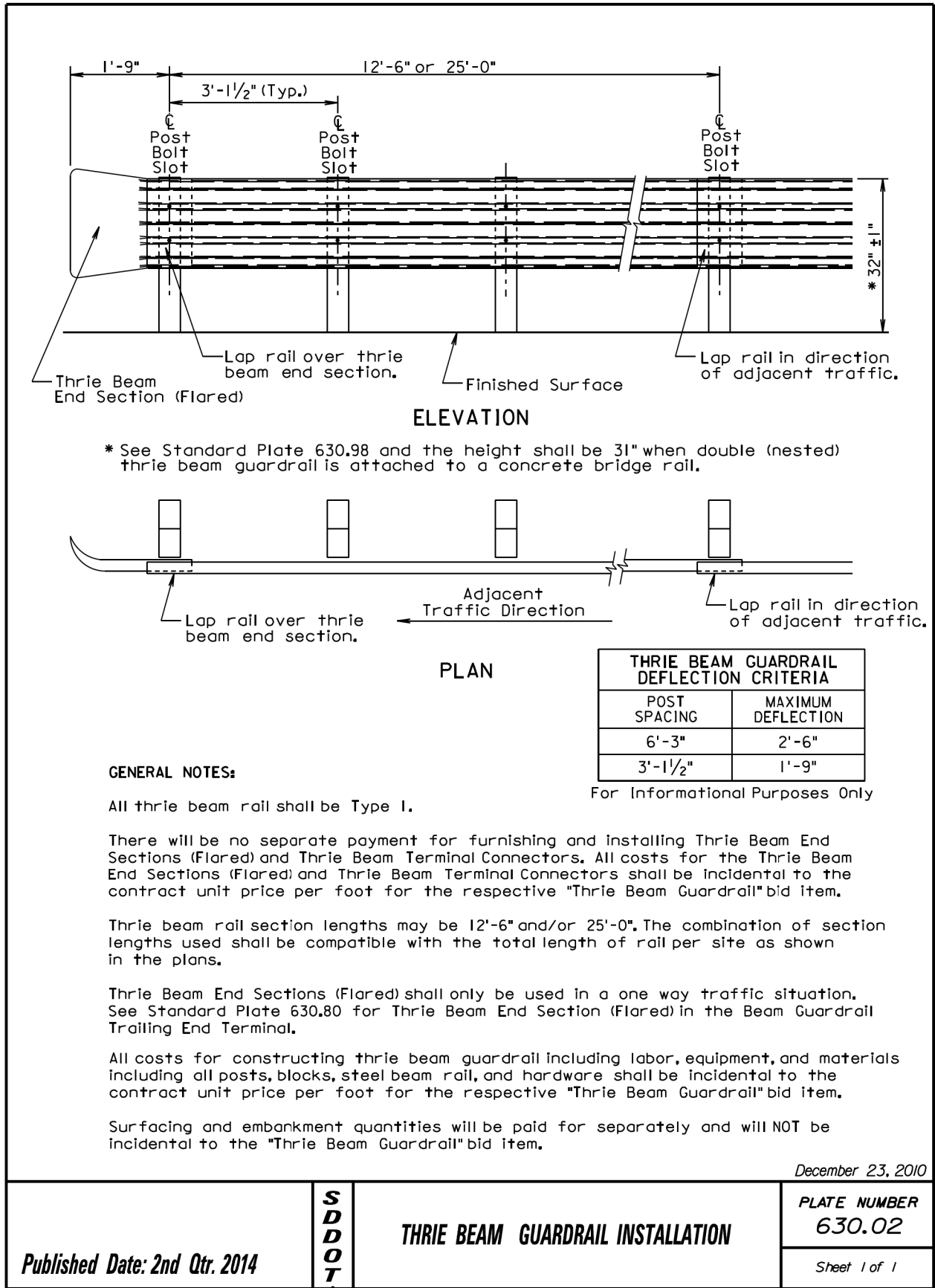
Surfacing and embankment quantities will be paid for separately and will NOT be incidental to the "Three Beam Guardrail" bid item.

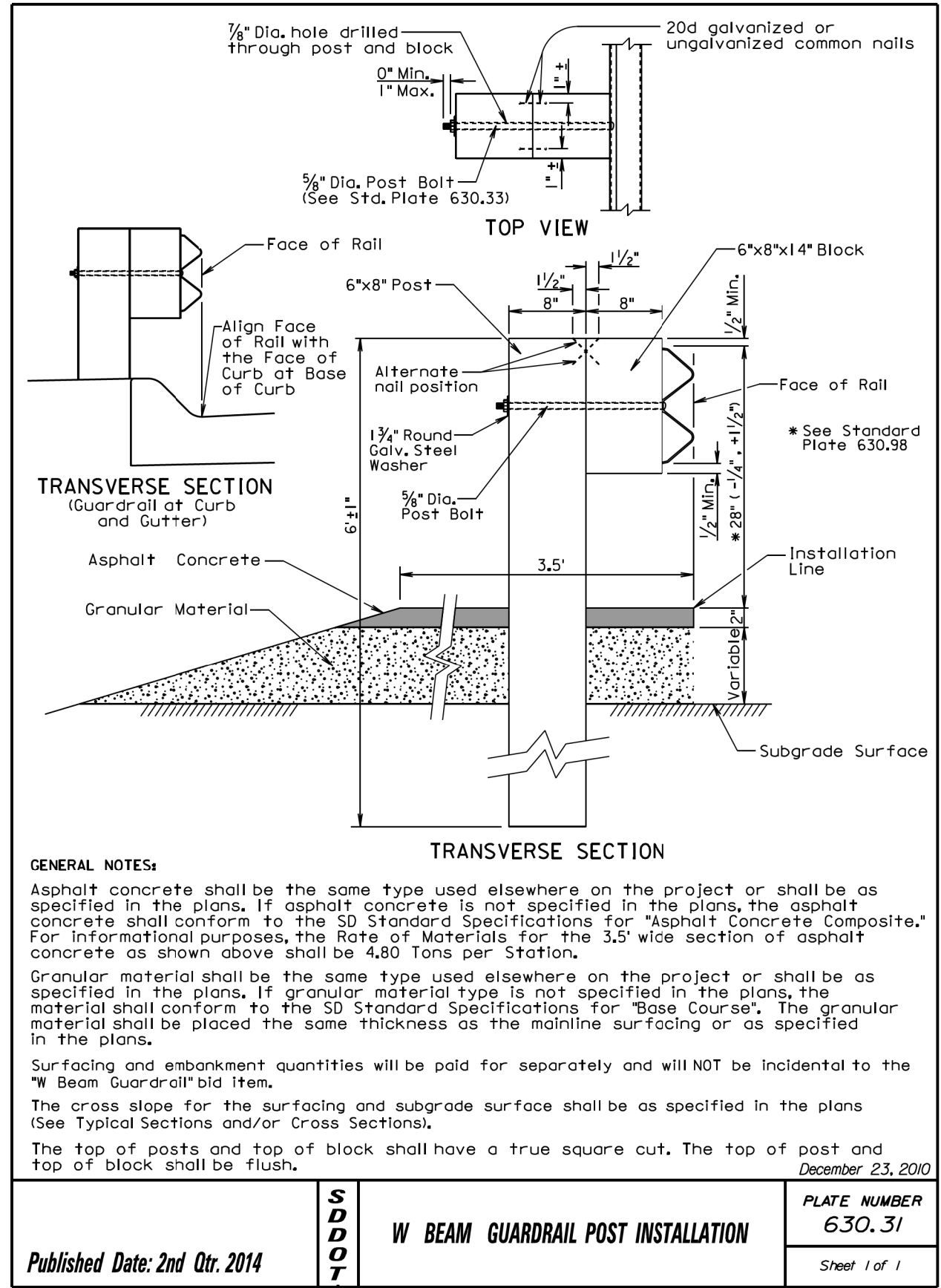
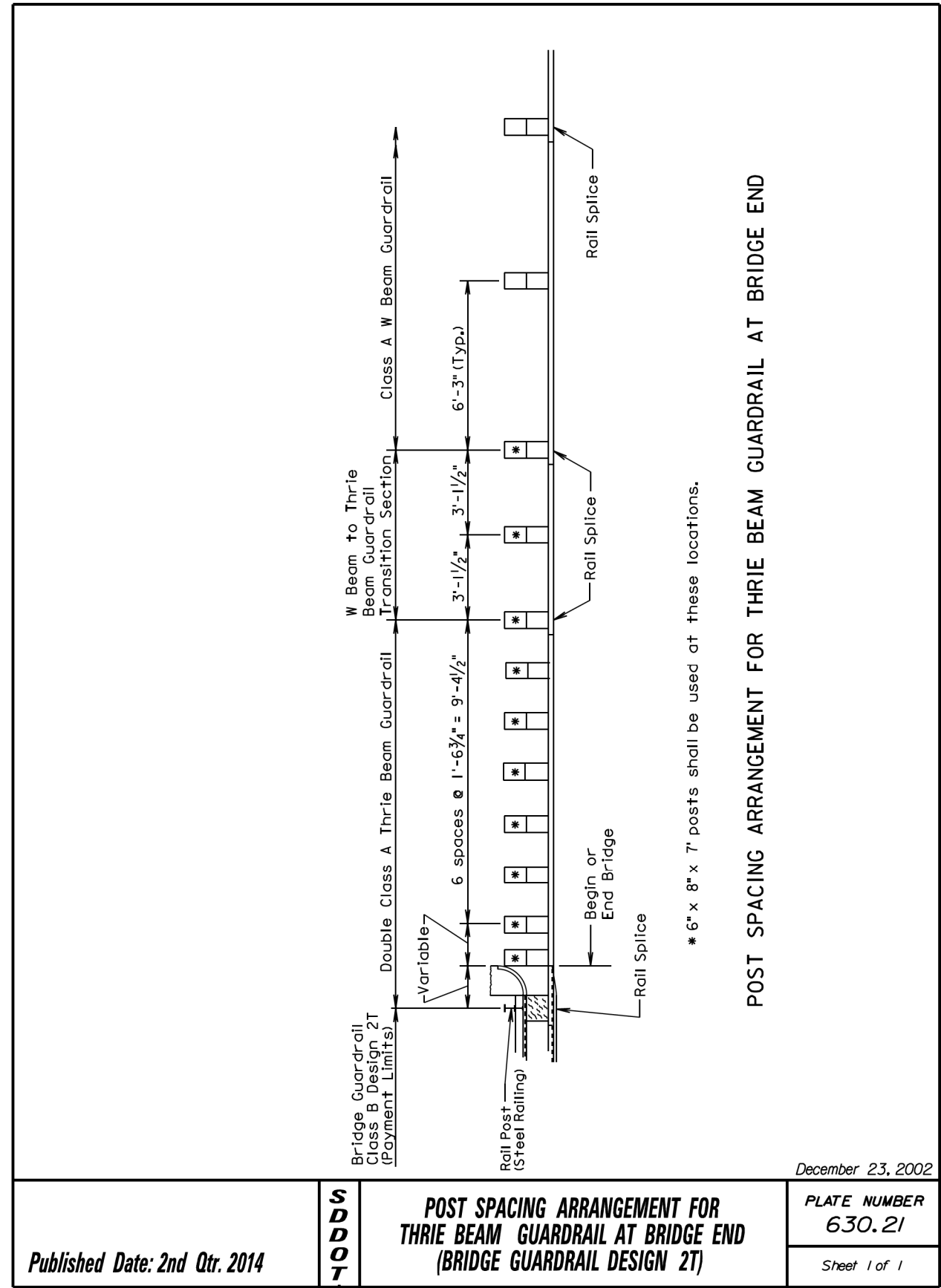
The cross slope for the surfacing and subgrade surface shall be as specified in the plans (See Typical Sections and/or Cross Sections).

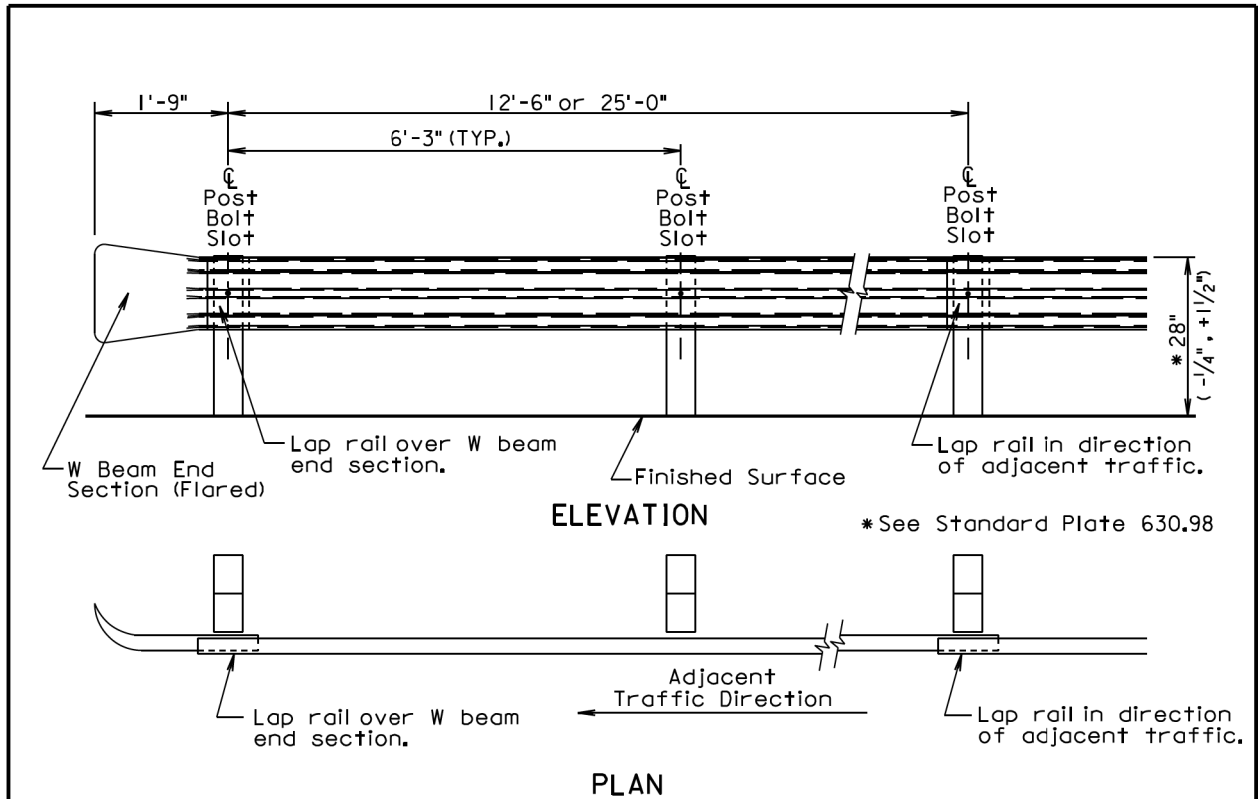
The top of posts and top of block shall have a true square cut. The top of post and top of block shall be flush.

December 23, 2010

| | | | |
|-------------------------------|-----------------------|--|------------------------|
| Published Date: 2nd Qtr. 2014 | S D D O T | THRIE BEAM GUARDRAIL POST INSTALLATION | PLATE NUMBER 630.01 |
| | | | Sheet 1 of 1 |







*See Standard Plate 630.98

| W BEAM GUARDRAIL DEFLECTION CRITERIA | |
|--------------------------------------|--------------------|
| POST SPACING | MAXIMUM DEFLECTION |
| 6'-3" | 3'-3" |
| 3'-1 1/2" | 2'-0" |

For Informational Purposes Only

GENERAL NOTES:

All W beam rail shall be Type I.

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.

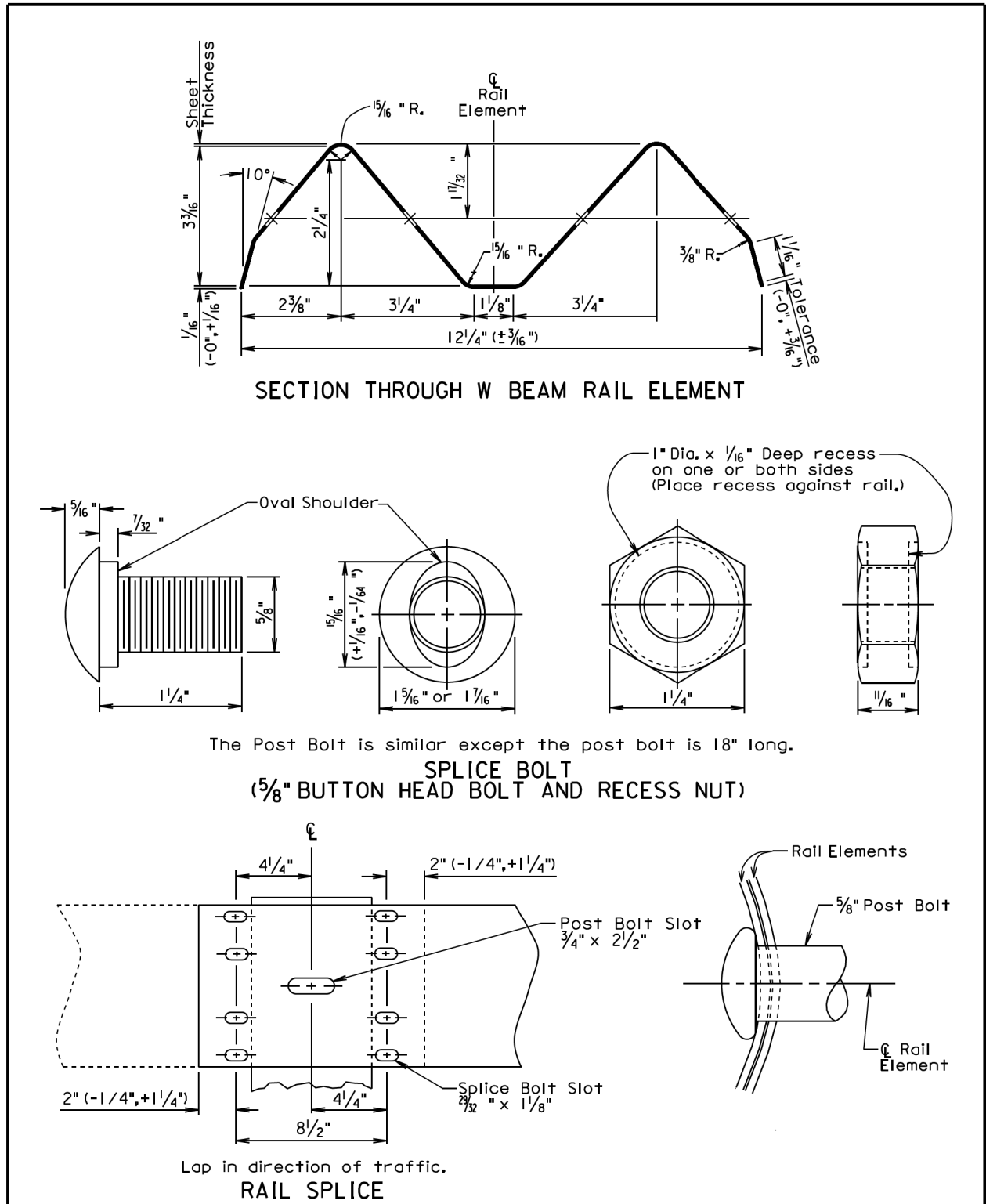
W Beam End Sections (Flared) shall only be used in a one way traffic situation. See Standard Plate 630.80 for W Beam End Section (Flared) in the Beam Guardrail Trailing End Terminal.

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.

Surfacing and embankment quantities will be paid for separately and will NOT be incidental to the "W Beam Guardrail" bid item.

December 23, 2010

| | | | |
|-------------------------------|-----------------------|-------------------------------|------------------------|
| Published Date: 2nd Qtr. 2014 | S D D O T | W BEAM GUARDRAIL INSTALLATION | PLATE NUMBER 630.32 |
| | | | Sheet 1 of 1 |



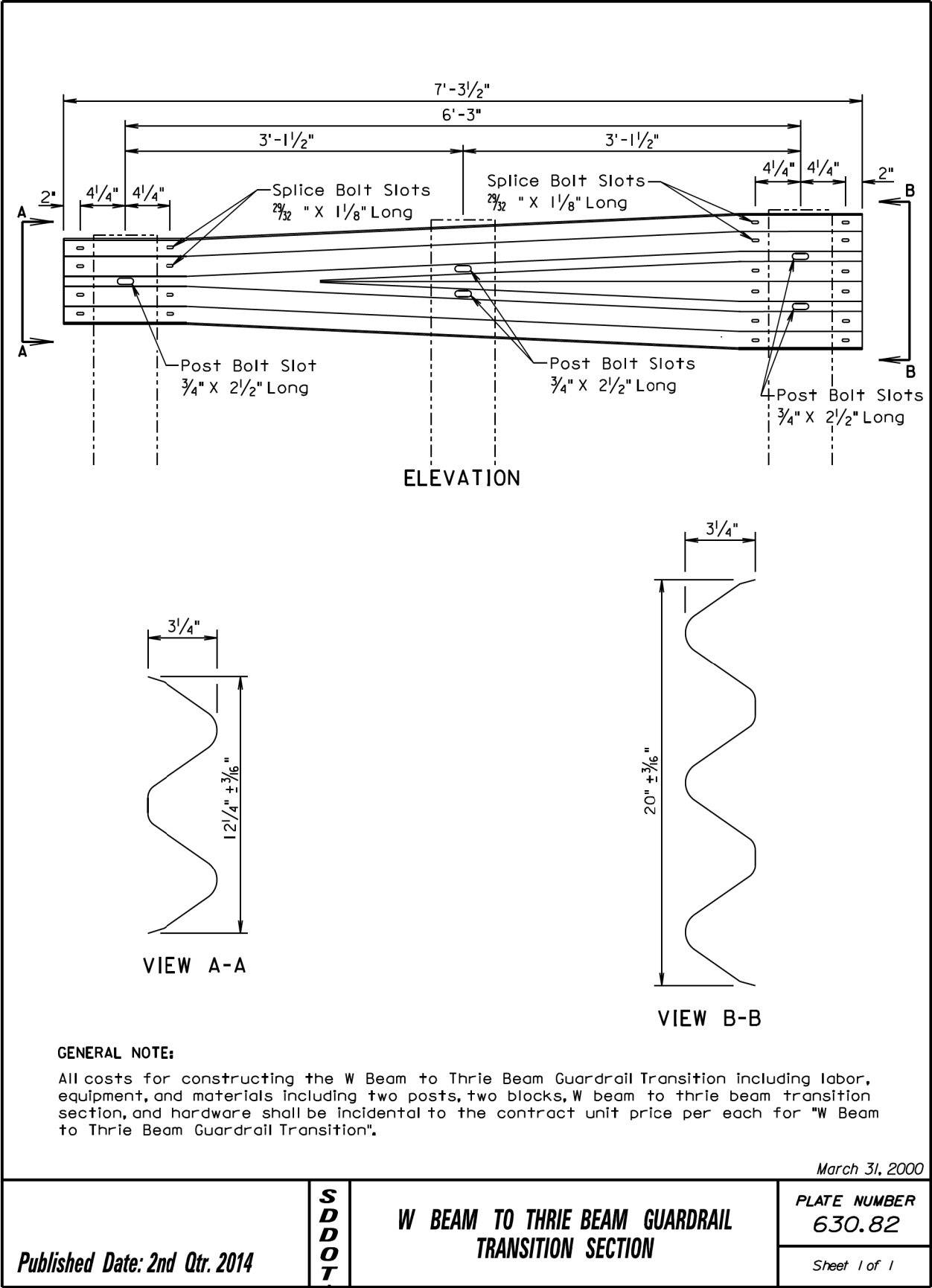
The Post Bolt is similar except the post bolt is 18" long.

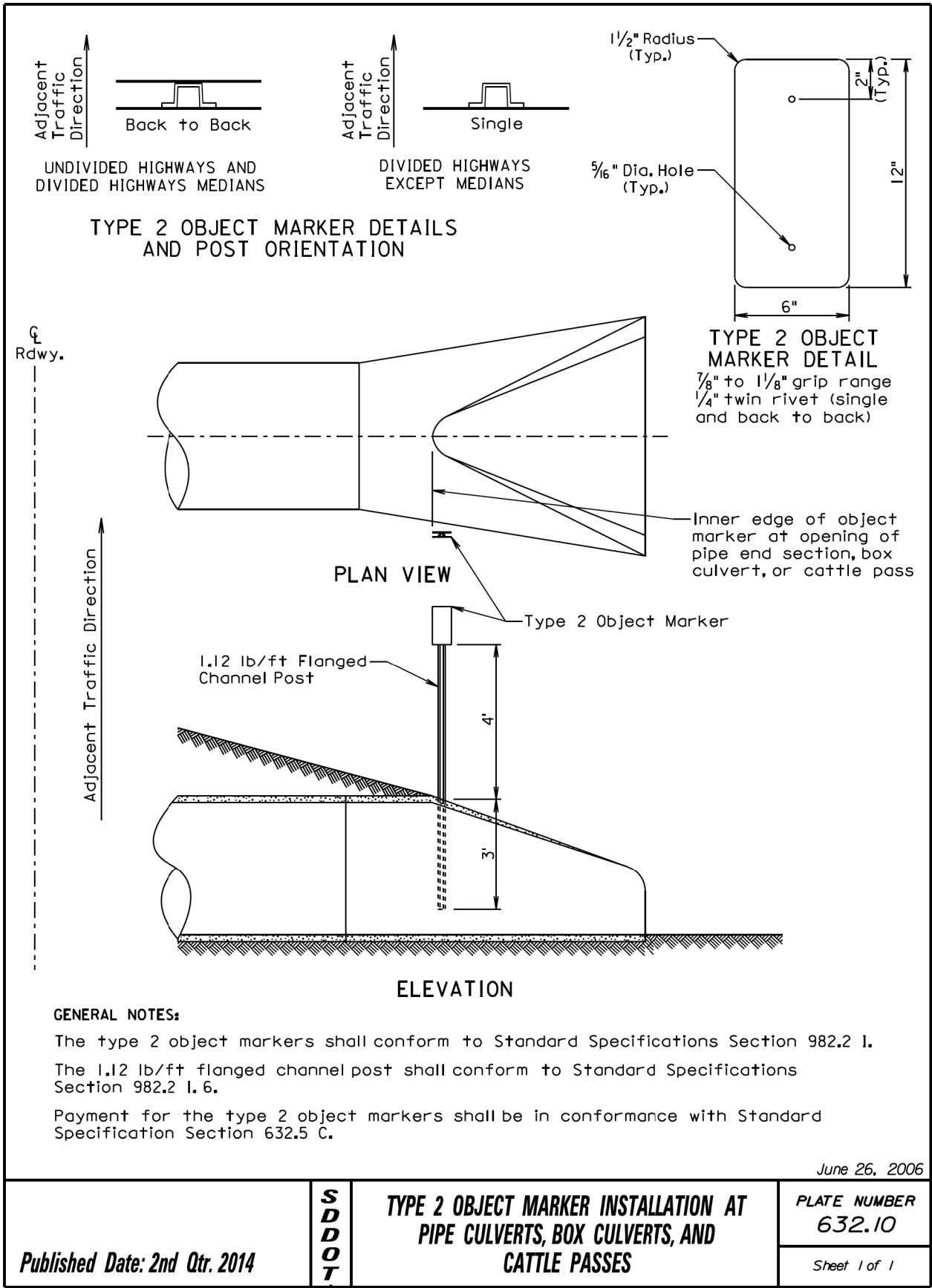
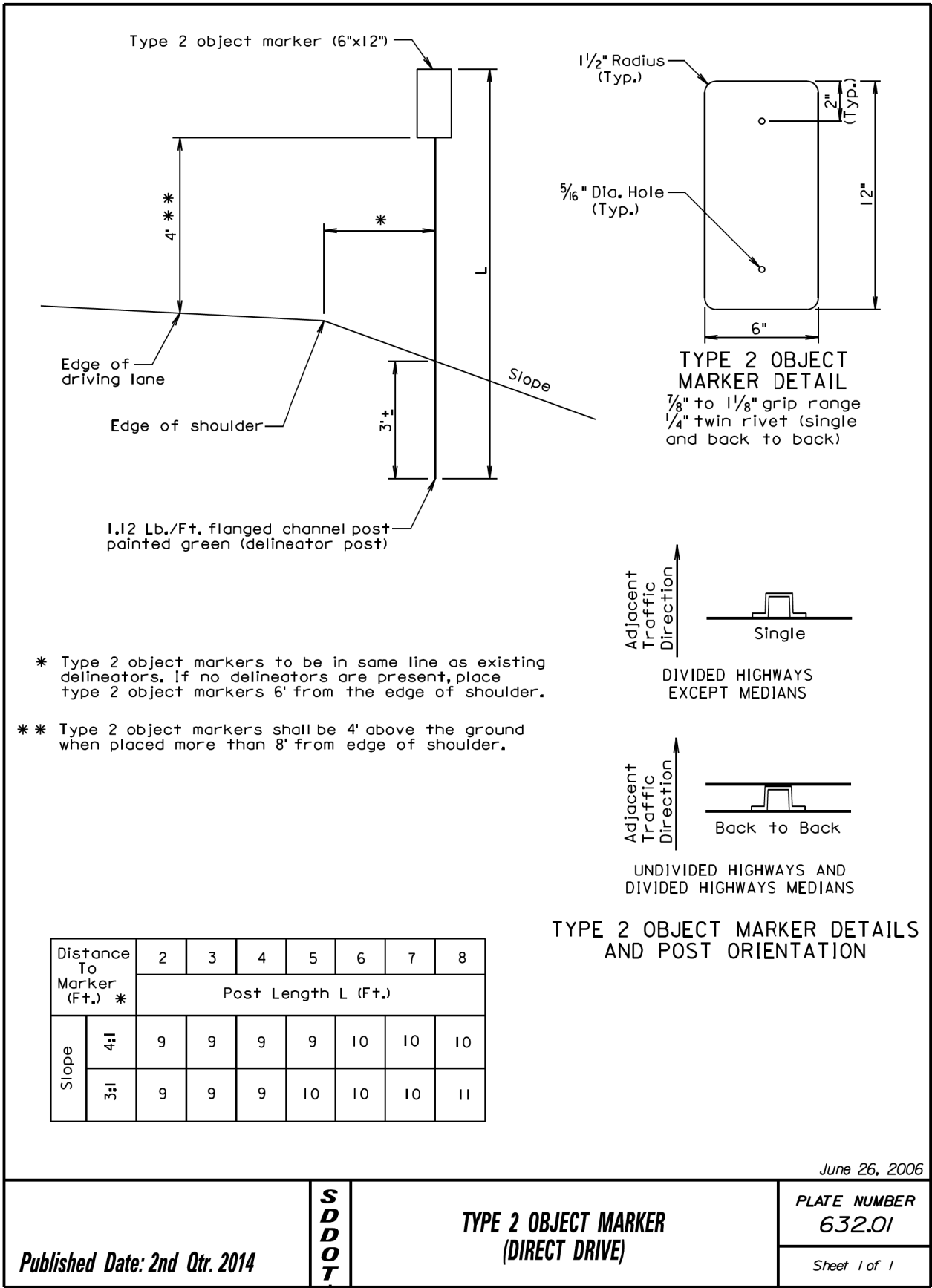
December 23, 2004

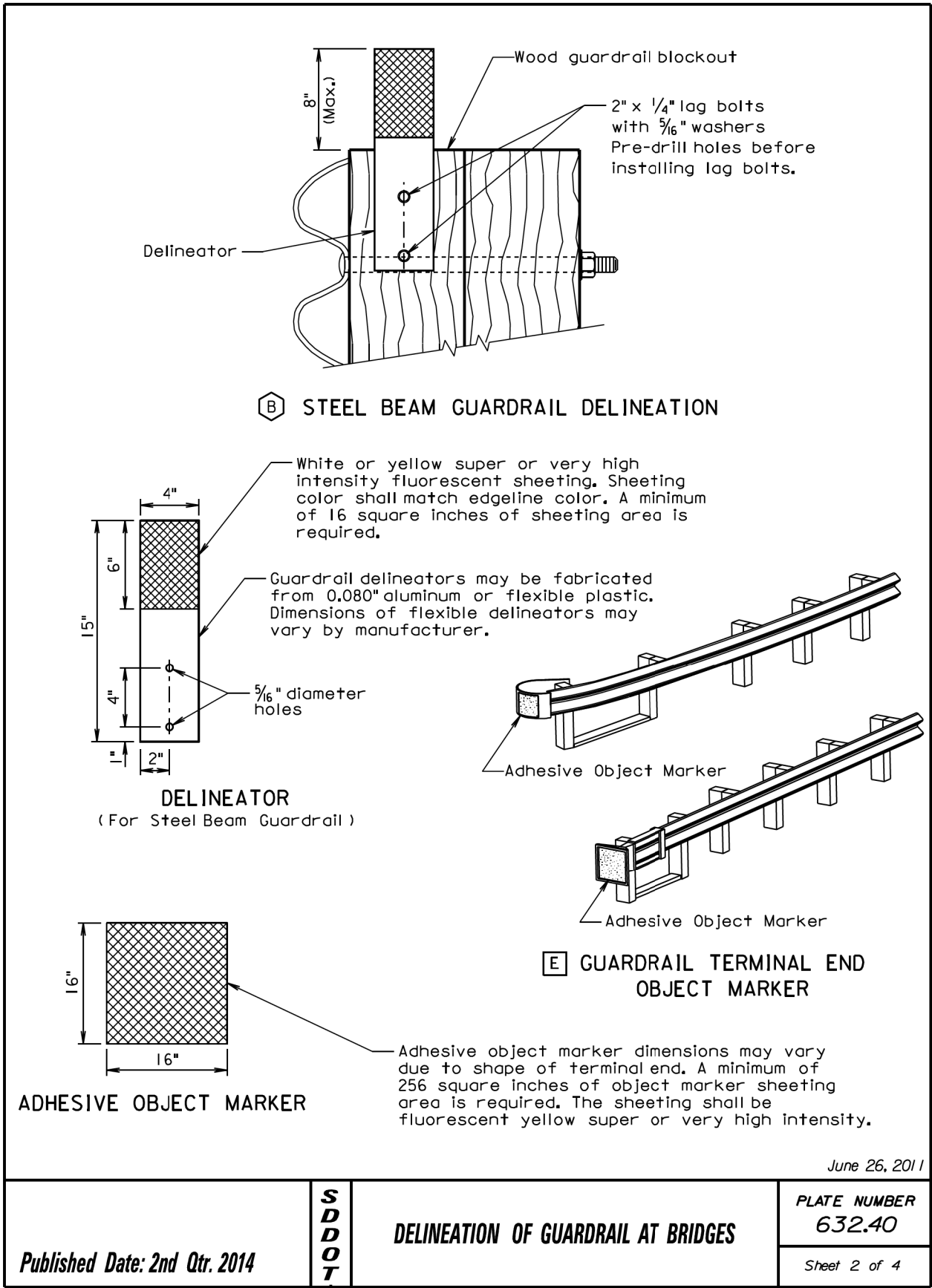
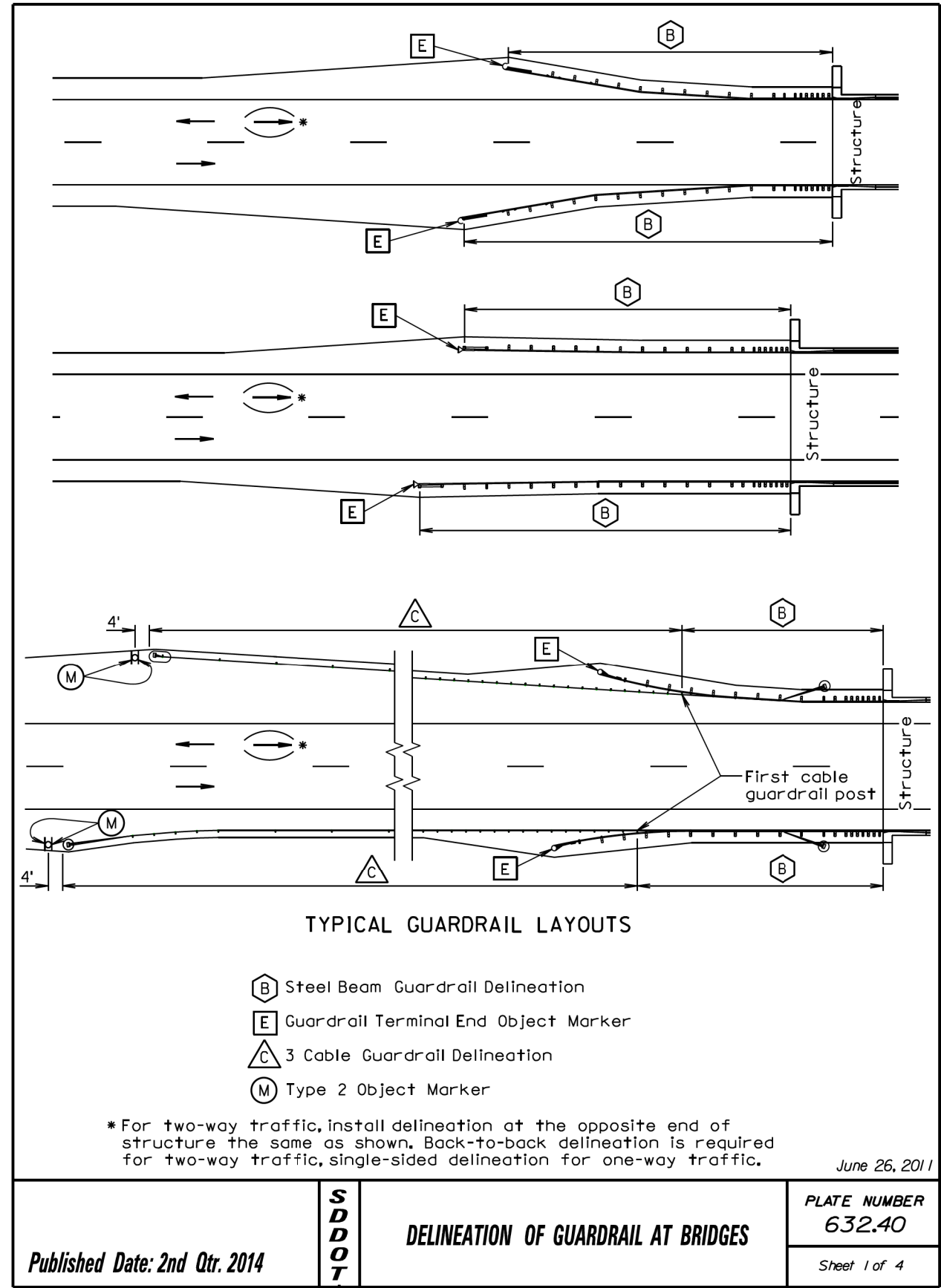
| | | | |
|-------------------------------|-----------------------|--|------------------------|
| Published Date: 2nd Qtr. 2014 | S D D O T | W BEAM RAIL, RAIL SPLICE, AND HARDWARE | PLATE NUMBER 630.33 |
| | | | Sheet 1 of 1 |

| | | | |
|-----------------------------|---------|-------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
| | 085-471 | 14 | 19 |

Plotting Date: 06/20/2014









*** 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 fluoresent sheeting. The sheeting color shall match the edgeline color.

June 26, 2011

Published Date: 2nd Qtr. 2014



GENERAL NOTES:

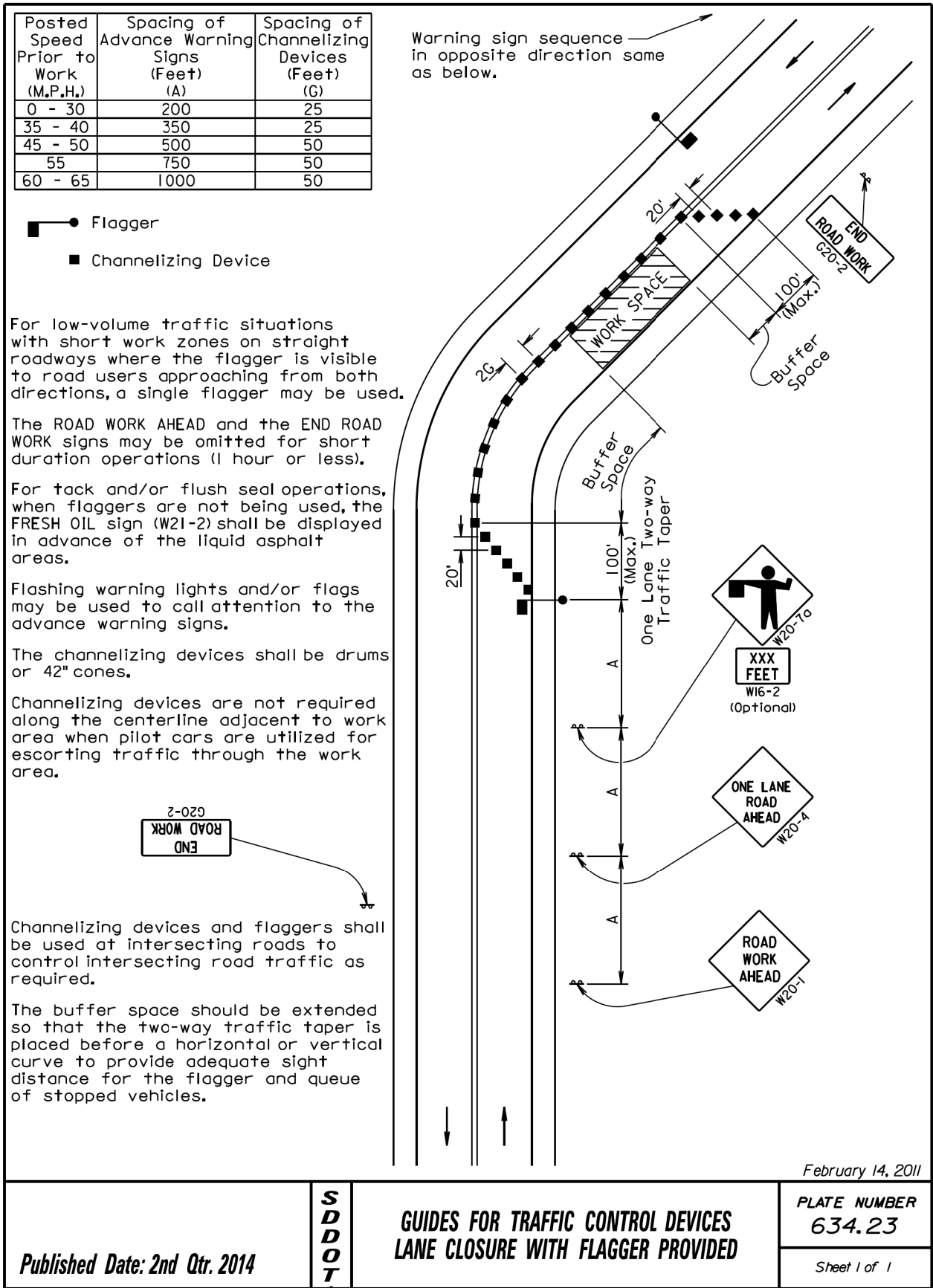
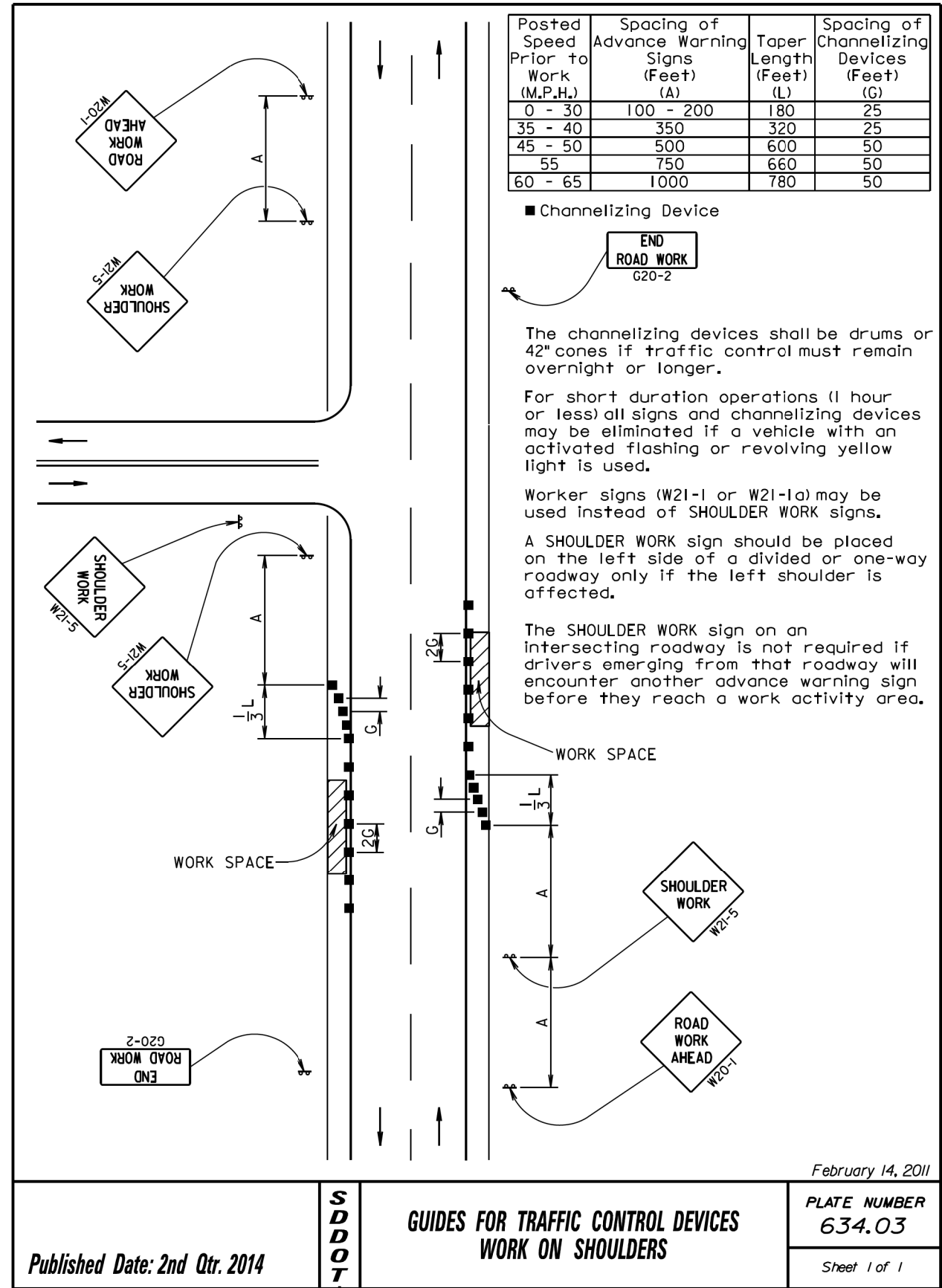
The first delineator shall be attached to the post nearest the bridge with additional delineators spaced in advance of the bridge at approximately 50 foot intervals. At bridges with short lengths of guardrail, less than 200 feet, a minimum of 4 delineators shall be placed in addition to the yellow object 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.

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.

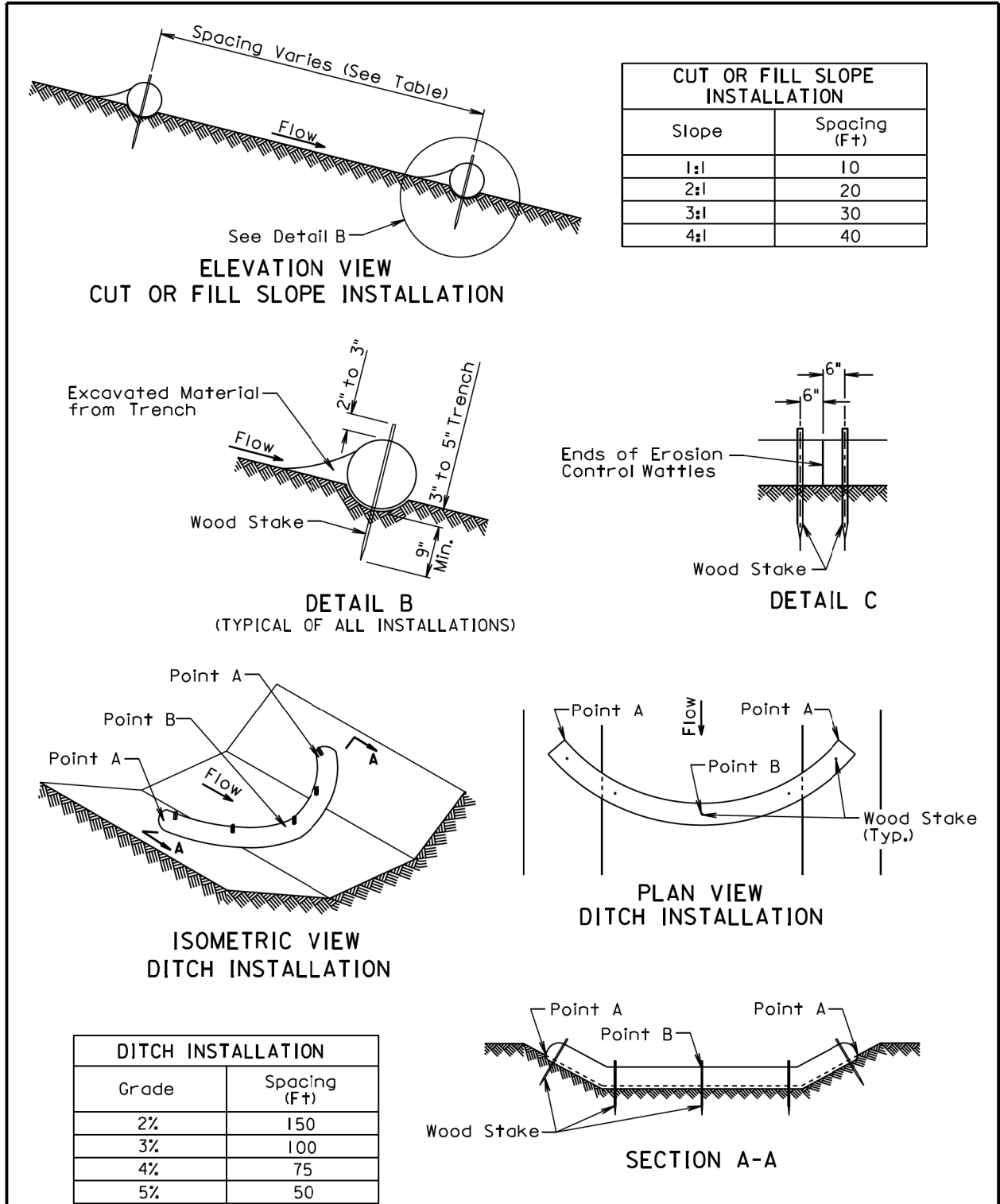
June 26, 2011

Published Date: 2nd Qtr. 2014



| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|-----------------------------|---------|-------|-----------------|
| | 085-471 | 19 | 19 |

Plotting Date: 06/20/2014



December 23, 2004

| | | | |
|--------------------------------------|----------------------------------|-------------------------------|------------------------|
| Published Date: 2nd Qtr. 2014 | S D D O T | EROSION CONTROL WATTLE | PLATE NUMBER 734.06 |
| | | | Sheet 1 of 2 |

GENERAL NOTES:

At cut or fill slope installations, wattles shall be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor shall dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes shall be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes shall be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles shall be 3' to 4'.

Where installing running lengths of wattles, the Contractor shall butt the second wattle tightly against the first and shall not overlap the ends. See Detail C.

The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than 1/2". The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping shall be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping shall be incidental to the contract unit price per cubic yard for "Remove Sediment".

All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials shall be incidental to the contract unit price per foot for the corresponding erosion control wattle bid item.

All costs for removing the erosion control wattle from the project including labor, equipment, and materials shall be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

December 23, 2004

| | | | |
|--------------------------------------|----------------------------------|-------------------------------|------------------------|
| Published Date: 2nd Qtr. 2014 | S D D O T | EROSION CONTROL WATTLE | PLATE NUMBER 734.06 |
| | | | Sheet 2 of 2 |