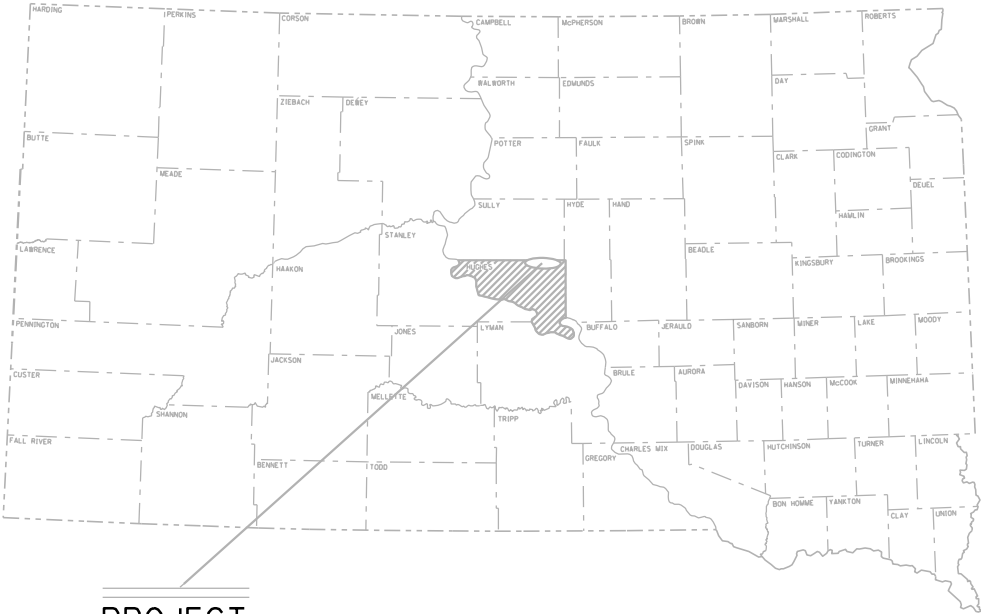


STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	014-351	1	10



STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED  
PROJECT 014 - 351  
US HIGHWAY 14  
HUGHES COUNTY  
PCN 12TY  
INSLOPE REPAIR



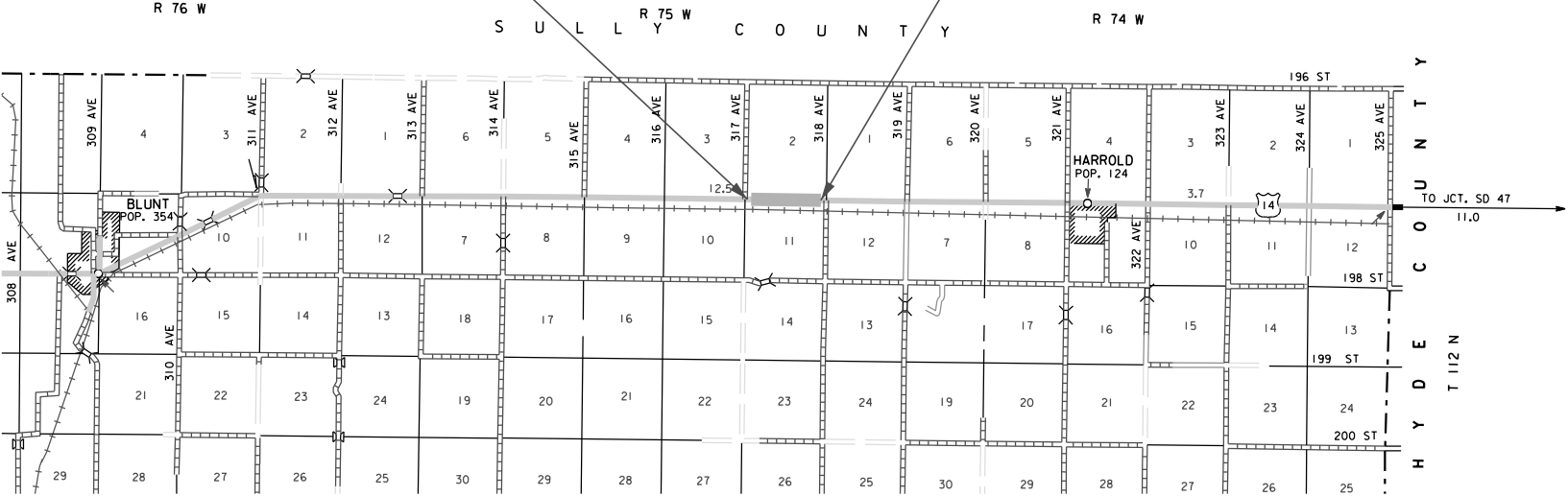
PROJECT

INDEX OF SHEETS

SHEET 1	Title Sheet
SHEETS 2-3	Estimate of Quantities and Plan Notes
SHEETS 4-5	Typical Sections
SHEET 6	Plan Sheet
SHEETS 7-10	Standard Plates

BEGIN PROJECT  
US 14 MRM 259.2

END PROJECT  
US 14 MRM 259.7



DESIGN DESIGNATION

ADT (2011)	1426
ADT (2031)	1647
DHV	189.4
D	50%
T DHV	9.7%
T ADT	21.4%
V(m. p. h. )	65

STORM WATER PERMIT  
(None Required)  
Area Disturbed: 0.9 Acres

ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E0510	Remove Pipe End Section	1	Each
120E0010	Unclassified Excavation	1,328	CuYd
120E0600	Contractor Furnished Borrow	1,391	CuYd
230E0010	Placing Topsoil	590	CuYd
450E5414	30" CMP Safety End, Furnish	1	Each
450E5417	30" CMP Safety End, Install	1	Each
450E8900	Cleanout Pipe Culvert	1	Each
634E0010	Flagging	80	Hour
634E0100	Traffic Control	306	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
730E0212	Type G Permanent Seed Mixture	26	Lb
732E0100	Mulching	2.0	Ton
734E0604	High Flow Silt Fence	2,726	Ft
734E0610	Mucking Silt Fence	190	CuYd
734E0620	Repair Silt Fence	682	Ft

SPECIFICATIONS

Standard Specifications for Road and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

GENERAL CONSTRUCTION NOTES

Damage to the driving surface or any other portion of the Right-of-Way due to the Contractor's operation shall be repaired by the Contractor at no expense to the State.

PROJECT WORK HOURS

The Contractor may perform work only during daylight hours unless additional hours are approved by the Engineer.

LOCATION AND SCOPE OF WORK

Work on this project involves repairing the north in-slope along US Highway 14 from MRM 259.2 to 259.7.

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment minus Waste. The estimated quantity of Water for Embankment is 15.8 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 of "Unclassified Excavation".

RIGHT OF WAY

All work shall be completed within the Right-of-Way.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility companies to avoid damage to existing facilities.

WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the DOT Environmental Office.

The DOT Environmental Office contact is the Environmental Project Scientist, 605-773-3268. The WATER SOURCE plan note does not relieve the Contractor of his/her responsibility to obtain the necessary permits from other agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE).

WORK AFFECTING WATERWAYS

A. WATER QUALITY

Surface Water Discharge

If construction dewatering is required, the Contractor is required to obtain a Surface Water Discharge Permit from the DENR. Contact the DENR Surface Water Program at 605-773-3351 to apply for a permit.

Storm Water

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.

HISTORICAL PRESERVATION OFFICE CLEARANCES

To obtain State Historical Preservation Office (SHPO) clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. In lieu of a cultural resources survey, the Contractor could request a records search from Jim Donohue, State Archaeological Research Center (SARC). Provide SARC 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 no artifacts have been found on the site. The Contractor shall arrange and pay for the cultural resource survey and/or records search.

If any earth disturbing activities occur within the current geographical or historic boundaries of any South Dakota reservation, the Contractor shall obtain Tribal Historical Preservation Office (THPO) clearance. If no THPO exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

HISTORICAL PRESERVATION OFFICE CLEARANCES (continued)

To facilitate SHPO or THPO responses, the Contractor should submit a records search or cultural resources survey report to the DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3268). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO/THPO approval. The Contractor is responsible for obtaining all required permits and clearances for staging areas, borrow sites, waste disposal sites, and all material processing sites. The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

WASTE DISPOSAL SITE

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/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 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/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/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.

WASTE DISPOSAL SITE (continued)

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.

UNCLASSIFIED EXCAVATION

Approximately 590 CuYds of Topsoil will be salvaged. Salvage Topsoil is included in the Unclassified Excavation quantity.

Embankment material shall be continuously benched as each lift is built in horizontal layers as per Section 120.3.B.1 of the Standard Specifications. Compaction shall be in accordance to the Ordinary Compaction Method. This method is detailed in Section 120.3 B.3.b of the Standard Specifications.

The plans quantity for “Unclassified Excavation” as shown in the Estimate of Quantities will be the basis of payment for this item.

CONTRACTOR FURNISHED BORROW

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

Embankment material shall be continuously benched as each lift is built in horizontal layers as per Section 120.3.B.1 of the Standard Specifications. Compaction shall be in accordance to the Ordinary Compaction Method. This method is detailed in Section 120.3 B.3.b of the Standard Specifications.

Restoration of the Contractor furnished borrow site shall be the responsibility of the Contractor.

SHRINKAGE FACTOR: Embankment +35%.

CLEANOUT PIPE CULVERT

Cleanout existing 30” CMP at MRM 259.5.

CORRUGATED METAL PIPE

The end section on the inlet end of the CMP at MRM 259.5 shall be removed and replaced with a new CMP Safety End.

The gauge of the corrugated metal end shall match the gauge of the existing corrugated metal pipe.

PLACING TOPSOIL

The thickness will be approximately 6 inches within the right-of-way. The plans quantity for “Placing Topsoil” as shown in the Estimate of Quantities will be the basis of payment for this item.

DRILLS

In addition to the drills specified in Section 730 of the Standard Specifications, other types of drills including no-till drills will be allowed as long as they have baffles, partitions, agitators, or augers which keep the seed distributed throughout the seed box and the seed is planted at a depth of ¼” to ½” .

FERTILIZING

Application of fertilizer will not be required on this project.

PERMANENT SEEDING

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.

Type G Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Flintlock, Rodan, Rosana	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk	3
Big Bluestem	Bison, Bonilla, Champ, Pawnee, Sunnyview	3
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26

MULCHING (GRASS HAY OR STRAW)

Bales with noxious weed contamination will be rejected and the Contractor will be required to remove the contaminated bales from the project.

HIGH FLOW SILT FENCE

The high flow silt fence fabric provided shall be from the approved product list. The approved product list for high flow silt fence may be viewed at the following internet site:

http://apps.sd.gov/Applications/HC54ApprovedProducts/main.asp

High flow silt fence shall be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.05 for details.

TABLE OF HIGH FLOW SILT FENCE

MRM	L/R	Location	Quantity (Ft)
259.2 to 259.7	Lt.	70' +/- Lt.	2640
259.5	Lt.	Pipe Inlet	36
Additional Quantity:			50
Total:			2726

MUCKING SILT FENCE

Mucking silt fence shall consist of removing muck trapped by the silt fence and spreading the material evenly over the adjacent area to conform to the existing grade.

GENERAL MAINTENANCE OF TRAFFIC

No lane closures will be permitted overnight.

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. 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 to 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.

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, ground mounted, breakaway supports.

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

ITEMIZED LIST FOR TRAFFIC CONTROL

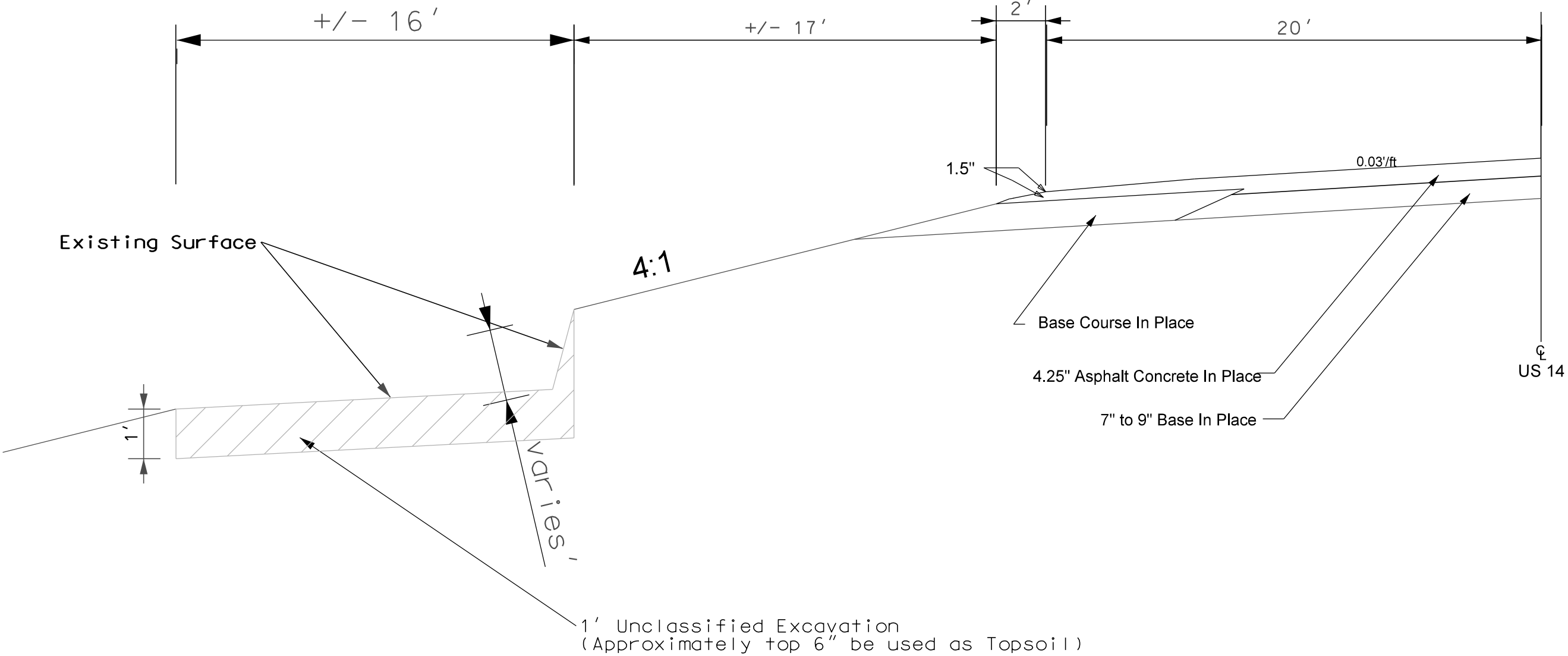
SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	2	34	68
W20-4	48" x 48"	ONE LANE ROAD ##### FT. OR AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
W21-5	48" x 48"	SHOULDER WORK	2	34	68
TOTAL UNITS					306

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	014-351	4	10

# US HIGHWAY 14

## TYPICAL INSLOPE REPAIR SECTION

Existing Section  
MRM 259.2 to 259.7  
Sta. 0+00 to 23+17.73



STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	014-351	5	10

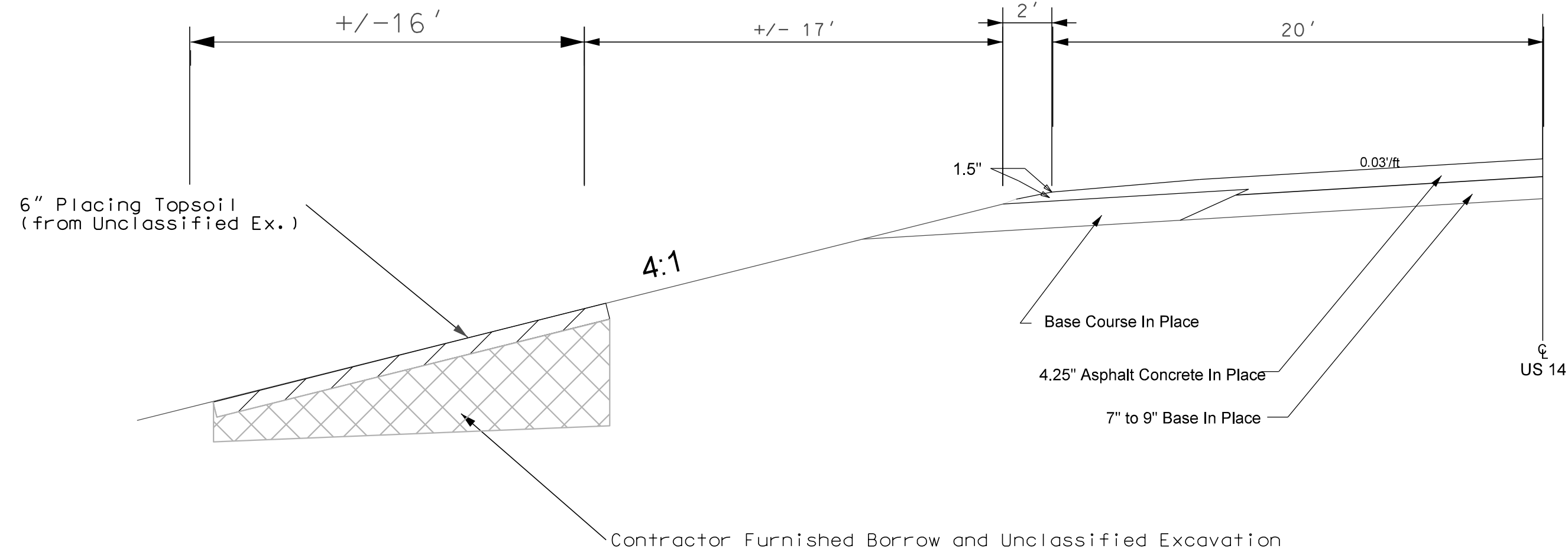
# US HIGHWAY 14

## TYPICAL INSLOPE REPAIR SECTION

Completed Section

MRM 259.2 to 259.7

Sta. 0+00 to 23+17.73



STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	014-351	6	10

INSLOPE REPAIR  
US HWY 14  
MRM 259.2 TO 259.7

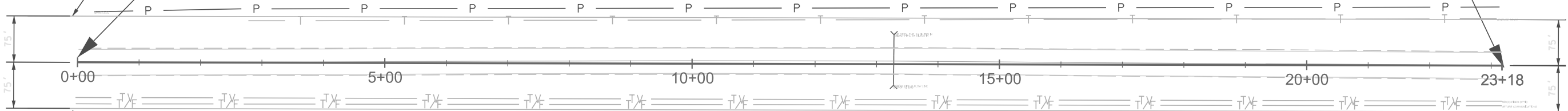


R.O.W

Begin Project  
US 14 MRM 259.2  
Sta. 0+00-Lt. Inslope  
N:800003.475  
E:2102488.772

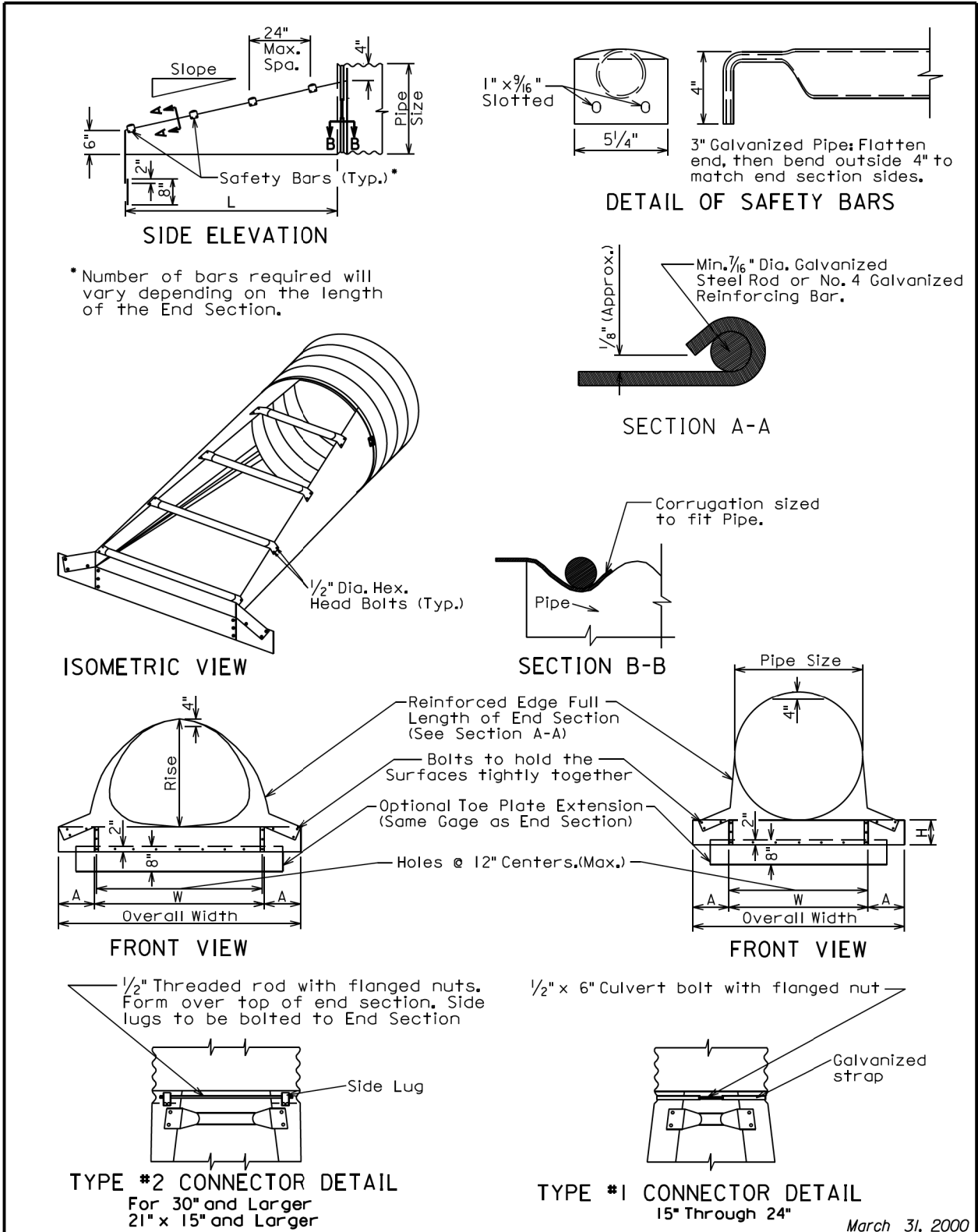
End Project  
US 14 MRM 259.7  
Sta. 23+17.73-Lt. Inslope  
N:799998.007  
E:2104806.491

Sta. 13+28-Lt.  
Remove Pipe End Section  
Furnish & Install 30" CMP Safety End  
Cleanout Pipe Culvert



R.O.W.

Control Data  
Control Point: Harrold  
N:799373.263  
E:2111661.049  
Elevation:1783.32



ARCH C.M.P. SAFETY ENDS										
Equiv. Dia. (In.)	(Inches)		Min. Thick.		Dimensions (Inches)				L Dimensions	
	Span	Rise	In.	Gage	A	H	W	Overall Width	Slope	Length (In.)
18	21	15	.064	16	8	6	27	43	6:1	30
21	24	18	.064	16	8	6	30	46	6:1	48
24	28	20	.064	16	8	6	34	50	6:1	60
30	35	24	.079	14	12	9	41	65	6:1	84
36	42	29	.109	12	12	9	48	72	6:1	114
42	49	33	.109	12	16	12	55	87	6:1	138
48	57	38	.109	12	16	12	63	95	6:1	168
54	64	43	.109	12	16	12	70	102	6:1	198
60	71	47	.109	12	16	12	77	109	6:1	222
72	83	57	.109	12	16	12	89	121	6:1	282

CIRCULAR C.M.P. SAFETY ENDS									
Pipe Dia. (In.)	Min. Thick.		Dimensions (Inches)					L Dimensions	
	In.	Gage	A	H	W	Overall Width	Slope	Length (In.)	
15	.064	16	8	6	21	37	6:1	30	
18	.064	16	8	6	24	40	6:1	48	
21	.064	16	8	6	27	43	6:1	66	
24	.064	16	8	6	30	46	6:1	84	
30	.109	12	12	9	36	60	6:1	120	
36	.109	12	12	9	42	66	6:1	156	
42	.109	12	16	12	48	80	6:1	192	
48	.109	12	16	12	54	86	6:1	228	
54	.109	12	16	12	60	92	6:1	264	
60	.109	12	16	12	66	98	6:1	300	

GENERAL NOTES:

Safety bars shall be attached to safety ends over 24" in diameter only.

Safety ends shall be fabricated from galvanized steel conforming to the requirements of the Standard Specifications.

Safety bars shall be fabricated from steel pipe conforming to the requirements of ASTM A-53 Schedule 40 Specifications.

Slotted holes for safety bar attachment shall be provided for all end sections.

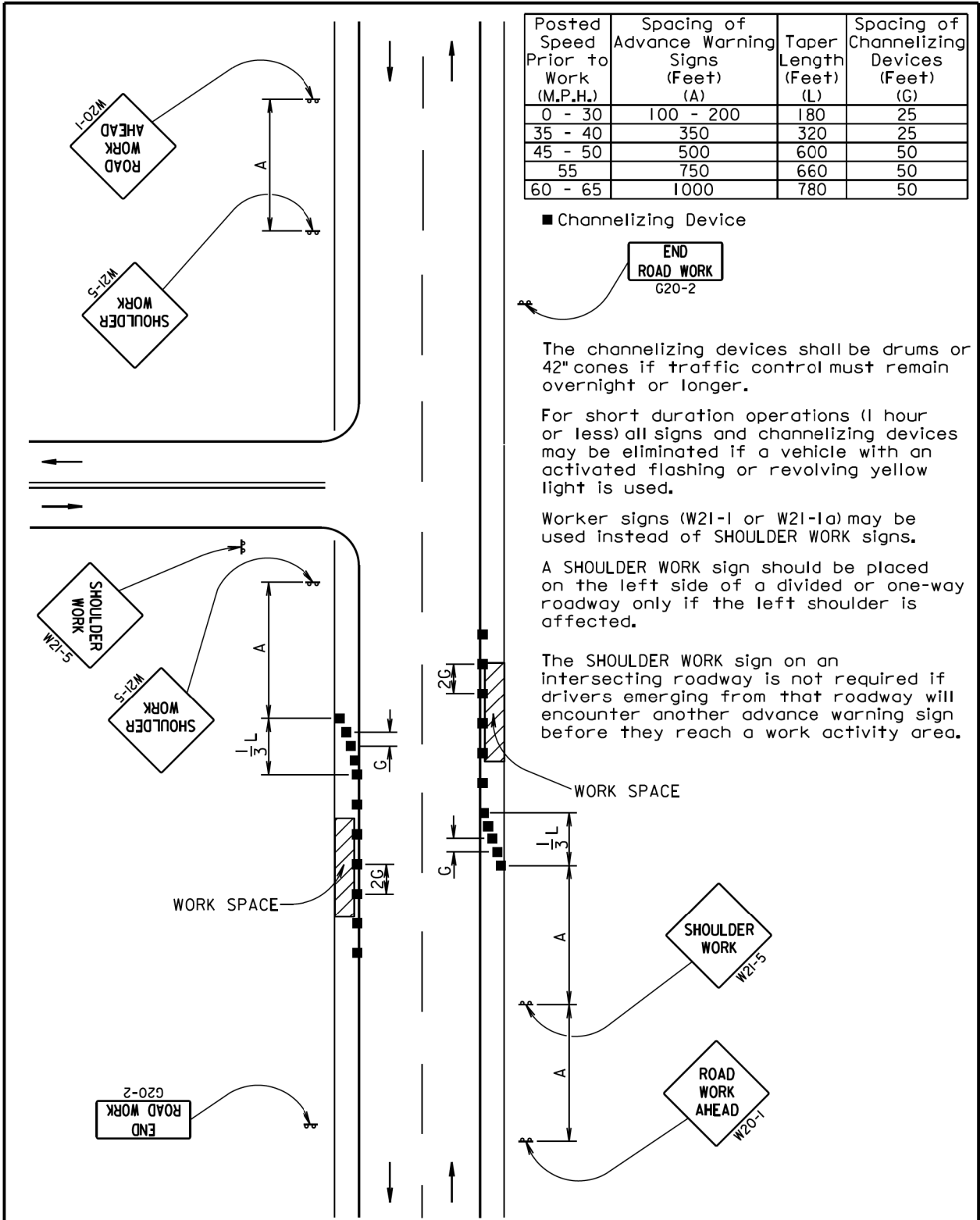
Attachment to circular pipes 15" through 24" diameter shall be made with Type #1 straps. All other sizes shall be attached with Type #2 rods and lugs.

When stated in the plans, optional toe plate extension shall be punched and bolted to end section apron lip with 3/8" diameter galvanized bolts. Steel for toe plate extension shall be same gauge as end section. Dimensions shall be overall width less 6" by 8" high.

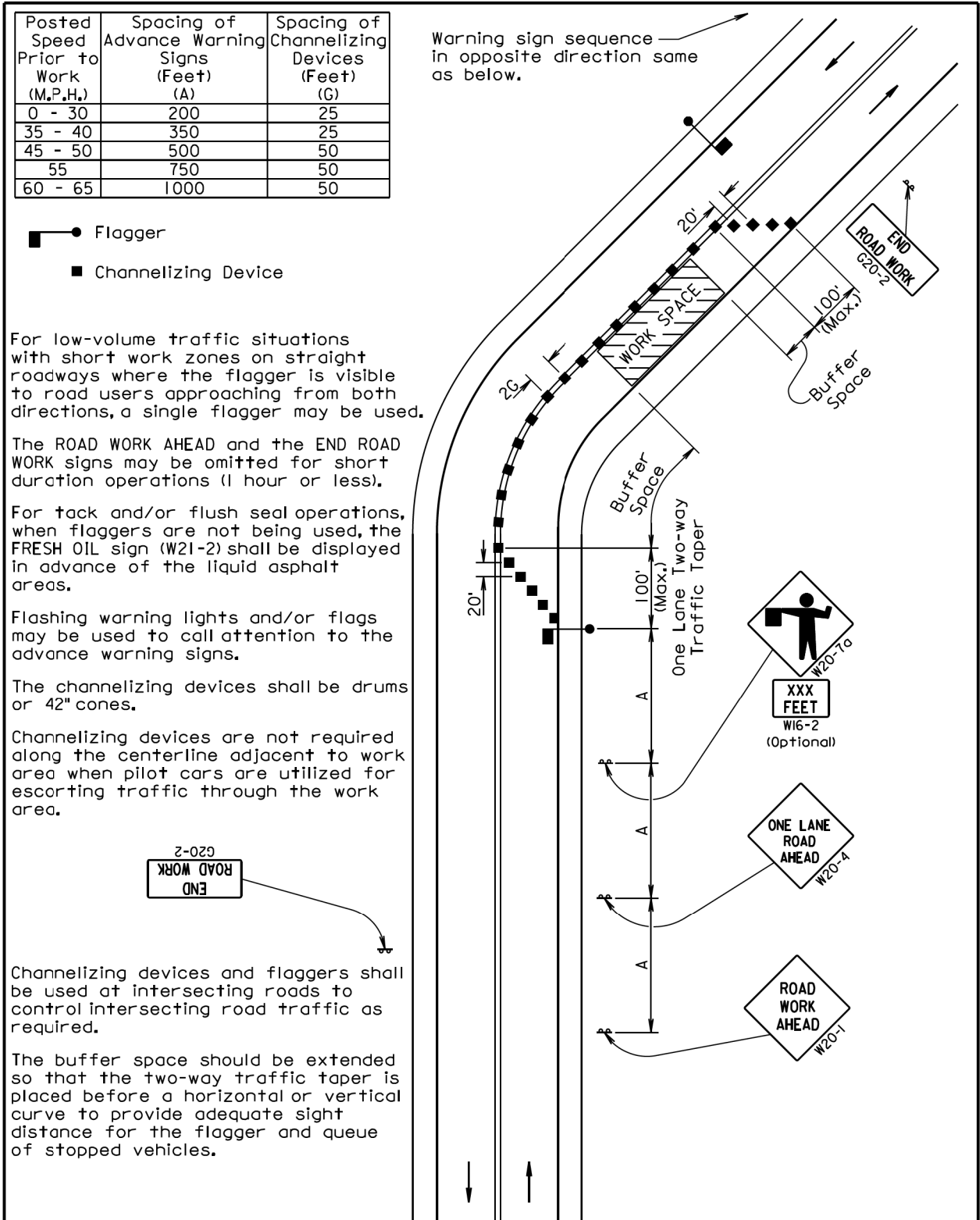
Installation shall be performed in accordance with the Standard Specifications.

All work and materials required for fabrication and installation of safety ends shall be incidental to the bid items for the various sizes of safety ends.





February 14, 2011



February 14, 2011



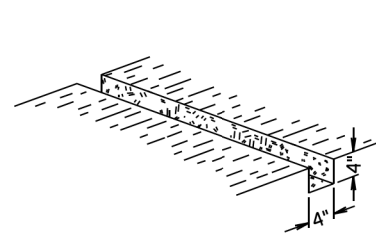


STATE OF SOUTH DAKOTA	PROJECT 014-351	SHEET 10	TOTAL SHEETS 10
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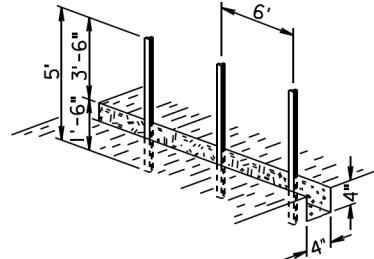
Plotting Date: 03/01/2013

## MANUAL HIGH FLOW SILT FENCE INSTALLATION

### ① EXCAVATE TRENCH

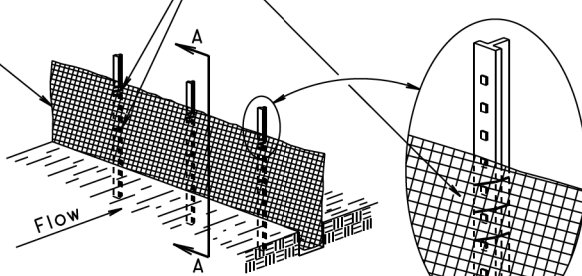


### ② DRIVE STEEL T FENCE POSTS



Attach the silt fence fabric with a total of 4 plastic or wire ties per post. Three ties shall be used at the top and 1 tie shall be approximately at mid-point of the post.

Fabric for silt fence shall be 36" minimum width.



### ③ ATTACH SILT FENCE FABRIC

Silt Fence Fabric

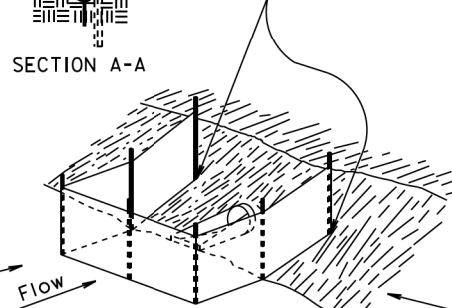
Steel T Fence Post

8" staples shall be placed at each post to secure the silt fence fabric to the bottom of the trench.

Plastic or Wire Ties

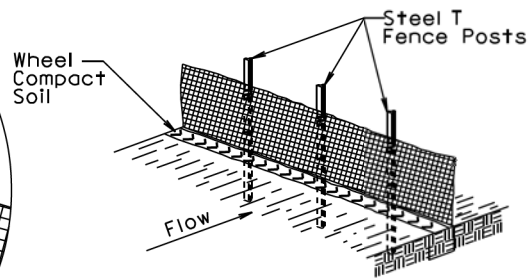
SECTION A-A

The elevation at these locations shall be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.



The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

### ④ BACKFILL TRENCH AND WHEEL COMPACT SOIL

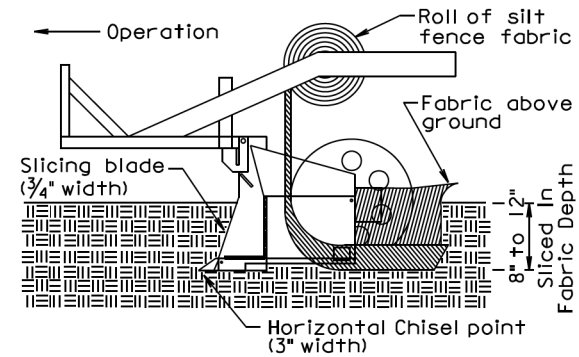


Post spacing shall be 3' for these types of applications of silt fence. All other components of the silt fence shall be the same as shown above.

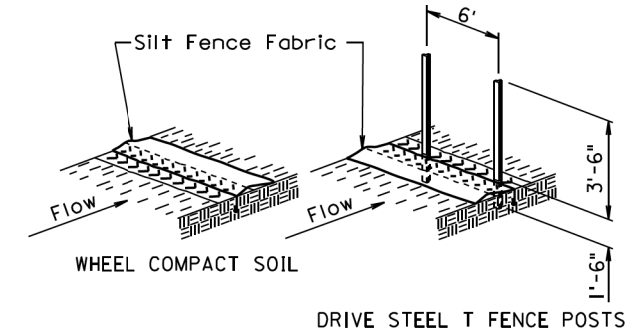
December 23, 2003

Published Date: 1st Qtr. 2013	S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

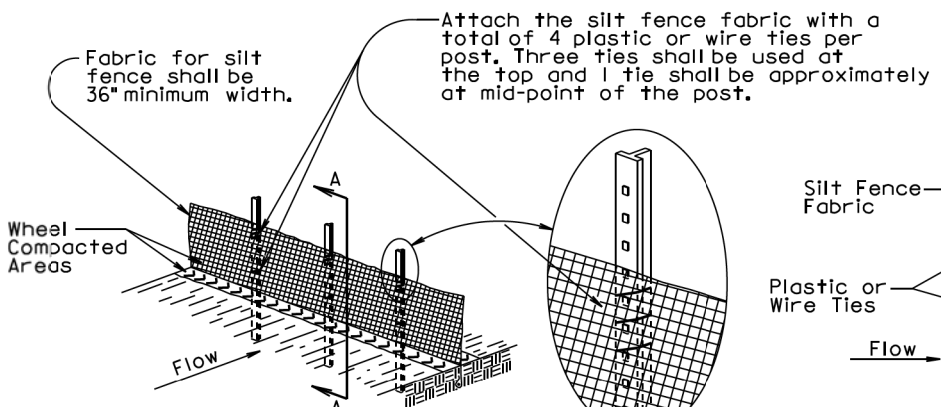
## MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



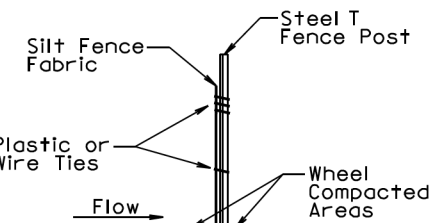
### ① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.



### ② WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.

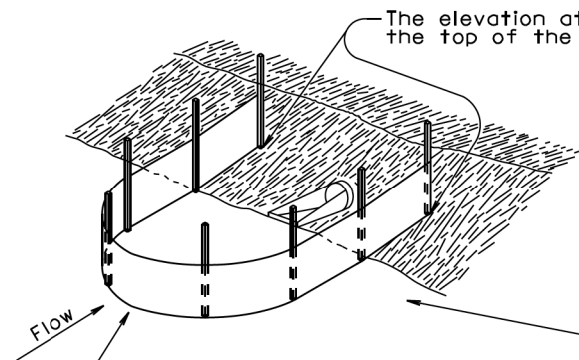


### ③ ATTACH SILT FENCE FABRIC



SECTION A-A

The elevation at these locations shall be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.



The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

The radius of the silt fence shall be the minimum capable by the slicing machine. The post spacing shall be 3' for these types of applications of silt fence. All the other components of the silt fence shall be the same as shown above.

### GENERAL NOTE:

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end shall be provided on top of the extra length of silt fence fabric to prevent underflow.

December 23, 2003

Published Date: 1st Qtr. 2013	S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 2 of 2