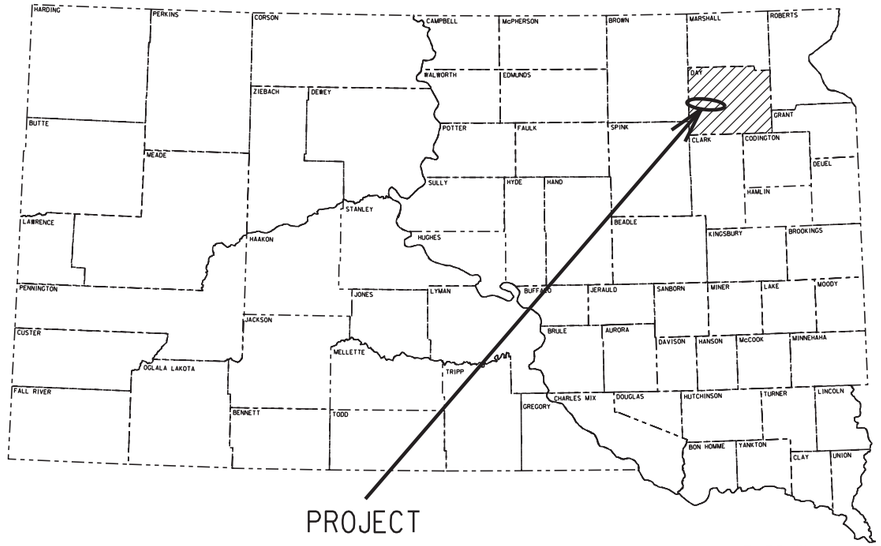


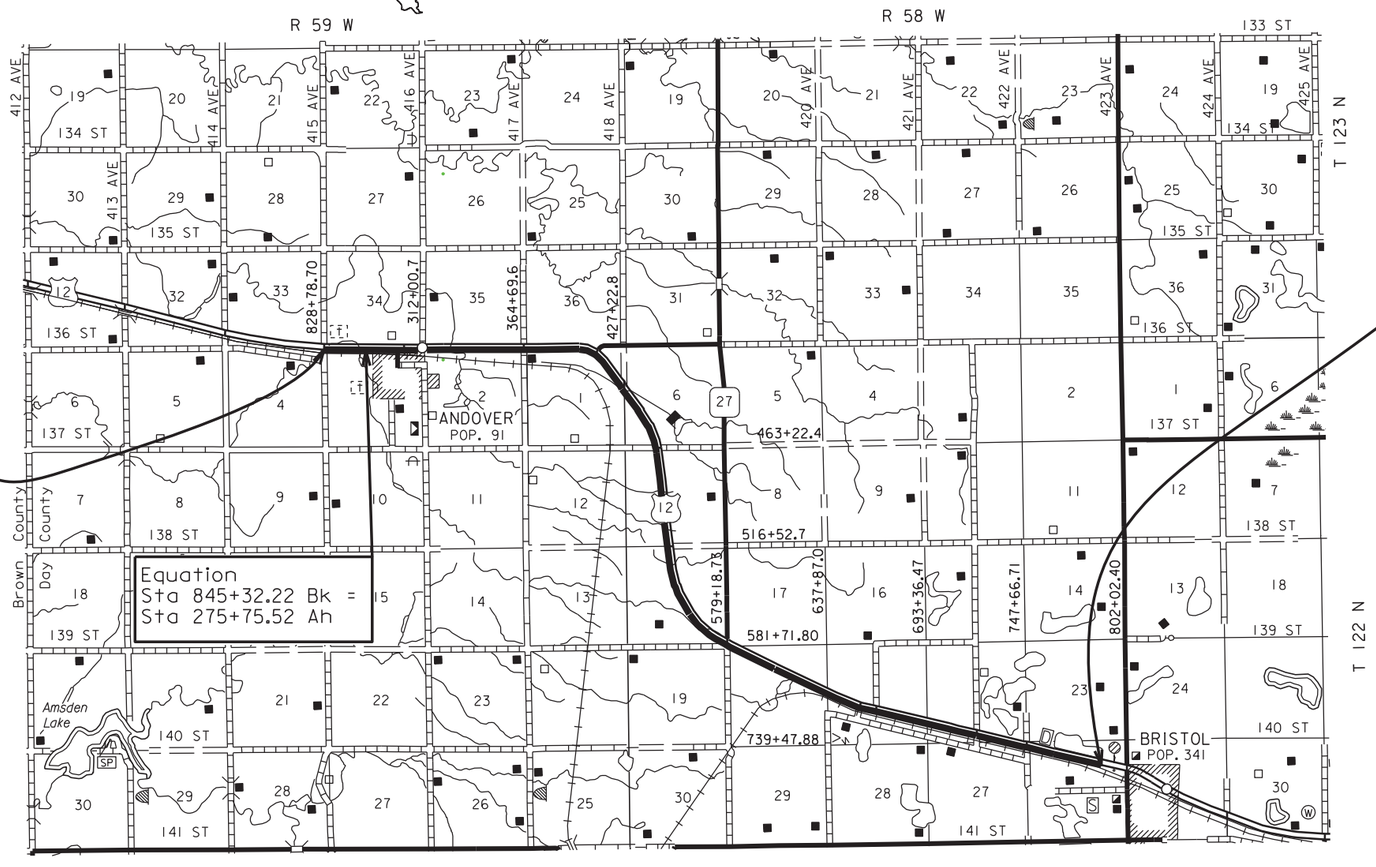
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT NH 0012(191)318
US HIGHWAY 12 EBL
DAY COUNTY

ASPHALT CONCRETE RESURFACING
AND PERMANENT SIGNING
PCN 04WA

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	1	42
Plotting Date: 10/07/2015			

INDEX OF SHEETS



DESIGN DESIGNATION

ADT (2014)	1564
ADT (2034)	2069
DHV	225
D	51%
T DHV	11.4%
T ADT	25.2%
V	70 MPH

STORM WATER PERMIT
(NONE REQUIRED)

GROSS LENGTH	52973.70 FEET	10.033 MILES
LENGTH OF EXCEPTIONS	0.00 FEET	0.000 MILES
NET LENGTH	52973.70 FEET	10.033 MILES

4

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	2	42

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0130	Remove Traffic Sign	23	Each
110E7150	Remove Sign for Reset	73	Each
120E0100	Unclassified Excavation, Digouts	251	CuYd
260E1010	Base Course	501.6	Ton
320E0008	PG 64-34 Asphalt Binder	782.6	Ton
320E1080	Class S Asphalt Concrete	12,360.5	Ton
320E1200	Asphalt Concrete Composite	2,006.6	Ton
320E3100	Stabilizing Additive for Asphalt Concrete	30.1	Ton
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	20.1	Mile
330E0100	SS-1h or CSS-1h Asphalt for Tack	75.4	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	3.3	Ton
332E0010	Cold Milling Asphalt Concrete	2,902	SqYd
600E0200	Type II Field Laboratory	1	Each
632E1320	2.0"x2.0" Perforated Tube Post	1,442.0	Ft
632E1330	2.25"x2.25" Perforated Tube Post	390.0	Ft
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	63.3	SqFt
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	300.4	SqFt
632E3500	Reset Sign	75	Each
632E3520	Remove, Salvage, Relocate, and Reset Traffic Sign	6	Each
633E3000	Durable Pavement Marking, 4" White	66,217	Ft
633E3005	Durable Pavement Marking, 4" Yellow	52,974	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	119,191	Ft
634E0010	Flagging	10.0	Hour
634E0110	Traffic Control Signs	492	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	1	Each
634E0600	4" Temporary Pavement Marking Tape Type I	1,920	Ft
634E0630	Temporary Pavement Marking	10.0	Mile

SPECIFICATIONS

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

PLOTTED FROM - TRAB1@100

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 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:

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 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".

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 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.

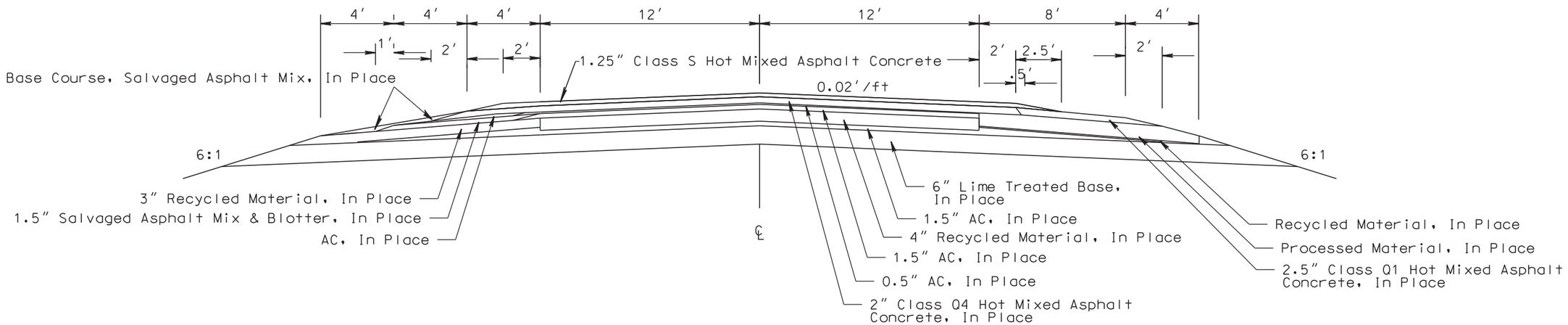
SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide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

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(191)318	4	42

Plotting Date: 10/06/2015

Section 1
Sta 829+00.0 to Sta 285+65.2 (thru Eq)
In Place Section & Resurfacing Section

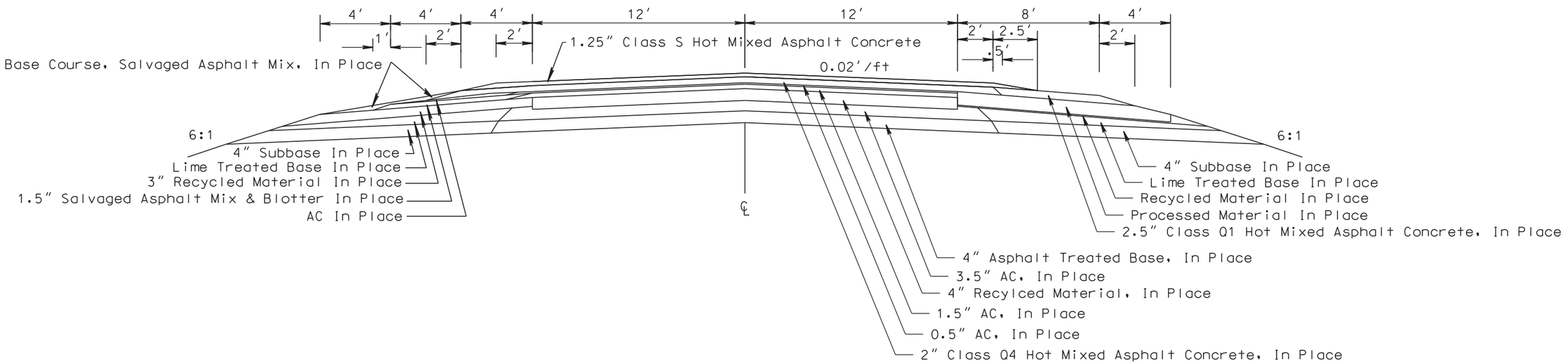


TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(191)318	5	42

Plotting Date: 10/06/2015

Section 2
Sta 285+65.2 to Sta 789+17.0
In Place & Resurfacing Section



RATES OF MATERIALS

The Estimate of Quantities is based on the following quantities of material per mile.

CLASS S ASPHALT CONCRETE - FIRST LIFT

Crushed Aggregate.....	1151 Tons
PG 64-34 Asphalt Binder.....	78 Tons
Total without Lime	**1229 Tons**
Stabilizing Additive.....	3 Tons
Total with Lime	**1232 Tons**

The exact proportion of these materials will be determined on construction.

SS-1h or CSS-1h Emulsified Asphalt for Tack at the rate of **7.5** tons applied **33.5** feet wide.
(Rate = 0.09 Gal./Sq.Yd.)

FLUSH SEAL (One Shoulder only)

SS-1h or CSS-1h Emulsified Asphalt for Flush Seal at the rate of **.2** tons applied **1'4"** feet wide.
(Rate = 0.05 Gal./Sq.Yd.).

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	7	42

TABLE OF PROJECT STATIONING

SECTION	STATION	TO	STATION	LENGTH (Ft)	NET SECTION LENGTH (Ft)	NET SECTION LENGTH (Miles)
1	829+00.0	TO	845+32.22	1632.2	2621.90	0.497
	275+75.52	TO	285+65.2	989.7		
2	285+65.2	TO	789+17.0	50351.8	50351.80	9.536
				TOTAL:	52973.70	10.033

TABLE OF MATERIAL QUANTITIES

	UNCLASSIFIED EXCAVATION, DIGOUTS	BASE COURSE	COLD MILLING ASPHALT CONCRETE	ASPHALT CONCRETE COMPOSITE	CLASS S ASPHALT CONCRETE	PG 64-34 ASPHALT BINDER	STABILIZED ADDITIVE	CRUSHED AGGREGATE (NABI.)	SS-1h/ CSS-1h ASPH. FOR TACK	SS-1h/ CSS-1h ASPH. FOR FLUSH SEAL
				Spot Leveling	<----------Main Line---------->					
SECTION	CuYd	Ton	SqYd	Ton	Ton	Ton	Ton	Ton	Ton	Ton
1	12	24.8	2721	99.3	611.78	38.73	1.5	571.6	3.7	0.16
2	238	476.8	181	1907.3	11748.75	743.83	28.6	10976.3	71.7	3.16
Totals	**251**	**501.6**	**2902**	**2006.6**	**12360.5**	**782.6**	**30.1**	**11547.9**	**75.4**	**3.3**

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	8	42

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
319.00 + 0.032	Lt.	Groton 10						26		2			1	1		E	4" X 6" Wood	Reset Existing Sign on New Post
319.00 + 0.167	Rt.	No Driving on Shoulder										1				W	U-Channel	Remove Do Not Replace
319.00 + 0.273	Rt.	Andover POP 91						26		2			1	1		W	4" X 6" Wood	Reset Existing Sign on New Post
319.00 + 0.332	Median	Wrong Way	R5-1a	36	24							1				E	4" X 6" Wood	Remove Do Not Replace
319.00 + 0.359	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
319.00 + 0.359	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.
319.00 + 0.365	Median	One Way	R6-1L					24		2			1	1		N	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													S		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									E		New Install
		Yellow Delineator		4	8		0.2									W		New Install
		Yield	R1-2													N		Reset Existing Sign on New Post
319.00 + 0.377	Lt.	One Way	R6-1L					10		1		1				S	4" X 6" Wood	Reset Existing Sign on New Post
319.00 + 0.377	Rt.	One Way	R6-1L					26		2			1	1		N	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													S		Reset Existing Sign on New Post
		Stop	R1-1	36	36											S		Reset Existing Sign on New Post
		Divided Hwy. Symbol (T Intersection)	R6-3a													S		Reset Existing Sign on New Post
319.00 + 0.377	Median	One Way	R6-1L					24		2			1	1		S	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													N		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									E		New Install
		Yellow Delineator		4	8		0.2									W		New Install
		Yield	R1-2													S		Reset Existing Sign on New Post

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
319.00 + 0.383	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
319.00 + 0.383	Lt.	Do Not Enter	R5-1	36	36			11		1			1	1		SW		Reset Existing Sign on New Post Across From New Sign.
		Speed Limit 70 MPH	R2-1	36	48				13		1		1	1		E		Reset Existing Sign on New Post at MRM 319.00 + 0.412
319.00 + 0.410	Median	Wrong Way	R5-1a	36	24							1				W		Remove Do Not Replace
319.00 + 0.424	Lt.	Andover POP 91														E	Telespar	Do Not Disturb
319.00 + 0.464	Median	Wrong Way										1				E	4" X 6" Wood	Remove Do Not Replace
319.00 + 0.616	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
319.00 + 0.616	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.
		Speed Limit 70 MPH	R2-1	36	48				13		1		1	1		W		Reset Existing Sign on New Post At MRM 319.00 + 0.586
319.00 + 0.622	Median	One Way	R6-1L					24		2						N	Telespar	Do Not Disturb
		One Way	R6-1R													S		Do Not Disturb
		Yellow Delineator		4	8		0.2									E		New Install
		Yellow Delineator		4	8		0.2									W		New Install
		Yield	R1-2													N		Do Not Disturb
319.00 + 0.625	Lt.	One Way	R6-1L						26		2		1	1		S	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													N		Reset Existing Sign on New Post
		Stop	R1-1	36	36											N		Reset Existing Sign on New Post
		Divided Hwy. Symbol (T Intersection)	R6-3a													N		Reset Existing Sign on New Post
319.00 + 0.635	Rt.	One Way	R6-1L					10		1			1	1		N	4" X 6" Wood	Reset Existing Sign on New Post
319.00 + 0.638	Median	One Way	R6-1L					24		2			1	1		S	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													N		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									E		New Install
		Yellow Delineator		4	8		0.2									W		New Install
		Yield	R1-2													S		Reset Existing Sign on New Post

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
319.00 + 0.644	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
319.00 + 0.644	Lt.	Do Not Enter	R5-1	36	36			11		1			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.
319.00 + 0.645	Rt.	East	M3-2	24	12			13		1			1	1		W	U-Channel	Reset Existing Sign on New Post
		US 12	M1-4	24	24											W		Reset Existing Sign on New Post
319.00 + 0.707	Rt.	JCT 27 5														W	Telespar	Do Not Disturb
320.00 + 0.594	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
320.00 + 0.594	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.
320.00 + 0.600	Median	One Way	R6-1L					24		2			1	1		N	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													S		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									E		New Install
		Yellow Delineator		4	8		0.2									W		New Install
		Yield	R1-2													N		Reset Existing Sign on New Post
320.00 + 0.602	Lt.	One Way	R6-1L						26		2		1	1		S	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													N		Reset Existing Sign on New Post
		Stop	R1-1	36	36											N		Reset Existing Sign on New Post
		Divided Hwy. Symbol (Thru Intersection)	R6-3													N		Reset Existing Sign on New Post
320.00 + 0.609	Rt.	One Way	R6-1L						26		2		1	1		N	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													S		Reset Existing Sign on New Post
		Stop	R1-1	36	36											S		Reset Existing Sign on New Post
		Divided Hwy. Symbol (Thru Intersection)	R6-3													S		Reset Existing Sign on New Post
320.00 + 0.613	Median	One Way	R6-1L					24		2			1	1		S	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													N		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									E		New Install
		Yellow Delineator		4	8		0.2									W		New Install
		Yield	R1-2													S		Reset Existing Sign on New Post

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
320.00 + 0.618	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
320.00 + 0.618	Lt.	Do Not Enter	R5-1	36	36			11		1			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.
320.00 + 0.937	Median	Right Curve Arrow	W1-2R	36	36										1	W	Telespar	Relocate Existing Sign and Post at 321.00 + 0.066
320.00 + 0.937	Rt.	Right Curve Arrow	W1-2R	36	36			12		1			1	1		W	U-Channel	Reset Existing Sign on New Post at 321.00 + 0.066
321.00 + 0.281	Lt.	West	M3-4	24	12	2.0						1				SE	Telespar	Replace Existing Sign with New Sign on Existing Post
		US 12	M1-4	24	24	4.0										SE		Replace Existing Sign with New Sign on Existing Post
DO NOT DISTURB CHEVRONS AROUND THIS CURVE AT APPROXIMATELY 321.00 + 0.115 TO 321.00 + 0.425																		
321.00 + 0.296	Median	Wrong Way	R5-1a	36	24							1				SE	Telespar	Remove Do Not Replace
321.00 + 0.323	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
321.00 + 0.323	Rt.	Do Not Enter	R5-1	36	36										1	SE	Telespar	Relocate Existing Sign and Post Across from New Sign
321.00 + 0.329	Median	One Way	R6-1L					24		2			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													SW		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													NE		Reset Existing Sign on New Post
321.00 + 0.329	Lt.	One Way	R6-1L													SW	Telespar	Do Not Disturb
		One Way	R6-1R													NE		Do Not Disturb
		Stop	R1-1	36	36											NE		Do Not Disturb
		Divided Hwy. Symbol (T Intersection)	R6-3a													NE		Do Not Disturb
321.00 + 0.334	Rt.	One Way	R6-1L													NE	Telespar	Do Not Disturb
321.00 + 0.336	Rt.	US 12														NE	Telespar	Do Not Disturb
		Horizontal Double Arrow	M6-4	21	15	2.2						1				NE		Replace Existing Sign with New Sign on Existing Post
321.00+ 0.340	Median	One Way	R6-1L													SW	Telespar	Do Not Disturb
		One Way	R6-1R													NE		Do Not Disturb
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Do Not Disturb

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	12	42

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
321.00 + 0.346	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
321.00 + 0.346	Lt.	Do Not Enter	R5-1	36	36										1	NW	Telespar	Relocate Existing Sign and Post Across from New Sign
321.00 + 0.373	Median	Wrong Way	R5-1a	36	24							1				NW	Telespar	Remove Do Not Replace
321.00 + 0.375	Rt.	East	M3-2	24	12	2.0						1				NW	Telespar	Replace Existing Sign with New Sign on Existing Post
		US 12	M1-4	24	24	4.0										NW		Replace Existing Sign with New Sign on Existing Post
321.00 + 0.554	Median	Left Curve Arrow													1	SE	Telespar	Relocate Existing Sign and Post at 321.00 + 0.478
321.00 + 0.554	Lt.	Left Curve Arrow	W1-2L	36	36		9.0	11		1		1				SE	4" X 6" Wood	Replace Existing Sign with New Sign on New Post at 321.00 + 0.478
321.00 + 0.752	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
321.00 + 0.752	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		SE	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.
321.00 + 0.758	Median	One Way	R6-1L					24		2			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													SW		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													NE		Reset Existing Sign on New Post
321.00 + 0.761	Lt.	One Way	R6-1L													SW	Telespar	Do Not Disturb
		One Way	R6-1R													NE		Do Not Disturb
		Stop	R1-1	36	36											NE		Do Not Disturb
		Divided Hwy. Symbol (T Intersection)	R6-3a													NE		Do Not Disturb
321.00 + 0.773	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	13	42

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
321.00 + 0.776	Rt.	One Way	R6-1L					10		1			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
321.00 + 0.779	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
321.00 + 0.779	Lt.	Do Not Enter	R5-1	36	36			11		1			1	1		NW	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.
322.00 + 0.064		Truck Symbol																Do Not Disturb
		Entering Exiting Highway																
322.00 + 0.064		Truck Symbol																
		Entering Exiting Highway																
322.00 + 0.249		Thru traffic merge left																Do Not Disturb
		when flashing																
322.00 + 0.249		Thru traffic merge left																
		when flashing																
322.00 + 0.414	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
322.00 + 0.414	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		SE	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.
322.00 + 0.420	Median	One Way	R6-1L					24		2			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													SW		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													NE		Reset Existing Sign on New Post
322.00 + 0.422	Lt.	One Way	R6-1L						26		2		1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Stop	R1-1	36	36											NE		Reset Existing Sign on New Post
		Divided Hwy. Symbol (Thru Intersection)	R6-3													NE		Reset Existing Sign on New Post

PLOTTED FROM - TRAB10100

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	14	42

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
322.00 + 0.433	Rt.	One Way	R6-1L						26		2		1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													SW		Reset Existing Sign on New Post
		Stop	R1-1	36	36											SW		Reset Existing Sign on New Post
		Divided Hwy. Symbol (Thru Intersection)	R6-3													SW		Reset Existing Sign on New Post
322.00 + 0.434	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post
322.00 + 0.440	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
322.00 + 0.440	Lt.	Do Not Enter	R5-1	36	36		9.0	11		1		1				NW	4" X 6" Wood	Replace Existing Sign with New Sign on New Post Across from New Install Above
322.00 + 0.624		Thru traffic merge right																Do Not Disturb
		when flashing																
322.00 + 0.624		Thru traffic merge right																
		when flashing																
322.00 + 0.786		Truck Symbol																Do Not Disturb
		Entering Exiting Highway																
322.00 + 0.786		Truck Symbol																
		Entering Exiting Highway																
323.00 + 0.401	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
323.00 + 0.401	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		SE	4" X 6" Wood	Reset Existing Sign on New Post Across from New Install Above

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
323.00 + 0.407	Median	One Way	R6-1L													NE	Telespar	Do Not Disturb
		One Way	R6-1R													SW		Do Not Disturb
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													NE		Do Not Disturb
323.00 + 0.407	Lt.	One Way	R6-1L						26		2		1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Stop	R1-1	36	36											NE		Reset Existing Sign on New Post
		Divided Hwy. Symbol (T Intersection)	R6-3a													NE		Reset Existing Sign on New Post
323.00 + 0.410	Rt.	One Way	R6-1L					10		1			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
323.00 + 0.419	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post
323.00 + 0.425	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
323.00 + 0.425	Lt.	Do Not Enter	R5-1	36	36			11		1			1	1		NW	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.
324.00 + 0.412	Lt.	Speed Limit 70 MPH														SE	Telespar	Do Not Disturb
324.00 + 0.412	Rt.	JCT	M2-1	21	15	2.2		11		1		1				NW	4" X 6" Wood	Replace Existing Sign with New Sign on New Post
		SD 27	M1-5	24	24	4.0										NW		Replace Existing Sign with New Sign on New Post
324.00 + 0.477	Lt.	Andover 5 Groton 15 Aberdeen 34														SE	Telespar	Do Not Disturb
324.00 + 0.477	Rt.	Webster / Britton														NW	Telespar	Do Not Disturb
324.00 + 0.514	Median	Wrong Way	R5-1a	36	24							1				SE		Remove Do Not Replace
324.00 + 0.517	Lt.	West	M3-4	24	12	2.0		13		1		1				SE	4" X 6" Wood	Replace Existing Sign with New Sign on New Post
		US 12	M1-4	24	24	4.0										SE		Replace Existing Sign with New Sign on New Post
324.00 + 0.541	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	16	42

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
324.00 + 0.541	Rt.	Do Not Enter	R5-1					11		1			1	1		SE	4" X 6" Wood	Reset Existing Sign on New Post Across from New Install Above
		SD 27	M1-5	24	24	4.0		26		2		1				NW		Replace Existing Signs with New Sign on New Post
		Horizontal Left Arrow	M6-1L	21	15	2.2										NW		
		US 12	M1-4	24	24	4.0										NW		
		Vertical Arrow	M6-3	21	15	2.2										NW		
324.00 + 0.547	Median	One Way	R6-1L					24		2			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													SW		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													NE		Reset Existing Sign on New Post
324.00 + 0.550	Lt.	One Way	R6-1L													S	Telespar	Do Not Disturb
		One Way	R6-1R													N		Do Not Disturb
		Stop	R1-1	36	36											N		Do Not Disturb
		Divided Hwy. Symbol (Thru Intersection)	R6-3													N		Do Not Disturb
NOTE: MRM's Skip from 324.00 + 0.550 to 326.36 + 0.000 at the Intersection																		
326.36 + 0.005	Rt.	US 12														N	Telespar	Do Not Disturb
		Horizontal Double Arrow														N		Do Not Disturb
		End														N		Do Not Disturb
		SD 27														N		Do Not Disturb
326.36 + 0.024	Rt.	One Way	R6-1L													N	Telespar	Do Not Disturb
		One Way	R6-1R													S		Do Not Disturb
		Stop	R1-1	36	36											S		Do Not Disturb
		Divided Hwy. Symbol (Thru Intersection)	R6-3													S		Do Not Disturb
326.36 + 0.027	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post
326.36 + 0.032	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install

PLOTTED FROM - TRAB10100

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	17	42

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
326.36 + 0.032	Lt.	Do Not Enter	R5-1					11		1			1	1		NW	4" X 6" Wood	Reset Existing Sign on New Post Across from New Install Above
		US 12	M1-4	24	24	4.0		26		2		1				NW		Replace Existing Signs with New Signs on New Post
		Vertical Arrow	M6-3	21	15	2.2										NW		
		SD 27	M1-5	24	24	4.0										NW		
		Horizontal Arrow Right	M6-1R	21	15	2.2										NW		
326.36 + 0.039	Rt.	East	M3-2	24	12	2.0		13		1		1				NW	4" X 6" Wood	Replace Existing Sign with New Sign on New Post
		US 12	M1-4	24	24	4.0										NW	4" X 6" Wood	Replace Existing Sign with New Sign on New Post
326.36 + 0.059	Median	Wrong Way	R5-1a	36	24							1				NW		Remove Do Not Replace
326.36 + 0.091	Lt.	Groton / Britton														SE	Telespar	Do Not Disturb
326.36 + 0.092	Rt.	Bristol 4 Webster 25 JCT 29 39														NW	Telespar	Do Not Disturb
326.36 + 0.141	Lt.	JCT	M2-1	21	15	2.2						1				SE	Telespar	Replace Existing Sign with New Sign on Existing Post
		SD 27	M1-5	24	24	4.0										SE		Replace Existing Sign with New Sign on Existing Post
326.36 + 0.161	Rt.	Deer Crossing Symbol						12		1			1	1		NW	4" X 6" Wood	Reset Existing Sign on New Post
326.36 + 0.212	Rt.	No Driving on Shoulder										1				NW	U-Channel	Remove Do Not Replace
326.36 + 0.268	Rt.	Speed Limit 70 MPH														NW	Telespar	Do Not Disturb
327.00 + 0.459	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
327.00 + 0.459	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		SE	4" X 6" Wood	Reset Existing Sign on New Post Across from New Install Above
327.00 + 0.465	Median	One Way	R6-1L					24		2			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													SW		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													NE		Reset Existing Sign on New Post
327.00 + 0.465	Lt.	One Way	R6-1L						26		2		1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Stop	R1-1	36	36											NE		Reset Existing Sign on New Post
		Divided Hwy. Symbol (T Intersection)	R6-3a													NE		Reset Existing Sign on New Post

PLOTTED FROM - TRAB10100

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	18	42

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
327.00 + 0.469	Rt.	One Way	R6-1L					10		1			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
327.00 + 0.475	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post
327.00 + 0.481	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
327.00 + 0.481	Lt.	Do Not Enter	R5-1	36	36			11		1			1	1		NW	4" X 6" Wood	Reset Existing Sign on New Post
327.00 + 0.853	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
327.00 + 0.853	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		SE	4" X 6" Wood	Reset Existing Sign on New Post Across from New Install Above
327.00 + 0.859	Median	One Way	R6-1L													NE	Telespar	Do Not Disturb
		One Way	R6-1R													SW		Do Not Disturb
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													NE		Do Not Disturb
327.00 + 0.860	Lt.	One Way	R6-1L					10		1			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
327.00 + 0.866	Rt.	One Way	R6-1L						26		2		1	1		N	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													S		Reset Existing Sign on New Post
		Stop	R1-1	36	36											S		Reset Existing Sign on New Post
		Divided Hwy. Symbol (T Intersection)	R6-3a													S		Reset Existing Sign on New Post
327.00 + 0.866	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post

PLOTTED FROM - TRAB1000

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
327.00 + 0.872	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
327.00 + 0.872	Lt.	Do Not Enter	R5-1	36	36										1	NW	Telespar	Relocate Existing Sign and Post Across From New Sign.
328.00 + 0.010	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
328.00 + 0.010	Rt.	Do Not Enter	R5-1	36	36		9.0	11		1		1				SE	4" X 6" Wood	Replace Existing Sign with New Sign on New Post Across from New Install Above
328.00 + 0.016	Median	One Way	R6-1L					24		2			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													SW		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													NE		Reset Existing Sign on New Post
328.00 + 0.017	Lt.	One Way	R6-1L						26		2		1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Stop	R1-1	36	36											NE		Reset Existing Sign on New Post
		Divided Hwy. Symbol (T Intersection)	R6-3a													NE		Reset Existing Sign on New Post
328.00 + 0.020	Rt.	One Way	R6-1L													NE	Telespar	Do Not Disturb
328.00 + 0.024	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post
328.00 + 0.030	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
328.00 + 0.030	Lt.	Do Not Enter	R5-1	36	36			11		1			1	1		NW	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
328.00 + 0.815	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
328.00 + 0.815	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		SE	4" X 6" Wood	Reset Existing Sign on New Post Across from New Install Above
328.00 + 0.821	Median	One Way	R6-1L					24		2			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													SW		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													NE		Reset Existing Sign on New Post
328.00 + 0.829	Lt.	One Way	R6-1L					10		1			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
328.00 + 0.830	Rt.	One Way	R6-1L						26		2		1	1		N	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													S		Reset Existing Sign on New Post
		Stop	R1-1	36	36											S		Reset Existing Sign on New Post
		Divided Hwy. Symbol (T Intersection)	R6-3a													S		Reset Existing Sign on New Post
328.00 + 0.831	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post
328.00 + 0.837	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
328.00 + 0.837	Lt.	Do Not Enter	R5-1	36	36			11		1			1	1		NW	4" X 6" Wood	Reset Existing Sign on New Post Across From New Sign.
329.00 + 0.050	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
329.00 + 0.050	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		SE	4" X 6" Wood	Reset Existing Sign on New Post Across from New Install Above

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	21	42

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
329.00 + 0.056	Median	One Way	R6-1L					24		2			1	1		NE	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													SW		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													NE		Reset Existing Sign on New Post
329.00 + 0.058	Lt.	One Way	R6-1L						26		2		1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Stop	R1-1	36	36											NE		Reset Existing Sign on New Post
		Divided Hwy. Symbol (Thru Intersection)	R6-3													NE		Reset Existing Sign on New Post
329.00 + 0.072	Rt.	One Way	R6-1L						26		2		1	1		N	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													S		Reset Existing Sign on New Post
		Stop	R1-1	36	36											S		Reset Existing Sign on New Post
		Divided Hwy. Symbol (Thru Intersection)	R6-3													S		Reset Existing Sign on New Post
329.00 + 0.072	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post
329.00 + 0.078	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
329.00 + 0.078	Lt.	Do Not Enter	R5-1	36	36										1	NW	Telespar	Relocate Existing Sign and Post Across from New Install Above
329.00 + 0.532	Median	Do Not Enter	R5-1	36	36		9.0	11		1						SE		New Sign Install
329.00 + 0.532	Rt.	Do Not Enter	R5-1	36	36			11		1			1	1		SE	4" X 6" Wood	Reset Existing Sign on New Post Across from New Install Above

US 12, NH 0012(191)318, PCN 04WA Permanent Sign Installation Table

MRM + Displacement	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	2.5"x2.5" Perforated Tube Post 10 Ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
329.00 + 0.538	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post
329.00 + 0.540	Lt.	One Way	R6-1L													SW	Telespar	Do Not Disturb
		One Way	R6-1R													NE		Do Not Disturb
		Stop	R1-1	36	36											NE		Do Not Disturb
		Divided Hwy. Symbol (Thru Intersection)	R6-3													NE		Do Not Disturb
329.00 + 0.544	Rt.	One Way	R6-1L						26		2		1	1		N	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													S		Reset Existing Sign on New Post
		Stop	R1-1	36	36											S		Reset Existing Sign on New Post
		Divided Hwy. Symbol (Thru Intersection)	R6-3													S		Reset Existing Sign on New Post
329.00 + 0.549	Median	One Way	R6-1L					24		2			1	1		SW	4" X 6" Wood	Reset Existing Sign on New Post
		One Way	R6-1R													NE		Reset Existing Sign on New Post
		Yellow Delineator		4	8		0.2									SE		New Install
		Yellow Delineator		4	8		0.2									NW		New Install
		Yield	R1-2													SW		Reset Existing Sign on New Post
329.00 + 0.555	Median	Do Not Enter	R5-1	36	36		9.0	11		1						NW		New Sign Install
329.00 + 0.555	Lt.	Do Not Enter	R5-1	36	36		9.0	11		1		1				NW	4" X 6" Wood	Replace Existing Sign with New Sign on New Post Across from New Install Above
329.00 + 0.989	Rt.	Adopt A Highway	ADO-5	36	36			11		1			1	1		NW	4" X 6" Wood	Reset Existing Sign on New Post
		Coteau Hills 4-H Club	ADO-1	36	18											NW		Reset Existing Sign on New Post
		Litter Crew Ahead	ADO-6	30	30											NW		Reset Existing Sign on New Post
					TOTAL	63.3	300.4	1442.0	390.0	125	30	23	73	73	6			

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	23	42

NH 0012(191)318, PCN 04WA, Sign Summary US 12

Sign Code	Description	Width (Inches)	Height (Inches)	Sq. Ft.	No.	Flat Aluminum Sign, Nonremovable Copy High Intensity (SQFT)	Flat Aluminum Sign, Nonremovable Copy Super or Very High Intensity (SQFT)	Text / Background
M1-4	US 12	24	24	4.0	6	24.0		Black on White
M1-5	SD 27	24	24	4.0	4	16.0		See Standard Plate 632.20
M2-1	Junction	21	15	2.2	2	4.4		Black on White/Green Border
M3-2	East	24	12	2.0	2	4.0		Black on White
M3-4	West	24	12	2.0	2	4.0		Black on White
M6-1L	Horizontal Left Arrow	21	15	2.2	1	2.2		Black on White/Green Border
M6-1R	Horizontal Right Arrow	21	15	2.2	1	2.2		Black on White/Green Border
M6-3	Vertical Arrow	21	15	2.2	2	4.4		Black on White
M6-4	Horizontal Double Arrow	21	15	2.2	1	2.2		Black on White
R5-1	Do Not Enter	36	36	9.0	31		279.0	White on Red
W1-2L	Left Curve Arrow	36	36	9.0	1		9.0	Black on Fluorescent Yellow
	Yellow Delineator	4	8	0.2	56		12.4	Fluorescent Yellow
					Totals	**63.3**	**300.4**	

SURFACING THICKNESS DIMENSIONS

Plans tonnage will be applied even though the thickness may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, plans tonnage may be varied to achieve the required elevation.

SCOPE OF WORK

Work on this project involves placement of 1.25" Asphalt Concrete Pavement, rumble strips, pavement markings and permanent signing.

SEQUENCE OF OPERATIONS

The following Sequence shall be used for this project. The Contractor may submit an alternate Sequence of Operations for consideration by the Area Engineer. An alternate Sequence of Operations shall be submitted to the Area Engineer a minimum of 2 weeks prior to the preconstruction meeting.

1. Install fixed location construction signing prior to start of work
2. Cold mill asphalt concrete
3. Spot leveling and strengthening asphalt concrete
4. Place asphalt concrete surfacing
5. Install rumble strips
6. Place flush seal over rumble strips
7. Install permanent signing
8. Install permanent pavement markings
9. Complete any remaining project items
10. Clean up project and remove fixed location construction signing

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.

TRAFFIC CONTROL

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost of this work shall be incidental to the various contract items unless otherwise specified in the plans. Delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

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.

Work activities during non-daylight hours are subject to prior approval.

"Grooved Pavement" signs shall be placed at the beginning of the project until all cold milled areas are covered with asphalt concrete. These signs are included in the Traffic Control Devices Inventory sheet.

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.

Traffic Control signs, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

TYPE II FIELD LABORATORY

The lab shall be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection shall be provided with a multi-port wireless router. The internet connection shall be a minimum speed of 512 Kb unless limited by job location and approved by the DOT. Prior to installing the wireless router the Contractor shall submit the wireless router's technical data to the Area Office to check for compatibility with the state's computer equipment. The internet connection is intended for state personnel usage only. The Contractor's personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer. These items shall be incidental to the contract unit price per each for TYPE II FIELD LABORATORY.

In addition, the Contractor shall furnish one mechanical convection oven that meets the specifications in Section 600.2 A.17 of the Specifications.

4" TEMPORARY PAVEMENT MARKING TAPE TYPE I

4" Temporary Pavement Marking Tape Type I has been included in the Estimate of Quantities for lane tapers as indicated on Standard Plate 634.47 and 634.48.

The Contractor may substitute Temporary Raised Pavement Markers for the 4" Temporary Pavement Marking Tape Type I. The Temporary Road Markers shall be installed at a spacing of 5 feet. Temporary Road Markers shall be paid for as 4" Temporary Pavement Marking Tape Type I.

SHOULDER PREPARATION

Vegetation and accumulated material adjacent to the existing surface edge shall be removed to the satisfaction of the Engineer prior to placement of mainline surfacing. Any remaining windrow of accumulated material shall be re-spread evenly on the inslope adjacent to the asphalt shoulder to the satisfaction of the Engineer prior to the application of the flush seal.

Any vegetation damaged outside of the asphalt concrete limits shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

This shoulder work shall be incidental to other contract items. Separate measurement and payment will not be made.

EXCAVATION OF UNSTABLE MATERIAL

Included in the Estimate of Quantities are **25** Cubic Yards of Unclassified Excavation, Digouts per mile for the necessary removal of unstable material.

Backfill shall be Base Course paid for at the contract unit price per ton.

The digout shall be extended to the shoulder and the granular material backfill shall daylight to the inslope to allow water to escape the subgrade.

BASE COURSE

Aggregate for Base Course shall conform to the specifications, except that the compaction shall be to the satisfaction of the Engineer.

Included in the Estimate of Quantities are **50** tons of Base Course per mile for backfill of Unclassified Excavation, Digouts.

WATER FOR COMPACTION OF GRANULAR MATERIALS

Cost of water for compaction of the granular material shall be incidental to the contract unit price for the various contract items. Six percent, plus or minus, moisture will be required at the time of compaction unless otherwise directed by the Engineer.

COLD MILLING ASPHALT CONCRETE

The placement of asphalt concrete shall begin within **5** working days after completion of the cold milling of mainline asphalt concrete.

Cold Milling Asphalt Concrete shall be done at the project limits according to the transition detail. Two maintenance patches will require cold milling asphalt concrete at the following locations: MRM 318.00 +0.643 (182' x 25' = 506 SqYd) and MRM 318.00+0.798 (275' x 25' = 764 SqYd). The Contractor will remove the maintenance patch first and the Engineer will then determine the necessary repair. The two options considered are: a) Another pass of cold milling asphalt at a 2 inch depth and pave back with asphalt concrete composite; b) An unclassified digout will be used for smaller areas with backfill of base course and 4 inches of asphalt concrete composite. Quantities for the second pass of cold milling asphalt concrete at both locations have been included in the Estimate of Quantities. If the second pass of cold milling asphalt concrete at the maintenance patch location is not warranted, the quantities shall be removed from the contract.

Any additional costs associated with cold milling shall be incidental to the contract unit price per square yard for COLD MILLING ASPHALT CONCRETE.

The salvaged asphalt concrete material shall become the property of the Contractor for his disposal. This material will not be subject to gradation testing.

CLASS S ASPHALT CONCRETE

Mineral aggregate for the Class S shall conform to the requirements for Class S, Type 1.

When directed by the Engineer, the Contractor shall saw and remove a total of three undamaged compaction cores (4” dia. min.) from designated area(s) and repair the hole(s) to the satisfaction of the Engineer. All costs associated with the compaction cores shall be incidental to the contract unit price per ton for CLASS S ASPHALT CONCRETE.

RUMBLE STRIPS

Rumble Strips installation shall be completed prior to application of the Permanent Pavement Markings. The Contractor will still be required to apply a Flush Seal to the newly installed 12” Rumble Strips at a width of 1’4”.

The Contractor shall be required to remove loose material from the driving surface and/or asphalt shoulders of the roadway. Loose material may be broomed to the edge of shoulders and it shall be the Contractor’s responsibility to ensure the loose material does not enter any vegetated areas and/or waterways.

All costs associated with the work shall be incidental to the contract unit price per mile for GRIND 12" RUMBLE STRIP OR STRIPE IN ASPHALT CONCRETE.

TABLE OF 12” RUMBLE STRIPS

Station to Station	Length (Ft)	Length (Miles)
829+00.00 to 285+65.20 (Thru Eq) (Median Shoulder)	2621.9	
285+65.20 to 789+17.00 (Median Shoulder)	50351.8	
829+00.00 to 285+65.20 (Thru Eq) (Outside Shoulder)	2621.9	
285+65.20 to 789+17.00 (Outside Shoulder)	50351.8	
Total	105947.4	20.1

FLUSH SEAL

Application of Flush Seal on the Rumble Strips shall be completed within 10 working days following completion of the asphalt concrete surfacing.

For each working day that the Flush Seal remains uncompleted after the 10 working day limitation, the Contractor will be assessed liquidated damages at the rate of $250.00 per day.

The liquidated damages shall apply only up to the Substantial Completion Date, as extended. After the Substantial Completion Date, liquidated damages will be assessed in accordance with the schedule set forth in section 8.8 of the specifications.

TEMPORARY PAVEMENT MARKINGS

The total length of no passing zone on this project is estimated to be **0** miles.

Quantities of Temporary Pavement Markings consist of:
One pass on top of the Class S Asphalt Concrete.

Temporary Flexible Vertical Markers (Tabs) shall be used as detailed in the specifications. The Contractor shall remove and properly dispose of the tabs after Permanent Pavement Marking is applied. Method of removal shall be nondestructive to the road surface and shall be accomplished within one week of completion of the Permanent Pavement Marking.

Cost for furnishing, applying, removing and disposing of the Temporary Flexible Vertical Markers (Tabs) shall be included in the contract unit price per mile for TEMPORARY PAVEMENT MARKING.

Flagger symbol signs (W20-7) and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights shall be positioned on the roadway shoulder in advance of workers during the installation of Temporary Flexible Vertical Markers (Tabs). The traffic control device used shall be moved to provide proper warning of the work operation. A Workers symbol sign (W21-1) shall be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work shall be approved by the Engineer.

DURABLE PAVEMENT MARKINGS

Durable Pavement Markings shall meet the requirements of the Special Provisions.

Durable Pavement Markings shall be installed to match existing markings.

Durable Pavement Markings shall be completed after the installation of the rumbles strips and associated fog sealing of the rumbles strips.

The application of Durable Pavement Markings may not begin until 7 calendar days following completion of the Flush Seal on the rumble strips and shall be completed within 14 calendar days following completion of the final surfacing.

For each working day the application of durable pavement markings remains uncompleted beyond the time limits described in the preceding paragraph, the Contractor will be assessed liquidated damages at the rate of $250.00 per day.

A lane closure will be used when the Contractor installs durable pavement markings.

PERMANENT SIGNING

Existing signs that are to be moved as per the remarks in the signing table shall be staked in the field by the Contractor and checked by the Engineer. The Contractor shall give the Engineer a minimum of one week to check staked locations prior to sign/post installation.

The Contractor shall be responsible for contacting South Dakota One Call to locate the utilities at the staked sign installation locations.

Prior to ordering sign posts, the Contractor shall verify post lengths. The height of the post shall not exceed the minimum height needed by more than 0.5 feet. Any portion that extends above the sign shall be cut off. No separate payment will be made for cutting the post or for that length cut off.

Prior to ordering signs, the Contractor shall verify dimensions, background, border, and legend of the signs.

REMOVE EXISTING SIGNS

Existing signs within the project limits are summarized in the Sign Table. This table provides the approximate Station or MRM location for each sign. Existing signs in the table are indicated to be removed and not reused.

All existing signs and hardware listed to be removed shall become the property of the Contractor.

Holes remaining from the removal of 4”x6” wood posts shall be backfilled and compacted with material placed in layers not to exceed 6 inches in depth.

All costs associated with the removal of existing signs, posts, hardware, and backfilled holes shall be incidental to the contract unit price per each for Remove Traffic Sign.

All existing sign posts and/or sign bases shall be removed in their entirety.

NEW PERMANENT SIGNING

New signs for installation are summarized in the Sign Table.

Sign Design

Signs shall be constructed as required per the Manual on Uniform Traffic Control Devices (MUTCD), the latest edition of "Standard Highway Signs", and as specified on the Special Sign Design sheets.

All upper/lower case letters and numerals shall be as required per the MUTCD, the latest edition of "Standard Highway Signs", and as illustrated on the Special Sign Design sheets.

The Contractor shall furnish the Aberdeen Region Traffic Engineer (P.O. Box 1767; Aberdeen, SD 57402) with a detailed sign layout sheet for each sign shown. These detailed sign layouts shall be approved by the Region Traffic Engineer prior to ordering the signs.

Sign Sheeting

All signs shall be manufactured in accordance with the sheeting manufacturer's recommendations utilizing a matched component system, including inks, electronic cuttable films, and protective overlay films. Digitally printed signs will not be accepted.

Sign Installation Hardware

Aluminum U-Channel stiffeners shall be used on all standard highway signs greater than 36 inches in width and shall conform to Alloy 6063-T6 or 6061-T6. The U-Channel shall be 2 inches in width and free of holes. The U-Channel stiffeners shall also be used to connect various signs together so that an entire sign assembly can be erected on a single installation.

Stiffeners may be fastened to signs by use of ¼ inch diameter drive rivets.

Refer to the Breakaway Sign Supports diagram for typical sign and stiffener details.

The Contractor shall use 3/8 inch diameter rust proof machine sign bolts, flat metal washers, neoprene washers (against the sign sheeting), lock washers, and nuts to fasten the sign to the channel aluminum and posts. A minimum of two bolts shall extend through each post.

All costs associated with furnishing and installing the new permanent signs, and with furnishing and installing stiffeners and hardware shall be incidental to the contract unit price per square foot for Flat Aluminum Sign, Nonremovable Copy High Intensity, or Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity.

SQUARE TUBE ANCHOR SLEEVE

The Contractor shall furnish and install new square tube anchor sleeve as follows:

2.5" x 18", 12 Gauge square tube anchor sleeve, (or equivalent components as approved by the Engineer).

A 2.25" x 2.25" x 4' perforated tube post (12 Gauge) shall be used as the anchor post for installation with the square tube anchor sleeve.

SQUARE TUBE POST SLEEVE

All 2.5"x2.5" perforated tube post (10 Gauge) shall be sleeved with a 2 3/16"x2 3/16"x4' perforated tube post (10 Gauge).

WINGED SLIP BASE ANCHOR

The Contractor shall furnish and install new winged anchor as required per the plans.

Winged anchor shall be installed using direct drive method.

Winged anchor shall consist of a slip base (upper), 48 inch long winged anchor (lower), and hardware kit.

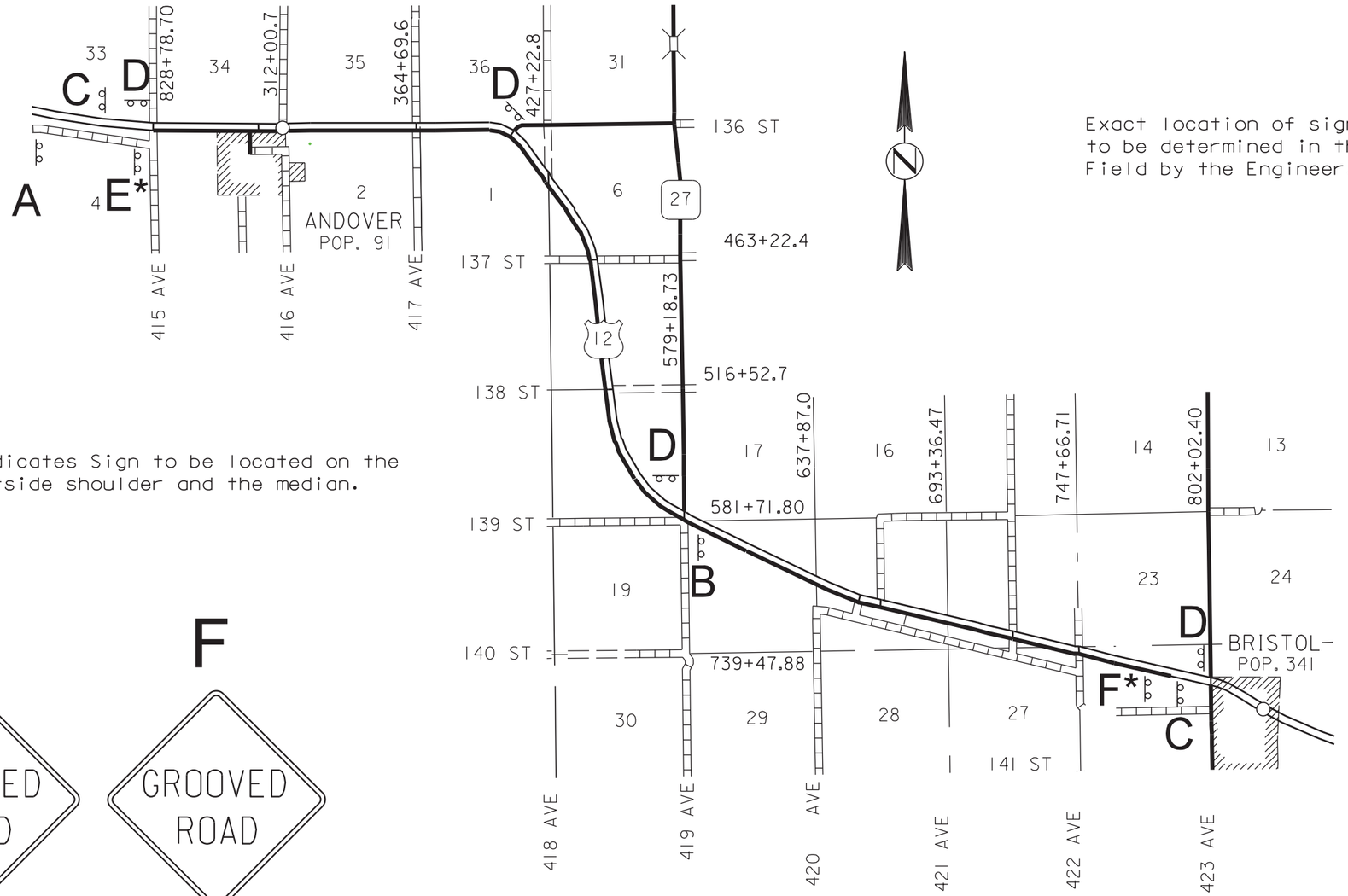
MILEAGE REFERENCE MARKERS

MRMs (Mileage Reference Markers) are not to be disturbed. If an MRM is attached to a sign listed for replacement it shall be salvaged and reattached to the new sign in the same location. Payment for this work shall be incidental to the various signing contract items.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	27	42
Plotting Date: 10/14/2015			

Revised 10-14-15 BMR

FIXED LOCATION SIGNS
(GROUND MOUNT BREAKAWAY SUPPORTS)



Exact location of signs to be determined in the Field by the Engineer.

A

ROAD WORK
NEXT 11 MILES

B

ROAD WORK
NEXT 3 MILES

C

END
ROAD WORK

D

ROAD
WORK
AHEAD

* Indicates Sign to be located on the outside shoulder and the median.

E

GROOVED
ROAD

NEXT
1/2 MILE

F

GROOVED
ROAD

W20-1 ROAD WORK AHEAD signs shall be mounted on portable supports, and shall be placed on intersecting roadways as directed by the Engineer. ROAD WORK AHEAD signs shall be moved as necessary to keep current with the work activities.

PLOT SCALE - 1:5184

PLOTTED FROM - TRAB17886

PLOT NAME - 1

FILE - ...\DESIGN\04WA_FIXED_SIGNS.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	28	42

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

◎ Reflectorized Drum

■ Channelizing Device

(4W) 4" White Temporary Pavement Marking

Temporary pavement markings shall be used if traffic control must remain overnight.

This procedure also applies when work is being performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED signs and the corresponding LANE REDUCTION symbol signs shall be used.

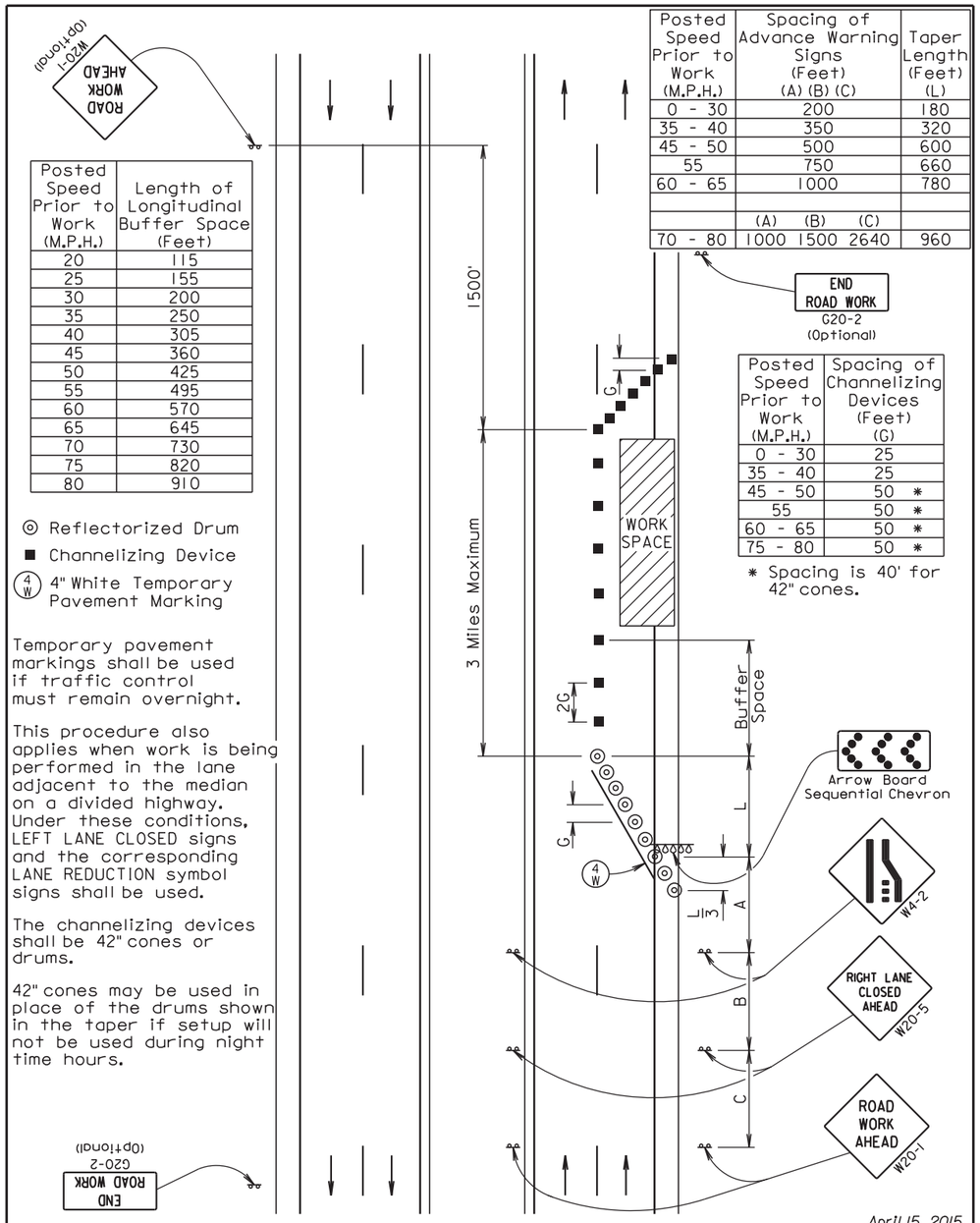
The channelizing devices shall be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 80	1000 1500 2640	960

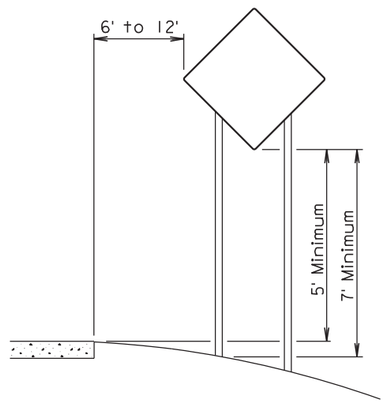
Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50 *
55	50 *
60 - 65	50 *
75 - 80	50 *

* Spacing is 40' for 42" cones.

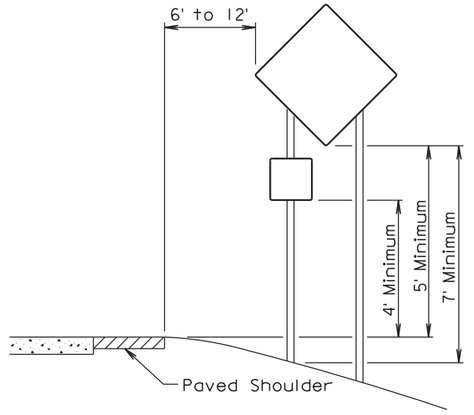


April 15, 2015

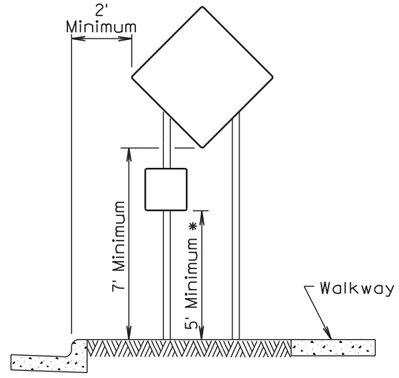
Published Date: 3rd Qtr. 2015	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITHOUT BARRIER	PLATE NUMBER 634.64
			Sheet 1 of 1



RURAL DISTRICT

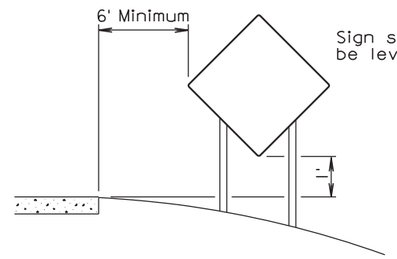


RURAL DISTRICT WITH SUPPLEMENTAL PLATE



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

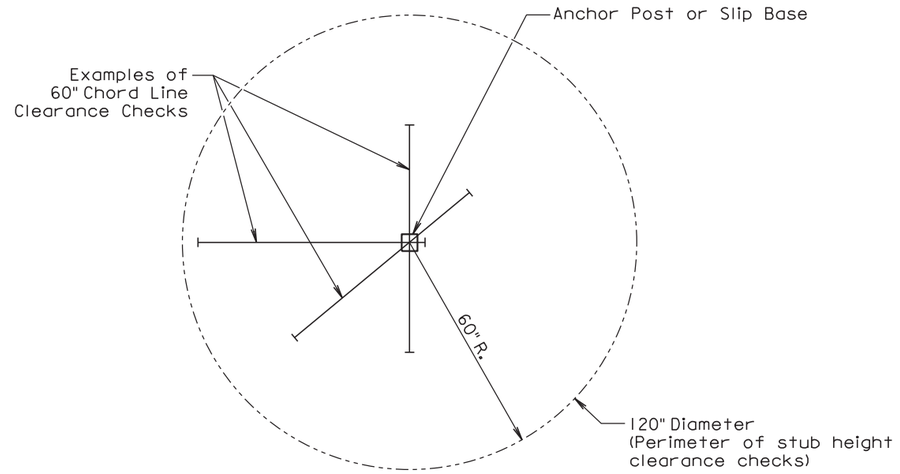
(Not applicable to regulatory signs)

September 22, 2014

Published Date: 3rd Qtr. 2015	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1

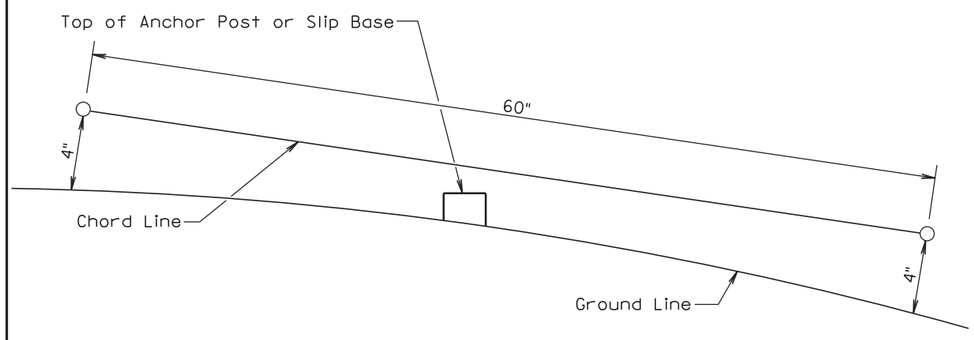
PLOTTED FROM - TRAB10100

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	29	42



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: 3rd Qtr. 2015	SDDOT	***BREAKAWAY SUPPORT STUB CLEARANCE***	***PLATE NUMBER*** *634.99*
			Sheet 1 of 1

PLOTTED FROM - TRAB10100

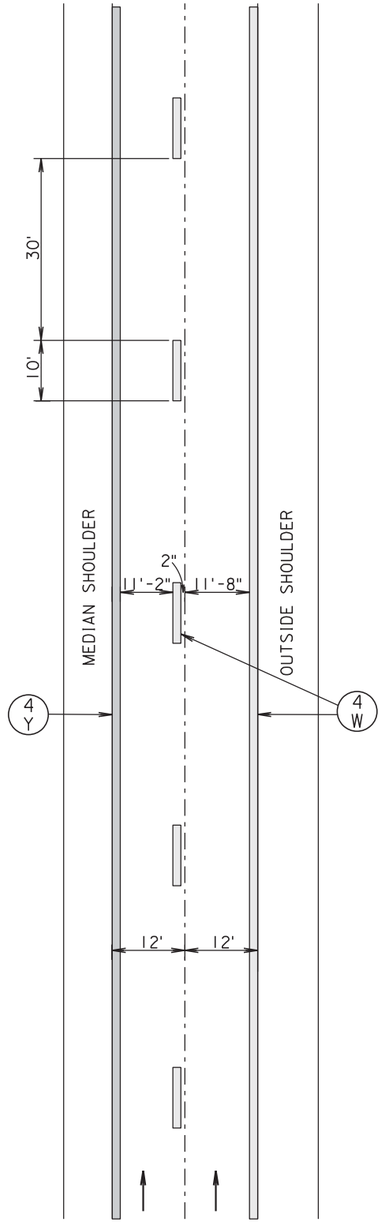
ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W7-3aP	NEXT __ MILES (plaque)	2	36" x 30"	8	16
W8-1	BUMP	8	48" x 48"	16	128
W8-6	TRUCK CROSSING	2	48" x 48"	16	32
W8-15	GROOVED PAVEMENT	4	48" x 48"	16	64
W8-15P	MOTORCYCLE (plaque)	4	30" x 24"	5	20
W20-1	ROAD WORK AHEAD	6	48" x 48"	16	96
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
G20-1	ROAD WORK NEXT __ MILES	3	48" x 24"	8	24
G20-2	END ROAD WORK	2	48" x 24"	8	16
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			492

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	1 Each

DIVIDED ROADWAY (ONE DIRECTION SHOWN)



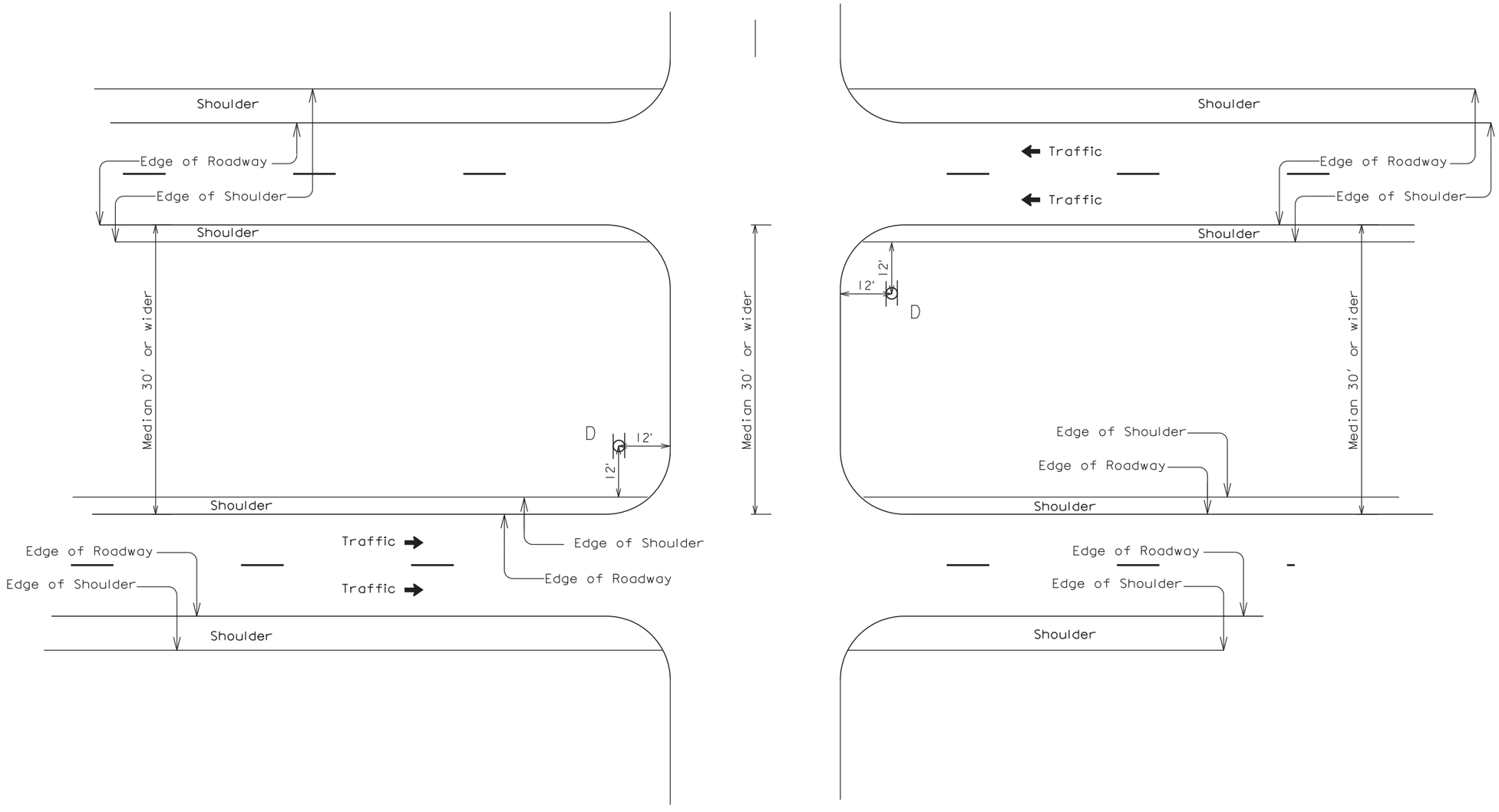
KEY	ITEM
4 W	4" White
4 Y	4" Yellow

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	31	42

Plotting Date: 10/09/2015

Signing for Divided Highways with Median Widths of 30 Feet or Wider

Farm, Field Entrance or Unimproved Section Line Road.



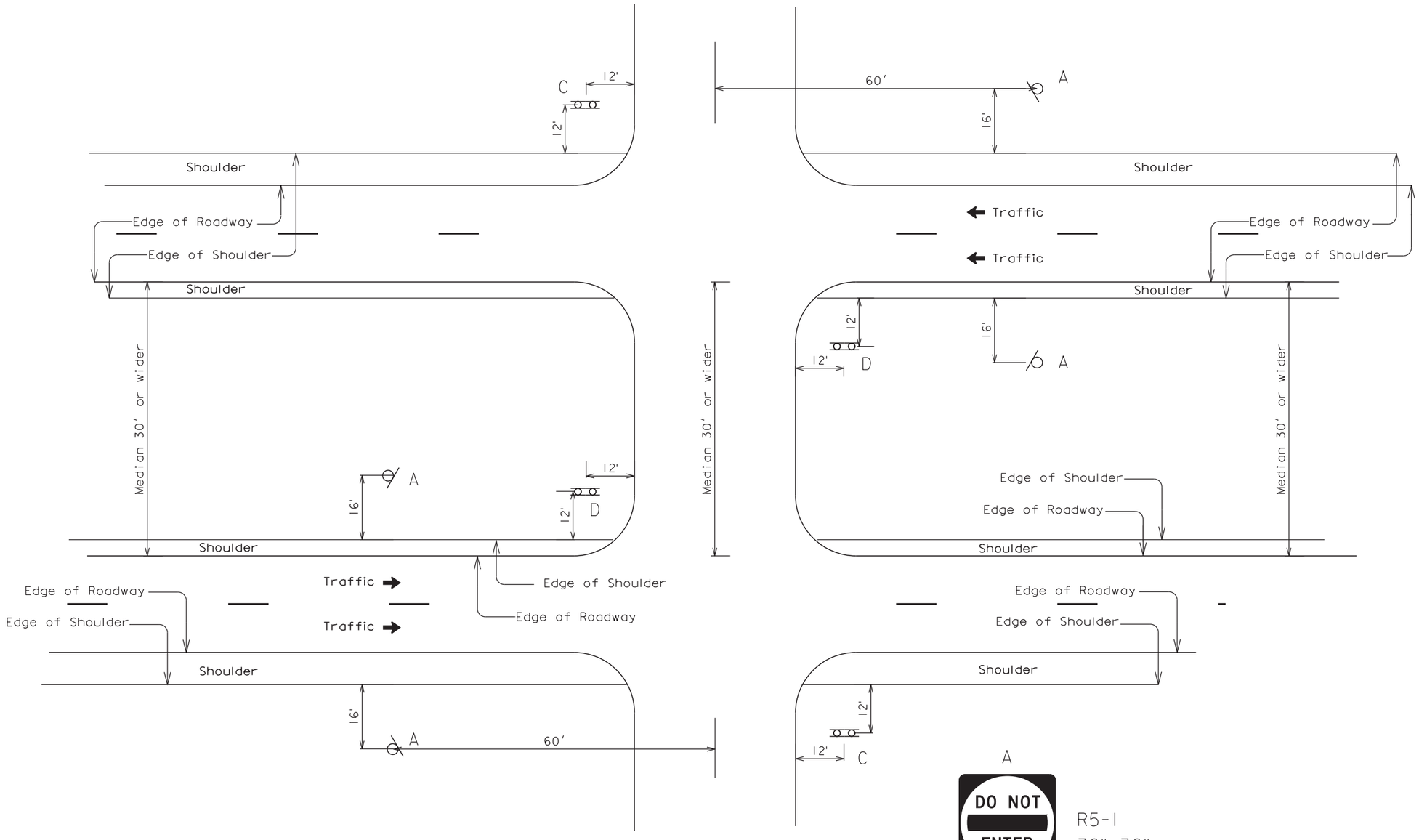
Sign Post "D" - Install Type 2 Object Markers back to back
@ 4' mounting height to the bottom of the object marker,
post shall be a 2.75 Lb/Ft. U-channel post

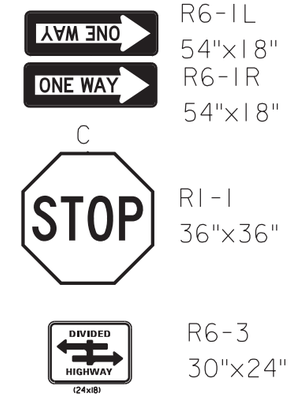
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	32	42

Plotting Date: 10/09/2015

Revised 10-14-15 BMR

Signing for Divided Highways with Median Widths of 30 Feet or Wider





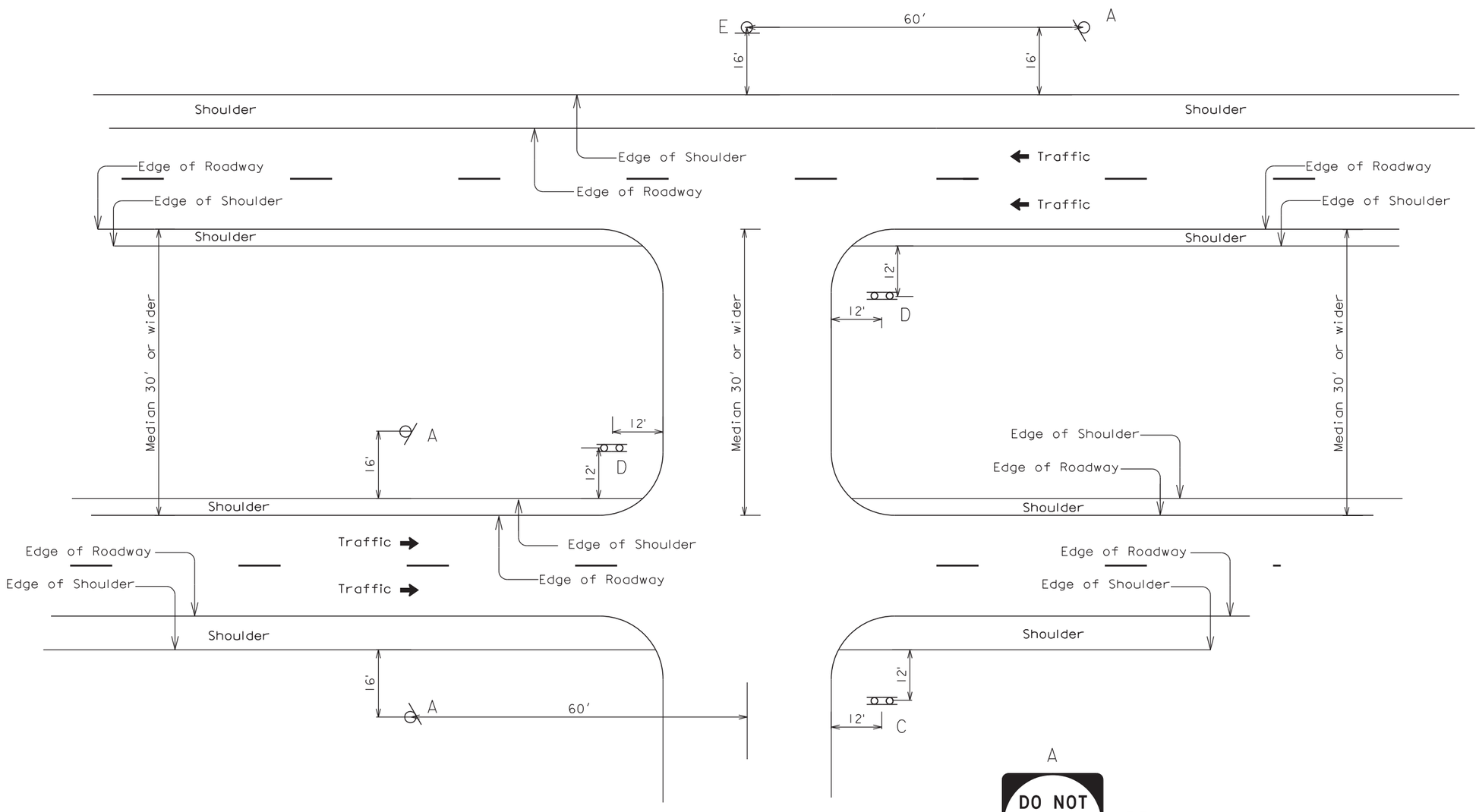
Sign Post "D" - Install Type 2 Object Markers back to back @ 4' mounting height to the bottom of the object marker, post shall be a 2.75 Lb/Ft. U-channel post

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	33	42

Plotting Date: 10/09/2015

Revised 10-14-15 BMR

Signing for Divided Highways with Median Widths of 30 Feet or Wider



R6-1L
54"x18"
R6-1R
54"x18"

C

STOP

R1-1
36"x36"

DIVIDED HIGHWAY (24x18)

R6-3a
30"x24"

R6-1L
54"x18"
R6-1R
54"x18"

D

YIELD

R1-2
36"x36"x36"

E

ONE WAY

R6-1L
54"x18"

A

DO NOT ENTER

R5-1
36"x36"

Sign Post "D" - Install Type 2 Object Markers back to back @ 4' mounting height to the bottom of the object marker, post shall be a 2.75 Lb/Ft. U-channel post

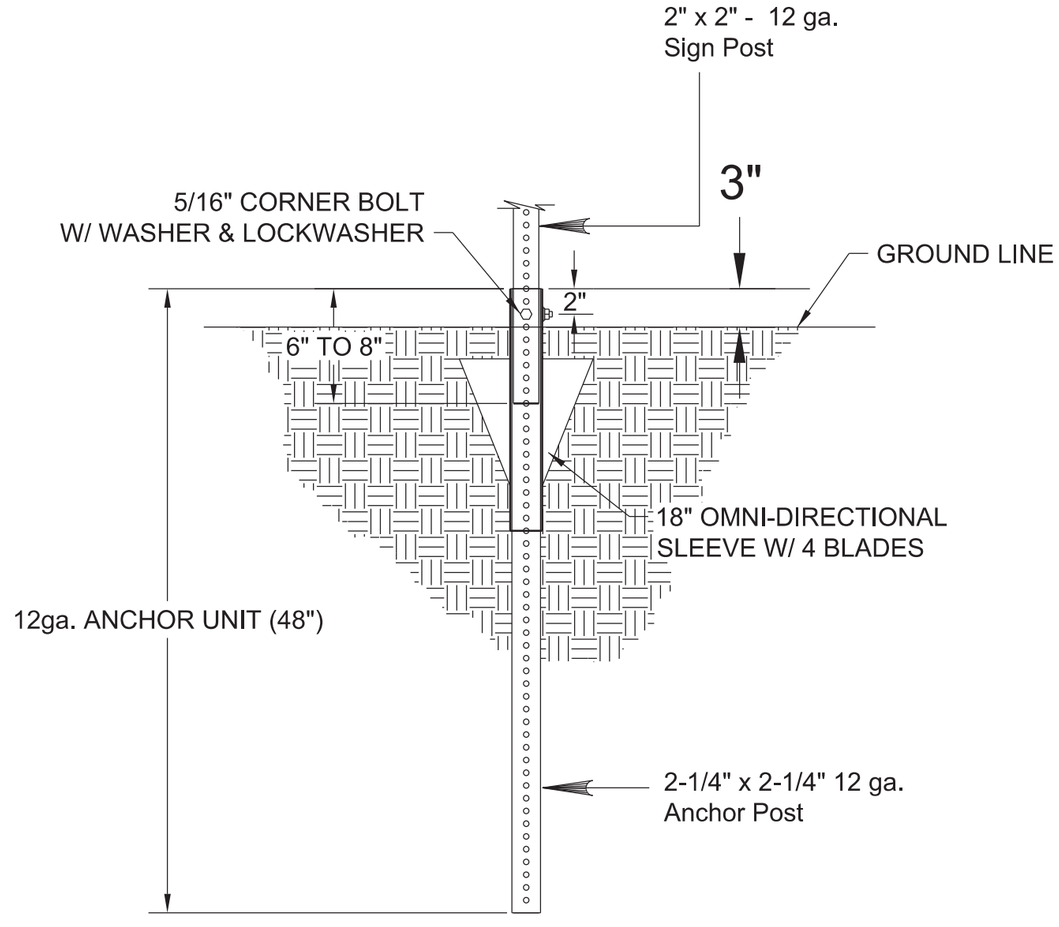
PLOT SCALE - 1:27.3375

PLOTTED FROM - TRAB10100

PLOT NAME - 3

FILE - ...\DIVIDED HIGHWAY MEDIAN XING SIGNING NO WRONG WAYS.DGN

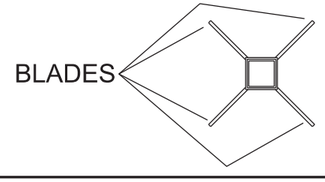
SQUARE TUBE
4 BLADE ANCHOR DETAIL



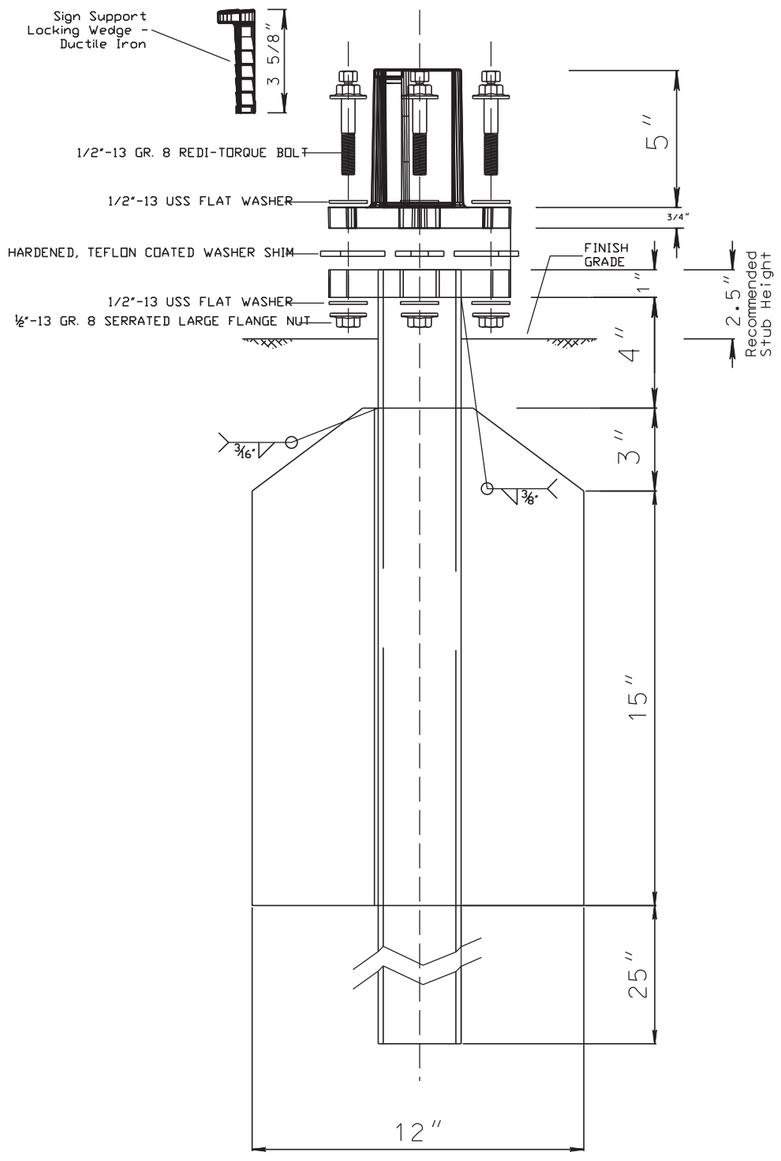
2-1/2" x 18" OMNI-ANCHOR SLEEVE
FOR SOIL STABILIZATION.

2-1/2" x 18" 12 ga. Omni-Sleeve

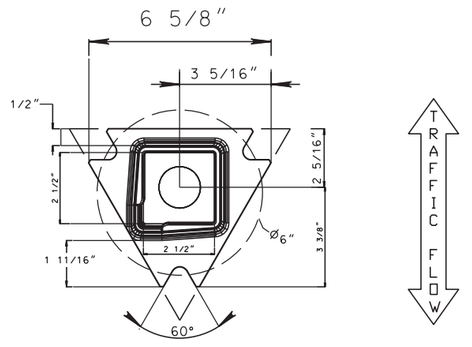
ANCHOR SLEEVE
TOP VIEW



SLIP BASE



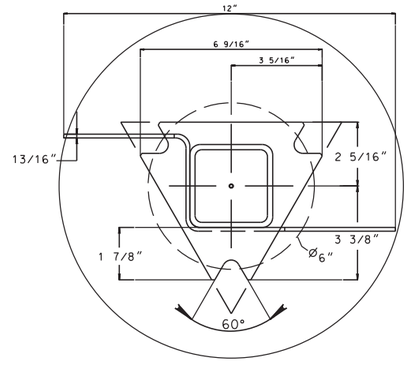
TOP POST RECEIVER for 2-½" SQUARE POST



MATERIAL:
DUCTILE IRON CASTING, CLASS 65-45-12

TRAFFIC FLOW

BOTTOM UNIBASE SOIL STUB

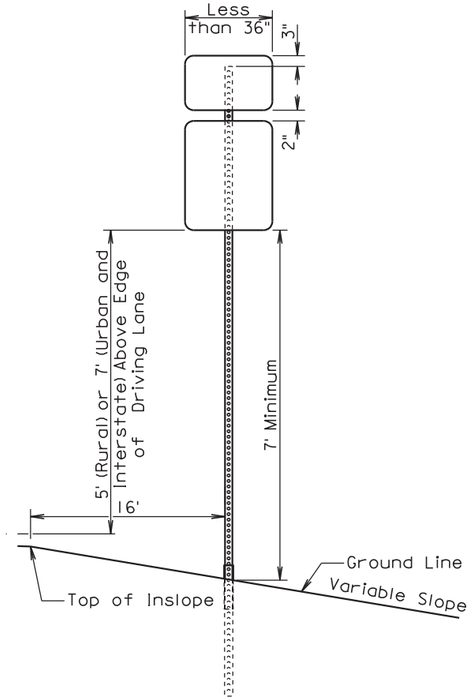


MATERIALS:
Tube - 3" x 3" x 7 ga. ASTM A500 Grade B tube
Stabilizing Wing - 7 ga. H.R.P.O. ASTM A 569
Plate - ASTM A572 grade 50

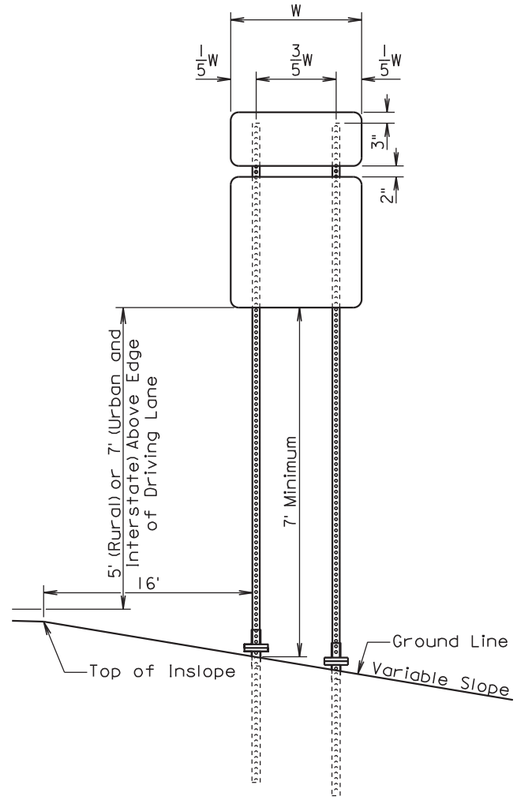
PLOT SCALE - 1:200

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	36	42
Plotting Date: 08/25/2015			

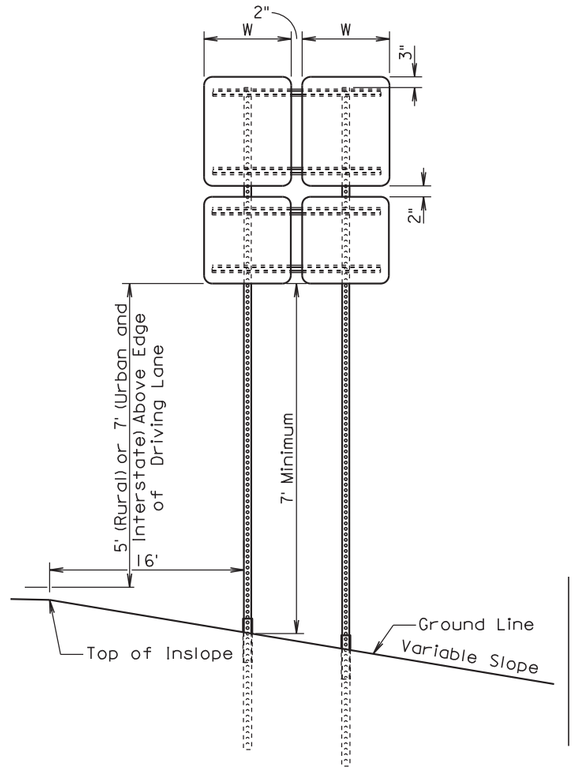
INSTALLATION DETAILS FOR MULTIPLE SIGN ASSEMBLIES



ELEVATION VIEW
(Single post assembly)



ELEVATION VIEW
(Double post assembly)



ELEVATION VIEW
(Double post assembly)

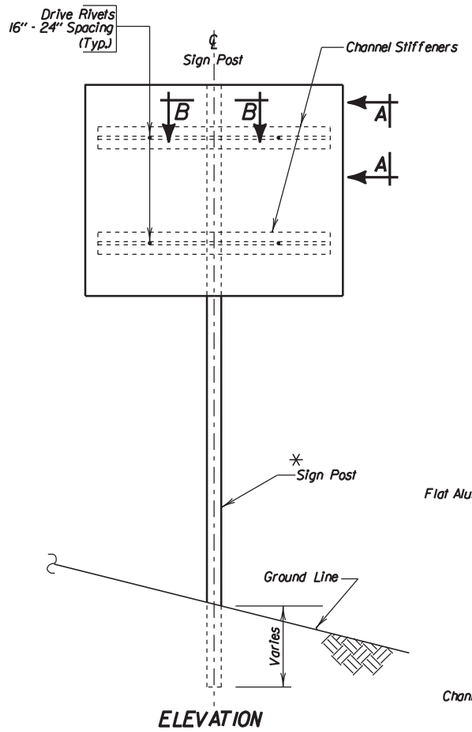
GENERAL NOTES:

The sign posts and bases shown are for illustrative purpose. The post type required shall be the type specified in the plans.

All breakaway sign supports shall comply with NCHRP 350 or MASH crash testing requirements and FHWA requirements. The Contractor shall provide post installation details at the preconstruction meeting for all breakaway sign support assemblies.

PLOTTED FROM - TRAB10100
PLOT NAME - 3
FILE - ...\SIGN POST INSTALL DETAILS.DGN

ONE POST BREAKAWAY SIGN SUPPORTS



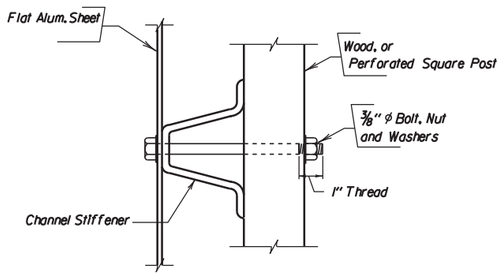
ELEVATION

Ø A plastic washer, as recommended by the sheeting manufacturer, shall be installed between the sign face and the metal washer shown.

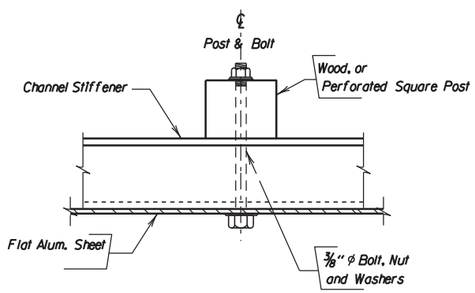
Height and lateral distance as recommended by latest edition of MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

* Single post installation shown. (See applicable Details or Standard Plates shown in these plans for multiple post spacing requirements.)

(Typical Sign and Stiffener Details)

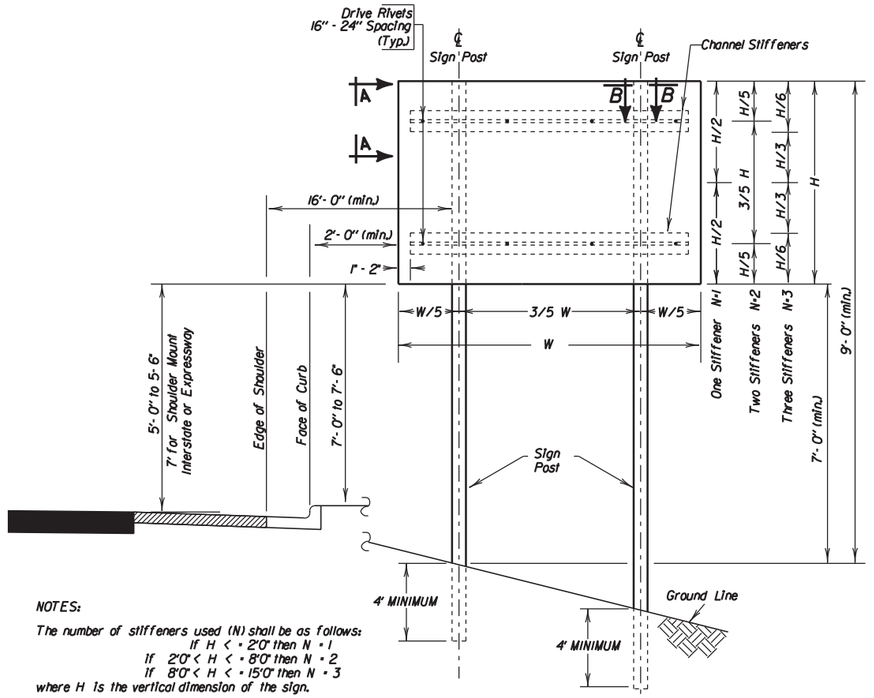


SEC. A-A



SEC. B-B

TWO POST BREAKAWAY SIGN SUPPORTS



NOTES:

The number of stiffeners used (N) shall be as follows:

If H < = 2'0" then N = 1
If 2'0" < H < = 8'0" then N = 2
If 8'0" < H < = 15'0" then N = 3

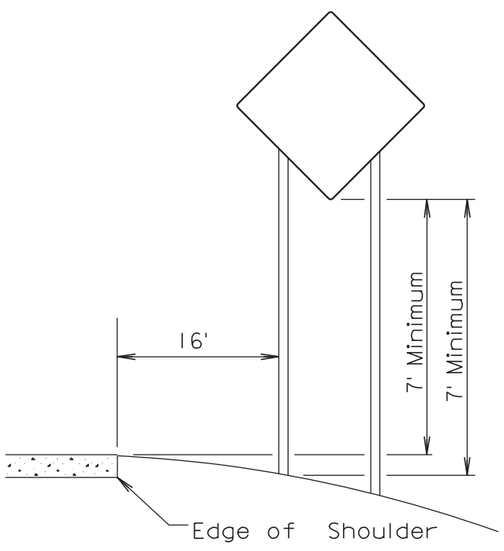
where H is the vertical dimension of the sign.

A minimum of two bolts shall be required to fasten the sign to each post.

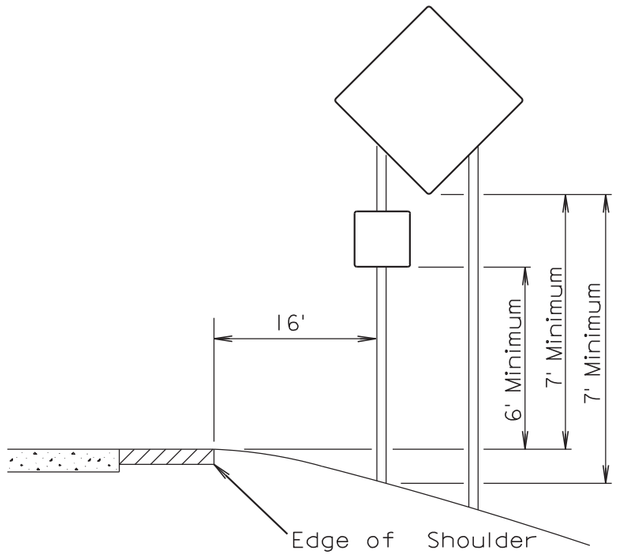
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	38	42

Plotting Date: 08/25/2015

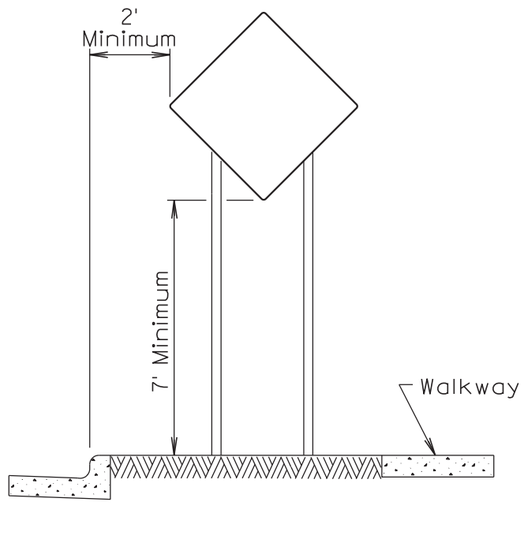
SIGN SUPPORTS
(Lateral Off–Sets)



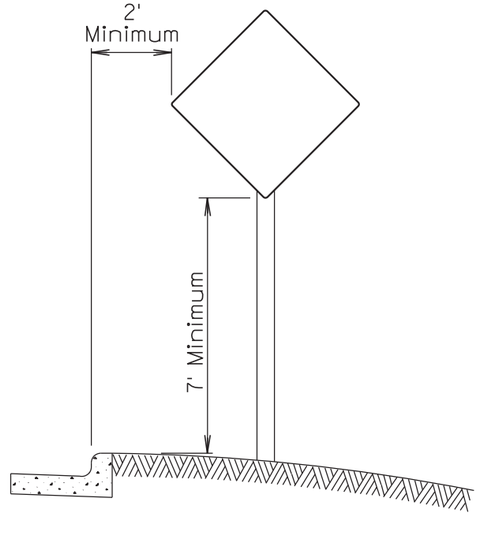
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE

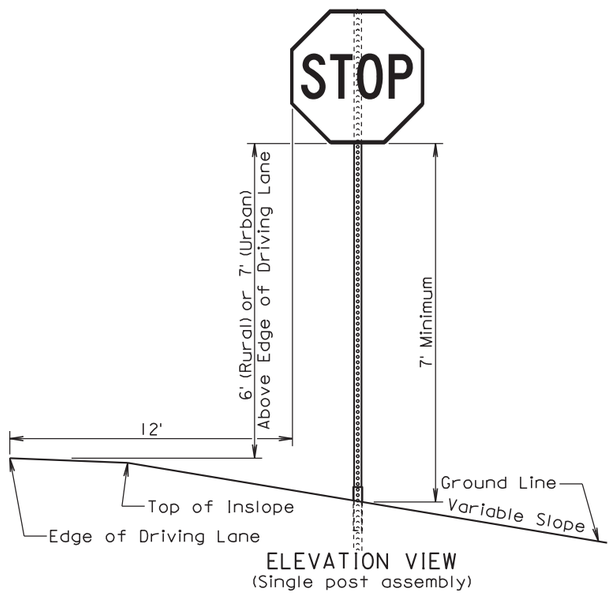


URBAN DISTRICT



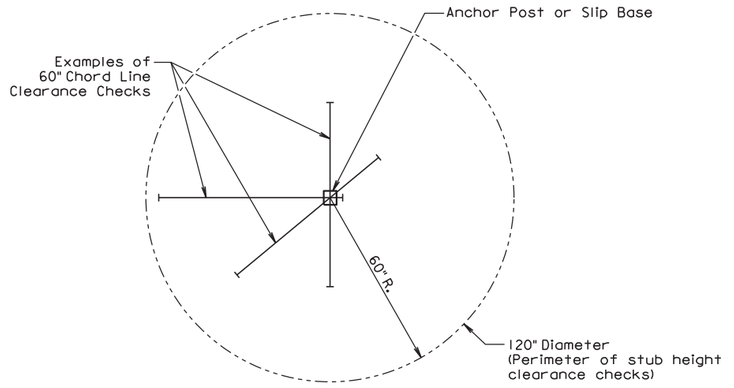
URBAN DISTRICT

INSTALLATION DETAILS FOR STOP SIGNS

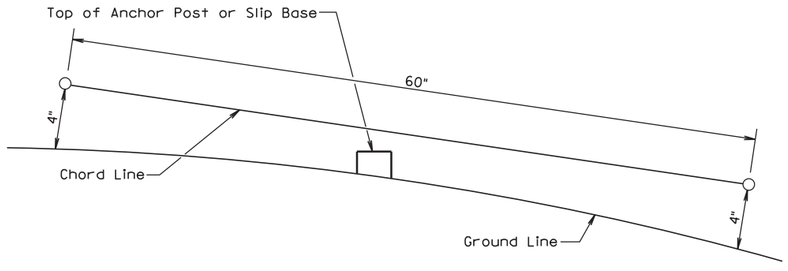


ELEVATION VIEW
(Single post assembly)

BREAKAWAY SUPPORT STUB CLEARANCE



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.

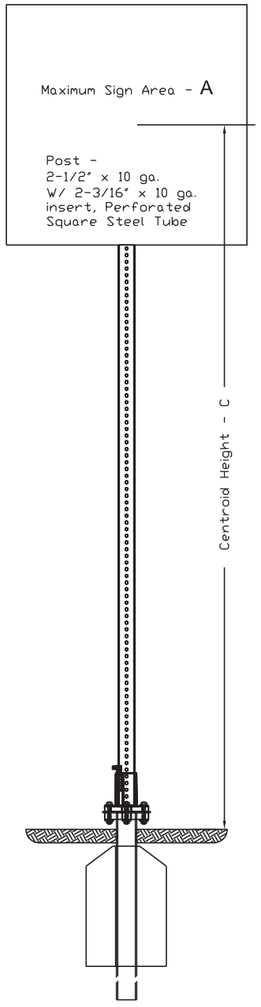
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	40	42

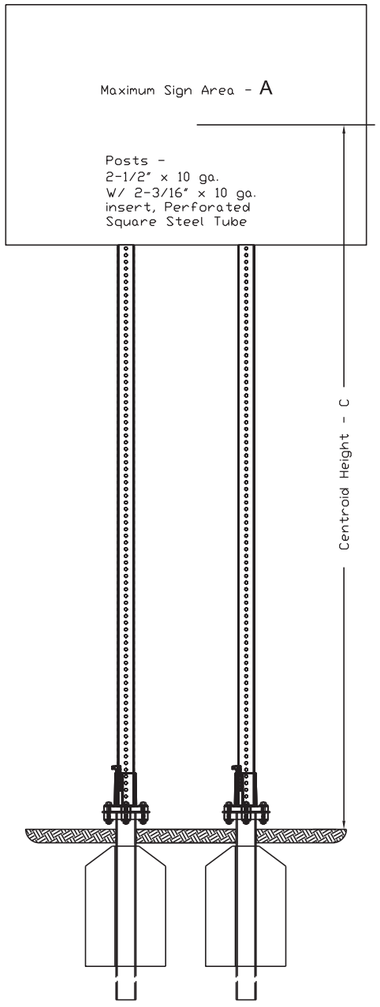
Plotting Date: 08/25/2015

48" WINGED SLIP BASE

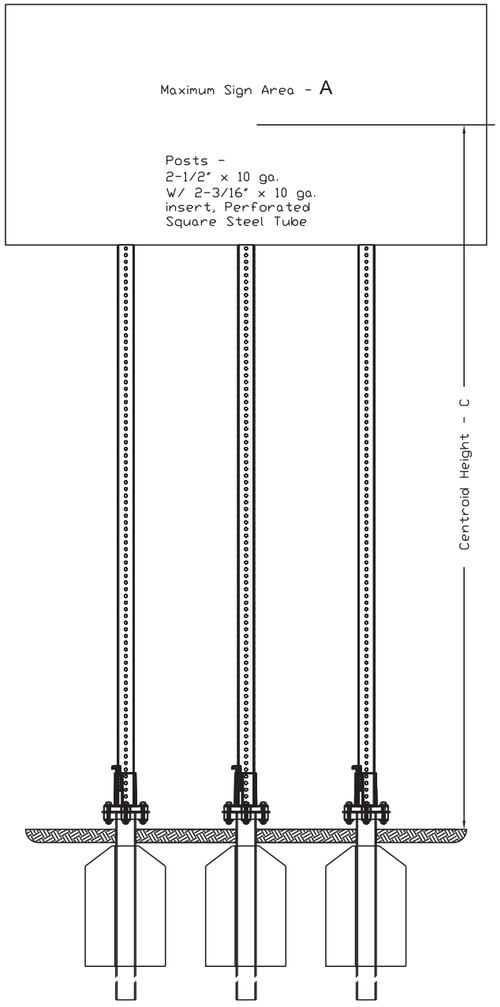
Post and Wind Load Information



centroid - C	Maximum Sign Area - A
8 ft.	42 ft²
9 ft.	38 ft²
10 ft.	34 ft²
11 ft.	30 ft²
12 ft.	28 ft²
13 ft.	26 ft²
14 ft.	24 ft²
15 ft.	22 ft²
16 ft.	20 ft²



centroid - C	Maximum Sign Area - A
8 ft.	84 ft²
9 ft.	76 ft²
10 ft.	68 ft²
11 ft.	60 ft²
12 ft.	56 ft²
13 ft.	52 ft²
14 ft.	48 ft²
15 ft.	44 ft²
16 ft.	40 ft²



centroid - C	Maximum Sign Area - A
8 ft.	126 ft²
9 ft.	114 ft²
10 ft.	102 ft²
11 ft.	90 ft²
12 ft.	84 ft²
13 ft.	78 ft²
14 ft.	72 ft²
15 ft.	66 ft²
16 ft.	60 ft²

PLOT SCALE - 1:26

PLOT NAME - 2

FILE - ...\DESIGN\TRANSITIONS_DETAILS.DGN

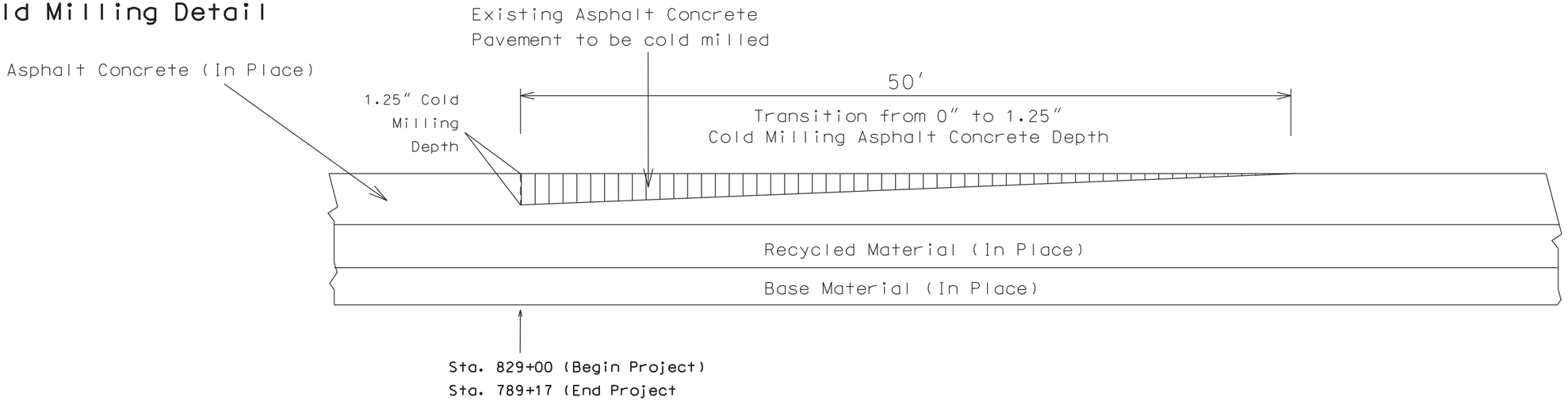
PLOTTED FROM - TRAB17886

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	41	42
Plotting Date: 10/14/2015			

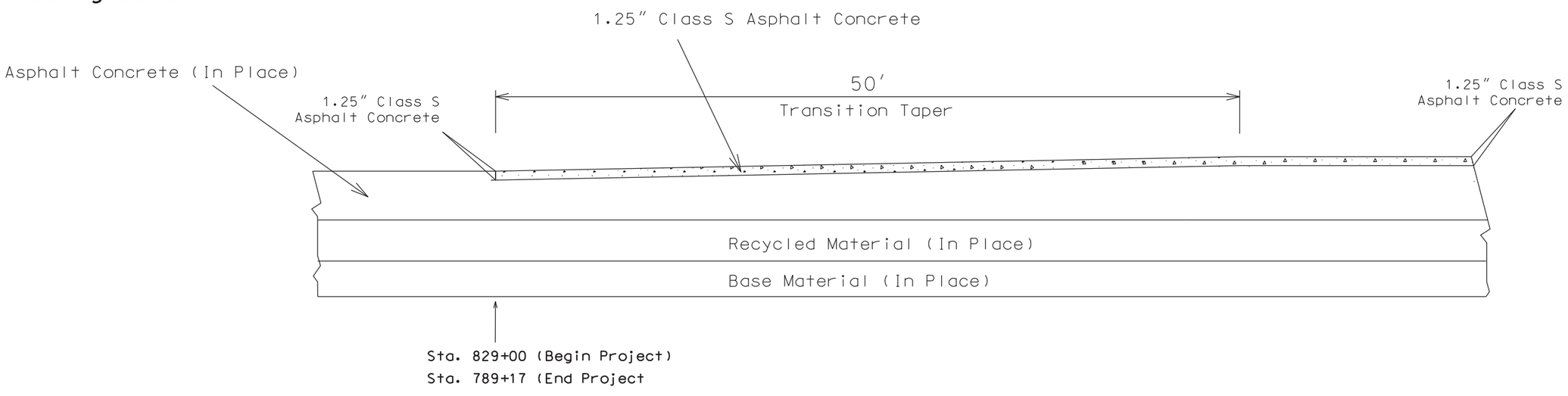
Revised 10-14-15 BMR

TRANSITION DETAIL AT BEGIN AND END OF PROJECT

Cold Milling Detail

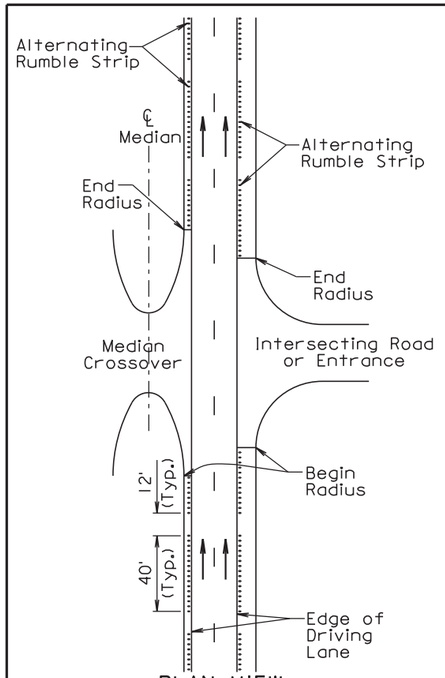


Surfacing Detail

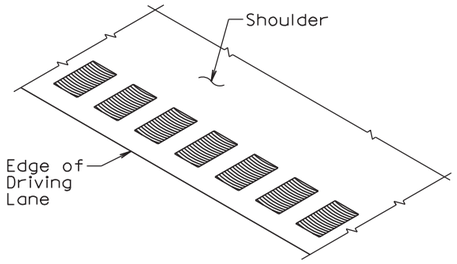


Cold Mill Asphalt Concrete full roadway width at Begin and End of Project to allow for placement of Class S Asphalt Concrete. Approximate width of Cold Mill Asphalt Concrete at Begin and End of Project is 32.5 feet. All costs associated with any additional width of Cold Mill Asphalt Concrete at Begin and End of Project shall be incidental to the contract unit price per square yard for Cold Milling Asphalt Concrete.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0012(191)318	42	42

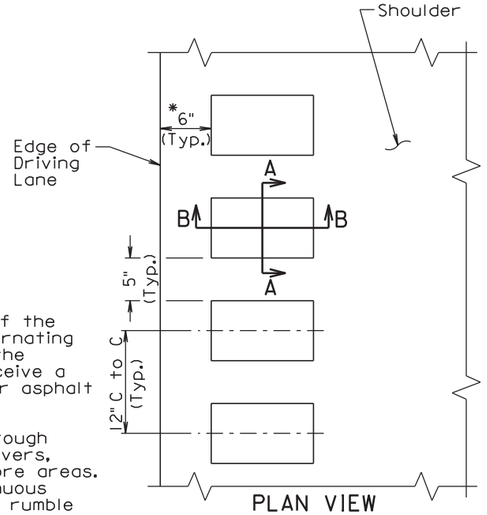


PLAN VIEW

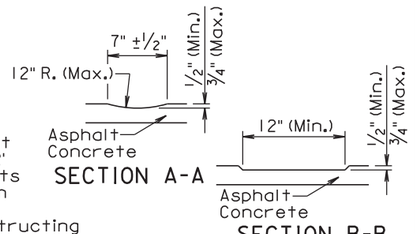


PERSPECTIVE OF TYPICAL RUMBLE STRIP IN ASPHALT CONCRETE

* When PCC pavement width from centerline to edge of pavement is 12', the rumble strip may be placed a maximum of 2' from the edge of the driving lane.



PLAN VIEW
TYPICAL RUMBLE STRIP IN ASPHALT CONCRETE



SECTION A-A

SECTION B-B

GENERAL NOTES:

A rumble strip shall be constructed on all of the asphalt concrete shoulders by grinding alternating patterns of 40' continuous indentations in the asphalt concrete. The rumble strip shall receive a flush seal with the shoulder flush sealing or asphalt surface treatment.

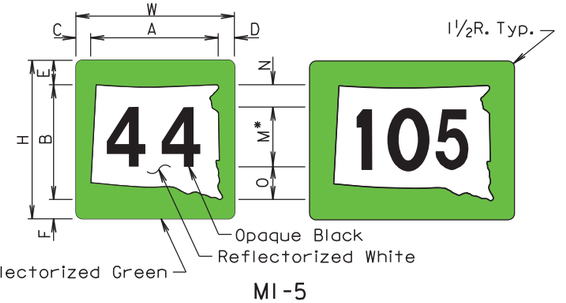
A rumble strip shall not be constructed through intersecting roads, entrances, median crossovers, entrance ramps, exit ramps, turnouts, and gore areas. The lengths of the 40' segments with continuous indentations and the 12' segments without a rumble strip adjacent to the intersecting roads, entrances, median crossovers, entrance ramps, exit ramps, turnouts, and gore areas shall be adjusted as approved by the Engineer.

Prior to constructing the rumble strip the Contractor shall submit to the Engineer, for approval, the proposed method of constructing the rumble strip.

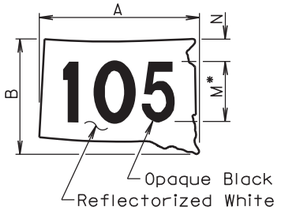
Measurement of the rumble strip shall be to the nearest 0.1 of a mile for each shoulder. Measurement and payment of the rumble strip shall include the 12' long segments without rumble strips and the segments adjacent to the intersecting roads, entrances, median crossovers, entrance ramps, exit ramps, turnouts, and gore areas without rumble strips. Payment for constructing the rumble strip shall be at the contract unit price per mile for "Grind 12" Rumble Strip or Stripe in Asphalt Concrete".

June 26, 2015

Published Date: 3rd Qtr. 2015	SDDOT	12" RUMBLE STRIP IN ASPHALT CONCRETE ON DIVIDED HIGHWAY SHOULDERS	PLATE NUMBER 320.28
			Sheet 1 of 1



MI-5



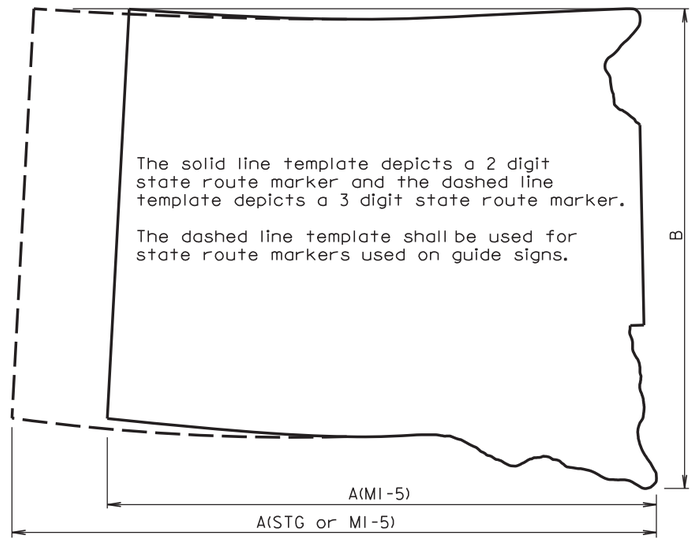
STG

SIGN CODE	WxH	A	B	C	D	E	F	M*	N	O
MI-5	24x24	20½	18	2	1½	3½	2½	12D	2	4
MI-5**	30x24	24	18	2¼	1¾	3½	2½	12D	2	4
MI-5	30x30	25⅝	22½	2½	1⅞	4⅜	3⅛	15D	2½	5
MI-5	36x36	30¾	27	3	2¼	5¼	3¾	18D	3	6

SIGN CODE	AxB	M*	N
STG-24	24x18	10D	4
STG-32	32x24	12D	4¾
STG-48	48x36	18D	7
STG-64	64x48	24D	9½

*In the few cases where there is not enough space for the numerals, the standard "D" series font may be replaced with "C" series font if approved by the Engineer.

**3 Digits



TEMPLATE FOR STATE ROUTE MARKER

GENERAL NOTES:

The unit for all dimensions shown is inches.

Numerals shall be "D" series font for all state route markers except as noted above.

December 23, 2003

Published Date: 3rd Qtr. 2015	SDDOT	STATE ROUTE MARKERS	PLATE NUMBER 632.20
			Sheet 1 of 1

PLOTTED FROM - TRAB10100