

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 2292(96)5	1	11

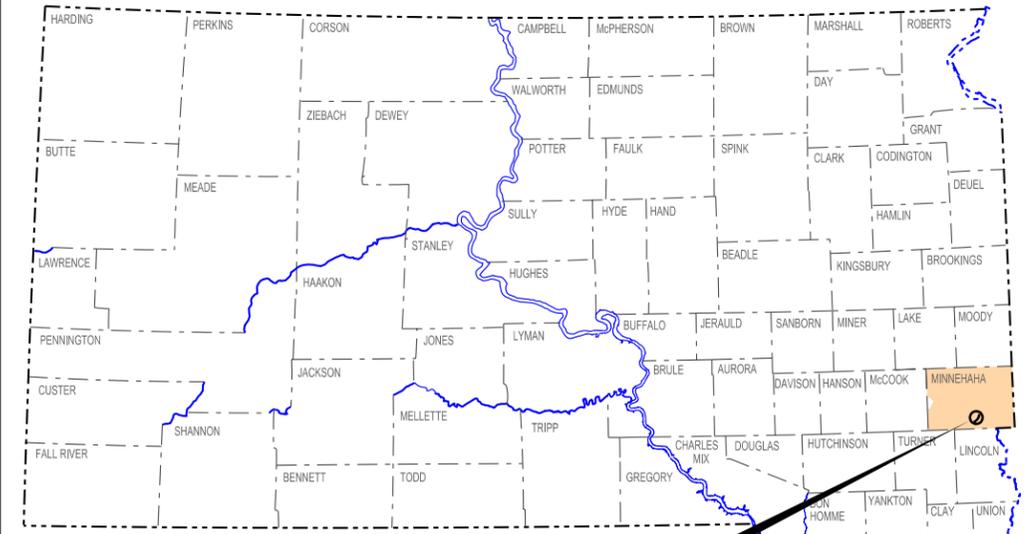
Plotting Date: 04/28/2014

PLANS FOR PROPOSED  
**PROJECT PH 2292(96)5**  
**INTERSTATE 229**  
**MINNEHAHA COUNTY**

**INDEX OF SHEETS**

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HIGH FRICTION SURFACE TREATMENT (HFST)  
(ONE COAT HFST ON I229, APPROACH SLABS & SLEEPER SLABS)  
(TWO COATS HFST ON STRUCTURES) &  
EPOXY PAVEMENT MARKING



**PROJECT**

PCN 04U2



**END PROJECT SBL**  
MRM 5.95 +0.026  
MILEAGE 7.187  
(164' N of CL 18th St)

**END PROJECT NBL**  
MRM 5.95 +0.011  
MILEAGE 6.486  
(84' N of CL 18th St)

T 101 N

**STR. NO. 50-217-217**  
Prestressed Girder Bridge  
282'-6 1/2"=0.054 Mile  
MRM 5.70 SBL  
Approach & Sleeper Slabs  
Two totaling 60'=0.011 Mile

**BEGIN PROJECT SBL**  
MRM 5.52 +0.111  
MILEAGE 6.852  
(100' from Begin Bridge)

**STR. NO. 50-218-217**  
Prestressed Girder Bridge  
282'-6 1/2"=0.054 Mile  
MRM 5.70 NBL  
Approach & Sleeper Slabs  
Two totaling 60'=0.011 Mile

**BEGIN PROJECT NBL**  
MRM 5.52 +0.098  
MILEAGE 6.137  
(100' from Begin Bridge)

**DESIGN DESIGNATION**

ADT(2013)	33,680
ADT(2033)	51,934
DHV	6,180
D	52%
T DHV	3.5%
T ADT	7.8%
V	65 MPH

PROJECT LENGTH	SBL	NBL
HFST Length:	0.335 Mile	0.349 Mile
Bridge/Slabs Length:	0.065 Mile	0.065 Mile
Roadway Length:	0.270 Mile	0.284 Mile

**STORM WATER PERMIT**  
(None required)

PLOT SCALE - 1"=7000'

PLOTTED FROM - TRM11INT15

PLOT NAME - 1

FILE - ... \PRJ2014\MINN04U2\TTL04U2.DGN

# ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 2292(96)5	2	11

## I229 SBL & NBL

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
633E1100	Epoxy Pavement Marking Paint, 4" White	9,030	Ft
633E1105	Epoxy Pavement Marking Paint, 4" Yellow	7,224	Ft
634E0010	Flagging	40	Hour
634E0100	Traffic Control	731	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
634E0640	Temporary Pavement Marking	12,150	Ft
634E1215	Contractor Furnished Portable Changeable Message Sign	3	Each
900E1250	High Friction Surface Treatment	7,800.0	SqYd
900E1256	Abrasive Blasting of PCC Pavement	7,800.0	SqYd

## STR. NO. 50-217-217 (SBL)

Bid Item Number	Item	Quantity	Unit
491E0110	Abrasive Blasting of Bridge Deck	1,510.5	SqYd
491E0120	Bridge Deck Grinding	1,250.5	SqYd
900E1250	High Friction Surface Treatment	260.0	SqYd
900E1254	Two Coat High Friction Surface Treatment	1,250.5	SqYd

## STR. NO. 50-218-217 (NBL)

Bid Item Number	Item	Quantity	Unit
491E0110	Abrasive Blasting of Bridge Deck	1,510.5	SqYd
491E0120	Bridge Deck Grinding	1,250.5	SqYd
900E1250	High Friction Surface Treatment	260.0	SqYd
900E1254	Two Coat High Friction Surface Treatment	1,250.5	SqYd

### SPECIFICATIONS

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

## ENVIRONMENTAL COMMITMENTS

### 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 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.

The Contractor shall not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

### 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.

### COMMITMENT H: WASTE DISPOSAL SITE (CONTINUED)

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.

Cost 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 contract unit prices for the various 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.

**HIGH FRICTION SURFACE TREATMENT**

High Friction Surface Treatment and Two Coat High Friction Surface Treatment shall be provided in accordance with the Special Provision for High Friction Surface Treatment.

High Friction Surface Treatment Application width (nonstructural) is 24' feet and shall be applied on the driving lanes at the following locations:

- I229S**      **MRM 5.52 +0.106 to MRM 5.53 +0.119 (70'=0.013 Mile)**  
(100' from Begin Bridge to Begin Sleeper Slab)  
**MRM 5.70 +0.005 to MRM 5.95 +0.026 (1355'=0.257 Mile)**  
(From End Bridge Sleeper Slab to North of 18<sup>th</sup> Street)
- I229N**      **MRM 5.52 +0.098 to MRM 5.52 +0.111 (70'=0.013 Mile)**  
(100' from Begin Bridge to Begin Bridge Sleeper Slab)  
**MRM 5.70 +0.005 to MRM 5.95 +0.011 (1430'=0.271 Mile)**  
(From End Bridge Sleeper Slab to North of 18<sup>th</sup> Street)

**CONSTRUCTION/DEMOLITION DEBRIS**

Grinding residue, abrasive blasting residue, waste water, excess aggregate and other waste material generated from the Contractor's operations are included in the construction/demolition debris that may not be disposed of within the State ROW.

**MAINTENANCE OF TRAFFIC**

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

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

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

A minimum 16 ft travel lane width shall be maintained at all times.

Adequate traffic control has been included in the estimate of quantities for one Interstate workspace. The Contractor will be allowed to work on more locations simultaneously if approved by the Engineer, and at no additional cost to the State.

**PORTABLE CHANGEABLE MESSAGE SIGNS**

Three Contractor furnished portable changeable message signs shall be installed and programmed by the Contractor, as detailed in the plans. The Engineer may approve alternate messages to fit project conditions.

The Contractor shall transport to the sites, install, maintain, and remove the Contractor furnished portable changeable message signs. Portable changeable message signs shall be installed outside of the clear zone. Locations shown in the plans may be adjusted as determined by the Engineer. A length of 400 feet should be maintained between the portable changeable message signs and the closest permanent mainline Interstate guide signs.

Costs for furnishing, transporting, grading and bracing required to install the portable changeable message signs at the proper height, programming of the signs, maintenance, reprogramming and removal of the signs shall be incidental to the contract unit price per each for Contractor Furnished Portable Changeable Message Sign.

**TEMPORARY PAVEMENT MARKING**

Temporary or permanent pavement marking shall be in place prior to traffic lanes being reopened to traffic.

Raised pavement markers shall be used in the lane tapers and for Interstate temporary pavement marking. Raised pavement markers shall be attached to the roadway surface with a flexible nonpermanent bituminous adhesive, or with another adhesive as approved by the Engineer, capable of being removed from the roadway surface.

The Contractor shall use equipment that is not damaging to the roadway surface when removing the raised pavement markers, as approved by the Engineer.

Cost for raised pavement markers shall be included in the contract unit price per foot for Temporary Pavement Marking. Cost for removal of raised pavement markers shall be incidental to the contract unit price per foot for Temporary Pavement Marking.

**PERMANENT PAVEMENT MARKING**

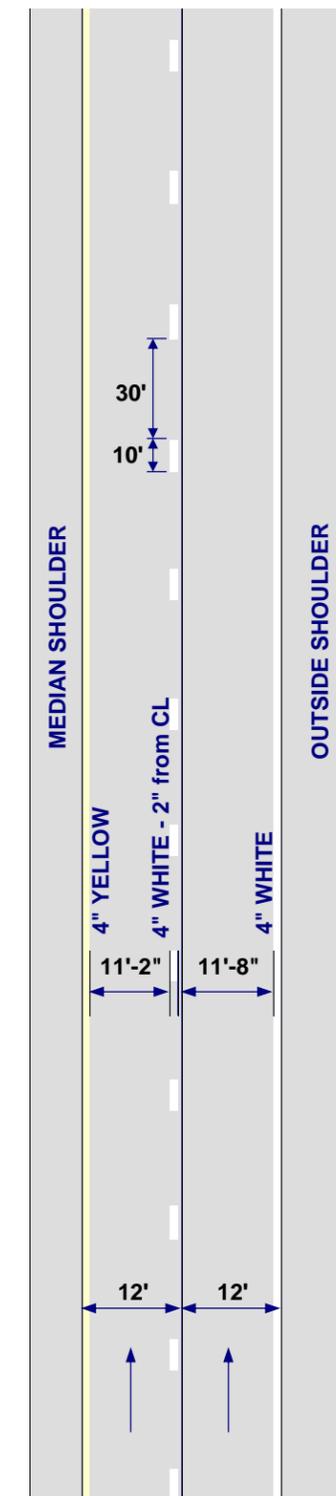
Application of permanent pavement marking shall be completed within 14 days following completion of the final surfacing.

Adequate epoxy quantities are included for two applications of epoxy on the final surface. The second application of epoxy pavement marking shall be made after the first application of epoxy pavement marking has cured.

Permanent pavement marking may only be applied during off peak hours between the hours of 9:00 AM and 3:30 PM, or after 7:00 PM.

**PAVEMENT MARKING**

**DIVIDED ROADWAY (ONE DIRECTION SHOWN)**



Typical pavement marking as shown on this sheet shall be applied throughout the entire length of divided roadway.

Traffic Control shall be incidental to the cost of application. The striper and advance or trailing warning vehicle shall be equipped with flashing amber lights and advance warning arrow panel.

ESTIMATED QUANTITIES	
EPOXY	4"
WHITE	9030'
YELLOW	7224'

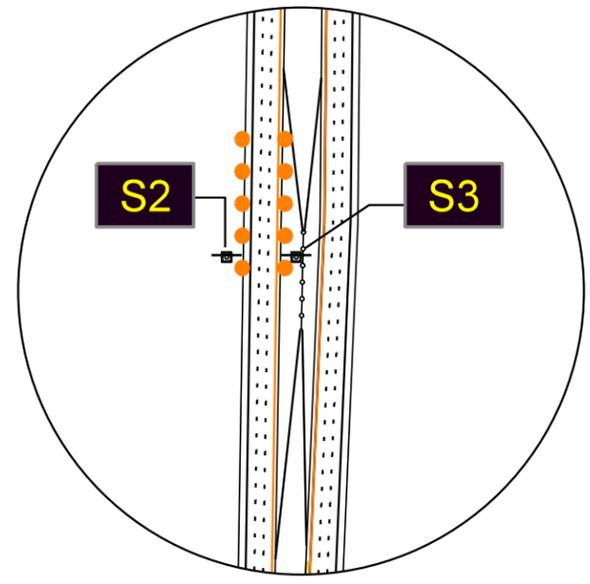
**NOTE:** All pavement marking dimensions are based on 12' driving lanes.

**ITEMIZED LIST FOR TRAFFIC CONTROL**

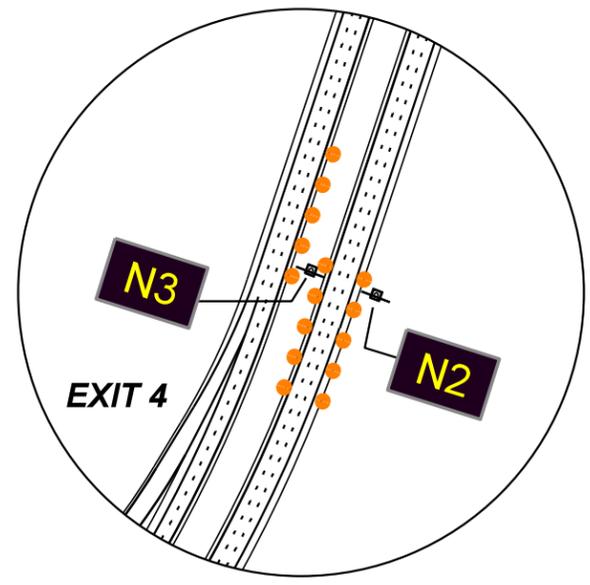
SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
E5-1	36" x 32"	EXIT GORE SIGN		24	
G20-2	36" x 18"	END ROAD WORK		17	
G20-2	48" x 24"	END ROAD WORK	1	24	24
G20-5aP	36" x 24"	WORK ZONE (PLAQUE)	2	20	40
R1-1	48" x 48"	STOP		34	
R1-2	48" x 48"	YIELD	1	34	34
R2-1	36" x 48"	SPEED LIMIT 45	2	29	58
R2-1	36" x 48"	SPEED LIMIT 55	2	29	58
R2-1	36" x 48"	SPEED LIMIT 65	1	29	29
R2-6aP	36" x 24"	FINES DOUBLE (PLAQUE)	2	20	40
R4-7	24" x 30"	KEEP RIGHT (SYMBOL)		18	
R5-1	48" x 48"	DO NOT ENTER		34	
R5-1a	42" x 30"	WRONG WAY		25	
R10-6	24" x 36"	STOP HERE ON RED		20	
R11-2	48" x 30"	ROAD CLOSED		27	
R11-3a	60" x 30"	ROAD CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY		30	
R11-4	60" x 30"	ROAD CLOSED TO THRU TRAFFIC		30	
W1-1	48" x 48"	LEFT OR RIGHT TURN ARROW		34	
W1-2	48" x 48"	LEFT OR RIGHT CURVE ARROW		34	
W1-3	48" x 48"	REVERSE TURN SIGN (LEFT OR RIGHT)		34	
W1-4	48" x 48"	REVERSE CURVE SIGN (LEFT OR RIGHT)		34	
W3-1	48" x 48"	STOP AHEAD (SYMBOL)		34	
W3-2	48" x 48"	YIELD AHEAD (SYMBOL)	1	34	34
W3-3	48" x 48"	SIGNAL AHEAD (SYMBOL)		34	
W3-4	48" x 48"	BE PREPARED TO STOP		34	
W3-5	48" x 48"	SPEED REDUCTION (___ MPH)	2	34	68
W4-1	48" x 48"	MERGE (SYMBOL)	1	34	34
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68
W5-2	48" x 48"	NARROW BRIDGE		34	
W5-3	48" x 48"	ONE LANE BRIDGE		34	
W7-3aP	24" x 18"	NEXT ___ MILES (PLAQUE)		15	
W8-1	36" x 36"	BUMP		27	
W8-6	48" x 48"	TRUCK CROSSING		34	
W8-7	36" x 36"	LOOSE GRAVEL		27	
W8-7	48" x 48"	LOOSE GRAVEL		34	
W8-9a	48" x 48"	SHOULDER DROP-OFF		34	
W8-11	48" x 48"	UNEVEN LANES		34	
W8-15	36" x 36"	GROOVED PAVEMENT		27	
W13-1P	24" x 24"	ADVISORY SPEED (PLAQUE)		16	
W13-1P	30" x 30"	ADVISORY SPEED (PLAQUE)		21	
W16-2P	30" x 24"	SUPPLEMENTAL DISTANCE (PLAQUE)		18	
W20-1	48" x 48"	ROAD WORK AHEAD	3	34	102
W20-2	48" x 48"	DETOUR AHEAD		34	
W20-3	48" x 48"	ROAD CLOSED AHEAD		34	
W20-4	48" x 48"	ONE LANE ROAD AHEAD		34	
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	2	34	68
W20-7	48" x 48"	FLAGGER (SYMBOL)	1	34	34
W21-1	48" x 48"	WORKERS (SYMBOL)		34	
W21-2	36" x 36"	FRESH OIL		27	
W21-3	48" x 48"	ROAD MACHINERY AHEAD		34	
W21-5	48" x 48"	SHOULDER WORK		34	
W21-5a	48" x 48"	RIGHT SHOULDER CLOSED		34	
W21-5b	48" x 48"	RIGHT SHOULDER CLOSED AHEAD		34	
*****	12" x 36"	TYPE III OBJECT MARKER		15	
*****	*****	TYPE 3 BARRICADE - 8 FT. SINGLE SIDED	1	40	40
*****	*****	TYPE 3 BARRICADE - 8 FT. DOUBLE SIDED		56	
<b>TOTAL UNITS</b>					<b>731</b>

# TRAFFIC CONTROL

## PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

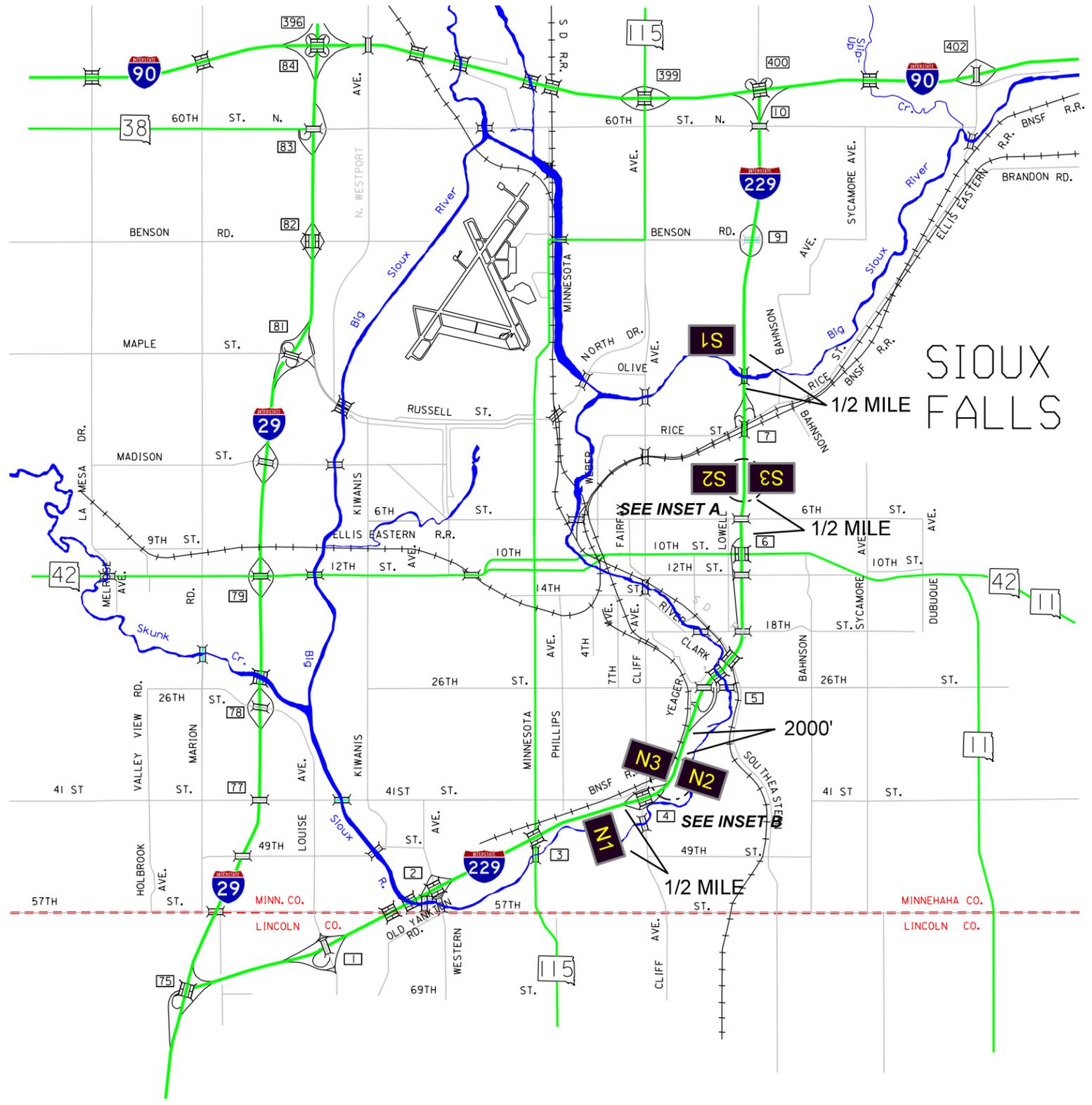


**INSET A**

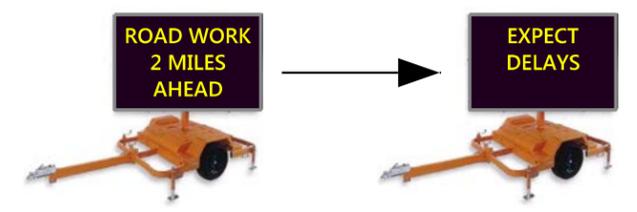


**INSET B**

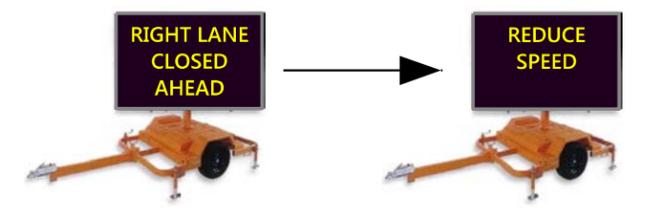
- ##** - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- ● ● ● ●** - FIVE 42" REFLECTORIZED CONES AT 40 FT SPACING IF THE PCMS IS LOCATED WITHIN THE CLEARZONE



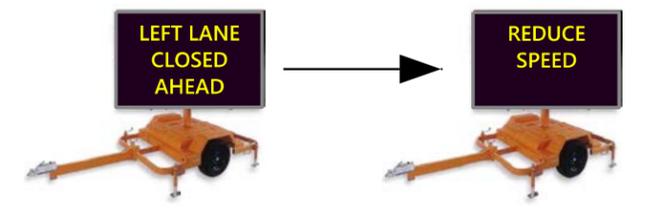
### PCMS N1 & S1 MESSAGES



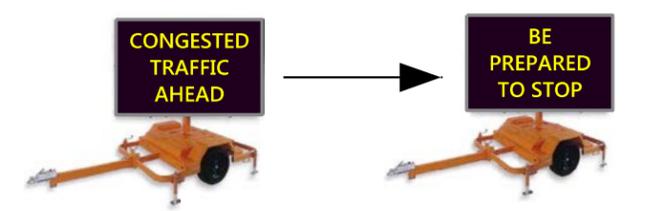
### PCMS N2, N3, S2, & S3 MESSAGES



**OR**



**OR**



PLOT SCALE - \$\$SCALE\$\$

PLOT NAME - \$\$PLOTNAME\$\$

FILE - \$\$FILENAME\$\$

### MANNED WORK SPACE SIGNING FOR DIVIDED AND UNDIVIDED HIGHWAYS

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)	Spacing of Advanced Warning Signs (Feet) (ABC)
0 - 30	25	180	200
35 - 40	25	320	350
45 - 50	50 *	600	500
55	50 *	660	750
60 - 65	50 *	780	1000
70 - 75	50 *	900	1000 1500 2640

\* Spacing to be every 40' for 42" cones.

4" white temporary pavement marking tape for right lane closures and 4" yellow temporary pavement marking tape for left lane closures or temporary road markers at 5' spacing shall be installed when the lane is closed overnight or longer.

Signs a, b, and c shall be removed or covered when workers are not present.

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

The FLAGGER sign shall be used whenever there is a Flagger present.

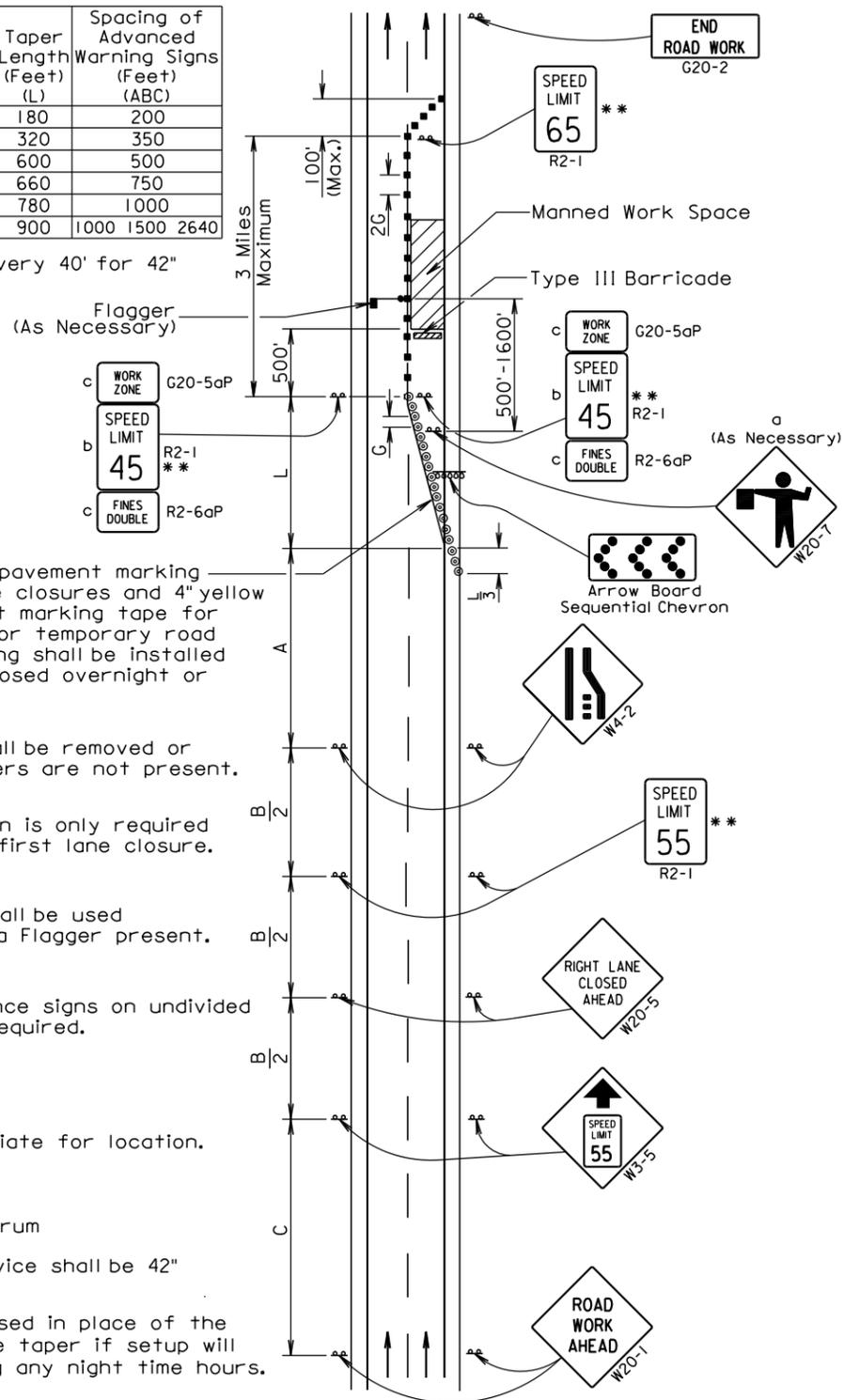
Left mounted advance signs on undivided highways are not required.

\*\* Speed appropriate for location.

⊙ Reflectorized Drum

■ Channelizing Device 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 any night time hours.



### TRAFFIC CONTROL DEVICES FOR WORK IN VICINITY OF ENTRANCE RAMP

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

Four inch white temporary pavement marking shall be used if traffic control must remain overnight or longer.

\*\* See detail for MANNED WORK SPACE SIGNING FOR DIVIDED HIGHWAYS for additional work space traffic control devices.

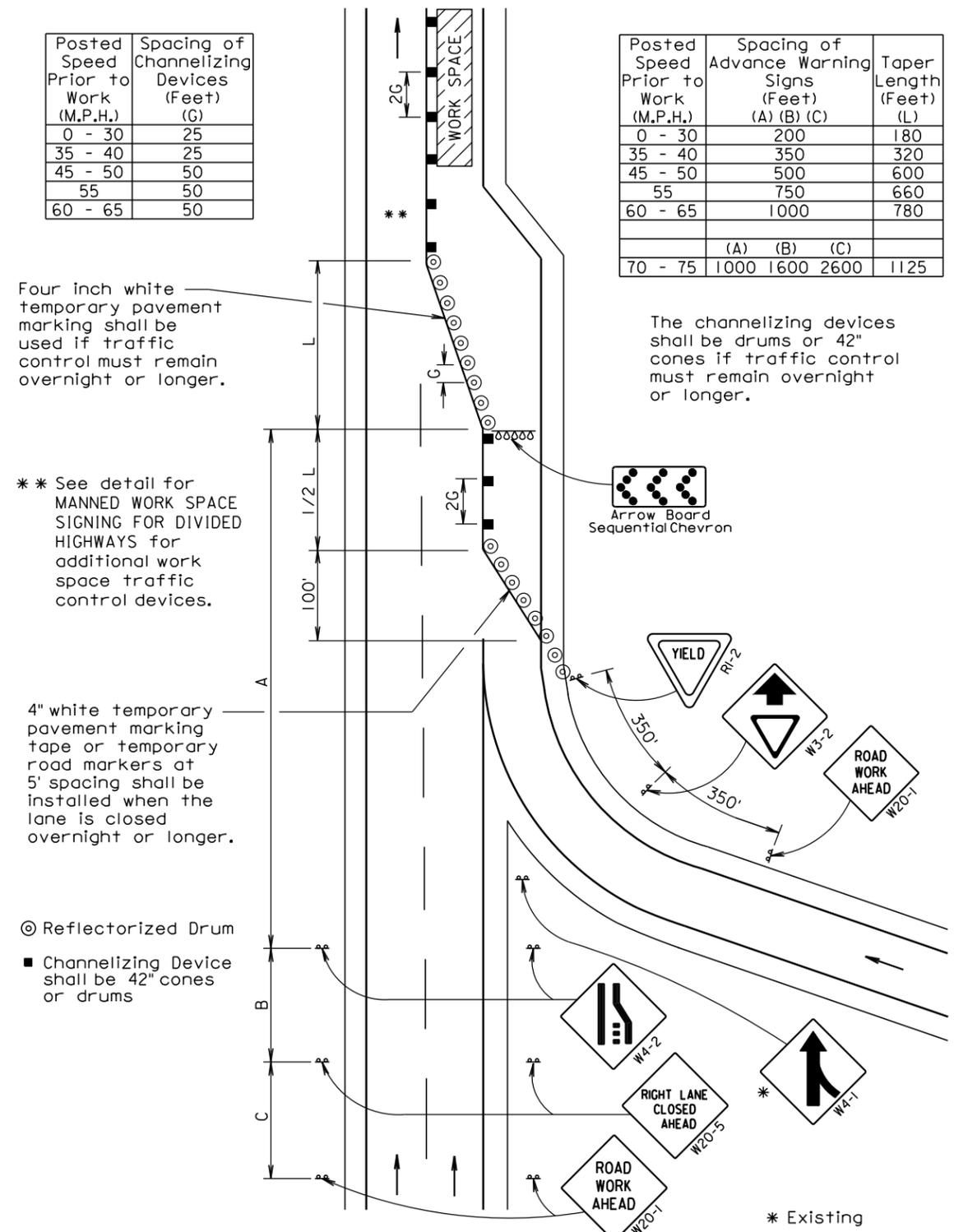
4" white temporary pavement marking tape or temporary road markers at 5' spacing shall be installed when the lane is closed overnight or longer.

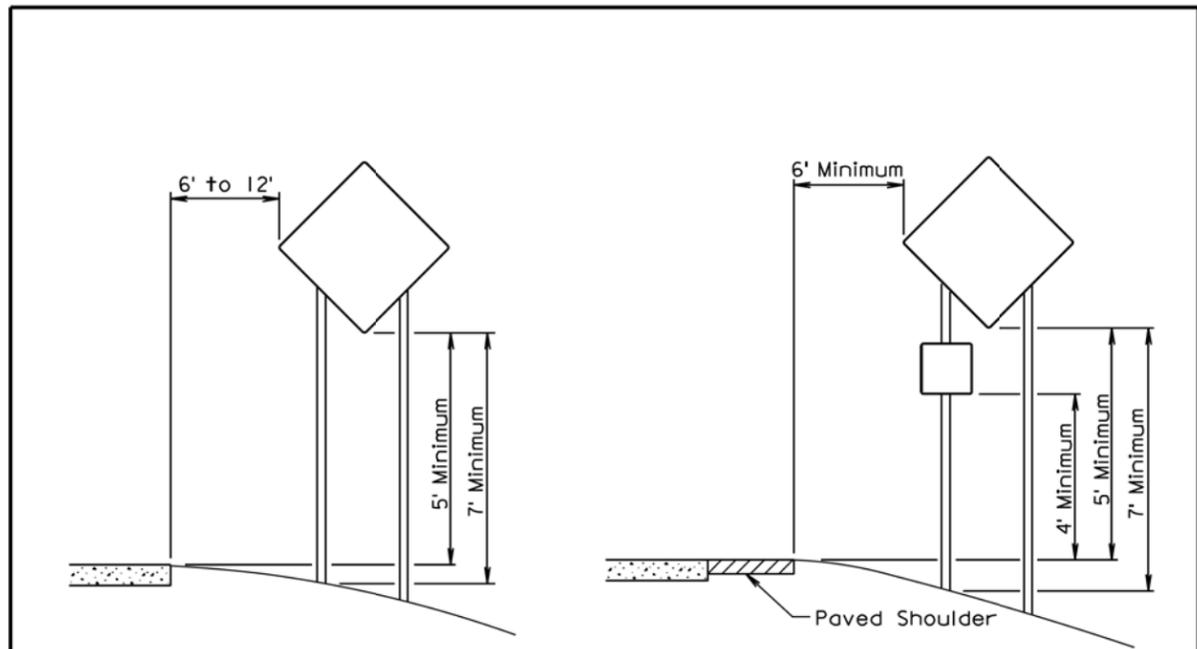
⊙ Reflectorized Drum

■ Channelizing Device shall be 42" cones or drums

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 - 75	1000	1600	2600	1125

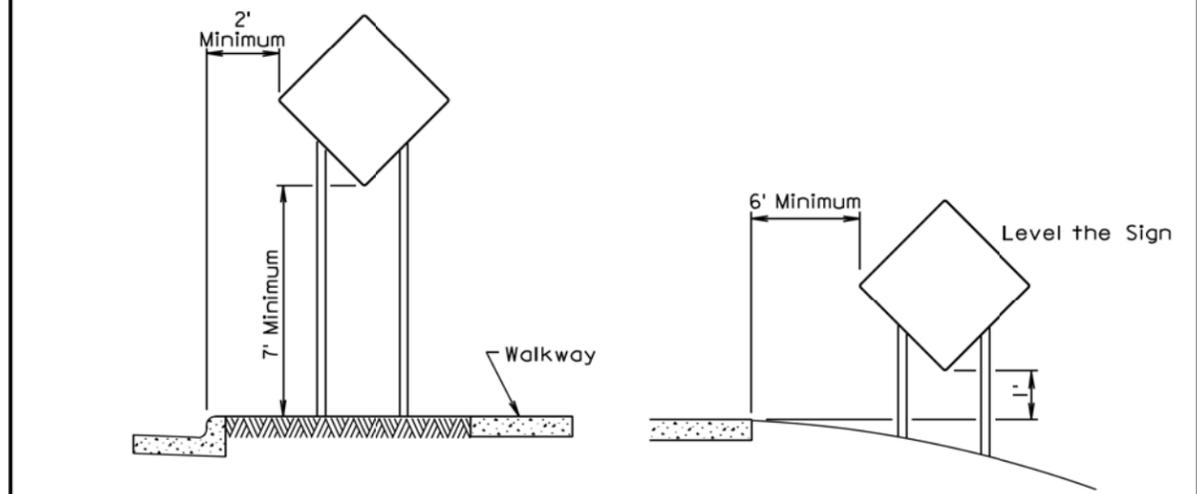
The channelizing devices shall be drums or 42" cones if traffic control must remain overnight or longer.





RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE

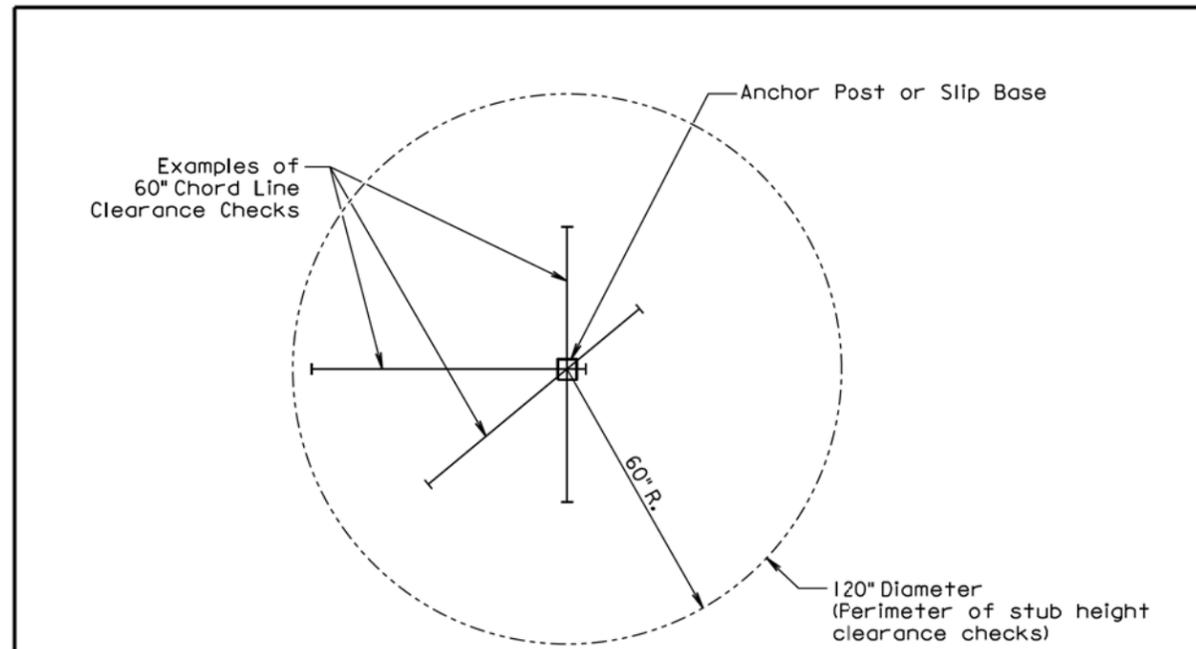


URBAN DISTRICT

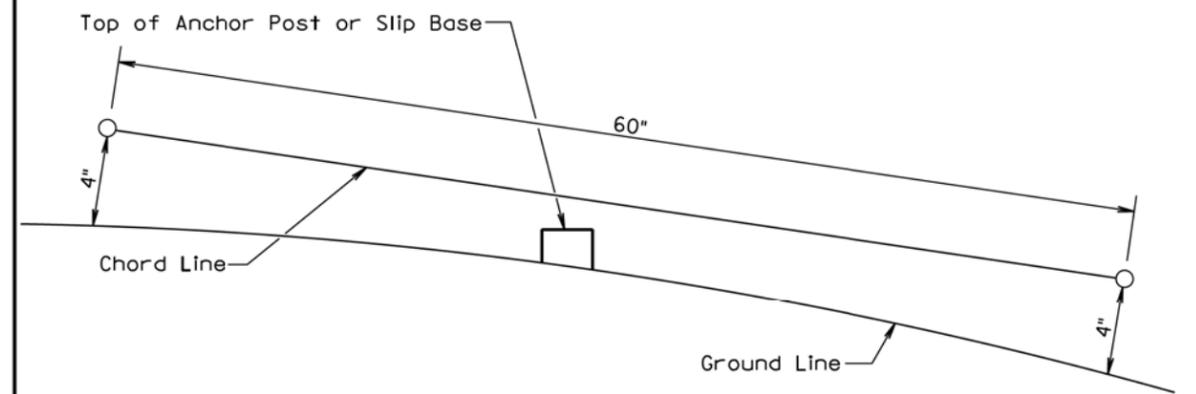
RURAL DISTRICT 3 DAY MAXIMUM

February 14, 2011

Published Date: 1st Qtr. 2014	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW  
(Examples of stub height clearance checks)



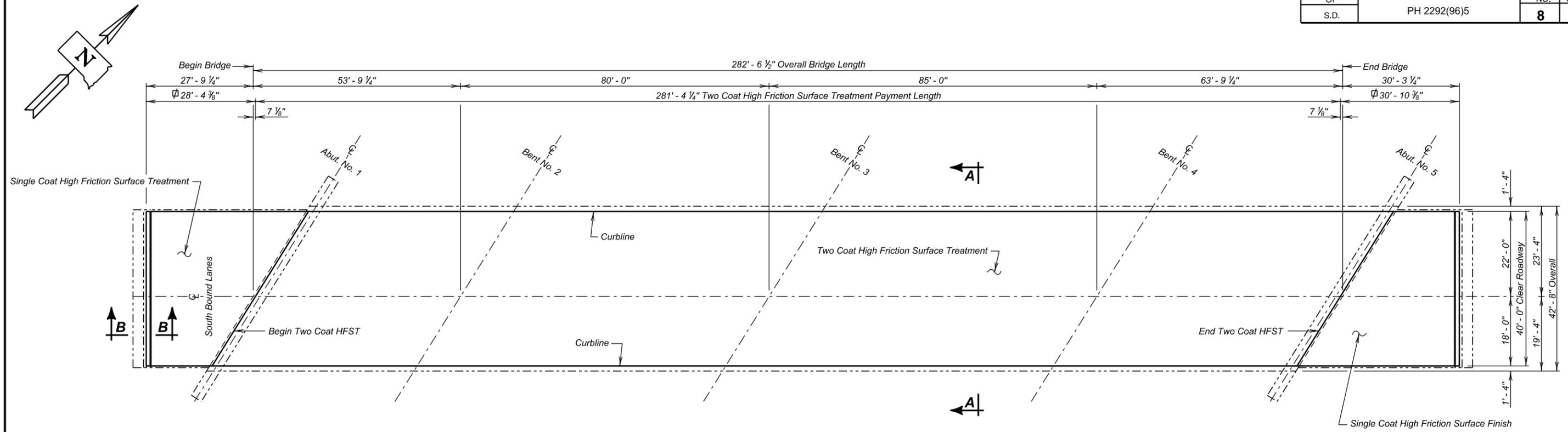
ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.  
 At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.  
 The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

Published Date: 1st Qtr. 2014	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

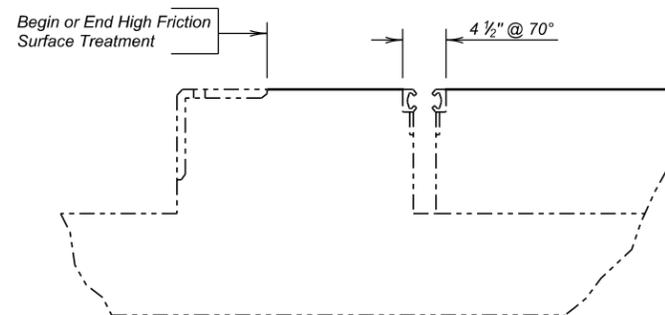


PLAN

∅ Payment Length for Single Coat High Friction Surface Treatment

NOTES:

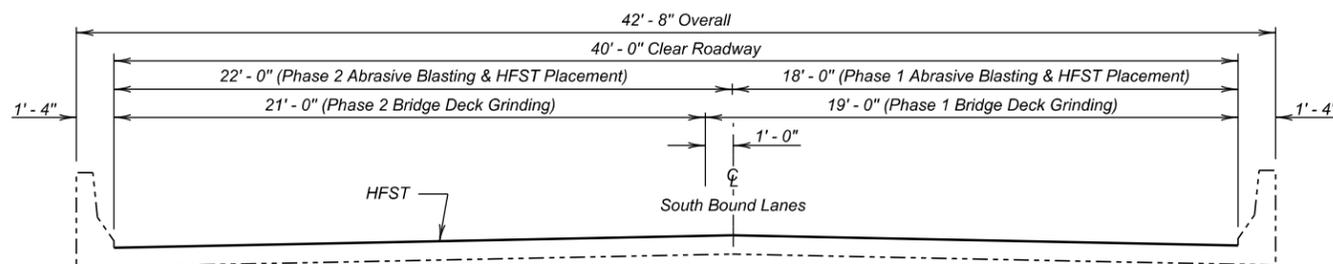
1. Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and Special Provisions as included in the Proposal.
2. The High Friction Surface Treatment shall be applied in accordance with the Special Provision for High Friction Surface Treatment (HFST).



SECTION B - B

Approach Slab at Abutment No. 1 shown, Approach Slab at Abutment No. 5 similar by opposite hand

ITEM	UNIT	QUANTITY	
		PHASE 1	PHASE 2
Two Coat High Friction Surface Treatment	Sq.Yd.	562.7	687.8
High Friction Surface Treatment	Sq.Yd.	117.0	143.0
Abrasive Blasting of Bridge Deck	Sq.Yd.	679.7	830.8
Bridge Deck Grinding	Sq.Yd.	594.0	656.5



SECTION A - A

(SOUTH BOUND LANES)  
HIGH FRICTION SURFACE TREATMENT LAYOUT & DETAILS  
FOR

282' - 6 1/2" PRESTRESSED GIRDER BRIDGE

40' - 0" ROADWAY  
OVER S.E. AVENUE & RR  
STR. NO. 50-217-217  
PCN 04U2

32° SKEW L.H.F.  
SEC. 22-T101N-R49W  
PH 2292(96)5

MINNEHAHA COUNTY  
S. D. DEPT. OF TRANSPORTATION

MARCH 2014

INDEX OF BRIDGE SHEETS -

- Sheet No. 1 - High Friction Surface Treatment Layout & Details  
Sheet No. 2 - Original Construction Plans

PLANS BY:  
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

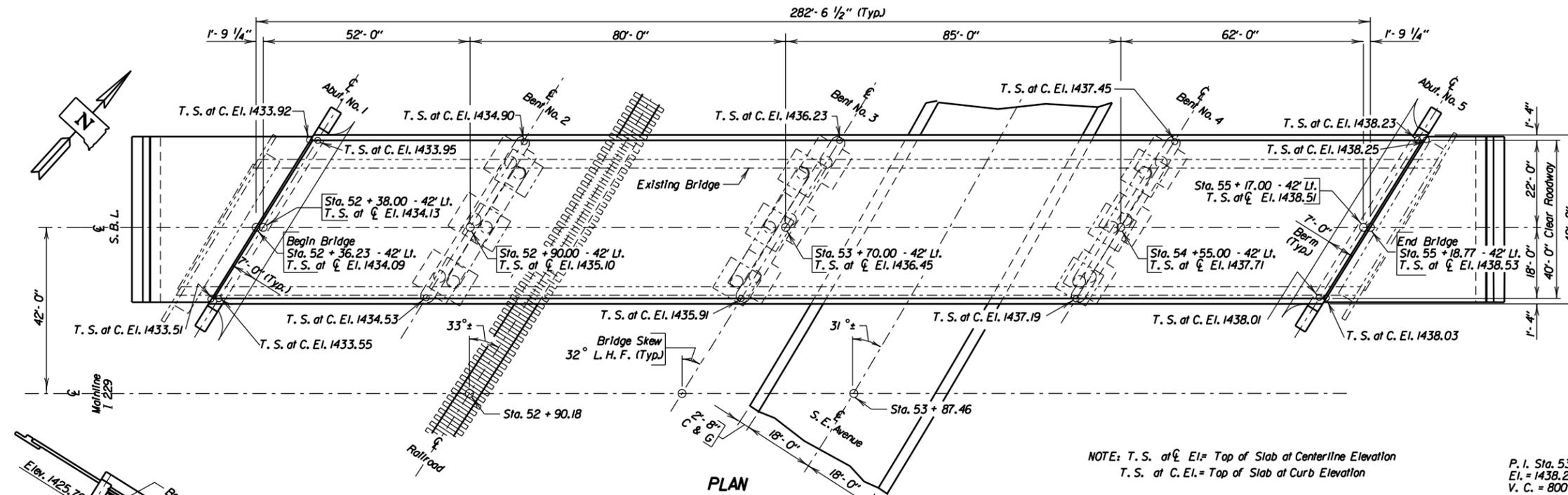
DESIGNED BY NP MINN04U2	CK. DES. BY EJA 04U2RA01	DRAFTED BY NP Kevin N. Coeden	BRIDGE ENGINEER
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BM # 2A Elev. 1442.87  
 State BM 282' North of  
 Str. No. 50-217-217  
 Sta. 57+55.99 - 132.34' Rt.

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	PH 2292(96)5	9	11

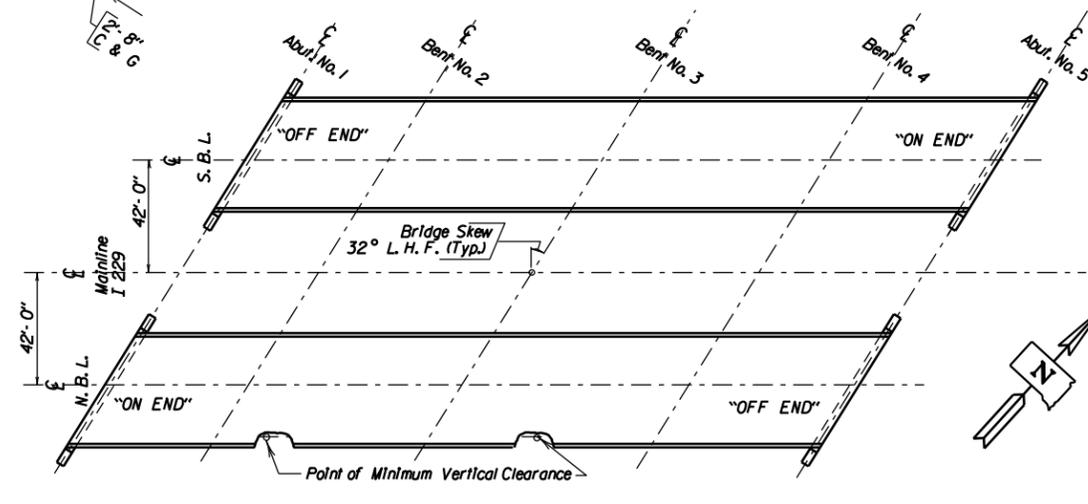
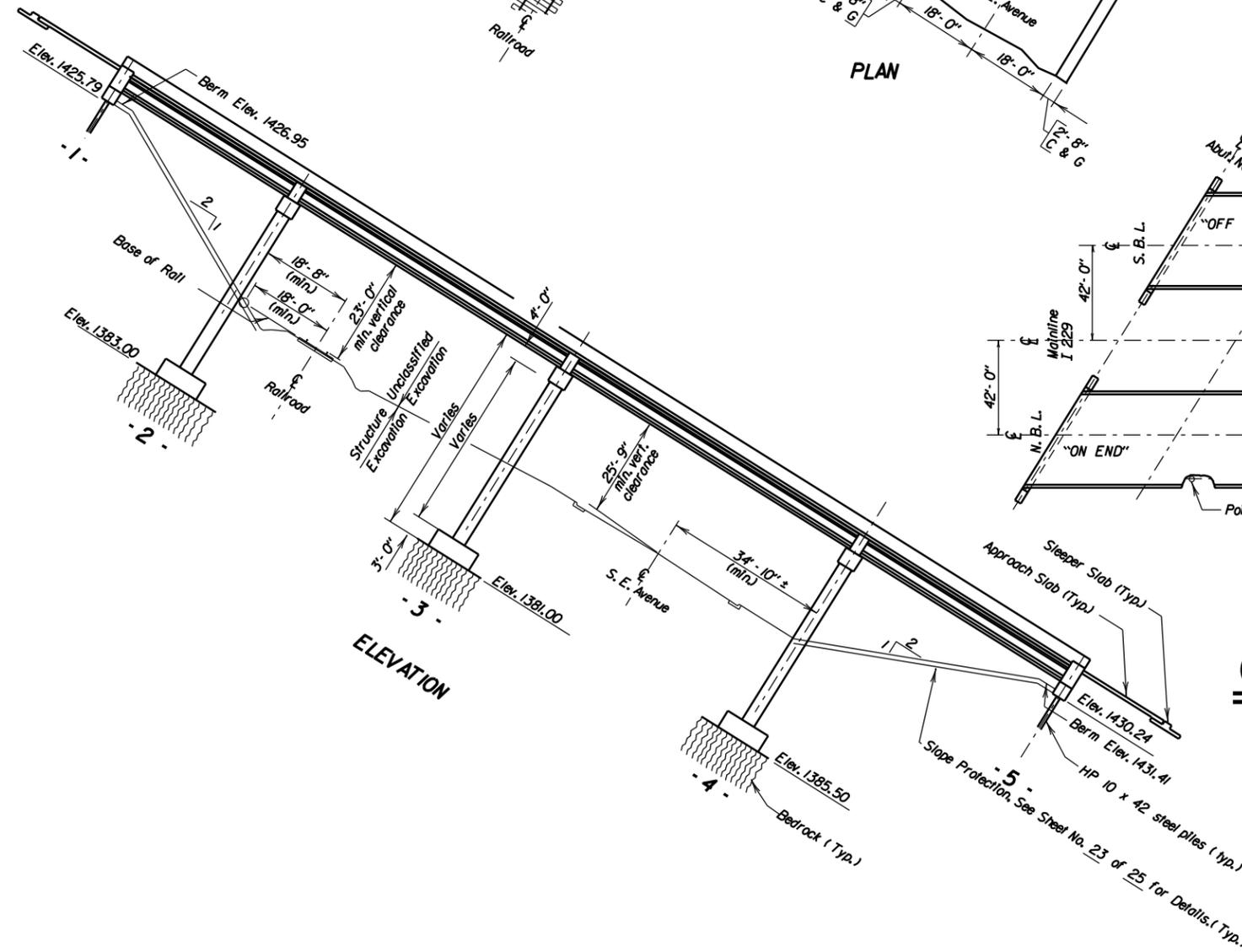
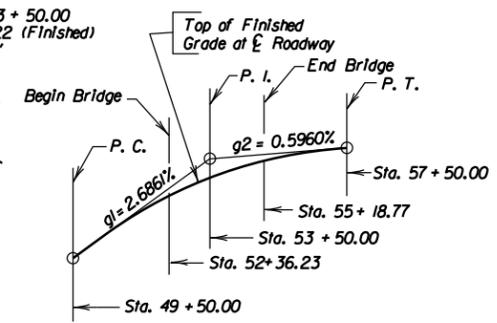
**-X58I-  
 INDEX OF BRIDGE SHEETS-**

- Sheet No. 1 - Layout & General Drawing
- Sheet No. 2 - Estimate of Structure Quantities & Notes
- Sheet No. 3 - Notes (Continued)
- Sheet No. 4 - Notes (Continued)
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- Sheet No. 6 - Abutment No. 1 Details
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- Sheet No. 8 - Bent No. 2 Details
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- Sheet No. 10 - Superstructure Details
- Sheet No. 11 - Superstructure Details (Continued)
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- Sheet No. 19 - Diaphragm Details
- Sheet No. 20 - Details of MSE Bridge End Backfill
- Sheet No. 21 - Details of Approach Slab Adj. to Bridge
- Sheet No. 22 - Approach Slab Joint Details
- Sheet No. 23 - Slope Protection Details
- Sheet No. 24 - Details of Standard Plate No. 460.10 & No. 510.40
- Sheet No. 25 - Details of Standard Plate No. 630.70



NOTE: T.S. at  $\bar{C}$  El. = Top of Slab at Centerline Elevation  
 T.S. at C. El. = Top of Slab at Curb Elevation

P.I. Sta. 53+50.00  
 El. = 1438.22 (Finished)  
 V. C. = 800'

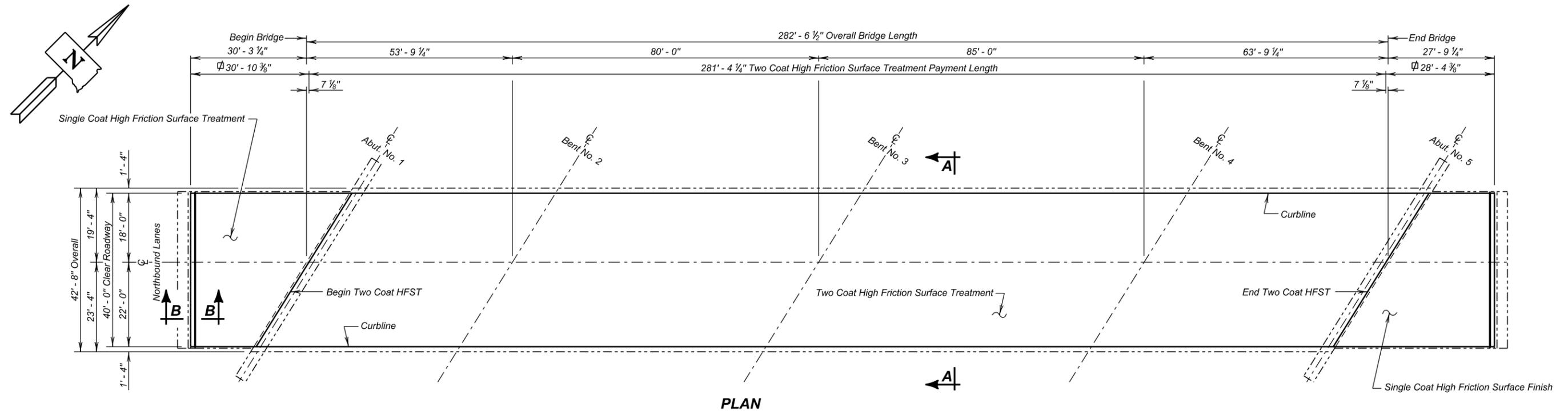


**ORIGINAL CONSTRUCTION PLANS**

**LAYOUT & GENERAL DRAWING  
 FOR  
 SOUTHBOUND LANES  
 282'-6 1/2" PRESTR. GIRDER BRIDGE  
 40'-0" ROADWAY 32° L. H. F. SKEW  
 OVER S. E. AVENUE & RR SEC. 22-TIOIN-R49W  
 STA. 52+36.23 TO 55+18.77 IM 229-2(44)5  
 STR. NO. 50-217-217 HS25-44 (& ALT.)  
 PCEMS NO. 0548  
 MINNEHAHA COUNTY  
 S. D. DEPT. OF TRANSPORTATION  
 SEPTEMBER 1996**

DESIGNED BY PC/SJ MINN0548	DRAWN BY LWJ 0548LBOI	CHECKED BY PC/SJ	APPROVED John C. Cole BRIDGE ENGINEER
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PLANS BY :  
 OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

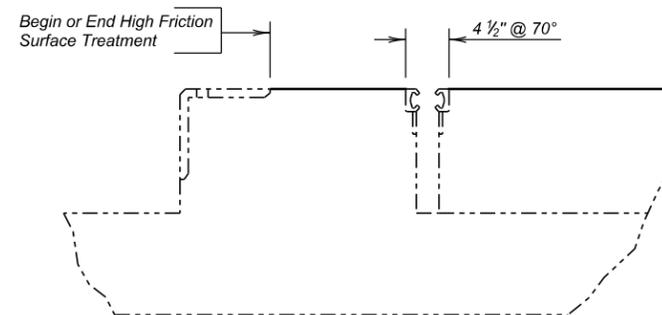


PLAN

∅ Payment Length for Single Coat High Friction Surface Treatment

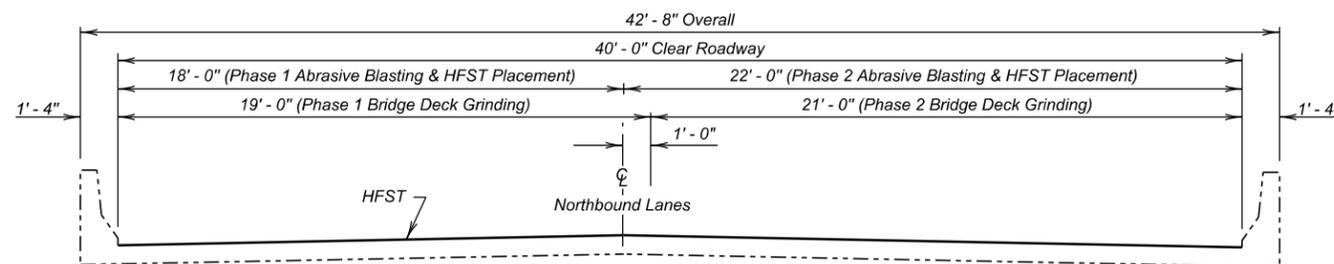
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SECTION A - A

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( NORTHBOUND LANES )  
**HIGH FRICTION SURFACE TREATMENT LAYOUT & DETAILS**  
 FOR  
**282' - 6 1/2" PRESTRESSED GIRDER BRIDGE**  
 40' - 0" ROADWAY 32° SKEW L.H.F.  
 OVER S. E. AVENUE & RR SEC. 22-T101N-R49W  
 STR. NO. 50-218-217 PH 2292(96)5  
 PCN 04U2

MINNEHAHA COUNTY  
 S. D. DEPT. OF TRANSPORTATION

MARCH 2014

1 OF 2

INDEX OF BRIDGE SHEETS -

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- Sheet No. 2 - Original Construction Plans

PLANS BY:  
 OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

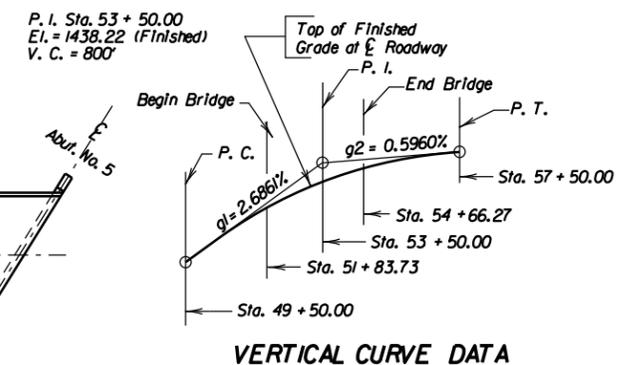
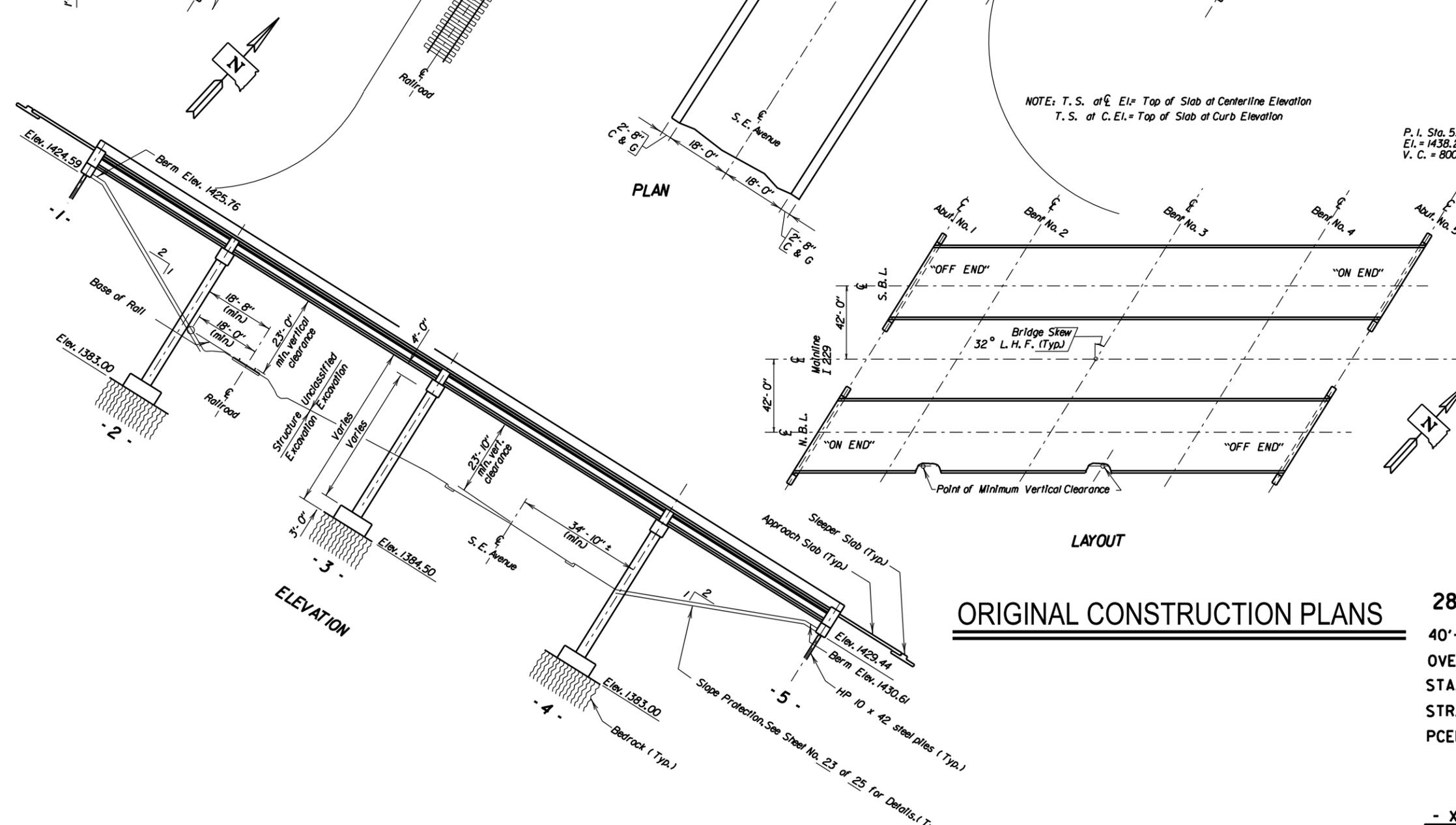
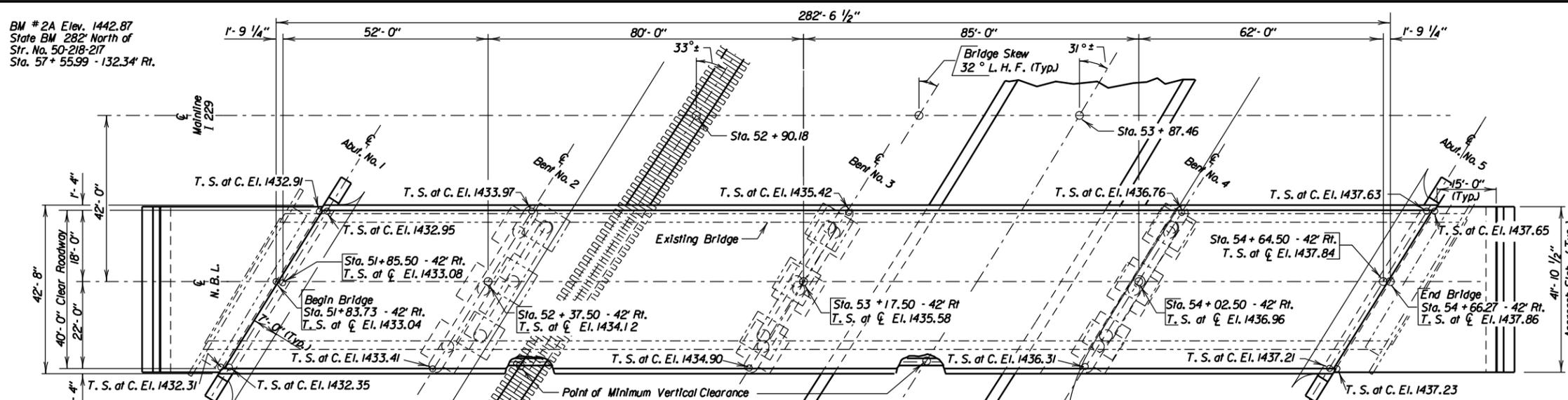
DESIGNED BY NP MINN04U2	CK. DES. BY EJA 04U2RB01	DRAFTED BY KR	<i>Kevin N. Boeden</i> BRIDGE ENGINEER
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STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	PH 2292(96)5	11	11

**-X581-**  
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**ORIGINAL CONSTRUCTION PLANS**

**LAYOUT & GENERAL DRAWING FOR NORTHBOUND LANES**

**282'-6 1/2" PRESTR. GIRDER BRIDGE**

40'-0" ROADWAY      32° L. H. F. SKEW  
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 PCEMS NO. 0548

MINNEHAHA COUNTY  
 S. D. DEPT. OF TRANSPORTATION  
 SEPTEMBER 1996

- X581 -

DESIGNED BY PC/SJ MINN0548	DRAWN BY LW 0548LA01	CHECKED BY PC/SJ	APPROVED John C. Cole BRIDGE ENGINEER
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PLANS BY :  
 OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION