

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

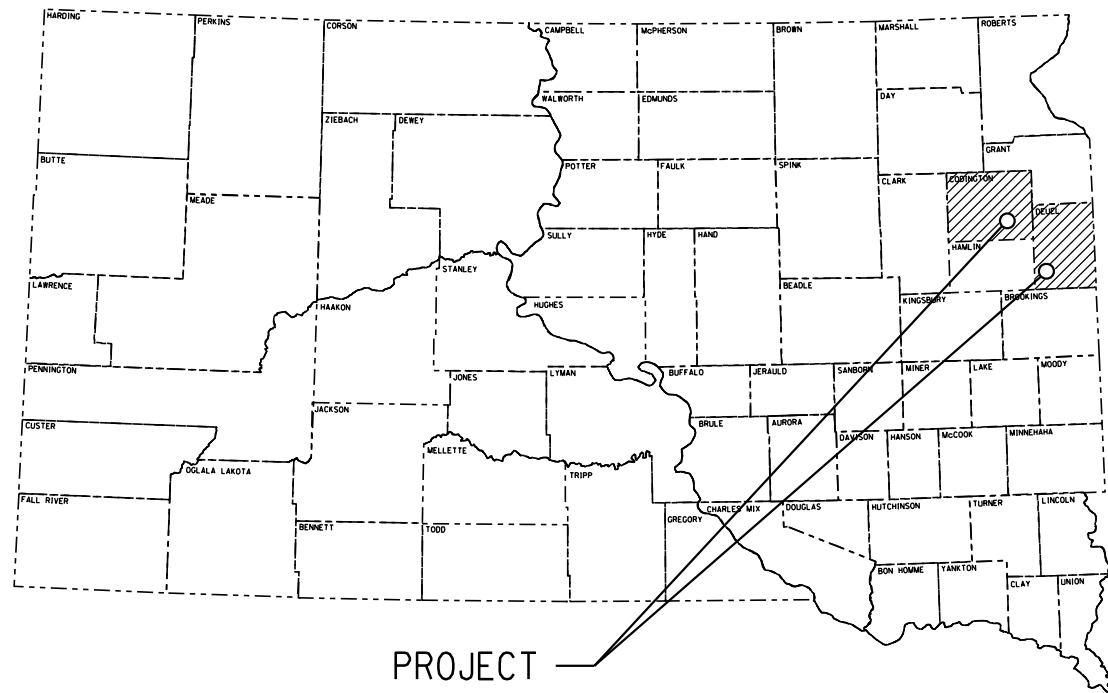
PLANS FOR PROPOSED
**PROJECT NH 0212(205)378 &
P 0028(52)357**
**US HIGHWAY 212 &
SD HIGHWAY 28**
**CODINGTON &
DEUEL COUNTIES**

BRIDGE DECK POLYMER CHIP SEAL
PCN 07WD & 07WE

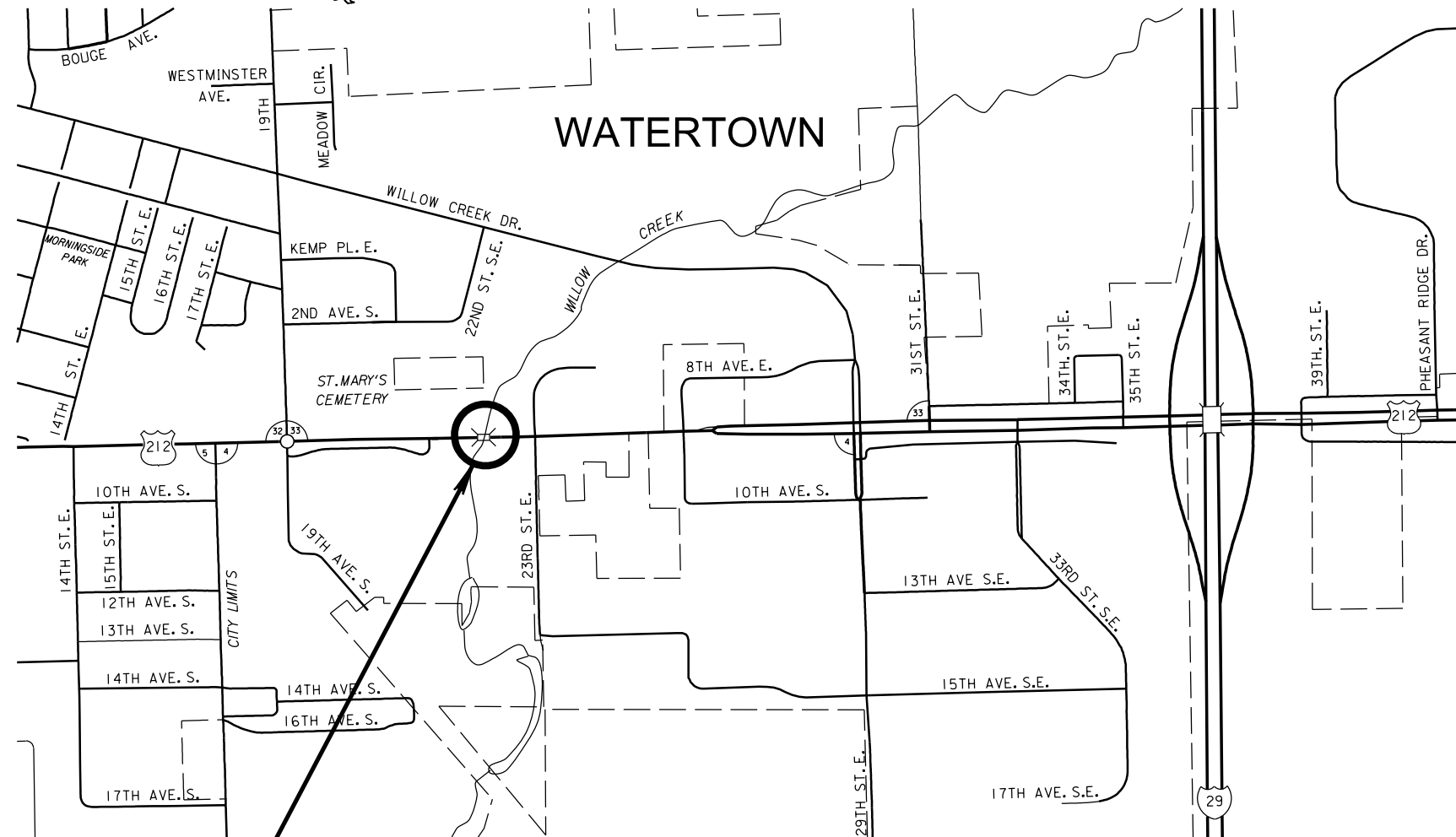
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0212(205)378 P 0028(52)357	1	22
Plotting Date: 06/22/2022			

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PROJECT



NH 0212(205)378
PCN 07WD
Str. No. 15-203-180
US 212 @ MRM 378.61

DESIGN DESIGNATION

ADT (2020)	11382
ADT (2040)	16299
DHV	1830
D	50%
DHV T%	3.5%
AADT T%	7.6%
V	40 M.P.H.

STORM WATER PERMIT

None Required

R 52 W

T 117 N

7

November 2, 2022

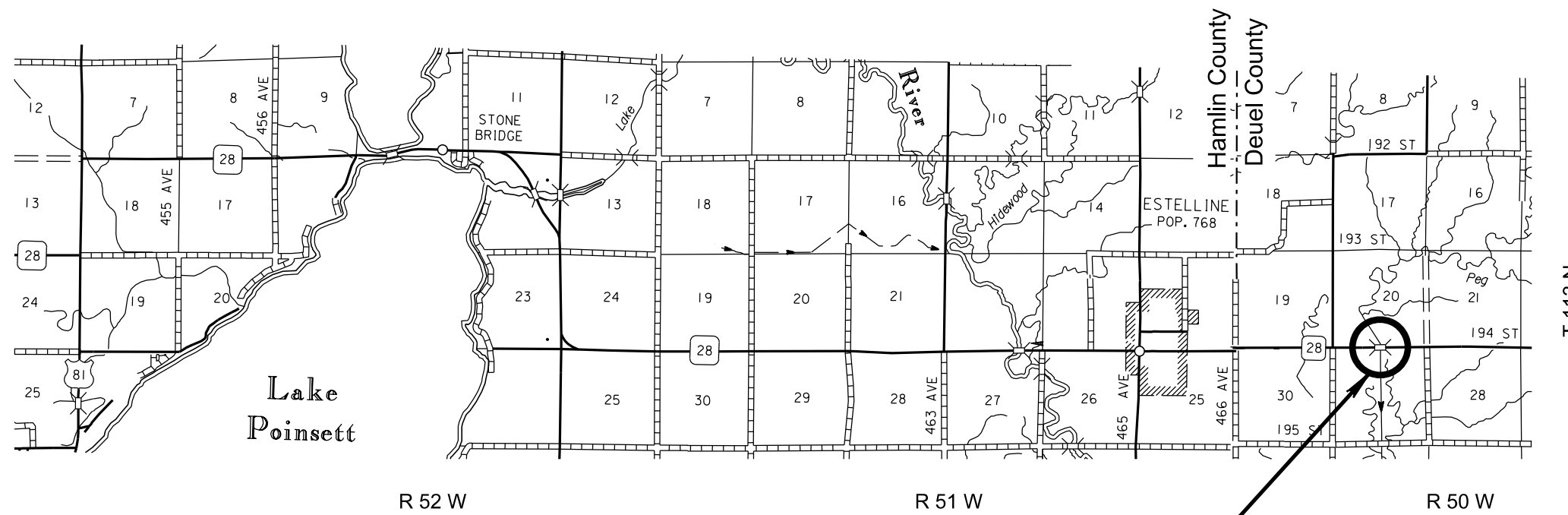
PLOT SCALE - 1:7986.03

PLOTTED FROM - IRBRINT12

PLOT NAME - 1

FILE - ... \07WD-TITLE.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0212(205)378 P 0028(52)357		
Plotting Date: 06/22/2022		2	22



P 0028(52)357
PCN 07WE
Str. No. 20-015-280
SD 28 @ MRM 357.02

DESIGN DESIGNATION

ADT (2020)	1230
ADT (2040)	1851
DHV	208
D	50%
DHV T%	10.7%
AADT T%	23.5%
V	65 M.P.H.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO. 3	TOTAL SHEETS 22
	NH 0212(205)378 P 0028(52)357		
Plotting Date: 01/28/2022		Revised 10/7/22 JR	

ESTIMATE OF QUANTITIES

GENERAL QUANTITIES PCN 07WD

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	80	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	252	Ft
634E0010	Flagging	5.0	Hour
634E0110	Traffic Control Signs	195.3	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	6	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0600	4" Temporary Pavement Marking Tape Type I	8,240	Ft
634E1002	Detour and Restriction Signing	399.0	SqFt

Structure 15-203-180

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	750.0	SqYd
491E0110	Abrasive Blasting of Bridge Deck	750.0	SqYd
491E0120	Bridge Deck Grinding	750.0	SqYd
491E0130	Concrete Removal, Class A	4.0	SqYd
491E0140	Concrete Removal, Class B	4.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	52.6	CuFt

GENERAL QUANTITIES PCN 07WE

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	210	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	30	Ft
634E0010	Flagging	5.0	Hour
634E0110	Traffic Control Signs	192.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	2	Each
634E0600	4" Temporary Pavement Marking Tape Type I	2,288	Ft
634E1002	Detour and Restriction Signing	652.5	SqFt

Structure 20-015-280

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	414.0	SqYd
491E0110	Abrasive Blasting of Bridge Deck	414.0	SqYd
491E0120	Bridge Deck Grinding	414.0	SqYd
491E0130	Concrete Removal, Class A	4.0	SqYd
491E0140	Concrete Removal, Class B	4.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	40.6	CuFt

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified 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. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <<https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

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

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

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

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Agriculture and Natural Resources.

The waste disposal site(s) will 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 Environmental Office and the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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 not to exceed the duration of the project. Prior to project completion, the waste will 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) will be incidental to the various contract items.

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COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

State Historic Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. 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 if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in 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 will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility/The Contractor is responsible for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

SCOPE OF WORK

Work on this project involves Bridge Deck Polymer Chip Seal on all bridge decks. Concrete Bridge Deck repair may be required prior to the placing of Bridge Deck Polymer Chip Seal.

SEQUENCE OF OPERATIONS

The following sequence of operations will be followed unless an alternate sequence is submitted in writing to the Area Engineer and approved, prior to the preconstruction meeting.

Work on multiple structures may be completed concurrently.

1. Install traffic control devices to close Phase 1 of project.
2. Complete Phase 1 work within the limits of the closed lane.
3. Switch traffic control and close Phase 2 of the project.
4. Complete Phase 2 work within the limits of the closed lane.
5. Complete clean up and remove traffic control devices to open the roadway to traffic.

Refer to each individual bridge repair plan set for location of Phase 1 and Phase 2, along with more detailed phasing and repair requirements.

GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulator, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

Traffic will be maintained on the driving lanes. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to rerouted traffic or Contractor's equipment will be repaired at no expense to the Department.

A Type 3 Barricade will be installed at the end of a lane closure taper as detailed in these plans.

Construction vehicles will exit or enter the construction work zone at locations identified by the Engineer.

The east entrance to the service road on US 212 will need to be closed throughout the construction to allow for sufficient workspace storage of equipment on the west side of the structure. Barricades and Road Closed Signs are included to allow for the closure.

TRAFFIC CONTROL SIGNS

Traffic control signs have been included in a table for each project PCN. Payment will only be for those signs used on each site.

OVERWIDTH RESTRICTION SIGNING

The Contractor will furnish and install the overwidth restriction signs as shown in these plans. Prior to installing the signs, the Contractor will mark the sign locations and review them with the Engineer. Overwidth restriction signs will be installed on fixed location, ground mounted, breakaway supports. It will be the responsibility of the Contractor to maintain and reinstall these signs during the project as required by the construction progress. Upon completion of the project, the Contractor will remove the overwidth restriction signs.

All costs for furnishing the signs, posts, and mounting hardware, and for installing, maintaining, covering, and removing the overwidth restriction signs will be incidental to the contract unit price per square foot for DETOUR AND RESTRICTION SIGNING.

REMOVE PAVEMENT MARKING

Pavement markings that conflicts with the temporary traffic control or temporary pavement markings will be removed or covered by a means that is nondestructive to the surfacing. Upon completion of each structure, original traffic control markings and signage must be restored to the condition prior to construction. Payment for this work will be incidental to the contract lump sum price for TRAFFIC CONTROL, MISCELLANEOUS.

TEMPORARY PAVEMENT MARKING

Cost of centerline pavement markings will be incidental to the contract unit price per foot for TEMPORARY PAVEMENT MARKING TAPE, TYPE I.

Temporary pavement marking for stop lines will consist of 4" Temporary Pavement Marking Tape Type I. Placement of each 24" white stop line will be accomplished by placing six pieces of 4" x 12' tape adjacent to one another. Each workspace requires two stop lines which is an equivalent of approximately 144' of 4" tape (2 workspaces at 144' = 288')

Temporary tape will be removed upon completion of the projects.

All Temporary Pavement Marking Tape and Temporary flexible vertical markers (tabs) will be clean at all times.

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TEMPORARY PAVEMENT MARKING

Cost of centerline pavement markings will be incidental to the contract unit price per foot for TEMPORARY PAVEMENT MARKING TAPE, TYPE I.

Temporary pavement marking for stop lines will consist of 4" Temporary Pavement Marking Tape Type I. Placement of each 24" white stop line will be accomplished by placing six pieces of 4" x 12' tape adjacent to one another. Each workspace requires two stop lines which is an equivalent of approximately 144' of 4" tape (2 workspaces at 144' = 288')

Temporary tape will be removed upon completion of the projects.

All Temporary Pavement Marking Tape and Temporary flexible vertical markers (tabs) will be clean at all times.

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

All materials will be applied as per manufacturer's recommendations. High build waterborne pavement marking paint will conform to the supplemental specifications for Section 980.1 C.

Reflective media will consist of glass beads.

High Build Waterborne Pavement Marking Paint applied after October 15 must be formulated as cold-weather waterborne paint. Cold weather waterborne paint will meet the requirements of Section 980.1 C.

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

Solid 4" line = 27.8 Gals/Mile
Dashed 4" line = 7.6 Gal/Mile
Glass Beads = 8 Lbs/Gal.

All cost for materials, labor and equipment necessary to furnish and install the pavement markings will be incidental to the contract unit price for the respective High Build Waterborne Pavement Marking Paint items.

RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT

The Department may take retroreflectivity readings on the pavement marking lines after 2 days and within 30 days of the line application using either a portable or mobile retroreflectometer that conforms to 30-meter geometry. If the Department chooses to take retroreflectivity readings, three retroreflectivity readings will be taken on each line at each test location. The three readings will be averaged and become the reading for that test location.

If the Department chooses to take retroreflectivity readings, three readings will be taken on the edge lines and lane lines in the direction of application. For combination solid yellow and skip yellow lines for turn lanes and for centerline markings on two-way roadways, three readings will be taken in one direction, the reflectometer will be turned 180 degrees and three more readings will be taken. The six readings for the centerline markings will be averaged and become the test reading for that test location.

If the Department chooses to take readings, the minimum retroreflectivity values will be 275 mc/m²/lux for white and 170 mc/m²/lux for yellow.

PLOT SCALE - 1:7986.24

PLOTTED FROM - IRBRINT12

PLOT NAME - 1

FILE - ... \07WD_TITLE.DGN

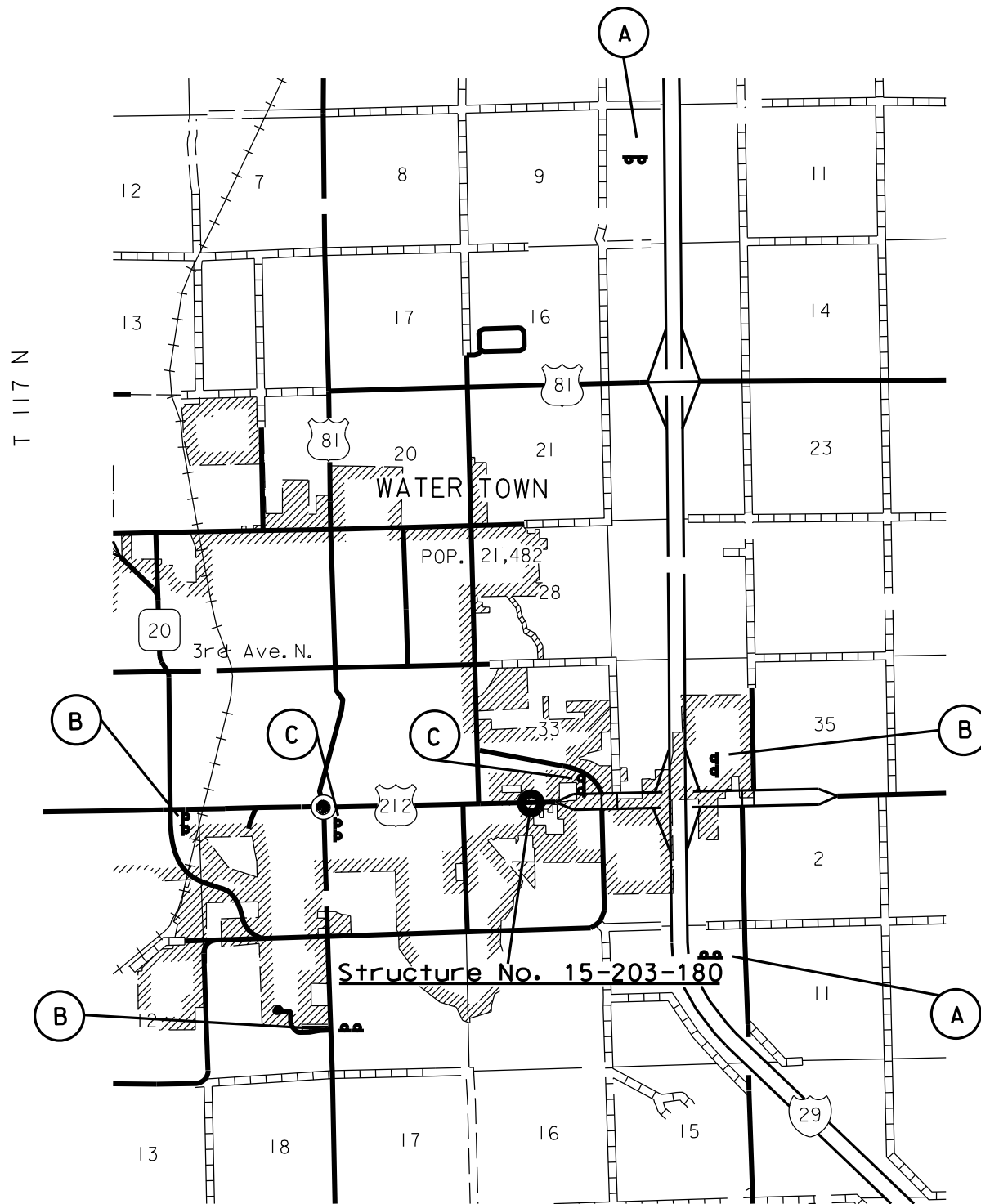
TABLE OF QUANTITIES - FOR INFORMATION ONLY

BID ITEM DESCRIPTION	UNIT	PROJECT, STRUCTURE NUMBER & MRM		Total Quantity
		PCN 07WE - SD 28	PCN 07WD - US 212	
		Str. No. 20-015-280	Str. No. 15-203-180	
		MRM 357.02	MRM 378.61	
Mobilization	LS	Lump Sum	Lump Sum	Lump Sum
Two Coat Bridge Deck Polymer Chip Seal	SqYd	414.0	750.0	1164.0
Abrasive Blasting of Bridge Deck	SqYd	414.0	750.0	1164.0
Bridge Deck Grinding	SqYd	414.0	750.0	1164.0
Concrete Removal, Class A	SqYd	4.0	4.0	8.0
Concrete Removal, Class B	SqYd	4.0	4.0	8.0
Concrete Patching Material, Bridge Deck	CuFt	40.6	52.6	93.2
High Build Waterborne Pavement Marking Paint, 4" White	Ft	210	80	290
High Build Waterborne Pavement Marking Paint, 4" Yellow	Ft	30	252	282
Flagging	Hour	5	5	10
Traffic Control Signs	SqFt	192.0	247.3	439.3
Traffic Control Miscellaneous	LS	Lump Sum	Lump Sum	Lump Sum
Type 3 Barricade	Each	2	8	10
Type C Advance Warning Arrow Panel	Each	0	2	2
4" Temporary Pavement Marking Tape, Type I	Ft	2,288	8,240	10,528
Detour and Restriction Signing	SqFt	652.5	399	1051.5


STATE OF SOUTH DAKOTA	PROJECT	SHEET NO. 7	TOTAL SHEETS 22
	NH 0212(205)378 P 0028(52)357		

OVERWIDTH SIGN LAYOUT

US 212 - NH 0212(205)378 PCN 07WD



WIDTH RESTRICTION


 **12 FT MAXIMUM**

EAST OF 19TH ST. E

USE ALT ROUTE

A

WIDTH RESTRICTION

 **12 FT MAXIMUM**

EAST OF 19TH ST. E

USE ALT ROUTE

B

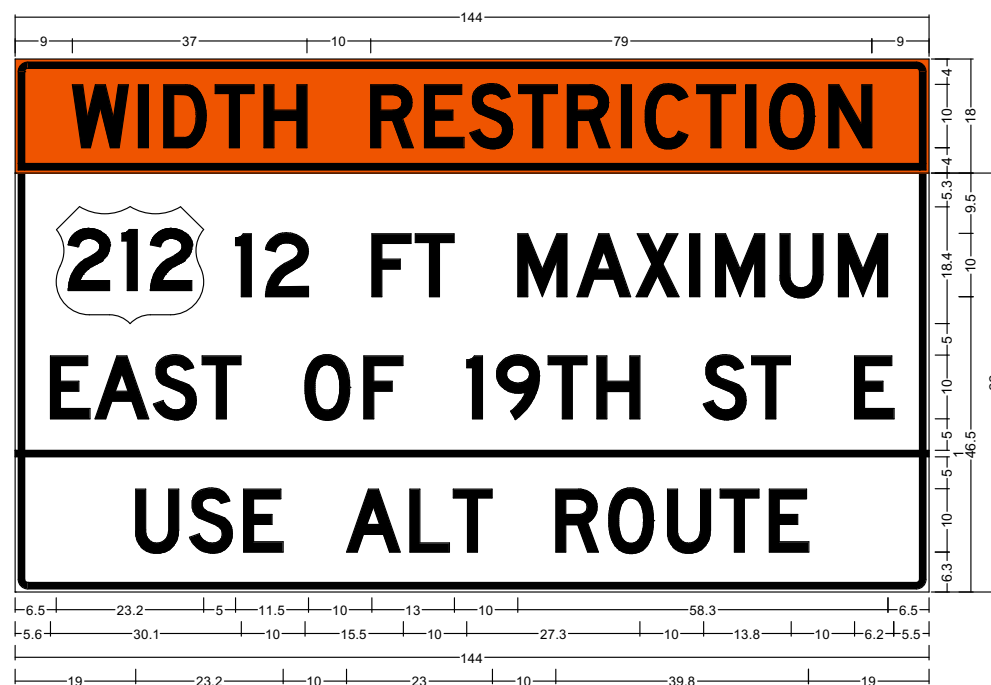
**NO VEHICLES
OVER 12 FT WIDE**

C

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO. 8	TOTAL SHEETS 22
	NH 0212(205)378 P 0028(52)357		

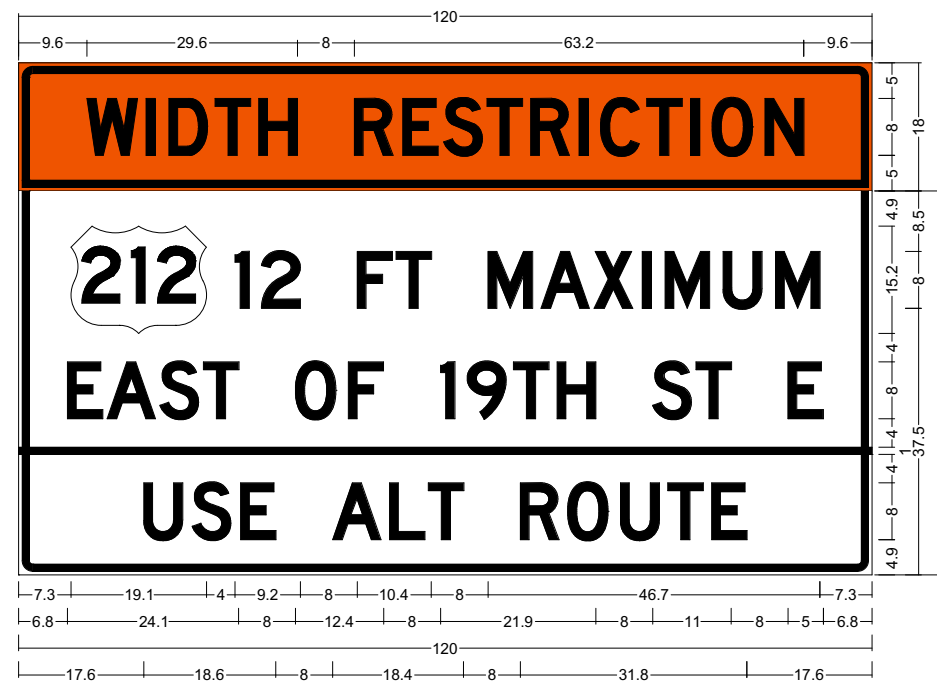
OVERWIDTH SIGN DESIGN

US 212 - NH 0212(205)378 PCN 07WD



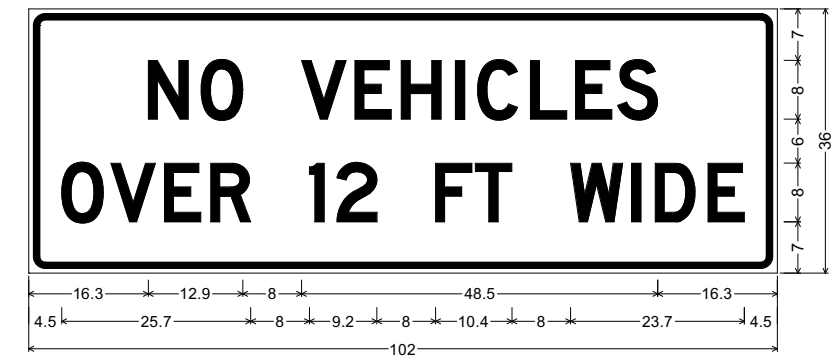
2.0" Radius, 1.0" Border, 0.5" Indent, Black on, Orange;
"WIDTH RESTRICTION", D 2K;
2.0" Radius, 1.0" Border, 0.5" Indent, Black on, White;
"12 FT MAXIMUM", D 2K; "EAST OF 19TH ST E", D 2K; "USE ALT ROUTE", D 2K;

A



2.0" Radius, 1.0" Border, 0.5" Indent, Black on, Orange;
"WIDTH RESTRICTION", D 2K;
2.0" Radius, 1.0" Border, 0.5" Indent, Black on, White;
"12 FT MAXIMUM", D 2K; "EAST OF 19TH ST E", D 2K; "USE ALT ROUTE", D 2K;

B

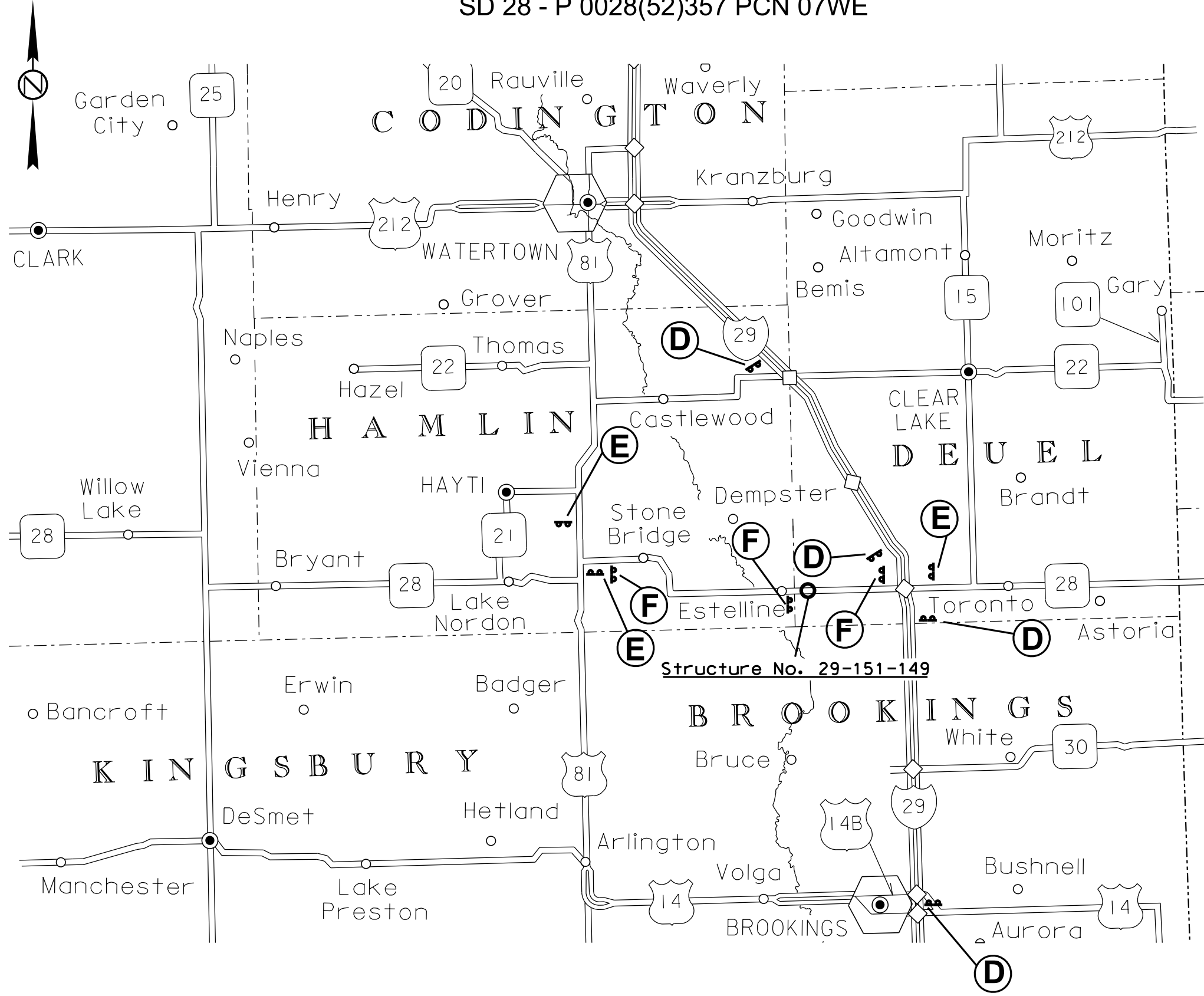


2.3" Radius, 0.9" Border, 0.6" Indent, Black on, White;
"NO VEHICLES", D 2K; "OVER 12 FT WIDE", D 2K;

C

OVERWIDTH SIGN LAYOUT

SD 28 - P 0028(52)357 PCN 07WE



WIDTH RESTRICTION

28 12 FT MAXIMUM

EAST OF ESTELLINE

USE ALT ROUTE

D

WIDTH RESTRICTION

28 12 FT MAXIMUM

EAST OF ESTELLINE

USE ALT ROUTE

E

**NO VEHICLES
OVER 12 FT WIDE**

F

PLOT SCALE - 1:199,557

PLOTTED FROM - IRBRINT12

PLOT NAME - 1

FILE - ... \07WD-OVERWIDTH SIGNING.DGN

OVERWIDTH SIGN DESIGN

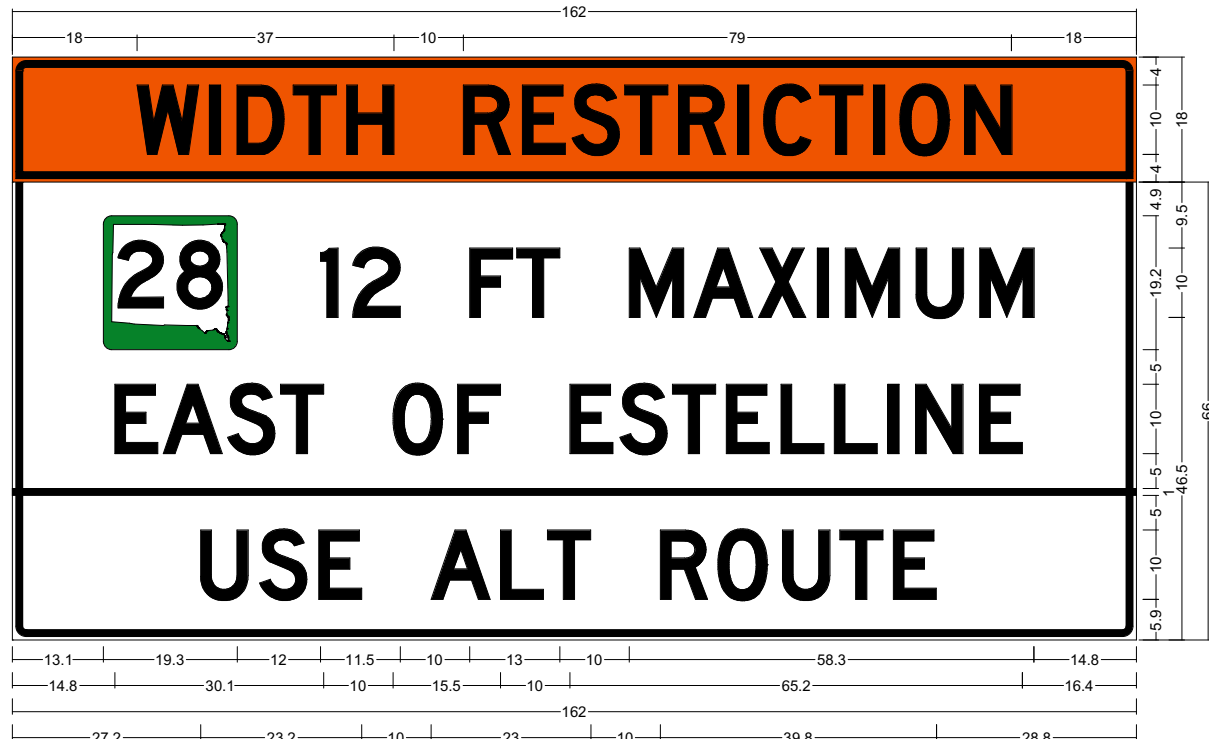
SD 28 - P 0028(52)357 PCN 07WE

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0212(205)378 P 0028(52)357	10	22

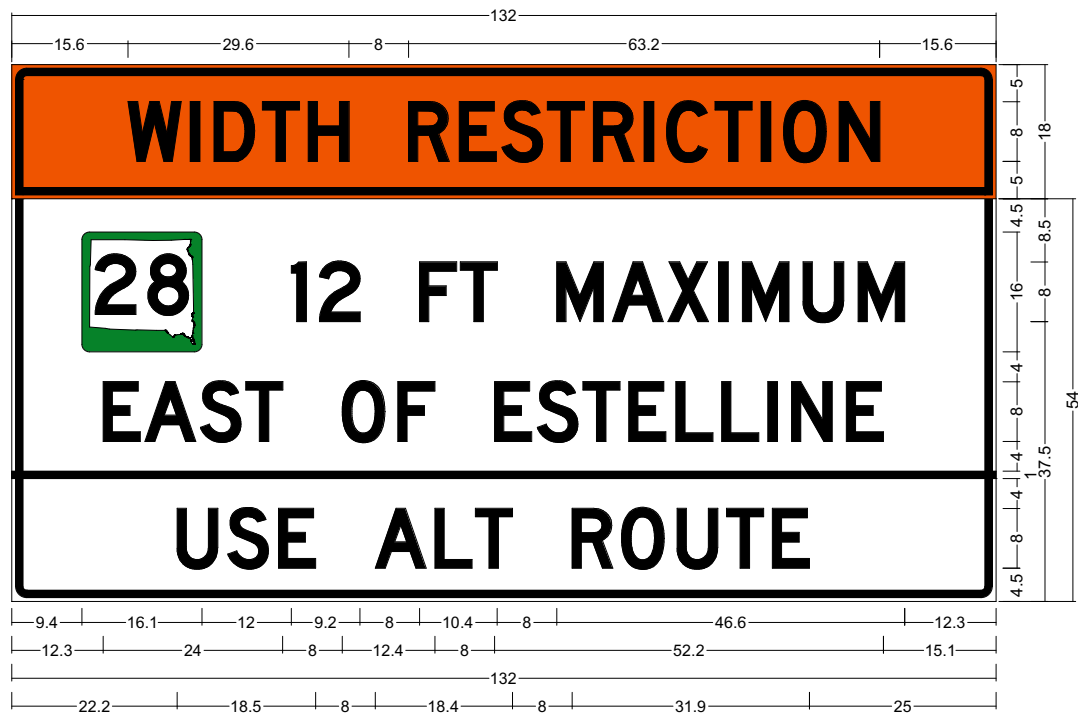
Plotting Date: 07/11/2022

PLOT SCALE - 1:199.508

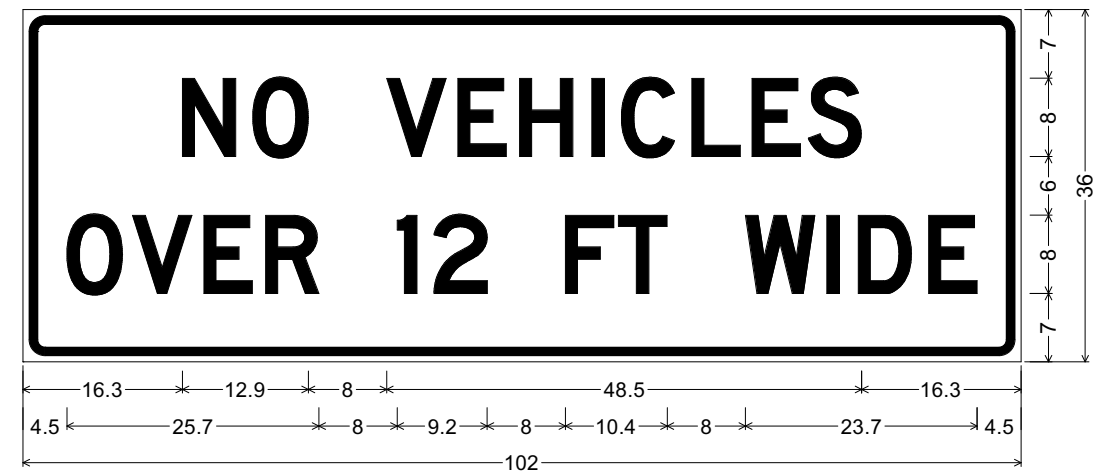
PLOT NAME - 1



D
 2.0" Radius, 1.0" Border, 0.5" Indent, Black on, Orange; "WIDTH RESTRICTION", D 2K;
 2.0" Radius, 1.0" Border, 0.5" Indent, Black on, White; "12 FT MAXIMUM", D 2K; "EAST OF ESTELLINE", D 2K; "USE ALT ROUTE", D 2K;



E
 2.0" Radius, 1.0" Border, 0.5" Indent, Black on, Orange; "WIDTH RESTRICTION", D 2K;
 2.0" Radius, 1.0" Border, 0.5" Indent, Black on, White; "12 FT MAXIMUM", D 2K; "EAST OF ESTELLINE", D 2K; "USE ALT ROUTE", D 2K;



F
 2.3" Radius, 0.9" Border, 0.6" Indent, Black on, White; "NO VEHICLES", D 2K; "OVER 12 FT WIDE", D 2K;

PLOTTED FROM - IRBRINT12

FILE - ... \07WD-OVERWIDTH SIGNING.DGN

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

- Flagger
- Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) will be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices will be drums or 42" cones.

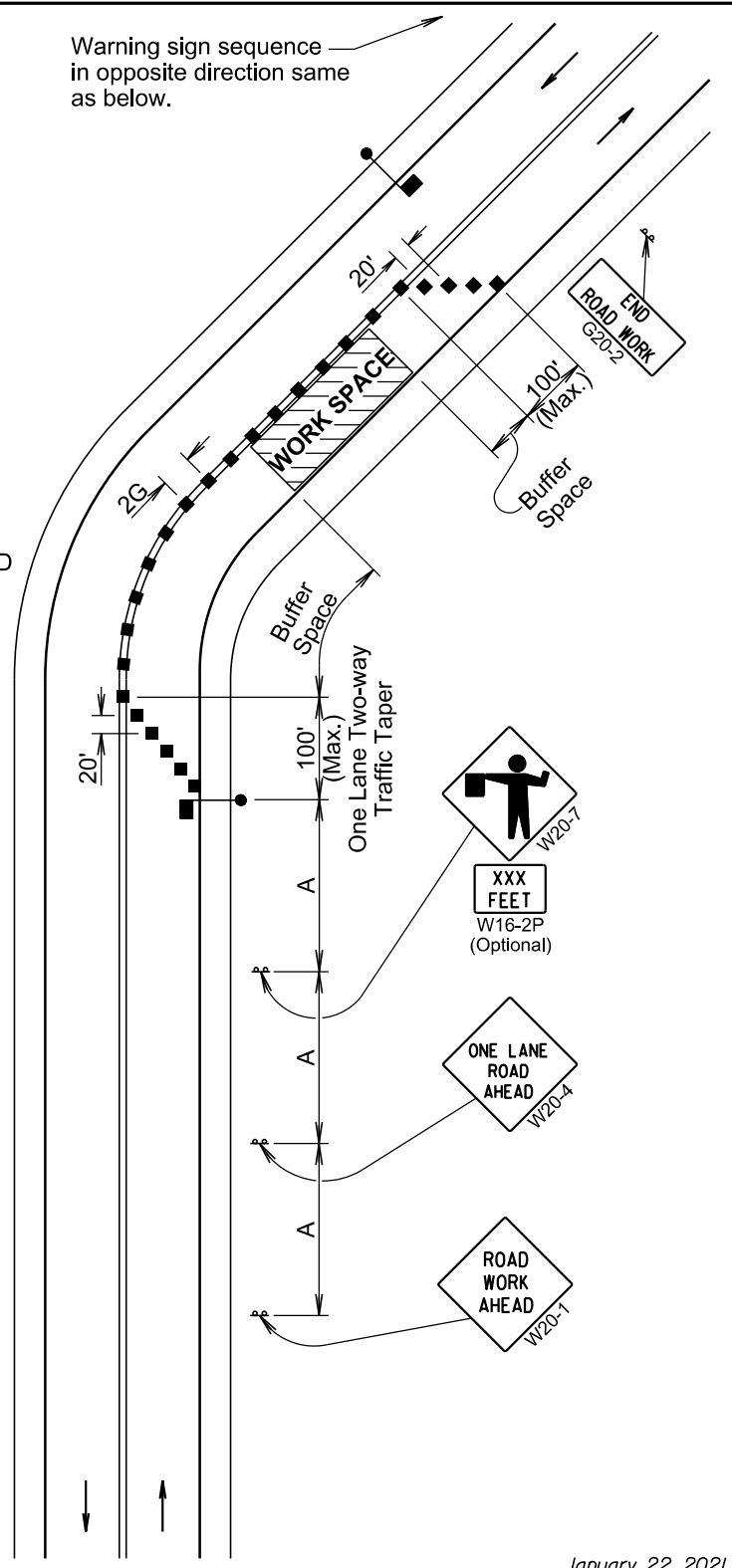
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

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

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

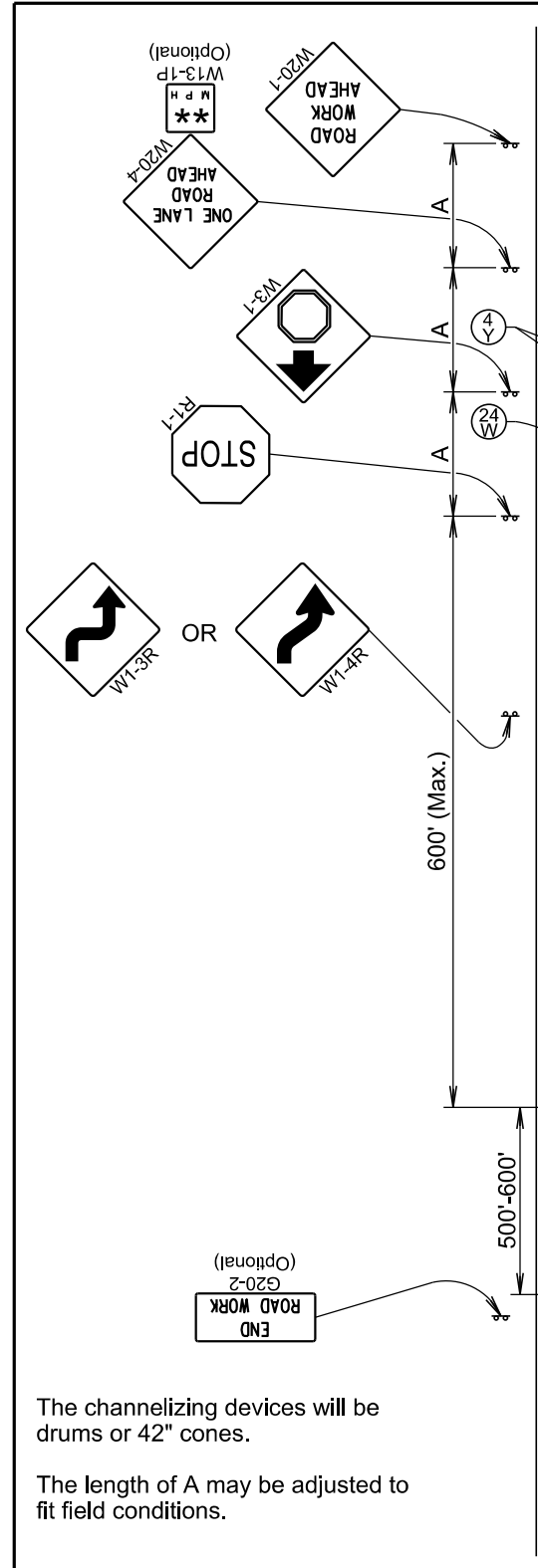
The length of A may be adjusted to fit field conditions.

Warning sign sequence in opposite direction same as below.



January 22, 2021

Published Date: 3rd Qtr. 2022	S D D O T	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1



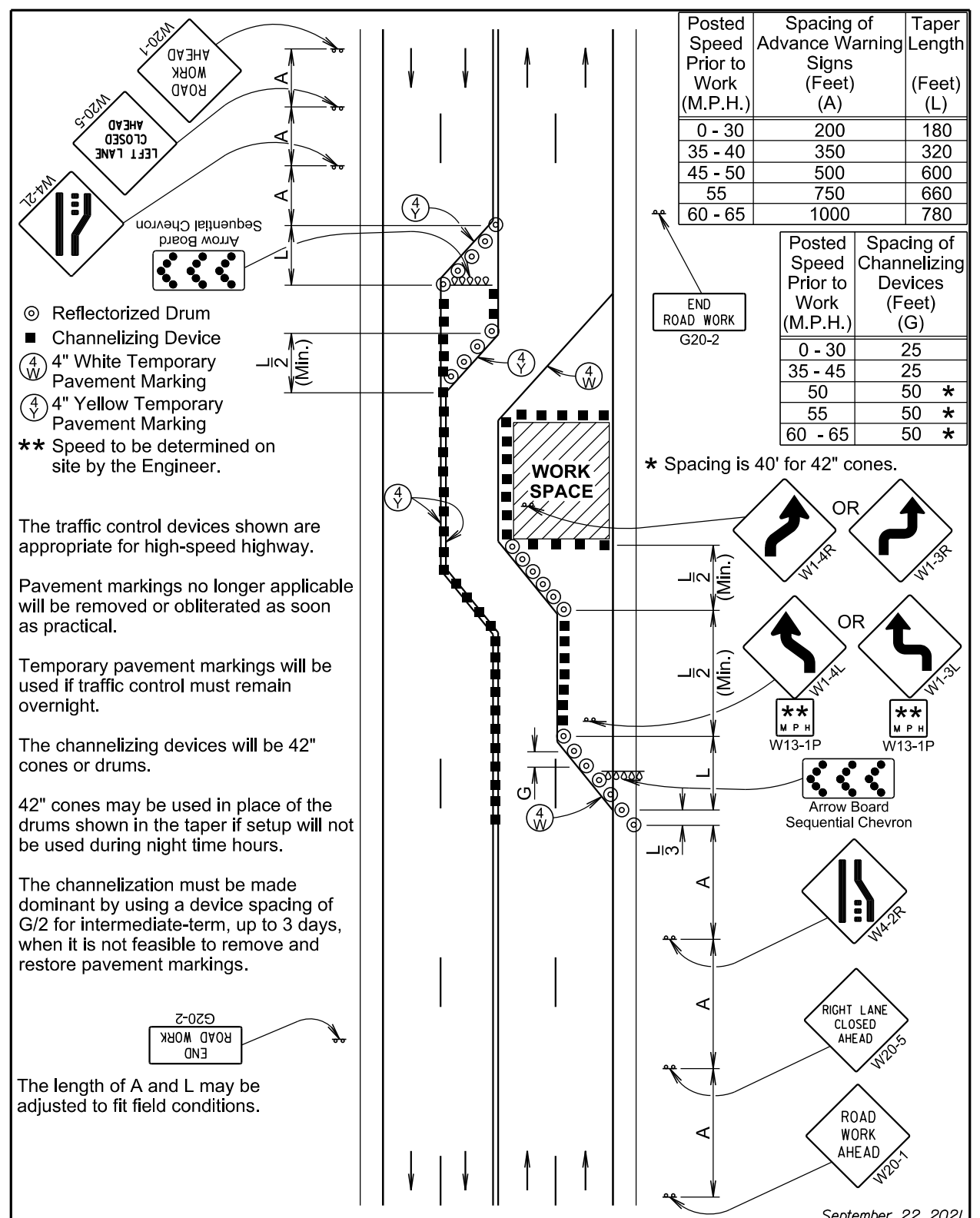
January 22, 2021

Published Date: 3rd Qtr. 2022	S D D O T	LANE CLOSURE USING STOP SIGNS	PLATE NUMBER 634.25
			Sheet 1 of 1

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

- ⊙ 24" White Temporary Pavement Marking
- ⊙ 4" Yellow Temporary Pavement Marking
- Channelizing Device
- ** Need and safe speed to be determined at the site by the Engineer.

PLOT SCALE - 1:7986.24



The traffic control devices shown are appropriate for high-speed highway.

Pavement markings no longer applicable will be removed or obliterated as soon as practical.

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

The channelizing devices will 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.

The channelization must be made dominant by using a device spacing of G/2 for intermediate-term, up to 3 days, when it is not feasible to remove and restore pavement markings.

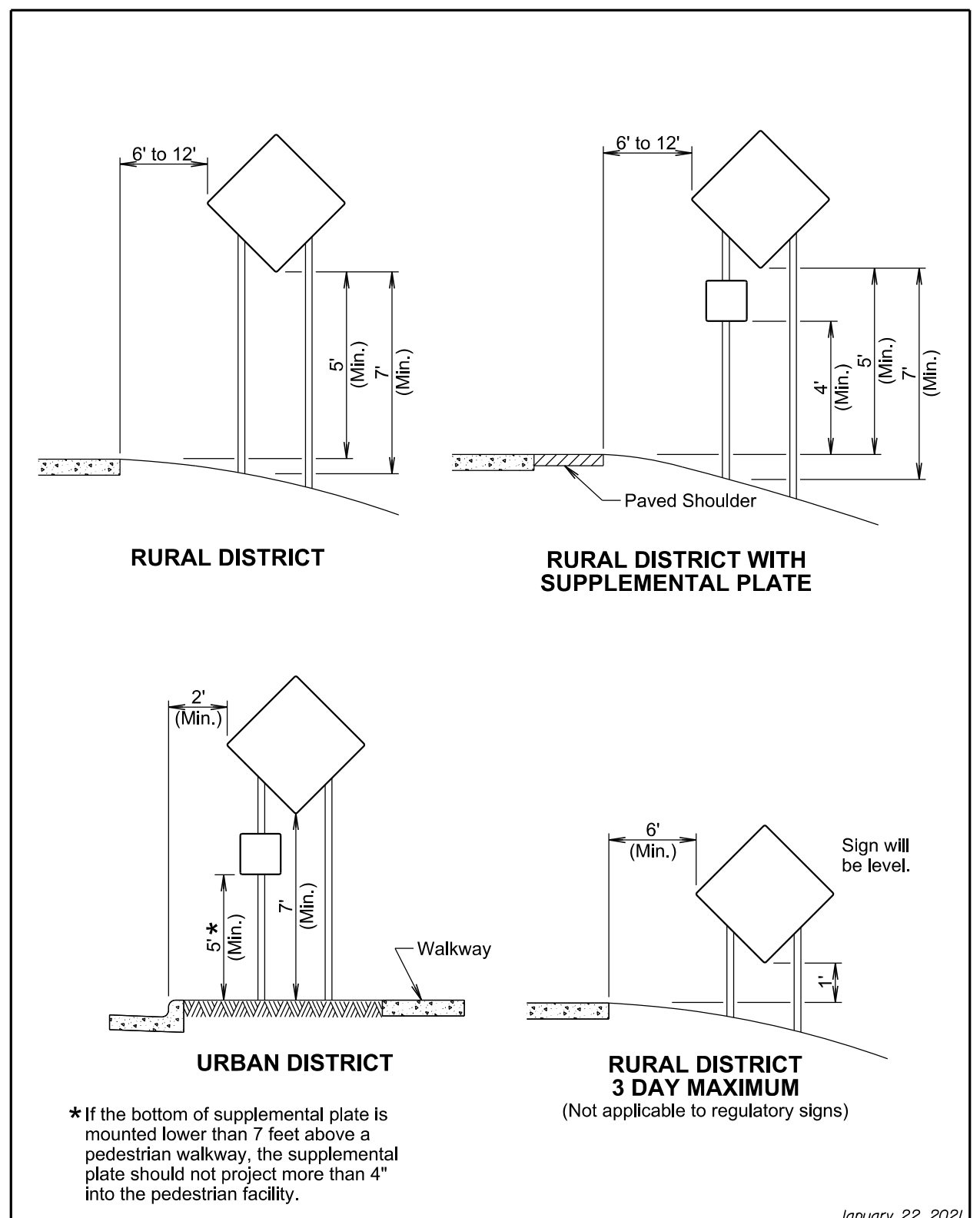
The length of A and L may be adjusted to fit field conditions.

September 22, 2021

S D D O T	HALF ROAD CLOSURE ON MULTILANE HIGHWAY	PLATE NUMBER 634.46
		Sheet 1 of 1

Published Date: 3rd Qtr. 2022

PLOT NAME - 1



* 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.

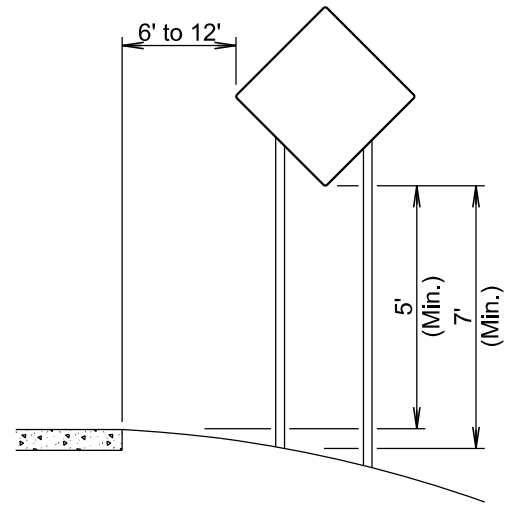
January 22, 2021

S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
		Sheet 1 of 1

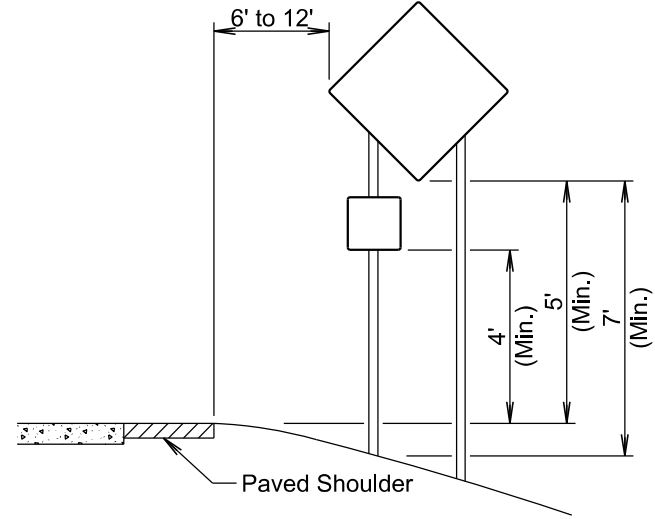
Published Date: 3rd Qtr. 2022

PLOTTED FROM - IRBRINT12

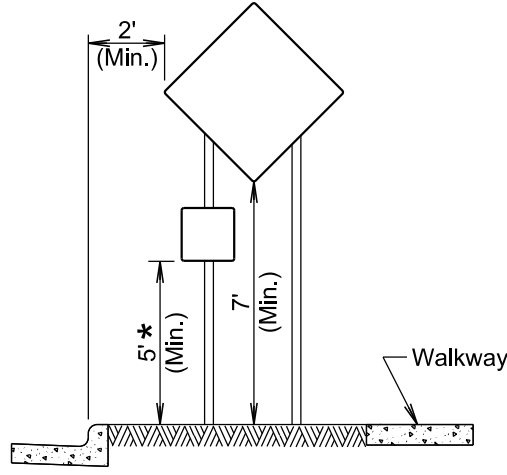
FILE - ... \07WD_TITLE.DGN



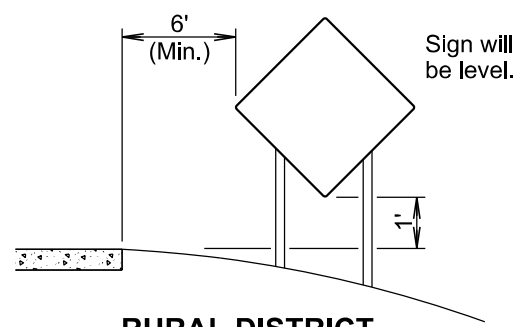
RURAL DISTRICT



**RURAL DISTRICT WITH
SUPPLEMENTAL PLATE**



URBAN DISTRICT



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

* 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.

January 22, 2021

Published Date: 3rd Qtr. 2022	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1

PLOT SCALE - 1:7986.24

PLOTTED FROM - IRBRINT12

PLOT NAME - 1

FILE - ... \07WD-TITLE.DGN

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS PCN 07WD

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R3-2	LEFT TURN PROHIBITION (symbol)	1	24" x 24"	4.0	4.0
R11-2	ROAD CLOSED	2	48" x 30"	10.0	20.0
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)	1	30" x 30"	6.3	6.3
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-3	ROAD CLOSED AHEAD	1	48" x 48"	16.0	16.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					247.3

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS PCN 07WE

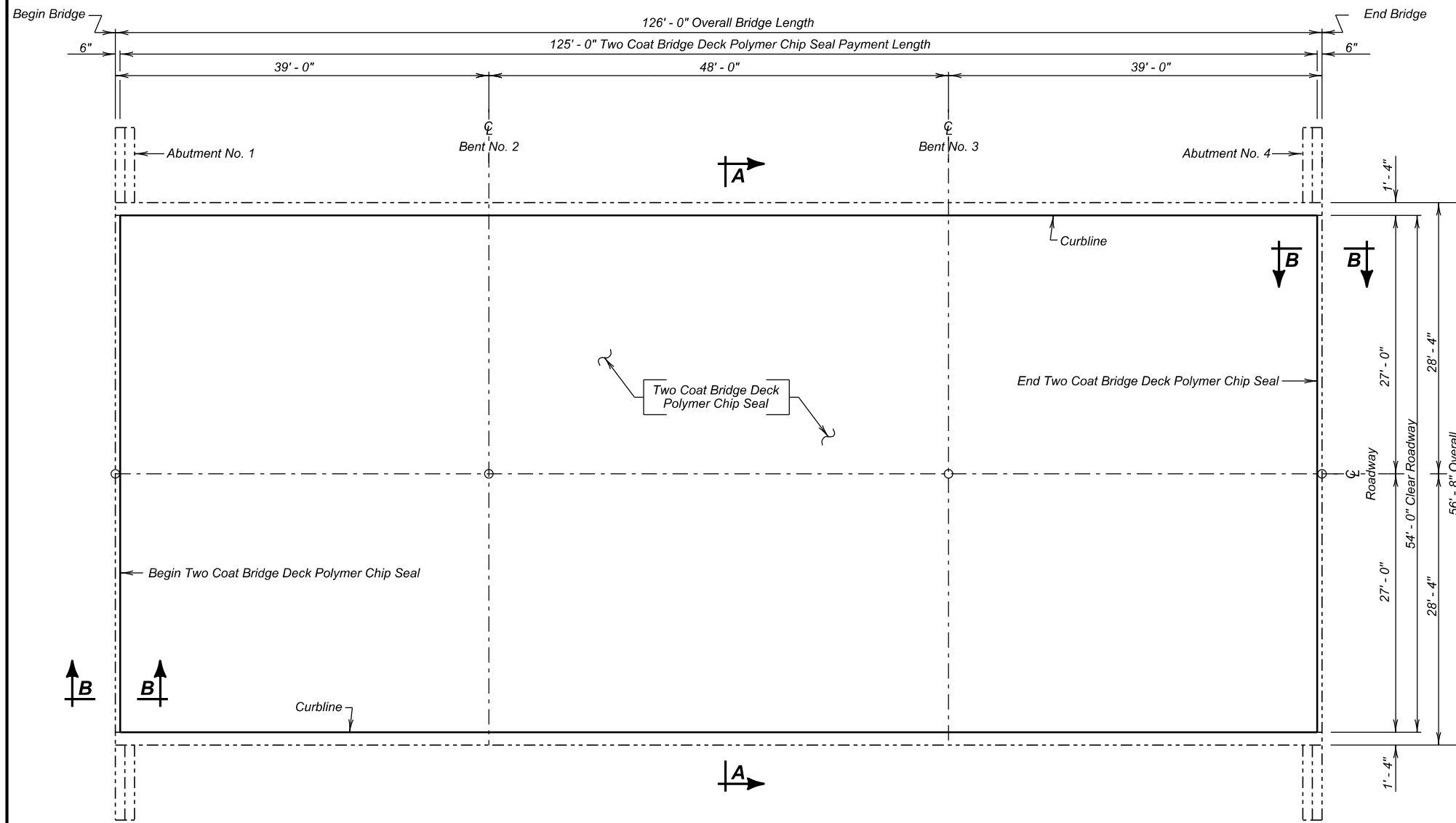
SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	2	30"	5.2	10.4
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16.0	32.0
W3-1	STOP AHEAD (symbol)	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					192.0

ITEMIZED LIST FOR DETOUR AND RESTRICTION SIGNS PCN 07WD

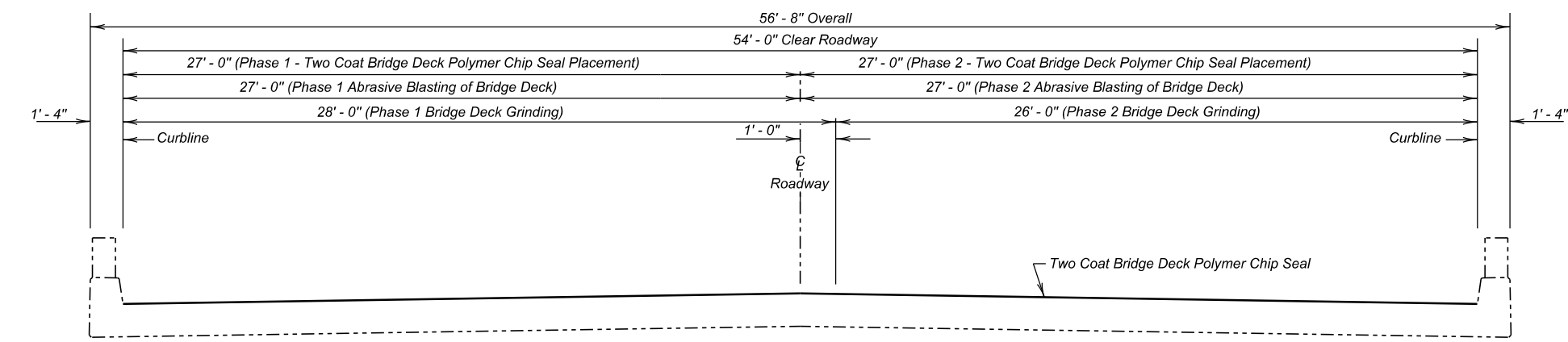
SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD				EXPRESSWAY / INTERSTATE				
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT	
R5-5C	NO VEHICLES OVER 12 FT WIDE	2	102" x 36"	25.5	51.0					
SPECIAL	WIDTH RESTRICTION 12 FT WIDE (Legend Varies)	3	120" x 72"	60.0	180.0					
SPECIAL	WIDTH RESTRICTION 12 FT WIDE (Legend Varies)					2	144" x 84"	84.0	168.0	
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					231.0	EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT				168.0

ITEMIZED LIST FOR DETOUR AND RESTRICTION SIGNS PCN 07WE

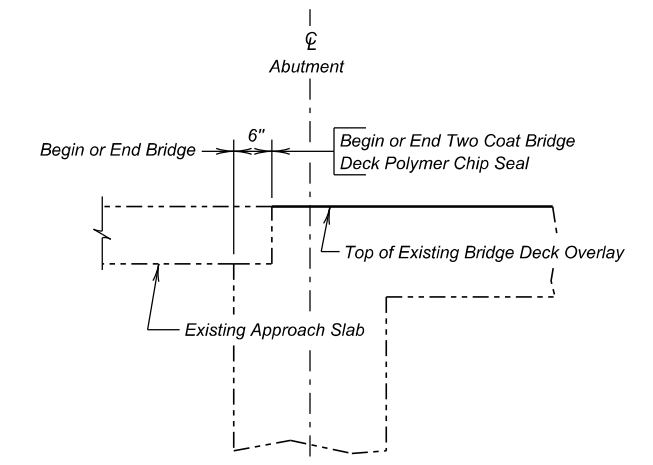
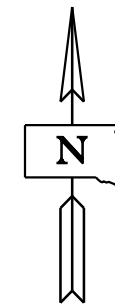
SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD				EXPRESSWAY / INTERSTATE				
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT	
R5-5C	NO VEHICLES OVER 12 FT WIDE	3	102" x 36"	25.5	76.5					
SPECIAL	WIDTH RESTRICTION 12 FT WIDE	3	132" x 72"	66.0	198.0					
SPECIAL	WIDTH RESTRICTION 12 FT WIDE					4	162" x 84"	94.5	378.0	
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					274.5	EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT				378.0



PLAN



SECTION A - A



SECTION B - B

ITEM	UNIT	QUANTITY	
		Phase 1	Phase 2
* Concrete Patching Material, Bridge Deck	Cu. Ft.	26.3	26.3
Two Coat Bridge Deck Polymer Chip Seal	Sq. Yd.	375.0	375.0
Abrasive Blasting of Bridge Deck	Sq. Yd.	375.0	375.0
Bridge Deck Grinding	Sq. Yd.	388.9	361.1
* Concrete Removal, Class A	Sq. Yd.	2.0	2.0
* Concrete Removal, Class B	Sq. Yd.	2.0	2.0

* Concrete Removal, Class A; Concrete Removal, Class B; and Concrete Patching Material may not be encountered and may be removed from the project at the direction of the Engineer.

- INDEX OF BRIDGE SHEETS -**
- Sheet No. 1 - Two Coat Bridge Deck Polymer Chip Seal Layout
 - Sheet No. 2 - Estimate of Structure Quantities and Notes
 - Sheet No. 3 and 4 - Original Construction Plans

TWO COAT BRIDGE DECK POLYMER CHIP SEAL LAYOUT FOR
126' - 0" CONTINUOUS CONCRETE BRIDGE
 54' - 0" ROADWAY 0° SKEW
 OVER WILLOW CREEK SEC. 4/33-T116/117N-R52W
 STR. NO. 15-203-180 NH 0212(205)378
 PCN 07WD

CODINGTON COUNTY
 S. D. DEPT. OF TRANSPORTATION

JULY 2022

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

DESIGNED BY AAK COD07WD	CK. DES. BY JH 07WDKA01	DRAFTED BY AAK	<i>Steve A. Johnson</i> BRIDGE ENGINEER
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ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	750.0	SqYd
491E0110	Abrasive Blasting of Bridge Deck	750.0	SqYd
491E0120	Bridge Deck Grinding	750.0	SqYd
491E0130	Concrete Removal, Class A	4.0	SqYd
491E0140	Concrete Removal, Class B	4.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	52.6	CuFt

SPECIFICATIONS

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

DETAILS AND DIMENSIONS OF EXISTING BRIDGE

All details and dimensions of the existing bridge, contained in these plans, are based on the original construction plans and shop plans and are provided as information only. It is the Contractor's responsibility to inspect and verify the actual field conditions and any necessary as-built dimensions affecting the satisfactory completion of the work required for this project.

SCOPE OF BRIDGE WORK & SEQUENCE OF OPERATIONS

All work on this structure will be accomplished with the traffic control shown in the plans. Alternate sequence of operations may be submitted by the Contractor for approval by the Engineer two weeks prior to the pre-construction meeting.

1. Perform Bridge Deck Grinding for the first phase of construction.
2. Where necessary, repair the bridge deck by removing and patching all loose and delaminated concrete from the bridge deck surface for the first phase of construction.
3. Clean the bridge deck surface with abrasive blasting for the first phase of construction.
4. Place the Two Coat Bridge Deck Polymer Chip Seal for the first phase of construction.
5. Switch traffic and repeat steps 1 through 4 for the second phase of construction.

BRIDGE DECK GRINDING

1. Perform Bridge Deck Grinding in accordance with Section 491 of the Construction Specifications.
2. The Contractor will have the option of grinding the entire deck surface during phase one. Any additional costs incurred for grinding the entire deck surface such as additional traffic control or cleaning will be at no additional cost to the Department.

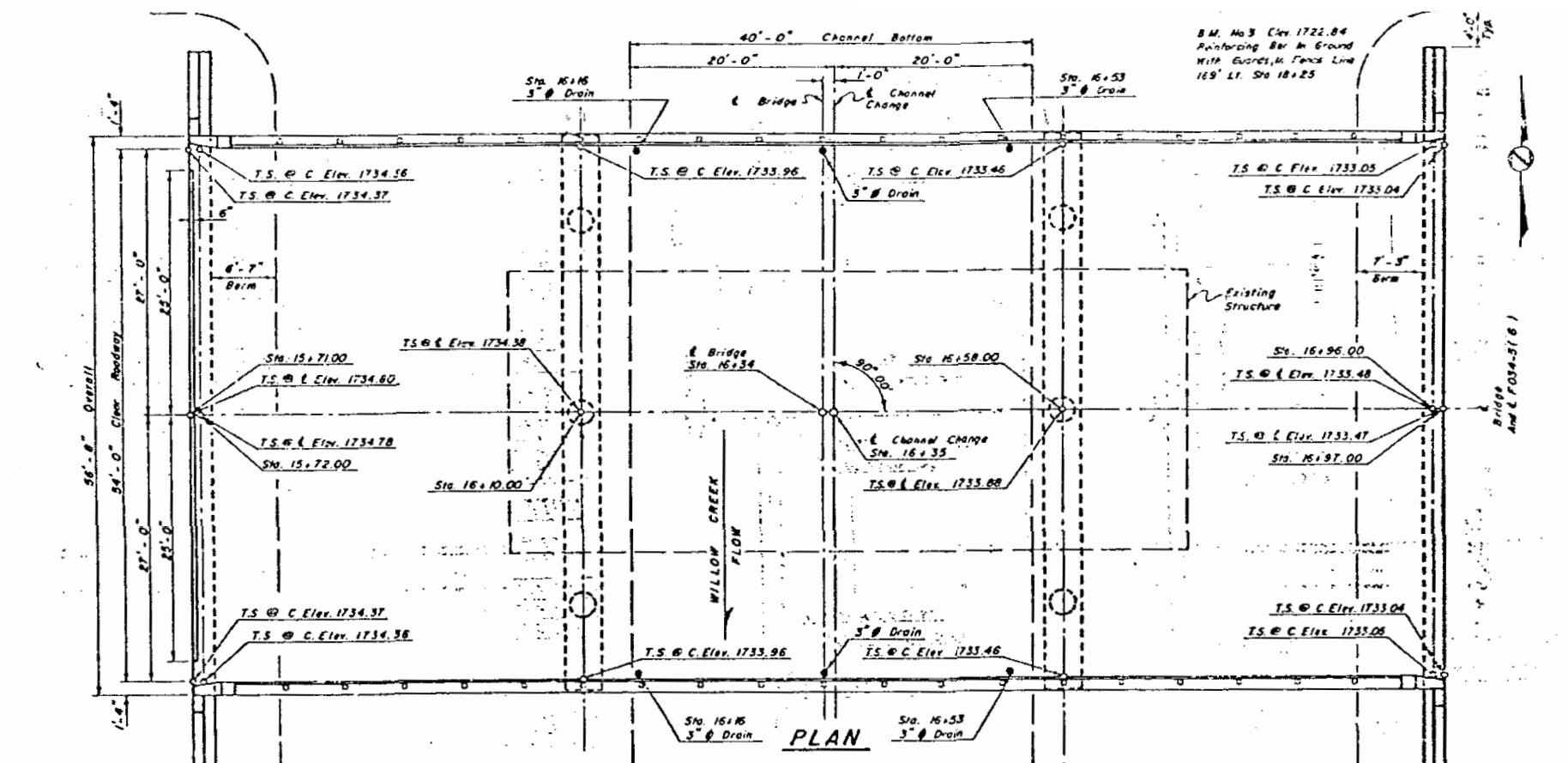
CONCRETE PATCHING MATERIAL, BRIDGE DECK

1. In lieu of the 48-hour wet cure, the contractor may use a wax-based curing compound after 4 hours of wet cure. The wax-based curing compound will be white pigmented and will be applied to the patch until the entire surface is white. After the 48-hour cure period, the curing compound will be completely sand blasted off and the surface of the patch will be allowed to air dry for a minimum of 48 hours before application of the polymer chip seal.
2. A thicker layer of the Two Coat Bridge Deck Polymer Chip Seal will not be used in place of Concrete Patching Material, Bridge Deck. Joint Nosing Material from the Department's Approved Products List may be used for Concrete Patching Material, Bridge Deck provided it is compatible with the polymer used for the chip seal and is approved by the manufacturer's representative. Joint Nosing Material will be fully cured before application of the chip seal. If Joint Nosing Material is substituted for Concrete Patching Material it will be paid for at the contract unit price per cubic foot for Concrete Patching Material, Bridge Deck.

ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
126' - 0" CONTINUOUS CONCRETE BRIDGE

STR. NO. 15-203-180
JULY 2022

(2) OF (4)



ESTIMATED QUANTITIES										
Item	QTY	UNIT	QTY	UNIT	QTY	UNIT	QTY	UNIT	QTY	UNIT
Superstructure	112.350	cu yds	259	cu yds	230.67					
Abutment No. 1	28.3	cu yds	310	cu yds	116.70	500	14.95	55	20	71
Bent No. 2	35.2	cu yds	545	cu yds	385.80	1750	14.85	35	129	
Bent No. 3	35.2	cu yds	545	cu yds	385.80	1750	14.85	35	119	
Abutment No. 4	28.3	cu yds	310	cu yds	116.70	500	14.95	55	20	71
Totals	534.6		1502.60		1415		2370		180	288

* One Treated Timber Test Pile Shall Be Driven At Abutments No. 1 And No. 4 And At Bents No. 2 And No. 3 Before The Remaining Piles Are Ordered.
 * Includes Quantities For End Blocks See Sheet No. B For End Block Quantities.
 * All Unclassified Excavation To Be Done By Others.
 * For Information Only, The Approximate Volume Of Granular Backfill Will Be 142 Cu Yds. In Place, And The Length Of 6" Perforated Metal Pipe Will Be 174'.
 * Incidental Work: See "Note" Sheet No. 2 Of Bridge Plans

NOTE:

T.S. @ C. Elev. = Top Of Slab @ Curb Elevation.
 T.S. @ E. Elev. = Top Of Slab @ E. Elevation

Q50	1500 c.f.s.
A	449 Sq. Ft.
V	3.3 f.p.s.

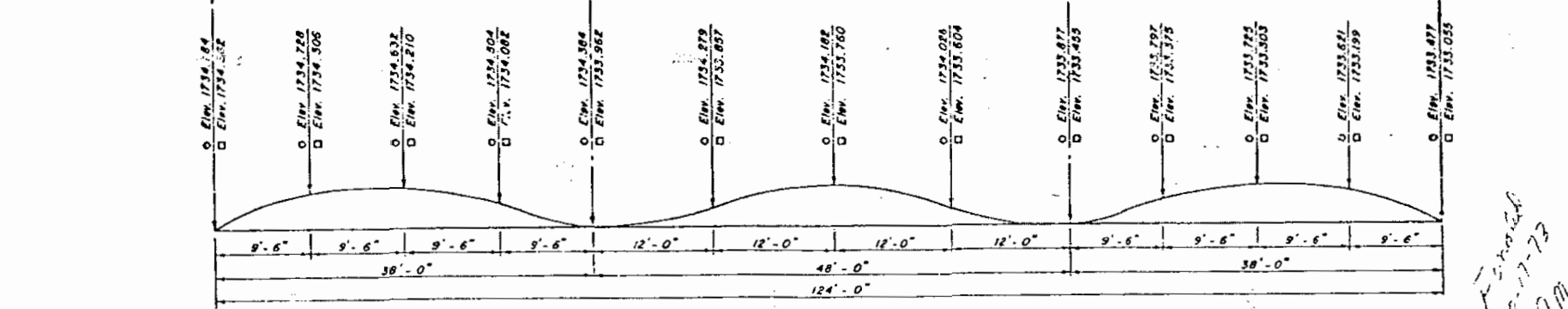
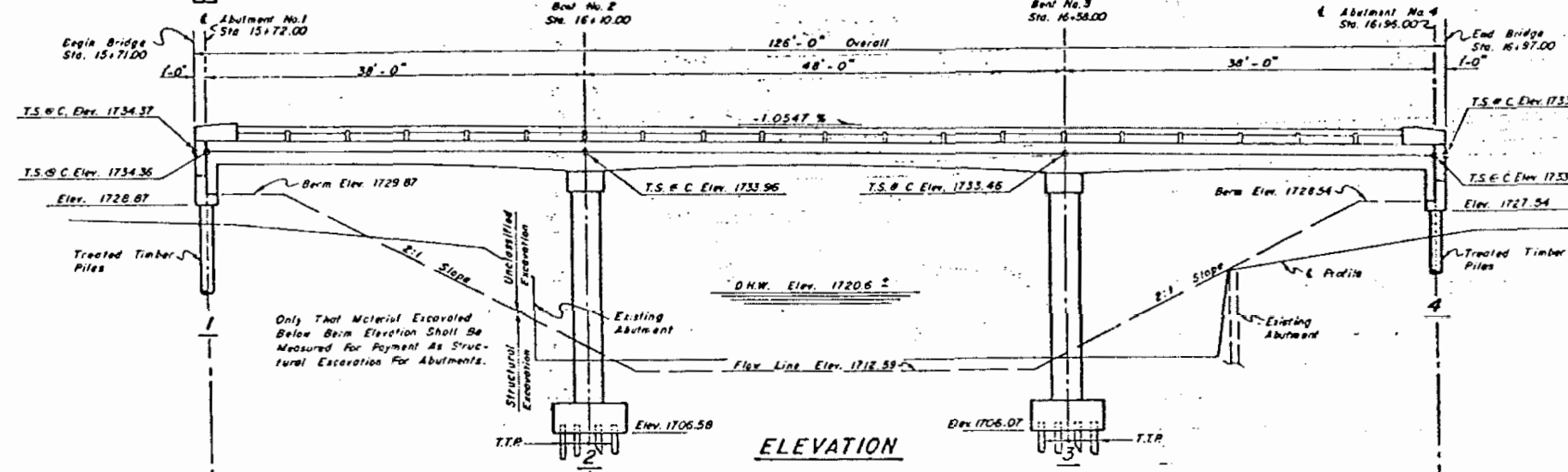
STR. EXC.	T.M. Pile	T.M. Sur. C.P.	TEST Pile	TEST Cap
65-1	20.2	16.4	15.4	5.7
65-2	12.2	12.2	22.4	12.2
65-3	11.2	11.2	22.7	11.2
65-4	22.3	22.3	29.9	22.3
TOTAL	76.9	62.9	90.4	51.8

SPECIFICATION NOTE

Use South Dakota Standard Specifications For Roads And Bridges, In The 1969 Edition, And Required Provisions, Supplemental Specifications And/Or Special Provisions As Included In The Proposal. All Conc. Shall Be Class "A"

GENERAL NOTES

- Design Specifications: A.A.S.H.O. Specifications For Highway Bridges, 1965.
- See Notes On Sheet No. 2 Through No. 8
- Longitudinal Elements Of The Slab Shall Conform To The -1.0547% Grade
- Rail Post Shall Be Built Normal To The Grade.
- All Reinforcing Steel Shall Conform To A.S.T.M. Specifications A 305 And A 15, Intermediate Grade.
- Unit Stresses: Concrete - 1c 1500 p.s.i.
Reinforcing Steel - 1s 20,000 p.s.i.
- Design Loading: HS 20-44 A.A.S.H.O.
- The Contractor Shall Have Sufficient Pile Splice Material On Hand Before Pile Driving Is Started. For Details See Standard Plate No 303.1
- In The Event Pile Shoes Are Used, See Standard Plate No 301
- Furnish And Install Inserts And Eyebolts As Shown On Standard Plate No 305
- Standard Plates Referred To In These Plans Are The Plates Printed On Sheets No. 154, 135 & 136 Of These Plans And Are Not Intended To Be Referred To The Standard Plates Manual.
- Place Roadway Drains As Shown In Plan. (6 Req'd)
- Elevation Of Top Of Slab Is 0.87 Feet Above & Subgrade Elevation.



ORIGINAL CONSTRUCTION PLANS

BS 034 084
 BR. NO. 15-203-160
 FN. 15351
 CODE-X020

STR. NO. 15-203-180
 LAYOUT PLAN, GENERAL DRAWING AND QUANTITIES
 FOR
 126'-0" CONTINUOUS CONCRETE BRIDGE OVER WILLOW CREEK
 SEC. 33-T117N-R52W
 SEC. 4-T116N-R52W
 STA. 15+71.00 TO 16+97.00 F034-5(6)
 CODINGTON COUNTY HS 20-44
 SOUTH DAKOTA
 DEPARTMENT OF HIGHWAYS

Sh. No.	Title
1	Layout Plan, General Drawing And Quantities
2	Subsurface Investigations
3	Superstructure Details
4	Details And Quantities For Granular Backfill And Superstructure
5	Details Of Abutment No. 1 And No. 4
6	Details Of Bent No. 2 And No. 3
7	Type RT-3A Steel Rolling And Curb Details
8	End Block Details

SOUTH DAKOTA DEPARTMENT OF HIGHWAYS 1969

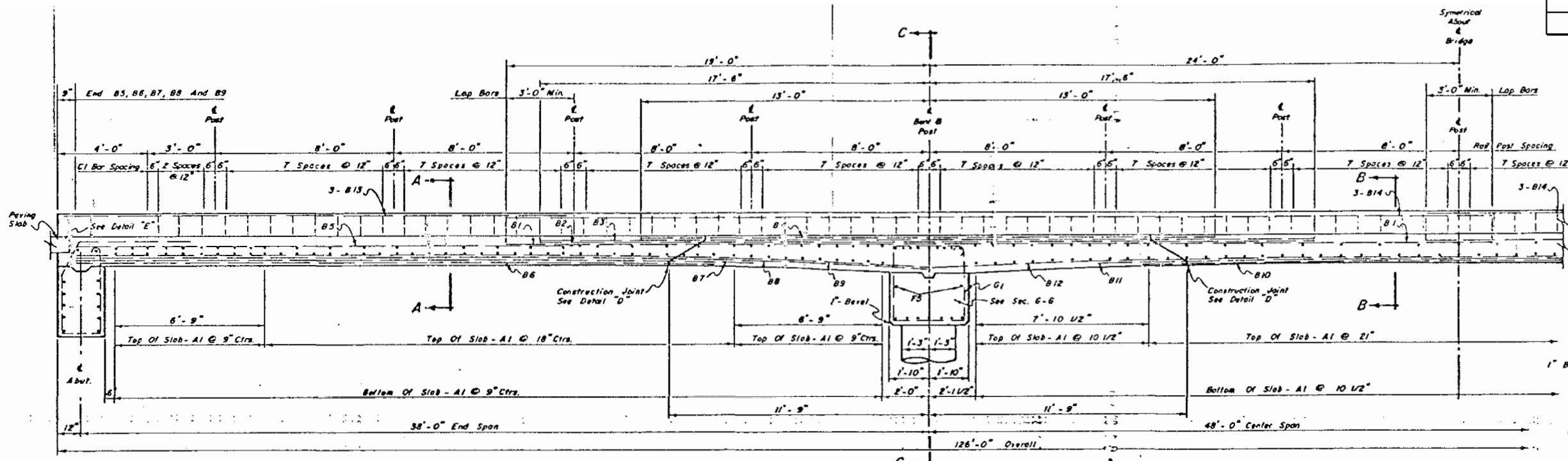
Codington County, South Dakota

Approved By _____

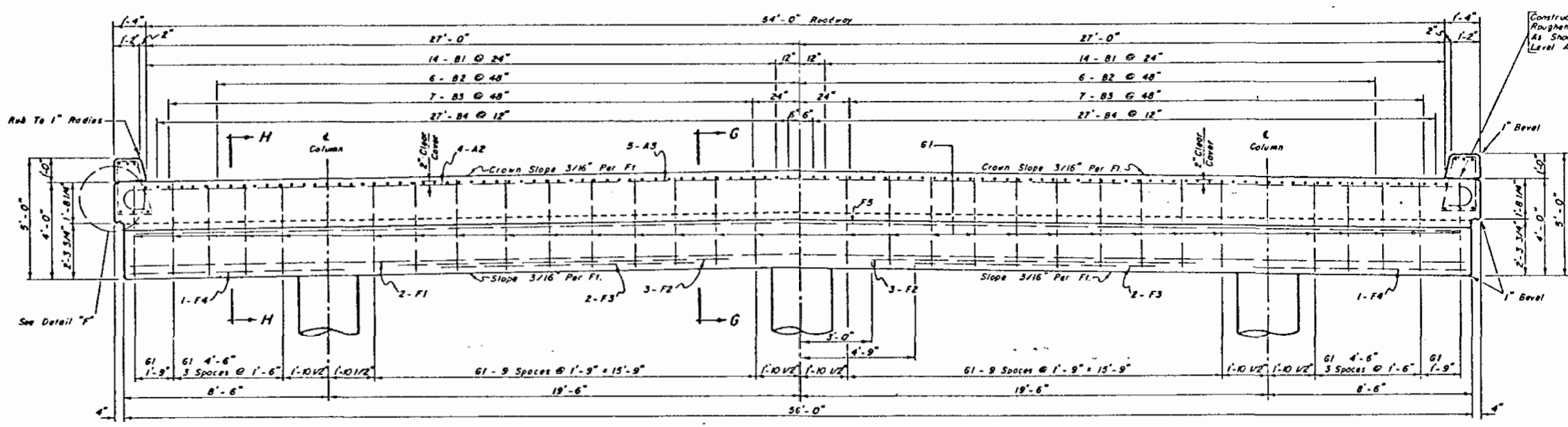
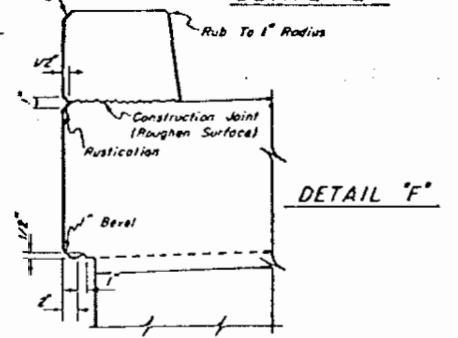
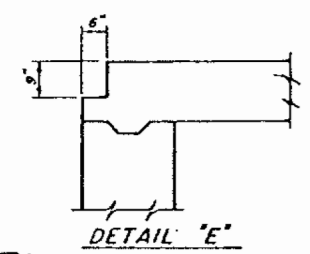
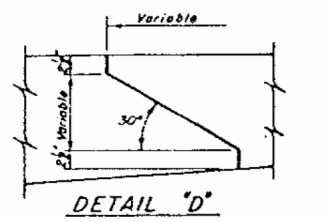
SCOTT ENGINEERING COMPANY
Waterstown, South Dakota

BY	DATE
Designed	11/5
Drawn	5/5

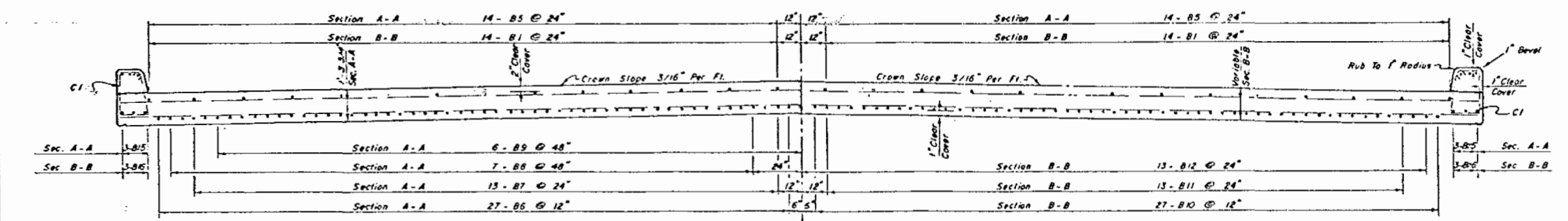
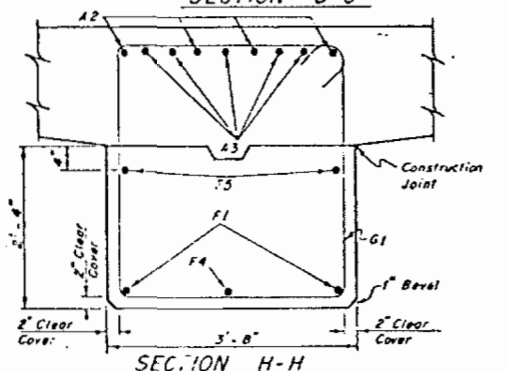
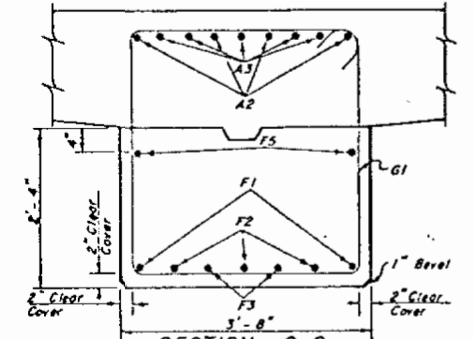
Sheet No. _____



HALF LONGITUDINAL SECTIONAL VIEW



SECTION G-G



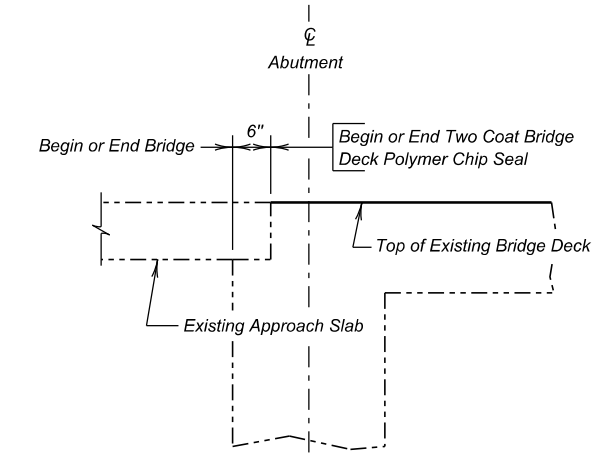
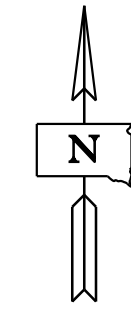
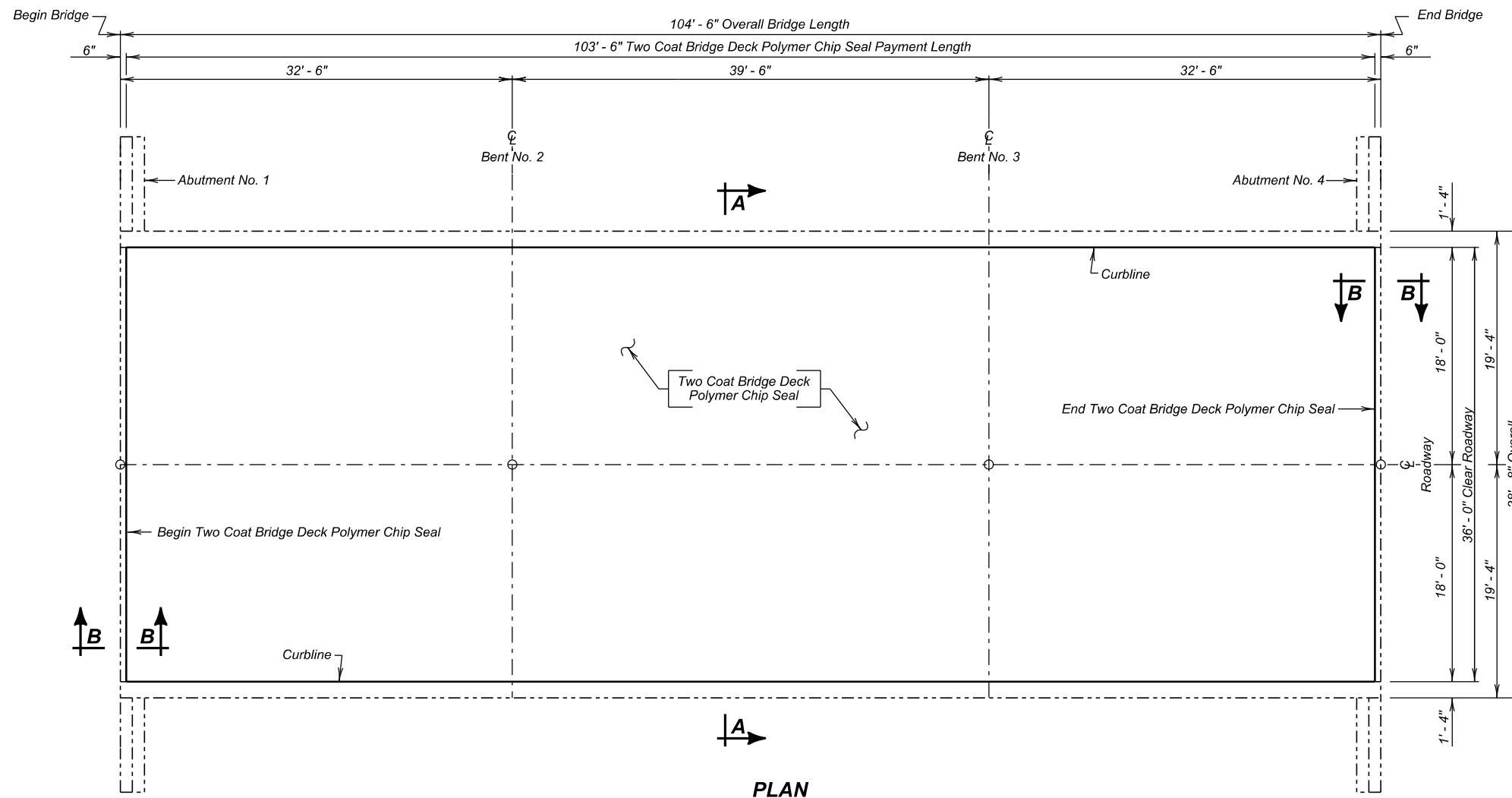
SECTION A-A OR SECTION B-B
(As Shown And Noted)

SCOTT ENGINEERING COMPANY Watertown, South Dakota	
BY	DATE
Designed WLS	
Drawn JCS	
STR. NO. 15-203-180	

SUPERSTRUCTURE DETAILS FOR
126'-0" CONTINUOUS CONCRETE BRIDGE
OVER WILLOW CREEK
SEC. 33-T117N-R52W
SEC. 4-T116N-R52W
STA. 15+71.00 TO 15+97.00 F034-5(6)
CODINGTON COUNTY HS 20-44
SOUTH DAKOTA
DEPARTMENT OF HIGHWAYS

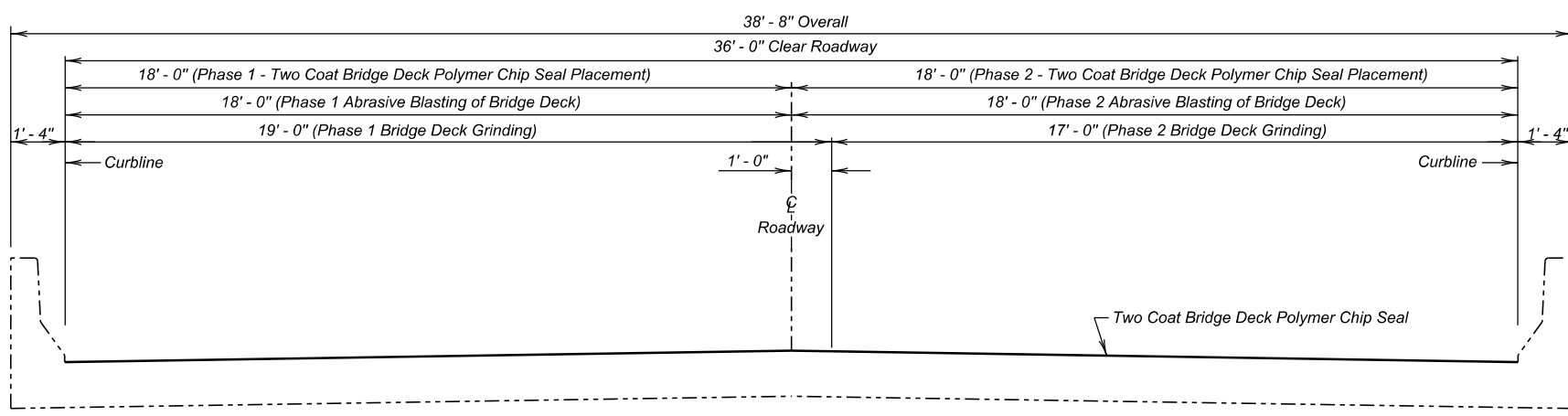
ORIGINAL CONSTRUCTION PLANS

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	NH 0212(205)378 P 0028(52)357	19	22



SECTION B - B

PLAN



SECTION A - A

ESTIMATED QUANTITIES			
ITEM	UNIT	QUANTITY	
		Phase 1	Phase 2
* Concrete Patching Material, Bridge Deck	Cu. Ft.	20.3	20.3
Two Coat Bridge Deck Polymer Chip Seal	Sq. Yd.	207.0	207.0
Abrasive Blasting of Bridge Deck	Sq. Yd.	207.0	207.0
Bridge Deck Grinding	Sq. Yd.	218.5	195.5
* Concrete Removal, Class A	Sq. Yd.	2.0	2.0
* Concrete Removal, Class B	Sq. Yd.	2.0	2.0

* Concrete Removal, Class A; Concrete Removal, Class B; and Concrete Patching Material may not be encountered and may be removed from the project at the direction of the Engineer.

TWO COAT BRIDGE DECK POLYMER CHIP SEAL LAYOUT FOR

104' - 6" CONTINUOUS CONCRETE BRIDGE
36' - 0" ROADWAY 0° SKEW
OVER PEG MUNKY RUN SEC. 20/29-T113N-R50W
STR. NO. 20-015-280 P 0028(52)357
PCN 07WE

DEUEL COUNTY
S. D. DEPT. OF TRANSPORTATION

JULY 2022

INDEX OF BRIDGE SHEETS -

- Sheet No. 1 - Two Coat Bridge Deck Polymer Chip Seal Layout
- Sheet No. 2 - Estimate of Structure Quantities and Notes
- Sheet No. 3 and 4 - Original Construction Plans

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

DESIGNED BY AAK DUEL07WE	CK. DES. BY JH 07WEK801	DRAFTED BY AAK	<i>Steve A. Johnson</i> BRIDGE ENGINEER
--------------------------------	-------------------------------	-------------------	--

ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	414.0	SqYd
491E0110	Abrasive Blasting of Bridge Deck	414.0	SqYd
491E0120	Bridge Deck Grinding	414.0	SqYd
491E0130	Concrete Removal, Class A	4.0	SqYd
491E0140	Concrete Removal, Class B	4.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	40.6	CuFt

SPECIFICATIONS

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

DETAILS AND DIMENSIONS OF EXISTING BRIDGE

All details and dimensions of the existing bridge, contained in these plans, are based on the original construction plans and shop plans and are provided as information only. It is the Contractor's responsibility to inspect and verify the actual field conditions and any necessary as-built dimensions affecting the satisfactory completion of the work required for this project.

SCOPE OF BRIDGE WORK & SEQUENCE OF OPERATIONS

All work on this structure will be accomplished with the traffic control shown in the plans. Alternate sequence of operations may be submitted by the Contractor for approval by the Engineer two weeks prior to the pre-construction meeting.

1. Perform Bridge Deck Grinding for the first phase of construction.
2. Where necessary, repair the bridge deck by removing and patching all loose and delaminated concrete from the bridge deck surface for the first phase of construction.
3. Clean the bridge deck surface with abrasive blasting for the first phase of construction.
4. Place the Two Coat Bridge Deck Polymer Chip Seal for the first phase of construction.
5. Switch traffic and repeat steps 1 through 4 for the second phase of construction.

BRIDGE DECK GRINDING

1. Perform Bridge Deck Grinding in accordance with Section 491 of the Construction Specifications.
2. The Contractor will have the option of grinding the entire deck surface during phase one. Any additional costs incurred for grinding the entire deck surface such as additional traffic control or cleaning will be at no additional cost to the Department.

CONCRETE PATCHING MATERIAL, BRIDGE DECK

1. In lieu of the 48-hour wet cure, the contractor may use a wax-based curing compound after 4 hours of wet cure. The wax-based curing compound will be white pigmented and will be applied to the patch until the entire surface is white. After the 48-hour cure period, the curing compound will be completely sand blasted off and the surface of the patch will be allowed to air dry for a minimum of 48 hours before application of the polymer chip seal.
2. A thicker layer of the Two Coat Bridge Deck Polymer Chip Seal will not be used in place of Concrete Patching Material, Bridge Deck. Joint Nosing Material from the Department's Approved Products List may be used for Concrete Patching Material, Bridge Deck provided it is compatible with the polymer used for the chip seal and is approved by the manufacturer's representative. Joint Nosing Material will be fully cured before application of the chip seal. If Joint Nosing Material is substituted for Concrete Patching Material it will be paid for at the contract unit price per cubic foot for Concrete Patching Material, Bridge Deck.

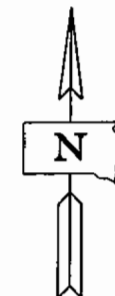
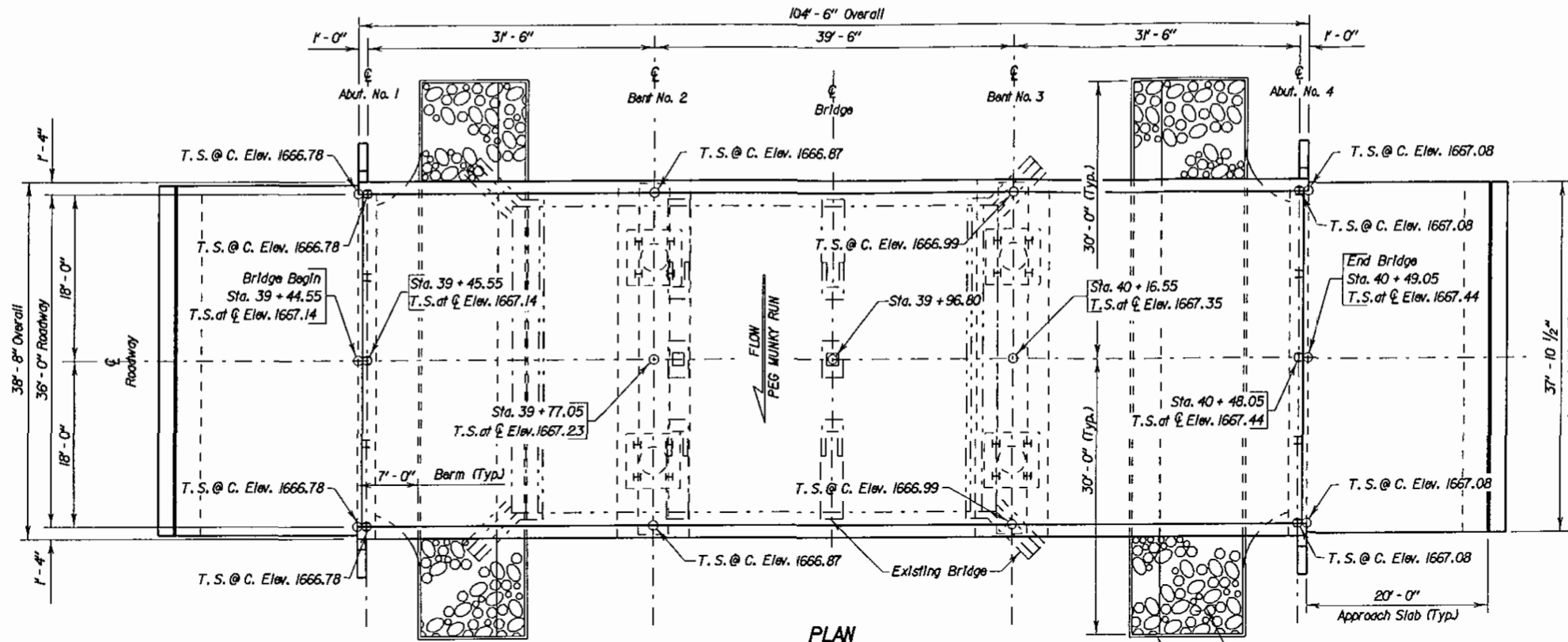
ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
104' - 6" CONTINUOUS CONCRETE BRIDGE

STR. NO. 20-015-280
JULY 2022

(2) OF (4)

The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	NH 0212(205)378 P 0028(52)357	21	22



- X020 -

INDEX OF BRIDGE SHEETS-

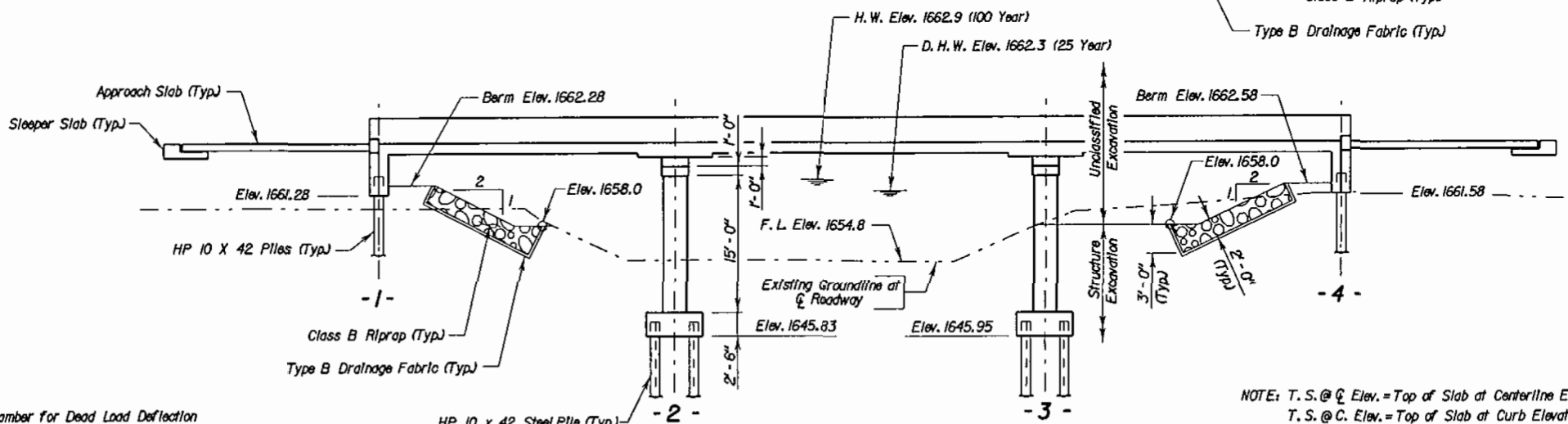
- Sheet No. 1 - General Drawing
- Sheet No. 2 - Estimate of Structures Quantities & Notes
- Sheet No. 3 - Notes (Continued)
- Sheet No. 4 - Notes (Continued)
- Sheet No. 5 - Subsurface Investigation & Piling Layout
- Sheet No. 6 - Bridge Contour Map Details
- Sheet No. 7 - Abutment Details
- Sheet No. 8 - Bent Details
- Sheet No. 9 - Superstructure Details
- Sheet No. 10 - End Block and Barrier Curb Details
- Sheet No. 11 - Details of Bridge End Backfill
- Sheet No. 12 - Details of Approach Slab Adjacent to Bridge
- Sheet No. 13 - Approach Slab Joint Details
- Sheet No. 14 - As-Built Elevation Survey
- Sheet No. 15 - Details of Standard Plate No. 460.02 & No. 460.05
- Sheet No. 16 - Details of Standard Plate No. 510.40 & No. 620.15
- Sheet No. 17 - Details of Standard Plate No. 630.92

PLAN

HYDRAULIC DATA

Q_d	2240 cfs
A_d	380 sq. ft.
V_d	5.9 fps
Q_F	2240 cfs
Q_{100}	3980 cfs
V_{max}	5.9 fps

Q_d = Design discharge for the proposed bridge based on 25 year frequency. El. 1662.3
 Q_F = Designated peak discharge for the basin approaching proposed project based on 25 year frequency.
 Q_{100} = Computed discharge for the basin approaching proposed project based on 100 year frequency. El. 1662.9
 V_{max} = Maximum computed outlet velocity for the proposed bridge, based on a 25 year frequency.



ELEVATION

NOTE: T.S. @ C. Elev. = Top of Slab at Centerline Elevation.
 T.S. @ C. Elev. = Top of Slab at Curb Elevation.

ORIGINAL CONSTRUCTION PLANS

GENERAL DRAWING
FOR

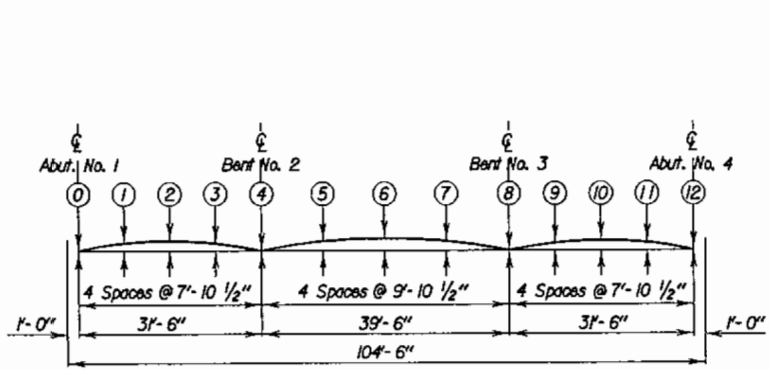
104'- 6" CONTINUOUS CONCRETE BRIDGE
 36'-0" ROADWAY 0° SKEW
 OVER PEG MUNKY RUN SEC. 20/29-T113N-R50W
 STA. 39+44.55 TO STA. 40+49.05 BRF 0028(2)357
 STR. NO. 20-015-280 HS 25-44
 PCEMS NO. 6242 (& ALT.)

DEUEL COUNTY
S. D. DEPT. OF TRANSPORTATION
JULY 2003

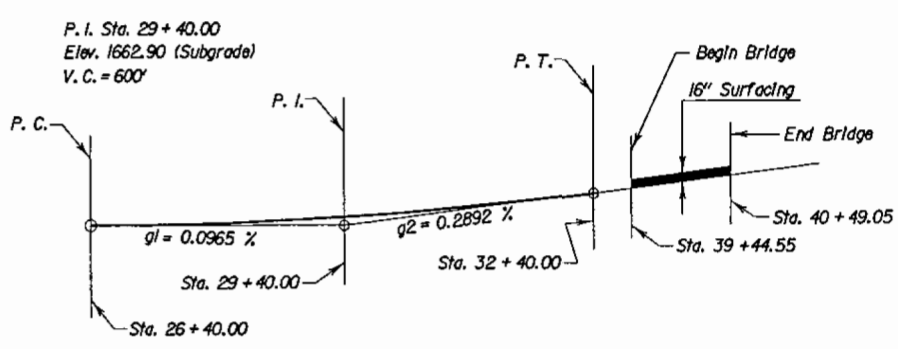
-X020-

*** TABLE OF SLAB ELEVATIONS**

Slab Point	Left Curb	℄	Right Curb
0	1666.781	1667.141	1666.781
1	1666.841	1667.201	1666.841
2	1666.868	1667.228	1666.868
3	1666.867	1667.227	1666.867
4	1666.872	1667.232	1666.872
5	1666.920	1667.280	1666.920
6	1666.970	1667.330	1666.970
7	1666.977	1667.337	1666.977
8	1666.987	1667.347	1666.987
9	1667.027	1667.387	1667.027
10	1667.073	1667.433	1667.073
11	1667.092	1667.452	1667.092
12	1667.092	1667.452	1667.092

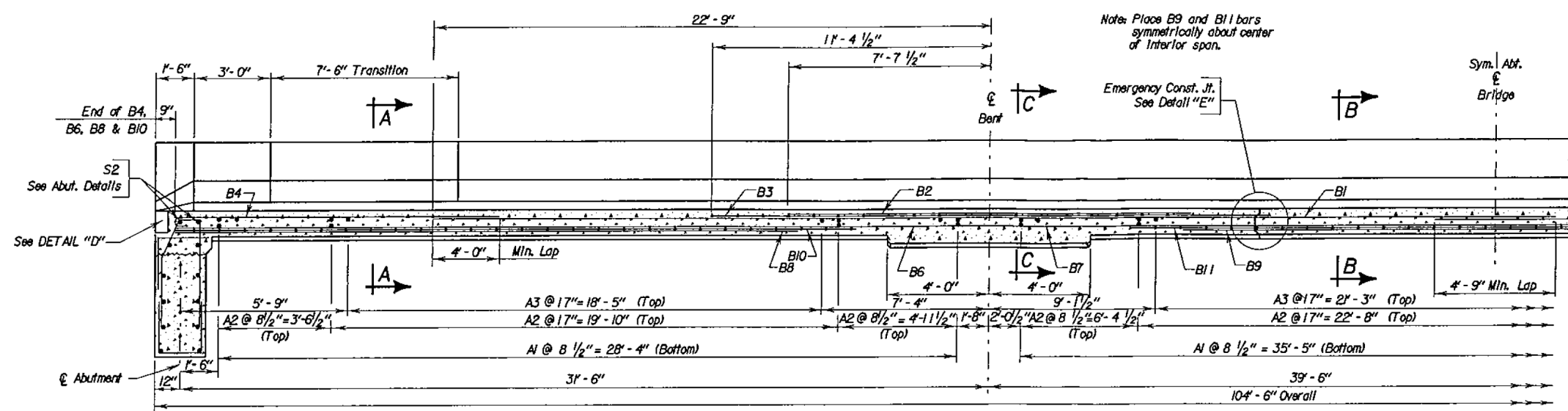


CENTERLINE AND CURB ELEVATIONS
(See TABLE OF SLAB ELEVATIONS for elevations)

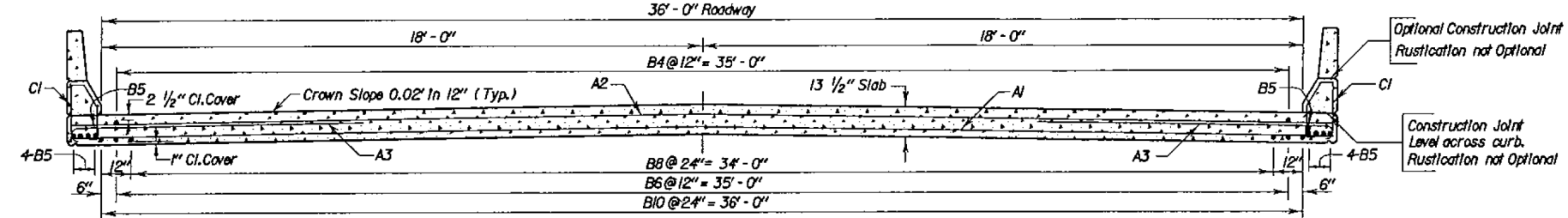


GRADELINE DATA

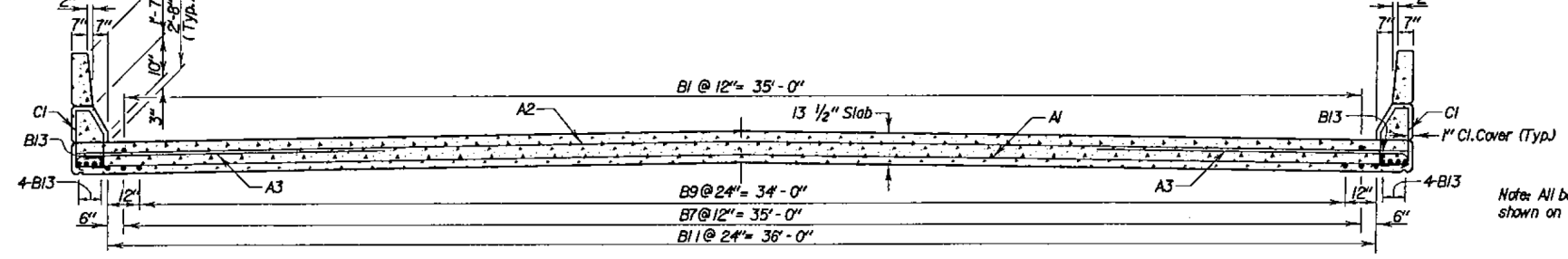
PLANS BY: OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION



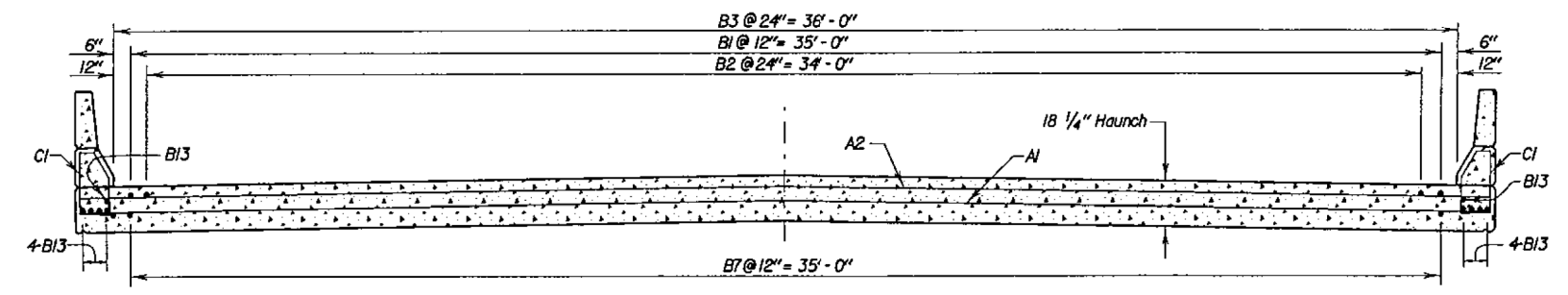
HALF LONGITUDINAL SECTIONAL VIEW



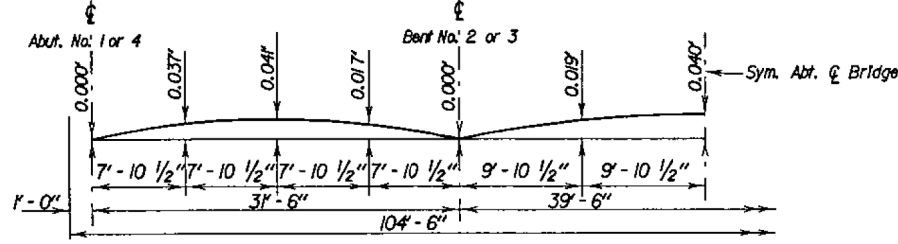
SEC. A-A



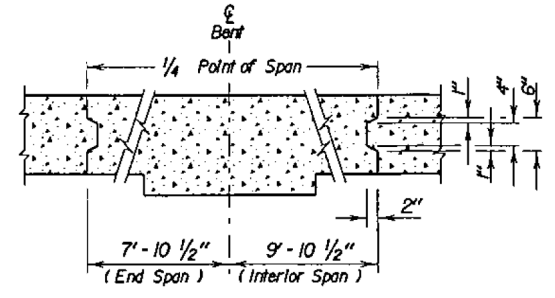
SEC. B-B



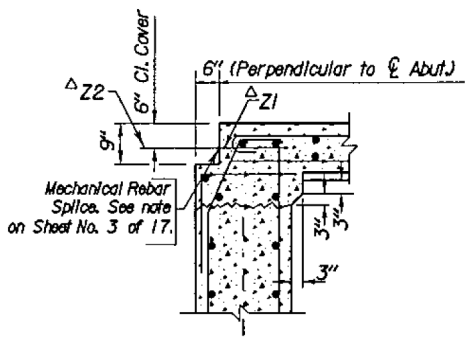
SEC. C-C



CAMBER DIAGRAM



DETAIL "E"



DETAIL "D"

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
A1	133	6	38'-4"	Str.	A3 5'-10" C5 6" B4 13'-1" C4 5" C3 4 1/2"
A2	89	5	38'-4"	Str.	
A3	88	6	6'-6"	1A	
A4	(See Bent Details)				
B1	72	9	45'-0"	Str.	Type 1A 1/4 1/2 2'-4 1/2"
B2	36	9	15'-3"	Str.	
B3	38	9	22'-9"	Str.	Type S11 2'-4 1/2"
B4	72	8	14'-0"	1A	
B5	20	5	32'-3"	Str.	Type S11 3 5/8"
B6	72	9	31'-9"	Str.	
B7	36	9	39'-6"	Str.	Type S11 6 1/2" 6" 13 1/2" 6" 1'-10 1/2"
B8	36	9	21'-6"	Str.	
B9	18	9	16'-9"	Str.	Type T2A r-0 1/2" C10 9" 3 1/2"
B10	38	9	24'-3"	Str.	
B11	19	9	23'-0"	Str.	Type T1 9" 7" 8 1/2" 7" 8" 7" 7" 7" 6 1/2" 7"
B12	24	5	42'-3"	Str.	
B13	10	5	39'-6"	Str.	Type T2A r-0 1/2" C10 9" 3 1/2"
B15	12	5	15'-0"	Str.	
B16	4	4	51'-3"	Str.	Type T2A 13 1/2" 7" 2'-4"
B17	8	4	6'-6"	19B	
B18	12	8	4'-3"	19B	Type 17A 12 1/8 B17 12
B19	12	5	2'-4"	Str.	
B20	12	6	3'-9"	17A	Type 19B B18 3'-0" B17 1'-0" 1/8 B17 12
B21	8	4	52'-6"	Str.	
C1	192	5	6'-6"	T2A	
C2	164	5	5'-1"	S11	
C3	4	5	5'-0"	S11	
C4	4	5	5'-0"	S11	
C5	4	5	5'-0"	S11	
C6	4	5	6'-8"	T1	
C7	4	5	6'-9"	T1	
C8	4	5	6'-11"	T1	
C9	4	5	7'-0"	T1	
C10	16	6	7'-3"	T2A	
C11	16	5	7'-1"	T1	
C12	4	6	6'-0"	17	
C13	4	5	5'-4"	17	
Z1	96	7	2'-0"	Str.	

NOTES:
 All reinforcing steel shall be epoxy coated.
 All dimensions are out to out of bars.
 See Sheet No. 12 of 17 for location of Z1 bars.
 Bend in field as necessary to fit.

ITEM	UNIT	QUANTITY
Class 445 Concrete, Bridge Deck	cu. yd.	197.8
Epoxy Coated Reinforcing Steel	Lb.	57598
No. 7 Rebar Splice	Each	96

Concrete Quantity for Barrier Curb is 0.0842 cu. yd./ft. and Concrete Quantity for one 12 ft. End Block is 1.1659 cu. yd.

SUPERSTRUCTURE DETAILS FOR

104'-6" CONTINUOUS CONCRETE BRIDGE
 36'-0" ROADWAY
 OVER PEG MUNKY RUN
 STA. 39+44.55 TO STA. 40+49.05
 STR. NO. 20-015-280

0° SKEW
 SEC. 20/29-T113N-R50W
 BRF 0028(21)357
 HS 25-44
 (& ALT.)

DEUEL COUNTY
 S. D. DEPT. OF TRANSPORTATION
 JULY 2003

ORIGINAL CONSTRUCTION PLANS