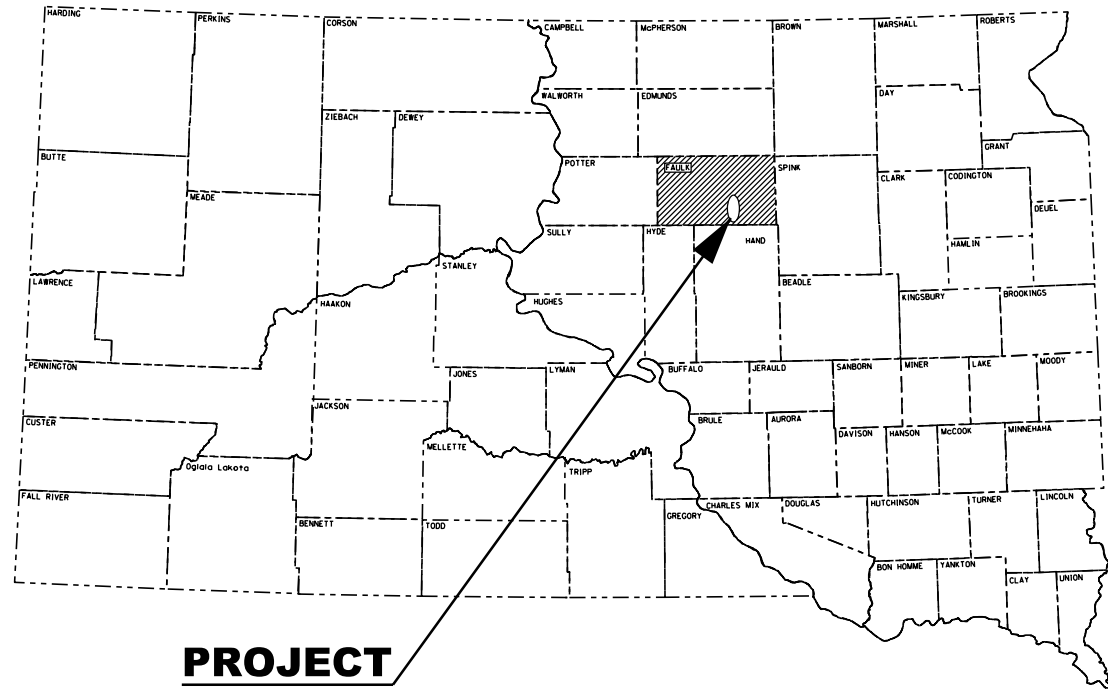


STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
DAKOTA	NH 0011(322)	1	19
Plotting Date: 03/20/2026			

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT NH 0011(322)
US HIGHWAY 212
SD HIGHWAY 45
FAULK COUNTY
PCC PAVEMENT REPAIR
PCN 09X2

Index of Sheets

- Sheet: 1 Title Sheet & Site Map
- Sheet: 2-3 Estimate of Quantities and Environmental Commitments
- Sheet: 4-7 Typical Sections & Tables
- Sheet: 8-9 Plan Notes
- Sheet: 10 Sign Layout
- Sheet: 11-13 Standard Plates
- Sheet: 14-17 Detail Sheets
- Sheet: 18-19 Standard Plates



PROJECT

DESIGN DESIGNATION

US HWY 212
MRM 267.67+0.000 TO 272.00+0.421

ADT (2024)	1030
ADT (2044)	1560
DHV	173
D	51%
T DHV	8.4%
T ADT	18.4%
V	65 MPH

LENGTH = 4.751 MILES

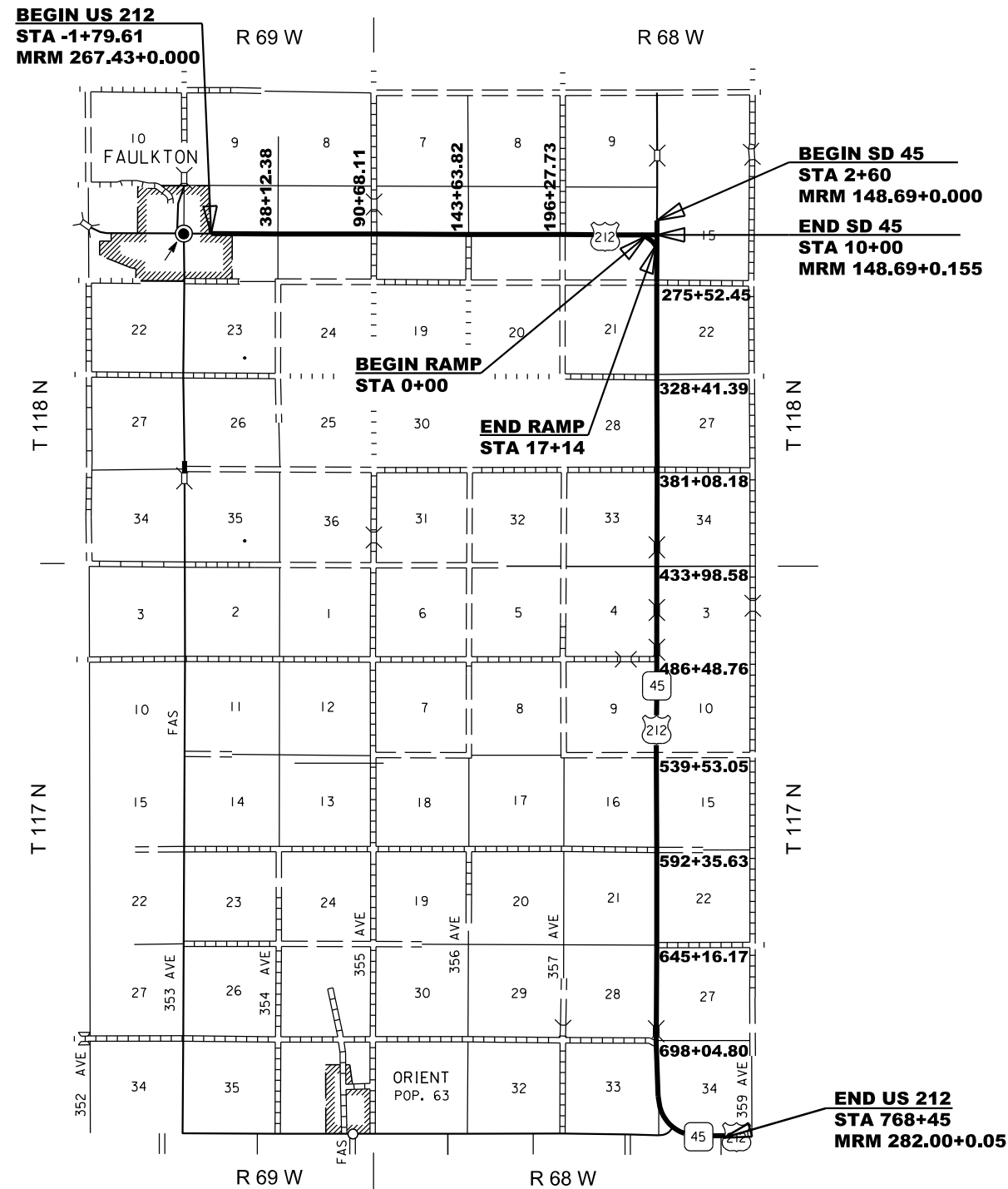
DESIGN DESIGNATION

US HWY 212 & SD 45
MRM 272.00+0.421 TO 282.00+0.259

ADT (2024)	768
ADT (2044)	1108
DHV	123
D	51%
T DHV	13.9%
T ADT	30.5%
V	65 MPH

LENGTH = 9.837 MILES

STORM WATER PERMIT
None Required



PLOT SCALE - 1" = 1000'

PLOTTED FROM - TRAB17898

PLOT NAME - 1

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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0011 (322)	2	19
Plotting Date: 12/03/2025			

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E4100	Construction Schedule, Category I	Lump Sum	LS
380E5030	Nonreinforced PCC Pavement Repair	399.2	SqYd
380E6000	Dowel Bar	191	Each
380E6110	Insert Steel Bar in PCC Pavement	1,127	Each
634E0010	Flagging	100.0	Hour
634E0110	Traffic Control Signs	1,284.4	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	36	Each
634E0600	4" Temporary Pavement Marking Tape Type I	4,100	Ft
634E0630	Temporary Pavement Marking	9.5	Mile
634E0900	Portable Temporary Traffic Control Signal	8	Unit

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/doing-business/environmental/about-environmental/>

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 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 pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately 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

REVISED 03-27-26

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (SDDANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Temporary permit to use public waters for highway construction purposes application can be found on the SDDANR website:
<https://danr.sd.gov/OfficeOfWater/WaterRights/PermitForms/default.aspx>

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:
< <https://sdleastwanted.sd.gov/maps/default.aspx> >

South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species:
< <https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04> >

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.

PLOT SCALE - 1:200

PLOTTED FROM - TRAB17898

PLOT NAME - 1

FILE - ... \FALK09X2\DESIGN\BORDER-3D.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0011 (322)	3	19
Plotting Date: 12/03/2025			

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.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

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 150 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 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.

PLOT SCALE - 1:200

PLOTTED FROM - TRAB17898

PLOT NAME - 1

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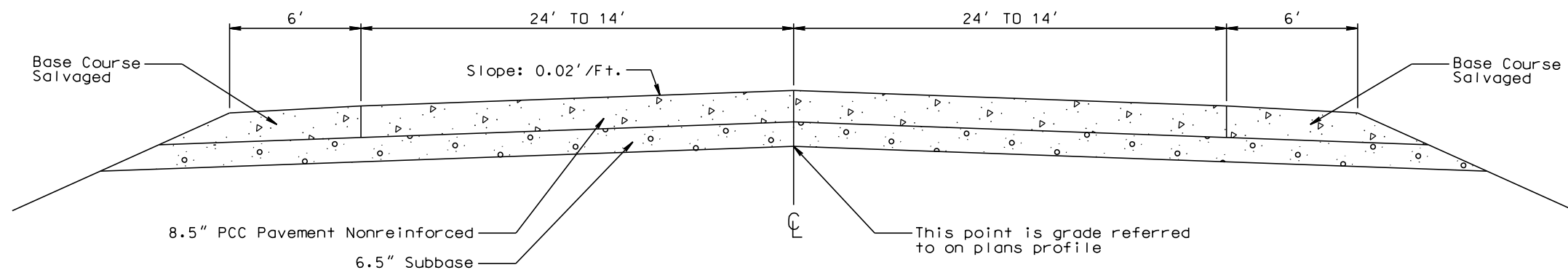
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0011 (322)	4	19
Plotting Date: 02/11/2026			

Original Construction
(For Information Only)

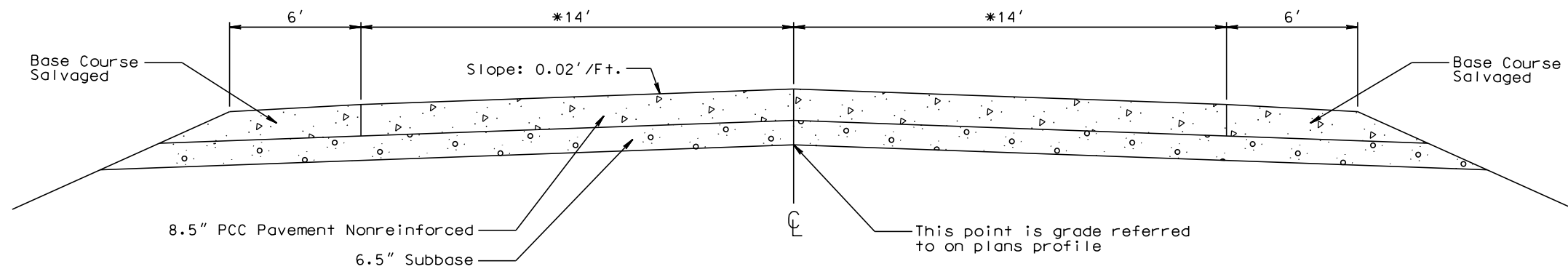
US HIGHWAY 212 & SD 45

Sta. -1+79.6 to Sta. 0+20.4

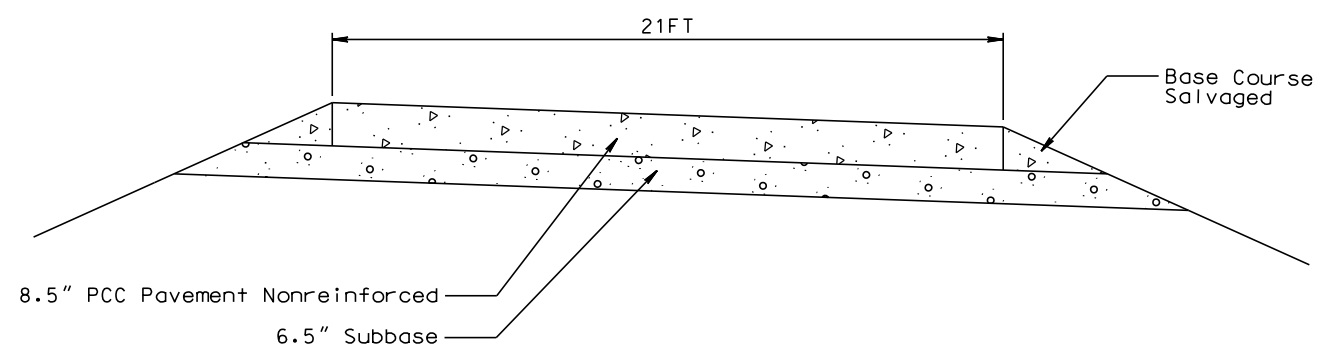


Sta. 0+20.4 to Sta. 243+93.1
Sta. 267+58.5 to Sta. 768+45

* Sta. 243+93.1 to Sta. 267+58.5
Varies



Sta. 2+25 to Sta. 15+65
Right Turn Ramp



PLOT SCALE - 1:200

PLOTTED FROM - TRAB17898

PLOT NAME - 1

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PCC PAVEMENT REPAIR - US 212 West to Orient Corner

PCC PAVEMENT REPAIR - US 212 West to Orient Corner									INSERT STEEL BAR IN PCC PAVEMENT			
STATION	TO	STATION	HWY	PAVEMENT THICKNESS (IN)	LANE	LENGTH (FT)	WIDTH (FT)	NONREINFORCED PCC PAVEMENT (SQYD)	DEFORMED #5 TIE BARS (EACH)	SMOOTH 1-1/4" DOWEL BARS (EACH)	DEFORMED #9 TIE BARS (EACH)	DOWEL BARS (EACH)
9+72		9+76	45	8.5	TL	4	4	1.8	4	2	2	
249+28		249+32	212	8.5	TL	4	4	1.8	4	2	2	
249+45		249+49	212	8.5	TL	4	4	1.8	4	2	2	
266+44		266+48	212	8.5	NB	4	4	1.8	4		4	
266+48		266+52	212	8.5	NB	4	4	1.8	4	2	2	
275+71		275+77	212	8.5	SB	6	14	9.3	4	8	8	
315+00		315+06	212	8.5	NB	6	14	9.3	4		16	12
324+47		324+51	212	8.5	SB	4	4	1.8	4		4	4
324+65		324+69	212	8.5	SB	4	4	1.8	4		4	4
348+66		348+70	212	8.5	NB	4	6	2.7	4	4	4	
354+71		354+75	212	8.5	NB	4	7	3.1	2	4	4	6
354+71		354+75	212	8.5	SB	4	7	3.1	4	4	4	
356+28		356+34	212	8.5	SB	6	14	9.3	4	8	8	
376+34		376+38	212	8.5	NB	4	4	1.8	4	2	2	
381+18		381+22	212	8.5	NB	4	4	1.8	4	2	2	
383+28		383+66	212	8.5	SB	38	4	16.9	28		4	12
486+54		486+64	212	8.5	SB	10	6	6.7	4		10	12
491+62		492+02	212	8.5	SB	40	4	17.8	32	4		3
562+13		562+19	212	8.5	SB	6	14	9.3	2	8	8	
562+13		562+19	212	8.5	NB	6	14	9.3		8	8	
608+90		608+94	212	8.5	SB	4	4	1.8	4	2	2	
633+10		633+16	212	8.5	SB	6	14	9.3	2		16	
696+62		696+66	212	8.5	SB	4	4	1.8	4		4	3
767+65		767+71	212	8.5	SB	6	14	9.3	2		16	
NB = NORTH BOUND SB = SOUTH BOUND						SUBTOTALS:		135.2	136	62	136	56
TL = TURNLANE												

PLOT SCALE - 1:200

PLOTTED FROM - TRAB17898

PLOT NAME - 1

FILE - ... \FALK09X2\DESIGN\BORDER-30.DGN

PCC PAVEMENT REPAIR - US 212 to SD 45

INSERT STEEL BAR IN PCC PAVEMENT

STATION	TO	STATION	HWY	PAVEMENT THICKNESS (IN)	LANE	LENGTH (FT)	WIDTH (FT)	NONREINFORCED PCC PAVEMENT (SQYD)	DEFORMED #5 TIE BARS (EACH)	SMOOTH 1-1/4" DOWEL BARS (EACH)	DEFORMED #9 TIE BARS (EACH)	DOWEL BARS (EACH)	
-1+64		-1+58	212	8.5	WB	6	14	9.3	4		22		
0+70		0+74	212	8.5	EB	4	10	4.4	2		18	10	
4+50		4+54	212	8.5	EB	4	4	1.8	4	2	2		
6+99		7+03	212	8.5	EB	4	4	1.8	4	2	2		
7+56		7+62	212	8.5	EB	5.5	7	4.3	6	6	6		
7+73		7+77	212	8.5	EB	4	4	1.8	4	2	2		
10+54		10+58	212	8.5	EB	4	8	3.6	4	7	7		
10+72		10+78	212	8.5	EB	6	14	9.3	2		16	12	
12+10		12+14	212	8.5	EB	4	4	1.8	2	2	2		
12+10		12+14	212	8.5	WB	4	4	1.8	2	2	2		
16+46		16+50	212	8.5	EB	4	4	1.8	2	2	2		
21+78		21+82	212	8.5	EB	4	8	3.6	4	7	7		
23+12		23+16	212	8.5	EB	4	4	1.8	4	2	2		
23+50		23+54	212	8.5	EB	4	4	1.8	4	2	2		
23+66		23+72	212	8.5	EB	6	14	9.3	2	8	8		
26+73		26+79	212	8.5	WB	6	14	9.3	2		16	12	
26+73		26+77	212	8.5	EB	4	8	3.6	4		14	8	
30+87		30+91	212	8.5	EB	4	4	1.8	4	2	2		
30+87		30+91	212	8.5	WB	4	4	1.8	4	2	2		
37+71		37+75	212	8.5	EB	4	4	1.8	4		4		
42+84		42+91	212	8.5	EB	7	7	5.4	6		12		
42+84		42+99	212	8.5	WB	15	4	6.7	12	2			
54+09		54+15	212	8.5	EB	6	14	9.3	2		16	12	
64+46		64+50	212	8.5	WB	4	4	1.8	2	2	2		
64+63		64+67	212	8.5	WB	4	10	4.4	4		18	10	
64+63		64+67	212	8.5	EB	4	6	2.7	4	4	4		
65+80		65+84	212	8.5	EB	4	4	1.8	4	2	2		
66+01		66+05	212	8.5	EB	4	4	1.8	4		4	4	
66+58		66+62	212	8.5	EB	4	6	2.7	4	4	4		
66+58		66+62	212	8.5	WB	4	4	1.8	4		4	4	
67+75		67+81	212	8.5	EB	6	14	9.3	4		16	12	
67+75		67+81	212	8.5	WB	6	14	9.3	2		16	12	
70+85		70+91	212	8.5	EB	6	14	9.3	2		16	12	
71+84		71+90	212	8.5	EB	6	14	9.3	2	8	8		
88+80		88+86	212	8.5	WB	6	14	9.3	3		22		
								SUBTOTALS:	161.4	127	70	282	108

EB = EAST BOUND
WB = WEST BOUND

PLOT SCALE - 1:200

PLOTTED FROM - TRAB17898

PLOT NAME - 1

FILE - ... \FALK09X2\DESIGN\BORDER-30.DGN

PCC PAVEMENT REPAIR - US 212 to SD 45 - Continued

STATION	TO	STATION	HWY	PAVEMENT THICKNESS (IN)	LANE	LENGTH (FT)	WIDTH (FT)	NONREINFORCED PCC PAVEMENT (SQYD)	INSERT STEEL BAR IN PCC PAVEMENT				
									DEFORMED #5 TIE BARS (EACH)	SMOOTH 1-1/4" DOWEL BARS (EACH)	DEFORMED #9 TIE BARS (EACH)	DOWEL BARS (EACH)	
88+85		88+89	212	8.5	EB	4	8	3.6	4	7	7		
104+60		104+64	212	8.5	EB	4	4	1.8	4	2	2		
105+13		105+17	212	8.5	EB	4	4	1.8	4		4		
106+12		106+16	212	8.5	EB	4	5	2.2	4	4	4		
106+12		106+16	212	8.5	WB	4	7	3.1	4	6	6		
115+45		115+51	212	8.5	EB	6	14	9.3	2		16	12	
118+37		118+41	212	8.5	EB	4	4	1.8	2	2	2		
192+63		192+68	212	8.5	EB	5	4	2.2	6		4	4	
205+81		205+90	212	8.5	WB	9	6	6.0	8	5	5		
206+44		206+50	212	8.5	WB	6	14	9.3	2	8	8		
206+86		206+92	212	8.5	EB	6	14	9.3	2	8	8		
210+39		210+43	212	8.5	WB	4	6	2.7	4		10		
211+18		211+22	212	8.5	WB	4	6	2.7	4		10		
247+32		247+38	212	8.5	TL	6	6	4.0	4	3	3		
EB = EAST BOUND TL = TURNLANE								SUBTOTALS:	59.8	54	45	89	16
WB = WEST BOUND													

PCC PAVEMENT REPAIR - US 212 Turnlane

STATION	TO	STATION	HWY	PAVEMENT THICKNESS (IN)	LANE	LENGTH (FT)	WIDTH (FT)	NONREINFORCED PCC PAVEMENT (SQYD)	INSERT STEEL BAR IN PCC PAVEMENT				
									DEFORMED #5 TIE BARS (EACH)	SMOOTH 1-1/4" DOWEL BARS (EACH)	DEFORMED #9 TIE BARS (EACH)	DOWEL BARS (EACH)	
1+31		1+35	212	8.5	TL	4	4	1.8	4	2	2		
2+28		2+32	212	8.5	TL	4	4	1.8	4	2	2		
3+07		3+11	212	8.5	TL	4	4	1.8	4	2	2		
4+44		4+48	212	8.5	TL	4	4	1.8	4		4	3	
9+54		9+58	212	8.5	TL	4	4	1.8	4	2	2		
12+43		12+51	212	8.5	TL	8	4	3.6	8		4		
14+89		14+93	212	8.5	TL	4	4	1.8	4		4		
15+03		15+49	212	8.5	TL	46	4	20.4	36		4	8	
15+52		15+62	212	8.5	TL	10	4	4.4	8		2		
16+08		16+12	212	8.5	TL	4	4	1.8	4	2	2		
16+25		16+29	212	8.5	TL	4	4	1.8	4	2	2		
TL = TURNLANE								SUBTOTALS:	42.8	84	12	30	11

TOTALS:	399.2	401	189	537	191
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PLOT SCALE - 1:200

PLOTTED FROM - TRAB17998

PLOT NAME - 1

FILE - ... \FALK09X2\DESIGN\BORDER-30.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0011 (322)	8	19
Plotting Date: 12/03/2025			

SCOPE OF WORK

This project consists of full depth replacement of Nonreinforced Concrete Pavement (NRCP) in areas where concrete pavement blowups or major failures have occurred.

UTILITIES

The Contractor will contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It will be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

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 will contact the Project Engineer to determine if project changes are necessary to avoid utility impacts.

RESTORATION OF GRAVEL CUSHION

An inspection of the gravel cushion will be made after removing concrete from each pavement replacement area. Areas of excess moisture will be dried to the satisfaction of the Engineer. Loose material will be removed. Each replacement area will be leveled and compacted to the satisfaction of the Engineer.

If additional gravel cushion material is required, the Contractor will furnish, place and compact gravel cushion to the satisfaction of the Engineer at no additional cost to the State.

Cost for this work will be incidental to the contract unit prices per square yard for Nonreinforced PCC Pavement Repair.

NONREINFORCED PCC PAVEMENT REPAIR - GENERAL

New pavement thickness will equal existing pavement thickness ($T_N = T$).

Locations and size (length or width) of concrete repair areas are subject to change in the field, at the discretion of the Engineer, at no additional cost to the state. Payment will be based on actual area replaced.

Existing concrete pavement will be sawed full depth at the beginning and end of the NRCP repair areas. When either the beginning or end of a NRCP repair area falls close to an existing joint or crack, the NRCP repair area will be extended to eliminate the existing joint or crack. Where possible, new working joints will be adjacent to existing working joints.

Saw cuts that extend beyond the repair area will be minimized and filled with a non-shrinkage mortar mix at the Contractor's expense.

Existing concrete pavement in the replacement areas will be removed by the lift out method or by means that minimize damage to the base and sides of remaining in place concrete. Removed material will be removed from within the right-of-way by the end of the workday. Damage to adjacent concrete caused by the Contractor's operations will be removed and replaced at the Contractor's expense.

If the pavement replacement area is entirely on either side of the existing contraction joint, the location of one of the working joints will be at the original location. Any existing dowel bar assemblies/steel bars will be sawed off and removed.

At full roadway width repairs and when specified, a working joint will be reconstructed at both ends of each pavement replacement area as shown in these plans.

Concrete placed adjacent to gravel and asphalt concrete shoulders will be formed full depth to match the width of existing concrete pavement. Asphalt concrete shoulders adjacent to concrete pavement replacements will be repaired with new hot-mix asphalt concrete.

At repair locations where the new working joint is not opposite the existing working joint, the Contractor will place a 1/4" preformed asphalt expansion joint material along the longitudinal joint from the existing working joint to the new working joint. The expansion joint material will meet the requirements of AASHTO M33. Cost for this material will be incidental to the contract unit price per square yard for Nonreinforced PCC Pavement Repair.

The initial contraction joint sawing will be performed as soon as practical after placement to avoid random cracking.

Joints (longitudinal and transverse) through and around the repair areas will be sawed and sealed in accordance with the details shown in these plans. Refer to Saw and Seal Joints notes.

NONREINFORCED PCC PAVEMENT REPAIR

Concrete will meet the requirements stated in Section 380 of the specifications, except as modified by the following notes:

The fine aggregate will be screened over a one-inch square-opening screen just prior to introduction into the concrete paving mix if required by the Engineer.

The slump requirement will be limited to 3" maximum after water reducer is added and the concrete will contain 4.5% to 7.0% entrained air. The concrete will contain a minimum of 50% coarse aggregate by weight. Coarse aggregate will be crushed ledge rock, Size No. 1 unless an alternative gradation is approved by the Concrete Engineer as part of the mix design submittal. The mix design will contain at least 650 lbs of Type I or II cement or 600 lbs of Type III cement per cubic yard. The minimum 28 day compressive strength will be 4,000 psi. The Contractor is responsible for the mix design used. The Contractor will submit a mix design and supporting documentation for approval at least 2 weeks prior to use.

The use of a water reducer at manufacturer's recommended dosage will be required.

Concrete will be cured with white pigmented curing compound (AASHTO M148, Type 2) applied as soon as practical at a rate of 125 square feet per gallon. Concrete will be cured for a minimum of 48 hours before opening to traffic. The 48 hours is based upon a concrete surface temperature of 60°F or higher throughout the cure period. If the concrete temperature falls below 60°F, the cure time will be extended, or other measures taken, at no additional cost to the State. A strength of 2,500 psi must be attained prior to opening to traffic.

Upon placement of the concrete, repair areas will be straight edged to ensure a smooth riding surface and will be textured longitudinally with the pavement by finishing with a stiff broom. Repair areas will then be checked with a 10' foot straight edge. The permissible longitudinal and transverse surface deviation will be 1/8" in 10'.

Concrete will be covered with suitable insulation blanket consisting of a layer of closed cell polystyrene foam protected by at least one layer of plastic. Insulation blanket will have an R-value of at least 0.5, as rated by the manufacturer. Insulation blanket will be left in place, except for joint sawing operations, until the 2,500 psi is attained. Insulation blanket will be overlapped on to the existing concrete by 4'. This requirement for covering repair areas with insulation blankets may be waived during periods of hot weather upon approval of the Engineer.

Cost for performing the aforementioned work including sawing and removing concrete, furnishing and placing concrete, sawing and sealing joints, repairing gravel and asphalt concrete shoulders, labor, tools and equipment will be included in the contract unit price per square yard for Nonreinforced PCC Pavement Repair.

SAW AND SEAL JOINTS

Longitudinal and transverse joints at concrete repair areas will be sawed and sealed.

Joint sealing will conform to Section 380.3 P.

Longitudinal and transverse joints in urban sections will be sealed with Hot Poured Elastic Joint Sealer. Transverse joints in rural sections will be sealed with Low Modulus Silicone Sealant. Longitudinal joints in rural sections may be sealed with either Hot Poured Elastic Joint Sealer or Low Modulus Silicone Sealant.

Acceptance of the Low Modulus Silicone Sealant and Hot Poured Elastic Joint Sealer will be based on visual inspection by the Engineer.

Cost for sawing and sealing of the longitudinal construction joint and both transverse joints will be incidental to the contract unit prices per square yard for Nonreinforced PCC Pavement Repair.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0011 (322)	9	19
Plotting Date: 12/03/2025			

STEEL BAR INSERTION

Steel bars will conform to Section 1010.

Locations and quantities of concrete repair are subject to change in the field at the discretion of the Engineer. The Contractor will be responsible for ordering the actual quantity of steel bars necessary to complete the work.

For existing pavement thickness greater than or equal to 10.5" (T >= 10.5"):
The Contractor will insert the steel bars (1½" x 18" epoxy coated plain round dowel bars and No. 11 x 18" epoxy coated deformed tie bars for transverse joints and No. 5 x 24" epoxy coated deformed tie bars for longitudinal joints) into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole as per Section 380.3 C.1.

For existing pavement thickness greater than or equal to 8.5" and less than 10.5" (T >= 8.5" and T < 10.5"):

The Contractor will insert the steel bars (1¼" x 18" epoxy coated plain round dowel bars and No. 9 x 18" epoxy coated deformed tie bars for transverse joints and No. 5 x 24" epoxy coated deformed tie bars for longitudinal joints) into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole as per Section 380.3 C.1.

For existing pavement thickness less than 8.5" (T < 8.5"):

The Contractor will insert the steel bars (1" x 18" epoxy coated plain round dowel bars and No. 8 x 18" epoxy coated deformed tie bars for transverse joints and No. 5 x 24" epoxy coated deformed tie bars for longitudinal joints) into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole as per Section 380.3 C.1.

Steel bars will be inserted in the transverse joint on 18" centers. The first steel bar in the transverse joint will be placed 9" from the edge of the slab closest to centerline. Steel bars will be inserted in the longitudinal joint on 30" centers and will be a minimum of 15" from either transverse joint. A typical one-lane patch 12' wide and 6' long will require 18 steel bars (8 in each transverse joint and 2 in the longitudinal joint). It will be necessary to laterally adjust the location of some of the inserted steel bars when the dimensions above interfere with existing steel bar locations.

A rigid frame or mechanical device will be required to guide the drill to ensure proper horizontal and vertical alignment of the steel bars in the drilled holes.

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work.

GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulatory, 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 temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports.

Portable sign supports will not be located on sidewalks, bicycle facilities, or other areas designated for pedestrian or bicycle traffic.

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.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

At no time will a vertical drop-off of greater than 3 inches be left overnight adjacent to the traveled way. The Contractor will utilize embankment material to ensure a 3-inch vertical drop-off is not exceeded. The slope of the embankment material will not be steeper than a 4:1 within 30 feet of the traveled way.

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.

MAINTENANCE OF TRAFFIC – US HWY 212 & SD 45

Sufficient traffic control devices have been included in these plans to sign 4 complete work areas with traffic signals limited to 1000 feet work zones, with 3 additional "alternating stopped condition" setups that can be added at the discretion of the Engineer.

Lane closures will be set up as per Standard Plates 634.25 or 634.26. For Standard Plate 634.26, each workspace will be limited to a maximum of 1000 feet, not including buffer zones or tapers. The distance between the closest points of any two construction workspaces, including channeling devices, will not be less than 3 miles. Payment for Traffic Signals will be limited to 4 sets of 2 for up to 4 work zones if used simultaneously. The Contractor will not be allowed to deviate beyond the 4 work zone limit.

Additional work zones (Standard Plate 634.25) for single standalone panel replacement work may be allowed by the Engineer. These work zones will not exceed 300 feet, not including buffer zones or tapers. The number of these work zones to be allowed will depend on the staffing of the Contractor and their ability to work in the additional zones. These closures will use STOP signs and will be set up as per Standard Plate 634.25.

Temporary pavement marking tape will be used at each lane closure, it will be paid for each lane closure set up at the contract unit price per foot for Temporary Pavement Marking Tape. Stop bars will utilize 4" white temporary pavement marking tape. It will be paid for under 4" Temporary Pavement Marking Tape, Type I. It is calculated that there is 6 – 4" x 12' sections of tape per stop bar, for a total of 144' of white tape placed for each lane closure set.

The Contractor will furnish, install, operate, and maintain the Portable Temporary Traffic Control Signal during construction phases as determined by the Engineer.

The Portable Temporary Traffic Control Signal will be set up to dwell in red.

The green time may be adjusted as needed. Initial Timing for the sites is as detailed below:

Red = 40 sec. Yellow = 6.5 sec. Green = 40 sec.

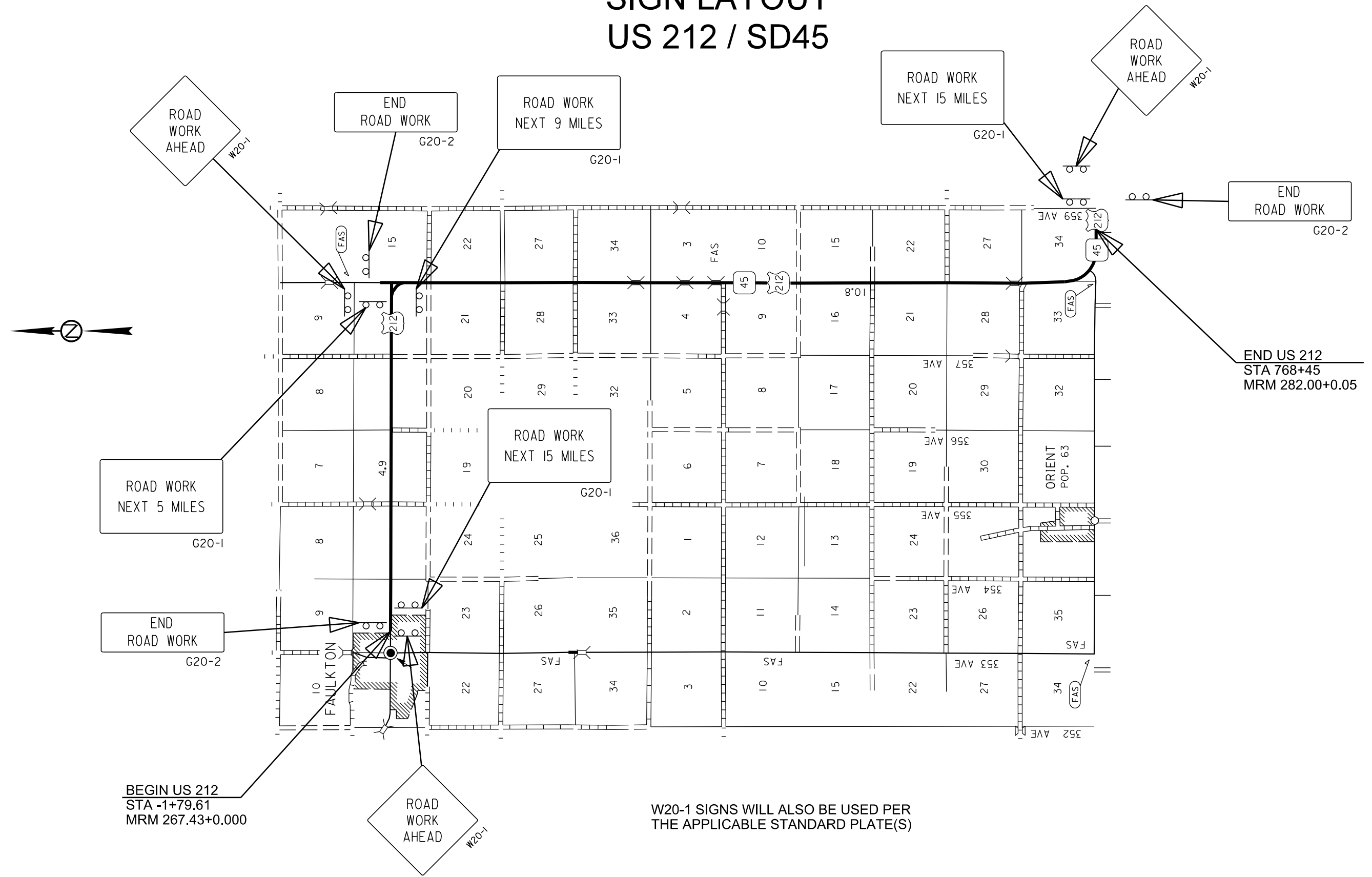
The dwell timings are based on 1300 feet between opposing STOP BARS.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0011 (322)	10	19
Plotting Date: 03/12/2026			

FIXED LOCATION SIGN LAYOUT US 212 / SD45

PLOT SCALE - 1:200

PLOT NAME - 1



PLOTTED FROM - TRAB17898

FILE - ... \FALK09X2\DESIGN\FIXEDSIGNS.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.

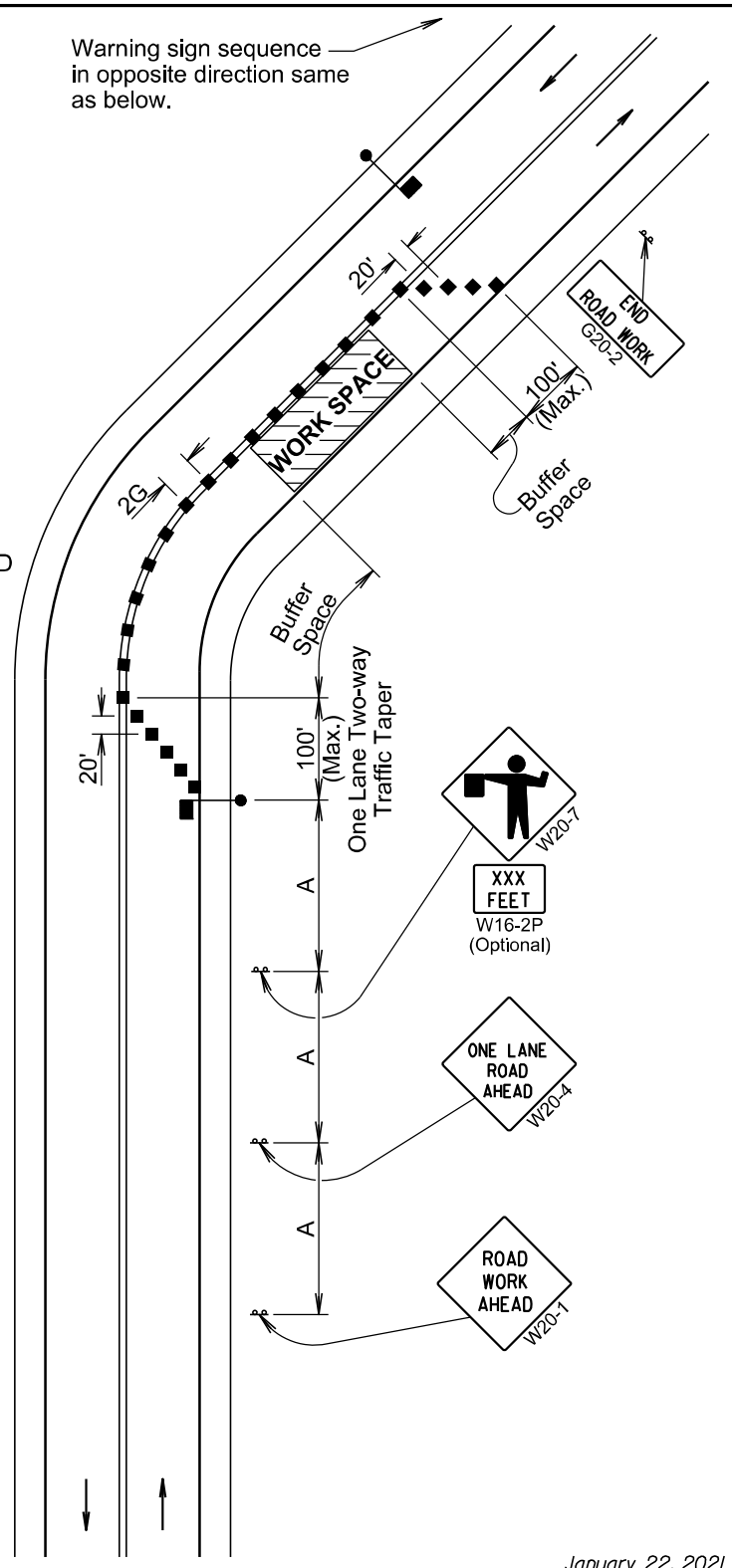
The channelizing devices will be drums or 42" cones.

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.

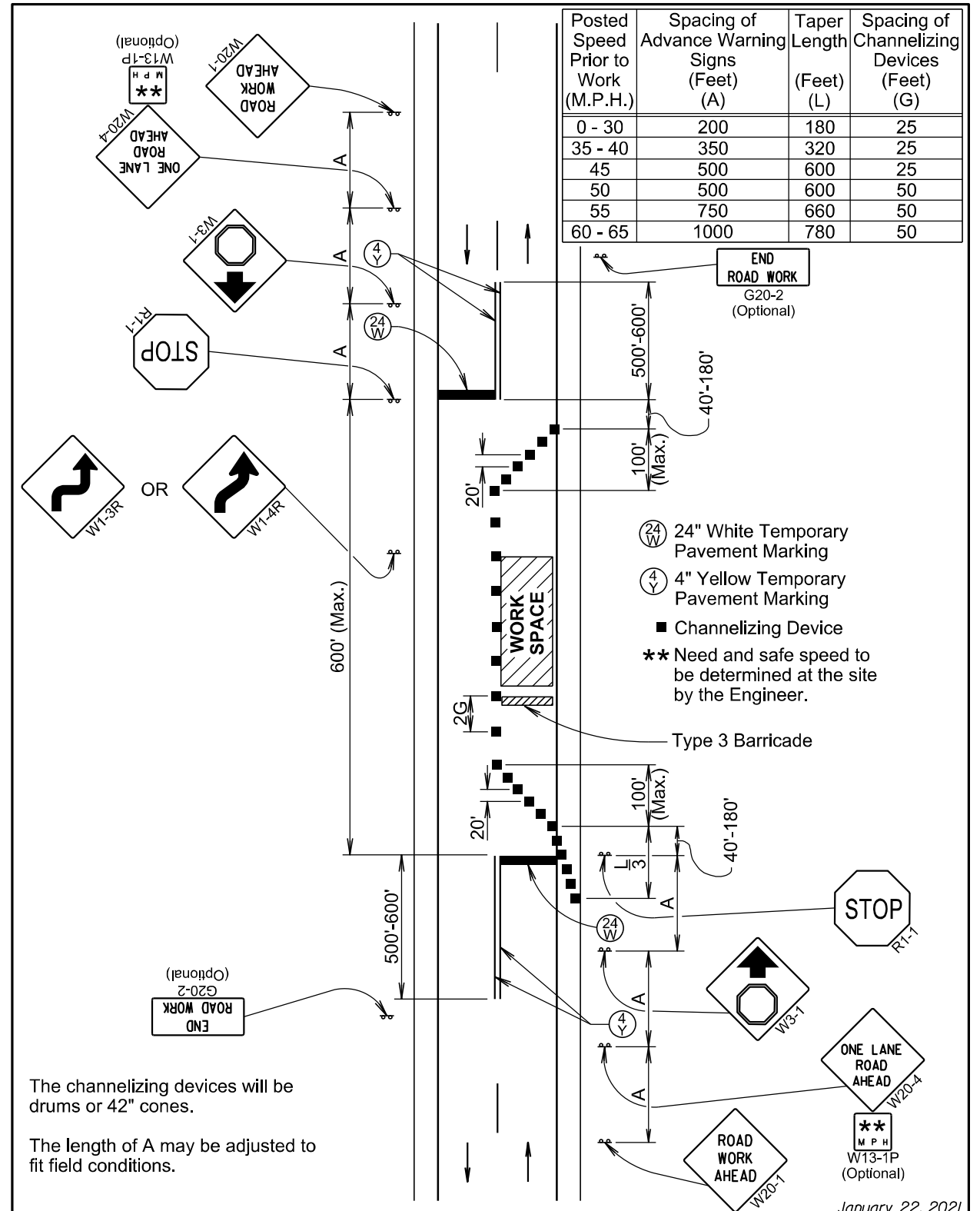
The length of A may be adjusted to fit field conditions.



January 22, 2021

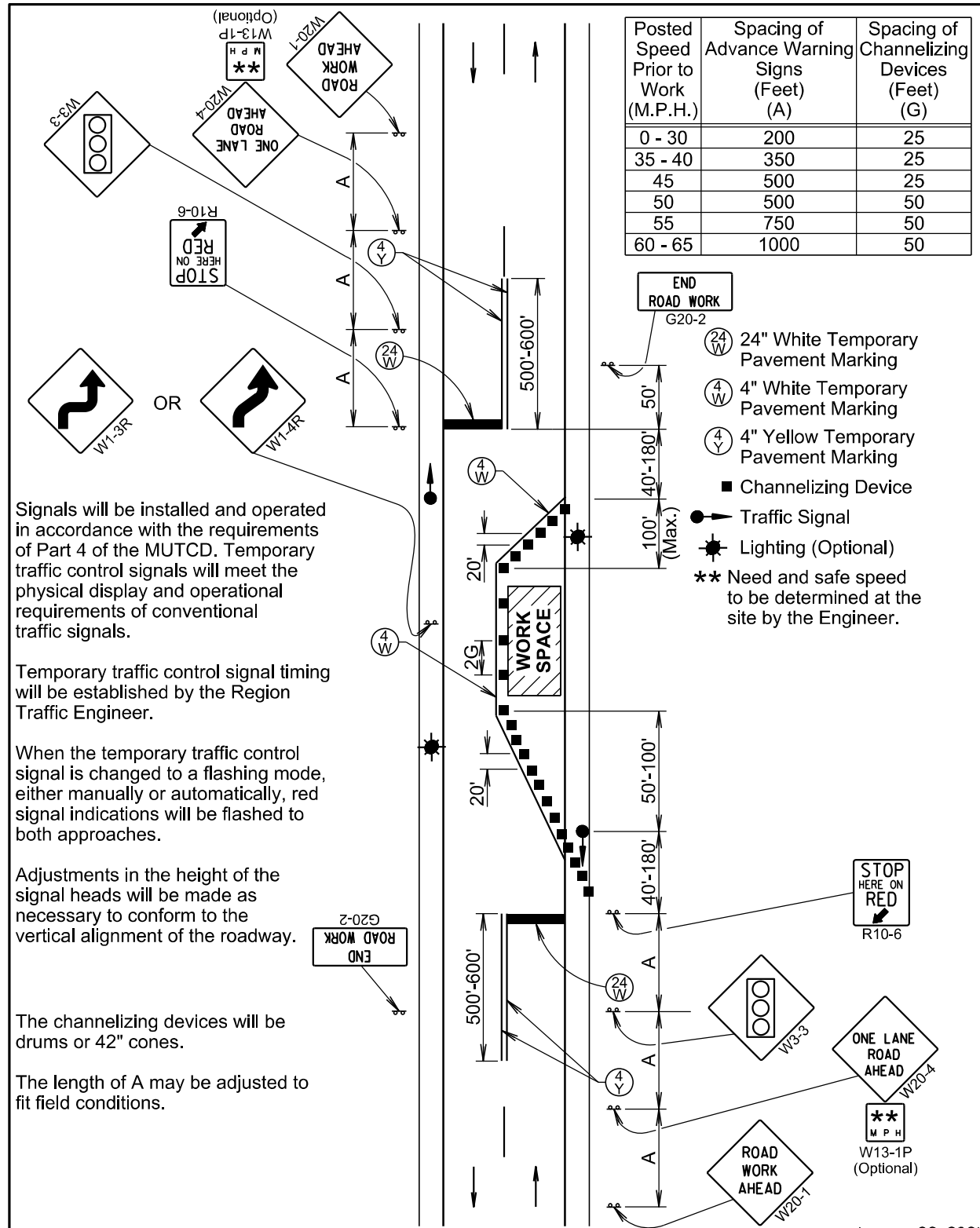
Published Date: 2026	SDOT	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1

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



January 22, 2021

Published Date: 2026	SDOT	LANE CLOSURE USING STOP SIGNS	PLATE NUMBER 634.25
			Sheet 1 of 1



Signals will be installed and operated in accordance with the requirements of Part 4 of the MUTCD. Temporary traffic control signals will meet the physical display and operational requirements of conventional traffic signals.

Temporary traffic control signal timing will be established by the Region Traffic Engineer.

When the temporary traffic control signal is changed to a flashing mode, either manually or automatically, red signal indications will be flashed to both approaches.

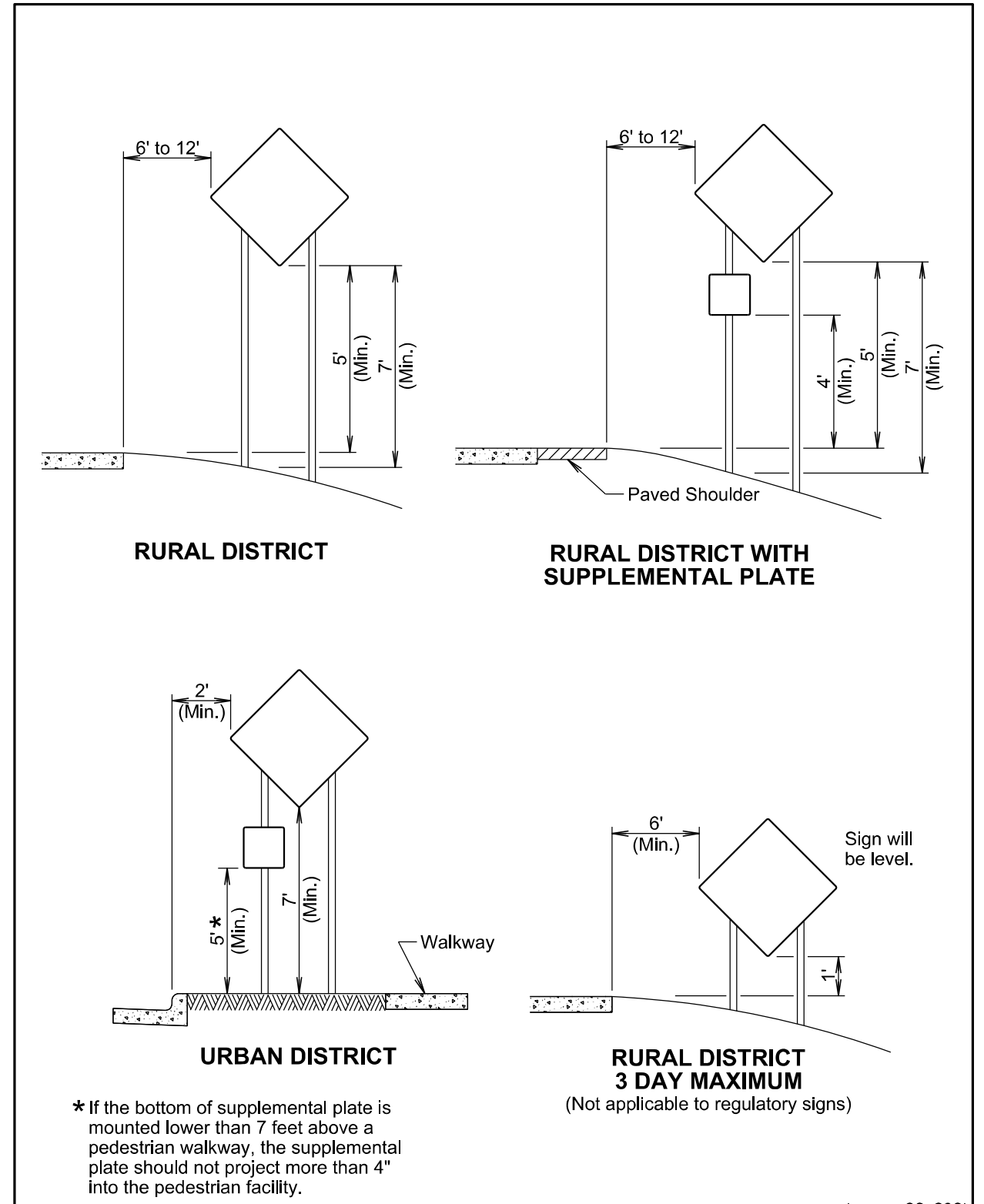
Adjustments in the height of the signal heads will be made as necessary to conform to the vertical alignment of the roadway.

The channelizing devices will be drums or 42" cones.

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

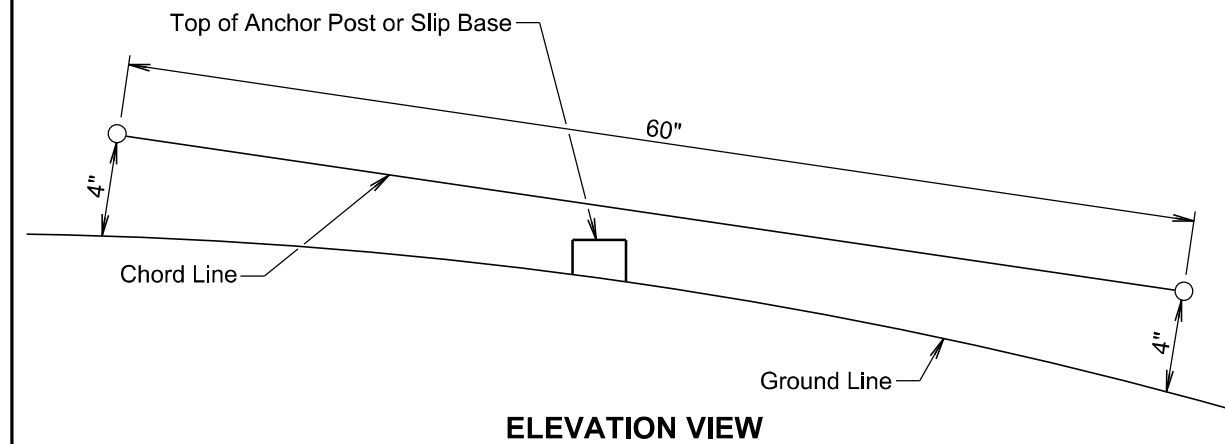
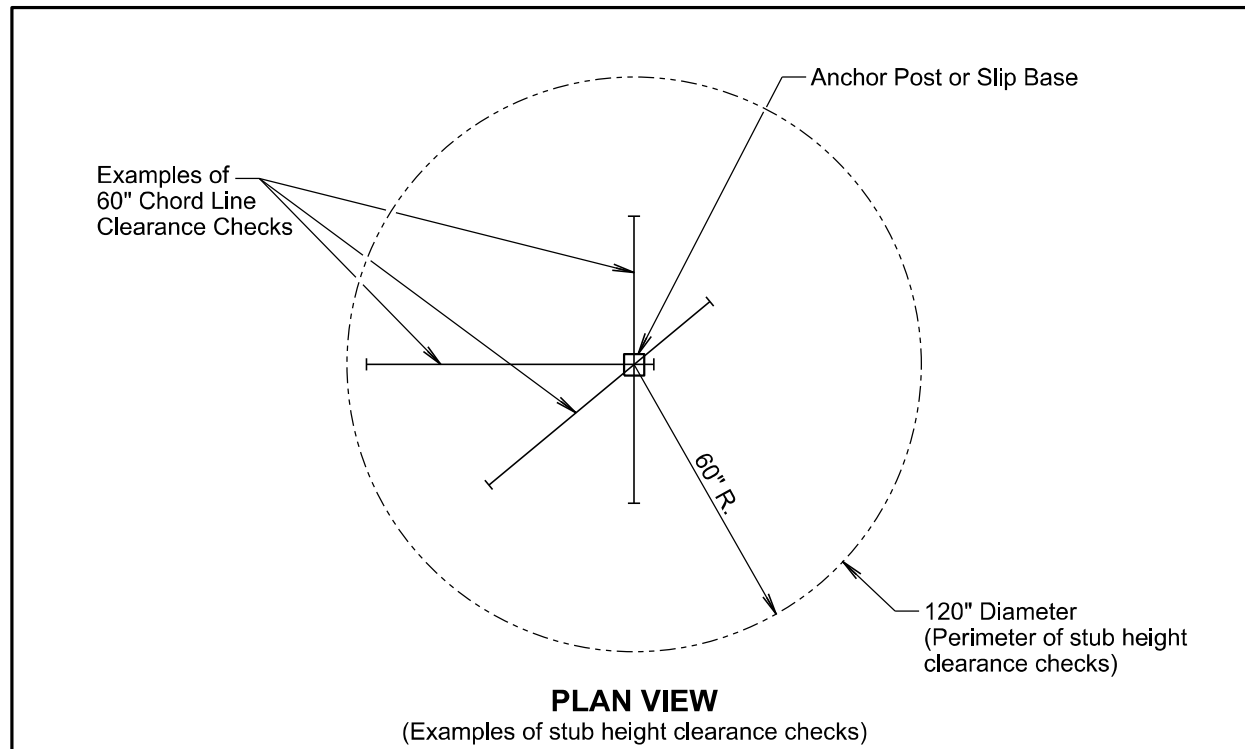
January 22, 2021

Published Date: 2026	SDOT	LANE CLOSURE USING TRAFFIC SIGNALS	PLATE NUMBER 634.26
			Sheet 1 of 1



January 22, 2021

Published Date: 2026	SDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



GENERAL NOTES:

The top of anchor posts and slip bases WILL 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 will 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.

January 22, 2021

S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
		Sheet 1 of 1

Published Date: 2026

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

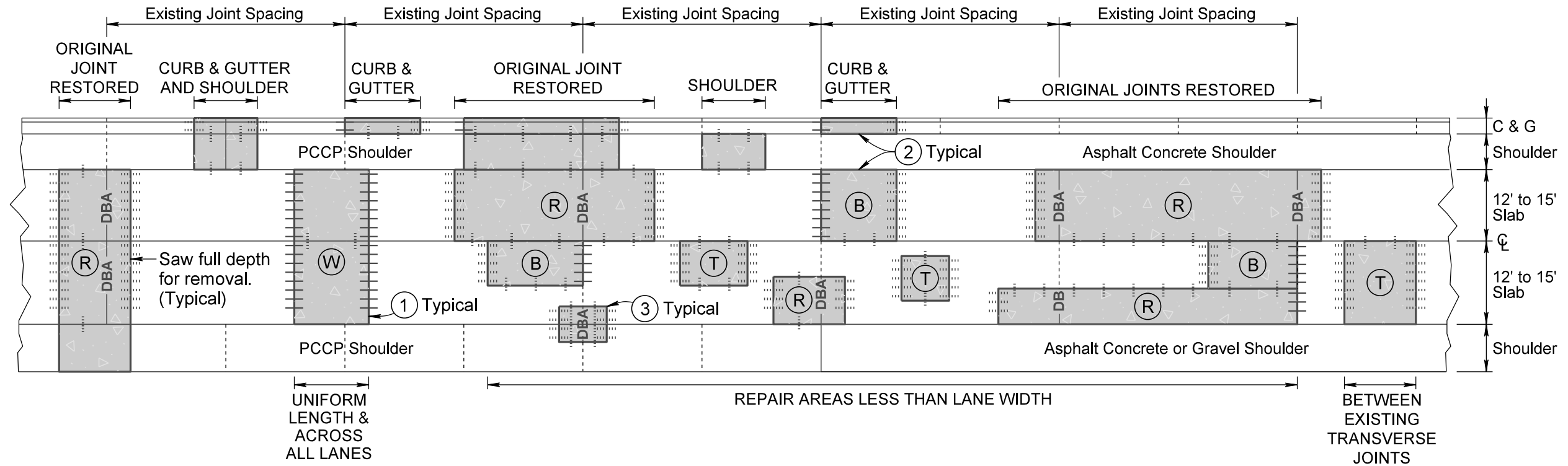
SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	6	30"	5.2	31.2
R10-6	STOP HERE ON RED	8	24" x 36"	6.0	48.0
W1-4	REVERSE CURVE (L or R)	7	48" x 48"	16.0	112.0
W3-1	STOP AHEAD (symbol)	6	48" x 48"	16.0	96.0
W3-3	SIGNAL AHEAD (symbol)	8	48" x 48"	16.0	128.0
W13-1P	ADVISORY SPEED (plaque)	14	30" x 30"	6.3	88.2
W20-1	ROAD WORK AHEAD	20	48" x 48"	16.0	320.0
W20-4	ONE LANE ROAD AHEAD	14	48" x 48"	16.0	224.0
W20-7	FLAGGER (symbol)	12	48" x 48"	16.0	192.0
G20-1	ROAD WORK NEXT 15 MILES	2	36" x 18"	4.5	9.0
G20-1	ROAD WORK NEXT 5 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 9 MILES	1	36" x 18"	4.5	4.5
G20-2	END ROAD WORK	6	36" x 18"	4.5	27.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					1284.4

NONREINFORCED PCC PAVEMENT REPAIR

UP TO TWO LANE ROADWAY OR UP TO FOUR LANE DIVIDED ROADWAY

TYPICAL REPAIR AREAS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0011 (322)	14	19
Plotting Date: 02/12/2026			



KEY:

 PCC Pavement Repair Area

PCC PAVEMENT REPAIR AREA TYPES:

- (W) Two Working Joints (Use only if repair is full roadway width and uniform length (across all lanes))
- (T) Two Tied Joints
- (B) One Working & One Tied Joint
- (R) Two Tied Joints with Original Joint Restored with Dowel Bar Assembly

Steel Bars for Transverse Joints

Pavement Thickness ≥ 10.5 "

- Drilled in $1\frac{1}{2}$ " x 18" epoxy coated plain round dowel bars spaced 18" center to center.
- Drilled in No. 11 x 18" epoxy coated deformed tie bars spaced 18" center to center.

Pavement Thickness ≥ 8.5 " and < 10.5 "

- Drilled in $1\frac{1}{4}$ " x 18" epoxy coated plain round dowel bars spaced 18" center to center.
- Drilled in No. 9 x 18" epoxy coated deformed tie bars spaced 18" center to center.

Pavement Thickness < 8.5 "

- Drilled in 1" x 18" epoxy coated plain round dowel bars spaced 18" center to center.
- Drilled in No. 8 x 18" epoxy coated deformed tie bars spaced 18" center to center.

DBA Dowel Bar Assembly

Steel Bars for Longitudinal Joints

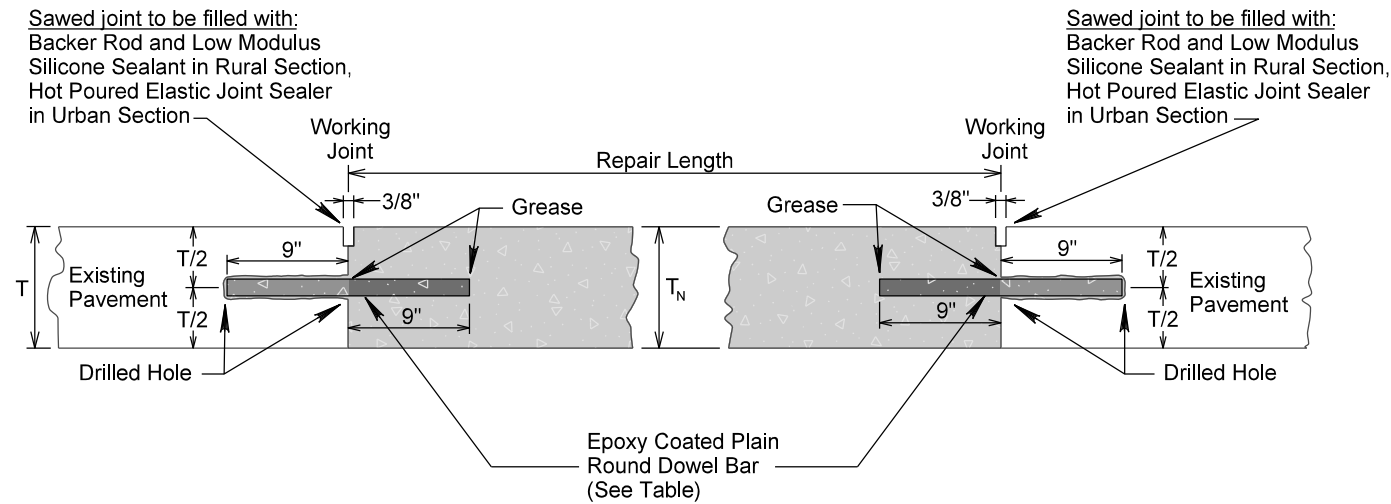
- No. 5 x 30" epoxy coated deformed tie bars. Sawed Joint - spaced 48" center to center. Construction Joint - spaced 48" center to center.
- No. 5 x 24" epoxy coated deformed tie bars. Drilled In - spaced 30" center to center.

NOTES: Saw around repair areas full depth for removal.

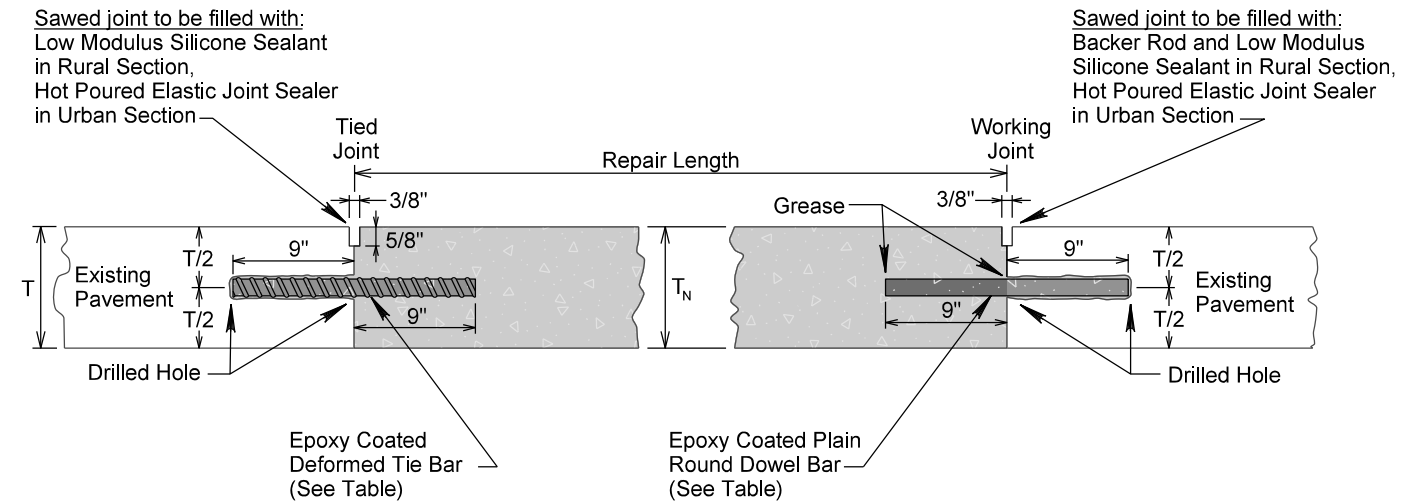
- (1) Where possible, transverse joints will be constructed/maintained full roadway width.
- (2) Edges of repair areas will be formed to match the width of the existing concrete pavement.
- (3) Need for bars in small repair areas on/near the shoulder to be determined on a case-by-case basis, on construction by the Engineer.

NONREINFORCED PCC PAVEMENT REPAIR

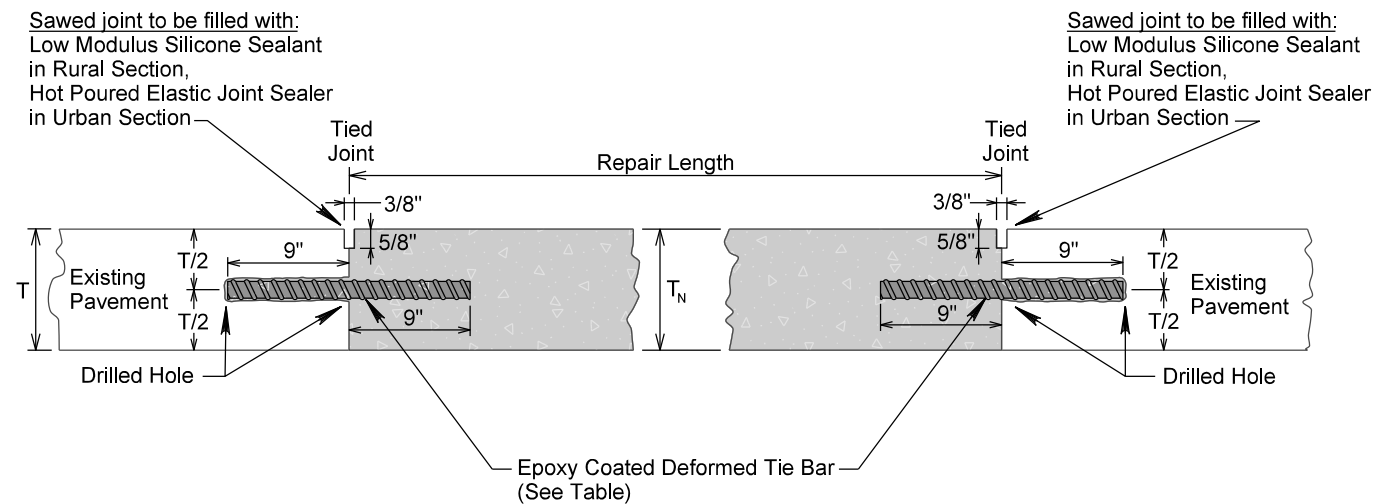
PLAIN ROUND DOWEL BAR INSERTION
TYPE W - (TWO WORKING JOINTS)



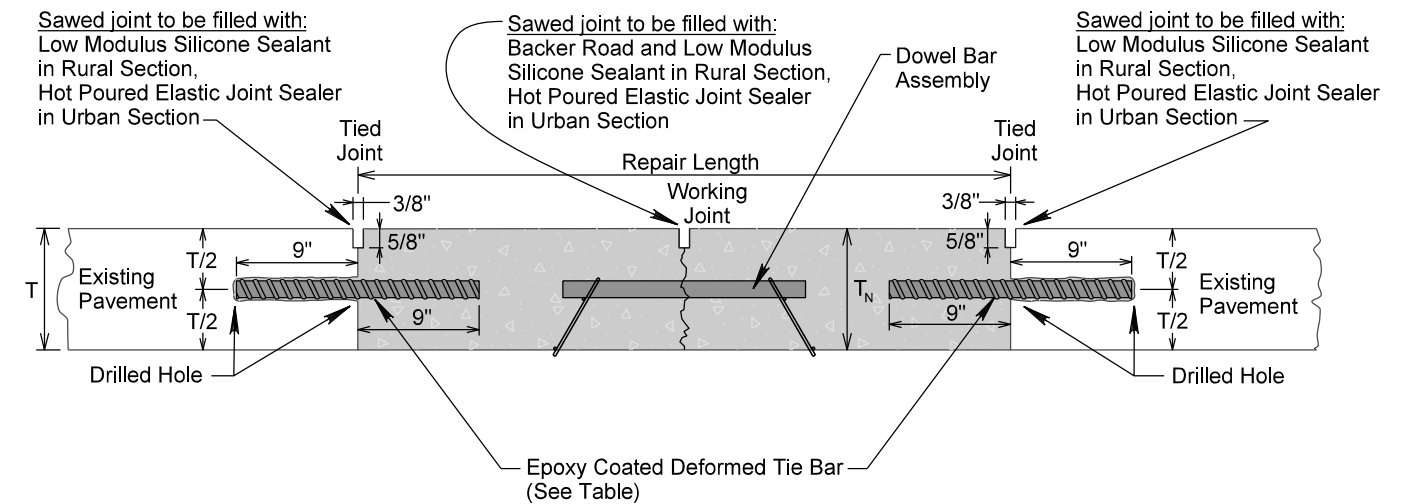
DEFORMED TIE BAR AND PLAIN ROUND DOWEL BAR INSERTION
TYPE B - (ONE TIED JOINT AND ONE WORKING JOINT)



DEFORMED TIE BAR INSERTION
TYPE T - (TWO TIED JOINTS)



DEFORMED TIE BAR INSERTION WITH DOWEL BAR ASSEMBLY
TYPE R - (TWO TIED JOINTS AND ONE WORKING JOINT - ORIGINAL JOINT RESTORED)



Existing Pavement Thickness	Epoxy Coated Deformed Tie Bar Size	Epoxy Coated Plain Round Dowel Bar Size
$T \geq 10.5"$	No. 11 x 18"	1½" x 18"
$T \geq 8.5"$ & $T < 10.5"$	No. 9 x 18"	1¼" x 18"
$T < 8.5"$	No. 8 x 18"	1" x 18"

T = Existing pavement thickness.
 T_N = New pavement thickness.

Bar embedded to a minimum depth of 9 inches into the existing pavement by utilizing an epoxy resin adhesive.

Cost for furnishing and inserting steel bars (deformed tie and plain round dowel) will be included in the contract unit price per each for Insert Steel Bar in PCC Pavement.

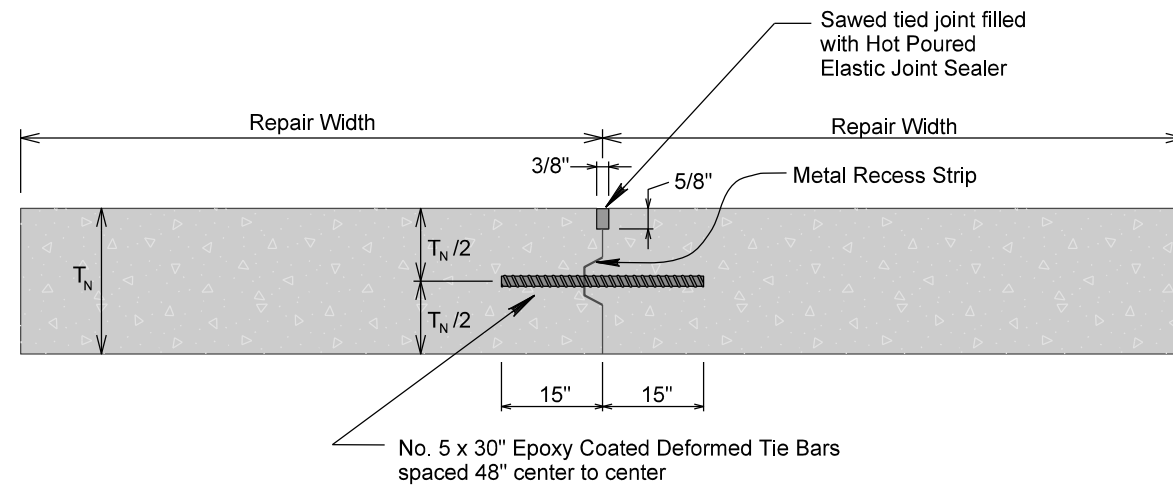
Cost for furnishing and installing dowel bar assembly will be included in the contract unit price per each for Dowel Bar.

$T_N = T$
(top of new pavement will be flush with top of existing pavement)

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0011 (322)	16	19
Plotting Date: 02/12/2026			

NONREINFORCED PCC PAVEMENT REPAIR

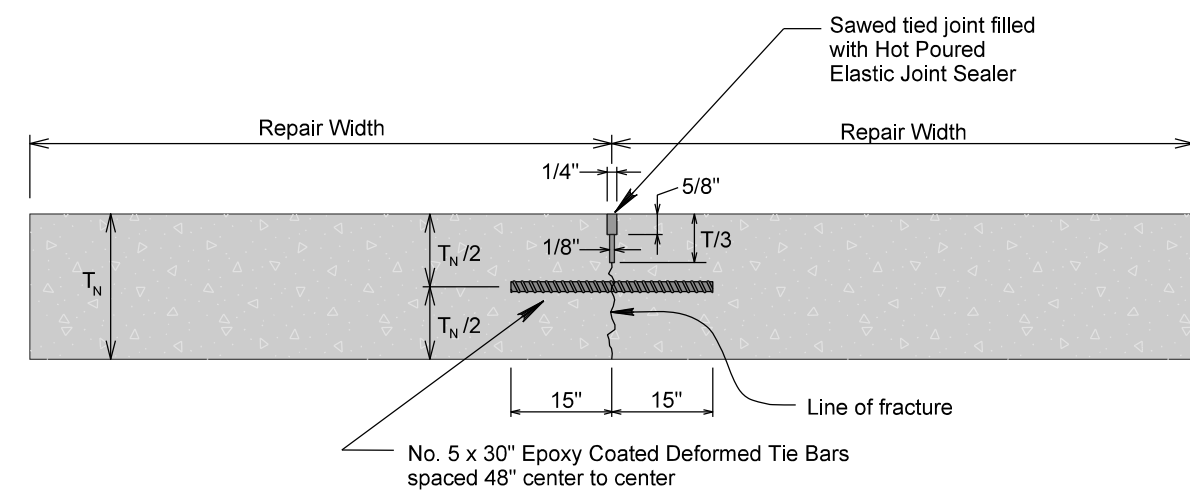
LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS & KEYWAY



T_N = New pavement thickness.

Cost for furnishing and inserting tie bars will be incidental to the contract unit price per square yard for Nonreinforced PCC Pavement Repair.

SAWED LONGITUDINAL JOINT

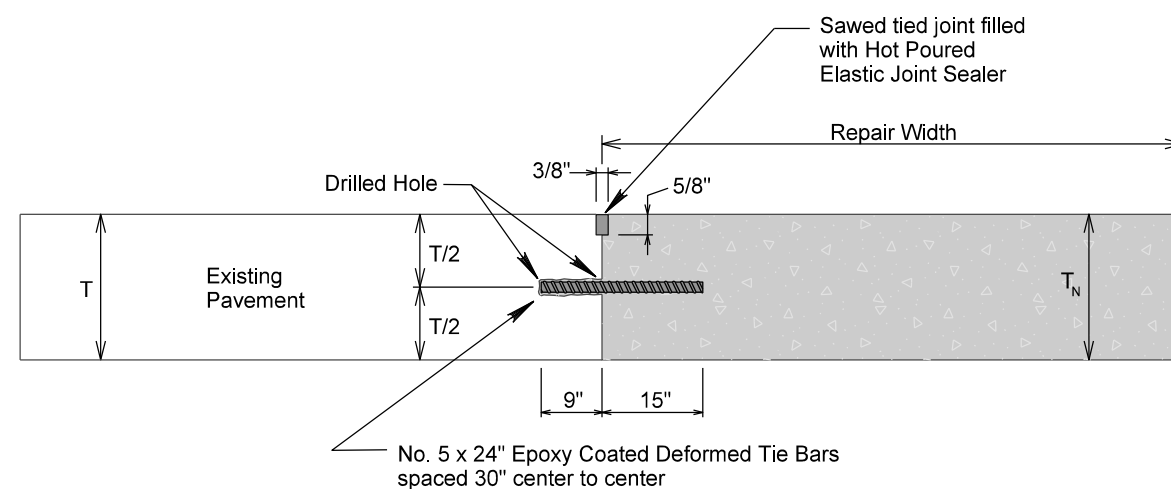


T_N = New pavement thickness.

The first saw cut to control cracking will be a minimum of 1/3 the depth of the pavement. Additional sawing for widening the saw cut will be necessary.

Cost for furnishing and inserting tie bars will be incidental to the contract unit price per square yard for Nonreinforced PCC Pavement Repair.

LONGITUDINAL CONSTRUCTION JOINT WITH DRILLED IN TIE BARS



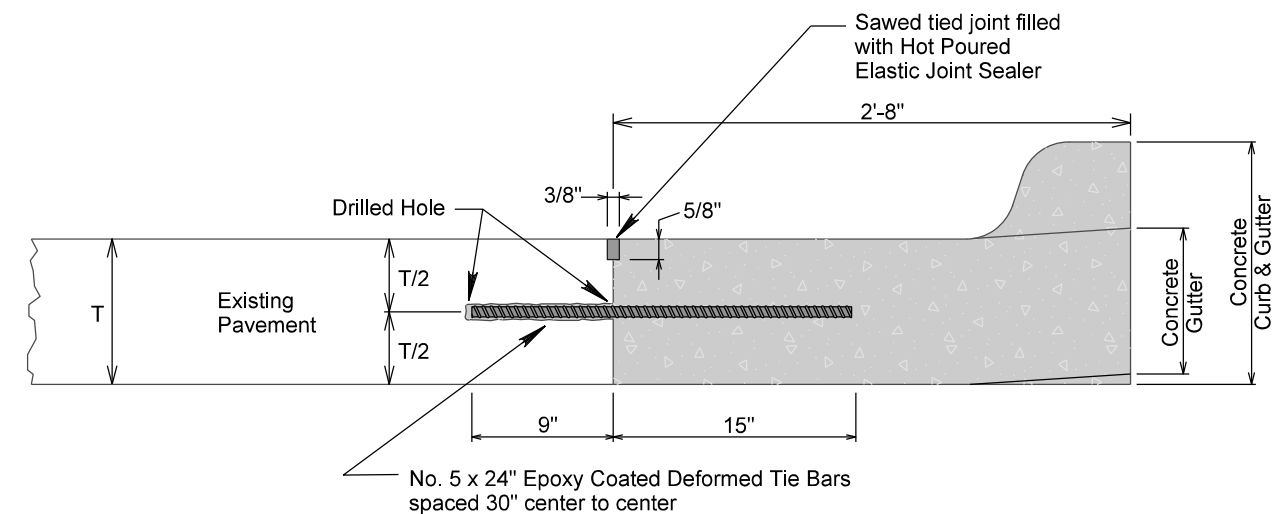
T = Existing pavement thickness.
 T_N = New pavement thickness.

Bar embedded a minimum depth of 9 inches into the existing pavement by utilizing an epoxy resin adhesive.

Bars will be placed a minimum of 15 inches from existing transverse contraction joints.

Cost for furnishing and inserting drilled in tie bars will be included in the contract unit price per each for Insert Steel Bar in PCC Pavement.

LONGITUDINAL CONSTRUCTION JOINT WITH DRILLED IN TIE BARS



T = Existing pavement thickness.

Bar embedded a minimum depth of 9 inches into the existing pavement by utilizing an epoxy resin adhesive.

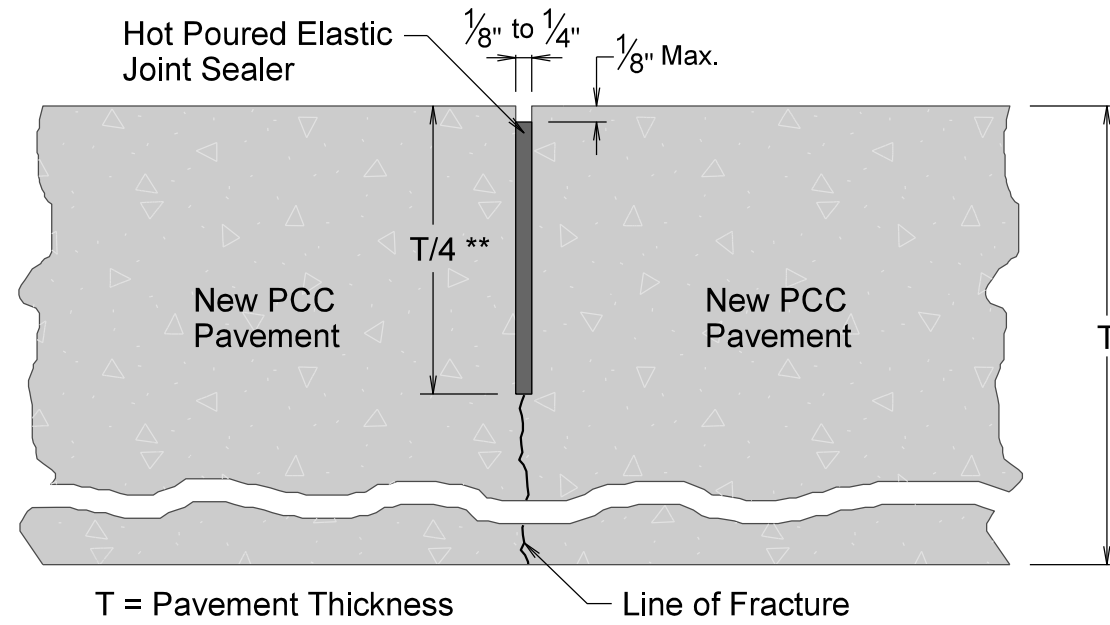
Bars will be placed a minimum of 15 inches from existing transverse contraction joints.

Cost for furnishing and inserting drilled in tie bars will be included in the contract unit price per each for Insert Steel Bar in PCC Pavement.

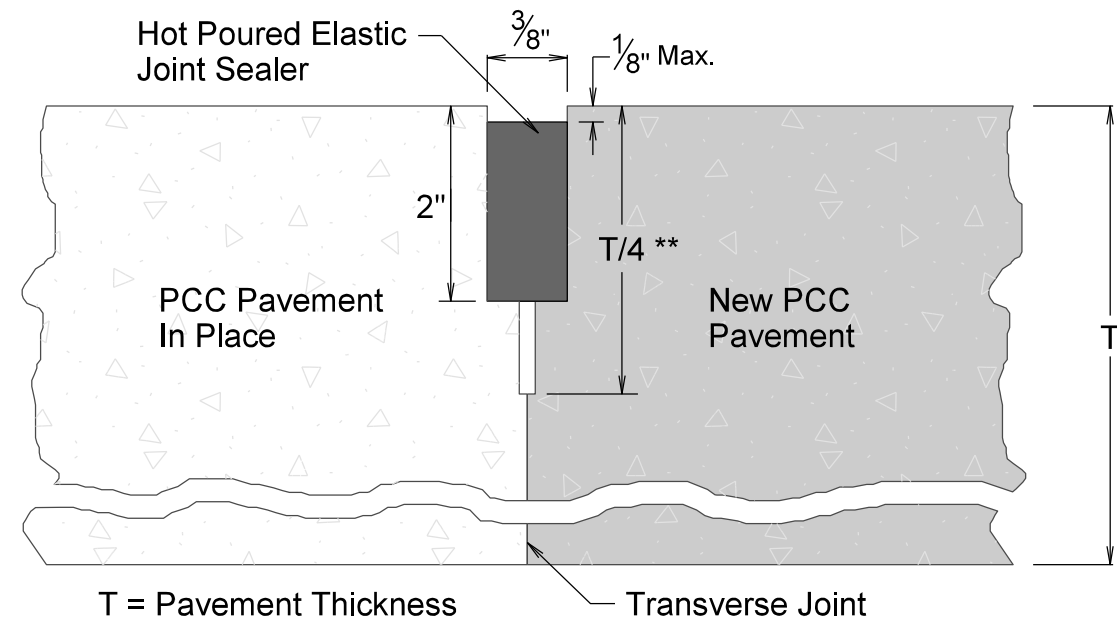
NONREINFORCED PCC PAVEMENT REPAIR

SAW & SEAL TRANSVERSE JOINTS

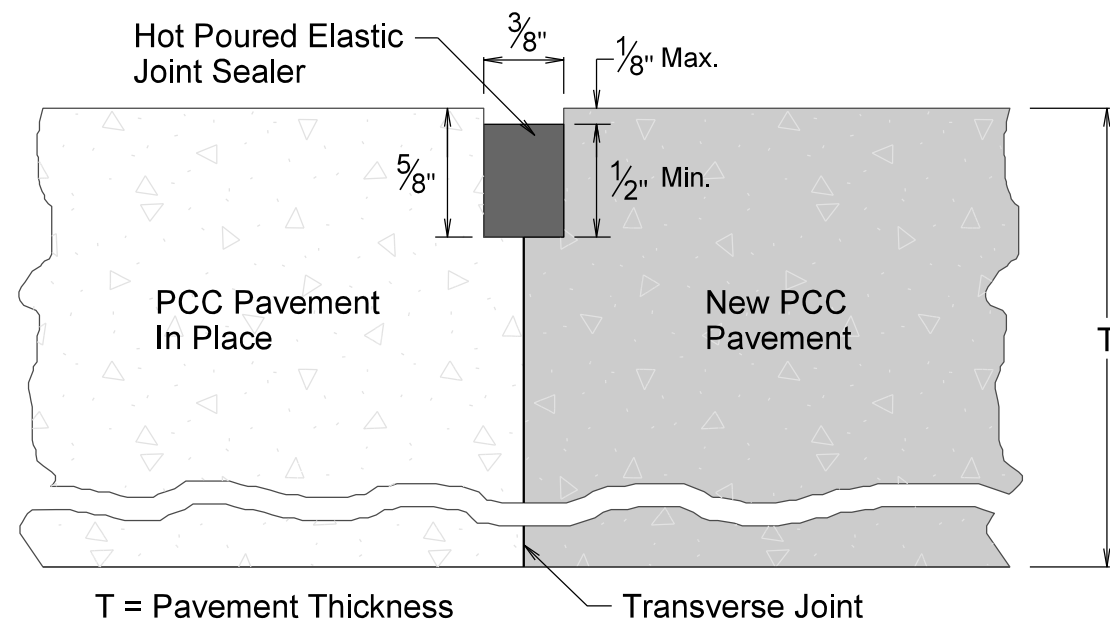
**WITH HOT Poured ELASTIC JOINT SEALER
AT WORKING JOINTS ENTIRELY WITHIN REPAIR AREAS**



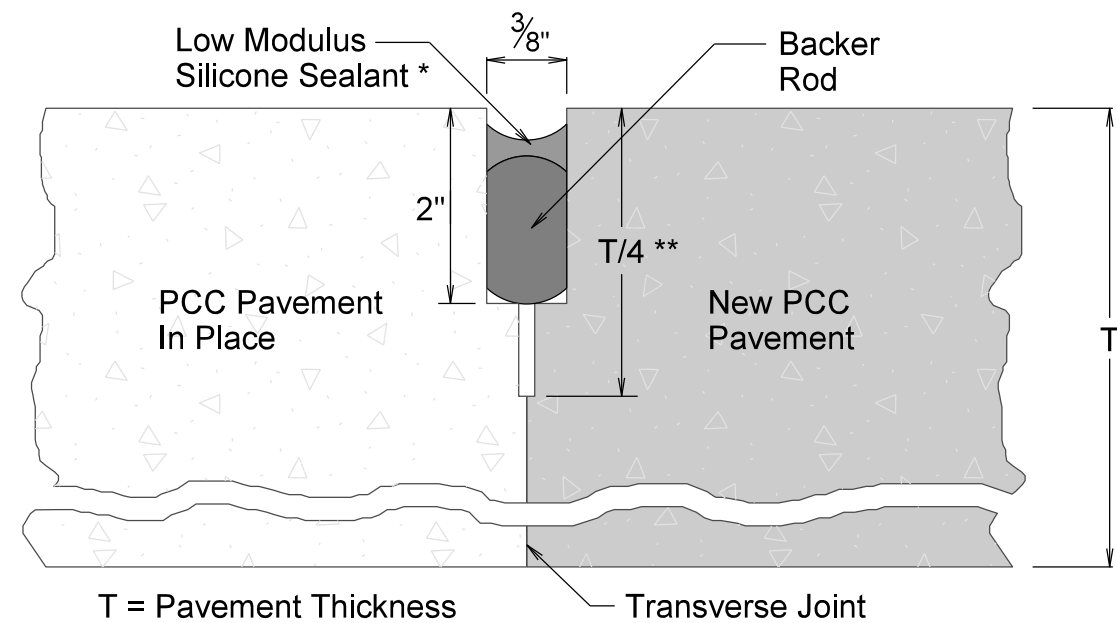
**WITH HOT Poured ELASTIC JOINT SEALER
AT WORKING JOINTS (TYPICALLY URBAN)**



**WITH HOT Poured ELASTIC JOINT SEALER
AT TIED JOINTS**



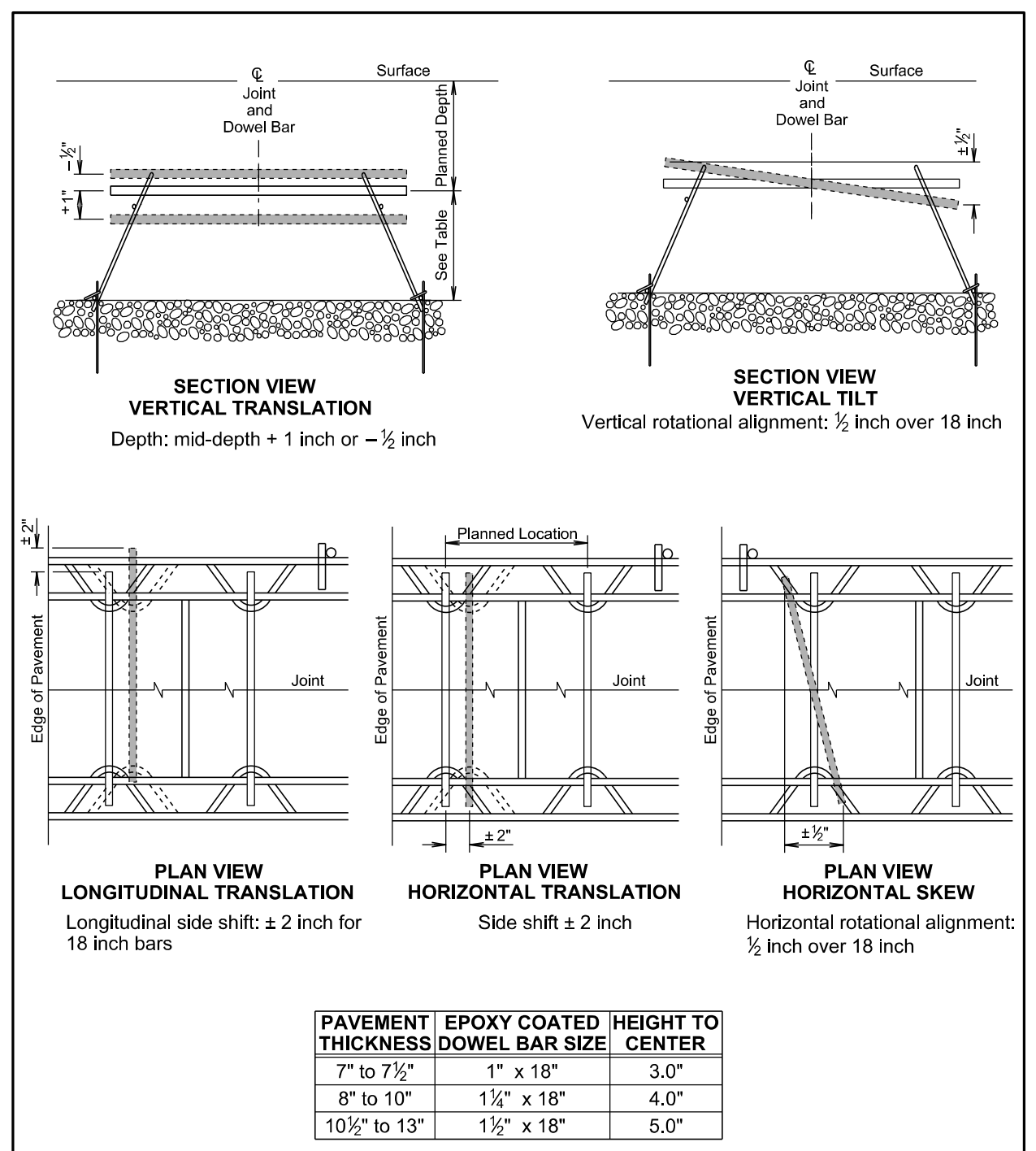
**WITH LOW MODULUS SILICONE SEALANT
AT WORKING JOINTS (TYPICALLY RURAL)**



* Refer to Standard Plate 380.13 for installation details using Joint Width J=3/8".

** The saw cut to control cracking will be a minimum of 1/4 the thickness of the pavement.

PLOT SCALE - 1:200

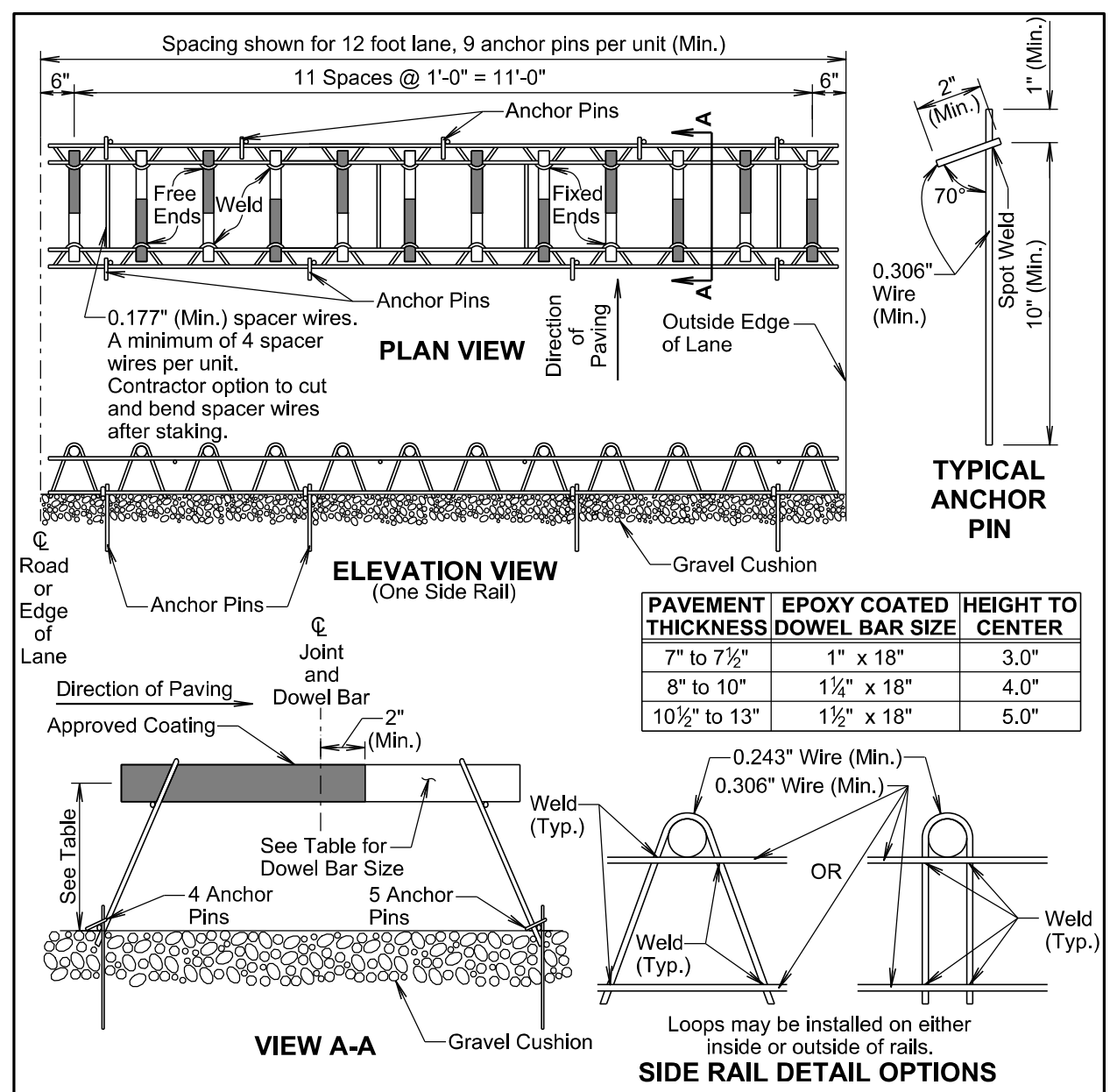


GENERAL NOTE:
The tolerances shown above represent the maximum deviation for acceptance of dowel bar placement.

November 19, 2022

	PCC PAVEMENT DOWEL BAR ALIGNMENT TOLERANCES	PLATE NUMBER 380.01
		Sheet 1 of 1

Published Date: 2026



GENERAL NOTES:

Longitudinal joint tie bars will be placed a minimum of 15 inches from the transverse contraction joint.

The transverse contraction joints will be sawed perpendicular to the centerline of the roadway. The transverse sawed joint will be centered over the dowel bars.

Supporting devices as shown on this sheet, or equivalent as approved by the Engineer, will be used to maintain proper horizontal and vertical alignment of the dowel bars.

All dowel bar alignment tolerances will be as shown in the PCC Pavement Dowel Bar Alignment Tolerances standard plate.

November 19, 2022

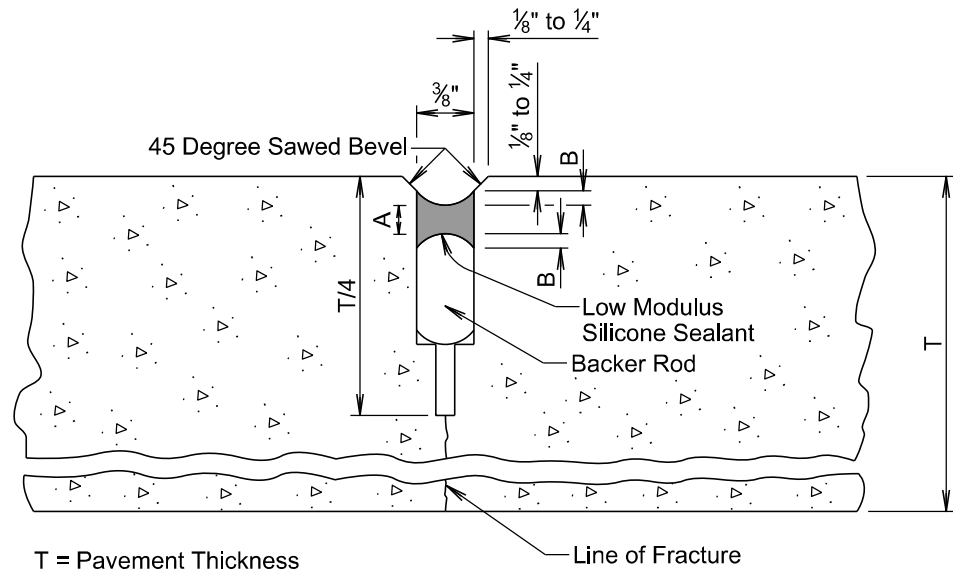
	PCC PAVEMENT DOWEL BAR ASSEMBLY FOR TRANSVERSE CONTRACTION JOINTS 12 Bar Assembly on Granular Base Material	PLATE NUMBER 380.04
		Sheet 1 of 1

Published Date: 2026

PLOTTED FROM - TRAB17898

PLOT NAME - 1

FILE - ... \FALK09X2\DESIGN\BORDER-3D.DGN



LOW MODULUS SILICONE SEALANT ALLOWABLE CONSTRUCTION TOLERANCES			
A (Min.) (in.)	A (Max.) (in.)	B (Min.) (in.)	B (Max.) (in.)
3/16	5/16	1/8	1/4

GENERAL NOTES:

The first saw cut to control cracking will be a minimum of 1/4 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the low modulus silicone joint sealant will be necessary.

The backer rod will be a non-moisture absorbing resilient material approximately 25% larger in diameter than the width of the joint to be sealed.

November 19, 2022

Published Date: 2026

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**PCC PAVEMENT BEVELED TRANSVERSE
CONTRACTION JOINT WITH OR WITHOUT
DOWEL BAR ASSEMBLY**

PLATE NUMBER
380.13

Sheet 1 of 1