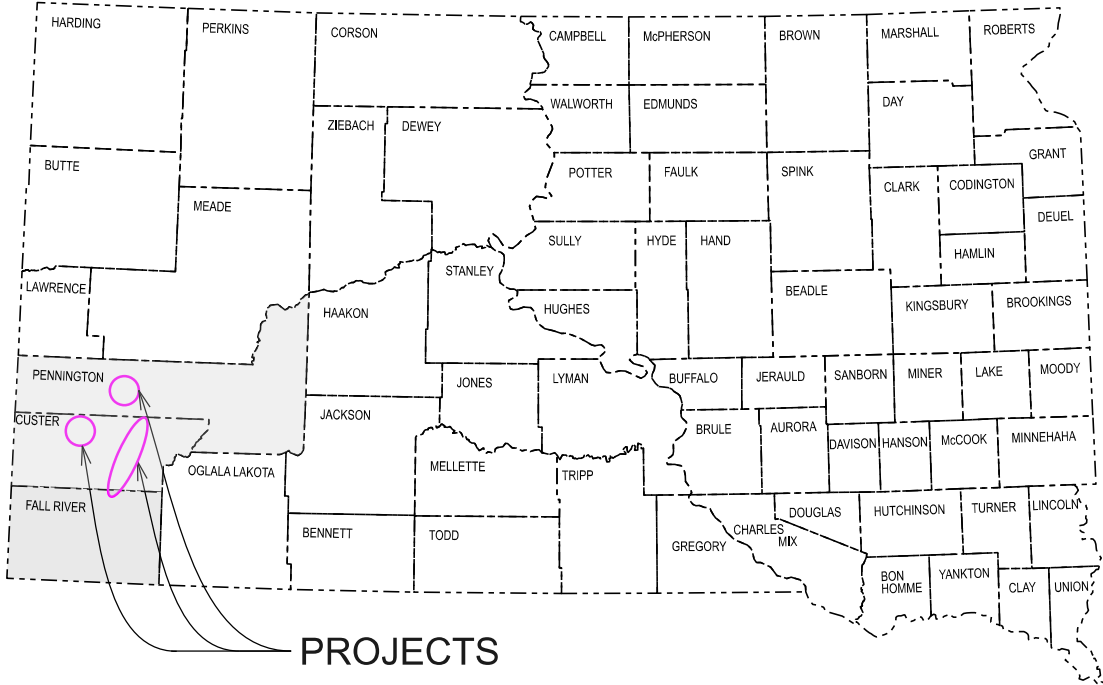




PROJECTS

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
PROJECTS 016-491, 016A-492,
079-492, 079 N-492 & 079 S-492
US HIGHWAYS 16 & 16A
SD HIGHWAY 79
CUSTER, FALL RIVER
& PENNINGTON COUNTIES
PCC PAVEMENT REPAIR
PCNS i89W, i89U, i89Q, i89T, & i89R

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	016-491 etc.	Non	1/24

Plotting Date: 10/26/2026

INDEX OF SHEETS

- | | |
|---------|---------------------------------------|
| 1 | General Layout with Index |
| 2 - 9 | Estimate of Quantities and Plan Notes |
| 10-13 | In-Place Typical Sections |
| 14-16 | Special Details |
| 17 - 24 | Standard Plates |

DESIGN DESIGNATION

US 16

ADT (2025)	7629
ADT (2045)	12443
DHV	20397
D	51%
T DHV	3.0%
T ADT	6.5%
V	65 MPH

DESIGN DESIGNATION

SD 79, 79N, & 79S

ADT (2025)	5365
ADT (2045)	8560
DHV	1402
D	51%
T DHV	6.3%
T ADT	13.9%
V	70 MPH

DESIGN DESIGNATION

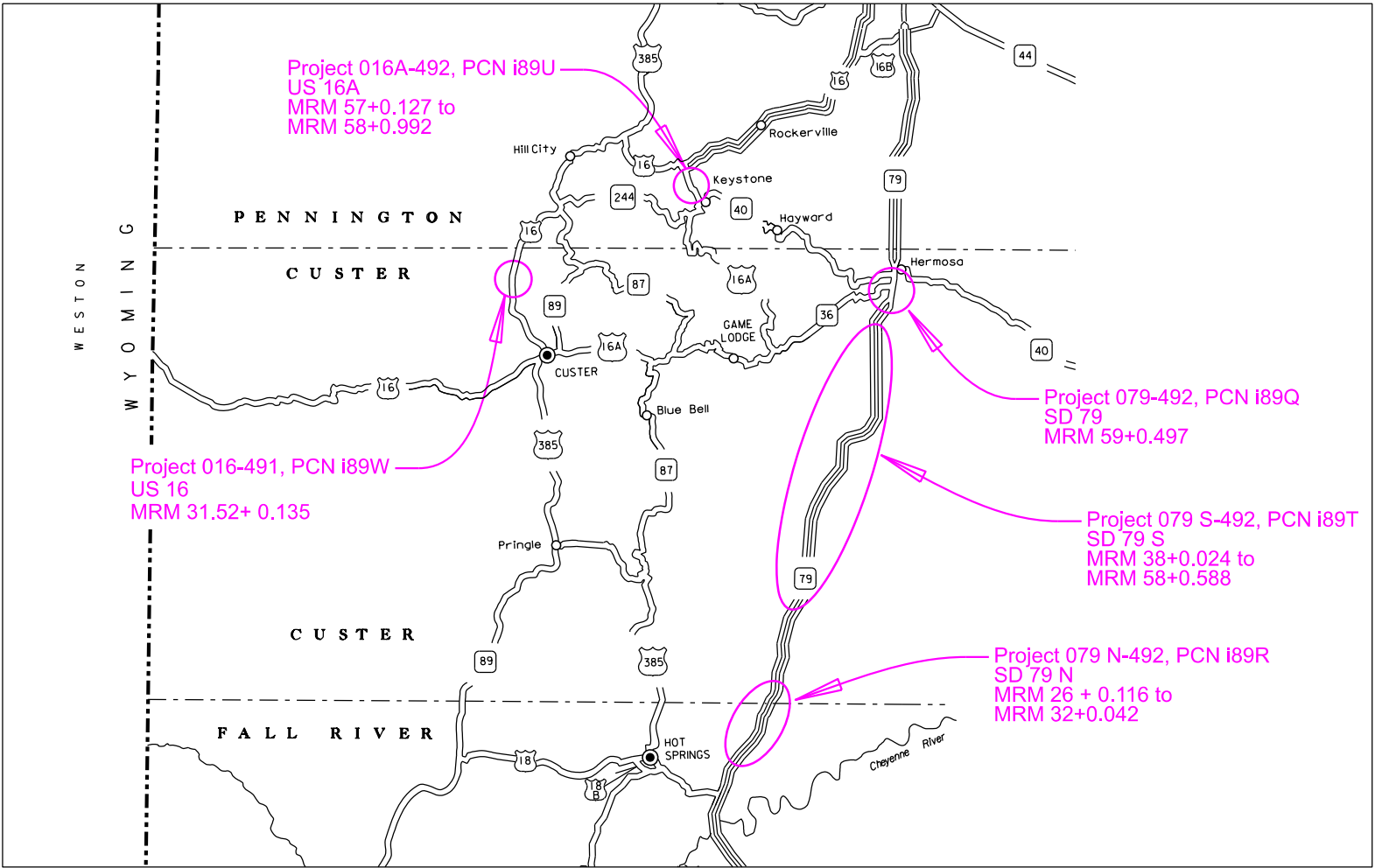
I90 E

ADT (2025)	11970
ADT (2045)	18889
DHV	2775
D	51%
T DHV	7.2%
T ADT	15.6%
V	75 MPH

DESIGN DESIGNATION

US 16A

ADT (2025)	3585
ADT (2045)	5654
DHV	926
D	51%
T DHV	1.9%
T ADT	4.2%
V	45 MPH



ESTIMATE OF QUANTITIES

MRM 59+0.493 Project 079-492, PCN i89Q

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
380E5030	Nonreinforced PCC Pavement Repair	108.9	SqYd
380E6000	Dowel Bar	36	Each
380E6110	Insert Steel Bar in PCC Pavement	36	Each
633E0010	Cold Applied Plastic Pavement Marking, 4"	18	Ft
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	70	Ft
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	18	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	70	Ft
634E0110	Traffic Control Signs	218.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
634E0420	Type C Advance Warning Arrow Board	1	Each
634E0640	Temporary Pavement Marking	780	Ft
634E1255	Contractor Furnished Vehicle Speed Feedback Sign	1	Each

SD 79 N MRM 27+0.116 to MRM 32+0.042 Project 079 N-492, PCN i89R

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
390E0212	Repair Type B Spall	261	Lb
633E0010	Cold Applied Plastic Pavement Marking, 4"	5	Ft
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	10	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	10	Ft
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	5	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	20	Ft
634E0110	Traffic Control Signs	218.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
634E0420	Type C Advance Warning Arrow Board	1	Each
634E0640	Temporary Pavement Marking	5,760	Ft
634E1255	Contractor Furnished Vehicle Speed Feedback Sign	1	Each

SD 79 S MRM 38+0.024 to MRM 58+0.588 Project 079 S-492, PCN i89T

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	5.0	Ton
380E5030	Nonreinforced PCC Pavement Repair	244.9	SqYd
380E6110	Insert Steel Bar in PCC Pavement	208	Each
390E0212	Repair Type B Spall	1,421	Lb
633E0010	Cold Applied Plastic Pavement Marking, 4"	27	Ft
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	98	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	38	Ft
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	27	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	136	Ft
634E0110	Traffic Control Signs	218.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
634E0420	Type C Advance Warning Arrow Board	1	Each
634E0640	Temporary Pavement Marking	5,760	Ft
634E1255	Contractor Furnished Vehicle Speed Feedback Sign	1	Each

US 16A MRM 57+0.127 to MRM 58+0.992 Project 016A-492, PCN i89U

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
380E5030	Nonreinforced PCC Pavement Repair	227.1	SqYd
380E6000	Dowel Bar	63	Each
380E6110	Insert Steel Bar in PCC Pavement	107	Each
390E0212	Repair Type B Spall	2,308	Lb
633E0010	Cold Applied Plastic Pavement Marking, 4"	83	Ft
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	136	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	10	Ft
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	83	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	146	Ft
634E0110	Traffic Control Signs	206.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0640	Temporary Pavement Marking	2,400	Ft

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	016-491 etc.	Non	2/24

US16 MRM 31.52+0.135 Project 016-491, PCN i89W

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
380E5030	Nonreinforced PCC Pavement Repair	53.3	SqYd
380E6110	Insert Steel Bar in PCC Pavement	23	Each
633E0010	Cold Applied Plastic Pavement Marking, 4"	5	Ft
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	40	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	40	Ft
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	80	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	5	Ft
634E0110	Traffic Control Signs	206.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	1	Each
634E0640	Temporary Pavement Marking	1,320	Ft

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 10-7-2026 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges are available for download and viewing at <https://dot.sd.gov/doing-business/contractors/standard-specifications>.

A construction schedule is not required on this project.

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 B4: BALD AND GOLDEN EAGLE

Bald and/or Golden 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 C: WATER SOURCE

If a Contractor needs access to state waters for extraction, the Contractor must obtain a water right, through the application of a Temporary Permit to Use Public Waters before work begins.

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.

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.

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	016-491 etc.	Non	3/24

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

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 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.

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.

COMMITMENT S: FIRE PREVENTION IN THE BLACK HILLS AREA

This project is located within the Black Hills Forest Fire Protection Boundary.

Action Taken/Required:

The Contractor will adhere to the “Special Provision for Fire Plan”.

UTILITIES

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor will contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

EXISTING PCC PAVEMENT

SD 79 MRM 59+0.493 – The existing pavement is 9.5” Nonreinforced PCC Pavement with limestone aggregate. Longitudinal joints are reinforced with No. 5 deformed tie bars spaced 48” center to center. The transverse joints are spaced 20’ apart. Transverse joints are reinforced with 1 ¼” dowel bars spaced 12” center to center.

SD 79 N MRM 27+0.116 to MRM 32+0.042 – The existing pavement is 8.5” Nonreinforced PCC Pavement with limestone aggregate. Longitudinal joints are reinforced with No. 5 deformed tie bars spaced 48” center to center. The transverse joints are spaced 20’ apart. Transverse joints are reinforced with 1 ¼” dowel bars spaced 12” center to center.

SD 79 S MRM 38+0.024 to MRM 58+0.588 – The existing pavement is 8.5” Nonreinforced PCC Pavement with limestone aggregate. Longitudinal joints are reinforced with No. 5 deformed tie bars spaced 48” center to center. The transverse joints are spaced 20’ apart. Transverse joints are reinforced with 1 ¼” dowel bars spaced 12” center to center.

US 16A MRM 57+0.127 to MRM 58+0.992 – The existing pavement is 8” Nonreinforced PCC Pavement with limestone aggregate. Longitudinal joints are reinforced with No. 5 deformed tie bars spaced 48” center to center. The transverse joints are spaced 20’ apart. Transverse joints are reinforced with 1 ¼” dowel bars spaced 12” center to center.

US 16 MRM 31.52+0.135 – The existing pavement is 8.5” Nonreinforced PCC Pavement with limestone aggregate. Longitudinal joints are reinforced with No. 5 deformed tie bars spaced 48” center to center. The transverse joints are spaced 20’ apart. Transverse joints are reinforced with 1 ¼” dowel bars spaced 12” center to center.

RESTORATION OF GRAVEL CUSHION

An inspection of the gravel cushion subgrade 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 and excess material will be removed. Each replacement area will be leveled and compacted to the satisfaction of the Engineer.

All costs associated with this work will be incidental to the contract unit price per square yard for Nonreinforced PCC Pavement Repair.

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite will be used for shoulder repair at full depth PCC replacement locations.

All other requirements in the Standard Specifications for Asphalt Concrete Composite will apply.

No MC-70 Asphalt for Prime will be required.

No flush seal will be required.

Plans specified locations for Asphalt Concrete Composite will be paid for at the contract unit price per ton for Asphalt Concrete Composite regardless of the class of asphalt concrete used at such locations.

REPAIR TYPE B SPALL

A unit weight of 116 Lb/CuFt was used for estimating purposes.

The material for Repair of Type B Spall will be TechCrete-TBR manufactured by Crafcro, Fibrecrete G manufactured by FPT Infrastructure, or an approved equal. The maximum width of the Type B spall repair will be 12”. The length will be as needed to repair the joint. The material will be measured and paid for per pound.

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 (ASTM C309, 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 surface 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.

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.

A construction joint will be sawed whenever new concrete pavement is placed adjacent to existing concrete pavement.

The Contractor will note the locations of the in-place transverse construction joints and will be place the new joints at the existing locations.

Rumble Strips in PCC Pavement will be placed 15 inches wide 3 inches from the outside edge of the pavement. Payment for forming rumble strips including labor, materials and incidentals will be incidental to the contract unit price per square yard for Nonreinforced PCC Pavement Repair.

Cost for performing the aforementioned work including sawing and removing concrete, furnishing and placing concrete, sawing and sealing joints, sawing and removing a 2’ width of asphalt shoulder adjacent to the removed panels, 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.

STEEL BAR INSERTION

The Contractor will insert the Steel Bars (No. 9 x 18 inch epoxy coated deformed tie bars, No. 5 x 24 inch epoxy coated deformed tie bars, and 1¼" x 18" epoxy coated plain round dowel bars) into drilled holes in the existing concrete pavement. Anchoring of the steel bars in the drilled holes will conform to the Specifications.

The steel bars will be cut to the specified length by sawing or shearing and will be free from burring or other deformations.

Epoxy coated plain round steel bars will be inserted on 12-inch centers in the transverse joint. The first steel bar will be placed a minimum of 3 inches and a maximum of 6 inches from the outside edge of the slab.

Epoxy coated deformed steel bars will be inserted on 18-inch centers in the transverse joint. The first steel bar will be placed a minimum of 3 inches and a maximum of 9 inches from the outside edge of the slab.

Epoxy coated deformed steel bars will be inserted on 30-inch centers in the longitudinal joint and will be placed a minimum of 15 inches from the existing transverse contraction joint.

PERMANENT PAVEMENT MARKING

The Contractor will be required to repaint all existing pavement markings including centerline, edge line, lane lines, turn arrows, stop bars, and pedestrian crossings. This list is approximate. The Contractor will be required to document and be able to relocate for replacement of the existing turn arrows, stop bars, pedestrian and crossings before the markings are obliterated. The cost to duplicate the existing marking locations will be incidental to the contract unit prices for the various contract items.

COLD APPLIED PLASTIC PAVEMENT MARKING

All materials will be applied as per the manufacturer’s recommendations.

Cold Applied Plastic Pavement Markings will be 3M Series 380 IES or an approved equal.

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 Section 980.1 B.

Reflective media will consist of glass beads. Reflective media will require a Certificate of Compliance for Certification for each source and lot. Acceptance sampling will not be required.

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

Solid 4” line = 22.5 Gals/Mile
Dashed 4” line = 6.2 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.

GROOVING FOR COLD APPLIED PLASTIC PAVEMENT MARKING

The Contractor will establish a positive means for the removal of the grinding and/or grooving residue. Residue from dry grooving will be vacuumed. Solid residue will be removed from the pavement surfaces before being blown by traffic action or wind. The Contractor will conduct this work to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or nuisance to property owners. Residue from wet grooving will not be permitted to flow across lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, will be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state. The cleaning of the residue for grooving will be to the satisfaction of the Engineer and may require more than one pass to adequately remove material. All costs for removal of grinding and/or grooving residue will be included in the contract unit price per foot, square foot, each, or word for Grooving for Cold Applied Plastic Pavement Marking contract items.

GROOVING FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

The Contractor will establish a positive means for the removal of the grinding and/or grooving residue. Residue from dry grooving will be vacuumed. Solid residue will be removed from the pavement surfaces before being blown by traffic action or wind. The Contractor will conduct this work to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or nuisance to property owners. Residue from wet grooving will not be permitted to flow across lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, will be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state. All costs for removal of grinding and/or grooving residue will be included in the contract unit price per foot, square foot, each, or word for Grooving for Durable Pavement Marking contract items.

Unless otherwise specified in the plans, the Contractor will groove the surface for High Build Waterborne Pavement Marking Paint as specified in these plans and as per the manufacturer’s instructions.

The grooving will be completed within the following tolerances:

Description	Specification	Tolerance
Depth of Groove	Marking Thickness ¹ + 15 mils	+ 5 mils
Width of Groove	5 to 6 inches	
Length of Skip Lines ²	10 foot 6 inches	± 3 inch
Tapers at ends of lines	6 to 9 inches	
Between Double Lines	4 inches	± 1/2 inch

- ¹ Marking thickness will include the thickness of marking material and reflective media.
² Additional length may be required as specified in the plans.

The equipment will be capable of the following:

- Grooving the total width of the groove in one pass or uniform depths with multiple passes.
- Grooving without causing damage to the pavement joints or joint sealant material.
- Provide uniform alignment and depth.
- Moving continuously to permit a mobile traffic work operation.

If damage occurs, including, but not limited to, joints, joint sealant material, and backer rod, the grooving operation will be stopped and modifications will be made to the grooving operation to prevent further damage. The Contractor will be required to use specially prepared circular diamond blade cutting heads to prevent damage at the joints. Damage caused will be repaired or replaced by the Contractor, as directed by the Engineer. No additional payment will be made for the repair work or any reapplication of the pavement marking in the area of the repair.

RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT

The Department may take retroreflectivity readings on the pavement marking lines after 14 days and within 42 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.

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	016-491 etc.	Non	5/24

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.

For US16 MRM 31.52+0.135 Project 016-491, PCN i89W and US 16A MRM 57+0.127 to MRM 58+0.992 Project 016A-492, PCN i89U Standard Plates 634.52, 634.53, 634.85, and 634.99 will be used for traffic control in the Contractors sequence of operations.

For SD79 PCN i89P Standard Plates 634.47, 634.48, 634.85, and 634.99 will be used for traffic control in the Contractors sequence of operations.

For MRM 59+0.493 Project 079-492, PCN i89Q, SD 79 N MRM 27+0.116 to MRM 32+0.042 Project 079 N-492, PCN i89R, SD 79 S MRM 38+0.024 to MRM 58+0.588 Project 079 S-492, and i89T Standard Plates 634.63, 634.85, and 634.99 will be used for traffic control in the Contractors sequence of operations.

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.

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.

The Contractor will notify businesses/homeowners a minimum of two weeks prior to construction to inform them of upcoming construction and again a minimum of 48 hours prior to any blocked access to make appropriate arrangements.

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. At no time will construction vehicles utilize the maintenance crossovers or the Interstate median to exit or enter Interstate traffic.

TRAFFIC CONTROL FOR PCCP REPAIR

Each mainline concrete repair location, from which the in-place concrete has been removed, will be marked with a minimum of two reflectorized drums.

Construction workspaces on divided roadways will be limited to 5 miles in length. Construction workspaces on undivided roadways will be limited to 1000 feet in length. The distance between the closest points of any two construction workspaces, including channeling devices, will not be less than 3 miles. Drivers in two-way traffic workspaces must be able to see approaching traffic through and beyond the work zone.

Construction workspaces in urban areas will be limited to 3 blocks in length. The minimum distance between workspaces will be 3 blocks.

When work is in progress within an intersection, Flaggers will be required to direct traffic.

Holes adjacent to centerline in the lane open to traffic created during removal and replacement of PCC pavement repair areas will be filled with gravel cushion material and cold-mix asphalt concrete prior to opening the lane to traffic. Gravel cushion material and cold-mix asphalt concrete will be furnished by the Contractor.

All costs for furnishing, hauling, and placing gravel cushion material and asphalt concrete will be incidental to the contract unit price per square yard for Nonreinforced PCC Pavement Repair.

Routing traffic onto the mainline shoulders during any phase of the construction will not be allowed.

Damage to the shoulders, median, or ditch due to the Contractor's operations will be repaired by the Contractor to the satisfaction of the Engineer at no expense to the State. This includes the apparent routing of traffic onto the shoulders around the work zones.

TEMPORARY PAVEMENT MARKING

SD79 MRM 59+0.493
Lane Closure Tapers and Repair Areas

780 Ft. – White

SD 79 N MRM 27+0.116 to MRM 32+0.042
Lane Closure Tapers and Repair Areas

3840 Ft. – White
1920 Ft. – Yellow

SD 79 S MRM 38+0.024 to MRM 58+0.588
Lane Closure Taper and Repair Area

3840 Ft. – White
1920 Ft. – Yellow

US 16A MRM 57+0.127 to MRM 58+0.992
Lane Closure Taper and Repair Area

1200 Ft. – White\
1200 Ft. – Yellow

US16 MRM 31.52+0.135
Lane Closure Taper and Repair Area

660 Ft. – White
660 Ft. – Yellow

PRESS RELEASE ANNOUNCEMENTS

The SDDOT will prepare a press release to be released 5 days prior to any phase change or any other major change that affects traffic flow. The SDDOT will be responsible to keep law enforcement, emergency services, and the traveling public notified of changes in project access. The Contractor will provide the Engineer with pertinent information 7 days prior to any phase change or any other major change that affects traffic flow.

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	016-491 etc.	Non	6/24

WORK ZONE SPEED REDUCTION

The Department is required to obtain a speed reduction resolution prior to the installation of any SPEED LIMIT (R2-1) signs shown on standard plate 634.63. To provide adequate time for the resolution to be enacted, the Contractor will inform the Engineer a minimum of 3 weeks prior to the scheduled installation of any work zone speed reduction signs on the project. The information provided by the Contractor will include the anticipated date of sign installation, the newly reduced speed limit, the location of the work zone, and the anticipated completion date of work requiring the speed reduction.

CONTRACTOR FURNISHED VEHICLE SPEED FEEDBACK SIGN

The Contractor will provide 2 vehicle speed feedback signs to monitor traffic speeds on designated routes at locations specified in the field by the Engineer.

The vehicle speed feedback sign assembly will include a speed limit sign mounted in conjunction with the vehicle speed feedback display. The speed display will not flash vehicle speeds exceeding the speed limit nor any other messages.

All costs associated with furnishing, maintaining, transporting, relocating if necessary, and removing the vehicle speed feedback signs from locations specified by the Engineer will be incidental to the contract unit price per each for “Contractor Furnished Vehicle Speed Feedback Sign”.

ITEMIZED LISTS FOR TRAFFIC CONTROL

US16 MRM 31.52+0.135 Project 016-491, PCN i89W
US 16A MRM 57+0.127 to MRM 58+0.992 Project 016A-492, PCN i89U

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16.0	32.0
W9-3	CENTER LANE CLOSED AHEAD	3	48" x 48"	16.0	48.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	4	36" x 18"	4.5	18.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			206.6

MRM 59+0.493 Project 079-492, PCN i89Q
SD 79 N MRM 27+0.116 to MRM 32+0.042 Project 079 N-492, PCN i89R
SD 79 S MRM 38+0.024 to MRM 58+0.588 Project 079 S-492, PCN i89T

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 45	1	36" x 48"	12.0	12.0
R2-1	SPEED LIMIT 65	1	36" x 48"	12.0	12.0
R2-1	SPEED LIMIT 70	3	36" x 48"	12.0	36.0
R2-6aP	FINES DOUBLE (plaque)	1	36" x 24"	6.0	6.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	1	48" x 48"	16.0	16.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	1	48" x 24"	8.0	8.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			218.0

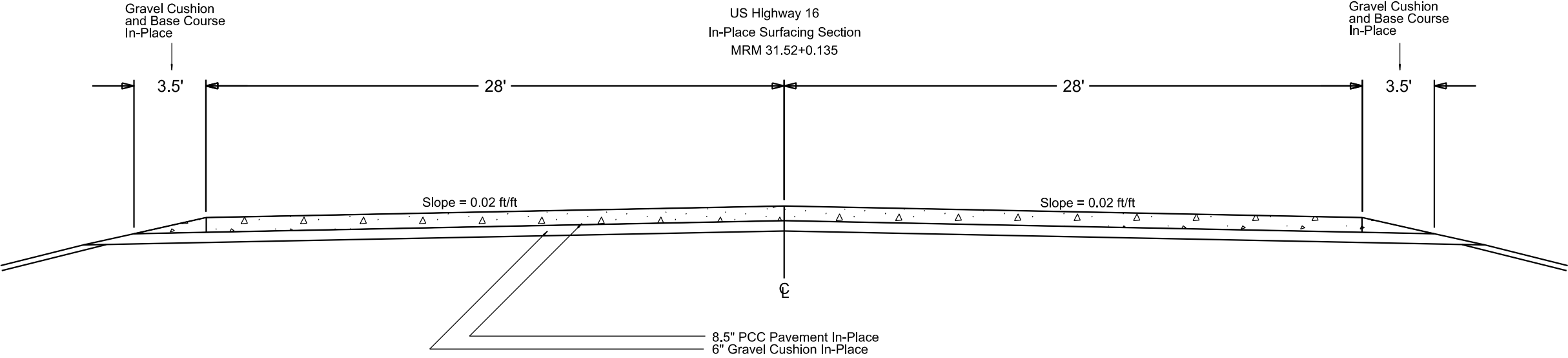
Table of Nonreinforced Pavement Repair																
							Length	Width	No. 5 Deformed Tie Bar	No. 9 Deformed Tie Bar	1 ¼" Bar	Insert Steel Bar in PCC Pavement	Dowel Bar	Nonreinforced PCC Pavement Repair	Asphalt Concrete Composite	
PCN	County	Route	MRM	Disp	Direction	Lane	(Ft)	(Ft)	(Each)	(Each)	(Each)	(Each)	(Each)	(SqYd)	(Ton)	comments
i89Q	Custer	79	59	0.493	Southbound	Driving	70	14	18	9	9	36	36	108.9	2.7	3 12-bar dowel basket assemblies, 18 transverse tie bars, 24 tie bars
i89T	Custer	079 S	39.51	0.054	Southbound	All Lanes	20	26	5		36	41		57.8	1.5	Significant dip in roadway over cross-drainage pipe
	Custer	079 S	51.53	0.371	Southbound	All Lanes	6	26	2	17	36	55		17.3	0.6	
	Custer	079 S	54	0.966	Southbound	Driving	40	26	14		36	50		115.6	1.5	Dip at north and south ends over drainage culvert
	Custer	079 S	55	0.421	Southbound	Driving	20	14	5		18	23		31.1	0.8	2 10ft panel sections, 1 dowel bar basket, and 12 transverse dowel bars at north and south ends of panels
	Custer	079 S	58	0.588	Southbound	All Lanes	8	26	3	18	18	39		23.1	0.6	1 12-bar basket, 1 10-bar basket, and 44 deformed dowel bars
								Total	29	35	144	208		244.9	5	
i89W	Custer	16	31.52	0.135	Southbound	All Lanes	20	24	5		18	23		53.3		24 insert dowels and 14 deformed tie bars
i89U	Pennington	016A	58	0.441	Southbound	Driving	20	14	5		24	29		31.1		1 panel SBlane
	Pennington	016A	58	0.879	Northbound	Driving	84	14	28	9	9	46	27	130.7		4 panels in driving lane at 21ftx16ft; 3 basket assemblies, 20 transverse bar assemblies, and 42 transverse tie bars
	Pennington	016A	58	0.992	Northbound	All Lanes	21	28	14		18	32	36	65.3		4 panels; (2) 21ftx16ft and (2) 21ftx12ft
								Total	47	9	51	107	63	227.1		

Table of Type B Spall Repair													
								Length	Width	Area		Repair Type B Spall	comments
PCN	Repair Type	County	Route	MRM	Disp	Direction	Lane	(Ft)	(Ft)	(SqFt)	Number of Spalls	Lb	
i89R	Spall	Fall River	079 N	27	0.116	Northbound	Driving	1	1	1	1	29	Shoulder edge of concrete in the slow lane
	Spall	Fall River	079 N	28	0.345	Northbound	Driving	1	1	1	5	145	Fill the voids in the concrete
	Spall	Fall River	079 N	28	0.376	Northbound	Passing	1	1	1	1	29	1 spall; passing lane
	Spall	Fall River	079 N	28	0.719	Northbound	Driving	1	1	1	1	29	Chunk of concrete missing in slow lane
	Spall	Fall River	079 N	32	0.042	Northbound	Passing	1	1	1	1	29	1 spall; passing lane
											Total	261	
i89T	Spall	Custer	079 S	38	0.024	Southbound	All Lanes	1	3	3	2	174	2 spalls; 3x3 (left SB lane), 2x1 (right SB lane)
	Spall	Custer	079 S	47	0.49	Southbound	Driving	3	2	6	1	174	1 spall; 3x2 (right SB lane beside centerline)
	Spall	Custer	079 S	51	0.429	Southbound	Passing	4	5	20	1	580	1 spall; 5x4 (left SB lane from yellow line to centerline)
	Spall	Custer	079 S	51.53	0.093	Southbound	Passing	9	1	9	1	261	1 spall; 3x3 (left SB lane next to centerline)
	Spall	Custer	079 S	51.53	0.371	Southbound	Driving	2	2	4	1	116	1 spall next to white fog line; south of Dry Creek Rd
	Spall	Custer	079 S	54	0.976	Southbound	Passing	2	2	4	1	116	1 spall on left SB lane next to centerline
											Total	1421	
i89U	Spall	Pennington	016A	57	0.127	Northbound	Driving	2	3	6	1	174	Spall on outside slow lane (NB left lane)
	Spall	Pennington	016A	57	0.376	Northbound	Passing	1	1	1	1	29	1 spall (passing lane, left of broken white line)
	Spall	Pennington	016A	57	0.408	Northbound	Driving	3	2	6	1	174	1 spall; 3x2 (NB slow lane)
	Spall	Pennington	016A	57.48	0.039	Northbound	Middle	2	1	2	1	58	Spall extending through center of both lanes
	Spall	Pennington	016A	57.66	0.053	Northbound	All Lanes	1	3	3	3	261	3 spalls; both lanes
	Spall	Pennington	016A	57.66	0.066	Southbound	Driving	1.5	2.5	3.8	2	220.4	2 spalls; one on the white line and one in the wheel tracks
	Spall	Pennington	016A	57.66	0.068	Northbound	All Lanes	1	4	4	2	232	2 spalls; center of both lanes
	Spall	Pennington	016A	57.66	0.237	Southbound	Driving	1	3	3	4	348	4 spalls; 2 in same panel on white line, next panel south has 1x2 spall and 0.5x0.5 spall
	Spall	Pennington	016A	58	0.153	Southbound	Driving	2.5	2	5	1	145	1 spall; 2.5x2 (on centerline)
	Spall	Pennington	016A	58	0.229	Northbound	All Lanes	1	2	2	1	58	1 spall; center of both lanes
	Spall	Pennington	016A	58	0.334	Northbound	Middle	1	2	2	1	58	1 spall; both lanes
	Spall	Pennington	016A	58	0.402	Northbound	All Lanes	2	2	4	2	232	2 spalls; both lanes
	Spall	Pennington	016A	58	0.509	Northbound	Driving	1	1	1	1	29	1 spall; slow lane
	Spall	Pennington	016A	58	0.723	Northbound	Driving	2	2	4	1	116	1 spall; 2x2 in NB right lane (across from former Best Western)
	Spall	Pennington	016A	58	0.758	Southbound	Driving	3	2	6	1	174	On centerline
											Total	2308.4	

Table of Pavement Marking													
							Length	High Build Waterborne Pavement Marking Paint, 4" White	High Build Waterborne Pavement Marking Paint, 4" Yellow	Grooving for Durable Pavement Marking, 4"	Cold Applied Plastic Pavement Marking, 4" (White)	Cold Applied Plastic Pavement Marking, 4" (Yellow)	Grooving for Cold Applied Plastic Pavement Marking, 4"
PCN	County	Route	MRM	Disp	Direction	Lane	(Ft)	(Ft)	(Ft)	(Ft)	(Ft)	(Ft)	(Ft)
i89Q	Custer	79	59	0.493	Southbound	Driving	70	70		70	17.5		17.5
i89R	Fall River	79N			Northbound		Spalls	10	10	20	5		5
i89T	Custer	079 S	39.51	0.054	Southbound	All Lanes	20	20	20	40	5		5
	Custer	079 S	54	0.966	Southbound	Driving	40	40		40	10		10
	Custer	079 S	55	0.421	Southbound	Driving	20	20		20	5		5
	Custer	079 S	58	0.588	Southbound	All Lanes	8	8	8	16	2		2
							Spalls	10	10	20	5		5
							Total	98	38	136	27		27
i89W	Custer	16	31.52	0.135	Southbound	All Lanes	20	40	40	80	5		5
i89U	Pennington	016A	58	0.879	Northbound	Driving	84	84		84	21		21
	Pennington	016A	58	0.992	Northbound	All Lanes	21	42		42	5	42	47
							Spalls	10	10	20	5	10	15
							Total	136	10	146	31	52	83

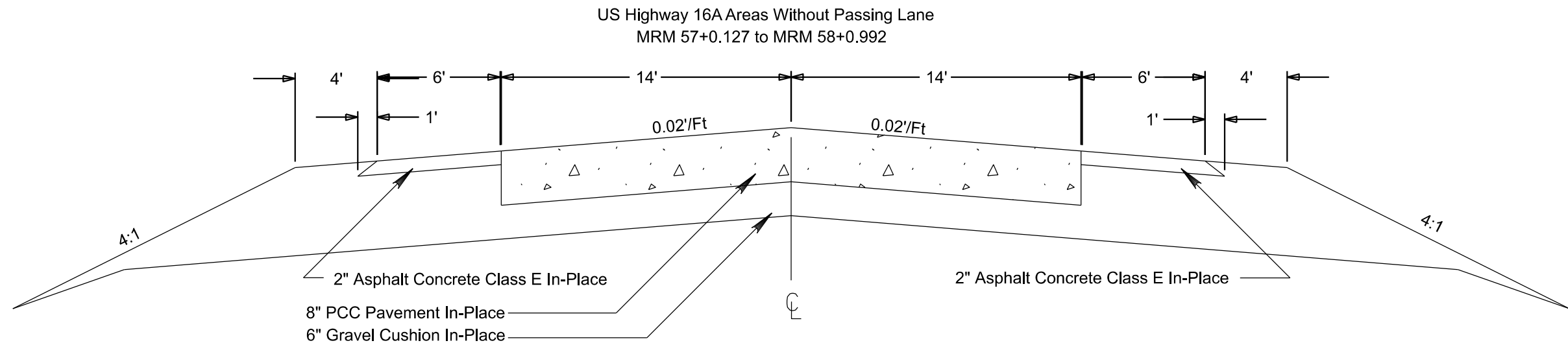
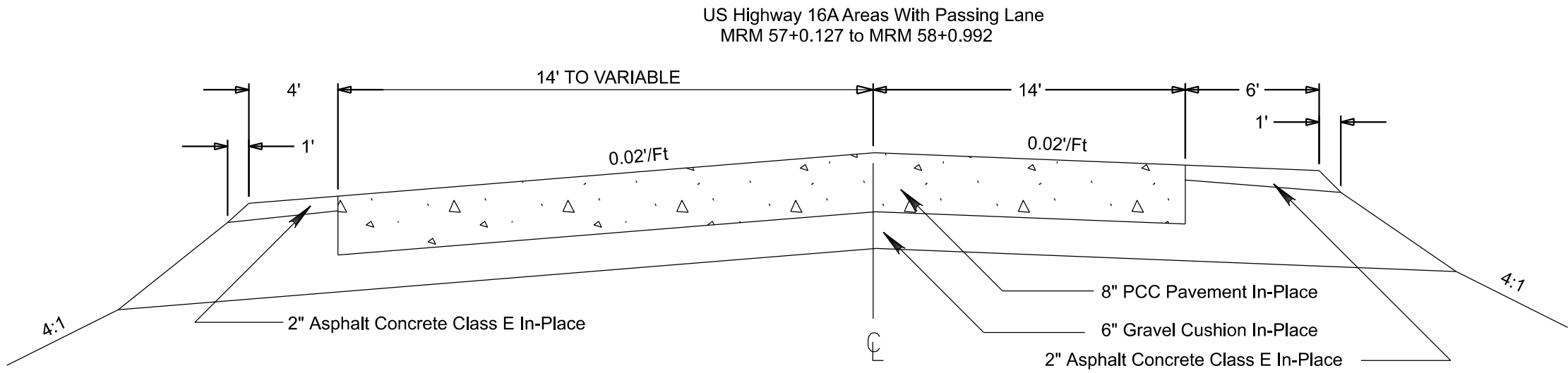
IN-PLACE TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	016-491 etc.	Non	10/24
Plotting Date: 10/23/2026			



IN-PLACE TYPICAL SECTIONS

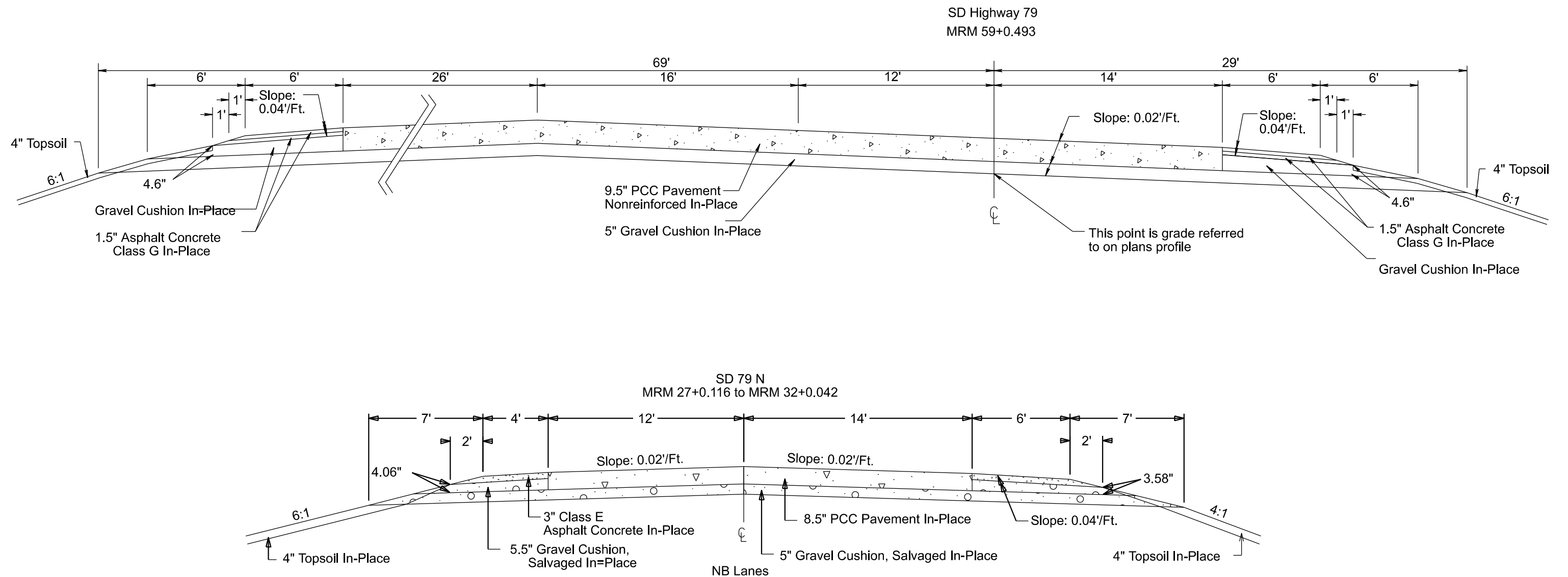
STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	016-491 etc.	Non	11/24
Plotting Date: 10/23/2026			



IN-PLACE TYPICAL SECTIONS

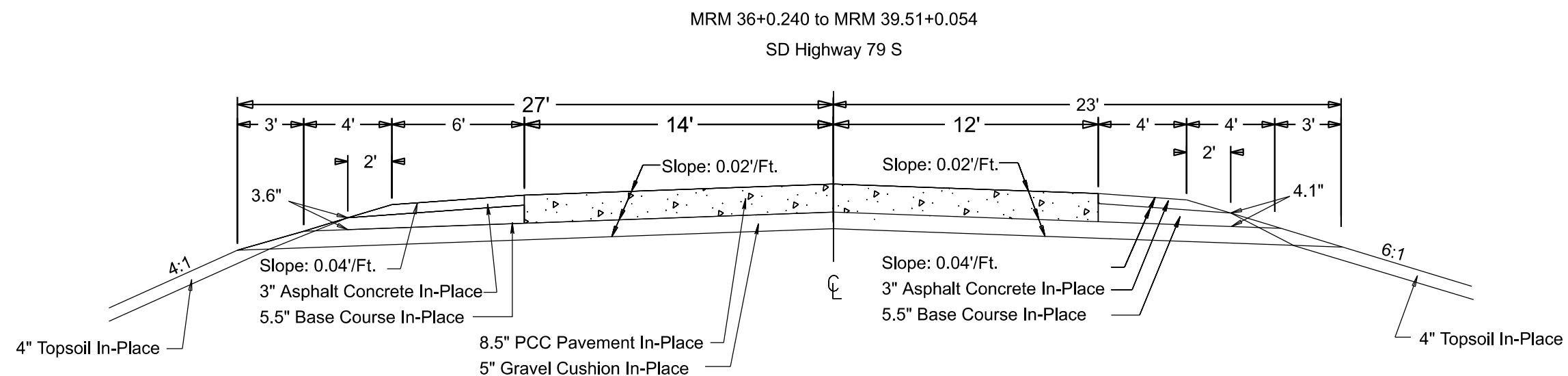
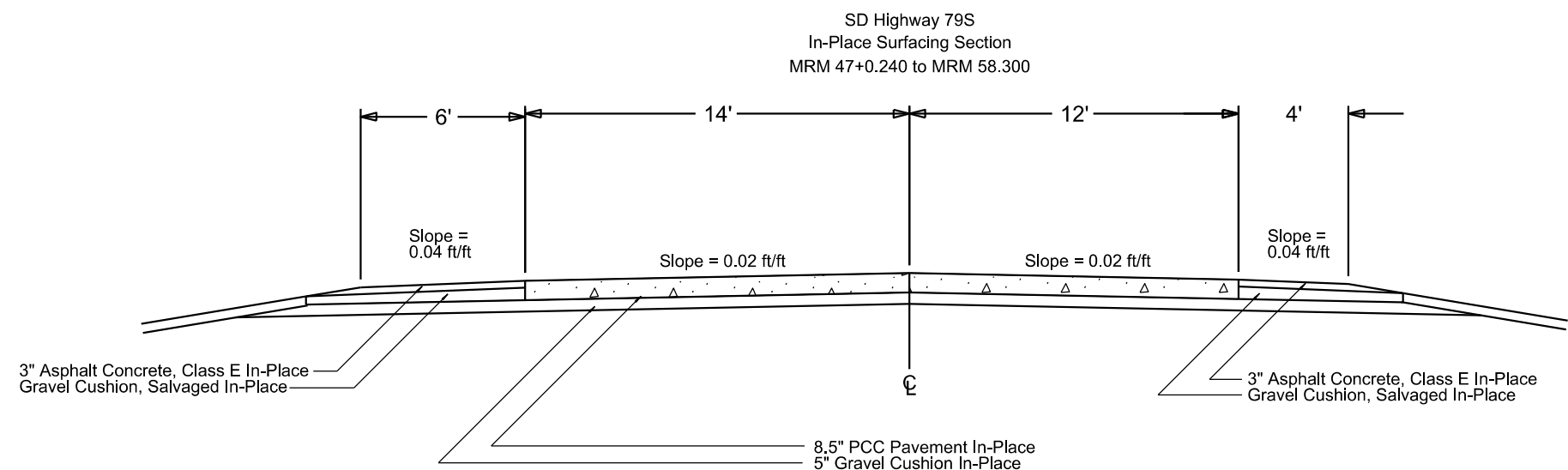
STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	016-491 etc.	Non	12/24

Plotting Date: 10/23/2026



IN-PLACE TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	016-491 etc.	Non	13/24
Plotting Date: 10/23/2026			

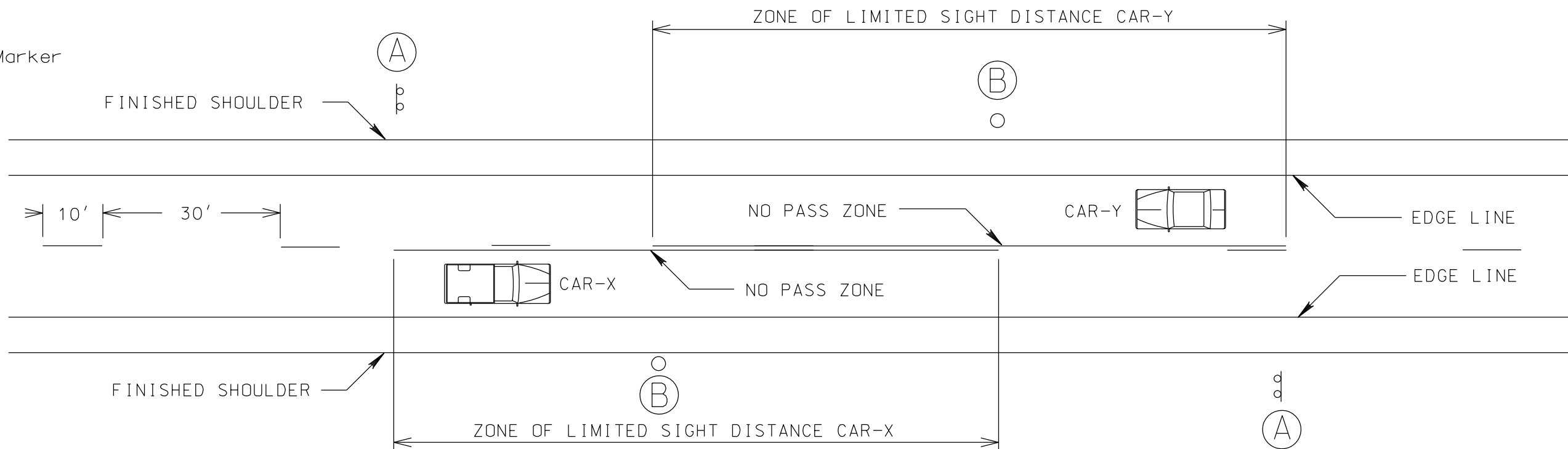


TYPICAL PAVEMENT MARKING LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	016-491 etc.	Non	14/24
Plotting Date: 10/23/2026			



(B) End of Zone Marker



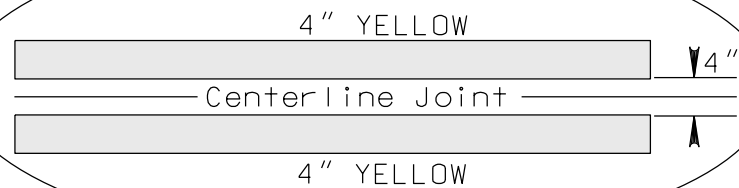
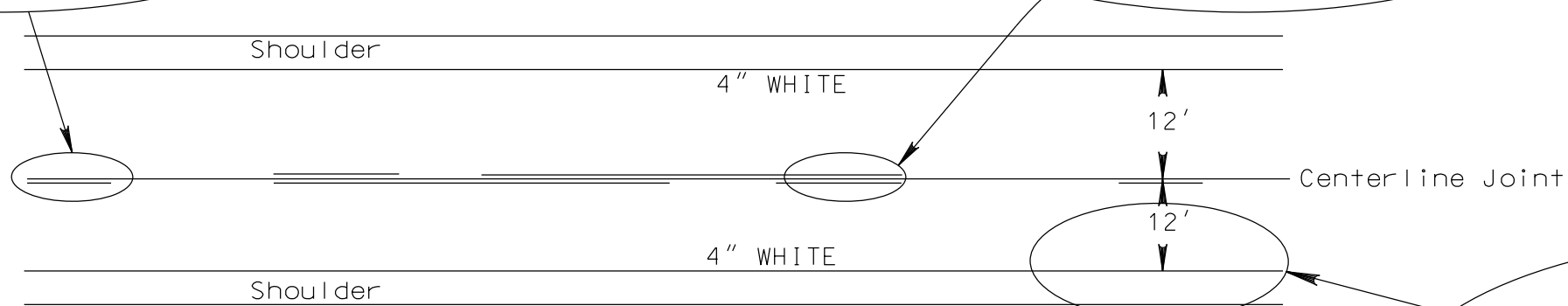
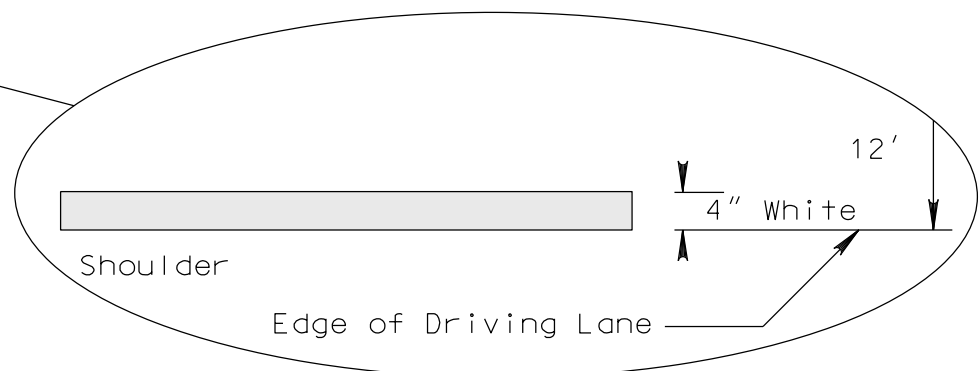
Centerline Detail



NOTE: A TWO "GUN" SYSTEM WILL BE USED TO OBTAIN THIS PATTERN.

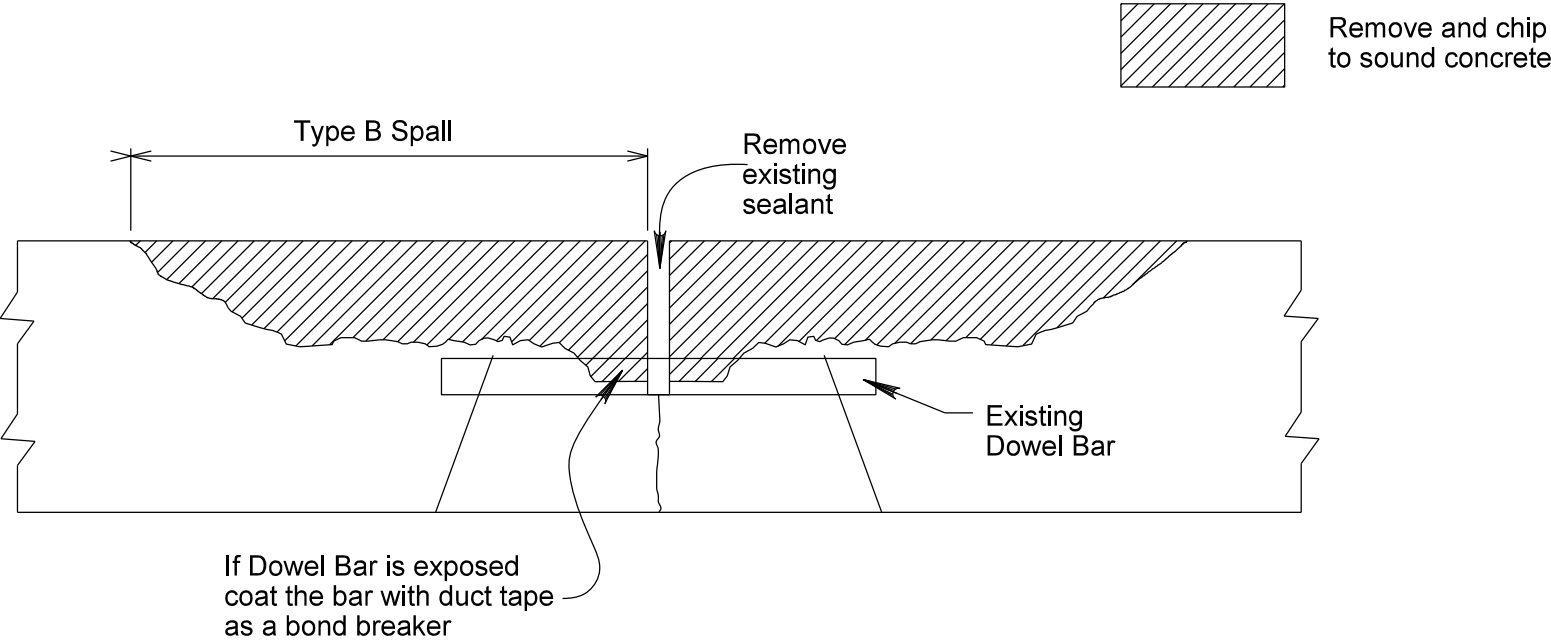
WHEN A SINGLE SKIP LINE EXISTS, THE SKIP WILL BE PLACED TO THE SOUTH OR EAST OF THE CENTERLINE JOINT.

Centerline Detail

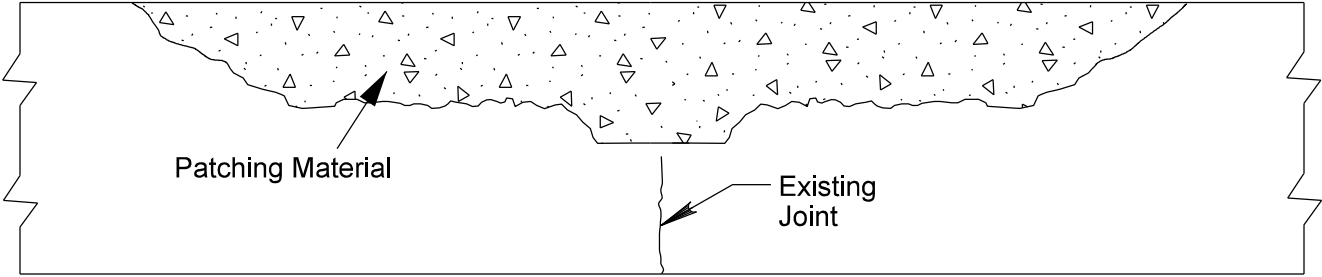


REPAIR OF TYPE B SPALLS

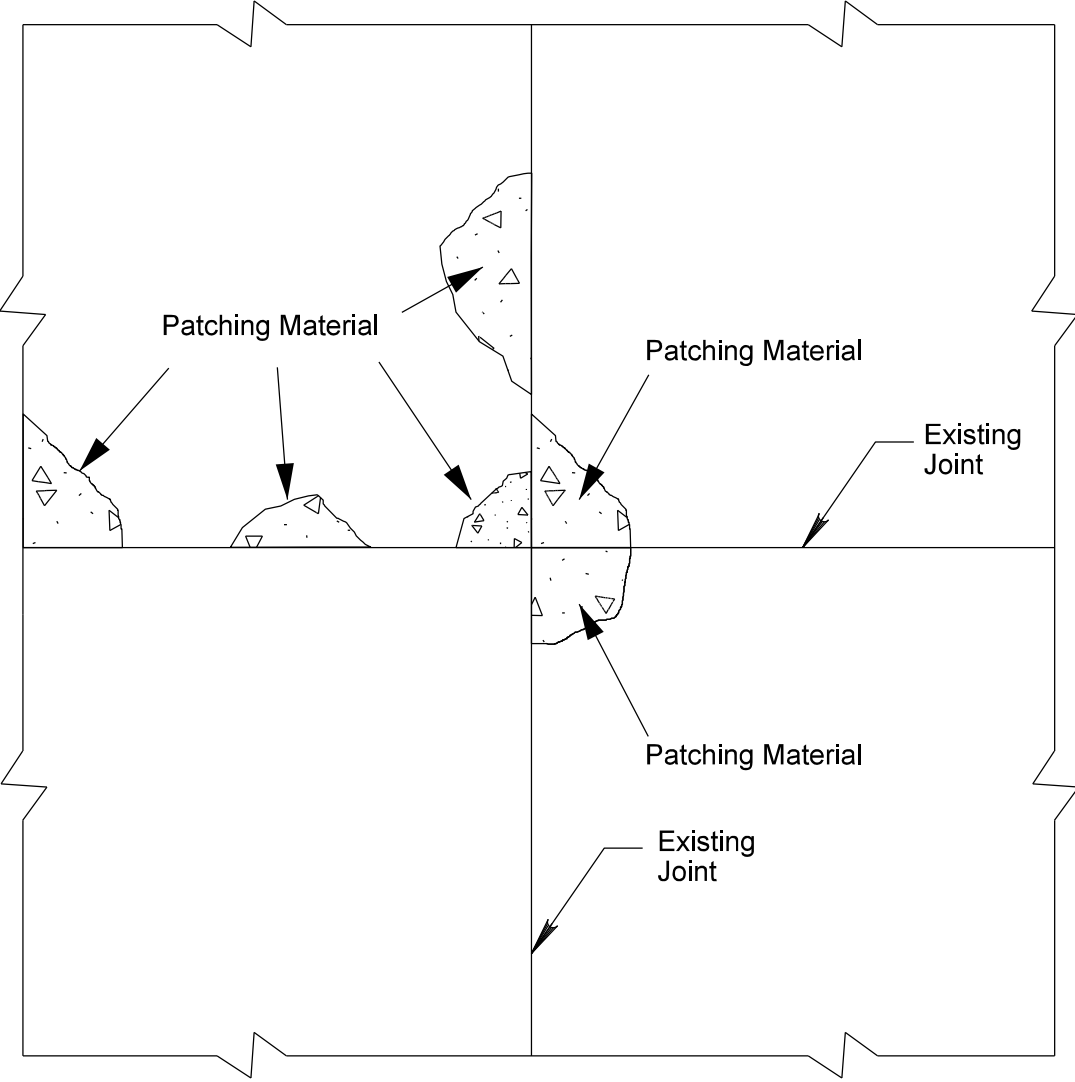
SPALL REMOVAL

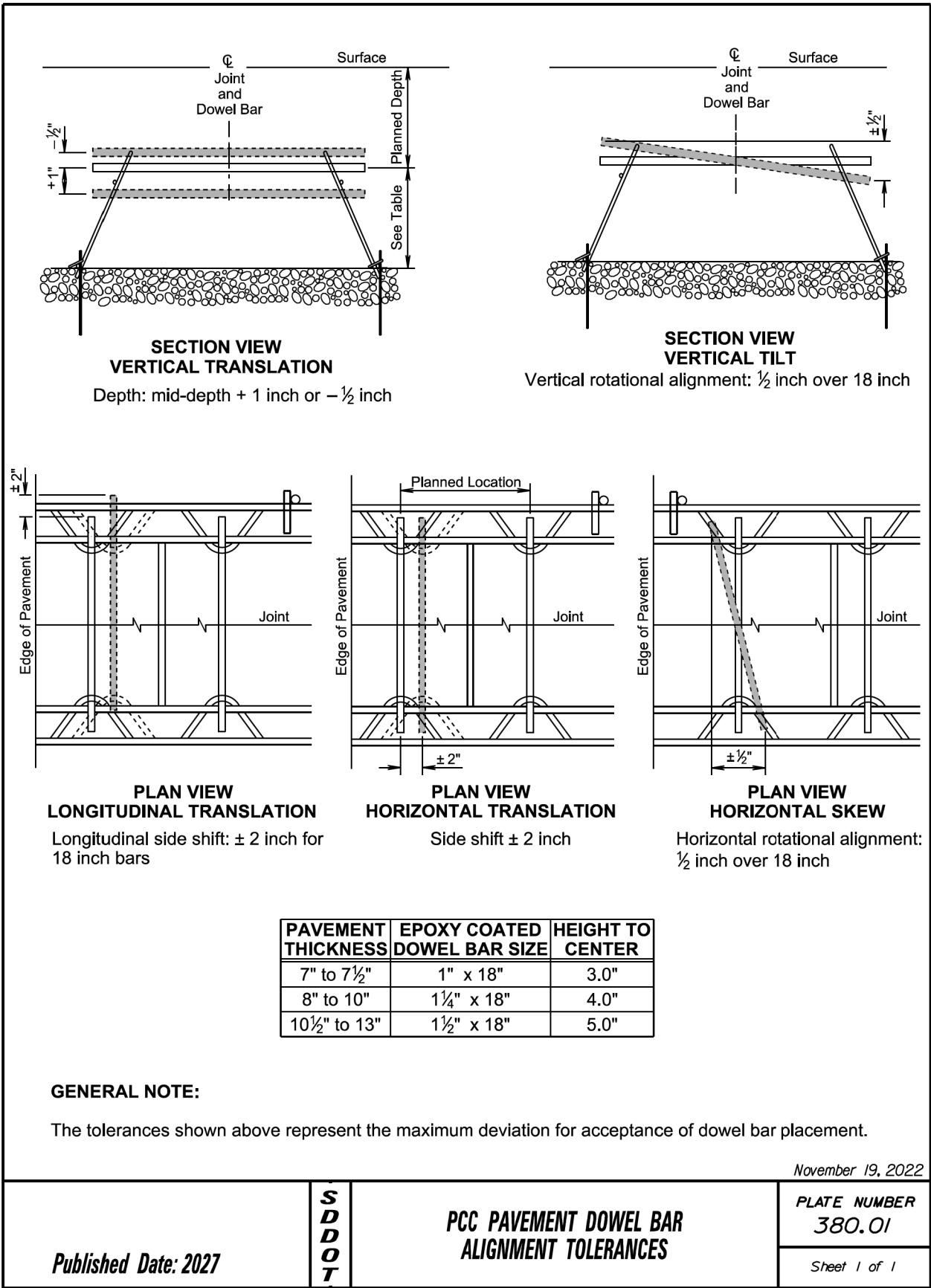


SPALL PATCH

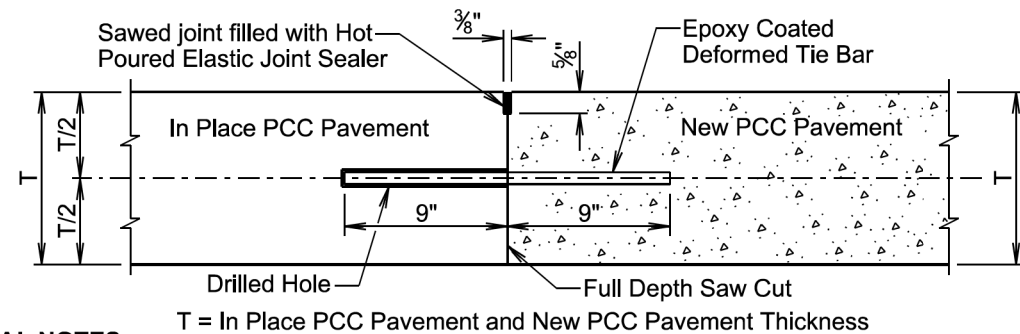


SPALL PATCHES (PLAN VIEW)





DETAIL A
TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS



GENERAL NOTES:

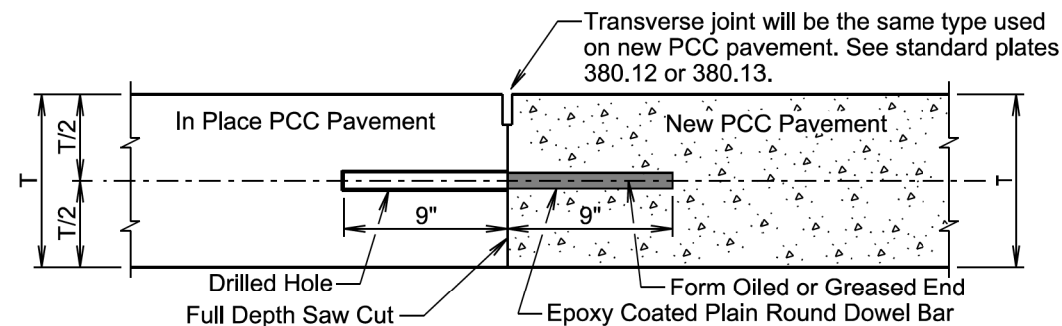
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

See sheet 2 of 2 of this standard plate to determine if Detail A will be used.

The tie bars will be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive or a non-shrink grout.

No. 9 epoxy coated deformed tie bars will be used in 10 inch thickness and less PCC Pavement and No. 11 epoxy coated deformed tie bars will be used in 10.5 inch thickness and greater PCC Pavement. The tie bar spacing will be 18 inches center to center and will be a minimum of 3 inches and a maximum of 9 inches from the pavement edges.

DETAIL B
TRANSVERSE CONSTRUCTION JOINT WITH DOWEL BARS



GENERAL NOTES:

T = In Place PCC Pavement and New PCC Pavement Thickness

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

See sheet 2 of 2 of this standard plate to determine if Detail B will be used.

The plain round dowel bars will be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive or a non-shrink grout.

The epoxy coated plain round dowel bar size, number, and spacing will be the same as detailed on the corresponding dowel bar assembly standard plate (380.04, 380.05, 380.06, or 380.07). The epoxy coated plain round dowel bars will be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

January 22, 2023

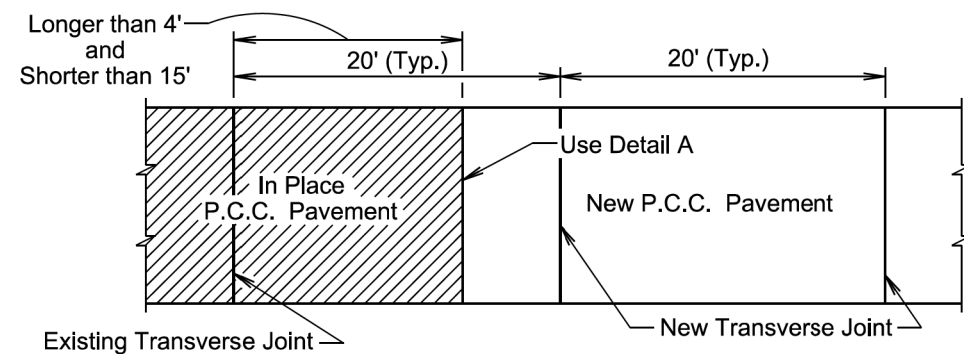
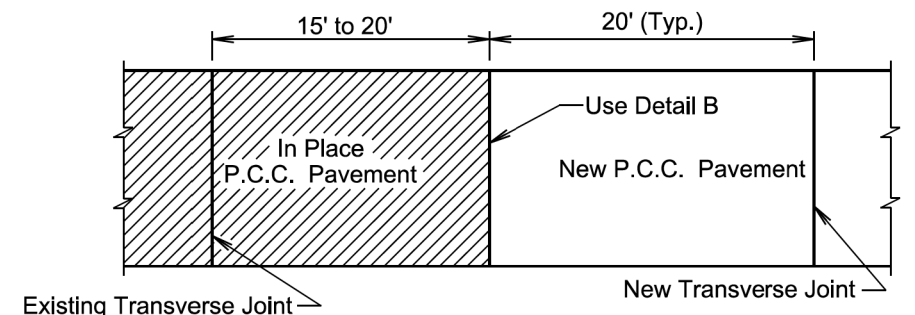
Published Date: 2027

S
D
D
O
T

**PCC PAVEMENT TRANSVERSE CONSTRUCTION
JOINTS WITH TIE BARS OR DOWEL BARS**

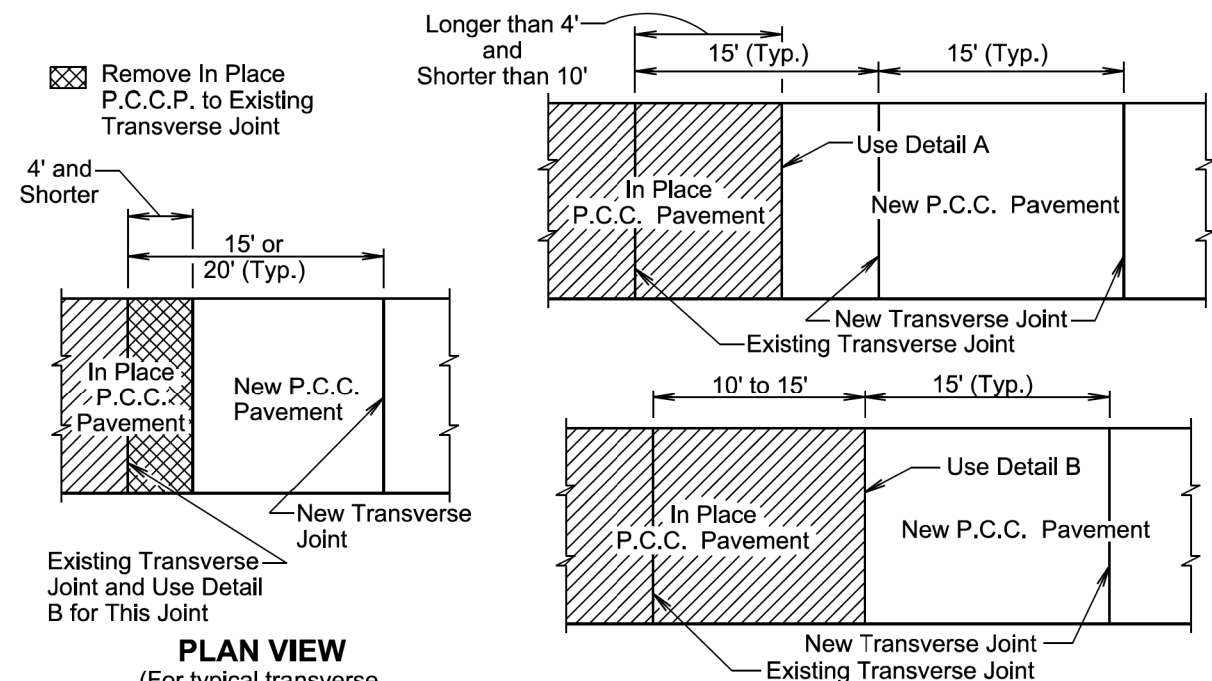
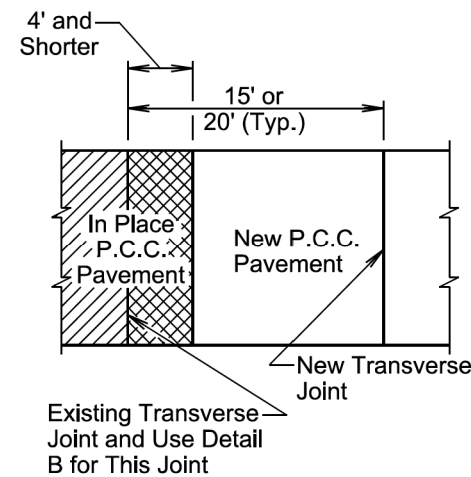
PLATE NUMBER
380.15

Sheet 1 of 2



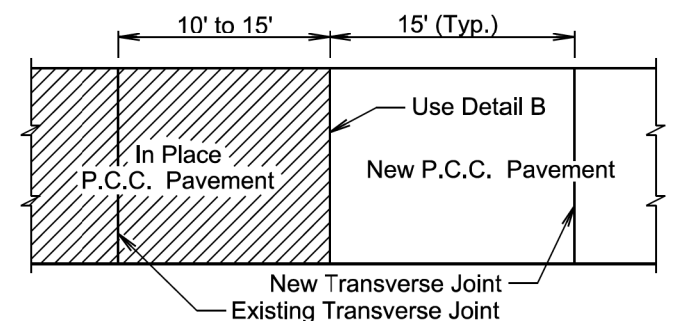
PLAN VIEW

(For typical transverse joint spacing of 20' on the current project)



PLAN VIEW

(For typical transverse joint spacing of 15' or 20' on the current project)



PLAN VIEW

(For typical transverse joint spacing of 15' on the current project)

January 22, 2023

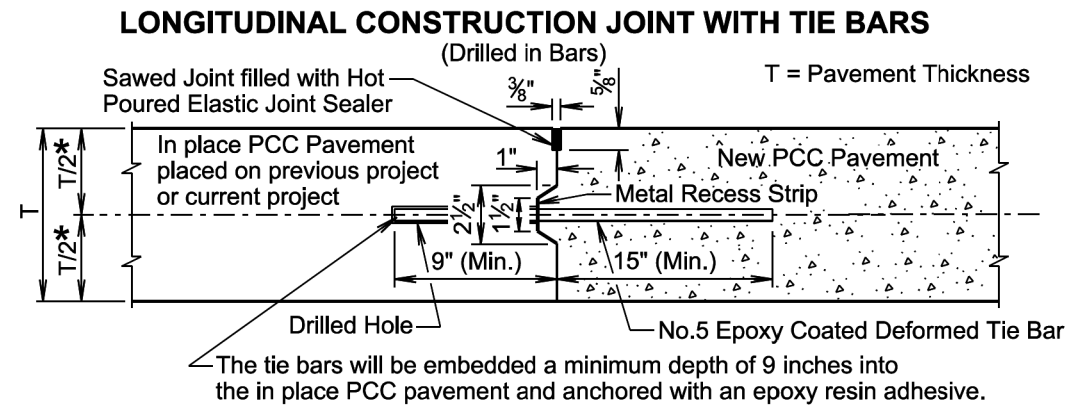
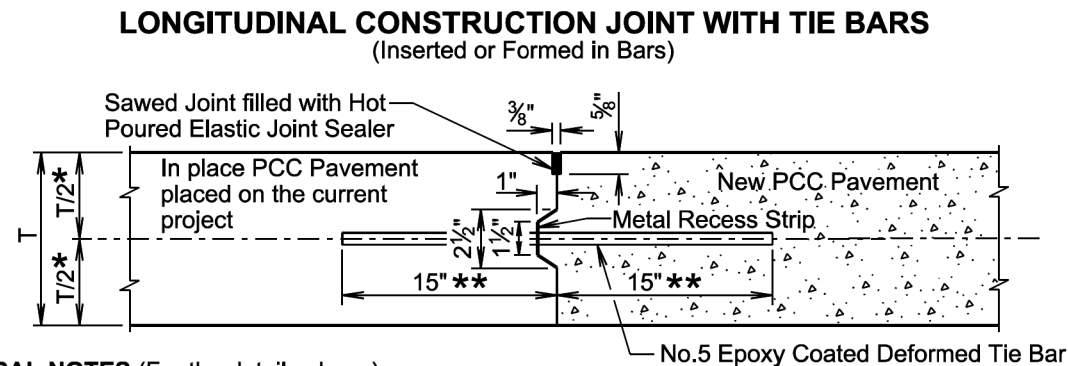
Published Date: 2027

S
D
D
O
T

**PCC PAVEMENT TRANSVERSE CONSTRUCTION
JOINTS WITH TIE BARS OR DOWEL BARS**

PLATE NUMBER
380.15

Sheet 2 of 2



GENERAL NOTES (For the details above):

The epoxy coated deformed tie bars will be spaced in accordance with the following tables:

TIE BAR SPACING 48" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

TIE BAR SPACING 30" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
5' to 7'	2
7.5' to 9.5'	3
10' to 12'	4
12.5' to 14.5'	5
15' to 17'	6
17.5' to 19.5'	7
20' to 22'	8

The tie bars will be placed a minimum of 15 inches from transverse contraction joints.

The required number of tie bars as shown in the table will be uniformly spaced within each panel. The uniformly spaced tie bars will be spaced a maximum of 48 inches center to center for a female keyway and will be spaced a maximum of 30 inches center to center for a vertical face and male keyway. The maximum tie bar spacing will apply to tie bars within each panel.

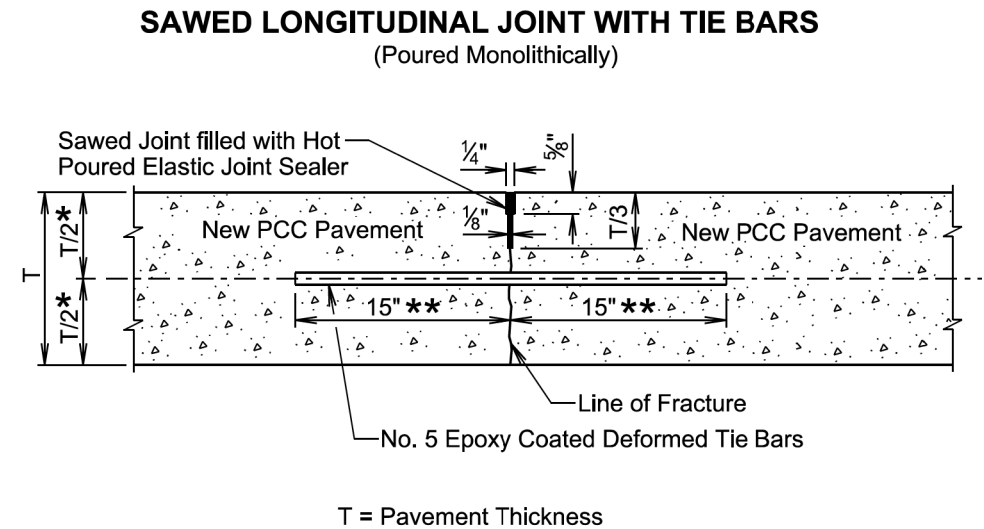
The keyway illustrated in the above details depict a female keyway.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip will be used. When concrete pavement is slip formed, a metal recess strip is not required.

- * The vertical placement tolerance for any part of the tie bar will be $\pm T/6$.
- ** The transverse placement (side shift) tolerance will be ± 3 inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2027	S D D O T	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 1 of 2



GENERAL NOTES (For the detail above):

The epoxy coated deformed tie bars will be spaced in accordance with the following table:

TIE BAR SPACING 48" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

The tie bars will be placed a minimum of 15 inches from the transverse contraction joints.

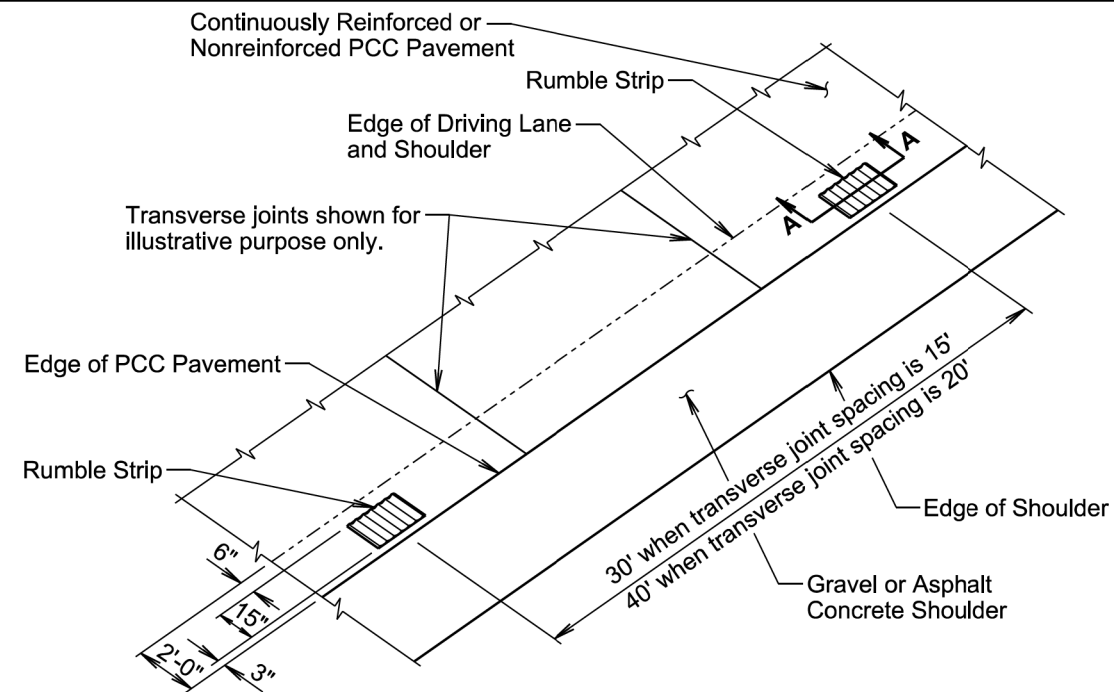
The required number of tie bars as shown in the table will be uniformly spaced within each panel with a maximum space of 48 inches center to center. The maximum tie bar spacing will apply to tie bars within each panel.

The first saw cut to control cracking will be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer is necessary.

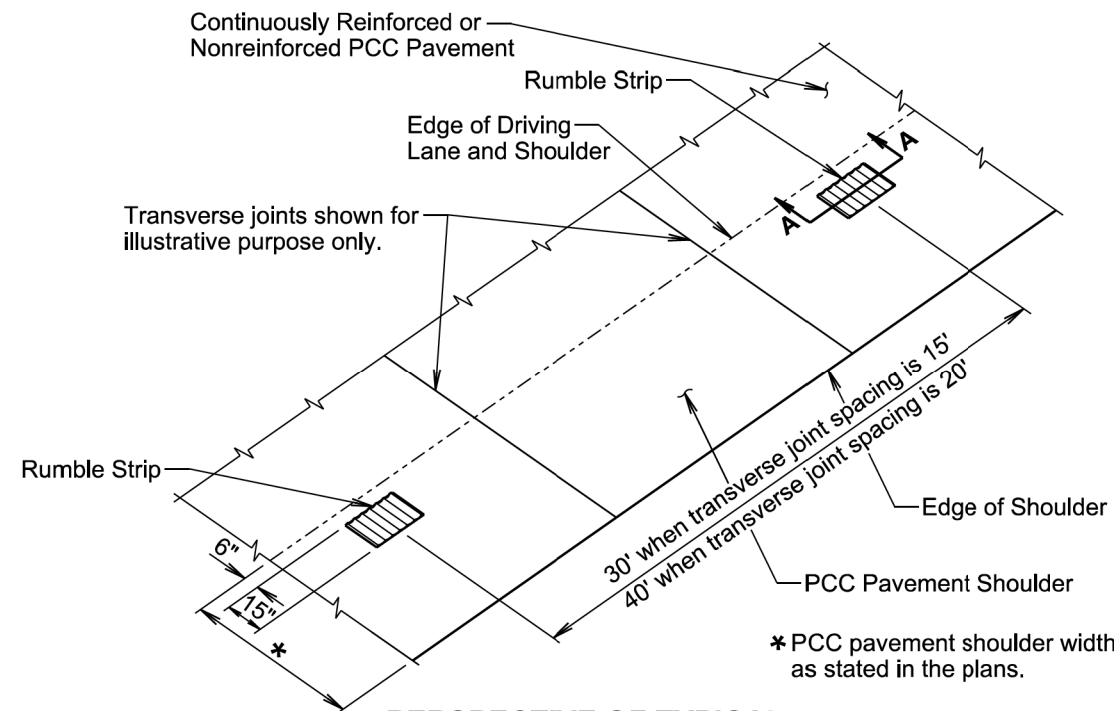
- * The vertical placement tolerance for any part of the tie bar will be $\pm T/6$.
- ** The transverse placement (side shift) tolerance will be ± 3 inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2027	S D D O T	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 2 of 2



PERSPECTIVE OF TYPICAL RUMBLE STRIPS ON PCC PAVEMENT SHOULDER ADJACENT TO GRAVEL OR ASPHALT CONCRETE SHOULDER



PERSPECTIVE OF TYPICAL RUMBLE STRIPS ON PCC PAVEMENT SHOULDER

November 19, 2022

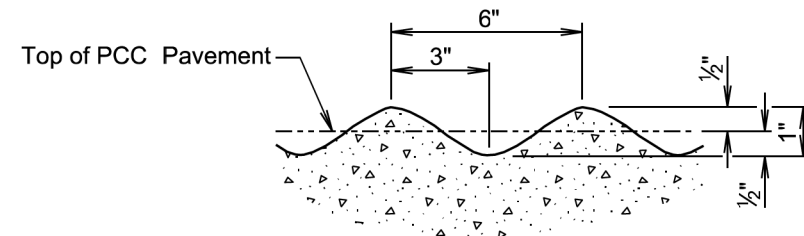
Published Date: 2027

S
D
D
O
T

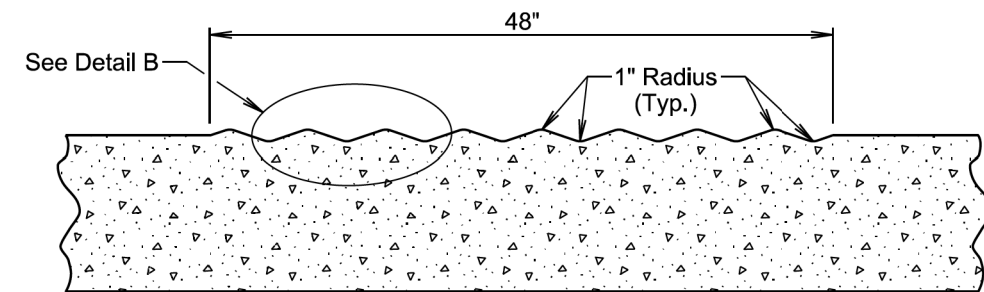
**RUMBLE STRIP ON
PCC PAVEMENT SHOULDER**

PLATE NUMBER
380.53

Sheet 1 of 2



DETAIL B



SECTION A-A

GENERAL NOTES:

The rumble strips will be evenly spaced and will not coincide with any transverse contraction joints.

The rumble strips will NOT be placed along areas adjacent to entrance ramps, exit ramps, and gore areas.

Payment for constructing the PCC Pavement Rumble Strips will be incidental to the contract unit price per square yard for the corresponding PCC Pavement contract item.

November 19, 2022

Published Date: 2027

S
D
D
O
T

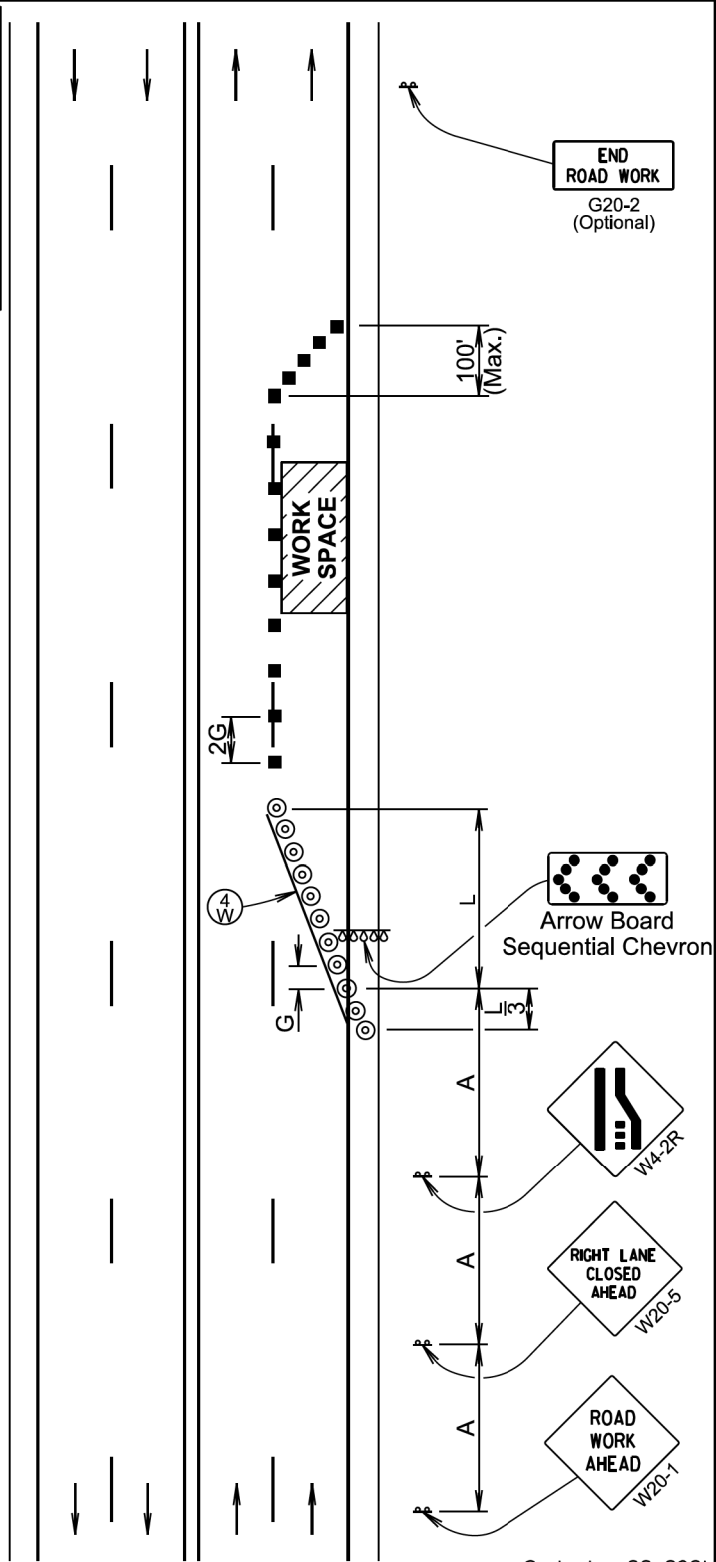
**RUMBLE STRIP ON
PCC PAVEMENT SHOULDER**

PLATE NUMBER
380.53

Sheet 2 of 2

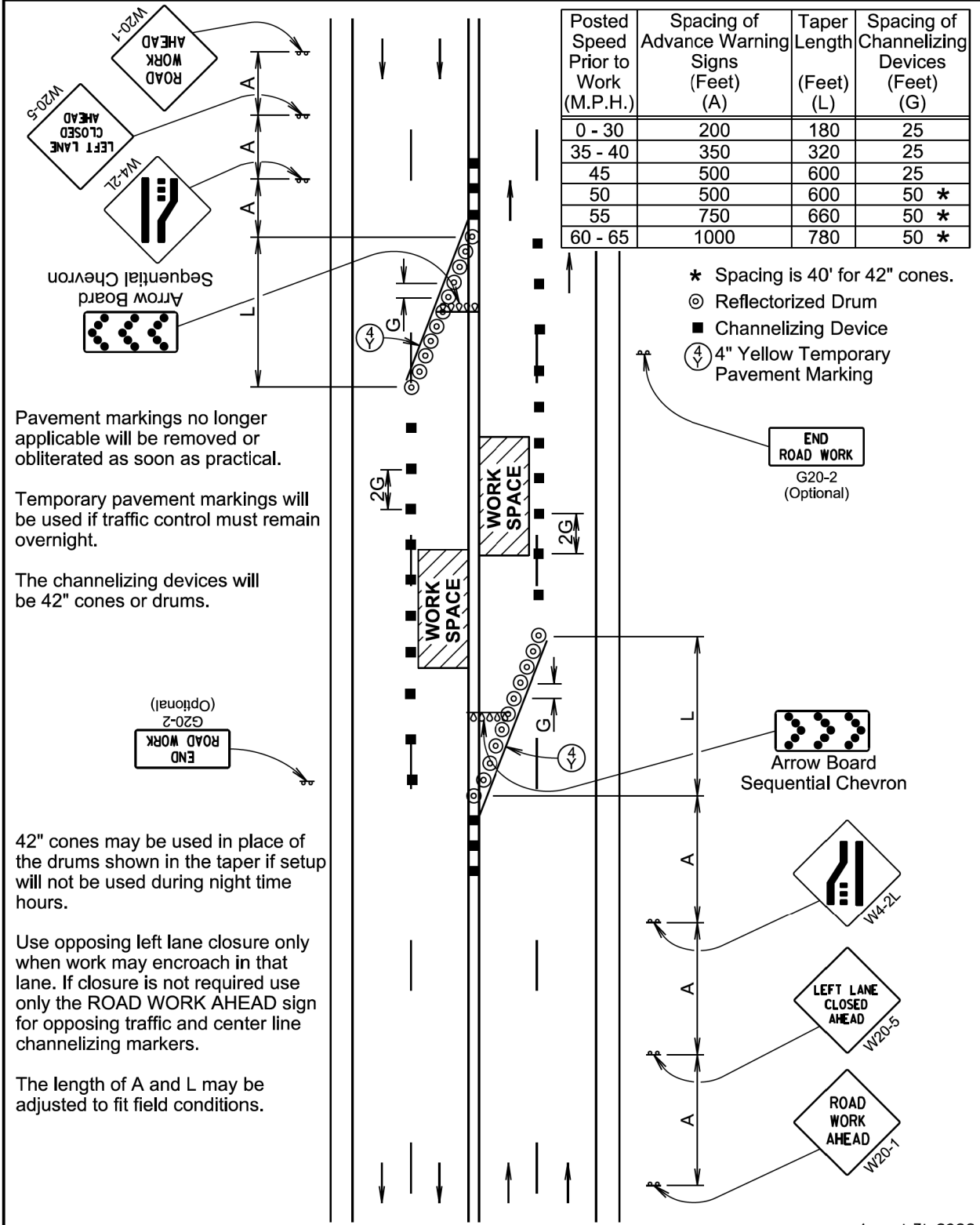
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50 *
55	750	660	50 *
60 - 65	1000	780	50 *

- * Spacing is 40' for 42" cones.
- ⊙ Reflectorized Drum
- Channelizing Device
- Ⓦ 4" White Temporary Pavement Marking
- 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.
- Temporary pavement markings will be used if traffic control must remain overnight.
- The length of A and L may be adjusted to fit field conditions.



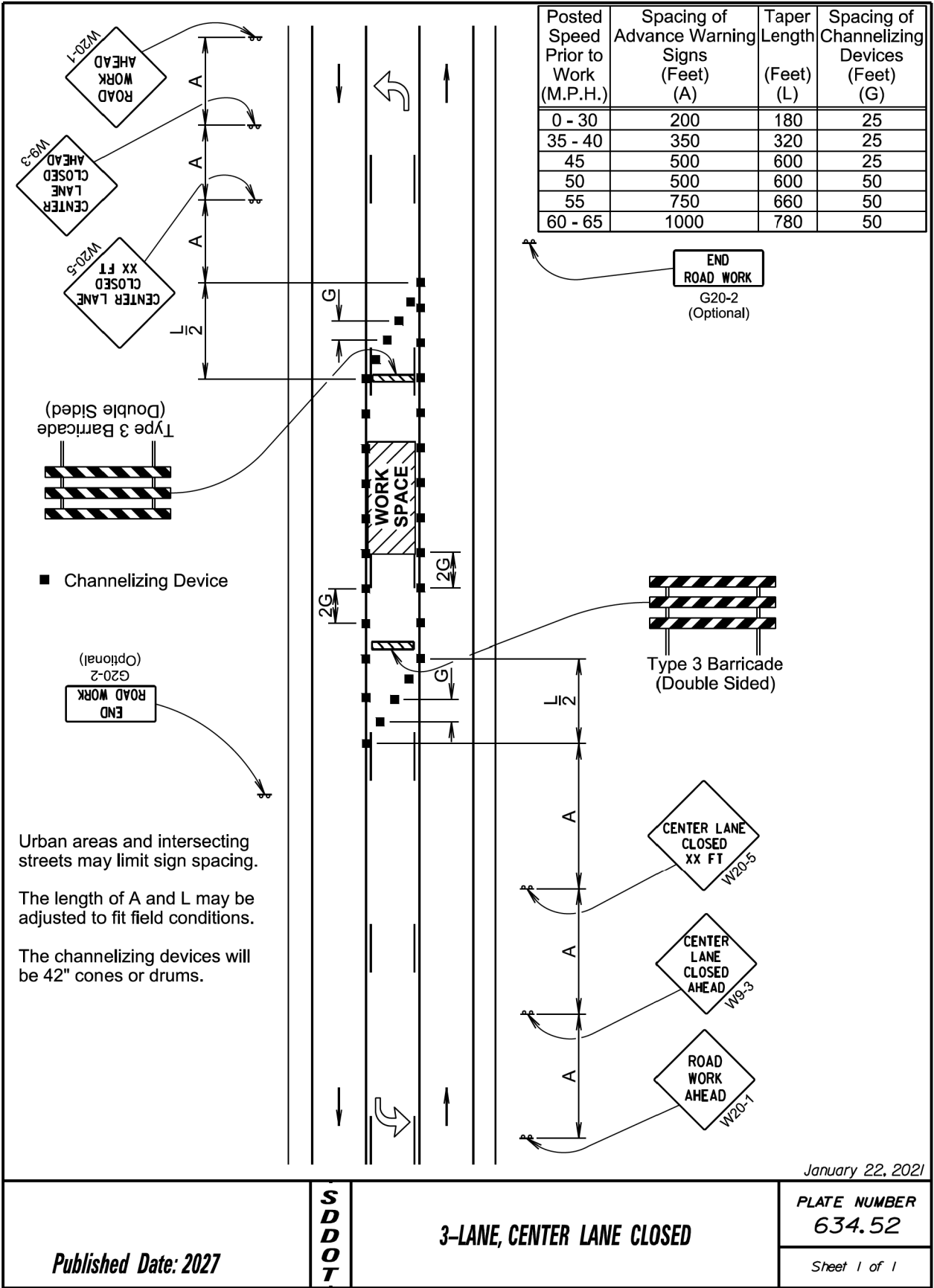
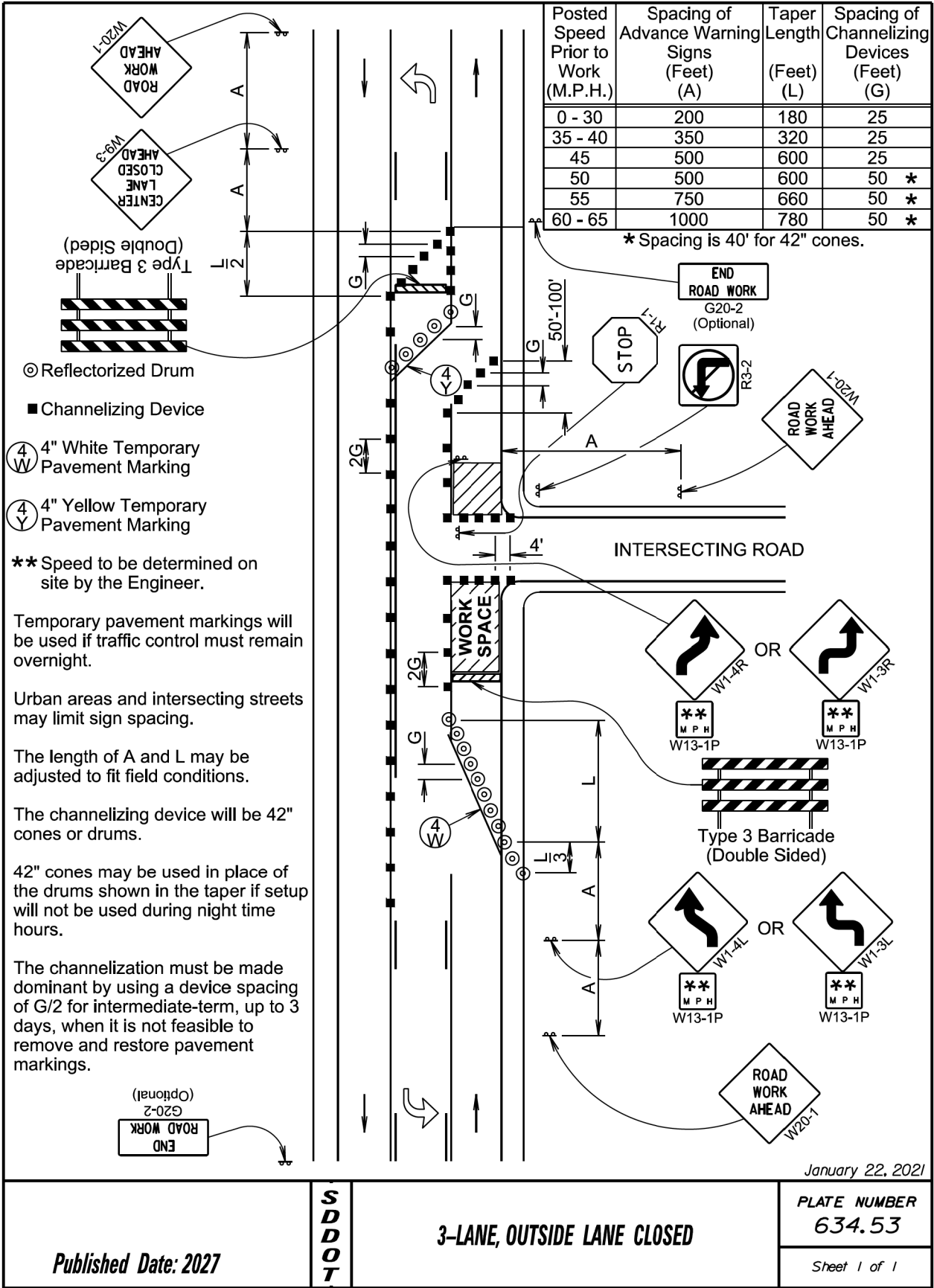
September 22, 2021

Published Date: 2027	S D D O T	4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER 634.47
			Sheet 1 of 1



August 31, 2022

Published Date: 2027	S D D O T	4-LANE UNDIVIDED, LEFT LANE CLOSED	PLATE NUMBER 634.48
			Sheet 1 of 1



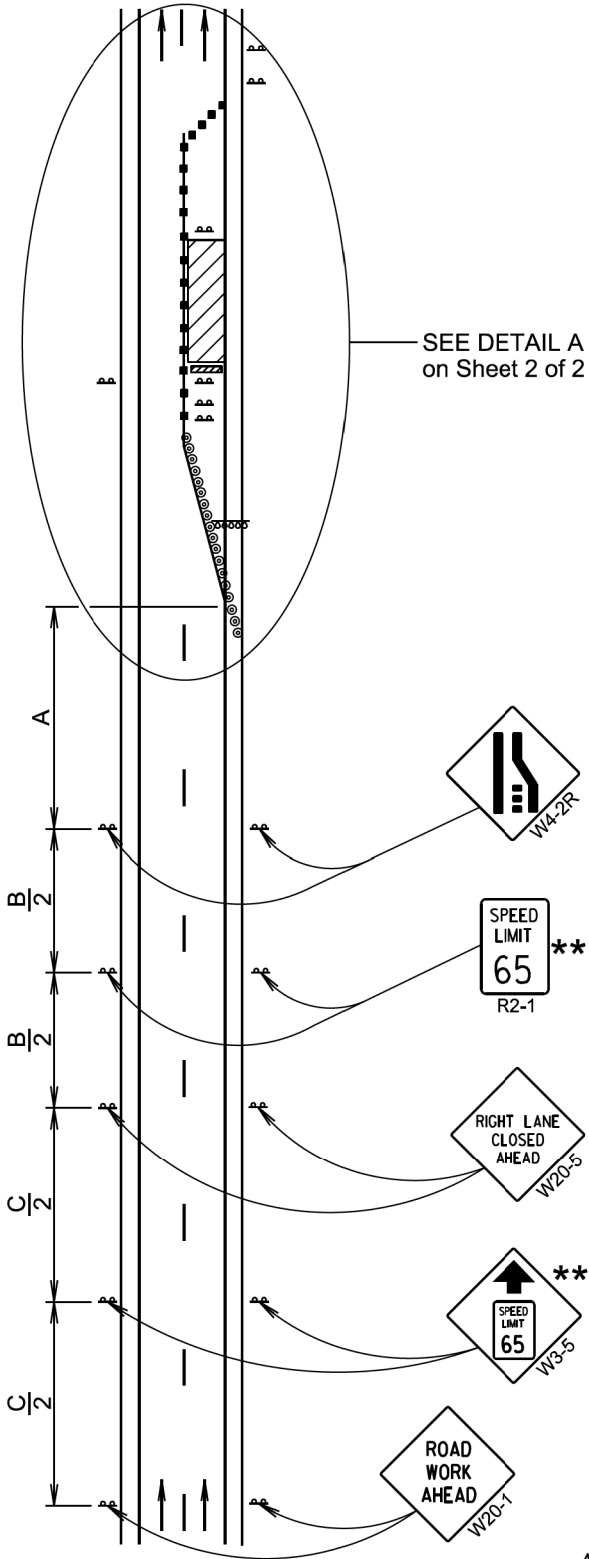
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)		
	(A)	(B)	(C)
0 - 30	200		
35 - 40	350		
45 - 50	500		
55	750		
60 - 65	1000		
	(A)	(B)	(C)
70 - 80	1000	1500	2640

** Speed appropriate for location.

- ◉ Reflectorized Drum
- Channelizing Device

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

High speed is defined as having a posted speed limit greater than 45 mph.



April 8, 2025

Published Date: 2027

S
D
D
O
T

WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS

PLATE NUMBER
634.63

Sheet 1 of 2

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)
0 - 30	25	180
35 - 40	25	320
45	25	600
50	50 *	600
55	50 *	660
60 - 65	50 *	780
70 - 80	50 *	960

* Spacing is 40' for 42" cones.

** Speed appropriate for location.

*** Use speed limit designated for the condition when workers are present in the work space. Signs will be covered or removed when workers are not present.

◉ Reflectorized Drum

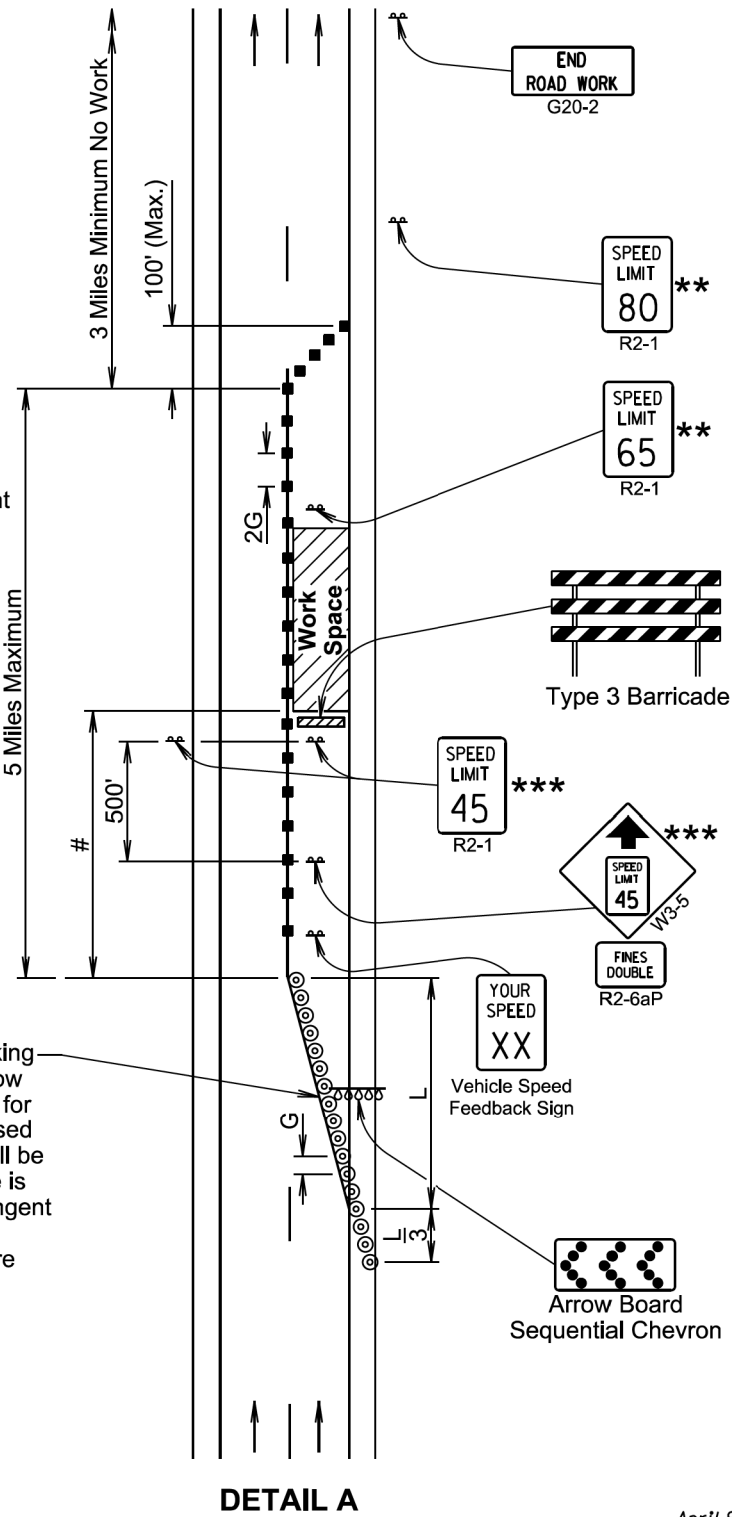
■ Channelizing Device

The Work Space will be a minimum of 500' from the end of the taper.

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.

4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary raised pavement markers at 5' spacing will be installed in the taper when the lane is closed overnight, and along the tangent section where the skip lines do not exist and the lane is closed for more than 3 days.



DETAIL A

April 8, 2025

Published Date: 2027

S
D
D
O
T

WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS

PLATE NUMBER
634.63

Sheet 2 of 2

