

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	048-291	1	8

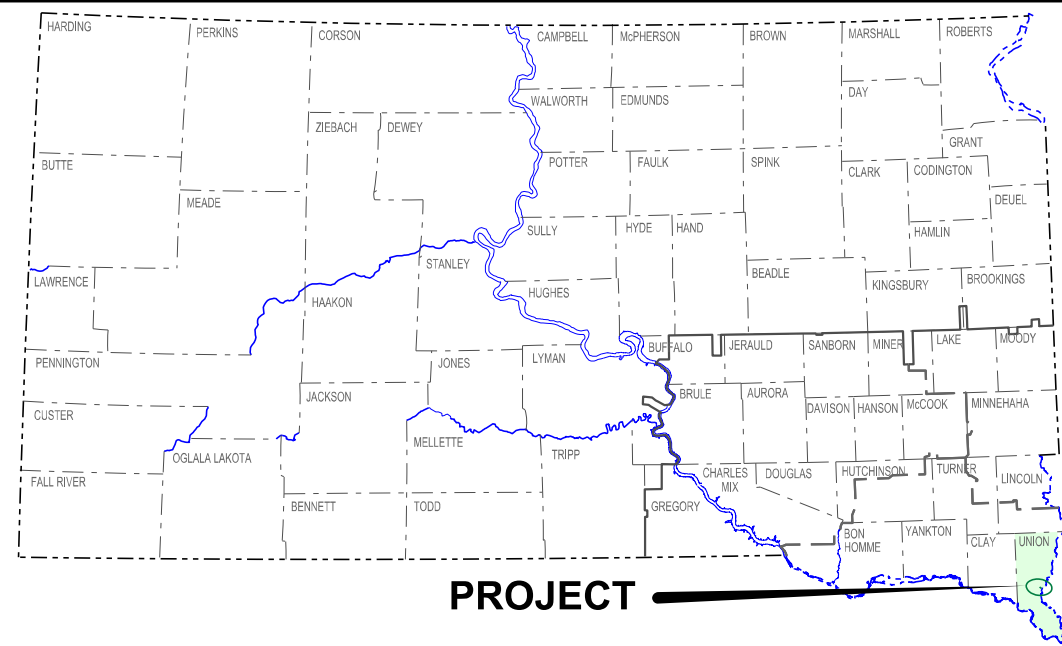
Plotting Date: 08/01/2019

PLANS FOR PROPOSED  
**PROJECT 048-291**  
**SD HIGHWAY 48**  
**UNION COUNTY**  
SURFACING FLOOD DAMAGED AREA  
FROM MRM 383.54 TO MRM 384.02  
PCN I5T2

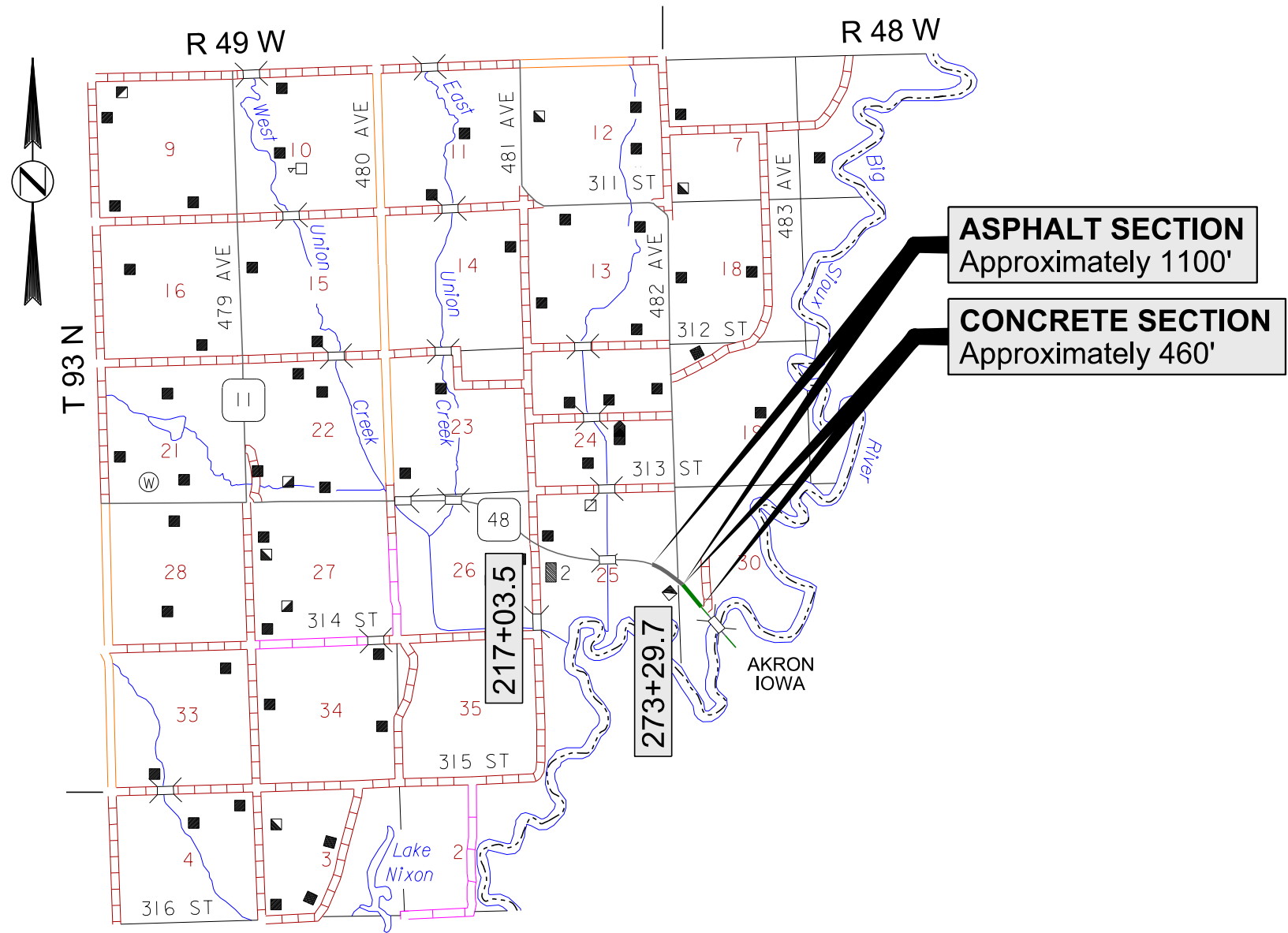
**INDEX OF SHEETS**

Sheet 1	Layout Map & Index of Sheets
Sheet 2	Estimate of Quantities & Environmental Commitments
Sheets 3 & 4	Existing Typical Sections
Sheet 5	Plan Notes
Sheets 6-8	Standard Plates

PLOT SCALE - 1"=8400'



**PROJECT**



**DESIGN DESIGNATION**

ADT(2017)	1,029
ADT(2037)	1,388
DHV	172
D	52%
T DHV	10.3%
T ADT	22.7%
V SD48	65 MPH
V (Iowa)	45 MPH

**STORM WATER PERMIT**  
(None required)

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# ESTIMATE OF QUANTITIES & ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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## ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	675	Ton
380E0070	9" Nonreinforced PCC Pavement	1080	SqYd
380E6000	Dowel Bar	480	Each
380E6110	Insert Steel Bar in PCC Pavement	170	Each

## 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. 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: <http://www.sddot.com/resources/Manuals/EnvironProcManual.pdf>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

## 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 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 Environment 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 completely 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 of time 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.

Cost associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

## COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

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

#### Action Taken/Required:

All earth disturbing activities 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 of 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 will immediately cease, and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office 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.

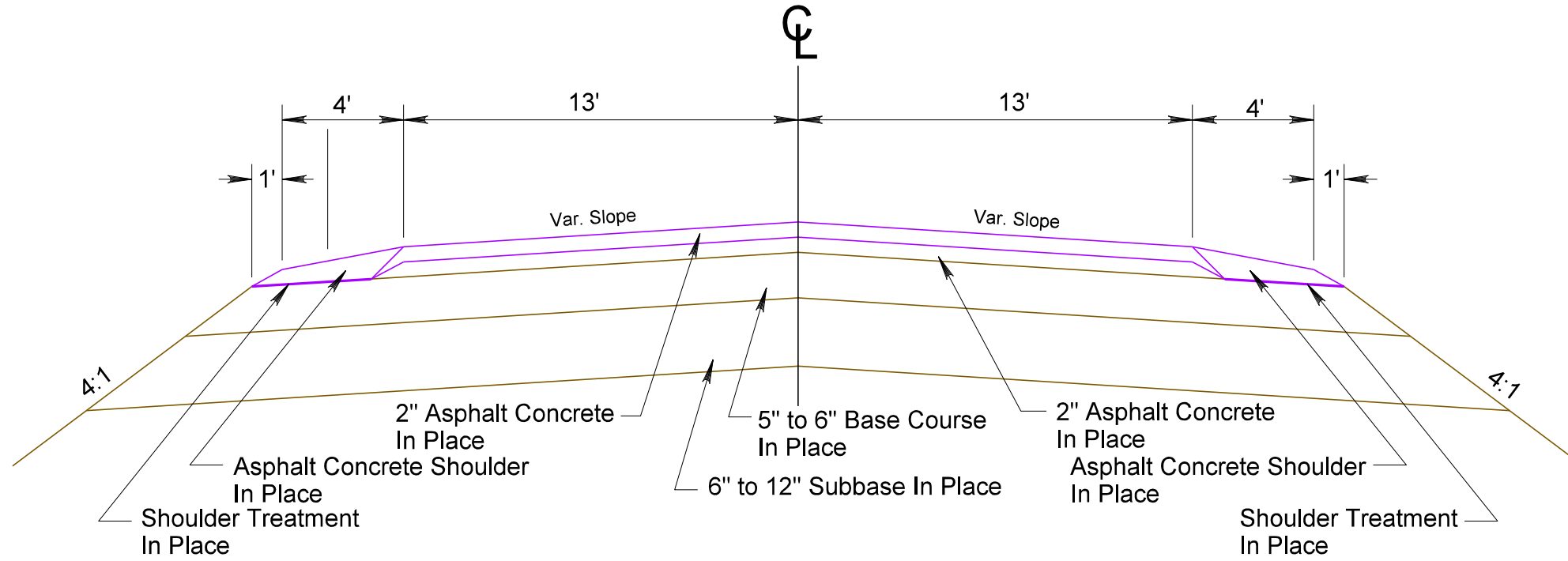
## SPECIFICATIONS

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

# TYPICAL EXISTING ASPHALT CONCRETE SECTION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	048-291	3	8

Plotting Date: 08/01/2019



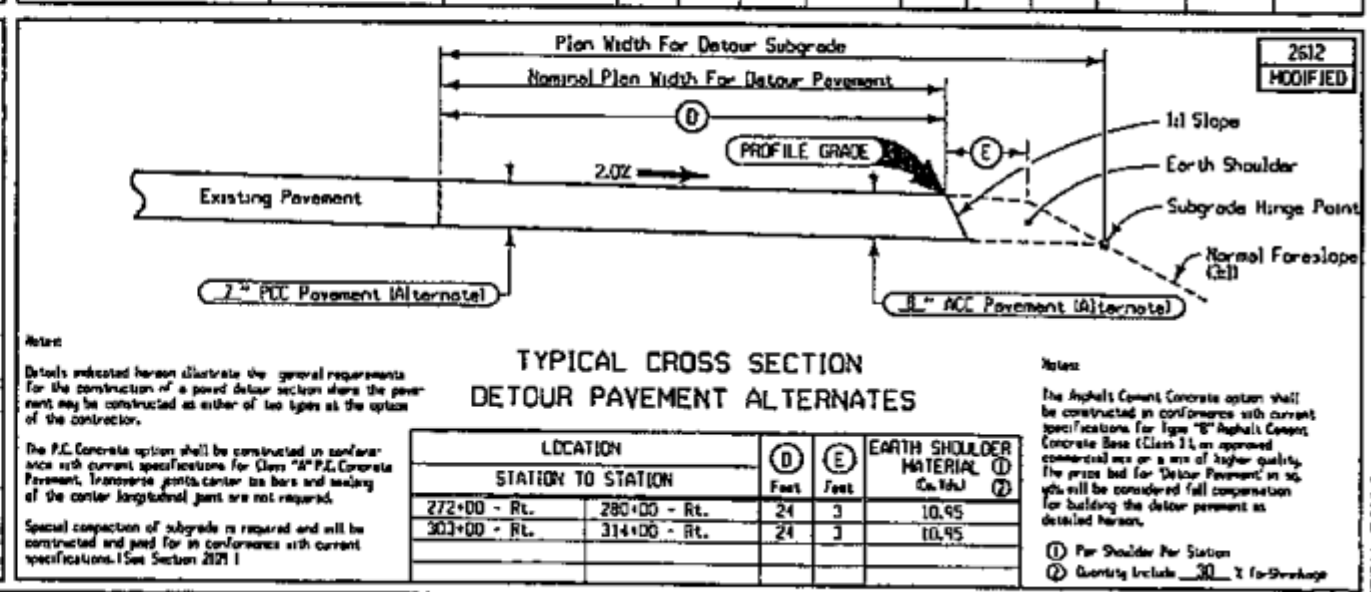
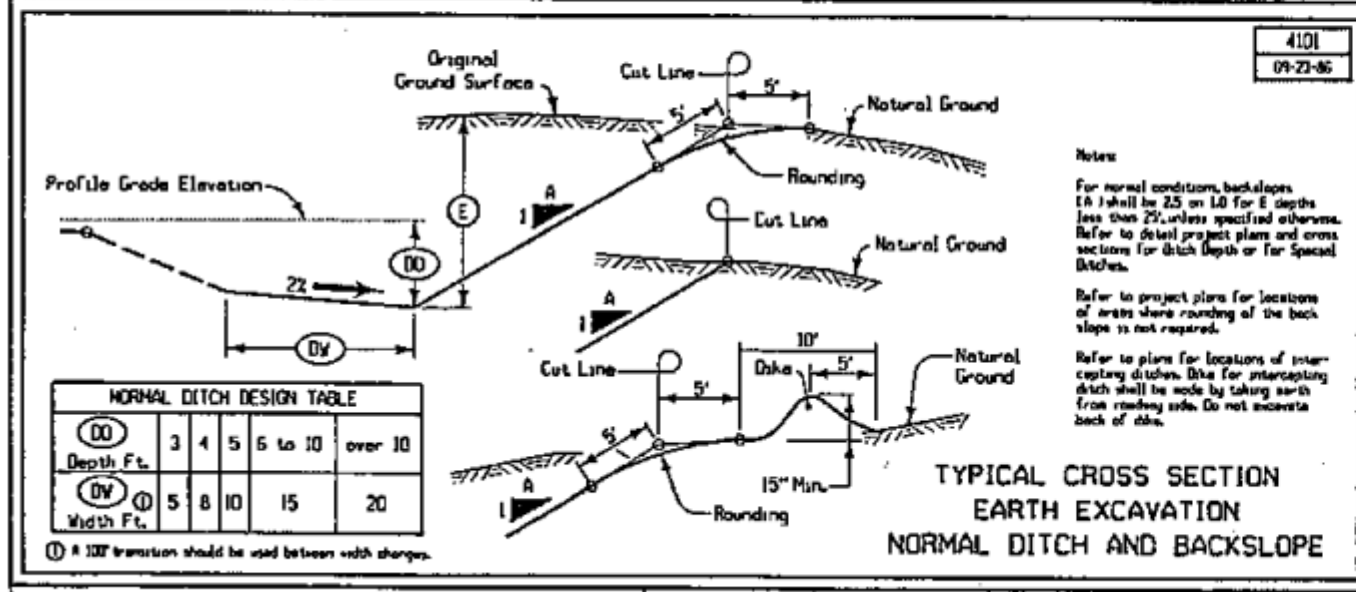
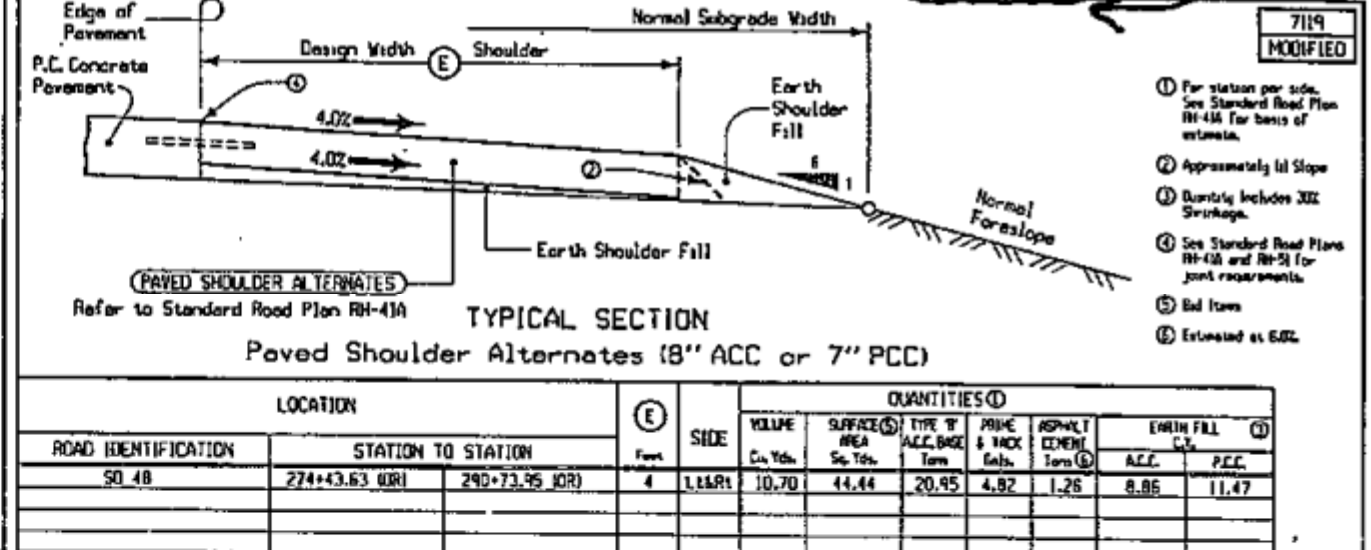
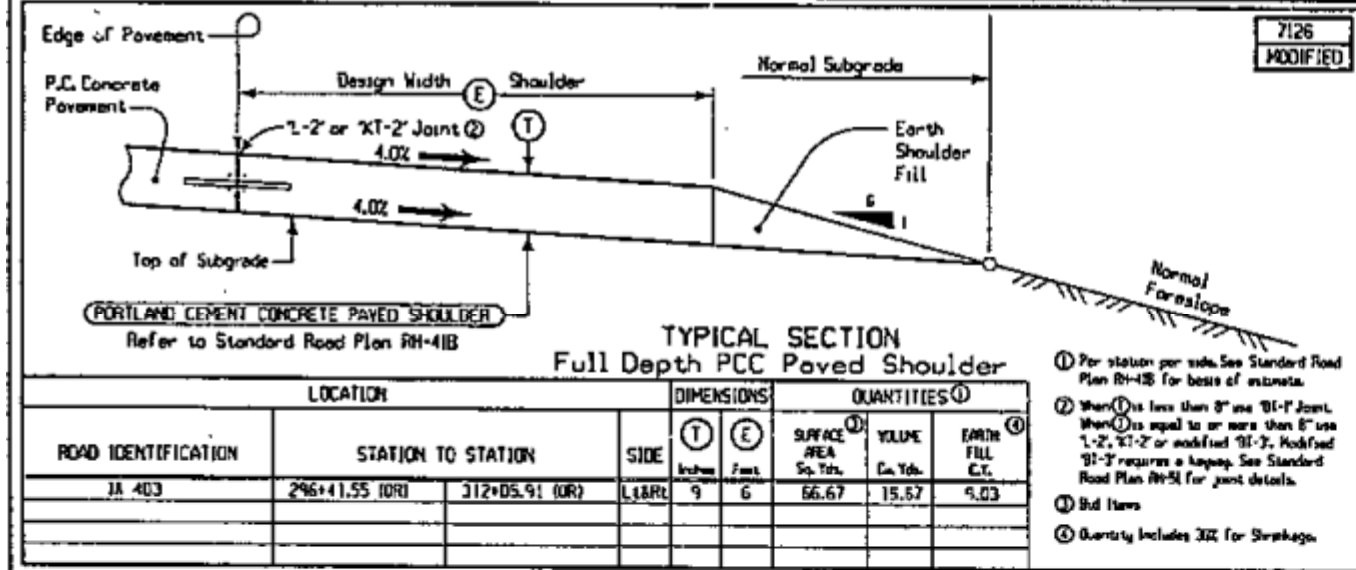
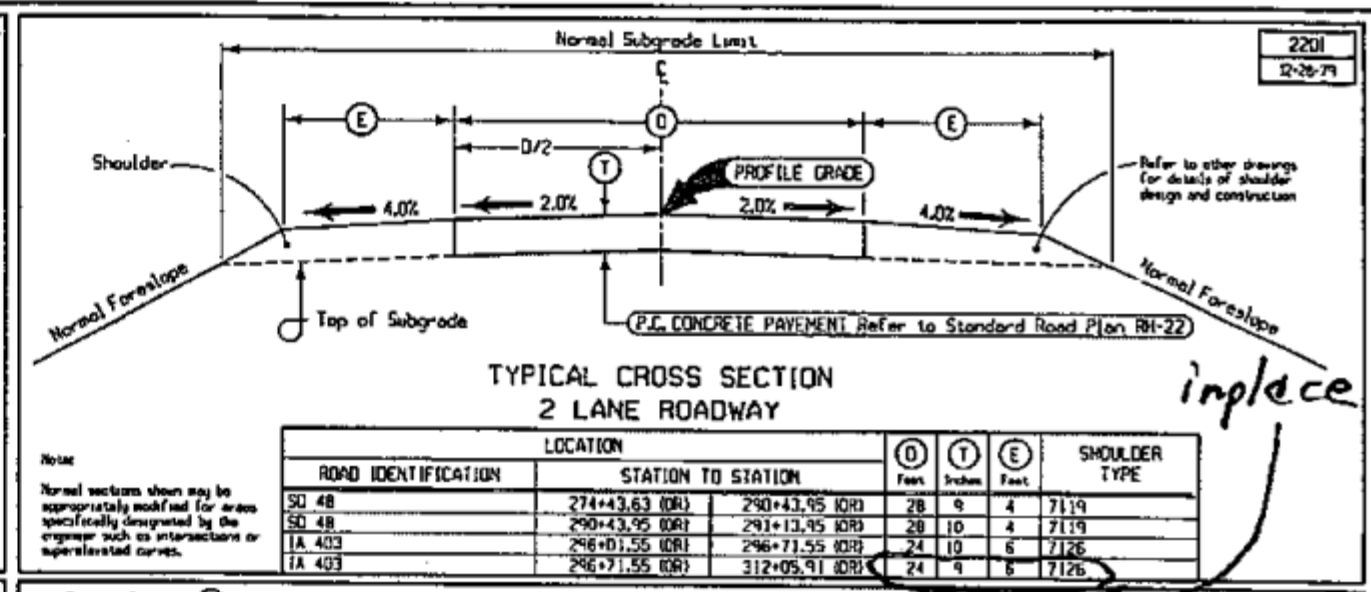
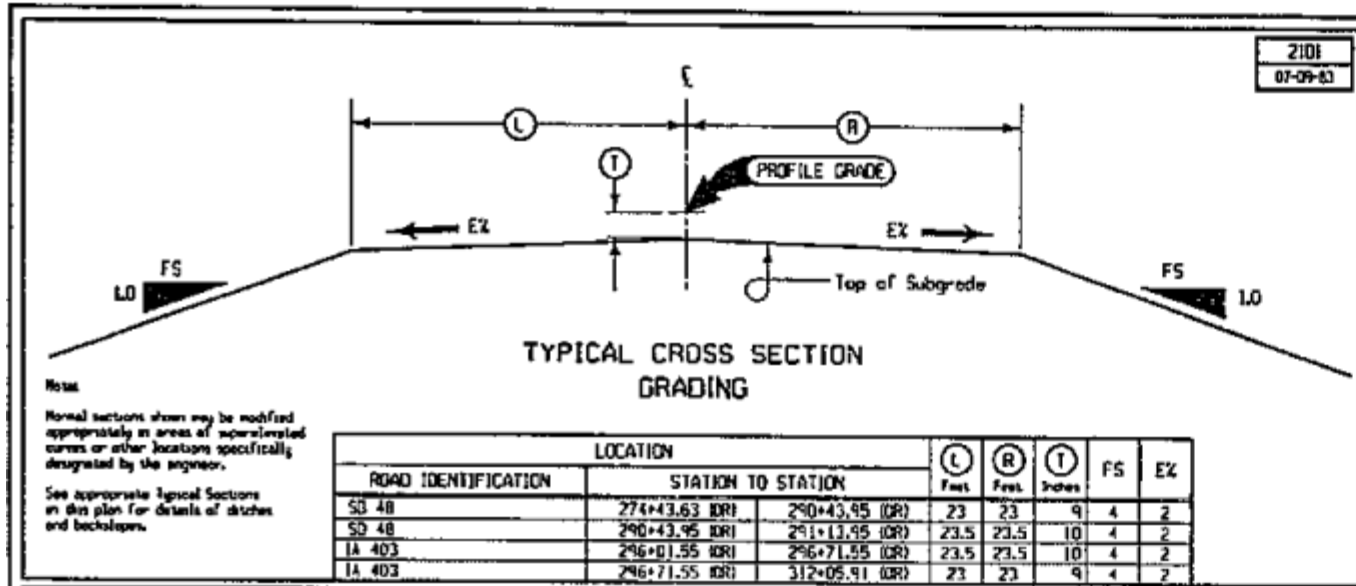
PLOT SCALE - 1:5

PLOT NAME - 1

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# TYPICAL EXISTING CONCRETE SECTION



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	048-291	5	8

**SURFACING THICKNESS DIMENSIONS**

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

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

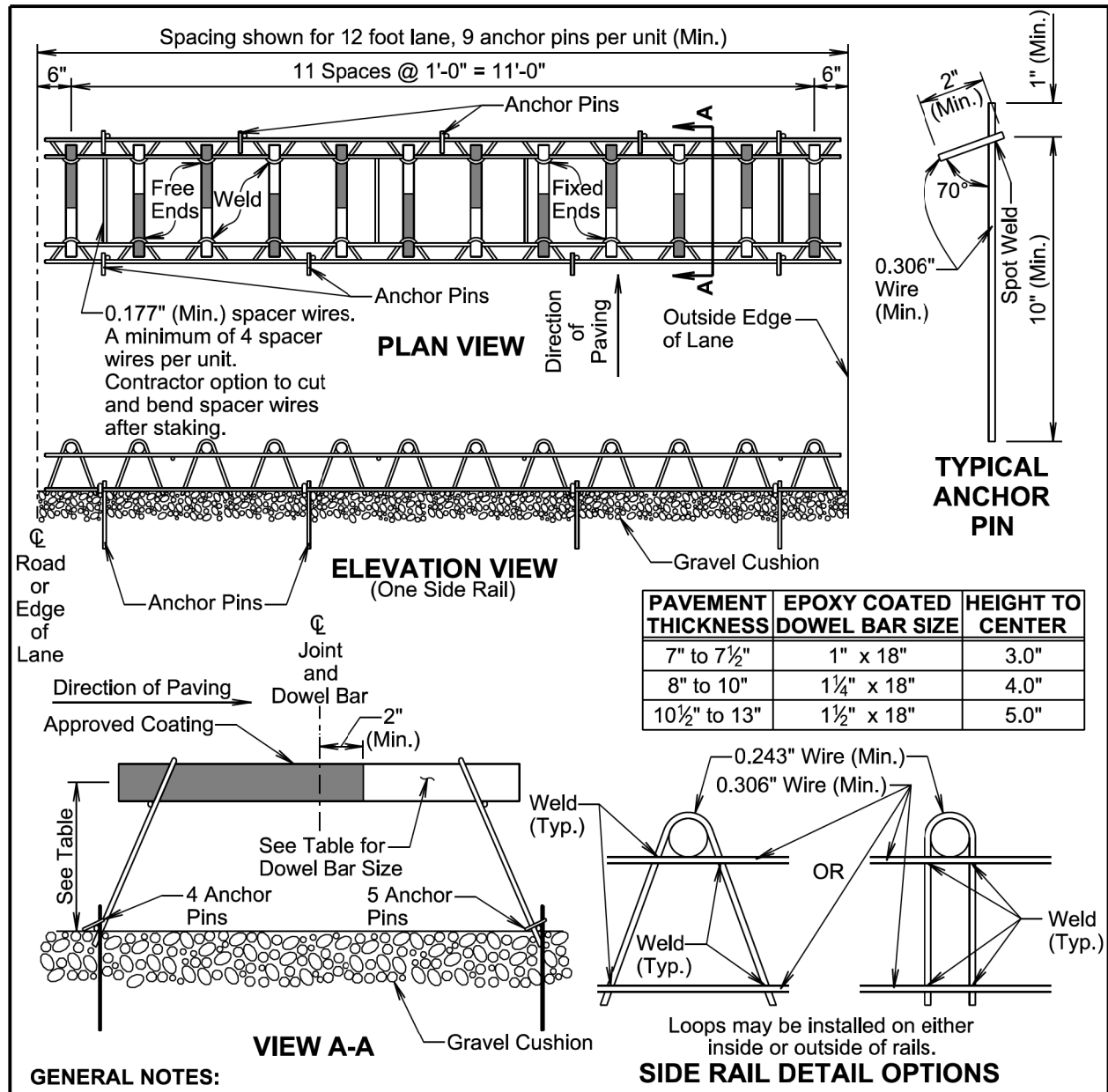
**PROJECT INFORMATION**

The Contractor should visit the site before bidding. Contact the Jct City Maintenance Supervisor to open road to look at site. Contact Jerry Hansen at 605-677-8187 to schedule looking at work site.

There will be no traffic control needed on this contract due to it being a road closed situation.

Cost must include all labor, material and equipment to do the work below:

- The surfacing on the asphalt part of the highway is approximately 1100 feet long. The new surfacing must meet the crown of the existing surfacing. Areas vary in width and shall be paved to the width specified by the Engineer. Most areas will be about 12' wide including the shoulder.
- The asphalt should be placed in 2 lifts - one 3" inch lift and one 2" lift. The slope should meet the existing slopes in place.
- There will also be places where pipe was removed across the entire roadway. Those areas must be resurfaced with 2 lifts of asphalt as stated above.
- Other areas along the north shoulder also will need to be overlaid where the asphalt has peeled off. The old asphalt must be removed. The remaining surface must be cleaned up to the satisfaction of the Engineer. Then the surface must be tacked prior to placing a lift of asphalt on the shoulder. The thickness will vary. The total length of these patches is approximately 100'. No extra payment will be given for the preparation of these areas.
- In the concrete section the in place base may have to be fine graded to get the desired 9" thick concrete as shown in the Typical section. The slope shall meet the in place slope of the concrete.
- The concrete must be placed at widths shown in the typical section. The length of concrete to be placed is approximately 460' where both the driving lane and shoulder is being placed. The area where only the shoulder is being placed is 240'. The width of the concrete is 12' with a 6' shoulder which can be placed at the same time. The 6' shoulder must be tied with tie bars as shown in the standard plate. Along the centerline tie bars will need to be drilled in to the existing concrete and epoxied in as shown in the standard plates.
- The Contractor for this project must coordinate his activities with the grading Contractor who is working there now.
- The transverse joints shall be 3/8 inch wide.



**GENERAL NOTES:**

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

Centerline of individual dowel bars will be parallel to top of subgrade ±1/8 inch in 18 inches and to all other dowel bars in the assembly ±1/16 inch in 18 inches.

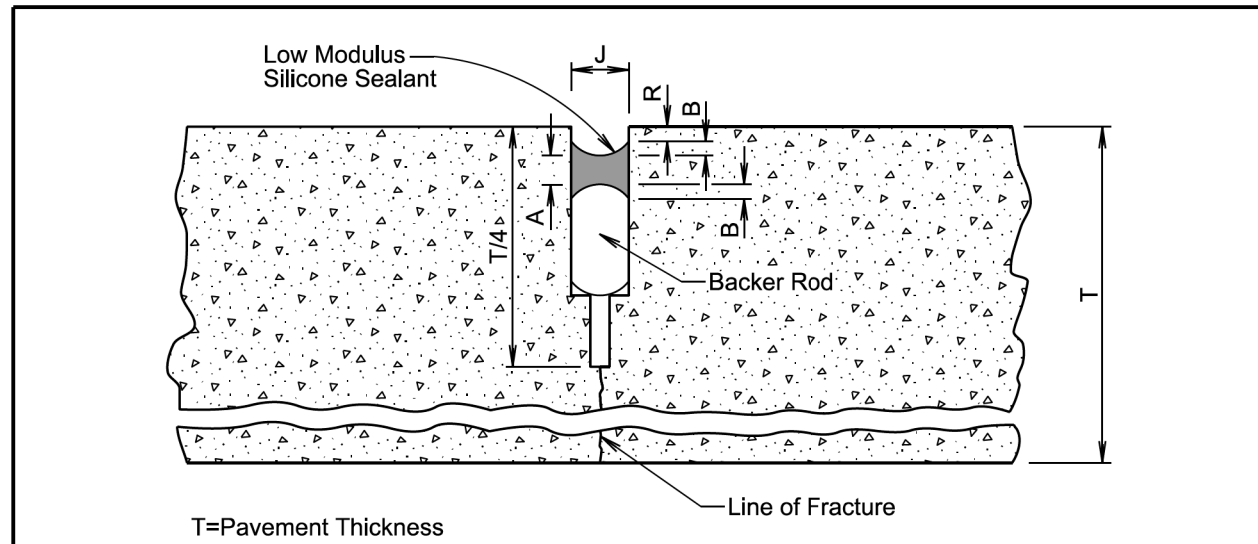
Centerline of individual dowel bars will be parallel to the centerline of the roadway ±1/2 inch in 18 inches.

The transverse contraction joints will be sawed perpendicular to the centerline of the roadway and the dowel bars will be centered on the sawed joint ±1 inch.

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.

June 26, 2019

<b>S D D O T</b>	<b>PCC PAVEMENT DOWEL BAR ASSEMBLY FOR TRANSVERSE CONTRACTION JOINTS 12 Bar Assembly on Granular Base Material</b>	PLATE NUMBER <b>380.01</b>
	Published Date: 3rd Qtr. 2019	Sheet 1 of 1



LOW MODULUS SILICONE SEALANT ALLOWABLE CONSTRUCTION TOLERANCES				
J=3/8"				
A (Min.) (in.)	A (Max.) (in.)	B (Min.) (in.)	B (Max.) (in.)	R (in.)
3/16	5/16	1/8	1/4	1/4
J=1/2"				
A (Min.) (in.)	A (Max.) (in.)	B (Min.) (in.)	B (Max.) (in.)	R (in.)
3/16	3/8	1/8	1/4	1/4
J=5/8"				
A (Min.) (in.)	A (Max.) (in.)	B (Min.) (in.)	B (Max.) (in.)	R (in.)
1/4	7/16	1/8	5/16	1/4
J=3/4"				
A (Min.) (in.)	A (Max.) (in.)	B (Min.) (in.)	B (Max.) (in.)	R (in.)
5/16	1/2	3/16	3/8	5/16
J=1"				
A (Min.) (in.)	A (Max.) (in.)	B (Min.) (in.)	B (Max.) (in.)	R (in.)
3/8	5/8	3/16	1/2	5/16

**GENERAL NOTE:**

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

June 26, 2019

<b>S D D O T</b>	<b>RESEAL PCC PAVEMENT JOINT (SILICONE)</b>	PLATE NUMBER <b>380.13</b>
	Published Date: 3rd Qtr. 2019	Sheet 1 of 1

PLOT SCALE - 1:200

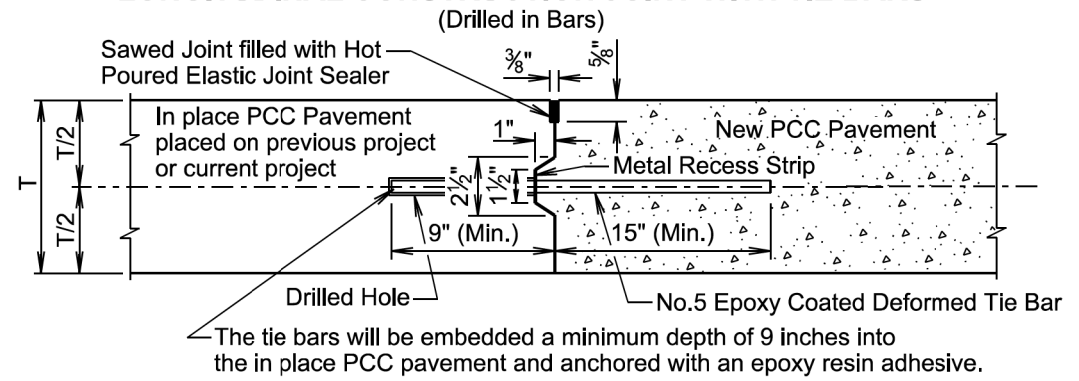
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PLOT NAME - 1

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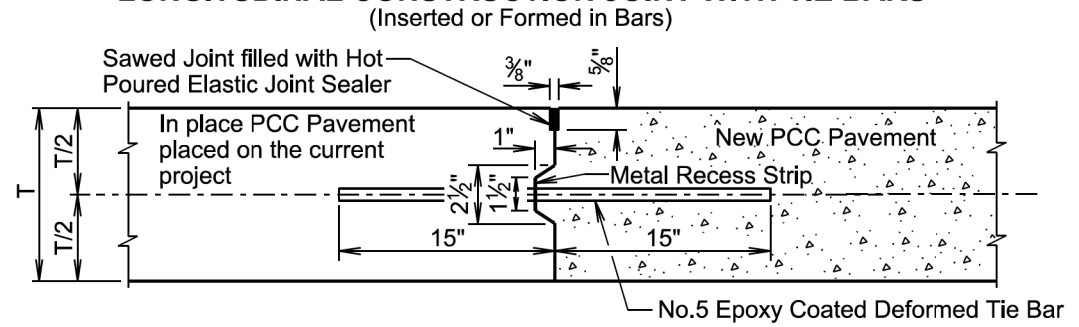
### LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS



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.

T = Pavement Thickness

### LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS



No.5 Epoxy Coated Deformed Tie Bar

**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.

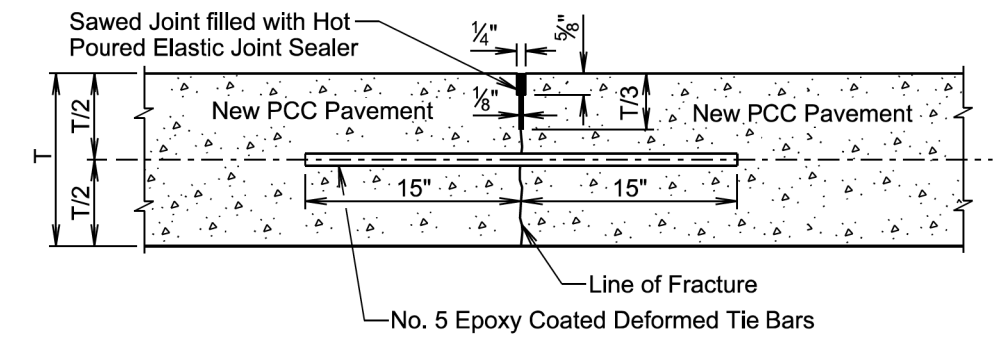
June 26, 2019

<b>S D D O T</b>	<b>PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS</b>	PLATE NUMBER 380.10
		Sheet 1 of 2

Published Date: 3rd Qtr. 2019

### SAWED LONGITUDINAL JOINT WITH TIE BARS

(Poured Monolithically)



T = Pavement Thickness

**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.

June 26, 2019

<b>S D D O T</b>	<b>PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS</b>	PLATE NUMBER 380.10
		Sheet 2 of 2

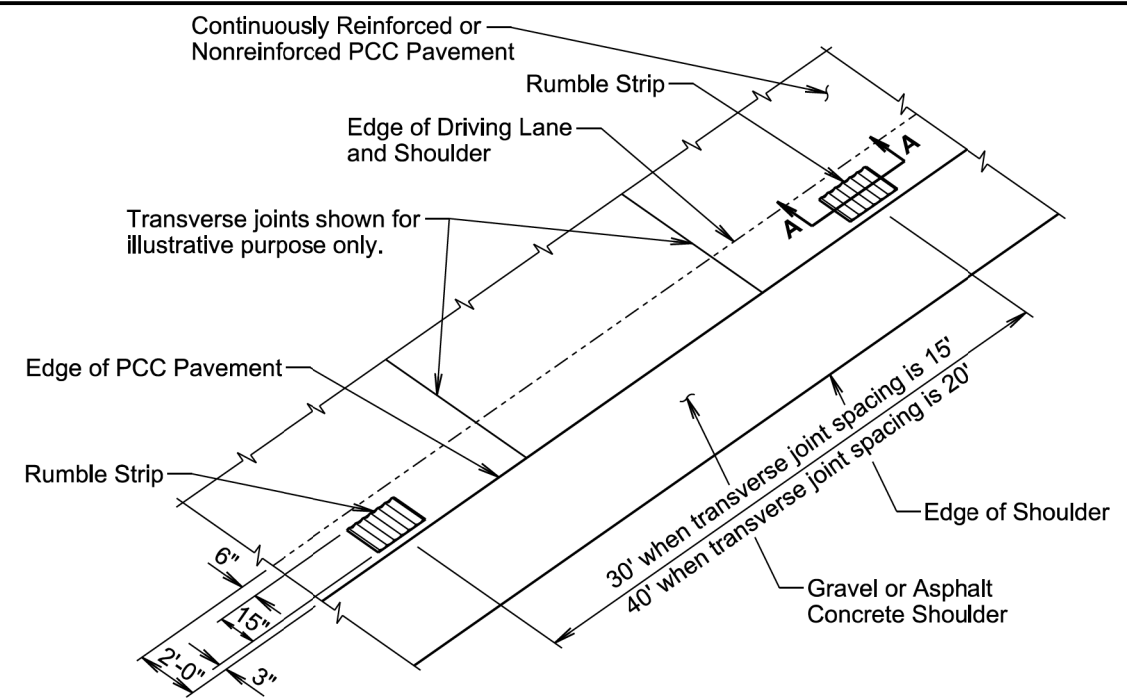
Published Date: 3rd Qtr. 2019

PLOT SCALE - 1:200

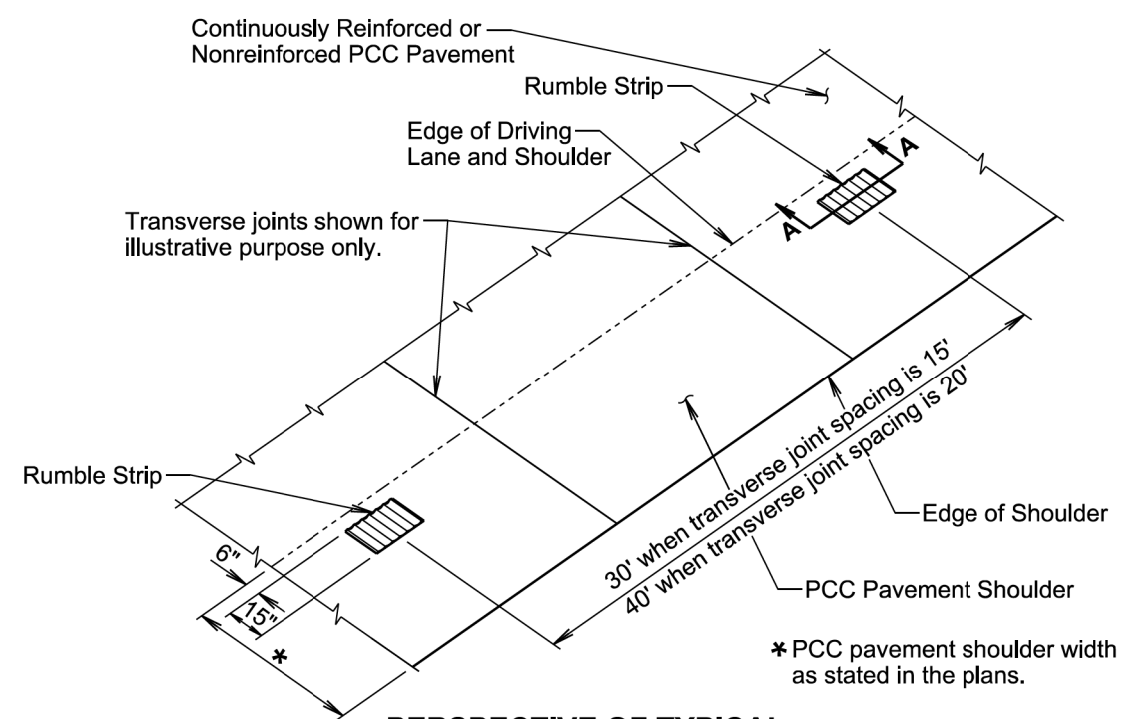
PLOT NAME - 2

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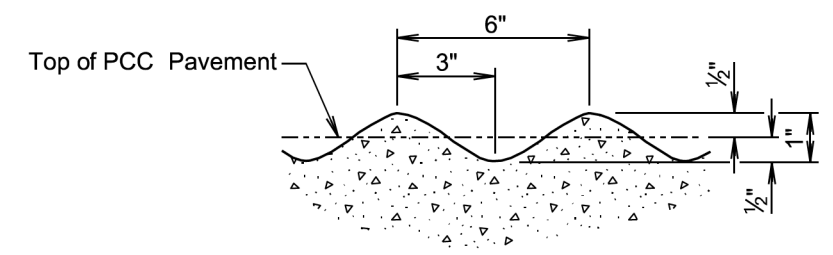
**PERSPECTIVE OF TYPICAL RUMBLE STRIPS ON PCC PAVEMENT SHOULDER ADJACENT TO GRAVEL OR ASPHALT CONCRETE SHOULDER**



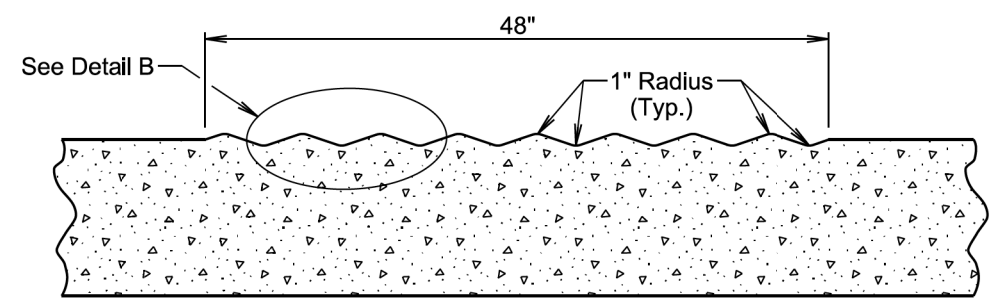
**PERSPECTIVE OF TYPICAL RUMBLE STRIPS ON PCC PAVEMENT SHOULDER**

June 26, 2019

Published Date: 3rd Qtr. 2019	S D D O T	RUMBLE STRIP ON PCC PAVEMENT SHOULDER	PLATE NUMBER 380.15
			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.

June 26, 2019

Published Date: 3rd Qtr. 2019	S D D O T	RUMBLE STRIP ON PCC PAVEMENT SHOULDER	PLATE NUMBER 380.15
			Sheet 2 of 2