

# Section F: Surfacing Plans

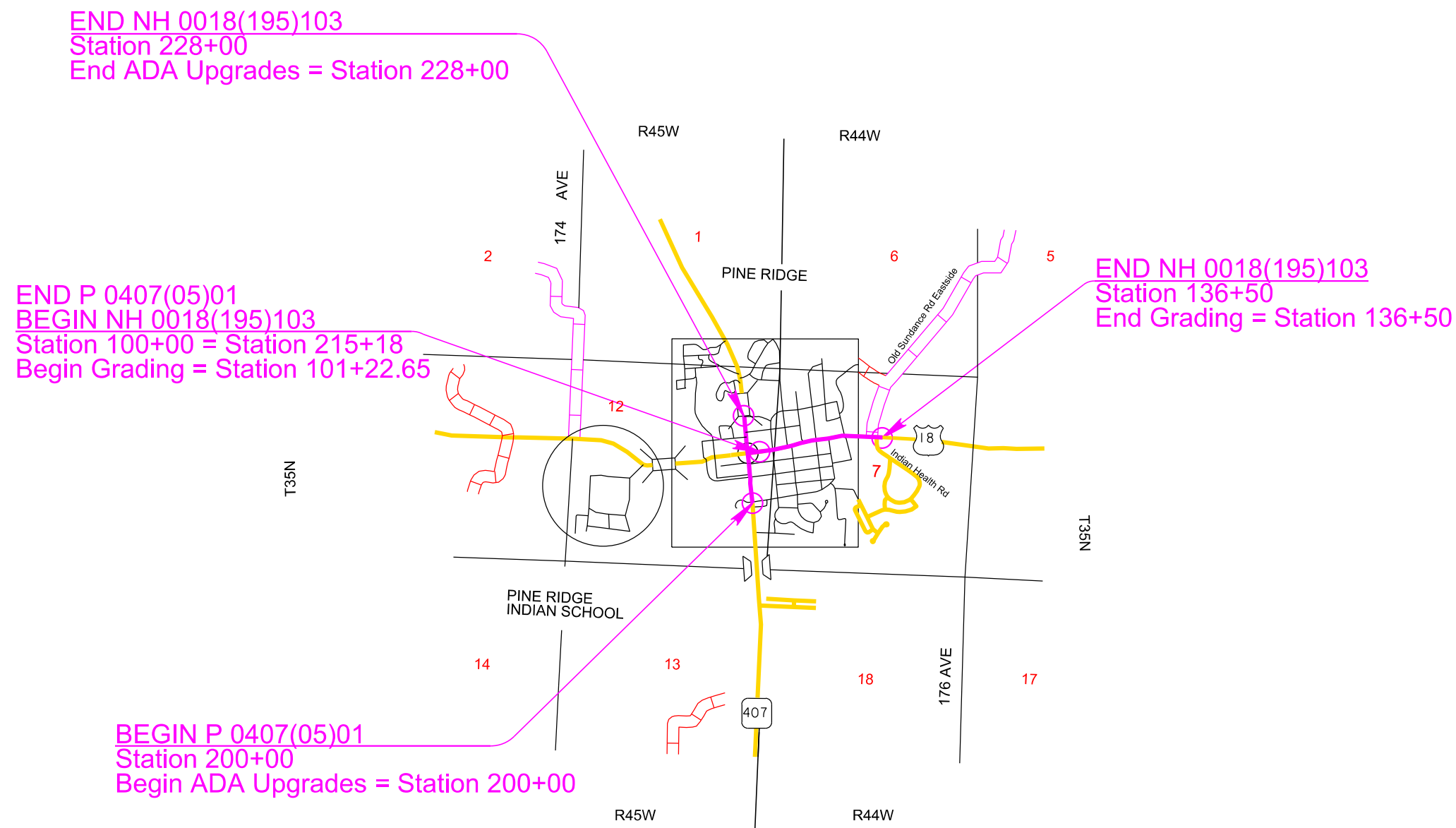
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F1	F33

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PLOT NAME - 1

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**SECTION F ESTIMATE OF QUANTITIES – PCN 04FC**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
120E6200	Water for Granular Material	135.3	MGal
260E1010	Base Course	350.0	Ton
260E1030	Base Course, Salvaged	1,843.1	Ton
260E2030	Gravel Cushion, Salvaged	9,092.0	Ton
270E0200	Blend, Haul, and Stockpile Granular Material	13,639.1	Ton
320E1200	Asphalt Concrete Composite	1,878.4	Ton
380E0050	8" Nonreinforced PCC Pavement	15,664.3	SqYd
380E3020	6" PCC Driveway Pavement	23.7	SqYd
380E3040	8" PCC Driveway Pavement	543.1	SqYd
380E6000	Dowel Bar	9,708	Each
380E6110	Insert Steel Bar in PCC Pavement	81	Each

**SECTION F ESTIMATE OF QUANTITIES – PCN 06N3**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
120E6200	Water for Granular Material	8.3	MGal
260E1010	Base Course	697.0	Ton
320E1200	Asphalt Concrete Composite	236.0	Ton

**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.

**EXISTING PCC PAVEMENT**

The existing concrete is Plain Jointed PCC Pavement. The existing transverse joints are perpendicular and are spaced at 20 feet. The aggregate in the existing Plain Jointed PCC Pavement is limestone.

**RECYCLED CONCRETE AGGREGATE (RCA)**

Portland cement concrete pavement (RCA) removed from the mainline within the project limits may be crushed and reused as granular material provided it meets the requirements for the granular material it is replacing.

All in-place rebar will be separated and removed from the RCA. There is an estimated 1,710 tons of PCC Pavement on this project (not including curb & gutter) that can be crushed and reused. This quantity is based on a unit weight of 118 lbs. per cubic foot for the recycled concrete aggregate.

The Contractor will dispose of the material (including existing rebar) not utilized on the project at a site approved by the Engineer.

Payment for the recycled concrete aggregate will be at the contract unit price per ton for the granular material that it is replacing.

**SALVAGED MATERIAL**

There is an estimated 7,219 tons(PCN 04FC) and 176 tons(PCN 06N3) (Total: 7,395 tons) of Salvaged Asphalt Mix Material and 10,352 tons(PCN 04FC) and 257 tons(PCN 06N3) (Total: 10,609 tons) of Salvaged Granular Material on the project(for informational purposes only).

Remaining excess salvaged material will not need to meet the requirements of Section 884.2 D.6 and will become property of the Contractor.

**BLEND, HAUL, AND STOCKPILE GRANULAR MATERIAL**

Salvaged asphalt concrete material (5,455.6 tons) will be blended with salvaged granular material (8,183.5 tons) at a rate of 40% salvaged asphalt mix material and 60% salvaged granular material to obtain stockpile material. Material will be uniformly blended to the satisfaction of the Engineer. A total of 13,639.1 tons of blended material will be used as Base Course, Salvaged and Gravel Cushion, Salvaged.

1,000 tons of blended material will be hauled and stockpiled in the Northeast ¼ of Section 24, Township 10 South, Range 7 East of the 5<sup>th</sup> P.M., Fall River, South Dakota at the Oelrichs SDDOT Maintenance Yard. The Contractor will have approval from the Engineer of the stockpile location prior to stockpiling the material within the aforementioned site.

1,500 tons of blended material will be hauled and stockpiled to a location determined by the Engineer to be used by the Oglala Lakota Sioux Tribe. The Contractor will have approval from the Engineer of the stockpile location prior to stockpiling the material.

A computerized scale, portable platform scale, stationary commercial scale, stationary commercial plant, portable plant scale, or a belt scale along with a scale operator will be provided by the Contractor at the stockpile site to weigh the salvaged material prior to blending.

The salvaged asphalt concrete material will be crushed to meet the requirements of Section 884.2 D.6 prior to blending into the stockpile.

No further gradation testing of the blended material will be required.

All other costs for crushing, hauling, stockpiling, and blending salvaged asphalt concrete material and salvaged granular material will be incidental to the contract unit price per ton for "Blend, Haul and Stockpile Granular Material".

**BASE COURSE, SALVAGED**

Base Course, Salvaged will be obtained from the stockpile site(s) provided by the Contractor and may be used without further gradation testing.

The Contractor will ensure the Base Course, Salvaged material contains no more than 40% salvaged asphalt mix material and at least 60% granular material (salvaged or virgin). Blended material will be to the satisfaction of the Engineer.

All other requirements for Base Course, Salvaged will apply.

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**GRAVEL CUSHION, SALVAGED**

Gravel Cushion, Salvaged will be obtained from the stockpile site(s) provided by the Contractor and may be used without further gradation testing.

The Contractor will ensure the Gravel Cushion, Salvaged material contains no more than 40% salvaged asphalt mix material and at least 60% granular material (salvaged or virgin). Blended material will be to the satisfaction of the Engineer.

All other requirements for Gravel Cushion, Salvaged will apply.

**GRAVEL CUSHION, SALVAGED AND TEMPORARY ASPHALT CONCRETE COMPOSITE**

See Section C for Gravel Cushion, Salvaged (2,000 tons) and Temporary Asphalt Concrete Composite (250 tons) notes and details.

**MATERIAL UTILIZATION TABLE**

Location	Salvaged Asphalt Mix and Granular Base Material (tons)
Base Course, Salvaged - project	1,843.1
Gravel Cushion, Salvaged - project	7,151.0
Gravel Cushion, Salvaged – PCN X06L project	145.0
Gravel Cushion, Salvaged - Traffic Control	2,000.0
Material to be Stockpiled @ Oelrichs Yard	1,000.0
Material for Oglala Lakota Sioux Tribe	1,500.0
<b>TOTAL BLENDED MATERIAL :</b>	<b>13,639.1</b>
Excess Asphalt Mix Material – not blended	1,939.4
Excess Granular Material – not blended	2,425.5
<b>SALVAGED MATERIAL TOTAL:</b>	<b>18,004.0</b>

**ASPHALT CONCRETE COMPOSITE**

Asphalt Concrete Composite will include MC-70 Asphalt for Prime placed at the rate of 0.30 gallons per square yard. The Asphalt for Prime will be applied to the Base Course, Salvaged for the full width of the bottom layer of Asphalt Concrete Composite plus one foot additional on the outside shoulder for a rural section or to match the width of the gutter.

Asphalt for tack SS-1h or CSS-1h will be applied prior to each lift of Asphalt Concrete Composite. Asphalt for tack will be applied at a rate of 0.09 gallons per square yard on existing pavement or milled asphalt concrete surfaces and at a rate of 0.06 gallons per square yard on primed base course or new asphalt concrete pavement. The Asphalt for tack will be applied for the full width of the bottom layer of Asphalt Concrete Composite plus one-half foot additional on the outside shoulder.

1:200 Plot Scale

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**8" NONREINFORCED PCC PAVEMENT**

The aggregate may require screening as determined by the Engineer.

The concrete mix will conform to the special provision for Contractor Furnished Mix Design for PCC Pavement.

A minimum of 21 pavement blockouts may be required at various locations on this project to facilitate traffic during the paving activity.

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

In lieu of an automatic subgrader operating from a preset line, a motor grader or other suitable equipment may be used to trim the gravel cushion to final grade prior to placement of concrete. There will be no direct payment for trimming of the gravel cushion for PCC pavement. The trimming will be considered incidental to the related items required for PCC Pavement.

The surface of the mainline paving will be a heavy carpet drag. All other areas will be textured as directed by the Engineer. The surface of the mainline paving will receive a heavy carpet drag to within 2 or 3 feet of the face of the curb.

Unless specified otherwise in the PCC Pavement Joint Layout Sheets or elsewhere in the plans, the typical joint spacing for 8" Nonreinforced PCC Pavement will be 15'.

The transverse construction joints will be handled in accordance with the Special Details for PCC Pavement Transverse Construction Joints.

The transverse contraction joints will be perpendicular to the centerline. In multilane areas the transverse contraction joints will be perpendicular to the centerline and be in a straight line across the entire width of the pavement. In special situations the Engineer may pre-approve transverse contraction joints that do not meet these requirements. All nonconforming transverse contraction joints will be removed at the Contractor's expense. Any method of placement that cannot produce these requirements will not be allowed.

The location of joints, as shown and designated on the PCC Pavement Joint Layout(s) are only approximate locations to be used as a guide and to afford bidders a basis for estimating the construction cost of the joints. The final locations of the joints are to be designated by the Engineer during construction.

There will be no direct payment for trimming of the gravel cushion for PCC pavement. The trimming will be considered incidental to the related items required for PCC Pavement. Trimming will be performed as required by Section 380.3 C of the Specifications.

**PAVEMENT SMOOTHNESS**

The following locations will be tested for smoothness with a Contractor furnished and operated 25 foot California style profilograph in accordance with the Special Provision for PI PCC Pavement Smoothness with 0.2" Blanking Band:

US18 - Sta. 100+00 to Sta. 133+84.31 - Driving and Passing Lanes

Turning lanes including center turn lane and side streets will be tested using the 10' straight edge as per Specifications 380.3.O.1

Due to the large number of block-outs, profilograph testing may be completed the next day or when the entire phase can be run.

**CURING OF CONCRETE**

Portland Cement Concrete Pavement, Concrete Curb & Gutter, Concrete Gutter, and Concrete Fillet will be cured with Linseed Oil Base Emulsion Compound. All costs for Curing of Concrete will be incidental to the contract unit price per various Portland Cement Concrete bid items.

**TABLE OF 8" NONREINFORCED PCC PAVEMENT – PCN 04FC**

Location			8" NONREINFORCED PCC PAVEMENT
Sta	to	Sta.	(SqYd)
Mainline US Hwy 18 - South-North			
Eagle Feather Street			78.3
Mainline US Hwy 18 - West - East			
99+37.24	to	101+22.65	1,532.6
101+22.65	to	102+62.62	685.0
102+62.62	to	103+87.62	534.8
103+87.62	to	110+89.35	2,572.6
110+89.35	to	111+35.87	113.9
111+35.87	to	131+22.79	7,380.7
131+22.79	to	131+83.12	301.2
131+83.12	to	133+56.18	832.8
133+56.18	to	133+84.31	103.3
Total:			14,135.2

**TABLE OF 6" NONREINFORCED PCC PAVEMENT FOR DRIVEWAYS – PCN 04FC**

Location	6" PCC DRIVEWAY PAVEMENT
	(SqYd)
Sta. 108+77 L	23.7
Total:	23.7

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**TABLE OF 8" INTERSECTING ROADS PCC PAVEMENT – PCN 04FC**

Location	8" NONREINFORCED PCC PAVEMENT
	(SqYd)
White Tail Deer Road - L	62.7
Sioux Nation Avenue SE - R	87.8
Prairie View Avenue - L	111.0
Cheyenne Avenue SE - R	159.3
Irving Road - L	134.1
Eastridge Road - L	124.1
Cherokee Avenue SE - R	106.7
Lakota Avenue SE - R	66.4
Sitting Bull Road - L	153.7
Veteran Avenue - R	153.0
Tribal 93 - L	188.4
Indian Health Road - R	181.9
Total:	1,529.1

**TABLE OF 8" NONREINFORCED PCC PAVEMENT FOR DRIVEWAYS – PCN 04FC**

Location	8" PCC DRIVEWAY PAVEMENT
	(SqYd)
Sta. 106+71 R	142.2
Sta. 107+35 L	400.9
Total:	543.1

1:200 Plot Scale -

Plotted From - TRPR13462

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**ALKALI SILICA REACTIVITY**

Fine aggregate will conform to Section 800.2 D Alkali Silica Reactivity (ASR) Requirements.

Below is a list of known fine aggregate sources and the average corresponding 14-day expansion values (as of 8-30-2023):

Source	Location	Expansion Value
Bachman	Winner, SD	0.335*
Bitterman	Delmont, SD	0.316*
Concrete Materials	Corson, SD	0.146
Concrete Materials - Vellek Pit	Yankton, SD	0.411**
Croell	Hot Springs, SD	0.089
Croell	Wasta, SD	0.212
Emme Sand & Gravel	Oneil, NE	0.217
Fisher S&G – Blair Pit	W of Vale, SD	0.171
Fisher S&G - Mickelson Pit	E of Nisland, SD	0.129
Fisher S&G - Vallery Pit	Nisland, SD	0.110
Fisher S&G	Rapid City, SD	0.092
Fisher S&G	Spearfish, SD	0.053
Fisher S&G	Wasta, SD	0.159
Fuchs	Pickstown, SD	0.275*
Henning – Tilstra Pit	Ash Creek, MN	0.199
Higman	Hudson, SD	0.187
Jensen	Herried, SD	0.276*
L.G. Everist	Akron, IA	0.257*
L.G. Everist	Brookings, SD	0.297*
L.G. Everist – Ode Pit	E Sioux Falls, SD	0.215
L.G. Everist – Nelson Pit	NE Sioux Falls, SD	0.156
L.G. Everist	Hawarden, IA	0.176
L.G. Everist	Summit, SD	0.184
Mark's S&G – Moerke Pit	Underwood, MN	0.165
Morris – Birdsall	Blunt, SD	0.229
Morris - Leesman	Blunt, SD	0.231
Morris - Richards Pit	Onida, SD	0.188
Morris - Shawn's Pit	E of Sturgis, SD	0.186
Northern Concrete Agg.	Rauville, SD	0.113
Northern Concrete Agg.	Luverne, MN	0.133
Opperman - Gunvordahl Pit	Burke, SD	0.363*
Opperman - Cahoy Pit	Herrick, SD	0.307*
Opperman - Jones Pit	Burke, SD	0.321*
Opperman - Randall Pit	Pickstown, SD	0.230
Pete Lien & Sons	Creston, SD	0.158
Pete Lien & Sons	Oral, SD	0.157
Pete Lien & Sons	Wasta, SD	0.226
Simon Materials - Beltline Pit	Scottsbluff, NE	0.277*
Thorpe Pit	Britton, SD	0.098
Wagner Building Supplies	Pickstown (Wagner), SD	0.251*
Winter Brothers- Whitehead Pit	Brookings, SD	0.197

\* These sources will require Type II cement with a fly ash content of 25% in the concrete mix.

\*\* These sources will not be used.

The Department will use the running average of the last three or fewer known expansion test results for determining acceptability of the source. These expansion results are reported in the preceding table. Additional testing, when requested by the Contractor, will be performed by the Department at the Contractor's expense.

The values listed in the table are intended for use in bidding. If a previously tested pit by SDDOT with a test value less than 0.250 is discovered after letting to be 0.250 or greater, then the Department will accept financial responsibility if higher costs are incurred due to higher percent of fly ash requirement.

**BLOCKOUT AREAS**

A minimum of 11 street pavement blockouts and 10 Business & Residence pavement blockouts may be required at various locations on this project to facilitate traffic during the paving activity. Additional locations may also be added by the Engineer.

For Temporary crossings, see Section C for more information.

**TABLES OF BLOCKOUT AREAS - STREETS**

Street Blockouts				
Station	L or R	Description	Blockouts	Gravel Crossing
106+27	L	White Tail Deer Road	0	2
106+27	R	Sioux Nation Avenue SE	0	0
110+38	L	Prairie View Avenue	2	0
111+55	R	Cheyenne Avenue SE	2	0
114+13	L	Irving Road	0	0
117+81	L	Cherokee Avenue SE	2	0
117+86	R	Eastridge Road	2	0
121+70	R	Lakota Avenue SE	0	0
125+65	L	Sitting Bull Road	0	1
125+65	R	Veteran Avenue	0	0
133+26	L	Tribal 93	2	0
133+26	R	Indian Health Road	1	0
Street Blockouts Total =			11	3

**TABLES OF BLOCKOUT AREAS – BUSINESS & RESIDENCE**

Business & Residence Blockouts				
Station	L or R	Description	Blockouts	Gravel Crossing
102+38	R	Taco John's	0	0
103+42	R	Taco John's	0	0
104+60	L	Pine Ridge Reconciliation Center	2	0
104+80	R	Star Buds Pine Ridge	0	0
106+71	R	Government Lot 2	0	0
107+35	L	Sinclair Station	2	0
109+51	R	500 East Main Street	0	0
110+06	R	The Rex Furniture Store	0	0
110+73	R	Government Lot 2	0	0
112+91	R	Pizza Hut	0	0
114+12	R	AT&T	2	0
115+42	R	Government Lot 2	0	0
119+72	R	Yellow Birds ATM	0	0
125+14	R	Murdock Electric	0	0
127+50	L	Pine Ridge Building Products	2	0
129+44	L	Lakota Artwork Signs and Designs	2	0
Business & Residence Blockouts Total =			10	0

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**STEEL BAR INSERTION**

The Contractor will insert the Steel Bars (No. 5 x 24 inch epoxy coated deformed tie bars or 1¼ inch x 18 inch epoxy coated plain round dowel bars) into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole.

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 30 inch centers in the longitudinal joint and will be placed a minimum of 15 inches from the existing transverse contraction joint.

**TABLE OF STEEL BAR INSERTION – PCN 04FC**

LOCATION	1-1/4" x 18" Plain Round Dowel Bars
US Hwy 18 North - South	
Eagle Feather Street	13
Sta. 214+50.11	28
Sta. 215+91.68	40
<b>Total:</b>	<b>81</b>

**TABLE OF DOWEL BARS – PCN 04FC**

Location	1 1/4" Bars
<b>US Hwy 18 - PCN 04FC</b>	
Eagle Feather Street	32
Bars in Mainline - 12 bar	9,094
Bars in Intersecting Roads - 12 bar	614
<b>Total Dowel Bars:</b>	<b>9,708</b>

**MANHOLE BOX-OUT DETAILS**

The Contractor will construct box-outs for all manholes in the 8" Concrete Pavement according to the Box-Out Detail. Locations of Proposed Manholes and water valve boxes are shown on the Pavement Joint Layout Sheets.

1:200 Plot Scale -

TRPR13462

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**TABLE OF MATERIALS – PCN 04FC**

LOCATION Station to Station	WATER FOR GRANULAR MATERIAL (MGal)	GRAVEL CUSHION, SALVAGED (Ton)	BASE COURSE, SALVAGED (Ton)	BASE COURSE (Ton)	ASPHALT CONCRETE COMPOSITE		
					1st Lift (Ton)	2nd Lift (Ton)	Top Lift (Ton)
<b>Mainline US Hwy 18 - West-East</b>							
100 + 21.06 to 101 + 22.65	6.9	573.0					
101 + 22.65 to 102 + 87.65	3.2	267.0					
102 + 87.65 to 103 + 87.65	2.5	209.0					
103 + 87.65 to 110 + 89.35	13.3	1,108.0					
110 + 89.35 to 111 + 35.87	0.8	68.0					
111 + 35.87 to 131 + 22.79	38.9	3,238.0					
131 + 22.79 to 131 + 83.12	1.2	99.0					
131 + 83.12 to 133 + 56.18	4.9	408.0					
133 + 56.18 to 133 + 84.35	0.6	49.0					
133 + 84.35 to 136 + 50.00	0.5		42.1		22.2		22.2
<b>Intersecting Streets - West-East</b>							
Whitetail Deer Road	0.8	22.0	44.0		11.0		11.0
Sioux Nation Avenue SE	0.7	27.0	37.0		8.0		8.0
Prairie View Avenue	1.4	29.0	95.0		23.0		23.0
Cheyenne Avenue SE	1.4	49.0	68.0		17.0		17.0
Irving Road	1.1	41.0	54.0		14.0		14.0
Cherokee Avenue SE	2.9	40.0	197.0		93.0		93.0
Eastridge Housing Road	3.3	47.0	227.0		75.0		75.0
Lakota Avenue SE	0.6	27.0	27.0		6.0		6.0
Sitting Bull Road	1.0	62.0	24.0		6.0		6.0
Veteran Avenue	1.4	54.0	67.0		22.0		22.0
Tribal 93	2.4	201.0					
Indian Health Road	7.5	36.0	594.0		393.0		393.0
<b>Driveways and Entrances - West-East</b>							
Sta. 102+38 R	0.1		12.0		4.0		4.0
Sta. 103+42 R	0.3		25.0		8.0		8.0
Sta. 104+60 L	0.1	7.0					
Sta. 104+80 R	0.1	7.0					
Sta. 106+71 R	0.4	30.0					
Sta. 107+35 L	1.0	84.0					
Sta. 108+77 L	0.1	5.0					

Plot Scale - 1:200

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**TABLE OF MATERIALS – PCN 04FC - CONTINUED**

LOCATION  Station to Station	WATER FOR GRANULAR MATERIAL  (MGal)	GRAVEL CUSHION, SALVAGED  (Ton)	BASE COURSE, SALVAGED  (Ton)	BASE COURSE  (Ton)	ASPHALT CONCRETE COMPOSITE		
					1st Lift  (Ton)	2nd Lift  (Ton)	Top Lift  (Ton)
<b>Driveways and Entrances - West-East - Continued</b>							
Sta. 109+51 R	0.1	6.0					
Sta. 110+06 R	0.1	9.0					
Sta. 110+73 R	0.2	17.0					
Sta. 112+91 R	0.3		25.0		8.0		8.0
Sta. 114+12 R	0.1	12.0					
Sta. 115+42 R	0.1	12.0					
Sta. 117+60 L	0.3	26.0					
Sta. 117+95 R	0.8		63.0		22.0		22.0
Sta. 118+22 - 88' L	0.2		15.0		5.0		5.0
Sta. 119+43 L	0.2		15.0		5.0		5.0
Sta. 119+72 R	0.3		25.0		8.0		8.0
Sta. 125+14 R	0.4		31.0		11.0		11.0
Sta. 127+50 L	0.7		56.0		20.0		20.0
Sta. 129+44 L	0.1	12.0					
Water Services - Sta. 101+45 to 102+20 R	0.1	9.0					
<b>Intersecting Streets - South-North</b>							
Main Street - NW	0.7		59.0		16.0	16.0	16.0
Eagle Feather Street	1.1	79.0	15.0		3.0		3.0
Buffalo Berry Street N	0.2	19.0					
Whitetail Deer Road	0.3	25.0					
<b>Driveways and Entrances - South-North</b>							
Sta. 216+55 L	0.2	13.0					
Sta. 217+19 R	0.2		14.0		3.0		3.0
Sta. 218+56 L	0.1		12.0		3.0		3.0
Sta. 218+64 R	0.2	13.0					
Sta. 219+55 R	0.1	4.0					
Sta. 221+50 L	0.2	14.0					
Sta. 222+25 R	0.1	12.0					
Sta. 223+22 R	0.2	13.0					
Sta. 224+34 R	0.1	10.0					
<b>Reinforcement Fabric Surfacing - See Section B</b>							
	4.2			350.0			
<b>Temporary Surfacing - See Section C</b>							
Gravel Cushion, Salvaged - Traffic Control	24.0	2,000.0					
Asphalt Concrete Composite - Traffic Control					250.0		
<b>Totals</b>	<b>135.3</b>	<b>9,092.0</b>	<b>1,843.1</b>	<b>350.0</b>	<b>1,878.4</b>		

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Plot Scale -

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Plotting Date: 08/06/2024

**TABLE OF MATERIALS – PCN 06N3**

LOCATION  Station to Station	WATER FOR GRANULAR MATERIAL  (MGal)	BASE COURSE  (Ton)	ASPHALT CONCRETE COMPOSITE	
			1st Lift	Top Lift
			(Ton)	(Ton)
<b>Intersecting Streets - South-North</b>				
Cherry Hill Court	0.3	27.0	3.0	3.0
Dakota Avenue	0.3	25.0	3.0	3.0
Spruce Street SE	0.8	68.0	7.0	7.0
Pine Street	1.0	84.0	8.0	8.0
Oglala Street -West	1.5	128.0	35.0	35.0
Oglala Street -East	0.9	77.0	8.0	8.0
Main Street	0.1	6.0		
<b>Driveways and Entrances - South-North</b>				
Sta. 208+10 - L	0.5	44.0	6.0	6.0
Sta. 209+74 - R	0.2	13.0	1.0	1.0
Sta. 213+38 - R	1.7	143.0	28.0	28.0
Sta. 213+64 - L	1.0	82.0	19.0	19.0
Totals	8.3	697.0	236.0	

1:200

Plot Scale -

Plotted From - TRPR13462


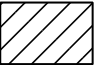


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# IN PLACE TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F8	F33

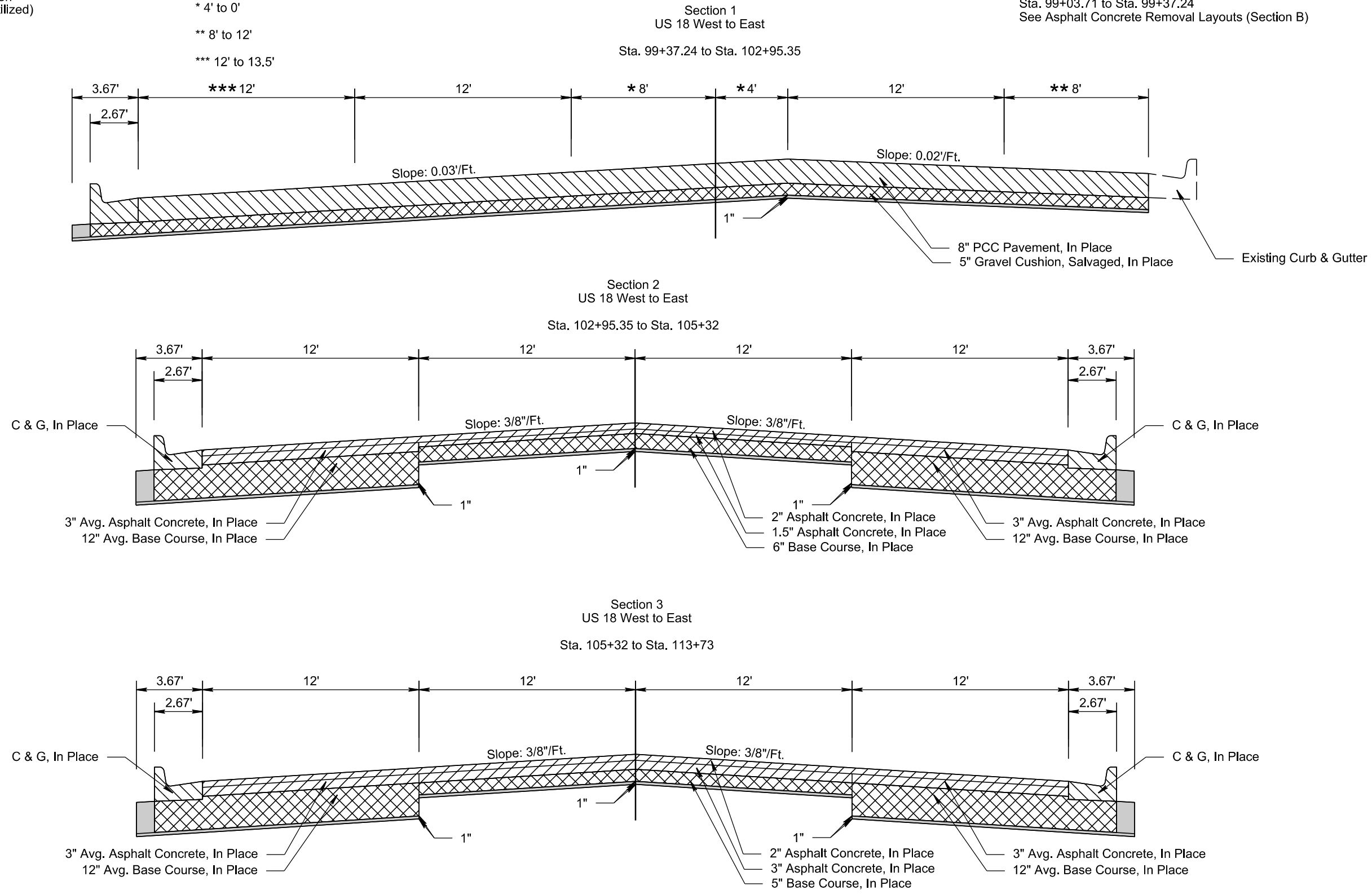
Plotting Date: 08/06/2024

FOR BIDDING PURPOSES ONLY

-  Remove Concrete Pavement
-  Salvage & Stockpile Asphalt Mix Material (Unclassified Excavation)
-  Salvage & Stockpile Granular Material (Unclassified Excavation)
-  1" Unclassified Excavation (Granular Material not utilized)

Transitions:  
 Sta. 101+82.35 to Sta. 103+01.75  
 \* 8' to 0'  
 \* 4' to 0'  
 \*\* 8' to 12'  
 \*\*\* 12' to 13.5'

Note:  
 See PCC Layouts elsewhere in these plans for limits of removal.  
 Sta. 99+03.71 to Sta. 99+37.24  
 See Asphalt Concrete Removal Layouts (Section B)



PLOT SCALE - 1+6.00001

4839

3736

PLOTTED FROM - TRPR13462

PLOT NAME - 8

FILE - ... \04FC-TYPICAL SECTIONS.DGN

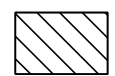
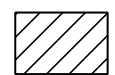




# IN PLACE TYPICAL SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0018(195)103 P 0407(05)01	SHEET F9	TOTAL SHEETS F33
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Plotting Date: 08/06/2024

-  Remove Concrete Pavement
-  Salvage & Stockpile Asphalt Mix Material (Unclassified Excavation)
-  Salvage & Stockpile Granular Material (Unclassified Excavation)
-  1" Unclassified Excavation (Granular Material not utilized)

PLOT SCALE - 1+6.00001

3736

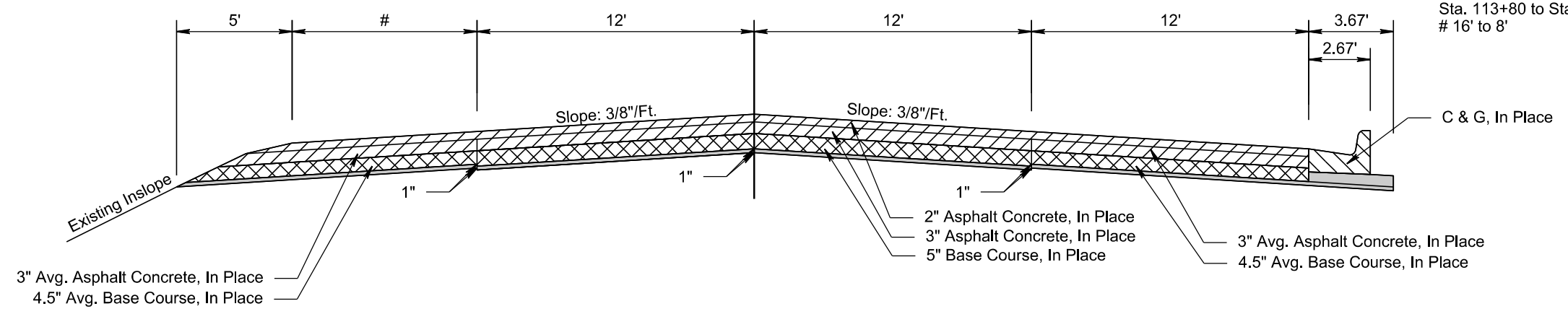
3736

PLOTTED FROM - TRPR13462

PLOT NAME - 9

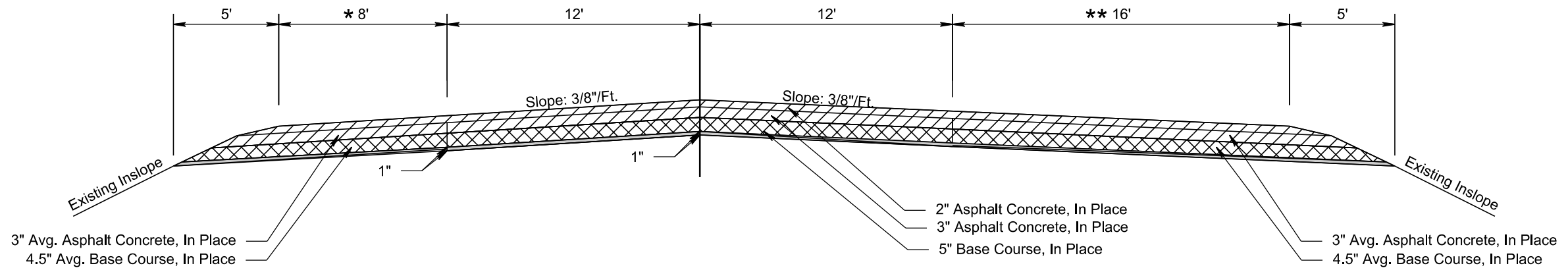
FILE - ... \04FC-TYPICAL SECTIONS.DGN

Section 4  
US 18 West to East  
Sta. 113+73 to Sta. 117+60



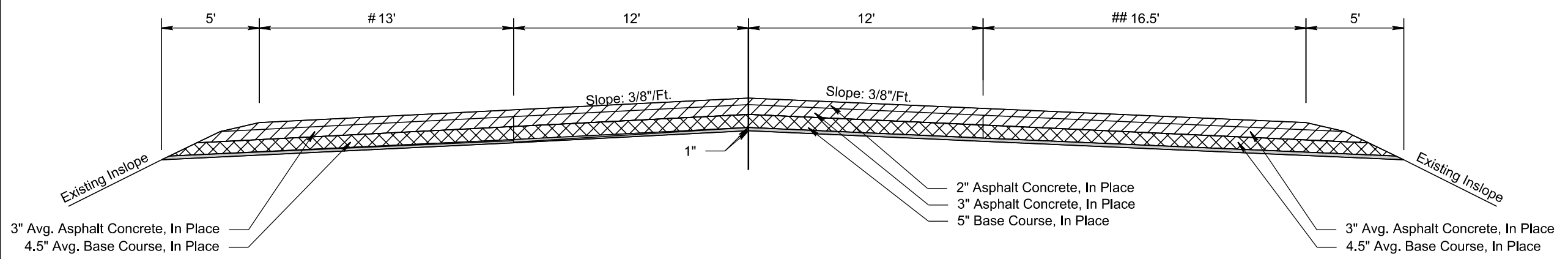
Transitions:  
Sta. 113+80 to Sta. 118+30  
# 16' to 8'

Section 5  
US 18 West to East  
Sta. 117+60 to Sta. 128+30



Transitions:  
Sta. 125+80 to Sta. 128+30  
\* 8' to 13'  
Sta. 117+94 to Sta. 120+30  
\*\* 16' to 8'  
Sta. 120+30 to Sta. 125+80  
\*\* 8'  
Sta. 125+80 to Sta. 127+80  
\*\* 8' to 10'  
Sta. 127+80 to Sta. 128+30  
\*\* 10' to 16.5'

Section 6  
US 18 West to East  
Sta. 128+30 to Sta. 136+50



Transitions:  
Sta. 128+30 to Sta. 129+80  
# 13' to 16'  
Sta. 129+80 to Sta. 132+30  
# 16'  
Sta. 132+30 to Sta. 136+50  
# 16' to 8'  
Sta. 128+30 to Sta. 128+80  
## 16.5' to 23'  
Sta. 128+80 to Sta. 129+80  
## 23' to 24'  
Sta. 129+80 to Sta. 132+30  
## 12'  
Sta. 132+30 to Sta. 136+50  
## 12' to 8'

# TYPICAL SURFACING SECTIONS

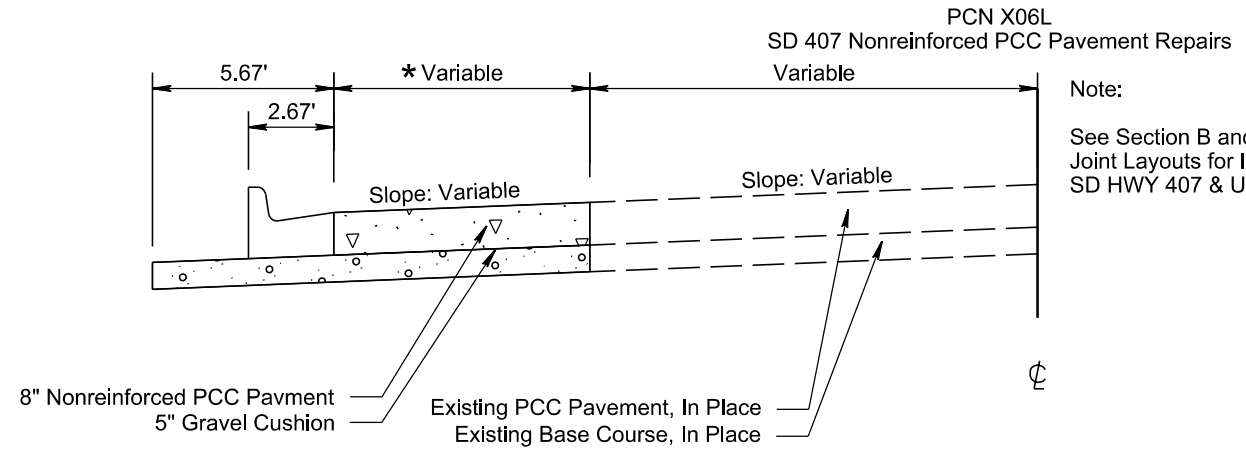
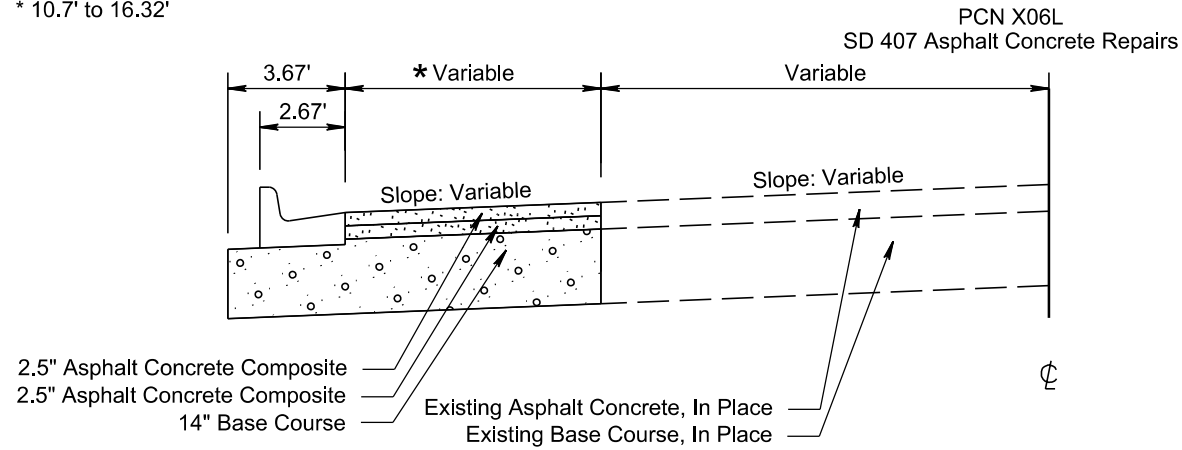
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F10	F33

Plotting Date: 08/06/2024

FOR BIDDING PURPOSES ONLY

Transitions:

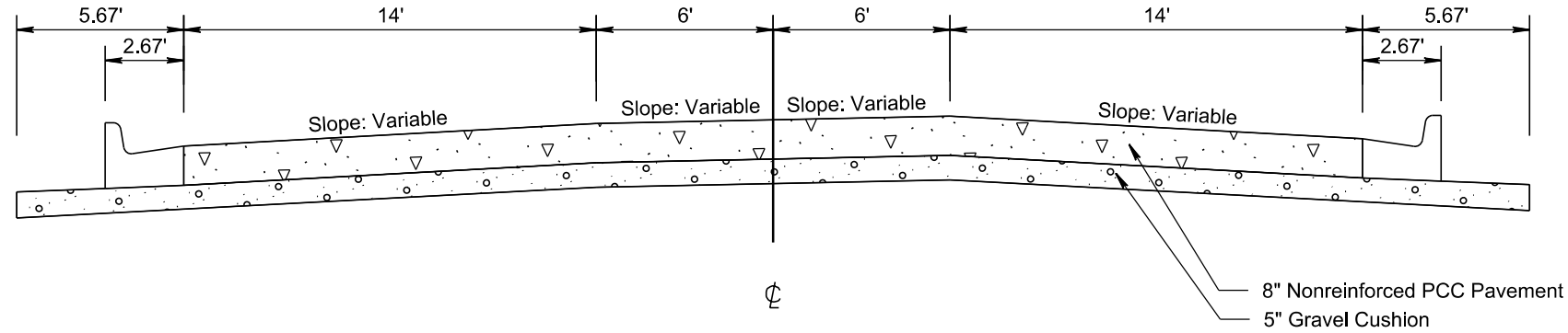
Sta. 212+71.13 to Sta. 214+50.11  
\* 10.7' to 16.32'



Note:  
See Section B and Section F PCC Pavement  
Joint Layouts for Intersection of  
SD HWY 407 & US HWY 18 details

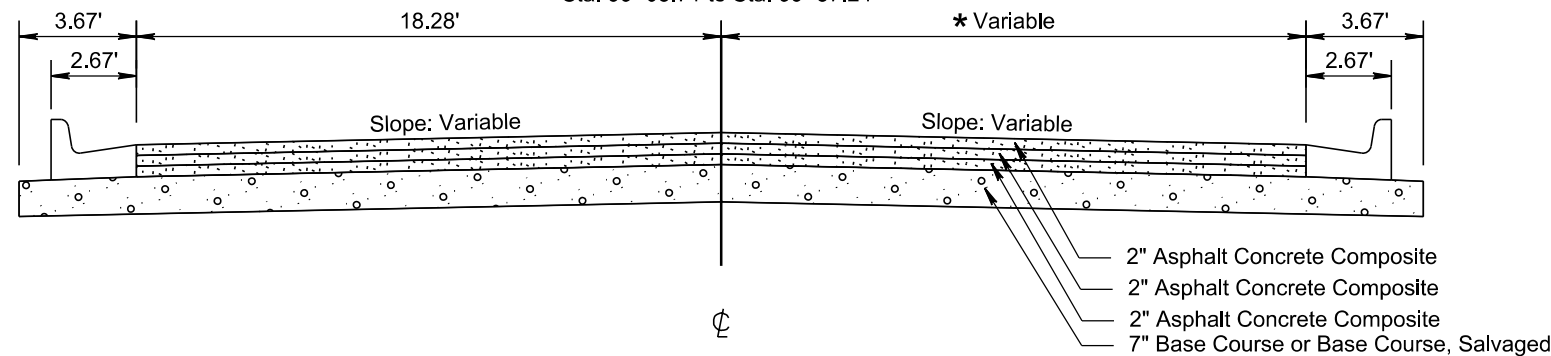
## Section 7 - PCN X06L US 18 Mainline

Sta. 220+16.58 to Sta. 220+36.58  
Sta. 224+16.68 to Sta. 224+36.68



## Section 8 US18 Mainline

Sta. 99+03.71 to Sta. 99+37.24



Note:  
See Section B and Section F PCC Joint Layouts  
for Intersection of SD HWY 407 & US HWY 18 details

PLOT SCALE - 1+6.00001

PLOTTED FROM - TRPR13462

PLOT NAME - 10

FILE - ... \04FC\_TYPICAL SECTIONS.DGN

# TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F11	F33

Plotting Date: 08/06/2024

FOR BIDDING PURPOSES ONLY

PLOT SCALE - 1+6.00001

PLOT NAME - 11

FILE - ... \04FC-TYPICAL SECTIONS.DGN

**Transitions:**

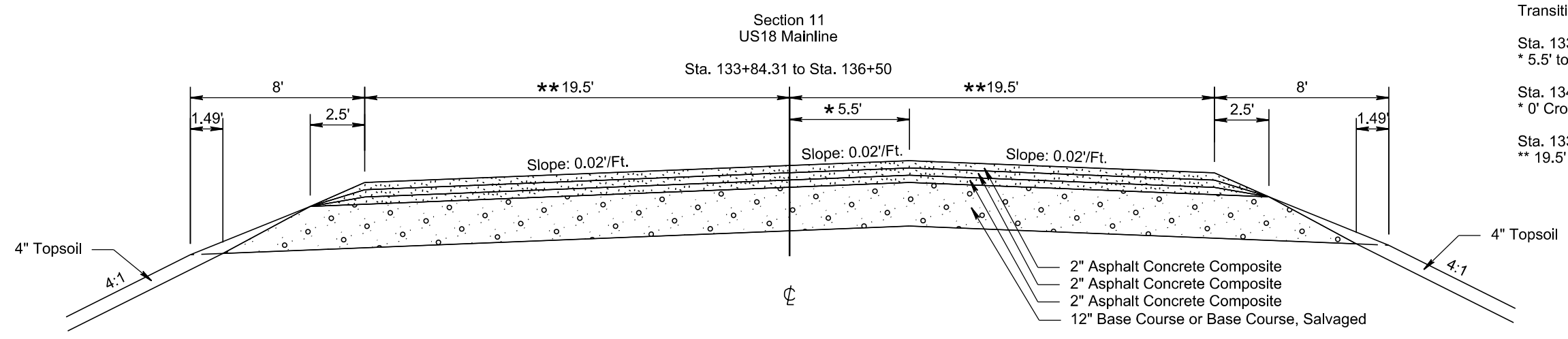
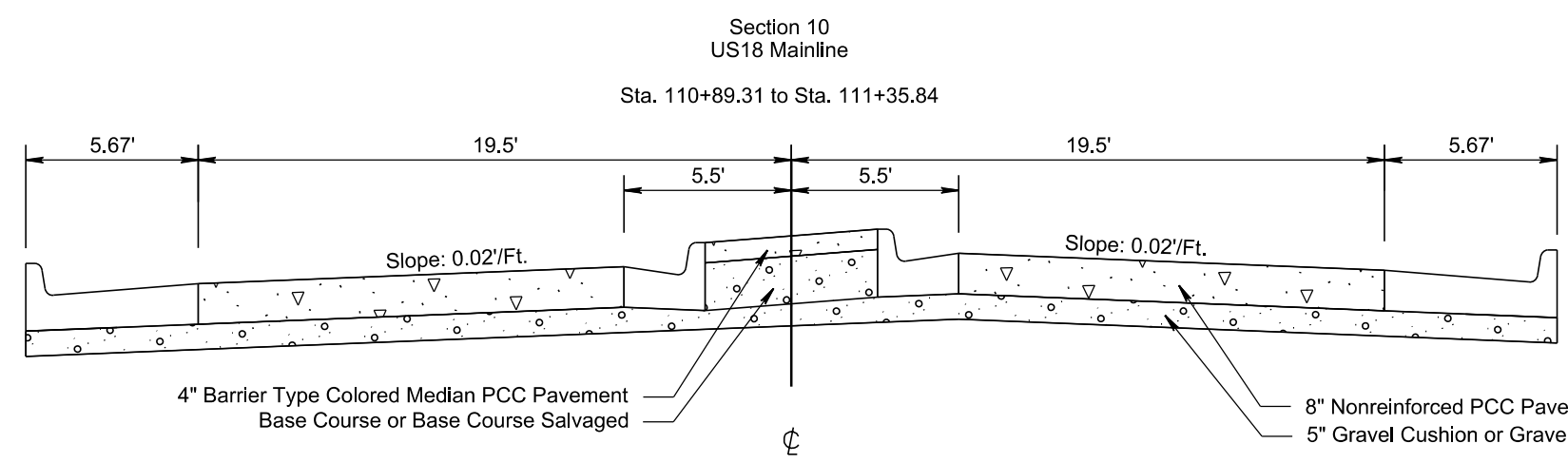
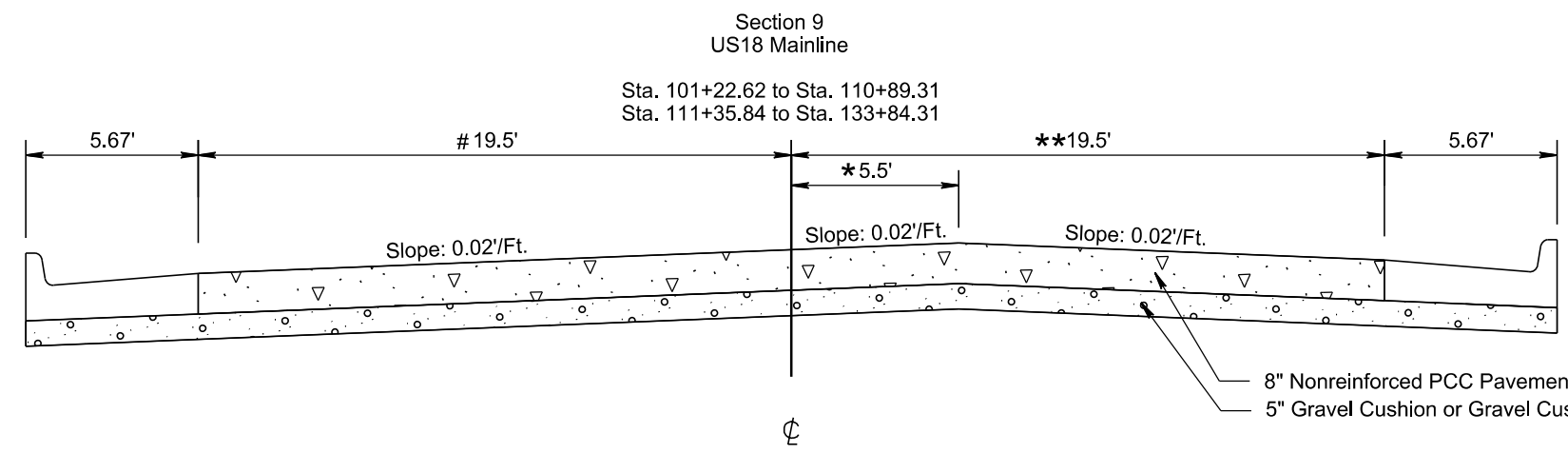
- Sta. 101+22.62 to Sta. 102+62.62  
# 33.5'
- Sta. 102+62.62 to Sta. 103+87.62  
# 33.5' to 19.5'

**Note:**

Sta. 99+37.24 to Sta. 101+22.62  
See PCC Joint Layouts for Intersection Layout

**Transitions:**

- Sta. 133+59.36 to Sta. 133+84.31  
\* 5.5' to 0' Crown Transition
- Sta. 131+22.75 to Sta. 131+83  
\*\* 19.5' to 31.5'
- Sta. 131+83 to Sta. 133+56.14  
\*\* 31.5'



**Transitions:**

- Sta. 133+84.31 to Sta. 134+09.32  
\* 5.5' to 0' Crown Transition
- Sta. 134+09.31 to Sta. 136+50  
\* 0' Crown Transition
- Sta. 133+84.31 to Sta. 136+50  
\*\* 19.5' to 26' (39' to 52' total)

PLOTTED FROM - TRPR13462

# TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F12	F33

Plotting Date: 08/06/2024

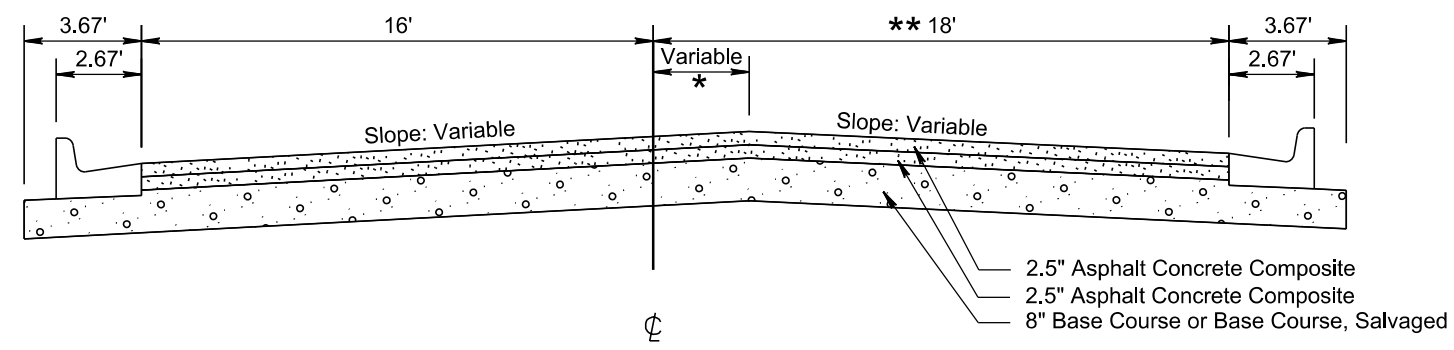
FOR BIDDING PURPOSES ONLY

PLOT SCALE - 1+6.00001

PLOT NAME - 12

## Section 12 XR 117

Sta. 11+00 to Sta. 12+24.23 (Cherokee Ave SE)  
Sta. 13+34.71 to Sta. 14+78.42 (Eastridge Road)

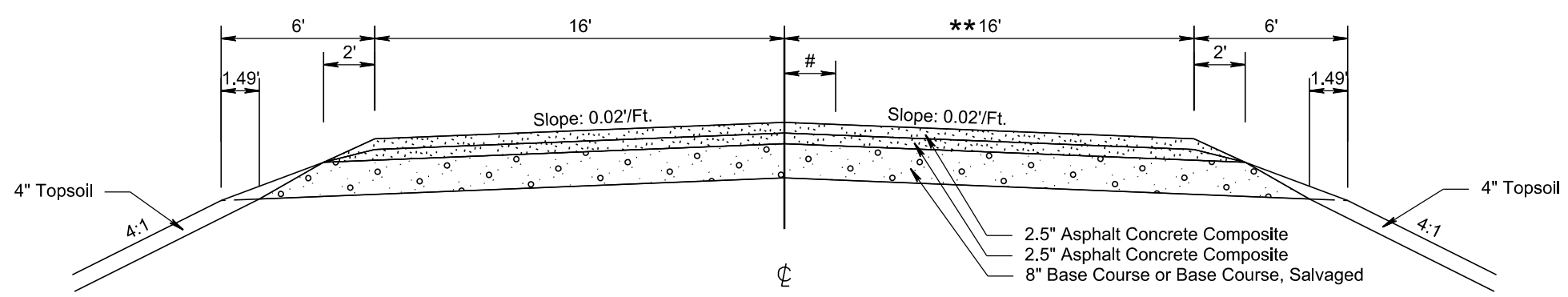


### Transitions:

- Sta. 11+00 to Sta. 12+24.23  
\* 0' Crown Transition
- Sta. 13+91.98 to Sta. 14+78.42  
\* 0' to 3' Crown Transition
- Sta. 13+91.98 to Sta. 14+78.42  
\*\* 16' to 22'

## Section 13 XR133

Sta. 22+13.89 to Sta. 25+53.15 (Indian Health Road)



### Transitions:

- Sta. 23+72.48 to Sta. 25+53.15  
# 0' to 6' Rt Crown Transition
- Sta. 23+72.48 to Sta. 25+53.15  
\*\* 16' to 24'

PLOTTED FROM - TRPR13462

FILE - ... \04FC-TYPICAL SECTIONS.DGN

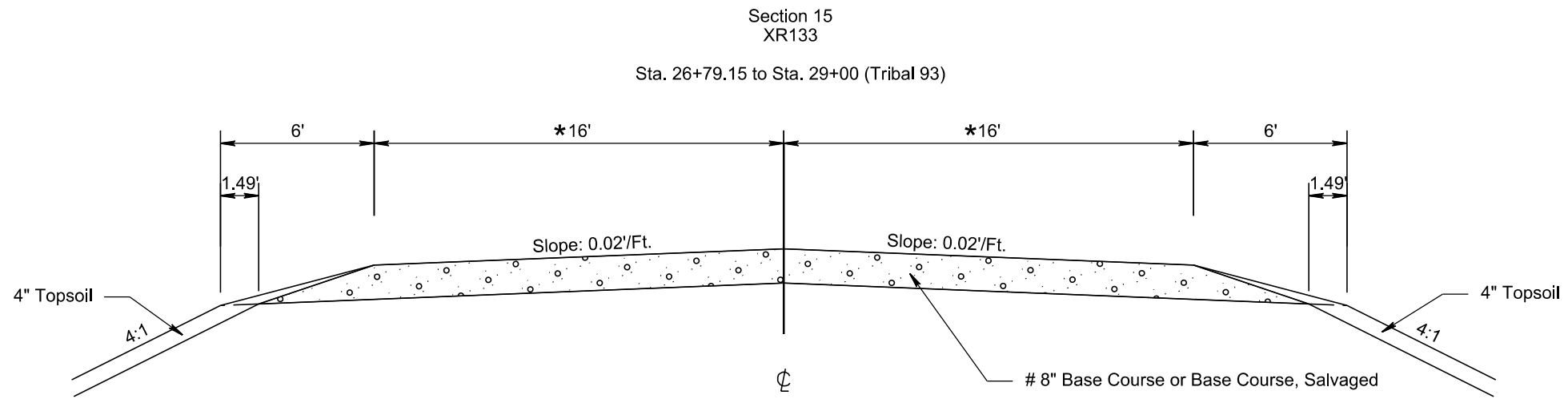
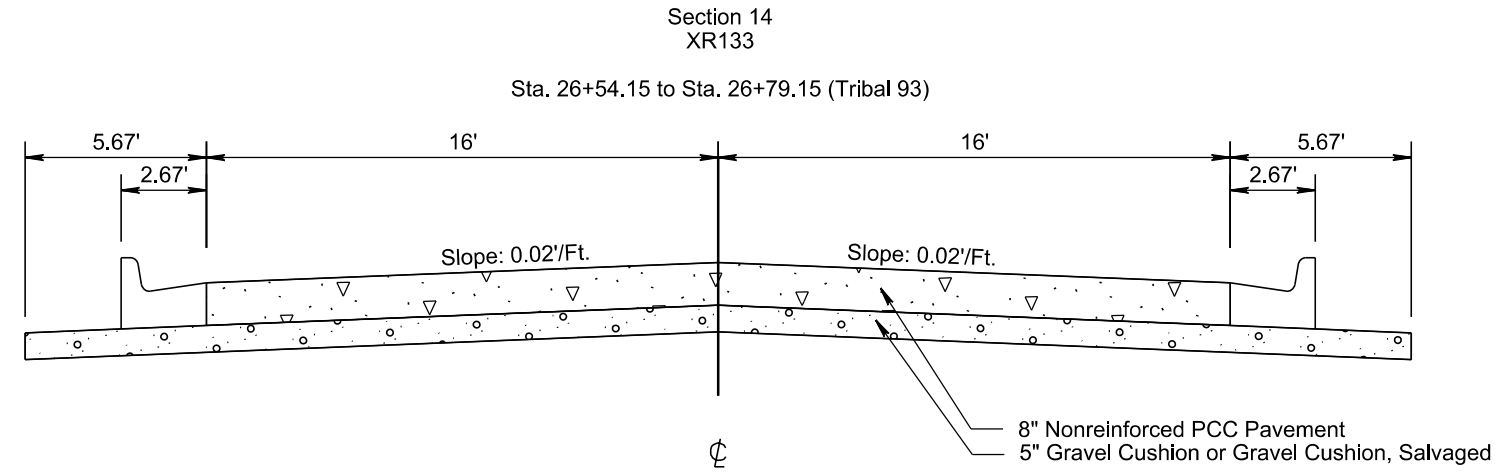
# TYPICAL SURFACING SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F13	F33
Plotting Date: 08/06/2024			

PLOT SCALE - 1+6.00001

PLOT NAME - 13



Transitions:  
Sta. 28+70 to Sta. 29+00  
\* 16' to 10'  
Sta. 26+79.15 to Sta. 27+29.15  
# 13" to 8"

PLOTTED FROM - TRPR13462

FILE - ... \04FC-TYPICAL SECTIONS.DGN

SD HWY 407

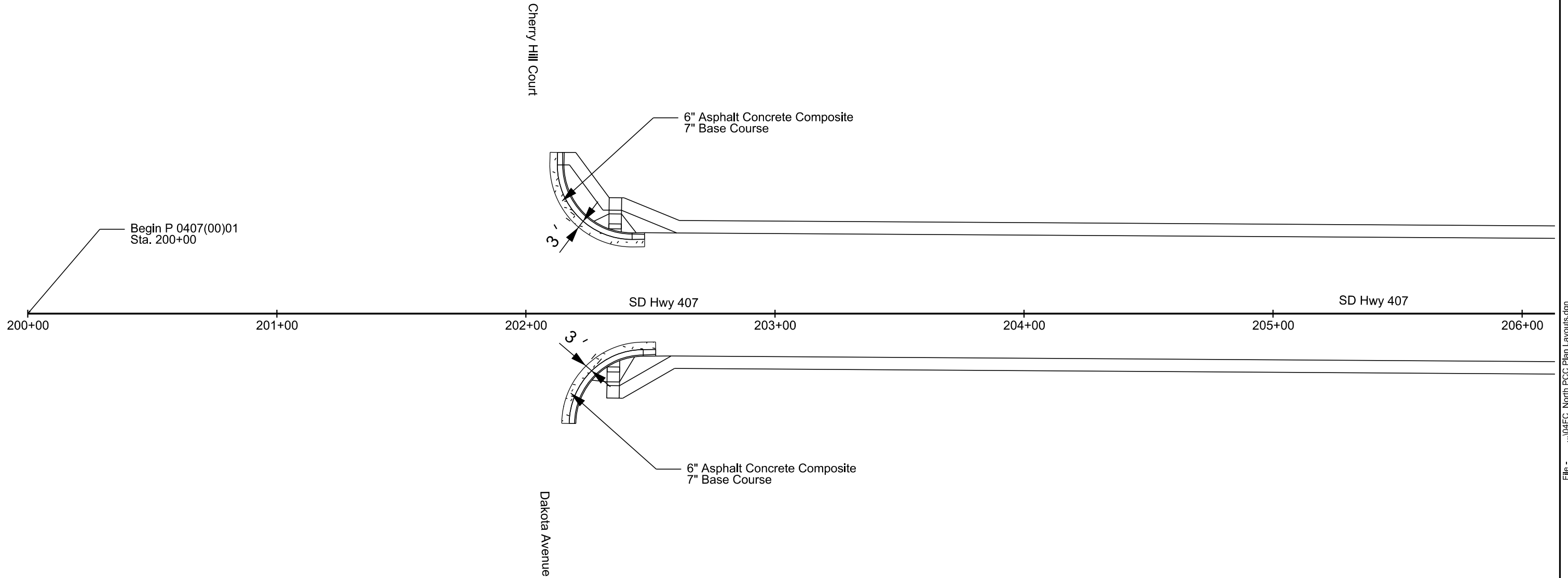
# PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F14	F33
Plotting Date:		08/06/2024	

Scale 1 Inch = 40 Feet  
Sheet 1 of 12 Sheets

Plot Scale - 1:40



**Note:**  
 All driveway approaches and intersecting street curb returns will have 5" Gravel Cushion from Sta. 212+97+.33 to Sta. 215+91.68

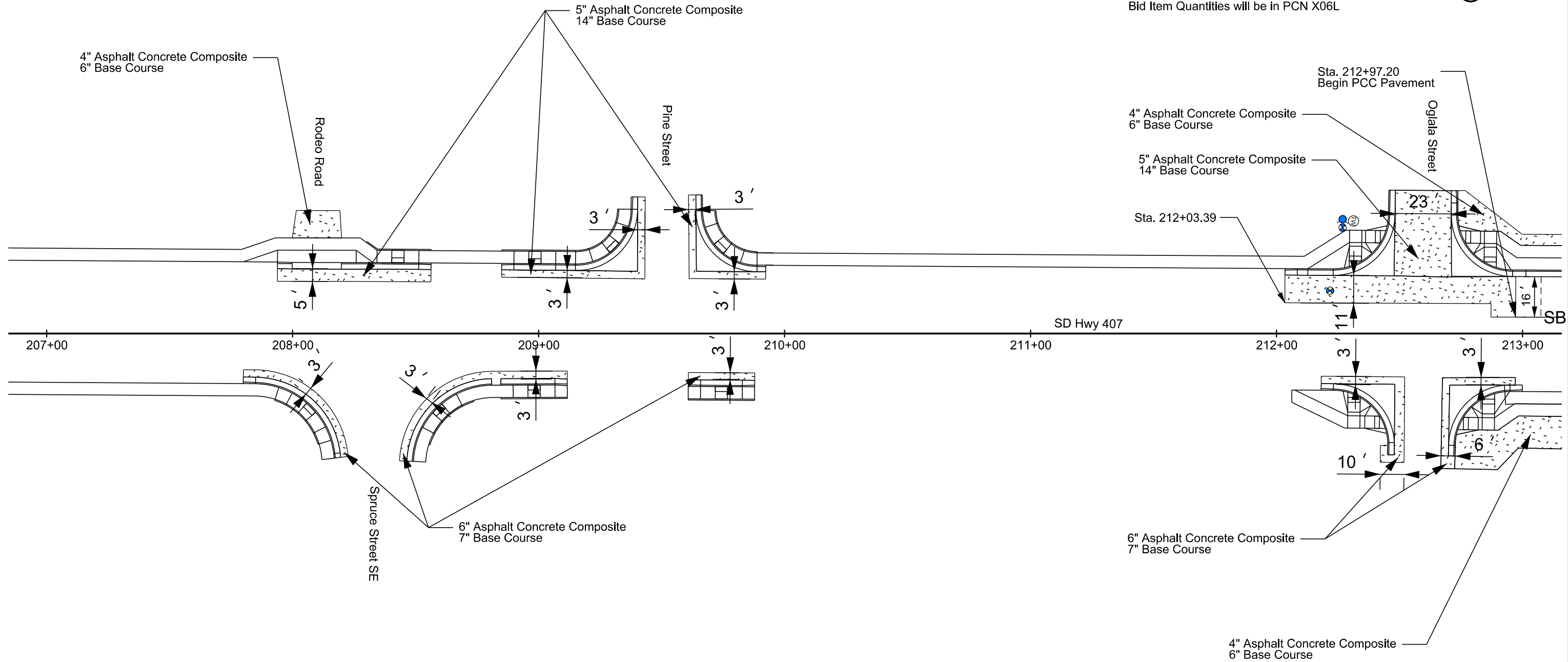
Plotted From - TRPR13462

File - ...104FC\_North PCC Plan Layouts.dgn

Scale 1 Inch = 40 Feet  
Sheet 2 of 12 Sheets

Note:

Sta. 212+03.39 to Sta. 214+50.11  
Bid Item Quantities will be in PCN X06L



Note:

All driveway approaches and intersecting street curb returns will have 5" Gravel Cushion from Sta. 212+97+.33 to Sta. 215+91.68

# SD HWY 407 - PCC PAVEMENT JOINT LAYOUT

## US HWY 18 FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0018(195)103 P 0407(05)01	SHEET F16	TOTAL SHEETS F33
Plotting Date: 08/06/2024			

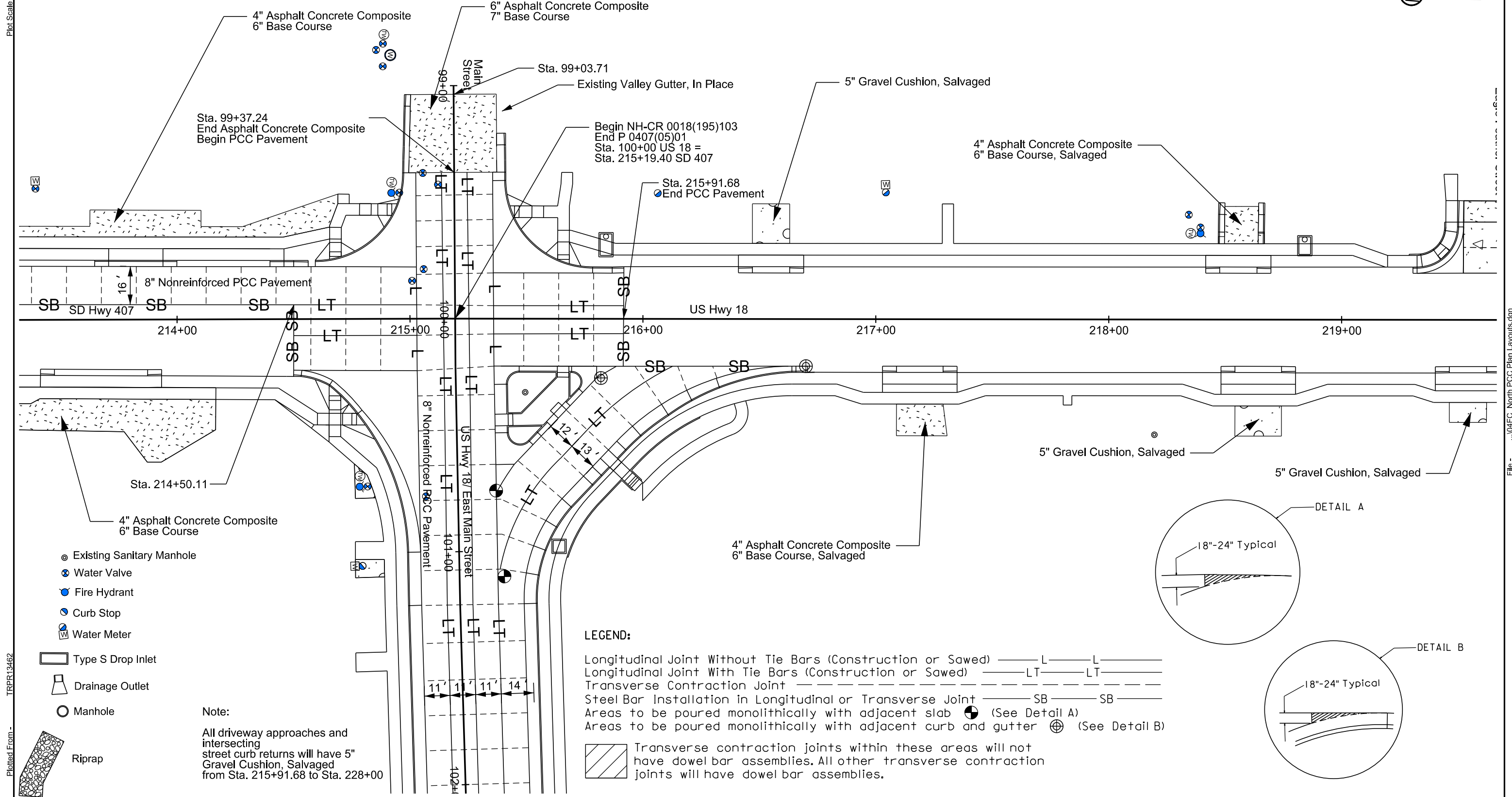
Scale 1 Inch = 40 Feet  
Sheet 3 of 12 Sheets

Note:

Sta. 212+03.39 to Sta. 214+50.11  
Bid Item Quantities will be in PCN X06L



Plot Scale - 1:40



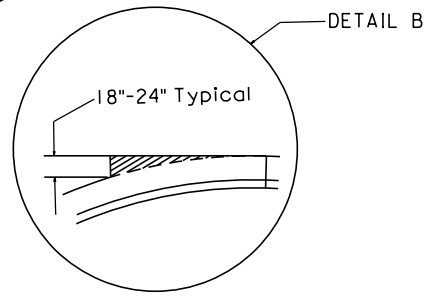
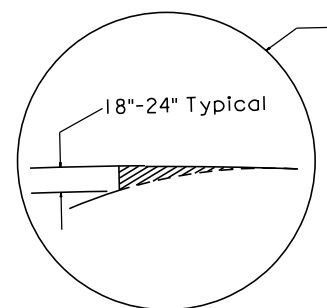
- ⊙ Existing Sanitary Manhole
- ⊗ Water Valve
- Fire Hydrant
- ⊙ Curb Stop
- ⊙ Water Meter

- ▭ Type S Drop Inlet
- ▭ Drainage Outlet
- Manhole
- ▨ Riprap

Note:  
All driveway approaches and intersecting street curb returns will have 5" Gravel Cushion, Salvaged from Sta. 215+91.68 to Sta. 228+00

**LEGEND:**

- Longitudinal Joint Without Tie Bars (Construction or Sawed) ——— L ——— L ———
- Longitudinal Joint With Tie Bars (Construction or Sawed) ——— LT ——— LT ———
- Transverse Contraction Joint ——— ——— ———
- Steel Bar Installation in Longitudinal or Transverse Joint ——— SB ——— SB ———
- Areas to be poured monolithically with adjacent slab ● (See Detail A)
- Areas to be poured monolithically with adjacent curb and gutter ⊕ (See Detail B)
- ▨ Transverse contraction joints within these areas will not have dowel bar assemblies. All other transverse contraction joints will have dowel bar assemblies.



Plotted From: TRPR13462

File: ...104FC\_North PCC Plan Layouts.dgn



# US HWY 18

# PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0018(195)103 P 0407(05)01	SHEET F17	TOTAL SHEETS F33
Plotting Date: 08/06/2024			

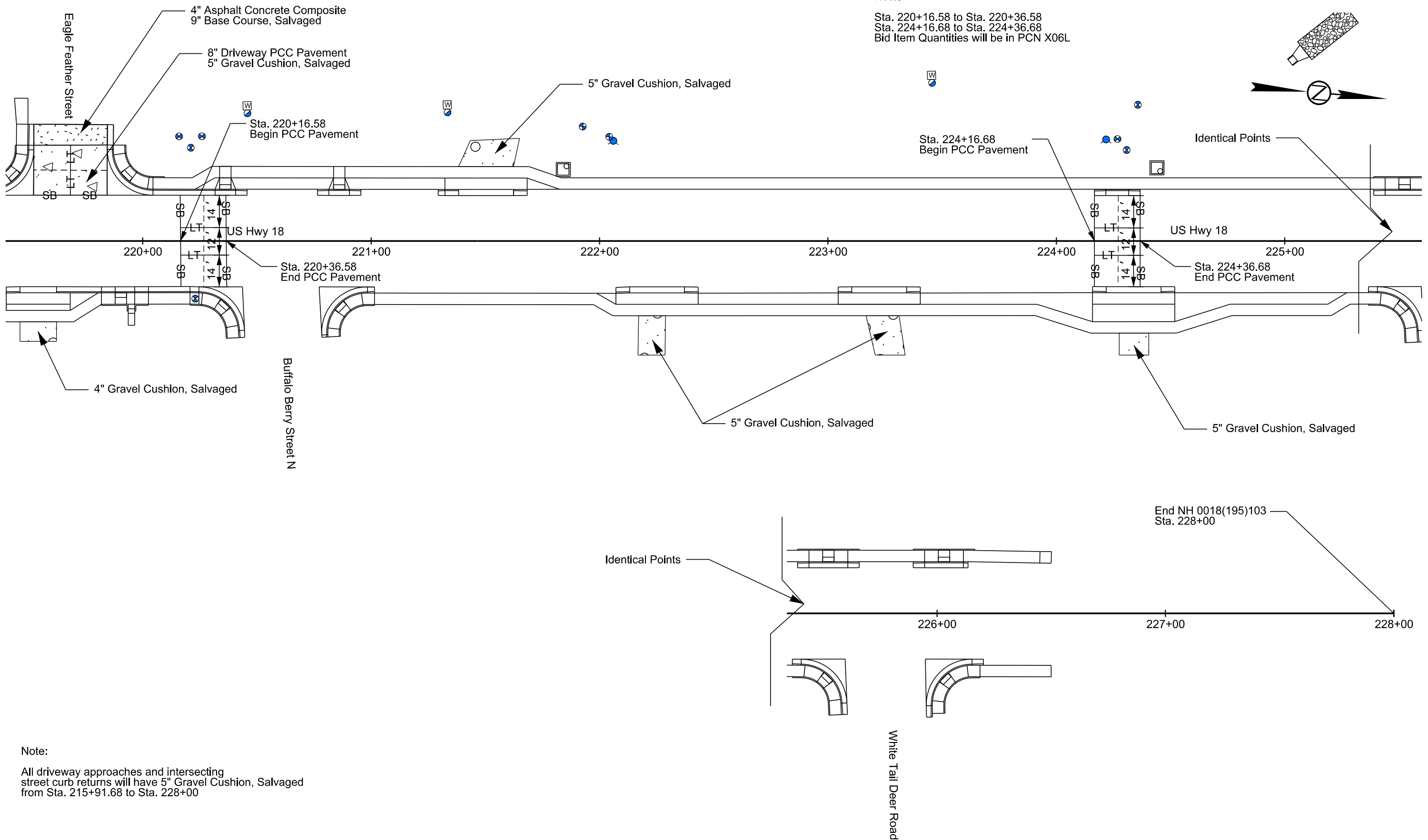
Scale 1 Inch = 40 Feet  
Sheet 4 of 12 Sheets

Note:

Sta. 220+16.58 to Sta. 220+36.58  
Sta. 224+16.68 to Sta. 224+36.68  
Bid Item Quantities will be in PCN X06L

Plot Scale - 1:40

Plotted From - TRPR13462



Note:

All driveway approaches and intersecting street curb returns will have 5" Gravel Cushion, Salvaged from Sta. 215+91.68 to Sta. 228+00

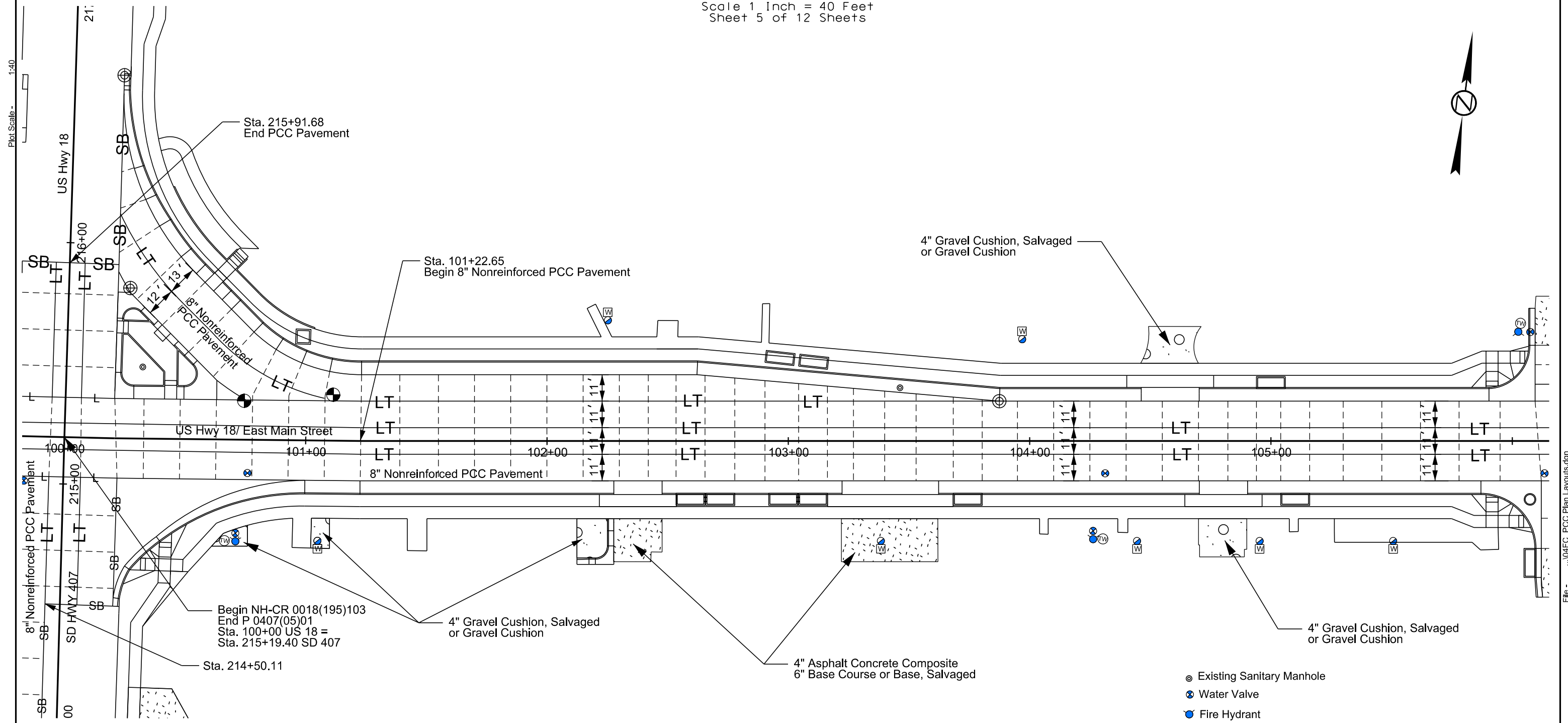
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# US HWY 18 PCC PAVEMENT JOINT LAYOUT

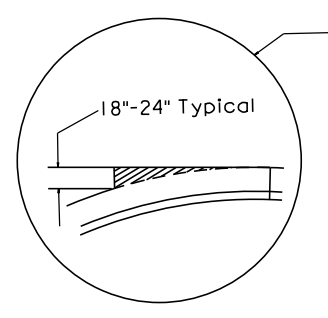
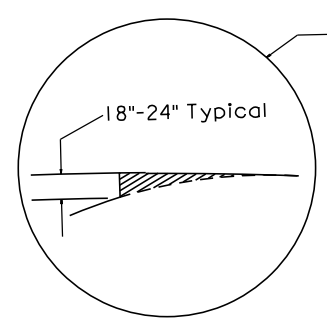
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F18	F33
Plotting Date: 08/06/2024			

Scale 1 Inch = 40 Feet  
Sheet 5 of 12 Sheets



- LEGEND:**
- Longitudinal Joint Without Tie Bars (Construction or Sawed) ——— L ——— L ———
  - Longitudinal Joint With Tie Bars (Construction or Sawed) ——— LT ——— LT ———
  - Transverse Contraction Joint ——— - - - - -
  - Steel Bar Installation in Longitudinal or Transverse Joint ——— SB ——— SB ———
  - Areas to be poured monolithically with adjacent slab (See Detail A)
  - Areas to be poured monolithically with adjacent curb and gutter (See Detail B)
- Transverse contraction joints within these areas will not have dowel bar assemblies. All other transverse contraction joints will have dowel bar assemblies.



- Existing Sanitary Manhole
- Water Valve
- Fire Hydrant
- Curb Stop
- Water Meter
- Type S Drop Inlet
- Drainage Outlet
- Manhole
- Riprap

Plot Scale - 1:40

Plotted From - TRPR13462

File - ...104FC\_PCC Plan Layouts.dgn

# US HWY 18

# PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

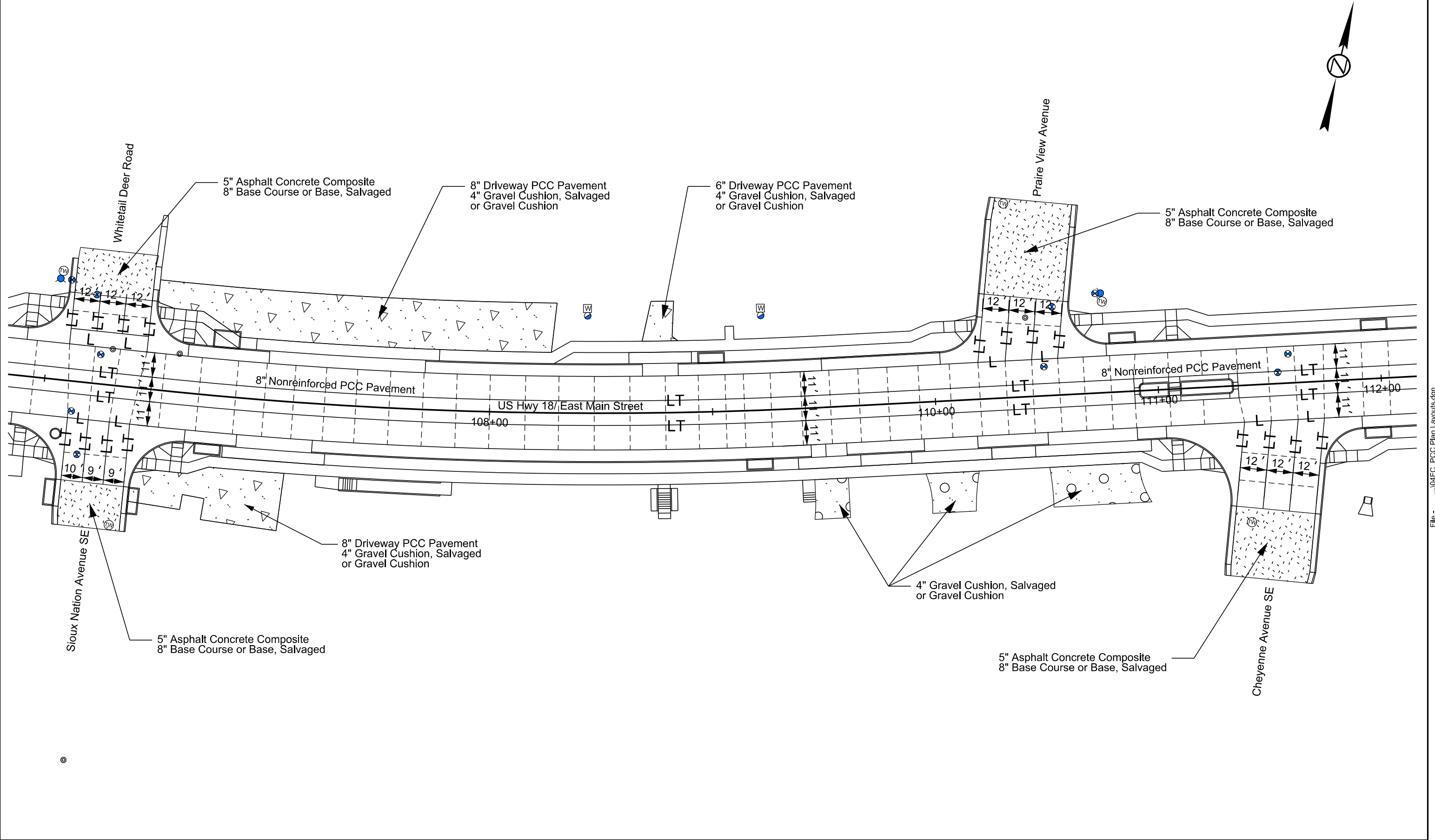
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F19	F33
Plotting Date: 08/06/2024			

Scale 1 Inch = 40 Feet  
Sheet 6 of 12 Sheets

Plot Scale - 1:40

Plotted From - TRPR13462

File - ...104FC\_PCC Plan Layouts.dgn



US HWY 18

# PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

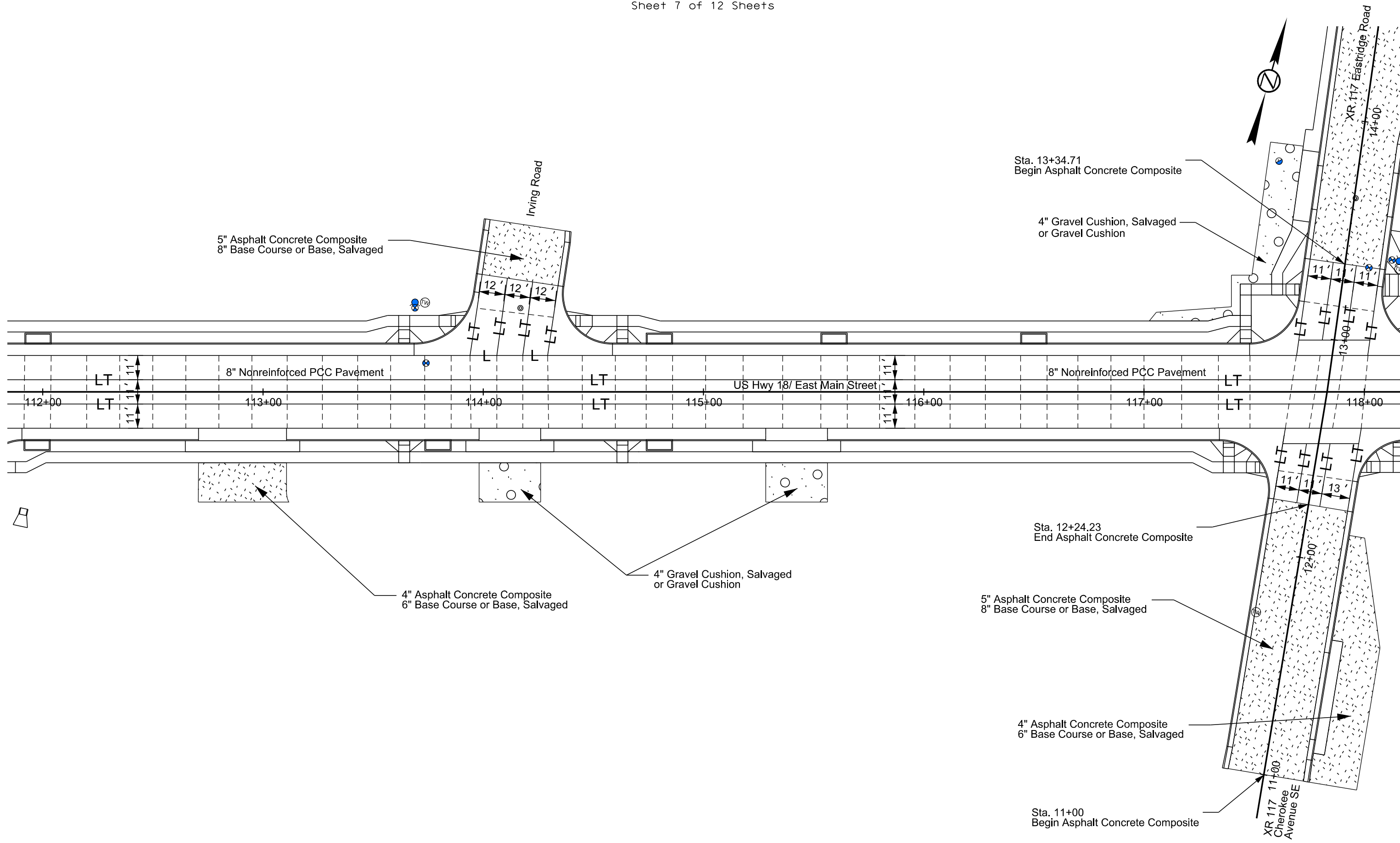
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F20	F33
Plotting Date: 08/06/2024			

Scale 1 Inch = 40 Feet  
Sheet 7 of 12 Sheets

Plot Scale - 1:40

Plotted From - TRPR13462

File - ...104FC\_PCC Plan Layouts.dgn





US HWY 18

# PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

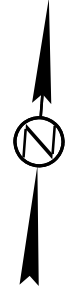
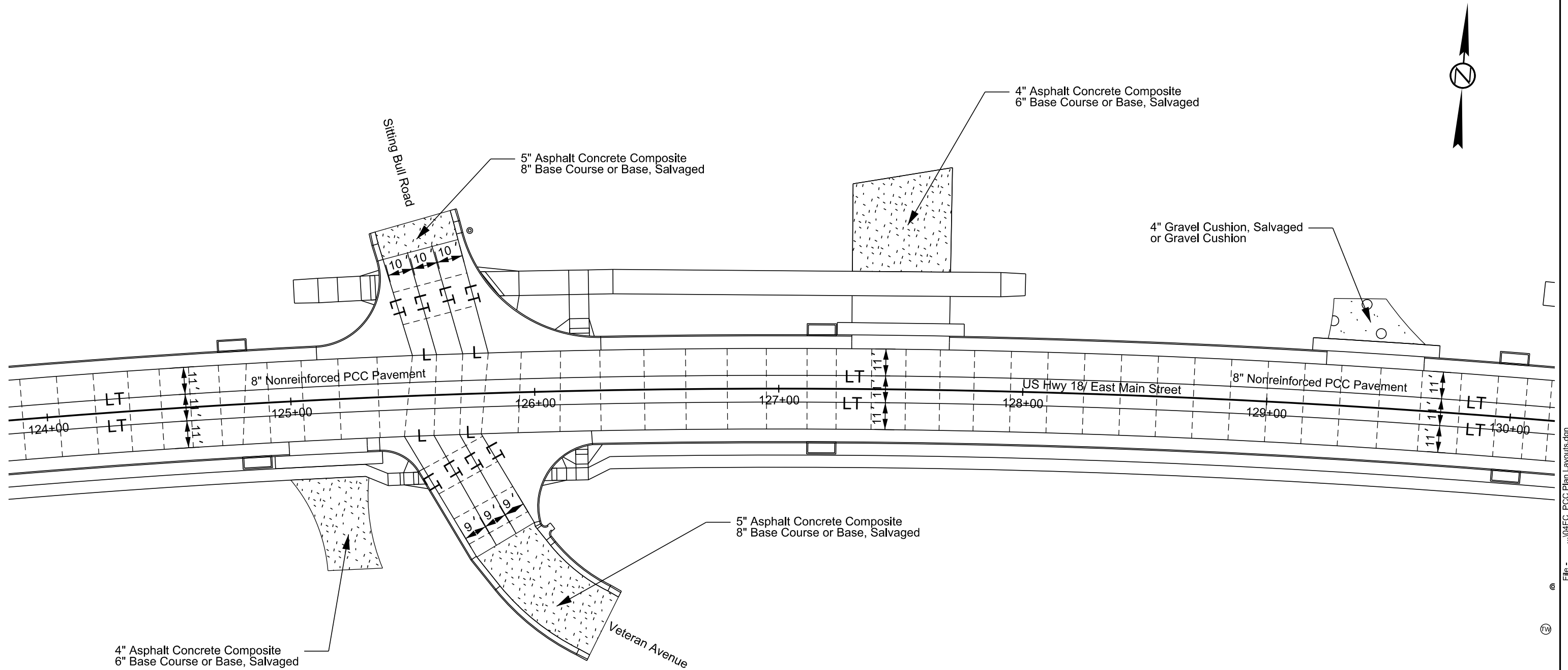
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F22	F33
Plotting Date: 08/06/2024			

Scale 1 Inch = 40 Feet  
Sheet 9 of 12 Sheets

Plot Scale - 1:40

Plotted From - TRPR13462

File - ...104FC\_PCC Plan Layouts.dgn



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US HWY 18

# PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F23	F33

Plotting Date: 08/06/2024

Revised: 08-06-2024 RTS

Scale 1 Inch = 40 Feet  
Sheet 10 of 12 Sheets

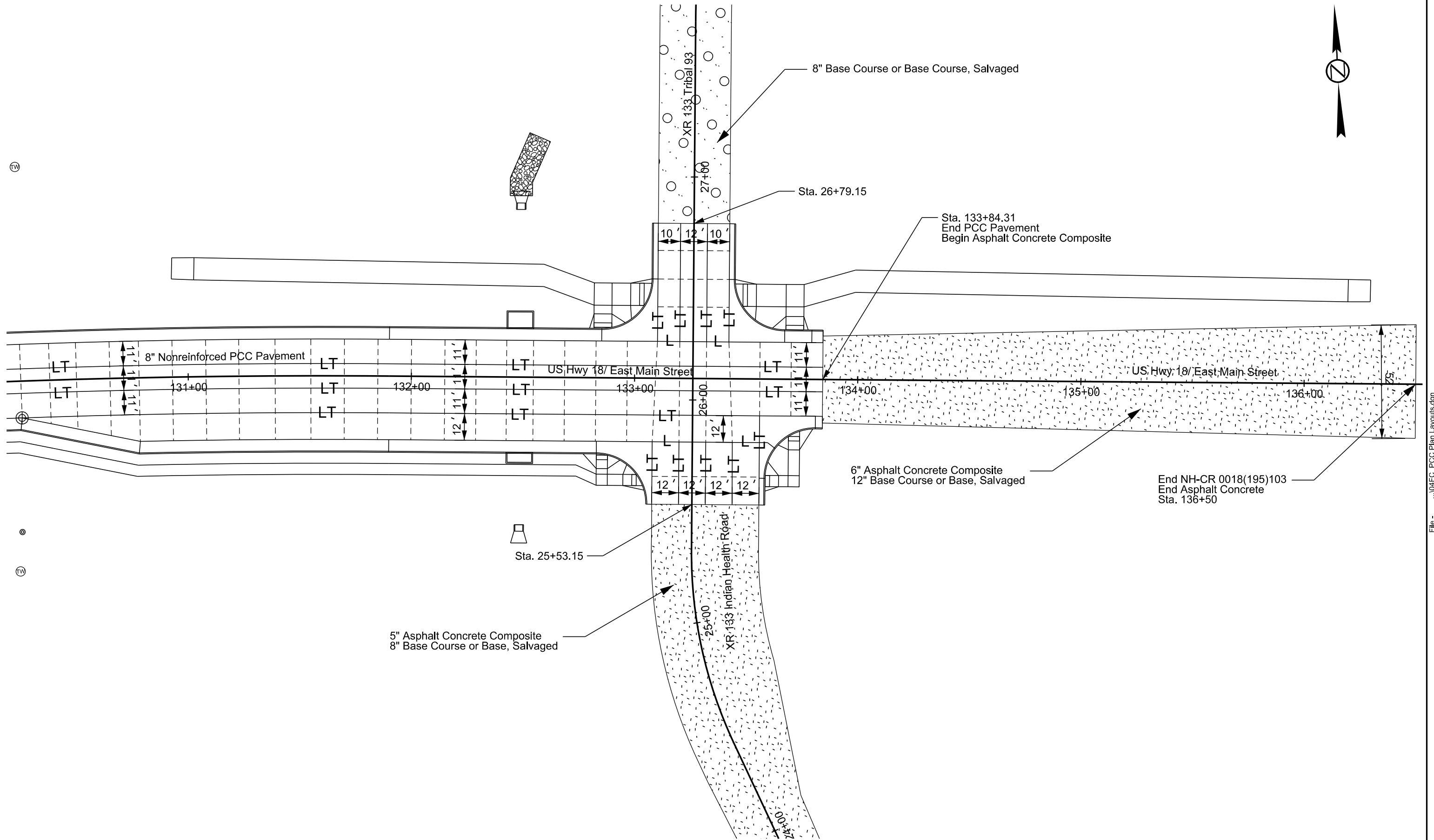
Plot Scale - 1:40

27

28

Plotted From - TRPR13462

Plotted From -



US HWY 18

# PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F24	F33

Plotting Date: 08/06/2024

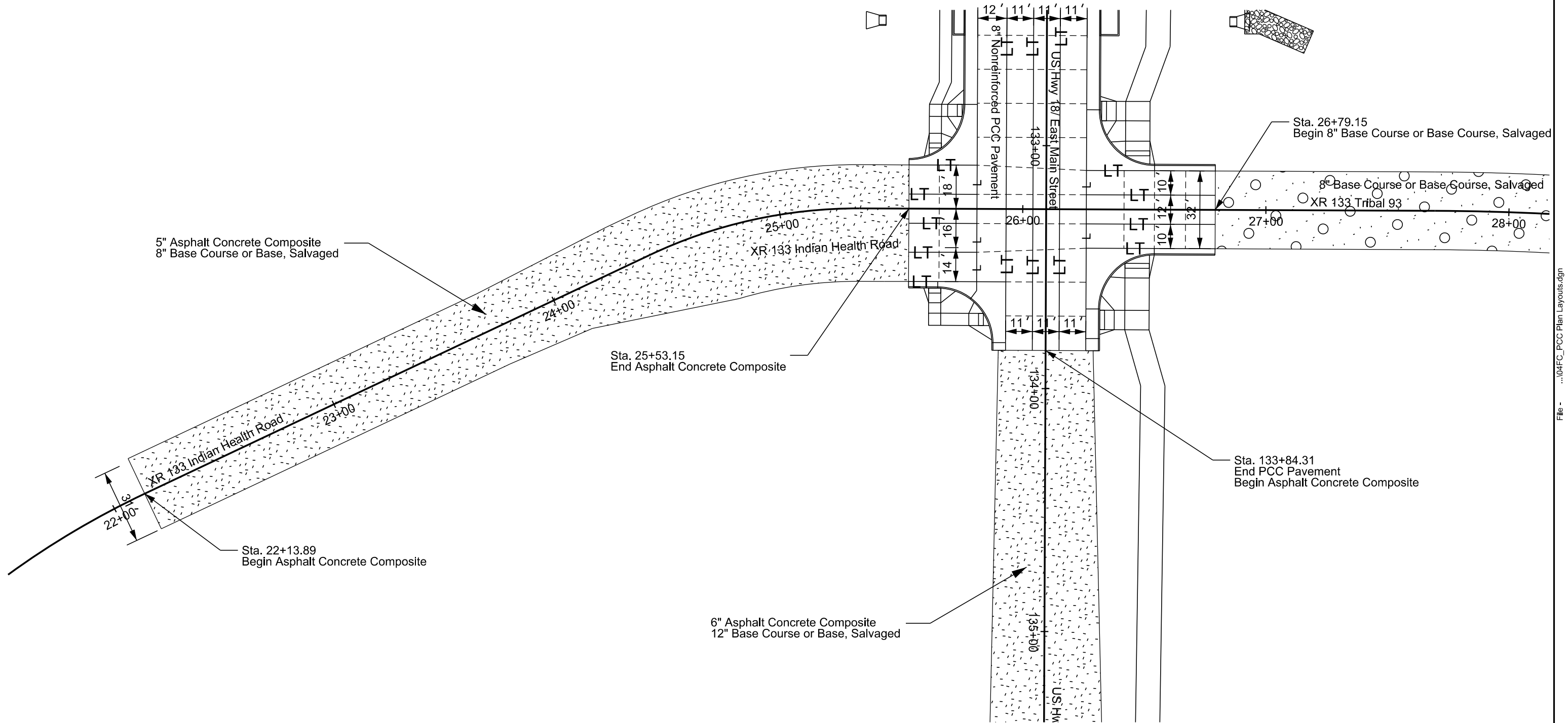
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Sheet 11 of 12 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

File - ...104FC\_PCC Plan Layouts.dgn





# US HWY 18

# PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F25	F33

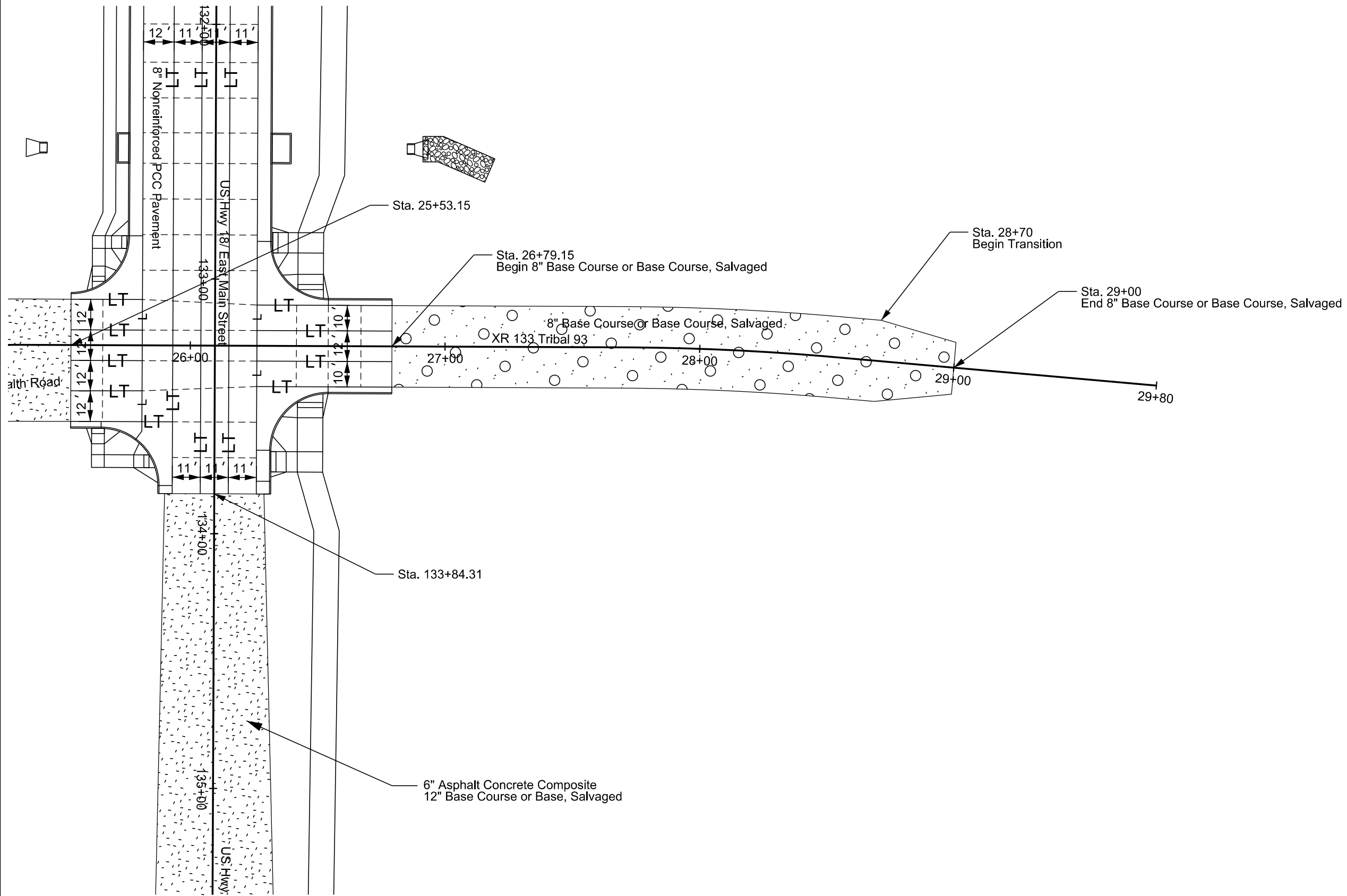
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Scale 1 Inch = 40 Feet  
Sheet 12 of 12 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

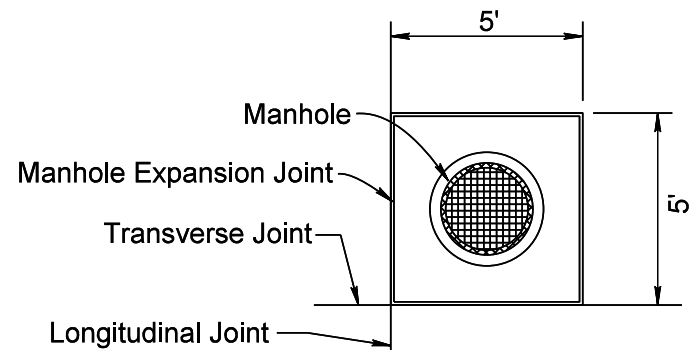


# TYPICAL MANHOLE BOX-OUT DETAILS FOR PCC PAVEMENT

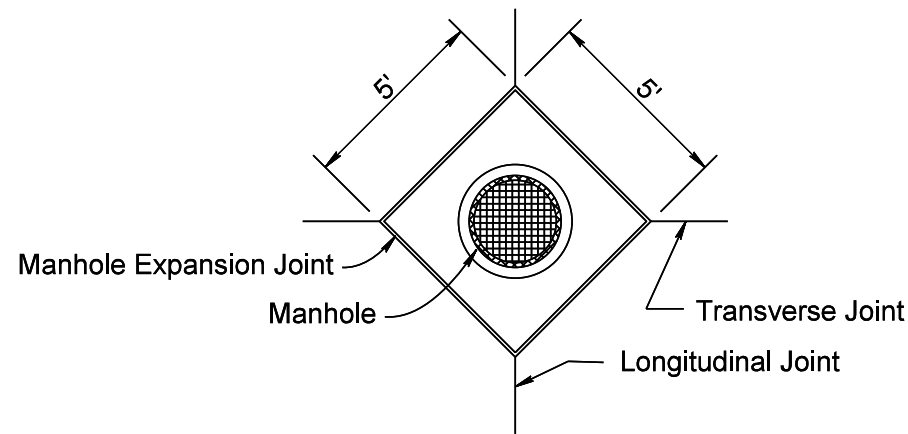
FOR BIDDING PURPOSES ONLY

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Plotting Date: 08/06/2024			

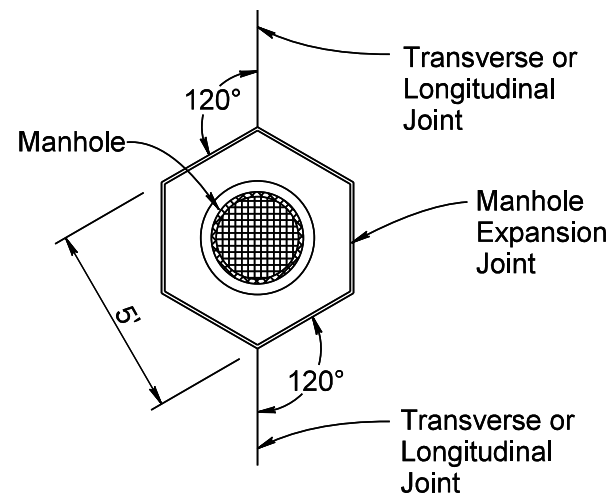
## BOX-OUT DETAIL IN PCC PAVEMENT



Where the utility access is offset from the longitudinal and transverse joints

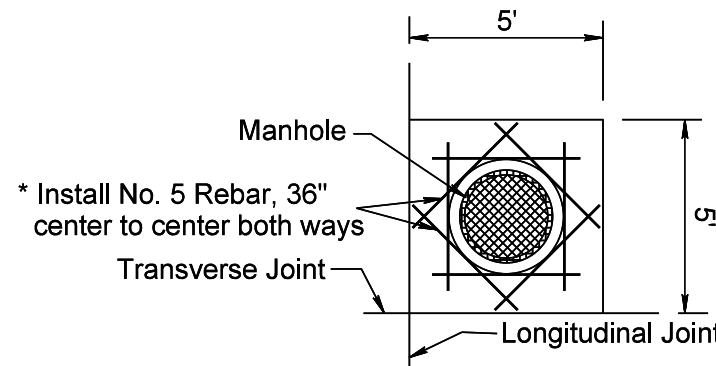


Where the utility access is intersected by the longitudinal and transverse joints

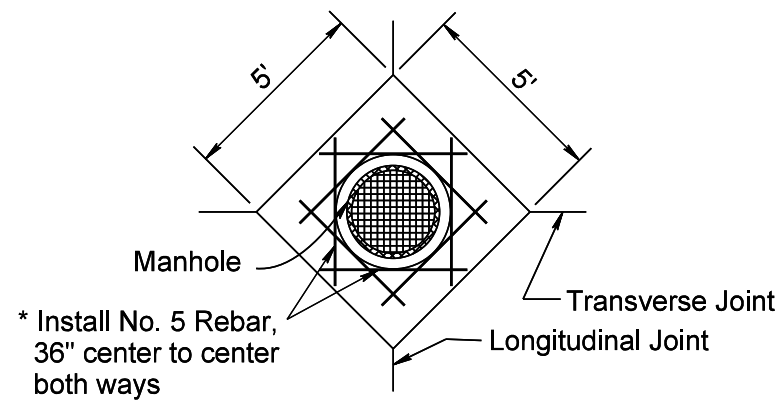


Where no Longitudinal or Transverse joints are present or at Longitudinal or Transverse joint.

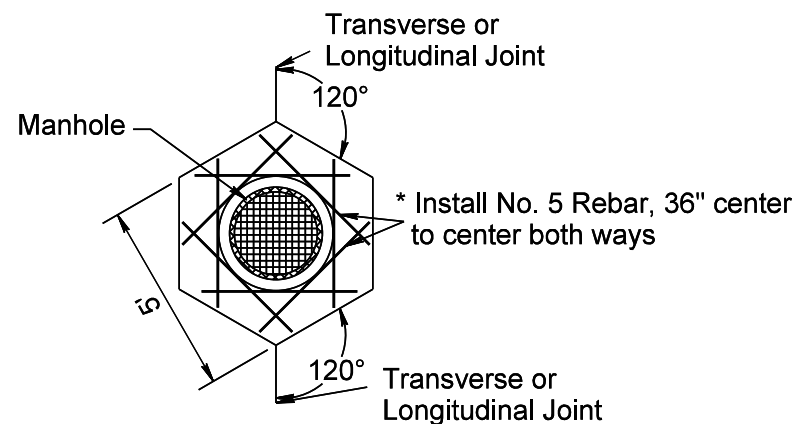
## REBAR LAYOUTS IN PCC PAVEMENT WITH BOX-OUTS



Where the utility access is offset from the longitudinal and transverse joints

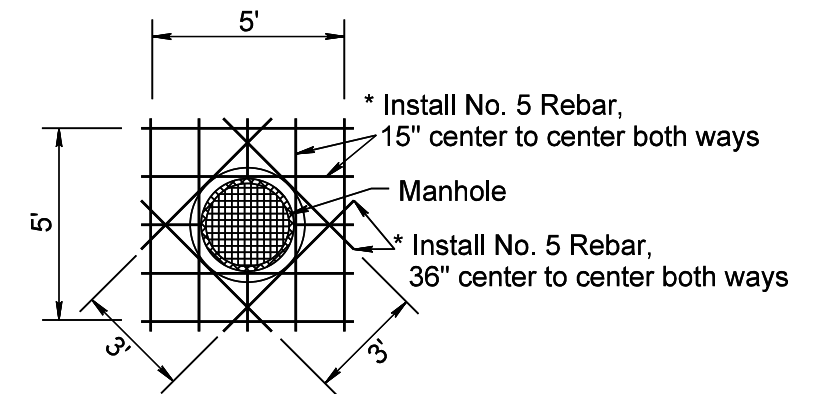


Where the utility access is intersected by the longitudinal and transverse joints



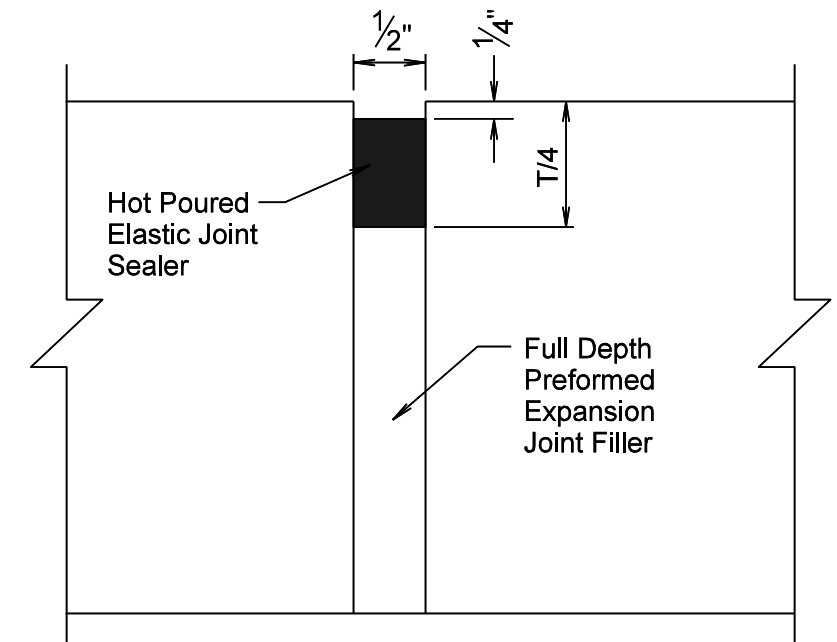
Where no Longitudinal or Transverse joints are present or at Longitudinal or Transverse joint.

## REBAR LAYOUT IN PCC PAVEMENT WITHOUT BOX-OUT



Note: The rebar shall not cross any joint in the concrete pavement. If manhole is next to a joint in the concrete pavement the Engineer shall approve a revised layout of the rebar.

## MANHOLE EXPANSION JOINT DETAIL



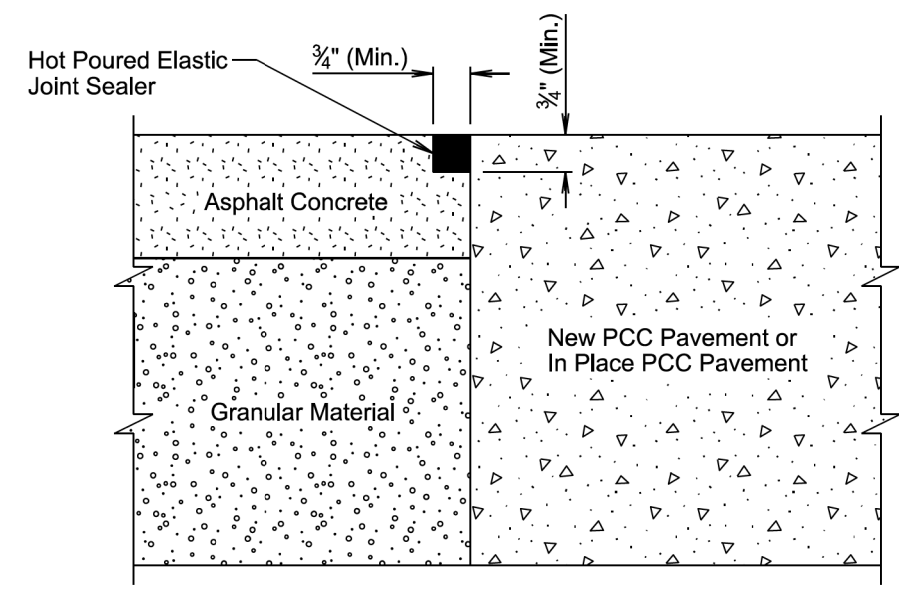
\* Rebar will be placed at the midpoint depth of the PCC Pavement. Cost for furnishing & installing rebar and constructing box-outs shall be incidental to the contract unit price per square yard for 8" Nonreinforced PCC Pavement.

Plot Scale - 1:6

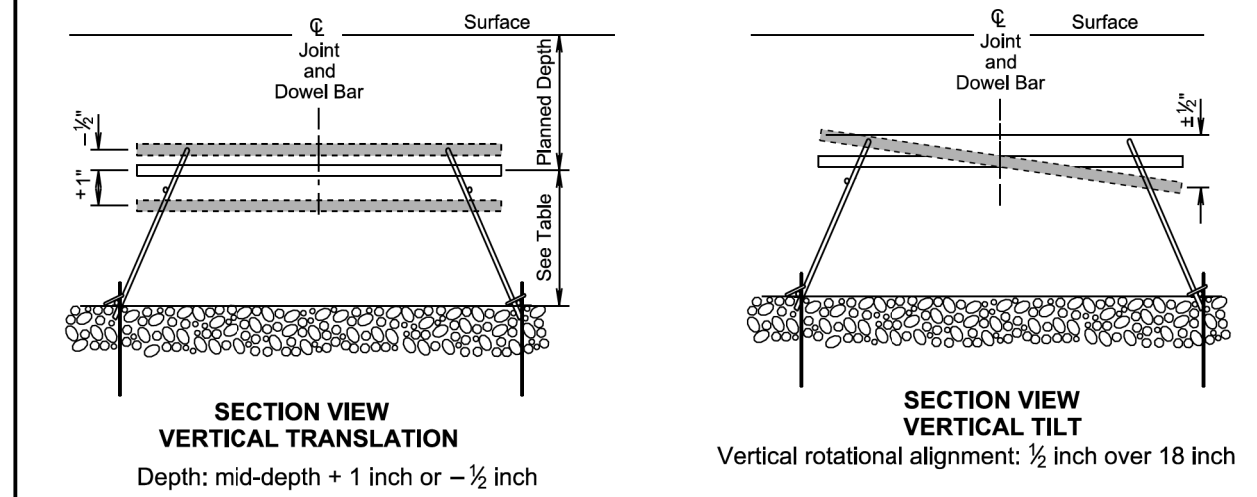
TRPR13462

Plotted From -

File - ...logla04fCimanhole detail.dgn

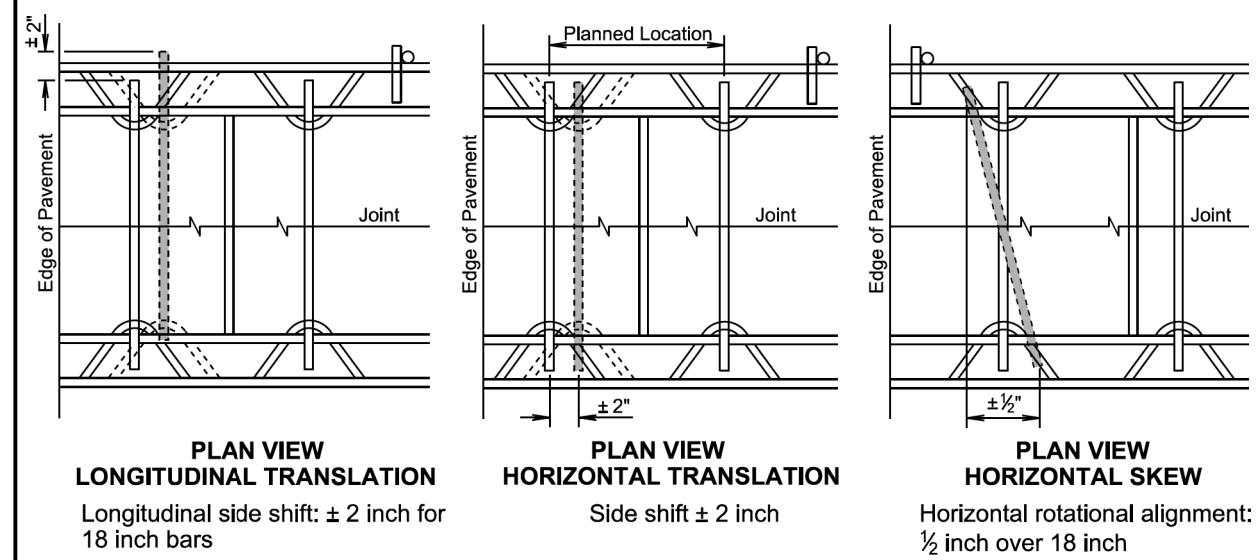


**TRANSVERSE SECTION**  
(Asphalt Concrete Shoulder Joint)



**SECTION VIEW VERTICAL TRANSLATION**  
Depth: mid-depth + 1 inch or - 1/2 inch

**SECTION VIEW VERTICAL TILT**  
Vertical rotational alignment: 1/2 inch over 18 inch



**PLAN VIEW LONGITUDINAL TRANSLATION**  
Longitudinal side shift: ± 2 inch for 18 inch bars

**PLAN VIEW HORIZONTAL TRANSLATION**  
Side shift ± 2 inch

**PLAN VIEW HORIZONTAL SKEW**  
Horizontal rotational alignment: 1/2 inch over 18 inch

PAVEMENT THICKNESS	EPOXY COATED DOWEL BAR SIZE	HEIGHT TO CENTER
7" to 7 1/2"	1" x 18"	3.0"
8" to 10"	1 1/4" x 18"	4.0"
10 1/2" to 13"	1 1/2" x 18"	5.0"

**GENERAL NOTE:**

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

September 14, 2019

November 19, 2022

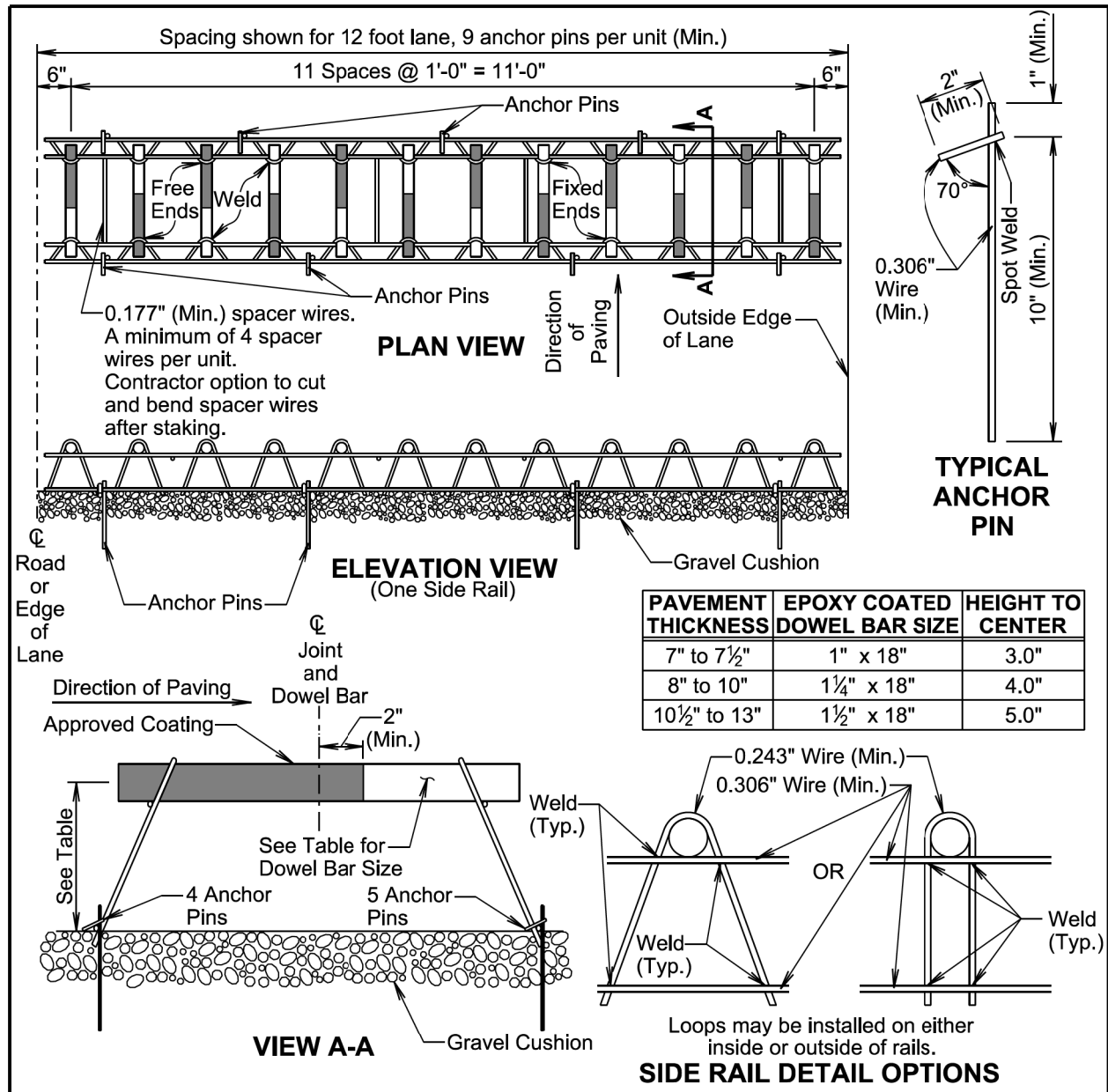
Published Date: 2025	S D D O T	ASPHALT CONCRETE SHOULDER JOINT ADJACENT TO PCC PAVEMENT	PLATE NUMBER 320.15
		Sheet 1 of 1	

Published Date: 2025	S D D O T	PCC PAVEMENT DOWEL BAR ALIGNMENT TOLERANCES	PLATE NUMBER 380.01
		Sheet 1 of 1	

Plot Scale - 1:200

Plotted From - TRPR13462

File - ...logla04FCISDPlateSectionF.dgn



**GENERAL NOTES:**

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

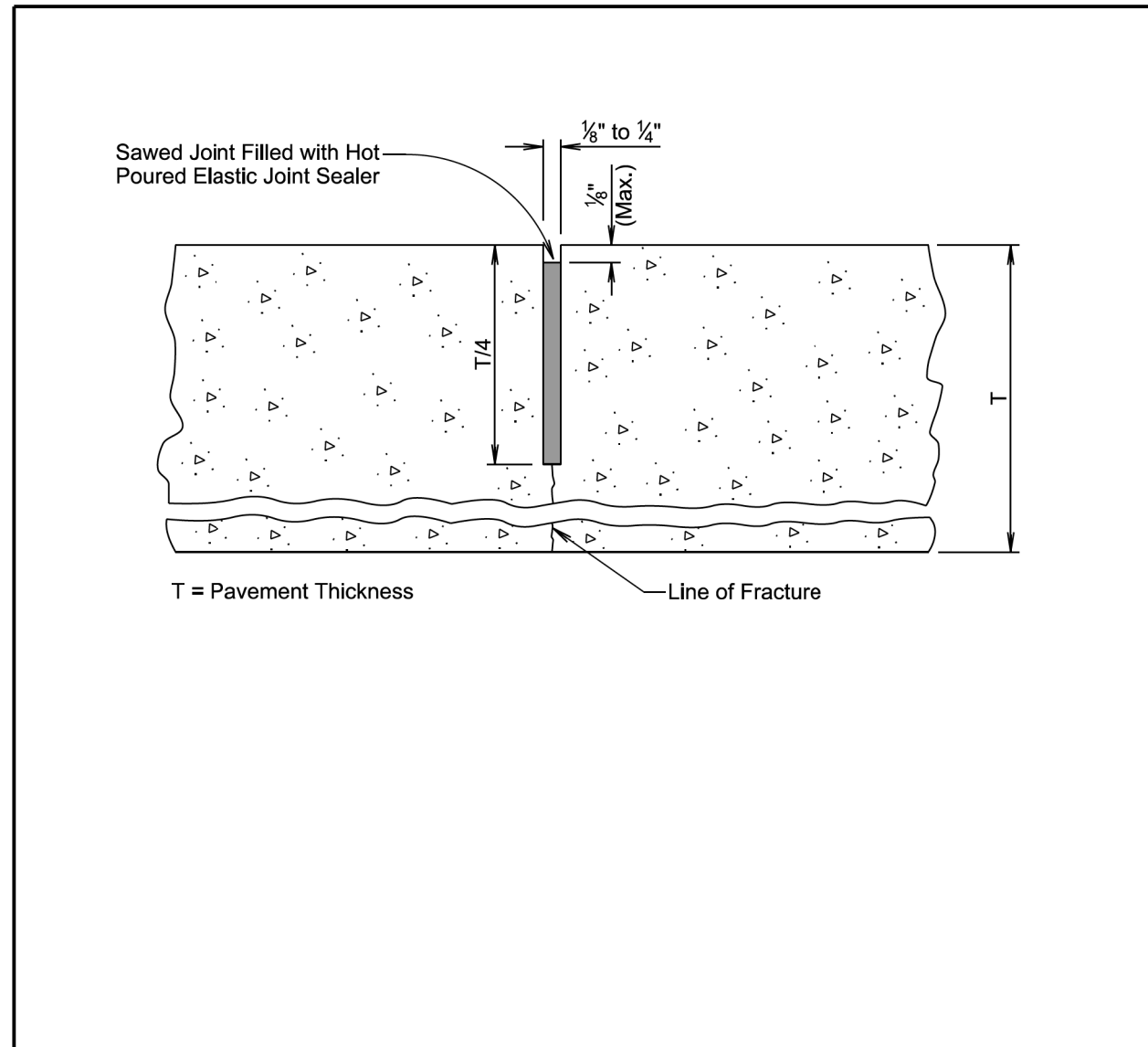
The transverse contraction joints will be sawed perpendicular to the centerline of the roadway. The transverse sawed joint will be centered over the dowel bars.

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

Published Date: 2025	S D D O T	PCC PAVEMENT DOWEL BAR ASSEMBLY FOR TRANSVERSE CONTRACTION JOINTS 12 Bar Assembly on Granular Base Material	PLATE NUMBER 380.04
			Sheet 1 of 1



**GENERAL NOTES:**

If an early entrance saw cut does not develop the full transverse crack, then the saw cut to control cracking will be a minimum ¼ of the thickness of the pavement.

All hot poured elastic joint sealer material spilled on the surface of the concrete pavement will be removed as soon as the material has cooled. The extent of removal of material will be to the satisfaction of the Engineer. All costs for removal of the spilled joint sealer material will be borne by the Contractor.

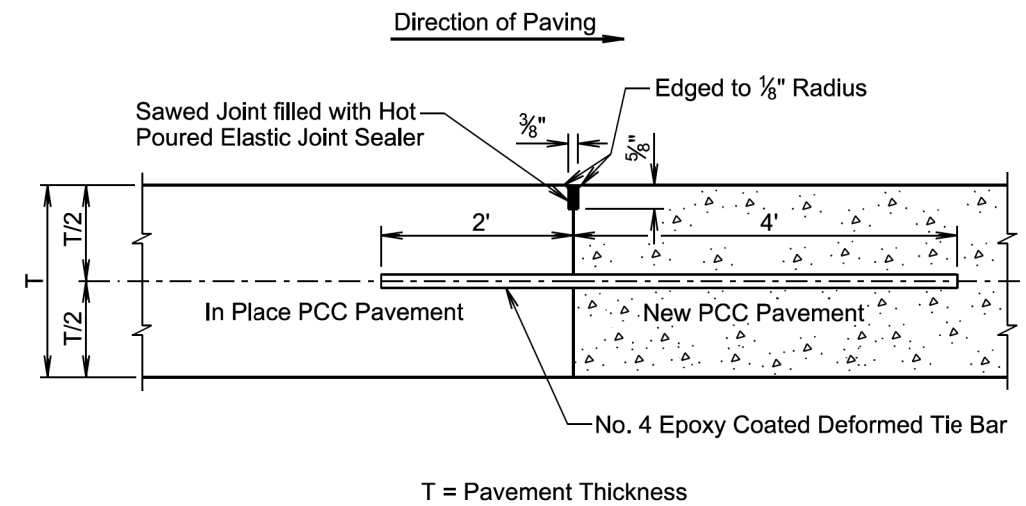
November 19, 2022

Published Date: 2025	S D D O T	PCC PAVEMENT TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY	PLATE NUMBER 380.12
			Sheet 1 of 1

Plot Scale - 1:200

Plotted From - TRPR13462

File - ...logla04FCStdPlateSectionF.dgn



**GENERAL NOTES:**

No. 4 epoxy coated deformed tie bars will be spaced 12 inches center to center and will be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

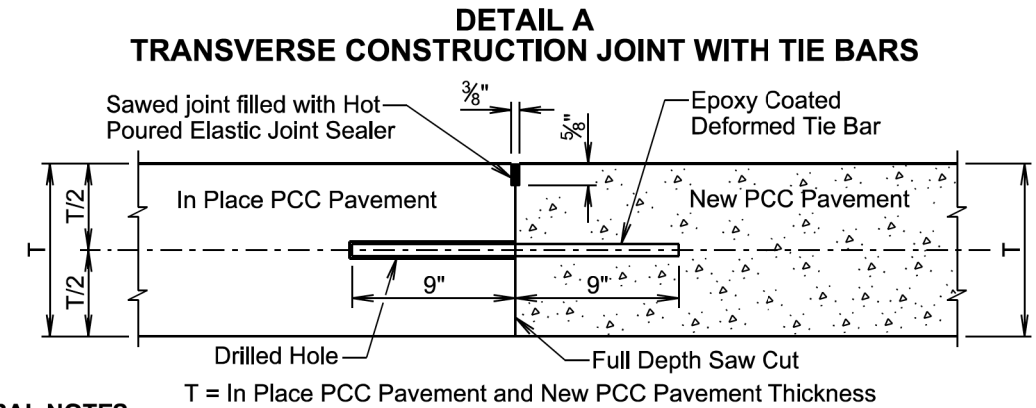
The minimum distance between a transverse construction joint with tie bars and an adjacent transverse contraction joint will be 5 feet.

When a transverse construction joint is made, paving will not be allowed in this area for 12 hours.

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

March 31, 2024

<b>Published Date: 2025</b>	<b>S D D O T</b>	<b>PCC PAVEMENT MID PANEL TRANSVERSE CONSTRUCTION JOINT</b>	PLATE NUMBER <b>380.14</b>
			Sheet 1 of 1



**GENERAL NOTES:**

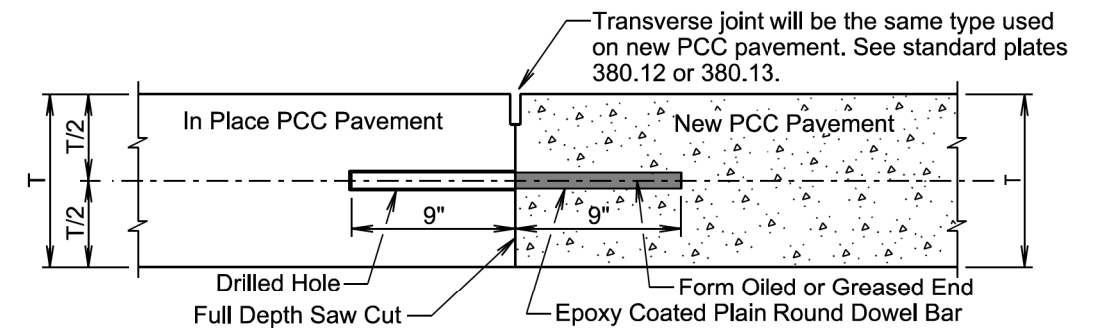
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

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.

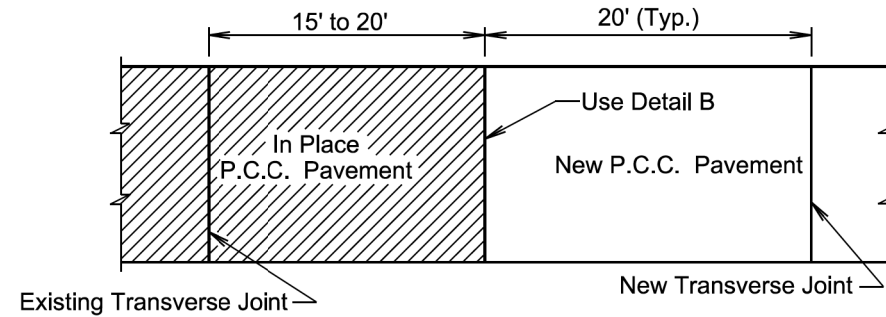
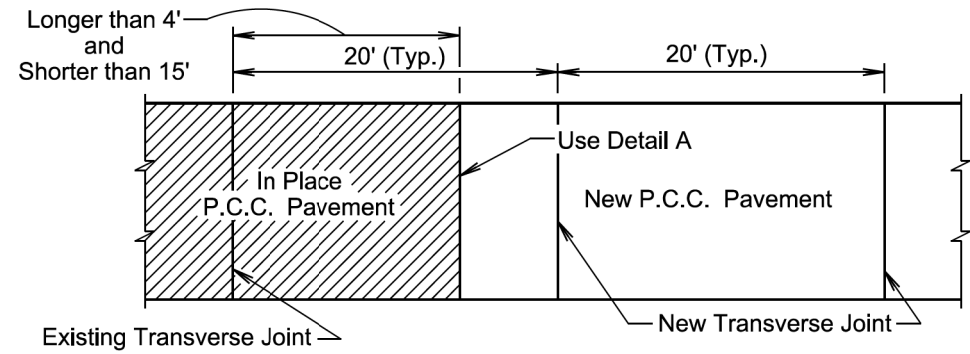
See sheet 2 of 2 of this standard plate to determine if Detail B will be used.

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.

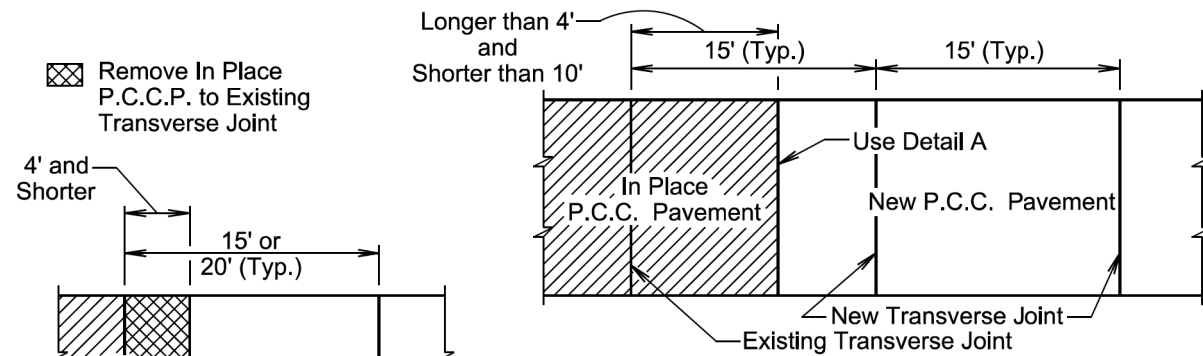
The epoxy coated plain round dowel bar size, number, and spacing will be the same as detailed on the corresponding dowel bar assembly standard plate (380.04, 380.05, 380.06, or 380.07). The epoxy coated plain round dowel bars will be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

January 22, 2023

<b>Published Date: 2025</b>	<b>S D D O T</b>	<b>PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS</b>	PLATE NUMBER <b>380.15</b>
			Sheet 1 of 2

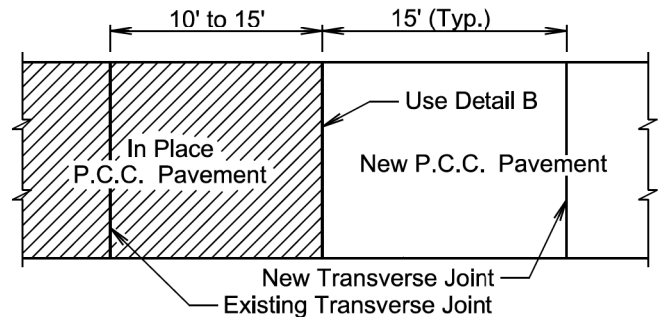
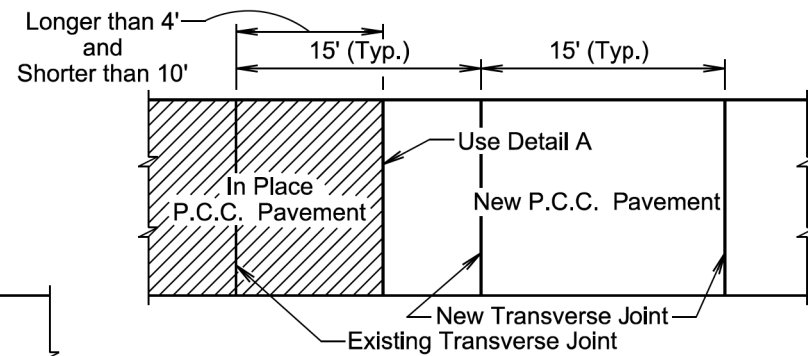


**PLAN VIEW**  
(For typical transverse joint spacing of 20' on the current project)



Existing Transverse Joint and Use Detail B for This Joint

**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: 2025

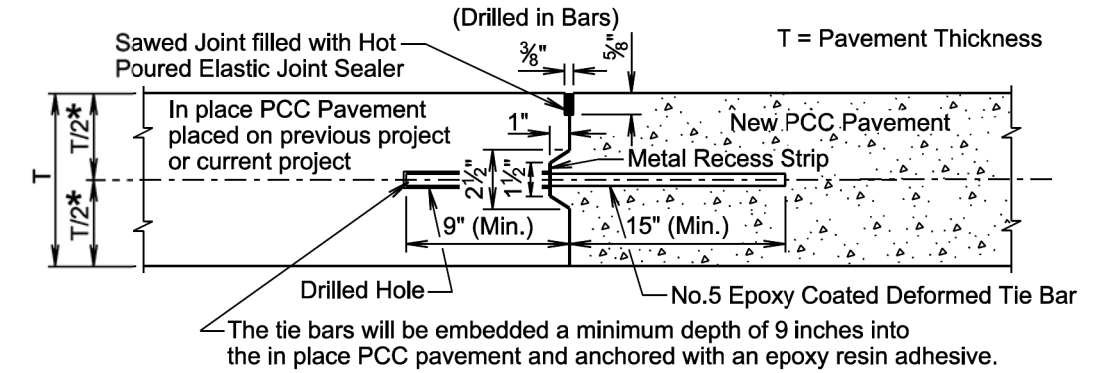
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**PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS**

PLATE NUMBER  
380.15

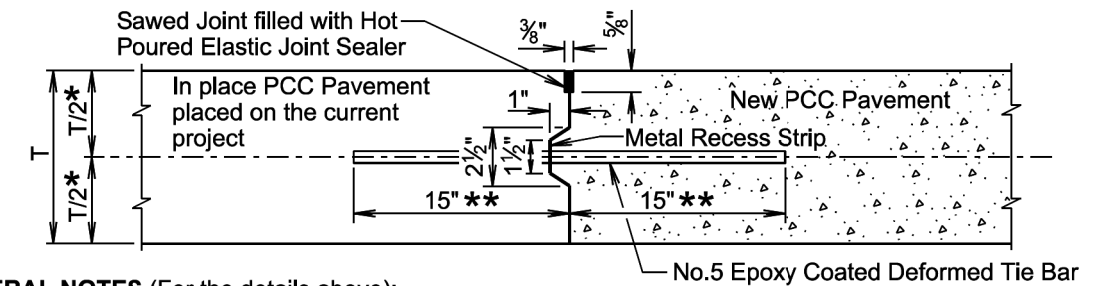
Sheet 2 of 2

**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.

**LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS**  
(Inserted or Formed in Bars)



**GENERAL NOTES** (For the details above):

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

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

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  $\pm 3$  inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2025

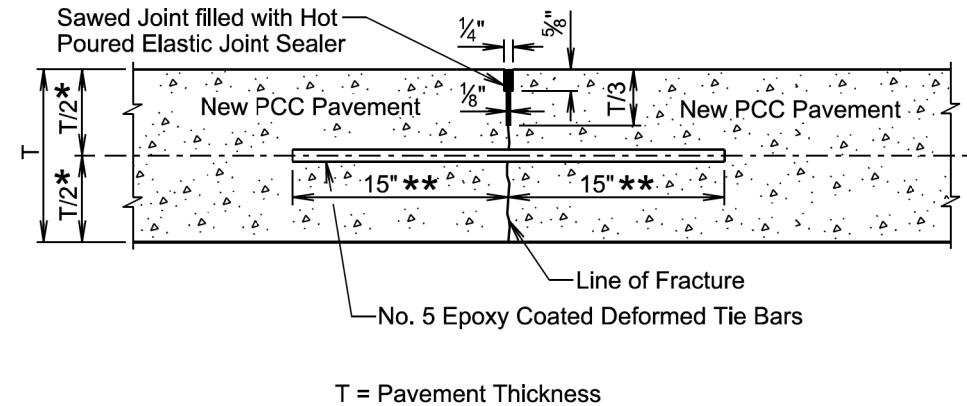
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**PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS**

PLATE NUMBER  
380.20

Sheet 1 of 2

**SAWED LONGITUDINAL JOINT WITH TIE BARS**  
(Poured Monolithically)



**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  $\pm 3$  inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2025

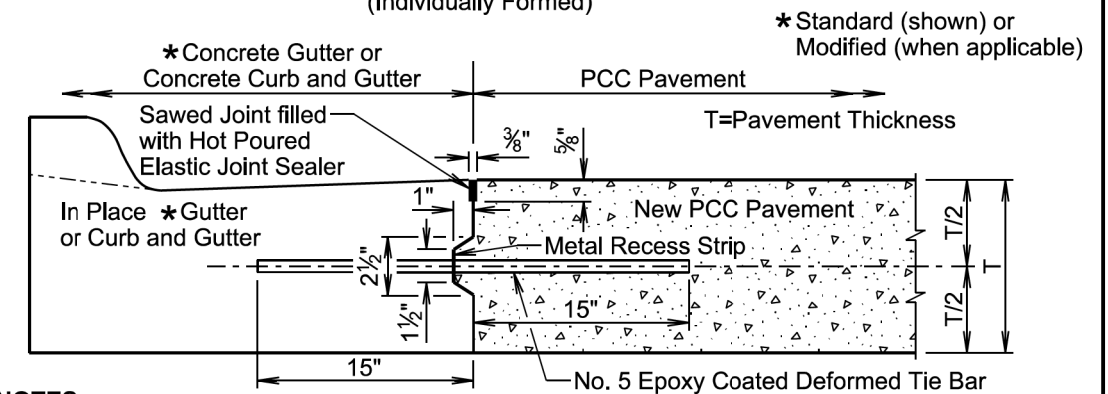
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PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS

PLATE NUMBER  
380.20

Sheet 2 of 2

**LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS**  
(Individually Formed)



**GENERAL NOTES:**

No. 5 epoxy coated deformed tie bars will be spaced 48 inches center to center. The tie bars will be placed a minimum of 15 inches from existing transverse contraction joints. The keyway shown above is a female keyway.

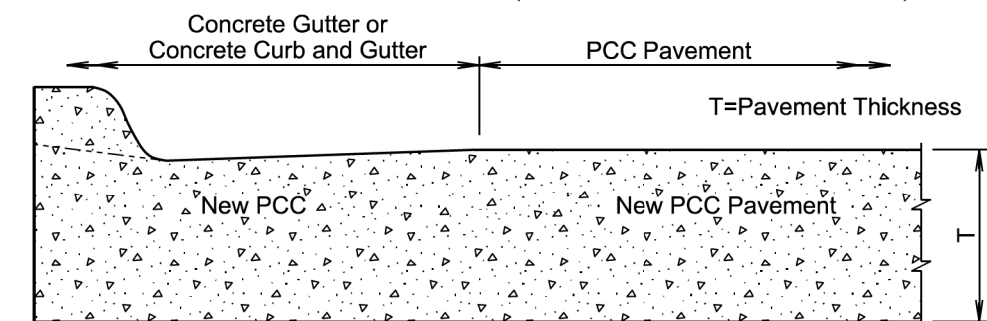
The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip will be used. When concrete pavement is slip formed, a metal recess strip is not required.

The transverse contraction joints in the concrete gutter or concrete curb and gutter will be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter will be 1 1/2 inches deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint will be at least 1/4 the thickness of the concrete gutter or concrete curb and gutter.

Standard curb and gutter may not be placed monolithically with PCC pavement if the mainline lane width is greater than 12 feet.

The term "In Place \*Gutter or Curb and Gutter" in the above drawing indicates that the in place \*concrete gutter and concrete curb and gutter was placed on the current project.

**POURED MONOLITHICALLY** (Standard Concrete Curb and Gutter)



**GENERAL NOTES:**

The mainline curb and gutter may be placed monolithically with the PCC pavement if the mainline lane width is less than or equal to 12 feet. If this method of construction is used, the tie bars and the sawed joint between the curb and gutter and the PCC pavement will be eliminated.

The gutter or curb and gutter will be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter will be sawed and sealed same as the transverse contraction joints in the PCC pavement.

The slope of the gutter will be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter will be constructed at the same slope as the mainline concrete pavement.

March 31, 2024

Published Date: 2025

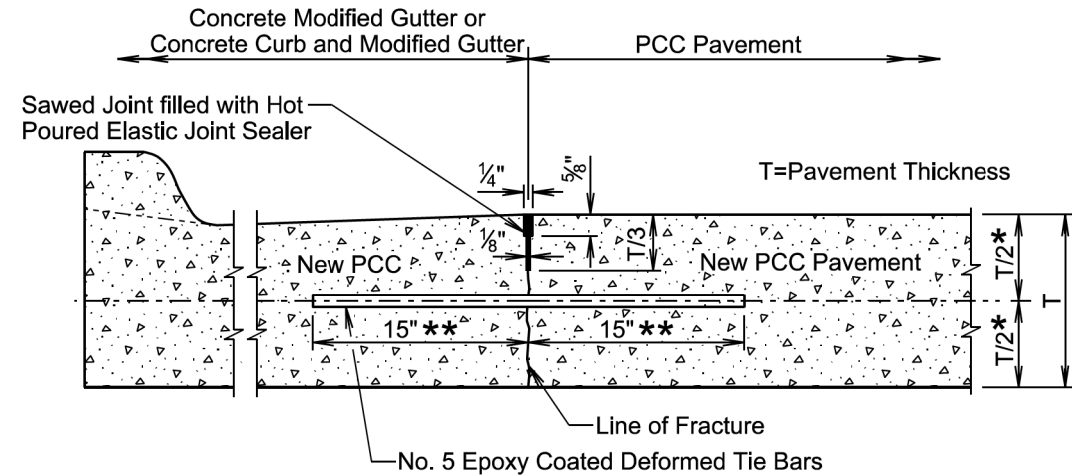
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PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER

PLATE NUMBER  
380.21

Sheet 1 of 2

**POURED MONOLITHICALLY** (Concrete Curb and Modified Gutter)



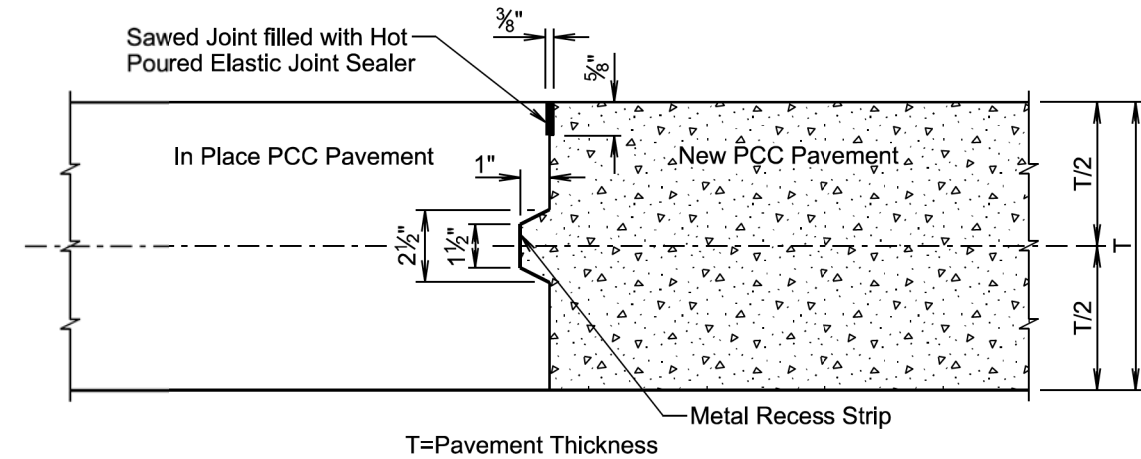
**GENERAL NOTES:**

- No. 5 epoxy coated deformed tie bars will be spaced 48 inches center to center.
- The tie bars will be placed a minimum of 15 inches from existing transverse contraction joints.
- The mainline curb and modified gutter may be placed monolithically with the PCC pavement if the mainline lane width is less than or equal to 14 feet.
- 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 gutter or curb and gutter will be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter will be sawed and sealed same as the transverse contraction joints in the PCC pavement.
- The slope of the gutter will be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter will be constructed at the same slope as the mainline concrete pavement.
- \* The vertical placement tolerance for any part of the tie bar will be  $\pm T/6$ .
- \*\* The transverse placement (side shift) tolerance will be  $\pm 3$  inches when measured perpendicular to the longitudinal joint line.

March 31, 2024

<i>Published Date: 2025</i>	S D D O T	<b>PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER</b>	PLATE NUMBER 380.21
			Sheet 2 of 2

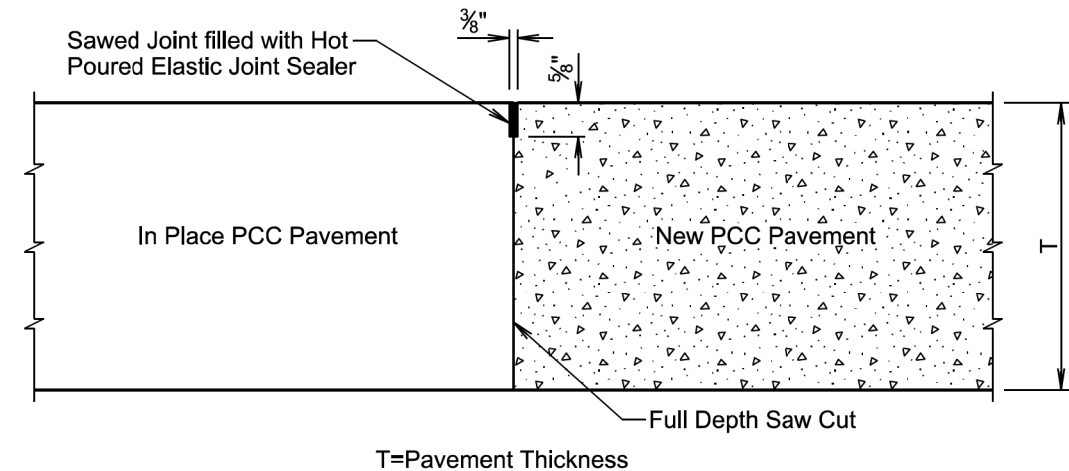
**LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS**



**GENERAL NOTES:**

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

**LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS**



**GENERAL NOTE:**

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

November 19, 2022

<i>Published Date: 2025</i>	S D D O T	<b>PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS</b>	PLATE NUMBER 380.22
			Sheet 1 of 2

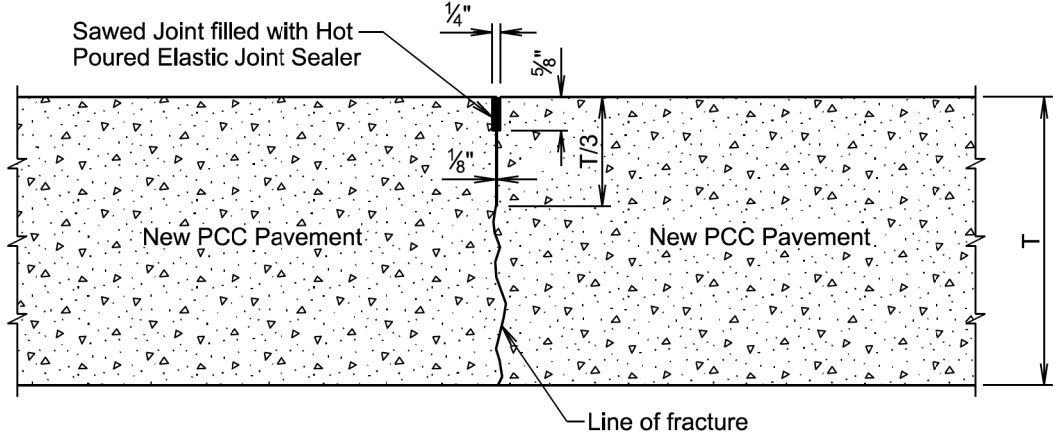


FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(195)103 P 0407(05)01	F33	F33

Plotting Date: 08/06/2024

**SAWED LONGITUDINAL JOINT WITHOUT TIE BARS**



T=Pavement Thickness

**GENERAL NOTE:**

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 will be necessary.

November 19, 2022

<i>Published Date: 2025</i>	<b>S D D O T</b>	<b>PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS</b>	PLATE NUMBER 380.22
			Sheet 2 of 2

Plot Scale - 1:200

Plotted From - TRPR13462

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