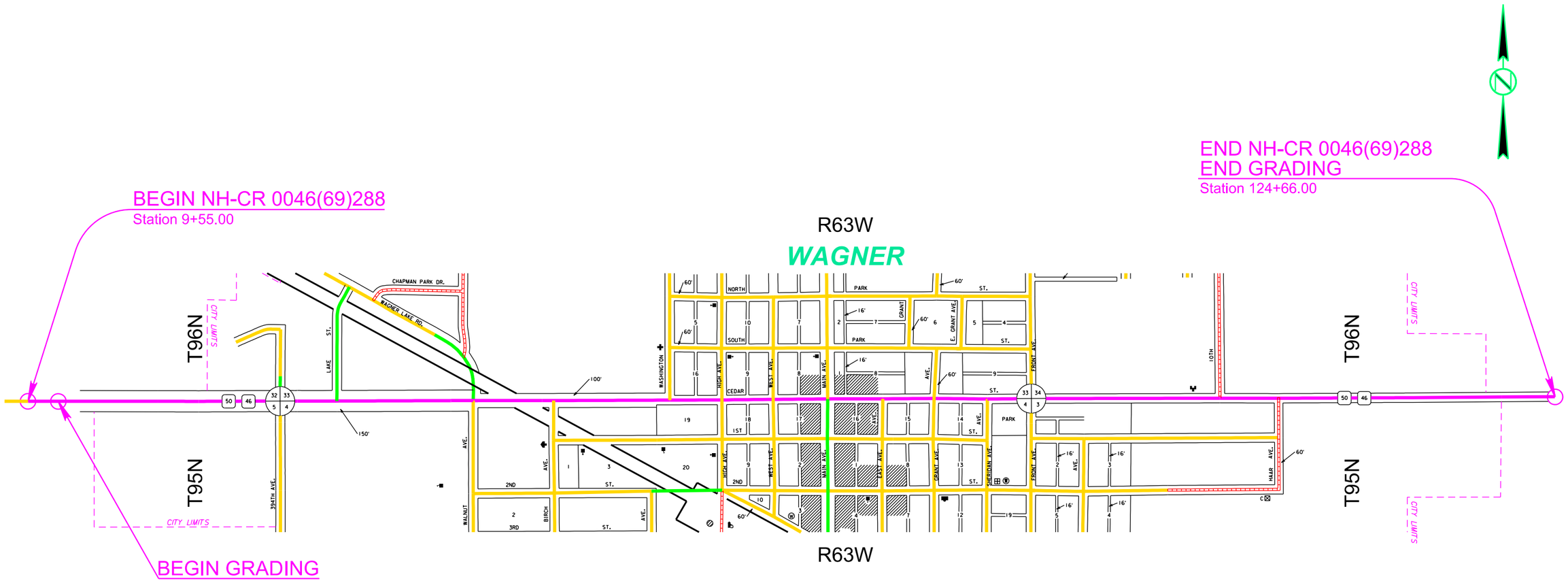
SECTION F: SURFACING PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F1	F38

Plotting Date: 10/23/2024

INDEX OF SHEETS



SECTION F ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	363.1	MGal
260E1010	Base Course	2,772.1	Ton
260E1030	Base Course, Salvaged	2,285.0	Ton
260E2010	Gravel Cushion	2,078.8	Ton
260E2030	Gravel Cushion, Salvaged	21,803.0	Ton
260E3500	Temporary Gravel Surfacing	1,371.0	Ton
320E1200	Asphalt Concrete Composite	3,673.4	Ton
380E0050	8" Nonreinforced PCC Pavement	60,488.6	SqYd
380E0800	PCC Shoulder Pavement	751.8	SqYd
380E3020	6" PCC Driveway Pavement	292.8	SqYd
380E3040	8" PCC Driveway Pavement	4,137.5	SqYd
380E6000	Dowel Bar	42,175	Each
380E6110	Insert Steel Bar in PCC Pavement	260	Each
831E0300	Reinforcement Fabric (MSE)	6,390	SqYd

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.

SAWING IN EXISTING SURFACING

Where new Portland Cement Concrete Pavement (PCCP) or new asphalt concrete is placed adjacent to existing asphalt concrete or PCCP, the existing pavement shall be sawed full depth to a true line with a vertical face. No separate payment shall be made for sawing.

CHECKING SPREAD RATES

The Contractor will be responsible for checking the Base Course, Gravel Cushion, Salvaged, Gravel Cushion and Asphalt Concrete Composite spread rates and taking the weigh delivery tickets as the surfacing material arrives on the project and is placed onto the roadway.

The Contractor will compute the required spread rates for each typical surfacing section and create a spread chart prior to the start of material delivery and placement. The Engineer will review and check the Contractor's calculations and spread charts. The station to station spread will be written on each ticket as the surfacing material is delivered to the roadway.

At the end of each day's shift, the Contractor will verify the following:

- All tickets are present and accounted for,
- The quantity summary for each item is calculated,
- The amount of material wasted if any,
- Each day's ticket summary is marked with the corresponding 'computed by',
- The ticket summary is initialed and certified that the delivered and placed quantity is correct.

All daily tickets and the summary by item will be given to the Engineer no later than the following morning.

If the checker is not properly and accurately performing the required duties, the Contractor will correct the problem or replace the checker with an individual capable of performing the duties to the satisfaction of the Engineer. Failure to do so will result in suspension of the work.

The Department will perform depth checks. The Contractor will be responsible for placement of material to the correct depth unless otherwise directed by the Engineer. If the placed material is not within a tolerance of ±1/2 inch of the plan shown depth, the Contractor will correct the problem at no additional cost to the Department. Excess material above the tolerance will not be paid for. Achieving the correct depth may require picking up and moving material or other action as required by the Engineer. All costs for providing the Contractor furnished checker and performing all related duties will be incidental to the contract lump sum price for the "Checker". No allowances will be made to the contract lump sum price for "Checker" due to authorized quantity variations unless the quantities for the material being checked vary above or below the estimated quantities by more than 25 percent. Payment for the Checker will then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

BASE COURSE, SALVAGED

Base Course, Salvaged will be obtained from the stockpile site(s) provided by the Contractor from the salvaged granular material produced on this project and may be used without further gradation testing.

The Contractor will ensure the Base Course, Salvaged material contains no more than 50% salvaged asphalt mix material and at least 50% granular material (salvaged or virgin). Salvaged Asphalt Mix and Granular Base Material will be blended to the satisfaction of the Engineer.

All other requirements for Base Course, Salvaged will apply.

GRAVEL CUSHION, SALVAGED

The Gravel Cushion, Salvaged will be obtained from the stockpile site(s) provided by the Contractor from the salvaged granular material produced on this project and may be used without further gradation testing.

The Contractor will ensure the Gravel Cushion, Salvaged material contains no more than 50% salvaged asphalt mix material and at least 50% granular material (salvaged or virgin). Salvaged Asphalt Mix and Granular Base Material will be blended to the satisfaction of the Engineer.

All other requirements for Gravel Cushion, Salvaged will apply.

TEMPORARY GRAVEL SURFACING

Temporary Gravel Surfacing will be required for surfacing transitions from the new pavement to the existing pavement to allow for continued traffic flow and access to driveways during and between phases as stated in the plans.

The Temporary Gravel Surfacing used in Phase 1 will be reused in Phase 2. The Temporary Gravel Surfacing used in Phase 3 will be reused in Phase 4. Temporary Gravel Surfacing used for transitions will meet all Base Course specifications and will be compacted to the satisfaction of the Engineer. All costs to furnish, install, compact, remove & relocate the Temporary Gravel Surfacing will be incidental to the contract unit price per ton for "Temporary Gravel Surfacing".

See Section C for Temporary Gravel Surfacing notes and details.

TABLE OF TEMPORARY GRAVEL SURFACING

TEMPORARY GRAVEL SURFACING			
PHASE	**LOCATION**	**NUMBER**	**GRAVEL SURFACING (Ton)**
Phase 1	Intersecting Streets	8	272
	Businesses	8	168
	Residences	10	210
	Cross Walks	8	80
	Total Tons Phase 1		730
Phase 2	Intersecting Streets	5	170
	Businesses	18	378
	Residences	5	105
	Cross Walks	8	80
	Total Tons Phase 2		733
	Total Tons to be Paid for Phase 1 & Phase 2		**733**
Phase 3	Intersecting Streets	7	238
	Businesses	13	273
	Residences	1	21
	Cross Walks	8	80
	Total Tons Phase 3		612
Phase 4	Intersecting Streets	9	306
	Businesses	10	210
	Residences	2	42
	Cross Walks	8	80
	Total Tons Phase 4		638
	Total Tons to be Paid for Phase 1 & Phase 2		**638**
	TOTAL GRAVEL SURFACING		**1371**

Temporary cross walks – Locations will depend on the Contractor's sequence of operations and the direction of the Engineer. Estimated 10 tons for each cross walk.
Intersecting Streets – Estimated 34 tons each at 40' wide.
Business Access – Estimated 21 tons for each access 24' wide.
Residences – Estimated 21 tons for each access 24' wide.

8" NONREINFORCED PCC PAVEMENT

The aggregate may require screening as determined by the Engineer.

The concrete mix used in the PCC Pavement will conform to the Special Provision for Contractor Furnished Mix Design for PCC 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.

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

The transverse construction joints will be handled in accordance with Standard Plate 380.15.

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.

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

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 13'.

See Standard Plate 380.04 for placement of Dowel Bars.

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 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.

The Nonreinforced PCC Pavement will be tested using the 10' straight edge as per Specifications 380.3.O.1.

SAW AND SEAL JOINTS

Longitudinal and transverse joints will be sawed and sealed.

Joint sealing will conform to Section 380.3 P.

Longitudinal and transverse joints will be sealed with Hot Poured Elastic Joint Sealer.

PCC SHOULDER PAVEMENT

In lieu of an automatic subgrader operating from a preset grade line, a motor grader or other suitable equipment may be used to bring the gravel cushion to final grade prior to placement of the concrete.

The outside shoulder may be poured monolithic with the mainline pavement.

Provide a heavy carpet drag finish, a metal-tine finish will not be required on the shoulders. A metal-tine finish may be applied to the shoulders poured monolithic with the mainline.

If the shoulders are poured monolithic with the mainline pavement a sawed joint with tie bars will be constructed between the mainline pavement and the shoulders.

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:

SD46 - Sta. 11+00 to Sta. 124+66 - Driving 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

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

Location			8" NONREINFORCED PCC PAVEMENT
Sta	to	Sta.	(SqYd)
11+00	to	56+34	27,171.5
56+34	to	119+36	26,779.1
119+36	to	124+66	2,210.9
		Total:	56,161.5

TABLE OF PCC SHOULDER PAVEMENT

Location			PCC SHOULDER PAVEMENT
Sta	to	Sta.	(SqYd)
119+36	to	124+66	751.8
		Total:	751.8

TABLE OF 8" INTERSECTING ROADS NONREINFORCED PCC PAVEMENT

Location	Stationing	8" NONREINFORCED PCC PAVEMENT
		(SqYd)
394th Avenue - North	28+79	222.6
394th Avenue - South	28+79	87.1
Lane Street - North	32+77	218.0
Old Highway 50 - North	42+40	476.7
Walnut Avenue SW - South	42+40	242.0
Birch Avenue SW - South	48+15	107.3
Washington Avenue NW - North	56+36	109.3
High Avenue NW - North	60+00	107.9
High Avenue SW - South	60+00	423.4
West Avenue NW - North	63+66	108.8
West Avenue SW - South	63+66	109.0
Main Street - North	67+50	137.0
Main Street - South	67+50	435.3
East Avenue SE - South	71+32	109.1
Grant Avenue SE - South	74+98	108.9
Grant Avenue NE - North	75+13	128.1
Sheridan Avenue SE - South	78+70	130.8
Front Avenue NE - North	81+87	479.2
Front Avenue SE - South	81+87	493.2
Tenth Avenue NE - North	95+16	0.0
East Harr Avenue - South	99+31	93.4
Total:		4,327.1

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TABLE OF 8" PCC PAVEMENT FOR DRIVEWAYS

Location	8" PCC DRIVEWAY PAVEMENT
	(SqYd)
Sta. 16+36 R	191.1
Sta. 19+10 R	149.9
Sta. 23+90 R	261.6
Sta. 27+04 R	194.4
Sta. 30+78 L	199.3
Sta. 30+78 R	184.2
Sta. 32+77 R	186.0
Sta. 35+88 R	210.6
Sta. 36+55 L	163.8
Sta. 44+36 L	19.4
Sta. 45+23 R	37.6
Sta. 47+64 L	40.1
Sta. 49+09 L	56.3
Sta. 50+46 R	45.4
Sta. 50+73 L	50.1
Sta. 52+84 R	88.4
Sta. 52+94 L	51.3
Sta. 57+34 L	20.9
Sta. 58+64R	122.9
Sta. 60+18, 105' R	53.2
Sta. 61+82 R	20.8
Sta. 66+00 L	49.0
Sta. 66+49 R	76.1
Sta. 67+14, 64' L	49.6
Sta. 67+85, 64' L	102.9
Sta. 68+93 L	35.6
Sta. 69+39 R	61.6
Sta. 72+80 L	22.4
Sta. 73+80 L	44.2
Sta. 75+90 L	81.1
Sta. 76+98 L	84.7
Sta. 77+93 L	44.6
Sta. 78+56 L	10.8
Sta. 88+19 L	21.4
Sta. 89+34 R	34.0
Sta. 89+61 L	19.3
Sta. 91+77 L	20.9
Sta. 111+50 L	295.1
Sta. 113+46 L	295.1
Sta. 118+54 R	441.8
Total:	4,137.5

TABLE OF 6" PCC PAVEMENT FOR DRIVEWAYS

Location	6" PCC DRIVEWAY PAVEMENT
	(SqYd)
Sta. 13+45 L	87.4
Sta. 71+85 L	23.6
Sta. 76+60 R	17.4
Sta. 79+97 L	43.3
Sta. 84+19 R	23.3
Sta. 85+69 R	22.2
Sta. 86+60 R	14.2
Sta. 87+29 R	27.4
Sta. 89+34 R	34.0
Total:	292.8

STEEL BAR INSERTION

The Contractor will insert the Steel Bars (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 9 inches from the outside edge of the slab.

TABLE OF STEEL BAR INSERTION

LOCATION	1-1/4" x 18" Plain Round Dowel Bars
Sta. 11+00	37
Sta. 28+79 - 85' L	35
Sta. 32+77 - 82' L	36
Sta. 42+40 - 100' L	40
Sta. 67+50- 88' R	70
Sta. 124+66	42
Total:	**260**

TABLE OF DOWEL BARS

Location	1 1/4" Bars
US 46	
Bars in Mainline - 12 bar	39,802
Bars in intersecting streets - 12 bar	2,373
Total Dowel Bars:	42,175

Plot Scale - 1:200

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 9-18-2024):

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	0.222
L.G. Everist – Nelson Pit	NE Sioux Falls, SD	0.156
L.G. Everist	Hawarden, IA	0.211
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	0.154
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	0.255*
Simon Materials - Beltline Pit	Scottsbluff, NE	0.277*
Thorpe Pit	Britton, SD	0.098
Valley S&G – Van Beek Pit	Rock Valley, IA	0.228
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.

MANHOLE BOX-OUT DETAILS

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

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite placed as a final surfacing 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 or Base Course, Salvaged for the full width of the bottom layer of Asphalt Concrete Composite plus one foot additional on the outside shoulder.

Asphalt Concrete Composite placed as the temporary surfacing for the traffic diversion estimated at 3,189.4 tons will not require the placement of MC-70 Asphalt for Prime or Blotting Sand for Prime prior to the Asphalt Concrete Composite placement. Asphalt for Flush Seal SS-1h or CSS-1h and Sand for Flush Seal will not be required for the temporary Asphalt Concrete Composite surfacing for the traffic diversion.

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.

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TABLE OF MATERIALS QUANTITIES

LOCATION			WATER FOR GRANULAR MATERIAL	GRAVEL CUSHION, SALVAGED/ GRAVEL CUSHION	BASE COURSE, SALVAGED	BASE COURSE	GRAVEL SURFACING	ASPHALT CONCRETE COMPOSITE	
								1st Lift	Top Lift
Station	to	Station	(MGal)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)
MAINLINE									
11+00.00	to	56+34.00	113.1	9,425.0					
56+34.00	to	119+36.00	122.6	10,214.0					
119+36.00	to	124+66.00	10.4	870.0					
INTERSECTING STREETS									
394th Avenue - North			0.9	72.0					
394th Avenue - South			0.9	74.0				19.0	19.0
Lane Street - North			0.8	68.0					
Old Highway 50 - North			1.5	122.0					
Walnut Avenue SW - South			0.9	77.0					
Birch Avenue SW - South			0.7	55.0				9.0	9.0
Washington Avenue NW - North			0.8	63.0				11.0	11.0
High Avenue NW - North			0.5	44.0				5.0	5.0
High Avenue SW - South			2.1	172.0				28.0	28.0
West Avenue NW - North			0.5	44.0				5.0	5.0
West Avenue SW - South			0.6	51.0				8.0	8.0
Main Street - North			1.4	118.0				40.0	40.0
Main Street - South			1.6	131.0					
East Avenue SE - South			0.8	70.0				16.0	16.0
Grant Avenue SE - South			0.6	51.0				8.0	8.0
Grant Avenue NE - North			0.7	56.0				9.0	9.0
Sheridan Avenue SE - South			0.7	58.0				9.0	9.0
Front Avenue NE - North			1.9	162.0				20.0	20.0
Front Avenue SE - South			2.0	168.0				23.0	23.0
Tenth Avenue NE - North			0.4	34.0					
Harr Avenue - South			0.6	50.0					
8" PCC DRIVEWAY PAVEMENT (40)			12.0	960.0					
6" PCC DRIVEWAY PAVEMENT (9)			0.9	63.0					
ASPHALT CONCRETE COMPOSITE DRIVEWAYS (2)			1.0			84.0		32.0	32.0
GRANULAR DRIVEWAYS (30)			3.0	360.0					
TRAFFIC CONTROL QUANTITIES									
9+55.00	to	10+00.00	0.1		8.2			1.9	2.1
10+00.00	to	20+25.00	3.6		297.7			86.4	86.4
20+25.00	to	28+52.43	7.8		646.4			214.1	214.1
28+52.43	to	40+72.43	5.3		439.8			133.3	133.3
40+72.43	to	42+62.47	0.8		68.5			20.8	20.8
42+62.47	to	65+50.00	9.9		824.4			250.0	250.0
65+50.00	to	66+50.00	3.0	249.8				47.3	47.3
66+50.00	to	81+82.69	6.6			552.4		167.5	167.5
81+82.69	to	108+26.39	11.4			952.8		288.9	288.9
108+26.39	to	112+46.39	2.5			210.4		66.9	66.9
112+46.39	to	125+66.00	11.3			938.4		308.6	308.6
125+66.00	to	126+42.55	0.4			34.1		8.5	9.3
TEMPORARY GRAVEL SURFACING - TRAFFIC CONTROL			16.5				1,371.0		
Totals			363.1	23,881.8	2,285.0	2,772.1	1,371.0	3,673.4	

Plot Scale - 1:200

Plotted From - TRPR13462

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IN PLACE TYPICAL SECTIONS

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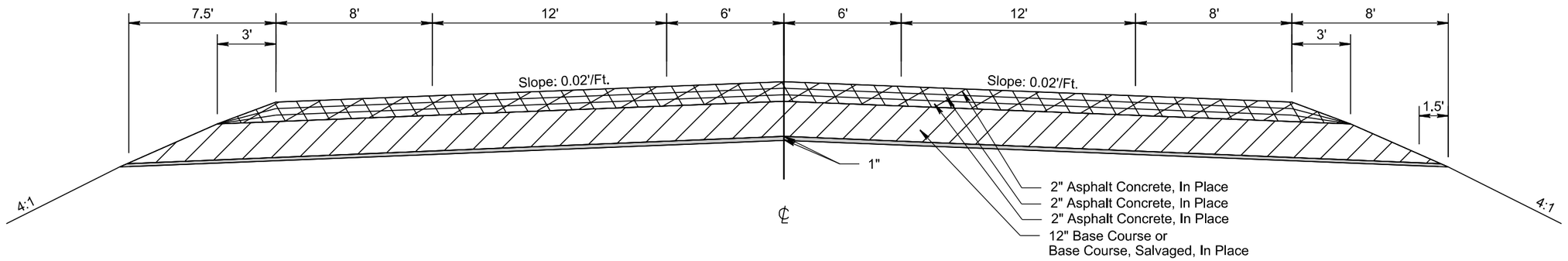
Remove Asphalt Concrete Pavement

Salvage & Stockpile Granular Material

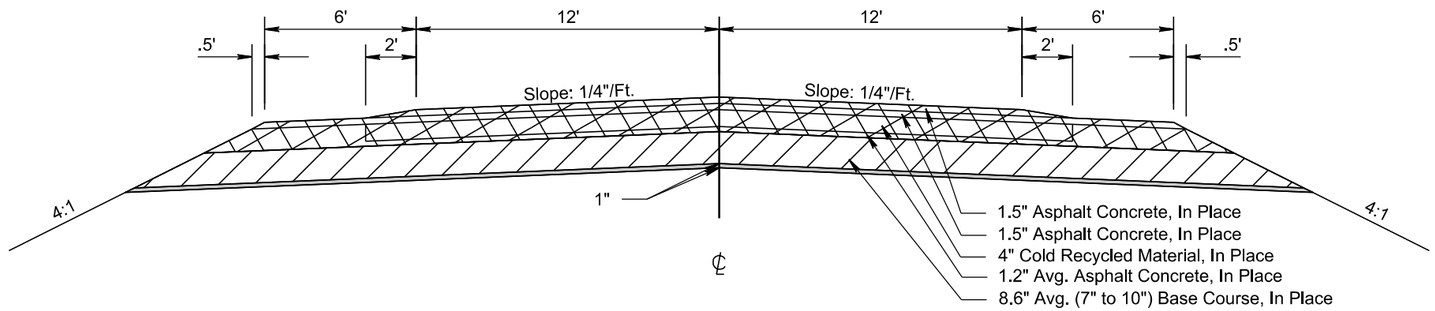
Unclassified Excavation

Remove Concrete Pavement

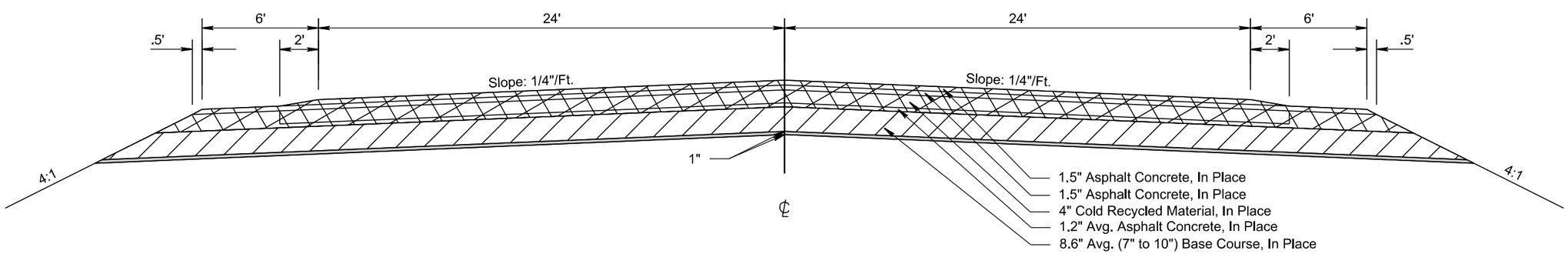
Section 1
Sta. 11+00 to Sta. 20+25



Section 2
Sta. 20+25 to Sta. 28+52.43



Section 3
Sta. 28+52.43 to Sta. 40+72.43



IN PLACE TYPICAL SECTIONS

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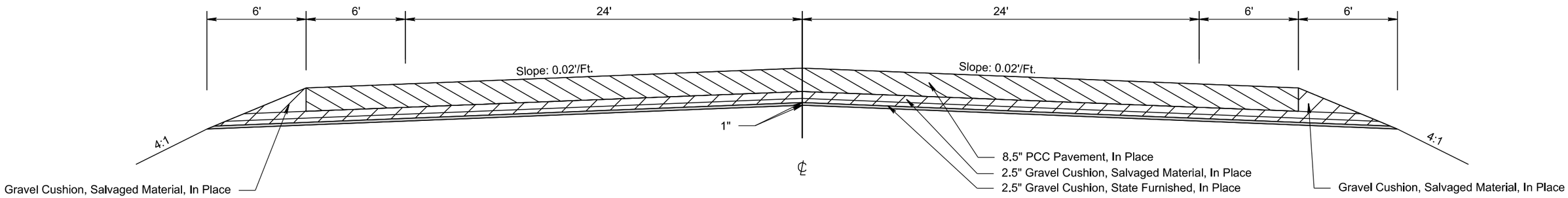
Remove Asphalt Concrete Pavement

Salvage & Stockpile Granular Material

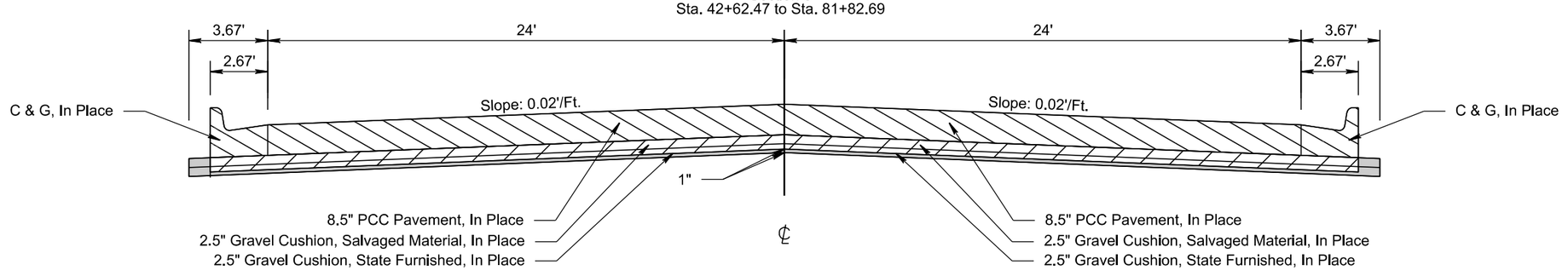
Unclassified Excavation

Remove Concrete Pavement

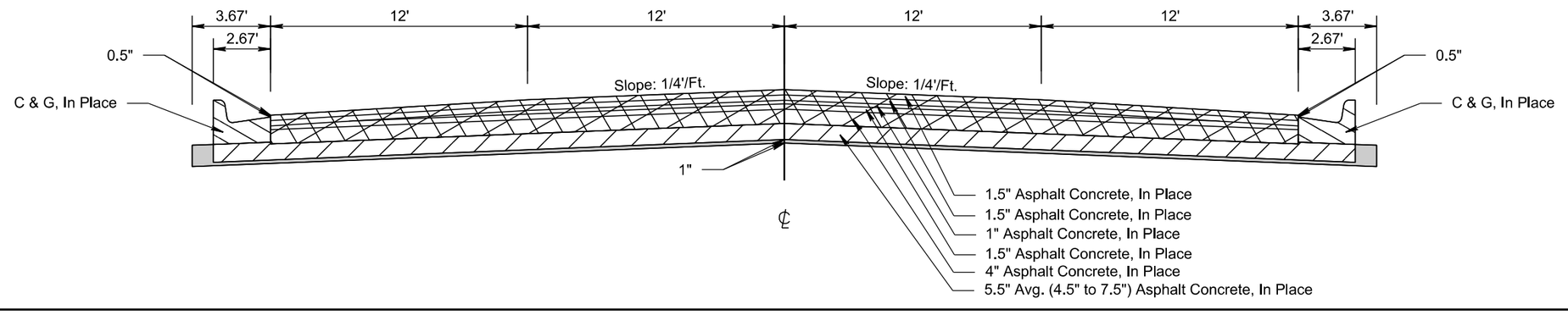
Section 4
Sta. 40+72.43 to Sta. 42+62.47



Section 5
Sta. 42+62.47 to Sta. 81+82.69



Section 6
Sta. 81+82.69 to Sta. 108+26.39



PLOT SCALE - 1:6.00001

PLOT NAME - 8

FILE ...\05JN_TYPICAL SECTIONS.DGN

0559

0559

5955

5955

5955 CREATED FROM - TRPR13462

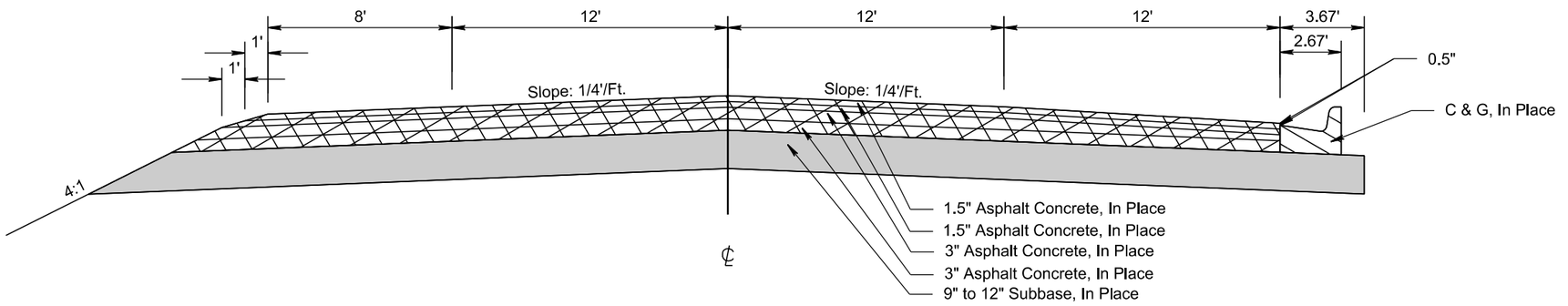
IN PLACE TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F9	F38

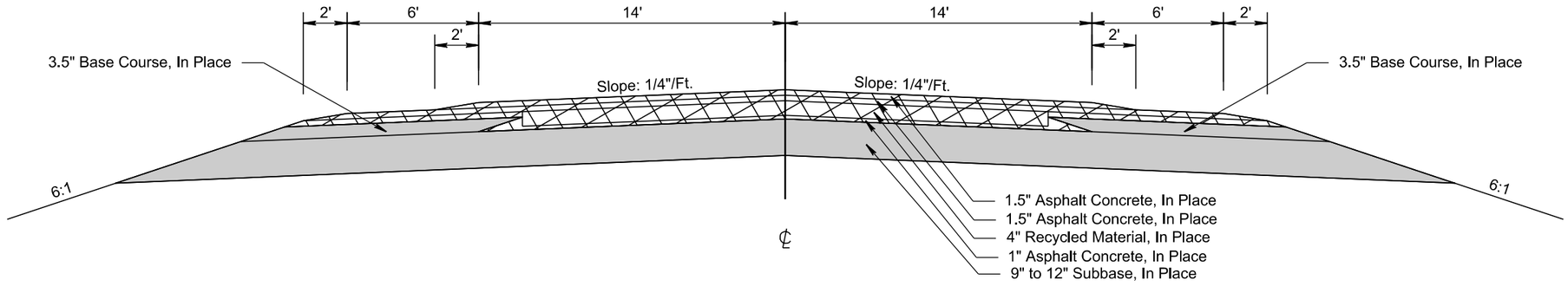
Remove Asphalt Concrete Pavement

Unclassified Excavation

Section 7
Sta. 108+26.39 to Sta. 112+46.39



Section 8
Sta. 112+46.39 to Sta. 124+66.00



TYPICAL SURFACING SECTIONS

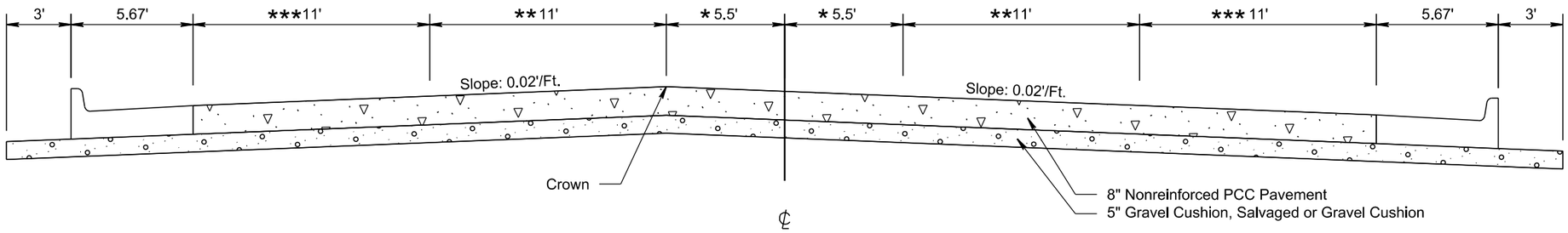
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F10	F38

Transitions:

Sta. 9+55 to Sta. 16+15
* 6' to 5.5'
** 12' to 11'
*** 0' to 11'

Crown Shift: Center to 5.5' L:
Sta. 11+00 to Sta. 12+00

Section 9
Sta. 11+00 to Sta. 56+34



Transitions:

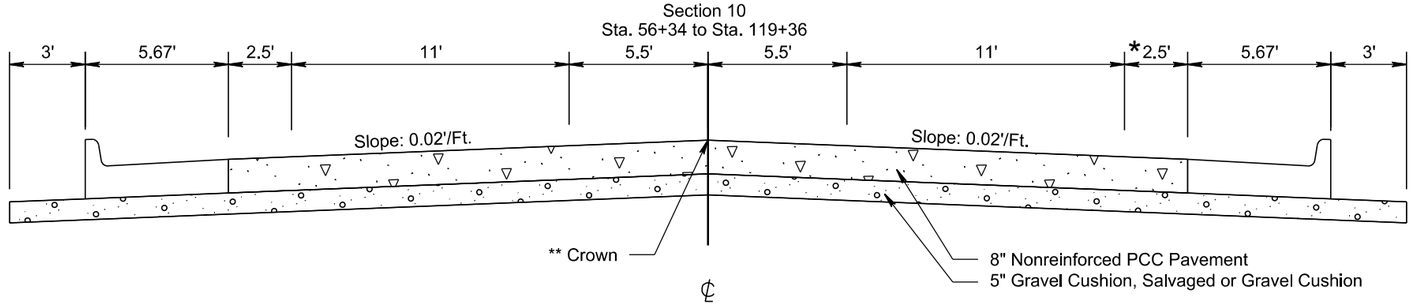
Sta. 56+34 to Sta. 57+10
* 11'

Sta. 57+10 to Sta. 58+84
* 11' to 2.5'

Sta. 56+34 to Sta. 57+10
** Crown 5.5' Lt.

Sta. 57+10 to Sta. 57+90
** Crown shift 5.5' Lt. to Center

Section 10
Sta. 56+34 to Sta. 119+36

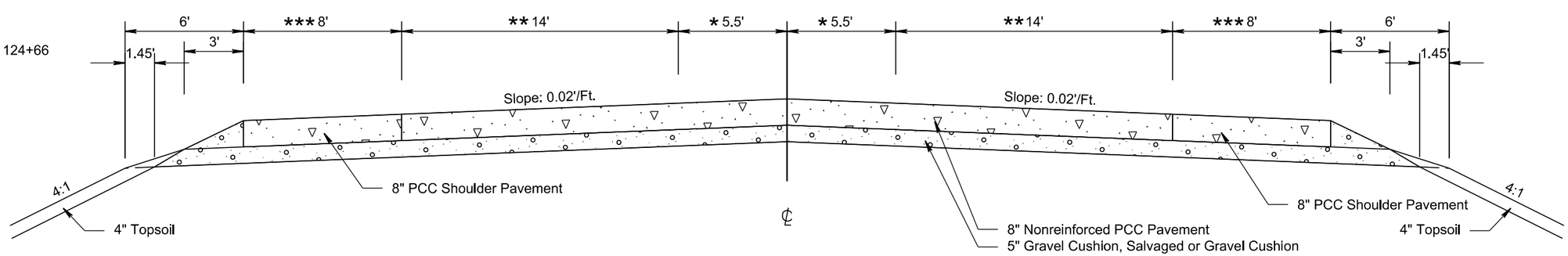


Transitions:

Sta. 121+28 to Sta. 124+66
* 5.5' to 0'
** 14' to 12'

Sta. 124+16 to Sta. 124+66
*** 8' to 8.85'

Section 11
Sta. 119+36 to Sta. 124+66



PLOT SCALE - 1:6.00001

PLOTTED FROM - TRPR13462

PLOT NAME - 10

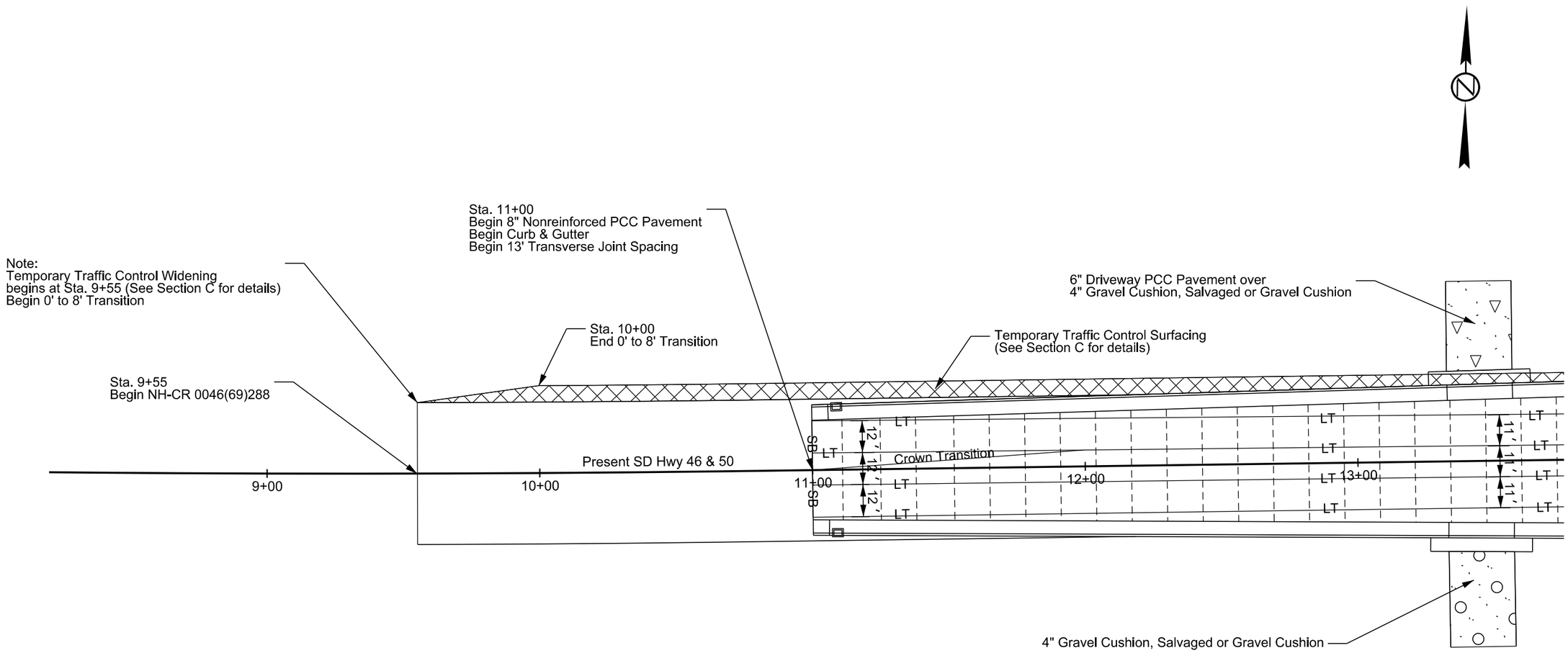
FILE - ...\05JN_TYPICAL SECTIONS.DGN

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F11	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 1 of 20 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)
Reinforce Transverse or Longitudinal joint termination with #4 x 30" rebar 12" Center to Center (See Detail D)

Transverse contraction joints within these areas will not have dowel bar assemblies. All other transverse contraction joints will have dowel bar assemblies.

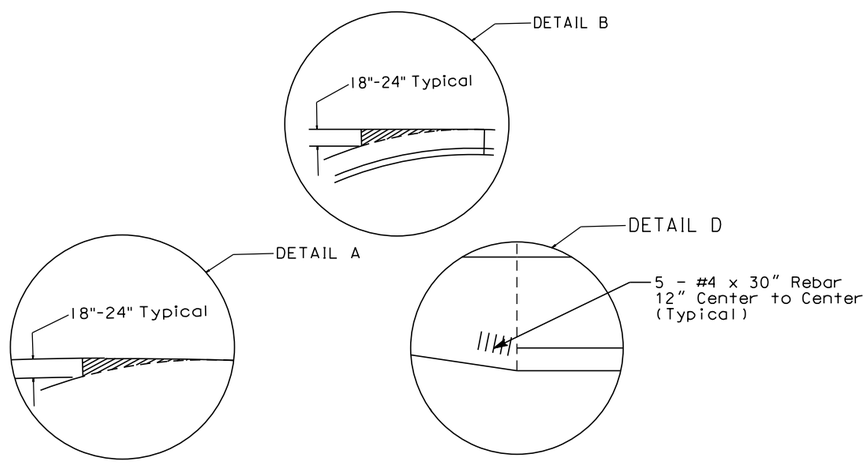
Asphalt Concrete Composite

Base Course

Driveway PCC Pavement

Reinforced Filet Area
(See Section B for details)

- Typical Drop Inlet
- Water Gate Valve
- Sanitary Sewer Manhole
- Fire Hydrant
- Cleanout
- Curb Stop



Plot Scale - 1:40

Plotted From - TRPR13462

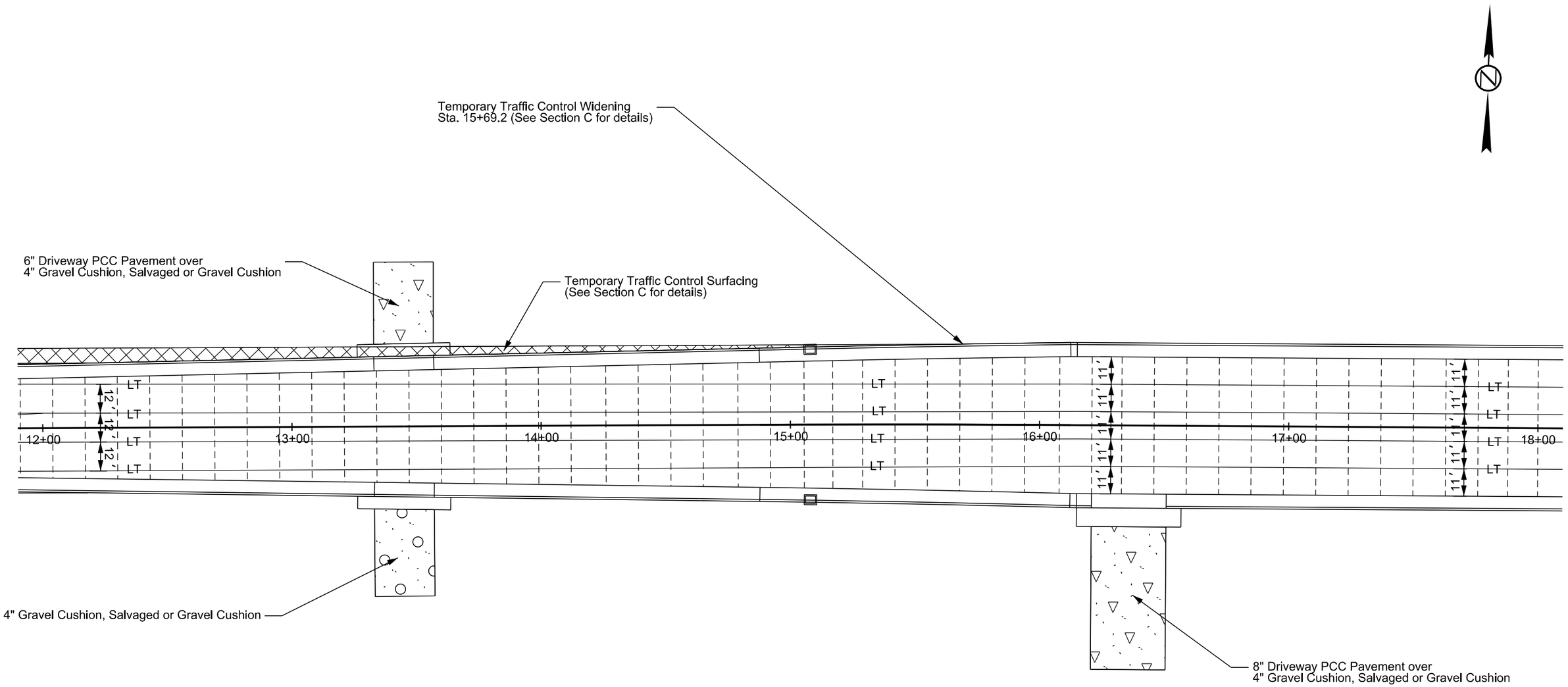
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F12	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 2 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

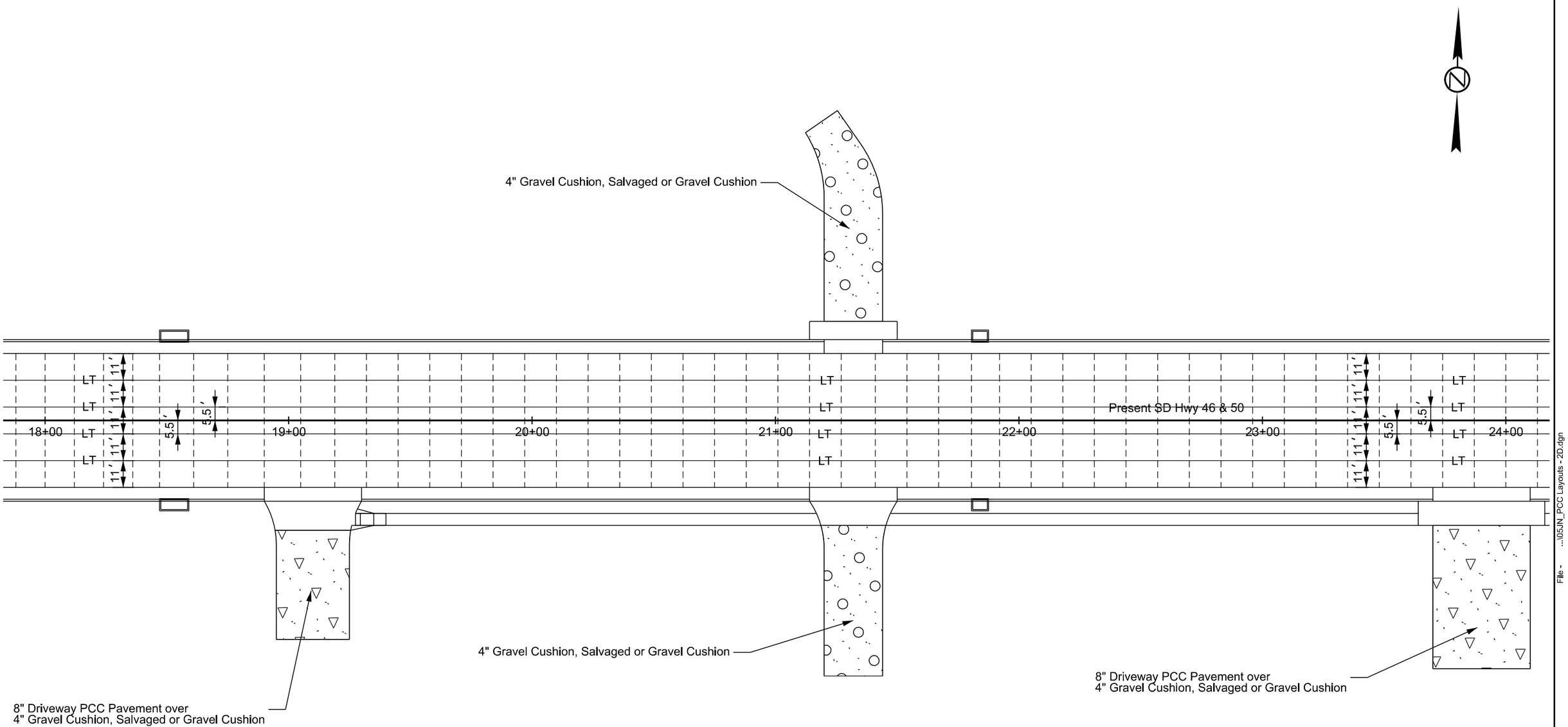
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F13	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 3 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

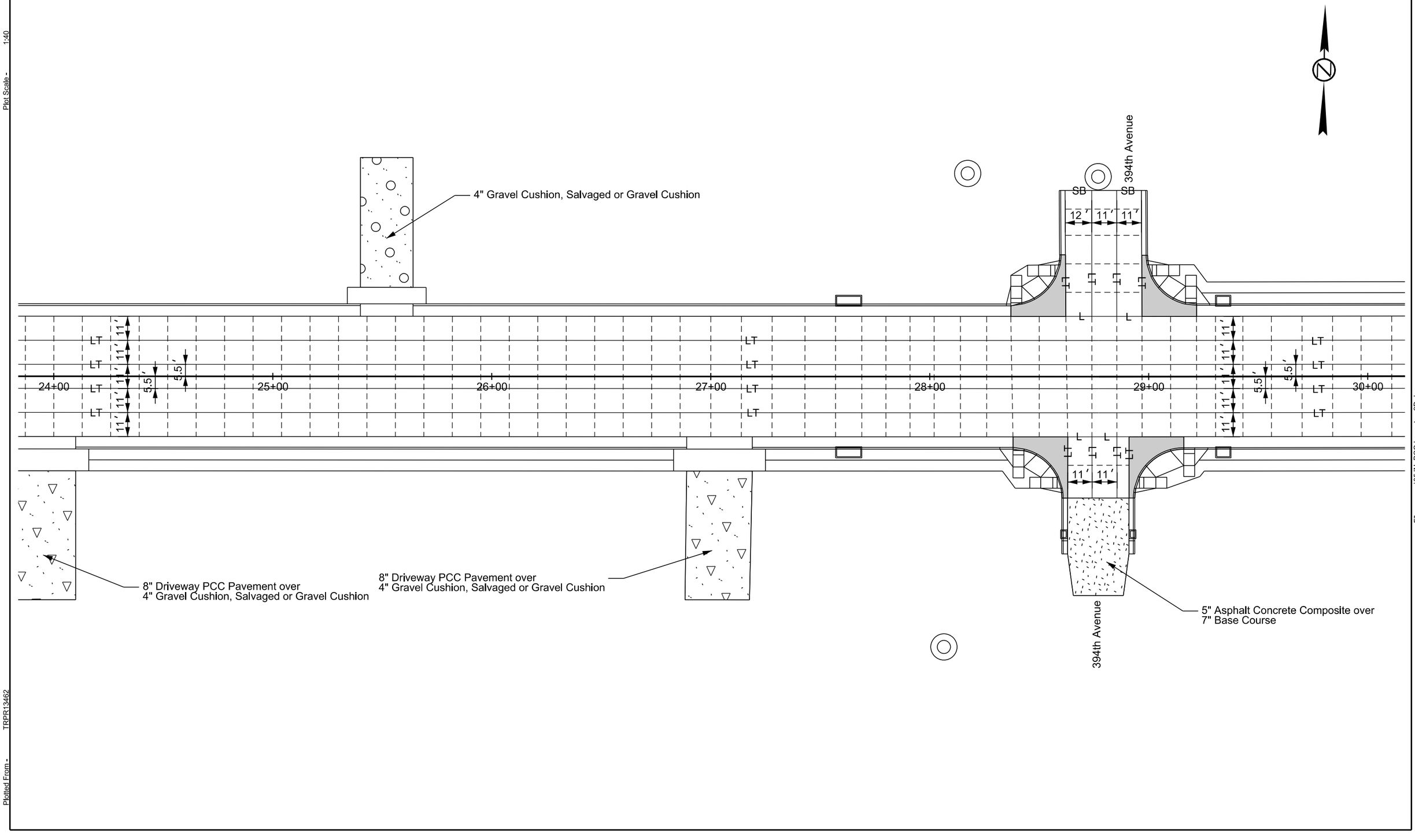
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F14	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 4 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

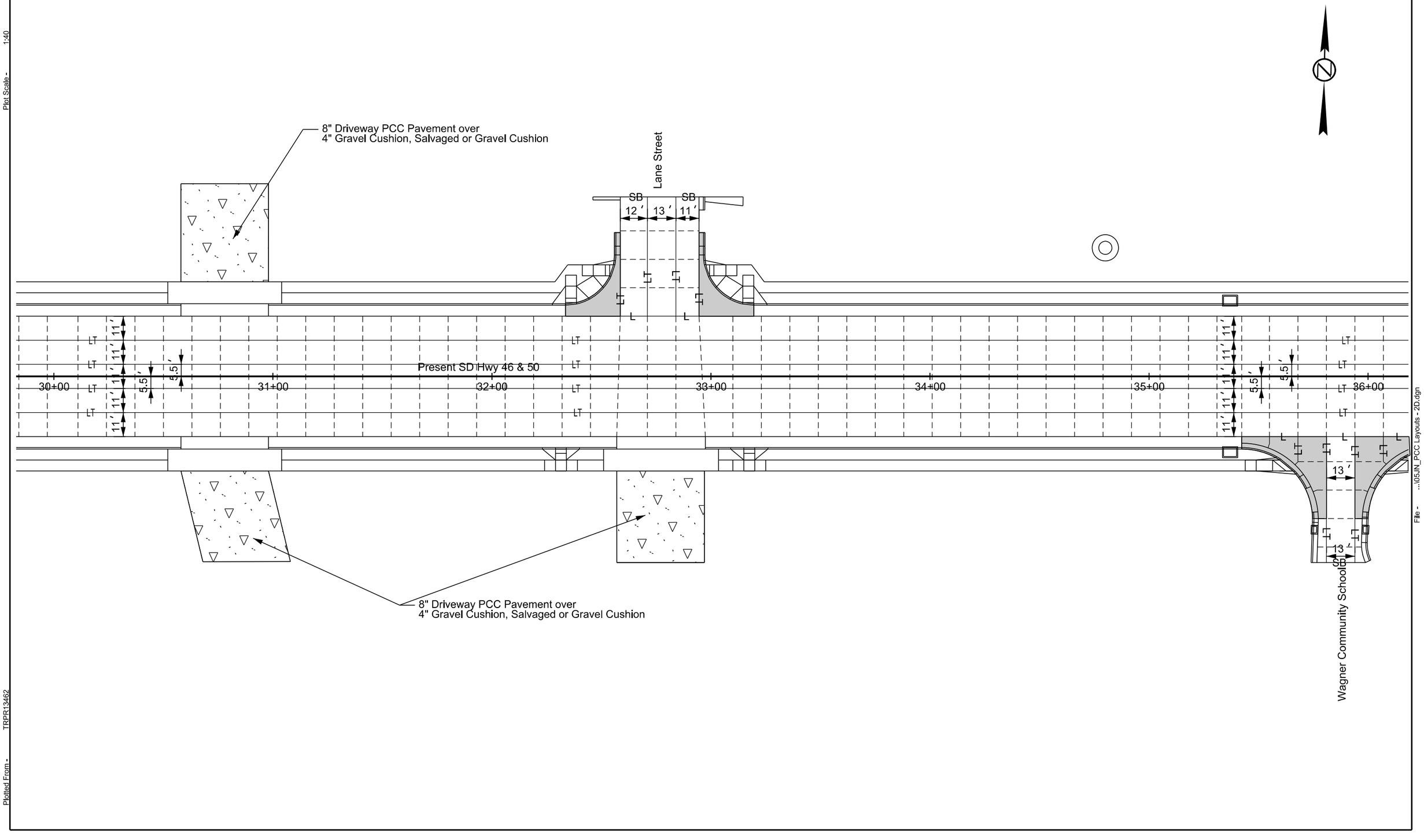
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F15	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 5 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

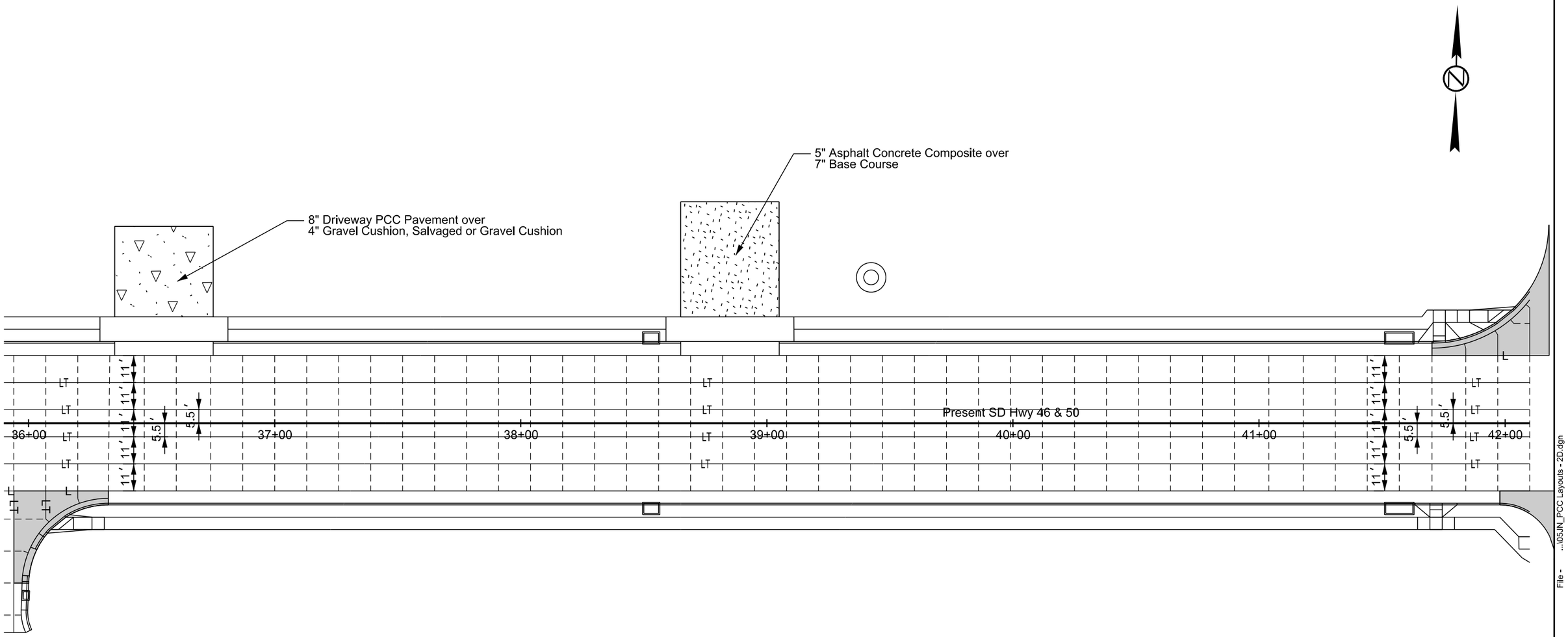
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F16	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 6 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

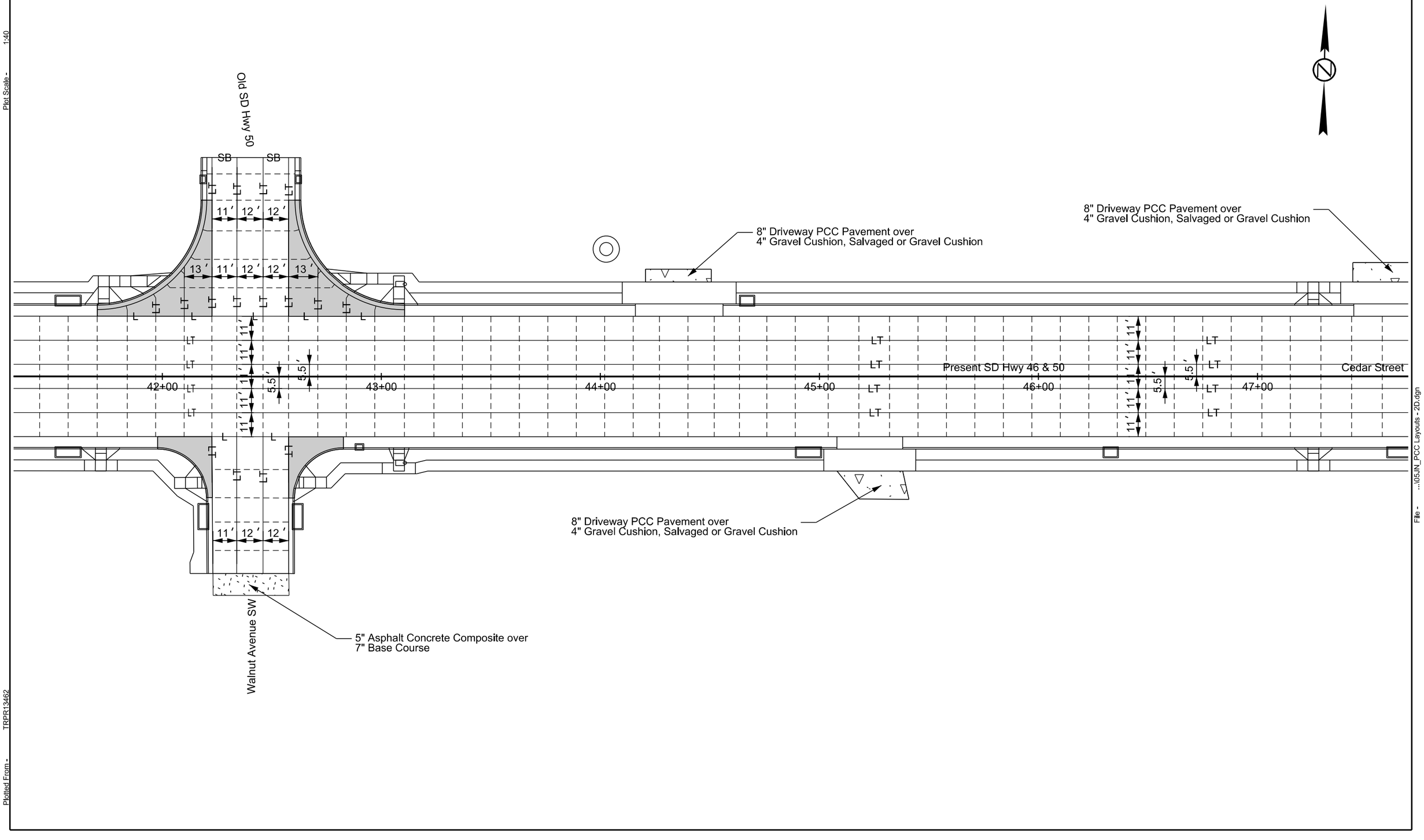
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F17	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 7 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

File - ...\05JN_PCC Layouts - 2D.dgn

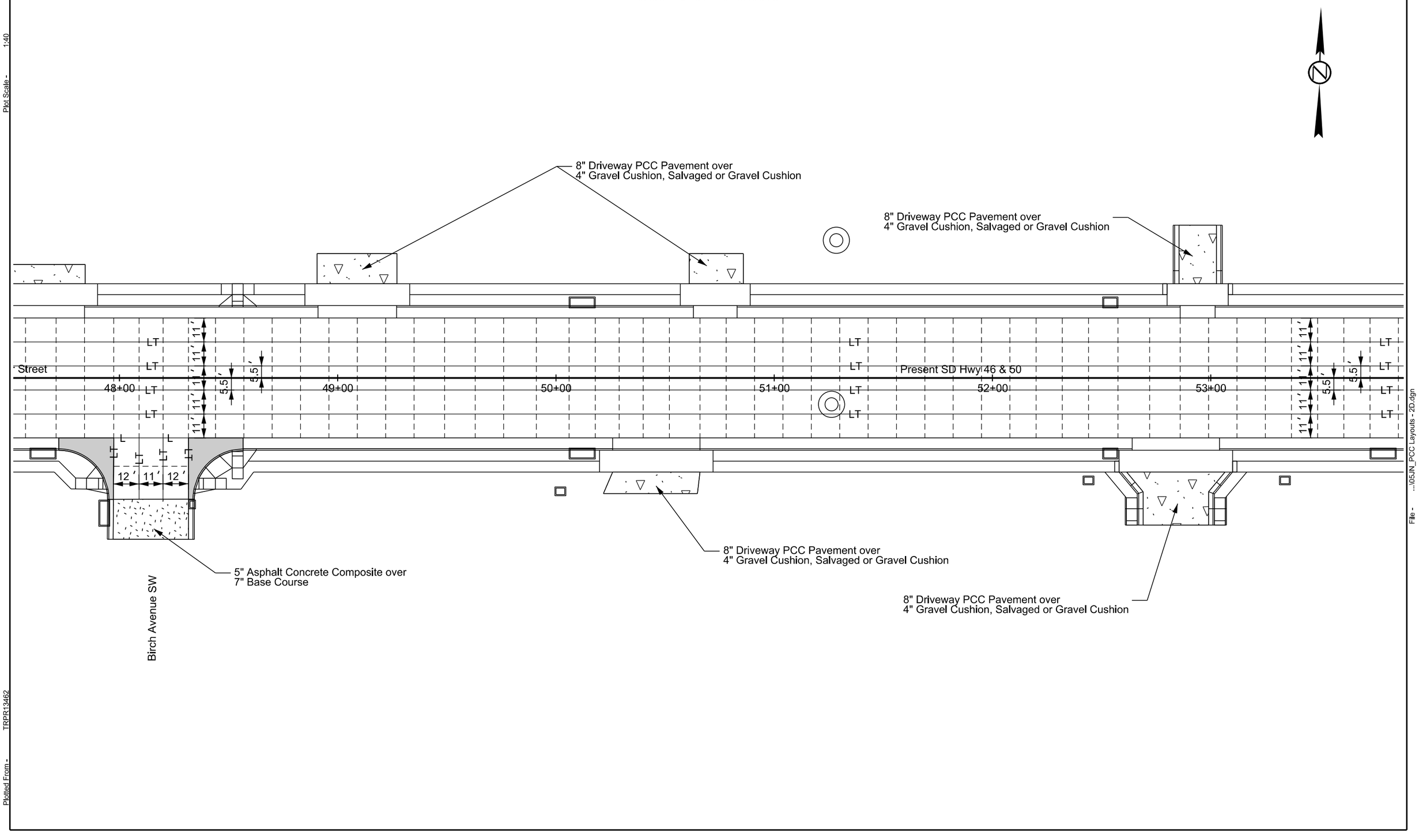
PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F18	F38

Plotting Date: 10/23/2024

Revised: 10/23/2024 RTS

Scale 1 Inch = 40 Feet
Sheet 8 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

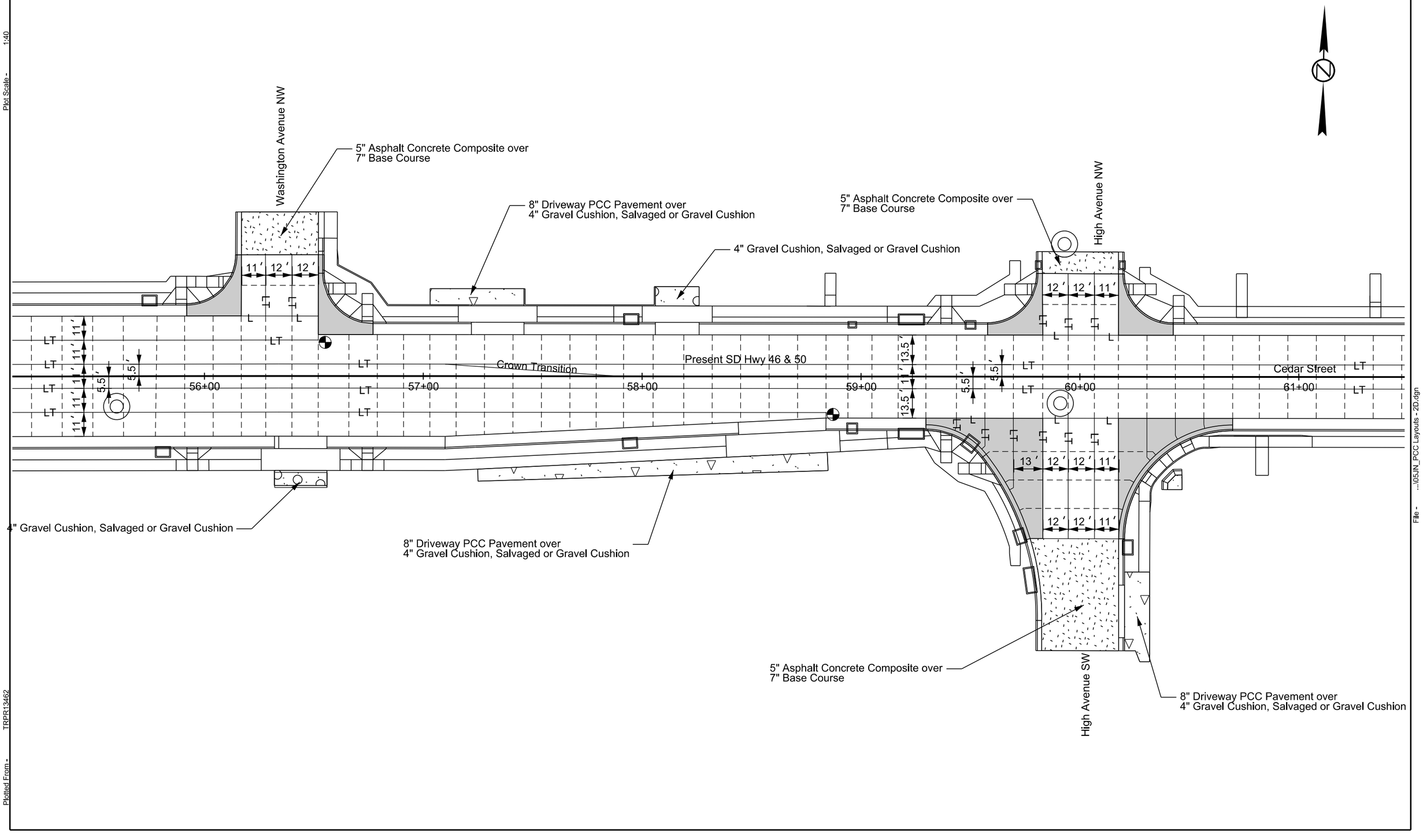
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F19	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 9 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

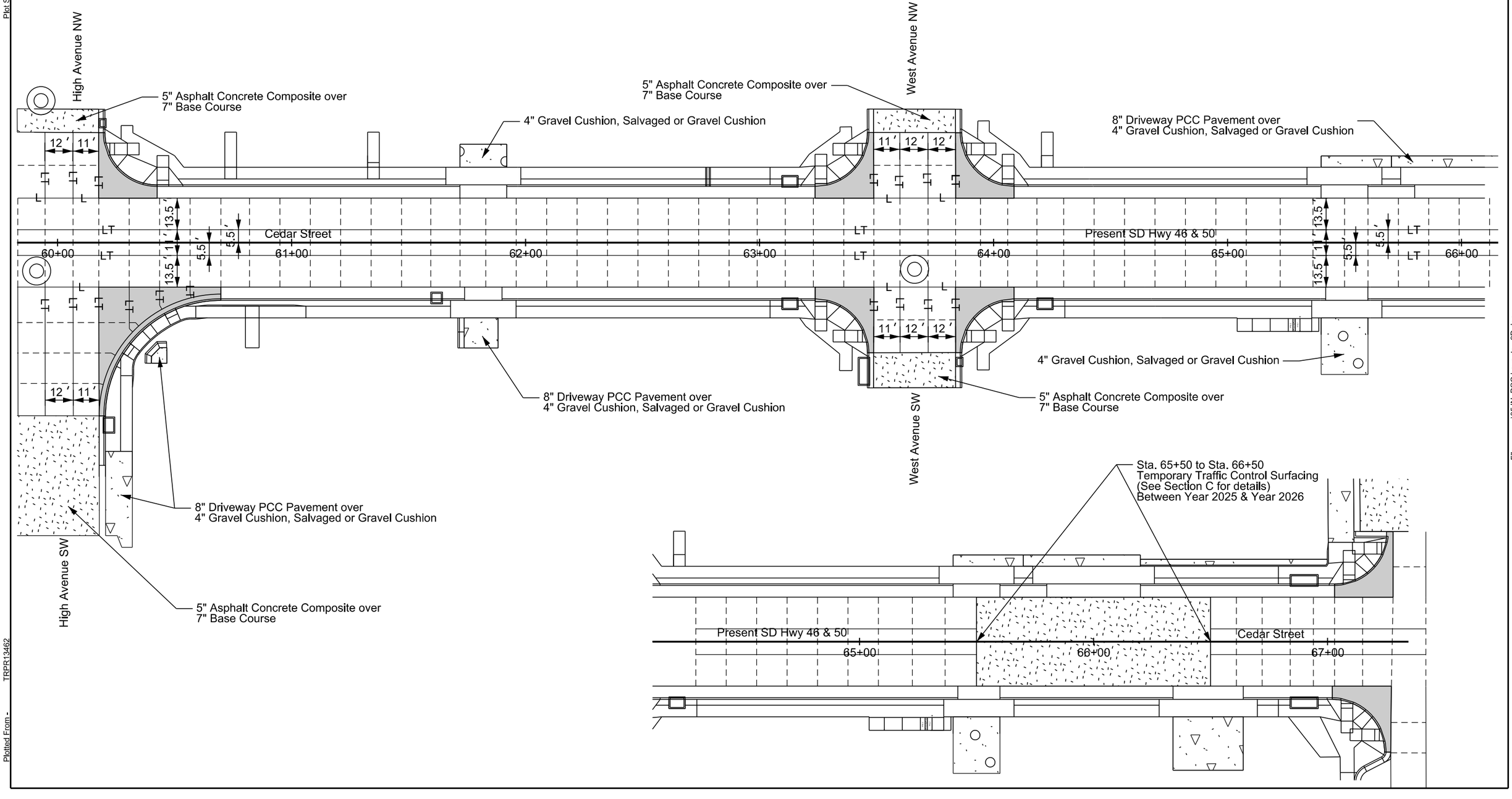
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

Scale 1 Inch = 40 Feet
Sheet 10 of 20 Sheets

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F20	F38

Plotting Date: 10/23/2024



Plot Scale - 1:40

Plotted From - TRPR13462

File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

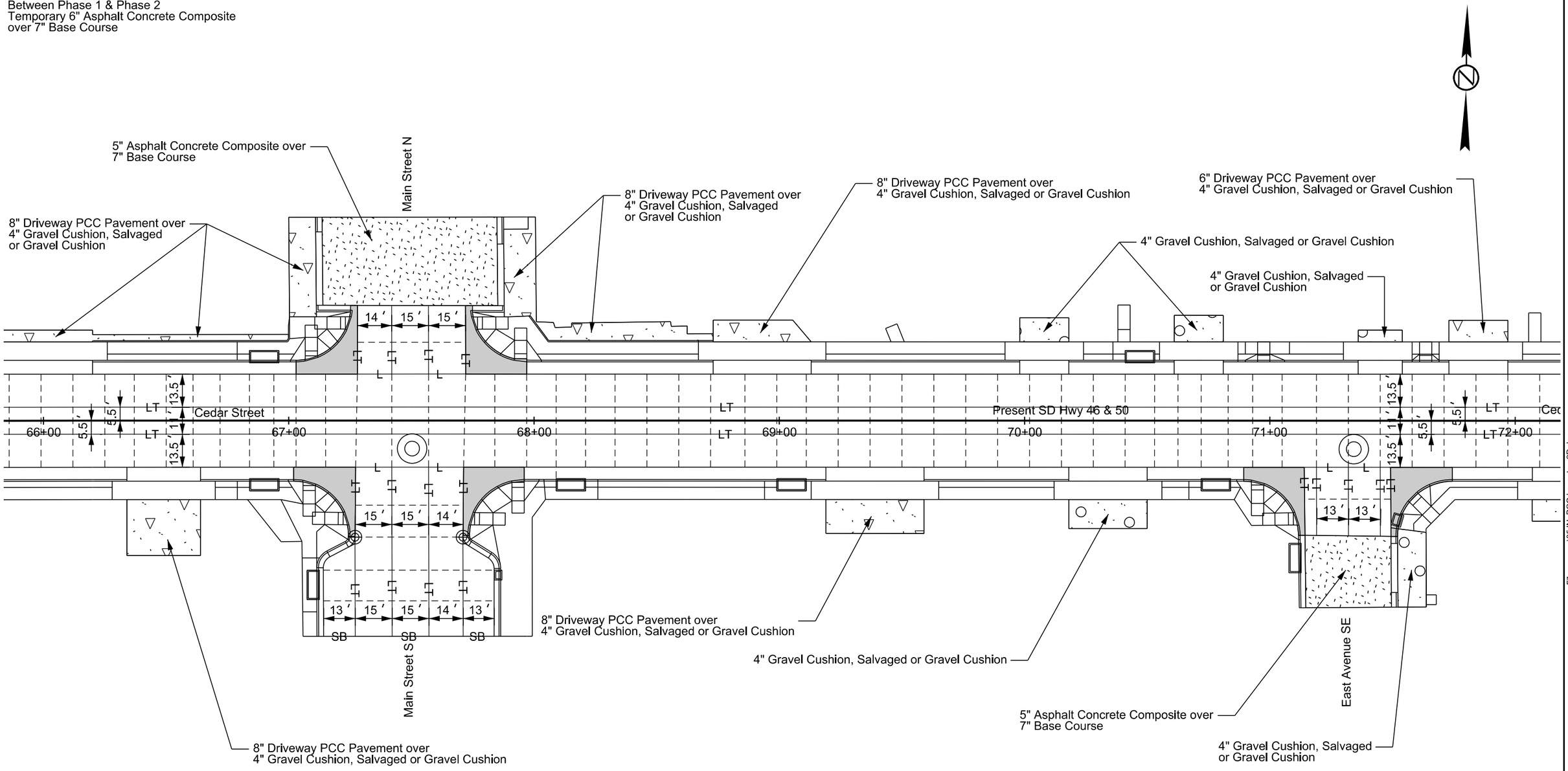
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F21	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 11 of 20 Sheets

Note:

Sta. 65+50 to Sta. 66+50
Between Phase 1 & Phase 2
Temporary 6" Asphalt Concrete Composite
over 7" Base Course



Plot Scale - 1:40

Plotted From - TRPR13462

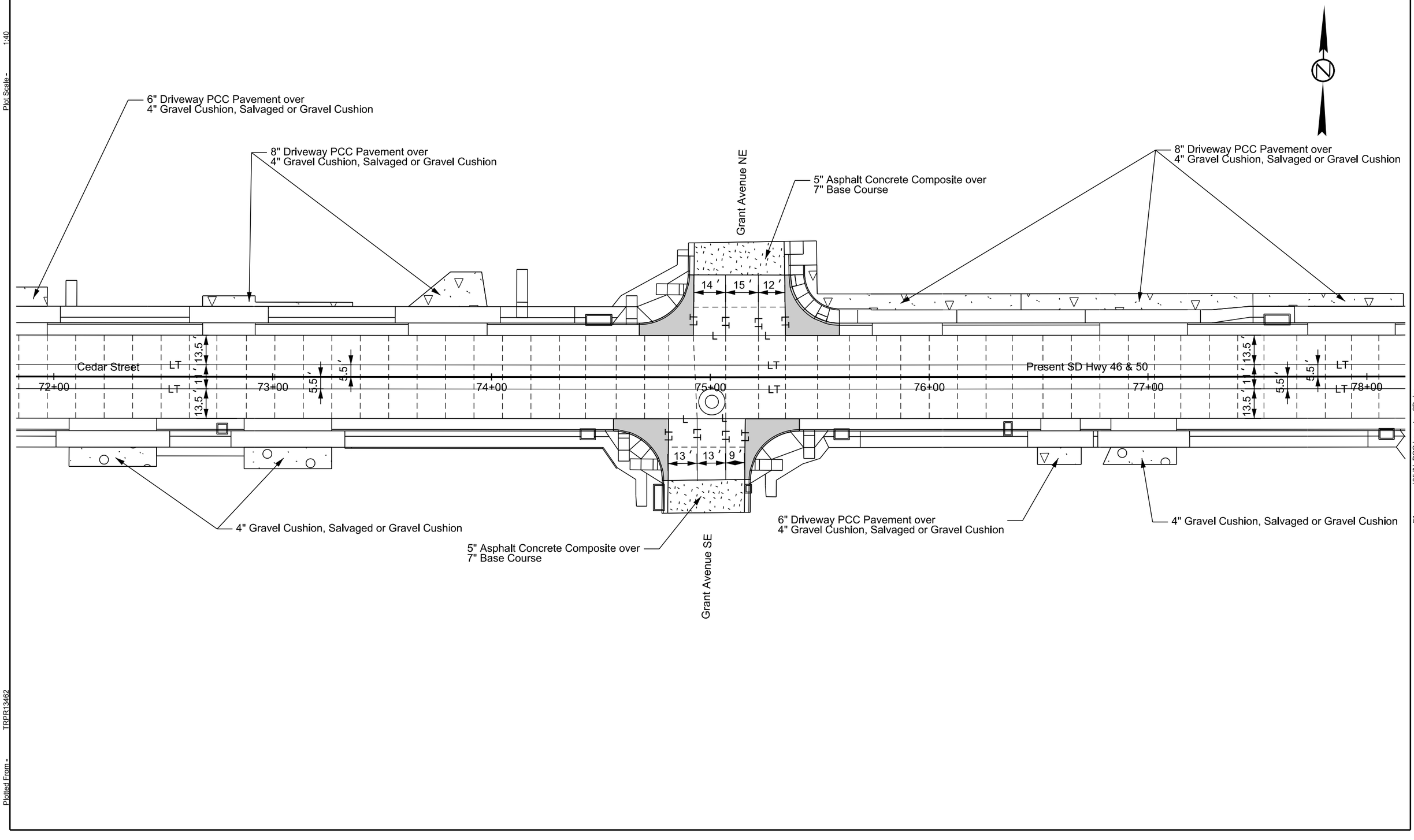
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F22	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 12 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

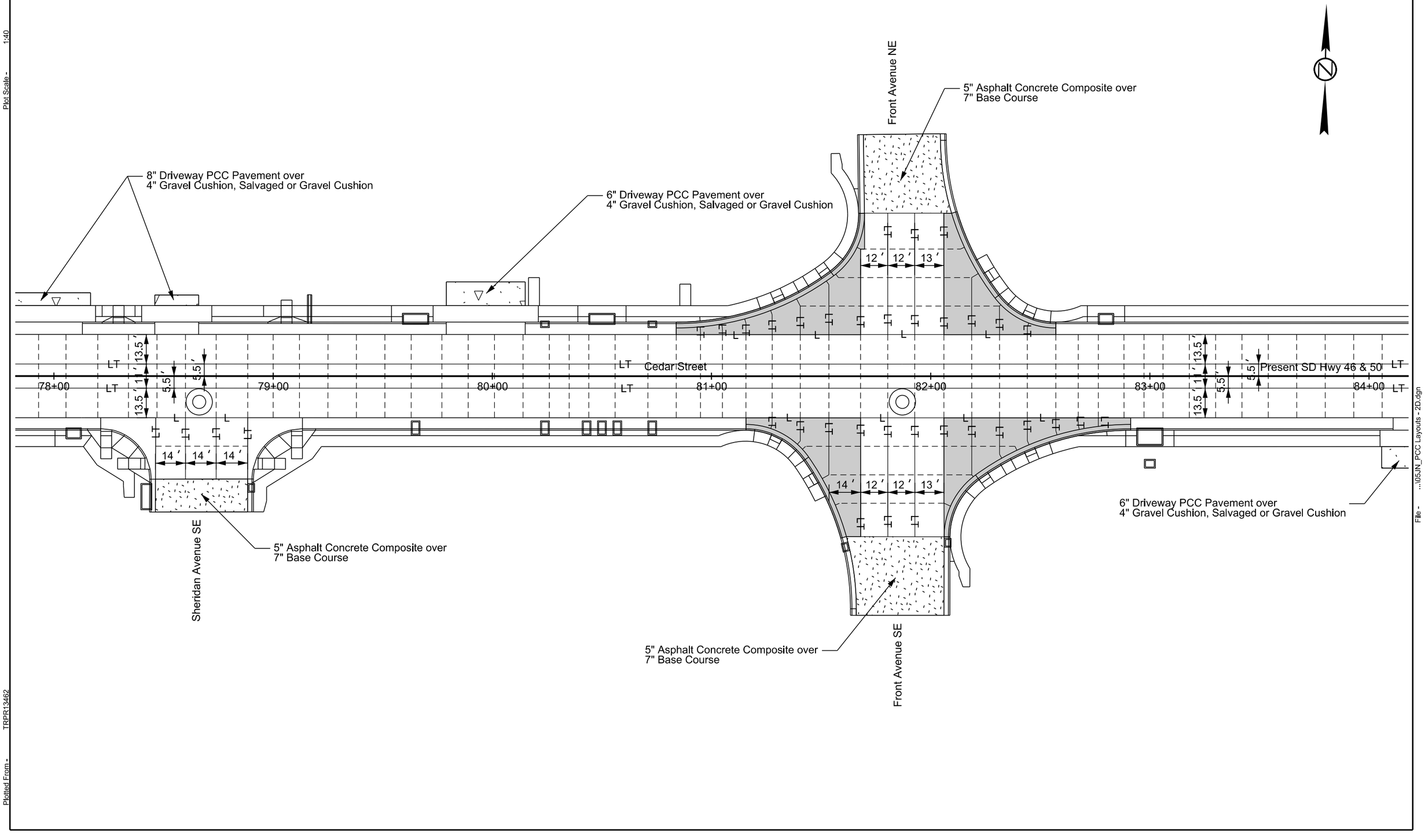
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F23	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 13 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

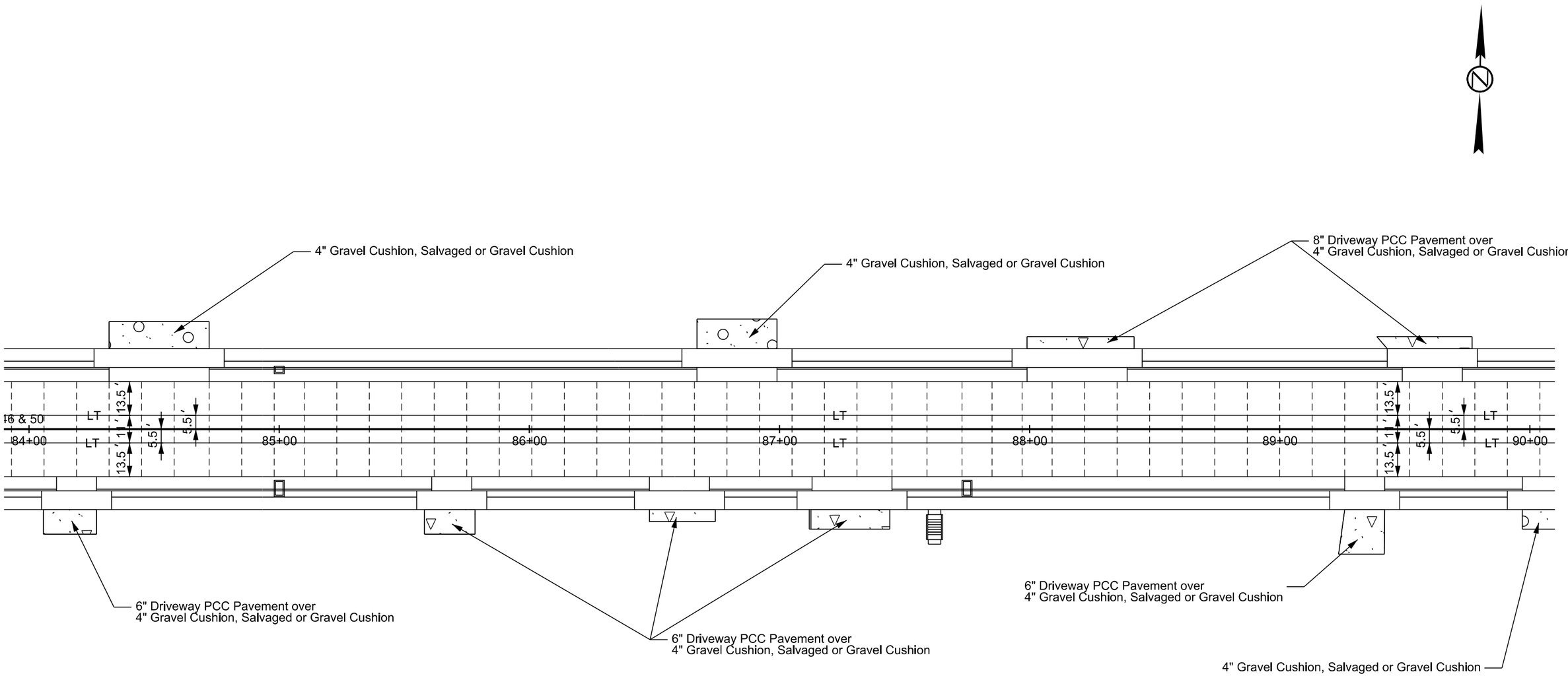
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F24	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 14 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

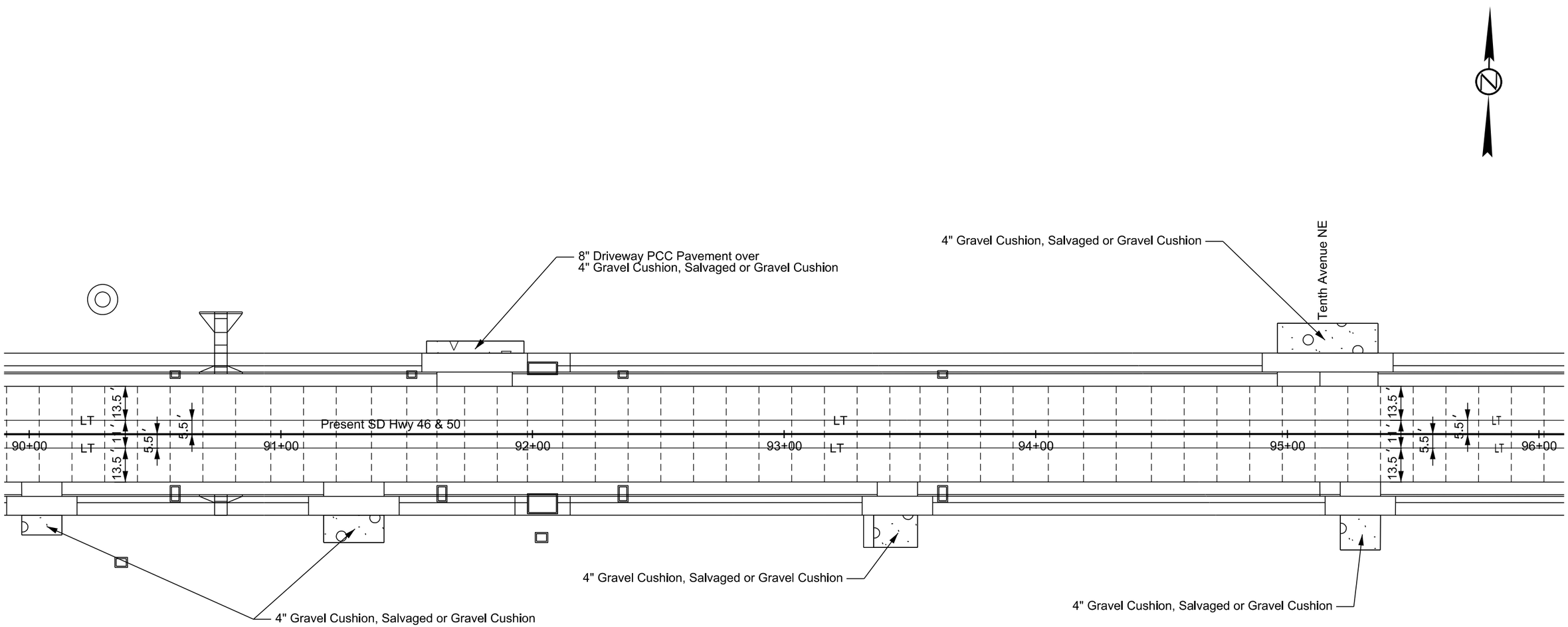
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F25	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 15 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

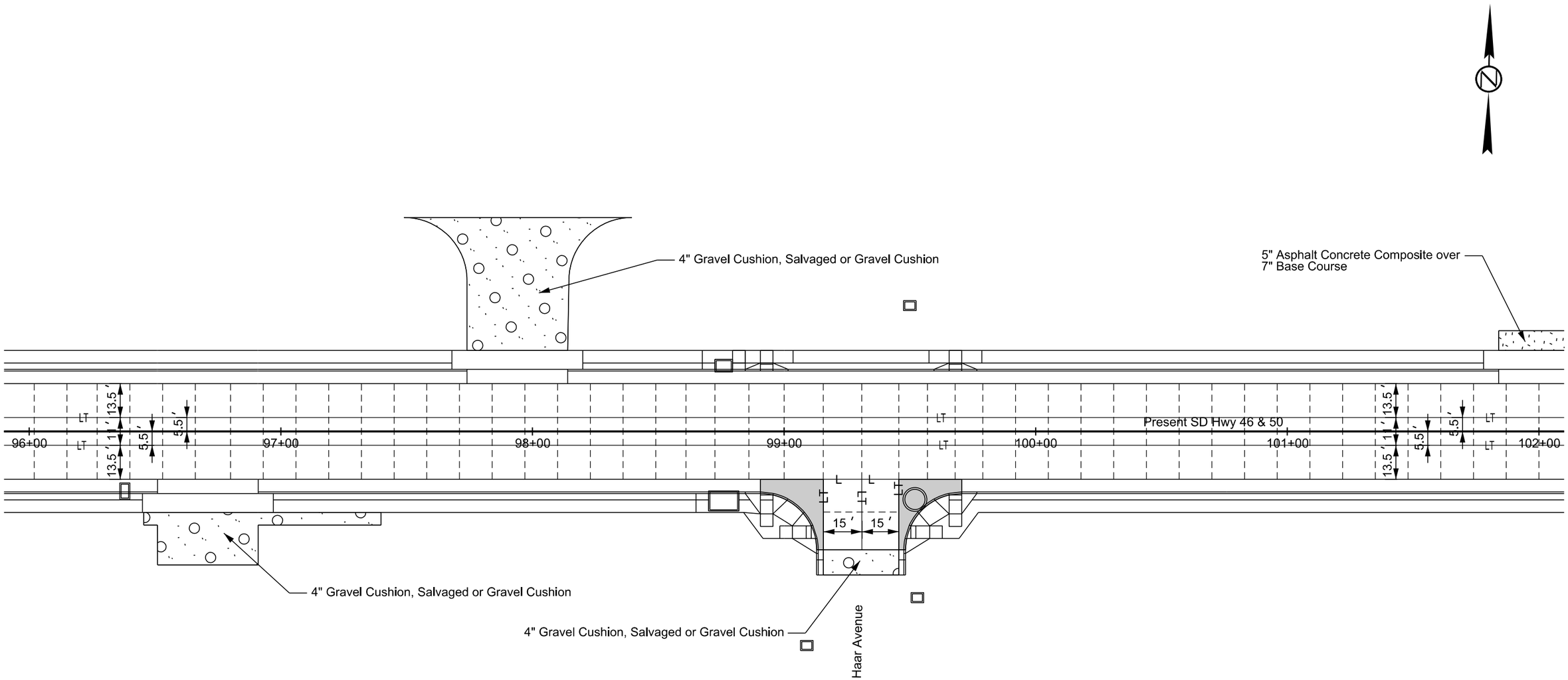
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F26	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 16 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

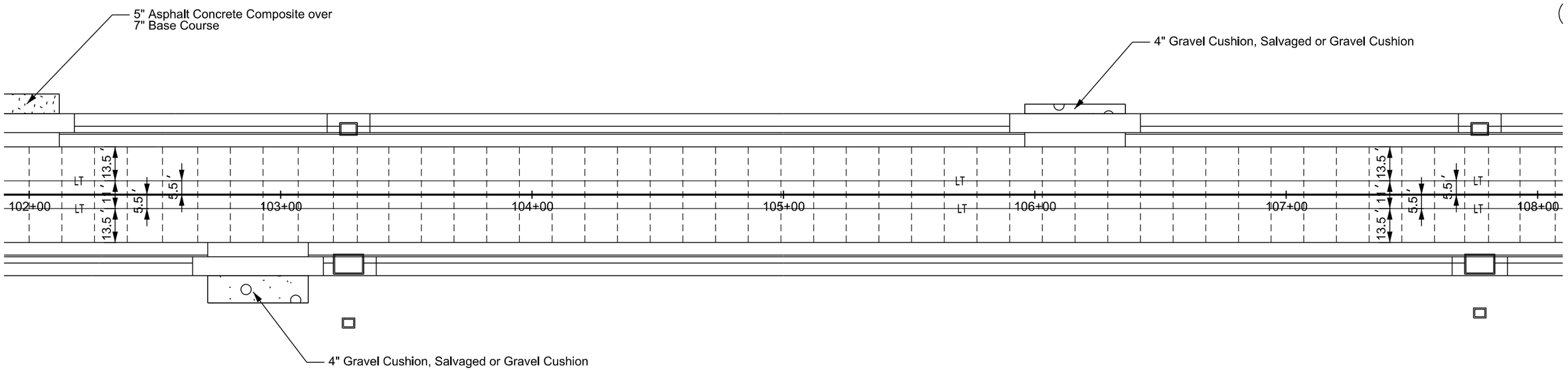
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F27	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 17 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

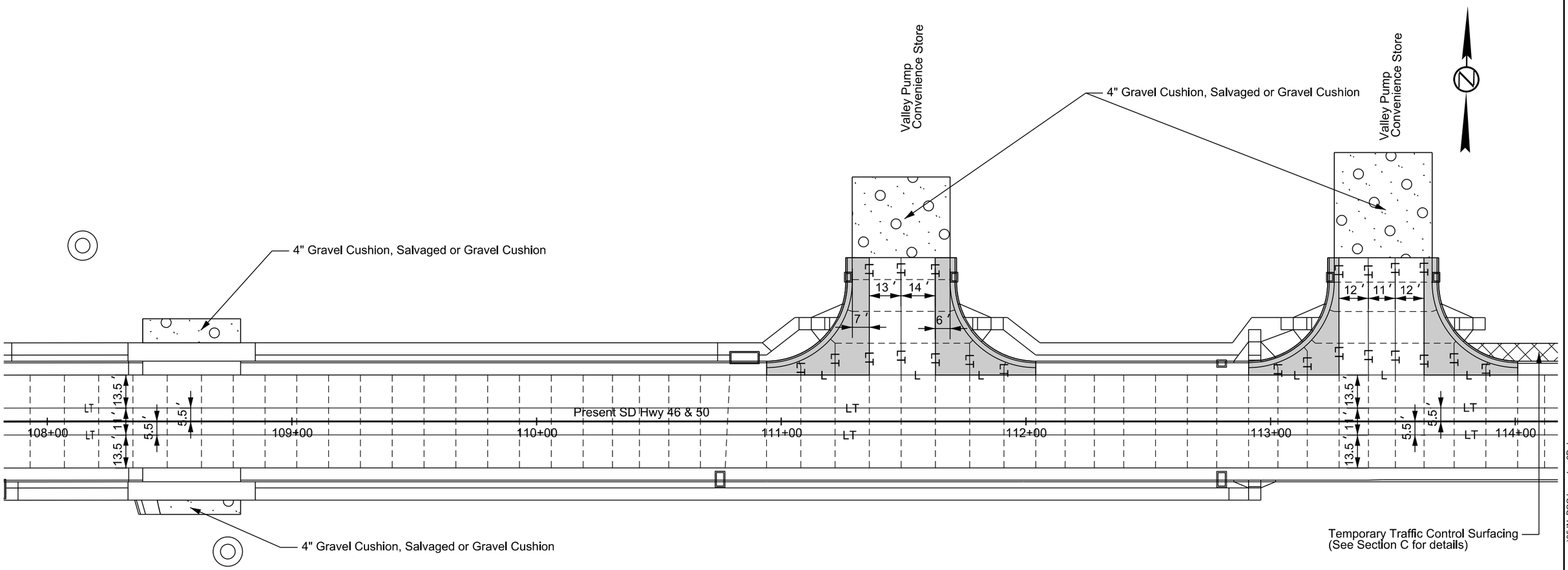
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F28	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 18 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

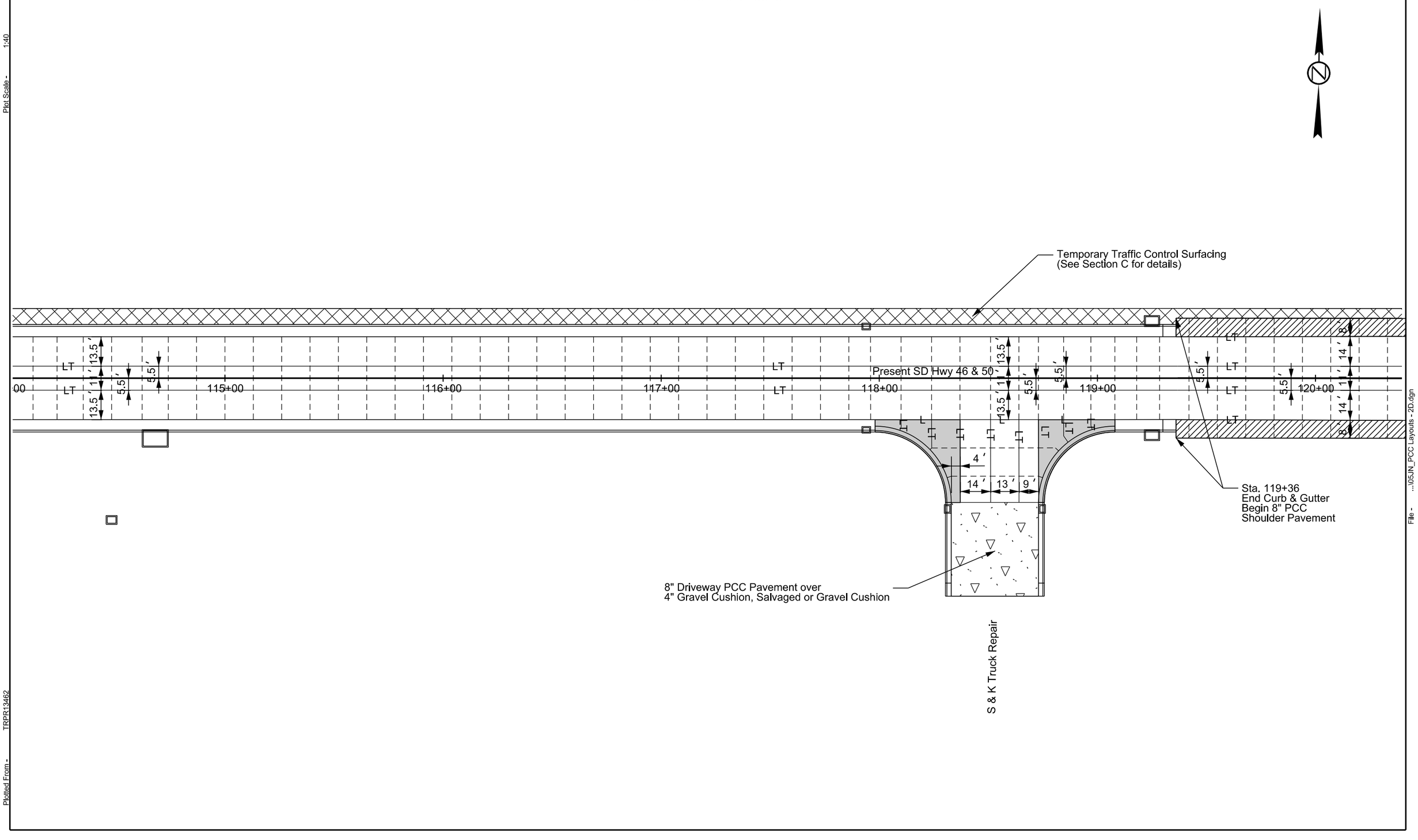
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F29	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 19 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

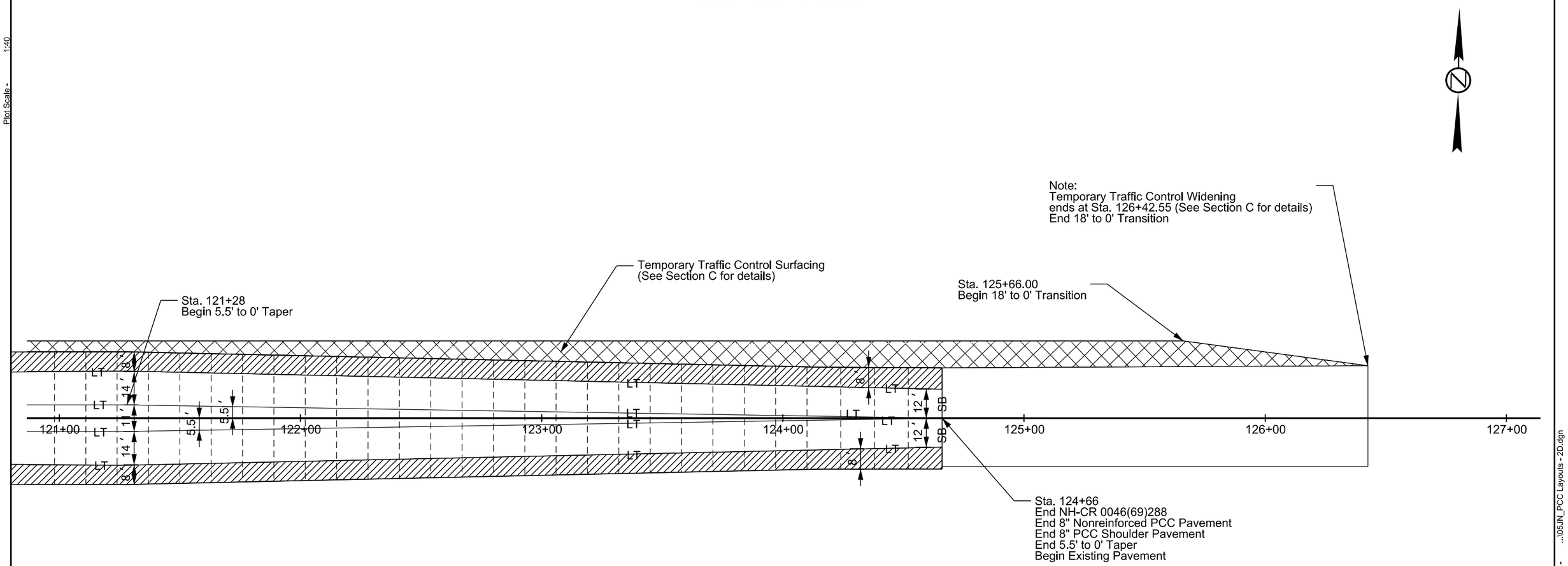
File - ...\05JN_PCC Layouts - 2D.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F30	F38

Plotting Date: 10/23/2024

Scale 1 Inch = 40 Feet
Sheet 20 of 20 Sheets



Plot Scale - 1:40

Plotted From - TRPR13462

File - ...\05JN_PCC Layouts - 2D.dgn

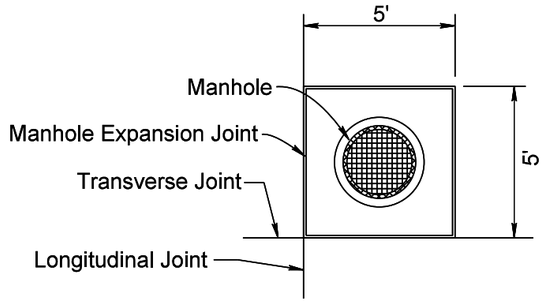
TYPICAL MANHOLE BOX-OUT DETAILS FOR PCC PAVEMENT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0046(69)288	F31	F38

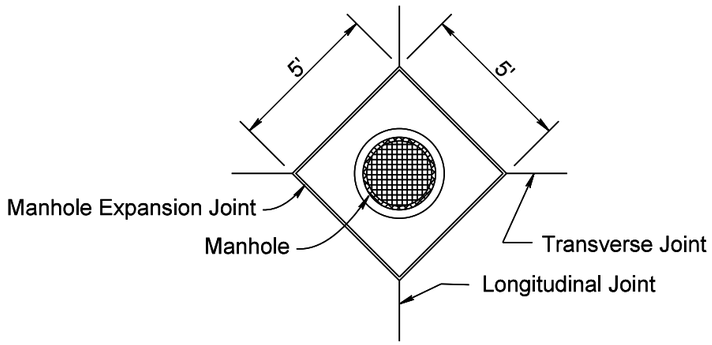
Plotting Date: 10/23/2024

Plot Scale - 1:6

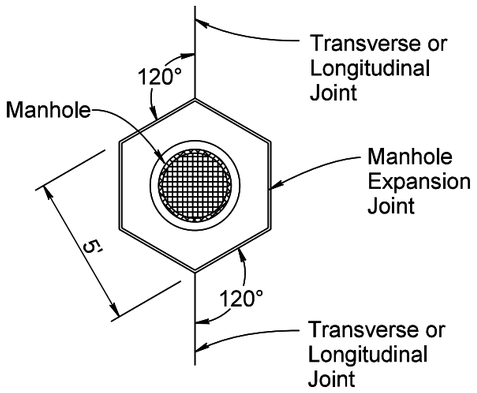
BOX-OUT DETAIL IN PCC PAVEMENT



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

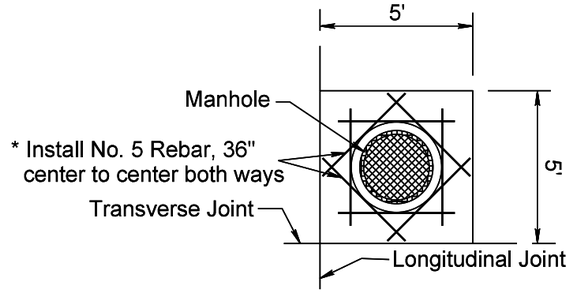


Where the utility access is intersected by the longitudinal and transverse joints

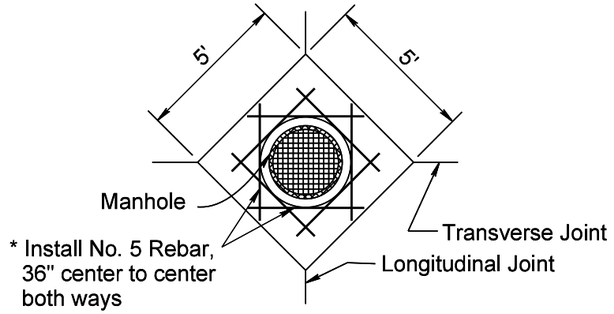


Where no Longitudinal or Transverse joints are present or at Longitudinal or Transverse joint.

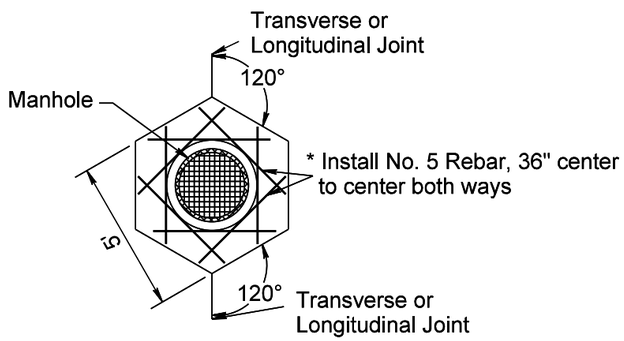
REBAR LAYOUTS IN PCC PAVEMENT WITH BOX-OUTS



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

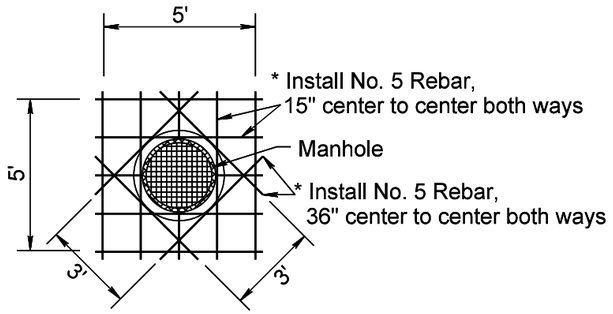


Where the utility access is intersected by the longitudinal and transverse joints



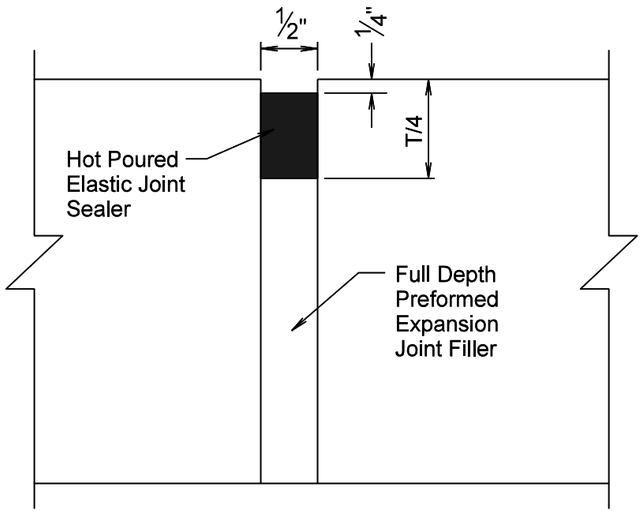
Where no Longitudinal or Transverse joints are present or at Longitudinal or Transverse joint.

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.

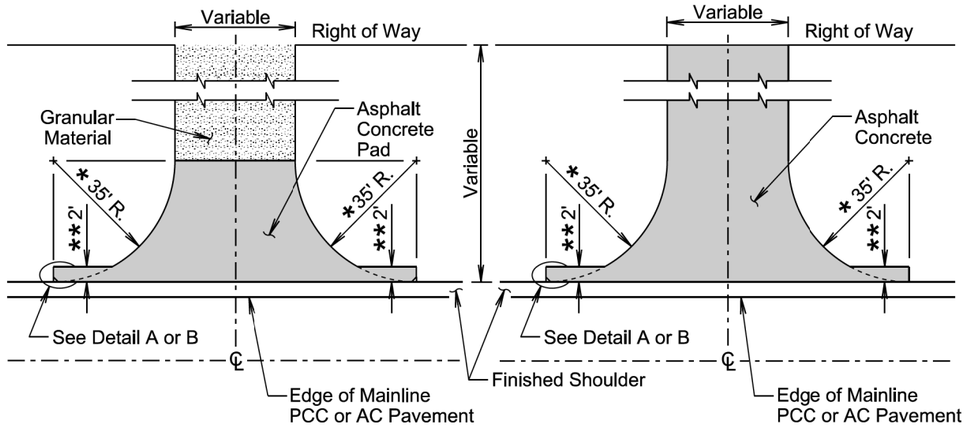
MANHOLE EXPANSION JOINT DETAIL



* 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 8.5" Nonreinforced PCC Pavement.

Plotted From - TRPR13462

File - ...\cmk05JN\manhole detail.dgn



PLAN VIEW
(Intersecting Road)
(No Asphalt Concrete Surfacing Beyond Right of Way)

PLAN VIEW
(Intersecting Road)
(Asphalt Concrete Surfacing Beyond Right of Way)

GENERAL NOTES:

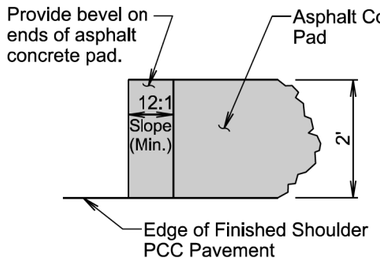
The precise construction limits for situations other than shown above will be determined by the Engineer during construction.

* For new construction, 35' radius typical or as specified in the plans. For resurfacing projects, radius is variable depending on existing conditions.

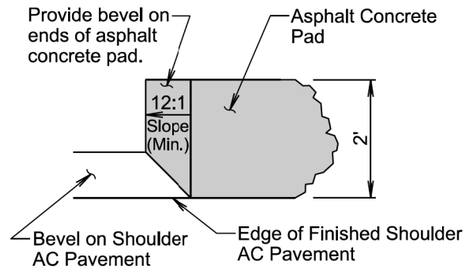
** The Contractor may adjust the screed of the paver during mainline paving operations to provide the 2-foot asphalt concrete pad or the Contractor may provide the 2-foot asphalt concrete pad during paving of the intersecting roads as shown above. The Engineer may eliminate the 2-foot asphalt concrete pads if the Engineer, in the Engineer's sole discretion, determines the pads are infeasible to construct due to site specific reasons including, but not limited to; existing inslope configuration, borrow and material availability, and right-of-way constraints.

August 27, 2020

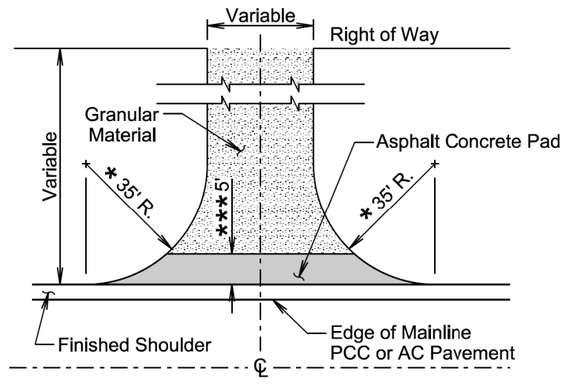
Published Date: 2025	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04 Sheet 1 of 2



DETAIL A
(Typ. for Projects with PCC Pavement on Shoulder)



DETAIL B
(Typ. for Projects with AC Pavement on Shoulder)

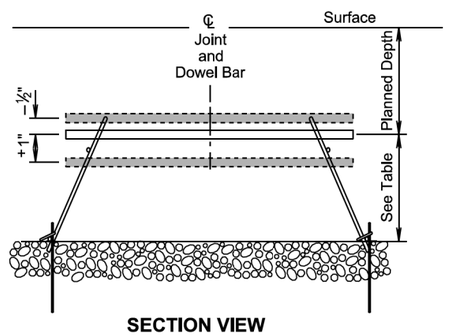


PLAN VIEW
(Entrance)

*** Not required if finished shoulder width is 4' or greater.

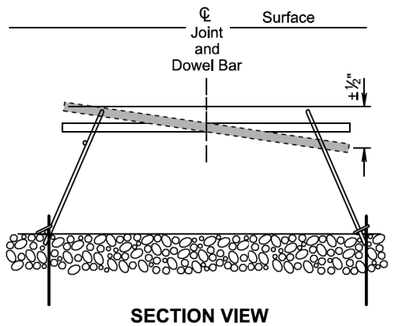
August 27, 2020

Published Date: 2025	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04 Sheet 2 of 2



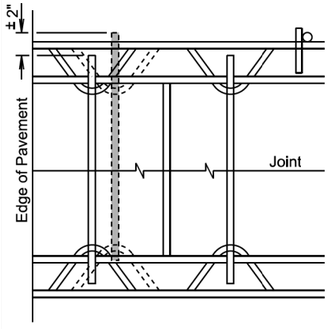
SECTION VIEW
VERTICAL TRANSLATION

Depth: mid-depth + 1 inch or – ½ inch



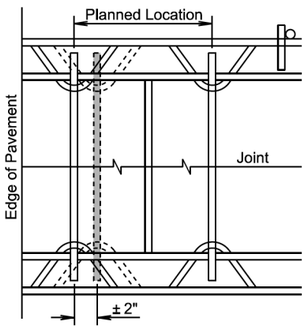
SECTION VIEW
VERTICAL TILT

Vertical rotational alignment: ½ inch over 18 inch



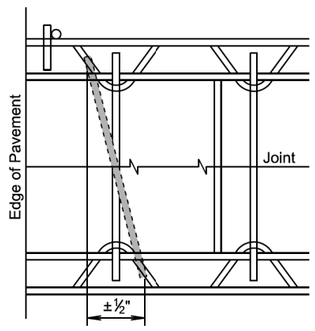
PLAN VIEW
LONGITUDINAL TRANSLATION

Longitudinal side shift: ± 2 inch for 18 inch bars



PLAN VIEW
HORIZONTAL TRANSLATION

Side shift ± 2 inch



PLAN VIEW
HORIZONTAL SKEW

Horizontal rotational alignment: ½ inch over 18 inch

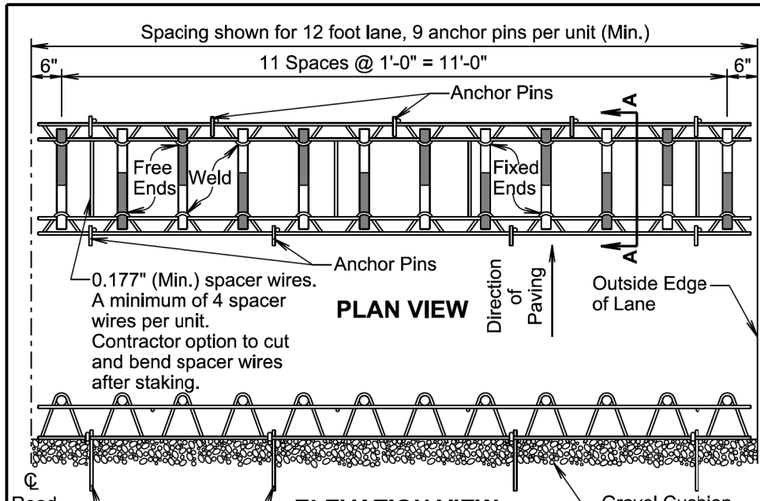
PAVEMENT THICKNESS	EPOXY COATED DOWEL BAR SIZE	HEIGHT TO CENTER
7" to 7½"	1" x 18"	3.0"
8" to 10"	1¼" x 18"	4.0"
10½" to 13"	1½" x 18"	5.0"

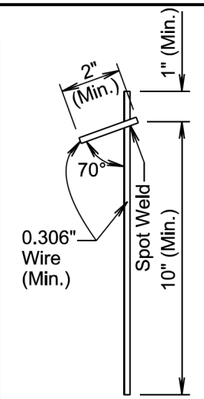
GENERAL NOTE:

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

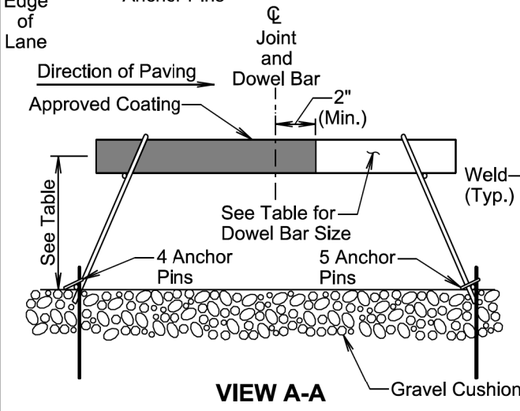
November 19, 2022

Published Date: 2025	SDDOT	**PCC PAVEMENT DOWEL BAR ALIGNMENT TOLERANCES**	PLATE NUMBER 380.01 Sheet 1 of 1

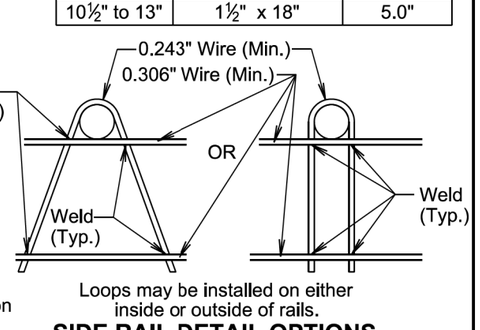




TYPICAL ANCHOR PIN



VIEW A-A



Loops may be installed on either inside or outside of rails.

SIDE RAIL DETAIL OPTIONS

PAVEMENT THICKNESS	EPOXY COATED DOWEL BAR SIZE	HEIGHT TO CENTER
7" to 7½"	1" x 18"	3.0"
8" to 10"	1¼" x 18"	4.0"
10½" to 13"	1½" x 18"	5.0"

GENERAL NOTES:

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

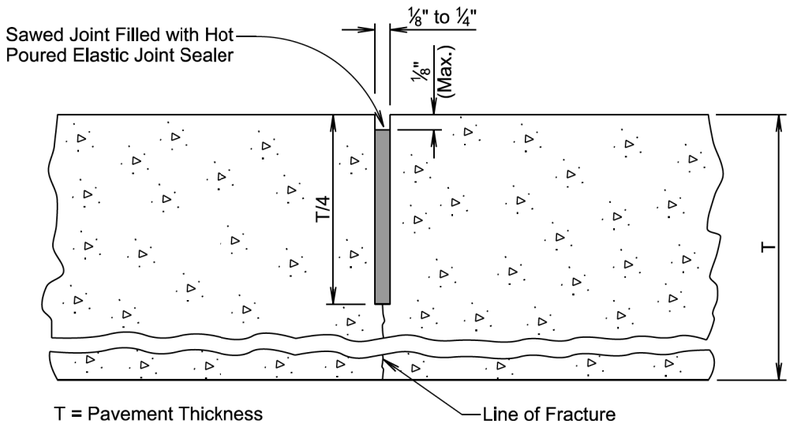
The transverse contraction joints will be sawed perpendicular to the centerline of the roadway. The transverse sawed joint will be centered over the dowel bars.

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



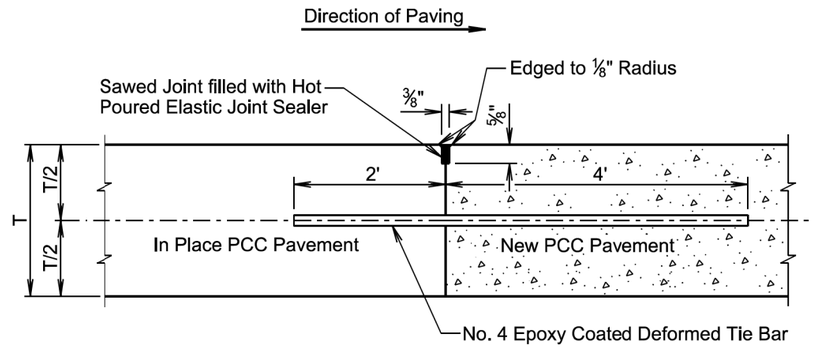
GENERAL NOTES:

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	SDDOT	PCC PAVEMENT TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY	PLATE NUMBER 380.12 Sheet 1 of 1



T = Pavement Thickness

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.

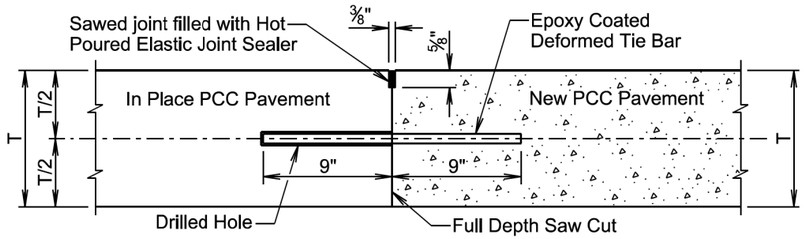
When a transverse construction joint is made, paving will not be allowed in this area for 12 hours.

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

Published Date: 2025	SDDOT	PCC PAVEMENT MID PANEL TRANSVERSE CONSTRUCTION JOINT	PLATE NUMBER 380.14 Sheet 1 of 1

DETAIL A
TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS



T = In Place PCC Pavement and New PCC Pavement Thickness

GENERAL NOTES:

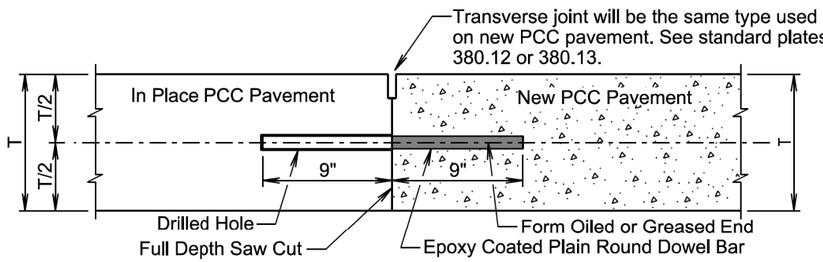
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

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.

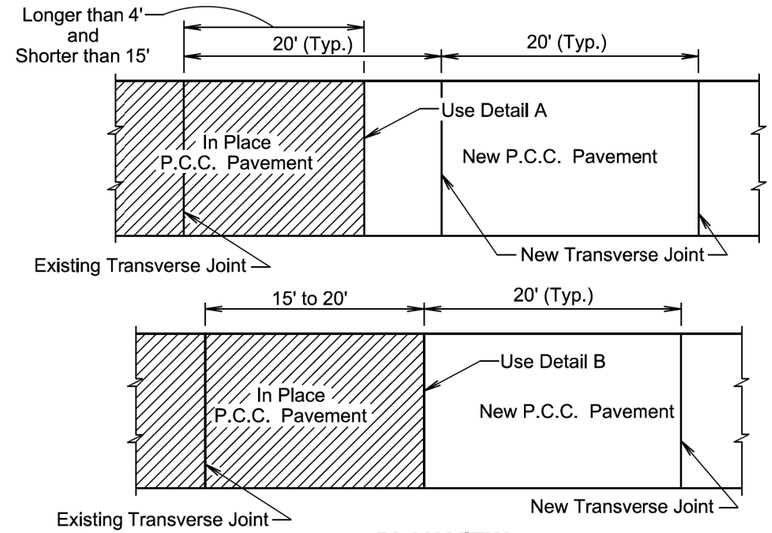
See sheet 2 of 2 of this standard plate to determine if Detail B will be used.

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.

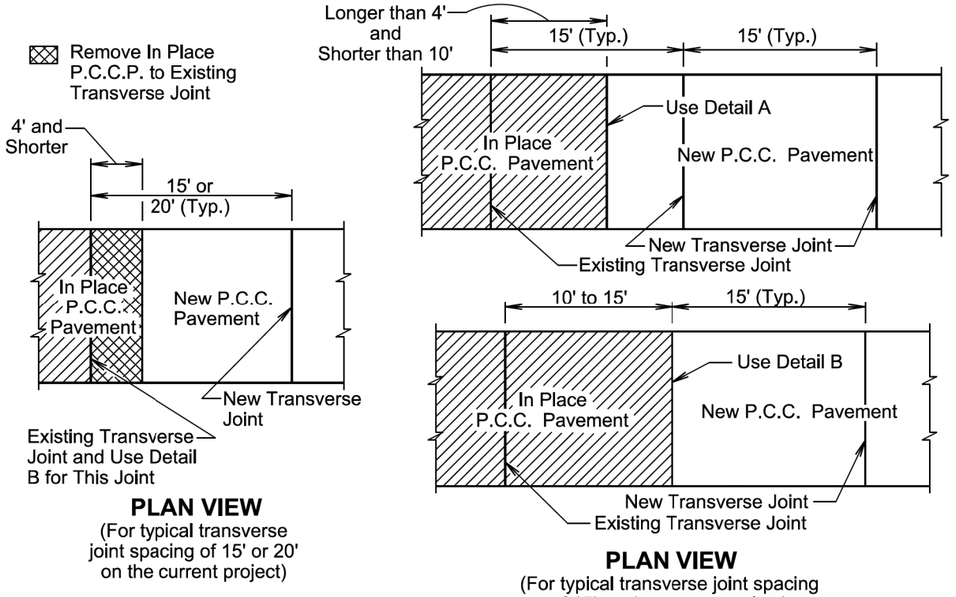
The epoxy coated plain round dowel bar size, number, and spacing will be the same as detailed on the corresponding dowel bar assembly standard plate (380.04, 380.05, 380.06, or 380.07). The epoxy coated plain round dowel bars will be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

January 22, 2023

Published Date: 2025	SDDOT	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 spacings of 15' or 20' on the current project)

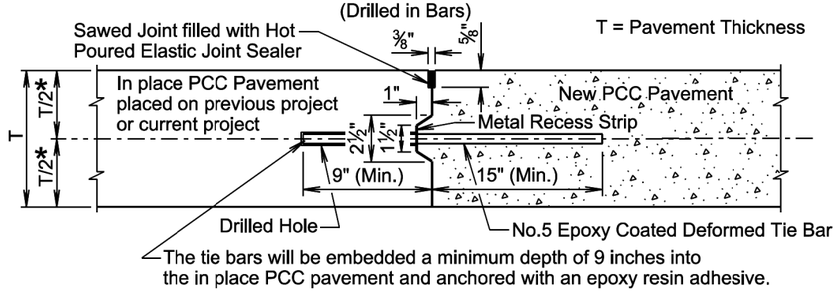
PLAN VIEW
(For typical transverse joint spacing of 15' on the current project)

January 22, 2023

Published Date: 2025	SDDOT	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER 380.15
			Sheet 2 of 2

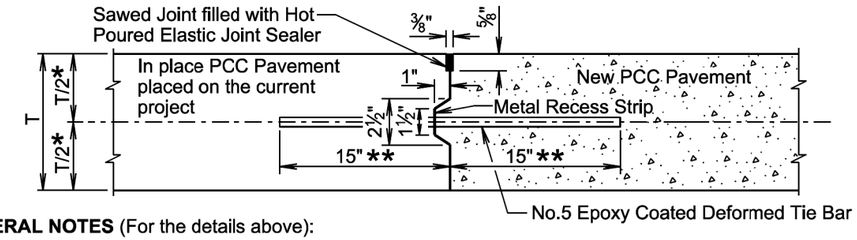
LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS

(Drilled in Bars)



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:

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.

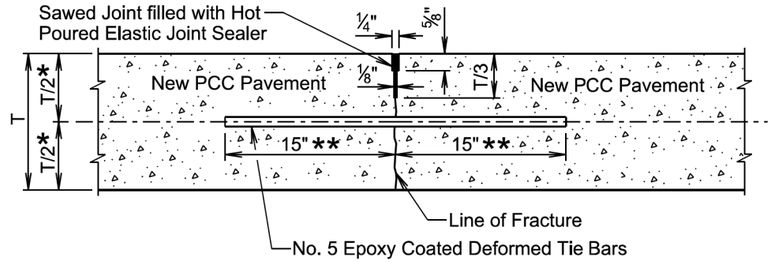
* The vertical placement tolerance for any part of the tie bar will be ± T/6.
** The transverse placement (side shift) tolerance will be ± 3 inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2025	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 1 of 2

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.

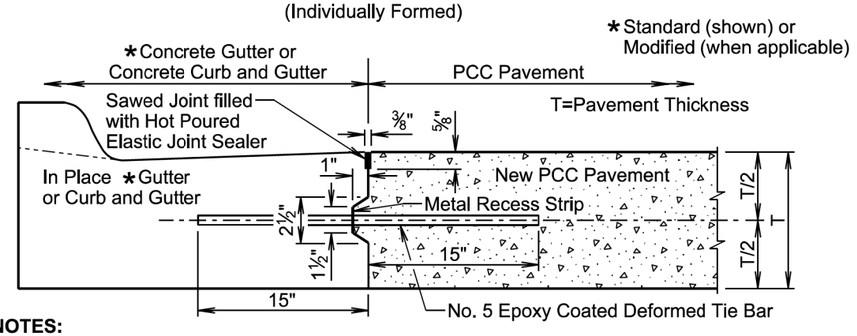
* The vertical placement tolerance for any part of the tie bar will be ± T/6.
** The transverse placement (side shift) tolerance will be ± 3 inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2025	SDDOT	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.

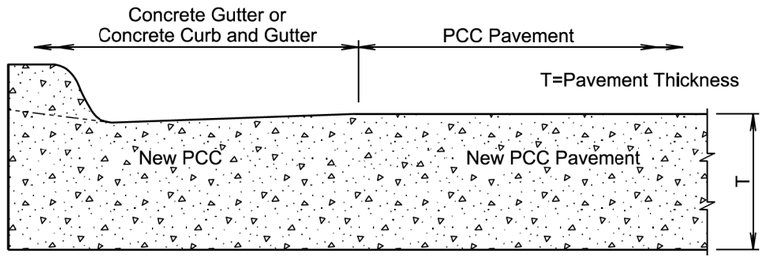
The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip will be used. When concrete pavement is slip formed, a metal recess strip is not required.

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 1½ 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 ¼ 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.

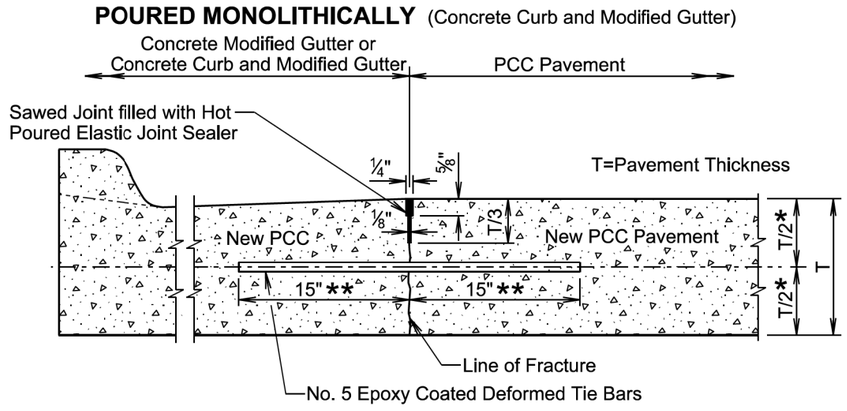
The gutter or curb and gutter will be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter will be sawed and sealed same as the transverse contraction joints in the PCC pavement.

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	SDDOT	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.

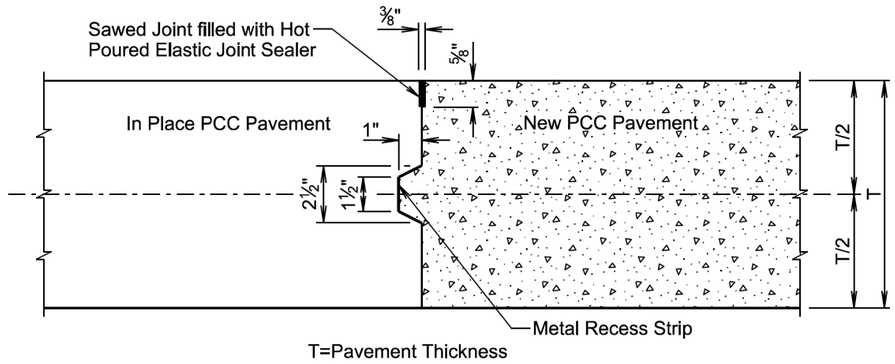
The slope of the gutter will be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter will be constructed at the same slope as the mainline concrete pavement.

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

March 31, 2024

Published Date: 2025	SDDOT	PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER	PLATE NUMBER 380.21
			Sheet 2 of 2

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS



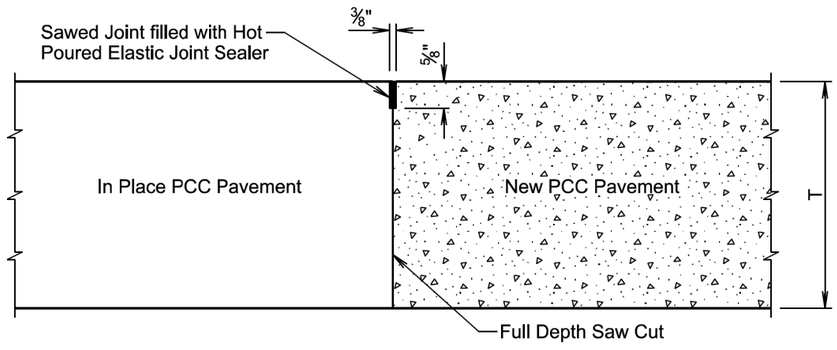
T=Pavement Thickness

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



T=Pavement Thickness

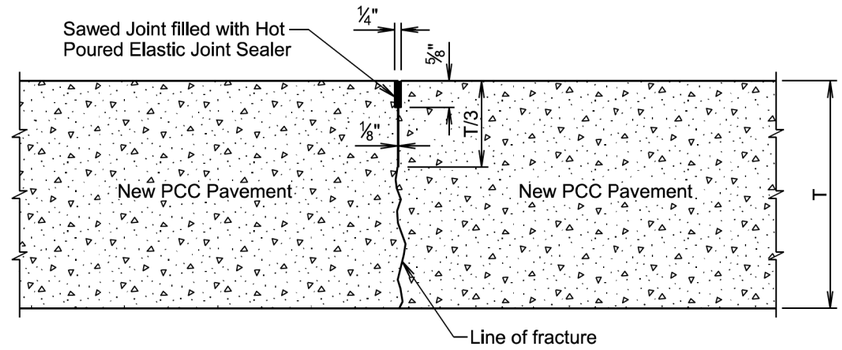
GENERAL NOTE:

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

Published Date: 2025	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS	PLATE NUMBER 380.22
			Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITHOUT TIE BARS



T=Pavement Thickness

GENERAL NOTE:

The first saw cut to control cracking will be a minimum of ⅓ 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

Published Date: 2025	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS	PLATE NUMBER 380.22
			Sheet 2 of 2