

SECTION F: SURFACING PLANS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SHEET F1	TOTAL SHEETS F64
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Plotting Date: 11/15/2024

INDEX OF SHEETS

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END IM-B-CR 2292(101)3

NB Cliff Ave. 126+02.67
 Located 1155.78 feet North and
 36.79 feet West of the
 southeast corner of Section 28 -
 Township 101 North -
 Range 49 West of the 5th PM.

STR. NO. 50-211-231

STR. NO. 50-211-230

BEGIN IM-B-CR 2292(101)3

NB I-229 Station 178+00.00
 Located 917.81 feet South and
 3016.64 feet West of the
 northeast corner of Section 33 -
 Township 101 North -
 Range 49 West of the 5th PM.
 MRM 003.26+0.243

END IM-B-CR 2292(101)3

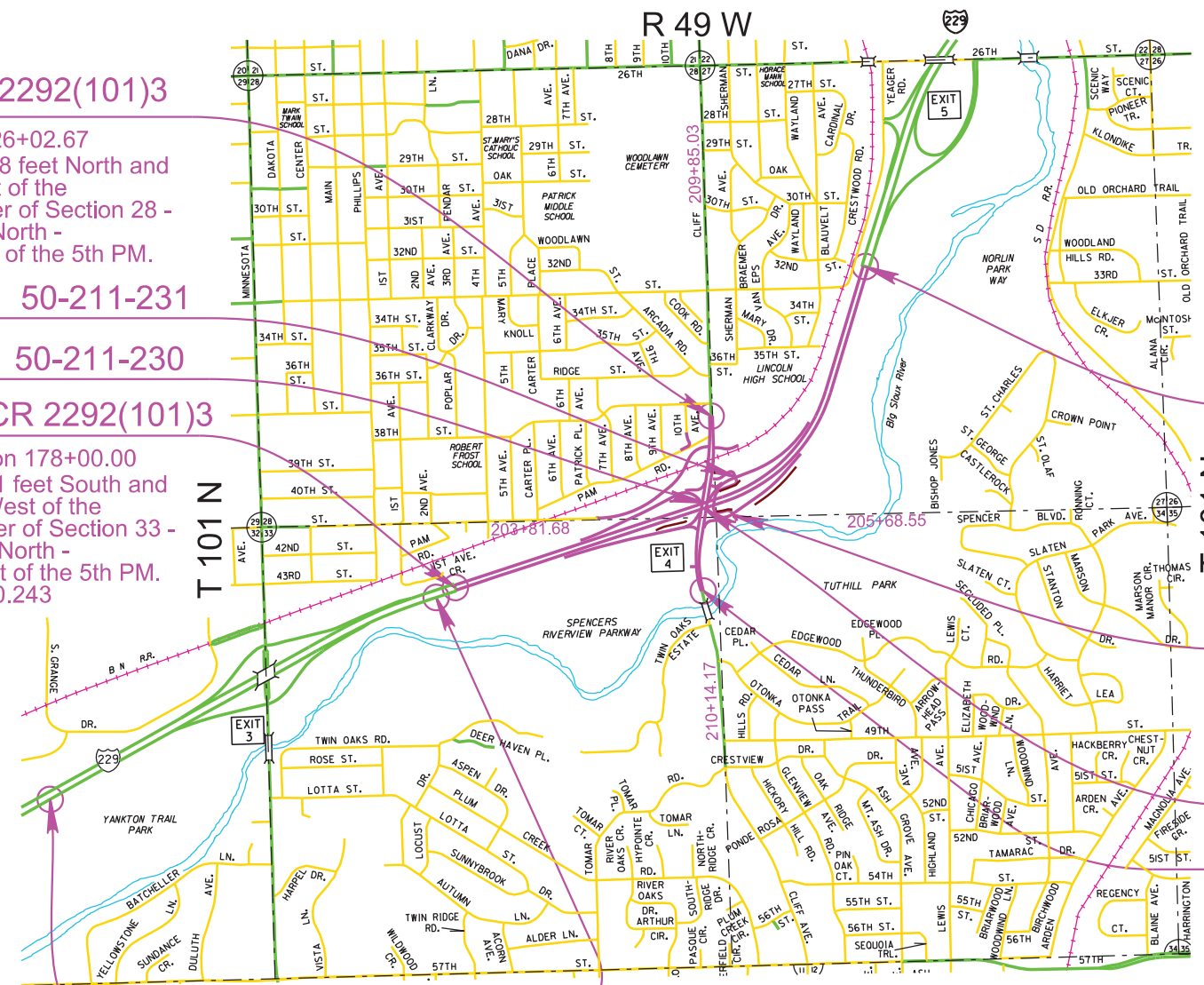
NB I-229 Station 245+03.64
 Located 2934.62 feet North and
 1765.55 feet East of the
 southwest corner of Section 27 -
 Township 101 North -
 Range 49 West of the 5th PM.
 MRM 004.37+0.465

STR. NO. 50-210-231

STR. NO. 50-210-230

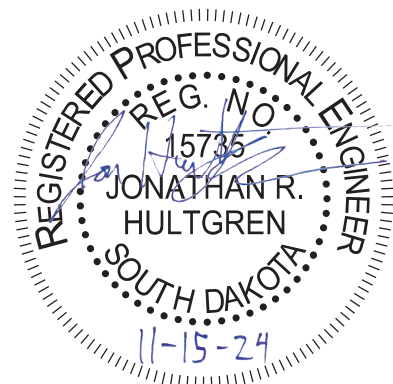
BEGIN IM-B-CR 2292(101)3

NB Cliff Ave. Station 105+40.80
 Located 890.68 feet South and
 115.85 feet West of the
 northeast corner of Section 33 -
 Township 101 North -
 Range 49 West of the 5th PM.



TEMPORARY GRADING

NB I-229 Sta. 124+34.51 to Sta. 175+00.00



SECTION F ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
120E6200	Water for Granular Material	666.9	MGal
120E9000	Pit Run	1,202.3	Ton
260E1010	Base Course	13,119.8	Ton
260E2010	Gravel Cushion	41,250.0	Ton
320E1200	Asphalt Concrete Composite	8,129.3	Ton
320E5020	Saw Joint in Asphalt Concrete	175	Ft
380E0060	8.5" Nonreinforced PCC Pavement	7,080.9	SqYd
380E0100	10.5" Nonreinforced PCC Pavement	32,434.2	SqYd
380E0150	13" Nonreinforced PCC Pavement	57,137.3	SqYd
380E3040	8" PCC Driveway Pavement	405.8	SqYd
380E3042	8" Fast Track Concrete Driveway Pavement	101.4	SqYd
380E6000	Dowel Bar	91,133	Each
380E6110	Insert Steel Bar in PCC Pavement	207	Each
380E6450	Saw Joint in PCC Pavement	2,647.3	Ft
410E2600	Membrane Sealant Expansion Joint	224.0	Ft
831E0210	Non-woven Separator Fabric	1,674	SqYd

SECTION F ESTIMATE OF QUANTITIES (Exit 3 Crossover)

(Included in overall estimate of quantities table above, for information only)

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
120E6200	Water for Granular Material	158.9	MGal
120E9000	Pit Run	1,202.3	Ton
260E1010	Base Course	12,041.4	Ton
320E1200	Asphalt Concrete Composite	7,333.0	Ton
380E6450	Saw Joint in PCC Pavement	2,248.3	Ft
831E0210	Non-woven Separator Fabric	1,674	SqYd

CONTROL OF ACCESS

If the Contractor's operations would require access to the interstate ROW in any location not currently designated as public access, prior approval must be obtained from the Department. All requests will be reviewed based on safety and construction sequencing. A Contractor will not assume that all requests will be granted.

The Contractor will be responsible for all safety control and signing measures.

Anytime Contractor operations have ceased for the day, any entrances approved in a control of access area will be closed by the Contractor.

The request for access will be provided in writing to the Engineer two weeks in advance of any proposed break in control of access.

BUSINESS ENTRANCE CLOSURES

It is anticipated that there may be 3 intersecting streets, and 9 driveways that will require a blackout to maintain access. The business entrances designated by the Engineer will not be closed for more than 24 consecutive hours with no alternate entrance into the business. The Contractor may use Fast Track Concrete, paving during nonbusiness hours, or any option approved by the Engineer to achieve this requirement.

SURFACING THICKNESS DIMENSIONS

The plans shown spread rates will be applied even though the thickness may vary from that shown in the plans.

At those locations where material must be placed to achieve a required elevation, the depth/quantity may be varied to achieve the required elevation.

UNCLASSIFIED EXCAVATION (Exit 3 Crossover)

See Section B for total quantity and payment of Unclassified Excavation, Removed Asphalt Mix Material, Removed Granular Material, and Waste Material. See typical sections for locations of these materials.

The Removed Granular Material and Waste Material quantities of the Unclassified Excavation quantity will be as noted in the following table. These Unclassified Excavation quantities will not be measured for payment and the basis of payment will be plans quantity.

The Unclassified Excavation waste material will be used as directed by the Engineer. It may be used as Contractor Furnished Borrow for inslope flattening and widening. The Contractor will ensure no asphalt concrete material will be used for inslope flattening and widening.

TABLE OF UNCLASSIFIED EXCAVATION (Exit 3 Crossover)

Location	Alignment	Station	Granular Material Removal	Waste Material
			CuYd	CuYd
Widening (Outside)	I-229 NB	STA 124+34 to STA 140+59		496.5
Widening (Inside)	I-229 NB	STA 157+61 to STA 175+00	219.4	531.4
Diversion (West)	NB Diversion	STA 5140+59 to STA 5152+75	146.9	282.6
Diversion (East)	NB Diversion	STA 5153+50 to STA 5160+62		224.9
Ramp C	Ramp C	STA 30+00 to STA 36+25	328.8	136.5
Median Crossover	I-229 NB	STA 125+00 to STA 130+57		1980.4
Total =			695.1	3652.3



REMOVE ASPHALT CONCRETE PAVEMENT

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete is unknown.

An estimated 1,955 Cubic Yards of the in-place asphalt concrete surfacing will be removed from the existing roadways according to the in-place surfacing typical sections and wasted as directed by the Engineer. Care will be taken not to waste the in-place granular material.

The quantity of removed asphalt material is estimated from the in-place surfacing typical sections. This estimated quantity is not included in the unclassified excavation quantities.

PREPARATION FOR PARKING LOT & DRIVEWAY PAVEMENTS

The foundation will be excavated, shaped, and compacted to a firm, uniform bearing surface. Unsuitable foundation material will be removed and replaced as directed by the Engineer. The foundation will be thoroughly moistened immediately prior to placing the PCC Pavement. Moisture will be applied without forming pools of water.

Granular material will be placed to the depth specified and satisfactorily compacted.

Payment for any foundation preparation will be incidental to the contract unit price of the surfacing material.

RECYCLED CONCRETE AGGREGATE (RCA)

PCC pavement removed from within the project limits will be crushed to a minus 2.5-inch size to be used as Recycled Concrete Aggregate (RCA). All in-place rebar will be separated and removed from the RCA.

All costs to remove the existing PCC pavement will be incidental to the contract unit price per square yard for "Remove Concrete Pavement".

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

Payment for crushing the PCC pavement, and incorporating it into the Processed Subgrade Topping, will be incidental to the contract unit price per cubic yard for "Processed Subgrade Topping".

Exit 3 Crossover

All in-place rebar will be separated and removed from the RCA.

There is an estimated 1400 ton of PCC Pavement for the Exit 3 Crossover 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 unit per ton for the granular material that it is replacing.

SAW JOINT IN ASPHALT CONCRETE OR PCC PAVEMENT

Prior to the removal of in place asphalt concrete and/or PCC Pavement, the existing pavement will be sawed full depth to a true line with a vertical face. See typical sections. If approved by the Engineer, the Contractor may elect to use a different method to create this vertical face. All costs to saw joint will be incidental to the contract unit price per foot for "Saw Joint in Asphalt Concrete" or "Saw Joint in PCC Pavement".

JOINT SAWING TABLE

Station		Station	Asphalt Concrete Joint (feet)	PCC Pavement Joint (feet)
I-229 Mainline				
178+00	to	178+00		104.0
245+04	to	245+04		104.0
Cliff Avenue				
105+41	to	105+41		50.0
127+35	to	127+35		55.0
127+51	to	127+57		36.0
127+98	to	128+21		50.0
41 st Street				
21+13	to	21+13	45.0	
School Entrance				
42+77	to	43+04	130.0	
Total			175.0	399.0

JOINT SAWING TABLE (Exit 3 Crossover)

Station		Station	PCC Pavement Joint (feet)
I-229 NB			
140+59-24' R	to	140+59-46' R	22.0
140+59-24' R	to	148+69-24' R	810.3
148+69-24' R	to	148+69-34' R	10.0
161+06	to	161+06-6' L	6.0
161+06	to	175+00	1,394.0
175+00	to	175+00-6' L	6.0
Total			2,248.3

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 for the full width of the bottom layer of Asphalt Concrete Composite plus one foot additional on the outside shoulder. The Asphalt for Prime will be applied at the following locations:

Pam Road – Sta. 50+75.00 to Sta. 51+72.66
 Lincoln High School Entrance – Sta. 40+21.77 to Sta. 42+76.58
 Lincoln High School Parking Lot – entire surface

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.

The asphalt binder used in the mixture shall be either a PG 64-34 or PG 58-34 Asphalt Binder. The asphalt binder content may be adjusted by the Engineer.

GRANULAR MATERIAL, FURNISH

Granular material will be furnished by the Contractor for use in this project.

The granular material will be Gravel Cushion and Base Course meeting the requirements of Section 882.

PIT RUN MATERIAL

Pit Run material will be obtained from a granular source conforming to Section 120 of the Specifications.

Minimum compaction testing requirements will be one test per crossover location.

WATER FOR GRANULAR MATERIAL

Water for granular material compaction is estimated at 12 gallons per ton and will be paid for at the contract unit price per thousand gallons for "Water for Granular Material".

EXISTING PCC PAVEMENT

The existing concrete pavement on the I229 mainline, is 10.5" continuously-reinforced P.C.C. Pavement with No. 4 Transverse Deformed Steel Bars spaced at 48" center to center and No. 6 Longitudinal Deformed Steel Bars spaced at 6" center to center.

The existing concrete pavement on Cliff Ave and the interstate ramps is 9" 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 quartzite.

TRANSVERSE CONTRACTION JOINTS

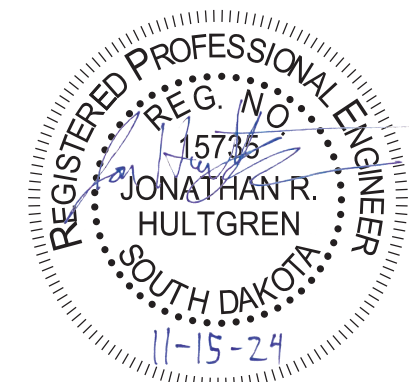
Unless specified otherwise in the PCC Pavement Joint Layout Sheets or elsewhere in the plans, the typical joint spacing will be as follows:

- 13" PCC Pavement (I-229) – 15'
- 10.5" PCC Pavement (I-229 Ramps & Cliff Avenue) – 15'
- 8.5" PCC Pavement (41st Street & Park Entrance) – 14'
- 8" PCC Driveway Pavement – 14'

Joint spacing in the PCC Shoulder Pavement will match adjacent mainline pavement.

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.



13" NONREINFORCED PCC PAVEMENT

The fine aggregate will be screened over a 1-inch square opening screen just prior to introduction into the concrete paving mix. The Contractor will screen all of the aggregate to prevent the incorporation of foreign materials (i.e. mud balls) into the concrete mix.

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

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.

All driving surfaces of the mainline paving will be longitudinally tined from 6" each side of centerline pavement markings to 6" inside the outside pavement markings. Areas with concrete curb and gutter without pavement markings will be longitudinally tined to within 2 to 3 feet of the face of the curb. All other areas will be textured as directed by the Engineer.

Rumble Strips will be placed 15 inches wide 6 inches from the outside edge of the driving lane. Rumble strips will not be placed on the side where curb and gutter is located. Payment for forming rumble strips including labor, materials and incidentals will be incidental to the contract unit price per square yard for "13" Nonreinforced PCC Pavement".

The following locations will be tested for smoothness in accordance with the Special Provision for IRI PCC Pavement Smoothness.

- NB I-229 – Sta. 179+00 to Sta. 205+00 (through lanes)
- NB I-229 – Sta. 212+00 to Sta. 244+00 (through lanes)
- SB I-229 – Sta. 179+00 to Sta. 205+90 (through lanes)
- SB I-229 – Sta. 212+60 to Sta. 243+50 (through lanes)

8.5" AND 10.5" 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 minimum of 24 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.

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 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.

- Ramp A – Sta. 10+00 to Sta. 25+43.67
- Ramp B – Sta. 30+00 to Sta. 44+21.56
- Ramp C – Sta. 50+00 to Sta. 67+16.73
- Ramp D – Sta. 70+00 to Sta. 85+96.23
- NB Cliff Avenue – Sta. 106+00 to Sta. 126+85 through lanes only
- SB Cliff Avenue – Sta. 306+00 to Sta. 326+90 through lanes only

TINING

The surfaces of all ramps will be longitudinally tined from 6" each side of centerline pavement markings to 6" inside the outside pavement markings. Areas with concrete curb and gutter without pavement markings will be longitudinally tined to within 2 to 3 feet of the face of the curb. All other areas will be textured as directed by the engineer.

Cliff Avenue, 41st Street, and the Park Entrance will receive a heavy carpet drag.

JOINTS IN CONCRETE MEDIAN PAVEMENT

Transverse contraction joints will be formed at intervals of approximately 10 feet by means of a grooving tool, to a depth of at least 1/4 the thickness of the median pavement. Expansions joints will be formed at planned contraction joint locations.

TABLE OF DOWEL BARS

Location	Dowel Bar (Size 1 1/2") Each	Dowel Bar (Size 1 1/4") Each
NB I-229		
Sta. 178+00.0 to Sta. 189+75.1	4,898	---
Sta. 189+75.1 to Sta. 190+35.1	258	---
Sta. 190+35.1 to Sta. 193+05.0	1,219	---
Sta. 193+05.0 to Sta. 196+24.5	1,057	---
Sta. 196+24.5 to Sta. 206+05.3	3,742	---
Sta. 210+73.1 to Sta. 219+45.1	3,360	---
Sta. 219+45.1 to Sta. 221+71.3	803	---
Sta. 221+71.3 to Sta. 229+70.4	1,650	---
Sta. 229+70.4 to Sta. 230+30.4	192	---
Sta. 230+30.4 to Sta. 237+37.2	2,686	---
Sta. 237+37.2 to Sta. 245+03.6	2,652	---
SB I-229		
Sta. 178+11.5 to Sta. 189+86.6	4,898	---
Sta. 189+86.6 to Sta. 190+45.7	192	---
Sta. 190+45.7 to Sta. 193+77.5	1,518	---
Sta. 193+77.5 to Sta. 196+31.0	846	---
Sta. 196+31.0 to Sta. 206+90.1	3,976	---
Sta. 211+58.5 to Sta. 221+49.4	3,752	---
Sta. 221+49.4 to Sta. 225+08.6	1,215	---
Sta. 225+08.6 to Sta. 229+24.3	19,114	---
Sta. 229+24.3 to Sta. 229+84.3	128	---
Sta. 229+84.3 to Sta. 233+19.5	1,426	---
Sta. 233+19.5 to Sta. 235+19.5	738	---
Sta. 235+19.5 to Sta. 244+57.6	3,224	---
Cliff Avenue		
Sta. 105+40.8 to Sta. 109+34.6	1,605	---
Sta. 109+34.6 to Sta. 110+47.0 R	294	---
Sta. 109+34.6 to Sta. 111+82.6 L	433	---
Sta. 110+47.0 to Sta. 111+67.0 R	404	---
Sta. 111+82.6 to Sta. 114+36.4 L	427	---
Sta. 111+67.0 to Sta. 113+38.9 R	585	---
Sta. 113+38.9 to Sta. 114+42.7 R	352	---
Sta. 114+42.7 to Sta. 116+24.3	932	---
Sta. 116+24.3 to Sta. 116+68.1 R	103	---
Sta. 116+24.3 to Sta. 118+24.8 L	497	---
Sta. 116+68.1 to Sta. 117+15.3 R	112	---
Sta. 117+15.3 to Sta. 117+75.3 R	113	---
Sta. 117+75.3 to Sta. 119+06.8 R	334	---
Sta. 118+35.6 to Sta. 119+05.6 L	266	---
Sta. 119+05.6 to Sta. 119+74.4 L	187	---
Sta. 119+06.8 to Sta. 119+64.9 R	133	---
Sta. 119+64.9 to Sta. 121+87.2 R	880	---
Sta. 119+74.4 to Sta. 121+91.2 L	464	---
Sta. 121+91.2 to Sta. 125+41.9	2,019	---
Sta. 125+41.9 to Sta. 125+94.5	180	---
Sta. 125+94.5 to Sta. 127+35.4	495	---
Subtotal	74,359	---

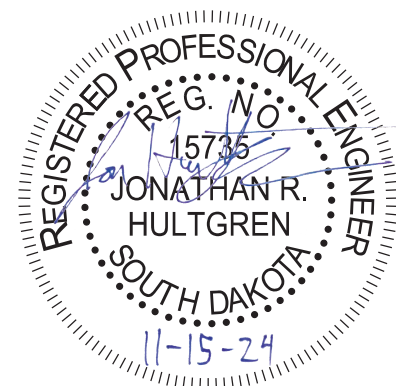


TABLE OF DOWEL BARS (CONTINUED)

Location	Dowel Bar (Size 1 1/2") Each	Dowel Bar (Size 1 1/4") Each
Ramp A		
Sta. 10+00.0 to Sta. 11+96.4	338	---
Sta. 11+96.4 to Sta. 14+00.0	492	---
Sta. 14+00.0 to Sta. 15+19.7	202	---
Sta. 15+19.7 to Sta. 25+29.8	1,668	---
Ramp E		
Sta. 5+00.0 to Sta. 6+09.0	195	---
Ramp B		
Sta. 30+00.0 to Sta. 33+38.4	425	---
Sta. 33+38.4 to Sta. 44+21.6	1,785	---
Ramp F		
Sta. 15+00.0 to Sta. 17+73.2	358	---
Ramp C		
Sta. 51+97.4 to Sta. 61+11.5	1,481	---
Sta. 61+11.5 to Sta. 62+31.5	241	---
Sta. 62+31.5 to Sta. 64+40.1	720	---
Sta. 64+40.1 to Sta. 67+16.7	513	---
Ramp G		
Sta. 25+00.0 to Sta. 26+77.2	391	---
Ramp D		
Sta. 70+00.0 to Sta. 83+45.3	2,725	---
Sta. 83+45.3 to Sta. 85+96.2	396	---
Ramp H		
Sta. 35+00.0 to Sta. 37+74.8	355	---
41st Street		
Sta. 21+13.2 to Sta. 21+82.1	---	203
Sta. 21+82.1 to Sta. 22+97.9	---	238
Sta. 22+97.9 to Sta. 32+41.9	---	2,070
Sta. 32+41.9 to Sta. 33+31.9	---	231
Sta. 33+31.9 to Sta. 34+57.1	---	582
Sta. 34+57.1 to Sta. 37+31.0	---	1,038
Park Entrance		
Sta. 0+10.8 to Sta. 0+53.4	---	127
Subtotal	12,285	4,489
Total	86,644	4,489

TABLE OF 13" NONREINFORCED PCC PAVEMENT

Station	Station	13" Nonreinforced PCC Pavement (SqYd)	*Gravel Cushion (Tons)	Water (MGal)
NB I-229				
178+00	to 191+23	7,054.1	2,792	33.5
191+23	to 196+24	2,267.6	849	10.2
196+24	to 206+05	3,923.4	2,014	24.2
210+73	to 219+45	3,519.0	1,809	21.7
219+45	to 221+75	1,051.8	392	4.7
221+75	to 245+04	11,047.5	4,996	60.0
SB I-229				
178+12	to 193+77	8,351.9	3,544	42.5
193+77	to 196+31	1,145.4	429	5.1
196+31	to 206+90	4,236.6	2,182	26.2
211+58	to 221+49	3,926.0	2,035	24.4
221+49	to 225+09	1,605.7	604	7.2
225+09	to 244+58	9,008.3	4,098	49.2
Total		57,137.3	25,744	308.9

* Includes gravel cushion under adjacent curb and gutter

TABLE OF 8.5" NONREINFORCED PCC PAVEMENT

Station	Station	8.5" Nonreinforced PCC Pavement (SqYd)	*Gravel Cushion (Tons)	Water (MGal)
41st Street				
21+13.2	to 32+41.9	3,889.9	1,394	16.7
32+41.9	to 37+36.8	2,974.4	949	11.4
Park Entrance				
0+10.7	to 0+68.4	216.6	78	0.9
Total		7,080.9	2,421	29.1

* Includes gravel cushion under adjacent curb and gutter

TABLE OF 8" DRIVEWAY PCC PAVEMENT

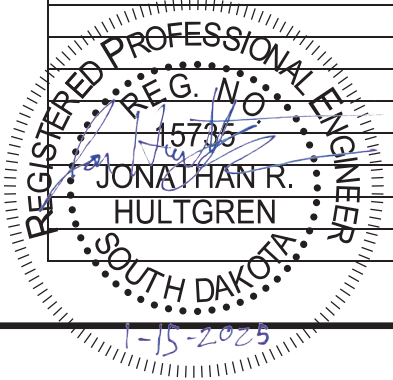
Station	Station	8" Driveway PCC Pavement (SqYd)	*Gravel Cushion (Tons)	Water (MGal)
Driveways - 9 Each				
		507.2	165	2.0
Total		507.2	165	2.0
20% Fast Track Concrete		101.4		
80% Non-Fast Track Concrete		405.8		

* Includes gravel cushion under adjacent curb and gutter

TABLE OF 10.5" NONREINFORCED PCC PAVEMENT

Station	Station	10.5" Nonreinforced PCC Pavement (SqYd)	*Gravel Cushion (Tons)	Water (MGal)
Ramp A				
10+00.0	to 12+71.9	733.1	264	3.2
12+71.9	to 13+99.7	517.4	179	2.1
13+99.7	to 15+19.7	340.0	140	1.7
15+19.7	to 25+43.7	1,673.1	974	11.7
Ramp E				
5+00.0	to 6+54.5	335.4	124	1.5
Ramp B				
30+00.0	to 32+30.4	387.0	169	2.0
32+30.4	to 33+38.4	250.7	128	1.5
33+38.4	to 44+21.6	1,738.7	1,082	13.0
Ramp F				
15+00.0	to 16+38.6	298.8	114	1.4
16+38.6	to 17+73.2	244.7	135	1.6
Ramp C				
50+00.0	to 61+11.5	1,826.1	1,039	12.5
61+11.5	to 62+31.5	420.0	161	1.9
62+31.5	to 64+40.1	1,112.9	361	4.3
64+40.1	to 67+16.7	791.1	291	3.5
Ramp G				
25+00.0	to 26+77.1	675.0	226	2.7
Ramp D				
70+00.0	to 82+51.1	2,745.0	1,431	17.2
82+51.1	to 83+52.5	336.4	150	1.8
83+52.5	to 85+96.2	705.0	254	3.0
Ramp H				
35+00.0	to 36+21.8	164.2	106	1.3
36+21.8	to 37+74.8	314.8	123	1.5
Cliff Avenue				
105+40.8	to 109+34.6	2,445.8	774	9.3
109+34.6	to 114+42.7	2,485.5	821	9.9
109+34.6	to 114+36.4	1,305.9	517	6.2
114+36.4	to 116+24.3	1,584.2	459	5.5
116+24.3	to 121+87.2	2,569.6	863	10.4
116+24.3	to 121+91.2	2,189.8	761	9.1
121+91.2	to 123+18.3	1,263.3	354	4.2
123+18.3	to 124+98.3	1,432.7	435	5.2
124+98.3	to 126+01.9	734.3	227	2.7
126+01.9	to 127+35.4	813.7	258	3.1
Total		32,434.2	12,920	155.0

* Includes gravel cushion under adjacent curb and gutter



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.

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.

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 median and 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.

8" PCC DRIVEWAY PAVEMENT

The concrete for the 8" PCC Driveway Pavement will comply with the requirements of the specifications for Class M6 Concrete, unless otherwise specified in the plans. The mix design can meet either Class M6 Concrete specifications or conform to the Special Provision for Contractor Furnished Mix Design for PCC.

The surface of the 8" PCC Driveway Pavement will have a maximum 10% slope and the tie-ins will match the existing and/or new adjoining PCC Approach Pavement.

Contraction joints in the 8" PCC Driveway Pavement will be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint will be at least ¼ the thickness of the approach pavement.

The curing compound will be applied in two applications to ensure the entire surface is white from any viewing angle.

All costs for furnishing and placing the 8" PCC Driveway Pavement and constructing the expansion and contraction joints including labor, equipment, and materials (including the earthen backfill) will be incidental to the contract unit price per square yard for "8" PCC Driveway Pavement".

Payment for any excavation required for placing the 8" PCC Driveway Pavement and granular material will be incidental to the contract unit price of the surfacing material.

All costs for furnishing and placing the granular material will be incidental to the contract unit price per ton for "Gravel Cushion".

MANHOLE BOX-OUT DETAILS

The Contractor will construct box-outs for all manholes in the 8.5" and 10.5" Nonreinforced PCC Pavement according to one of the Box-Out Detail options. See Section B for locations of proposed manholes and water valve boxes.

FAST TRACK CONCRETE

At specific locations (ramps, intersecting streets, driveways, and blockouts) designated by the Engineer, Fast Tack Concrete may be used. The intent of the Fast Track Concrete is to ensure the new pavement can be opened to traffic within 48 hours after placement.

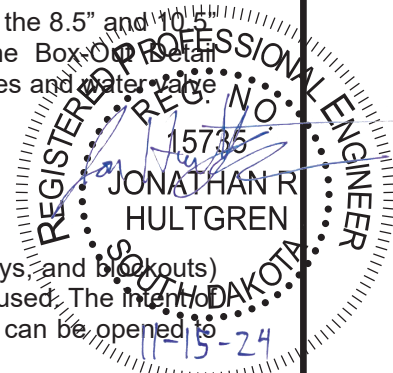
Fast Track Concrete will be constructed according to plan details and specifications for the Nonreinforced PCC Pavement except as follows:

The Fast Track Concrete will be designed to achieve a minimum compressive strength of 3000 psi in 48 hours. Use of a water reducer, accelerator, or a high range water reducer may be required to achieve the desired early strength. If any of these additives are used, they will be compatible with all other ingredients of the mix. The minimum weight of cementitious material will be 600 pounds per cubic yard of Type II or III cement with 15% to 25% fly ash. The coarse aggregate will be a minimum of 50% of total aggregate weight per cubic yard. Coarse aggregate will be crushed ledge rock, Size No. 1 or 15. The water cement ratio will be as low as practical to achieve the desired results. The slump requirement will be limited to 4 inches maximum and the entrained air content will be 4.5% to 7.0% after all admixtures are added to the concrete. The Contractor is responsible for the mix design used. The Contractor will submit a mix design and supporting documentation to the Engineer for approval at least 2 weeks prior to use. The Department of Transportation's Office of Materials & Surfacing will review and comment on the proposed mix design prior to its use.

Fast Track Concrete will be cured with Linseed Oil Base Emulsion Curing Compound. In addition, the concrete will be immediately covered with a suitable insulation blanket consisting of a layer of closed cell polystyrene foam protected by at least one layer of plastic. The insulation blanket will have an R-value of at least 0.5, as rated by the manufacturer. The insulation blanket will be left in place, except for initial joint sawing operations, until the 3000 psi is attained. The initial contraction joint sawing will be performed as soon as practical after placement to avoid random cracking. This requirement for covering areas with insulation blankets may be waived during periods of hot weather upon approval of the Engineer.

The pavement may be opened to traffic, earlier than 48 hours, provided the compressive strength of 3000 psi has been attained. The final contraction joint sawing and sealing are not required at this time to open pavement to traffic.

For quantity estimates, it is assumed that 25% of 8" PCC Driveway Pavement will be Fast Track Concrete. An estimated 405.8 square yards of 8" PCC Driveway Pavement and 101.4 square yards of Fast Track Concrete is to be used on this project. If more or less Fast Track Concrete is used, an equal amount will be subtracted from or added to the total for 8" PCC Driveway Pavement. All costs for Fast Track Concrete will be incidental to the contract unit price per square yard for Fast Track Concrete.


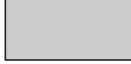


IN PLACE TYPICAL SECTIONS

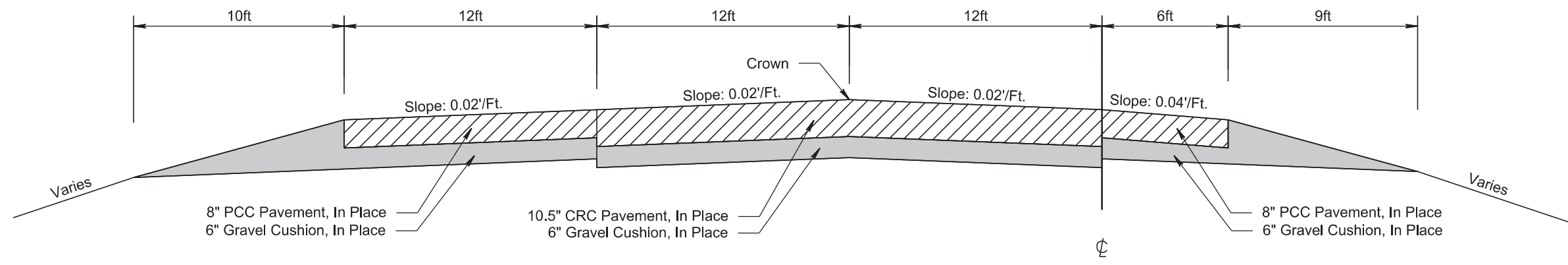
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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Plotting Date: 11/15/2024			

Plotted From: ngiersvik 1:6 Plot Scale -

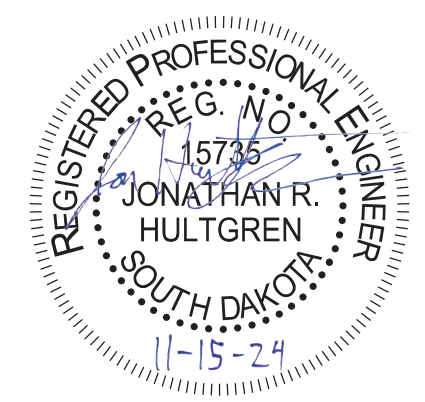
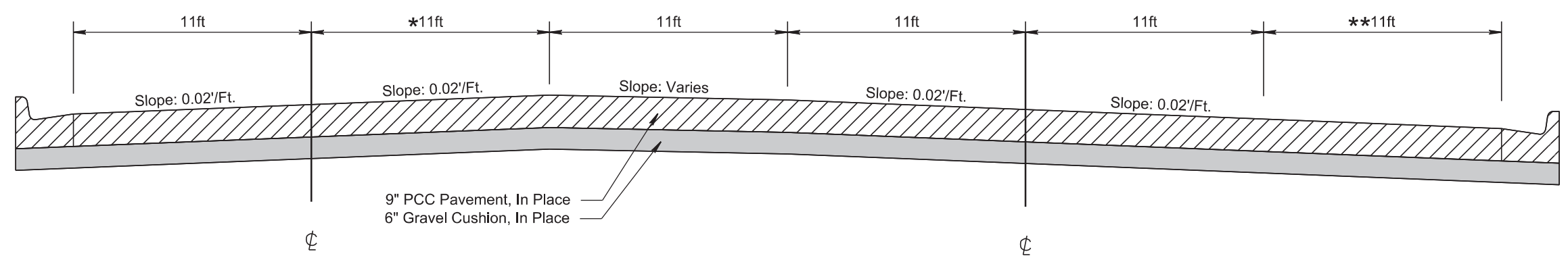
 Remove Concrete Pavement
 Unclassified Excavation

Section 1
 SBL 1-229
 Sta. 178+12 to Sta. 244+58
 NBL I-229 (Reversed)
 Sta. 178+00 to Sta. 245+04



Transitions:
 Sta. 105+44 to Sta. 106+33
 * 0' to 11'
 Sta. 108+26 to Sta. 109+26
 ** 0' to 11'
 Sta. 112+97 to Sta. 127+35
 ** 0'

Section 2
 Cliff Avenue
 Sta. 105+44 to Sta. 127+35





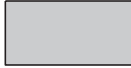
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IN PLACE TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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Plotting Date:		11/15/2024	

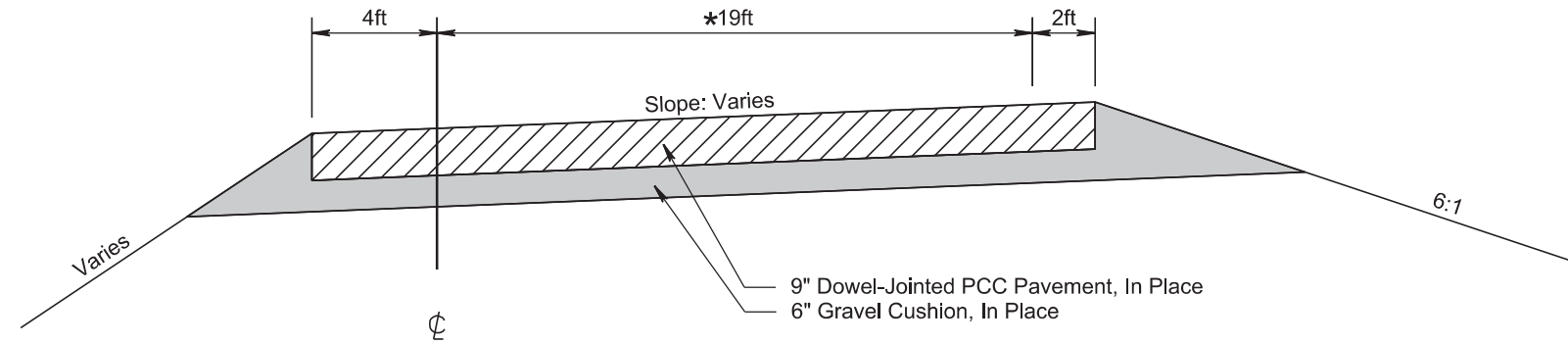
FOR BIDDING PURPOSES ONLY

Plotted From: - ngiersvik 1:6 Plot Scale -

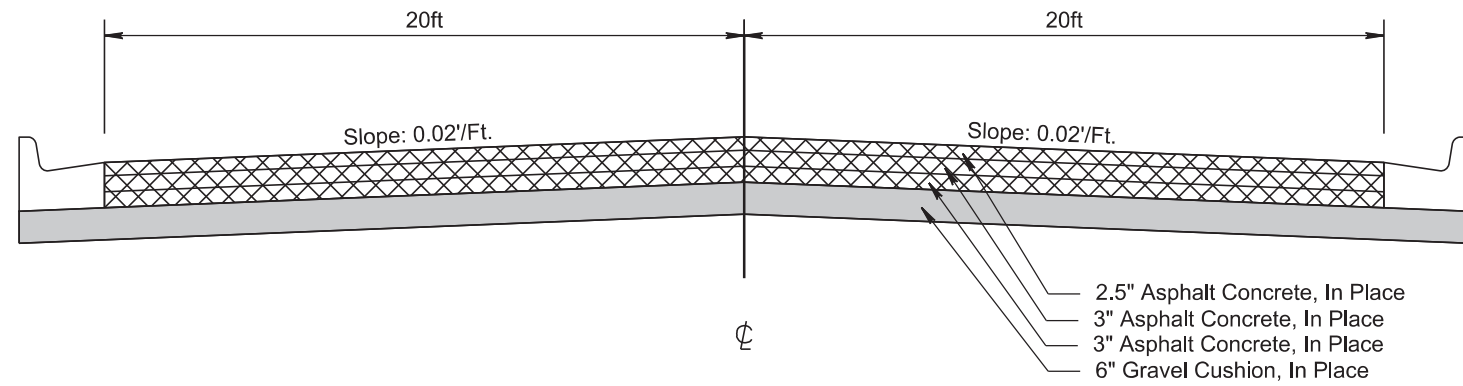
-  Remove Concrete Pavement
-  Remove Asphalt Concrete Pavement
-  Unclassified Excavation

Transitions:
Sta. 212+18 to Sta. 214+16 Ramp A
* 19' to 22.5'

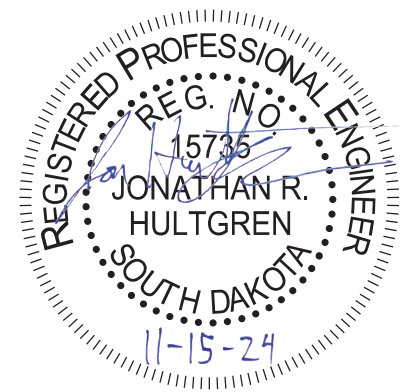
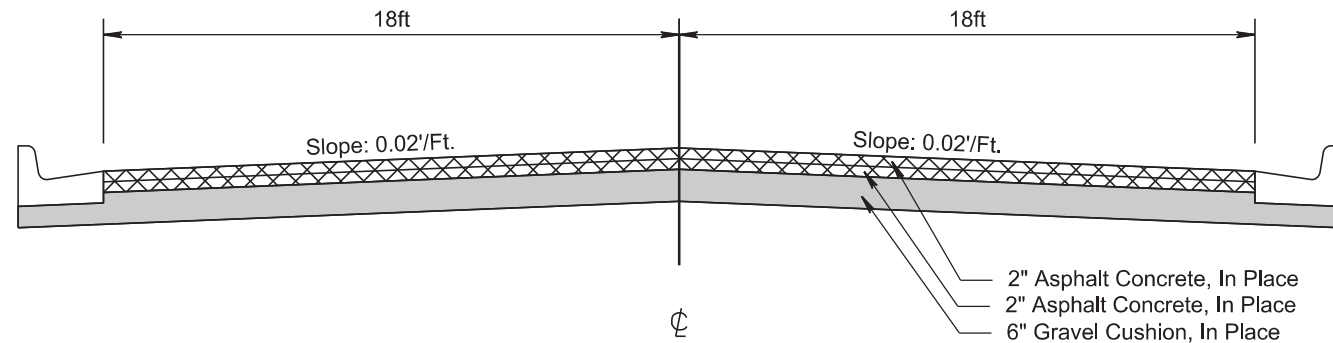
Section 3
SBL I-229
Ramp A
Sta. 211+72 to Sta. 230+27.22
Ramp B
Sta. 208+33 to Sta. 217+39
Ramp C (Reversed)
Sta. 198+58 to Sta. 206+60
Ramp D
Sta. 201+39 to Sta. 209+10



Section 4
41st Street
Sta. 21+13 to Sta. 33+87



Section 5
Pam Road
Sta. 50+75 to Sta. 51+73



TYPICAL SURFACING SECTIONS

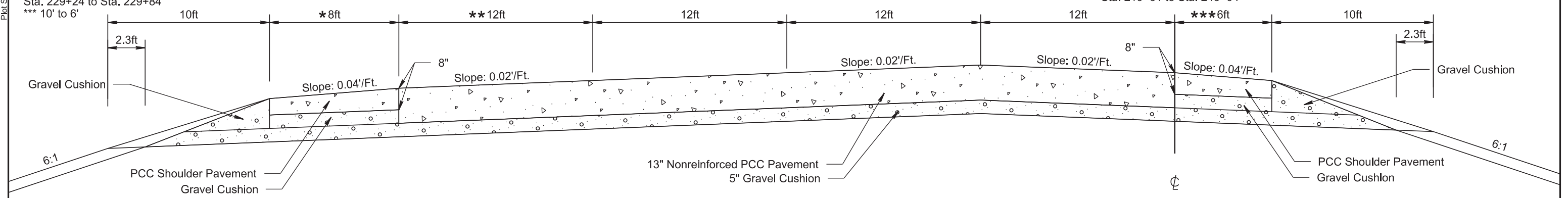
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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Plotting Date: 11/15/2024			

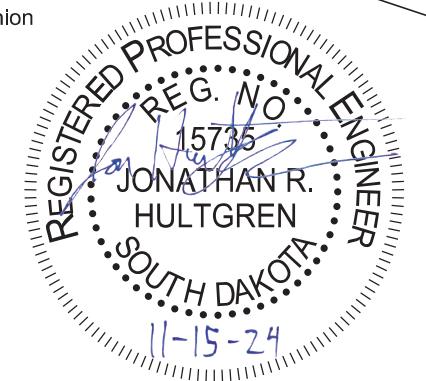
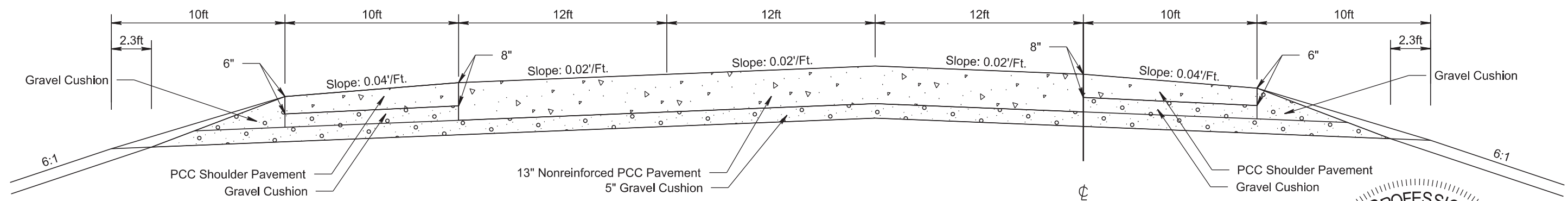
Transitions:
 Sta. 180+83 to Sta. 181+23
 * 10' to 8'
 Sta. 236+37 to Sta. 237+37
 ** 8' to 10'
 Sta. 233+19 to Sta. 235+59
 ** 12' to 0'
 Sta. 189+87 to Sta. 190+47
 *** 6' to 10'
 Sta. 229+24 to Sta. 229+84
 *** 10' to 6'

Transitions:
 ** Exit and entry ramp transitions controlled by Ramp alignments as shown in the plans

Section 6
 SBL I-229
 Sta. 178+12 to Sta. 196+31
 Sta. 221+49 to Sta. 244+58
 NBL I-229 (Reversed)
 Sta. 178+00 to Sta. 196+36
 Sta. 219+31 to Sta. 245+04



Section 7
 SBL I-229
 Sta. 196+31 to Sta. 221+49
 NBL I-229 (Reversed)
 Sta. 196+36 to Sta. 219+31



Plotted From: ...105HN_typ-surfacing.dgn

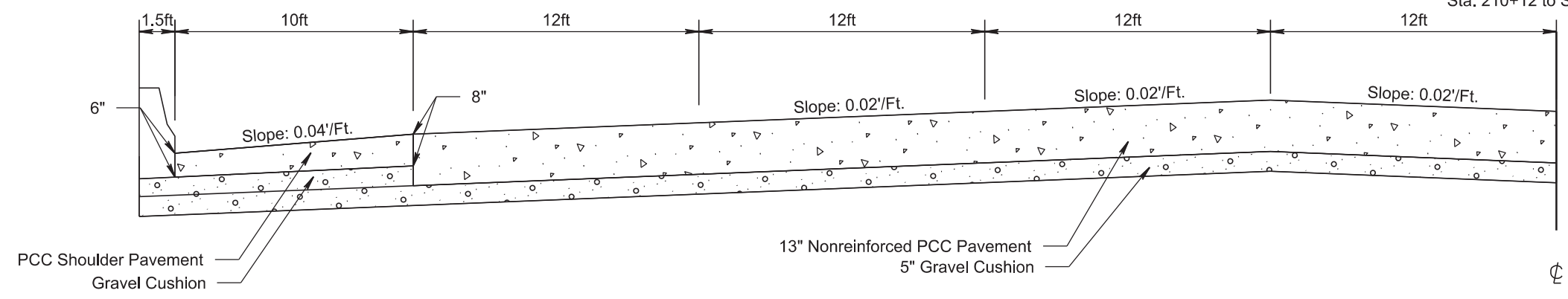
TYPICAL SURFACING SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F11	F64
Plotting Date: 11/15/2024			

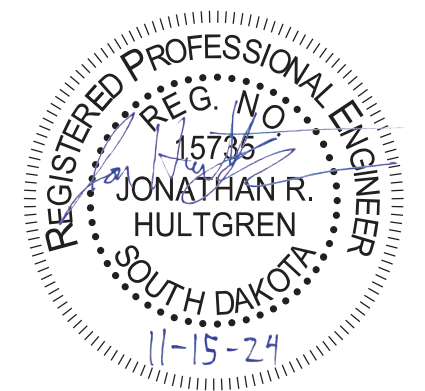
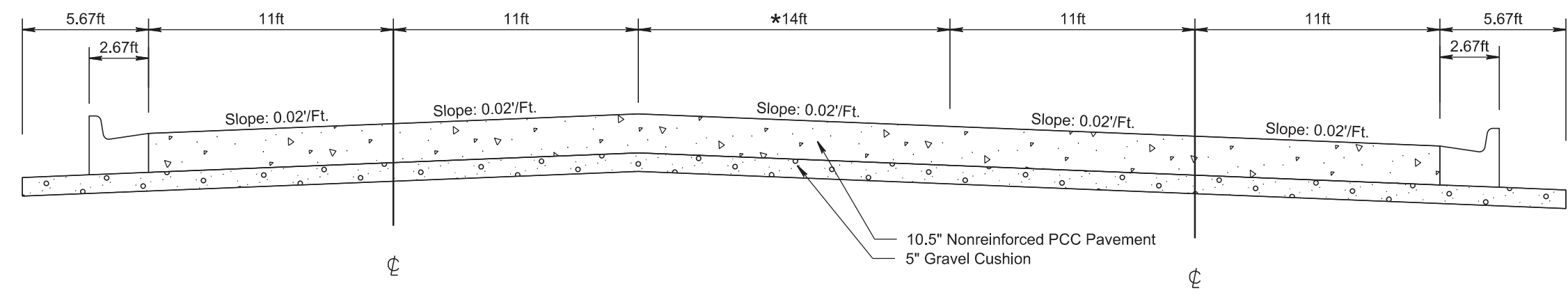
Plot Scale - 1:6

Section 8
 SBL I-229
 Sta. 211+37 to Sta. 215+52
 NBL I-229 (Reversed)
 Sta. 202+31 to Sta. 206+24
 Sta. 210+12 to Sta. 213+51



Transitions:
 Sta. 105+25 to Sta. 109+40
 * 0' to 14' Center Turn Lane

Section 9
 Cliff Avenue
 Sta. 105+43 to Sta. 109+35



Plotted From - ngiersvik

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TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F12	F64

FOR BIDDING PURPOSES ONLY

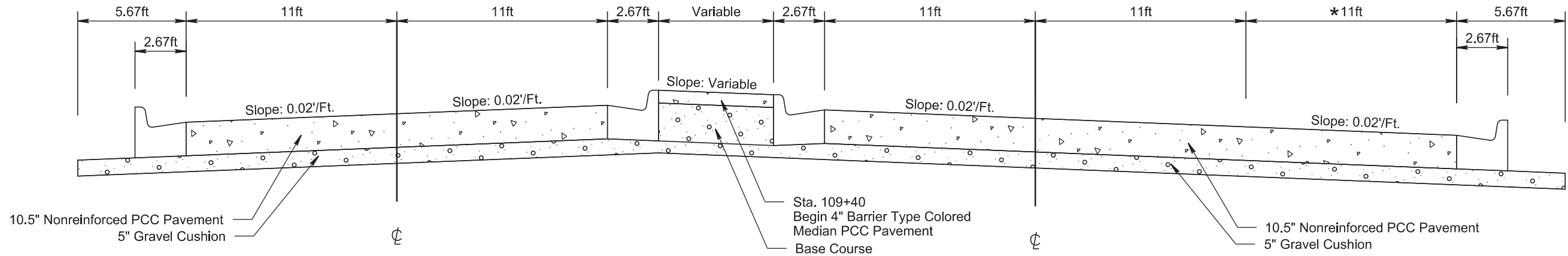
Plotting Date: 11/15/2024

Plot Scale - 1:6

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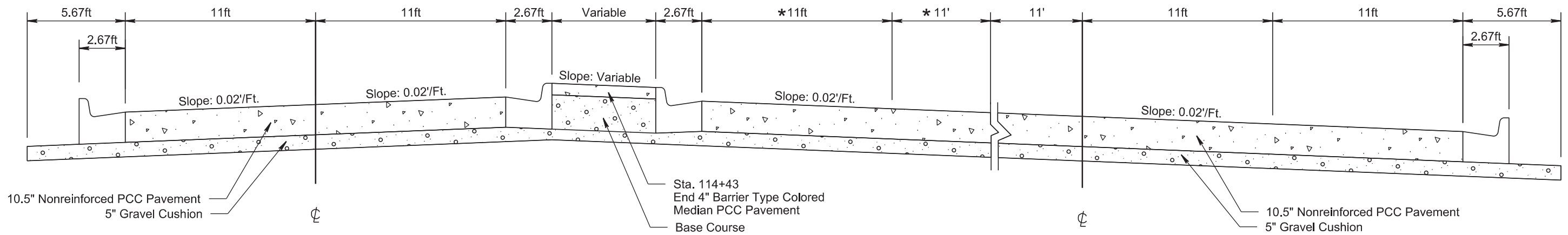
Section 10
Cliff Avenue
Sta. 109+35 to Sta. 110+47

Transitions:
Sta. 108+53 to Sta. 109+64
* 0' to 11' Right Turn Lane



Section 11
Cliff Avenue
Sta. 110+47 to Sta. 114+46

Transitions:
Sta. 110+47 to Sta. 111+67
* 0' to 11' Left Turn Lane



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TYPICAL SURFACING SECTIONS

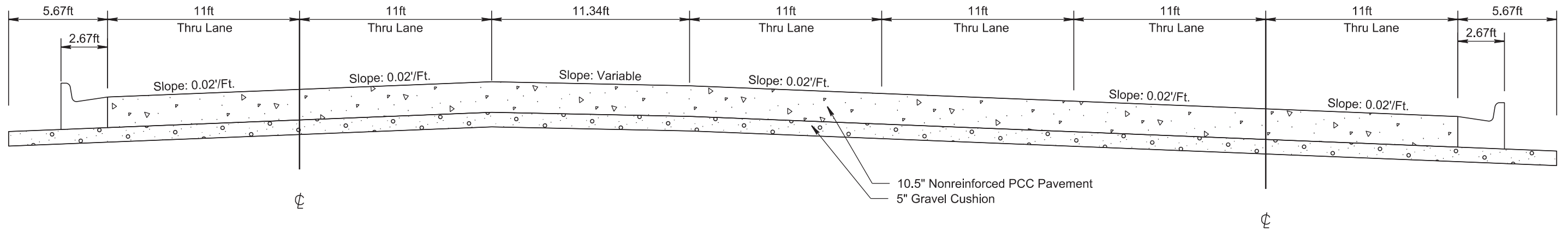
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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Plotting Date: 11/15/2024			

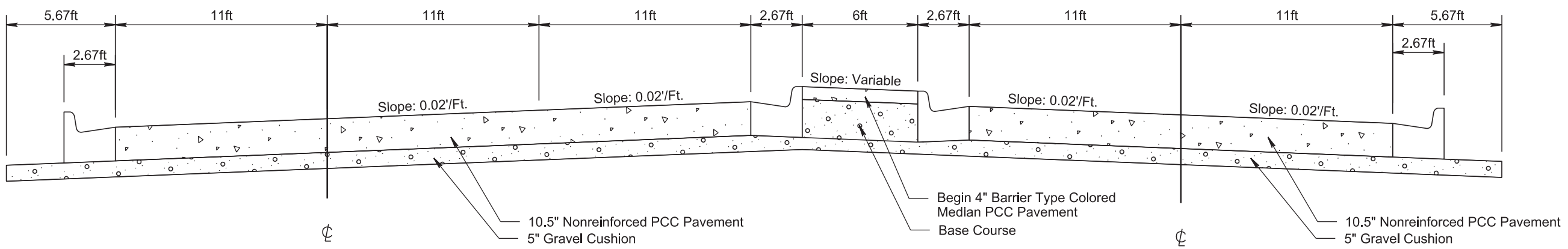
Plot Scale - 1:6

Plotted From - ngiers.vik

Section 12
Cliff Avenue
Sta. 114+46 to Sta. 116+26



Section 13
Cliff Avenue
Sta. 116+26 to Sta. 117+15

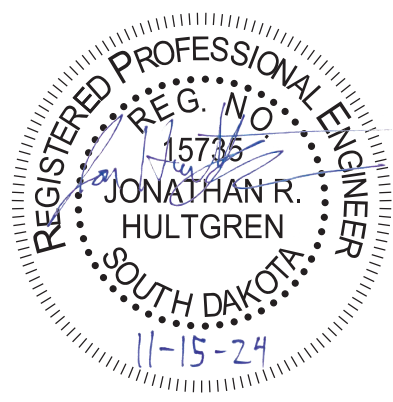


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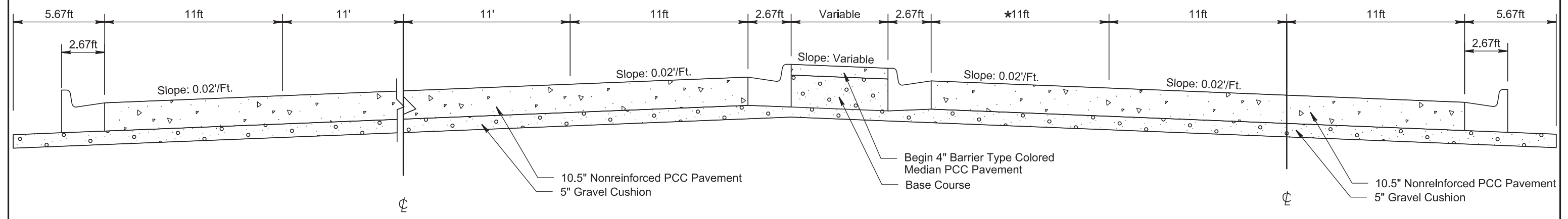
TYPICAL SURFACING SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F14	F64
Plotting Date: 11/15/2024			

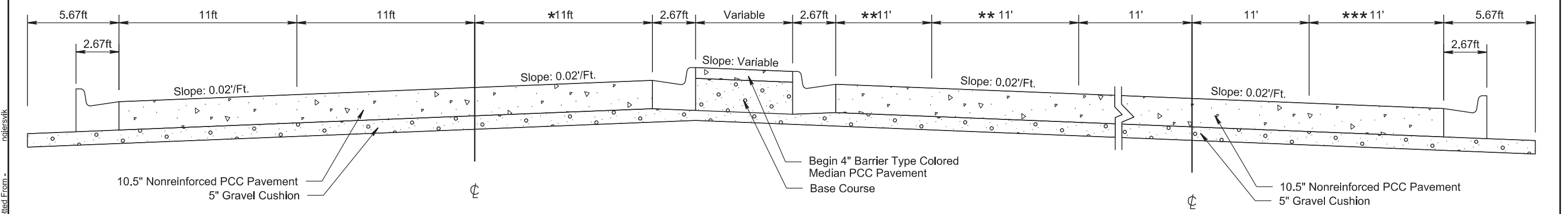


Section 14
Cliff Avenue
Sta. 117+15 to Sta. 119+06



Transitions:
Sta. 117+15 to Sta. 117+75
* 0' to 11' Left Turn Lane

Section 15
Cliff Avenue
Sta. 119+06 to Sta. 121+88



Transitions:
Sta. 119+06 to Sta. 119+75
* 11' to 0' Left Turn Lane
Sta. 119+06 to Sta. 119+65
** 0' to 11' Right Turn Lane
Sta. 119+06 to Sta. 119+65
*** 0' to 11' Left Turn Lane

Plot Scale - 1:6

Plotted From - ngiersvik

File - ...105HN_typ-surfacing.dgn

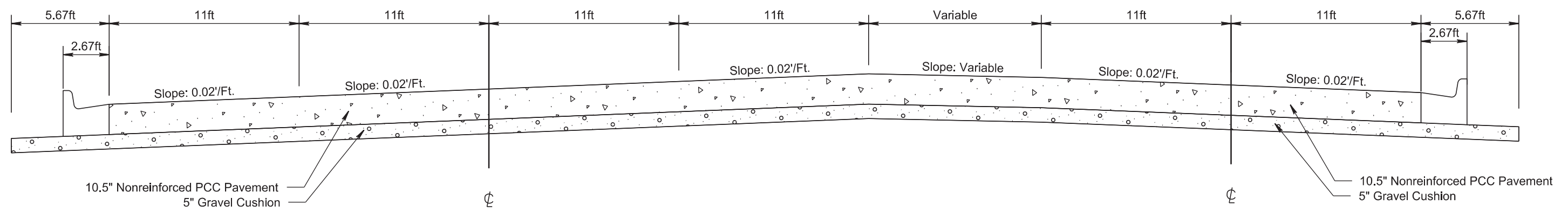
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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Plotting Date:		11/15/2024	

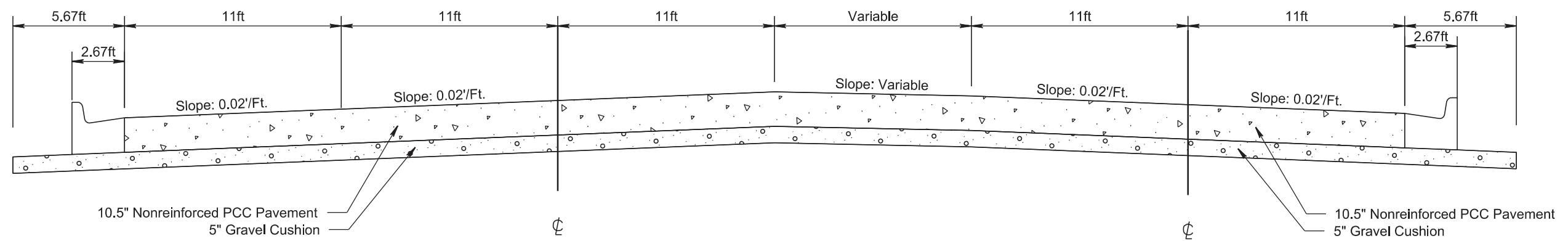
FOR BIDDING PURPOSES ONLY

Plotted From: ngiersvik Plot Scale: 1:6

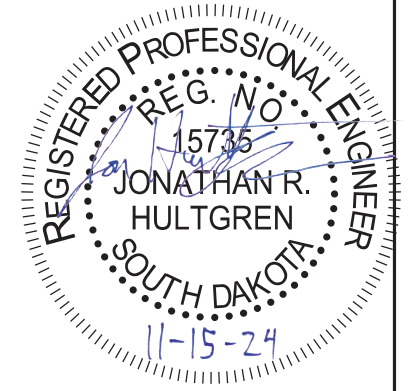
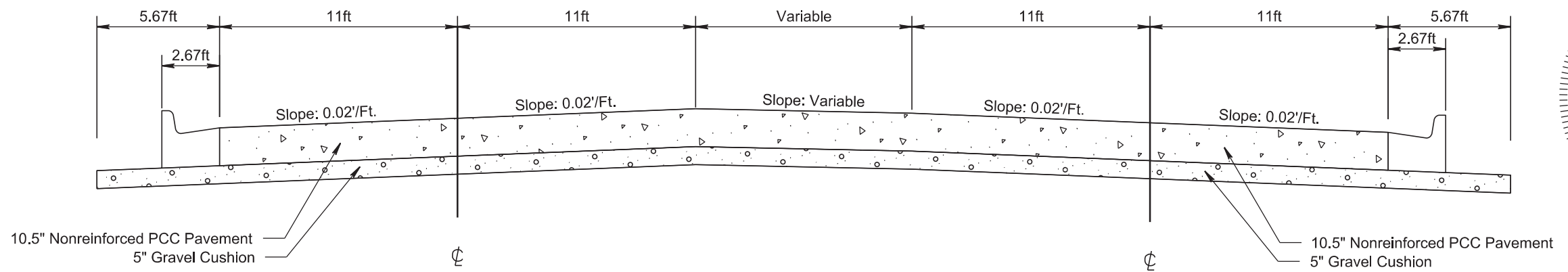
Section 16
Cliff Avenue
Sta. 121+88 to Sta. 125+42



Section 17
Cliff Avenue
Sta. 125+42 to Sta. 125+95



Section 18
Cliff Avenue
Sta. 125+95 to Sta. 127+35



TYPICAL SURFACING SECTIONS FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F16	F64
Plotting Date: 11/15/2024			

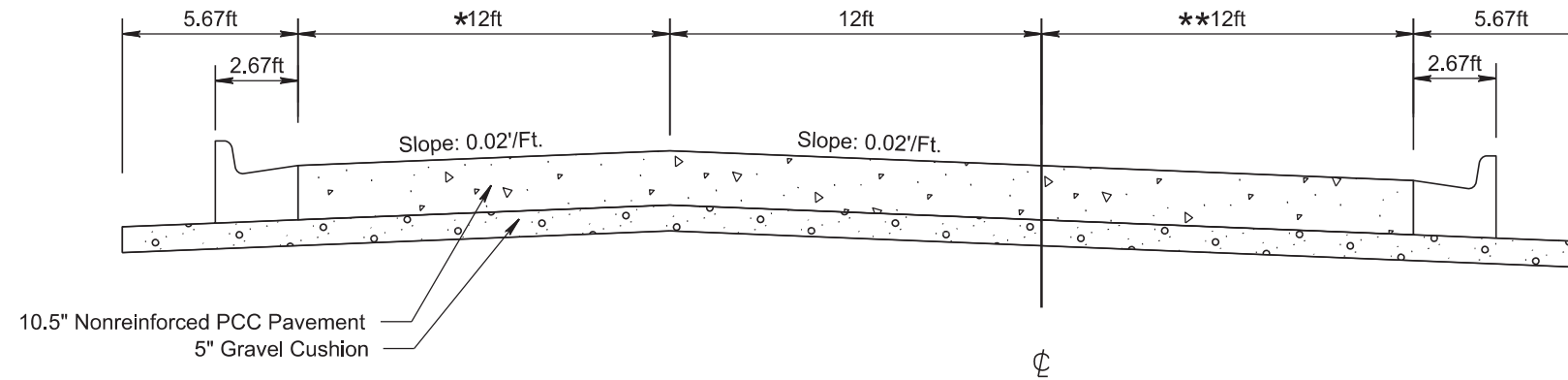
Transitions:

Sta. 10+00 to Sta. 12+00
* 0'

Sta. 14+00 to Sta. 14+40
* 12' to 8' Right Turn Lane
** 12' to 8' Right Turn Lane

Section 19

Ramp A
Sta. 10+00 to Sta. 14+40

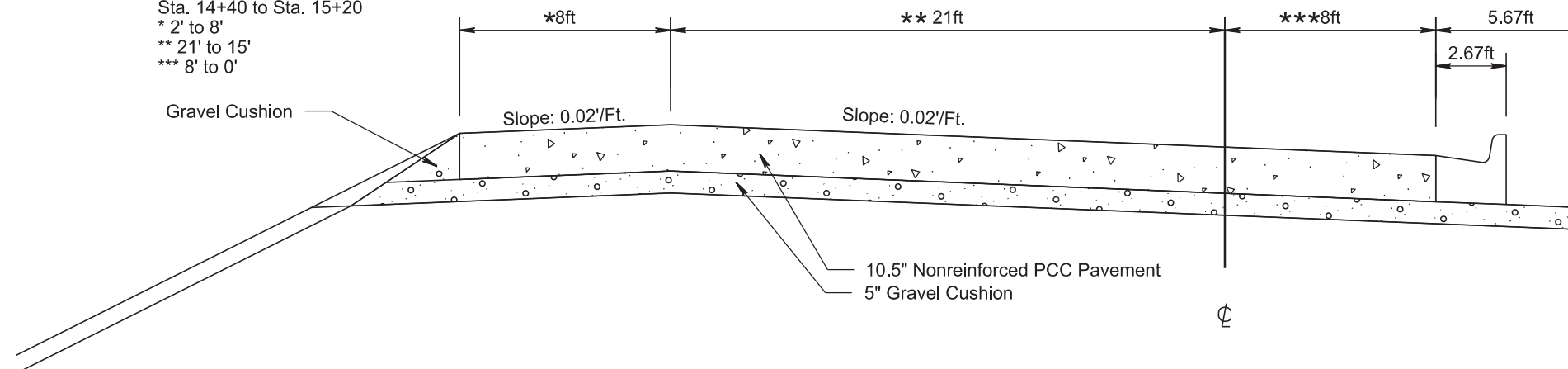


Section 20

Ramp A
Sta. 14+40 to Sta. 15+20

Transitions:

Sta. 14+40 to Sta. 15+20
* 2' to 8'
** 21' to 15'
*** 8' to 0'



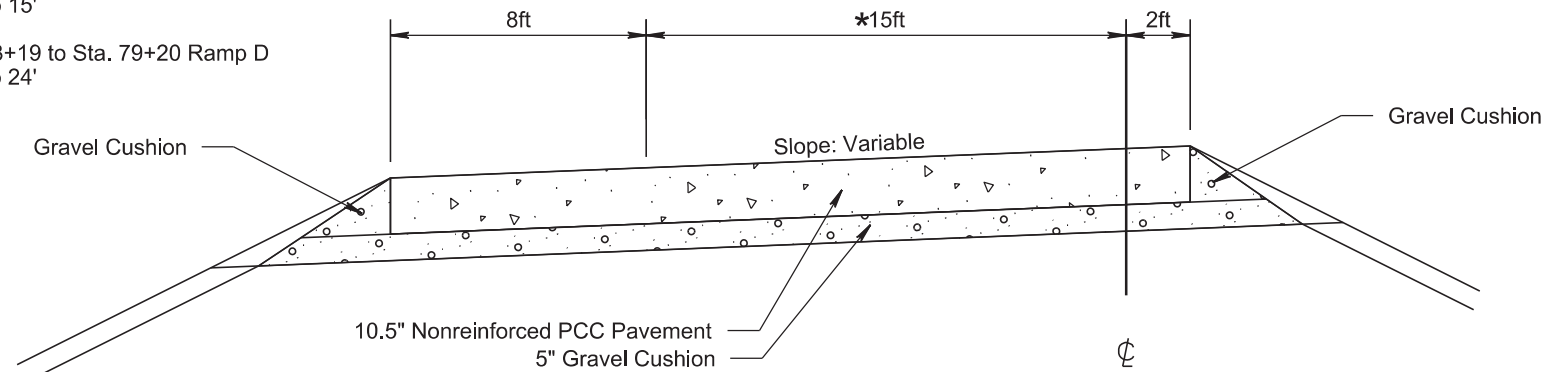
Section 21

Various Ramps
Sta. 15+20 to Sta. 21+92 Ramp A
Sta. 70+00 to Sta. 79+20 Ramp D
Sta. 32+00 to Sta. 41+86 Ramp B (Reversed)
Sta. 55+02 to Sta. 61+11 Ramp C (Reversed)

Transitions:

Sta. 70+00 to Sta. 71+51 Ramp D
* 12' to 15'

Sta. 73+19 to Sta. 79+20 Ramp D
* 15' to 24'



TYPICAL SURFACING SECTIONS

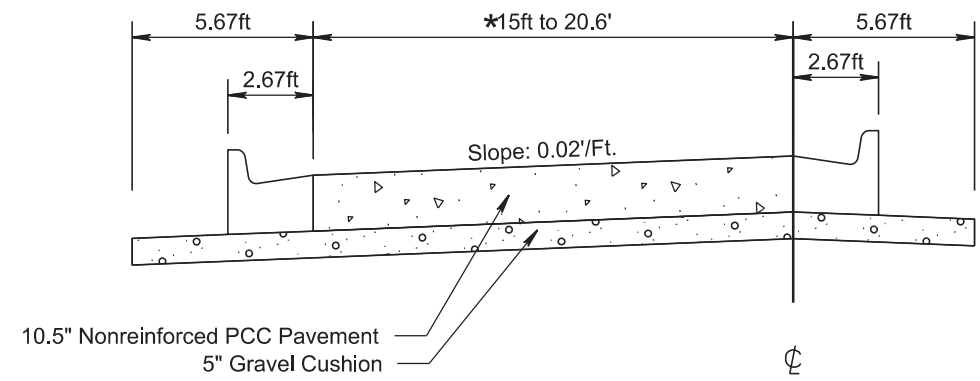
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F17	F64
Plotting Date: 11/15/2024			

FOR BIDDING PURPOSES ONLY

Transitions:
Variable width lane
* 15' Ramp B
Sta. 36+22 to Sta. 36+80 Ramp H
* 18' to 20.6'

Section 22

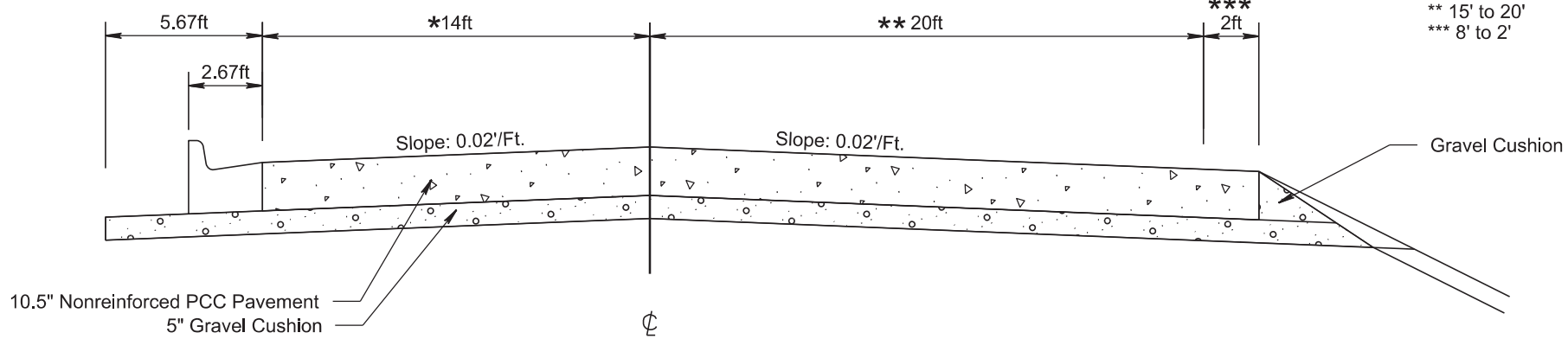
Various Ramps
Sta. 30+00 to Sta. 32+00 Ramp B
Sta. 36+22 to Sta. 37+74 Ramp H



Section 23

Ramp C
Sta. 61+11 to Sta. 61+83

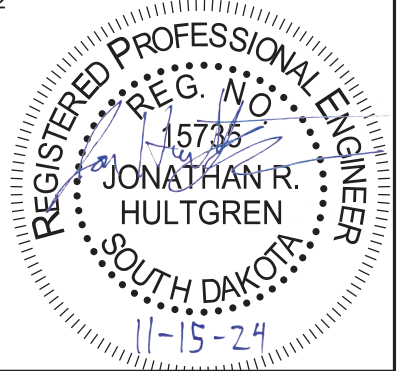
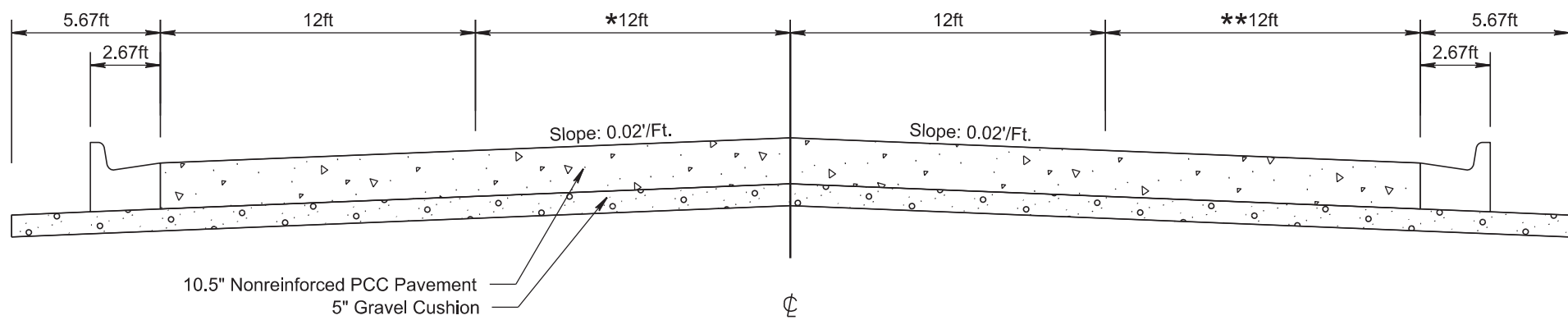
Transitions:
Sta. 61+11 to Sta. 61+83
* 0' to 14'
** 15' to 20'
*** 8' to 2'



Section 24

Ramp C
Sta. 61+83 to Sta. 65+00

Transitions:
Sta. 61+11 to Sta. 62+31
* 0' to 12'
Sta. 61+82 to Sta. 62+31
** 0' to 12'



Plot Scale - 1:6

Plotted From - ngiersvik

File - ...105HN_typ-surfacing.dgn

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F18	F64
Plotting Date:		11/15/2024	

FOR BIDDING PURPOSES ONLY

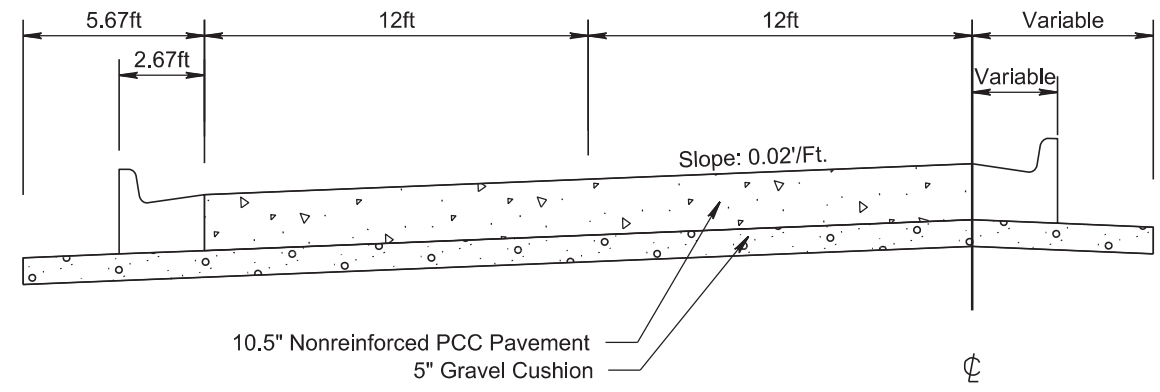
Section 25

Ramp C
Sta. 65+00 to Sta. 67+16

Ramp D
Sta. 83+85 to Sta. 85+96 (Reversed)

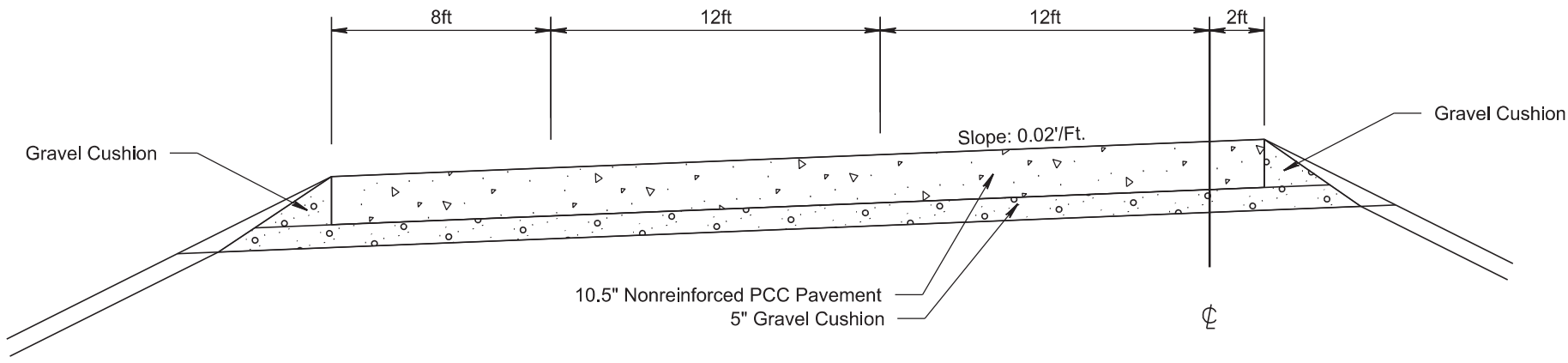
Ramp G
Sta. 25+00 to Sta. 26+78 (Reversed)

Note:
Ramp G tie to Ramp C Surfacing
Sta. 25+00 to Sta. 25+73



Section 26

Ramp D
Sta. 79+20 to Sta. 83+85

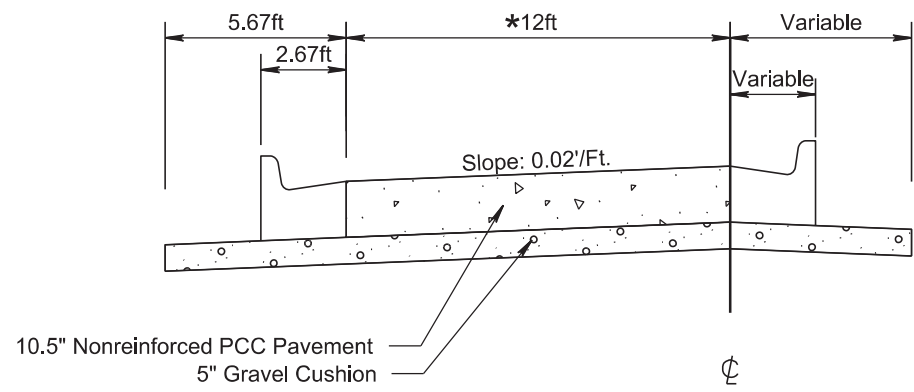


Section 27

Ramp E
Sta. 5+00 to Sta. 6+55

Transitions:
Sta. 5+00 to Sta. 6+55
* 19.5' to 12'

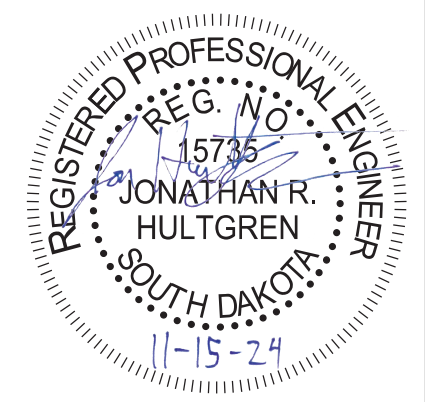
Note:
Ramp E tie to Ramp A Surfacing
Sta. 5+78 to Sta. 6+55



Plot Scale - 1:6

Plotted From - ngiersvik

File - ...105HN_typ-surfacing.dgn



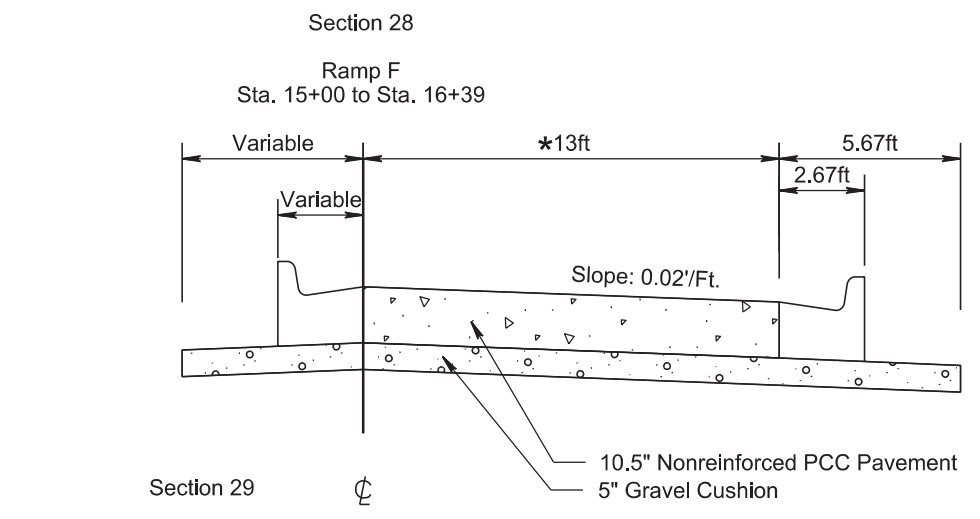
TYPICAL SURFACING SECTIONS FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F19	F64
Plotting Date:		11/15/2024	

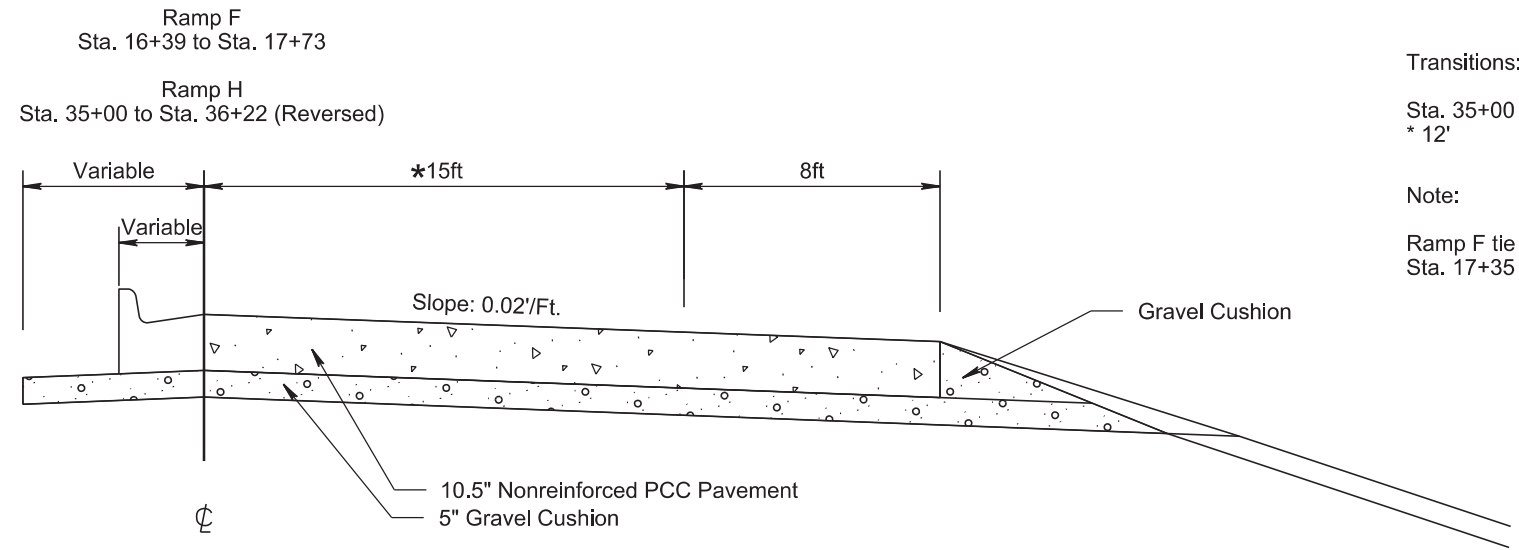
Plot Scale - 1:6

Plotted From - ngiersvik

File - ...105HN_typ-surfacing.dgn



Transitions:
Sta. 15+00 to Sta. 16+39
* 13' to 21'



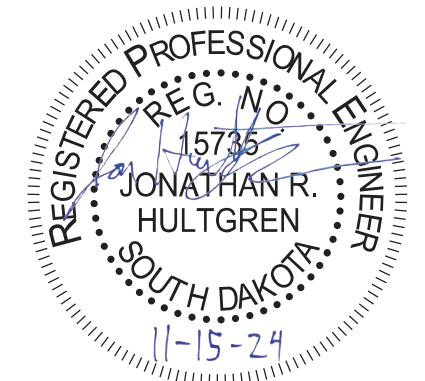
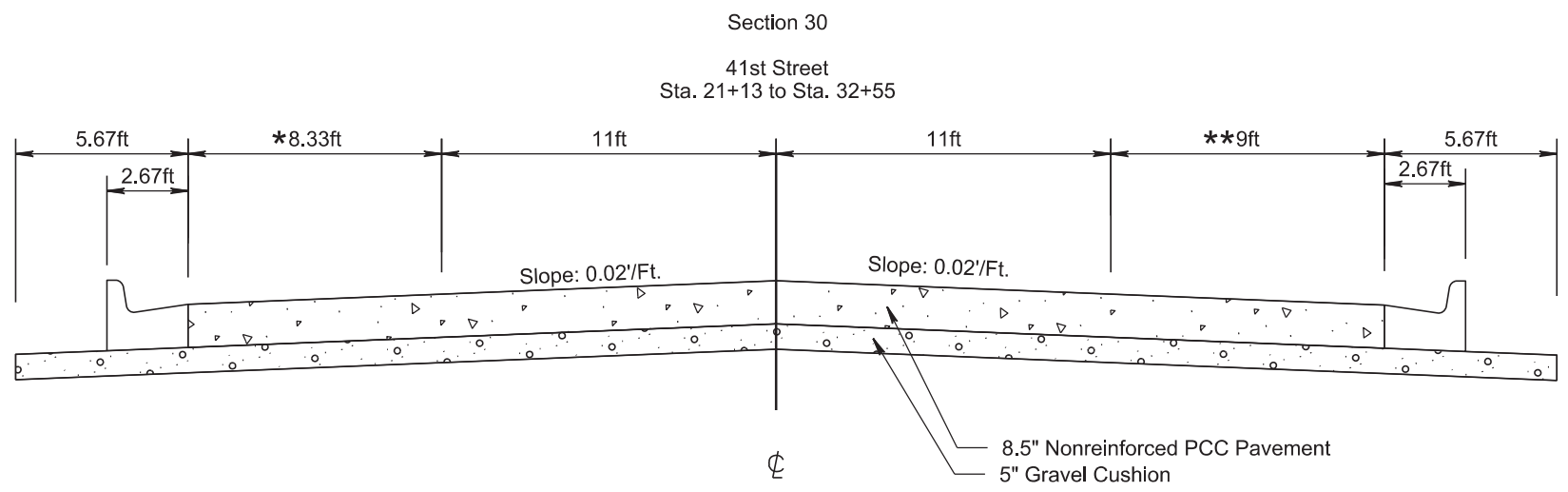
Transitions:
Sta. 35+00 to Sta. 36+22 Ramp H
* 12'

Note:
Ramp F tie to Ramp B Surfacing
Sta. 17+35 to Sta. 17+73

Transitions:
Sta. 21+13 to Sta. 22+28
* 8.33' to 4'

Sta. 21+82 to Sta. 22+98
** 9' to 4'

Sta. 22+98 to Sta. 32+55
* 4'
** 4'

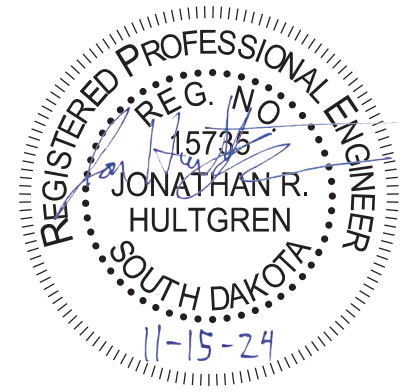
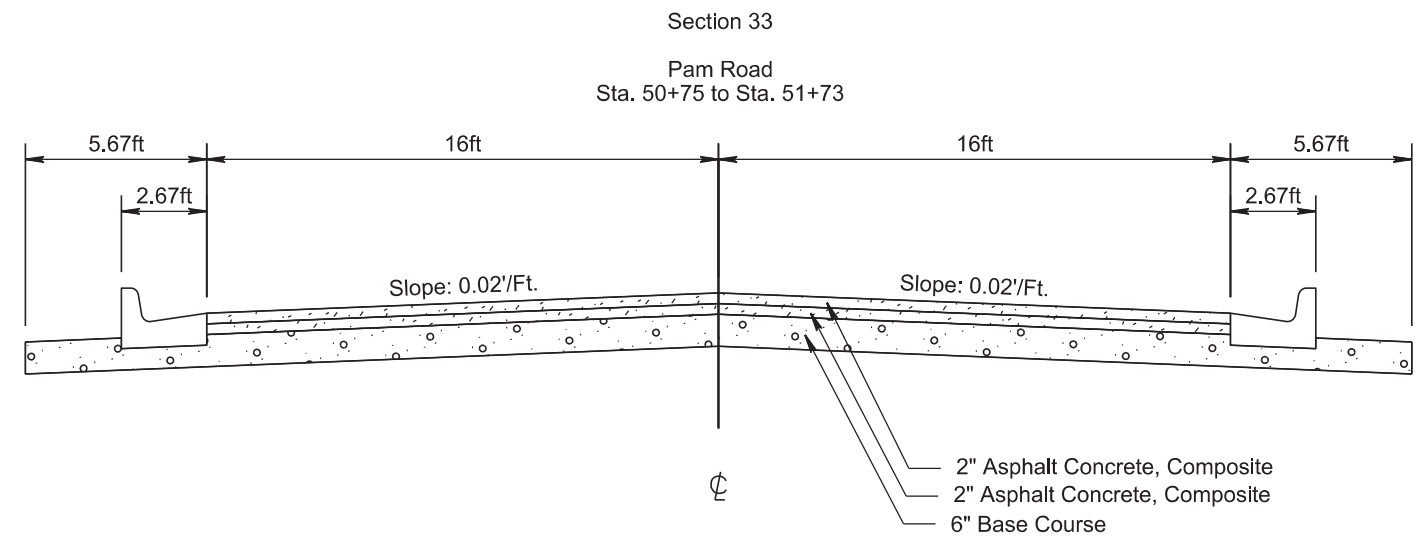
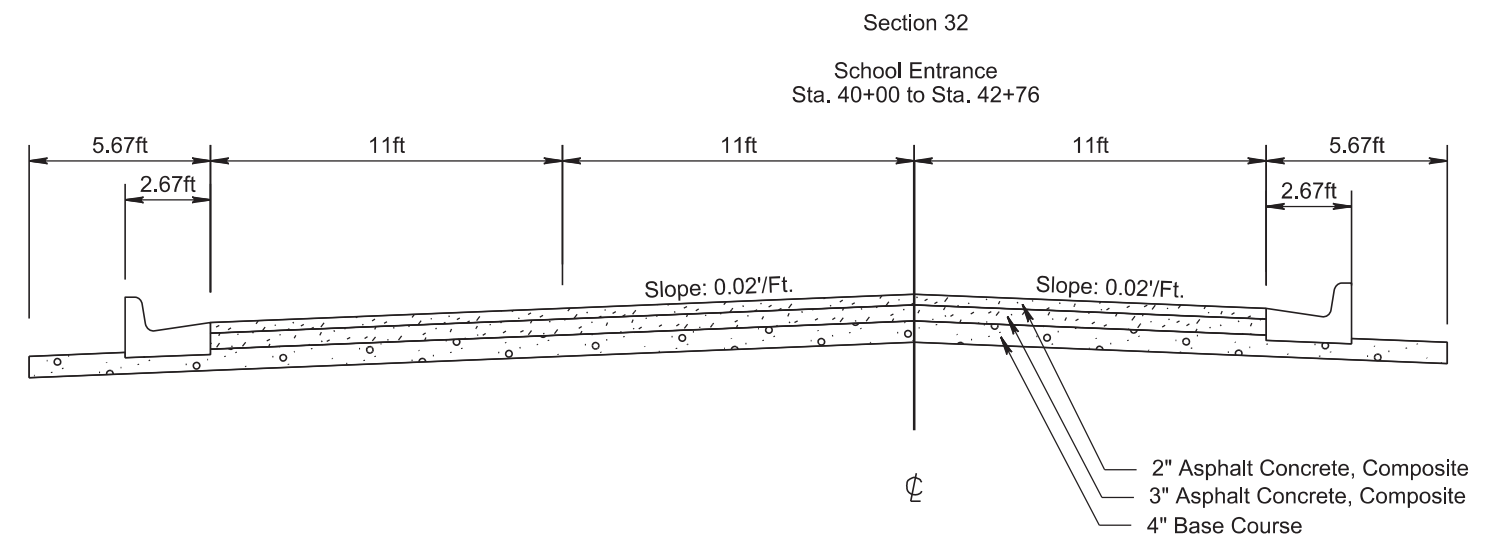
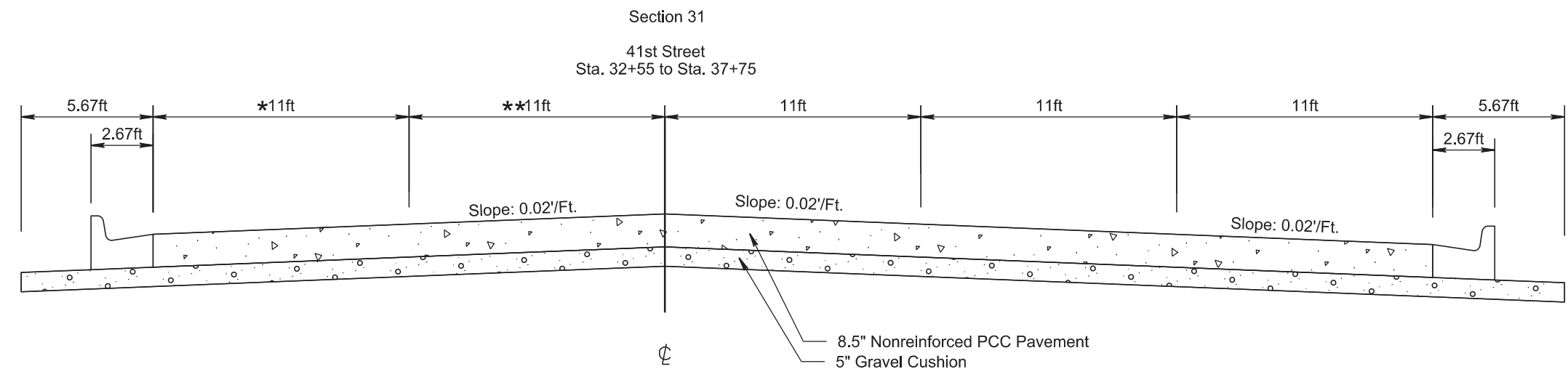


TYPICAL SURFACING SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F20	F64
Plotting Date: 11/15/2024			

Transitions:
 Sta. 33+80 to Sta. 35+98
 * 0' to 11'
 Sta. 35+98 to Sta. 37+33
 * 11' to 26.9'
 Sta. 33+80 to Sta. 35+98
 ** 15' to 11'



Plotted From: ngiersvik 1:6 Plot Scale -

File - ...105HN_typ-surfacing.dgn

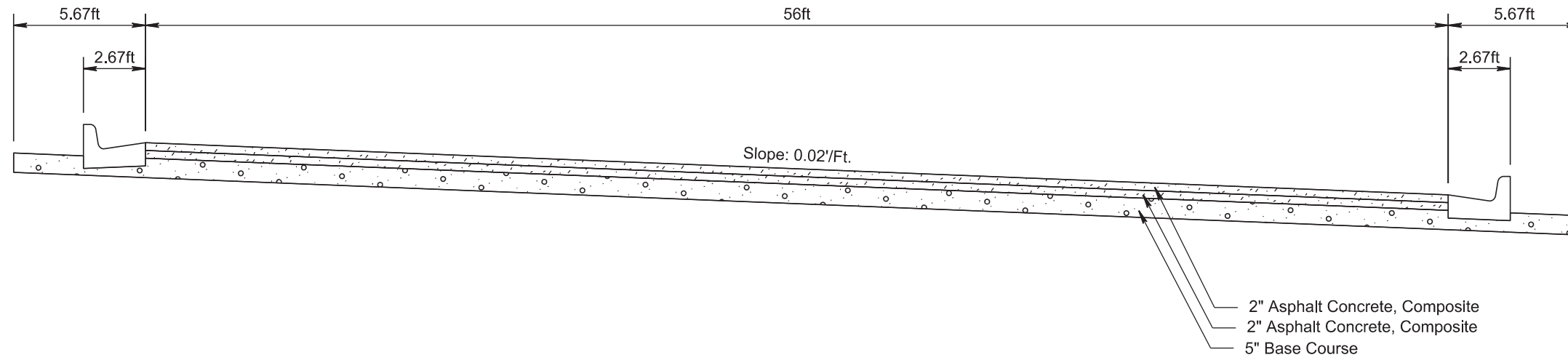
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F21	F64

Plotting Date: 11/15/2024

FOR BIDDING PURPOSES ONLY

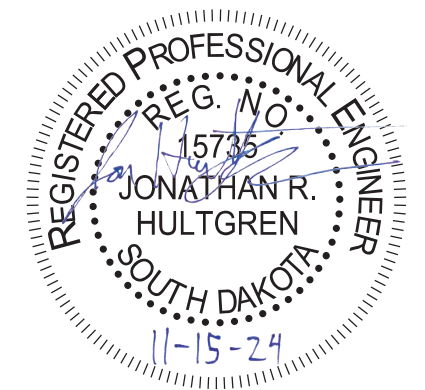
Section 34
School Parking Lot
Sta. 41+33 to Sta. 43+03



Plot Scale - 1:6

Plotted From - ngiersvik

File - ...105HN_typ-surfacing.dgn



PCC PAVEMENT JOINT LAYOUT

I-229

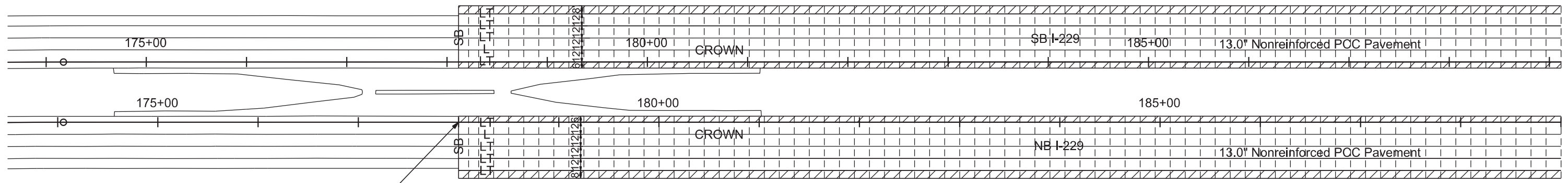
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F22	F64

Plotting Date: 11/15/2024



Plot Scale - 1:100

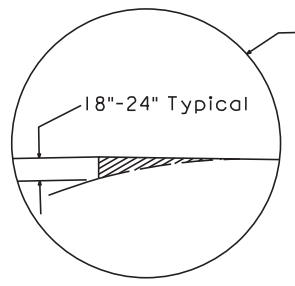


Sta. 178+00.00
Begin 13" Nonreinforced PCC Pavement
Begin 20' Transverse Joint Spacing

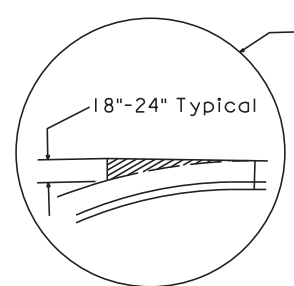
LEGEND:

- 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.



DETAIL A



DETAIL B



Plotted From: ngiersvik

File: ...105HN_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUT

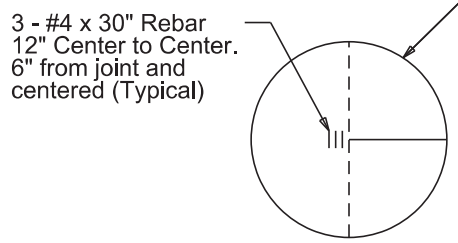
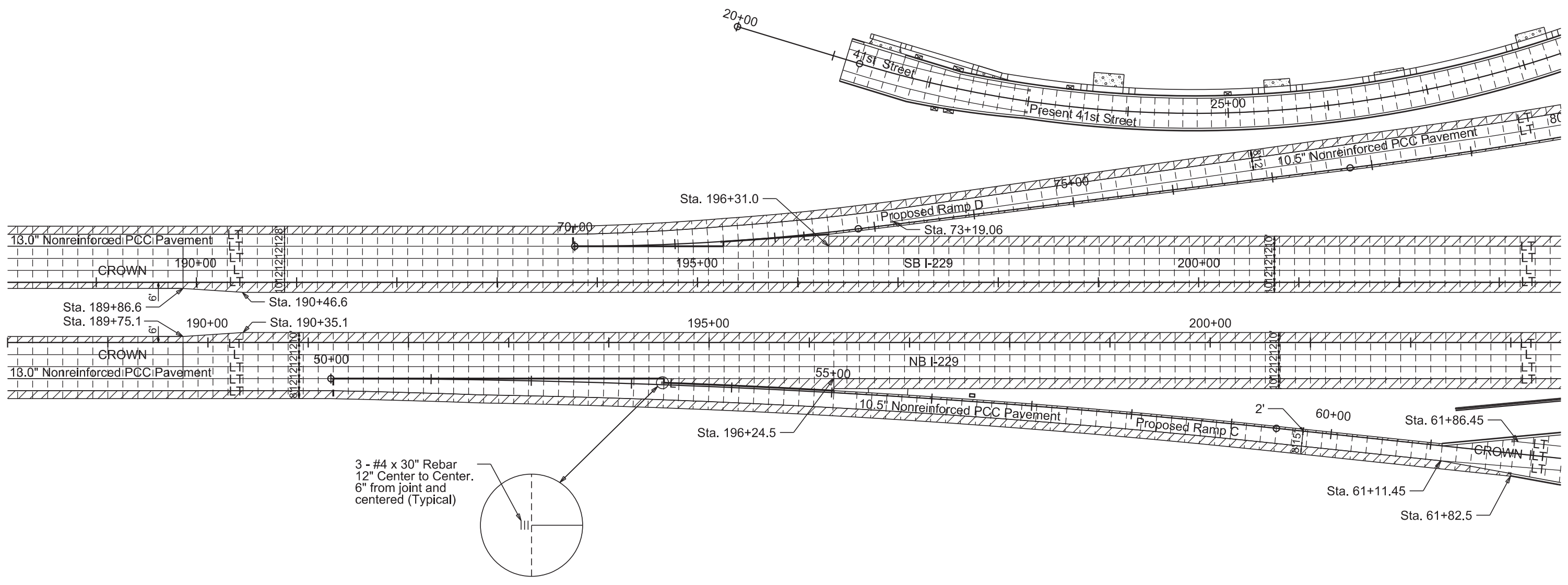
I-229 & RAMPS C/D

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SHEET F23	TOTAL SHEETS F64
Plotting Date: 11/15/2024			



- 6" PCC Driveway Pavement
- Joint Line Between the mainline 13" & all ramps 10.5" Nonreinforced PCC Pavement



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



Plot Scale - 1:100

Plotted From - ngiersvik

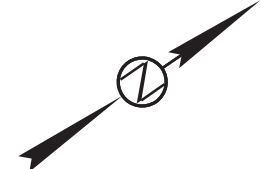
File - ...105HN_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUT

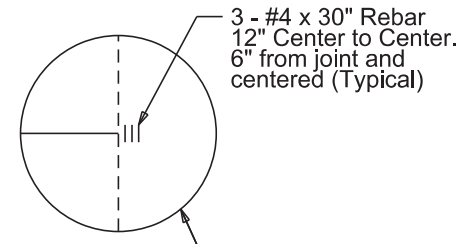
I-229 & RAMPS A/B

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SHEET F25	TOTAL SHEETS F64
Plotting Date: 11/15/2024			

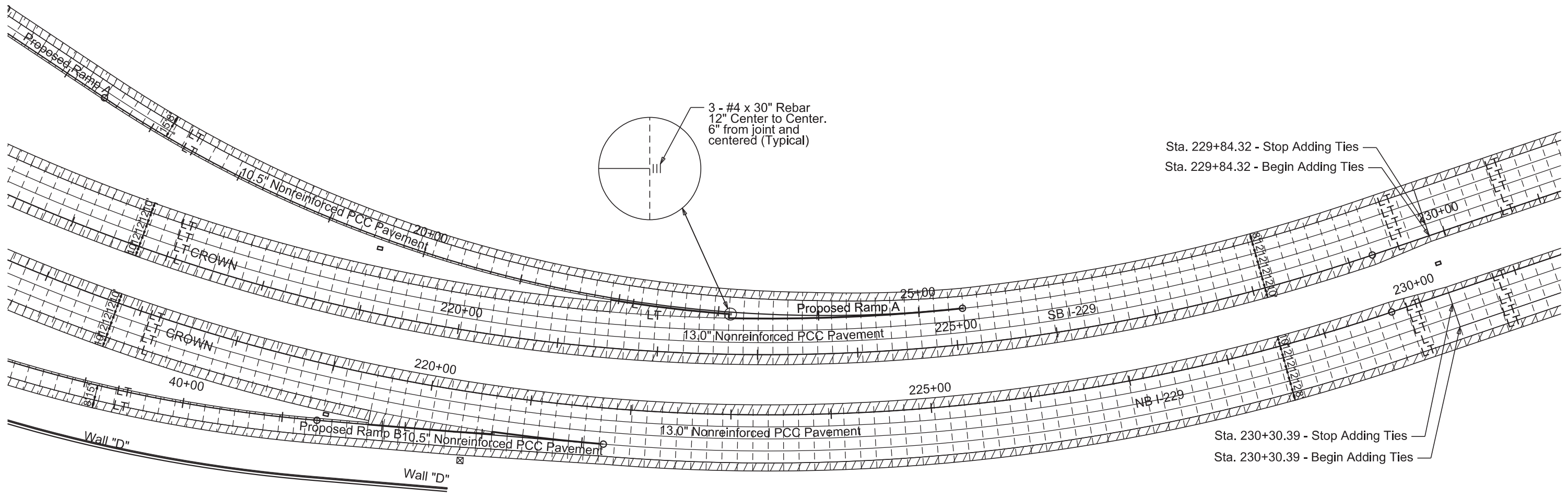


Joint Line Between the mainline 13" & all ramps 10.5" Nonreinforced PCC Pavement

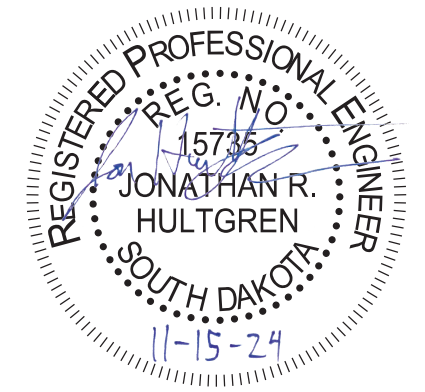


Sta. 229+84.32 - Stop Adding Ties
Sta. 229+84.32 - Begin Adding Ties

Sta. 230+30.39 - Stop Adding Ties
Sta. 230+30.39 - Begin Adding Ties



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



Plot Scale - 1:100

Plotted From - ngiersvik

File - ...105HN_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUT

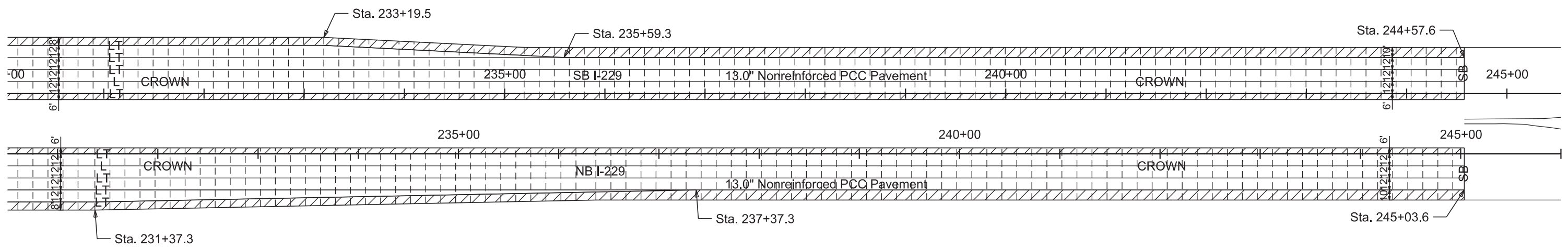
I-229

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SHEET F26	TOTAL SHEETS F64
Plotting Date: 11/15/2024			

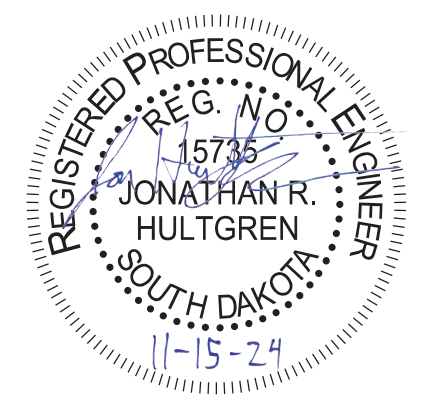


Plot Scale - 1:100



Plotted From - ngiersvik

File - ...105HN_PCC Layouts.dgn



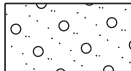
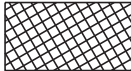
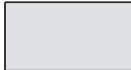
PCC PAVEMENT JOINT LAYOUT

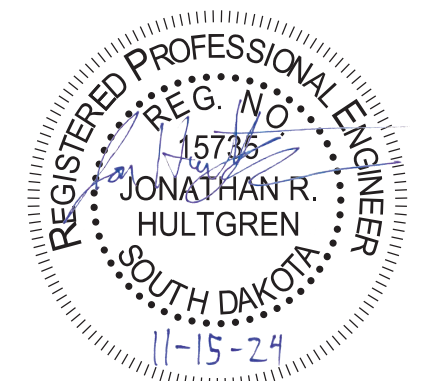
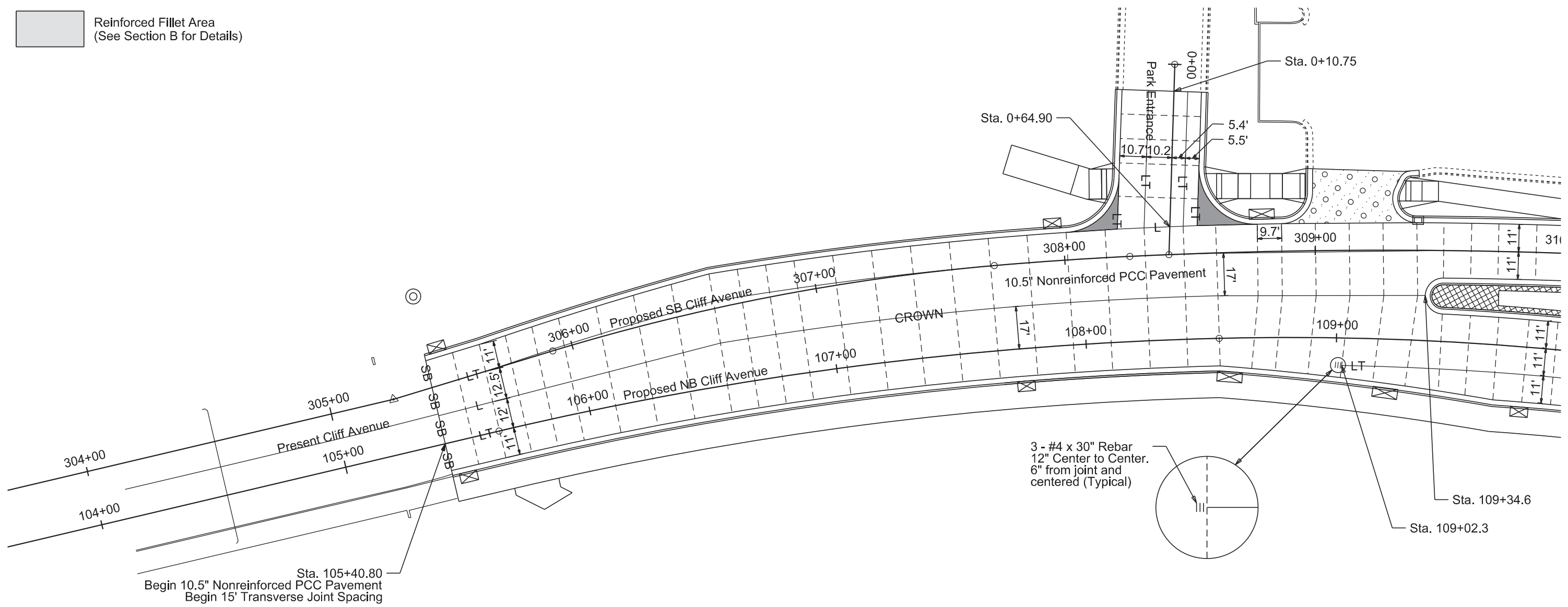
CLIFF AVENUE

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F27	F64
Plotting Date: 11/15/2024			



-  8" PCC Driveway Pavement
-  Median / Island Landscaping (See Section H for Details)
-  Reinforced Fillet Area (See Section B for Details)



Plotted From: ngiersvik 1:40 File: ...105HN_PCC Layouts.dgn

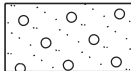
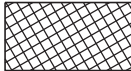
PCC PAVEMENT JOINT LAYOUT

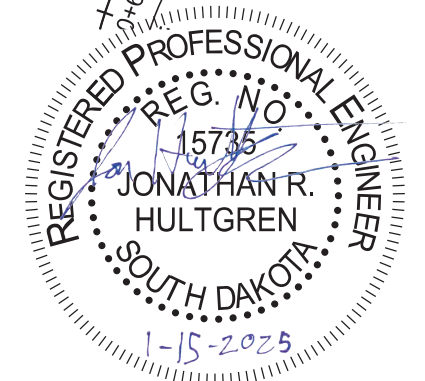
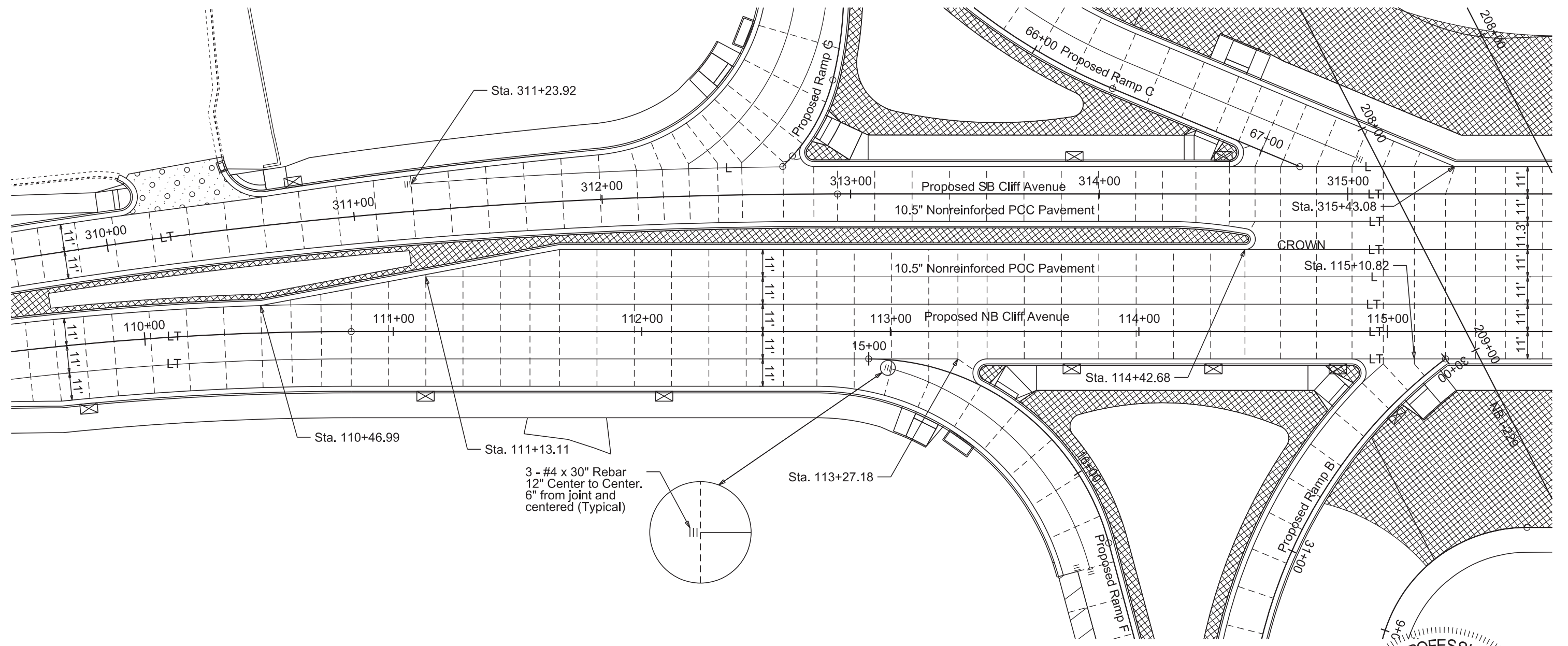
CLIFF AVENUE

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SHEET F28	TOTAL SHEETS F64
Plotting Date: 1/14/2025	Revised Date: 1/14/2025	Initials: NBG	



-  8" PCC Driveway Pavement
-  Median / Island Landscaping
(See Section H for Details)



Plotted From: ...nglersvik
 Plot Scale: 1/4"=1'-0"
 File: ...105HN_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUT

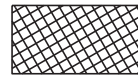
CLIFF AVENUE

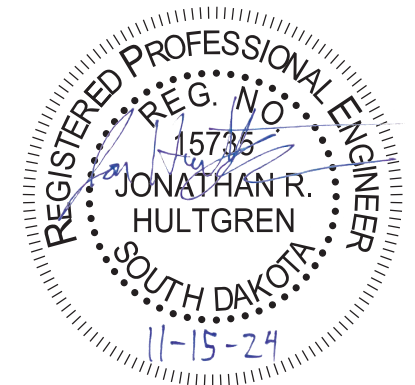
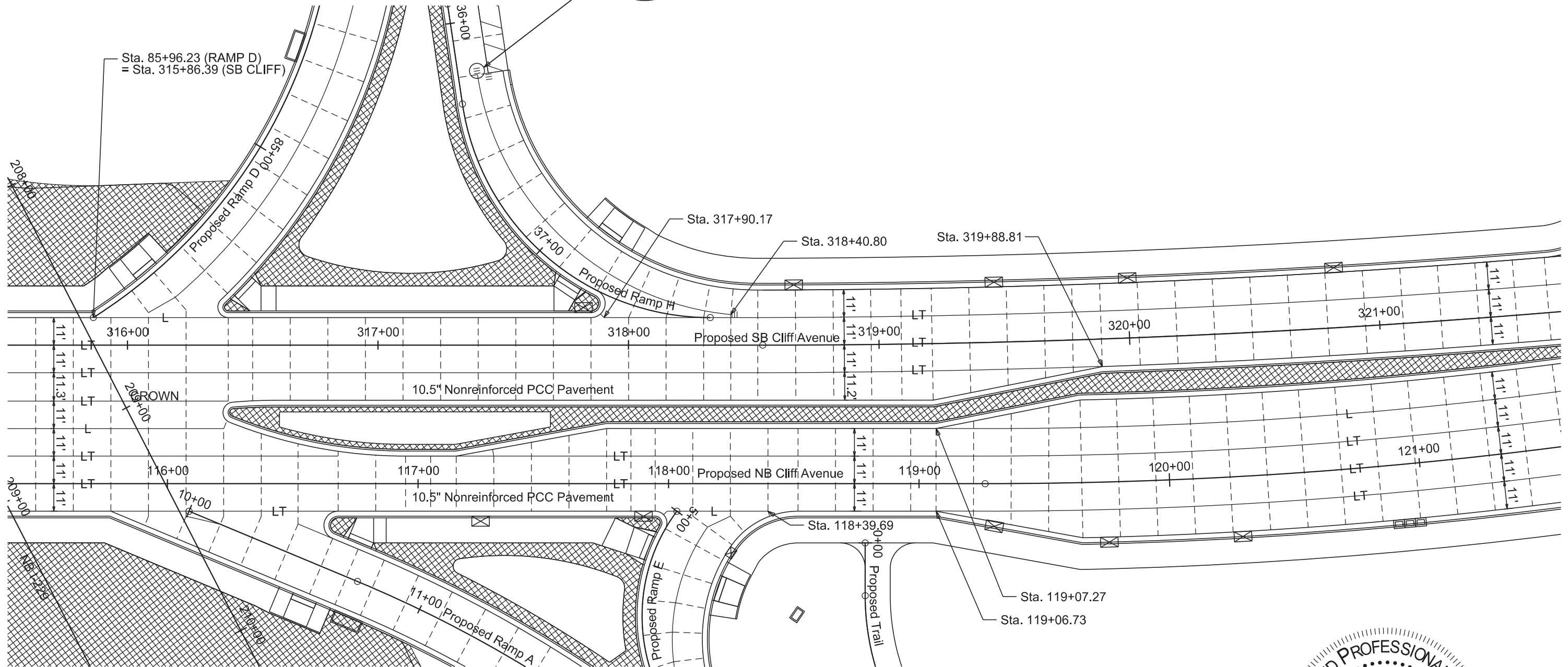
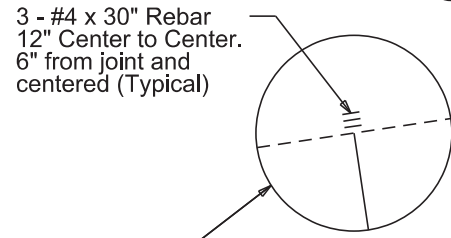
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F29	F64

Plotting Date: 11/15/2024



 Median / Island Landscaping
(See Section H for Details)



Plot Scale - 1"=40'

Plotted From - engiersvik

File - ...105HN_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUT

CLIFF AVENUE

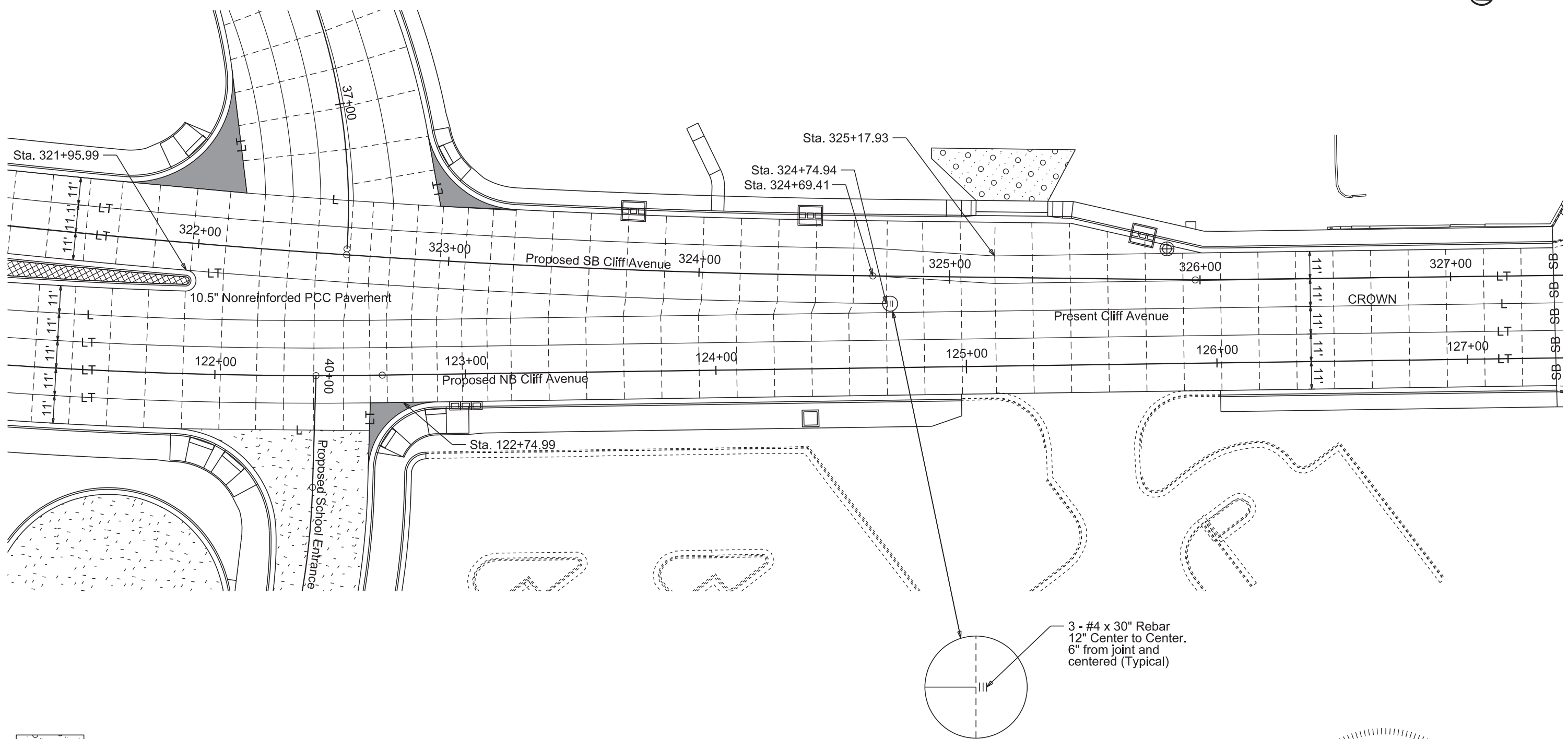
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SHEET F30	TOTAL SHEETS F64
Plotting Date: 11/15/2024			

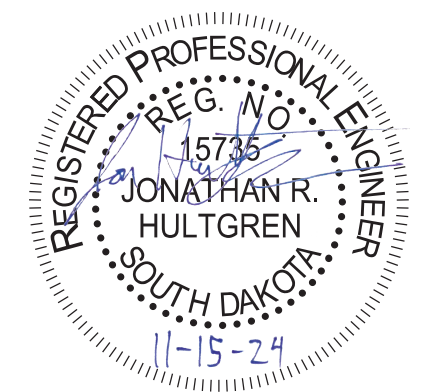


Plot Scale - 1"=40'

Plotted From - ngiersvik



- 8" PCC Driveway Pavement
- Median / Island Landscaping
(See Section H for Details)
- Reinforced Fillet Area
(See Section B for Details)
- Roadway Asphalt Concrete, Composite



File - ...105HN_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUT

CLIFF AVENUE & 38TH STREET

FOR BIDDING PURPOSES ONLY

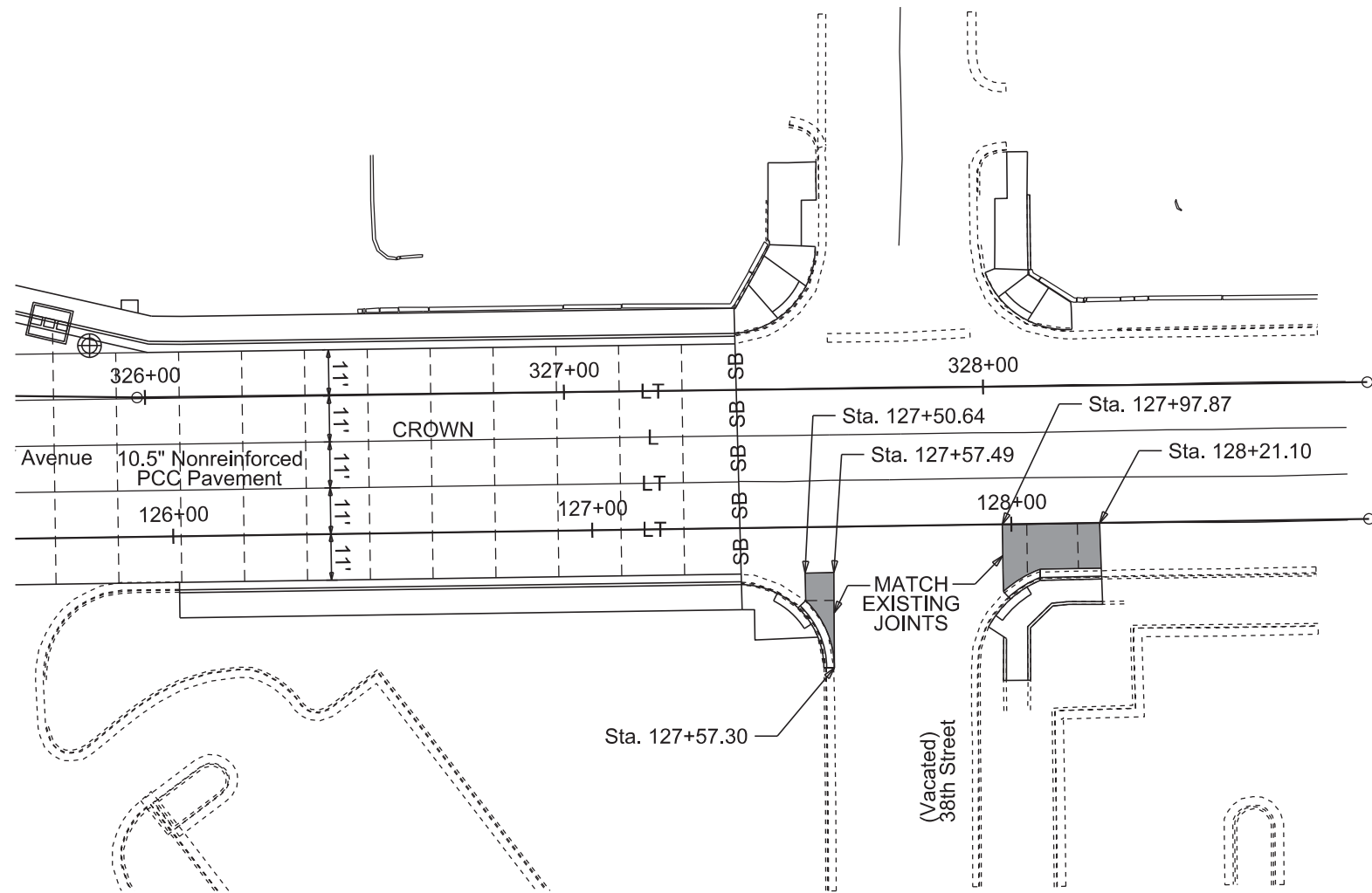
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F31	F64

Plotting Date: 11/15/2024

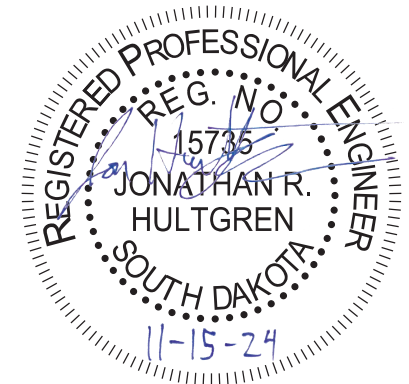


Plot Scale - 1:40

Plotted From - ngiersvik



Reinforced Fillet Area
 (See Section B for Details)



File - ...105HN_PCC Layouts.dgn

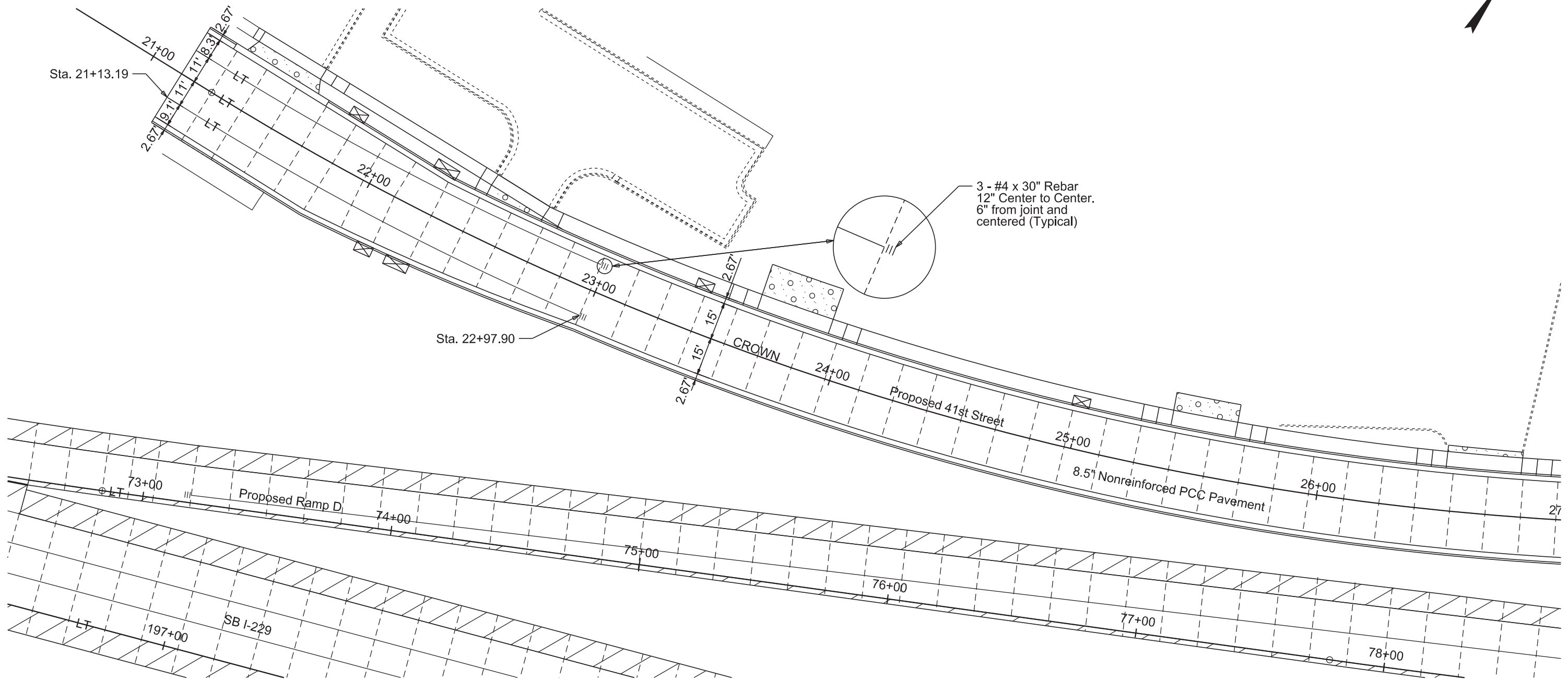
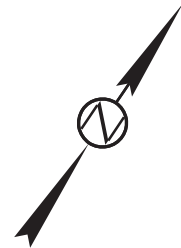
PCC PAVEMENT JOINT LAYOUT


41ST STREET

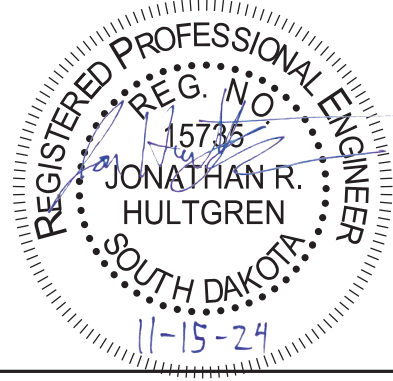
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F32	F64
Plotting Date:		11/15/2024	

 8" PCC Driveway Pavement



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



Plot Scale - 1"=40'

Plotted From - ngiersvik

File - ...105HN_PCC Layouts.dgn

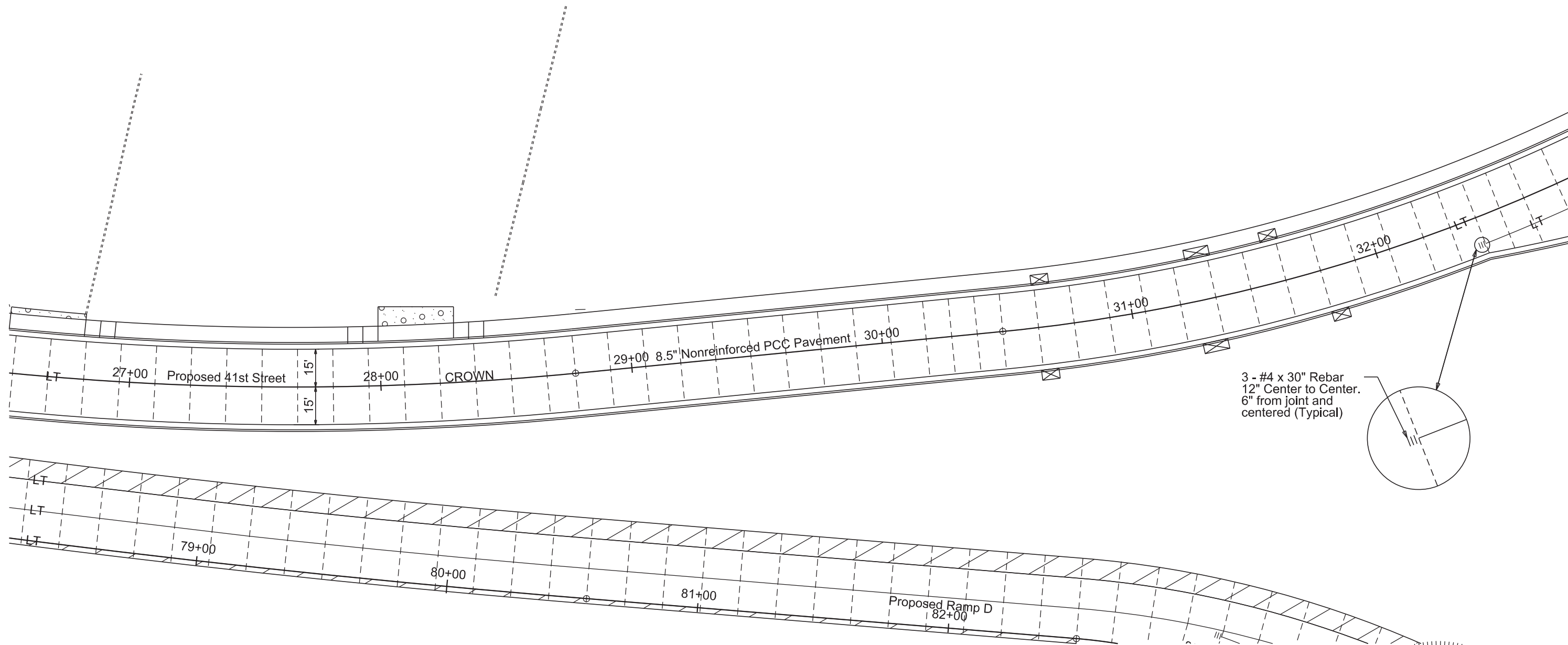
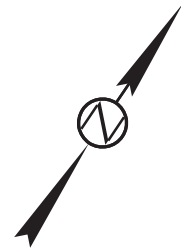
PCC PAVEMENT JOINT LAYOUT

41ST STREET

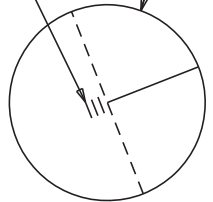
FOR BIDDING PURPOSES ONLY


STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F33	F64
Plotting Date: 11/15/2024			

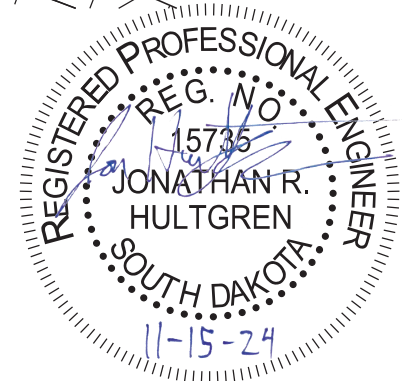
 8" PCC Driveway Pavement



3 - #4 x 30" Rebar
12" Center to Center.
6" from joint and centered (Typical)



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



Plot Scale - 1:40

Plotted From - ngiersvik

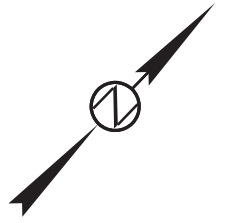
File - ...105HN_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUT

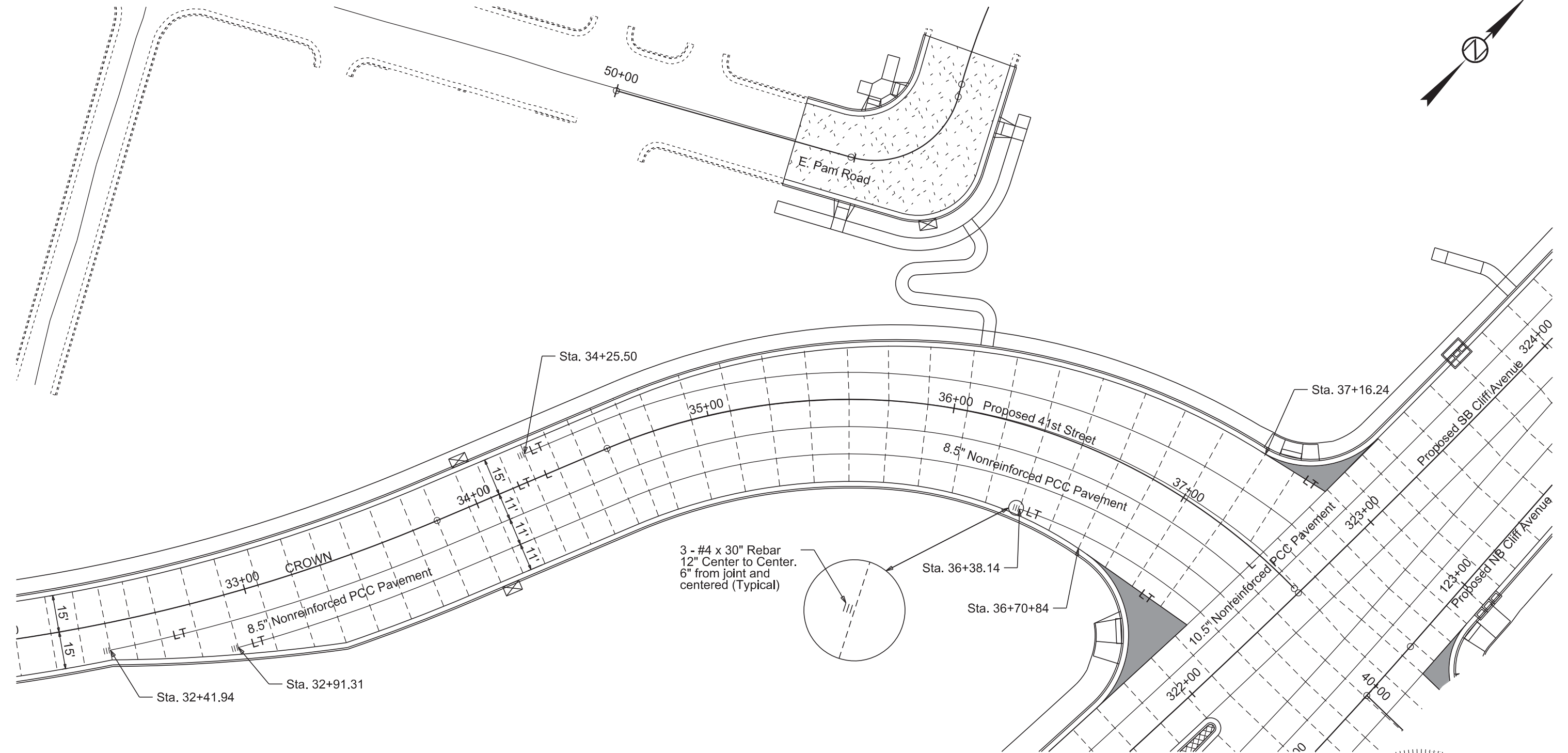
41ST STREET

FOR BIDDING PURPOSES ONLY

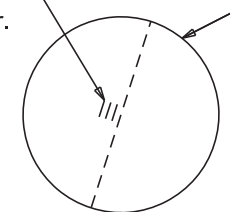
STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SHEET F34	TOTAL SHEETS F64
Plotting Date: 11/15/2024			



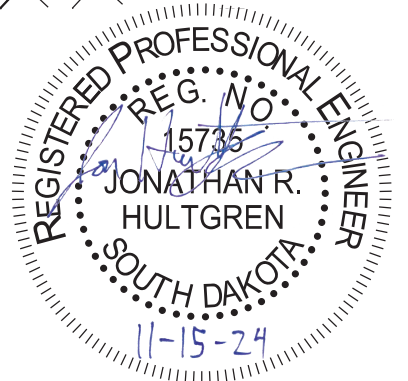
Plot Scale - 1:40



3 - #4 x 30" Rebar
12" Center to Center.
6" from joint and
centered (Typical)



- Median / Island Landscaping
(See Section H for Details)
- Reinforced Fillet Area
(See Section B for Details)
- Roadway Asphalt Concrete, Composite



Plotted From - engiersvik

File - ...105HN_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUT

SCHOOL ENTRANCE

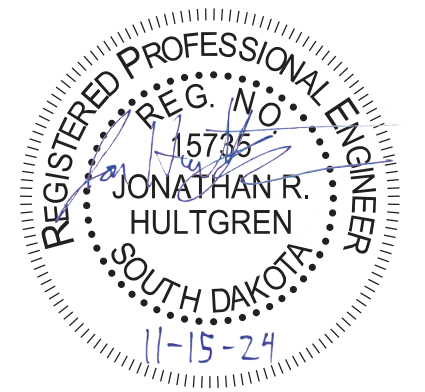
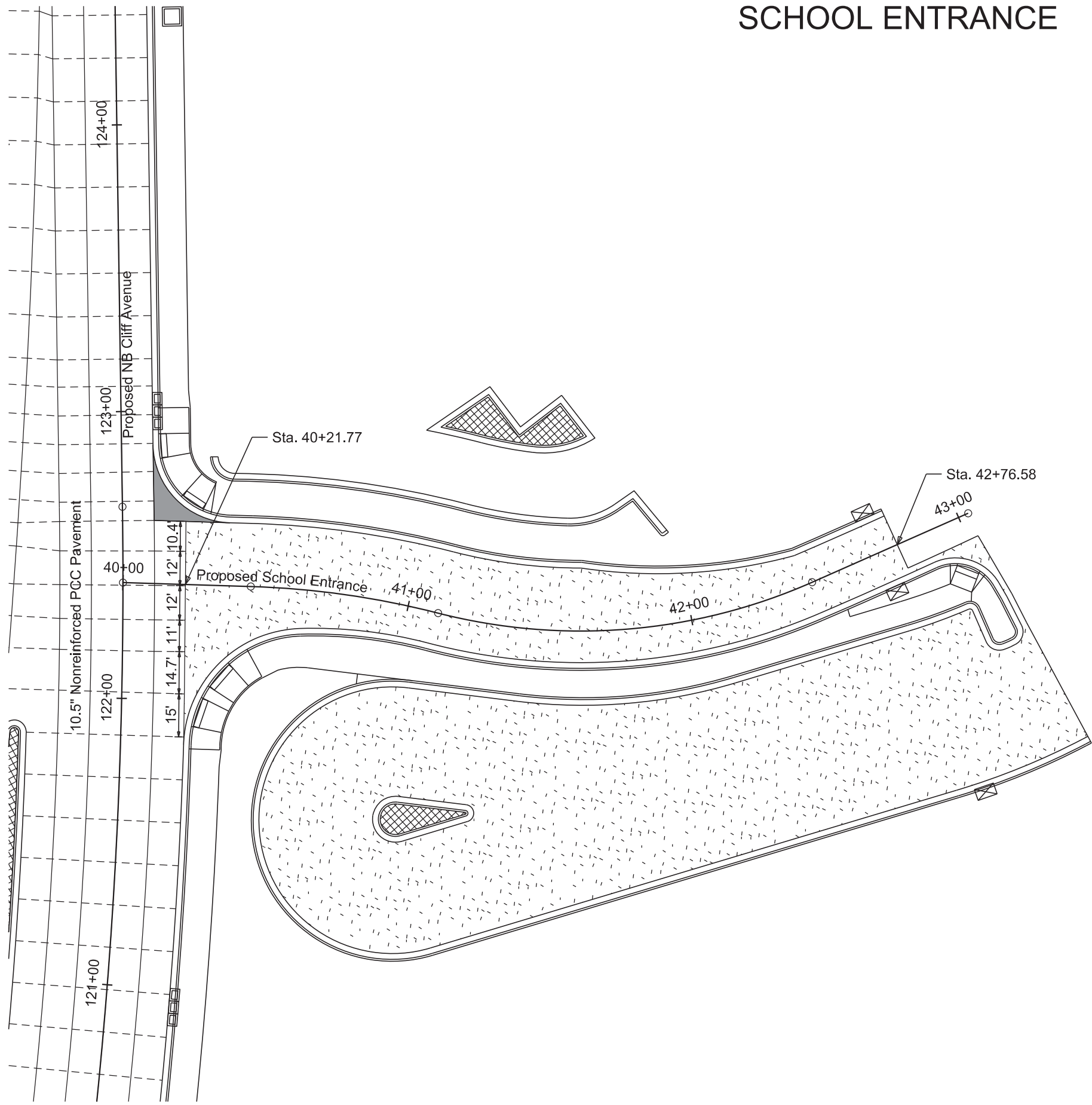
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SHEET F35	TOTAL SHEETS F64
Plotting Date: 11/15/2024			



Plot Scale - 1:40

Plotted From - ngiersvik



- Median / Island Landscaping
(See Section H for Details)
- Reinforced Fillet Area
(See Section B for Details)
- Roadway Asphalt Concrete, Composite

File - ...105HN_PCC Layouts.dgn

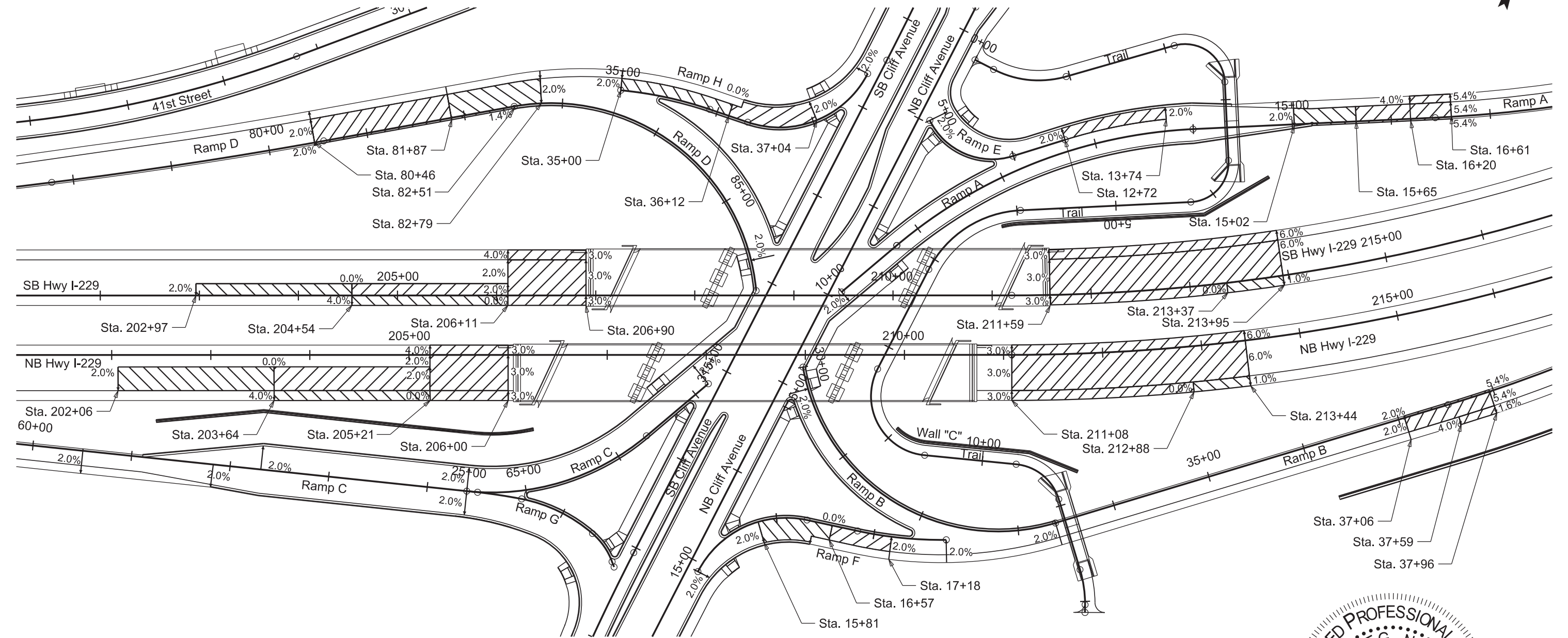
PAVEMENT SLOPE LAYOUT FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F36	F64
Plotting Date: 11/15/2024			



Plot Scale - 1:100

Plotted From - ngiersvik



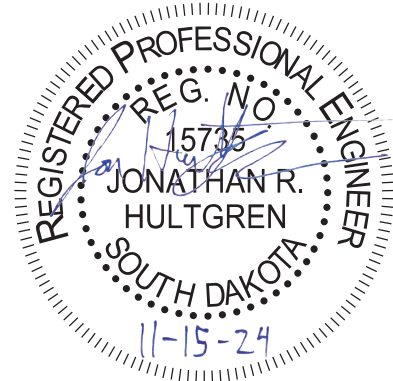
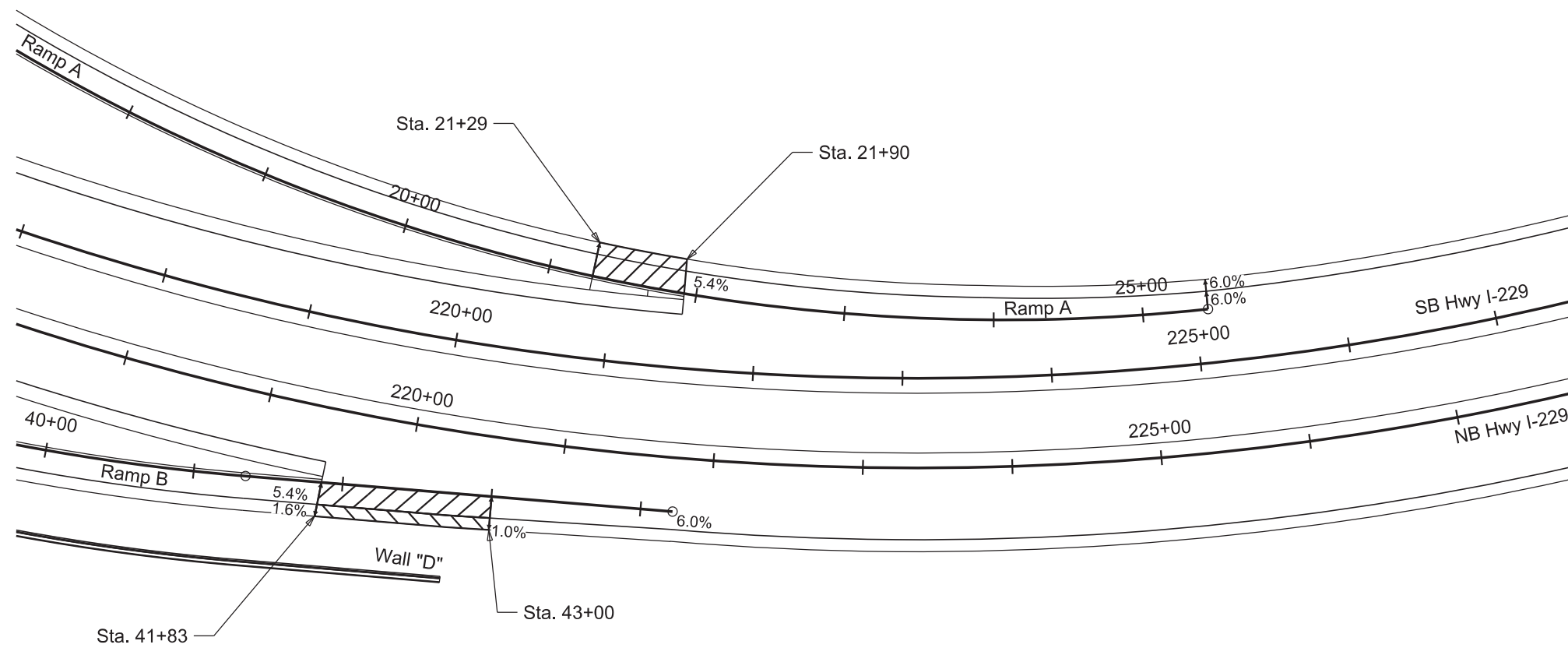
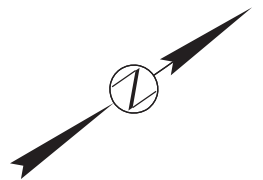
File - ...1054HN_PCC Slope Layouts.dgn

PAVEMENT SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F37	F64

Plotting Date: 11/15/2024



Plot Scale - 1:100

Plotted From - ngiers.vik

File - ...105HN_PCC Slope Layouts.dgn

PAVEMENT SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY

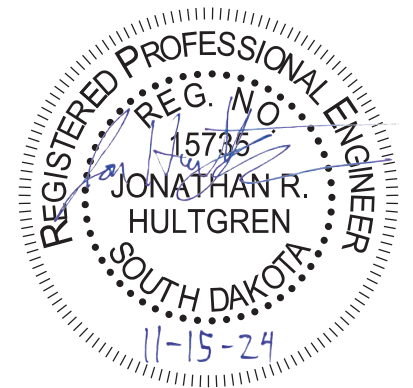
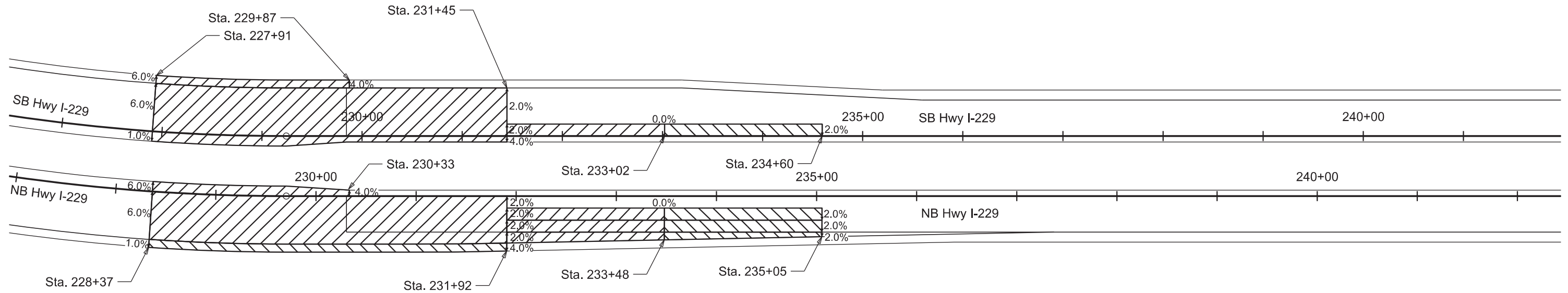
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F38	F64

Plotting Date: 11/15/2024



Plot Scale - 1:100

Plotted From - ngiers.vik

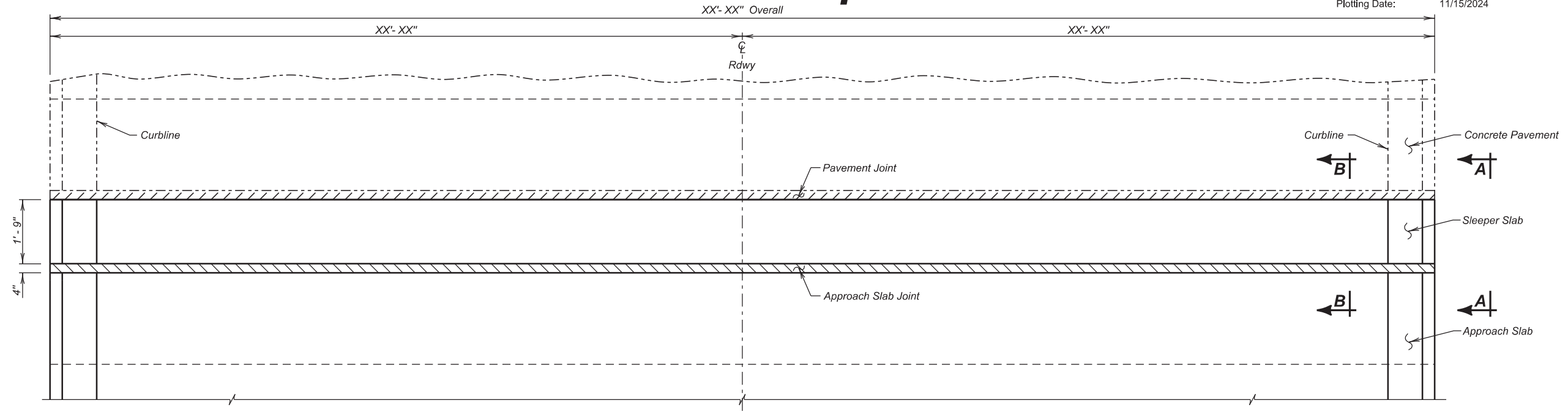


Membrane Sealant Expansion Joint

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F39	F64

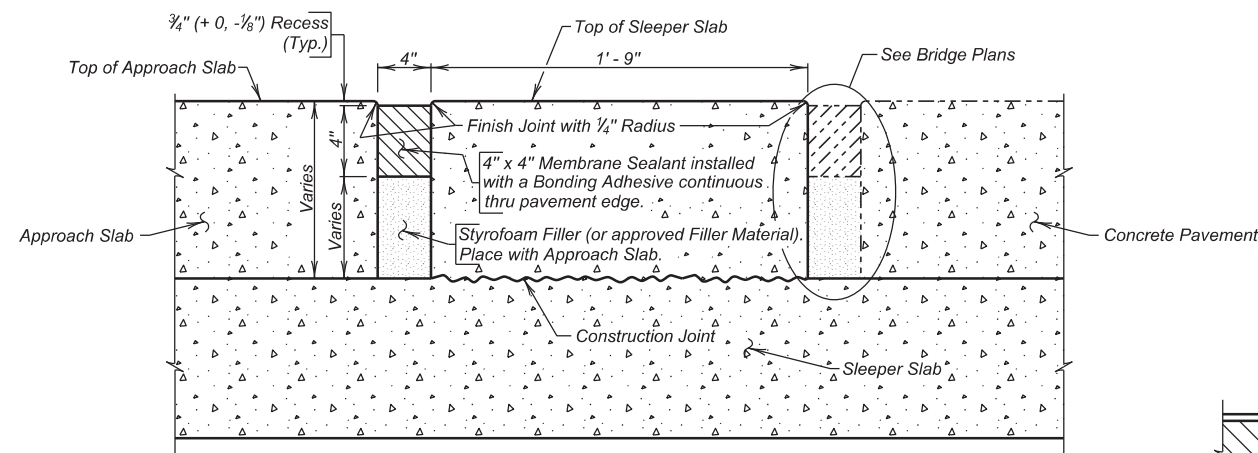
Plotting Date: 11/15/2024



PLAN

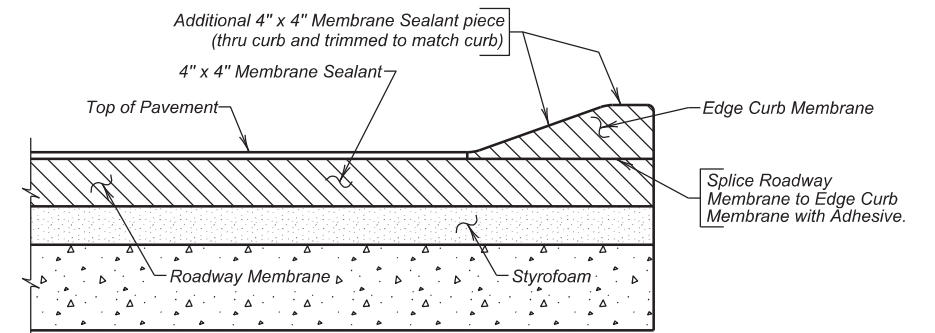
GENERAL NOTES

- The Membrane Sealant shall be on the approved product list for Membrane Sealant Expansion Joints.
- The manufacturer shall supply the membrane sealant in packaging that precompresses the membrane sealant. The precompressed dimension shall be as recommended by the sealant manufacturer, however, in no case shall the precompressed dimension exceed 75% of the joint opening width. The foam sealant shall be slowly self expanding to permit workers ample time to install the membrane sealant before the membrane sealant exceeds the joint opening width.
- The membrane sealant shall provide a water tight seal throughout a joint movement range of + 25% (minimum) from the specified joint opening dimension.
- The membrane sealant shall be supplied in pieces a minimum of 5 feet in length. The foam sealant shall be ultra-violet and ozone resistant.
- The bonding adhesive used to attach the membrane sealant to the adjacent concrete shall be approved by the membrane sealant manufacturer.
- Adhesive used to join adjacent pieces of the membrane sealant shall be as recommended by the manufacturer.
- If styrofoam filler material is used in the construction, it shall be closed cell and water-tight as approved by the Engineer.
- The minimum ambient air temperature at the time of joint installation and adhesive curing shall be 40° F.
- A technical representative of the membrane sealant manufacturer shall be present at the jobsite during installation. The technical representative shall be knowledgeable in the correct procedures for the preparation and installation of the joint material to ensure the Contractor installs the joint to the manufacturers' recommendations.
- Surfaces that will be in contact with the membrane sealant shall be thoroughly cleaned by abrasive blasting to remove all laitance and contaminants (such as oil, curing compounds, etc.) from the surface. At a minimum, two passes of abrasive blasting with the nozzle held at an angle to within 1 to 2 inches of the surface will be required. Cleaning of the surfaces with solvents, wire brushing, or grinding shall not be permitted.
- After abrasive blasting, but immediately prior to membrane joint installation, the entire joint contact surface shall be air blasted. The air compressor used for joint cleaning shall be equipped with trap devices capable of providing moisture-free and oil-free air at a recommended pressure of 90 psi. To obtain complete bonding with the adhesive, the adjacent surfaces must be dry and clean. The contact surfaces for the joint shall be visually inspected by the Engineer immediately prior to joint installation to verify the surface is dry and clean.
- Individual spliced sections shall be installed as per the manufacturers' recommendations. The membrane joint sealant manufacturer shall submit a detailed installation procedure to the Engineer at least 5 days prior to joint installation for his review.
- Traffic shall not be allowed on the joint until the bonding adhesive has had time to cure, as recommended by the manufacturer.
- Use plywood or other material to protect concrete adjacent to the joint from spalling before any equipment is moved across the joint. Any spall areas will be repaired at the Contractor's expense by breaking out and replacing adjacent concrete, as approved by the Engineer.
- The Membrane Sealant Expansion Joint will be measured in feet to the nearest one-tenth foot, complete in place. Measurement will be made of the overall horizontal length. The Membrane Sealant Expansion Joint will be paid for at the contract unit price per foot complete in place. Payment for this item shall be full compensation for furnishing all the required materials in place, including labor, equipment and incidentals necessary to complete the work in accordance with the plans and the foregoing specifications.

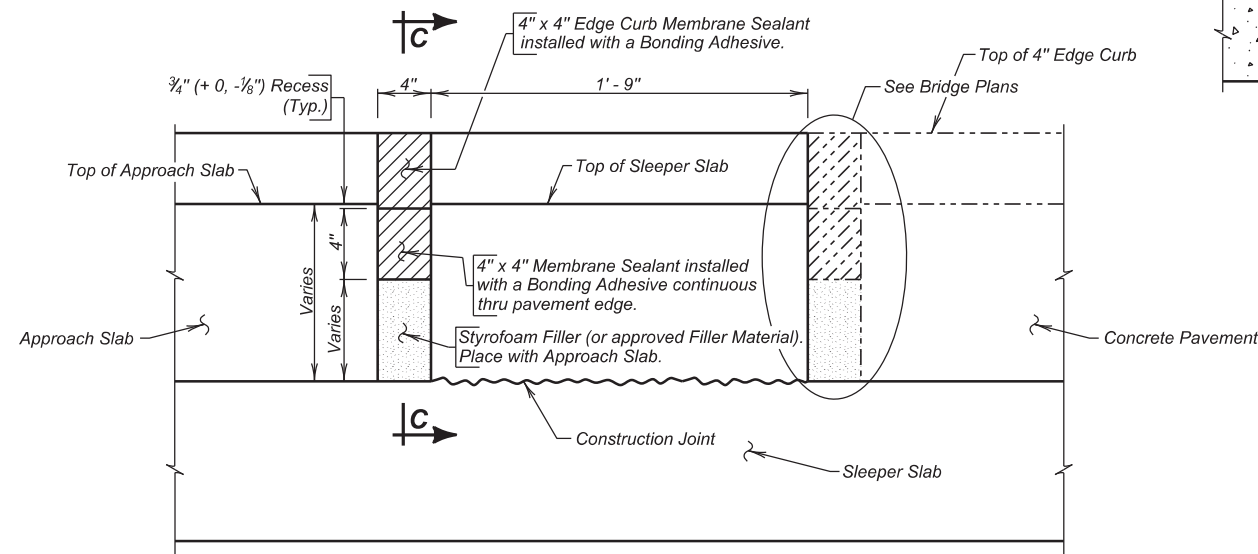


SEC. B - B

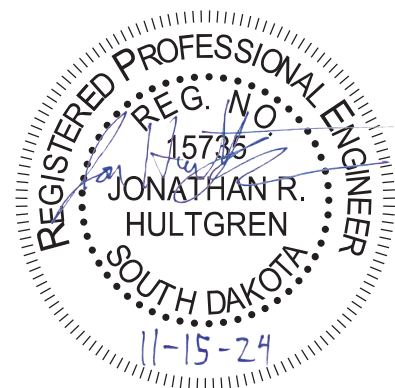
ESTIMATED QUANTITIES		
LOCATION	UNIT	QUANTITY
NB I-229 Sta. 206+05.4 (Str. No. 50+210-230)	Ft.	56.0
SB I-229 Sta. 206+90.1 (Str. No. 50+211-230)	Ft.	56.0
NB I-229 Sta. 210+73.1 (Str. No. 50+210-230)	Ft.	56.0
SB I-229 Sta. 211+58.4 (Str. No. 50+211-230)	Ft.	56.0
TOTAL		224.0



SEC. C - C



VIEW A - A



Plot Scale - 1:200

Plotted From - nglersrik




File - ...103HN_membrane-sealant-expansion-joint.dgn

IN-PLACE SURFACING SECTIONS

Exit 3 NB Diversion

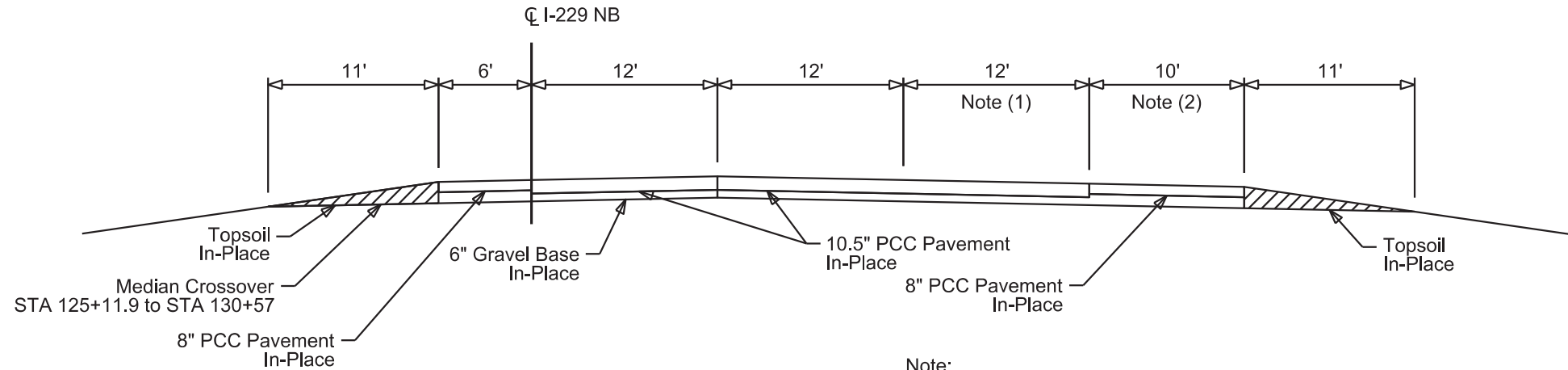
STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	IM-B-CR 2292(101)3	F40	F64
Plotting Date: 10/23/2024			

FOR BIDDING PURPOSES ONLY

-  Remove Granular Base Material
-  Unclassified Excavation (Waste Material)
-  PCC Pavement Removal

I-229 NB Lanes

STA 124+34.5 to STA 140+58.8

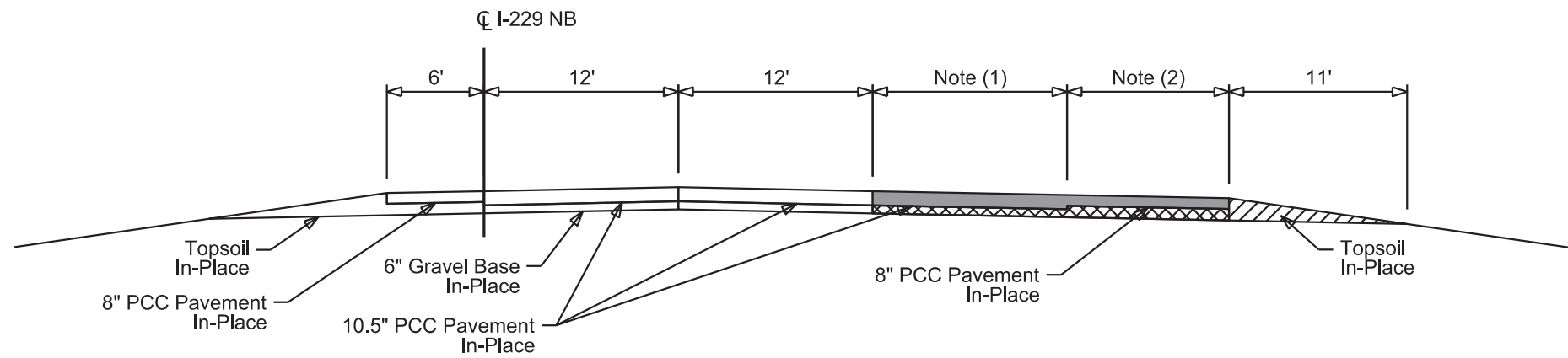


Note:

- (1) 12' to 13.7' from STA 139+78.9 to STA 140+58.8
- (2) 10' to 8.3' from STA 139+78.9 to STA 140+58.8

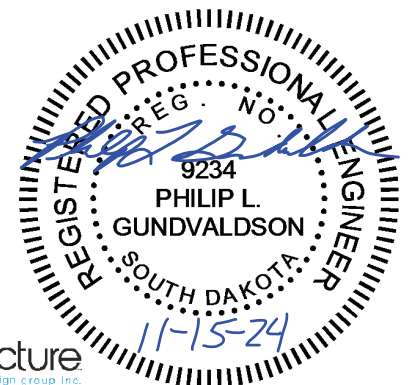
I-229 NB Lanes

STA 140+58.8 to STA 141+68.7



Note:

- (1) 13.7' to 18' from STA 140+58.8 to STA 141+68.7
- (2) 8.3' to 4' from STA 140+58.8 to STA 141+68.7



IN-PLACE SURFACING SECTIONS

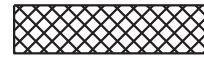
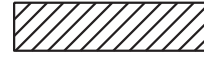

FOR BIDDING PURPOSES ONLY

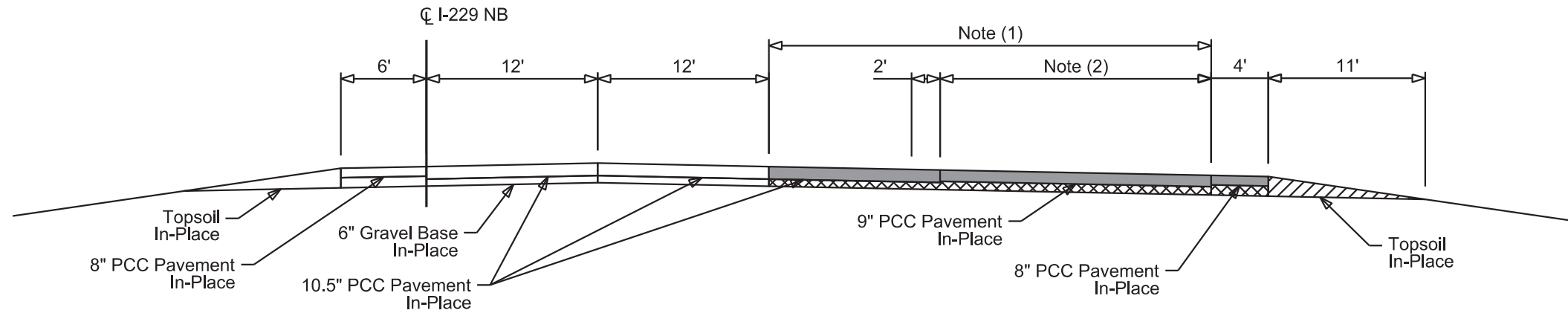
Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	IM-B-CR 2292(101)3	F41	F64
Plotting Date: 10/23/2024			

I-229 NB Lanes

STA 141+68.7 to STA 143+09.3

-  Remove Granular Base Material
-  Unclassified Excavation (Waste Material)
-  PCC Pavement Removal

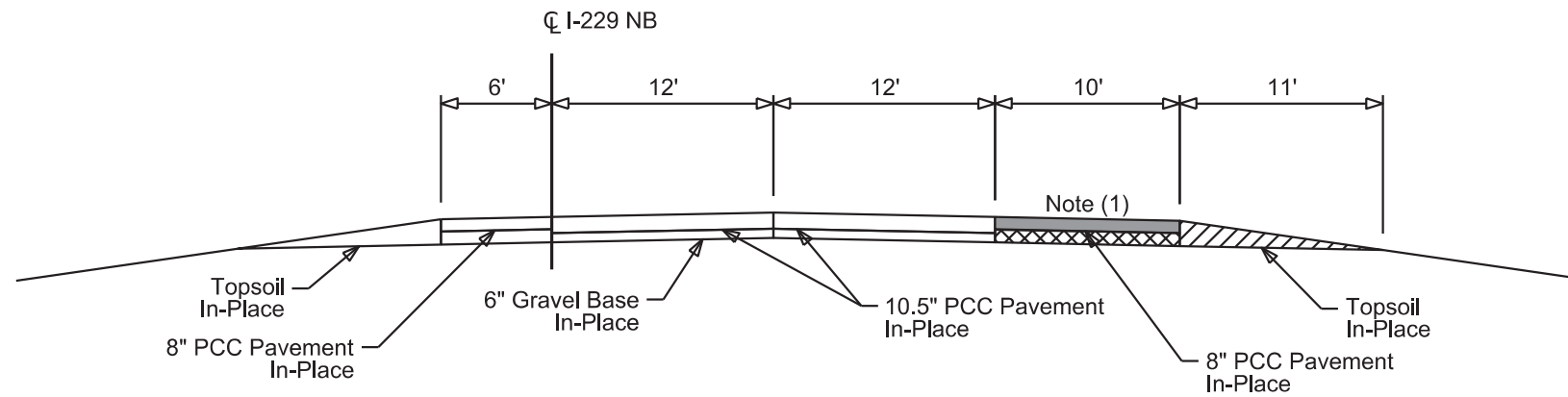


Note:

- (1) 18' to 31' from STA 140+58.8 to STA 143+09.3
- (2) 6' to 19' from STA 140+58.8 to STA 143+09.3

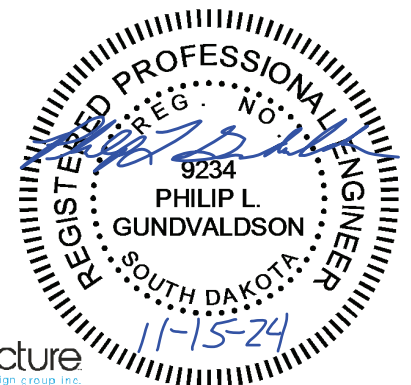
I-229 NB Lanes

STA 143+09.3 to STA 152+33.4
STA 154+38.0 to STA 157+63.9



Note:

- (1) Remove Shoulder from STA 143+09.3 to STA 148+69.0



IN-PLACE SURFACING SECTIONS


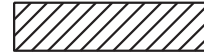

FOR BIDDING PURPOSES ONLY

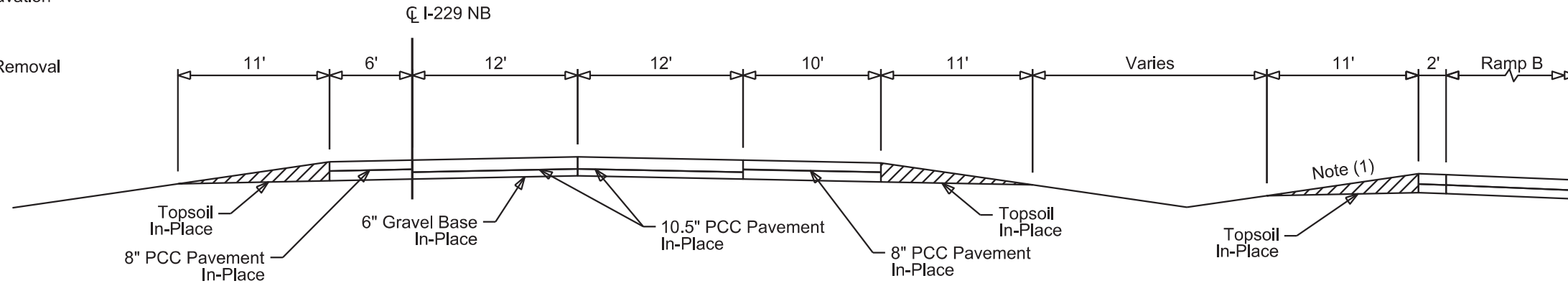
Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	IM-B-CR 2292(101)3	F42	F64
Plotting Date: 10/23/2024			

I-229 NB Lanes

STA 157+63.9 to STA 160+61.3

-  Remove Granular Base Material
-  Unclassified Excavation (Waste Material)
-  PCC Pavement Removal

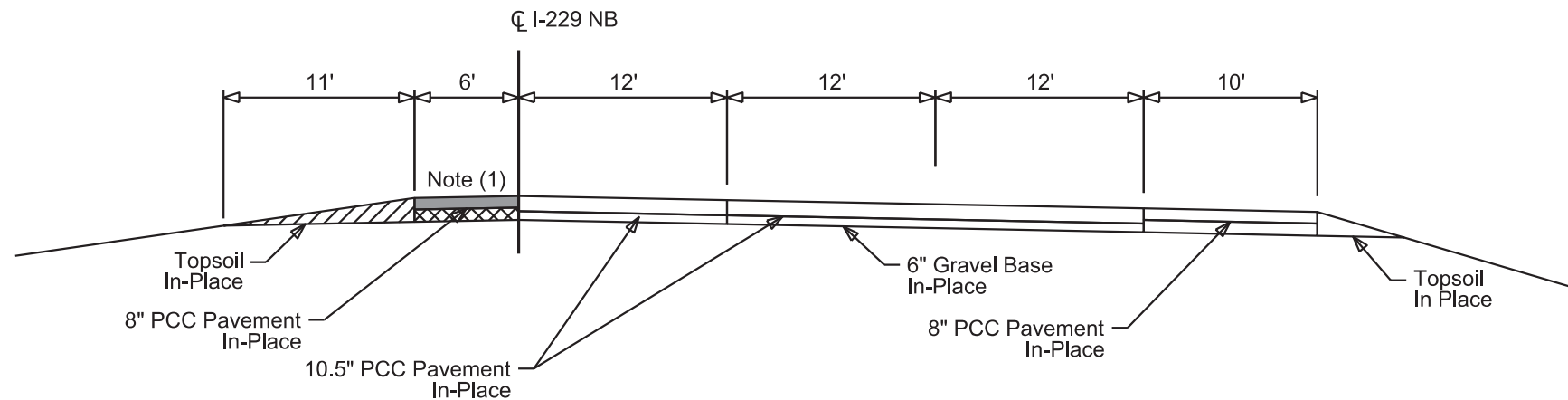


Note:

(1) Unclassified Excavation from STA 158+32.4 to STA 160+61.3

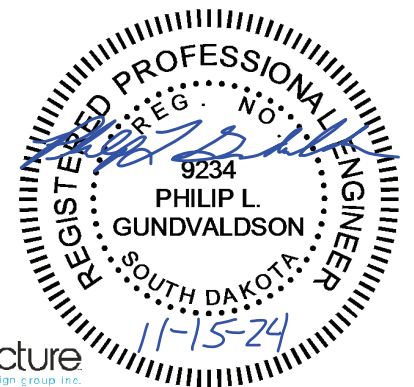
I-229 NB Lanes

STA 160+61.3 to STA 175+00.0



Note:

(1) Remove Shoulder from STA 161+06.3 to STA 175+00.0






IN-PLACE SURFACING SECTIONS

FOR BIDDING PURPOSES ONLY

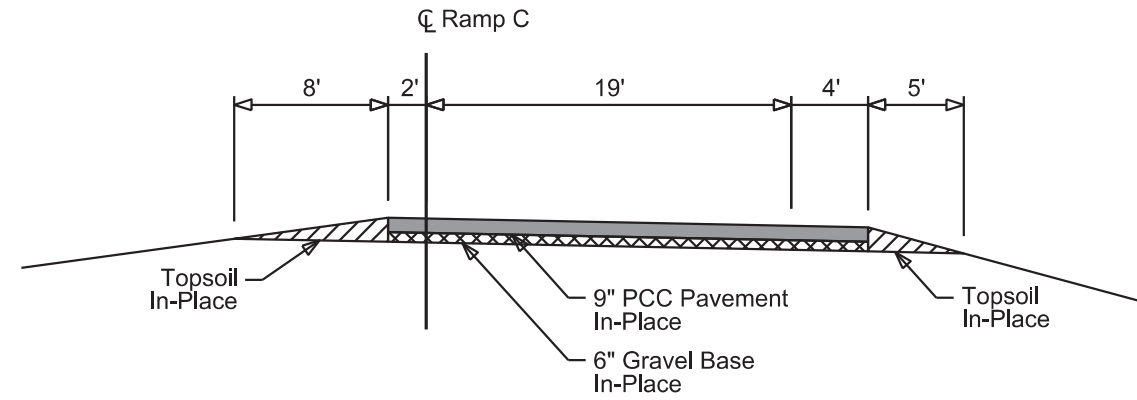
Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	IM-B-CR 2292(101)3	F43	F64
Plotting Date: 10/23/2024			

-  Remove Granular Base Material
-  Unclassified Excavation (Waste Material)
-  PCC Pavement Removal

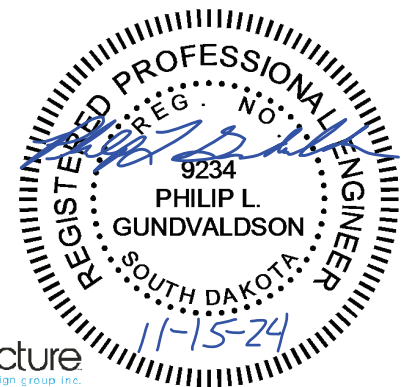
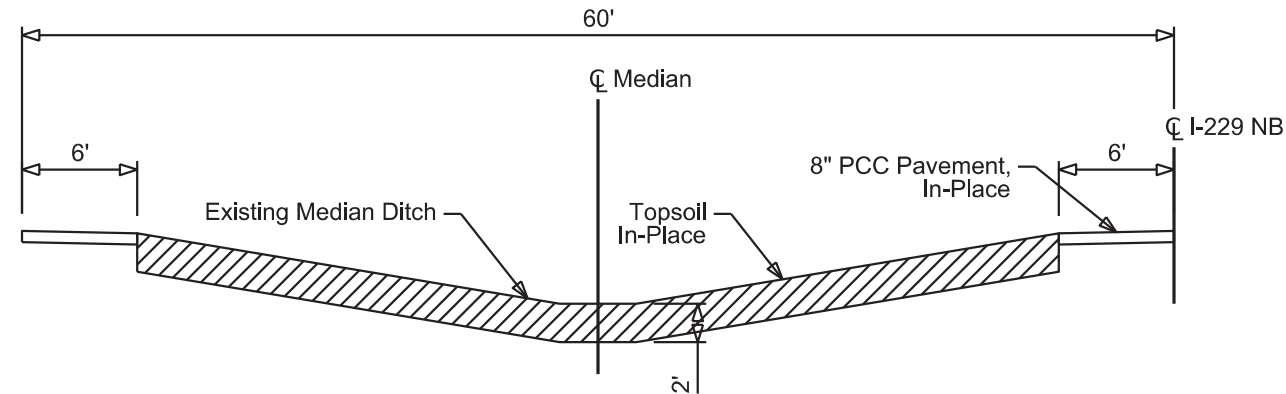
I-229 Ramp C

STA 32+49.7 to STA 36+10.4



I-229 Median Crossover

STA 125+11.9 to STA 130+57.0



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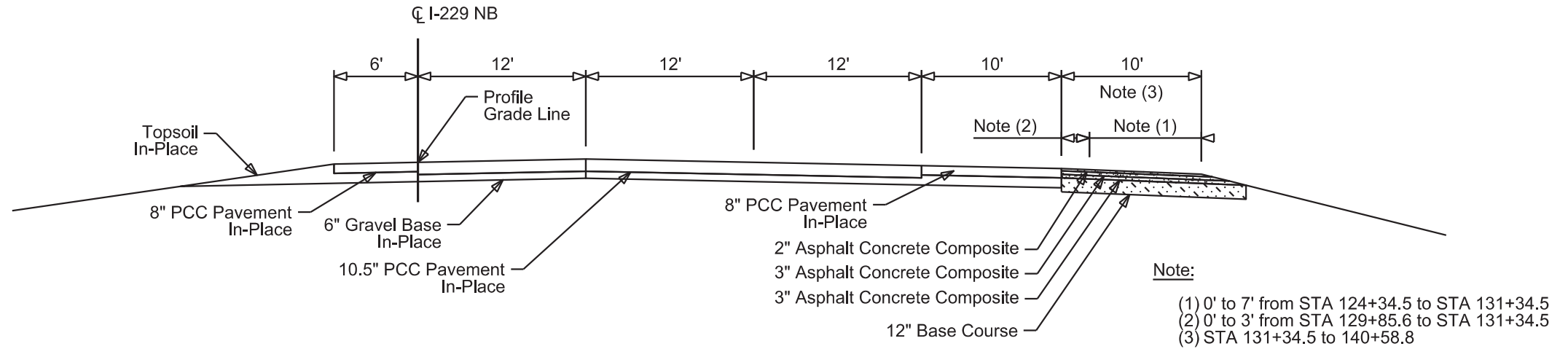
TYPICAL SURFACING SECTIONS FOR BIDDING PURPOSES ONLY

Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SECTION F44	SHEET F64
Plotting Date: 10/23/2024			

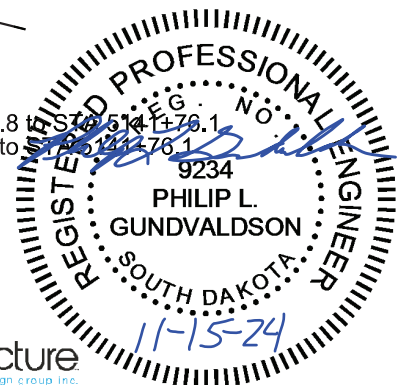
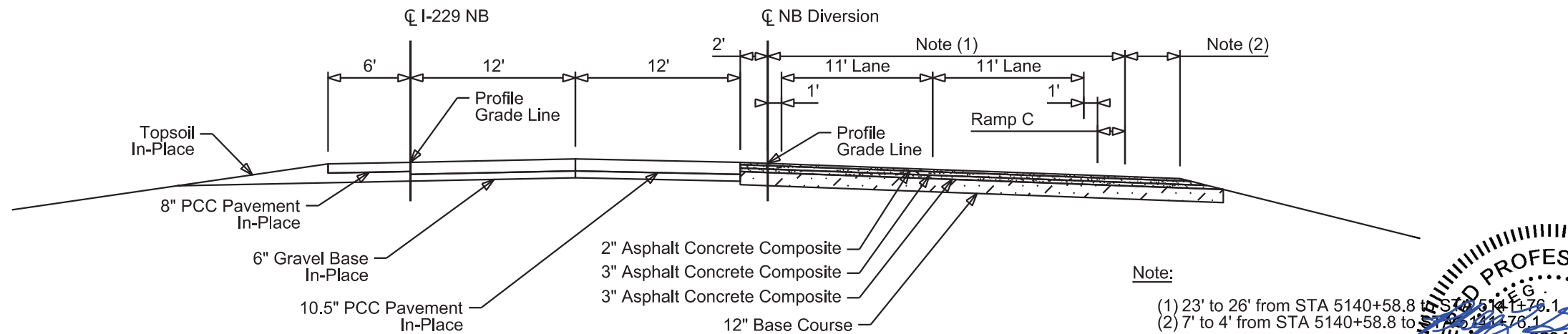
I-229 NB Lanes

STA 124+34.5 to STA 140+58.8 (5140+58.8)



I-229 NB Diversion

STA 5140+58.8 to STA 5141+76.1



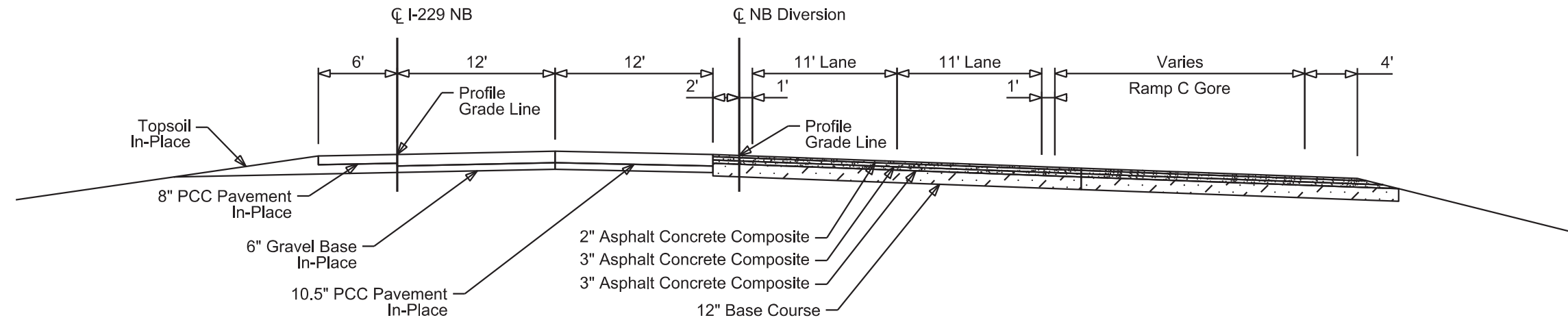
TYPICAL SURFACING SECTIONS FOR BIDDING PURPOSES ONLY

Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	IM-B-CR 2292(101)3	F45	F64
Plotting Date: 10/23/2024			

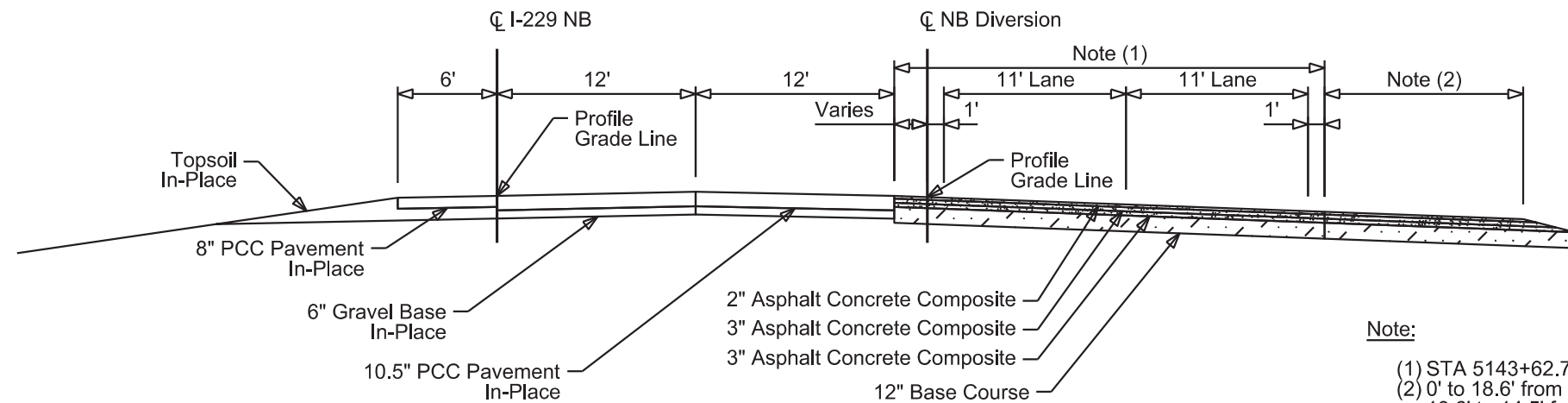
I-229 NB Diversion

STA 5141+76.1 to STA 5143+62.7



I-229 NB Diversion

STA 5143+62.7 to STA 5148+69.1



Note:

- (1) STA 5143+62.7 to STA 5147+55.4
- (2) 0' to 18.6' from STA 5143+62.7 to STA 5144+93.0
18.6' to 14.5' from STA 5144+93.0 to STA 5145+50.6
14.5' from STA 5145+50.6 to STA 5148+69.1



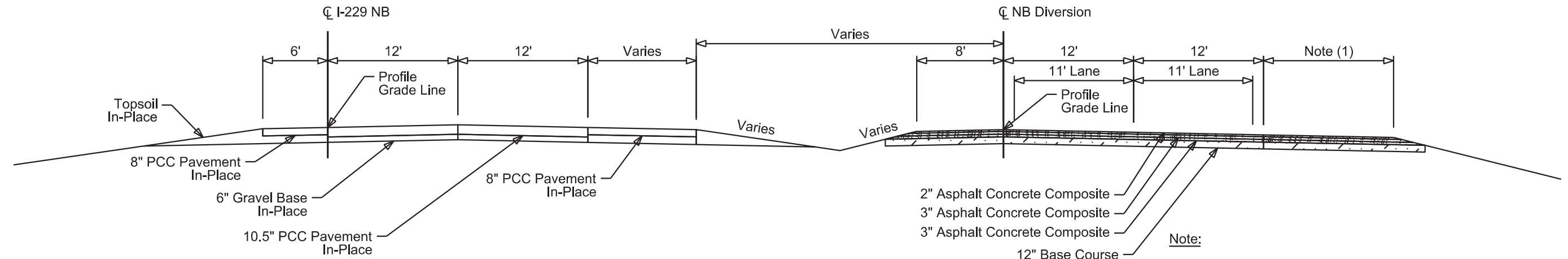
TYPICAL SURFACING SECTIONS FOR BIDDING PURPOSES ONLY

Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	IM-B-CR 2292(101)3	F46	F64
Plotting Date: 10/23/2024			

I-229 NB Diversion

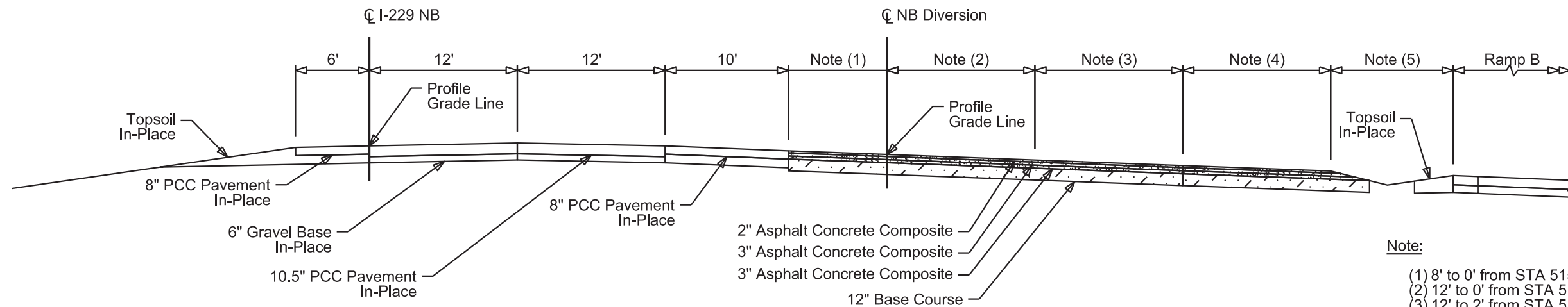
STA 5148+69.1 to STA 5152+33.9
STA 5153+97.1 to STA 5157+56.5



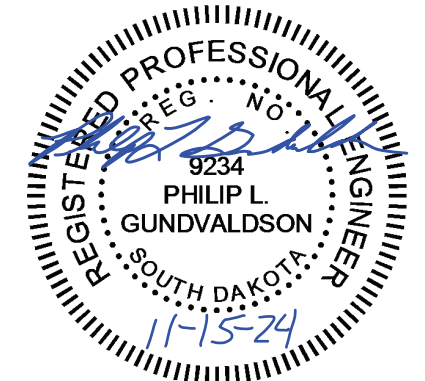
- Note:**
- (1) 14.5' from STA 5148+69.1 to STA 5150+68.0
 - 14.5' to 12.0' from STA 5150+68.0 to STA 5151+42.7
 - 12' from STA 5151+42.7 to 5152+33.9
 - 12' from STA 5153+97.1 to STA 5154+42.9
 - 12' to 14.5' from STA 5154+42.9 to STA 5155+16.9
 - 14.5' from STA 5155+16.9 to STA 5157+56.5

I-229 NB Diversion

STA 5157+56.5 to STA 5160+62.2



- Note:**
- (1) 8' to 0' from STA 5157+56.5 to STA 5158+70.7
 - (2) 12' to 0' from STA 5158+70.7 to STA 5160+62.2
 - (3) 12' to 2' from STA 5159+63.9 to STA 5160+62.2
 - (4) 14.5' from STA 5157+56.5 to STA 5158+81.0
 - 14.5' to 0' from STA 5158+81.0 to STA 5159+63.9
 - (5) 32.5' to 0' from STA 5157+56.5 to STA 5158+81.0



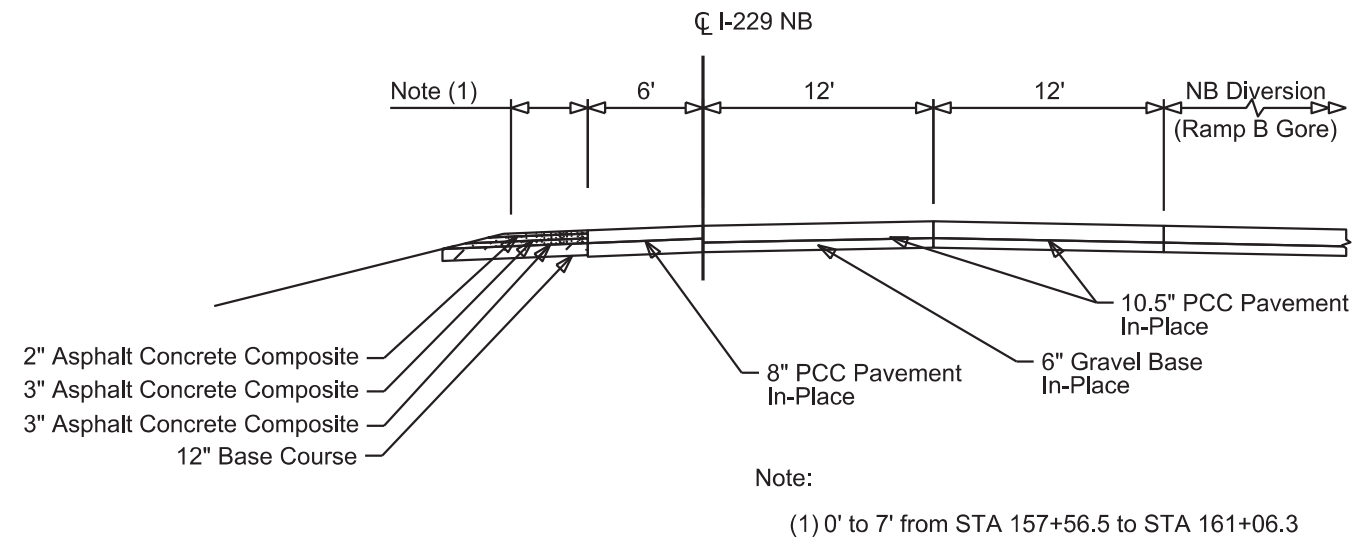
TYPICAL SURFACING SECTIONS FOR BIDDING PURPOSES ONLY

Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	IM-B-CR 2292(101)3	F47	F64
Plotting Date: 10/23/2024			

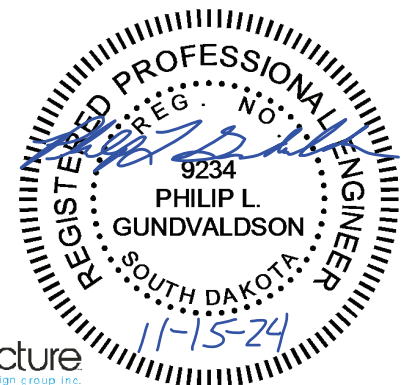
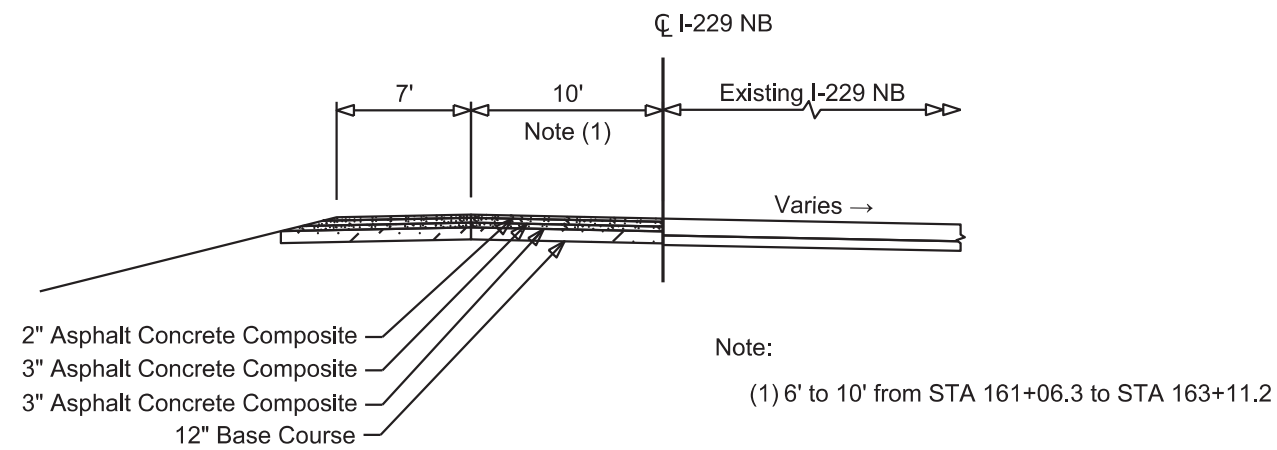
I-229 NB Lanes

STA 157+56.5 to STA 161+06.3



I-229 NB Lanes

STA 161+06.3 to STA 175+00.0



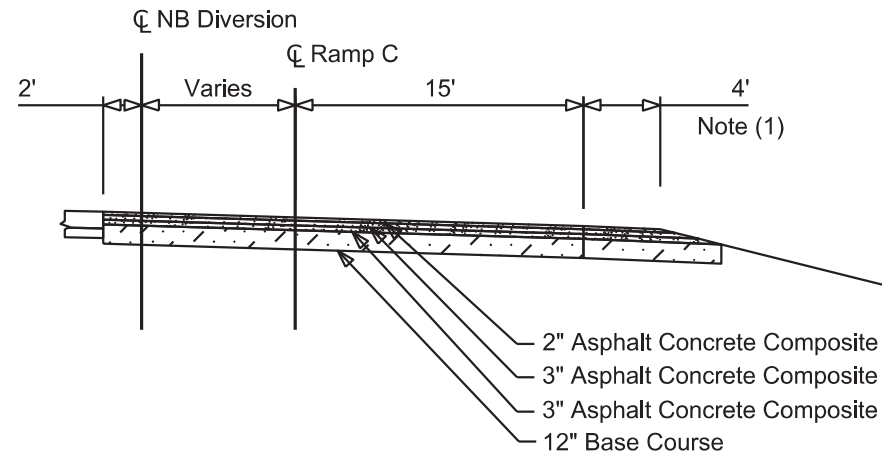
TYPICAL SURFACING SECTIONS FOR BIDDING PURPOSES ONLY

Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	IM-B-CR 2292(101)3	F48	F64
Plotting Date: 10/23/2024			

I-229 Ramp C

STA 30+00.0 to STA 33+04.3

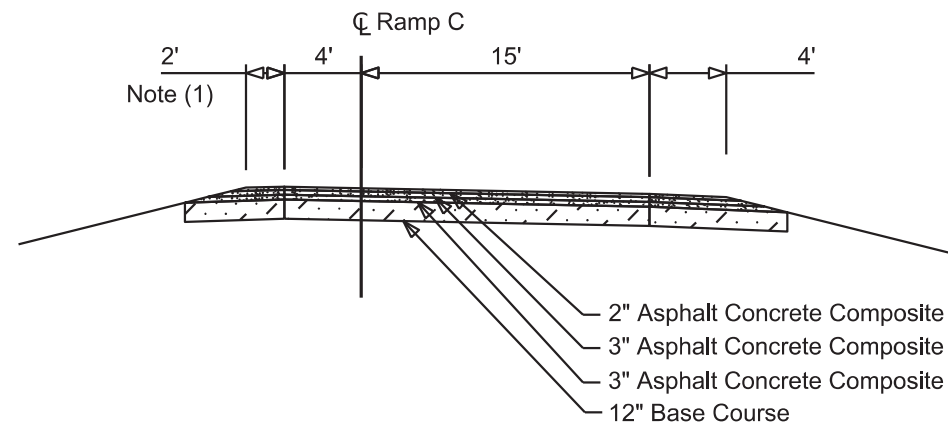


Note:

(1) 7' to 4' from STA 30+00.0 to STA 31+18.4

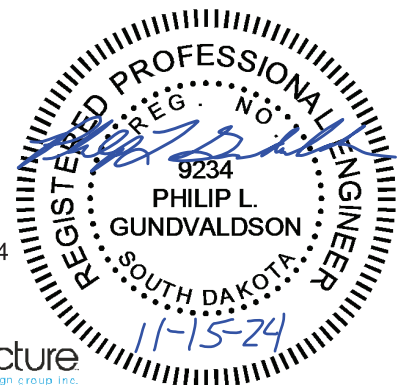
I-229 Ramp C

STA 33+04.3 to STA 36+10.4



Note:

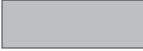

(1) STA 33+97.1 to STA 36+10.4

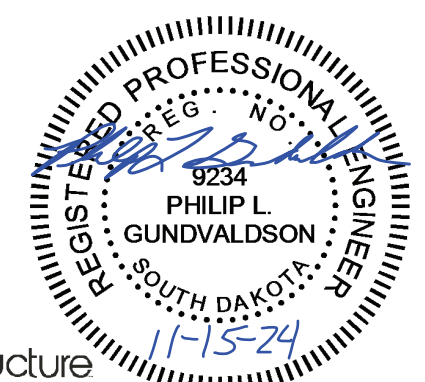
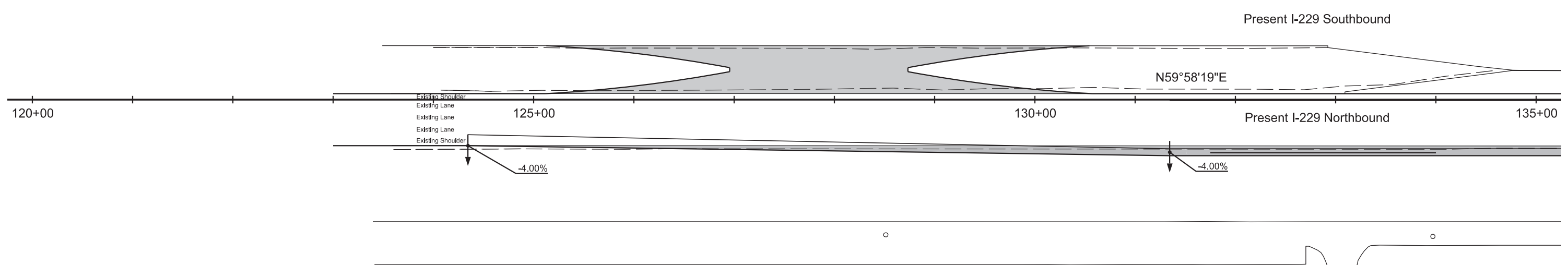
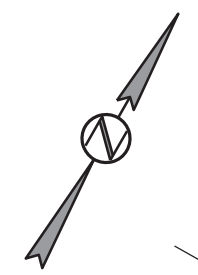
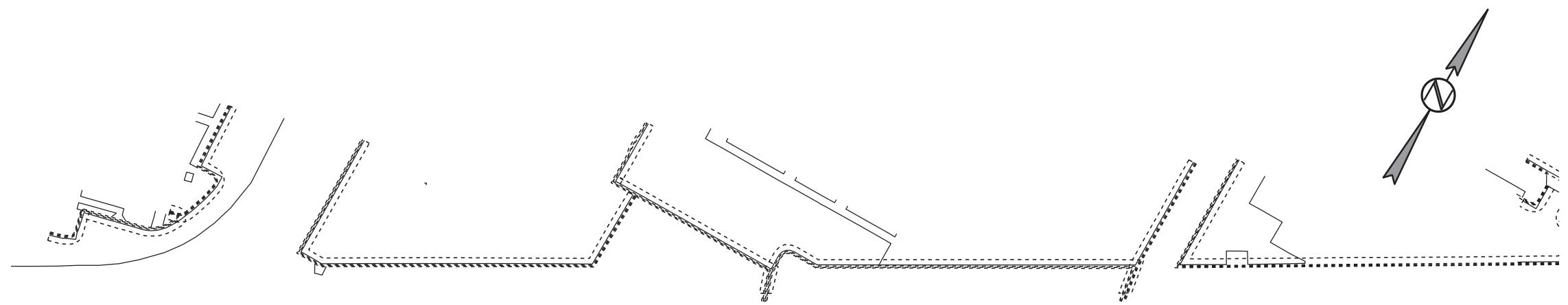


PAVEMENT SLOPE LAYOUT FOR BIDDING PURPOSES ONLY

Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SECTION F49	SHEET F64
Plotting Date: 10/23/2024			

-  8" Asphalt Surfacing
-  Pavement Slope Transition

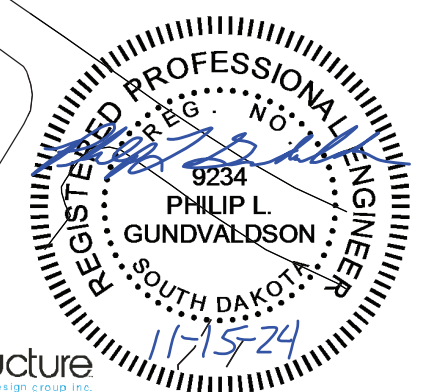
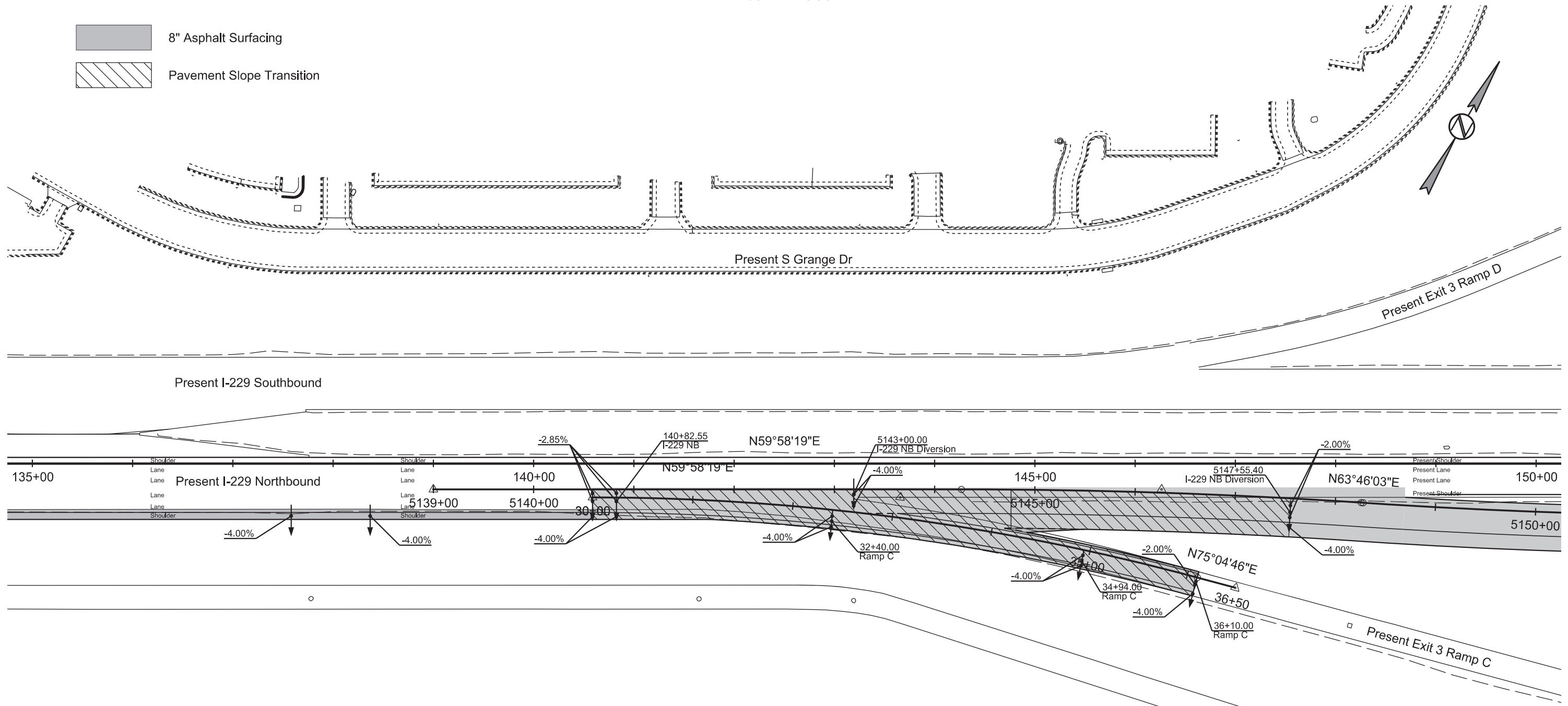


PAVEMENT SLOPE LAYOUT FOR BIDDING PURPOSES ONLY

Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	IM-B-CR 2292(101)3	F50	F64
Plotting Date: 10/23/2024			



8" Asphalt Surfacing
 Pavement Slope Transition

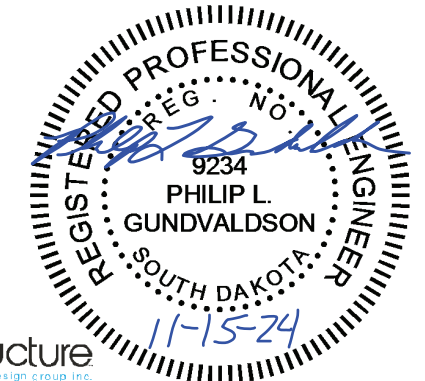
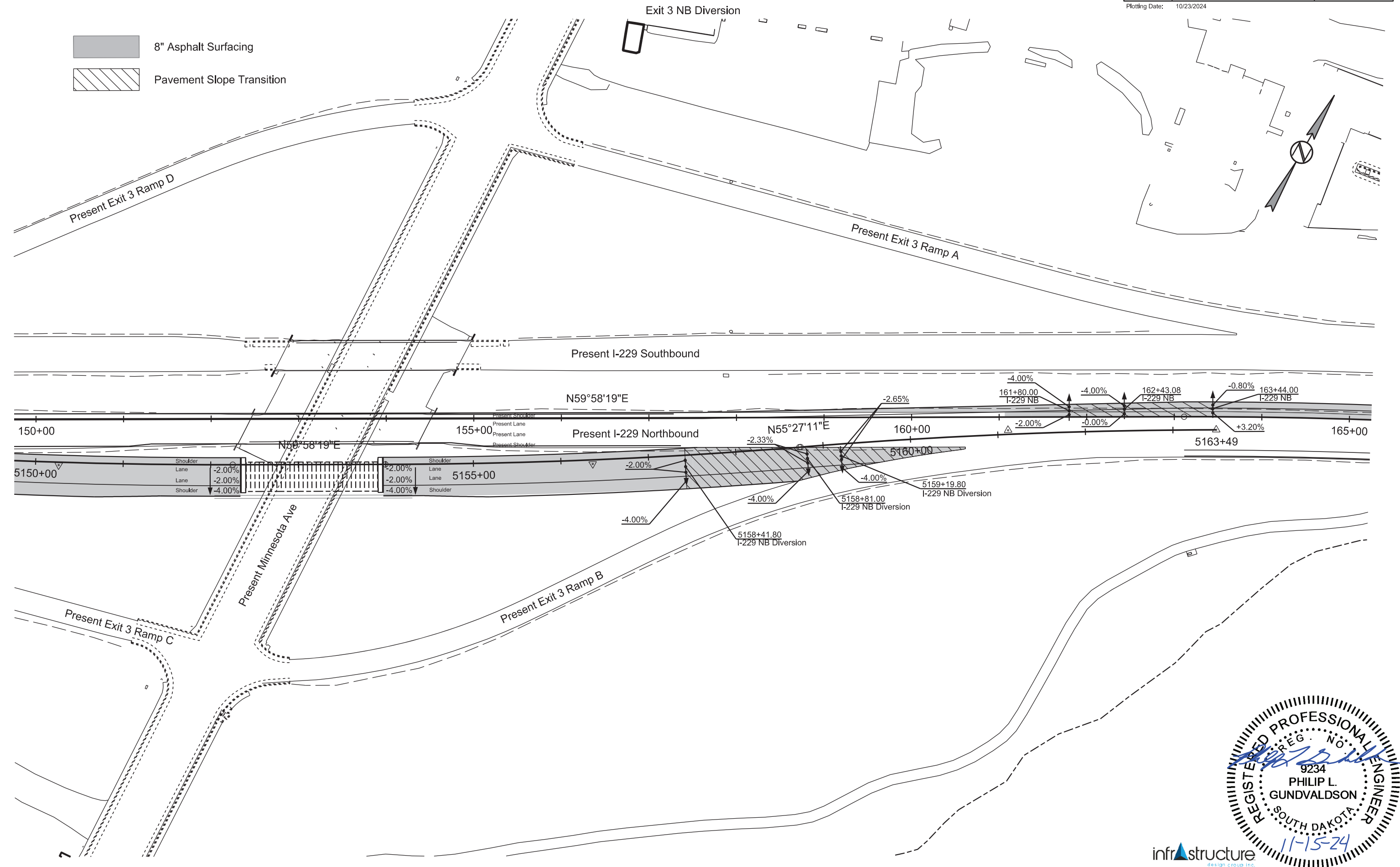


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PAVEMENT SLOPE LAYOUT FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SECTION F51	SHEET F64
Plotting Date: 10/23/2024			

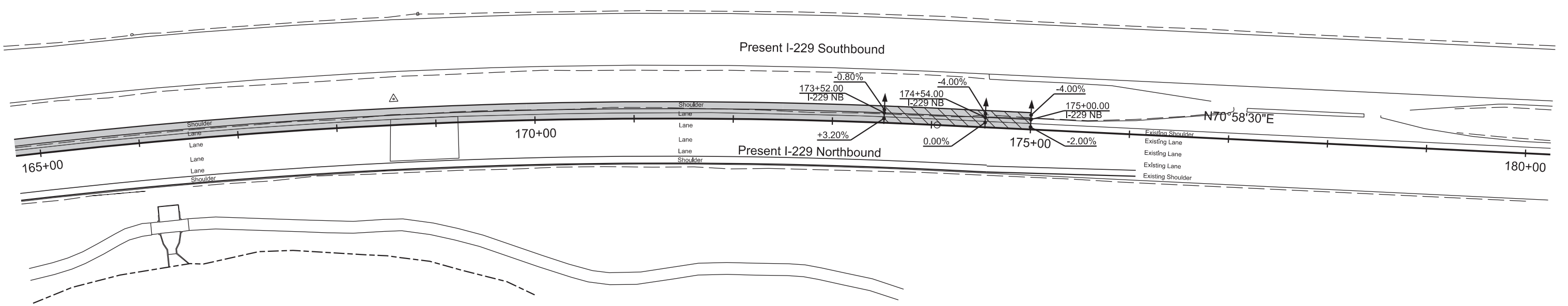
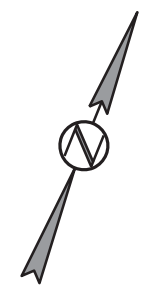
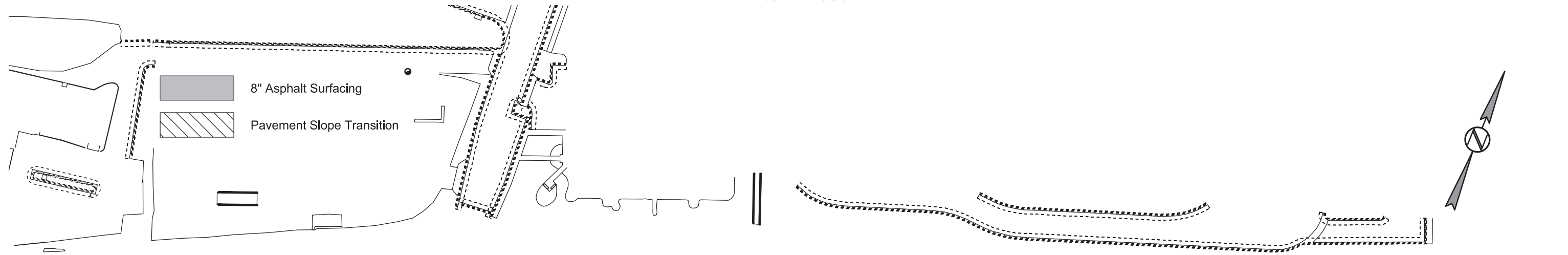
-  8" Asphalt Surfacing
-  Pavement Slope Transition



PAVEMENT SLOPE LAYOUT FOR BIDDING PURPOSES ONLY

Exit 3 NB Diversion

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SECTION F52	SHEET F64
Plotting Date: 10/23/2024			



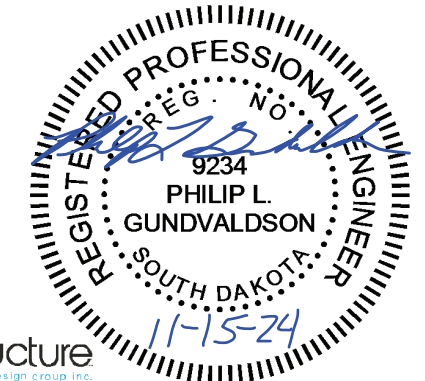
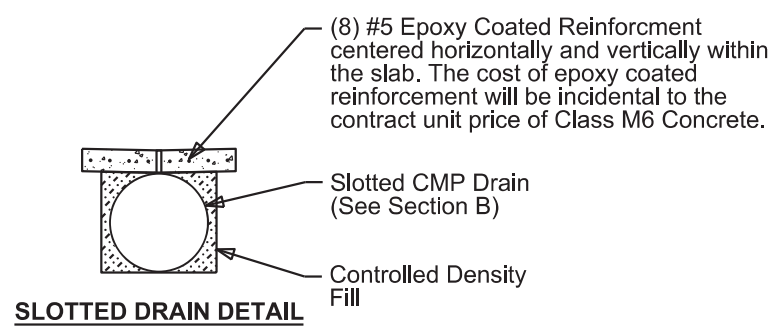
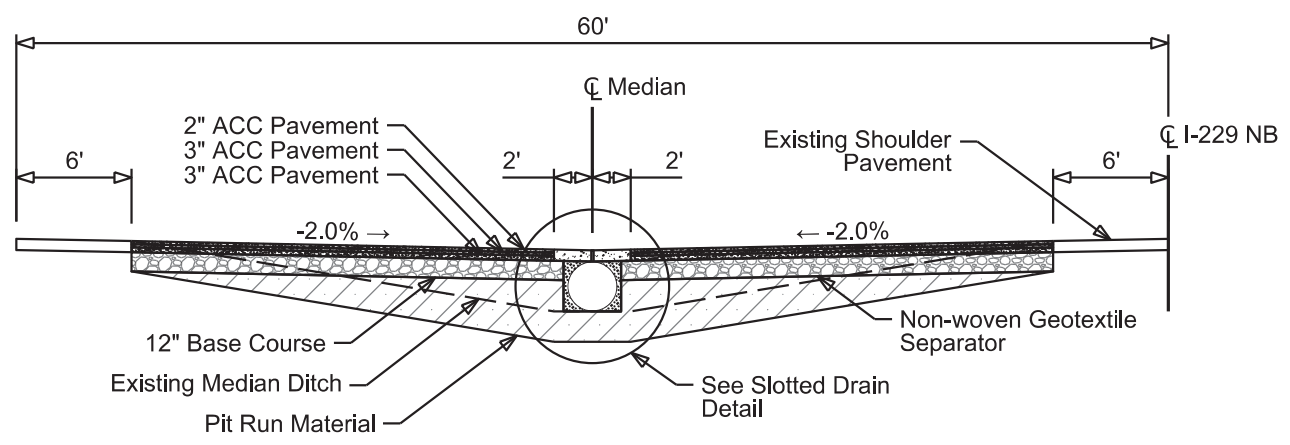
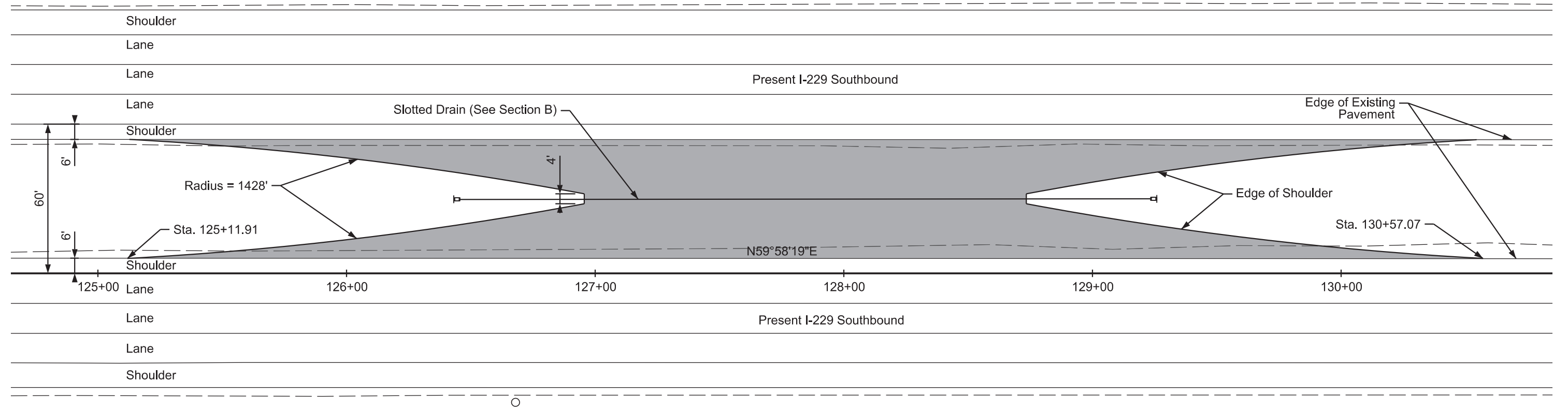
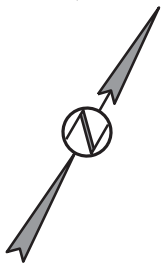
MEDIAN CROSSOVER FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM-B-CR 2292(101)3	SECTION F53	SHEET F64
Plotting Date: 10/23/2024			

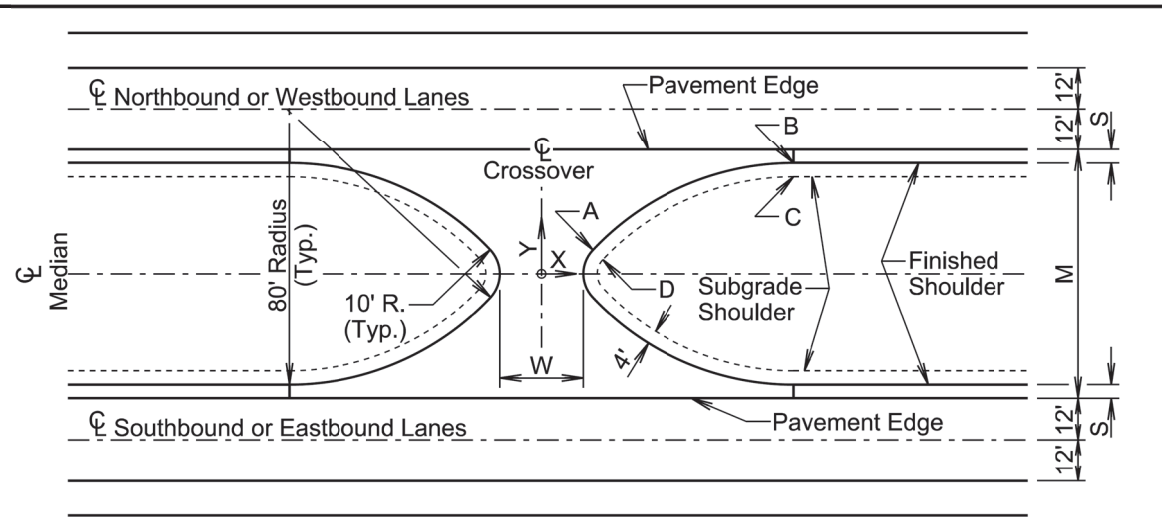
Exit 2-3



8" Asphalt Surfacing



infrastucture design group inc.



PLAN VIEW

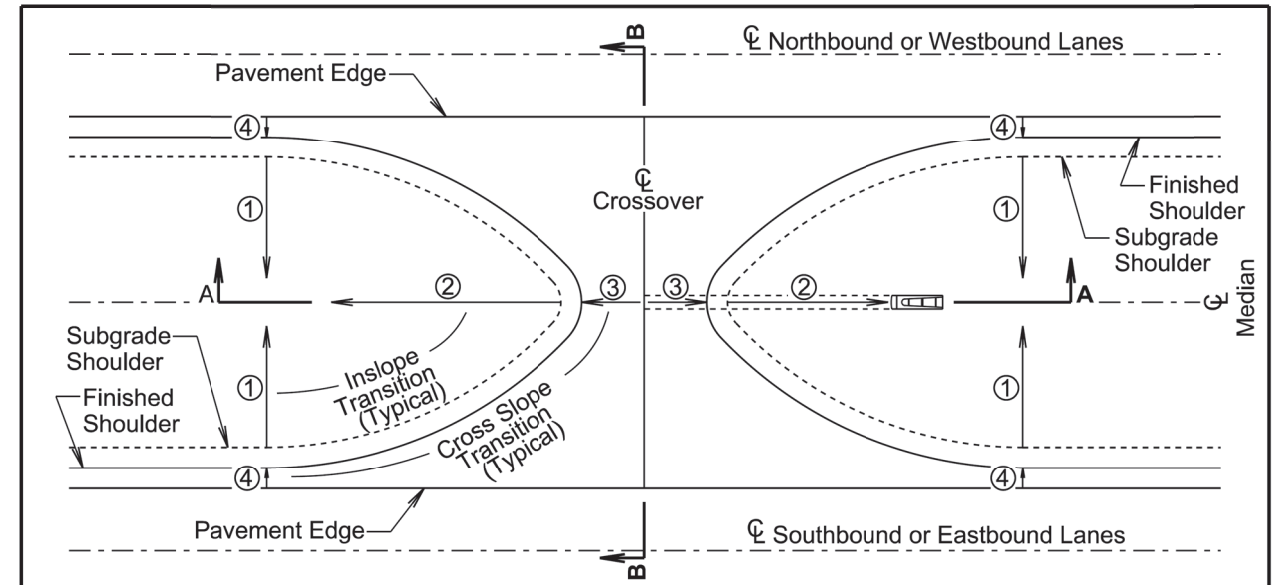
S = Finished Shoulder Width
M = Median Width
W = Finished Median Crossover Width

PUBLIC ACCESS MEDIAN CROSSOVER LAYOUT INFORMATION										
M (Ft)	S (Ft)	W (Ft)	Point A		Point B		Point C		Point D	
			X (Ft)	Y (Ft)	X (Ft)	Y (Ft)	X (Ft)	Y (Ft)	X (Ft)	Y (Ft)
60	4	24	15.7	7.7	66.5	26.0	66.5	22.0	18.2	4.7
60	4	40	23.7	7.7	74.5	26.0	74.5	22.0	26.2	4.7
60	6	24	16.0	8.0	64.0	24.0	64.0	20.0	18.4	4.8
60	6	40	24.0	8.0	72.0	24.0	72.0	20.0	26.4	4.8
66	4	24	15.2	7.3	70.0	29.0	70.0	25.0	17.9	4.4
66	4	40	23.2	7.3	78.0	29.0	78.0	25.0	25.9	4.4
66	6	24	15.5	7.6	67.7	27.0	67.7	23.0	18.1	4.6
66	6	40	23.5	7.6	75.7	27.0	75.7	23.0	26.1	4.6
72	4	24	14.8	6.9	73.0	32.0	73.0	28.0	17.6	4.1
72	4	40	22.8	6.9	81.0	32.0	81.0	28.0	25.6	4.1
72	6	24	15.0	7.1	71.0	30.0	71.0	26.0	17.8	4.3
72	6	40	23.0	7.1	79.0	30.0	79.0	26.0	25.8	4.3
80	4	24	14.2	6.3	76.4	36.0	76.4	32.0	17.3	3.8
80	4	40	22.2	6.3	84.4	36.0	84.4	32.0	25.3	3.8
80	6	24	14.5	6.6	74.8	34.0	74.8	30.0	17.5	4.0
80	6	40	22.5	6.6	82.8	34.0	82.8	30.0	25.5	4.0

The dimensions provided for "X" and "Y" begin from the intersection of the median centerline and the crossover centerline.

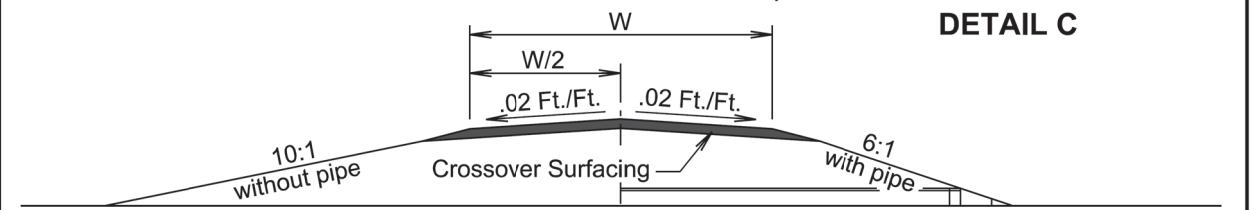
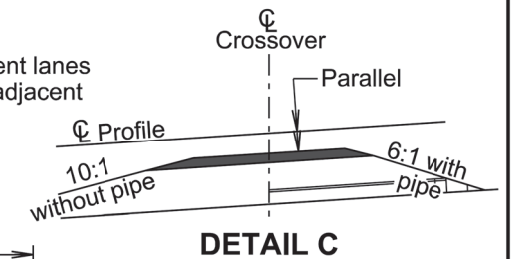
September 14, 2018

Published Date: 2025	S D D O T	PUBLIC ACCESS MEDIAN CROSSOVER	PLATE NUMBER 120.03
			Sheet 1 of 2

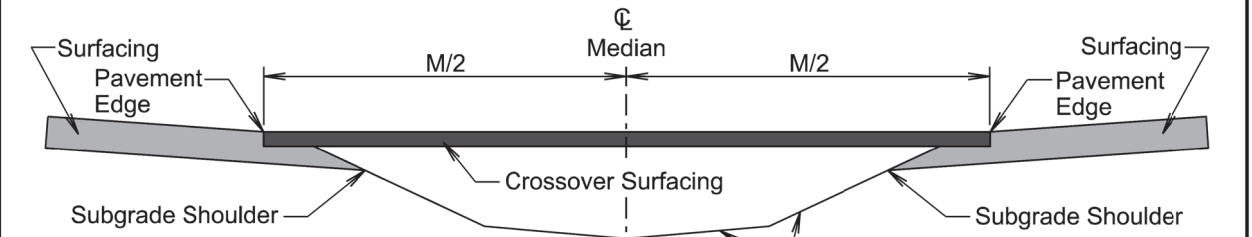


PLAN VIEW

- ① Inslope as specified on the typical sections or cross sections
- ② 10:1 Inslope without pipe, 6:1 with pipe
- ③ Cross slope will be .02 Ft./Ft. when centerline profiles of adjacent lanes are at less than 2% grade. When the centerline profiles of the adjacent lanes are 2% and greater the cross slope will be parallel to the profile or as approved by the Engineer. (See Detail C)
- ④ Cross slope as specified on the typical sections



SECTION A-A



SECTION B-B

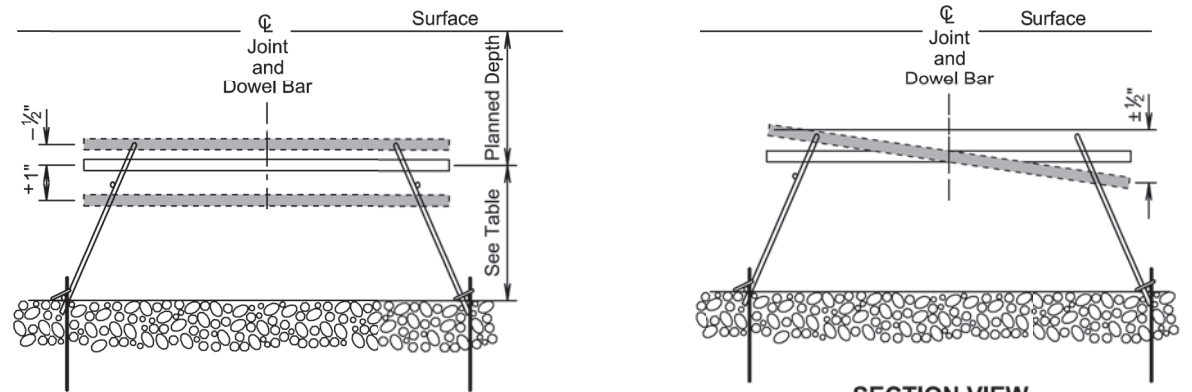
The ditch section shown is only for illustrative purpose.

GENERAL NOTE:

The quantities of materials necessary for construction of the public access median crossover are as provided in the plans and will be paid for at their respective contract unit prices for the various materials used.

September 14, 2018

Published Date: 2025	S D D O T	PUBLIC ACCESS MEDIAN CROSSOVER	PLATE NUMBER 120.03
			Sheet 2 of 2

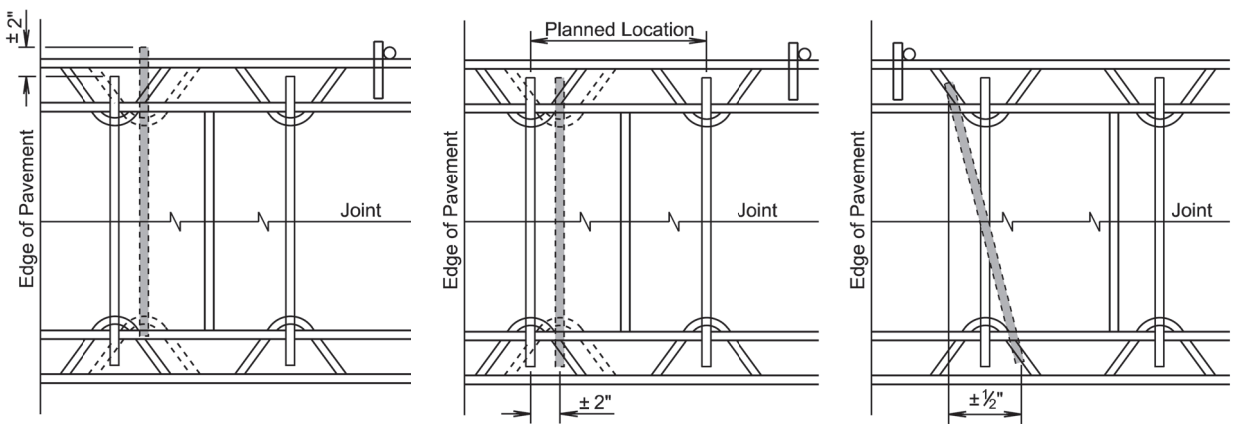


SECTION VIEW VERTICAL TRANSLATION

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

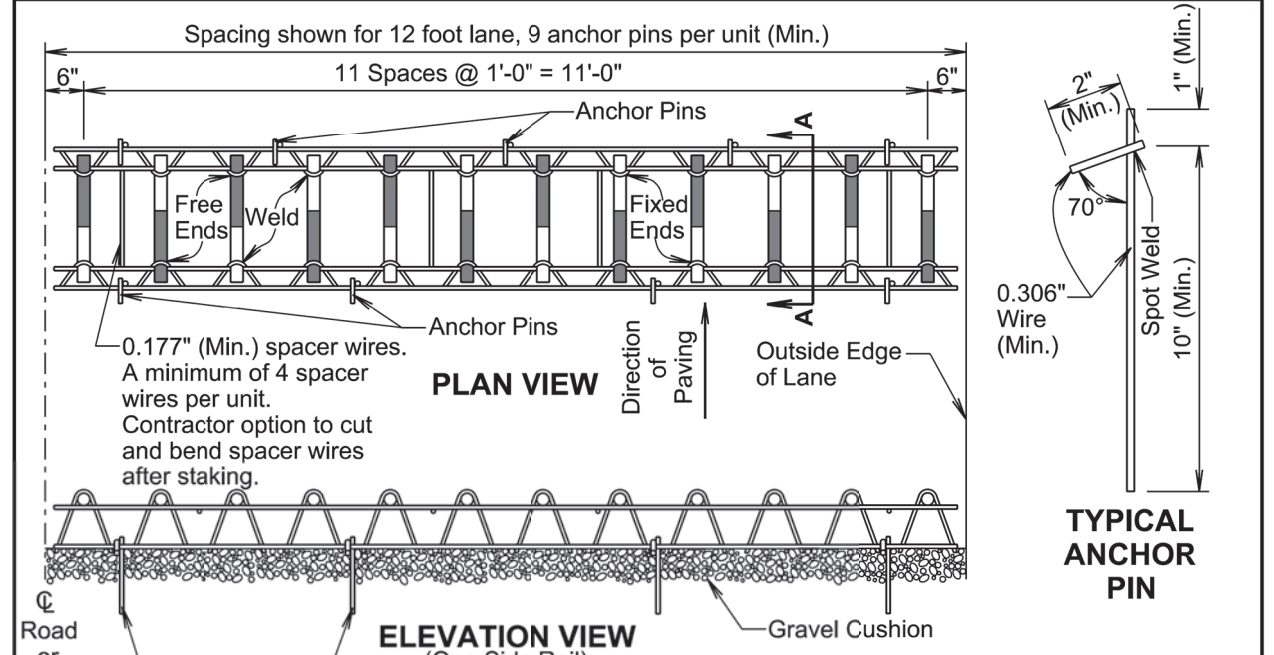
PAVEMENT THICKNESS	EPOXY COATED DOWEL BAR SIZE	HEIGHT TO CENTER
7" to 7 1/2"	1" x 18"	3.0"
8" to 10"	1 1/4" x 18"	4.0"
10 1/2" to 13"	1 1/2" x 18"	5.0"

GENERAL NOTE:

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

November 19, 2022

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

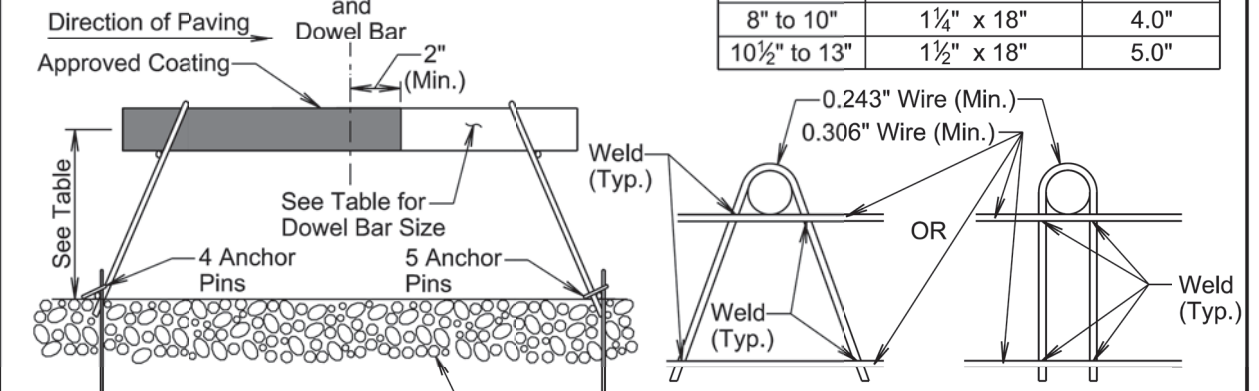


PLAN VIEW

ELEVATION VIEW (One Side Rail)

TYPICAL ANCHOR PIN

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"



VIEW A-A

SIDE RAIL DETAIL OPTIONS

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

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

Plot Scale - 1:200

Plotted From - ngiersvik

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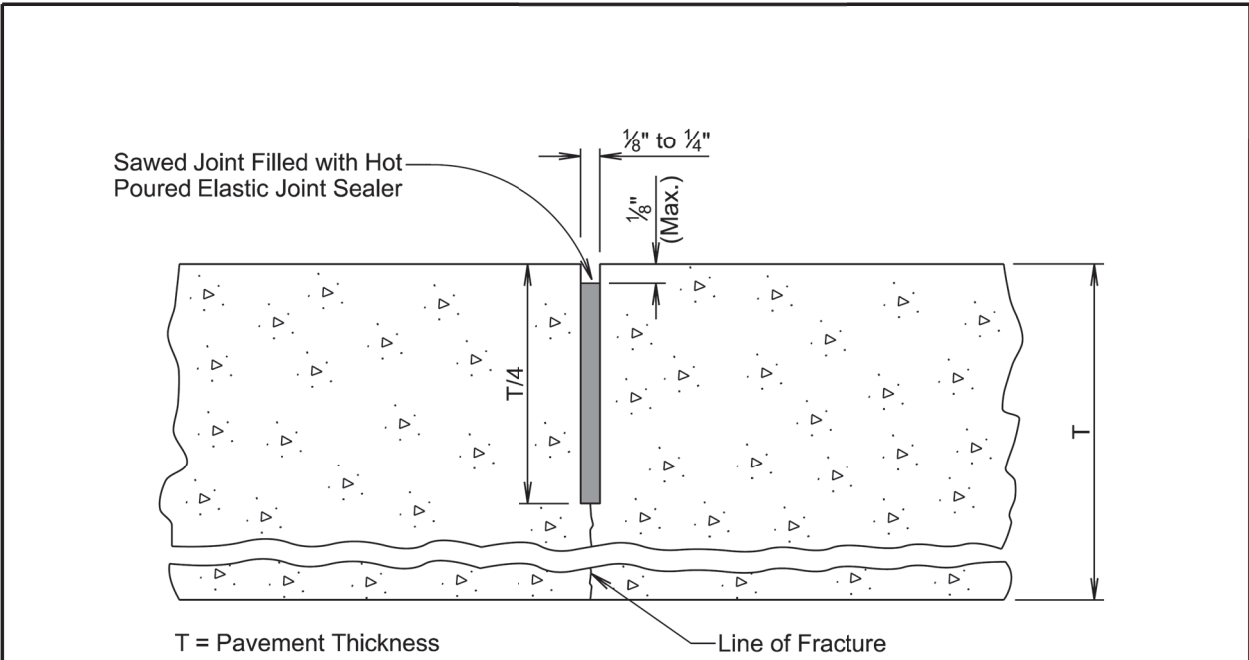
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F56	F64

Plotting Date: 11/15/2024

Plot Scale - 1:200

Plotted From - ngiersvik



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 1/4 of the thickness of the pavement.

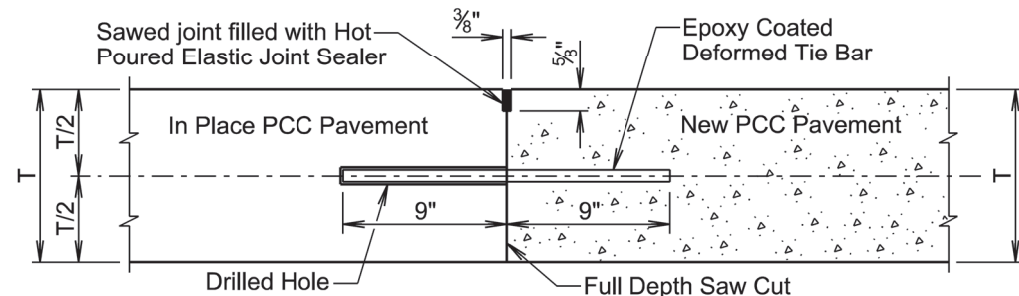
All hot poured elastic joint sealer material spilled on the surface of the concrete pavement will be removed as soon as the material has cooled. The extent of removal of material will be to the satisfaction of the Engineer. All costs for removal of the spilled joint sealer material will be borne by the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

November 19, 2022

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

File - ...105HN_F-plates.dgn

**DETAIL A
TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS**



T = In Place PCC Pavement and New PCC Pavement Thickness

GENERAL NOTES:

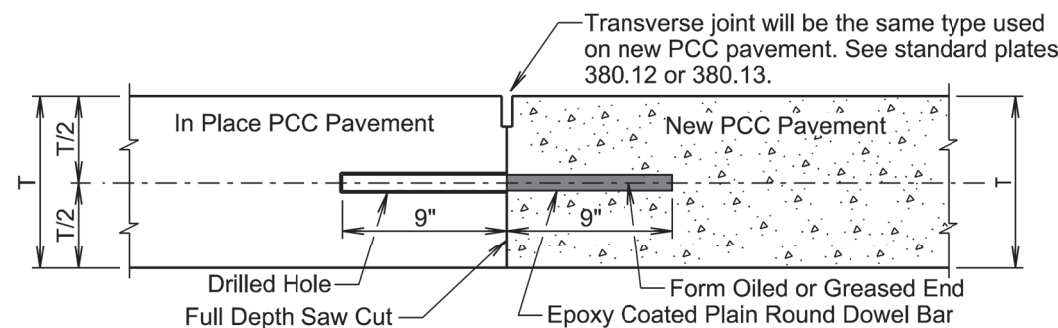
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

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**



Transverse joint will be the same type used on new PCC pavement. See standard plates 380.12 or 380.13.

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 or current project.

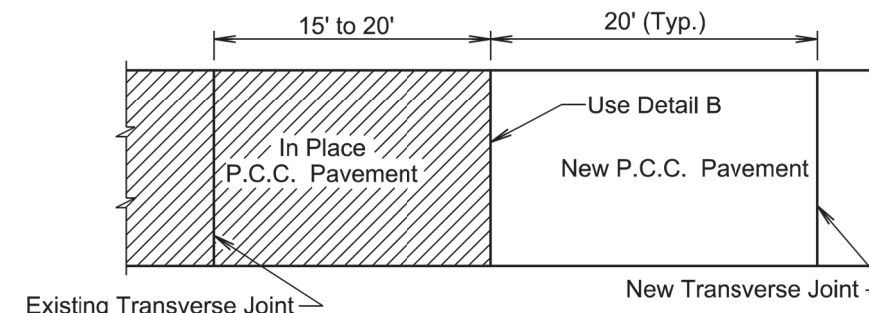
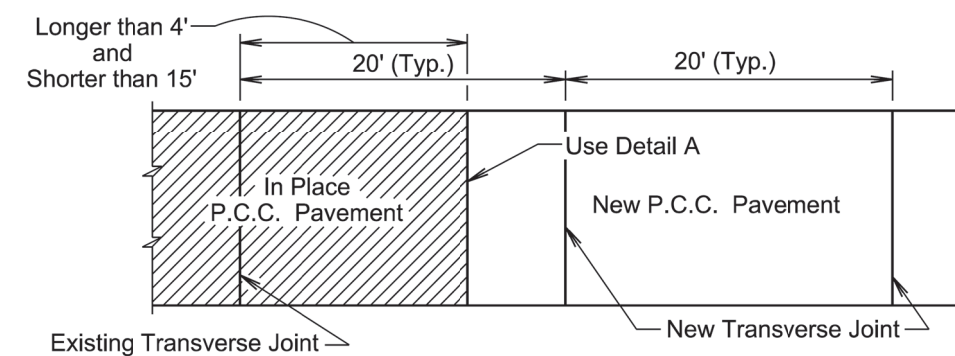
See sheet 2 of 2 of this standard plate to determine if Detail B will be used.

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.

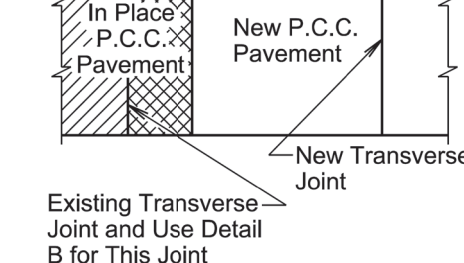
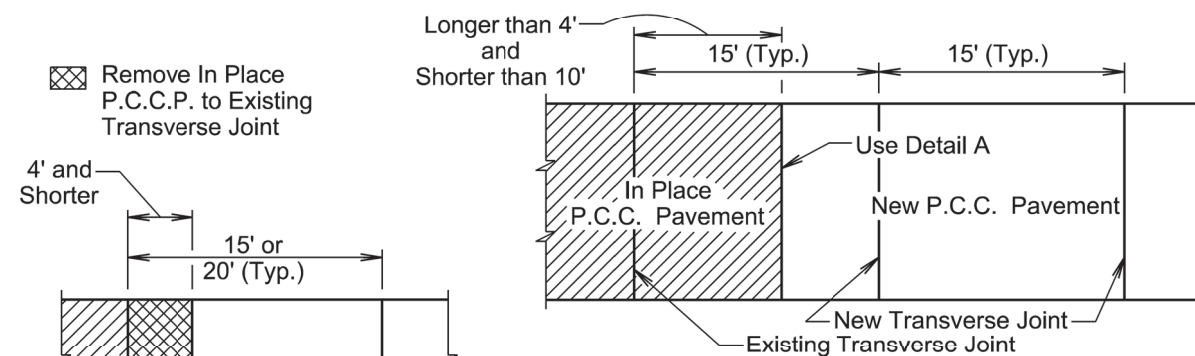
The epoxy coated plain round dowel bar size, number, and spacing will be the same as detailed on the corresponding dowel bar assembly standard plate (380.04, 380.05, 380.06, or 380.07). The epoxy coated plain round dowel bars will be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

January 22, 2023

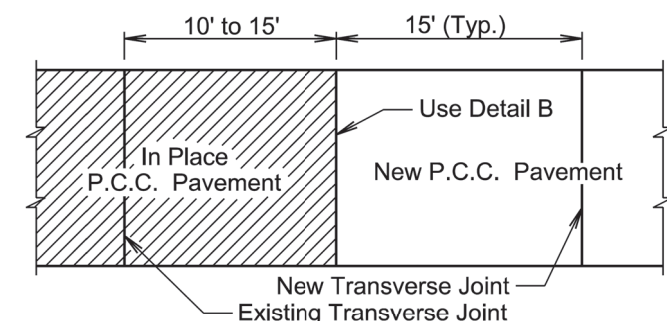
<i>Published Date: 2025</i>	S D D O T	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER 380.15
			Sheet 1 of 2



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



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

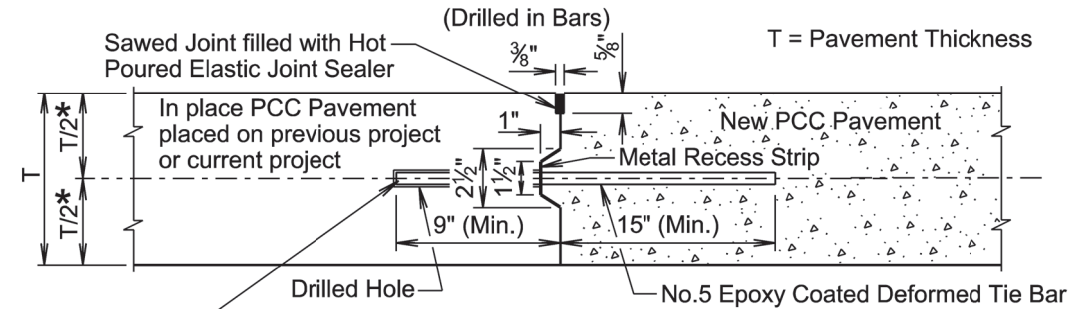


PLAN VIEW
(For typical transverse joint spacing of 15' on the current project)

January 22, 2023

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

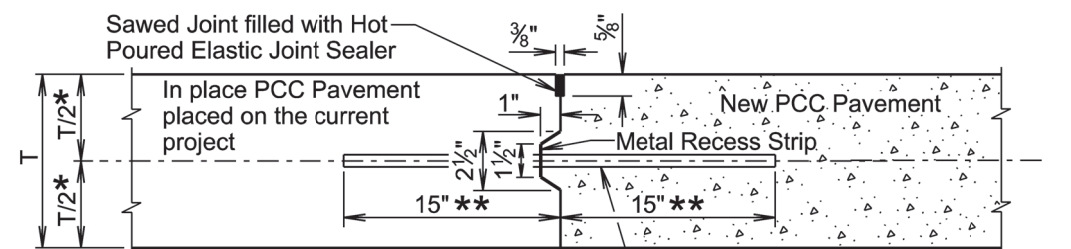
LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS



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:

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.

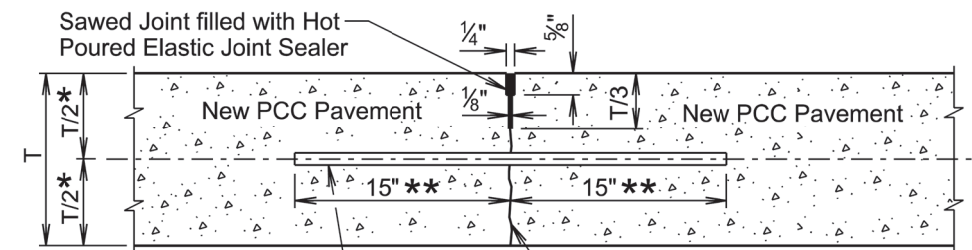
** The transverse placement (side shift) tolerance will be ± 3 inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2025	S D D O T	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

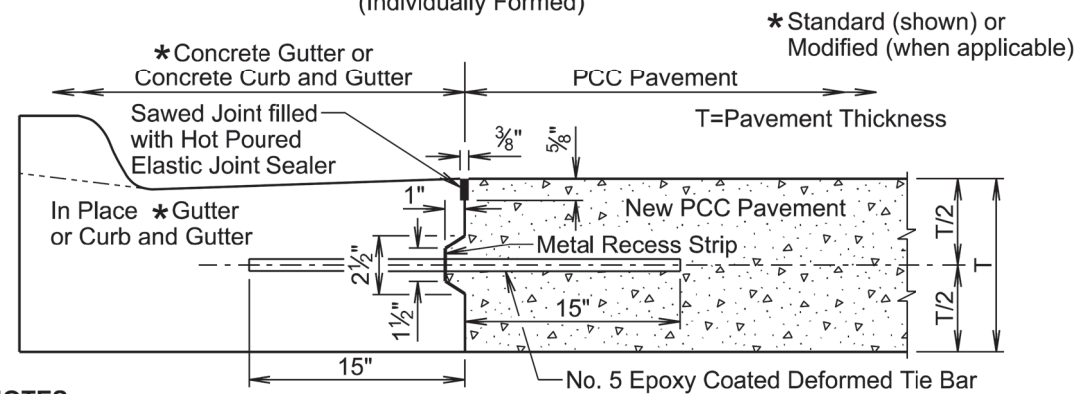
Published Date: 2025	S D D O T	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 2 of 2

1:200

Plotted From: ngiers\k

File - ...105\HN_F-plates.dgn

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.

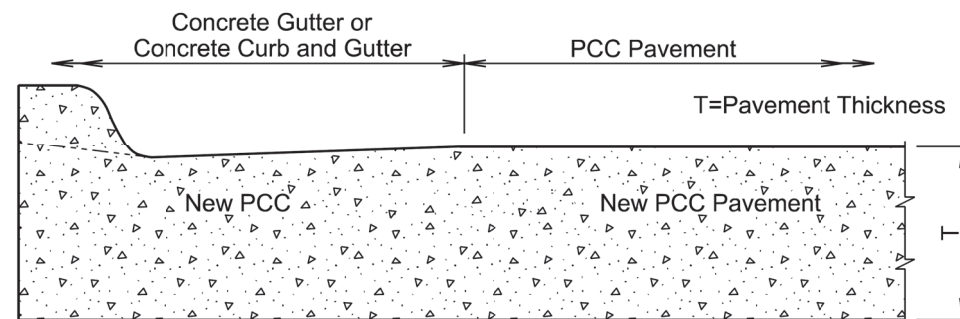
The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip will be used. When concrete pavement is slip formed, a metal recess strip is not required.

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.

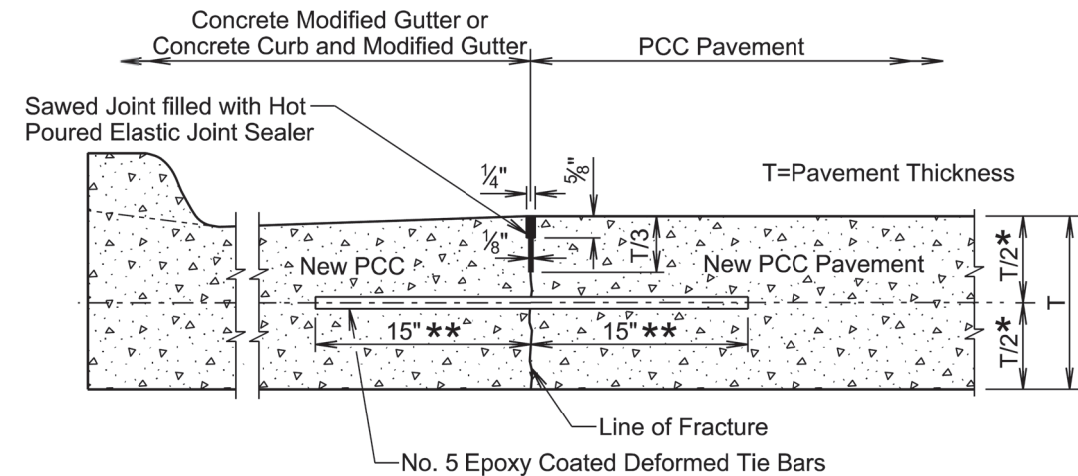
The gutter or curb and gutter will be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter will be sawed and sealed same as the transverse contraction joints in the PCC pavement.

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	SD DOT	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 ± 3 inches when measured perpendicular to the longitudinal joint line.

March 31, 2024

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

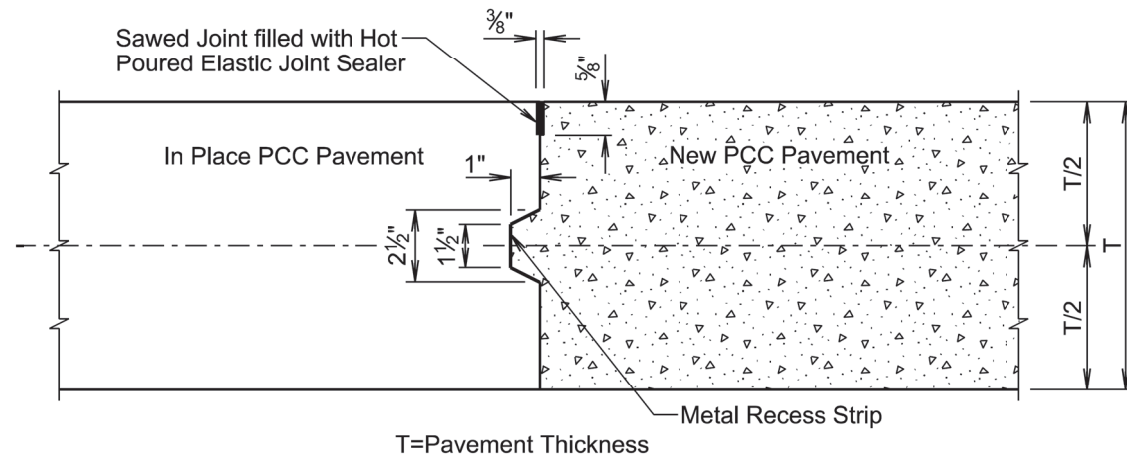
Plot Scale - 1:200

Plotted From - ngalsvik

File - ...105HN_F-plates.dgn

Plot Scale - 1:200

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS

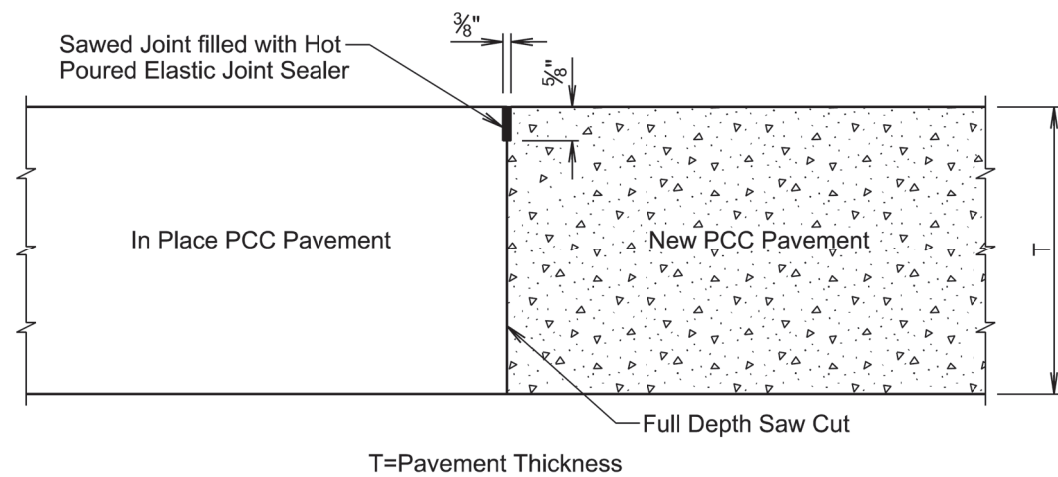


GENERAL NOTES:

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



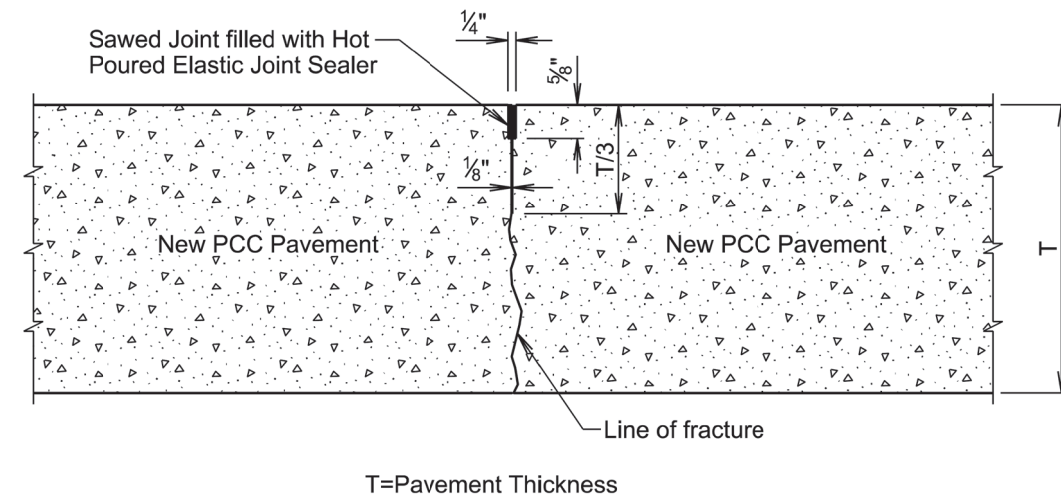
GENERAL NOTE:

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	PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS	PLATE NUMBER 380.22
			Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITHOUT TIE BARS



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

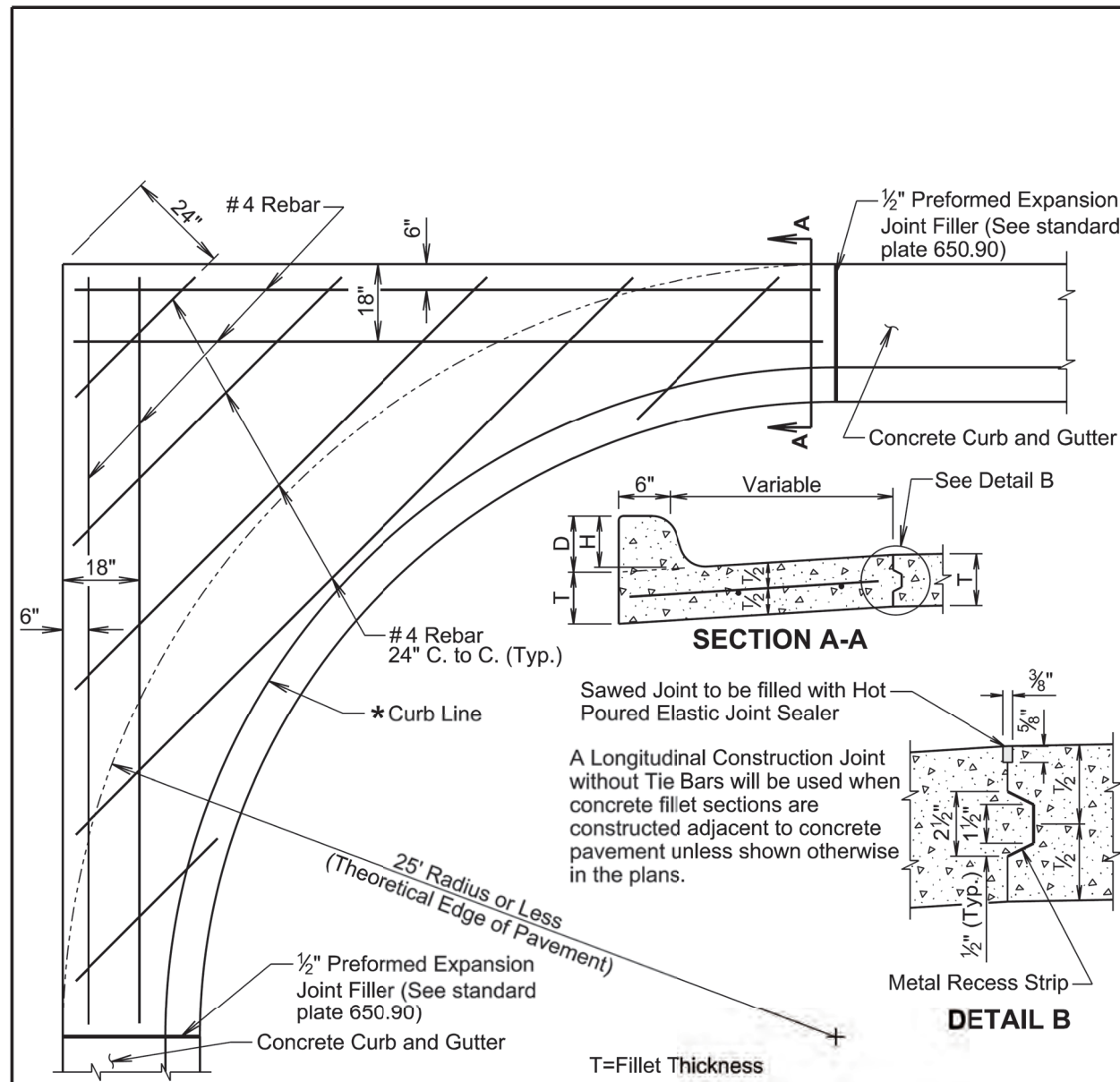
<i>Published Date: 2025</i>	S D D O T	PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS	PLATE NUMBER 380.22
			Sheet 2 of 2

Plotted From - ngiersvik

File - ...105HN_F-plates.dgn

Plot Scale - 1:200

Plotted From - ngiersvik



* If a curb ramp is constructed adjacent to a PCC fillet section, the curb will need to be modified. Refer to the corresponding curb ramp standard plate or other special details in the plans for modification of the PCC fillet section.

March 31, 2024

Published Date: 2025	S D D O T	PCC FILLET SECTION WITH TYPE B CURB AND GUTTER	PLATE NUMBER 380.30
			Sheet 1 of 2

GENERAL NOTES:

For fillets with irregular shapes or bump outs:

- 1) The 6" and 18" offset #4 rebar will be included on any side next to pavement or driveways (not along the Curb and Gutter).
- 2) All remaining area will have #4 rebar spaced 24" center to center in a square pattern.

Dimensions D, H, and T will conform to those shown on the appropriate curb and gutter standard plate.

All rebar will be in conformance with Sections 480 and 1010 of the Specifications. All rebar will have a minimum of 3 inches of clear cover.

Class M6 Concrete will be used in construction of the fillets.

The concrete curb will be monolithic with the concrete fillet. No separate payment for this curb will be made as the curb is considered a part of the fillet.

Joints will be constructed at 10-foot intervals except when fillets are constructed adjacent to PCC Pavement. If there is adjacent PCC Pavement the joints will be extended from edge of pavement through the fillet section as directed by the Engineer.

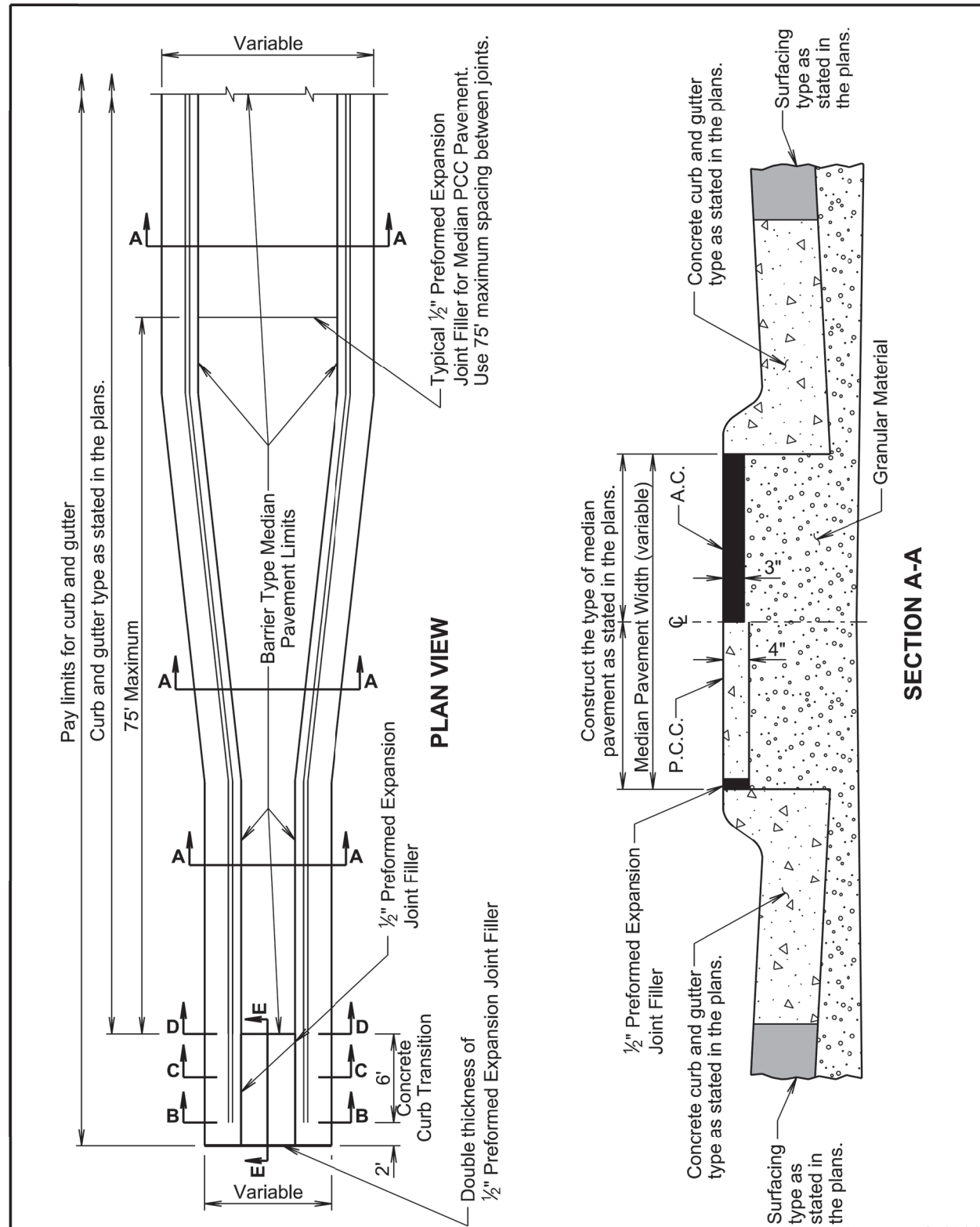
The cost for all materials, labor, and incidentals necessary to construct the PCC fillet section with curb and gutter will be incidental to the contract unit price per square yard for the corresponding PCC fillet section contract item.

March 31, 2024

Published Date: 2025	S D D O T	PCC FILLET SECTION WITH TYPE B CURB AND GUTTER	PLATE NUMBER 380.30
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Plot Scale - 1:200



November 19, 2022

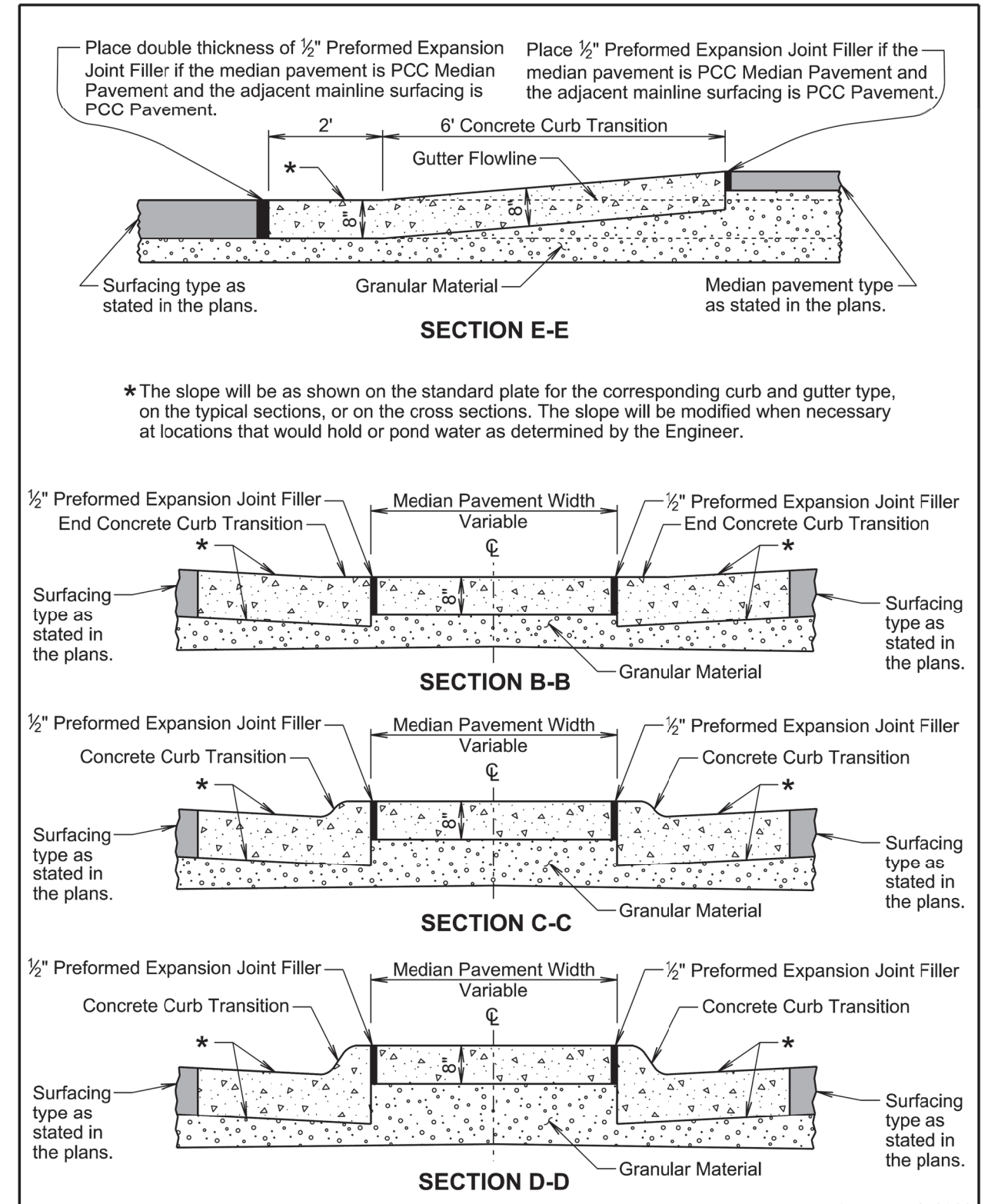
PLATE NUMBER
380.36

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Published Date: 2025

SD DOT

**BARRIER TYPE
MEDIAN PAVEMENT**



* The slope will be as shown on the standard plate for the corresponding curb and gutter type, on the typical sections, or on the cross sections. The slope will be modified when necessary at locations that would hold or pond water as determined by the Engineer.

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380.36

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SD DOT

**BARRIER TYPE
MEDIAN PAVEMENT**

Plotted From - ngiersvik

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FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-B-CR 2292(101)3	F63	F64

Plotting Date: 11/15/2024

GENERAL NOTES:

Necessary excavation for construction of barrier type PCC and asphalt concrete median pavements and excavation for granular material will be measured and paid for as "Unclassified Excavation".

Concrete for barrier type median PCC pavement will comply with the requirements of the Specifications for Class M6 Concrete. One-half inch expansion joint filler will be placed transversely in the median PCC pavement at a maximum spacing of 75 feet. Where median PCC pavement is wider than 8 feet, a longitudinal joint will be sawed or grooved along the centerline of the median PCC pavement. Where the median PCC pavement is 4 feet or narrower and at width transitions, contraction joints will be sawed or grooved at spacings as approved by the Engineer. All other contraction joints will be sawed in square sections. All joints will be sawed or grooved to a depth of 1/3 the thickness of the median PCC pavement.

All costs for labor, materials, and incidentals necessary for construction of the barrier type median pavement will be incidental to the contract unit price per square yard for "Barrier Type Median PCC Pavement" or "Barrier Type Median Asphalt Concrete Pavement".

All costs for labor, materials, and incidentals necessary for construction of the 6-foot concrete curb transition (See Sections B-B, C-C, and D-D) and the adjacent 8-inch thick concrete (See Section E-E) will be incidental to the contract unit price per foot for the corresponding curb and gutter contract item.

Granular material will be paid for at the contract unit price for the respective granular material contract item.

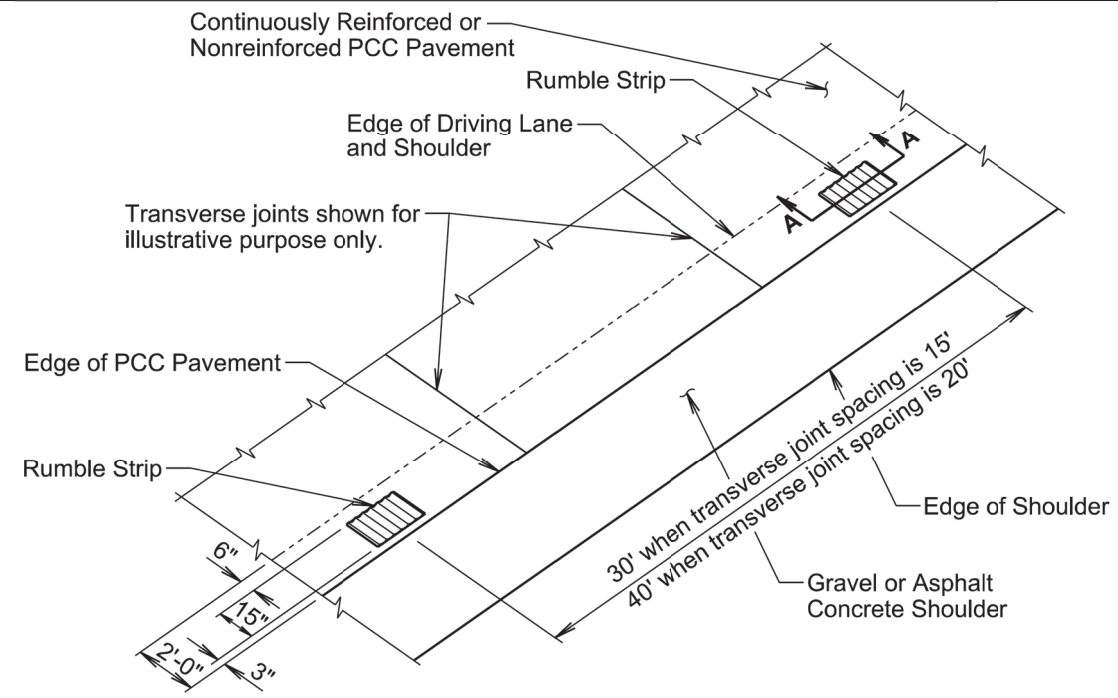
November 19, 2022

<i>Published Date: 2025</i>	S D D O T	BARRIER TYPE MEDIAN PAVEMENT	PLATE NUMBER 380.36
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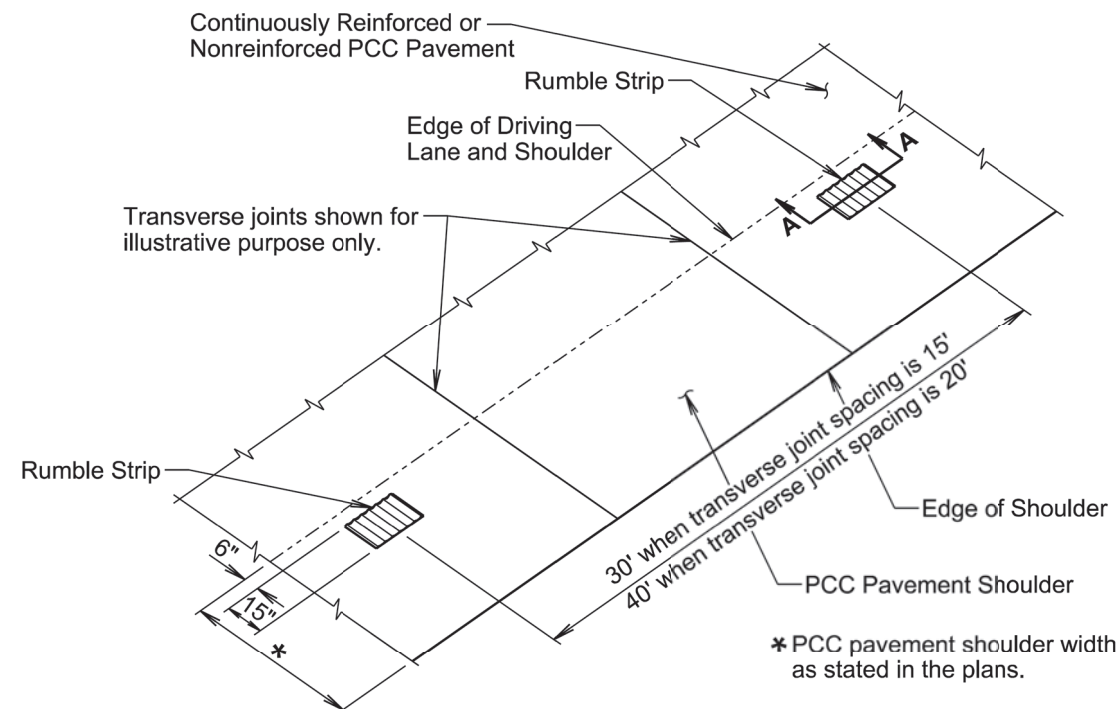
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Plotted From - ngiersvik

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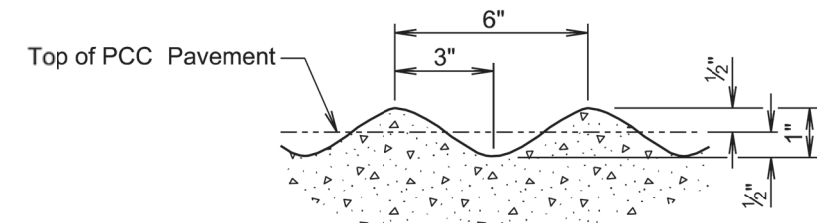
PERSPECTIVE OF TYPICAL RUMBLE STRIPS ON PCC PAVEMENT SHOULDER ADJACENT TO GRAVEL OR ASPHALT CONCRETE SHOULDER



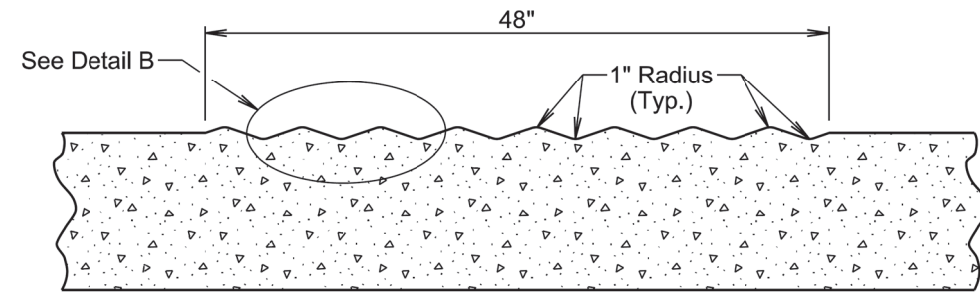
PERSPECTIVE OF TYPICAL RUMBLE STRIPS ON PCC PAVEMENT SHOULDER

November 19, 2022

Published Date: 2025	S D D O T	RUMBLE STRIP ON PCC PAVEMENT SHOULDER	PLATE NUMBER 380.53
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DETAIL B



SECTION A-A

GENERAL NOTES:

- The rumble strips will be evenly spaced and will not coincide with any transverse contraction joints.
- The rumble strips will NOT be placed along areas adjacent to entrance ramps, exit ramps, and gore areas.
- Payment for constructing the PCC Pavement Rumble Strips will be incidental to the contract unit price per square yard for the corresponding PCC Pavement contract item.

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