

SECTION F: SURFACING PLANS

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F1	F105

Plotting Date: 5/16/2025

INDEX OF SHEETS

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END EM 0292(88)73

Station 106+06.35
located 1103.12 feet south and
1959.66 feet west of the northeast
corner of Section 18 -Township 100 North -
Range 50 West of the 5th P.M.
MRM (029 N) 75.17+0.032

Sta. 0+01.50 to Sta. 6+65.00
M.S.E. Large Panel Retaining Wall

Sta. 60+35.34 to Sta. 63+50.03
Str. No. 42-065-016
312'-11 3/8" Steel Girder Bridge
Concrete Barrier Curb and Gutter

BEGIN EM 0292(88)73

85TH STREET
Station 299+35.00
located 20.50 feet south and
499.13 feet east of the northwest
corner of Section 19 - Township 100 North -
Range 50 West of the 5th P.M.

Sta. 318+79.74 to Sta. 321+55.24
Str. No. 42-065-020
276'-6" Steel Girder Bridge
Concrete Barrier Curb and Gutter

BEGIN EM 0292(88)73

Station 30+27.82
located 2117.41 feet north and
2376.09 feet east of the southwest
corner of Section 19 - Township 100 North -
Range 50 West of the 5th P.M.
MRM (029 N) 73.38+0.364

END IM 2292(104)0

I-229 RAMP C LOUISE AVENUE
Station 43+87.81
located 1411.81 feet north and
4960.21 feet east of the southwest
corner of Section 8 -Township 100 North -
Range 50 West of the 5th P.M.
MRM (229 N1) 00.92+0.000

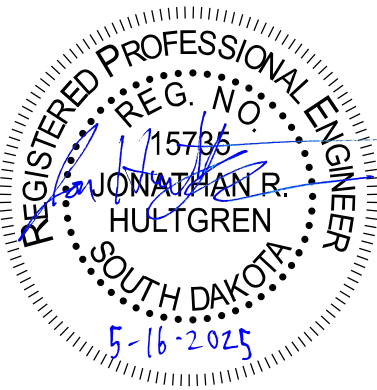
BEGIN IM 2292(104)0

I-229 RAMP B
Station 19+34.15
located 1115.22 feet south and
1906.32 feet west of the northeast
corner of Section 18 -Township 100 North -
Range 50 West of the 5th P.M.
MRM (229 N) 00.00+00.032

END EM 0292(88)73

85TH STREET
Station 339+30.00
located 33.11 feet south and
600.68 feet west of the northwest
corner of Section 20 - Township 100 North -
Range 50 West of the 5th P.M.

Sta. 324+45.77
Str. No. 42-066-020
11'x10' Box Culvert



SECTION F ESTIMATE OF QUANTITIES - PCN 06JQ

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
120E6200	Water for Granular Material	430.4	MGal
260E1010	Base Course	4,704.4	Ton
260E2010	Gravel Cushion	24,553.7	Ton
260E2030	Gravel Cushion, Salvaged	6,480.6	Ton
320E1200	Asphalt Concrete Composite	123.4	Ton
380E0070	9" Nonreinforced PCC Pavement	25,562.2	SqYd
380E0080	9.5" Nonreinforced PCC Pavement	22,662.1	SqYd
380E0130	12" Nonreinforced PCC Pavement	952.2	SqYd
380E0150	13" Nonreinforced PCC Pavement	7,302.5	SqYd
380E0800	PCC Shoulder Pavement	10,538.2	SqYd
380E2228	9.5" Nonmetallic Fiber Reinforced PCC Pavement	1,289.9	SqYd
380E6000	Dowel Bar	32,969	Each
380E6110	Insert Steel Bar in PCC Pavement	3,382	Each
380E6450	Saw Joint in PCC Pavement	7,399.3	Ft
380E6505	NGCS Grinding PCC Pavement	1,524.4	SqYd
410E2600	Membrane Sealant Expansion Joint	246.4	Ft

SECTION F ESTIMATE OF QUANTITIES - PCN 07D0

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
120E6200	Water for Granular Material	98.2	MGal
260E2010	Gravel Cushion	4,648.2	Ton
260E2030	Gravel Cushion, Salvaged	3,538.1	Ton
320E1200	Asphalt Concrete Composite	236.9	Ton
320E5000	Saw and Seal Joint in Asphalt Concrete	990	Ft
380E0050	8" Nonreinforced PCC Pavement	1,706.7	SqYd
380E0100	10.5" Nonreinforced PCC Pavement	6,291.8	SqYd
380E0150	13" Nonreinforced PCC Pavement	167.2	SqYd
380E0800	PCC Shoulder Pavement	6,162.9	SqYd
380E6000	Dowel Bar	3,987	Each
380E6110	Insert Steel Bar in PCC Pavement	2,361	Each
380E6450	Saw Joint in PCC Pavement	5,099.3	Ft
380E6505	NGCS Grinding PCC Pavement	7,219.2	SqYd

CONTROL OF ACCESS

If a 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.

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.

EXISTING PCC PAVEMENT

I-29 Mainline

The existing concrete is 13” Plain Jointed PCC Pavement with 8” Plain Jointed PCC Shoulder Pavement. The transverse joints are perpendicular and are spaced at 20 feet with 1 ½” x 18” Epoxy Coated Dowel Bars at a spacing of 12”. The aggregate in the existing Plain Jointed PCC Pavement is quartzite. The south end from Sta. 30+27.8 to Sta. 43+50.0 is 11” Continuously Reinforced PCC Pavement with transverse #4 deformed steel, longitudinal #7 deformed steel, and 8” Plain Jointed PCC Shoulder Pavement.

I-229 Mainline and I-229 Ramps B & G

The existing concrete is 12” Plain Jointed PCC Pavement with 8” Plain Jointed PCC Shoulder Pavement. The transverse joints are perpendicular and are spaced at 20 feet with 1 ½” x 18” Epoxy Coated Dowel Bars at a spacing of 12”. The aggregate in the existing Plain Jointed PCC Pavement is quartzite. A portion of I-229 Mainline beginning near Sta. 181+00 is overlaid with 2.5” Class G Asphalt Concrete Pavement.

I-229 Ramp C Louise Avenue

The existing concrete is 12” Plain Jointed PCC Pavement with 12” Plain Jointed PCC Shoulder Pavement. The transverse joints are perpendicular and are spaced at 20 feet with 1 ½” x 18” Epoxy Coated Dowel Bars at a spacing of 12”. The aggregate in the existing Plain Jointed PCC Pavement is quartzite. The gore area and entire ramp is overlaid with 2.5” Class G Asphalt Concrete Pavement.

GRAVEL CUSHION, SALVAGED

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

An estimated 6,480.6 tons (3,429 Cubic Yards) (PCN 06JQ) and 3,538.1 tons (1,872 Cubic Yards) (PCN 07D0) of granular base material will be used to construct permanent surfacing. An equal amount will be subtracted from the total for virgin Gravel Cushion.

Locations where Gravel Cushion or Gravel Cushion, Salvaged may be used for permanent surfacing are shown in the Typical Surfacing Sections.

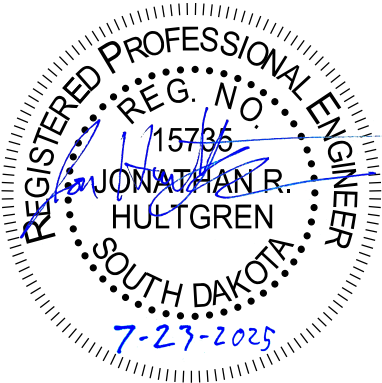
All other requirements for Gravel Cushion, Salvaged will apply.

SAW JOINT IN ASPHALT CONCRETE OR PCC PAVEMENT

Prior to the removal of in-place asphalt concrete and 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 PCC Pavement”.

JOINT SAWING TABLE

Station		Station	PCC Pavement Joint (feet)
PCN 06JQ			
I-29 NBL - Rt Shoulder			
36+92	to	50+84	1,412.5
75+02	to	106+06	3,119.1
I-29 SBL - Lt Shoulder			
30+28	to	51+32	2,123.4
I-229 Ramp C - Lt Shoulder			
22+72	to	30+07	744.3
Total - PCN 06JQ			7,399.3
PCN 07D0			
I-229 Ramp B - Rt Shoulder			
21+14	to	46+55	2,518.6
I-229 NBL - Rt Shoulder			
154+86	to	186+63	2,530.2
I-229 Ramp C Louise			
43+73	to	43+93	26.0
43+88	to	43+88	24.5
Total - PCN 07D0			5,099.3



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.

Pavement blockouts may be required at various locations on this project to facilitate traffic during the paving activity.

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.

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 Section 380.3.O.2 of the Specifications:

- NB I-29 - Sta. 44+50 to Sta. 47+32 (through lane)
- NB I-29 - Sta. 78+77 to Sta. 105+47 (through lane)
- SB I-29 - Sta. 44+50 to Sta. 47+58 (through lane)

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", 9", 9.5", 10.5" & 12" 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.

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.

- 85th Street - Sta. 299+34 to Sta. 318+50 (Begin Bridge) (EB85TH) - through lanes only
- 85th Street - Sta. 321+75 (End Bridge) to Sta. 339+27 (EB85TH) - through lanes only
- Ramp A - Sta. 10+22 to Sta. 26+21
- Ramp B - Sta. 20+00 to Sta. 35+77
- Ramp C - Sta. 30+00 to Sta. 45+56
- Ramp D - Sta. 40+00 to Sta. 60+09
- Ramp D - Sta. 64+04 to Sta. 76+28
- Ramp D_Conn - Sta. 70+00 to Sta. 86+53
- I-229 Ramp C Louise - Sta. 20+00 to Sta. 43+42

9.5" NONMETALLIC FIBER REINFORCED PCC PAVEMENT

The Nonmetallic Fiber Reinforced Concrete will conform to Section 380 of the Construction Specification except as modified by these notes.

The Nonmetallic Fiber Reinforced Concrete at the time of placement will contain 6.5 percent plus 1.0 to minus 1.5 percent entrained air and slump of the concrete will be maintained between 2.0 and 5.0 inches for side-formed concrete and between 1.0 and 4.0 inches for slip-formed concrete.

The Nonmetallic Fiber Reinforcement will be a macro fiber approximately 1.5 inches or longer (W.R. Grace – STRUX 90/40 or approved equal) at an addition rate of 5 lbs. per cubic yard. The fiber will be designed specifically for use in concrete, tested according to ASTM C1609, the test results will be supplied by the manufacturer, and the manufacturer will have a documented history of providing fibers for use in concrete.

The minimum coarse aggregate content will be 48 percent of the total aggregate in the mix by weight.

Refer to the list of known fine aggregate sources and the average corresponding 14-day expansion values.

The concrete mix design proportions will be submitted to the Concrete Engineer for review a minimum of 3 weeks prior to first use. This submittal will include a mixing method to ensure the fibers are uniformly distributed in the concrete with no fiber balling.

All costs for labor, materials, and incidentals necessary for construction of the Nonmetallic Fiber Reinforced PCC Pavement will be incidental to the contract unit price per square yard for "9.5" Nonmetallic Fiber Reinforced PCC Pavement".

RUMBLE STRIPS

Rumble Strips will be placed 15 inches wide 6 inches from the outside edge of the driving lane of the I-29 and I-229 mainline paving. 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" or "PCC Shoulder Pavement".

TINING

All driving surfaces of the mainline paving and the surfaces of all ramps and auxiliary lanes 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.

The surface of the 85th Street and Entrance paving will receive a heavy carpet drag to within 2 or 3 feet of the face of the curb. All other areas will be textured as directed by the Engineer.

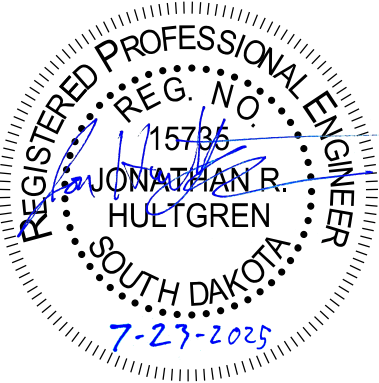


TABLE OF 13" NONREINFORCED PCC PAVEMENT - PCN 06JQ

Station		Station	13" Nonreinforced PCC Pavement (SqYd)	Gravel Cushion (Tons)	Water (Mgal)
I-29 NBL					
43+50.0	to	47+32.1	509.5	133.7	1.6
78+77.3	to	105+47.4	3,535.1	928.0	11.1
I-29 SBL					
43+50.0	to	47+57.5	568.6	149.3	1.8
RAMP A					
23+66.6	to	26+20.6	528.4	138.7	1.7
RAMP B					
20+00.0	to	22+53.2	526.0	138.1	1.7
RAMP C					
30+00.0	to	32+55.7	558.2	146.5	1.8
RAMP D					
72+38.3	to	77+27.8	1,076.7	282.6	3.4
Total - PCN 06JQ			7,302.5	1,916.9	23.1

TABLE OF 13" NONREINFORCED PCC PAVEMENT - PCN 07D0

Station		Station	13" Nonreinforced PCC Pavement (SqYd)	Gravel Cushion (Tons)	Water (Mgal)
I-229 NBL					
179+84.0	to	181+09.4	167.2	43.9	0.5
Total - PCN 07D0			167.2	43.9	0.5

TABLE OF 12" NONREINFORCED PCC PAVEMENT - PCN 06JQ

Station		Station	12" Nonreinforced PCC Pavement (SqYd)	Gravel Cushion (Tons)	Water (Mgal)
I-229 RAMP C					
23+91.9	to	30+07.0	952.2	249.9	3.0
Total - PCN 06JQ			952.2	249.9	3.0

TABLE OF 10.5" NONREINFORCED PCC PAVEMENT - PCN 07D0

Station		Station	10.5" Nonreinforced PCC Pavement (SqYd)	*Gravel Cushion (Tons)	Water (Mgal)
I-229 RAMP C LOUISE					
23+47.3	to	43+93.2	6,291.8	2,896.4	34.8
Total - PCN 07D0			6,291.8	2,896.4	34.8

* Includes gravel cushion under adjacent shoulder

TABLE OF 9.5" NONREINFORCED PCC PAVEMENT - PCN 06JQ

Station		Station	9.5" Nonreinforced PCC Pavement (SqYd)	*Gravel Cushion (Tons)	Water (Mgal)
RAMP A					
10+19.4	to	12+11.2	596.2	201.8	2.4
12+11.2	to	23+66.6	4,080.1	2,008.8	24.1
RAMP B					
22+53.2	to	29+65.3	1,977.0	1,096.9	13.2
29+65.3	to	30+95.2	397.0	178.4	2.1
30+95.2	to	34+09.9	1,118.9	473.5	5.7
34+09.9	to	35+77.2	377.4	149.2	1.8
RAMP C					
32+55.7	to	43+60.4	3,066.0	1,701.4	20.4
43+60.4	to	45+56.7	324.4	132.5	1.6
RAMP D					
40+00.0	to	41+89.7	385.6	154.1	1.8
41+89.7	to	46+32.0	1,775.9	619.1	7.4
46+32.0	to	47+51.2	477.1	193.4	2.3
47+51.2	to	54+17.1	2,515.4	1,200.7	14.4
54+17.1	to	56+75.7	548.5	248.9	3.0
56+75.7	to	60+13.3	970.6	528.8	6.3
63+99.2	to	72+38.3	1,691.0	784.4	9.4
RAMP E					
1+00.0	to	3+87.4	512.6	214.8	2.6
RAMP F					
2+00.0	to	3+74.2	382.5	164.0	2.0
RAMP G					
3+00.0	to	5+89.8	527.6	216.2	2.6
RAMP H					
4+00.0	to	6+13.8	628.4	229.5	2.8
RAMP D CONN					
70+00.0	to	83+72.5	309.9	1,040.5	12.5
Total - PCN 06JQ			22,662.1	11,536.9	138.4

* Includes gravel cushion under adjacent curb and gutter and/or shoulder

TABLE OF 9.5" NONMETALLIC FIBER REINFORCED PCC PAVEMENT - PCN 06JQ

Station		Station	9.5" Nonmetallic Fiber Reinforced PCC Pavement (SqYd)	*Gravel Cushion (Tons)	Water (Mgal)
EB 85TH STREET					
316+31.9	to	317+71.6	806.7	258.0	3.1
322+68.6	to	323+72.4	483.2	245.4	2.9
Total - PCN 06JQ			1,289.9	503.4	6.0

* Includes gravel cushion under adjacent curb and gutter

TABLE OF 9" NONREINFORCED PCC PAVEMENT - PCN 06JQ

Station		Station	9" Nonreinforced PCC Pavement (SqYd)	*Gravel Cushion (Tons)	Water (Mgal)
EB 85TH STREET					
299+35	to	316+34	5,747.6	1,940.6	23.3
317+69	to	318+58	337.3	122.8	1.5
321+77	to	322+69	220.7	91.6	1.1
323+72	to	339+30	5,338.5	1,902.9	22.8
WB 85TH STREET					
399+34	to	416+30	5,641.5	2,018.9	24.2
417+66	to	418+56	212.4	55.8	0.7
421+76	to	422+64	207.3	54.4	0.7
423+70	to	439+29	5,568.4	1,950.8	23.4
ENT_NW					
8+11.0	to	9+17.0	491.0	203.1	2.4
ENT_SW					
7+00.0	to	8+40.0	630.0	282.7	3.4
ENT_NE					
5+11.0	to	6+29.0	525.2	232.9	2.8
ENT_SE					
6+00.0	to	7+27.0	642.3	273.4	3.3
Total - PCN 06JQ			25,562.2	9,129.9	109.6

* Includes gravel cushion under adjacent curb and gutter

TABLE OF 8" NONREINFORCED PCC PAVEMENT - PCN 07D0

Station		Station	8" Nonreinforced PCC Pavement (SqYd)	*Gravel Cushion (Tons)	Water (Mgal)
I-229 NBL					
181+09.4	to	183+16.7	508.7	196.6	2.4
I-229 RAMP C LOUISE					
20+00.0	to	23+47.3	1,198.0	420.2	5.0
Total - PCN 07D0			1,706.7	616.8	7.4

* Includes gravel cushion under adjacent shoulder

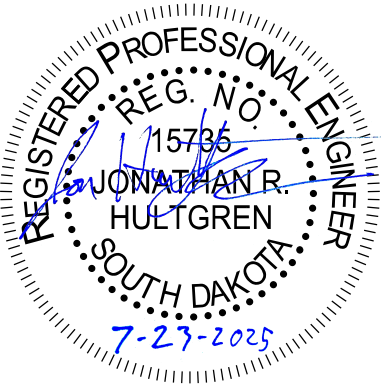


TABLE OF PCC SHOULDER PAVEMENT - PCN 06JQ

Station		Station	PCC Shoulder Pavement (SqYd)	*Gravel Cushion (Tons)	Water (Mgal)
I-29 NBL					
36+92.0	to	43+50.0	1,608.3	1,111.4	13.3
43+50.0	to	47+32.1	400.7	340.2	4.1
49+84.6	to	50+84.0	111.1	91.7	1.1
75+01.8	to	76+23.8	135.5	112.1	1.3
78+77.3	to	105+47.4	2,942.7	2,443.1	29.3
105+47.4	to	106+06.4	65.5	54.2	0.7
I-29 SBL					
30+27.8	to	43+50.0	436.3	765.7	9.2
43+50.0	to	47+57.5	3,232.2	1,658.6	19.9
50+13.2	to	51+31.6	131.2	108.7	1.3
89+99.5	to	94+87.6	823.5	380.5	4.6
RAMP D					
72+38.3	to	77+27.8	443.7	235.1	2.8
I-229 RAMP C					
22+72.2	to	23+91.9	207.5	54.5	0.7
Total - PCN 06JQ			10,538.2	7,355.8	88.3

* Includes gravel cushion for surfacing sluff width

TABLE OF PCC SHOULDER PAVEMENT - PCN 07D0

Station		Station	PCC Shoulder Pavement (SqYd)	*Gravel Cushion (Tons)	Water (Mgal)
I-229 RAMP B					
19+34.7	to	44+46.6	2,758.4	2,028.1	24.3
I-229 NBL					
152+77.3	to	186+61.1	3,404.5	2,601.1	31.2
Total - PCN 07D0			6,162.9	4,629.2	55.5

* Includes gravel cushion for surfacing sluff width

TABLE OF DOWEL BARS - PCN 06JQ

Location			Dowel Bar (Size 1 ½") (Each)	Dowel Bar (Size 1 ¼") (Each)
I-29 NBL				
43+50	to	47+32	228	
78+80	to	105+47	1,584	
I-29 SBL				
43+50	to	47+58	348	
I-229 RAMP C				
26+84	to	28+45		99
EB 85TH STREET				
299+35	to	318+55		4,291
321+80	to	339+30		3,865
WB 85TH STREET				
399+34	to	418+53		4,007
421+78	to	439+30		3,838
RAMP A				2,266
RAMP B				1,910
RAMP C				1,615
RAMP D				
40+00	to	60+11		3,438
64+02	to	77+28		1,293
RAMP D CONN				1,615
RAMP E				242
RAMP F				211
RAMP G				252
RAMP H				384
ENT NW				310
ENT SW				392
ENT NE				328
ENT SE				453
Total - PCN 06JQ			2,160	30,809

TABLE OF DOWEL BARS - PCN 07D0

Location			Dowel Bar (Size 1 ½") (Each)	Dowel Bar (Size 1 ¼") (Each)
I-229 NBL				
179+90	to	183+17	254	
I-229 RAMP C LOUISE			3,733	
Total - PCN 07D0			3,987	0

TRANSVERSE CONTRACTION JOINTS

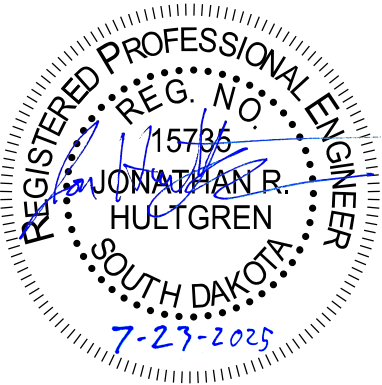
Unless specified otherwise in the PCC Pavement Joint Layout Sheets or elsewhere in the plans, the typical joint spacing will be as follows:

- 13" PCC Pavement (I-29 mainline) - 20'
- 12" PCC Pavement (I-229 Ramp C and I-229 NBL) - 20'
- 10.5" PCC Pavement (I-229 Ramp C Louise) - 15'
- 9.5" PCC Pavement (I-29 Ramps) - 14'
- 9" PCC Pavement (85th Street and Entrances) - 14'
- 8" PCC Pavement (I-229 Ramp C Louise) - 15'
- 8" PCC Shoulder Pavement (I-29 and I-229 Auxiliary Lane) - 20'
- 8" PCC Shoulder Pavement (I-29 South End) - 10'

Match all existing transverse joints when placing adjacent to existing mainline PCC 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.



ALKALI SILICA REACTIVITY

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

Below is a list of known fine aggregate sources and the average corresponding 14-day expansion values (as of 9-18-2024):

Source	Location	Expansion Value
Bachman	Winner, SD	0.335*
Bitterman	Delmont, SD	0.316*
Concrete Materials	Corson, SD	0.146
Concrete Materials - Vellek Pit	Yankton, SD	0.411**
Croell	Hot Springs, SD	0.089
Croell	Wasta, SD	0.212
Emme Sand & Gravel	Oneil, NE	0.217
Fisher S&G – Blair Pit	W of Vale, SD	0.171
Fisher S&G - Mickelson Pit	E of Nisland, SD	0.129
Fisher S&G - Vallery Pit	Nisland, SD	0.110
Fisher S&G	Rapid City, SD	0.092
Fisher S&G	Spearfish, SD	0.053
Fisher S&G	Wasta, SD	0.159
Fuchs	Pickstown, SD	0.275*
Henning – Tilstra Pit	Ash Creek, MN	0.199
Higman	Hudson, SD	0.187
Jensen	Herried, SD	0.276*
L.G. Everist	Akron, IA	0.257*
L.G. Everist	Brookings, SD	0.297*
L.G. Everist – Ode Pit	E Sioux Falls, SD	0.222
L.G. Everist – Nelson Pit	NE Sioux Falls, SD	0.156
L.G. Everist	Hawarden, IA	0.211
L.G. Everist	Summit, SD	0.184
Mark’s S&G – Moerke Pit	Underwood, MN	0.165
Morris – Birdsall	Blunt, SD	0.229
Morris - Leesman	Blunt, SD	0.231
Morris - Richards Pit	Onida, SD	0.188
Morris - Shawn’s Pit	E of Sturgis, SD	0.186
Northern Concrete Agg.	Rauville, SD	0.113
Northern Concrete Agg.	Luverne, MN	0.154
Opperman - Gunvordahl Pit	Burke, SD	0.363*
Opperman - Cahoy Pit	Herrick, SD	0.307*
Opperman - Jones Pit	Burke, SD	0.321*
Opperman - Randall Pit	Pickstown, SD	0.230
Pete Lien & Sons	Creston, SD	0.158
Pete Lien & Sons	Oral, SD	0.157
Pete Lien & Sons	Wasta, SD	0.255*
Simon Materials - Beltline Pit	Scottsbluff, NE	0.277*
Thorpe Pit	Britton, SD	0.098
Valley S&G – Van Beek Pit	Rock Valley, IA	0.228
Wagner Building Supplies	Pickstown (Wagner), SD	0.251*
Winter Brothers- Whitehead Pit	Brookings, SD	0.197

* These sources will require Type II cement with a fly ash content of 25% in the concrete mix.
** These sources will not be used.

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

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

MANHOLE BOX-OUT DETAILS

The Contractor will construct box-outs for all manholes in the 9” Nonreinforced PCC Pavement according to one of the Box-Out Detail options. See Section B for locations of proposed manholes and water valve boxes.

STEEL BAR INSERTION

The Contractor will insert the Steel Bars (1-½” x 18-inch epoxy coated plain round steel bars, 1-¼” x 18-inch epoxy coated plain round steel bars, and No. 5 x 24-inch epoxy coated deformed tie bars) into drilled holes in the existing concrete pavement. Anchoring of the steel bars in the drilled holes will conform to the Specifications.

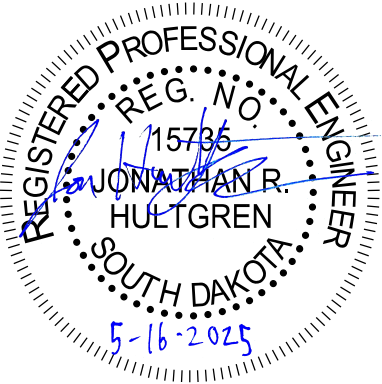
The steel bars will be cut to the specified length by sawing or shearing and will be free from burring or other deformations.

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

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

TABLE OF STEEL BAR INSERTION

LOCATION			Transverse 1½" Plain Round Dowel Bars	Longitudinal No. 5 Deformed Tie Bars
Station		Station	(Each)	(Each)
PCN 06JQ				
I-29 NBL				
36+92			12	
36+92	to	50+84		556
50+84			10	
75+02			10	
75+02	to	106+06		1,241
105+47			12	
I-29 SBL				
30+28			12	
30+28	to	51+32		841
93+70	to	99+76		242
99+76			22	
I-229 Ramp C				
22+72			10	
22+72	to	30+07		294
30+07			10	
EB 85TH STREET				
299+35			44	
339+30			66	
Total - PCN 06JQ			208	3,174
PCN 07D0				
I-229 Ramp B				
21+14	to	46+55		1,016
I-229 NBL				
154+86	to	179+84		999
179+84			12	
179+84		186+63		271
186+63			12	
I-229 Ramp C Louise				
43+73	to	43+93	25	
43+88			26	
Total - PCN 07D0			75	2,286



POLY-ALPHA METHYLSTYRENE (AMS) MEMBRANE CURING COMPOUND

Provide poly-alpha methylstyrene liquid membrane curing compounds for spray application on portland cement concrete surfaces exposed to the air.

The AMS membrane curing compound will conform to section 821 of the Specifications and the following requirements:

1. The AMS membrane curing compound will be successfully reviewed by the Department before use.
2. Meets the requirements of ASTM C 309 for white pigmented Type 2, Class B.
3. The Engineer will not allow the use of curing compound that is over 1 year from the manufacture date.
4. Resin is 100 percent poly-alpha methylstyrene and formulated to maintain the specified properties of the following Table.

REQUIREMENTS FOR AMS MEMBRANE CURING COMPOUND	
Properties	Range
Total solids, % by weight of compound	≥ 42
% reflectance in 72 h (ASTM E 1247)	≥ 65
Loss of Water, kg/sq. m in 24 h (AASHTO T 155)	≤ 0.15
Loss of Water, kg/sq. m in 72 h (AASHTO T 155)	≤ 0.40
Settling Test, ml/100 ml in 72 h *	≤ 2
V.O.C. Content, g/L	≤ 350
Infrared Spectrum, vehicle	100% α methylstyrene
*Test in accordance with MNDOT method.	

The application will be in accordance with section 380.3 M plus the following:

Before application, agitate the curing compound as received in the shipping container to obtain a homogenous mixture. Protect membrane curing compounds from freezing before application. Handle and apply the membrane curing compound in accordance with the manufacturer's recommendations.

1. Apply curing compound homogeneously to provide a uniform solid, white opaque coverage on all exposed concrete surfaces (equal to a white sheet of typing paper) at the time of application.
2. If the Engineer determines that the initial or corrective spraying result in unsatisfactory curing, the Engineer may require the Contractor to use the blanket curing method, at no additional cost to the Department.

Use the fully-automatic, self-propelled mechanical power sprayer to apply the curing compound:

1. Operate the equipment to direct the curing compound to the surface from two different lateral directions.
2. If puddling, dripping, or non-uniform application occurs, suspend the operation to perform corrections as approved by the Engineer.
3. A re-circulating bypass system that provides for continuous agitation of the reservoir material.
4. Separate filters for the hose and nozzle.
5. Check valve nozzles.
6. Multiple or adjustable nozzle system that provides for variable spray patterns.
7. A spray-bar drive system that operates independently of the wheels or track drive system.

Equipment for hand spraying of odd width or shapes and surfaces exposed by form removal will be:

1. Used from two directions to ensure coverage equal to a white sheet of typing paper as visible from any direction immediately after spraying.
2. A re-circulating bypass system that provides for continuous agitation of the reservoir material.
3. Separate filters for the hose and nozzle.
4. Multiple or adjustable nozzle system that provides for variable spray patterns.

A recommended practice for using AMS membrane curing compound is to clean out the sprayer including tank and nozzles each day after use.

Payment for AMS membrane curing compound, including labor, materials and incidentals will be incidental to the contract unit price per square yard for “9” Nonreinforced PCC Pavement”, “9.5” Nonreinforced PCC Pavement”, “9.5” Nonmetallic Fiber Reinforced PCC Pavement”, “10.5” Nonreinforced PCC Pavement”, “12” Nonreinforced PCC Pavement”, “13” Nonreinforced PCC Pavement”, or “PCC Shoulder Pavement”.

NGCS GRINDING OF PCC PAVEMENT

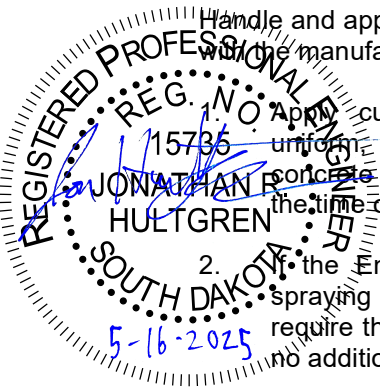
NGCS Grinding PCC Pavement can be performed with a single-pass or two-passes to produce longitudinal grooves on the concrete surface in accordance with the Special Provision.

NGCS grinding of PCC pavement will be accomplished according to the Special Provision for NGCS Grinding PCC Pavement. All costs to grind mainline will be incidental to the contract unit price per square yard for NGCS Grinding PCC Pavement.

NGCS grinding of PCC pavement will be accomplished before new PCCP paving occurs to ensure smoother new PCCP lanes and prevent a lip or the need for feathering.

TABLE OF NGCS GRINDING PCC PAVEMENT

Station		Station	NGCS Grinding PCC Pavement (SqYd)
PCN 06JQ			
I-29 NBL - Existing Rt Lane			
95+22.0	to	106+06.4	1,524.4
Total - PCN 06JQ			1,524.4
PCN 07D0			
I-229 Ramp B - Existing Rt Lane & Shoulder			
19+34.2	to	21+50.0	572.1
I-229 Ramp B - Existing Rt Shoulder			
21+50.0	to	46+55.4	3,318.4
I-229 NBL - Existing Rt Shoulder			
154+86.1	to	179+84.0	3,328.7
Total - PCN 07D0			7,219.2



 Plotting Date: 5/16/2025	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	F8	F105

ASPHALT CONCRETE COMPOSITE

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

SAW AND SEAL JOINTS IN ASPHALT CONCRETE

Saw and Seal Joints in Asphalt Concrete will consist of marking the existing transverse joint in the PCC Pavement prior to placement of the asphalt concrete, sawing, cleaning, and sealing the transverse joint in the new asphalt concrete. The joints will be constructed immediately over and in line with the underlying transverse joint in the PCC Pavement. Use a string line between established markings to determine the saw cut locations. The existing pavement joints are spaced at 20’ on mainline I-229 and 15’ on I-229 Ramp C Louise.

Sawing will be performed after the asphalt concrete has cooled and no more than 36 hours after the asphalt concrete is placed. Sawing will be performed prior to any evidence of reflective cracking. Saw cuts may be made wet or dry and will be accurately located by pins and string line subject to approval of the Engineer.

The dimension of the saw cut on the Asphalt Concrete Composite lift will be 1/8" wide by 1" deep directly above the underlying joint in the PCC Pavement to facilitate cracking. A sealant reservoir 5/8" wide by 5/8" deep will be sawed in and centered directly over the underlying 1/8" saw cut.

The saw cut for Asphalt Concrete Composite lift will be the full width of the pavement.

Dry sawed joints will be cleaned with high-pressure air. Wet sawed joints will be cleaned with high-pressure water followed by high-pressure air. The air compressor will produce a minimum of 125-CFM output and will be equipped with a 5/8" nozzle. After cleaning and drying and just prior to sealing, a bond breaker tape consisting of masking tape or other suitable bond breaker tape will be placed in the bottom of the reservoir. The tape width will be equal to the reservoir width or 1/8" narrower.

The sealant will meet the requirements of Section 871.B.

Joint sealant material will be from the South Dakota Department of Transportation’s approved products list for Sealants Approved for Asphalt Concrete over Long Jointed Concrete Pavement. The Approved Product List for sealant may be viewed at the following Internet Site:

<http://apps.sd.gov/HC60ApprovedProducts/main.aspx>

The sealant will be placed in accordance with the manufacturer's recommendations. The sealant will fit the joint such that after cooling, the level of the sealant will not be greater than 1/8" below the pavement surface.

Care will be taken so that the joints will not be overfilled. Sealant will not be spread over the pavement surface.

Blotting material such as toilet paper will be placed over the sealant material where traffic is allowed to cross a sealed area before track free status has been achieved.

Payment for sawing and sealing joints will be paid for as Saw and Seal Joints in Asphalt Concrete inclusive of costs for marking existing joints, sawing, cleaning, sealing, equipment, labor, and incidentals necessary complete the work.

PROTECTION OF BRIDGE JOINTS

The Contractor and Engineer will inspect all bridge/pavement expansion joints for preexisting damage prior to pavement removals. The Engineer will inspect all joints for work-related damage following removals and again following completion of final surfacing.

It may be necessary to use special methods and equipment to remove/place material as close as practical to structure appurtenances. Also, the Contractor will mask all expansion joints prior to any removal/placement of material near the joints. The joints will be protected throughout completion of the work. Once the masking has been removed any loose material contained within the joint will be cleaned from the joint. Any damage to the expansion joints along with any existing structure appurtenances will be repaired by the Contractor to the satisfaction of the Engineer at no cost to the Department. All costs related to this work will be incidental to various contract items.

At locations with membrane sealant expansion joints 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.

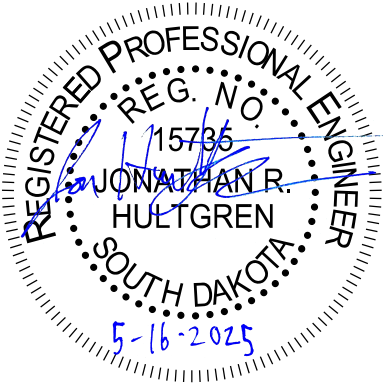
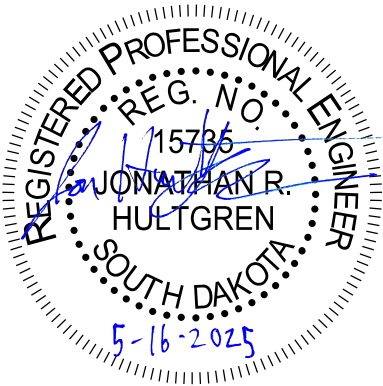


TABLE OF ADDITIONAL QUANTITIES

Location - Description			Gravel Cushion (Ton)	Base Course (Ton)	Water for Granular Material (Mgal)	Asphalt Concrete Composite (Ton)
EB 85th Street - Median Areas						
399+35	to	305+62		361.6	4.3	
304+87	to	307+67		102.4	1.2	
306+89	to	316+38		720.0	8.6	
323+77	to	333+79		809.9	9.7	
332+96	to	335+61		110.1	1.3	
334+86	to	339+30		167.6	2.0	
EB 85th Street - DDI Island NW				164.6	2.0	
EB 85th Street - DDI Island SW				204.2	2.5	
EB 85th Street - DDI Island NE				162.4	1.9	
EB 85th Street - DDI Island SE				136.9	1.6	
ENT NW Median				23.1	0.3	
ENT SW Median				52.3	0.6	
ENT NE Median				37.7	0.5	
ENT SE Median				46.0	0.6	
Guardrail Embankment Surfacing						
I-29 NBL Sta. 44+10 to Sta. 48+10 Rt.			56.2	198.5	3.1	15.8
I-29 NBL Sta. 58+70 to Sta. 64+05 Lt.			74.4	263.8	4.1	20.8
I-29 NBL Sta. 58+76 to Sta. 62+65 Rt.			54.7	193.1	3.0	15.3
I-29 NBL Sta. 84+04 to Sta. 87+97 Rt.			54.8	194.0	3.0	15.3
I-29 NBL Sta. 84+48 to Sta. 88+11 Lt.			50.7	179.5	2.8	14.2
I-29 SBL Sta. 98+98 to Sta. 102+67 Lt.			50.7	180.5	2.8	14.0
I-229 Ramp C Sta. 25+96 to Sta. 30+60 Rt.			55.1	208.1	3.2	14.0
I-229 Ramp C Sta. 26+12 to Sta. 30+07 Lt.			51.9	188.1	2.9	14.0
Str. No. 42-065-016						
End Bridge Lt.			52.5	157.7	2.5	15.0
Total - PCN 06JQ			341.5	4,704.4	62.0	123.4
I-229 NBL						
181+09	to	183+17				70.6
183+17	to	186+63				54.3
I-229 Ramp C Louise Avenue						
20+00	to	23+47				112.0
Total - PCN 7D0			0.0	0.0	0.0	236.9



IN PLACE TYPICAL SECTIONS

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

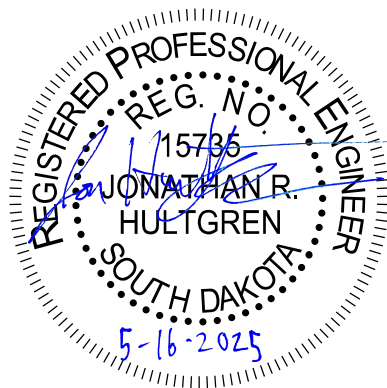
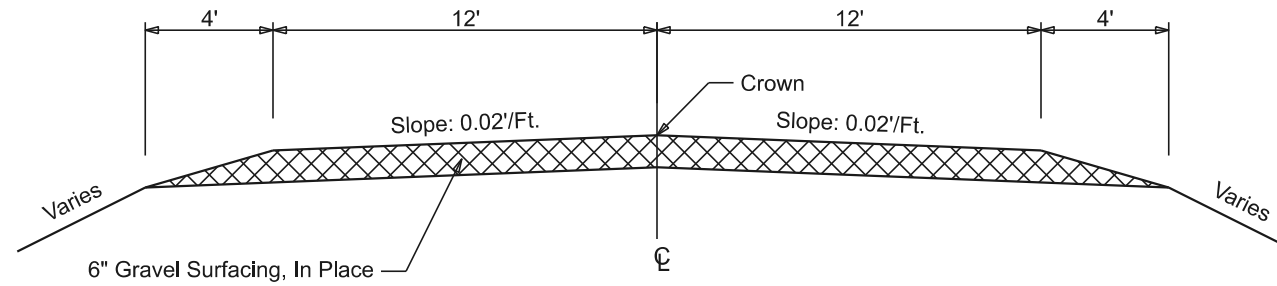
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F10	F105



Unclassified Excavation
(See Section B)

Section 1

85TH STREET
Sta. 299+35.00 to Sta. 318+42.20
Sta. 322+11.27 to Sta. 339+30.00



IN PLACE TYPICAL SECTIONS



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F11	F105

Plotting Date: 7/1/2025

Revised Date: 6/19/2025
Initials: NBG

Unclassified Excavation
(See Section B)

Remove Concrete Pavement
(See Section B)

Salvage and Stockpile
Granular Material
(Unclassified Excavation)
(See Section B)

Transitions:

Sta. 30+28 to Sta. 43+50 SB & NB
* 11" Continuously Reinforced Concrete

Sta. 95+22 to Sta. 105+76 NB
** 12' to 24'

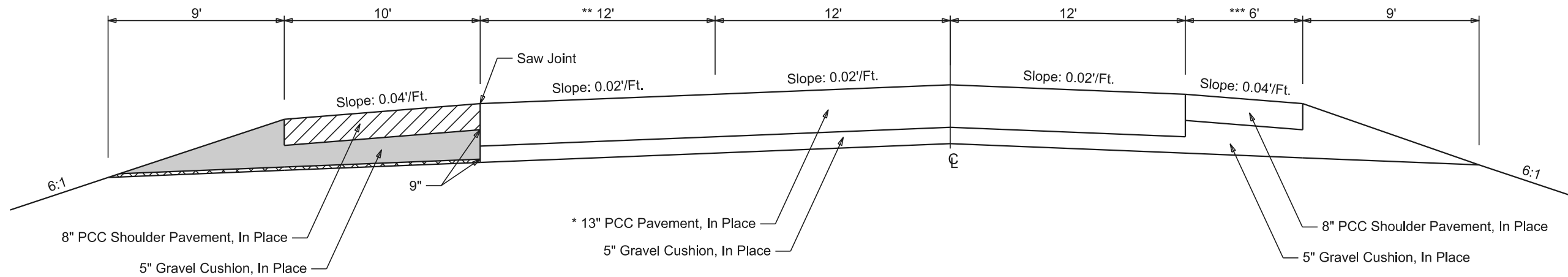
Sta. 43+46 to Sta. 45+45 SB & NB
*** 6' to 10'

Section 2

SBL I-29

Sta. 30+27.82 to Sta. 51+31.58
Sta. 90+73.80 to Sta. 92+80.26

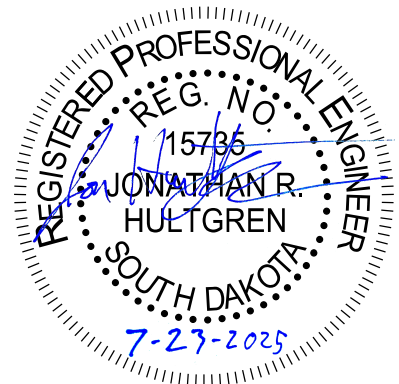
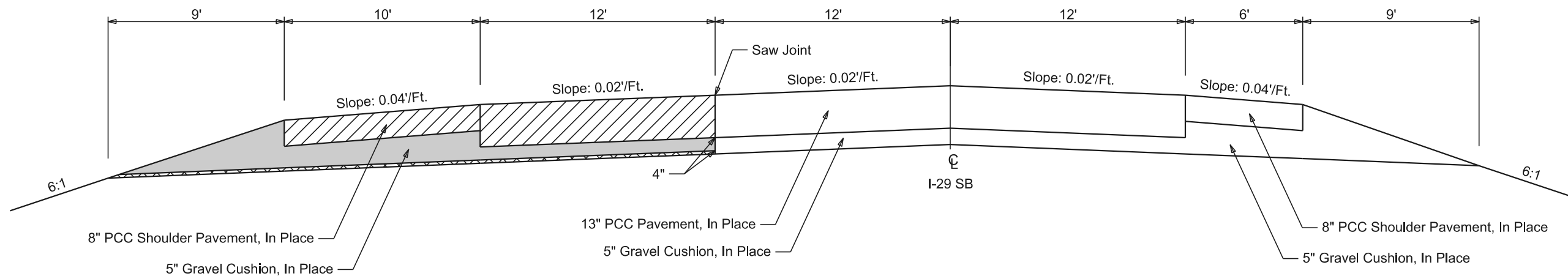
NBL I-29 (Reversed)
Sta. 36+92.00 to Sta. 50+84.32
Sta. 75+01.80 to Sta. 105+47.40



Section 2

SBL I-29

Sta. 92+80.26 to Sta. 99+76.35



IN PLACE TYPICAL SECTIONS

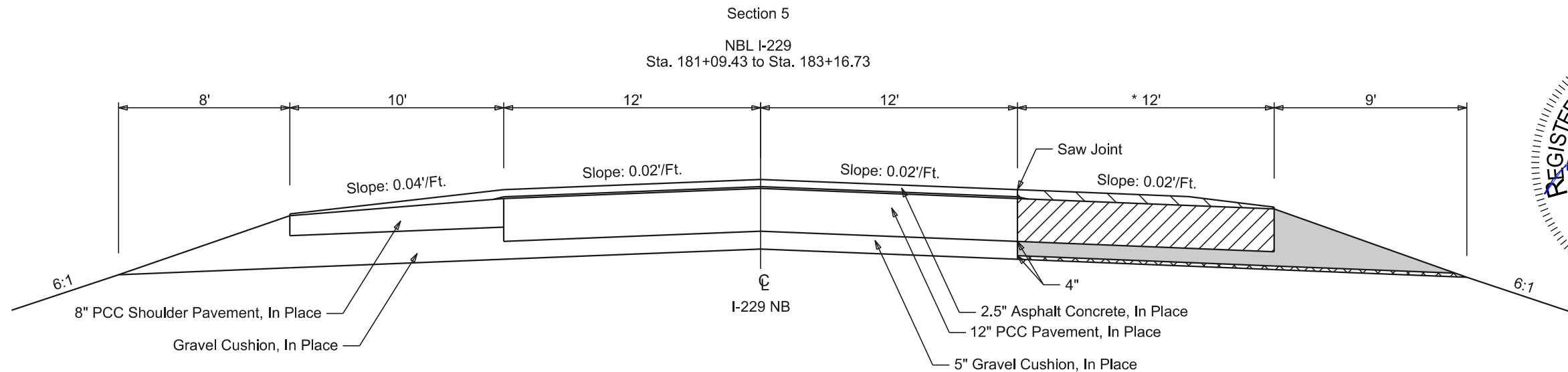
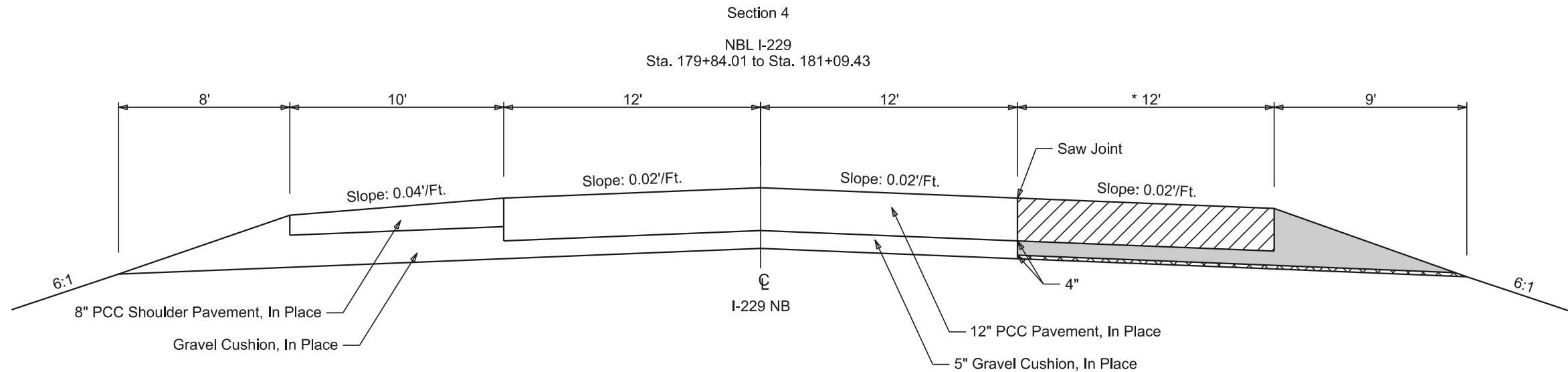
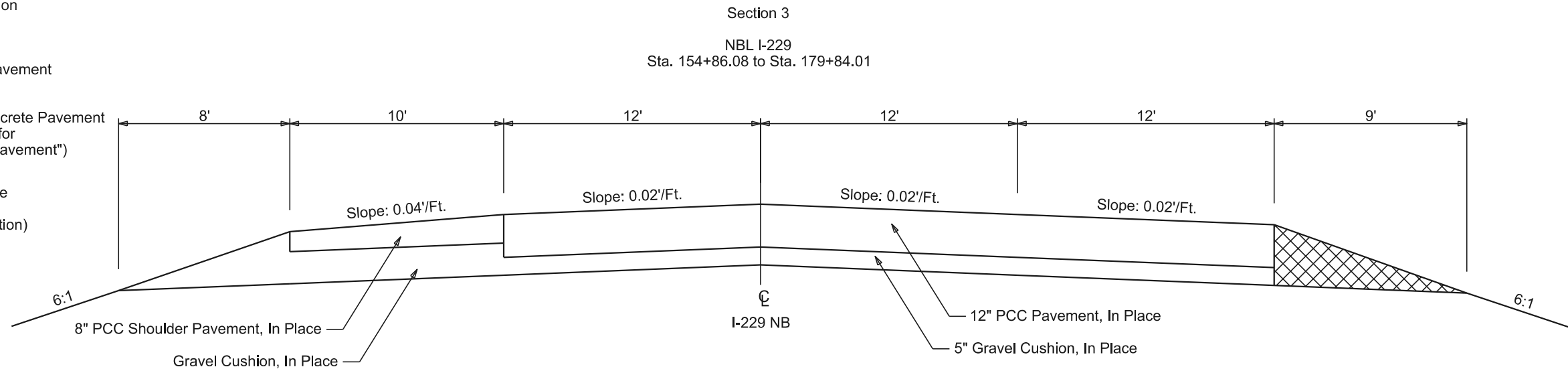


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F12	F105

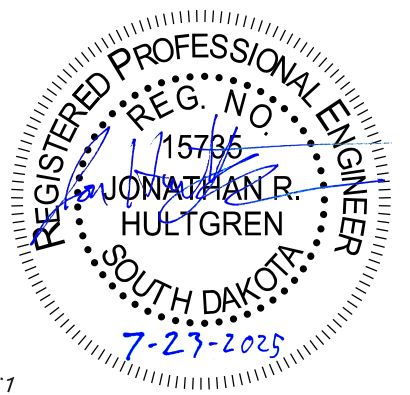
Plotting Date: 7/1/2025

Revised Date: 6/19/2025
Initials: NBG

-  Unclassified Excavation
(See Section B)
-  Remove Concrete Pavement
(See Section B)
-  Remove Asphalt Concrete Pavement
(Included in quantity for
"Remove Concrete Pavement")
(See Section B)
-  Salvage and Stockpile
Granular Material
(Unclassified Excavation)
(See Section B)



Transitions:
* 181+10 to 183+17 - 12' to 23'



IN PLACE TYPICAL SECTIONS



Plotting Date: 7/1/2025

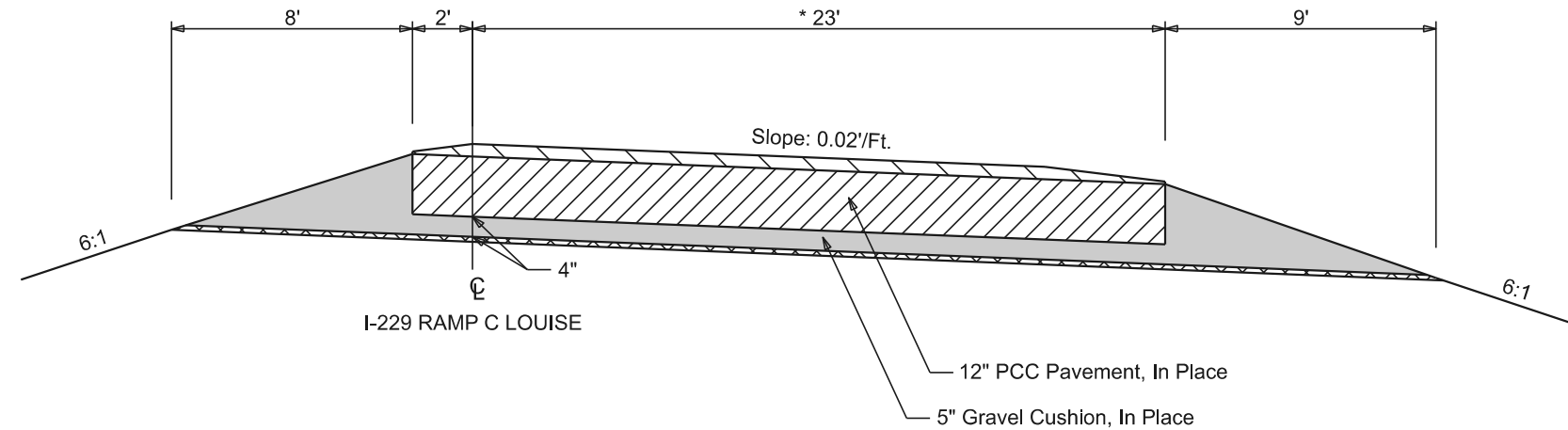
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F13	F105

Revised Date: 6/19/2025
Initials: NBG

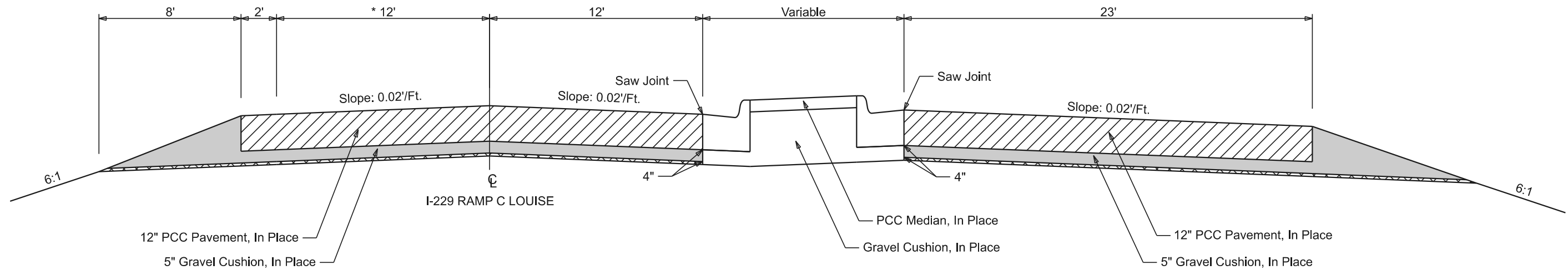
- Unclassified Excavation
(See Section B)
- Remove Concrete Pavement
(See Section B)
- Remove Asphalt Concrete Pavement
(Included in quantity for
"Remove Concrete Pavement")
(See Section B)
- Salvage and Stockpile
Granular Material
(Unclassified Excavation)
(See Section B)

Transitions:
Sta. 36+00 to Sta. 42+69
* 23' to 43'

Section 6
NBL I-229 RAMP C LOUISE
Sta. 20+00.00 to Sta. 42+66.34



Section 7
NBL I-229 RAMP C LOUISE
Sta. Sta. 42+66.34 to Sta. 43+87.81



IN PLACE TYPICAL SECTIONS

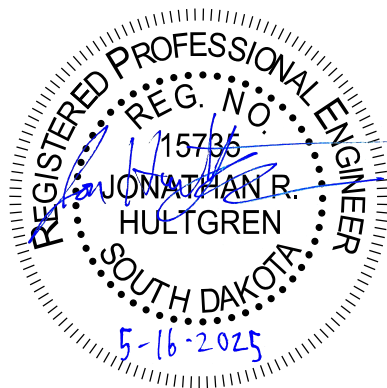
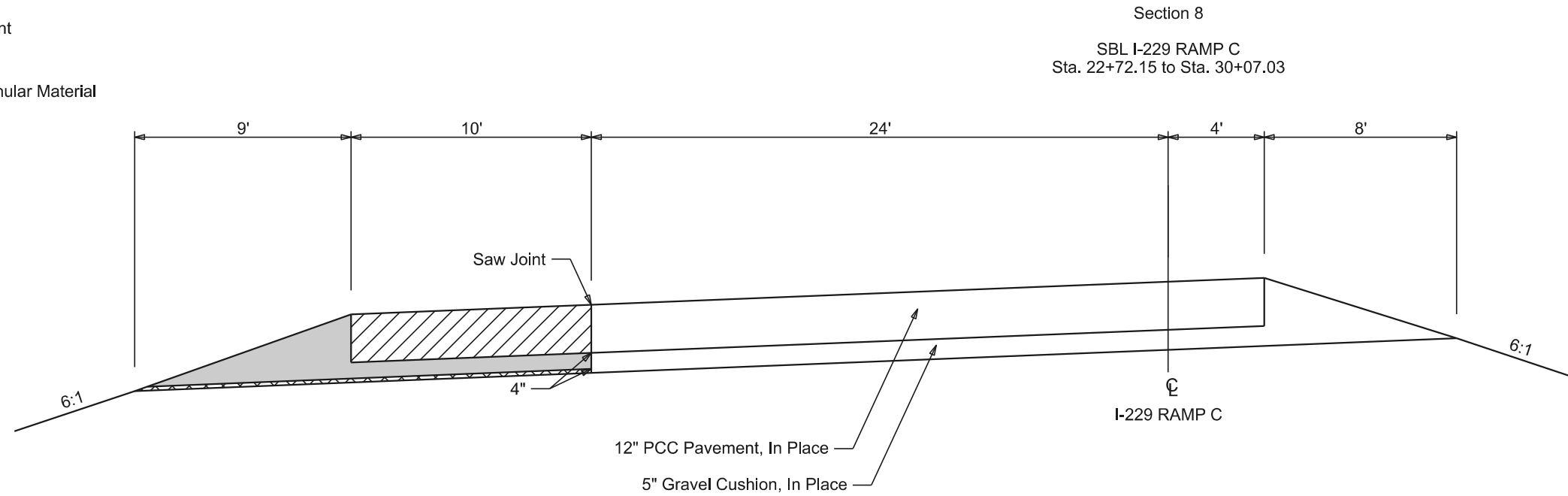
FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F14	F105

-  Unclassified Excavation
(See Section B)
-  Remove Concrete Pavement
(See Section B)
-  Salvage and Stockpile Granular Material
(Unclassified Excavation)
(See Section B)



TYPICAL SURFACING SECTIONS

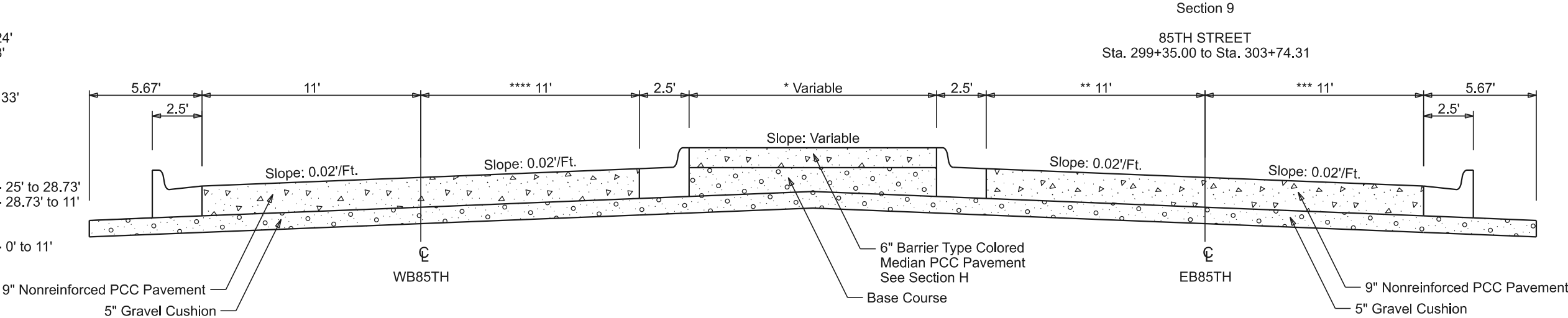


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F15	F105

Plotting Date: 5/16/2025

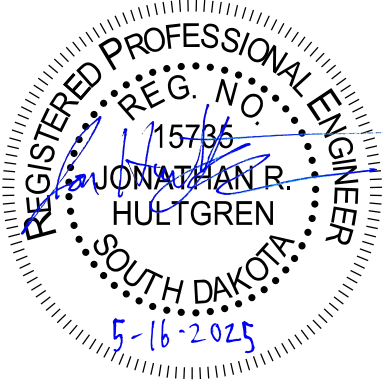
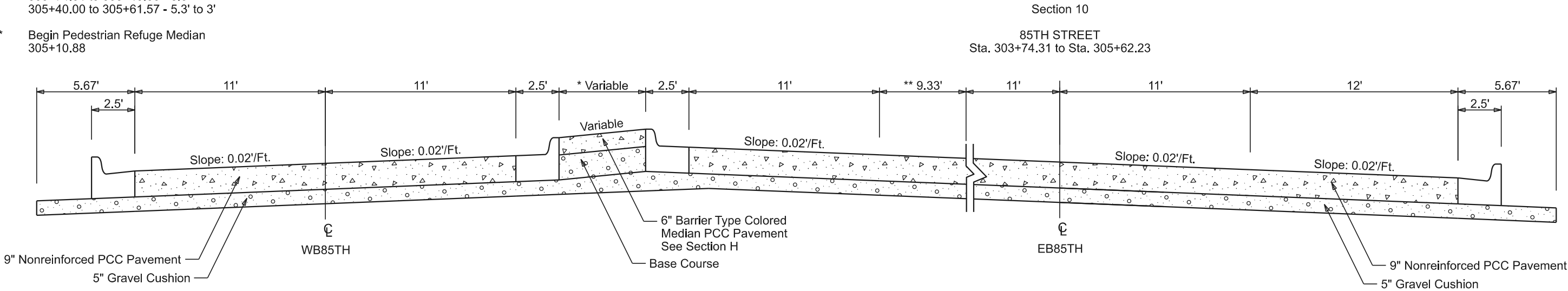
Transitions:

- * Median Transition
299+35.00 to 302+54.31 - 18.8' to 24'
302+54.31 to 303+74.10 - 24' to 4.8'
- ** Left Turn Lane Transition
302+54.31 to 303+74.31 - 11' to 31.33'
- *** Right Turn Lane Transition
302+54.31 to 303+74.31 - 11' to 23'
- **** Left Turn Lane Transition
WB85TH 399+35.00 to 401+37.43 - 25' to 28.73'
WB85TH 401+37.43 to 402+54.02 - 28.73' to 11'
- ***** Lane Transition
WB85TH 399+35.00 to 399+63.40 - 0' to 11'



Transitions:

- * Median Transition
303+74.31 to 305+40.00 - 5.3'
305+40.00 to 305+61.57 - 5.3' to 3'
- ** Begin Pedestrian Refuge Median
305+10.88



TYPICAL SURFACING SECTIONS

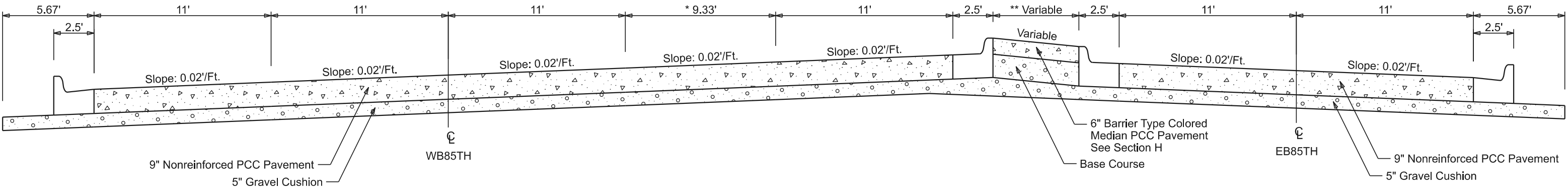


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F16	F105

Plotting Date: 5/16/2025

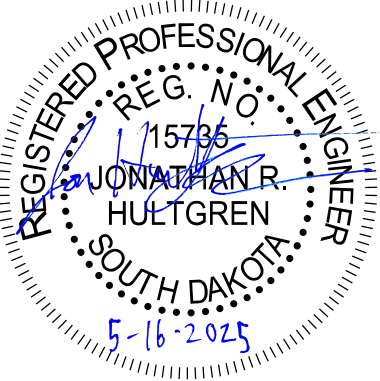
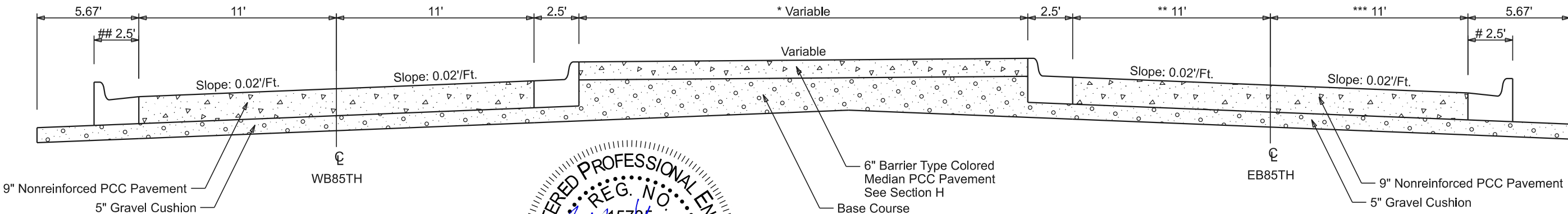
- Transitions:
- * Pedestrian Refuge Median
306+89.17 to 307+39.86 - 4.33'
 - ** Median Transition
306+89.17 to 307+19.98 - 3' to 5.33'
308+77.02 to 310+00.00 - 5.33' to 25.67'

Section 11
85TH STREET
Sta. 305+62.23 to Sta. 310+00.00



- Transitions:
- * Median Transition
310+00.00 to 313+18.05 - 25.66' to 33'
 - ** Added Lane
313+19.47 to 315+28.89 - 11' to 22'
 - *** Right Turn Lane Transition
313+19.47 to 315+28.89 - 11' to 22'
 - # Curb & Gutter Transition
314+39.78 - Type SFB69 to Type B69
 - ## Curb & Gutter Transition
315+82.47 to 316+05.27 - Type SFB69 to Type B69

Section 12
85TH STREET
Sta. 310+00.00 to Sta. 316+31.89



TYPICAL SURFACING SECTIONS



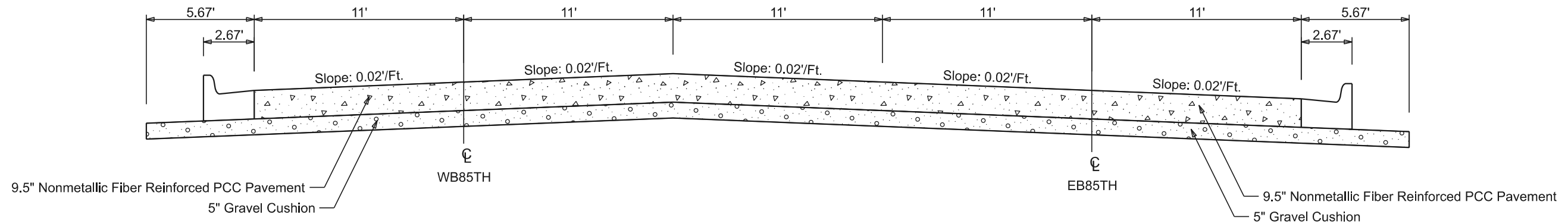
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F17	F105

Plotting Date: 5/16/2025

FOR BIDDING PURPOSES ONLY

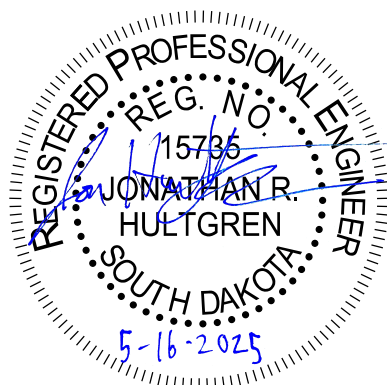
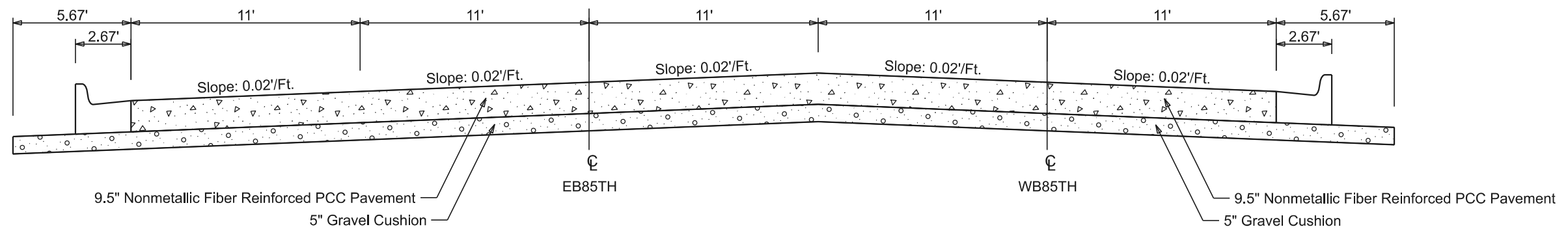
Section 13

85TH STREET CROSSOVER AREA
Sta. 316+31.89 to Sta. 317+11.60
Sta. 323+22.26 to Sta. 323+72.37



Section 14

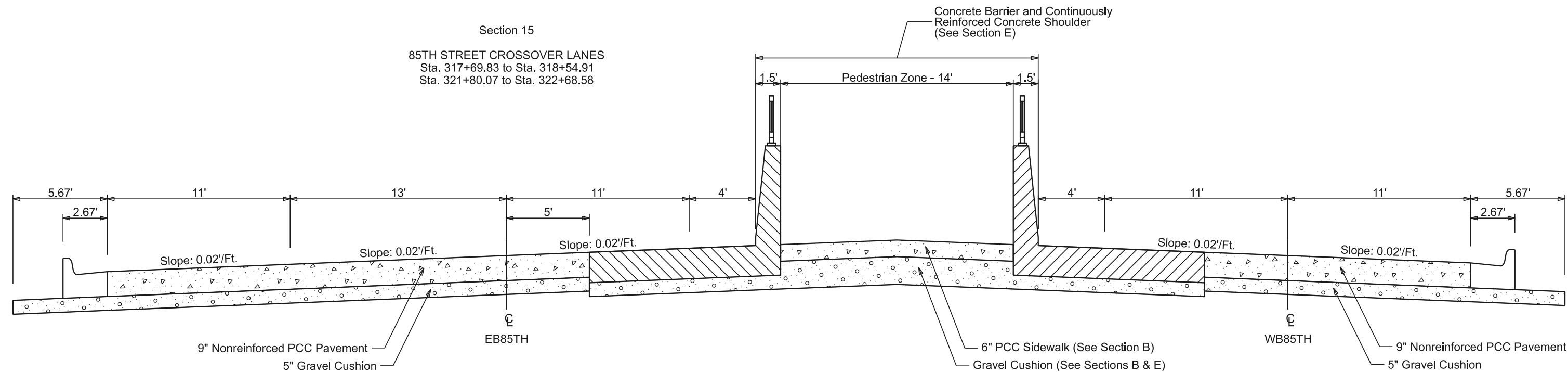
85TH STREET CROSSOVER AREA
Sta. 317+11.60 to Sta. 317+69.83
Sta. 322+68.58 to Sta. 323+22.26



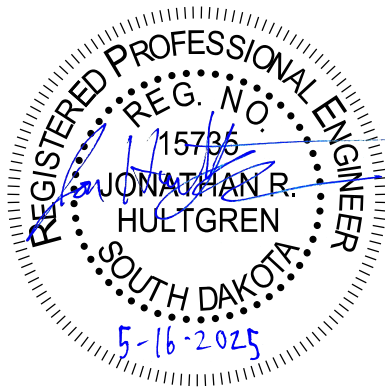
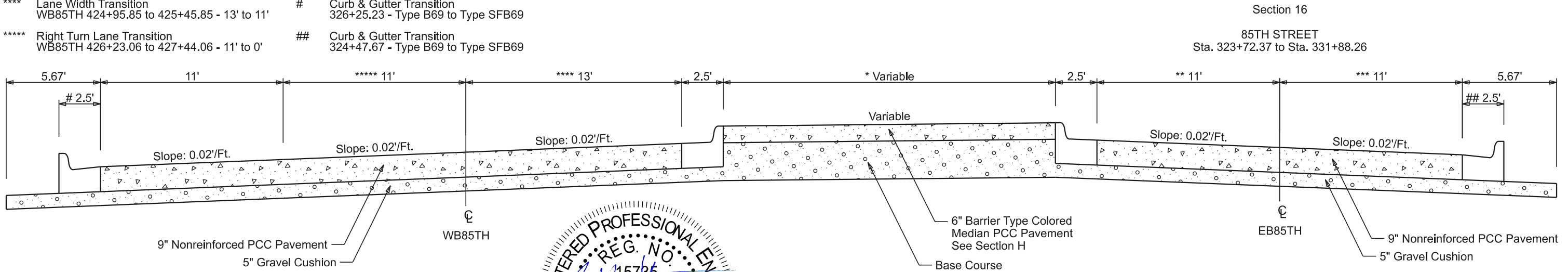
TYPICAL SURFACING SECTIONS

FOR BIDDING PURPOSES ONLY

SD DOT	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73	F18	F105
	IM 2292(104)0		
Plotting Date: 5/16/2025			



- Transitions:
- * 324+77.81 to 328+88.94 - 39' to 27'
 - 330+68.15 to 331+88.26 - 27' to 6.5'
 - ** Lane Width Transition
 - 324+77.81 to 325+27.81 - 13' to 11'
 - Left Turn Lane Transition
 - 330+68.26 to 331+88.26 - 11' to 31.33'
 - *** Right Turn Lane Transition
 - 330+68.26 to 331+88.26 - 11' to 22'
 - **** Lane Width Transition
 - WB85TH 424+95.85 to 425+45.85 - 13' to 11'
 - # Curb & Gutter Transition
 - 326+25.23 - Type B69 to Type SFB69
 - ***** Right Turn Lane Transition
 - WB85TH 426+23.06 to 427+44.06 - 11' to 0'
 - ## Curb & Gutter Transition
 - 324+47.67 - Type B69 to Type SFB69



TYPICAL SURFACING SECTIONS

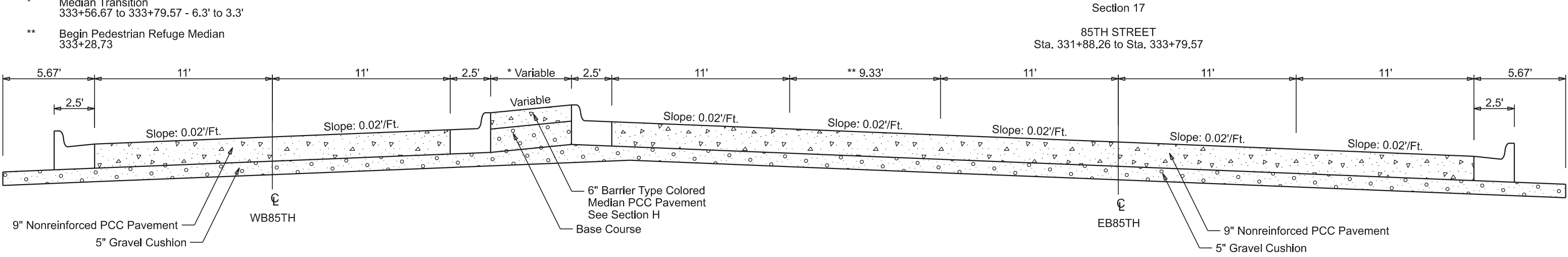


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F19	F105

Plotting Date: 5/16/2025

Transitions:
* Median Transition
333+56.67 to 333+79.57 - 6.3' to 3.3'

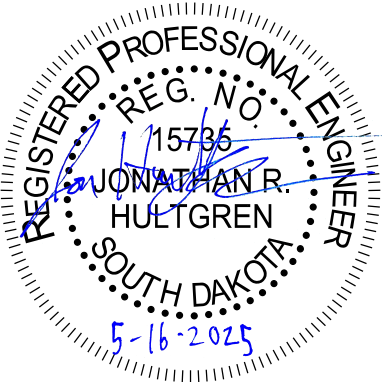
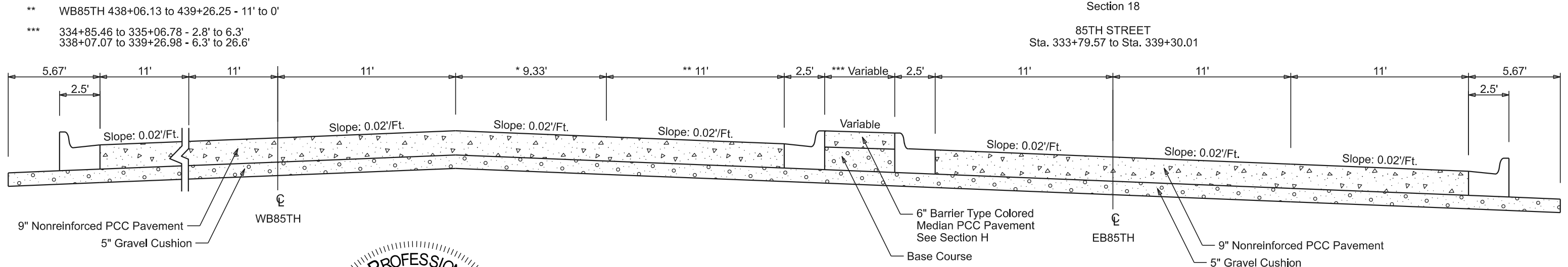
** Begin Pedestrian Refuge Median
333+28.73



Transitions:
* End Pedestrian Refuge Median
WB85TH 435+60.42
Pedestrian Refuge Median Transition
WB85TH 438+05.21 to 438+60.34 - 9.33' to 0'

** WB85TH 438+06.13 to 439+26.25 - 11' to 0'

*** 334+85.46 to 335+06.78 - 2.8' to 6.3'
338+07.07 to 339+26.98 - 6.3' to 26.6'



TYPICAL SURFACING SECTIONS

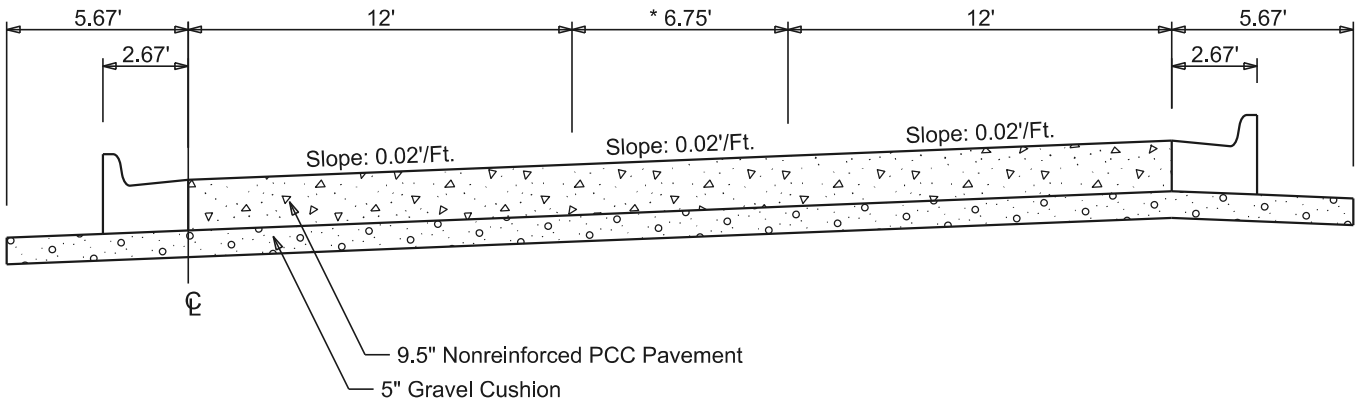


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F20	F105

Plotting Date: 5/16/2025

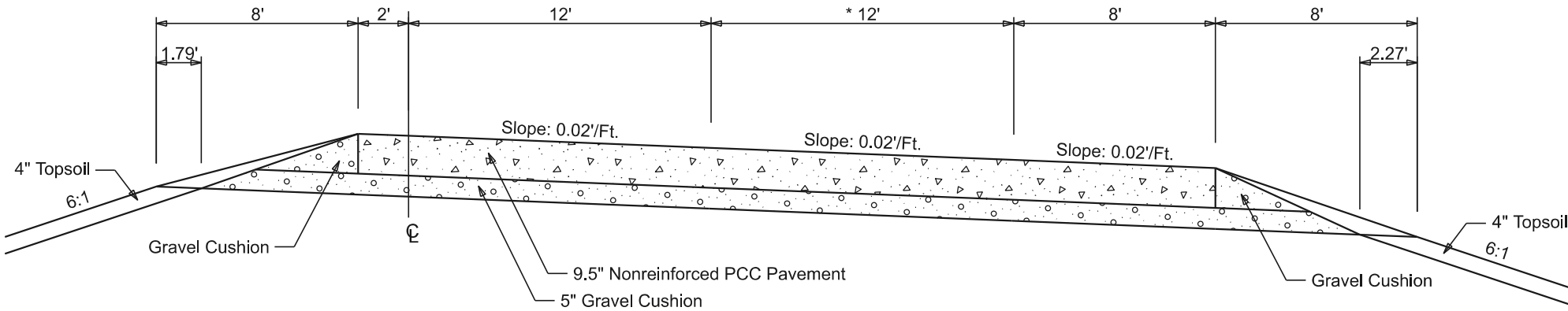
Transitions:
* Painted Gore Transition
10+00.00 to 11+00.00 - 0' to 6.75'
11+00.00 to 12+11.00 - 6.75' to 0'

Section 19
RAMP A
Sta. 10+00.00 to Sta. 12+11.00

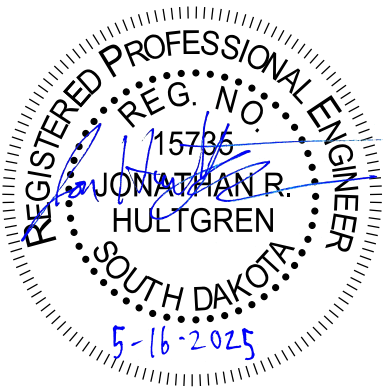
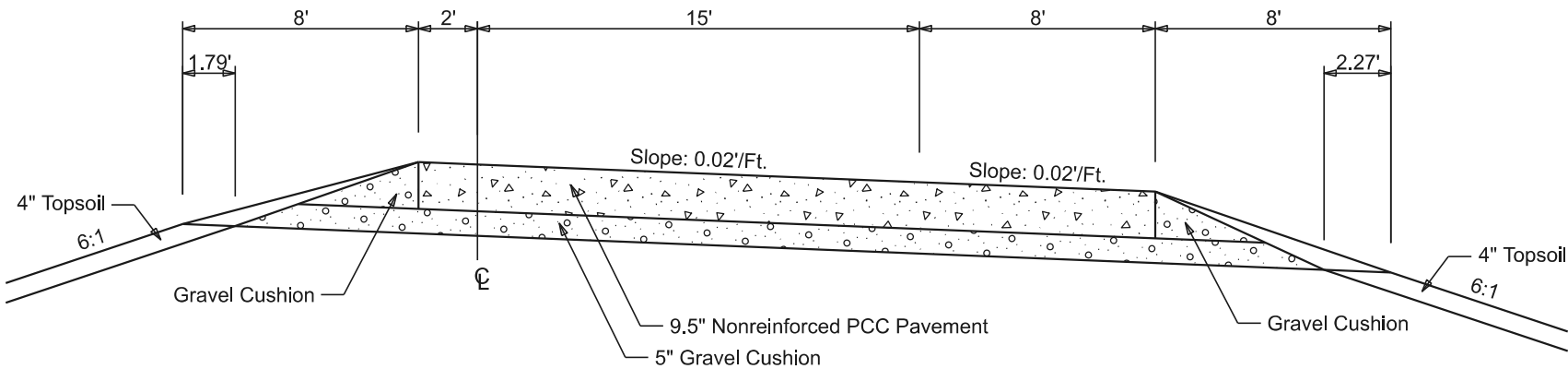


Transitions:
* 17+37.00 to 23+37.68 - 12' to 3'

Section 20
RAMP A
Sta. 12+11.00 to Sta. 26+20.00



Section 21
RAMP B
Sta. 20+00.00 to Sta. 29+65.00



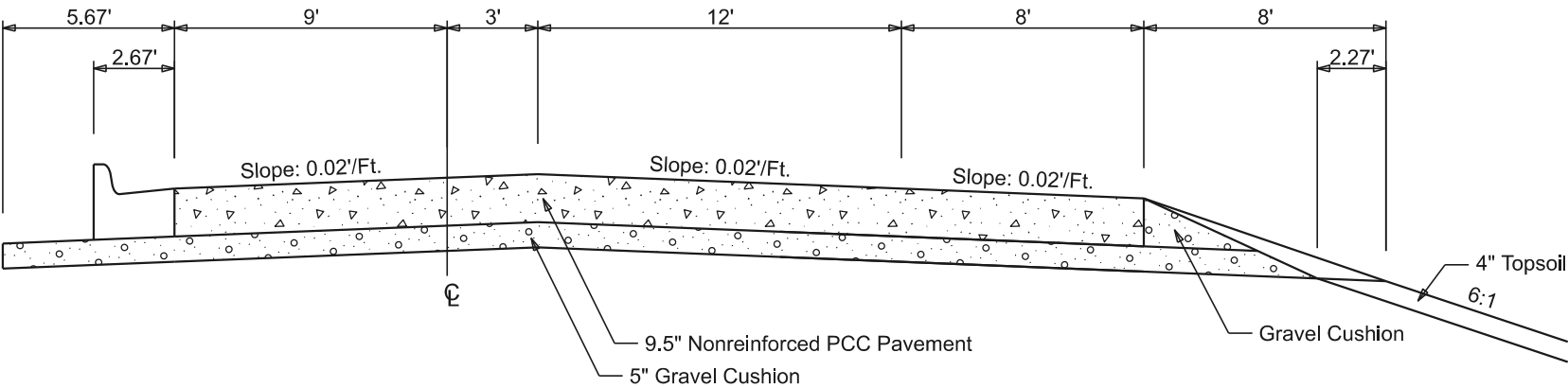
TYPICAL SURFACING SECTIONS

SD DOT	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	F21	F105
Plotting Date: 5/16/2025			

FOR BIDDING PURPOSES ONLY

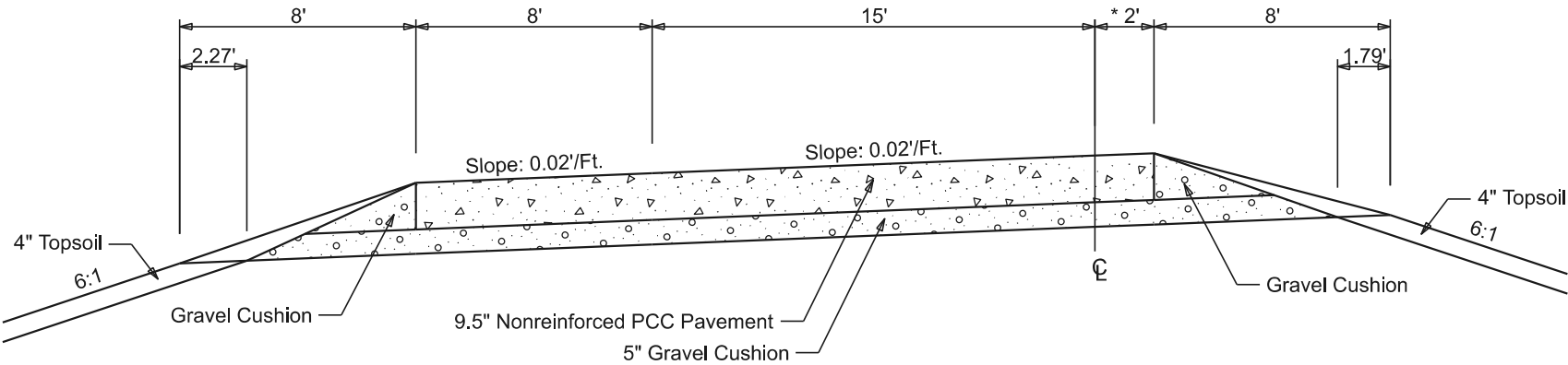
Section 22

RAMP B
Sta. 29+65.00 to Sta. 34+50.00



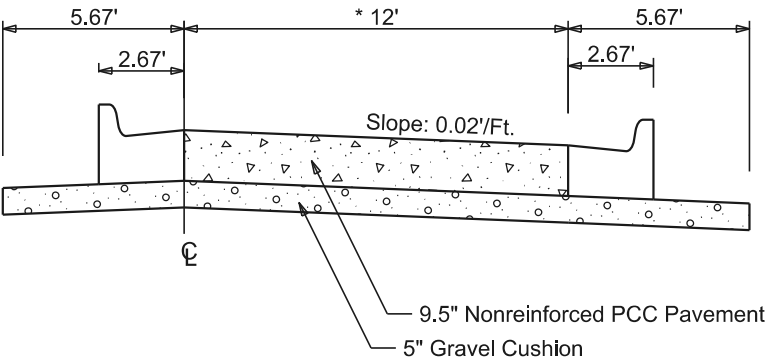
Section 23

Various Ramps
Sta. 30+00.00 to Sta. 43+36.00 Ramp C
Sta. 56+75.65 to Sta. 60+10.83 Ramp D
Sta. 70+00.00 to Sta. 82+52.60 Ramp D_Conn



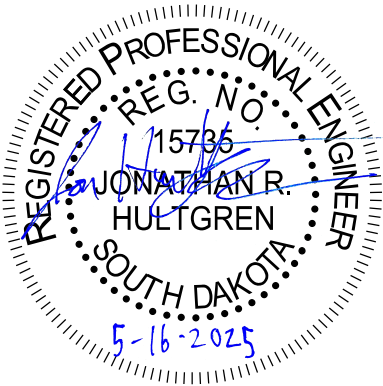
Section 24

RAMP D
Sta. 40+00.00 to Sta. 41+89.68



Transitions:
* 58+94.98 - 2' to 4' Ramp D

Transitions:
* 40+00.00 to 41+67.47- 20.5' to 12'



TYPICAL SURFACING SECTIONS

FOR BIDDING PURPOSES ONLY

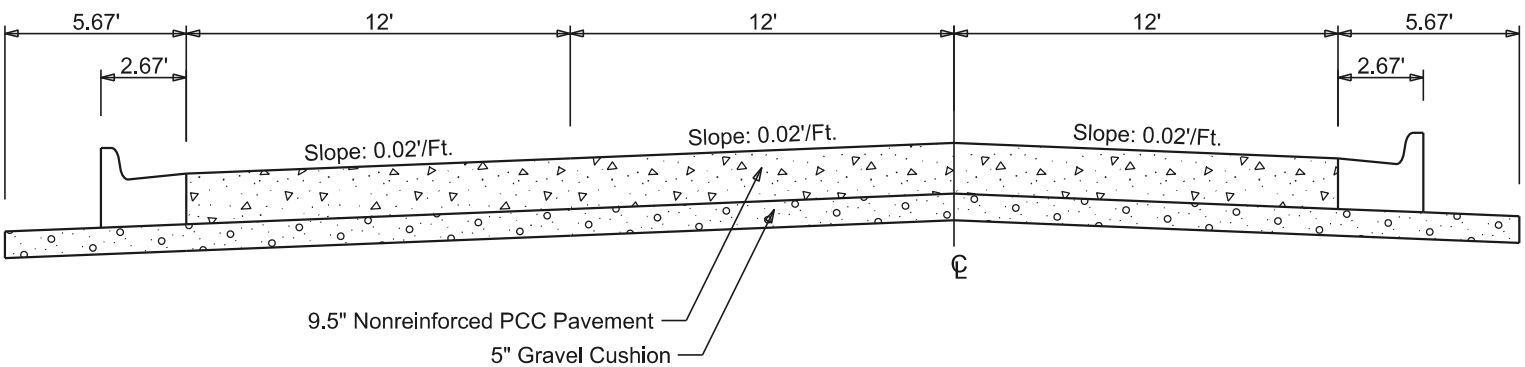


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F22	F105

Plotting Date: 5/16/2025

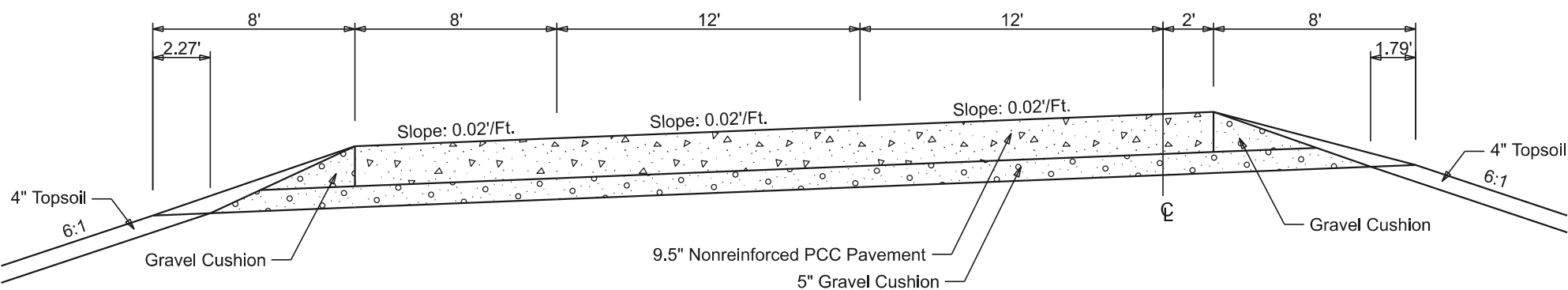
Section 25

RAMP D
Sta. 41+89.68 to Sta. 47+51.42



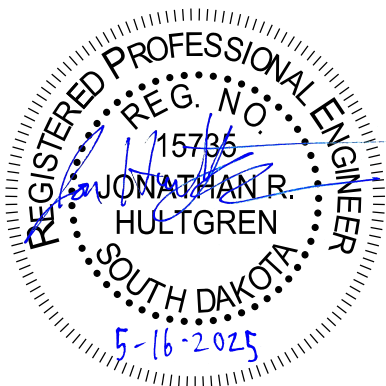
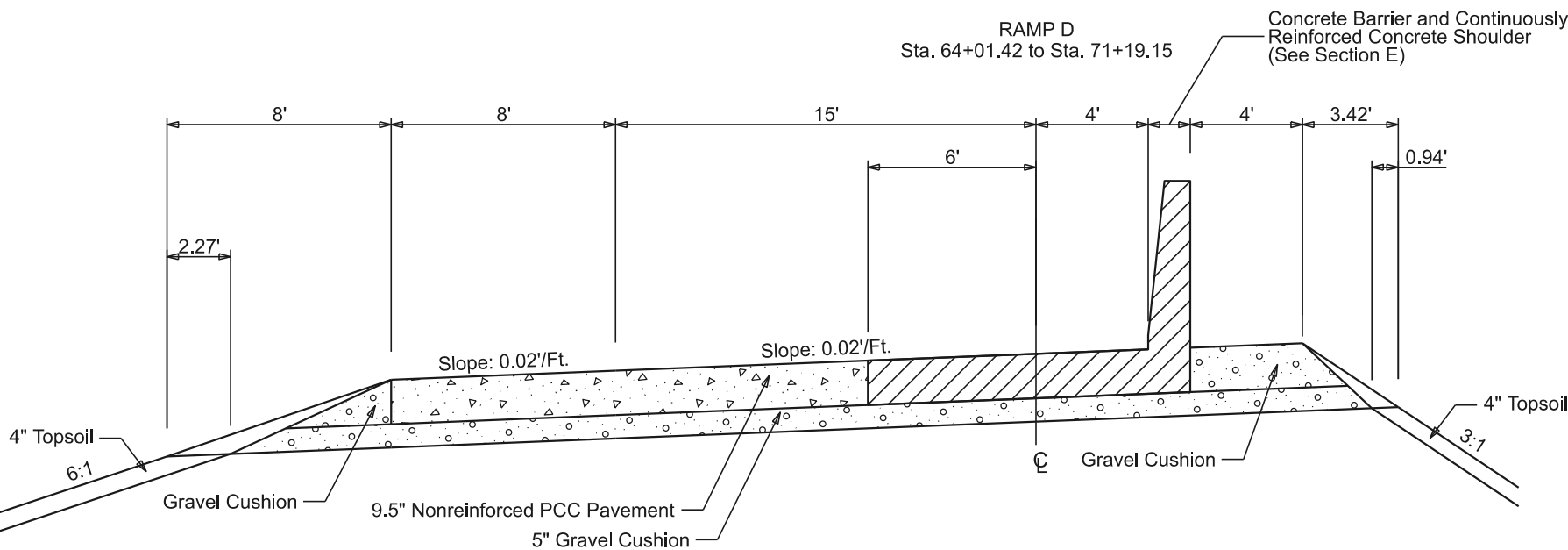
Section 26

RAMP D
Sta. 47+51.42 to Sta. 56+75.65



Section 27

RAMP D
Sta. 64+01.42 to Sta. 71+19.15



TYPICAL SURFACING SECTIONS

FOR BIDDING PURPOSES ONLY

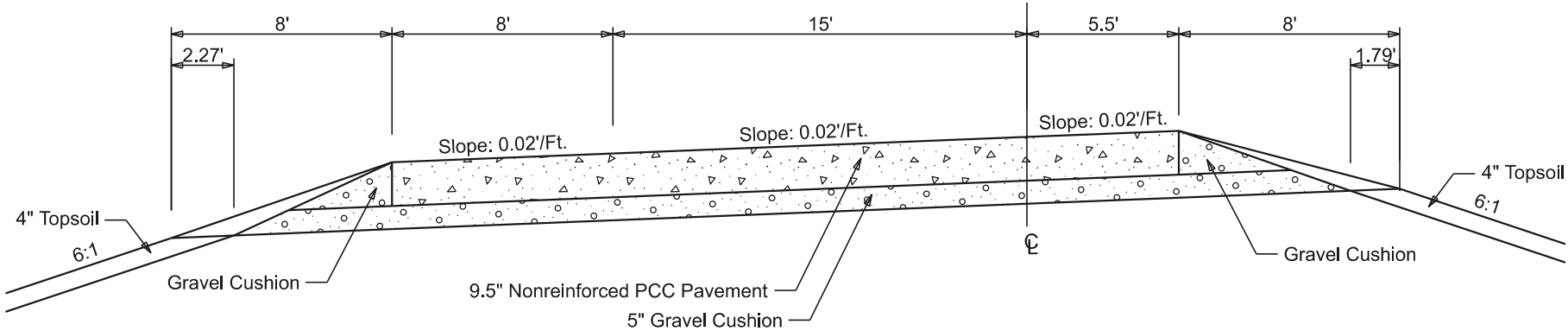


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F23	F105

Plotting Date: 5/16/2025

Section 28

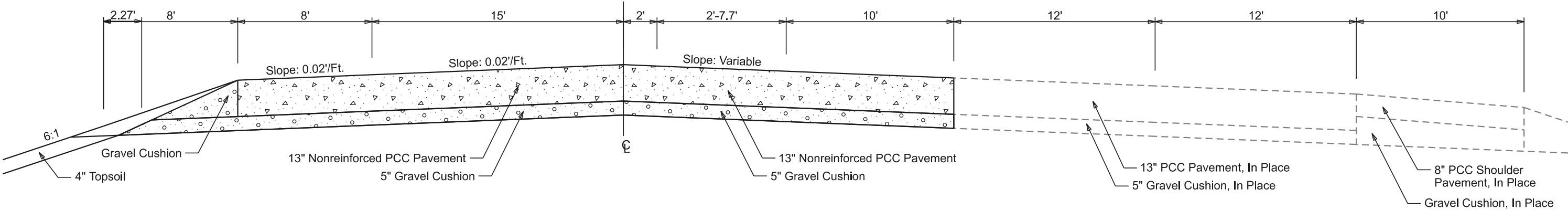
RAMP D
Sta. 71+19.15 to Sta. 71+34.00



Section 29

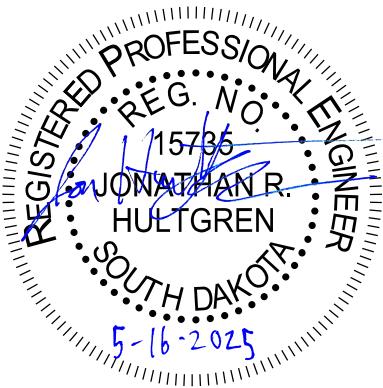
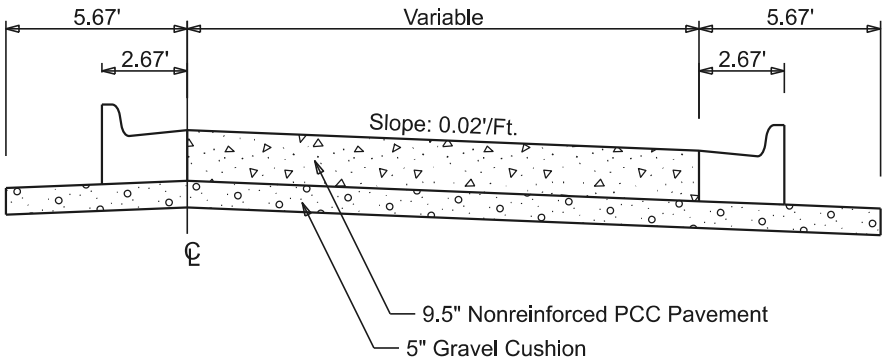
RAMP D
Sta. 71+34.00 to Sta. 77+27.75

Existing SBL I-29



Section 30

Various Ramps
Sta. 15+00.00 to Sta. 17+50.00 Ramp E
Sta. 25+50.00 to Sta. 26+70.00 Ramp F
Sta. 35+00.00 to Sta. 37+50.00 Ramp G
Sta. 4+00.00 to Sta. 6+13.84 Ramp H (Reversed)



TYPICAL SURFACING SECTIONS



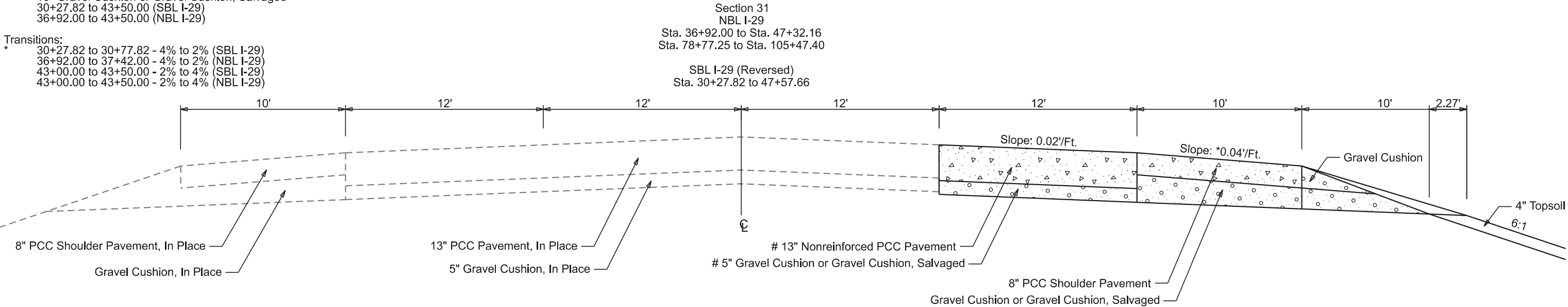
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F24	F105

Plotting Date: 7/1/2025

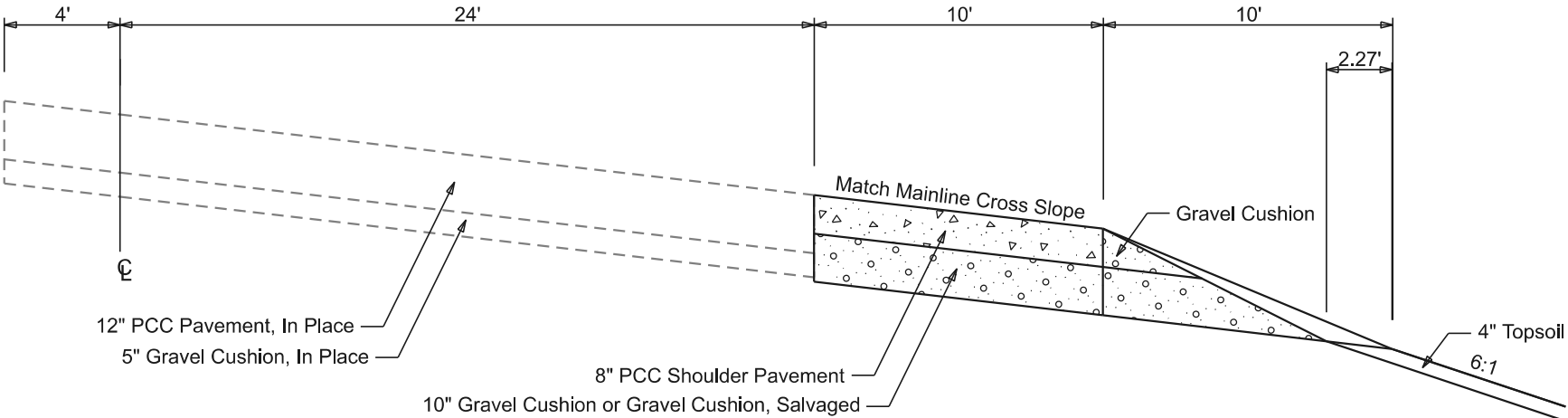
Revised Date: 6/19/2025
Initials: NBG

8" PCC Shoulder Pavement and
10" Gravel Cushion or Gravel Cushion, Salvaged
30+27.82 to 43+50.00 (SBL I-29)
36+92.00 to 43+50.00 (NBL I-29)

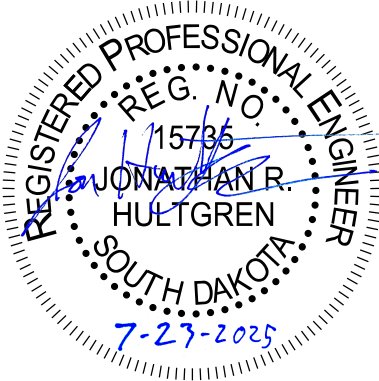
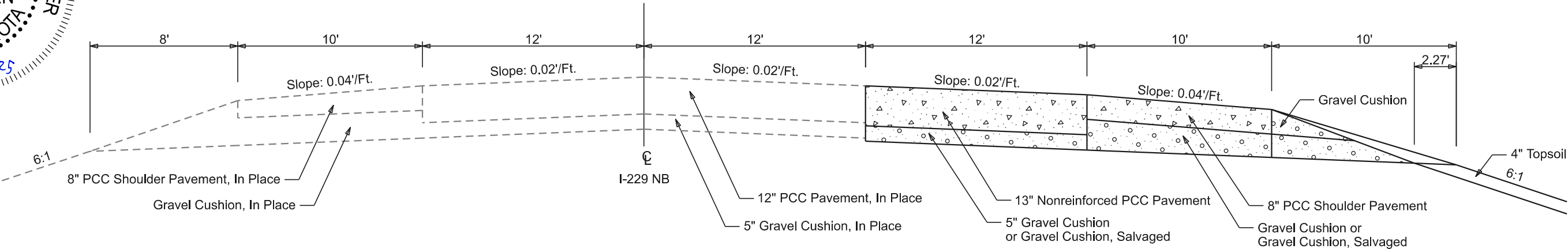
Transitions:
* 30+27.82 to 30+77.82 - 4% to 2% (SBL I-29)
36+92.00 to 37+42.00 - 4% to 2% (NBL I-29)
43+00.00 to 43+50.00 - 2% to 4% (SBL I-29)
43+00.00 to 43+50.00 - 2% to 4% (NBL I-29)



Section 32
Sta. 154+86.08 to Sta. 179+84.01 NBL I-229
Sta. 18+75.19 to Sta. 46+55.35 I-229 Ramp B



Section 33
NBL I-229
Sta. 179+84.01 to Sta. 181+09.40



TYPICAL SURFACING SECTIONS

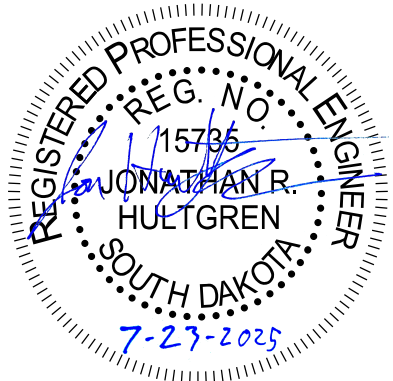
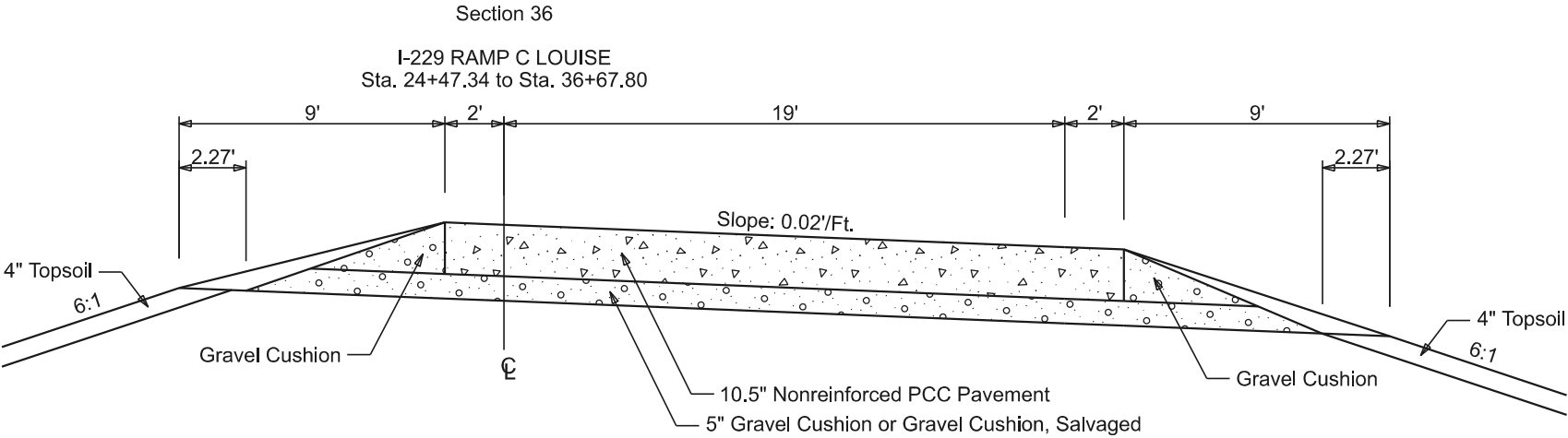
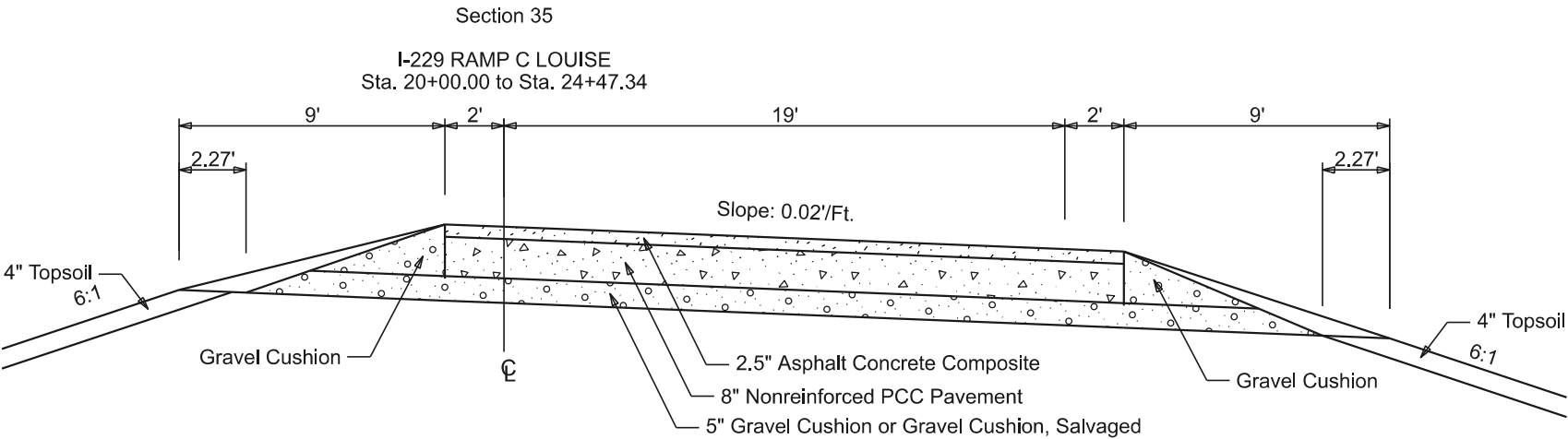
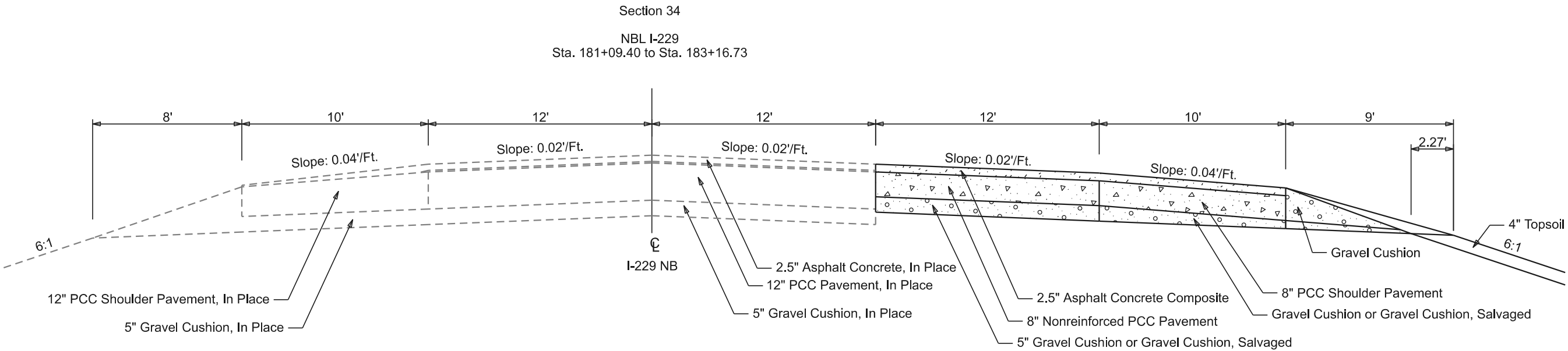


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F25	F105

Plotting Date: 7/1/2025

Revised Date: 6/19/2025
Initials: NBG

FOR BIDDING PURPOSES ONLY



TYPICAL SURFACING SECTIONS

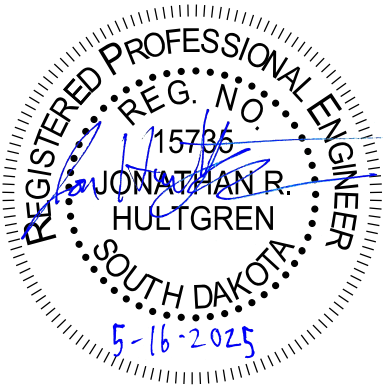
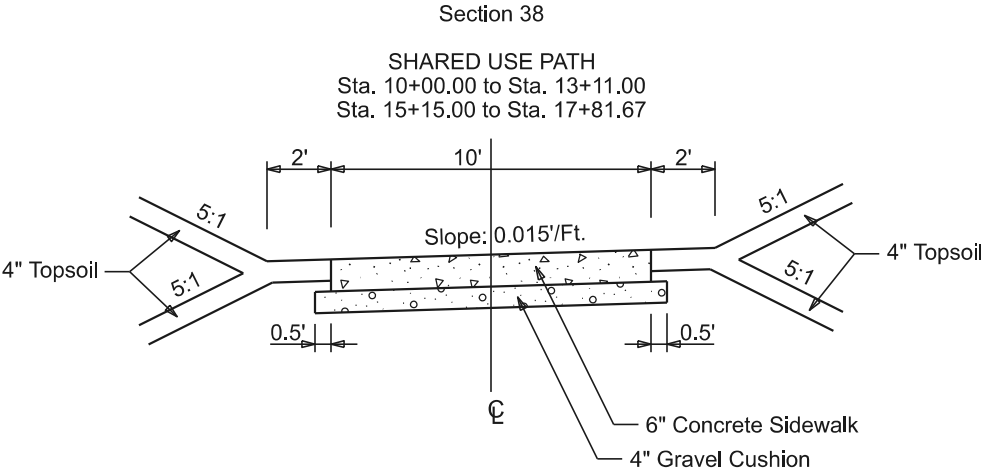
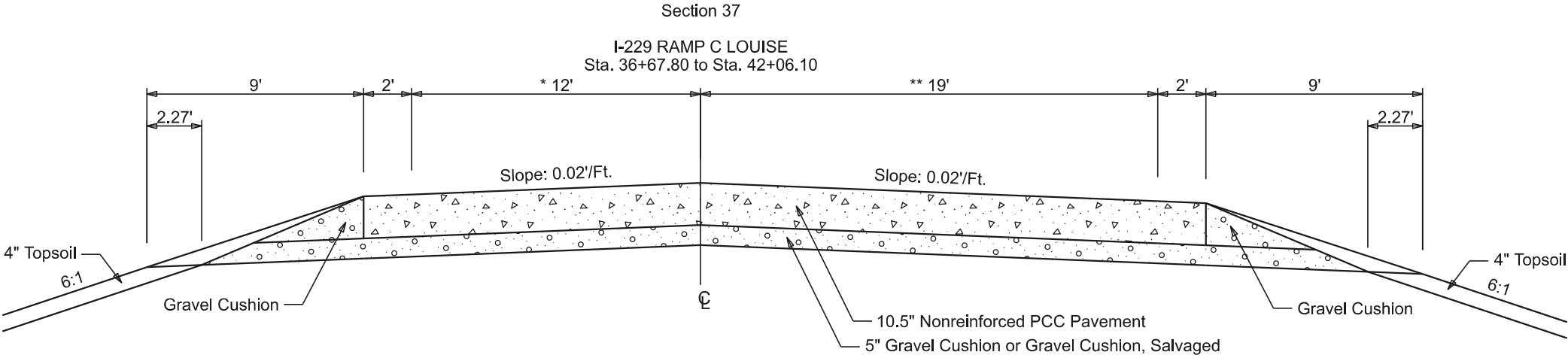
FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F26	F105

Plotting Date: 5/16/2025

Transitions:
* 36+67.80 to 40+24.04 - 0' to 12'
** 40+66.95 to 42+06.10 - 19 to 26'
42+06.10 to 42+66.34 - 26'
42+66.34 to 43+87.81 - 12'



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

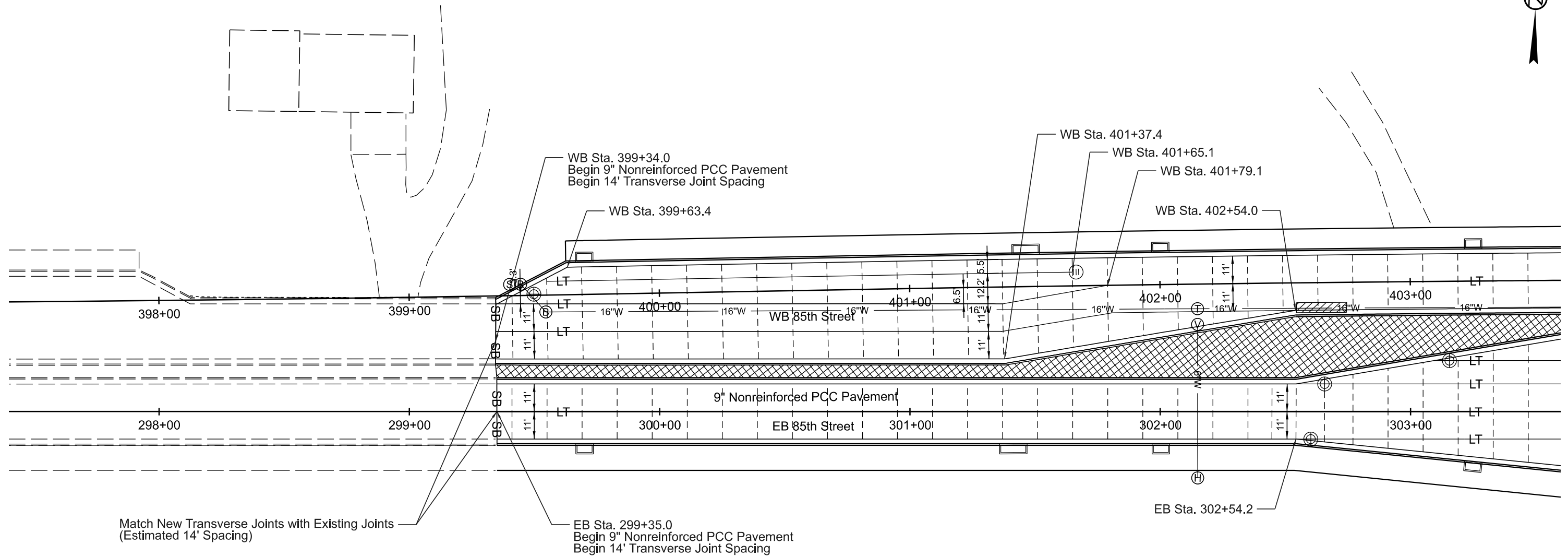


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F27	F105

Plotting Date: 7/21/2025

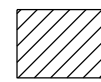
Revised Date: 7/21/2025
Initials: NBG

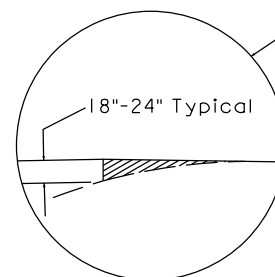
 Median / Island Landscaping
(See Section H)



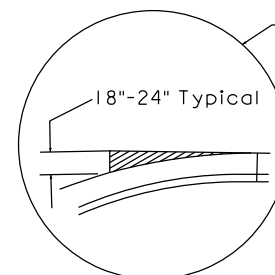
LEGEND:

Longitudinal Joint Without Tie Bars (Construction or Sawed) ——— L ——— L ———
Longitudinal Joint With Tie Bars (Construction or Sawed) ——— LT ——— LT ———
Transverse Contraction Joint ——— SB ——— SB ———
Steel Bar Installation in Longitudinal or Transverse Joint ——— SB ——— SB ———
Areas to be poured monolithically with adjacent slab (See Detail A)
Areas to be poured monolithically with adjacent curb and gutter (See Detail B)
Reinforce Transverse or Longitudinal joint termination (See Detail C)
with #4 x 30" rebar 12" Center to Center

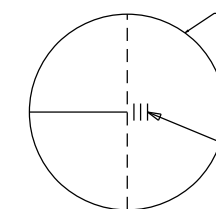
 Transverse contraction joints within these areas will not have dowel bar assemblies. All other transverse contraction joints will have dowel bar assemblies.



DETAIL A

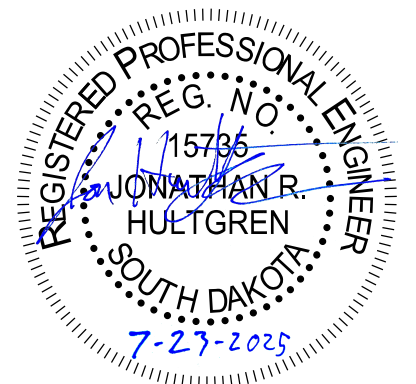


DETAIL B



DETAIL C

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



PCC PAVEMENT JOINT LAYOUT

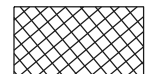
FOR BIDDING PURPOSES ONLY



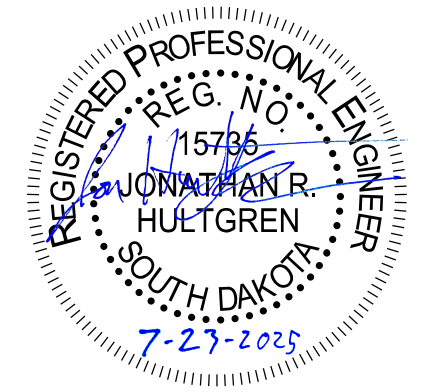
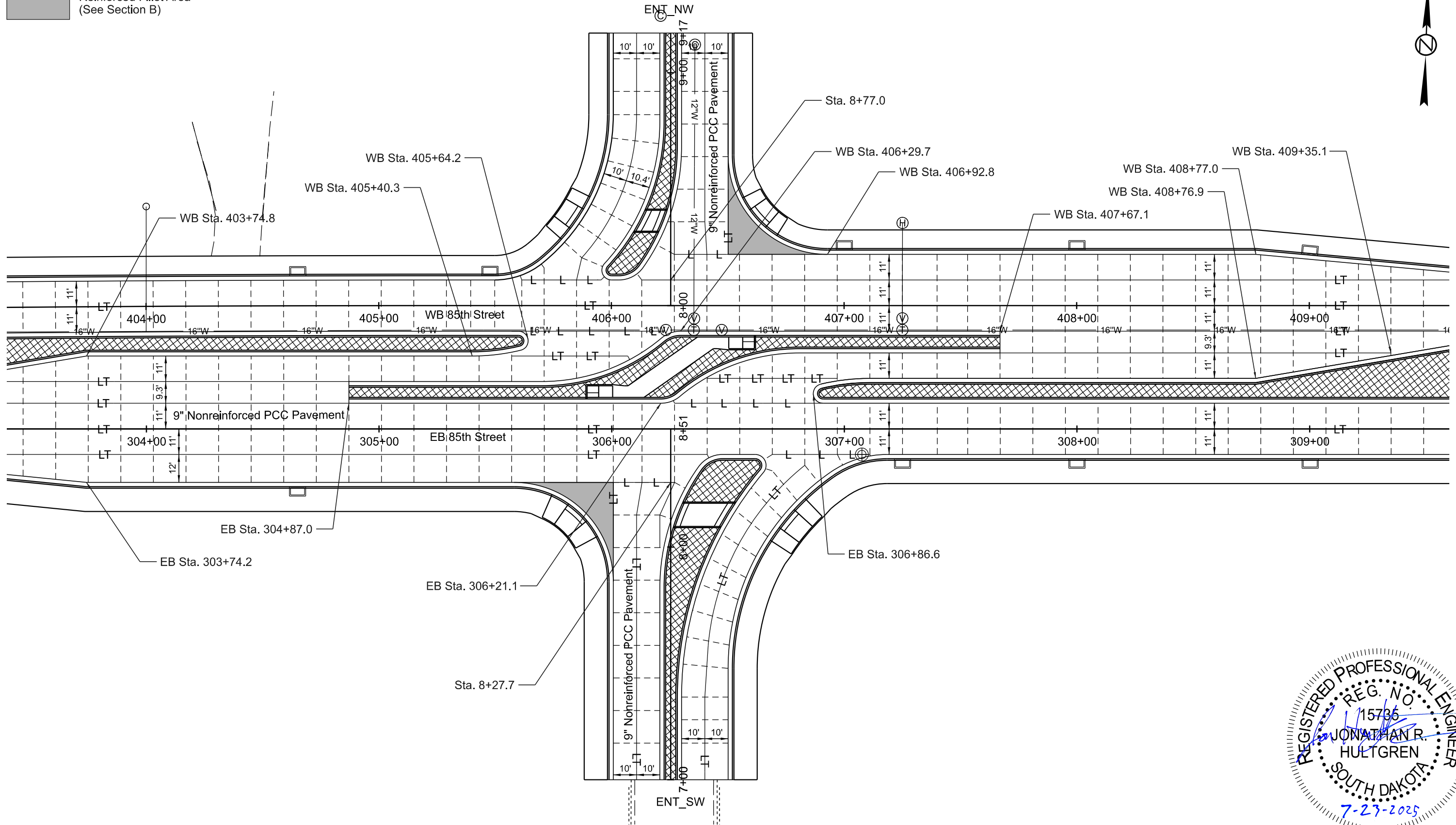
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F28	F105

Plotting Date: 7/21/2025

Revised Date: 7/21/2025
Initials: NBG

 Median / Island Landscaping
(See Section H)

 Reinforced Fillet Area
(See Section B)



PCC PAVEMENT JOINT LAYOUT

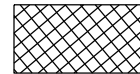
FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F29	F105

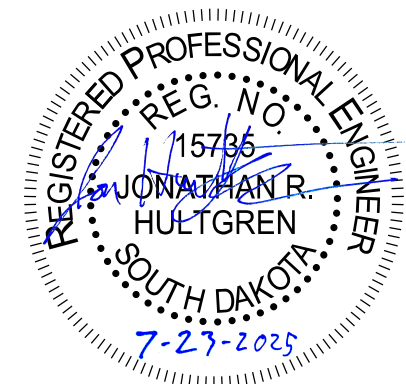
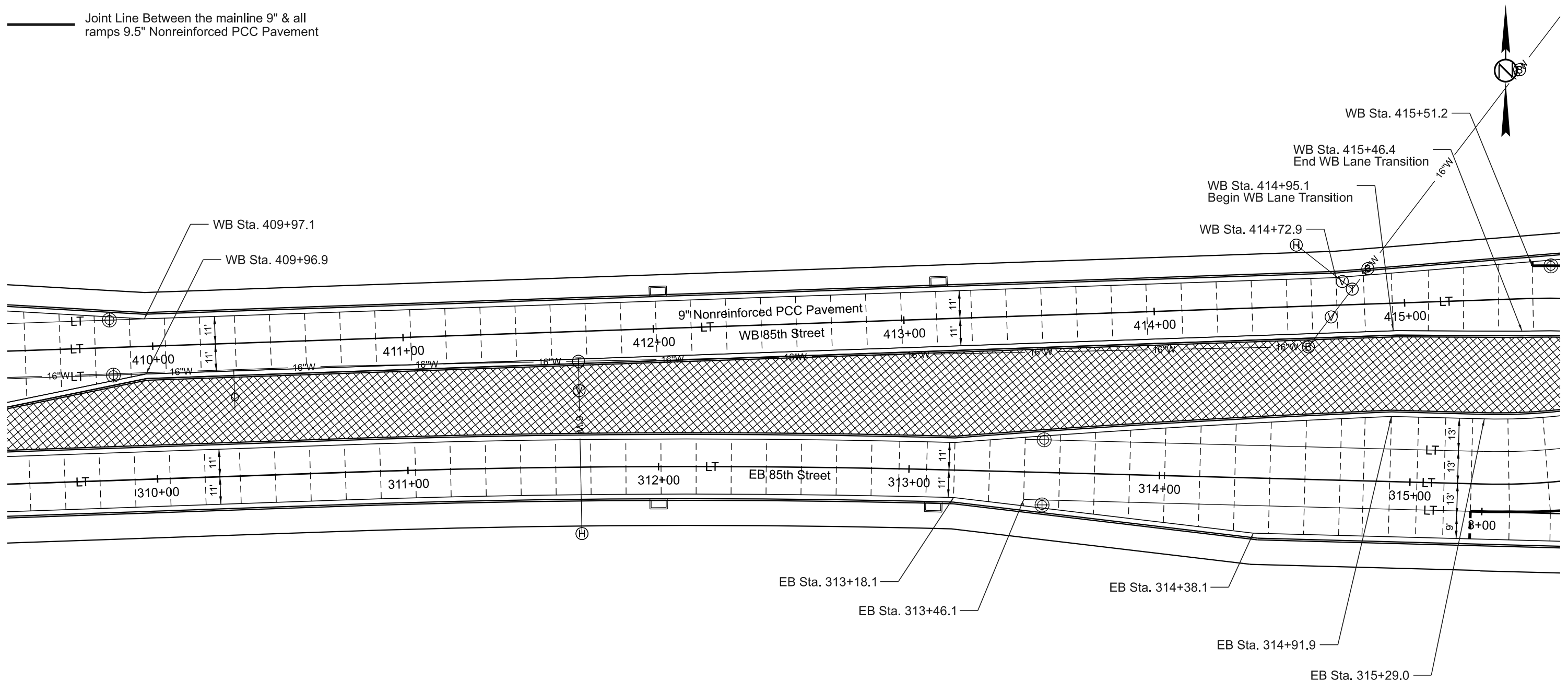
Plotting Date: 7/21/2025

Revised Date: 7/21/2025
Initials: NBG



Median / Island Landscaping
(See Section H)

Joint Line Between the mainline 9" & all
ramps 9.5" Nonreinforced PCC Pavement



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



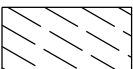
PROJECT
EM 0292(88)73
IM 2292(104)0

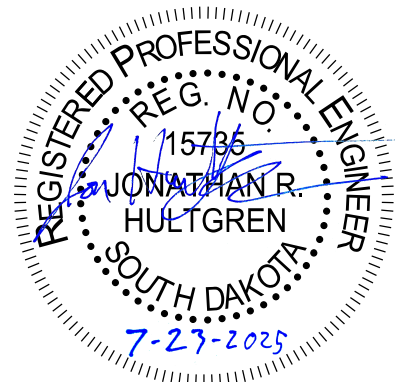
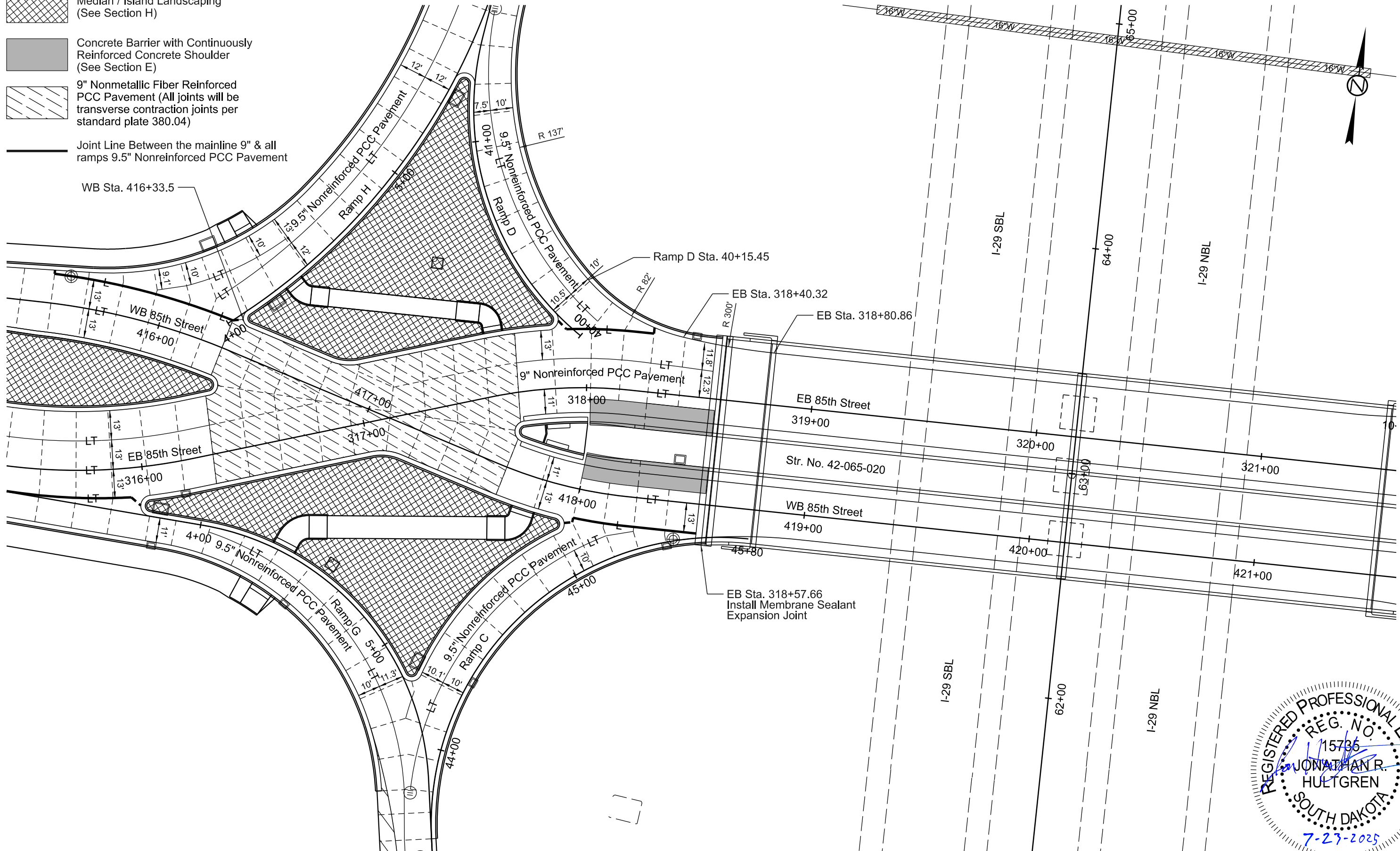
SHEET
F30

TOTAL
SHEETS
F105

Plotting Date: 7/21/2025

Revised Date: 7/21/2025
Initials: NBG

-  Median / Island Landscaping (See Section H)
-  Concrete Barrier with Continuously Reinforced Concrete Shoulder (See Section E)
-  9" Nonmetallic Fiber Reinforced PCC Pavement (All joints will be transverse contraction joints per standard plate 380.04)
-  Joint Line Between the mainline 9" & all ramps 9.5" Nonreinforced PCC Pavement



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



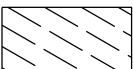
PROJECT
EM 0292(88)73
IM 2292(104)0

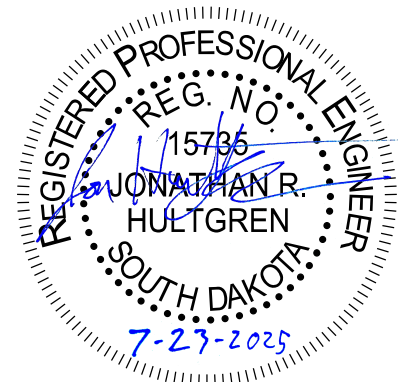
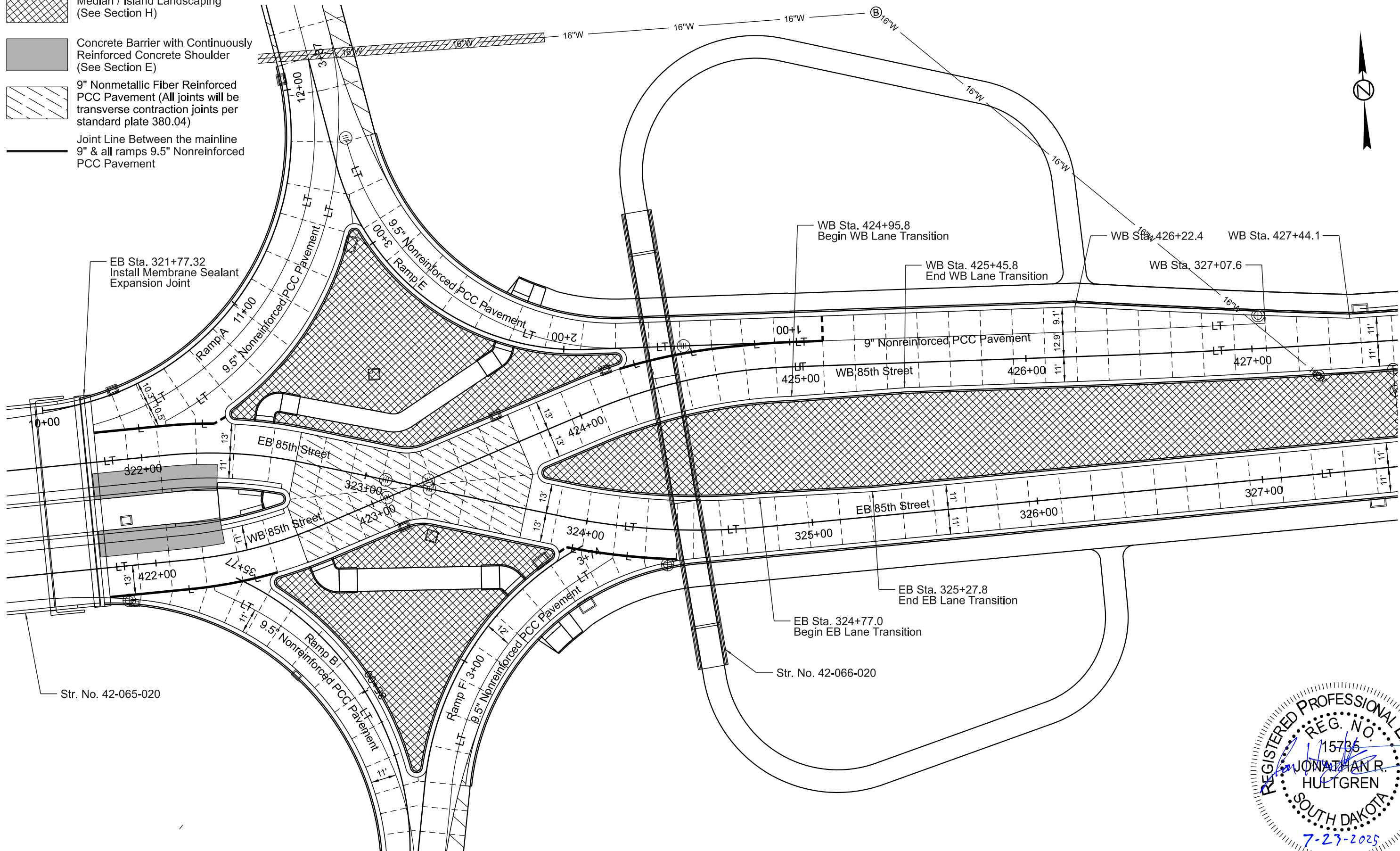
SHEET
F31

TOTAL
SHEETS
F105

Plotting Date: 7/21/2025

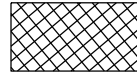
Revised Date: 7/21/2025
Initials: NBG

-  Median / Island Landscaping (See Section H)
-  Concrete Barrier with Continuously Reinforced Concrete Shoulder (See Section E)
-  9" Nonmetallic Fiber Reinforced PCC Pavement (All joints will be transverse contraction joints per standard plate 380.04)
-  Joint Line Between the mainline 9" & all ramps 9.5" Nonreinforced PCC Pavement



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



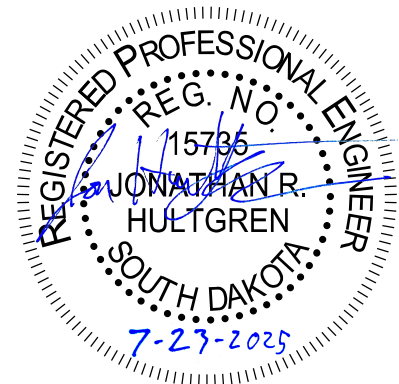
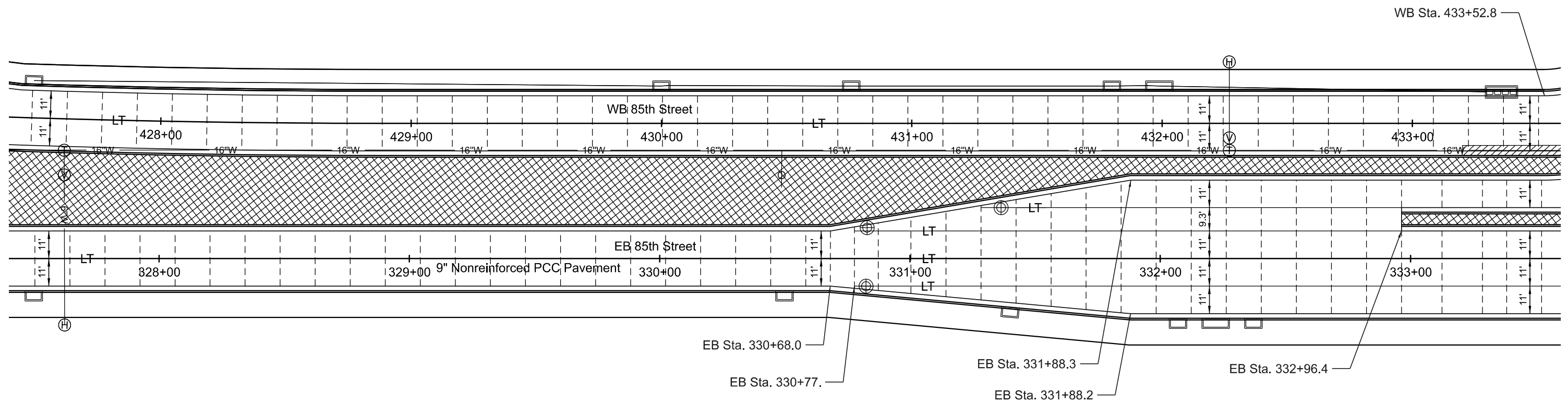
Median / Island Landscaping
(See Section H)

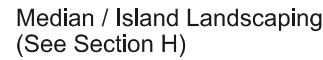


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F32	F105

Plotting Date: 7/21/2025

Revised Date: 7/21/2025
Initials: NBG



Reinforced Fillet Area
(See Section B)

ENT_NE

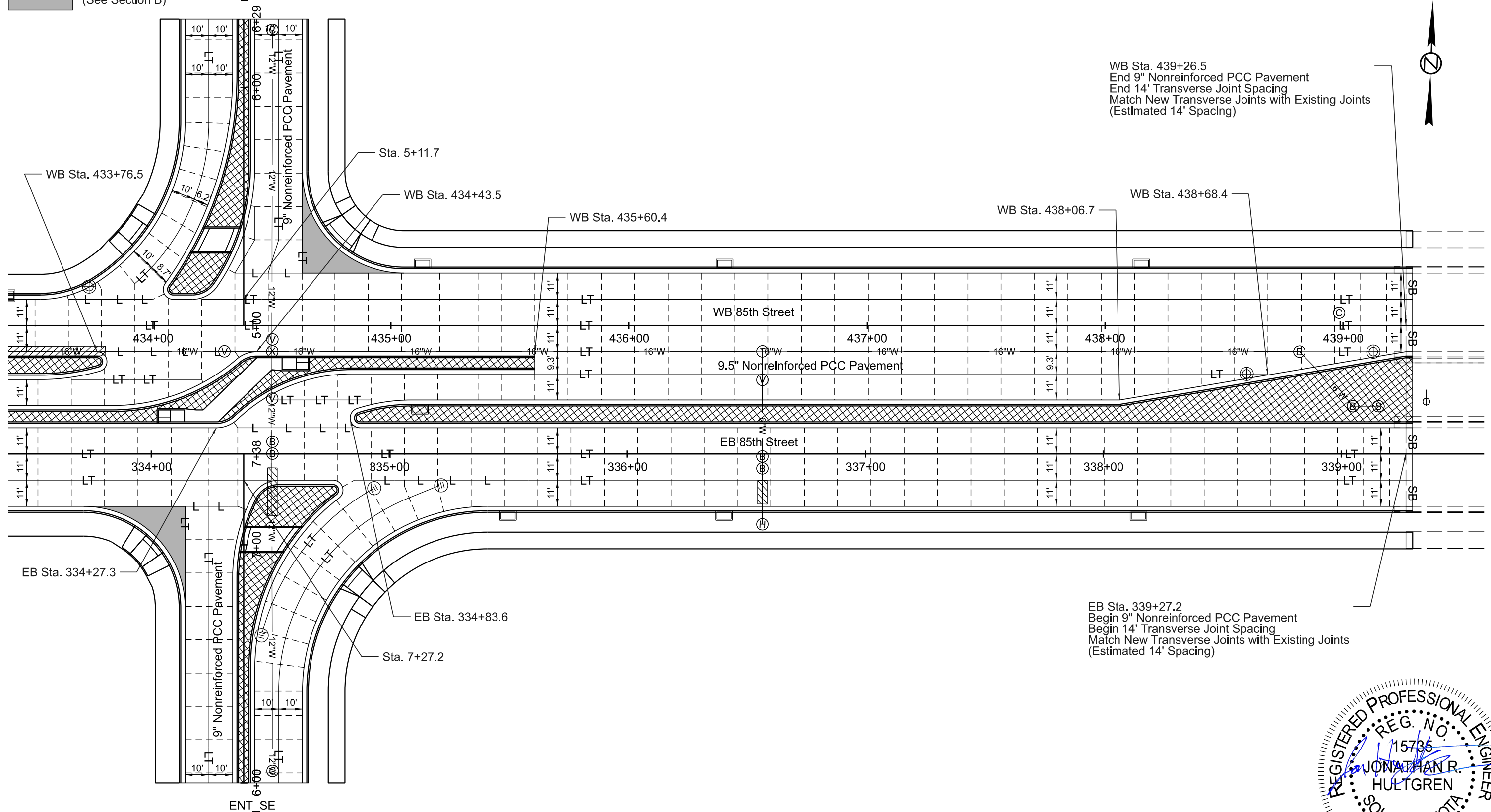
PCC PAVEMENT JOINT LAYOUT



PROJECT
EM 0292(88)73
IM 2292(104)0

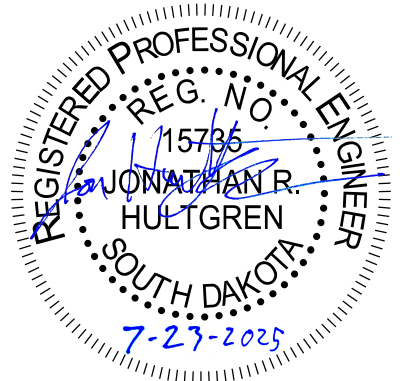
SHEET	TOTAL SHEETS
F33	F105

Revlsd Date: 7/21/2025
Initials: NBG



WB Sta. 439+26.5
End 9" Nonreinforced PCC Pavement
End 14' Transverse Joint Spacing
Match New Transverse Joints with Existing Joints
(Estimated 14' Spacing)

EB Sta. 339+27.2
Begin 9" Nonreinforced PCC Pavement
Begin 14' Transverse Joint Spacing
Match New Transverse Joints with Existing Joints
(Estimated 14' Spacing)



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date:

7/1/2025

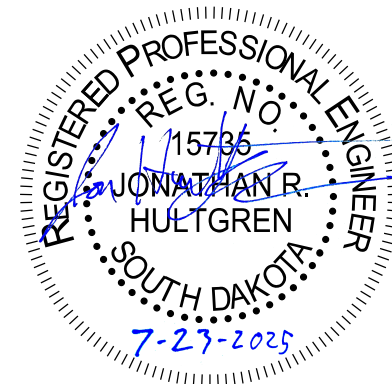
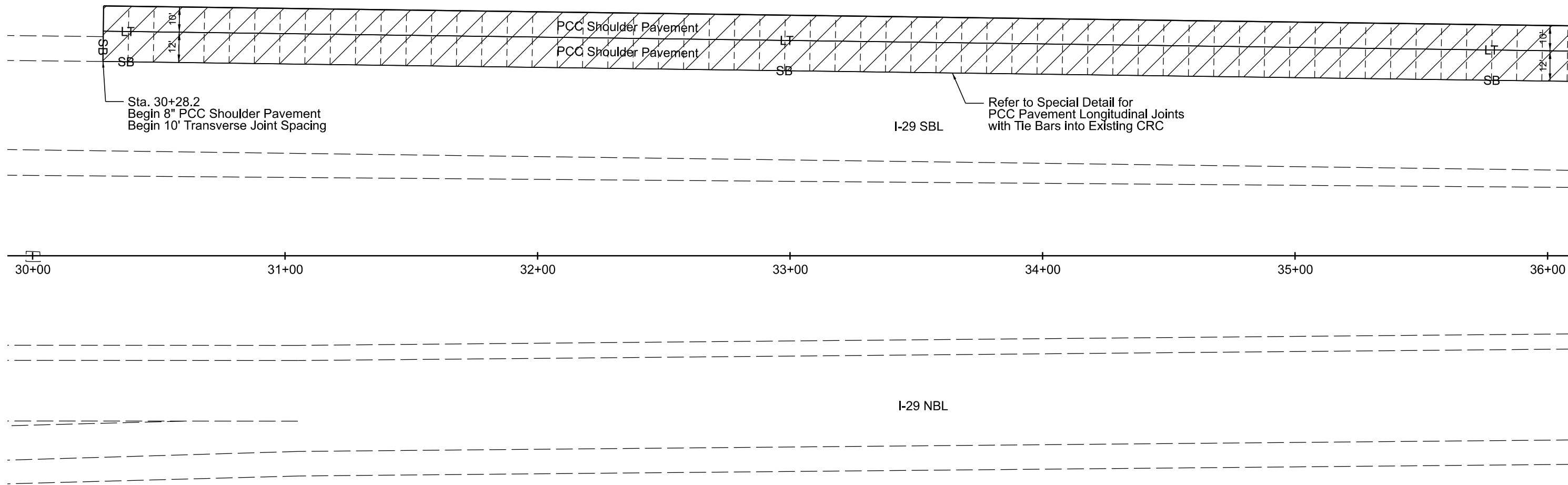
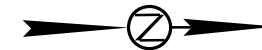
PROJECT
EM 0292(88)73 IM 2292(104)0

SHEET
F34

TOTAL SHEETS
F105

Revised Date:
Initials:

6/19/2025
NBG



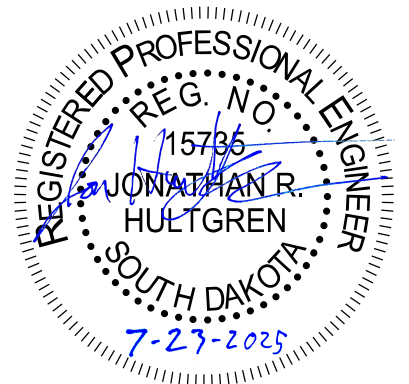
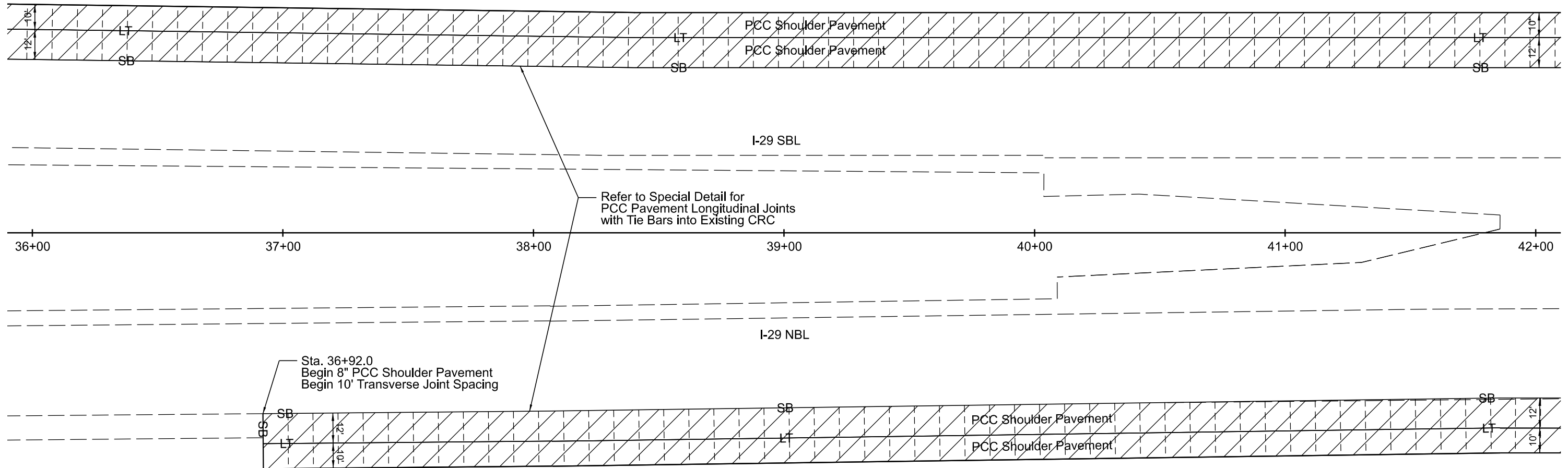
PCC PAVEMENT JOINT LAYOUT



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F35	F105

Plotting Date: 7/1/2025

Revised Date: 6/19/2025
Initials: NBG



PCC PAVEMENT JOINT LAYOUT

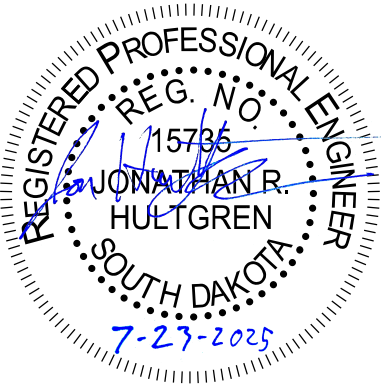
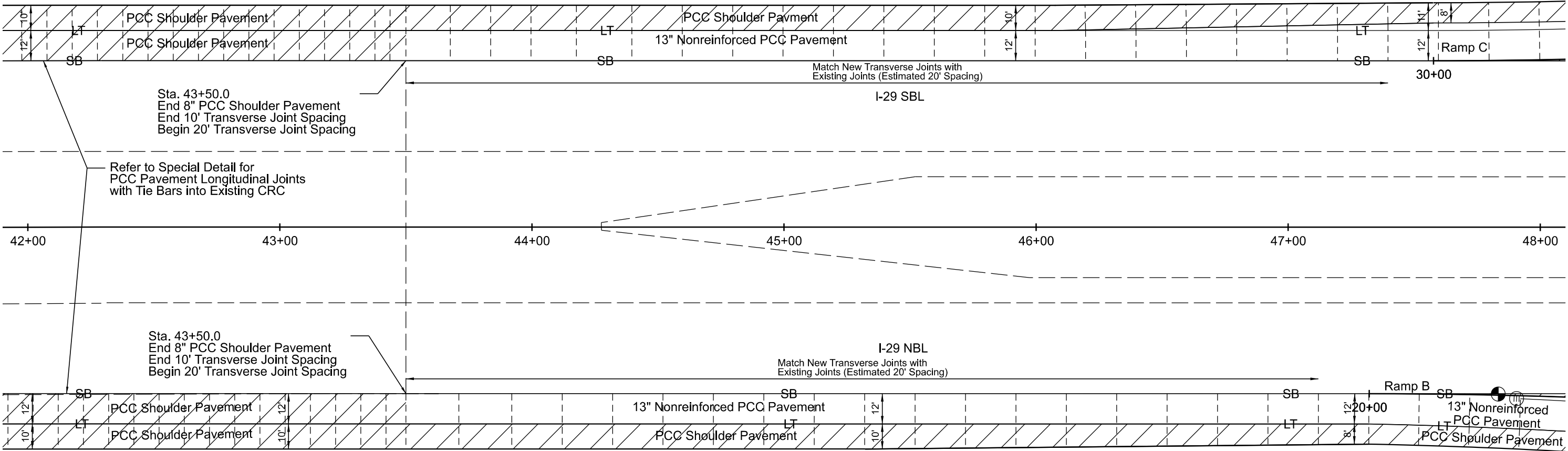
FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F36	F105

Plotting Date: 7/1/2025

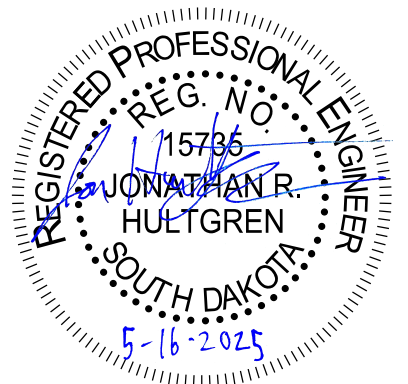
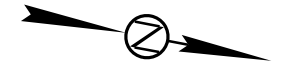
Revised Date: 6/19/2025
Initials: NBG



FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F37	F105



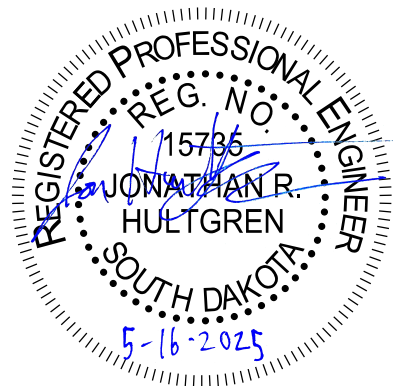
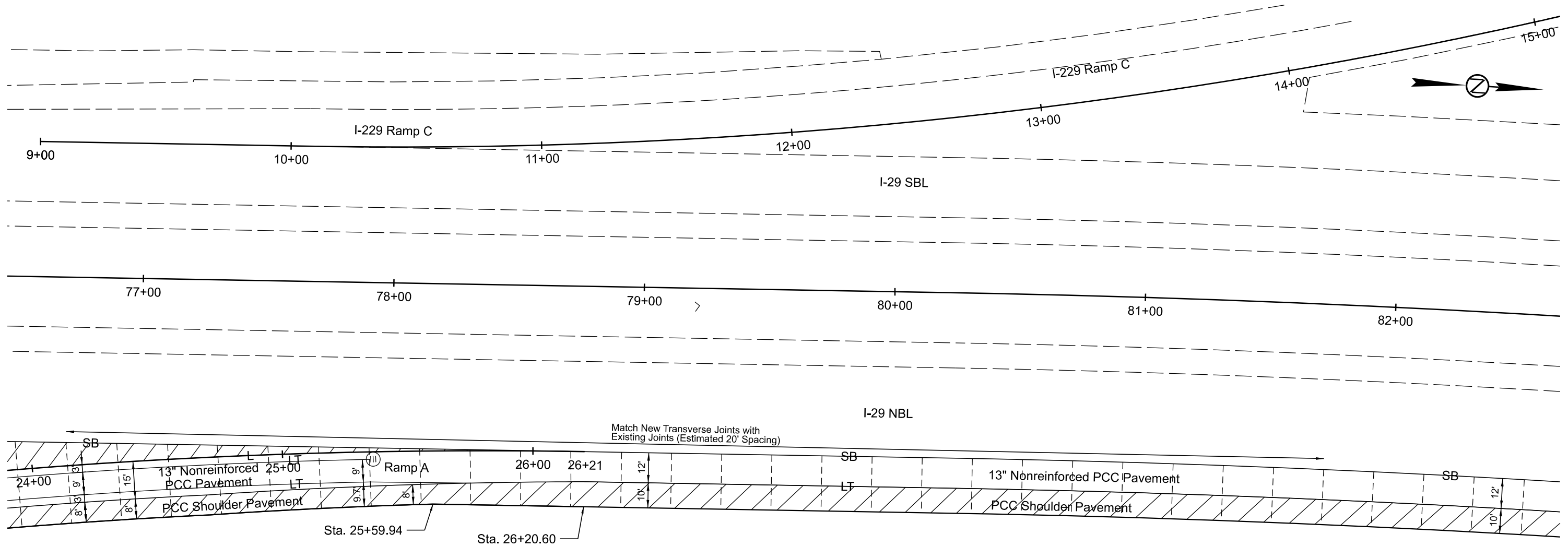
PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F38	F105



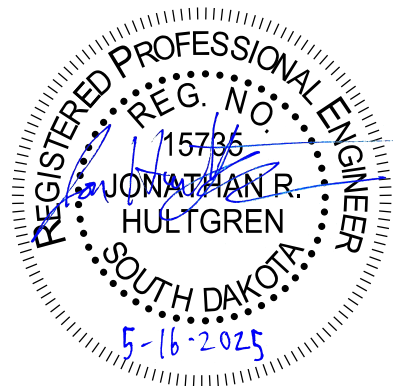
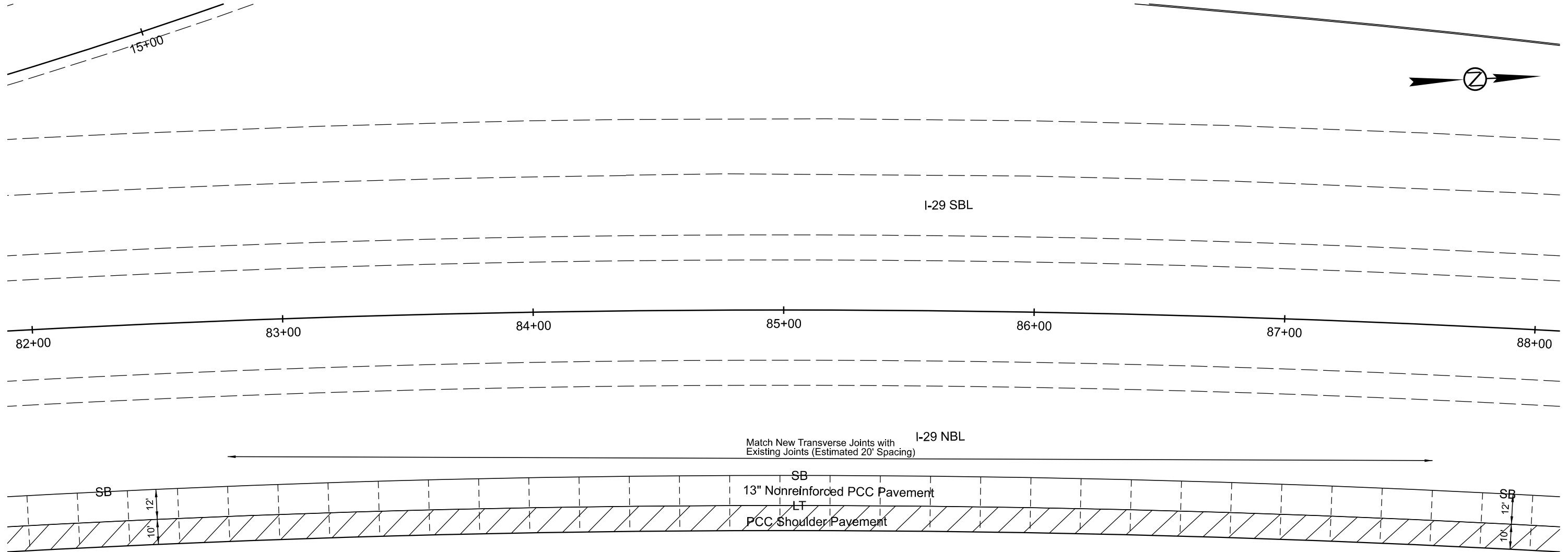
PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F39	F105



PCC PAVEMENT JOINT LAYOUT

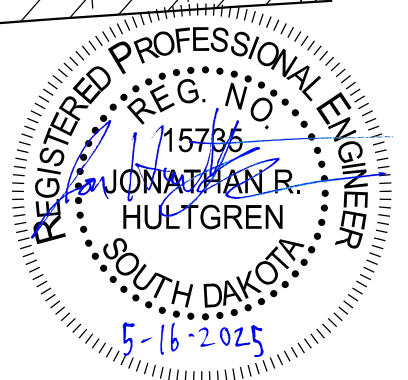
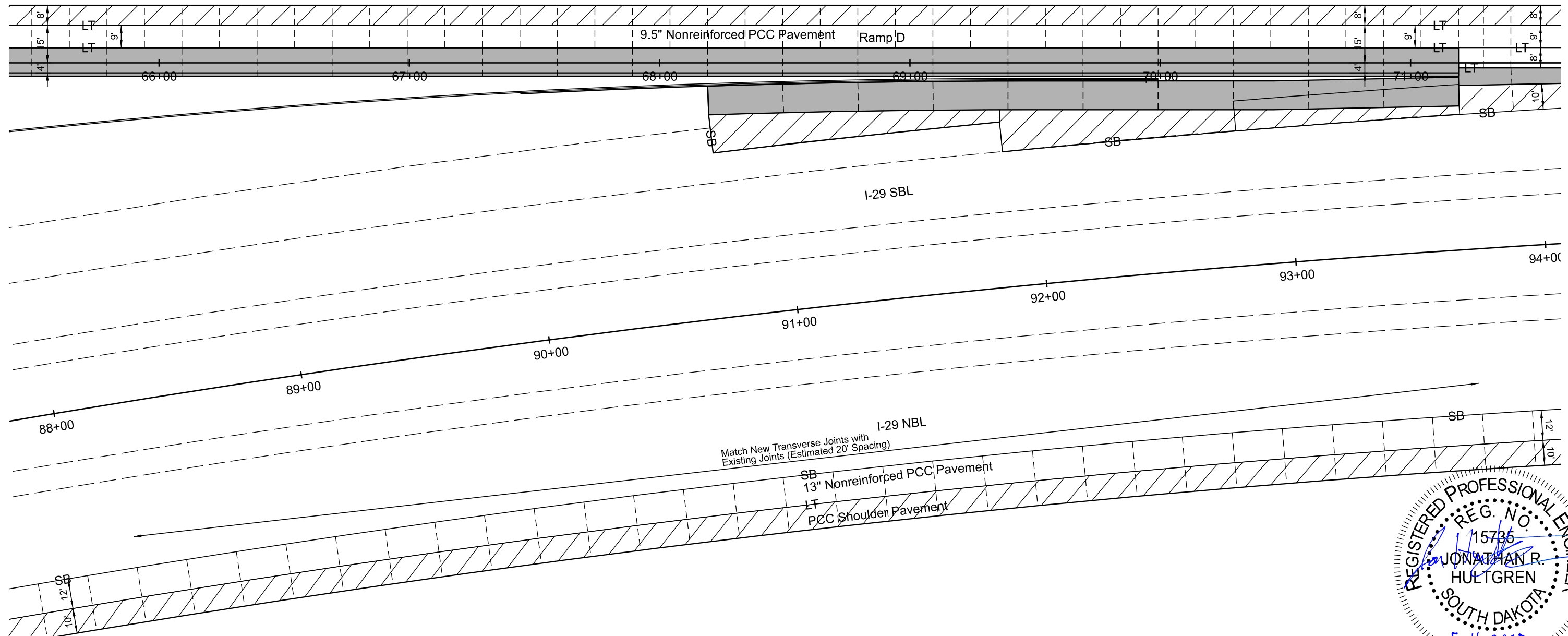
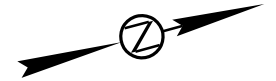
FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F40	F105

Plotting Date: 5/16/2025

Concrete Barrier with Continuously Reinforced Concrete Shoulder (See Section E)



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F41	F105

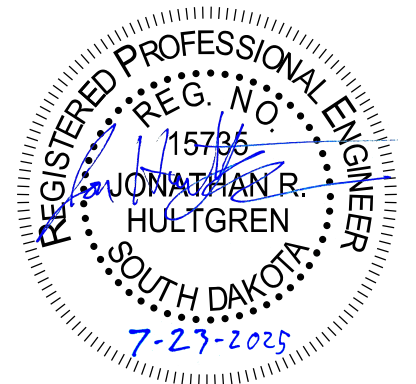
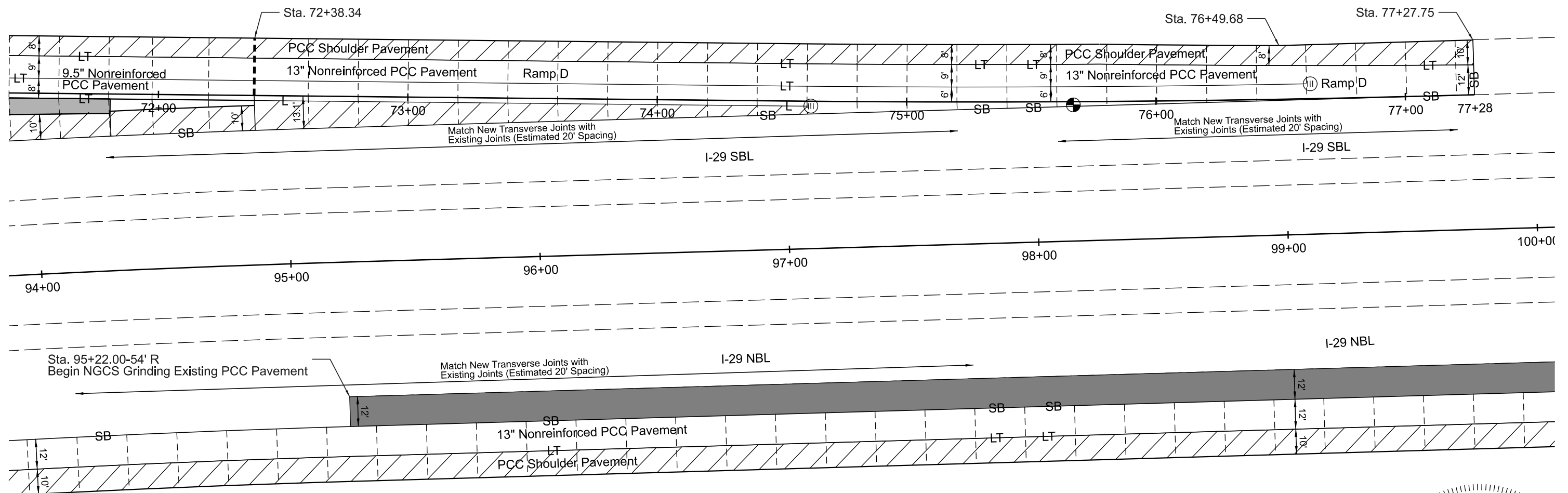
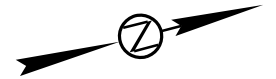
Plotting Date: 7/1/2025

Revised Date: 6/20/2025
Initials: NBG

Concrete Barrier with Continuously Reinforced Concrete Shoulder (See Section E)

Joint Line Between the mainline 13" & all ramps 9.5" Nonreinforced PCC Pavement

NGCS Grinding PCC Pavement



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

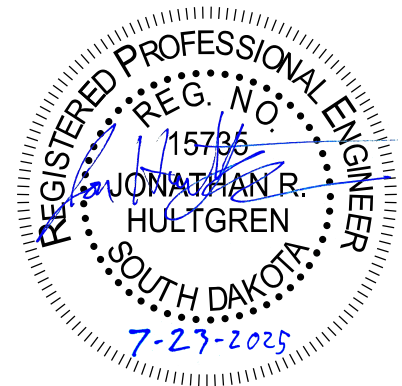
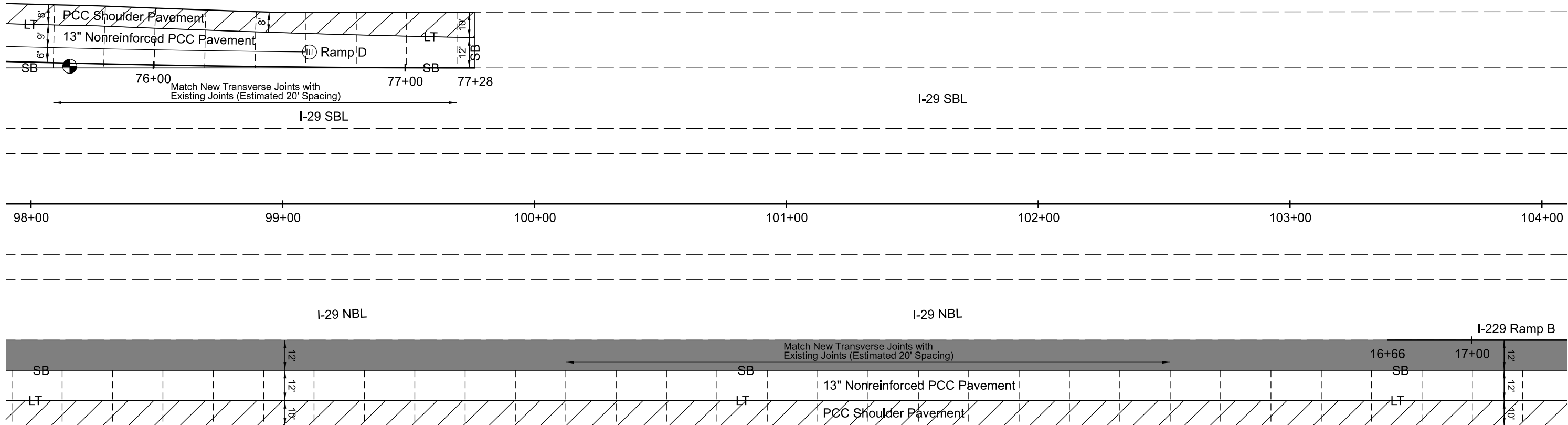
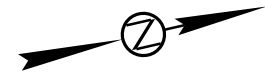


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F42	F105

Plotting Date: 7/1/2025

Revised Date: 6/19/2025
Initials: NBG

 NGCS Grinding PCC Pavement



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

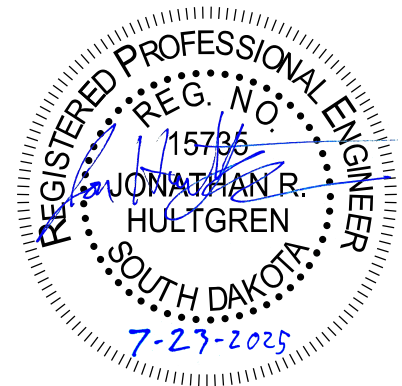
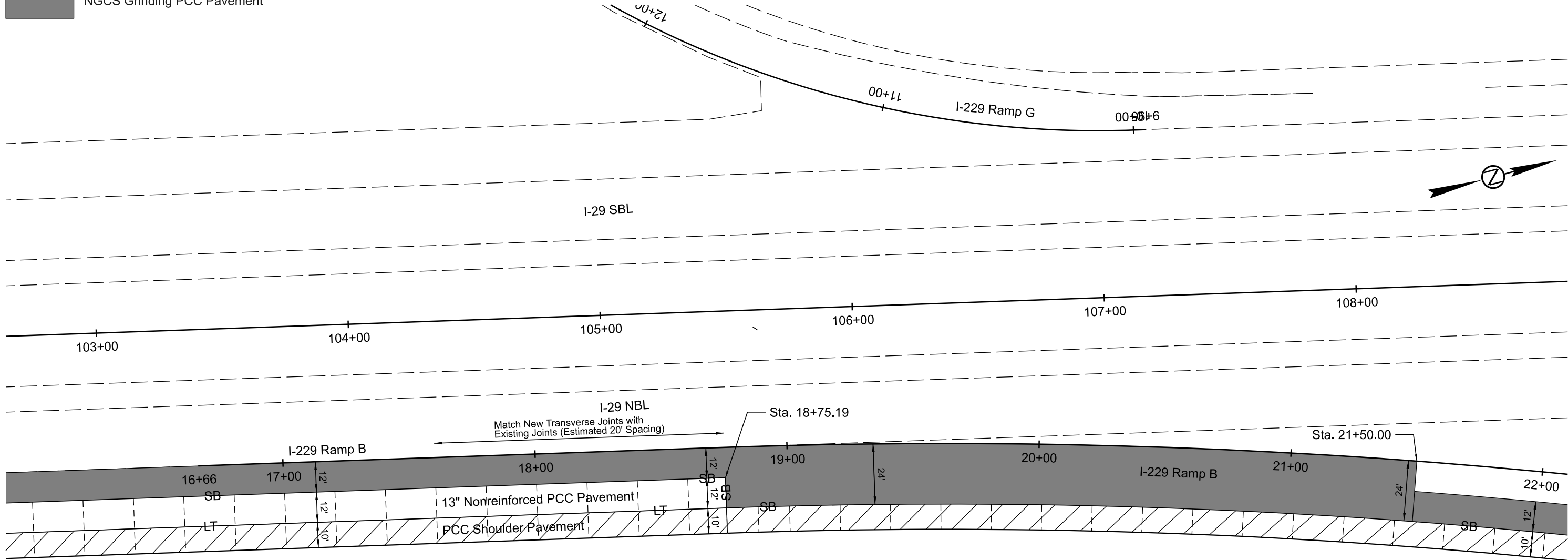


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F43	F105

Plotting Date: 7/1/2025

Revised Date: 06/17/2025
Initials: JJB

NGCS Grinding PCC Pavement



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

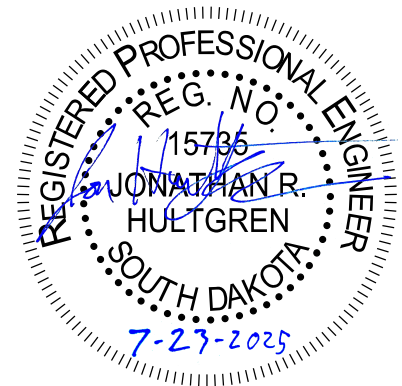
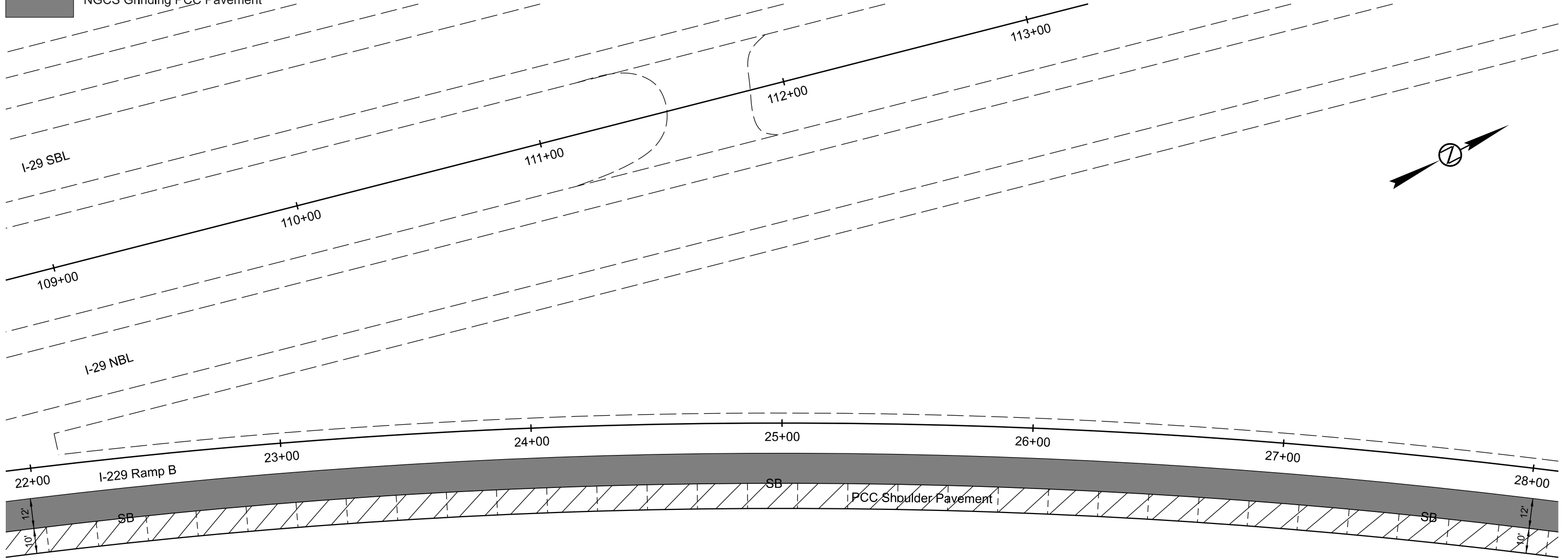


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F44	F105

Plotting Date: 7/1/2025

Revised Date: 06/17/2025
Initials: JJB

NGCS Grinding PCC Pavement



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

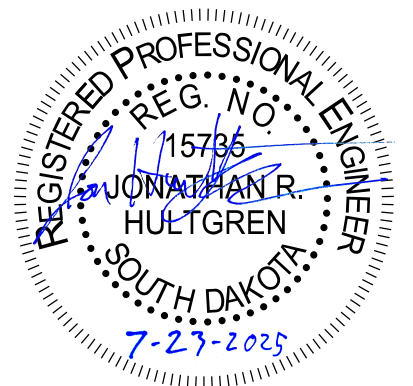
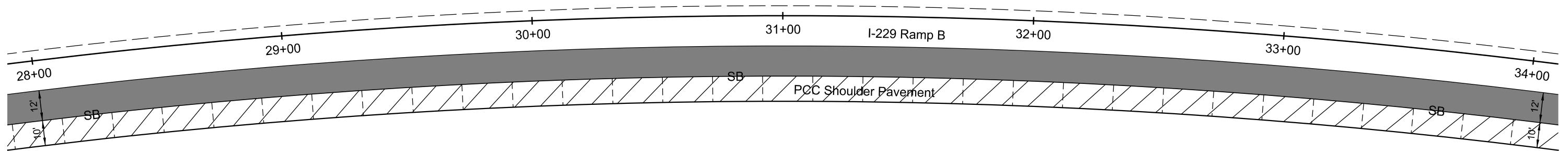
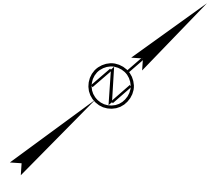


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F45	F105

Plotting Date: 7/1/2025

Revised Date: 06/17/2025
Initials: JJB

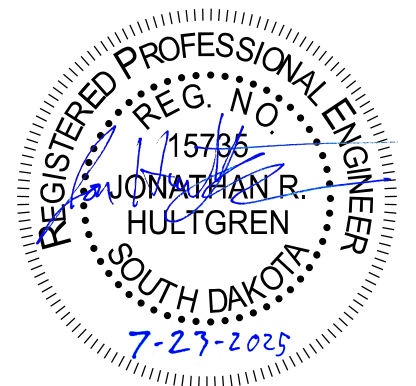
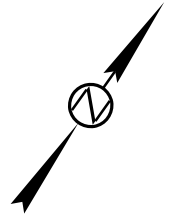
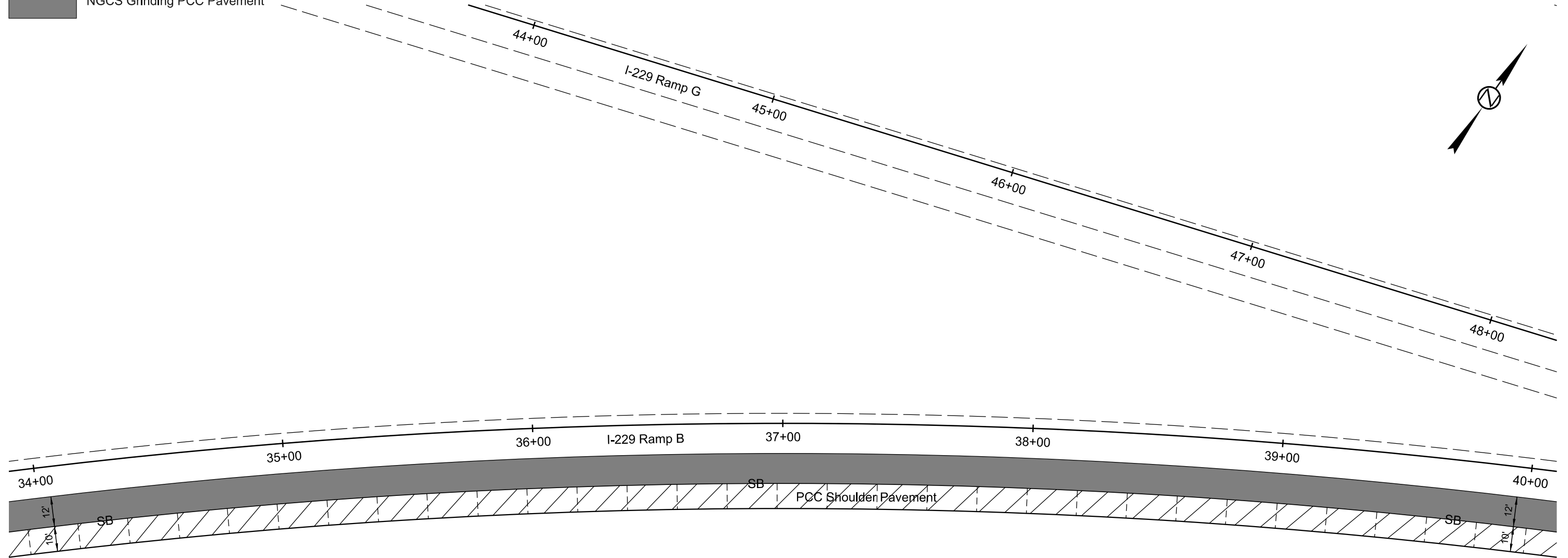
 NGCS Grinding PCC Pavement



FOR BIDDING PURPOSES ONLY



Revised Date: 06/17/2025
Initials: JJB



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

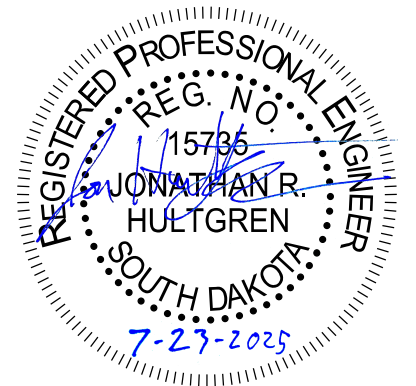
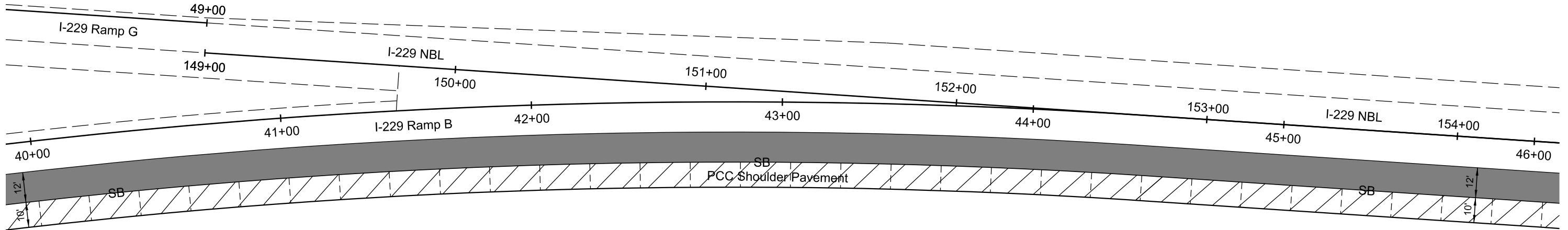
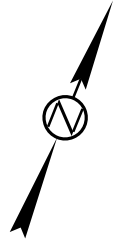


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F47	F105

Plotting Date: 7/1/2025

Revised Date: 06/17/2025
Initials: JJB

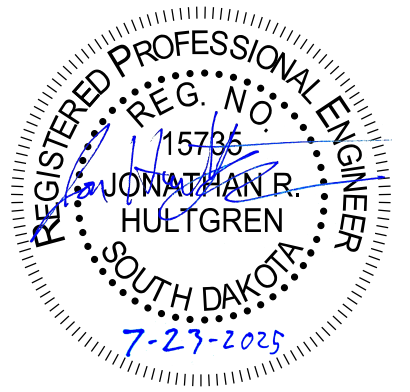
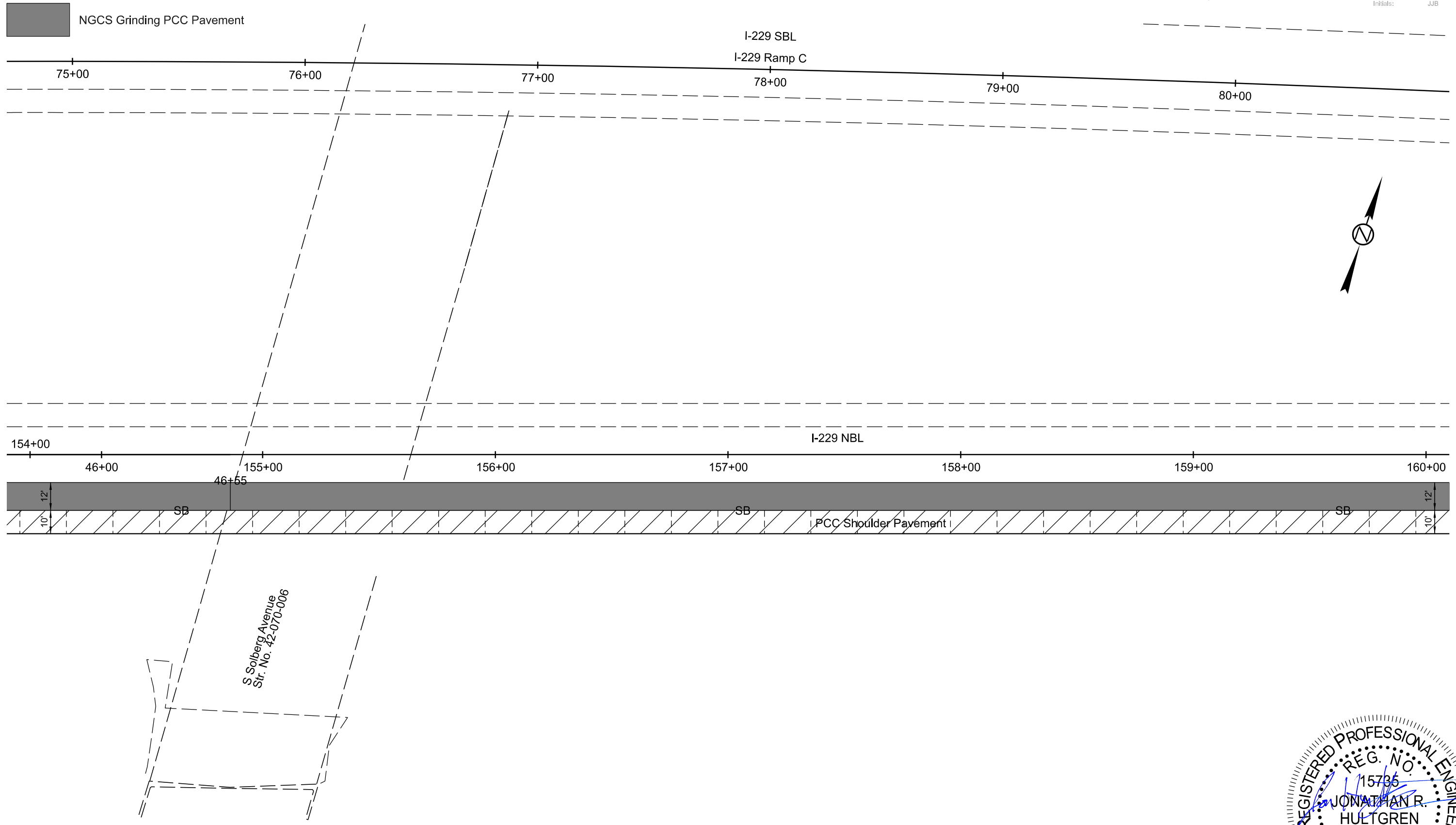
 NGCS Grinding PCC Pavement



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	F48	F105
Plotting Date: 7/1/2025	Revised Date: 06/17/2025		Initials: JJB



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

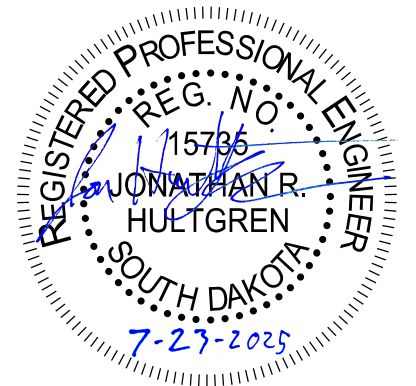
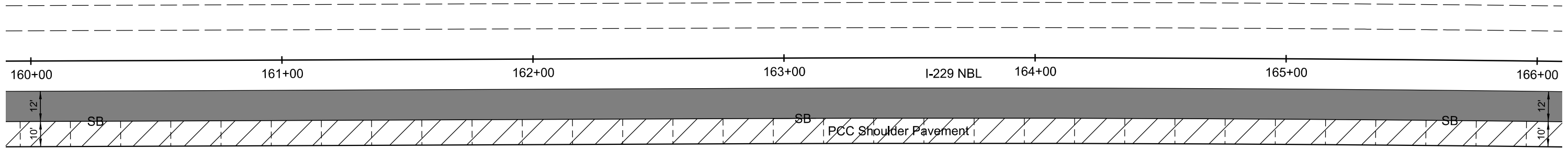
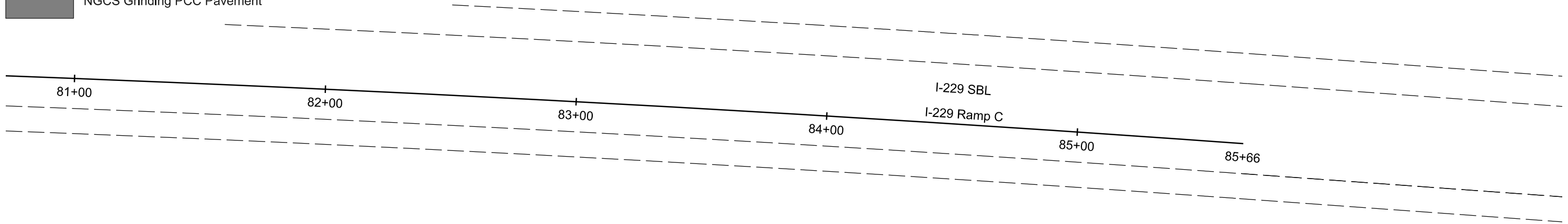


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F49	F105

Plotting Date: 7/1/2025

Revised Date: 06/17/2025
Initials: JJB

 NGCS Grinding PCC Pavement



PCC PAVEMENT JOINT LAYOUT

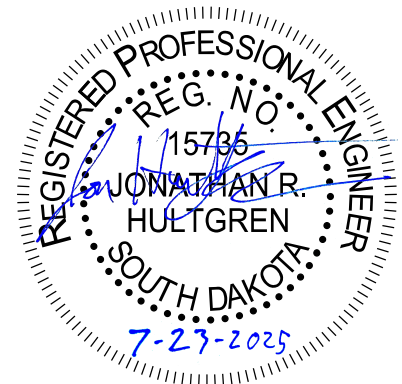
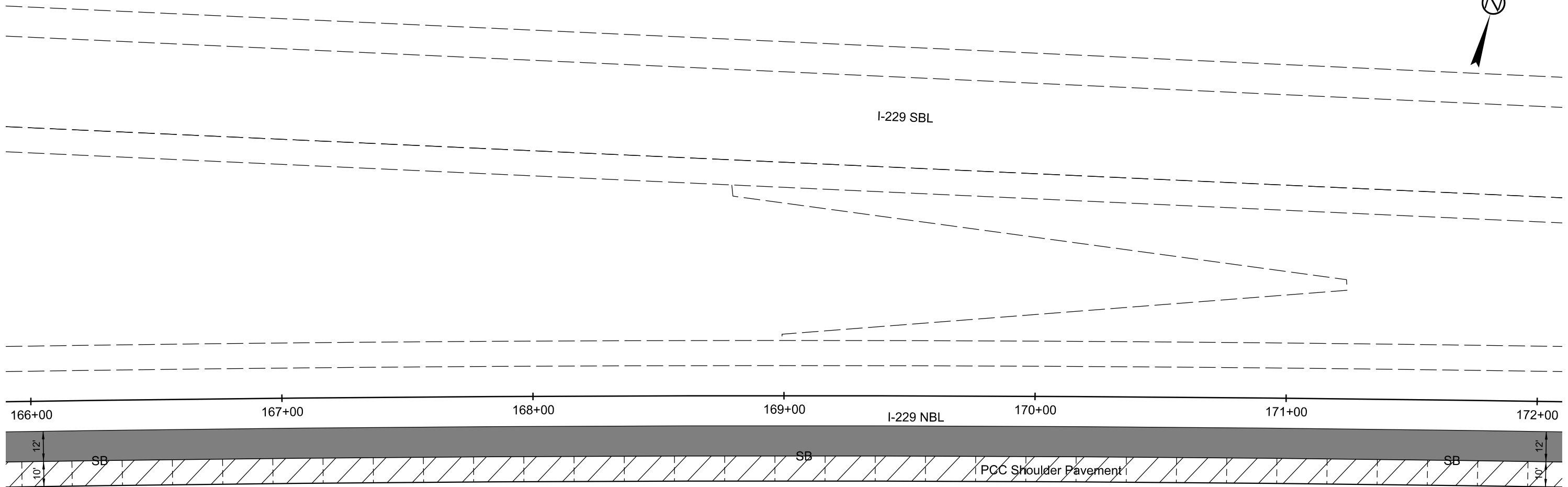


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F50	F105

Plotting Date: 7/1/2025

Revised Date: 06/17/2025
Initials: JJB

 NGCS Grinding PCC Pavement



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

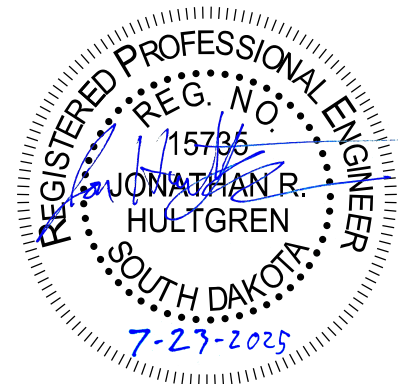
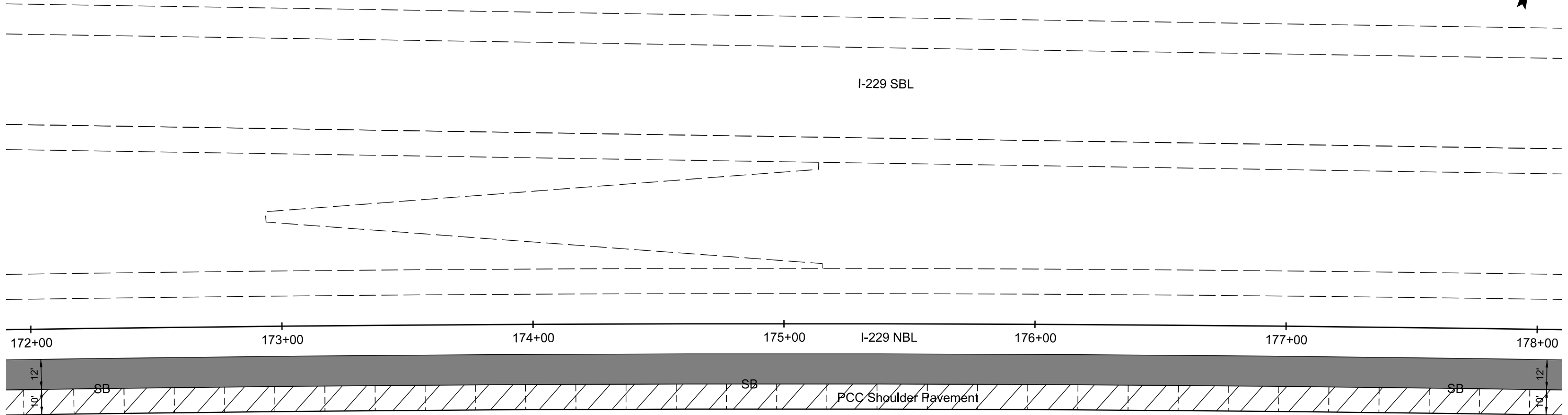


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F51	F105

Plotting Date: 7/1/2025

Revised Date: 06/17/2025
Initials: JJB

 NGCS Grinding PCC Pavement



PCC PAVEMENT JOINT LAYOUT

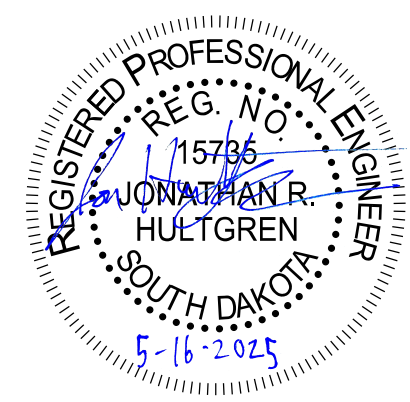
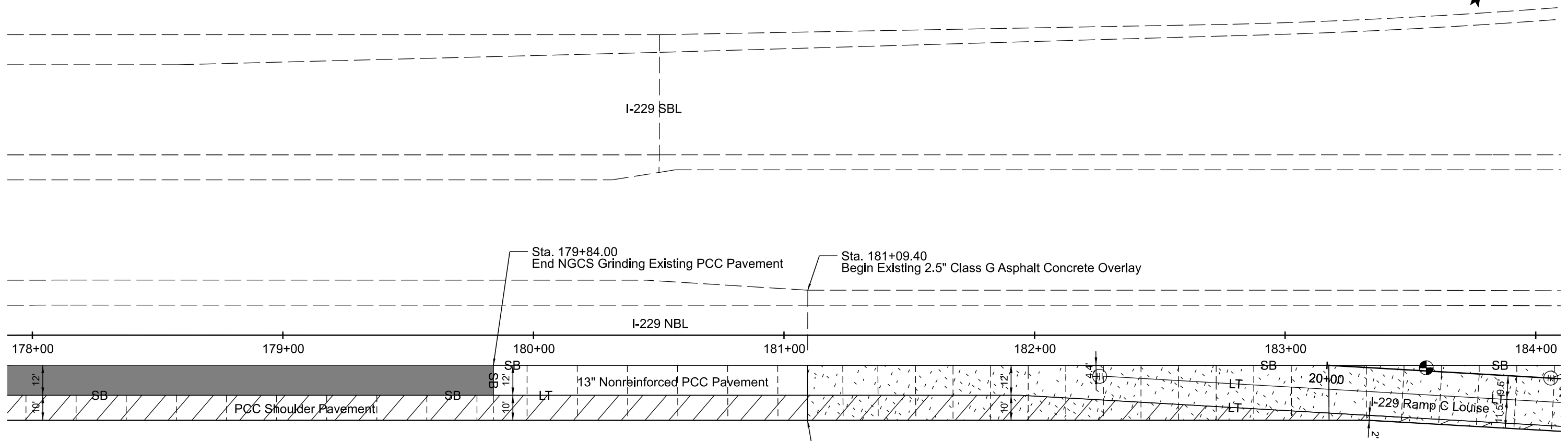


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F52	F105

Plotting Date: 5/16/2025

 2.5" Asphalt Concrete Composite Overlay

 NGCS Grinding PCC Pavement



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

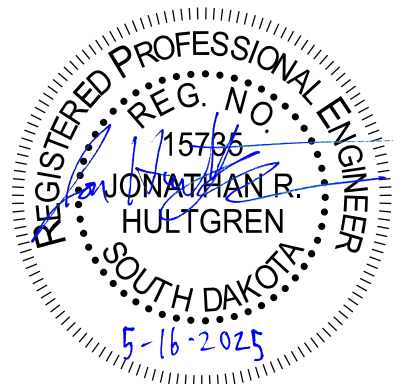
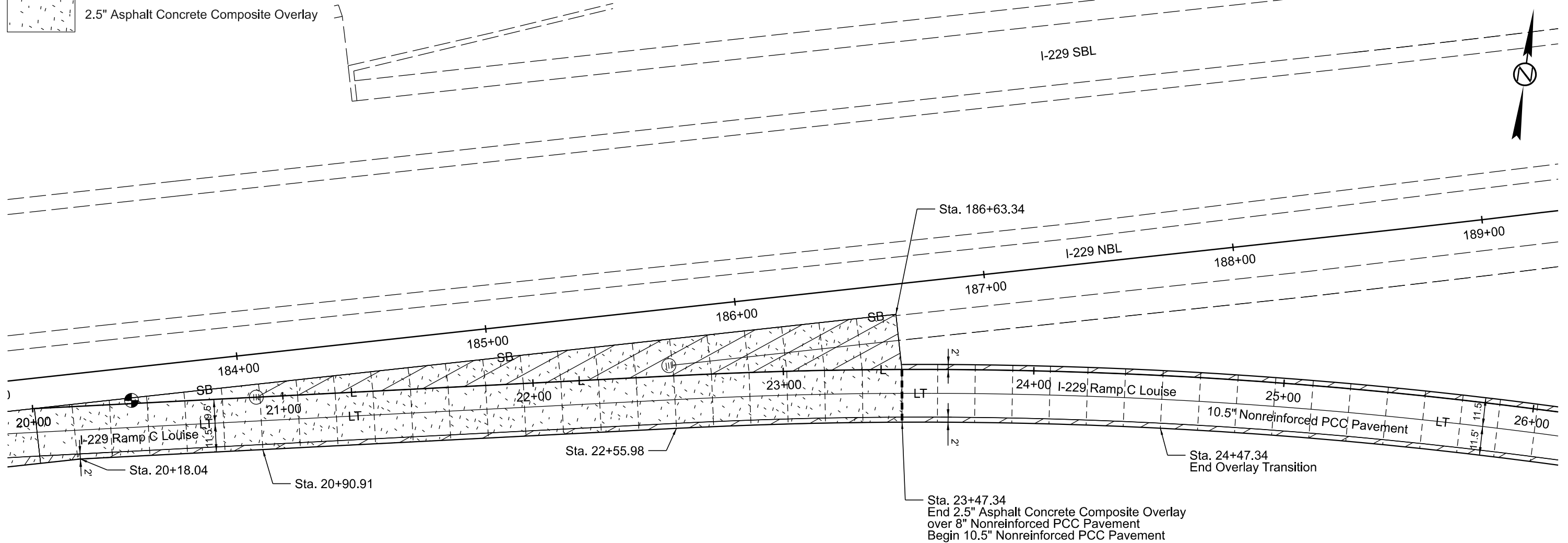


Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F53	F105

Joint Line Between the mainline 12" &
ramp 10.5" Nonreinforced PCC Pavement

2.5" Asphalt Concrete Composite Overlay



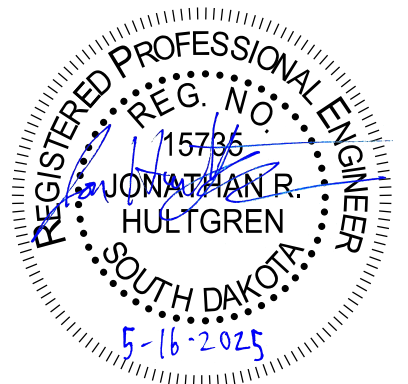
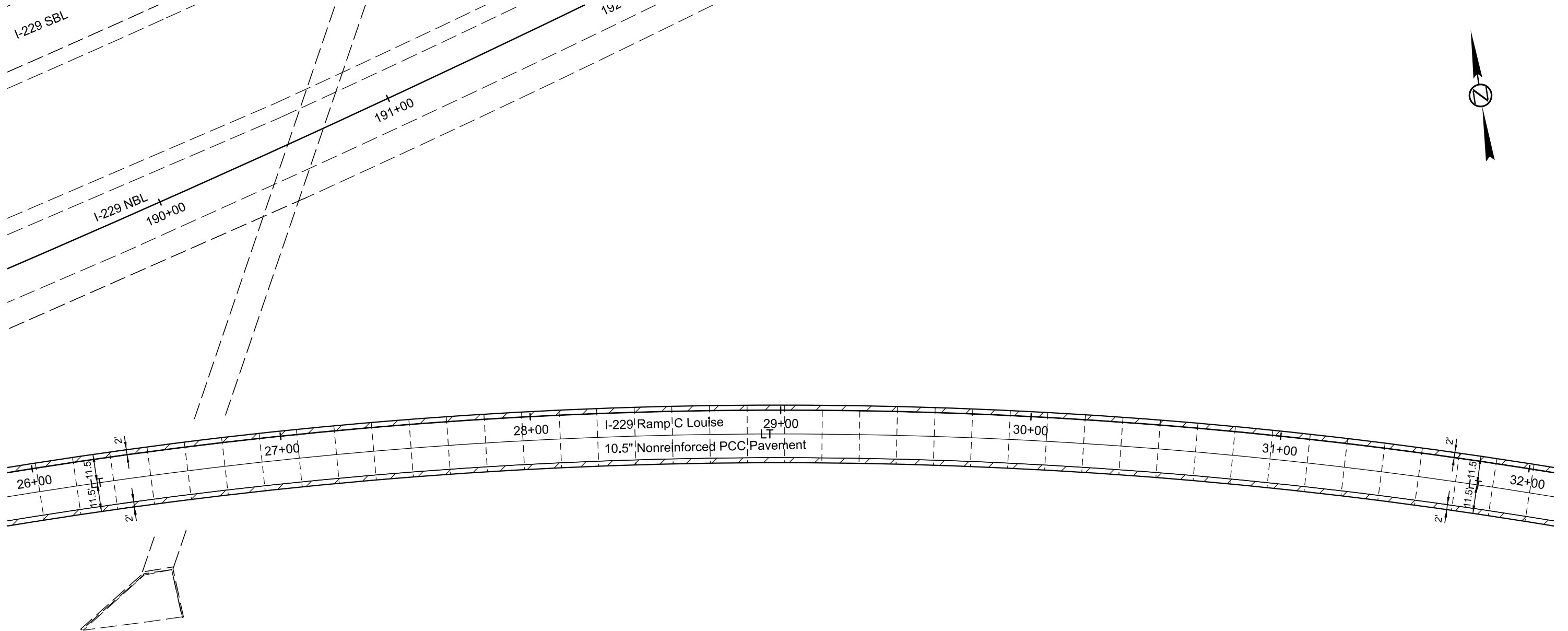
PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F54	F105



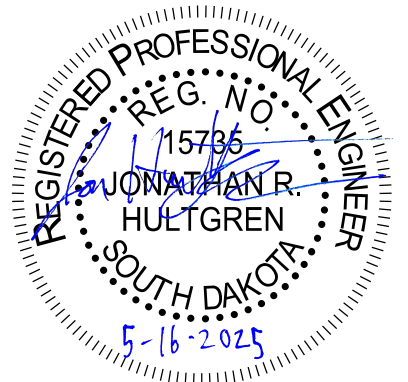
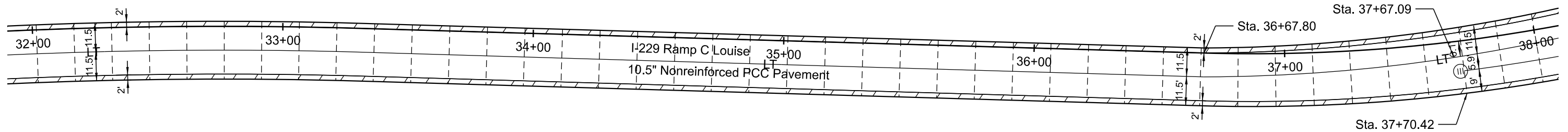
PCC PAVEMENT JOINT LAYOUT



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F55	F105

Plotting Date: 5/16/2025

FOR BIDDING PURPOSES ONLY



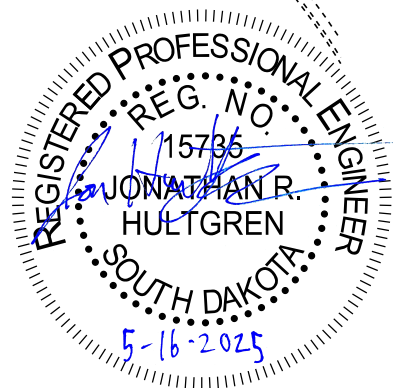
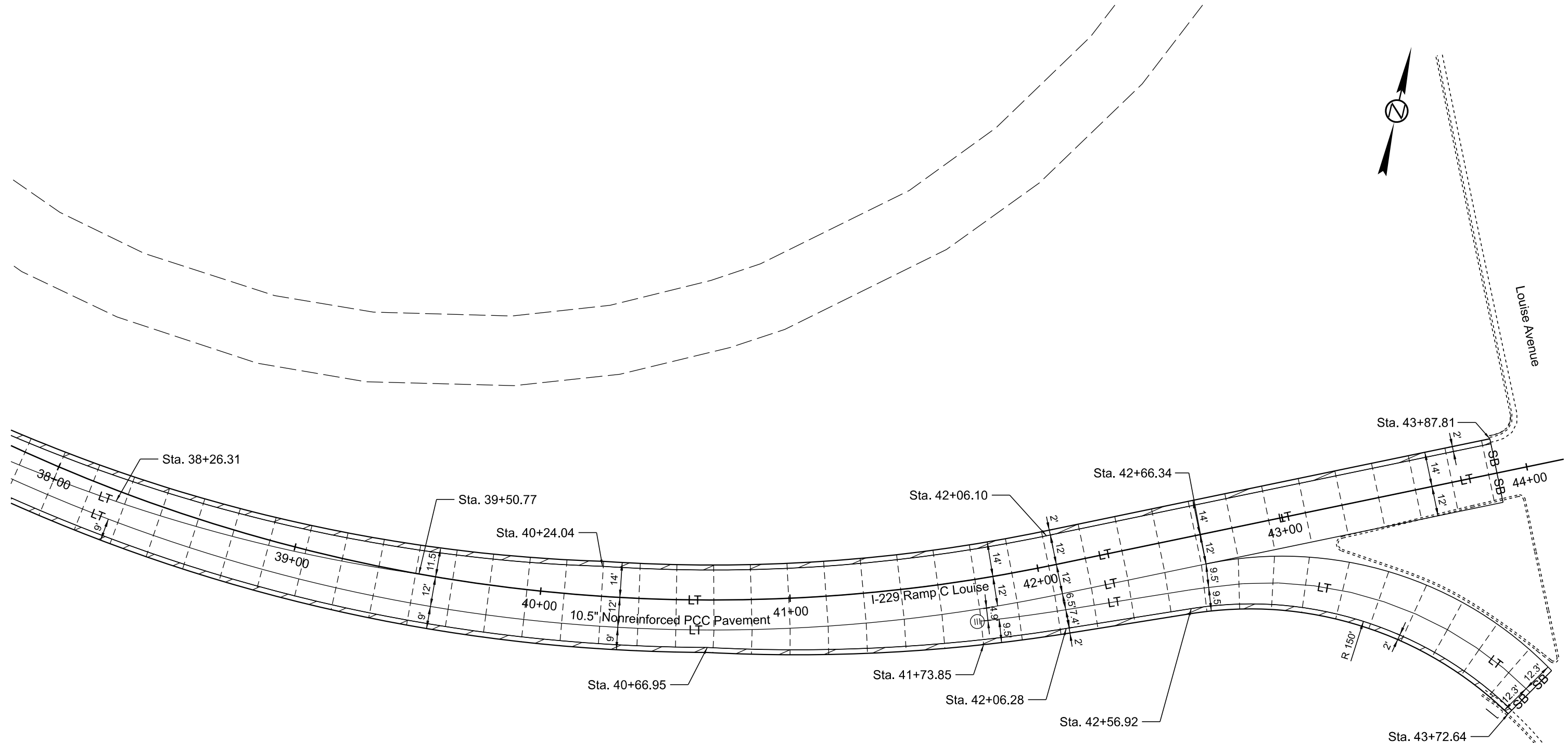
PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F56	F105



PCC PAVEMENT JOINT LAYOUT

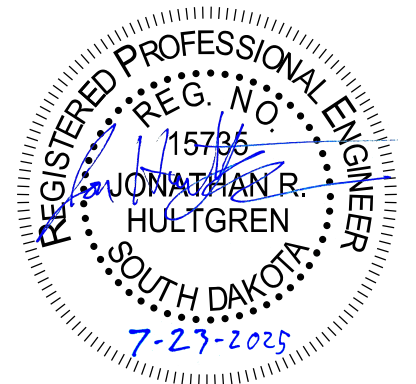
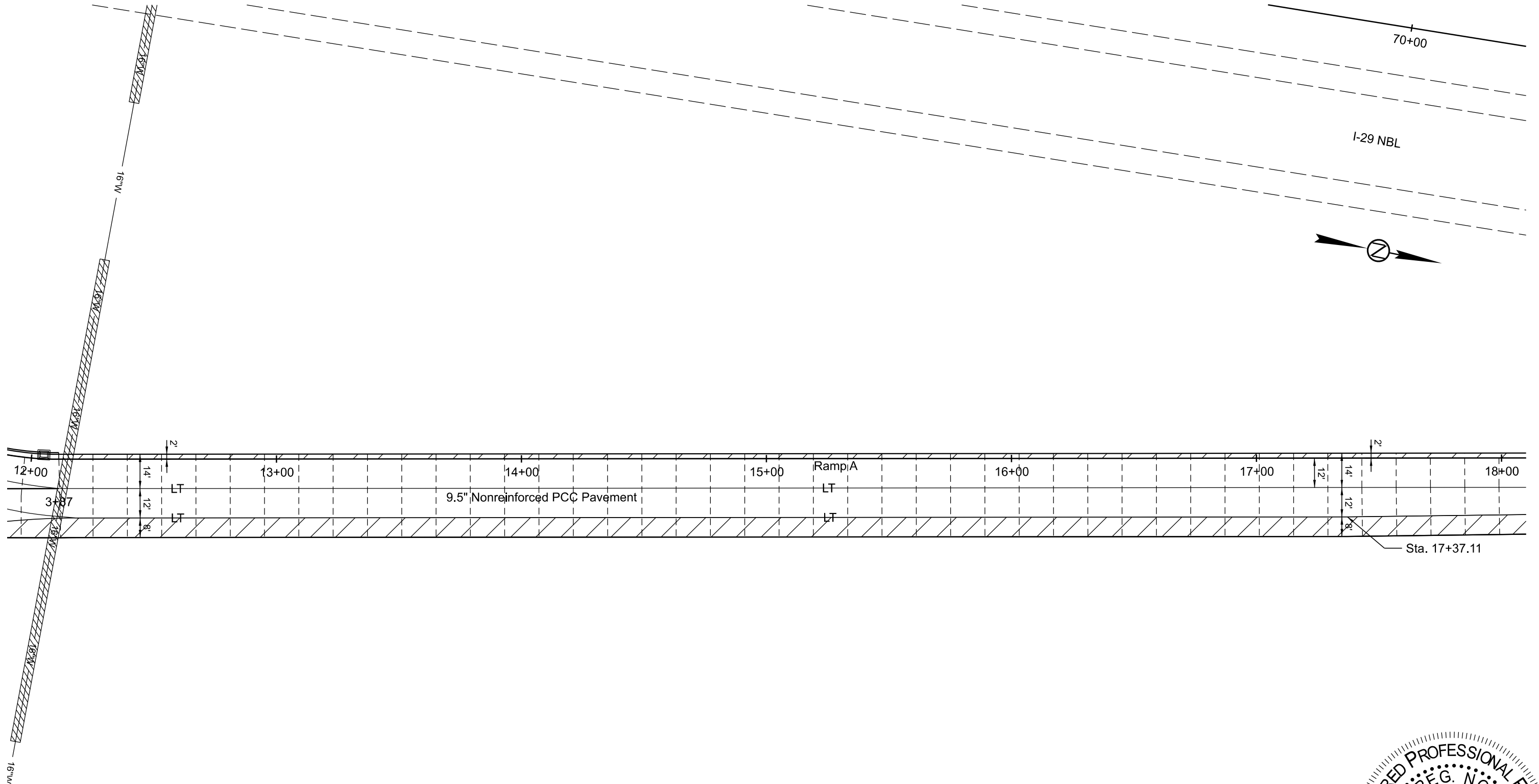
FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F57	F105

Plotting Date: 7/22/2025

Revised Date: 7/21/2025
Initials: NBG



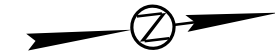
PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

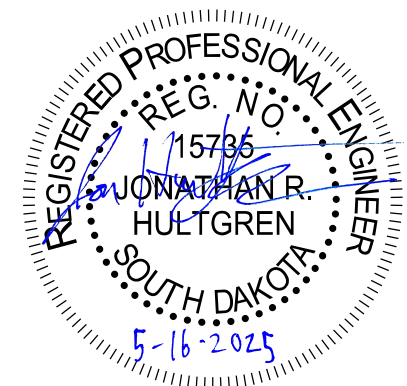
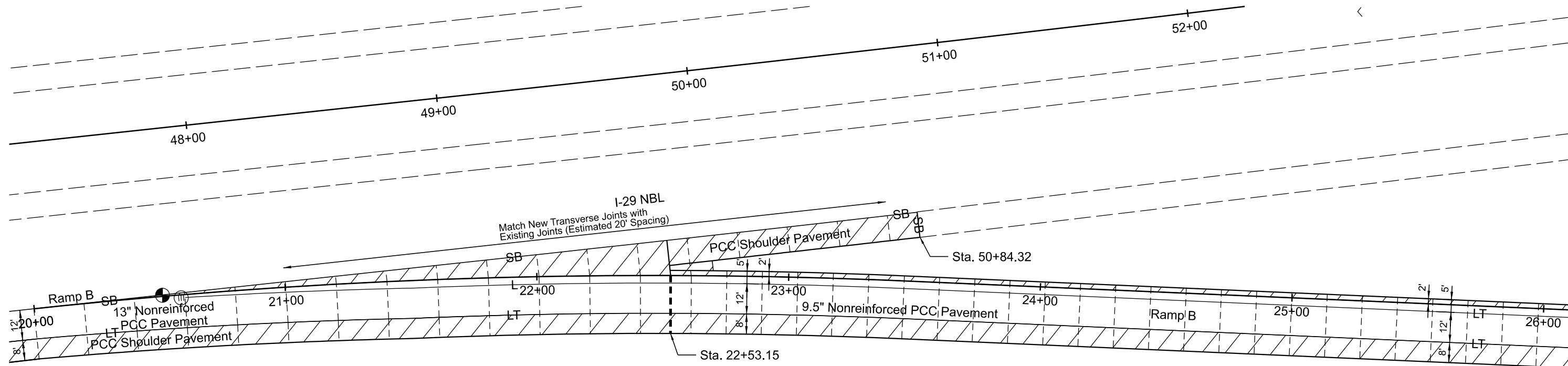


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F58	F105

Plotting Date: 5/16/2025



Joint Line Between the mainline 13" & all
ramps 9.5" Nonreinforced PCC Pavement

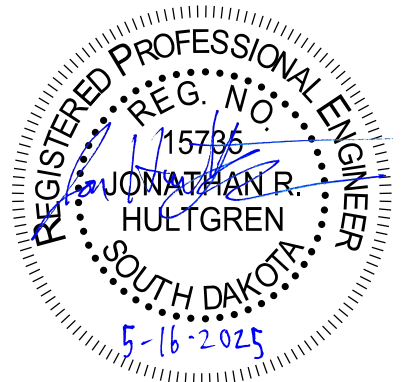
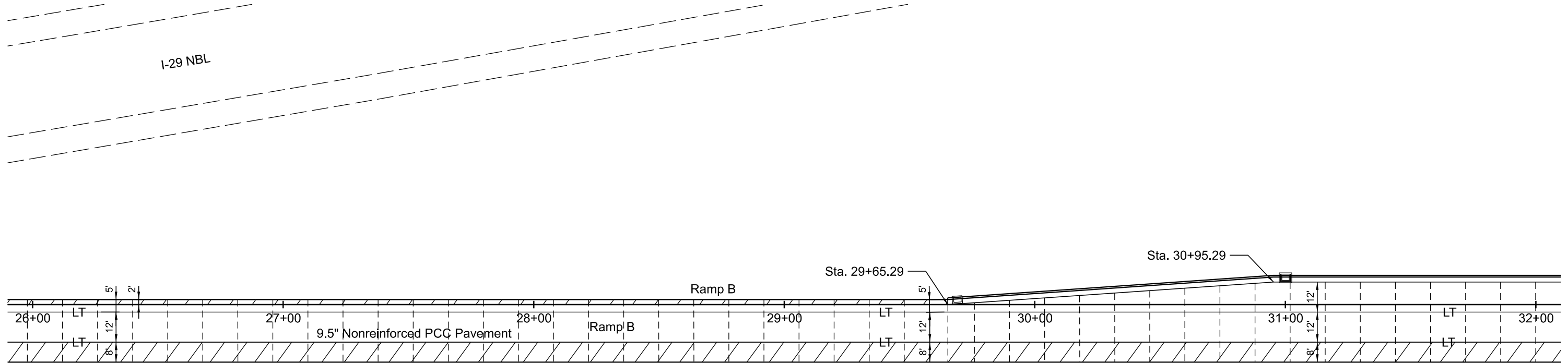


PCC PAVEMENT JOINT LAYOUT



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F59	F105

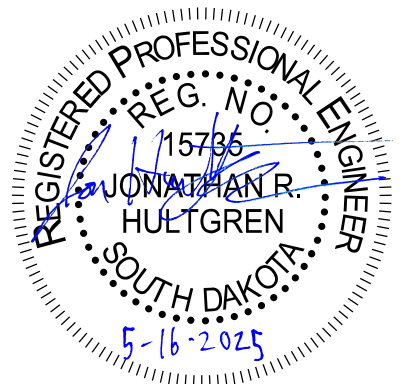
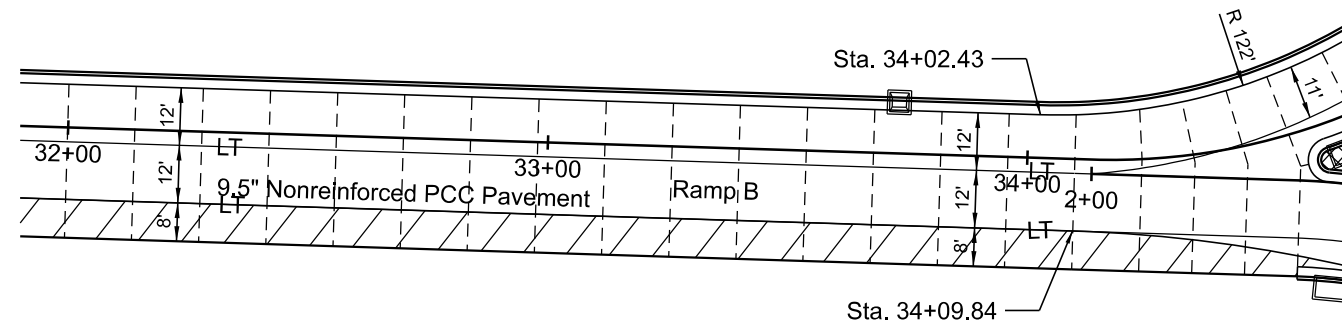


PCC PAVEMENT JOINT LAYOUT



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F60	F105



PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY

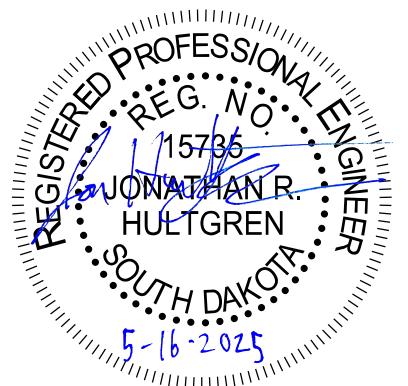
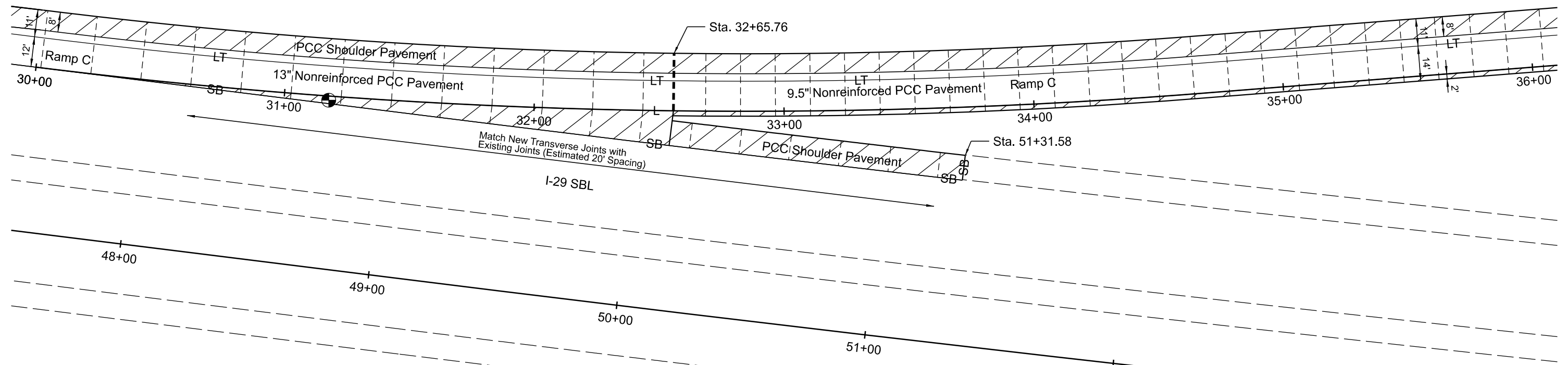


Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F61	F105



Joint Line Between the mainline 13" & all
ramps 9.5" Nonreinforced PCC Pavement

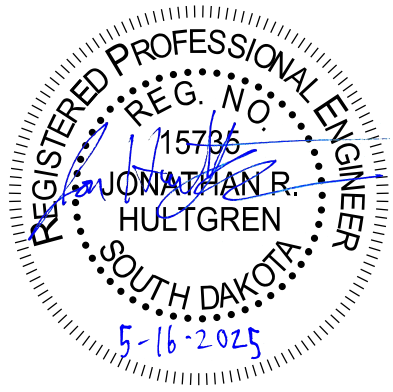
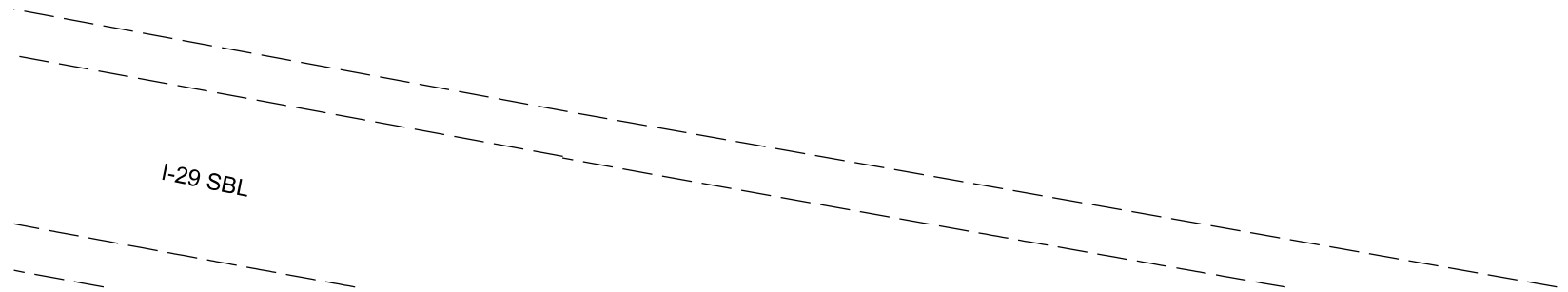
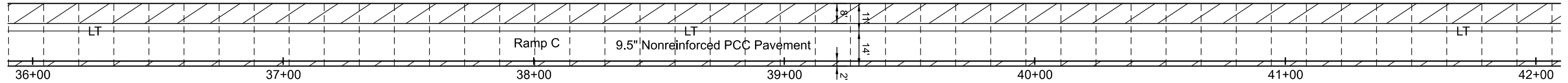
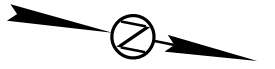


PCC PAVEMENT JOINT LAYOUT



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F62	F105

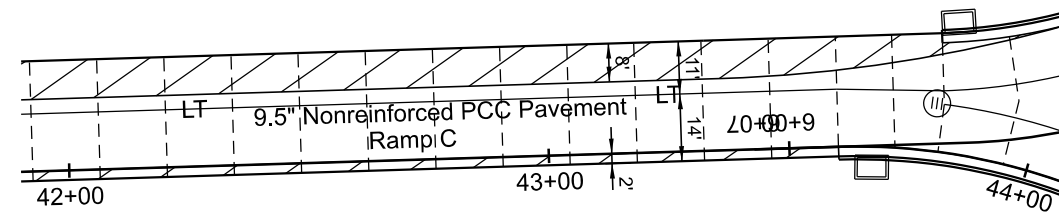
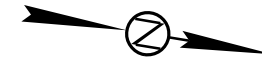


PCC PAVEMENT JOINT LAYOUT

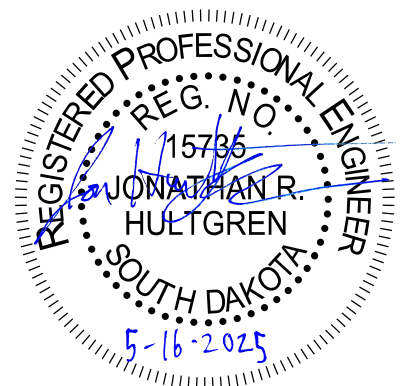


Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F63	F105



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PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



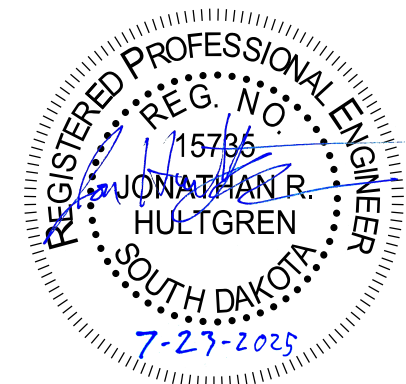
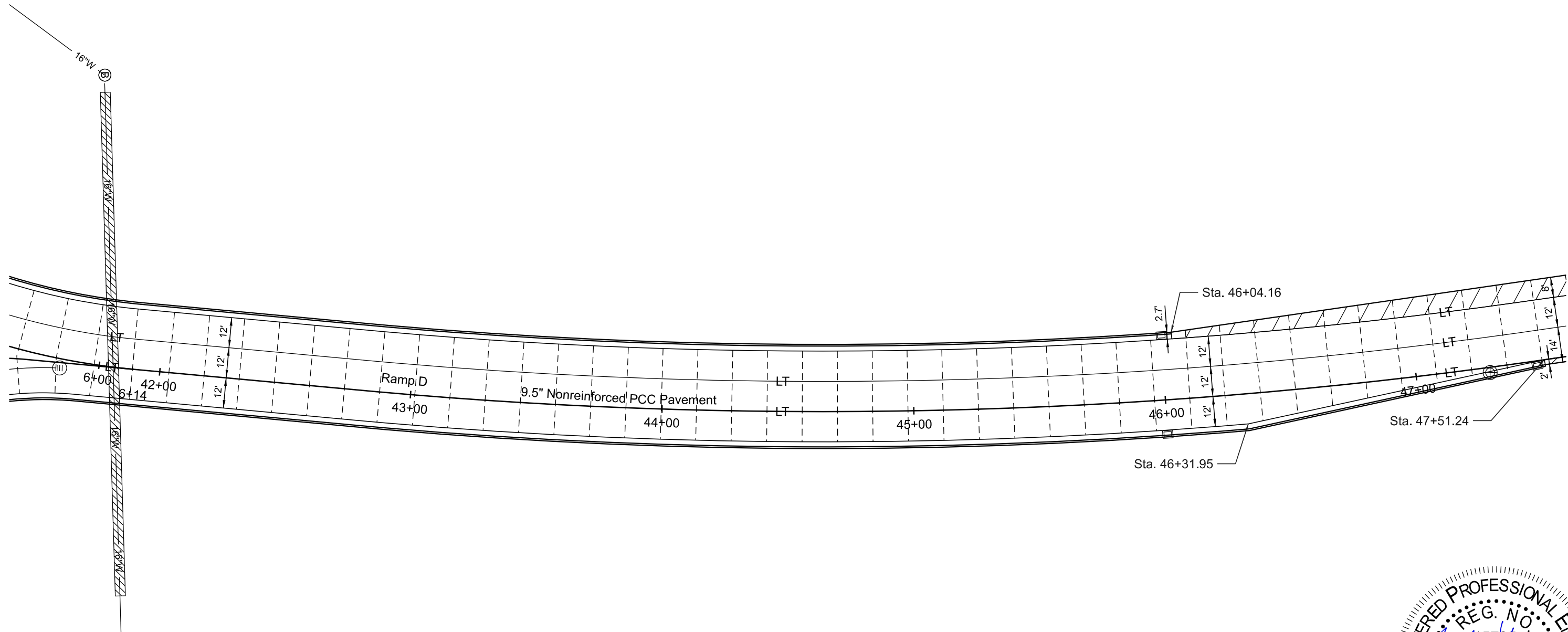
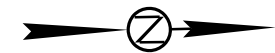
Plotting Date:

7/22/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F64	F105

Revised Date:
Initials:

7/21/2025
NBG



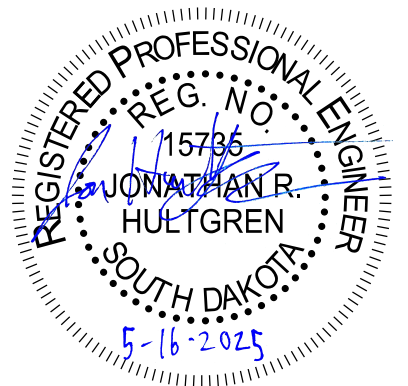
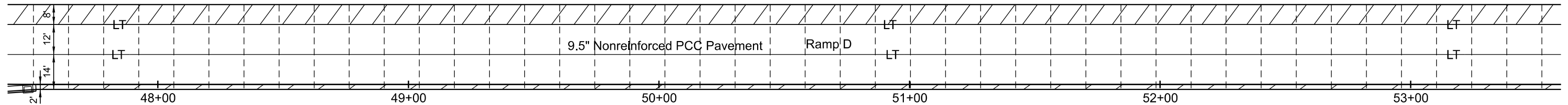
PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F65	F105

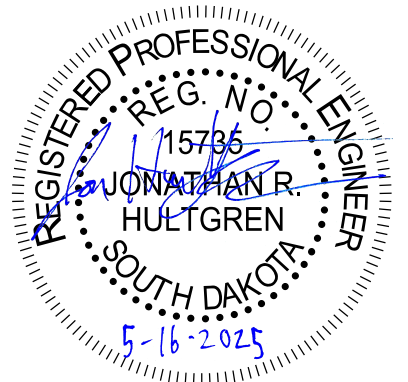
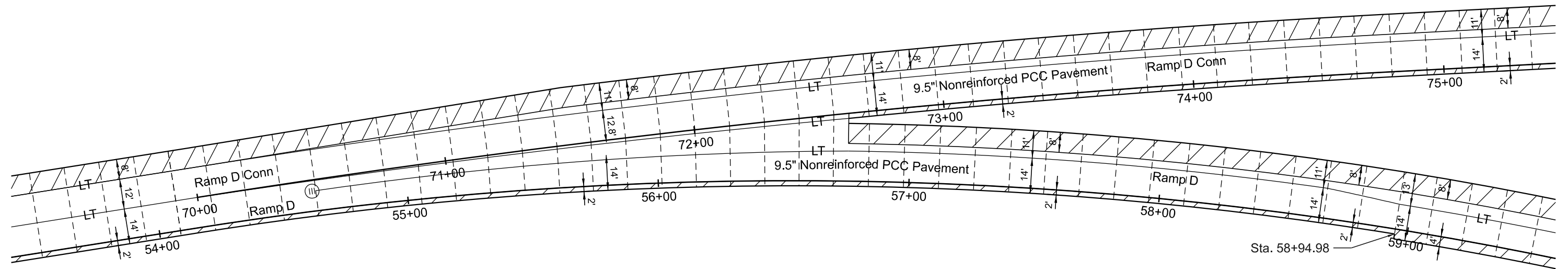


PCC PAVEMENT JOINT LAYOUT



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F66	F105



PCC PAVEMENT JOINT LAYOUT

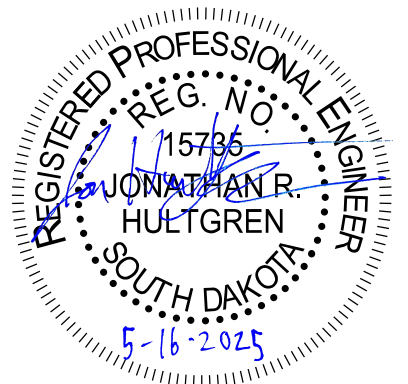
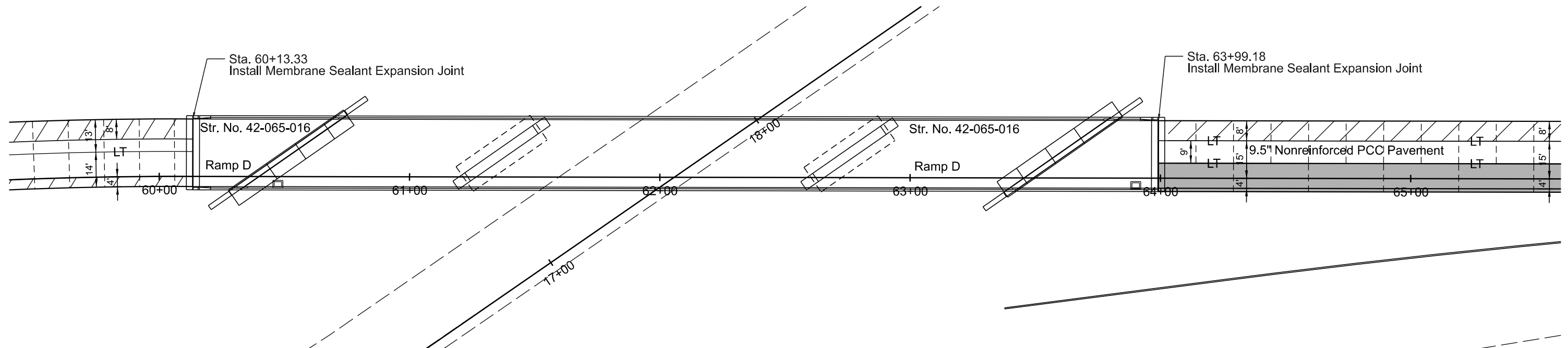
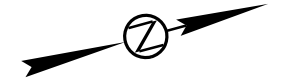
FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F67	F105

Plotting Date: 5/16/2025

Concrete Barrier with Continuously Reinforced Concrete Shoulder (See Section E)



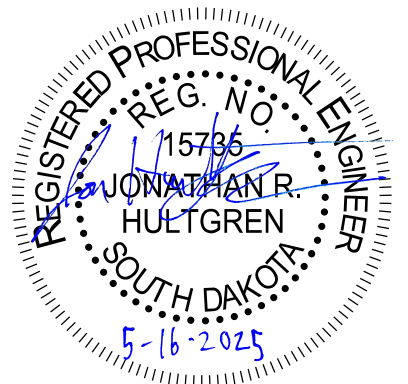
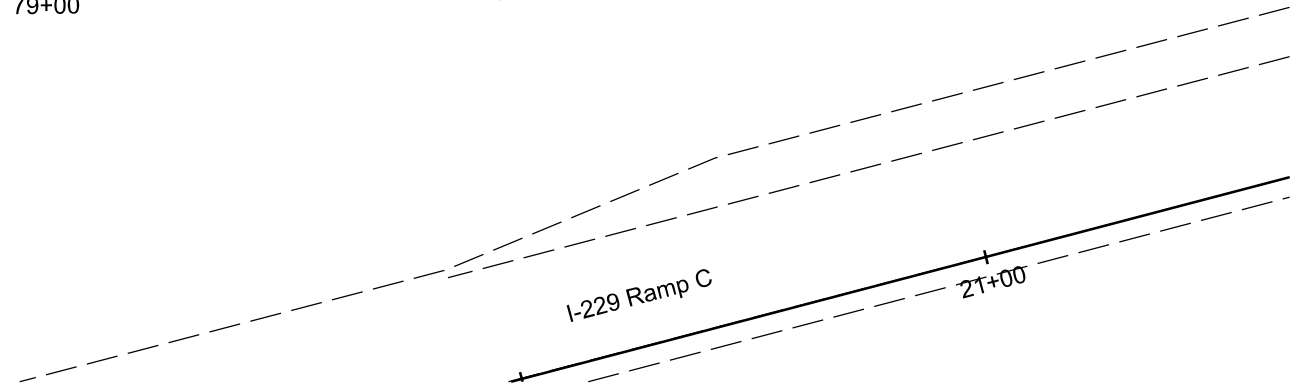
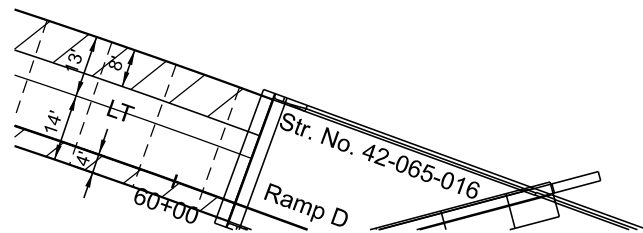
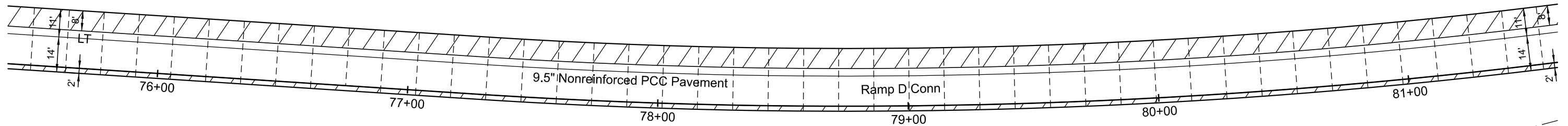
PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F68	F105

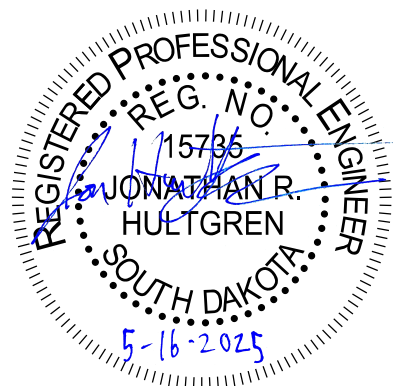
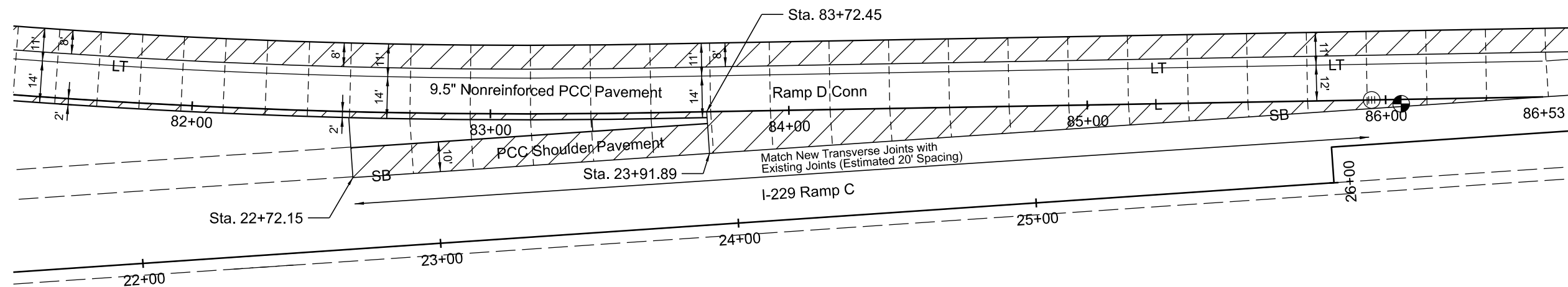


PCC PAVEMENT JOINT LAYOUT



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F69	F105



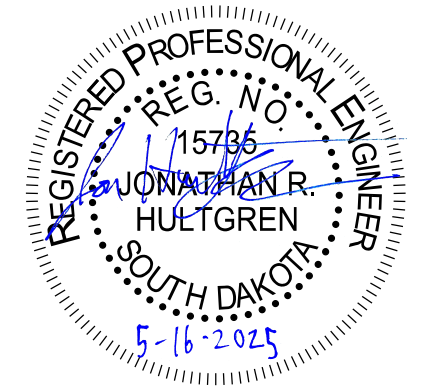
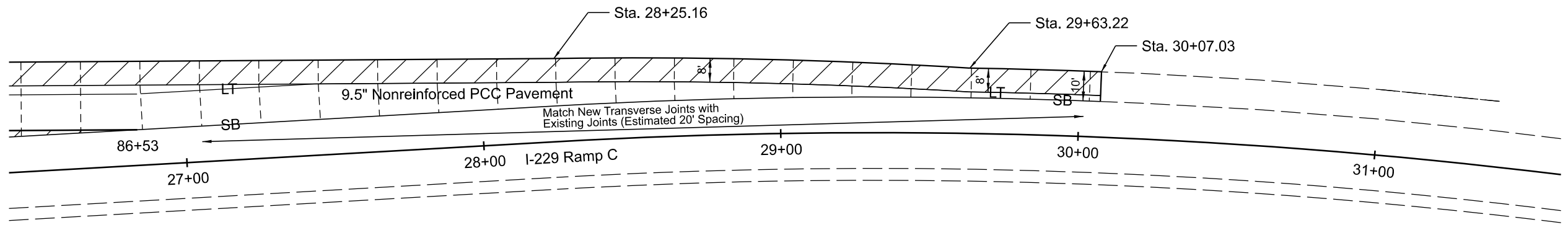
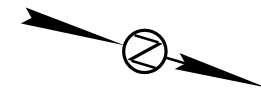
PCC PAVEMENT JOINT LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F70	F105



OUT FOR BIDDING PURPOSES ONLY

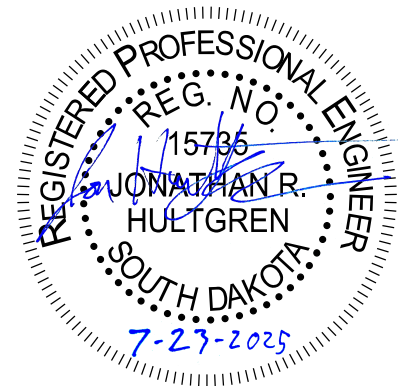


EM 0292(88)73
IM 2292(104)0

F71

SHEETS	
F105	

Revised Date: 7/21/2025
Initials: NBG



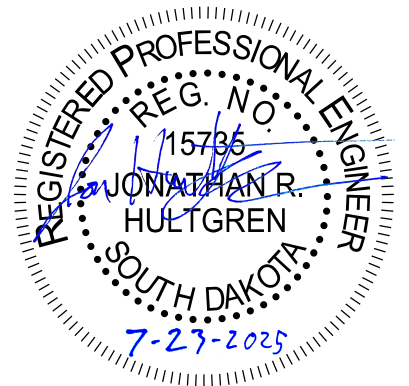
OUT FOR BIDDING PURPOSES ONLY



SHEET

TOTAL SHEETS	
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Revised Date: 7/21/2025
Initials: NBG

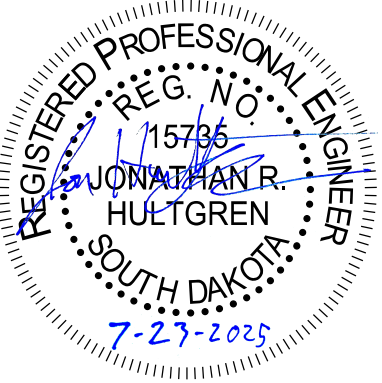
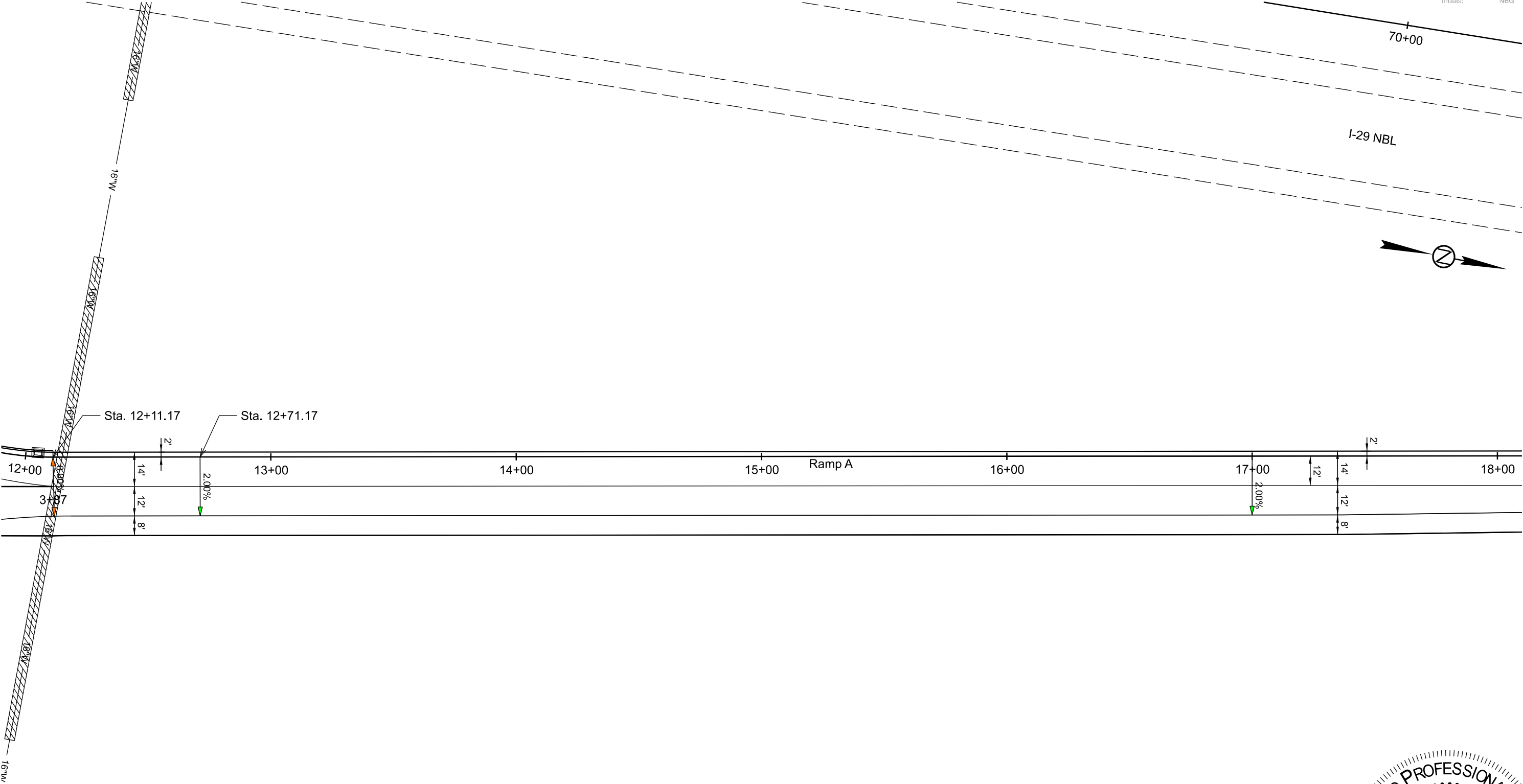


CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY

SD DOT	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	F73	F105

Plotting Date: 7/22/2025
Revised Date: 7/21/2025
Initials: NBG



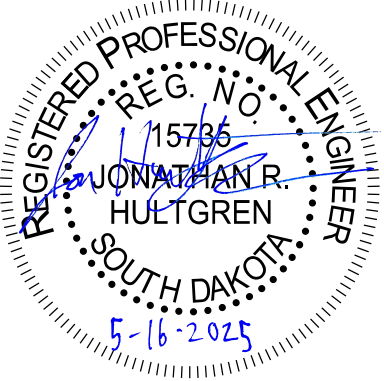
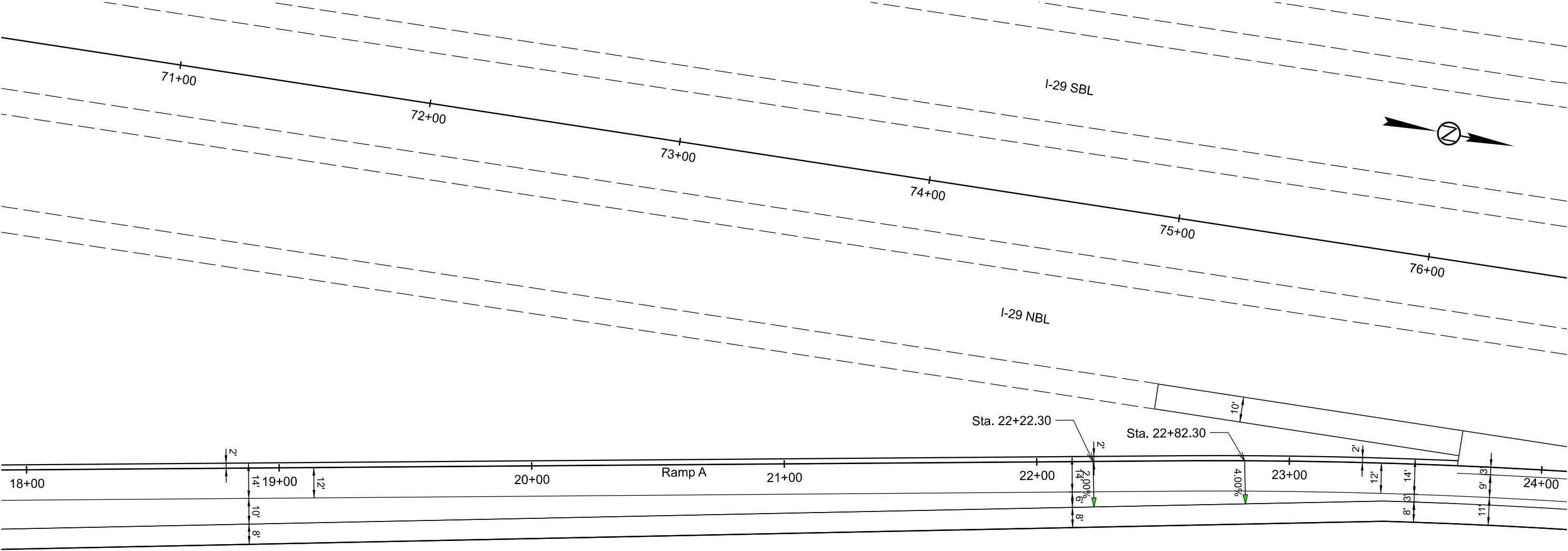
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F74	F105

Plotting Date: 5/16/2025



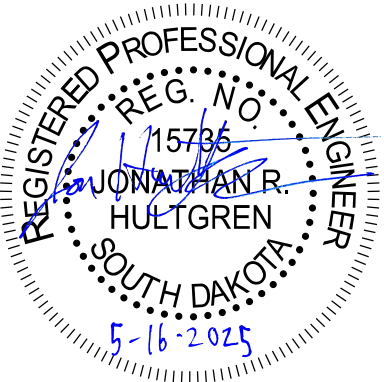
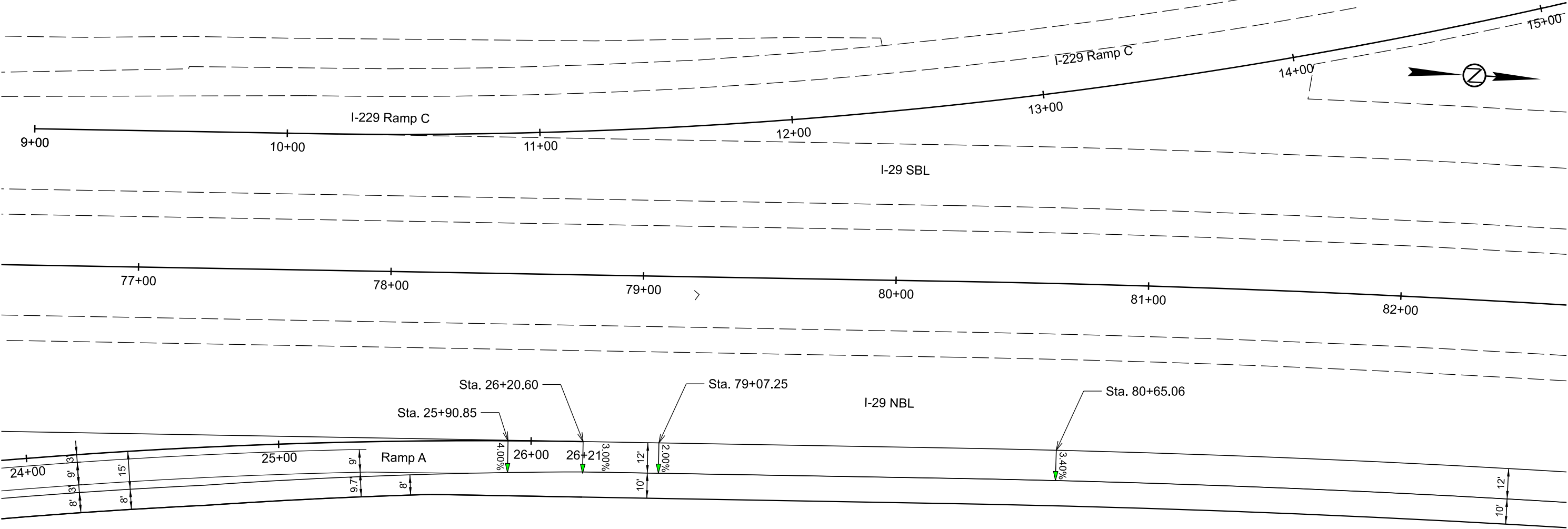
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F75	F105

Plotting Date: 5/16/2025



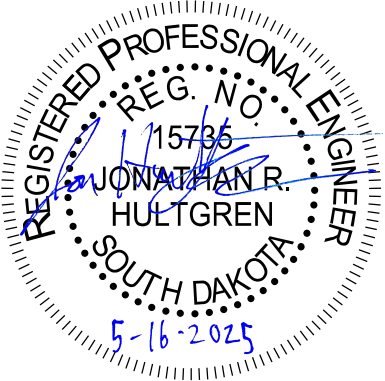
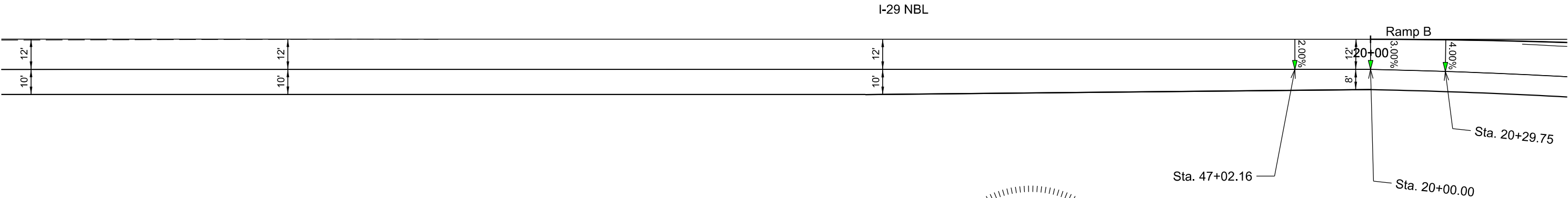
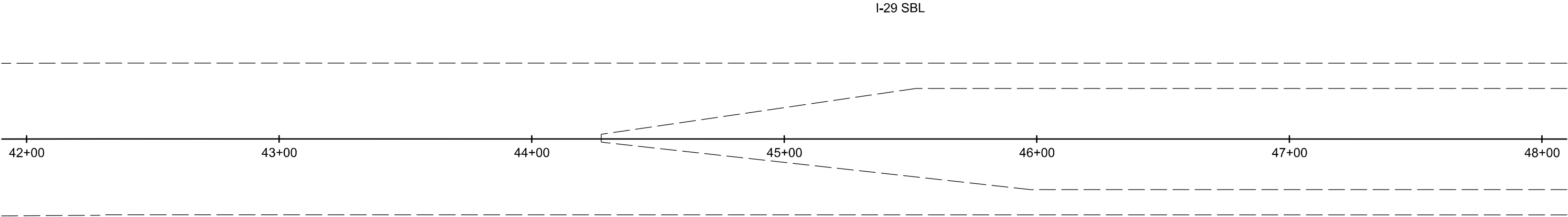
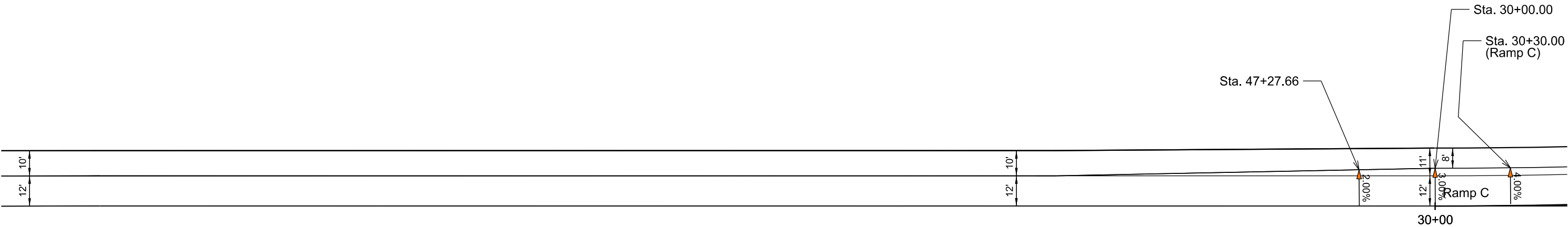
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F76	F105

Plotting Date: 5/16/2025



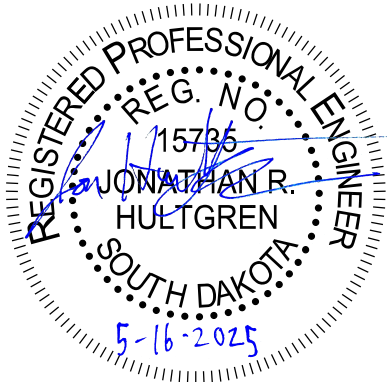
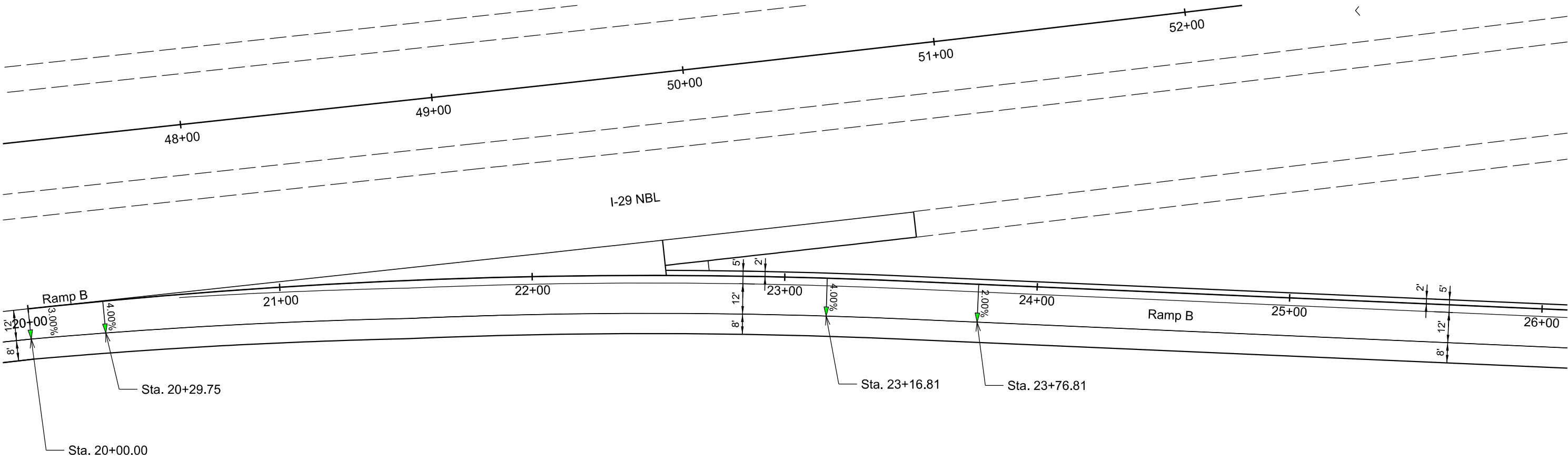
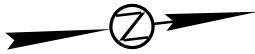
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F77	F105

Plotting Date: 5/16/2025



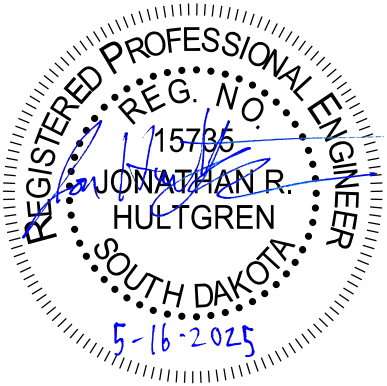
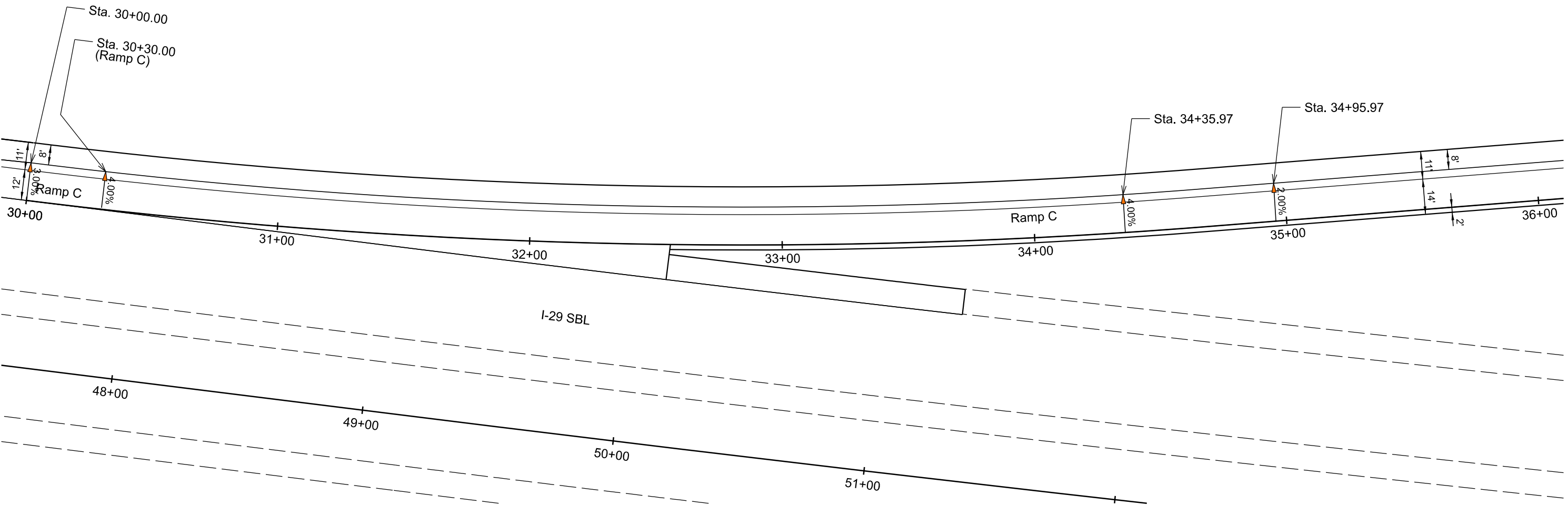
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F78	F105

Plotting Date: 5/16/2025



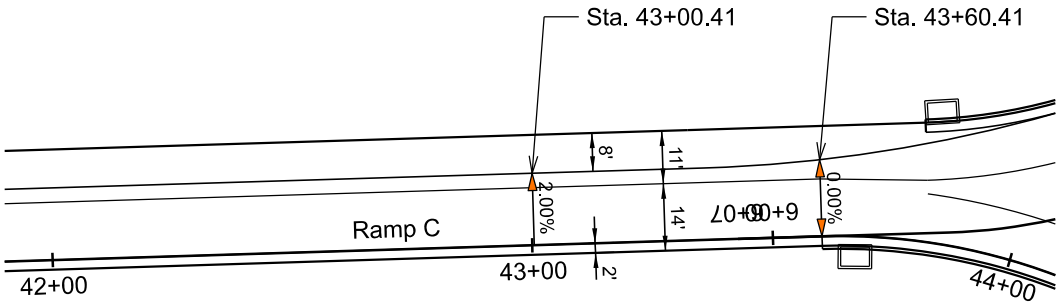
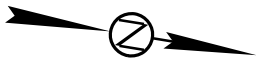
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY

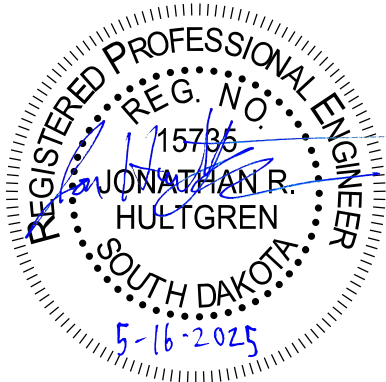


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F79	F105

Plotting Date: 5/16/2025



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CROSS SLOPE LAYOUT

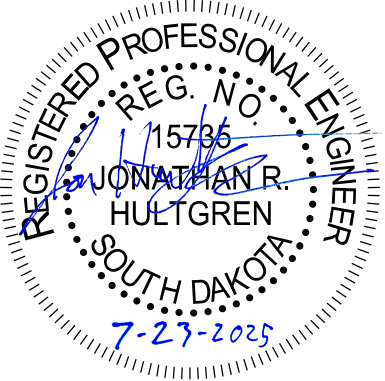
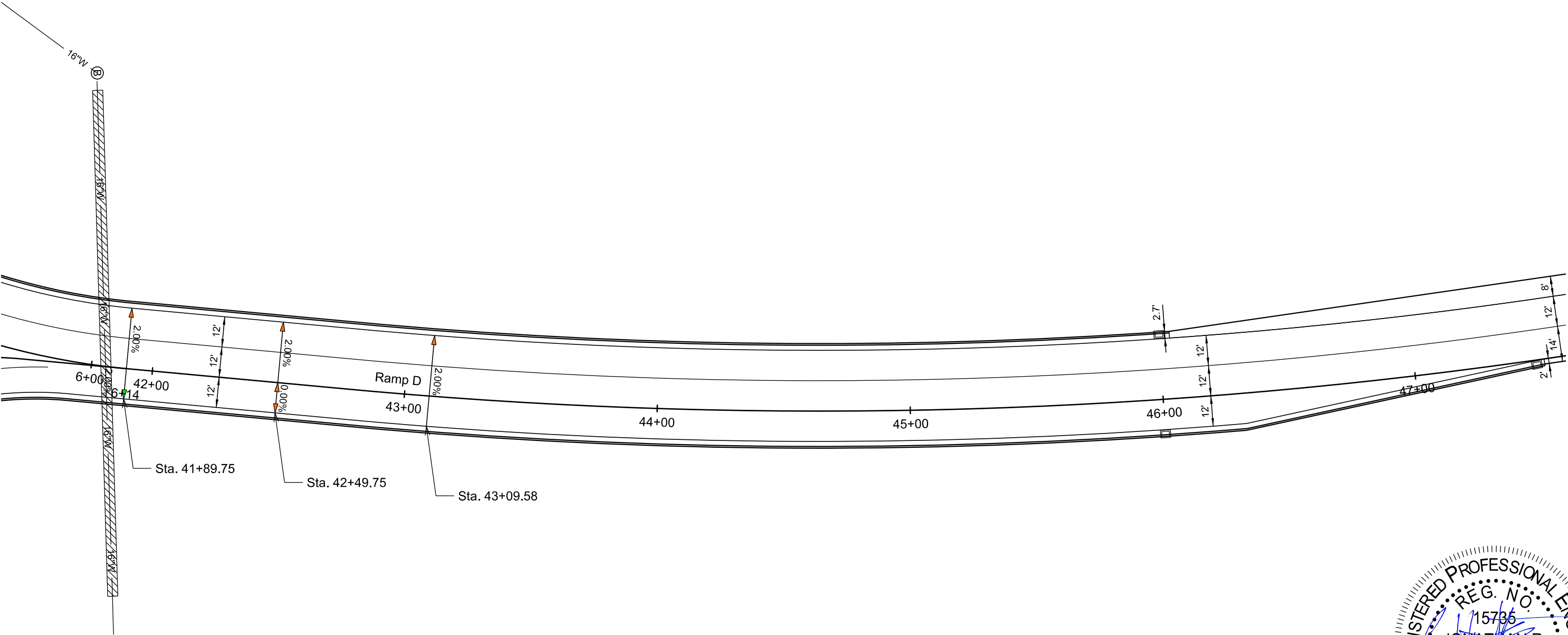
FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F80	F105

Plotting Date: 7/22/2025

Revised Date: 7/21/2025
Initials: NBG



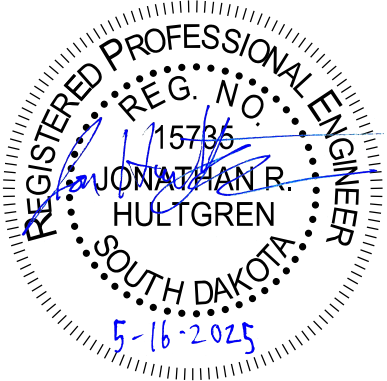
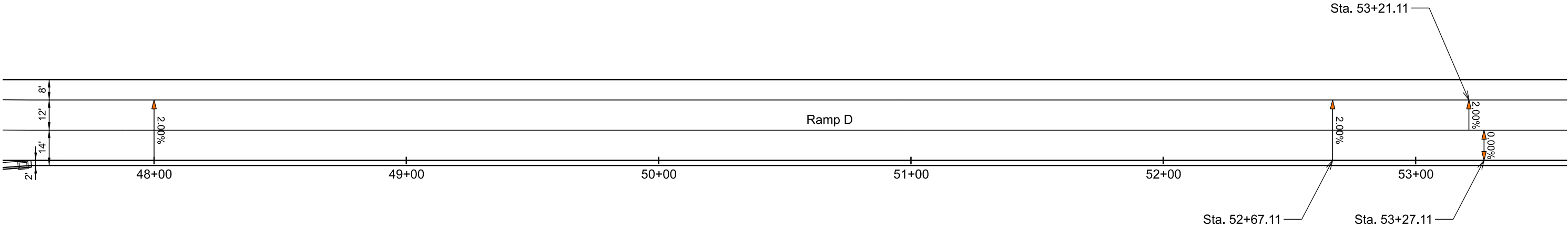
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

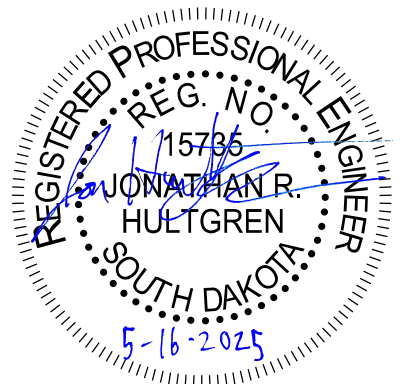
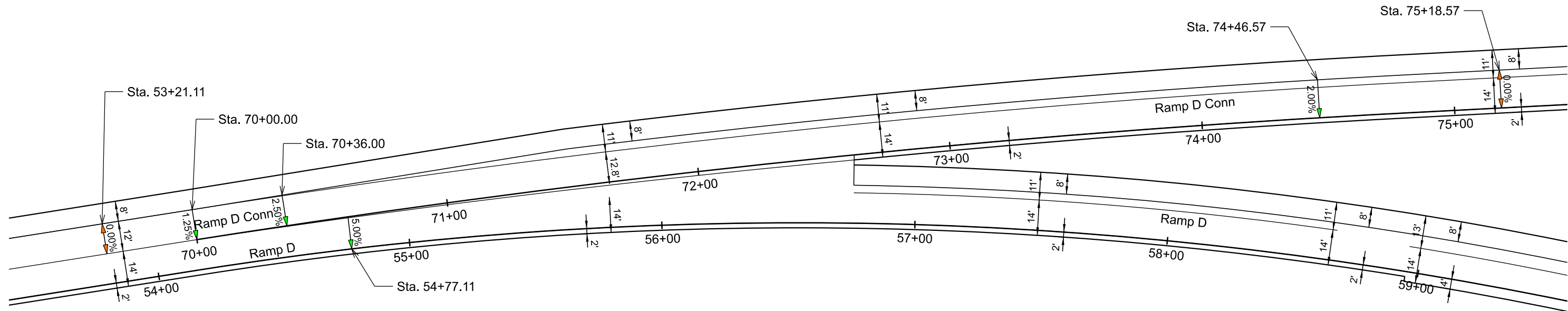
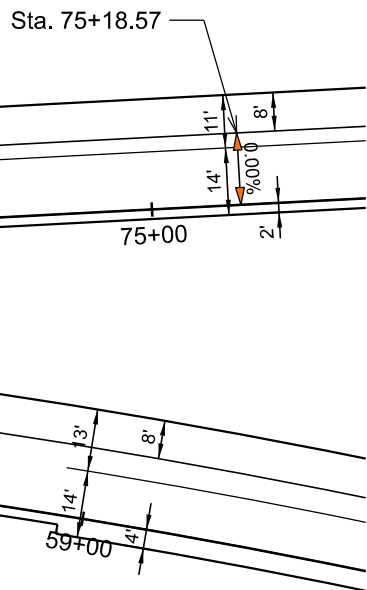
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F81	F105



FOR BIDDING PURPOSES ONLY



5/16/2025



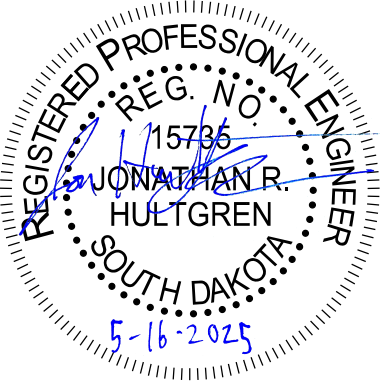
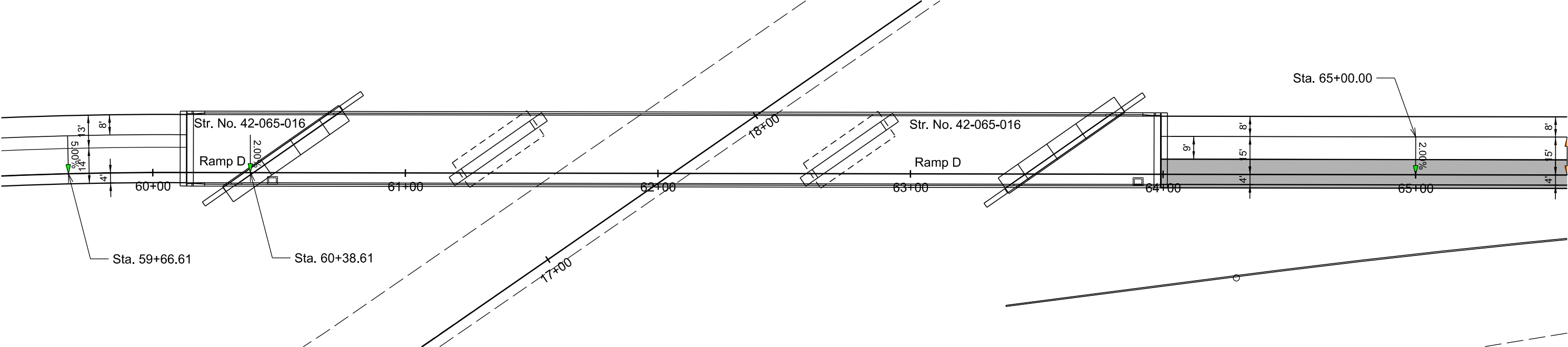
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F83	F105

Plotting Date: 5/16/2025



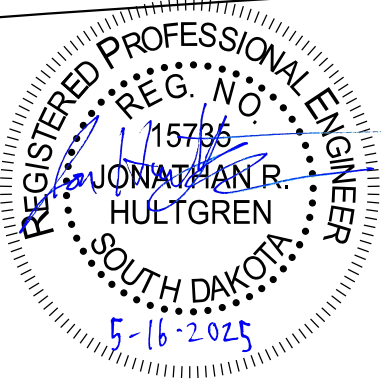
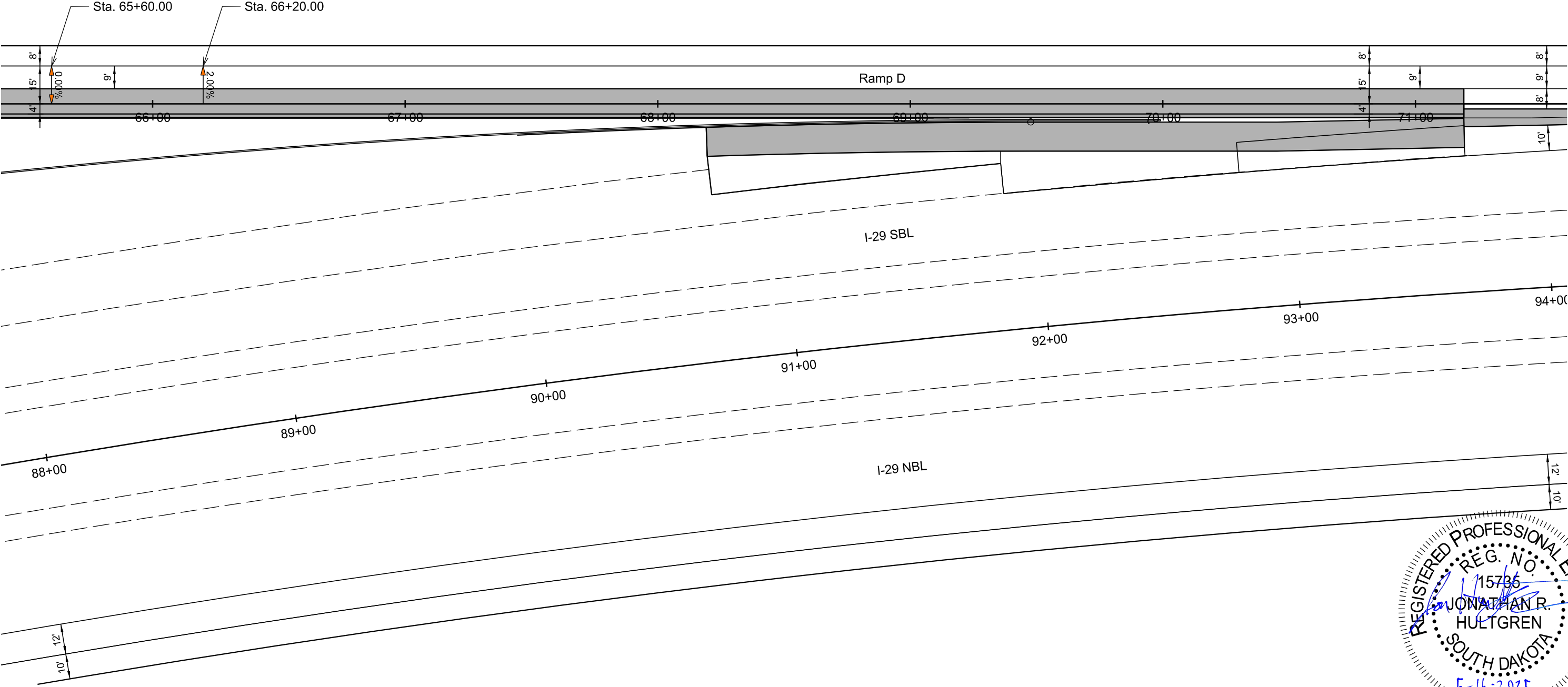
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F84	F105

Plotting Date: 5/16/2025



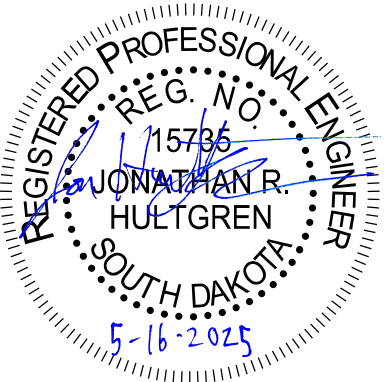
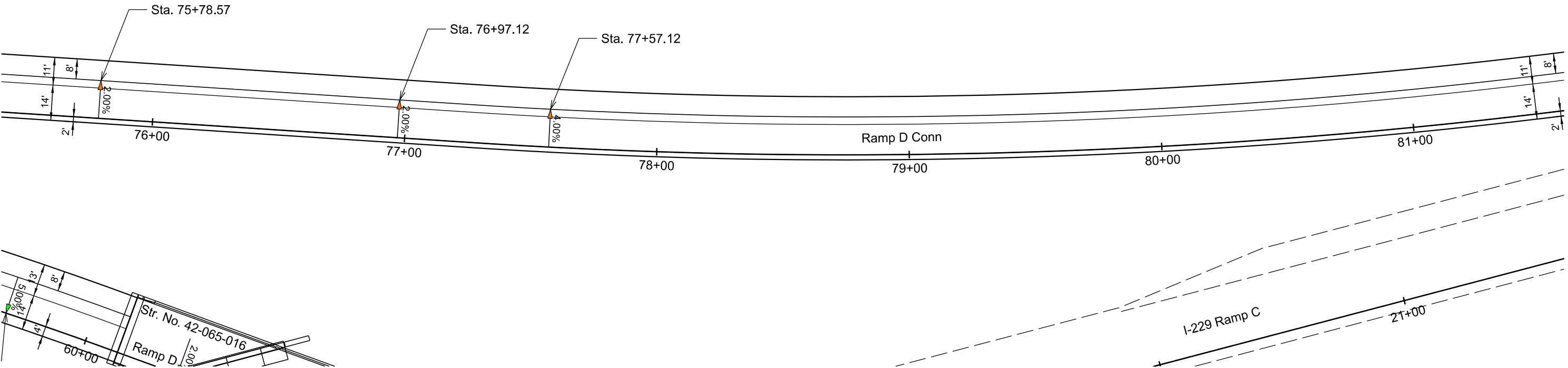
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F85	F105

Plotting Date: 5/16/2025



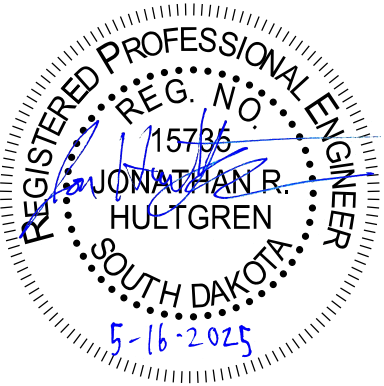
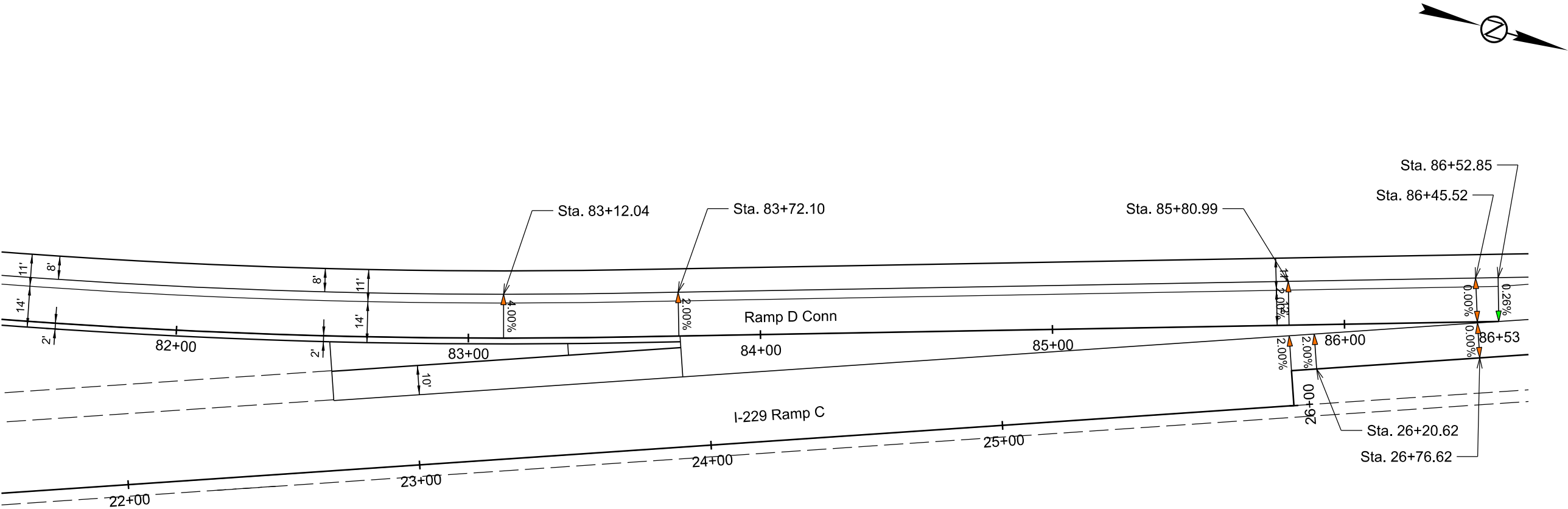
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F86	F105



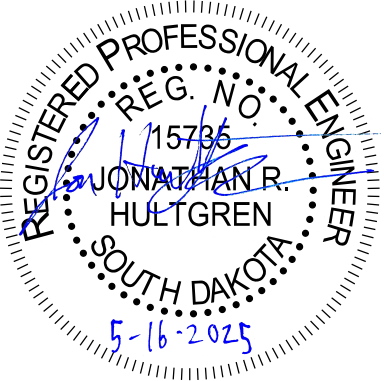
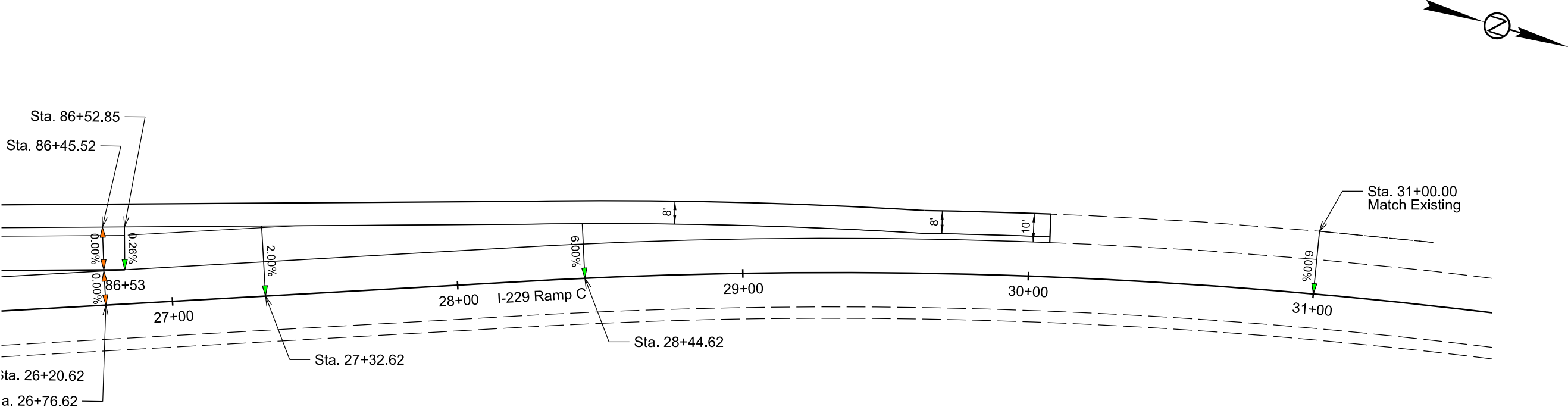
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F87	F105



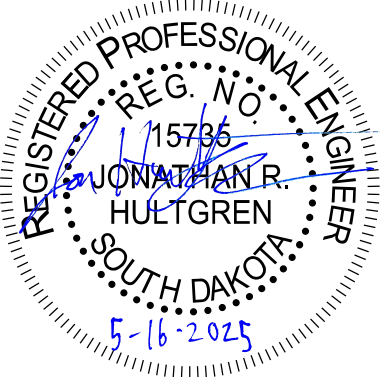
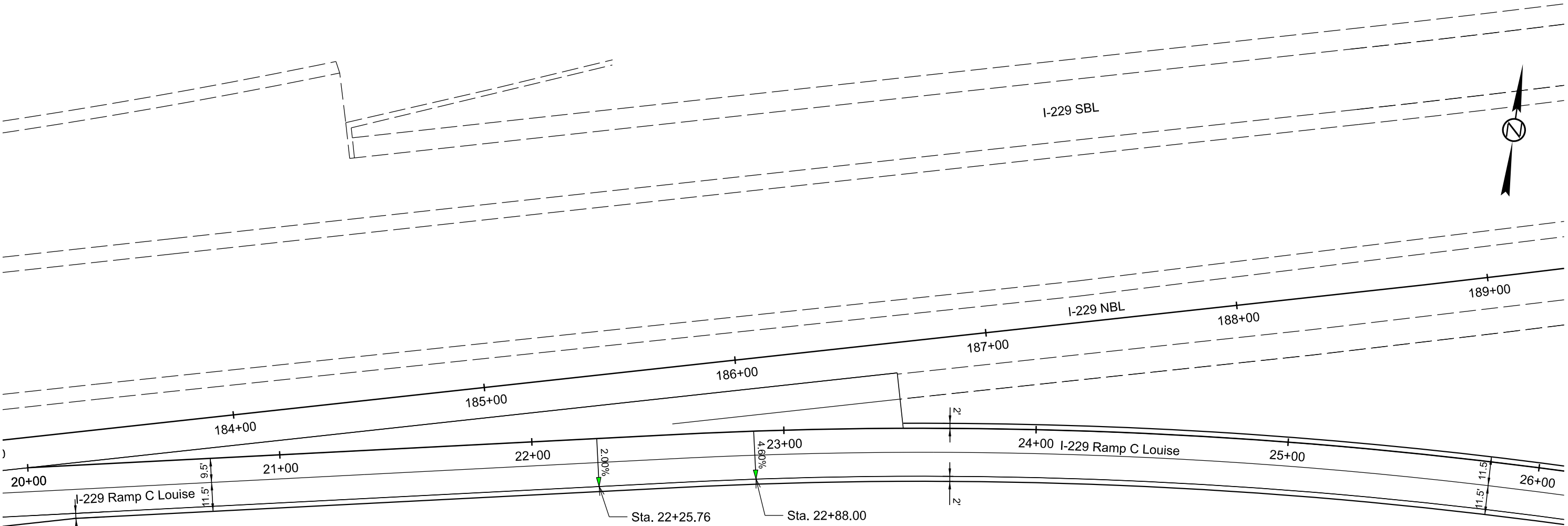
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F88	F105

Plotting Date: 5/16/2025



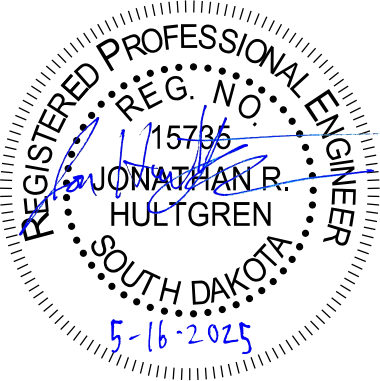
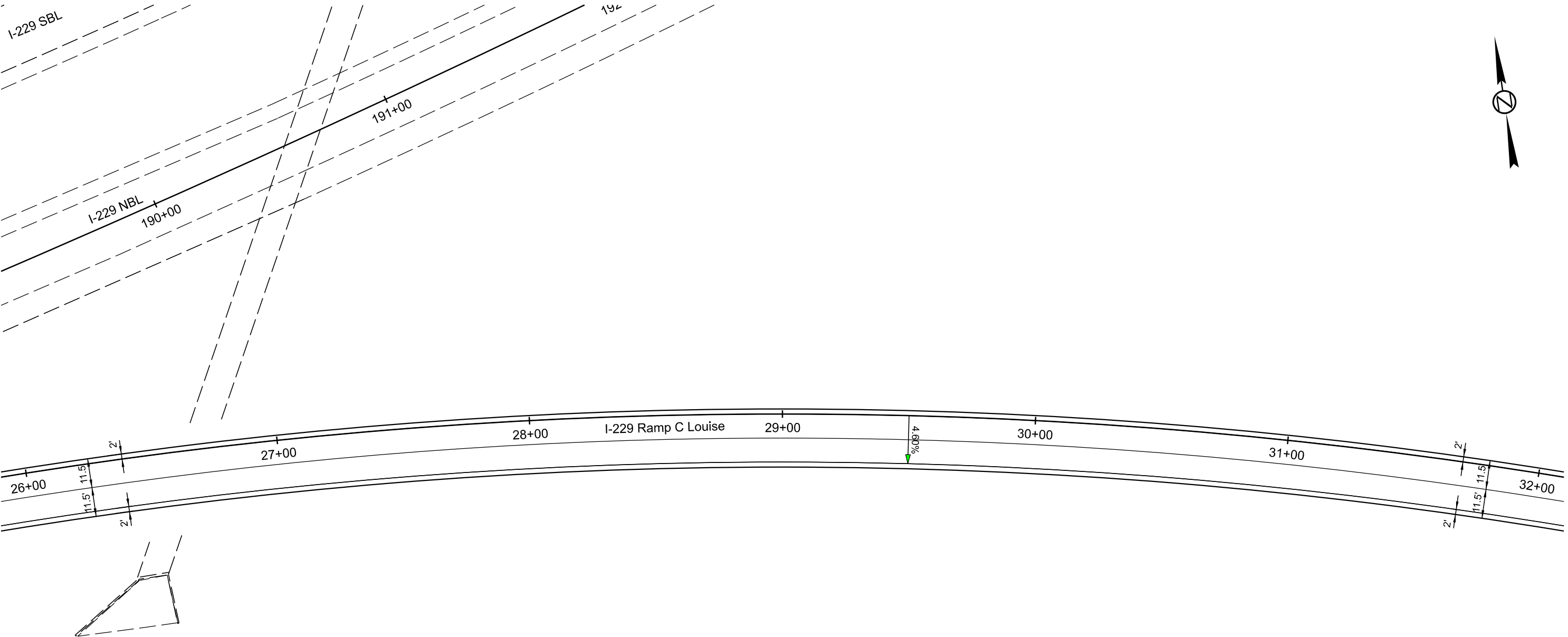
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F89	F105



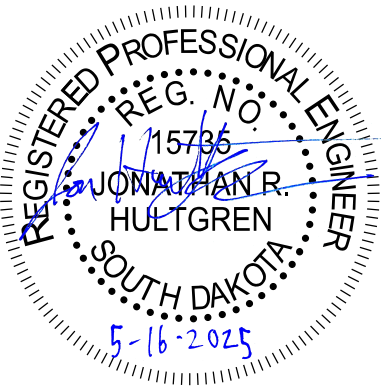
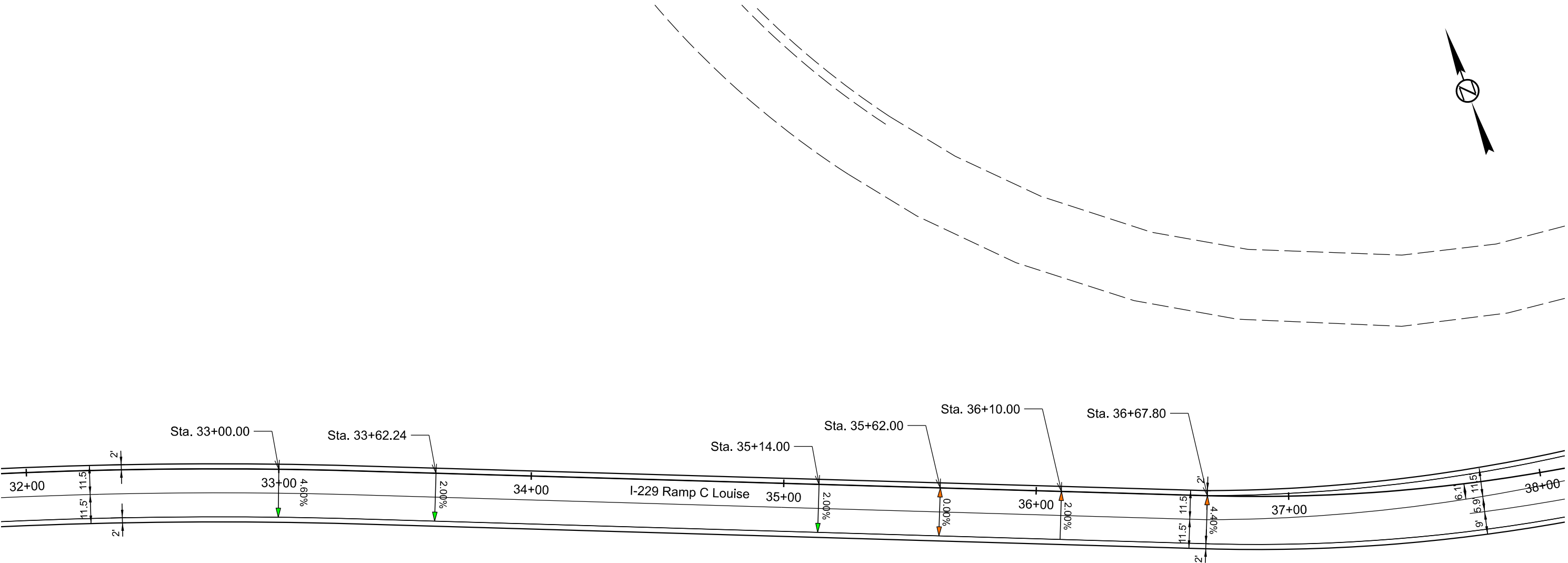
CROSS SLOPE LAYOUT



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F90	F105

Plotting Date: 5/16/2025

FOR BIDDING PURPOSES ONLY



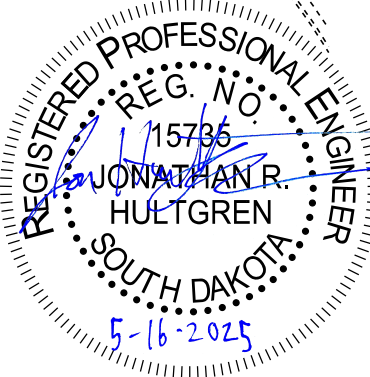
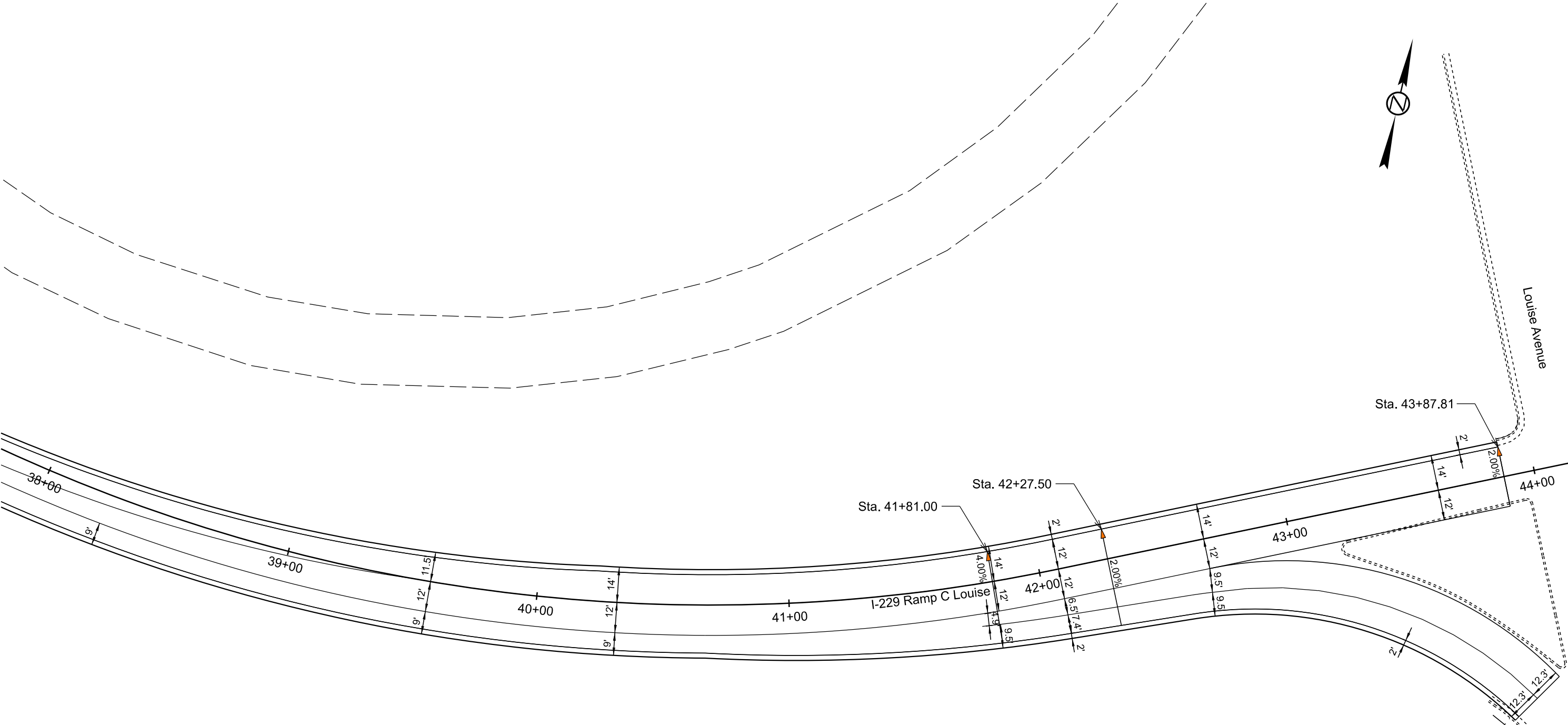
CROSS SLOPE LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F91	F105

Plotting Date: 5/16/2025



GUARDRAIL EMBANKMENT LAYOUTS

FOR BIDDING PURPOSES ONLY

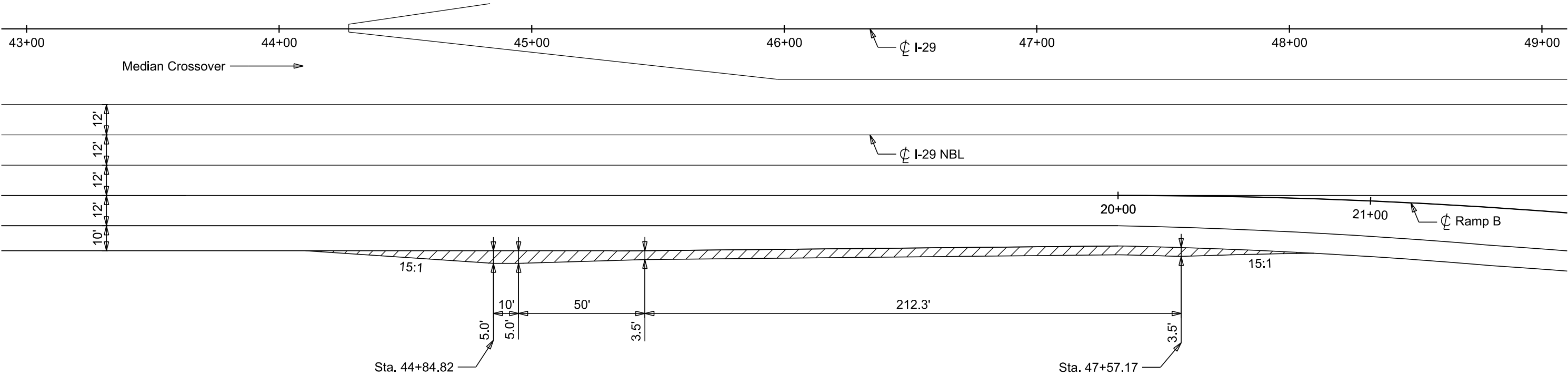
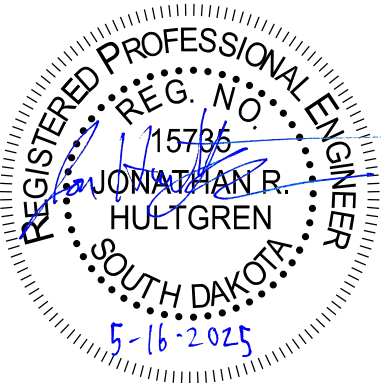


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F92	F105

Plotting Date: 5/16/2025

Scale 1 Inch = 40 Feet
Sheet 1 of 4 Sheets

 5" Gravel Cushion, 11" Base Course,
& 2" Asphalt Concrete Composite



GUARDRAIL EMBANKMENT LAYOUTS

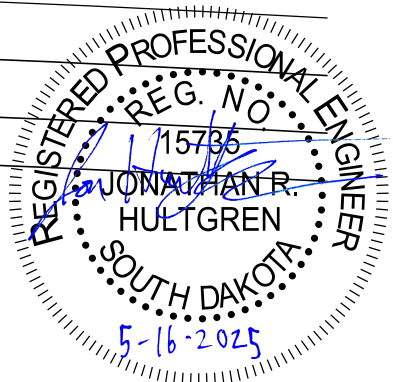
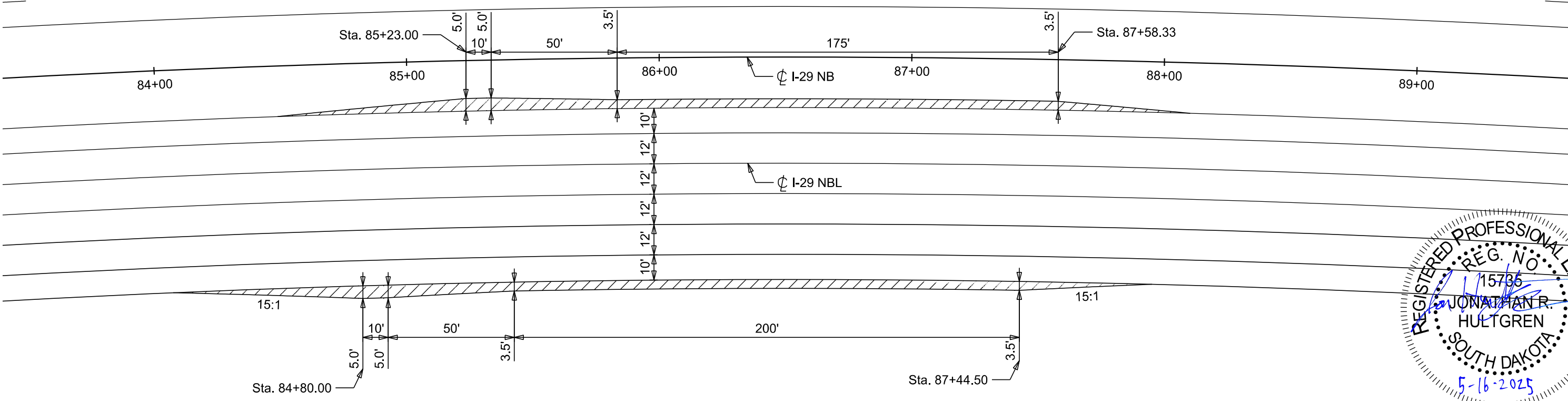
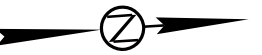
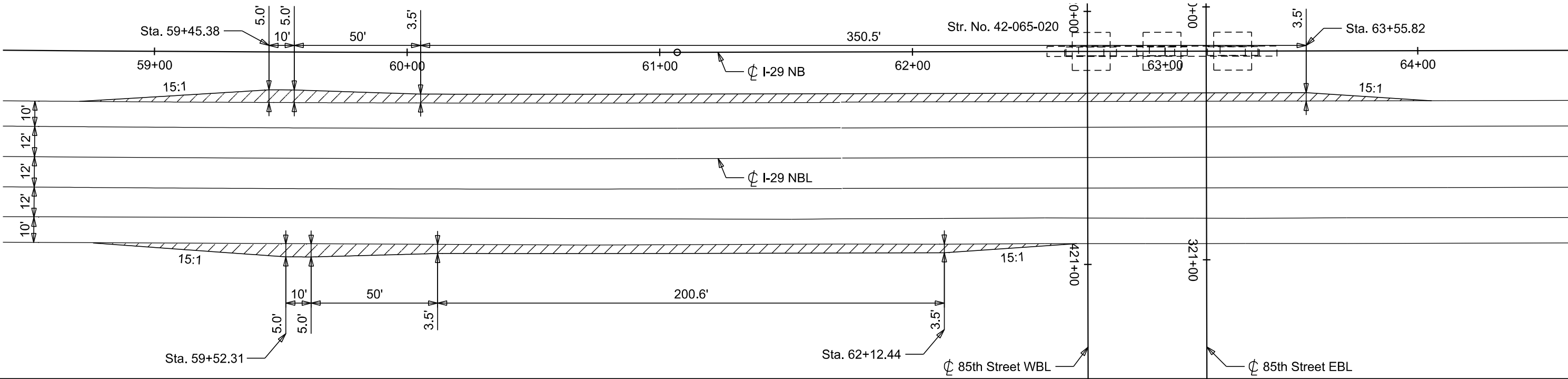


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F93	F105

Plotting Date: 5/16/2025

Scale 1 Inch = 40 Feet
Sheet 2 of 4 Sheets

5" Gravel Cushion, 11" Base Course,
& 2" Asphalt Concrete Composite



GUARDRAIL EMBANKMENT LAYOUTS

FOR BIDDING PURPOSES ONLY

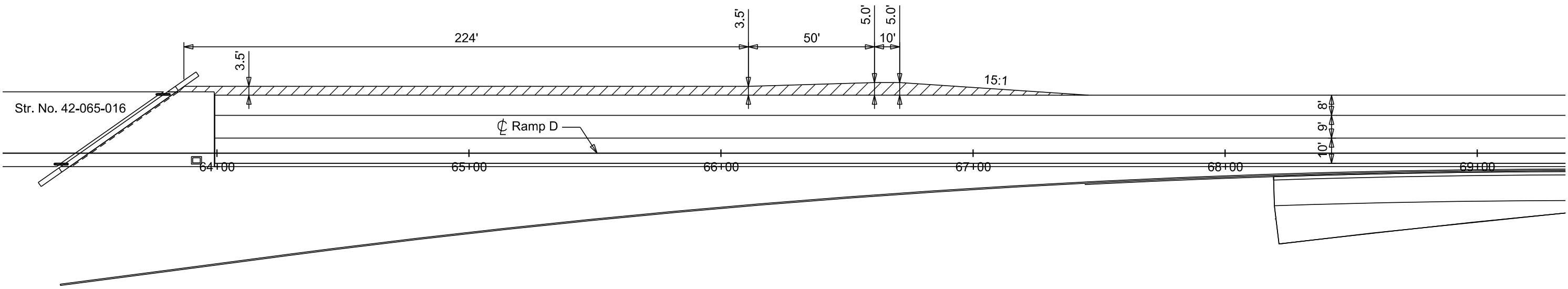


PROJECT	SHEET	TOTAL SHEETS
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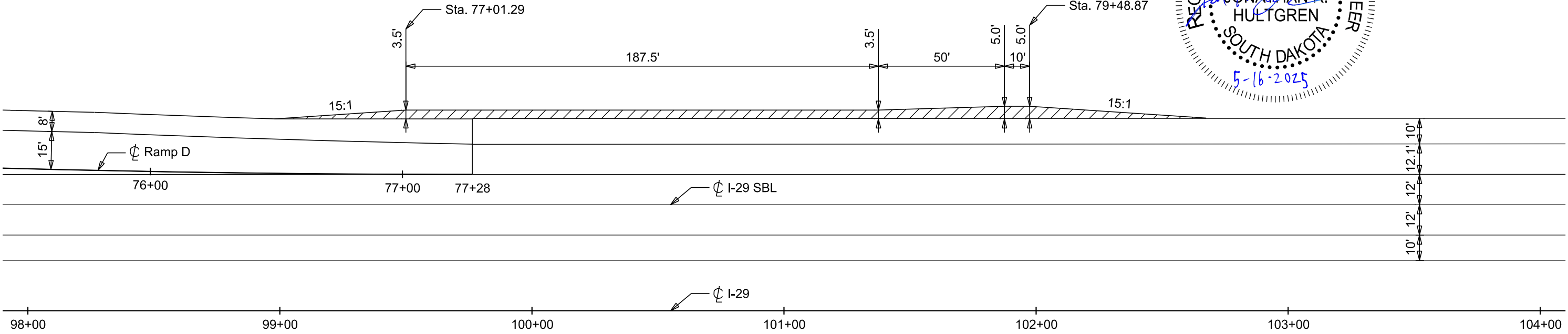
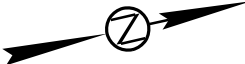
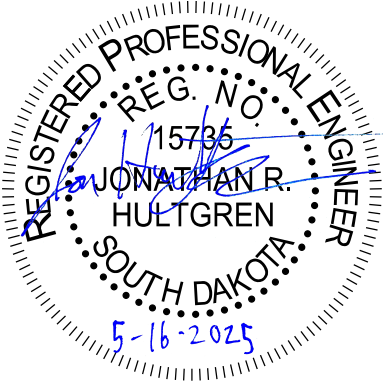
Plotting Date: 5/16/2025

Scale 1 Inch = 40 Feet
Sheet 3 of 4 Sheets

5" Gravel Cushion, 7.5" Base Course,
& 2" Asphalt Concrete Composite



5" Gravel Cushion, 11" Base Course,
& 2" Asphalt Concrete Composite



GUARDRAIL EMBANKMENT LAYOUTS

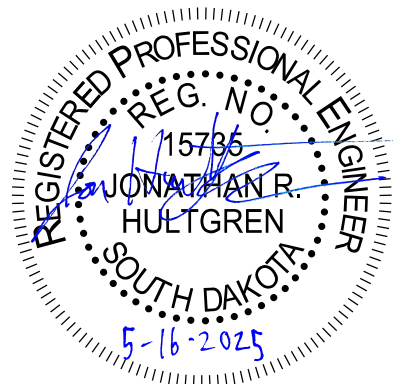
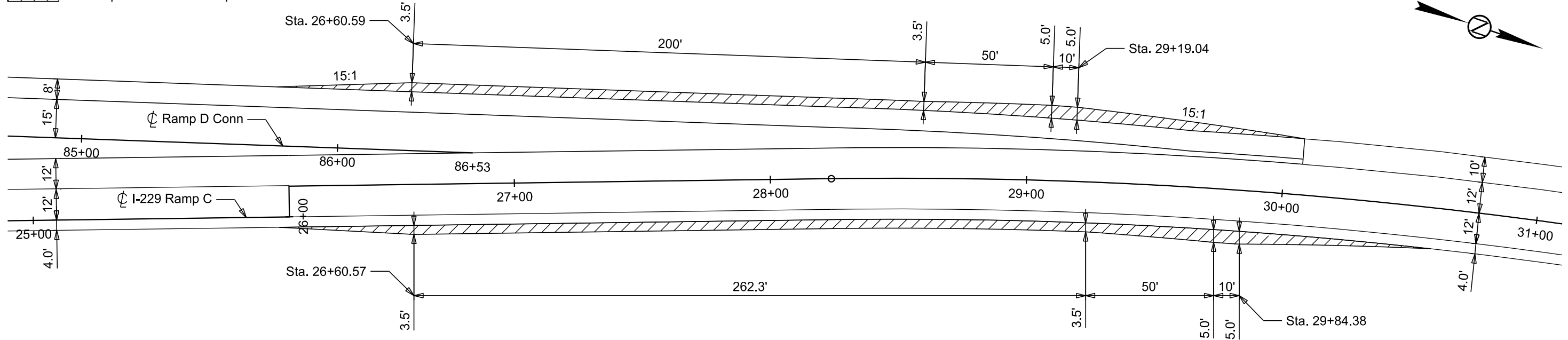


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F95	F105

Plotting Date: 5/16/2025

Scale 1 Inch = 40 Feet
Sheet 4 of 4 Sheets

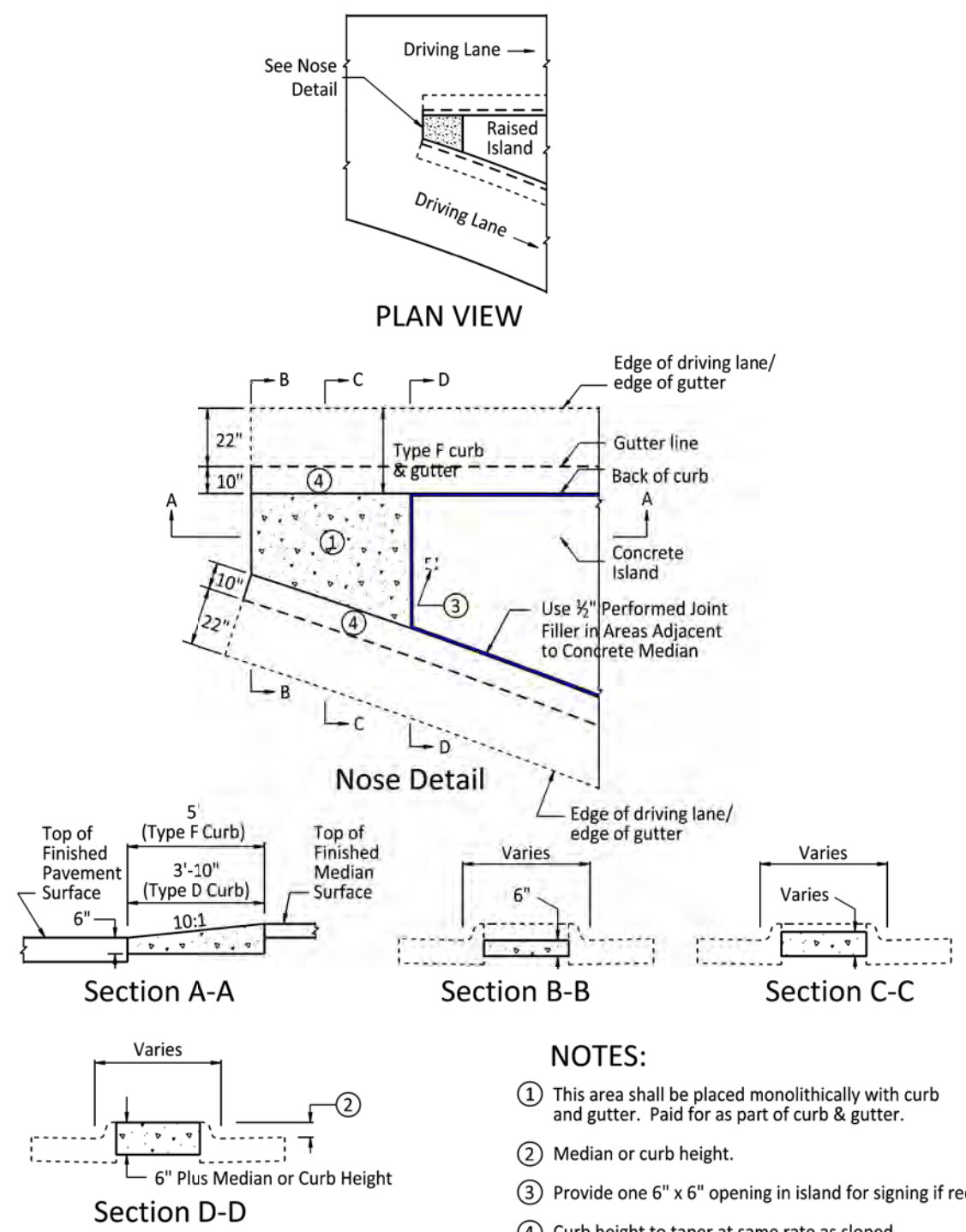
5" Gravel Cushion, 7.5" Base Course,
& 2" Asphalt Concrete Composite



Special Surfacing Details

FOR BIDDING PURPOSES ONLY

SD DOT	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	F95A	F105
Plotting Date:	9/2/2025	Revised Date:	9/2/2025
		Initials:	NBG



Concrete Approach Nose Detail



Membrane Sealant Expansion Joint

FOR BIDDING PURPOSES ONLY

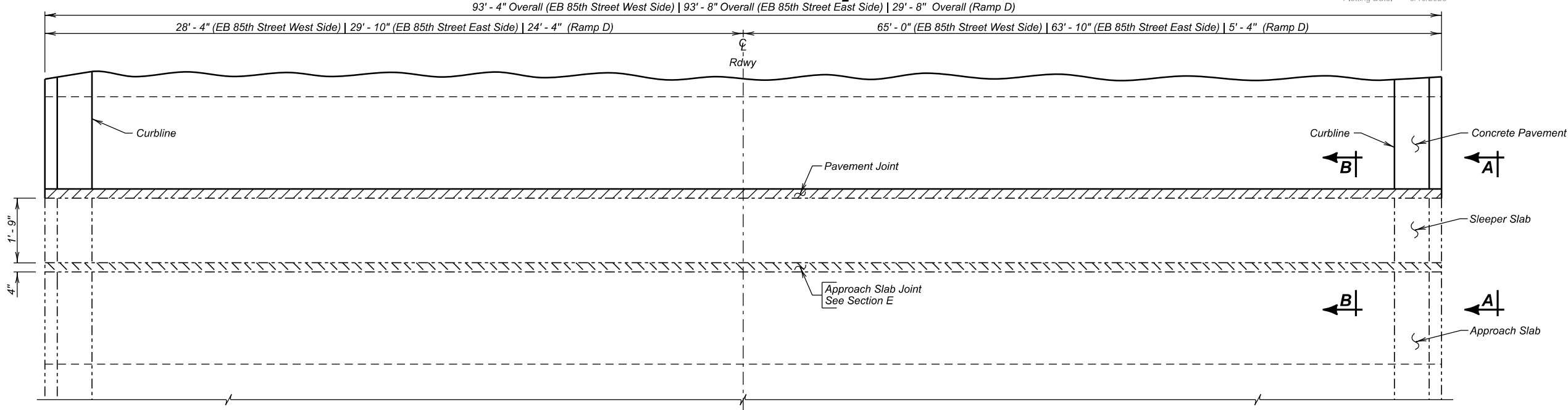


PROJECT
EM 0292(88)73
IM 2292(104)0

SHEET
F96

TOTAL
SHEETS
F105

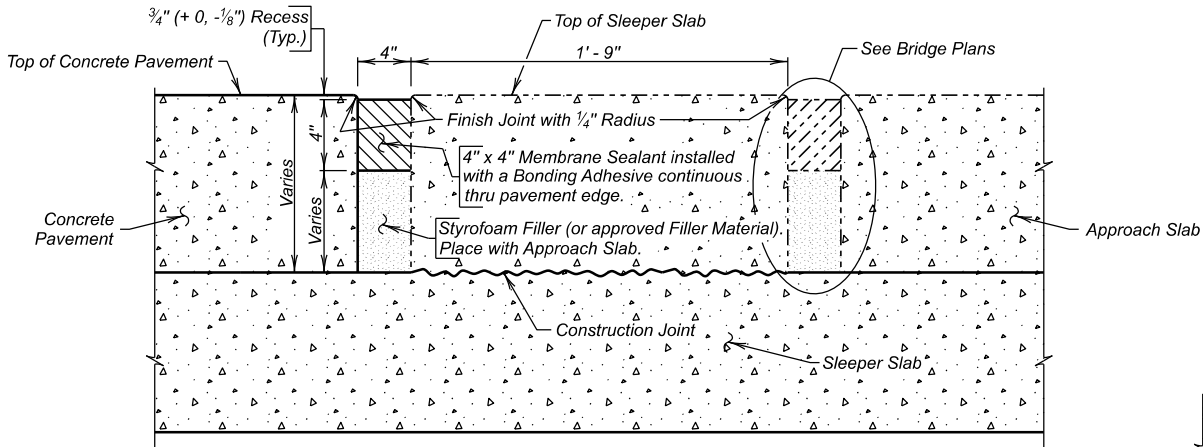
Plotting Date: 5/16/2025



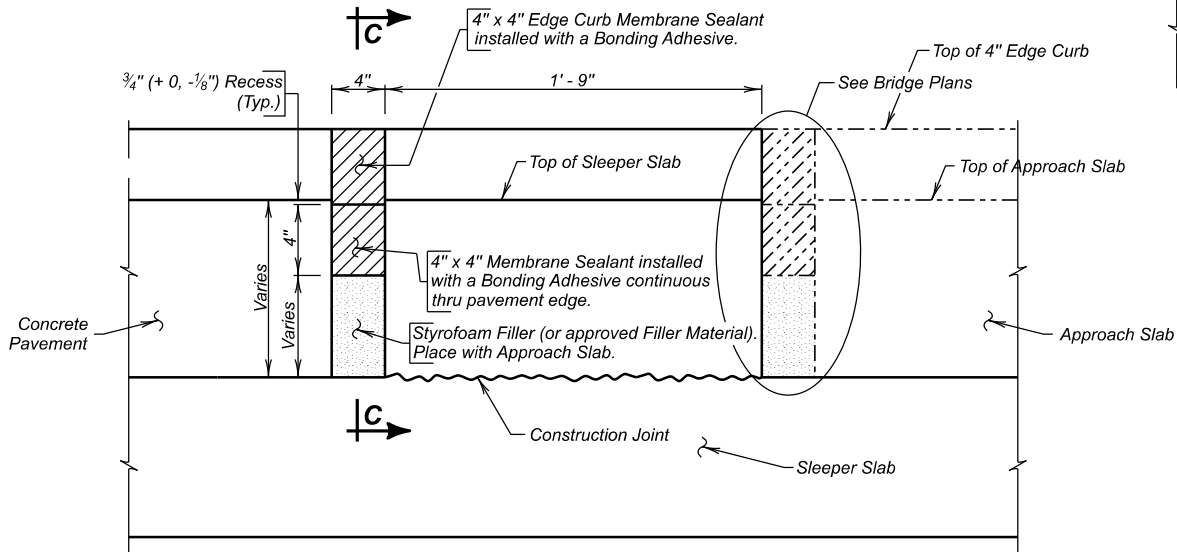
PLAN

GENERAL NOTES

1. The Membrane Sealant shall be on the approved product list for Membrane Sealant Expansion Joints.
2. 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.
3. The membrane sealant shall provide a water tight seal throughout a joint movement range of + 25% (minimum) from the specified joint opening dimension.
4. 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.
5. The bonding adhesive used to attach the membrane sealant to the adjacent concrete shall be approved by the membrane sealant manufacturer.
6. Adhesive used to join adjacent pieces of the membrane sealant shall be as recommended by the manufacturer.
7. If styrofoam filler material is used in the construction, it shall be closed cell and water-tight as approved by the Engineer.
8. The minimum ambient air temperature at the time of joint installation and adhesive curing shall be 40° F.
9. 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.
10. 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.
11. 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.
12. 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.
13. Traffic shall not be allowed on the joint until the bonding adhesive has had time to cure, as recommended by the manufacturer.
14. 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.
15. 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

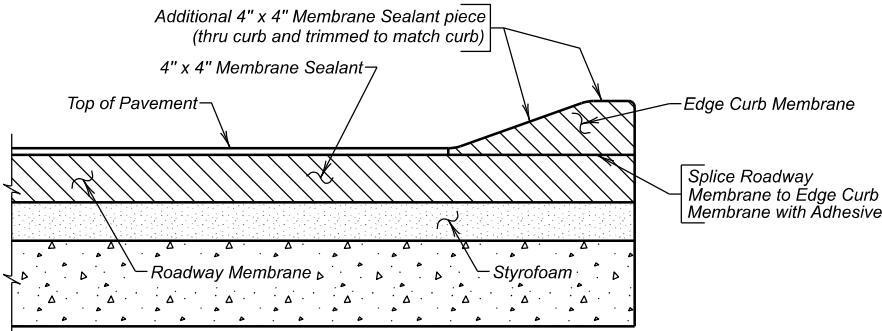


VIEW A - A

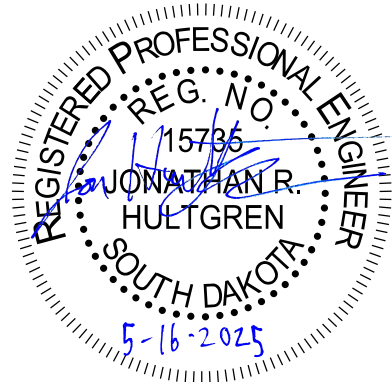
I-29 / 85th Street Interchange - PCN 06JQ

ESTIMATED QUANTITIES

LOCATION	UNIT	QUANTITY
EB 85th Street Sta. 318+57.7 (Str. No. 42-065-020)	Ft.	93.3
EB 85th Street Sta. 321+77.3 (Str. No. 42-065-020)	Ft.	93.7
Ramp D Sta. 60+13.3 (Str. No. 42-065-016)	Ft.	29.7
Ramp D Sta. 63+99.2 (Str. No. 42-065-016)	Ft.	29.7
TOTAL		246.4



SEC. C - C



FOR BIDDING PURPOSES ONLY



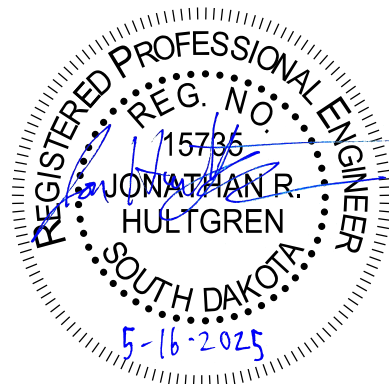
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	F97	F105

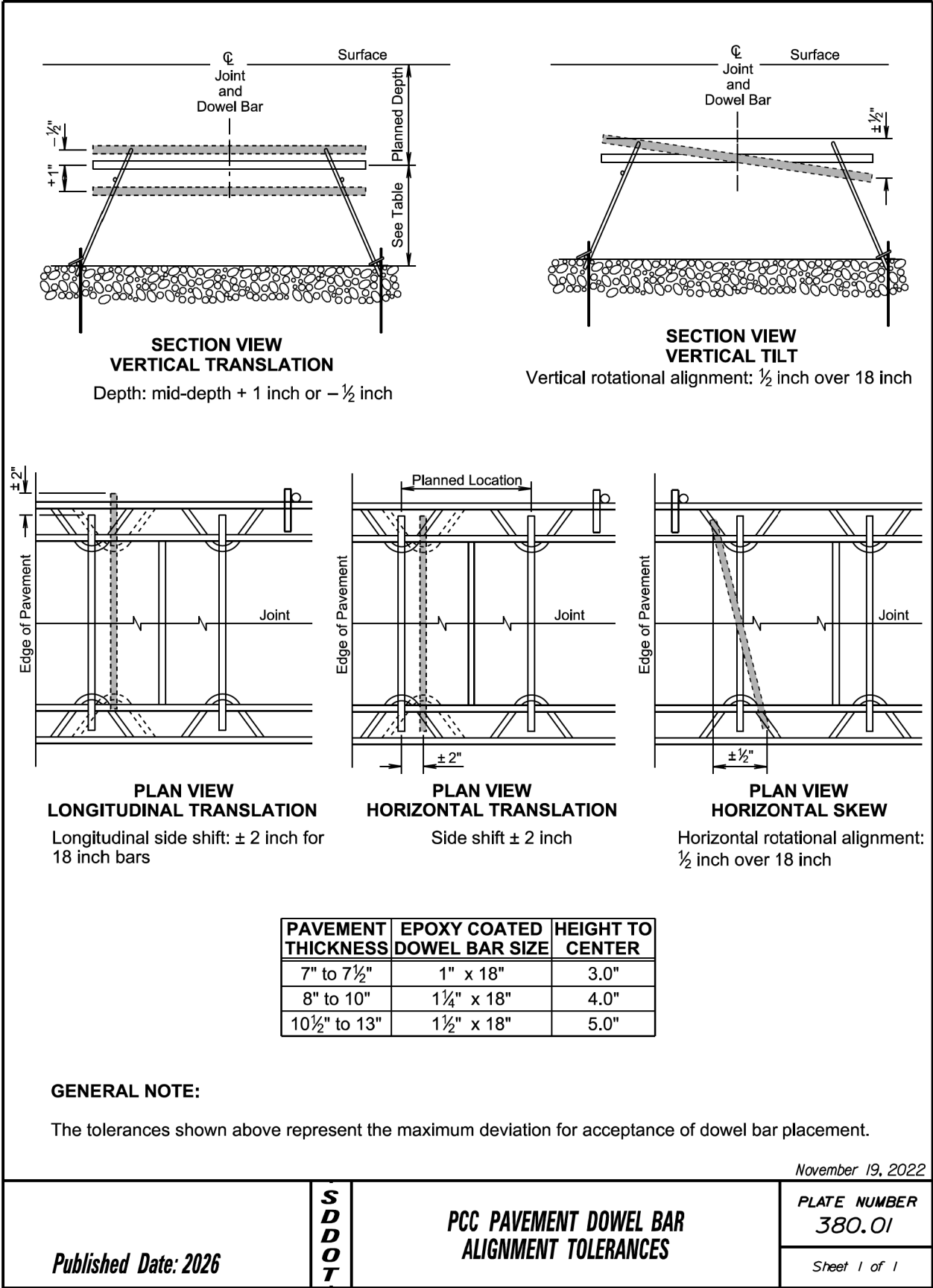


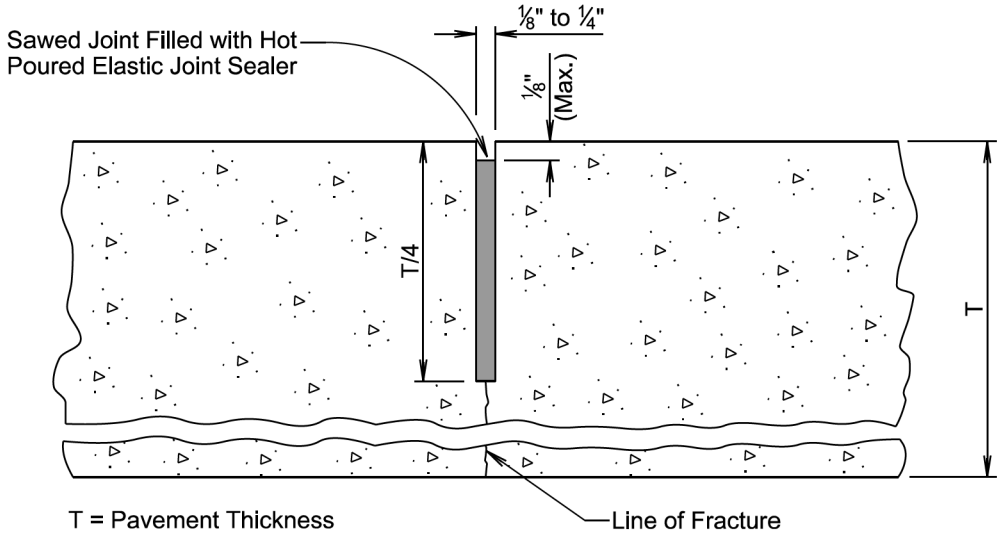
SECTION S - S

- ## GENERAL NOTES

1. The Membrane Sealant Expansion Joint will be on the approved product list for Membre Sealant Expansion Joints.
2. The manufacturer will supply the membrane sealant in packaging that precompresses the membrane sealant. The precompressed dimension will be as recommended by the sealant manufacturer, however, in no case will the precompressed dimension exceed 75% of the joint opening width. The foam sealant will be slowly self expanding to permit workers ample time to install the membrane sealant before the membrane sealant exceeds the joint opening width.
3. The membrane sealant will provide a water tight seal throughout a joint movement range of + 25% (minimum) from the specified joint opening dimension.
4. The membrane sealant will be supplied in pieces a minimum of 5 feet in length. The foam sealant will be ultra-violet and ozone resistant.
5. The bonding adhesive used to attach the membrane sealant to the adjacent concrete will be approved by the membrane sealant manufacturer.
6. Adhesive used to join adjacent pieces of the membrane sealant will be as recommended by the manufacturer.
7. If styrofoam filler material is used in the construction, it will be closed cell and water-tight as approved by the Engineer.
8. The minimum ambient air temperature at the time of joint installation and adhesive curing will be 40°F.
9. A technical representative of the membrane sealant manufacturer will be present at the jobsite during installation. The technical representative will 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.
10. Surfaces that will be in contact with the membrane sealant will 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 will not be permitted.
11. After abrasive blasting, but immediately prior to membrane joint installation, the entire joint contact surface will be air blasted. The air compressor used for joint cleaning will 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 will be visually inspected by the Engineer immediately prior to joint installation to verify the surface is dry and clean.
12. Individual spliced sections will be installed as per the manufacturers' recommendations. The membrane joint sealant manufacturer will submit a detailed installation procedure to the Engineer at least 5 days prior to joint installation for his review.
13. Traffic will not be allowed on the joint until the bonding adhesive has had time to cure, as recommended by the manufacturer.
14. 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.
15. 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 will 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 specification.







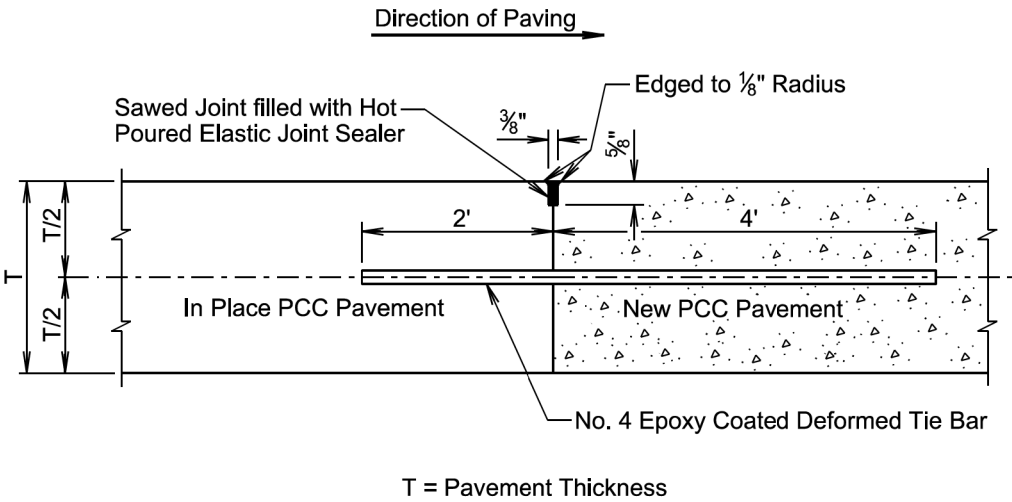
GENERAL NOTES:

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

Published Date: 2026	SD DOT	PCC PAVEMENT TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY	PLATE NUMBER 380.12
			Sheet 1 of 1



GENERAL NOTES:

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

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

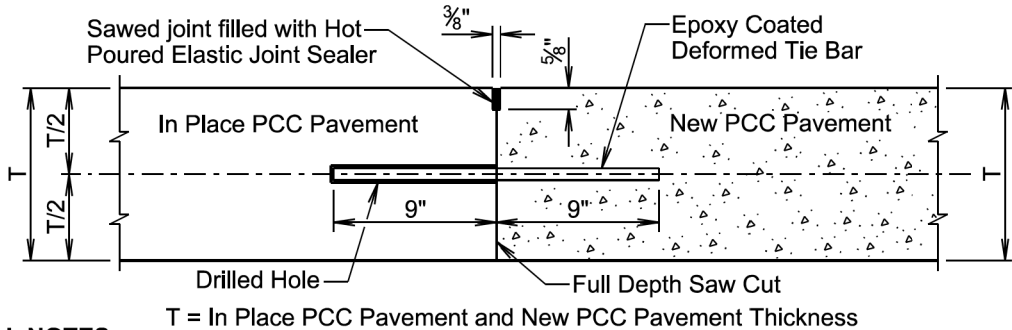
When a transverse construction joint is made, paving will not be allowed in this area for 12 hours.

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

March 31, 2024

Published Date: 2026	SD DOT	PCC PAVEMENT MID PANEL TRANSVERSE CONSTRUCTION JOINT	PLATE NUMBER 380.14
			Sheet 1 of 1

DETAIL A
TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS



GENERAL NOTES:

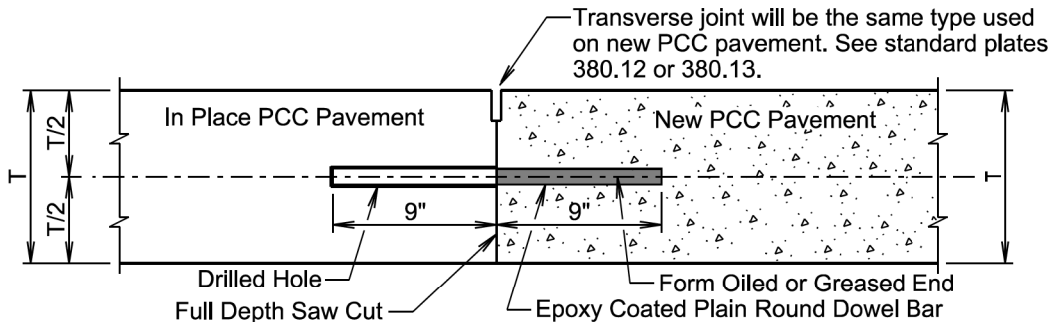
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

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

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

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

DETAIL B
TRANSVERSE CONSTRUCTION JOINT WITH DOWEL BARS



GENERAL NOTES:

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

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

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

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

January 22, 2023

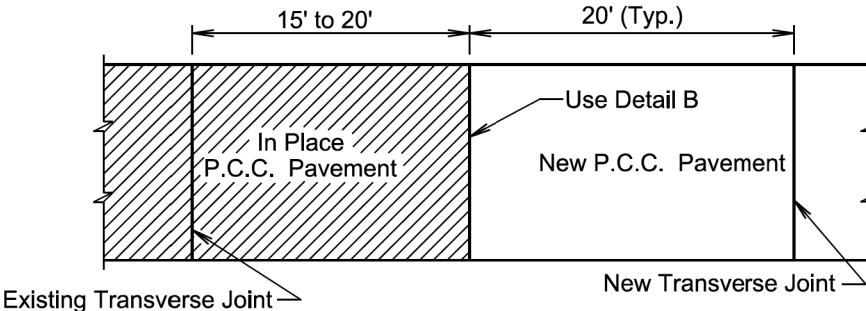
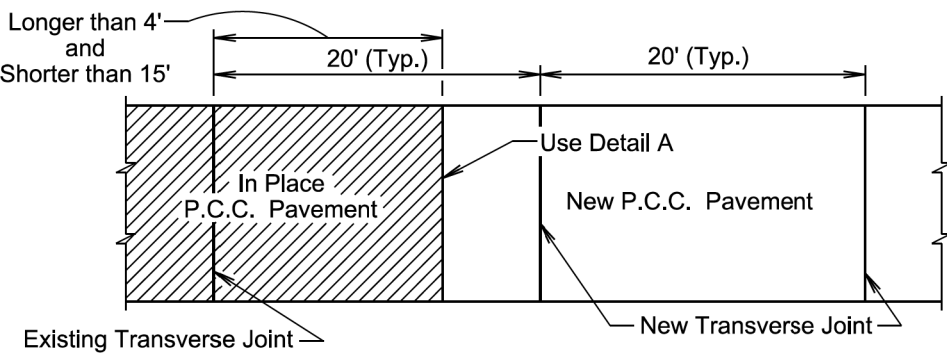
Published Date: 2026

SD DOT

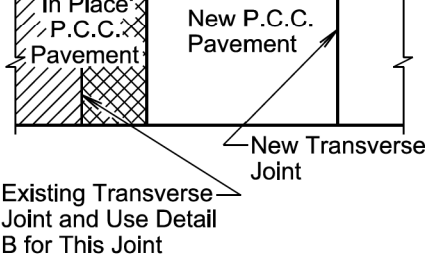
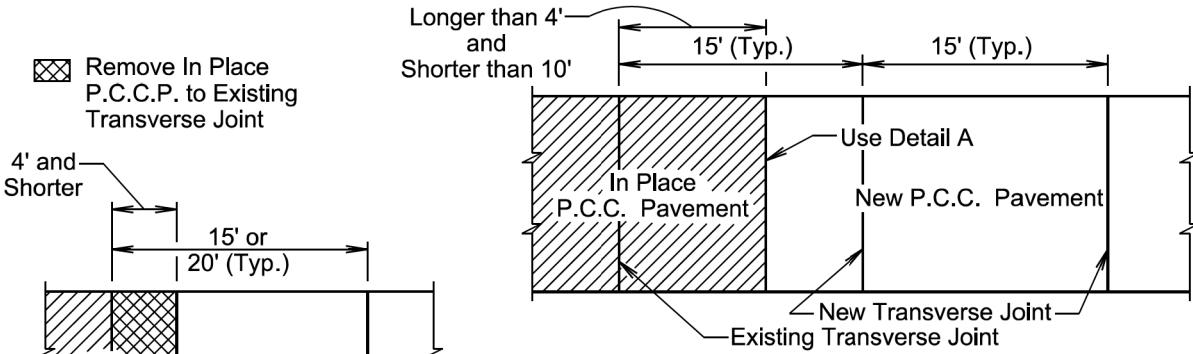
PCC PAVEMENT TRANSVERSE CONSTRUCTION
JOINTS WITH TIE BARS OR DOWEL BARS

PLATE NUMBER
380.15

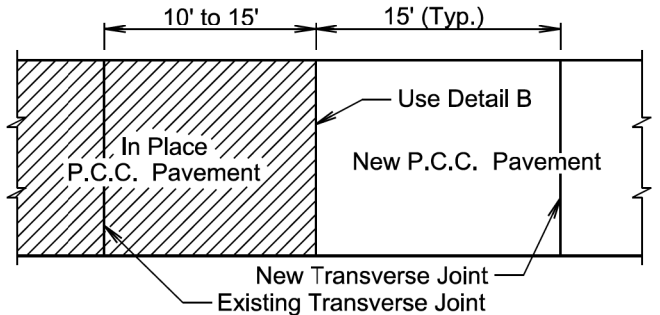
Sheet 1 of 2



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



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



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

January 22, 2023

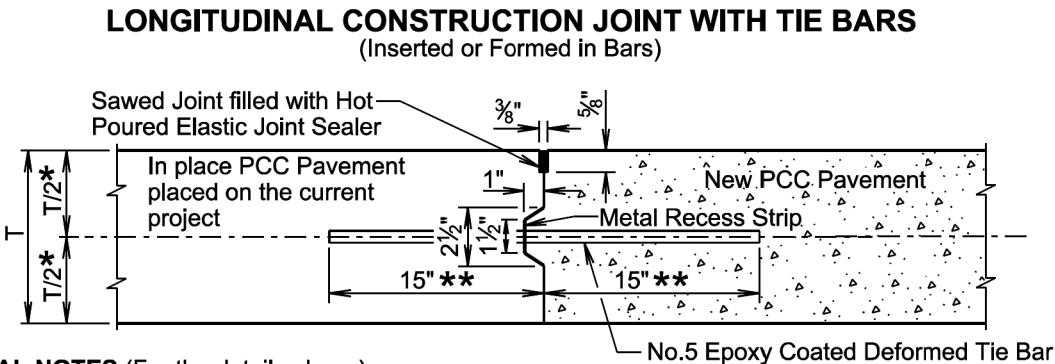
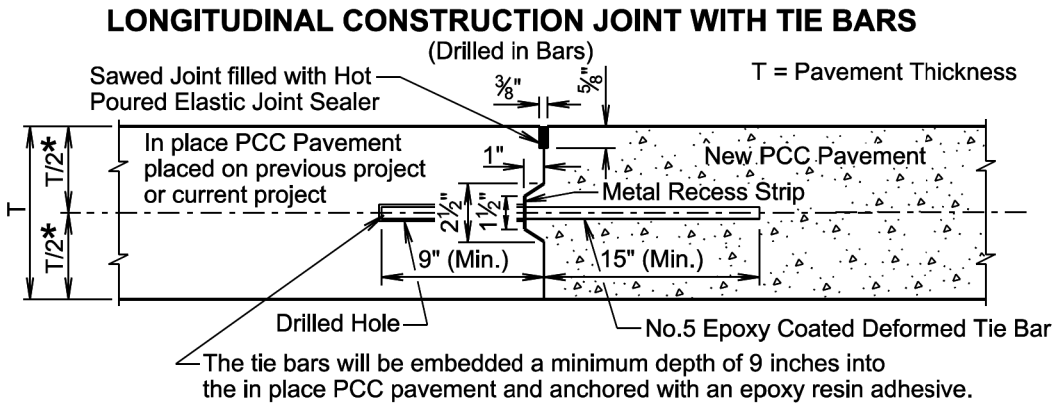
Published Date: 2026

SD DOT

PCC PAVEMENT TRANSVERSE CONSTRUCTION
JOINTS WITH TIE BARS OR DOWEL BARS

PLATE NUMBER
380.15

Sheet 2 of 2



GENERAL NOTES (For the details above):

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

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

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

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

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

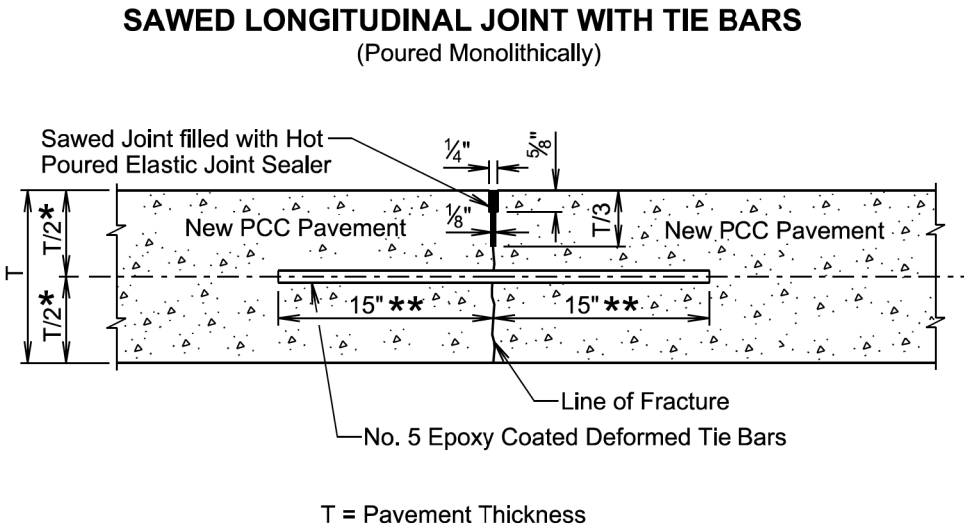
The keyway illustrated in the above details depict a female keyway.

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

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

November 19, 2022

Published Date: 2026	SD DOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 1 of 2



GENERAL NOTES (For the detail above):

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

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

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

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

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

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

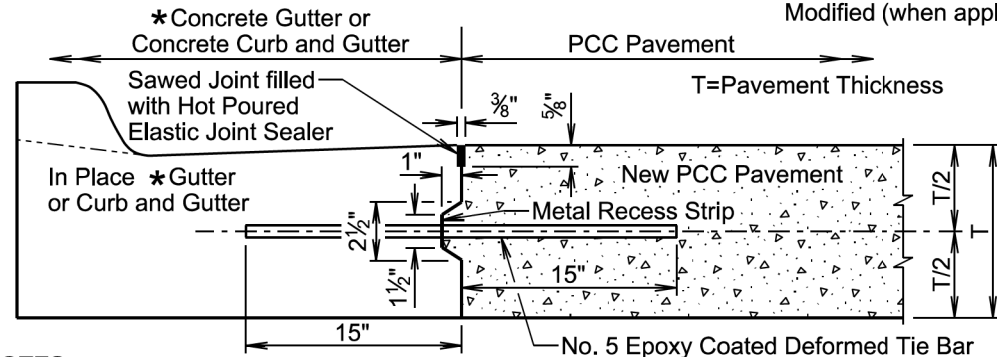
November 19, 2022

Published Date: 2026	SD DOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 2 of 2

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS

(Individually Formed)

* Standard (shown) or
Modified (when applicable)



GENERAL NOTES:

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

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

The transverse contraction joints in the concrete gutter or concrete curb and gutter will be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter will be 1½ inches deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint will be at least ¼ the thickness of the concrete gutter or concrete curb and gutter.

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

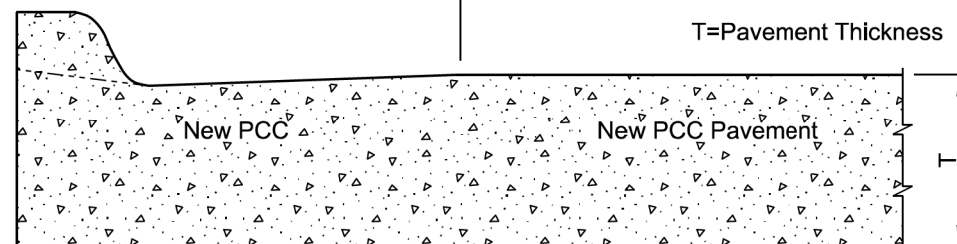
The term "In Place *Gutter or Curb and Gutter" in the above drawing indicates that the in place *concrete gutter and concrete curb and gutter was placed on the current project.

POURED MONOLITHICALLY (Standard Concrete Curb and Gutter)

Concrete Gutter or Concrete Curb and Gutter

PCC Pavement

T=Pavement Thickness



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: 2026

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

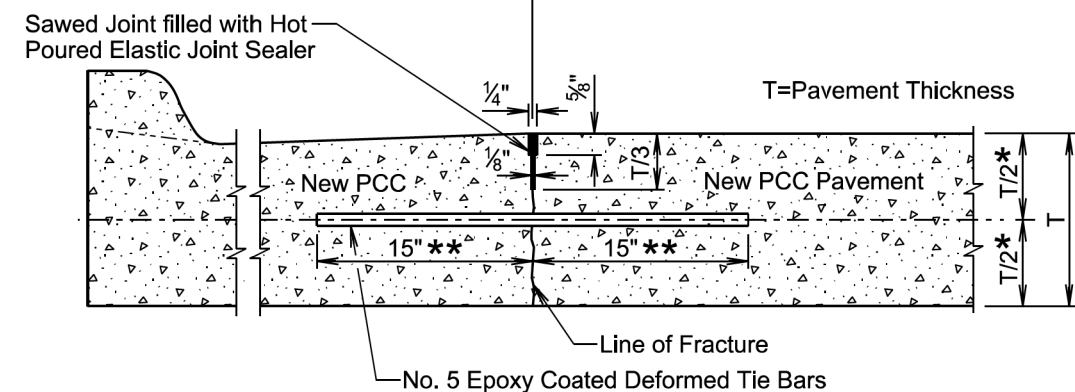
PLATE NUMBER
380.21

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POURED MONOLITHICALLY (Concrete Curb and Modified Gutter)

Concrete Modified Gutter or

PCC Pavement



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.

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

PLATE NUMBER
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Sheet 2 of 2

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS

GENERAL NOTES:

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

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

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS

GENERAL NOTE:

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

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PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS

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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.

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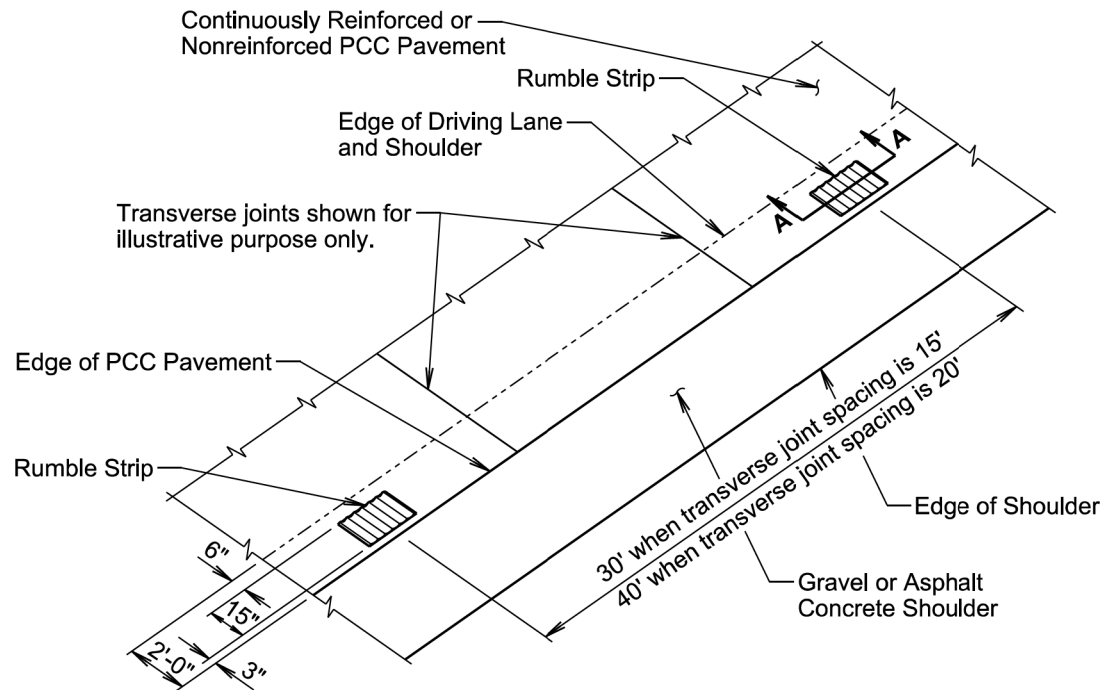
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PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS

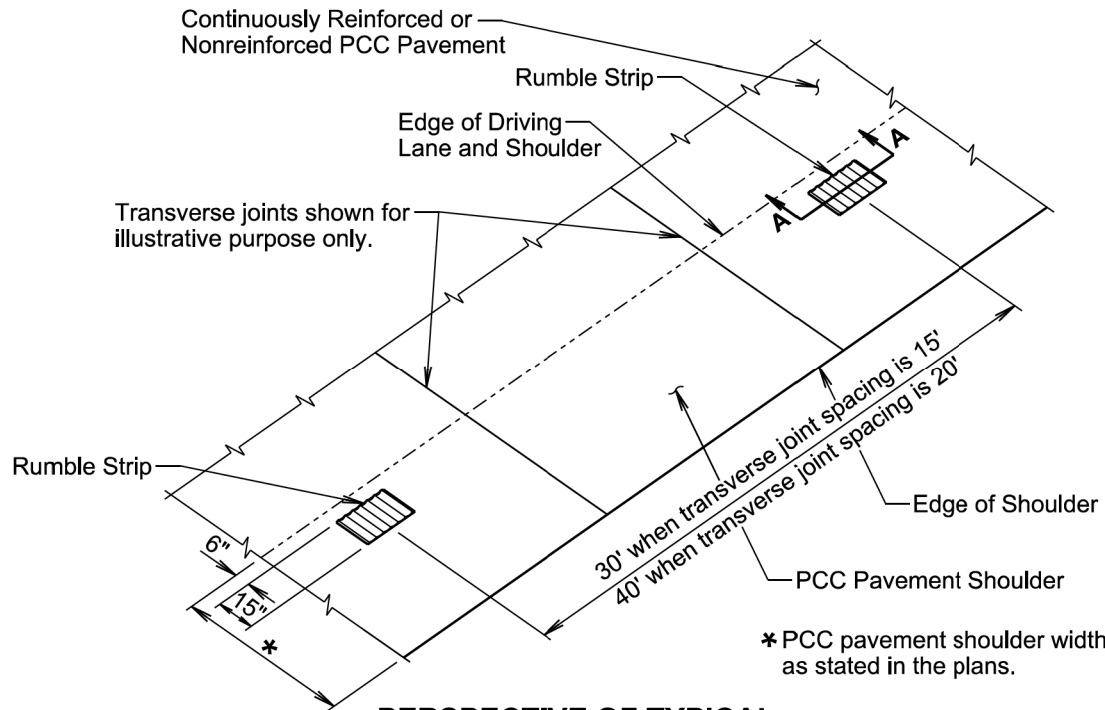
November 19, 2022

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380.22

Sheet 2 of 2



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



PERSPECTIVE OF TYPICAL RUMBLE STRIPS ON PCC PAVEMENT SHOULDER

November 19, 2022

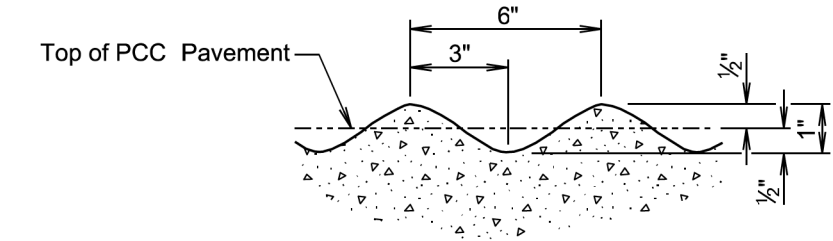
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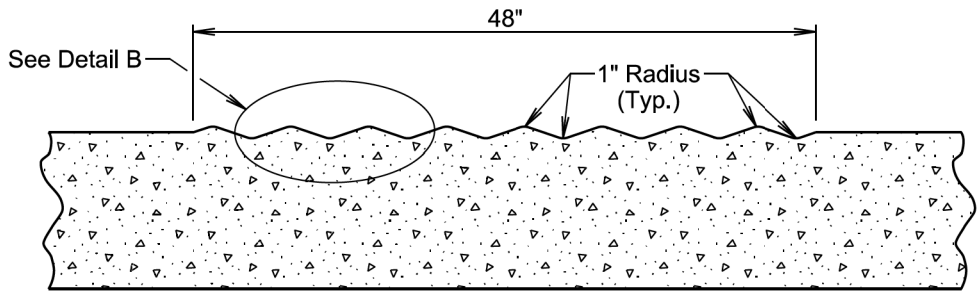
**RUMBLE STRIP ON
PCC PAVEMENT SHOULDER**

PLATE NUMBER
380.53

Sheet 1 of 2



DETAIL B



SECTION A-A

GENERAL NOTES:

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

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

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

November 19, 2022

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**RUMBLE STRIP ON
PCC PAVEMENT SHOULDER**

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