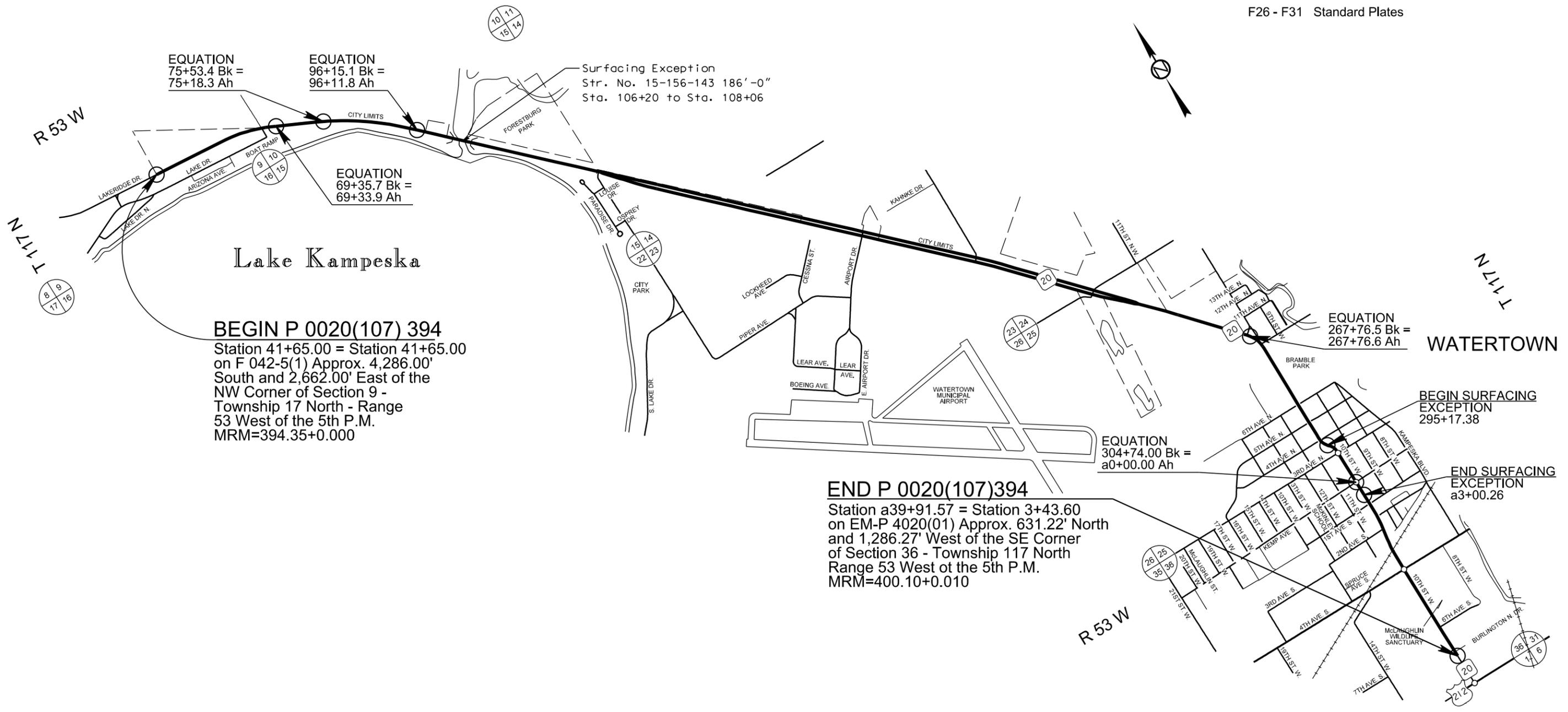


Section F: Surfacing Plans

INDEX OF SHEETS

- F1 General Layout W/ Index
- F2 - F6 Estimate With General Notes & Tables
- F7 - F11 Typical Surfacing Sections
- F12 Cold Milling Transition
- F13 - F23 Pavement Layout Sheets
- F24 - F25 Railroad Removal Details
- F26 - F31 Standard Plates



EQUATION
75+53.4 Bk =
75+18.3 Ah

EQUATION
96+15.1 Bk =
96+11.8 Ah

EQUATION
69+35.7 Bk =
69+33.9 Ah

Surfacing Exception
Str. No. 15-156-143 186'-0"
Sta. 106+20 to Sta. 108+06

BEGIN P 0020(107) 394
Station 41+65.00 = Station 41+65.00
on F 042-5(1) Approx. 4,286.00'
South and 2,662.00' East of the
NW Corner of Section 9 -
Township 17 North - Range
53 West of the 5th P.M.
MRM=394.35+0.000

END P 0020(107)394
Station a39+91.57 = Station 3+43.60
on EM-P 4020(01) Approx. 631.22' North
and 1,286.27' West of the SE Corner
of Section 36 - Township 117 North
Range 53 West of the 5th P.M.
MRM=400.10+0.010

EQUATION
304+74.00 Bk =
a0+00.00 Ah

EQUATION
267+76.5 Bk =
267+76.6 Ah

**BEGIN SURFACING
EXCEPTION**
295+17.38

**END SURFACING
EXCEPTION**
a3+00.26

SECTION F – ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
110E0500	Remove Pipe Culvert	12	Ft
110E0510	Remove Pipe End Section	10	Each
110E7500	Remove Pipe for Reset	6	Ft
110E7510	Remove Pipe End Section for Reset	6	Each
120E0100	Unclassified Excavation, Digouts	359	CuYd
120E0600	Contractor Furnished Borrow	148	CuYd
120E4100	Reprofiling Ditch	1.0	Sta
120E6200	Water for Granular Material	15.2	MGal
250E0010	Incidental Work	Lump Sum	LS
260E1010	Base Course	1,259.5	Ton
320E0005	PG 58-34 Asphalt Binder	1,011.0	Ton
320E1200	Asphalt Concrete Composite	189.8	Ton
320E1203	Class Q3R Hot Mixed Asphalt Concrete	22,669.4	Ton
320E4000	Hydrated Lime	225.0	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	51.5	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	38.1	Ton
330E2000	Sand for Flush Seal	546.7	Ton
332E0010	Cold Milling Asphalt Concrete	177,060	SqYd
380E1030	8" Miscellaneous PCC Pavement	139.6	SqYd
450E0122	18" RCP Class 2, Furnish	12	Ft
450E0130	18" RCP, Install	12	Ft
450E0142	24" RCP Class 2, Furnish	22	Ft
450E0150	24" RCP, Install	22	Ft
450E2008	18" RCP Flared End, Furnish	6	Each
450E2009	18" RCP Flared End, Install	6	Each
450E2304	18" RCP Safety End, Furnish	1	Each
450E2307	18" RCP Safety End, Install	1	Each
450E2308	24" RCP Safety End, Furnish	2	Each
450E2311	24" RCP Safety End, Install	2	Each
450E4769	24" CMP 16 Gauge, Furnish	4	Ft
450E4770	24" CMP, Install	4	Ft
450E5310	24" CMP Sloped End, Furnish	1	Each
450E5311	24" CMP Sloped End, Install	1	Each
* 450E8900	Cleanout Pipe Culvert	13	Each
450E9000	Reset Pipe	6	Ft
450E9001	Reset Pipe End Section	6	Each
900E0010	Refurbish Single Mailbox	69	Each
900E0012	Refurbish Double Mailbox	5	Each

* - Denotes Non-Participating

SURFACING THICKNESS DIMENSIONS

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

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

SAWING IN EXISTING SURFACING

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

BASE COURSE

All requirements of the Standard Specifications for Base Course shall apply, except that Base Course for backfilling of digouts shall be compacted to the satisfaction of the Engineer.

Included in the Estimate of Quantities are 100 tons of Base Course and 1.2 Mgal of Water for Granular Material per mile for backfill of Unclassified Excavation - Digouts.

UNCLASSIFIED EXCAVATION - DIGOUTS

Included in the Estimate of Quantities are 50 cubic yards of Unclassified Excavation – Digouts per mile for the necessary removal of unstable material.

Backfill shall be Base Course paid for at the contract unit price.

COLD MILLING ASPHALT CONCRETE

The Los Angeles Abrasion Loss value on the aggregate used for the in place asphalt concrete could not be determined.

Cold Milling Asphalt is expected to produce 9,388.4 tons of salvaged asphalt concrete material. An estimated 4,286.7 tons of salvaged asphalt concrete will be used on this project in the Class Q3R Hot Mixed Asphalt Concrete mixture. The Contractor is responsible to assure enough asphalt concrete salvage is available for the Class Q3R Hot Mixed Asphalt Concrete.

The excess salvaged asphalt concrete material shall become property of the Contractor.

TABLE OF COLD MILLING

Location	Quantity Sq.Yd.
Mainline	
Sta. 41+65.00 to 67+17.80	11,403
Sta. 67+17.80 to 106+20 (thru eqs.)	22,827
Sta. 108+06 to 146+81.24 (thru eqs)	22,941
Sta. 146+81.24 to 235+28.76 EBL	29,885
Sta. 146+81.24 to 235+28.76 EBL	29,885
Sta. 235+28.76 to 267+76.5	18,962
Sta. 267+76.6 to 295+17.3	19,489
Sta. a 3+00.26 to a 39+91.57	19,687
Tenth Avenue North	178
Sixth Avenue North	84
Fourth Avenue North	233
First Avenue SW	258
Second Avenue SW – Lt.	85
Second Avenue SW – Rt.	113
Industrial Avenue	101
Rural intersecting roads	929
TOTAL	177,060

ASPHALT CONCRETE, COMPOSITE

Mineral aggregate for the Asphalt Concrete, Composite shall conform to the requirements for Class E, Type 1.

All other requirements in the Standard Specifications for Asphalt Concrete, Composite shall apply.

The asphalt binder used in the mixture shall be PG 64-22, PG 64-28, PG 58-34 or PG 64-34 Asphalt Binder.

CULVERT CLEANOUT

Material in existing culverts as listed in the Table of Pipe and Related Items shall be cleaned out by water flushing or other approved methods.

It is the responsibility of the Contractor to visit the site to determine the extent of culvert cleaning work required.

Cost for this work shall be included in the contract unit price per each for Cleanout Pipe Culvert.

The Contractor shall implement appropriate sediment control measures prior to water flushing in order to prevent discharges from project boundaries, and to comply with the Storm Water Permit.

One drop inlet needs cleaned out and will be paid for as one each under the bid item "Cleanout Pipe Culvert".

RAILROAD REMOVAL

The Contractor shall remove and dispose of the following:

1. Two railroad rails (estimated at 55.5' each) and all hardware
2. Fourteen railroad ties and any wood debris

Railroad ballasts shall remain in place.

All costs associated with removal of the railroad shall be paid for with the Bid Item "Incidental Work".

Asphalt Concrete shall be removed and paid for under the Bid Item "Remove Asphalt Concrete Pavement" (See Section B). Removal of unclassified material (estimated at 49.0 CuYd) shall be incidental to the Bid Item "Remove Asphalt Concrete Pavement".

CONTRACTOR FURNISHED BORROW

The Contractor shall provide a suitable site for Contractor Furnished Borrow material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material shall be approved by the Engineer. The plans quantity for "Contractor Furnished Borrow" as shown in the Estimate of Quantities will be the basis of payment for this item.

Water for compaction of earth embankments shall be applied at the rate of 10 gallons per cubic yard of Contractor Furnished Borrow. This rate may need to be adjusted depending on how near the material is to optimum moisture. The cost of the water shall be incidental to the contract unit price per cubic yard for CONTRACTOR FURNISHED BORROW.

Restoration of the Contractor Furnished Borrow site shall be the responsibility of the Contractor.

See "Table of Pipe and Related Items" for Contractor Furnished Borrow locations.

CLASS Q3R HOT MIXED ASPHALT CONCRETE

Asphalt concrete aggregates shall consist of salvaged asphalt concrete mix material (RAP) and virgin aggregate. Virgin mineral aggregate shall be furnished by the Contractor.

Virgin mineral aggregate for Class Q3R Hot Mixed Asphalt Concrete shall conform to the requirements included in the Special Provision for Gyrotory Controlled Quality Control/Quality Assurance Hot Mixed Asphalt Concrete Pavement for Class Q3 except for the following:

Gyrotory Compactive Effort:

	N _{initial}	N _{design}	N _{maximum}
Class Q3R	6	50	75

Salvaged asphalt concrete material shall be obtained from the material produced by cold milling on this project and may be used without further testing. The salvaged asphalt concrete mix material shall be crushed so that the maximum particle size in the cold feed will not exceed 1-1/2 inches.

The Class Q3R Asphalt Concrete shall include 20 percent salvaged asphalt concrete (RAP) in the mixture. Job mix formula tolerances for the RAP shall be ± 5 % from the target value.

All remaining requirements of the Special Provision for Class Q3 Hot Mixed Asphalt Concrete shall apply.

The asphalt concrete on the shoulders will not be compacted to a specified density. The shoulders shall be compacted using the same rolling pattern used on the adjacent mainline asphalt concrete or as directed by the Engineer.

ADDITIONAL QUANTITIES

Included in the Estimate of Quantities are 200 tons of Class Q3R Hot Mixed Asphalt Concrete, 9.0 tons of PG 58-34 Asphalt Binder, and 2.0 tons of Hydrated Lime per mile for spot leveling, strengthening, and repair of the existing surface throughout the project.

ASPHALT FOR TACK

Included in the estimate of quantities are 10 tons of SS-1h or CSS-1h Emulsified Asphalt for Tack for repair and leveling areas throughout the project. (Rate = 0.05 gallons per square yard.)

FLEXIBLE PAVEMENT SMOOTHNESS PROVISION

Station 67+17.8 to Station 146+81.24 (thru equations) will not be excluded by the curb and gutter exception and will be profiled.

MAILBOXES

The Contractor shall reset the existing mailboxes on new posts with the necessary support hardware for single or double mailbox assemblies. The local Postmaster will determine the recommended mounting height of the mailboxes throughout the project. The Contractor shall coordinate with the Engineer on the proper postal representative to contact.

All costs for removing existing mailboxes, providing temporary mailboxes, and resetting mailboxes with new posts and necessary support hardware shall be incidental to the contract unit price per each for "Refurbish Single Mailbox" or "Refurbish Double Mailbox".

TABLE OF REFURBISH MAILBOX

Station	L/R	Single (Each)	Double (Each)
43+40	L	1	
50+00	L	1	
51+65	L	1	
56+35	L	1	
69+37	R	1	
72+40	R	1	
*73+54	R	1	
74+00	R	1	
74+75	R	1	
75+60	R	1	
76+55	R	1	
76+70	R	1	
78+00	R	1	
79+08	R	1	
79+12	R	1	
*80+55	R	1	
80+62	R	1	
82+50	R	1	
83+35	R	1	
85+00	R	1	
86+24	R	1	
87+28	R	1	
88+17	R	1	
89+00	R	1	
90+65	R	1	
*91+05	R	1	
92+25	R	1	
93+00	R	1	
94+30	R	1	
95+60	R	1	
96+20	R	1	
96+31	R	1	
97+75	R	1	
99+28	R	1	1
100+53	R	1	
101+66	R	1	
102+16	R	1	
102+82	R	1	
103+32	R	1	
103+90	R	1	

TABLE OF REFURBISH MAILBOX (continued)

Station	L/R	Single (Each)	Double (Each)
*104+83	R	1	
104+97	R	1	
111+30	R	1	
112+28	R		1
112+67	R	1	
113+14	R	1	
113+87	R	1	
113+87	R	1	
114+87	R	1	
116+07	R	1	
117+08	R	1	
117+87	R	1	
119+00	R	1	
119+96	R	1	
120+29	R	1	
121+00	R	1	
*122+28	R	1	
*123+52	R	1	
*124+57	R	1	
*127+50	R	1	
*129+93	R	1	
153+90	L	1	
189+10	L	1	
216+30	R	1	
*236+34	R	1	
243+50	R	1	
244+03	R	1	
245+10	L	1	
252+09	R	1	1
253+87	R	1	
256+73	R		2
		69	5

*Indicates brick or other decorative mailbox.

8" MISCELLANEOUS PCC PAVEMENT

The PCC Pavement at the intersection of SD 20 and Fourth Avenue SW, estimated at 139.6 square yards, shall comply with the requirements of the Standard Specifications for Class M6 concrete. See Pavement Layouts in this Section. All costs including reinforcing steel and other materials, equipment, labor, and incidentals necessary shall be incidental to the contract unit price per square yard for 8" Miscellaneous PCC Pavement.

RATES OF MATERIALS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P0020(107)394	F4	F31

The Estimate of Surfacing Quantities is based on the following quantities of materials per Station.

SD 20 Mainline
Sta. 41+65.00 to Sta. 67+17.80

CLASS Q3R Hot Mixed ASPHALT CONCRETE

Crushed Aggregate		37.88 Tons
Salvaged Asphalt Concrete		9.47 Tons
PG 58-34 Asphalt Binder		<u>2.23 Tons</u>
	Total Mix	49.58 Tons
Hydrated Lime		<u>0.50 Tons</u>
	Total:	50.08 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.11 tons applied 45 feet wide (Rate = 0.05 gallon per square yard).

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.09 tons applied 40 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 0.98 tons applied 22 feet wide (Rate = 8.0 lbs. per square yard).

SD 20 Mainline
Sta. 247+00.00 to Sta. 267+76.50

CLASS Q3R Hot Mixed ASPHALT CONCRETE

Crushed Aggregate		55.41 Tons
Salvaged Asphalt Concrete		13.85 Tons
PG 58-34 Asphalt Binder		<u>3.26 Tons</u>
	Total Mix	72.52 Tons
Hydrated Lime		<u>0.73 Tons</u>
	Total:	73.25 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.14 tons applied 61 feet wide (Rate = 0.05 gallon per square yard).

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.13 tons applied 56 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 1.96 tons applied 44 feet wide (Rate = 8.0 lbs. per square yard).

SD 20 Mainline
Sta. 271+09.00 to Sta. 295+17.30

CLASS Q3R Hot Mixed ASPHALT CONCRETE

Crushed Aggregate		60.78 Tons
Salvaged Asphalt Concrete		15.19 Tons
PG 58-34 Asphalt Binder		<u>3.58 Tons</u>
	Total Mix	79.55 Tons
Hydrated Lime		<u>0.80 Tons</u>
	Total:	80.35 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.15 tons applied 64 feet wide (Rate = 0.05 gallon per square yard).

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.15 tons applied 64 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 2.44 tons applied 55 feet wide (Rate = 8.0 lbs. per square yard).

SD 20 Mainline
Sta. a 3+00.26 to Sta. a 39+91.57

CLASS Q3R Hot Mixed ASPHALT CONCRETE

Crushed Aggregate		45.23 Tons
Salvaged Asphalt Concrete		11.31 Tons
PG 58-34 Asphalt Binder		<u>2.66 Tons</u>
	Total Mix	59.20 Tons
Hydrated Lime		<u>0.59 Tons</u>
	Total:	59.79 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.11 tons applied 48 feet wide (Rate = 0.05 gallon per square yard).

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.11 tons applied 48 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 103.3 tons applied 1.96 feet wide (Rate = 8.0 lbs. per square yard).

The Estimate of Surfacing Quantities is based on the following quantities of materials per mile.

SD 20 Mainline
Sta. 67+17.80 to Sta. 135+10.00 (thru equations)

CLASS Q3R Hot Mixed ASPHALT CONCRETE

Crushed Aggregate		2,567.2 Tons
Salvaged Asphalt Concrete		641.8 Tons
PG 58-34 Asphalt Binder		<u>151.2 Tons</u>
	Total Mix	3,360.2 Tons
Hydrated Lime		<u>33.6 Tons</u>
	Total:	3,393.8 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 6.8 tons applied 54.5 feet wide (Rate = 0.05 gallon per square yard).

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 6.5 tons applied 52 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 103.3 tons applied 44 feet wide (Rate = 8.0 lbs. per square yard).

SD 20 Mainline
Sta. 146+81.24 to Sta. 235+28.76 Eastbound
Sta. 146+81.24 to Sta. 235+28.76 Westbound

CLASS Q3R Hot Mixed ASPHALT CONCRETE

Crushed Aggregate		1,707.5 Tons
Salvaged Asphalt Concrete		426.9 Tons
PG 58-34 Asphalt Binder		<u>100.6 Tons</u>
	Total Mix	2,235.0 Tons
Hydrated Lime		<u>22.4 Tons</u>
	Total:	2,257.4 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 4.7 tons applied 38 feet wide (Rate = 0.05 gallon per square yard).

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 4.1 tons applied 33 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 51.6 tons applied 22 feet wide (Rate = 8.0 lbs. per square yard).

Revised: 22 Jan 14, LLR

TABLE OF ADDITIONAL QUANTITIES

Location-Description	Water for Granular Material	Base Course	Asphalt Concrete Composite	Class Q3R Hot Mixed Asphalt Concrete	PG 58-34 Asphalt Binder	Hydrated Lime	SS-1h or CSS-1h Asphalt for Tack	SS-1h or CSS-1h Asphalt for Flush Seal	Sand for Flush Seal
	Mgal	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton
Transitions									
Sta. 135+10 to 146+81.24				877.1	39.1	8.7	1.3	1.2	17.2
Sta. 235+28.76 to 247+00				929.5	41.4	9.2	1.4	1.2	17.2
Curb & Gutter Updates									
Tenth Avenue North	0.2	19.2	2.3 / 2.3						
Sta. 276+30.57 to 277+07.00	0.1	8.3	1.4 / 1.4						
Sta. 278+72.39 to 279+61.00	0.1	9.5	1.7 / 1.7						
Sixth Ave North	0.1	5.4	1.0 / 1.0						
Sta. 287+10 to 287+38	--	3.1	0.5 / 0.5						
Fifth Avenue North	0.8	68.1	33.8 / 33.8						
Fourth Avenue North	0.3	25.3	9.7 / 9.7						
First Avenue SW	0.2	15.4	2.8 / 2.8						
Second Avenue SW – Lt.	0.1	10.6	1.9 / 1.9						
Second Avenue SW – Rt.	0.1	6.2	1.2 / 1.2						
Sta. a 14+51.29 to a 14+76.46	--	2.7	0.5 / 0.5						
Fourth Avenue SW	0.6	53.2	2.7 / 2.7						
Industrial Avenue	0.1	6.4	1.2 / 1.2						
Intersecting Streets									
Tenth Avenue North				20.0	0.9	0.2			
Sixth Ave North				9.4	0.4	0.1			
Fifth Avenue North				13.4	0.6	0.1			
Fourth Avenue North				26.2	1.2	0.3			
First Avenue SW				29.0	1.3	0.3			
Second Avenue SW – Lt.				9.5	0.4	0.1			
Second Avenue SW – Rt.				12.7	0.6	0.1			
Industrial Avenue				11.2	0.5	0.1			
Parking Lot at Fourth Ave North									
Parking Lot at Fourth Ave North	0.2	17.7	4.7 / 4.7						
Railroad Crossing Removal Area									
Railroad Crossing Removal Area	1.0	83.5	22.1 / 22.1 / 14.8						
Gravel Approaches – 11									
Gravel Approaches – 11	2.2	165.0							
Asphalt Approaches – 4									
Asphalt Approaches – 4				59.6	2.8	0.6	0.1	0.1	
Gravel Public Access Median – 1									
Gravel Public Access Median – 1	0.5	41.5							
Asphalt Public Access Median – 1									
Asphalt Public Access Median – 1				44.3	2.0	0.4	0.1	0.1	1.6
Mailbox turnouts – 10									
Mailbox turnouts – 10				35.2	0.2	0.4	0.1		
TOTAL	6.6	541.1	189.8	2,077.1	91.4	20.6	3.0	2.6	36.0

TABLE OF PIPE AND RELATED ITEMS

Station	Culvert	18" RCP Pipe, Class 2 Feet		18" RCP Safety End Each		18" RCP Flared End Each		24" CMP Pipe, 16 Gauge Feet		24" CMP Sloped End Each		24" RCP Pipe, Class 2 Feet		24" RCP Safety End Each		Remove Pipe Feet		Remove and Reset Pipe Feet		Remove End Section Each		Remove & Reset End Section Each		Contractor Furnished Borrow CuYd		Cleanout Pipe Culvert Each		Clean Drop Inlet Each		Reprofile Ditch Sta.
		Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.			
*50+40 Lt	24" RCP & FE											12	10	1	1					1	1			40	28.3	1				
52+75 Lt	18" RCP & Safety End	12		1												12			6	1			1	10	5					
67+45 Lt	18" RCP & FE																									1				
70+20 Rt	12" CMP																									1				
71+00	18" RCP & FE																									1				
129+00	24" CMP & FE							4		1											1		10		1		1		1.0	
145+00	24" RCP & FE																					1	1	5	5					
147+00 (EBL)	18" RCP & FE																									1				
163+00	24" RCP & FE																									1				
211+00 (EBL)	18" RCP & FE					1	1														1	1	5	5	1					
211+00 (WBL)	18" RCP & FE						1																		5	1				
234+00 (EBL)	18" RCP & FE					1	1														1	1	5	5	1					
234+00 (WBL)	18" RCP & FE						1															1		5						
236+80	18" RCP & FE																									1				
241+00	24" RCP & FE																									1				
252+00	24" RCP & FE																						1	5	1					
TOTALS		12		1		6		4		1		22		2		12		6		10		6		148.3		12		1	1.0	

*Contractor will be required to flatten slopes to achieve the minimum 6:1 requirement. See Standard Plate 120.01.

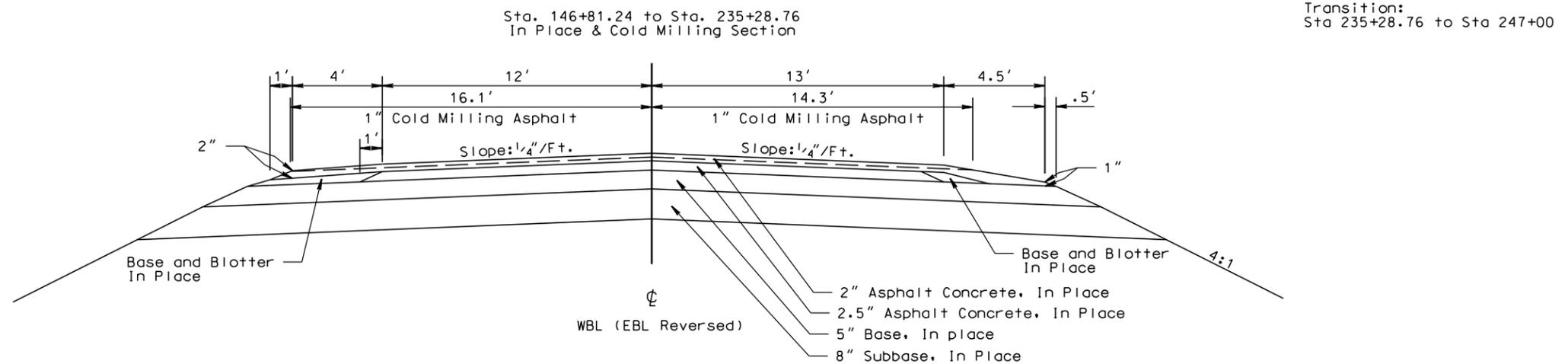
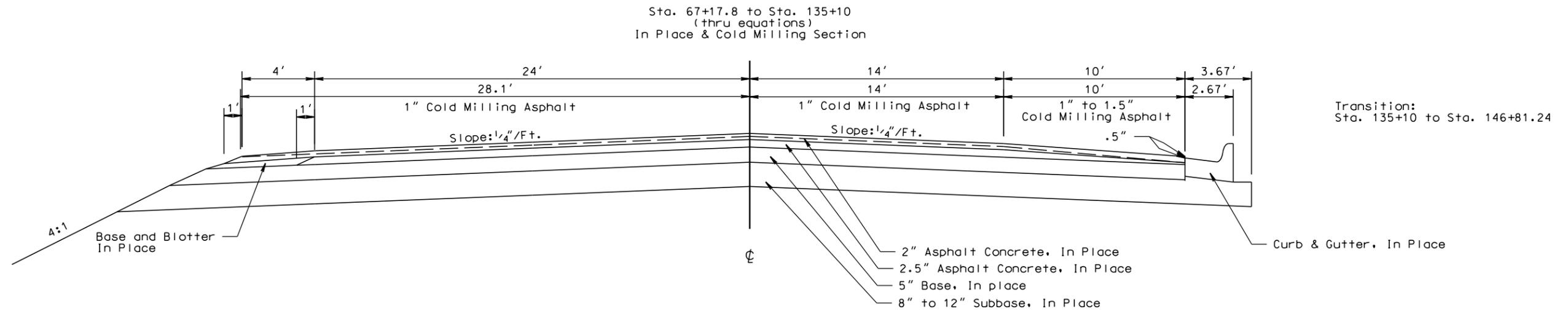
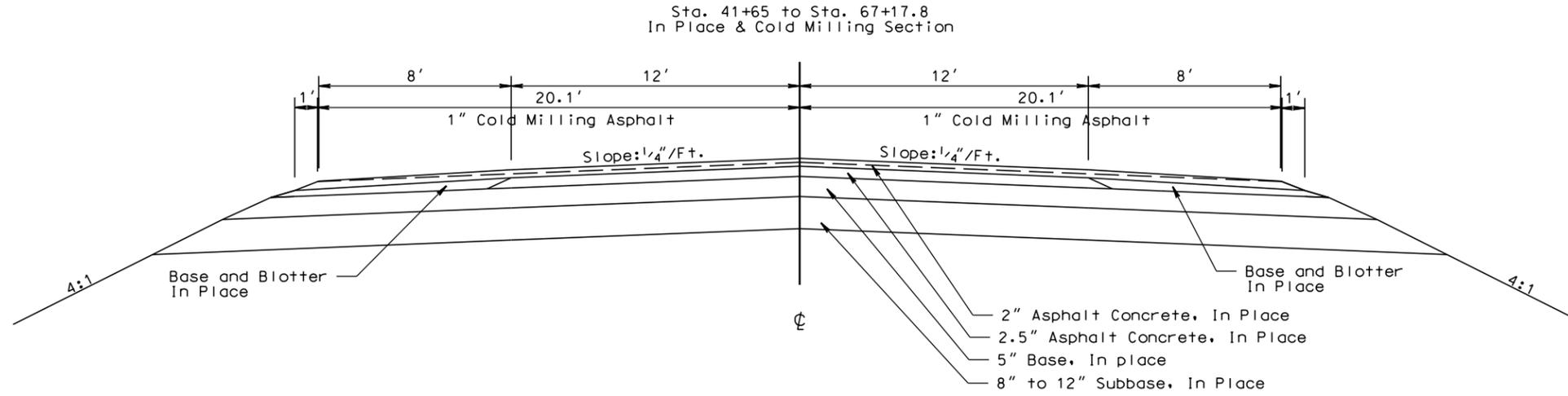
TYPICAL INPLACE SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P0020(107)394	F7	F31

Plotting Date: 01/23/2014

PLOT SCALE - 1+6.19298

PLOT NAME - 2



PLOTTED FROM - TRPR15123

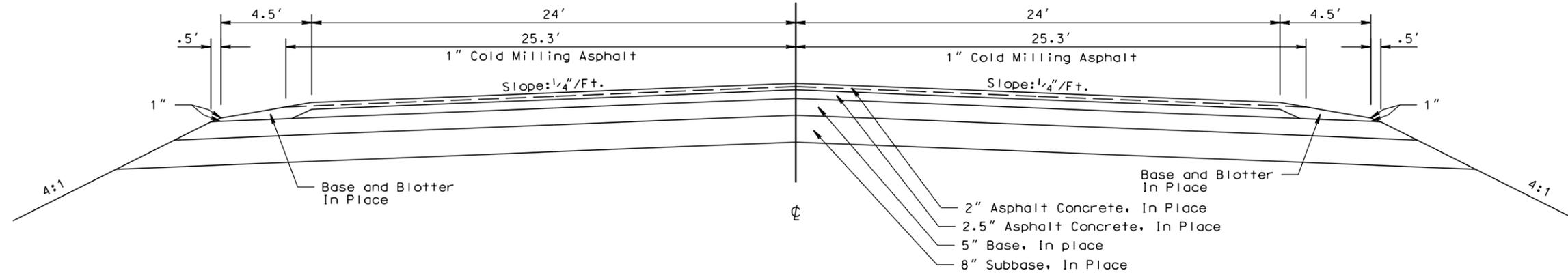
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TYPICAL INPLACE SURFACING SECTIONS

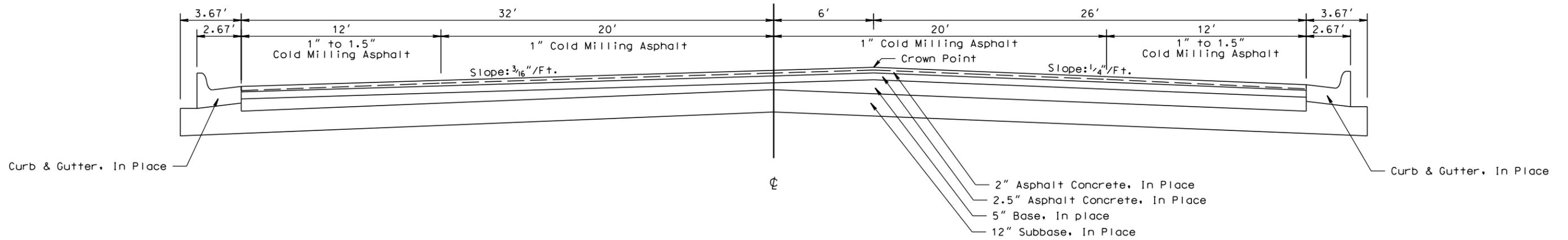
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P0020(107)394	F8	F31

Plotting Date: 01/23/2014

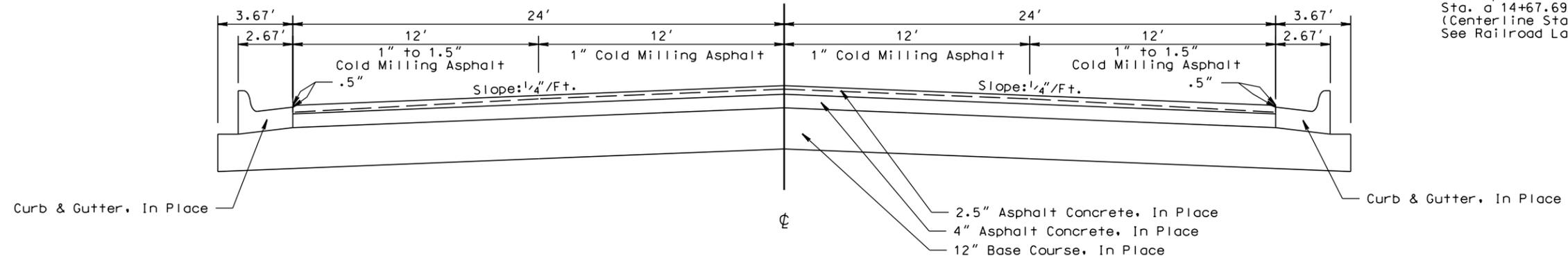
Sta. 247+00 to Sta. 267+76.5 Rt.
Sta. 247+00 to Sta. 271+09 Lt.
In Place & Cold Milling Section



Sta. 267+76.6 to Sta. 295+17.3
In Place & Cold Milling Section



Sta. a 3+00 to Sta. a 39+91.57 *
In Place & Cold Milling Section



* Exception:
Sta. a 14+67.69 to Sta. a 14+92.69
(Centerline Stating)
See Railroad Layout Sheets

PLOT SCALE - 1+6.19298

PLOTTED FROM - TRPR15123

PLOT NAME - 3

FILE - ... \PRJ\CODN027U\027U TYPICALS.DGN

TYPICAL SURFACING SECTIONS

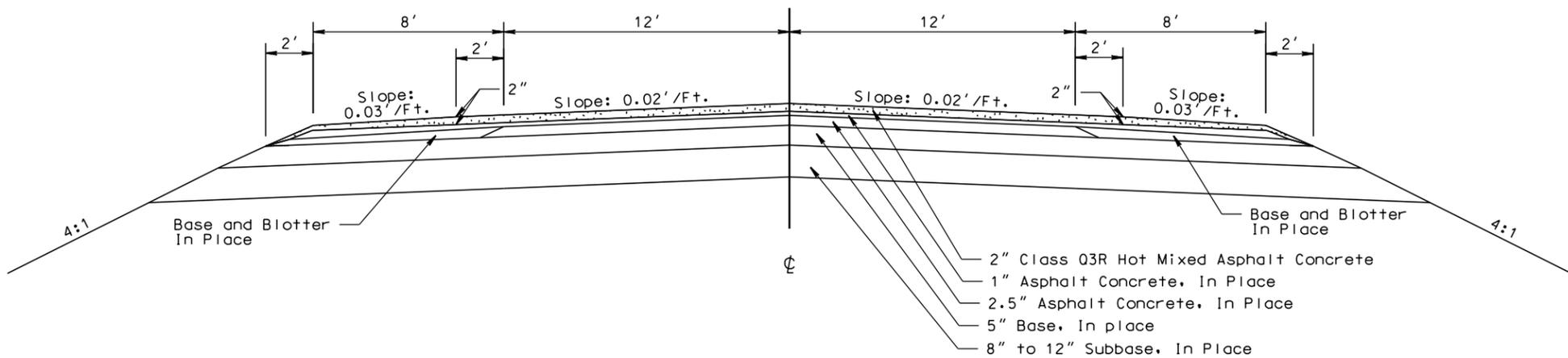
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P0020(107)394	F9	F31

Plotting Date: 01/23/2014

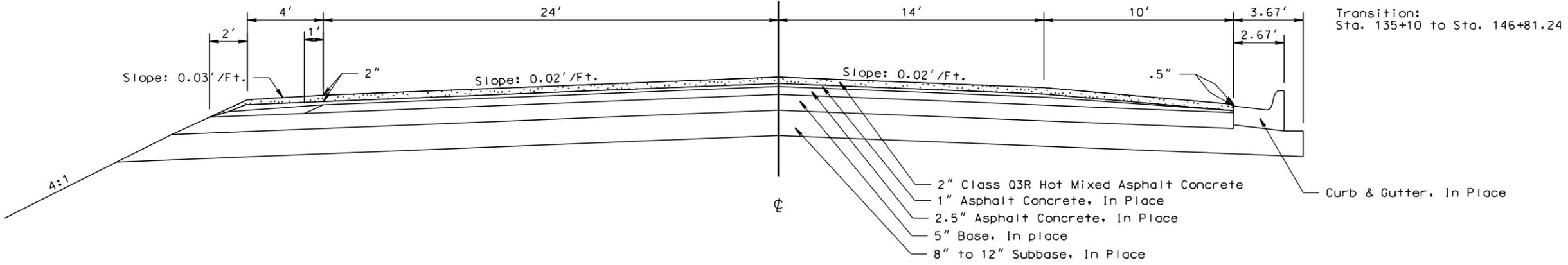
PLOT SCALE - 1+6.19298

PLOT NAME - 4

Sta. 41+65 to Sta. 67+17.8

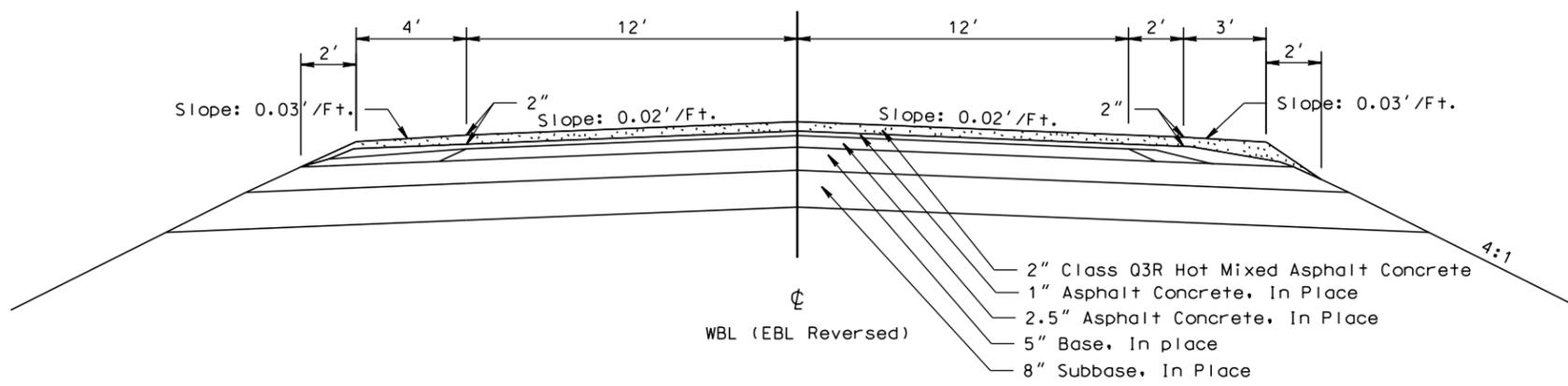


Sta. 67+17.8 to Sta. 135+10
(thru equations)



Transition:
Sta 235+28.76 to Sta 247+00

Sta. 146+81.24 to Sta. 235+28.76



PLOTTED FROM - TRPR15123

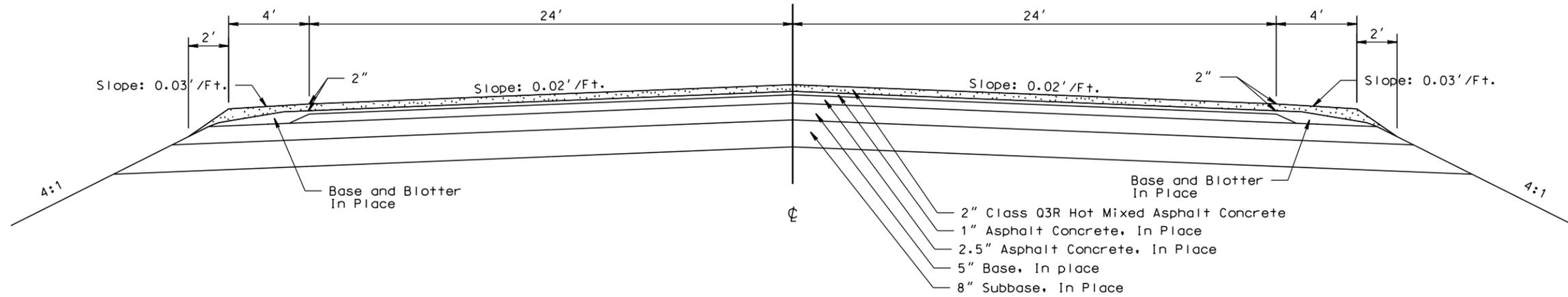
FILE - ... \PRJ\CODN027U\027U TYPICALS.DGN

TYPICAL SURFACING SECTIONS

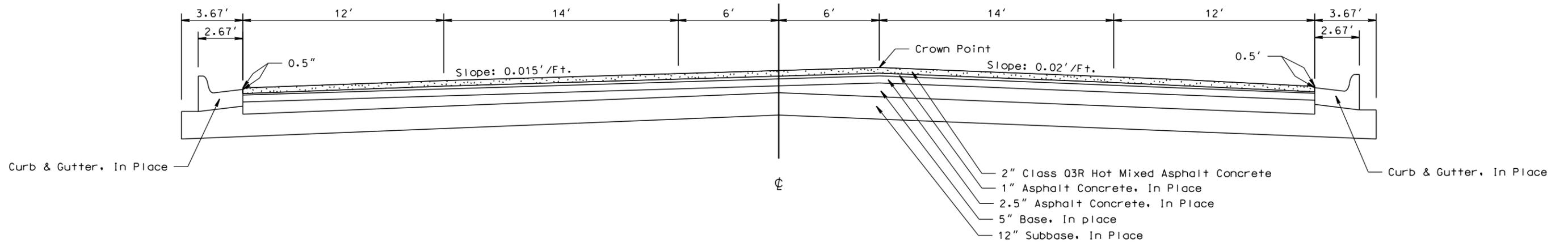
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P0020(107)394	F10	F31

Plotting Date: 01/23/2014

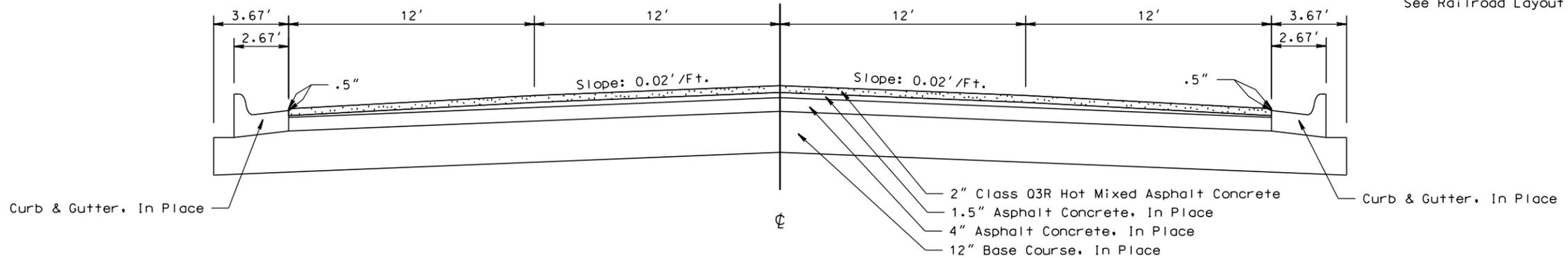
Sta. 247+00 to Sta. 267+76.5 Rt.
and to Sta. 271+09 Lt.



Sta. 267+76.6 to Sta. 295+17.3



Sta. a 3+00 to Sta. a 39+91.57 *



* Exception:
Sta. a 14+67.69 to Sta. a 14+92.69
(Centerline Stating)
See Railroad Layout Sheets

PLOT SCALE - 1+6.19298

PLOTTED FROM - TRPR15123

PLOT NAME - 5

FILE - ... \PRJ\CODN027U\027U TYPICALS.DGN

TYPICAL SURFACING SECTIONS

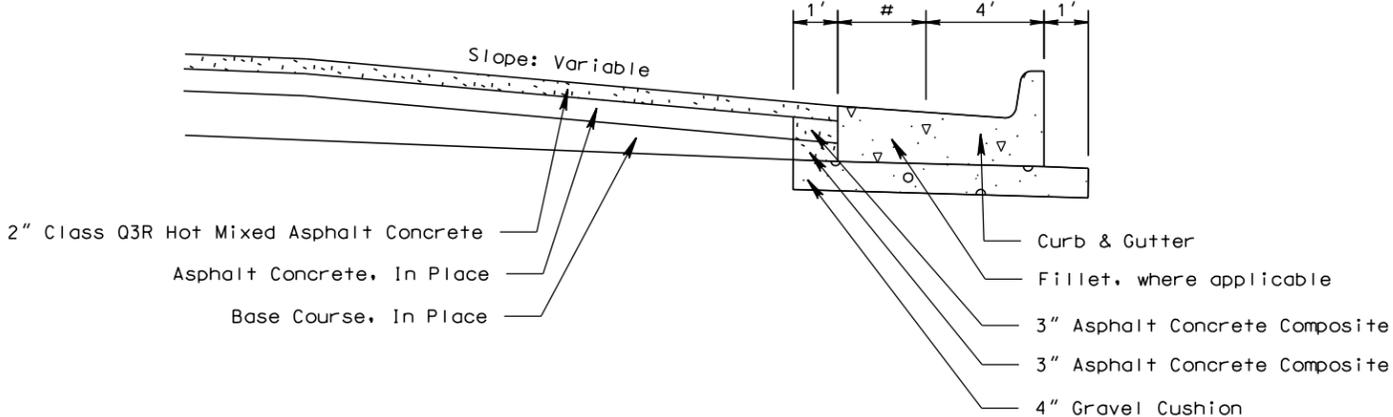
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P0020(107)394	F11	F31

Plotting Date: 01/23/2014

PLOT SCALE - 1+6.19298

PLOT NAME - 6

See Layouts in Section F
Fillet Width Variable



PLOTTED FROM - TRPR15123

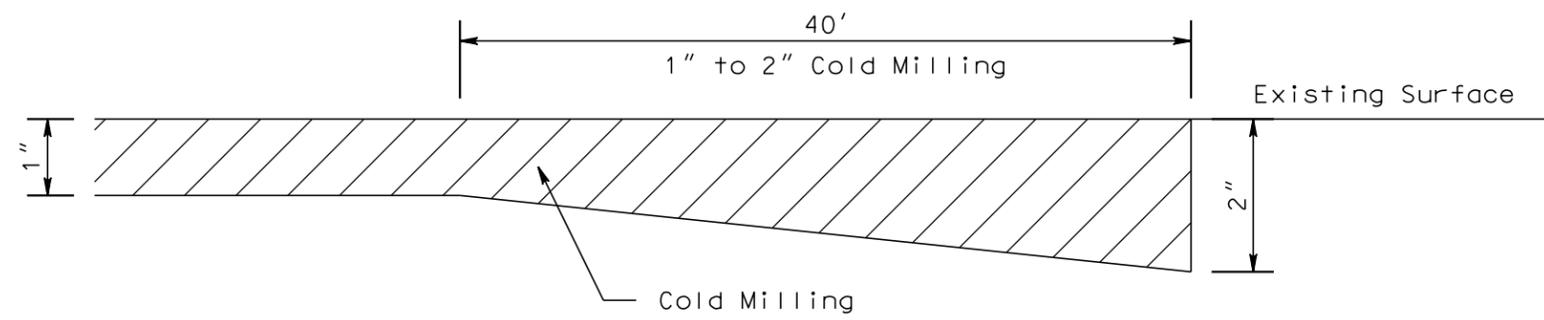
FILE - ... \PRJ\CODN027U\027U TYPICALS.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P0020(107)394	F12	F31

Plotting Date: 01/23/2014

COLD MILLING ASPHALT CONCRETE PROFILE

Project Begin/End Points / Structures



PLOT SCALE - 1:10

PLOT NAME - 7

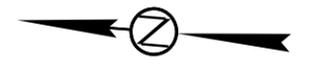
FILE - ... \PRJ\COB027U\COLD MILLING.DGN

PLOTTED FROM - IRP15123

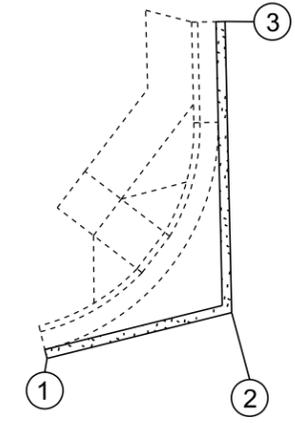
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P0020(107)394	F13	F31

Plotting Date: 01/23/2014
Revised: 23 Jan 14, LLR

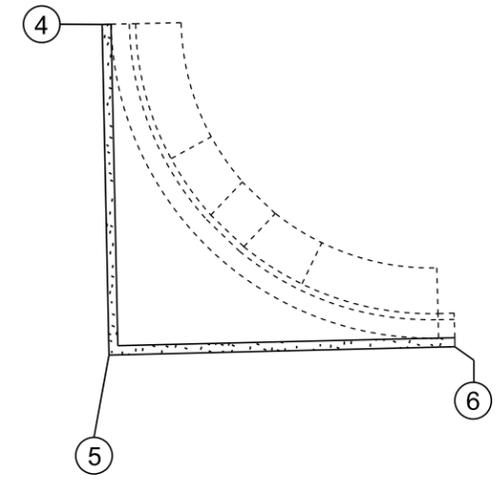
 2" Class Q3R Hot Mixed Asphalt Concrete (to be placed with mainline paving)
6" Asphalt Concrete Composite
4" Base Course



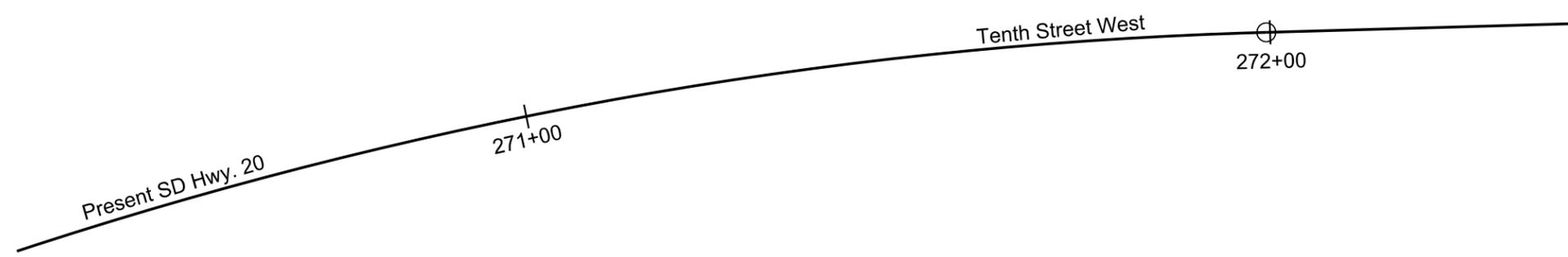
- 1 Station 270+78.81-30.06' L
Begin 1' Asphalt Concrete
Pavement
- 2 Station 270+98.53-30.60' L
1' Asphalt Concrete
Pavement
- 3 Station 271+04.06-61.90' L
End 1' Asphalt Concrete
Pavement



Tenth Avenue North



- 4 Station 271+43.82-70.77' L
Begin 1' Asphalt Concrete
Pavement
- 5 Station 271+37.47-34.89' L
1' Asphalt Concrete
Pavement
- 6 Station 271+69.57-31.75' L
End 1' Asphalt Concrete
Pavement



PLOT SCALE - 1:20

PLOTTED FROM - ITRP15123

PLOT NAME - 8

FILE - U:\MS\PR\CODING\27\LAYOITS.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P0020(107)394	F15	F31

Plotting Date: 01/23/2014
 Revised: 23 Jan 14, LLR

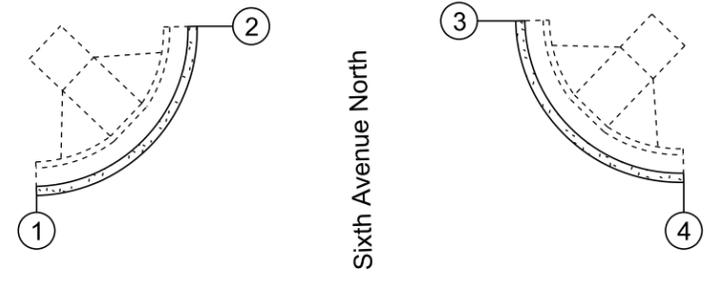


2" Class Q3R Hot Mixed Asphalt Concrete (to be placed with mainline paving)
 6" Asphalt Concrete Composite
 4" Base Course

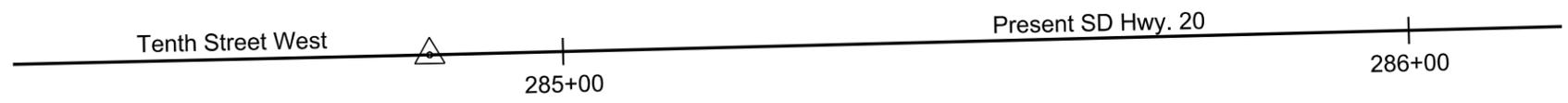


- 1 Station 284+82.41-31.33' L
Begin 1' Asphalt Concrete
Pavement
- 2 Station 285+00.43-49.42' L
End 1' Asphalt Concrete
Pavement

- 3 Station 285+35.30-49.09' L
Begin 1' Asphalt Concrete
Pavement
- 4 Station 285+53.25-31.02' L
End 1' Asphalt Concrete
Pavement



Sixth Avenue North



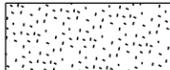
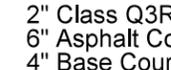
PLOT SCALE - 1:20

PLOT NAME - 10

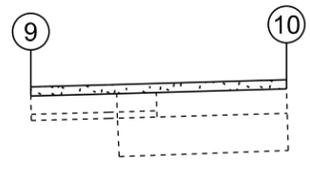
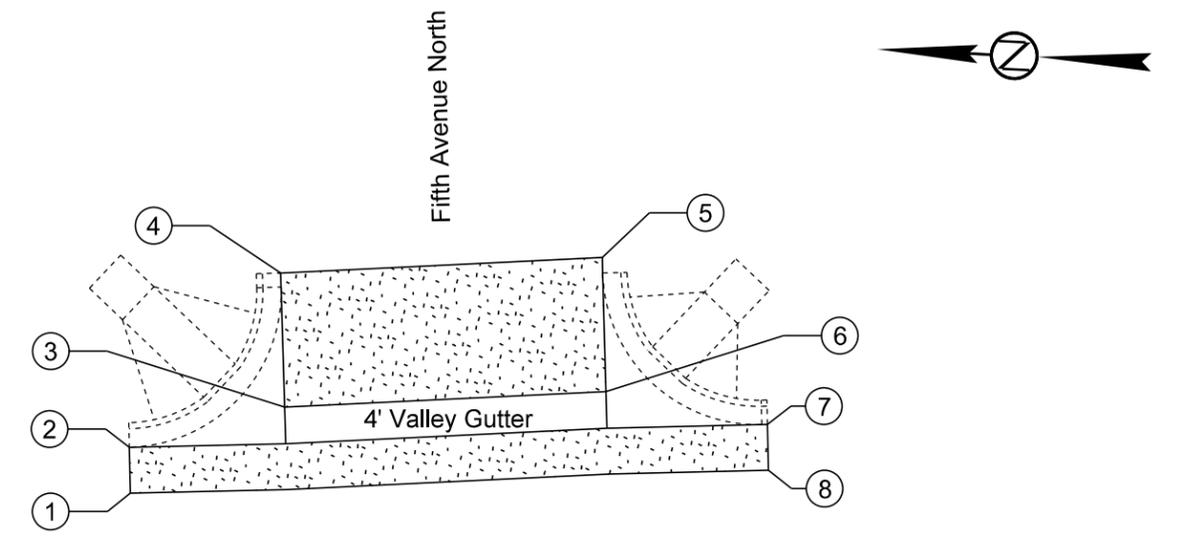
FILE - U:\MS\PR\CODING\27\LAYO\OUTS.DGN

PLOTTED FROM - TRP15123

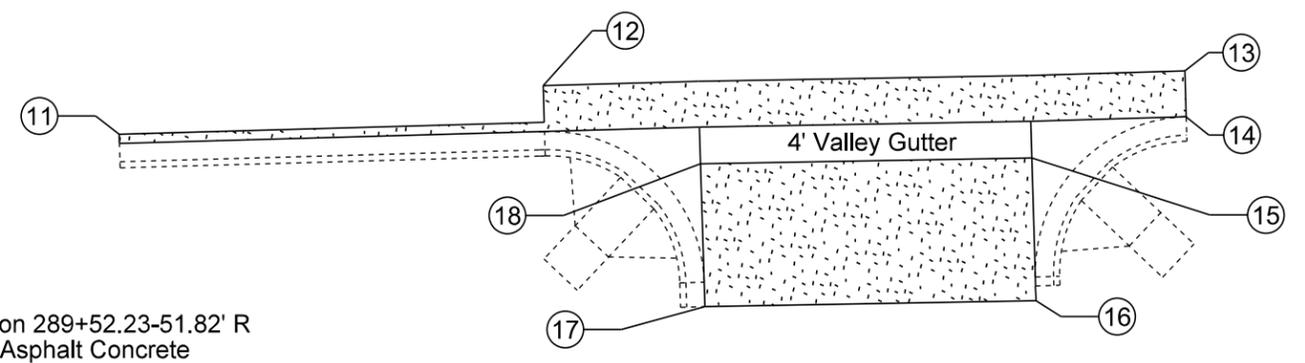
Plotting Date: 01/23/2014
Revised: 23 Jan 14, LLR

 2" Class Q3R Hot Mixed Asphalt Concrete (to be placed with mainline paving)
 6" Asphalt Concrete Composite
 4" Base Course

- | | | | |
|---|--|---|--|
| 1 | Station 288+99.25-26.43' L
Begin 5' Asphalt Concrete Pavement | 5 | Station 289+51.52-50.86' L
Begin Asphalt Concrete Pavement |
| 2 | Station 288+99.27-31.43' L
Asphalt Concrete Pavement | 6 | Station 289+51.55-36.21' L
End Asphalt Concrete Pavement
Begin Valley Gutter (See Section B) |
| 3 | Station 289+16.36-35.39' L
End Valley Gutter (See Section B)
Begin Asphalt Concrete Pavement | 7 | Station 289+69.13-32.20' L
Asphalt Concrete Pavement |
| 4 | Station 289+16.30-50.03' L
End Asphalt Concrete Pavement | 8 | Station 289+69.12-27.20' L
End 5' Asphalt Concrete Pavement |



- | | |
|----|--|
| 9 | Station 287+10.00-31.30' R
Begin 1' Asphalt Concrete Pavement |
| 10 | Station 287+38.00-31.21' R
End 1' Asphalt Concrete Pavement |



- | | | | |
|----|--|----|--|
| 11 | Station 288+52.38-31.17' R
Begin 1' Asphalt Concrete Pavement | 16 | Station 289+52.23-51.82' R
End Asphalt Concrete Pavement |
| 12 | Station 288+98.91-27.01' R
Begin 5' Asphalt Concrete Pavement | 17 | Station 289+16.00-51.55'
Begin Asphalt Concrete Pavement |
| 13 | Station 289+69.12-27.15'
5' Asphalt Concrete Pavement | 18 | Station 289+15.89-35.95'
End Asphalt Concrete Pavement
Begin Valley Gutter (See Section B) |
| 14 | Station 289+69.14-32.15'
Asphalt Concrete Pavement | | |
| 15 | Station 289+52.15-36.22' R
End Valley Gutter (See Section B)
Begin Asphalt Concrete Pavement | | |

PLOT SCALE - 1:20

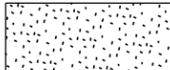
PLOTTED FROM - TRP15123

PLOT NAME - 11

FILE - U:\MS\PR\CODING\27\LAYO\OUTS.DGN

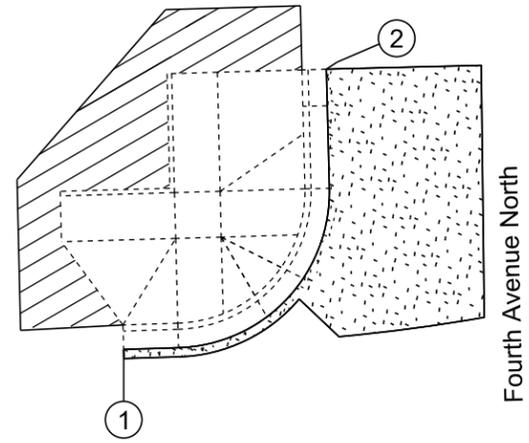
STATE OF SOUTH DAKOTA	PROJECT P0020(107)394	SHEET F17	TOTAL SHEETS F31
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Plotting Date: 01/23/2014
Revised: 23 Jan 14, LLR

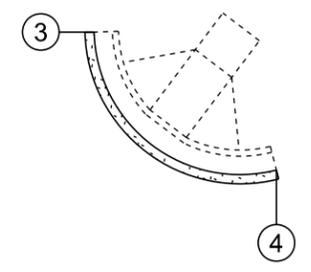
 2" Class Q3R Hot Mixed Asphalt Concrete (to be placed with mainline paving)
6" Asphalt Concrete Composite
4" Base Course

 4" Asphalt Concrete Composite
8" Base Course

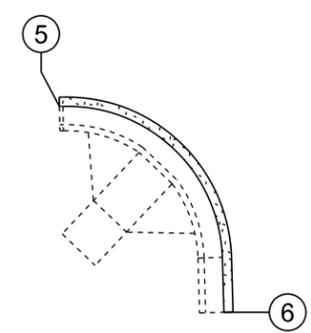
- 1 Station 293+07.15-30.85' L
Begin 1' Asphalt Concrete Pavement
- 2 Station 293+31.13-61.00' L
End 1' Asphalt Concrete Pavement



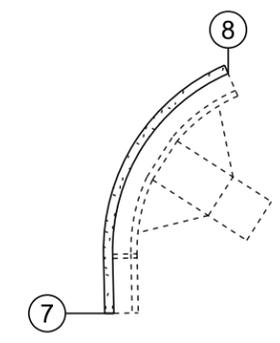
- 3 Station 293+81.33-52.32' L
Begin 1' Asphalt Concrete Pavement
- 4 Station 293+96.19-30.98' L
End 1' Asphalt Concrete Pavement



- 5 Station 293+14.15-30.97' R
Begin 1' Asphalt Concrete Pavement
- 6 Station 293+32.17-55.55' R
End 1' Asphalt Concrete Pavement



- 7 Station 293+49.58-54.84' R
Begin 1' Asphalt Concrete Pavement
- 8 Station 293+70.78-31.11' R
End 1' Asphalt Concrete Pavement



PLOT SCALE - 1:20

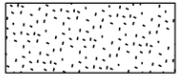
PLOTTED FROM - IRPR15123

PLOT NAME - 12

FILE - U:\MS\PR\CODING\27\LAYO\OUTS.DGN

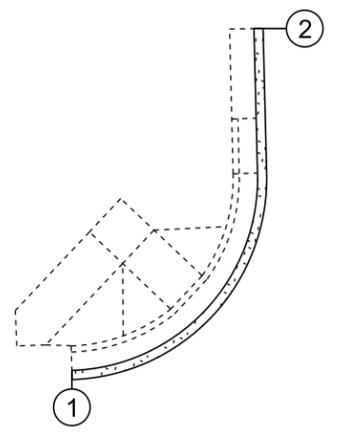
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P0020(107)394	F18	F31

Plotting Date: 01/23/2014
Revised: 23 Jan 14, LLR

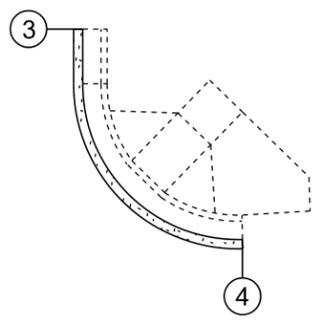


2" Class Q3R Hot Mixed Asphalt Concrete (to be placed with mainline paving)
6" Asphalt Concrete Composite
4" Base Course

- 1 Station a 4+68.82-23.10' L
Begin 1' Asphalt Concrete
Pavement
- 2 Station a 4+90.82-60.83' L
End 1' Asphalt Concrete
Pavement



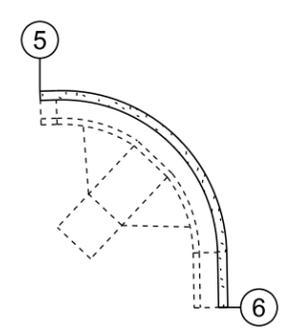
- 3 Station a 5+22.47-47.71' L
Begin 1' Asphalt Concrete
Pavement
- 4 Station a 5+40.29-23.19' L
End 1' Asphalt Concrete
Pavement



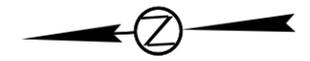
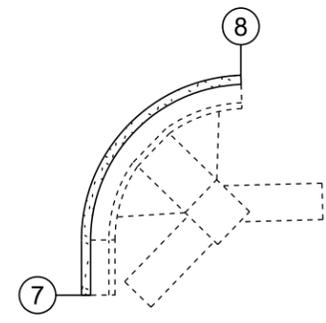
First Avenue SW



- 5 Station a 4+69.01-22.42' R
Begin 1' Asphalt Concrete
Pavement
- 6 Station a 4+88.88-46.57' R
End 1' Asphalt Concrete
Pavement



- 7 Station a 5+22.24-46.22' R
Begin 1' Asphalt Concrete
Pavement
- 8 Station a 5+40.38-22.74' R
End 1' Asphalt Concrete
Pavement



PLOT SCALE - 1:20

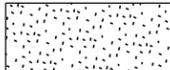
PLOT NAME - 13

PLOTTED FROM - TRPR15123

FILE - U:\MS\PR\CODING\27\1\LAYO\T.S.DGN

STATE OF SOUTH DAKOTA	PROJECT P0020(107)394	SHEET F19	TOTAL SHEETS F31
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Plotting Date: 01/23/2014
Revised: 23 Jan 14, LLR


 2" Class Q3R Hot Mixed Asphalt Concrete (to be placed with mainline paving)
 6" Asphalt Concrete Composite
 4" Base Course

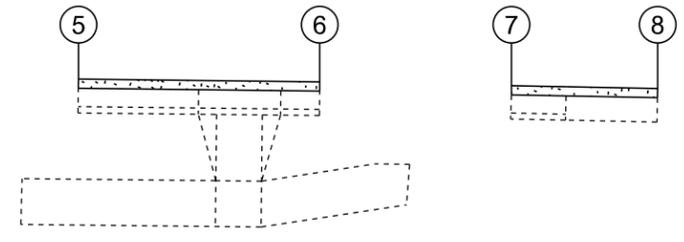
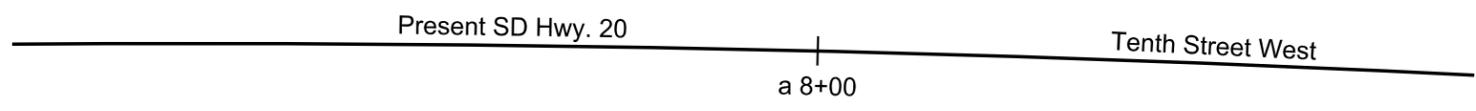
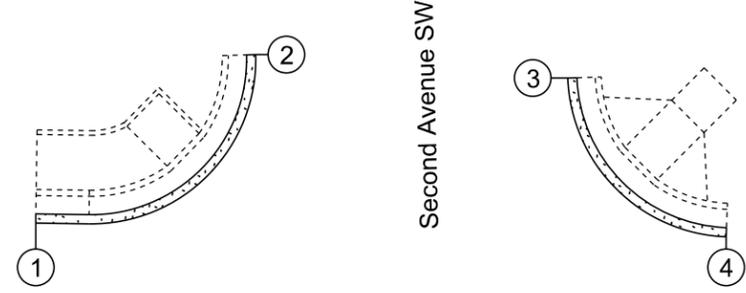


1 Station a 7+54.58-23.38' L
Begin 1' Asphalt Concrete Pavement

2 Station a 7+78.20-42.07' L
End 1' Asphalt Concrete Pavement

3 Station a 8+12.41-40.28' L
Begin 1' Asphalt Concrete Pavement

4 Station a 8+30.14-23.51' L
End 1' Asphalt Concrete Pavement



5 Station a 7+53.57-22.60' R
Begin 1' Asphalt Concrete Pavement

6 Station a 7+79.98-22.55' R
End 1' Asphalt Concrete Pavement

7 Station a 8+00.96-22.54' R
Begin 1' Asphalt Concrete Pavement

8 Station a 8+16.96-22.42' R
End 1' Asphalt Concrete Pavement

PLOT SCALE - 1:20

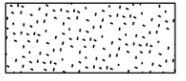
PLOTTED FROM - IRPR15123

PLOT NAME - 14

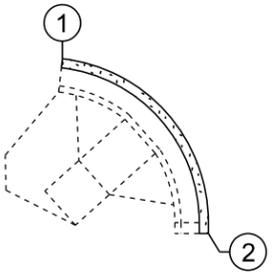
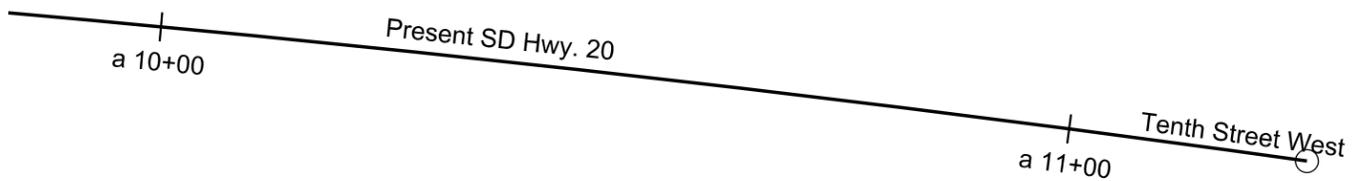
FILE - U:\MS\PR\CODING\27\LAYO\OUTS.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P0020(107)394	F20	F31

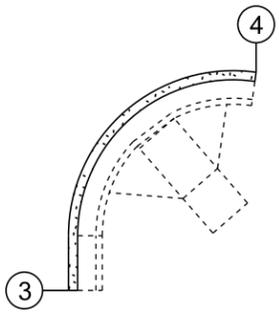
Plotting Date: 01/23/2014
Revised: 23 Jan 14, LLR



2" Class Q3R Hot Mixed Asphalt Concrete (to be placed with mainline paving)
6" Asphalt Concrete Composite
4" Base Course



Second Avenue SW



1 Station a 10+42.51-22.29' R
Begin 1' Asphalt Concrete Pavement

2 Station a 10+60.23-39.48' R
End 1' Asphalt Concrete Pavement

3 Station a 10+93.68-48.54' R
Begin 1' Asphalt Concrete Pavement

4 Station a 11+10.97-22.26' R
End 1' Asphalt Concrete Pavement

PLOT SCALE - 1:20

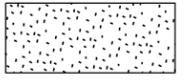
PLOTTED FROM - IRPR15123

PLOT NAME - 15

FILE - U:\MS\PR\CODING\27\LAYOITS.DGN

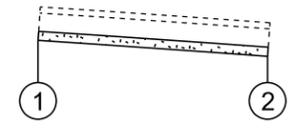
STATE OF SOUTH DAKOTA	PROJECT P0020(107)394	SHEET F21	TOTAL SHEETS F31
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Plotting Date: 01/23/2014
 Revised: 23 Jan 14, LLR



2" Class Q3R Hot Mixed Asphalt Concrete (to be placed with mainline paving)
 6" Asphalt Concrete Composite
 4" Base Course

- 1 Station a 14+51.29-22.84' R
Begin 1' Asphalt Concrete Pavement
- 2 Station a 14+76.46-22.70' R
End 1' Asphalt Concrete Pavement



PLOT SCALE - 1:20

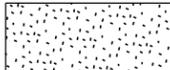
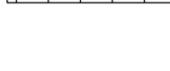
PLOT NAME - 16

PLOTTED FROM - IRPR15123

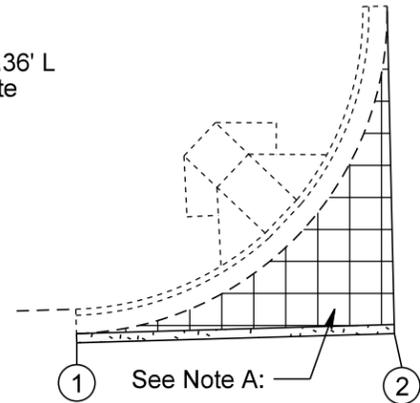
FILE - U:\MS\PR\CODING\27\N\LAYOUTS.DGN

STATE OF SOUTH DAKOTA	PROJECT P0020(107)394	SHEET F22	TOTAL SHEETS F31
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Plotting Date: 01/23/2014
Revised: 23 Jan 14, LLR

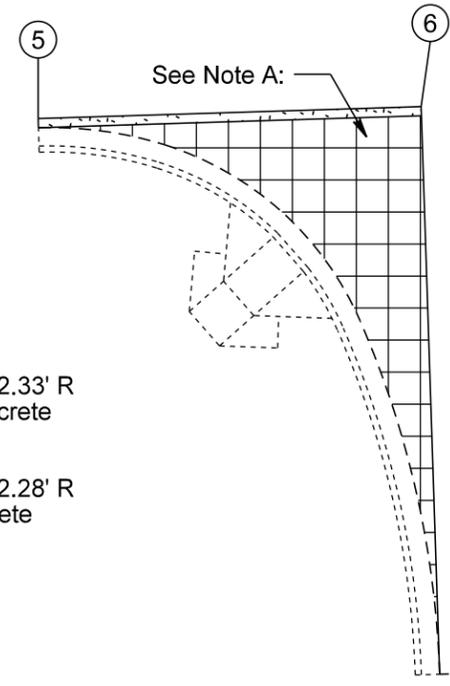
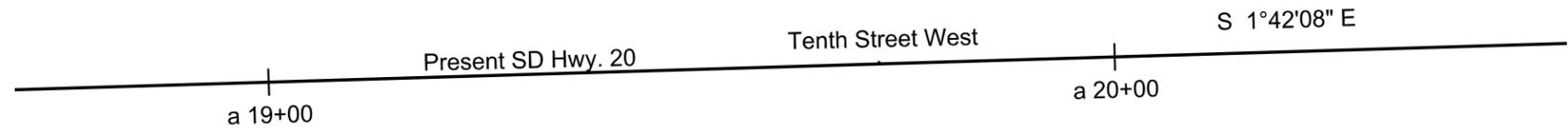
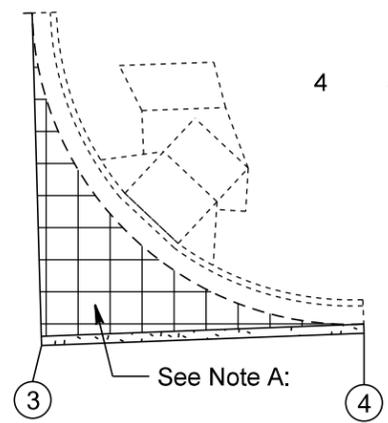
-  2" Class Q3R Hot Mixed Asphalt Concrete (to be placed with mainline paving)
-  6" Asphalt Concrete Composite
-  4" Base Course
-  8" Miscellaneous PCC Pavement
-  4" Base Course

- 1 Station a 19+19.81-23.40' L
Begin 1' Asphalt Concrete Pavement
- 2 Station a 19+54.58-23.36' L
End 1' Asphalt Concrete Pavement



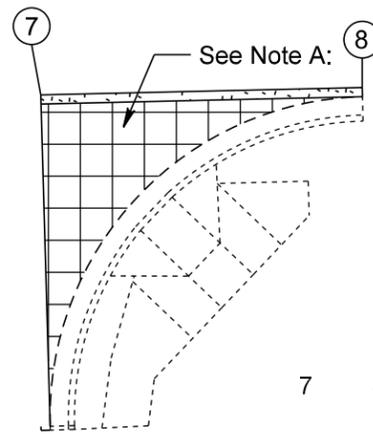
Fourth Avenue SW

- 3 Station a 19+90.84-23.19' L
Begin 1' Asphalt Concrete Pavement
- 4 Station a 20+26.15-23.45' L
End 1' Asphalt Concrete Pavement

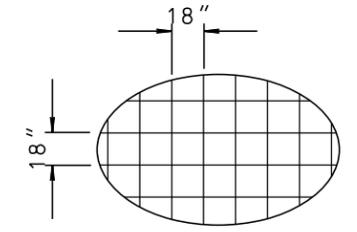


Fourth Avenue SW

- 5 Station a 19+12.59-22.33' R
Begin 1' Asphalt Concrete Pavement
- 6 Station a 19+54.52-22.28' R
End 1' Asphalt Concrete Pavement



- 7 Station a 19+91.06-22.08' R
Begin 1' Asphalt Concrete Pavement
- 8 Station a 20+26.25-22.32' R
End 1' Asphalt Concrete Pavement



Note A:
Fillet Area shall be reinforced with #4 rebar 18 inches on center both directions. Cost for furnishing and placing the rebar shall be incidental to the contract unit price per cubic yard for 8" MISCELLANEOUS PCC PAVEMENT

PLOT SCALE - 1:20

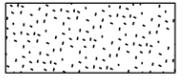
PLOTTED FROM - ITRP15123

PLOT NAME - 17

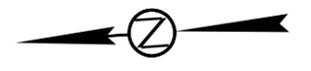
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P0020(107)394	F23	F31

Plotting Date: 01/23/2014
Revised: 23 Jan 14, LLR

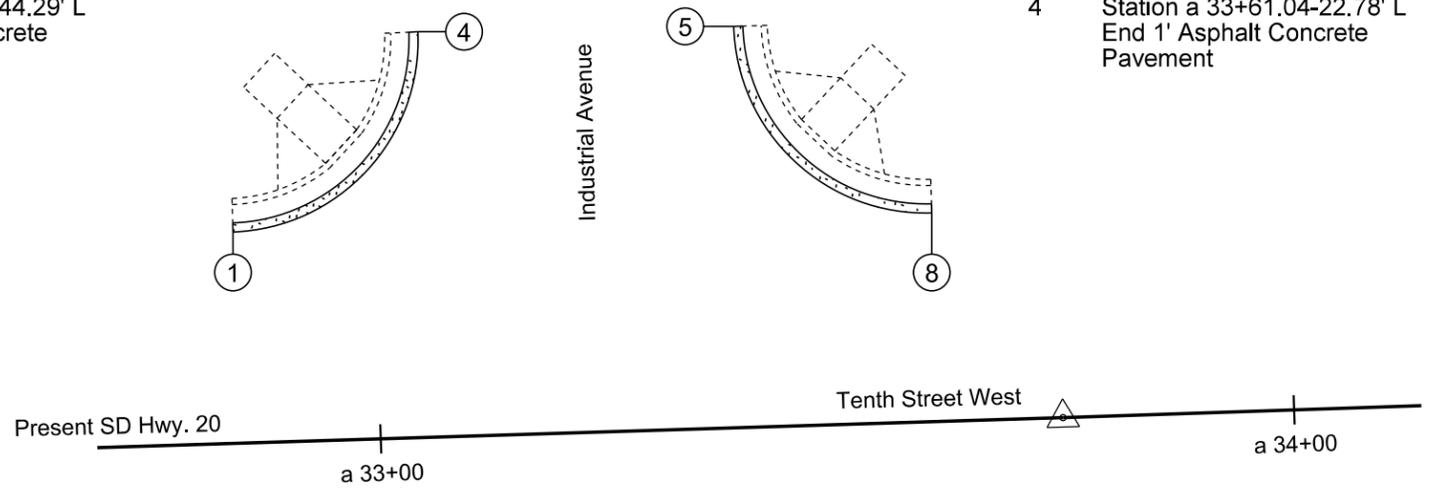


2" Class Q3R Hot Mixed Asphalt Concrete (to be placed with mainline paving)
6" Asphalt Concrete Composite
4" Base Course



- 1 Station a 32+84.54-23.06' L
Begin 1' Asphalt Concrete
Pavement
- 2 Station a 33+05.45-44.29' L
End 1' Asphalt Concrete
Pavement

- 3 Station a 33+40.00-43.81' L
Begin 1' Asphalt Concrete
Pavement
- 4 Station a 33+61.04-22.78' L
End 1' Asphalt Concrete
Pavement



PLOT SCALE - 1:20

PLOT NAME - 18

PLOTTED FROM - IRPR15123

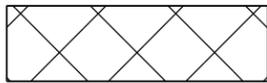
FILE - U:\MS\PR\CODING\27\LAYOITS.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P0020(107)394	F24	F31

Plotting Date: 01/23/2014

Railroad Removal Details

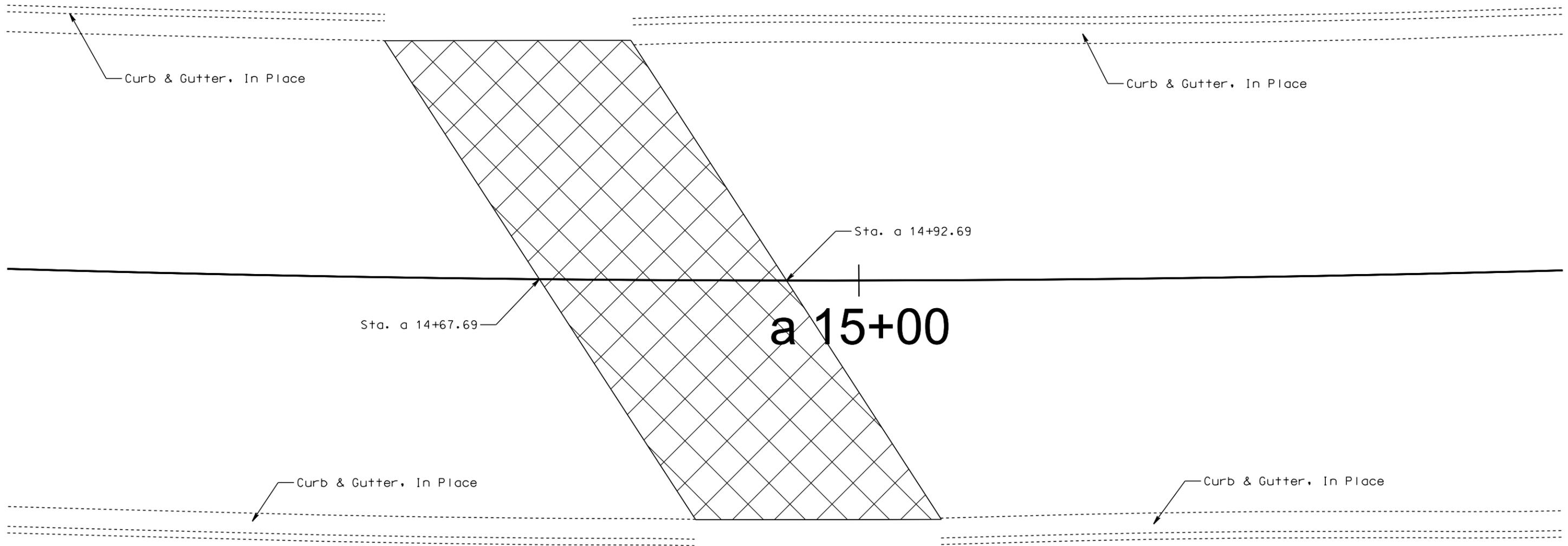
Sheet 1 of 2



Remove Asphalt Concrete
(Includes Removal of existing Granular Material)
(RR Ballasts shall remain In Place)

PLOT SCALE - 1:10

PLOT NAME - 19



PLOTTED FROM - IRPR15123

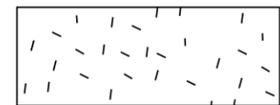
FILE - U:\MS\PR\CODING\27\RR XING.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P0020(107)394	F25	F31

Plotting Date: 01/23/2014

Railroad Removal Details

Sheet 2 of 2



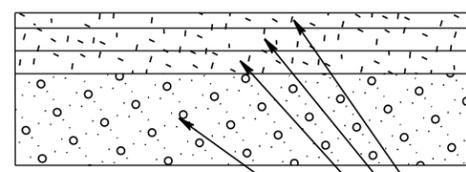
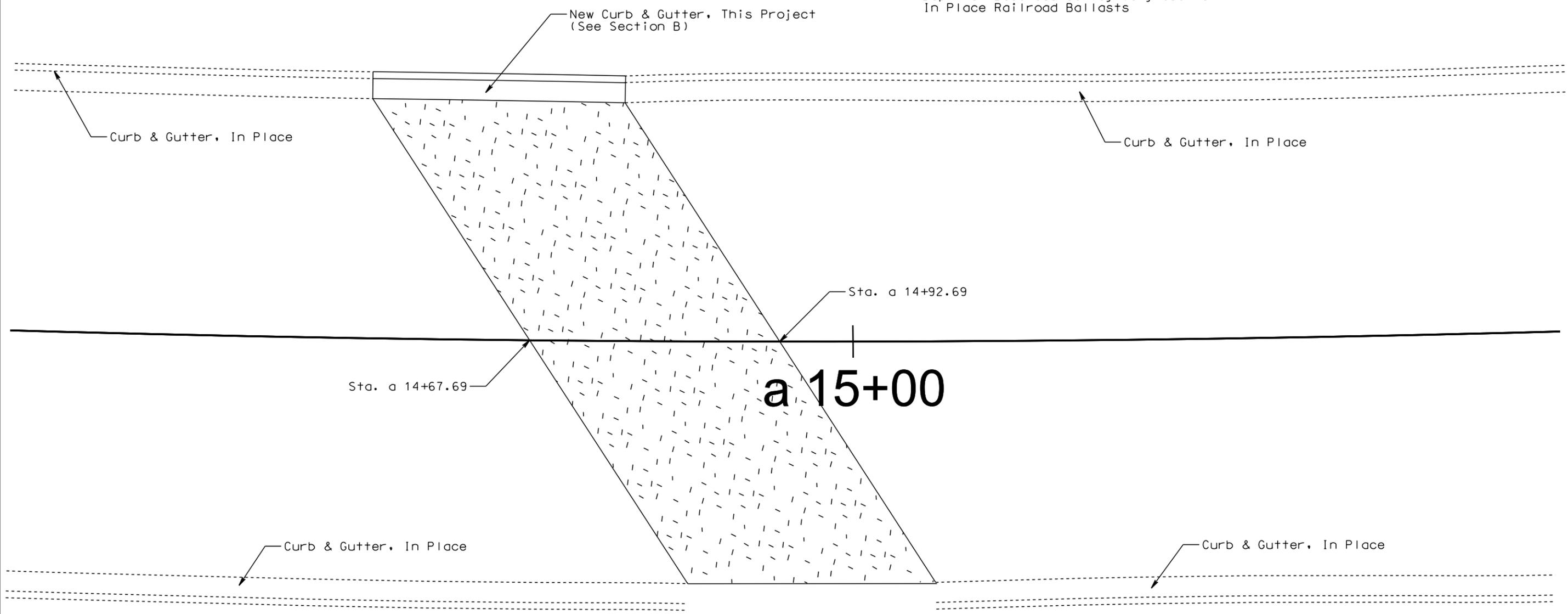
- * 2" Asphalt Concrete Composite
- 3" Asphalt Concrete Composite
- 3" Asphalt Concrete Composite
- ** 12" Base Course

Notes:

- * 1" Asphalt Concrete Composite shall be milled with mainline milling.
- 2" Q3R Hot Mixed Asphalt Concrete shall be placed with mainline paving (See Typical Sections)
- ** Depth of Base Course may vary due to In Place Railroad Ballasts

PLOT SCALE - 1:10

PLOT NAME - 20



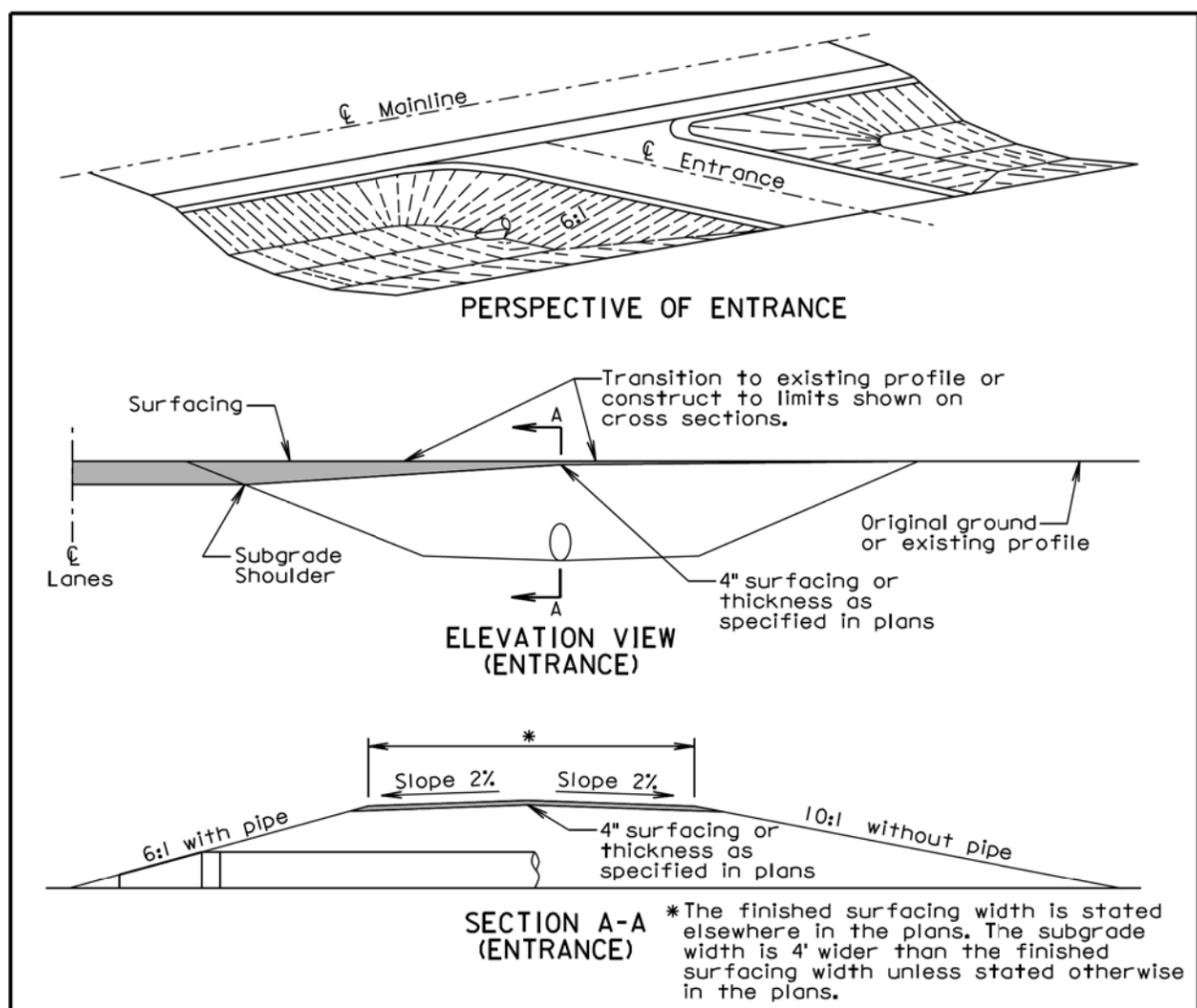
- 2" Asphalt Concrete Composite
- 3" Asphalt Concrete Composite
- 3" Asphalt Concrete Composite
- 12" Base Course

PLOTTED FROM - TRPR15123

FILE - U:\MS\PR\CODING\27\RR XING.DGN

PLOT SCALE - 1:200

PLOT NAME - 21



GENERAL NOTES:

The ditch section shown above in the perspective and elevation view is only for illustrative purposes.

A 6:1 inslope shall be constructed for an entrance when a pipe is required. A 10:1 inslope shall be constructed when a pipe is not required.

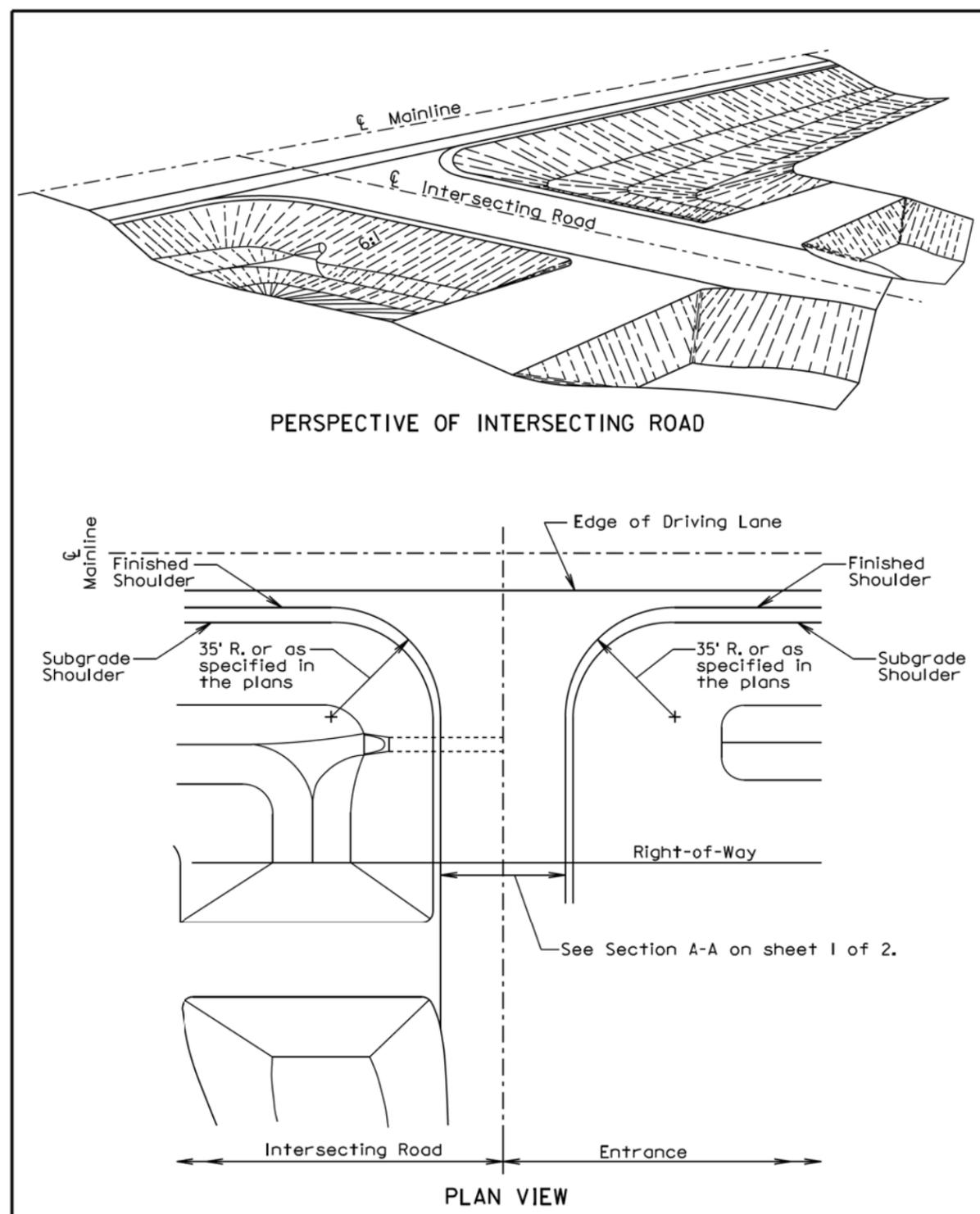
Pipe lengths shall be adjusted if necessary during construction to obtain the 6:1 slopes. For grading projects, the pipe lengths are estimated typically using a 4" thickness of surfacing directly over the subgrade above the pipe.

The transition area between the mainline inslope and the approach inslope for entrances shall be rounded to eliminate an abrupt transition.

The turning radii shall be 35' for intersecting roads and entrances unless stated otherwise in the plans.

September 6, 2013

Published Date: 1st Qtr. 2014	S D D O T	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 1 of 2



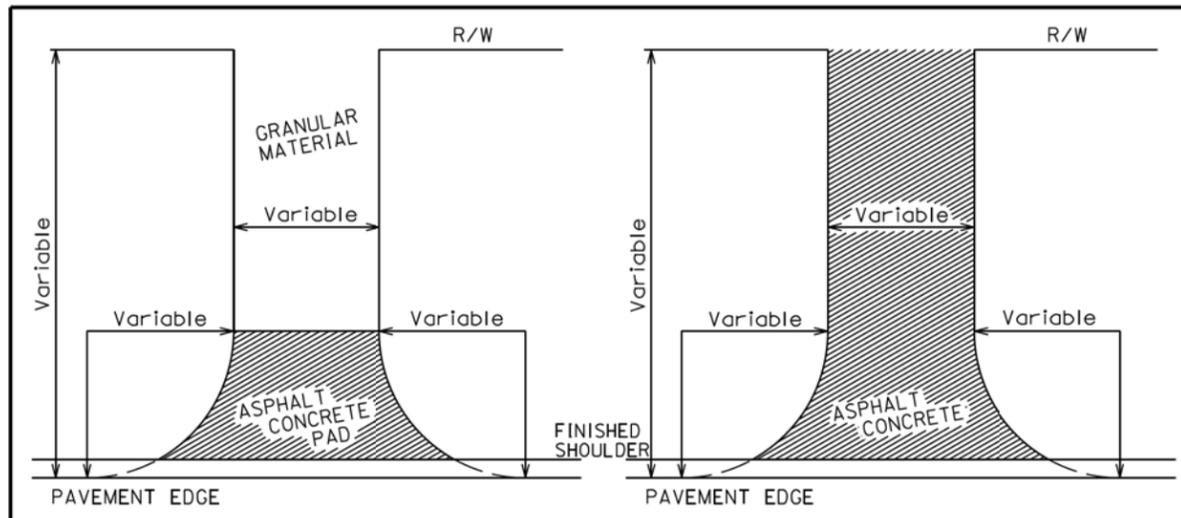
September 6, 2013

Published Date: 1st Qtr. 2014	S D D O T	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 2 of 2

PLOTTED FROM - TRPR15123

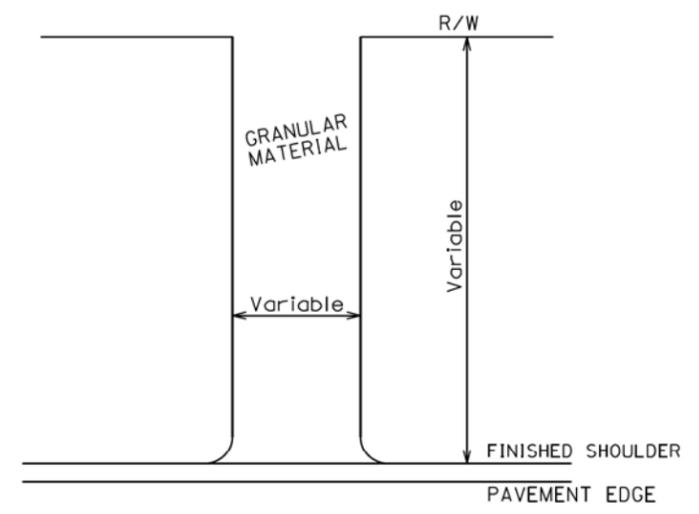
FILE - ... \STANDARD PLATES\120.01-1&2.DGN

Plotting Date: 01/23/2014



INTERSECTING ROAD
NO ASPHALT CONCRETE SURFACING
BEYOND R/W

INTERSECTING ROAD
ASPHALT CONCRETE SURFACING
BEYOND R/W



ENTRANCE

The surfacing details shown on this sheet are provided as a guide for surfacing these facilities. The precise construction limits for situations other than the standards shown will be determined by the Engineer, at the time of construction.

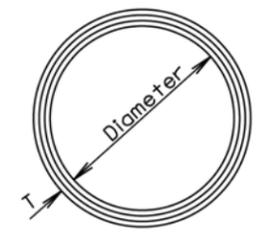
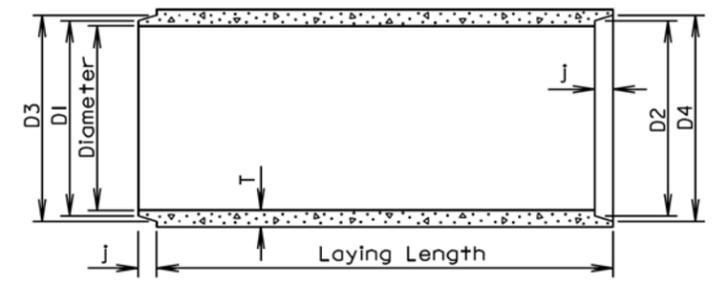
ROADWAY WITH SHOULDER

March 31, 2000

S D D O T	RESURFACING OF INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 320.11
		Sheet 1 of 1
	Published Date: 1st Qtr. 2014	

TOLERANCES IN DIMENSIONS

Diameter: $\pm 1.5\%$ for 24" Dia. or less and $\pm 1\%$ or $\frac{3}{8}$ " whichever is more for 27" Dia. or greater.
 Diameters at Joints: $\pm 3/16$ " for 30" Dia. or less and $\pm 1/4$ " for 36" or greater.
 Length of joint (J): $\pm 1/4$ ".
 Wall thickness (T): not less than design T by more than 5% or $\frac{3}{16}$ ", whichever is greater.
 Laying length: shall not underrun by more than $\frac{1}{2}$ ".



LONGITUDINAL SECTION

END VIEW

GENERAL NOTES:

Construction of R.C.P. shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges.

Not more than 2 four foot sections shall be permitted near the ends of any culvert. Four foot lengths shall be used only to secure the required length of culvert.

Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 3/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	3 1/4	3	29 1/4	29 5/8	30 1/4	30 5/8
30	384	3 1/2	3 1/4	32 3/8	32 3/4	33 1/2	33 7/8
36	524	4	3 3/4	38 3/4	39 1/4	40	40 1/2
42	685	4 1/2	4	45 1/8	45 5/8	46 1/2	47
48	867	5	4 1/2	51 1/2	52	53	53 1/2
54	1070	5 1/2	4 1/2	57 7/8	58 3/8	59 3/8	59 7/8
60	1296	6	5	64 1/4	64 3/4	66	66 1/2
66	1542	6 1/2	5 1/2	70 5/8	71 1/8	72 1/2	73
72	1810	7	6	77	77 1/2	79	79 1/2
78	2098	7 1/2	6 1/2	83 3/8	83 7/8	85 5/8	86 1/8
84	2410	8	7	89 3/4	90 1/4	92 1/8	92 5/8
90	2740	8 1/2	7	95 3/4	96 1/4	98 1/8	98 5/8
96	2950	9	7	102 1/8	102 5/8	104 1/2	105
102	3075	9 1/2	7 1/2	109	109 1/2	111 1/2	112
108	3870	10	7 1/2	115 1/2	116	118	118 1/2

March 31, 2000

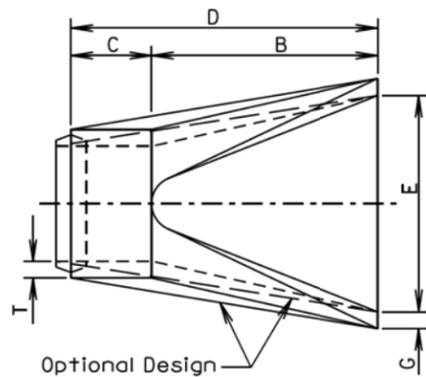
S D D O T	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
		Sheet 1 of 1
	Published Date: 1st Qtr. 2014	

PLOT SCALE - 1:200

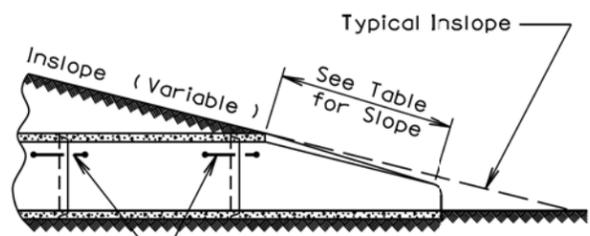
-PLOTTED FROM - TRPR15123

PLOT NAME - 22

FILE - ... \320-11 450.01.DGN



TOP VIEW

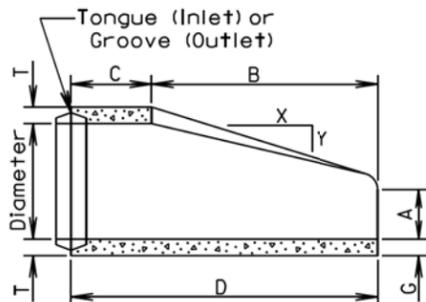


SLOPE DETAIL

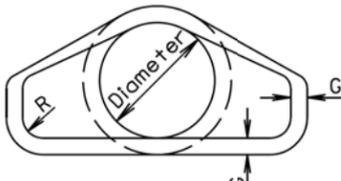
GENERAL NOTES:

Lengths of concrete pipe shown on Plan Sheets are between flared Ends only.

Construction of R.C.P. Flared End shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges.



LONGITUDINAL SECTION



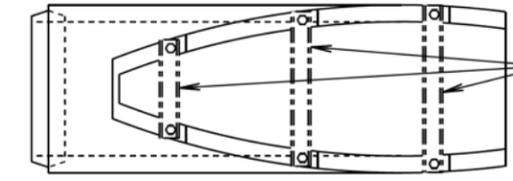
END VIEW

Dia. (in.)	Approx. Wt. of Section (lbs.)	Approx. Slope (X to Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)	R (in.)
12	530	2.4:1	2	4	24	48 1/8	72 7/8	24	2	1 1/2
15	740	2.4:1	2 1/4	6	27	46	73	30	2 1/4	1 1/2
18	990	2.3:1	2 1/2	9	27	46	73	36	2 1/2	1 1/2
21	1280	2.4:1	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	1 1/2
24	1520	2.5:1	3	9 1/2	43 1/2	30	73 1/2	48	3	1 1/2
27	1930	2.5:1	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	1 1/2
30	2190	2.5:1	3 1/2	12	54	19 3/4	73 3/4	60	3 1/2	1 1/2
36	4100	2.5:1	4	15	63	34 3/4	97 3/4	72	4	1 1/2
42	5380	2.5:1	4 1/2	21	63	35	98	78	4 1/2	1 1/2
48	6550	2.5:1	5	24	72	26	98	84	5	1 1/2
54	8240	2:1	5 1/2	27	65	33 1/4	98 1/4	90	5 1/2	1 1/2
60	8730	1.9:1	6	35	60	39	99	96	5	1 1/2
66	10710	1.7:1	6 1/2	30	72	27	99	102	5 1/2	1 1/2
72	12520	1.8:1	7	36	78	21	99	108	6	1 1/2
78	14770	1.8:1	7 1/2	36	90	21	111	114	6 1/2	1 1/2
84	18160	1.6:1	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2
90	20900	1.5:1	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	6

March 31, 2000

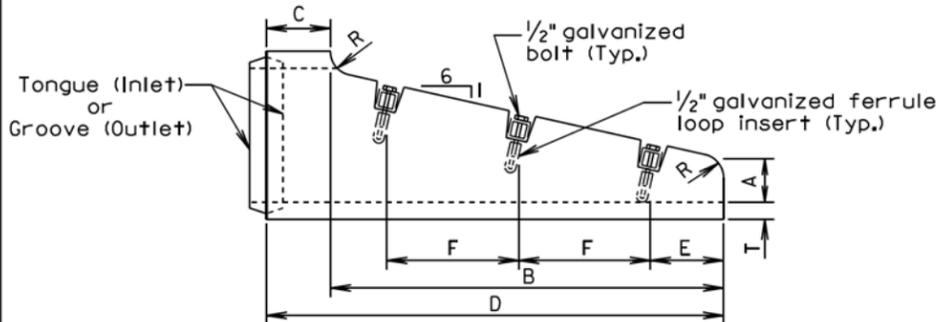
S D D O T	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
		Sheet 1 of 1

Published Date: 1st Qtr. 2014

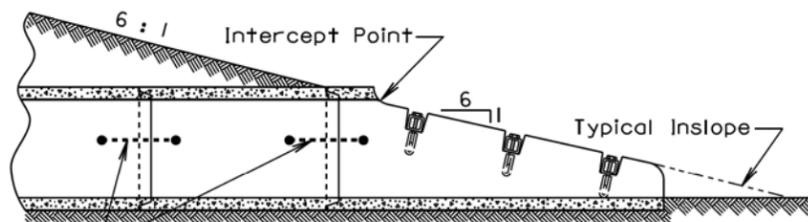


TOP VIEW

If bars are specified in the plans then provide HSS 2.5X2.5X.1875 Structural Steel Tubing in conformance with ASTM A500, Grade B or 3" Diameter Schedule 40 Pipe in conformance with ASTM A53, Grade B.



SIDE VIEW



ELEVATION VIEW

Dia. (in.)	T (in.)	R (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	No. Sections	No. Bars
FOR CIRCULAR PIPE										
15	2 1/4	3	6	48	9	57	6	18	1	3
18	2 1/2	3	6	69	9	78	9	24	1	3
*24	3	3	6	111	9	120	6	24	1 or 2	5
FOR ARCH PIPE										
**18	2 1/2	1	6	39	33	72	6	24	1	2

*The use of 2 sections must be an approved design.
**Equivalent Diameter of Circular R. C. P.

GENERAL NOTES:

The length of concrete pipe shown on the plans is between safety ends.
Safety ends without bars are acceptable with or without the bar notches.
Bars shall be galvanized after fabrication in accordance with ASTM A123.

August 31, 2013

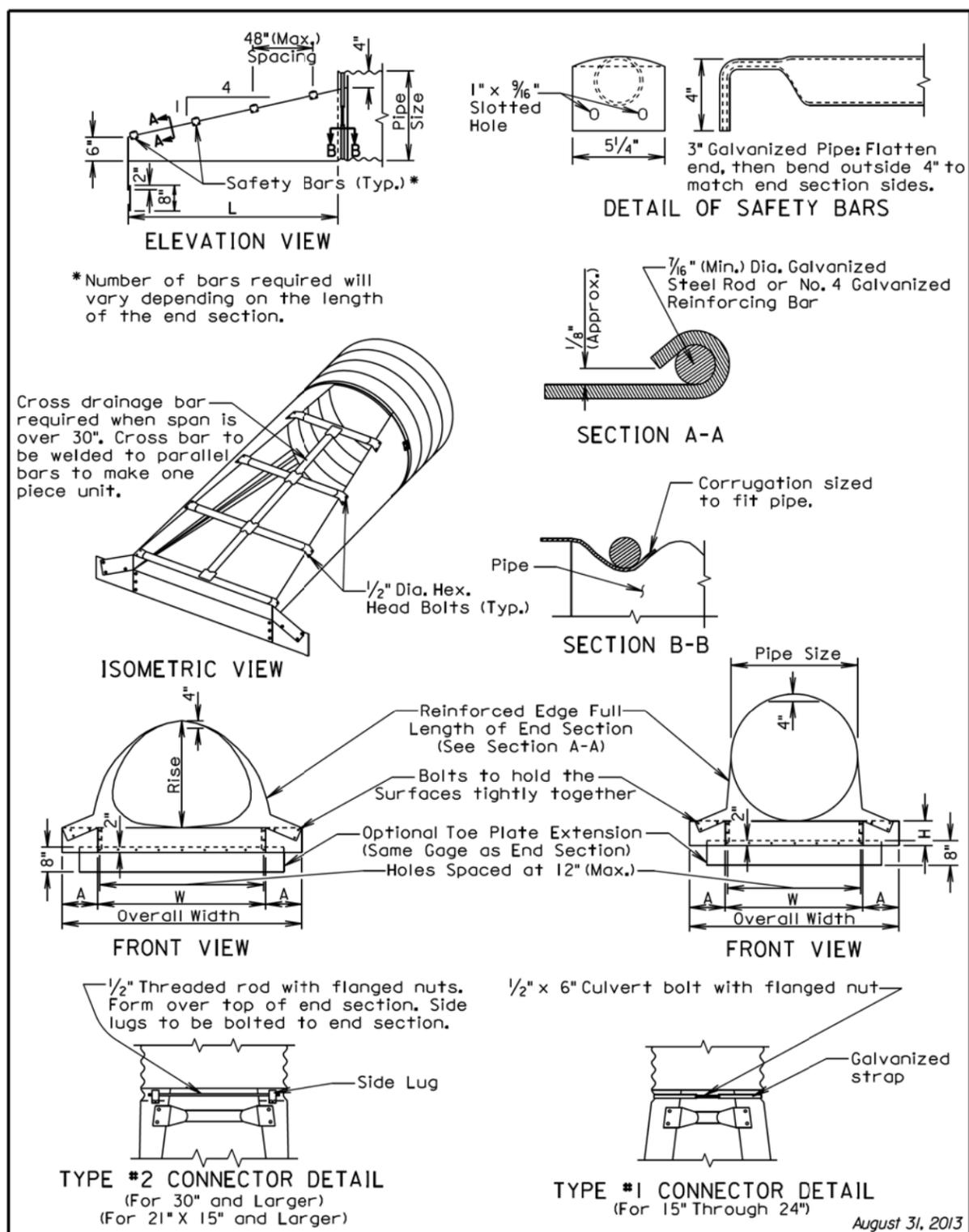
S D D O T	R. C. P. SAFETY ENDS WITH OR WITHOUT BARS	PLATE NUMBER 450.12
		Sheet 1 of 1

Published Date: 1st Qtr. 2014

PLOT SCALE - 1:200

PLOT NAME -

FILE - ... \STANDARD PLATES\450.37.1&2.DGN



August 31, 2013

S D D O T	C. M. P. SLOPED ENDS	PLATE NUMBER 450.37
		Sheet 1 of 2

Published Date: 1st Qtr. 2014

ARCH C.M.P. SLOPED ENDS										
Equv. Dia. (Inch)	(Inches)		Min. Thick. Inch	Gage	Dimensions (Inches)			L Dimensions		
	Span	Rise			A	H	W	Overall Width	Slope	Length (Inch)
18	21	15	.064	16	8	6	27	43	4:1	20
21	24	18	.064	16	8	6	30	46	4:1	32
24	28	20	.064	16	8	6	34	50	4:1	40
30	35	24	.079	14	12	9	41	65	4:1	56
36	42	29	.109	12	12	9	48	72	4:1	76
42	49	33	.109	12	16	12	55	87	4:1	92
48	57	38	.109	12	16	12	63	95	4:1	112
54	64	43	.109	12	16	12	70	102	4:1	132
60	71	47	.109	12	16	12	77	109	4:1	148
72	83	57	.109	12	16	12	89	121	4:1	188

CIRCULAR C.M.P. SLOPED ENDS									
Pipe Dia. (Inch)	Min. Thick. Inch	Dimensions (Inches)					L Dimensions		
		Gage	A	H	W	Overall Width	Slope	Length (Inch)	
15	.064	16	8	6	21	37	4:1	20	
18	.064	16	8	6	24	40	4:1	32	
21	.064	16	8	6	27	43	4:1	44	
24	.064	16	8	6	30	46	4:1	56	
30	.109	12	12	9	36	60	4:1	80	
36	.109	12	12	9	42	66	4:1	104	
42	.109	12	16	12	48	80	4:1	128	
48	.109	12	16	12	54	86	4:1	152	
54	.109	12	16	12	60	92	4:1	176	
60	.109	12	16	12	66	98	4:1	200	

GENERAL NOTES:

Safety bars shall be attached to sloped ends over 30" in diameter only.

Sloped ends shall be fabricated from galvanized steel and shall conform to the requirements of the Standard Specifications.

Safety bars shall be fabricated from steel schedule 40 pipe in conformance with ASTM A53, grade B or HSS 3.5X.216 in conformance with ASTM A500, grade B.

Slotted holes for safety bar attachment shall be provided for all end sections.

Attachment to circular pipes 15" through 24" diameter shall be made with Type #1 straps. All other sizes shall be attached with Type #2 rods and lugs.

When stated in the plans, optional toe plate extension shall be punched and bolted to end section apron lip with 3/8" diameter galvanized bolts. Steel for toe plate extension shall be same gauge as end section. Dimensions shall be overall width less 6" by 8" high.

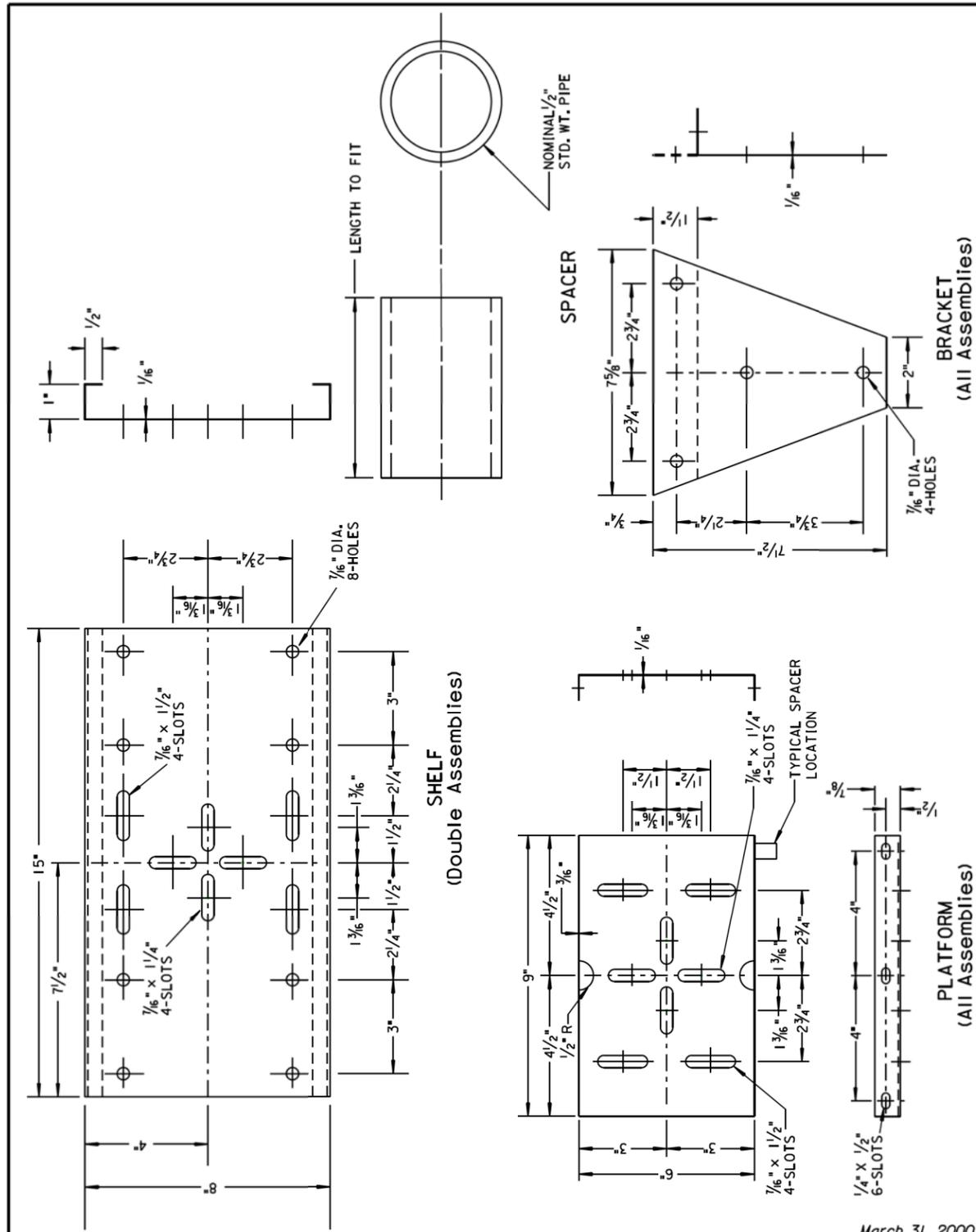
Installation shall be performed in accordance with the Standard Specifications.

Cost of all work and materials required for fabrication and installation of sloped ends shall be incidental to the bid items for the various sizes of sloped ends.

August 31, 2013

S D D O T	C. M. P. SLOPED ENDS	PLATE NUMBER 450.37
		Sheet 2 of 2

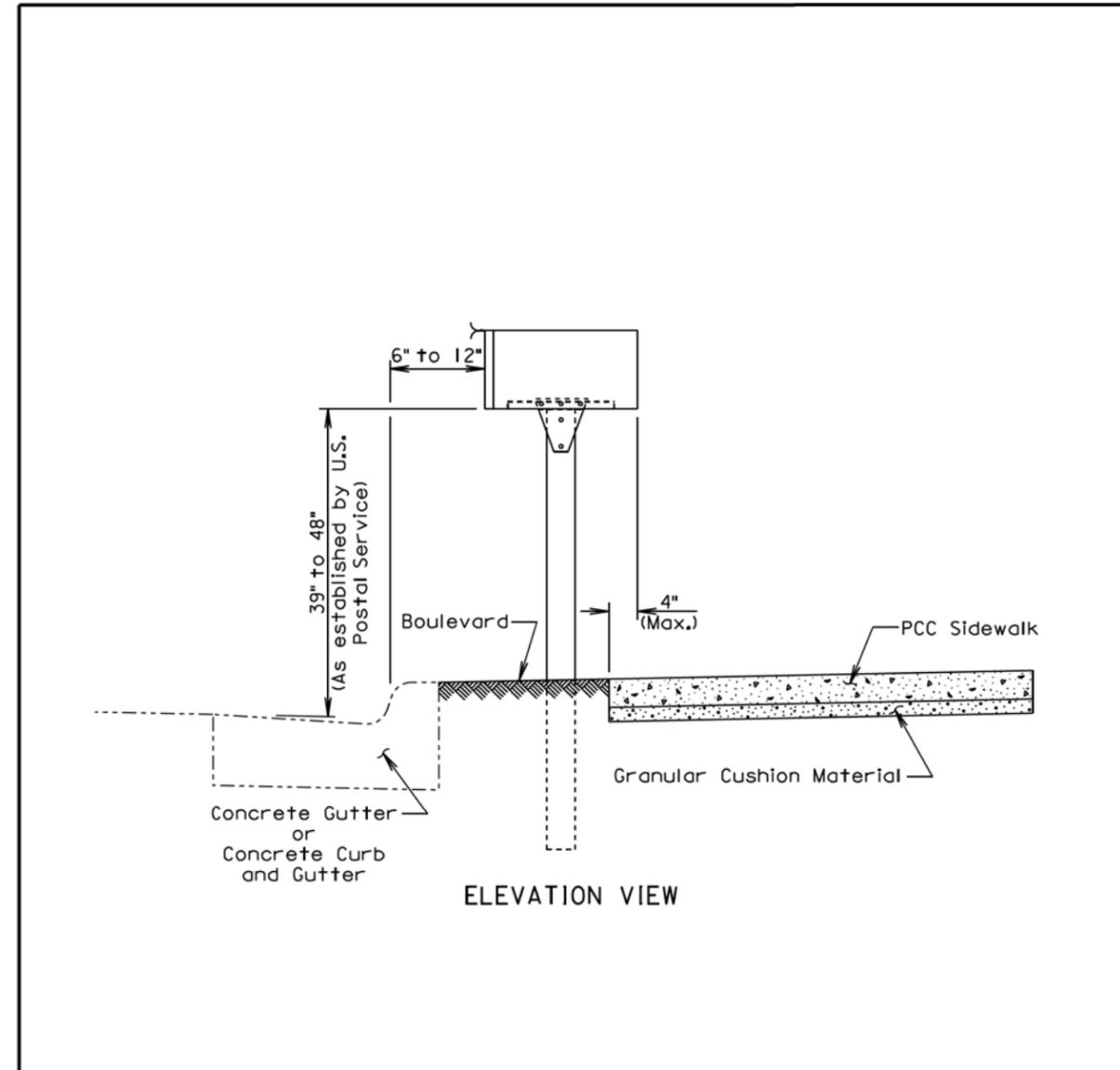
Published Date: 1st Qtr. 2014



March 31, 2000

S D D O T	MAILBOX SUPPORT HARDWARE	PLATE NUMBER 900.03
		Sheet 1 of 1

Published Date: 1st Qtr. 2014



GENERAL NOTES:

The post support assemblies provided should be consistent throughout the project.

Post support assemblies shall be one from the approved products list, a 4"x4" or 4" round wood post, or an alternate post support assembly that meets the test level 3 crash testing requirements of NCHRP 350 or MASH.

Alternate mailbox support assemblies shall be approved by the Engineer prior to installation. The Contractor shall provide the Engineer written certification that the mailbox support assembly has met the crash testing requirements and will be installed in accordance with the manufacturer's installation instructions.

August 31, 2013

S D D O T	MAILBOX ADJACENT TO CONCRETE GUTTER OR CONCRETE CURB AND GUTTER	PLATE NUMBER 900.05
		Sheet 1 of 1

Published Date: 1st Qtr. 2014