

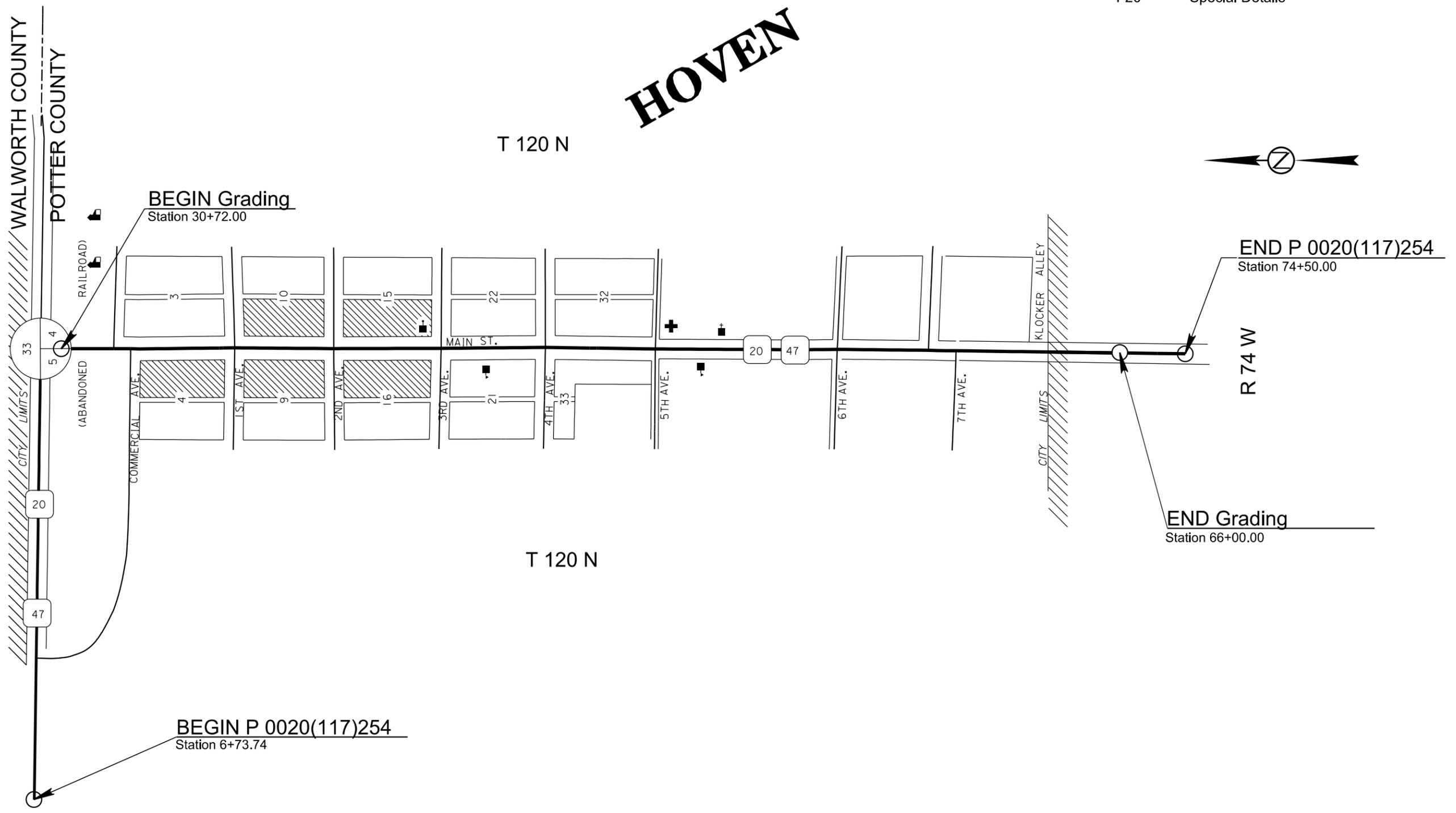
Section F: Surfacing Plans

STATE OF SOUTH DAKOTA	PROJECT P 0020(117)254	SHEET F1	TOTAL SHEETS F20
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Plotting Date: 07/06/2015

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- F2 - F5 Estimate of Quantities, Notes, Rates, and Tables
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PLOT SCALE - 1:200

PLOTTED FROM - TRPR18387

PLOT NAME - 1

FILE - U:\MS\PR\N\P01102R9\TITLEF.DGN

ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	212.7	MGal
260E1010	Base Course	1,128.6	Ton
260E1030	Base Course, Salvaged	16,537.5	Ton
320E0007	PG 64-28 Asphalt Binder	296.3	Ton
320E1050	Class E Asphalt Concrete	4,927.7	Ton
320E3000	Compaction Sample	3	Each
330E0100	SS-1h or CSS-1h Asphalt for Tack	4.6	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	4.7	Ton
330E2000	Sand for Flush Seal	76.5	Ton
332E0010	Cold Milling Asphalt Concrete	761	SqYd

SURFACING THICKNESS DIMENSIONS

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

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

CHECKING SPREAD RATES

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

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

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

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

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

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

The Department will perform depth checks. The Contractor shall be responsible for placement of material to the correct depth unless otherwise directed by the Engineer. If the placed material is not within a tolerance of ±1/2 inch of the plan shown depth, the Contractor shall correct the problem at no additional cost to the Department. Excess material above the tolerance will not be paid for. Achieving the correct depth may require picking up and moving material or other action as required by the Engineer.

All costs for providing the Contractor furnished checker and performing all related duties shall be incidental to the contract lump sum price for "Checker". No allowances will be made to the contract lump sum price for Checker due to authorized quantity variations unless the quantities for the material being checked vary above or below the estimated quantities by more than 25 percent. Payment for the Checker shall then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

SALVAGED MATERIAL

All salvaged asphalt mix material shall be used as Base Course, Salvaged. An estimated 16,537.5 tons of material shall be stockpiled on the project site at locations approved by the Engineer. See Section B notes for Salvage and Stockpile Asphalt Mix and Granular Base Material for determining salvaged material. The quantity of salvaged material may vary from the plans.

No adjustment in the contract unit price for salvage material will be made because of a variation in salvaged material quantities.

BASE COURSE, SALVAGED

Specifications for salvaging, processing, and stockpiling asphalt concrete surfacing materials shall apply.

The Base Course, Salvaged shall be obtained from the stockpiles provided by the Contractor and may be used without further testing. There are 16,537.5 tons of Salvaged Asphalt Mix and Granular Base Material that will be used on this project.

All other requirements for Base Course, Salvaged shall apply.

COLD MILLING ASPHALT CONCRETE

The typical surfacing sections and AC Pavement Layout sheets show cold milling. Payment is based on plans quantity for "Cold Milling Asphalt Concrete" in the following table.

The Los Angeles Abrasion Loss value on the aggregate used for the in place asphalt concrete varies from 24 to 28 percent. These value was obtained from testing during construction of the in place asphalt concrete.

Cold milling asphalt is estimated to produce 40 tons of salvaged asphalt concrete material. The salvaged asphalt concrete material shall be stockpiled or disposed of as directed by the Engineer.

COLD MILLING ASPHALT CONCRETE TABLE

Location	Cold Milling Asphalt Concrete (SqYd)
Intersection of SD Hwy 20/47 and 148 th Street	761
Total:	761

STATE OF SOUTH DAKOTA	PROJECT P 0020(117)254	SHEET F2	TOTAL SHEETS F20
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CLASS E ASPHALT CONCRETE

Mineral Aggregate for Class E Asphalt Concrete shall conform to the requirements for Class E Type 1.

All other requirements for Class E shall apply.

FLUSH SEAL

Application of Flush Seal shall be completed within 10 working days following completion of the asphalt concrete surfacing.

Application of Flush Seal may be eliminated by the Engineer. If the paved surface remains tight, the Engineer shall notify the Contractor as soon as possible that the Flush Seal is unnecessary.

SAND FOR FLUSH SEAL

The sand application shall be placed over the entire width of the mainline pavement surface.

SUMMARY OF CLASS E ASPHALT CONCRETE

Location	Class E Asphalt Concrete with Specified Density Compaction (Tons)	Class E Asphalt Concrete without Specified Density Compaction (Tons)
Sta. 30+72 to Sta. 66+00 Mainline	4,004.0	---
Intersecting Streets, Approaches and Driveways	---	783.9
Cold Milled Resurfacing – Intersection of SD Hwy 20/47 and 148 th Street	---	92.0
Pipe Replacements	---	47.8
Totals:	4,004.0	923.7

1:200 Plot Scale -

Plotted From: tpr18387

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RATES OF MATERIALS

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

MAINLINE

Sta. 32+50 to Sta. 47+12
Sta. 51+21 to Sta. 57+00

CLASS E ASPHALT CONCRETE – 2- 2" lifts

Crushed Aggregate	55.65 Tons
PG 64-28 Asphalt Binder	<u>3.55 Tons</u>
Total	59.20 Tons

The exact proportions of these materials will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.11 ton applied 48.0 feet wide (Rate = 0.05 gallon per square yard).

FLUSH SEAL

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

Sand for Flush Seal at the rate of 2.13 ton applied 48.0 feet wide (Rate = 8.0 pounds per square yard).

MAINLINE

Sta. 47+52 to Sta. 50+88
Sta. 57+28 to Sta. 60+20

CLASS E ASPHALT CONCRETE – 2- 2" lifts

Crushed Aggregate	51.01 Tons
PG 64-28 Asphalt Binder	<u>3.26 Tons</u>
Total	54.27 Tons

The exact proportions of these materials will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.11 ton applied 44.0 feet wide (Rate = 0.05 gallon per square yard).

FLUSH SEAL

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.11 ton applied 44 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 2.13 ton applied 44.0 feet wide (Rate = 8.0 pounds per square yard).

MAINLINE

Sta. 60+50 to Sta. 64+07

CLASS E ASPHALT CONCRETE – 2- 2" lifts

Crushed Aggregate	46.37 Tons
PG 64-28 Asphalt Binder	<u>2.96 Tons</u>
Total	49.33 Tons

The exact proportions of these materials will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.11 ton applied 40.0 feet wide (Rate = 0.05 gallon per square yard).

FLUSH SEAL

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.11 ton applied 40 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 2.13 ton applied 40.0 feet wide (Rate = 8.0 pounds per square yard).

TABLE OF ADDITIONAL QUANTITIES

LOCATION	WATER FOR GRANULAR MATERIAL (MGal)	BASE COURSE, SALVAGED/ BASE COURSE (Ton)	CLASS E ASPHALT CONCRETE		PG 64-28 ASPHALT BINDER		ASPHALT FOR TACK	ASPHALT FOR FLUSH SEAL	SAND FOR FLUSH SEAL
			1st Lift	Top Lift	1st Lift	Top Lift	Top Lift		
			(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)
Mainline									
Sta. 30+72 to Sta. 32+50	8.2	687.4	107.0	107.0	6.4	6.4	0.2	0.2	3.8
Sta. 47+12 to Sta. 47+52	1.8	149.4	22.7	22.7	1.4	1.4	**	***	0.8
Sta. 50+88 to Sta. 51+21	1.5	123.2	18.7	18.7	1.1	1.1	**	***	0.7
Sta. 57+00 to Sta. 57+28	1.3	104.5	15.9	15.9	1.0	1.0	**	***	0.6
Sta. 60+20 to Sta. 60+50	1.2	103.6	15.5	15.5	0.9	0.9	**	***	0.6
Sta. 64+07.00 to Sta. 66+00	7.6	637.3	97.0	97.0	5.8	5.8	0.2	0.2	3.4
Intersecting Streets									
Sta. 19+57 R - Commercial Avenue	1.2	99.2	28.2	28.2	1.7	1.7	0.1	0.1	---
Sta. 32+60 L - Railroad Avenue	1.2	99.2	17.5	17.5	1.1	1.1	**	***	---
Sta. 33+29 L - Commercial Avenue	1.1	88.0	15.5	15.5	0.9	0.9	**	***	---
Sta. 36+70 L - First Avenue	1.4	117.8	20.8	20.8	1.3	1.3	**	***	---
Sta. 36+70 R - First Avenue	1.4	114.0	20.1	20.1	1.2	1.2	**	***	---
Sta. 40+25 L - Second Avenue	2.3	194.3	29.6	29.6	1.8	1.8	0.1	0.1	---
Sta. 40+25 R - Second Avenue	1.4	112.5	19.8	19.8	1.2	1.2	**	***	---
Sta. 43+76 L - Third Avenue	1.1	95.1	16.7	16.7	1.0	1.0	**	***	---
Sta. 43+76 R - Third Avenue	0.8	65.6	11.6	11.6	0.7	0.7	**	***	---
Sta. 47+32 L - Fourth Avenue	1.4	117.2	20.6	20.6	1.2	1.2	**	***	---
Sta. 47+32 R - Fourth Avenue	1.1	90.7	16.0	16.0	1.0	1.0	**	***	---
Sta. 50+97 L - Fifth Avenue	1.0	83.1	14.6	14.6	0.9	0.9	**	***	---
Sta. 51+04 R - Fifth Avenue	1.2	95.7	16.9	16.9	1.0	1.0	**	***	---
Sta. 57+13 R Sixth Avenue	1.1	91.3	16.1	16.1	1.0	1.0	**	***	---
Sta. 57+32 L - Sixth Avenue	1.4	113.7	20.0	20.0	1.2	1.2	**	***	---
Sta. 60+35 L - Seventh Avenue	1.0	79.0	13.9	13.9	0.8	0.8	**	***	---
Sta. 61+29 R - Seventh Avenue	0.9	75.9	13.4	13.4	0.8	0.8	**	***	---
Subtotals:	42.6	3,537.7	1,176.2		70.8		1.2	1.2	9.9

** The total quantity of Asphalt for Tack on this sheet (0.6 ton) in the asterisk marked locations is included in the Estimate of Quantities.

*** The total quantity of Asphalt for Flush Seal on this sheet (0.6 ton) in the double asterisk marked locations is included in the Estimate of Quantities.

TABLE OF ADDITIONAL QUANTITIES – CONTINUED

LOCATION	WATER FOR GRANULAR MATERIAL (MGal)	BASE COURSE, SALVAGED/ BASE COURSE (Ton)	CLASS E ASPHALT CONCRETE		PG 64-28 ASPHALT BINDER		ASPHALT FOR TACK	ASPHALT FOR FLUSH SEAL	SAND FOR FLUSH SEAL
			1st Lift	Top Lift	1st Lift	Top Lift	Top Lift	(Ton)	(Ton)
			(Ton)	(Ton)	(Ton)	(Ton)	(Ton)		
Driveways and Entrances									
Sta. 9+50 L	0.4	30.0	---	---	---	---	---	---	---
Sta. 20+71 L	0.2	15.0	34.0	---	2.0	---	---	***	---
Sta. 24+09 R	0.4	30.0	---	---	---	---	---	---	---
Sta. 27+19 R	0.4	30.0	---	---	---	---	---	---	---
Sta. 30+24 L	1.7	139.4	18.4	18.4	1.1	1.1	**	***	---
Sta. 32+42 R	*	3.1	---	---	---	---	---	---	---
Sta. 34+39 R	*	3.3	---	---	---	---	---	---	---
Sta. 34+40 L	0.3	22.3	---	---	---	---	---	---	---
Sta. 35+57 R	*	3.5	---	---	---	---	---	---	---
Sta. 35+93 L	0.2	13.5	---	---	---	---	---	---	---
Sta. 38+12 L	0.1	7.6	---	---	---	---	---	---	---
Sta. 44+59 R	0.1	9.0	---	---	---	---	---	---	---
Sta. 44+90 L	*	3.6	---	---	---	---	---	---	---
Sta. 45+63 L	0.1	3.8	---	---	---	---	---	---	---
Sta. 48+35 R	0.1	3.9	---	---	---	---	---	---	---
Sta. 48+44 L	*	3.3	---	---	---	---	---	---	---
Sta. 49+01 L	*	3.7	---	---	---	---	---	---	---
Sta. 49+80 R	0.1	3.9	---	---	---	---	---	---	---
Sta. 53+12 L	0.1	3.8	---	---	---	---	---	---	---
Sta. 58+07 L	*	2.0	---	---	---	---	---	---	---
Sta. 59+21 L	0.1	5.8	---	---	---	---	---	---	---
Sta. 59+21 R	*	3.3	---	---	---	---	---	---	---
Sta. 59+92 R	*	3.3	---	---	---	---	---	---	---
Sta. 61+52 L	0.1	3.8	---	---	---	---	---	---	---
Sta. 62+34 R	0.1	6.2	---	---	---	---	---	---	---
Sta. 62+74 L	0.1	4.6	---	---	---	---	---	---	---
Sta. 63+84 R	0.1	4.6	---	---	---	---	---	---	---
Sta. 65+47 L	0.2	20.0	36.6	---	2.2	---	---	***	---
Sta. 65+85 R	0.2	20.0	20.8	---	1.3	---	---	***	---
Sta. 71+50 R	0.2	14.5	33.1	---	2.0	---	---	***	---
Pipe Replacement @ XR30-Sta. 40+45	20.8	1,731.2	47.8	---	2.9	---	---	---	---
Maintain Local Traffic	7.6	630.0	---	---	---	---	---	---	---
Cold Mill Area - Intersection of SD Hwy 20/47 and 148 th Street	---	---	---	92.0	---	5.5	0.2	0.2	4.4
Subtotals:	34.0	2,782.0	301.1		18.1		0.3	0.4	4.4
Grand Totals:	76.6	6,319.7	1,477.3		88.9		1.5	1.6	14.3

* The total quantity of Water for Granular Material on this sheet (0.3 ton) in the asterisk marked locations is included in the Estimate of Quantities.

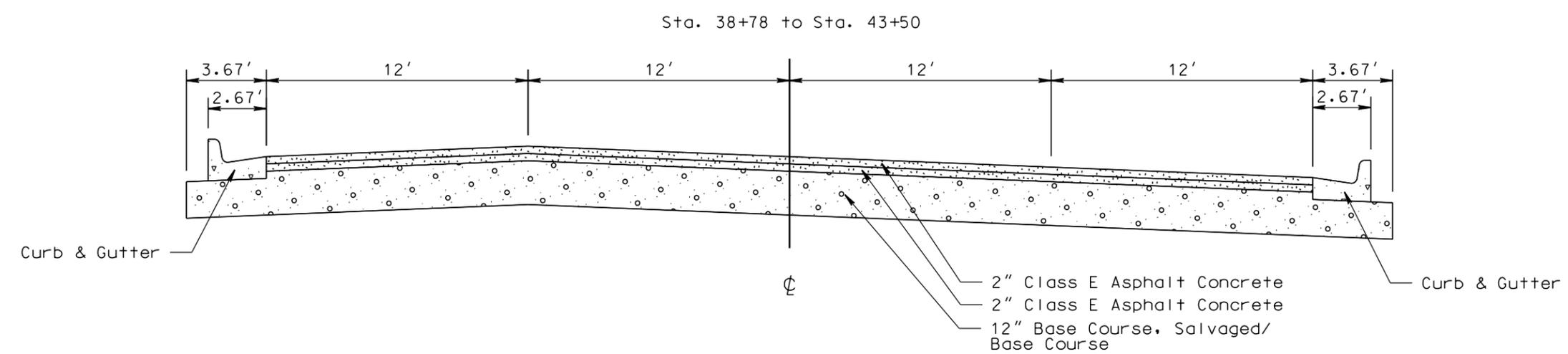
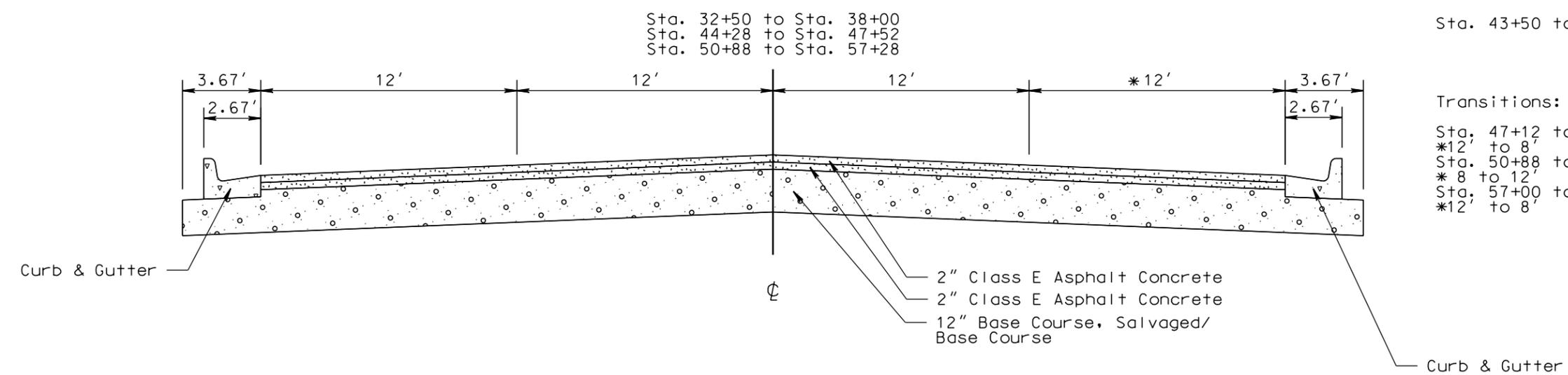
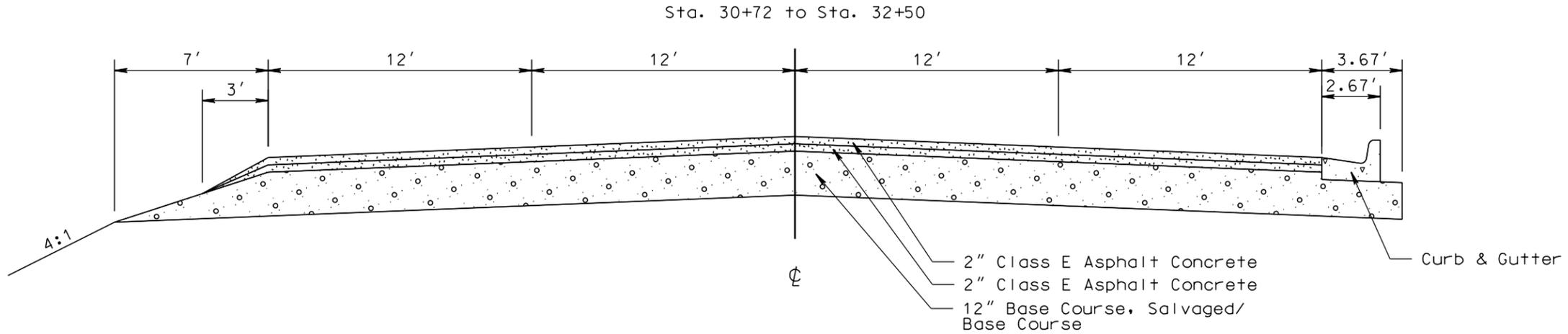
** The total quantity of Asphalt for Tack on this sheet (0.1 ton) in the asterisk marked locations is included in the Estimate of Quantities.

*** The total quantity of Asphalt for Flush Seal on this sheet (0.2 ton) in the double asterisk marked locations is included in the Estimate of Quantities.

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0020(117)254	F6	F20

Plotting Date: 07/06/2015



Crown Transitions:
Sta. 38+00 to Sta. 38+78
Sta. 43+50 to Sta. 44+28

Transitions:
Sta. 47+12 to Sta. 47+52
*12' to 8'
Sta. 50+88 to Sta. 51+21
*8 to 12'
Sta. 57+00 to Sta. 57+28
*12' to 8'

PLOT SCALE - 1+6.00001

PLOTTED FROM - TRPR18387

PLOT NAME - 6

FILE - ... \P01102R9\TYPICAL SECTIONS.DGN

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0020(117)254	F7	F20

Plotting Date: 07/06/2015

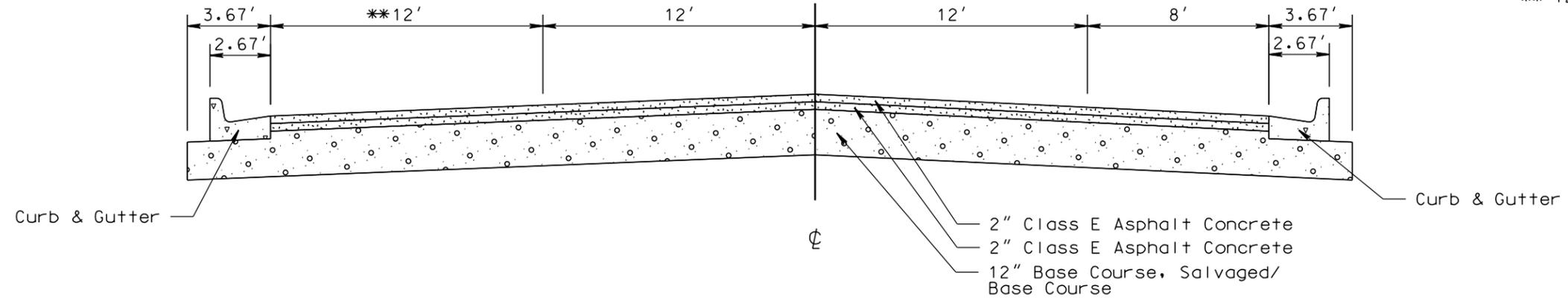
PLOT SCALE - 1+6.00001

PLOT NAME - 7

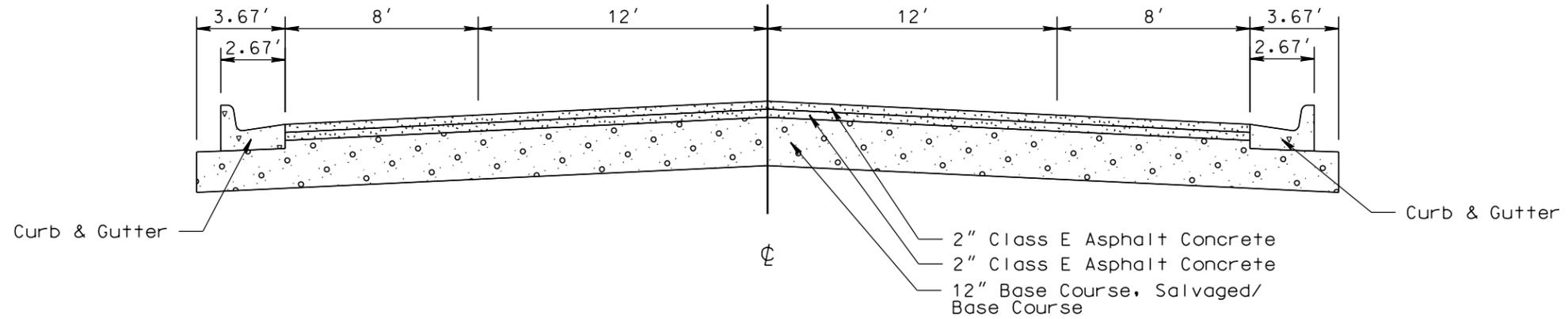
Sta. 47+52 to Sta. 50+88
Sta. 57+28 to Sta. 60+50

Transitions:

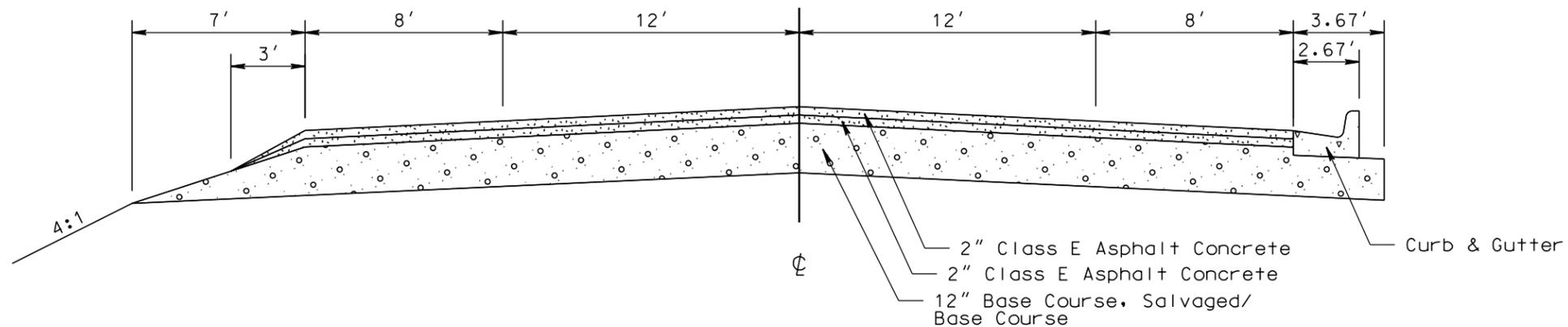
Sta. 60+20 to Sta. 60+50
** 12' to 8'



Sta. 60+50 to Sta. 64+07



Sta. 64+07 to Sta. 66+00



PLOTTED FROM - TRPR18387

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AC PAVEMENT LAYOUT

Scale 1 Inch = 40 Feet
 Sheet 4 of 11 Sheets

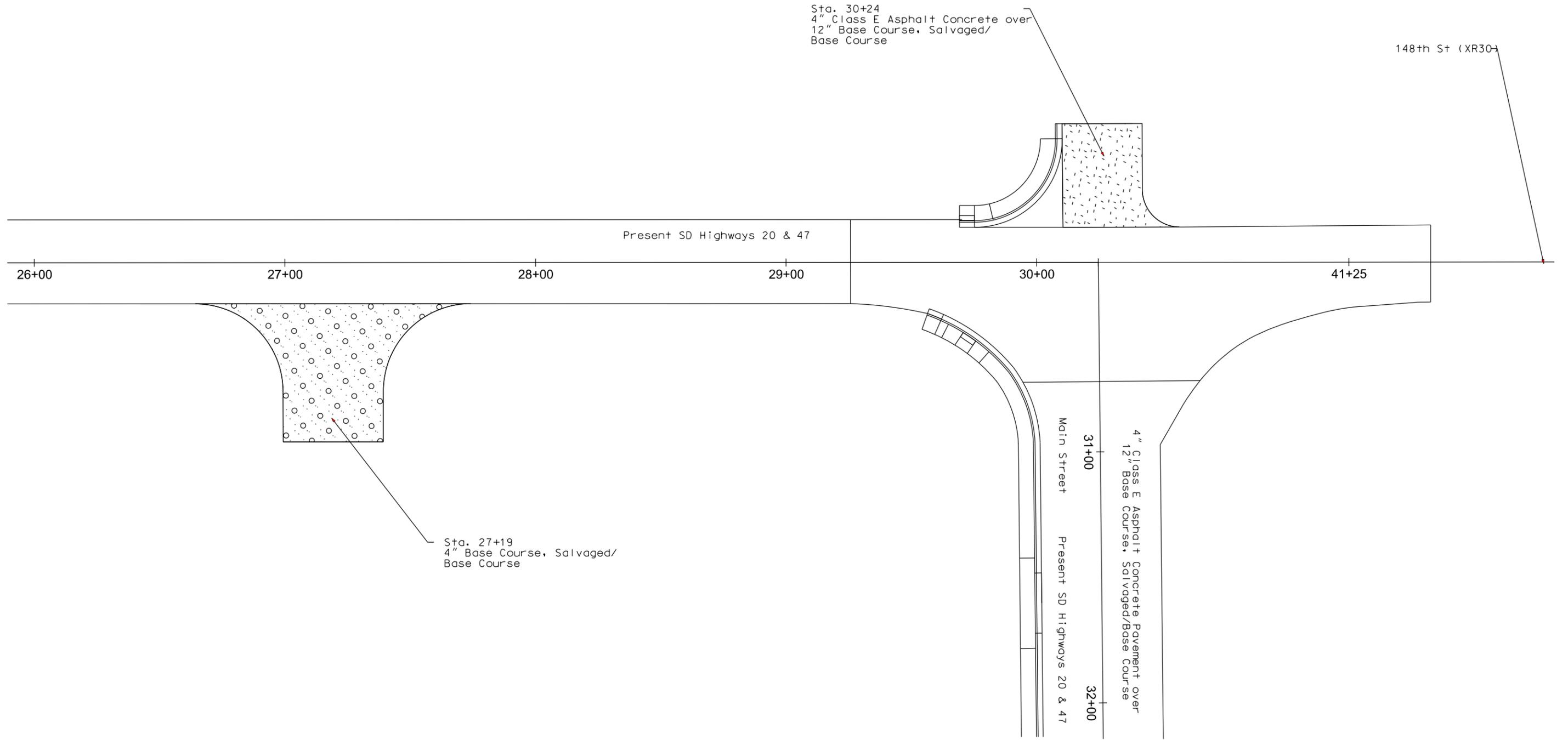
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0020(117)254	F12	F20

Plotting Date: 07/06/2015



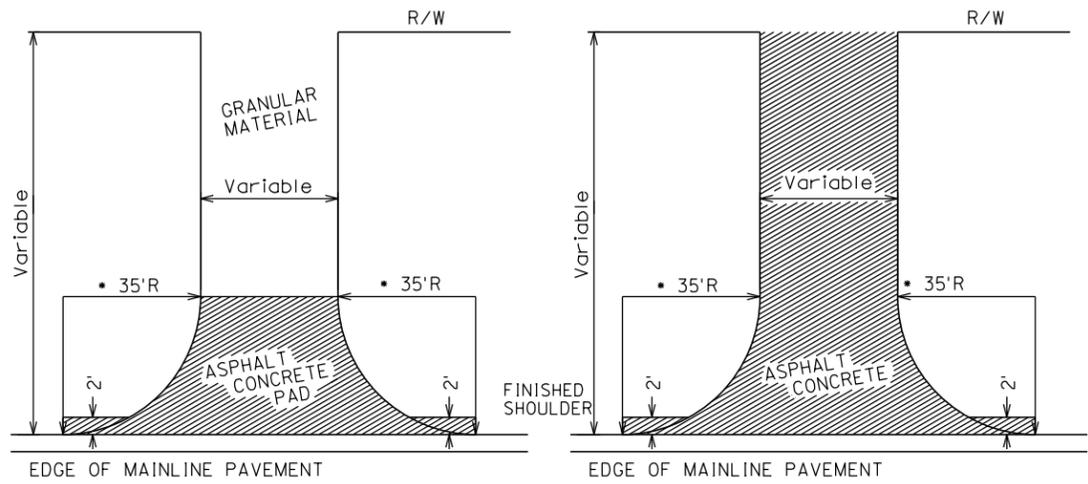
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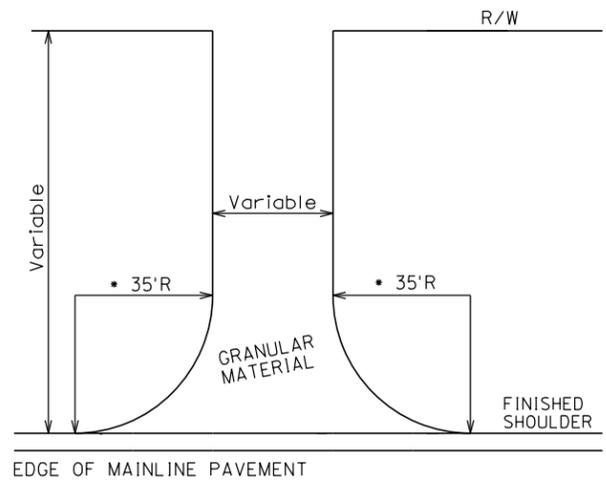
SPECIAL DETAILS

SURFACING OF INTERSECTING ROADS AND ENTRANCES WITH PCCP OR AC PAVED SHOULDERS



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.
 • 35' radius except as noted elsewhere in plans.

ROADWAY WITH SHOULDER

Plot Scale - 1:212.561

Plotted From - tpr18387

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