

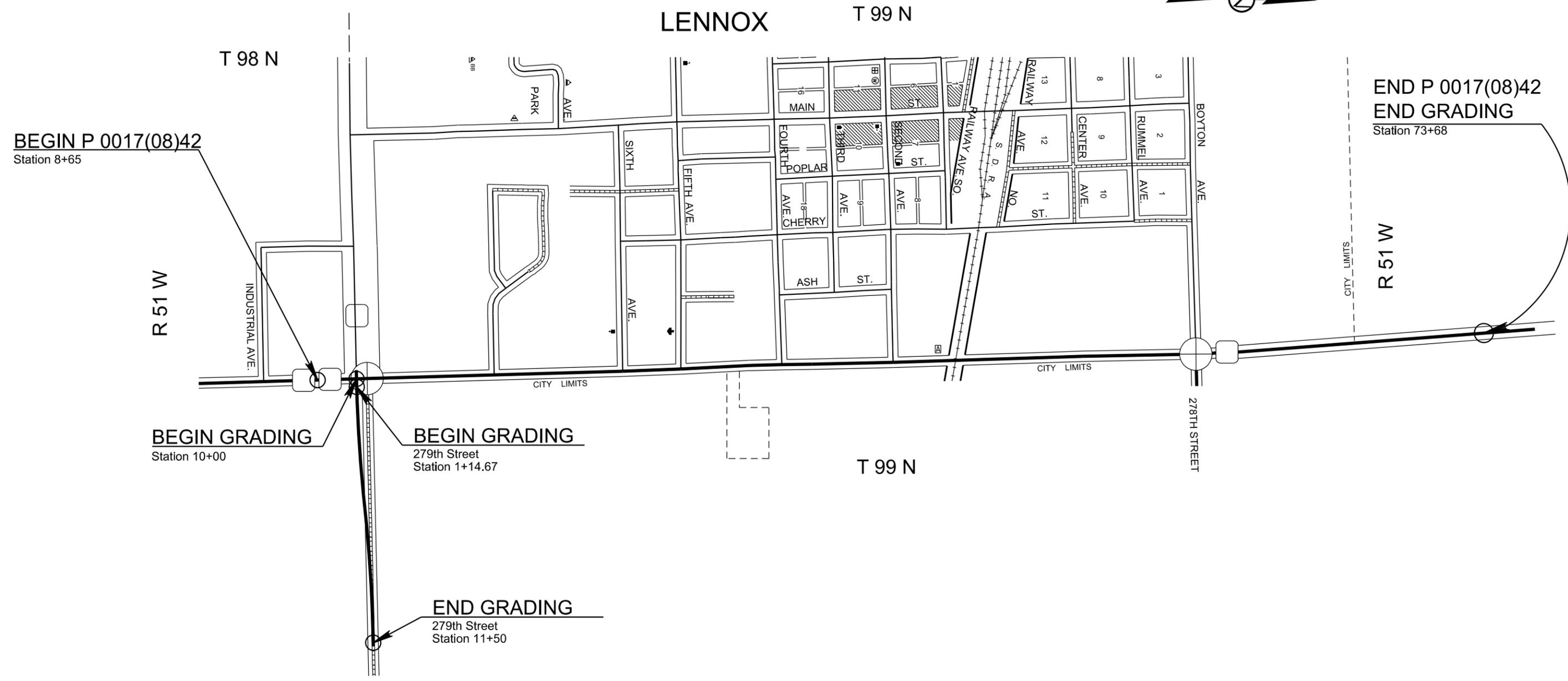
STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F1	TOTAL SHEETS F20
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Plotting Date: 10/27/2015

Section F: Surfacing Plans

INDEX OF SHEETS

- F1 General Layout W/Index
- F2-F5 Estimate With General Notes & Tables
- F6-F9 Typical Surfacing Sections
- F10-F19 Lane and Crown Point Layouts
- F20 Details for Surfacing of Intersecting Roads and Entrances (PCCP or AC Paved Shoulders)



PLOT SCALE - 1:200

PLOTTED FROM - TRPR18388

PLOT NAME - 1
FILE - ... \PRJ\INC028V\028V TITLE.F.DWG

Revised 11-25-2015 LLH

SECTION F ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
120E6200	Water for Granular Material	330.3	MGal
260E1010	Base Course	9,957.8	Ton
260E1030	Base Course, Salvaged	16,852.0	Ton
260E3010	Gravel Surfacing	647.9	Ton
* 270E0210	Haul and Stockpile Granular Material	109.8	Ton
320E0005	PG 58-34 Asphalt Binder	447.7	Ton
320E1070	Class HR Asphalt Concrete	9,518.5	Ton
330E0010	MC-70 Asphalt for Prime	0.4	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	9.1	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	7.4	Ton
330E2000	Sand for Flush Seal	134.6	Ton
332E0010	Cold Milling Asphalt Concrete	18,326	SqYd
380E3020	6" PCC Driveway Pavement	140.1	SqYd

* - Denotes Non-Participating

SURFACING THICKNESS DIMENSIONS

Plans quantity 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 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.

COLD MILLING ASPHALT CONCRETE

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

Cold Milling Asphalt Concrete is estimated to produce 1,924 tons of salvaged asphalt concrete material (RAP). An estimated 1,814.2 tons of salvaged asphalt concrete (RAP) will be used on this project in the Class HR Asphalt Concrete mixture. The Contractor is responsible to assure enough RAP is available for the Class HR. The remainder of the RAP material, estimated at 109.8 tons, shall be stockpiled at the Lennox DOT Shop located in the NW quadrant of Exit 62 as directed in the Haul and Stockpile Granular Material note.

TABLE OF COLD MILLING ASPHALT CONCRETE

Location	Cold Milling Asphalt Concrete SqYd	Width of Cold Milling Asphalt Concrete Feet	Depth of Cold Milling Asphalt Concrete Inches
Mainline			
Sta. 10+00 to Sta. 73+68	18,326	25.9	2

HAUL AND STOCKPILE GRANULAR MATERIAL

Excess asphalt mix material estimated at 109.8 tons (for information purposes only) shall be hauled and stockpiled at the Lennox DOT Shop located in the NW quadrant of Exit 62.

The Contractor shall use a portable platform scale, stationary commercial plant, portable plant scale, or a belt scale to control the weighing of the salvage material.

The RAP shall be crushed to meet the requirements of Section 884.C.1 prior to incorporation into the stockpile.

All other costs for hauling and stockpiling the asphalt mix material shall be incidental to the contract unit price per ton for "Haul and Stockpile Granular Material."

BASE COURSE, SALVAGED

The Base Course, Salvaged shall be obtained from the stockpile site(s) provided by the Contractor and may be used without further testing.

All other requirements of the Specifications for Base Course, Salvaged shall apply.

SALVAGED MATERIAL

The quantity of salvaged asphalt mix and granular base material may vary from the plans. The Contractor will be required to use all of the salvaged material on this project, by decreasing for increasing the quantity of Base Course as necessary, or as directed by the Engineer.

No adjustment in the contract unit prices will be allowed as a result of a variation in quantities of Base Course, Salvaged or Base Course.

CLASS HR ASPHALT CONCRETE

RAP for Class HR Asphalt Concrete shall be obtained from the material produced on this project.

An estimated 1,814.2 tons of RAP is needed for the Class HR mixture.

The Class HR Asphalt Concrete shall include 20 percent RAP in the mixture.

The RAP shall be crushed so the maximum particle size in the cold feed will meet the requirements specified in Section 884.2.C.1.

Screening or scalping of the RAP stockpile(s) will not be allowed.

All other requirements for Class HR shall apply.

SUMMARY OF ASPHALT CONCRETE COMPACTION

Location	Class HR Asphalt Concrete With Specified Density Ton	Class HR Asphalt Concrete Without Specified Density Ton
Mainline		
Sta. 8+60 to Sta. 9+15	62.6	---
Shoulders	---	6.7
Sta. 10+00 to Sta. 11+13.06	118.5	---
Shoulders	---	60.9
Sta. 11+13.06 to Sta. 33+86.66 Sta. 38+74.61 to Sta. 47+34.26 Sta. 48+85.32 to Sta. 64+11.80 Sta. 69+62.73 to Sta. 70+66.72	5,433.5	---
Shoulder	---	1,321.6
Sta. 33+86.66 to Sta. 38+74.61 Sta. 64+11.80 to Sta. 69+62.73	1,467.6	---
Sta. 47+34.26 to Sta. 48+04.78 Sta. 48+14.85 to Sta. 48+85.32	121.7	---
Shoulder	---	4.8
Sta. 70+66.72 to Sta. 73+68	265.4	---
Shoulders	---	141.9
7 Intersecting Streets	---	435.5
Intersecting Road – XR10 ML Sta. 10+00 R.	---	25.3
Intersecting Road – ML Sta. 63+63 R.	---	25.8
Areas Beyond Drives	---	26.7
Totals:	7,469.3	2,049.2

See Typical Surfacing Sections and Lane and Crown Point Layouts for additional details showing limits of work and depths of surfacing

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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6" PCC DRIVEWAY PAVEMENT

The concrete for the 6" PCC driveway pavement shall comply with the requirements of the specifications for Class M6 concrete unless otherwise stated in the plans.

Contraction joints in the 6" PCC driveway pavement shall be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint shall be at least ¼ the thickness of the approach pavement.

All costs for furnishing and placing the 6" PCC driveway pavement and constructing the expansion and contraction joints including labor, equipment and materials including the earthen backfill shall be incidental to the contract unit price per square yard for "6" PCC Driveway Pavement" accordingly.

All costs for excavation required for placing the 6" PCC driveway pavement and granular material shall be incidental to the contract unit price per cubic yard for "Unclassified Excavation".

All costs for furnishing and placing the granular material shall be incidental to the contract unit price per ton for "Base Course".

TABLE OF PCC DRIVEWAY PAVEMENT

Location	6" PCC Driveway Pavement	
	L or R	SqYd
Sta. 34+57 to Sta. 35+00	L	84.8
Sta. 61+09.2 to Sta. 61+48.6	L	55.3
Total:		140.1

See Lane and Crown Point Layouts for additional details showing limits of work.

RATES OF MATERIALS

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

MAINLINE

Sta. 11+13.06 to Sta. 33+86.66
Sta. 38+74.61 to Sta. 47+34.26
Sta. 48+85.32 to Sta. 64+11.80
Sta. 69+62.73 to Sta. 70+66.72

BASE COURSE, SALVAGED AND BASE COURSE

Salvaged Material or Crushed Material 386.19 tons

Water for Granular Material at the rate of 4.63 M Gallons

MAINLINE

Sta. 33+86.66 to Sta. 38+74.61
Sta. 64+11.80 to Sta. 69+62.73

BASE COURSE, SALVAGED AND BASE COURSE

Salvaged Material or Crushed Material 359.38 tons

Water for Granular Material at the rate of 4.31 M Gallons

INTERSECTING ROAD – XR10

Sta. 1+21.64 to Sta. 11+50

GRAVEL SURFACING

Crushed Material 63.00 tons

Water for Granular Material at the rate of 0.76 M Gallons

MAINLINE

Sta. 11+13.06 to Sta. 33+86.66
Sta. 38+74.61 to Sta. 47+34.26
Sta. 48+85.32 to Sta. 64+11.80
Sta. 69+62.73 to Sta. 70+66.72

CLASS HR ASPHALT CONCRETE – 1ST LIFT

Crushed Aggregate	64.89 tons
Salvaged Asphalt Concrete	16.22 tons
PG 58-34 Asphalt Binder	<u>4.00 tons</u>
Total	85.11 tons

The exact proportions of these materials will be determined on construction

CLASS HR ASPHALT CONCRETE – 2ND LIFT

Crushed Aggregate	43.26 tons
Salvaged Asphalt Concrete	10.82 tons
PG 58-34 Asphalt Binder	<u>2.67 tons</u>
Total	56.75 tons

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

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.14 ton applied 48 feet wide (Rate = 0.06 gallon per square yard).

FLUSH SEAL

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.11 ton applied 47 feet wide (Rate = 0.05 gallon per square yard)

Sand for Flush Seal at the rate of 2.00 ton applied 45 feet wide (Rate = 8 lbs. per square yard).

MAINLINE

Sta. 33+86.66 to Sta. 38+74.61
Sta. 64+11.80 to Sta. 69+62.73

CLASS HR ASPHALT CONCRETE – 1ST LIFT

Crushed Aggregate	56.43 tons
Salvaged Asphalt Concrete	14.11 tons
PG 58-34 Asphalt Binder	<u>3.48 tons</u>
Total	74.02 tons

The exact proportions of these materials will be determined on construction

CLASS HR ASPHALT CONCRETE – 2ND LIFT

Crushed Aggregate	37.62 tons
Salvaged Asphalt Concrete	9.40 tons
PG 58-34 Asphalt Binder	<u>2.32 tons</u>
Total	49.34 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 feet wide (Rate = 0.06 gallon per square yard).

FLUSH SEAL

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

Sand for Flush Seal at the rate of 1.78 ton applied 40 feet wide (Rate = 8 lbs. per square yard).

TABLE OF ADDITIONAL QUANTITIES

Location	Water for Granular Material MGal	Base Course Ton	Base Course, Salvaged and Base Course Ton	PG 58-34 Asphalt Binder 1 st Lift/2 nd Lift Ton	Class HR Asphalt Concrete 1 st Lift/2 nd Lift Ton	MC-70 Asphalt for Prime Ton	SS-1h or CSS-1h Asphalt for Tack Ton	SS-1h or CSS-1h Asphalt for Flush Seal Ton	Sand for Flush Seal Ton	Depth of Granular Material Inches	Depth of Asphalt Material Inches
Mainline											
Sta. 8+60 to Sta. 9+15 – Pipe Replacement Area	2.2	---	184.4	2.0 / 1.3	41.6 / 27.7	---	0.1	0.1	1.0	#	#
Sta. 10+00 to Sta. 11+13.06	5.4	---	447.9	5.1 / 3.4	107.6 / 71.8	---	0.2	0.1	2.4	#	#
Sta. 47+34.26 to Sta. 48+04.78	6.1	---	505.6	3.6 / 2.4	75.9 / 50.6	---	0.1	0.1	1.8	#	#
Sta. 48+14.85 to Sta. 48+85.32											
Below Concrete Median Pavement	0.5	---	37.6	---	---	---	---	---	---	#	#
Sta. 70+66.72 to Sta. 73+68	12.9	---	1,072.4	11.5 / 7.7	244.4 / 162.9	---	0.4	0.3	5.4	#	#
Intersecting Road – XR10 (ML Sta. 10+00 R.)											
Asphalt Concrete Pad	---	---	---	1.2	25.3	0.2	0.05	0.05	0.6		##
7 Intersecting Streets	13.1	1,089	---	12.3 / 8.2	261.3 / 174.2	---	0.4	0.3	6.3	##	##
Intersecting Road – ML Sta. 63+63 R.	0.8	65.2	---	---	---	---	---	---	---	##	
Asphalt Concrete Pad	---	---	---	1.2	25.8	0.2	0.05	0.05	0.6		##
9 Entrances	5.2	434.3	---	---	---	---	---	---	---	##	
12 Drives	1.7	142.8	---	---	---	---	---	---	---	##	
Areas Beyond Drives	2.6	211.7	---	1.3	26.7	---	---	---	---	##	##
Totals:	50.5	1,943.0	2,247.9	61.2	1,295.8	0.4	1.3	1.0	18.1		

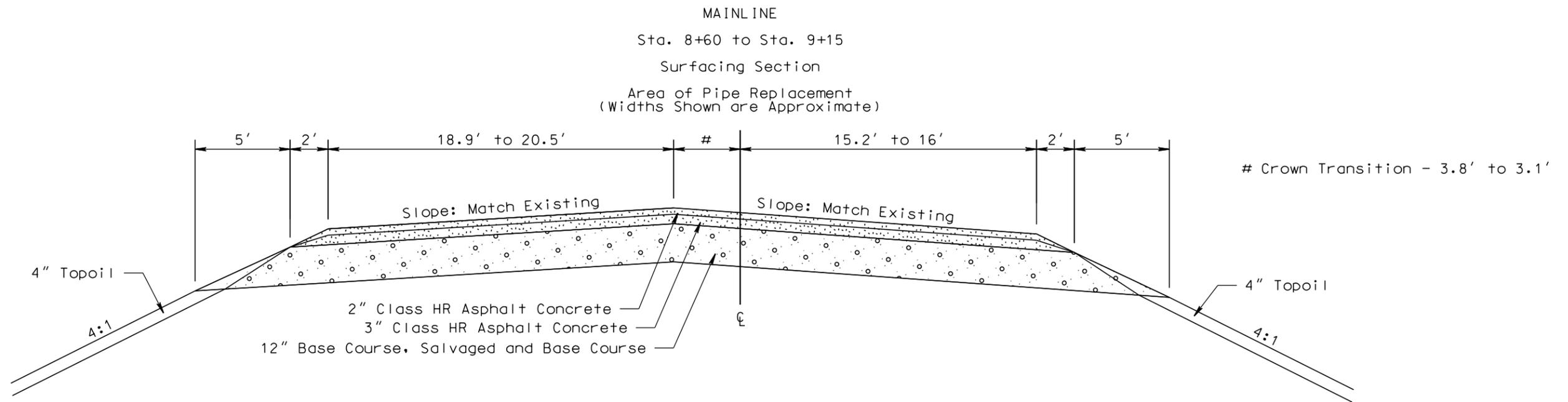
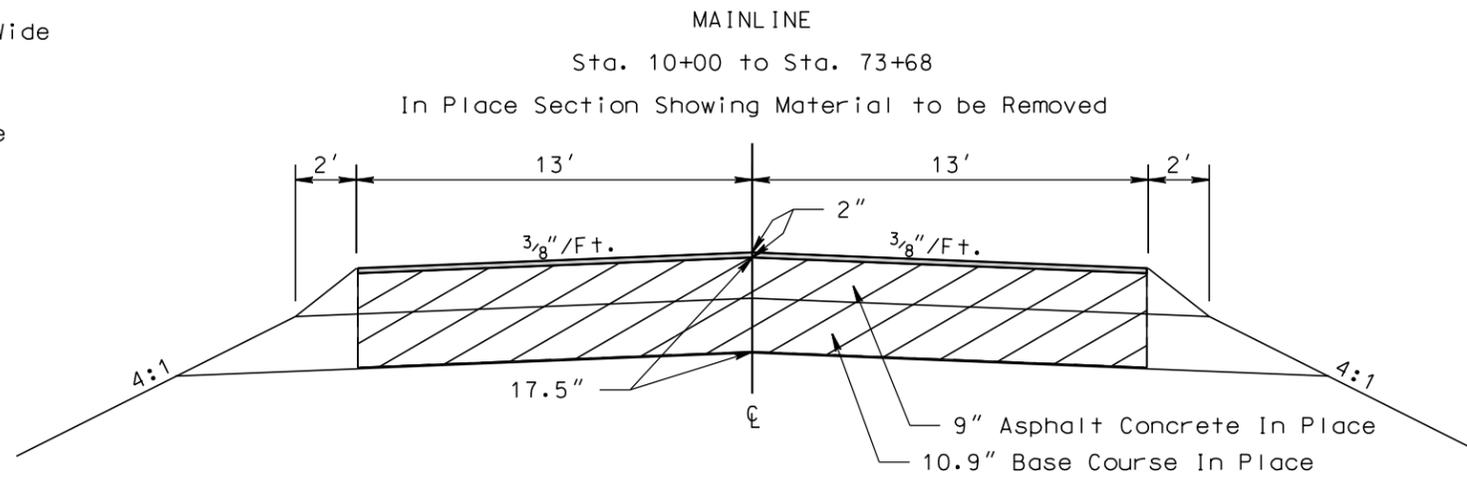
See Typical Surfacing Sections
See Lane and Crown Point Layouts

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F6	TOTAL SHEETS F20
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Plotting Date: 10/27/2015

-  Limits of Salvage and Stockpile
Asphalt Mix & Granular Base
Material - 17.5" Depth x 25.9' Wide
(See Section B - Grading)
-  Limits of Cold Milling Asphalt
Concrete - 2" Depth x 25.9' Wide



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PLOTTED FROM - TRPR18388

PLOT NAME - 2

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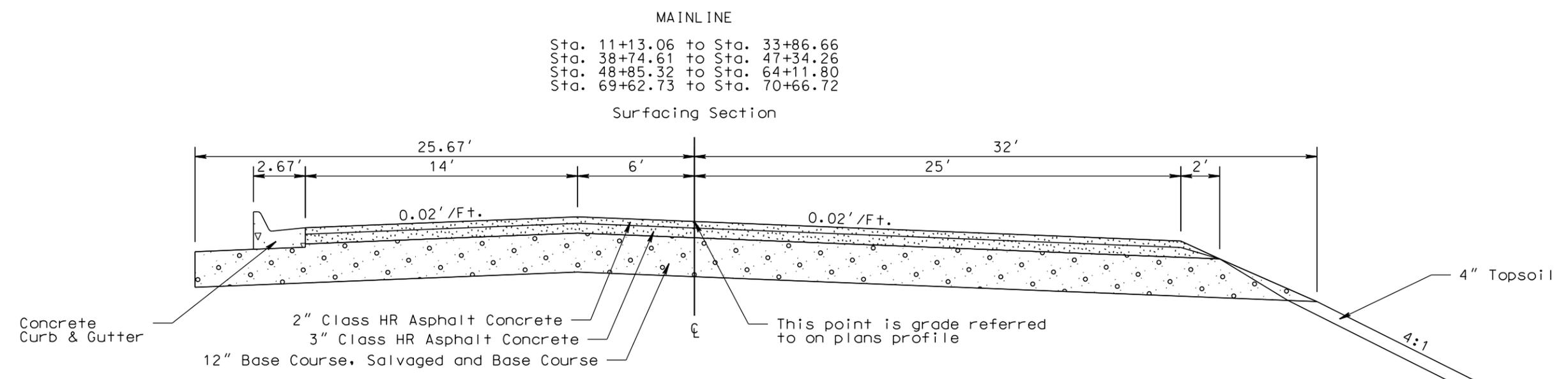
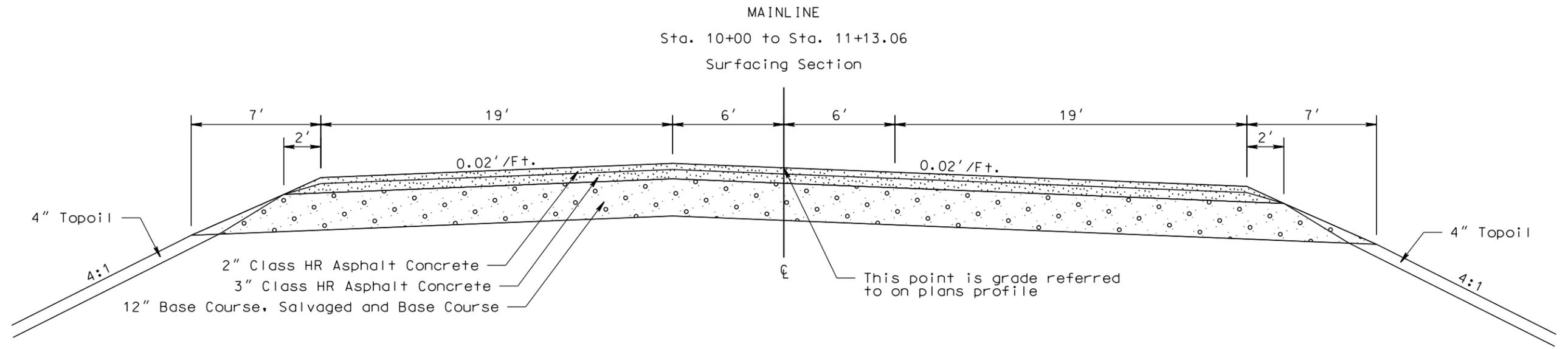
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0017(08)42	F7	F20

Plotting Date: 10/27/2015

PLOT SCALE - 1+6.00001

PLOT NAME - 3



PLOTTED FROM - TRP18388

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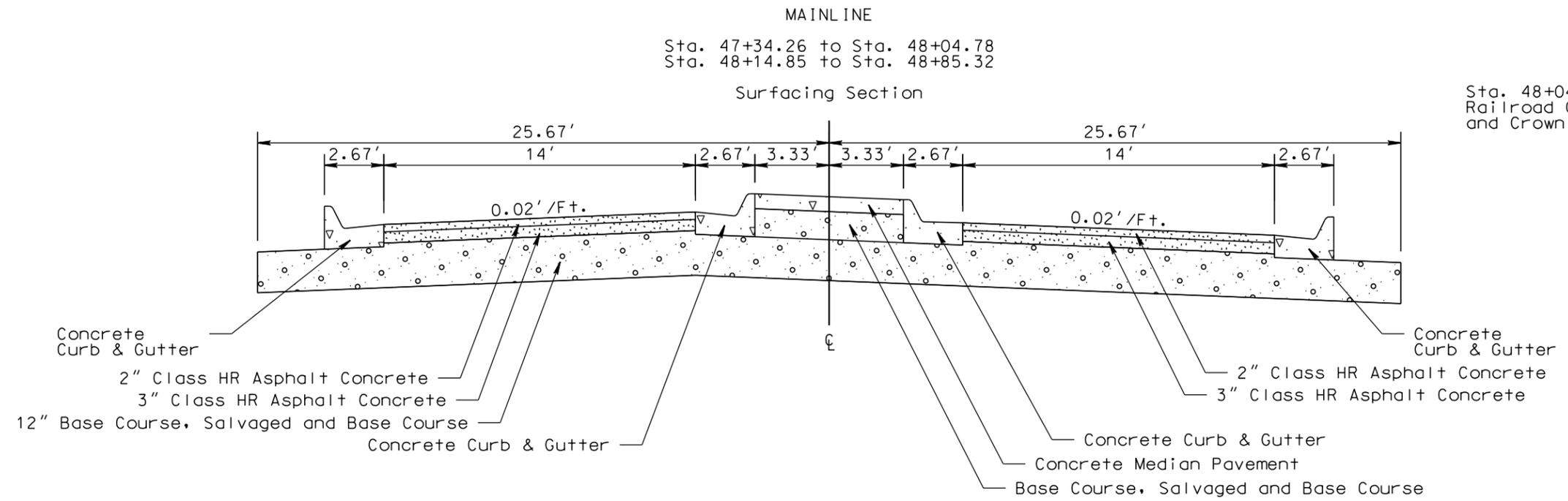
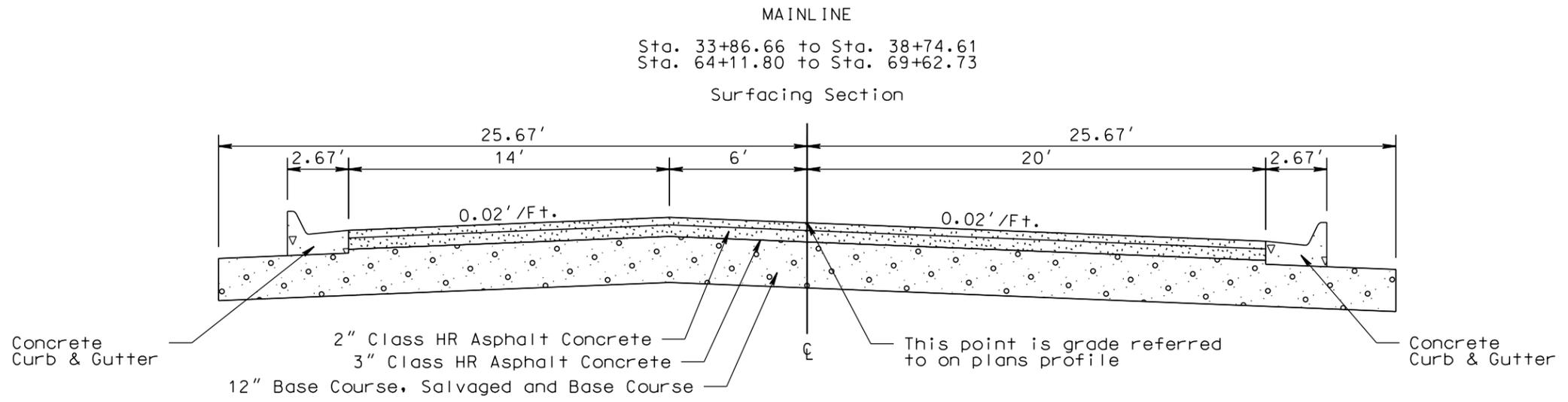
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STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F8	TOTAL SHEETS F20
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Plotting Date: 10/27/2015

PLOT SCALE - 1+6.00001

PLOT NAME - 4



Sta. 48+04.78 to Sta. 48+14.85
Railroad Crossing - See Lane
and Crown Point Layouts

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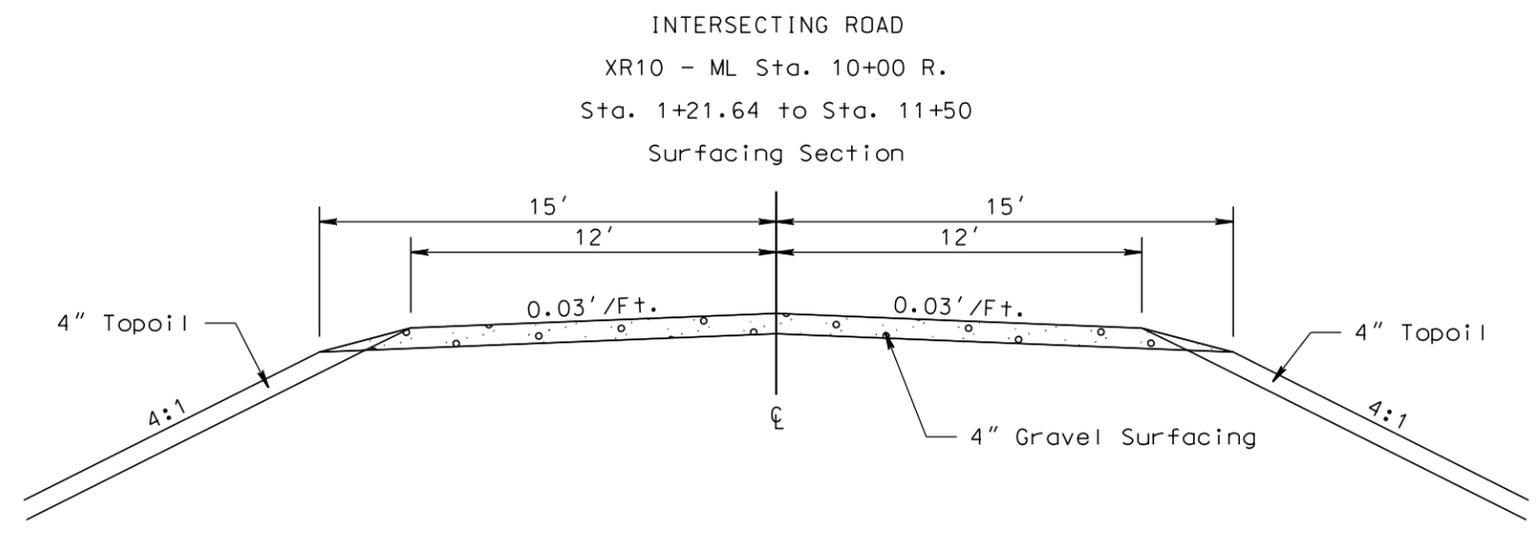
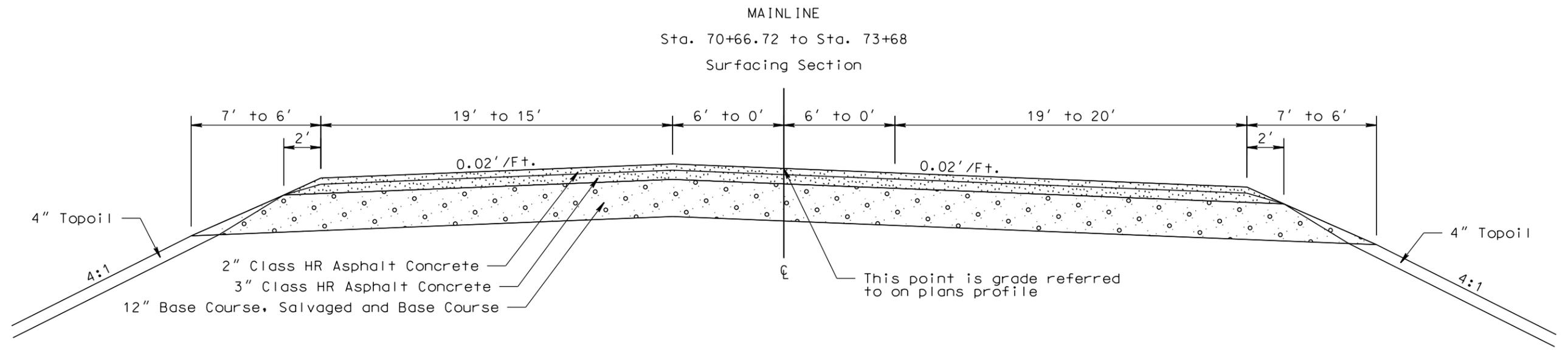
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STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F9	TOTAL SHEETS F20
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Plotting Date: 10/27/2015

PLOT SCALE - 1+6.00001

PLOT NAME - 5



PLOTTED FROM - TRPR18388

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LANE AND CROWN POINT LAYOUT

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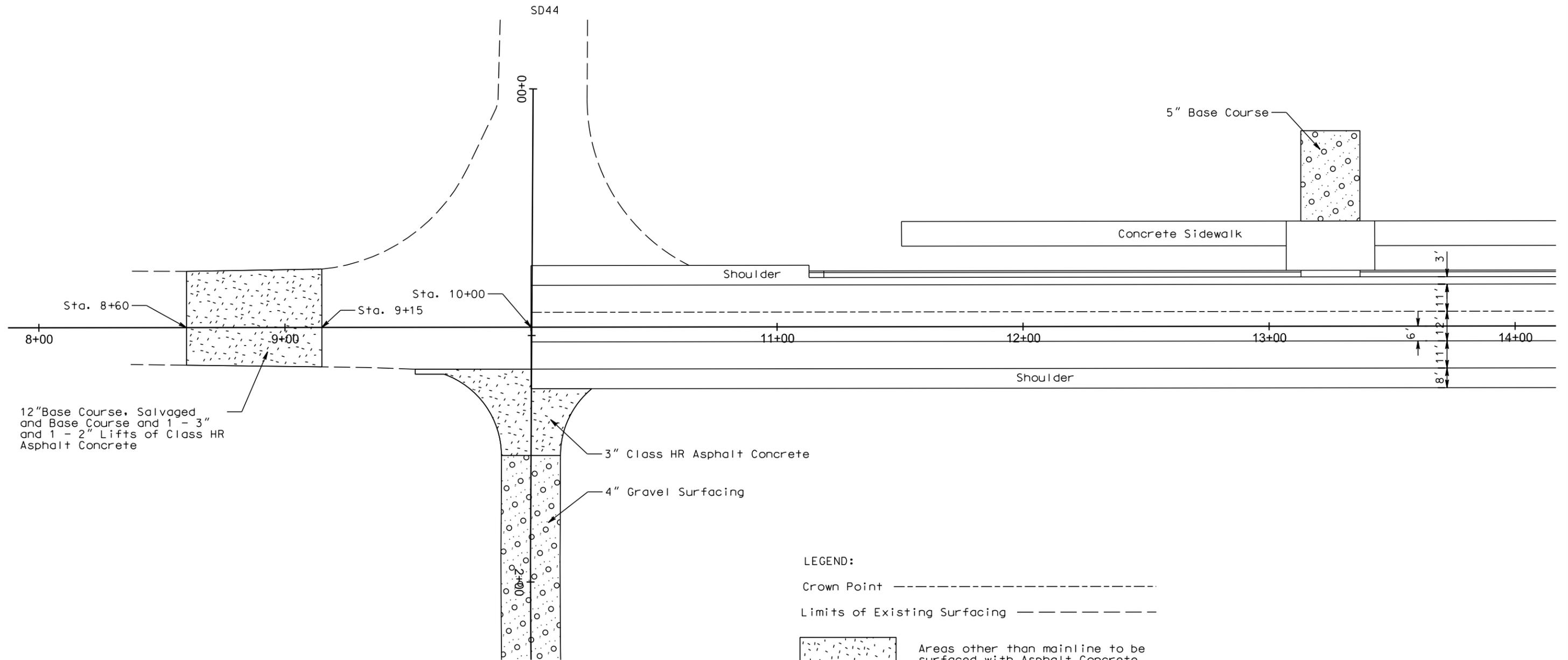
Plotting Date: 10/27/2015

Scale 1 Inch = 40 Feet
Sheet 1 of 11 Sheets



PLOT SCALE - 1:40

PLOT NAME - 6



12" Base Course, Salvaged and Base Course and 1 - 3" and 1 - 2" Lifts of Class HR Asphalt Concrete

3" Class HR Asphalt Concrete

4" Gravel Surfacing

5" Base Course

Concrete Sidewalk

Shoulder

Shoulder

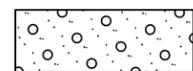
Intersecting Road
(XR10 - 279th Street)

LEGEND:

Crown Point —————

Limits of Existing Surfacing - - - - -

 Areas other than mainline to be surfaced with Asphalt Concrete

 Areas other than mainline to be surfaced with Base Course or Gravel Surfacing

 Areas to be surfaced with PCC Driveway Pavement

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FILE - ... \LINC028\PAVEMENT LAYOUTS.DGN

LANE AND CROWN POINT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F11	TOTAL SHEETS F20
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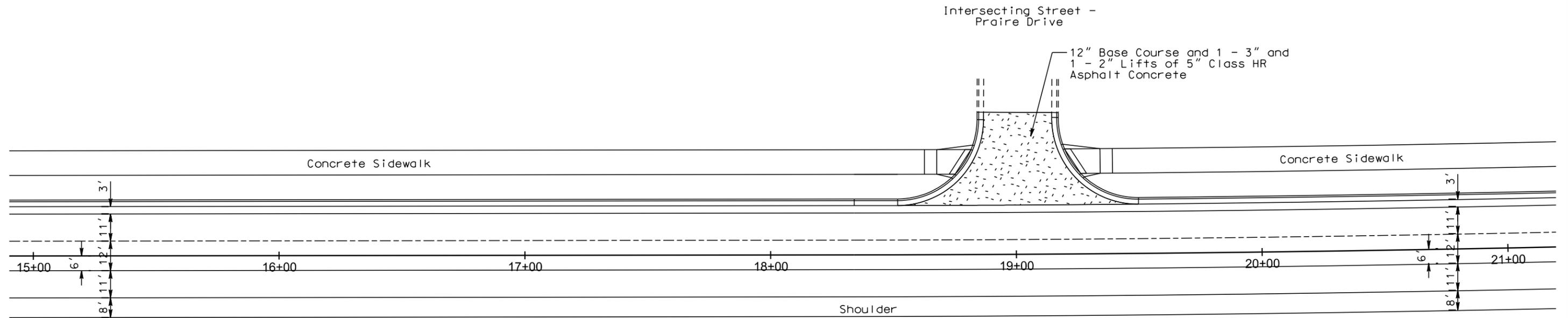
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Sheet 2 of 11 Sheets



PLOT SCALE - 1:40

PLOT NAME - 7



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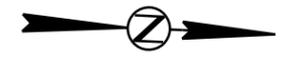
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LANE AND CROWN POINT LAYOUT

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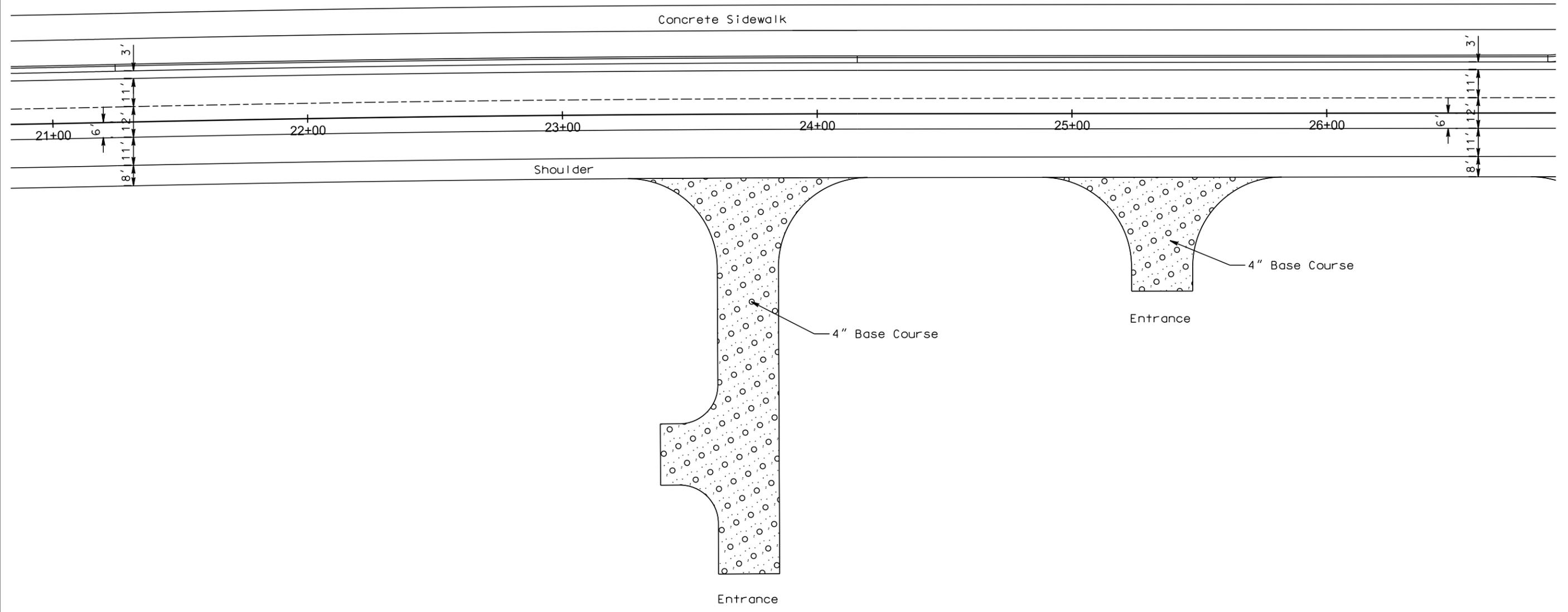
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Sheet 3 of 11 Sheets



PLOT SCALE - 1:40

PLOT NAME - 8



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LANE AND CROWN POINT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F13	TOTAL SHEETS F20
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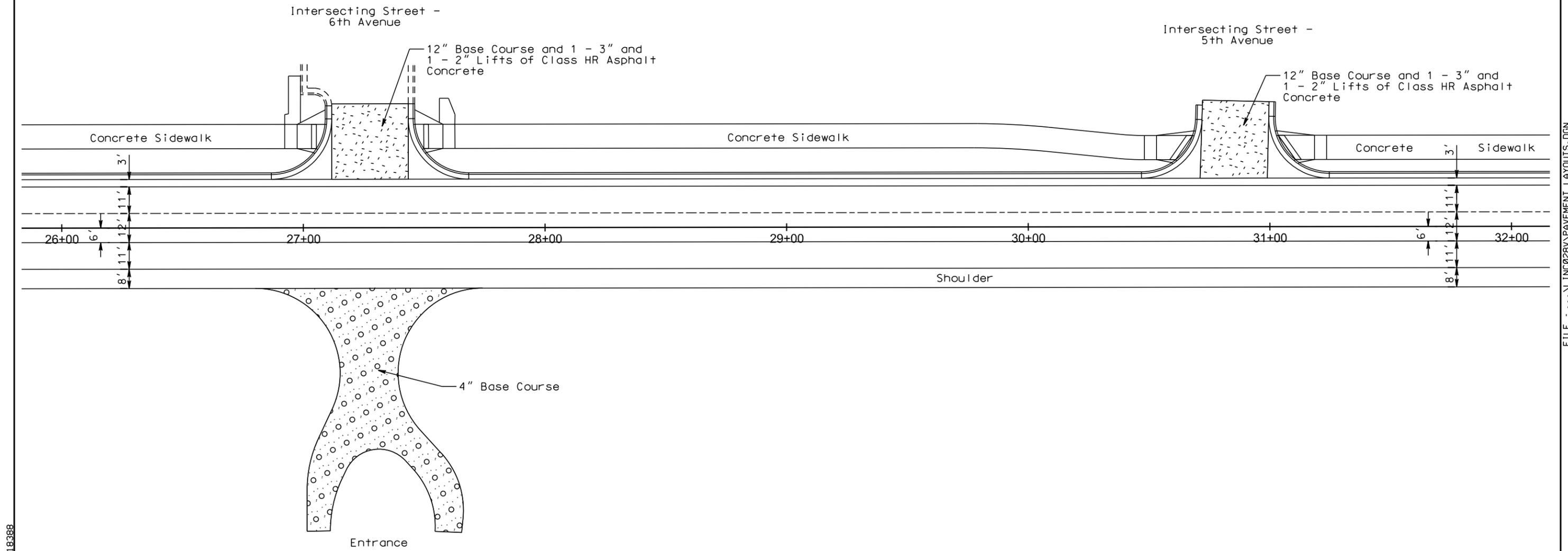
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PLOT SCALE - 1:40

PLOT NAME - 9



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LANE AND CROWN POINT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F14	TOTAL SHEETS F20
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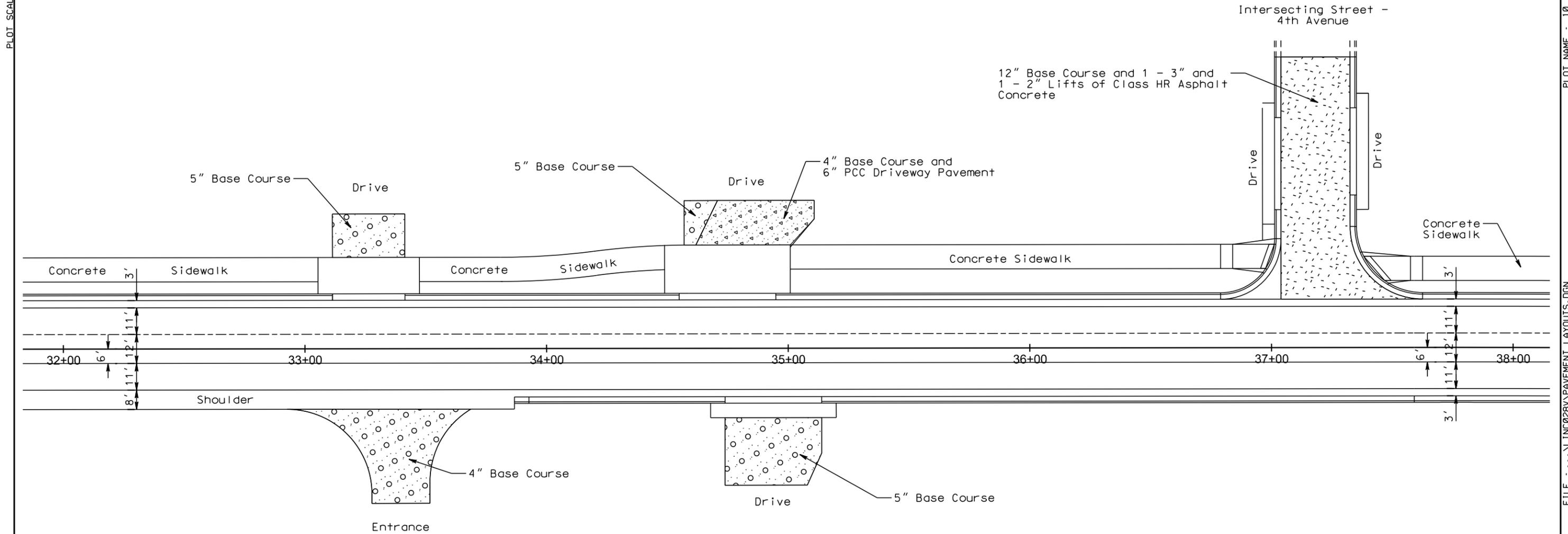
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PLOT SCALE - 1:40

PLOT NAME - 10



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LANE AND CROWN POINT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F15	TOTAL SHEETS F20
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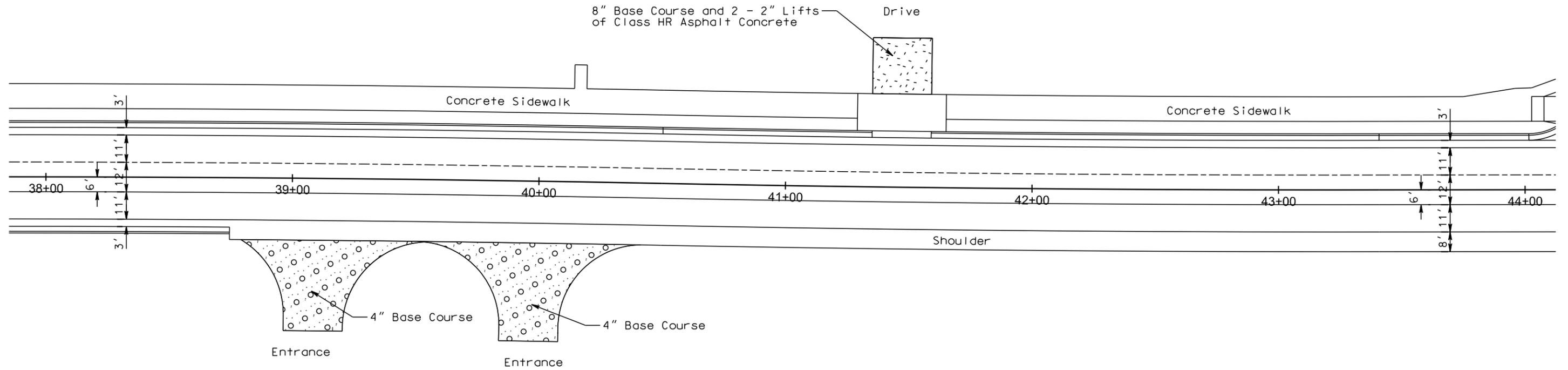
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Sheet 6 of 11 Sheets



PLOT SCALE - 1:40

PLOT NAME - 11



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LANE AND CROWN POINT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F16	TOTAL SHEETS F20
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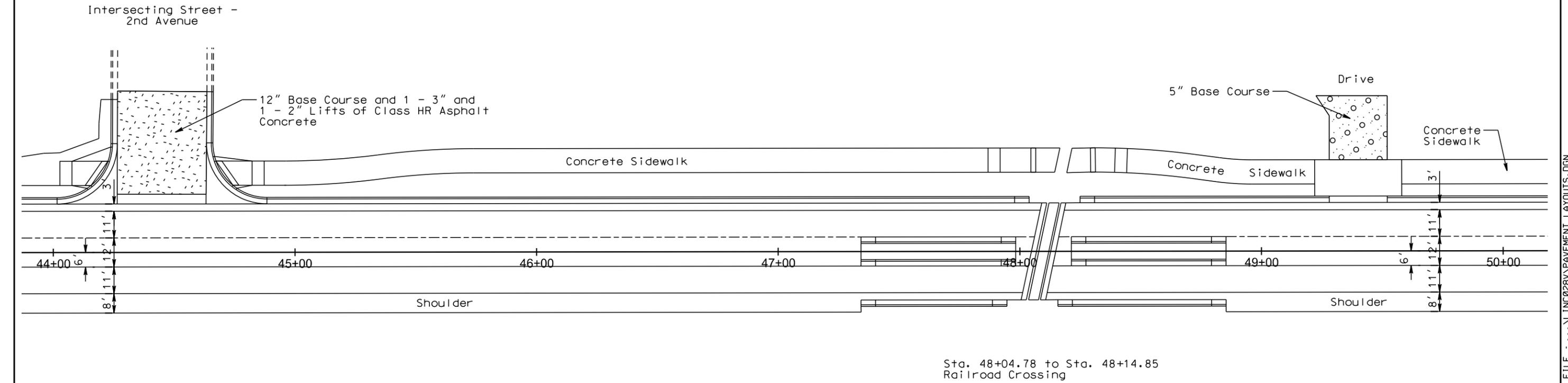
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Scale 1 Inch = 40 Feet
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PLOT SCALE - 1:40

PLOT NAME - 12



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FILE - ... \LINC028\PAVEMENT LAYOUTS.DGN

LANE AND CROWN POINT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F17	TOTAL SHEETS F20
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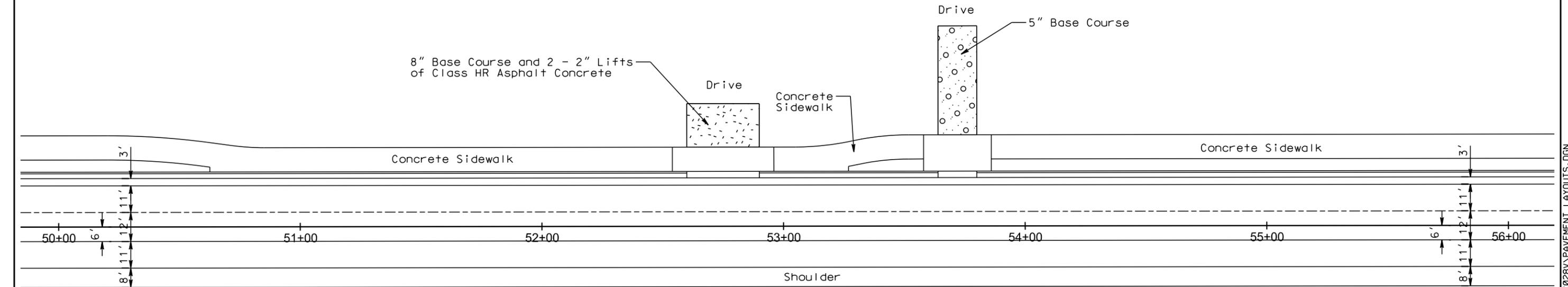
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PLOT SCALE - 1:40

PLOT NAME - 13



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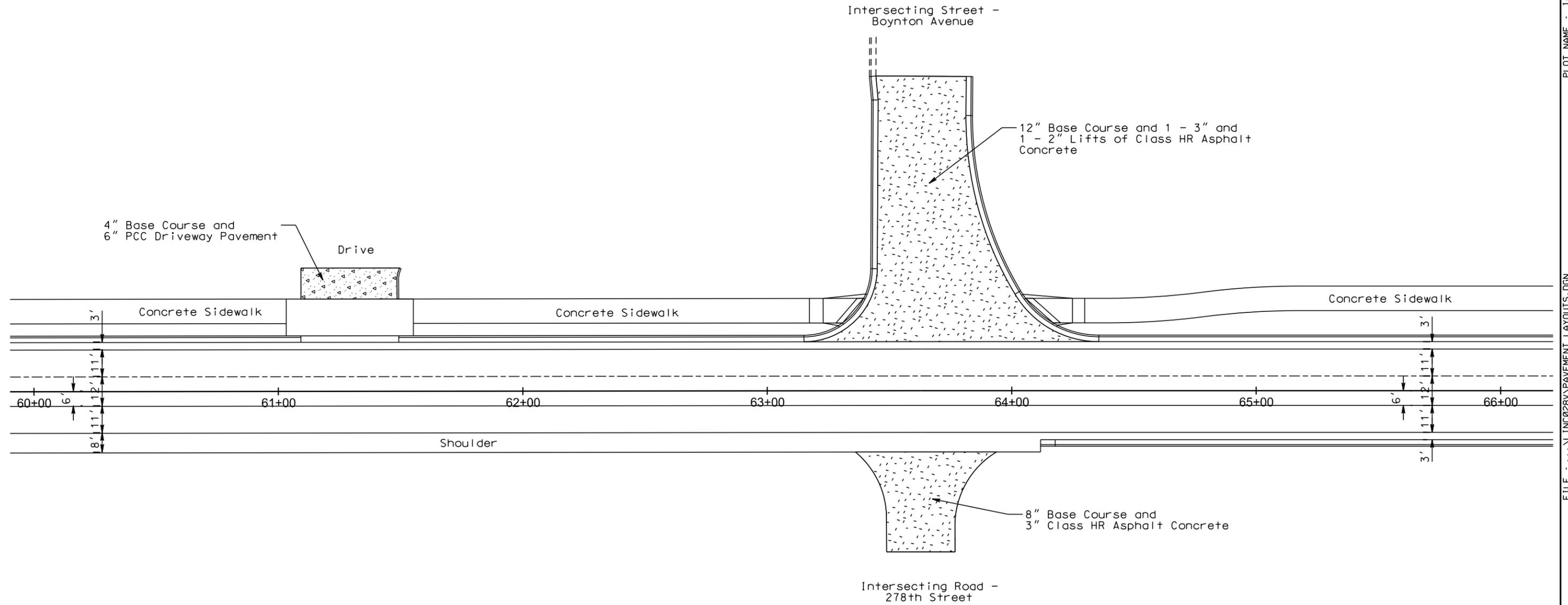
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LANE AND CROWN POINT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F18	TOTAL SHEETS F20
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Plotting Date: 10/27/2015

Scale 1 Inch = 40 Feet
Sheet 10 of 11 Sheets



PLOT SCALE - 1:40

PLOT NAME - 14

FILE - ... \LINC028\PAVEMENT LAYOUTS.DGN

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LANE AND CROWN POINT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT P 0017(08)42	SHEET F19	TOTAL SHEETS F20
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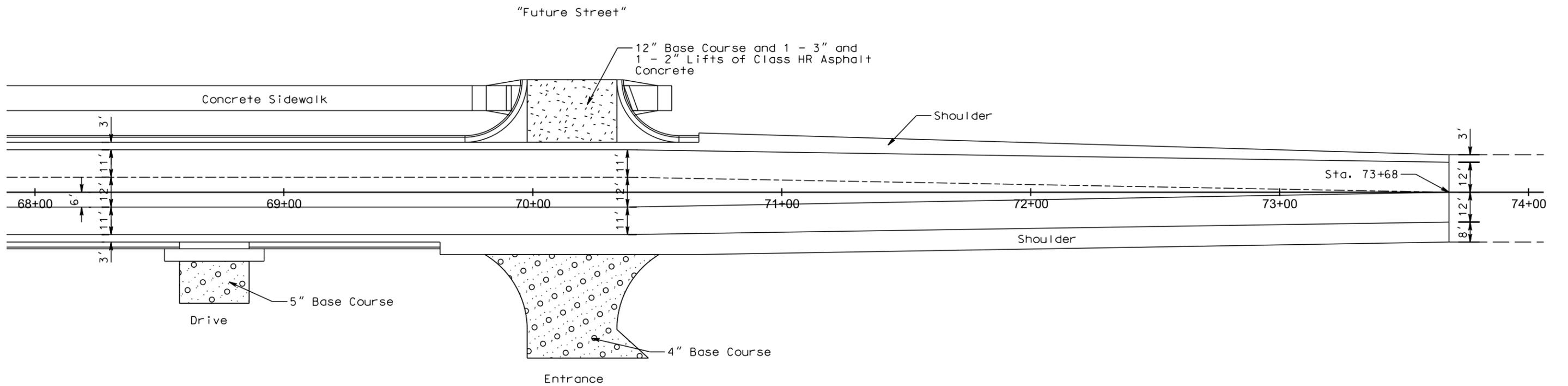
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Scale 1 Inch = 40 Feet
Sheet 11 of 11 Sheets



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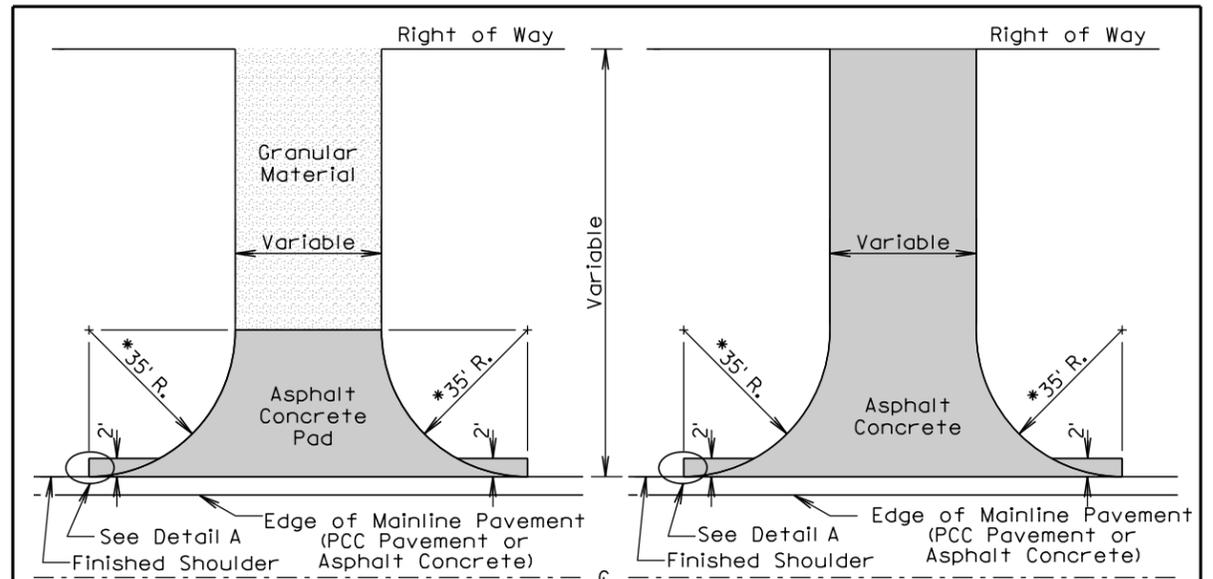
PLOT NAME - 15



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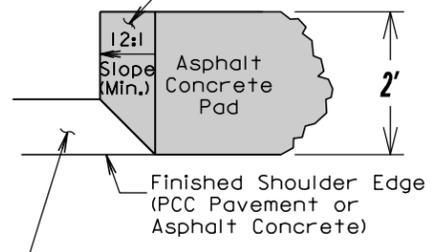
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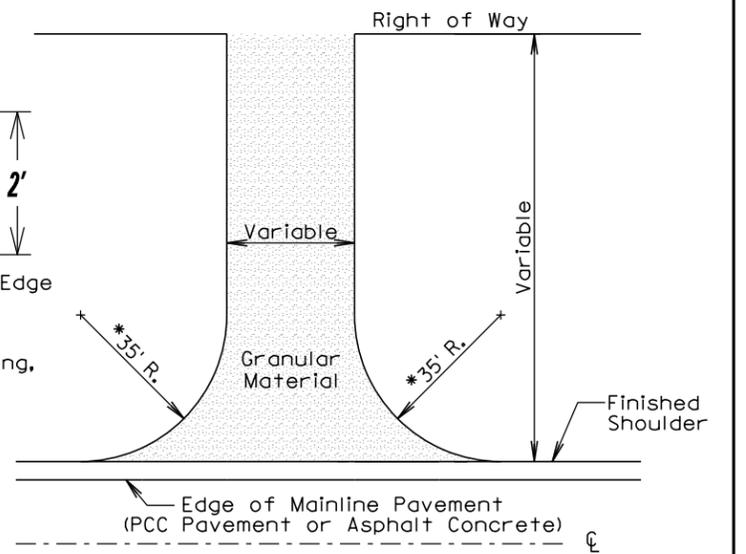
INTERSECTING ROAD
NO ASPHALT CONCRETE SURFACING
BEYOND RIGHT OF WAY

INTERSECTING ROAD
ASPHALT CONCRETE SURFACING
BEYOND RIGHT OF WAY

Provide bevel on ends of asphalt concrete pad as shown



DETAIL A



ENTRANCE

GENERAL NOTES:

The details shown are provided as a guide for surfacing. The precise construction limits for situations other than the standards shown will be determined by the Engineer during construction.

* 35' Radius except as noted elsewhere in plans.

ROADWAY WITH SHOULDER

December 16, 2014

**SURFACING OF
INTERSECTING ROADS AND ENTRANCES
(PCCP OR AC PAVED SHOULDERS)**

**SPECIAL
DETAIL**

Sheet 1 of 1

PLOT SCALE - 1:200

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PLOT NAME - 16

FILE - ... \SPECIAL DETAIL S32004.DGN