

# Section F: Surfacing Plans

STATE OF SOUTH DAKOTA	PROJECT NH 0073(63)182	SHEET F1	TOTAL SHEETS F9
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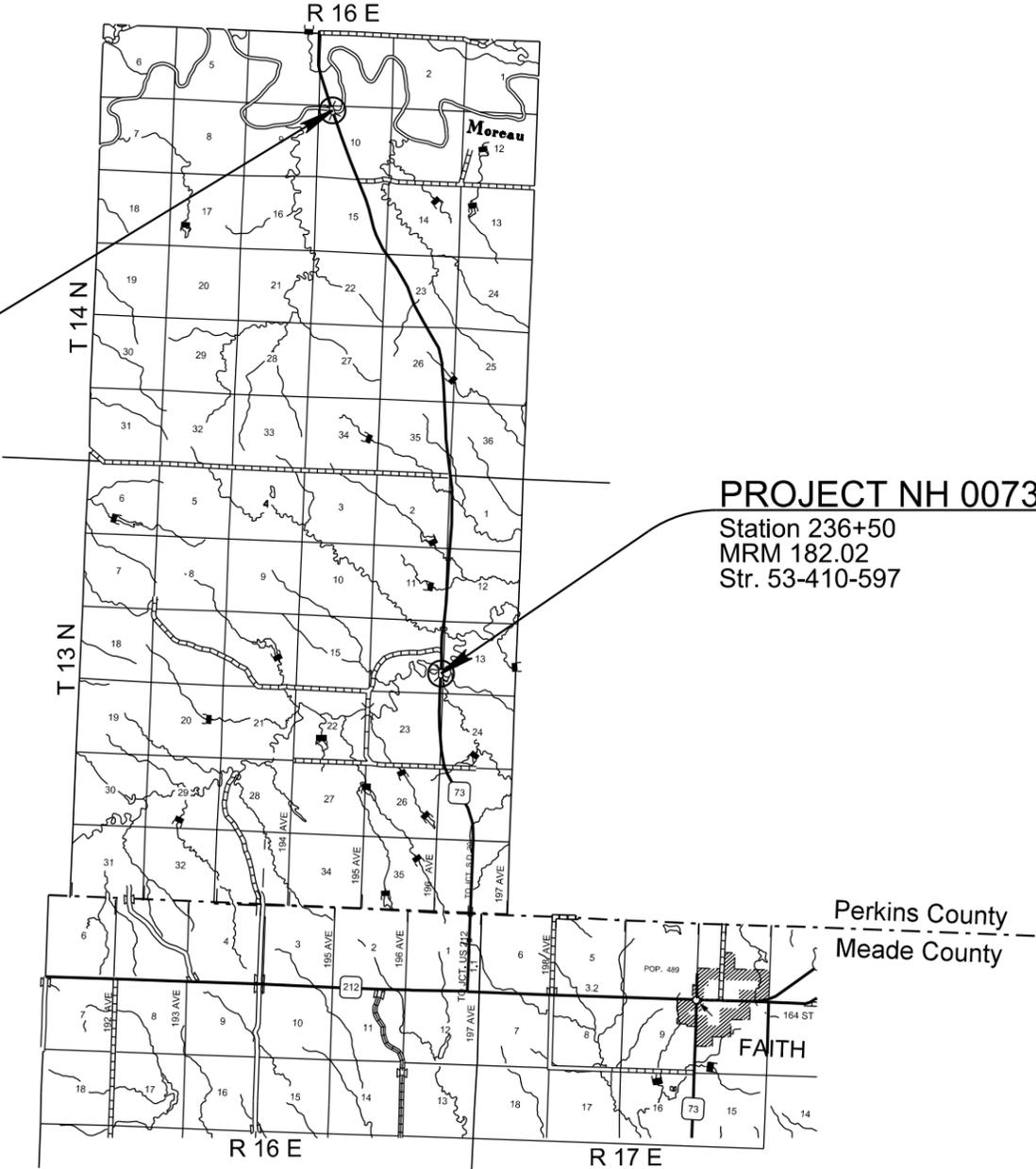
Plotting Date: 11/18/2014

### INDEX OF SHEETS

- F1 General Layout W/Index
- F2-F3 Estimate With General Notes & Tables
- F4-F5 Typical Sections
- F6-F7 Guardrail Surfacing Layouts
- F8 Special Detail
- F9 Standard Plate

**PROJECT NH 0073(63)182**  
 Station 665+00  
 MRM 190.11  
 Str. 53-392-521

**PROJECT NH 0073(63)182**  
 Station 236+50  
 MRM 182.02  
 Str. 53-410-597



Plot Scale - 1:200

Plotted From - trpr15123

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**SECTION F – ESTIMATE OF QUANTITIES**

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0073(63)182	F2	F9

Bid Item Number	Item	Quantity	Unit
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	220.2	MGal
260E1010	Base Course	1,012.9	Ton
260E1030	Base Course, Salvaged	17,321.6	Ton
320E0007	PG 64-28 Asphalt Binder	465.0	Ton
320E1050	Class E Asphalt Concrete	7,749.1	Ton
320E3000	Compaction Sample	3	Each
330E0010	MC-70 Asphalt for Prime	0.4	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	10.2	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	5.4	Ton
330E2000	Sand for Flush Seal	52.6	Ton

**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.

**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 the salvaged material on this project by decreasing or increasing the quantity of Base Course, as necessary, or as directed by the Engineer.

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

**BASE COURSE, SALVAGED**

The Base Course, Salvaged shall be obtained from the stockpiles provided by the Contractor from the asphalt mix and granular base material salvaged on this project and may be used without further testing.

All requirements for Base Course, Salvaged shall apply.

**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.

**CHECKING SPREAD RATES**

The Contractor shall be responsible for checking the Asphalt Concrete and Base Course 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 the 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.

**RATES OF MATERIALS**

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

**SD 73**

- Sta. 230+00 to 241+00
- Sta. 643+00 to 660+60.4
- Sta. 667+62.6 to 690+00

**BASE COURSE or BASE COURSE, SALVAGED**

Crushed Aggregate or Salvaged Material 322.00 tons.

Water for Granular Material at the rate of 3.68 M. Gallons.

**CLASS E ASPHALT CONCRETE – 1<sup>st</sup> Lift**

Crushed Aggregate	47.53 Tons
PG 64-28 Asphalt Binder	<u>3.03 Tons</u>
Total Mix	50.56 Tons

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

**CLASS E ASPHALT CONCRETE – 2<sup>nd</sup> Lift**

Crushed Aggregate	45.21 Tons
PG 64-28 Asphalt Binder	<u>2.89 Tons</u>
Total Mix	48.10 Tons

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

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.10 tons applied 41 feet wide (Rate = 0.05 gallon per square yard).

**CLASS E ASPHALT CONCRETE – 3<sup>rd</sup> Lift**

Crushed Aggregate	42.90 Tons
PG 64-28 Asphalt Binder	<u>2.74 Tons</u>
Total Mix	45.64 Tons

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

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.09 tons applied 39 feet wide (Rate = 0.05 gallon per square yard).

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.10 ton applied 39 feet wide (Rate = 0.05 gallon per square yard).

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

**SUMMARY OF CLASS E ASPHALT CONCRETE COMPACTION**

Location	With Specified Density (1 <sup>st</sup> / 2 <sup>nd</sup> / 3 <sup>rd</sup> Lift)	Without Specified Density
	Ton	Ton
SD 73		
Sta. 230+00 to 241+00	556.2 / 529.1 / 502.0	---
Sta. 643+00 to 660+60.4	890.1 / 846.8 / 803.4	---
Sta. 660+60.4 to 661+90.4	62.5 / 59.3 / 56.2	---
Sta. 666+32.6 to 667+62.6	62.5 / 59.3 / 56.2	---
Sta. 667+62.6 to 690+00	1,131.2 / 1,076.2 / 1,021.1	---
Guardrail Str. # 53-392-521	---	37.0
<b>TOTAL</b>	<b>7,712.1</b>	<b>37.0</b>

**TABLE OF ADDITIONAL QUANTITIES**

Location-Description	Water for Granular Material	Base Course or Base Course, Salvaged	Base Course	Class E Asphalt Concrete	PG 64-28 Asphalt Binder	MC-70 Asphalt for Prime	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
Sta. 660+60.40 to 661+90.40	4.8	400.4		62.5 / 59.3 / 56.2	3.8 / 3.5 / 3.4		-- / 0.1 / 0.1	0.1	1.3
Sta. 666+32.60 to 667+62.60	4.8	400.4		62.5 / 59.3 / 56.2	3.8 / 3.5 / 3.4		-- / 0.1 / 0.1	0.1	1.3
Field Entrances – 5	2.5	225.0							
Traffic Diversion 237			613.9						
Guardrail									
Str. # 53-392-521	3.4	279.9		37.0	2.2	0.4	0.1	0.1	
<b>Totals</b>	<b>15.5</b>	<b>1,305.7</b>	<b>613.9</b>	<b>393.0</b>	<b>23.6</b>	<b>0.4</b>	<b>0.5</b>	<b>0.3</b>	<b>2.6</b>

# TYPICAL SURFACING SECTIONS

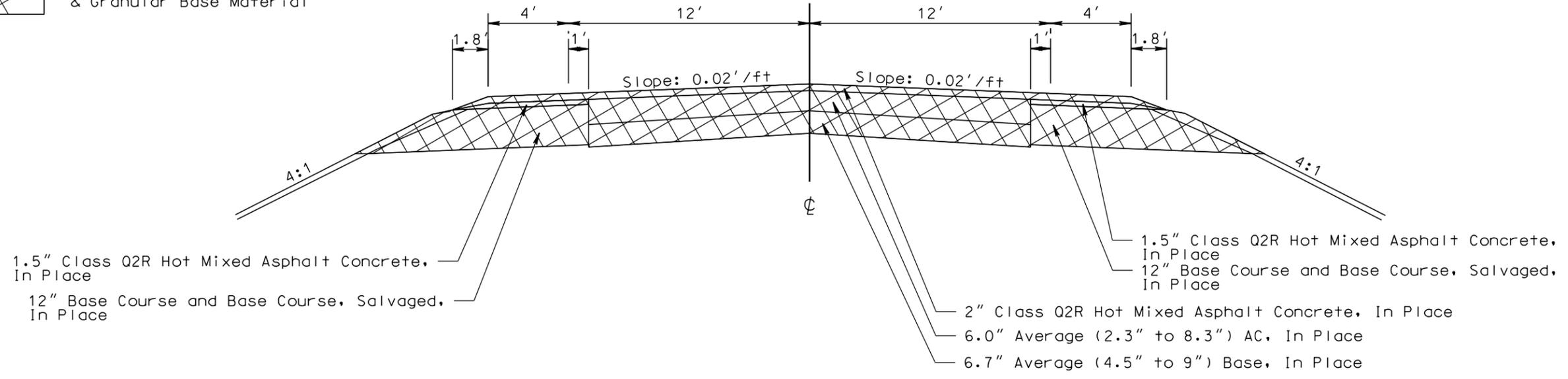
STATE OF SOUTH DAKOTA	PROJECT NH 0073(63)182	SHEET F4	TOTAL SHEETS F9
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Plotting Date: 11/18/2014

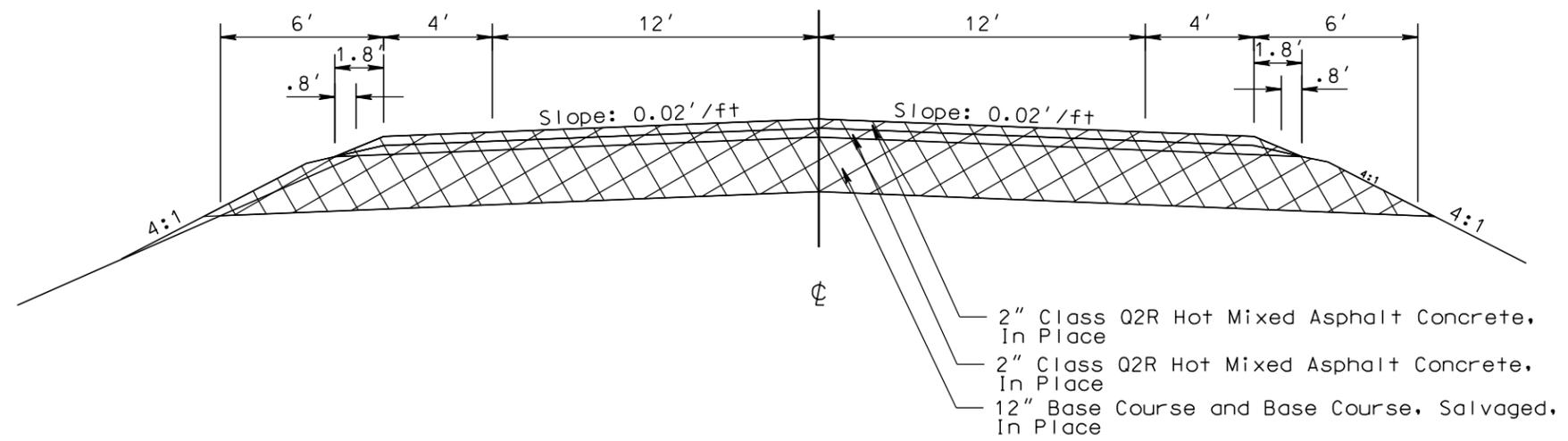
Sta. 230+00 to Sta. 241+00  
Sta. 643+00 to Sta. 660+60.4  
Sta. 667+62.6 to Sta. 680+25



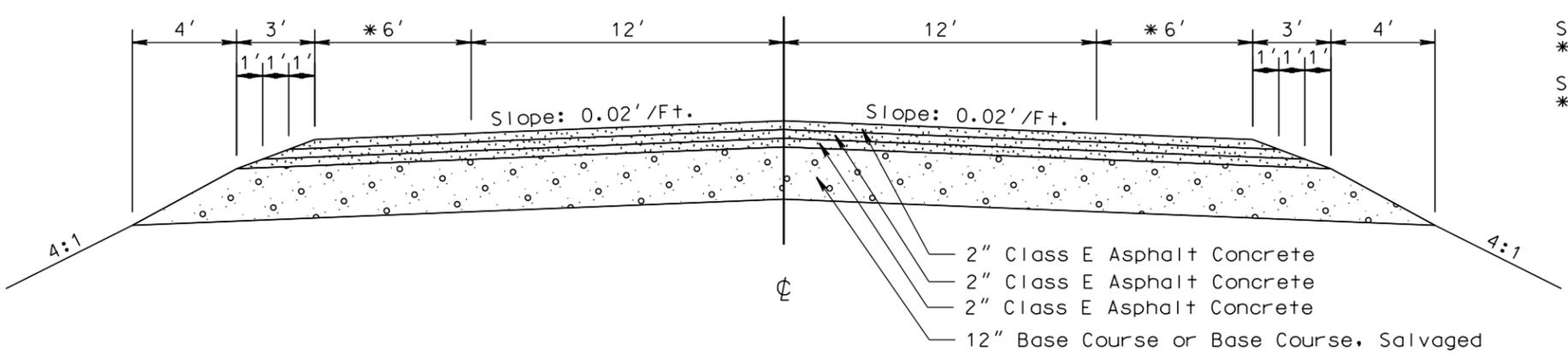
Salvage & Stockpile Asphalt Mix & Granular Base Material



SD 73 Sta 680+25 to Sta 690+00



Sta. 230+00 to Sta. 241+00  
Sta. 643+00 to Sta. 660+60.4  
Sta. 667+62.6 to Sta. 690+00



Transitions:

Sta, 660+60.4 to Sta. 661+90.4  
\* 6' to 4'

Sta, 666+32.6 to Sta. 667+62.6  
\* 4' to 6'

PLOT SCALE - 1:6.00001

PLOTTED FROM - TRPR15123

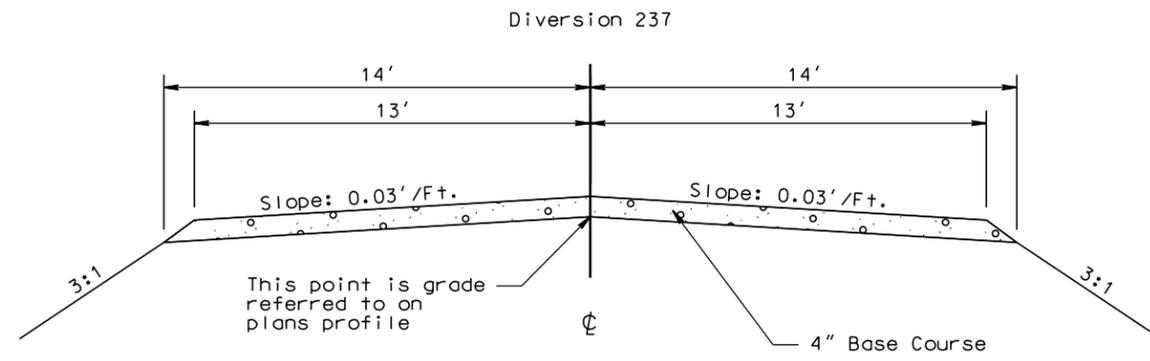
PLOT NAME - 2

FILE - ... \PERK02S\TYPICAL SECTION.DGN

# TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0073(63)182	F5	F9

Plotting Date: 11/18/2014



PLOT SCALE - 1+6.00001

PLOTTED FROM - TRPR15123

PLOT NAME - 3

FILE - ... \PERK02S\TYPICAL SECTION.DGN

# GUARDRAIL SURFACING

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0073(63)182	F6	F9

Plotting Date: 11/18/2014

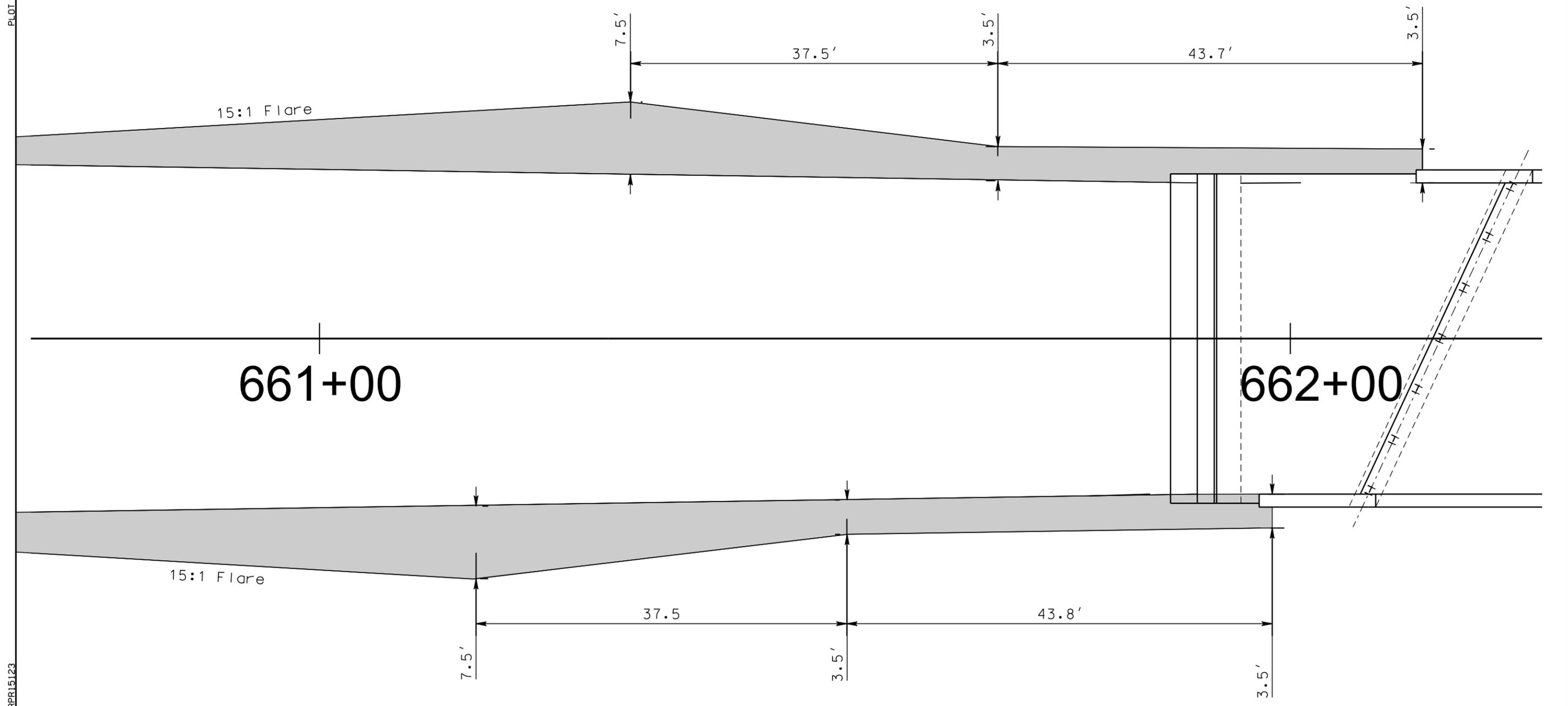
Sheet 1 of 2 Sheets



2" Asphalt Concrete and  
16" Base Course or  
Base Course, Salvaged

PLOT SCALE - 1:10

PLOT NAME - 4



PLOTTED FROM - IRP15123

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# GUARDRAIL SURFACING

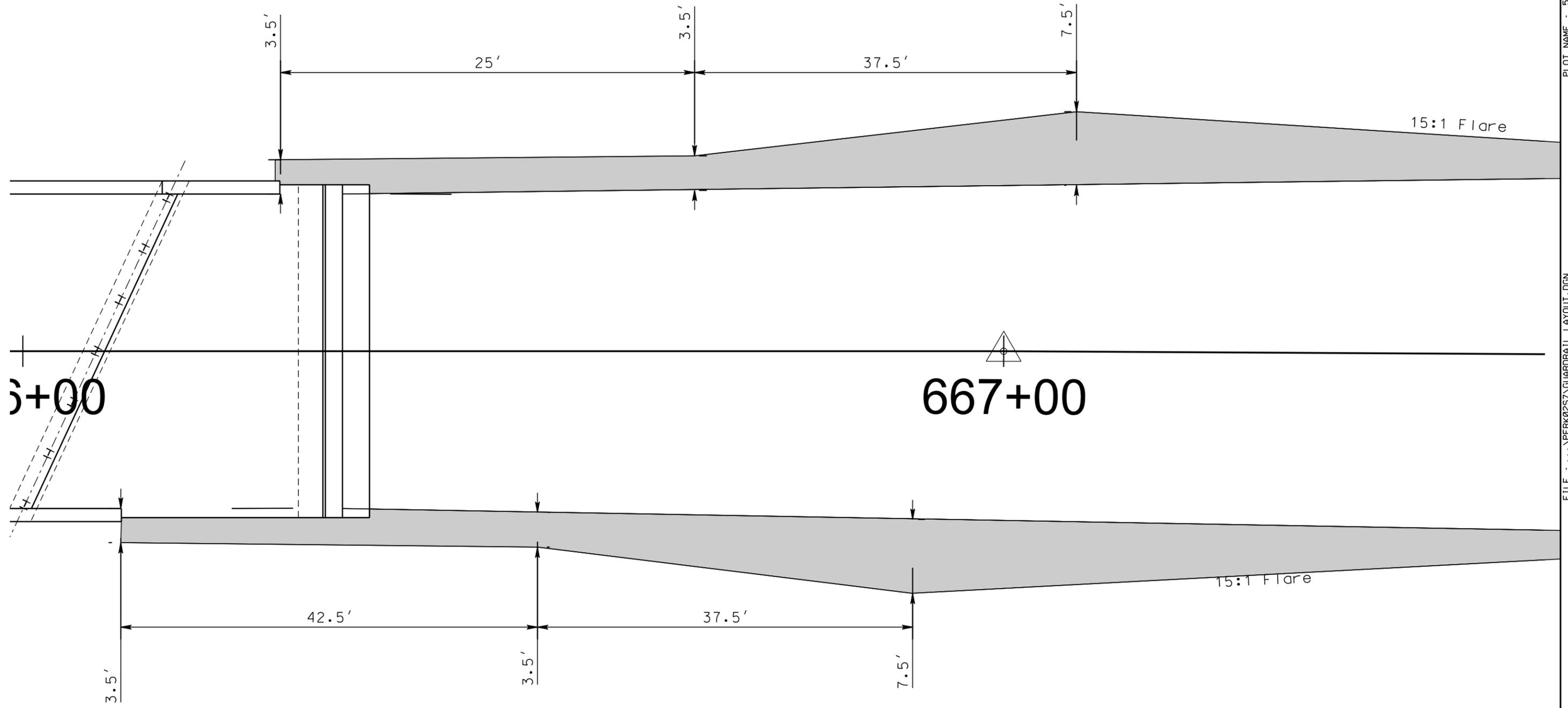
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0073(63)182	F7	F9

Plotting Date: 11/18/2014

Sheet 2 of 2 Sheets

PLOT SCALE - 1:10

PLOT NAME - 5

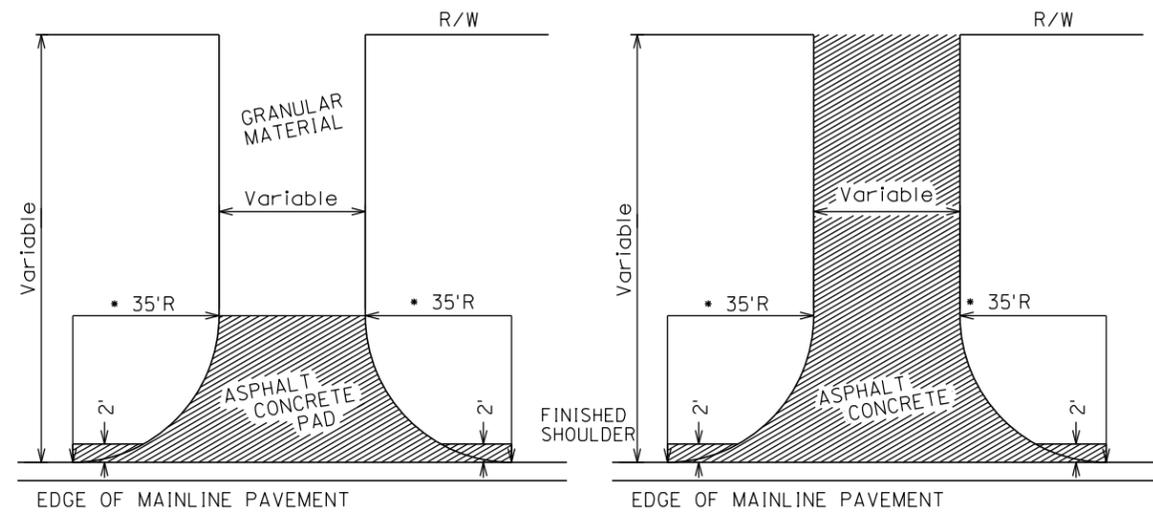


PLOTTED FROM - IRPR15123

FILE - ... \PERK025\GUARDRAIL\_LAYOUT.DGN

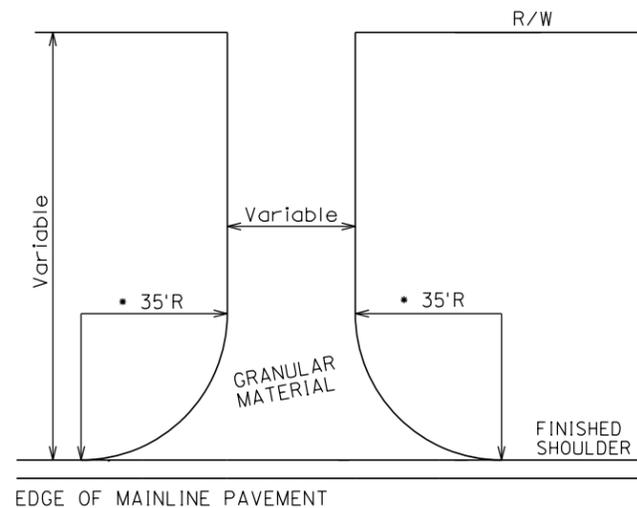
# SPECIAL DETAILS

## 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 - 1:200

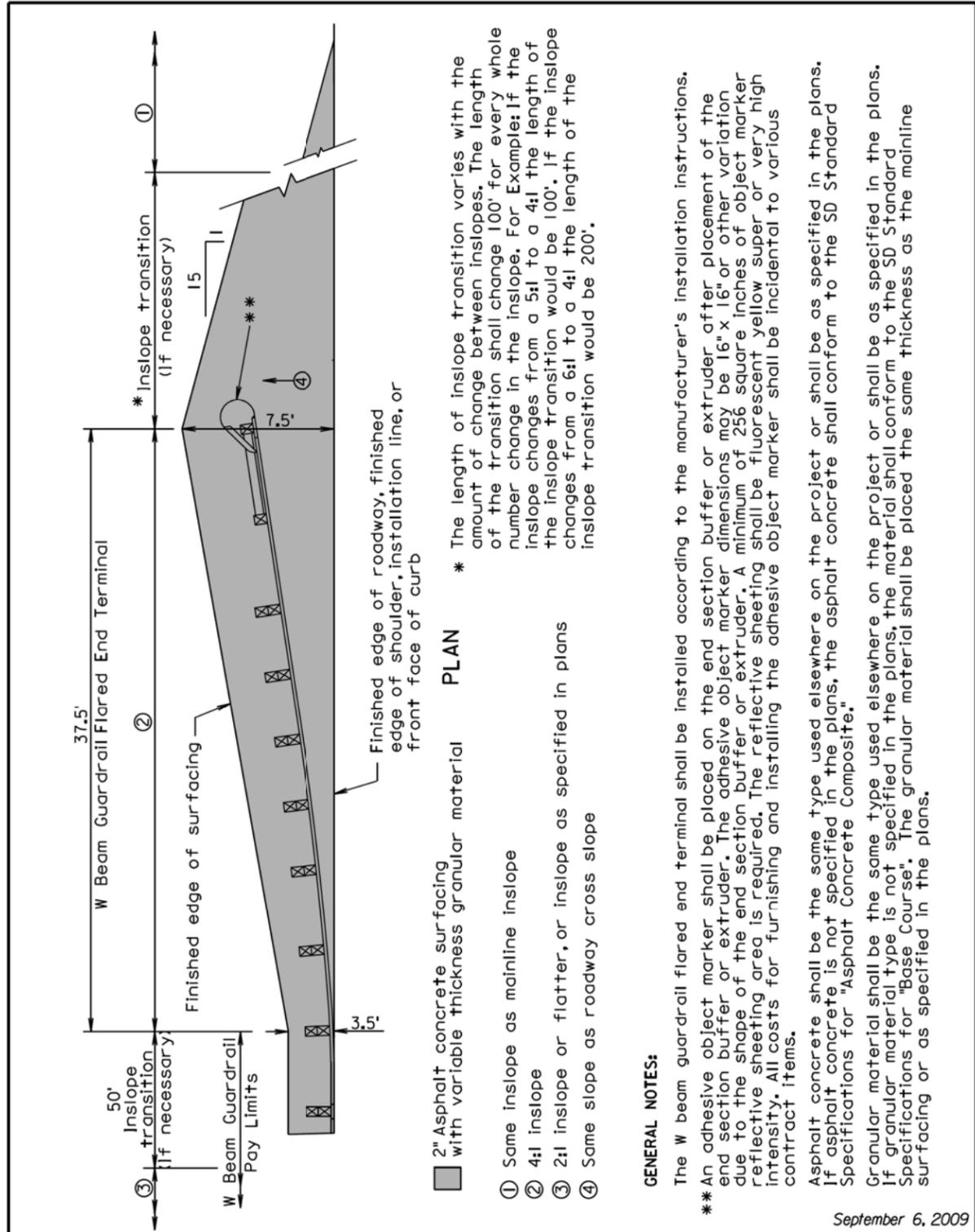
PLOTTED FROM - TRPR15123

PLOT NAME - 6

FILE - ... \SPECIAL DETAIL 32004.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0073(63)182	F9	F9

Plotting Date: 11/18/2014



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Published Date: 4th Qtr. 2014

**EMBANKMENT AND SURFACING FOR  
W BEAM GUARDRAIL FLARED END TERMINAL**

PLATE NUMBER  
**630.45**

Sheet 1 of 1

- 2" Asphalt concrete surfacing with variable thickness granular material
  - ① Same inslope as mainline inslope
  - ② 4:1 inslope
  - ③ 2:1 inslope or flatter, or inslope as specified in plans
  - ④ Same slope as roadway cross slope
- GENERAL NOTES:**
- The W beam guardrail flared end terminal shall be installed according to the manufacturer's installation instructions.
- \*\* An adhesive object marker shall be placed on the end section buffer or extruder after placement of the end section buffer or extruder. The adhesive object marker dimensions may be 16" x 16" or other variation due to the shape of the end section buffer or extruder. A minimum of 256 square inches of object marker reflective sheeting area is required. The reflective sheeting shall be fluorescent yellow super or very high intensity. All costs for furnishing and installing the adhesive object marker shall be incidental to various contract items.
- Asphalt concrete shall be the same type used elsewhere on the project or shall be as specified in the plans. If asphalt concrete is not specified in the plans, the asphalt concrete shall conform to the SD Standard Specifications for "Asphalt Concrete Composite".
- Granular material shall be the same type used elsewhere on the project or shall be as specified in the plans. If granular material type is not specified in the plans, the material shall conform to the SD Standard Specifications for "Base Course". The granular material shall be placed the same thickness as the mainline surfacing or as specified in the plans.

**PLAN**

\* The length of inslope transition varies with the amount of change between inslopes. The length of the transition shall change 100' for every whole number change in the inslope. For Example: If the inslope changes from a 5:1 to a 4:1 the length of the inslope transition would be 100'. If the inslope changes from a 6:1 to a 4:1 the length of the inslope transition would be 200'.