

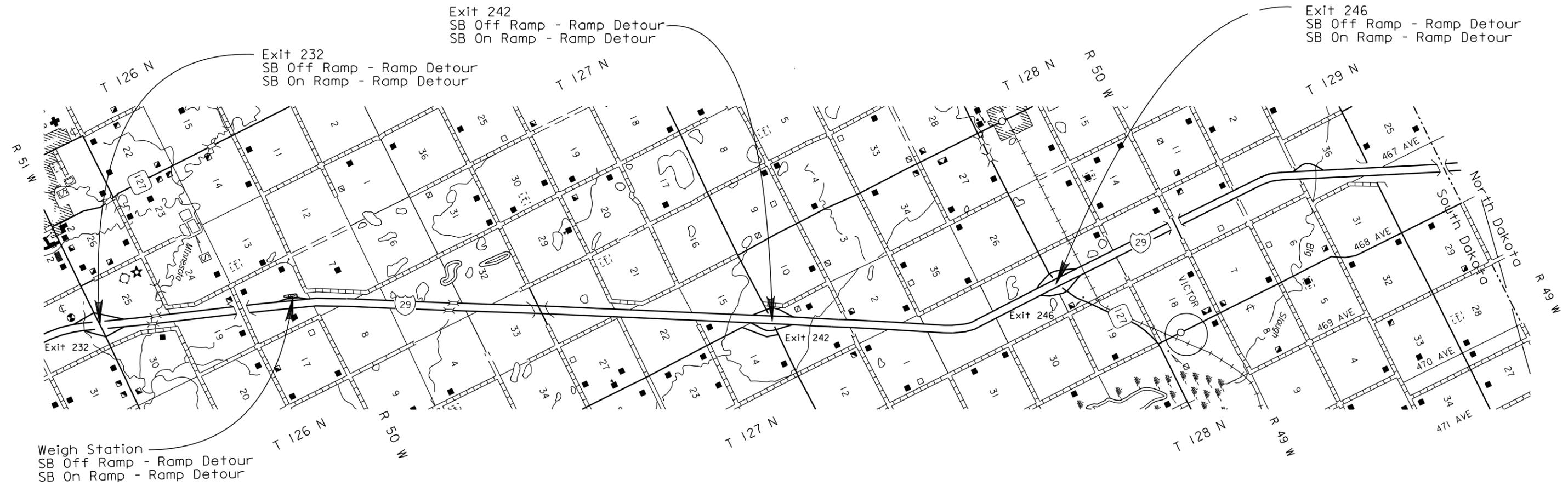
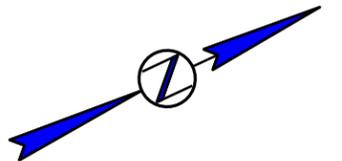
STATE OF SOUTH DAKOTA	PROJECT IM 0299(76)231	SHEET F1	TOTAL SHEETS F15
-----------------------	---------------------------	-------------	---------------------

Plotting Date: 08/08/2016

# Section F: Surfacing Plans

## INDEX OF SHEETS

- F1 General Layout W/Index
- F2-F4 Estimate with General Notes & Tables
- F5 Typical Sections
- F6-F13 Ramp Detour Layouts
- F14 Special Detail
- F15 Standard Plate



PLOT SCALE - 1:7920

PLOTTED FROM - ITRP15123

PLOT NAME - 1

FILE - U:\MS\PR\ROB\05A\TITLE F.DGN

**SECTION F – ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3250	Miscellaneous Staking	1,345	Mile
009E3300	Three Man Survey Crew	40.0	Hour
120E0010	Unclassified Excavation	5,247	CuYd
120E6200	Water for Granular Material	289.5	MGal
120E9000	Pit Run	16,643.4	Ton
260E1010	Base Course	7,494.5	Ton
320E0007	PG 64-28 Asphalt Binder	156.1	Ton
320E1050	Class E Asphalt Concrete	2,866.0	Ton
320E3000	Compaction Sample	3	Each
330E0010	MC-70 Asphalt for Prime	11.7	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	4.0	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	2.0	Ton
330E2000	Sand for Flush Seal	28.2	Ton
600E0200	Type II Field Laboratory	1	Each
629E9010	Interim Crossover Closure	1,024	Ft
632E2000	4"x4" Amber Delineator with 1.12 Lb/Ft Post	96	Each
632E2020	4"x4" White Delineator with 1.12 Lb/Ft Post	24	Each
831E0210	Non-woven Separator Fabric	13,804	SqYd

**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.

**UTILITIES**

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

**TYPE II FIELD LABORATORY**

The lab shall be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection shall be provided with a multi-port wireless router. The internet connection shall be a minimum speed of 512 Kb unless limited by job location and approved by the DOT. Prior to installing the wireless router the Contractor shall submit the wireless router's technical data to the Area Office to check for compatibility with the state's computer equipment. The internet connection is intended for state personnel usage only. The Contractor's personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer.

**PIT RUN MATERIAL**

Minimum compaction testing requirements will be a minimum of one test per ramp detour location.

Non-woven Separator Fabric has been included in the Estimate of Quantities for the ramp detours. This fabric is to be used as a separator between the Pit Run Material and the Base Course to prevent migration of fines from the Base Course into the Pit Run Material. If the Pit Run Material contains enough fines as placed to prevent the loss of material from the Base Course, the separator fabric may be eliminated by CCO. Nonwoven Separator Fabric will conform to Section 831, of the Specifications.

**TABLE OF REINFORCEMENT FABRIC (MSE)**

Location	Reinforcement Fabric (MSE)
	SqYds
Exit 232 – SB on Ramp	1,916.7
Exit 232 – SB off Ramp	1,442.5
Weigh Station – SB on Ramp	1,990.8
Weigh Station – SB off Ramp	1,412.9
Exit 242 – SB on Ramp	2,018.7
Exit 242 – SB off Ramp	1,505.7
Exit 246 – SB on Ramp	2,012.2
Exit 246 – SB off Ramp	1,504.8
<b>TOTAL</b>	<b>13,804.3</b>

**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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	IM 0299(76)231	F2	F15

**UNCLASSIFIED EXCAVATION**

An estimated 5,247.1 CuYds of Unclassified Excavation shall be plans quantity and will not be adjusted according to field measurements, see Typical Sections. Unclassified Excavation is removal of waste material. The Unclassified Excavation waste material shall become property of the Contractor.

**TABLE OF UNCLASSIFIED EXCAVATION**

Location of Removal Areas	Waste Material
	CuYds
Exit 232 – SB on Ramp	758.7
Exit 232 – SB off Ramp	537.1
Weigh Station – SB on Ramp	787.3
Weigh Station – SB off Ramp	519.0
Exit 242 – SB on Ramp	787.3
Exit 242 – SB off Ramp	535.2
Exit 246 – SB on Ramp	787.3
Exit 246 – SB off Ramp	535.2
<b>TOTAL</b>	<b>5,247.1</b>

**DELINEATORS**

4" x 4" delineators shall be installed on the ramp detours. The delineators shall be constructed according to the details and ramp detour layout sheets.

**TABLE OF DELINEATORS**

Location	Amber Delineators	White Delineators
	each	each
Exit 232 – SB on Ramp	12	
Exit 232 – SB off Ramp	12	6
Weigh Station – SB on Ramp	12	
Weigh Station – SB off Ramp	12	6
Exit 242 – SB on Ramp	12	
Exit 242 – SB off Ramp	12	6
Exit 246 – SB on Ramp	12	
Exit 246 – SB off Ramp	12	6
<b>TOTAL</b>	<b>96</b>	<b>24</b>

**RAMP DETOURS**

Ramp detours shall be constructed according to the layouts provided in these plans.

The maximum horizontal degree of curve shall be 6°45' and the vertical alignment shall be constructed to provide adequate stopping sight distance. The Engineer shall have final approval of the horizontal and vertical alignment of the ramp.

Existing drainage impacted by the ramp detours shall be addressed. The Contractor shall be responsible for sizing the pipes if pipes are necessary to drain the water under the ramp detours. The Contractor shall provide sloped end sections for all 30-inch and smaller diameter pipe used in ramp detours. If the Contractor provides 36-inch or larger diameter pipe in the ramp detours, then the pipe shall be extended to a minimum of 30 feet from the nearest edge of traveled lane or farther due to higher fill sections. All costs for pipe, pipe end sections, and other costs associated with the temporary modification of existing drainage shall be incidental to the various contract items needed to construct the ramp detours.

Material quantities necessary for constructing the ramp detours are as specified in the tables, ramp detour sections, and layouts.

**CROSSOVER CLOSURES**

See Ramp Detour Layouts and Special Details for placement and construction of the crossover closures.

**TABLE OF CROSSOVER CLOSURES**

Location	Interim Crossover Closure Ft
Exit 232 – SB on Ramp	128
Exit 232 – SB off Ramp	128
Weigh Station – SB on Ramp	128
Weigh Station – SB off Ramp	128
Exit 242 – SB on Ramp	128
Exit 242 – SB off Ramp	128
Exit 246 – SB on Ramp	128
Exit 246 – SB off Ramp	128
Totals	1,024

**TABLE OF QUANTITIES**

Location-Description	Water for Granular Material	Base Course	Pit Run Material	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	1 <sup>st</sup> / 2 <sup>nd</sup> Lift Ton	1 <sup>st</sup> / 2 <sup>nd</sup> Lift Ton	Ton	1 <sup>st</sup> / 2 <sup>nd</sup> Lift Ton	Ton	Ton
Exit 232 – SB on Ramp	42.8	1,041.2	2,520.9	216.5 / 182.3	11.8 / 9.9	1.6	0.3 / 0.3	0.3	3.9
Exit 232 – SB off Ramp	32.5	783.3	1,926.5	162.8 / 136.4	8.9 / 7.4	1.2	0.2 / 0.2	0.2	2.9
Weigh Station – SB on Ramp	40.8	1,081.4	2,316.7	224.8 / 189.6	12.2 / 10.3	1.7	0.3 / 0.3	0.3	4.1
Weigh Station – SB off Ramp	31.9	766.8	1,894.0	159.1 / 133.6	8.7 / 7.3	1.2	0.2 / 0.2	0.2	2.9
Exit 242 – SB on Ramp	38.4	1,095.2	2,112.4	227.3 / 191.3	12.4 / 10.4	1.7	0.3 / 0.3	0.3	4.1
Exit 242 – SB off Ramp	32.1	817.0	1,861.4	169.4 / 142.4	9.2 / 7.8	1.3	0.2 / 0.2	0.2	3.1
Exit 246 – SB on Ramp	40.2	1,092.9	2,258.6	227.3 / 191.4	12.4 / 10.4	1.7	0.3 / 0.3	0.3	4.1
Exit 246 – SB off Ramp	30.8	816.7	1,752.9	169.4 / 142.4	9.2 / 7.8	1.3	0.2 / 0.2	0.2	3.1
Totals	289.5	7,494.5	16,643.4	2,866.0	156.1	11.7	4.0	2.0	28.2

**TABLE OF CONSTRUCTION STAKING**

(See Special Provision for Contractor Staking)

Location and Description	Length (Ft)	Miscellaneous Staking Quantity (Mile)
Exit 232 – SB on Ramp	1,010.9	0.191
Exit 232 – SB off Ramp	718.1	0.136
Weigh Station – SB on Ramp	1,060.5	0.201
Weigh Station – SB off Ramp	707.3	0.134
Exit 242 – SB on Ramp	1,061.7	0.201
Exit 242 – SB off Ramp	739.5	0.140
Exit 246 – SB on Ramp	1,060.9	0.201
Exit 246 – SB off Ramp	745.6	0.141
Totals	7,104.5	1.345

# TYPICAL SURFACING SECTION

## RAMP DETOURS

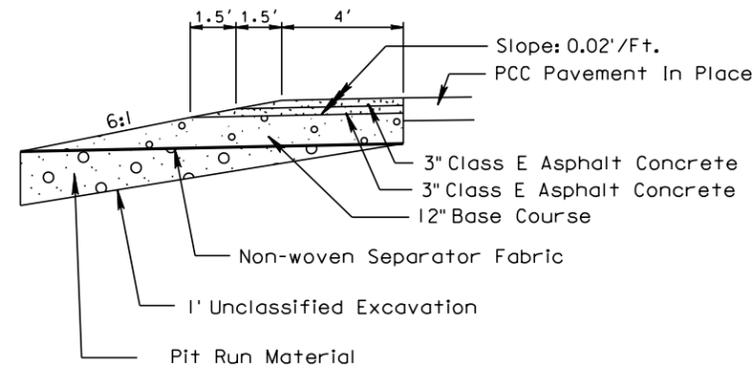
STATE OF SOUTH DAKOTA	PROJECT IM 0299(76)231	SHEET F5	TOTAL SHEETS F15
-----------------------	---------------------------	-------------	---------------------

Plotting Date: 08/08/2016

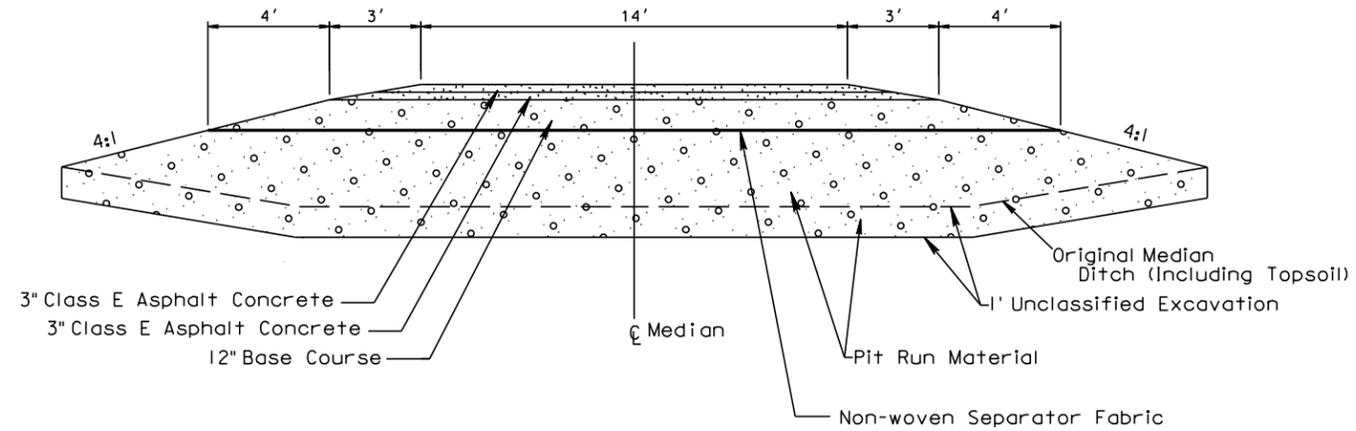
PLOT SCALE - 1:6

PLOT NAME - 2

RAMP DETOUR TYPICAL NEXT TO PCC PAVEMENT



RAMP DETOUR TYPICAL SECTION



PLOTTED FROM - TRPR15123

FILE - ... \ROBT05AT\TYPICAL SECTION.DGN

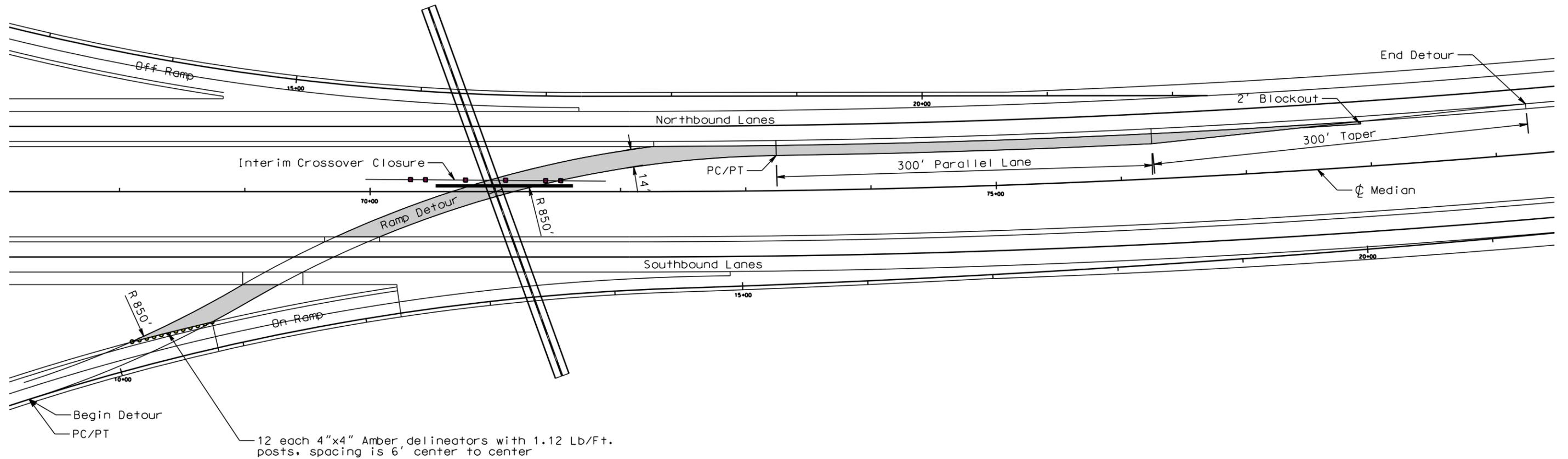
# RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT IM 0299(76)231	SHEET F6	TOTAL SHEETS F15
-----------------------	---------------------------	-------------	---------------------

Plotting Date: 08/08/2016

Scale 1 Inch = 80 Feet  
Sheet 1 of 8 Sheets

## Exit 232



**General Notes:**

Stationing shown for the Ramp Detour is for reference only.

The Ramp Detour shall be constructed with a minimum horizontal curve radius of 850' and the vertical alignment shall be adequate for stopping sight distance.

Pipe shall be installed if needed and sized appropriately for adequate drainage. Length, size and type of pipe will be determined in the field by the Project Engineer during construction. Payment for the pipe and installation shall be incidental to the various contract items.

Surfacing for Ramp Detour:  
6" Class E Asphalt Concrete,  
12" Base Course, and  
Pit Run Material

PLOT SCALE - 1:80

PLOTTED FROM - TRPR15123

PLOT NAME - 3

FILE - ... \PRJ\ROBT05AT\RAMP DETOURS.DGN

# RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0299(76)231	F7	F15

Plotting Date: 08/08/2016

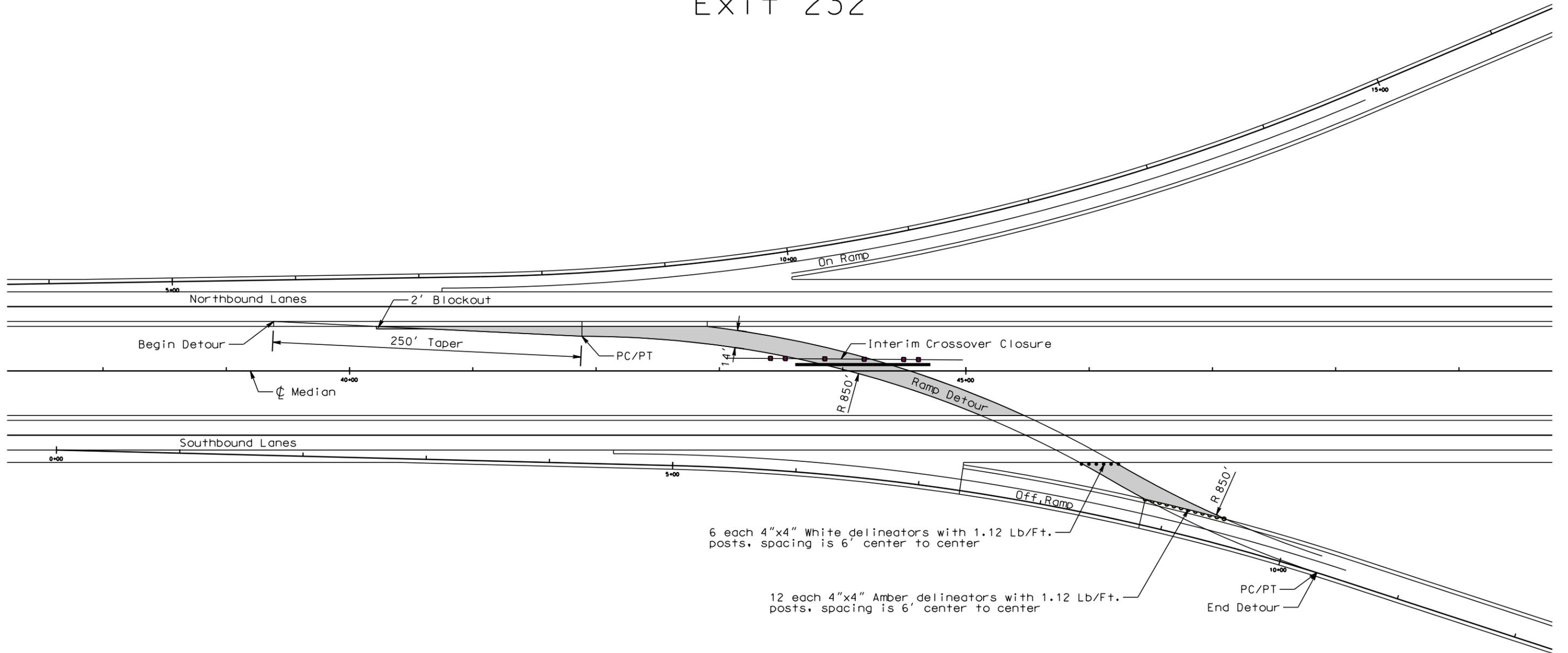
Scale 1 Inch = 80 Feet  
Sheet 2 of 8 Sheets

## Exit 232



PLOT SCALE - 1:80

PLOT NAME - 4



PLOTTED FROM - TRPR15123

FILE - ... \PRJ\ROBT08AT\RAMP DETOURS.DGN

# RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT IM 0299(76)231	SHEET F8	TOTAL SHEETS F15
-----------------------	---------------------------	-------------	---------------------

Plotting Date: 08/08/2016

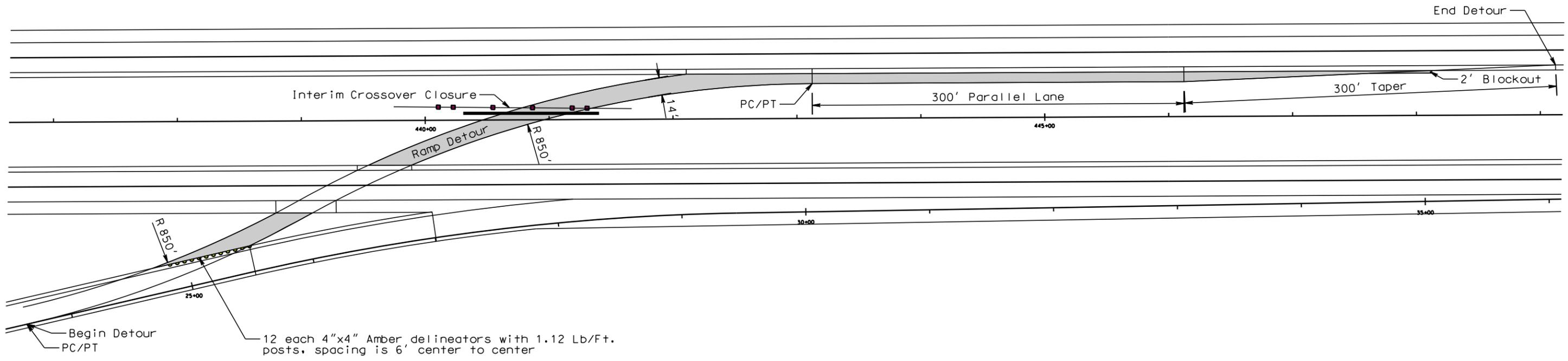
Scale 1 Inch = 80 Feet  
Sheet 3 of 8 Sheets

## Weigh Station



PLOT SCALE - 1:80

PLOT NAME - 5



PLOTTED FROM - TRPR15123

FILE - ... \PRJ\ROBT08AT\RAMP DETOURS.DGN

# RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT IM 0299(76)231	SHEET F9	TOTAL SHEETS F15
-----------------------	---------------------------	-------------	---------------------

Plotting Date: 08/08/2016

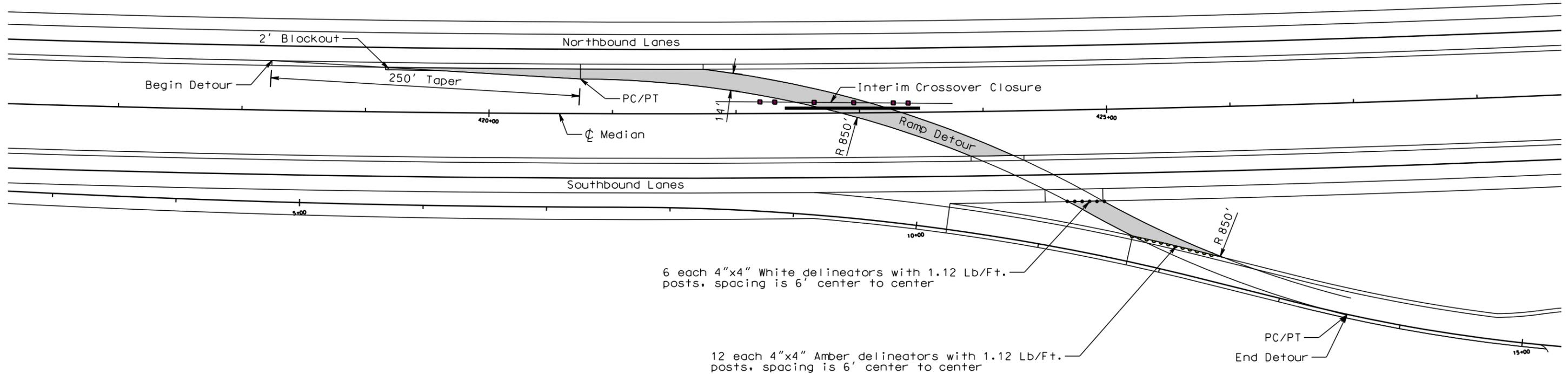
Scale 1 Inch = 80 Feet  
Sheet 4 of 8 Sheets

## Weigh Station



PLOT SCALE - 1:80

PLOT NAME - 6



PLOTTED FROM - ITRP15123

FILE - ... \PRJ\ROBT05AT\RAMP DETOURS.DGN

# RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT IM 0299(76)231	SHEET F10	TOTAL SHEETS F15
-----------------------	---------------------------	--------------	---------------------

Plotting Date: 08/08/2016

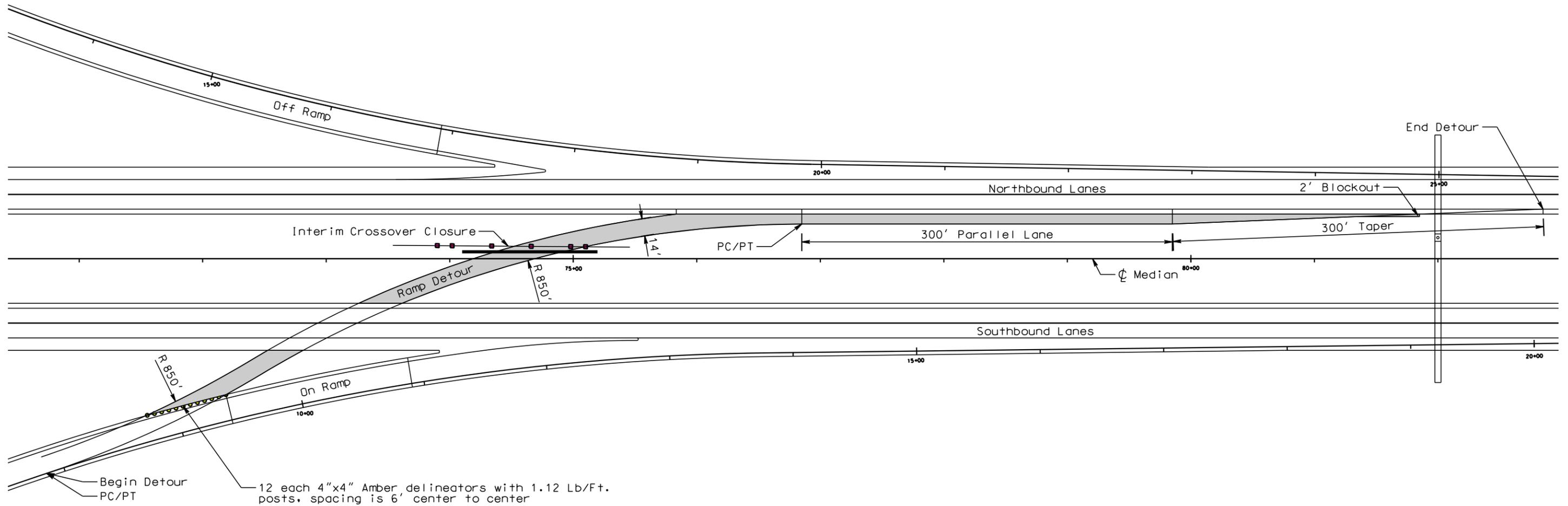
Scale 1 Inch = 80 Feet  
Sheet 5 of 8 Sheets

## Exit 242



PLOT SCALE - 1:80

PLOT NAME - 7



PLOTTED FROM - TRPR15123

FILE - ... \PRJ\ROBT08AT\RAMP DETOURS.DGN

# RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0299(76)231	F11	F15

Plotting Date: 08/08/2016

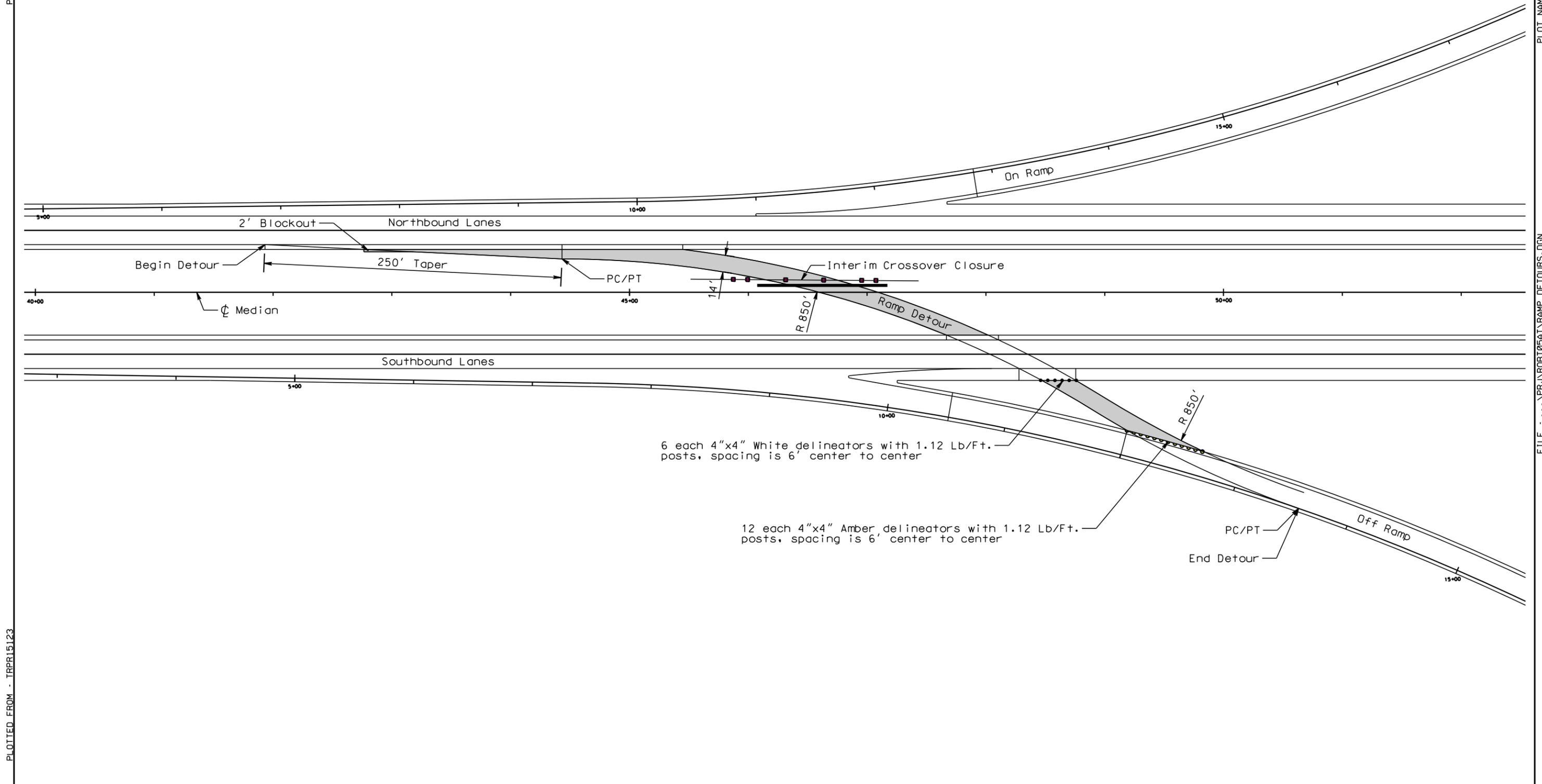
Scale 1 Inch = 80 Feet  
Sheet 6 of 8 Sheets

## Exit 242



PLOT SCALE - 1:80

PLOT NAME - 8



2' Blockout Northbound Lanes

Begin Detour 250' Taper

⊕ Median

Southbound Lanes

6 each 4"x4" White delineators with 1.12 Lb/Ft. posts, spacing is 6' center to center

12 each 4"x4" Amber delineators with 1.12 Lb/Ft. posts, spacing is 6' center to center

On Ramp

Ramp Detour

Off Ramp

End Detour

PLOTTED FROM - TRPR15123

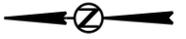
FILE - ... \PRJ\ROBT05AT\RAMP DETOURS.DGN

# RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0299(76)231	F12	F15

Plotting Date: 08/08/2016

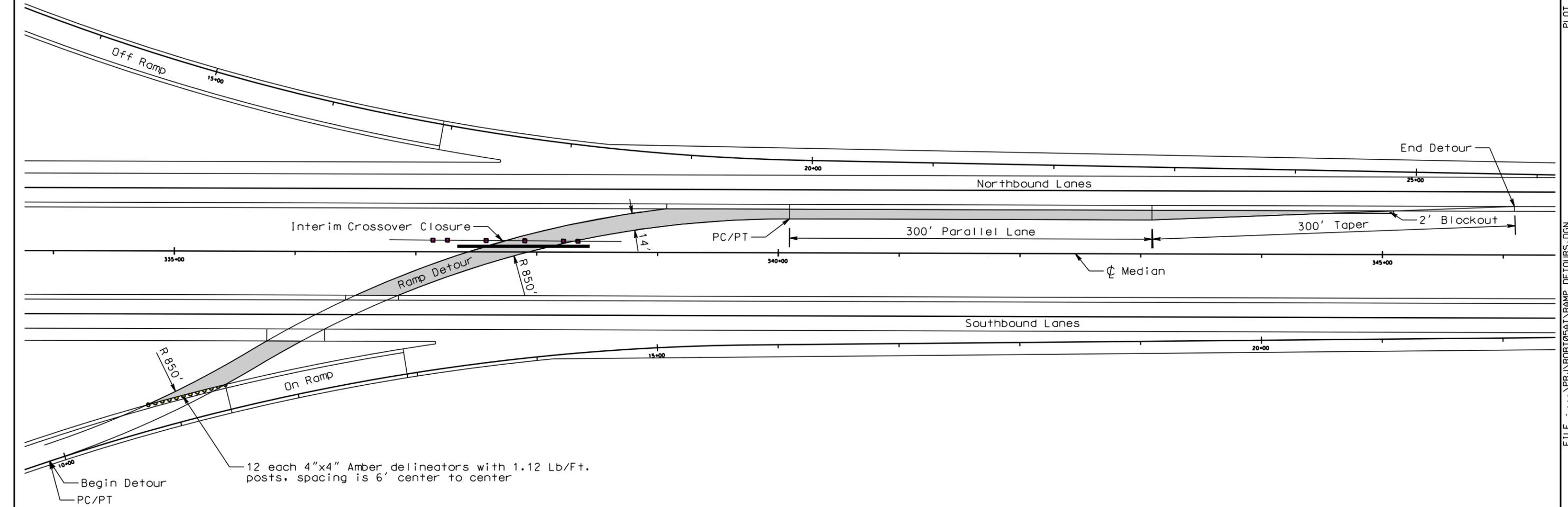
Scale 1 Inch = 80 Feet  
Sheet 7 of 8 Sheets



## Exit 246

PLOT SCALE - 1:80

PLOT NAME - 9



PLOTTED FROM - TRPR15123

FILE - ... \PRJ\ROBT05AT\RAMP DETOURS.DGN

# RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT IM 0299(76)231	SHEET F13	TOTAL SHEETS F15
-----------------------	---------------------------	--------------	---------------------

Plotting Date: 08/08/2016

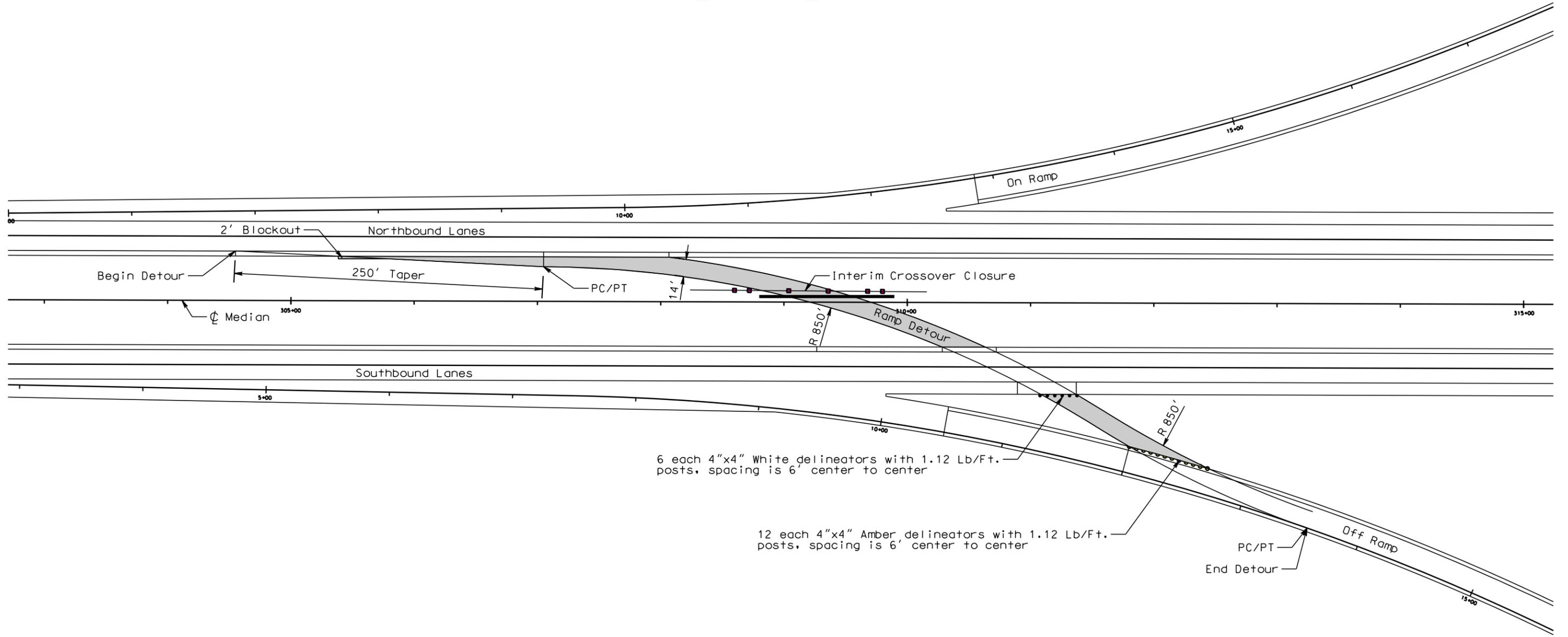
Scale 1 Inch = 80 Feet  
Sheet 8 of 8 Sheets



## Exit 246

PLOT SCALE - 1:80

PLOT NAME - 10



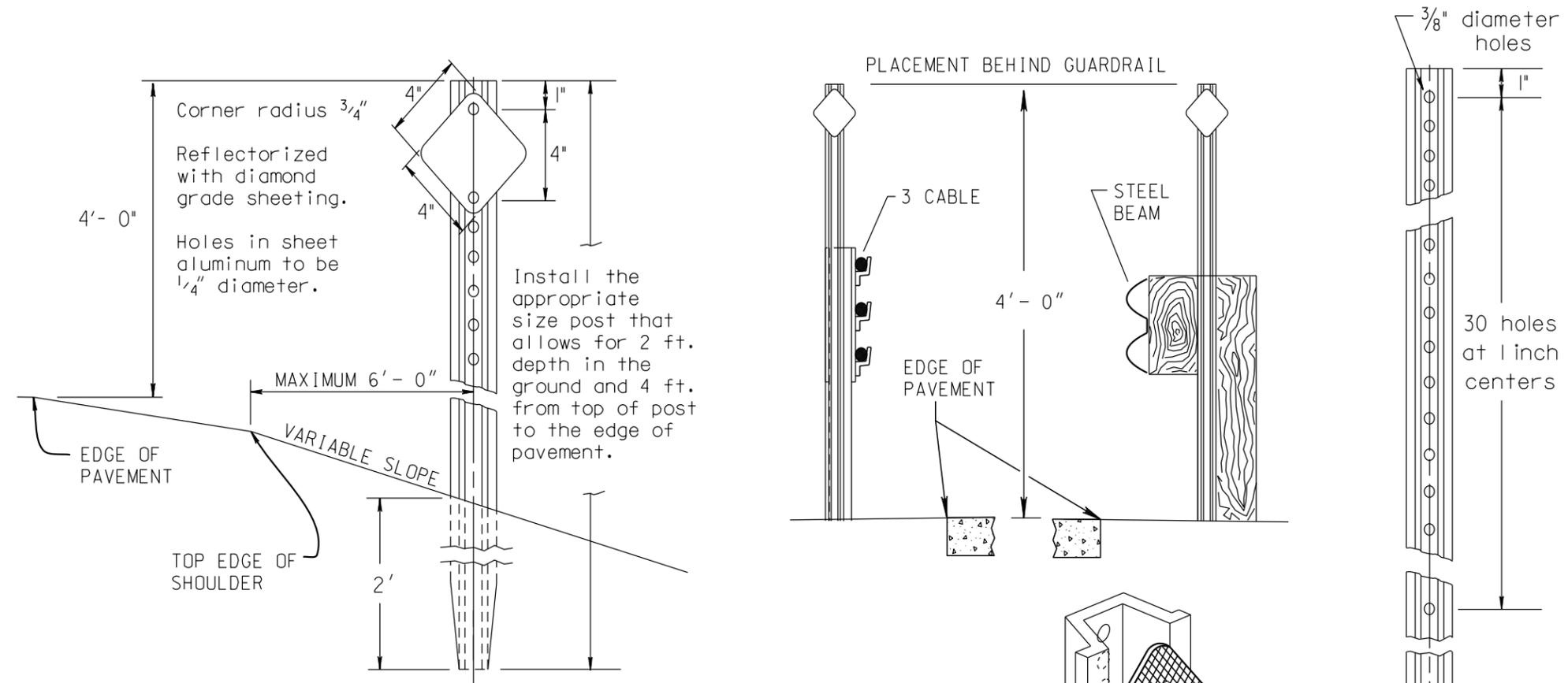
6 each 4"x4" White delineators with 1.12 Lb/Ft. posts, spacing is 6' center to center

12 each 4"x4" Amber delineators with 1.12 Lb/Ft. posts, spacing is 6' center to center

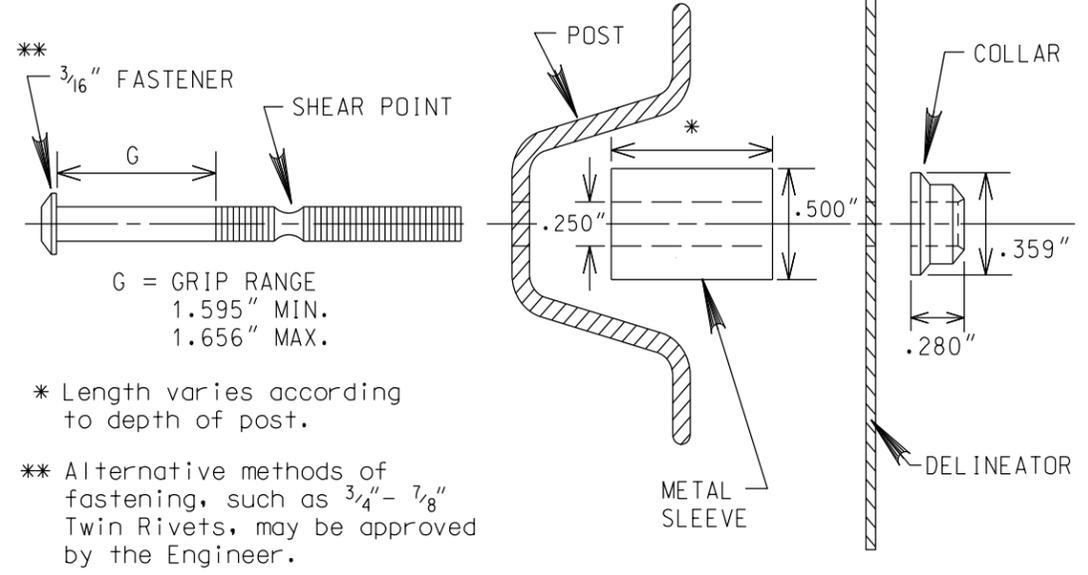
PLOTTED FROM - TRPR15123

FILE - ... \PRJ\ROBT08AT\RAMP DETOURS.DGN

# INSTALLATION DETAILS FOR 4" x 4" DELINEATORS (DIVIDED HIGHWAY)



## DETAIL FOR SINGLE MOUNTING 4" x 4" DELINEATORS ON POST

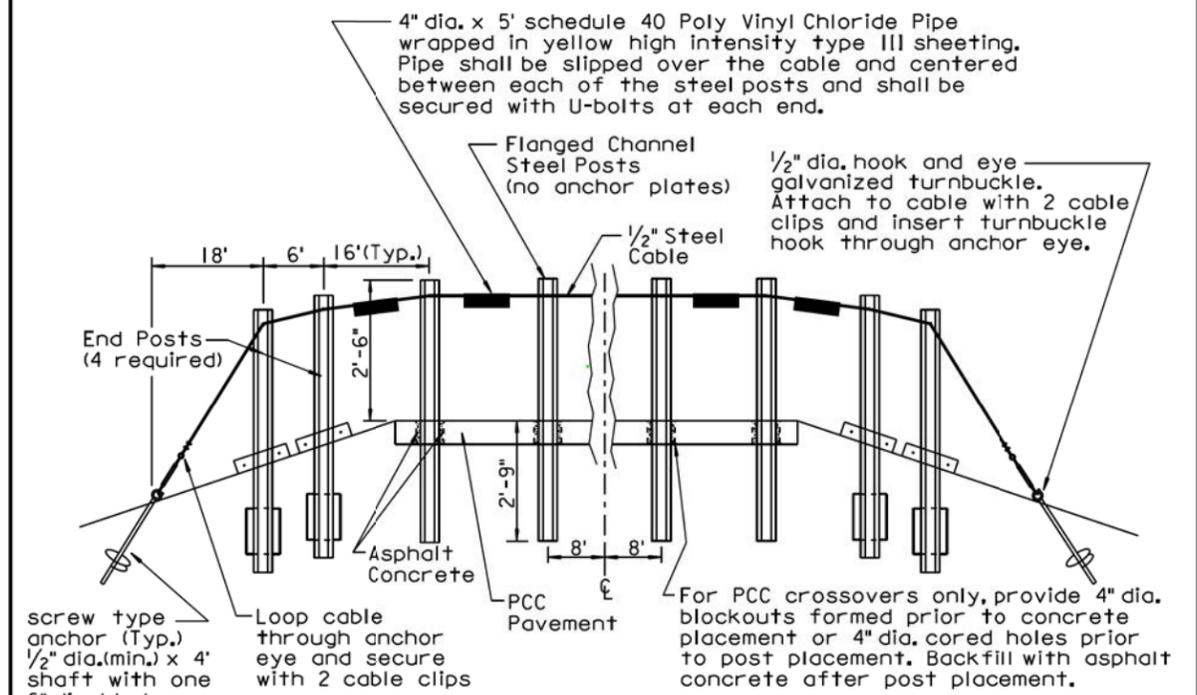
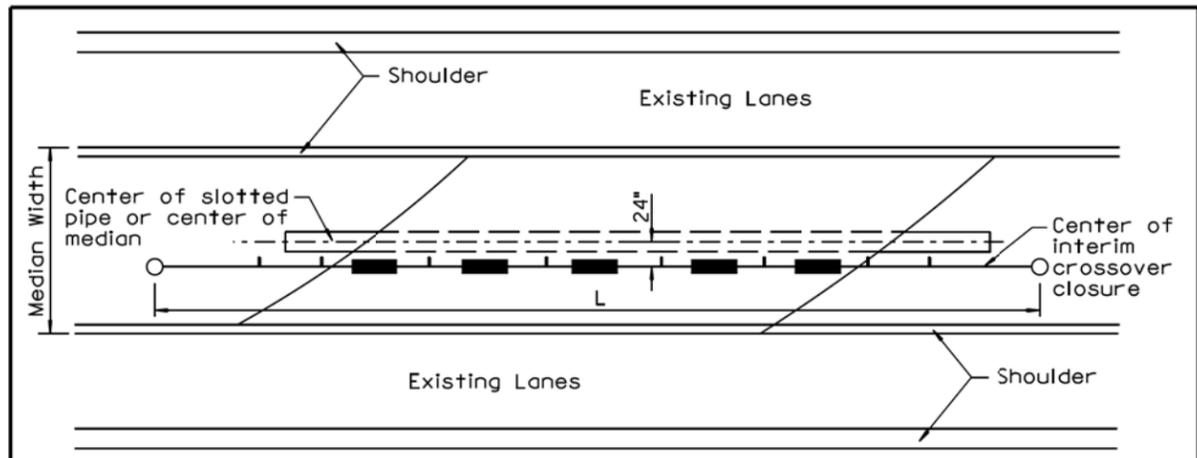


PLOT SCALE - 1:211.963

PLOTTED FROM - ITRP15123

PLOT NAME - 11

FILE - ... \PRJ\ROBT05AT\DELINATORS.DGN



MEDIAN WIDTH	NO. OF PVC PIPES	NO. OF U-BOLTS	NO. OF FLANGED CHANNEL STEEL POSTS	PAY LENGTH L
60'	5	10	4	128'

**GENERAL NOTES:**

All costs for materials, backfilling holes with asphalt concrete, labor, equipment, and incidentals necessary to construct the interim crossover closure shall be incidental to the contract unit price per Ft for "Interim Crossover Closure". The costs of coring holes or providing blackouts in the surfacing shall be incidental to the surfacing bid item(s).

The Interim Crossover Closure shall be constructed using 3 cable guardrail posts with hook bolts. For specific details of the 3 cable guardrail hardware and installation, see Standard Plate 629.01 sheets 1 through 6.

March 31, 2000

<b>S D D O T</b>	<b>INTERIM CROSSOVER CLOSURE</b>	PLATE NUMBER <b>629.41</b>
	Published Date: 3rd Qtr. 2016	Sheet 1 of 1

PLOT SCALE - 1:200

-PLOTTED FROM - TRPR15123

PLOT NAME - 12

FILE - ... \STANDARD PLATES\629-40.DGN