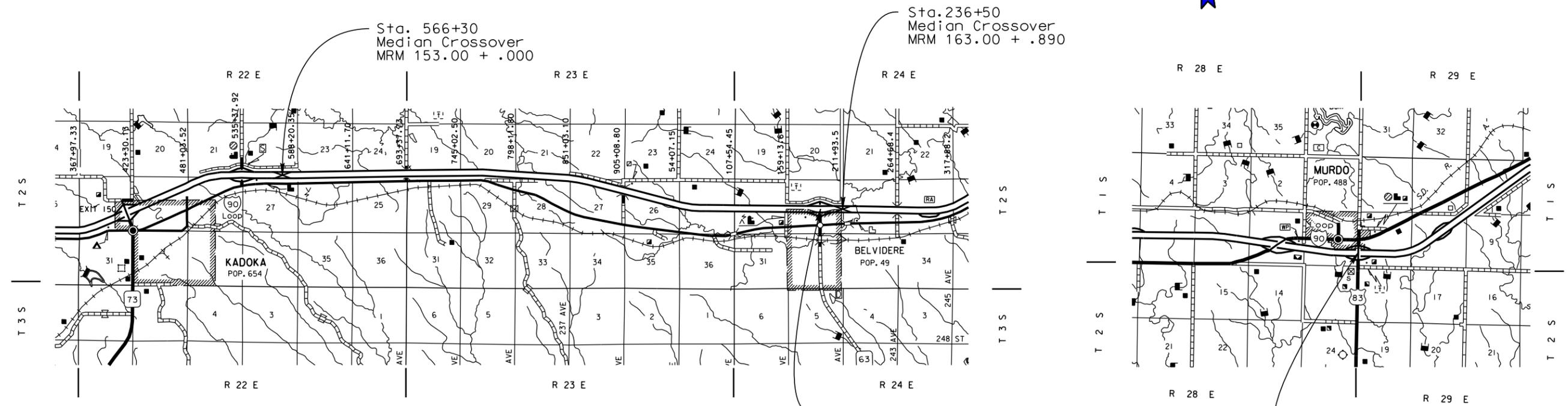
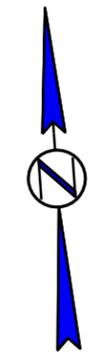


Plotting Date: 08/12/2014

Section F: Surfacing Plans

INDEX OF SHEETS

- F1 General Layout W/Index
- F2-F5 Estimate With General Notes & Tables
- F6 Typical Sections
- F7-10 Ramp Detour Layouts
- F11-F13 Median Crossover Layout and Typicals
- F14 Installation details for 4" x 4" Delineators
- F15 Details for Interim Crossover Closures
- F16-F19 Standard Plates



STORM WATER PERMIT

MAJOR STREAM - tributaries to the White River and Bad River
 AREA DISTURBED - 7.75 Acres
 PROJECT AREA - 150 Acres

Latitude = 43.8509
 Longitude = -101.4713

DESIGN DESIGNATION	
MRM 152.00 to 154.00	
ADT (2013)	2806
ADT (2033)	3229
DHV	546
D	51%
T DHV	12.7%
T ADT	28%
V	75 MPH

DESIGN DESIGNATION	
MRM 162.00 to 165.00	
ADT (2013)	2790
ADT (2033)	3212
DHV	542
D	51%
T DHV	12.7%
T ADT	28%
V	75 MPH

DESIGN DESIGNATION	
MRM 192.00 to 194.00	
ADT (2013)	2873
ADT (2033)	3365
DHV	571
D	51%
T DHV	13.2%
T ADT	29%
V	75 MPH

Exit 163
 EB Off Ramp - Ramp Detour
 EB On Ramp - Ramp Detour

Exit 192
 EB Off Ramp - Ramp Detour
 EB On Ramp - Ramp Detour

PLOT SCALE - 1:10560

PLOTTED FROM - TRP15123

PLOT NAME - 1

FILE - U:\MS\PR\JACK\03\W\TITLEF.DGN

SECTION F ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	IM 0903(103)152	F2	F19

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
009E3250	Miscellaneous Staking	1.095	Mile
009E3300	Three Man Survey Crew	40.0	Hour
120E0010	Unclassified Excavation	13,661	CuYd
120E6200	Water for Granular Material	565.8	MGal
120E9000	Pit Run Material	37,926.2	Ton
260E1010	Base Course	6,119.5	Ton
260E1030	Base Course, Salvaged	3,106.6	Ton
270E0040	Salvage and Stockpile Asphalt Mix and Granular Base Material	3,106.6	Ton
320E3000	Compaction Sample	3	Each
330E0100	SS-1h or CSS-1h Asphalt for Tack	3.6	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	1.2	Ton
330E2000	Sand for Flush Seal	22.0	Ton
450E4749	15" CMP 16 Gauge, Furnish	468	Ft
450E4750	15" CMP, Install	468	Ft
450E5005	15" CMP Elbow, Furnish	2	Each
450E5006	15" CMP Elbow, Install	2	Each
450E5100	CMP Tee, Furnish	2	Each
450E5101	CMP Tee, Install	2	Each
450E5402	15" CMP Safety End, Furnish	4	Each
450E5403	15" CMP Safety End, Install	4	Each
450E6119	15" Slotted CMP 16 Gauge, Furnish	216	Ft
450E6120	15" Slotted CMP, Install	216	Ft
451E3115	15" Pipe Cap	2	Each
462E0100	Class M6 Concrete	20.6	CuYd
462E0200	Controlled Density Fill	23.2	CuYd
600E0200	Type II Field Laboratory	1	Each
629E9000	Crossover Closure	448	Ft
629E9010	Interim Crossover Closure	512	Ft
632E2000	4"x4" Amber Delineator with 1.12 Lb/Ft Post	54	Each
632E2020	4"x4" White Delineator with 1.12 Lb/Ft Post	24	Each
831E0210	Non-woven Geotextile Separator	16,380	SqYd
900E2030	Miscellaneous Work	1	Site

Alternate A

Bid Item Number	Item	Quantity	Unit
320E0007	PG 64-28 Asphalt Binder	262.5	Ton
320E1050	Class E Asphalt Concrete	4,525.2	Ton

Alternate B

Bid Item Number	Item	Quantity	Unit
320E0007	PG 64-28 Asphalt Binder	232.2	Ton
320E1050	Class E Asphalt Concrete	4,647.2	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.

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

Substitution of a cellular telephone for the hard-wired touch-tone telephone is not allowed, as state personnel need the ability to download information over direct internet and phone lines. The phone is intended for state personnel usage only. Contractor personnel are prohibited from using this phone unless pre-approved by the Project Engineer.

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.

The Contractor shall submit a copy of each monthly bill for calls charged to this phone at the end of each month. The Project Engineer will then audit the bills to ensure all calls are legitimate and then initiate a Construction Change Order (CCO) to reimburse the Contractor for the actual phone calls made, including local and long distance calls. Reimbursement will not be made for fees associated with the purchase, installation, disconnection, monthly line charges, and incidentals involved in the installation, maintenance, and disconnection of the phone (including attachments). These items shall be incidental to the contract unit price per each for "Type II Field Laboratory".

CLASS E ASPHALT CONCRETE

Mineral Aggregate for Class E Asphalt Concrete – Alternate A shall conform to the requirements for Class E, Type 1.

Mineral Aggregate for Class E Asphalt Concrete – Alternate B shall consist of a minimum of 80 percent crushed limestone ledgerrock and shall conform to the requirements for Class E, Type 1.

All other requirements for Class E shall apply.

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 quality and gradation testing.

All other requirements for Base Course, Salvaged shall apply.

Any Base Course, Salvaged material remaining after completion of the project shall become the property of the Contractor.

REMOVE MAINTENANCE CROSSOVER

The maintenance crossover located at MRM 152.42 + .439 (Sta. 559+00) shall be removed as part of this project. The Contractor shall dispose of all material as approved by the Engineer.

Cost for removing the maintenance crossover shall be incidental to the contract unit price per site for MISCELLANEOUS WORK.

PIT RUN MATERIAL

Pit Run material shall be obtained from a granular source and shall conform to the following gradation:

Sieve	% Passing
6"	100
#4	0-60
#200	0-20

Pit Run Material shall be compacted to 95% or greater of Maximum Dry Density as determined by the Specified Density Method in layers not exceeding 8 inches loose depth. If the material does not contain enough fines to allow for conventional density testing (SD 105 or SD 106), the material shall be compacted as specified for A-2-4(0) and A-3 soils. Minimum compaction testing requirements will be a minimum of one test per median crossover and ramp detour locations.

Pit Run material will be paid for at the contract unit price per ton. Payment will be full compensation for furnishing and placing materials, labor, equipment, test strips (if required), and all incidentals required.

Nonwoven Geotextile Separator Fabric has been included in the Estimate of Quantities for median crossovers and 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 Geotextile Separator Fabric will conform to Section 831, of the Specifications.

CONTROLLED DENSITY FILL

Controlled density fill shall be placed at the locations shown in the Table of Controlled Density Fill.

Controlled density fill shall be a flowable mortar material. Material and mixing shall be in accordance with the Section 462 of the Specifications, except as modified below. The mix shall be as follows:

Mix Design:

Material	Rate per Cubic Yard
Portland Cement, Type I	100 Lb
Fine Aggregate	2,600 Lb
Coarse Aggregate	None
Water	60 Gal
Fly Ash, Type C	300 Lb

Alternative Mix Design with Controlled Low Strength Material (CLSM):

Material	Rate per Cubic Yard
Portland Cement, Type I	200 Lb
Fine Aggregate	2,600 Lb
Coarse Aggregate	None
Water	35 Gal
W.R. Grace - Darafill (or approved equal)	1 (3 oz.)* capsule (or equivalent)

* One 3oz. Darafill capsule or equivalent CLSM performance additive (foaming admixture).

The fine aggregate shall be natural sand consisting of mineral aggregate particles conforming to the following gradation requirements:

Passing a 3/8 Inch Sieve	100%
Passing a No. 200 Sieve	0-10%

Either mix shown above is designed to produce a minimum compressive strength of 100 psi. The Engineer may allow adjustments to the proportion of water at the site to provide the necessary consistency of the mix.

Controlled density fill shall be contained within the required limits with sandbags or other methods approved by the Engineer.

The Contractor shall prevent the flotation, uplift or movement of the culvert due to the buoyant force from the controlled density fill until the controlled density fill hardens. Overlying surfacing material shall not be placed sooner than four hours after placement of the controlled density fill.

Cost for furnishing and installing the controlled density fill, including sandbags, labor, material, equipment and incidentals necessary to complete the work shall be included in the contract unit price per cubic yard for CONTROLLED DENSITY FILL.

Plans quantity will be the basis of payment unless otherwise ordered by the Engineer.

TABLE OF CONTROLLED DENSITY FILL

Location	Controlled Density Fill CuYd
Median Crossovers	
MRM 153.00	11.6
MRM 163.89	11.6
TOTAL	23.2

TABLE OF CLASS M6 CONCRETE

Location	Class M6 Concrete CuYd
Median Crossovers	
MRM 153.00	10.3
MRM 163.89	10.3
TOTAL	20.6

NON-WOVEN GEOTEXTILE SEPARATOR FABRIC

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

TABLE OF NON-WOVEN GEOTEXTILE SEPARATOR

Location	Non-woven Geotextile Separator SqYds
Median Crossovers	
MRM 153.00	3,850.4
MRM 163.89	3,850.4
Exit 163 – EB off Ramp	1,760.8
Exit 163 – EB on Ramp	2,466.2
Exit 192 – WB off Ramp	1,882.4
Exit 192 – WB on Ramp	2,569.6
TOTAL	16,379.8

UNCLASSIFIED EXCAVATION

An estimated 13,661.1 CuYds of Unclassified Excavation shall be plans quantity and will not be adjusted according to field measurements, see Typical Sections. Unclassified Excavation is salvaged asphalt mix and granular base material and removal of waste material. The Unclassified Excavation waste material shall be disposed of as directed by the Engineer.

If waste material is disposed of in the State ROW, the removal and replacement of the topsoil and seeding shall be incidental to the contract unit price per cubic yard for UNCLASSIFIED EXCAVATION.

The salvaged material will be used as Base Course, Salvaged on this project.

TABLE OF UNCLASSIFIED EXCAVATION

Location of Removal Areas	Salvaged Asphalt Mix and Granular Base Material	Waste Material
	CuYds	CuYds
Median Crossovers		
MRM 153.00	575.0	2,567
MRM 163.89	379.8	2,688
Exit 163 – EB off Ramp	136.0	1,289.5
Exit 163 – EB on Ramp	234.9	1,969.7
Exit 192 – WB off Ramp	115.7	1,409.4
Exit 192 – WB on Ramp	202.3	2,093.8
Subtotals	1,643.7	12,017.4
TOTAL	13,661.1	

SALVAGE AND STOCKPILE ASPHALT MIX AND GRANULAR BASE MATERIAL

An estimated 3,106.6 tons (1,643.7 cubic yards) of asphalt mix and granular base material shall be salvaged from the mainline shoulders of the interstate in locations where ramp detours and median crossovers are being built. The salvaged material shall be stockpiled at a site furnished by the Contractor and satisfactory to the Engineer.

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

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

SALVAGE AND STOCKPILE ASPHALT MIX AND GRANULAR BASE MATERIAL

Location of Removal Areas	Salvage and Stockpile Asphalt Mix and Granular Base Material
	Tons
Median Crossovers	
MRM 153.00	1,086.8
MRM 163.89	717.8
Exit 163 – EB off Ramp	257.0
Exit 163 – EB on Ramp	444.0
Exit 192 – WB off Ramp	218.7
Exit 192 – WB on Ramp	382.3
Total	3,106.6

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 each	White Delineators each
Exit 163 – EB off Ramp	14	6
Exit 163 – EB on Ramp	14	6
Exit 192 – WB off Ramp	14	6
Exit 192 – WB on Ramp	12	6
TOTAL	54	24

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	Crossover Closure Ft	Interim Crossover Closure Ft
Median Crossovers		
MRM 153.00	224	
MRM 163.89	224	
Exit 163 – EB off Ramp		128
Exit 163 – EB on Ramp		128
Exit 192 – WB off Ramp		128
Exit 192 – WB on Ramp		128
Totals	448	512

TABLE OF ADDITIONAL QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	IM 0903(103)152	F5	F19

Location-Description	Water for Granular Material MGal	Base Course or Base Course, Salvaged Ton	Pit Run Material Ton	Class E Asphalt Concrete Alternate A 1 st / 2 nd / 3 rd Lift Ton	PG 64-28 Asphalt Binder Alternate A 1 st / 2 nd / 3 rd Lift Ton	Class E Asphalt Concrete Alternate B 1 st / 2 nd / 3 rd Lift Ton	PG 64-28 Asphalt Binder Alternate B 1 st / 2 nd / 3 rd Lift Ton	SS-1h or CSS-1h Asphalt for Tack 1 st / 2 nd Lift Ton	SS-1h or CSS-1h Asphalt for Flush Seal Ton	Sand for Flush Seal Ton
Median Crossovers										
MRM 153.00	98.8	2,227.5	6,002.8	522.0 / 493.0 / 312.3	30.3 / 28.6 / 18.1	536.1 / 506.3 / 320.7	26.8 / 25.3 / 16.0	-- / 0.6 / 0.6	0.6	11.0
MRM 163.89	95.4	2,227.5	5,720.5	522.0 / 493.0 / 312.3	30.3 / 28.6 / 18.1	536.1 / 506.3 / 320.7	26.8 / 25.3 / 16.0	-- / 0.6 / 0.6	0.6	11.0
Exit 163 – EB off Ramp	71.5	964.7	4,994.1	202.0 / 172.3	11.7 / 10.0	207.5 / 176.9	10.4 / 8.8	0.2	--	--
Exit 163 – EB on Ramp	108.0	1,361.6	7,641.7	289.5 / 250.1	16.8 / 14.5	297.4 / 256.8	14.9 / 12.8	0.3	--	--
Exit 192 – WB on Ramp	114.4	1,415.8	8,116.5	300.2 / 259.0	17.4 / 15.0	308.3 / 266.0	15.4 / 13.3	0.4	--	--
Exit 192 – WB off Ramp	77.7	1,029.0	5,450.6	214.7 / 182.8	12.5 / 10.6	220.4 / 187.7	11.0 / 9.4	0.3	--	--
Totals	565.8	9,226.1	37,926.2	4,525.2	262.5	4,647.2	232.2	3.6	1.2	22.0

TABLE OF PIPE AND RELATED ITEMS

Location-Description	15" CMP (16 ga.), Ft	15" CMP Elbow Each	15" CMP Safety End Each	15" Slotted CMP (16 ga.) Ft	15" Pipe Cap Ft	CMP Tee Each
Median Crossovers						
MRM 153.00	234	1	2	108	1	1
MRM 163.89	234	1	2	108	1	1
Totals	468	2	4	216	2	2

TABLE OF CONSTRUCTION STAKING

(See Special Provision for Contractor Staking)

Location and Description	Length (Ft)	Miscellaneous Staking Quantity (Mile)
Median Crossovers		
MRM 153.00	672.0	0.127
MRM 163.89	672.0	0.127
Exit 163 – EB off Ramp	909.6	0.172
Exit 163 – EB on Ramp	1,260.2	0.239
Exit 192 – WB on Ramp	1,332.9	0.252
Exit 192 – WB off Ramp	941.2	0.178
Totals	5,787.9	1.095

TYPICAL SURFACING SECTION

RAMP DETOURS

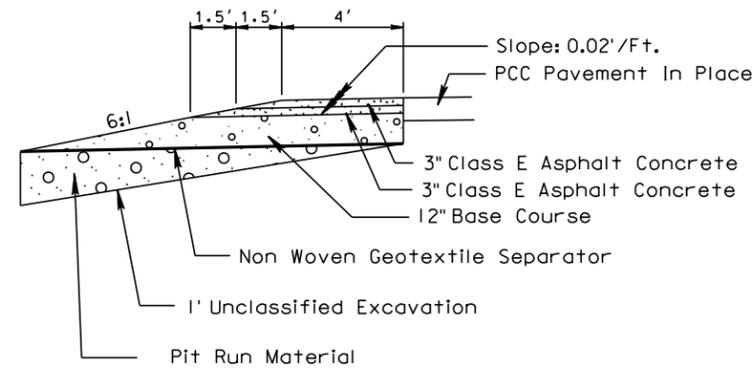
STATE OF SOUTH DAKOTA	PROJECT IM 0903(103)152	SHEET F6	TOTAL SHEETS F19
-----------------------	----------------------------	-------------	---------------------

Plotting Date: 08/12/2014

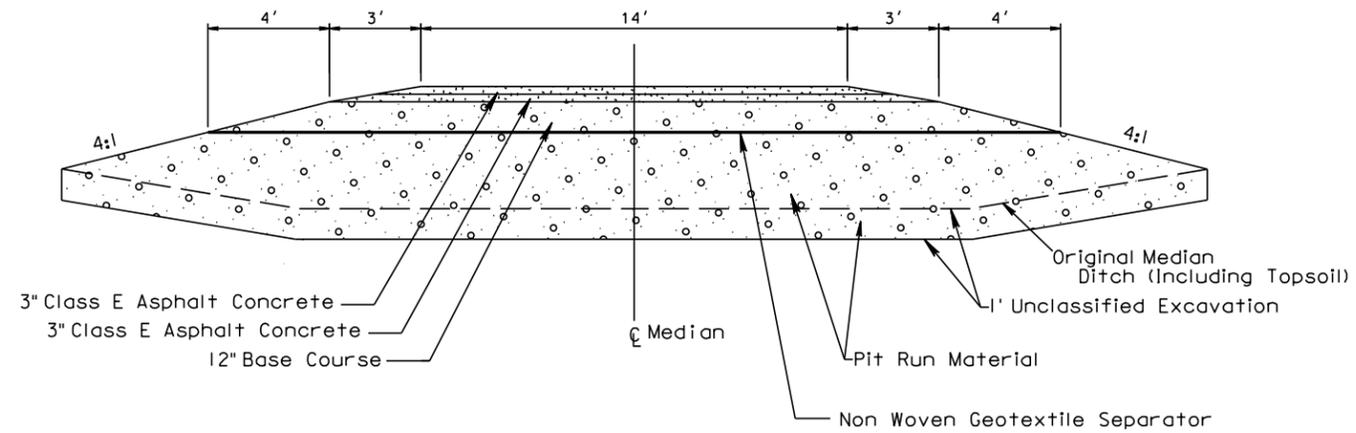
PLOT SCALE - 1:6

PLOT NAME - 2

RAMP DETOUR TYPICAL NEXT TO PCC PAVEMENT



RAMP DETOUR TYPICAL SECTION



PLOTTED FROM - IRPR15123

FILE - ... \JACK03\TYPICAL SECTION.DGN

RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0903(103)152	F7	F19

Plotting Date: 08/12/2014

Scale 1 Inch = 80 Feet
Sheet 1 of 4 Sheets

Exit 163

General Notes:

Stationing shown for the Ramp Detour is for reference only.

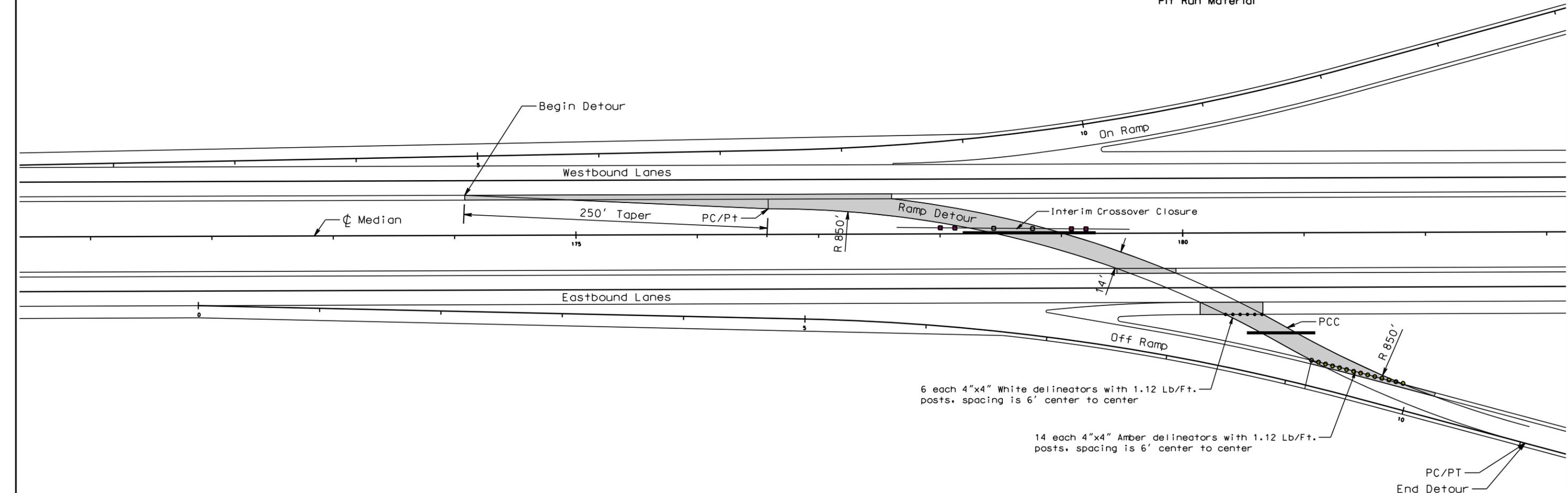
The Ramp Detour shall be constructed with a maximum horizontal degree of curve of $6 \frac{33}{64} 45'$ and the vertical alignment shall be adequate for stopping sight distance.

— 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
Pit Run Material

PLOT SCALE - 1:80

PLOT NAME - 3



PLOTTED FROM - TRP15123

FILE - ... \PRJ\JACK03\W\RAMP DETOURS.DGN

RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0903(103)152	F8	F19

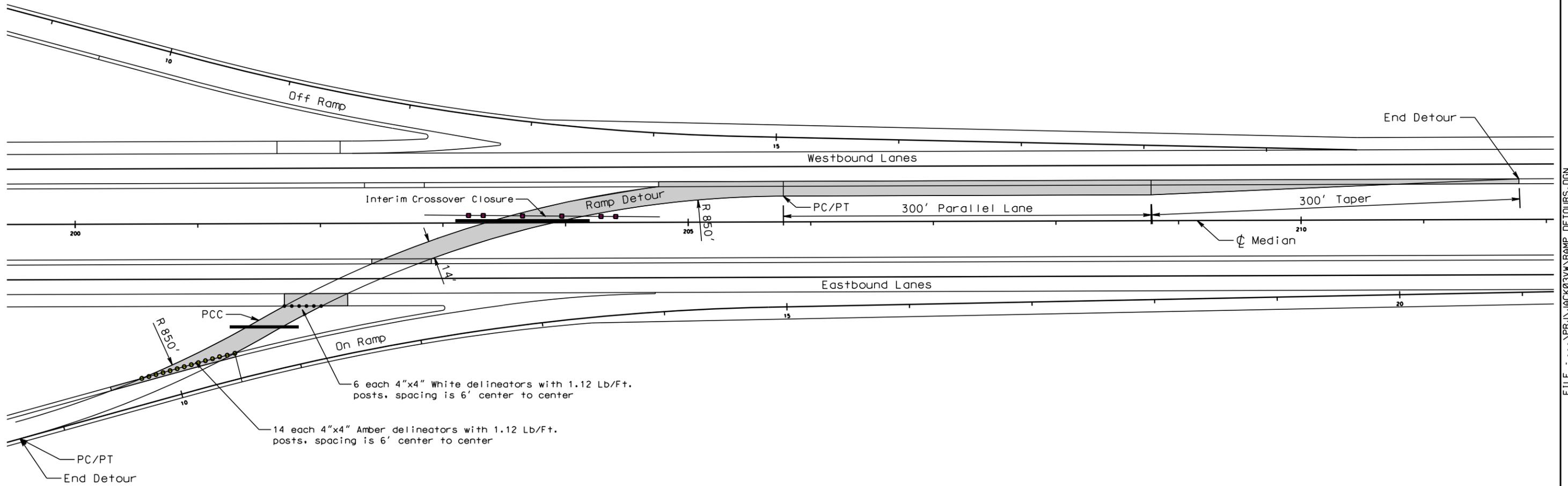
Plotting Date: 08/12/2014

Scale 1 Inch = 80 Feet
Sheet 2 of 4 Sheets

Exit 163

PLOT SCALE - 1:80

PLOT NAME - 4



PLOTTED FROM - TRP15123

FILE - ... \PRJ\JACK03\W\RAMP DETOURS.DGN

RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0903(103)152	F9	F19

Plotting Date: 08/12/2014

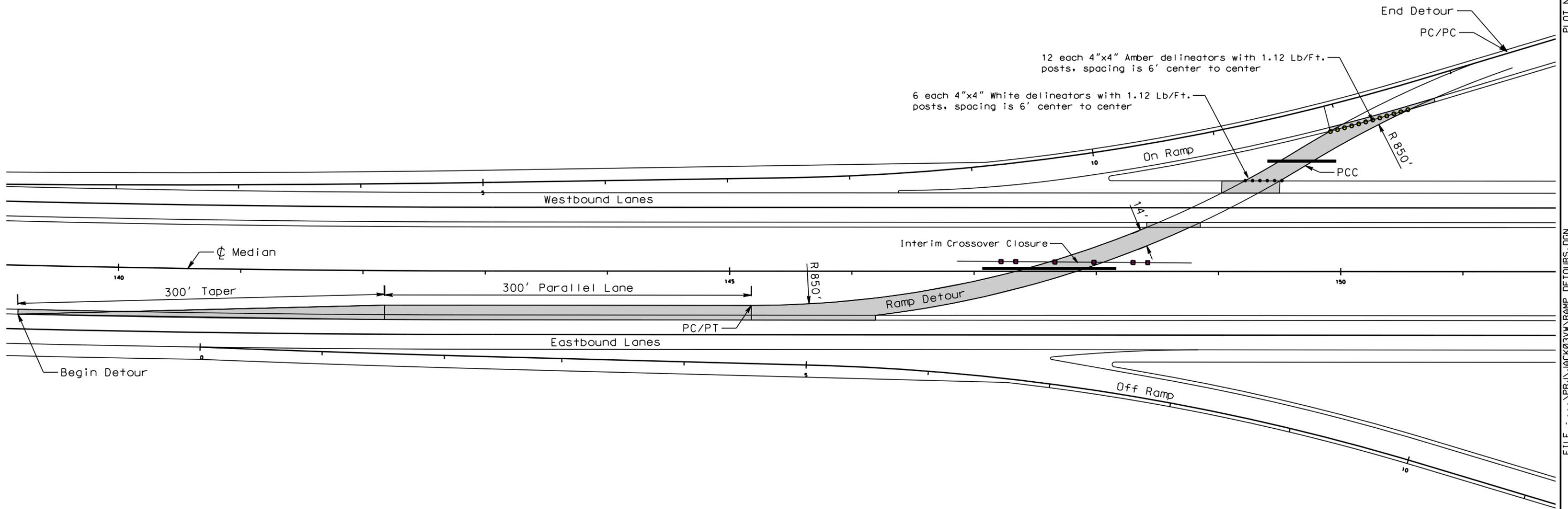
Scale 1 Inch = 80 Feet
Sheet 3 of 4 Sheets

Exit 192

PLOT SCALE - 1:80

PLOT NAME - 5

FILE - ... \PRJ\JACKSON\RAMPS\DETOURS.DGN



RAMP DETOUR LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0903(103)152	F10	F19

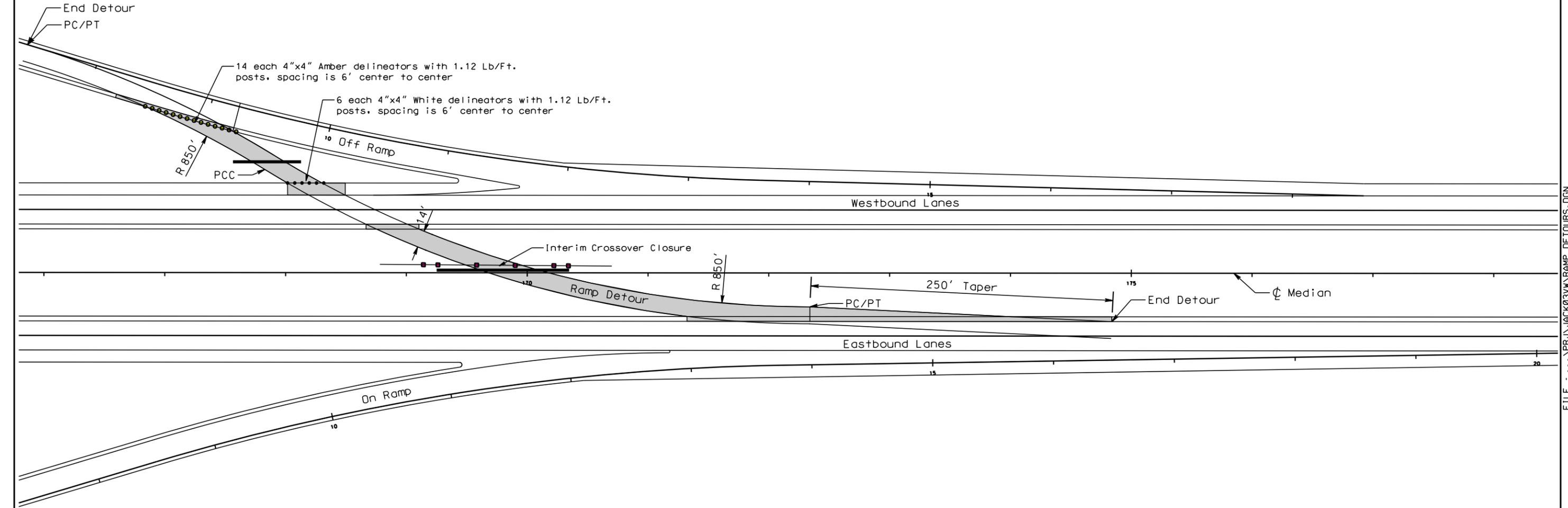
Plotting Date: 08/12/2014

Scale 1 Inch = 80 Feet
Sheet 4 of 4 Sheets

Exit 192

PLOT SCALE - 1:80

PLOT NAME - 6



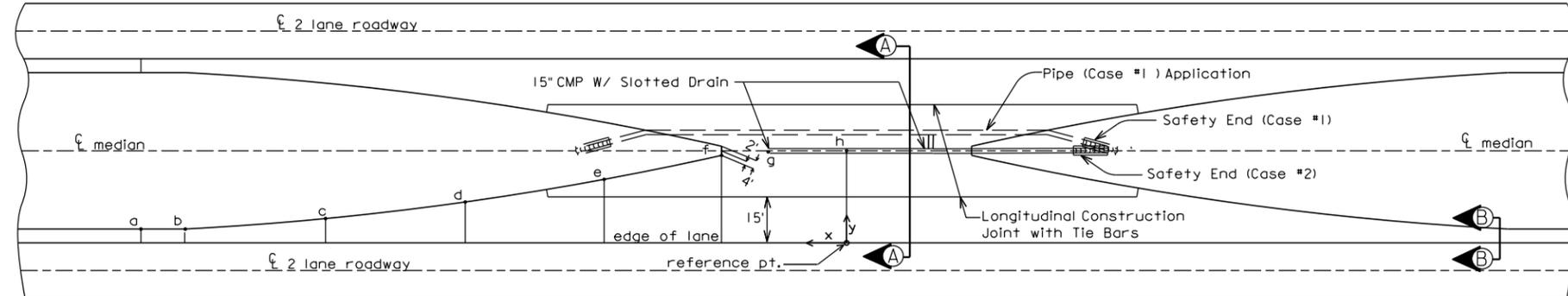
PLOTTED FROM - ITRP15123

FILE - ... \PRJ\JACK03\W\RAMP DETOURS.DGN

MEDIAN CROSSOVERS

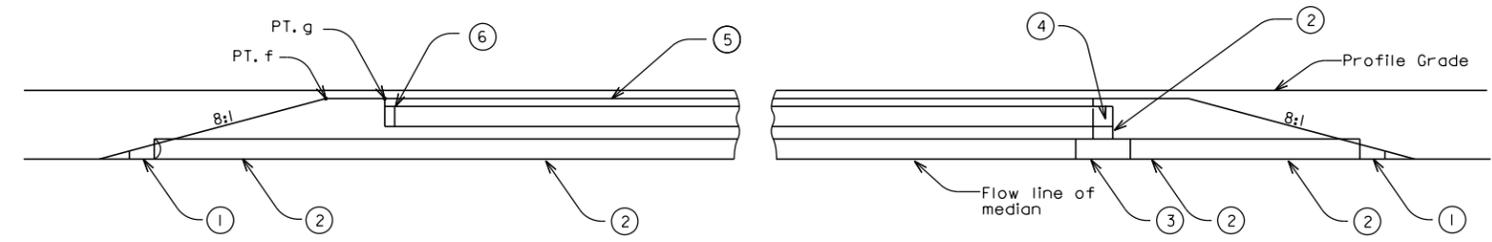
MRM 153.00 + .000 and 163.00 + .890

Sheet 1 of 3

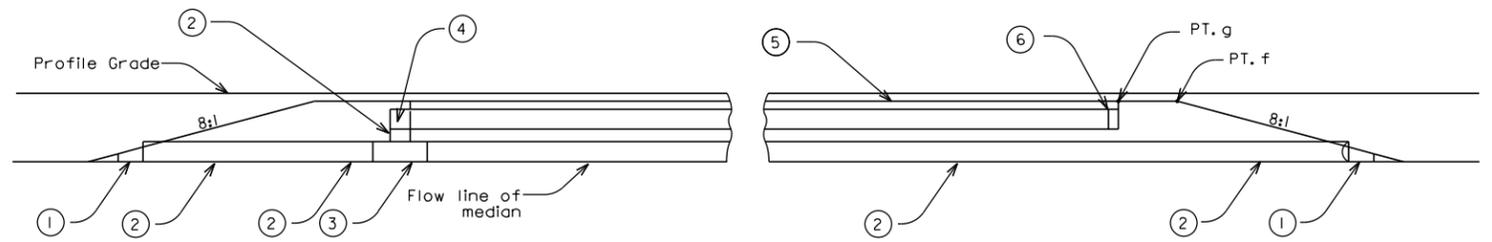


66' MEDIAN		
Point	(x)	(y)
* a	336+	6.0'
b	336'	6.0'
c	266'	7.7'
d	197'	12.8'
e	128'	21.2'
f	72'	31.0'
g	54'	33.0'
h	0'	33.0'

(*Point a - may vary to match on site pavement joints)



TYPICAL SECTION - Sta. 566+30



TYPICAL SECTION - Sta. 236+50

Median Drainage Components (each location)

- ① 15" CM Safety End
- ② 15" CMP
- ③ 15" CM Tee
- ④ 15" CM 90° Elbow
- ⑤ 15" CM Slotted Drain
- ⑥ 15" CM Cap

GENERAL NOTES:

The intent of this plan is to show the construction requirements for The median crossover.

Construction of median crossover shall conform to the requirement of Current Specifications.

Typical Sections shows Median Crossover located on grade requiring through drainage and a slotted drain.

Sections A-A & B-B depict the surfacing requirements.

The 15" CMP Cap shall be incidental to the contract unit price bid per linear foot of 15" Slotted C.M.P. (16 ga.) Furnish and 15" Slotted C.M.P. Install.

Price bid for contract items shall be considered full compensation for furnishing all necessary materials and labor to construct the median crossover as detailed hereon.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0903(103)152	F12	F19

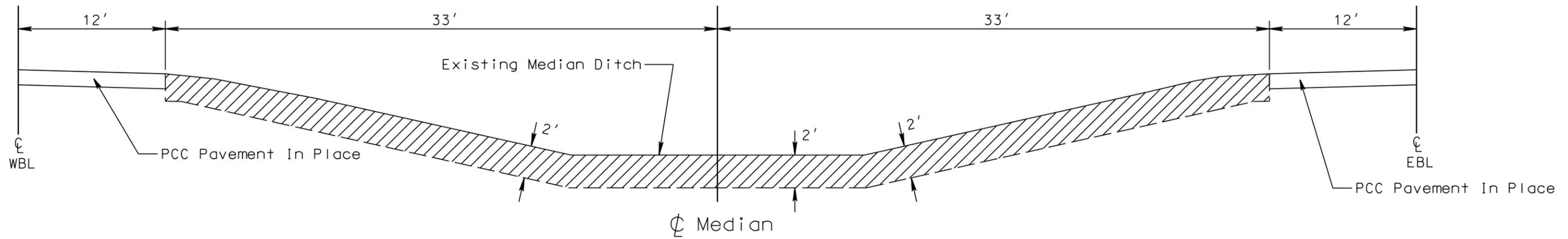
Plotting Date: 08/12/2014

MEDIAN CROSSOVER

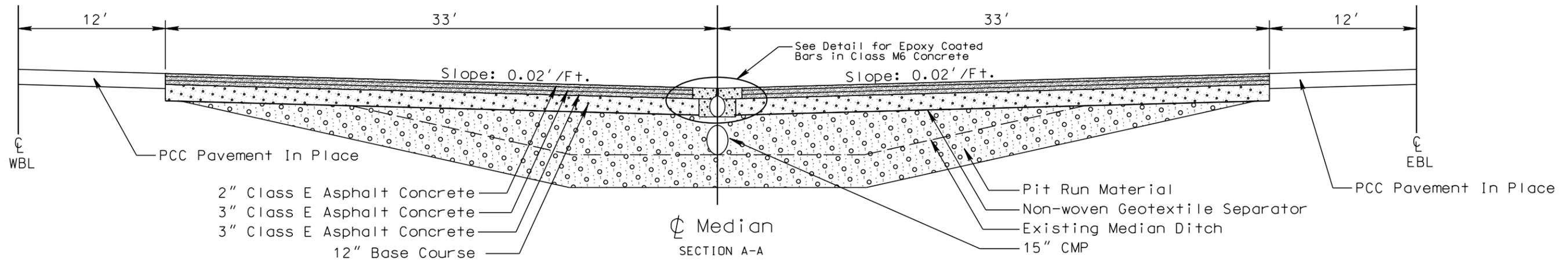
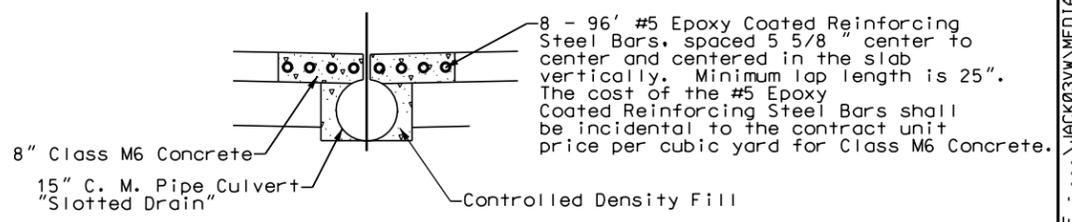
MRM 153.00 + .000 and 163.00 + .890

Sheet 2 of 3

 Unclassified Excavation



Detail for Epoxy Coated Bars in Class M6 Concrete



PLOT SCALE - 1:10,757

PLOTTED FROM - ITRP15123

PLOT NAME - 8

FILE - ... \JACK03\W\MEDIAN CROSSOVERS.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0903(103)152	F13	F19

Plotting Date: 08/12/2014

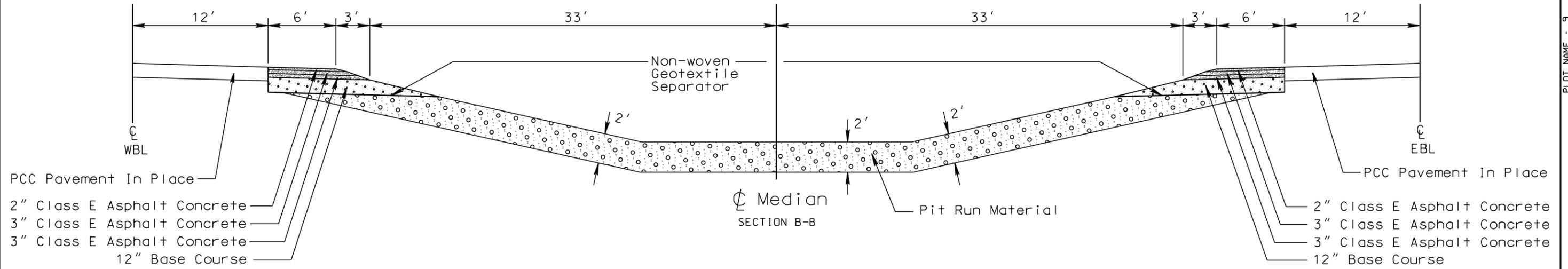
MEDIAN CROSSOVER

MRM 153.00 + .000 and 163.00 + .890

Sheet 3 of 3

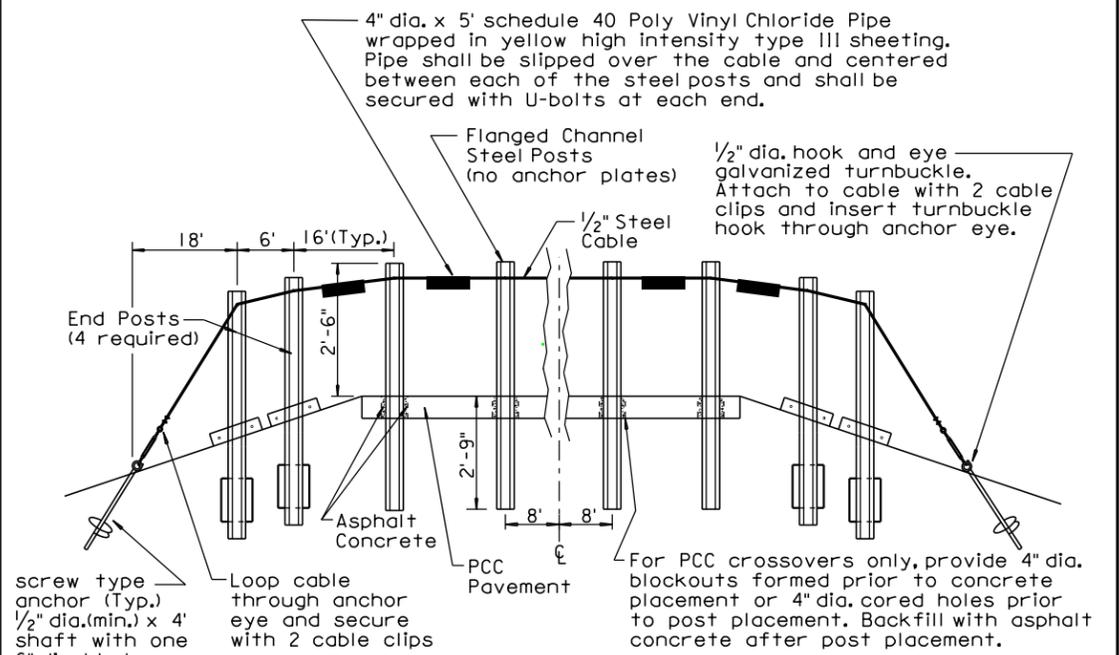
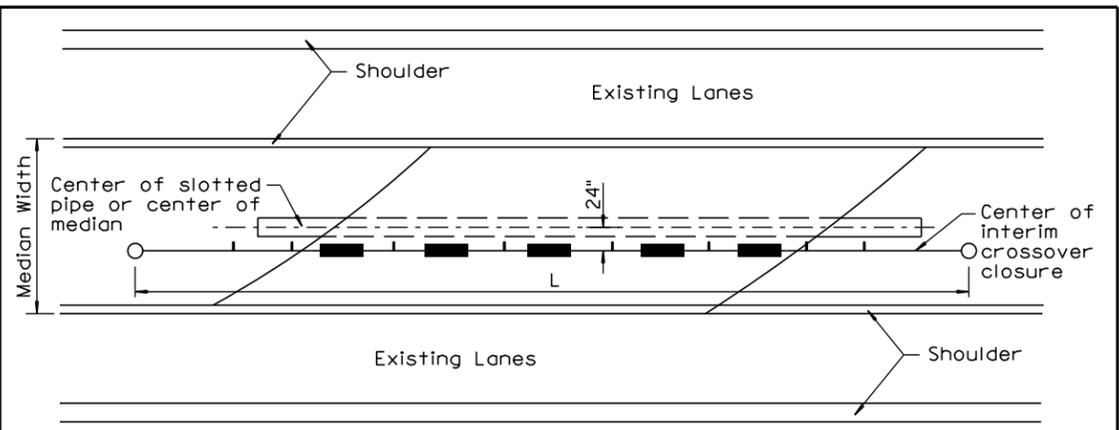
PLOT SCALE - 1:10,757

PLOT NAME - 9



PLOTTED FROM - IRP15123

FILE - ... \JACK03\MEDIAN CROSSOVERS.DGN



NO. OF PVC PIPES	NO. OF U-BOLTS	NO. OF FLANGED CHANNEL STEEL POSTS	PAY LENGTH L
5	10	4	128'
3	8	2	96'

GENERAL NOTES:

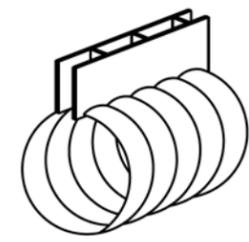
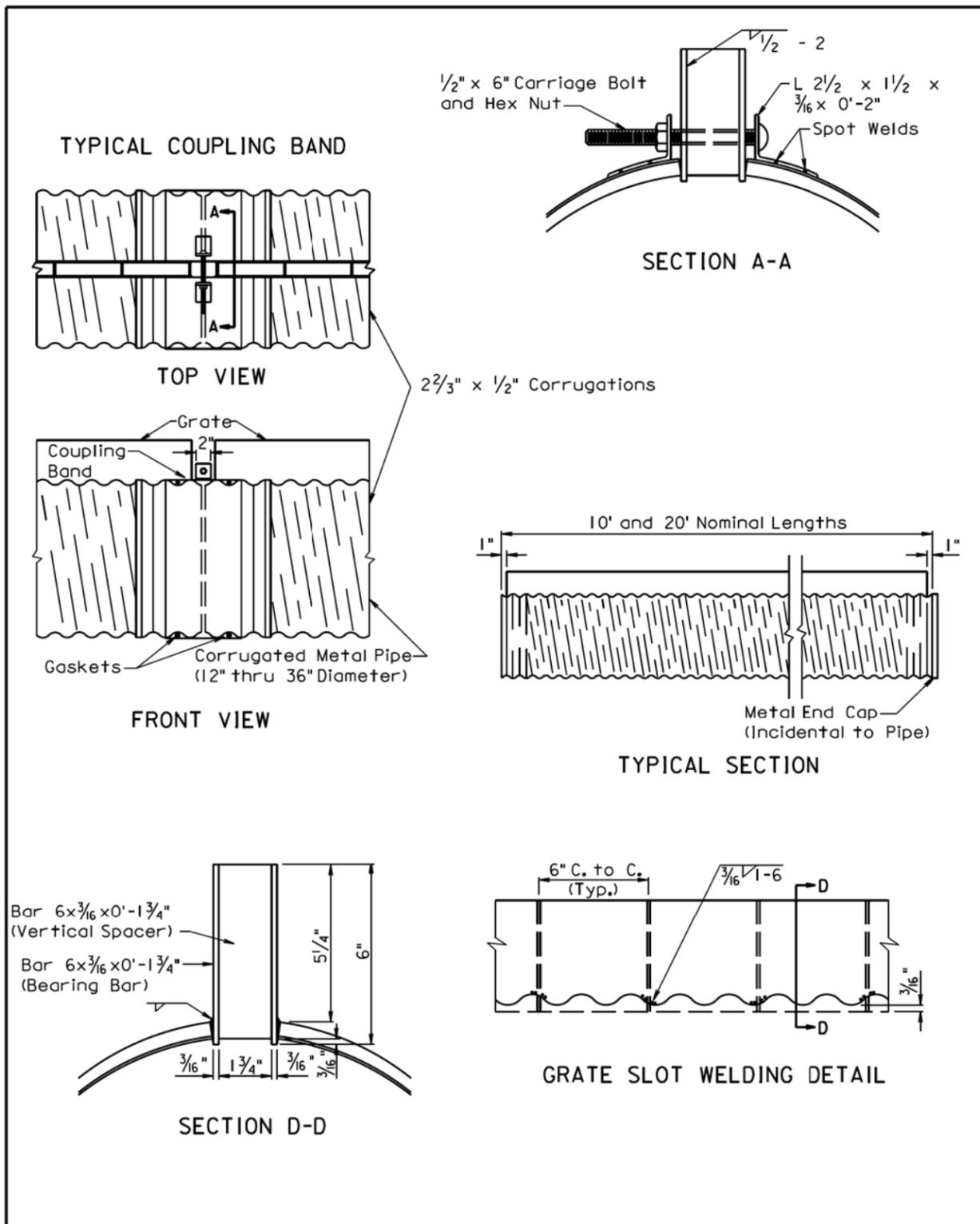
All costs for materials, backfilling holes with asphalt concrete, labor, equipment, and incidentals necessary to construct the interim crossover closure shall be incidental to the contract unit price per Ft for "Interim Crossover Closure". The costs of coring holes or providing blockouts in the surfacing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

INTERIM CROSSOVER CLOSURE FOR RAMP DETOURS

PLOT SCALE - 1:200

PLOT NAME - 12



SLOTTED C.M.P. DRAIN

GENERAL NOTES:

- A typical length of Slotted Drain is twenty (20) feet. Installation should be in multiples of ten (10) feet unless situations dictate otherwise.
- All Slotted Drain materials and hardware shall be galvanized.
- Metal end caps shall be provided for the closed end of each installation. The end caps shall be the same gage as the pipe.
- All joints and end caps shall be watertight.
- Close riveted soldered annular or continuously welded helical pipe shall be used and shall be watertight.
- Units on which the spelter coating has been burned by welding or otherwise damaged in fabrication or during installation shall be regalvanized or painted with one full brush coat of zinc-rich paint conforming to Military Specification Mil-P-21035 or with at zinc-dust, zinc-oxide paint conforming to Federal Specification TT-P-641-B, Type III. Prior to painting, the surface shall be properly cleaned and approved.
- Two gaskets will be required for each coupling band or joint and shall be rendered watertight by methods approved by the Engineer.
- The slot shall be covered with an acceptable material during paving operations and/or installation of curb and gutter.
- Anchors shall be 1/2" Dia. x 3" galvanized bolts and nuts. The nuts shall be welded to the slot at two (2) foot spacing. Bolts shall be added just prior to installation to avoid damage.
- A trapezoidal design for spacer bars, either vertical or slanted, may be an alternate for the vertical bars shown on the details. The Slotted Drain with slanted spacer bars shall be installed with the slanted spacer bars oriented toward the flow.
- A Heel Guard (1/2 inch #13 expanded metal mesh) shall be furnished when called for in the plans and shall be welded to the grating before delivery to the project.
- Slotted Drain will be measured along the centerline of the pipe. The length shall be the overall installed length from end to end including any coupling bands that may be between sections. The outlet pipe will be paid for as CMP and End Sections.
- Slotted Drain will be paid for at the contract unit price per Foot of Slotted C.M.P. Payment will be full compensation for materials, labor, equipment, and incidentals required.

FILE - ... \STANDARD PLATES\450.31-1&2.DGN

-PLOTTED FROM - TRPR15123

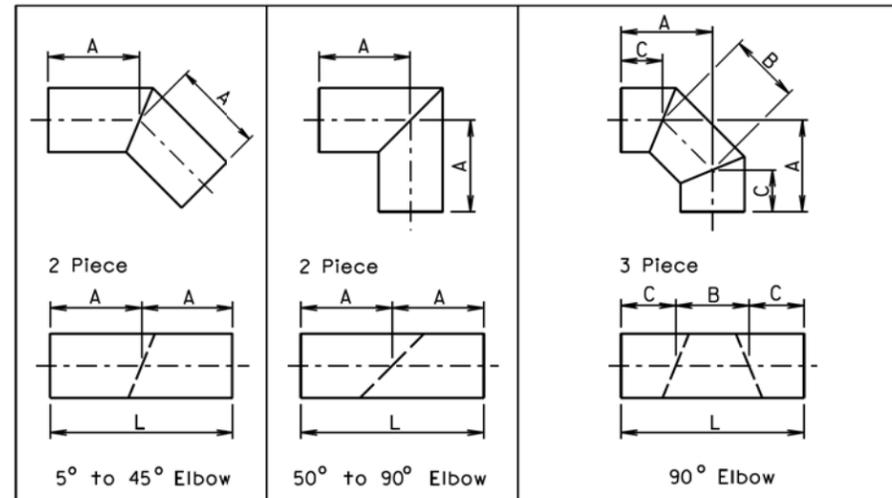
March 31, 2000

March 31, 2000

Published Date: 3rd Qtr. 2014	S D D O T	SLOTTED C.M.P. DRAIN	PLATE NUMBER 450.31
			Sheet 1 of 2

Published Date: 3rd Qtr. 2014	S D D O T	SLOTTED C.M.P. DRAIN	PLATE NUMBER 450.31
			Sheet 2 of 2

Plotting Date: 08/12/2014



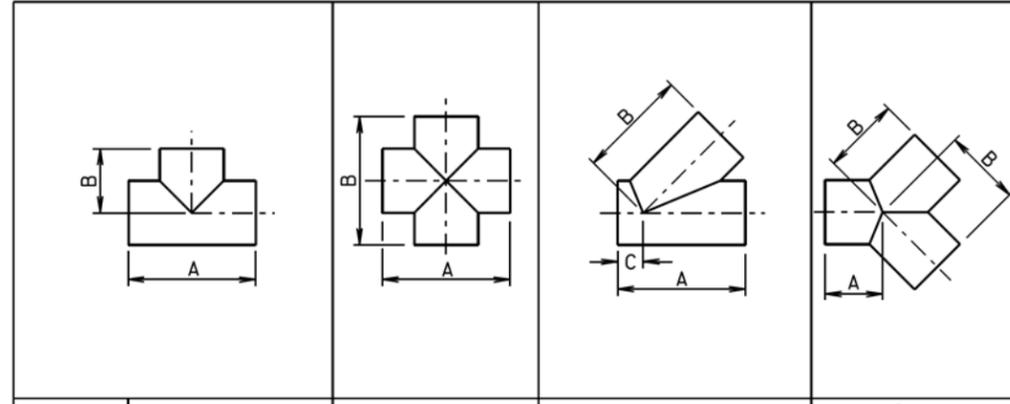
Diameter Inches	5° to 45° Elbow		50° to 90° Elbow			90° Elbow				
	A Feet	L Feet	Diameter Inches	A Feet	L Feet	Diameter Inches	A Inches	B Inches	C Inches	L Feet
12	1	2	12	2	4	12	25 1/2	11	18 1/2	4
15	1	2	15	2	4	15	26 1/2	12	18	4
18	1	2	18	2	4	18	27	14	17	4
21	2	4	21	2	4	21	27	15	16 1/2	4
24	2	4	24	2	4	24	27 1/2	16	16	4
27	2	4	27	2	4	27	27 1/2	17	15 1/2	4
30	2	4	30	3	6	30	40	19	26 1/2	6
33	2	4	33	3	6	33	40	20	26	6
36	2	4	36	3	6	36	40 1/2	21	25 1/2	6
42	2	4	42	3	6	42	41	23	24 1/2	6
48	2	4	48	4	8	48	53 1/2	26	35	8
54	3	6	54	4	8	54	54	28	34	8
60	3	6	60	4	8	60	54 1/2	31	32 1/2	8
66	3	6	66	4	8	66	54	33	31 1/2	8
72	3	6	72	5	10	72	67 1/2	36	42	10
78	3	6	78	5	10	78	68	39	40 1/2	10
84	3	6	84	5	10	84	68 1/2	41	39 1/2	10
90	3	6	90	6	12	90	70	46	37	10
96	3	6	96	6	12	96	82	46	49	12

FABRICATED ELBOW LENGTHS FOR ALL CORRUGATIONS

GENERAL NOTES:
 All dimensions shown are nominal.
 L = Linear Feet of C.M.P. required to fabricate fitting.

June 26, 2001

S D D O T	C.M.P. FABRICATED LENGTHS FOR ELBOWS	PLATE NUMBER 450.32
	Published Date: 3rd Qtr. 2014	Sheet 1 of 1



Diameter Inches	Tee			Cross			45° Lateral				45° Wye		
	A Feet	B Feet	L Feet	A Feet	B Feet	L Feet	A Feet	B Inches	C Feet	L Feet	A Feet	B Feet	L Feet
12	4	2	6	4	4	8	4	2	17	6	2	2	6
15	4	2	6	4	4	8	4	4	18	8	2	2	6
18	4	2	6	4	4	8	4	4	13	8	2	2	6
21	4	2	6	4	4	8	6	4	22	10	2	2	6
24	4	2	6	4	4	8	6	4	23	10	2	2	6
27	4	2	6	4	4	8	6	4	20	10	2	2	6
30	4	2	6	4	4	8	6	4	21	10	2	2	6
33	6	4	10	6	6	12	6	6	19	12	2	3	8
36	6	4	10	6	6	12	8	6	19	14	2	3	8
42	6	4	10	6	6	12	8	6	21	14	2	3	8
48	6	4	10	6	6	12	10	8	28	18	2	3	8
54	6	4	10	6	6	12	10	8	23	18	4	4	12
60	8	4	12	8	8	16	12	10	30	22	4	4	12
66	8	4	12	8	8	16	12	10	32	22	4	4	12
72	8	4	12	8	8	16	14	10	45	24	4	5	14
78	10	6	16	10	10	20	14	10	46	24	4	5	14
84	10	6	16	10	10	20	16	12	47	28	4	5	14
90	10	6	16	10	10	20	16	12	49	28	4	5	14
96	10	6	16	10	10	20	16	12	50	28	4	6	16

FABRICATED LENGTHS FOR TEES, CROSSES, AND WYES FOR ALL CORRUGATIONS

GENERAL NOTES:
 All dimensions shown are nominal.
 L = Linear Feet of C.M.P. required to fabricate fitting.

June 26, 2001

S D D O T	C.M.P. FABRICATED LENGTHS FOR TEES, CROSSES, AND WYES	PLATE NUMBER 450.33
	Published Date: 3rd Qtr. 2014	Sheet 1 of 1

PLOT SCALE - 1:200

-PLOTTED FROM - TRPR15123

PLOT NAME - 13

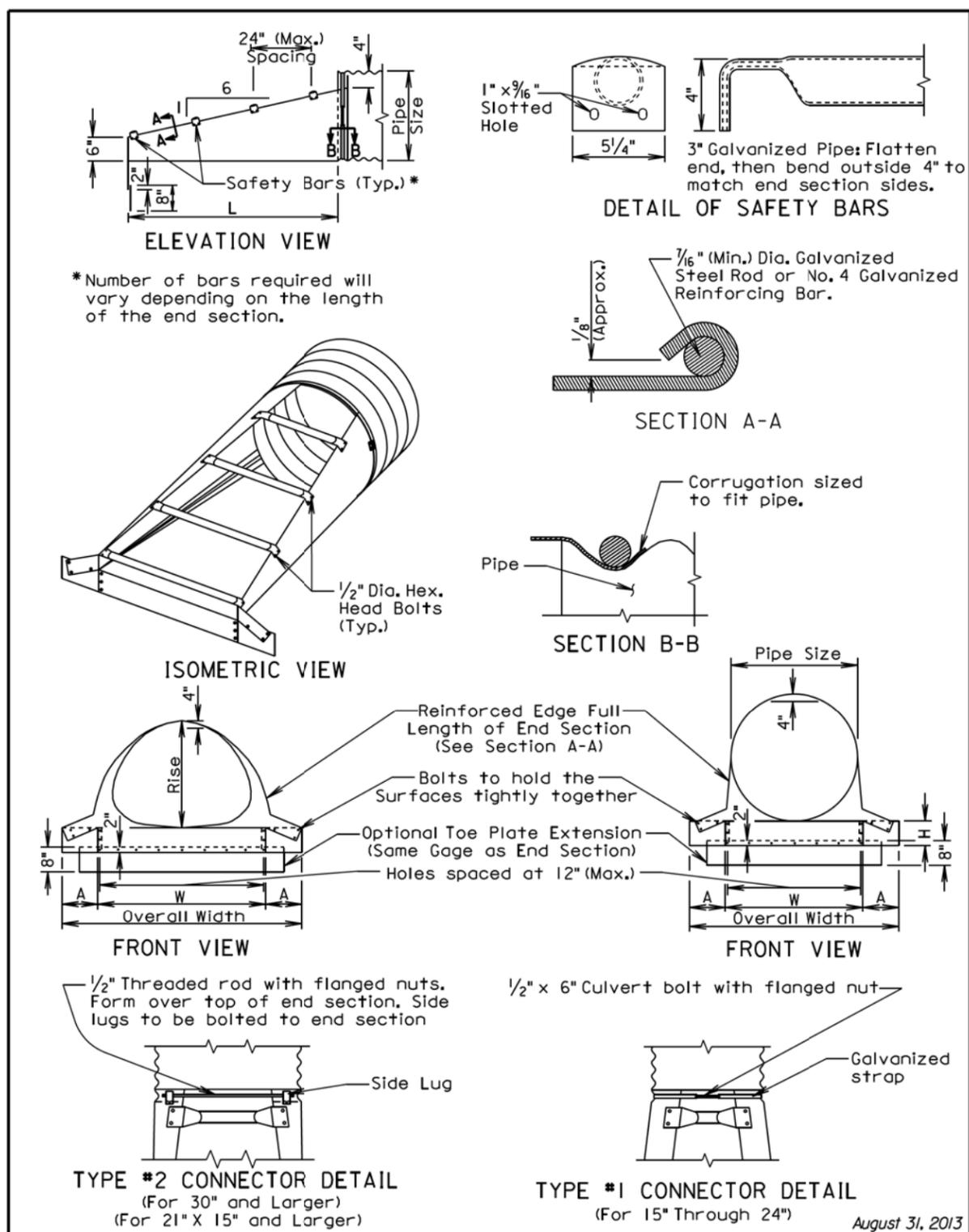
FILE - ... \450_32_450_33.DGN

Plotting Date: 08/12/2014

PLOT SCALE - 1:200

PLOT NAME - 14

FILE - ... \STANDARD PLATES\450.38.1&2.DGN



August 31, 2013

August 31, 2013

S D D O T	C. M. P. SAFETY ENDS	PLATE NUMBER 450.38
		Sheet 1 of 2

Published Date: 3rd Qtr. 2014

Equiv. Dia. (Inch)	(Inches)		Min. Thick. Inch	Dimensions (Inches)			Overall Width	L Dimensions		
	Span	Rise		Gage	A	H		W	Slope	Length (Inch)
18	21	15	.064	16	8	6	27	43	6:1	30
21	24	18	.064	16	8	6	30	46	6:1	48
24	28	20	.064	16	8	6	34	50	6:1	60
30	35	24	.079	14	12	9	41	65	6:1	84
36	42	29	.109	12	12	9	48	72	6:1	114
42	49	33	.109	12	16	12	55	87	6:1	138
48	57	38	.109	12	16	12	63	95	6:1	168
54	64	43	.109	12	16	12	70	102	6:1	198
60	71	47	.109	12	16	12	77	109	6:1	222
72	83	57	.109	12	16	12	89	121	6:1	282

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	6:1	30
18	.064	16	8	6	24	40	6:1	48
21	.064	16	8	6	27	43	6:1	66
24	.064	16	8	6	30	46	6:1	84
30	.109	12	12	9	36	60	6:1	120
36	.109	12	12	9	42	66	6:1	156
42	.109	12	16	12	48	80	6:1	192
48	.109	12	16	12	54	86	6:1	228
54	.109	12	16	12	60	92	6:1	264
60	.109	12	16	12	66	98	6:1	300

GENERAL NOTES:

Safety ends shall be fabricated from galvanized steel conforming 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.

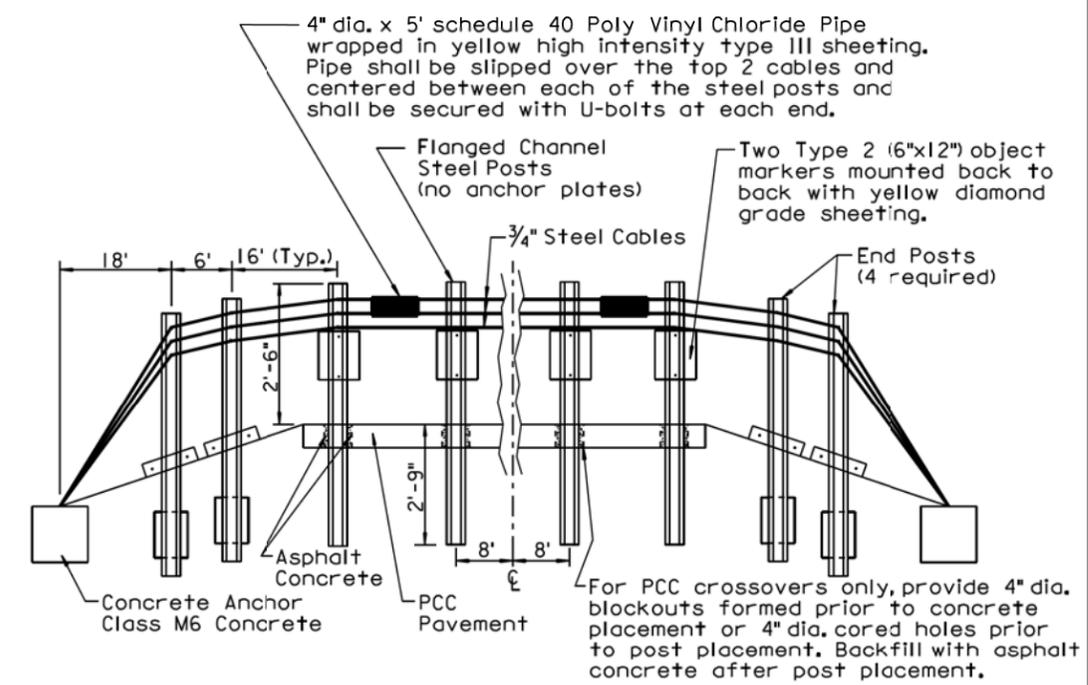
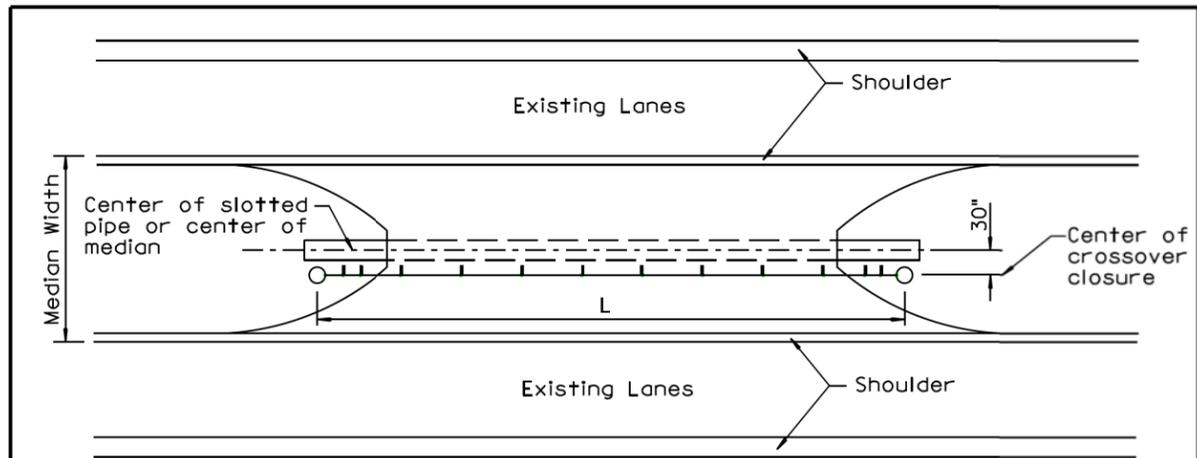
When stated in the plans, optional toe plate extension shall be punched and bolted to end section apron lip with 3/8" diameter galvanized bolts. Steel for toe plate extension shall be same gauge as end section. Dimensions shall be overall width less 6" by 8" high.

Installation shall be performed in accordance with the Standard Specifications.

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

S D D O T	C. M. P. SAFETY ENDS	PLATE NUMBER 450.38
		Sheet 2 of 2

Published Date: 3rd Qtr. 2014



MEDIAN WIDTH	NO. OF PVC PIPES	NO. OF U-BOLTS	NO. OF FLANGED CHANNEL STEEL POSTS	NO. OF TYPE 2 OBJECT MARKERS	NO. OF BLOCKOUTS OR CORED HOLES (PCC CROSSOVERS)	PAY LENGTH L
60' and 66'	9	18	10	20	10	224'
80'	7	14	8	16	8	192'

GENERAL NOTES:
 All costs for materials, backfilling holes with asphalt concrete, labor, equipment, and incidentals necessary to construct the crossover closure shall be incidental to the contract unit price per Ft for "Crossover Closure". The costs of coring holes or providing blockouts in the surfacing shall be incidental to the surfacing bid item(s).
 The Crossover Closure shall be constructed using 3 cable guardrail hardware. For specific details of the 3 cable guardrail hardware and installation, see Standard Plate 629.01 sheets 1 through 6.
 March 31, 2000

Published Date: 3rd Qtr. 2014	S D D O T	CROSSOVER CLOSURE	PLATE NUMBER 629.40
			Sheet 1 of 1

PLOT SCALE - 1:200

-PLOTTED FROM - TRPR15123

PLOT NAME - 15

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