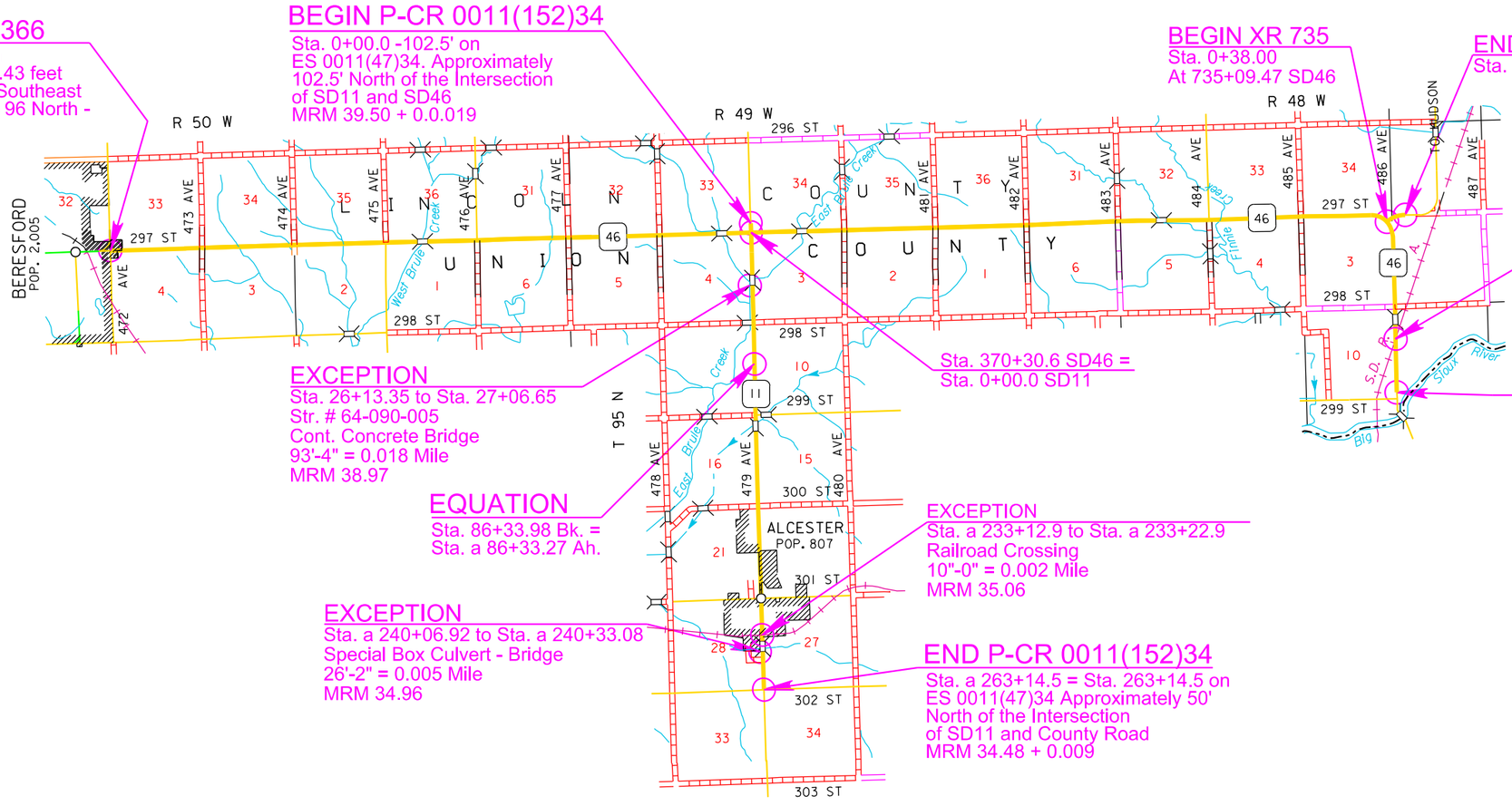
Section F: Surfacing Plans

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F1	F82

Plotting Date: 08/25/2025

INDEX OF SHEETS



BEGIN P-CR 0046(73)366
Sta. 0+20.00 =Sta. 52+72.55 on
P 0046(48)365 Approximately 0.43 feet
South & 12.43 feet West of the Southeast
corner of Section 32 - Township 96 North -
Range 50 West 5th P.M.
MRM = 366.56+0.000

BEGIN P-CR 0011(152)34
Sta. 0+00.0 -102.5' on
ES 0011(47)34. Approximately
102.5' North of the Intersection
of SD11 and SD46
MRM 39.50 + 0.0.019

BEGIN XR 735
Sta. 0+38.00
At 735+09.47 SD46

END XR 735
Sta. 13+60.00

EXCEPTION
Sta. 800+35.5 to Sta. 800+66.0
Railroad Crossing
30'-5" = 0.006 Mile
MRM 381.75

Sta. 370+30.6 SD46 =
Sta. 0+00.0 SD11

EXCEPTION
Sta. 26+13.35 to Sta. 27+06.65
Str. # 64-090-005
Cont. Concrete Bridge
93'-4" = 0.018 Mile
MRM 38.97

EQUATION
Sta. 86+33.98 Bk. =
Sta. a 86+33.27 Ah.

EXCEPTION
Sta. a 233+12.9 to Sta. a 233+22.9
Railroad Crossing
10"-0" = 0.002 Mile
MRM 35.06

EXCEPTION
Sta. a 240+06.92 to Sta. a 240+33.08
Special Box Culvert - Bridge
26'-2" = 0.005 Mile
MRM 34.96

END P-CR 0011(152)34
Sta. a 263+14.5 = Sta. 263+14.5 on
ES 0011(47)34 Approximately 50'
North of the Intersection
of SD11 and County Road
MRM 34.48 + 0.009

END P-CR 0046(73)366
Sta. 828+60.0 = Sta. 822+81.84 on
F 0046(00)366 Approximately 852.5 feet North
& 105.8 feet West of the Southeast corner of
Section 10 - Township 95 North - Range 48
West 5th P.M.
MRM = 382.00+0.123

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October 1, 2025

Revised: 03Sept25, JPC

ESTIMATE OF QUANTITIES FOR PCN 05J5

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
004E0050	Remove Traffic Diversion(s)	Lump Sum	LS
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	17.160	Mile
009E3240	Graded Centerline Staking	0.385	Mile
009E3250	Miscellaneous Staking	15.692	Mile
009E3301	Engineer Directed Surveying/Staking	80.0	Hour
009E3320	Checker	Lump Sum	LS
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E0500	Remove Pipe Culvert	56	Ft
110E7510	Remove Pipe End Section for Reset	26	Each
120E0010	Unclassified Excavation	9,289	CuYd
120E0100	Unclassified Excavation, Digouts	784	CuYd
120E0600	Contractor Furnished Borrow Excavation	11,679	CuYd
120E6100	Water for Embankment	504.2	MGal
120E6200	Water for Granular Material	2,789.6	MGal
210E1005	Surface Preparation	15.684	Mile
210E2000	Shoulder Shaping	31.367	Mile
210E3000	Ordinary Roadway Shaping	2.000	Mile
210E3500	Heavy Roadway Shaping	2.000	Mile
260E1010	Base Course	14,820.3	Ton
260E1030	Base Course, Salvaged	23,381.3	Ton
260E2010	Gravel Cushion	29,019.9	Ton
260E2030	Gravel Cushion, Salvaged	786.3	Ton
260E6000	Granular Material, Furnish	923.2	Ton
270E0040	Salvage and Stockpile Asphalt Mix and Granular Base Material	4,513.4	Ton
270E0110	Salvage and Stockpile Granular Material	13,042.9	Ton
270E0220	Blend and Stockpile Granular Material	5,436.6	Ton
320E0005	PG 58-34 Asphalt Binder	862.7	Ton
320E1070	Class HR Asphalt Concrete	24,590.9	Ton
320E3000	Compaction Sample	6	Each
320E5010	Saw and Seal Shoulder Joint	164,956	Ft
330E0010	MC-70 Asphalt for Prime	215.6	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	46.7	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	34.5	Ton
330E1000	Blotting Sand for Prime	10.0	Ton
330E2000	Sand for Flush Seal	58.2	Ton
380E0050	8" Nonreinforced PCC Pavement	272,464.8	SqYd
380E6000	Dowel Bar	162,714	Each
380E6110	Insert Steel Bar in PCC Pavement	162	Each
380E6548	Grind Sinusoidal Centerline Rumble Stripe in PCC Pavement	15.7	Mile
450E0142	24" RCP Class 2, Furnish	20	Ft
450E0150	24" RCP, Install	20	Ft
450E0162	30" RCP Class 2, Furnish	36	Ft
450E0170	30" RCP, Install	36	Ft
450E9001	Reset Pipe End Section	26	Each
600E0300	Type III Field Laboratory	1	Each
900E0022	Remove and Reset Mailbox	30	Each
998E0100	Railroad Protective Insurance	Lump Sum	LS

ESTIMATE OF QUANTITIES FOR PCN 06QY

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	4.981	Mile
009E3250	Miscellaneous Staking	4.981	Mile
009E3320	Checker	Lump Sum	LS
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E0730	Remove Beam Guardrail	325.0	Ft
110E1010	Remove Asphalt Concrete Pavement	372.6	SqYd
110E7500	Remove Pipe for Reset	14	Ft
110E7510	Remove Pipe End Section for Reset	4	Each
120E0010	Unclassified Excavation	549	CuYd
120E0100	Unclassified Excavation, Digouts	248	CuYd
120E0600	Contractor Furnished Borrow Excavation	281	CuYd
120E4100	Reprofiling Ditch	2.4	Sta
120E6100	Water for Embankment	3.7	MGal
120E6200	Water for Granular Material	25.0	MGal
210E0100	Shoulder Clearing	7.9	Mile
260E1010	Base Course	1,229.2	Ton
260E1030	Base Course, Salvaged	856.9	Ton
260E6000	Granular Material, Furnish	3,151.6	Ton
270E0040	Salvage and Stockpile Asphalt Mix and Granular Base Material	296.7	Ton
270E0220	Blend and Stockpile Granular Material	6,545.0	Ton
320E0005	PG 58-34 Asphalt Binder	607.2	Ton
320E1200	Asphalt Concrete Composite	124.2	Ton
320E1202	Class Q2R Hot Mixed Asphalt Concrete	13,926.2	Ton
320E1800	Asphalt Concrete Blade Laid	745.2	Ton
320E4000	Hydrated Lime	146.1	Ton
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	7.8	Mile
330E0010	MC-70 Asphalt for Prime	1.1	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	62.0	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	3.8	Ton
330E2000	Sand for Flush Seal	7.0	Ton
332E0010	Cold Milling Asphalt Concrete	114,891	SqYd
380E7035	Grind Sinusoidal Transverse Rumble Strip in PCC Pavement	392.0	SqFt
450E9000	Reset Pipe	14	Ft
450E9001	Reset Pipe End Section	4	Each
600E0300	Type III Field Laboratory	1	Each
630E0500	Type 1 MGS	150.0	Ft
630E1501	Type 1 Retrofit Guardrail Transition	4	Each
630E2016	MGS Flared End Terminal	4	Each
632E2220	Guardrail Delineator	16	Each
700E0210	Class B Riprap	297.0	Ton
831E0110	Type B Drainage Fabric	512	SqYd
831E0300	Reinforcement Fabric (MSE)	508	SqYd
900E0010	Refurbish Single Mailbox	2	Each
900E0012	Refurbish Double Mailbox	1	Each
900E1980	Storage Unit	1	Each
998E0100	Railroad Protective Insurance	Lump Sum	LS

SURFACING THICKNESS DIMENSIONS

The plans shown spread rates will be applied even though the thickness may vary from that shown in the plans.

At those locations where material must be placed to achieve a required elevation, the depth/quantity may be varied to achieve the required elevation.

SURFACING/SUBGRADE INVESTIGATION FOR SD11

A copy of the surfacing/subgrade investigation for this project is available from the Mitchell Region and Yankton Area offices.

UTILITIES

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

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 will contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

TYPE III FIELD LABORATORY

The lab will be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection will be provided with a multi-port wireless router. The internet connection will be a minimum speed of 5 Mbps unless limited by job location and approved by the DOT. Prior to installing the wireless router, the Contractor will 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. These items will be incidental to the contract unit price per each for "Type III Field Laboratory".

STORAGE UNIT (SD11)

The Contractor will provide a storage unit such as a portable storage container or a semi-trailer meeting the minimum size requirements from the table below:

Project Total Asphalt Concrete Tonnage	Minimum Internal Size (Cu Ft)	Minimum External Size (L x W x H)
Less than 50,000 ton	1,166	20' x 8' x 8.6' std
More than 50,000 ton	2,360	40' x 8' x 8.6' std
All Gyratory Controlled QC/QA Projects	2,360	40' x 8' x 8.6' std

STORAGE UNIT (CONTINUED)

The storage unit is intended for use only by the Engineer for the duration of the project. The QC lab personnel or the Contractor will not be allowed to use the storage container while it is on the project, without permission of the Engineer.

The storage unit will be on site and operational prior to asphalt concrete production. Upon completion of asphalt concrete production, the Engineer will notify the Contractor when the storage unit can be removed from the project. The storage unit use will not exceed 30 calendar days from the completion of asphalt concrete production. The storage unit will remain the property of the Contractor.

The storage unit will be weather proof and will be set in a level position. The storage unit will be able to be locked with a padlock.

The storage unit will be placed adjacent to the QA lab, as approved by the Engineer.

The following will apply when the storage unit provided on the project is a portable storage container:

1. The portable storage container will be constructed of steel.
2. The portable storage container will be set such that it is raised above the surrounding ground level to keep water from ponding under or around the storage container.

The following will apply when the storage unit provided on the project is a semi-trailer:

1. A set of steps and hand railings will be provided at the exterior door.
2. If the floor of the semi-trailer is 18 inches or more above the ground, a landing will be constructed at the exterior door. The minimum dimensions for the landing will be 4 feet by 5 feet. The top of the landing will be level with the threshold or opening of the doorway.
3. The semi-trailer may be connected to the QA lab by a stable elevated walkway. The walkway will be a minimum of 48 inches wide and contain handrails installed at 32 inches above the deck of the walkway. The walkway will be constructed such that it is stable and the deck does not deform during use and allows for proper door operation. Walkway construction will be approved by the Engineer.

All cost for furnishing, maintaining, and removing the storage unit including labor, equipment, and materials including any necessary walkways, landings, stairways, and handrails will be included in the contract unit price per each for “Storage Unit”.

COLD MILLING ASPHALT CONCRETE

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was 25 for SD11. This value was obtained from testing during construction of the in-place asphalt concrete.

Cold milling asphalt concrete will be done according to the typical section(s). In areas where maintenance patches have raised and/or widened the road, additional asphalt concrete will be milled to provide a uniform typical section from centerline to the edge of the finished shoulder. These areas also include farm, residential, field entrances and intersecting roads. Milling will be daylighted to the outside edge of the roadway. Any additional costs associated with this additional cold milling will be incidental to the contract unit price per square yard for Cold Milling Asphalt Concrete.

Cold milling asphalt is estimated to produce 7,580.7 tons of cold milled asphalt concrete material. An estimated 4,169.0 tons of cold milled asphalt concrete material will be used on SD11 as RAP in the Class Q2R Hot Mixed Asphalt Concrete mixture. An estimated 315.0 tons of cold milled asphalt concrete material along with 10,600 tons of RAP material stockpiled at the junction of SD46 and SD11 (Southeast corner Section 33 Township 96 North & Range 49 West) will be used on SD46 as RAP in the Class HR Asphalt Concrete mixture. The Contractor is responsible to assure enough cold milled asphalt concrete is available for the asphalt concrete on both projects. An estimated 3,096.7 tons of excess cold milled asphalt concrete material will be blended with salvaged material and Granular Material Furnished to be reused as Base Course, Salvaged on SD11 and SD46.

RAP achieved for project use and/or other uses is based on the dimensions given in the typical section(s). Field conditions will vary from that given in the typical section(s).

TABLE OF COLD MILLING ASPHALT CONCRETE ON SD11

Location			Cold Milling Asphalt Concrete	
Station		Station	Sq.Yds.	Tons
1+01.6	to	26+13.35	10,493.0	630.6
27+06.65	to	a 196+45.0	71,030.7	3,752.1
a 196+45.00	to	a 201+52.0	2,467.7	256.2
a 201+52.00	to	a 233+13.3	14,053.9	1,475.7
a 233+22.30	to	a 240+06.9	3,661.8	384.5
a 240+33.08	to	a 251+60.60	6013.3	631.4
a 251+60.60	to	a 253+00.5	703.4	73.0
a 253+00.50	to	a 263+14.5	4,274.3	233.0
Int. Roads, Farm Ent. & Guardrail			1,641.3	86.2
Int. Streets			551.6	58.0
TOTAL =			114,891.0	7,580.7

SALVAGE AND STOCKPILE ASPHALT MIX AND GRANULAR BASE MATERIAL

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was 25. This value was obtained from testing during construction of the in-place asphalt concrete.

An estimated 4,810.1 tons (2,545.0 Cubic Yards) of asphalt mix and granular base material will be salvaged from the existing highway according to the in-place surfacing typical sections and stockpiled at a site furnished by the Contractor and satisfactory to the Engineer. The salvaged asphalt mix and granular base material will be reused on this project as Base Course, Salvaged after blending. This estimated quantity was included in the Unclassified Excavation quantities.

Salvaged material will be processed to meet the requirements of Section 884.2 D.6 prior to stockpiling. The Contractor will ensure that no vegetation, topsoil, subgrade, or other foreign material is incorporated into the salvaged asphalt mix material.

The quantity of salvaged asphalt mix and granular base material may vary from the plans.

SALVAGE AND STOCKPILE GRANULAR MATERIAL

Granular material used for Traffic Control shoulder widening on SD46 will be salvaged and stockpiled. Care will be taken not to waste the in-place granular material. Salvaged material will be processed to meet the requirements of Section 884.2 D.4 prior to stockpiling. The Contractor will ensure that no vegetation, topsoil, subgrade, or other foreign material is incorporated into the salvaged granular base material.

Salvaged quantity estimated at approximately 13,042.9 tons (6,901.0 cubic yards). This work will be incidental to the contract unit price per ton for “Salvage and Stockpile Granular Material”. The quantity of salvaged granular base material may vary from the plans.

Revised: 21Jan25, RML

TABLE OF SALVAGED MATERIAL

LOCATION	Salvaged Asphalt Mix and Granular Base Material	Salvaged Granular Material	Unclassified Excavation
Stationing	Tons	Tons	Cu.Yds.
SD46			
353+43.0 to 362+70.0	1,805.0		955.0
362+70.0 to 366+90.0	948.8		502.0
366+90.0 to 373+73.3	1,759.6		931.0
Traffic Control Shoulder Widening			
741+09.4 to 828+60 Lt. Sh.		2,910.6	1,540.0
735+09.5 to 828+60 Rt. Sh.		10,132.3	5,361.0
			9,289
SD11			
0-102.5 to 0-26.0	149.3		79.0
0+26.0 to 1+01.6	147.4		78.0
Bridge Approach @ Str. No. 64-090-005			
25+38.35 to 26+13.35			196.0
27+06.65 to 27+81.65			196.0
TOTAL	4,810.1	13,042.9	9,838.0

SALVAGED MATERIAL

The quantity of cold milled material and salvaged material may vary from the plans. Due to sequence of construction, the Contractor may not be able to reuse all of the salvaged granular material from the traffic control shoulder widening area from Sta. 735+60 to Sta. 828+60 both shoulders.
Excess salvaged material will be hauled and stockpiled at a site approved by the Engineer. All costs for crushing, hauling, and stockpiling the remaining salvaged material will be incidental to the contract unit price per ton for "Salvage and Stockpile Granular Material". The Contractor should reuse the salvaged material as much as possible on this project.

GRANULAR MATERIAL, FURNISH

Granular material will be furnished by the Contractor for use in blending with the cold milled material and the salvaged asphalt mix and granular material from this project, estimated at 4,074.8 tons.

The granular material will be Base Course meeting the requirements of Section 882.

BLEND AND STOCKPILE GRANULAR MATERIAL

An estimated 3,096.7 tons of excess cold milled material, an estimated 4,810.1 tons of salvaged asphalt mix and granular base material will be blended with 4,074.8 tons of Granular Material, Furnish and stockpiled at the Contractor's furnished stockpile site. Estimated total blended material = 11,981.6 tons.

The Contractor will use a portable platform scale, stationary commercial scale, stationary commercial plant, portable plant scale, or a belt scale to control the blending and weighing of the cold milled material with Contractor furnished granular material.

The cold milled material and salvaged asphalt mix material will be crushed to meet the requirements of Section 884.2 D.2 prior to blending into the stockpile.

Excess cold milled material and salvaged asphalt mix and granular base material and Granular Material, Furnish at a rate of no more than 50% asphalt material and no less than 50% granular material to obtain stockpile material. Material will be uniformly blended to the satisfaction of the Engineer.

No further gradation testing of the blended material will be required.

All costs for crushing the cold milled and salvaged asphalt material, stockpiling, and blending the materials will be incidental to the contract unit price per ton for "Blend and Stockpile Granular Material".

TABLE OF MATERIAL UTILIZATION
(Materials produced from projects 05J5 & 06QY)

	RAP for Asphalt Concrete Mix (06QY & 05J5)	Base Course, Salvaged or Gravel Cushion, Salvaged	Total
	Tons	Tons	Tons
Cold Milling Asphalt Concrete from SD11	4,484.0	* 3,096.7	7,580.7
Salvaged Asphalt Mix and Granular Base Material from Jct. of SD46 & SD11		* 4,810.1	4,810.1
Granular Material Furnished		* 4,074.8	4,074.8
Salvaged Granular Base Material from Traffic Control Shoulder Widening		13,042.9	13,042.9
Total =	4,484.0	25,024.5	

* These 3 materials will be blended together to create a 50/50 blend of asphalt concrete and granular material.

SHOULDER CLEARING FOR SD11

The Contractor will notify the Yankton Area Office at (605) 668-2929 at least two weeks prior to beginning work on this project so SDDOT personnel can mow and/or spray along the shoulder and inslopes. The Department will not be responsible for the effectiveness of the mowing or spraying.

Vegetation and accumulated material on or adjacent to the existing roadway edge will be removed by the Contractor, to the satisfaction of the Engineer, prior to cold milling. Shoulder Clearing will be done at locations as directed by the Engineer. The actual quantity of Shoulder Clearing needed will be measured and be the basis of payment. Any remaining windrow of accumulated material will be spread evenly on the inslope adjacent to the asphalt shoulder, to the satisfaction of the Engineer, following pavement operations.

Each shoulder will be measured for payment. Costs associated with this work will be included in the contract unit price per mile for Shoulder Clearing. Total length for both shoulders equal 7.9 miles.

UNCLASSIFIED EXCAVATION, DIGOUTS FOR SD46

The locations and extent of digout areas will be determined in the field by the Engineer. The backfilling material for the digouts will be Base Course.

Included in the Estimate of Quantities are 50 cubic yards of Unclassified Excavation, Digouts per mile for the removal of unstable material on SD46.

Included in the Estimate of Quantities are 100 tons of Base Course and 1.2 MGal of Water for Granular Material per mile for backfill of Unclassified Excavation, Digouts.

The digouts will be extended through the shoulder and backfilled with granular material that will daylight to the inslope to allow water to escape the subsurface. Estimated roadway length for digouts = 15.684 miles.

UNCLASSIFIED EXCAVATION, DIGOUTS FOR SD11

The locations and extent of digout areas will be determined in the field by the Engineer. The backfilling material for the digouts will be Asphalt Concrete Composite and Base Course. The depth of asphalt will match the in-place thickness.

Included in the Estimate of Quantities are 50 cubic yards of Unclassified Excavation, Digouts and 75 square yards of Remove Asphalt Concrete Pavement per mile for the removal of asphalt and unstable material on SD11.

Included in the Estimate of Quantities are 100 tons of Base Course,
1.2 MGal of Water for Granular Material and 25 tons of Asphalt Concrete Composite per mile for backfill of Unclassified Excavation, Digouts.

The digouts will be extended through the shoulder and backfilled with granular material that will daylight to the inslope to allow water to escape the subsurface. Estimated roadway length for digouts = 4.968 miles.

Revised: 25Aug25, JPC

BRIDGE APPROACH SURFACING OPERATION ON SD11 adjacent to Str. No. 64-090-005 SD11

The Contractor will install Reinforcement Fabric (MSE) and 6" of Class Q2R Hot Mixed Asphalt Concreter over 18" of Base Course (see detail sheet for bridge approach surfacing).

Geotextile Specification

Reinforcement Fabric (MSE) will conform to Section 831. The Reinforcement Fabric (MSE) provided will be on the Approved Products List or will be certified by the supplier to meet this specification prior to installation.

Reinforcement Fabric (MSE) will be paid for at the contract unit price per square yard for Reinforcement Fabric (MSE), estimated at 508.0 sq.yds. Payment quantities will be based on area covered plus 15%. Overlaps are accounted for by the additional 15%. Payment will be full compensation for furnishing and installing the Reinforcement Fabric (MSE) only. Granular backfill materials will be paid for under a separate bid item.

Geotextile Installation Procedure

Prior to placing the Reinforcement Fabric (MSE), the upper 6 inches of subgrade will be scarified and recompacted. All costs for scarifying and recompacting subgrade material will be incidental to the contract unit price per sq.yd. for "Reinforcement Fabric (MSE)".

Place the Reinforcement Fabric (MSE) on as level and smooth of surface as possible. Any protrusions that might damage the geotextile will be removed prior to placing the geotextile. No equipment will be allowed on the geotextile until the granular backfill material is in place. The geotextile will be kept as taut as possible prior to backfilling. Placement will be done so that subsequent granular cover material does not shove, wrinkle or distort the in-place geotextile.

The geotextile will be overlapped a minimum of 2 feet. The overlaps will be shingled in a manner that assures granular material will not be forced under the geotextile during backfilling operations.

Granular backfill material will be dumped behind the leading edge of the fill and pushed into place with a loader or dozer. The geotextile may be held in place with small piles of granular material or staples. Granular material will be dumped at least 20 feet behind the leading edge of the backfill and pushed into place with a loader or dozer from the covered areas to the uncovered areas. The granular material will conform to the requirements of Base Course and will be compacted to 97% of the maximum dry density.

CONTRACTOR FURNISHED BORROW EXCAVATION

Additional embankment is necessary to accommodate the MGS Guardrail System installations and roadway widening for traffic control.

The Contractor will provide a suitable site for Contractor Furnished Borrow Excavation material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material will be approved by the Engineer. The plans quantity for "Contractor Furnished Borrow Excavation" as shown in the Estimate of Quantities will be the basis of payment for this item.

Restoration of the Contractor Furnished Borrow Excavation site will be the responsibility of the Contractor and all cost to restore the site will be incidental to the contract unit bid price per cubic yard for Contractor Furnished Borrow Excavation.

The existing embankments at Str. # 61-090-005 with additional Contractor Furnished Borrow Excavation are to be reshaped according to the details provided in these plans for guardrail installation.

Roadway widening for traffic control will be placed according to the typicals in Section F. Area requiring widening is from Sta. 735+09.5 to Sta. 828+60 SD46, both shoulders.

Seeding of all disturbed areas will be done by the Contractor, see Section D.

Payment for the aforementioned work including labor, equipment, materials, and incidentals will be incidental to the contract unit price per cubic yard for Contractor Furnished Borrow Excavation. Water for compaction of earth embankments will be applied at the rate of 10 gallons per cubic yard of Contractor Furnished Borrow Excavation.

Table of Contractor Furnished Borrow Excavation

Location	Contractor Furnished Borrow Excavation (Cu.Yds.)	Water For Embankment (Mgal)
SD46		
Traffic Control Widening from Sta. 735+09.5 to Sta. 828+60		
Lt. Shoulder	4061	52.4
Rt. Shoulder	7145	92.2
Additional Widening for Movable Concrete Barriers @ Str. # 61-160-011 RCBC		
Lt. Shoulder	186	2.4
Rt. Shoulder	287	3.7
SD11		
Str. # 64-090-005		
Begin Bridge Left Sh.	62	0.8
Begin Bridge Right Sh.	90	1.2
End Bridge Left Sh.	23	0.3
End Bridge Right Sh.	86	1.1
Culvert Work	20	0.3
Total =	11,960	154.4

CONSTRUCTION HAUL ROAD (SD46)

Included in the Estimate of Quantities are 1,000 tons of Gravel Cushion per mile, and 12 MGal of Water for Granular Material per mile for haul road construction. The use of this material will be at the discretion of the Contractor. Any additional construction and removal for the construction haul road will be the Contractor's responsibility. The Contractor will receive no additional compensation for this work. Estimated length = 13.918 Miles

The Gravel Cushion used to construct the haul road will be compacted to the satisfaction of the Engineer.

All costs associated with construction of the haul road will be incidental to the Gravel Cushion quantities provided.

SURFACE PREPARATION FOR SD46

Prior to trimming or placement of the Nonreinforced PCC Pavement, the Contractor will be required to prepare the existing surface according to the Surface Preparation specifications provided in Section 210, at locations determined by the Engineer.

The locations provided on the typical sections for Asphalt Surface Treatment, In Place, represent the locations where an asphalt surface treatment is anticipated to be in place at the time of construction. The Contractor is advised that locations and dimensions of actual Asphalt Surface Treatment, In Place, may vary from that given on the typical sections. Approximately 50 tons of asphalt concrete patching to maintain the interim surfacing by DOT maintenance in 2025. The asphalt concrete patching was completed as needed at various locations throughout the project with an estimates thickness of 2" or less. All costs associated with processing the asphalt surface treatment and asphalt concrete patching prior to reshaping the granular material will be incidental to the contract until price per mile for "Surface Preparation".

Quantities for Surface Preparation have been provided for the entire length of the Nonreinforced PCC Pavement project. Actual limits to receive Surface Preparation ahead of the Nonreinforced PCC Pavement placement will be limited to particular project conditions and will be subject to approval by the Engineer. In no case will Surface Preparation operations ahead of Nonreinforced PCC Pavement placement operations exceed fourteen calendar days. Estimated roadway length = 15.684 miles.

TRIM MATERIAL

Material removed during the trimming operation may be used for the Construction Haul Road or hauled from the roadbed. Material hauled from the roadbed may be placed on shoulders after completion of the nonreinforced concrete pavement placement. No additional payment will be made for handling, stockpiling, processing, or placement of trim material. Water added by road mix or plant mix methods will be paid at the contract unit price per MGal for Water for Granular Material.

REMOVE TRAFFIC CONTROL WIDENING (SD46)

When the traffic control widening is no longer required, the granular material will be salvaged and stockpiled at a location determined by the Engineer. The Contractor Furnished Borrow Excavation material will be removed and become the property of the Contractor. The shoulders will be reshaped to the original grading design as shown in the typical sections and cross sections. The cross sections are from the grading project, PCN 04JF.

Sta. 741+09.4 to Sta. 828+60, Lt. Shoulder
Sta. 735+09.5 to Sta. 828+60, Rt. Shoulder

Cost for removing the Contractor Furnished Borrow Excavation material will be incidental to the contract lump sum price for Remove Traffic Diversion(s).

SHOULDER SHAPING FROM STA. 0+20 TO STA. 735+09.5 (SD46)

The Contractor will remove all granular material generated from the Construction Haul Road to a separate stockpile site as directed by the Engineer. This material may be reused as Base Course, Salvaged at the discretion of the Engineer.

After removal of the Haul Road material and prior to paving the shoulders, the existing Base Course or Base Course, Salvaged on the shoulders will be reshaped and compacted with adequate moisture as determined by the Engineer until a uniform, stable surface is obtained.

After Shoulder Shaping is completed, the shoulder granular material will be placed as specified, according to the Base Course, Salvaged requirements.

Included in the Estimate of Quantities are 27.837 miles of Shoulder Shaping for both shoulders.

Sta. 0+20.0 to Sta. 735+09.5 Lt. & Rt. Shoulders

Included in the Estimate of Quantities is 12.0 MGal of Water for Granular Material per mile per shoulder for compaction of granular material associated with Shoulder Shaping.

All costs associated with removing, hauling, stockpiling, and shaping the granular material will be incidental to the contract unit price per mile bid for Shoulder Shaping.

SHOULDER SHAPING FROM STA. 735+09.5 TO STA. 828+60 LT. SHOULDER (SD46)

The Contractor will salvage and stockpile the granular material used to build the traffic control widening to a site as directed by the Engineer. This material may be reused as Base Course, Salvaged at the discretion of the Engineer.

After removal of the granular material and the additional borrow material for the traffic control widening and prior to paving the shoulders with Asphalt Concrete & Base Course material, the in place granular on the shoulders will be reshaped as shown in the typical sections and compacted with adequate moisture as determined by the Engineer until a uniform, stable surface is obtained.

After Shoulder Shaping is completed, the shoulder granular material will be placed as specified, according to the Base Course, Salvaged requirements.

Included in the Estimate of Quantities are 1.765 miles of Shoulder Shaping for the left shoulder.

Included in the Estimate of Quantities is 12.0 MGal of Water for Granular Material per mile per shoulder for compaction of granular material associated with Shoulder Shaping.

All costs associated with shaping the granular material will be incidental to the contract unit price per mile bid for Shoulder Shaping.

SHOULDER SHAPING FROM STA. 735+09.50 TO STA. 828+60 RT. SHOULDER (SD46)

The Contractor will salvage and stockpile the granular material used to build the traffic control widening to a site as directed by the Engineer. This material may be reused as Base Course, Salvaged at the discretion of the Engineer.

After removal of the granular material and the additional borrow material for the traffic control widening and prior to paving the shoulders with Asphalt Concrete, the in place granular on the shoulders will be reshaped as shown in the typical sections and compacted with adequate moisture as determined by the Engineer until a uniform, stable surface is obtained.

After Shoulder Shaping is completed, the shoulder asphalt concrete material will be placed as specified.

Included in the Estimate of Quantities are 1.765 miles of Shoulder Shaping for the right shoulder.

Included in the Estimate of Quantities is 10.8 MGal of Water for Granular Material per mile per shoulder for compaction of granular material associated with Shoulder Shaping.

All costs associated with shaping the granular material will be incidental to the contract unit price per mile bid for Shoulder Shaping.

BASE COURSE, SALVAGED

The Base Course, Salvaged will be obtained from the stockpile site(s) provided by the Contractor from the blended material produced on this project and may be used without further gradation testing.

All other requirements for Base Course, Salvaged will apply.

Base Course, Salvaged placed on SD46 shoulders will be compacted according to Section 260.3.D of the Specifications except that a pneumatic tired roller with an effective roller weight of at least 250 pounds per square inch of roller width will be required. At the time of compaction, the material placed on the shoulders will have a minimum of 4% moisture uniformly blended throughout the depth of material. The percent moisture may be adjusted by the Engineer.

ASPHALT CONCRETE BLADE LAID (SD11)

Included in the Estimate of Surfacing Quantities are 150 tons of Asphalt Concrete Blade Laid, 1.5 tons of Hydrated Lime, and 11.1 tons of PG 58-34 Asphalt Binder per mile and will be tight bladed on the existing surface 24 feet wide prior to the overlay of SD11. Gaps at centerline will not be permitted. Estimated roadway length = 4.968 miles.

Mineral Aggregate for tight bladed material will use only the fine aggregate components combined in the same proportions as the Class Q2R Hot Mixed Asphalt Concrete mix. Mineral Aggregate for tight bladed material will meet the gradation requirements of the Job Mix Formula. Fine Aggregate Angularity and Sand Equivalent requirements will be the same as the Class Q2R Hot Mixed Asphalt Concrete mix. Quality testing is not required on the coarse aggregate (+No. 4 sieve) in this mixture.

The Asphalt Concrete Blade Laid Lift will be designed using an N_{design} Gyratory Compactive Effort of 65. The asphalt binder content will be determined so that the air voids of Asphalt Concrete Blade Laid Lift are between 3.0% and 5.0%.

Included in the Estimate of Surfacing Quantities are 27.8 tons of SS-1h or CSS-1h Asphalt for Tack for use prior to the application of the Blade Laid lift. (Rate = 0.09 Gal./Sq.Yd. at 25-foot width)

CLASS Q2R HOT MIXED ASPHALT CONCRETE (SD11)

Mineral Aggregate:
Asphalt concrete aggregates will consist of reclaimed asphalt pavement (RAP) and virgin aggregate.

Virgin mineral aggregate for Class Q2R Hot Mixed Asphalt Concrete will conform to the requirements of Class Q2.

The Class Q2R Hot Mixed Asphalt Concrete will include 30 percent RAP in the mixture. RAP will be obtained from the material produced by cold milling on this project. An estimated 4,169.0 tons of RAP is needed for the Class Q2R Hot Mixed Asphalt Concrete mixture.

Mix Design Criteria:
Gyratory Controlled QC/QA Mix Design requirements for the Class Q2R Hot Mixed Asphalt Concrete will conform to the requirements of Class Q2.

All remaining requirements for Class Q2 will apply.

COMPACTION for CLASS Q2R HOT MIXED ASPHALT CONCRETE

Location	Compaction With Specified Density	Compaction Without Specified Density
	Ton	Ton
SD11		
Sta. 1+01.6 to Sta. 4+74.8 24' Mainline Lt. & Right Shoulders	111.6	 88.3
Sta. 4+74.8 to Sta. 25+38.35 24' Mainline Lt. & Right Shoulders	617.1	 359.8
Sta. 25+38.35 to Sta. 26+13.35 24' Mainline Lt. & Right Shoulders	24.3 / 28.0 / 22.4	 14.2 / 16.4 / 13.2
Sta. 27+06.65 to Sta. 27+81.65 24' Mainline Lt. & Right Shoulders	24.3 / 28.0 / 22.4	 14.2 / 16.4 / 13.2
Sta. 27+81.65 to Sta. a 196+45.0 24' Mainline Lt. & Right Shoulders	5,043.3	 2,945.2
Sta. a 196+45.0 to Sta. a 201+52.0 36' Mainline Lt. Shoulder	227.4	 46.1
Sta. a 201+52.0 to Sta. a 211+02.5 48' Mainline	568.3	
Sta. a 211+02.5 to Sta. a 233+13.3 36' Mainline	1,004.5	
Sta. a 233+22.3 to Sta. a 240+06.9 48' Mainline	579.5	
Sta. a 240+33.1 to Sta. a 251+60.6 48' Mainline	674.2	
Sta. a 251+60.6 to Sta. a 253+00.5 36' Mainline Lt. Shoulder	62.8	 15.2
Sta. a 253+00.5 to Sta. a 263+14.5 24' Mainline Lt. & Right Shoulders	303.2	 180.0
Miscellaneous Areas		862.7
TOTALS:	9,341.3	4,584.9

CLASS HR ASPHALT CONCRETE (SD46)

RAP for the Class HR Asphalt Concrete will be obtained from the stockpile at a state furnished stockpile site located in the Southeast corner of Section 33, Township 96 North, Range 49 West of the 5th P.M. Lincoln County, South Dakota near the intersection of SD46 and SD11 and from the cold milling operation on SD11.

An estimated 10,915.0 tons of RAP is needed for the Class HR mixture. The Class HR Asphalt Concrete will include 40 percent RAP in the mixture (10,600.0 tons from the state furnished stockpile and 315.0 tons from the cold milling operation).

When directed by the Engineer, the Contractor will saw and remove a total of three undamaged compaction cores per asphalt concrete lift from designated area(s) and repair the hole(s) to the satisfaction of the Engineer. All costs associated with the compaction cores will be incidental to the contract unit price per each for Compaction Sample.

All other requirements for Class HR Asphalt Concrete will apply.

COMPACTION for CLASS HR ASPHALT CONCRETE

Location	Compaction With Specified Density	Compaction Without Specified Density
	Ton	Ton
SD46		
Left Shoulder: Sta. 0+20.0 to Sta. 733+91.4 Sta. 746+46.7 to Sta. 799+84.1 Sta. 800+21.3 to Sta. 828+60.0	 9,504.9 743.3 365.5	
Right Shoulder: Sta. 0+20.0 to Sta. 800+35.5 Sta. 800+66.0 to Sta. 828+60.0	 10,369.2 355.2	
XR735		
Sta. 0+38.0 to Sta. 13+60.0	731.4 / 731.4	
Miscellaneous Areas		1,790.0
TOTALS:	22,800.9	1,790.0

FLEXIBLE PAVEMENT SMOOTHNESS PROVISION

All sections, not excluded by the Special Provision for Flexible Pavement Smoothness will be evaluated as two opportunities.

BLOTTING SAND FOR PRIME (SD46)

Included in the Estimate of Quantities are 10 tons of Blotting Sand for Prime to be used where necessary for maintenance of traffic as directed by the Engineer. (Rate = 10 pounds per square yard)

SAND FOR FLUSH SEAL

The sand application will be placed only on intersecting roads and entrances.

FLUSH SEAL

Application of flush seal will be completed within 10 working days following completion of the asphalt concrete surfacing.

The flush seal application for SD46 will be placed only on shoulders, intersecting roads and entrances.

The flush seal application for SD11 will be placed only on shoulder rumble strips (1.5' width per shoulder), intersecting roads and entrances.

Application of flush seal may be eliminated from intersecting roads and entrances by the Engineer. If the paved surface remains tight, the Engineer will notify the Contractor as soon as possible that the flush seal is unnecessary.

ASPHALT CONCRETE COMPOSITE

Section 324 will apply except that Class Q2R Hot Mixed Asphalt Concrete or Class HR Asphalt Concrete as specified elsewhere in the plans may be used as Asphalt Concrete Composite.

Plans specified locations for Asphalt Concrete Composite will be paid for at the contract unit price per ton for Asphalt Concrete Composite regardless of the class of asphalt concrete used at such locations.

REMOVE AND RESET MAILBOXES (SD46)

The Contractor will remove and reset the existing mailboxes for single or double mailbox assemblies. The local Postmaster will determine the recommended mounting height of the mailboxes throughout the project. The Contractor will coordinate with the Engineer on the proper postal representative to contact.

All costs for removing and resetting existing mailboxes and providing temporary mailboxes will be incidental to the contract unit price per each for "Remove and Reset Mailbox".

Two double and 28 single mailboxes will be removed and reset.

REFURBISH MAILBOXES (SD11)

The Contractor will refurbish the existing mailboxes on new posts with the necessary support hardware for single or double mailbox assemblies. The local Postmaster will determine the recommended mounting height of the mailboxes throughout the project. The Contractor will coordinate with the Engineer on the proper postal representative to contact.

All costs for removing existing mailboxes, providing temporary mailboxes, and resetting mailboxes with new posts and necessary support hardware will be incidental to the contract unit price per each for "Refurbish Single Mailbox" or "Refurbish Double Mailbox".

Two single and one double mailbox will be refurbished.

CHECKING SPREAD RATES

The Contractor will be responsible for checking the Class HR Asphalt Concrete, Class Q2R Hot Mixed Asphalt Concrete, Base Course, Base Course, Salvaged, Gravel Cushion and Gravel Cushion, Salvaged spread rates and taking the weigh delivery tickets as the surfacing material arrives on the project and is placed onto the roadway.

The Contractor will 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 will be written on each ticket as the surfacing material is delivered to the roadway.

At the end of each day's shift, the Contractor will 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 will 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 will 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 will 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 will 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 will 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 will then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

TABLE OF SUPERELEVATION

SD46

Station	to	Station		
0+20		716+07.26	-	Normal Crown Section
716+07.26		719+67.26	-	Superelevation Transition
719+67.26		750+51.67	-	2040' Radius Curve Right 0.0600'/' Superelevation Rate Point of Rotation at Centerline
750+51.67		752+91.67	-	Superelevation Transition
752+91.67		828+60.00	-	Normal Crown Section

XR735

0+38.00	1+85.71	-	Normal Crown Section
1+85.71	3+89.71	-	Superelevation Transition
3+89.71	11+40.91	-	1060' Radius Curve Right 0.0600'/' Superelevation Rate Point of Rotation at Centerline
11+40.91	13+44.91	-	Superelevation Transition
13+44.91	13+60.00	-	Normal Crown Section

GRIND RUMBLE STRIPS IN ASPHALT CONCRETE SHOULDERS (SD11)

Asphalt concrete rumble strips/stripes will be constructed on the shoulders per Standard Plate 320.24. Rumble strips will be paid for at the contract unit price per mile for Grind 12" Rumble Strip or Stripe in Asphalt Concrete. It is estimated that 7.8 miles of asphalt concrete rumble strips will be required.

Location:

Sta. 0+96.6 to Sta. 26+13.4 Lt. & Rt. Shoulders
Sta. 27+06.7 to Sta. a 196+45.0 Lt. & Rt. Shoulders
Sta. a 253+00.5 to Sta. a 263+14.5 Lt. & Rt. Shoulders

Rumble strip installation will be completed prior to application of the flush seal and permanent pavement markings. A flush seal will be applied to the newly installed 12" rumble strips at a width of 18" and a rate of 0.10 gal./SqYd. All costs associated with placing the flush seal will be incidental to the contract unit price per ton for "SS-1h or CSS-1h Asphalt for Flush Seal".

GRIND SINUSOIDAL TRANSVERSE RUMBLE STRIP IN ASPHALT CONCRETE (SD11)

Advance intersection warning sinusoidal transverse rumble strips will be constructed on SD11 mainline pavement south of SD46, as detailed in Standard Plate 320.46. Sinusoidal transverse rumble strips will be paid for at the contract unit price square foot for Grind Sinusoidal Transverse Rumble Strip in Asphalt Concrete. It is estimated that 392.0 square feet of sinusoidal transverse rumble strips will be required.

Sinusoidal transverse rumble strip installation will be completed prior to application of the flush seal and permanent pavement markings. A flush seal will be applied to the newly installed sinusoidal transverse rumble strips at a width of 11' and a rate of 0.10 Gal/SqYd. All costs associated with placing the flush seal will be incidental to the contract unit price per ton for "SS-1h or CSS-1h Asphalt for Flush Seal".

8" NONREINFORCED PCC PAVEMENT

The fine aggregate will be screened over a 1-inch square opening screen just prior to introduction into the concrete paving mix. The Contractor will screen all of the aggregate to prevent the incorporation of foreign materials (i.e. mud balls) into the concrete mix.

The concrete mix will conform to the Special Provision for Contractor Furnished Mix Design for PCC Pavement.

There will be no direct payment for trimming of the gravel cushion for PCC pavement. The trimming will be considered incidental to the related items required for PCC Pavement. Trimming will be performed as required by Section 380.3 C of the Specifications.

A construction joint will be sawed whenever new concrete pavement is placed adjacent to existing concrete pavement. The transverse construction joints will be handled in accordance with Standard Plate 380.15.

The location of joints, as shown and designated on the PCC Pavement Joint Layout(s) are only approximate locations to be used as a guide and to afford bidders a basis for estimating the construction cost of the joints. The final locations of the joints are to be designated by the Engineer during construction.

All driving surfaces of the mainline paving, including turning lanes, will be longitudinally tined from 6" each side of centerline pavement markings to 6" inside the outside pavement markings. All other areas will be textured as directed by the Engineer.

Rumble Strips will be placed 15 inches wide 3 inches from the outside edge of the pavement. Payment for forming rumble strips including labor, materials and incidentals will be incidental to the contract unit price per square yard for "8" Nonreinforced PCC Pavement". Estimated length for both shoulders equal 31.4 miles.

The following locations will be tested for smoothness in accordance with the Special Provision for IRI PCC Pavement Smoothness.

SD46 – Sta. 0+20.0 to Sta. 800+23.5 (Both Lanes)
SD46 – Sta. 800+78.1 Sta. 833+60.0 (Both Lanes)

Turning lanes including center turn lane will be tested using the 10' straight edge as per Specifications 380.3.O.1.

TRANSVERSE CONTRACTION JOINTS

Unless specified otherwise in the PCC Pavement Joint Layout Sheets or elsewhere in the plans, the typical joint spacing for the 8" Nonreinforced PCC Pavement will be 13'. See Standard Plate 380.04 for placement of Dowel Bars.

The transverse contraction joints will be perpendicular to the centerline. In multilane areas the transverse contraction joints will be perpendicular to the centerline and be in a straight line across the entire width of pavement. In special situations the Engineer may pre-approve transverse contraction joints that do not meet these requirements. All nonconforming transverse contraction joints will be removed at the Contractor's expense. Any method of placement that cannot produce these requirements will not be allowed.

Table of PCC Pavement and Dowel Bars

Location			1 ¼" Dowel Bars	8" Nonreinforced PCCP
Station		Station	Each	Sq. Yds.
SD46				
0+20.0	to	1+09.9	289	432.9
1+09.9	to	147+40.0	27,000	45,515.9
147+40.0	to	151+60.0	967	1,586.7
151+60.0	to	166+36.6	4,104	6,562.7
166+36.6	to	170+56.6	988	1,586.7
170+56.6	to	362+70.0	35,472	59,775.0
362+70.0	to	366+90.0	943	1,587.2
366+90.0	to	373+73.3	1,972	3,036.9
373+73.3	to	377+90.7	955	1,575.8
377+90.7	to	687+02.0	57,072	96,168.5
687+02.0	to	692+50.0	1,288	2,104.4
692+50.0	to	724+86.0	8,964	14,382.2
724+86.0	to	729+06.0	1,348	2,153.5
729+06.0	to	735+83.7	2,496	3,915.6
735+83.7	to	742+46.7	1,936	3,313.2
742+46.7	to	799+71.5	10,560	17,810.5
799+71.5	to	800+23.5	98	162.4
800+78.1	to	801+30.1	125	161.2
801+30.1	to	828+60.0	5,040	8,493.0
Intersecting Streets				
Sta. 0+32 Rt.			94	164.4
Sta. 0+36 Lt.			127	223.1
Sta. 370+03 Rt.			340	678.6
Sta. 370+03 Lt.			338	683.5
Entrances				
Sta. 3+20 Rt., 472nd Ave.			108	225.5
Sta. 4+45 Lt., SD46			90	165.4
Total =			162,714	272,464.8

GRIND SINUSOIDAL CENTERLINE RUMBLE STRIPE IN PCC PAVEMENT (SD46)

Sinusoidal rumble stripes will be constructed on the centerline, as detailed in the plan set. Sinusoidal rumble stripes will be paid for at the contract unit price per mile for Grind Sinusoidal Centerline Rumble Stripe in PCC Pavement. It is estimated that 15.7 miles of sinusoidal rumble stripes will be required.

Location:

Sta. 0+20.0 to Sta. 800+23.5
Sta. 800+78.1 to Sta. 828+60.0

ALKALI SILICA REACTIVITY

Fine aggregate will conform to Section 800.2 D Alkali Silica Reactivity (ASR) Requirements.

Below is a list of known fine aggregate sources and the average corresponding 14-day expansion values (as of 9-18-2024):

Source	Location	Expansion Value
Bachman	Winner, SD	0.335*
Bitterman	Delmont, SD	0.316*
Concrete Materials	Corson, SD	0.146
Concrete Materials - Vellek Pit	Yankton, SD	0.411**
Croell	Hot Springs, SD	0.089
Croell	Wasta, SD	0.212
Emme Sand & Gravel	Oneil, NE	0.217
Fisher S&G – Blair Pit	W of Vale, SD	0.171
Fisher S&G - Mickelson Pit	E of Nisland, SD	0.129
Fisher S&G - Vallery Pit	Nisland, SD	0.110
Fisher S&G	Rapid City, SD	0.092
Fisher S&G	Spearfish, SD	0.053
Fisher S&G	Wasta, SD	0.159
Fuchs	Pickstown, SD	0.275*
Henning – Tilstra Pit	Ash Creek, MN	0.199
Higman	Hudson, SD	0.187
Jensen	Herried, SD	0.276*
L.G. Everist	Akron, IA	0.257*
L.G. Everist	Brookings, SD	0.297*
L.G. Everist – Ode Pit	E Sioux Falls, SD	0.222
L.G. Everist – Nelson Pit	NE Sioux Falls, SD	0.156
L.G. Everist	Hawarden, IA	0.211
L.G. Everist	Summit, SD	0.184
Mark's S&G – Moerke Pit	Underwood, MN	0.165
Morris – Birdsall	Blunt, SD	0.229
Morris - Leesman	Blunt, SD	0.231
Morris - Richards Pit	Onida, SD	0.188
Morris - Shawn's Pit	E of Sturgis, SD	0.186
Northern Concrete Agg.	Rauville, SD	0.113
Northern Concrete Agg.	Luverne, MN	0.154
Opperman - Gunvordahl Pit	Burke, SD	0.363*
Opperman - Cahoy Pit	Herrick, SD	0.307*
Opperman - Jones Pit	Burke, SD	0.321*
Opperman - Randall Pit	Pickstown, SD	0.230
Pete Lien & Sons	Creston, SD	0.158
Pete Lien & Sons	Oral, SD	0.157
Pete Lien & Sons	Wasta, SD	0.255*
Simon Materials - Beltline Pit	Scottsbluff, NE	0.277*
Thorpe Pit	Britton, SD	0.098
Valley S&G – Van Beek Pit	Rock Valley, IA	0.228
Wagner Building Supplies	Pickstown (Wagner), SD	0.251*
Winter Brothers- Whitehead Pit	Brookings, SD	0.197

* These sources will require Type II cement with a fly ash content of 25% in the concrete mix.
** These sources will not be used.

The Department will use the running average of the last three or fewer known expansion test results for determining acceptability of the source. These expansion results are reported in the preceding table. Additional testing, when requested by the Contractor, will be performed by the Department at the Contractor's expense.

ALKALI SILICA REACTIVITY (CONTINUED)

The values listed in the table are intended for use in bidding. If a previously tested pit by SDDOT with a test value less than 0.250 is discovered after letting to be 0.250 or greater, then the Department will accept financial responsibility if higher costs are incurred due to higher percent of fly ash requirement.

POLY-ALPHA METHYLSTYRENE (AMS) MEMBRANE CURING COMPOUND

Provide poly-alpha methylstyrene liquid membrane curing compounds for spray application on portland cement concrete surfaces exposed to the air.

The AMS membrane curing compound will conform to section 821 of the Specifications and the following requirements:

1. The AMS membrane curing compound will be successfully reviewed by the Department before use.
2. Meets the requirements of ASTM C 309 for white pigmented Type 2, Class B.
3. The Engineer will not allow the use of curing compound that is over 1 year from the manufacture date.
4. Resin is 100 percent poly-alpha methylstyrene and formulated to maintain the specified properties of the following Table.

REQUIREMENTS FOR AMS MEMBRANE CURING COMPOUND	
Properties	**Range**
Total solids, % by weight of compound	≥ 42
% reflectance in 72 h (ASTM E 1247)	≥ 65
Loss of Water, kg/sq. m in 24 h (AASHTO T 155)	≤ 0.15
Loss of Water, kg/sq. m in 72 h (AASHTO T 155)	≤ 0.40
Settling Test, ml/100 ml in 72 h *	≤ 2
V.O.C. Content, g/L	≤ 350
Infrared Spectrum, vehicle	100% α methylstyrene
*Test in accordance with MNDOT method.	

POLY-ALPHA METHYLSTYRENE (AMS) MEMBRANE CURING COMPOUND (CONTINUED)

The application will be in accordance with section 380.3 M plus the following:

Before application, agitate the curing compound as received in the shipping container to obtain a homogenous mixture. Protect membrane curing compounds from freezing before application. Handle and apply the membrane curing compound in accordance with the manufacturer's recommendations.

POLY-ALPHA METHYLSTYRENE (AMS) MEMBRANE CURING COMPOUND (CONTINUED)

1. Apply curing compound homogeneously to provide a uniform, solid, white opaque coverage on all exposed concrete surfaces (equal to a white sheet of typing paper) at the time of application.

2. If the Engineer determines that the initial or corrective spraying result in unsatisfactory curing, the Engineer may require the Contractor to use the blanket curing method, at no additional cost to the Department.

Use the fully-automatic, self-propelled mechanical power sprayer to apply the curing compound:

1. Operate the equipment to direct the curing compound to the surface from two different lateral directions.

2. If puddling, dripping, or non-uniform application occurs, suspend the operation to perform corrections as approved by the Engineer.

3. A re-circulating bypass system that provides for continuous agitation of the reservoir material.

4. Separate filters for the hose and nozzle.

5. Check valve nozzles.

6. Multiple or adjustable nozzle system that provides for variable spray patterns.

7. A spray-bar drive system that operates independently of the wheels or track drive system.

Equipment for hand spraying of odd width or shapes and surfaces exposed by form removal will be:

1. Used from two directions to ensure coverage equal to a white sheet of typing paper as visible from any direction.

2. A re-circulating bypass system that provides for continuous agitation of the reservoir material.

3. Separate filters for the hose and nozzle.

4. Multiple or adjustable nozzle system that provides for variable spray patterns.

A recommended practice for using AMS membrane curing compound is to clean out the sprayer including tank and nozzles each day after use.

Payment for AMS membrane curing compound, including labor, materials and incidentals will be incidental to the contract unit price per square yard for 8" Nonreinforced PCC Pavement.

STEEL BAR INSERTION

The Contractor will insert the Steel Bars (1 ¼" x 18 inch epoxy coated plain round dowel bars) into drilled holes in the existing concrete pavement. Anchoring of the steel bars in the drilled holes will conform to the Specifications.

The steel bars will be cut to the specified length by sawing or shearing and will be free from burring or other deformations.

Epoxy coated plain round steel bars will be inserted on 12-inch centers in the transverse joint. The first steel bar will be placed a minimum of 3 inches and a maximum of 6 inches from the centerline of the slab.

TABLE OF STEEL BAR INSERTION

LOCATION	QUANTITY OF BARS
SD46	1 ¼" x 18"
Sta. 0+20.0 67' Lt. to 67' Rt.	134
Sta. 828+60.0 14' Lt. to 14' Rt.	28
Totals:	162

ORDINARY ROADWAY SHAPING

Ordinary Roadway Shaping will be performed in accordance with the Standard Specifications at locations designated by the Engineer.

Included in the Estimate of Quantities are 2.0 miles of Ordinary Roadway Shaping, 56.9 MGal of Water for Embankment per mile and 175.6 MGal of Water for Granular Material per mile, for bidding purposes only. The actual quantity ordered by the Engineer will be the quantity eligible for payment. If no areas are identified by the Engineer for these items, the bid items will be CCO'ed off the project.

HEAVY ROADWAY SHAPING

Heavy Roadway Shaping will be performed in accordance with the Standard Specifications at locations designated by the Engineer.

Included in the Estimate of Quantities are 2.0 miles of Heavy Roadway Shaping, 118.0 MGal of Water for Embankment per mile and 175.6 MGal of Water for Granular Material per mile, for bidding purposes only. The actual quantity ordered by the Engineer will be the quantity eligible for payment. If no areas are identified by the Engineer for these items, the bid items will be CCO'ed off the project.

RATES OF MATERIALS (PCN 05J5)

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

SD46 SHOULDER SURFACING SECTIONS – Rate 1

(Rates are for one shoulder only)

Sta. 0+20.0 to Sta. 735+09.5 Rt. Shoulder
Sta. 0+20.0 to Sta. 733+91.1 Lt. Shoulder
Sta. 742+46.7 to Sta. 799+84.1 Lt. Shoulder
Sta. 800+38.3 to Sta. 828+60.0 Lt. Shoulder

BASE COURSE or BASE COURSE, SALVAGED 1,067 tons.

Water for Granular Material at the rate of 12.8 M. Gallons.

MC-70 Asphalt for Prime at the rate of 6.3 ton applied 9.0 feet wide (Rate = 0.30 gallon per square yard).

SS-1h or CSS-1h Asphalt for Tack at the rate of 1.3 ton applied 8.5 feet wide (Rate = 0.06 gallon per square yard).

CLASS HR ASPHALT CONCRETE

Crushed Aggregate		396 tons
Salvaged Asphalt Concrete	264 tons	
PG 58-34 Asphalt Binder	24 tons	
Total		684 tons

FLUSH SEAL

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 1.0 ton applied 8.0 feet wide (Rate = 0.05 gallon per square yard).

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

SD46 SHOULDER SURFACING SECTIONS – Rate 2

Sta. 735+09.5 to Sta. 800+63.2 Rt. Shoulder
Sta. 801+18.2 to Sta. 828+60 Rt. Shoulder
(Rates are for one shoulder only)

MC-70 Asphalt for Prime at the rate of 6.3 ton applied 9.0 feet wide (Rate = 0.30 gallon per square yard).

SS-1h or CSS-1h Asphalt for Tack at the rate of 1.3 ton applied 8.5 feet wide (Rate = 0.06 gallon per square yard).

CLASS HR ASPHALT CONCRETE

Crushed Aggregate		396 tons
Salvaged Asphalt Concrete	264 tons	
PG 58-34 Asphalt Binder	24 tons	
Total		684 tons

FLUSH SEAL

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 1.0 ton applied 8.0 feet wide (Rate = 0.05 gallon per square yard).

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

Revised: 28May25, RML

RATES OF MATERIALS (PCN 06QY)

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

SD11 MAINLINE OVERLAY SECTIONS – Rate A

Sta. 4+74.8 to Sta. 26+13.35
Sta. 27+06.65 to Sta. a 195+45.0
Sta. a 253+80.5 to Sta. a 263+14.5

SS-1h or CSS-1h Asphalt for Tack at the rate of 6.1 ton applied 41.0 feet wide (Rate = 0.06 gallon per square yard).

CLASS Q2R HOT MIXED ASPHALT CONCRETE

Crushed Aggregate		1,663 tons
Salvaged Asphalt Concrete	713 tons	
PG 58-34 Asphalt Binder	99 tons	
Hydrated Lime		25 tons
Total		2,500 tons

FLUSH SEAL

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.35 ton per shoulder applied 1.5 feet wide per shoulder on the Rumble Strips. (Rate = 0.10 gallon per square yard).

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

RATES OF MATERIALS

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

SD11 MAINLINE OVERLAY SECTIONS – Rate B

Sta. a 201+52.0 to Sta. a 211+02.5
Sta. a 233+38.7 to Sta. a 240+06.9
Sta. a 240+33.1 to Sta. a 251+60.6

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.07 ton applied 24.0 feet wide at centerline (Rate = 0.06 gallon per square yard).

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.10 ton applied 24.0 feet wide, (12' adjacent left curb & gutter and 12' adjacent right curb & gutter).
(Rate = 0.09 gallon per square yard).

CLASS Q2R HOT MIXED ASPHALT CONCRETE

Crushed Aggregate		39.78 tons
Salvaged Asphalt Concrete	17.05 tons	
PG 58-34 Asphalt Binder	2.37 tons	
Hydrated Lime		0.59 tons
	Total	59.79 tons

FLUSH SEAL

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.007 ton per shoulder applied 1.5 feet wide per shoulder on the Rumble Strips. (Rate = 0.10 gallon per square yard).

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

SD11 MAINLINE OVERLAY SECTIONS – Rate C

Sta. a 211+02.5 to Sta. a 232+02.5

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.07 ton applied 24.0 feet wide at centerline (Rate = 0.06 gallon per square yard).

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.05 ton applied 12.0 feet wide, (6' adjacent left curb & gutter and 6' adjacent right curb & gutter).
(Rate = 0.09 gallon per square yard).

CLASS Q2R HOT MIXED ASPHALT CONCRETE

Crushed Aggregate		29.84 tons
Salvaged Asphalt Concrete	12.79 tons	
PG 58-34 Asphalt Binder	1.78 tons	
Hydrated Lime		0.44 tons
	Total	44.85 tons

FLUSH SEAL

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.007 ton per shoulder applied 1.5 feet wide per shoulder on the Rumble Strips. (Rate = 0.10 gallon per square yard).

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

TABLE OF ADDITIONAL QUANTITIES (SD46)

LOCATION			WATER FOR GRANULAR MATERIAL	BASE COURSE or BASE COURSE, SALVAGED	GRAVEL CUSHION or GRAVEL CUSHION, SALVAGED	ASPHALT CONCRETE COMPOSITE	CLASS HR ASPHALT CONCRETE	PG 58-34 ASPHALT BINDER	ASPHALT FOR PRIME	ASPHALT FOR TACK	ASPHALT FOR FLUSH SEAL	SAND FOR FLUSH SEAL
			MGal	Ton	Ton	Ton / Lift	Ton / Lift	Ton / Lift	Ton	Ton / Lift	Ton	Ton
Station	to	Station										
XR 735												
0+38.0	to	1+58.0	1.0	84.1			139.8 / 139.8	4.9 / 4.9	1.2	0.3 / 0.3	0.2	3.9
1+58.0	to	13+60.0					591.6 / 591.6	20.7 / 20.7	5.7	1.2 / 1.2	0.9	12.8
MISCELLANEOUS												
Right Turn Lane @ XR735			0.7		53.0							
Intersecting Rd @ Sta. 370+30 Lt.			0.2		19.2							
Intersecting Rd @ Sta. 370+31 Rt.			0.2		19.1							
Intersecting Rd @ Sta. 159+00 Rt.			1.0	83.2			117.2 / 117.2	4.1 / 4.1	1.2	0.3 / 0.3	0.2	4.2
Intersecting Rd @ Sta. 211+87 Lt.			1.1	90.4			191.2	6.7	1.3	0.3	0.2	4.6
Intersecting Rd @ Sta. 633+74 Lt.			0.2	17.6			37.2	1.3	0.3	0.1	*	0.9
Intersecting Rd - AC radius only (25 ea)			10.4	868.8			779.5	27.3	5.5	1.2	1.0	18.7
Entrance - Sta. 693+28 Rt.			0.7	59.0			124.7	4.4	0.9	0.2	0.2	3.0
Entrance - Sta. 714+95 Rt.			0.2	18.6			39.2	1.4	0.3	0.1	0.1	0.9
Entrances w/ AC (11 ea)			4.8	401.5			383.8	13.4	2.7	0.6	0.5	9.2
40' Entrance (29 ea)			17.5	1,456.7								
30' Entrance (2 ea)			1.1	87.7								
24' Entrance (66 ea)			24.7	2,057.9								
Railroad Crossing - Sta. 800+51						17.9 / 17.9 / 11.9						
Traffic Control Shoulder Widening (Sta. 735+09.5 to Sta. 828+60												
Lt. Shoulder			35.7		2,979.3							
Rt. Shoulder			145.5		12,121.6							
Temporary Concrete Barrier Surfacing RCBC @ Sta. 787+19												
Lt. Shoulder			0.9		69.0							
Rt. Shoulder			1.5		126.0							
Traffic Control (Engineer's Discretion)			6.0		500.0							
Total =			253.4	5,225.5	15,887.2	47.7	3,252.8	113.9	19.1	6.1	3.3	58.2

Application Rates: PG 58-34 Asphalt Binder for Class HR Asphalt Concrete at 3.5% (total mix weight = 148 lbs./cu.ft.)
MC-70 Asphalt for Prime rate = 0.30 gallon per square yard
SS-1h or CSS-1h Asphalt for Tack rate = 0.06 gallon per square yard
SS-1h or CSS-1h Asphalt for Flush Seal rate = 0.05 gallon per square yard
Sand for Flush Seal rate = 8.00 lbs. per square yard

* Less than a tenth of a ton

TABLE OF ADDITIONAL QUANTITIES (SD11)

LOCATION			WATER FOR GRANULAR MATERIAL	BASE COURSE OR BASE COURSE, SALVAGED	CLASS Q2R ASPHALT CONCRETE	PG 58-34 ASPHALT BINDER	HYDRATED LIME	ASPHALT FOR PRIME	ASPHALT FOR TACK		ASPHALT FOR FLUSH SEAL	SAND FOR FLUSH SEAL
									Mainline	Lt. & Rt. Shoulders		
			MGal	Ton	Ton	Ton	Ton	Ton	Rate = 0.06 Gal./Sq.Yd. Ton (width)	Rate = 0.09 Gal./Sq.Yd. Ton (width)	Ton	Ton
Station	to	Station										
MAINLINE TRANSITIONS												
0-102.5'	to	0-97.5'			4.0 / 4.0 / 2.7	0.2 / 0.2 / 0.1	* / * / *		* / * / *		*	
0+96.6	to	1+01.6			4.0 / 4.0 / 2.7	0.2 / 0.2 / 0.1	* / * / *		* / * / *		*	
1+01.6	to	4+74.8			199.9	7.9	2.0		0.4		0.1	
a 195+45.0	to	a 196+45.0			51.1	2.0	0.5		0.1		*	
a 196+45.0	to	a 200+16.0			196.4	7.8	1.9		0.3 (24')	0.3 (19.5')		
a 200+16.0	to	a 201+52.0			77.1	3.1	0.8		0.1 (24')	0.1 (ave. 22.5')		
a 232+02.5	to	a 233+13.3			62.6	2.5	0.6		0.1 (24')	0.1 (ave. 23')		
a 233+22.3	to	a 233+38.7			180.0	7.1	1.8		0.2 (24')	* (ave. 29.6')		
a 251+60.6	to	a 252+65.6			59.5	2.4	0.6		0.1 (24')	0.1 (ave. 21')		
a 252+65.6	to	a 253+00.5			18.5	0.7	0.2		* (24")	* (18')		
a 253+00.5	to	a 253+80.5			40.9	1.6	0.4		0.1		*	
Bridge Approach @ Str. No. 64-090-005												
Sta. 25+38.35 to Sta. 26+13.35			4.4	# 366.2	38.5 / 44.4	1.5 / 1.8	0.4 / 0.4	0.4	0.1 / 0.1			
Sta. 27+06.65 to Sta. 27+81.65			4.4	# 366.2	38.5 / 44.4	1.5 / 1.8	0.4 / 0.4	0.4	0.1 / 0.1			
Str. No. 64-090-005 Guardrail												
Begin Bridge Left			0.9	73.3	20.4	0.8	0.2	0.1	*		*	
Begin Bridge Right			1.3	106.9	20.4	0.8	0.2	0.1	*		*	
End Bridge Left			0.3	27.4	19.1	0.8	0.2	*	*		*	
End Bridge Right			1.2	102.1	19.3	0.8	0.2	0.1	*		*	
MISCELLANEOUS AREAS												
Spot Leveling, Strengthening & Repair					496.8	19.5	5.0					
Tack for Repair and Leveling									1.2			
Int. Rds Radius - 5 each			1.2	100.0	140.7	5.6	1.4		0.2		0.2	3.3
Int. Roads ROW - 1 each					52.7	2.1	0.5		0.1		0.1	1.3
Int. Streets AC only - 7 each					58.2	2.3	0.6		0.1		0.1	2.1
Int. Streets AC/BC - 1 each			0.2	20.0	7.7	0.3	0.1		*		*	0.3
Fe/Fm Entrances - 20 each			4.8	400.0								
Mailbox Turnouts – 3 each			0.3	27.2	6.0	0.2	0.1		*			
Total =			19.0	1,589.3	1,914.5	76.3	18.9	1.1	4.0		0.5	7.0

Virgin Base Course

Application Rates: PG 58-34 Asphalt Binder for Class Q2R Asphalt Concrete at 4.0% (total mix weight = 148 lbs./cu.ft.)
Hydrated Lime at 1.0%
MC-70 Asphalt for Prime rate = 0.30 gallon per square yard
SS-1h or CSS-1h Asphalt for Tack rate = 0.06 gallon per square yard
SS-1h or CSS-1h Asphalt for Tack rate = 0.09 gallon per square yard for designated shoulder area (see Typical Sections)
SS-1h or CSS-1h Asphalt for Flush Seal rate = 0.05 gallon per square yard
Sand for Flush Seal rate = 8.00 lbs. per square yard

* Less than a tenth of a ton

TABLE OF CULVERT WORK (SD46)

Station	Approx. MRM	Existing Culvert	Work Location		Furnish & Install 24" RCP		Furnish & Install 30" RCP		Remove Pipe		* Remove & Reset Pipe End Section		Comments
			Lt.	Rt.	Ft		Ft		Ft		Each		
748+00	380.71	30" RCP & 2 Sloped Ends		X				4		4		2	Traffic Control Widening
808+67	381.91	Quad 30" RCP & 8 Sloped Ends	X	X			16	16	16	16	8	8	Traffic Control Widening
826+33	382.24	Twin 24" Arch RCP & 4 Sloped Ends	X	X	8	12			8	12	4	4	Traffic Control Widening
TOTAL =					20		36		56		26		

* Pipe End Sections will be removed and reset twice. Once to install RC Pipe for traffic control shoulder widening and once after traffic control shoulder widening pipe has been removed.

TABLE OF CULVERT WORK (SD11)

Station	Approx. MRM	Existing Culvert	Work Location		Reprofile Ditch		Contractor Furnished Borrow Excavation		Remove & Reset Pipe		Remove & Reset Pipe End Section		Type B Drainage Fabric		* Class B Riprap		Comments
			Lt.	Rt.	Stations		Cu.Yds.		Ft.		Each		Sq.Yds.		Tons		
83+38	37.917	24" RCP & 2 FE	X	X			5	5			1	1					
a 110+80	37.387	Triple 8'x6' RCBC	X	X	0.5	0.5							258	254	149	148	See detail sheets
a 118+24	37.227	42" Arch RCP & 2 FE		X		0.5											
a 152+00	36.601	24" RCP & 2 FE		X				5		6		1					
a 172+44	36.216	60" RCP & 2 FE	X	X		0.5	5		8		1						
a 256+60	34.611	36" RCP & 2 FE		X		0.4											
TOTAL =					2.4		20		14		4		512		297		

* For estimating purposes only, a factor of 1.4 tons/cu.yd. was used to convert Cu.Yds. to Tons.

TABLE OF GURARDRAIL ITEMS

Location	Remove Beam Guardrail	# Remove Flared End Terminal	Type 1 Retrofit Guardrail Transition	Type 1 MGS	MGS Flared End Terminal	Steel Beam Guardrail Delineator	Comments
	Feet	Each	Each	Feet	Each	Each	
SD11							
Str. # 64-090-005							
Begin Bridge Left Sh.	81.25	1	1	37.5	1	4	
Begin Bridge Right Sh.	81.25	1	1	37.5	1	4	
End Bridge Left Sh.	81.25	1	1	37.5	1	4	
End Bridge Right Sh.	81.25	1	1	37.5	1	4	
TOTAL	325.0	4	4	150.0	4	16	

For Informational Purposes Only: All cost to remove these items will be incidental to the contract unit price per foot for "Remove Beam Guardrail".

Revised 25Aug25, JPC

TABLE OF CONSTRUCTION STAKING (SD46)
(See Special Provision for Contractor Staking)

The staking data from the grading project (P-PH 0046(61)366, PCN 04JF) can be obtained from the Area office.

Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Grade Staking Length (Mile)	Grade Staking Lane Factor	Grade Staking Sets of Stakes	* Grade Staking (Mile)	Graded Centerline Staking (Mile)	Miscellaneous Staking (Mile)
SD46 (2 lane roadway)	0+20.0	147+40.0	2	14,720.0	2.788	1	1	2.788		2.788
SD46 (Transition from 2 lane to 3 lane roadway)	147+40.0	151+60.0	3	420.0	0.080	1.5	1	0.120		0.080
SD46 (3 lane roadway)	151+60.0	166+36.6	3	1,476.6	0.280	1.5	1	0.420		0.280
SD46 (Transition from 3 lane to 2 lane roadway)	166+36.6	170+56.6	3	420.0	0.080	1.5	1	0.120		0.080
SD46 (2 lane roadway)	170+56.6	353+43.0	2	18,286.4	3.463	1	1	3.463		3.463
SD46 (2 lane roadway)	353+43.0	362+70.0	2	927.0	0.176	1	2	0.352	0.176	0.176
SD46 (Transition from 2 lane to 3 lane roadway)	362+70.0	366+90.2	3	420.0	0.080	1.5	2	0.240	0.080	0.080
SD46 (3 lane roadway)	366+90.2	373+73.3	3	683.1	0.129	1.5	2	0.387	0.129	0.129
SD46 (Transition from 3 lane to 2 lane roadway)	373+73.3	377+90.7	3	417.4	0.079	1.5	1	0.119		0.079
SD46 (2 lane roadway)	377+90.7	686+50.0	2	30,859.3	5.845	1	1	5.845		5.845
SD46 (Transition from 2 lane to 3 lane roadway)	686+50.0	692+50.0	3	600.0	0.114	1.5	1	0.171		0.114
SD46 (3 lane roadway)	692+50.0	724+86.0	3	3,236.0	0.613	1.5	1	0.920		0.613
SD46 (Transition from 3 lane to 4 lane roadway)	724+86.0	729+06.0	4	420.0	0.080	2	1	0.160		0.080
SD46 (4 lane roadway)	729+06.0	735+86.5	4	680.5	0.129	2	1	0.258		0.129
SD46 (Transition from 3 lane to 2 lane roadway)	735+86.5	740+20.0	3	433.5	0.082	1.5	1	0.123		0.082
SD46 (2 lane roadway)	740+20.0	828+60.0	2	8,840	1.674	1	1	1.674		1.674
							Totals:	17.160	0.385	15.692

* 1 = Paving Hub Stakes (PCC Pavement)

** Grade Staking Quantity = (Length) x (Lane Factor) x (Sets of Stakes)

TABLE OF CONSTRUCTION STAKING (SD11)
(See Special Provision for Contractor Staking)

The staking data from the grading project (P-PH 0046(61)366, PCN 04JF) can be obtained from the Area office.

Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Length (Mile)	Lane Factor	Sets of Stakes	* Grade Staking (Mile)	Miscellaneous Staking (Mile)
SD11 (2 lane roadway)	0-102.5	26+13.35	2	2715.9	0.514	1	1	0.514	0.514
Bridge Exception	26+13.35	27+06.65		93.3					
SD11 (2 lane roadway)	27+06.65	86+33.98	2	5927.3	1.123	1	1	1.123	1.123
SD11 (2 lane roadway) (Equation)	86+33.98	a 86+33.27							
SD11 (2 lane roadway)	a 86+33.27	240+06.92	2	15373.7	2.912	1	1	2.912	2.912
Box Culvert Exception	240+06.92	240+33.08		26.2					
SD11 (2 lane roadway)	240+33.08	263+14.5	2	2281.4	0.432	1	1	0.432	0.432
							Totals:	4.981	4.981

* 1 = Paving Hub Stakes (PCC Pavement)

** Grade Staking Quantity = (Length) x (Lane Factor) x (Sets of Stakes)

Revised: 28May25, RML

TABLE OF MATERIAL QUANTITIES (SD46)

LOCATION	WATER FOR GRANULAR MATERIAL	BASE COURSE OR BASE COURSE, SALVAGED	GRAVEL CUSHION OR GRAVEL CUSHION, SALVAGED	CLASS HR ASPHALT CONCRETE	PG 58-34 ASPHALT BINDER	ASPHALT FOR PRIME	BLOTTING SAND FOR PRIME	ASPHALT FOR TACK	ASPHALT FOR FLUSH SEAL	SAND FOR FLUSH SEAL
	MGal	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton
Rate 1	376.8	31,407.7		20,133.9	706.5	185.4		38.3	29.4	
Rate 2				1,204.2	42.3	11.1		2.3	1.8	
Additional Quantities Table	253.4	5,225.5	15,887.2	3,252.8	113.9	19.1		6.1	3.3	58.2
Notes										
Surface Preparation	896.9									
Shoulder Shaping – 0+20 to 828+60 Lt.	188.2									
Shoulder Shaping – 0+20 to 735+09.5 Rt.	167.0									
Shoulder Shaping – 735+09.5 to 828+60 Rt.	19.1									
Digout Backfill	18.8	1,568.4								
Construction Haul Road	167.0		13,919.0							
Traffic Control Blotting Sand for Prime							10.0			
ORS	351.2									
HRS	351.2									
Total =	2,789.6	38,201.6	29,806.2	24,590.9	862.7	215.6	10.0	46.7	34.5	58.2

TABLE OF MATERIAL QUANTITIES (SD11)

LOCATION	WATER FOR GRANULAR MATERIAL	BASE COURSE OR BASE COURSE, SALVAGED	ASPHALT CONCRETE COMPOSITE	ASPHALT CONCRETE BLADE LAID	CLASS Q2R ASPHALT CONCRETE	PG 58-34 ASPHALT BINDER	HYDRATED LIME	ASPHALT FOR PRIME	ASPHALT FOR TACK	ASPHALT FOR FLUSH SEAL	SAND FOR FLUSH SEAL
	MGal	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton
Rate A					9,427.8	373.3	94.3		23.0	2.6	
Rate B					1,642.0	65.1	16.2		4.6	0.4	
Rate C					941.9	37.4	9.2		2.6	0.3	
Additional Quantities Table	19.0	1,589.3			1,914.5	76.3	18.9	1.1	4.0	0.5	7.0
Notes											
Asphalt Concrete Blade Laid				745.2		55.1	7.5		27.8		
Digout Backfill	6.0	496.8	124.2								
Grind Sinusoidal Transverse Rumble Strip in Asphalt Concrete										*	
Total =	25.0	2,086.1	124.2	745.2	13,926.2	607.2	146.1	1.1	62.0	3.8	7.0

* Less than a tenth of a ton

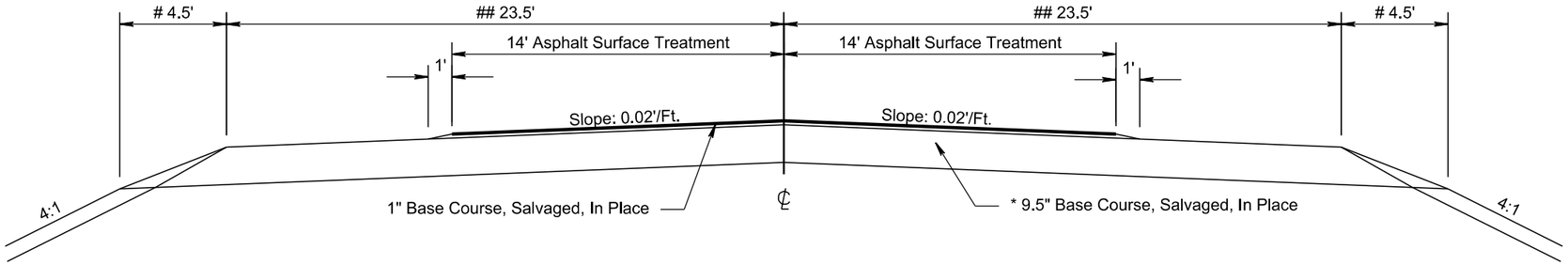
IN PLACE TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F18	F82

Plotting Date: 08/25/2025

SD 46

Sta. 0+20.0 to Sta. 147+40.0
Sta. 170+56.6 to Sta. 353+43.0
Sta. 373+73.3 to Sta. 686+50.0
Sta. 741+84.8 to Sta. 800+35.5
Sta. 800+66.0 to Sta. 828+60.0



Transitions:

Sta. 0+20.0 to Sta. 3+40.0
Sta. 373+73.31 to Sta. 376+93.31
Sta. 800+66.0 to Sta. 803+86.0
* 17.5" to 9.5"
# 8' to 4.5'
20' to 23.5'

Sta. 350+23.0 to Sta. 353+43.0
Sta. 797+15.5 to Sta. 800+35.5
Sta. 825+40.0 to Sta. 828+60.0
* 9.5" to 17.5"
# 4.5' to 8'
23.5' to 20'

Sta. 373+73.31 to Sta. 377+93.31
* 17.5" to 9.5"
# 8' to 4.5'
26' to 23.5'

Superelevation:

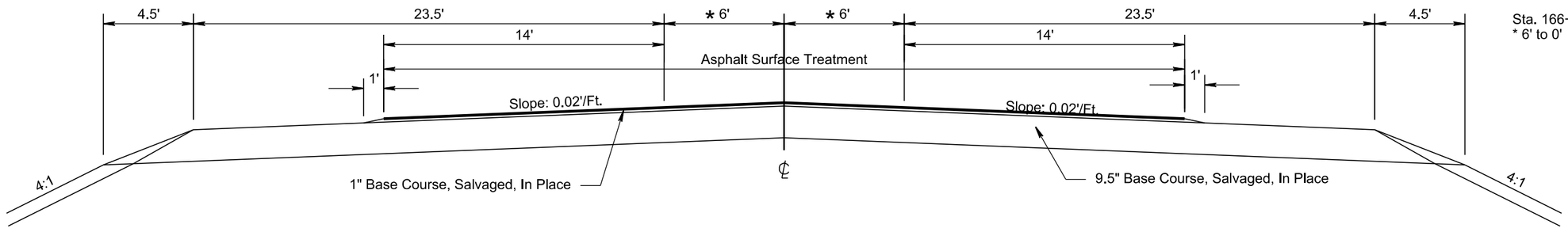
Sta. 716+07.3 to Sta. 719+67.3
Cross Slope 0.02'/Ft to 0.06'/Ft

Sta. 719+67.3 to Sta. 750+51.7
Cross Slope 0.06'/Ft

Sta. 750+51.7 to Sta. 752+91.7
Cross Slope 0.06'/Ft to 0.02'/Ft

SD 46

Sta. 147+40.00 to Sta. 170+56.6



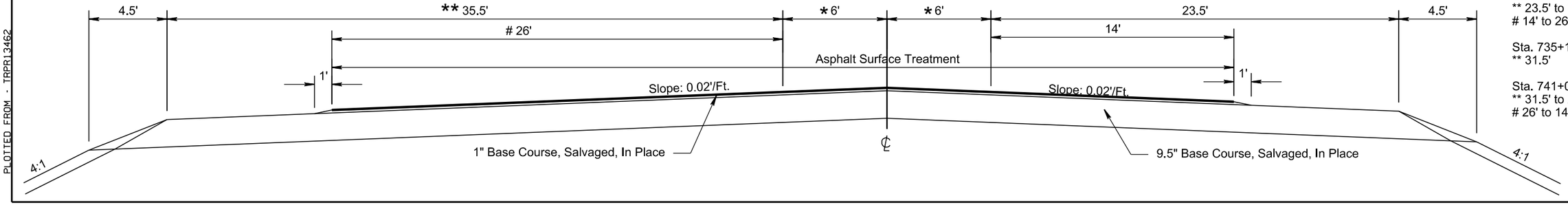
Transitions:

Sta. 147+40.00 to Sta. 151+60.00
* 0' to 6'

Sta. 166+36.6 to Sta. 170+56.6
* 6' to 0'

SD 46

Sta. 686+50.00 to Sta. 741+84.8



Transitions:

Sta. 686+50 to Sta. 724+86
* 0'

Sta. 724+86 to Sta. 729+06
* 0' to 6'

Sta. 736+00 to Sta. 740+20
* 6' to 0'

Sta. 740+20 to Sta. 741+84.8
0'

Sta. 686+50 to Sta. 692+50
** 23.5' to 35.5'
# 14' to 26'

Sta. 735+10 to Sta. 741+05
** 31.5'

Sta. 741+05 to Sta. 741+84.8
** 31.5' to 23.5'
# 26' to 14'

PLOT SCALE - 1:6.00001

PLOTTED FROM - TRPR13462

PLOT NAME - 2

FILE - ...\TYPICAL SECTIONS 05J5.DGN

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F19	F82

Plotting Date: 08/25/2025

Transitions:

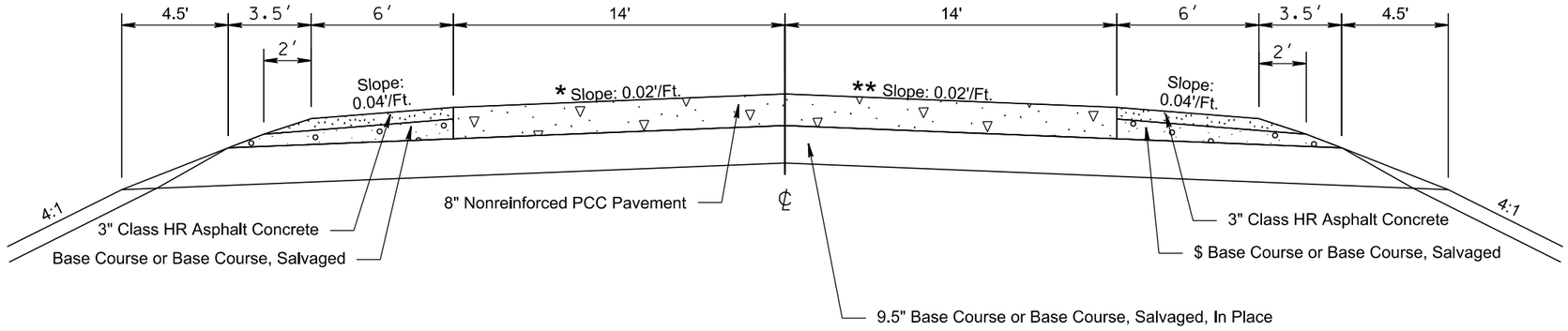
Sta. 742+46.7 to Sta. 750+51.7
* 0.06'/Ft.
** 0.06'/Ft.

Sta. 750+51.7 to Sta. 752+91.7
* 0.06'/Ft. to -0.02'/Ft.
** 0.06'/Ft. to 0.02'/Ft.

SD 46

Sta. 0+20.0 to Sta. 147+40.0
Sta. 170+56.6 to Sta. 353+43.0
Sta. 377+93.3 to Sta. 686+50.0
Sta. 742+46.7 to Sta. 800+23.5
Sta. 800+78.1 to Sta. 828+60.0

$ Sta. 742+46.7 to Sta. 828+60
Granular material will be placed during Traffic Control Shoulder Widening operation. Area will be reshaped and recompacted during Shoulder Shaping operation.



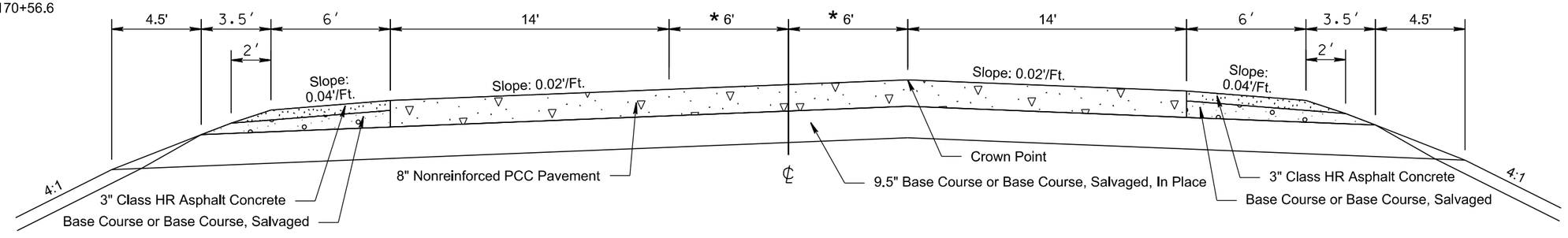
Transitions:

Sta. 147+40.00 to Sta. 151+60.00
* 0' to 6'

Sta. 166+36.6 to Sta. 170+56.6
* 6' to 0'

SD 46

Sta. 147+40.0 to Sta. 170+56.6



Salvage & Stockpile Asphalt Mix and Granular Base Material

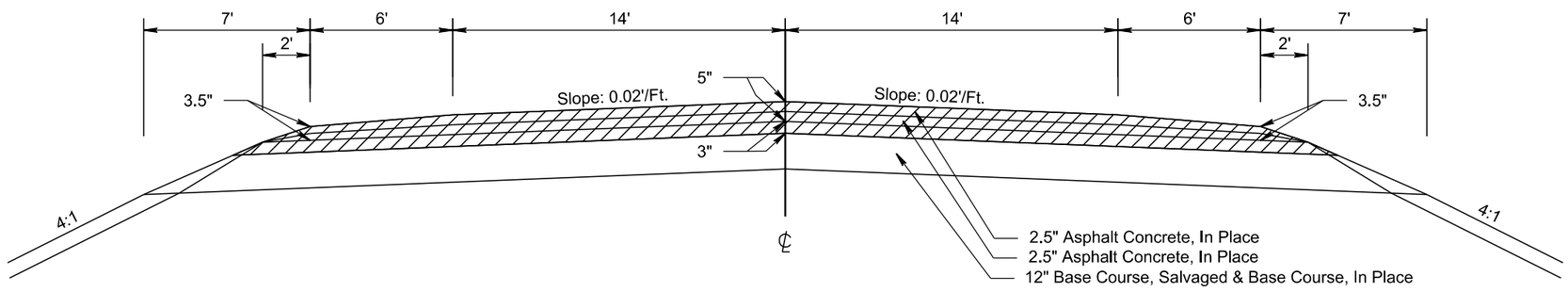
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F20	F82

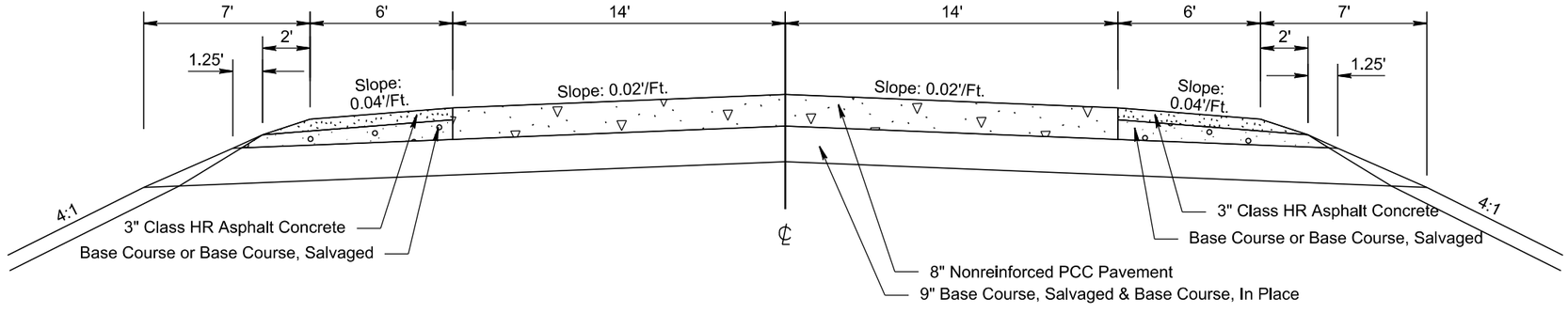
Plotting Date: 08/25/2025

SD46
Sta. 353+43.0 to Sta. 362+70.0

IN PLACE SURFACING



SD46
Sta. 353+43.0 to Sta. 362+70.0



TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F21	F82

Plotting Date: 08/25/2025

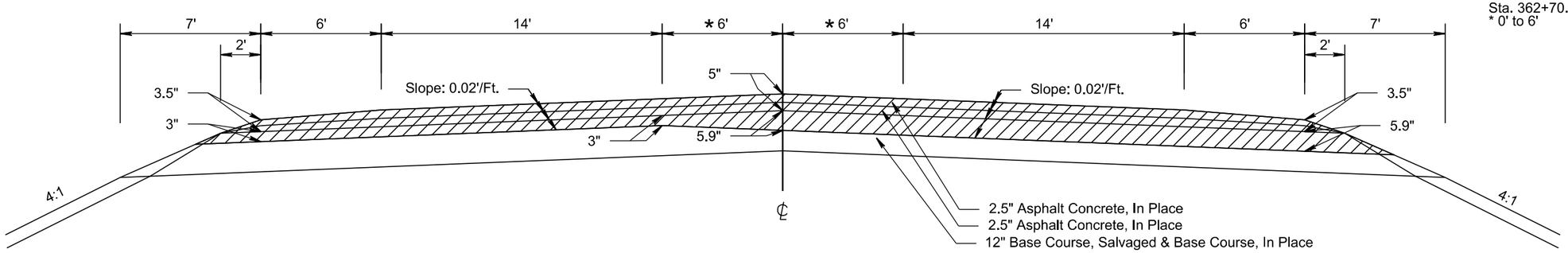
Salvage & Stockpile Asphalt Mix and Granular Base Material

SD46
Sta. 362+70.0 to Sta. 373+73.3

IN PLACE SURFACING

Transitions:

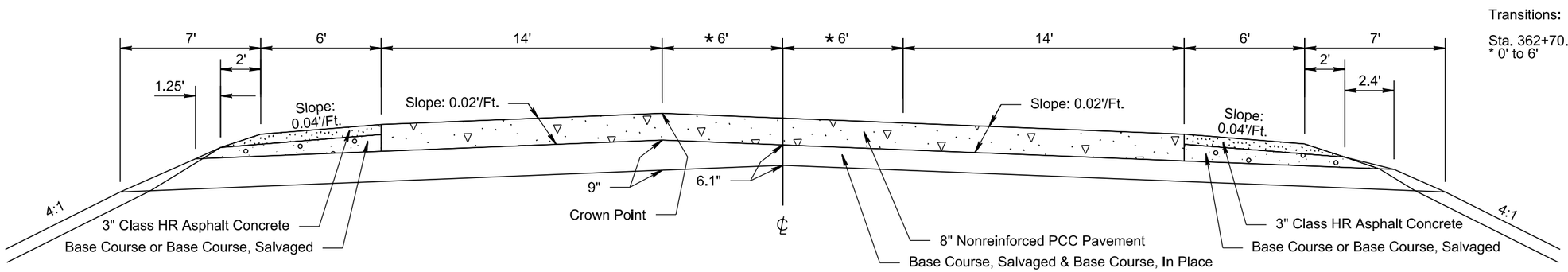
Sta. 362+70.0 to Sta. 366+90.0
* 0' to 6'



SD46
Sta. 362+70.0 to Sta. 373+73.3

Transitions:

Sta. 362+70.0 to Sta. 366+90.0
* 0' to 6'

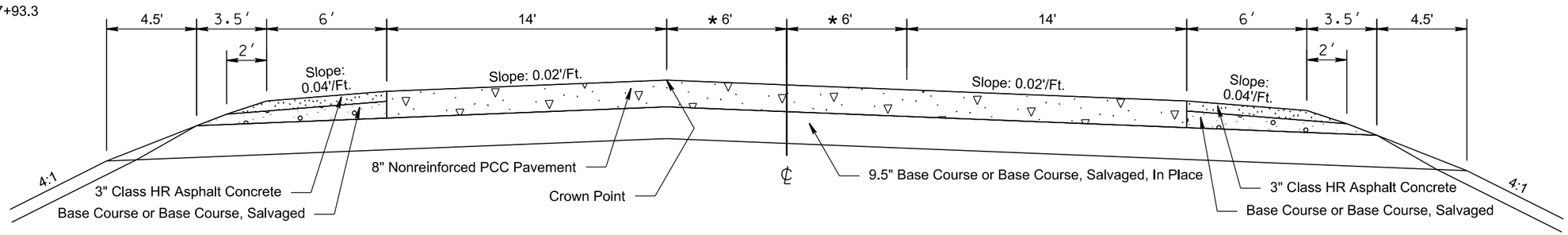


SD 46

Sta. 373+73.3 to Sta. 377+93.3

Transitions:

Sta. 373+73.3 to Sta. 377+93.3
* 6' to 0'



TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F22	F82

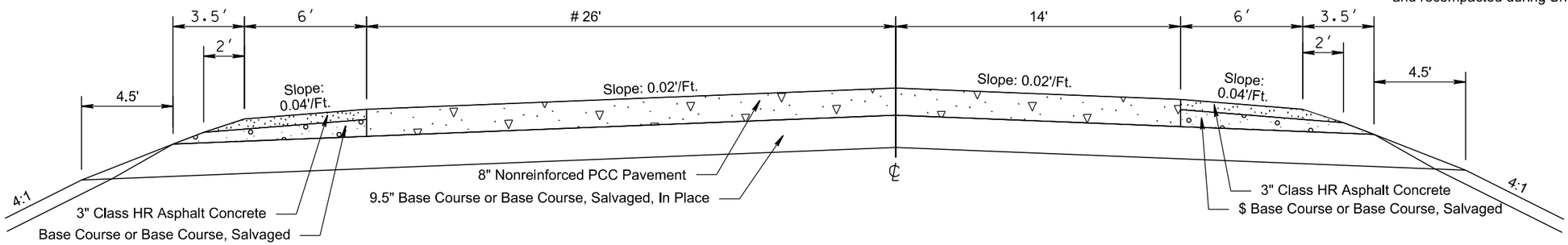
Plotting Date: 08/25/2025

Transitions:

Sta. 686+50 to Sta. 692+50
14' to 26'

SD 46

Sta. 686+50.0 to Sta. 716+07.3

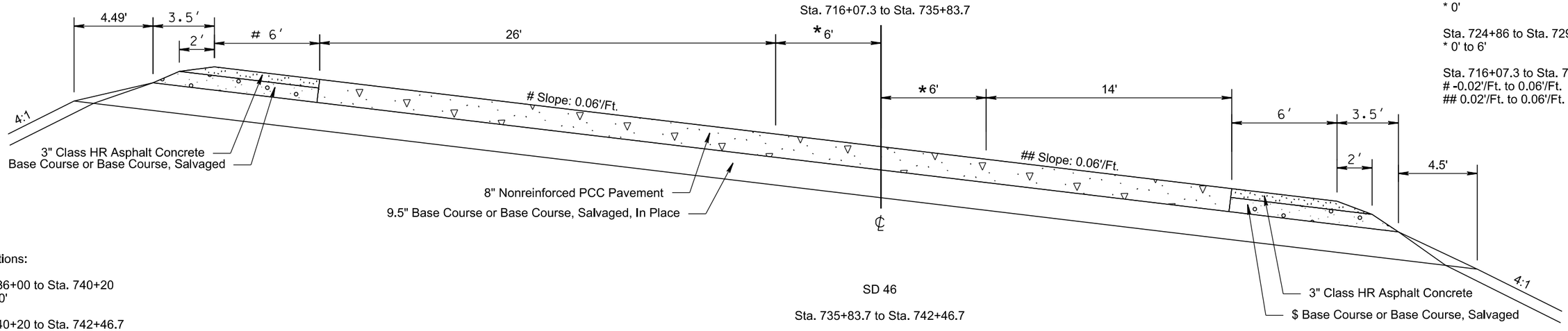


$ Sta. 735+09.5 to Sta. 742+46.7
Granular material will be placed during Traffic Control Shoulder Widening operation. Area will be reshaped and recompacted during Shoulder Shaping operation.

Sta. 733+91.1 to Sta. 735+83.7
XR 735

SD 46

Sta. 716+07.3 to Sta. 735+83.7



Transitions:

Sta. 716+07.3 to Sta. 724+86
* 0'

Sta. 724+86 to Sta. 729+06
* 0' to 6'

Sta. 716+07.3 to Sta. 719+67.3
-0.02'/Ft. to 0.06'/Ft.
0.02'/Ft. to 0.06'/Ft.

Transitions:

Sta. 736+00 to Sta. 740+20
* 6' to 0'

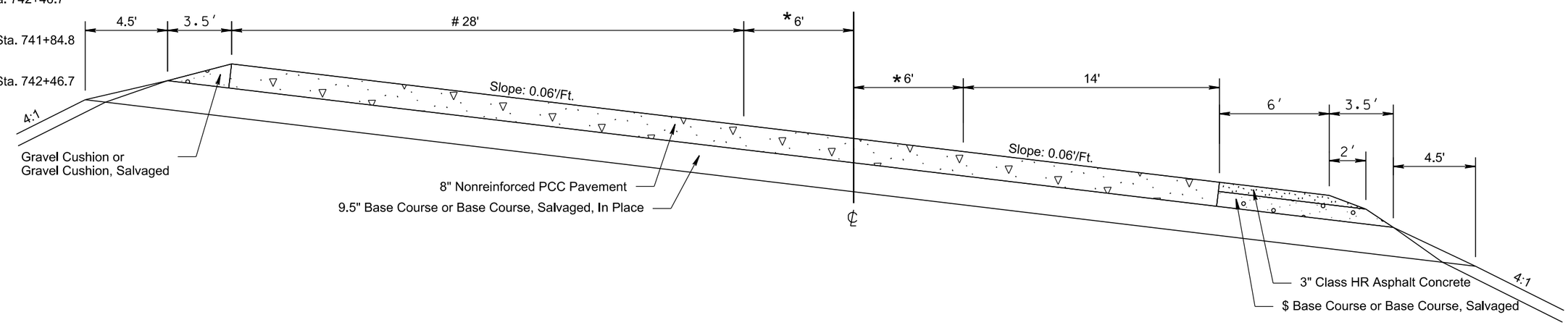
Sta. 740+20 to Sta. 742+46.7
* 0'

Sta. 741+05.0 to Sta. 741+84.8
28' to 20'

Sta. 741+85.0 to Sta. 742+46.7
20'

SD 46

Sta. 735+83.7 to Sta. 742+46.7



PLOT SCALE - 1:6.00001
PLOTTED FROM - TRPR13462
PLOT NAME - 6
FILE - ...\TYPICAL SECTIONS 05J5.DGN

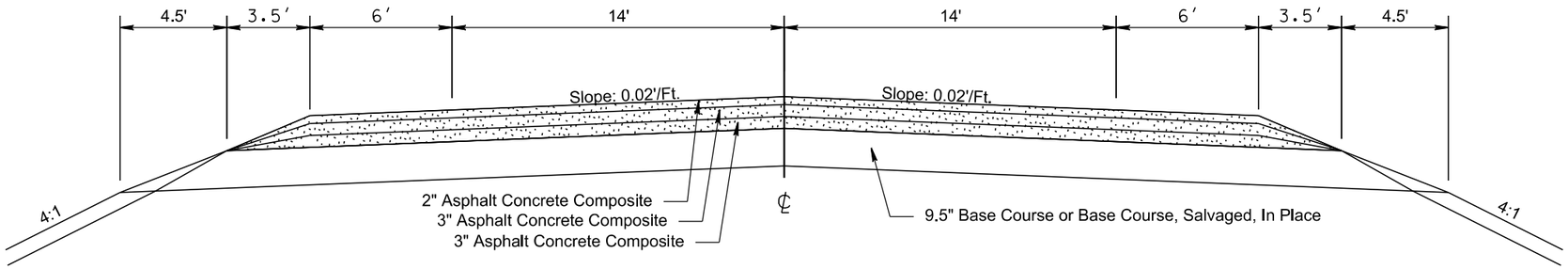
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F23	F82

Plotting Date: 08/25/2025

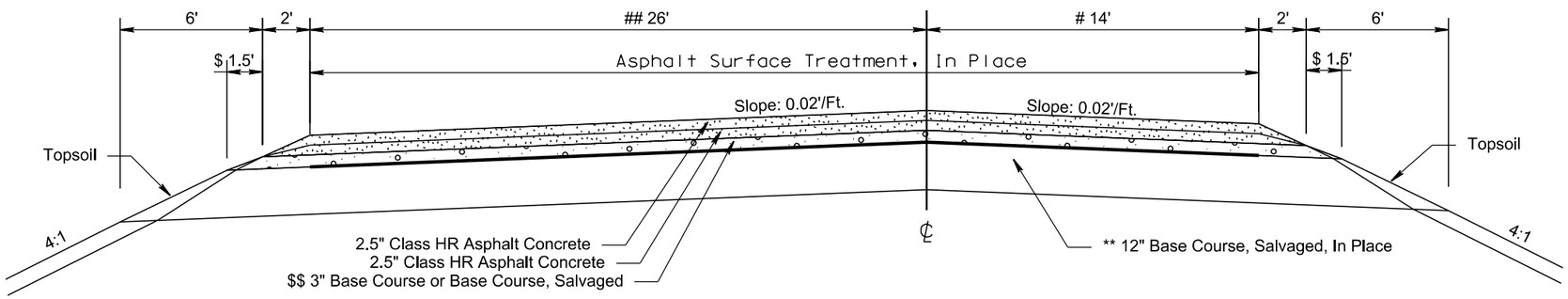
SD 46

Sta. 800+23.5 to Sta. 800+35.5
Sta. 800+66.0 to Sta. 800+78.1
Adjacent Railroad Crossing



XR 735

Sta. 0+32.0 to Sta. 13+60.0



Transitions:

Sta. 0+32 to Sta. 1+52
$ 1.5' to 0'
$$ 3" to 0"
** 9" to 12"

Sta. 1+52 to Sta. 13+60
$ 0'
$$ 0"

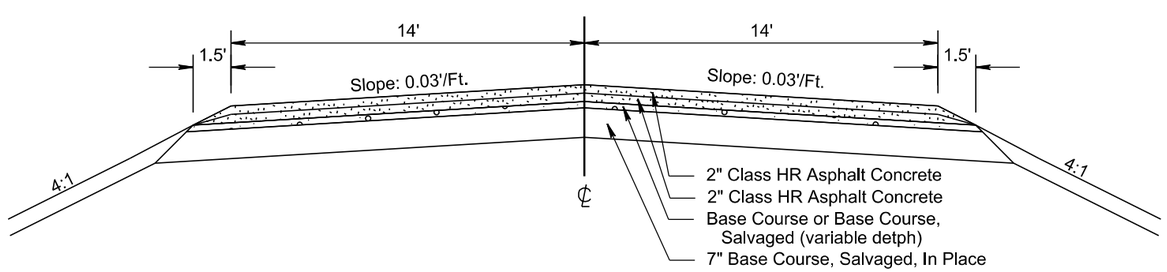
Sta. 0+32 to Sta. 1+44.4
Variable
Variable

Sta. 2+80 to Sta. 4+00
26' to 14'

Sta. 4+00 to Sta. 12+60
14'

Sta. 12+60 to Sta. 13+60
14' to 13'
14' to 13'

XR 159
Sta. 3+86.7 to Sta. 6+59.9



Salvage & Stockpile Asphalt Mix and Granular Base Material

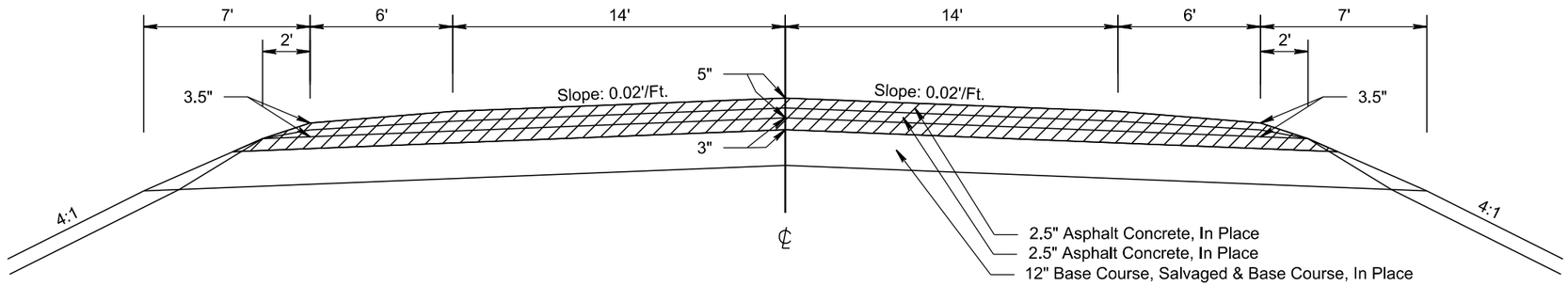
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F24	F82

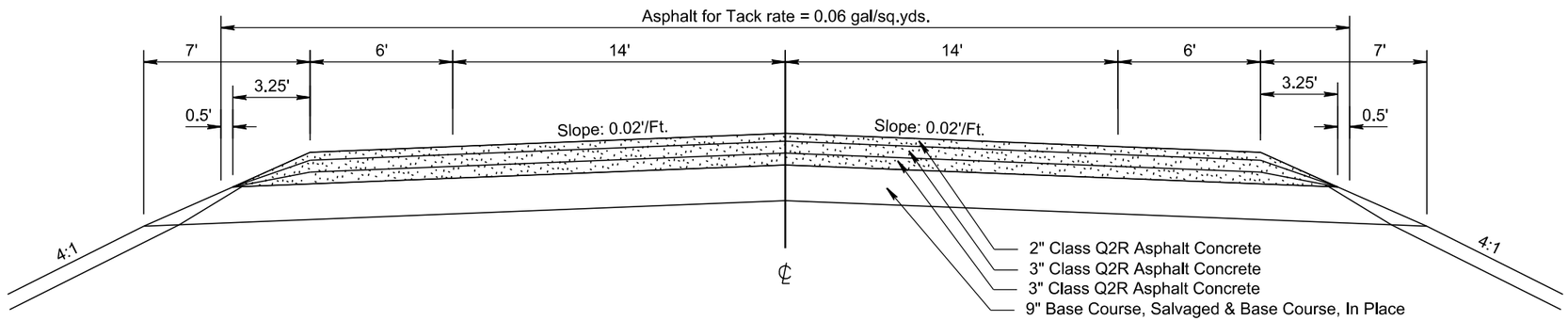
Plotting Date: 08/25/2025

SD11
Sta. 0-102.5' to Sta. 0-26'
Sta. 0+26.0 to Sta. 1+01.6

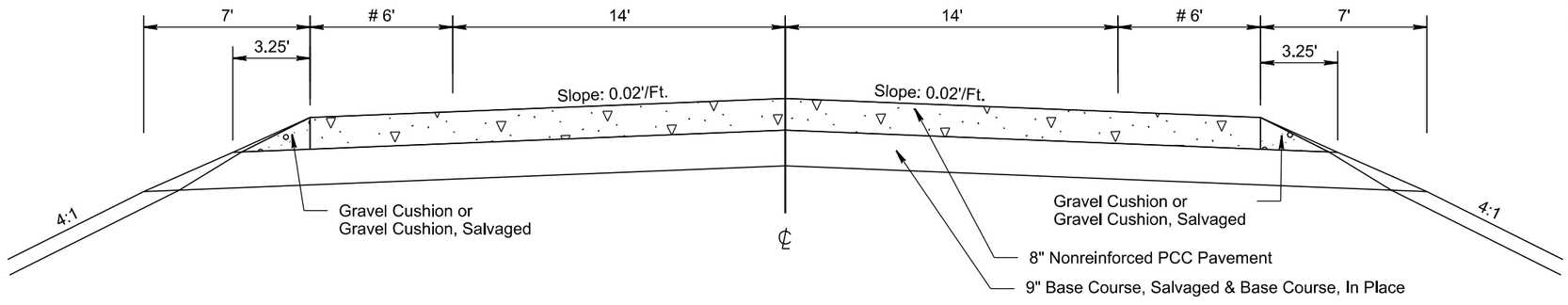
IN PLACE SURFACING



SD11
Sta. 0-102.5' to Sta. 0-97.5'
Sta. 0+96.6 to Sta. 1+01.6



SD11
Sta. 0-97.5' to Sta. 0-26'
Sta. 0+26.0 to Sta. 0+96.6



Transitions:

Sta. 0-97.5' to Sta. 0-26'
Sta. 0+26.0 to Sta. 0+96.6
Variable through radius

TYPICAL SURFACING SECTIONS

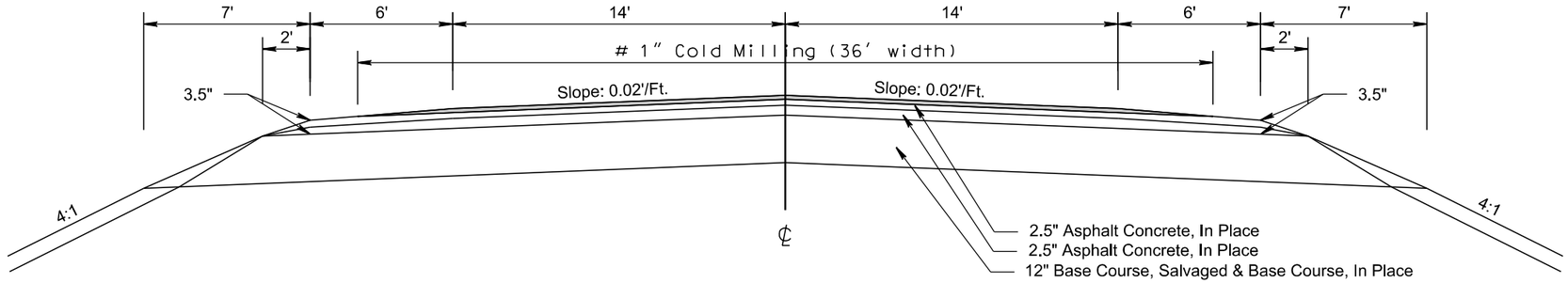
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F25	F82

Plotting Date: 08/25/2025

Cold Milled Asphalt Concrete

SD11
Sta. 1+01.6 to Sta. 4+74.8

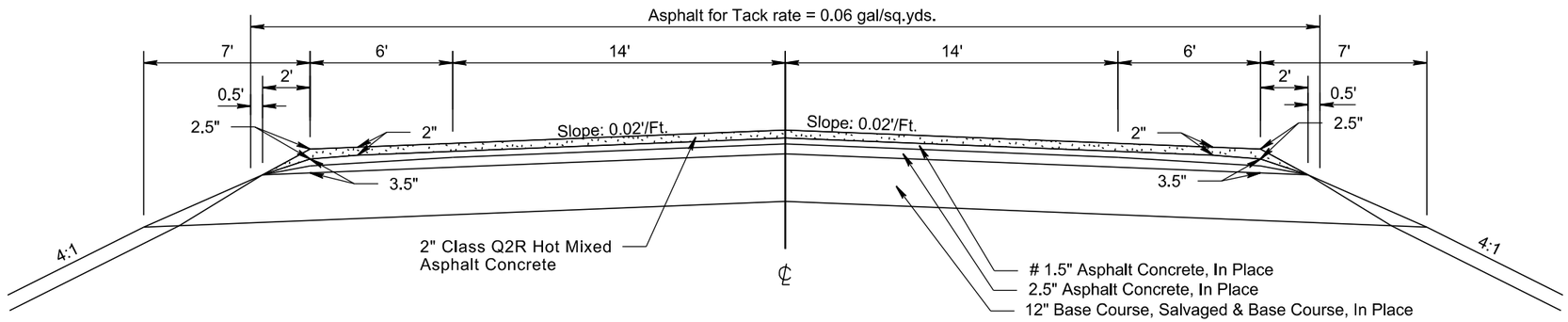
IN PLACE SURFACING



Transitions:

Sta. 1+01.6 to Sta. 1+41.6
2" to 1"

SD11
Sta. 1+01.6 to Sta. 4+74.8



Transitions:

Sta. 1+01.6 to Sta. 1+41.6
0.5" to 1.5"

PLOT SCALE - 1:6.00001

PLOTTED FROM - TRPR13462

PLOT NAME - 9

FILE - ...\TYPICAL SECTIONS 05J5.DGN

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F26	F82

Plotting Date: 08/25/2025

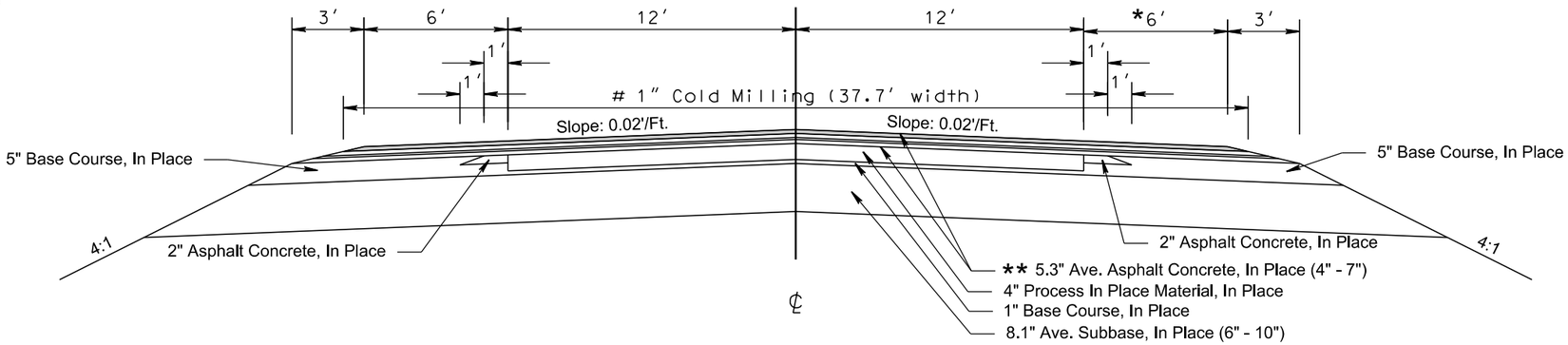
Cold Milled Asphalt Concrete

Equation: Sta. 86+33.98 Bk. = Sta. a 86+33.27 Ah.

Exception: Sta. 26+13.35 to Sta. 27+06.65

SD 11
Sta. 4+74.8 to Sta. 25+38.35
Sta. 27+81.65 to Sta. a 196+45.0
Sta. a 253+00.5 to Sta. a 263+14.5

IN PLACE SURFACING



Transitions:

Sta. 25+13.35 to Sta. 25+38.35
1" to 5"
** 6"
See Bridge Approach Detail sheet

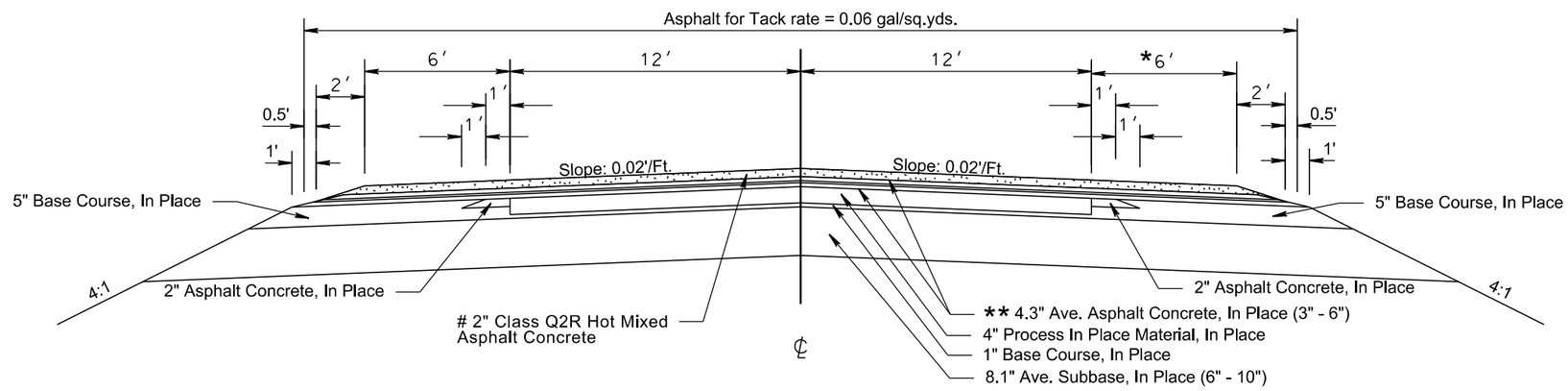
Sta. 27+81.65 to Sta. 28+06.65
5" to 1"
** 6"
See Bridge Approach Detail sheet

Sta. a 195+45.0 to Sta. a 196+45.0
1" to 2"
* 6' to 12'

Sta. a 253+00.5 to Sta. a 253+80.5
2" to 1"
* 12' to 6'

Sta. a 262+74.5 to Sta. a 263+14.5
1" to 2"

SD 11
Sta. 4+74.8 to Sta. 25+38.35
Sta. 27+81.65 to Sta. a 196+45.0
Sta. a 253+00.5 to Sta. a 263+14.5



Transitions:

Sta. 25+13.35 to Sta. 25+38.35
2" to 6"
** 5" to 1"
See Bridge Approach Detail sheet

Sta. 27+81.65 to Sta. 28+06.65
6" to 2"
** 1" to 5"
See Bridge Approach Detail sheet

Sta. a 195+45.0 to Sta. a 196+45.0
* 6' to 12'
** 4.3" to 3.3"

Sta. a 253+00.5 to Sta. a 253+80.5
* 12' to 6'
** 3.3" to 4.3"

Sta. a 262+74.5 to Sta. a 263+14.5
** 4.3" to 3.3"

PLOT SCALE - 1:6.00001

PLOT NAME - 10

FILE ...\TYPICAL SECTIONS 05J5.DGN

PLOTTED FROM - TRPR13462

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F27	F82

Plotting Date: 08/25/2025

Cold Milled Asphalt Concrete

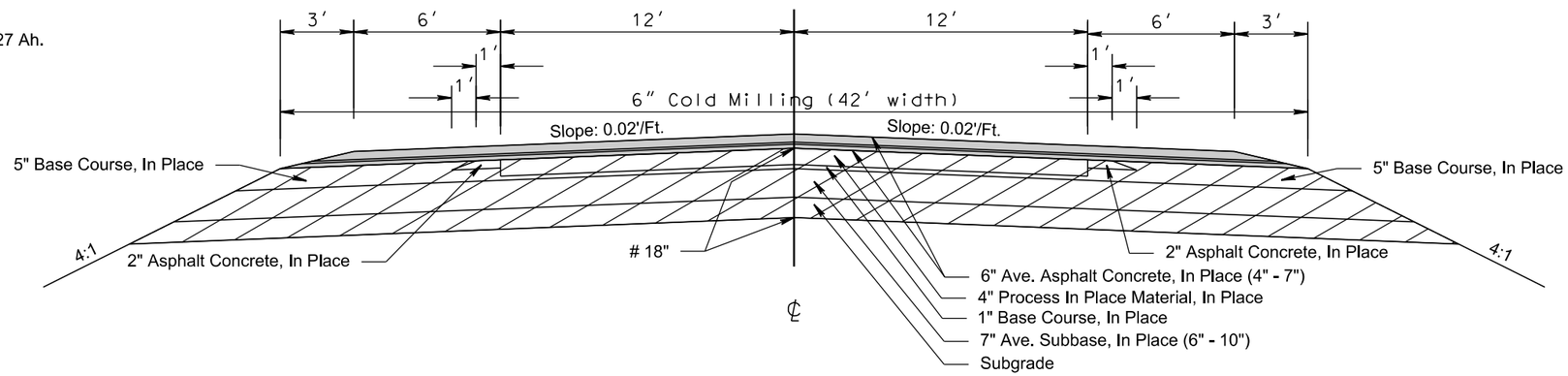
Unclassified Excavation

Equation: Sta. 86+33.98 Bk. = Sta. a 86+33.27 Ah.

Exception: Sta. 26+13.35 to Sta. 27+06.65

SD 11
Sta. 25+38.35 to Sta. 26+13.35
Sta. 27+06.65 to Sta. 27+81.65
See Bridge Approach Detail sheet

IN PLACE SURFACING

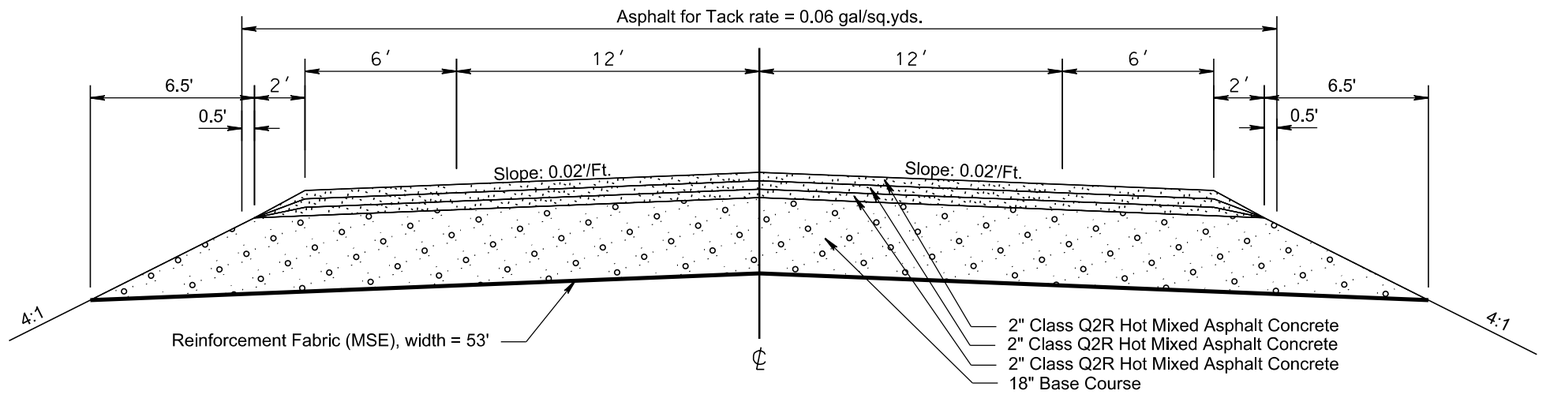


Transitions:

Sta. 25+38.35 to Sta. 26+13.35
17" to 18"
See Bridge Approach Detail sheet

Sta. 27+06.65 to Sta. 27+81.65
18" to 17"
See Bridge Approach Detail sheet

SD 11
Sta. 25+38.35 to Sta. 26+13.35
Sta. 27+06.65 to Sta. 27+81.65
See Bridge Approach Detail sheet



PLOT SCALE - 1:6.00001

PLOTTED FROM - TRPR13462

PLOT NAME - 11

FILE - ...\TYPICAL SECTIONS 05J5.DGN

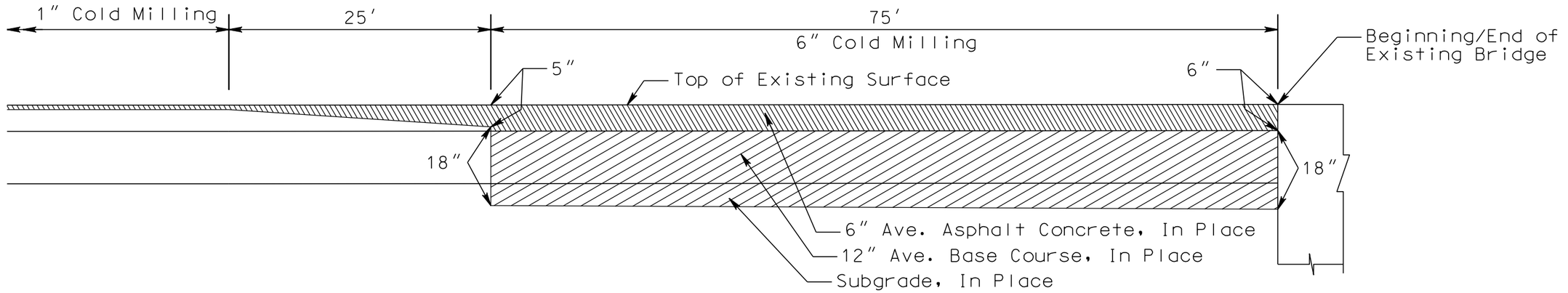
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F28	F82

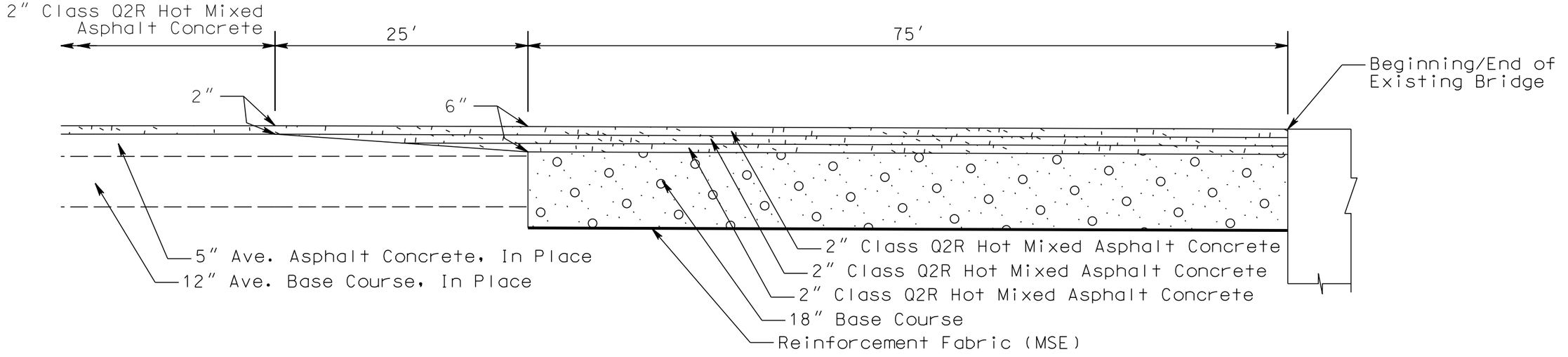
Plotting Date: 08/25/2025

BRIDGE APPROACH DETAIL
at Str. No. 64-090-005
Typical at both ends of bridge.

Cold Milling in place Asphalt Concrete

Unclassified Excavation (Granular and Subgrade material)





NOTES REGARDING BRIDGE APPROACHES

In order to construct the new surface flush with the top of the bridge and to provide depth for additional asphalt concrete, it will be necessary to cut out the existing base course to the limits shown on the layout above. The excavated material will be wasted as directed by the Engineer.

Any damage to the bridges will be repaired at the Contractor's expense. Contact the Bridge Construction Engineer for repair details.

See Table of Additional Quantities.

PLOT SCALE - 1:25.1999

PLOT NAME - 12

FILE - ...\BRIDGE APPROACH DETAIL 060Y.DGN

PLOTTED FROM - TRPR13462

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F29	F82

Plotting Date: 08/25/2025

Cold Milled Asphalt Concrete

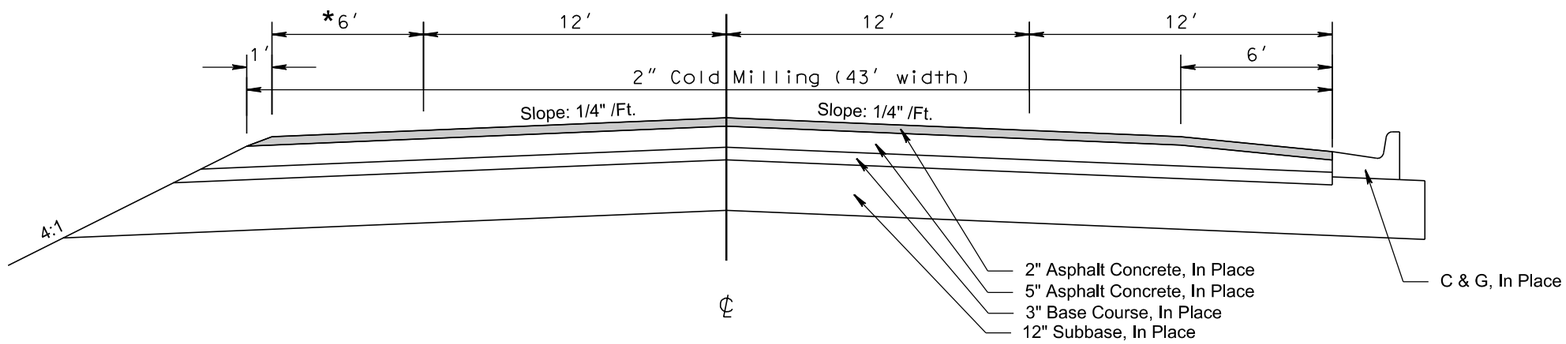
Transitions:

Sta. a 200+16.0 to Sta. a 201+52.0
* 6' to 12'

Sta. a 251+60.6 to Sta. a 252+65.6
* 12' to 6'

SD 11
Sta. a 196+45 to Sta. a 201+52
Sta. a 251+60.6 to Sta. a 253+00.5

IN PLACE SURFACING

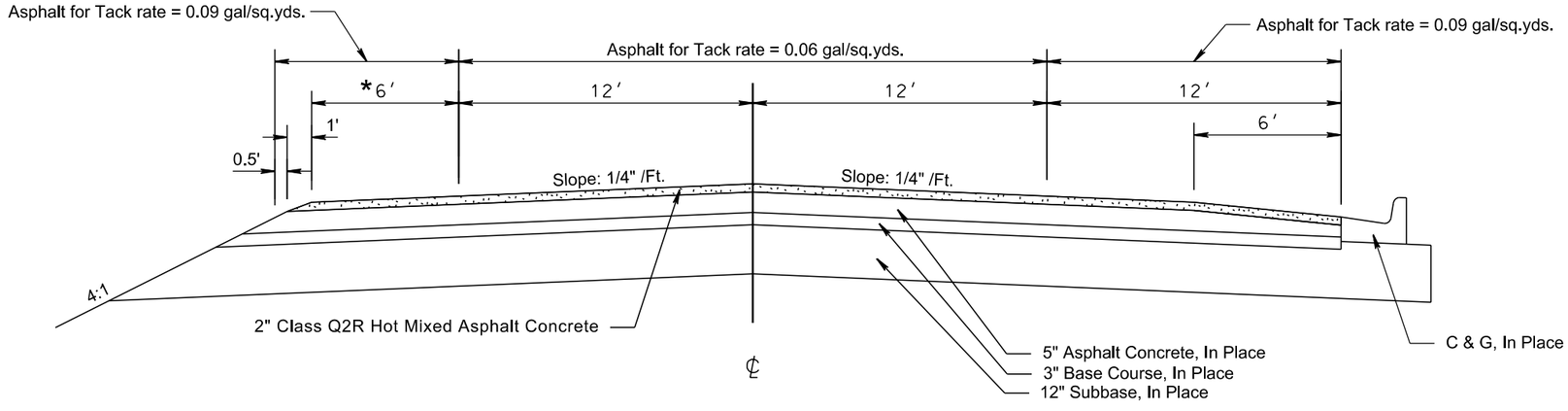


Transitions:

Sta. a 200+16.0 to Sta. a 201+52.0
* 6' to 12'

Sta. a 251+60.6 to Sta. a 252+65.6
* 12' to 6'

SD 11
Sta. a 196+45 to Sta. a 201+52
Sta. a 251+60.6 to Sta. a 253+00.5



TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F30	F82

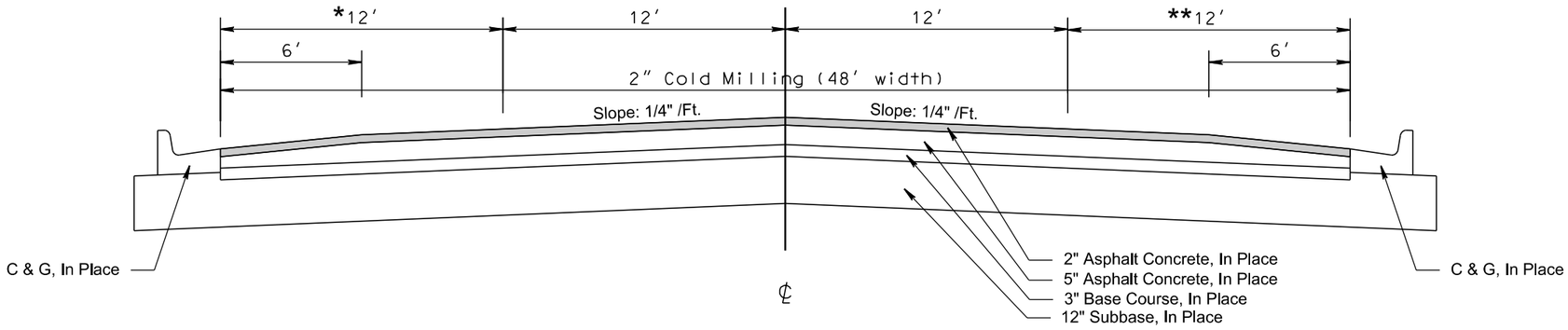
Plotting Date: 08/25/2025

Cold Milled Asphalt Concrete

SD 11
Sta. a 201+52 to Sta. a 211+02.5
Sta. a 232+02.5to Sta. a 251+60.6

IN PLACE SURFACING

Exceptions:
Sta. a 233+12.9 to Sta. a 233+22.9
Sta. a 240+06.92 to Sta. a 240+33.08

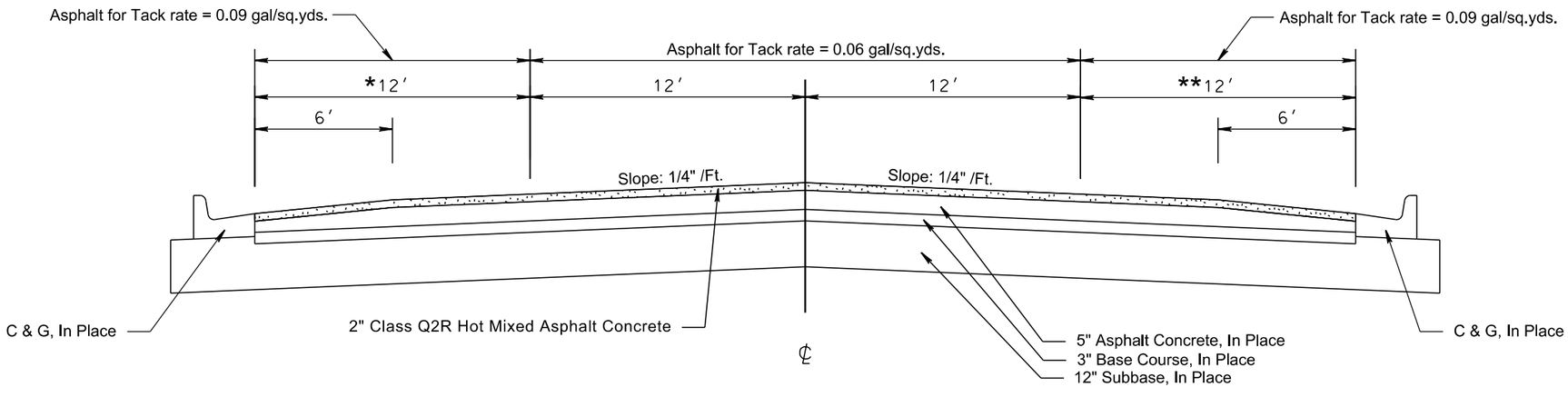


Transitions:

Sta. 232+02.5 to Sta. 233+13.3
* 12' to 17.4'
** 12' to 16.5'

Sta. 233+22.3 to Sta. 233+38.7
* 15.1' to 12'
** 16.1' to 12'

SD 11
Sta. a 201+52 to Sta. a 211+02.5
Sta. a 232+02.5 to Sta. a 251+60.6



Transitions:

Sta. 232+02.5 to Sta. 233+13.3
* 12' to 17.4'
** 12' to 16.5'

Sta. 233+22.3 to Sta. 233+38.7
* 15.1' to 12'
** 16.1' to 12'

PLOT SCALE - 1:6.00001

PLOT NAME - 14

FILE ...\TYPICAL SECTIONS 05J5.DGN

PLOTTED FROM - TRPR13462

TYPICAL SURFACING SECTIONS

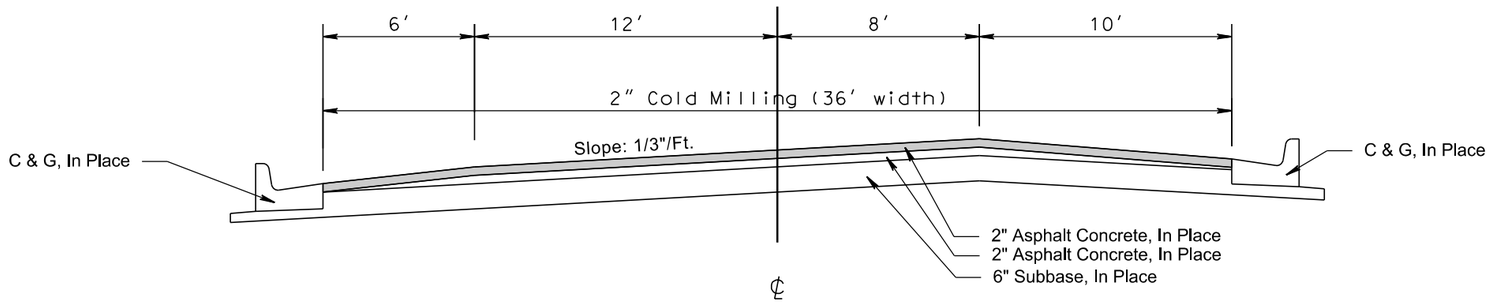
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F31	F82

Plotting Date: 08/25/2025

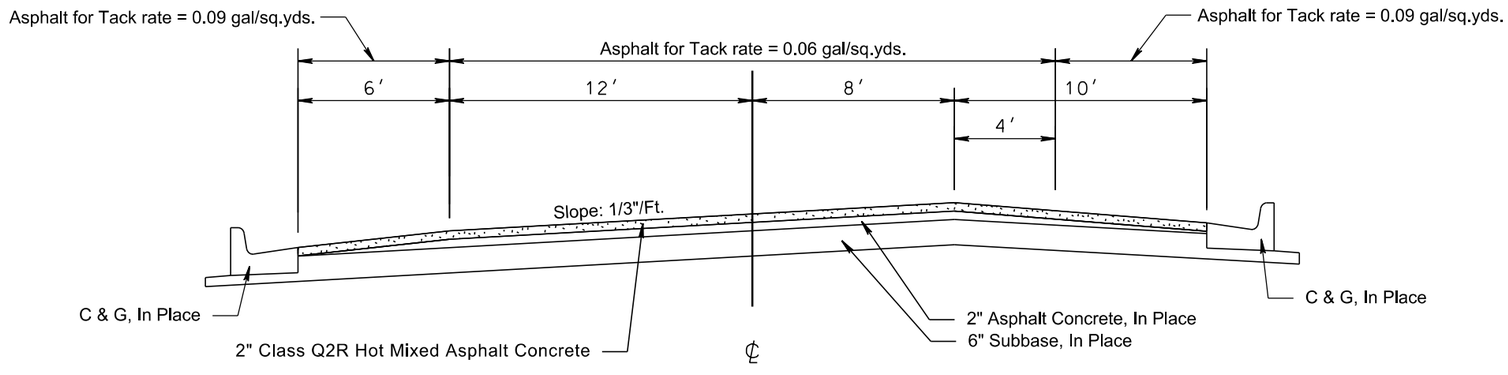
Cold Milled Asphalt Concrete

SD 11
Sta. a 211+02.5 to Sta. a 232+02.5

IN PLACE SURFACING



SD 11
Sta. a 211+02.5 to Sta. a 232+02.5



PLOT SCALE - 1:6.00001

PLOT NAME - 15

FILE ...\TYPICAL SECTIONS 05J5.DGN

PLOTTED FROM - TRPR13462

TRAFFIC CONTROL SHOULDER WIDENING

* Superelevation Data:
Sta. 719+67.3 to Sta. 750+51.7 - rate = 6.0%, Curve Right
Sta. 750+51.7 to Sta. 752+91.7 - Superelevation Transition
Sta. 752+91.7 to End - Normal Crown Section

SD 46

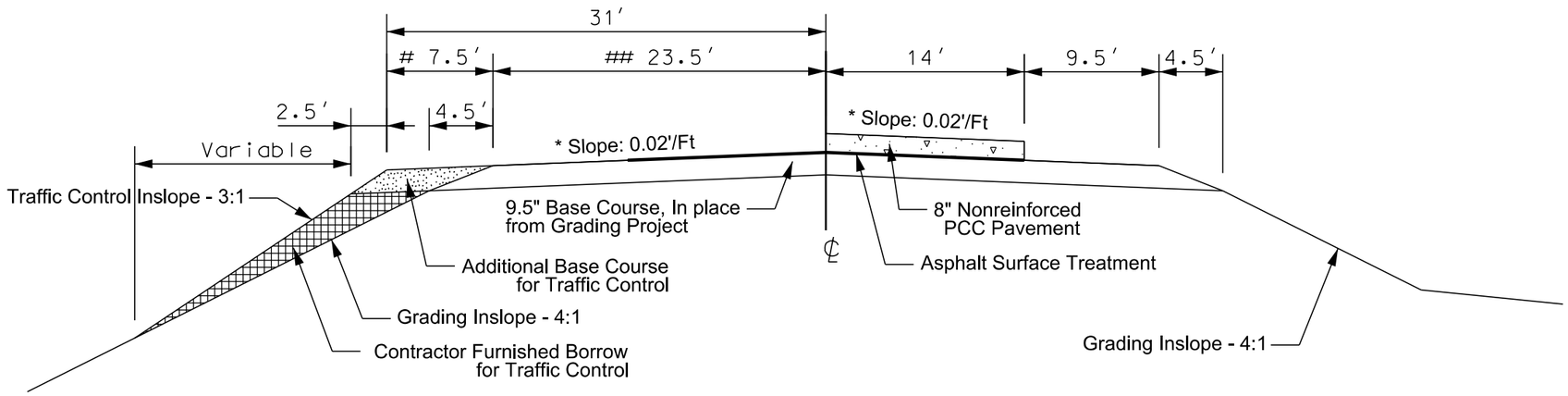
Additional Surfacing for Traffic Control
Sta. 741+09.4 to Sta. 800+35.5
Sta. 800+66.0 to Sta. 828+60.0

Transition:

Sta. 741+09.4 to Sta. 741+85.0
0' to 7.5'
31' to 23.5'

Railroad Crossing:
Sta. 800+35.5 to Sta. 800+66.0

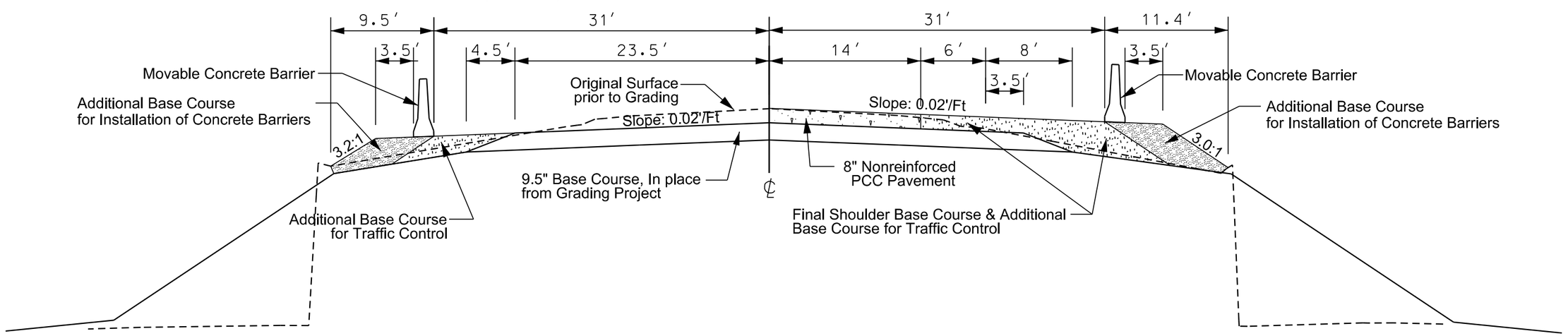
Traffic Control Surfacing
during 1st Lane Paving
(Phase 2.3)



In Place RCBC @ Sta. 787+19

Traffic Control Surfacing
during 1st Lane Paving
(Phase 2.3)

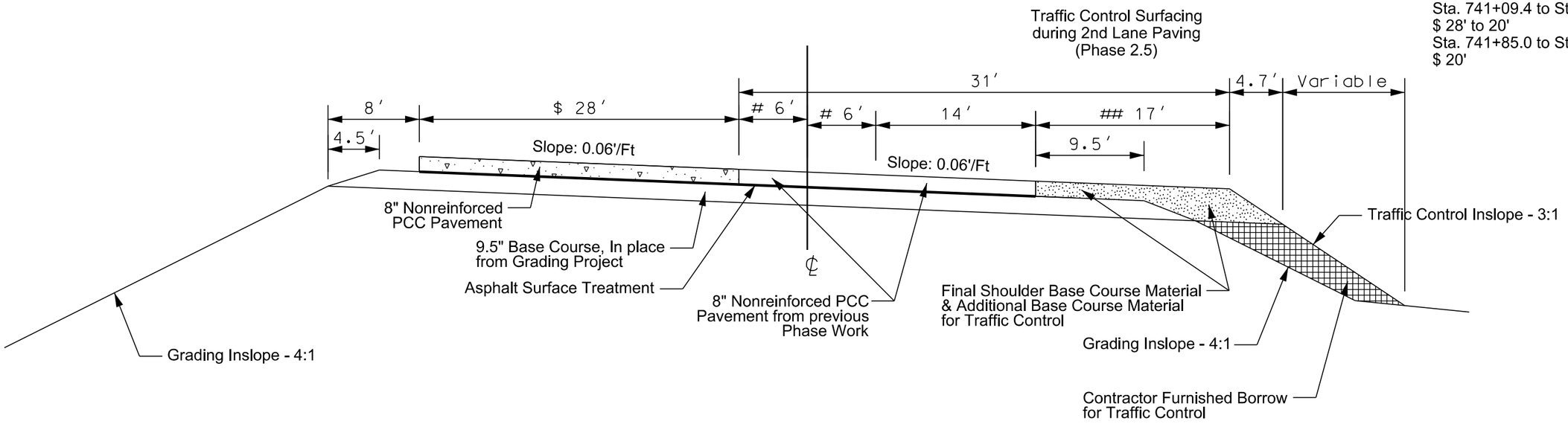
Traffic Control Surfacing
during 2nd Lane Paving
(Phase 2.5)



TRAFFIC CONTROL SHOULDER WIDENING

SD 46

Additional Surfacing for Traffic Control
Sta. 735+09.5 to Sta. 742+46.7



Transition:

Sta. 735+09.5 to Sta. 736+38.8
6'
Sta. 736+38.8 to Sta. 740+20.0
6' to 17'
Sta. 736+00.0 to Sta. 740+20.0
6' to 0'
Sta. 740+20.0 to Sta. 742+46.7
0'
Sta. 741+09.4 to Sta. 741+85.0
$ 28' to 20'
Sta. 741+85.0 to Sta. 742+46.7
$ 20'

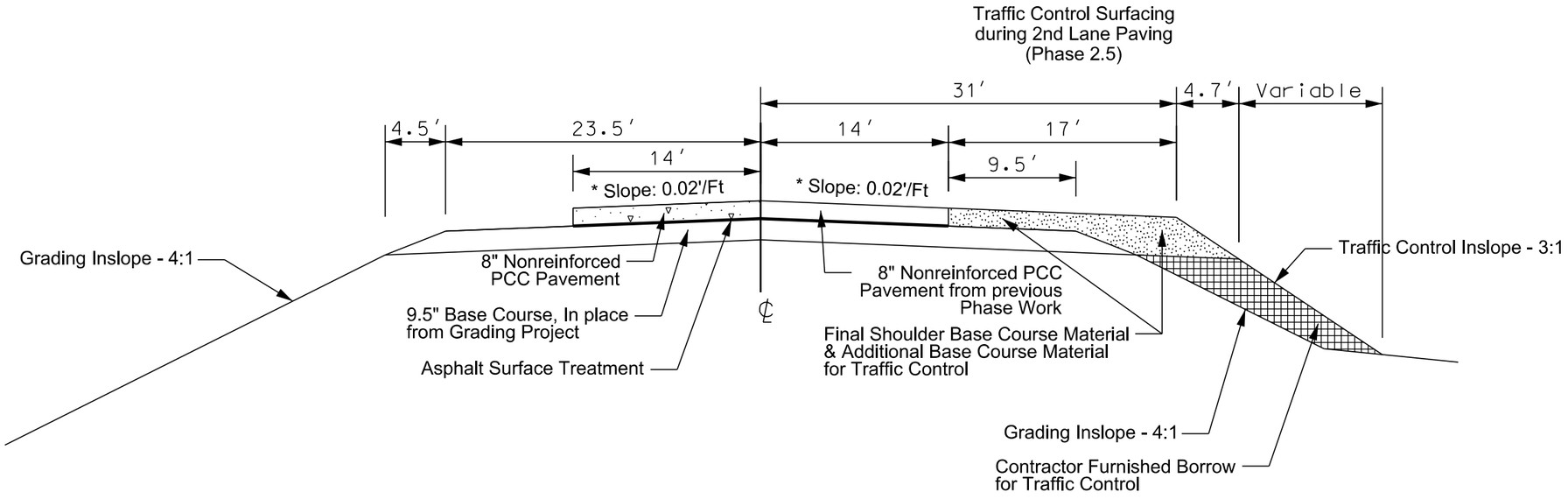
TRAFFIC CONTROL SHOULDER WIDENING

* Superelevation Data:
Sta. 719+67.3 to Sta. 750+51.7 - rate = 6.0%, Curve Right
Sta. 750+51.7 to Sta. 752+91.7 - Superelevation Transition
Sta. 752+91.7 to End - Normal Crown Section

SD 46

Additional Surfacing for Traffic Control
Sta. 742+46.7 to Sta. 800+35.5
Sta. 800+66.0 to Sta. 828+60.0

Railroad Crossing:
Sta. 800+35.5 to Sta. 800+66.0



TRAFFIC CONTROL REMOVAL

Salvage & Stockpile Granular Base Material

Remove Traffic Diversion (Borrow Material)

Shoulder Shaping Depth = 4"

* Superelevation Data:
Sta. 719+67.3 to Sta. 750+51.7 - Rate = 6.0%, Curve Right
Sta. 750+51.7 to Sta. 752+91.7 - Superelevation Transition
Sta. 752+91.7 to End - Normal Crown Section

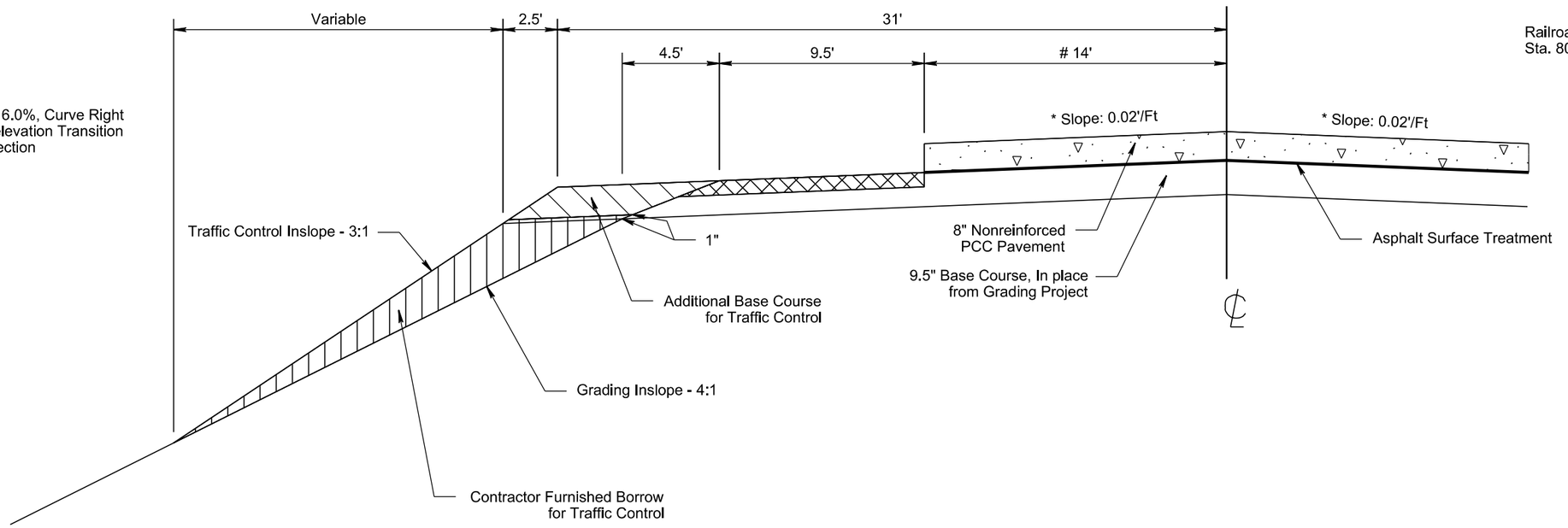
SD 46

Traffic Control Surfacing required during 1st Lane Paving (Phase 2.3)

Removal/Reshaping of Traffic Control Widening
Sta. 741+09.4 to Sta. 800+35.5 Lt. Shoulder
Sta. 800+66.0 to Sta. 828+60.0 Lt. Shoulder

Transition:
Sta. 735+83.7 to Sta. 742+46.7
34' to 20'

Railroad Crossing:
Sta. 800+35.5 to Sta. 800+66.0



SD 46

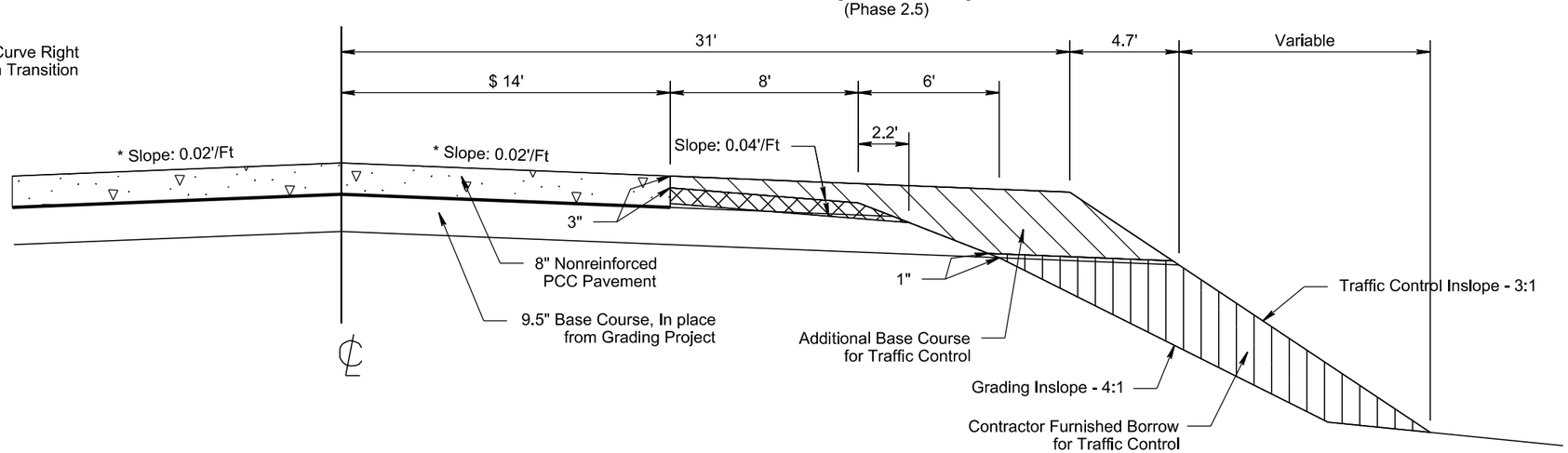
Removal/Reshaping of Traffic Control Widening
Sta. 735+09.5 to Sta. 800+35.5 Rt. Shoulder
Sta. 800+66.0 to Sta. 828+60.0 Rt. Shoulder

Traffic Control Surfacing required during 2nd Lane Paving (Phase 2.5)

* Superelevation Data:
Sta. 719+67.3 to Sta. 750+51.7 - Rate = 6.0%, Curve Right
Sta. 750+51.7 to Sta. 752+91.7 - Superelevation Transition
Sta. 752+91.7 to End - Normal Crown Section

Transition:
Sta. 735+09.5 to Sta. 736+00.0
$ 20'
Sta. 736+00.0 to Sta. 740+20.0
$ 20' to 14'

Railroad Crossing:
Sta. 800+35.5 to Sta. 800+66.0



PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F36	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 1 of 13 Sheets

LEGEND:

Longitudinal Joint Without Tie Bars (Construction or Sawed) ——— L ——— L ———
Longitudinal Joint With Tie Bars (Construction or Sawed) ——— LT ——— LT ———
Transverse Contraction Joint —
Steel Bar Installation in Longitudinal or Transverse Joint ——— SB ——— SB ———
Areas to be poured monolithically with adjacent slab (See Detail A)

Transverse contraction joints within these areas will not have dowel bar assemblies. All other transverse contraction joints will have dowel bar assemblies.

DETAIL A

18"-24" Typical

4+00

472nd Ave.

Sta. 2+82.7 (472nd Ave.)

67' Lt of SD46

Sta. 0+20
Begin 8" Nonreinforced PCC Pavement
Transverse Joint Spacing = 13'

Sta. 1+09.9

Entrance

3" Asphalt Concrete

Asphalt Concrete Shoulder

SD46

8" Nonreinforced PCC Pavement

Asphalt Concrete Shoulder

0+00

Sta. 0+49.5 SD46 =
Sta. 0+00 472ND Ave.

67' Rt of SD46

Base Course

Entrance

5+00

Plot Scale - 1:40.086

Plotted From - TRPR13462

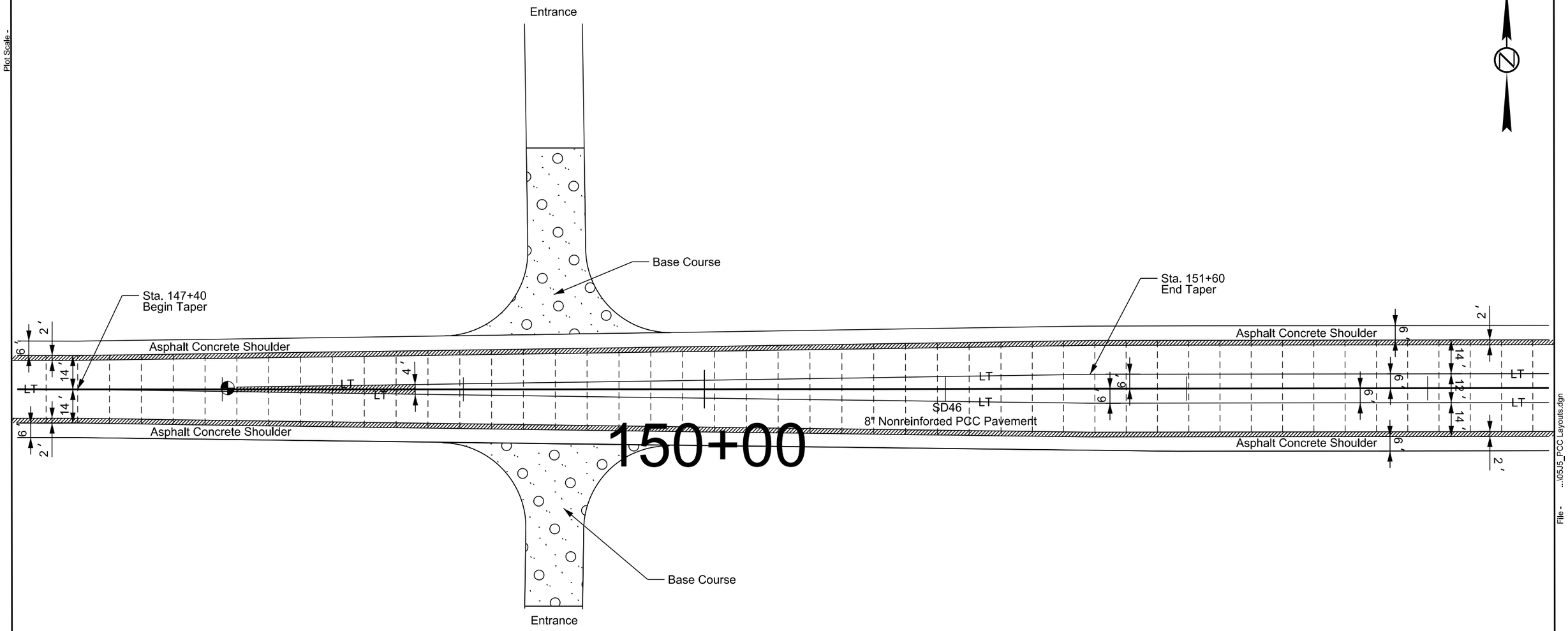
File - ...\05\l5_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F37	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 2 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

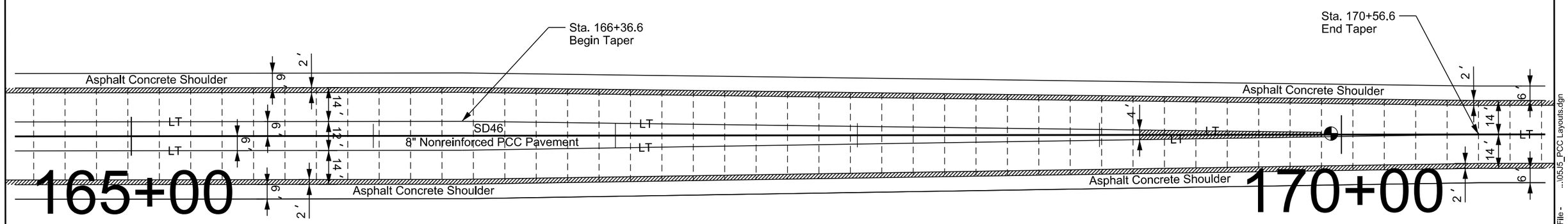
File - ...\05J5_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F38	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 3 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

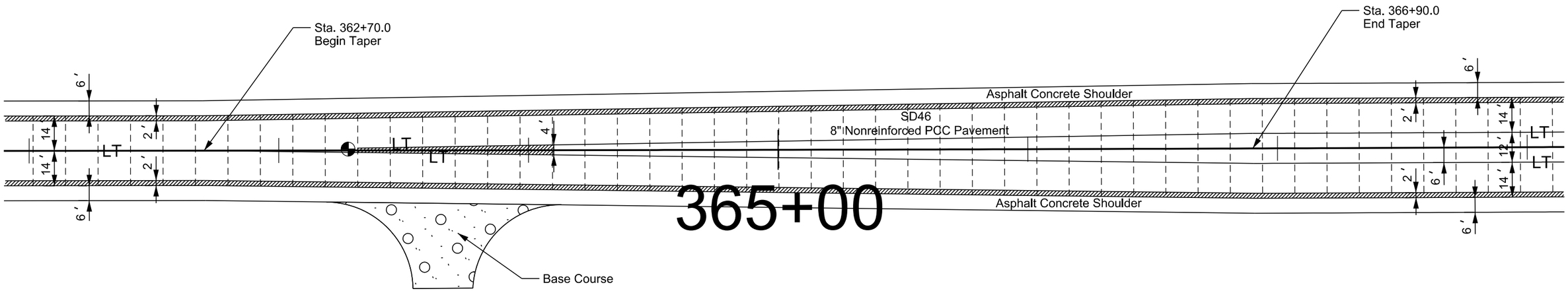
File - ...\0505_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F39	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 4 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

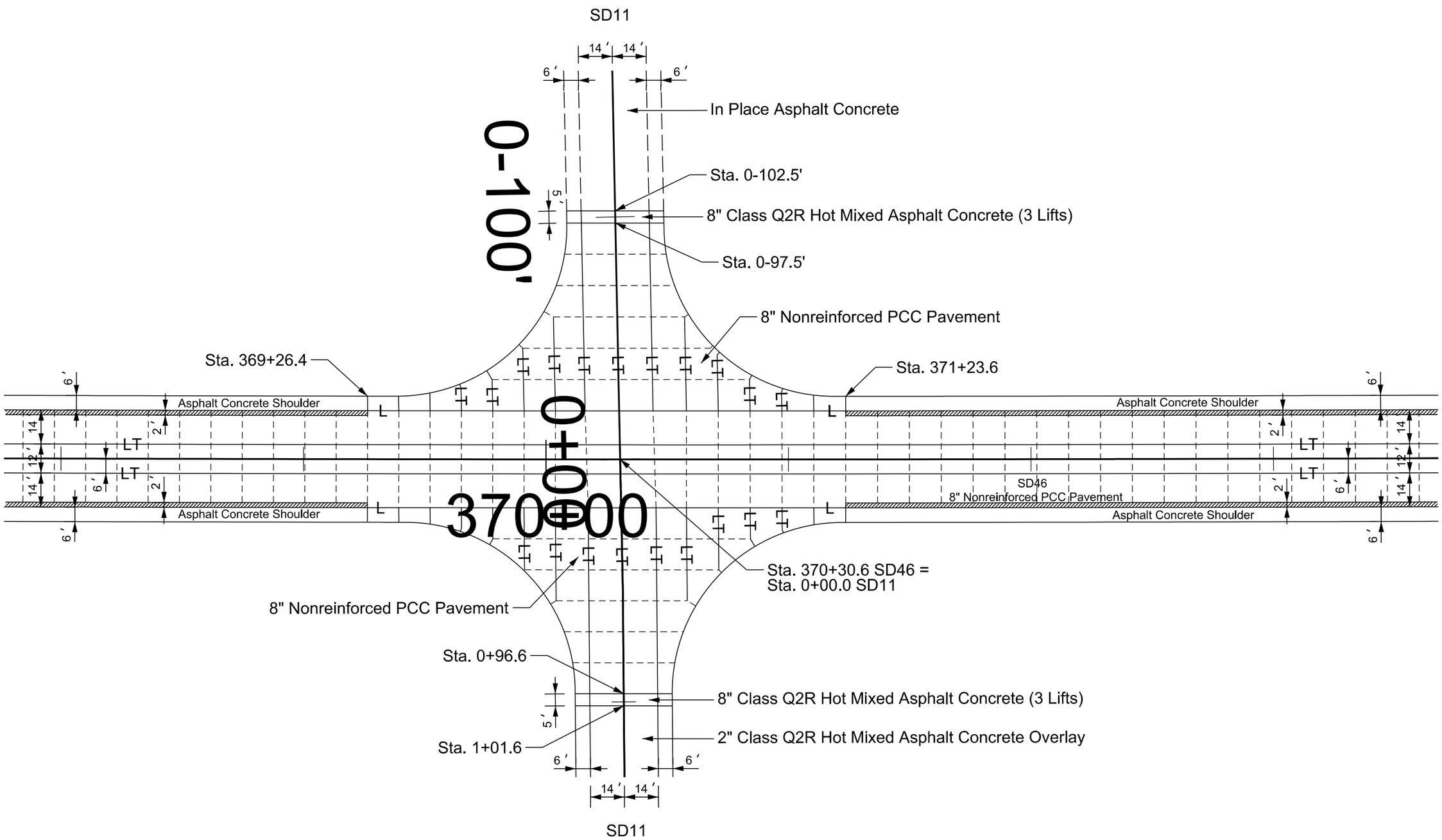
File - ...\05J5_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F40	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 5 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

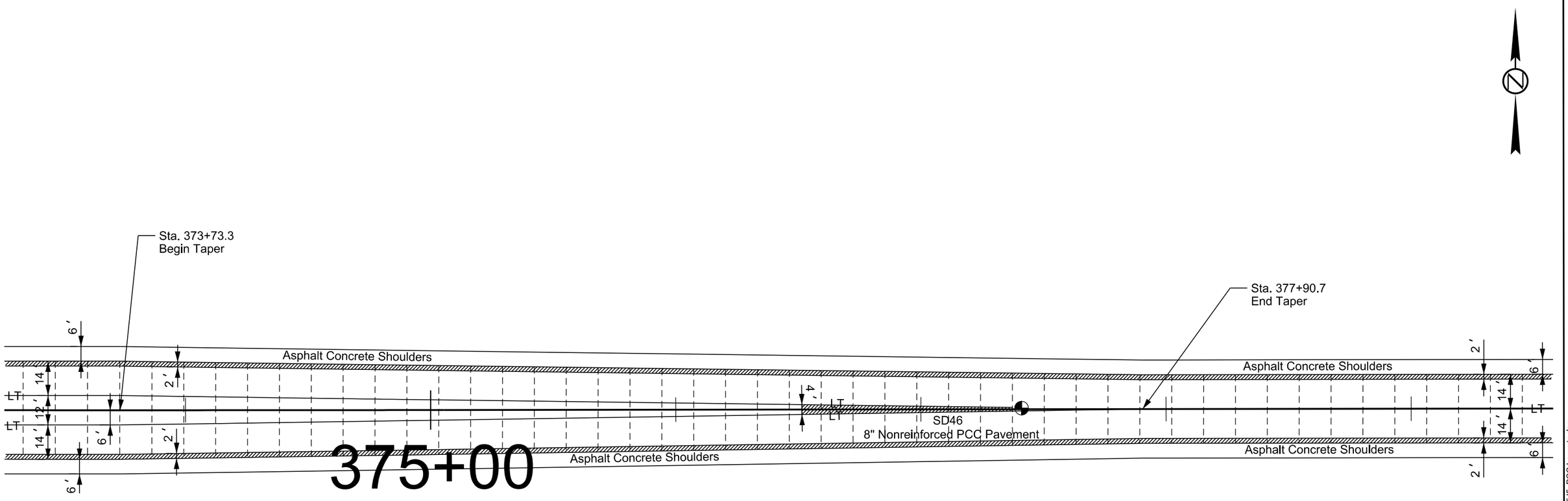
File - ...\05J5_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F41	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 6 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

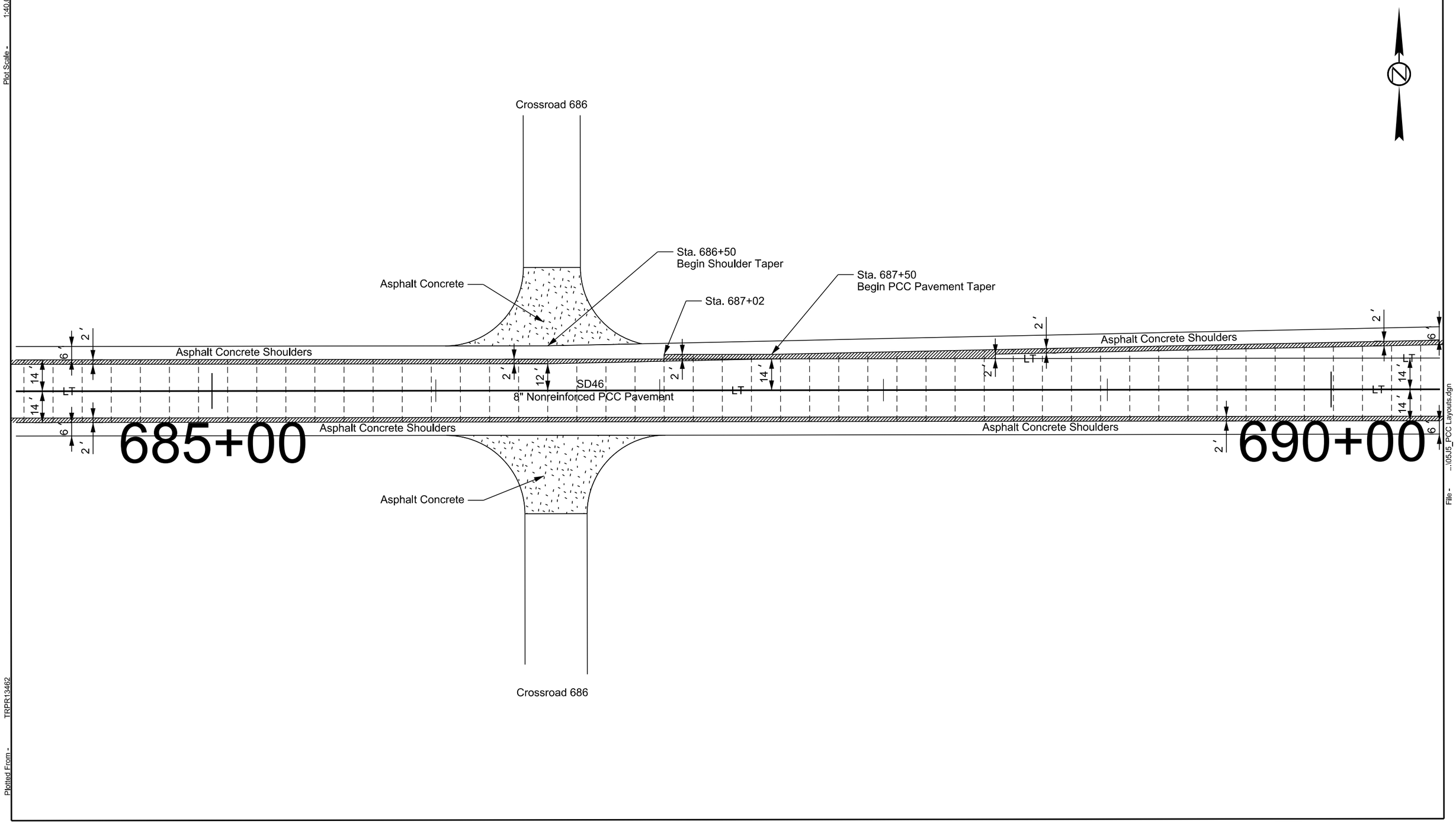
File - ...\05\J5_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F42	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 7 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

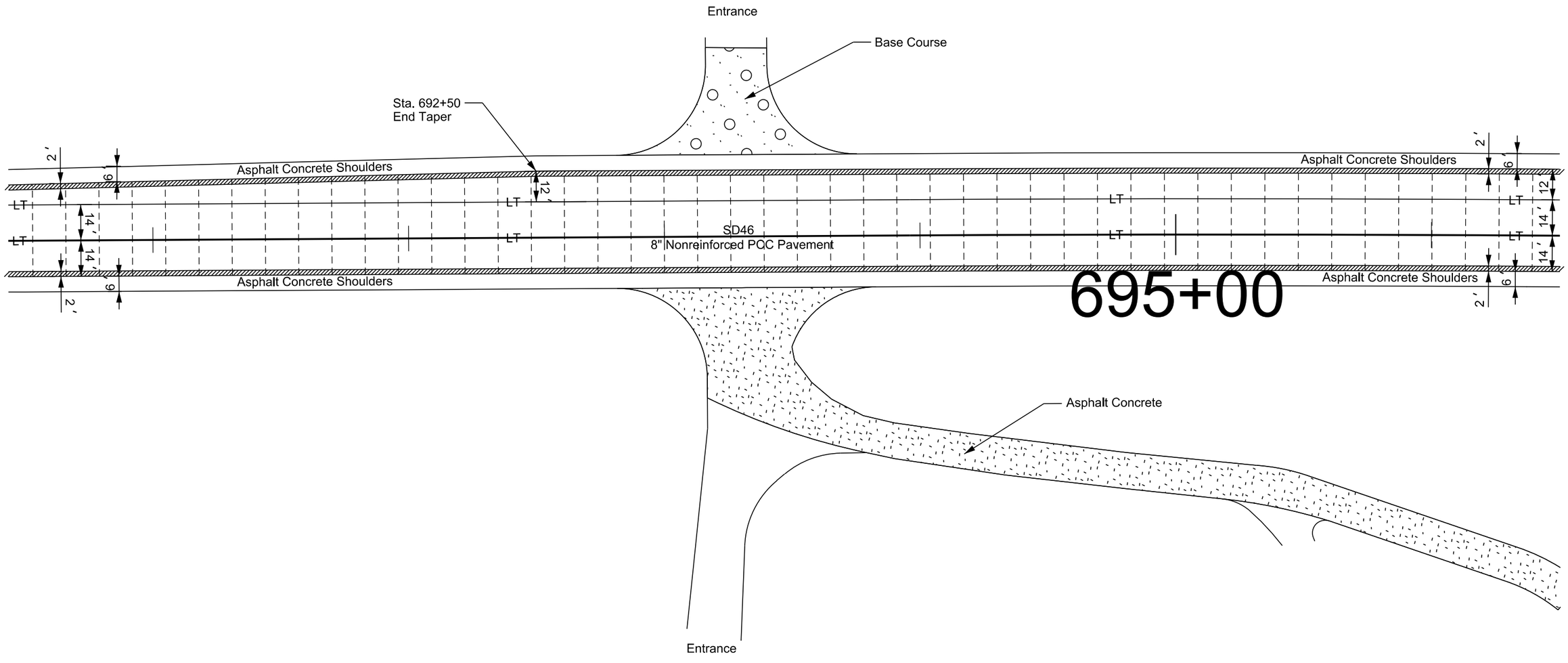
File - ...\05\J5_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F43	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 8 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

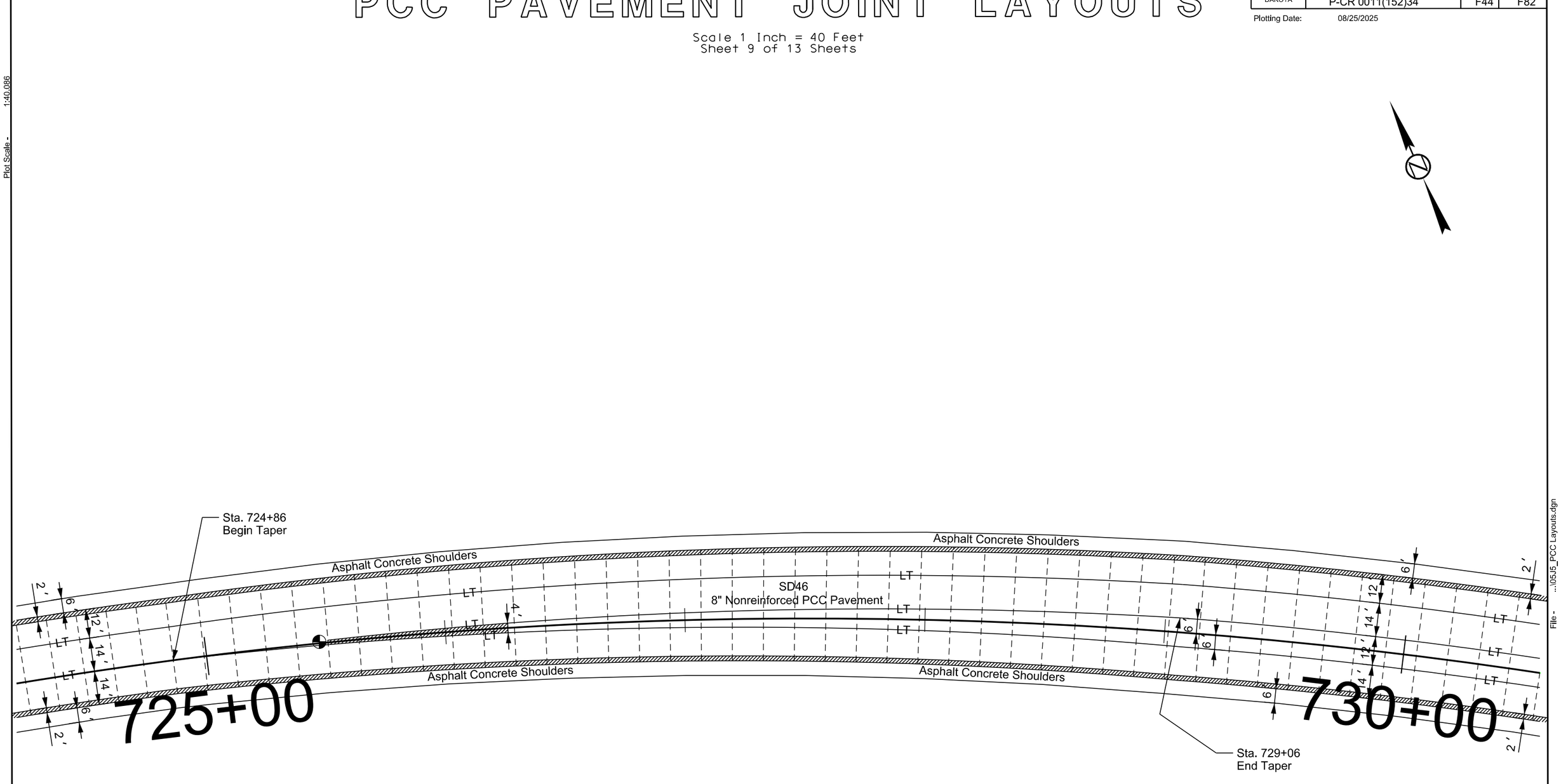
File - ...\05J5_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F44	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 9 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

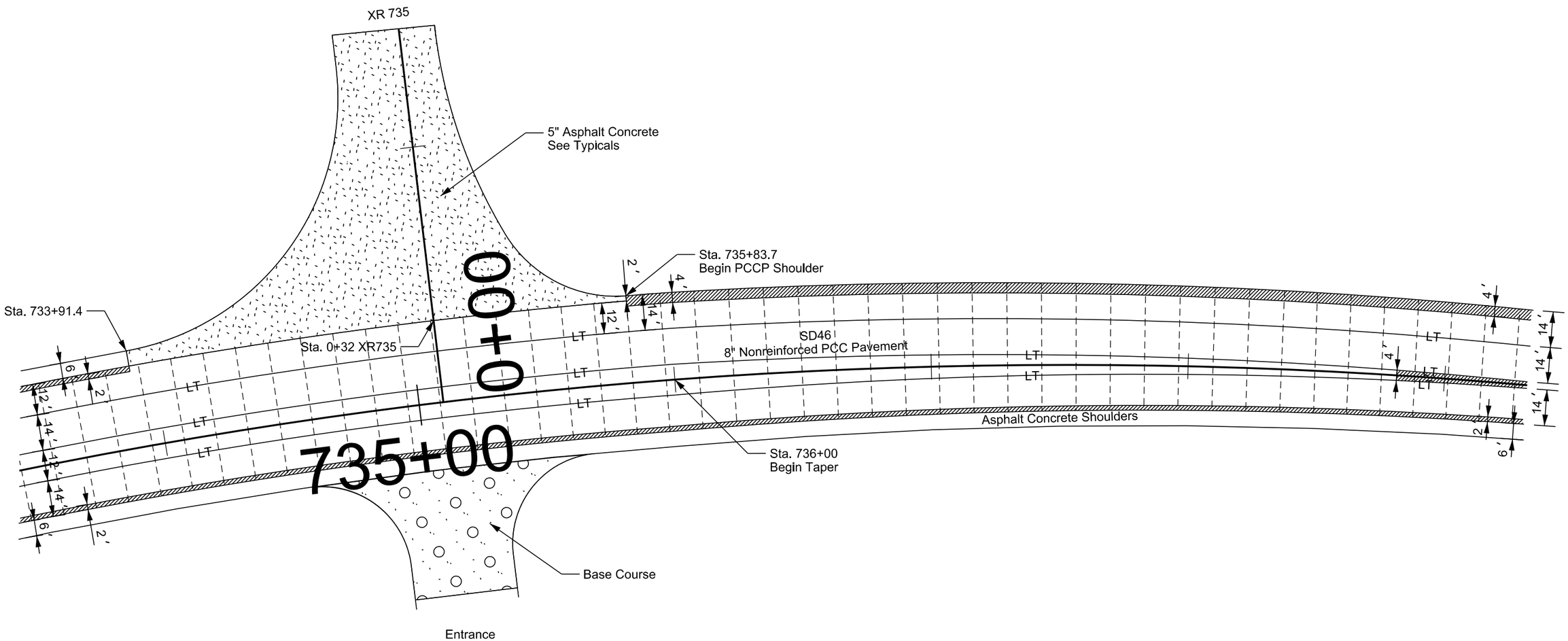
File - ...\05J5_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F45	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 10 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

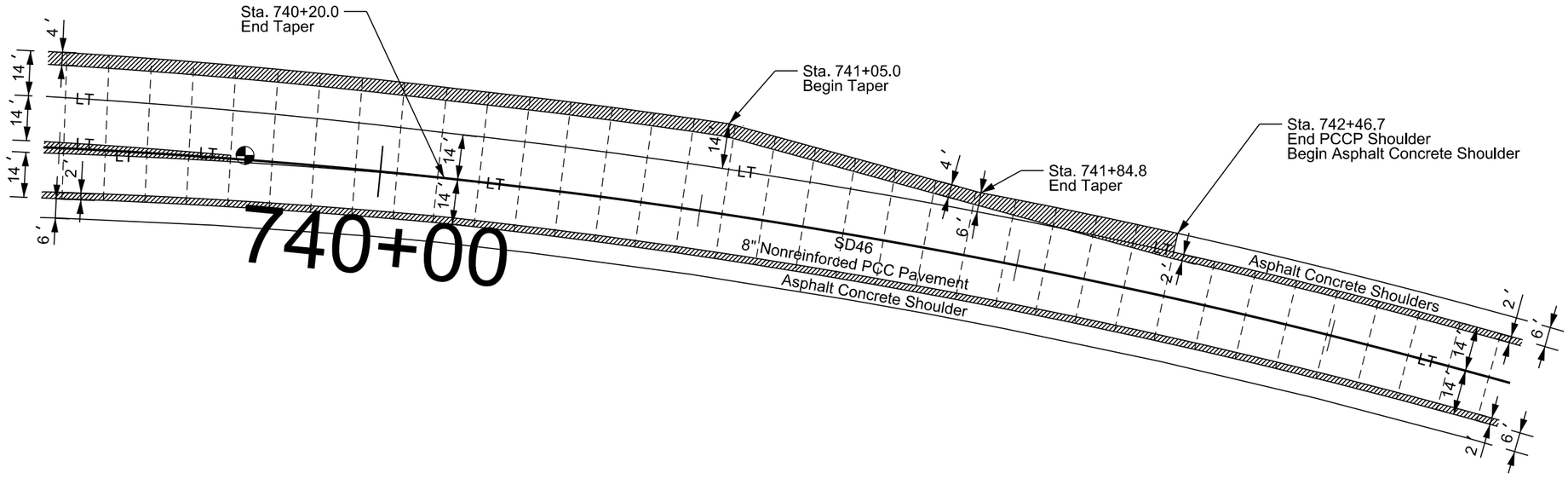
File - ...\05J5_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F46	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 11 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

File - ...\05J5_PCC Layouts.dgn

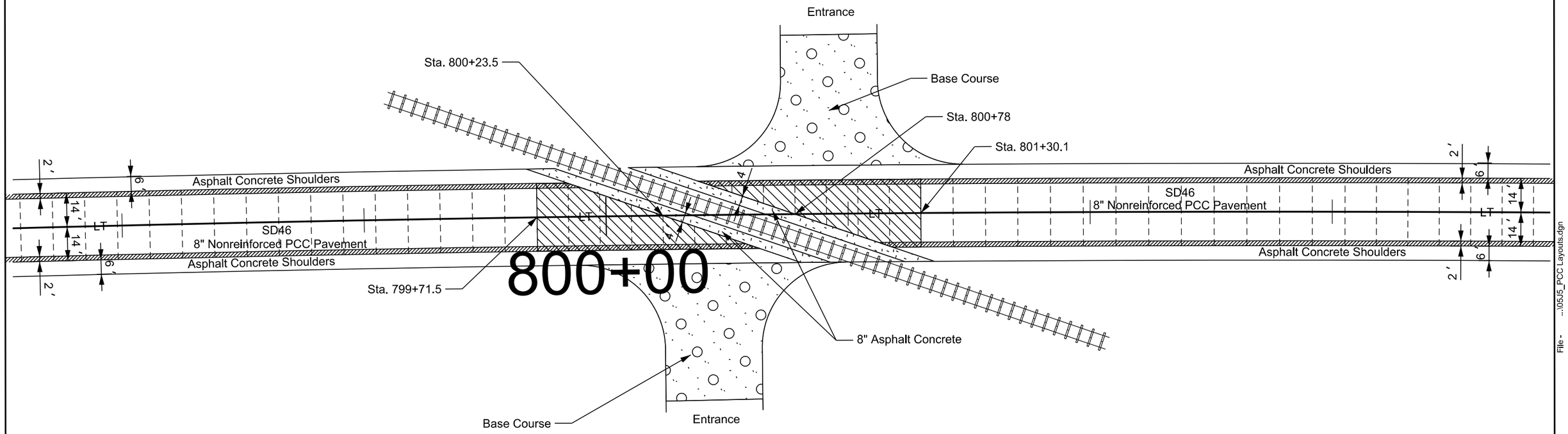
PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F47	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 12 of 13 Sheets

See Reinforcement Detail for Railroad Crossing



Plot Scale - 1:40.086

Plotted From - TRPR13462

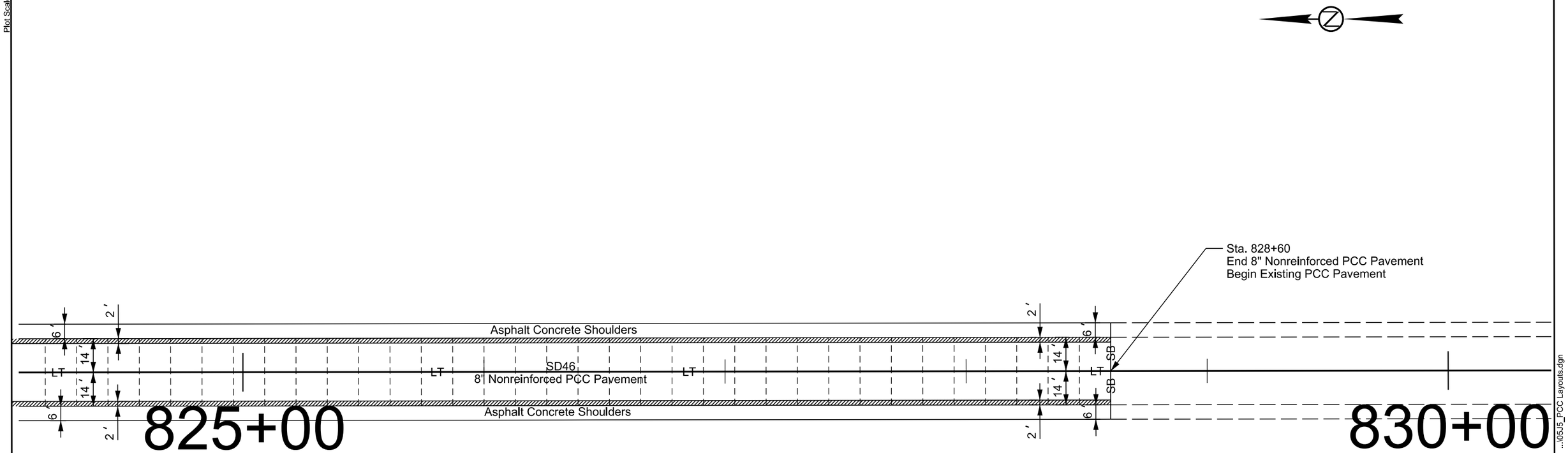
File - ...\05J5_PCC Layouts.dgn

PCC PAVEMENT JOINT LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F48	F82

Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet
Sheet 13 of 13 Sheets



Plot Scale - 1:40.086

Plotted From - TRPR13462

File - ...\05J5_PCC Layouts.dgn

RAILROAD APPROACH REINFORCEMENT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F49	F82

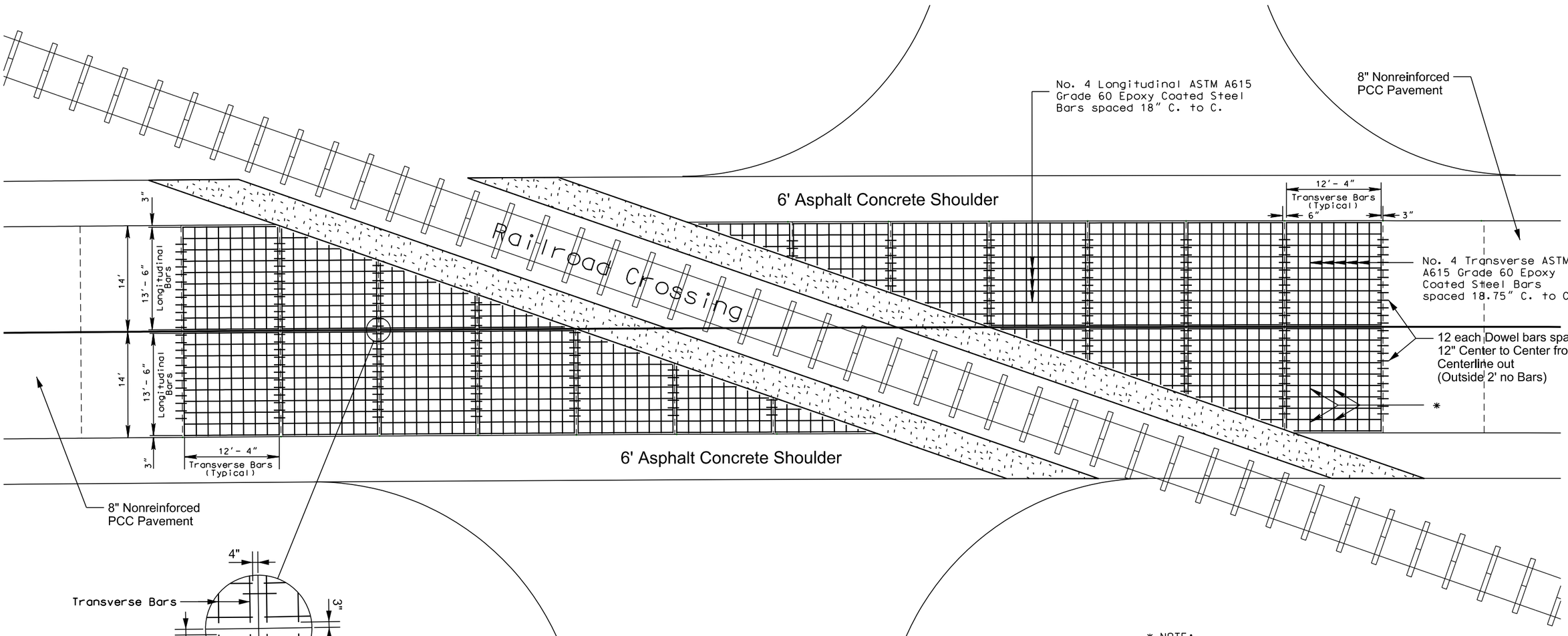
Plotting Date: 08/25/2025

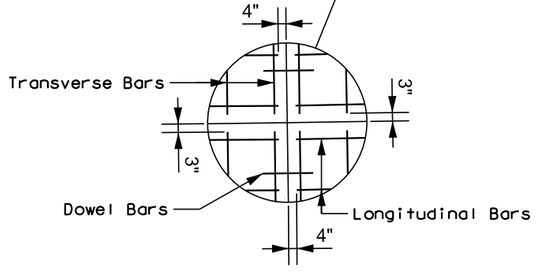
NOT TO SCALE
Sheet 1 of 2 Sheets

Revised: 28May25, RML

8" Class HR Asphalt Concrete

Railroad
at Mainline Sta. 800+51 (SD46)





Typical longitudinal joint with tie bars shall continue through the areas of special reinforcement.

* NOTE:

The Length of the ASTM A615 Grade 60 Epoxy Coated steel bars may vary +/- 2 inches

Top of longitudinal bars shall be located at 1/2 depth of pcc pavement slab +/- 1/2"

The rebar mat may rest on top of the dowel basket assemblies.

Cost of additional reinforcement will be incidental to the cost of 8" Nonreinforced PCC Pavement.

Plot Scale - 1:40.086

Plotted From - TRPR13462

File - ...\05J5_PCC Layouts.dgn

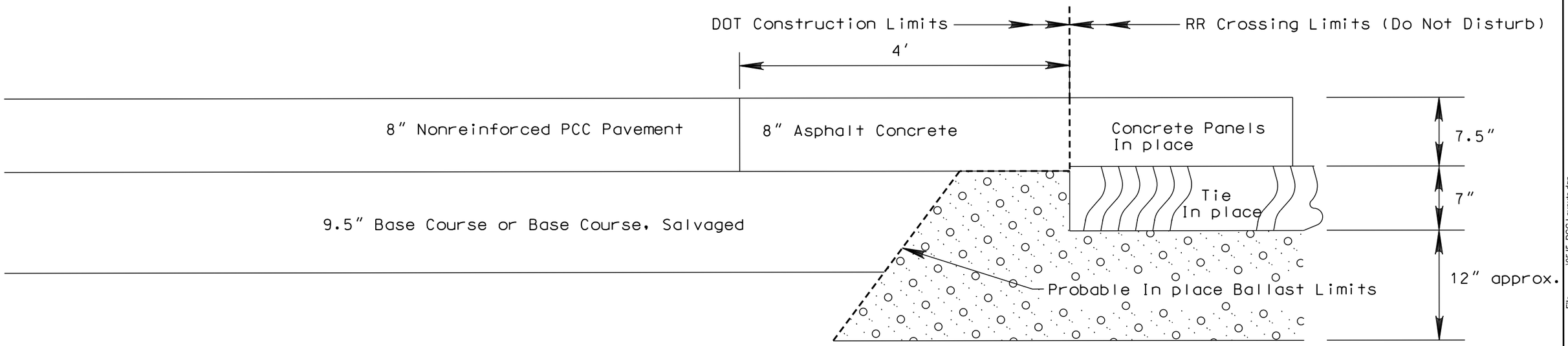
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F50	F82

Plotting Date: 08/25/2025

RAILROAD APPROACH

NOT TO SCALE
Sheet 2 of 2 Sheets

ROADWAY PROFILE



Note: Care shall be taken to not disturb the existing railroad ballast.

Plot Scale - 1:40.086

Plotted From - TRPR13462

File - ...\05J5_PCC Layouts.dgn

RIPRAP LAYOUT

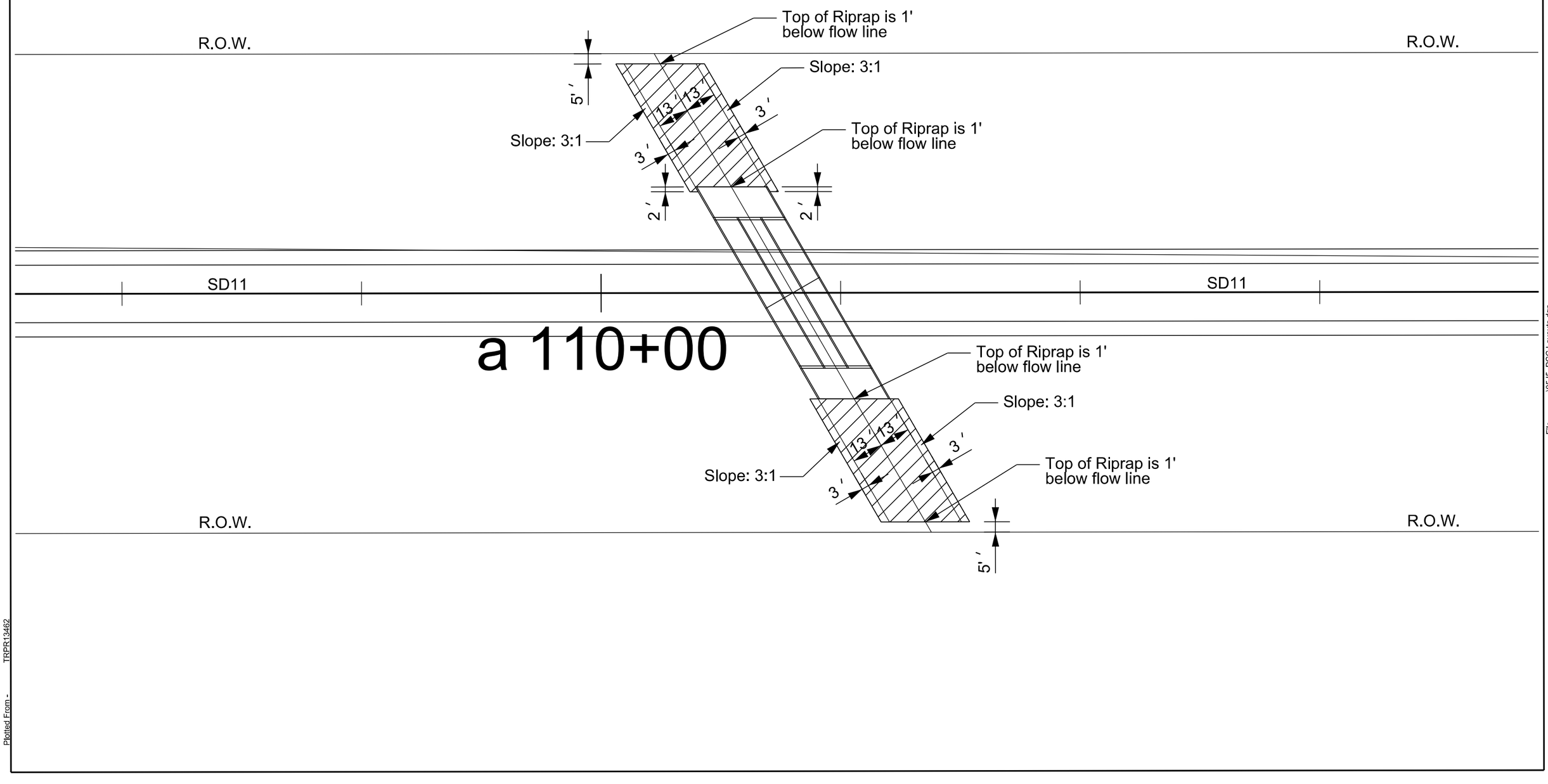
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F51	F82

Plotting Date: 08/25/2025

Class B Riprap (depth = 1.5') with Type B Drainage Fabric

Sheet 1 of 2 Sheets

BOX CULVERT
Str. No. 64-090-022
MRM 37.37



Plot Scale - 1:40.086

Plotted From - TRPR13462

File - ...\05J5_PCC Layouts.dgn

RIPRAP LAYOUT

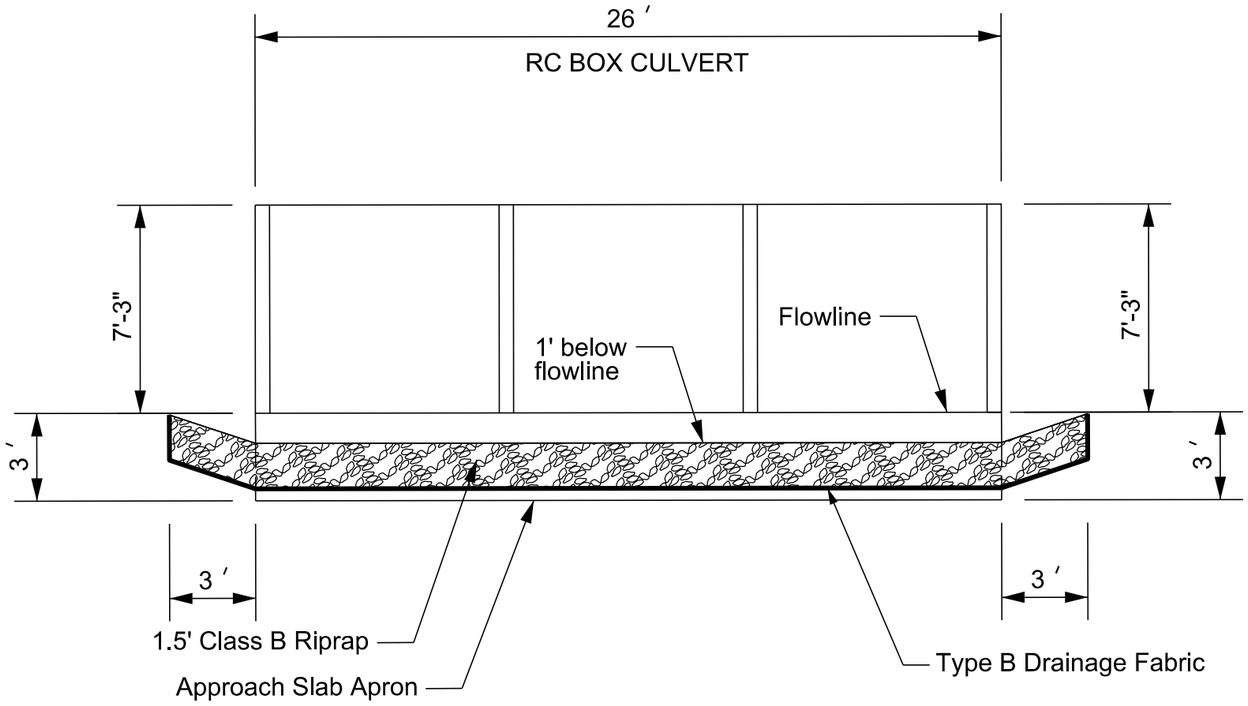
Sheet 2 of 2 Sheets

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F52	F82

Plotting Date: 08/25/2025

Plot Scale - 1:40.086

BOX CULVERT
Str. No. 64-090-022
MRM 37.37



DRAWING NOT TO SCALE

Plotted From - TRPR13462

File - ...\05\I5_PCC Layouts.dgn

GUARDRAIL LAYOUT

Scale 1 Inch = 40 Feet

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F53	F82

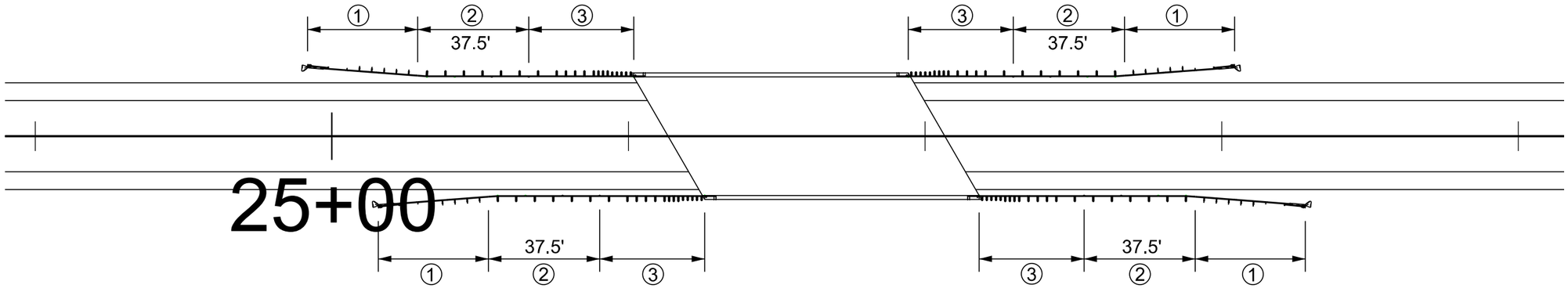
Plotting Date: 08/25/2025

① MGS Mash Flared End Terminal

② Type 1 MGS

③ Type 1 Retrofit Guardrail Transition

Str. No. 64-090-005
MRM 38.97
SD11



Plot Scale - 1:40

Plotted From - TRPR13462

File - ...\05J5_Guardrail Layouts.dgn

GUARDRAIL EMBANKMENT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F54	F82

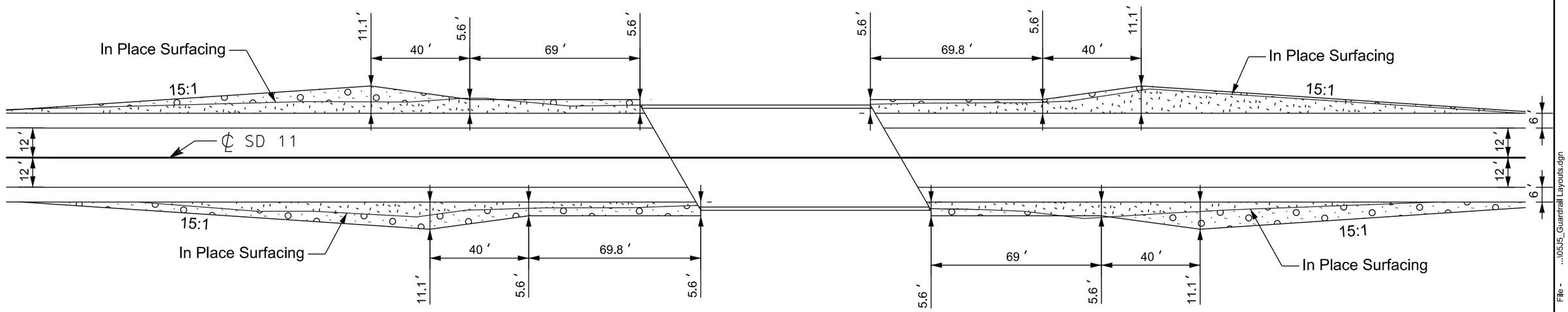
Plotting Date: 08/25/2025

Scale 1 Inch = 40 Feet

2" Class Q2R Hot Mix Asphalt Concrete, 19.5" Base Course, Salvaged and Contractor Furnished Borrow Excavation

2" Class Q2R Hot Mix Asphalt Concrete

Str. No. 64-090-005
MRM 38.97
SD11



Plot Scale - 1:40

Plotted From - TRPR13462

File - ...\05J5_Guardrail Layouts.dgn

GUARDRAIL EMBANKMENT LAYOUT

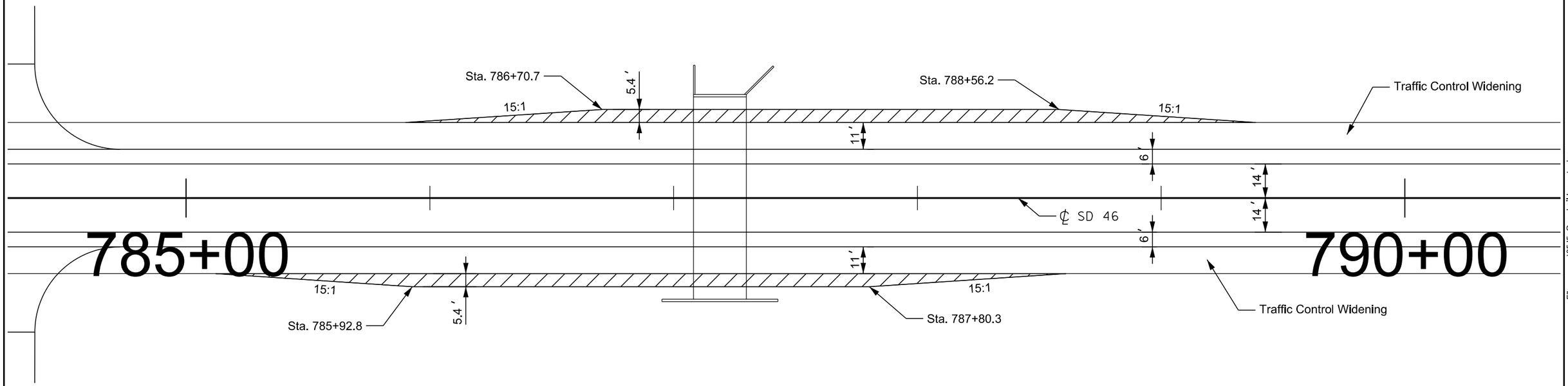
Scale 1 Inch = 40 Feet

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F55	F82

Plotting Date: 08/25/2025

Temporary Surfacing for Traffic Control Widening
Base Course & Contractor Furnished Borrow
(See Typicals Section F)

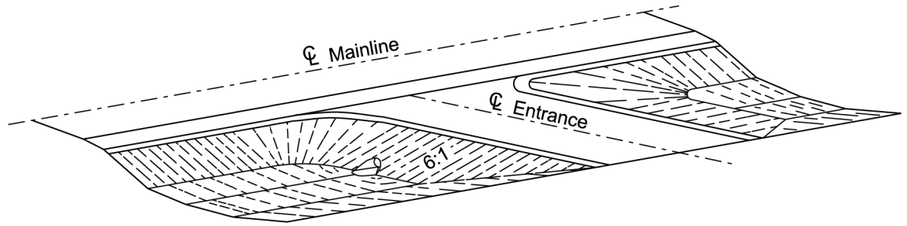
RCBC
Sta. 787+19
SD46



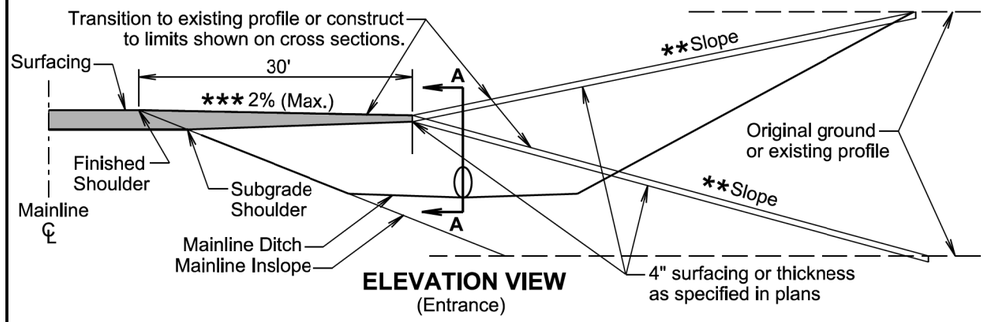
Plot Scale - 1:40

Plotted From - TRPR13462

File - ...\05\J5_Guardrail Layouts.dgn



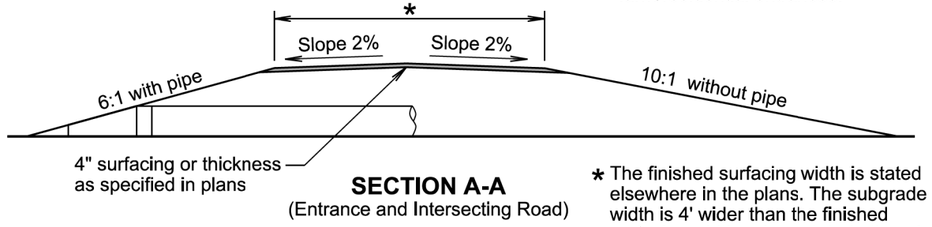
PERSPECTIVE OF ENTRANCE



ELEVATION VIEW
(Entrance)

*** 2% When on the inside of superelevation and 0% or flat when on outside of superelevation.

** Entrance maximum slope is typically 10:1 for field entrances and 15:1 for farm/residential entrances.



SECTION A-A
(Entrance and Intersecting Road)

* The finished surfacing width is stated elsewhere in the plans. The subgrade width is 4' wider than the finished surfacing width unless stated otherwise in the plans.

GENERAL NOTES:

The ditch section shown above in the perspective view is only for illustrative purpose.

The elevation view above is typical for either a ditch cut or fill section. Entrances that vary from above should be specified in the plans.

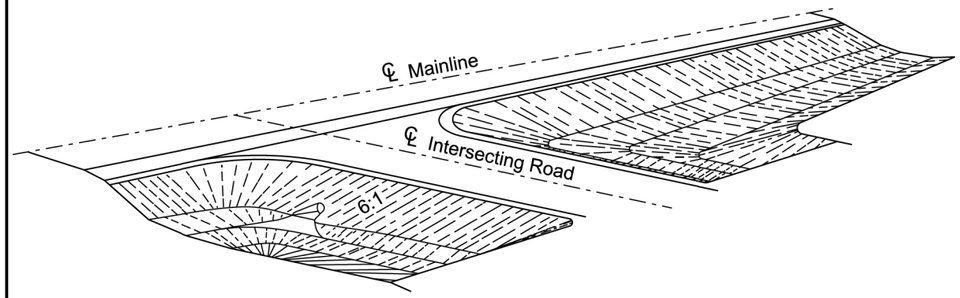
Pipe length will be adjusted if necessary during construction to obtain the 6:1 slope. For grading projects, the pipe length is estimated typically using a 4" thickness of surfacing directly over the subgrade above the pipe.

The transition area between the mainline inslope and the entrance or intersecting road inslope will be rounded to eliminate an abrupt transition.

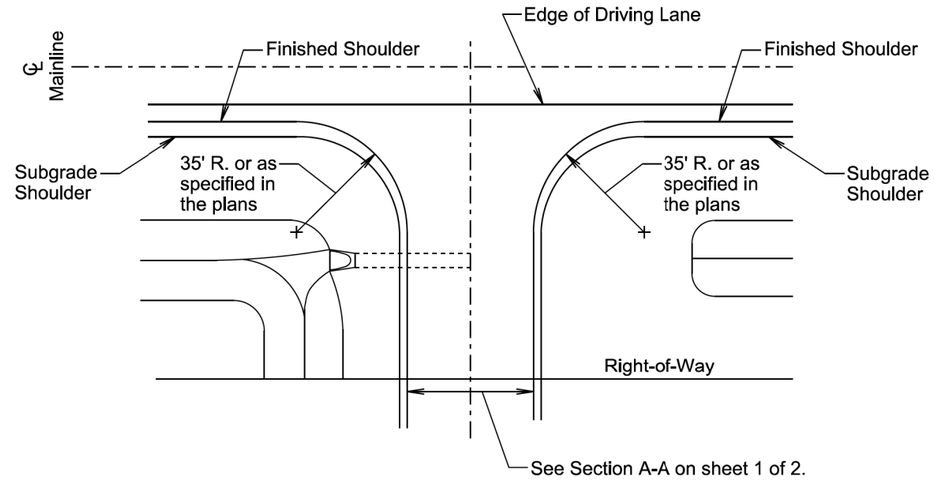
The turning radii will be 35' for intersecting roads and entrances unless stated otherwise in the plans.

November 19, 2021

Published Date: 2026	SDDOT	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 1 of 2



PERSPECTIVE OF INTERSECTING ROAD



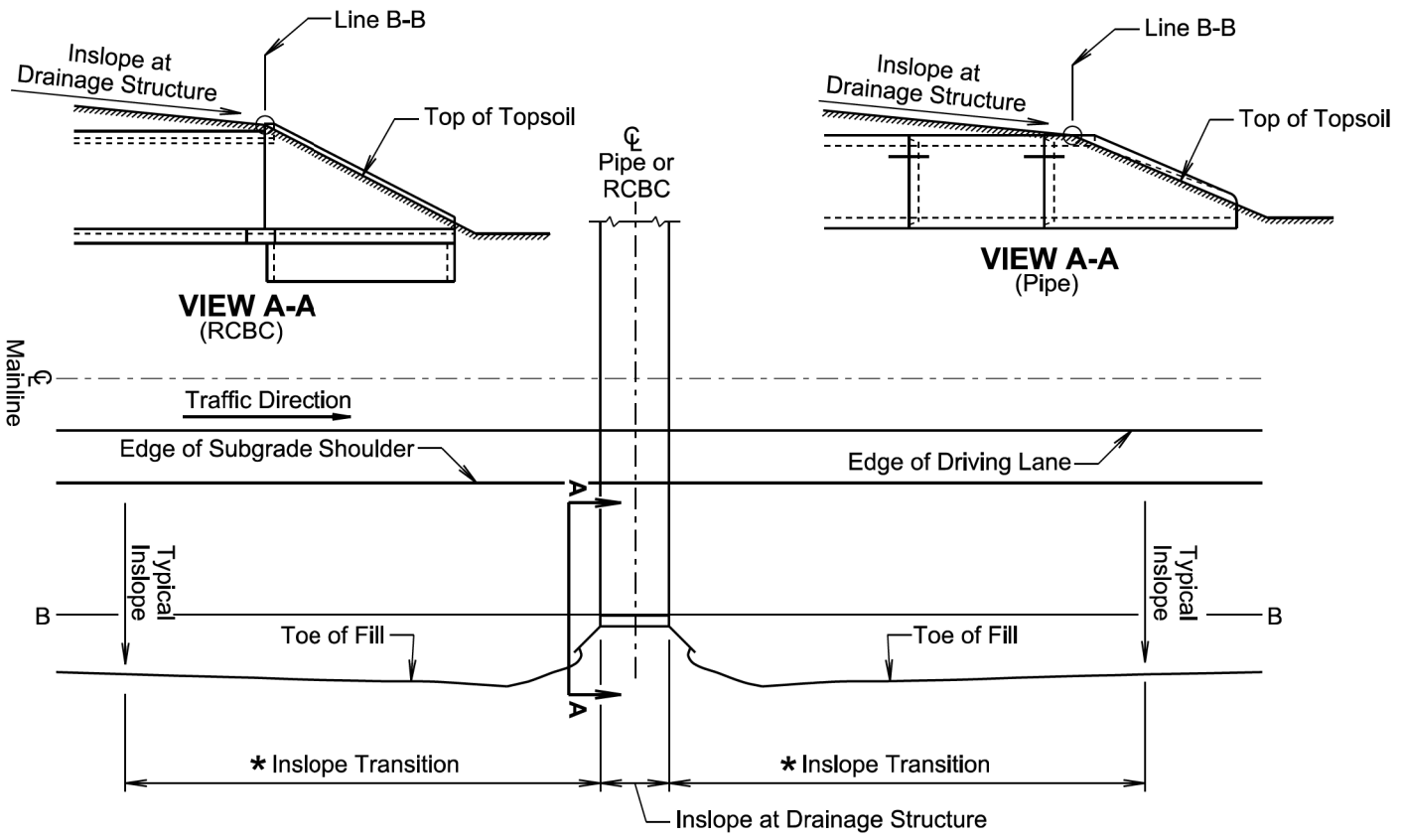
PLAN VIEW

GENERAL NOTES:

The 6:1 or 10:1 intersecting road inslope will transition to the existing intersecting road inslope near the right-of-way or at a location as determined by the Engineer.

November 19, 2021

Published Date: 2026	SDDOT	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 2 of 2



TYPE 1 INSLOPE TRANSITION

GENERAL NOTES:

This Type 1 Inslope Transition is used when the specified inslope at the drainage structure is flatter than the typical inslope and the inslope at the drainage structure is between a 4:1 slope and 6:1 slope.

Line B-B represents the clear zone line, the location where soil intercepts the parapet on an RCBC, the location where the soil intercepts the top of the pipe adjacent to the opening of the pipe end section, or may represent a change in slope.

* Transition from the typical inslope to the inslope at the drainage structure. Within the clear zone (area from edge of subgrade shoulder to line B-B) use 100' length for each 1:1 slope change. Example: transition from a 4:1 to a 6:1 would require a 200' length transition. The typical inslope outside of the clear zone will be transitioned gradually to the slope necessary adjacent to the RCBC wing wall or pipe culvert end section within the transition length necessary for the transition within the clear zone.

Published Date: 2026

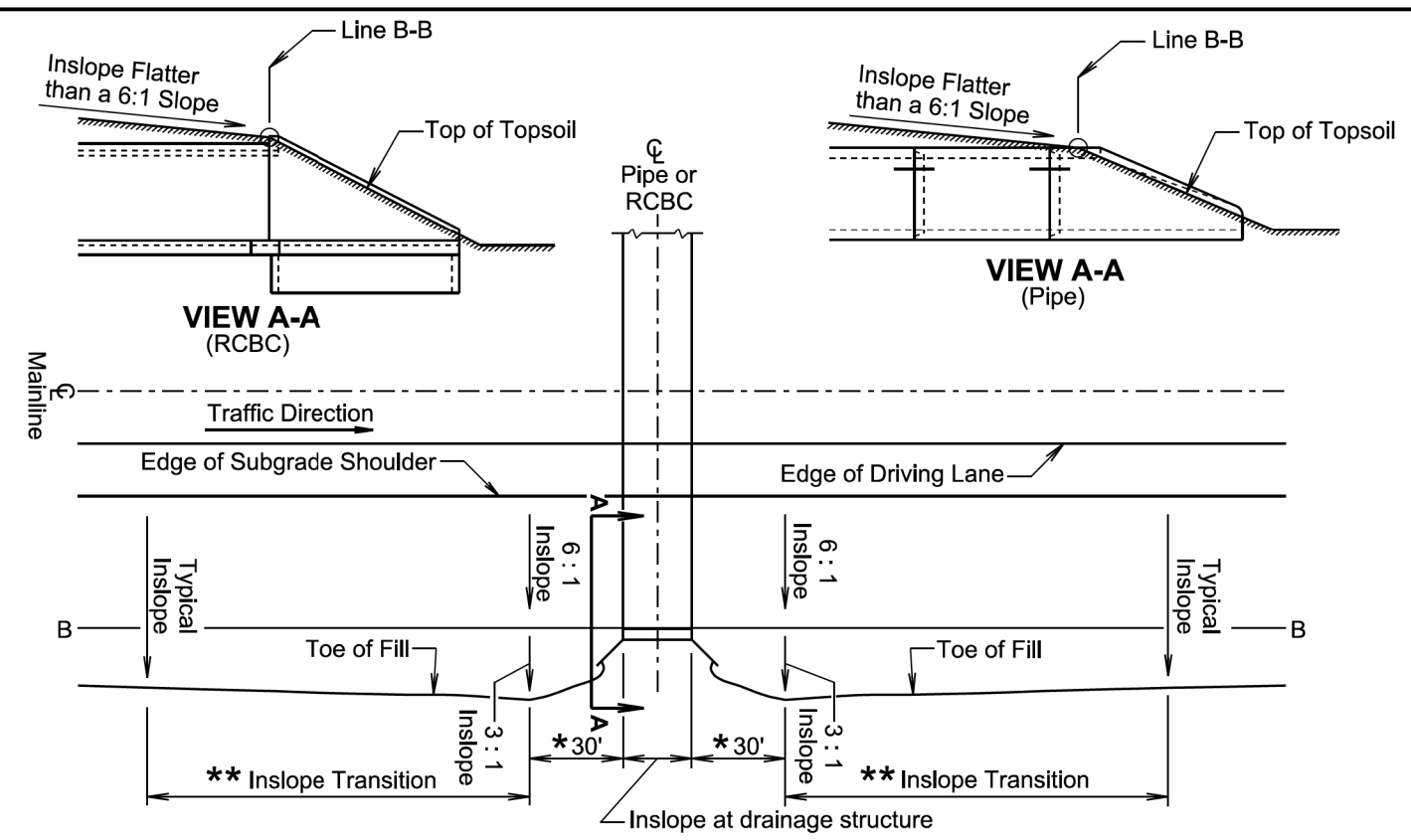
SDDOT

INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS

PLATE NUMBER 120.05

Sheet 1 of 2

September 14, 2018



TYPE 2 INSLOPE TRANSITION

GENERAL NOTES:

This Type 2 Inslope Transition is used when the specified inslope at the pipe or RCBC is flatter than a 6:1 slope.

Line B-B represents the clear zone line, the location where soil intercepts the parapet on an RCBC, the location where the soil intercepts the top of the pipe adjacent to the opening of the pipe end section, or may represent a change in slope.

* Transition from Inslope at drainage structure to a 6 : 1 inslope and 3:1 inslope.

** Transition from typical inslope to the inslopes adjacent to the drainage structure. Within the clear zone (area from edge of subgrade shoulder to line B-B) use 100' length for each 1:1 slope change. Example: transition from a 4:1 to a 6:1 would require a 200' length transition. The typical inslope outside of the clear zone will be transitioned to a 3:1 inslope within the transition length necessary for the transition within the clear zone.

Published Date: 2026

SDDOT

INSLOPE TRANSITIONS AT PIPE CULVERTS OR REINFORCED CONCRETE BOX CULVERTS

PLATE NUMBER 120.05

Sheet 2 of 2

September 14, 2018

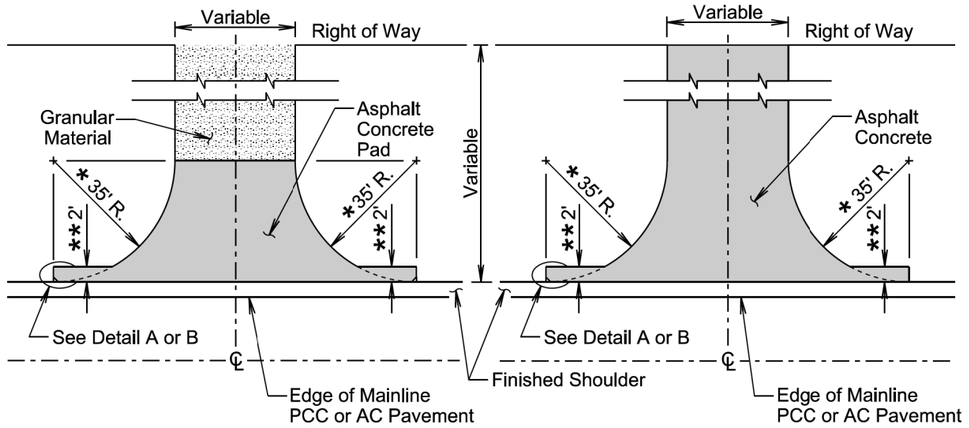
STATE OF SOUTH DAKOTA

PROJECT P-CR 0046(73)366 & P-CR 0011(152)34

SHEET F57

TOTAL SHEETS F82

Plotting Date: 08/25/2025



PLAN VIEW
(Intersecting Road)
(No Asphalt Concrete Surfacing Beyond Right of Way)

PLAN VIEW
(Intersecting Road)
(Asphalt Concrete Surfacing Beyond Right of Way)

GENERAL NOTES:

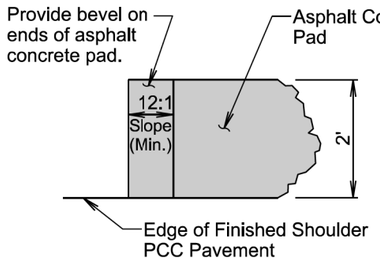
The precise construction limits for situations other than shown above will be determined by the Engineer during construction.

* For new construction, 35' radius typical or as specified in the plans. For resurfacing projects, radius is variable depending on existing conditions.

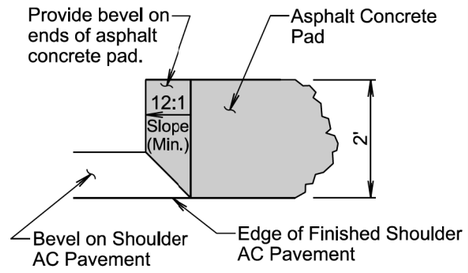
** The Contractor may adjust the screed of the paver during mainline paving operations to provide the 2-foot asphalt concrete pad or the Contractor may provide the 2-foot asphalt concrete pad during paving of the intersecting roads as shown above. The Engineer may eliminate the 2-foot asphalt concrete pads if the Engineer, in the Engineer's sole discretion, determines the pads are infeasible to construct due to site specific reasons including, but not limited to; existing inslope configuration, borrow and material availability, and right-of-way constraints.

August 27, 2020

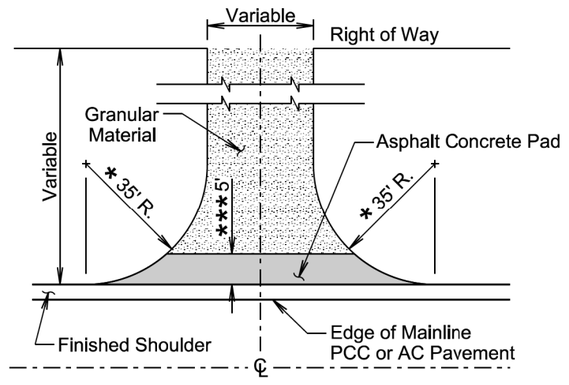
Published Date: 2026	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04 Sheet 1 of 2



DETAIL A
(Typ. for Projects with PCC Pavement on Shoulder)



DETAIL B
(Typ. for Projects with AC Pavement on Shoulder)

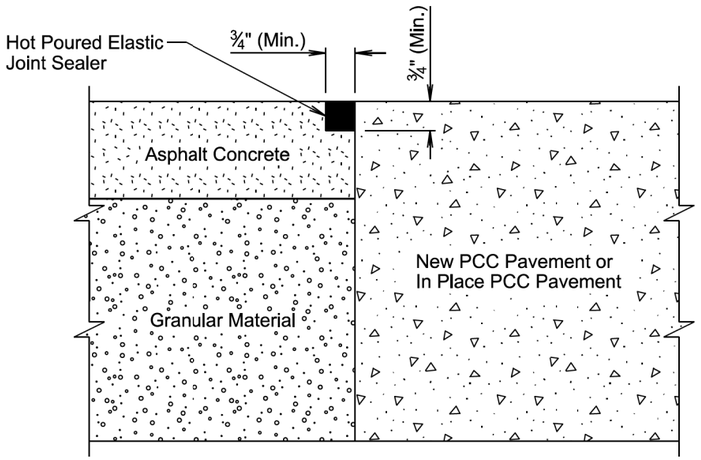


PLAN VIEW
(Entrance)

*** Not required if finished shoulder width is 4' or greater.

August 27, 2020

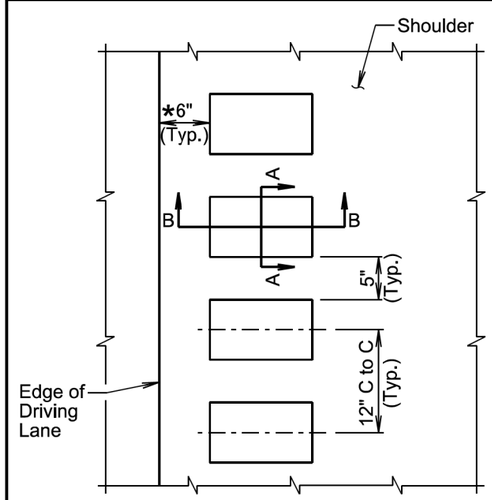
Published Date: 2026	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04 Sheet 2 of 2



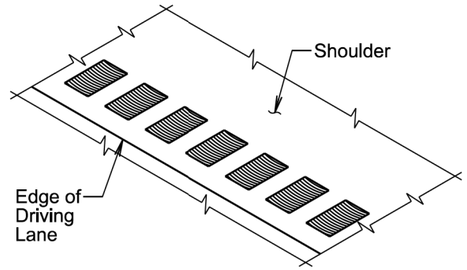
TRANSVERSE SECTION
(Asphalt Concrete Shoulder Joint)

September 14, 2019

Published Date: 2026	SDDOT	ASPHALT CONCRETE SHOULDER JOINT ADJACENT TO PCC PAVEMENT	PLATE NUMBER 320.15 Sheet 1 of 1

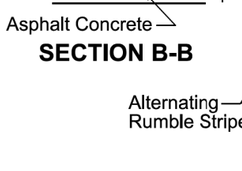


PLAN VIEW
(Typical Rumble Strip in Asphalt Concrete)

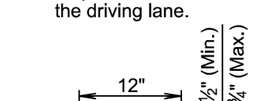


PERSPECTIVE VIEW
(Typical Rumble Strip in Asphalt Concrete)

*When PCC pavement width from centerline to edge of pavement is 12', the rumble strip may be placed a maximum of 2' from the edge of the driving lane.



SECTION A-A



SECTION B-B

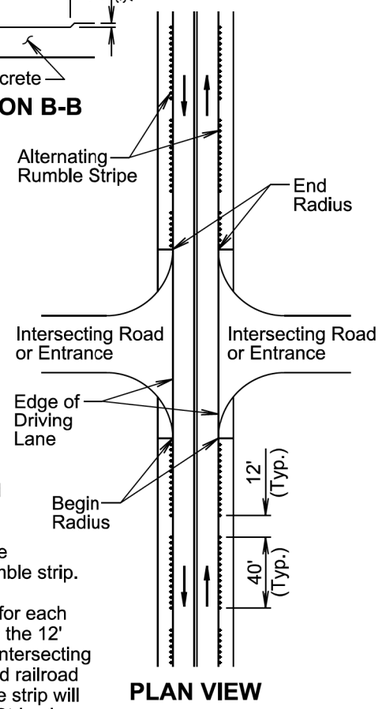
GENERAL NOTES:

A rumble strip will be constructed on all of the asphalt concrete shoulders by grinding alternating patterns of 40' continuous indentations in the asphalt concrete. The rumble strip will receive a flush seal or asphalt surface treatment as specified in the plans.

A rumble strip will not be constructed through intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings. The lengths of the 40' segments with continuous indentations and the 12' segments without a rumble strip adjacent to the intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble strip the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble strip.

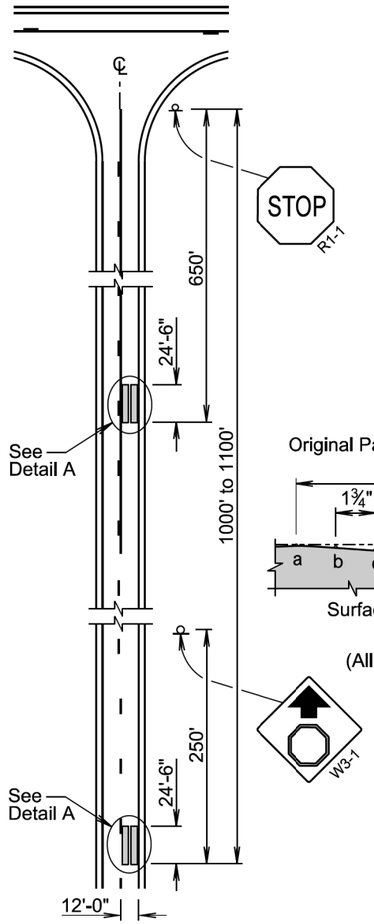
Measurement of the rumble strip will be to the nearest 0.1 of a mile for each shoulder. Measurement and payment of the rumble strip will include the 12' long segments without rumble strips and the segments adjacent to intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings without rumble strips. Payment for constructing the rumble strip will be at the contract unit price per mile for "Grind 12" Rumble Strip or Stripe in Asphalt Concrete".



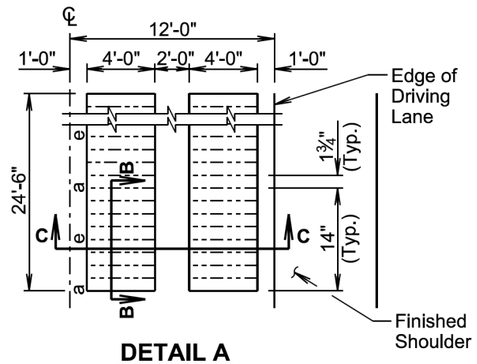
PLAN VIEW

September 14, 2019

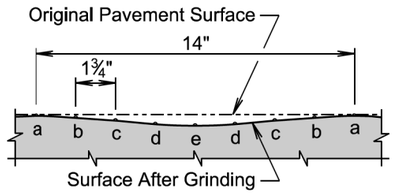
Published Date: 2026	SDDOT	12" RUMBLE STRIP IN ASPHALT CONCRETE ON NONDIVIDED HIGHWAY SHOULDERS	PLATE NUMBER 320.24 Sheet 1 of 1



PLAN VIEW

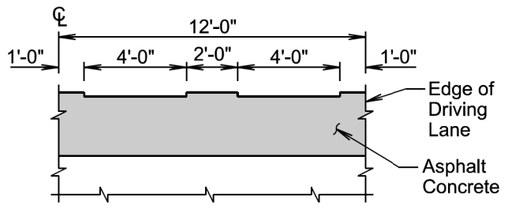


DETAIL A
PLAN VIEW
(Not to Scale)



SECTION B-B
(All dimensions are typical.)

SINUSOIDAL GRINDING	
Location	☑ Depth (In.)
a	1/16
b	5/32
c	9/32
d	7/16
e	½



SECTION C-C
(All dimensions are typical.)

GENERAL NOTES:

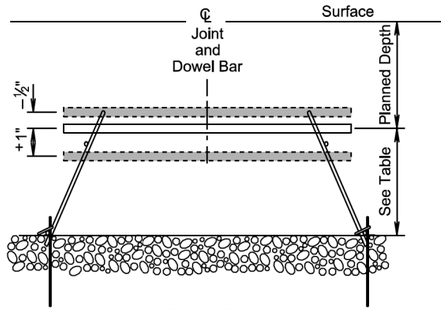
Transverse rumble strips will be constructed by grinding continuous sinusoidal indentations in the asphalt concrete pavement as approved by the Engineer. The transverse rumble strips will receive a flush seal or fog seal as specified in the plans.

☑ The sinusoidal transverse rumble strips construction grinding tolerance will be ± 1/16 inch.

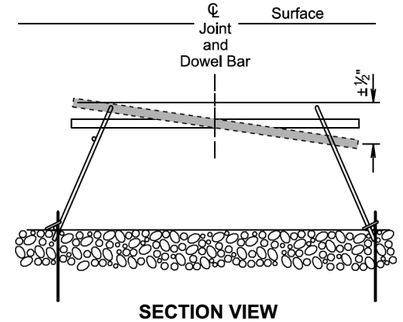
Measurement of the sinusoidal transverse rumble strips will be to the nearest square foot. Payment for constructing the sinusoidal transverse rumble strips will be at the contract unit price per square foot for "Grind Sinusoidal Transverse Rumble Strip in Asphalt Concrete Pavement".

January 22, 2021

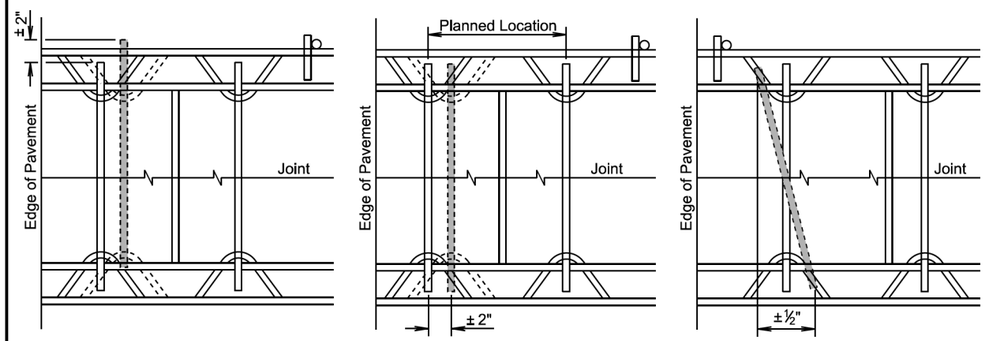
Published Date: 2026	SDDOT	*SINUSOIDAL TRANSVERSE RUMBLE STRIP IN ASPHALT CONCRETE HIGHWAY ADJACENT TO STOP CONTROLLED INTERSECTION*	*PLATE NUMBER 320.46* / *Sheet 1 of 1*



SECTION VIEW
VERTICAL TRANSLATION
Depth: mid-depth + 1 inch or – ½ inch



SECTION VIEW
VERTICAL TILT
Vertical rotational alignment: ½ inch over 18 inch



PLAN VIEW
LONGITUDINAL TRANSLATION
Longitudinal side shift: ± 2 inch for 18 inch bars

PLAN VIEW
HORIZONTAL TRANSLATION
Side shift ± 2 inch

PLAN VIEW
HORIZONTAL SKEW
Horizontal rotational alignment: ½ inch over 18 inch

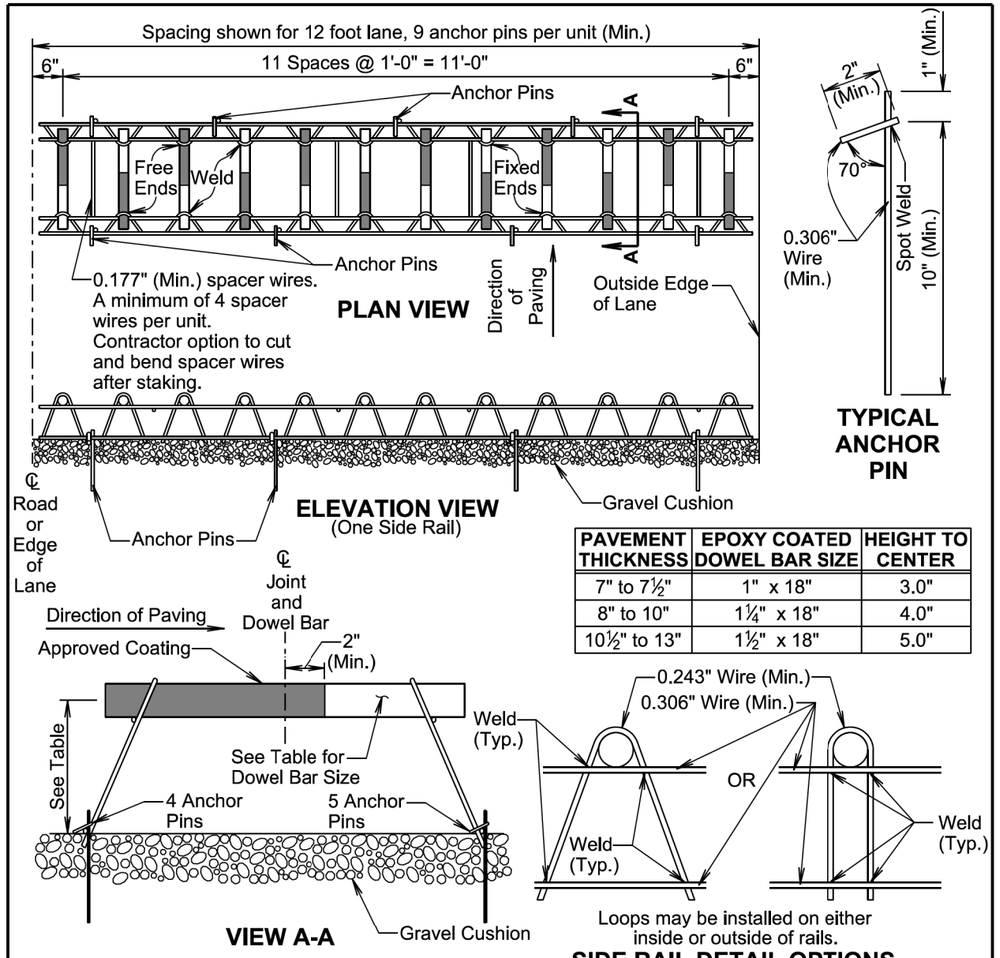
PAVEMENT THICKNESS	EPOXY COATED DOWEL BAR SIZE	HEIGHT TO CENTER
7" to 7½"	1" x 18"	3.0"
8" to 10"	1¼" x 18"	4.0"
10½" to 13"	1½" x 18"	5.0"

GENERAL NOTE:

The tolerances shown above represent the maximum deviation for acceptance of dowel bar placement.

November 19, 2022

Published Date: 2026	SDDOT	*PCC PAVEMENT DOWEL BAR ALIGNMENT TOLERANCES*	*PLATE NUMBER 380.01* / *Sheet 1 of 1*



PAVEMENT THICKNESS	EPOXY COATED DOWEL BAR SIZE	HEIGHT TO CENTER
7" to 7½"	1" x 18"	3.0"
8" to 10"	1¼" x 18"	4.0"
10½" to 13"	1½" x 18"	5.0"

GENERAL NOTES:

Longitudinal joint tie bars will be placed a minimum of 15 inches from the transverse contraction joint.

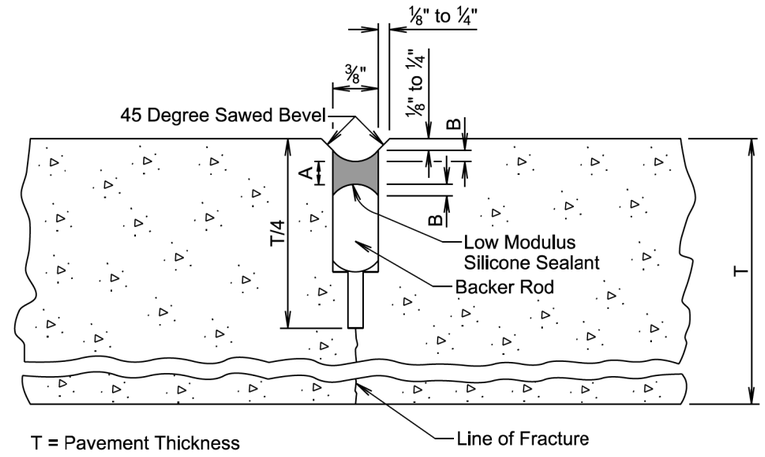
The transverse contraction joints will be sawed perpendicular to the centerline of the roadway. The transverse sawed joint will be centered over the dowel bars.

Supporting devices as shown on this sheet, or equivalent as approved by the Engineer, will be used to maintain proper horizontal and vertical alignment of the dowel bars.

All dowel bar alignment tolerances will be as shown in the PCC Pavement Dowel Bar Alignment Tolerances standard plate.

November 19, 2022

Published Date: 2026	SDDOT	PCC PAVEMENT DOWEL BAR ASSEMBLY FOR TRANSVERSE CONTRACTION JOINTS 12 Bar Assembly on Granular Base Material	PLATE NUMBER 380.04 Sheet 1 of 1



LOW MODULUS SILICONE SEALANT ALLOWABLE CONSTRUCTION TOLERANCES			
A (Min.) (in.)	A (Max.) (in.)	B (Min.) (in.)	B (Max.) (in.)
3/16	5/16	⅛	¼

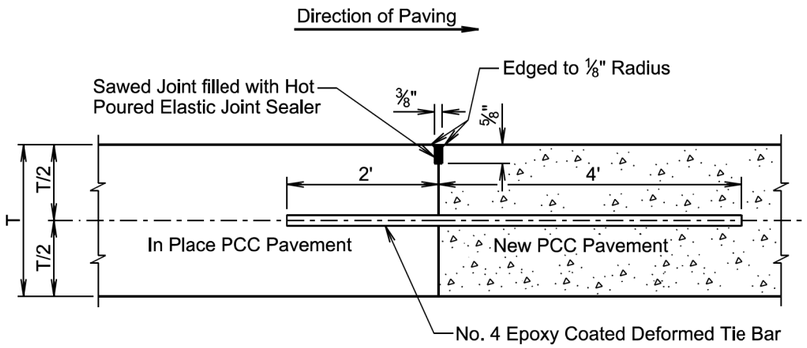
GENERAL NOTES:

The first saw cut to control cracking will be a minimum of ¼ the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the low modulus silicone joint sealant will be necessary.

The backer rod will be a non-moisture absorbing resilient material approximately 25% larger in diameter than the width of the joint to be sealed.

November 19, 2022

Published Date: 2026	SDDOT	PCC PAVEMENT BEVELED TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY	PLATE NUMBER 380.13 Sheet 1 of 1



T = Pavement Thickness

GENERAL NOTES:

No. 4 epoxy coated deformed tie bars will be spaced 12 inches center to center and will be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

The minimum distance between a transverse construction joint with tie bars and an adjacent transverse contraction joint will be 5 feet.

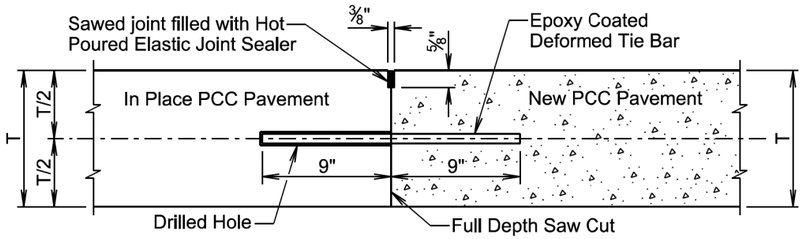
When a transverse construction joint is made, paving will not be allowed in this area for 12 hours.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

March 31, 2024

Published Date: 2026	SDDOT	PCC PAVEMENT MID PANEL TRANSVERSE CONSTRUCTION JOINT	PLATE NUMBER 380.14
			Sheet 1 of 1

DETAIL A
TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS



T = In Place PCC Pavement and New PCC Pavement Thickness

GENERAL NOTES:

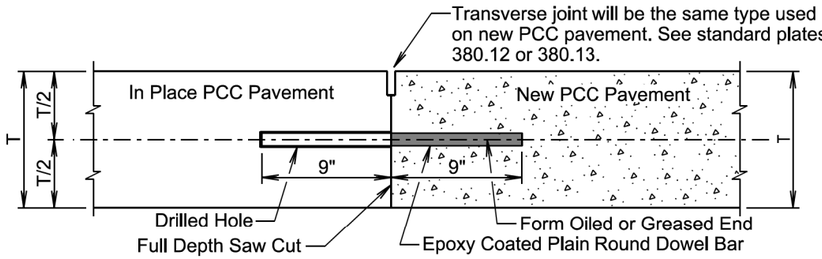
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

See sheet 2 of 2 of this standard plate to determine if Detail A will be used.

The tie bars will be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive or a non-shrink grout.

No. 9 epoxy coated deformed tie bars will be used in 10 inch thickness and less PCC Pavement and No. 11 epoxy coated deformed tie bars will be used in 10.5 inch thickness and greater PCC Pavement. The tie bar spacing will be 18 inches center to center and will be a minimum of 3 inches and a maximum of 9 inches from the pavement edges.

DETAIL B
TRANSVERSE CONSTRUCTION JOINT WITH DOWEL BARS



GENERAL NOTES: T = In Place PCC Pavement and New PCC Pavement Thickness

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

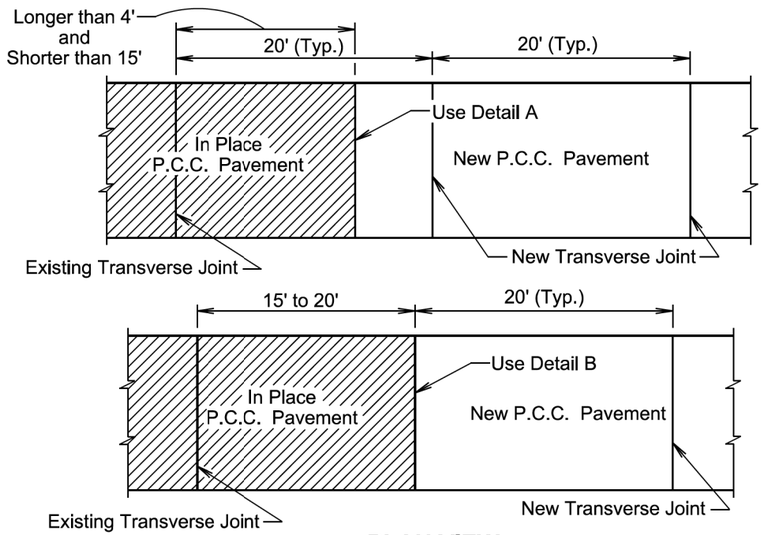
See sheet 2 of 2 of this standard plate to determine if Detail B will be used.

The plain round dowel bars will be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive or a non-shrink grout.

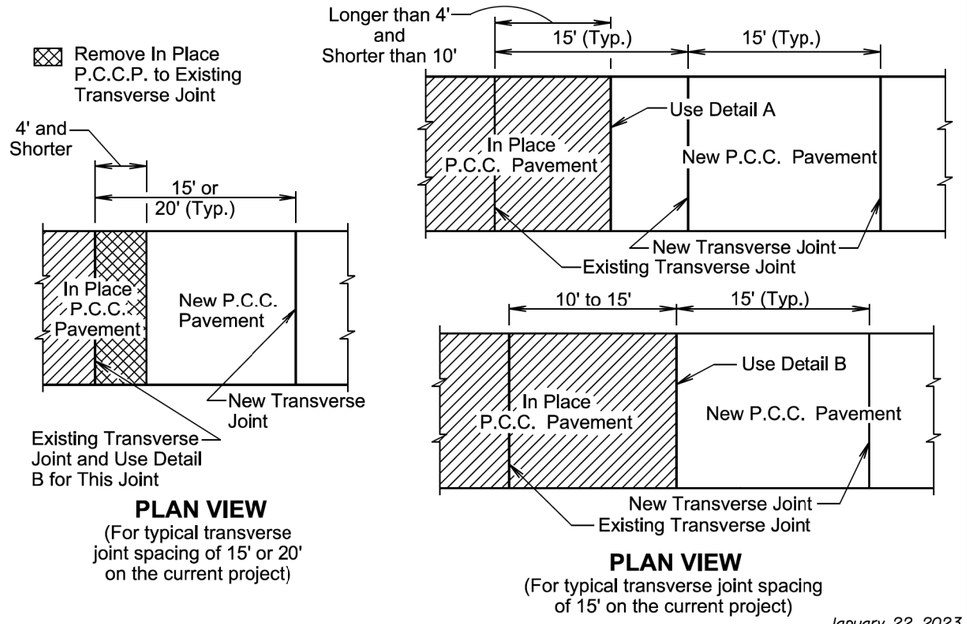
The epoxy coated plain round dowel bar size, number, and spacing will be the same as detailed on the corresponding dowel bar assembly standard plate (380.04, 380.05, 380.06, or 380.07). The epoxy coated plain round dowel bars will be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

January 22, 2023

Published Date: 2026	SDDOT	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER 380.15
			Sheet 1 of 2



PLAN VIEW
(For typical transverse joint spacing of 20' on the current project)



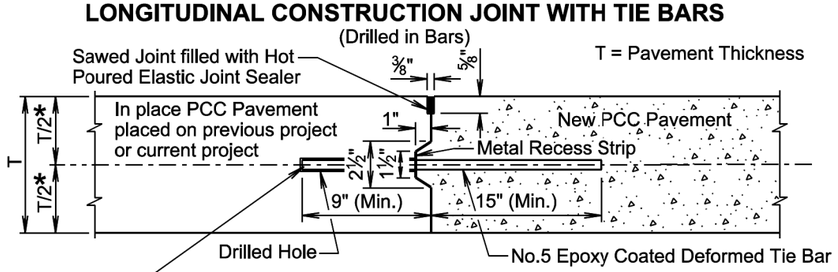
PLAN VIEW
(For typical transverse joint spacing of 15' or 20' on the current project)

PLAN VIEW
(For typical transverse joint spacing of 15' on the current project)

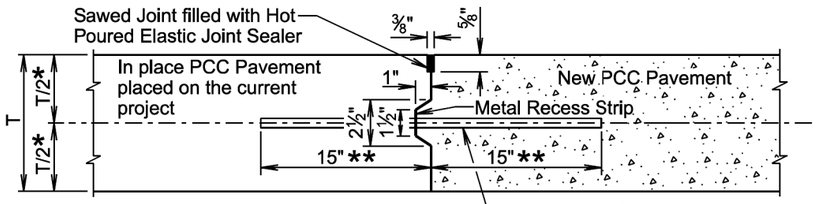
January 22, 2023

Published Date: 2026	SDDOT	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER 380.15
			Sheet 2 of 2

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(Drilled in Bars)



LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(Inserted or Formed in Bars)



GENERAL NOTES (For the details above):

The epoxy coated deformed tie bars will be spaced in accordance with the following tables:

TIE BAR SPACING 48" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

TIE BAR SPACING 30" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
5' to 7'	2
7.5' to 9.5'	3
10' to 12'	4
12.5' to 14.5'	5
15' to 17'	6
17.5' to 19.5'	7
20' to 22'	8

The tie bars will be placed a minimum of 15 inches from transverse contraction joints.

The required number of tie bars as shown in the table will be uniformly spaced within each panel. The uniformly spaced tie bars will be spaced a maximum of 48 inches center to center for a female keyway and will be spaced a maximum of 30 inches center to center for a vertical face and male keyway. The maximum tie bar spacing will apply to tie bars within each panel.

The keyway illustrated in the above details depict a female keyway.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip will be used. When concrete pavement is slip formed, a metal recess strip is not required.

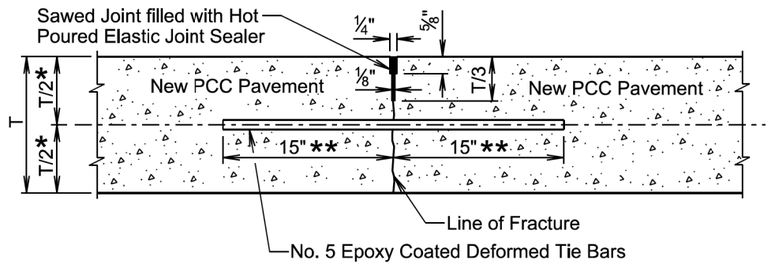
* The vertical placement tolerance for any part of the tie bar will be ± T/6.
** The transverse placement (side shift) tolerance will be ± 3 inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2026	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITH TIE BARS

(Poured Monolithically)



T = Pavement Thickness

GENERAL NOTES (For the detail above):

The epoxy coated deformed tie bars will be spaced in accordance with the following table:

TIE BAR SPACING 48" MAXIMUM	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

The tie bars will be placed a minimum of 15 inches from the transverse contraction joints.

The required number of tie bars as shown in the table will be uniformly spaced within each panel with a maximum space of 48 inches center to center. The maximum tie bar spacing will apply to tie bars within each panel.

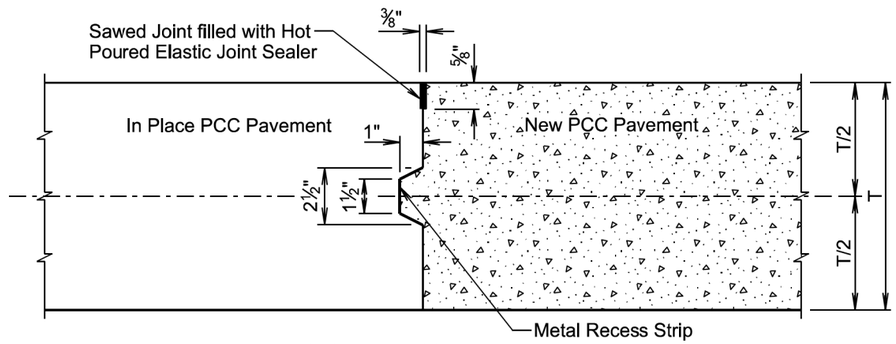
The first saw cut to control cracking will be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer is necessary.

* The vertical placement tolerance for any part of the tie bar will be ± T/6.
** The transverse placement (side shift) tolerance will be ± 3 inches when measured perpendicular to the longitudinal joint line.

November 19, 2022

Published Date: 2026	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.20
			Sheet 2 of 2

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS



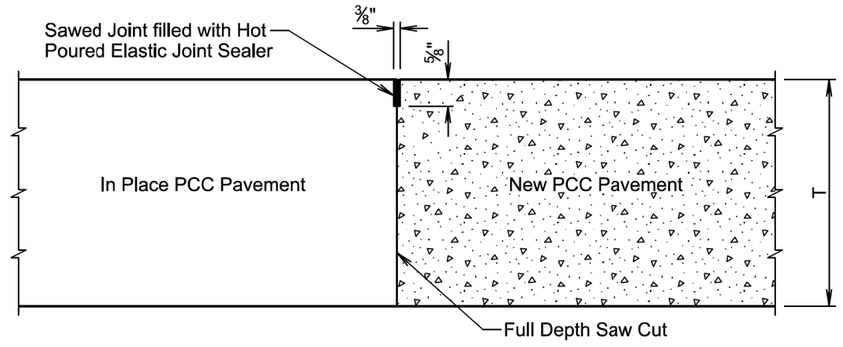
T=Pavement Thickness

GENERAL NOTES:

When concrete pavement is formed and a keyway is provided, a metal recess strip will be used. When concrete pavement is slip formed, a metal recess strip is not required.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS



T=Pavement Thickness

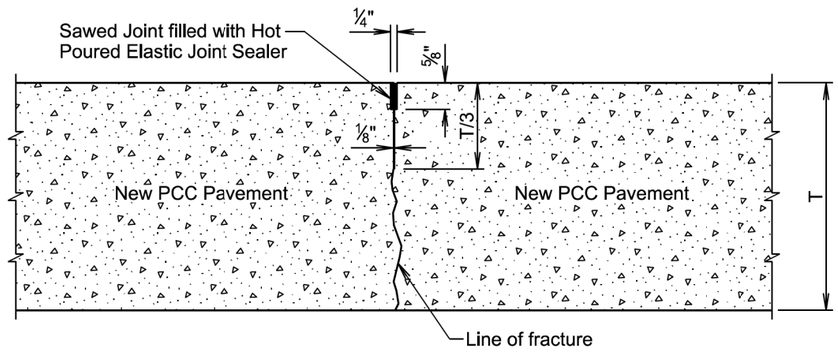
GENERAL NOTE:

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

November 19, 2022

Published Date: 2026	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS	PLATE NUMBER 380.22
			Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITHOUT TIE BARS



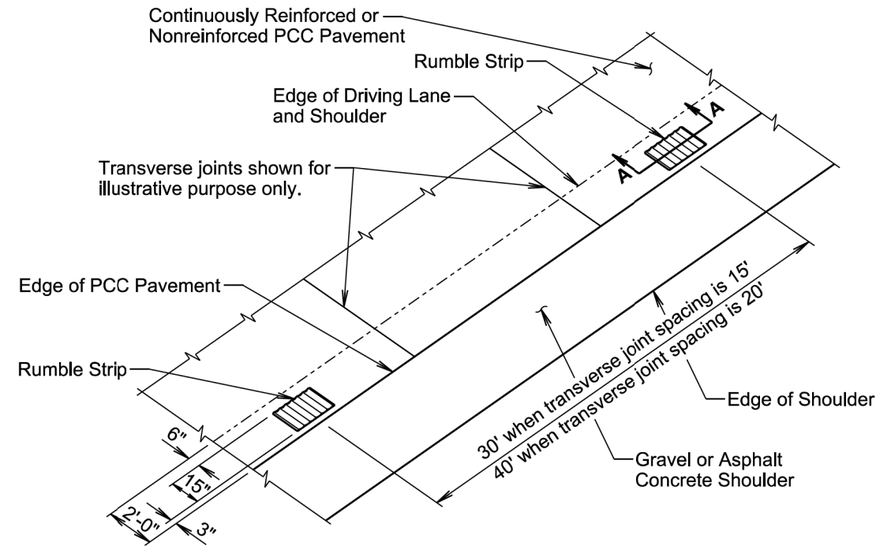
T=Pavement Thickness

GENERAL NOTE:

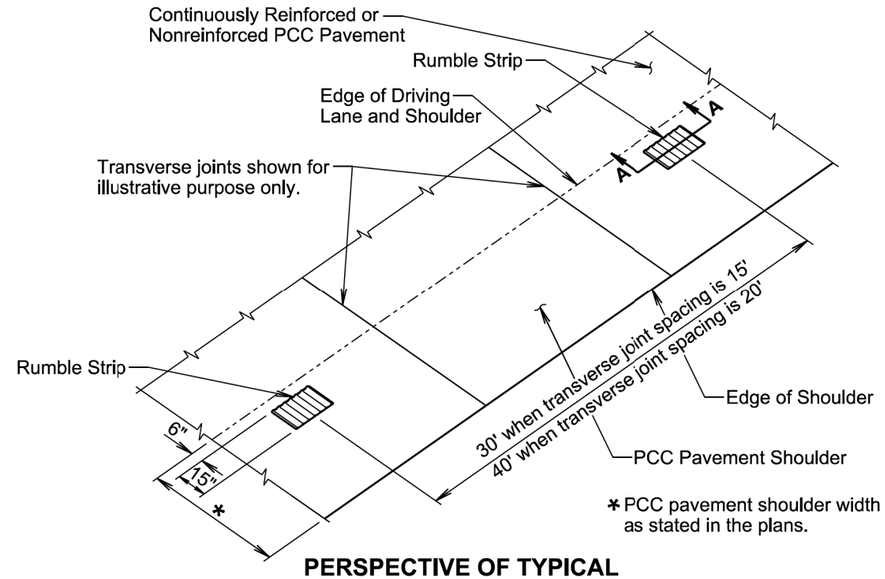
The first saw cut to control cracking will be a minimum of ⅓ the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer will be necessary.

November 19, 2022

Published Date: 2026	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS	PLATE NUMBER 380.22
			Sheet 2 of 2



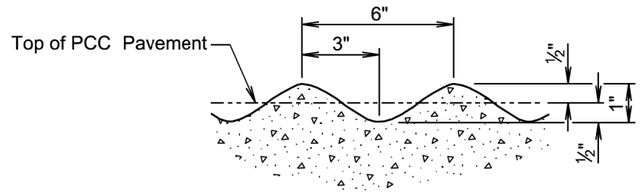
PERSPECTIVE OF TYPICAL RUMBLE STRIPS ON PCC PAVEMENT SHOULDER ADJACENT TO GRAVEL OR ASPHALT CONCRETE SHOULDER



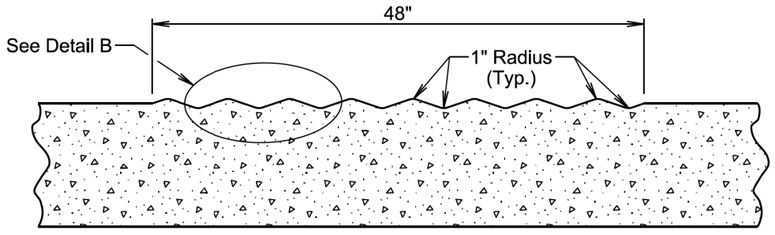
PERSPECTIVE OF TYPICAL RUMBLE STRIPS ON PCC PAVEMENT SHOULDER

November 19, 2022

Published Date: 2026	SDDOT	RUMBLE STRIP ON PCC PAVEMENT SHOULDER	PLATE NUMBER 380.53
			Sheet 1 of 2



DETAIL B



SECTION A-A

GENERAL NOTES:

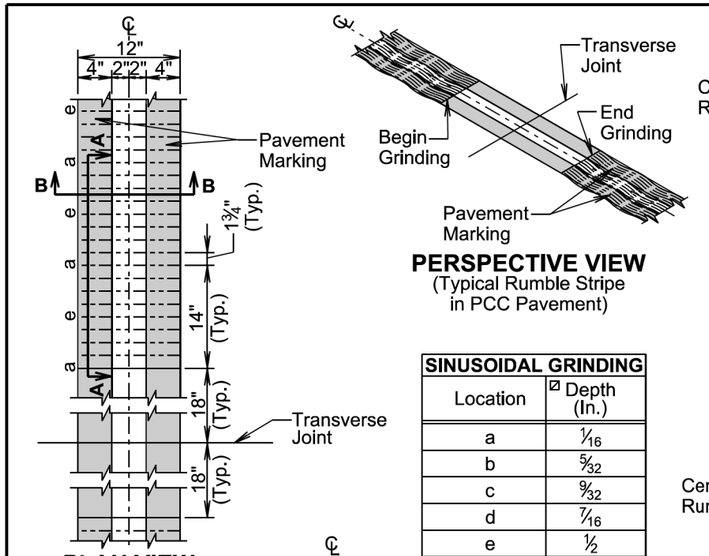
The rumble strips will be evenly spaced and will not coincide with any transverse contraction joints.

The rumble strips will NOT be placed along areas adjacent to entrance ramps, exit ramps, and gore areas.

Payment for constructing the PCC Pavement Rumble Strips will be incidental to the contract unit price per square yard for the corresponding PCC Pavement contract item.

November 19, 2022

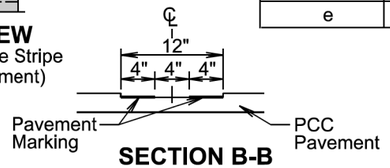
Published Date: 2026	SDDOT	RUMBLE STRIP ON PCC PAVEMENT SHOULDER	PLATE NUMBER 380.53
			Sheet 2 of 2



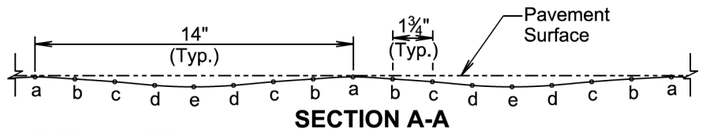
PLAN VIEW
(Typical Rumble Stripe in PCC Pavement)

PERSPECTIVE VIEW
(Typical Rumble Stripe in PCC Pavement)

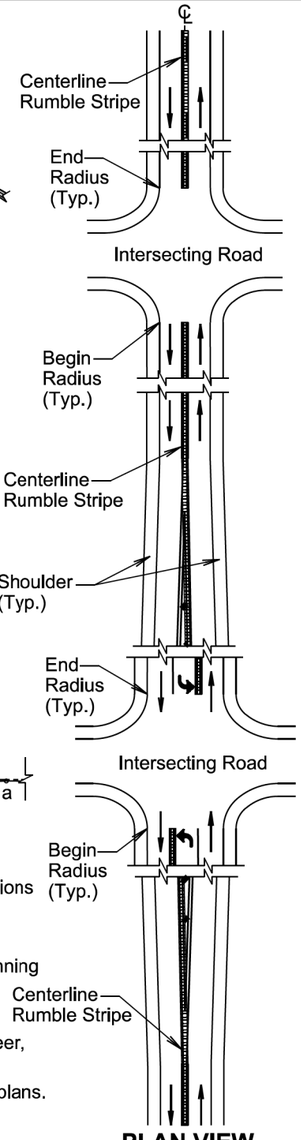
SINUSOIDAL GRINDING	
Location	⧄ Depth (In.)
a	1/16
b	5/32
c	9/32
d	7/16
e	½



SECTION B-B



SECTION A-A



PLAN VIEW

GENERAL NOTES:

A rumble stripe will be constructed by grinding continuous sinusoidal indentations in the PCC pavement with diamond blades.

A rumble stripe will not be constructed through intersecting roads, transverse joints, bridge decks, bridge approach slabs, and railroad crossings. The beginning and ending locations of the rumble stripe at these locations will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

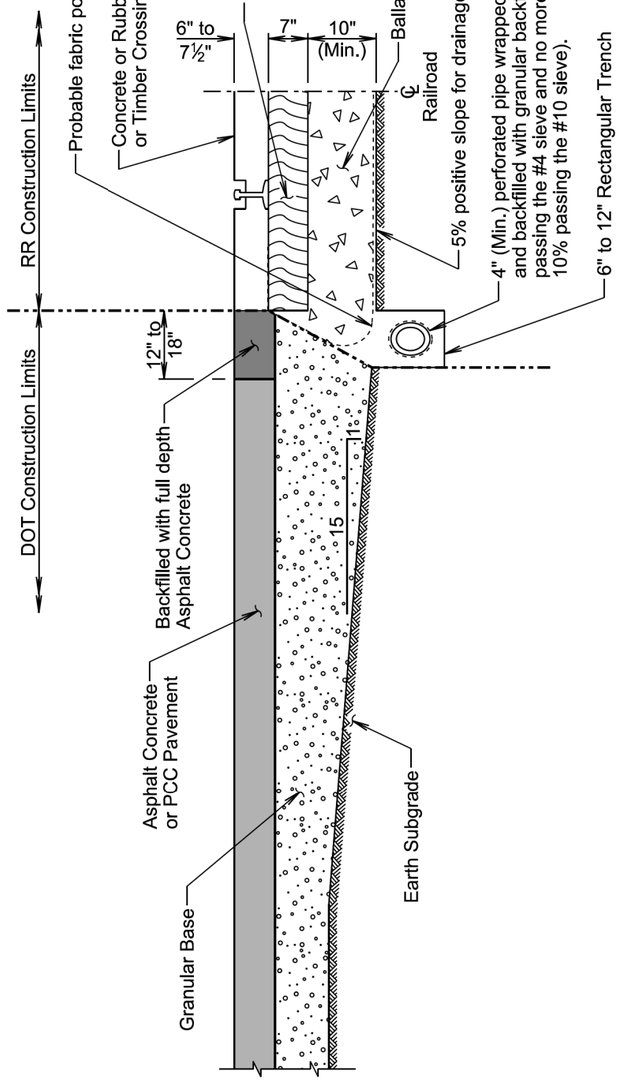
The longitudinal centerline joint will be resealed as detailed elsewhere in the plans.

⧄ The sinusoidal rumble stripe construction grinding tolerance will be ±1/16 inch.

Measurement of the rumble stripe will be to the nearest 0.1 of a mile along the centerline. Measurement and payment of the rumble stripe will include segments without the rumble stripe at intersecting roads, transverse joints, bridge decks, bridge approach slabs, and railroad crossings. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind Sinusoidal Centerline Rumble Stripe in PCC Pavement".

Novenber 19, 2022

Published Date: 2026	SDDOT	SINUSOIDAL CENTERLINE RUMBLE STRIPE IN PCC PAVEMENT	PLATE NUMBER 380.56
			Sheet 1 of 1

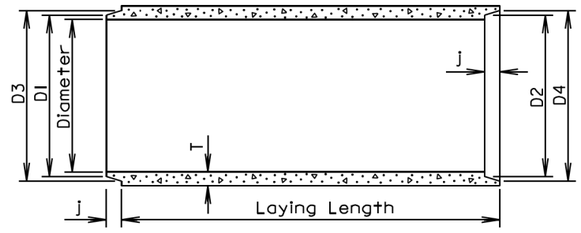


November 19, 2022

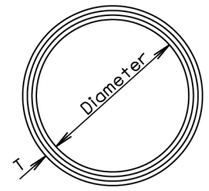
Published Date: 2026	SDDOT	TYPICAL RAILROAD APPROACH	PLATE NUMBER 380.65
			Sheet 1 of 1

TOLERANCES IN DIMENSIONS

Diameter: ±1.5% for 24" Dia. or less and ±1% or ⅜" whichever is more for 27" Dia. or greater.
Diameters at joints: ± 3/16" for 30" Dia. or less and ± ¼" for 36" or greater.
Length of joint (j): ± ¼".
Wall thickness (T): not less than design T by more than 5% or 3/16", whichever is greater.
Laying length: shall not underrun by more than ½".



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

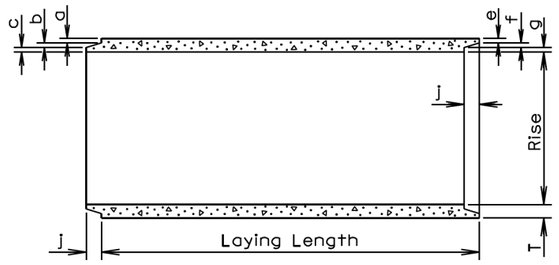
Construction of R.C.P. shall conform to the requirements of Section 990 of the Specifications.

Not more than 2 four-foot sections shall be permitted near the ends of any culvert. Four-foot lengths shall be used only to secure the required length of culvert.

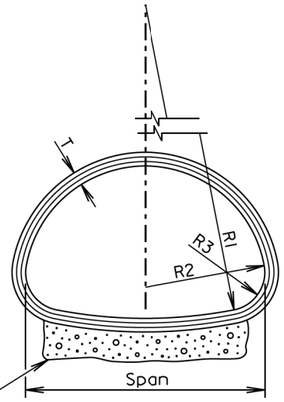
Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1¾	13¼	13⅝	13⅞	14¼
15	127	2¼	2	16½	16⅞	17¼	17⅝
18	168	2½	2¼	19⅝	20	20⅜	20¾
21	214	2¾	2½	22⅞	23¼	23¾	24⅛
24	265	3	2¾	26	26⅜	27	27⅜
27	322	3¼	3	29¼	29⅝	30¼	30⅝
30	384	3½	3¼	32⅜	32¾	33½	33⅞
36	524	4	3¾	38¾	39¼	40	40½
42	685	4½	4	45⅛	45⅝	46½	47
48	867	5	4½	51½	52	53	53½
54	1070	5½	4½	57⅞	58⅜	59⅜	59⅞
60	1296	6	5	64¼	64¾	66	66½
66	1542	6½	5½	70⅝	71⅛	72½	73
72	1810	7	6	77	77½	79	79½
78	2098	7½	6½	83⅜	83⅞	85⅝	86⅛
84	2410	8	7	89¾	90¼	92⅛	92⅝
90	2740	8½	7	95¾	96¼	98⅛	98⅝
96	2950	9	7	102⅛	102⅝	104½	105
102	3075	9½	7½	109	109½	111½	112
108	3870	10	7½	115½	116	118	118½

June 26, 2015

Published Date: 2026	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1



LONGITUDINAL SECTION



END VIEW

TOLERANCES IN DIMENSIONS

Radial dimensions at joints: ± 1/8" for 65" span or less and ± 1/4" for longer spans.
Rise and Span: ±2% of tabular values.
Length of Joint (J): ± 1/4".
Wall thickness (T): not less than design T by more than 5% or 3/16", whichever is greater.
Laying length: shall not underrun by more than 1/2".

Gravel Bedding Material shall be supplied for 102" to 169" spans. It shall be placed to a thickness of 6" (Min.) x 85% of the Span x Length of culvert and shall conform to the gradation requirements for gravel surfacing except material may be screened or may be plan provided material.

* Size (in.)	Approx. Wt./Ft. (lb.)	Rise (in.)	Span (in.)	T (in.)	a (in.)	b (in.)	c (in.)	j (in.)	e (in.)	f (in.)	g (in.)	R1 (in.)	R2 (in.)	R3 (in.)
18	170	13 1/2	22	2 1/2	1 3/8	3/8	3/4	2	1 1/8	3/8	1	27 1/2	13 3/4	5 1/4
24	320	18	28 1/2	3 1/2	1 5/8	1/2	1 3/8	3	1 3/8	1/2	1 5/8	40 11/16	14 3/4	4 5/8
30	450	22 1/2	36 1/4	4	1 13/16	5/8	1 9/16	3 1/2	1 9/16	5/8	1 13/16	51	18 3/4	6 1/8
36	600	26 5/8	43 3/4	4 1/2	2	3/4	1 3/4	4	1 3/4	3/4	2	62	22 1/2	6 1/2
42	740	31 5/16	51 1/8	4 1/2	2	3/4	1 3/4	4	1 3/4	3/4	2	73	26 1/4	7 3/4
48	890	36	58 1/2	5	2 1/4	3/4	2	5	2	3/4	2 1/4	84	30	8 7/8
54	1100	40	65	5 1/2	2 1/2	3/4	2 1/4	5	2 1/4	3/4	2 1/2	92 1/2	33 3/8	10
60	1400	45	73 1/2	6	3 5/16	3/4	1 15/16	5	2 3/4	3/4	2 1/2	105	37 1/2	11
72	1900	54	88	7	3 13/16	1	2 3/16	6	3 1/4	1	2 3/4	126	45	13 5/16
84	2500	62	102	8	4 1/8	1	2 7/8	6	3 1/2	1	3 1/2	162 1/2	52	14 1/2
96	3300	78	122 3/8	9	4 1/2	1	3 1/2	7	4	1	4	218	62	20
108	4200	88	138 1/2	10	5	1	4	7	4 1/2	1	4 1/2	269	70	22
120	5100	96 7/8	154	11	5 1/2	1	4 1/2	7	5	1	5	301 3/8	78	24
132	5100	106 1/2	168 3/4	10		1	4	7	4 1/2	1	4 1/2	329	85 5/8	26 7/8

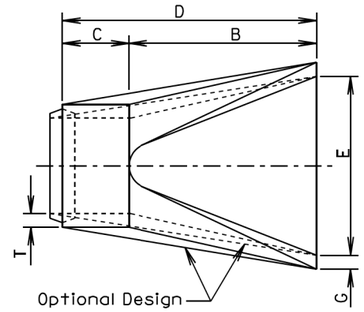
* Equivalent Diameter of Circular R. C. P.

GENERAL NOTES:

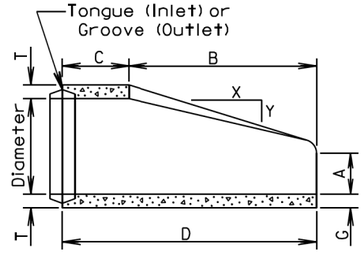
Construction of R.C.P. Arch shall conform to the requirements of Section 990 of the Specifications. Not more than 2 four-foot sections shall be permitted near the ends of any culvert. Four-foot lengths shall be used only to secure the required length of culvert.

June 26, 2015

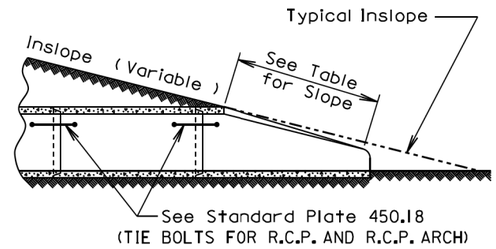
Published Date: 2026	SDDOT	REINFORCED CONCRETE PIPE ARCH	PLATE NUMBER 450.02
			Sheet 1 of 1



TOP VIEW



LONGITUDINAL SECTION

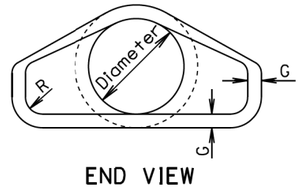


SLOPE DETAIL

GENERAL NOTES:

Lengths of concrete pipe shown on plan sheets are between flared ends only.

Construction of R.C.P. Flared End shall conform to the requirements of Section 990 of the Specifications.

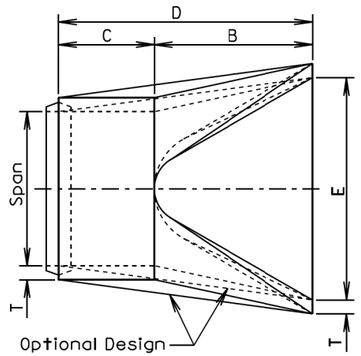


END VIEW

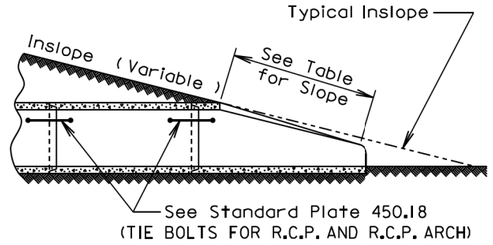
Dia. (in.)	Approx. Wt. of Section (lbs.)	Approx. Slope (X to Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)	R (in.)
12	530	2.4: 1	2	4	24	48 7/8	72 7/8	24	2	1 1/2
15	740	2.4: 1	2 1/4	6	27	46	73	30	2 1/4	1 1/2
18	990	2.3: 1	2 1/2	9	27	46	73	36	2 1/2	1 1/2
21	1280	2.4: 1	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	1 1/2
24	1520	2.5: 1	3	9 1/2	43 1/2	30	73 1/2	48	3	1 1/2
27	1930	2.5: 1	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	1 1/2
30	2190	2.5: 1	3 1/2	12	54	19 3/4	73 3/4	60	3 1/2	1 1/2
36	4100	2.5: 1	4	15	63	34 3/4	97 3/4	72	4	1 1/2
42	5380	2.5: 1	4 1/2	21	63	35	98	78	4 1/2	1 1/2
48	6550	2.5: 1	5	24	72	26	98	84	5	1 1/2
54	8240	2: 1	5 1/2	27	65	33 1/4	98 1/4	90	5 1/2	1 1/2
60	8730	1.9: 1	6	35	60	39	99	96	5	1 1/2
66	10710	1.7: 1	6 1/2	30	72	27	99	102	5 1/2	1 1/2
72	12520	1.8: 1	7	36	78	21	99	108	6	1 1/2
78	14770	1.8: 1	7 1/2	36	90	21	111	114	6 1/2	1 1/2
84	18160	1.6: 1	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2
90	20900	1.5: 1	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	6

June 26, 2015

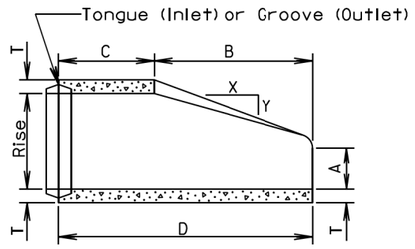
Published Date: 2026	SDDOT	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
			Sheet 1 of 1



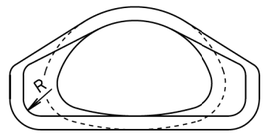
TOP VIEW



SLOPE DETAIL



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

Lengths of concrete pipe shown on plan sheets are between flared ends only.

Construction of R.C.P. Arch Flared End shall conform to the requirements of Section 990 of the Specifications.

✱ Size (in.)	Approximate Weight of Section (lbs.)	Rise (in.)	Span (in.)	Slope (X:Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	R (in.)
18	1100	13½	22	3:1	2½	7	27	45	72	36	2
24	1750	18	28½	3:1	3½	8½	39	33	72	48	3
30	3300	22½	36¼	3:1	4	9½	50	46	96	60	3
36	4350	26⅝	43¾	3:1	4½	1 1⅛	60	36	96	72	6
42	5250	31⅝	51⅛	3:1	4½	15¹³⁄₁₆	60	36	96	78	6
48	6400	36	58½	3:1	5	21	60	36	96	84	6
54	7850	40	65	3:1	5½	25½	60	36	96	90	6
60	9500	45	73½	3:1	6	31	60	36	96	96	6
72	13550	54	88	2:1	7	31	60	39	99	120	6
84	17950	62	102	2:1	8	28½	83	19	102	144	6

✱Equivalent Diameter of Circular R.C.P.

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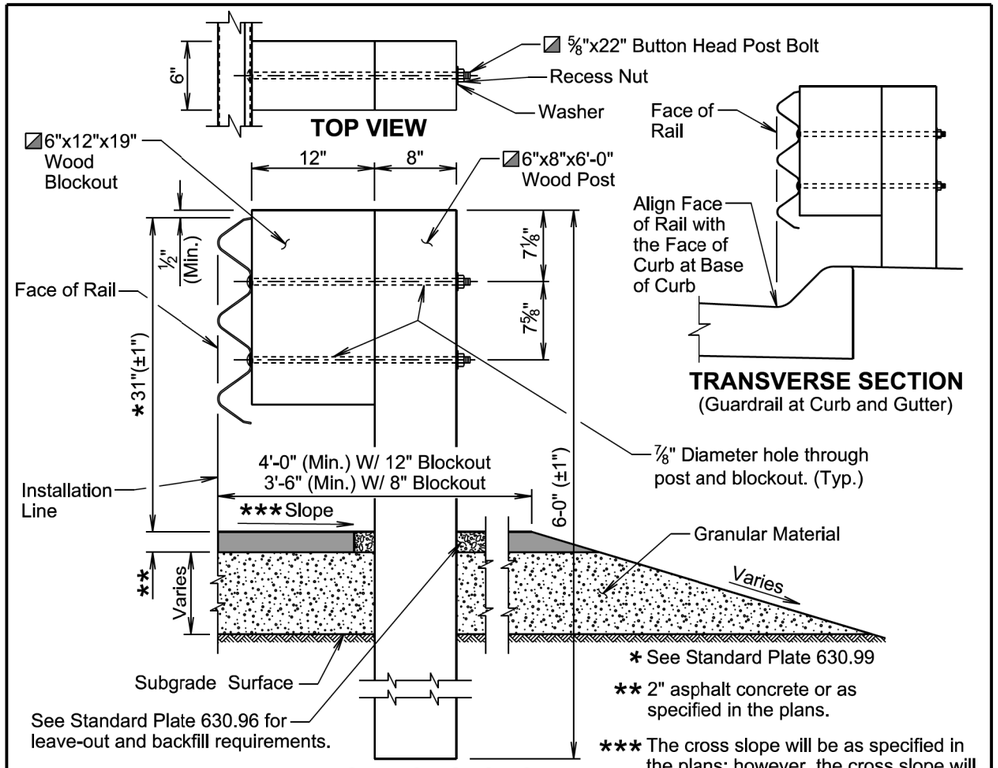
Published Date: 2026	SDDOT	R.C.P. ARCH FLARED ENDS	PLATE NUMBER 450.11 Sheet 1 of 1



TRANSVERSE SECTION

GENERAL NOTES:

Asphalt concrete will be the same type used elsewhere on the project or will be as specified in the plans. If asphalt concrete is not specified in the plans, the asphalt concrete will conform to the Specifications for "Asphalt Concrete Composite."

Granular material will be the same type used elsewhere on the project or will be as specified in the plans. If granular material type is not specified in the plans, the material will conform to the Specifications for "Base Course". The granular material will be placed the same thickness as the mainline surfacing or as specified in the plans.

Topsoil is not shown in the transverse section drawing.

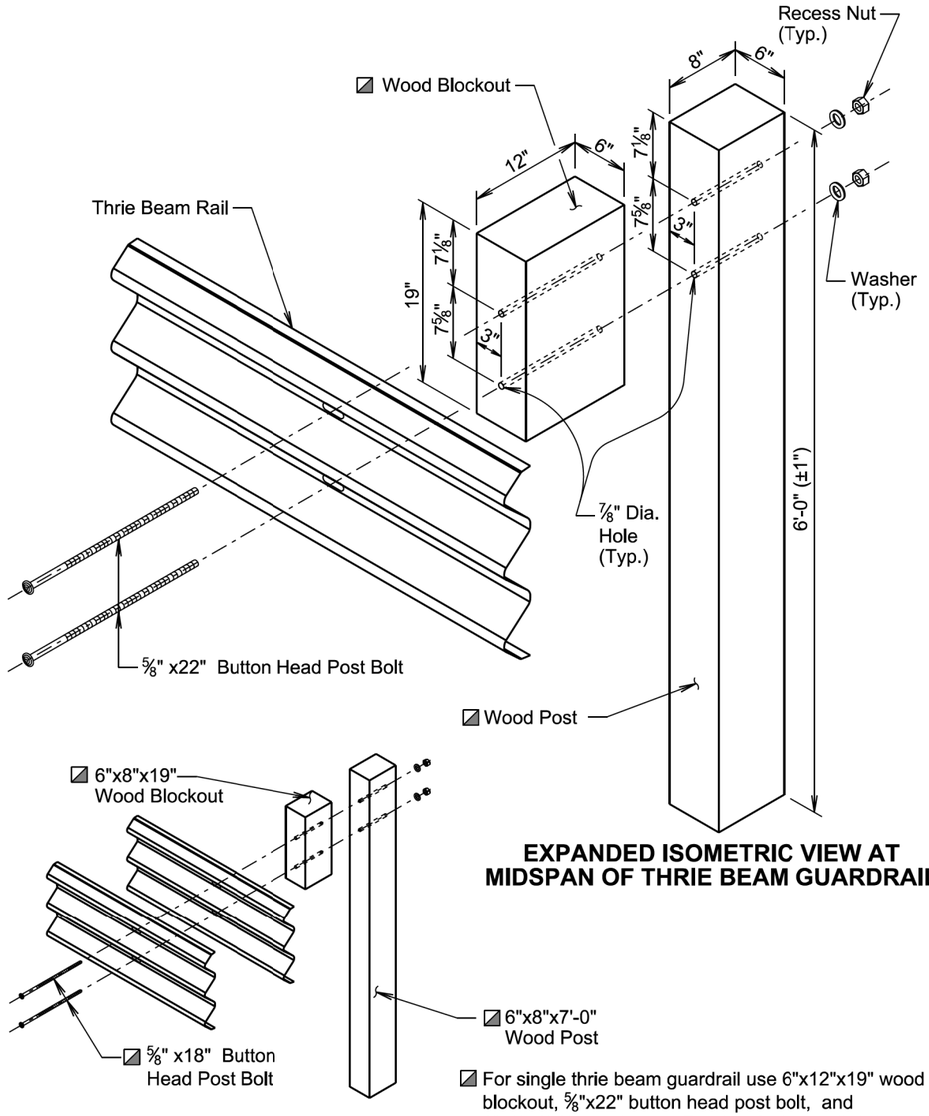
☑ The post and blockout illustrated above is typical for single thrie beam guardrail. When other variations of posts and blockouts are specified on other standard plates (e.g. transitions) then the posts and blockouts will be as specified on the other standard plates or as specified in the plans.

Slots in the rails will be provided as specified in the plans and by the manufacturer. A drilled hole through the rail is not allowed as a replacement for a slot. If the Contractor must create a slot, a cutting torch or plasma cutter is not allowed. The slot edges will be smooth and free of burrs or notches.

The top of post and top of block will have a true square cut. The top of block will be a maximum of ±½ inch from the top of the post.

April 8, 2025

Published Date: 2026	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01 Sheet 1 of 5



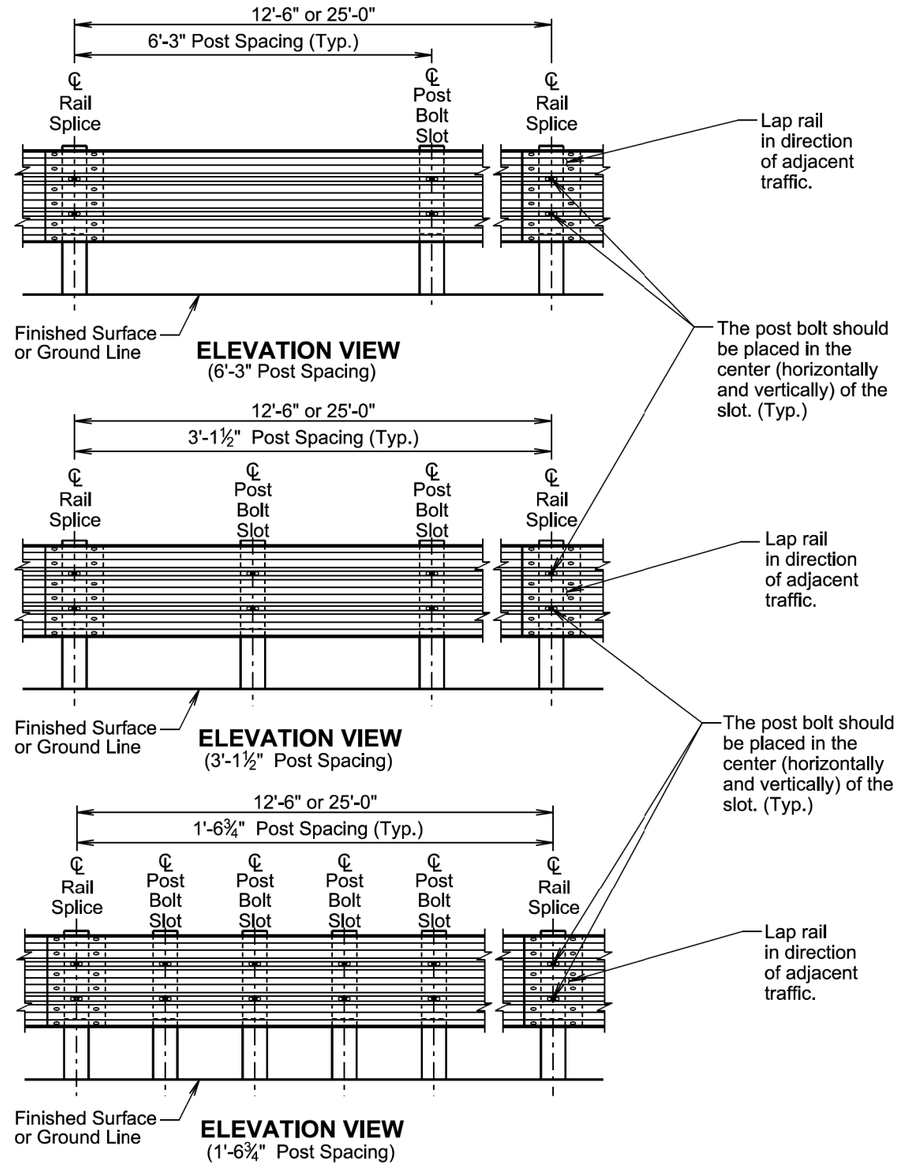
EXPANDED ISOMETRIC VIEW AT MIDSPAN OF THRIE BEAM GUARDRAIL

EXPANDED ISOMETRIC VIEW OF DOUBLE (NESTED) THRIE BEAM GUARDRAIL AT MIDSPAN
(For Information Only, Not to Scale)

- For single thrie beam guardrail use 6"x12"x19" wood blockout, ⅝"x22" button head post bolt, and 6"x8"x6'-0" wood post. For double (nested) thrie beam guardrail use 6"x8"x19" wood blockout, ⅝"x18" button head post bolt, and 6"x8"x7'-0" wood post.

April 8, 2025

Published Date: 2026	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 2 of 5



ELEVATION VIEW
(6'-3" Post Spacing)

ELEVATION VIEW
(3'-1½" Post Spacing)

ELEVATION VIEW
(1'-6¾" Post Spacing)

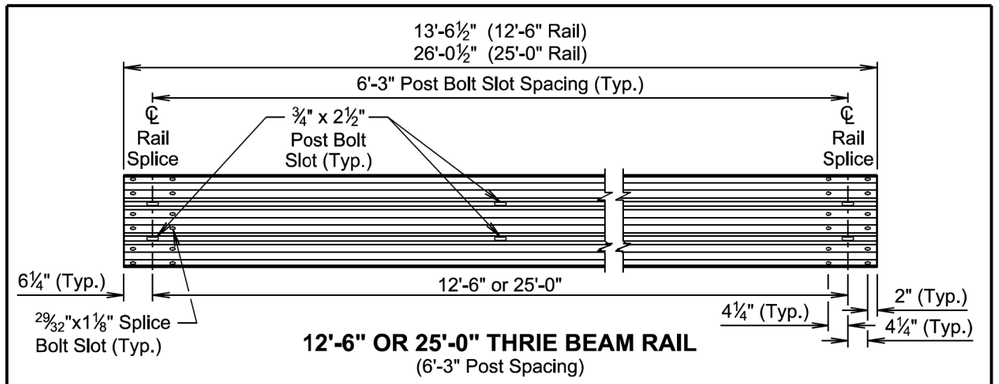
April 8, 2025

Published Date: 2026	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 3 of 5

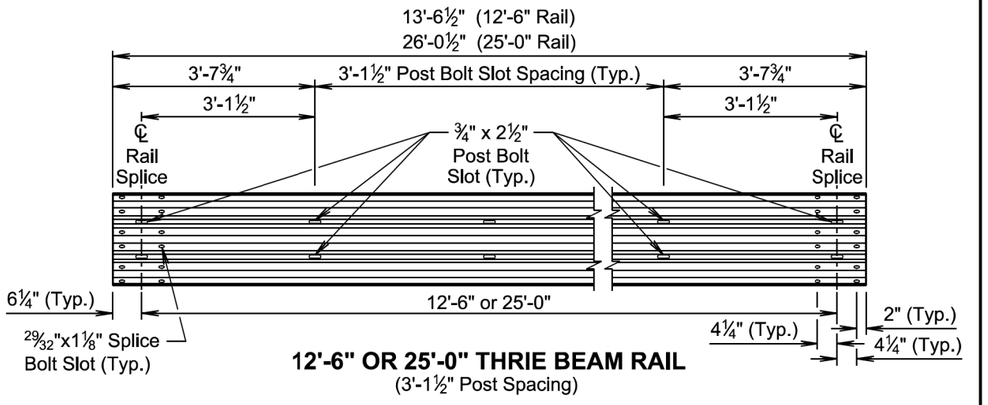
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F71	F82

Plotting Date: 08/25/2025

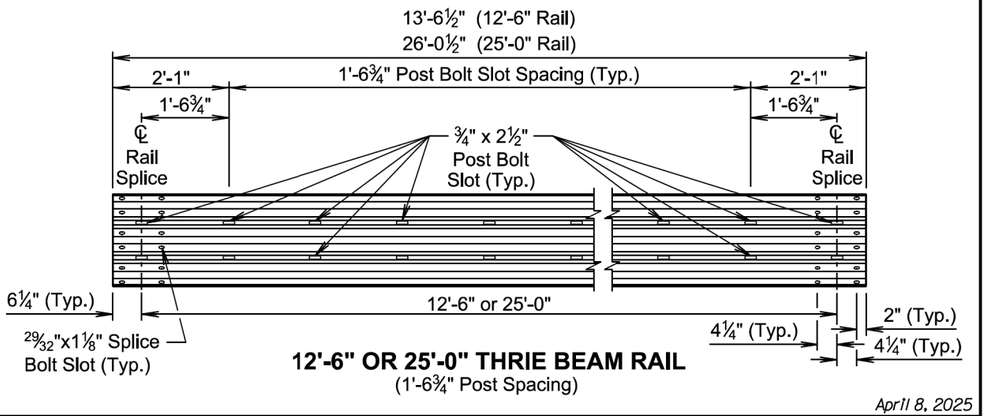
Plot Scale - 1:200



12'-6" OR 25'-0" THRIE BEAM RAIL
(6'-3" Post Spacing)



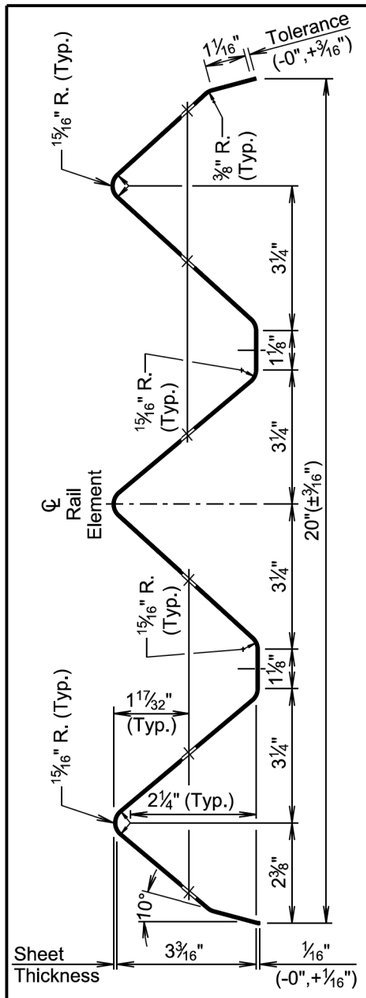
12'-6" OR 25'-0" THRIE BEAM RAIL
(3'-1½" Post Spacing)



12'-6" OR 25'-0" THRIE BEAM RAIL
(1'-6¾" Post Spacing)

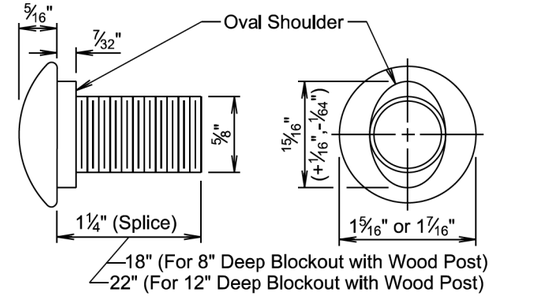
April 8, 2025

Published Date: 2026	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 4 of 5

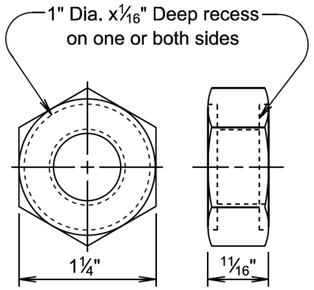


SECTION THROUGH THRIE BEAM RAIL

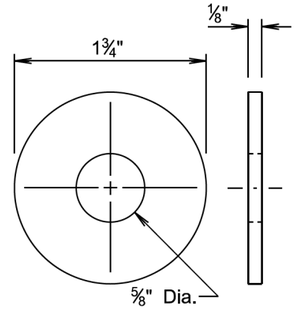
PLAN VIEW
(Lap Splice)
(Lap rail in direction of adjacent traffic.)
(12 splice bolts and 12 recess nuts per splice, NO washers)



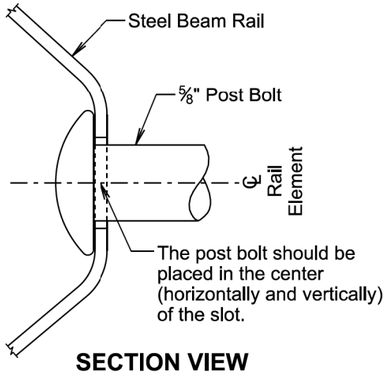
SPLICE BOLT AND POST BOLT
(⅝" Button Head Bolt)



RECESS NUT
(At lap splices, the recess will be placed against the steel rail.)



WASHER
(The washer will be placed between the back side of wood post and the recess nut, see sheet 1 and 2.)



SECTION VIEW
(At Post Bolt)

April 8, 2025

Published Date: 2026	SDDOT	THRIE BEAM GUARDRAIL	PLATE NUMBER 630.01
			Sheet 5 of 5

Plotted From - TRPR13462

File - ...\StdPlateSection 05J5.dgn

TYPE AND DETAILS OF MGS						
Type of MGS	W Beam Rail Single or Double (Nested)	Blockout Size	Blockout Material	Post Size	Post Material	Post Spacing
1	Single	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	6'-3"
1C	Single	6"x12"x14"	Wood	6"x8"x7'-6"	Wood	6'-3"
2	Single	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	3'-1½"
3	Single	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	1'-6¾"
4	Double	6"x12"x14"	Wood	6"x8"x6'-0"	Wood	6'-3"

STANDARD PLATE REFERENCE	
Type of MGS	See Standard Plate(s)
1	630.20, 630.22
1C	630.20, 630.25
2	630.20
3	630.20
4	630.20

GENERAL NOTES:

Asphalt concrete will be the same type used elsewhere on the project or will be as specified in the plans. If asphalt concrete is not specified in the plans, the asphalt concrete will conform to the Specifications for "Asphalt Concrete Composite".

Granular material will be the same type used elsewhere on the project or will be as specified in the plans. If granular material type is not specified in the plans, the material will conform to the Specifications for "Base Course". The granular material will be placed the same thickness as the mainline surfacing or as specified in the plans.

Topsoil is not shown in the transverse section drawing on sheet 2 of 6.

All W beam rail will be Type 1 and Class A (12 Ga.) unless specified otherwise in the plans.

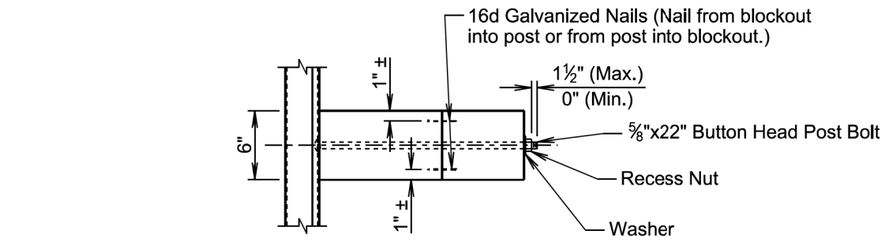
W beam rail section lengths may be 12'-6" and/or 25'-0". The combination of section lengths used will be compatible with the total length of rail per site as shown in the plans.

Slots in the rails will be provided as specified in the plans and by the manufacturer. A drilled hole through the rail is not allowed as a replacement for a slot. If the Contractor must create a slot, a cutting torch or plasma cutter is not allowed. The slot edges will be smooth and free of burrs or notches.

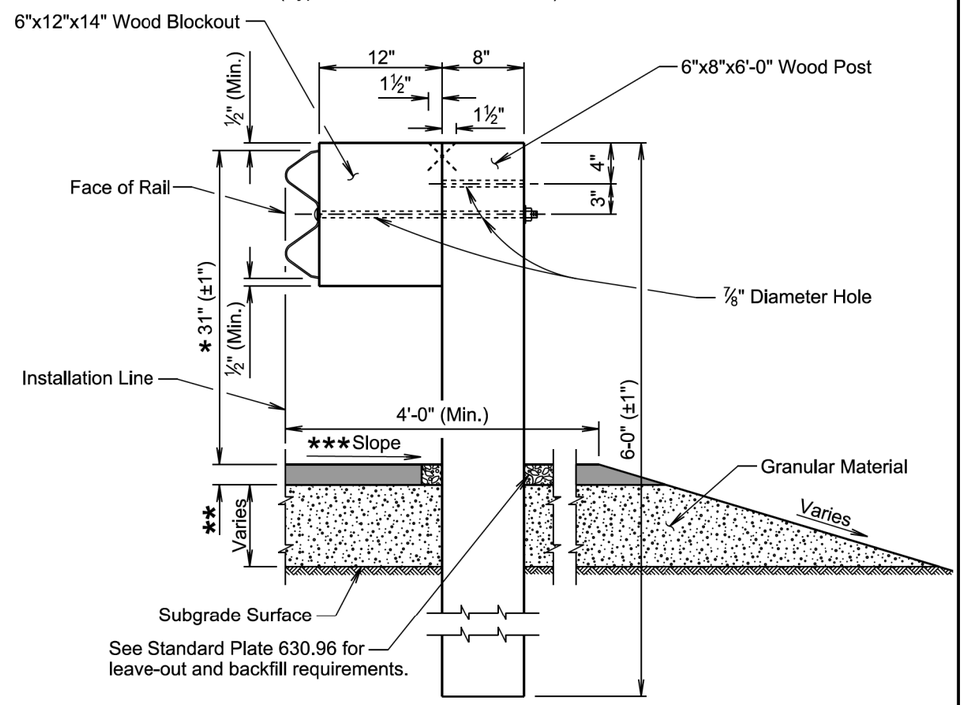
All costs for constructing the MGS including labor, equipment, and materials including all posts, blockouts, steel beam rail, and hardware will be incidental to the contract unit price per foot for the respective MGS contract item.

April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20 Sheet 1 of 6



TOP VIEW
(Type 1, 2, or 3 MGS Installation)



TRANSVERSE SECTION
(Type 1, 2, or 3 MGS Installation)

* See Standard Plate 630.99

** 2" asphalt concrete or as specified in the plans.

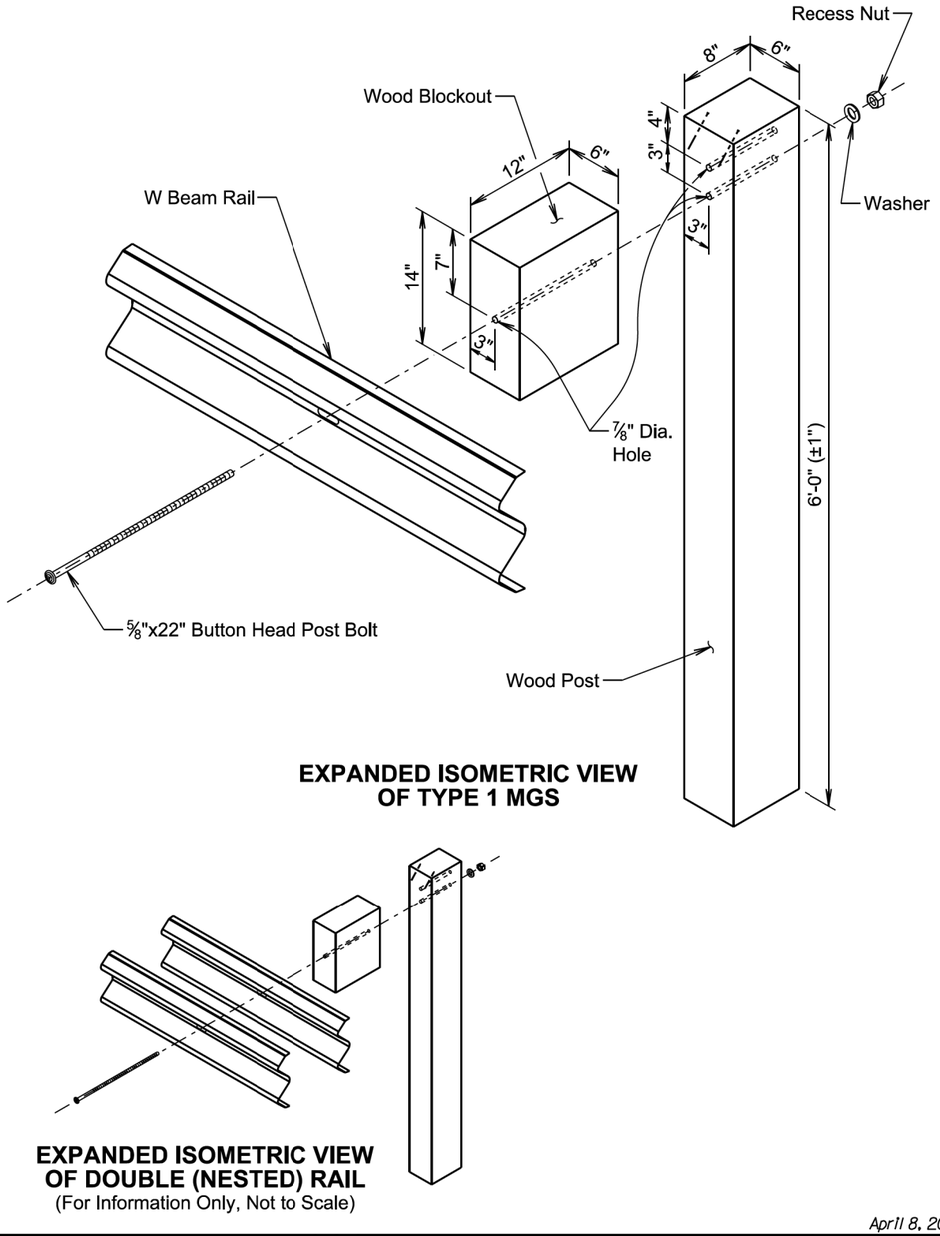
*** The cross slope will be as specified in the plans; however, the cross slope will not be steeper than a 10:1 slope.

April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20 Sheet 2 of 6

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F73	F82

Plotting Date: 08/25/2025

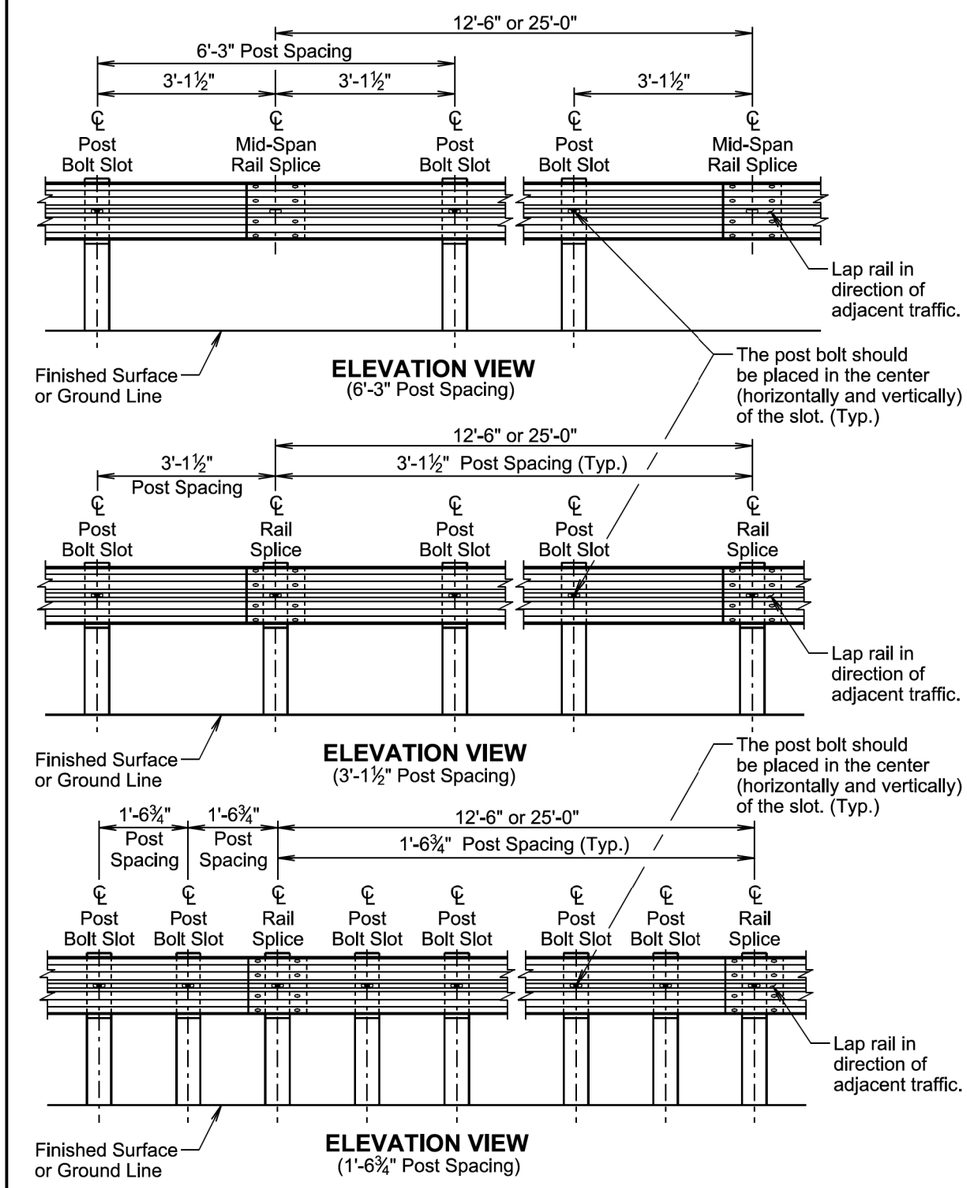


EXPANDED ISOMETRIC VIEW OF TYPE 1 MGS

EXPANDED ISOMETRIC VIEW OF DOUBLE (NESTED) RAIL
(For Information Only, Not to Scale)

April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 3 of 6



ELEVATION VIEW
(6'-3" Post Spacing)

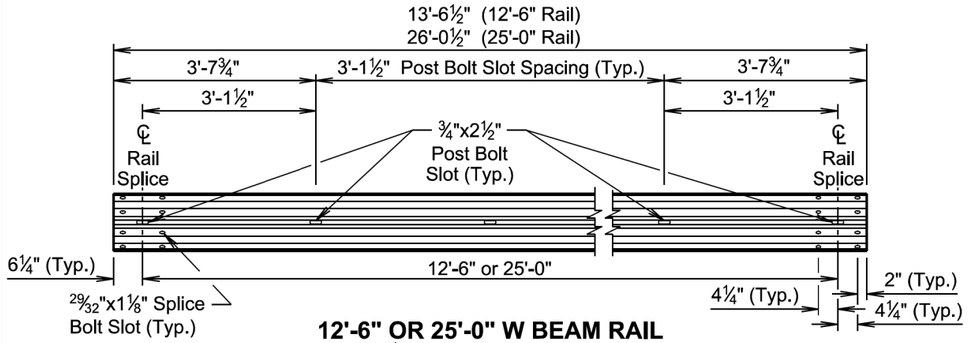
ELEVATION VIEW
(3'-1½" Post Spacing)

ELEVATION VIEW
(1'-6¾" Post Spacing)

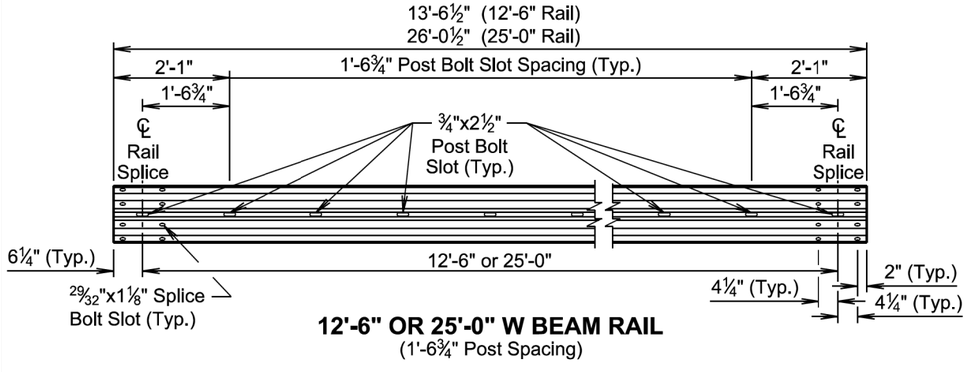
April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 4 of 6

Plot Scale - 1:200
Plotted From - TRPR13462
File - ...\StdPlateSection 05J5.dgn



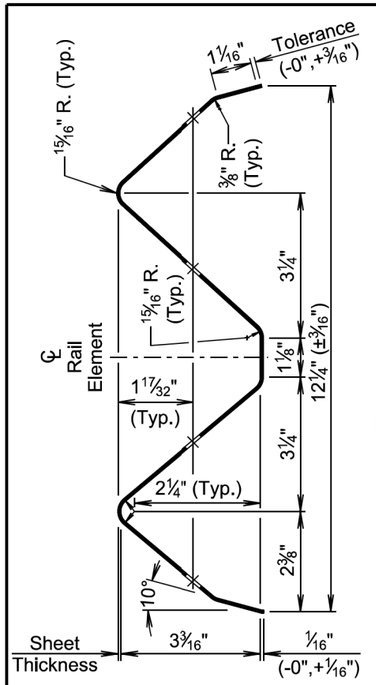
12'-6" OR 25'-0" W BEAM RAIL
(3'-1½" and 6'-3" Post Spacing)



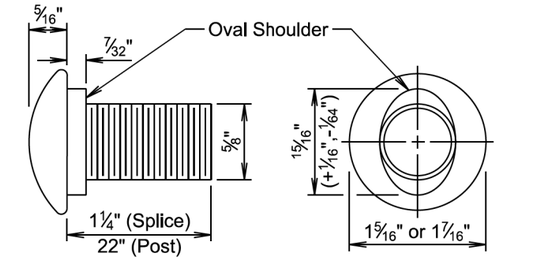
12'-6" OR 25'-0" W BEAM RAIL
(1'-6¾" Post Spacing)

April 8, 2025

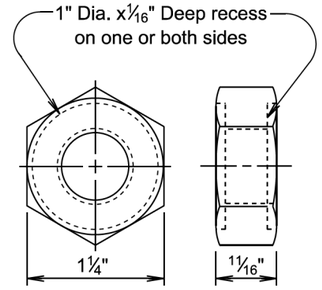
Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 5 of 6



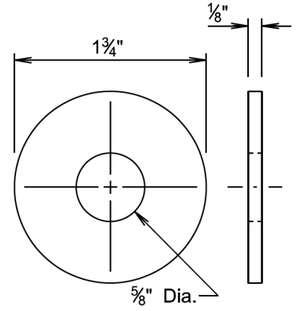
SECTION THROUGH W BEAM RAIL



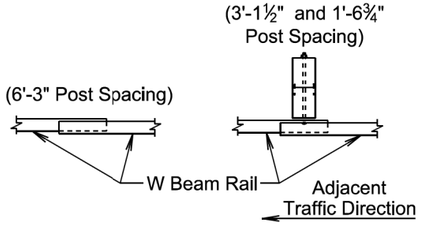
SPLICE BOLT AND POST BOLT
(⅝" Button Head Bolt)



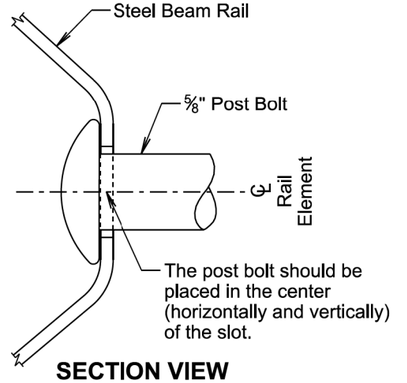
RECESS NUT
(At lap splices, the recess will be placed against the steel rail.)



WASHER
(The washer will be placed between the back side of wood post and the recess nut, see sheet 2 and 3.)



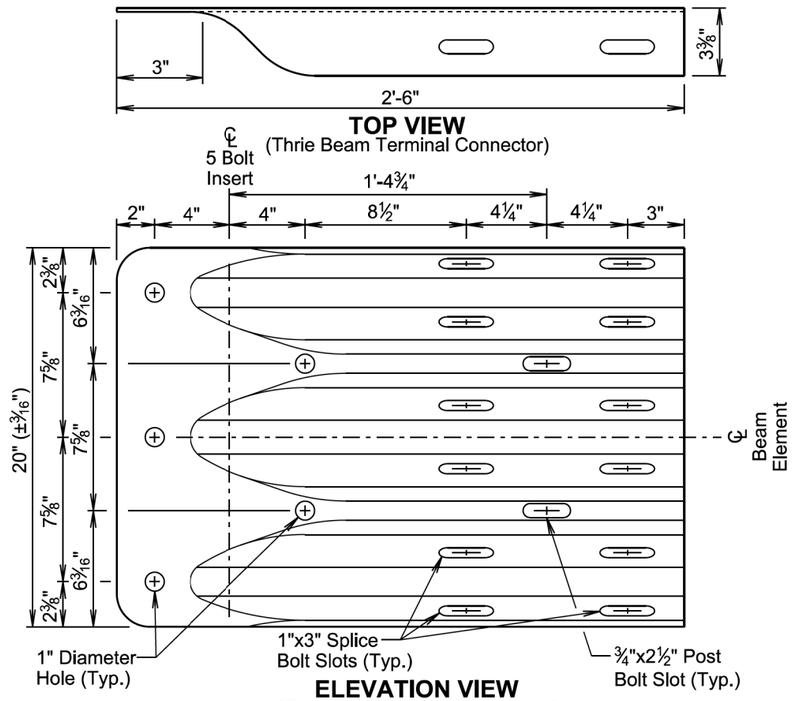
PLAN VIEW
(Lap Splice)
(Lap rail in direction of adjacent traffic.)
(8 splice bolts and 8 recess nuts per splice, NO washers)



SECTION VIEW
(At Post Bolt)

April 8, 2025

Published Date: 2026	SDDOT	MIDWEST GUARDRAIL SYSTEM (MGS)	PLATE NUMBER 630.20
			Sheet 6 of 6



GENERAL NOTES:

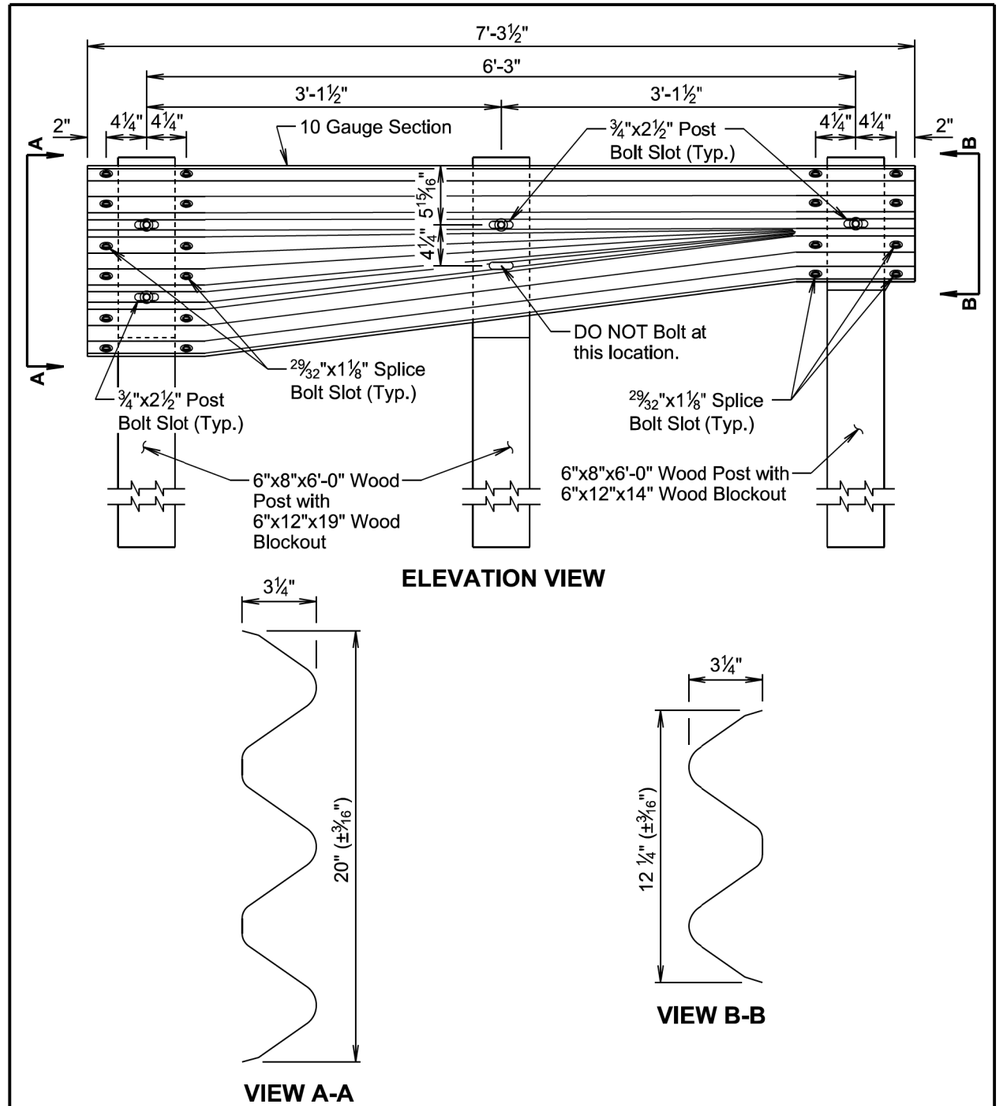
Thrie Beam Terminal Connectors will be 10 gauge.

When the thrie beam terminal connector is used to connect the rail to the bridge or concrete end block, 1" steel washers will be used at the lap splice and the washers will be in direct contact with the 3" slots of the thrie beam terminal connector. See the drawings above for the typical locations of the 1" steel washers.

There will be no separate payment for furnishing and installing the thrie beam terminal connector. All costs for furnishing and installing the thrie beam terminal connector will be incidental to the contract unit price of the respective guardrail item it is attached to.

September 14, 2019

Published Date: 2026	SDDOT	THRIE BEAM TERMINAL CONNECTOR	PLATE NUMBER 630.47
			Sheet 1 of 1

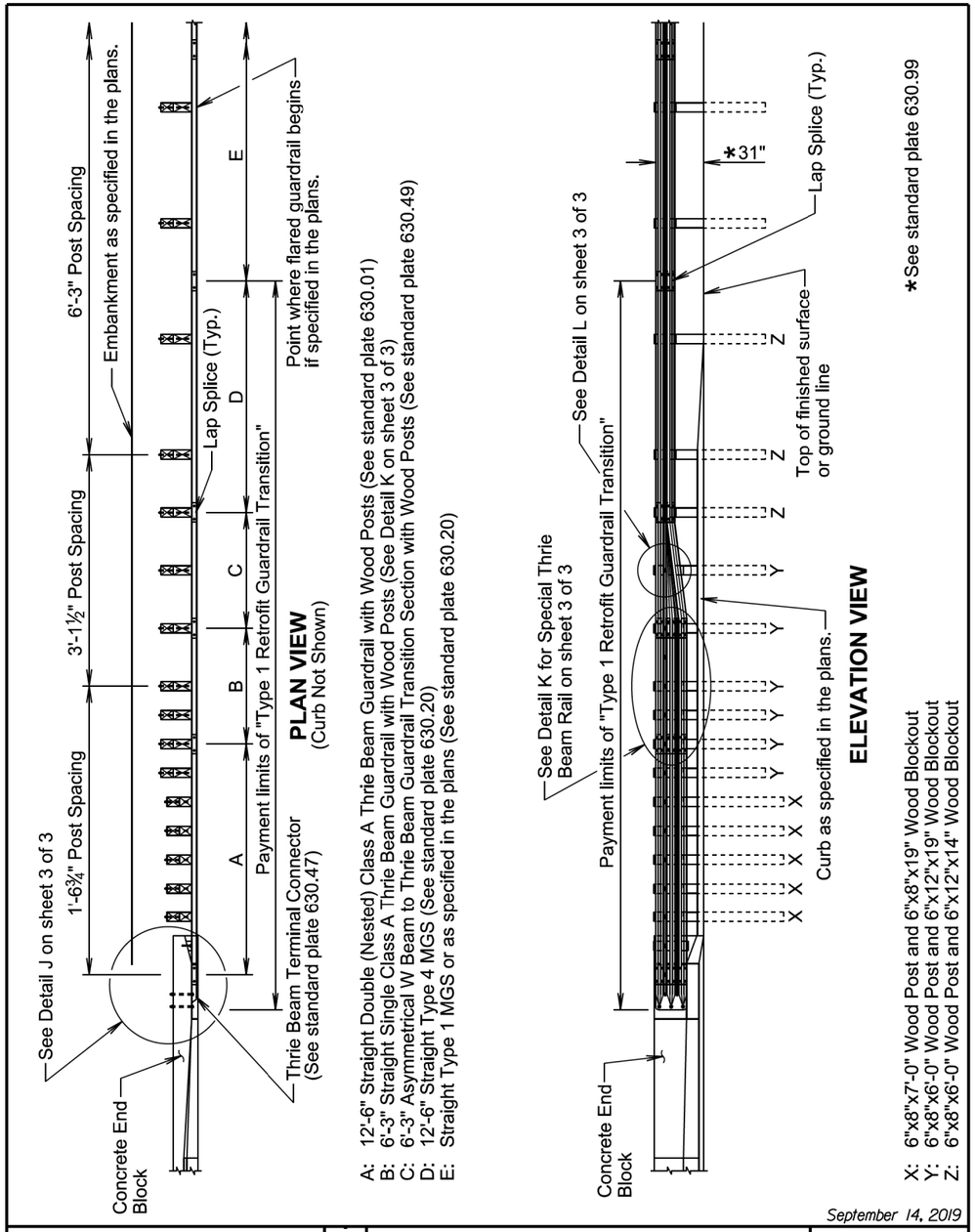


GENERAL NOTES:

All costs for furnishing and installing the asymmetrical W beam to thrie beam guardrail transition including labor, equipment, and materials including two posts, two blocks, asymmetrical W beam to thrie beam transition section, and hardware will be incidental to the contract unit price per each for the corresponding guardrail transition contract item.

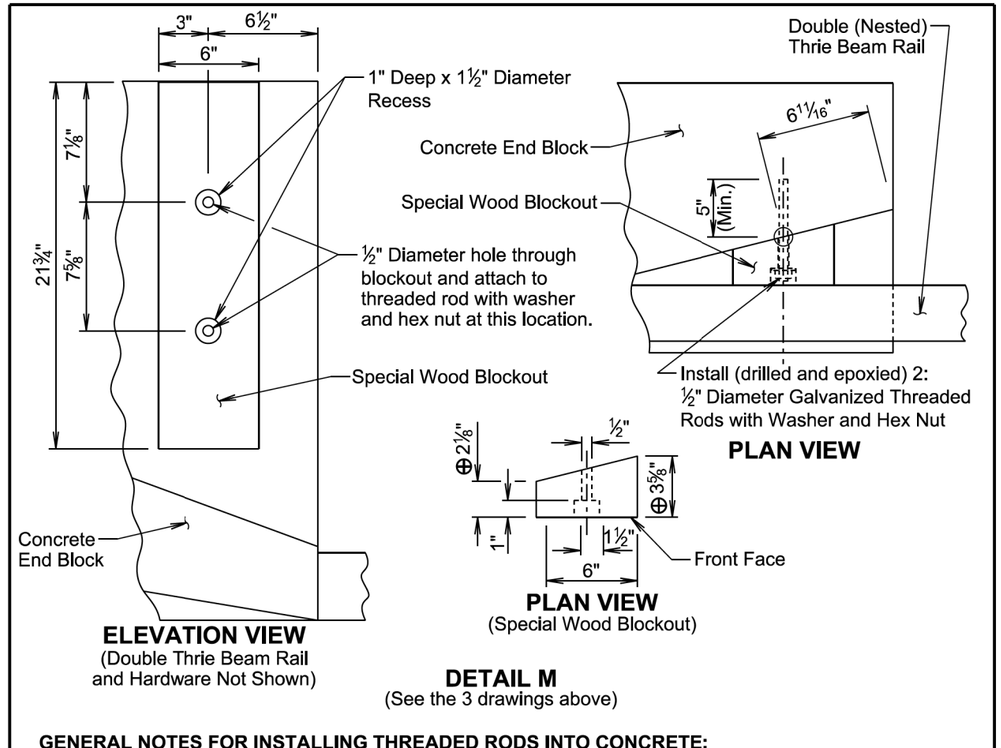
September 14, 2019

Published Date: 2026	SDDOT	ASYMMETRICAL W BEAM TO THRIE BEAM GUARDRAIL TRANSITION SECTION	PLATE NUMBER 630.49
			Sheet 1 of 1



September 14, 2019

Published Date: 2026	SDDOT	TYPE 1 RETROFIT GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.51
			Sheet 1 of 3



GENERAL NOTES FOR INSTALLING THREADED RODS INTO CONCRETE:

⊕ The dimensions shown are estimated based on original construction plans of the concrete end block. The special wood blockout will be cut as necessary such that the front face of the special wood blockout will align with the vertical front face of the concrete end block ±½".

The threaded rods will be ½" diameter and conform to ASTM F1554, Grade 55. The threaded rods will be embedded a minimum of 5" into the concrete.

The diameter of the drilled holes will not be less than ⅛" greater or more than ⅜" greater than the diameter of the threaded rods or as per the Manufacturer's recommendations. The holes will not be drilled using core bits. The drilled holes will be blown out with compressed air using a device that will reach the back of the hole to ensure that all debris or loose material has been removed prior to the epoxy injection.

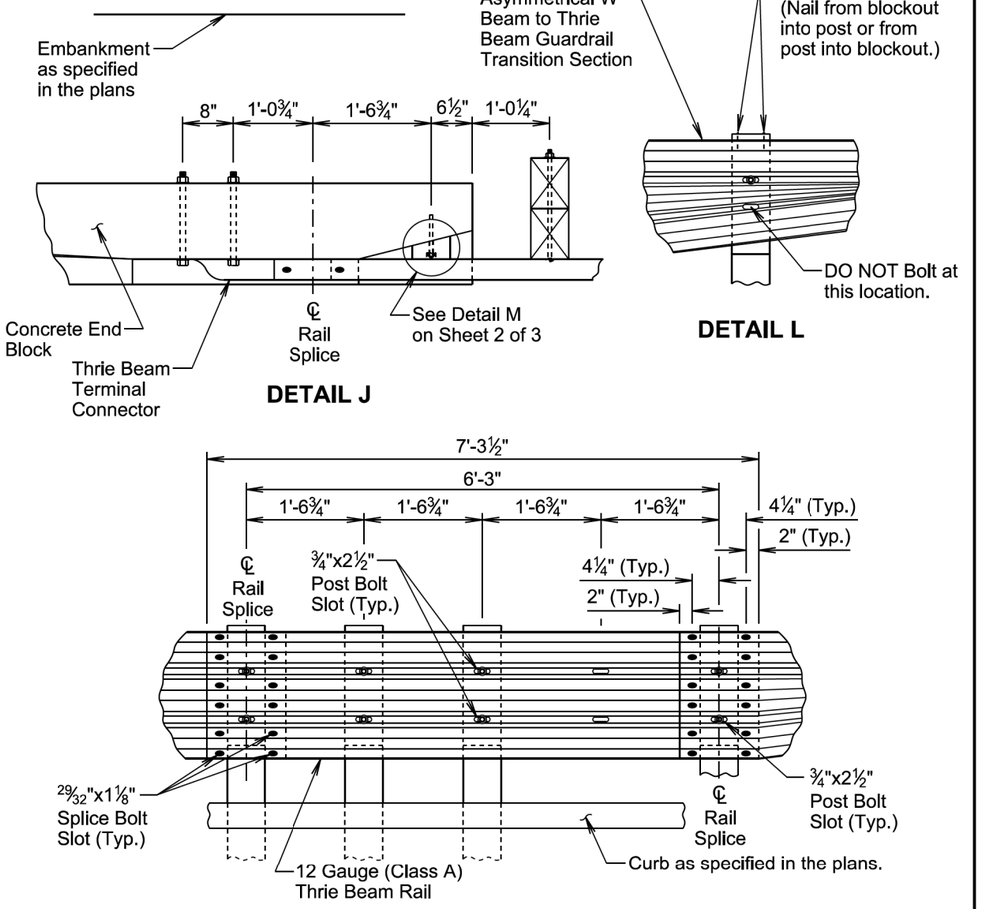
The epoxy resin mixture will be of a type for bonding steel to hardened concrete and will conform to AASHTO M235 Type IV, Grade 3 (Equivalent to ASTM C881, Type IV, Grade 3).

Mix epoxy resin as recommended by the Manufacturer and apply by an injection method as approved by the Engineer. Beginning at the back of the drilled holes, fill the holes ⅓ to ½ full of epoxy, or as recommended by the Manufacturer, prior to insertion of the steel rod. Rotate the steel rod during installation to eliminate voids and ensure complete bonding of the rod. Insertion of the rods by the dipping or painting methods will not be allowed.

Loads will not be applied to the epoxy grouted threaded rods until the epoxy resin has had sufficient time to cure as specified by the epoxy resin Manufacturer.

September 14, 2019

Published Date: 2026	SDDOT	TYPE 1 RETROFIT GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.51
			Sheet 2 of 3



DETAIL K
(Special Thrie Beam Rail)

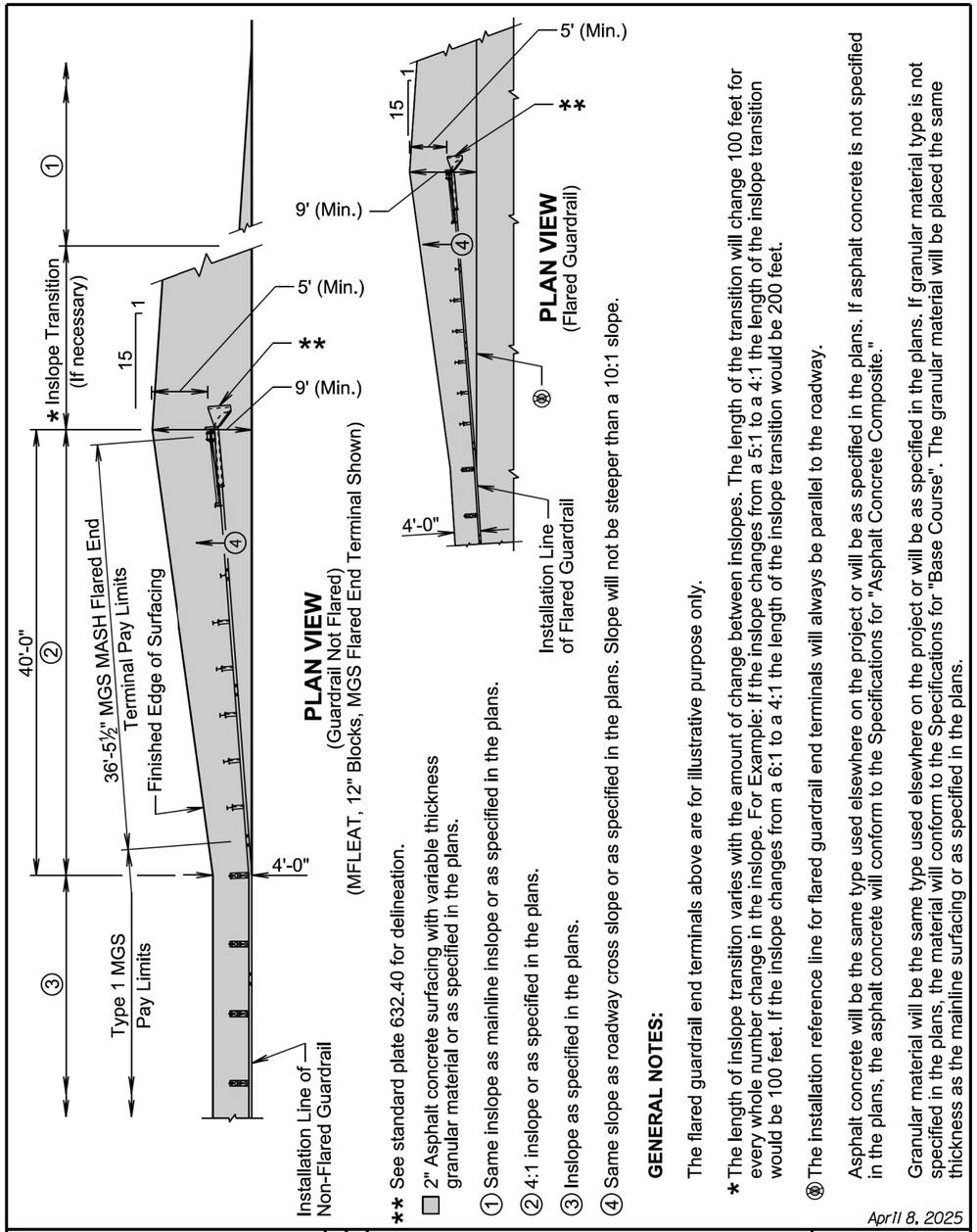
GENERAL NOTES:

Throughout the type 1 retrofit guardrail transition, slots in the rails will be provided as specified in the plans and by the Manufacturer. A drilled hole through the rail is not allowed as a replacement for a slot. If the Contractor must create a slot, a cutting torch or plasma cutter is not allowed. The slot edges will be smooth and free of burrs or notches.

All costs for furnishing and installing the type 1 retrofit guardrail transition including labor, equipment, and materials which includes all rail sections, posts and blockouts, special blockout, hardware, and incidentals will be included in the contract unit price per each for "Type 1 Retrofit Guardrail Transition".

September 14, 2019

Published Date: 2026	SDDOT	TYPE 1 RETROFIT GUARDRAIL TRANSITION (CONCRETE END BLOCK TO MIDWEST GUARDRAIL SYSTEM (MGS))	PLATE NUMBER 630.51 Sheet 3 of 3



** See standard plate 632.40 for delineation.

☐ 2" Asphalt concrete surfacing with variable thickness granular material or as specified in the plans.

① Same inslope as mainline inslope or as specified in the plans.

② 4:1 inslope or as specified in the plans.

③ Inslope as specified in the plans.

④ Same slope as roadway cross slope or as specified in the plans.

GENERAL NOTES:

The flared guardrail end terminals above are for illustrative purpose only.

* The length of inslope transition varies with the amount of change between inslopes. The length of the transition will change 100 feet 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 200 feet. If the inslope changes from a 6:1 to a 4:1 the length of the inslope transition would be 200 feet.

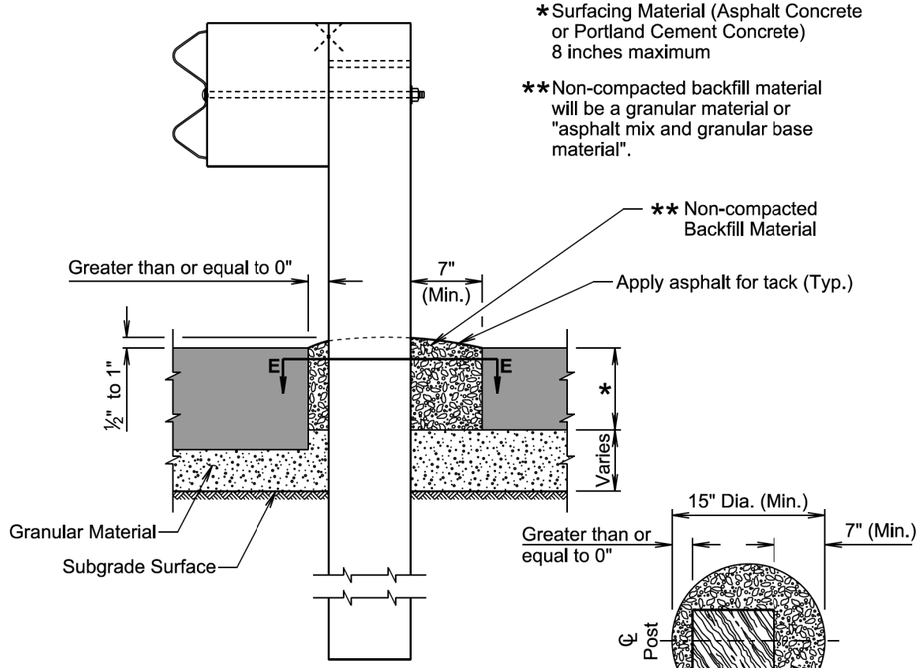
Ⓢ The installation reference line for flared guardrail end terminals will always be parallel to the roadway.

Asphalt concrete will be the same type used elsewhere on the project or will be as specified in the plans. If asphalt concrete is not specified in the plans, the asphalt concrete will conform to the Specifications for "Asphalt Concrete Composite."

Granular material will be the same type used elsewhere on the project or will be as specified in the plans. If granular material type is not specified in the plans, the material will conform to the Specifications for "Base Course". The granular material will be placed the same thickness as the mainline surfacing or as specified in the plans.

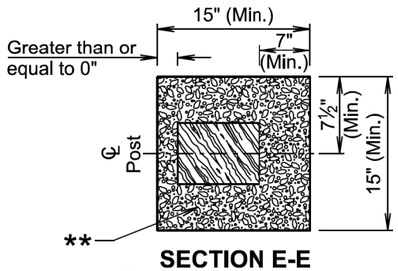
April 8, 2025

Published Date: 2026	SDDOT	EMBANKMENT, SURFACING, AND PAYMENT LIMITS FOR MGS MASH FLARED END TERMINAL	PLATE NUMBER 630.87 Sheet 1 of 2



TRANSVERSE SECTION
(Wood post shown for illustrative purpose only)

SECTION E-E
(Round option for leave-out and backfill limits)
(Wood post shown for illustrative purpose only)



SECTION E-E
(Square option for leave-out and backfill limits)
(Wood post shown for illustrative purpose only)

GENERAL NOTES:

The leave-out limits may be increased to accommodate construction equipment and tolerances.

When posts are installed in augured or dug holes, the backfill material will be compacted to the bottom of the pavement surfacing material to the satisfaction of the Engineer. The backfill material for the thickness of the pavement surfacing material will be non-compacted.

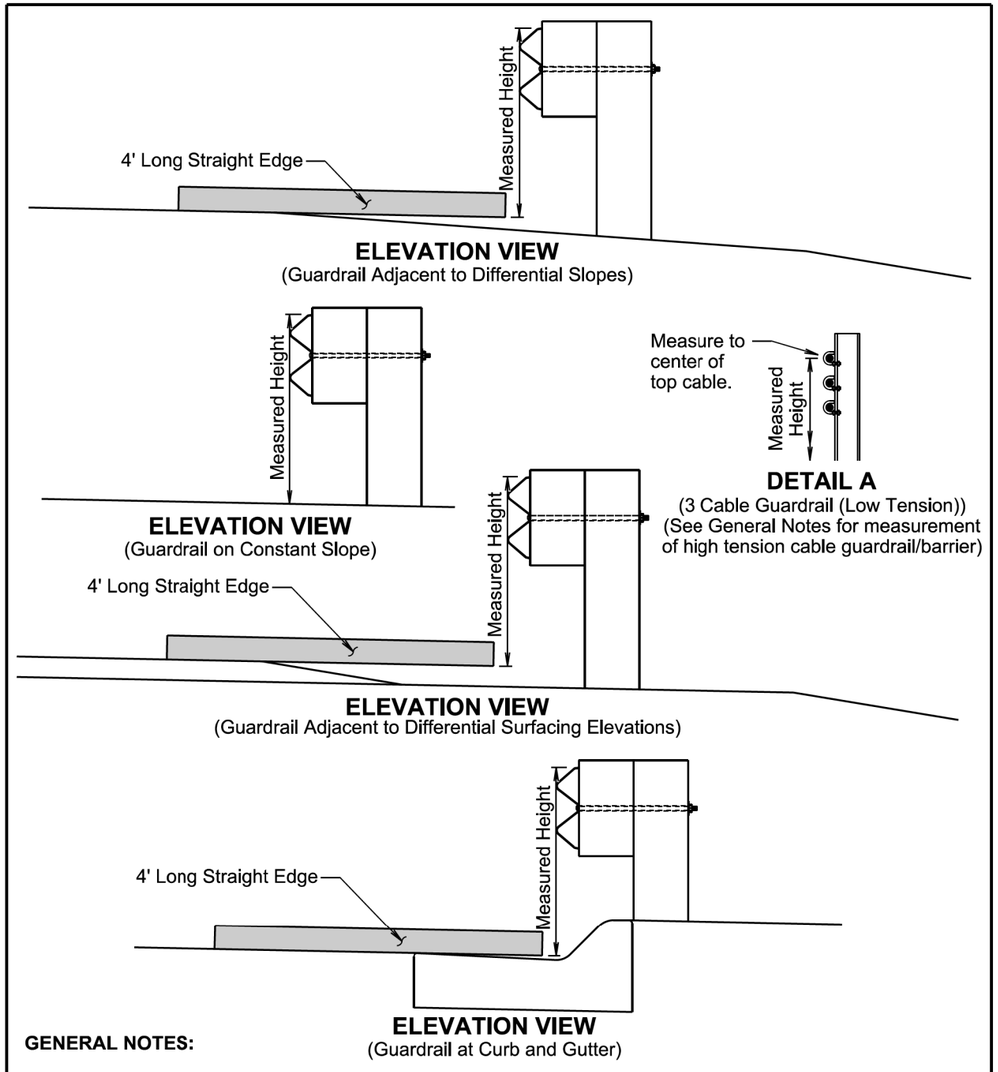
The backfill material will be mounded ½ inch to 1 inch above the top of the adjacent surfacing as illustrated above.

Asphalt for tack will be applied to the surface of the backfill material at the rate of 0.15 to 0.20 gallons per square yard.

All costs for constructing the leave-out including labor, equipment, and materials which includes the backfill material and tack coat will be incidental to the contract unit price for the respective guardrail contract item.

November 19, 2021

Published Date: 2026	SDDOT	GUARDRAIL POST INSTALLED IN ASPHALT CONCRETE OR PORTLAND CEMENT CONCRETE	PLATE NUMBER 630.96
			Sheet 1 of 1



ELEVATION VIEW
(Guardrail Adjacent to Differential Slopes)

ELEVATION VIEW
(Guardrail on Constant Slope)

DETAIL A
(3 Cable Guardrail (Low Tension))
(See General Notes for measurement of high tension cable guardrail/barrier)

ELEVATION VIEW
(Guardrail Adjacent to Differential Surfacing Elevations)

ELEVATION VIEW
(Guardrail at Curb and Gutter)

GENERAL NOTES:

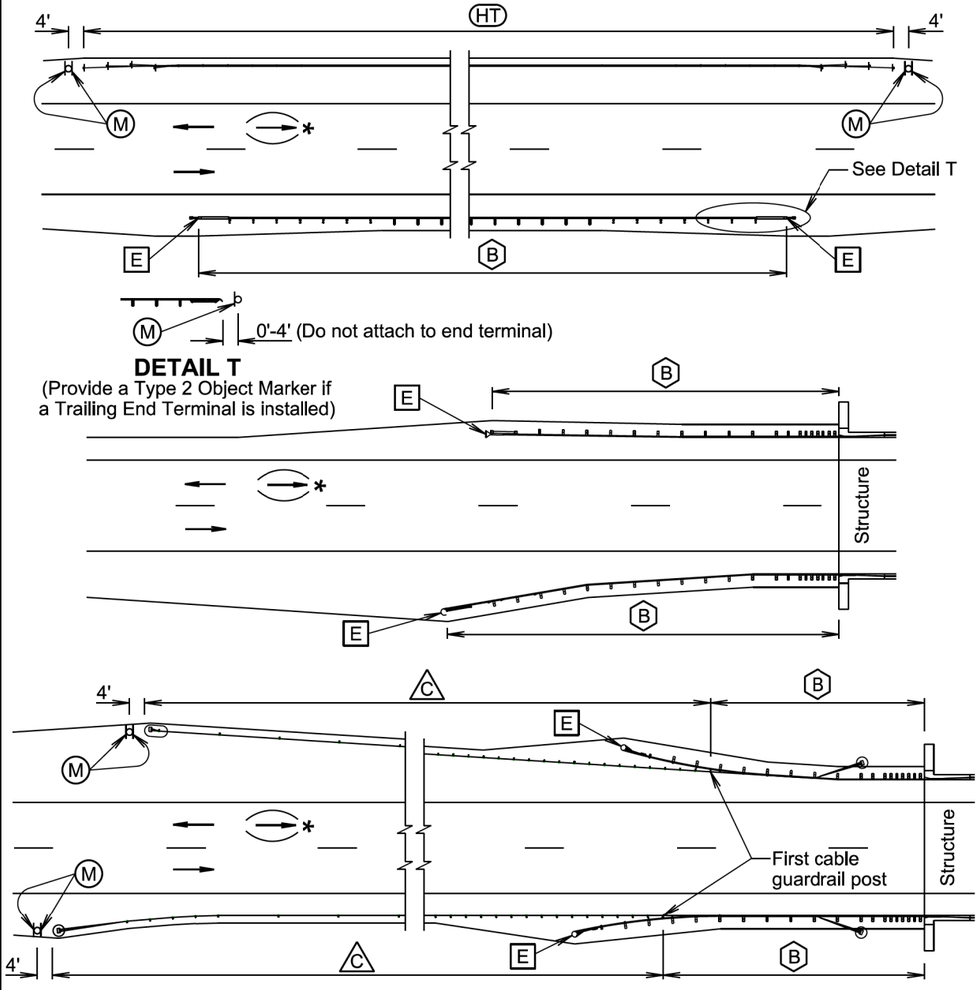
The W Beam guardrail shown is for illustrative purpose. The guardrail height for all types of guardrail systems except for high tension cable guardrail/barrier will be measured in accordance with this standard plate.

When measuring height of 3 cable guardrail (low tension) the height will be measured to the center of the top cable. See Detail A.

The height of high tension cable guardrail/barrier will be measured in accordance with the Manufacturer's installation instructions.

September 14, 2019

Published Date: 2026	SDDOT	MEASURING GUARDRAIL HEIGHT	PLATE NUMBER 630.99
			Sheet 1 of 1



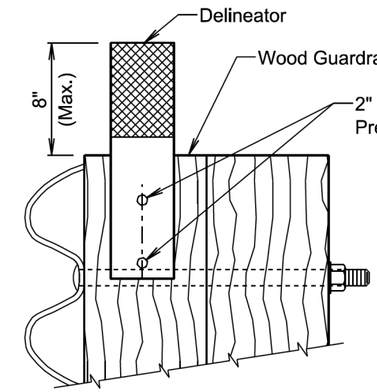
PLAN VIEW
(Typical Guardrail Layouts)

- (B) Steel Beam Guardrail Delineation
- [E] Guardrail End Terminal Object Marker
- <C> 3 Cable Guardrail (Low Tension) Delineation
- (HT) High Tension Cable Guardrail Delineation
- (M) Type 2 Object Marker

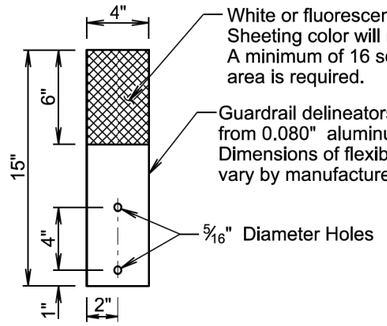
*For two-way traffic, install delineation at the opposite end of structure the same as shown. Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

April 8, 2025

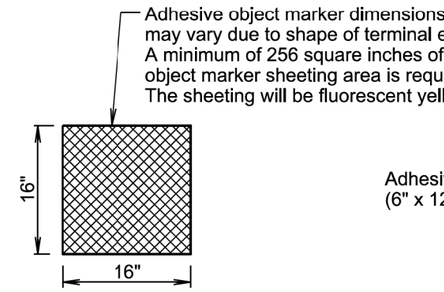
Published Date: 2026	SDDOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 1 of 4



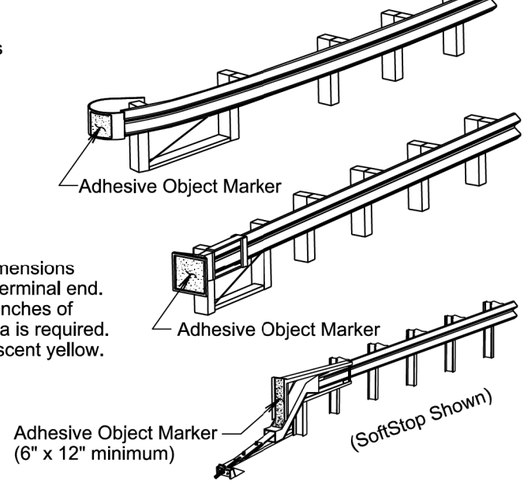
(B) STEEL BEAM GUARDRAIL DELINEATION



DELINEATOR
(For Steel Beam Guardrail)



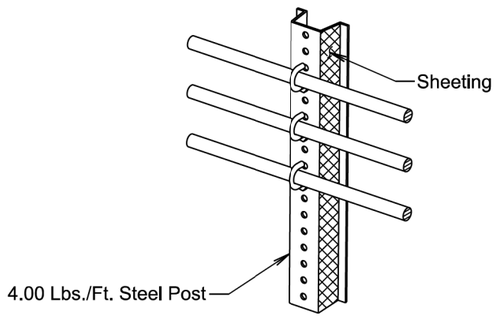
ADHESIVE OBJECT MARKER



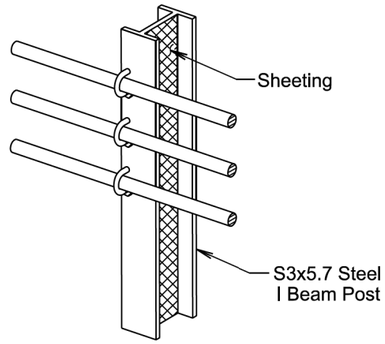
[E] GUARDRAIL END TERMINAL OBJECT MARKER

April 8, 2025

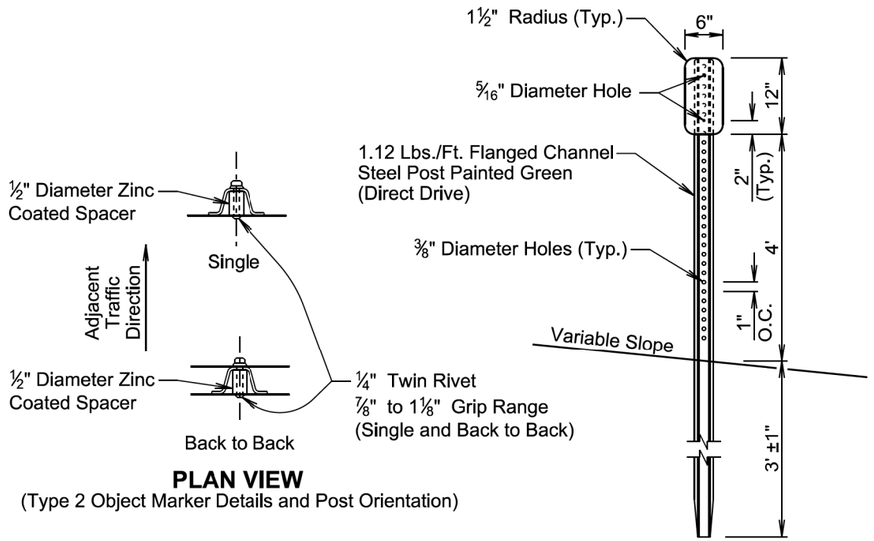
Published Date: 2026	SDDOT	DELINEATION GUARDRAIL	PLATE NUMBER 632.40
			Sheet 2 of 4



Ⓒ 3 CABLE GUARDRAIL (LOW TENSION) DELINEATION



Ⓒ 3 CABLE GUARDRAIL (LOW TENSION) DELINEATION



PLAN VIEW
(Type 2 Object Marker Details and Post Orientation)

ELEVATION VIEW
Ⓜ (Type 2 Object Marker)
(For Marking 3 Cable Guardrail (Low Tension) Anchor, High Tension Cable Guardrail Anchor, and Trailing End Terminal)

April 8, 2025

Published Date: 2026	SDDOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 3 of 4

GENERAL NOTES:

The delineation of high tension cable guardrail will be reflective sheeting placed back to back on every third post cap or cable spacer. Maximum spacing of delineation will not exceed 35 feet. The sheeting will be type XI in conformance with ASTM D4956. The color of the reflective sheeting will be the same as the nearest pavement marking.

The delineators for steel beam guardrail and sheeting on 3 cable guardrail (low tension) posts will be covered with a minimum of 16 square inches of reflective sheeting. The reflective sheeting will be type XI in conformance with ASTM D4956. Along two-way roadways the sheeting will be on both sides of the delineators and guardrail posts and will be white in color. For one-way roadways the sheeting will only be required on the side facing traffic and the color will be the same as the nearest pavement marking, yellow on the left side of the roadway and white on the right side.

When steel beam guardrail is attached to a bridge the first delineator will be attached to the post nearest the bridge.

At bridges with guardrail less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object marker. The spacing between the delineators will be approximately one third of the length of the guardrail.

At bridges with guardrail 200 feet and greater in length, including bridges that have steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

Steel beam guardrail that is not attached to a bridge and is less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object markers. The spacing between the delineators will be approximately one third of the length of the guardrail.

Steel beam guardrail that is not attached to a bridge and is 200 feet and greater in length, including steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

All costs for furnishing and installing single or back to back guardrail delineation on 3 cable guardrail and steel beam guardrail will be included in the contract unit price per each for "Guardrail Delineator".

All costs for furnishing and installing the reflective sheeting on the cable spacers or post caps for the high tension cable guardrail will be incidental to the respective high tension cable guardrail contract item.

An adhesive object marker will be placed on the end of the W beam guardrail or MGS end terminal. The adhesive object marker dimensions may vary due to the shape of the terminal end. A minimum of 256 square inches of object marker reflective sheeting area is required on end terminals with sufficient surface area. Other end terminals (SoftStop) will require an adhesive object marker with a minimum size of 6" x 12". The reflective sheeting will be fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the adhesive object marker will be incidental to various contract items.

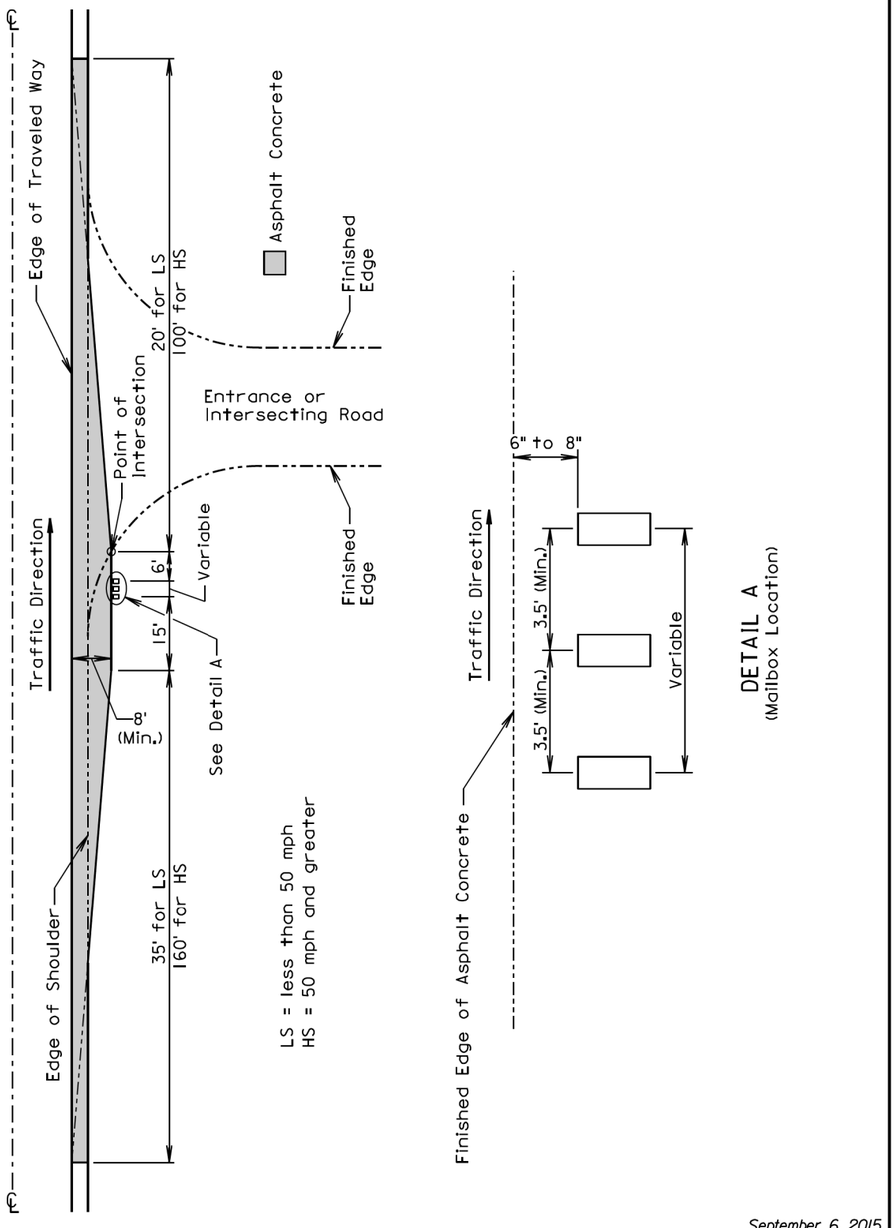
A type 2 object marker will be placed such that the edges of the type 2 object marker and the 3 cable guardrail (low tension) anchor, high tension cable guardrail anchor, or the trailing end terminal that are nearest to the roadway will be installed in line with the same lateral offset from the traveled way at the location as noted on sheet 1 of this standard plate. The type 2 object marker (6" x 12") will have fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the type 2 object marker including the steel post, 6" x 12" reflective panel, and hardware will be included in the contract unit price per each for "Type 2 Object Marker" for single-sided and "Type 2 Object Marker Back to Back" for back to back type 2 object markers.

April 8, 2025

Published Date: 2026	SDDOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 4 of 4

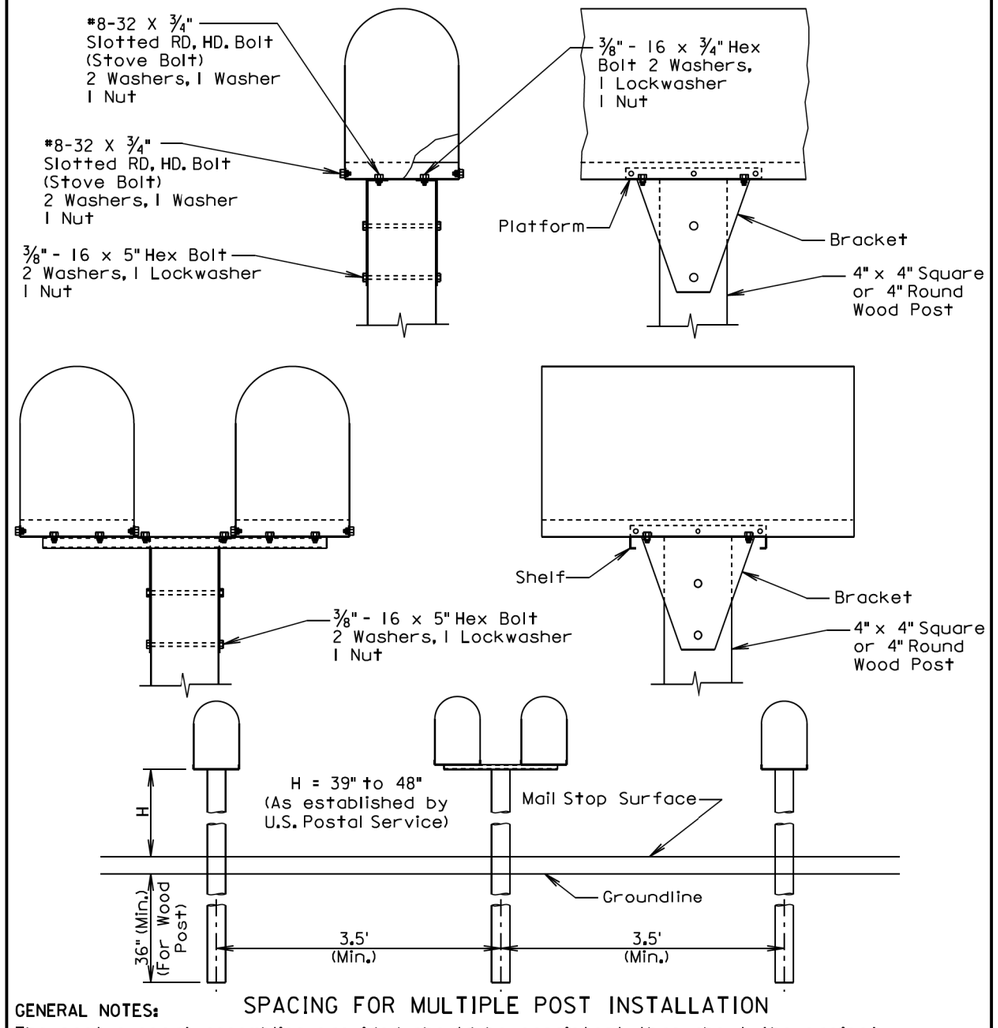
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0046(73)366 & P-CR 0011(152)34	F81	F82

Plotting Date: 08/25/2025



September 6, 2015

Published Date: 2026	SDDOT	MAILBOX TURNOUT	PLATE NUMBER 900.01
			Sheet 1 of 1



SPACING FOR MULTIPLE POST INSTALLATION

GENERAL NOTES:

The post support assemblies provided should be consistant throughout the project.

Single and double mailboxes may be in any sequence.

Post support assemblies shall be one from the approved products list, a 4"x4" or 4" round wood post, or an alternate post support assembly that meets the test level 3 crash testing requirements of NCHRP 350 or MASH.

Alternate mailbox support assemblies shall be approved by the Engineer prior to installation. The Contractor shall provide the Engineer written certification that the mailbox support assembly has met the crash testing requirements and will be installed in accordance with the manufacturer's installation instructions.

September 6, 2013

Published Date: 2026	SDDOT	SINGLE AND DOUBLE MAILBOX ASSEMBLIES	PLATE NUMBER 900.02
			Sheet 1 of 1

Plot Scale - 1:200

Plotted From - TRPR13462

File - ...\StdPlateSection 05J5.dgn

Published Date: 2026

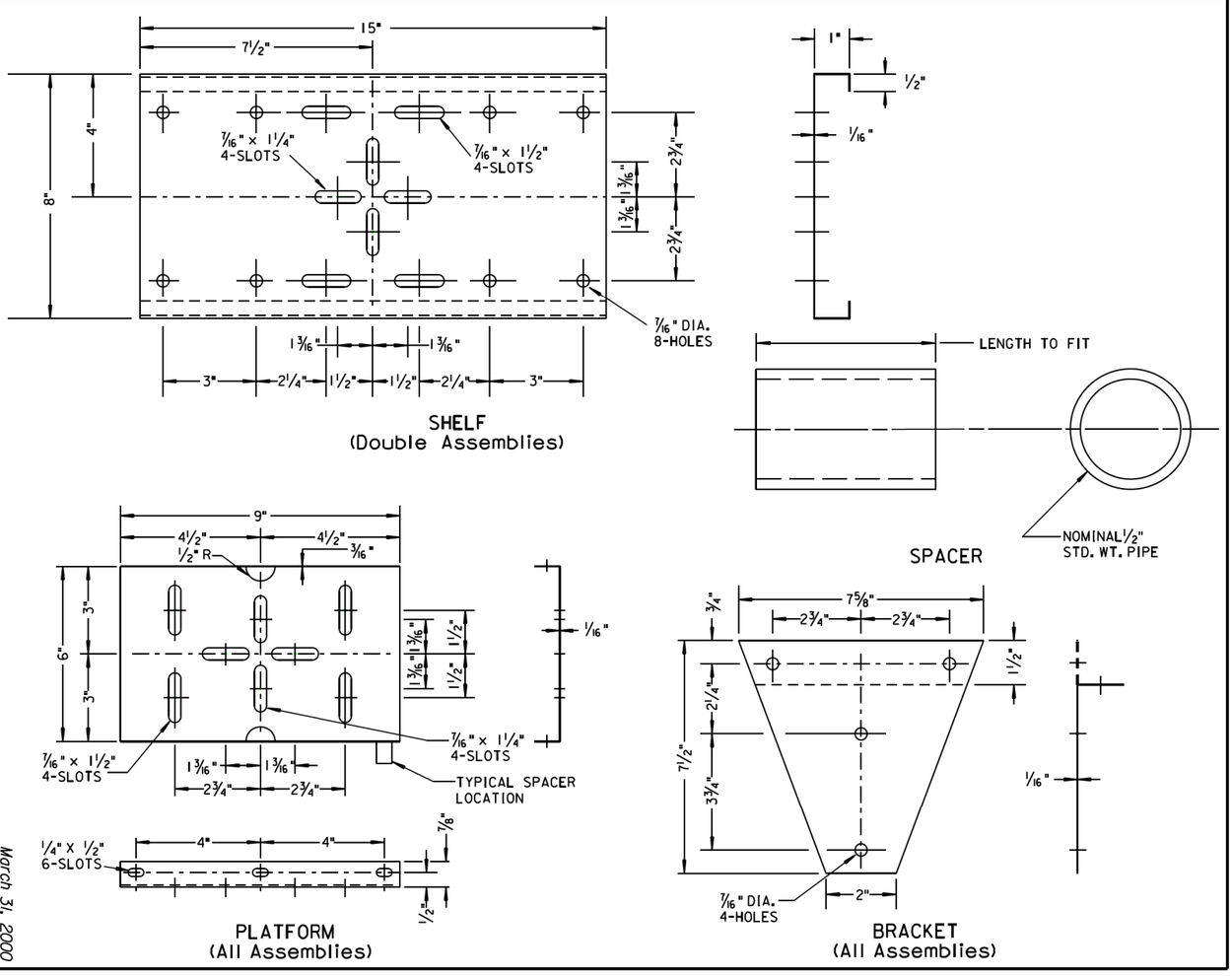
SDDOT

MAILBOX SUPPORT HARDWARE

PLATE NUMBER 900.03

March 31, 2000

Sheet 1 of 1



STATE OF SOUTH DAKOTA

PROJECT P-CR 0046(73)366 & P-CR 0011(152)34

SHEET F82

TOTAL SHEETS F82

Plotting Date: 08/25/2025