SECTION B: GRADING PLANS

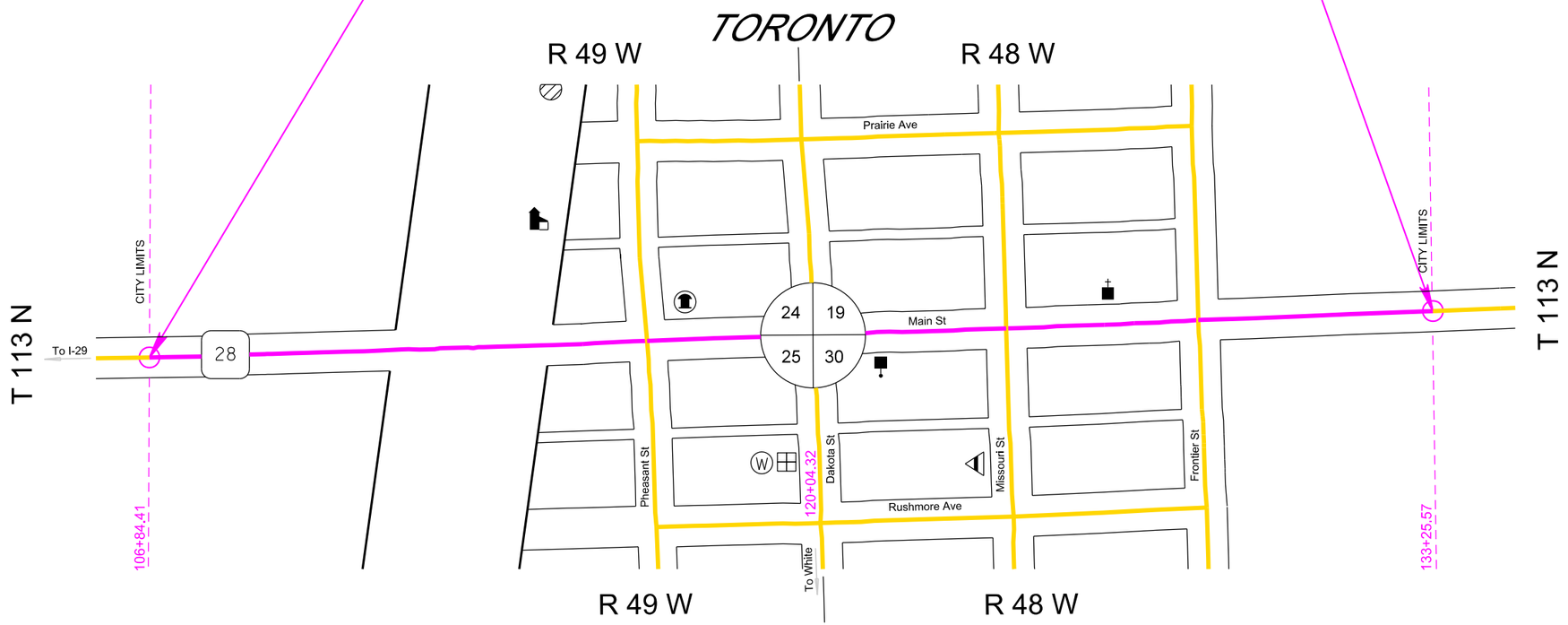
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B1	B72

Plotting Date: 09/09/2025 Revised 08/27/2025 AR

INDEX OF SHEETS

BEGIN P-CR 0028(47)367
Station 106+84.40

END P-CR 0028(47)367
Station 133+50.00



Plot Scale - 1:200
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SECTION B ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B2	B72

Plotting Date: 01/07/2026 Revised 01/07/2026 AR

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3220	Reestablish Right-of-Way and Property Corner	32	Each
009E3225	Reestablish Public Land Survey System Corner	1	Each
009E3230	Grade Staking	0.500	Mile
009E3250	Miscellaneous Staking	0.500	Mile
009E3280	Slope Staking	0.500	Mile
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E4300	Construction Schedule, Category III	Lump Sum	LS
100E0020	Clear and Grub Tree	3	Each
110E0300	Remove Concrete Curb and/or Gutter	2,203	Ft
110E0400	Remove Drop Inlet	6	Each
110E1050	Remove Asphalt Concrete Approach Pavement	215.7	SqYd
110E1100	Remove Concrete Pavement	145.5	SqYd
110E1130	Remove Concrete Driveway Pavement	376.6	SqYd
110E1140	Remove Concrete Sidewalk	1,827.7	SqYd
120E0010	Unclassified Excavation	28,977	CuYd
120E0900	Contaminated Material Excavation	100	CuYd
120E1000	Muck Excavation	53	CuYd
120E2000	Undercutting	12,083	CuYd
120E6100	Water for Embankment	175.2	MGal
250E0020	Incidental Work, Grading	Lump Sum	LS
270E0040	Salvage and Stockpile Asphalt Mix and Granular Base Material	12,853.3	Ton
380E3520	6" PCC Approach Pavement	301.1	SqYd
380E3540	8" PCC Approach Pavement	461.1	SqYd
380E4050	8" PCC Fillet Section	149.5	SqYd
450E0122	18" RCP Class 2, Furnish	1,488	Ft
450E0130	18" RCP, Install	1,488	Ft
450E0142	24" RCP Class 2, Furnish	476	Ft
450E0150	24" RCP, Install	476	Ft
450E0162	30" RCP Class 2, Furnish	684	Ft
450E0170	30" RCP, Install	684	Ft
450E0182	36" RCP Class 2, Furnish	90	Ft
450E0190	36" RCP, Install	90	Ft
450E2028	36" RCP Flared End, Furnish	1	Each
450E2029	36" RCP Flared End, Install	1	Each
450E2204	30" RCP Sloped End, Furnish	1	Each
450E2205	30" RCP Sloped End, Install	1	Each
450E2304	18" RCP Safety End, Furnish	2	Each
450E2307	18" RCP Safety End, Install	2	Each
450E4759	18" CMP 16 Gauge, Furnish	64	Ft
450E4760	18" CMP, Install	64	Ft
450E4779	30" CMP 16 Gauge, Furnish	52	Ft

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
450E4780	30" CMP, Install	52	Ft
450E5406	18" CMP Safety End, Furnish	2	Each
450E5407	18" CMP Safety End, Install	2	Each
450E5414	30" CMP Safety End, Furnish	2	Each
450E5417	30" CMP Safety End, Install	2	Each
450E5559	48" CMP Arch 14 Gauge, Furnish	48	Ft
450E5560	48" CMP Arch, Install	48	Ft
450E6032	48" CMP Arch Safety End, Furnish	2	Each
450E6035	48" CMP Arch Safety End, Install	2	Each
451E6080	Adjust Water Valve Box	21	Each
462E0100	Class M6 Concrete	77.6	CuYd
470E0020	Pipe Handrail	76.0	Ft
480E0100	Reinforcing Steel	10,864	Lb
480E0200	Epoxy Coated Reinforcing Steel	409	Lb
600E0300	Type III Field Laboratory	1	Each
650E0080	Type B68 Concrete Curb and Gutter	1,894	Ft
650E1080	Type F68 Concrete Curb and Gutter	881	Ft
650E3060	Type B6 Concrete Curb	80	Ft
650E4680	Type P8 Concrete Gutter	604	Ft
650E6080	8" Concrete Valley Gutter	172	Ft
651E0040	4" Concrete Sidewalk	8,570	SqFt
651E0060	6" Concrete Sidewalk	3,362	SqFt
651E0540	4" Colored Concrete Sidewalk	5,242	SqFt
651E0560	6" Colored Concrete Sidewalk	1,464	SqFt
651E7000	Type 1 Detectable Warnings	300	SqFt
670E1200	Type B Frame and Grate	34	Each
670E2200	Type C Frame and Grate	7	Each
670E5400	Precast Drop Inlet Collar	34	Each
720E1010	PVC Coated Bank and Channel Protection Gabion	16.5	CuYd
831E0110	Type B Drainage Fabric	49	SqYd
831E0300	Reinforcement Fabric (MSE)	3,194	SqYd

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment minus Waste.

The estimated cubic yards of excavation and/or embankment required to construct outlet ditches, ditch blocks, and approaches are included in the earthwork balance notes on the profile sheets.

Special ditch grades and other sections of the roadway different than the typical sections will be constructed to the limits shown on the cross sections. If significant changes to the cross sections are necessary during construction, the Engineer will contact the Designer for the proposed change.

A copy of the subsurface investigation for this project is available for review at the Aberdeen Region and Watertown Area offices.

TYPE III FIELD LABORATORY

The Contractor will provide high-speed broadband internet connection to the field lab. The multiport internet connection may be hardwired, through a cellular method, or other approved service that allows Wi-Fi connection. Prior to obtaining the internet connection, the Contractor will submit the internet connection's technical data to the Area Office to check for compatibility with the state's computer equipment. The Contractor's personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer. The internet service will be incidental to the contract unit price per each for "Type III Field Laboratory".

UTILITIES

The Contractor will be aware that the existing utilities shown in the plans were surveyed prior to the design of this project and might have been relocated or replaced by a new utility facility prior to construction of this project, might be relocated or replaced by a new utility facility during the construction of this project, or might not require adjustment and may remain in its current location. The Contractor will contact each utility owner and confirm the status of all existing and new utility facilities. The utility contact information is provided elsewhere in the plans or bidding documents.

GENERAL GEOLOGY

The project alignment traverses glacial terrain typical of eastern South Dakota. Included within this terrain may be areas of loess, shale, sand, gravel, glacial till and boulder till. As is the case with most glacial terrain, the materials throughout the project can vary greatly in a short distance.

CLASSIFICATION OF EXCAVATION

Most of the material encountered should be able to be excavated using conventional methods associated with normal Unclassified Excavation. Muck Excavation will be required at the areas shown in the plans or as directed by the Engineer.

EXCESS MATERIAL FROM PIPE AND DROP INLET INSTALLATION

The excess material which will result from installing drop inlets and pipe culverts which are larger than previously existed or where no such features previously existed is not included in the Waste quantity listed in the Table of Excavation Quantities. Disposal of this excess material will be incidental to the corresponding contract pay items which generated the excess material.

CLEAR AND GRUB TREE

The Contractor will remove trees located outside the existing sidewalk at the following general locations. There are 3 tree removals located outside the existing sidewalk at the locations in the table below. No additional trees outside of the existing sidewalk will be removed without the approval of the Engineer and care should be taken to not disturb them. All costs to complete this work will be included in the contract unit price per each for "Clear and Grub Tree".

TABLE OF CLEAR AND GRUB TREE

Station	L/R	Quantity (Each)
123+13	L	1
125+21	L	1
126+86	L	1
	Total:	3

REINFORCEMENT FABRIC (MSE)

Soft and unstable subgrade conditions will likely be encountered throughout the project. Any unstable areas should be reworked and recompacted. If, in the opinion of the Engineer, the subgrade will not stabilize by this method, Reinforcement Fabric (MSE) and granular material may be used. Contact the Geotechnical Engineering Activity (605-773-3725) for assistance should the use of Reinforcement Fabric (MSE) and additional granular material become necessary.

3,194 square yards (50' x 500') of Reinforcement Fabric (MSE) and 1,750 tons (50' x 500' x 1') of base course is included in the materials quantities for bidding purposes. The Reinforcement Fabric (MSE) quantity has been increased by 15% to account for overlaps. These quantities can be adjusted or eliminated by CCO, depending on field conditions.

Section B	Section F
Reinforcement Fabric (MSE)	Base Course
3,194 sq.yds. (80'x500')	1,750 tons (50'x500'x1.0')

UNSTABLE MATERIAL EXCAVATION

The areas of unstable material excavation are drawn on the cross sections with a normal depth of 2 feet. The estimated quantity of 54 cubic yards of unstable material excavation will be paid for at the contract unit price per cubic yard for "Unclassified Excavation".

All areas designated as Unstable will be excavated. The unstable material excavated on this project will be placed outside the subgrade shoulder in fill sections or stockpiled and used as topsoil.

Field measurement of unstable material excavation will not be made. However, if there are additional areas of unstable material excavation other than what is shown in the plans, the Engineer will direct removal of these areas and the additional areas will be measured according to the Engineer.

TABLE OF UNSTABLE MATERIAL EXCAVATION

Station	to	Station	L/R	Depth (Ft)	Quantity (CuYd)
109+50		110+10	R	2	54
				Total:	54

MUCK EXCAVATION

The areas of muck excavation are drawn on the cross sections with a normal depth of 3 feet. The estimated quantity of 53 cubic yards of muck excavation will be paid for at the contract unit price per cubic yard for "Muck Excavation".

Muck excavation consists of the removal of highly organic and/or highly saturated material from the designated areas shown on the cross sections. Highly organic muck material will not be used in the embankment but may be used as topsoil. Non-organic muck material may be used as embankment outside of the fill subgrade shoulder if it is properly handled and dried prior to placement in the embankment.

Field measurement of muck excavation will not be made unless the Engineer orders additional excavation, or when the Engineer determines, in accordance with Section 120.3 A.1 of the Specifications, that the classification of excavation be changed.

If the areas designated as muck excavation can be removed with similar equipment and procedures as used for unclassified excavation, the material will be measured and paid for as "Unclassified Excavation".

TABLE OF MUCK EXCAVATION

Station	to	Station	L/R	Depth (Ft)	Quantity (CuYd)
110+50		110+95	L	3	53
				Total:	53

WASTE EXCAVATION

The quantity of waste in the Table of Excavation Quantities by Balances that is muck excavation or excess excavation material will be disposed of at a Contractor furnished site acceptable to the Engineer.

IN PLACE SURFACING AND GRANULAR MATERIAL

Test holes were drilled to check the depth of in-place surfacing. A log of these test holes is shown below.

Station	Centerline Offset (ft)	Thickness (in) AC	Thickness (in) Base Course
110+00	8.0 LT	6.0	18.0
115+00	8.2 RT	5.0	15.0
119+00	9.2 RT	5.0	13.0
124+50	7.2 RT	8.0	12.0
127+50	8.6 LT	9.0	8.0
133+00	5.8 RT	6.0	11.0

SHRINKAGE FACTOR: Embankment +20%

TABLE OF EXCAVATION QUANTITIES BY BALANCES

Station to	Station	Excavation (CuYd)	*Undercut (CuYd)	* Muck Exc. (CuYd)	Total Excavation (CuYd)	** Exc. Waste (CuYd)	** Waste (CuYd)
106+85	133+25	8,851	11,374	53	20,278	2,653	53
	Totals:	8,851	11,374	53	20,278	2,653	53

* Intersecting street and sidewalk undercut is not included in earthwork balances.
* The quantities for these items are in the Estimate of Quantities under their respective contract items.
** The quantities for these items are for information only. Waste is excess excavation material to be disposed of by the Contractor at a site approved by the Engineer.

TABLE OF UNCLASSIFIED EXCAVATION

	(CuYd)
Excavation	8,851
Undercut	12,083
Topsoil	1,242
Salvaged Asphalt Mix and Granular Base Material (from cut sections)	6,801
Total	28,977

SOIL BORING INFORMATION

Station	Offset (ft)	Depth (ft)	Description	Initial Water Level (ft)	Final Water Level (ft)*	Time Between Reading (hrs)
110+00	8.0 LT	2.0-9.0 9.0-15.0	Brown clay sand Brown sandy clay	Dry	5.9	98
115+00	8.2 RT	1.8-3.8 3.8-15.0	Black clay silt Brown to gray silt clay	Dry	7.2	100
119+00	8.2 RT	1.6-4.5 4.5-10.0 10.0-15.0	Black to brown clay silt Brown sandy clay Brown silt clay	Dry	7.4	101
124+50	7.2 RT	1.8-3.8 3.8-20.0	Black clay silt Brown clay sand	Dry	5.5	118
127+50	8.6 LT	2.1-3.9 3.9-5.0 5.0-20.0	Black to gray clay sand Black clay silt Brown silty sand	11.0	11.0	120
133+00	5.8 RT	1.5-10.0	Black to gray silt clay	Dry	Dry	122

*Water levels as of July-August 2022

Free water was encountered in borings throughout most of the project at levels that will be higher than or near the bottom of the new storm sewer trenches. Proper protective measures will be required for the storm sewer construction. Seasonal changes may affect the groundwater elevations. Sumps and/or other dewatering methods will be required.

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

When plan quantities are used for payment, the Unclassified Excavation quantity will be used for final payment and the plans quantity of Topsoil and salvaged surfacing items listed in the Table of Unclassified Excavation will not be adjusted according to field measurements.

The following paragraphs are general earthwork information and information in regard to computing the Unclassified Excavation quantity when final cross sections are taken in the field:

The Unstable Material Excavation quantity is included in the Excavation quantity listed in the Table of Unclassified Excavation. When finaling a project, the Unstable Material Excavation quantity will be added to the Excavation quantity to compute the Unclassified Excavation quantity.

The Topsoil quantity in the Table of Unclassified Excavation is an estimate. When finaling a project, the total quantity of field measured Topsoil will be used in place of the estimated Topsoil quantity. The quantity of Topsoil from the cuts will be paid for twice as Unclassified Excavation, as it will be in both the Excavation and Topsoil quantities. This will be full compensation for Excavation, which includes necessary undercutting to provide space for placement of topsoil.

The Excavation quantities from individual balances and the Table of Unclassified Excavation have been reduced by the volume of in place surfacing that will be removed and/or salvaged.

Salvaged Asphalt Mix and Granular Base Material will be paid for at the contract unit price per ton and is also included in and paid for once as Unclassified Excavation. As shown in the Table of Unclassified Excavation the estimated quantity of 5,698 cubic yards of Salvaged Asphalt Mix and Granular Base from fill sections will be added to the Excavation quantity to determine the Unclassified Excavation quantity. When finaling a project, the quantity of Salvaged Asphalt Mix and Granular Base Material from fill sections will not be adjusted according to field measurements. The quantity of Salvaged Asphalt Mix and Granular Base Material from cut sections will not be added to the Excavation quantity as it is already in the cuts on the final cross sections.

HAUL

There is no defined haul for this project.

UNDERCUTTING

In all cut sections, the earthen subgrade will be undercut 2 feet below the earthen subgrade surface. The undercut will extend from behind the curb to behind the opposite curb as needed for paving operations. Shallow embankment sections, fills less than 2 feet in height measured at the finished subgrade shoulders, will be undercut to ensure a minimum 2-foot height of earth embankment for the entire width of the roadbed. The undercut material or other suitable material, as directed by the Engineer, will then be replaced and recompacted to the density specified for the section being constructed.

Intersecting roads will be undercut to the same depth as the Mainline roadway out to the limits of asphalt concrete or PCC pavement placement on the intersecting road unless specified otherwise. Quantities are included in the "Table of Undercutting".

The Contractor will be responsible to determine the condition of the adjacent building foundations and determine construction methods that will not damage the buildings. The Contractor will be responsible for any damage to the buildings resulting from highway construction activities.

Sidewalk placed adjacent to buildings at the locations listed in the "Table of Undercutting" will be undercut 1.0 foot below the bottom of the granular cushion material for the sidewalk. Limits of this undercut are from the edge of the roadway undercut to the outside edge of the sidewalk (edge of building). The undercut material or other suitable material will then be replaced and compacted to the density specified for the adjacent roadway undercut as directed by the Engineer. Quantities are included in the "Table of Undercutting".

The plan shown quantity will be the basis of payment. However, if there are additional areas of undercut other than what is shown in the plans, the Engineer will direct removal of these areas and the additional areas will be measured according to the Engineer.

TABLE OF UNDERCUTTING QUANTITIES URBAN

Station	to	Station	Description	Quantity (CuYd)
106+85		133+25	SD Hwy 28	11,374
116+75 L			Int. Street	78
116+75 R			Int. Street	50
120+04 L			Int. Street	58
120+04 R			Int. Street	38
123+85 L			Int. Street	76
123+85 R			Int. Street	39
127+68 L			Int. Street	139
127+68 R			Int. Street	122
117+12-51' R		117+52-38' R	Sidewalk	11
117+78-40' R		117+89-40' R	Sidewalk	2
117+07-52' L		117+07-36' L	Sidewalk	3
118+19-40' L		118+83-41' L	Sidewalk	17
118+89-39' R		119+62-39' R	Sidewalk	19
118+97-41' L		119+20-41' R	Sidewalk	9
120+38-53' L		120+67-40' L	Sidewalk	11
120+93 L		121+14 L	Sidewalk	5
122+00 L		122+60 L	Sidewalk	19
122+19 R		122+43 R	Sidewalk	5
122+69 R		122+85 R	Sidewalk	5
125+71-59' L		125+81-59' L	Sidewalk	3
			Total:	12,083

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 23. This value was obtained from testing during construction of the in-place asphalt concrete.

An estimated 12,853.3 tons (6,801 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.
Salvaged material will be processed to meet the requirements of Section 884.2 D.7 prior to stockpiling. The Contractor will ensure that no vegetation, topsoil, subgrade, or other foreign material is incorporated into the salvaged asphalt mix and granular base material.

The salvaged material not used on the project will be stockpiled or disposed of as directed by the Engineer.

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

The quantity of salvageable material is estimated from the in-place surfacing typical sections. This estimated quantity was included in the unclassified excavation quantities.

The following table is furnished for information only.

Station	Distance from Centerline (Feet) Lt.	Rt.	Thickness of Asphalt Mix Material (Inches)	Thickness of Granular Base Material (Inches)
110+00	8.0		6	18
115+00		8.2	5	15
119+00		9.2	5	13
124+50		7.2	8	12
127+50	8.6		9	8
133+00		5.8	6	11
	Average Thickness:		6.5	12.8

TABLE OF SALVAGE AND STOCKPILE ASPHALT MIX AND GRANULAR BASE MATERIAL

Location of Removal Areas	Estimated Salvage and Stockpile Asphalt Mix and Granular Base Material (Tons)
Sta. 106+84.40 to Sta. 114+11.72	3,730.1
Sta. 114+11.72 to Sta. 114+35.85	147.3
Sta. 114+35.85 to Sta. 117+00.00	1,479.7
Sta. 117+00.00 to Sta. 121+75.00	2,358.3
Sta. 121+75.00 to Sta. 126+00.00	2,347.3
Sta. 126+00.00 to Sta. 127+89.63	861.2
Sta. 127+89.63 to Sta. 128+03.38	54.9
Sta. 128+03.38 to Sta. 133+50.00	1,874.4
Total	12,853.3

REMOVAL OF EXISTING CONCRETE PAVEMENT

Existing asphalt concrete and/or existing asphalt concrete patch work that was placed above the existing concrete pavement is included in the quantity for "Remove Concrete Pavement". The Contractor will dispose of the concrete pavement and asphalt concrete at a site approved by the Engineer.

TABLE OF CONCRETE PAVEMENT REMOVAL

Station	to	Station	L\R	Description	Quantity (SqYd)
116+42		117+10	L	Concrete Fillets & Valley Gutter	32.6
116+42		117+10	R	Concrete Fillets & Valley Gutter	28.4
119+68		119+75	L	Concrete Fillet	3.7
119+68		119+75	R	Concrete Fillet	3.8
120+32		120+39	L	Concrete Fillet	4.0
120+32		120+40	R	Concrete Fillet	4.0
123+48		124+16	L	Concrete Fillets & Valley Gutter	33.6
123+49		124+15	R	Concrete Fillets & Valley Gutter	29.6
127+51		127+58	L	Concrete Fillet	5.8
				Total:	145.5

TABLE OF CONCRETE CURB AND/OR GUTTER REMOVAL

Station	to	Station	L/R	Quantity (Ft)
114+51		116+47	L	197.1
115+48		116+49	R	111.8
117+04		119+72	L	271.6
117+05		119+72	R	288.3
120+34		123+55	L	323.7
120+34		123+55	R	326.5
124+11		127+56	L	355.1
124+09		127+39	R	329.2
			Total:	2203.3

TABLE OF ASPHALT CONCRETE APPROACH PAVEMENT REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
118+03		118+19	L	32.1
124+23		125+24	R	81.9
124+06		124+98	L	101.7
			Total:	215.7

TABLE OF CONCRETE DRIVEWAY PAVEMENT REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
115+04		116+47	L	177.0
117+71		117+84	R	7.9
118+02		118+12	L	10.6
121+70		121+95	R	32.2
122+70		122+85	R	22.2
125+12		125+62	R	95.2
125+87		126+11	R	31.5
			Total:	376.6

TABLE OF SIDEWALK REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
114+44		115+03	L	65.3
115+48		116+49	R	113.6
116+33		116+48	L	9.2
117+05		119+72	R	341.8
117+04		119+72	L	313.7
120+35		121+75	R	144.9
121+95		122+70	R	81.9
122+85		123+55	R	76.2
120+35		123+55	L	368.0
124+11		124+25	L	10.4
124+09		124+25	R	15.8
124+76		125+12	R	20.3
124+91		127+54	L	266.6
			Total:	1827.7

TABLE OF DROP INLET REMOVAL

All costs for removal of the frame and grate assembly will be incidental to the contract unit price per each for "Remove Drop Inlet".

Station	L/R	Quantity (Each)
110+83-40'	R	1
112+28-32'	L	1
113+57-36'	L	1
114+53-27'	L	1
127+31-28'	L	1
127+36-27'	R	1
Total:		6

INCIDENTAL WORK, GRADING

Station	Remarks
107+00-48' L	Take Out 18" – 63' RCP
109+05-41' R	Take Out 18" – 56' CMP
109+61-43' L	Take Out 18" – 51' CMP
110+07-41' R to 110+83-40' R	Take Out 15" – 75' CMP
110+93-41' L to 112+28-32' L	Take Out 18" – 136' CMP
112+28-32' L to 113+57-36' L	Take Out 18" – 128' RCP
113+54.19-32.17' L to 113+57.93-40.74' L	Take Out 18" – 8' RCP
113+57-36' L to 114+53-27' L	Take Out 18" – 98' RCP
118+19 L to 118+66 L	Remove and reset stanchions in front of bank pillars
127+31-28' L to 127+50-55' L	Take Out 30" – 32' RCP
127+36-27' R to 127+45-42' R	Take Out 17" – 18' RCP
127+50-55' L	Take Out 30" RCP Bend
127+50-55' L to 127+88-60' L	Take Out 24" – 38' RCP
127+68-54' R	Take Out 15" – 41' CMP
133+20-48' L	Take Out 24" – 56' RCP

CORRUGATED METAL PIPE

Corrugated metal pipes will have 2 ⅔-inch x ½-inch corrugations for 42-inch and smaller round pipe and 48-inch and smaller arch pipe unless otherwise stated in the plans. Corrugated metal pipes will have 3-inch x 1-inch or 5-inch x 1-inch corrugations for 48-inch and larger round pipe and 54-inch and larger arch pipe unless otherwise stated in the plans.

The gauge of the corrugated metal ends will match the thickest gauge of corrugated metal pipe it is connected to.

PIPE FOR APPROACHES

Class 2 reinforced concrete pipe, high density polyethylene pipe, polypropylene pipe (will be in conformance with AASHTO M330), or steel reinforced polyethylene pipe may be substituted for corrugated metal pipe at approaches and intersecting roads at no additional cost to the State.

If corrugated metal pipes are provided, the pipes will be as specified in the CORRUGATED METAL PIPE note.

If high density polyethylene pipe, polypropylene pipe (will be in conformance with AASHTO M330), or steel reinforced polyethylene pipe are provided, then the end sections will be metal, be compatible, and conform to the type of end section as shown in the plans.

CONCRETE PIPE CONNECTIONS

Pipe connections to existing pipes, manholes, junction boxes, and drop inlets will be done by breaking a hole into the existing structure and inserting the pipe. A concrete collar will then be poured around the pipe in the area of the connection.

When it is not possible to use a normal pipe joint (male-female ends), connections to existing pipe will be made by placing a 2' wide by 6" thick M6 concrete collar around the outside of the connection. The concrete collar will be reinforced with 6x6 W2.9 x W2.9 wire mesh.

All costs for constructing the concrete collars including materials and labor will be incidental to the contract unit price per foot for the corresponding pipe contract item.

PIPE COVER

The earthen subgrade cover for some pipe installations is less than one foot. The Contractor will take the necessary precautions to ensure the structural properties of the pipes are not damaged after installation and prior to the placement of final surfacing. Any additional costs for preventing damage to these pipes will be incidental to the contract unit price per foot for the corresponding pipe installation contract item.

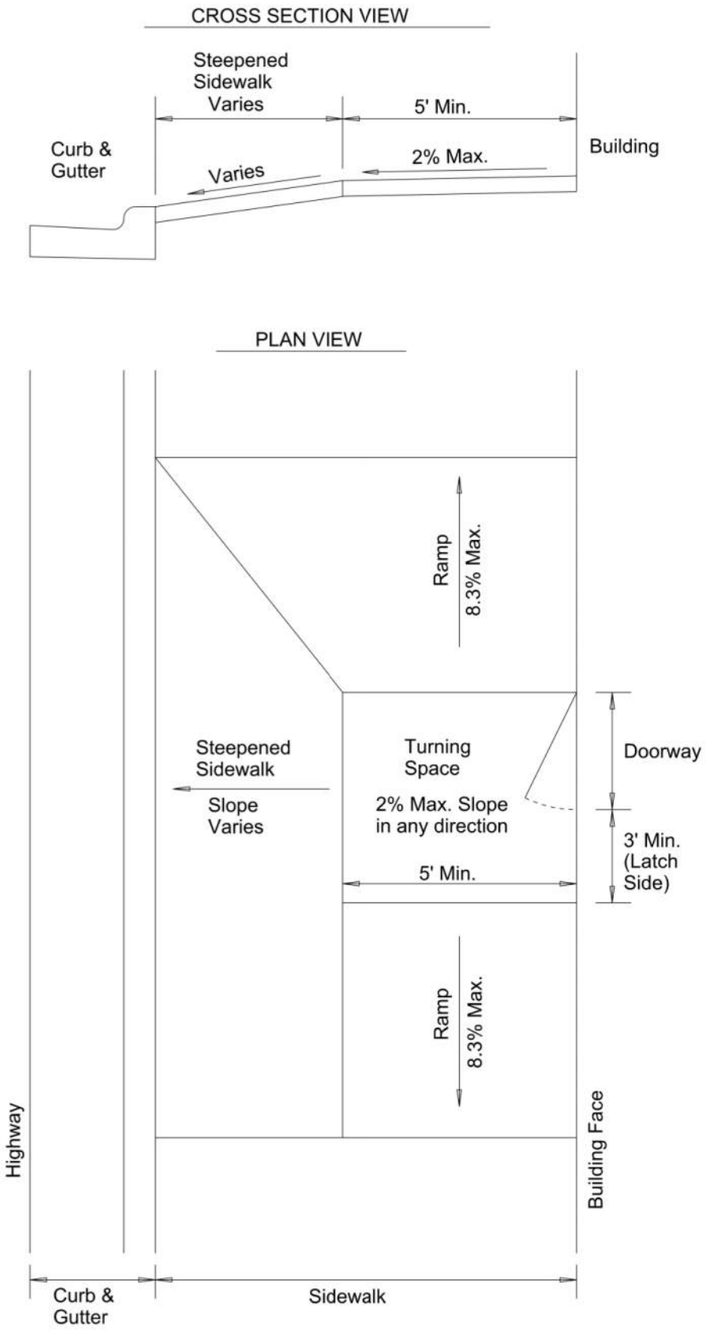
CONCRETE SIDEWALK JOINT SEALING

The Contractor will install expansion joint material approximately ½" lower than the finished concrete sidewalk elevation adjacent to buildings. The Contractor will seal all of these expansion joints between the concrete sidewalk and existing buildings using silicone joint sealer that meets the requirements of Section 879 of the Standard Specification.

All costs to seal these joints will be incidental to the contractor unit price per square foot for "4" Concrete Sidewalk."

SIDEWALK ADJACENT TO BUILDING DETAIL

Maximum slopes are shown in the following drawing. As shown in Standard Plate 651.75, the typical sidewalk cross slope is designed to be 1.5%. Ramps are typically designed to have a slope of 7.5%.



SIDEWALK ADJACENT TO BUILDINGS

When placing sidewalk adjacent to buildings, the elevation of the new sidewalk may be either higher or lower than the existing sidewalk. This may require that modification be made to building exteriors such as: removal of siding, installation of flashing, installation of siding, or other necessary modifications. Building modifications will be approved by the Engineer. All costs associated with modifying the buildings for sidewalk placement will be incidental to the contract unit price per square foot for the corresponding concrete sidewalk contract item.

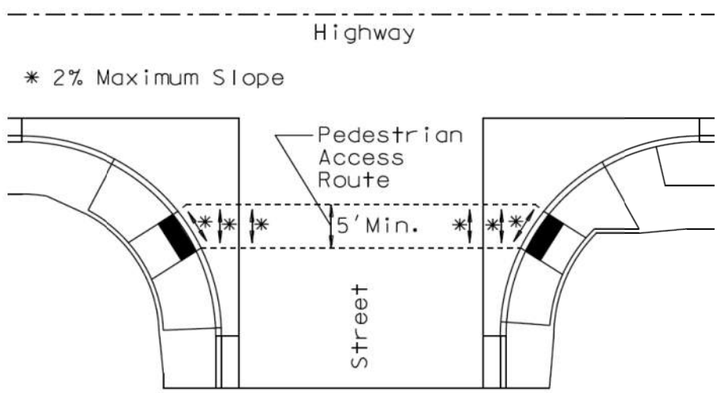
Sidewalk placed adjacent to building doorways should nearly match the doorway threshold and will have a maximum 1/4-inch vertical rise at the doorway threshold. A sidewalk turning space will be provided at building doorways in accordance with the plans. Sidewalk should ramp or slope down from the turning space to the typical sidewalk as specified in the plans. Additional sidewalk ramp or slope locations may be required. In the plans, the locations without ramps were assumed by the design Engineer as sites where slopes of less than 5 percent could be used from the turning space to the typical sidewalk. The limits of the ramp and steepened sidewalk shown in the plans may need to be adjusted to the actual doorway location and to meet sidewalk slope requirements as specified in the plans.

Minimum width of the 2% maximum slope sidewalk is 5'. It is typically an 8' width for this project.

Maximum ramp slope to / from doorways is 8.3%. For this project it is anticipated that most or all locations will be able to achieve a slope of 5% or less to meet requirements for a standard longitudinal sidewalk grade.

INTERSECTING STREET AND FILLET SLOPES

The pedestrian access route across intersecting streets between the curb ramps should have a 2% maximum cross slope perpendicular to the direction of travel by pedestrians. This includes the fillets of the intersecting street. The fillets require a 2% maximum slope along the curb ramp opening (along the turning space or bottom of curb ramp). See the following detail. The proposed intersecting street top of curb elevations are set to meet these requirements including additional top of curb elevations (grade breaks) of the fillets. Changes may need to be made during construction to meet these requirements. The intent of the plans is for the intersecting street to have only one break in grade along either the outside or inside edge of the pedestrian access route for streets where grade breaks are needed.



STEEPENED BOULEVARD SIDEWALK

Steepened boulevard sidewalk has a cross slope greater than 2%. Steepened sidewalk is provided between the back of curb and the minimum 5 ft wide pedestrian access route sidewalk raised to meet existing building doorways, sidewalks or other features. See the SIDEWALK ADJACENT TO BUILDING DETAIL. The design elevations have been set to provide a maximum boulevard slope of 10% from 5th St. South to 3rd St. North. The locations and limits may need to be adjusted during construction. All costs associated with steepened sidewalk will be incidental to the contract unit price per square foot for the corresponding concrete sidewalk bid item.

COLORED CONCRETE FOR COLORED CONCRETE SIDEWALK

The colored concrete will have the integral color Solomon Brick Red #417 or an equal approved by the Engineer.

ColorFlo Liquid Color
Color #417 Brick Red
Solomon Colors, Inc.
www.solomoncolors.com

Brick Red requires a rate of 12.50 pounds of Solomon ColorFlo #417 Red per cubic yard of concrete. The colored concrete must be cured according to the manufacturer's recommendations with two coats of a non-yellowing acrylic curing and sealing compound. The curing and sealing compound will meet ASTM C309. The curing and sealing product will be DECRA-SEAL or an equal approved by the Engineer.

DECRA-SEAL
W.R. Meadows, Inc.
1-800-342-5976
www.wrmeadows.com

White pigmented cure will not be used. The Contractor will protect the colored concrete to ensure white pigmented curing compound will not come in contact with the colored concrete. All costs for furnishing, handling, applying the curing and sealing compound, and liquid integral color, including the materials, equipment, labor, and incidentals necessary will be incidental to the contract unit price for "6" Colored Concrete Sidewalk" and "4" Colored Concrete Sidewalk."

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B8	B72

Plotting Date: 09/09/2025 Revised 08/27/2025 AR

DROP INLETS

Where drop inlets are constructed within areas of curb and gutter, the Contractor will construct weep holes of at least 3 inches in diameter in the drop inlet walls. The weep holes will be constructed at the same elevation as the adjacent top of the earthen subgrade and will be maintained clean and open at all times until the permanent surfacing is placed. The drop inlets will be covered throughout construction operations as necessary with an Engineer approved cover to provide safe travel for motorists and to prevent materials from entering the storm sewer system. After the permanent surfacing has been placed, the Contractor will seal the weep holes with grout and remove all debris from the drop inlet. All costs involved with the coverings, weep holes, and removing debris from the drop inlets will be incidental to the contract unit prices for the components of the drop inlets.

The plan shown quantities of the drop inlet components such as Class M6 Concrete, Reinforcing Steel, Type B Frame and Grate, Type C Frame and Grate, and Precast Drop Inlet Collar will be the basis of payment for these items.

If additions or reductions to the number of drop inlets are ordered by the Engineer, payment for the components required to construct the drop inlets will be made at the contract unit prices for the components of the drop inlets.

TABLE OF DROP INLETS AND QUANTITIES

Station	L/R	Drop Inlet Size	Drop Inlet Type	Class M6 Concrete (CuYd)	Reinf Steel (Lb)	Precast Drop Inlet Collar (Each)	Frame and Grate/Lid Type	Floor Elev.	Top of Wall Elev.	**H (Ft)
*109+63.20	19.67' R	4'x3'	B	1.48	229	1	B	1987.89	1990.76	2.87
110+19.69	19.67' L	4'x3'	B	1.65	250	1	B	1987.56	1990.96	3.40
110+19.69	41.50' L	4'x5'	C	2.09	354		C	1985.97	1989.80	3.82
110+78.95	19.67' L	5.5'x3'	B	2.24	372	1	B	1986.77	1991.17	4.40
110+78.95	19.67' R	2'x3'	B	0.99	161	1	B	1987.38	1991.17	3.79
*110+78.95	38.67' R	3'x4'	C	1.37	217		C	1687.46	1989.81	2.35
112+17.95	19.67' L	4'x3'	B	1.73	298	1	B	1987.45	1992.08	4.63
112+17.95	32.92' L	3'x4'	C	1.52	234		C	1988.50	1991.32	2.82
112+17.95	19.67' R	2'x3'	B	0.92	151	1	B	1988.61	1992.08	3.47
*112+17.95	32.67' R	3'x4'	C	1.47	228		C	1988.68	1991.34	2.66
113+54.19	19.67' L	4'x3'	B	1.87	309	1	B	1988.14	1993.05	4.91
113+54.19	32.17' L	3'x4'	C	1.66	251		C	1989.18	1992.47	4.29
114+55.51	19.67' L	4'x3'	B	1.87	315	1	B	1988.69	1993.76	5.07
*114+55.51	37.17' L	3'x4'	C	2.31	330		C	1989.76	1995.22	5.46
*114+55.51	19.67' R	2'x3'	B	1.07	164	1	B	1989.87	1993.76	3.89
*116+27.41	19.67' L	4'x4'	B	2.55	426	1	B	1989.53	1995.15	5.62
*116+48.74	43.62' L	3'x4'	B	2.58	370	1	B	1990.88	1995.67	4.79
117+02.21	48.67' L	2'x3'	B	1.27	191	1	B	1991.52	1996.35	4.83
117+06.21	46.99' R	2'x3'	B	1.02	164	1	B	1992.06	1995.97	3.91
117+20.11	29.17' L	3'x4'	B	2.13	319	1	B	1990.87	1996.02	5.15
117+20.11	29.17' R	3'x4'	B	1.93	291	1	B	1991.65	1996.02	4.37
118+79.09	29.17' L	2'x3'	B	1.14	173	1	B	1993.45	1997.66	4.21
118+79.09	29.17' R	2'x3'	B	1.03	172	1	B	1993.17	1997.35	4.18
*119+53.91	29.17' L	3'x4'	B	1.69	261	1	B	1994.77	1998.34	3.57
*119+53.91	29.17' R	2'x3'	B	1.03	166	1	B	1994.07	1998.03	3.96
119+73.16	47.67' L	2'x3'	B	1.04	160	1	B	1994.89	1998.66	3.77
120+31.50	46.17' L	2'x3'	B	1.60	234	1	B	1994.00	2000.27	6.27
*120+54.06	29.17' L	3'x4'	B	2.08	309	1	B	1993.87	1998.73	4.86
121+70.15	29.17' L	2'x3'	B	1.25	202	1	B	1993.31	1998.51	5.2
121+70.15	29.17' R	2'x3'	B	1.31	195	1	B	1993.58	1998.56	4.98
123+28.71	29.17' R	2'x3'	B	1.26	189	1	B	1992.81	1997.00	4.19
*123+28.71	29.17' L	3'x4'	B	2.02	313	1	B	1992.03	1997.00	4.97
*123+65.28	53.36' L	2'x3'	B	1.69	246	1	B	1991.38	1998.09	6.71
124+04.67	53.38' L	3'x4'	B	2.25	329	1	B	1991.20	1996.62	5.42
124+29.82	29.17' L	3'x4'	B	1.98	318	1	B	1990.54	1995.66	5.12
124+29.82	29.17' R	2'x3'	B	1.17	178	1	B	1991.40	1995.69	4.29
125+85.19	29.17' L	4'x3'	B	1.97	309	1	B	1988.41	1993.83	5.42
125+75.19	29.17' R	2'x3'	B	1.15	175	1	B	1989.69	1993.96	4.27
127+25.63	29.17' L	5.5'x5.5'	B	4.32	664	1	B	1987.24	1992.10	4.86
127+25.63	29.17' R	2'x3'	B	1.00	155	1	B	1988.51	1992.10	3.59
*127+42.63	49.65' L	4'x5'	C	3.31	492		C	1987.12	1992.50	5.38
			Totals	69.8	10,864	34				

Total Type B Frame and Grate 34

Total Type C Frame and Grate 7

* Drop inlet requires watertight joints in accordance with the STORM SEWER notes.

** H = Height of the Drop Inlet as shown on the details and Standard Plates

STORM SEWER

Reinforced concrete pipe may be bell and spigot. The pipe sections will be adjoined such that the ends are fully entered and the inner surfaces are reasonably flush and even.

Lift holes in the reinforced concrete pipe will be plugged with grout.

Watertight joints are required for reinforced concrete pipe, drop inlets, manholes, and junction boxes where storm sewers run parallel to and within 10 feet horizontally from existing or proposed water mains.

Watertight joints are required where reinforced concrete pipes, drop inlets, manholes, or junction boxes cross water mains and are separated a distance of 18 inches or less, above or below, the water main.

If watertight joints are required then the watertight joints will extend for a distance of 10 feet beyond the water main. This measurement will be from the sealed concrete joint to the outer most surface of the water main.

Watertight joint seals will conform to the following requirements:

1. Reinforced Concrete Pipe (Circular): Gasketed pipe will conform to the requirements of ASTM C443 and the gasket will be in conformance with Section 990 of the Specifications. Non-gasketed concrete pipe will be sealed with a mastic joint seal conforming to the requirements of ASTM C990 and encased with a minimum 2-foot wide by 6-inch thick M6 concrete collar reinforced with 6x6 W2.9 x W2.9 wire mesh.

2. Reinforced Concrete Pipe (Arch): Gasketed pipe will conform to the requirements of ASTM C443 and the gasket will be in conformance with Section 990 of the Specifications. Non-gasketed concrete pipe joints will be sealed with a hydrophilic flexible water stop seal and wrapped with a 1-foot wide strip of fabric above the cradle. The fabric will conform to the requirements of Section 831 of the Specifications for Type A Drainage Fabric. The hydrophilic flexible water stop will be from the list below.

3. Drop Inlets, Manholes, and Junction Boxes: Joints will be sealed with one of the following methods:

   A. A flexible strip seal placed in the joints conforming to the requirements of ASTM C990 and the perimeter encased with a minimum 2-foot wide by 6-inch thick M6 concrete collar reinforced with 6x6 W2.9 x W2.9 wire mesh.

   B. A hydrophilic flexible water stop seal placed in the joints and a 1-foot wide strip of fabric wrapped around the perimeter of the pipe. The fabric will conform to the requirements of Section 831 of the Specifications for Type A Drainage Fabric. The hydrophilic flexible water stop will be from the list below.

   C. A self-adhesive external joint seal wrap. The seal wrap will be from the list below.

Approved List of Self-adhesive Joint Wrap

Product	Manufacturer
Mar Mac Seal Wrap	Mar Mac Construction Products McBee, SC 843-335-5909 www.marmac.com
ConWrap CS-212	Concrete Sealants, Inc. Tipp City, OH 800-332-7325 http://www.conseal.com

Approved List of Hydrophilic Flexible Water Stop Seal:

Product	Manufacturer
Waterstop RX	Cetco Hoffman Estates, IL 800-527-9948 www.cetco.com
Conseal CS-231	Concrete Sealants, Inc. Tipp City, OH 800-332-7325 http://www.conseal.com

Gaskets and seals (mastic, waterstop, and seal wraps) will be installed in accordance with the Manufacturer's recommendations.

The cost for furnishing and installing all gaskets, mastic joint seal, water stop seal, seal wrap, concrete collars, and for plugging the lift holes will be incidental to the contract unit price per foot for the corresponding pipe contract item.

TABLE FOR ADJUSTMENT OF WATER VALVES

Station	Adjustment	Quantity (Each)
115+04-30' L	Raise 0.36'	1
116+65-37' L	Lower 0.40'	1
116+66-38' R	Lower 0.04'	1
118+51-29' L	Raise 0.76'	1
118+55-28' R	Lower 0.18'	1
119+30-29' L	Lower 0.71'	1
119+47-29' L	Lower 0.12'	1
119+59-29' L	Lower 0.15'	1
119+63-11' L	Lower 0.66'	1
119+82-7' L	Lower 0.63'	1
120+51-29' L	Lower 0.73'	1
121+17-29' L	Lower 0.15'	1
121+95-31' L	Lower 0.03'	1
122+41-28' R	Lower 0.16'	1
123+39-27' L	Lower 0.27'	1
123+71-7' L	Lower 0.98'	1
124+59-33' R	Lower 0.24'	1
127+28-8' L	Lower 1.31'	1
127+51-23' L	Lower 0.99'	1
127+56-42' L	Lower 1.71'	1
128+28-55' L	Lower 2.98'	1
	Total:	21

8" PCC FILLET SECTIONS

Payment for "8" PCC Fillet Section" will be based on plans quantity. If additions or reductions to the area of PCC fillet sections are ordered by the Engineer, payment will be made in accordance with the contract unit price per square yard for "8" PCC Fillet Section".

FIRST BANK AND TRUST BUILDING

At the First Bank and Trust from approximately station 118+19 Lt to station 118+66 Lt there are 5 pillars that provide structural support for the roof of the First Bank and Trust building.

The property owner was granted a Revocable Permit to Occupy Right-of-Way from SDDOT Watertown Area Office for the pillars.

The contractor will be careful in the removal and placement of the sidewalk/ramps located adjacent to the support pillars at the bank.

At all times either one or the other entrances at station 118+05 Lt or the door at 118+50 Lt will remain open and accessible.

Undercut will end at back of curb between station 118+17 Lt and 118+55 Lt, in the location of the pillars.

TABLE OF ACCESS RAMP FOR FIRST BANK AND TRUST

Station	L/R	Top Landing Elev.	Bottom Landing Elev.	Length of Ramp (Ft)	Class M6 Concrete (CuYd)	Epoxy Coated Reinf. Steel (Lb)	Pipe Handrail (Ft)
118+00	L	2000.05	1998.65	50.6'	7.8	409	76
				Totals:	7.8	409	76

* There is an estimated 18.2 cubic yards of Structure Excavation (Misc.). The quantity for structure excavation is for informational purposes only. Payment for all work necessary for structure excavation will be incidental to the various contract unit prices for the items listed in the above table.

TABLE OF PVC COATED BANK AND CHANNEL PROTECTION GABIONS AND DRAINAGE FABRIC

Station	L/R	PVC Coated Bank and Channel Protection Gabion (CuYd)	Type B Drainage Fabric (SqYd)
107+03	L	12.0	34
127+67	R	4.5	15
	Totals:	16.5	49

TABLE OF CLASS M6 CONCRETE, REINFORCING STEEL & HANDRAIL

Item	Class M6 Concrete (CuYd)	Reinforcing Steel (Lb)	Epoxy Coated Reinf. Steel (Lb)	Pipe Handrail (Ft)
Drop Inlets	69.8	10,864	0	0
Access Ramp	7.8	0	409	76
Totals:	77.6	10,864	409	76

SIDEWALK CURB PARALLEL TO INTERSECTING STREETS

The locations and limits of sidewalk curb installed parallel to the intersecting streets may need to be adjusted during construction to best fit the ground surface. The use of sidewalk curb at additional locations will be approved by the Engineer. The height will vary to match the existing ground surface and the maximum height will be 12". Estimated areas of sidewalk curb are included in the Table of Pavement, Curb & Gutter and Sidewalk Quantities. All costs to construct sidewalk curb will be included in the contract unit price per square foot for the corresponding sidewalk bid item.

DETECTABLE WARNINGS

Detectable warnings will be in compliance with the Americans with Disabilities Act regulations.

The detectable warnings will be installed according to the manufacturer's installation instructions.

A concrete thickness equal to the adjacent concrete sidewalk thickness and 2 inches of granular cushion material will be placed below the Type 1 Detectable Warnings. When concrete is placed below the detectable warnings then the concrete thickness will be transitioned at the rate of 1" per foot to match the adjacent concrete sidewalk thickness.

The detectable warnings will be a brick red color for application in concrete curb ramps. Cast iron plates may be a natural patina (weathered steel).

Type 1 Detectable Warning Panels will be one of the following products:

Type 1 Detectable Warnings

Product	Manufacturer
Detectable Warning Plate Cast Iron Plate	Neenah Foundry Company Neenah, WI 800-558-5075 http://www.neenahfoundry.com/
Detectable Warning Plate Cast Iron Plate	Deeter Foundry Lincoln, NE 800-234-7466 http://www.deeter.com/
Detectable Warning Plate Cast Iron Plate(No Coating)	East Jordan Iron Works, Inc. 301 Spring Street East Jordan, MI 49727 800-626-4653 http://www.ejiw.com
Iron Dome Cast Iron Detectable Warning Tile	ADA Solutions, Inc. 323 Andover Street Suite 3 Wilmington, MA 01887 800-372-0519 https://adatile.com
TufTile (wet-set) Cast Iron Replaceable Tile	TufTile 1200 Flex Court Lake Zurich, IL 60047 888-960-8897 http://www.tuftile.com/
Advantage Tactile Detectable Warning Cast Iron Plate	Advantage Tactile Systems, Inc. 241 Main Street, Suite 100 Buffalo, NY 14203 800-679-4022 https://advantagetactile.com/

PUBLIC LANDS SURVEY SYSTEM, RIGHT OF WAY, AND PROPERTY CORNERS

The Contractor will have a Land Surveyor, licensed in the State of South Dakota, to set, reestablish or verify public land survey system (PLSS) corners, right of way (ROW) corners, and property corners as directed by the appropriate SDDOT Region Land Surveyor. It is estimated that 1 PLSS corners and 32 ROW and property corners will be set, reestablished, or verified for this project. The Contractor's Land Surveyor, under the direction of the Region Land Surveyor, will set, reestablish, or verify all corner monuments after surfacing and fencing operations are completed in accordance with the PUBLIC LANDS SURVEY SYSTEM CORNERS section and the RIGHT OF WAY AND PROPERTY CORNERS section in Chapter 8 of the SDDOT Survey Manual.

< https://dot.sd.gov/doing-business/engineering/design-services/surveyors >

The SDDOT Region Land Surveyor will furnish the ROW corner caps, property corner caps, and guard posts for ROW corners in rural areas. All costs associated with furnishing and installing rebar, PLSS corner caps, and all other materials associated with setting, reestablishing, or verifying PLSS corners, ROW corners, and property corners in accordance with the SDDOT Survey Manual will be incidental to the contract unit price per each for "Reestablish Public Land Survey System Corner" and/or "Reestablish Right-of-Way and Property Corner".

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B11	B72

Plotting Date: 09/09/2025 Revised 08/27/2025 AR

TABLE OF CONSTRUCTION STAKING

Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Grade Staking				Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)
					Length (Mile)	Lane Factor	*Sets of Stakes	**Grade Staking Quantity (Mile)		
SD Hwy 28 (2 Lanes AC Pavement)	106+84.40	133+25.57	2	2,641	0.500	1	1	0.500	0.500	0.500
							Totals:	0.500	0.500	0.500

* 1 = Blue Top Stakes Only (Asphalt Concrete Pavement)
2 = Blue Top and Paving Hub Stakes (PCC Pavement)

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

PIPE QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B12	B72

Plotting Date: 10/06/2025 Revised 10/06/2025 MMM

P-CR 0028(47)367 PCN 06R7	Reinforced Concrete				RCP Ends Circular			Corrugated Metal			CMP Ends Circular		CMP Ends Arch
	Circular				Safety	Flared	Sloped	Circular		Arch	Safety		Safety
Station Offset (L/R)	18" Cl.2 Ft	24" Cl.2 Ft	30" Cl.2 Ft	36" Cl.2 Ft	18" Each	36" Each	30" Each	18" 16 Ga Ft	30" 16 Ga Ft	48" 14 Ga Ft	18" Each	30" Each	48" Each
107+03-50' L										48			2
109+01-49' R								64			2		
*109+28.94-51.49' L to 110+19.69-41.50' L				90		1							
*109+63.20-19.67' R to 110+19.69-19.67' L	68												
110+19.69-19.67' L to 110+19.69-41.50' L	18												
110+19.69-41.50' L to 110+78.95-19.67' L			60										
*110+78.95-19.67' L to 112+17.95-19.67' L			138										
*110+78.95-19.67' R to 110+78.95-38.67' R	18												
*110+78.95-19.67' L to 110+78.95-19.67' R	36												
*112+17.95-19.67' L to 112+17.95-19.67' R	36												
112+17.95-19.67' L to 112+17.95-32.92' L	10												
*112+17.95-19.67' R to 112+17.95-32.67' R	10												
*112+17.95-19.67' L to 113+54.19-19.67' L			134										
113+54.19-32.17' L to 113+57.93-40.74' L	8												
113+54.19-32.17' L to 113+54.19-19.67' L	10												
113+54.19-19.67' L to 114+55.51-19.67' L			98										
114+55.51-37.17' L to 114+55.51-19.67' L	14												
*114+55.51-19.67' L to 116+27.41-19.67' L			168										
114+55.51-19.67' L to 114+55.51-19.67' R	36												
*116+27.41-19.67' L to 116+48.73-43.62' L	32												
*116+27.41-19.67' L to 117+20.11-29.17' L		90											
*116+48.73-43.62' L to 117+02.21-48.67' L	52												
117+20.11-29.17' R to 117+06.21-46.99' R	20												
*117+20.11-29.17' L to 117+20.11-29.17' R	56												
*117+20.11-29.17' R to 118+79.03-29.17' R	156												
*118+79.03-29.17' L to 118+79.03-29.17' R	56												
118+79.03-29.17' R to 119+53.91-29.17' R	72												
*119+53.91-29.17' R to 119+53.91-29.17' L	56												
*119+53.91-29.17' L to 119+73.16-47.67' L	28												
*120+31.50-46.17' L to 120+54.06-29.17' L	20												
*120+54.06-29.17' L to 121+70.15-29.17' L	114												
*121+70.15-29.17' L to 121+70.15-26.67' R	54												
*121+70.15-29.17' L to 123+28.71-29.17' L	156												
*123+28.71-29.17' L to 124+29.82-29.17' L		98											
*123+28.71-29.17' L to 123+28.71-26.67' R	54												
*123+65.28-53.36' L to 124+04.67-53.38' L	36												
124+04.67-53.38' L to 124+29.82-29.17' L	36												
*124+29.82-29.17' L to 124+29.82-29.17' R	56												
*124+29.82-29.17' L to 125+85.19-29.17' L		152											
125+85.19-29.17' L to 127+25.63-29.17' L		136											
*125+85.19-29.17' L to 125+75.19-29.17' R	56												
*127+25.63-29.17' L to 127+42.63-49.65' L			26										
*127+25.63-29.17' L to 127+25.63-29.17' R	56												
*127+42.63-49.59' L to 128+04.57-49.57' L			60				1						
127+67-55' R	58				2								
133+23-49' L									52			2	
Subtotal:	1488	476	684	90	2	1	1	64	52	48	2	2	2

Pipes denoted with an asterisk(*) indicate that the entire length or a portion of the pipe requires watertight joints in accordance with the STORM SEWER plan note.

0

PAVEMENT, CURB AND GUTTER, AND SIDEWALK QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B13	B72

Plotting Date: 01/07/2026 Revised 01/07/2026 AR

Station to Station		Fillet Section	Concrete Curb and Gutter		Concrete Curb	Concrete Gutter		PCC Approach Pavement					Concrete Sidewalk				Detectable Warning
		PCC	Type B	Type F	Type B	Type P	Valley Gutter	Type A	Type B		Type C				Colored		Type 1
		8"	68	68	6	8"	8"	8"	6"	8"	6"	8"	4"	6"	4"	6"	
		SqYd	Ft	Ft	Ft	Ft	Ft	Sq Yd	Sq Yd	Sq Yd	Sq Yd	SqYd	SqFt	SqFt	SqFt	SqFt	SqFt
Project Begin to Pheasant Street																	
110+10.19-18.00' L	111+05.46-18.00' L			95.3													
111+05.46-18.00' L	112+57.91-18.00' L			92.4		60.0		48.0									
112+57.91-18.00' L	113+80.47-18.00' L			62.6		60.0				48.0							
113+80.47-18.00' L	114+93.70-18.00' L			63.2		60.0				80.0				206.2		206.2	
114+93.70-18.00' L	116+50.37-54.36' L	18.3		83.0		60.0						80.0		652.6		435.1	20.0
116+50.48-18.00' L	117+00.54-27.50' L						51.0										
109+55.70-18.00' R	110+02.79-18.00' R			47.1													
110+02.79-18.00' R	111+20.46-18.00' R			57.7		60.0		48.0									
111+20.46-18.00' R	113+80.47-18.00' R			230.0		30.0		27.9									
113+80.47-18.00' R	115+05.27-27.50' R			66.1		60.0		80.0						264.0		264.0	
115+05.27-27.50' R	115+59.27-27.50' R			14.0		40.0					57.8			10.0		10.0	
115+59.27-27.50' R	116+51.70-51.16' R	4.6		69.9		30.0			46.7					345.8		163.0	20.0
116+51.63-27.50' R	117+00.45-27.50' R						49.0										
Pheasant Street to Dakota Street																	
117+00.54-56.17' L	117+97.00-27.50' L	3.9	115.1										393.4	101.8	484.9		20.0
117+97.00-27.50' L	118+69.61-27.50' L		56.6		20.0	16.0					27.5		280.0		194.4		
118+69.61-27.50' L	119+74.85-55.17' L	2.3	179.5										928.5		592.1		30.0
117+04.54-51.05' R	119+74.80-49.17' R	7.7	300.9		40.0								1394.8	151.8	898.3		50.0
Dakota Street to Missouri Street																	
120+29.80-27.50' L	123+66.95-62.15' L	14.4	356.3										1671.6	273.2	1203.3		40.0
123+66.97-27.50' L	124+03.00-27.50' L						36.0										
120+29.80-25.00' R	121+80.49-25.00' R	2.3	167.1		20.0								780.3	125.0	473.6		30.0
121+80.49-25.00' R	121+96.48-25.00' R		61.7			16.0			31.1				578.5				
121+96.48-25.00' R	122+58.14-25.00' R	11.7	80.5			24.0			44.0				495.0	193.0	104.9		20.0
122+58.14-25.00' R	124+03.00-27.50' R						36.0										
Missouri Street to Frontier Street																	
124+03.00-27.50' L	124+48.85-27.50' L	11.7	50.7										131.0	163.7	68.6		20.0
124+48.85-27.50' L	127+56.00-28.00' L	30.4	264.0			24.0			60.0				1307.6	90.1	795.0		20.0
124+02.99-27.50' R	125+22.24-27.50' R	11.7	110.3											630.7		340.3	20.0
125+22.24-27.50' R	125+87.18-27.50' R		25.0			40.0						49.2		64.6		45.3	
125+87.18-27.50' R	127+56.00-24.28' R	30.5	125.9			24.0					34.0		609.0	89.9	426.7		10.0
Total:		149.5	1893.6	881.3	80.0	604.0	172.0	203.9	181.8	128.0	119.3	129.2	8569.8	3362.4	5241.7	1463.9	300.0

Plot Scale - 1:200

Plotted From - trsf12141

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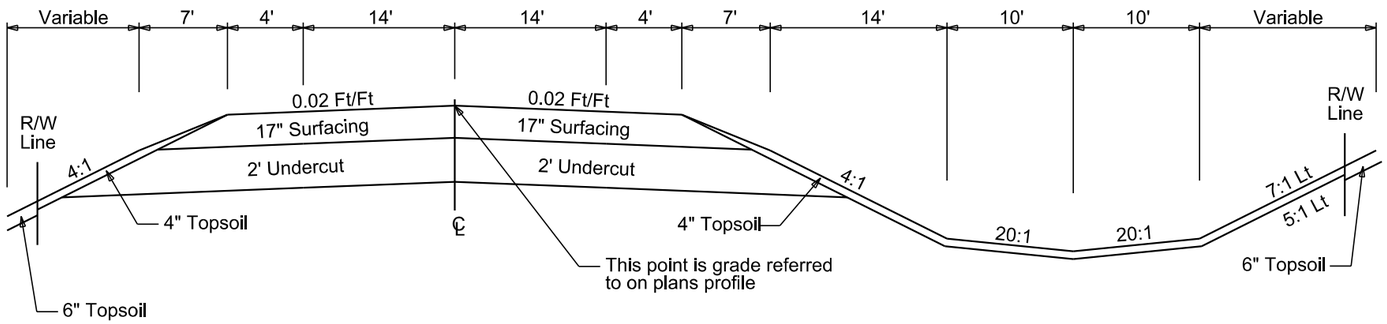
TYPICAL GRADING SECTION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B14	B72

Plotting Date: 09/09/2025 Revised 09/09/2025 AR

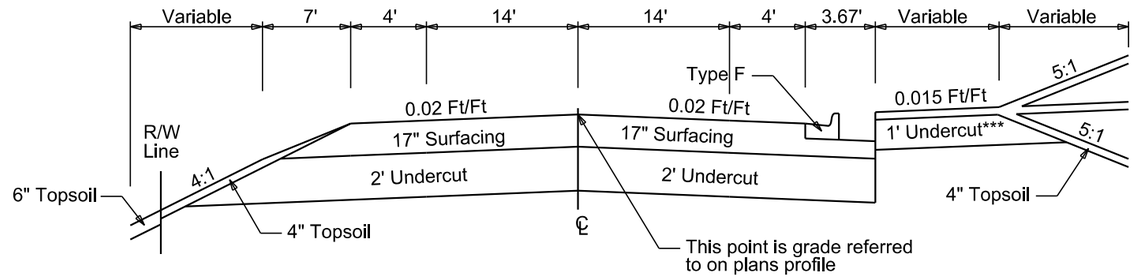
Mainline

106+84.40 to 109+55.70
127+56.00 to 133+50.00



Mainline

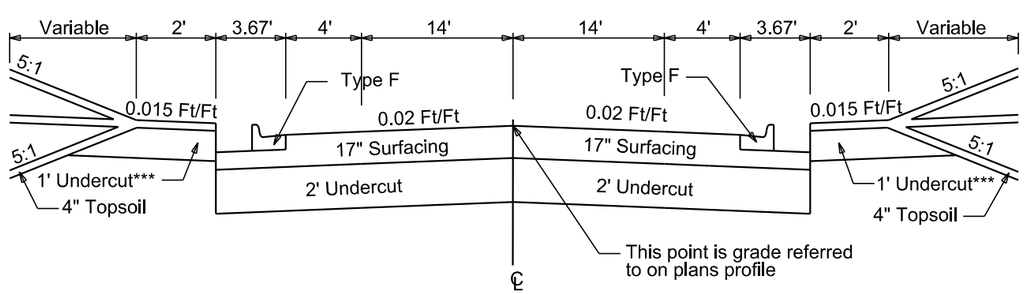
109+55.70 to 110+10.19



*** 1' Undercut is applicable in the locations listed in the "Table of Undercutting Quantities" found elsewhere in Section B.

Mainline

110+10.19 to 114+26.47



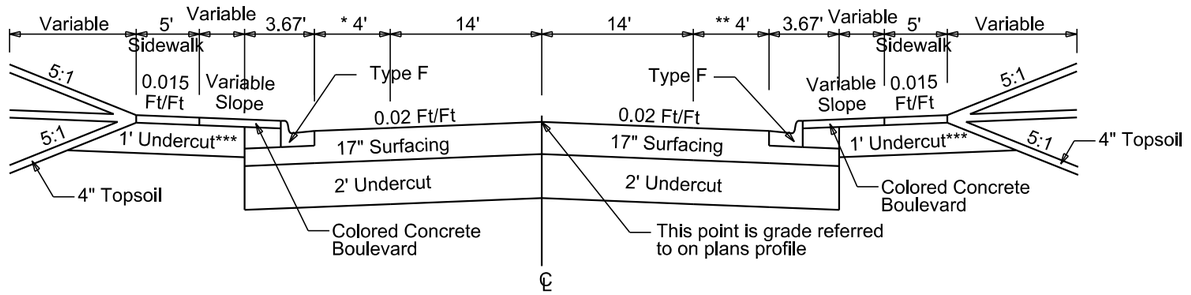
TYPICAL GRADING SECTION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B15	B72

Plotting Date: 09/09/2025 Revised 09/09/2025 AR

Mainline

114+26.47 to 117+00.54



Transition

* 116+50.48 to 117+00.54
4' to 13.5'

** 114+25.47 to 114+59.51
4'

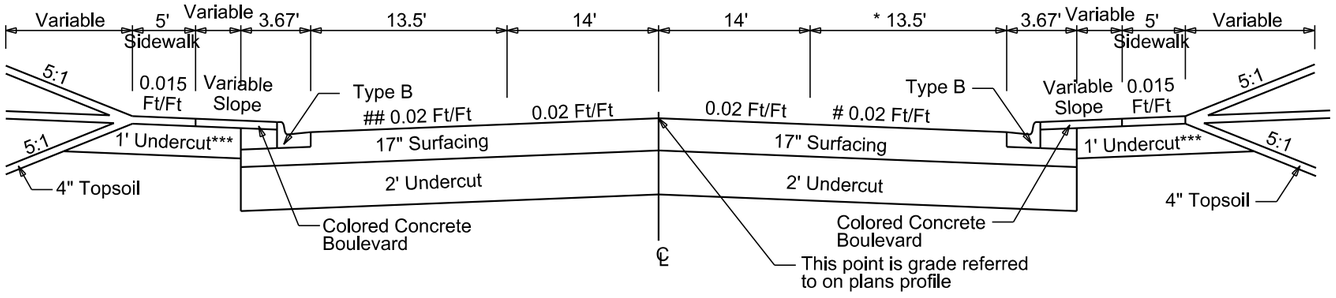
** 114+59.51 to 114+93.11
4' to 13.5'

** 114+93.11 to 117+00.54
13.5'

*** 1' Undercut is applicable in the locations listed in the "Table of Undercutting Quantities" found elsewhere in Section B.

Mainline

117+00.54 to 127+56.00



Transition

117+50 to 118+50
0.02 Ft/Ft to 0.04 Ft/Ft
118+50 to 120+29.80
0.04 Ft/Ft
120+29.80 to 121+29.80
0.04 Ft/Ft to 0.02 Ft/Ft

123+51.95 to 124+18.02
0.02 Ft/Ft to 0.03 Ft/Ft

124+18.02 to 124+50.00
0.03 Ft/Ft

124+50.00 to 125+50.00
0.03 Ft/Ft to 0.02 Ft/Ft

120+29.80 to 123+67.00
* 11'

*** 1' Undercut is applicable in the locations listed in the "Table of Undercutting Quantities" found elsewhere in Section B.

HORIZONTAL ALIGNMENT DATA

Mainline SD28

Type	Station			Northing	Easting
POB	93+68.07			287613.057	2840539.303
		TL= 1316.33	N 87°23'22" E		
PI	106+84.40			287673.010	2841854.272
		TL= 990.87	N 87°34'45" E		
PI	116+75.27			287714.863	2842844.254
		TL= 480.86	N 87°23'49" E		
PC	121+56.13			287736.702	2843324.614
PI	124+61.13	R = 39937.74	Delta = 0°52'30" L	287750.554	2843629.305
PT	127+66.13			287769.059	2843933.749
		TL= 103.20	N 86°31'18" E		
PC	128+69.33			287775.320	2844036.762
PI	130+56.83	R = 29552.88	Delta = 0°43'37" R	287786.696	2844223.919
PT	132+44.33			287795.695	2844411.205
		TL= 375.06	N 87°14'56" E		
PI	136+19.39			287813.698	2844785.835
		TL= 1030.09	N 87°23'13" E		
POE	146+49.48			287860.662	2845814.853

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North Zone (NAD 83/2011); epoch 2010.00; Geoid 12A; SF = 0.9999067376

Plot Scale - 1:200

TRSF12141

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CONTROL DATA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B17	B72

Plotting Date: 09/09/2025

HORIZONTAL AND VERTICAL CONTROL POINTS

POINT	STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION
10	138+27.30	74.23’ R	rebar 2' west of power pole	287749.028	2844996.914	1983.10
11	127+47.60	41.53’ L	rebar with SDDOT cap 1' south street marker	287809.397	2843912.756	1993.86
12	123+36.22	34.26’ R	PK Nail in sidewalk 2' south power pole	287711.073	2843506.216	1998.67
13	119+67.70	34.75’ L	PK Nail in sidewalk 4' NW power pole	287762.856	2843134.807	1999.96
14	116+37.42	34.56’ L	PK Nail in sidewalk 5' south of comercial sign	287747.793	2842804.973	1996.84
15	109+01.28	21.14’ R	PK Nail in asphalt driveway	287661.053	2842071.849	1990.67
16	97+62.32	81.21’ L	Rebar 3' east of Powerpole	287712.143	2840929.449	1971.38

* All Station and Offsets are from Alignment

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North Zone (NAD 83/2011);
Geoid 12A; SF = 0.9999067376
The elevations shown on this sheet are based on NAVD 88.

LEGEND

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B18	B72

Plotting Date: 09/09/2025

- Anchor
- Antenna
- Approach
- Assumed Corner
- Azimuth Marker
- BBQ Grill/ Fireplace
- Bearing Tree
- Bench Mark
- Box Culvert
- Bridge
- Brush/Hedge
- Buildings
- Bulk Tank
- Cattle Guard
- Cemetery
- Centerline
- Cistern
- Clothes Line
- Concrete Symbol
- Control Point
- Creek Edge
- Curb/Gutter
- Curb
- Dam Grade/Dike/Levee
- Deck Edge
- Ditch Block
- Doorway Threshold
- Drainage Profile
- Drop Inlet
- Edge Of Asphalt
- Edge Of Concrete
- Edge Of Gravel
- Edge Of Other
- Edge Of Shoulder
- Electric Transformer/Power Junction Box
- Fence Barbwire
- Fence Chainlink
- Fence Electric
- Fence Miscellaneous
- Fence Rock
- Fence Snow
- Fence Wood
- Fence Woven
- Fire Hydrant
- Flag Pole
- Flower Bed
- Gas Valve Or Meter
- Gas Pump Island
- Grain Bin
- Guardrail
- Gutter
- Guy Pole
- Haystack
- Highway ROW Marker
- Interstate Close Gate
- Iron Pin
- Irrigation Ditch
- Lake Edge
- Lawn Sprinkler
- Mailbox
- Manhole Electric
- Manhole Gas
- Manhole Miscellaneous
- Manhole Sanitary Sewer
- Manhole Storm Sewer
- Manhole Telephone
- Manhole Water
- Merry-Go-Round
- Microwave Radio Tower
- Miscellaneous Line
- Miscellaneous Property Corner
- Miscellaneous Post
- Overhang Or Encroachment
- Overhead Utility Line — OH —
- Parking Meter
- Pedestrian Push Button Pole
- Pipe With End Section
- Pipe With Headwall
- Pipe Without End Section
- Playground Slide
- Playground Swing
- Power And Light Pole
- Power And Telephone Pole
- Power Meter
- Power Pole
- Power Pole And Transformer
- Power Tower Structure
- Propane Tank
- Property Pipe
- Property Pipe With Cap
- Property Stone
- Public Telephone
- Railroad Crossing Signal
- Railroad Milepost Marker
- Railroad Profile
- Railroad ROW Marker
- Railroad Signs
- Railroad Switch
- Railroad Track
- Railroad Trestle
- Rebar
- Rebar With Cap
- Reference Mark
- Retaining Wall
- Riprap
- River Edge
- Rock And Wire Baskets
- Rockpiles
- Satellite Dish
- Septic Tank
- Shrub Tree
- Sidewalk
- Sign Face
- Sign Post
- Slough Or Marsh
- Spring
- Stream Gauge
- Street Marker
- Subsurface Utility Exploration Test Hole
- Telephone Fiber Optics — T/F —
- Telephone Junction Box
- Telephone Pole
- Television Cable Jct Box
- Television Tower
- Test Wells/Bore Holes
- Traffic Sign Double Face
- Traffic Sign One Post
- Traffic Sign Two Post
- Traffic Signal
- Trash Barrel
- Tree Belt
- Tree Coniferous
- Tree Deciduous
- Tree Stumps
- Triangulation Station
- Underground Electric Line — P —
- Underground Gas Line — G —
- Underground High Pressure Gas Line — HG —
- Underground Sanitary Sewer — S —
- Underground Storm Sewer — S —
- Underground Tank
- Underground Telephone Line — T —
- Underground Television Cable — TV —
- Underground Water Line — W —
- Water Fountain
- Water Hydrant
- Water Meter
- Water Tower
- Water Valve
- Water Well
- Weir Rock
- Windmill
- Wingwall
- Witness Corner
- State and National Line
- County Line
- Section Line
- Quarter Line
- Sixteenth Line
- Property Line
- Construction Line
- ROW Line
- New ROW Line
- Cut and Fill Limits
- Control of Access
- New Control of Access
- Proposed ROW (After Property Disposal)
- Drainage Arrow
- Remove Concrete Pavement
- Remove Concrete Driveway Pavement
- Remove Asphalt Concrete Pavement
- Remove Concrete Sidewalk
- Remove Concrete Median Pavement
- Remove Concrete Curb and/or Gutter
- Detectable Warning Pedestrian Push Button Pole and 30" x 48" Clear Space with 1.5% slope

Plot Scale - 1:200

Plotted From - TRSF12141

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B19	B72

Plotting Date: 09/16/2025 Revised 09/16/2025 AR

107+00-48' L
Take Out 18"-63' RCP
(Incidental Work, Grading)

107+03-50' L (17 Ac)
Install 48" - 48' CMP Arch
(14 Gauge)
& 2 Safety Ends

107+03 L&Bk
Install Bank and Channel
Protection Gabions (12.0 CY)
and Type B Drainage Fabric
(34 SqYd)

109+01-49' R
Install 18" - 64' CMP
& 2 Safety Ends

109+61-43' L
Take Out 18"-51' CMP
(Incidental Work, Grading)

109+05-41' R
Take Out 18"-56' CMP
(Incidental Work, Grading)

109+28.94-51.49' L to
110+19.69-41.50' L
Install 36" - 90' RCP
& 1 Flared End
(Between Outlet and
Drop Inlet)

109+63.20-19.67' R to
110+19.69-19.67' L
Install 18" - 68' RCP
(Between Drop Inlets)

110+19.69-19.67' L to
110+19.69-41.50' L
Install 18" - 18' RCP
(Between Drop Inlets)

110+93-41' L to 112+28-32' L
Take Out 18"-136' CMP
(Incidental Work, Grading)

110+07-41' R to 110+83-40' R
Take Out 15" - 75' CMP
(Incidental Work, Grading)

Remove Drop Inlets
with Frame and Grate at
the Following Locations:
110+83-40' R

110+19.69-41.50' L to
110+78.95-19.67' L
Install 30" - 60' RCP
(Between Drop Inlets)

110+78.95-19.67' L to
112+17.95-19.67' L
Install 30" - 138' RCP
(Between Drop Inlets)

110+78.95-19.67' R to
110+78.95-38.67' R
Install 18" - 18' RCP
(Between Drop Inlets)

110+78.95-19.67' L to
110+78.95-19.67' R
Install 18" - 36' RCP
(Between Drop Inlets)

Install Type B Drop Inlet
with 6" Concrete collar
and Type B Frame & Grate
at the following locations:
109+63.20-19.67' R (4'x3')
110+19.69-19.67' L (4'x3')
110+78.95-19.67' L (5.5'x3')
110+78.95-19.67' R (2'x3')

Install Type C Drop Inlet
and Type C Frame & Grate
at the following locations:
110+19.69-41.50' L (4'x5')
110+78.95-38.67' R (3'x4')

TORONTO

Sec 24 - T113N - R49W

Sonja Evenson Trust
Parcel A1

Deuel County Farmers Union Oil Company
Parcel A2

WC4 Co.
Parcel A3

Deuel County Farmers
Union Oil Company
(INFORMATION ONLY)

OUTLOT 3

OUTLOT No. 1

OUTLOT A

LOT 1

RAILROAD ADDITION

1/16 Line

SW1/4 SE1/4

SE1/4 SE1/4

106+84.51-76.96'
106+84.54-96.00'
107+31-98'
107+50-94'
108+89.71-101.00'
108+89.78-76.98'
109+00-102'
109+47-98'
109+56-105'
110+27-105'
110+40.00-77.24'
111+97.70-38.72'
112+01.88-62.00'
111+92.48-38.66'
111+87.20-65.00'

BEGIN P-CR 0028(47)367
Station 106+84.40

152'
118'
79'
151'
N 87°34'45" E

Section Line
Present SD Hwy 28
Main Street

106+00
107+00
108+00
109+00
110+00
111+00
112+00

390 feet
173 feet
325 feet
412 feet
325 feet

NE1/4

Michael D. Siegel
(INFORMATION ONLY)

106+84.54-75.43'
106+84.55-81.00'
CITY LIMITS

Interstate Telecommunications Cooperative, Inc.
Parcel A5

LOT 1

108+35.00-80.00'
108+62.21-74.70'
108+62.22-87.00'
108+69-88'
108+84-88'

TELEPHONE ADDITION

PI 106+84.40
N 287673.01
E 2841854.27
Del 0°11'23" R

Sec 25 - T113N - R49W

108+70-76' R
Do Not Disturb
Water Pump &
Drain Tile

ROGNESS ADDITION

LOT 1

Estelline Community Oil Company
n/k/a AXESS Cooperative
Parcel A6

Estelline Community Oil Company
n/k/a AXESS Cooperative
Parcel A7

WC4 Co.
Parcel A8

Property Line

Property Line

109+65.00-74.30'
110+12.00
74.12&78.00'
110+35.19-74.03'
110+35.20-78.00'
110+73.00
73.69&78.00'
111+67.06-46.36'
111+68.18-40.06'

CHICAGO, ROCK ISLAND & PACIFIC
RAILROAD STATION GROUND

NE1/4

T/F
W
HO

Parcel A1
106+84.51 to 108+89.78 L
Temporary Easement containing
0.1 ac (4162 sq ft), more or less

Parcel A2
108+89.71 to 110+40.00 L
Temporary Easement containing
0.1 ac (3708 sq ft), more or less

Parcel A3
111+82.48 to 112+01.88 L
Temporary Easement containing
0.1 ac (377 sq ft), more or less

Parcel A5
106+84.54 to 108+62.22 R
Temporary Easement containing
0.1 ac (1047 sq ft), more or less

Parcel A6
108+62.21 to 109+65.00 R
Temporary Easement containing
0.1 ac (829 sq ft), more or less

Parcel A6
110+12.00 to 110+35.20 R
Temporary Easement containing
0.1 ac (91 sq ft), more or less

Parcel A7
110+35.19 to 110+73.00 R
Temporary Easement containing
0.1 ac (153 sq ft), more or less

Parcel A8
111+67.06 to 113+44.82 R
Temporary Easement containing
0.1 ac (1784 sq ft), more or less

Plot Scale - 1:40

Plotted From - TRSF12141

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B20	B72

Plotting Date: 09/16/2025 Revised 09/16/2025 AR

Plot Scale - 1:40

Station 106+85 to 133+25

Exc	8,851	Emb	3,270	
Undercut	11,374	20.00%	654	3,924
Muck	53	Undercut	11,374	
	20,278	20.00%	2,274	13,648
		Exc. Waste		2,653
		Waste		53
				20,278

106+84.40
Begin Grading

107+03 L
24' Ent

108+97 R
28' Ent

109+63 L
24' Ent

110+33 R
60' Drive

111+35 L
60' Drive

111+35 R
30' Drive

L 50.00ft
G1 0.3495%
G2 0.7054%
K 141

PVI 106+76
Elev 1990.57

0.6481%

RDGPI 106+76
Elev 1985.90

LDGPI 106+69
Elev 1984.64

RDG 0.1216%

LDG 0.3333%

PVI 108+80
Elev 1991.89

L 50.00ft
G1 0.6481%
G2 0.3495%
K 167

FLR (E) 1987.89

36" RCP 0.5000%

Outlet
FLL (E) 1985.97
FLL (W) 1985.52

LDGPI 109+24
Elev 1985.49

RDGPI 109+56
Elev 1986.24

LDG 0.5904%

FLL (W&N) 1987.56

FLL (S) 1987.47
FLL (E) 1986.47
FLL (W) 1985.97
0.3495%

18" RCP 0.5000%

FLR (S) 1987.89
FLL (N) 1987.56

LDGPI 110+13
Elev 1986.02

FLR (S&N) 1987.38

FLR (N) 1987.46

30" RCP 0.5000%

18" RCP 0.5000%
FLL (S) 1987.56
FLL (N) 1987.47

0.7054%

PVI 110+96
Elev 1992.64

FLL (E&W) 1986.77
FLL (S) 1987.20

30" RCP 0.5000%

18" RCP 0.5000%
FLR (S) 1987.46
FLR (N) 1987.38

18" RCP 0.5000%
FLR (S) 1987.38
FLL (N) 1987.20

FLL (E) 1986.77
FLL (W) 1986.47

FLL (E) 1987.45
FLL (W) 1986.77

16
97+62.32-81.21' L
Rebar 3' East of Powerpole
Elev 1971.33

15
109+01.28-21.14' R
PK Nail in asphalt driveway
Elev 1990.67

2040 2035 2030 2025 2020 2015 2010 2005 2000 1995 1990 1985 1980 1975 1970 1965 1960 1955 1950

1990.59 1990.72 1990.85 1990.98 1991.11 1991.24 1991.37 1991.50 1991.63 1991.76 1991.87 1991.96 1992.03 1992.10 1992.17 1992.24 1992.31 1992.38 1992.45 1992.52 1992.59 1992.69 1992.81 1992.95 1993.10 1993.24 1993.38

106+00 107+00 108+00 109+00 110+00 111+00 112+00

Plotted From - TRSF12141

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B21	B72

Plotting Date: 01/07/2026 Revised 01/07/2026 AR

Remove Drop Inlets at the following Locations:
112+28-32' L
113+57-36' L
114+53-27' L

113+54.19-32.17' L to
113+57.93-40.74' L
Take Out 18" - 8' RCP
(Incidental Work, Grading)

112+28-32' L to
113+57-36' L
Take Out 18" - 128' RCP
(Incidental Work, Grading)

112+17.95-19.67' L to
112+17.95-19.67' R
Install 18" -36' RCP
(Between Drop Inlets)

112+17.95-19.67' L to
112+17.95-32.92' L
Install 18" -10' RCP
(Between Drop Inlets)

112+17.95-19.67' R to
112+17.95-32.67' R
Install 18" -10' RCP
(Between Drop Inlets)

112+17.95-19.67' L to
113+54.19-19.67' L
Install 30" -134' RCP
(Between Drop Inlets)

113+57-36' L to 114+53-27' L
Take Out 18" - 98' RCP
Between Drop Inlets
(Incidental Work, Grading)

113+54.19-32.17' L to
113+57.93-40.74' L
Take Out 18" - 8' RCP
(Incidental Work, Grading)

113+54.19-32.17' L to
113+54.19-19.67' L
Install 18" -10' RCP
(Between Drop Inlets)

113+54.19-19.67' L to
114+55.51-19.67' L
Install 30" -98' RCP
(Between Drop Inlets)

113+54.19-32.17' L to
113+57.93-40.74' L
Install 18" - 8' RCP
(Between Drop Inlet and 18" pipe that connects from northeast side of Drop Inlet)

114+55.51-37.17' L to
114+55.51-19.67' L
Install 18" -14' RCP
(Between Drop Inlets)

114+55.51-19.67' L to
116+27.41-19.67' L
Install 30" -168' RCP
(Between Drop Inlets)

114+55.51-19.67' L to
114+55.51-19.67' R
Install 18" -36' RCP
(Between Drop Inlets)

116+27.41-19.67' L to
116+48.73-43.62' L
Install 18" - 32' RCP
(Between Drop Inlets)

116+27.41-19.67' L to
117+20.11-29.17' L
Install 24" - 90' RCP
(Between Drop Inlets)

116+48.73-43.62' L to
117+02.21-48.67' L
Install 18" - 52' RCP
(Between Drop Inlets)

117+20.11-29.17' R to
117+06.21-46.99' R
Install 18" - 20' RCP
(Between Drop Inlets)

117+20.11-29.17' L to
117+20.11-29.17' R
Install 18" - 56' RCP
(Between Drop Inlets)

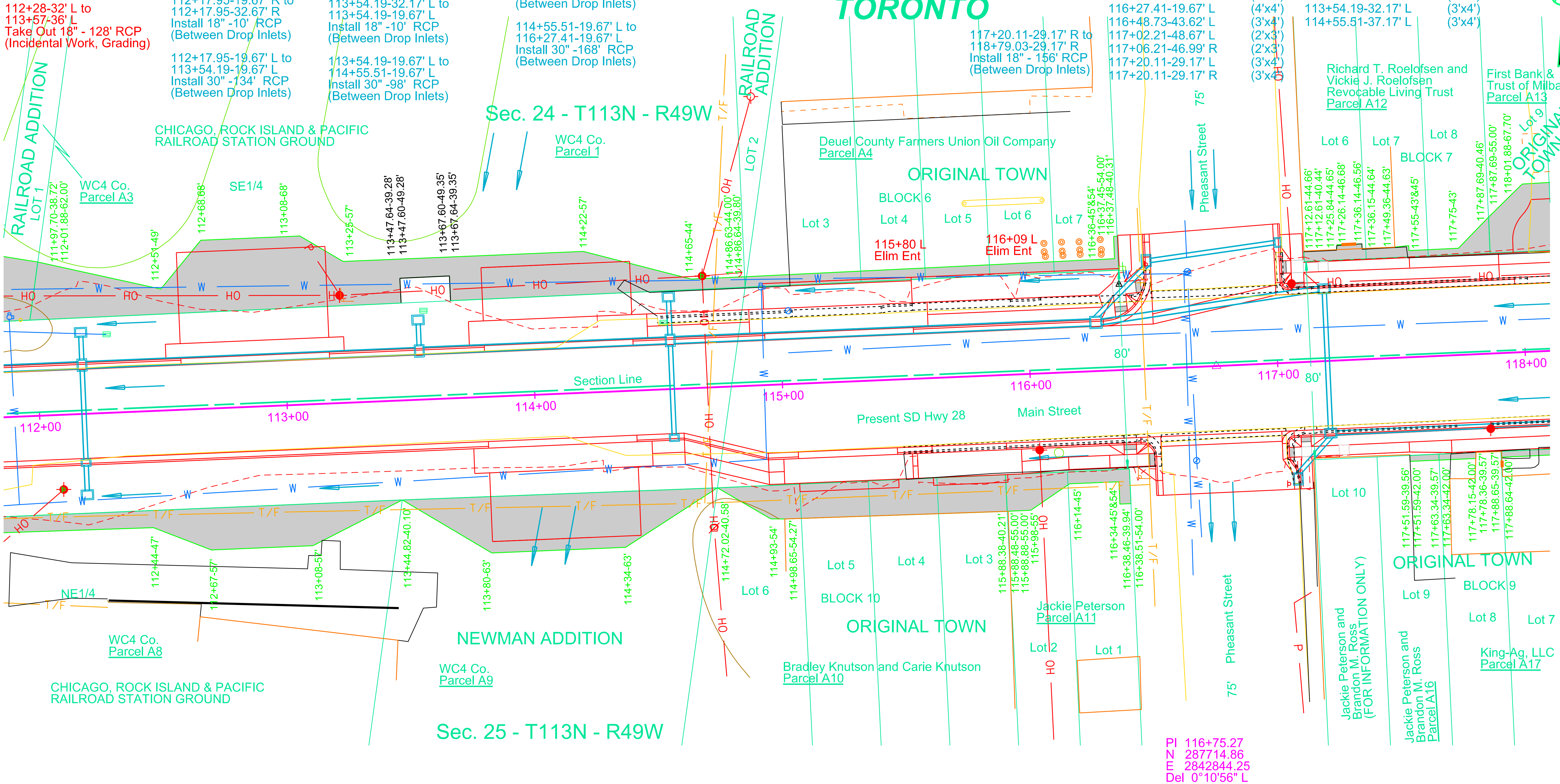
117+20.11-29.17' R to
118+79.03-29.17' R
Install 18" - 156' RCP
(Between Drop Inlets)

Install Type B Drop Inlet with 6" Concrete collar and Type B Frame & Grate at the following locations:

112+17.95-19.67' L	(4'x3')
112+17.95-19.67' R	(2'x3')
113+54.19-19.67' L	(4'x3')
114+55.51-19.67' L	(4'x3')
114+55.51-19.67' R	(2'x3')
116+27.41-19.67' L	(4'x4')
116+48.73-43.62' L	(3'x4')
117+02.21-48.67' L	(2'x3')
117+06.21-46.99' R	(2'x3')
117+20.11-29.17' L	(3'x4')
117+20.11-29.17' R	(3'x4')

Install Type C Drop Inlet and Type C Frame & Grate at the following locations:

112+17.95-32.92' L	(3'x4')
112+17.95-32.67' R	(3'x4')
113+54.19-32.17' L	(3'x4')
114+55.51-37.17' L	(3'x4')



Parcel A4
114+86.63 to 116+37.48 L
Temporary Easement containing
0.1 ac (685 sq ft), more or less

Parcel A12
117+12.61 to 117+87.69 L
Temporary Easement containing
0.1 ac (358 sq ft), more or less

Parcel A9
113+44.82 to 114+72.02 R
Temporary Easement containing
0.1 ac (2053 sq ft), more or less

Parcel A11
115+88.38 to 116+38.51 R
Temporary Easement containing
0.1 ac (462 sq ft), more or less

Parcel A17
117+63.34 to 117+78.36 R
Temporary Easement containing
0.1 ac (36 sq ft), more or less

Parcel 1
111+97.70 to 114+86.64 L
Temporary Easement containing
0.1 ac (4823 sq ft), more or less

Parcel A13
117+87.69 to 118+18.69 R
Temporary Easement containing
0.1 ac (755 sq ft), more or less

Parcel A10
114+72.02 to 115+88.48 R
Temporary Easement containing
0.1 ac (1500 sq ft), more or less

Parcel A16
117+51.59 to 117+63.34 R
Temporary Easement containing
0.1 ac (29 sq ft), more or less

Parcel A17
117+88.65 to 118+13.35 R
Temporary Easement containing
0.1 ac (60 sq ft), more or less

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B22	B72

Plotting Date: 01/07/2026 Revised 01/07/2026 AR

Plot Scale - 1:40

112+88 L
60' Drive

114+10 L
60' Drive

114+10 R
60' Drive

115+24 L
60' Drive

115+25 R
40' Drive

115+74 R
30' Drive

116+75 L
50' Int Rd

116+75 R
49' Int Rd

FLL (S&N) 1988.45
FLL (E&W) 1987.45
FLR (N) 1988.68
FLR (S&N) 1988.63
FLL (S) 1988.50
30" RCP 0.5179%
18" RCP 0.5000%
FLL (N) 1988.50
FLL (S) 1988.45
18" RCP 0.5000%
FLR (S) 1988.68
FLR (N) 1988.63
18" RCP 0.5000%
FLR (S) 1988.63
FLL (N) 1988.45
30" RCP 0.5000%
FLL (E) 1987.45
FLL (W) 1986.77

FLL (N,E&W) 1988.14
0.7054%
FLL (E) 1988.14
FLL (W) 1987.45
18" RCP 0.5000%
FLL (N) 1989.18
FLL (S) 1989.14
FLL (N&S) 1989.18
30" RCP 0.5574%
18" RCP 0.5000%
FLL (N) 1989.25
FLL (S) 1989.18

FLL (S&N) 1989.69
FLL (E&W) 1988.69
FLL (S) 1989.76
FLR (N) 1989.87
FLL (E) 1988.69
FLL (W) 1988.14
18" RCP 0.5000%
FLL (N) 1989.76
FLL (S) 1989.69
18" RCP 0.5000%
FLR (S) 1989.87
FLL (N) 1989.69

L 50.00ft
G1 0.7054%
G2 1.0578%
K 142
PVI 115+65
Elev 1995.95
FLL (E) 1989.53
FLL (W) 1988.69
30" RCP 0.5000%

FLL (N) 1990.53
FLL (E) 1990.03
FLL (W) 1989.53
FLL (E&W) 1990.88
1.0578%
18" RCP 1.1848%
FLL (N) 1990.88
FLL (S) 1990.53
18" RCP 1.2408%
FLL (E) 1991.52
FLL (S) 1990.88

FLL (W) 1991.52
FLR (N) 1992.06
FLL (S) 1991.37
FLL (W) 1990.87
18" RCP 0.5000%
FLR (S) 1991.65
FLL (N) 1991.37
18" RCP 1.0000%
24" RCP 0.9424%
FLL (E) 1990.87
FLL (W) 1990.03
18" RCP 2.0542%
FLR (S) 1992.06
FLR (N) 1991.65
FLR (W,E&N)
1991.65
FLR (E) 1993.17
FLR (W) 1991.65

14
116+37.42-34.56' L
PK Nail in sidewalk 5' South of commercial sign
Elev 1996.844

2040 2035 2030 2025 2020 2015 2010 2005 2000 1995 1990 1985 1980 1975 1970 1965 1960 1955 1950

1993.38 1993.52 1993.66 1993.80 1993.94 1994.08 1994.22 1994.36 1994.51 1994.65 1994.79 1994.93 1995.07 1995.21 1995.35 1995.49 1995.63 1995.78 1995.93 1996.12 1996.32 1996.53 1996.75 1996.96 1997.17 1997.38 1997.59 1997.80 1998.02 1998.23 1998.44

112+00 113+00 114+00 115+00 116+00 117+00 118+00

Plotted From - tcsf12141

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B23	B72

Plotting Date: 09/29/2025 Revised 09/29/2025 MMM

118+79.03-29.17' L to 118+79.03-29.17' R
Install 18" - 56' RCP
(Between Drop Inlets)

118+19 Lt to 118+66 Lt
Do Not Disturb 5 pillars & Use extreme caution during construction activities adjacent to the pillars

118+19 Lt to 118+66 Lt
Remove and reset stanchions in front of bank pillars
(Incidental Work, Grading)

118+79.03-29.17' R to 119+53.91-29.17' R
Install 18" - 72' RCP
(Between Drop Inlets)

119+53.91-29.17' R to 119+53.91-29.17' L
Install 18" - 56' RCP
(Between Drop Inlets)

119+53.91-29.17' L to 119+73.16-47.67' L
Install 18" - 28' RCP
(Between Drop Inlets)

120+31.50-46.17' L to 120+54.06-29.17' L
Install 18" - 20' RCP
(Between Drop Inlets)

120+54.06-29.17' L to 121+70.15-29.17' L
Install 18" - 114' RCP
(Between Drop Inlets)

121+70.15-29.17' L to 121+70.15-26.67' R
Install 18" - 54' RCP
(Between Drop Inlets)

121+70.15-29.17' L to 123+28.71-29.17' L
Install 18" - 156' RCP
(Between Drop Inlets)

123+28.71-29.17' L to 124+29.82-29.17' L
Install 24" - 98' RCP
(Between Drop Inlets)

123+28.71-29.17' L to 123+28.71-26.67' R
Install 18" - 54' RCP
(Between Drop Inlets)

123+65.28-53.36' L to 124+04.67-53.38' L
Install 18" - 36' RCP
(Between Drop Inlets)

Install Type B Drop Inlet with 6" Concrete collar and Type B Frame & Grate at the following locations:

118+79.09-29.17' L	(2'x3')
118+79.09-29.17' R	(2'x3')
119+53.91-29.17' L	(3'x4')
119+53.91-29.17' R	(2'x3')
119+73.16-47.67' L	(2'x3')
120+31.50-46.17' L	(2'x3')
120+54.06-29.17' L	(3'x4')
121+70.15-29.17' L	(2'x3')
121+70.15-26.67' R	(2'x3')
123+28.71-29.17' L	(3'x4')
123+28.71-26.67' R	(2'x3')
123+65.28-53.36' L	(2'x3')

TORONTO

At all times either one or the other of the entrance at 118+05 Lt or the door at 118+50 Lt will remain open and accesible.

123+15 L
Remove tree and stump
(Clear and Grub Tree)

First Bank & Trust of Milbank
Parcel A13

Arthur Shelton and Kyle S. Shelton
Parcel A14

Prop. Line

T and C Enterprises
Parcel A15

Roelofsen Implement Inc. (INFORMATION ONLY)

City of Toronto (INFORMATION ONLY)

Roelofsen Implement Inc.
Parcel A19

Richard T. Roelofsen and Vickie J. Roelofsen Revocable Living Trust
Parcel A20

ORIGINAL TOWN
BLOCK 7
Lot 9 Lot 10 Lot 11 Lot 12 Lot 13 Lot 14 Lot 15

ORIGINAL TOWN
BLOCK 8
Lot 7 Lot 8 Lot 9 Lot 10 Lot 11 Lot 12 Lot 13 Lot 14 Lot 15 Lot 16 Lot 17 Lot 18

Dakota Street 80'

Missouri Street 80'

Present SD Hwy 28

Main Street

Section Line

N 87°23'49" E

118+00 119+00 120+00 121+00 122+00 123+00 124+00

ORIGINAL TOWN
BLOCK 9
Lot 4 Lot 5 Lot 6 Lot 7

Xavier Buck Fuller (INFORMATION ONLY)

King-Ag, LLC
Parcel A17

Town of Toronto
Parcel A18

120+40 R
Do Not Disturb Sign

118+30-45' R
Do Not Disturb Flag Pole

Tim Trooien, Neal Trooien, Doyle Trooien and Thane Trooien d/b/a Trooien Bros.
Parcel A21

Trooien Bros.
Parcel A22

Betty Steinmetz
Parcel A23

APIF - South Dakota, LLC (INFORMATION ONLY)

Quality Spray Foam Applicators, LLC
Parcel A24

ORIGINAL TOWN
BLOCK 11
Lot 5 Lot 6 Lot 7 Lot 8 Lot 9 Lot 10 Lot 11 Lot 12

Michelle Oftedahl (INFORMATION ONLY)

Michelle Oftedahl
Parcel A25

Bradley Knutson and Catie Knutson
Parcel A26

Property Line

60 feet

80 feet

122+28-38' Rt to 122+34-38' Rt
Do not disturb building steps and building foundation

Parcel A14
118+63.83 to 118+68.46 L
Temporary Easement containing
0.1 ac (11 sq ft), more or less

Parcel A15
118+87.79 to 118+97.17 L
Temporary Easement containing
0.1 ac (33 sq ft), more or less

Parcel A21
120+43.37 to 120+68.34 R
Temporary Easement containing
0.1 ac (104 sq ft), more or less

Parcel A19
121+13.92 to 121+17.93 L
Temporary Easement containing
0.1 ac (19 sq ft), more or less

Parcel A24
121+68.15 to 122+18.02 R
Temporary Easement containing
0.1 ac (181 sq ft), more or less

Parcel A25
122+42.96 to 122+67.91 R
Temporary Easement containing
0.1 ac (177 sq ft), more or less

Parcel A18
118+13.35 to 118+88.36 R
Temporary Easement containing
0.1 ac (492 sq ft), more or less

Parcel A14
118+83.47 to 118+87.79 L
Temporary Easement containing
0.1 ac (15 sq ft), more or less

Parcel A15
119+29.85 to 119+62.87 L
Temporary Easement containing
0.1 ac (84 sq ft), more or less

Parcel A22
120+68.33 to 121+18.26 R
Temporary Easement containing
0.1 ac (152 sq ft), more or less

Parcel A23
121+18.25 to 121+43.21 R
Temporary Easement containing
0.1 ac (104 sq ft), more or less

Parcel A20
121+93.03 to 123+43.32 L
Temporary Easement containing
0.1 ac (555 sq ft), more or less

Parcel A26
122+67.89 to 123+42.73 R
Temporary Easement containing
0.1 ac (487 sq ft), more or less

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B24	B72

Plotting Date: 09/09/2025 Revised 08/27/2025 AR

Plot Scale - 1:40

118+05 L
16' Drive

120+04 L
55' Int Rd

120+04 R
55' Int Rd

121+88 R
16' Drive

122+70 R
24' Drive

123+85 L
36' Int Rd

123+85 R
36' Int Rd

FLL (S) 1993.45
FLR (N,E&W) 1993.17
1.0578%
18" RCP 0.5000%
FLL (N) 1993.45
FLR (S) 1993.17
18" RCP 1.0000%
FLR (E) 1993.17
FLR (W) 1991.65

FLL (S&E) 1994.77
FLL (N&W) 1994.07
18" RCP 1.2500%
FLL (N) 1994.77
FLR (S) 1994.07
18" RCP 1.2500%
FLR (E) 1994.07
FLR (W) 1993.17
18" RCP 0.5000%
FLL (N) 1994.88
FLL (S) 1994.77

FLL (W) 1994.88
FLL (E) 1994.00
PVI 120+05
Elev 2000.61
L 225.00ft
G1 1.0578%
G2 -0.3000%
K 166

FLL (N&E) 1993.91
18" RCP 0.5000%
FLL (N) 1994.00
FLL (S) 1993.91
18" RCP 0.5000%
FLL (W) 1993.91
FLL (E) 1993.31

FLR (N) 1993.58
-0.3000%
18" RCP 0.5000%
FLR (S) 1993.58
FLL (N) 1993.31
18" RCP 0.5000%
FLL (W) 1993.31
FLL (E) 1992.53

FLL (W,S&E) 1993.31
PVI 122+18
Elev 1999.97
18" RCP 0.5000%
L 110.00ft
G1 -0.3000%
G2 -1.2349%
K 118

FLL (W&S) 1992.53
FLL (E) 1992.03
18" RCP 0.5000%
FLR (S) 1992.03
FLL (N) 1992.30
24" RCP 1.5469%
FLL (W) 1992.03
FLL (E) 1990.62

FLR (N) 1992.81
-1.2349%
FLL (E) 1991.44
18" RCP 0.5000%
FLL (W) 1991.44
FLL (E) 1991.26

13
119+67.70-34.75' L
PK Nail in sidewalk 4' NW power pole
Elev 1999.960

12
123+36.22-34.26' R
PK Nail in sidewalk 2' South power pole
Elev 1998.671

2045 2040 2035 2030 2025 2020 2015 2010 2005 2000 1995 1990 1985 1980 1975 1970 1965 1960 1955

1998.44 1998.65 1998.86 1999.07 1999.29 1999.50 1999.69 1999.85 2000.00 2000.11 2000.21 2000.28 2000.32 2000.35 2000.34 2000.32 2000.27 2000.21 2000.15 2000.08 1999.97 1999.83 1999.66 1999.45 1999.21 1998.97 1998.72 1998.47 1998.22 1997.98 1997.73

118+00 119+00 120+00 121+00 122+00 123+00 124+00

Plotted From - TPSF12141

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B25	B72

Plotting Date: 01/07/2026 Revised 01/07/2026 AR

124+04.67-53.38' L to 124+29.82-29.17' L
Install 18" - 36' RCP
(Between Drop Inlets)

124+29.82-29.17' L to 124+29.82-29.17' R
Install 18" - 56' RCP
(Between Drop Inlets)

124+29.82-29.17' L to 125+85.19-29.17' L
Install 24" - 152' RCP
(Between Drop Inlets)

125+85.19-29.17' L 127+25.63-29.17' L
Install 24" - 136' RCP
(Between Drop Inlets)

125+85.19-29.17' L to 125+75.19-29.17' R
Install 18" - 56' RCP
(Between Drop Inlets)

127+31-28' L to 127+50-55' L
Take Out 30"-32' RCP
(Incidental Work, Grading)

127+36-27' R to 127+45-42' R
Take Out 17"-18' RCP
(Incidental Work, Grading)

127+50-55' L
Take Out 30" RCP Bend
(Incidental Work, Grading)

127+50-55' L to 127+88-60' L
Take Out 24"-38' RCP
(Incidental Work, Grading)

127-68-54' R
Take Out 15" - 41' CMP &
(Incidental Work, Grading)

127+25.63-29.17' L to 127+42.63-49.65' L
Install 30" - 26' RCP
(Between Drop Inlets)

127+25.63-29.17' L to 127+25.63-29.17' R
Install 18" - 56' RCP
(Between Drop Inlets)

127+42.63-49.59' L to 128+04.58-49.57' L
Install 30" - 60' RCP
& 1 Sloped End
(Between Drop Inlet & Outlet)

127+67-55' R
Install 18" - 58' RCP
& 2 Safety Ends

127+67 Rt & Ah
Install Bank and Channel Protection Gabions (4.5 CY) and Type B Drainage Fabric (15 SqYd)

Remove Drop Inlets at the following Locations:
127+31-28' L
127+36-27' R

Install Type B Drop Inlet with 6" Concrete collar and Type B Frame & Grate at the following locations:

124+04.67-53.38' L	(3'x4')
124+29.82-29.17' L	(3'x4')
124+29.82-29.17' R	(2'x3')
125+85.19-29.17' L	(4'x3')
125+75.19-29.17' R	(2'x3')
127+25.63-29.17' L	(5.5'x5.5')
127+25.63-29.17' R	(2'x3')

Install Type C Drop Inlet with 6" Concrete collar at the following locations:
127+42.63-49.65' L (4'x5')

TORONTO

ORIGINAL TOWN
BLOCK 14

Leganger Evangelical Lutheran Church
Parcel A27

Missouri Street 80'

124+47 L
Elim Ent

124+87 L
Elim Ent

Lot 7 Lot 8 Lot 9 Lot 10 Lot 11 Lot 12 Lot 13 Lot 14 Lot 15 Lot 16 Lot 17 Lot 18

125+21-43' L
126+86-46' L
Remove trees and stumps
(Clear and Grub Tree)

Frontier Street 80'

Sec 19 - T113N - R48W

Government Lot 4

DK Overby, LLP
Parcel A30

Section Line
Present SD Hwy 28
Main Street

N 86°31'18" E

124+00 125+00 126+00 127+00 128+00 129+00 130+00

150'

Missouri Street 80'

Lot 1 Lot 2 Lot 3 Lot 4 Lot 5 Lot 6 Lot 7 Lot 8 Lot 9 Lot 10 Lot 11 Lot 12

OMSHRI, LLC
Parcel A28

BLOCK 17

David and Kimberly Overby Living Trust
Parcel A29

124+98 R
Do Not Disturb
Test Well

PI 124+61.13
N 287750.55
E 2843629.31
Del 0°52'30" L
Dc 0°08'36"
T 305.01'
L 610.00'
R 39937.74'

ORIGINAL TOWN

125+22-52' R to 125+62-52' R
Do Not Disturb
Embedded Pavement
Apron Heaters

125+73 R to 127+23 R
Do Not Disturb
Private Drain Tile
Outside of Work Limits

David and Kimberly Overby Living Trust

Lots 11 and 12 in Block 17 of the Original Town of Toronto

Frontier Street 80'

127+80-40' R
Do not Disturb
Sanitary Sewer Inlet

Government Lot 1

STRASSBURG ADDITION

Emery H. Emerson, Jr. Trust
Parcel A31
Omitted

Sec 30 - T113N - R48W

Parcel A27
124+23.38 to 127+23.95 L
Temporary Easement containing
0.1 ac(2544 sq ft), more or less

Parcel A30
128+04.44 to 133+71.76 L
Temporary Easement containing
0.1 ac(4297 sq ft), more or less

Parcel A28
124+22.62 to 125+72.81 R
Temporary Easement containing
0.1 ac(1509 sq ft), more or less

Parcel A29
125+72.78 to 127+22.22 R
Temporary Easement containing
0.1 ac(1303 sq ft), more or less

Plot Scale - 1:40
Plotted From - trsf12141
File - U:\trip\rj\Duel\06R7\124.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B26	B72

Plotting Date: 09/09/2025

Plot Scale - 1:40

124+61 L
24' Drive

125+42 R
40' Drive

125+99 R
24' Drive

127+68 L
36' Int Rd

127+68 R
36' Int Rd

FLL (W&S) 1991.26
FLR (N) 1991.40
FLL (N&S) 1991.12
FLL (E&W) 1990.62
18" RCP 0.5000%
FLR (S) 1991.40
FLL (N) 1991.12
24" RCP 1.0865%
18" RCP 0.5000%
FLL (W) 1991.44
FLL (E) 1991.26
24" RCP 1.5469%
FLL (W) 1992.03
FLL (E) 1990.62
FLL (W) 1990.62
FLL (E) 1988.91
FLR (N) 1989.69
FLL (W) 1988.91
FLL (S) 1989.41
FLL (E) 1988.41
18" RCP 0.5000%
FLR (S) 1989.69
FLL (N) 1989.41
30" RCP 0.8696%
FLL (W) 1990.62
FLL (E) 1988.91
FLR (N) 1988.51
FLL (W,S&N) 1987.24
-1.2349%
18" RCP 0.5000%
FLR (S) 1988.51
FLL (N) 1988.24
30" RCP 0.5000%
FLL (S) 1987.24
FLL (N) 1987.12
FLL (S&E) 1987.12
30" RCP 0.5000%
FLL (W) 1987.12
FLL (E) Outlet 1986.82

11
127+47.60-41.53' L
CP11 Rebar with SDDOT cap 1' South street marker
Elev 1993.855

2040 2035 2030 2025 2020 2015 2010 2005 2000 1995 1990 1985 1980 1975 1970 1965 1960 1955 1950

1997.73 1997.48 1997.24 1996.99 1996.74 1996.50 1996.25 1996.00 1995.75 1995.51 1995.26 1995.01 1994.77 1994.52 1994.27 1994.03 1993.78 1993.53 1993.28 1993.04 1992.79 1992.54 1992.30 1992.05 1991.80 1991.56 1991.31 1991.06 1990.82 1990.57 1990.32

124+00 125+00 126+00 127+00 128+00 129+00 130+00

Plotted From - TRSF12141

File - U:\rdp\rj\Duel06R7\124v.dgn

133+20-48' L
Take Out 24"-56' RCP
(Incidental Work, Grading)

133+23-49' L
Install 30" - 52' CMP
& 2 Safety Ends

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B27	B72

Plotting Date: 01/07/2026 Revised 01/07/2026 AR

Plot Scale - 1:40

TORONTO

Sec 19 - T113N - R48W

END P-CR 0028(47)367
Station 133+50.00

DK Overby, LLP
Parcel A30

DK Overby, LLP
Parcel A30

Government Lot 4

E1/2 SW1/4

CITY LIMITS

132+83-73'

133+11-95'

133+36-95'

133+71.76-70.75'

150'

N 87°14'56" E

Present SD Hwy 28

Main Street

Section Line

130+00

131+00

132+00

133+00

134+00

135+00

136+00

T/F

HO

Government Lot 1

NE1/4 NW1/4

1/16 Line

CITY LIMITS

STRASSBURG ADDITION

Emery H. Emerson, Jr. Trust
Parcel A31
Omitted

Emery H. Emerson, Jr. Trust
(INFORMATION ONLY)

PI 130+56.83
N 287786.70
E 2844223.92
Del 0°43'37" R
Dc 0°11'38"
T 187.50'
L 375.00'
R 29552.88'

Sec 30 - T113N - R48W

Plotted From - trsf12141

File - U:\trdprj\Duell6R7\130.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B28	B72

Plotting Date: 09/09/2025 Revised 08/27/2025 AR

133+50.00
End Grading

133+20 L
24' Ent

L 50.00ft
G1 -1.2349%
G2 -0.6174%
K 81

-1.2349%

-1.2349%

PVI 130+38
Elev 1989.85

-0.6174%

PVI 134+80
Elev 1987.12

10
138+27.30-74.23' R
CP10 Rebar 2' West of power pole
Elev 1983.100

2035 2030 2025 2020 2015 2010 2005 2000 1995 1990 1985 1980 1975 1970 1965 1960 1955 1950 1945

1990.32 1990.08 1989.87 1989.72 1989.59 1989.47 1989.35 1989.22 1989.10 1988.97 1988.85 1988.73 1988.60 1988.48 1988.36 1988.23 1988.11 1987.99 1987.86 1987.74 1987.62 1987.49 1987.37 1987.25

130+00 131+00 132+00 133+00 134+00 135+00 136+00

Plot Scale - 1:40

TPSF12141

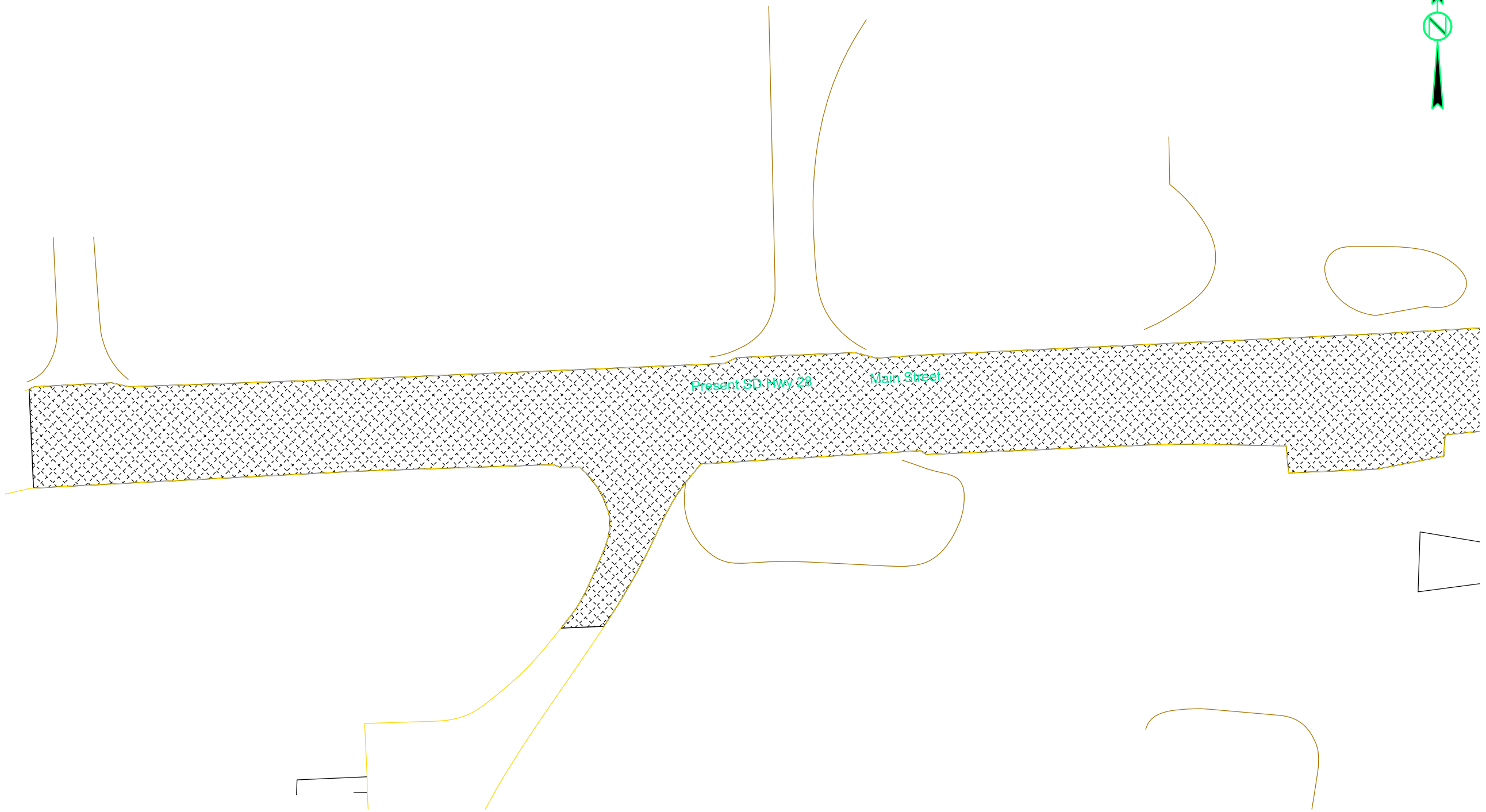
Plotted From -

File - U:\drdpn\Duel06R7\1130v.dgn

PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B29	B72

Plotting Date: 09/09/2025



Plot Scale - 1:40

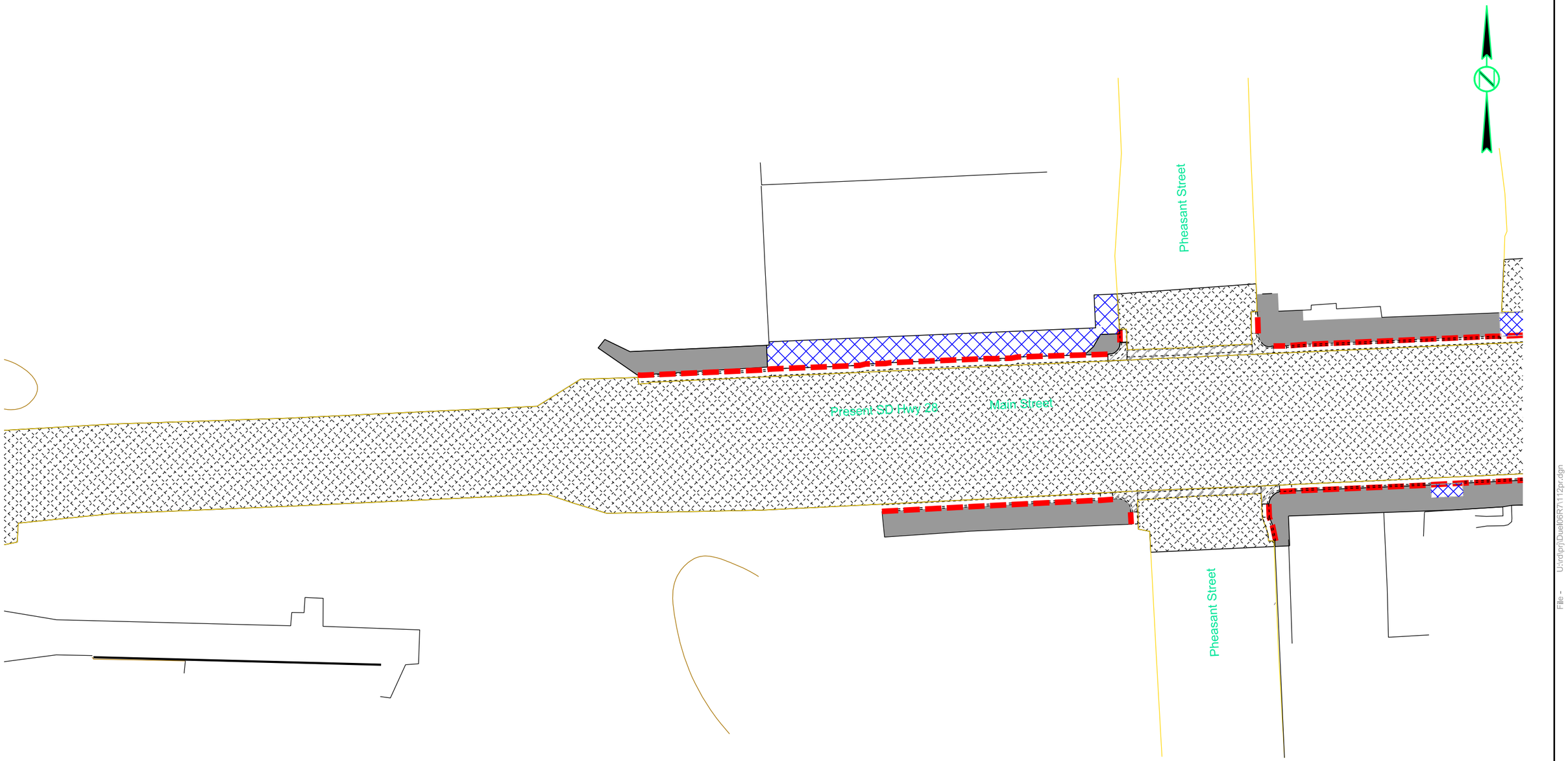
Plotted From - TRSF12141

File - U:\d\prj\Duel06R7\1106pr.dgn

PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B30	B72

Plotting Date: 09/09/2025



Plot Scale - 1:40

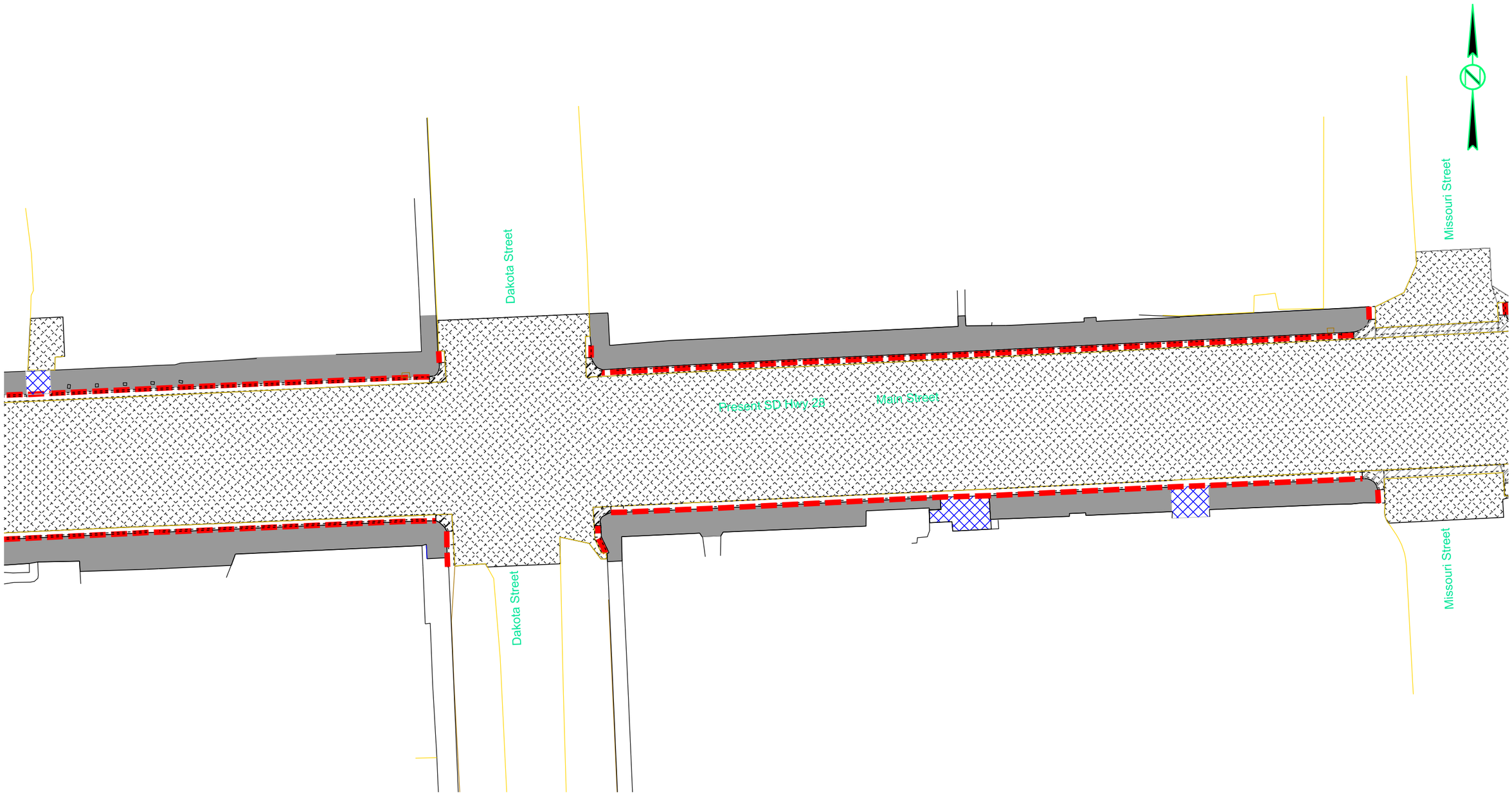
Plotted From - TRSF12141

File - U:\roll\prj\Duell\6R7\1112pr.dgn

PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B31	B72

Plotting Date: 09/09/2025



Plot Scale - 1:40

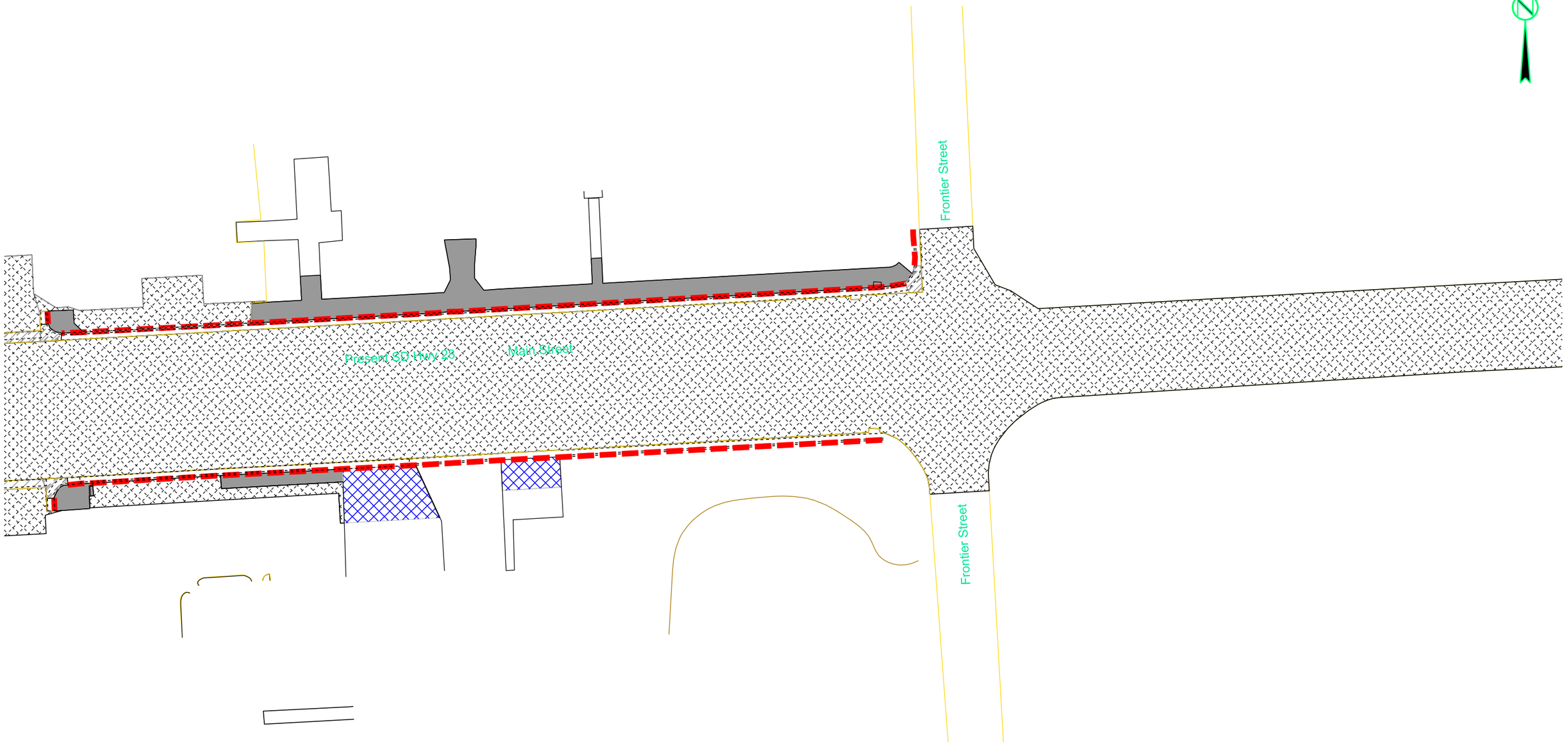
Plotted From - TRSF12141

File - U:\trafprj\Duel\06R7\T18pr.dgn

PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B32	B72

Plotting Date: 09/09/2025



Plot Scale - 1:40

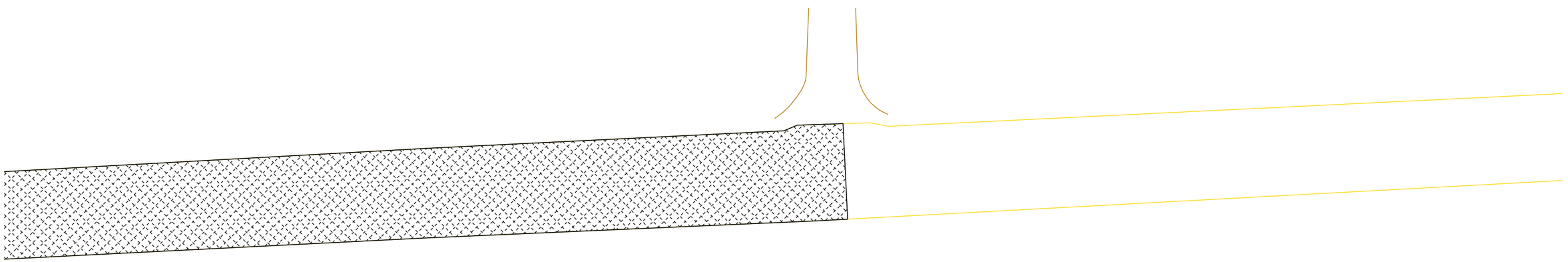
Plotted From - TRSF12141

File - U:\rdplrj\Duell\6R7\124pr.dgn

PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B33	B72

Plotting Date: 09/09/2025



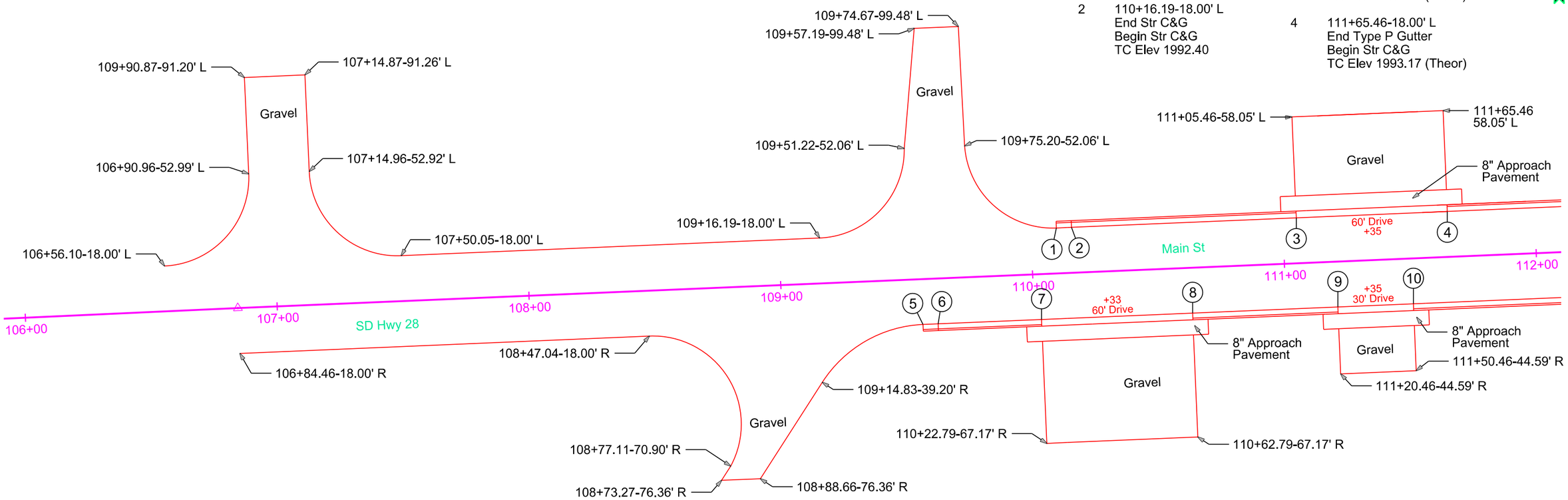
CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B34	B72

Plotting Date: 09/16/2025 Revised 09/16/2025 AR

Note: All curb and gutter shown on this sheet is Type F68 and all gutter is Type P8 except as noted.
All sidewalk is 5' wide except as noted.
All approach pavement is 6" thick pavement except as noted.

TORONTO



1 110+10.19-18.00' L
Begin Str C&G
TC Elev 1992.38 (Theor)

2 110+16.19-18.00' L
End Str C&G
Begin Str C&G
TC Elev 1992.40

3 111+05.46-18.00' L
End Str C&G
Begin Type P Gutter
TC Elev 1992.76 (Theor)

4 111+65.46-18.00' L
End Type P Gutter
Begin Str C&G
TC Elev 1993.17 (Theor)

5 109+55.70-18.00' R
Begin Str C&G
TC Elev 1992.19 (Theor)

6 109+61.70-18.00' R
End Str C&G
Begin Str C&G
TC Elev 1992.21

7 110+02.79-18.00' R
End Str C&G
Begin Type P Gutter
TC Elev 1992.36 (Theor)

8 110+62.79-18.00' R
End Type P Gutter
Begin Str C&G
TC Elev 1992.57 (Theor)

9 111+20.46-18.00' R
End Str C&G
Begin Type P Gutter
TC Elev 1992.86 (Theor)

10 111+50.46-18.00' R
End Type P Gutter
Begin Str C&G
TC Elev 1993.07 (Theor)

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B35	B72

Plotting Date: 01/07/2026 Revised 01/07/2026 AR

Note: All curb and gutter shown on this sheet is Type B68 and all gutter is Type P8 except as noted.
All sidewalk is 5' wide except as noted.
All approach pavement is 6" thick except as noted.

TORONTO

1 112+57.91-18.00' L
End Str Type F68 C&G
Begin Type P Gutter
TC Elev 1993.83 (Theor)

2 113+17.91-18.00' L
End Type P Gutter
Begin Str Type F68 C&G
TC Elev 1994.25 (Theor)

3 113+80.47-18.00' L
End Str Type F68 C&G
Begin Type P Gutter
TC Elev 1994.69 (Theor)

4 114+40.47-18.00' L
End Type P Gutter
Begin Str Type F68 C&G
TC Elev 1995.11 (Theor)

5 114+93.70-18.00' L
End Str Type F68 C&G
Begin Type P Gutter
TC Elev 1995.49 (Theor)

6 115+53.70-18.00' L
End Type P Gutter
Begin Str Type F68 C&G
TC Elev 1995.92 (Theor)

7 116+30.48-18.00' L
End Str Type F68 C&G
Begin 20' Rad Fillet
TC Elev 1996.69

8 116+50.42-38.13' L
End 20' Rad Fillet
Begin Str Type F68 C&G
TC Elev 1997.11 (Theor)

9 116+50.40-45.12' L
End Str Type F68 C&G
Begin Str Type F68 C&G
TC Elev 1997.40

10 116+50.40-51.12' L
End Str Type F68 C&G
Begin Type P Gutter
TC Elev 1997.70 (Theor)

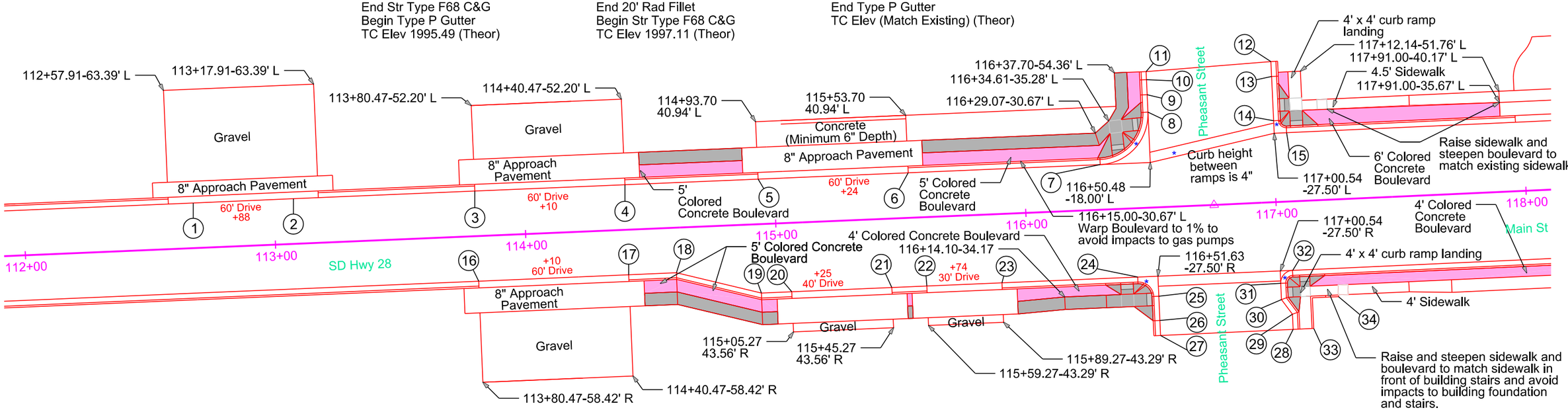
11 116+50.37-54.36' L
End Type P Gutter
TC Elev (Match Existing) (Theor)

12 117+00.54-56.17' L
Begin Str C&G
TC Elev (Match Existing) (Theor)

13 117+00.54-50.17' L
End Str C&G
Begin Str C&G
TC Elev 1997.91

14 117+00.54-32.50' L
End Str C&G
Begin 5' Rad Fillet
TC Elev 1997.40

15 117+05.54-27.50' L
End 5' Rad Fillet
Begin Str C&G
TC Elev 1997.29



16 113+80.47-18.00' R
End Str Type F68 C&G
Begin Type P Gutter
TC Elev 1994.69 (Theor)

17 114+40.47-18.00' R
End Type P Gutter
Begin Str Type F68 C&G
TC Elev 1995.11 (Theor)

18 114+59.51-18.00' R
End Str Type F68 C&G
Begin Str Type F68 C&G
TC Elev 1995.25

19 114+93.11-27.50' R
End Str Type F68 C&G
Begin Str Type F68 C&G
TC Elev 1995.29

20 115+05.27-27.50' R
End Str Type F68 C&G
Begin Type P Gutter
TC Elev 1995.38 (Theor)

21 115+45.27-27.50' R
End Type P Gutter
Begin Str Type F68 C&G
TC Elev 1995.66 (Theor)

22 115+59.27-27.50' R
End Str Type F68 C&G
Begin Type P Gutter
TC Elev 1995.78 (Theor)

23 115+89.27-27.50' R
End Type P Gutter
Begin Str Type F68 C&G
TC Elev 1996.06 (Theor)

24 116+43.57-27.50' R
End Str Type F68 C&G
Begin 8' Rad Fillet
TC Elev 1996.63 (Theor)

25 116+51.65-35.50' R
End 8' Rad Fillet
Begin Str Type F68 C&G
TC Elev 1996.79 (Theor)

26 116+51.69-45.16' R
End Str Type F68 C&G
Begin Str Type F68 C&G
TC Elev 1996.83

27 116+51.70-51.17' R
End Str Type F68 C&G
TC Elev (Match Existing)

28 117+04.54-51.05' R
Begin Str C&G
TC Elev (Match Existing)

29 117+04.54-44.99' R
End Str C&G
Begin Str C&G
TC Elev 1997.46

30 117+00.45-38.99' R
End Str C&G
Begin Str C&G
TC Elev 1997.40 (Theor)

31 117+00.54-32.50' R
End Str C&G
Begin 5' Rad Fillet
TC Elev 1997.31 (Theor)

32 117+05.37-27.50' R
End 5' Rad Fillet
Begin Str C&G
TC Elev 1997.29

33 117+12.76-51.05' R
Begin Str Curb

34 117+23.25-38.84' R
End Str Curb

LEGEND
- 4" Colored Concrete Sidewalk
- 6" Concrete

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B36	B72

Plotting Date: 09/29/2025 Revised 09/29/2025 MMM

Note: All curb and gutter shown on this sheet is Type B68 and all gutter is Type P8 except as noted.
All sidewalk is 5' wide except as noted.
All approach pavement is 6" thick except as noted.

TORONTO

1 117+97.00-27.50' L
End Str C&G
Begin Type P Gutter
TC Elev 1998.26 (Theor)

2 118+13.00-27.50' L
End Type P Gutter
Begin Str C&G
TC Elev 1998.43 (Theor)

3 119+69.80-27.50' L
End Str C&G
Begin 5' Rad Fillet
TC Elev 1999.91 (Theor)

4 119+74.81-32.48' L
End 5' Rad Fillet
Begin Str C&G
TC Elev 1999.98 (Theor)

5 119+74.84-49.17' L
End Str C&G
Begin Str C&G
TC Elev 2000.40

6 119+74.85-55.17' L
End Str C&G
TC Elev (Theor)

7 120+31.68-52.82' L
Begin Str C&G
TC Elev (Match Existing)(Theor)

8 120+29.84-48.19' L
End Str C&G
Begin Str C&G
TC Elev 2000.63

9 120+29.81-33.02' L
End Str C&G
Begin 5.5' Rad Fillet
TC Elev 2000.21 (Theor)

10 120+35.30-27.50' L
End 5.5' Rad Fillet
Begin Str C&G
TC Elev 2000.17 (Theor)

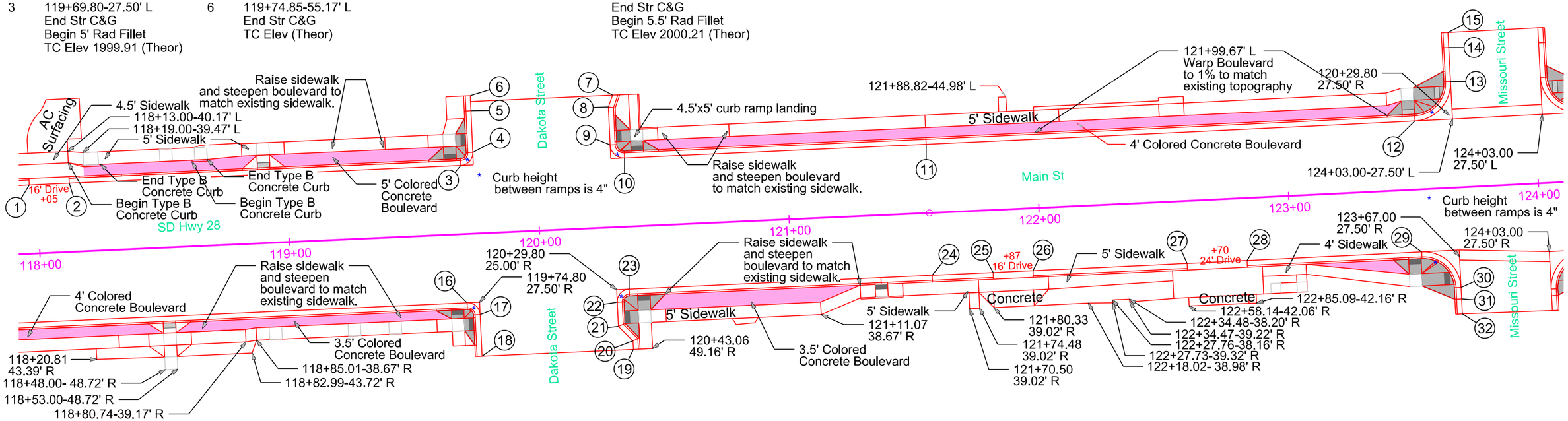
11 121+56.13-27.50' L
End Str C&G
Begin 39910.24' Rad C&G
TC Elev 2000.01

12 123+51.95-27.50' L
End 39910.24' Rad C&G
Begin 15' Rad Fillet
TC Elev 1998.17 (Theor)

13 123+66.96-42.53' L
End 15' Rad C&G
Begin Str C&G
TC Elev 1998.12 (Theor)

14 123+66.95-56.16' L
End Str C&G
Begin Str C&G
TC Elev 1998.27

15 123+66.95-62.15' L
End Str C&G
TC Elev (Match Existing)(Theor)



16 119+69.80-27.50' R
End Str C&G
Begin 5' Rad Fillet
TC Elev 1999.60 (Theor)

17 119+74.80-32.50' R
End 5' Rad Fillet
Begin Str C&G
TC Elev 1999.58 (Theor)

18 119+74.80-49.17' R
End Str C&G
TC Elev 1999.43

19 120+35.39-49.17' R
Begin Str C&G
TC Elev (Match Existing)

20 120+35.39-45.72' R
End Str C&G
Begin Str C&G
TC Elev 1999.95

21 120+29.80-39.72' R
End Str C&G
Begin Str C&G
TC Elev 1999.95 (Theor)

22 120+29.80-30.00' R
End Str C&G
Begin 5' Rad Fillet
TC Elev 1999.89 (Theor)

23 120+34.80-25.00' R
End 5' Rad Fillet
Begin Str C&G
TC Elev 2000.01 (Theor)

24 121+56.13-25.00' R
End Str C&G
Begin 39962.74' Rad C&G
TC Elev 2000.06

25 121+80.49-25.00' R
End 39962.74' Rad C&G
Begin 39962.74' Rad
Type P Gutter
TC Elev 1999.97 (Theor)

26 121+96.48-25.00' R
End 39962.74' Rad
Type P Gutter
Begin 39962.74' Rad C&G
TC Elev 1999.89 (Theor)

27 122+58.14-25.00' R
End 39962.74' Rad C&G
Begin 39962.74' Rad
Type P Gutter
TC Elev 1999.37 (Theor)

28 122+82.13-25.00' R
End 39962.74' Rad
Type P gutter
Begin 39962.74' Rad C&G
TC Elev 1999.09 (Theor)

29 123+52.01-25.00' R
End 39962.74' Rad C&G
Begin 15' Rad Fillet
TC Elev 1998.22 (Theor)

30 123+67.00-40.00' R
End 15' Rad Fillet
Begin Str C&G
TC Elev 1998.28 (Theor)

31 123+67.00-44.60' R
End Str C&G
Begin Str C&G
TC Elev 1998.31

32 123+67.00-50.60' R
End Str C&G
TC Elev (Match Existing)(Theor)

LEGEND
4" Colored Concrete Sidewalk
6" Concrete Sidewalk

Plot Scale - 1:40
Plotted From - TRSF12144
File - U:\dgn\prj\Duel\06R7\1118cg.dgn

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B37	B72

Plotting Date: 09/09/2025

Note: All curb and gutter shown on this sheet is Type B68 and all gutter is Type P8 except as noted.
All sidewalk is 5' wide except as noted.
All approach pavement is 6" thick except as noted.

TORONTO

1 124+03.00-62.16' L
Begin Str C&G
TC Elev (Match Existing)(Theor)

2 124+03.00-56.16' L
End Str C&G
Begin Str C&G
TC Elev 1997.98

3 124+03.00-42.29' L
End Str C&G
Begin 15' Rad Fillet
TC Elev 1997.71 (Theor)

4 124+18.02-27.50' L
End 15' Rad Fillet
Begin 39910.24' Rad C&G
TC Elev 1997.20 (Theor)

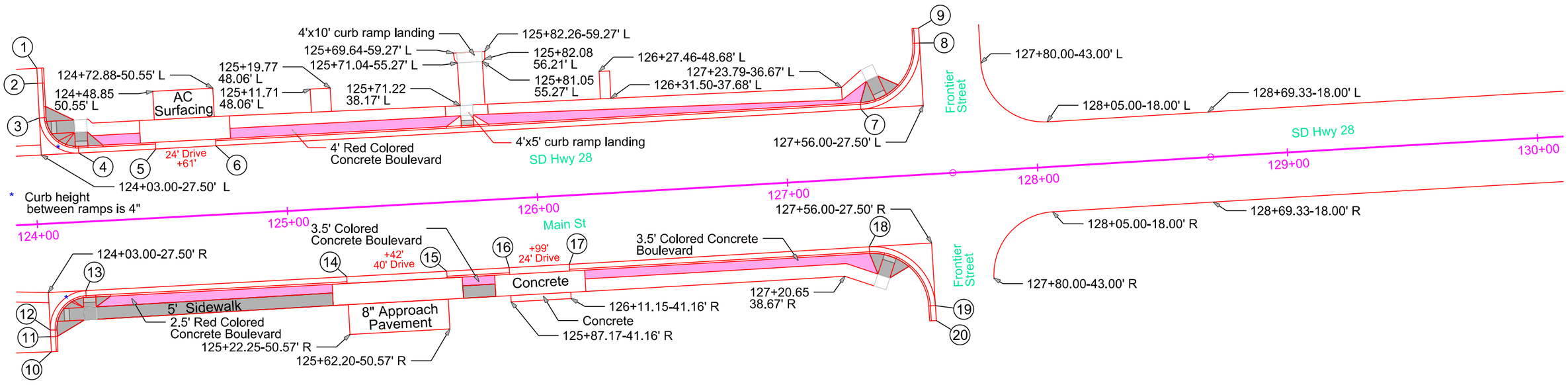
5 124+48.85-27.50' L
End 39910.24' Rad C&G
Begin 39910.24' Rad Type P Gutter
TC Elev 1996.82 (Theor)

6 124+72.86-27.50' L
End 39910.24' Rad Type P Gutter
Begin 39910.24' Rad C&G
TC Elev 1996.56 (Theor)

7 127+31.00-27.50' L
End 39910.24' Rad C&G
Begin 25' Rad Fillet
TC Elev 1993.49

8 127+56.00-52.50' L
End 25' Rad Fillet
Begin Str C&G
TC Elev 1992.77

9 127+56.00-58.50' L
End Str C&G
TC Elev (Match Existing)(Theor)



10 124+02.99-51.13' R
Begin Str C&G
TC Elev (Match Existing)(Theor)

11 124+02.99-45.13' R
End Str C&G
Begin Str C&G
TC Elev 1997.94

12 124+02.99-42.50' R
End Str C&G
Begin 15' Rad Fillet
TC Elev 1997.89 (Theor)

13 124+17.98-27.50' R
End 15' Rad Fillet
Begin 39965.24' Rad C&G
TC Elev 1997.36 (Theor)

14 125+22.24-27.50' R
End 39965.24' Rad C&G
Begin 39965.24' Rad
Type P Gutter
TC Elev 1996.07 (Theor)

15 125+62.21-27.50' R
End 39965.24' Rad
Type P Gutter
Begin 39965.24' Rad C&G
TC Elev 1995.48 (Theor)

16 125+87.18-27.50' R
End 39965.24' Rad C&G
Begin 39965.24' Rad
Type P Gutter
TC Elev 1995.27 (Theor)

17 126+11.16-27.50' R
End 39965.24'
Type P Gutter
Begin 39965.24' Rad C&G
TC Elev 1994.97 (Theor)

18 127+31.00-27.50' R
End 39965.24' Rad C&G
Begin 25' Rad Fillet
TC Elev 1993.49

19 127+56.00-52.50' R
End 25' Rad Fillet
Begin Str C&G
TC Elev 1993.03

20 127+56.00-58.50' R
End Str C&G
TC Elev (Match Existing)(Theor)

LEGEND
- 4" Colored Concrete Sidewalk
- 6" Concrete Sidewalk

CURB RAMP LAYOUT

NOTE

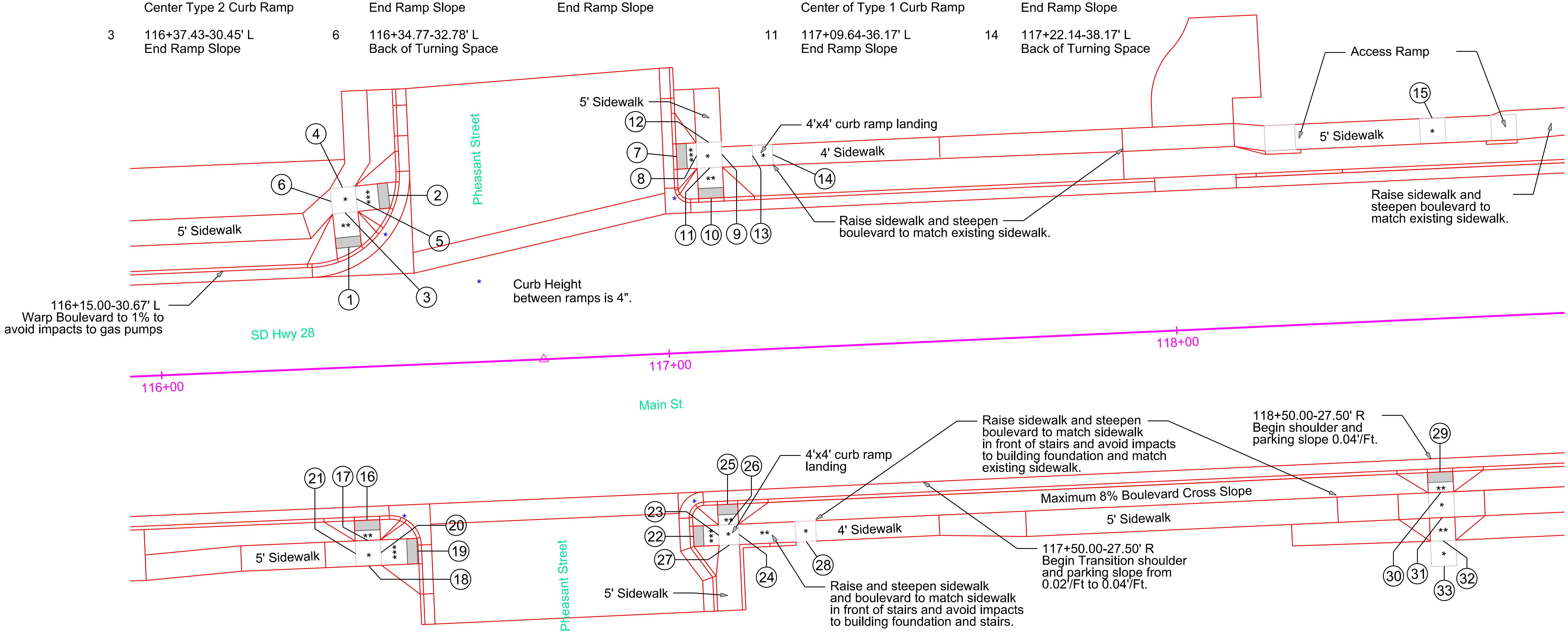
*** The turning space at some locations will not be able to achieve full height within the available length for the ramp slope(s). To offset this, the longitudinal running slope (5.0% maximum) of the connecting sidewalk(s) will be adjusted to meet the lower elevation of the turning space.

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
***Curb ramp with 1.5% cross slope and a minimum of 7.5% slope, although slope may be less than 7.5%.

Note:
Concrete will be used between directional and perpendicular curb ramps except as noted.
Concrete will be used in the boulevard except as noted.

TORONTO

1	116+37.87-23.65' L Center Type 2 Curb Ramp
2	116+46.12-33.51' L Center Type 2 Curb Ramp
3	116+37.43-30.45' L End Ramp Slope
4	116+37.11-35.44' L Back of Turning Space
5	116+39.76-33.10' L End Ramp Slope
6	116+34.77-32.78' L Back of Turning Space
7	117+03.21-38.67' L Center of Type 1 Curb Ramp
8	117+07.14-38.67' L End Ramp Slope
9	117+12.14-38.67' L Back of Turning Space
10	117+09.64-30.17' L Center of Type 1 Curb Ramp
11	117+09.64-36.17' L End Ramp Slope
12	117+09.64-41.17' L Back of Turning Space
13	117+18.14-38.17' L End Ramp Slope
14	117+22.14-38.17' L Back of Turning Space
15	118+52.11-39.47' L Back of Turning Space



16	116+39.17-30.17' R Center of Type 1 Curb Ramp
17	116+39.17-34.17' R End Ramp Slope
18	116+39.17-39.17' R Back of Turning Space
19	116+48.82-36.67' R Center of Type 2 Curb Ramp
20	116+41.67-36.67' R End Ramp Slope
21	116+36.67-36.67' R Back of Turning Space
22	117+03.12-36.17' R Center Type 1 Curb Ramp
23	117+08.11-36.17' R End Ramp Slope
24	117+12.11-36.17' R Back of Turning Space
25	117+10.11-30.17' R Center of Type 1 Curb Ramp
26	117+10.11-34.17' R End Ramp Slope
27	117+10.11-38.17' R Back of Turning Space
28	117+20.14-36.14' R Back of Turning Space
29	118+50.50-30.17' R Center Type 1 Curb Ramp
30	118+50.50-34.17' R End Ramp Slope
31	118+50.50-39.17' R Back of Turning Space
32	118+50.50-43.72' R End Ramp Slope
33	118+50.50-48.72' R Back of Turning Space

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B39	B72

Plotting Date: 09/29/2025 Revised 09/29/2025 MMM

NOTE

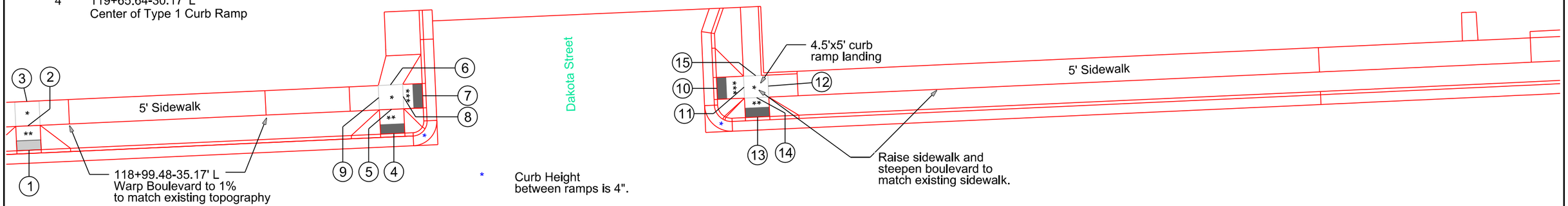
*** The turning space at some locations will not be able to achieve full height within the available length for the ramp slope(s).
To offset this, the longitudinal running slope (5.0% maximum) of the connecting sidewalk(s) will be adjusted to meet the lower elevation of the turning space.

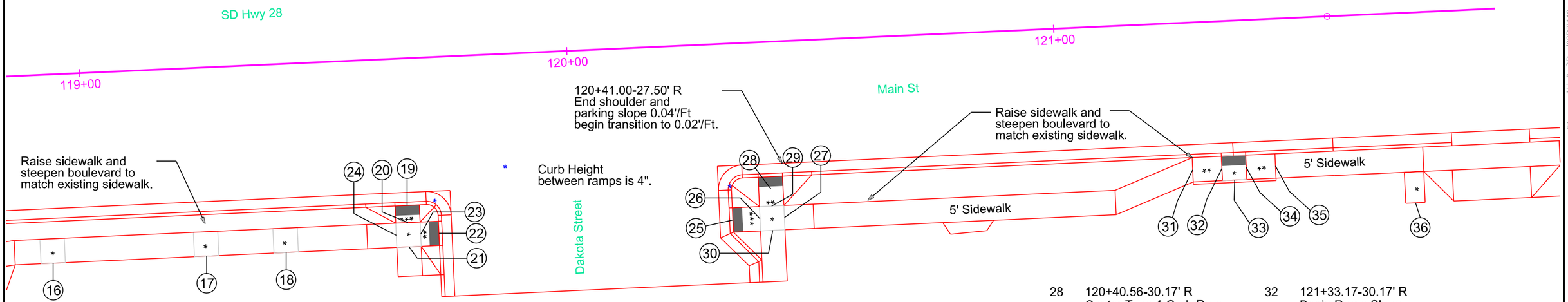
* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
***Curb ramp with 1.5% cross slope and a minimum of 7.5% slope, although slope may be less than 7.5%.

Note:
Concrete will be used between directional and perpendicular curb ramps except as noted.
Concrete will be used in the boulevard except as noted.

TORONTO

1	118+90.98-30.17' L Center of Type 1 Curb Ramp	5	119+65.64-35.17' L End Ramp Slope	8	119+68.14-37.67' L End Ramp Slope	11	120+38.06-36.42' L End Ramp Slope	14	120+40.56-34.17' L End Ramp Slope
2	118+90.98-35.17' L End Ramp Slope	6	119+65.64-40.17' L Back of Turning Space	9	119+63.14-37.67' L Back of Turning Space	12	120+43.06-36.42' L Back of Turning Space	15	120+40.56-38.67' L Back of Turning Space
3	118+90.98-40.17' L Back of Turning Space	7	119+72.15-37.67' L Center of Type 1 Curb Ramp	10	120+32.49-36.42' L Center of Type 1 Curb Ramp	13	120+40.56-30.17' L Center of Type 1 Curb Ramp		
4	119+65.64-30.17' L Center of Type 1 Curb Ramp								





16	118+92.81-38.67' R Back of Turning Space	19	119+65.87-30.17' R Center Type 1 Curb Ramp	22	119+72.13-36.17' R Center Type 1 Curb Ramp	25	120+32.47-36.17' R Center Type 1 Curb Ramp	28	120+40.56-30.17' R Center Type 1 Curb Ramp
17	119+24.32-38.67' R Back of Turning Space	20	119+65.87-33.67' R End Ramp Slope	23	119+68.37-36.17' R End Ramp Slope	26	120+38.06-36.17' R End Ramp Slope	29	120+40.56-33.67' R End Ramp Slope
18	119+40.64-38.67' R Back of Turning Space	21	119+65.87-33.67' R Back of Turning Space	24	119+63.37-36.17' L Back of Turning Space	27	120+43.06-36.17' R Back of Turning Space	30	120+40.56-38.67' R Back of Turning Space
								31	121+27.16-30.18' R End Ramp Slope

32	121+33.17-30.17' R Begin Ramp Slope	33	121+35.66-32.67' R Back of Turning Space
34	121+38.16-30.17' R Begin Ramp Slope	35	121+44.16-30.17' R End Ramp Slope
36	121+72.49-39.02' R Back of Turning Space		

Plot Scale - 1:20
Plotted From - TRSF12144
File - U:\rdprj\Duell\6R7\119cr.dgn

NOTE

*** The turning space at some locations will not be able to achieve full height within the available length for the ramp slope(s).
To offset this, the longitudinal running slope (5.0% maximum) of the connecting sidewalk(s) will be adjusted to meet the lower elevation of the turning space.

CURB RAMP LAYOUT

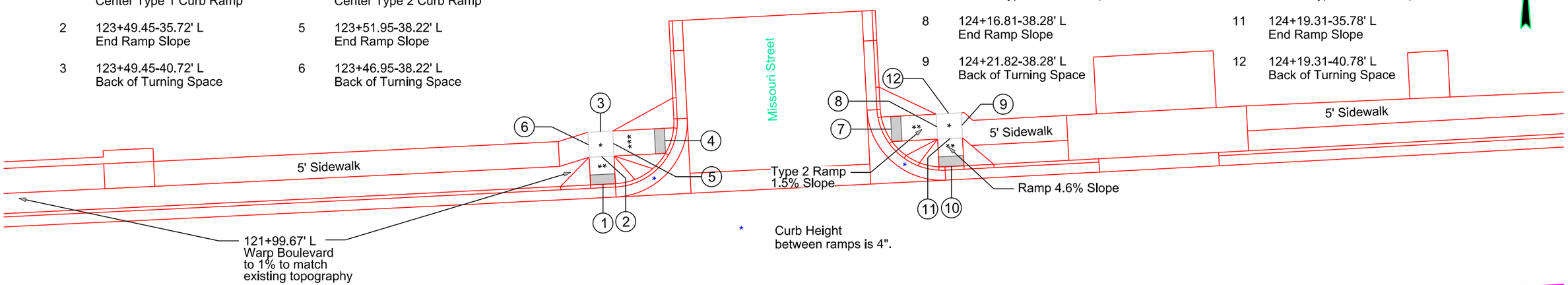
* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
***Curb ramp with 1.5% cross slope and a minimum of 7.5% slope, although slope may be less than 7.5%.

Note:
Concrete will be used between directional and perpendicular curb ramps except as noted.
Concrete will be used in the boulevard except as noted.

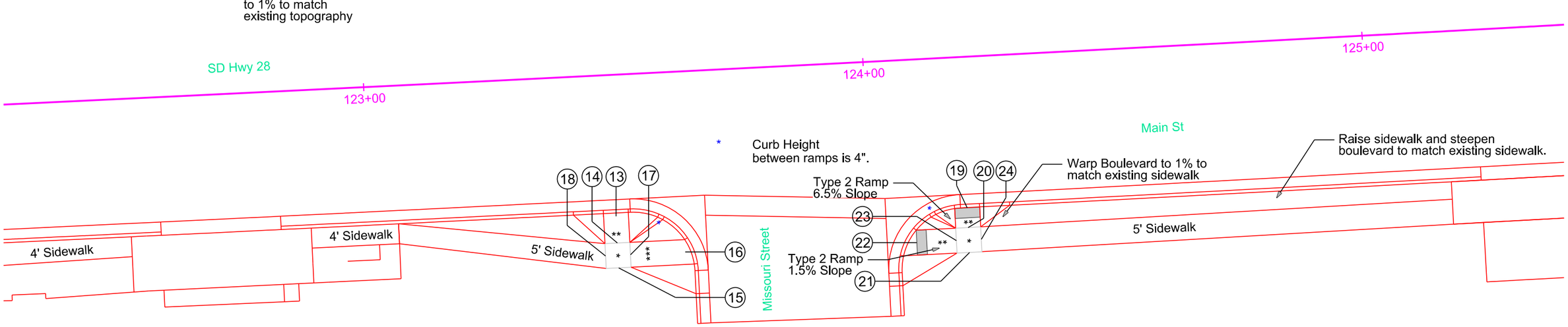
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B40	B72

Plotting Date: 09/09/2025 Revised 09/09/2025 AR

1	123+49.45-30.17' L Center Type 1 Curb Ramp	4	23+62.28-38.25' L Center Type 2 Curb Ramp
2	123+49.45-35.72' L End Ramp Slope	5	123+51.95-38.22' L End Ramp Slope
3	123+49.45-40.72' L Back of Turning Space	6	123+46.95-38.22' L Back of Turning Space



7	124+07.67-38.28' L Center Type 2 Curb Ramp	10	124+19.31-30.23' L Center Type 2 Curb Ramp
8	124+16.81-38.28' L End Ramp Slope	11	124+19.31-35.78' L End Ramp Slope
9	124+21.82-38.28' L Back of Turning Space	12	124+19.31-40.78' L Back of Turning Space



13	123+49.12-28.34' R Center Type 1 Curb Ramp	17	123+51.62-36.17' R End Ramp Slope	21	124+19.31-39.17' R Back of Turning Space
14	123+49.12-33.67' R End Ramp Slope	18	123+46.63-36.17' R Back of Turning Space	22	124+08.89-36.67' R Center of Type 2 Curb Ramp
15	123+49.12-38.67' R Back of Turning Space	19	123+19.31-30.22' R Center of Type 2 Curb Ramp	23	124+16.82-36.67' R End Ramp Slope
16	123+62.59-36.17' R Center Type 2 Curb Ramp	20	123+19.31-34.17' R End Ramp Slope	24	124+21.81-36.67' R Back of Turning Space

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B41	B72

Plotting Date: 09/09/2025

CURB RAMP LAYOUT

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
***Curb ramp with 1.5% cross slope and a minimum of 7.5% slope, although slope may be less than 7.5%.

Note:
Concrete will be used between directional and perpendicular curb ramps except as noted.
Concrete will be used in the boulevard except as noted.

NOTE

*** The turning space at some locations will not be able to achieve full height within the available length for the ramp slope(s). To offset this, the longitudinal running slope (5.0% maximum of the connecting sidewalk(s) will be adjusted to meet the lower elevation of the turning space.

TORONTO

1 125+73.72-30.17' L
Center Type 1 Curb Ramp

2 123+43.72-34.17' L
End Ramp Slope

3 125+73.72-38.17' L
Back of Turning Space

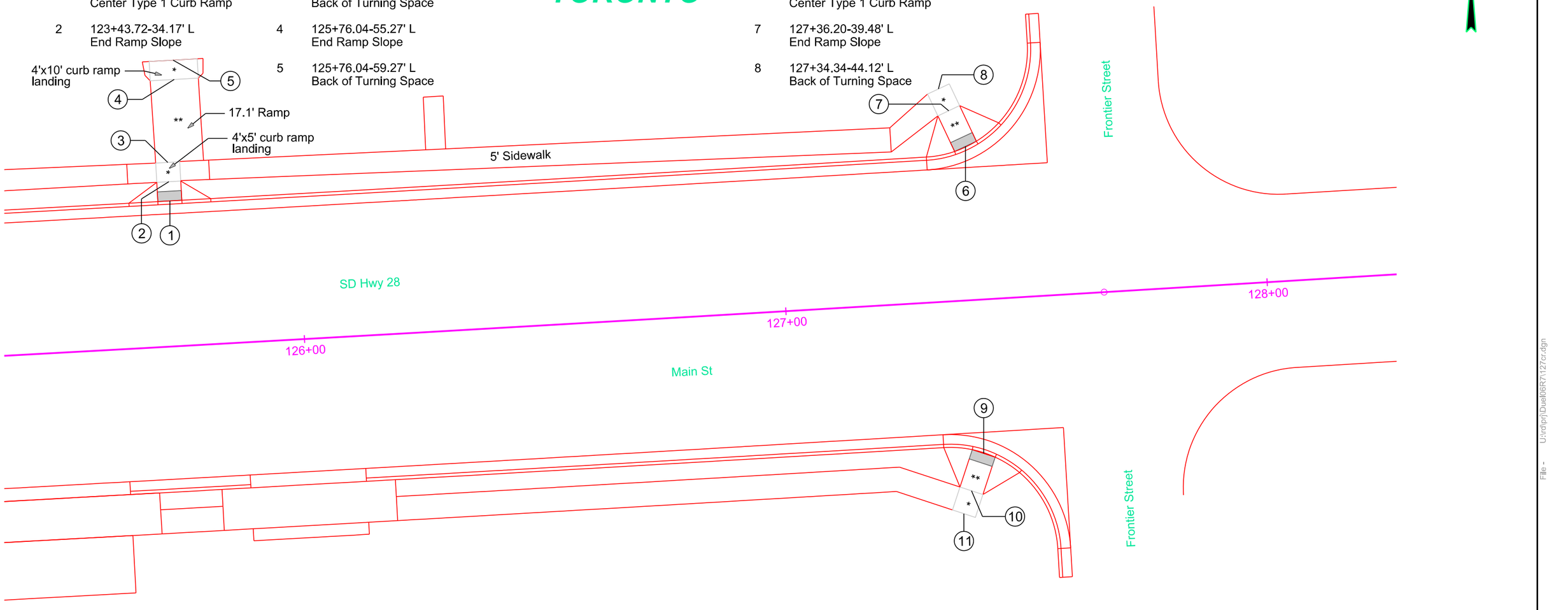
4 125+76.04-55.27' L
End Ramp Slope

5 125+76.04-59.27' L
Back of Turning Space

6 127+39.25-31.91' L
Center Type 1 Curb Ramp

7 127+36.20-39.48' L
End Ramp Slope

8 127+34.34-44.12' L
Back of Turning Space



9 127+39.19-31.87' R
Center Type 1 Curb Ramp

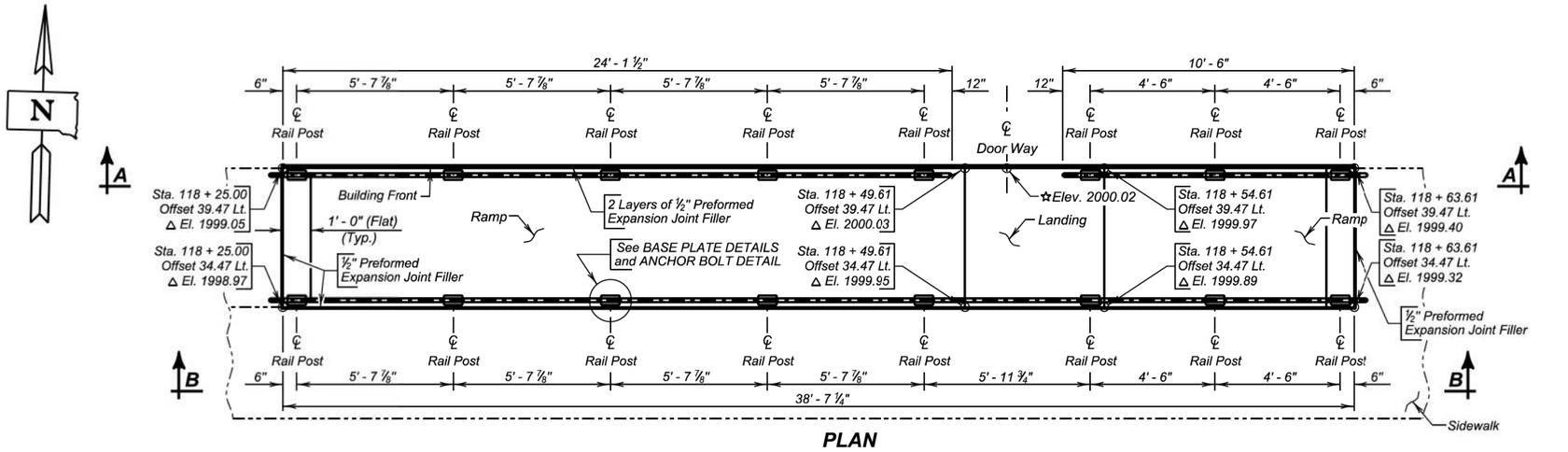
10 127+36.19-39.45' R
End Ramp Slope

11 127+34.35-44.10' R
Back of Turning Space

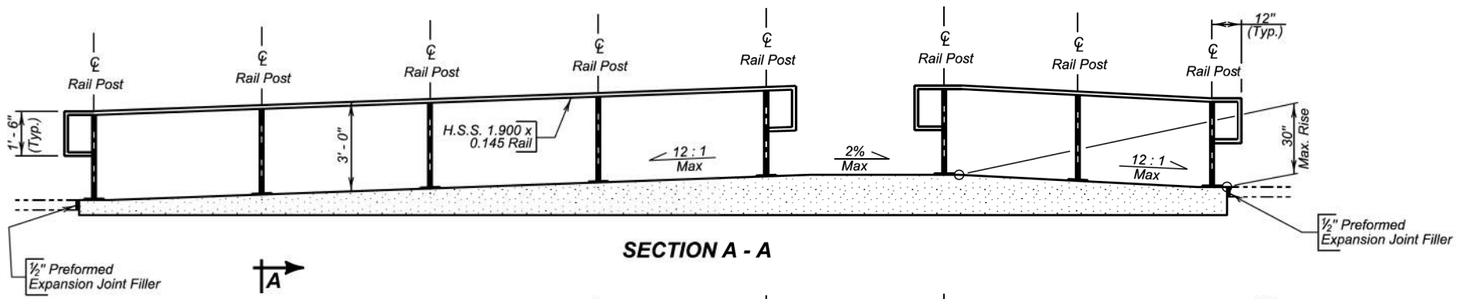
Plot Scale - 1:20
Plotted From - TRSF12141
File - U:\rdi\prj\Duel06R7\127cr.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B42	B72

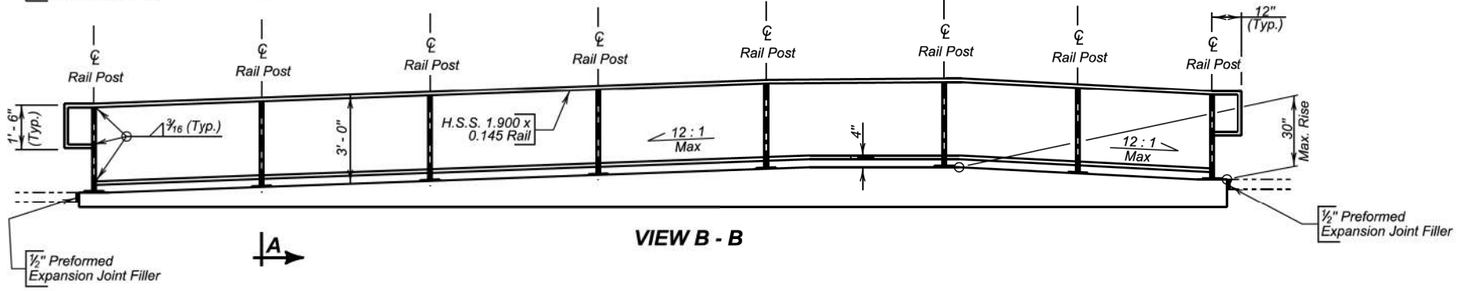
Plotting Date: 12/18/2025 Revised 12/18/2025 Bridge



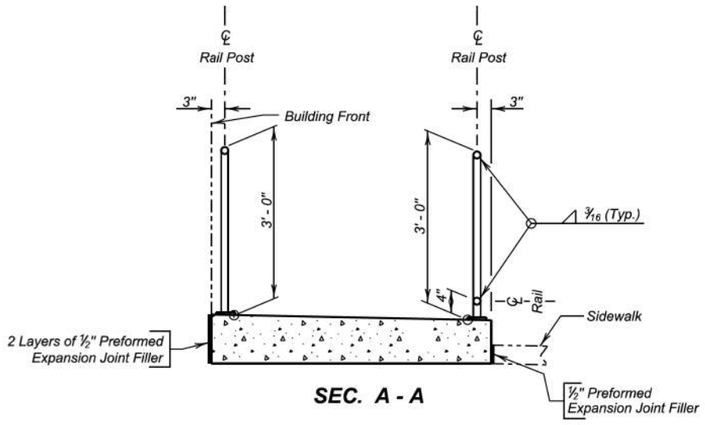
PLAN



SECTION A - A



VIEW B - B



SEC. A - A

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Class M6 Concrete	Cu. Yd.	7.8
Epoxy Coated Reinforcing Steel	Lb.	409
Pipe Handrail	Ft.	76

INDEX OF SHEETS-

SPECIFICATIONS

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Driges is available for download and viewing at: https://dot.sd.gov/doing-business/contractors/standard-specifications.

GENERAL NOTES

☆ 1. The plans elevations and slopes shown to construct the ramp and landings are based on the existing doorway threshold elevation. The doorway threshold elevation will be field verified and if the field verified elevation is different than that shown in the plans adjust ramp and stairway elevations accordingly. If field elevations differ from plans elevations by more than one inch, contact the Bridge Construction Engineer before proceeding with construction.

2. All concrete will be Class M6 in accordance with Section 462.

3. All reinforcing steel will be epoxy coated and will conform to ASTM A615, Grade 60.

4. Use 2" clear cover on all reinforcing steel except as shown.

5. All concrete will be thoroughly tamped and spaded against forms to leave a smooth surface without honeycomb. All exposed edges will be chamfered ¾" except as shown.

6. Place concrete on undisturbed soil. If backfilling is necessary, compact with mechanical tampers to the satisfaction of the Engineer.

7. The concrete sidewalk will be constructed in accordance with Section 651.

8. Cost of the ½" Preformed Expansion Joint Filler will be incidental to the contract unit price per cubic yard for Class M6 Concrete.

9. All costs for constructing ramps, stairways and pipe hand railing including labor, material equipment and incidentals necessary to complete the work will be included in the Class M6 Concrete, Epoxy Coated Reinforcing Steel and Pipe Handrail bid items. Payment will be for plans quantities regardless of the quantity actually used.

PIPE HANDRAIL

1. Pipe handrail will not be ordered until the ramps, landings and stairways are constructed and field measurements for in-place length and slope are taken.

2. All rail posts will be built vertical.

3. Steel pipe for railing and posts will conform to ASTM A500, Grade B. Railpost base plates shall conform to ASTM A709, Grade 36.

4. The Contractor may use either cast in place anchor bolts or drilled and epoxied anchor rods for anchoring the pipe handrail. Anchor bolts and nuts will conform to ASTM A307. Anchor rods will conform to ASTM 1554, Grade 36. Washers will be in accordance with ASTM F436. Hardware will be galvanized in accordance with ASTM F2329. Bolts shall be hex head "Structural" type with heavy hex, lock nuts, and round washers.

5. All anchor bolts and rods will be tightened to a torque of 120 ft./lbs. (approximated without the use of a calibrated torque wrench).

6. Epoxy will be in accordance with ASTM C881 Type IV. Hole size will be as per the epoxy manufacturer's recommendations. Core bits will not be used to drill anchor rod holes.

7. Painting of steel railing will be done in accordance with Section 411 of the Specifications. The finish color shall be an approved black.

8. Welding and weld inspection will be done in accordance with AWS D1.1 - 2025 Structural Welding Code - Steel.

9. The cost of structural steel, anchor bolts or anchor rods, painting, galvanizing, welding, weld inspection, and that which is incidental to the fabrication and installation of the Pipe Handrail will be incidental to the contract unit price per foot for Pipe Handrail.

10. Alternate rail designs, including aluminum rail, may be submitted through proper channels to the Office of Bridge Design for approval.

SHOP PLANS

Shop plans will be required as specified by the Construction Specifications

RAMP DETAILS (A)

FOR

ACCESS RAMP

IN TORONTO SEC. 24-T113N-R49W
STA. 118+25 TO
STA. 118+63.61 - Lt.
PCN 06R7

DEUEL COUNTY

S. D. DEPT. OF TRANSPORTATION

JULY 2025

PLANS BY :
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

DESIGNED BY	CK. DES. BY	DRAFTED BY	
AH	JH	AH	Steve A Johnson BRIDGE ENGINEER
DUEL06R7	06R7HA01		

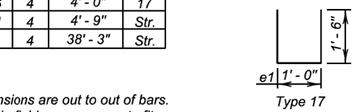
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B43	B72

Plotting Date: 09/09/2025 Revised 09/04/2025 Bridge

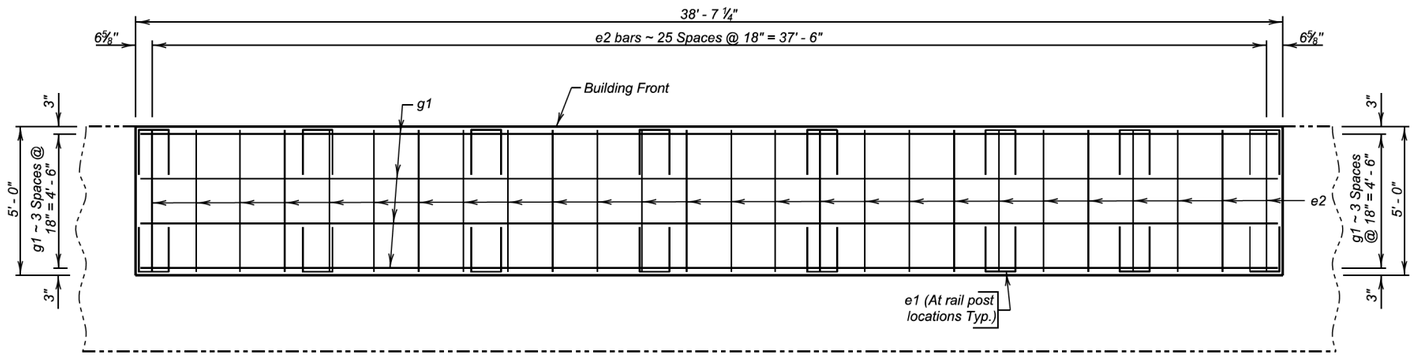
REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
e1	16	4	4' - 0"	17	
e2	51	4	4' - 9"	Str.	
✳ g1	8	4	38' - 3"	Str.	

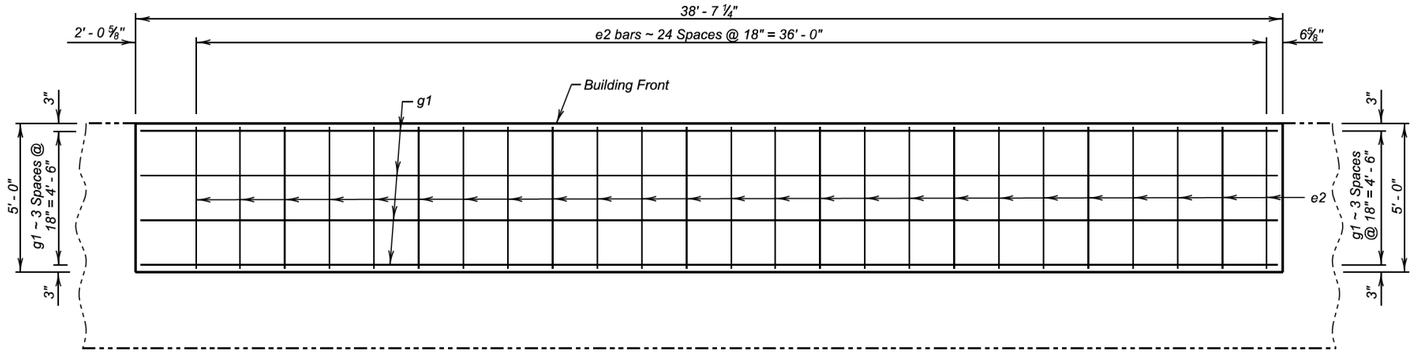
NOTES:
All dimensions are out to out of bars.
✳ Bend in field as necessary to fit.



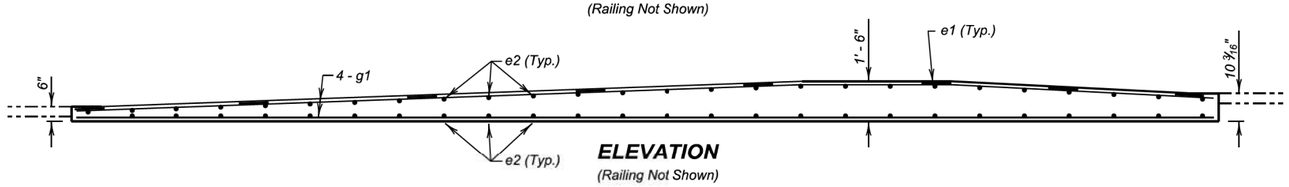
Type 17



PLAN - TOP STEEL
(Railing Not Shown)

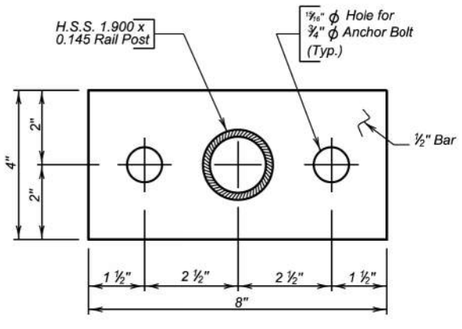


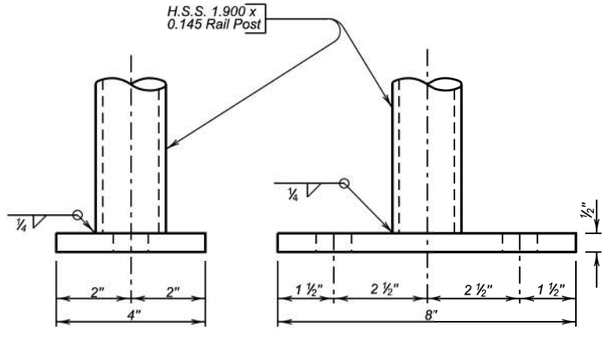
PLAN - BOTTOM STEEL
(Railing Not Shown)



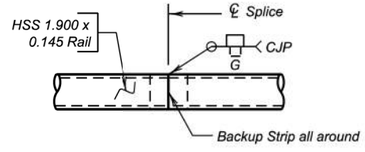
ELEVATION
(Railing Not Shown)

ANCHOR BOLT DETAIL





BASE PLATE DETAILS



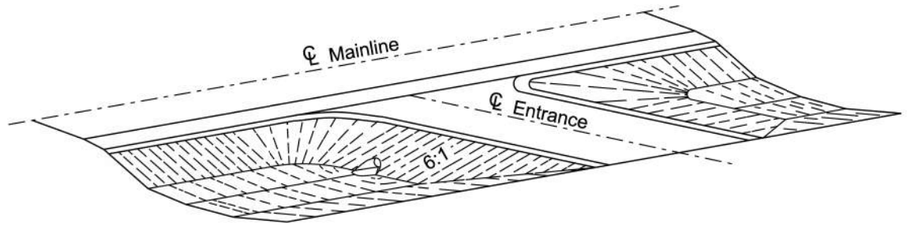
RAIL SPLICE DETAILS

RAMP DETAILS (B)
FOR
ACCESS RAMP

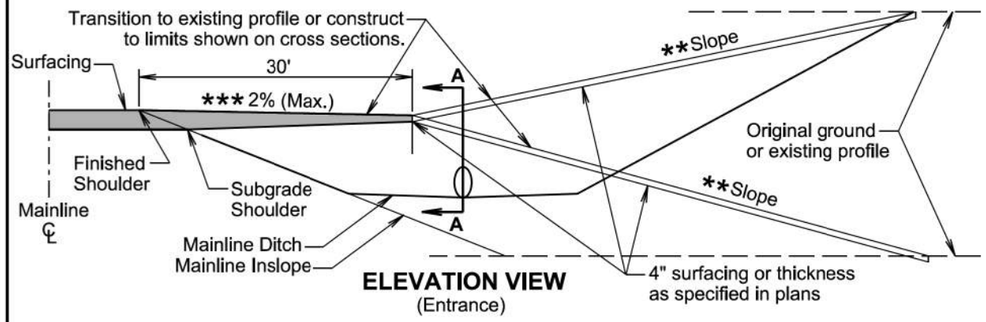
IN TORONTO SEC. 24-T113N-R49W
STA. 118+25 TO
STA. 118+63.61 - Lt.

DEUEL COUNTY
S. D. DEPT. OF TRANSPORTATION
JULY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
AH	JH	AH	Steven A Johnson BRIDGE ENGINEER
DUEL06R7	06R7HA02		



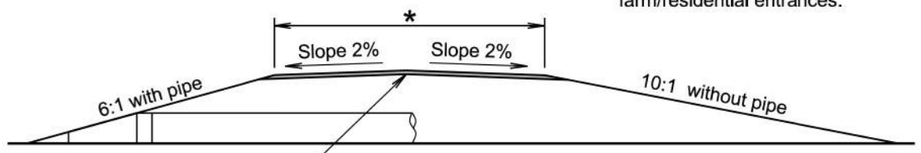
PERSPECTIVE OF ENTRANCE



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.

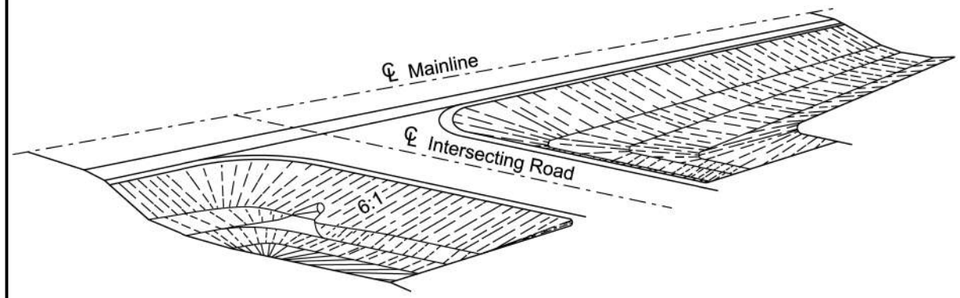
Pipe length will be adjusted if necessary during construction to obtain the 6:1 slope. For grading projects, the pipe length is estimated typically using a 4" thickness of surfacing directly over the subgrade above the pipe.

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

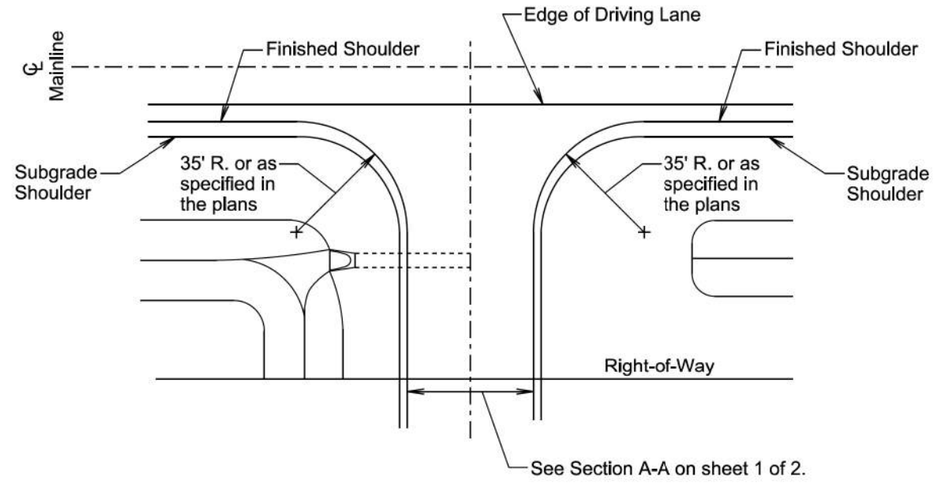
The turning radii will be 35' for intersecting roads and entrances unless stated otherwise in the plans.

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:

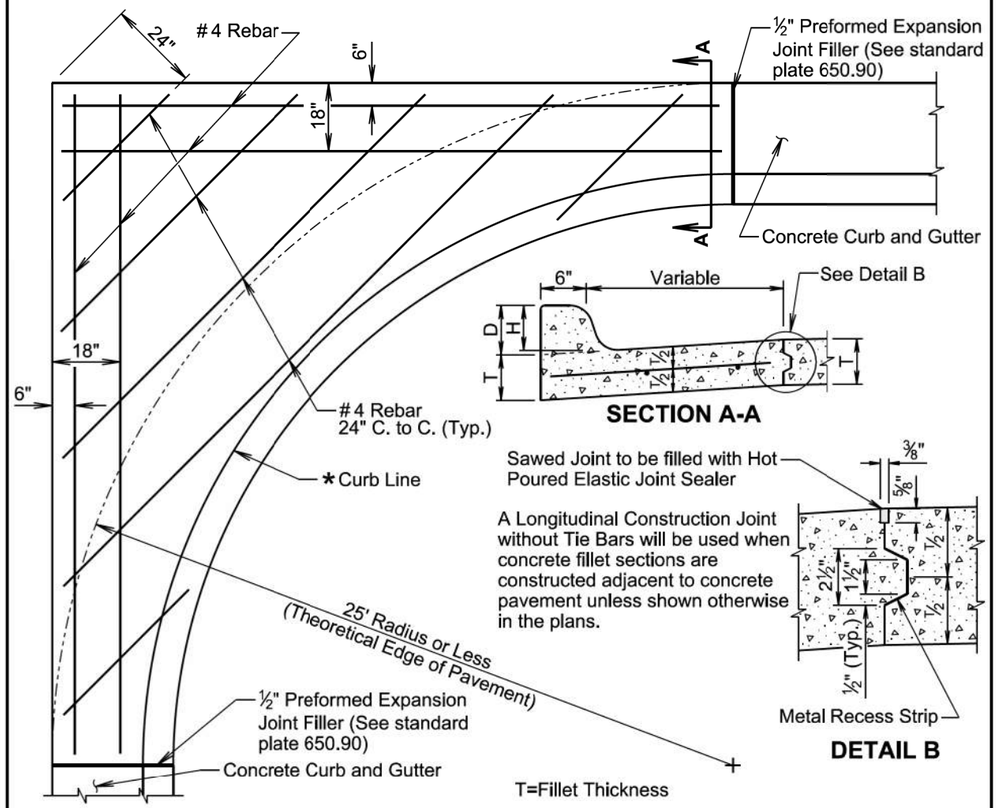
The 6:1 or 10:1 intersecting road inslope will transition to the existing intersecting road inslope near the right-of-way or at a location as determined by the Engineer.

November 19, 2021

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

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B45	B72

Plotting Date: 09/09/2025



* If a curb ramp is constructed adjacent to a PCC fillet section, the curb will need to be modified. Refer to the corresponding curb ramp standard plate or other special details in the plans for modification of the PCC fillet section.

March 31, 2024

Published Date: 2026	SDDOT	PCC FILLET SECTION WITH TYPE B CURB AND GUTTER	PLATE NUMBER 380.30
			Sheet 1 of 2

GENERAL NOTES:

For fillets with irregular shapes or bump outs:

1) The 6" and 18" offset #4 rebar will be included on any side next to pavement or driveways (not along the Curb and Gutter).

2) All remaining area will have #4 rebar spaced 24" center to center in a square pattern.

Dimensions D, H, and T will conform to those shown on the appropriate curb and gutter standard plate.

All rebar will be in conformance with Sections 480 and 1010 of the Specifications. All rebar will have a minimum of 3 inches of clear cover.

Class M6 Concrete will be used in construction of the fillets.

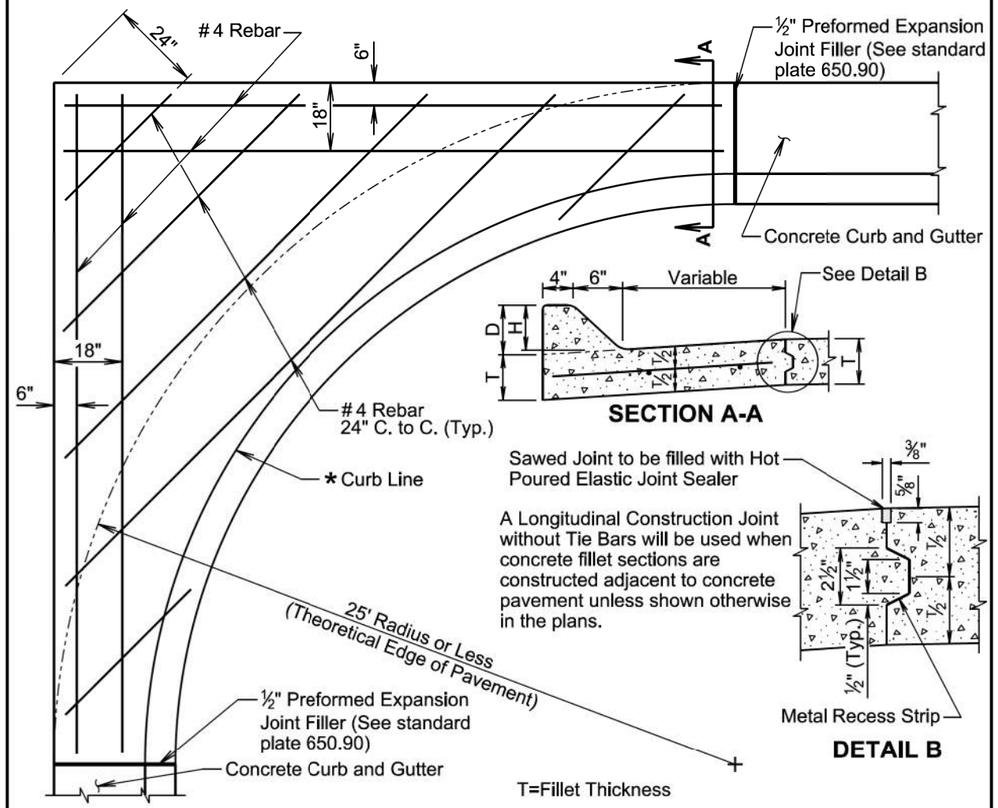
The concrete curb will be monolithic with the concrete fillet. No separate payment for this curb will be made as the curb is considered a part of the fillet.

Joints will be constructed at 10-foot intervals except when fillets are constructed adjacent to PCC Pavement. If there is adjacent PCC Pavement the joints will be extended from edge of pavement through the fillet section as directed by the Engineer.

The cost for all materials, labor, and incidentals necessary to construct the PCC fillet section with curb and gutter will be incidental to the contract unit price per square yard for the corresponding PCC fillet section contract item.

March 31, 2024

Published Date: 2026	SDDOT	PCC FILLET SECTION WITH TYPE B CURB AND GUTTER	PLATE NUMBER 380.30
			Sheet 2 of 2



* If a curb ramp is constructed adjacent to a PCC fillet section, the curb will need to be modified. Refer to the corresponding curb ramp standard plate or other special details in the plans for modification of the PCC fillet section.

March 31, 2024

Published Date: 2026	SDDOT	PCC FILLET SECTION WITH TYPE F CURB AND GUTTER	PLATE NUMBER 380.31
			Sheet 1 of 2

GENERAL NOTES:

For fillets with irregular shapes or bump outs:

1) The 6" and 18" offset #4 rebar will be included on any side next to pavement or driveways (not along the Curb and Gutter).

2) All remaining area will have #4 rebar spaced 24" center to center in a square pattern.

If a curb ramp is constructed adjacent to a PCC fillet section, the curb will need to be modified. Refer to the corresponding curb ramp standard plate or other special details in the plans for modification of the PCC fillet section.

Dimensions D, H, and T will conform to those shown on the appropriate curb and gutter standard plate.

All rebar will be in conformance with Sections 480 and 1010 of the Specifications. All rebar will have a minimum of 3 inches of clear cover.

Class M6 Concrete will be used in construction of the fillets.

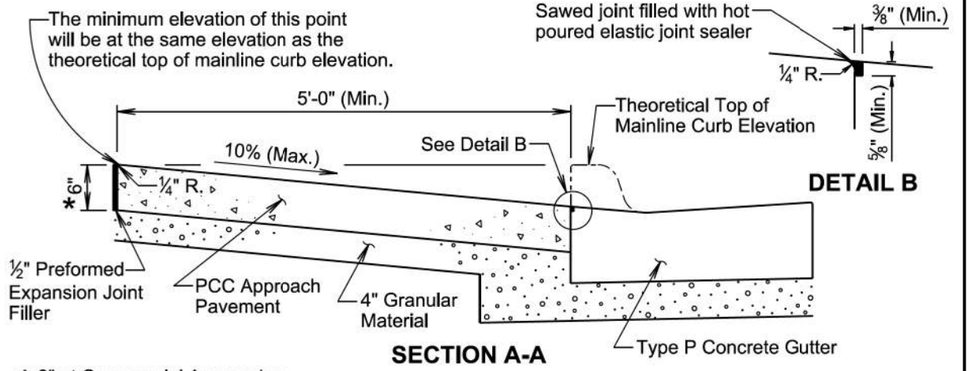
The concrete curb will be monolithic with the concrete fillet. No separate payment for this curb will be made as the curb is considered a part of the fillet.

Joints will be constructed at 10-foot intervals except when fillets are constructed adjacent to PCC Pavement. If there is adjacent PCC Pavement the joints will be extended from edge of pavement through the fillet section as directed by the Engineer.

The cost for all materials, labor, and incidentals necessary to construct the PCC fillet section with curb and gutter will be incidental to the contract unit price per square yard for the corresponding PCC fillet section contract item.

March 31, 2024

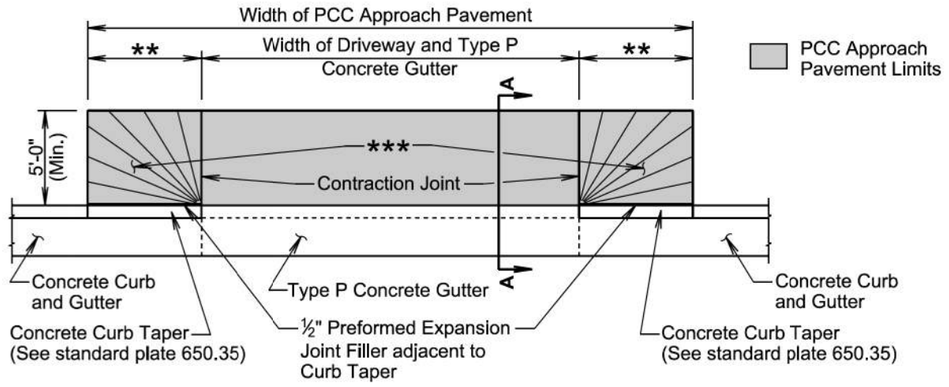
Published Date: 2026	SDDOT	PCC FILLET SECTION WITH TYPE F CURB AND GUTTER	PLATE NUMBER 380.31
			Sheet 2 of 2



* 8" at Commercial Approaches

** Width for 6" high curb is 6' (See standard plate 650.35)

*** Within these areas, the surface of the type A PCC approach pavement will be sloped transitionally as approved by the Engineer.



GENERAL NOTES:

The concrete for the type A PCC approach pavement and adjacent driveway will comply with the requirements of the Specifications for class M6 concrete unless otherwise stated in the plans.

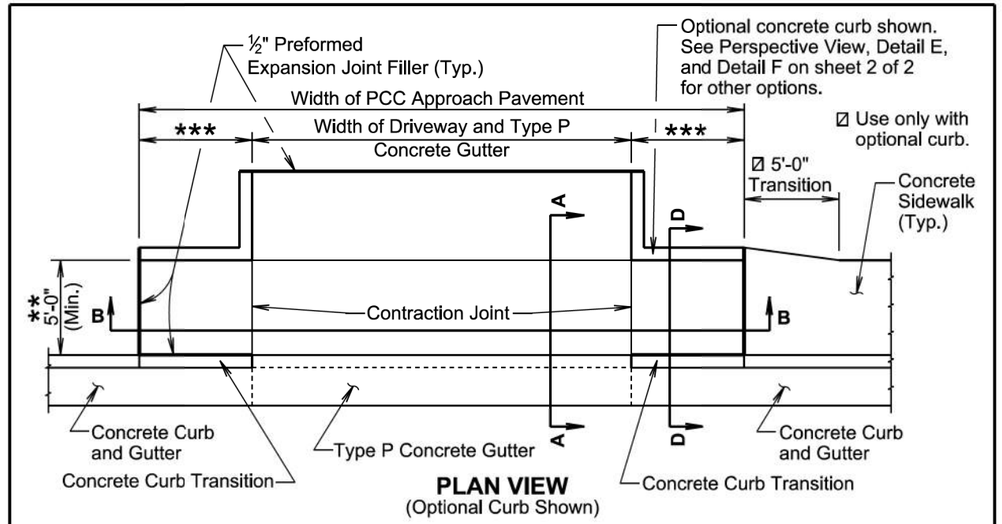
Contraction joints in the type A PCC approach pavement will be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint will be at least ¼ the thickness of the approach pavement. Additional contraction joints not shown in the Plan View will be spaced as follows:

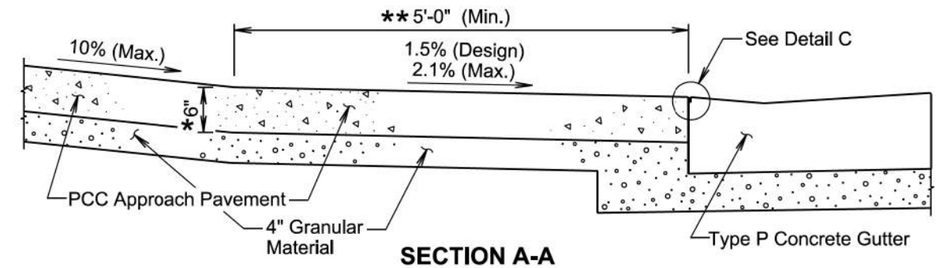
One joint at the center of the approach for driveways 16 feet to 24 feet wide.
Two joints spaced at equal intervals for driveways greater than 24 feet to 40 feet wide.

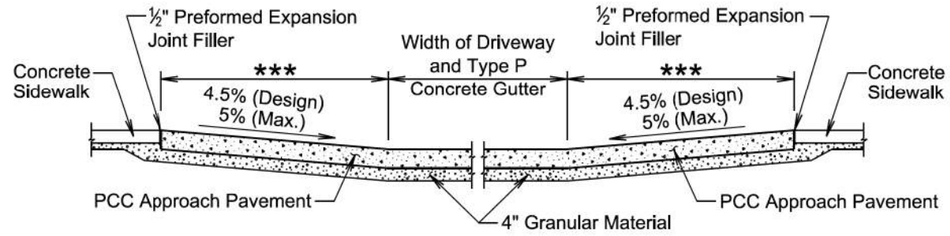
All costs for furnishing and placing the type A PCC approach pavement and constructing the expansion and contraction joints including labor, equipment, excavation, and materials including the earthen backfill and granular material, will be incidental to the contract unit price per square yard for the corresponding PCC Approach Pavement contract item.

June 26, 2019

Published Date: 2026	SDDOT	**TYPE A PCC APPROACH PAVEMENT**	PLATE NUMBER 380.40 Sheet 1 of 1







* 8 inches at Commercial Approaches

** Sidewalk width is 5 feet unless specified otherwise in the plans. The cross slope of the sidewalk is designed at 1.5% and will not be steeper than 2.1% unless specified otherwise in the plans.

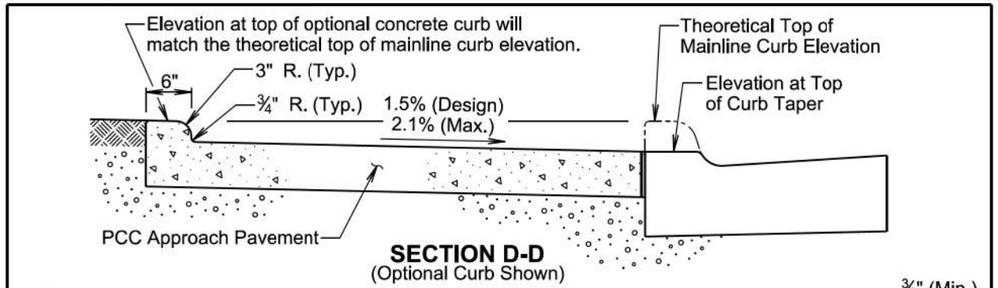
*** The slope of the type B PCC approach pavement in these areas will match the slope of the concrete curb transition. The slope is designed at 4.5% and will not be steeper than 5% unless specified otherwise in the plans.

April 8, 2025

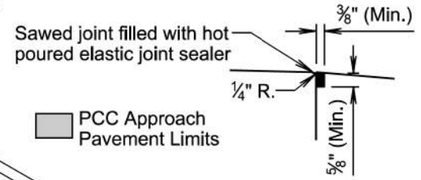
Published Date: 2026	SDDOT	**TYPE B PCC APPROACH PAVEMENT**	PLATE NUMBER 380.41 Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B48	B72

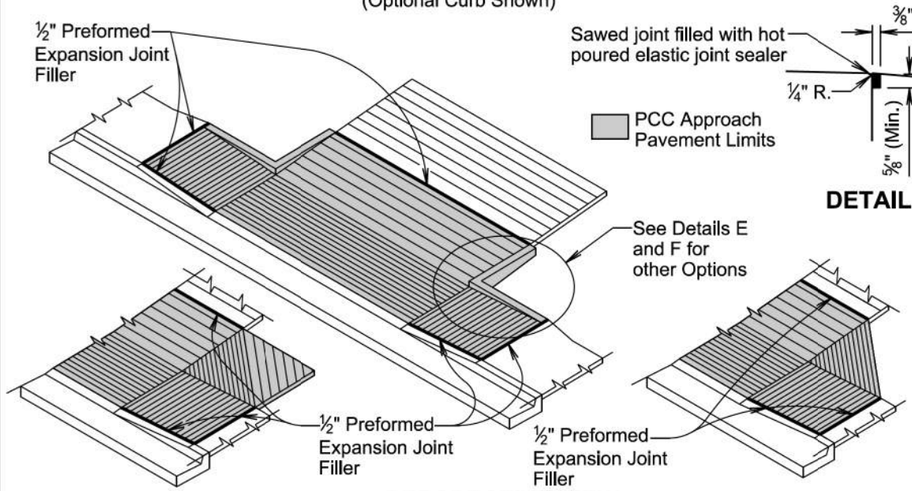
Plotting Date: 09/09/2025



SECTION D-D
(Optional Curb Shown)



DETAIL C



PERSPECTIVE VIEW
(Optional Curb Shown)

DETAIL E
(Optional Rectangle Pavement Shown)

DETAIL F
(Optional Triangle Pavement Shown)

GENERAL NOTES:

Use the plan specified option for the pavement adjacent to the driveway and sidewalk. The options are shown above in the Perspective View, Detail E, and Detail F.

The concrete for the type B PCC approach pavement and adjacent driveway will comply with the requirements of the Specifications for class M6 concrete unless otherwise stated in the plans.

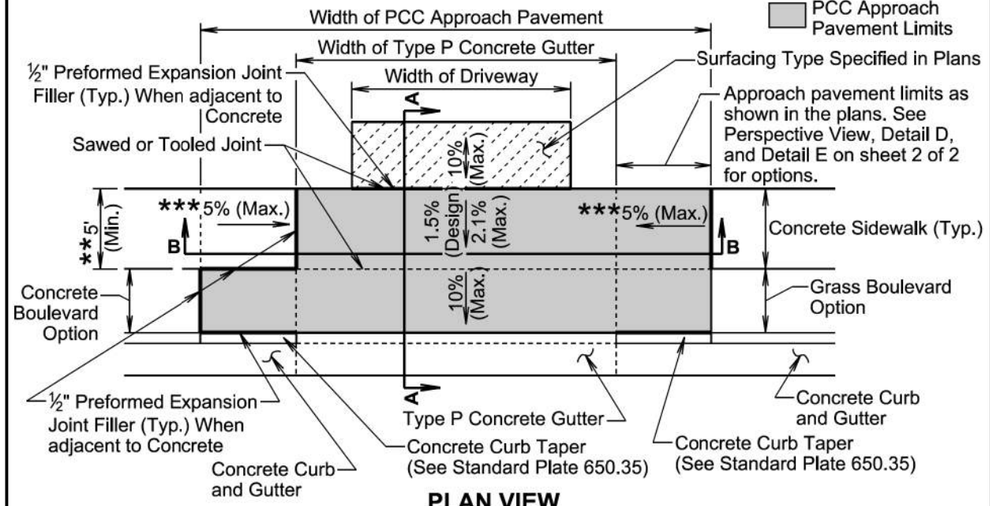
Contraction joints in the type B PCC approach pavement will be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint will be at least ¼ the thickness of the approach pavement. Additional contraction joints not shown in the Plan View will be spaced as follows:

One joint at the center of the approach for driveways 16 feet to 24 feet wide.
Two joints spaced at equal intervals for driveways greater than 24 feet to 40 feet wide.

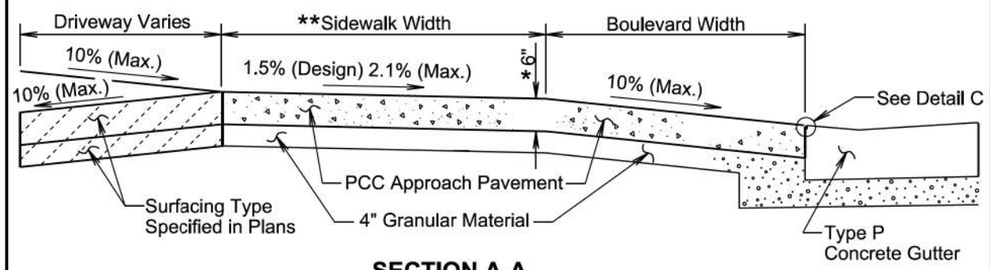
All costs for furnishing and placing the type B PCC approach pavement and constructing the expansion and contraction joints including labor, equipment, excavation, and materials including the earthen backfill and granular material will be incidental to the contract unit price per square yard for the corresponding PCC Approach Pavement contract item.

April 8, 2025

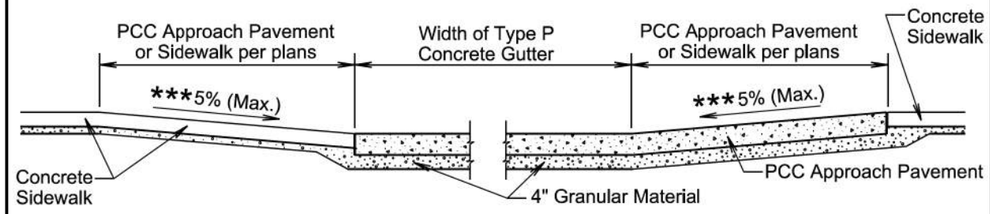
Published Date: 2026	SDDOT	TYPE B PCC APPROACH PAVEMENT	PLATE NUMBER 380.41
			Sheet 2 of 2



PLAN VIEW



SECTION A-A



SECTION B-B

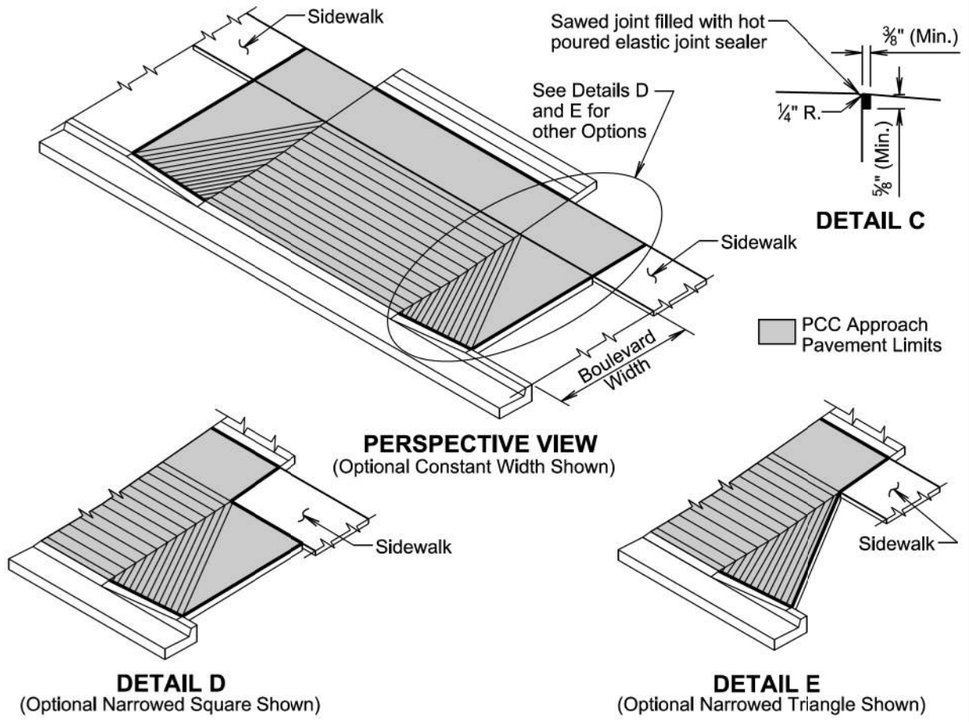
* 8 inches at Commercial Approaches

** Sidewalk width is 5 feet unless specified otherwise in the plans. The cross slope of the sidewalk is designed at 1.5% and will not be steeper than 2.1% unless specified otherwise in the plans.

*** The slope of the type C PCC approach pavement or sidewalk in these areas will be 5% maximum where boulevard width is less than 5'-0" or to provide a smooth connection to a lower driveway. Otherwise this area should match the slope of the adjacent sidewalk.

April 8, 2025

Published Date: 2026	SDDOT	TYPE C PCC APPROACH PAVEMENT	PLATE NUMBER 380.42
			Sheet 1 of 2



GENERAL NOTES:

Use the plan specified option for the pavement adjacent to the driveway and sidewalk. The options are shown above in the Perspective View, Detail D, and Detail E.

The concrete for the type C PCC approach pavement will comply with the requirements of the Specifications for class M6 concrete unless otherwise stated in the plans.

1/2" Preformed expansion joint filer will be provided around the approach pavement where adjacent to other concrete, except P gutter.

Contraction joints in the type C PCC approach pavement will be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint will be at least ¼ the thickness of the approach pavement. Additional contraction joints not shown in the Plan View will be spaced as follows:

One joint at the center of the approach for driveways 16 feet to 24 feet wide.
Two joints spaced at equal intervals for driveways greater than 24 feet to 40 feet wide.
One joint at the center of the boulevard parallel to the gutter for boulevard widths greater than 12 feet.

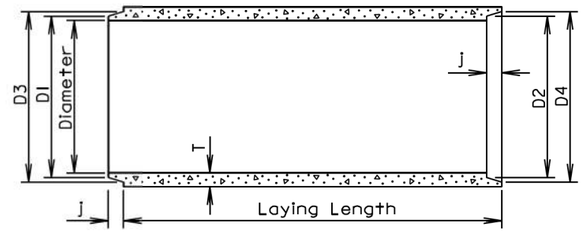
All costs for furnishing and placing the type C PCC approach pavement and constructing the expansion and contraction joints including labor, equipment, excavation, and materials including the earthen backfill and granular material will be incidental to the contract unit price per square yard for the corresponding PCC Approach Pavement contract item.

April 8, 2025

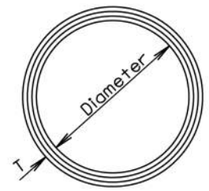
Published Date: 2026	SDDOT	TYPE C PCC APPROACH PAVEMENT	PLATE NUMBER 380.42
			Sheet 2 of 2

TOLERANCES IN DIMENSIONS

Diameter: ±1.5% for 24" Dia. or less and ±1% or 3/8" whichever is more for 27" Dia. or greater.
Diameters at joints: ± 3/16" for 30" Dia. or less and ± 1/4" for 36" or greater.
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".



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

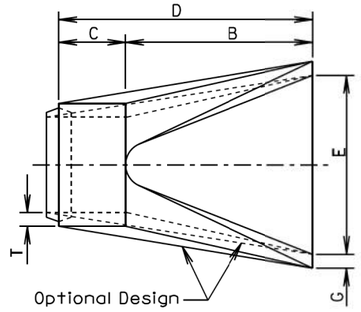
Construction of R.C.P. shall conform to the requirements of Section 990 of the Specifications.

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.

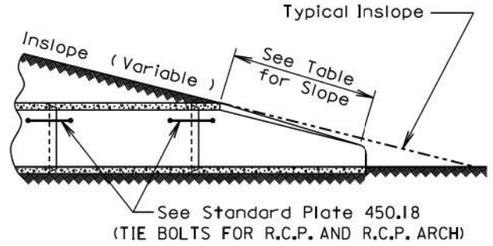
Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	3 1/4	3	29 1/4	29 5/8	30 1/4	30 5/8
30	384	3 1/2	3 1/4	32 3/8	32 3/4	33 1/2	33 7/8
36	524	4	3 3/4	38 3/4	39 1/4	40	40 1/2
42	685	4 1/2	4	45 1/8	45 5/8	46 1/2	47
48	867	5	4 1/2	51 1/2	52	53	53 1/2
54	1070	5 1/2	4 1/2	57 7/8	58 3/8	59 3/8	59 7/8
60	1296	6	5	64 1/4	64 3/4	66	66 1/2
66	1542	6 1/2	5 1/2	70 5/8	71 1/8	72 1/2	73
72	1810	7	6	77	77 1/2	79	79 1/2
78	2098	7 1/2	6 1/2	83 3/8	83 7/8	85 5/8	86 1/8
84	2410	8	7	89 3/4	90 1/4	92 1/8	92 5/8
90	2740	8 1/2	7	95 3/4	96 1/4	98 1/8	98 5/8
96	2950	9	7	102 1/8	102 5/8	104 1/2	105
102	3075	9 1/2	7 1/2	109	109 1/2	111 1/2	112
108	3870	10	7 1/2	115 1/2	116	118	118 1/2

June 26, 2015

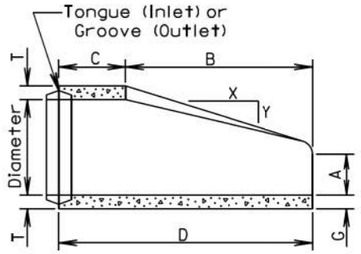
Published Date: 2026	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1



TOP VIEW



SLOPE DETAIL

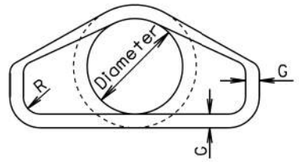


LONGITUDINAL SECTION

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.

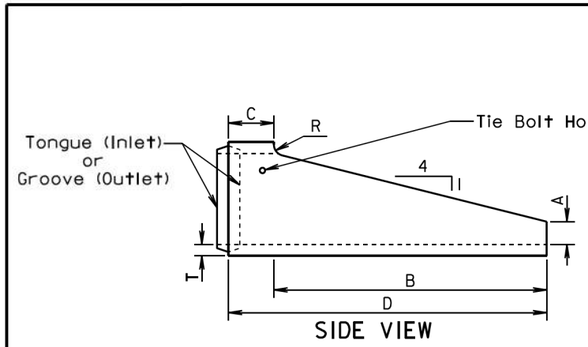


END VIEW

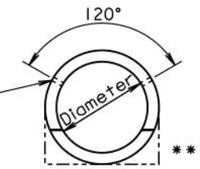
Dia. (in.)	Approx. Wt. of Section (lbs.)	Approx. Slope (X to Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)	R (in.)
12	530	2.4:1	2	4	24	48 7/8	72 7/8	24	2	1 1/2
15	740	2.4:1	2 1/4	6	27	46	73	30	2 1/4	1 1/2
18	990	2.3:1	2 1/2	9	27	46	73	36	2 1/2	1 1/2
21	1280	2.4:1	2 3/4	9	36	37 1/2	73 1/2	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

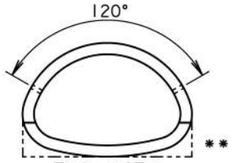
Published Date: 2026	SDDOT	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
			Sheet 1 of 1



SIDE VIEW



END VIEW
"CIRCULAR"



END VIEW
"ARCH"

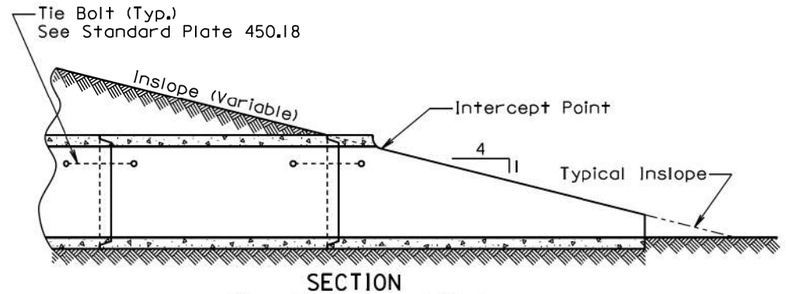
Dia. (in.)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	R (in.)
FOR CIRCULAR PIPE						
24	3	6	72	12	84	3
30	3 1/2	7 1/2	90	12	102	3 1/2
FOR ARCH PIPE						
* 24	3	6	48	12	60	3
* 30	3 1/2	7 1/2	60	12	72	3 1/2
* 36	4 1/2	8 5/8	66	30	96	0
* 42	4 1/2	10	77 1/4	18 3/4	96	0

ALTERNATE

Dia. (in.)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	R (in.)
FOR CIRCULAR PIPE						
24	3	9	72	12	84	0
30	3 1/2	11	90	12	102	0
FOR ARCH PIPE						
* 24	3	9	48	12	60	0
* 30	3 1/2	11	60	12	72	0

* Equivalent Diameter of Circular R.C.P.

** Acceptable Flat Bottom Alternate.



SECTION
(Along Centerline of Pipe)

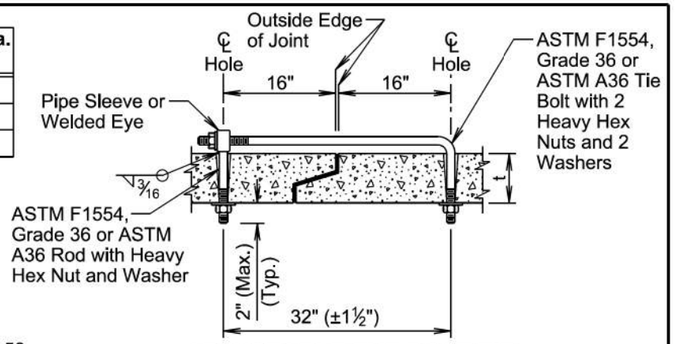
GENERAL NOTE:

The length of concrete pipe shown in the construction plans is between sloped ends.

September 22, 2006

Published Date: 2026	SDDOT	R. C. P. SLOPED ENDS	PLATE NUMBER 450.13
			Sheet 1 of 1

Wall "t" (in.)	Rod Dia. (in.)	Pipe Sleeve Dia. (nominal)
≤ 3¼	⅝	¾
3½-6½	¾	1
≥ 7	1	1¼



ADJUSTABLE EYE BOLT TIE

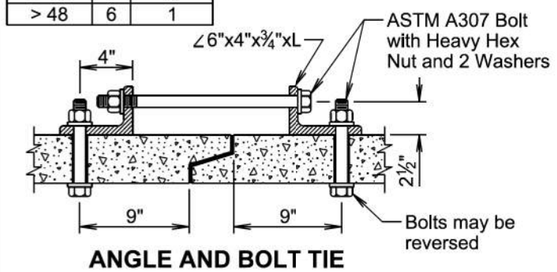
GENERAL NOTES:

Tie bolts will conform to ASTM F1554, Grade 36 or ASTM A36. Nuts will be heavy hex conforming to ASTM A563. Washers will conform to ASTM F436.

Pipe Sleeve will conform to ASTM A53, Grade B or ASTM A500, Grade B or C.

Galvanize adjustable eye bolt tie assembly in accordance with ASTM A153.

Pipe Dia. (in.)	"L" (in.)	Bolt Dia. (in.)
≤ 48	4	¾
> 48	6	1



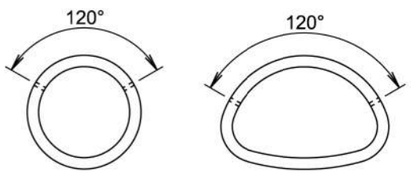
ANGLE AND BOLT TIE

GENERAL NOTES:

Angles will conform to ASTM A36.

Bolts will conform to ASTM A307. Nuts will be heavy hex conforming to ASTM A563. Washers will conform to ASTM F436.

Galvanize angles, bolts, nuts, and washers in accordance with ASTM A153.



END VIEW (Circular)

END VIEW (Arch)

GENERAL NOTES:

In lieu of the tie bolts detailed above other types of tie bolt connections may be installed as approved by the Office of Bridge Design.

All pipe sections of R.C.P. and R.C.P. Arch will be tied with tie bolts except for pipe located between drop inlets, manholes, and junction boxes. All pipe sections of pipes that only enter or exit drop inlets, manholes, and junction boxes will be tied with tie bolts.

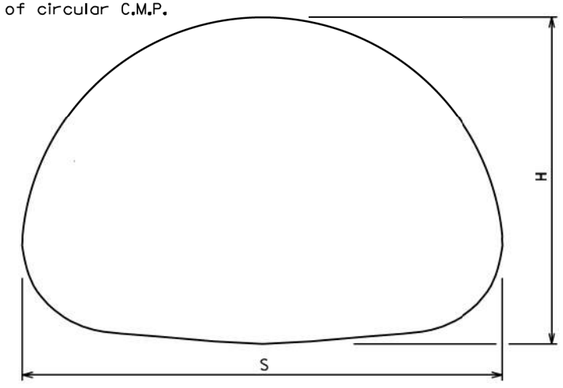
There will be no separate measurement or payment for the tie bolts. The cost for furnishing and installing the tie bolts will be incidental to the contract unit price per foot for the corresponding bid item for R.C.P. or R.C.P. Arch.

April 8, 2025

Published Date: 2026	SDDOT	TIE BOLTS FOR R.C.P. AND R.C.P. ARCH	PLATE NUMBER 450.18
			Sheet 1 of 1

	2⅔" x ½" CORRUGATIONS			3" X 1" CORRUGATIONS		
* Dia. (in.)	S Span (in.)	H Rise (in.)	Area (Sq. Ft.)	S Span (in.)	H Rise (in.)	Area (Sq. Ft.)
15	17	13	1.1			
18	21	15	1.6			
21	24	18	2.2			
24	28	20	2.8			
30	35	24	4.4			
36	42	29	6.4	40	31	7.0
42	49	33	8.7	46	36	9.4
48	57	38	11.4	53	41	12.3
54	64	43	14.3	60	46	15.6
60	71	47	17.6	66	51	19.3
66	77	52	21.3	73	55	23.2
72	83	57	25.3	81	59	27.4
78				87	63	32.1
84				95	67	37.0
90				103	71	42.4
96				112	75	48.0
102				117	79	54.2
108				128	83	60.8
114				137	87	67.4
120				142	91	74.5

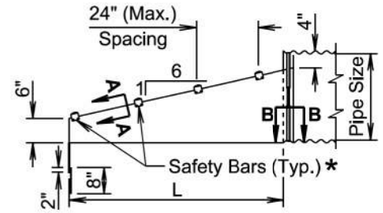
* Equivalent diameter of circular C.M.P.



GENERAL NOTE:
All dimensions measured from inside crest.

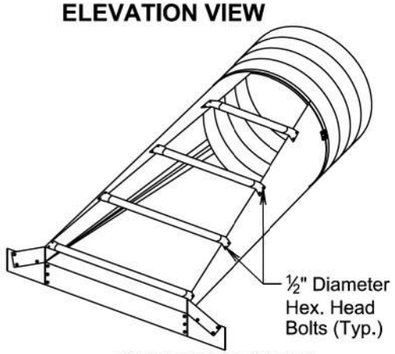
March 31, 2000

Published Date: 2026	SDDOT	CORRUGATED METAL PIPE ARCH CULVERT	PLATE NUMBER 450.30
			Sheet 1 of 1

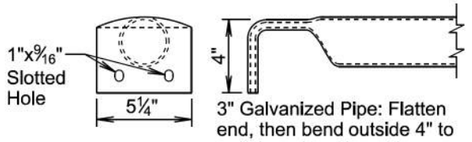


* Number of bars required will vary depending on the length of the end section.

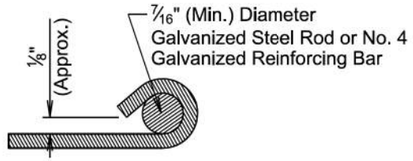
ELEVATION VIEW



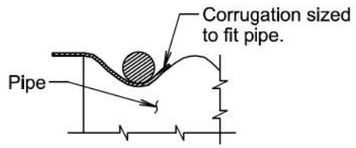
ISOMETRIC VIEW



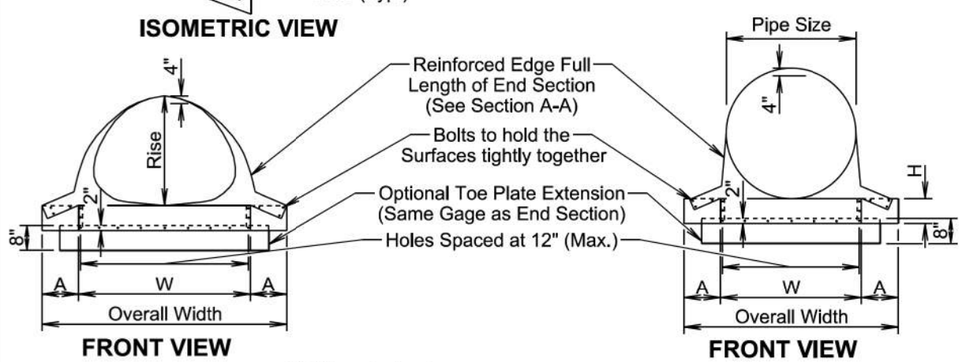
DETAIL OF SAFETY BARS



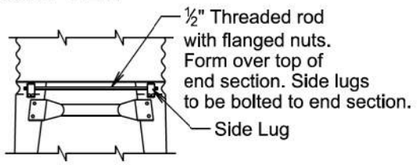
SECTION A-A



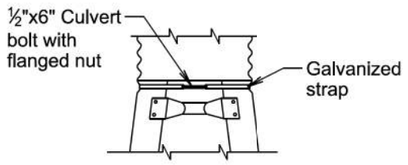
SECTION B-B



FRONT VIEW **FRONT VIEW**



TYPE #2 CONNECTOR DETAIL
(For 30" and Larger)
(For 21"x15" and Larger)



TYPE #1 CONNECTOR DETAIL
(For 15" Through 24")

April 8, 2025

Published Date: 2026	SDDOT	C.M.P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 1 of 2

ARCH C.M.P. SAFETY ENDS

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

CIRCULAR C.M.P. SAFETY ENDS

Pipe Dia. (Inch)	(Min.) Thick. Inch	Gage	Dimensions (Inches) A	H	W	Overall Width	L Dimensions Slope	Length (Inch)
15	.064	16	8	6	21	37	6:1	30
18	.064	16	8	6	24	40	6:1	48
21	.064	16	8	6	27	43	6:1	66
24	.064	16	8	6	30	46	6:1	84
30	.109	12	12	9	36	60	6:1	120
36	.109	12	12	9	42	66	6:1	156
42	.109	12	16	12	48	80	6:1	192
48	.109	12	16	12	54	86	6:1	228
54	.109	12	16	12	60	92	6:1	264
60	.109	12	16	12	66	98	6:1	300

GENERAL NOTES:

Safety bars will be provided when specified in the plans.

Safety ends will be fabricated from galvanized steel conforming to the requirements of the Specifications.

Safety bars will be fabricated from steel schedule 40 pipe in conformance with ASTM A53, grade B or HSS 3.5x.216 in conformance with ASTM A500, grade B or C.

Slotted holes for safety bar attachment will be provided for all end sections.

Attachment to circular pipes 15" through 24" diameter will be made with Type #1 straps. All other sizes will be attached with Type #2 rods and lugs.

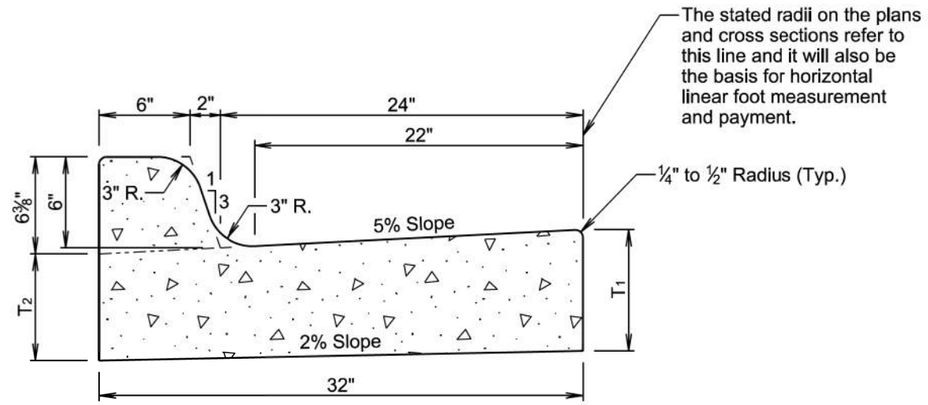
When stated in the plans, optional toe plate extension will be punched and bolted to end section apron lip with ⅜" diameter galvanized bolts. Steel for toe plate extension will be same gauge as end section. Dimensions will be overall width less 6" by 8" high.

Installation will be performed in accordance with the Specifications.

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

April 8, 2025

Published Date: 2026	SDDOT	C.M.P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 2 of 2



TYPE B CONCRETE CURB AND GUTTER				
Type	T_1 (Inches)	T_2 (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B66	6	5 1/16	0.057	17.7
B67	7	6 1/16	0.065	15.4
B68	8	7 1/16	0.073	13.7
B68.5	8.5	7 9/16	0.077	13.0
B69	9	8 1/16	0.081	12.3
B69.5	9.5	8 9/16	0.085	11.7
B610	10	9 1/16	0.090	11.2
B610.5	10.5	9 9/16	0.094	10.7
B611	11	10 1/16	0.098	10.2
B611.5	11.5	10 9/16	0.102	9.8
B612	12	11 1/16	0.106	9.4

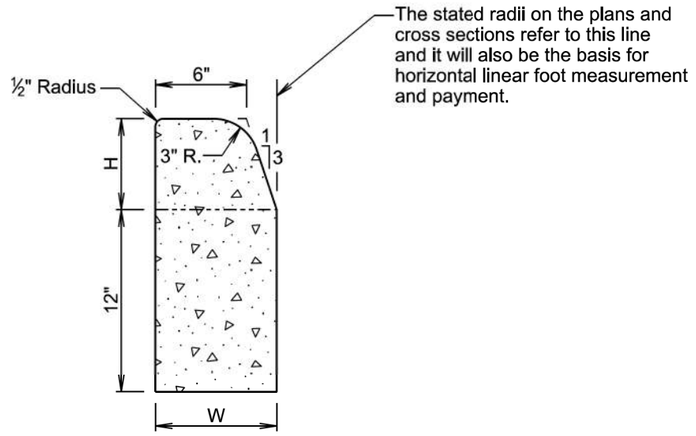
GENERAL NOTES:

When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment will be by one of the methods shown on standard plate 380.21.

See standard plate 650.90 for expansion and contraction joints in the curb and gutter.

January 22, 2023

Published Date: 2026	SDDOT	TYPE B CONCRETE CURB AND GUTTER	PLATE NUMBER 650.01 Sheet 1 of 1



TYPE B CONCRETE CURB				
Type	H (Inches)	W (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B6	6	8	0.0353	28.4
B7	7	8 3/8	0.0383	26.1
B8	8	8 5/8	0.0414	24.1
B9	9	9	0.0449	22.3
B10	10	9 3/8	0.0485	20.6

GENERAL NOTES:

The concrete for the type B concrete curb will comply with the requirements of the specifications for class M6 concrete.

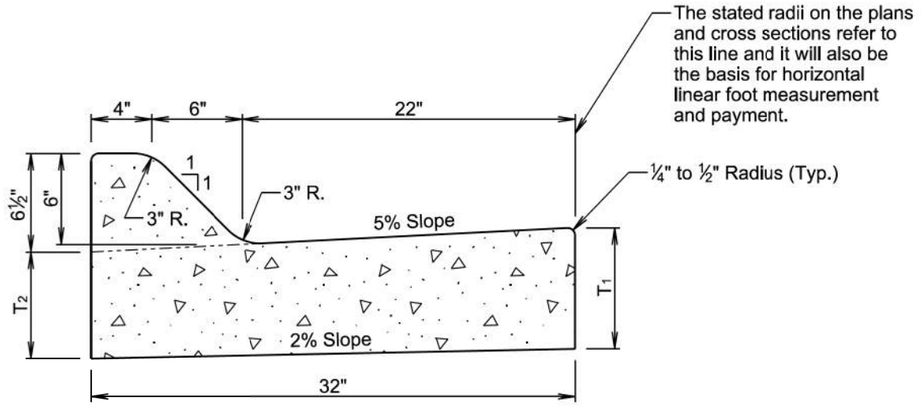
A ½" preformed expansion joint filler will be placed transversely in the curb at the following locations:

1. At each junction between the radius return of curb and curb which is parallel to the project centerline.
2. At each junction between the existing curb and new curb or curb and gutter.
3. At each junction between the curb and existing sidewalk to the depth of the sidewalk.

See standard plate 650.90 for contraction joints in the curb.

December 23, 2019

Published Date: 2026	SDDOT	TYPE B CONCRETE CURB	PLATE NUMBER 650.02 Sheet 1 of 1



TYPE F CONCRETE CURB AND GUTTER				
Type	T_1 (Inches)	T_2 (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
F66	6	5 1/16	0.057	17.6
F67	7	6 1/16	0.065	15.4
F68	8	7 1/16	0.073	13.6
F68.5	8.5	7 9/16	0.077	12.9
F69	9	8 1/16	0.082	12.3
F69.5	9.5	8 9/16	0.086	11.7
F610	10	9 1/16	0.090	11.1
F610.5	10.5	9 9/16	0.094	10.7
F611	11	10 1/16	0.098	10.2
F611.5	11.5	10 9/16	0.102	9.8
F612	12	11 1/16	0.106	9.4

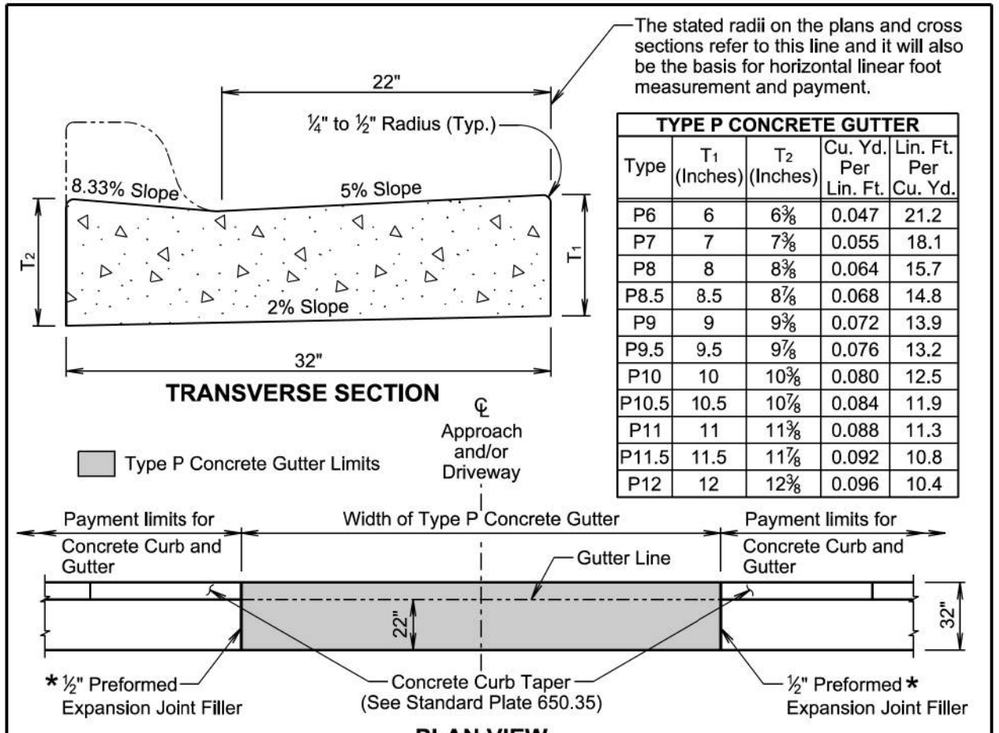
GENERAL NOTES:

When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment will be by one of the methods shown on standard plate 380.21.

See standard plate 650.90 for expansion and contraction joints in the curb and gutter.

January 22, 2023

Published Date: 2026	SDDOT	TYPE F CONCRETE CURB AND GUTTER	PLATE NUMBER 650.20
			Sheet 1 of 1



TYPE P CONCRETE GUTTER				
Type	T_1 (Inches)	T_2 (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
P6	6	6 3/8	0.047	21.2
P7	7	7 3/8	0.055	18.1
P8	8	8 3/8	0.064	15.7
P8.5	8.5	8 7/8	0.068	14.8
P9	9	9 3/8	0.072	13.9
P9.5	9.5	9 7/8	0.076	13.2
P10	10	10 3/8	0.080	12.5
P10.5	10.5	10 7/8	0.084	11.9
P11	11	11 3/8	0.088	11.3
P11.5	11.5	11 7/8	0.092	10.8
P12	12	12 3/8	0.096	10.4

* Joint will not be needed if concrete curb and gutter and type P concrete gutter is placed at the same time. If the ½" preformed expansion joint filler is provided, then the joint will be sealed in accordance with standard plate 650.90.

GENERAL NOTES:

The concrete for the type P concrete gutter will comply with the requirements of the specifications for class M6 concrete.

When concrete gutter longitudinally adjoins new concrete pavement, the method of attachment will be by one of the methods shown on standard plate 380.21.

Transverse contraction joints will be constructed at 10-foot intervals in the concrete gutter except when concrete gutter is constructed adjacent to mainline PCC pavement. When concrete gutter is constructed adjacent to mainline PCC pavement, a transverse contraction joint will be constructed in the concrete gutter at each mainline PCC pavement transverse contraction joint location.

When concrete gutter is placed monolithically with mainline PCC pavement, the transverse contraction joints in the concrete gutter will be sawed and sealed the same as the transverse contraction joints in the mainline PCC pavement.

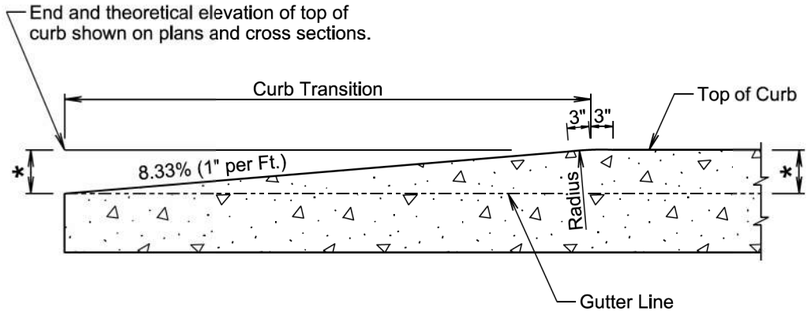
When concrete gutter is not placed monolithically with the mainline PCC pavement and when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete gutter will be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint will be at least ¼ the thickness of the concrete.

January 22, 2023

Published Date: 2026	SDDOT	TYPE P CONCRETE GUTTER	PLATE NUMBER 650.30
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B55	B72

Plotting Date: 09/09/2025

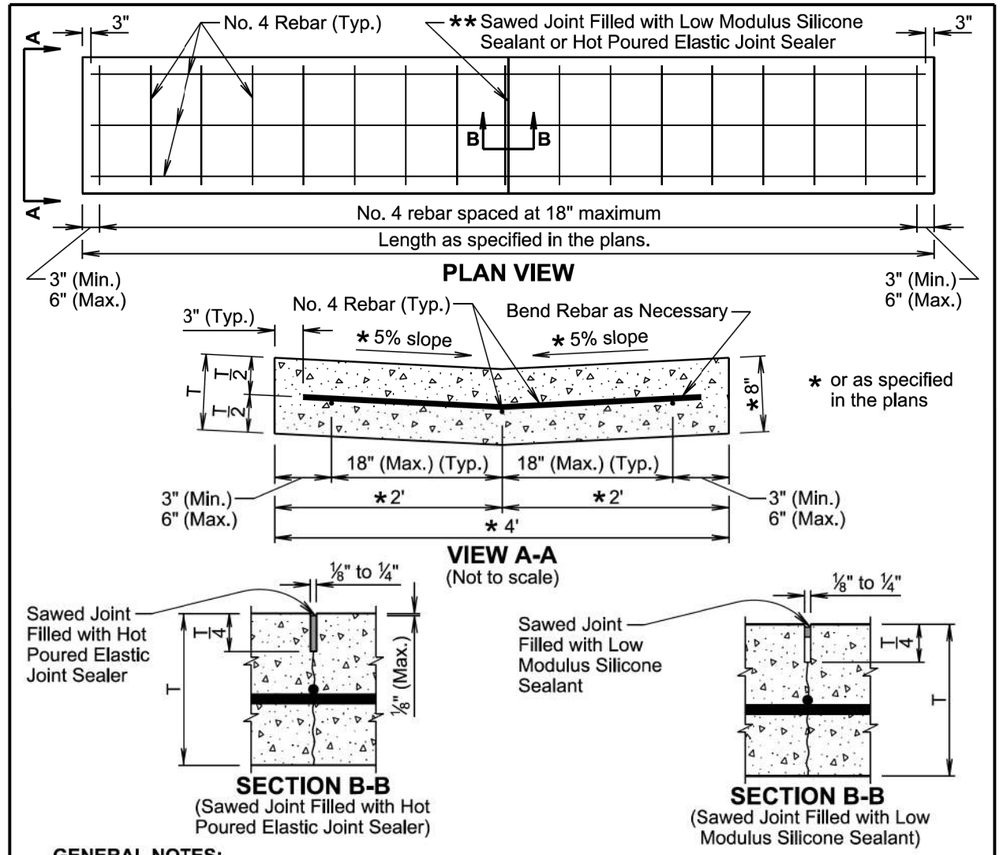


* Height of Curb

LONGITUDINAL SECTION
(Concrete Curb Taper)

December 23, 2019

Published Date: 2026	SDDOT	CONCRETE CURB TAPER	PLATE NUMBER 650.35 Sheet 1 of 1



PLAN VIEW

VIEW A-A
(Not to scale)

SECTION B-B
(Sawed Joint Filled with Hot Poured Elastic Joint Sealer)

SECTION B-B
(Sawed Joint Filled with Low Modulus Silicone Sealant)

GENERAL NOTES:

The concrete will comply with the specifications for class M6 concrete.

The reinforcing steel will comply with the requirements of specification sections 480 and 1010.

If a lap splice is provided the No. 4 rebar will be lapped a minimum of 12 inches.

** The sawed joints will be spaced at 12 feet; however, when the length of the valley gutter is 12 feet to 24 feet there will be a joint at the midpoint of the length. The saw cut to control cracking will be a minimum of ¼ the thickness of the pavement.

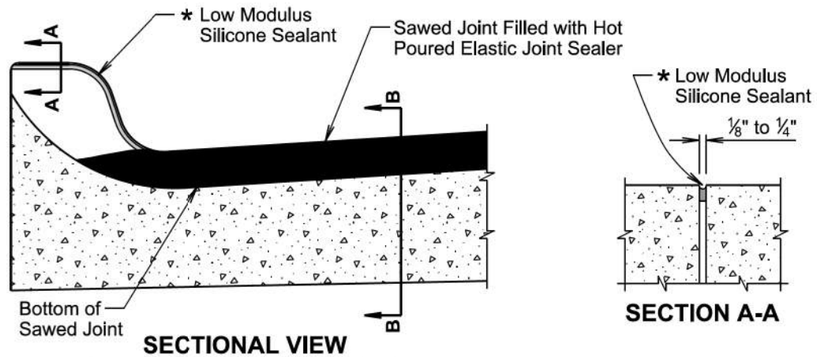
All hot poured elastic joint sealer material spilled on the surface of the concrete pavement will be removed as soon as the material has cooled. The extent of removal of material will be to the satisfaction of the Engineer. All costs for removal of the spilled joint sealer material will be borne by the Contractor.

The silicone sealant will be bonded to the sides of a clean joint to completely seal the joint as approved by the Engineer.

All costs for furnishing and installing the valley gutter including materials, equipment, labor, and incidentals will be included in the contract unit price per square yard for the corresponding Valley Gutter contract item.

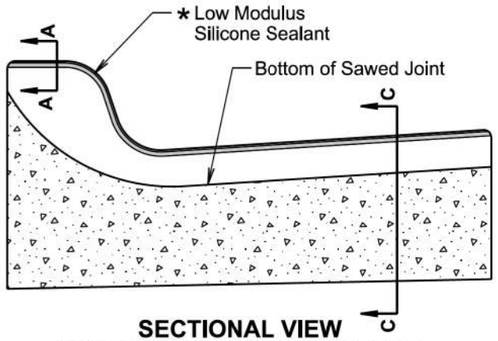
December 23, 2019

Published Date: 2026	SDDOT	VALLEY GUTTER	PLATE NUMBER 650.40 Sheet 1 of 1

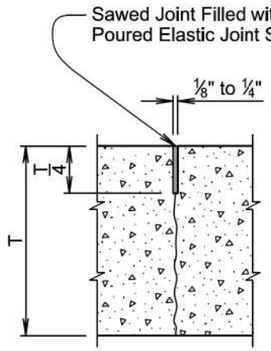


SECTIONAL VIEW
(Curb and Gutter Placed Monolithic with Adjacent Mainline PCC Pavement)

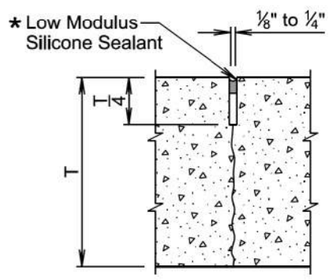
SECTION A-A



SECTIONAL VIEW
(Curb and Gutter not Placed Monolithic with Adjacent Mainline PCC Pavement or Mainline Surfacing is not PCC Pavement)



SECTION B-B

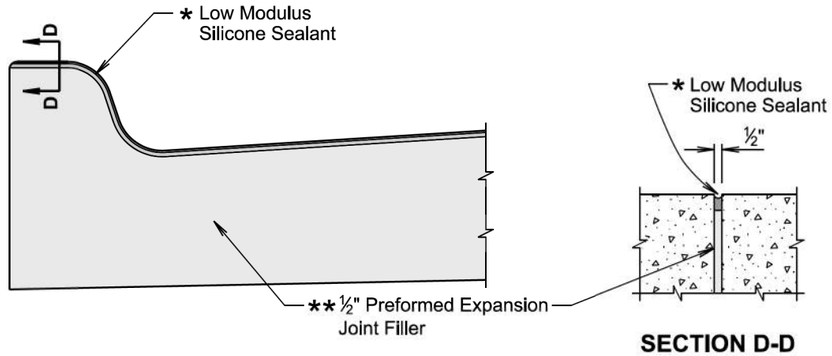


SECTION C-C

* The silicone sealant will be placed such that it completely seals the joint and is bonded to the sides of the clean joint as approved by the Engineer.

December 23, 2019

Published Date: 2026	SDDOT	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 1 of 2



SECTIONAL VIEW
(Curb and Gutter at ½" Preformed Expansion Joint Filler Location)

SECTION D-D

* The silicone sealant will be placed such that it completely seals the joint and is bonded to the sides of the clean joint as approved by the Engineer.

GENERAL NOTES:

For illustrative reason, only the type B curb and gutter is shown.

** A ½-inch preformed expansion joint filler will be placed transversely in the curb and gutter at the following locations:

At each junction between the radius return of curb and gutter, and curb and gutter which is parallel to the project centerline.

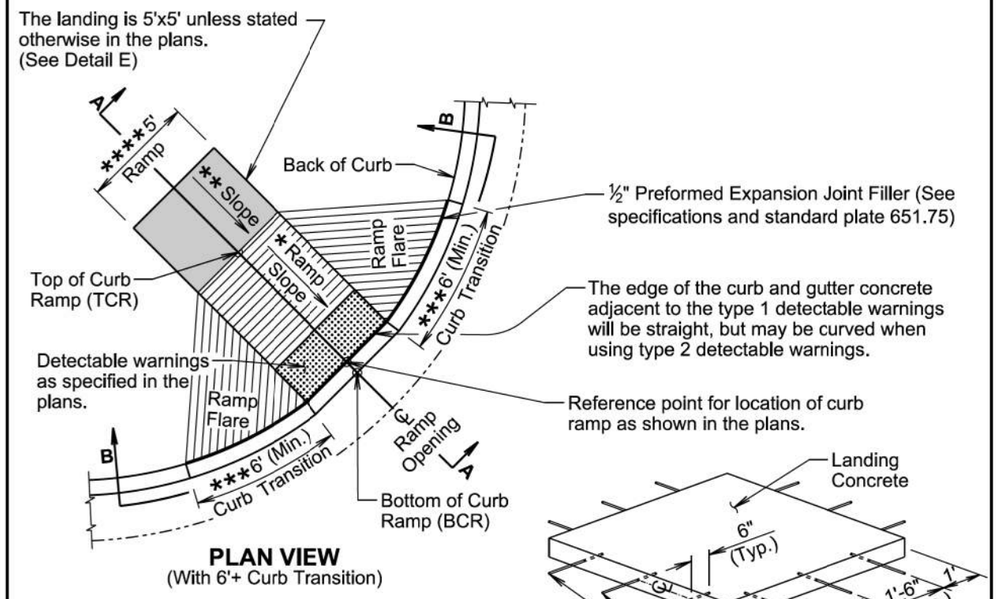
At each junction between new curb and gutter and existing curb and gutter.

Transverse contraction joints will be constructed at 10 foot intervals in the concrete curb and gutter except when the concrete curb and gutter is constructed adjacent to mainline PCC pavement. When concrete curb and gutter is constructed adjacent to mainline PCC pavement, a transverse contraction joint will be constructed in the concrete curb and gutter at each mainline PCC pavement transverse contraction joint location.

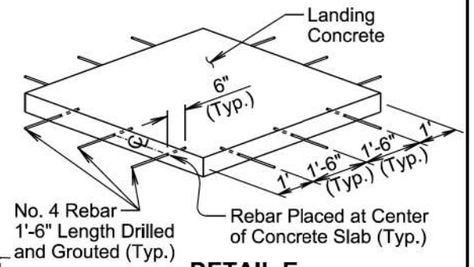
When concrete curb and gutter is not placed monolithically with the mainline PCC pavement or when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete curb and gutter will be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint will be at least ¼ the thickness of the concrete and the joint will be sealed in accordance with the details shown above.

December 23, 2019

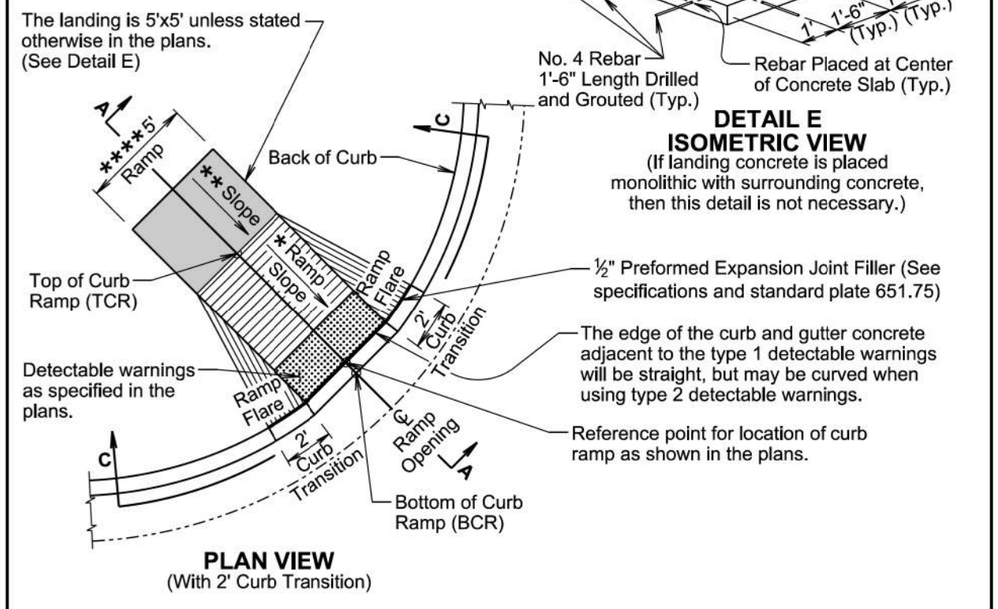
Published Date: 2026	SDDOT	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 2 of 2



PLAN VIEW
(With 6'+ Curb Transition)



DETAIL E
ISOMETRIC VIEW
(If landing concrete is placed monolithic with surrounding concrete, then this detail is not necessary.)



PLAN VIEW
(With 2' Curb Transition)

April 8, 2025

Published Date: 2026	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 1 of 3

* Curb ramp slopes are designed at 7.5% unless stated otherwise in the plans. The curb ramp may have a maximum slope of 8.3% and will not exceed 15' in length unless stated otherwise in the plans.

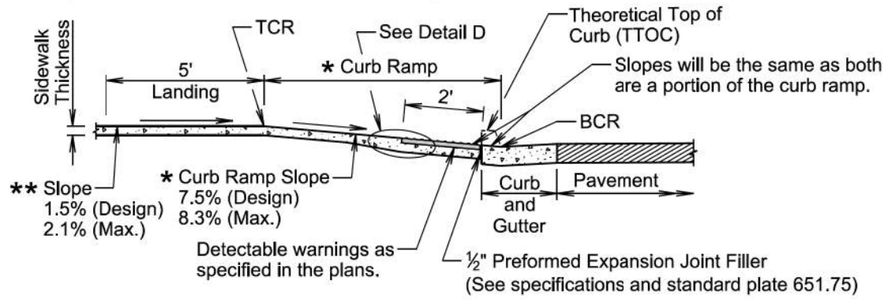
The curb ramp length may be computed based on the intersection of a continuous 1.5% theoretical slope from theoretical top of curb (TTOC) with the curb ramp using a continuous 7.5% curb ramp slope. The elevation of point TCR will always be higher than the elevation of point TTOC unless specified otherwise in the plans. The curb ramp length dimension as shown in the plans will be adjusted as necessary to meet all slope and length requirements based on field geometrics.

The cross slope of the ramp will not be steeper than 2.1%. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

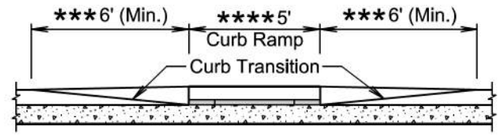
** The slope in the landing will not be steeper than 2.1% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

*** The curb transition will be a minimum of 6' long, a maximum of 10' long, and the curb transition slope will not be steeper than 10% unless stated otherwise in the plans. The curb transition length will be adjusted as necessary to meet slope and length requirements based on field geometrics.

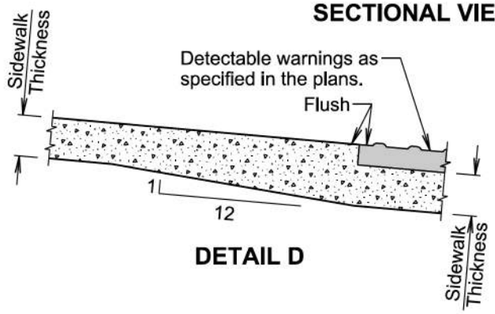
**** The ramp width is 5' unless stated otherwise in the plans.



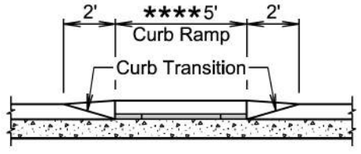
SECTION A-A



SECTIONAL VIEW B-B



DETAIL D



SECTIONAL VIEW C-C

April 8, 2025

Published Date: 2026	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 2 of 3

GENERAL NOTES:

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

For illustrative purpose only, PCC fillet sections are shown in the drawings. The curb ramp depicted on this standard plate may be used with a PCC fillet section or curb and gutter.

The curb ramp will be placed at the location stated in the plans.

Sidewalk will not be placed adjacent to the curb ramp flares when a 2-foot curb transition is used unless shown otherwise in the plans.

* Care will be taken to ensure a uniform grade on the curb ramp, free of sags and short grade changes.

Surface texture of the curb ramp will be obtained by coarse brooming transverse to the slope of the curb ramp.

The normal gutter line profile will be maintained through the area of the ramp opening.

Joints will be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking.

Care will be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

The detectable warnings will be cut as necessary to fit the plan specified limits of the detectable warnings. Cost for cutting the detectable warnings will be incidental to the corresponding detectable warning contract item.

There will be no separate payment for curb ramps. The curb ramp will be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk contract item. The square foot area of the detectable warnings will be included in the measured and paid for quantity of sidewalk.

If rebar is placed in the landing as depicted in detail E, the cost of the materials, labor, and equipment to furnish and install the rebar will be incidental to the contract unit price per square foot for the corresponding concrete sidewalk contract item.

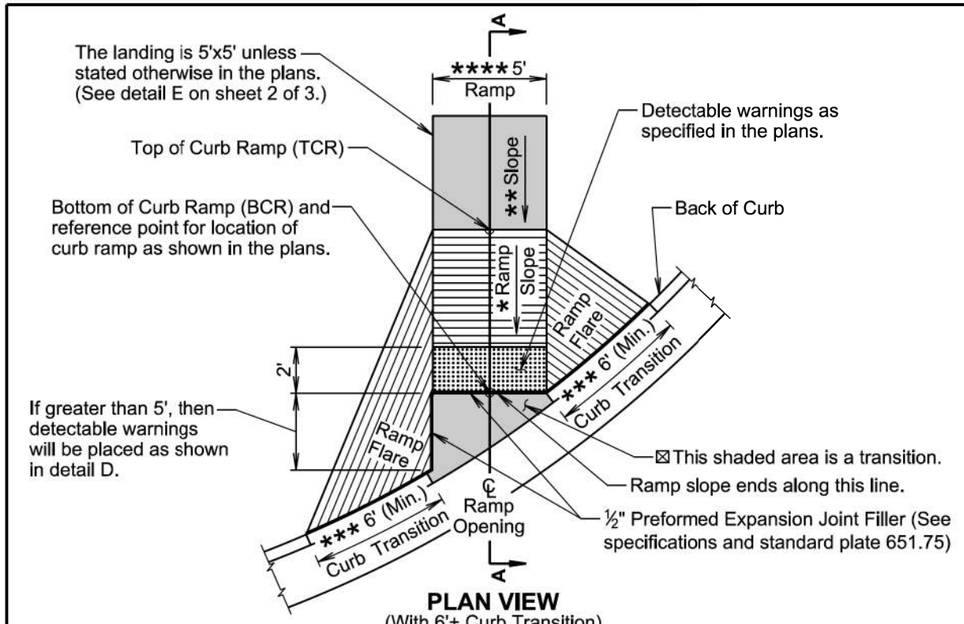
The curb transitions and ramp opening will be measured and paid for at the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used. The curb transitions and ramp opening will be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section contract item when a PCC fillet section is used.

Type 1 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing type 1 detectable warnings including labor, equipment, materials, and incidentals will be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

Type 2 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding will be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

April 8, 2025

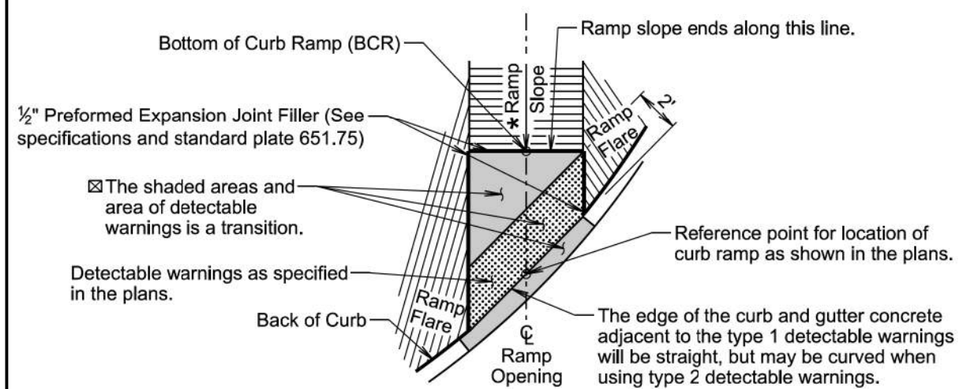
Published Date: 2026	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 3 of 3



PLAN VIEW
(With 6'+ Curb Transition)

⊠The slope within the transition area will not be steeper than 5%. The concrete within the transition will be placed monolithic with the curb and gutter or fillet section concrete. The concrete thickness within the transition will be the same as the curb and gutter or fillet section concrete thickness.

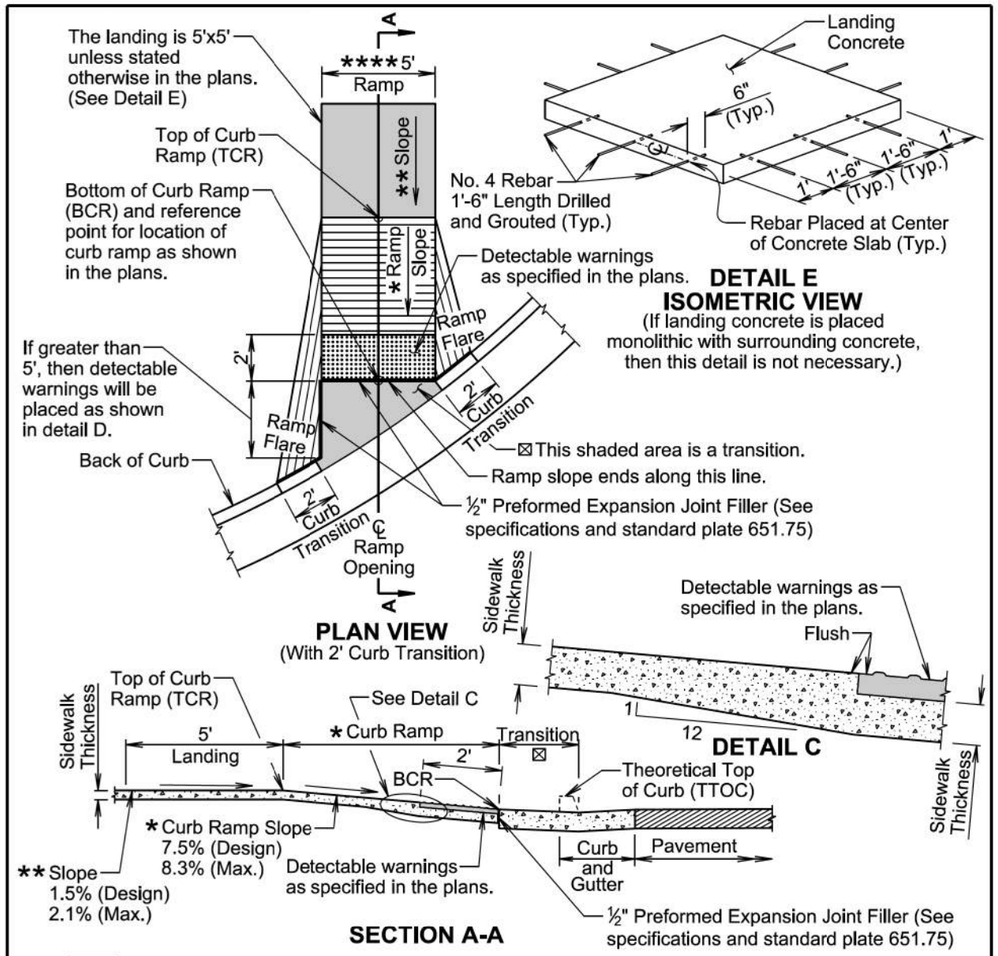
*** The curb transition will be a minimum of 6' long, a maximum of 10' long, and the curb transition slope will not be steeper than 10% unless stated otherwise in the plans. The curb transition length will be adjusted as necessary to meet slope and length requirements based on field geometrics.



DETAIL D

April 8, 2025

Published Date: 2026	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02
			Sheet 1 of 3



Curb ramp slopes are designed at 7.5% unless stated otherwise in the plans. The curb ramp may have a maximum slope of 8.3% and will not exceed 15' in length unless stated otherwise in the plans.

* The elevation of point TCR will always be higher than the elevation of point TTOC unless specified otherwise in the plans. The curb ramp length dimension as shown in the plans will be adjusted as necessary to meet all slope and length requirements based on field geometrics.

The cross slope of the ramp will not be steeper than 2.1%. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

** The slope in the landing will not be steeper than 2.1% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

**** The ramp width is 5' unless stated otherwise in the plans.

April 8, 2025

Published Date: 2026	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02 Sheet 2 of 3

GENERAL NOTES:

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

The curb ramp depicted on this standard plate may be used with a PCC fillet section or curb and gutter. The curb ramp will be placed at the location stated in the plans.

Sidewalk will not be placed adjacent to the curb ramp flares when a 2-foot curb transition is used unless shown otherwise in the plans.

* Care will be taken to ensure a uniform grade on the curb ramp, free of sags and short grade changes.

Surface texture of the curb ramp will be obtained by coarse brooming transverse to the slope of the curb ramp.

The normal gutter line profile will be maintained through the area of the ramp opening.

Joints will be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking.

Care will be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

The detectable warnings will be cut as necessary to fit the plan specified limits of the detectable warnings. Cost for cutting the detectable warnings will be incidental to the corresponding detectable warning contract item.

There will be no separate payment for curb ramps. The curb ramp will be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk contract item. The square foot area of the detectable warnings will be included in the measured and paid for quantity of sidewalk.

If rebar is placed in the landing as depicted in DETAIL E, the cost of the materials, labor, and equipment to furnish and install the rebar will be incidental to the contract unit price per square foot for the corresponding concrete sidewalk contract item.

The curb transitions and ramp opening will be measured and paid for at the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used. The curb transitions and ramp opening will be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section contract item when a PCC fillet section is used.

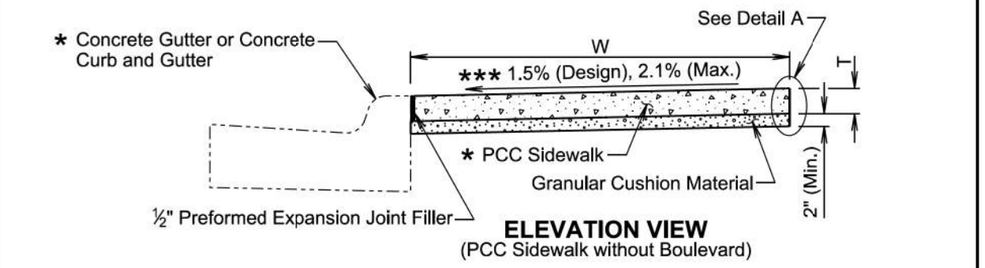
All costs for furnishing and installing the transition area at the base of the curb ramp will be incidental to the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used and will be incidental to the contract unit price per square yard for the corresponding PCC fillet section contract item when a PCC fillet section is used.

Type 1 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing type 1 detectable warnings including labor, equipment, materials, and incidentals will be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

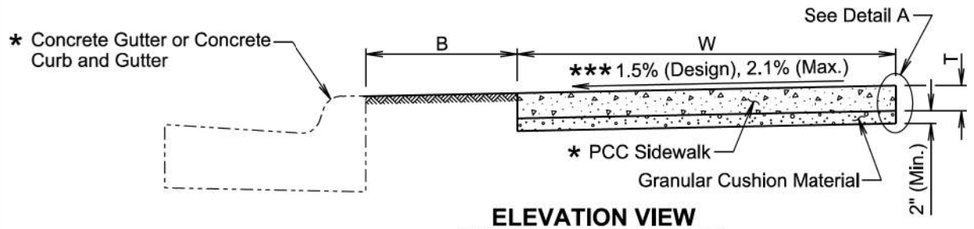
Type 2 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding will be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

April 8, 2025

Published Date: 2026	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02 Sheet 3 of 3



ELEVATION VIEW
(PCC Sidewalk without Boulevard)



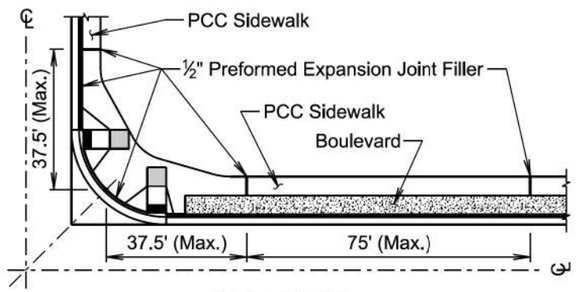
ELEVATION VIEW
(PCC Sidewalk with Boulevard)

B Width of boulevard as specified in the plans.

T Thickness of PCC sidewalk as specified in the plans.

W Width of PCC sidewalk as specified in the plans.

* Type as specified in the plans.



PLAN VIEW

GENERAL NOTES:

The PCC sidewalk will be constructed in accordance with Section 651 of the Specifications.

*** The cross slope of the sidewalk is designed at 1.5% and the maximum slope allowed is 2.1% unless specified otherwise in the plans.

The maximum length between expansion joints in the PCC sidewalk is 75 feet.

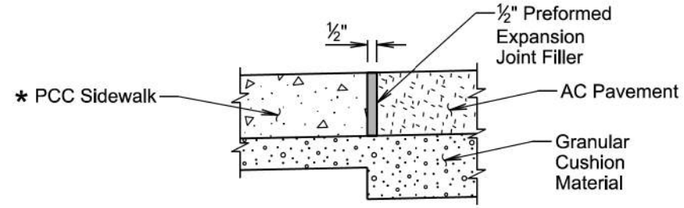
PCC sidewalk placed adjacent to intersection of roadways will have an expansion joint placed transversely a maximum of 37.5 feet from the intersection. See Plan View.

An expansion joint in the PCC sidewalk will consist of a ½ -inch thick preformed expansion joint filler material placed full depth and width of the PCC sidewalk.

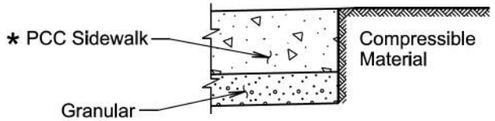
** Large areas of PCC pavement adjacent to the PCC sidewalk may require a different joint treatment than shown in the detail. If a different joint detail is necessary, plans will contain the joint detail and the Contractor will construct the joint treatment in accordance with the plans.

April 8, 2025

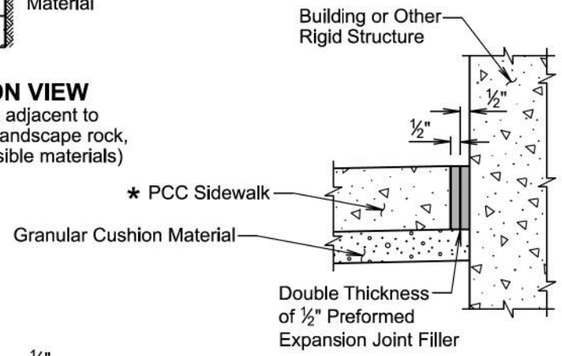
Published Date: 2026	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 1 of 2



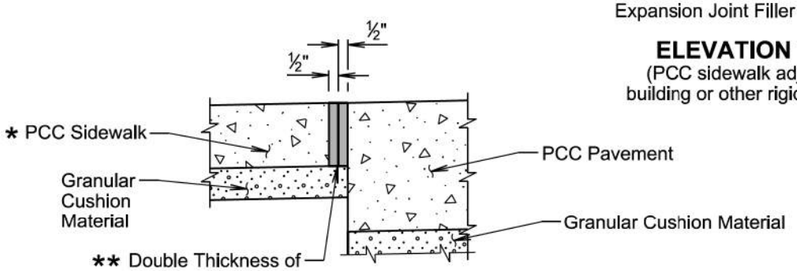
ELEVATION VIEW
(PCC sidewalk adjacent to asphalt concrete pavement)



ELEVATION VIEW
(PCC sidewalk adjacent to earthen material, landscape rock, or other compressible materials)



ELEVATION VIEW
(PCC sidewalk adjacent to building or other rigid structure)

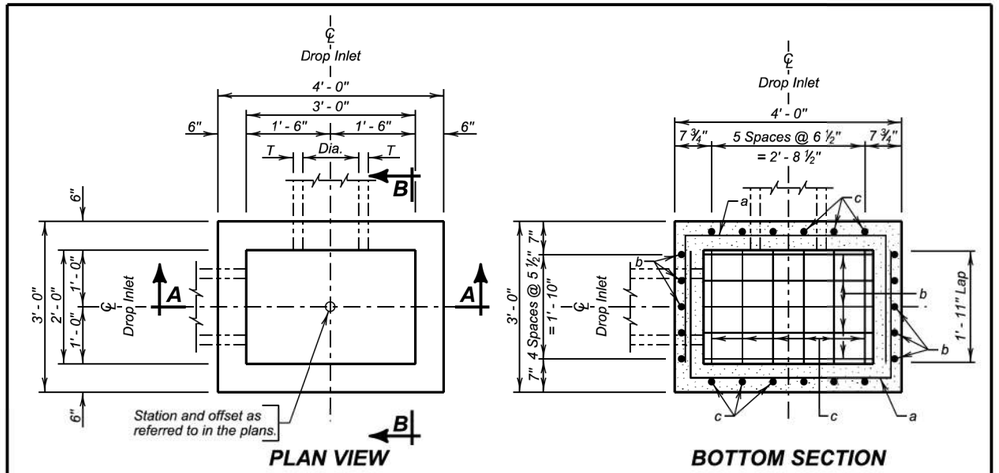


ELEVATION VIEW
(PCC sidewalk adjacent to PCC pavement)

DETAIL A
(Use Appropriate Detail(s))

April 8, 2025

Published Date: 2026	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 2 of 2



ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
✳ Class M6 Concrete	Cu. Yd.	0.26	0.22H
Reinforcing Steel	Lb.	51.19	28.97H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 24" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

✳ Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

Maximum R.C.P. diameter shall not exceed 18 inches on the 2-foot wide side and shall not exceed 24 inches (24 inches for R.C. arch) on the 3-foot wide side of the drop inlet.

The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS			
	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09

March 31, 2024

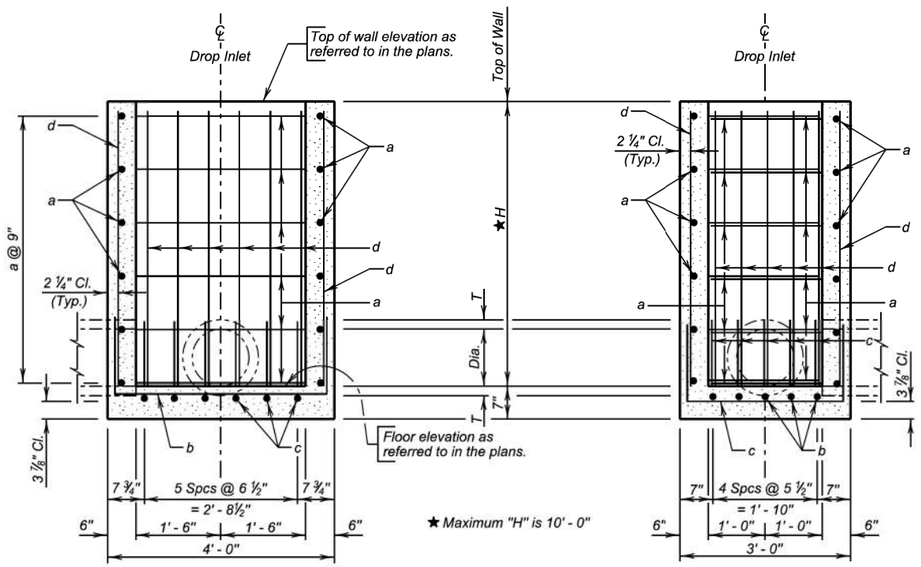
Published Date: 2026

SDDOT

2'X 3' TYPE B REINFORCED CONCRETE DROP INLET

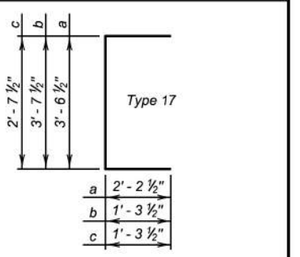
PLATE NUMBER 670.01

Sheet 1 of 2



REINFORCING SCHEDULE					
Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	8' - 0"	17	
b	5	5	6' - 3"	17	
c	6	4	5' - 3"	17	
d	22	4	H - 2"	Str.	

NOTE:
All dimensions are out to out of bars.



March 31, 2024

Published Date: 2026

SDDOT

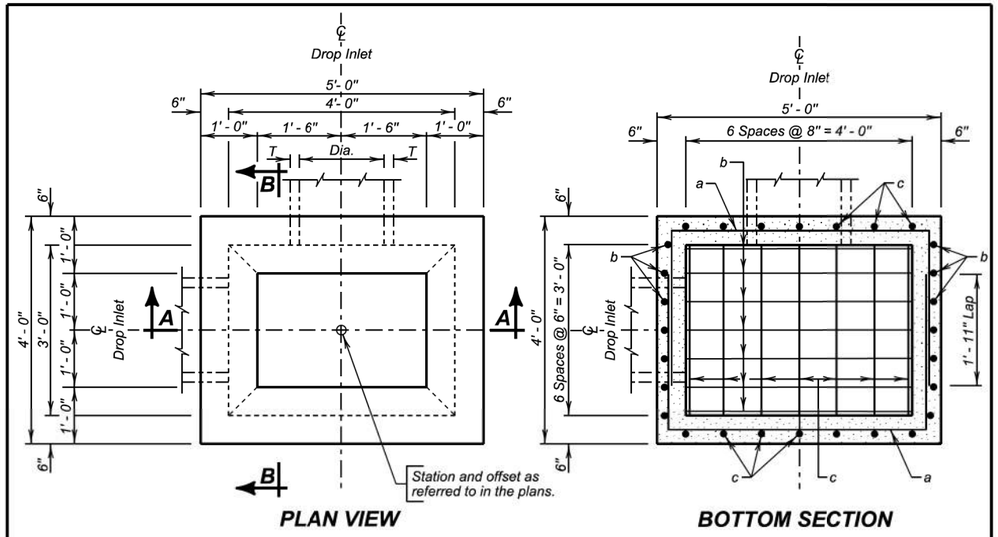
2'X 3' TYPE B REINFORCED CONCRETE DROP INLET

PLATE NUMBER 670.01

Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B62	B72

Plotting Date: 09/09/2025



PLAN VIEW

BOTTOM SECTION

ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
⚹ Class M6 Concrete	Cu. Yd.	0.72	0.30H
Reinforcing Steel	Lb.	130.93	36.54H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

⚹ Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

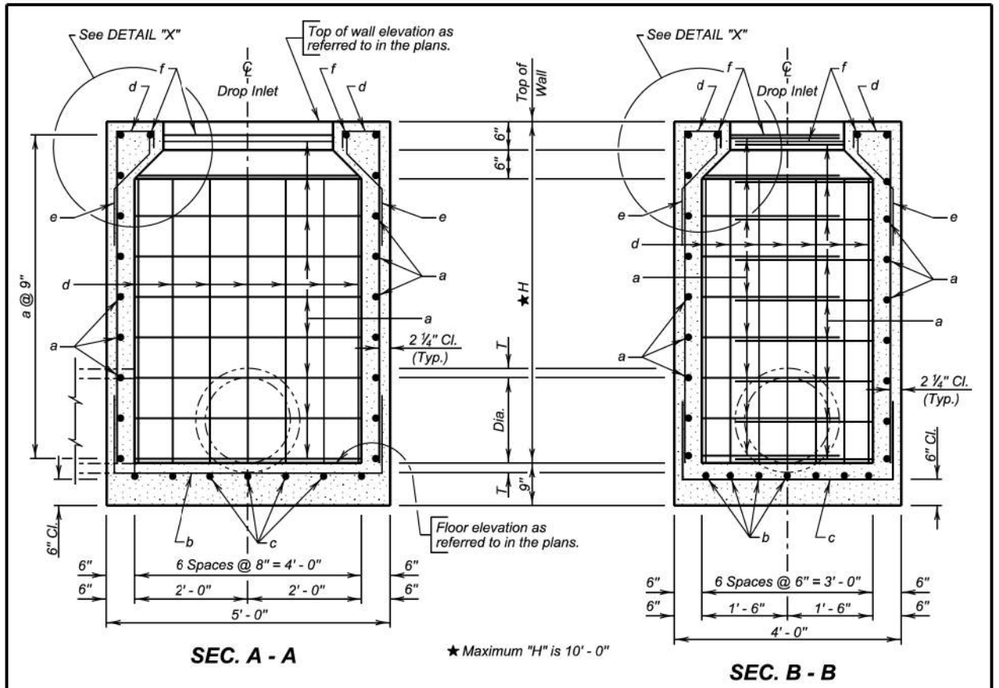
Maximum R.C.P. diameter shall not exceed 24 inches (24 inches for R. C. arch) on the 3-foot wide side and shall not exceed 36 inches (30 inches for R.C. arch) on the 4-foot wide side of the drop inlet.

The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS			
	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14

December 16, 2015

Published Date: 2026	SDDOT	3'X 4' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.02
			Sheet 1 of 2



SEC. A - A

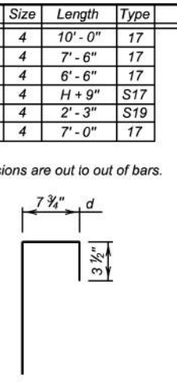
★ Maximum "H" is 10' - 0"

SEC. B - B

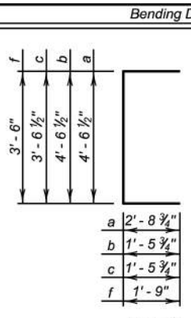
REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	10' - 0"	17	
b	7	4	7' - 6"	17	
c	7	4	6' - 6"	17	
d	28	4	H + 9"	S17	
e	28	4	2' - 3"	S19	
f	2	4	7' - 0"	17	

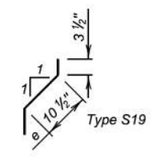
NOTE:
All dimensions are out to out of bars.



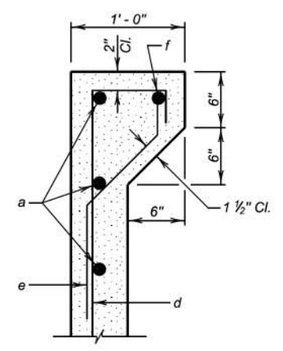
Type S17



Type 17



Type S19



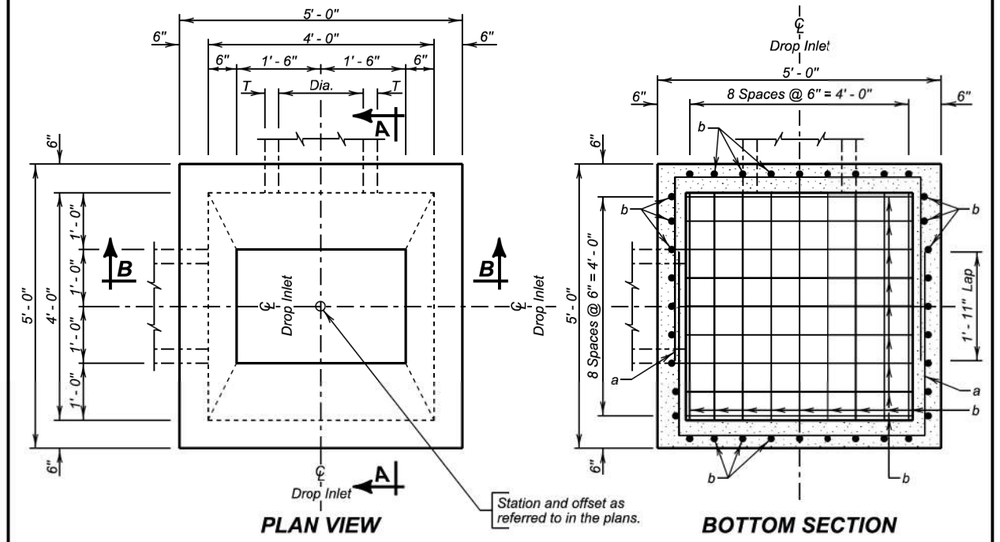
DETAIL "X"

December 16, 2015

Published Date: 2026	SDDOT	3'X 4' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.02
			Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B63	B72

Plotting Date: 09/09/2025



PLAN VIEW

BOTTOM SECTION

ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
✳ Class M6 Concrete	Cu. Yd.	0.98	0.33H
Reinforcing Steel	Lb.	180.69	43.67H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

✳ *Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.*

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

Maximum R.C.P. diameter shall not exceed 36 inches (30 inches for R. C. arch) on the 4-foot wide side of the drop inlet.

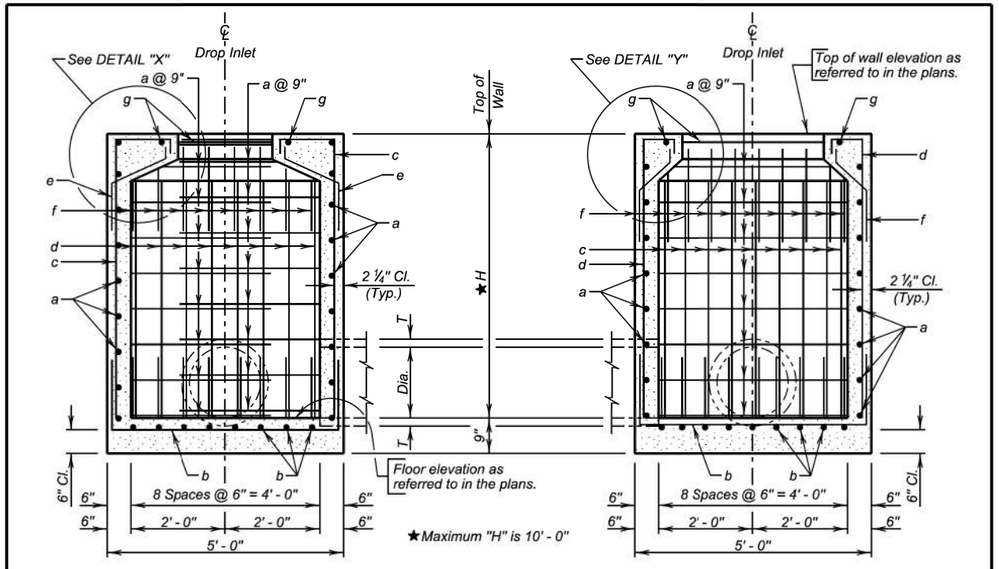
The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS

	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14

December 16, 2015

Published Date: 2026	SDDOT	4' X 4' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.04
			Sheet 1 of 2



SEC. A - A

SEC. B - B

DETAIL "X"

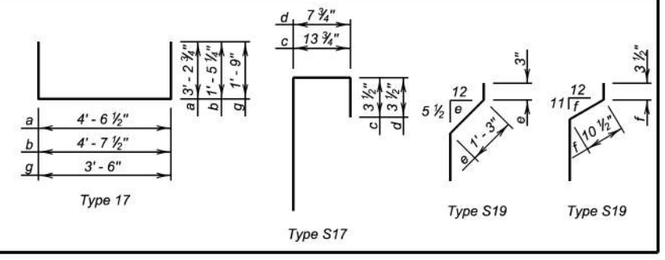
DETAIL "Y"

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
a	2.67H	4	11' - 0"	17
b	18	4	7' - 6"	17
c	18	4	H + 15"	S17
d	18	4	H + 9"	S17
e	18	4	2' - 6"	S19
f	18	4	2' - 3"	S19
g	2	4	7' - 0"	17

NOTE:
All dimensions are out to out of bars.

Bending Details



Type 17

Type S17

Type S19

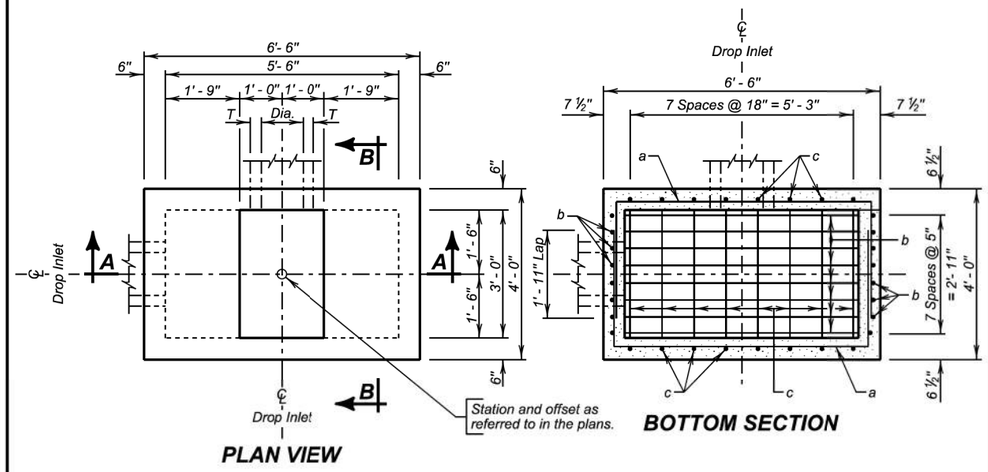
Type S19

December 16, 2015

Published Date: 2026	SDDOT	4' X 4' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.04
			Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B64	B72

Plotting Date: 09/09/2025



PLAN VIEW

BOTTOM SECTION

ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
⚹ Class M6 Concrete	Cu. Yd.	1.03	0.35H
Reinforcing Steel	Lb.	161.19	47.89H
Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 54" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

⚹ Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

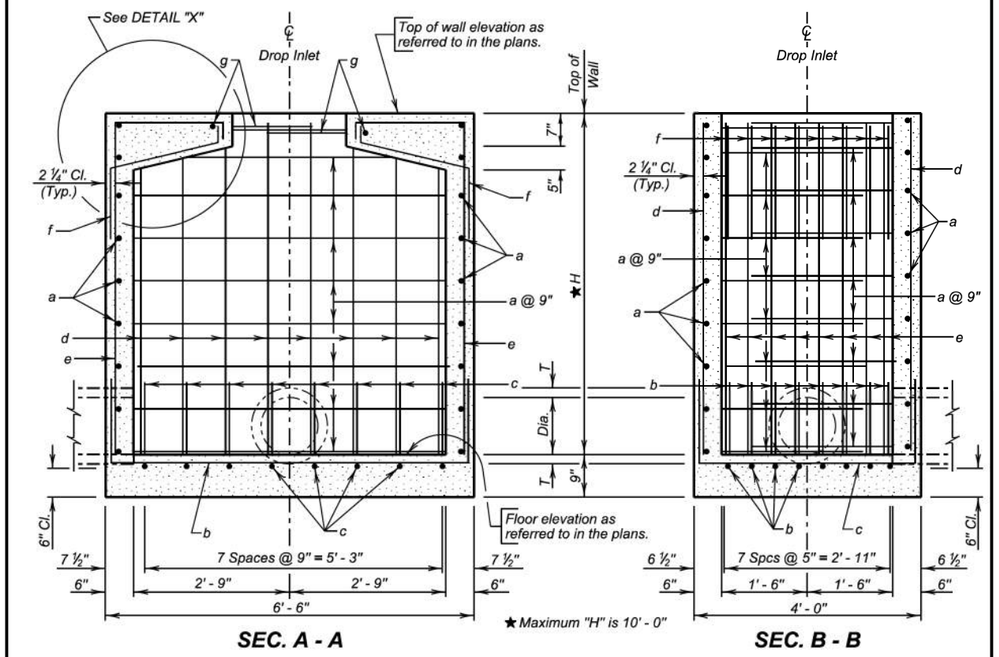
Maximum R.C.P. diameter shall not exceed 54 inches (42 inches for R. C. arch) on the 5.5-foot wide side and shall not exceed 24 inches (24 inches for R. C. arch) on the 3-foot wide side of the drop inlet.

The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS			
	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
	42	4 ½	0.26
	48	5	0.34
	54	5 ½	0.43
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14
	36	4 ½	0.19
	42	4 ½	0.24

December 16, 2015

Published Date: 2026	SDDOT	5.5' X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.05
			Sheet 1 of 2

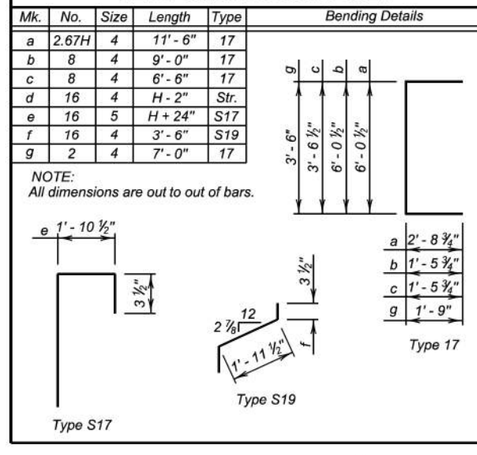


SEC. A - A **SEC. B - B**

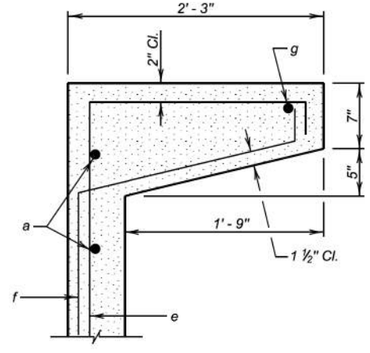
REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	11' - 6"	17	
b	8	4	9' - 0"	17	
c	8	4	6' - 6"	17	
d	16	4	H - 2"	Str.	
e	16	5	H + 24"	S17	
f	16	4	3' - 6"	S19	
g	2	4	7' - 0"	17	

NOTE:
All dimensions are out to out of bars.



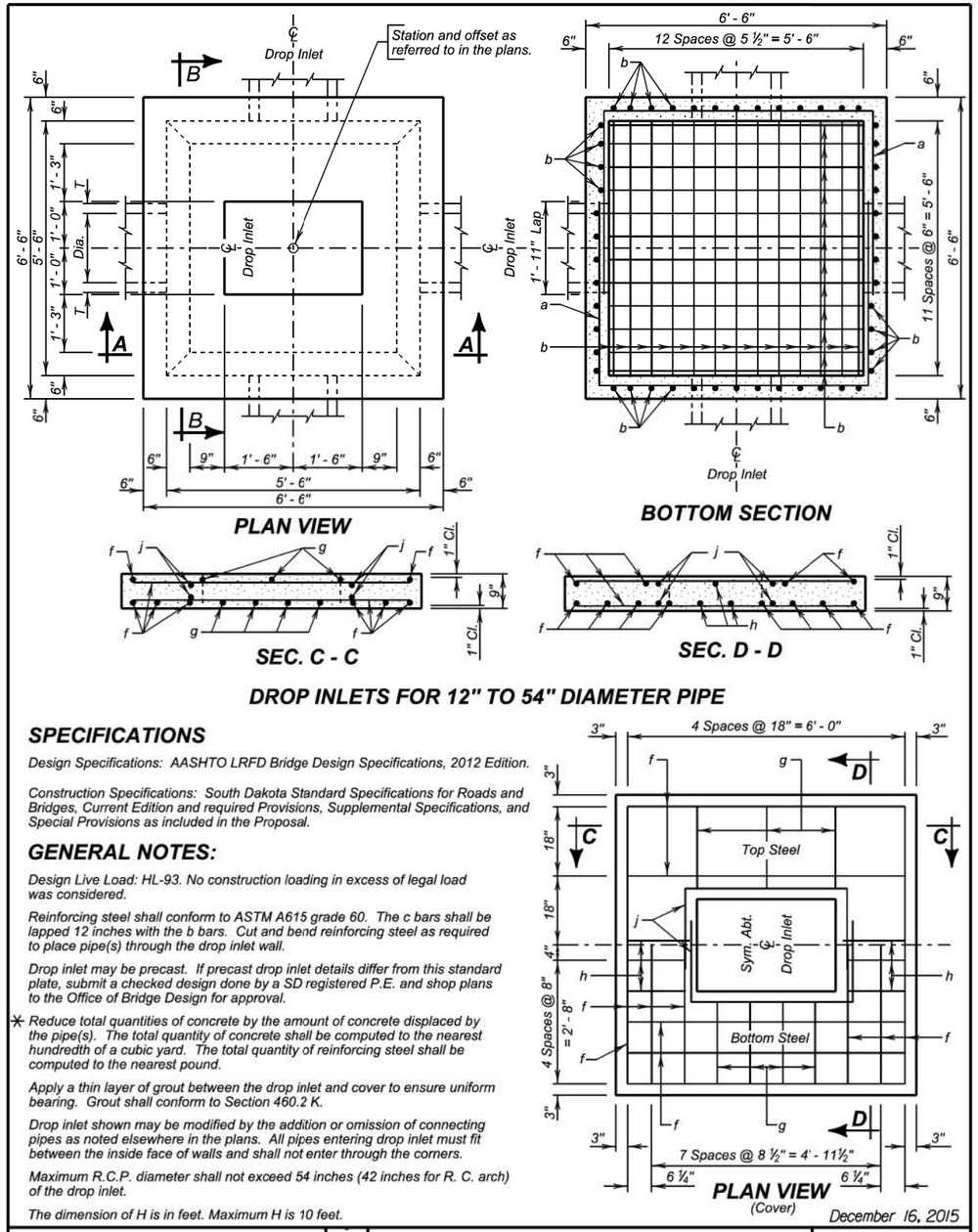
Type S17 Type S19 Type 17



DETAIL "X"

December 16, 2015

Published Date: 2026	SDDOT	5.5' X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.05
			Sheet 2 of 2



SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The c bars shall be lapped 12 inches with the b bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

✳ *Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.*

Apply a thin layer of grout between the drop inlet and cover to ensure uniform bearing. Grout shall conform to Section 460.2 K.

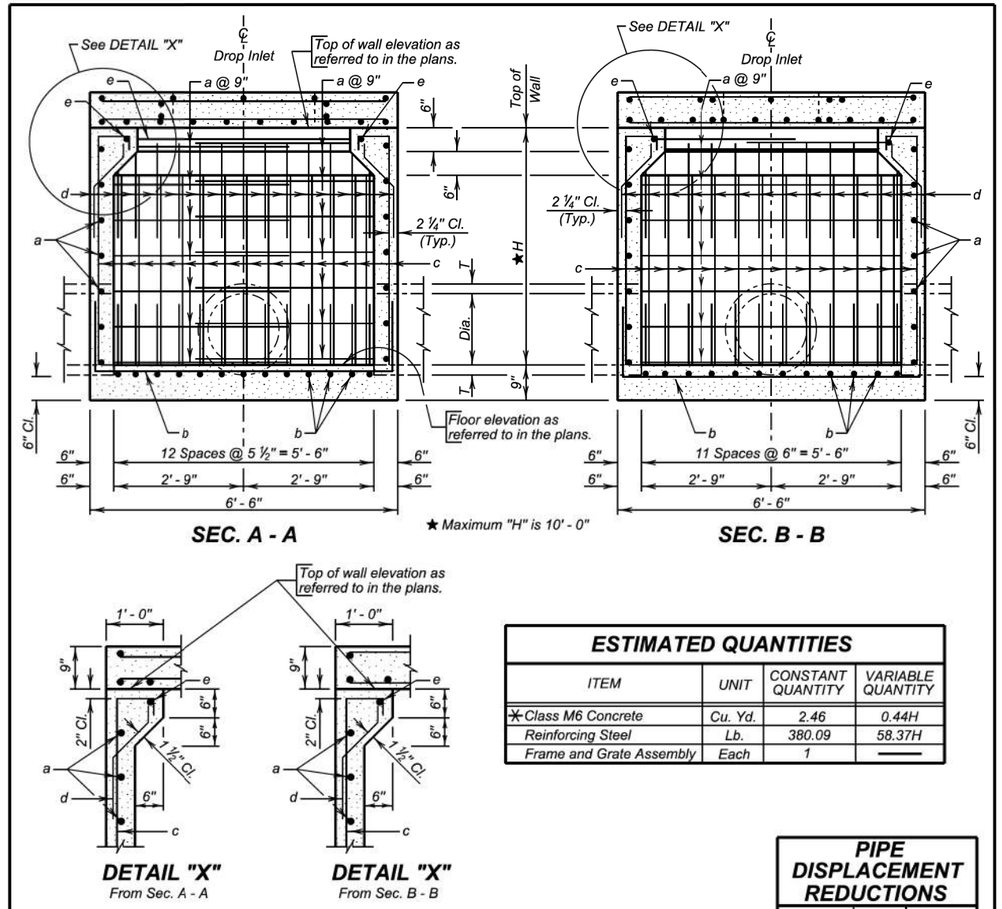
Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

Maximum R.C.P. diameter shall not exceed 54 inches (42 inches for R. C. arch) of the drop inlet.

The dimension of H is in feet. Maximum H is 10 feet.

December 16, 2015

Published Date: 2026	SDDOT	5.5' X 5.5' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.06
			Sheet 1 of 2



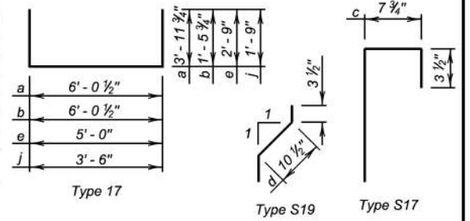
ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
✳Class M6 Concrete	Cu. Yd.	2.46	0.44H
Reinforcing Steel	Lb.	380.09	58.37H
Frame and Grate Assembly	Each	1	———

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
a	2.67H	4	14' - 0"	17
b	25	4	9' - 0"	17
c	50	4	H + 9"	S17
d	50	4	2' - 3"	S19
e	2	4	10' - 6"	17
f	18	4	6' - 0"	Str.
g	14	4	1' - 9"	Str.
h	10	4	1' - 3"	Str.
j	4	4	7' - 0"	17

Bending Details



NOTE:
All dimensions are out to out of bars.

PIPE DISPLACEMENT REDUCTIONS

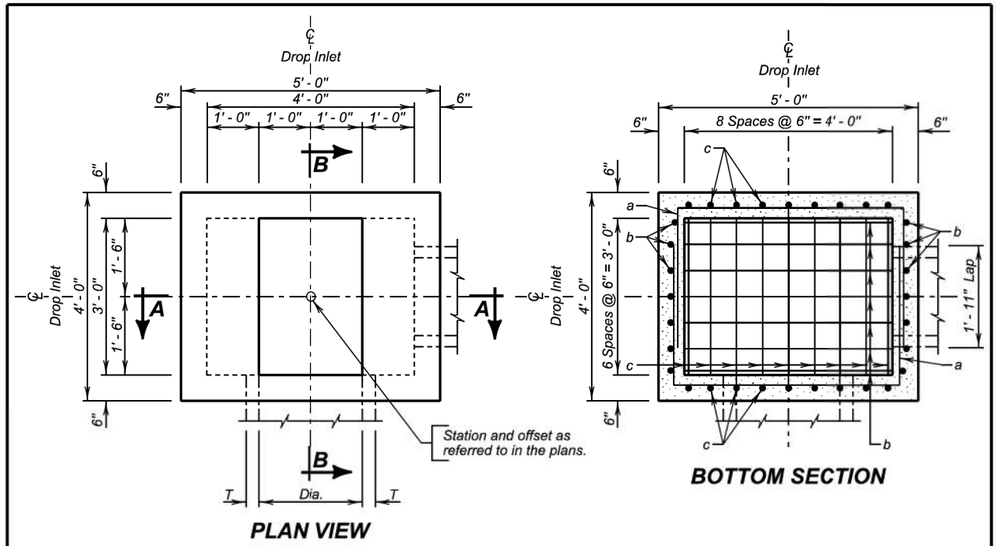
	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
	42	4 ½	0.26
	48	5	0.34
	54	5 ½	0.43
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14
	36	4 ½	0.19
	42	4 ½	0.24

December 16, 2015

Published Date: 2026	SDDOT	5.5' X 5.5' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.06
			Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B66	B72

Plotting Date: 09/09/2025



PLAN VIEW

BOTTOM SECTION

ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
⚹ Class M6 Concrete	Cu. Yd.	0.58	0.33H
Reinforcing Steel	Lb.	116.24	39.21H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d and e bars shall be lapped 12 inches with the c and b bars, respectively. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

⚹ Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

Maximum R.C.P. diameter shall not exceed 36 inches (30 inches for R. C. arch) on the 4-foot wide side and shall not exceed 24 inches (24 inches for R. C. arch) on the 3-foot wide side of the drop inlet.

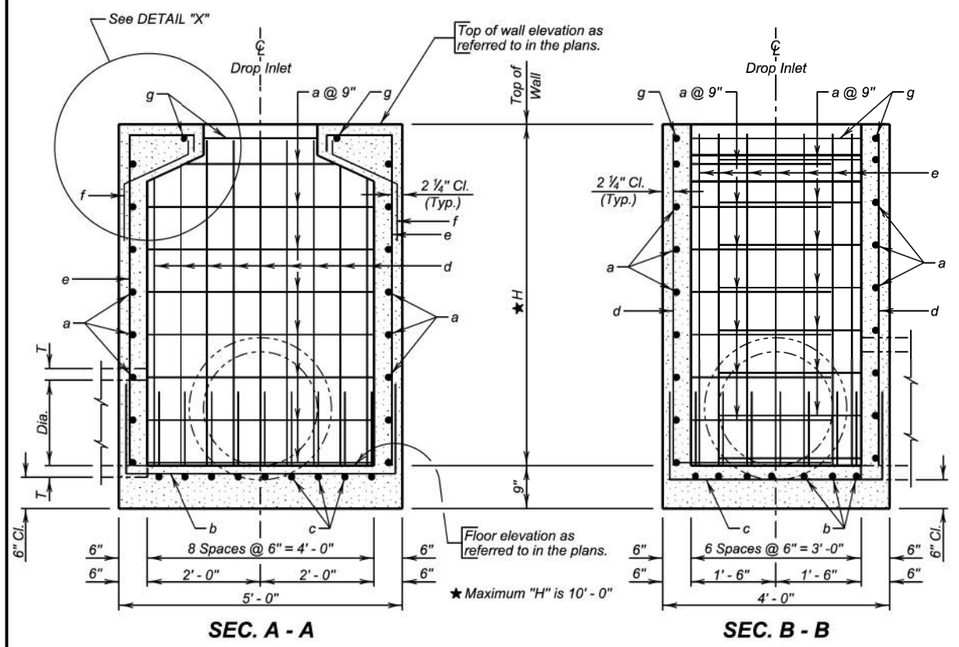
The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS

	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14

December 16, 2015

Published Date: 2026	SDDOT	4' X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.07
			Sheet 1 of 2



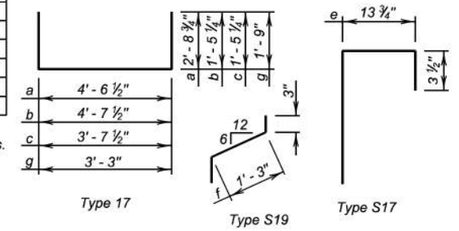
SEC. A - A

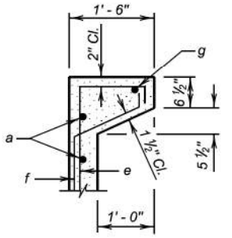
SEC. B - B

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	10' - 0"	17	
b	7	4	7' - 6"	17	
c	9	4	6' - 6"	17	
d	18	4	H - 2"	Str.	
e	14	4	H + 15"	S17	
f	14	4	2' - 6"	S19	
g	2	4	6' - 9"	17	

NOTE:
All dimensions are out to out of bars.





DETAIL "X"

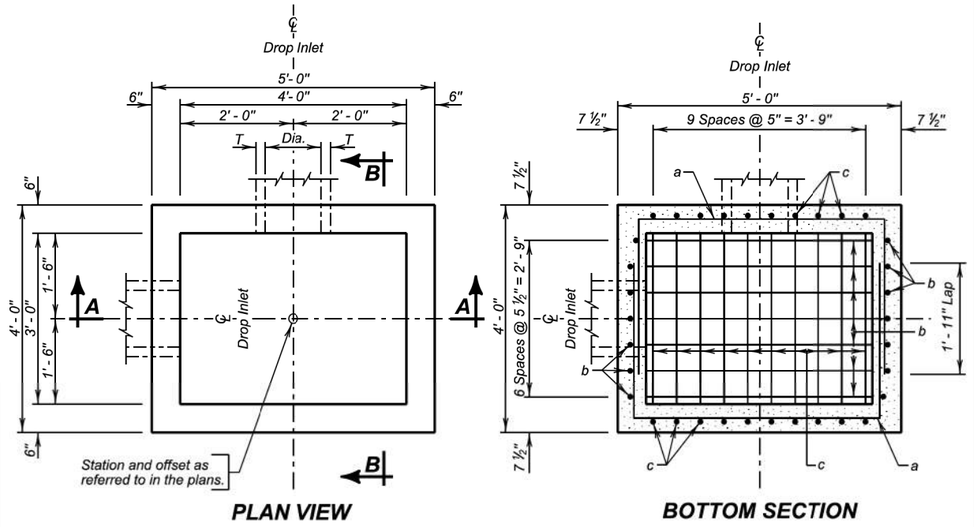
December 16, 2015

Published Date: 2026	SDDOT	4' X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.07
			Sheet 2 of 2

Plot Scale - 1:200

Plotted From - TRSF12141

File - ...\Duel06R7\StdPlateSectionB.dgn



ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
✳ Class M6 Concrete	Cu. Yd.	0.43	0.30H
Reinforcing Steel	Lb.	90.90	40.53H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

✳ Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

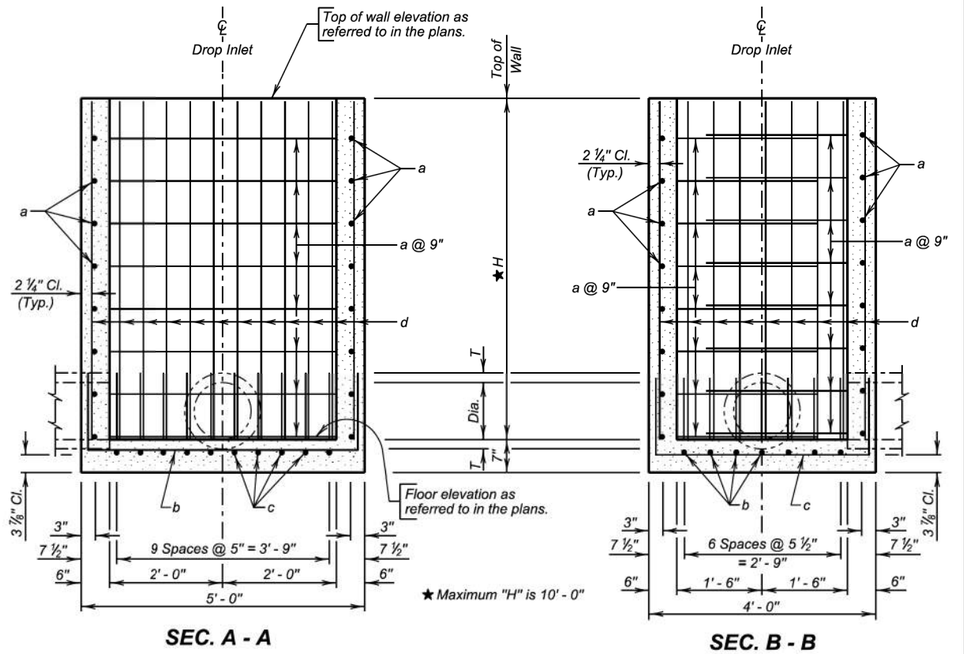
Maximum R.C.P. diameter shall not exceed 24 inches (24 inches for R. C. arch) on the 3-foot wide side and shall not exceed 36 inches (30 inches for R. C. arch) on the 4-foot wide side of the drop inlet.

The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS			
	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14

December 16, 2015

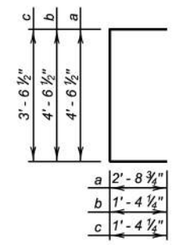
Published Date: 2026	SDDOT	3' X 4' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.10 Sheet 1 of 2



REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	10' - 0"	17	
b	7	5	7' - 3"	17	
c	10	4	6' - 3"	17	
d	34	4	H - 2"	Str.	

NOTE:
All dimensions are out to out of bars.

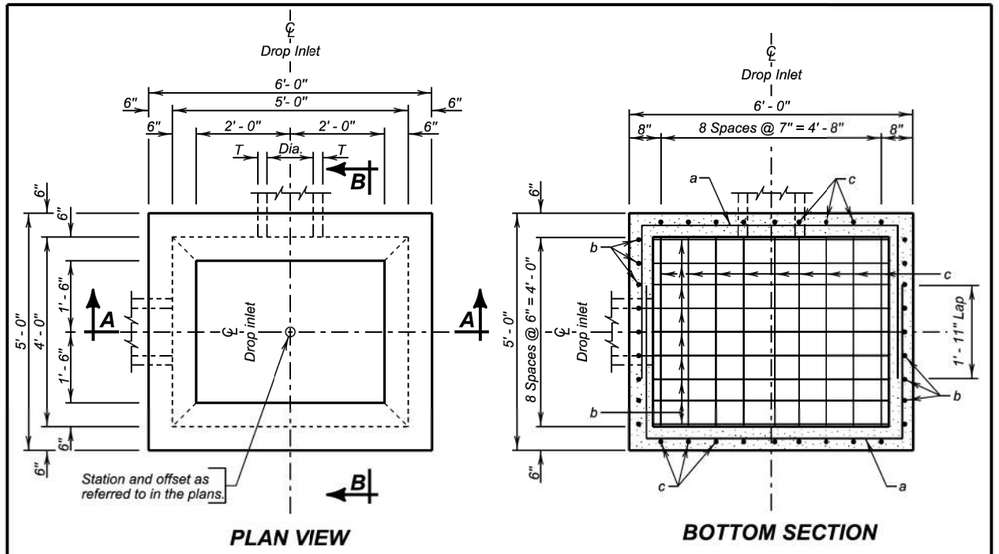


December 16, 2015

Published Date: 2026	SDDOT	3' X 4' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.10 Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B68	B72

Plotting Date: 09/09/2025



ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
✳ Class M6 Concrete	Cu. Yd.	1.06	0.37H
Reinforcing Steel	Lb.	180.36	45.43H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 48" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

✳ Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

Maximum R.C.P. diameter shall not exceed 36 inches (30 inches for R. C. arch) on the 4-foot wide side and shall not exceed 48 inches (36 inches for R. C. arch) on the 5-foot wide side of the drop inlet.

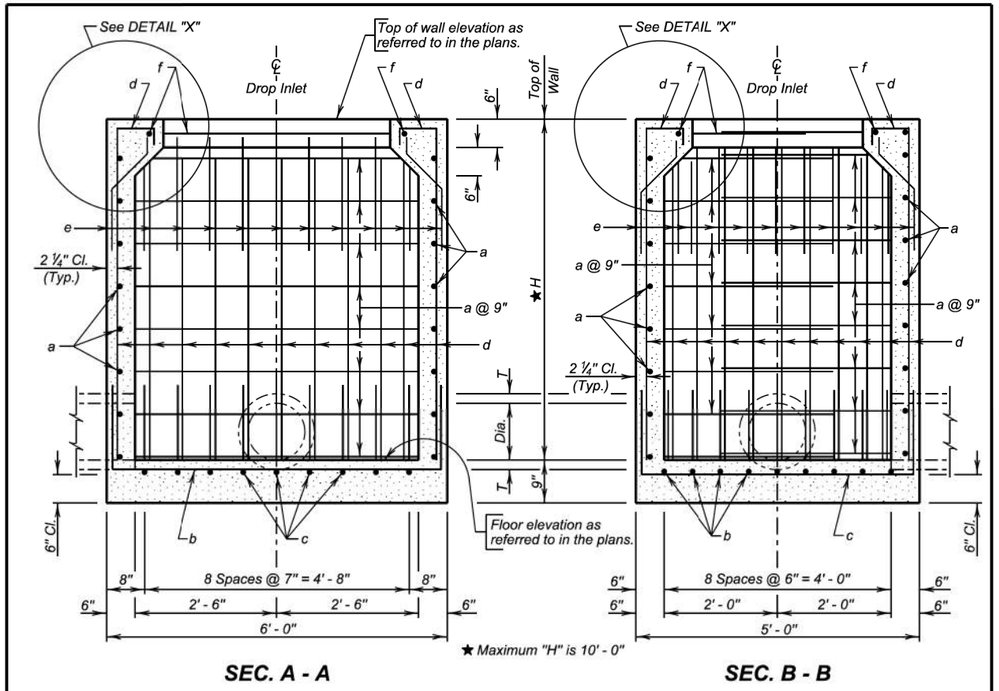
The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS

	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
	42	4 ½	0.26
	48	5	0.34
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14
	36	4 ½	0.19

December 16, 2015

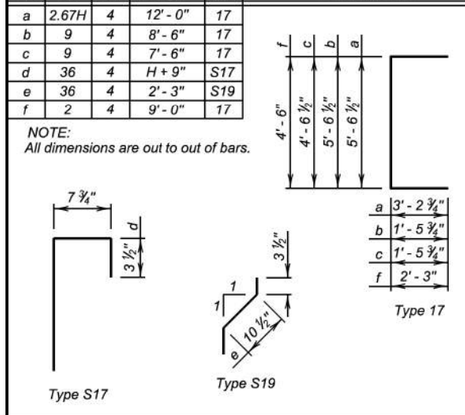
Published Date: 2026	SDDOT	4' X 5' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.11
			Sheet 1 of 2

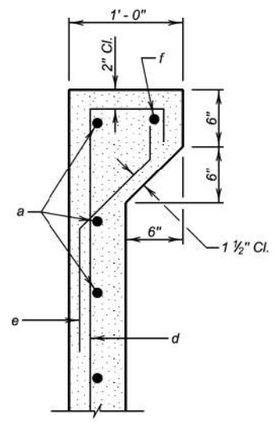


REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	12' - 0"	17	
b	9	4	8' - 6"	17	
c	9	4	7' - 6"	17	
d	36	4	H + 9"	S17	
e	36	4	2' - 3"	S19	
f	2	4	9' - 0"	17	

NOTE:
All dimensions are out to out of bars.





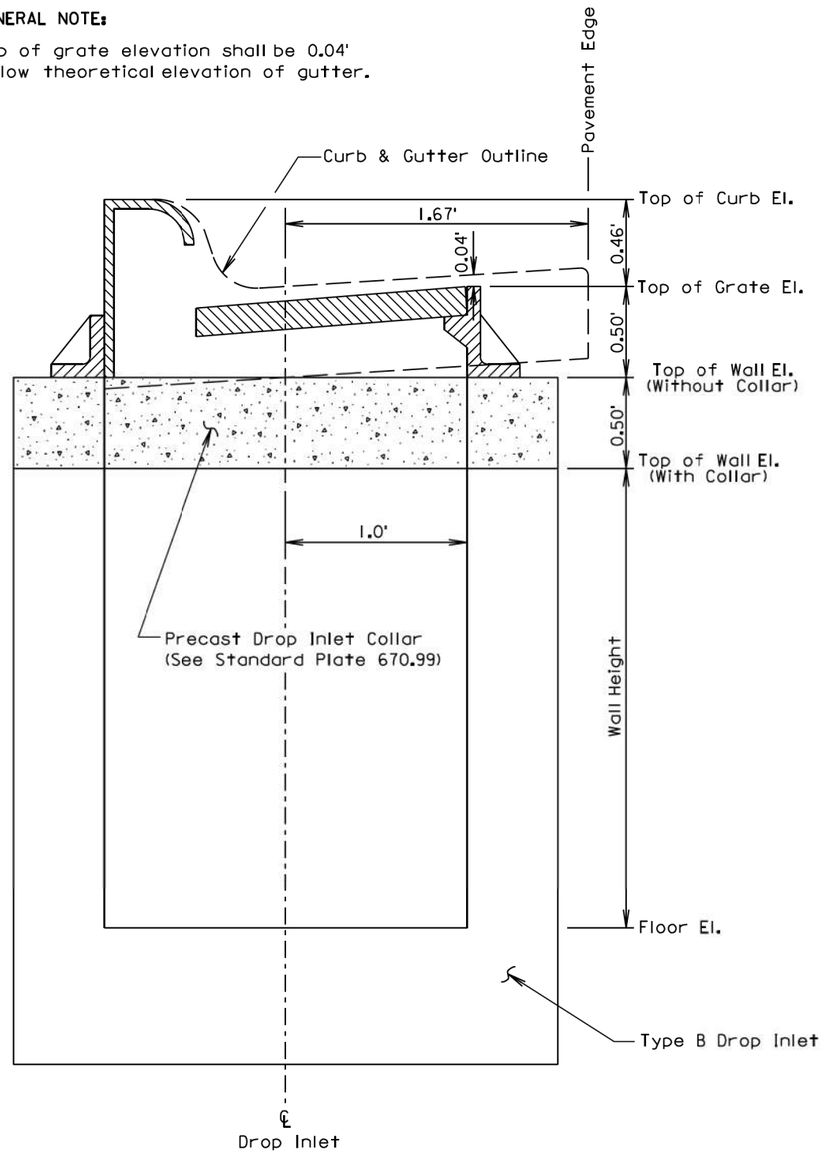
DETAIL "X"

December 16, 2015

Published Date: 2026	SDDOT	4' X 5' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.11
			Sheet 2 of 2

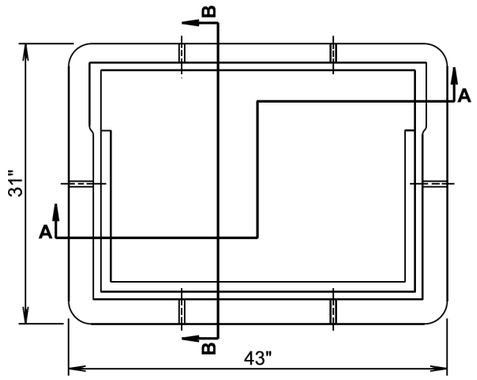
GENERAL NOTE:

Top of grate elevation shall be 0.04' below theoretical elevation of gutter.

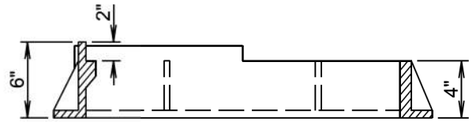


June 26, 2011

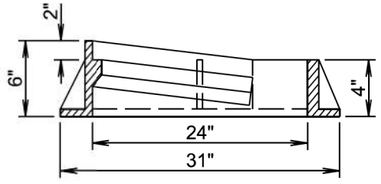
Published Date: 2026	SDDOT	INSTALLATION OF TYPE B DROP INLET	PLATE NUMBER 670.75
			Sheet 1 of 1



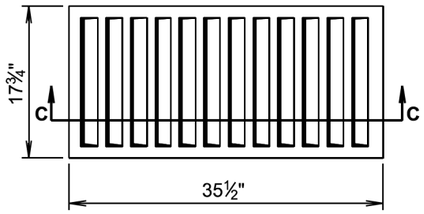
PLAN VIEW
(Frame)



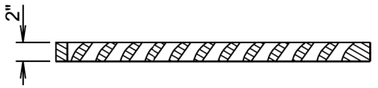
SECTION A-A



SECTION B-B

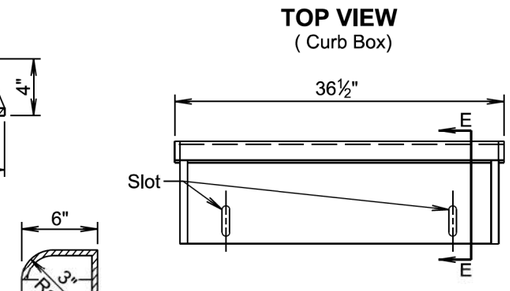


PLAN VIEW
(Grate)

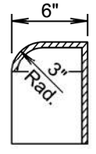


SECTION C-C

TOP VIEW
(Curb Box)



ELEVATION VIEW
(Curb Box)



SECTION E-E

GENERAL NOTES:

The product dimensions may vary from those shown on the standard plate depending on the manufacturer. Grate size and configuration will be similar to the standard plate for hydraulic capacity and bicycle safety. Any variation in dimensions will be approved by the Engineer and the type B frame and grate assembly will be from a manufacturer on the approved products lists.

Design load for the grate will meet the requirements of AASHTO HL-93.

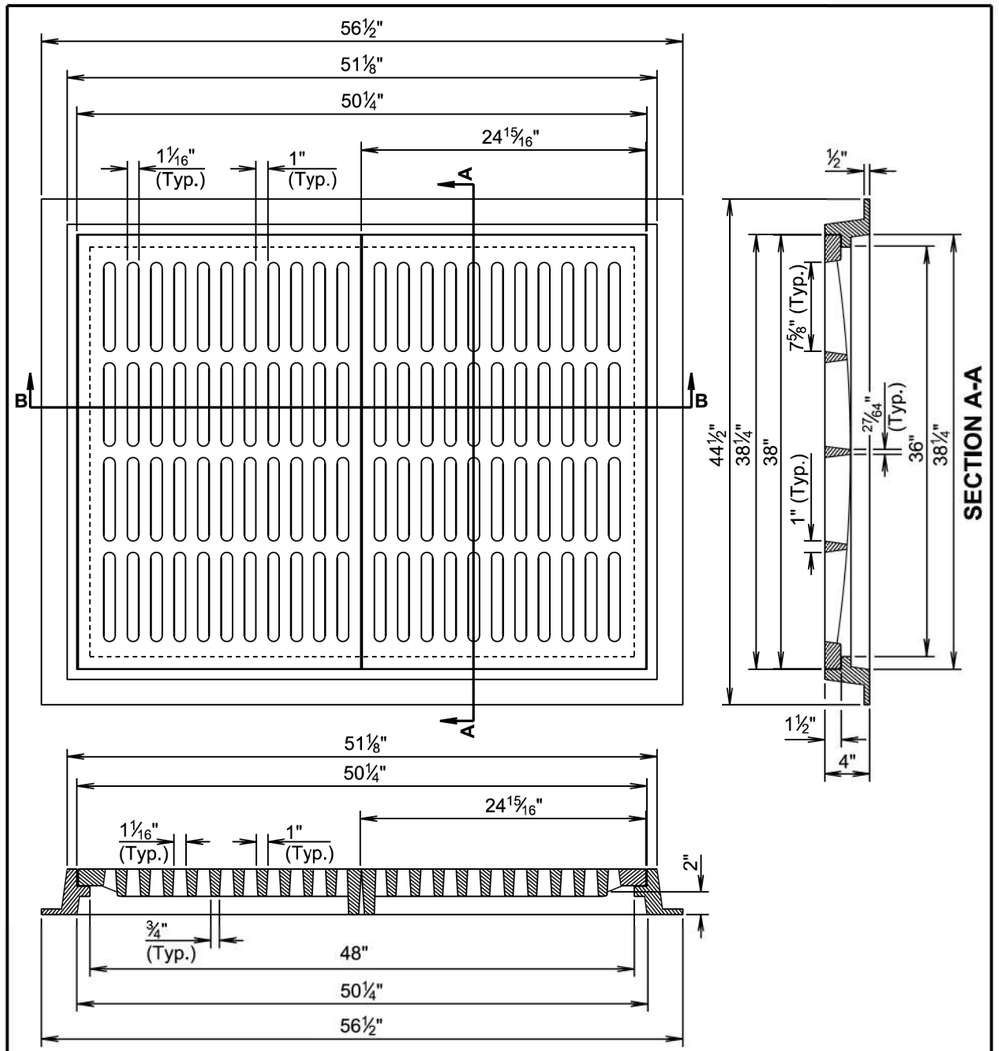
The curb box will be adjustable 6" to 9".

June 1, 2022

Published Date: 2026	SDDOT	TYPE B FRAME AND GRATE	PLATE NUMBER 670.80
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B70	B72

Plotting Date: 09/09/2025



SECTION B-B

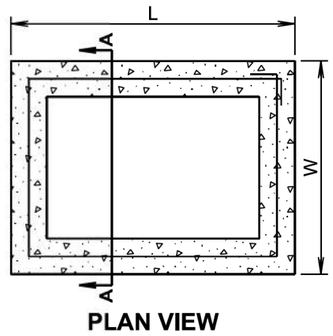
GENERAL NOTES:

The product dimensions may vary from those shown on the standard plate depending on the manufacturer. Grate size and configuration will be similar to the standard plate for hydraulic capacity. Any variation in dimensions will be approved by the Engineer and the type C frame and grate will be from a manufacturer on the approved products list.

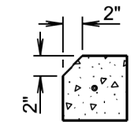
Design load for the grate will meet the requirements of AASHTO HL-93.

March 31, 2024

Published Date: 2026	SDDOT	***TYPE C FRAME AND GRATE***	*PLATE NUMBER* 670.82
			Sheet 1 of 1

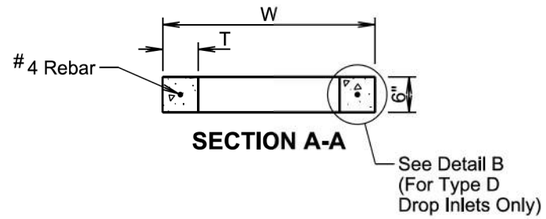


PLAN VIEW



For Type D Drop Inlets only:
Use Precast Drop Inlet Collar with
2" chamfer on L sides only.

DETAIL B



SECTION A-A

INFORMATIONAL QUANTITIES

FRAME AND GRATE TYPE	L (Ft-in)	W (Ft-in)	T (in)	CLASS M6 CONCRETE (CuYd)	REINFORCING STEEL (Lb)
TYPE A, B, and E	4'-0"	3'-0"	6	0.11	9
TYPE C	5'-0"	4'-0"	6	0.15	11
TYPE D	4'-0"	2'-6"	6	0.10	8

GENERAL NOTES:

All reinforcing steel will conform to ASTM A615, Grade 60.

The ½" diameter bar will lap 6"± and will be centered in the concrete.

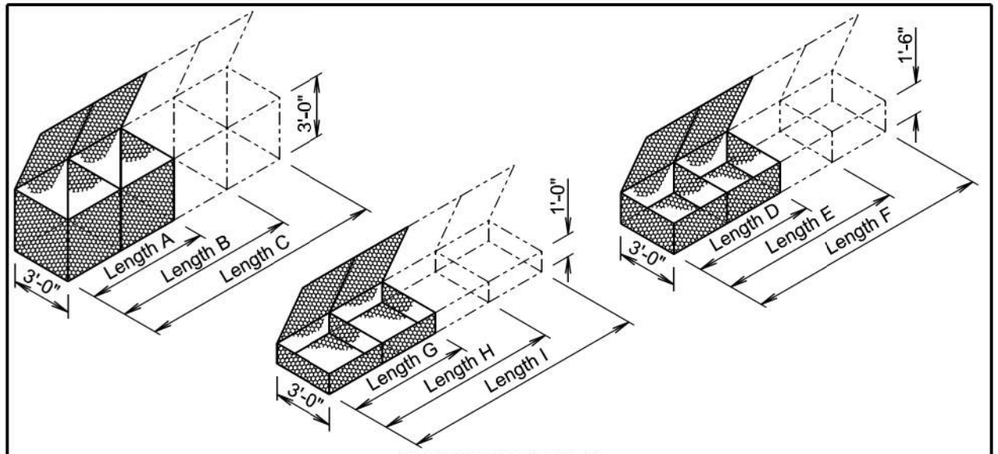
The cost of furnishing and installing Precast Drop Inlet Collars, including labor, materials, and incidentals will be incidental to the contract unit price per Each for "Precast Drop Inlet Collar".

June 1, 2022

Published Date: 2026	SDDOT	***PRECAST DROP INLET COLLAR***	*PLATE NUMBER* 670.99
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B71	B72

Plotting Date: 09/09/2025



GABION DETAILS

STANDARD SIZES					
SIZE	LENGTH	WIDTH	HEIGHT	NUMBER OF CELLS	CAPACITY (Cu. Yd.)
A	6'-0"	3'-0"	3'-0"	2	2.0
B	9'-0"	3'-0"	3'-0"	3	3.0
C	12'-0"	3'-0"	3'-0"	4	4.0
D	6'-0"	3'-0"	1'-6"	2	1.0
E	9'-0"	3'-0"	1'-6"	3	1.5
F	12'-0"	3'-0"	1'-6"	4	2.0
G	6'-0"	3'-0"	1'-0"	2	0.7
H	9'-0"	3'-0"	1'-0"	3	1.0
I	12'-0"	3'-0"	1'-0"	4	1.3

Above dimensions subject to mill tolerances.

GENERAL NOTES:

Lacing and internal connecting wire will be 0.0866 inch diameter steel wire ASTM A641, Class 3 soft temper measured after galvanizing and for PVC coated gabions will be 0.0866 inch diameter steel wire measured after galvanizing but before PVC coating.

The lacing procedure is as follows:

1. Cut a length of lacing wire approximately 1½ times the distance to be laced but not exceeding 5 feet.
2. Secure the wire terminal at the corner by looping and twisting.
3. Proceed lacing with alternating single and double loops at a spacing not to exceed 6 inches.
4. Securely fasten the other lacing wire terminal.

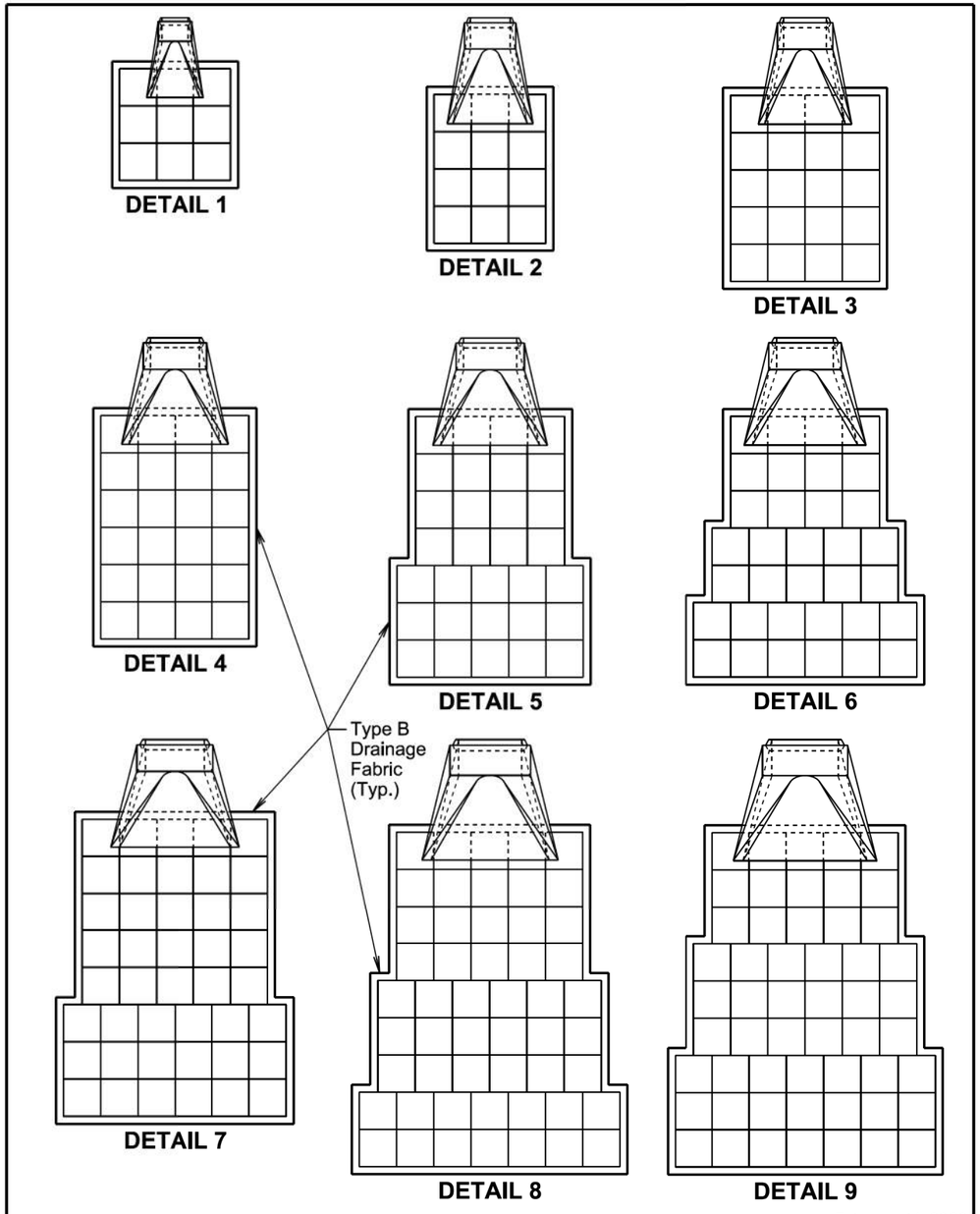
Wire lacing or interlocking type fasteners will be used for gabion assembly and final construction of gabion structures. Interlocking fasteners for galvanized gabions will be high tensile 0.120 inch diameter galvanized steel wire measured after galvanizing. The galvanizing will conform to ASTM A641-92, Class 3 coating. Fasteners will also be in accordance with ASTM A764, Class II, Type III.

Interlocking fasteners for PVC coated gabions will be high tensile 0.120 inch diameter stainless steel wire conforming to ASTM A313, Type 302, Class 1. The spacing of the interlocking fasteners during all phases of assembly and construction will not exceed 6 inches.

All fasteners will be placed where the mesh weaves around the selvage wire at the vertical and horizontal joints.

February 14, 2020

Published Date: 2026	SDDOT	BANK AND CHANNEL PROTECTION GABIONS	PLATE NUMBER 720.01
			Sheet 1 of 1



February 14, 2020

Published Date: 2026	SDDOT	BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS	PLATE NUMBER 720.03
			Sheet 1 of 2

Plot Scale - 1:200

Plotted From - TRSF12141

File - ...\Duet6R7\StdPlateSectionB.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-CR 0028(47)367	B72	B72

Plotting Date: 09/09/2025

	* ESTIMATED QUANTITIES			
	Detail	Pipe Diameter (Inches)	Gabion (Cu. Yd.)	Type B Drainage Fabric (Sq. Yd.)
RCP, RCP Arch, CMP, and CMP Arch	1	12, 18, and 24	4.5	15
	2	30 and 36	6.0	19
	3	42	10.0	29
	4	48 and 54	12.0	34
	5	60	15.5	43
	6	66	17.0	47
	7	72	21.5	57
	8	78	26.0	68
	9	84	27.0	70

GENERAL NOTES:

Gabions at outlets of CMP and RCP will be placed under the end section a distance of 2 feet from the outlet end. For CMP end section installations, the upper fabric of the gabions will be modified to accommodate the metal end section as approved by the Engineer.

* Gabion and type B drainage fabric quantities on this standard plate are based on standard gabion sizes D, E, and F as depicted on standard plate 720.01.

Type B drainage fabric will be placed under the gabions and around the exterior sides (perimeter) of the gabions as approved by the Engineer. The type B drainage fabric will be in conformance with Section 831 of the Specifications. Measurement and payment of the type B drainage fabric will be in conformance with Section 720 of the Specifications.

February 14, 2020

Published Date: 2026	SDDOT	BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS	PLATE NUMBER 720.03 Sheet 2 of 2