SECTION B: GRADING PLANS

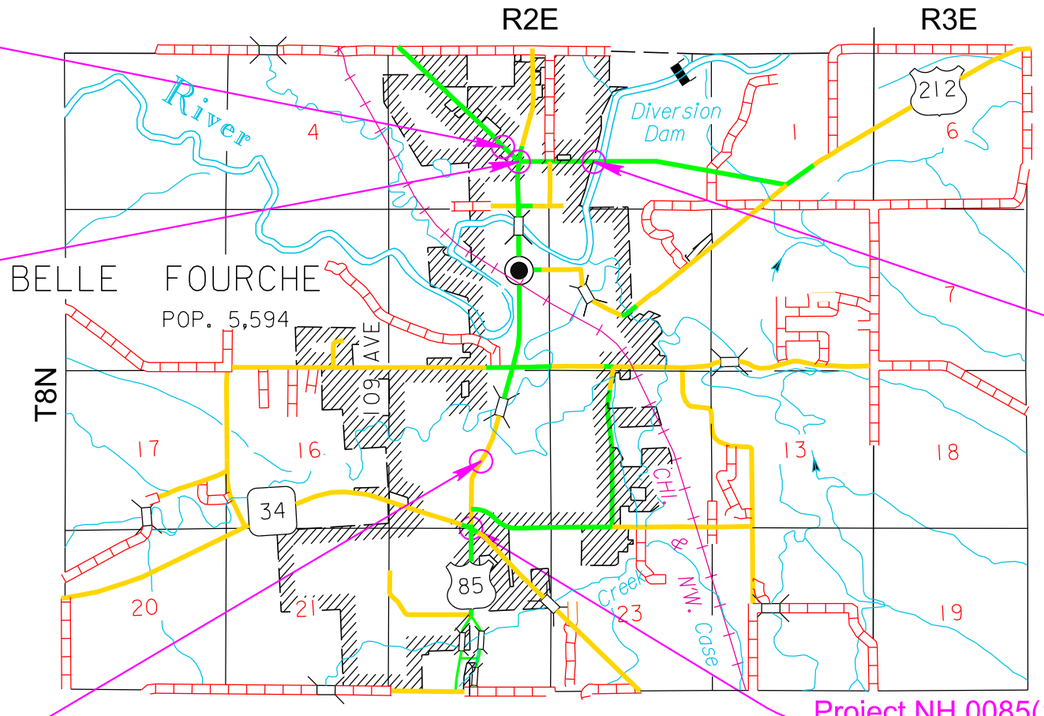
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & NH 0085(114)54	B1	B59

Plotting Date: 02/17/2021 Revised 2/17/2021 NJF

INDEX OF SHEETS

BEGIN NH 0212(00)13
Station 704+07
MRM 13.35

END NH 0085(00)54
Station 92+32
MRM 56.57



END NH 0212(00)13
Station 725+45
MRM 13.82

BEGIN NH 0085(00)54
Station 468+00
MRM 54.73

Project NH 0085(114)54
Station 442+18.16
MRM 54.24

Plot Scale - 1:200
Plotted From - trrc11626
File - ...\prj\Eute05V0\dtlleB.dgn

Revised 2/19/2021 NJF

SECTION B ESTIMATE OF QUANTITIES

PCN 05V0 (US85 & SD34 Intersection)

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0300	Remove Concrete Curb and/or Gutter	161	Ft
110E1010	Remove Asphalt Concrete Pavement	3,600.0	SqYd
110E1100	Remove Concrete Pavement	189.0	SqYd
120E3000	Placing Embankment	675	CuYd
240E0010	Obliterate Old Road	7	Sta
250E0020	Incidental Work, Grading	Lump Sum	LS
260E2010	Gravel Cushion	72.9	Ton
380E0060	8.5" Nonreinforced PCC Pavement	303.3	SqYd
380E1040	8.5" Miscellaneous PCC Pavement	470.1	SqYd
380E6110	Insert Steel Bar in PCC Pavement	539	Each
450E0122	18" RCP Class 2, Furnish	36	Ft
450E0130	18" RCP, Install	36	Ft
450E2008	18" RCP Flared End, Furnish	2	Each
450E2009	18" RCP Flared End, Install	2	Each
462E0100	Class M6 Concrete	3.0	CuYd
480E0100	Reinforcing Steel	460	Lb
650E1085	Type F68.5 Concrete Curb and Gutter	1,309	Ft
650E4060	Type C6 Concrete Gutter	114	Ft
670E1200	Type B Frame and Grate Assembly	2	Each
670E5400	Precast Drop Inlet Collar	2	Each

PCN 04P9 (US85)

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0300	Remove Concrete Curb and/or Gutter	76	Ft
110E1100	Remove Concrete Pavement	259.7	SqYd
110E1140	Remove Concrete Sidewalk	225.8	SqYd
110E7150	Remove Sign for Reset	10	Each
260E2010	Gravel Cushion	1.5	Ton
380E2708	8" Mountable Type Median PCC Pavement	36.9	SqYd
380E4080	9.5" PCC Fillet Section	195.4	SqYd
380E6110	Insert Steel Bar in PCC Pavement	101	Each
632E3500	Reset Sign	10	Each
650E0080	Type B68 Concrete Curb and Gutter	57	Ft
650E0095	Type B69.5 Concrete Curb and Gutter	114	Ft
651E0040	4" Concrete Sidewalk	2,311	SqFt
651E7000	Type 1 Detectable Warnings	290	SqFt

PCN 04PA (US212)

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	15.8	SqYd
110E1100	Remove Concrete Pavement	375.2	SqYd
110E1140	Remove Concrete Sidewalk	269.6	SqYd
110E7150	Remove Sign for Reset	10	Each
110E7800	Remove Chain Link Fence for Reset	104	Ft
380E4050	8" PCC Fillet Section	339.8	SqYd
380E6110	Insert Steel Bar in PCC Pavement	46	Each
621E0520	Reset Chain Link Fence	104	Ft
632E3500	Reset Sign	10	Each
650E0090	Type B69 Concrete Curb and Gutter	113	Ft
651E0040	4" Concrete Sidewalk	2,179	SqFt
651E0080	8" Concrete Sidewalk	224	SqFt
651E7000	Type 1 Detectable Warnings	140	SqFt

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.

OBLITERATING OLD ROAD

The Contractor will obliterate the existing roadway at the locations listed in the Table of Obliterating Old Road.

The Contractor will obliterate the existing roadway in accordance with Section 240 of the Specifications when the existing roadway is not being removed in accordance with the template section.

The earthwork necessary for obliterating the existing road will be accomplished to such an extent that placing topsoil and seeding can be done in a satisfactory manner. Quantities of topsoil, fertilizing, mulching, and seeding for the obliterated sections of the old road are included in the Section D - Erosion and Sediment Control Plans Estimate of Quantities.

TABLE OF OBLITERATING OLD ROAD – PCN 05V0

Station	to	Station	L/R	Length (Sta)
440+40 (US85)		7+00 (SD34)	L	3.0
5+85 (SD34)		445+50 (US85)	L	4.0
			Total:	7.0

INCIDENTAL WORK, GRADING – PCN 05V0

Station	L/R	Remarks
441+48	L	Take Out 24”-24’ RCP & End Section
441+55	L	Take Out Drop Inlet & Frame and Grate
441+70	L	Take Out 18”-45’ RCP
443+88	L	Take Out 18”-65’ RCP & 2 End Sections
a 229+90	R	Take Out 30”-3’ RCP

PLACING EMBANKMENT – PCN 05V0

The Contractor will place embankment material as necessary to construct the berm behind the new curb and gutter at the intersection. Embankment material is available from obliterating the roadways in the northwest and southwest quadrants of the intersection of US85 and SD34.

Prior to placement or removal of fill material, the Contractor will be required to remove four inches of topsoil and replace it following the placement of the new fill material. Removal and replacement of topsoil will not be measured for payment but will be incidental to the contract unit price per cubic yard for Placing Embankment.

Compaction of the fill material will be to the satisfaction of the Engineer.

It is not anticipated that water for compaction will be required, however; if in the opinion of the Engineer the fill material is extremely dry, water may be ordered and placed to the satisfaction of the Engineer. Cost for water will be incidental to the contract unit price per cubic yard for Placing Embankment.

The basis for payment for Placing Embankment will be plans quantity. No separate measurements will be taken. Additional quantities will be included for payment only in the event that work sites other than those shown on the plans are added to the contract.

TABLE OF PLACING EMBANKMENT – PCN 05V0

Intersection of SD34 & US85 Quadrant	Embankment Material (CuYd)
Northwest	248
Southwest	176
Southeast	183
Northeast	68
Total:	675

REMOVAL OF EXISTING CONCRETE PAVEMENT

The existing concrete pavement at the intersection of US85 and SD34 is 8.5" Nonreinforced PCC Pavement over a 5" gravel cushion. Special reinforcement fillet areas in the northeast and southeast quadrants are reinforced with #5 deformed steel bars spaced 18" center to center in both directions. The fillet areas will be removed as shown in the Pavement Removal Layout Sheet.

The existing concrete pavement along US85 (PCN 04P9) is 9.5" Nonreinforced PCC Pavement. The existing concrete pavement along US212 (PCN 04PA) is 8" Nonreinforced PCC Pavement.

All costs for removing and hauling the existing concrete pavement will be incidental to the contract unit price per square yard for "Remove Concrete Pavement".

REINFORCED CONCRETE PIPE

High sulfate levels are likely to be encountered on this project. The type of cement used for the reinforced concrete pipes will be either a type II with 25% class F modified fly ash substituted for cement in accordance with Specifications Section 605 or a type V. The water/cementitious material ratio will not exceed 0.45 as defined in Specifications Section 460.3 C. The mix will be as per the fabricator's design; however, minimum compressive strength will not be less than 4500 psi at 28 days. The pipe must be marked in an acceptable way to designate meeting requirements for sulfate resistance.

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.

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-217	Concrete Sealants, Inc. Tipp City, OH 800-332-7325 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 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.

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 Assembly, 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 – PCN 05V0

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
441+25	L	3'x4'	B	1.72	259	1	B
10+68	R	3'x4'	B	1.25	201	1	B
			Totals:	2.97	460	2	

Total Type B Frame and Grate Assembly 2

TABLE OF PIPE QUANTITIES – PCN 05V0

			Reinforced Concrete	
			Circular 18"	Circular Flared End 18"
Hwy	**Station**	**L/R**	**Ft**	**Each**
US85	441+25	L	16	1
SD34	10+68	R	20	1
		Total:	**36**	**2**

8" AND 9.5" PCC FILLET SECTIONS

Payment for "8" or 9.5" 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" or 9.5" PCC Fillet Section".

8.5" MISCELLANEOUS PCC PAVEMENT – PCN 05V0

The concrete pavement located near the new curb and gutter at the intersection of US85 and SD34 (PCN 05V0) will be reinforced as shown on the "PCC Pavement Joint Layout Sheet" in the plans. The concrete, including reinforcing steel, used at this location will be paid for at the contract unit price per square yard for "8.5" Miscellaneous PCC Pavement". The curb and gutter sections adjacent to this pavement is paid for separately (in Section B).

The concrete used will be in accordance with the requirements stated under the notes for "Nonreinforced PCC Pavement".

NONREINFORCED PCC PAVEMENT

The aggregate may require screening as determined by the Engineer.

The concrete used in the Portland Cement Concrete Pavement will conform to Section 380, contain a minimum of 600 lbs of cement, and 20% fly ash. The concrete will contain at least 55% coarse aggregate. The use of a water reducer at manufacturers recommendations will be required. The concrete will obtain a minimum 4,000 psi at 28 days. The contractor is responsible for the mix design used. The contractor will submit a mix design for approval at least 2 weeks prior to use.

In lieu of an automatic subgrader operating from a preset line, a motor grader or other suitable equipment may be used to trim the gravel cushion to final grade prior to placement of concrete. There will be no direct payment for trimming of the gravel cushion for PCC pavement. The trimming will be considered incidental to the related items required for PCC Pavement.

A construction joint will be sawed whenever new concrete pavement is placed adjacent to existing concrete pavement.

The surface of the mainline paving will be longitudinally tined. All other areas will be tined as directed by the Engineer. The surface of the mainline paving will be tined to within 2 or 3 feet of the face of the curb.

Unless specified otherwise in the PCC Pavement Joint Layout Sheets or elsewhere in the plans, the typical joint spacing 20'. Joint spacing in the PCC Shoulder Pavement will match adjacent mainline pavement.

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

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

STEEL BAR INSERTION

The Contractor will insert the Steel Bars into drilled holes in the existing concrete pavement along SD34, US85, and US212. An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole.

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

Epoxy coated plain round 1 ¼" steel bars will be inserted on 12-inch centers in the transverse joint. The first steel bar will be placed a minimum of 3 inches and a maximum of 6 inches from the outside edge of the slab.

Epoxy coated deformed No. 5 steel bars will be inserted on 30-inch centers in the longitudinal joint and will be placed a minimum of 15 inches from the existing transverse contraction joint.

The quantity of "Insert Steel Bar in PCC Pavement" is estimated at 539 bars as shown on the PCC Pavement Joint Layout Sheet.

SAW AND SEAL JOINTS

Longitudinal and transverse joints at the new concrete areas will be sawed and sealed.

Joint sealing will conform to Section 380.3 P.

Longitudinal and transverse joints in urban sections will be sealed with Hot Poured Elastic Joint Sealer. Transverse joints in rural sections will be sealed with Low Modulus Silicone Sealant. Longitudinal joints in rural sections may be sealed with either Hot Poured Elastic Joint Sealer or Low Modulus Silicone Sealant.

Cost for sawing and sealing of the longitudinal construction joint and transverse joints will be incidental to the contract unit prices per square yard for "8.5" Miscellaneous PCC Pavement" and "8.5" Nonreinforced PCC Pavement".

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).

When Type 1 Detectable Warnings are specified, the Contractor will furnish and install only one of the products listed in the Type 1 Detectable Warnings table.

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/

Type 1 Detectable Warnings will be installed along a radius at the locations as shown in the plans. The radius necessary will be as shown in the plans. Payment for the radius detectable warnings will be at the contract unit price per square foot for "Type 1 Detectable Warnings".

When Type 1 Detectable Warnings with a radius are specified, the Contractor will furnish and install an appropriately sized product listed in the following Type 1 Detectable Warnings (Radius) table.

Type 1 Detectable Warnings (Radius)

Product	Manufacturer
Detectable Warning Plate Cast Iron Plate 9'-5", 15', 20', 25', 35' Radius	Neenah Foundry Company Neenah, WI 800-558-5075 http://www.neenahfoundry.com/
Detectable Warning Plate Cast Iron Plate (No Coating) 10', 15', 17.5', 20', 25', 30', 35' Radius	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 15', 20', 25', 30' Radius	ADA Solutions, Inc. 323 Andover Street Suite 3 Wilmington, MA 01887 800-372-0519 https://adatile.com
TufTile (wet-set) Cast Iron Replaceable Tile 15' and 30' Radius	TufTile 1200 Flex Court Lake Zurich, IL 60047 888-960-8897 http://www.tuftile.com/
TufTile (wet-set) Polymer Replaceable Tile 15', 20', 25', 30' Radius	TufTile 1200 Flex Court Lake Zurich, IL 60047 888-960-8897 http://www.tuftile.com/

TABLE OF REMOVE AND RESET CHAIN LINK FENCE – PCN 04PA

Station	to	Station	L/R	Length (Ft)
720+66		720+87	R	28
724+45		724+70	R	39
725+25		725+46	R	37
			Total:	104

REMOVE SIGN FOR RESET AND RESET SIGN

Signs that are scheduled for reset will be dismantled and reassembled to the extent needed by the Contractor to properly reset the sign. Signs will be handled with care so that the existing signs, posts, and bases are not damaged during the relocation process. The Contractor will replace and pay for any reset signs damaged in their care. The Contractor will remove and dispose of any existing posts for all reset signs that require use of new posts as shown in the Table of Permanent Signing.

All costs for removing, dismantling, and disposing of any existing posts will be incidental to the contract unit price per each for "Remove Sign for Reset". All costs for resetting the existing signs will be incidental to the contract unit price per each for "Reset Sign". All quantities for Remove Sign for Reset and Reset Sign will be per assembly at the contract unit price per each.

TABLE OF REMOVE AND RESET SIGN – PCN 04P9

Station	Offset L/R	Sign Type	Quantity (Each)
467+72	51' L	Stop Here on Red	1
468+34	60' R	Street Sign	1
468+35	56' R	Stop Here on Red	1
77+02	44' L	Stop Sign	1
77+58	46' R	Stop & Street Sign	1
85+45	43' R	Destination	1
88+21	48' R	No Thru Traffic	1
91+57	79' R	Yield Sign	1
91+86	36' R	Stop Sign	1
92+04	40' L	Stop Sign	1
		Total:	10

TABLE OF REMOVE AND RESET SIGN – PCN 04PA

Station	L/R	Sign Type	Quantity (Each)
714+28	36' R	Pedestrian Crossing	1
715+01	42' R	Stop & Street Sign	1
715+12	34' L	Pedestrian Crossing	1
720+02	37' L	Pedestrian Ahead	1
720+02	40' L	Stop Sign	1
720+12	49' R	No Trucks	1
720+73	39' R	Stop & Street Sign	1
724+69	50' R	No Trucks	1
725+27	43' R	Stop & Street Sign	1
729+23	40' R	Stop & Street Sign	1
		Total:	10

PAVEMENT, CURB AND GUTTER, AND SIDEWALK QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B6	B59

Plotting Date: 12/22/2020

		REMOVE				INSTALL																							
		Concrete Curb and/or Gutter	Concrete Pavement	Asphalt Concrete Pavement	Concrete Sidewalk	PCC Fillet Section		Miscellaneous PCC Pavement			8.5" Nonreinforced PCC Pavement			8" Mountable Type Median PCC Pavement			Gravel Cushion	Insert Steel Bar in PCC Pavement	Concrete Curb and Gutter Type				Concrete Gutter	Concrete Sidewalk		Detectable Warnings	
Intersection	**Quadrant**	Ft	SqYd	SqYd	SqYd	8" SqYd	9.5" SqYd		8.5" SqYd			SqYd			8" SqYd			Ton	Each	B68 Ft	B69 Ft	B69.5 Ft	F68.5	Type C6 Ft	4" SqFt	8" SqFt	Type 1 SqFt	
PCN 05V0																													
US85 & SD34 Intersection	Northwest			1973					311.3			58.2						37.3	143				354	52				
	Northeast		99	202								60.8						8.1	109				268	62				
	Southeast		90	79								59.5						7.3	91				220					
	Southwest	161		1346					158.8			124.8						20.1	196				467					
PCN 05V0 Total:		161	189	3600					470.1			303.3						72.9	539				1309.0	114.0				
PCN 04P9 (US85)																													
Summit Street (468+00)	Southwest		25.8		16.1		25.7												2			6			197		30.0	
	Northwest		27.0		19.2		25.0												2			6			222		30.0	
	Southeast	30			11.8														15			38			176		30.0	
	Northeast	46			21.7														22			54			246		30.0	
Custer Street (77+50)	Southwest		8.8		7.8		8.0												1			3			77		10.0	
	Northwest		13.8		10.3		13.8																		99		10.0	
	Southeast		11.3		8.0		11.0																		78		10.0	
	Northeast		13.9		10.4		13.5																		103		10.0	
Butte Street (81+00)	Southwest		14.1		10.1		14.1																		98		10.0	
	Southeast		11.9		18.2		10.1																		163		10.0	
	Northeast		13.7		13.7		13.8																		90		10.0	
South Alley (85+75)	Southeast		16.6		14.8		14.4												3			7			142		10.0	
	Northeast		15.7		11.2		15.7																		109		10.0	
North Alley (88+50)	Southeast		15.7		11.3		15.9																		109		10.0	
	Northeast		14.7		11.3		14.6																		108		10.0	
US85 & US212 (92+00)	Southwest		17.6		15.2										9.6				23	28.0					147		30.0	
	Southeast		39.0		14.8										27.3			1.5	33	29.0					145		30.0	
PCN 04P9 Total:		76	259.7		225.8		195.4								36.9			1.5	101	57.0		114.0			2311		290.0	
PCN 04PA (US212)																													
Apache Street (704+50)	West		9.6	5.5	12.6														13		33				141		10.0	
	East		6.7	3.2	15.1														10		24				124		10.0	
Conoco West Entrance	West		10.1	7.1	18.9														11		27					110	10.0	
	East		7.9		11.6														12		29					114	10.0	
6th Avenue (714+65)	Southwest		27.9		20.1	28.3																			181		10.0	
	Southeast		34.0		21.5	34.4																			194		10.0	
	Northeast		35.0		19.5	34.8																			176		10.0	
8th Avenue (720+70)	Northwest		34.0		21.2	33.9																			193		10.0	
	Southwest		35.8		21.9	35.6																			198		10.0	
	Southeast		35.1		21.6	34.6																			197		10.0	
9th Avenue (725+00)	Southwest		34.8		21.6	34.6																			195		10.0	
	Southeast		34.3		20.8	34.2																			189		10.0	
10th Avenue (729+00)	Southwest		36.1		21.6	35.8																			195		10.0	
	Southeast		33.9		21.6	33.4																			196		10.0	
PCN 04PA Total:			375.2	15.8	269.6	339.8													46		113				2179	224	140	

Plot Scale - 1:200

Plotted From - trrc11626

File - ...\prj\Butte05V0\TableSeed.dgn

TYPICAL SECTIONS

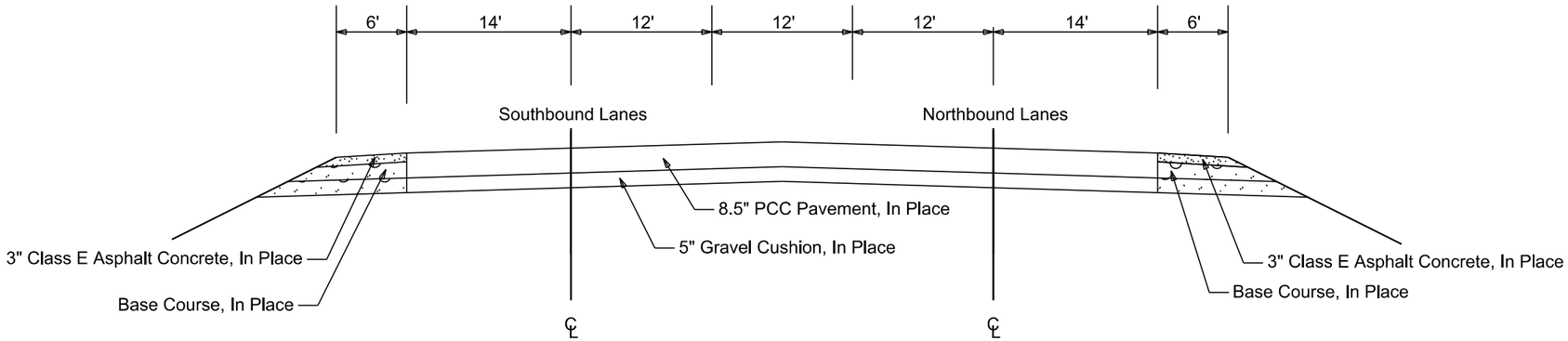
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B7	B59

Plotting Date: 12/22/2020

US85

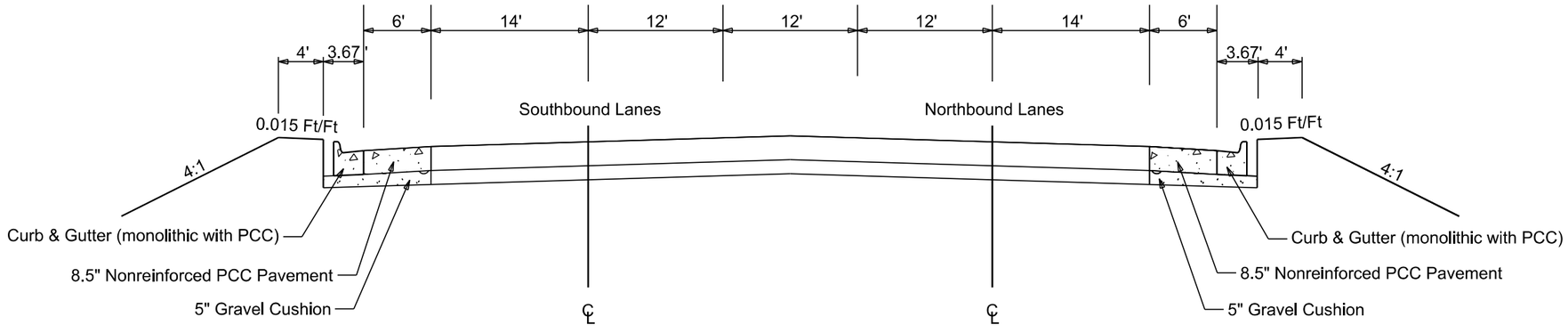
In Place Surfacing

Sta. 440+15 to Sta. 444+01



US85

Sta. 440+15 to Sta. 444+01



Plot Scale - 1:200

Plotted From - trnc11626

File - ...\regionRC\prj\Bute05V0\typ.dgn

TYPICAL SECTIONS

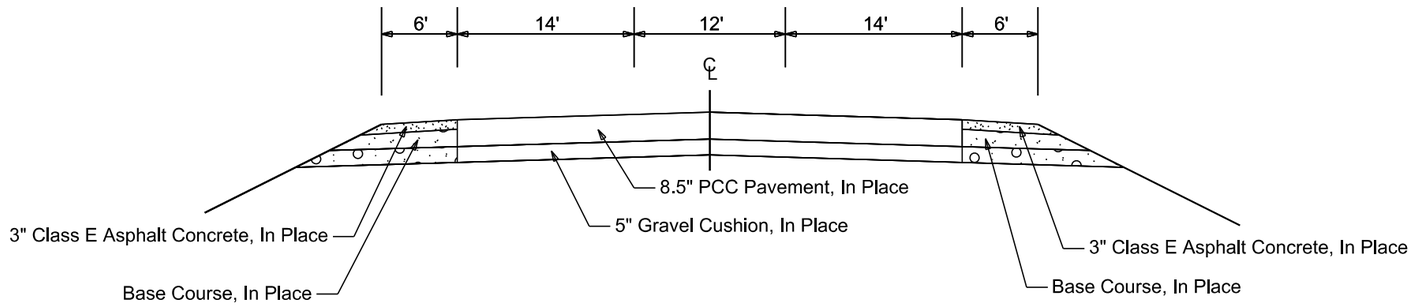
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B8	B59

Plotting Date: 12/22/2020

SD34

In Place Surfacing

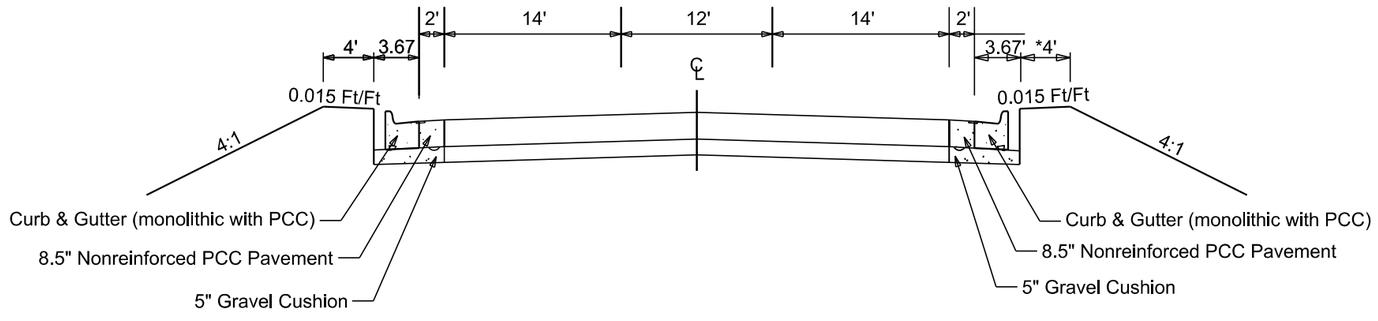
Sta. 6+63 to Sta. 12+14



SD34

In Place Surfacing

Sta. 6+63 to Sta. 12+14



* 2' in SW Quadrant of US85 & SD34

Plot Scale - 1:200

Plotted From - trnc11626

File - ...\region\RC\prj\Bute05\V0\typ.dgn

HORIZONTAL ALIGNMENT DATA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B9	B59

Plotting Date: 12/22/2020

MAINLINE US85 at SD 34

Type	Station			Northing	Easting
POB	419+55.90			318719.020	964311.310
		TL= 2913.13	N 2°08'54" E		
POE	448+69.03			321630.102	964420.514

MAINLINE US85 (at Summit Street)

Type	Station			Northing	Easting
POB	465+00.00			323170.740	964824.962
		TL= 24.03	N 33°42'40" E		
PI	465+24.03			323190.730	964838.300
		TL= 31.04	N 33°40'29" E		
PI	465+55.07			323216.560	964855.510
		TL= 32.57	N 34°27'57" E		
PI	465+87.64			323243.410	964873.940
		TL= 33.58	N 33°38'00" E		
PI	466+21.22			323271.370	964892.540
		TL= 29.24	N 34°51'32" E		
PI	466+50.45			323295.360	964909.250
		TL= 33.99	N 33°37'29" E		
PI	466+84.44			323323.660	964928.070
		TL= 33.81	N 34°49'56" E		
PI	467+18.25			323351.410	964947.380
		TL= 32.11	N 33°31'54" E		
PI	467+50.36			323378.180	964965.120
		TL= 27.63	N 33°31'44" E		
PI	467+77.99			323401.210	964980.380
		TL= 29.69	N 33°45'54" E		
PI	468+07.68			323425.890	964996.880
		TL= 31.93	N 33°16'19" E		
PI	468+39.61			323452.590	965014.400
		TL= 31.24	N 32°52'35" E		
PI	468+70.86			323478.830	965031.360
		TL= 32.30	N 32°33'30" E		
PI	469+03.15			323506.050	965048.740
		TL= 32.37	N 31°35'54" E		
PI	469+35.52			323533.620	965065.700
		TL= 31.29	N 30°18'38" E		
PI	469+66.81			323560.630	965081.490
		TL= 30.92	N 31°25'05" E		
PI	469+97.73			323587.020	965097.610
		TL= 2.27	N 28°37'48" E		
POE	470+00.00			323589.012	965098.697

MAINLINE US85 (from Custer Street to US212)

Type	Station			Northing	Easting
POB	64+12.51			330162.844	966406.735
		TL= 1046.71	N 2°28'17" E		
PI	74+59.21			331208.578	966451.868
		TL= 152.41	N 1°20'55" E		
PI	76+11.63			331360.949	966455.455
		TL= 173.18	N 3°32'11" E		
PI	77+84.80			331533.795	966466.137
		TL= 376.26	N 2°33'44" E		
PI	81+61.06			331909.680	966482.957
		TL= 541.74	N 2°31'39" E		
PI	87+02.80			332450.891	966506.847
		TL= 165.71	N 2°32'58" E		
PI	88+68.51			332616.435	966514.218
		TL= 138.97	N 2°33'44" E		
PI	90+07.48			332755.271	966520.431
		TL= 66.04	N 2°36'06" E		
PI	90+73.52			332821.240	966523.428
		TL= 14.79	N 2°33'11" E		
PC	90+88.31			332836.015	966524.087
PI	91+89.85	R = 520.87	Delta = 22°03'46" R	332937.458	966528.610
PT	92+88.88			333029.773	966570.907
		TL= 134.47	N 24°36'58" E		
POE	94+23.36			333152.027	966626.920

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 = 0.9998166253

Plot Scale - 1:200

Plotted From - trrc11626

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HORIZONTAL ALIGNMENT DATA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B10	B59

Plotting Date: 12/22/2020

MAINLINE US212

Type	Station			Northing	Easting
POB	684+90.77			334754.104	964789.178
		TL= 1906.70	S 43°42'44" E		
PI	703+97.46			333375.908	966106.779
		TL= 289.38	S 43°48'34" E		
PI	706+86.85			333167.076	966307.108
		TL= 118.08	S 43°48'34" E		
PC	708+04.92			333081.865	966388.849
PI	710+11.30	R = 520.87	Delta = 43°13'44" L	332932.932	966531.718
PT	711+97.92			332922.269	966737.822
		TL= 349.97	S 87°02'18" E		
PI	715+47.89			332904.188	967087.326
		TL= 431.59	S 87°06'26" E		
PI	719+79.48			332882.407	967518.370
		TL= 128.50	S 87°17'23" E		
PI	721+07.98			332876.331	967646.724
		TL= 319.96	S 87°20'05" E		
PI	724+27.93			332861.452	967966.334
		TL= 127.58	S 87°18'34" E		
PI	725+55.52			332855.463	968093.774
		TL= 272.53	S 87°22'24" E		
PI	728+28.04			332842.974	968366.016
		TL= 126.48	S 87°05'35" E		
POE	729+54.52			332836.560	968492.329

MAINLINE SD34

Type	Station			Northing	Easting
POB	3+00.00			321232.638	963743.415
		TL= 178.56	S 68°32'28" E		
PI	4+78.56			321167.314	963909.598
		TL= 185.66	S 69°01'05" E		
PI	6+64.22			321100.835	964082.948
		TL= 335.78	S 68°51'05" E		
PI	10+00.00			320979.689	964396.115
		TL= 133.32	S 69°36'23" E		
PC	11+33.32			320933.231	964521.080
PI	13+82.30	R = 940.00	Delta = 29°40'11" R	320846.473	964754.446
PT	16+20.09			320655.573	964914.271
		TL= 54.39	S 39°56'12" E		
POE	16+74.48			320613.867	964949.188

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 = 0.9998166253

Plot Scale - 1:200

Plotted From - trrc11626

File - ...\HorizontalAlignmentData.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B11	B59

Plotting Date: 12/22/2020

CONTROL DATA

PCN 05V0 – US Highway 85 & SD Highway 34

POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
AD9009	REFMRK – Harn	331941.197	975612.715	3056.950
PU2652	REFMRK – Harn	352866.994	965893.432	3188.612
CP 1	REFMRK – Rebar	321405.768	962660.438	3113.986
CP 2	Barcap Vrem 6577	321581.055	964477.548	3119.918
CP 3	REFMRK – 18” Rebar & Cap	321057.455	964478.368	3123.992
CP 4	REFMRK – Pk Nail	321949.223	964315.455	3116.231
CP 5	BNCHMK – F 359	320849.052	964223.039	3120.994

PCN 04P9 – US Highway 85

POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP 6	REFMRK – Rebar & Cap	332870.175	966971.781	3079.820
CP 7	REFMRK – Rebar & Cap	332873.384	966625.450	3078.095
CP 13	REFMRK – PK Nail	332579.478	966474.208	3075.953
CP 14	REFMRK – PK Nail	331806.909	966539.725	3061.287
AD9009	REFMRK - Harn	331941.197	975612.715	9056.950
CP 9	REFMRK – Rebar & Cap	332802.322	968371.364	3054.647
CP 8	REFMRK – Iron Pin	332918.059	967613.545	3082.120
CP 10	REFMRK – 2’ Rebar	332887.758	968083.449	3067.080
CP 11	REFMRK – Bar Cap	323395.198	965088.204	3080.780
CP 12	REFMRK – Rebar & Cap	323443.910	964903.424	3078.420

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North Zone (NAD 83/2011); epoch 2010.0
Geoid12A; SF = 0.9998183699 (Summit St., PCN 04P9); SF = 0.9998160059 (North End US85, PCN 04P9); SF = 0.9998166253 (PCN 05V0)
The elevations shown on this sheet are based on NAVD 88.

Plot Scale - 1:200
Plotted From - trrc11626
File - ...\HorizontalAlignmentData.dgn

LEGEND

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B12	B59

Plotting Date: 12/22/2020

- Anchor
- Antenna
- Approach
- Assumed Corner
- Azimuth Marker
- BBQ Grill/ Fireplace
- Bearing Tree
- Bench Mark
- Box Culvert
- Bridge
- Brush
- Buildings
- Bulk Tank
- Cattle Guard
- Cemetery
- Centerline
- Cistern
- Clothes Line
- Commercial Sign Double Face
- Commercial Sign One Post
- Commercial Sign Overhead
- Commercial Sign Two Post
- Concrete Symbol
- 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
- Elec. Trans./Power Jct. Box
- Fence Barbwire
- Fence Chainlink
- Fence Electric
- Fence Misc.
- Fence Rock
- Fence Snow
- Fence Wood
- Fence Woven
- Fire Hydrant
- Flag Pole
- Flower Bed
- Gas Valve Or Meter
- Gas Pump Island
- Grain Bin
- Guardrail
- Guide Sign One Post
- Guide Sign Two Post
- Gutter
- Guy Pole
- Haystack
- Hedge
- Highway R.O.W. Marker
- Interstate Close Gate
- Iron Pin
- Irrigation Ditch
- Lake Edge
- Lawn Sprinkler
- Mailbox
- Manhole Electric
- Manhole Gas
- Manhole Misc
- Manhole Sanitary Sewer
- Manhole Storm Sewer
- Manhole Telephone
- Manhole Water
- Merry-Go-Round
- Microwave Radio Tower
- Misc. Line
- Misc. Property Corner
- Misc. 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 R.O.W. Marker
- Railroad Signs
- Railroad Switch
- Railroad Track
- Railroad Trestle
- Rebar
- Rebar With Cap
- Reference Mark
- Regulatory Sign One Post
- Regulatory Sign Two Post
- 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 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 —
- Warning Sign One Post
- Warning Sign Two Post
- 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
- R. O. W. Line
- New R. O. W. 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 - trnc11626

File - ...\pn\Bute05\01\Legend.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B13	B59

Plotting Date: 01/05/2021

10+68 - 46.03' R
Install 3'x4' Type B Drop Inlet
with 6" Concrete Collar
and Type B Frame and Grate

10+68 - 46.03' R to 10+82 - 68.71 'R
Install 18"-20' RCP
& 18" RCP Flared End
(Between Drop Inlet and Outlet)

1/4 Line

Section Line

Present US Hwy. 85

440+00 442+00 443+00 444+00 445+00

10+00

11+00

12+00

442+43.08

R.O.W. Line

TRACT R

DAKOTA ADDITION

Sec. 22 - T8N - R2E

NW1/4 NE1/4

Present SD Hwy. 34

TRACT A-4

Easement for Motor Vehicle Parking and Driveway for
Tract A-1, Tract A-2 and Tract A-3

Lot A - Revised

TRACT A-2

Tract A-3

PINE VIEW ADDITION

Sec. 15 - T8N - R2E

SW1/4 SE1/4

33'

Plot Scale - 1:40

Plotted From - trrc11626

File - ...\pn\Butte05\V0\439_85_East.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B14	B59

Plotting Date: 01/05/2021

441+48-125' L
Take Out 24"-24' RCP &
Pipe End Section
(Incidental Work, Grading)

441+55-116' L
Take Out Drop Inlet &
Frame and Grate
(Incidental Work, Grading)

441+25 - 56.67' L
Install 3' x 4' Drop Inlet
with 6" Concrete Collar
and Type B Frame and Grate

441+70-98' L
Take Out 18"-45' RCP
(Incidental Work, Grading)

441+25 - 56.67' L to 80' L
Install 18" - 16' RCP
& 18" RCP Flared End
(Between Drop Inlet and Outlet)

443+88-180' L
Take Out 18"-65' RCP &
2 End Sections
(Incidental Work, Grading)

Obliterate Roadway at the following locations:
440+40-59' L (US85) to 7+00-25' R (SD34) (3.0 Sta)
5+85-35' L (SD34) to 445+50-63' L (US85) (4.0 Sta)

Sec. 22 - T8N - R2E

BELLE FOURCHE

NE1/4 NW1/4

COUNTRY CLUB ADDITION

Lot 8

Sec. 15 - T8N - R2E

SE1/4 SW1/4

SHERRILL ADDITION

Lot 2

R.O.W. Line

Section Line

Present SD Hwy. 34

Present US Hwy. 85

1/4 Line

442+43.08

7+00

8+00

9+00

10+00

440+00

441+00

442+00

443+00

444+00

445+00

Plot Scale = 1:40

Plotted From = trrc11626

File = ...\prj\Butte05\V0439_85_West.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B15	B59

Plotting Date: 12/22/2020

WELL'S ADDITION

Lot B-1

60'

Summit Street

WELL'S ADDITION

Lot A-1

Tract D-3A
in
Tract D-3

467+67-47' L
Do Not Disturb Signal Pole

468+34-47' L
Do Not Disturb Signal Pole

Present US Hwy 85

465+00 190' 466+00 467+00 468+00 469+00 470+00 190'

467+66-53' R
Do Not Disturb Signal Pole

468+40-53' R
Do Not Disturb Signal Pole

UNPLATTED LAND

TRACT F

PINE VIEW ADDITION

Summit Street

Lot DE-1
in
TRACT E

Lot K-1HA
in
Lot K-1

PINE VIEW ADDITION

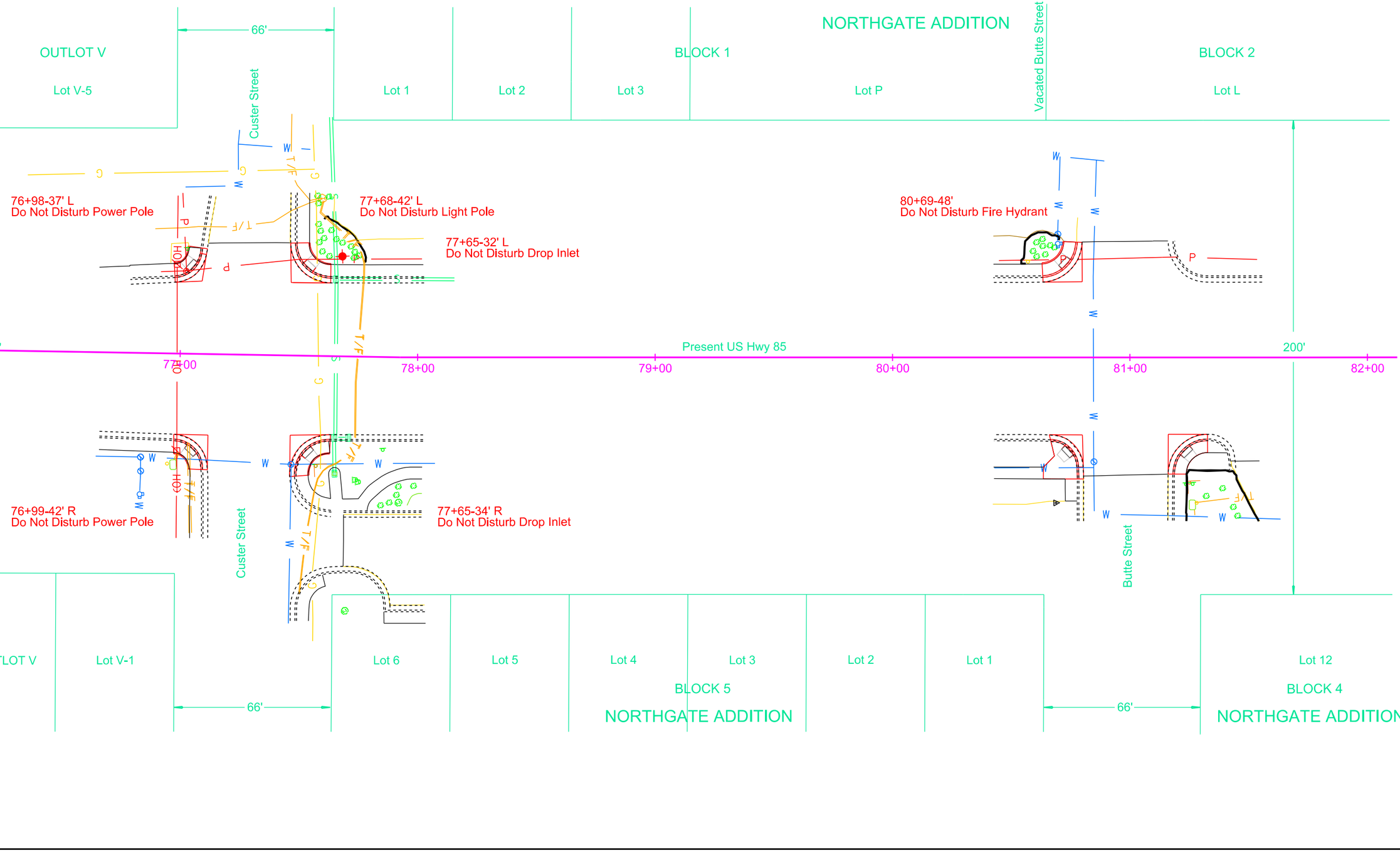
Plot Scale - 1:40

Plotted From - trrc11626

File - ...\pr\Eute65V0\467_US85.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B16	B59

Plotting Date: 12/22/2020



Plot Scale - 1:40

Plotted From - trrc11626

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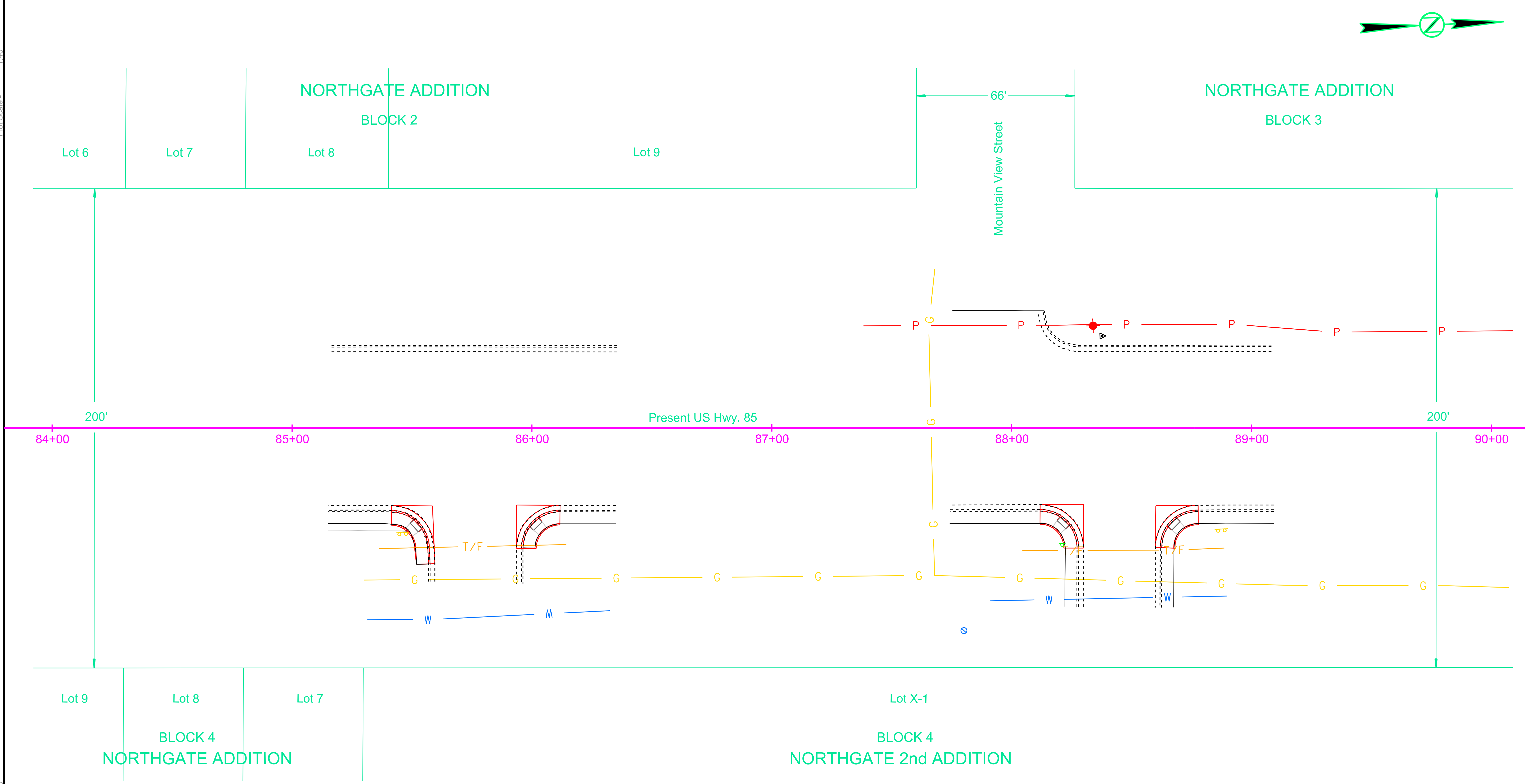
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B17	B59

Plotting Date: 12/22/2020



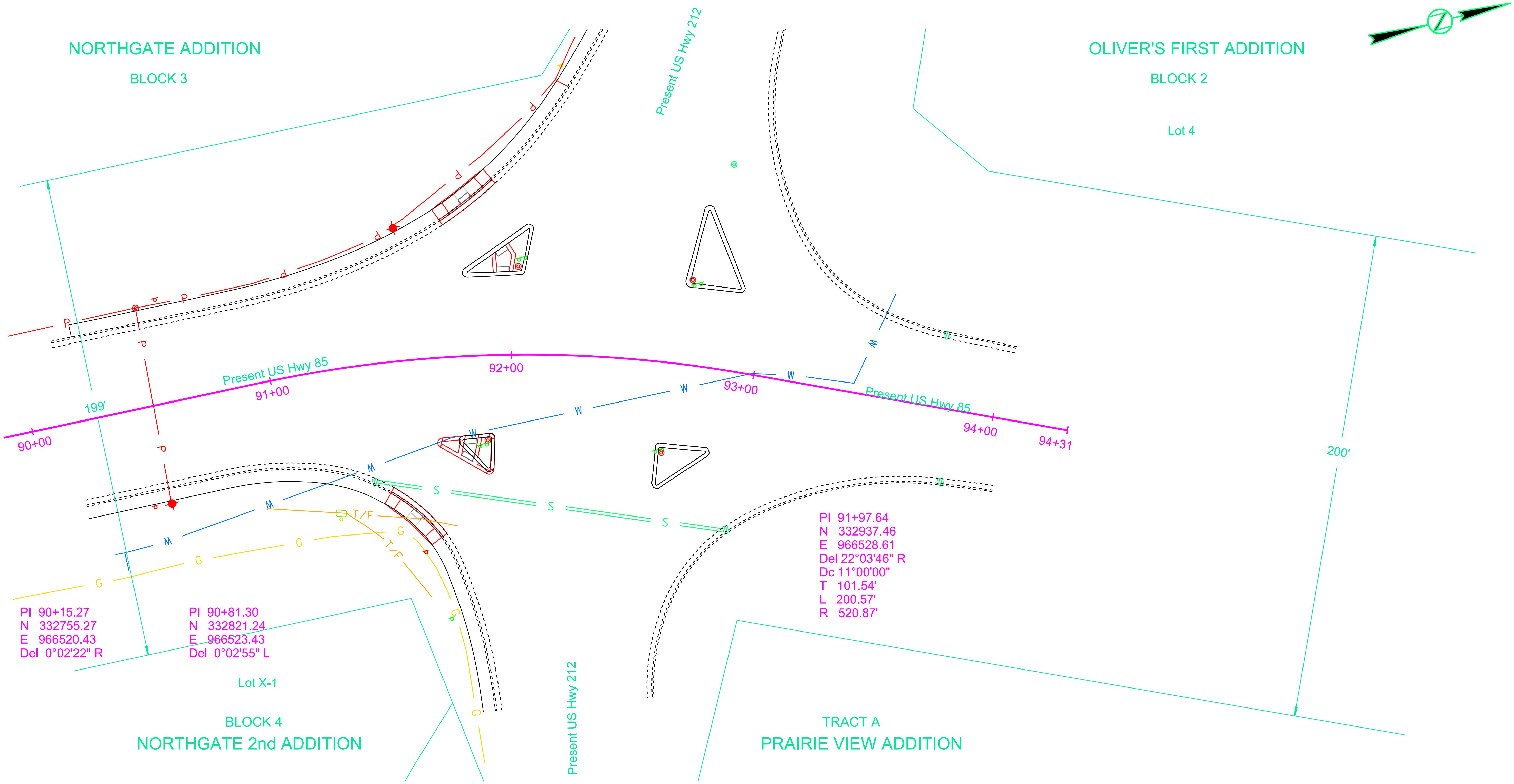
Plot Scale - 1:40

Plotted From - trrc11626

File - ...\prj\Bute05V084_US85.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B18	B59

Plotting Date: 12/22/2020



NORTHGATE ADDITION
BLOCK 3
OLIVER'S FIRST ADDITION
BLOCK 2
Lot 4
Present US Hwy 212
Present US Hwy 85
Present US Hwy 85
90+00
91+00
92+00
93+00
94+00
94+31
199'
200'
PI 90+15.27
N 332755.27
E 966520.43
Del 0°02'22" R
PI 90+81.30
N 332821.24
E 966523.43
Del 0°02'55" L
PI 91+97.64
N 332937.46
E 966528.61
Del 22°03'46" R
Dc 11°00'00"
T 101.54'
L 200.57'
R 520.87'
Lot X-1
BLOCK 4
NORTHGATE 2nd ADDITION
Present US Hwy 212
TRACT A
PRAIRIE VIEW ADDITION

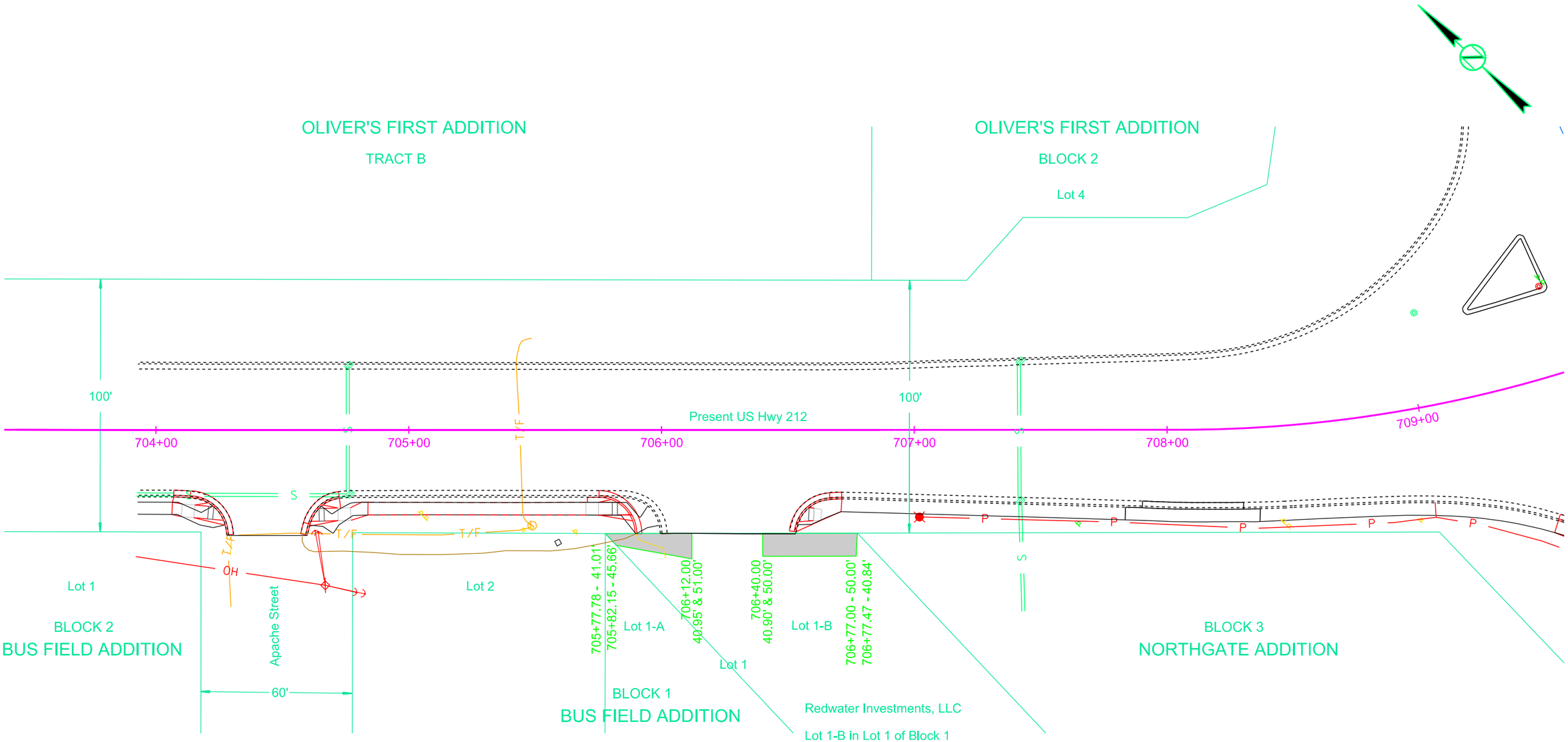
Plot Scale - 1:40

Plotted From - trrc11626

File - ...\prj\Bute05V090_US85.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B19	B59

Plotting Date: 12/22/2020 10/8/2019 NJF



Redwater Investments, LLC

Lot 1-B in Lot 1 of Block 1
of Bus Field Addition to the
City of Belle Fourche, Butte
County, South Dakota

Parcel A1

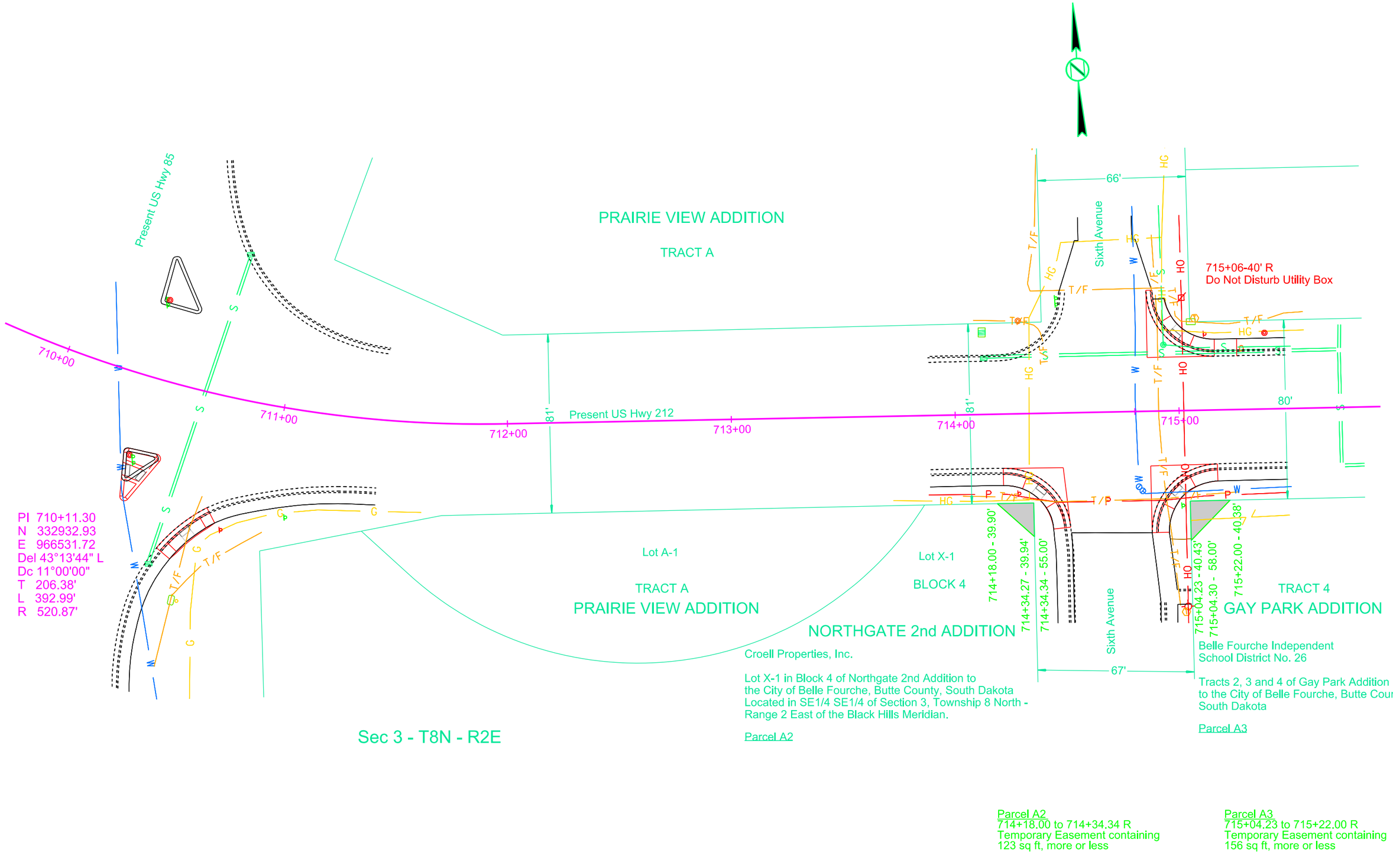
Parcel A1
705+77.78 to 706+12.00 R
Temporary Easement containing
230 sq ft, more or less

Parcel A1
706+40.00 to 706+77.47 R
Temporary Easement containing
340 sq ft, more or less

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B20	B59

Plotting Date: 12/22/2020

Plot Scale - 1:40



Croell Properties, Inc.

Lot X-1 in Block 4 of Northgate 2nd Addition to the City of Belle Fourche, Butte County, South Dakota Located in SE1/4 SE1/4 of Section 3, Township 8 North - Range 2 East of the Black Hills Meridian.

Parcel A2

Belle Fourche Independent School District No. 26

Tracts 2, 3 and 4 of Gay Park Addition to the City of Belle Fourche, Butte County, South Dakota

Parcel A3

Sec 3 - T8N - R2E

Parcel A2
714+18.00 to 714+34.34 R
Temporary Easement containing
123 sq ft, more or less

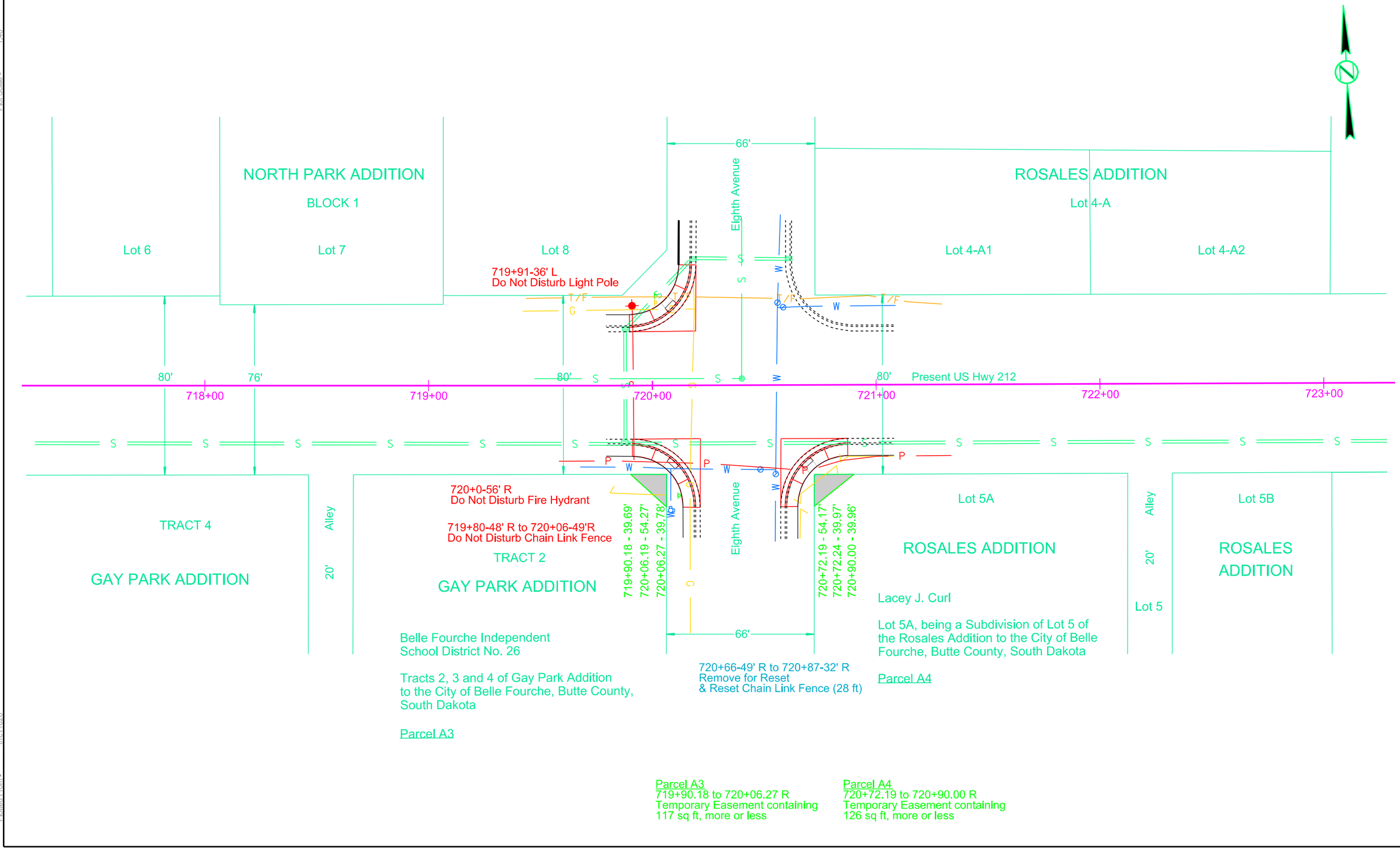
Parcel A3
715+04.23 to 715+22.00 R
Temporary Easement containing
156 sq ft, more or less

Plotted From - trrc11626

File - ...\pn\Eute05\0710_US212.dgn

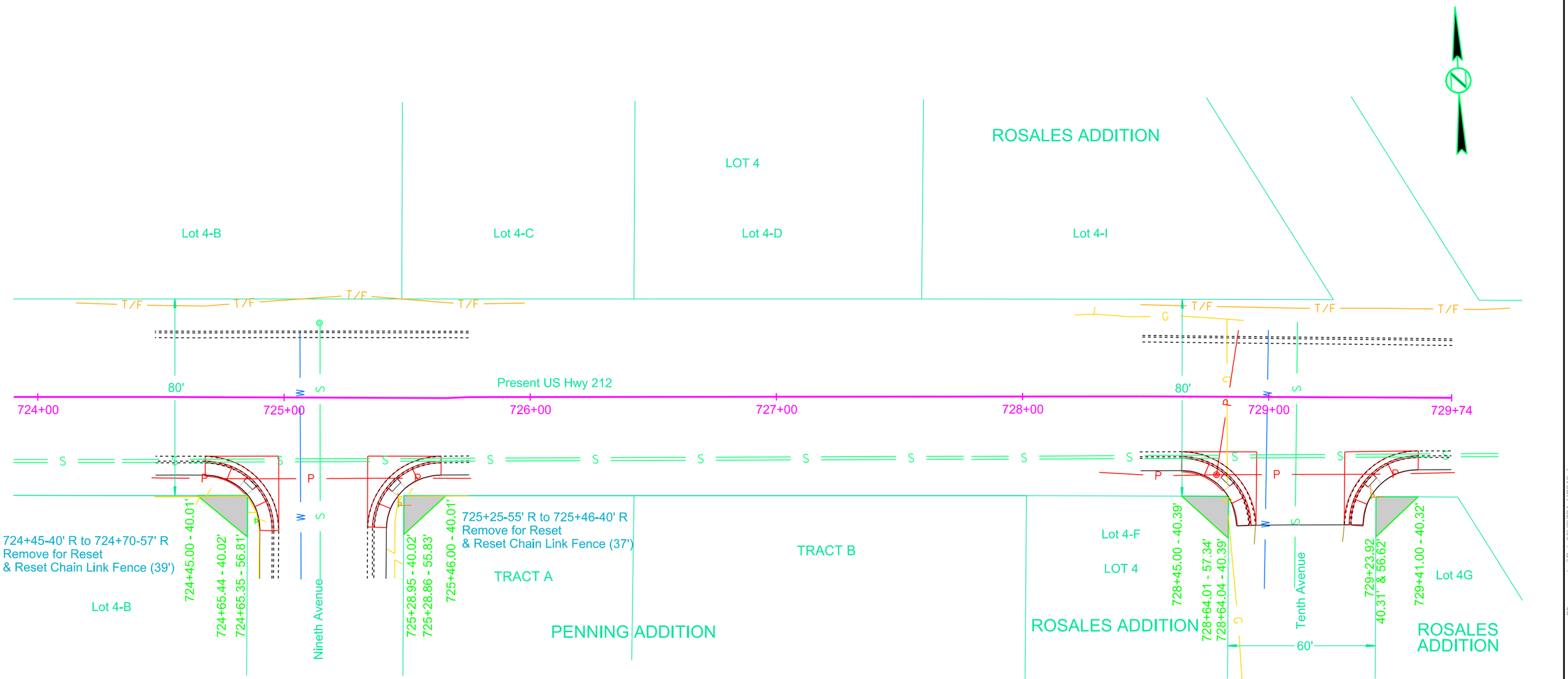
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B21	B59

Plotting Date: 12/22/2020



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B22	B59

Plotting Date: 12/22/2020



Ronnie Leroy Franke and Shannon R. Geddes

Lot 4-B, a Subdivision of Lot 4 located in NW1/4 SW1/4 of Section 2, Township 8 North - Range 2 East of the Black Hills Meridian

Parcel A5

Michael Penning and Sheri Penning

Tract A and B of Penning Addition to the City of Belle Fourche, a replat of Lots 4-C, 2-A, 2-3, 4-E and Lot 3 of Sowers Addition, and of Lot 11 of Outlot B in U&I Addition to the City of Belle Fourche, all located in Section 2, Township 8 North - Range 2 East of the Black Hills Meridian

Parcel A6

Emmanuel Cyle McKinney and Danyell Ann McKinney

Lot 4-F of Rosales Addition, a Subdivision of a Portion of Lot 4, Located in NW1/4 SW1/4 of Section 2, Township 8 North - Range 2 East of the Black Hills Meridian, City of Belle Fourche, Butte County, South Dakota

Parcel A7

City of Belle Fourche

Lot 4-G of Rosales Addition, a Subdivision of a Portion of Lot 4, Located in NW1/4 SW1/4 of Section 2, Township 8 North - Range 2 East of the Black Hills Meridian, City of Belle Fourche, Butte County, South Dakota

Parcel A8

Sec 2 - T8N - R2E

Parcel A5
724+45.00 to 724+65.44 R
Temporary Easement containing
172 sq ft, more or less

Parcel A6
725+28.95 to 725+46.00 R
Temporary Easement containing
135 sq ft, more or less

Parcel A7
728+45.00 to 728+64.04 R
Temporary Easement containing
161 sq ft, more or less

Parcel A8
729+23.92 to 729+41.00 R
Temporary Easement containing
139 sq ft, more or less

Plot Scale - 1:40

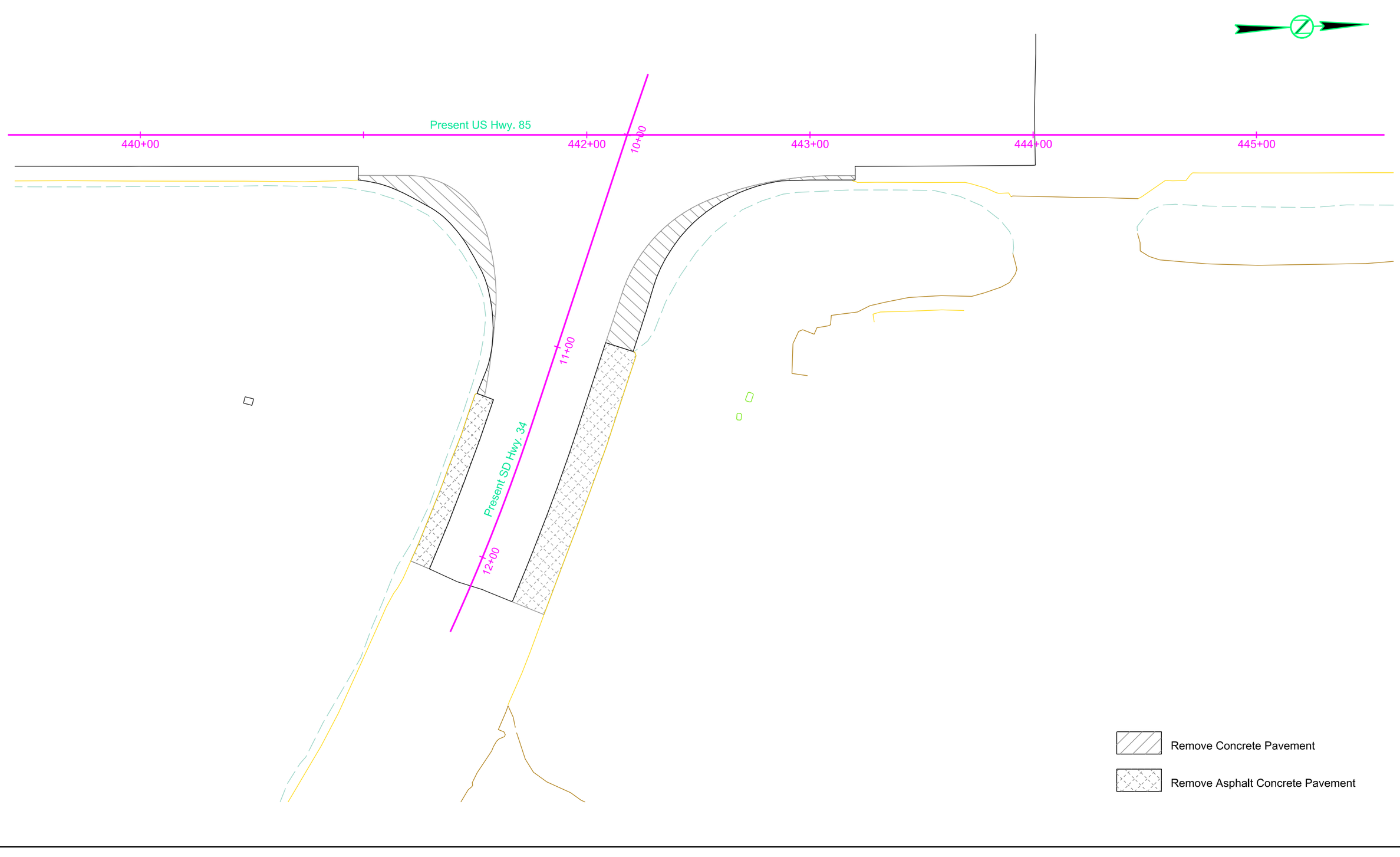
Plotted From - trrc11626

File - ...\prj\Eute05\0724_US212.dgn

PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B23	B59

Plotting Date: 12/22/2020



Plot Scale - 1:40

Plotted From - trrc11626

File - ...\pn\Butte05\0439_85_Eastpr.dgn

PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B24	B59

Plotting Date: 12/22/2020

Remove Asphalt Concrete Pavement

Remove Concrete Curb and/or Gutter

Present US Hwy. 85

Present SD Hwy. 34

7+00

8+00

9+00

440+00

441+00

442+00

443+00

444+00

445+00

Plot Scale - 1:40

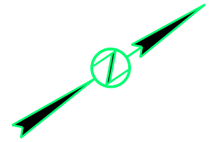
Plotted From - trrc11626

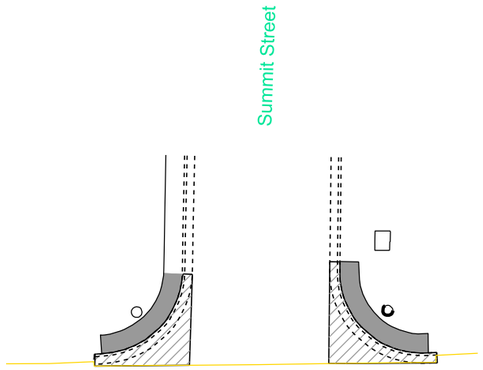
File - ...rpt\Bute605V0439_85_Westpr.dgn

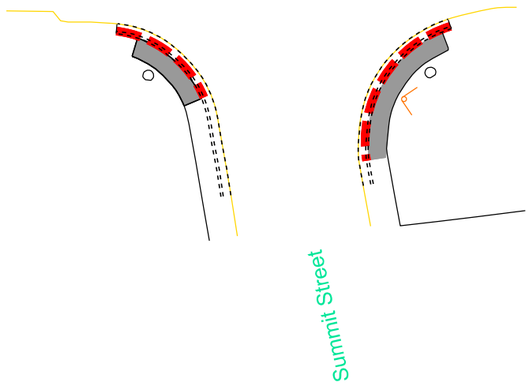
PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B25	B59

Plotting Date: 12/22/2020







Remove Concrete Pavement

Remove Concrete Curb and/or Gutter

Remove Concrete Sidewalk

Plot Scale - 1:40

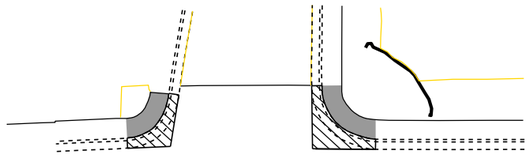
Plotted From - trrc11626

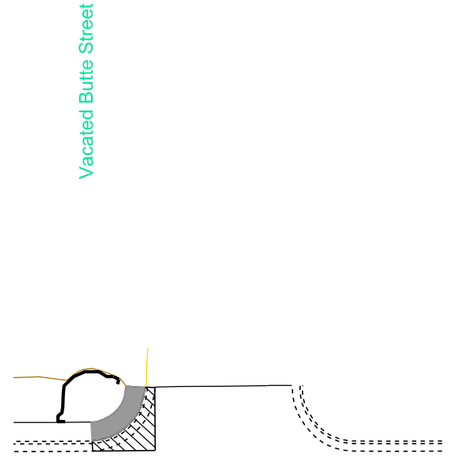
File - ...\prj\Bute05\V0467_US85pr.dgn

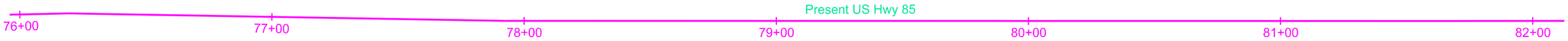
PAVEMENT REMOVAL LAYOUT

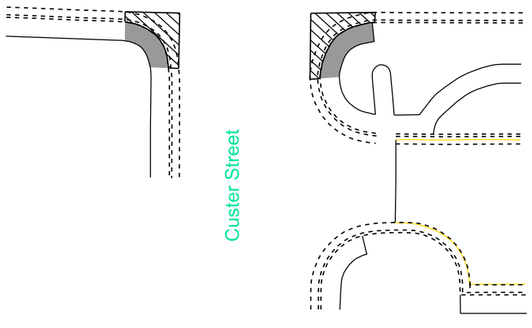
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B26	B59

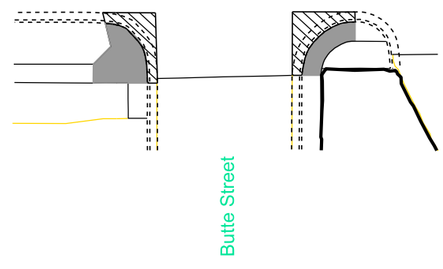
Plotting Date: 12/22/2020











Remove Concrete Pavement

Remove Concrete Sidewalk

Plot Scale - 1:40

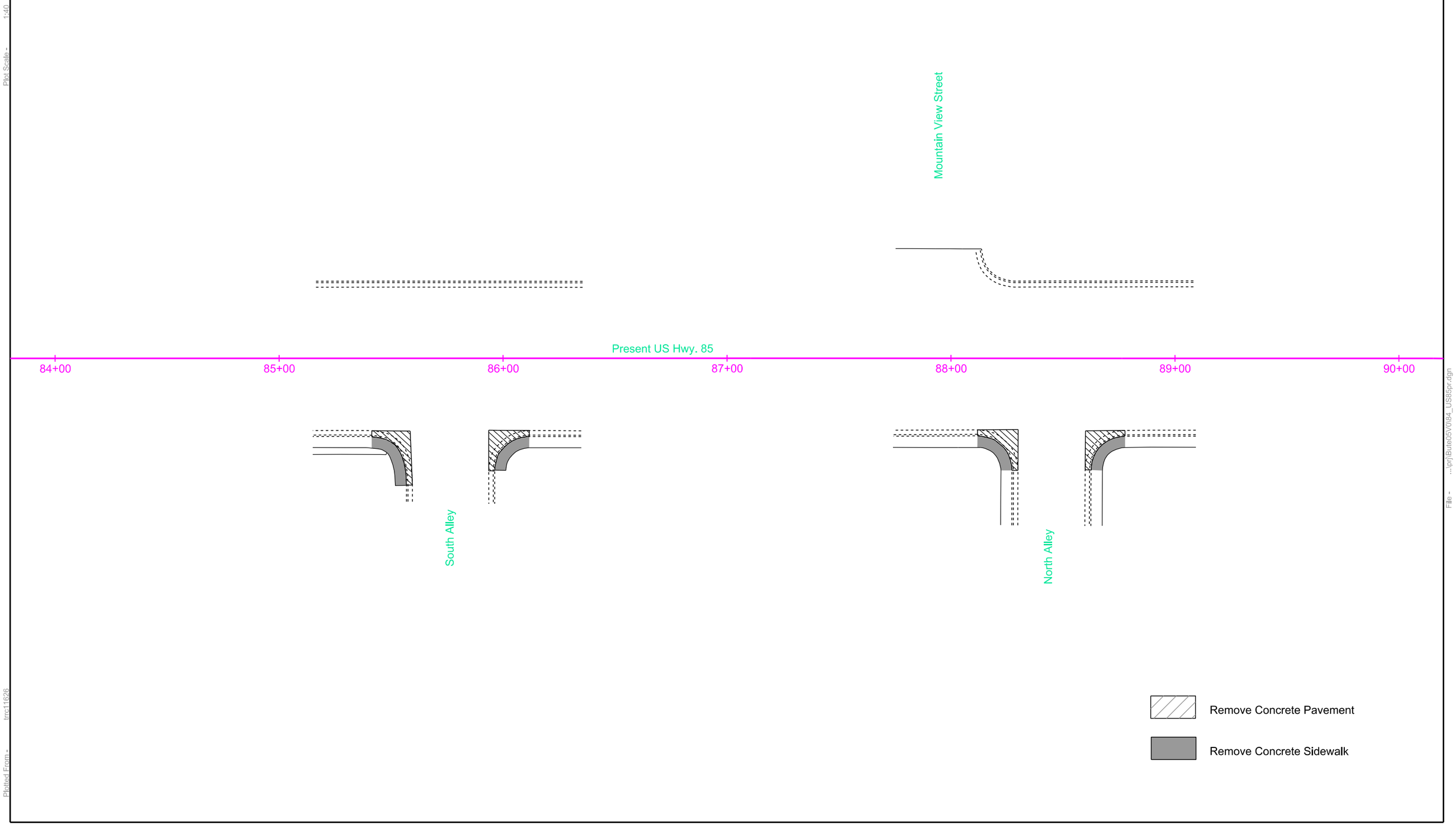
Plotted From - trrc11626

File - ...\prj\Butte06V0\76_US85pr.dgn

PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B27	B59

Plotting Date: 12/22/2020



Plot Scale - 1:40

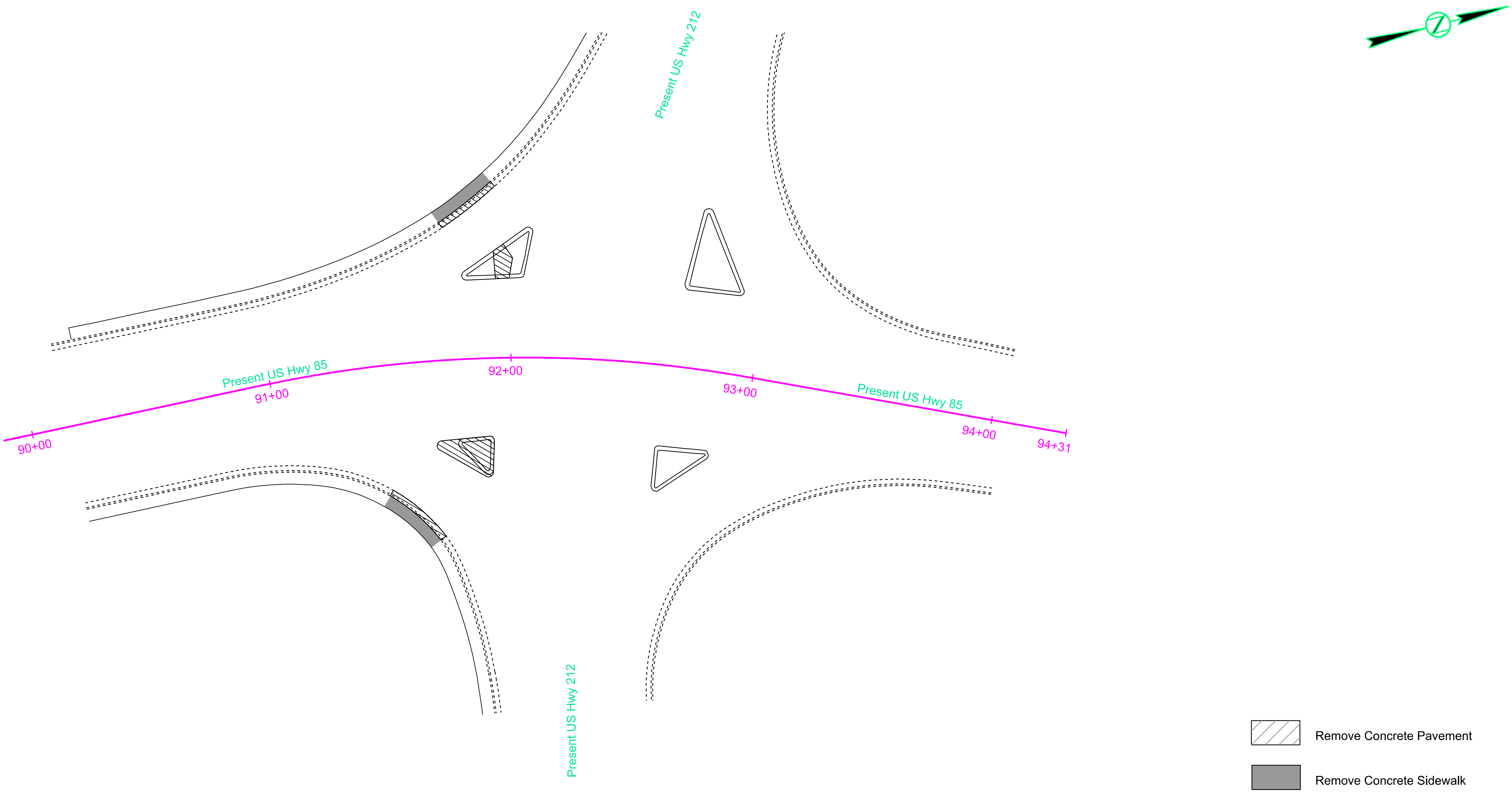
Plotted From - trrc11626

File - ...\pn\Butte05V0184_US85pr.dgn

PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B28	B59

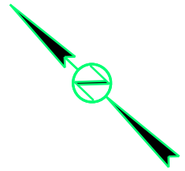
Plotting Date: 01/04/2021 Revised 1/4/2021 NJF

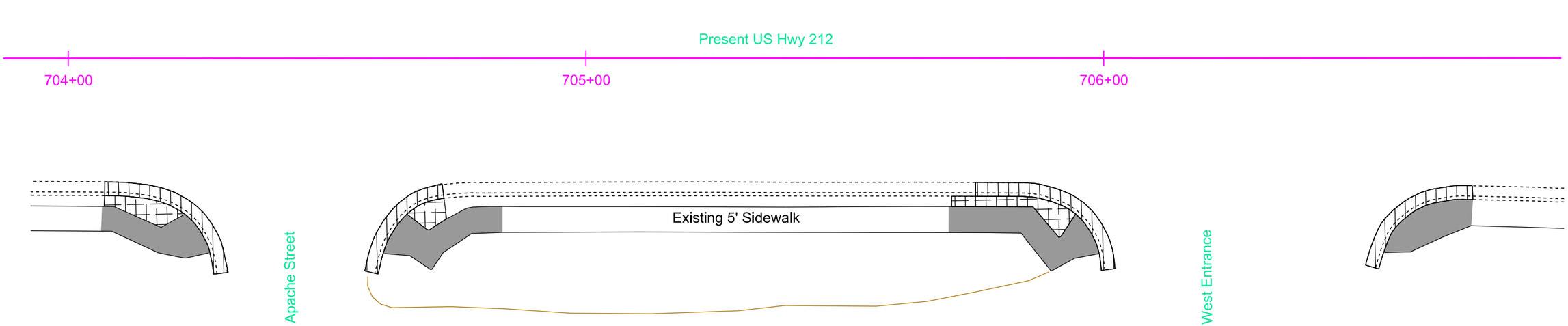


PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B29	B59

Plotting Date: 12/22/2020

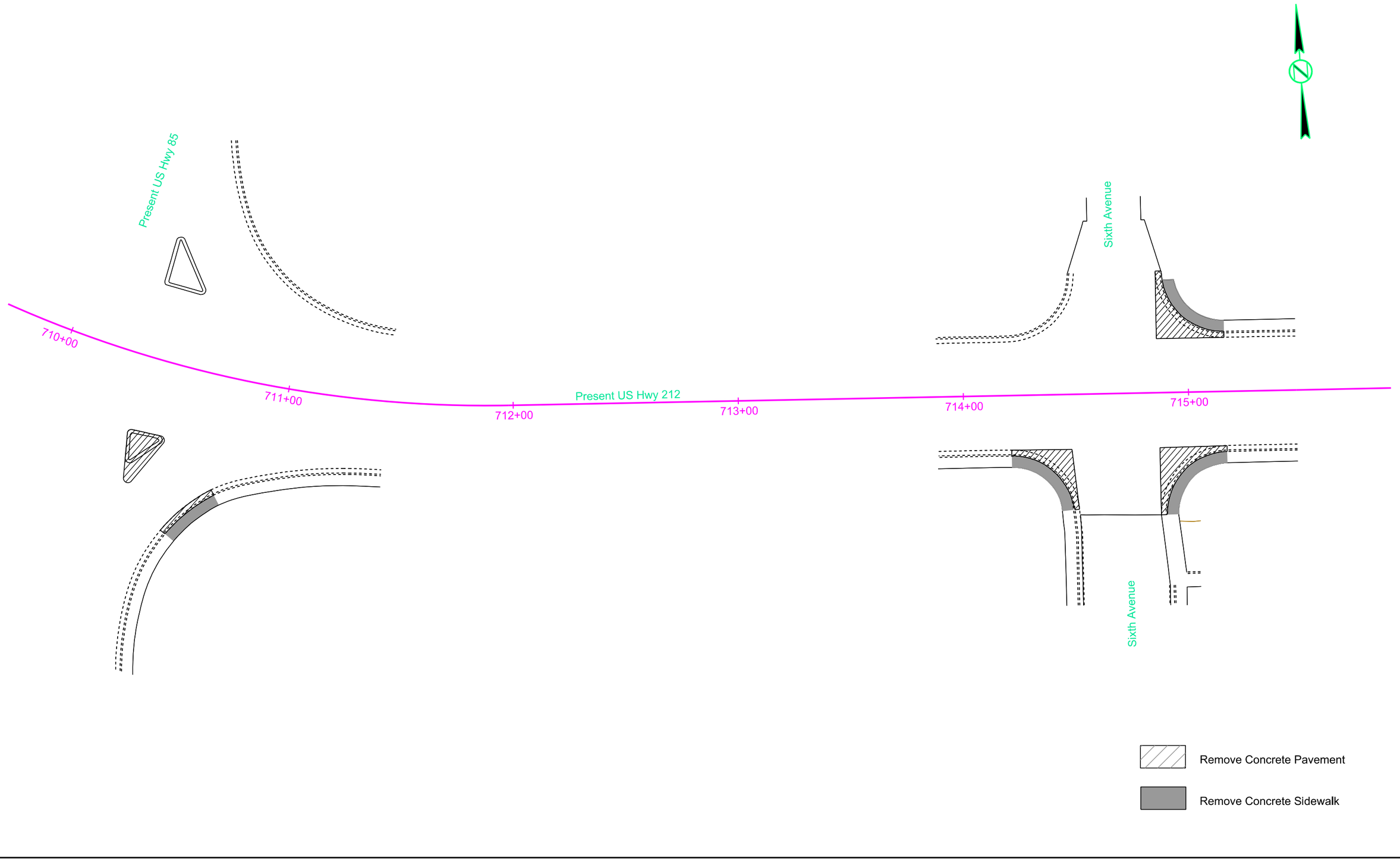




PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B30	B59

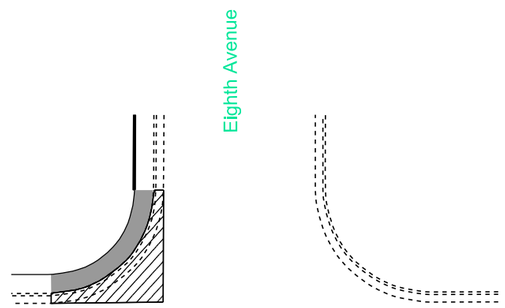
Plotting Date: 12/22/2020

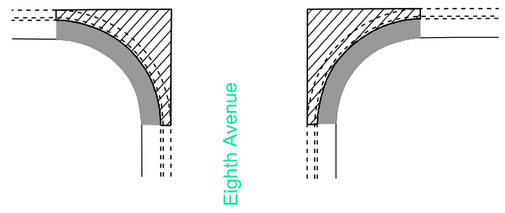


PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B31	B59

Plotting Date: 12/22/2020





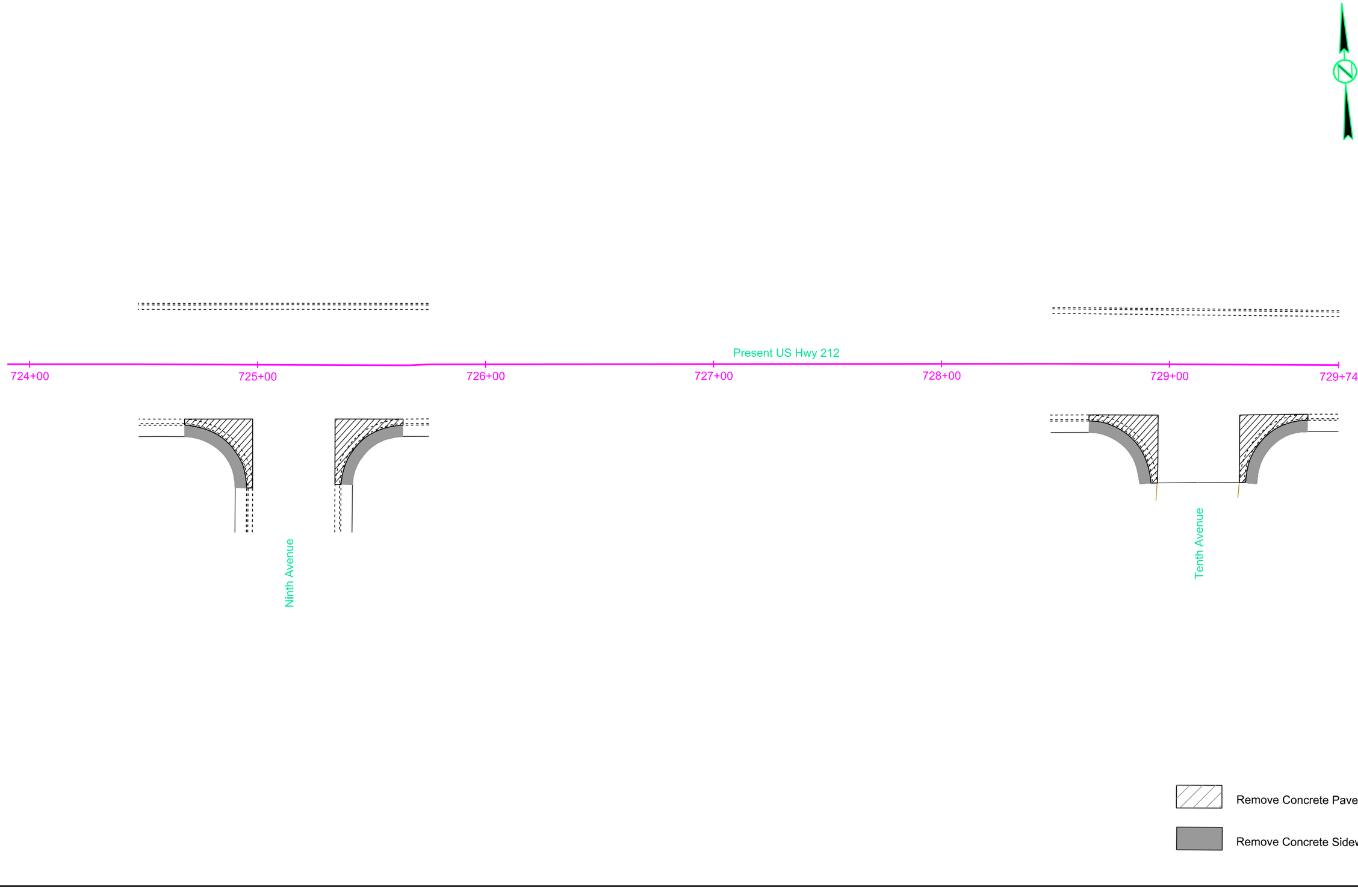
Remove Concrete Pavement

Remove Concrete Sidewalk

PAVEMENT REMOVAL LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B32	B59

Plotting Date: 12/22/2020

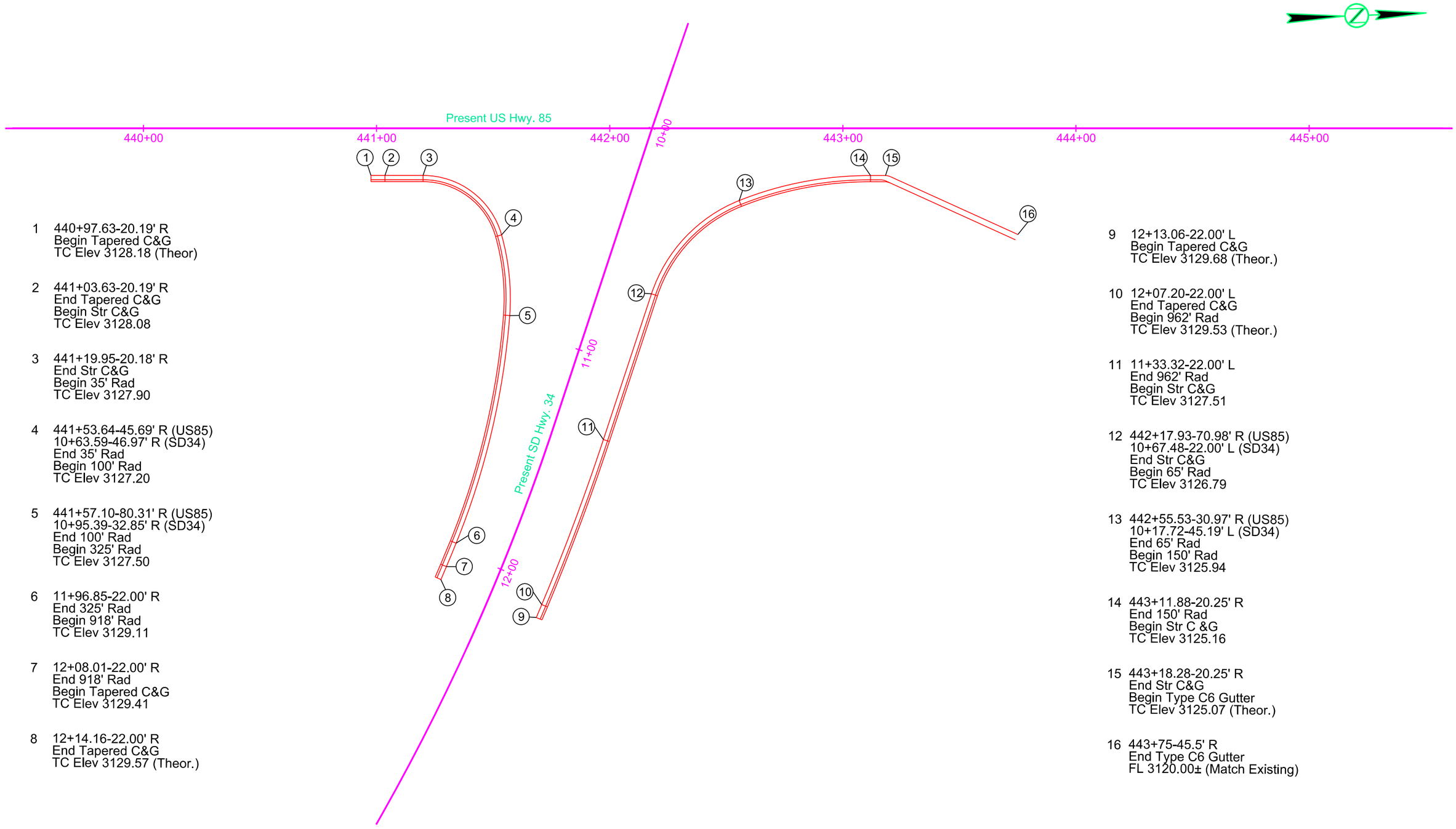


CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B33	B59

Plotting Date: 12/22/2020

Note: All curb and gutter shown on this sheet is Type F68.5 except as noted.



1 440+97.63-20.19' R
Begin Tapered C&G
TC Elev 3128.18 (Theor)

2 441+03.63-20.19' R
End Tapered C&G
Begin Str C&G
TC Elev 3128.08

3 441+19.95-20.18' R
End Str C&G
Begin 35' Rad
TC Elev 3127.90

4 441+53.64-45.69' R (US85)
10+63.59-46.97' R (SD34)
End 35' Rad
Begin 100' Rad
TC Elev 3127.20

5 441+57.10-80.31' R (US85)
10+95.39-32.85' R (SD34)
End 100' Rad
Begin 325' Rad
TC Elev 3127.50

6 11+96.85-22.00' R
End 325' Rad
Begin 918' Rad
TC Elev 3129.11

7 12+08.01-22.00' R
End 918' Rad
Begin Tapered C&G
TC Elev 3129.41

8 12+14.16-22.00' R
End Tapered C&G
TC Elev 3129.57 (Theor.)

9 12+13.06-22.00' L
Begin Tapered C&G
TC Elev 3129.68 (Theor.)

10 12+07.20-22.00' L
End Tapered C&G
Begin 962' Rad
TC Elev 3129.53 (Theor.)

11 11+33.32-22.00' L
End 962' Rad
Begin Str C&G
TC Elev 3127.51

12 442+17.93-70.98' R (US85)
10+67.48-22.00' L (SD34)
End Str C&G
Begin 65' Rad
TC Elev 3126.79

13 442+55.53-30.97' R (US85)
10+17.72-45.19' L (SD34)
End 65' Rad
Begin 150' Rad
TC Elev 3125.94

14 443+11.88-20.25' R
End 150' Rad
Begin Str C &G
TC Elev 3125.16

15 443+18.28-20.25' R
End Str C&G
Begin Type C6 Gutter
TC Elev 3125.07 (Theor.)

16 443+75-45.5' R
End Type C6 Gutter
FL 3120.00± (Match Existing)

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B34	B59

Plotting Date: 12/22/2020

Note: All curb and gutter shown on this sheet is Type F68.5 except as noted.

1 440+15.00-56.20' L
Begin Str C&G
TC Elev 3129.99± (Match Existing)

2 441+26.71-55.99' L
End Str C&G
Begin 200' Rad
TC Elev 3128.04

3 441+92.21-67.49' L
End 200' Rad
Begin 65' Rad
TC Elev 3126.90

4 442+31.94-107.59' L (US85)
8+93.79-22.00' R (SD34)
End 65' Rad
Begin Str C&G
TC Elev 3126.02

5 6+69.51-22.00' R
End Str C&G
Begin Tapered C&G
TC Elev 3123.83

6 6+63.44-22.00' R
End Tapered C&G
TC Elev 3123.75 (Theor.)

7 6+63.37-22.00' L
Begin Tapered C&G
TC Elev 3123.56 (Theor)

8 6+69.31-22.00' L
End Tapered C&G
Begin Str C&G
TC Elev 3123.63

9 7+75.15-22.00' L
End Str C&G
Begin 400' Rad
TC Elev 3124.65

10 8+42.69-27.74' L
End 400' Rad
Begin 220' Rad
TC Elev 3124.97

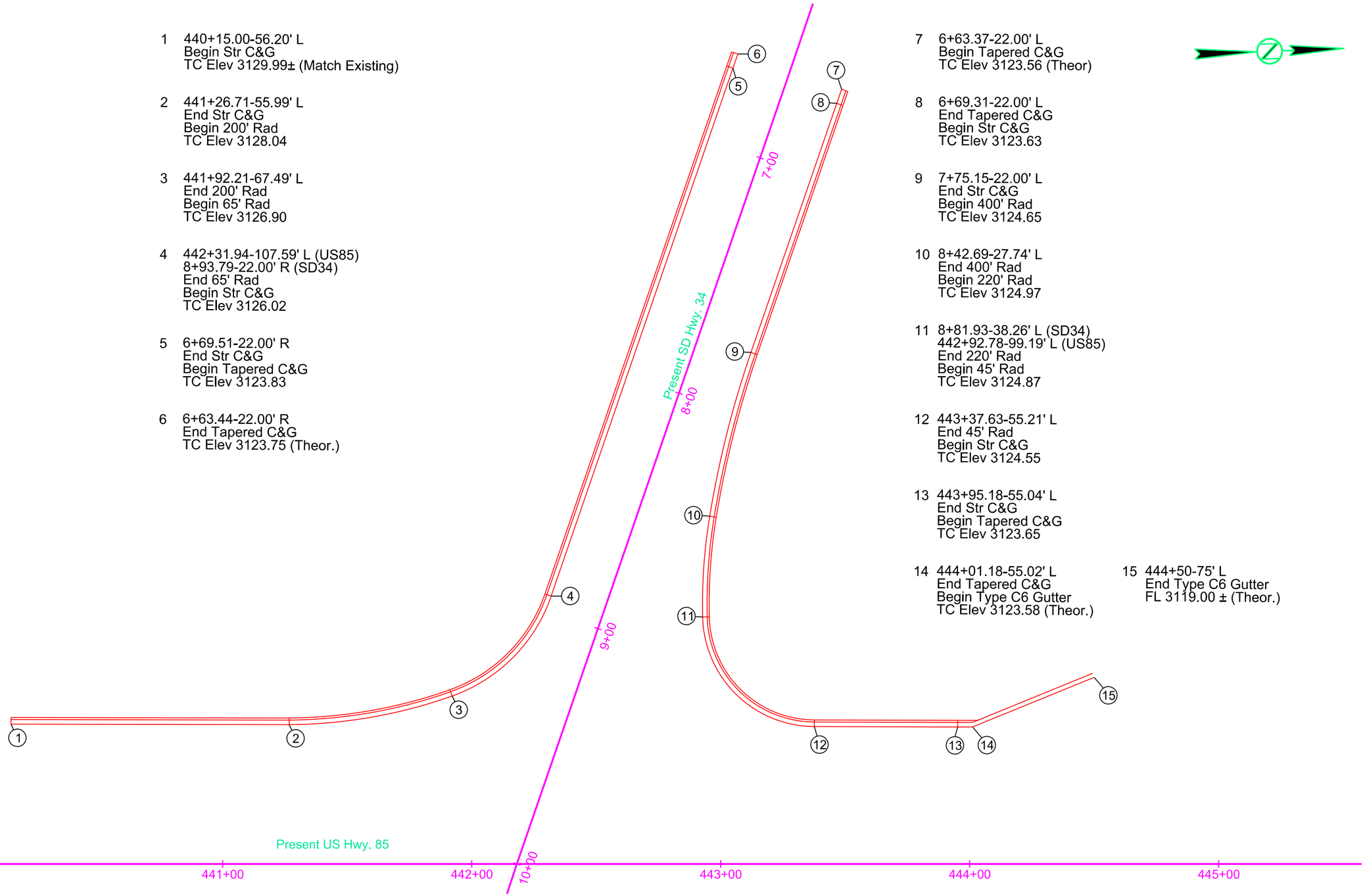
11 8+81.93-38.26' L (SD34)
442+92.78-99.19' L (US85)
End 220' Rad
Begin 45' Rad
TC Elev 3124.87

12 443+37.63-55.21' L
End 45' Rad
Begin Str C&G
TC Elev 3124.55

13 443+95.18-55.04' L
End Str C&G
Begin Tapered C&G
TC Elev 3123.65

14 444+01.18-55.02' L
End Tapered C&G
Begin Type C6 Gutter
TC Elev 3123.58 (Theor.)

15 444+50-75' L
End Type C6 Gutter
FL 3119.00 ± (Theor.)



CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B35	B59

Plotting Date: 12/22/2020

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B69.5 except as noted.
All sidewalk is 5' wide except as noted.

1 467+50.29-33.98' L
Begin Str C&G Taper
TC Elev 3081.44 (Theor)

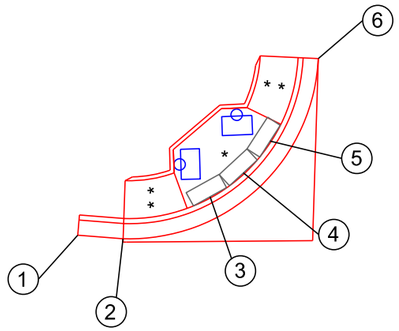
2 467+56.28-33.46' L
End Str C&G Taper
Begin 25' Rad Fillet
TC Elev 3081.34

3 467+67.80-38.90' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

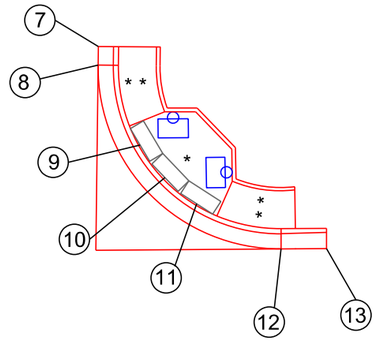
4 467+72.22-42.03' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

5 467+75.78-46.19' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

6 467+81.99-57.05' L
End 25' Rad Fillet
TC Elev 3078.87 (Theor)



Summit Street



7 468+18.85-60.14' L
Begin Str C&G
TC Elev 3078.37 (Match Existing)

8 468+18.79-57.70' L
End Str C&G
Begin 25' Rad Fillet
TC Elev 3078.37

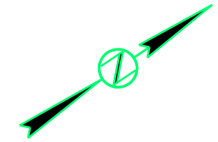
9 468+24.19-47.07' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

10 468+27.42-42.72' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

11 468+31.57-39.21' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

12 468+42.88-33.10' L
End 25' Rad Fillet
Begin Str C&G Taper
TC Elev 3078.78

13 468+48.88-33.02' L
End Str C&G Taper
TC Elev 3078.69 (Theor.)



Present US Hwy 85

467+00 468+00 469+00

14 467+52.53-38.83' R
Begin Str C&G Taper
TC Elev 3082.05 (Theor)

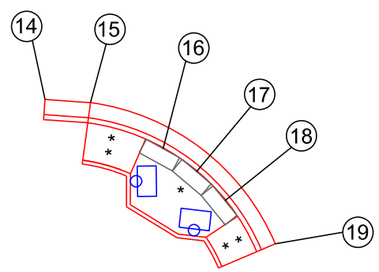
15 467+58.52-39.29' R
End Str C&G Taper
Begin 31' Rad C&G
TC Elev 3081.96

16 467+68.06-45.44' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

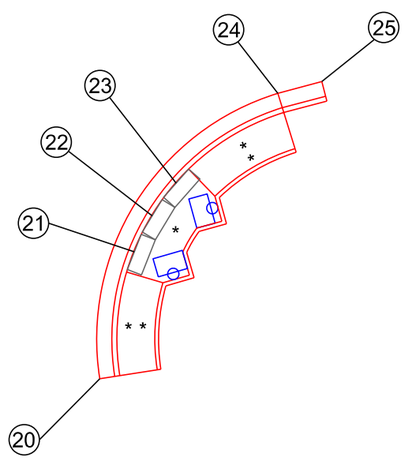
17 467+72.46-48.51' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

18 467+76.19-52.36' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

19 467+83.03-58.10' R
End 31' Rad C&G
TC Elev 3080.67 (Theor)



Summit Street



20 468+21.45-76.18' R
Begin 34' Rad C&G
TC Elev 3080.48 (Match Existing)

21 468+26.21-59.49' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

22 468+28.63-54.75' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

23 468+31.85-50.49' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

24 468+45.14-38.82' R
End 34' Rad C&G
Begin Str C&G Taper
TC Elev 3080.63

25 468+50.98-37.40' R
End Str C&G Taper
TC Elev 3080.53 (Theor)

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B36	B59

Plotting Date: 12/22/2020

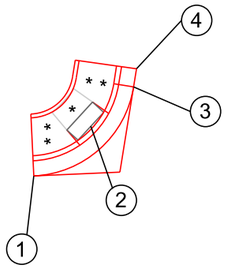
* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B69.5 except as noted.
All sidewalk is 5' wide except as noted.

1 76+97.36-30.02' L
Begin 14' Rad Fillet
TC Elev 3051.69± (Match Existing)

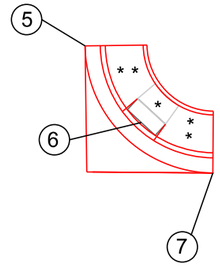
2 77+04.80-36.71' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

3 77+10.35-41.99' L
End 14' Rad Fillet
Begin Str C&G
TC Elev 3052.29

4 77+10.70-44.39' L
End Str C&G
TC Elev 3052.34± (Match Existing)



Custer Street



5 77+45.71-47.36' L
Begin 17' Rad Fillet
TC Elev 3053.76± (Match Existing)

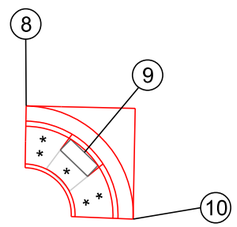
6 77+53.31-37.36' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

7 77+62.86-30.87' L
End 17' Rad Fillet
TC Elev 3053.75± (Match Existing)

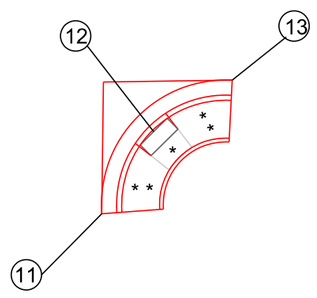
8 76+97.86-34.02' R
Begin 14' Rad Fillet
TC Elev 3051.91± (Match Existing)

9 77+05.64-40.01' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

10 77+12.23-48.72' R
End 14' Rad Fillet
TC Elev 3053.21± (Match Existing)



Custer Street



11 77+46.95-50.99' R
Begin 16.4' Rad Fillet
TC Elev 3053.87± (Match Existing)

12 77+53.63-40.02' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

13 77+63.86-33.05' R
End 16.4' Rad Fillet
TC Elev 3053.87± (Match Existing)

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B37	B59

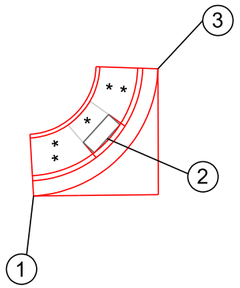
Plotting Date: 12/22/2020

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B69.5 except as noted.
All sidewalk is 5' wide except as noted.

1 80+63.41-31.72' L
Begin 17.4' Rad Fillet
TC Elev 3061.34± (Match Existing)

2 80+73.13-39.26' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

3 80+79.83-48.49' L
End 17.4' Rad Fillet
TC Elev 3061.42 (Theor)



Present US Hwy 85

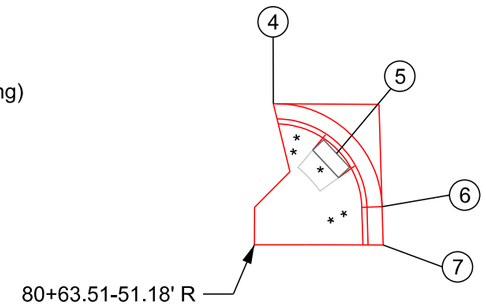
80+00 81+00 82+00

4 80+66.03-32.54' R
Begin 14' Rad Fillet
TC Elev 3061.17± (Match Existing)

5 80+74.38-39.12' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

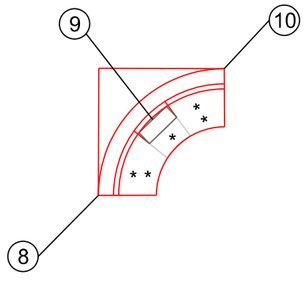
6 80+80.38-46.13' R
End 14' Rad Fillet
Begin Str C&G
TC Elev 3061.27

7 80+80.53-51.19' R
End Str C&G
TC Elev 3061.31± (Theor.)



80+63.51-51.18' R
Elev 3061.32±

Butte Street



8 81+16.08-49.14' R
Begin 16.7' Rad Fillet
TC Elev 3062.55± (Match Existing)

9 81+23.23-39.12' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

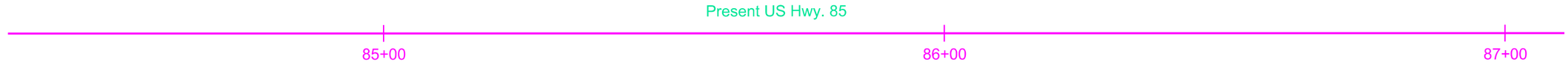
10 81+32.68-32.40' R
End 16.7' Rad Fillet
TC Elev 3062.56± (Match Existing)

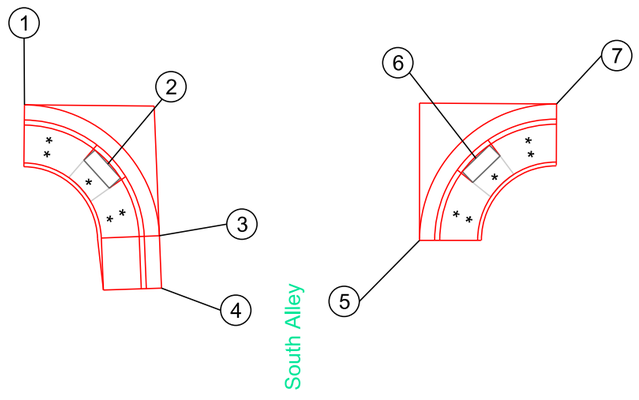
CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B38	B59

Plotting Date: 12/22/2020

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B69.5 except as noted.
All sidewalk is 5' wide except as noted.





1 85+41.40-32.32' R
Begin 18' Rad Fillet
TC Elev 3071.02± (Match Existing)

2 85+52.41-40.13' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

3 85+59.22-49.61' R
End 18' Rad Fillet
Begin Str C&G
TC Elev 3071.69

4 85+59.49-56.54' R
End Str C&G
TC Elev 3071.82± (Match Existing)

5 85+93.60-50.24' R
Begin 18' Rad Fillet
TC Elev 3072.33± (Match Existing)

6 86+01.04-39.40' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

7 86+11.70-32.22' R
End 18' Rad Fillet
TC Elev 3072.43± (Match Existing)

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B39	B59

Plotting Date: 12/22/2020

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B69.5 except as noted.
All sidewalk is 5' wide except as noted.

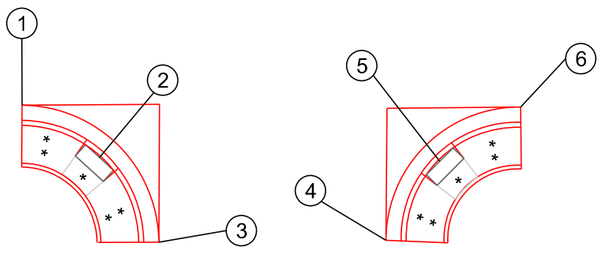
Present US Hwy. 85

87+00 88+00 89+00

1 88+11.85-31.94' R
Begin 18.2' Rad Fillet
TC Elev 3075.44± (Match Existing)

2 88+22.07-38.84' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

3 88+29.91-50.03' R
End 18.2' Rad Fillet
TC Elev 3075.44± (Match Existing)



North Alley

4 88+59.91-49.77' R
Begin 17.6' Rad Fillet
TC 3075.73± (Match Existing)

5 88+67.01-39.34' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

6 88+77.71-32.18' R
End 17.6' Rad Fillet
TC Elev 3076.04± (Match Existing)

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B40	B59

Plotting Date: 12/22/2020

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B68 except as noted.
All sidewalk is 5' wide except as noted.

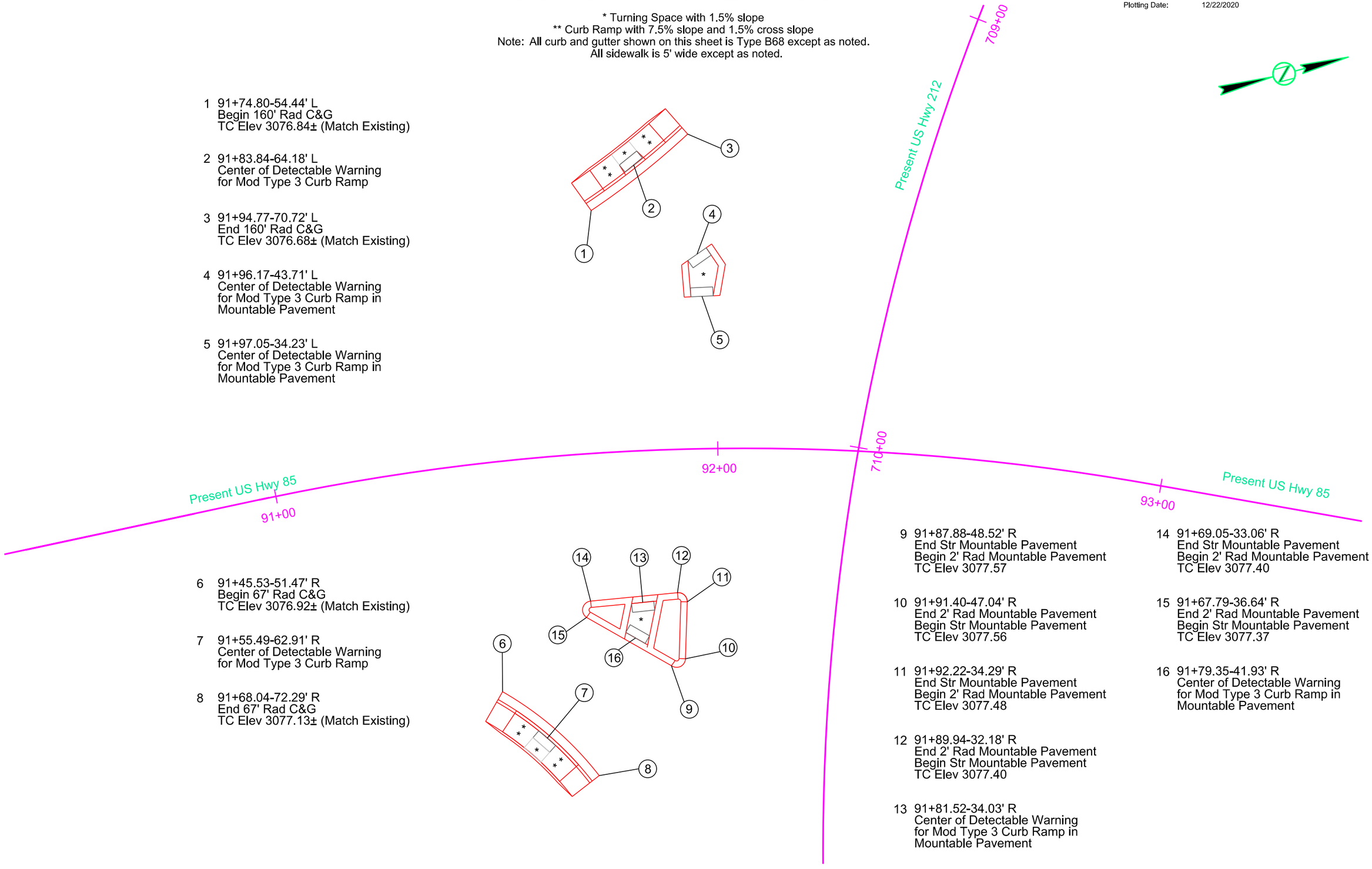
1 91+74.80-54.44' L
Begin 160' Rad C&G
TC Elev 3076.84± (Match Existing)

2 91+83.84-64.18' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

3 91+94.77-70.72' L
End 160' Rad C&G
TC Elev 3076.68± (Match Existing)

4 91+96.17-43.71' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp in
Mountable Pavement

5 91+97.05-34.23' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp in
Mountable Pavement



6 91+45.53-51.47' R
Begin 67' Rad C&G
TC Elev 3076.92± (Match Existing)

7 91+55.49-62.91' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

8 91+68.04-72.29' R
End 67' Rad C&G
TC Elev 3077.13± (Match Existing)

9 91+87.88-48.52' R
End Str Mountable Pavement
Begin 2' Rad Mountable Pavement
TC Elev 3077.57

10 91+91.40-47.04' R
End 2' Rad Mountable Pavement
Begin Str Mountable Pavement
TC Elev 3077.56

11 91+92.22-34.29' R
End Str Mountable Pavement
Begin 2' Rad Mountable Pavement
TC Elev 3077.48

12 91+89.94-32.18' R
End 2' Rad Mountable Pavement
Begin Str Mountable Pavement
TC Elev 3077.40

13 91+81.52-34.03' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp in
Mountable Pavement

14 91+69.05-33.06' R
End Str Mountable Pavement
Begin 2' Rad Mountable Pavement
TC Elev 3077.40

15 91+67.79-36.64' R
End 2' Rad Mountable Pavement
Begin Str Mountable Pavement
TC Elev 3077.37

16 91+79.35-41.93' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp in
Mountable Pavement

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B41	B59

Plotting Date: 12/22/2020

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B69 except as noted.
All sidewalk is 5' wide except as noted.

1 704+07.13-23.80' R
Begin Str C&G
TC Elev 3071.27 (Match Existing)

2 704+13.72-24.06' R
End Str C&G
Begin 16' Rad C&G
TC Elev 3071.33

3 704+22.66-32.87' R
Center of Detectable Warning
for Type 2 Curb Ramp

4 704+30.57-41.36' R
End 16' Rad C&G
TC Elev 3071.19 (Theor)

5 704+57.25-41.04' R
Begin Str C&G
TC Elev 3071.53 (Theor)

6 704+58.39-36.60' R
End Str C&G
Begin 17' Rad C&G
TC Elev 3071.66 (Theor)

7 704+64.55-33.59' R
Center of Detectable Warning
for Type 2 Curb Ramp

8 704+72.22-24.38' R
End 25' Rad Fillet
TC Elev 3072.05 (Match Existing)

9 705+75.28-24.00' R
Begin 25' Rad C&G
TC Elev 3073.11 (Match Existing)

10 705+82.56-31.20' R
Center of Detectable Warning
for Type 2 Curb Ramp

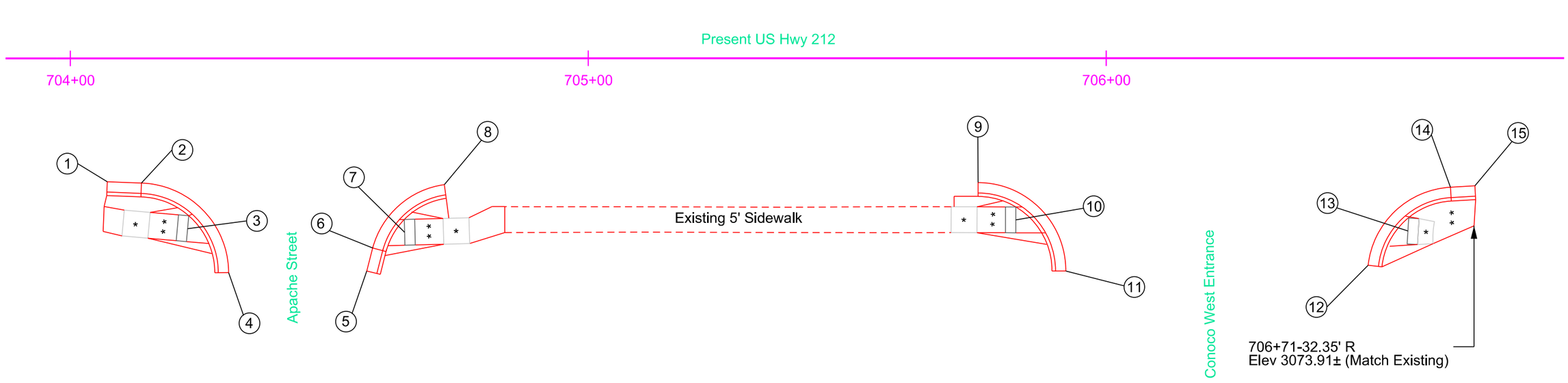
11 705+92.21-41.07' R
End 25' Rad Fillet
TC Elev 3073.40 (Theor)

12 706+50.58-39.98' R
Begin 25' Rad C&G
TC Elev 3074.10 (Theor)

13 706+58.26-33.35' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

14 706+66.48-24.91' R
End 25' Rad C&G
Begin Str C&G
TC Elev 3073.94

15 706+71.19-24.65' R
End Str C&G
TC Elev 3073.96 (Match Existing)

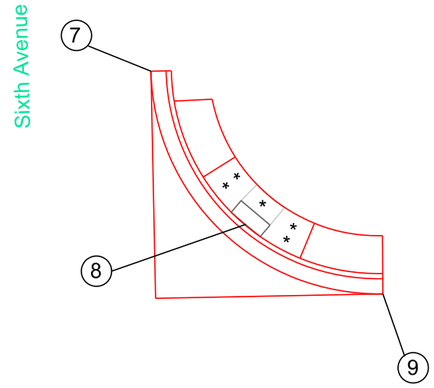


CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B42	B59

Plotting Date: 12/22/2020

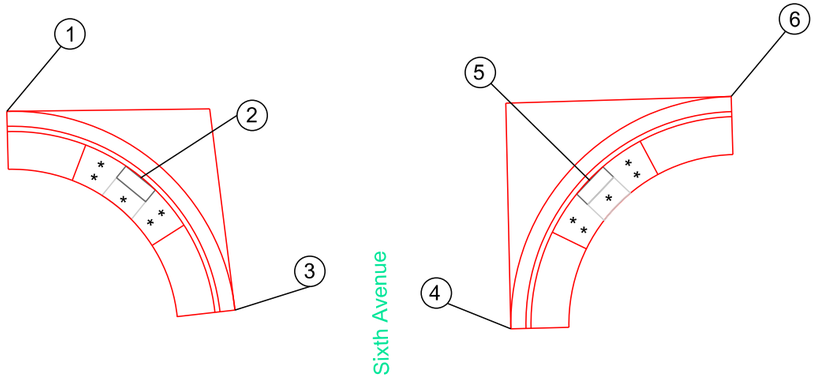
* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B68 except as noted.
All sidewalk is 5' wide except as noted.



7 714+86.19-54.00' L
Begin 30' Rad Fillet
TC Elev 3079.94 (Theor)

8 714+98.29-33.52' L
Center of Detectable Warning
for Mod Type 3 Curb Ramp

9 715+16.20-24.02' L
End 30' Rad Fillet
TC Elev 3080.82± (Match Existing)



1 714+20.97-24.23' R
Begin 30' Rad Fillet
TC Elev 3080.07± (Match Existing)

2 714+38.47-33.38' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

3 714+50.59-51.05' R
End 30' Rad Fillet
TC Elev 3079.91± (Match Existing)

4 714+86.96-54.23' R
Begin 30' Rad Fillet
TC Elev 3079.89± (Match Existing)

5 714+97.76-34.86' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

6 715+16.64-24.13' R
End 30' Rad Fillet
TC Elev 3080.82± (Match Existing)

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B43	B59

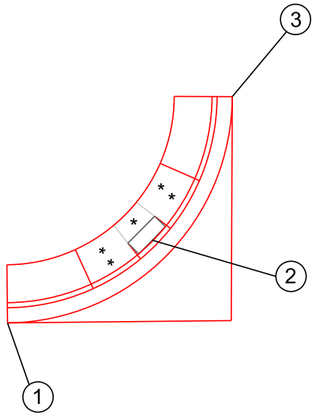
Plotting Date: 12/22/2020

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B68 except as noted.
All sidewalk is 5' wide except as noted.

1 719+89.88-24.01' L
Begin 30' Rad Fillet
TC Elev 3082.74± (Match Existing)

2 720+08.99-34.87' L
Center of Detectable Warning
for Type 3 Curb Ramp

3 720+19.65-53.79' L
End 30' Rad Fillet
TC Elev 3082.54± (Match Existing)



Eighth Avenue

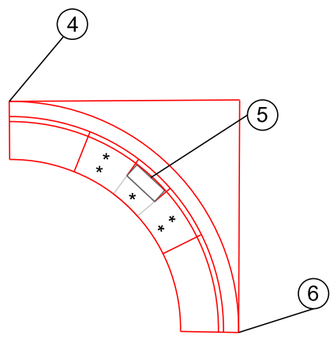
Present US Hwy 212

719+00 720+00 721+00

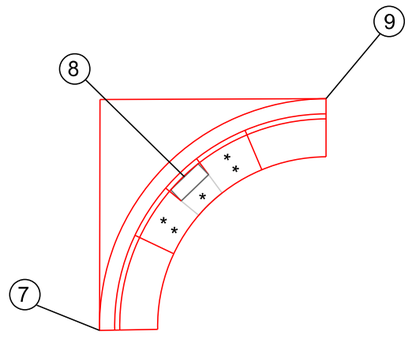
4 719+91.00-23.98' R
Begin 30' Rad Fillet
TC Elev 3082.80± (Match Existing)

5 720+09.68-34.08' R
Center of Detectable Warning
for Type 3 Curb Ramp

6 720+21.19-54.57' R
End 30' Rad Fillet
TC Elev 3080.74± (Match Existing)



Eighth Avenue



7 720+57.22-54.41' R
Begin 30' Rad Fillet
TC Elev 3080.70± (Match Existing)

8 720+68.49-34.17' R
Center of Detectable Warning
for Type 3 Curb Ramp

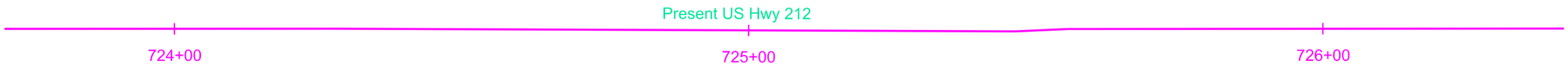
9 720+87.22-23.92' R
End 30' Rad Fillet
TC Elev 3081.69± (Match Existing)

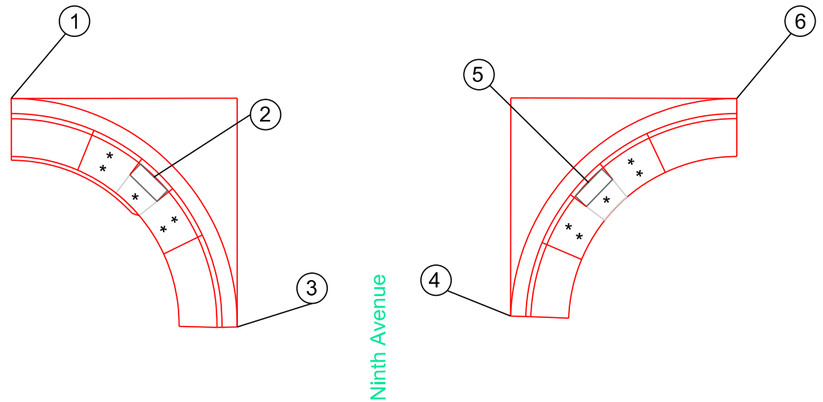
CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B44	B59

Plotting Date: 12/22/2020

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B68 except as noted.
All sidewalk is 5' wide except as noted.





1 724+48.32-23.98' R
Begin 30' Rad Fillet
TC Elev 3070.95± (Match Existing)

2 724+67.20-34.30' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

3 724+78.26-54.04' R
End 30' Rad Fillet
TC Elev 3066.83± (Match Existing)

4 725+14.36-52.44' R
Begin 30' Rad Fillet
TC Elev 3066.96± (Match Existing)

5 725+24.59-34.78' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

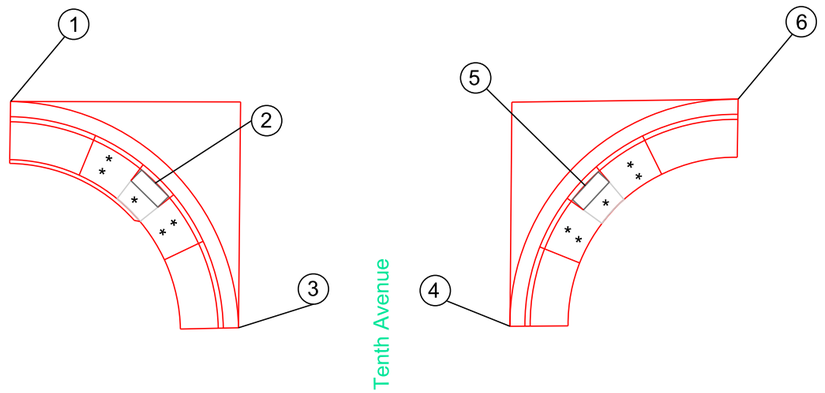
6 725+44.12-23.60' R
End 30' Rad Fillet
TC Elev 3067.12± (Match Existing)

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B45	B59

Plotting Date: 12/22/2020

* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B68 except as noted.
All sidewalk is 5' wide except as noted.



1 728+45.03-22.36' R
Begin 30' Rad Fillet
TC Elev 3055.10± (Match Existing)

2 728+64.16-33.06' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

3 728+75.25-52.10' R
End 30' Rad Fillet
TC Elev 3052.86± (Match Existing)

4 729+11.08-51.77' R
Begin 30' Rad Fillet
TC Elev 3051.89± (Match Existing)

5 729+20.96-33.18' R
Center of Detectable Warning
for Mod Type 3 Curb Ramp

6 729+41.09-21.65' R
End 30' Rad Fillet
TC Elev 3051.11± (Match Existing)

PCC PAVEMENT JOINT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(00)54, NH 0212(00)13 & P 0034(191)9	B46	B59

Plotting Date: 12/22/2020

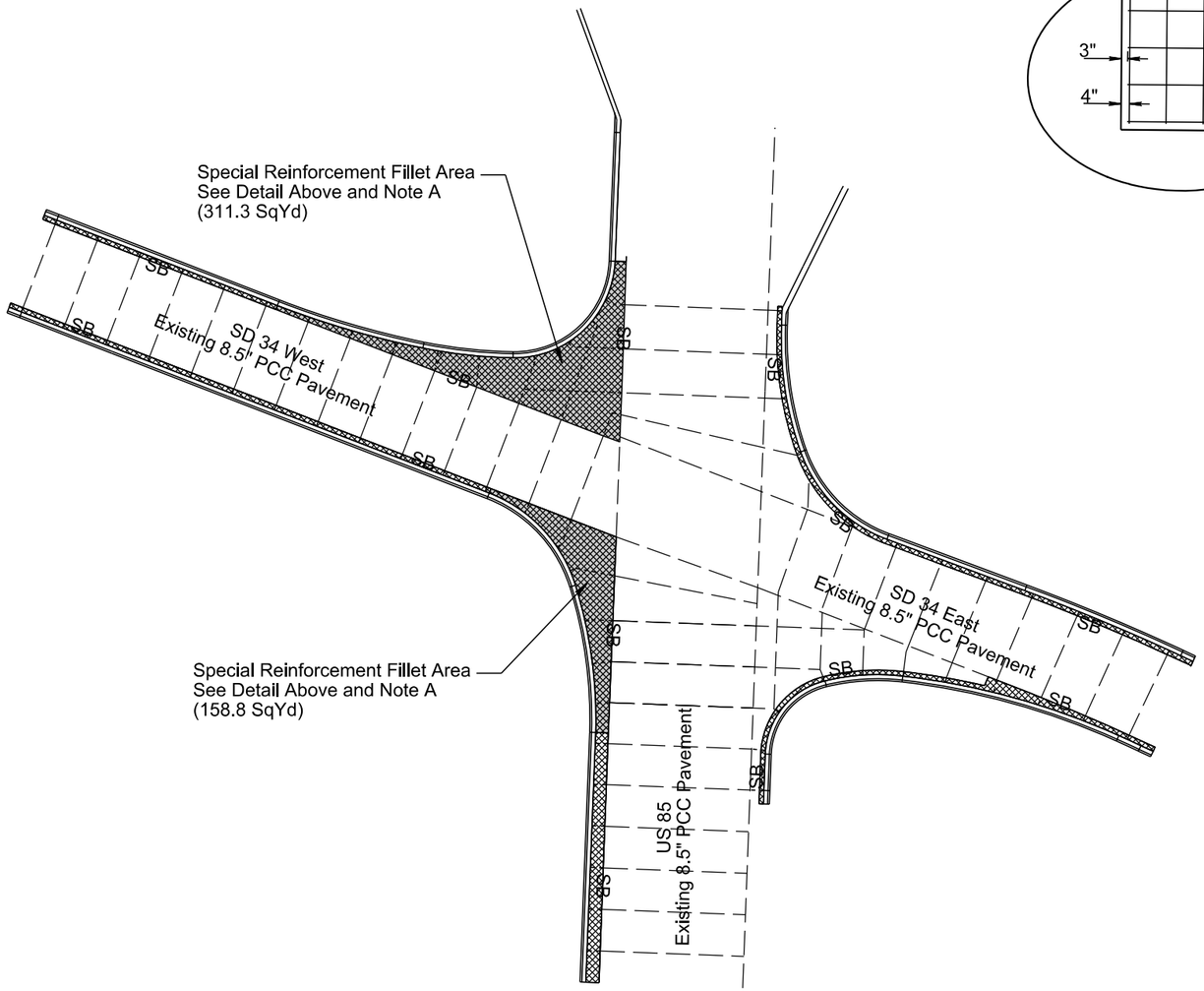
LEGEND:

Insert Steel Bar ——— SB ——— SB ———

Transverse Contraction Joint ----------

Existing Transverse Contraction Joints (Approximate) — — — — — — — —

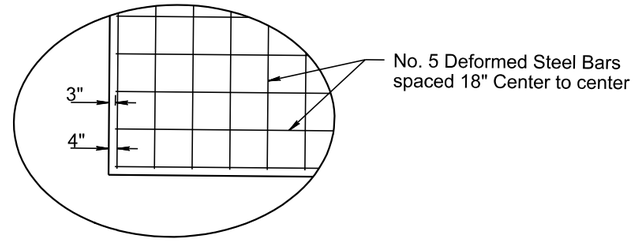
New concrete to be poured monolithically with curb and gutter as per Standard Plate 380.11. Transverse contraction joints within these areas will not have dowel bar assemblies.

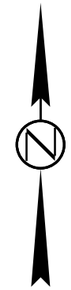


Note A:

Special Reinforcement Fillet Area will be reinforced with #5 rebar 18" on center, both directions. Cost for furnishing and placing the rebar will be incidental to the contract unit price per square yard for "8.5" Miscellaneous PCC Pavement".

Special Reinforcement Fillet Area

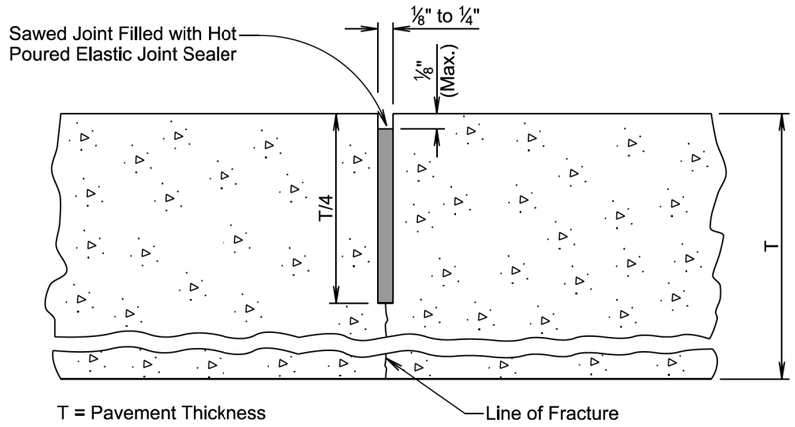




Plot Scale - 1:66.66

Plotted From - trrc11626

File - ...\PCC Pavement Joint Layout.dgn



GENERAL NOTES:

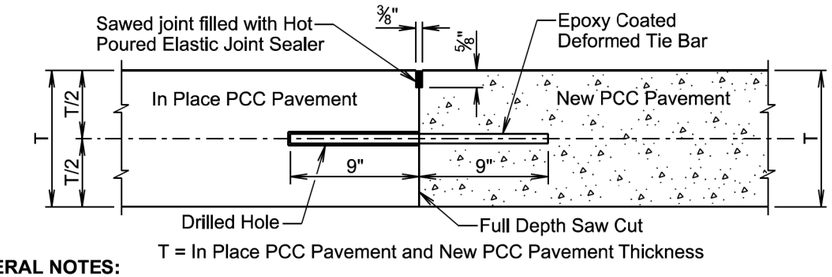
If an early entrance saw cut does not develop the full transverse crack, then the saw cut to control cracking will be a minimum ¼ of the thickness of the pavement.

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.

June 26, 2019

Published Date: 4th Qtr. 2020	SDDOT	PCC PAVEMENT TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY	PLATE NUMBER 380.05
			Sheet 1 of 1

DETAIL A
TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS



T = In Place PCC Pavement and New PCC Pavement Thickness

GENERAL NOTES:

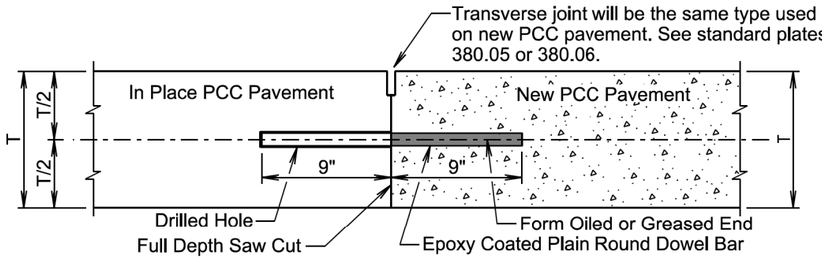
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

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

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

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

DETAIL B
TRANSVERSE CONSTRUCTION JOINT WITH DOWEL BARS



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

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

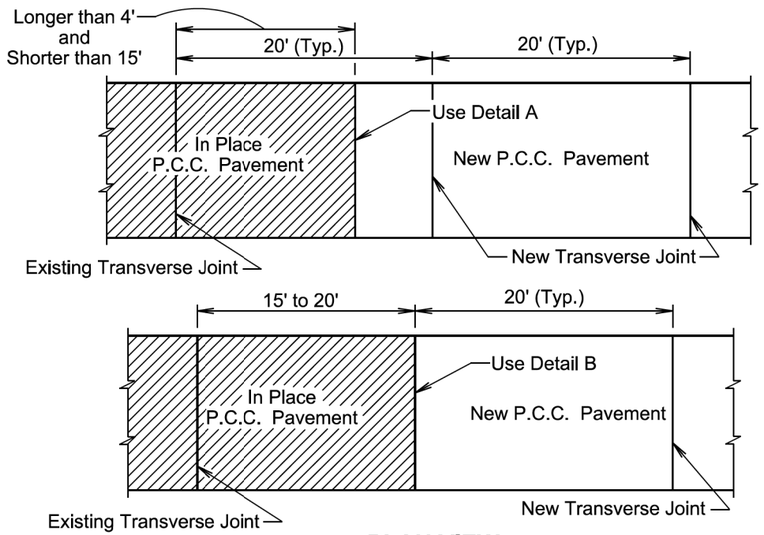
See sheet 2 of 2 of this standard plate to determine if Detail B will be used.

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

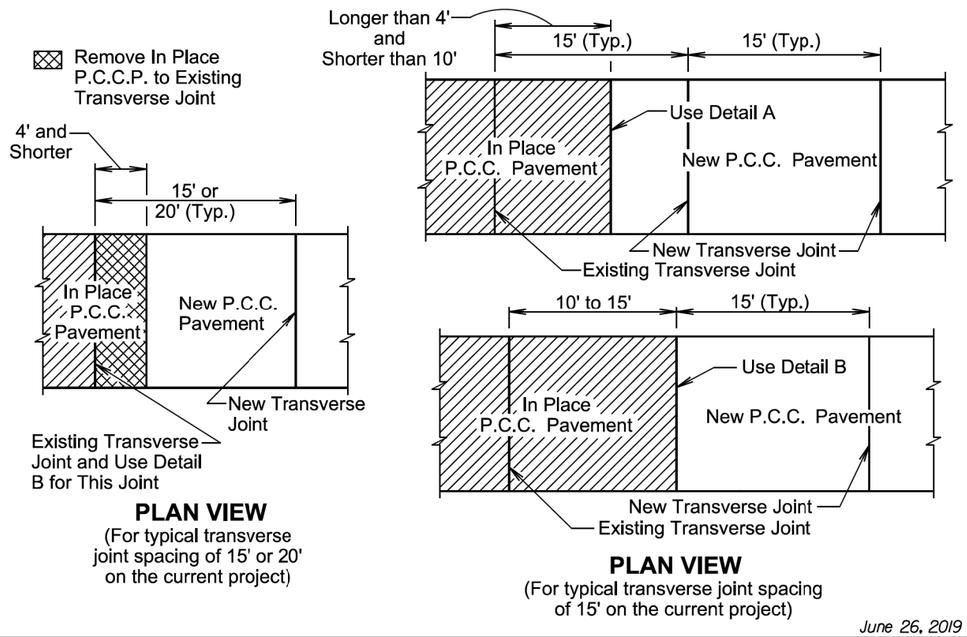
The epoxy coated plain round dowel bar size, number, and spacing will be the same as detailed on the corresponding dowel bar assembly standard plate (380.01, 380.02, 380.03, or 380.04). The epoxy coated plain round dowel bars will be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

June 26, 2019

Published Date: 4th Qtr. 2020	SDDOT	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER 380.08
			Sheet 1 of 2



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



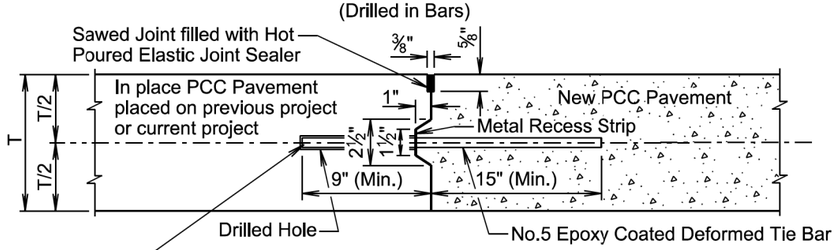
PLAN VIEW
(For typical transverse joint spacing of 15' or 20' on the current project)

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

June 26, 2019

Published Date: 4th Qtr. 2020	SDDOT	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER 380.08
			Sheet 2 of 2

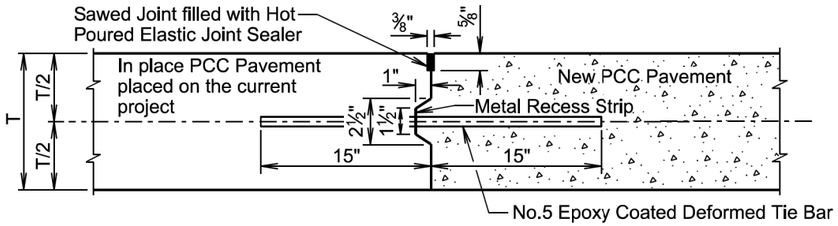
LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(Drilled in Bars)



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

T = Pavement Thickness

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



GENERAL NOTES (For the details above):

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

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

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

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

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

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

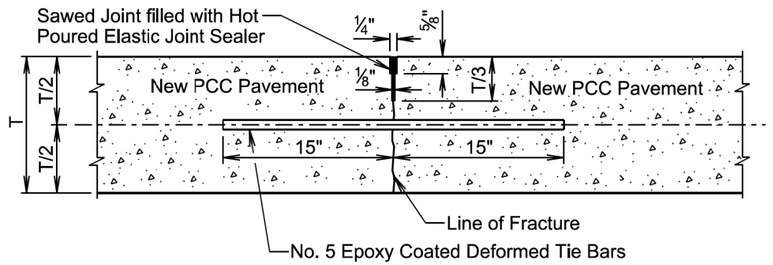
The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip will be used. When concrete pavement is slip formed, a metal recess strip is not required.

June 26, 2019

Published Date: 4th Qtr. 2020	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10
			Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITH TIE BARS

(Poured Monolithically)



T = Pavement Thickness

GENERAL NOTES (For the detail above)**:**

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

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

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

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

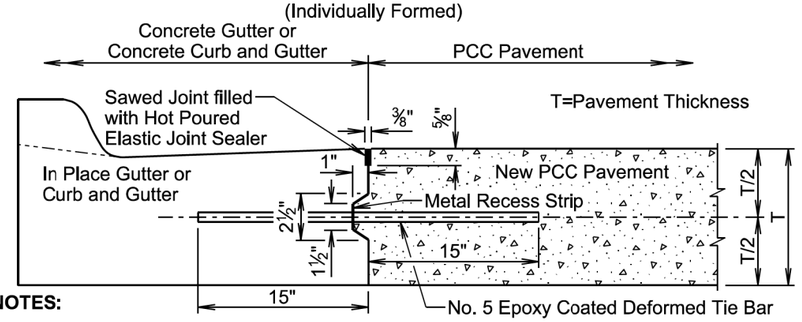
The first saw cut to control cracking will be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer is necessary.

June 26, 2019

Published Date: 4th Qtr. 2020	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10
			Sheet 2 of 2

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS

(Individually Formed)



GENERAL NOTES:

No. 5 epoxy coated deformed tie bars will be spaced 48 inches center to center. The keyway shown above is a female keyway.

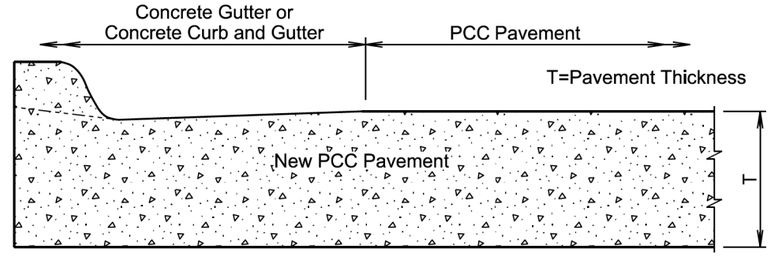
The tie bars will be placed a minimum of 15 inches from existing transverse contraction joints.

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

The transverse contraction joints in the concrete gutter or concrete curb and gutter will be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter will be 1½ inches deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint will be at least ¼ the thickness of the concrete gutter or concrete curb and gutter.

The term "In Place Gutter or Curb and Gutter" in the above drawing indicates that the in place concrete gutter and concrete curb and gutter was placed on the current project.

POURED MONOLITHICALLY



GENERAL NOTES:

The mainline curb and gutter may be placed monolithically with the PCC pavement if the mainline lane width is less than or equal to 12 feet. If this method of construction is used, the tie bars and the sawed joint between the curb and gutter and the PCC pavement will be eliminated.

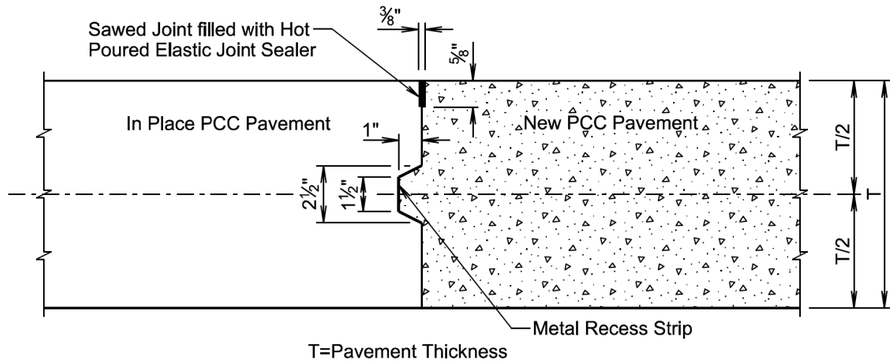
The gutter or curb and gutter will be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter will be sawed and sealed same as the transverse contraction joints in the PCC pavement.

The slope of the gutter will be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter will be constructed at the same slope as the mainline concrete pavement.

June 26, 2019

Published Date: 4th Qtr. 2020	SDDOT	PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER	PLATE NUMBER 380.11
			Sheet 1 of 1

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS



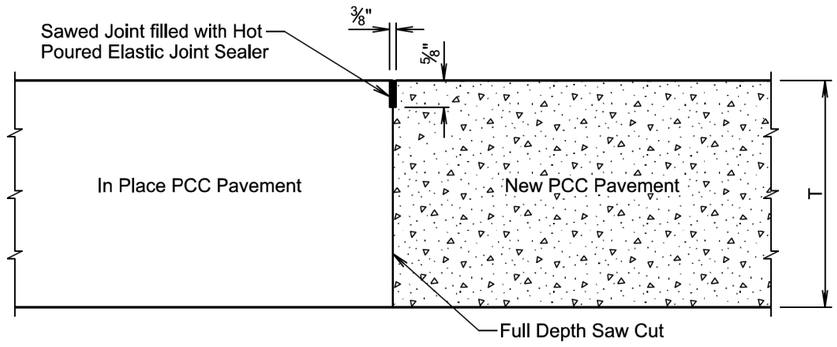
T=Pavement Thickness

GENERAL NOTES:

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

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

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS



T=Pavement Thickness

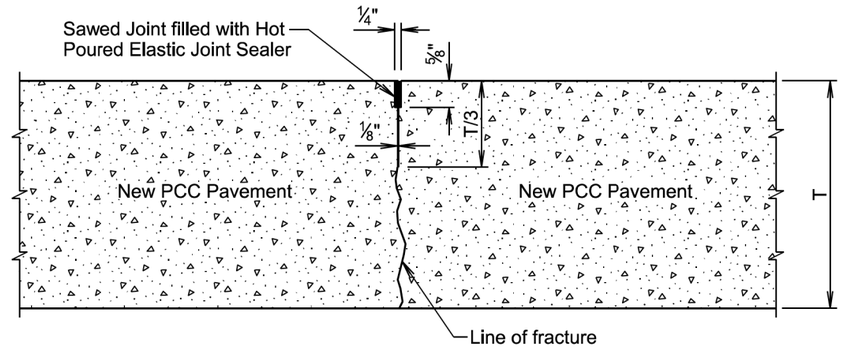
GENERAL NOTE:

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

June 26, 2019

Published Date: 4th Qtr. 2020	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS	PLATE NUMBER 380.12 Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITHOUT TIE BARS



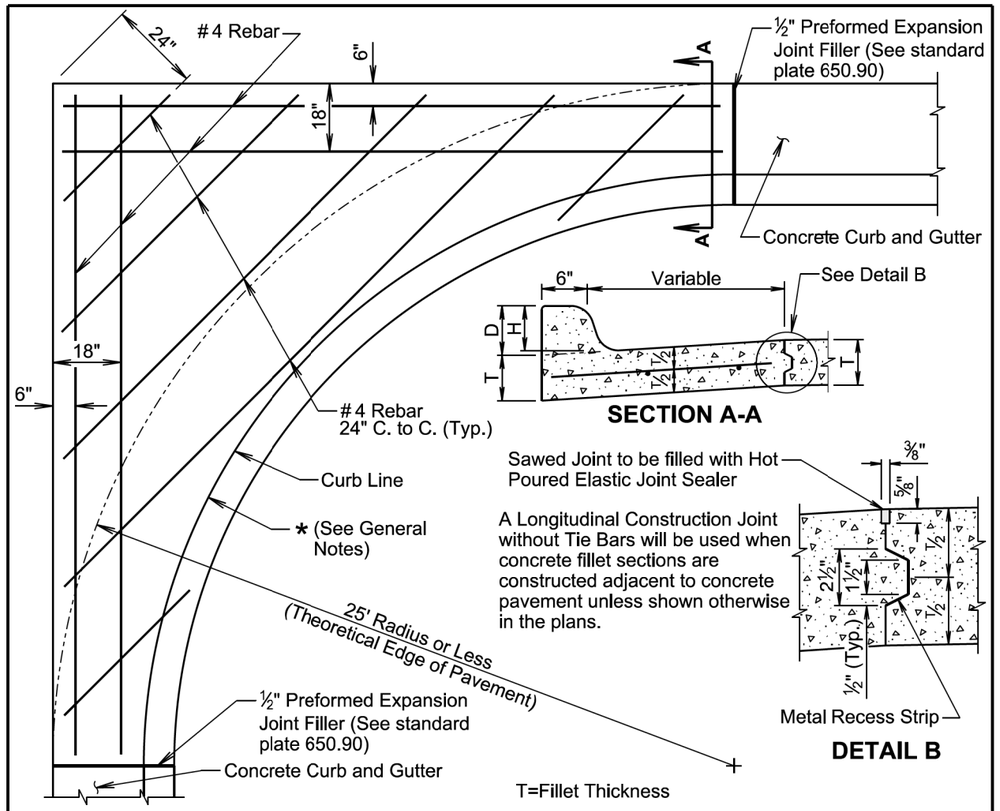
T=Pavement Thickness

GENERAL NOTE:

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

June 26, 2019

Published Date: 4th Qtr. 2020	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS	PLATE NUMBER 380.12 Sheet 2 of 2



GENERAL NOTES:

* 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.

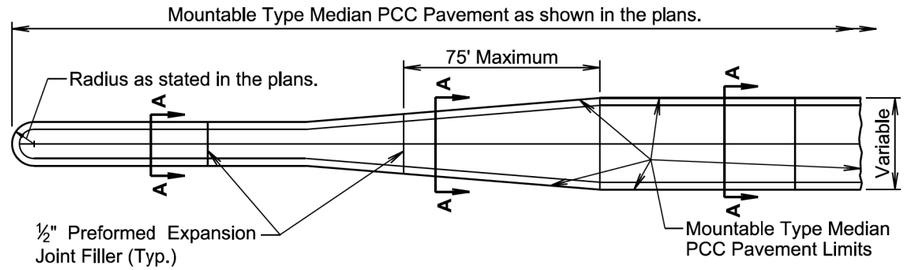
The concrete curb will be monolithic with the concrete fillet. No separate payment for this curb will be made as the curb is considered a part of the fillet.

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.

June 26, 2019

Published Date: 4th Qtr. 2020	SDDOT	PCC FILLET SECTION WITH TYPE B CURB AND GUTTER	PLATE NUMBER 380.16
			Sheet 1 of 1



PLAN VIEW

GENERAL NOTES:

This standard plate may also be used for mountable concrete island construction.

* T will be 8 inches when mountable type median PCC pavement is placed adjacent to asphalt concrete pavement.

Excavation necessary for construction of the mountable type median PCC pavement and excavation for granular material will be measured and paid for as "Unclassified Excavation".

If PCC pavement is placed adjacent to mountable type PCC pavement, the keyway is optional and is not required. When adjacent PCC pavement is formed and a keyway is provided, a metal recess strip will be used (See Detail B). When adjacent PCC pavement is slip formed, a metal recess strip is not required.

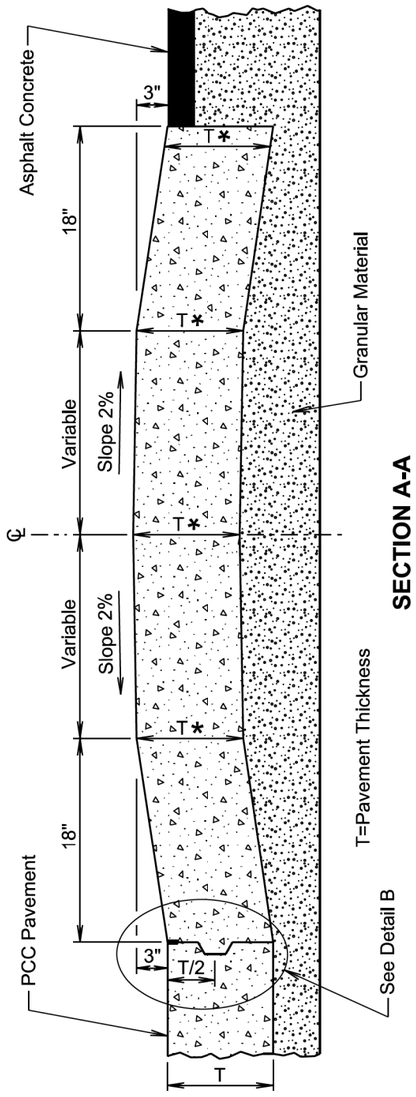
Concrete for mountable type median PCC pavement will comply with the requirements of the Specifications for Class M6 Concrete. ½ inch expansion joint filler will be placed transversely in the median PCC pavement at a maximum spacing of 75 feet. A minimum of one expansion joint will be placed in areas less than 75 feet long. Transverse joints will be sawed to coincide with or at the same spacing of adjacent mainline PCC pavement. Where median PCC pavement is 15 feet and wider, a longitudinal joint will be sawed along the centerline of the median PCC pavement. Where median pavement is adjacent to mainline asphalt concrete pavement, transverse joints will be sawn to create square sections not exceeding 15 feet or as approved by the Engineer. All joints will be sawed to a depth of ⅓ the thickness of the median PCC pavement.

All costs for labor, materials, and incidentals necessary for construction of the mountable type median PCC pavement will be incidental to the contract unit price per square yard for "Mountable Type Median PCC Pavement".

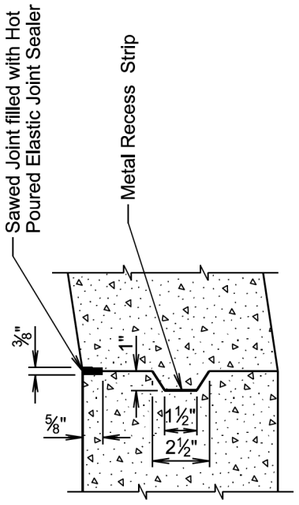
Granular material will be paid for at the contract unit price for the respective granular material contract item.

June 26, 2019

Published Date: 4th Qtr. 2020	SDDOT	MOUNTABLE TYPE MEDIAN PCC PAVEMENT	PLATE NUMBER 380.21
			Sheet 1 of 2



SECTION A-A



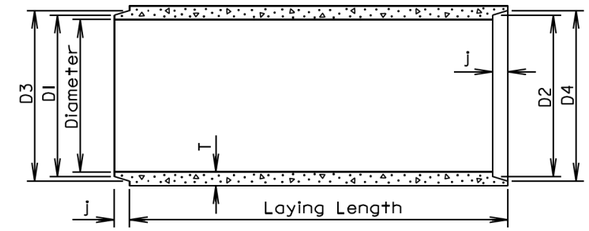
DETAIL B

June 26, 2019

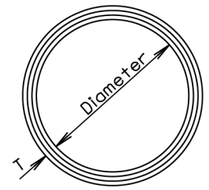
Published Date: 4th Qtr. 2020	SDDOT	MOUNTABLE TYPE MEDIAN PCC PAVEMENT	PLATE NUMBER 380.21
			Sheet 2 of 2

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:

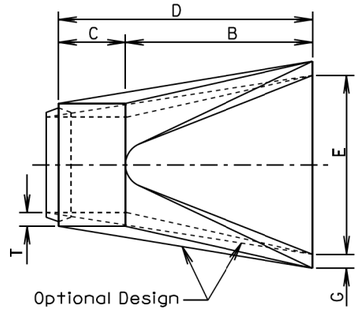
Construction of R. C. P. shall conform to the requirements of Section 990 of the Specifications.

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.

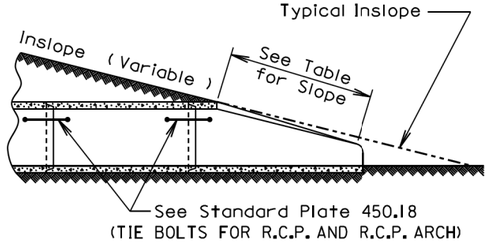
Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	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

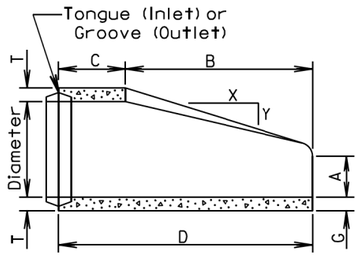
Published Date: 4th Qtr. 2020	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1



TOP VIEW



SLOPE DETAIL

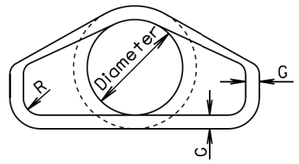


LONGITUDINAL SECTION

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.

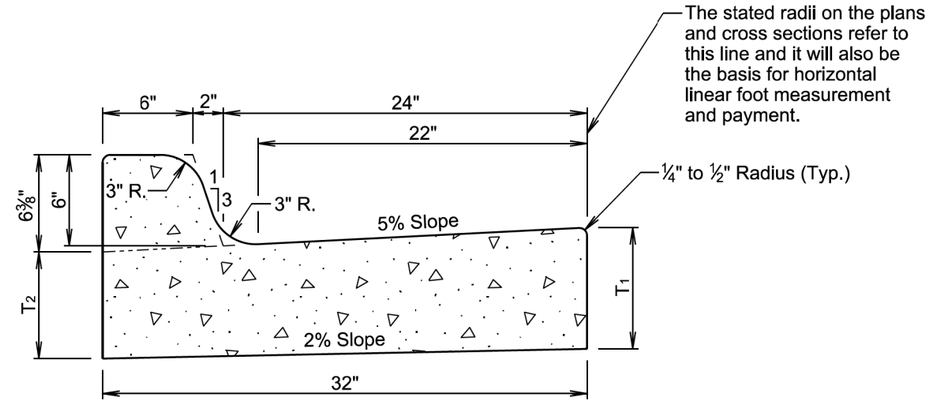


END VIEW

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: 4th Qtr. 2020	SDDOT	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
			Sheet 1 of 1



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

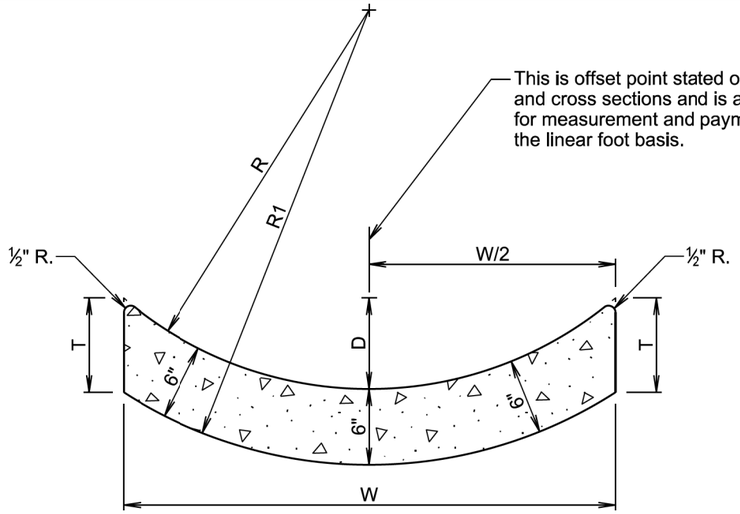
GENERAL NOTES:

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 380.11.

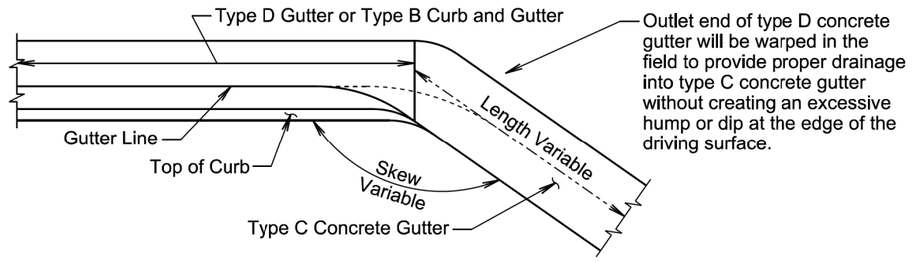
See standard plate 650.90 for expansion and contraction joints in the curb and gutter.

December 23, 2019

Published Date: 4th Qtr. 2020	SDDOT	TYPE B CONCRETE CURB AND GUTTER	PLATE NUMBER 650.01
			Sheet 1 of 1



TYPE C CONCRETE GUTTER							
Type	Gutter Depth D	Gutter Width W	Radius of Top of Gutter R	Radius of Bottom of Gutter R1	Vertical Depth of Concrete at Edges T	Cu. Yd. Per Lin. Foot	Lin. Ft. Per Cu. Yd.
C6	6"	30"	21¾"	27¾"	7⅝"	0.04982	20.1
C9	9"	48"	36½"	42½"	7⅝"	0.07966	12.6
C12	12"	72"	60"	66"	7⅝"	0.11828	8.5



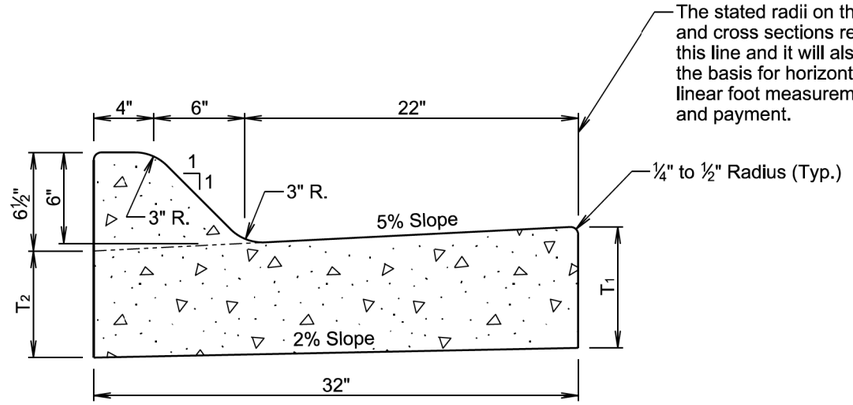
GENERAL NOTE:

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

One-half inch preformed expansion joint filler will be placed transversely in the concrete gutter at intervals of approximately 30 feet.

December 23, 2019

Published Date: 4th Qtr. 2020	SDDOT	TYPE C CONCRETE GUTTER	PLATE NUMBER 650.10 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

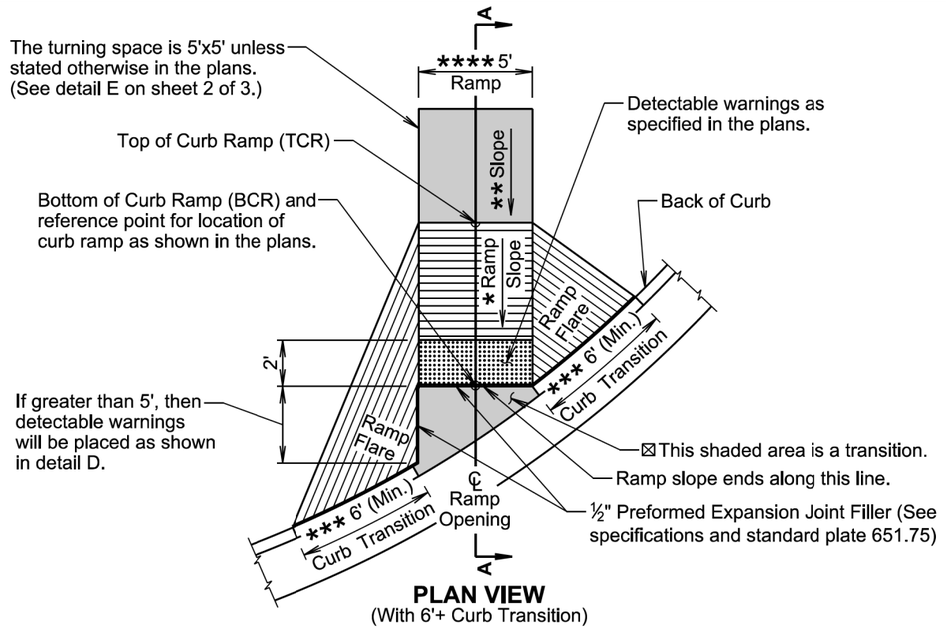
GENERAL NOTES:

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 380.11.

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

December 23, 2019

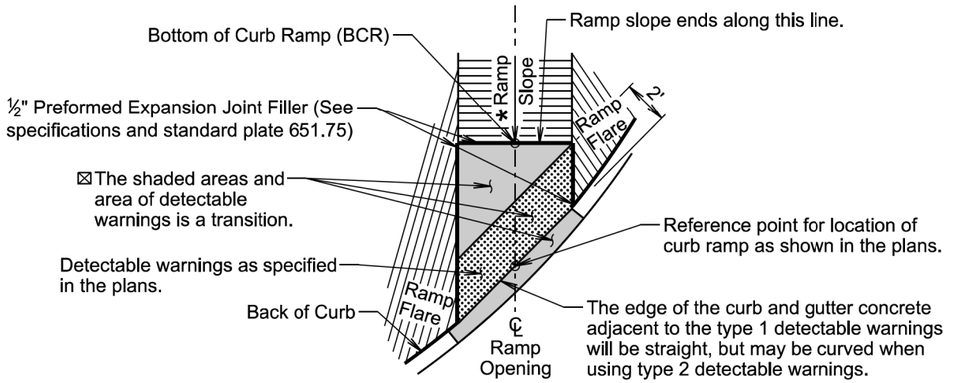
Published Date: 4th Qtr. 2020	SDDOT	TYPE F CONCRETE CURB AND GUTTER	PLATE NUMBER 650.20 Sheet 1 of 1



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.

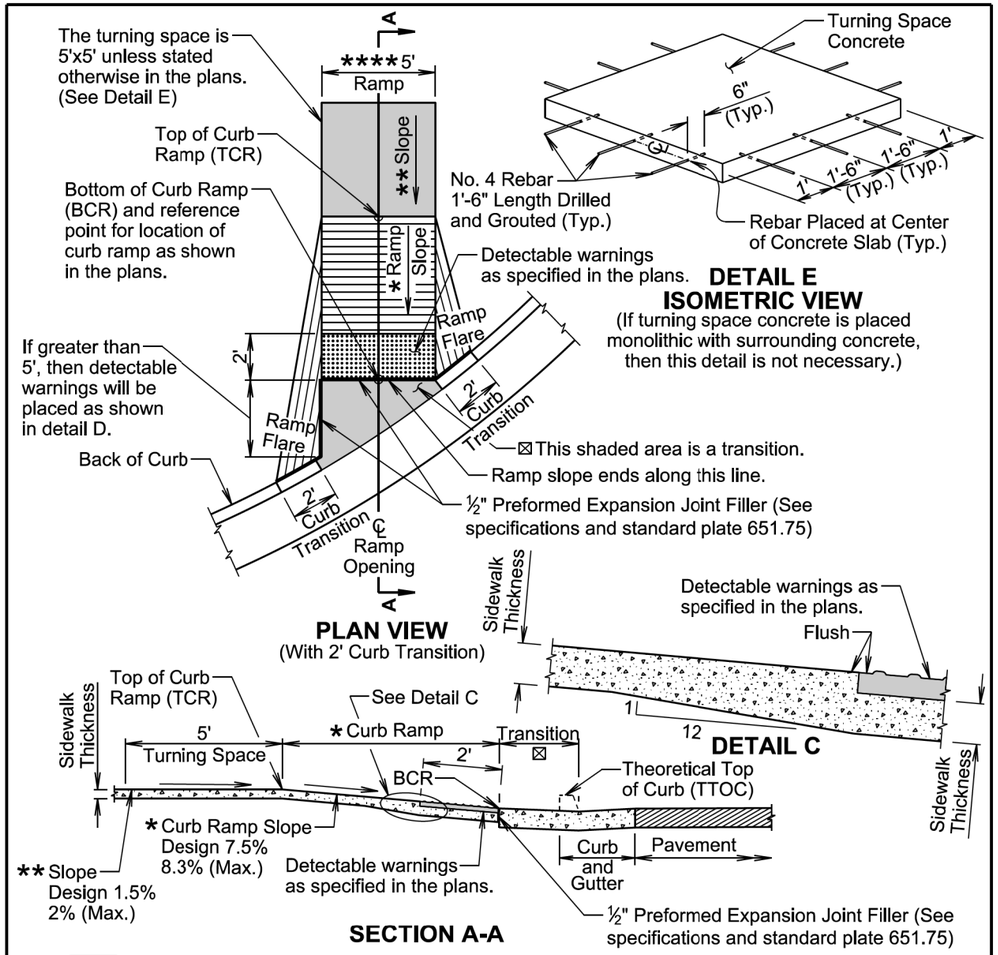
*** The curb transition will be a minimum of 6' long, a maximum of 10' long, and the curb transition slope will not be steeper than 10% unless stated otherwise in the plans. The curb transition length will be adjusted as necessary to meet slope and length requirements based on field geometrics.



DETAIL D

February 14, 2020

Published Date: 4th Qtr. 2020	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02 Sheet 1 of 3



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

PLAN VIEW
(With 2' Curb Transition)

DETAIL C

SECTION A-A

* 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%. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

** The slope in the turning space will not be steeper than 2% 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.

February 14, 2020

Published Date: 4th Qtr. 2020	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 Turning Space 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.

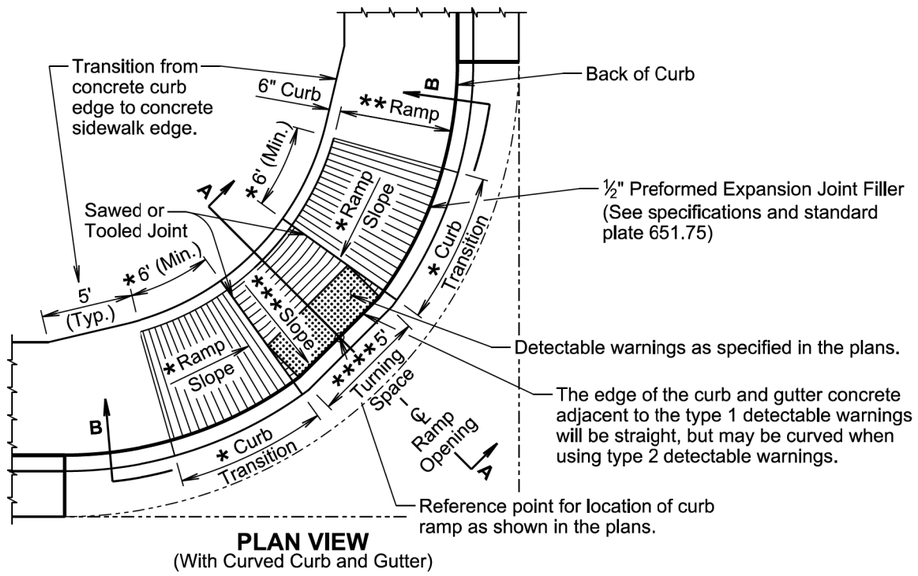
All costs for furnishing and installing the transition area at the base of the curb ramp will be incidental to the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used and will be incidental to the contract unit price per square yard for the corresponding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

The type 1 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the 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".

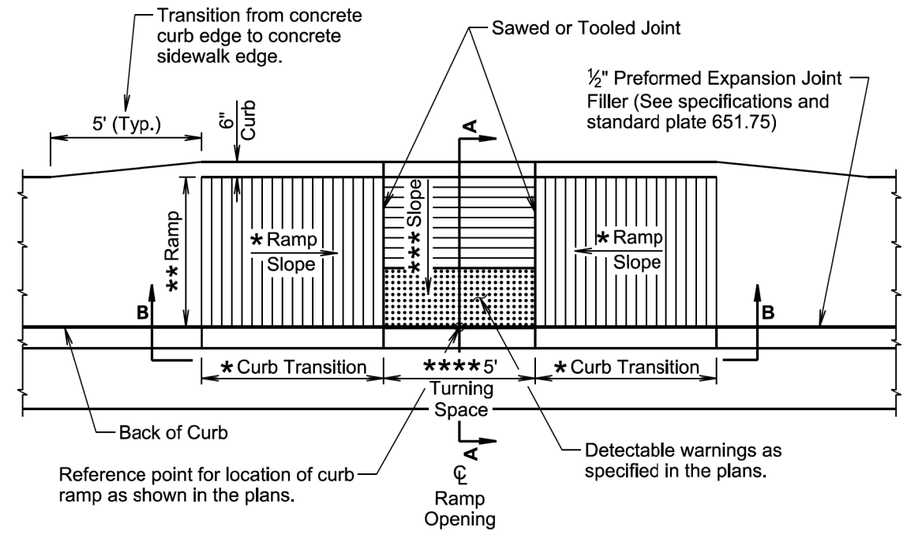
The type 2 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding will be paid for at the contract unit price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

February 14, 2020

Published Date: 4th Qtr. 2020	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02
			Sheet 3 of 3



PLAN VIEW
(With Curved Curb and Gutter)



PLAN VIEW
(With Straight Curb and Gutter)

February 14, 2020

Published Date: 4th Qtr. 2020	SDDOT	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 1 of 3

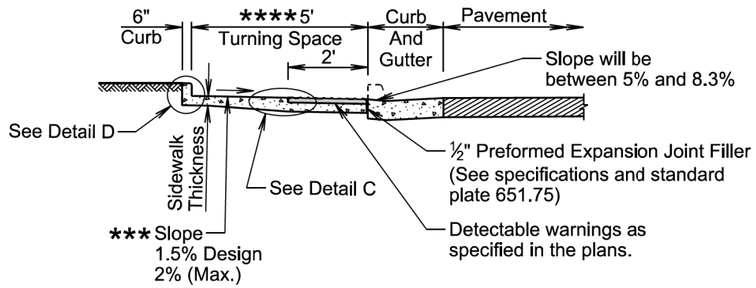
* The curb transition slope will match the curb ramp slope. Curb ramp slopes are designed at 7.5% unless stated otherwise in the plans. The curb ramp may have a maximum slope of 8.3% at any location of the curb ramp and will not exceed 15' in length unless stated otherwise in the plans. The curb transitions and curb ramp lengths 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% and the ramp width is 5' unless stated otherwise in the plans. Plans are designed using a 1.5% cross slope for the ramp unless stated otherwise in the plans.

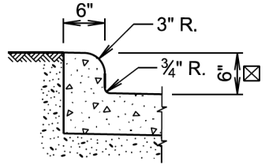
*** The slope in the turning space will not be steeper than 2% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

**** The turning space is 5'x5' unless stated otherwise in the plans.

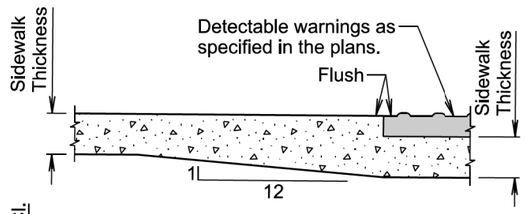
☒ The curb height will be 6" unless stated otherwise in the plans.



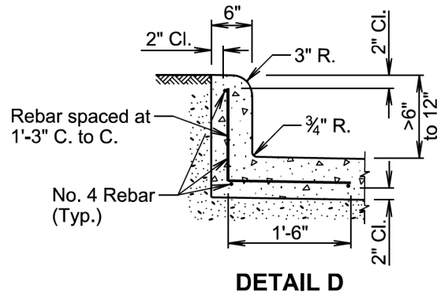
SECTION A-A



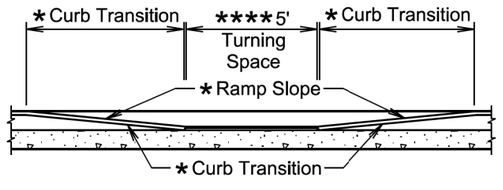
DETAIL D



DETAIL C



DETAIL D
(Use this detail when the curb height is greater than 6" and less than 12")



SECTIONAL VIEW B-B

February 14, 2020

Published Date: 4th Qtr. 2020	SDDOT	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03 Sheet 2 of 3

GENERAL NOTES:

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

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

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

Sidewalk adjacent to the curb ramp will be as shown 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 (see plan view for joint location).

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.

When curb height is greater than 6" and less than 12", reinforcing steel is required in accordance with the detail on sheet 2 of 3. The reinforcing steel will conform to ASTM A615, Grade 60. Cost for furnishing and installing the reinforcing steel will be incidental to the contract unit price per square foot for the corresponding concrete sidewalk 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 and the curb along the short radius will be included in the measured and paid for quantity of sidewalk.

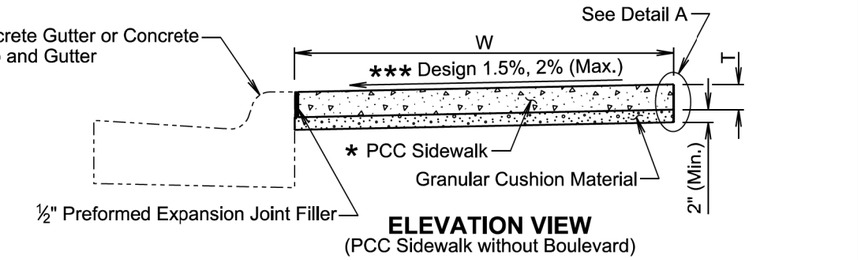
The curb transitions and ramp opening will be measured and paid for at the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used. The curb transitions and ramp opening will be measured and paid for at the contract unit price per square yard for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

The type 1 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the 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".

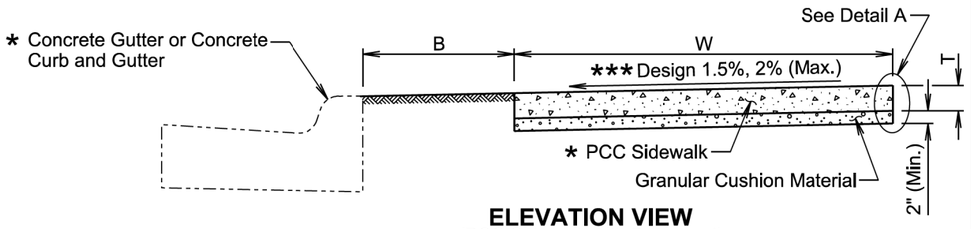
The type 2 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding will be paid for at the contract unit price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

February 14, 2020

Published Date: 4th Qtr. 2020	SDDOT	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03 Sheet 3 of 3



ELEVATION VIEW
(PCC Sidewalk without Boulevard)



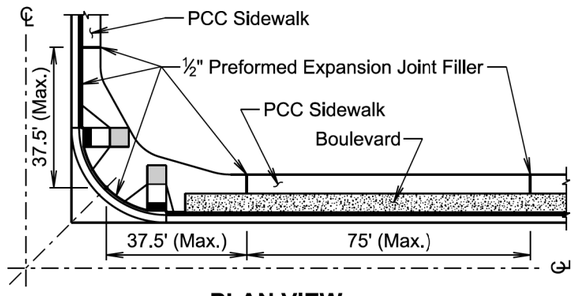
ELEVATION VIEW
(PCC Sidewalk with Boulevard)

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% unless specified otherwise in the plans.

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

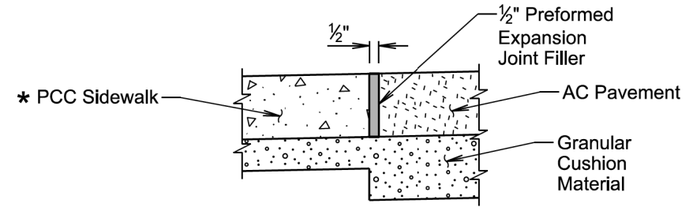
PCC sidewalk placed adjacent to intersection of roadways will have an expansion joint placed transversely a maximum of 37.5 feet from the intersection. See Plan View.

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.

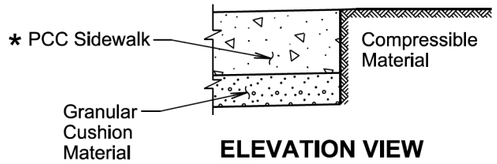
** Large areas of PCC pavement adjacent to the PCC sidewalk may require a different joint treatment than shown in the detail. If a different joint detail is necessary, plans will contain the joint detail and the Contractor will construct the joint treatment in accordance with the plans.

February 14, 2020

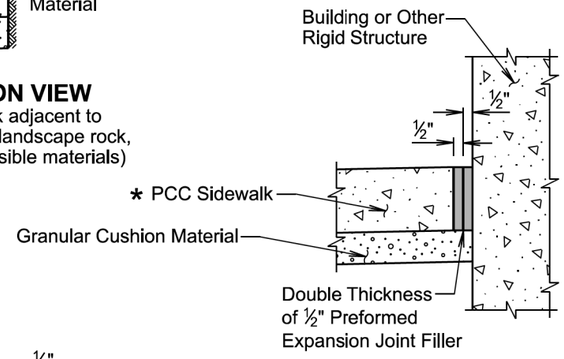
Published Date: 4th Qtr. 2020	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 1 of 2



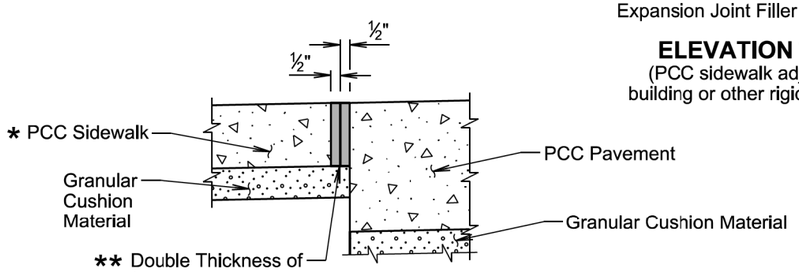
ELEVATION VIEW
(PCC sidewalk adjacent to asphalt concrete pavement)



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)

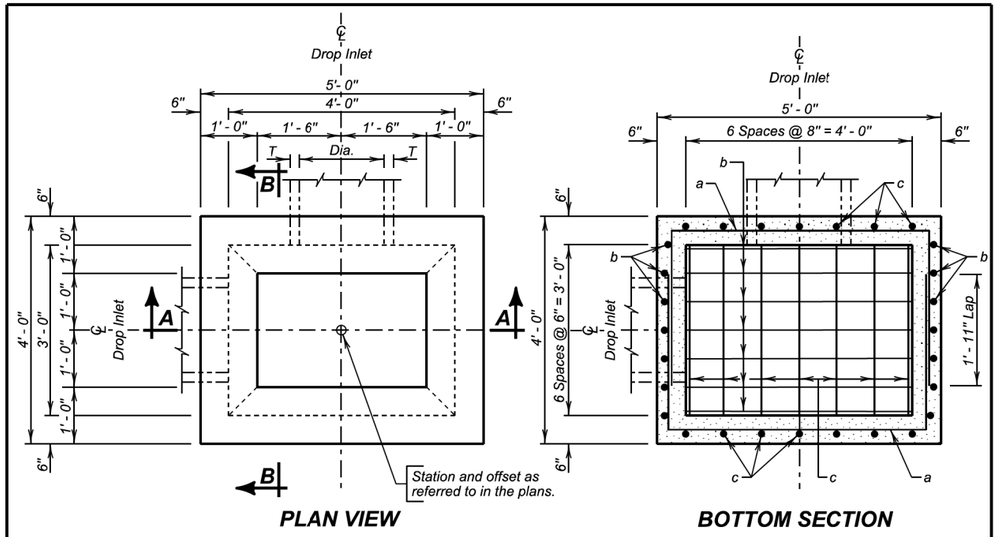


ELEVATION VIEW
(PCC sidewalk adjacent to PCC pavement)

DETAIL A
(Use Appropriate Detail(s))

February 14, 2020

Published Date: 4th Qtr. 2020	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 2 of 2



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.

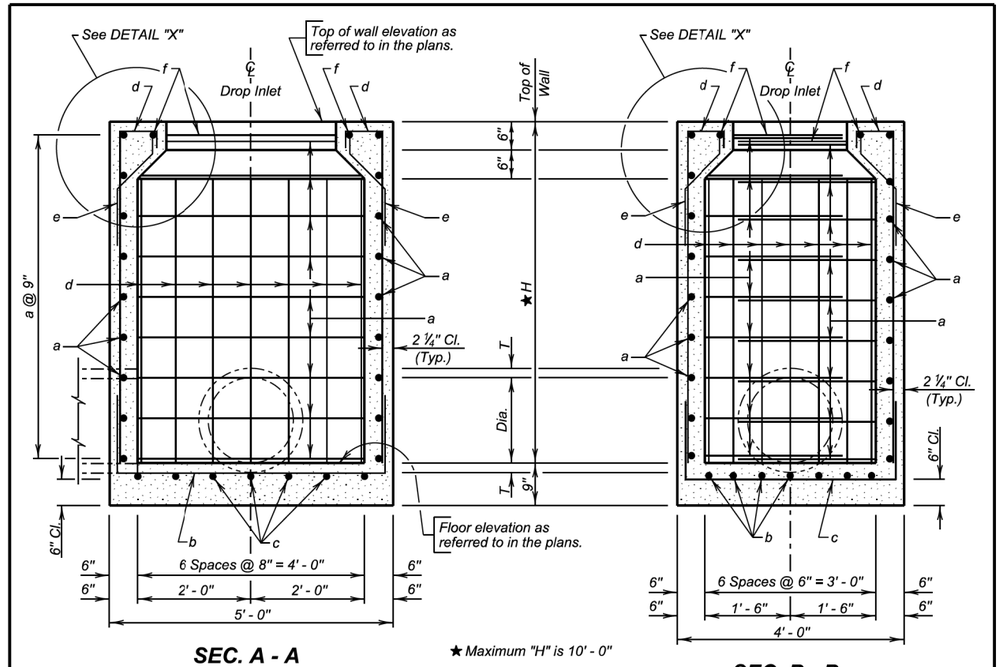
The dimension of H is in feet. Maximum H is 10 feet.

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: 4th Qtr. 2020	SDDOT	3' X 4' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.02
			Sheet 1 of 2

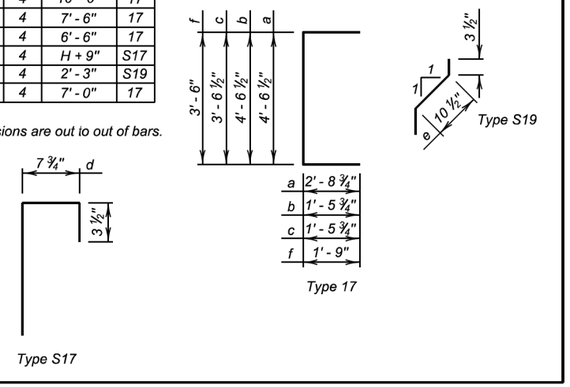


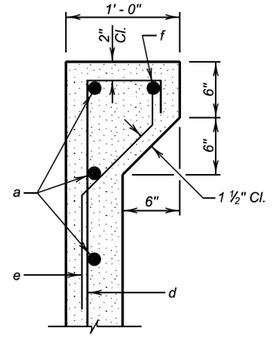
SEC. A - A ★Maximum "H" is 10' - 0" **SEC. B - B**

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.





DETAIL "X"

December 16, 2015

Published Date: 4th Qtr. 2020	SDDOT	3' X 4' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.02
			Sheet 2 of 2