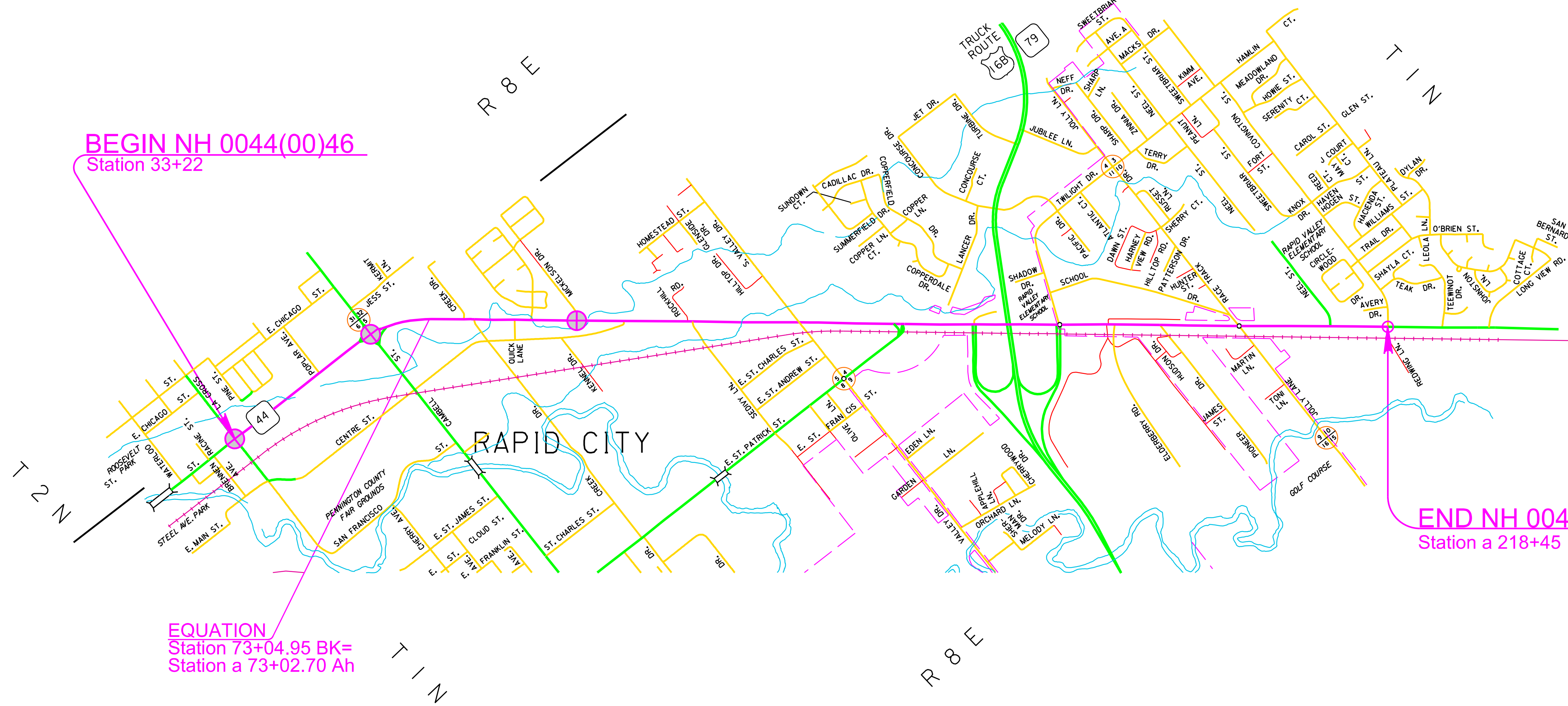
SECTION B: GRADING PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B1	B123

Plotting Date: 10/20/2021

INDEX OF SECTIONS



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B2	B123

Plotting Date: 12/21/2021 Rev 12/21/21 RG

SECTION B ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3200	Construction Staking	Lump Sum	LS
009E3220	Reestablish Right-of-Way and Property Corner	72	Each
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
009E4220	Project Management, Category II	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E0300	Remove Concrete Curb and/or Gutter	1,516	Ft
110E0400	Remove Drop Inlet	12	Each
110E0420	Remove Drop Inlet Frame and Grate Assembly	3	Each
110E0730	Remove Beam Guardrail	62.5	Ft
110E1010	Remove Asphalt Concrete Pavement	6,979.1	SqYd
110E1100	Remove Concrete Pavement	7,686.4	SqYd
110E1130	Remove Concrete Driveway Pavement	482.1	SqYd
110E1140	Remove Concrete Sidewalk	630.0	SqYd
110E7500	Remove Pipe for Reset	20	Ft
110E7510	Remove Pipe End Section for Reset	6	Each
110E7700	Remove Drop Inlet Frame and Grate Assembly for Reset	1	Each
120E0010	Unclassified Excavation	6,574	CuYd
120E0600	Contractor Furnished Borrow Excavation	2,595	CuYd
120E0900	Contaminated Material Excavation	100	CuYd
120E2000	Undercutting	2,217	CuYd
250E0020	Incidental Work, Grading	Lump Sum	LS
260E6010	Granular Material	40.0	Ton
270E0110	Salvage and Stockpile Granular Material	1,374.0	Ton
380E3540	8" PCC Approach Pavement	1,321.6	SqYd
380E4050	8" PCC Fillet Section	20.9	SqYd
380E4090	10" PCC Fillet Section	688.6	SqYd
421E0100	Pipe Culvert Undercut	21	CuYd
450E0122	18" RCP Class 2, Furnish	300	Ft
450E0130	18" RCP, Install	300	Ft
450E0142	24" RCP Class 2, Furnish	72	Ft
450E0150	24" RCP, Install	72	Ft
450E0162	30" RCP Class 2, Furnish	36	Ft
450E0170	30" RCP, Install	36	Ft
450E0182	36" RCP Class 2, Furnish	118	Ft
450E0190	36" RCP, Install	118	Ft
450E0202	48" RCP Class 2, Furnish	32	Ft
450E0210	48" RCP, Install	32	Ft
450E0408	18" RCP Bend, Furnish	2	Each
450E0409	18" RCP Bend, Install	2	Each
450E0416	24" RCP Bend, Furnish	2	Each
450E0417	24" RCP Bend, Install	2	Each

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
450E0424	30" RCP Bend, Furnish	1	Each
450E0425	30" RCP Bend, Install	1	Each
450E0428	36" RCP Bend, Furnish	1	Each
450E0429	36" RCP Bend, Install	1	Each
450E0700	RCP Tee, Furnish	2	Each
450E0701	RCP Tee, Install	2	Each
450E2036	48" RCP Flared End, Furnish	2	Each
450E2037	48" RCP Flared End, Install	2	Each
450E2304	18" RCP Safety End, Furnish	3	Each
450E2307	18" RCP Safety End, Install	3	Each
450E2400	RCP Arch to Round Transition Furnish	1	Each
450E2401	RCP Arch to Round Transition Install	1	Each
450E2402	RCP Round to Arch Transition Furnish	1	Each
450E2403	RCP Round to Arch Transition Install	1	Each
450E3002	18" RCP Arch Class 2, Furnish	76	Ft
450E3010	18" RCP Arch, Install	76	Ft
450E3012	24" RCP Arch Class 2, Furnish	12	Ft
450E3020	24" RCP Arch, Install	12	Ft
450E3032	36" RCP Arch Class 2, Furnish	8	Ft
450E3040	36" RCP Arch, Install	8	Ft
450E3042	42" RCP Arch Class 2, Furnish	6	Ft
450E3050	42" RCP Arch, Install	6	Ft
450E3052	48" RCP Arch Class 2, Furnish	10	Ft
450E3060	48" RCP Arch, Install	10	Ft
450E4769	24" CMP 16 Gauge, Furnish	4	Ft
450E4770	24" CMP, Install	4	Ft
* 450E8900	Cleanout Pipe Culvert	27	Each
450E9000	Reset Pipe	20	Ft
450E9001	Reset Pipe End Section	6	Each
462E0100	Class M6 Concrete	54.0	CuYd
464E0100	Controlled Density Fill	0.1	CuYd
480E0100	Reinforcing Steel	10,969	Lb
600E0200	Type II Field Laboratory	1	Each
650E0060	Type B66 Concrete Curb and Gutter	112	Ft
650E0100	Type B610 Concrete Curb and Gutter	2,886	Ft
650E1080	Type F68 Concrete Curb and Gutter	54	Ft
650E1100	Type F610 Concrete Curb and Gutter	1,069	Ft
650E3060	Type B6 Concrete Curb	9	Ft
650E4700	Type P10 Concrete Gutter	156	Ft
650E6060	6" Concrete Valley Gutter	31	Ft
650E6100	10" Concrete Valley Gutter	80	Ft
651E0040	4" Concrete Sidewalk	90,930	SqFt
651E0060	6" Concrete Sidewalk	3,032	SqFt

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
651E0140	4" Reinforced Concrete Sidewalk	262	SqFt
651E0540	4" Colored Concrete Sidewalk	9,922	SqFt
651E0560	6" Colored Concrete Sidewalk	111	SqFt
651E5000	Sidewalk Drain	28.8	Ft
651E7000	Type 1 Detectable Warnings	650	SqFt
670E1200	Type B Frame and Grate Assembly	13	Each
670E2200	Type C Frame and Grate	3	Each
670E5200	Special Frame and Grate Assembly	3	Each
670E5205	Special Grate	1	Each
670E5340	4' x 11' Precast Concrete Type S Drop Inlet Lid	3	Each
670E5400	Precast Drop Inlet Collar	13	Each
670E6000	Adjust Drop Inlet	4	Each
670E7000	Reset Drop Inlet Frame and Grate Assembly	1	Each
671E4548	48" Manhole Cone Section	6.0	Ft
671E5502	2" Adjusting Ring for Manhole	3	Each
671E5506	6" Adjusting Ring for Manhole	2	Each
671E6010	Type A10 Manhole Frame and Lid	2	Each
671E6030	Type S Manhole Frame and Lid	2	Each
671E6035	Special Manhole Frame and Lid	2	Each
700E0210	Class B Riprap	473.2	Ton
831E0110	Type B Drainage Fabric	406	SqYd

*** - Denotes Non-Participating**

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 15 gallons of water per cubic yard of Embankment minus Waste. The estimated quantity of Water for Embankment is 99.7 MGal. No separate payment will be made for the Water for Embankment and all costs associated will be incidental to the contract unit price per cubic yard of “Unclassified Excavation”.

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

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

Generally, all shallow inlet and outlet ditches as noted on the plan sheets will be cut with a 10-foot wide bottom with 5:1 backslopes. However, the Engineer may direct the Contractor to adjust the ditch width for proper alignment with the drainage structure.

Temporary fence and/or permanent fence will be placed ahead of the grading operation unless otherwise directed by the Engineer.

TYPE II FIELD LABORATORY

The lab will be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection will be provided with a multi-port wireless router. The internet connection will be a minimum speed of 5 Mbps unless limited by job location and approved by the DOT. Prior to installing the wireless router, the Contractor will submit the wireless router’s technical data to the Area Office to check for compatibility with the state’s computer equipment. The internet connection is intended for state personnel usage only. The Contractor’s personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer. These items will be incidental to the contract unit price per each for “Type II Field Laboratory”.

UTILITIES

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

See the City of Rapid City’s utility upgrades project PCN X05G for utilities that are known to be moved and/or replaced with this project.

CONDUIT INSTALLATION

Each end of each conduit will be marked with a ½-inch dia. x 12-inch long reinforcing bar driven flush with the finished grade, except when the conduit end terminates inside a junction box. The ends of each conduit run will be capped to prevent water and soil from entering. This work will be done by the Lighting Contractor and will not be disturbed by the Grading Contractor.

SHRINKAGE FACTOR: Embankment +20%

TABLE OF EXCAVATION QUANTITIES BY BALANCES

Station to Station	Excavation (CuYd)	* Undercut (CuYd)	* Contractor Furnished Borrow Exc. (CuYd)	Total Excavation (CuYd)	** Waste (CuYd)
Lacrosse Intersection Sidewalk	181	990	100	1271	0
35+30 56+70 L	200	0	0	200	176
42+64 51+06 R	35	0	96	131	0
56+71.51 59+60.23 L	74	36	121	231	
Cambell Intersection					
59+62.79 62+04.01 L	21	91	513	625	
54+44.30 62+57.64 R	270	461	48	779	
61+05.22 62+00.43 L	21	95	144	260	
62+00.43 64+17.08 R	87	139	267	493	
Sidewalk					
62+00.43 a75+64.75	474	327	469	1270	
a76+12.67 a93+01.15	169	0	0	169	
a93+54 a126+71	178	0	116	294	
a168+14 a194+47	61	0	409	470	
a195+28 a218+28	213	78	312	603	
Totals:	1984	2217	2595	6796	176

* The quantities for these items are in the Estimate of Quantities under their respective contract items.
** The quantities for these items are for information only.

TABLE OF UNCLASSIFIED EXCAVATION

	(CuYd)
Excavation	1984
Undercut	2217
Topsoil	1396
Salvaged Granular Base Material (from cut sections)	727
Excavation for Brookdale Estates Temporary Approach (See Section C)	250
Total	6574

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

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

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

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

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

Salvaged Granular Base Material will be paid for once as Unclassified Excavation. The quantity of Salvaged Granular Base Material from cut sections will not be added to the Excavation quantity as it is already in the cuts on the final cross sections.

The volume of in place Concrete Surfacing removed will NOT be paid for as Unclassified Excavation.

The Excavation quantities from individual balances and the table above have been reduced by the volume of in place concrete pavement and asphalt pavement that will be removed.

When finaling a project, the estimated quantity of 2,559.8 cubic yards of Concrete Pavement and Asphalt Pavement removed from the cut sections will be subtracted from the Unclassified Excavation quantity for final payment. The quantity of Concrete Pavement and Asphalt Pavement from cut sections subtracted from the Unclassified Excavation quantity will be plans quantity and will not be adjusted according to field measurements.

UNDERCUTTING

In all cut sections the earthen subgrade will be undercut 1 feet below the earthen subgrade surface. The undercut material or other suitable material, as directed by the Engineer, will then be replaced and compacted to the density specified for the section being constructed.

Shallow embankment sections, fills less than 1 feet in height measured at the finished subgrade shoulders, will be undercut to ensure a minimum 1 foot height of earth embankment for the entire width of roadbed. The upper 4 inches of undercut material that consists of topsoil with a high humus content will be used as topsoil, placed in the fill slopes outside the shoulders of the earthen subgrade, or placed in the lower portion (below 4 foot depth) in fills which are greater than 4 feet in height. The remaining undercut soil and soil obtained from adjacent excavation (excluding the upper 4 inches) will then be replaced and compacted to the density specified for the section being constructed.

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

TABLE OF UNDERCUTTING

Station	to Station	Quantity (CuYd)
LaCrosse/SD44 Intersection		990
54+45.53	62+57.64 R	461
56+90.80	60+56.65 L	127
61+05.22	62+00.43 L	95
61+99.51	64+14.30 R	139
62+00.43	68+04.60 L	327
a212+97.72	a218+28.58 L	78
	Total:	2217

SALVAGE AND STOCKPILE GRANULAR BASE MATERIAL

An estimated 1,374 tons (727 Cubic Yards) of granular base material will be salvaged from the Lacrosse Street Intersection and the right hand turn lanes at the Cambell Street Intersection and stockpiled at a site furnished by the Contractor and satisfactory to the Engineer.

The quantity of granular base material may vary from the plans. No adjustment will be made to the contract unit price for variations of the quantity of “Salvage and Stockpile Granular Base Material.”

CONTRACTOR FURNISHED BORROW EXCAVATION

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

Restoration of the Contractor furnished borrow excavation site will be the responsibility of the Contractor.

PIPE EXTENSIONS

For pipe extensions that are outside the new surfaced shoulder as shown in the typical sections, acceptance tests in the lower one-half and upper one-half of pipe 48” or less in diameter may be performed by visual inspection to the satisfaction of the Engineer. All other MSTR pipe density testing requirements will apply.

PIPE CULVERT UNDERCUT

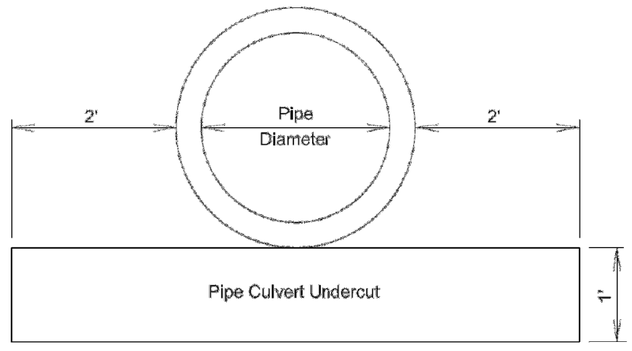
The table includes undercut for 36 inch and larger pipe culverts. The depth of undercut is an estimate and the actual depth necessary will be determined during construction. Pipes listed may or may not require undercutting and pipes not listed may require undercutting. The Engineer will determine which pipe will be undercut in accordance with Section 421 of the Specifications.

Station	Undercut Depth (Ft)	Pipe Culvert Undercut (CuYd)	Granular Material (Ton)
65+36.5	1	8	15
65+39.7	1	13	25
	Total:	21	40

The table below contains the rate for one-foot depth of pipe culvert undercut per foot of pipe length and should be used as an aid in determining the actual amount of undercut to be performed during construction. The table is derived from the drawing below and conforms to the Specifications. When calculating pipe culvert undercut, the length of pipe ends should be included in the overall pipe length.

Storm sewer and approach pipes do not require undercutting unless specified otherwise in these plans.

Pipe Diameter (In)	Round Pipe Undercut Rate for 1’ Depth (CuYd/Ft)	Arch Pipe Undercut Rate for 1’ Depth (CuYd/Ft)
24	0.2407	0.2577
30	0.2623	0.2847
36	0.2840	0.3110
42	0.3056	0.3337
48	0.3272	0.3596
54	0.3488	0.3827
60	0.3704	0.4105
66	0.3920	---
72	0.4136	0.4630
78	0.4352	---
84	0.4568	0.5123
90	0.4784	---



INCIDENTAL WORK, GRADING

Station	L/R	Remarks
34+13-31.3' L to		Take Out 18" – 62' RCP & RC Tee
34+20-30.5' R		
34+41-75'L to		Take Out 24"-60' RCP
35+05-74'L		
35+05-78' to 126' L		Take Out 36" – 47' RCP
34+89 25'R to		Take Out 36"-96' RCP & 1 RC Bend
35+04-78'L		
35+05-74'L to		Take Out 18"-8' RCP
35+14-73' L		
59+33-34.9' R to		Take Out 24"-8' RCP
59+41-33' R		
60+69-33' R to		Take Out 24"-8' RCP
60+70-40' R		
62+46.85-37' R to		Take Out 18"-62' RCP & 1 RC Bend
63+11-37' R		
63+11-37' R to		Take Out 18"-48' RC Pipe
63+57-44' R		
64+04-35' L to		Take Out 30"-40' RC Pipe
64+40-51' L		
65+38-97' L		Take Out End Section
65+55-98' L		Take Out End Section
a193+93	L	Take Out Pipe End Section
a202+93	L	Take Out Pipe End Section

REMOVAL OF EXISTING CONCRETE PAVEMENT
STA. 33+22.00 to STA. 35+74.73

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

The existing 9.5-inch P.C.C. Pavement is variable width at the Lacrosse Street intersection: SD44 west of intersection is 60 feet wide and 72 feet wide east of the intersection. Lacrosse Street is 44 feet south of the intersection and approximately 55 feet wide north of the intersection. This information is from original construction plans and actual pavement thickness may vary.

The existing contraction joints are spaced at approximately 15 feet.

The aggregate in the existing P.C.C. pavement is expected to be limestone.

TABLE OF CONCRETE PAVEMENT REMOVAL

This includes the curb and gutter adjacent to the concrete pavement and the concrete inside the islands.

Station	to Station	Description	Quantity (SqYd)
33+22	35+74.73	LaCrosse St. Intersection	2706.5
50+72.87 L	51+78.31 L	Poplar St Fillets and 5' PAR	73.2
53+00.23 L	53+92.43 L	Fillets and PAR across Ent	86.9
56+00.77 L	56+90.80 L	Fillets and PAR across Ent	114.8
56+90.80 L	60+56.65 L	Turnlane and Island in NW quadrant of SD44/Cambell	1153.7
59+30.49 R	61+26.54 R	Turnlane and Island in SW quadrant of SD44/Cambell	808.6
61+05.22 L	62+79.75 L	Turnlane and Island in NE quadrant of SD44/Cambell	667.5
61+59.58 R	63+20.67 R	Turnlane and Island in SE quadrant of SD44/Cambell	1175.0
64+68.94 L	65+28.06 L	Fillets and Valley Gutter at Drive	49.5
66+09.25 L	66+95.77 L	Fillets and Drive	266.2
a 75+60.04	a75+72.06L	West Fillet at Creek Drive	17.3
a 75+99.26	a76+13.25L	East Fillet at Creek Drive	20.5
a 85+86.04	a86+60.72L	Street & Fillets into Brookdale Estates	212.3
a92+91	a93+10 L	West Fillet at Mickelson Dr	28.3
a93+43	a93+58 L	East Fillet at Mickelson Dr	22.0
a100+26.37	a100+35.85L	West Fillet	10.9
a100+55.69	a100+64.68L	East Fillet	10.0
a114+98	a115+39 L	Fillets and Drive	42.7
a154+33.65	a154+40.02L	Part of West fillet	5.9
a154+55.24	a154+88.08L	Part of Eastside of entrance and fillet into Holiday store	40.4
a177+37	a177+70.76R	Parts of West Fillet	34.4
a178+29	a178+54.54R	East Fillet	60.1
a209+35.40	a209+85.54	Part of fillet and street into Williamsburg Trailor Ct	79.7
		Total:	7686.4

TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL

Station	to Station	L/R	Quantity (SqYd)
32+60	33+19	L	50.0
32+77	33+46	R	45.4
33+46	34+39	R	65.5
33+41	34+07	L	58.8
0+19 (XR35)	1+09	L	50.0
2+34 (XR35)	2+86	R	19.7
35+07	41+44	L	749.8
42+96	43+47	L	113.4
45+70	46+20	L	49.9
49+16	49+65	L	110.8
50+98	51+53	L	41.8
56+22	61+15	R	1984.3
59+71	60+54	L	152.5
61+12	65+09	L	758.2
62+02	65+96	R	1132.2
a 80+12	a 80+40	L	55.8
a 100+36	a 100+56	L	51.9
a 123+58	a 125+47	L	170.5
a 125+49	a 126+23	L	85.0
a 154+55	a 154+80	L	47.9
a 177+36	a 178+25	L	66.3
a 182+91	a 183+23	L	30.7
a 186+24	a 186+52	L	64.9
a 191+12	a 193+32	L	96.3
a 195+32	a 196+49	R	427.3
a 213+02	a 218+29	L	497.2
		Total:	6976.1

TABLE OF CONCRETE CURB AND/OR GUTTER REMOVAL

Station	to	Station	L/R	Quantity (Ft)
32+28		32+75	L	47.3
32+79		33+22	R	43.1
33+19		33+22	L	3.0
-0+12 (XR35)		0+73	L	84.8
2+52 (XR35)		2+82	R	30.4
45+68-35.8'L		46+68-44.8'L	L	9.0
47+96		48+21	L	24.6
48+01-31.8'L		48+01-70.2'L	L	38.5
48+16-31.9'L		48+16-70.2'L	L	38.4
49+40		49+65	L	25.2
50+96-49'L		50+96-53.6'L	L	4.6
51+55-49.2'L		51+55-58.1'L	L	9.0
54+46		59+31	R	482.4
62+80		64+69	L	192.6
65+28		66+09	L	90.5
66+96		68+05	L	111.1
68+43-32.65'L		68+42-59.17'L	L	26.5
a 91+32		a 91+56	L	24.2
a 143+15		a 144+00	L	85.5
a 144+00-86.4'R		a144+25-66'R	R	34.4
a 154+82-39' L		a154+82-56'L	L	17.2
a 167+91		a 168+05	L	16.4
a 178+48		a 178+57	L	9.0
a 194+46-32'L		a 194+53-38'L	L	9.0
a 194+57-45'L		a 194+59-71'L	L	26.5
a 195+11-66'L		a 195+26-48'L	L	23.3
a 195+59-27'L		a 195+69-26'L	L	9.7
			Total:	1516.2

TABLE OF CONCRETE DRIVEWAY PAVEMENT REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
32+28		32+60	L	26.6
32+79		33+48	R	37.5
33+19		33+41	L	18.5
33+71		34+06	L	16.5
-0+12 (XR35)		0+24	L	18.6
42+95		43+48	L	29.5
47+39		47+88	L	27.6
47+96		48+21	L	60.2
49+09		49+45	56.5' L	37.4
49+16		49+44	L	15.0
63+68		64+17	R	25.4
a 91+32		a 91+56	L	11.7
a 109+42		a 109+74	L	17.8
a 143+30		a 143+78	L	26.6
a 187+77		a 188+09	L	45.2
a 188+97		a 189+29	L	41.8
a 191+11		a 191+59	L	26.2
			Total:	482.1

TABLE OF SIDEWALK REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
32+60		33+75	L	61.6
33+46		34+49	R	105.1
34+07		34+42	L	72.9
35+02		35+25	L	50.0
35+05		35+75	R	77.5
42+64		43+03	R	21.8
50+73		50+95	L	17.2
51+56		51+78	L	16.8
56+01		56+20	L	14.9
56+69		56+95	L	19.3
61+08		61+16	L	14.6
65+09		65+71	L	39.0
a 143+01		a 143+22	R	14.8
a 143+15		a 143+33	L	16.4
a 143+76		a 143+91	L	27.5
a 153+95		a 154+37	L	28.8
a 154+82		a 154+89	L	4.6
a 166+98		a 167+11	L	9.8
a 167+93		a 168+09	L	17.4
			Total:	630.

TABLE OF DROP INLET REMOVAL

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

Station	L/R	Quantity (Each)
34+13	L	1
34+20	R	1
34+36.99	L	1
34+89.5	R	1
35+05.54	L	1
18+52(XR61)	L	1
62+46	R	1
63+11	R	1
63+57	R	1
64+04	L	1
a 86+08	L	1
a 86+40	L	1
	Total:	12

TABLE OF DROP INLET FRAME AND GRATE ASSEMBLY REMOVAL

Station	L/R	Quantity (Each)
56+00.13	R	1
59+32.28	R	1
66+99.56	L	1
	Total:	3

PIPE CULVERT CLEANOUT

The existing identified pipe culverts that will be left in place will be cleaned out by water flushing or other methods approved by the Engineer, the ditches at the inlet and/or outlet will also be cleaned if needed. The pipe will be cleaned of all debris, silt and obstruction. Depending on field conditions at the time of construction, the Engineer may add additional locations or remove locations to be cleaned out.

The Contractor will implement appropriate sediment control measures prior to pipe cleanout in order to prevent discharges from project boundaries and to comply with the Storm Water permit. Debris and the water used in the storm drain cleaning process must be collected and properly disposed of.

All costs associated with this work will be incidental to the contract unit price per each for "Cleanout Pipe Culvert". A unit will be considered a location between existing structures (drop inlet or manhole) or between an existing structure and a pipe inlet or outlet or between a pipe inlet and outlet.

TABLE OF PIPE CULVERT CLEANOUT

Station to Station	Pipe Size and Material	Quantity (Each)
39+93-45' R to 39+94-68' R	30" RCP Arch	1
40+32-40' R to 40+32-72' R	36" RCP Arch	1
40+50-45' R to 40+50-66' R	30" RCP Arch	1
a113+95-45' L to a113+95-26' R	36" RCP	1
a119+76-78' L to a118+81-66' R	36" RCPArch	1
a128+97-48' L to a128+94-26' L	18" RCP	1
a128+94-24' L to a128+94-63' R	36" RCP	1
a129+00-51' L to a129+85-51' L	12" RCP	1
a132+94-21' L to a132+95-59' R	36" RCP Arch	1
a132+98-90' L to a133+04-59' R	36" RCP Arch	1
a141+94-17' L to a141+96-61' R	18" RCP	1
a145+94-14' L to a145+93-63' R	18" RCP	1
a151+93-41' L to a150+93-90' R	18" RCP	1
a155+68-17' L to a155+68-80' R	18" RCP	1
a158+63-48' L to a158+74-73' R	18" RCP	1
a166+90-69' L to a167+09-73' L	24" RCP Arch	1
a172+79-26' L to a172+79-59' R	18" RCP	1
a177+51-58' L to a178+33-58' L	18" CMP	1
a182+68-43' L to a182+68-65' R	24" RCP Arch	1
a185+93-42' L to a185+94-55' R	18" RCP Arch	1
a190+28-57' L to a190+82-69' R	42" RCP Arch	2
a193+93-48' L to a193+93-64' R	24" RCP	1
a195+93-40' L to a195+93-56' L	18" RCP	1
a199+93-52' L to a199+92-26' L	18' RCP	1
a218+69-60' L to a219+22-59' L	30" RCP	1
a217+93-95' R to a218+84-95' R	18" CMP	1
	Total:	27

CONTROLLED DENSITY FILL FOR DROP INLET AT a217+75-L

Controlled density fill will be in conformance with Section 464 of the Specifications.

The controlled density fill will be placed between the Drop Inlet and existing pavement edge from the base of the drop inlet to the top of the wall and extend to 1' past end of the drop inlet.

CONCRETE PIPE CONNECTIONS

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

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

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

PIPE COVER

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

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, Type C Frame and Grate, Precast Drop Inlet Collar, and Precast Concrete Type S Drop Inlet Lid will be the basis of payment for these items.

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

TABLE OF DROP INLETS AND QUANTITIES

Station	L / R	Drop Inlet Size	Drop Inlet Type	Class M6 Concrete (CuYd)	Reinf. Steel (Lb)	Precast Drop Inlet Collar (Each)	Frame and Grate/Lid Type
*33+87.25	L	2'x3'	B	0.64	140	1	B
33+91.65	R	2'x3'	B	0.68	151	1	B
34+41.69	L	2'x3'	B	1.13	210	1	B
34+40.21	L	4'x11'	S	3.16	582		S
*35+03.35	L	4'x11'	S	4.10	723		S
*48+08	L	3'x4'	C	1.13	192		C
56+00	R	2'x3'	B	1.00	187	1	B
*59+32	R	2'x3'	B	0.82	164	1	B
*60+27	R	3'x4'	C	1.16	196		C
62+49.71	R	2'x3'	B	0.77	157	1	B
63+56	R	3'x4'	C	1.41	231		C
63+59	R	3'x4'	B	1.88	290	1	B
63+98	L	4'x11'	S	5.88	915		S
18+52(XR 61)	L	2'x3'	B	1.07	196	1	B
a86+11.35	L	2'x3'	B	1.12	209	1	B
a86+11.86	L	2'x3'	B	0.99	185	1	B
a86+39.08	L	2'x3'	B	1.37	424	1	B
a86+39.59	L	2'x3'	B	1.24	219	1	B
a217+75	L	2'x3'	B	0.80	161	1	B
			Totals:	30.35	5532	13	

Total Type B Frame and Grate Assembly	13
Total Type C Frame and Grate	3
Total 4'x11' Precast Concrete Type S Drop Inlet Lid	3

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

TABLE OF JUNCTION BOXES AND MANHOLE QUANTITIES

Station	L / R	Size L'xW'xH'	Frame and Lid (Type)	Class M6 Conc. (CuYd)	Reinf. Steel (Lb)	** 48" Manhole Cone Section (Ft)	Adjusting Rings
34+89.46	R	5'x5'x4'	A10	3.85	821	0	2-6" & 1-2"
*35+04.78	L	6'x6'x4'	A10	4.90	1186	0	2-2"
65+36.50	L	7'x7'x5'	Special	6.79	1622	3.0	0
65+57.50	L	7'x7'x7'	Special	8.15	1808	3.0	0
			Totals:	23.69	5437	6	

Total Type A10 Manhole Frame and Lid	2
Total Special Manhole Frame and Lid	2

* Junction boxes require watertight joints in accordance with the STORM SEWER notes.

** Eccentric

The Special Frame and Lid shall be a Neenah R-1733-1 heavy duty frame & type R-2573-1 Lid or an approved equal.

TABLE OF CLASS M6 CONCRETE AND REINFORCING STEEL

Item	Class M6 Concrete (CuYd)	Reinforcing Steel (Lb)
Drop Inlets	30.35	5532
Junction Boxes	23.69	5437
Totals:	54.04	10969

ADJUSTMENT OF DROP INLETS

The Contractor will adjust drop inlets to the extent necessary on this project. Adjusting the drop inlet will consist of removing the existing Frame & Grate, removing the concrete walls if necessary, remove 6" Concrete Collar if necessary, replacing the removed materials with Class M6 concrete, placing adjusting rings if necessary. The elevation of the lid will be set at the same elevation of the adjacent new pavement or surrounding ground. All manhole frames, lids, and adjusting rings that are cracked or broken due to carelessness of the Contractor will be replaced with new manhole frames, lids, and adjusting rings that conform with the Specifications at the Contractor's expense. Drop Inlets will be adjusted to the satisfaction of the Engineer. All costs involved in adjusting the drop inlet will be incidental to the contract unit price per each for "Adjust Drop Inlet".

The Engineer may direct adjustment of drop inlets that were not included in these plans. Payment for adjusting drop inlets that were not included in the plans will be at the contract unit price per each for "Adjust Drop Inlet".

TABLE OF ADJUST DROP INLETS

Station	L/R	Type of Adjustment	Manhole Frame and Lid Type
38+80	L	Raise 1'	Type C
56+00	R	Raise 6"	*Special
59+32	R	Raise 2"	*Special
66+99.56	L	Lower 3"	Special

SPECIAL FRAME AND GRATE

The Special Frame and Lid shall be a Neenah R 1801-F heavy duty frame & lid or an approved equal that can be used on a 2'x3' Type B Drop Inlet.

*The Special Frame and Lid shall be a Neenah R 1801-G heavy duty frame & lid or an approved equal that can be used on a 3'x4' Type B Drop Inlet.

SPECIAL GRATE AT 60+61.5-5' L

The Special Lid shall be a Neenah R 1801-G heavy duty lid or an approved equal that can be used on a Type C Frame.

TABLE OF RIPRAP AND DRAINAGE FABRIC

Station	L/R	Class B Riprap (Ton)	Type B Drainage Fabric (SqYd)
65+36	L	473.2	406
	Totals:	473.2	406

SIDEWALK DRAINS

At the locations noted in the Table of Sidewalk Drains, drainage from adjacent buildings will be carried through the sidewalk to the gutter. The sidewalk drains will be constructed in accordance with the details shown on standard plate 651.50.

TABLE OF SIDEWALK DRAINS

Station	L/R	Length (Ft)
51+79	L	6.8
68+41.73	L	11.0
68+43.68	L	11.0
	Totals:	28.8

COLORED CONCRETE FOR BOULEVARD SIDEWALK

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

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

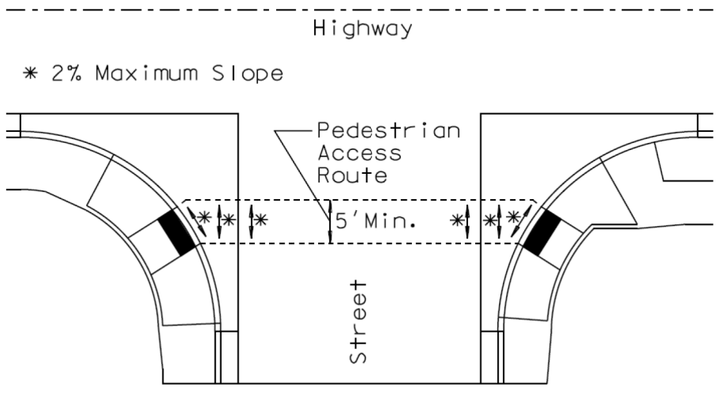
Brick Red requires a rate of 12.50 pounds of Solomon ColorFlo #417 Red per cubic yard of concrete. The colored concrete must be cured according to the manufacturer's recommendations with two coats of a non-yellowing acrylic curing and sealing compound. The curing and sealing compound will meet ASTM C309.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

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

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

INTERSECTING STREET AND FILLET SLOPES

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



TYPE 1 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 yellow color for application in concrete curb ramps.

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

Type 1 Detectable Warnings

Product	Manufacturer
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/

TABLE OF CONSTRUCTION STAKING

Roadway and Description	Begin Station	End Station	Length (Ft)
Mainline	32+78.91	35+74.73	295.82
XR33 R	0+72.37	1+24.70	52.33
XR33 L	1+85.29	2+51.63	66.37
Sidewalk L	35+74.73	59+60.23	2385.5
Sidewalk R	42+63.98	51+06.99	843.01
Mainline (turnlane rt)	54+45.53	61+26.54	817.43
Mainline (turnlane lt)	59+60.23	60+56.66	241.22
Mainline (turnlane lt)	61+05.22	68+04.60	904.58
Mainline (turnlane rt)	62+00.41	64+17.08	398.08
Sidewalk	68+04.60	a126+73.31	5868.00
Sidewalk	a168+00	a218+28.53	5028.53

Intersections at St. Patrick & Intersection at Station a154+50

SHAPING FOR AREA DRAIN AT 48+08-59.71' L

After the entrance at 48+08-L is removed the area will be shaped to provide 1' of freeboard for the area drain as shown below or as directed by the Engineer. Extra erosion control is shown in Section D. The Curb at station 48+00 – 61.2'L to 70.2'L is to direct water from the parking to the Area Drain.

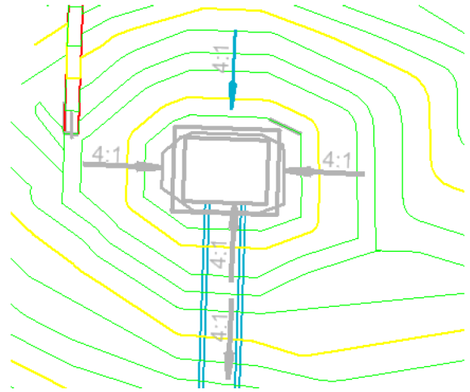


TABLE OF BEAM GUARDRAIL REMOVAL

Station	L/R	Length (Ft)
22+00 to 22+62	R	62.5
	Totals:	62.5

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

The Contractor will have a Land Surveyor, licensed in the State of South Dakota, to set, reestablish or verify public land survey system (PLSS) corners, right of way (ROW) corners, and property corners as directed by the appropriate SDDOT Region Land Surveyor. It is estimated that 0 PLSS corners and 72 ROW and property corners will be set, reestablished, or verified for this project. The Contractor's Land Surveyor, under the direction of the Region Land Surveyor, will set, reestablish, or verify all corner monuments after surfacing and fencing operations are completed in accordance with the PUBLIC LANDS SURVEY SYSTEM CORNERS section and the RIGHT OF WAY AND PROPERTY CORNERS section in Chapter 8 of the SDDOT Survey Manual.

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

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

PIPE QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B11	B123

Plotting Date: 10/15/2021

** Short Radius Bend	Reinforced Concrete																						RC Pipe Transition				CMP		Reset			
	Circular					Safety End		Flared Ends		RC ARCH					RC Bends (4' lay length except as noted)							RC TEE'S	Round to Arch		Arch to Round		Circular		Reset Pipe	Reset End Section			
Station Offset (L/R)	18" Cl. 2	24" Cl. 2	30" Cl. 2	36" Cl. 2	48" Cl. 2	18"		48"		18" Cl. 2	24" Cl. 2	36" Cl. 2	42" Cl. 2	48" Cl. 2	18" 12.5°	18" 5' Lay 90°	24" ** 7.5°	30" x 22.5°	36" x 15°		24" x 6'	36" 4' Lay		36" 4' Lay		24" 16 Ga						
	Ft	Ft	Ft	Ft	Ft	Each		Each		Ft	Ft	Ft	Ft	Ft	Each	Each	Each	Each	Each		Each	Each		Each		Ft		Ft	Each			
33+87.25-31.98' L to 33+91.65-31.33 R *										62																						
33+91.65-31.33' R to 34+19.40-25.51' R	28														1																	
34+40.21-91.12' L to 34+41.69-75.23' L	10																															
34+41.69-75.23' L to 35+05.31-72.58' L *		60																														
34+89.46-25.60' R to 35+05.31-72.58' L *				82								8							1					1							
35+03.35-120.18' L to 35+05.31-72.58' L				36																		1										
35+05.31-72.58' L to 35+14-73' L	8																															
47+91-25.67' L to 48+09-59.71' L *	46															1																
56+00-32.67' R to 44.83' R										10																						
59+32-34.88' R to 47.67' R *	12																															
60+27-59.7' R to 60+73-54' R *	42																				1											
18+52-32.77' L to 18+52 - 36' L (XR62)																					1											
62+49.71-44.28' R to 63+59.00-43.96' R	106																															
63+59-43.96' R to 63+56-52' R	6																															
64+01.3-48' L to 64+04-33.72' L *		12																2														
63+98.07-49.35' L to 64+40.5-51' L *			36																1													
65+36.5-101' L to 65+33-120' L					8			1																								
65+36.5-101' L to 65+41.39-90.17' L														10																		
65+39.7-122.7' L to 65+57.5-92.5' L					24			1																								
86+11.86-66.15'L to 86+11.35-62.17'L	2																															
86+39.59-67.36'L to 86+39.08-63.39'L	2																															
109+25-40' L to 52' L	6																														1	
113+95-38' L to 52' L													6																		1	
a172+75-39' L to a172+71-53' L											8																				1	
a182+69-43' L to 53' L											4																				1	
a185+93-42.5' L to 52.5' L										4																					1	
a195+93-39.5' L to 50' L	4					1																										
a201+20.9 to a201+29.6-62.5' L																												4			1	
a202+93-25.67' to 59' L *	6					1																								20		
a217+75-55' L to 26.09' L *	22					1																										
Total:	300	72	36	118	32	3		2		76	12	8	6	10	1	1	2	1	1		2	1		1		4		20	6			

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

Plot Scale - 1:200

Plotted From - TRPR17192

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PAVEMENT, CURB AND GUTTER, AND SIDEWALK QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B12	B123

Plotting Date: 10/15/2021

Station to Station		PCC Fillet Section		Concrete Curb and Gutter				Concrete Gutter	PCC Approach Pavement		Concrete Sidewalk		Reinforced Concrete Sidewalk	Colored Concrete Sidewalk		Detectable Warning	Valley Gutter		Sidewalk Drain	Concrete Curb
				Type B		Type F		Type P	Type A	Type B						Type 1	Type B			
		8"	10"	66	610	68	610	10"	8"	8"	4"	6"	4"	4"	6"		6"	10"		6"
		SqYd	SqYd	Ft	Ft	Ft	Ft	Ft	SqYd	SqYd	SqFt	SqFt	SqFt	SqFt	SqFt	SqFt	Ft	Ft	Ft	Ft
32+27.72, 30.47'L	32+75.00, 30.47'L				17.3			30.0	57.4		39.5									
33+18.74,30.41'L	33+44.37, 98.10'L		96.7		83.5						655.6		128.2	794.3		20.0				
32+78.91, 29.33'R	33+12.04, 29.51'R				33.1						144.9			170.0						
33+12.04, 29.51'R	34+56.29, 135.60'R										963.2			726.4		20.0				
34+56.29, 135.60'R	34+56.27, 166.94'R				185.6			25.3	40.7											
LaCrosse Street																				
35+00.22-82.45' R	35+74.73-30.25' R				104.2						651.5			120.2		20.0				
34+99.18-127.15' L	36+67.47-57.61' L		108.9		39.4						1237.5		133.8	55.2		20.0				
36+67.47-57.61' L	39+35.00-33.95' L										1106.2									
39+35.00-33.95' L	42+95.86-33.70' L										1550.7									
42+95.86-33.70' L	45+70.18-35.80' L					9.0			68.3		1099.1									
45+70.17-37.80' L	47+38.50-36.87' L										592.7									
47+38.44-26.82' L	49+17.00-35.89' L				24.6				81.0		637.4									9.0
49+15.93-26.86' L	50+97.85-53.62' L		26.6		9.9			20.7	69.1		659.3					10.0				
42+63.98-44.28' R	51+06.99-70.58' R								42.5		4012.6									
Poplar Avenue																				
51+53.28-58.12' L	53+67.02-50.20' L		52.5		8.9				23.4		846.6					20.0			6.8	
53+67.02-50.20' L	56+65.80-56.44' L		50.4		4.8				63.3		1288.7					20.0				
56+65.80-56.44' L	60+56.65-194.54' L		26.6		514.6						2720.0			1166.3		30.0				
54+45.53-33.54' R	56+30.00-42.00' R		25.9		162.9															
56+30.00-42.00' R	61+17.67-248.97' R		25.9		565.8				16.6			3031.8		248.0		20.0		40.0		
Cambell Street																				
62+00.41-231.15' R	64+17.08-42.25' R				398.1						1696.0			1010.8		20.0				
61+05.22-305.77' L	64+66.02-45.67' L				572.1						4301.5			2222.8		20.0				
64+66.02-45.67' L	66+35.96-46.87' L				134.1			40.0		58.0	1225.5									
66+35.96-46.87' L	69+40.00-44.67' L						133.4	40.0		67.1	2591.5						16.5		22.0	
69+40.00-44.67' L	72+75.00-46.23' L								111.1		2663.6									
72+75.00-46.23' L	a75+72.06-48.44'L		17.3						127.9		2244.0					20.0				
Creek Drive																				
a76+00.02-48.59' L	a80+05.99-36.23' L		20.5								4040.4					20.0				
a80+05.99-36.23' L	a86+15.06-77.76' L		21.1	20.6			12.3		63.5		5649.0					20.0				
Brookdale																				
a86+38.89-74.92' L	a93+10.05-57.07' L		60.4	16.4			7.1				6678.1					40.0				
a93+45.53-57.54' L	a100+35.85-52.98' L	10.9	22.0								3544.8					30.0				
a100+56.05-53.09' L	a110+14.00-37.96' L	10.0					32.1				4779.8					10.0				
a110+14.00-37.96' L	a111+74.00-34.84' L								45.4		620.6									
a111+74.00-34.84' L	a115+01.59-69.67' L					3.8			38.2		1454.0					10.0				
a114+98.41-60.62' L	a123+49.00-61.50' L					4.7			40.3		4097.0					10.0				
a123+49.00-61.50' L	a126+73.17-67.43' L						7.4		28.9		1360.0					10.0				
	Subtotal:	20.9	554.8	37.0	2858.9	17.5	192.3	156.0	917.6	125.1	65151.3	3031.8	262.0	6514.0	0.0	390.0	16.5	40.0	28.8	9.0

Plot Scale - 1:200

Plotted From - TRPR17192

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PAVEMENT, CURB AND GUTTER, AND SIDEWALK QUANTITIES

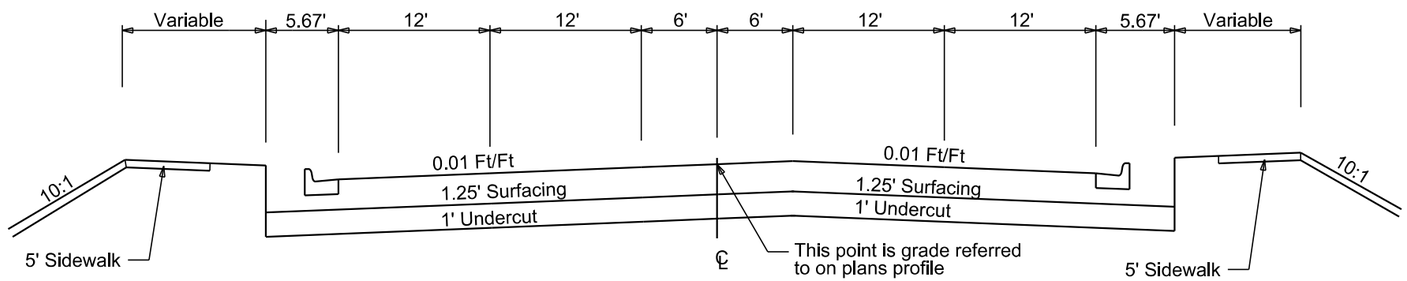
Station to Station		PCC Fillet Section 8" SqYd	PCC Fillet Section 10" SqYd	Concrete Curb and Gutter Type B 66 Ft	Concrete Curb and Gutter Type B 610 Ft	Concrete Curb and Gutter Type F 68 Ft	Concrete Curb and Gutter Type F 610 Ft	Concrete Gutter Type P 10" Ft	PCC Approach Pavement Type A 8" SqYd	PCC Approach Pavement Type B 8" SqYd	Concrete Sidewalk 4" SqFt	Concrete Sidewalk 6" SqFt	Reinforced Concrete Sidewalk 4" SqFt	Colored Concrete Sidewalk 4" SqFt	Colored Concrete Sidewalk 6" SqFt	Detectable Warning Type 1 SqFt	Valley Gutter Type B 6" Ft	Valley Gutter Type B 10" Ft	Sidewalk Drain Ft	Concrete Curb 6" Ft
E. Saint Patrick Street	Northwest		12.4	36.2			6.5				96.6					10.0		40.0		
	Northeast		12.4	36.5			9.0				301.1					20.0				
	Southwest				27.3						133.4									
	Southeast						36.9				94.0					10.0				
a153+94.81-40.49' L	a154+39.82-39.22' L		6.0								234.8					10.0				
a154+79.73-56.51' L	a154+88.08-25.39' L		8.5	2.5							42.7					10.0	14.8			
Twilight Drive																				
a166+97.99-35.66' L	a167+10.86-45.16' L										89.5					10.0				
a167+89.55-36.95' L	a177+62.85-34.06' L						16.9				4941.6				110.8	30.0				
a177+37.69-52.45' R	a177+70.76-77.51' R		34.4								229.3			141.2		20.0				
a178+28.89-76.56' R	a178+53.02-55.81' R		60.1								196.7			70.1		20.0				
a178+23.79-34.14' L	a182+91.00-34.16' L						9.0				2391.9					20.0				
a182+91.00-34.16' L	a186+20.00-33.75' L								25.8		1485.0									
a186+20.00-33.75' L	a187+77.35-31.86' L								26.5		607.1									
a187+77.35-31.86' L	a188+96.50-31.96' L								47.2		435.3									
a188+96.50-31.96' L	a191+11.00-33.28' L								44.1		910.0									
a191+11.00-33.28' L	a192+92.00-33.46' L								67.6		612.5									
a192+92.00-33.46' L	a194+60.34-71.39' L						46.4		29.8		729.9			43.5		20.0				
a195+04.84-48.07' R	a195+95.65-90.67' R						104.2				617.5			296.0		20.0				
Jolly Lane																				
a196+31.60-95.82' R	a196+49.51-46.92' R						66.7				325.1			26.8		20.0				
a195+09.87-65.00' L	a200+66.87-65.00' L						33.4				2838.7					20.0				
a200+66.87-65.00' L	a209+43.69-55.75' L					18.1			37.9		4136.5					10.0				
Williamsburg Trailer Court																				
a209+76.39-54.58' L	a218+28.53-60.22' L					18.5	547.8				4329.1			2829.9		10.0				
	Subtotal:	0.0	133.8	75.2	27.3	36.6	876.8	0	278.9	0	25778.3	0	0	3407.5	110.8	260.0	14.8	40.0	0	0
	Total:	20.9	688.6	112.2	2886.2	54.1	1069.1	156.0	1196.5	125.1	90929.6	3031.8	262.0	9921.5	110.8	650.0	31.3	80.0	28.8	9.0

TYPICAL GRADING SECTION

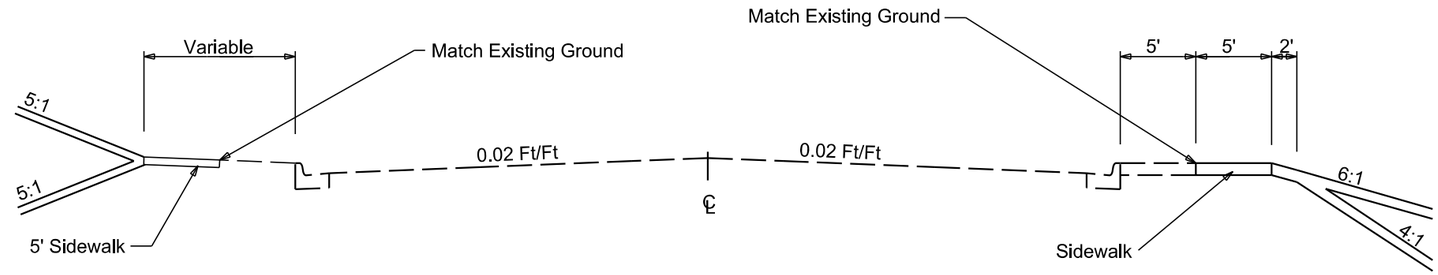
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B14	B123

Plotting Date: 10/15/2021

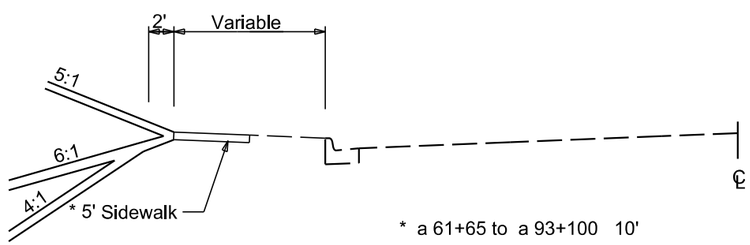
Mainline
33+22 to 35+74.73



Mainline
35+74.74 to 56+18.87 - L
42+63.98 to 51+07 - R



Mainline
a 67+56.61 to a 75+64.75
a 76+06.67 to a 93+01.15
a 93+53.85 to a 126+70.45
a 168+13.16 to a 194+47.50
a 198+27.79 to a 218+28.53



* a 61+65 to a 93+100 10'

Plot Scale - 1:200

Plotted From - TRPR17192

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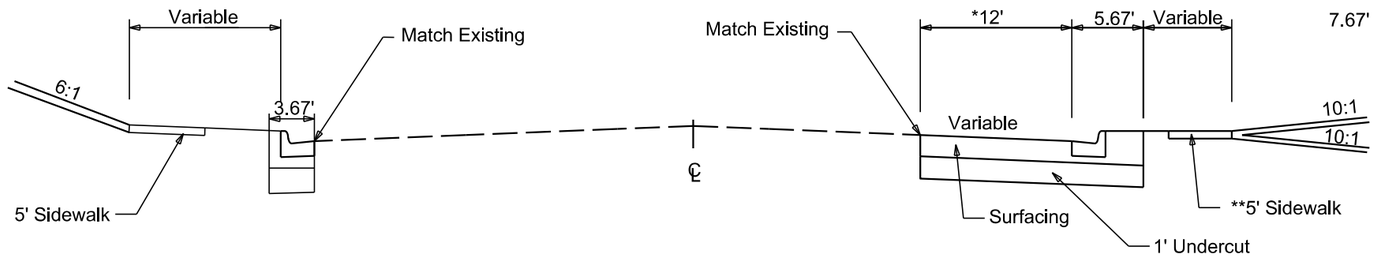
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B15	B123

Plotting Date: 10/15/2021

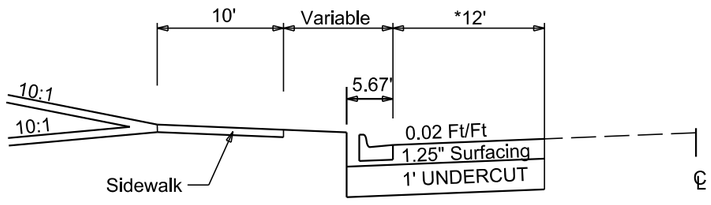
Plot Scale - 1:200

Mainline
56+90.80 to 59+60.23 L
54+45.53 to 61+26.54 R = (XR61) 17+64.26 L



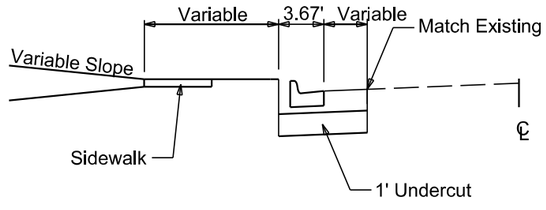
* 54+45.53 to 54+87.87 0' to 12'
** 54+45.53 to 56+41.12 - 0'

Mainline
61+51.72 to 68+04.60

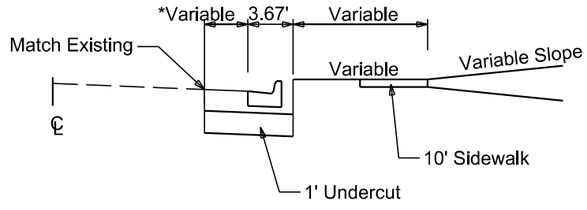


* 66+88.81 to 68+04.60 12' to 0'

Mainline
59+60.23 to 22+12.15 XR61



XR61 17+69.13 to 64+17.08 Mainline
XR61 20+35.09 to 23+13.66



* 0' - 17+69.39 to 18+87.96 (XR61)
0' - 63+20.67 to 64+17.08
0' - 21+57.44 to 23+13.66 (XR61)

Plotted From - TRPR17192

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HORIZONTAL ALIGNMENT DATA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B16	B123

Plotting Date: 10/15/2021

MAINLINE

Type	Station			Northing	Easting
POB	32+00.00			650164.432	1214653.663
		TL= 274.73	S 87°54'26" E		
PI	34+74.73			650154.400	1214928.210
		TL= 2322.94	S 88°01'20" E		
PC	57+97.67			650074.235	1217249.766
PI	64+78.09	R = 1909.86	Delta = 39°13'08" R	650050.753	1217929.785
PT	71+04.96			649602.596	1218441.774
		TL= 73.77	S 48°48'13" E		
PI	71+78.73			649554.010	1218497.280
EQNBK	73+04.95			649472.921	1218594.005
EQNAHD	a 73+02.70			649472.921	1218594.005
		TL= 497.65	S 50°01'32" E		
PI	a 76+74.13			649234.299	1218878.640
		TL= 4974.53	S 49°16'16" E		
PI	a 126+48.66			645988.518	1222648.373
		TL= 4035.69	S 49°16'00" E		
PI	a 166+84.35			643355.080	1225706.440
		TL= 2097.83	S 49°16'58" E		
PI	a 187+82.17			641986.610	1227296.460
		TL= 1423.04	S 49°15'44" E		
PI	a 202+05.21			641057.940	1228374.700
		TL= 4539.15	S 49°15'32" E		
POE	a 247+44.35			638095.506	1231813.862

XR35

Type	Station			Northing	Easting
POB	-0+72.61			649927.168	1214917.683
		TL= 72.61	N 2°07'33" E		
PI	0+00.00			649999.725	1214920.377
		TL= 154.85	N 1°54'45" E		
PI	1+54.85			650154.492	1214925.545
		TL= 127.13	N 1°55'44" E		
POE	2+81.98			650281.549	1214929.824

XR61

Type	Station			Northing	Easting
POB	17+63.10			649790.023	1217546.610
		TL= 160.69	N 3°02'37" E		
PI	19+23.79			649950.485	1217555.141
		TL= 161.13	N 3°19'59" E		
PI	20+84.92			650111.343	1217564.510
		TL= 127.00	N 2°31'32" E		
PI	22+11.92			650238.217	1217570.106
		TL= 119.61	N 1°24'07" E		
POE	23+31.52			650357.787	1217573.032

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. South Zone (ITRF to NAD 83/11); epoch 2010.00; Geoid12A; SF = 0.9997877

Plot Scale - 1:200

Plotted From - TRPR17192

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CONTROL DATA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B17	B123

Plotting Date: 10/15/2021

Plot Scale - 1:200

Plotted From - TRPR17192

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HORIZONTAL AND VERTICAL CONTROL POINTS						
POINT	**STATION**	**OFFSET**	**DESCRIPTION**	**NORTHING**	**EASTING**	**ELEVATION**
BDJ01	67+09	7215’ L	I90-60.6 STATE LAB TRAILER	656121.118	1221653.695	3197.26
TT 5 RA	Not on	Project	BRASS CAP IN CONC. S. ON 44E.	630862.600	1243236.000	3023.38
H362	a 84+65	807’ R	CREEK DR BRASS CAP IN CONC.	648107.117	1218951.501	3176.50
J362	a 182+86	87’ R	RC Benchmark W. PIONEER DR.	642243.943	1226863.485	3112.92
CP01	a 109+46	42’ L	PK NAIL APPROACH N OF KNECHT	647131.477	1221385.018	3170.64
CP02	a 136+14	67’ R	2FT REBAR 14 FT S. EDGE OF ASHALT DITCH S OF ISEMAN HOMES	645307.794	1223335.543	3140.22
CP04	a 242+96	119’ R	REBAR AND CAP ALONG RR	638297.899	1231396.753	3091.79
ML130	60+39	283’ L	BRASS CAP RC BENCH #2051 N ON CAMBELL ST W. SIDE +/- 200 FT.	650329.938	1217535.185	3214.12
ML100	a 187+80	64’ L	CHISEL MARK NW CORNER OF BOXCUVERT	642036.878	1227336.335	3110.36
ML101	a 168+90	81’ L	3 IN PK NAIL 3.3 FT EAST OF PLATER IN CULDASACK	643282.239	1225915.199	3121.73

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System South Zone (ITRF to NAD 83/11); epoch 2010.00
Geoid12A; SF = 09997877
The elevations shown on this sheet are based on NAVD 88.

LEGEND

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B18	B123

Plotting Date: 10/15/2021

Item	Symbol
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	

Item	Symbol
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	

Item	Symbol
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	

Item	Symbol
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 - TRPR17192

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B19	B123

Plotting Date: 10/15/2021 Rev 6/04/2021(BT)

Remove Type S Drop Inlets
at the following locations:
34+41 - 75' L
35+05 - 73' L

33+87.25-31.98' L to 33+91.65-31.33' R
Install 18"-62' RCP Arch
(Between Drop Inlets)

33+91.65-31.33' R to 34+19.40-25.51' R
Install 18"-28' RCP
& 1- 12.5° RC Bend
(Between Drop Inlet & Existing Pipe)

34+40.21-91.12'L to 34+41.69-75.23'L
Install 18"-10' RCP
(Between Drop Inlets)

34+41.69 - 75.23' L to 35+05.31-72.58'L
Install 24"-60' RCP
(Between Drop Inlet and Junction Box)

35+02-61' L to 34+95-150' R
Retain 36" RCP & Junction Box

34+19.40-25.51'R to 34+89.45-26'R
Retain 18" - 68' RCP

35+14-75' L to 35+55-74' L
Retain 18" RCP

35+05.31-72.58'L to 35+14-73'L
Install 18"-8' RCP
(Between JB and Existing Pipe)

35+05-78' L to 126' L
Take Out 36"- 47' RCP
(Incidental Work, Grading)

34+41-75' L to 35+05-74' L
Take Out 24" - 60' RCP
(Incidental Work, Grading)

34+89.5 - 26' R
Remove Type C Drop Inlet

Remove Type B Drop Inlet
and Type B Frame and Grate
at the following locations:
34+13 - 31.3' L
34+20 - 30.5' R

34+13-31.3'L to 34+20-30.5' R
Take Out 18" - 62' RCP & RC Tee
(Incidental Work, Grading)

34+89-25' R to 35+04-78' L
Take Out 36"- 96' RCP & 1 RC Bend
(Incidental Work, Grading)

35+05-74' L to 35+14-73' L
Take Out 18" - 8' RCP
(Incidental Work, Grading)

35+03.35-120.18' to 35+05.31-72.58' L
Install 36"-36' RCP and
36" RCP Round to Arch Transition (4'Lay)
(Between Junction Box & Drop Inlet)

34+89.46-25.6' R to 35+05.31-72.58' L
Install 36"-82' RCP (24'&58')
Install 36"-8' RCP Arch
& 1 - 15° RC Bend
& 36" RCP Arch to Round Transition (4'Lay)
(Between Junction Boxs)

Install 2'x3' Type B Drop Inlet
with 6" Concrete Collar and
Type B Frame and Grate
the following locations:
33+87.25 - 31.98' L
33+91.65 - 31.33' R
34+41.69 - 75.23' L

Mollers Limited Partnership

Lot 3C of Eastbrooke Subdivision
to Rapid City

Parcel 1
91 sq ft, R.O.W. Taking
more or less

J & D Tire, L.L.C.

The South 80 feet of Tract A of Lot 1 in
Government Lot 2 of Section 6 -
Township 1 North - Range 8 East of the B.H.M.,
in Rapid City

Parcel 3
37 sq ft, R.O.W. Taking
more or less

J & D Tire, L.L.C.
(INFORMATION ONLY)

Black Hills Area
Habitat for Humanity
(INFORMATION ONLY)

Government Lot 2

TRACT C

TRACT A

LOT 1

80 feet

Property Line

EASTBROOKE SUBDIVISION

BEGIN NH 0044(00)46
Station 33+22

Lot 3C

33+17
50.82' & 54

33+30-L
Elim Ent

33+95-L
Elim Ent

33+75-59'

34+06.42-50.89'

34+20.38-71.89'

34+20.40-63.91'

LaCrosse Street 90'

2+82

2+00

N 1°55'44" E

35+11.67-110.22'

35+11.67-89.03'

35+22.60-75.51'

35+17.17-75.52'

101'

101'

133'

PI 34+74.73
N 650154.40
E 1214928.21
Del 0°06'54" L

132'

150'

S 87°54'26" E

Present SD Hwy 44

E Omaha St.

S 88°01'20" E

32+00

33+00

34+00

35+00

36+00

37+00

38+00

XR35

1+00

0+00

N 1°54'45" E

LaCrosse Street

80'

32+92 R
Elim Ent

33+27 R
32' Drive

Lot 10

Lot 9

Lot 8

Lot 7

Property Line

Lot 6

Lot 5

Lot 4

Lot 3

Lot 2

Lot 1

BLOCK 6

34+00.60-49.85'

34+05.53-55.20'

34+05.53-49.84'

34+30.37-82.20'

34+30.38-74.82'

35+10.54-70.08'

35+10.54-73.63'

35+33.57-57.05'

35+45.20-57.03'

BRENNAN & SWEENEY'S ADDITION

Lot 1

MF Properties, LLC

Lot 1 in Starner Tract in Government
Lot 2 of Section 6 - Township 1 North-
Range 8 East of the B.H.M., in Rapid City

Parcel 4
150 sq ft, R.O.W. Taking
more or less

STARNER TRACT

Government Lot 2

MF Properties, LLC
(INFORMATION ONLY)

Install 4'x11' Type S Drop Inlet Base,
Type S Precast Lid
and Type S Manhole Frame & Lid
at the following locations:
34+40.21-91.12' L
35+03.35-120.18' L

35+05.31-72.58' L
Install Special 6'x6' Junction Box
with Type A10 Manhole Frame and Lid

34+89.46-25.60' L
Install 5'x5' Junction Box
with Type A10 Manhole Frame and Lid

Vickey L. Fuss

Lot 2 in Block 6
of Brennan & Sweeney's
Addition to Rapid City

Parcel A1

Vickey L. Fuss

Lot 1 in Block 6 of Brennan & Sweeney's
Addition to Rapid City

Parcel 2
0.01 ac, R.O.W. Taking
(311 sq ft) more or less

Sec 6 - T1N - R8E

Rapid City

Parcel A1
34+00.60 to 34+05.53 R
Temporary easement containing
13 sq ft, more or less

Parcel 1
33+17.00 to 34+20.40 L
Temporary Easement containing
898 sq ft, more or less

Parcel 2
34+05.53 to 34+30.38 R
Temporary Easement containing
158 sq ft, more or less

Parcel 3
35+11.67 to 35+22.60 L
Temporary Easement containing
152 sq ft, more or less

Parcel 4
35+10.54 to 35+45.20 R
Temporary Easement containing
137 sq ft, more or less

Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\dpj\penn04PDI\032.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(00)46	B20	B123

Plotting Date: 11/15/2021 Rev 11/15/21 RG

XR35

PVI 0+00
Elev 3189.03
0.5519%
PVI 0+72
Elev 3189.43
1.1552%
PVI 1+25
Elev 3190.04
1.0010%
PVI 1+49
Elev 3190.28
-0.9990%
PVI 1+85
Elev 3189.93
-0.9990%
PVI 2+52
Elev 3190.33
0.8120%
PVI 1+98
Elev 3189.80
1.3612%
PVI 2+35
Elev 3190.10
1.5481%
PVI 2+82
Elev 3190.80

Existing 36" RCP
36" RCP 1.2 %
FLR 3184.00 (estimated)
Jct Box w/sump
FLR 3185.14 (estimated)
Jct Box w/sump
Inlet w/sump
FLL 3185.57
FLL 3186.39
FLR 3185.57 (estimated)
FLR 3185.57

3189.14 3189.25 3189.36 3189.52 3189.75 3189.98 3190.19 3190.18 3189.98 3189.82 3189.98 3190.17 3190.46 3190.77 3190.80

0+00 1+00 2+00 2+82

32+69 L
30' Drive
33+28 R
32' Drive

18" RCP

PVI 32+50
Elev 3191.10
-0.4255%
PVI 33+00
Elev 3190.89
-0.4800%
PVI 33+25
Elev 3190.77
-0.4000%
PVI 34+00
Elev 3190.47
-0.3450%
PVI 35+00
Elev 3190.12
-0.1798%
PVI 35+25
Elev 3190.08
-0.1793%

FLL 3187.15
FLR 3186.90
18" RCP
Existing 18" RCP (verify elev)
FLR 3184.0
FLR 3186.81 (estimate)

3191.06 3190.98 3190.89 3190.79 3190.71 3190.63 3190.55 3190.47 3190.40 3190.33 3190.26 3190.19 3190.12 3190.09 3190.05 3190.02 3189.98 3189.95 3189.91 3189.87 3189.84 3189.80 3189.77 3189.73 3189.69 3189.66 3189.62 3189.59

32+00 33+00 34+00 35+00 36+00 37+00 38+00

3255 3250 3245 3240 3235 3230 3225 3220 3215 3210 3205 3200 3195 3190 3185 3180 3175 3170 3165

Plot Scale - 1:40

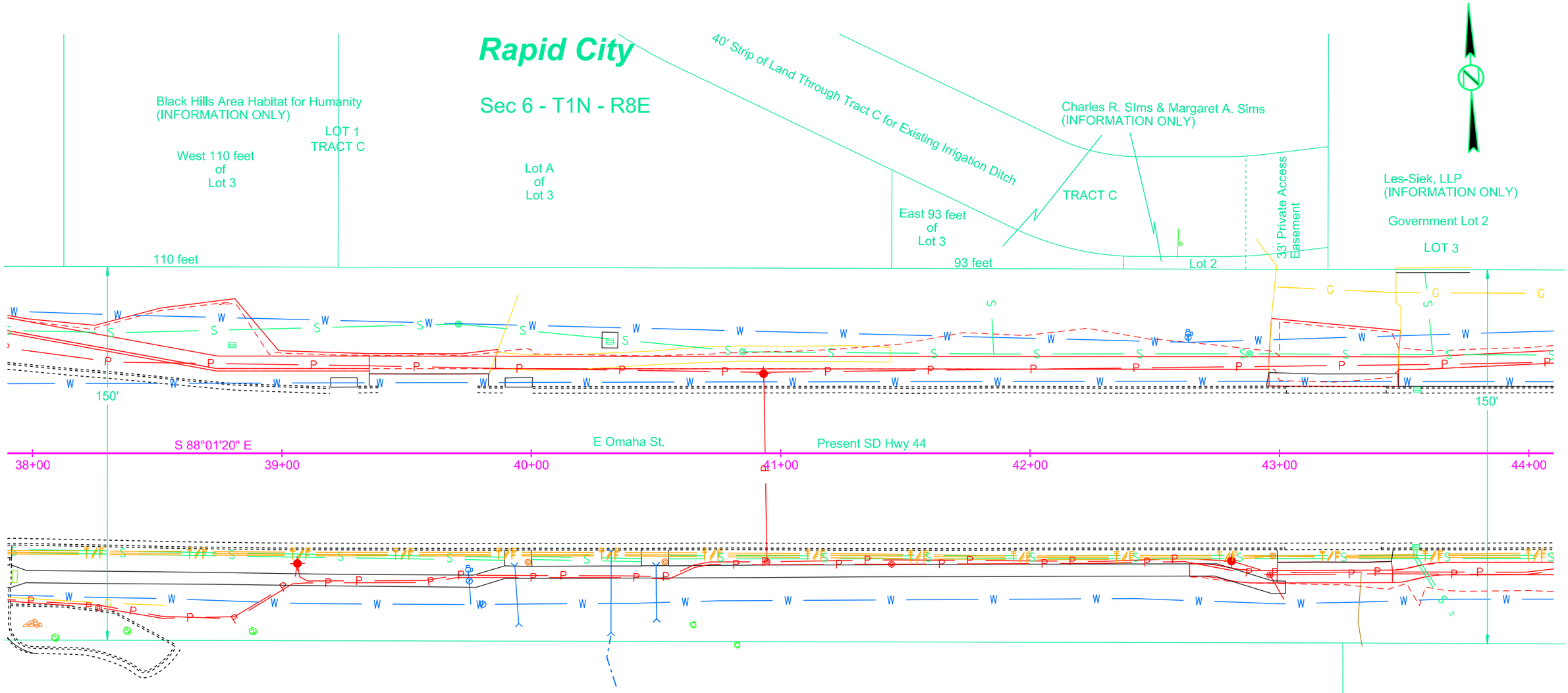
Plotted From - tpr13418

File - U:\rd\prj\penn04PDI\032v.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B21	B123

Plotting Date: 10/15/2021

38+80.03-43.43' L
Adjust 3'x4' Type C
Drop Inlet



Plot Scale - 1:40

Plotted From - TRPR17192

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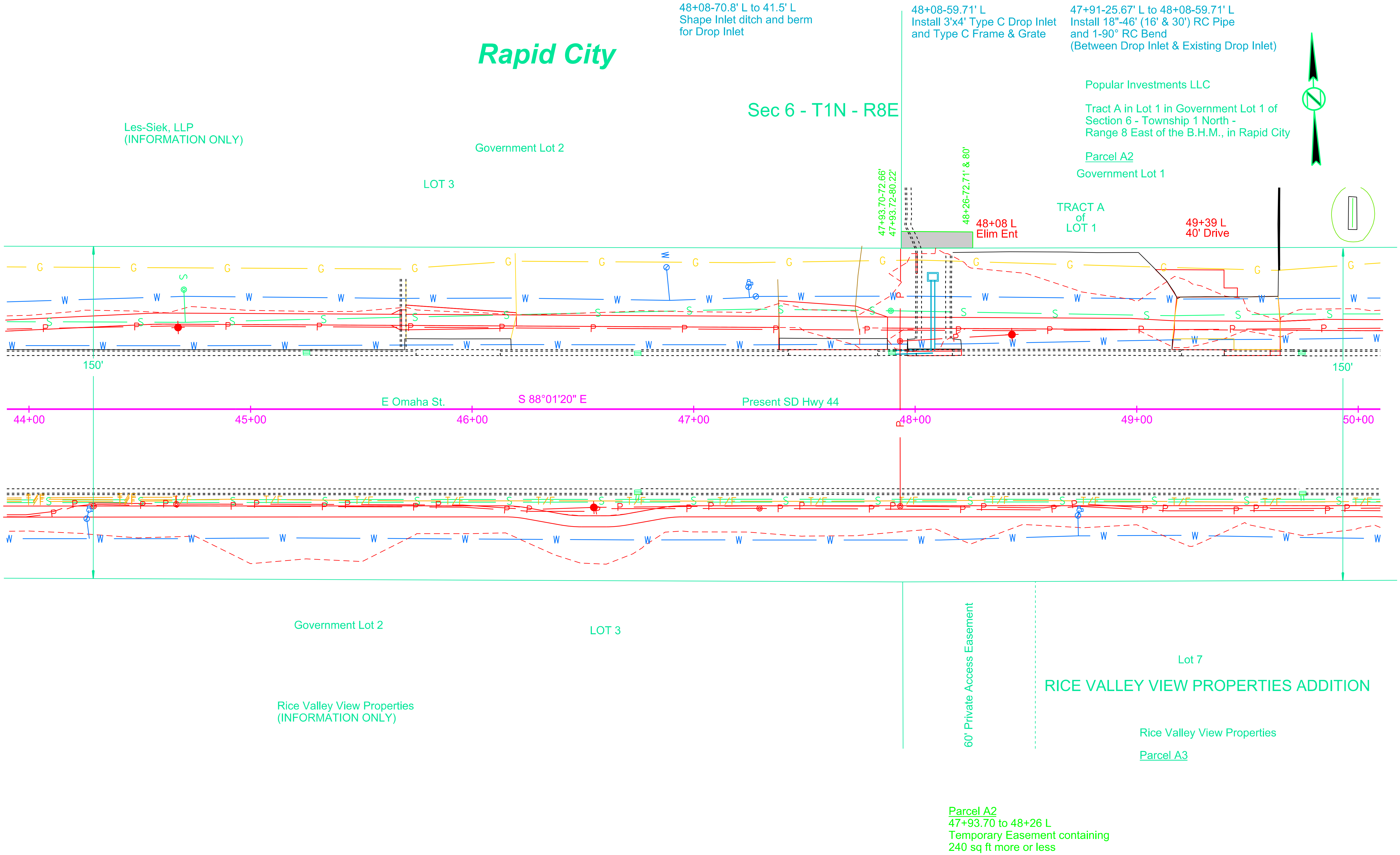
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B22	B123

Plotting Date: 10/18/2021 Rev 7/08/2021(BT)



48+08-70.8' L to 41.5' L
Shape Inlet ditch and berm
for Drop Inlet
48+08-59.71' L
Install 3'x4' Type C Drop Inlet
and Type C Frame & Grate
47+91-25.67' L to 48+08-59.71' L
Install 18"-46' (16' & 30') RC Pipe
and 1-90° RC Bend
(Between Drop Inlet & Existing Drop Inlet)
Rapid City
Sec 6 - T1N - R8E
Popular Investments LLC
Tract A in Lot 1 in Government Lot 1 of
Section 6 - Township 1 North -
Range 8 East of the B.H.M., in Rapid City
Parcel A2
Government Lot 1
Les-Siek, LLP
(INFORMATION ONLY)
Government Lot 2
LOT 3
47+93.70-72.66'
47+93.72-80.22'
48+26-72.71' & 80'
48+08 L
Elim Ent
TRACT A
of
LOT 1
49+39 L
40' Drive
150'
150'
E Omaha St.
S 88°01'20" E
Present SD Hwy 44
44+00
45+00
46+00
47+00
48+00
49+00
50+00
Government Lot 2
LOT 3
60' Private Access Easement
Lot 7
RICE VALLEY VIEW PROPERTIES ADDITION
Rice Valley View Properties
(INFORMATION ONLY)
Rice Valley View Properties
Parcel A3
Parcel A2
47+93.70 to 48+26 L
Temporary Easement containing
240 sq ft more or less

Plot Scale - 1:40

Plotted From - trpr13418

File - U:\rd\prj\penn04PD044.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B23	B123

Plotting Date: 10/15/2021 Rev. 7/23/2020(BT)

Plot Scale - 1:40

Rapid City

RYPKEMA SUBDIVISION

TRACT E

Sec 6 - T1N - R8E

Popular Investments LLC

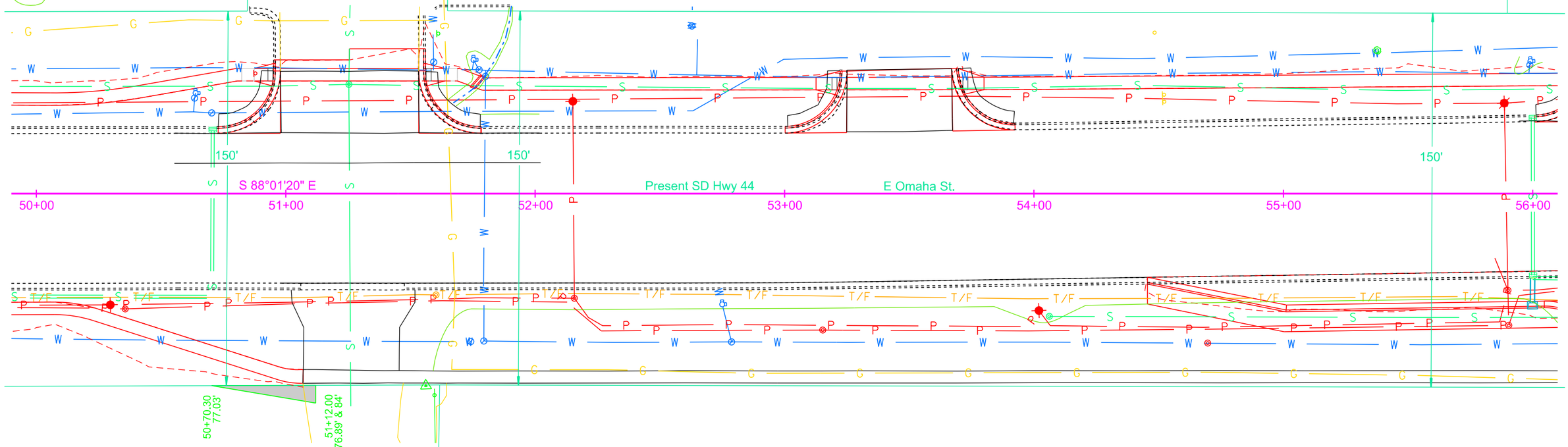
Parcel A2

TRACT A
of
LOT 1

Poplar Avenue

80'

Industrial Leasing and Rentals, LLC
(INFORMATION ONLY)



Lot 7

Lot 6

RICE VALLEY VIEW PROPERTIES ADDITION

Rice Valley View Properties
Lot 7 of Rice Valley View
Properties Addition to Rapid City

Parcel A3

Parcel A3
50+70.30 to 51+12 R
Temporary Easement containing
148 sq ft more or less

Plotted From - TRPP17192

File - U:\rdp\prj\penn\04PD\050.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B24	B123

Plotting Date: 10/15/2021 Rev 6/3/2021(BT)

56+00.13-32.87' R
Remove Type B Frame & Grate

56+00.13-32.87' R
Adjust 3'x4' Drop Inlet
& Install Special Type
Frame & Grate

56+00 - 32.67' R to 44.83' R
Install 18" - 10' RCP Arch
(Between Existing Drop Inlet & Drop Inlet)

59+32.28-34.88' R
Remove Type B Frame & Grate

59+32-34.88' R
Adjust 3'x4' Drop Inlet
& Install Special Type
Frame & Grate

59+32 - 34.88' R to 47.67' R
Install 18" - 12' RC Pipe
(Between Existing Pipe & Drop Inlet)

Install 2'x3' Type B Drop Inlet
with 6" Concrete Collar &
Type B Frame & Grate
at the following locations:
56+00-44.83' R
59+32-47.67' R

60+27 - 59.7' R
Install 3'x4' Type C Drop Inlet
& Type C Frame and Grate

60+27 - 59.7' R to 60+73 - 54' R
Install 18" - 42' RC Pipe
& 1-18" on 24" x6' RCP Tee
(Between Drop Inlet & Existing Pipe)

Rapid City

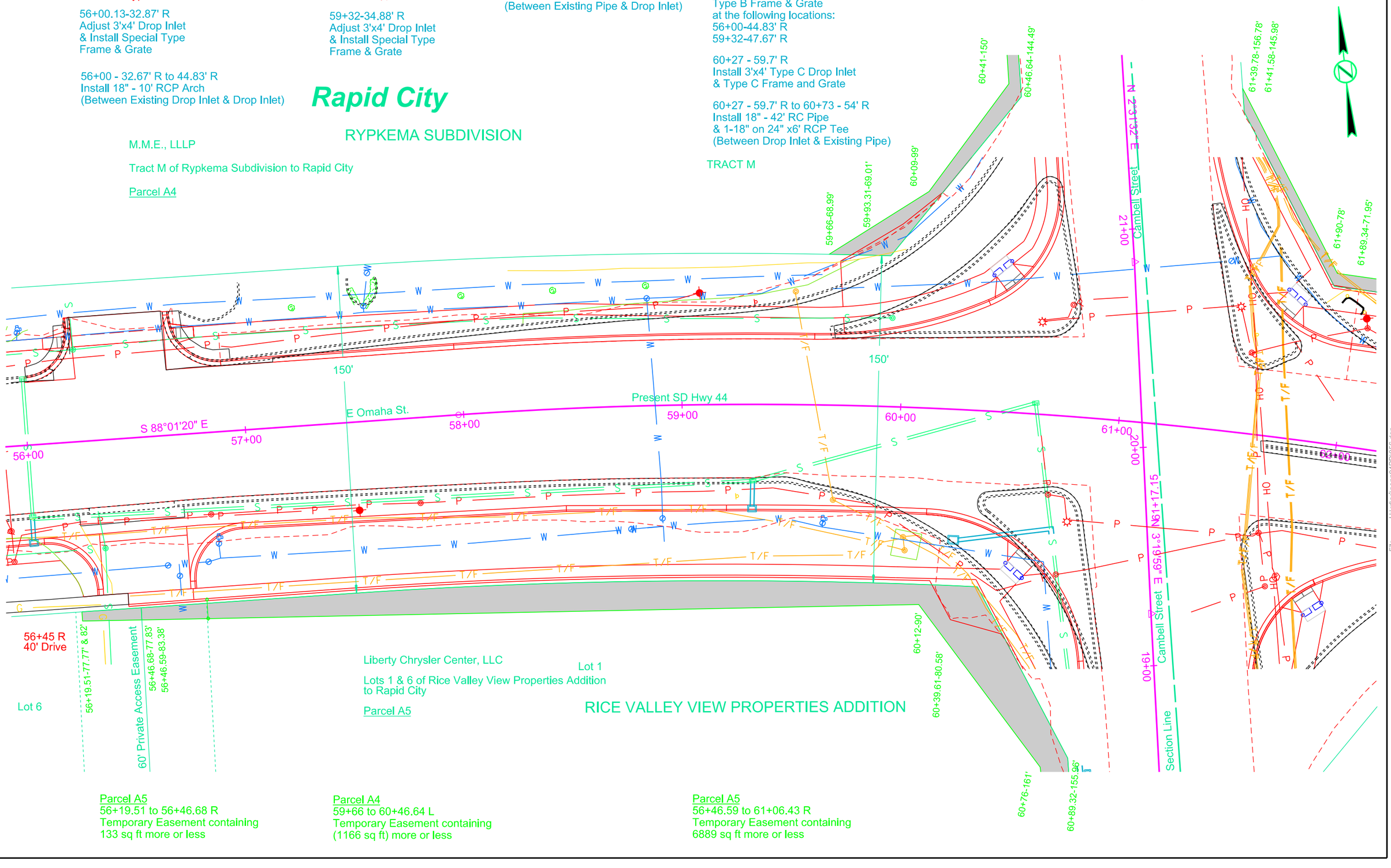
RYPKEMA SUBDIVISION

M.M.E., LLLP

Tract M of Rypkema Subdivision to Rapid City

Parcel A4

TRACT M



Parcel A5
56+19.51 to 56+46.68 R
Temporary Easement containing
133 sq ft more or less

Parcel A4
59+66 to 60+46.64 L
Temporary Easement containing
(1166 sq ft) more or less

Parcel A5
56+46.59 to 61+06.43 R
Temporary Easement containing
6889 sq ft more or less

Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rdp\rjpenn04PD\056.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B25	B123

Plotting Date: 10/15/2021 Rev 8/26/2021(BT)

18+52-36' L
Remove Drop Inlet

18+52 - 32.77' L to 18+52 - 36' L
Install 1-18" on 24"x 6' RC Tee
(Between Drop Inlet & Existing Pipe)

18+52 - 32.77' L
Install 2' X 3' Type B Drop Inlet
and Type B Frame & Grate
Top of Grate El 3212.14
Top Wall El 3210.68
Floor El 3206.77

Leicop 3, L.L.C.
Lot 2 of RTA Addition to Rapid City
Parcel A6

RTA ADDITION

LOT 2

LMK Land, LLC
Lot 6A of Cambell Square Addition
to Rapid City
Parcel A9

CAMBELL SQUARE ADDITION

LOT 6A

Present SD Hwy 44

61+10.60 (mainline) =
20+11.37 (XR61)

Cambell Street
N 2°31'32" E

Section Line
N 3°19'59" E

Cambell Street
N 3°02'37" E

N 1°24'07" E

61+17.15

22+00

23+00

21+00

20+00

19+00

18+00

17+63

61+00

60+00

101'

150'

61+90-78'
61+89.34-71.95'
61+41.58-145.98'
61+39.78-156.78'

62+71.98-77.88'
62+60.40-77.94'
62+49.11-96.66'
62+13.07-153.55'
62+03.46-168.03'
62+22.42-231.99'
62+19.15- 232.80'

60+44.64-144.49'
60+40.39-197'
60+36-197'
60+41-150'
60+09-99'
59+93.31-69.01'

60+76-161'
60+89.32-155.96'
60+95.73-254.93'
61+06.43-252.99'
60+12-90'
60+39.61-80.58'

E Omaha St.

M.M.E., LLLP
TRACT M
Parcel A4

RYPKEMA SUBDIVISION

Lot 1

RICE VALLEY VIEW
PROPERTIES ADDITION

Rapid City
Liberty Chrysler Center, LLC
Parcel A5

Parcel A6
61+39.78 to 64+35.28 L
Temporary Easement containing
1917 sq ft more or less

Parcel A9
62+49.11 to 62+71.98 R
Temporary Easement containing
104 sq ft more or less

Parcel A9
62+03.46 to 62+22.42 R
Temporary Easement containing
502 sq ft more or less

Plot Scale - 1:40

Plotted From - TPPR17192

File - U:\drdp\rjpenn04PD\060.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B26	B123

Plotting Date: 10/18/2021 Rev 4/28/2021(BT)

62+46.85-37' R to 63+11 - 37' R
Take Out 18" - 62' RC Pipe
& 1 RC Bend
(Incidental Work, Grading)

62+49.7 - 44.28 R to 63+59 - 43.96' R
Install 18" - 106' RC Pipe
(Between Drop Inlets)

63+59 - 43.96 R to 63+56 - 52' R
Install 18" - 6' RC Pipe
(Between Drop Inlets)

Remove Drop Inlet
at the following locations:
62+46 - 37' R
63+11 - 37' R
63+57 - 44' R
64+04 - 35' L

63+11 - 37' R to 63+57 - 44' R
Take Out 18" - 48' RC Pipe
(Incidental Work, Grading)

63+98.07 - 49.35' L
Install 4'x11' Type S Drop Inlet Base,
Type S Precast Lid and
Type S Manhole Frame & Lid

63+98.07 - 49.35' L to 64+40.5 - 51' L
Install 30" - 36' RC Pipe
& 1 - 22.5° RC Bend
(Between Existing Pipe & Drop Inlet)

64+01.3 - 48' L to 64+04 - 33.72' L
Install 24" - 12' RCP
& 2-7.5° R C Bends
(Between Drop Inlet & Existing Pipe)

64+04 -35' L to 64+40 - 51' L
Take Out 30" - 40' RC Pipe
(Incidental Work, Grading)

65+20 - 141' L to 65+64 - 89' L
Install Class B Riprap
473.2 Tons (2.5' Thick)
& Class B Drainage Fabric
(406 Sq Yd)

65+40 - 97' L
Take Out End Section
(Incidental Work, Grading)

65+55 - 98' L
Take Out End Section
(Incidental Work, Grading)

65+36.5 - 101' L to 120' L
Install 48" - 8' RCP
& 1 Flared End

65+36.5 - 101' L
Install 7'x7' x5' H Junction Box
with Type S Manhole & Lid
3.0' - 48"x 24" RCP Eccentric Manhole

66+99.56-36.87' L
Remove Type B Frame & Grate

65+39.7 - 122.7' L to 65+57.5 - 92.5' L
Install 48" - 24' RCP
& 1 Flared End

65+57.5 - 92.5' L
Install 7'x7' x7' H Junction Box
with Type S Manhole & Lid
3.0' - 48"x 24" RCP Eccentric Manhole

66+99.56-36.87' L
Adjust 2'x3' Drop Inlet
& Install Special Frame & Grate

Rapid City

Leicop 3, L.L.C.

Lot 2 of RTA Addition in Rapid City

Parcel A6

RTA ADDITION

LOT 2

Wetlands area

Major Drainage Easement

64+86 L
40' Drive

LOT 1

40' Access Easement

Rapid Tire & Alignment, Inc.
Lot A of Lot 1 of RTA Addition in Rapid City
Parcel A7

RTA ADDITION

Lot A

66+55 L
40' Drive

63+10-81'
64+25-77'
64+35.28-73'
64+89.42-73.24'
64+66-135'
65+24.91
156.32'
65+49-166'
65+58-64-73.33'
66+20-81'
66+67-104'
66+82.90-74.09'
67+10.00
74.21' & 85.00'
67+70.00
74.48' & 85.00'

150'

Present SD Hwy 44

62+00
63+00
64+00
65+00
66+00
67+00
68+00

63+92- R
Elim Ent

PI 64+78.09
N 650050.75
E 1217929.79
Del 39°13'08" R
Dc 3°00'00"
T 680.42'
L 1307.30'
R 1909.86'

62+49.71-44.28' R
Install 2'x3' Type B Drop Inlet
with 6" Concrete Collar
and Type B Frame & Grate

63+59-43.96' R
Install 3'x4' Type B Drop Inlet
with 6" Concrete Collar
and Type B Frame & Grate

63+56-52' R
Install 3'x4' Type C Drop Inlet
and Type C Frame & Grate

65+36.5-101' L to 65+41.39-90.17' L
Install 48" - 10' RCP Arch
(Between Junction Box and Existing Pipe)

Lot 6A

LMK Land, LLC

Parcel A9

62+49.11-96.66'
62+60.40-77.94'
62+71.98-77.88'

ARM Land, LLC
(INFORMATION ONLY)

CAMBELL SQUARE ADDITION

LOT 5

Parcel A9
62+49.11 to 62+71.98 R
Temporary Easement containing
104 sq ft more or less

Parcel A6
64+66 to 65+56.84 L
Temporary Easement containing
5119 sq ft, more or less

Parcel A7
65+24.91 to 66+82.90 L
Temporary Easement containing
5691 sq ft, more or less

Parcel A7
67+10 to 67+70 L
Temporary Easement containing
656 sq ft, more or less

Plot Scale - 1:40

Plotted From - trgr13418

File - U:\rdlprj\penn\04PD\062.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B27	B123

Plotting Date: 10/15/2021 Rev 7/06/2020(BT)

Sec 5 - T1N - R8E

United States of America
(Department of Energy Western Area Power Administration)

A tract of land in Government Lot 4 of Section 5 - Township 1 North - Range 8 East of the B.H.M., Beginning at a point on the north line of Government Lot 4 of Section 5 - Township 1 North - Range 8 East of the B.H.M., 700 feet easterly of the Northwest corner of said Section 5; thence Easterly along the north line of Government Lot 4 of said Section 5, 630 feet; thence Southerly along the East line of Government Lot 4 of said Section 5, 926 feet; thence N51^20'W, 436.6 feet; thence along a curve to the left with a radius of 2621.65 feet, 274.6 feet; thence along a curve to the left with a radius of 1985 feet, 77.9 feet; thence north, 452.2 feet to the point of beginning and containing 9.81 acres more or less

Parcel A8

Government Lot 4

69+52.88-75.48'
69+70-95'
69+86-95'
69+98.32-76.15'

PI 71+78.73
N 649554.01
E 1218497.28
Del 1°13'19" L

Rapid City

150'
150'
150'

Present SD Hwy 44

68+00
69+00
70+00
71+00
S 48°48'13" E
72+00
S 50°01'32" E
73+00
a 73+00
a 74+00

EQUATION
Station 73+04.95 BK=
Station a 73+02.70 Ah

LOT 5
LOT 4
LOT 3
LOT 2

ARM Land, LLC
(INFORMATION ONLY)

S & N Homes, Inc.
(INFORMATION ONLY)

CAMBELL SQUARE ADDITION

Parcel A8
69+52.88 to 69+98.32 L
Temporary Easement containing
614 sq ft more or less

Plot Scale - 1:40
Plotted From - TRPR17192
File - U:\rdp\pj\pemn04PD\068.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B28	B123

Plotting Date: 10/15/2021

Government Lot 4

United States of America
(Department of Energy Western Area
Power Administration)

Parcel A8

Sec 5 - T1N - R8E

Rapid City

Black Hills Self Storage, LLC
(INFORMATION ONLY)

R.O.W. Line

Creek Drive

R.O.W. Line

Lot 1

GRIMM ADDITION

Lot 7

150'

150'

150'

S 50°01'32" E

Present SD Hwy 44

S 49°16'16" E

a 74+00

a 75+00

a 76+00

a 77+00

a 78+00

a 79+00

a 80+00

PI a 76+74.13
N 649234.30
E 1218878.64
Del 0°45'15" R

66' Creek Drive

LOT A

LOT 2

CAMBELL SQUARE ADDITION

LOT A
of
LOT 1

Government Lot 3

S & N Homes, Inc.
(INFORMATION ONLY)

Northsiders Land, LLC
(INFORMATION ONLY)

Dakota Hills Real Estate, LLC
(INFORMATION ONLY)

Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rdprj\penn\04PDla 074.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B29	B123

Plotting Date: 10/18/2021

Sec 5 - T1N - R8E

Rapid City

Wetland area

Black Hills Self Storage, LLC
(INFORMATION ONLY)

Regency of South Dakota, Inc.
(INFORMATION ONLY)

SE1/4 NW1/4

BROOKDALE ADDITION

GRIMM ADDITION

a 80+26 L
40' Ent

Lot 7

TRACT A

150'

150'

Present SD Hwy 44

S 49°16'16" E

a 80+00 a 81+00 a 82+00 a 83+00 a 84+00 a 85+00 a 86+00

Government Lot 3

LOT A

Dakota Hills Real Estate, LLC
(INFORMATION ONLY)

Lot A
of
LOT 3
of
LOT B

LOT 3

SE1/4 NW1/4

Lot B
of
LOT 3
of
LOT B

Quick Lane

66'

Lot 1
of
LOT 4
of
LOT B

Plot Scale - 1:40

Plotted From - trpr13418

File - U:\rdprj\penn\04PD\a 080.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B30	B123

Plotting Date: 10/15/2021 Rev 7/06/2020(BT)

a 86+08-58' L
Take Out Type S Drop Inlet

a 86+40-64' L
Take Out Type S Drop Inlet

a 86+11-62' L to a 86+39 - 63' L
Retain 18" - 28' RCP

Install 2'x3' Type B Drop Inlet
with 6" Concrete Collar and
Type B Frame & Grate
at the following locations:
a 86+11.35-62.17' L
a 86+11.86-66.15' L
a 86+39.08-63.39' L
a 86+39.59-67.36' L

a 86+11.86-66.15' L to a 86+11.35-62.17' L
Install 18"-2' RC Pipe
(Between Drop Inlets)

a 86+39.59-67.36' L to a 86+39.08-63.39' L
Install 18"-2' RC Pipe
(Between Drop Inlets)

Sec 5 - T1N - R8E

Rapid City

Regency of South Dakota, Inc.
(INFORMATION ONLY)

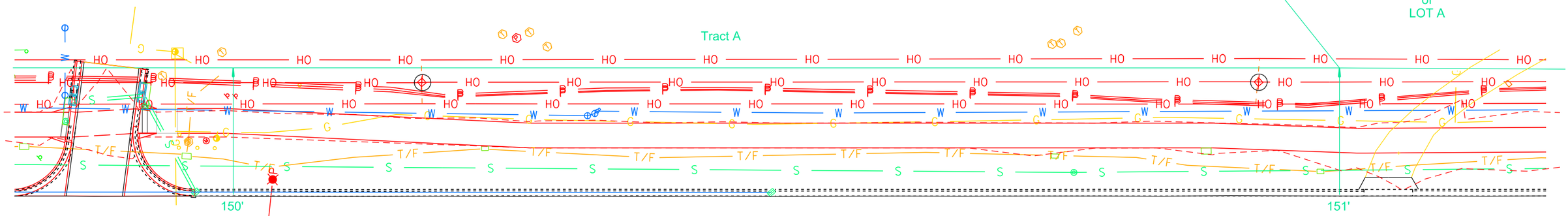
BROOKDALE ADDITION

SE1/4 NW1/4

Lyle N. Hendrickson &
Lola LaRene Scheller Hendrickson
(INFORMATION ONLY)

Lot 1
of
LOT A

Tract A



S 49°16'16" E

Present SD Hwy 44

a 86+00 a 87+00 a 88+00 a 89+00 a 90+00 a 91+00 a 92+00

Lot 2
of
LOT 4
of
LOT B

Horst Developments, L.L.C.
(INFORMATION ONLY)

Lot 3
of
LOT 4
of
LOT B

SE1/4 NW1/4

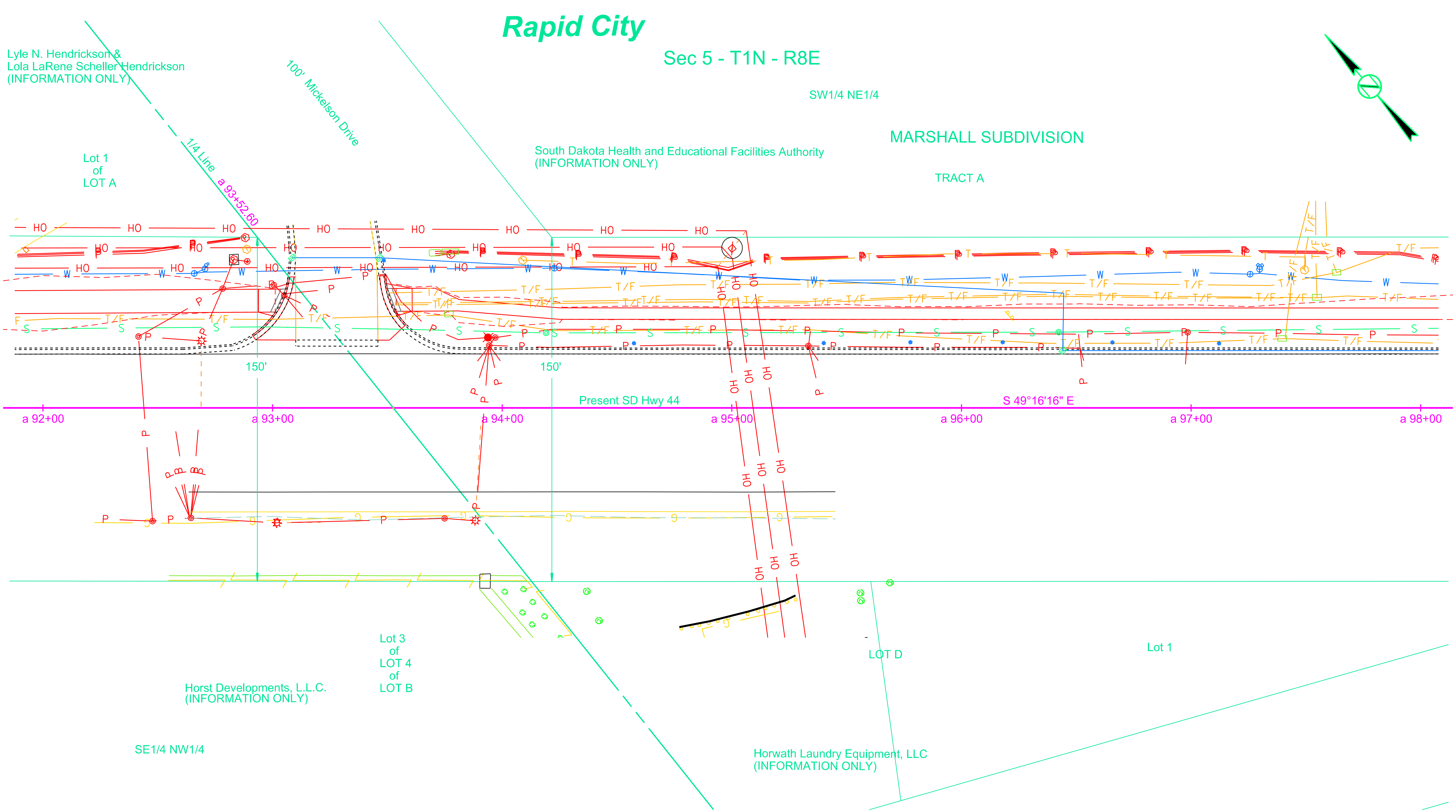
Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rdprj\penn\04PDta 086.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B31	B123

Plotting Date: 10/15/2021



Rapid City
Sec 5 - T1N - R8E
SW1/4 NE1/4
MARSHALL SUBDIVISION
TRACT A
South Dakota Health and Educational Facilities Authority
(INFORMATION ONLY)
Lyle N. Hendrickson &
Lola LaRene Scheller Hendrickson
(INFORMATION ONLY)
100' Mickelson Drive
1/4 Line
a 93+52.60
Lot 1
of
LOT A
150'
150'
Present SD Hwy 44
S 49°16'16" E
a 92+00
a 93+00
a 94+00
a 95+00
a 96+00
a 97+00
a 98+00
Lot 3
of
LOT 4
of
LOT B
Horst Developments, L.L.C.
(INFORMATION ONLY)
SE1/4 NW1/4
LOT D
Lot 1
Horwath Laundry Equipment, LLC
(INFORMATION ONLY)

Plot Scale - 1:40

Plotted From - TRPR17192

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B32	B123

Plotting Date: 10/15/2021

Rapid City

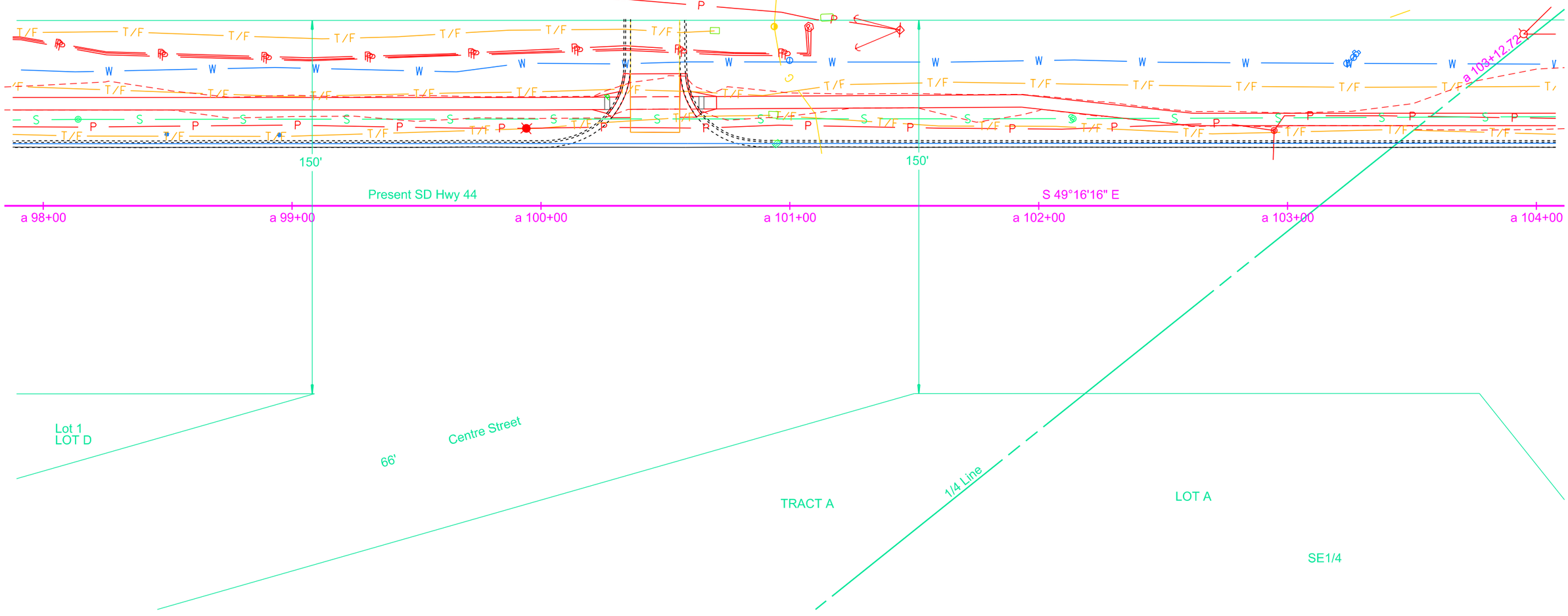
Sec 5 - T1N - R8E

MARSHALL SUBDIVISION

SW1/4 NE1/4

TRACT A

South Dakota Health and Educational Facilities Authority
(INFORMATION ONLY)



Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rdlprj\penn\04PD\a 098.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B33	B123

Plotting Date: 10/15/2021 Rev 7/06/2020(BT)

Plot Scale - 1:40

Rapid City

Sec 5 - T1N - R8E

a 109+25 - L
Retain 18" -14' RCP

a 109+25 - 46.40' L
Remove for Reset
Pipe End Section

a 109+25 - 40' L to 52' L
Install 18"- 6' RCP
& Reset Pipe End Section

TRACT A

MARSHALL SUBDIVISION

South Dakota Health and Educational Facilities Authority
Lot 6 in the SE1/4 of Section 5 - Township 1 North - Range 8 East of the B.H.M.
Parcel E1

1/4 Line

OH

LOT 6

SE1/4

a 109+58-L
Elim Ent

OH

150'

151'

S 49°16'16" E

Present SD Hwy 44

a 104+00 a 105+00 a 106+00 a 107+00 a 108+00 a 109+00 a 110+00

30' Alley

LOT 2

LOT 3

SE1/4

Plotted From - TRPR17192

File - U:\rdi\prj\penn04PD\a 104.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B34	B123

Plotting Date: 10/15/2021

a 113+95 - 45' L
Remove for Reset
Pipe End Section

a 113+95 L
Retain 42" - 10'
RCP Arch

a 113+95 - 38' L to 52' L
Install 42"- 6' RCP Arch
& Reset Pipe End Section

Sec 5 - T1N - R8E

Rapid City

NE1/4 SE1/4

HILLS VIEW SUBDIVISION

Lot 17

Royal N. Nielsen & Merle K. Nielsen
(INFORMATION ONLY)

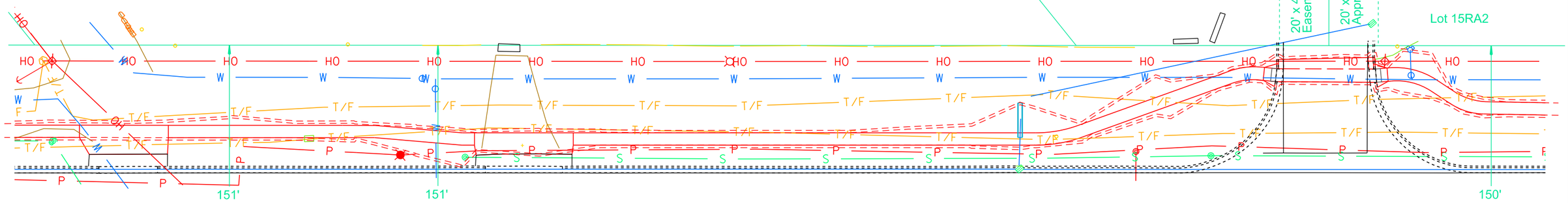
Lot 15RB

20' x 40' Permanent Easement for Access

20' x 40' Wide Approach

Jerry L. Olson & Donna M. Olson
(INFORMATION ONLY)

Lot 15RA2



151'

151'

150'

S 49°16'16" E

Present SD Hwy 44

a 110+00

a 111+00

a 112+00

a 113+00

a 114+00

a 115+00

a 116+00

LOT 3

66' Sedivy Lane

LOT 4

SE1/4

Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rdlp\pennl04PD\a 110.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B35	B123

Plotting Date: 10/15/2021

Rapid City

Sec 5 - T1N - R8E

Jerry L. Olson & Donna M. Olson
(INFORMATION ONLY)

HILLS VIEW SUBDIVISION

Lot 15RA2

Lot 5

150'

150'

S 49°16'16" E

Present SD Hwy 44

a 116+00 a 117+00 a 118+00 a 119+00 a 120+00 a 121+00 a 122+00

Lot 4

Lot 5

SE1/4

Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rdp\rp\penn04PDla 116.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B36	B123

Plotting Date: 10/15/2021

Plot Scale - 1:40

Rapid City

Sec 5 - T1N - R8E

Sec 4 - T1N - R8E

END SIDEWALK
Station a 126+67

Clifford R. Gibbs
(INFORMATION ONLY)

West 100 feet
Lot 14

Property Line

HILLS VIEW SUBDIVISION

Lot 14

Valley Developers

Lot 7 in the SE1/4 of Section 5 - Township 1 North - Range 8 East of the B.H.M., in Rapid City

Parcel A10

LOT 7

21' Emergency Access Easement

Jerry L. & Donna M. Olson
(INFORMATION ONLY)

Lot 5

SE1/4

66'

Valley Drive

a 126+43.22
81.83'

a 126+48.66
75.05'

a 125+60.42
75.03'

SW1/4 SW1/4

Country Cabin, LLC
(INFORMATION ONLY)

Lot 1a
of
Lot1
of
LOT A

150'

150'

150'

S 49°16'16" E

Present SD Hwy 44

S 49°16'00" E

a 122+00 | a 123+00 | a 124+00 | a 125+00 | a 126+00 | a 127+00 | a 128+00

a 127+51.28

Section Line

PI a 126+48.66
N 645988.52
E 1222648.37
Del 0°00'16" R

SE1/4

Lot 5

RAILROAD RIGHT OF WAY

Parcel A10
a 125+60.42 to a 126+48.66 L
Temporary Easement containing
299 sq ft more or less

Plotted From - TRPR17192

File - U:\rdp\pj\penn04PD\a 122.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B37	B123

Plotting Date: 10/15/2021

Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rdp\pj\penn04PDIa 140.dgn

Rapid City

Dacotah Federal Credit Union.
(INFORMATION ONLY)

Lot 2

Lot 3

14' Util. & Acc. Easement

45' Access Easement

Don Neumiller, Steve Neumiller & Brian Neumiller
(INFORMATION ONLY)

TRACT C

150'

Present SD Hwy 44

150'

a 140+00 a 141+00 a 142+00 a 143+00 a 144+00 a 145+00 a 146+00

Railroad R.O.W. Line

Railroad R.O.W. Line

a 128+00 to a 218+00 R
Do Not Disturb Environmental
Sensitive Site

RAILROAD RIGHT OF WAY

Division of Railroads for the State of South Dakota
(South Dakota Railroad Authority)
(INFORMATION ONLY)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B38	B123

Plotting Date: 10/15/2021

Plot Scale - 1:40

Rapid City

RT Enterprises, LLC
(INFORMATION ONLY)

HOLIDAY SUBDIVISION

Holiday Station Stores, Inc.
(INFORMATION ONLY)

Lot E

Lot 1

150'

S 49°16'00" E

Present SD Hwy 44

150'

a 152+00 a 153+00 a 154+00 a 155+00 a 156+00 a 157+00 a 158+0

Railroad R.O.W. Line

Railroad R.O.W. Line

RAILROAD RIGHT OF WAY

Division of Railroads for the State of South Dakota
(South Dakota Railroad Authority)
(INFORMATION ONLY)

Plotted From - TRPR17192

File - U:\rdpn\penn04PD\a152.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B39	B123

Plotting Date: 10/15/2021

Plot Scale - 1:40

West River Electric Assocation, Inc.
(INFORMATION ONLY)

WREA SUBDIVISION

Lot 1

PI a 166+84.35
N 643355.08
E 1225706.44
Del 0°00'57" L

Twilight Drive

CITY LIMITS

BEGIN SIDEWALK
Station a 168+08

Sec 9 - T1N - R8E

STEKL SUBDIVISION

Traci Ann Stekl
(INFORMATION ONLY)

Glenda Lee Byers
(INFORMATION ONLY)

SW1/4 NE1/4

Carney W. Wichmann
(INFORMATION ONLY)

Lot 8

Lot 9

Lot 10

Lot 11

Lot 12

CITY LIMITS

30' Dedicated Access Road

R.O.W Line

150'

150'

150'

S 49°16'00" E

S 49°16'58" E

Present SD Hwy 44

a 166+00

a 167+00

a 168+00

a 169+00

a 170+00

a 171+00

a 172+00

Railroad R.O.W. Line

R.O.W Line

U.S. Hwy 16B Exit /Access Ramp

R.O.W Line

Control of Access

Railroad R.O.W. Line

RAILROAD RIGHT OF WAY

Division of Railroads for the State of South Dakota
(South Dakota Railroad Authority)

Parcel A11

Rapid City

Plotted From - TRPR17192

File - U:\rdp\lpenn04PD\a 166.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B40	B123

Plotting Date: 10/15/2021

a 172+73-45' L
Remove for Reset
Pipe End Section

a 172+73 L
Retain 24" - 14'
RCP Arch

a 172+75-39' L to a 172+71-53' L
Install 24"- 8' RCP Arch
& Reset Pipe End Section

19' wide Access Easement

Sec 9 - T1N - R8E

SW1/4 NE1/4

Michael C. Carlson & Traci J. Carlson
(INFORMATION ONLY)

Richard A. Schlimgen, Robert J. Schlimgen
& Cindy A. Schlimgen
(INFORMATION ONLY)

John F. Kepler & Laverle E. Kepler
(INFORMATION ONLY)

Joseph A. Bauer
(INFORMATION ONLY)

Annie Roubideaux-Bennett &
Margaret Jean Lashley
(INFORMATION ONLY)

STEKL SUBDIVISION

Lot 12 | Lot 13 | Lot 14 | Lot C | Lot 15 | Lot B | Lot A | LOT 4 | Lot B

CITY LIMITS

30' Dedicated Access Road

30' Dedicated Access Road

40' Dedicated
Public Parkway

R.O.W. Line

150'

150'

S 49°16'58" E

Present SD Hwy 44

a 172+00 | a 173+00 | a 174+00 | a 175+00 | a 176+00 | a 177+00 | a 178+00

Control of Access

Railroad R.O.W. Line

Railroad R.O.W. Line

RAILROAD RIGHT OF WAY

Division of Railroads for the State of South Dakota
(South Dakota Railroad Authority)

Railroad Right of Way lying South of SD Highway 44 between
East St. Patrick Street on the West end and Jolly Lane on the East end;
in Sections 9 - Township 1 North - Range 8 East of the B.H.M.

Parcel A11

a 177+37.37-74.78'

a 177+40.91'

a 177+70.72-74.79'

a 177+70.79-89.86'

Elderberry Blvd Crossing

Rapid City

Parcel A11
a 177+37.37 to a 177+70.79 R
Temporary Easement containing
495 sq ft more or less

Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rdprj\penn\04PD\a 172.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B41	B123

Plotting Date: 10/15/2021

a 182+69 L
Retain 24" - 16' RCP Arch
Pipe End Section

a 182+69-49' L
Remove for Reset
Pipe End Section

a 182+69-43' L to 53' L
Install 24"- 4' RCP Arch
& Reset Pipe End Section

Sec 9 - T1N - R8E

LOT 4 | Clayton L. Neumiller & Alice E. Neumiller (INFORMATION ONLY) | LOT 6 | Gale Rogers (INFORMATION ONLY) | Joshua J. Birdsall & Keli J. Raber (INFORMATION ONLY) | LOT 8 | Marjorie A. Bargo (INFORMATION ONLY) | Robert R. Redetzke & Marilyn A. Redetzke (INFORMATION ONLY) | LOT 10

Lot B | Lot A | Lot B | SE1/4 NE1/4 Lot A | Lot B | Lot A | Lot B

CITY LIMITS

40' Dedicated Public Parkway | 40' Dedicated Public Parkway

R.O.W. Line

150' | 149'

S 49°16'58" E

Present SD Hwy 44

a 178+00 | a 179+00 | a 180+00 | a 181+00 | a 182+00 | a 183+00 | a 184+00

Railroad R.O.W. Line | Railroad R.O.W. Line

RAILROAD RIGHT OF WAY

Elderberry Blvd Crossing

a 178+28.88 90.74'
a 178+28.89 74.80'

a 178+60.65 74.81' & 89'

Division of Railroads for the State of South Dakota
(South Dakota Railroad Authority)

Parcel A11

Parcel A11
a 178+28.88 to a 178+60.65 R
Temporary Easement containing
478 sq ft more or less

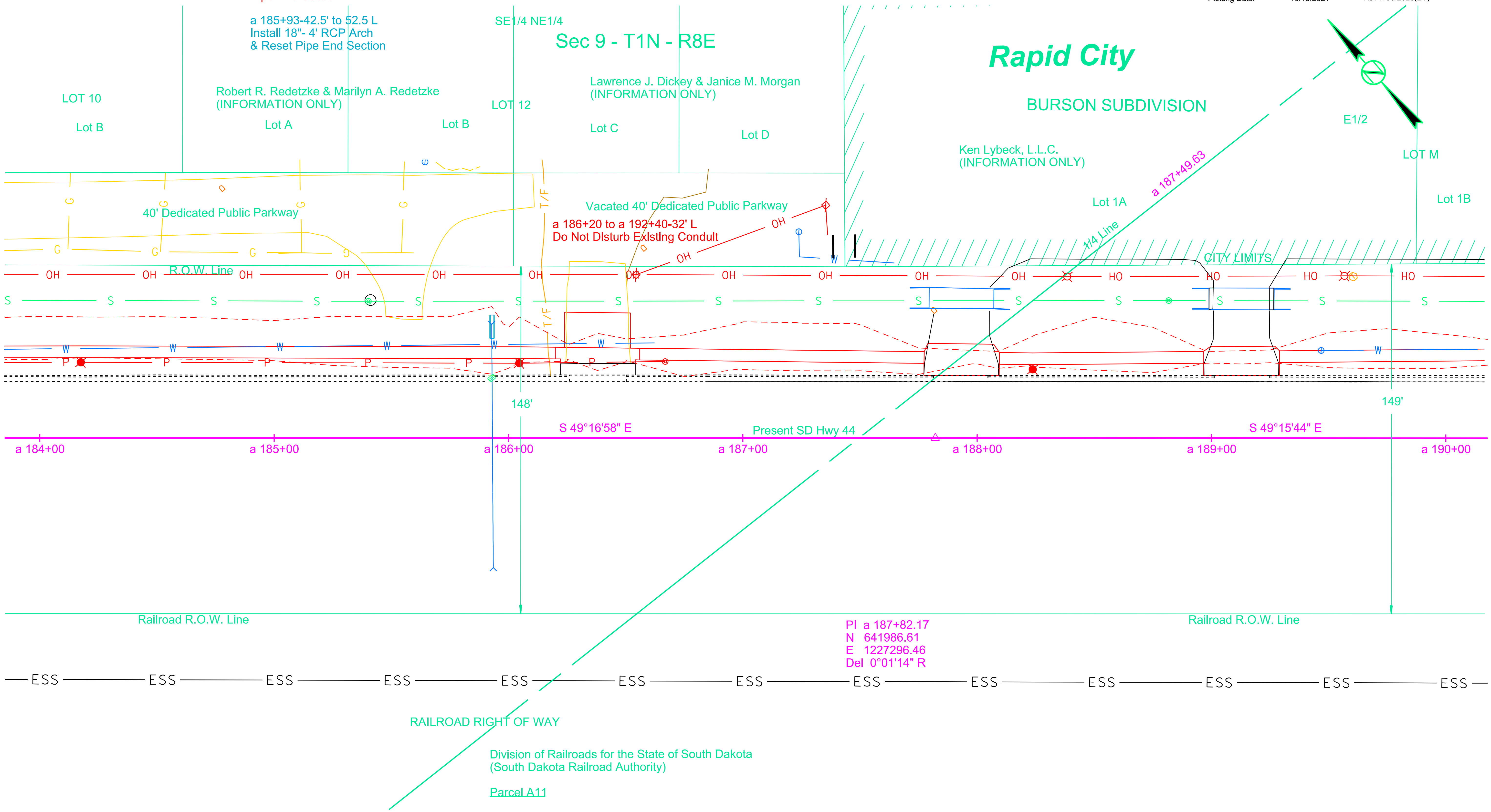
Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rdlprj\penn\04PD\a 178.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B42	B123

Plotting Date: 10/15/2021 Rev 7/06/2020(BT)



a 185+93 L
Retain 18" - 16' RCP Arch
a 185+93 L
Remove for Reset
Pipe End Section
a 185+93-42.5' to 52.5 L
Install 18"- 4' RCP Arch
& Reset Pipe End Section
SE1/4 NE1/4
Sec 9 - T1N - R8E
Rapid City
BURSON SUBDIVISION
LOT 10
Lot B
Robert R. Redetzke & Marilyn A. Redetzke
(INFORMATION ONLY)
Lot A
Lot B
LOT 12
Lawrence J. Dickey & Janice M. Morgan
(INFORMATION ONLY)
Lot C
Lot D
Ken Lybeck, L.L.C.
(INFORMATION ONLY)
E1/2
LOT M
Lot 1A
Lot 1B
a 187+49.63
1/4 Line
40' Dedicated Public Parkway
Vacated 40' Dedicated Public Parkway
a 186+20 to a 192+40-32' L
Do Not Disturb Existing Conduit
R.O.W. Line
CITY LIMITS
148'
149'
S 49°16'58" E
Present SD Hwy 44
S 49°15'44" E
a 184+00
a 185+00
a 186+00
a 187+00
a 188+00
a 189+00
a 190+00
Railroad R.O.W. Line
Railroad R.O.W. Line
PI a 187+82.17
N 641986.61
E 1227296.46
Del 0°01'14" R
ESS
RAILROAD RIGHT OF WAY
Division of Railroads for the State of South Dakota
(South Dakota Railroad Authority)
Parcel A11

Plot Scale - 1:40

TRPR17192

Plotted From -

File - U:\rd\prj\penn04PDa 184.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B43	B123

Plotting Date: 10/15/2021

a 195+93 L
Take Out Pipe End Section
(Incidental Work, Grading)

a 195+93 L
Retain 18"-4' RCP

a 195+93 - 35.5' L to 50' L
Install 18" - 4' RCP
& 1 Safety End

E1/2
Fresh Start Convenience Stores, Inc.
(INFORMATION ONLY)

Rapid City

BURSON SUBDIVISION

Sec 9 - T1N - R8E

Sec 10 - T1N - R8E

LOT M

Lot 1B

Lot 2

Section Line

Jolly Lane

a 195+37.11

Cross Country Real Estate, LLC
(INFORMATION ONLY)

NW1/4 SW1/4

CITY LIMITS

149'

152'

150'

S 49°15'44" E

Present SD Hwy 44

a 190+00 a 191+00 a 192+00 a 193+00 a 194+00 a 195+00 a 196+00

Railroad R.O.W. Line

Railroad R.O.W. Line

RAILROAD RIGHT OF WAY

RAILROAD RIGHT OF WAY

Division of Railroads for the State of South Dakota
(South Dakota Railroad Authority)

Parcel A11

Plot Scale - 1:40

Plotted From - TRPR317192

File - U:\rdp\pjpenn04PD\a 190.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B44	B123

Plotting Date: 10/18/2021

a 199+93 L
Retain 18" - 20' RCP
& 1 End Section

a 201+25.5-62.5' L
Remove for Reset
Pipe End Section

a 200+92-62' L
Retain 24"-66' CMP
& 2 End Sections

a 201+20.9 to a 201+29.8-62.5' L
Install 24"-4' CMP
Reset End Section

Sec 10 - T1N - R8E

NW1/4 SW1/4

Cross Country Real Estate, LLC
(INFORMATION ONLY)

Wetlands area

150'

150'

S 49°15'44" E

Present SD Hwy 44

a 196+00 a 197+00 a 198+00 a 199+00 a 200+00 a 201+00 a 202+00

Railroad R.O.W. Line

Railroad R.O.W. Line

RAILROAD RIGHT OF WAY

Division of Railroads for the State of South Dakota
(South Dakota Railroad Authority)
(INFORMATION ONLY)

Jolly Lane Section Line

CITY LIMITS

Plot Scale - 1:40

Plotted From - tmp13418

File - U:\drdp\rjpenn04PDla\196.dgn

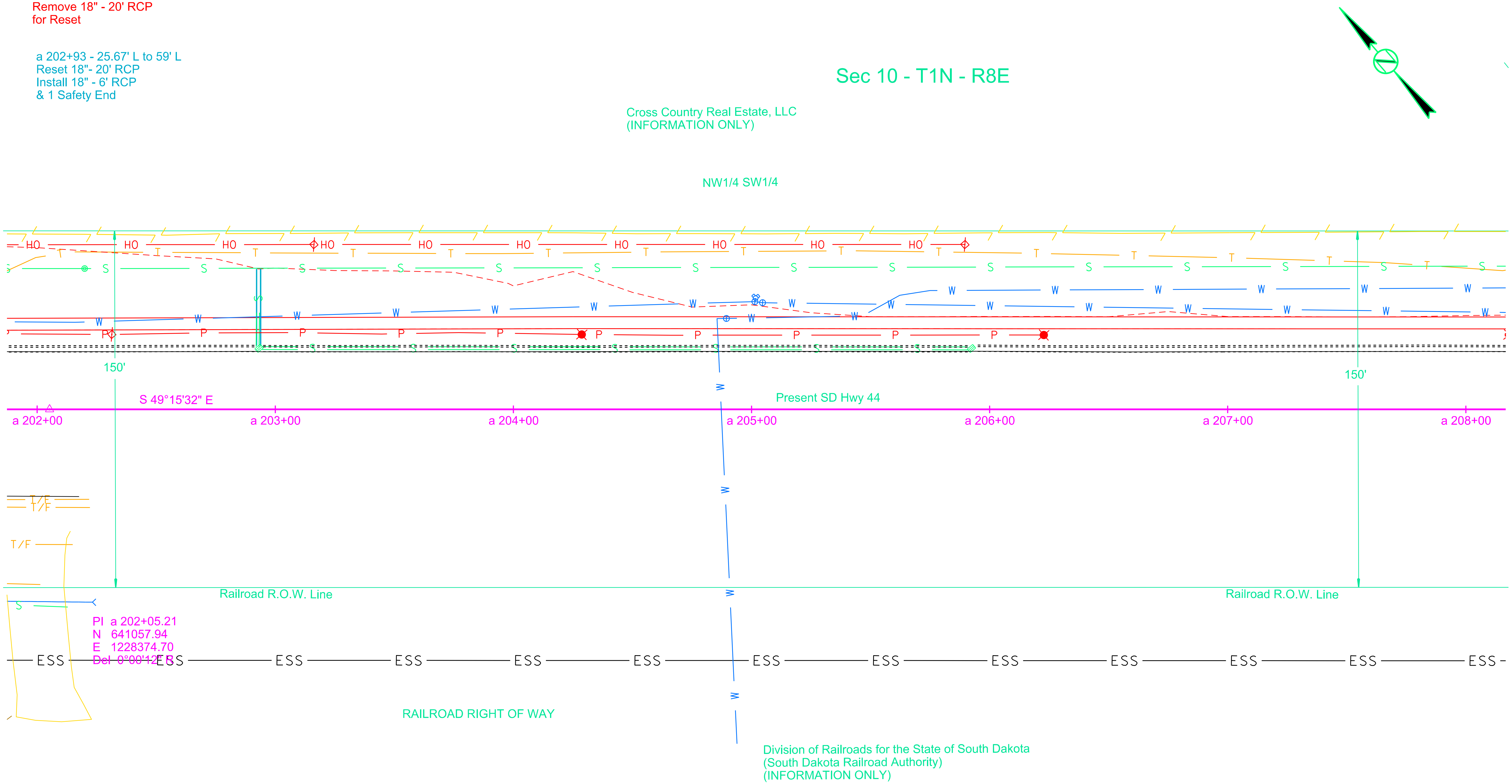
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B45	B123

Plotting Date: 10/15/2021

a 202+93-52' L
Take Out Pipe End Section
(Incidental Work, Grading)

a 202+93 L
Remove 18" - 20' RCP
for Reset

a 202+93 - 25.67' L to 59' L
Reset 18"- 20' RCP
Install 18" - 6' RCP
& 1 Safety End



Plot Scale - 1:40
TRPR17192
Plotted From -
File - U:\rd\prj\penn04PD\a 202.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B46	B123

Plotting Date: 10/15/2021

Plot Scale - 1:40

Sec 10 - T1N - R8E

Leonard V. Keller Trust
(INFORMATION ONLY)

RACETRACK SUBDIVISION

NW1/4 SW1/4

Lot E Revised

S/Seven, LLC
(INFORMATION ONLY)

SW1/4 SW1/4

MKC Family Partnership
(INFORMATION ONLY)

Lot BR

TRAILWOOD VILLAGE

SE1/4 SW1/4

Thomas K. Skoog
(INFORMATION ONLY)

Lot C

150'

150'

S 49°15'32" E

Present SD Hwy 44

a 208+00 a 209+00 a 210+00 a 211+00 a 212+00 a 213+00 a 214+00

Railroad R.O.W. Line

Railroad R.O.W. Line

RAILROAD RIGHT OF WAY

Division of Railroads for the State of South Dakota
(South Dakota Railroad Authority)
(INFORMATION ONLY)

Plotted From - TRPR17192

File - U:\roll\pr\jbenn04\PDla 208.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B47	B123

Plotting Date: 11/03/2021 Rev 11/10/21 RG

a 217+75-55' L to 26.09' L
Install 18" -22' RCP
& 1 Safety End

a 217+75 - 26.09' L
Install 2'x3' Type B Drop Inlet
with 6" Concrete collar
and Type B Frame & Grate

Sec 10 - T1N - R8E

Lot C

Thomas K. Skoog
(INFORMATION ONLY)

TRAILWOOD VILLAGE

END NH 0044(00)46
Station a 218+45

Covington Street

80'

Lot 1R
Lot B
BLOCK 16
TRAILWOOD VILLAGE

150'

150'

150'

S 49°15'32" E

Present SD Hwy 44

a 214+00 a 215+00 a 216+00 a 217+00 a 218+00 a 219+00 a 220+00

Railroad R.O.W. Line

RAILROAD RIGHT OF WAY

Division of Railroads for the State of South Dakota
(South Dakota Railroad Authority)
(INFORMATION ONLY)

Railroad R.O.W. Line

80'

RAILROAD RIGHT OF WAY

Redwing Lane

Plot Scale - 1:40

Plotted From - TRPP13418

File - U:\rdprj\penn\04PDla 214.dgn

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B48	B123

Plotting Date: 10/15/2021 Rev 6/4/2021(BT)

Note: All curb and gutter shown on this sheet is Type B610 except as noted.
All sidewalk is 5' wide except as noted.

1 32+27.72 - 30.47' L
Begin Str C & G
TC Elev (Match Existing)

2 32+39.00 - 30.47' L
End Str C & G
Begin Type P Gutter
TC Elev (Set in Field)

3 32+69.00 - 30.46' L
End Type P Gutter
Begin Str C & G
TC Elev (Set in Field)

4 32+75.00 - 30.46' L
End Str C & G
TC Elev (Match Existing)

5 33+18.74 - 30.41' L
Begin Str C & G
TC Elev (Match Existing)

6 33+89.25 - 30.31' L
End Str C & G
Begin 55' Rad Fillet
TC Elev 3190.58

7 34+44.32 - 85.10' L
End 55' Rad Fillet
Begin Str C & G
TC Elev 3190.51

8 34+44.57 - 98.16' L
End Str C & G
TC Elev (Match Existing)

9 34+99.18 - 127.15' L
Begin Str C & G
TC Elev (Match Existing)

10 34+99.26 - 114.15' L
End Str C & G
Begin 100' Rad Fillet
TC Elev (Set in Field)

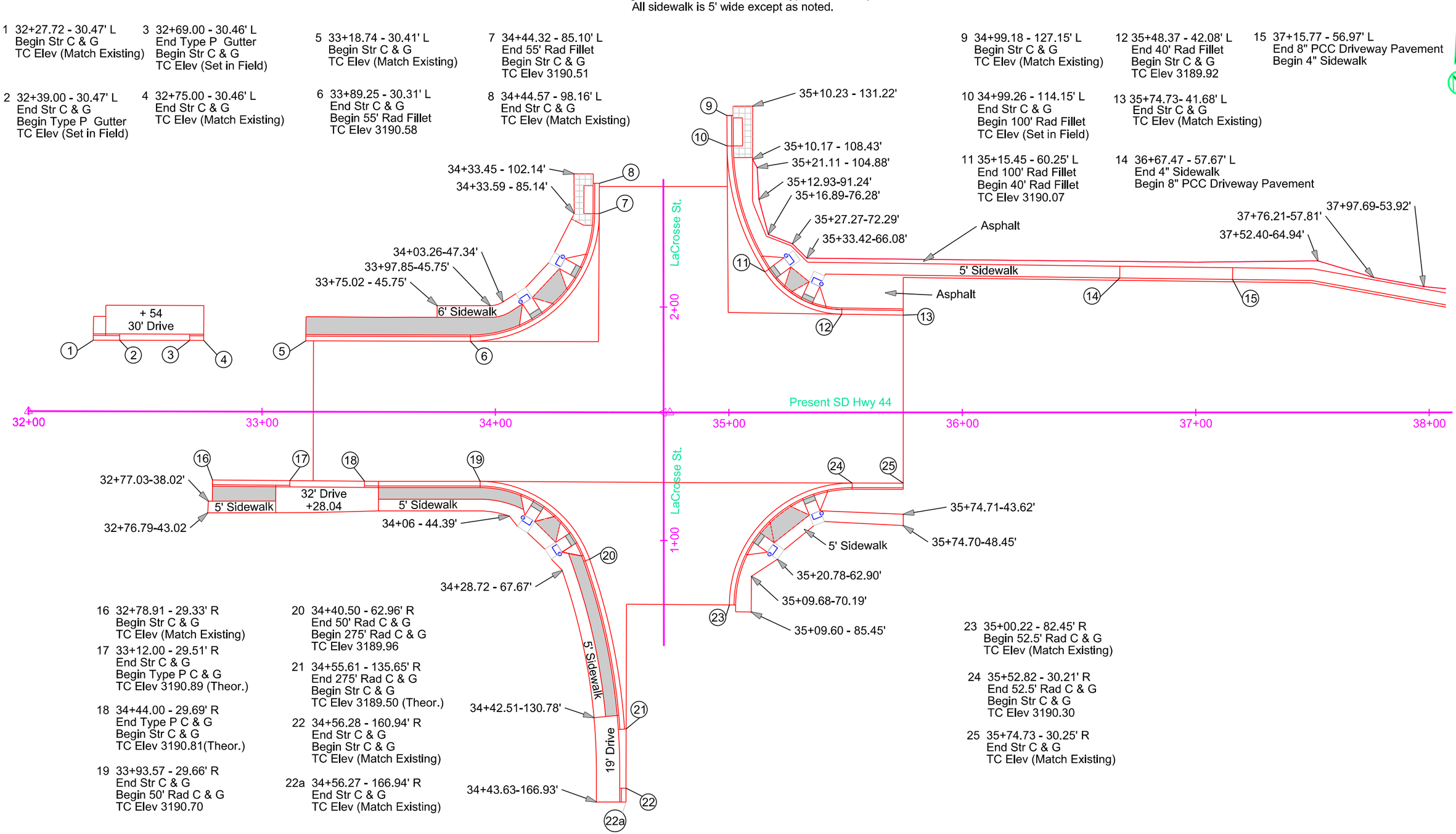
11 35+15.45 - 60.25' L
End 100' Rad Fillet
Begin 40' Rad Fillet
TC Elev 3190.07

12 35+48.37 - 42.08' L
End 40' Rad Fillet
Begin Str C & G
TC Elev 3189.92

13 35+74.73- 41.68' L
End Str C & G
TC Elev (Match Existing)

14 36+67.47 - 57.67' L
End 4" Sidewalk
Begin 8" PCC Driveway Pavement

15 37+15.77 - 56.97' L
End 8" PCC Driveway Pavement
Begin 4" Sidewalk



16 32+78.91 - 29.33' R
Begin Str C & G
TC Elev (Match Existing)

17 33+12.00 - 29.51' R
End Str C & G
Begin Type P C & G
TC Elev 3190.89 (Theor.)

18 34+44.00 - 29.69' R
End Type P C & G
Begin Str C & G
TC Elev 3190.81(Theor.)

19 33+93.57 - 29.66' R
End Str C & G
Begin 50' Rad C & G
TC Elev 3190.70

20 34+40.50 - 62.96' R
End 50' Rad C & G
Begin 275' Rad C & G
TC Elev 3189.96

21 34+55.61 - 135.65' R
End 275' Rad C & G
Begin Str C & G
TC Elev 3189.50 (Theor.)

22 34+56.28 - 160.94' R
End Str C & G
Begin Str C & G
TC Elev (Match Existing)

22a 34+56.27 - 166.94' R
End Str C & G
TC Elev (Match Existing)

23 35+00.22 - 82.45' R
Begin 52.5' Rad C & G
TC Elev (Match Existing)

24 35+52.82 - 30.21' R
End 52.5' Rad C & G
Begin Str C & G
TC Elev 3190.30

25 35+74.73 - 30.25' R
End Str C & G
TC Elev (Match Existing)

Colored Concrete Reinforced Concrete

Plot Scale - 1:40
Plotted From - TRPR17192
File - U:\rdi\prj\penn\04PD\032cg.dgn

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B49	B123

Plotting Date: 10/15/2021

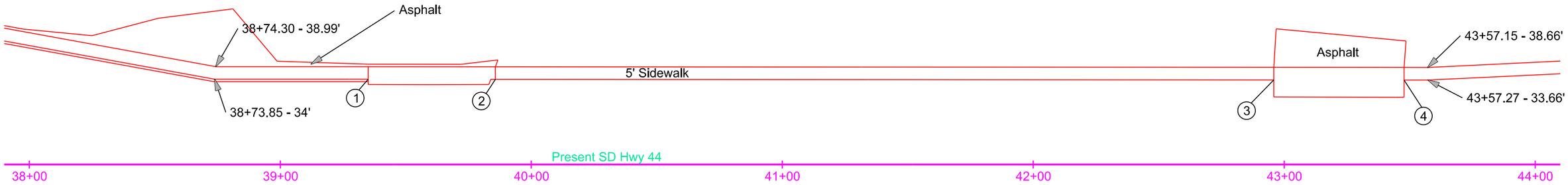
Note: All curb and gutter shown on this sheet is Type B610 except as noted.
All sidewalk is 5' wide except as noted.

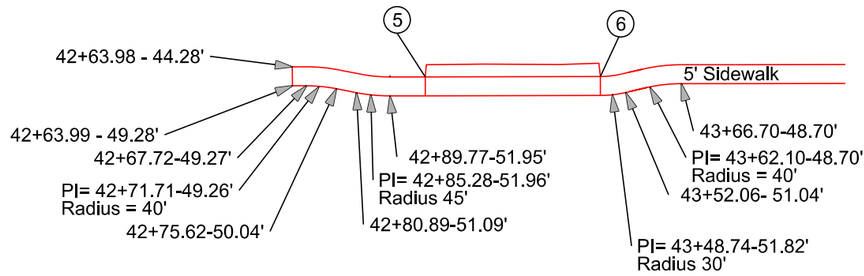
1 39+35.00-33.95' L
End 4" Sidewalk
Begin 8" PCC Driveway Pavement

2 39+85.71-33.92' L
End 8" PCC Driveway Pavement
Begin 4" Sidewalk

3 42+95.86-33.70' L
End 4" Sidewalk
Begin 8" PCC Driveway Pavement

4 43+47.78-33.67' L
End 8" PCC Driveway Pavement
Begin 4" Sidewalk





5 42+99.07-46.93' R
End 4" Sidewalk
Begin 8" PCC Driveway Pavement

6 43+45.31-46.82' R
End 8" PCC Driveway Pavement
Begin 5' sidewalk

Plot Scale - 1:40
Plotted From - TRPR17192
File - U:\rdp\pj\penn\04PD\038cg.dgn

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B50	B123

Plotting Date: 10/15/2021 Rev 7/08/2021(BT)

Note: All curb and gutter shown on this sheet is Type B610 except as noted.
All sidewalk is 5' wide except as noted.

1 45+70.18 - 35.80' L
Begin Str C & G
TC Elev (Match Existing)

2 45+70.14 - 44.80' L
End Str C & G
TC Elev (Match Existing)

3 45+70.17 - 37.80' L
Begin 8" PCC Driveway Pavement

4 46+19.97 - 37.52' L
End 8" PCC Driveway Pavement
Begin 4" Sidewalk

5 47+38.50 - 36.87' L
End 4" Sidewalk
Begin 8" PCC Approach Pavement

6 47+87.50 - 36.60' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk

7 47+96.37 - 24.11' L
Begin Str C & G
TC Elev (Match Existing)

8 48+20.92 - 24.23' L
End Str C & G
TC Elev (Match Existing)

9 49+17.00 - 35.89' L
End 4" Sidewalk
Begin 8" PCC Approach Pavement

10 49+64.74 - 35.63' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk

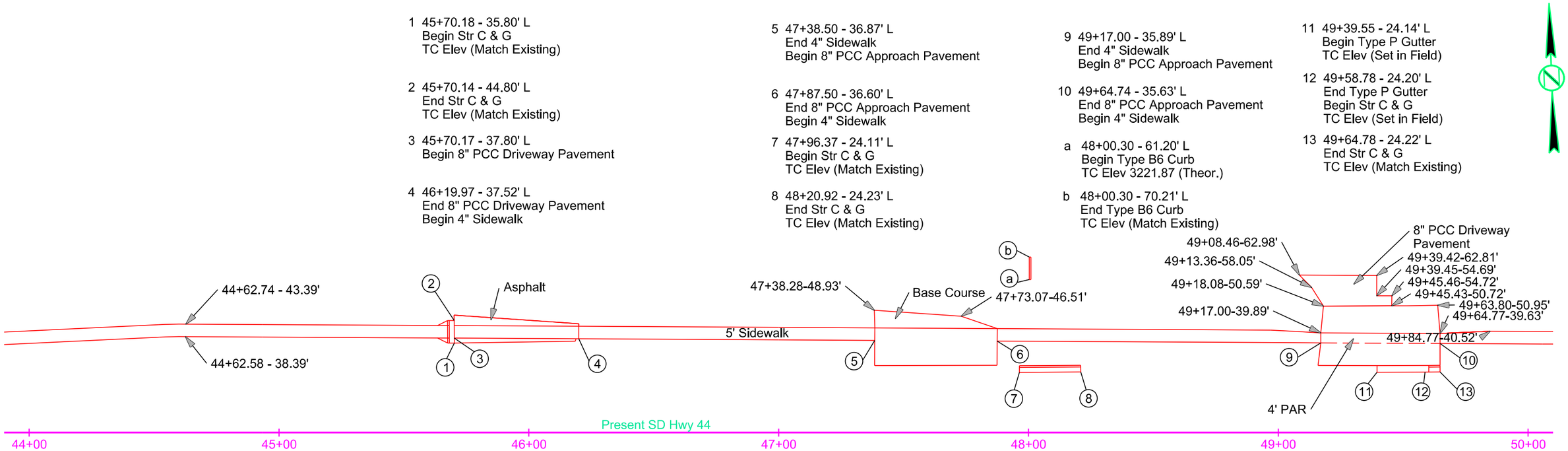
a 48+00.30 - 61.20' L
Begin Type B6 Curb
TC Elev 3221.87 (Theor.)

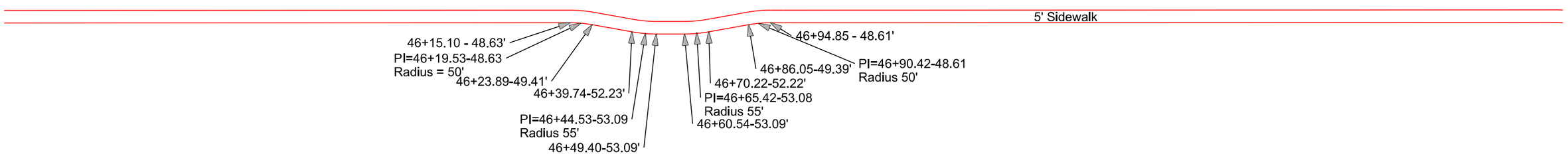
b 48+00.30 - 70.21' L
End Type B6 Curb
TC Elev (Match Existing)

11 49+39.55 - 24.14' L
Begin Type P Gutter
TC Elev (Set in Field)

12 49+58.78 - 24.20' L
End Type P Gutter
Begin Str C & G
TC Elev (Set in Field)

13 49+64.78 - 24.22' L
End Str C & G
TC Elev (Match Existing)





CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B51	B123

Plotting Date: 10/15/2021

Note: All curb and gutter shown on this sheet is Type B610 except as noted.
All sidewalk is 5' wide except as noted.

1 50+72.87-24.18' L
Begin 25' Rad Fillet
TC Elev (Match Existing)

2 50+97.85-49.19' L
End 25' Rad Fillet
Begin Str C & G
TC Elev (Set in Field)

3 50+97.85-53.62' L
End Str C & G
TC Elev (Match Existing)

4 51+53.28-58.12' L
Begin Str C & G
TC Elev (Match Existing)

5 51+53.29-49.23' L
End Str C & G
Begin 25' Rad Fillet
TC Elev (Set in Field)

6 51+78.31-24.25' L
End 25' Rad Fillet
TC Elev (Match Existing)

a 51+74.88-42.42' L
Begin Sidewalk Drain

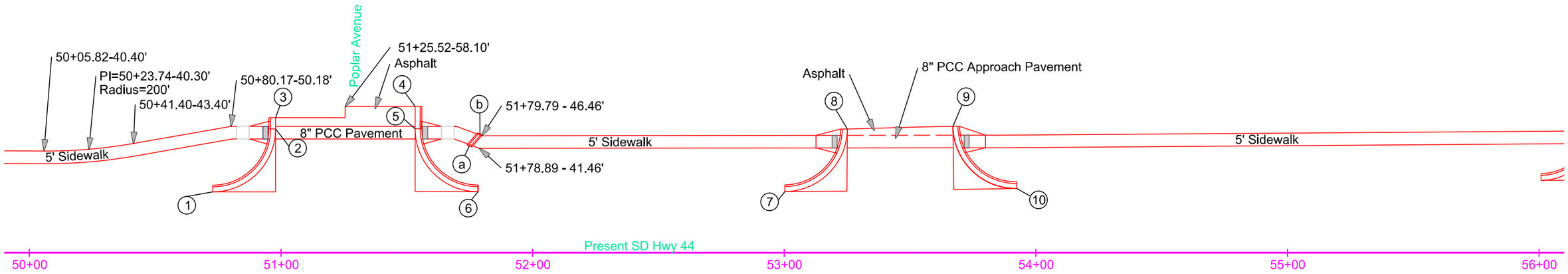
b 51+79.09-47.26' L
End Sidewalk Drain

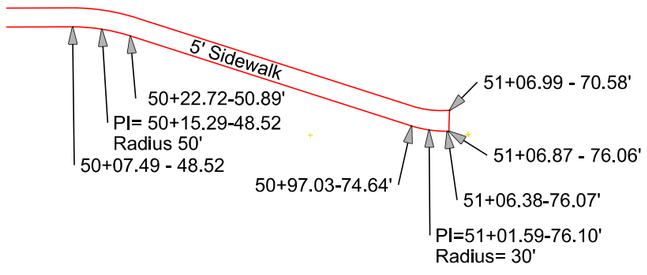
7 53+00.23-24.30' L
Begin 25' Rad Fillet
TC Elev (Match Existing)

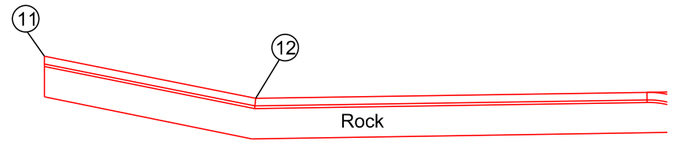
8 53+25.05-49.14' L
End 25' Rad Fillet
TC Elev (Match Existing)

9 53+67.02-50.20' L
Begin 25' Rad Fillet
TC Elev (Match Existing)

10 53+92.43-25.55' L
End 25' Rad Fillet
TC Elev (Match Existing)







11 54+45.53-33.53' R
Begin Str C & G
TC Elev (Match Existing)

12 55+01.29-44.68' R
End Str C & G
Begin Str C & G
TC Elev 3224.79

CURB AND GUTTER LAYOUT

Note: All curb and gutter shown on this sheet is Type B610 except as noted.
All sidewalk is 5' wide except as noted.

1 56+00.77 - 28.77' L
Begin 22.5' Rad Fillet
TC Elev (Match Existing)

2 56+23.17 - 52.09' L
End 22.5' Rad Fillet
Begin Str C & G
TC Elev (Set in Field)

3 56+22.99 - 56.93' L
End Str C & G
TC Elev (Match Existing)

4 56+65.80 - 56.44' L
Begin Str C & G
TC Elev (Match Existing)

5 56+65.80 - 55.00' L
End Str C & G
Begin 25' Rad Fillet
TC Elev (Set in Field)

6 56+90.80 - 30.00' L
End 25' Rad Fillet
Begin Str C & G
TC Elev 3221.83

7 57+97.67 - 30.00' L
End Str C & G
Begin 1939.86' Rad C & G
TC Elev 3220.51

8 59+60.23 - 30.00' L
End 1939.86 Rad C & G
Begin 200' Rad C & G
TC Elev 3218.27

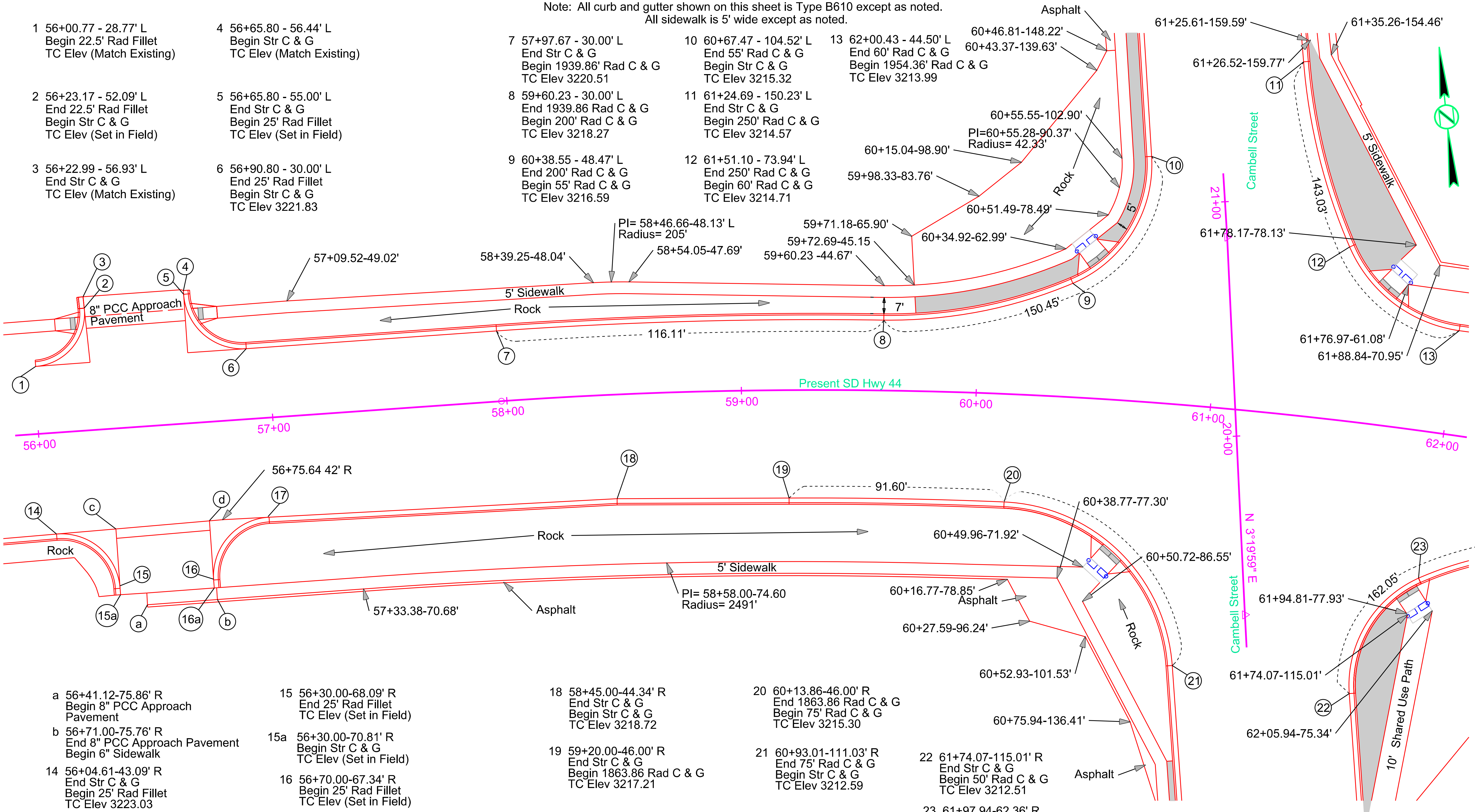
9 60+38.55 - 48.47' L
End 200' Rad C & G
Begin 55' Rad C & G
TC Elev 3216.59

10 60+67.47 - 104.52' L
End 55' Rad C & G
Begin Str C & G
TC Elev 3215.32

11 61+24.69 - 150.23' L
End Str C & G
Begin 250' Rad C & G
TC Elev 3214.57

12 61+51.10 - 73.94' L
End 250' Rad C & G
Begin 60' Rad C & G
TC Elev 3214.71

13 62+00.43 - 44.50' L
End 60' Rad C & G
Begin 1954.36' Rad C & G
TC Elev 3213.99



a 56+41.12-75.86' R
Begin 8" PCC Approach Pavement

b 56+71.00-75.76' R
End 8" PCC Approach Pavement
Begin 6" Sidewalk

14 56+04.61-43.09' R
End Str C & G
Begin 25' Rad Fillet
TC Elev 3223.03

c 56+30-42.7' R
Begin Valley Gutter

d 56+70-42.09' R
End Valley Gutter

15 56+30.00-68.09' R
End 25' Rad Fillet
TC Elev (Set in Field)

15a 56+30.00-70.81' R
Begin Str C & G
TC Elev (Set in Field)

16 56+70.00-67.34' R
Begin 25' Rad Fillet
TC Elev (Set in Field)

16a 56+70.00-70.76' R
Begin Str C & G
TC Elev (Set in Field)

17 56+95.00-42.00' R
End 25' Rad Fillet
Begin Str C & G
TC Elev 3221.41

18 58+45.00-44.34' R
End Str C & G
Begin Str C & G
TC Elev 3218.72

19 59+20.00-46.00' R
End Str C & G
Begin 1863.86 Rad C & G
TC Elev 3217.21

20 60+13.86-46.00' R
End 1863.86 Rad C & G
Begin 75' Rad C & G
TC Elev 3215.30

21 60+93.01-111.03' R
End 75' Rad C & G
Begin Str C & G
TC Elev 3212.59

22 61+74.07-115.01' R
End Str C & G
Begin 50' Rad C & G
TC Elev 3212.51

23 61+97.94-62.36' R
End 50' Rad C & G
Begin 140' Rad C & G
TC Elev 3212.37

Colored Concrete

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B53	B123

Plotting Date: 10/15/2021 Rev 8/26/2021(BT)

Note: All curb and gutter shown on this sheet is Type B610 except as noted.
All sidewalk is 5' wide except as noted.

1 61+05.22-305.77' L
Begin Str C & G
TC Elev (Match Existing)

2 61+08.89-247.72' L
End Str C & G
Begin Str C & G
TC Elev 3213.96

3 61+24.69-150.23' L
End Str C & G
Begin 250' Rad C & G
TC Elev 3214.57

4 61+51.10-73.94' L
End 250' Rad C & G
Begin 60' Rad C & G
TC Elev 3214.71

5 62+00.43-44.50' L
End 60' Rad C & G
Begin 1954.36' Rad C & G
TC Elev 3213.99

6 62+87.47-39.96' R
End Str C & G
Begin 140' Rad C & G
TC Elev 3211.92

7 61+97.94-62.36' R
End 140' Rad C & G
Begin 50' Rad C & G
TC Elev 3212.37

8 61+74.07-115.01' R
End 50' Rad C & G
Begin Str C & G
TC Elev 3212.51

9 62+00.41-231.15' R
End Str C & G
TC Elev (Match Existing)

10 60+56.65-194.54' L
Begin Str C & G
TC Elev (Match Existing)

11 60+67.47-104.52' L
End Str C & G
Begin 55' Rad C & G
TC Elev 3215.32

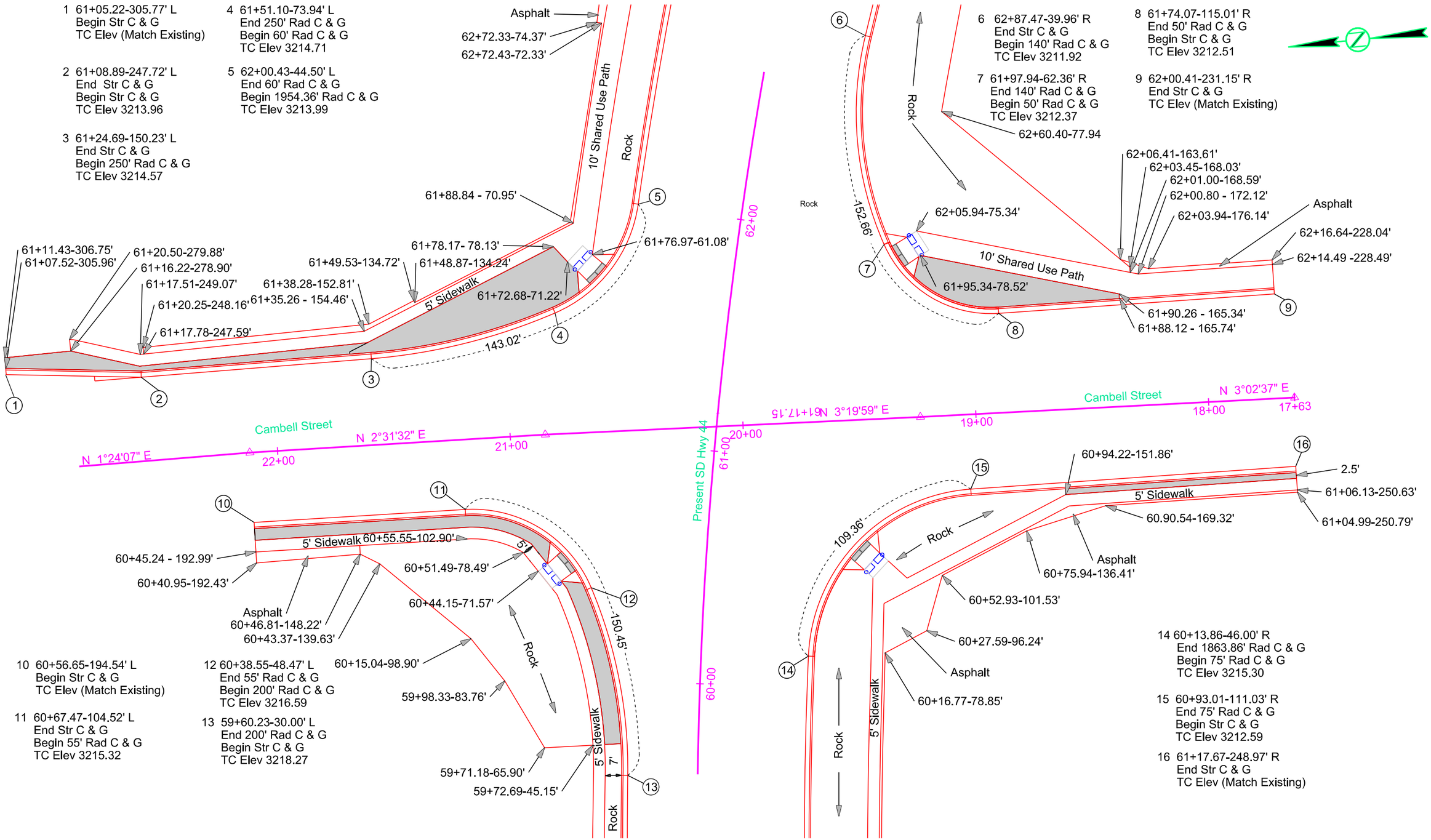
12 60+38.55-48.47' L
End 55' Rad C & G
Begin 200' Rad C & G
TC Elev 3216.59

13 59+60.23-30.00' L
End 200' Rad C & G
Begin Str C & G
TC Elev 3218.27

14 60+13.86-46.00' R
End 1863.86' Rad C & G
Begin 75' Rad C & G
TC Elev 3215.30

15 60+93.01-111.03' R
End 75' Rad C & G
Begin Str C & G
TC Elev 3212.59

16 61+17.67-248.97' R
End Str C & G
TC Elev (Match Existing)



CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B54	B123

Plotting Date: 10/18/2021 Rev 8/26/2021(BT)

Note: All curb and gutter shown on this sheet is Type B10 except as noted.
All sidewalk is 10' wide except as noted.

1 62+00.43-44.50' L
Begin 1954.36' Rad C & G
TC Elev 3213.99

2 63+00.92-44.50' L
End 1954.36' Rad C & G
Begin 1954.36' Rad C & G
TC Elev 3213.04

3 65+66.02-45.67' L
End 1954.36' Rad C & G
Begin 1954.36' Rad Type P Gutter
TC Elev 3212.71 (Theor)

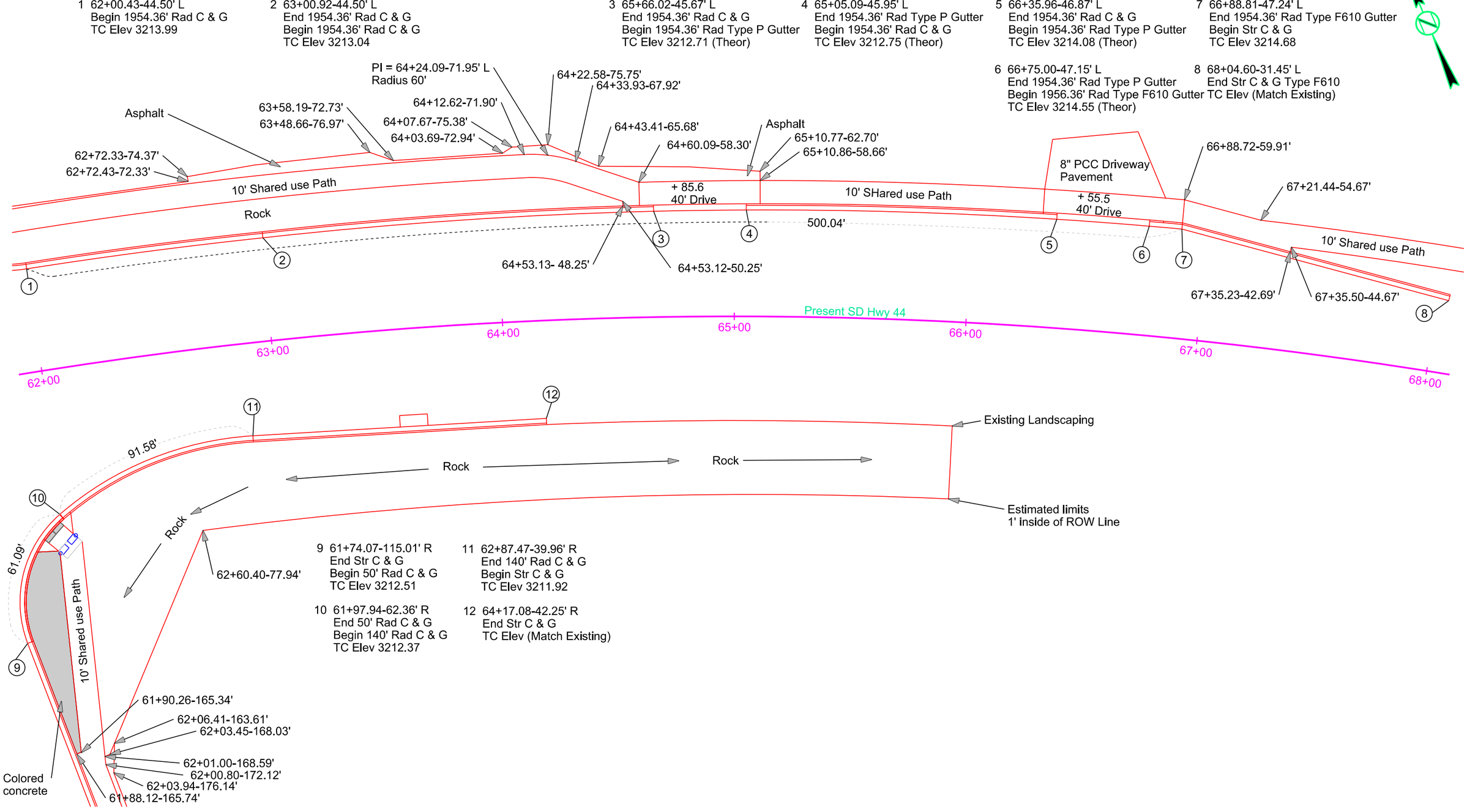
4 65+05.09-45.95' L
End 1954.36' Rad Type P Gutter
Begin 1954.36' Rad C & G
TC Elev 3212.75 (Theor)

5 66+35.96-46.87' L
End 1954.36' Rad C & G
Begin 1954.36' Rad Type P Gutter
TC Elev 3214.08 (Theor)

6 66+75.00-47.15' L
End 1954.36' Rad Type P Gutter
Begin 1956.36' Rad Type F610 Gutter
TC Elev 3214.55 (Theor)

7 66+88.81-47.24' L
End 1954.36' Rad Type F610 Gutter
Begin Str C & G
TC Elev 3214.68

8 68+04.60-31.45' L
End Str C & G Type F610
TC Elev (Match Existing)



9 61+74.07-115.01' R
End Str C & G
Begin 50' Rad C & G
TC Elev 3212.51

10 61+97.94-62.36' R
End 50' Rad C & G
Begin 140' Rad C & G
TC Elev 3212.37

11 62+87.47-39.96' R
End 140' Rad C & G
Begin Str C & G
TC Elev 3211.92

12 64+17.08-42.25' R
End Str C & G
TC Elev (Match Existing)

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B55	B123

Plotting Date: 10/18/2021

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 10' wide except as noted.

* Transition valley Gutter to sidewalk drain 6' wide

a 68+41.73-49.67' L
Middle of Sidewalk Drain

b 68+43.60-49.67' L
Middle of Sidewalk Drain

c 68+43.02-32.65' L
Begin 6" Valley Gutter

d 68+42.86-44.17' L
End 6" Valley Gutter

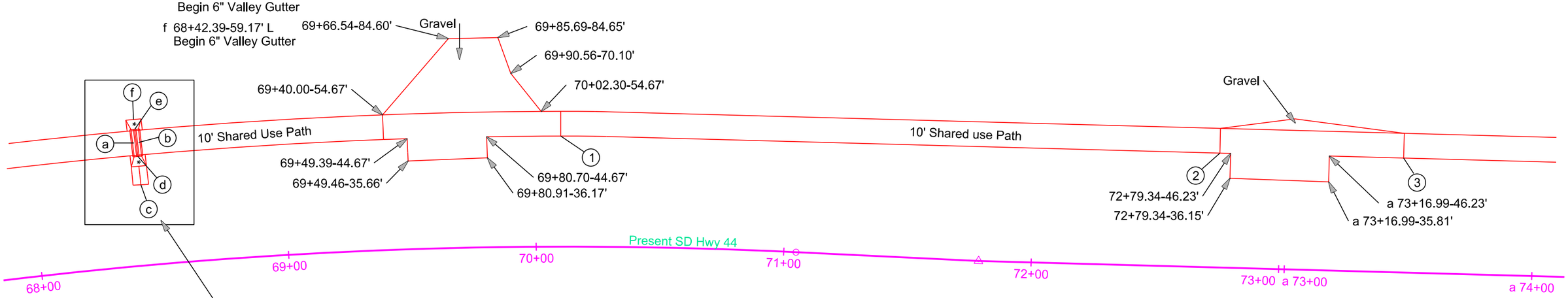
e 68+42.56-55.17' L
Begin 6" Valley Gutter

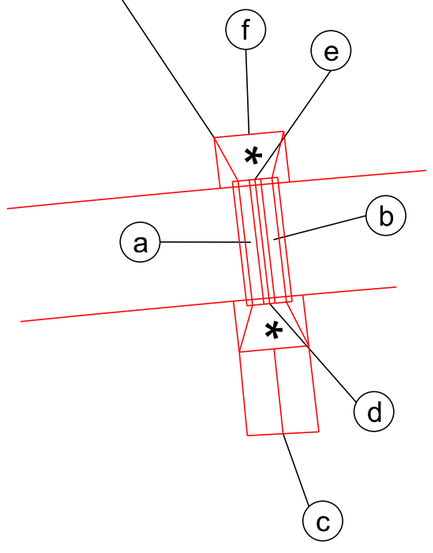
f 68+42.39-59.17' L
Begin 6" Valley Gutter

1 70+10.00-44.67' L
End 8" PCC Driveway Pavement
Begin 4" Sidewalk

2 72+75.00-46.23' L
End 4" Sidewalk
Begin 8" PCC Approach Pavement

3 a 73+47.00-46.23' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk





Plotted From - trpr13418

Plot Scale - 1:40

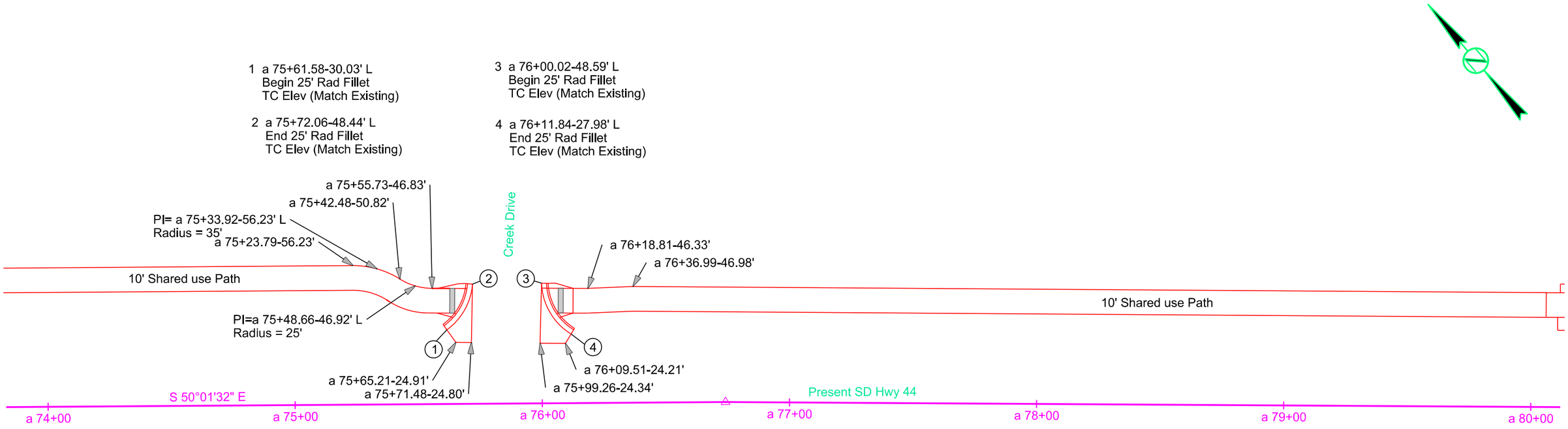
File - U:\rdpn\pemn04PD\068cg.dgn

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B56	B123

Plotting Date: 10/15/2021

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 10' wide except as noted.



CURB AND GUTTER LAYOUT

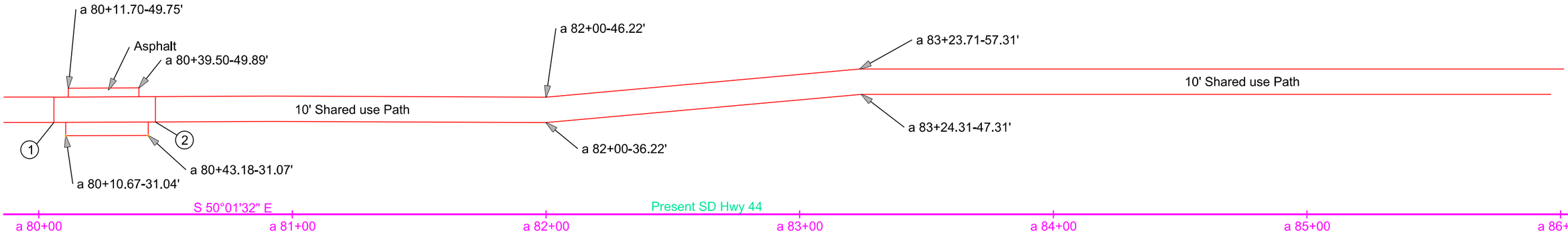
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B57	B123

Plotting Date: 10/15/2021

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 10' wide except as noted.

1 a 80+06-36.23'
End 4" Sidewalk
Begin 8" PCC Approach Pavement

2 a 80+46.00-36.43'
End 8" PCC Approach Pavement
Begin 4" Sidewalk



CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B58	B123

Plotting Date: 10/18/2021

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 10' wide except as noted.

1 a 85+86.04-23.39' L
Begin 25' Rad Fillet
TC Elev (Match Existing)

2 a 86+10.82-45.17' L
End 25' Rad Fillet
Begin Str C & G
TC Elev (Set in Field)

3 a 86+12.40-57.31' L
End Str C & G
Begin Str C & G Type B66
TC Elev 3199.87(Theor)

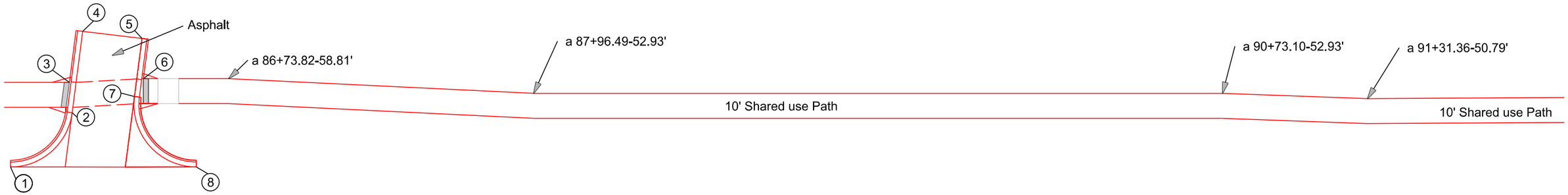
4 a 86+15.06-77.76' L
End Str Type B66 C & G
TC Elev (Match Existing)

5 a 86+38.89-74.92' L
Begin Str B66 C & G
TC Elev (Match Existing)

6 a 86+36.78-58.70' L
End Str C & G Type B66
Begin Str C & G
TC Elev 3200.43 (Theor)

7 a 86+35.87-51.66' L
End Str C & G
Begin 25' Rad Fillet
TC Elev (Set in Field)

8 a 86+60.72-23.44' L
End 25' Rad Fillet
TC Elev (Match Existing)



CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B59	B123

Plotting Date: 10/18/2021

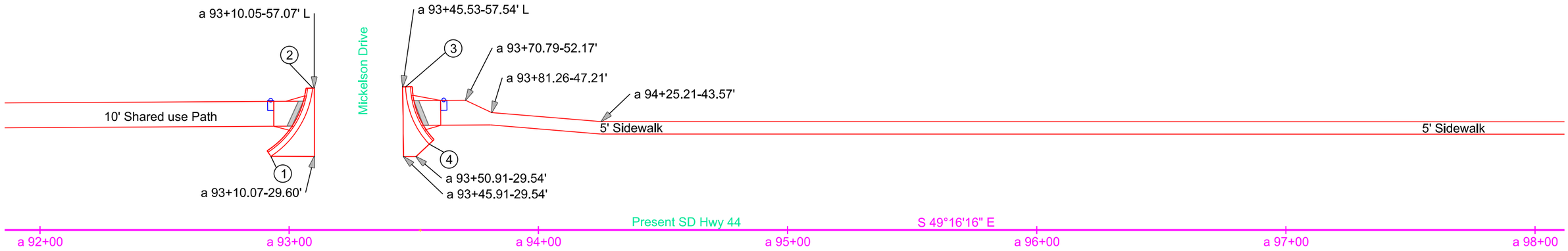
Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 92+92.62-29.63' L
Begin 37.5' Rad Fillet
TC Elev (Match Existing)

2 a 93+09.43-57.07' L
End 37.5' Rad Fillet
TC Elev (Match Existing)

3 a 93+46.72-57.56' L
Begin 35' Rad Fillet
TC Elev (Match Existing)

4 a 93+56.20-34.51' L
End 35' Rad Fillet
TC Elev (Match Existing)



CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B60	B123

Plotting Date: 10/15/2021

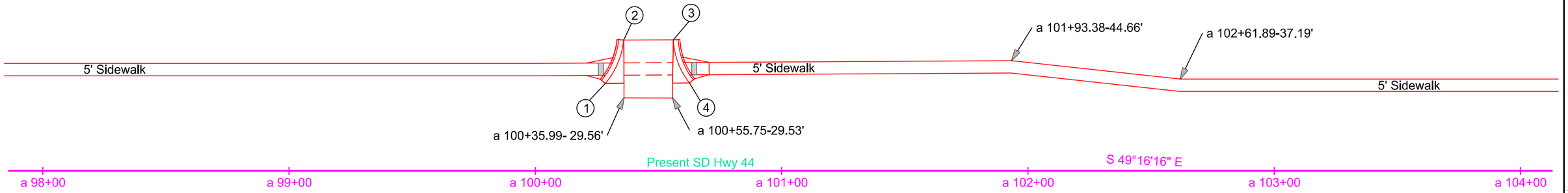
Note: All curb and gutter shown on this sheet is Type B68 except as noted.
All sidewalk is 5' wide except as noted.

1 a 100+28.42-35.41' L
Begin 32.20' Rad Fillet

2 a 100+35.85-52.98' L
End 32.20' Rad Fillet

3 a 100+56.05-53.09' L
Begin 30' Rad Fillet

4 a 100+62.59-35.64' L
End 30' Rad Fillet

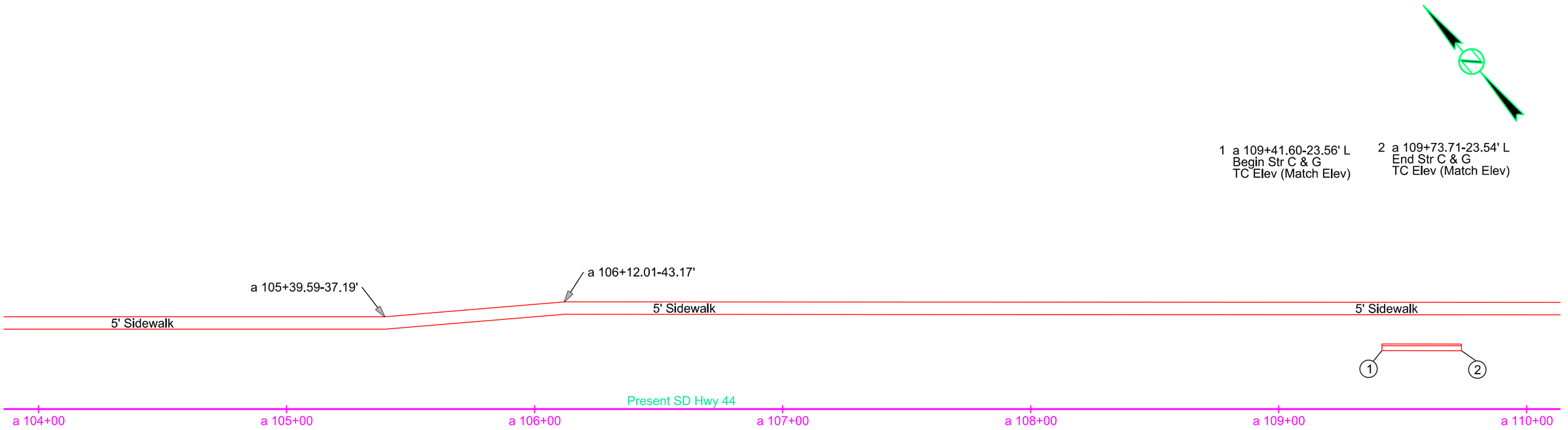


CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B61	B123

Plotting Date: 10/15/2021

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.



CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B62	B123

Plotting Date: 10/15/2021

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

1 a 110+14.00-37.96' L
End 4" Sidewalk
Begin 8" PCC Approach Pavement

2 a 110+50.00-37.94' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk

3 a 111+74.00-34.84' L
End 4" Sidewalk
Begin 8" PCC Approach Pavement

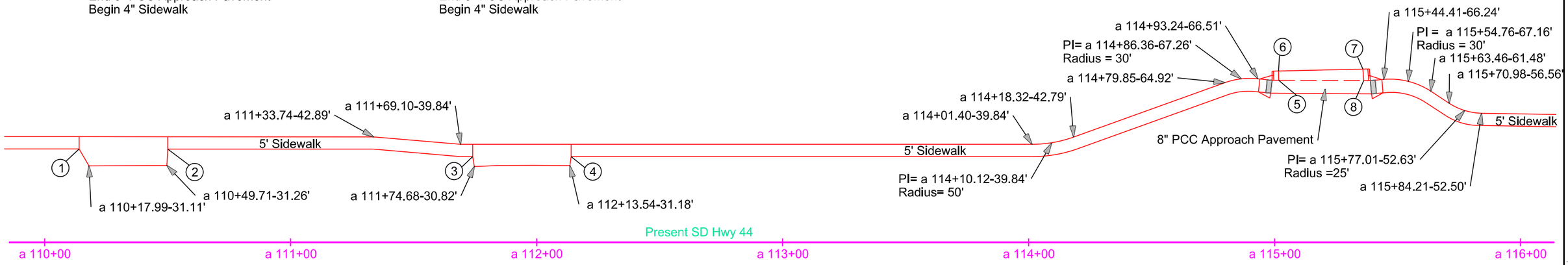
4 a 112+14.00-34.84' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk

5 a 115+01.66-65.88' L
Begin Str C & G

6 a 115+01.59-69.67' L
End Srt C & G

7 a 115+35.90-70.42' L
Begin Str C & G

8 a 115+36.24-65.76' L
End Srt C & G

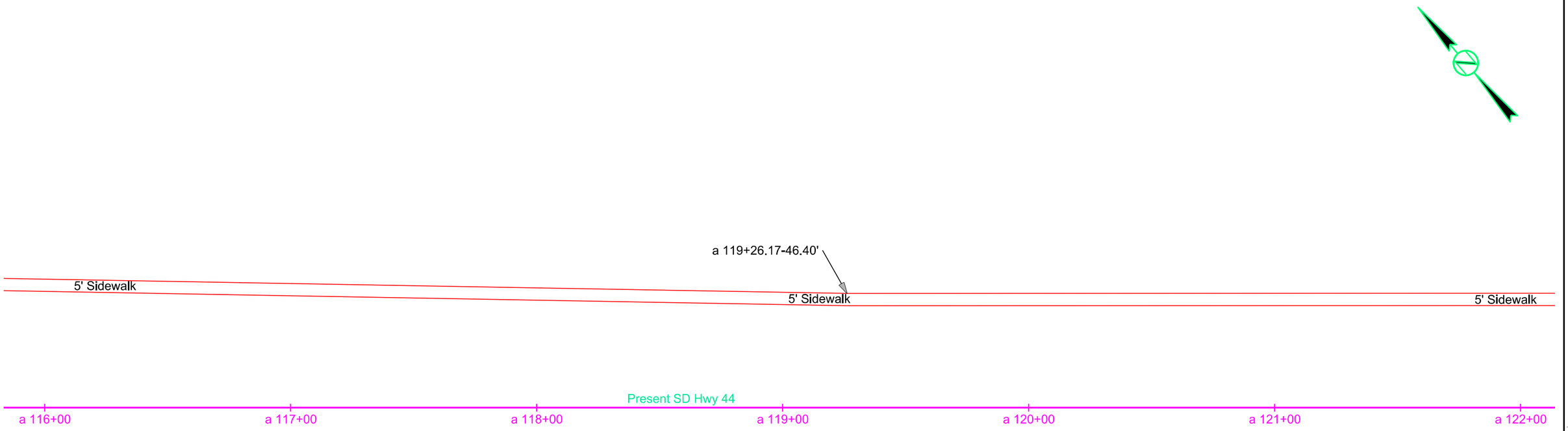


CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B63	B123

Plotting Date: 10/15/2021

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

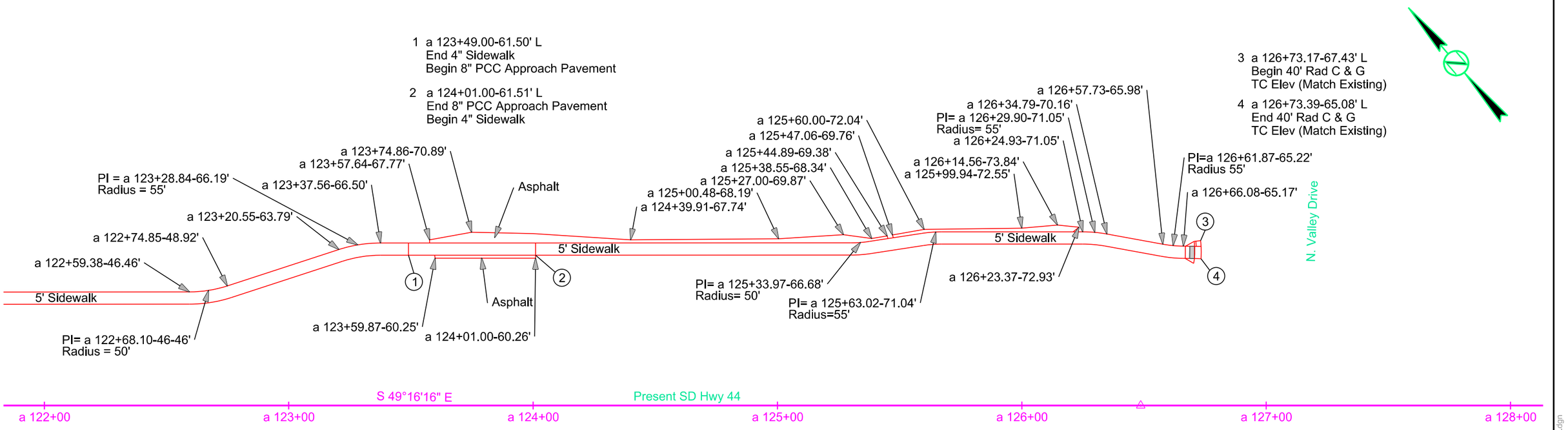


CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B64	B123

Plotting Date: 10/18/2021

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.

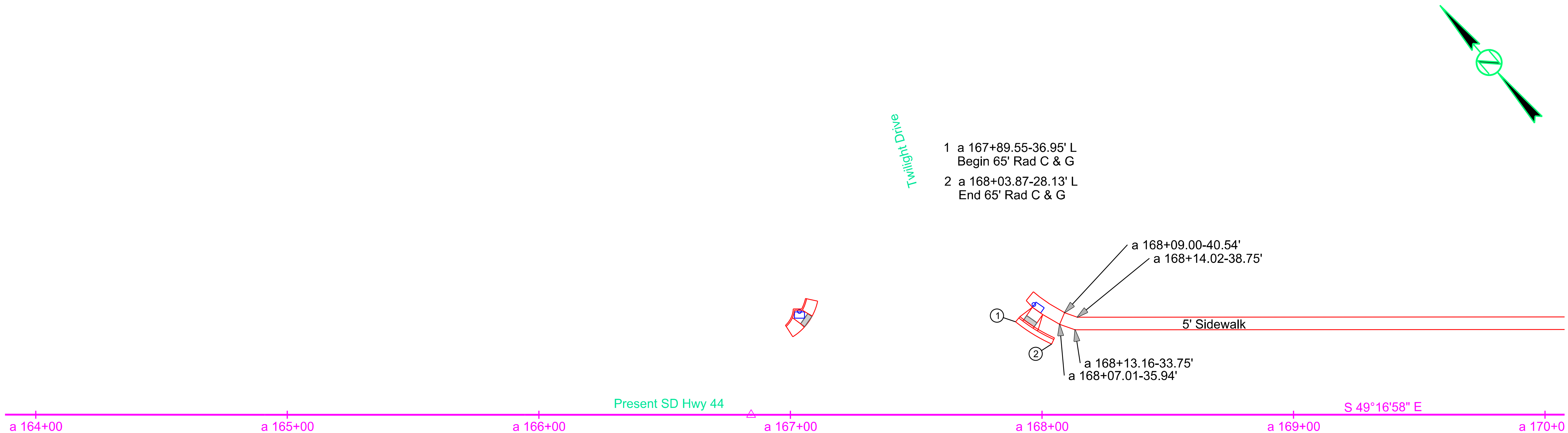


STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B65	B123

Plotting Date: 10/18/2021

CURB AND GUTTER LAYOUT

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.



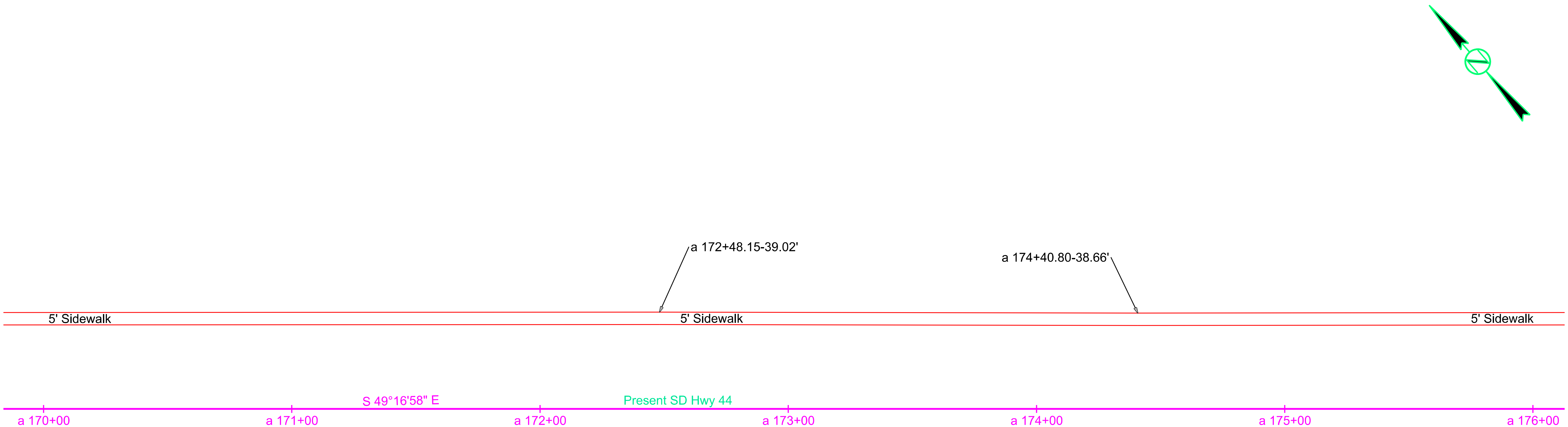
Plot Scale - 1:40
Plotted From - trpr13418
File - U:\rd\prj\penn04PD\a 164cg.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B66	B123

Plotting Date: 10/18/2021

CURB AND GUTTER LAYOUT

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.



CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B67	B123

Plotting Date: 10/15/2021

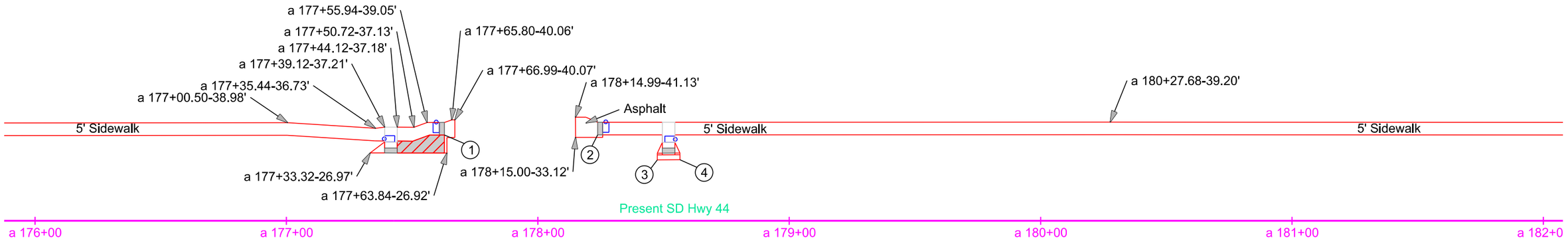
Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.

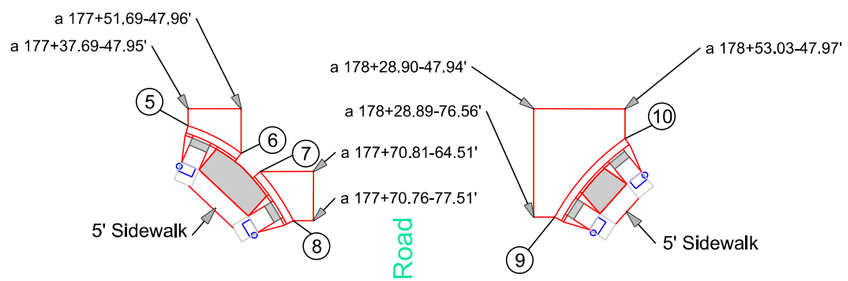
1 a 177+62.85-34.06' L
End 4" Sidewalk
Begin 8" PCC Driveway Pavement

2 a 178+23.79-34.14' L
End 8" PCC Driveway Pavement
Begin 4" Sidewalk

3 a 178+47.55-24.21' L
Begin Str C & G

4 a 178+56.55-24.24' L
End Str C & G





5 a 177+37.69-52.45' R
Begin 45' Rad C & G

6 a 177+51.68-59.75' R
End 45' Rad C & G

7 a 177+56.66-64.54' R
Begin 60' Rad C & G

8 a 177+65.44-77.52' R
End 60' Rad C & G

9 a 178+34.47-76.57' R
Begin 60' Rad C & G

10 a 178+53.02-55.81' R
End 60' Rad C & G

- Colored Concrete

- 6" Colored Concrete

Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rdp\pj\penn\d4PD\a 176cg.dgn

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B68	B123

Plotting Date: 10/18/2021

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 188+96.50-31.96' L
End 4" Sidewalk
Begin 8" PCC Driveway Pavement

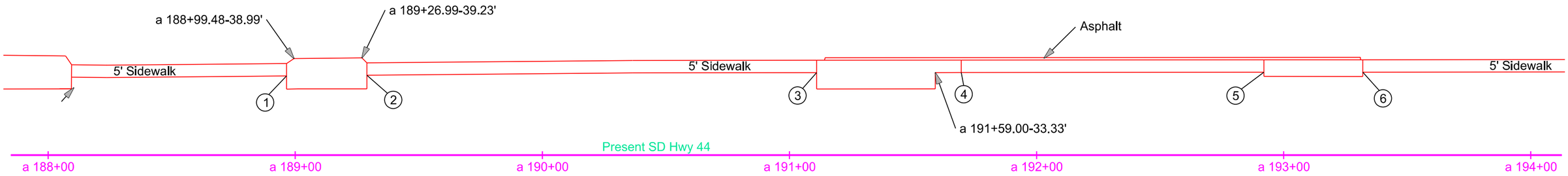
2 a 189+29.00-32.25' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk

3 a 191+11.00-33.28' L
End 4" Sidewalk
Begin 8" PCC Approach Pavement

4 a 191+69.50-33.34' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk

5 a 192+92.00-33.46' L
End 4" Sidewalk
Begin 8" PCC Approach Pavement

6 a 193+32.00-33.50' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk



CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B69	B123

Plotting Date: 10/15/2021

Note: All curb and gutter shown on this sheet is Type B610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 188+96.50-31.96' L
End 4" Sidewalk
Begin 8" PCC Driveway Pavement

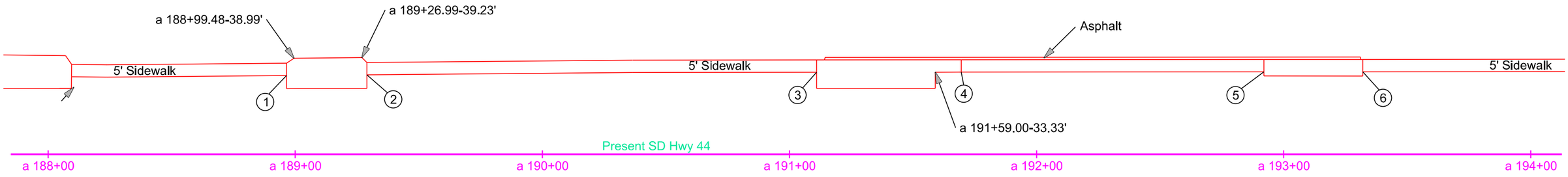
2 a 189+29.00-32.25' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk

3 a 191+11.00-33.28' L
End 4" Sidewalk
Begin 8" PCC Approach Pavement

4 a 191+69.50-33.34' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk

5 a 192+92.00-33.46' L
End 4" Sidewalk
Begin 8" PCC Approach Pavement

6 a 193+32.00-33.50' L
End 8" PCC Approach Pavement
Begin 4" Sidewalk



CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B70	B123

Plotting Date: 10/15/2021

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 194+47.54-30.24' L
Begin 35' Rad C & G

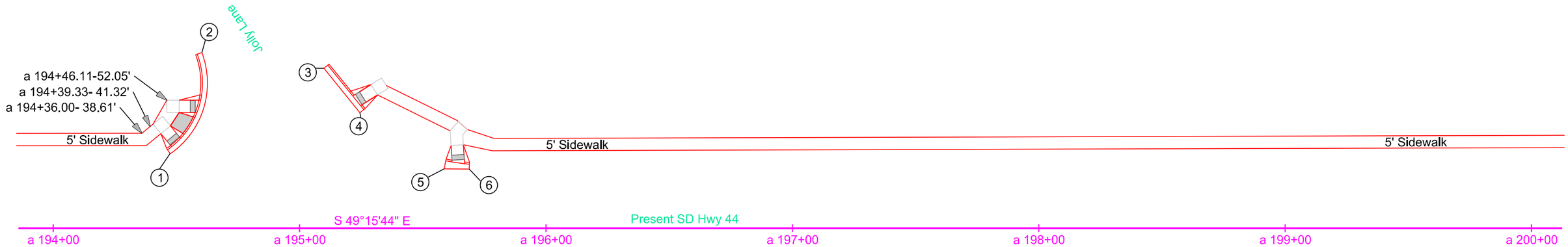
2 a 194+60.34-71.39' L
End 35' Rad C & G

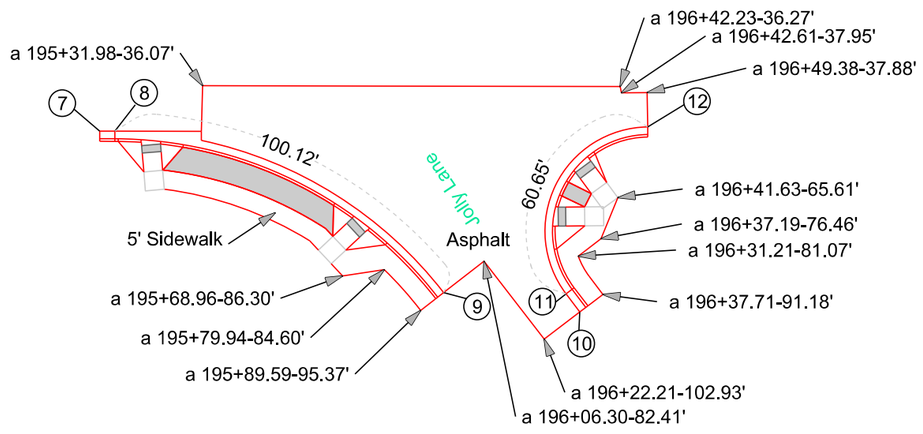
3 a 195+09.87-65.00' L
Begin Str C & G

4 a 195+24.50-46.92' L
End Str C & G

5 a 195+58.72-24.16' L
Begin Str C & G

6 a 195+68.81-24.05' L
End Str C & G





7 a 195+04.84-48.07' R
Begin Str C & G

8 a 195+08.84-48.08' R
End Str C & G
Begin 110' Rad C & G

9 a 195+95.65-90.67' R
End 110' Rad C & G

10 a 196+31.60-95.82' R
Begin Str C & G

11 a 196+27.97-91.03' R
End Str C & G
Begin 27.5' Rad C & G

12 a 196+49.51-46.92' R
End 110' Rad C & G

- Colored Sidewalk

CURB AND GUTTER LAYOUT

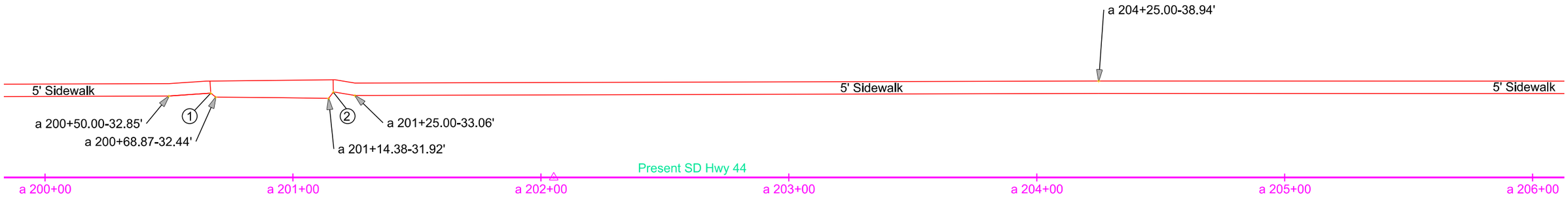
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B71	B123

Plotting Date: 10/15/2021

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 200+66.86-34.02' L
End 4" Sidewalk
Begin 8" PCC Driveway Pavement

2 a 201+16.26-34.43' L
End 8" PCC Driveway Pavement
Begin 4" Sidewalk



Plot Scale - 1:40

Plotted From - TRPR17192

File - U:\rd\pj\pemn04PD\a 200cg.dgn

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B72	B123

Plotting Date: 10/15/2021

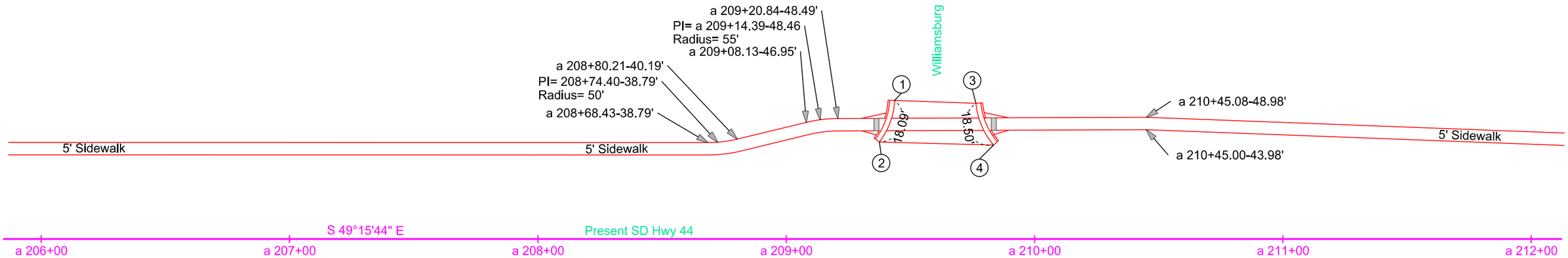
Note:All curb and gutter shown on this sheet is Type F68 except as noted.
All sidewalk is 5' wide except as noted.

1 a 209+43.69-55.75' L
Begin 30' Rad C & G
TC Elev (Match Existing)

2 a 209+37.52-39.03' L
End 30' Rad C & G
TC Elev (Match Existing)

3 a 209+76.39-54.58' L
Begin 30' Rad C & G
TC Elev (Match Exisiting)

4 a 209+83.51-37.82' L
End 30' Rad C & G
TC Elev (Match Existing)



CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B73	B123

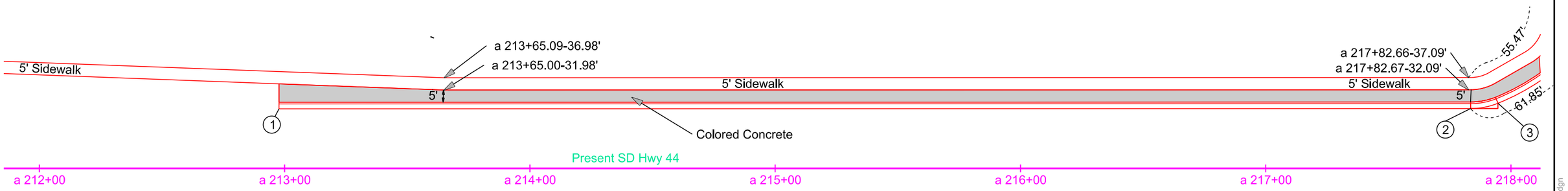
Plotting Date: 10/15/2021

Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 212+97.71-24.29' L
Begin Str C & G
TC ELev (Match Existing)

2 a 217+83.54-24.42' L
End Str C & G
Begin 30' Rad C & G
TC Elev 3113.86

3 a 217+94.68-26.57' L
End 30' Rad C & G
Begin 90' Rad C & G
TC Elev 3113.56



Plot Scale - 1:40
Plotted From - TRPR17192
File - U:\rd\pj\pemn04PD\a 212cg.dgn

CURB AND GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B74	B123

Plotting Date: 10/15/2021

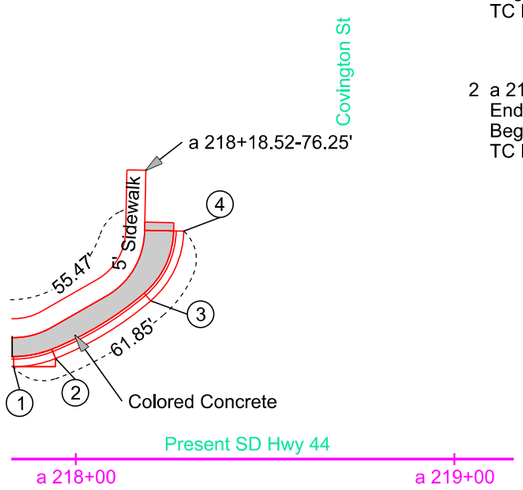
Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 217+83.54 - 24.42' R
Begin 30' Rad C & G
TC Elev 3113.86

2 a 217+94.68 - 26.57' R
End 30' Rad C & G
Begin 90' Rad C & G
TC Elev 3113.56

3 a 218+19.80 - 41.79' R
End 90' Rad C & G
Begin 25' Rad C & G
TC Elev 3112.70

4 a 218+28.53 - 60.22' R
End 25' Rad C & G
TC Elev (Match Existing)



CURB RAMP LAYOUT

* 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.

North Side

1 34+17.76 - 41.52' L
Center of Detectable Warning
& Type 1 Curb Ramp

2 34+35.20 - 60.12' L
Center of Detectable Warning
& Type 1 Curb Ramp

3 34+28.64 - 63.76' L
Back of Turning Space

4 34+24.06 - 66.31' L
End Ramp Slope

5 34+13.71 - 47.82' L
End Ramp Slope

6 34+10.87 - 52.24' L
Back of Turning Space

8 35+19.15 - 59.77' L
Center of Detectable Warning
& Type 1 Curb Ramp

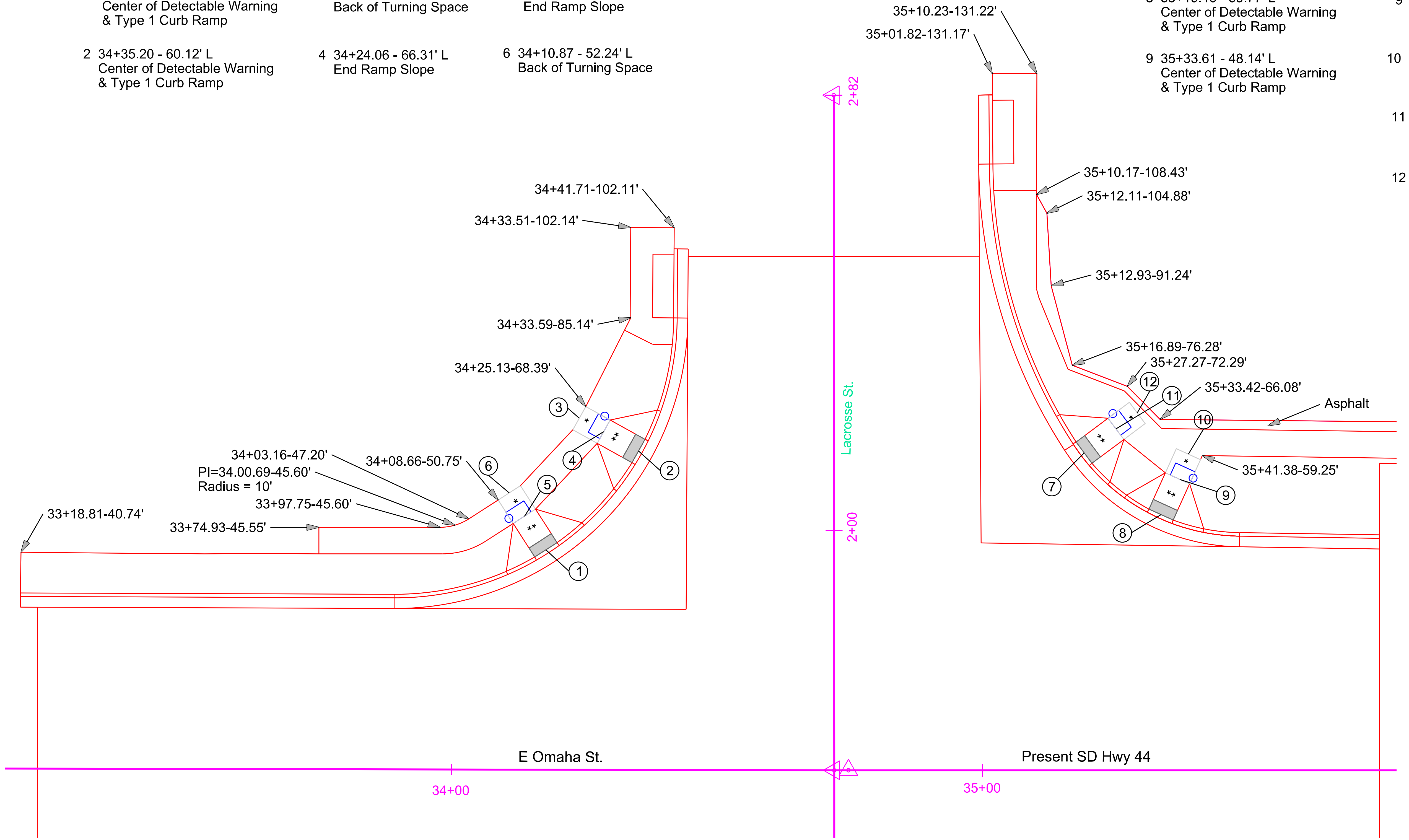
9 35+33.61 - 48.14' L
Center of Detectable Warning
& Type 1 Curb Ramp

9 35+37.16 - 54.77' L
End Ramp Slope

10 35+38.76 - 59.53' L
Back of Turning Space

11 35+25.12 - 64.30' L
End Ramp Slope

12 35+29.87 - 67.29' L
Back of Turning Space



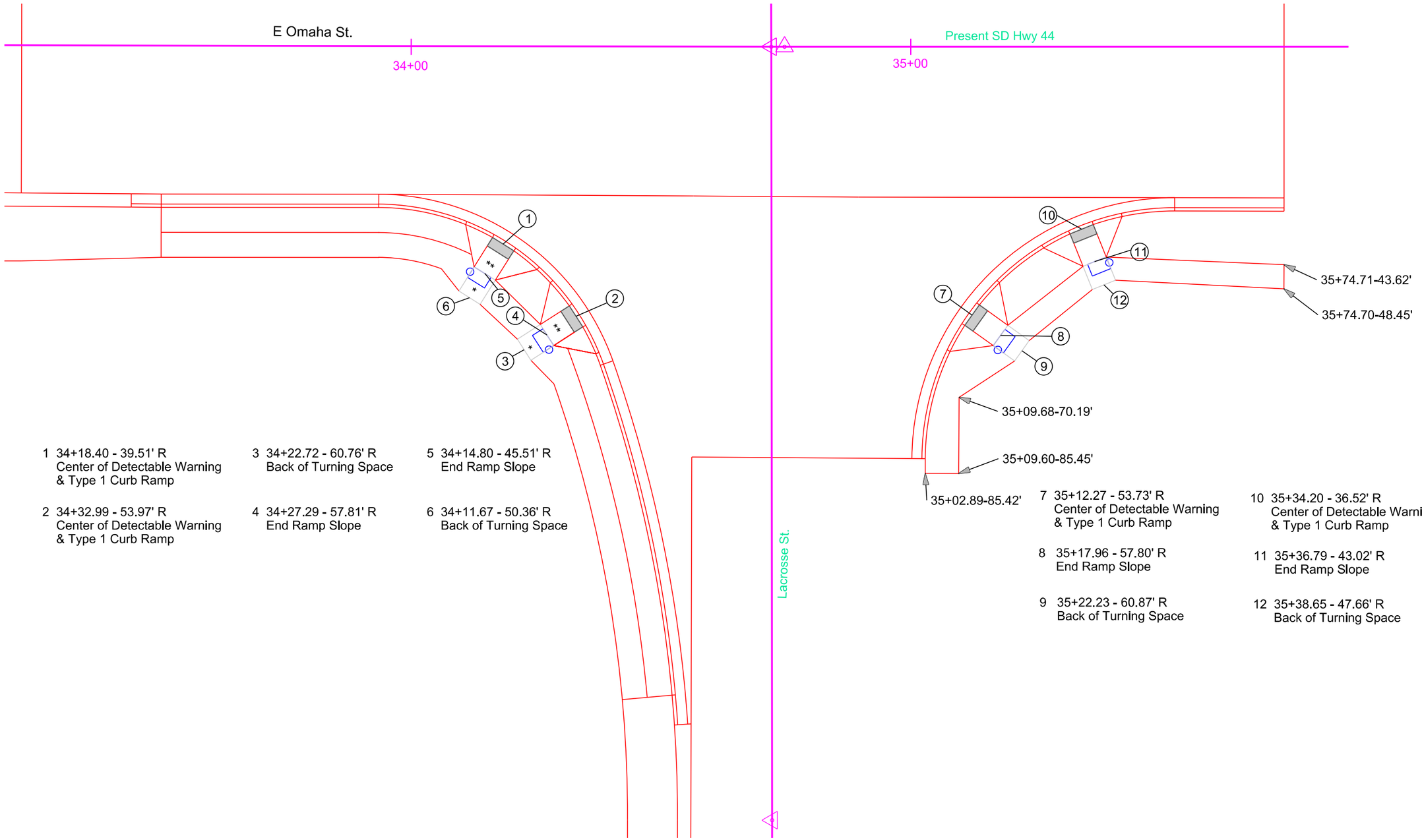
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B76	B123

Plotting Date: 10/15/2021

CURB RAMP LAYOUT

* 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 B610 except as noted.
All sidewalk is 5' wide except as noted.

South Side



1 34+18.40 - 39.51' R
Center of Detectable Warning
& Type 1 Curb Ramp

2 34+32.99 - 53.97' R
Center of Detectable Warning
& Type 1 Curb Ramp

3 34+22.72 - 60.76' R
Back of Turning Space

4 34+27.29 - 57.81' R
End Ramp Slope

5 34+14.80 - 45.51' R
End Ramp Slope

6 34+11.67 - 50.36' R
Back of Turning Space

7 35+12.27 - 53.73' R
Center of Detectable Warning
& Type 1 Curb Ramp

8 35+17.96 - 57.80' R
End Ramp Slope

9 35+22.23 - 60.87' R
Back of Turning Space

10 35+34.20 - 36.52' R
Center of Detectable Warning
& Type 1 Curb Ramp

11 35+36.79 - 43.02' R
End Ramp Slope

12 35+38.65 - 47.66' R
Back of Turning Space

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B77	B123

Plotting Date: 10/16/2021

* 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 50+72.97-24.18 L
Begin 25' Rad C & G

2 50+94.82-47.69'
Center of Detectable Warning
& Type 2 Curb Ramp

3 50+97.85-49.19 L
End 25' Rad C & G
Begin Str C & G

4 50+97.85-53.62' L
End Str C & G

5 50+87.33-47.69' L
End Ramp Slope

6 50+82.33-47.68' L
Back of Turning Space

7 51+53.28-58.12 L
Begin Str C & G

8 51+53.29-49.23' L
End Str C & G
Begin 25' Rad C & G

9 51+56.32-47.72' L
Center of Detectable Warning
& Type 2 Curb Ramp

10 51+78.31-24.25 L
End 25' Rad C & G

11 51+63.82-72.14' L
End Ramp Slope

12 51+68.82-47.72' L
Back of Turning Space

13 53+00.23-24.30 L
Begin 25' Rad C & G

14 53+21.03-44.13' L
Center of Detectable Warning
& Type 2 Curb Ramp

15 53+25.05-49.14 L
End 25' Rad C & G

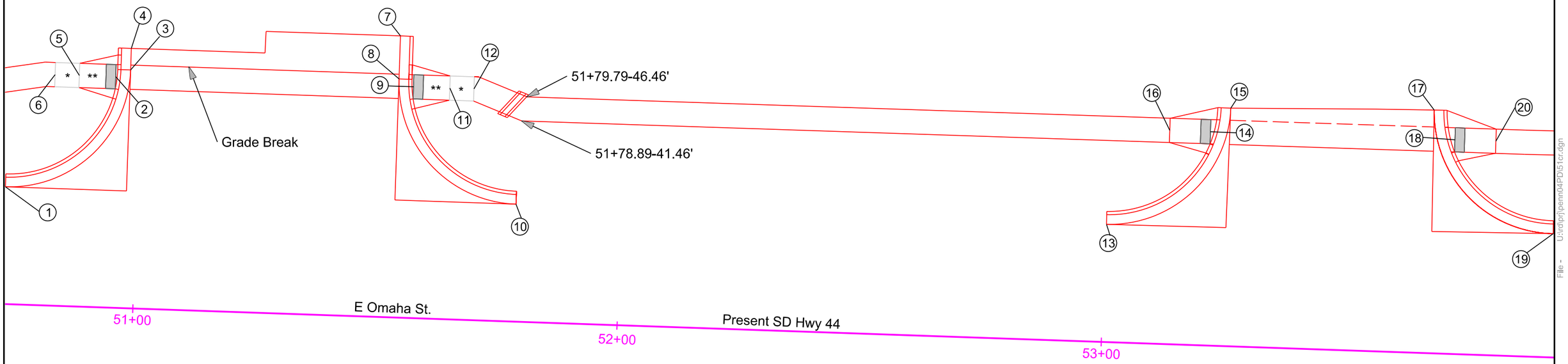
16 53+12.63-44.13' L
End Ramp Slope

17 53+67.02-50.20 L
Begin 25' Rad C & G

19 53+71.51-44.20' L
Center of Detectable Warning
& Type 2 Curb Ramp

18 53+92.43-25.55 L
End 25' Rad C & G

20 53+79.97-44.21' L
End Ramp Slope



CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B78	B123

Plotting Date: 10/15/2021

* 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 B8 except as noted.
All sidewalk is 5 ' wide except as noted.

1 56+00.77-28.77' L
Begin 22.5' Rad C & G

2 56+18.85-45.87' L
Center of Detectable Warning
& Type 3 Curb Ramp

3 56+23.16-52.09' L
End 22.5' Rad C & G
Begin Str C & G

4 56+22.99-56.93' L
End Str C & G

5 56+10.21-45.81' L
End Ramp Slope

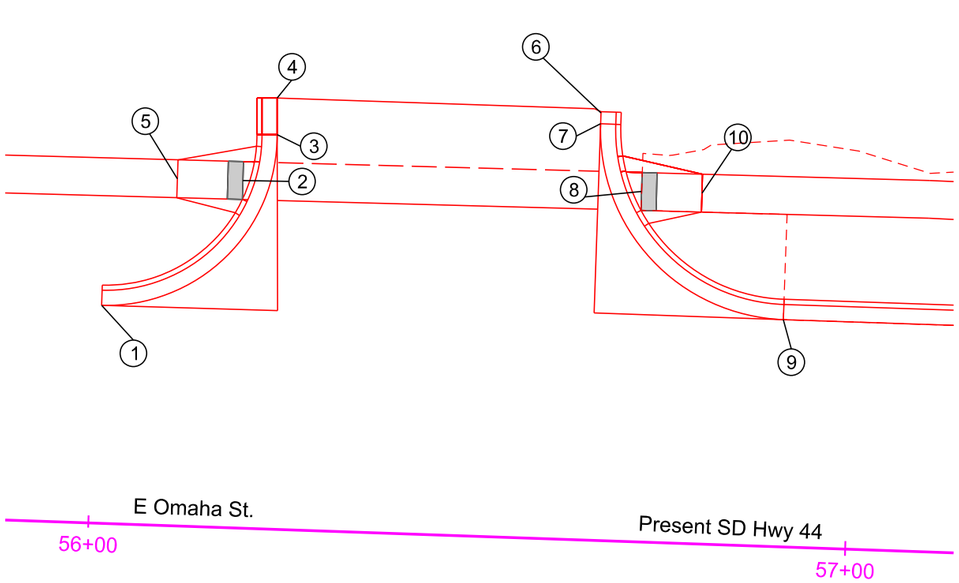
6 56+65.80-56.44' L
Begin Str C & G

7 56+65.80-55.00' L
End Str C & G
Begin 25' Rad C & G

8 56+71.49-46.25' L
Center of Detectable Warning
& Type 3 Curb Ramp

9 56+90.80-30.00' L
End 25' Rad C & G

10 56+79.49-46.31' L
End Ramp Slope



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B79	B123

Plotting Date: 10/18/2021

CURB RAMP LAYOUT

* 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 B610 except as noted.
All sidewalk is 5' wide except as noted.

North Side

1 60+47.08-57.08' L
Center of Detectable Warning
& Type 1 Curb Ramp

2 60+50.81-60.79' L
Center of Detectable Warning
& Type 1 Curb Ramp

3 60+44.00-64.70' L
End Ramp Slope

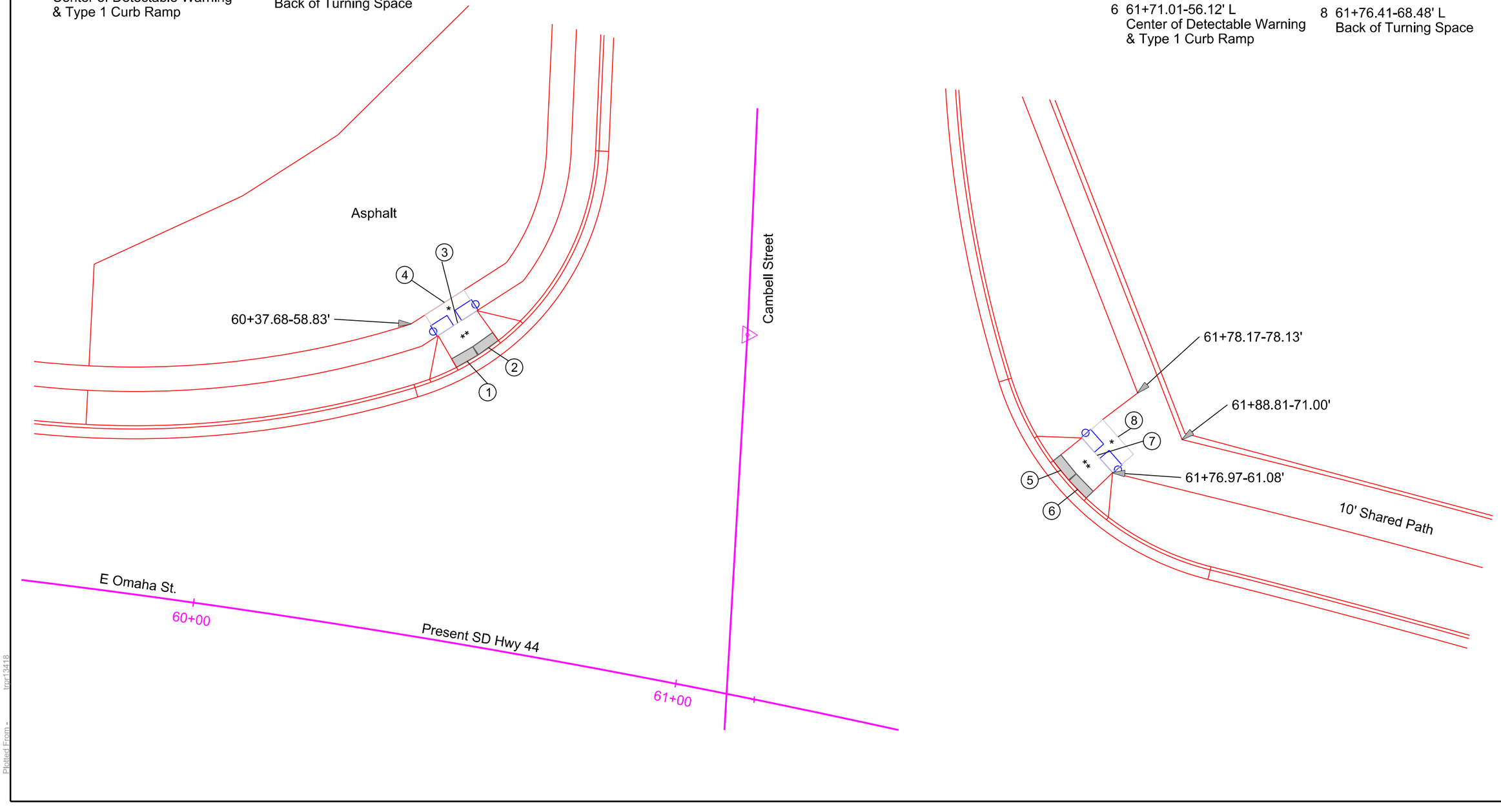
4 60+40.76-68.41' L
Back of Turning Space

5 61+66.91-59.13' L
Center of Detectable Warning
& Type 1 Curb Ramp

6 61+71.01-56.12' L
Center of Detectable Warning
& Type 1 Curb Ramp

7 61+73.22-63.82' L
End Ramp Slope

8 61+76.41-68.48' L
Back of Turning Space



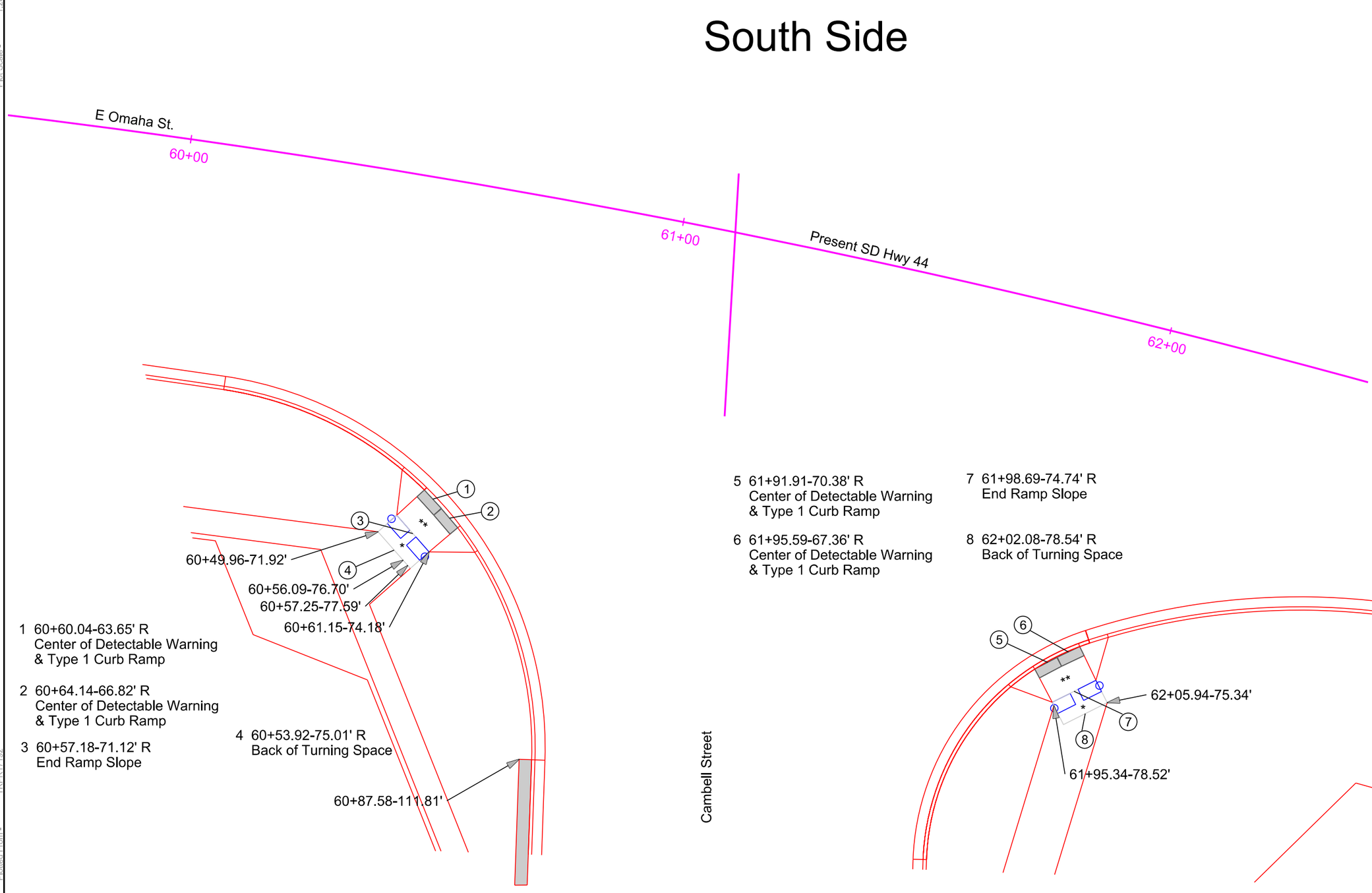
CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B80	B123

Plotting Date: 10/15/2021

* 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 B610 except as noted.
All sidewalk is 5' wide except as noted.

South Side



1 60+60.04-63.65' R
Center of Detectable Warning
& Type 1 Curb Ramp

2 60+64.14-66.82' R
Center of Detectable Warning
& Type 1 Curb Ramp

3 60+57.18-71.12' R
End Ramp Slope

4 60+53.92-75.01' R
Back of Turning Space

5 61+91.91-70.38' R
Center of Detectable Warning
& Type 1 Curb Ramp

6 61+95.59-67.36' R
Center of Detectable Warning
& Type 1 Curb Ramp

7 61+98.69-74.74' R
End Ramp Slope

8 62+02.08-78.54' R
Back of Turning Space

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B81	B123

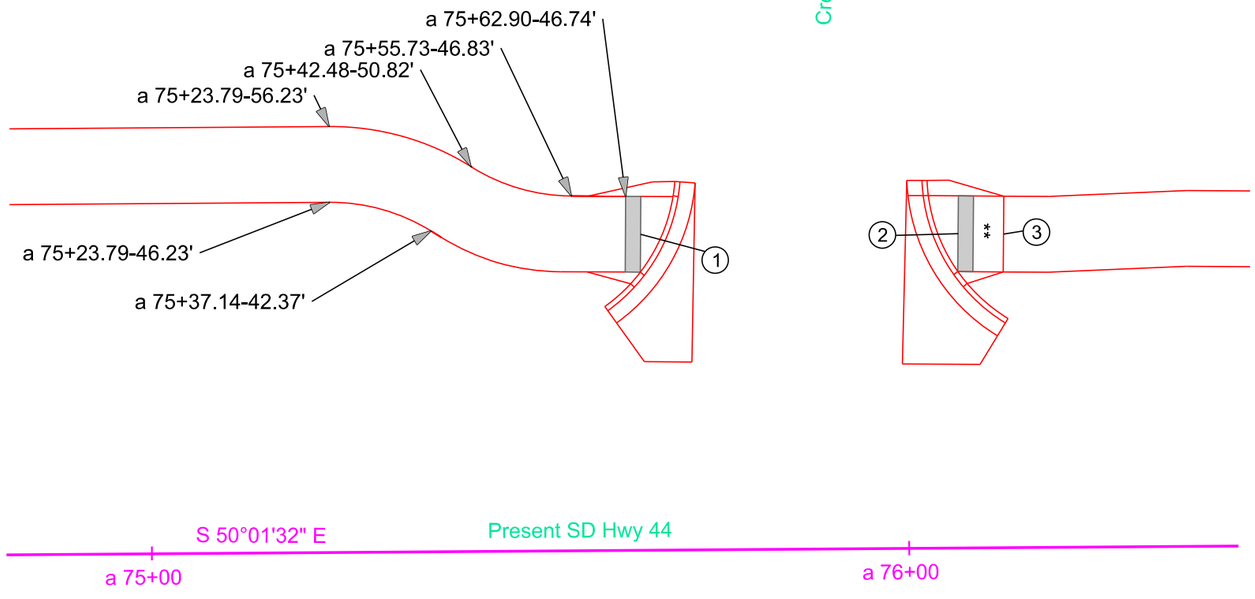
Plotting Date: 10/15/2021

* 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 B610 except as noted.
All sidewalk is 10' wide except as noted.

1 a 75+64.83-41.72' L
Center of Detectable Warning
& Type 2 Mod Curb Ramp

2 a 76+06.74-41.50' L
Center of Detectable Warning
&Type 2 Mod Curb Ramp

3 a 76+12.74-41.41' L
End Ramp Slope



CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B82	B123

Plotting Date: 10/15/2021

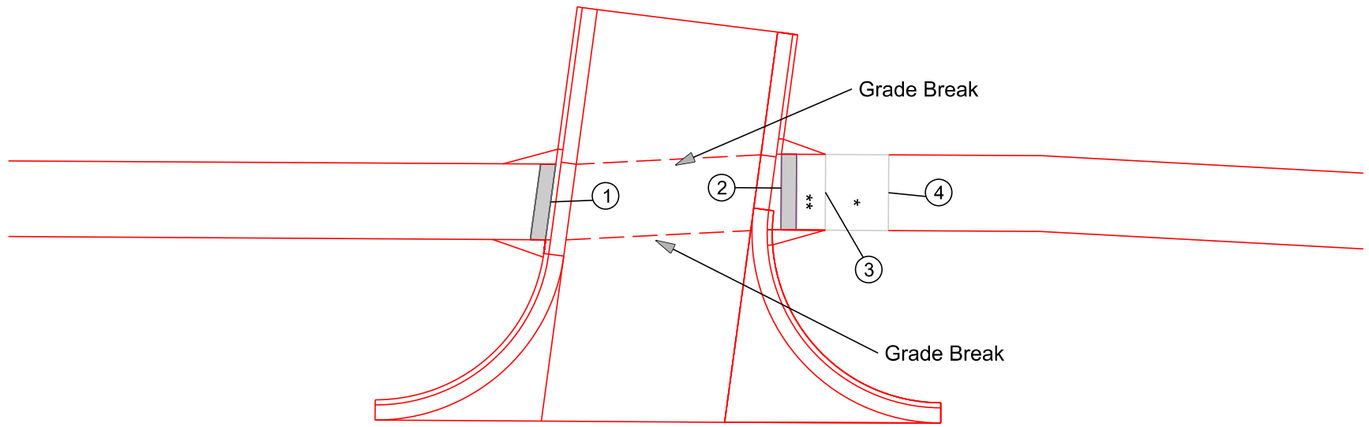
* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type F68 except as noted.
All sidewalk is 10' wide except as noted.

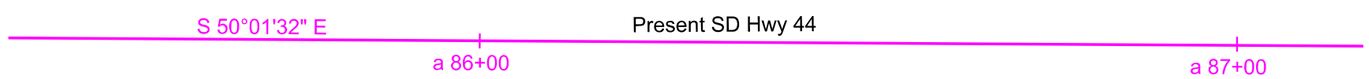
1 a 86+09.06-52.31' L
Center of Detectable Warning
& Type 1 Mod Curb Ramp

2 a 86+39.49-54.33' L
Center of Detectable Warning
& Type 2 Mod Curb Ramp

3 a 86+45.31-53.81' L
End Ramp Slope

4 a 86+53.65-53.81' L
Back of Turning Space





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CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B83	B123

Plotting Date: 10/15/2021

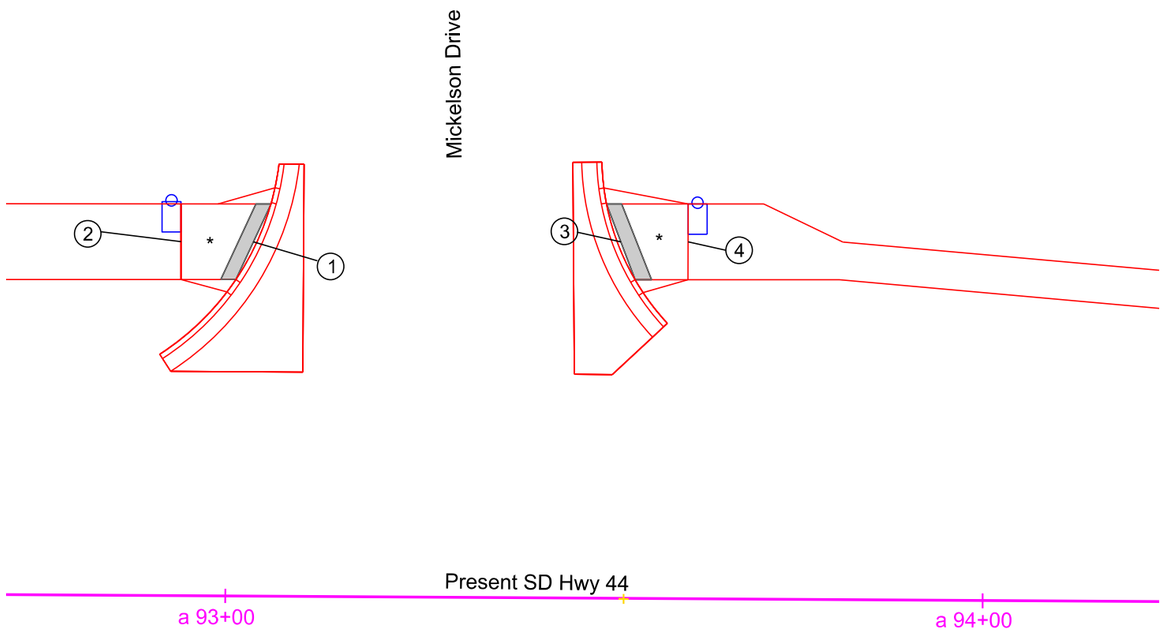
* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type F610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 93+03.44-46.78' L
Center of Detectable Warning
& Type 2 Mod Curb Ramp

2 a 92+97.05-43.19' L
End Ramp Slope

3 a 93+51.94-47.06' L
Center of Detectable Warning
& Type 1 Mod Curb Ramp

4 a 93+60.82-47.11' L
End Ramp Slope



CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B84	B123

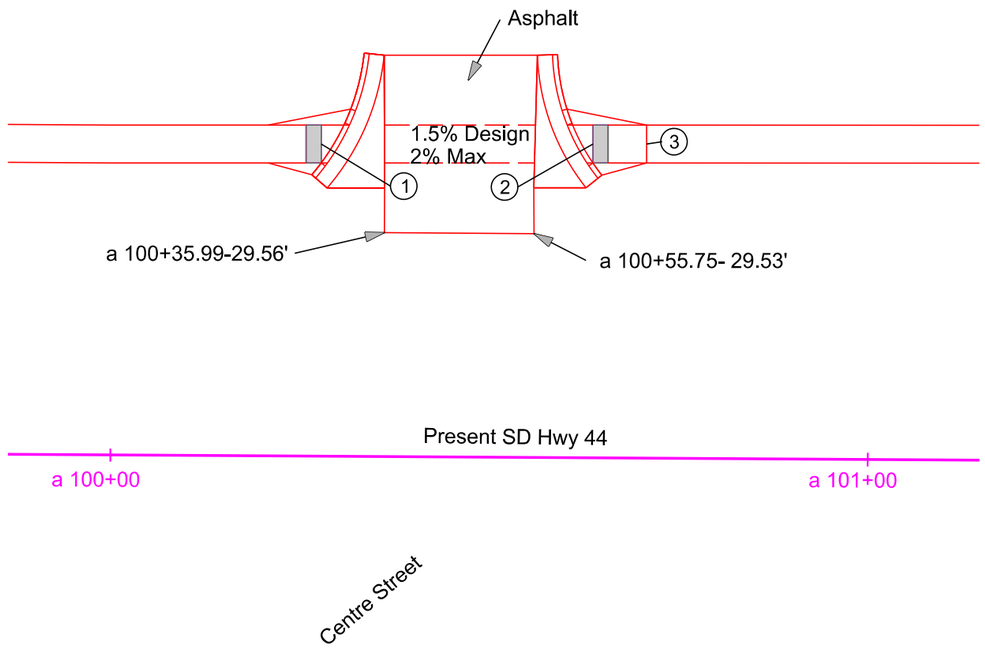
Plotting Date: 10/15/2021

* 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 F68 except as noted.
All sidewalk is 5' wide except as noted.

1 a 100+27.61-41.21' L
Center of Detectable Warning
& Type 2 Mod Curb Ramp

2 a 100+63.47-41.41' L
Center of Detectable Warning
& Type 2 Mod Curb Ramp

3 a 100+70.55-41.45' L
End Ramp Slope



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B85	B123

Plotting Date: 10/15/2021

CURB RAMP LAYOUT

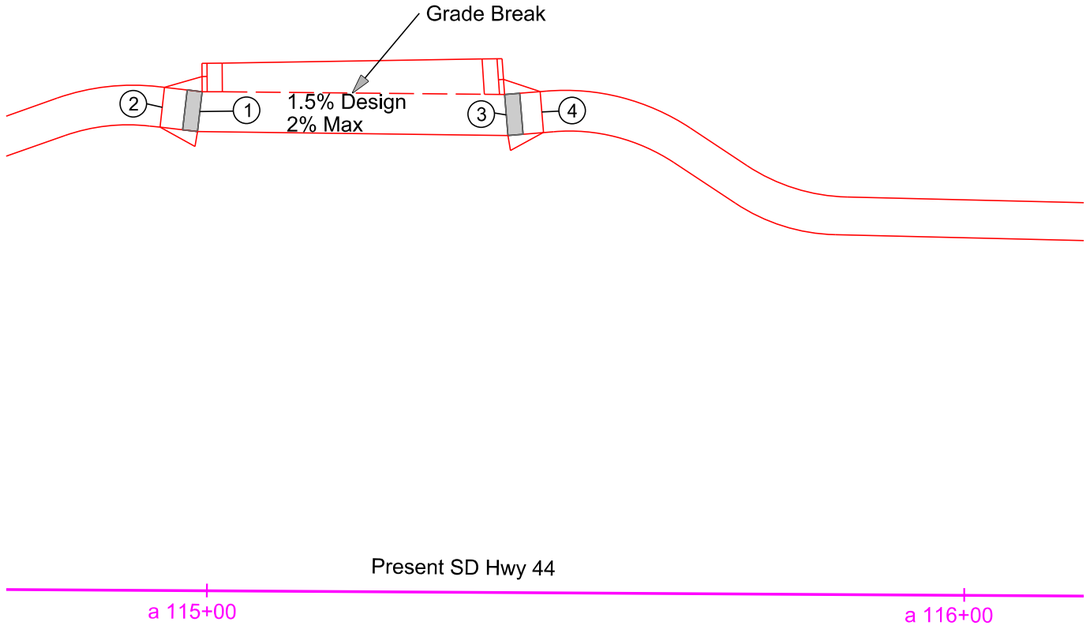
* Turning Space with 1.5% slope
** Curb Ramp with 7.5% slope and 1.5% cross slope
Note: All curb and gutter shown on this sheet is Type B68 except as noted.
All sidewalk is 6' wide except as noted.

1 a 114+98.70-63.25' L
Center of Detectable Warning
& Type 1Mod Curb Ramp

2 a 114+93.73-63.80' L
End Ramp Slope

3 a 115+39.15-63.05' L
Center of Detectable Warning
& Type 1Mod Curb Ramp

4 a 115+43.85-63.47' L
End Ramp Slope



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CURB RAMP LAYOUT

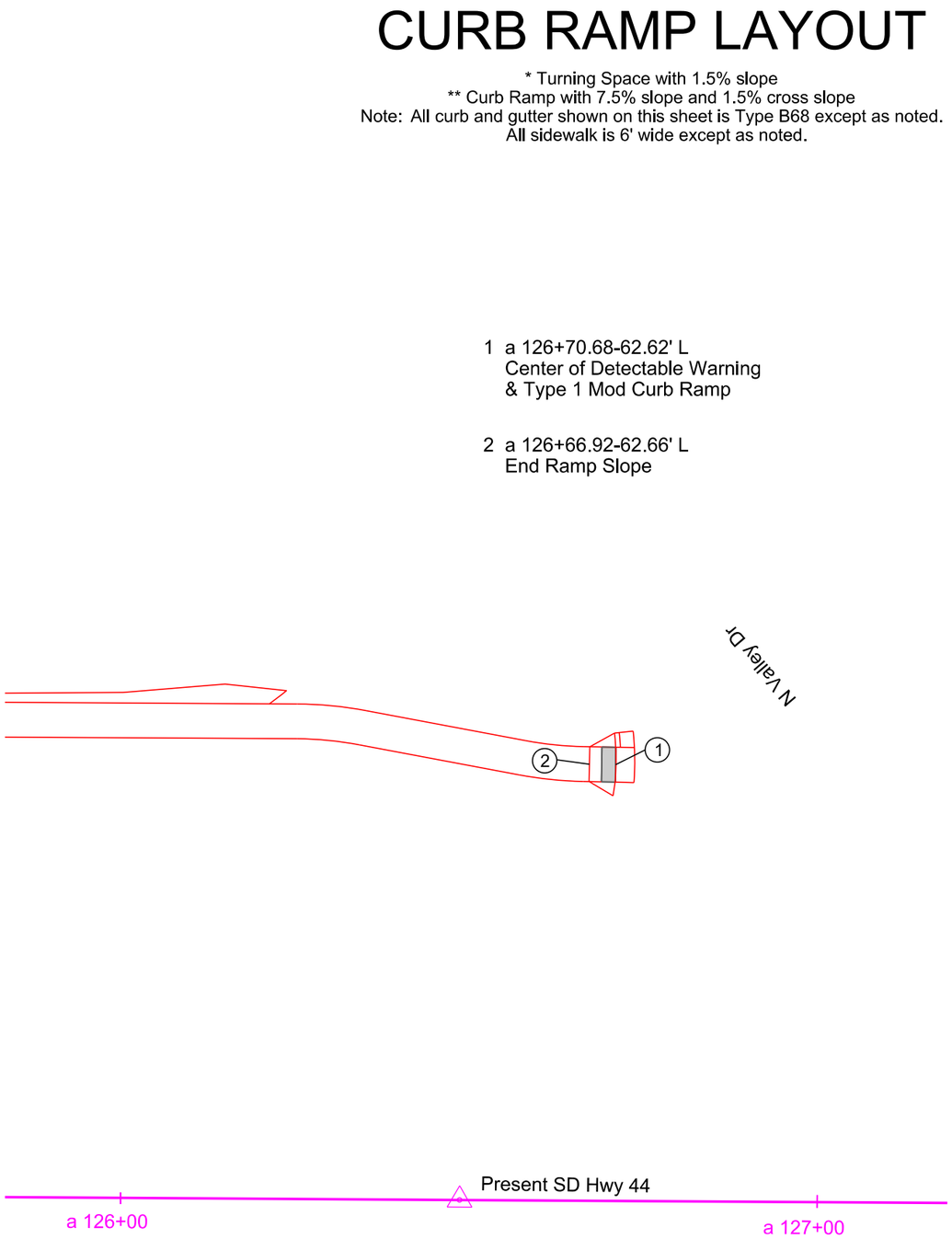
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B86	B123

Plotting Date: 10/15/2021

* 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 6' wide except as noted.

1 a 126+70.68-62.62' L
Center of Detectable Warning
& Type 1 Mod Curb Ramp

2 a 126+66.92-62.66' L
End Ramp Slope



CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B87	B123

Plotting Date: 10/18/2021

* 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 F610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 143+14.61-14.35' L
Begin Str C & G
TC Elev (Match Existing)

2 a 143+21.08-14.35' L
End Str C & G
Begin 15' Rad Fillet
TC Elev (Set in Field)

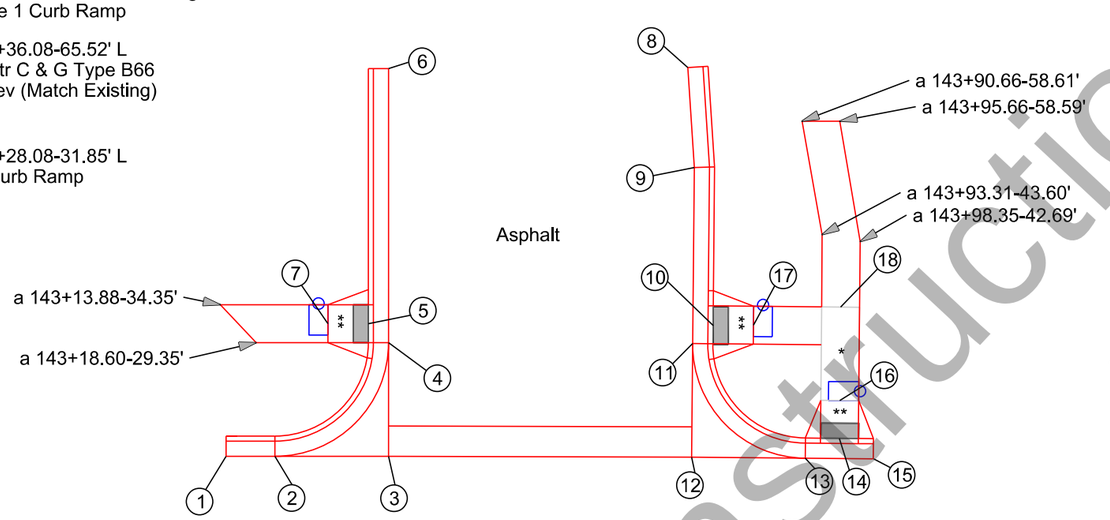
3 a 143+36.08-14.35' L
Begin Valley Gutter

4 a 143+36.08-29.35' L
End 15' Rad Fillet
Begin Str C & G Type B66
TC Elev (Set in Field)

5 a 143+33.41-31.85' L
Center of Detectable Warning
& Type 1 Curb Ramp

6 a 143+36.08-65.52' L
End Str C & G Type B66
TC Elev (Match Existing)

7 a 143+28.08-31.85' L
End Curb Ramp



8 a 143+75.58-65.67' L
Begin Str C & G Type B66
TC Elev (Match Existing)

9 a 143+76.44-52.46' L
End Str C & G Type B66
Begin Str C & G Type B66
TC Elev (Set in Field)

10 a 143+78.91-31.70' L
Center of Detectable Warning
& Type 1 Curb Ramp

11 a 143+76.22-29.23' L
End Str C & G Type B66
Begin 15' Rad Fillet
TC Elev (Set in Field)

12 a 143+76.08-14.23' L
End Valley Gutter

13 a 143+91.08-14.09' L
End 15' Rad Fillet
Begin Str C & G
TC Elev (Set in Field)

14 a 143+95.60-16.71' L
Center of Detectable Warning
& Type 1 Curb Ramp

15 a 144+00.13-14.00' L
End Str C & G
TC Elev (Match Existing)

16 a 143+95.65-21.71' L
End Curb Ramp

17 a 143+84.24-31.65' L
End Curb Ramp

18 a 143+95.76-34.04' L
Back of Turning Space

19 a 143+08.00-63.54' R
Begin Str C & G Type B610

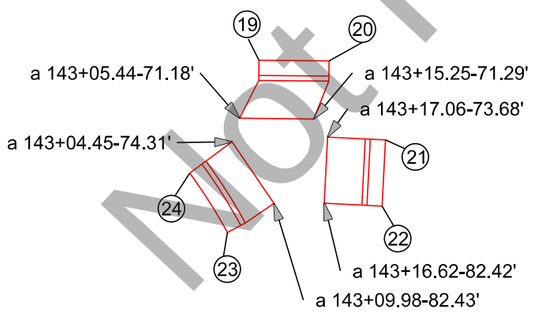
20 a 143+17.25-63.64' R
End Str C & G Type B610

21 a 143+24.70-74.06' R
Begin Str C & G Type B610

22 a 143+24.27-82.80' R
End Str C & G Type B610

23 a 143+03.84-86.28' R
Begin 65' Rad C & G Type B610

24 a 142+98.87-78.44' R
End 65' Rad C & G Type B610



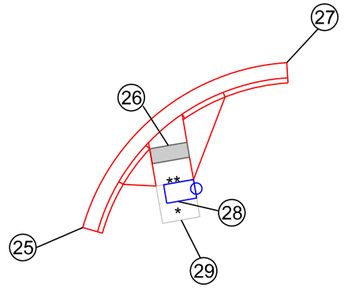
25 a 143+98.43-85.90' R
Begin 30' Rad C & G
TC Elev (Match Existing)

26 a 144+09.71-75.06' R
Center of Detectable Warning
& Type 2 Curb Ramp

27 a 144+25.35-64.13' R
End 30' Rad C & G
TC Elev (Match Existing)

28 a 144+10.57-79.98' R
End Curb Ramp

29 a 144+11.92-84.90' R
Back of Turning Space



CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B88	B123

Plotting Date: 10/15/2021

* 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 B66 except as noted.
All sidewalk is 6' wide except as noted.

1 a 154+36-04-27.10' L
Begin 40' Rad Fillet
TC Elev (Match Existing)

2 a 154+35.28-34.99 L
Center of Detectable Warning
& Type 2 Curb Ramp

3 a 154+39.82-39.82 L
End 40' Rad Fillet
TC Elev (Match Existing)

4 a 154+30.28-34.78 L
End Curb Ramp

5 a 154+25.28-34.57' L
Back of Turning Space

6 a 154+79.93-56.51' L
Begin Valley Gutter

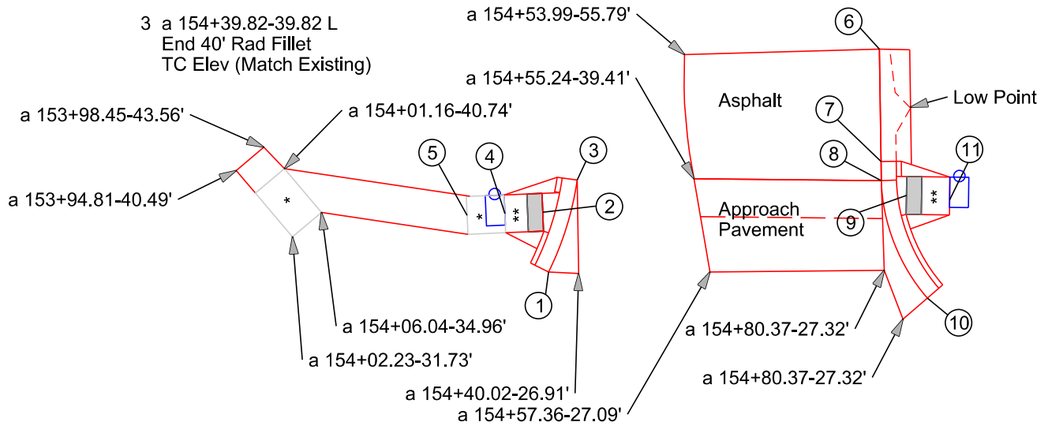
7 a 154+79.93-41.69 L
End Valley Gutter
Begin Str C & G

8 a 154+79.97-39.16 L
End Str C & G
Begin 25' Rad Fillet
TC Elev (Set in Field)

9 a 154+83.30-37.21 L
Center of Detectable Warning
& Type 2 Curb Ramp

10 a 154+86.06-23.64' L
End 25' Rad C & G
TC Elev (Match Existing)

11 a 154+89.00-36.57' L
Back of Turning Space



Plot Scale - 1:20

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B89	B123

Plotting Date: 10/18/2021

CURB RAMP LAYOUT

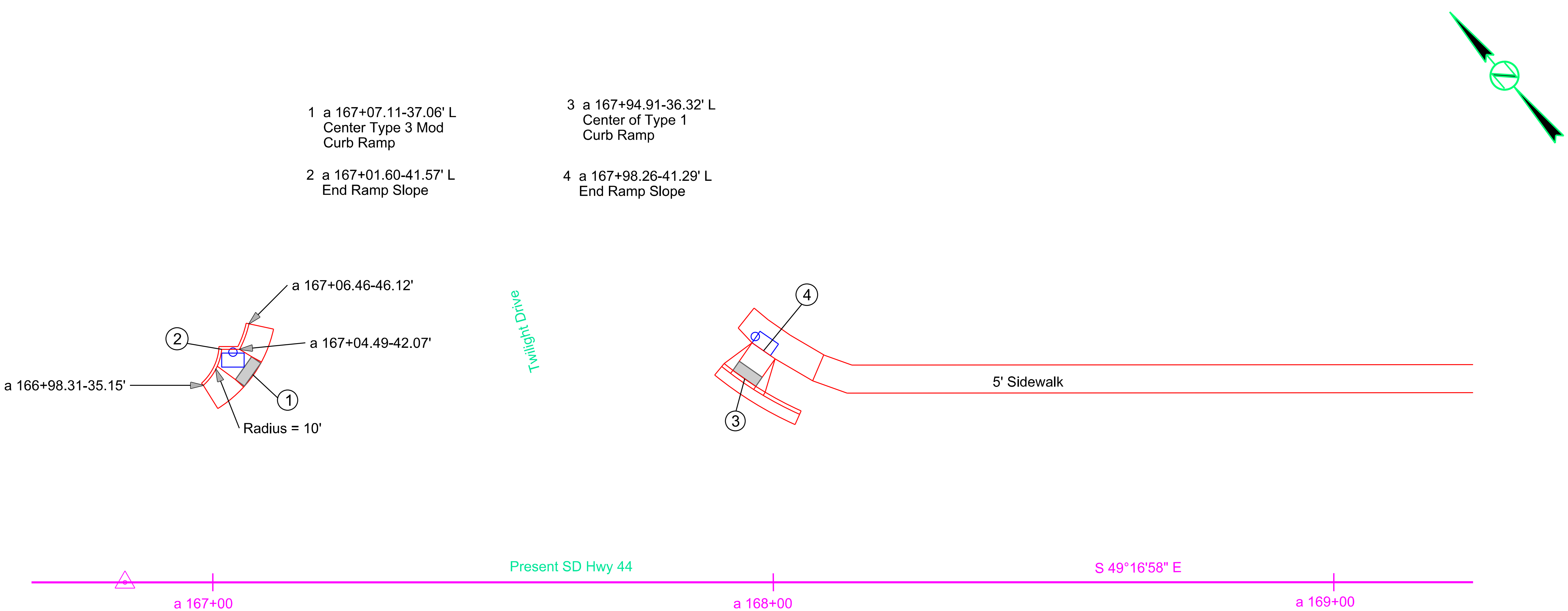
Note: All curb and gutter shown on this sheet is Type B610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 167+07.11-37.06' L
Center Type 3 Mod
Curb Ramp

2 a 167+01.60-41.57' L
End Ramp Slope

3 a 167+94.91-36.32' L
Center of Type 1
Curb Ramp

4 a 167+98.26-41.29' L
End Ramp Slope



Plot Scale - 1:20
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Plotted From -
File - U:\rd\prj\penn04PD\a 167cr.dgn

CURB RAMP LAYOUT

* 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 F610 except as noted.
All sidewalk is 5' wide except as noted.

1 a 177+41.58-26.94' L
Center of Detectable Warning
& Type 1 Mod Curb Ramp

2 a 177+41.58-31.29' L
End Ramp Slope

3 a 177+41.61-36.69' L
Back of Turning Space

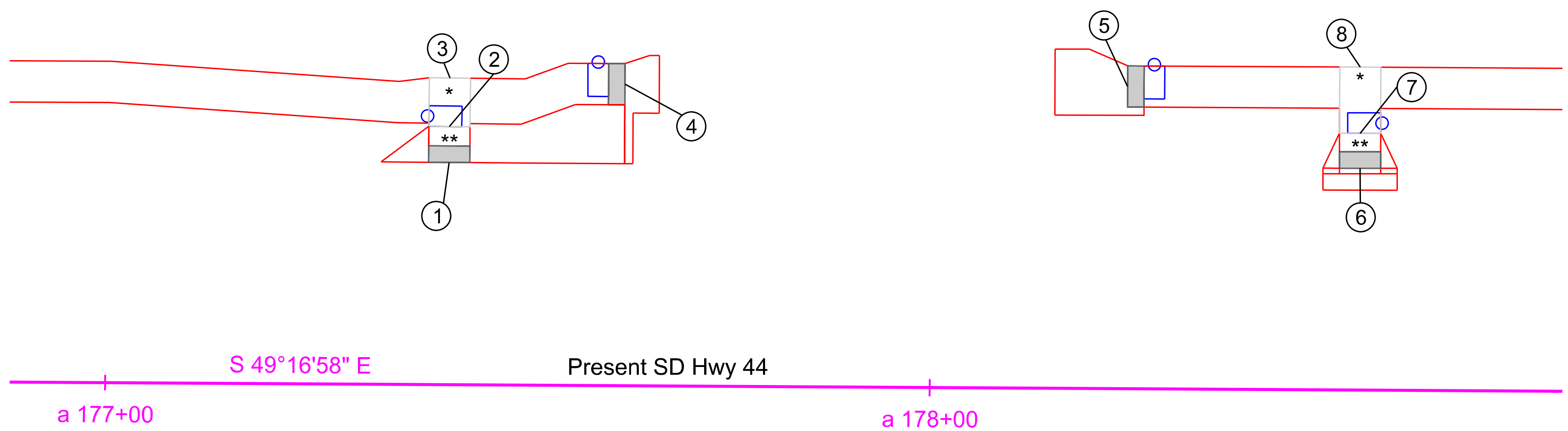
4 a 177+62.84-36.56' L
Center of Detectable Warning

5 a 178+23.79-36.64' L
Center of Detectable Warning

6 a 178+52.04-26.90' L
Center of Detectable Warning
& Type 1 Curb Ramp

7 a 178+52.01-31.12' L
End Ramp Slope

8 a 178+52.01-39.55' L
Back of Turning Space



9 a 177+41.07-56.04' R
Center of Detectable Warning
& Type 1 Curb Ramp

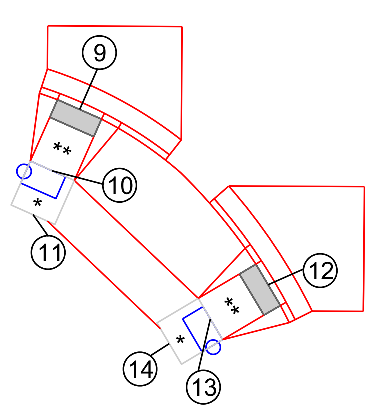
10 a 177+38.27-63.06' R
End Ramp Slope

11 a 177+36.27-67.64' R
Back of Turning Space

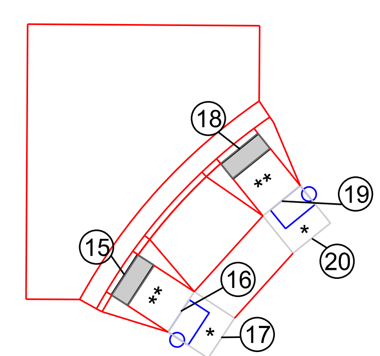
12 a 177+60.83-74.80' R
Center of Detectable Warning
& Type 1 Curb Ramp

13 a 177+54.84-78.41' R
End Ramp Slope

14 a 177+50.55-80.99' R
Back of Turning Space



Elderberry Road



15 a 178+39.06-73.91' R
Center of Detectable Warning
& Type 1 Curb Ramp

16 a 178+45.01-77.72' R
End Ramp Slope

17 a 178+49.22-80.41' R
Back of Turning Space

18 a 178+50.99-60.75' R
Center of Detectable Warning
& Type 3 Curb Ramp

19 a 178+55.45-66.21' R
End Ramp Slope

20 a 178+58.62-70.08' R
Back of Turning Space

CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B91	B123

Plotting Date: 10/15/2021

* 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 F610 except as noted.
All sidewalk is 6' wide except as noted.

1 a 194+49.37-35.44' L
Center of Detectable Warning
& Type 2 Curb Ramp

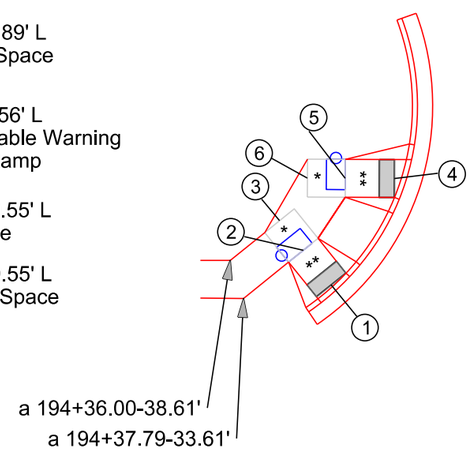
2 a 194+45.64-40.02' L
End Ramp Slope

3 a 194+42.48-43.89' L
Back of turning Space

4 a 194+57.64-49.56' L
Center of Detectable Warning
& Type 2 Curb Ramp

5 a 194+51.12-49.55' L
End Ramp Slope

6 a 194+46.12-49.55' L
Back of turning Space



Jolly Lane

7 a 195+23.99-52.27' L
Center of Detectable Warning
& Type 2 Curb Ramp

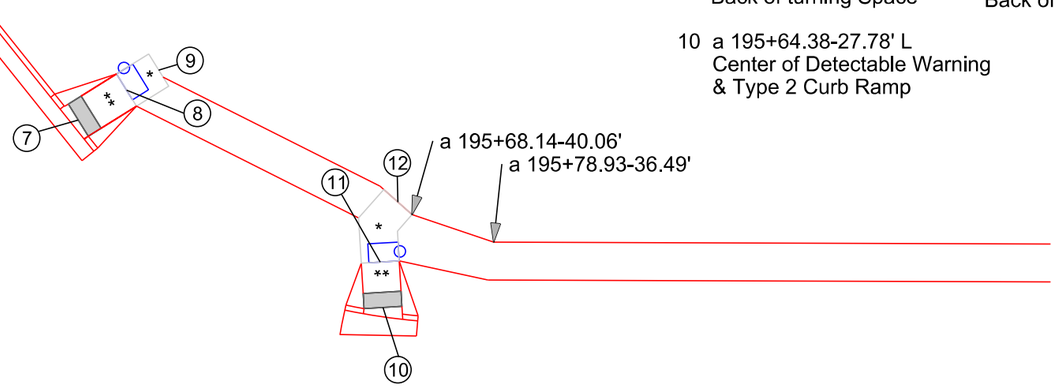
8 a 195+30.34-56.26' L
End Ramp Slope

9 a 195+34.57-58.93' L
Back of turning Space

10 a 195+64.38-27.78' L
Center of Detectable Warning
& Type 2 Curb Ramp

11 a 195+63.98-33.77' L
End Ramp Slope

12 a 195+66.26-41.71' L
Back of turning Space



13 a 195+18.37-51.65' R
Center of Detectable Warning
& Type 2 Curb Ramp

14 a 195+18.96-58.62' R
End Ramp Slope

15 a 195+19.38-63.60' R
Back of turning Space

16 a 195+73.22-72.86' R
Center of Detectable Warning
& Type 3 Curb Ramp

17 a 195+68.11-77.64' R
End Ramp Slope

18 a 195+64.24-81.25' R
Back of turning Space

19 a 196+25.89-70.63' R
Center of Detectable Warning
& Type 3 Curb Ramp

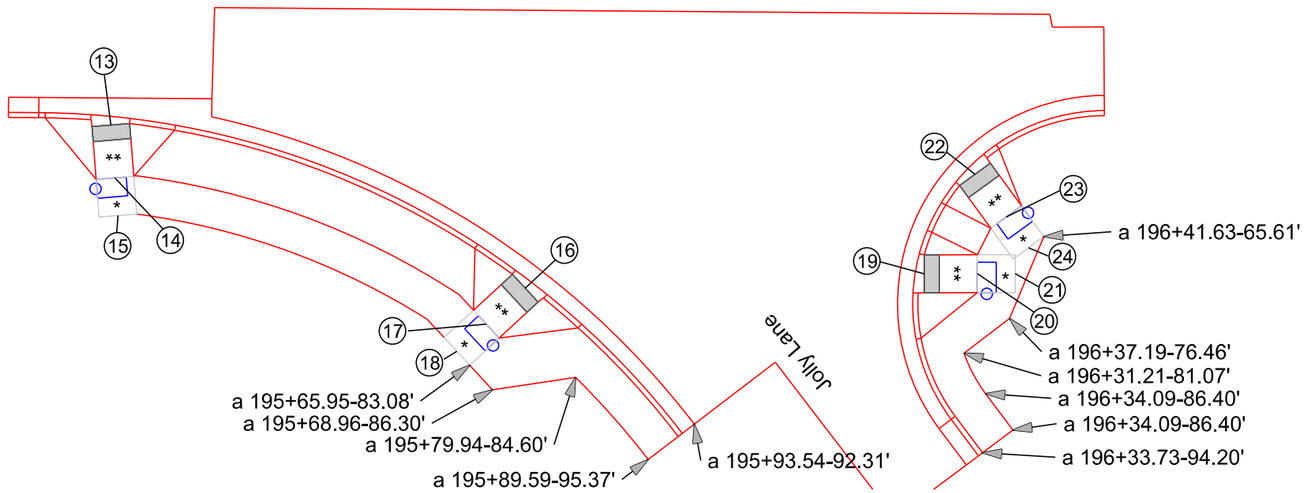
21 a 196+32.89-70.57' R
End Ramp Slope

22 a 196+37.89-70.52' R
Back of turning Space

22 a 196+32.50-57.44' R
Center of Detectable Warning
& Type 2 Curb Ramp

23 a 196+36.65-63.07' R
End Ramp Slope

24 a 196+39.62-67.09' R
Back of turning Space



CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B92	B123

Plotting Date: 10/15/2021

* 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 F8 except as noted.
All sidewalk is 6' wide except as noted.

1 a 209+37.52-39.03' L
Begin 30' Rad C & G

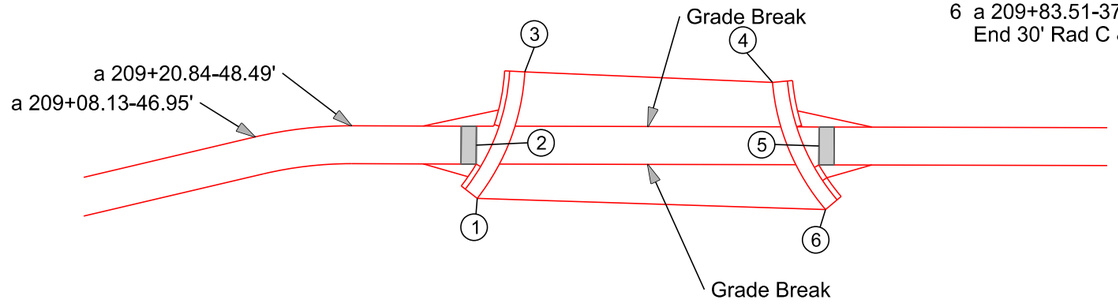
2 a 209+37.34-46.05' L
Center of Detectable Warning
& Type 2 Mod Curb Ramp

3 a 209+43.69-55.75' L
End 30' Rad C & G

4 a 209+76.39-76.39' L
Begin 30' Rad C & G

5 a 209+83.51-37.82' L
Center of Detectable Warning
& Type 2 Mod Curb Ramp

6 a 209+83.51-37.82' L
End 30' Rad C & G



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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B93	B123

Plotting Date: 10/15/2021

SD44/LaCROSSE STREET INTERSECTION LAYOUT

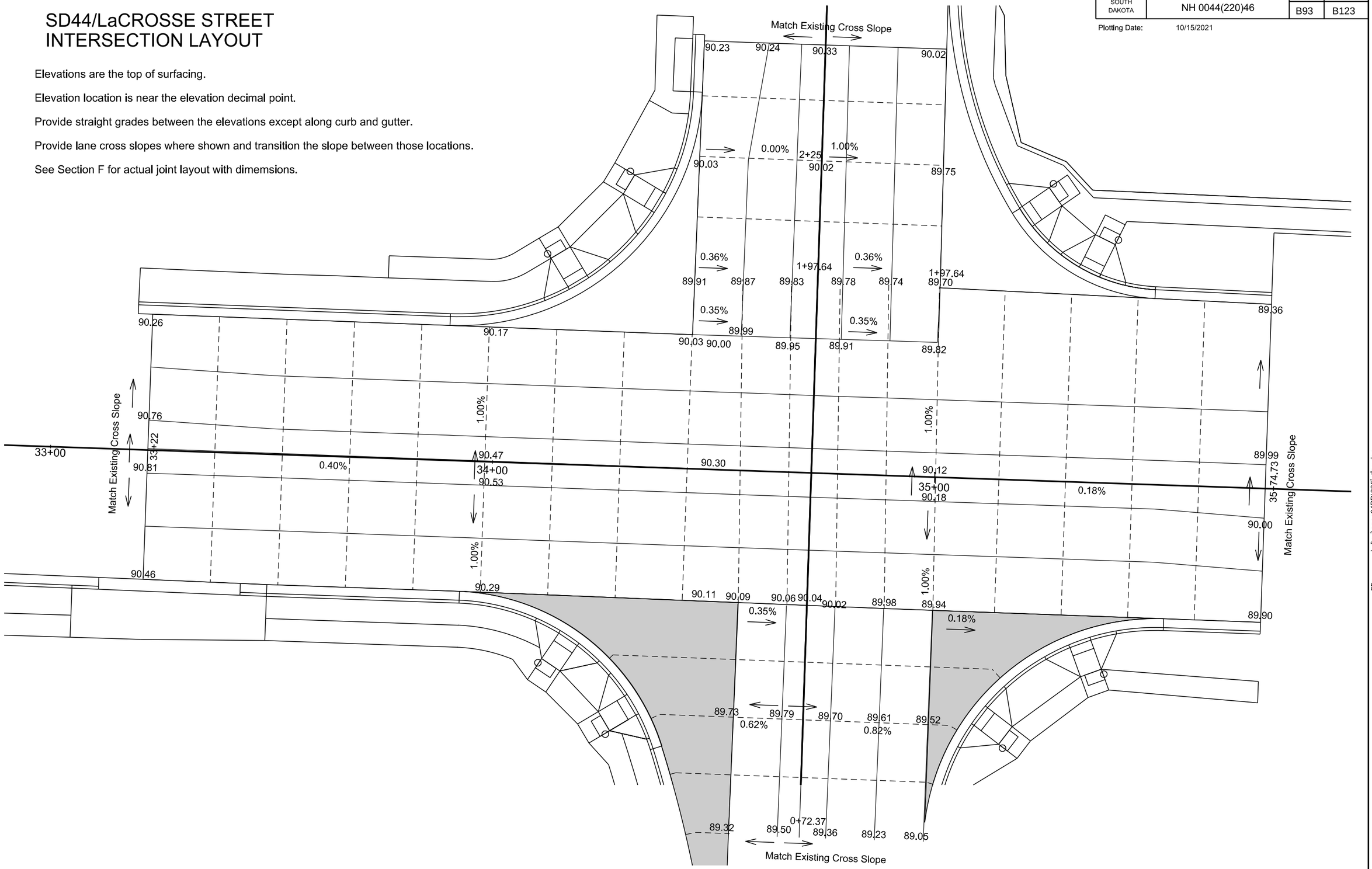
Elevations are the top of surfacing.

Elevation location is near the elevation decimal point.

Provide straight grades between the elevations except along curb and gutter.

Provide lane cross slopes where shown and transition the slope between those locations.

See Section F for actual joint layout with dimemsions.



Plot Scale - 1:20

Plotted From - TRPR17192

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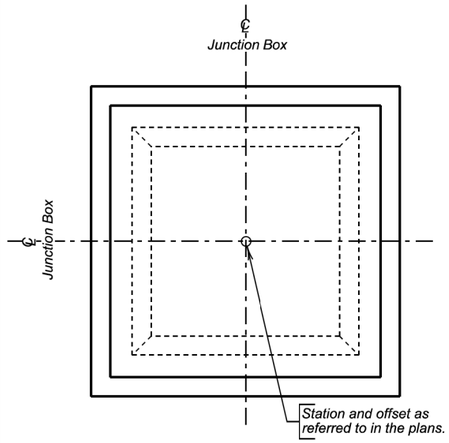
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B94	B123

Plotting Date: 10/15/2021

Plot Scale - 1:200

6'X 6' JUNCTION BOX

Sheet 1 of 3



PLAN VIEW

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.

The design of the junction box is based on a maximum fill over the junction box of 5 feet and minimum fill over the junction box of Ø 1 foot.

Reinforcing steel will conform to ASTM A615 Grade 60. Cut and bend reinforcing steel as required to place pipe(s) through junction box wall.

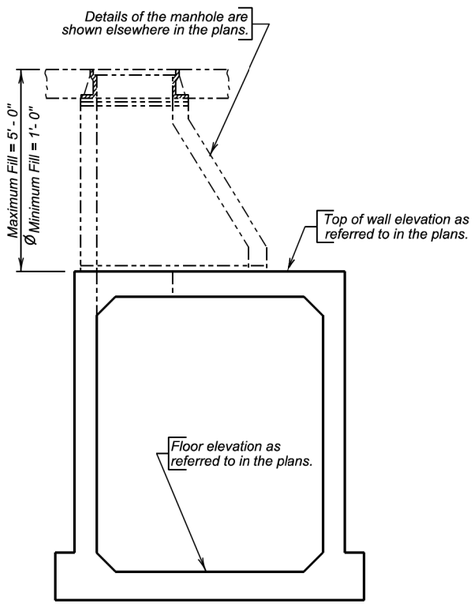
Junction box may be precast. If precast junction box details differ from these details, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

Use 1 inch clear cover on all reinforcing steel unless otherwise noted.

All exposed edges will be chamfered ¾ inch.

Junction box shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering junction box must fit between the inside face of walls and will not enter through the corners.

The cost of furnishing and installing the manhole steps will be incidental to the contract unit price per pound for "Reinforcing Steel".



ELEVATION VIEW

PIPE DISPLACEMENT REDUCTIONS

	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	18	2 ½	0.06
	24	3	0.11
R.C.P. Arch	** Size (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
	36	4 ½	0.23

** *Equivalent Diameter of Circular R.C.P.*

ESTIMATED QUANTITIES

ITEM	⚹ Class M6 Concrete	Reinforcing Steel
UNIT	Cu. Yd.	Lb.
H = 4' - 0"	5.53	1186
H = 4' - 6"	5.82	1215
H = 5' - 0"	6.10	1286
H = 5' - 6"	6.39	1316
H = 6' - 0"	6.67	1345
H = 6' - 6"	6.96	1416
H = 7' - 0"	7.24	1445
H = 7' - 6"	7.52	1475
H = 8' - 0"	7.81	1545

⚹ *Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). Quantity shown includes reduction for a 24-inch diameter manhole opening. The total quantity of concrete will be computed to the nearest hundredth of a cubic yard.*

Ø *DM - Revised 9/10/2021*

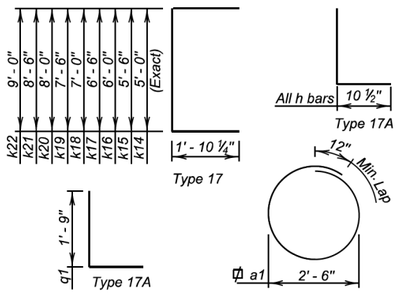
6'X 6' JUNCTION BOX

Sheet 2 of 3

REINFORCING SCHEDULE

	Mk.	No.	Size	Length	Type
H = 4' - 0"	Ø a1	1	6	9' - 0"	T3
	▼ a2	4	–	———	—
	h14	32	4	5' - 9"	17A
	k14	56	4	8' - 9"	17
	m2	22	6	7' - 9"	Str.
	n2	22	6	6' - 9"	Str.
	p2	56	4	6' - 0"	Str.
	q1	8	4	3' - 6"	17A
H = 4' - 6"	Ø a1	1	6	9' - 0"	T3
	▼ a2	4	–	———	—
	h15	32	4	6' - 3"	17A
	k15	56	4	9' - 3"	17
	m2	22	6	7' - 9"	Str.
	n2	22	6	6' - 9"	Str.
	p2	56	4	6' - 0"	Str.
	q1	8	4	3' - 6"	17A
H = 5' - 0"	Ø a1	1	6	9' - 0"	T3
	▼ a2	5	–	———	—
	h16	32	4	6' - 9"	17A
	k16	56	4	9' - 9"	17
	m2	22	6	7' - 9"	Str.
	n2	22	6	6' - 9"	Str.
	p2	64	4	6' - 0"	Str.
	q1	12	4	3' - 6"	17A
H = 5' - 6"	Ø a1	1	6	9' - 0"	T3
	▼ a2	5	–	———	—
	h17	32	4	7' - 3"	17A
	k17	56	4	10' - 3"	17
	m2	22	6	7' - 9"	Str.
	n2	22	6	6' - 9"	Str.
	p2	64	4	6' - 0"	Str.
	q1	12	4	3' - 6"	17A
H = 6' - 0"	Ø a1	1	6	9' - 0"	T3
	▼ a2	6	–	———	—
	h18	32	4	7' - 9"	17A
	k18	56	4	10' - 9"	17
	m2	22	6	7' - 9"	Str.
	n2	22	6	6' - 9"	Str.
	p2	64	4	6' - 0"	Str.
	q1	12	4	3' - 6"	17A
H = 6' - 6"	Ø a1	1	6	9' - 0"	T3
	▼ a2	6	–	———	—
	h19	32	4	8' - 3"	17A
	k19	56	4	11' - 3"	17
	m2	22	6	7' - 9"	Str.
	n2	22	6	6' - 9"	Str.
	p2	72	4	6' - 0"	Str.
	q1	16	4	3' - 6"	17A
H = 7' - 0"	Ø a1	1	6	9' - 0"	T3
	▼ a2	7	–	———	—
	h20	32	4	8' - 9"	17A
	k20	56	4	11' - 9"	17
	m2	22	6	7' - 9"	Str.
	n2	22	6	6' - 9"	Str.
	p2	72	4	6' - 0"	Str.
	q1	16	4	3' - 6"	17A

Bending Details



	Mk.	No.	Size	Length	Type
H = 7' - 6"	Ø a1	1	6	9' - 0"	T3
	▼ a2	7	–	———	—
	h21	32	4	9' - 3"	17A
	k21	56	4	12' - 3"	17
	m2	22	6	7' - 9"	Str.
	n2	22	6	6' - 9"	Str.
	p2	72	4	6' - 0"	Str.
	q1	16	4	3' - 6"	17A
H = 8' - 0"	Ø a1	1	6	9' - 0"	T3
	▼ a2	8	–	———	—
	h22	32	4	9' - 9"	17A
	k22	56	4	12' - 9"	17
	m2	22	6	7' - 9"	Str.
	n2	22	6	6' - 9"	Str.
	p2	80	4	6' - 0"	Str.
	q1	20	4	3' - 6"	17A

LEGEND FOR PLACING RE-STEEL

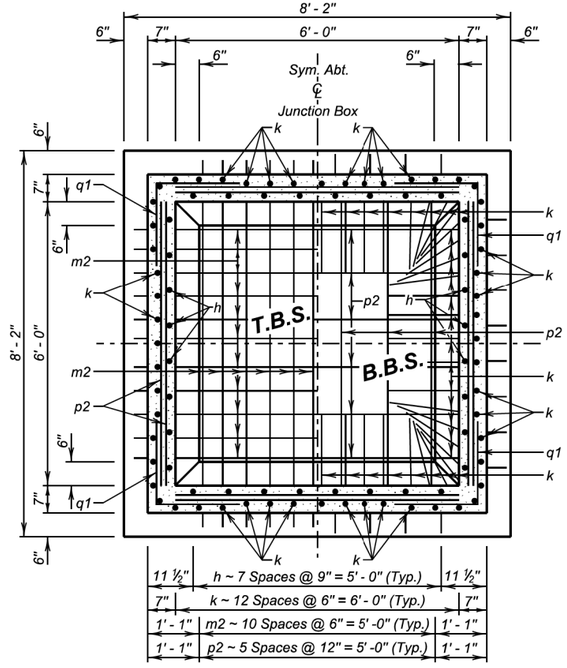
T.B.S. - Top of Bottom Slab

B.B.S. - Bottom of Bottom Slab

▼ *Cast iron Manhole Steps (R - 1980 - C) from Neenah Foundry or equivalent.*

Ø *Locate in center of top slab with 3" clearance at manhole opening.*

All dimensions are out to out of bars.



SEC. A - A

Plotted From - TRPR17192

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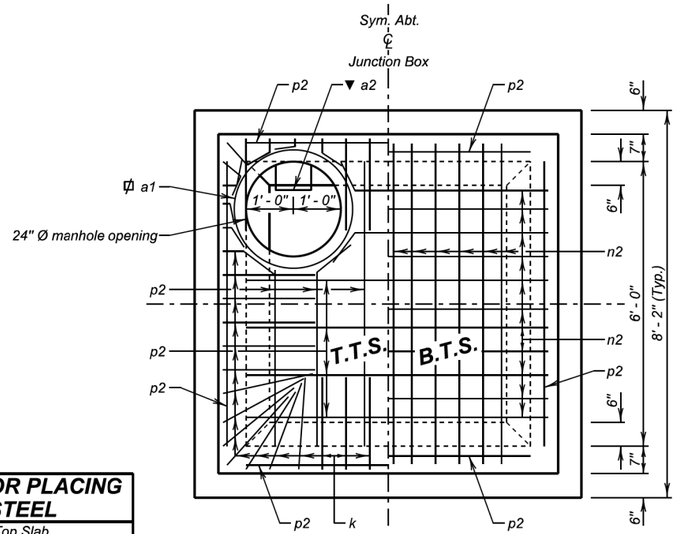
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B95	B123

Plotting Date: 10/15/2021

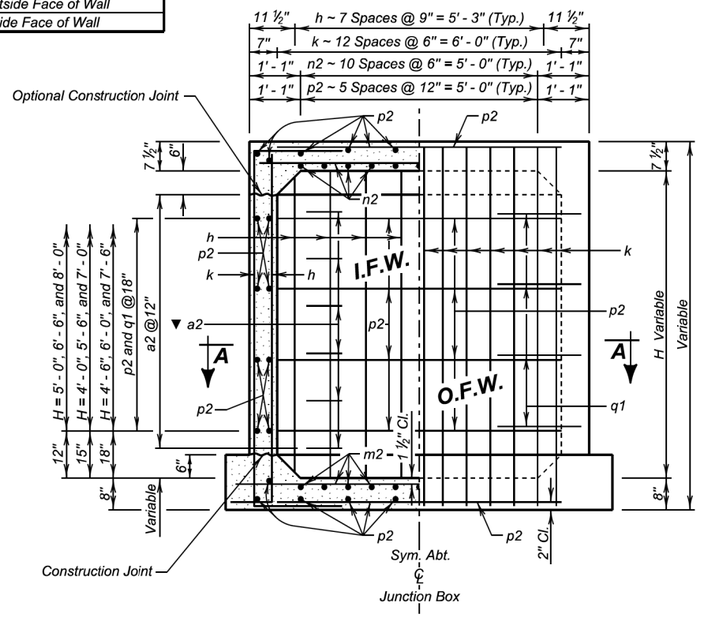
6' X 6' JUNCTION BOX

Sheet 3 of 3



PLAN VIEW

LEGEND FOR PLACING RE-STEEL
T. T. S. - Top of Top Slab
B. T. S. - Bottom of Top Slab
O. F. W. - Outside Face of Wall
I. F. W. - Inside Face of Wall



ELEVATION VIEW

Plot Scale - 1:200

- Plotted From - TRPR17192

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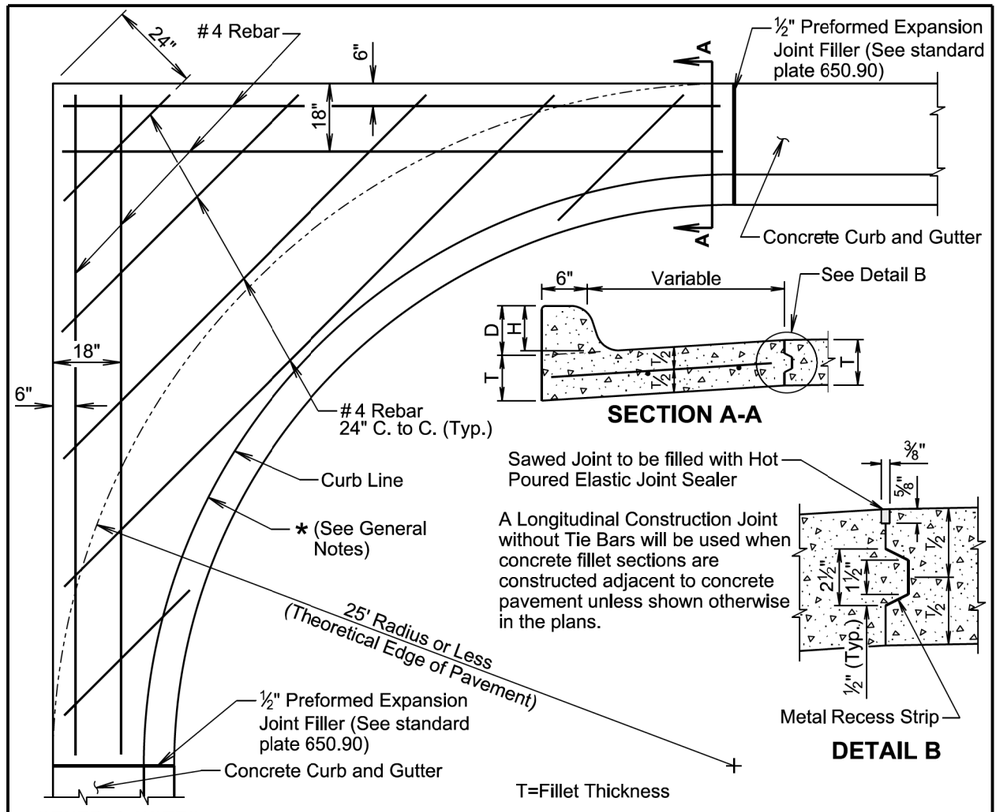
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B96	B123

Plotting Date: 10/15/2021



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.

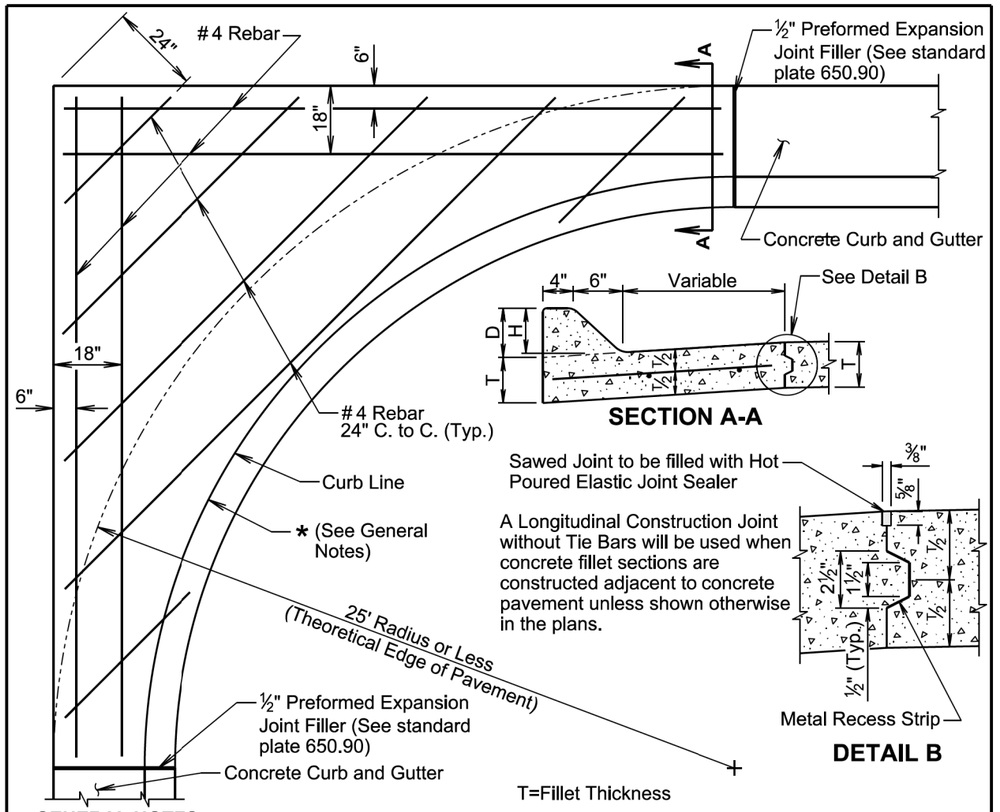
The concrete curb will be monolithic with the concrete fillet. No separate payment for this curb will be made as the curb is considered a part of the fillet.

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. 2021	SDDOT	PCC FILLET SECTION WITH TYPE B CURB AND GUTTER	PLATE NUMBER 380.16
			Sheet 1 of 1



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.

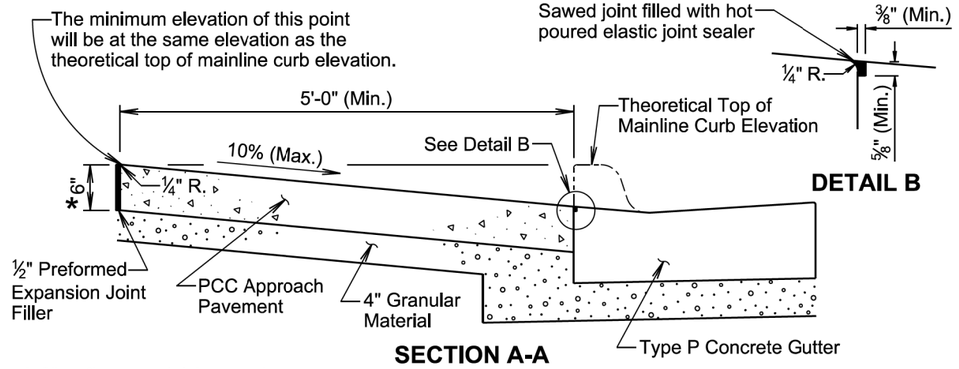
The cost for all materials, labor, and incidentals necessary to construct the PCC fillet section with curb and gutter will be incidental to the contract unit price per square yard for the corresponding PCC fillet section contract item.

June 26, 2019

Published Date: 4th Qtr. 2021	SDDOT	PCC FILLET SECTION WITH TYPE F CURB AND GUTTER	PLATE NUMBER 380.17
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B97	B123

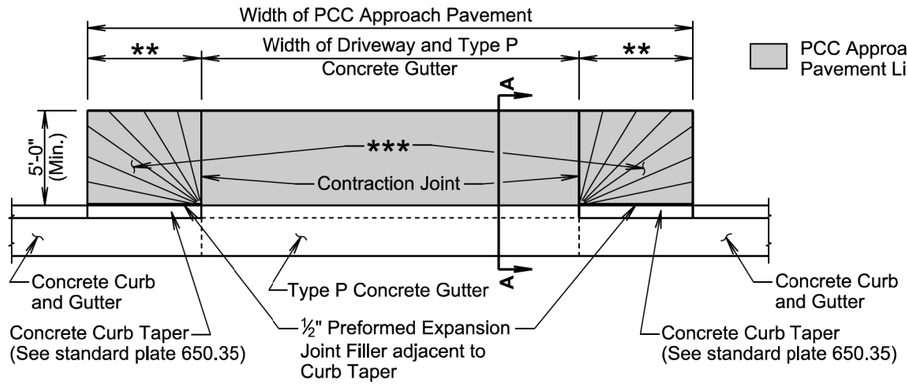
Plotting Date: 10/15/2021



* 8" at Commercial Approaches

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

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



PLAN VIEW

GENERAL NOTES:

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

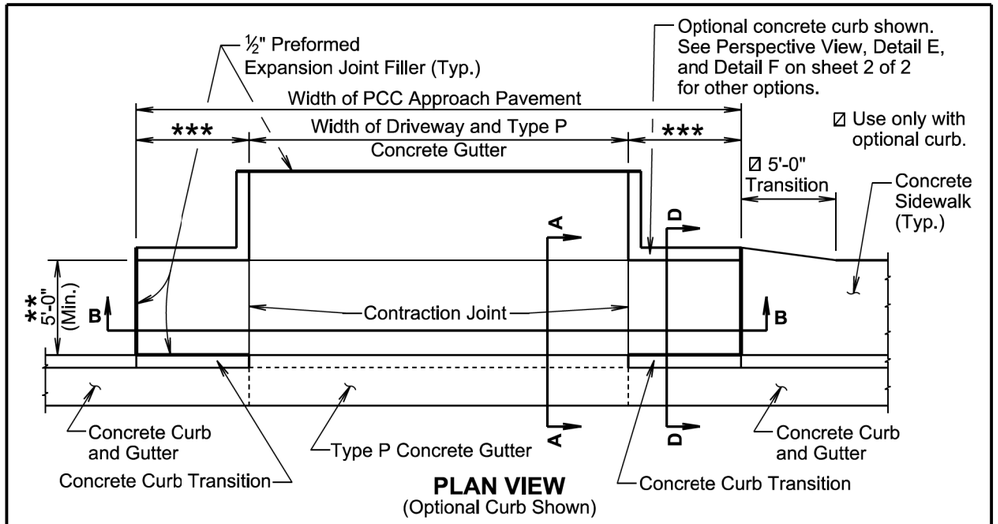
Contraction joints in the type A PCC approach pavement will be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint will be at least ¼ the thickness of the approach pavement. Additional contraction joints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

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

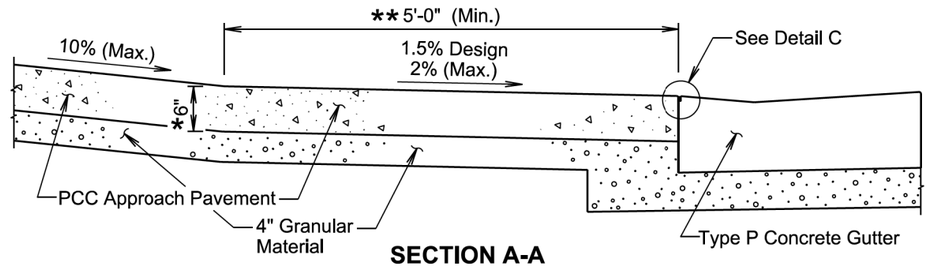
All costs for furnishing and placing the type A PCC approach pavement and constructing the expansion and contraction joints including labor, equipment, excavation, and materials including the earthen backfill and granular material, will be incidental to the contract unit price per square yard for the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

June 26, 2019

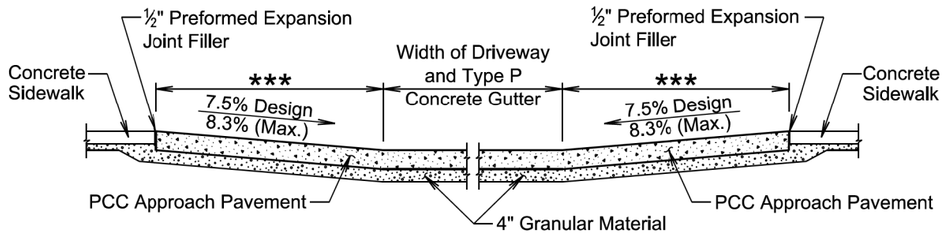
Published Date: 4th Qtr. 2021	SDDOT	TYPE A PCC APPROACH PAVEMENT	PLATE NUMBER 380.40
			Sheet 1 of 1



PLAN VIEW
(Optional Curb Shown)



SECTION A-A



SECTION B-B

* 8 inches at Commercial Approaches

** Sidewalk width is 5 feet unless specified otherwise in the plans. The cross slope of the sidewalk is designed at 1.5% and will not be steeper than 2% unless specified otherwise in the plans.

*** The slope of the type B PCC approach pavement in these areas will match the slope of the concrete curb transition and the length will not be longer than 15 feet. The slope is designed at 7.5% and will not be steeper than 8.3% unless specified otherwise in the plans.

June 26, 2019

Published Date: 4th Qtr. 2021	SDDOT	TYPE B PCC APPROACH PAVEMENT	PLATE NUMBER 380.41
			Sheet 1 of 2

Plot Scale - 1:200

Plotted From - TRPR17192

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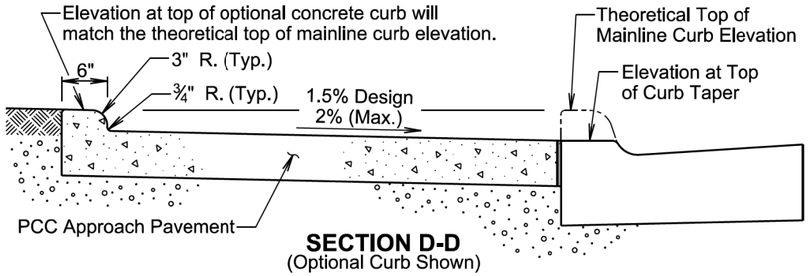
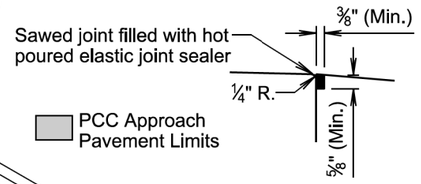
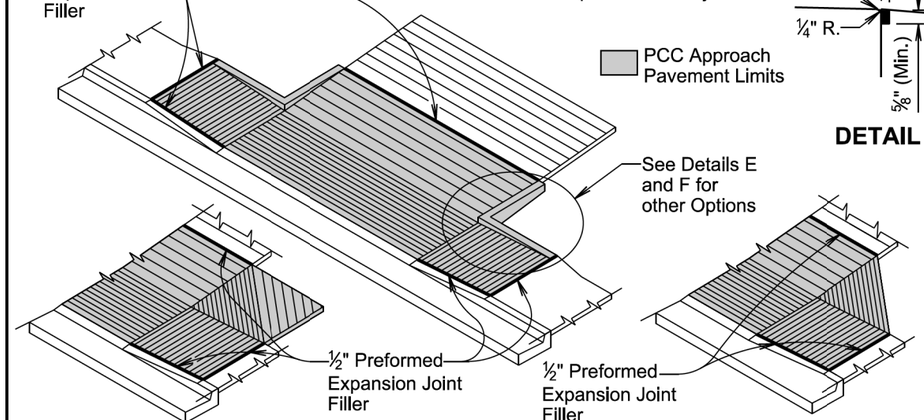


SECTION D-D
(Optional Curb Shown)



DETAIL C



DETAIL E
(Optional Rectangle Pavement Shown)

PERSPECTIVE VIEW
(Optional Curb Shown)

DETAIL F
(Optional Triangle Pavement Shown)

GENERAL NOTES:

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

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

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

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

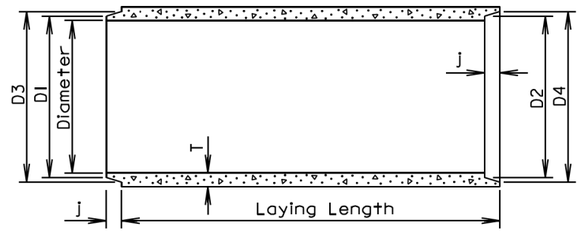
All costs for furnishing and placing the type B PCC approach pavement and constructing the expansion and contraction joints including labor, equipment, excavation, and materials including the earthen backfill and granular material will be incidental to the contract unit price per square yard for the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

June 26, 2019

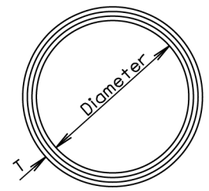
Published Date: 4th Qtr. 2021	SDDOT	TYPE B PCC APPROACH PAVEMENT	PLATE NUMBER 380.41
			Sheet 2 of 2

TOLERANCES IN DIMENSIONS

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



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

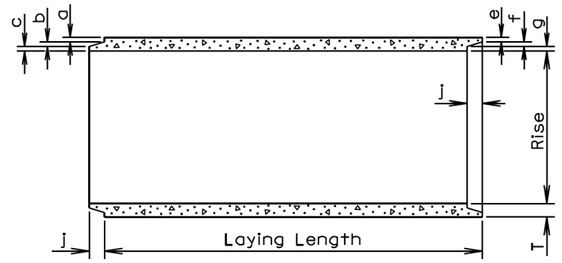
Construction of R.C.P. shall conform to the requirements of Section 990 of the Specifications.

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

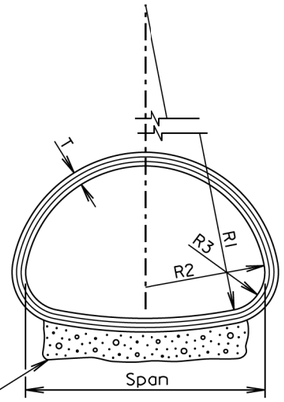
Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1¾	13¼	13⅝	13⅞	14¼
15	127	2¼	2	16½	16⅞	17¼	17⅝
18	168	2½	2¼	19⅝	20	20⅜	20¾
21	214	2¾	2½	22⅞	23¼	23¾	24⅛
24	265	3	2¾	26	26⅜	27	27⅜
27	322	3¼	3	29¼	29⅝	30¼	30⅝
30	384	3½	3¼	32⅜	32¾	33½	33⅞
36	524	4	3¾	38¾	39¼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

June 26, 2015

Published Date: 4th Qtr. 2021	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1



LONGITUDINAL SECTION



END VIEW

TOLERANCES IN DIMENSIONS

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

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

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

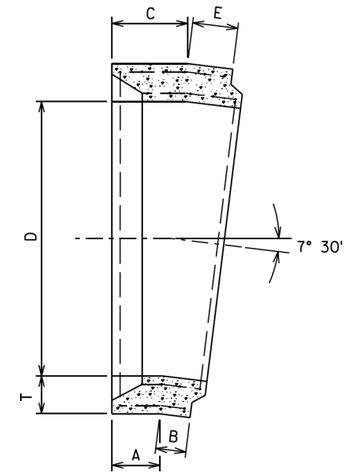
* Equivalent Diameter of Circular R. C. P.

GENERAL NOTES:

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

June 26, 2015

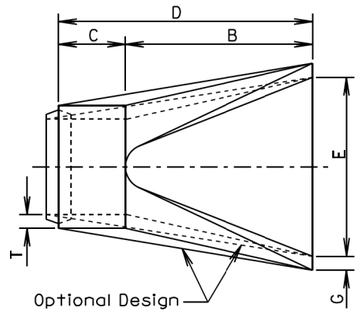
Published Date: 4th Qtr. 2021	SDDOT	**REINFORCED CONCRETE PIPE ARCH**	PLATE NUMBER 450.02 Sheet 1 of 1



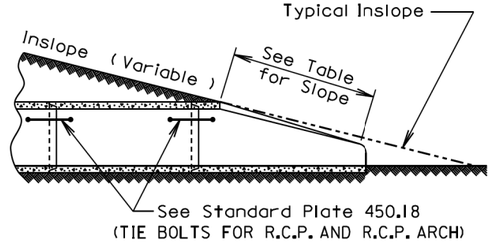
D (in.)	Laying Length at Center of Pipe (in.)	Laying Length at Outside of Curve (in.)	T (in.)	A (in.)	B (in.)	C (in.)	E (in.)	Radius of Curve (ft.)	Weight of Section (lbs.)
12	7 3/4	8	2	4 3/4	2	5 3/4	3	4.9	70
15	11 1/4	12 1/2	2 1/4	5 1/4	4 3/4	6 1/2	6	7.2	120
18	12 1/8	13 5/8	2 1/2	5 1/2	5 1/8	7	6 5/8	7.7	170
21	9 1/2	11 1/4	2 3/4	5 1/2	2 1/4	7 1/4	4	6.1	170
24	9 13/16	11 3/4	3	5 9/16	2 5/8	7 1/2	4 1/4	6.2	215
27	9 11/16	12 1/8	3 1/4	5 7/16	2 5/16	7 5/8	4 1/2	6.2	260
30	10	12 3/8	3 1/2	5 5/16	2 5/16	7 11/16	4 11/16	6.4	320
33	11 3/16	13 7/8	3 3/4	5 15/16	2 9/16	8 5/8	5 1/4	7.1	420
36	12 3/16	15 1/16	4	6 1/2	2 5/16	9 3/8	5 11/16	7.7	530
42	14 1/16	17 1/2	4 1/2	6 13/16	3 13/16	10 5/16	7 3/16	8.9	800
48	16 1/16	20 1/4	5	7 15/16	4 11/16	11 3/4	8 1/2	10.5	1190
54	18 1/16	22 5/16	5 1/2	7 5/8	6 3/16	11 7/8	10 7/16	11.5	1600
60	20 1/2	25 1/4	6	8 5/8	7 1/8	13 3/8	11 7/8	13.0	2210
66	21 5/8	26 15/16	6 1/2	9	7 3/8	14 5/16	12 5/8	13.8	2790
72	22 5/8	28 1/4	7	9 3/8	7 5/8	13 1/4	15	14.4	3420

March 31, 2000

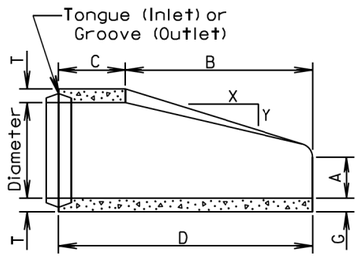
Published Date: 4th Qtr. 2021	SDDOT	**REINFORCED CONCRETE PIPE SHORT RADIUS BEND**	PLATE NUMBER 450.03 Sheet 1 of 1



TOP VIEW



SLOPE DETAIL

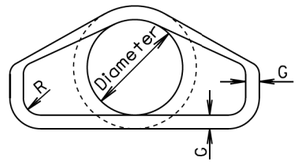


LONGITUDINAL SECTION

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.

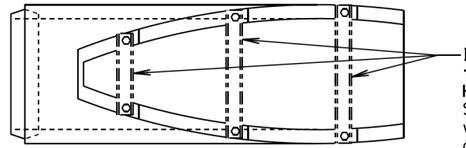


END VIEW

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

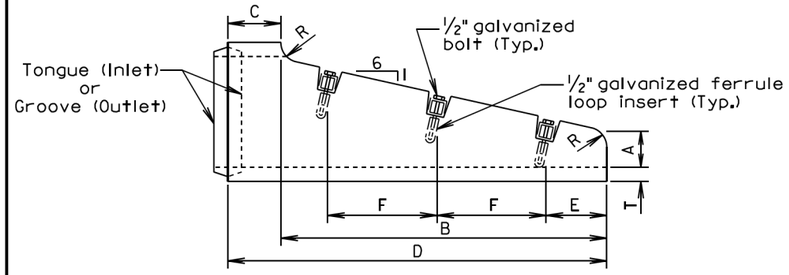
June 26, 2015

Published Date: 4th Qtr. 2021	SDDOT	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
			Sheet 1 of 1

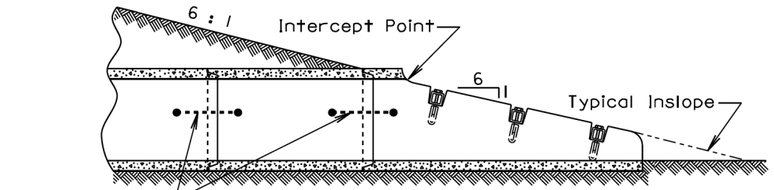


TOP VIEW

If bars are specified in the plans then provide HSS 2.5X2.5X.1875 Structural Steel Tubing in conformance with ASTM A500, Grade B or 3" Diameter Schedule 40 Pipe in conformance with ASTM A53, Grade B.



SIDE VIEW



ELEVATION VIEW

Dia. (in.)	T (in.)	R (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	No. Sections	No. Bars
FOR CIRCULAR PIPE										
15	2 1/4	3	6	48	9	57	6	18	1	3
18	2 1/2	3	6	69	9	78	9	24	1	3
*24	3	3	6	111	9	120	6	24	1 or 2	5
FOR ARCH PIPE										
**18	2 1/2	1	6	39	33	72	6	24	1	2

*The use of 2 sections must be an approved design.
**Equivalent Diameter of Circular R. C. P.

GENERAL NOTES:

The length of concrete pipe shown on the plans is between safety ends.

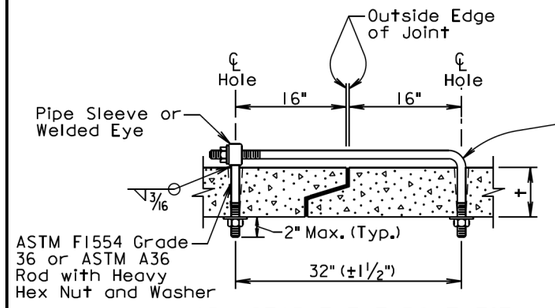
Safety ends without bars are acceptable with or without the bar notches.

Bars shall be galvanized after fabrication in accordance with ASTM A123.

August 31, 2013

Published Date: 4th Qtr. 2021	SDDOT	R. C. P. SAFETY ENDS WITH OR WITHOUT BARS	PLATE NUMBER 450.12
			Sheet 1 of 1

Wall "t" (in.)	Rod Dia. (in.)	Pipe Sleeve Dia. (nominal)
≤ 3 1/4	5/8	3/4
3 1/2-6 1/2	3/4	1
≥ 7	1	1 1/4



ADJUSTABLE EYE BOLT TIE

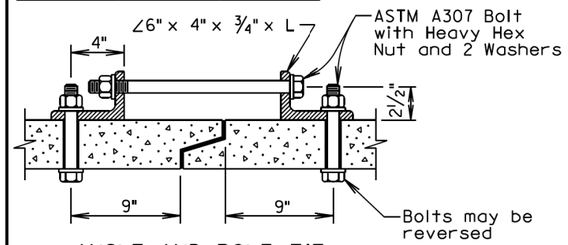
GENERAL NOTES:

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

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

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

Pipe Dia. (in.)	"L" (in.)	Bolt Dia. (in.)
≤ 48	4	3/4
> 48	6	1



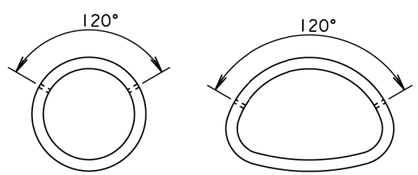
ANGLE AND BOLT TIE

GENERAL NOTES:

Angles shall conform to ASTM A36.

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

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



END VIEW "CIRCULAR"

END VIEW "ARCH"

GENERAL NOTES:

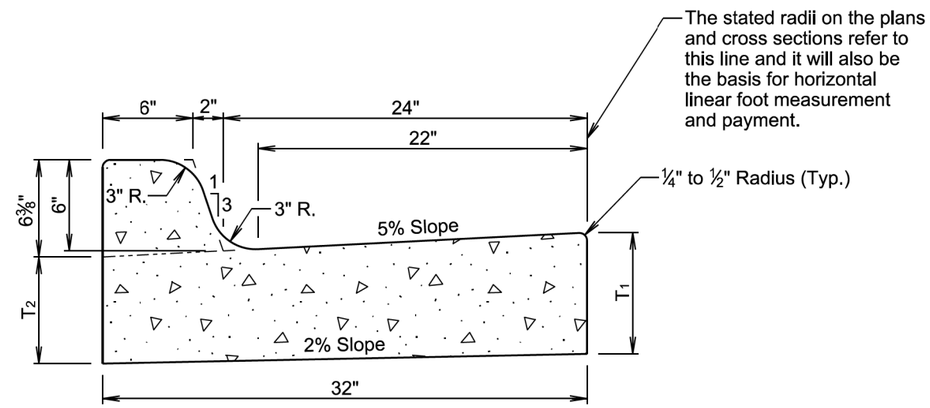
In lieu of the tie bolts detailed above other types of tie bolt connections may be installed as approved by the Office of Bridge Design.

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

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

February 28, 2013

Published Date: 4th Qtr. 2021	SDDOT	TIE BOLTS FOR R.C.P. AND R.C.P. ARCH	PLATE NUMBER 450.18
			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

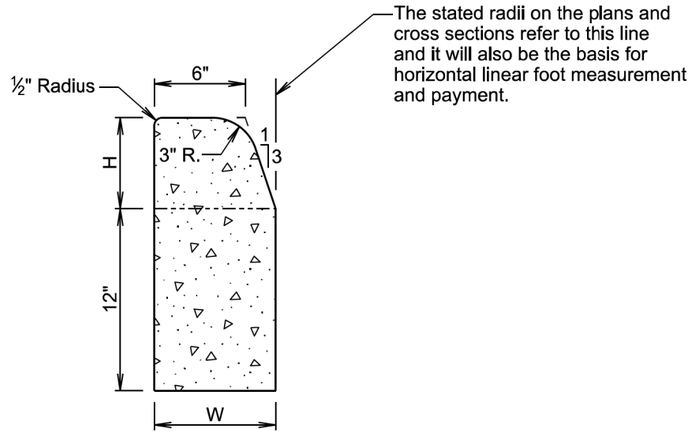
GENERAL NOTES:

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. 2021	SDDOT	TYPE B CONCRETE CURB AND GUTTER	PLATE NUMBER 650.01
			Sheet 1 of 1



TYPE B CONCRETE CURB				
Type	H (Inches)	W (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B6	6	8	0.0353	28.4
B7	7	8⅜	0.0383	26.1
B8	8	8⅝	0.0414	24.1
B9	9	9	0.0449	22.3
B10	10	9⅜	0.0485	20.6

GENERAL NOTES:

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

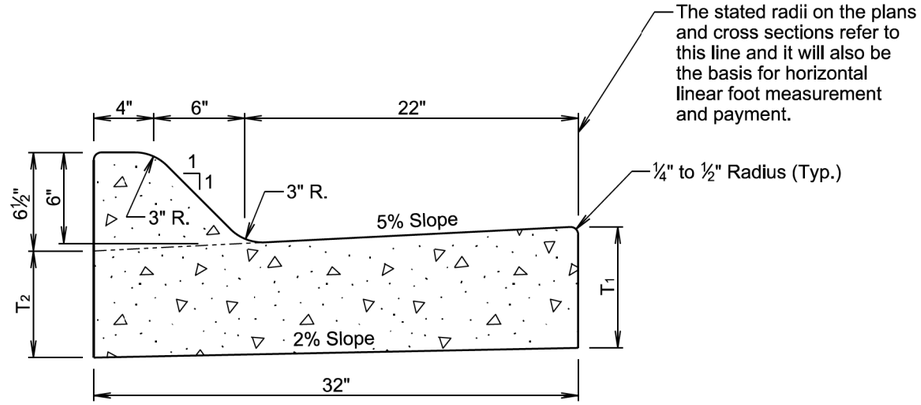
A ½" preformed expansion joint filler will be placed transversely in the curb at the following locations:

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

See standard plate 650.90 for contraction joints in the curb.

December 23, 2019

Published Date: 4th Qtr. 2021	SDDOT	TYPE B CONCRETE CURB	PLATE NUMBER 650.02
			Sheet 1 of 1



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

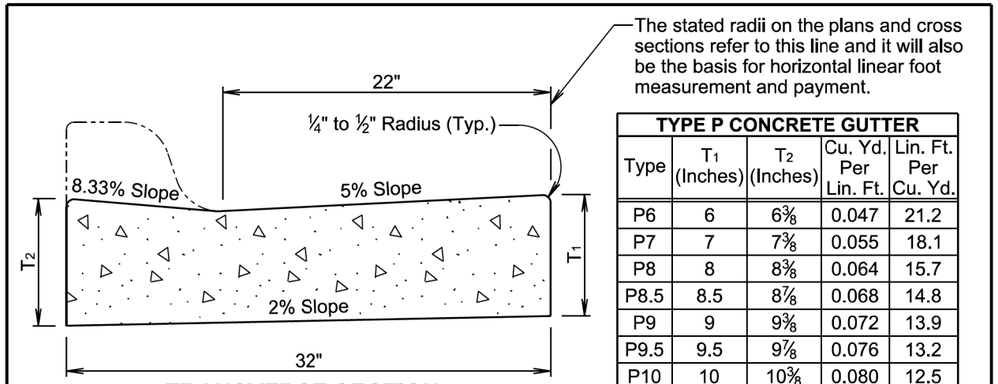
GENERAL NOTES:

When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment will be by one of the methods shown on standard plate 380.11.

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

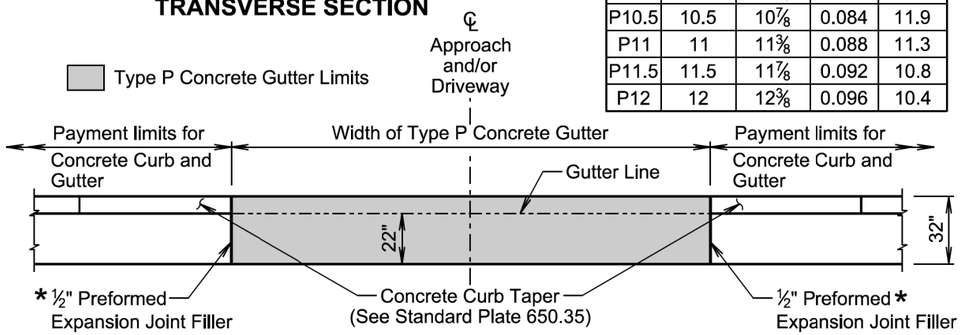
December 23, 2019

Published Date: 4th Qtr. 2021	SDDOT	TYPE F CONCRETE CURB AND GUTTER	PLATE NUMBER 650.20
			Sheet 1 of 1



TRANSVERSE SECTION

TYPE P CONCRETE GUTTER				
Type	T_1 (Inches)	T_2 (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
P6	6	6⅜	0.047	21.2
P7	7	7⅜	0.055	18.1
P8	8	8⅜	0.064	15.7
P8.5	8.5	8⅞	0.068	14.8
P9	9	9⅜	0.072	13.9
P9.5	9.5	9⅞	0.076	13.2
P10	10	10⅜	0.080	12.5
P10.5	10.5	10⅞	0.084	11.9
P11	11	11⅜	0.088	11.3
P11.5	11.5	11⅞	0.092	10.8
P12	12	12⅜	0.096	10.4



PLAN VIEW

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

GENERAL NOTES:

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

When concrete gutter longitudinally adjoins new concrete pavement, the method of attachment will be by one of the methods shown on standard plate 380.11.

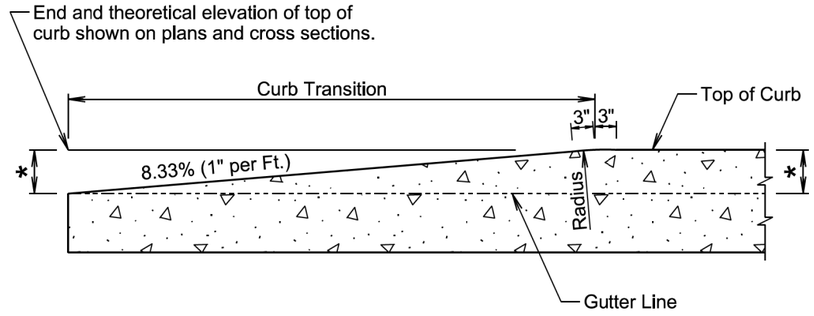
Transverse contraction joints will be constructed at 10-foot intervals in the concrete gutter except when concrete gutter is constructed adjacent to mainline PCC pavement. When concrete gutter is constructed adjacent to mainline PCC pavement, a transverse contraction joint will be constructed in the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

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

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

December 23, 2019

Published Date: 4th Qtr. 2021	SDDOT	TYPE P CONCRETE GUTTER	PLATE NUMBER 650.30
			Sheet 1 of 1

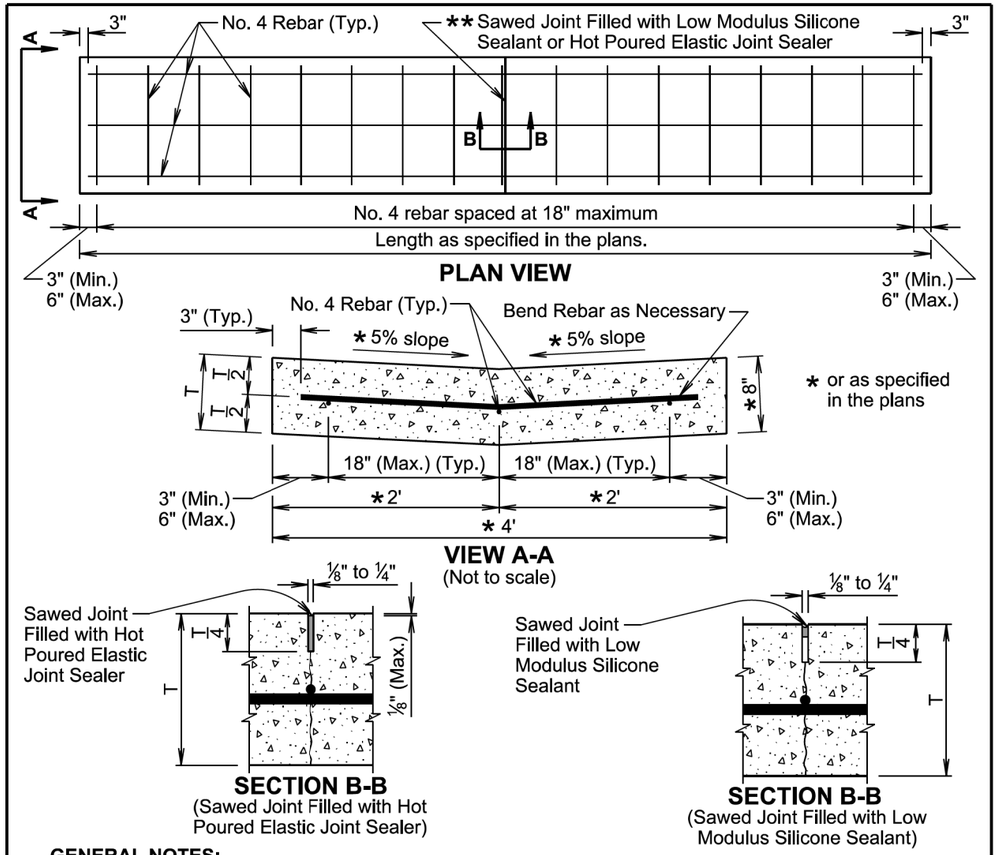


* Height of Curb

LONGITUDINAL SECTION
(Concrete Curb Taper)

December 23, 2019

Published Date: 4th Qtr. 2021	SDDOT	CONCRETE CURB TAPER	PLATE NUMBER 650.35
			Sheet 1 of 1



GENERAL NOTES:

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

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

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

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

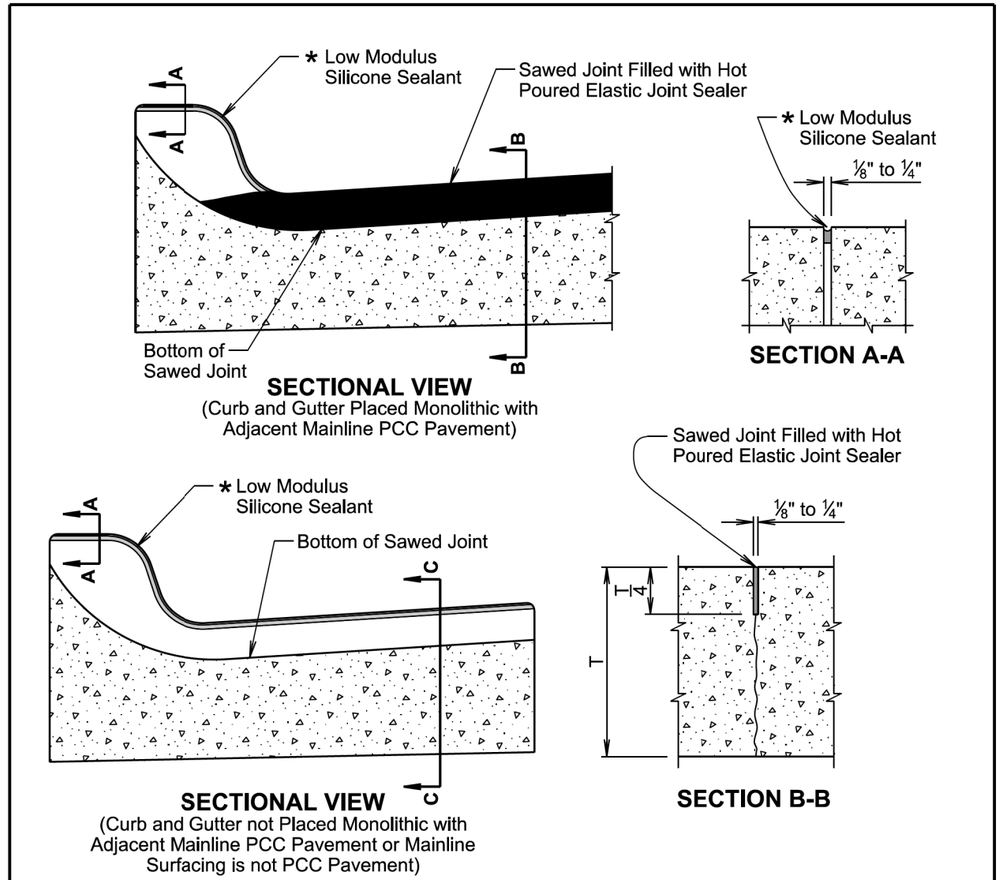
All hot poured elastic joint sealer material spilled on the surface of the concrete pavement will be removed as soon as the material has cooled. The extent of removal of material will be to the satisfaction of the Engineer. All costs for removal of the spilled joint sealer material will be borne by the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

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

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

December 23, 2019

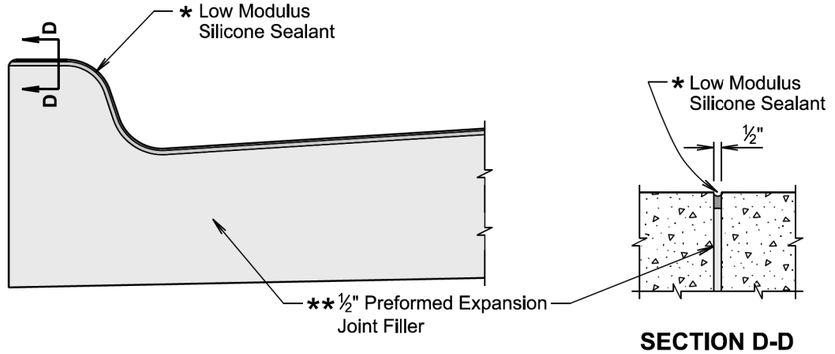
Published Date: 4th Qtr. 2021	SDDOT	VALLEY GUTTER	PLATE NUMBER 650.40
			Sheet 1 of 1



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

December 23, 2019

Published Date: 4th Qtr. 2021	SDDOT	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 1 of 2



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

SECTION D-D

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

GENERAL NOTES:

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

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

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

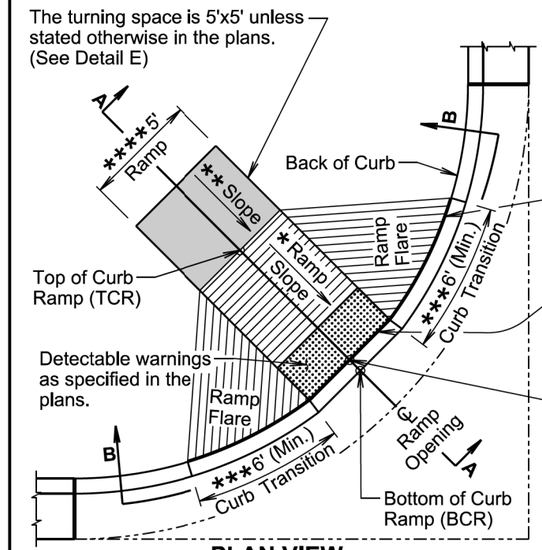
At each junction between new curb and gutter and existing curb and gutter.

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

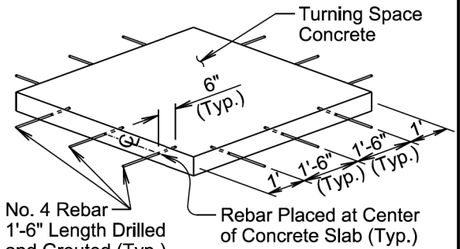
When concrete curb and gutter is not placed monolithically with the mainline PCC pavement or when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete curb and gutter will be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool.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

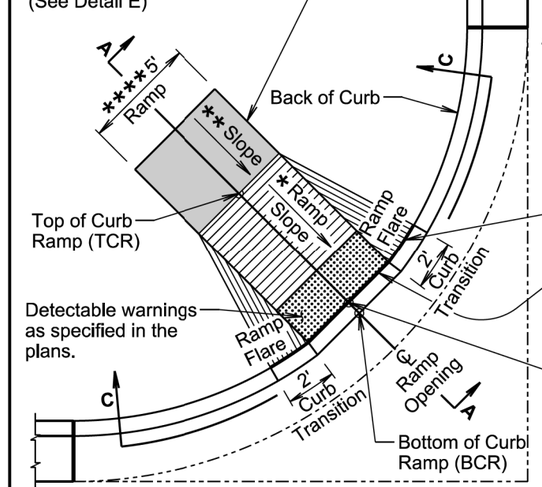
December 23, 2019

Published Date: 4th Qtr. 2021	SDDOT	***JOINTS IN CONCRETE CURB AND GUTTER***	***PLATE NUMBER*** 650.90 *Sheet 2 of 2*



PLAN VIEW
(With 6'+ Curb Transition)





PLAN VIEW
(With 2' Curb Transition)

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

February 14, 2020

Published Date: 4th Qtr. 2021	SDDOT	***TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)***	***PLATE NUMBER*** 651.01 *Sheet 1 of 3*

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

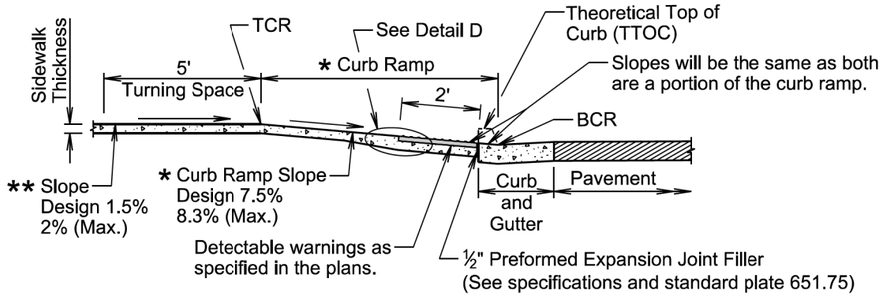
* The curb ramp length may be computed based on the intersection of a continuous 1.5% theoretical slope from theoretical top of curb (TTOC) with the curb ramp using a continuous 7.5% curb ramp slope. The elevation of point TCR will always be higher than the elevation of point TTOC unless specified otherwise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

The cross slope of the ramp will not be steeper than 2%. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

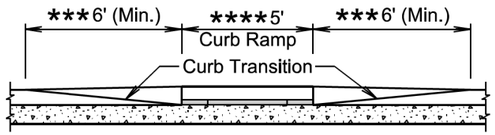
** The slope in the turning space will not be steeper than 2% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

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

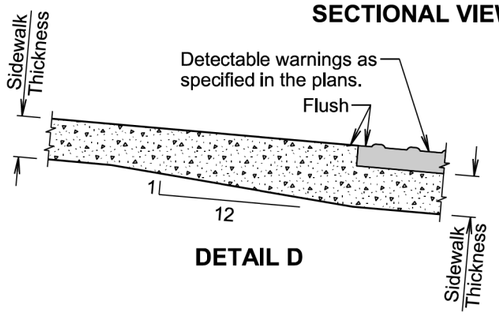
**** The ramp width is 5' unless stated otherwise in the plans.



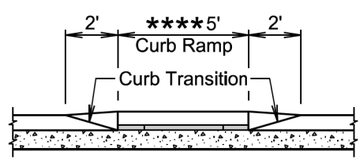
SECTION A-A



SECTIONAL VIEW B-B



DETAIL D



SECTIONAL VIEW C-C

February 14, 2020

Published Date: 4th Qtr. 2021	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 2 of 3

GENERAL NOTES:

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

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

For illustrative purpose only, the curb ramp location is shown at the center of a PCC fillet section. 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.

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".

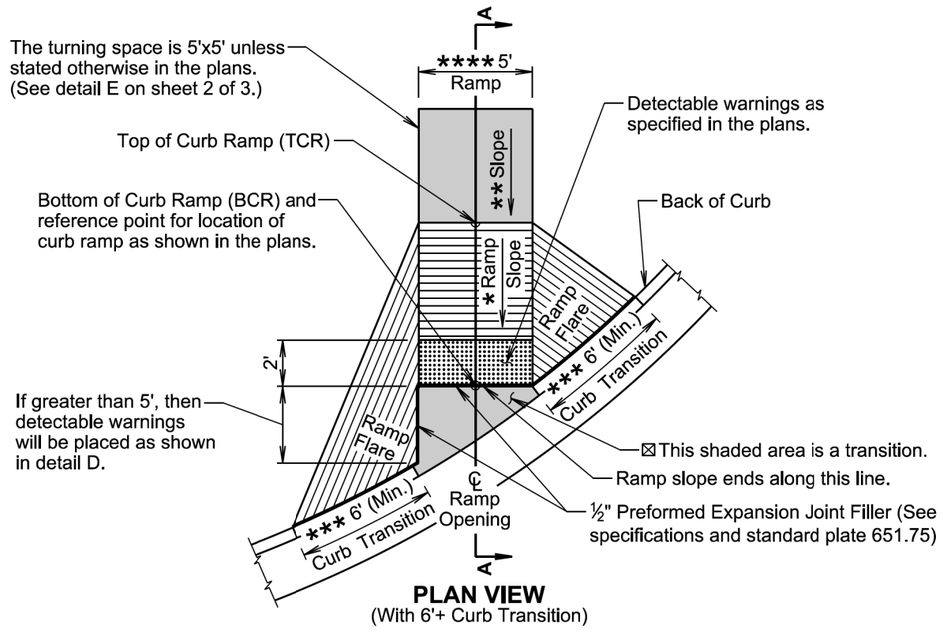
The type 2 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding will be paid for at the contract unit price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

February 14, 2020

Published Date: 4th Qtr. 2021	SDDOT	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 3 of 3

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B107	B123

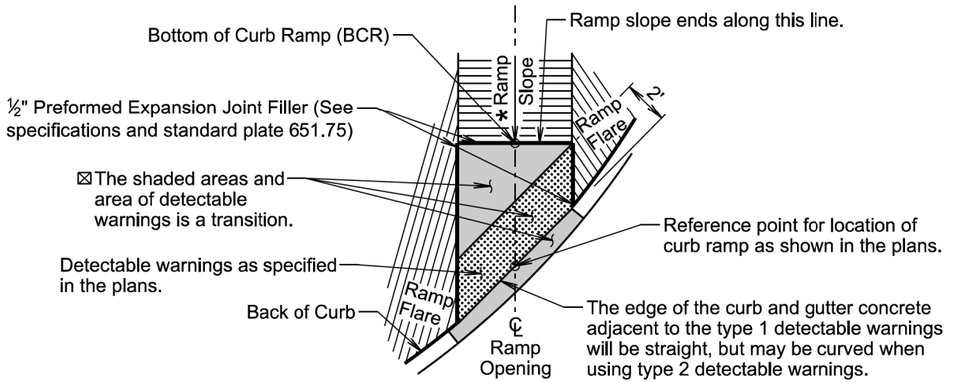
Plotting Date: 10/15/2021



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.

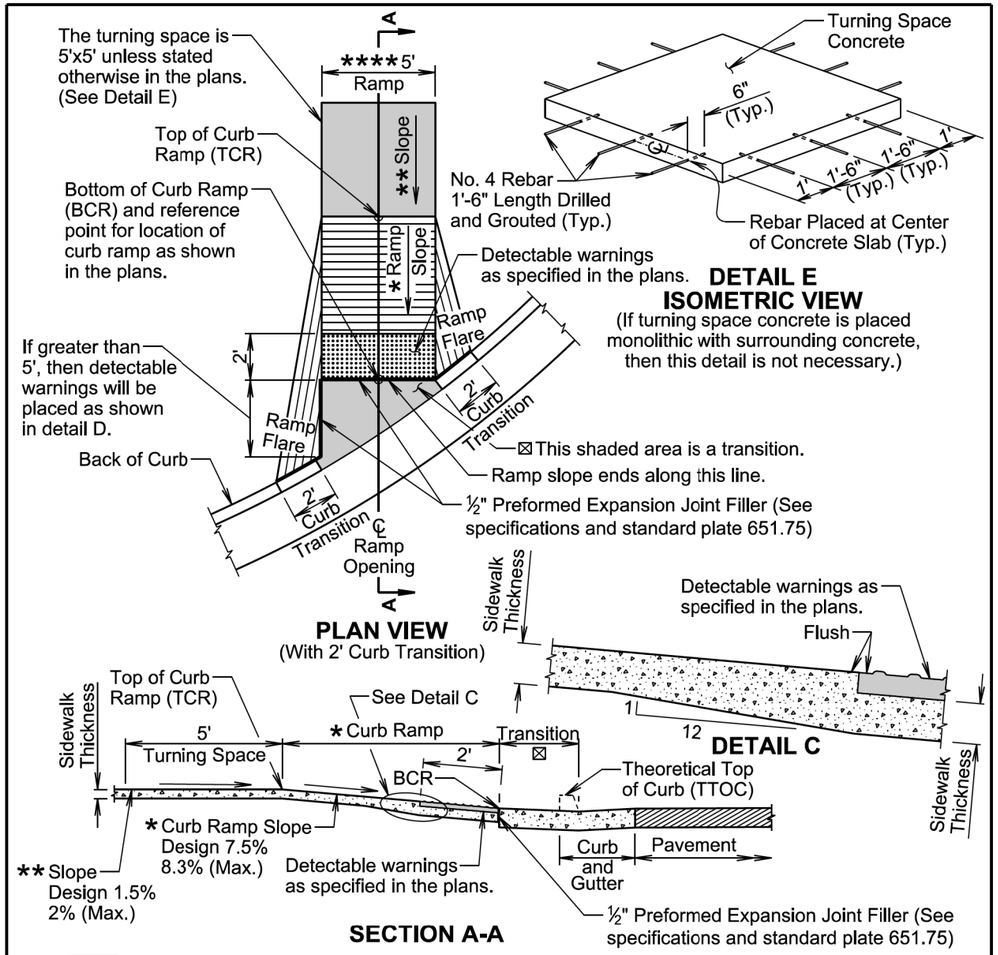
*** The curb transition will be a minimum of 6' long, a maximum of 10' long, and the curb transition slope will not be steeper than 10% unless stated otherwise in the plans. The curb transition length will be adjusted as necessary to meet slope and length requirements based on field geometrics.



DETAIL D

February 14, 2020

Published Date: 4th Qtr. 2021	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. 2021	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02 Sheet 2 of 3

Plot Scale - 1:200

Plotted From - TRPR17192

File - ...\penn04PD\StdPlateSectionB.dgn

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.

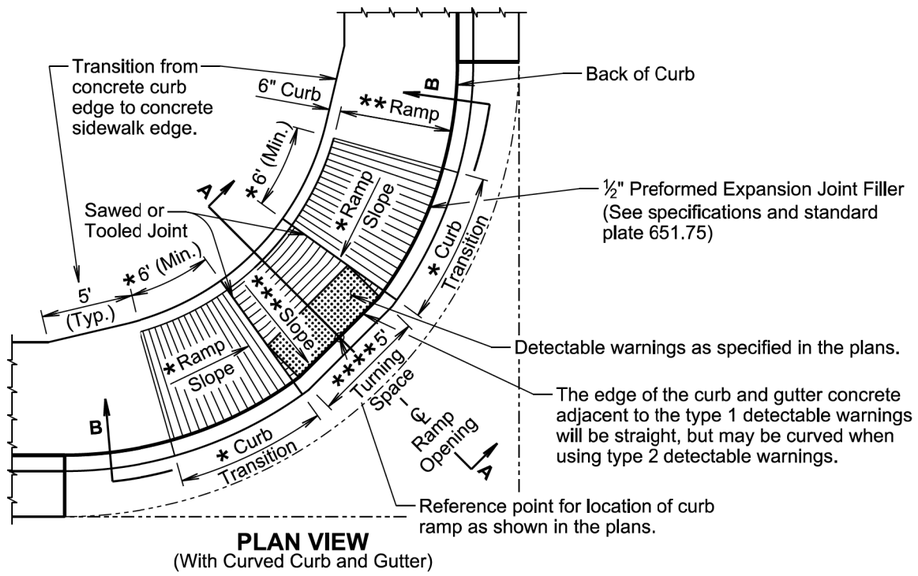
All costs for furnishing and installing the transition area at the base of the curb ramp will be incidental to the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used and will be incidental to the contract unit price per square yard for the corresponding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

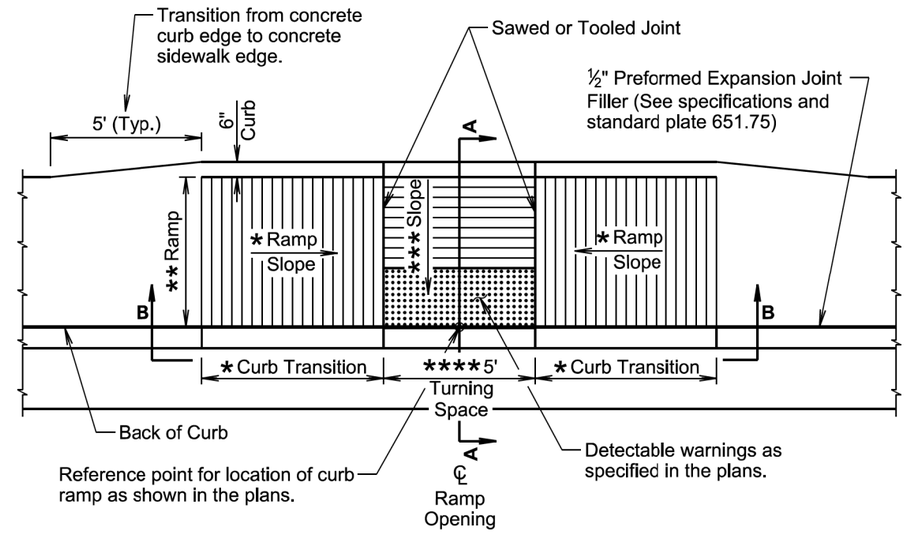
The type 2 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding will be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

February 14, 2020

Published Date: 4th Qtr. 2021	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)

April 18, 2021

Published Date: 4th Qtr. 2021	SDDOT	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 1 of 3

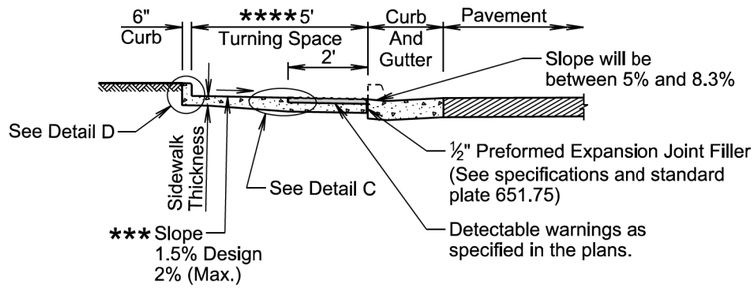
* The curb transition slope will match the curb ramp slope. Curb ramp slopes are designed at 7.5% unless stated otherwise in the plans. The curb ramp may have a maximum slope of 8.3% at any location of the curb ramp and will not exceed 15' in length unless stated otherwise in the plans. The curb transitions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

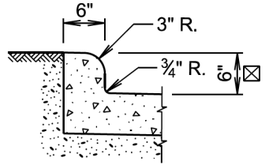
*** The slope in the turning space will not be steeper than 2% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

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

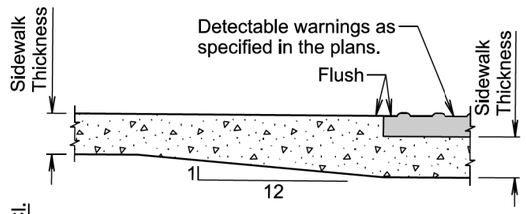
☒ The curb height will be 6" unless stated otherwise in the plans.



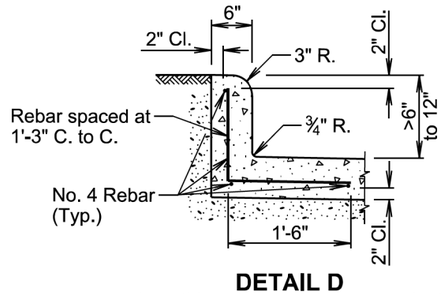
SECTION A-A



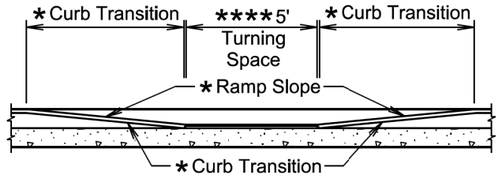
DETAIL D



DETAIL C



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



SECTIONAL VIEW B-B

April 18, 2021

Published Date: 4th Qtr. 2021	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.

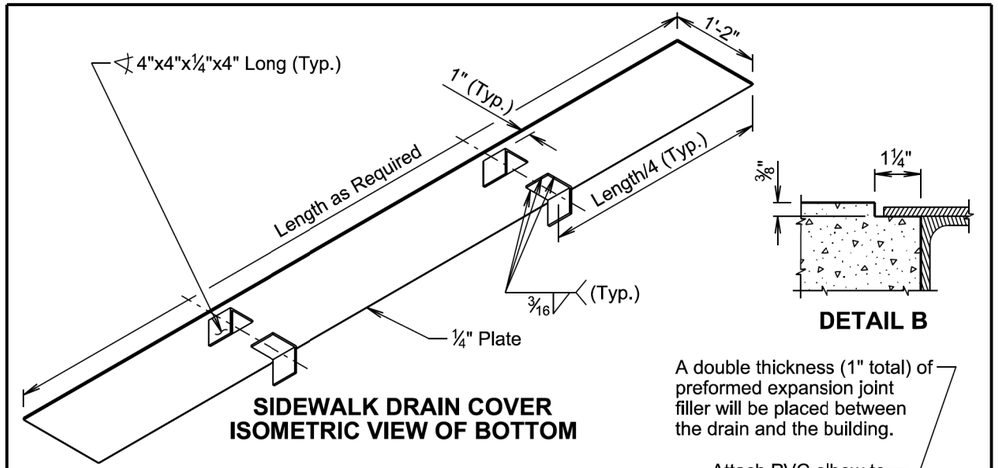
The curb transitions and ramp opening will be measured and paid for at the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used. The curb transitions and ramp opening will be measured and paid for at the contract unit price per square yard for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

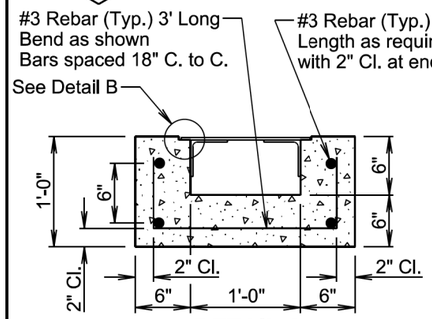
April 18, 2021

Published Date: 4th Qtr. 2021	SDDOT	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 3 of 3

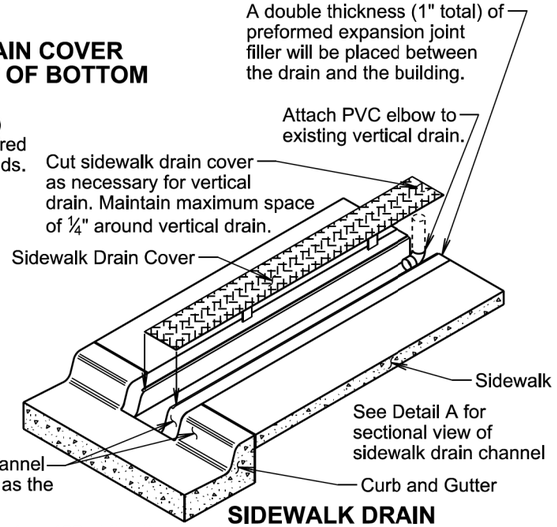


SIDEWALK DRAIN COVER ISOMETRIC VIEW OF BOTTOM

DETAIL B



DETAIL A



SIDEWALK DRAIN

GENERAL NOTES:

Concrete will be Class M6 in accordance with Section 462 of the Specifications.

Reinforcing steel will conform to ASTM A615, Grade 60.

Structural Steel will conform to ASTM A36. The sidewalk drain cover will conform to ASTM A786.

Welding and weld inspection will be in conformance with the current edition of the AWS D1.1 Structural Welding Code-Steel.

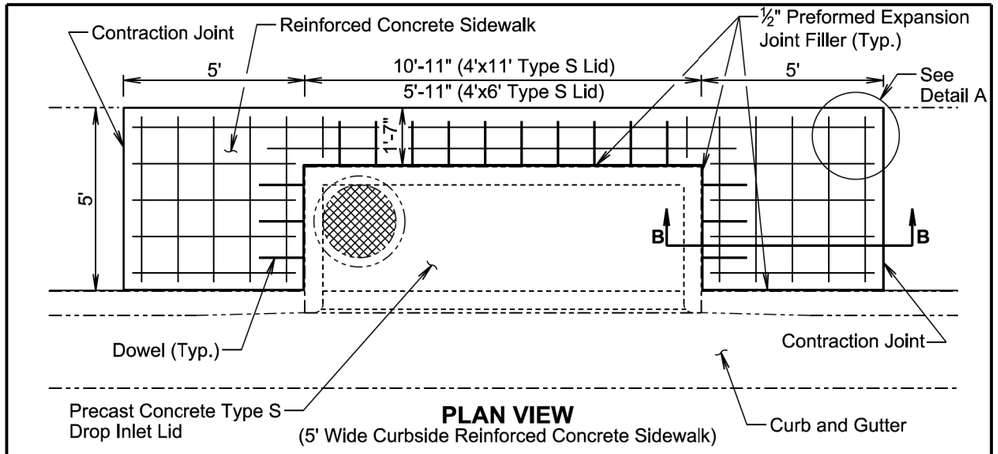
The cover plate assembly will be galvanized after fabrication. Galvanizing will be in accordance with ASTM A123.

All costs associated for providing the required curb cut will be incidental to the contract unit price per foot for the corresponding curb and gutter contract item.

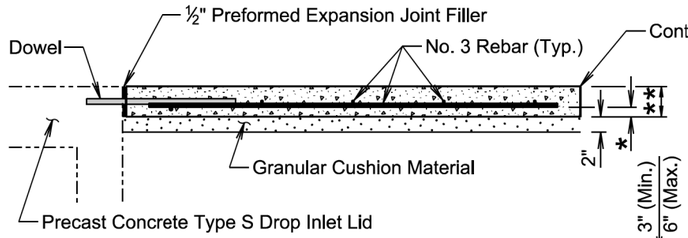
The sidewalk drain will be measured and paid for to the nearest tenth of a foot. The length of the drain will be measured from the gutter to the necessary end location adjacent to the building. All costs associated with furnishing and installing the sidewalk drain channel and cover including the attachment to the vertical drain will be incidental to the contract unit price per foot for "Sidewalk Drain".

February 14, 2020

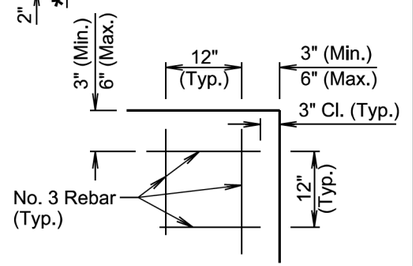
Published Date: 4th Qtr. 2021	SDDOT	SIDEWALK DRAIN	PLATE NUMBER 651.50
			Sheet 1 of 1



PLAN VIEW
(5' Wide Curbside Reinforced Concrete Sidewalk)



SECTION B-B



DETAIL A

** 4", 5", or 6" as specified elsewhere in the plans.

* 1⅝" for 4" sidewalk, 2⅛" for 5" sidewalk, and 2⅝" for 6" sidewalk.

GENERAL NOTES:

The precast concrete Type S lids shown are 4'x11' for illustrative purpose.

The cross slope of the sidewalk and precast concrete type S drop inlet lid will be as specified elsewhere in the plans.

The reinforcing steel will conform to Section 1010 of the Specifications. The Contractor will be in conformance with the construction requirements of Section 480.3 of the Specifications.

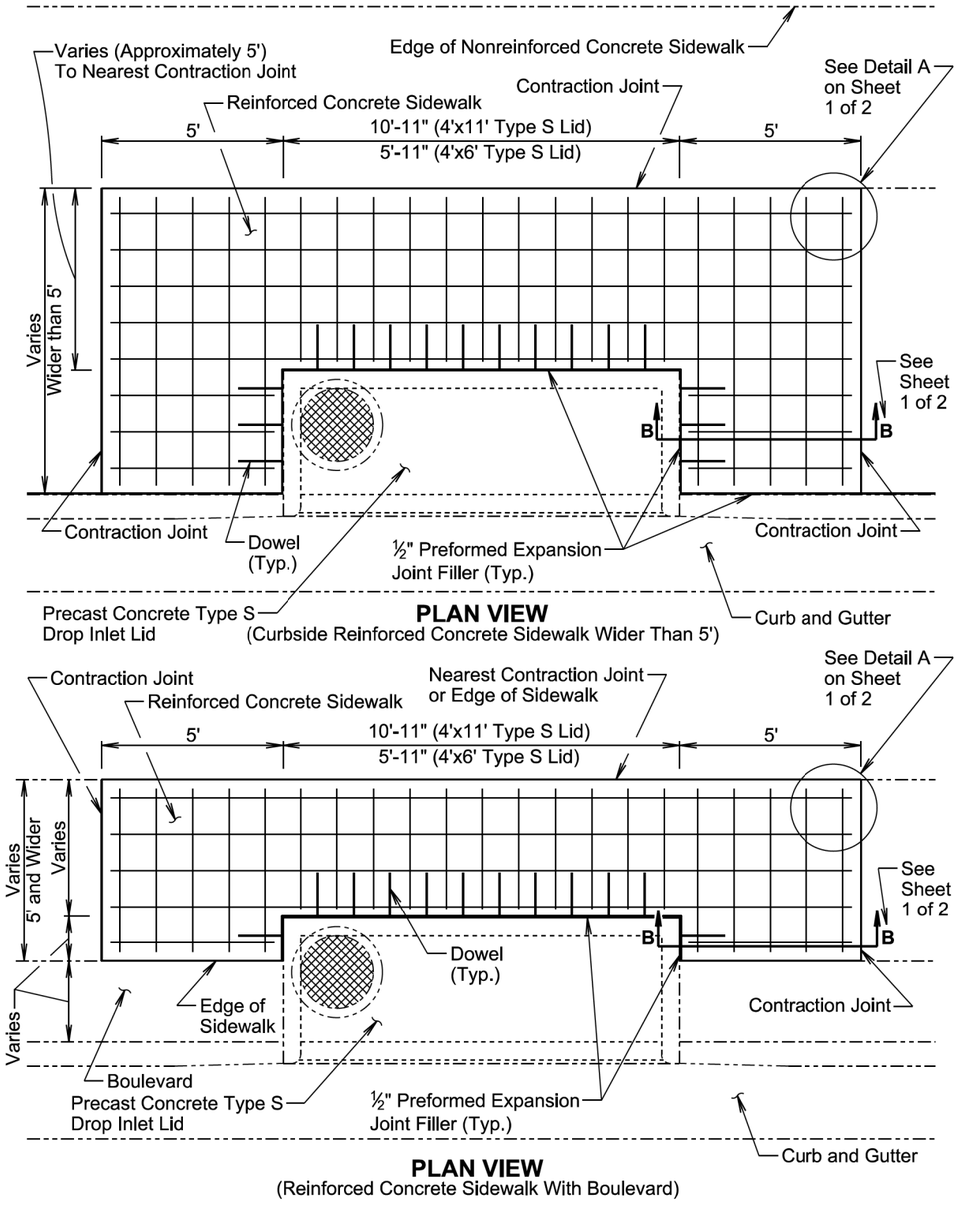
When lapping of reinforcing steel is necessary, the No. 3 rebar will be lapped 12".

The reinforced concrete sidewalk will conform to the requirements of Section 651 of the Specifications.

All costs for constructing the reinforced concrete sidewalk including labor, equipment, tools, backfilling, furnishing and placing materials, including granular cushion, reinforcing steel, preformed expansion joint filler, and incidentals will be included in the contract unit price per square foot for the corresponding reinforced concrete sidewalk contract item.

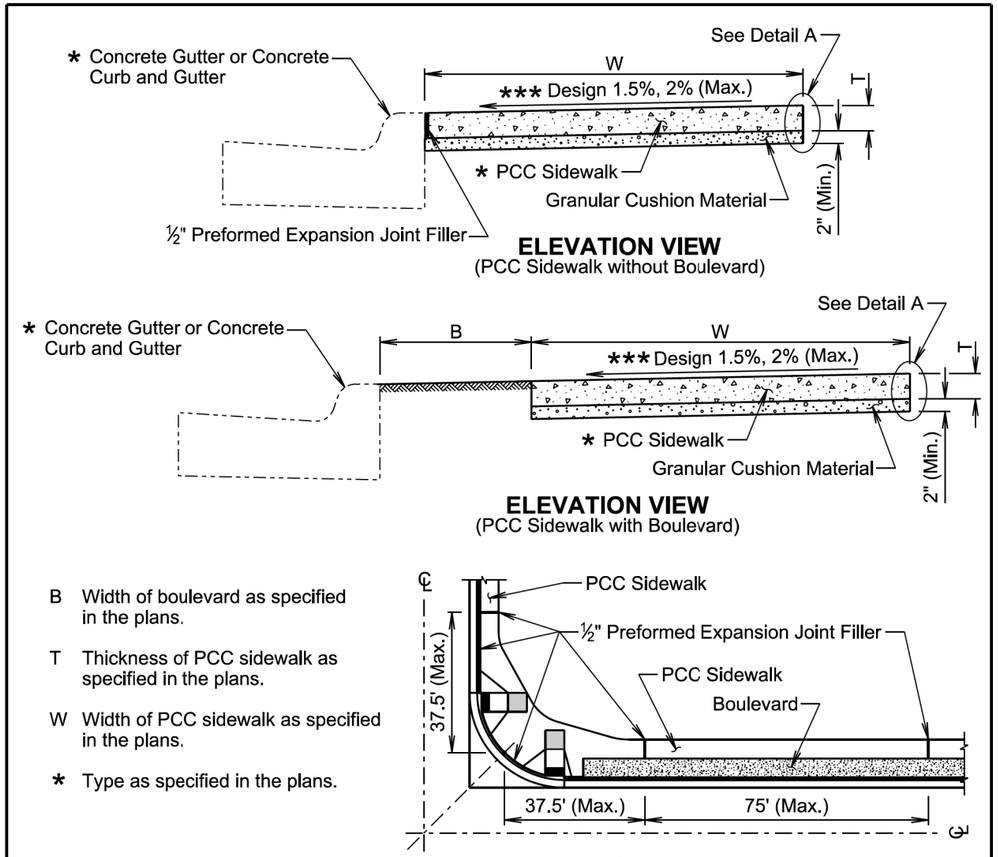
February 14, 2020

Published Date: 4th Qtr. 2021	SDDOT	REINFORCED CONCRETE SIDEWALK ADJACENT TO PRECAST CONCRETE TYPE S DROP INLET LID	PLATE NUMBER 651.70
			Sheet 1 of 2



February 14, 2020

Published Date: 4th Qtr. 2021	SDDOT	*REINFORCED CONCRETE SIDEWALK ADJACENT TO PRECAST CONCRETE TYPE S DROP INLET LID*	*PLATE NUMBER* 651.70 *Sheet 2 of 2*



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.

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.

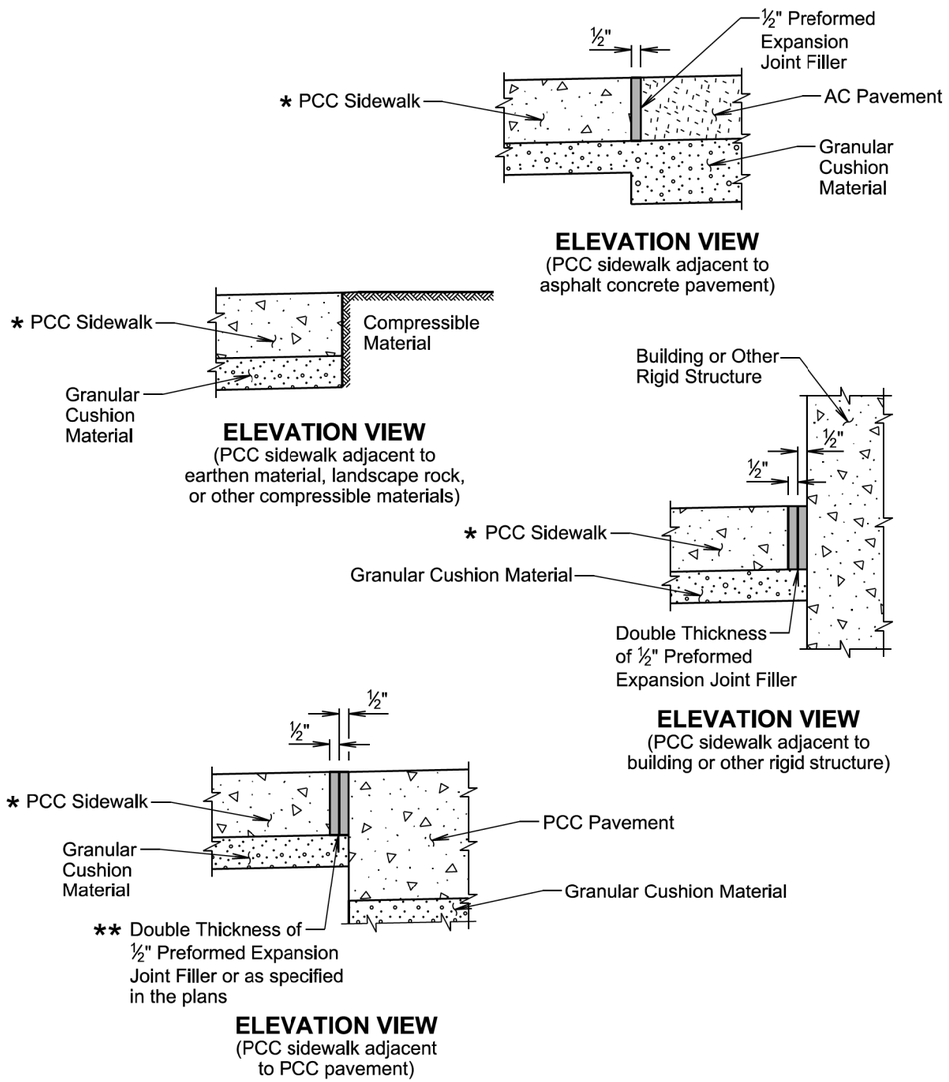
February 14, 2020

Published Date: 4th Qtr. 2021	SDDOT	*PCC SIDEWALK*	*PLATE NUMBER* 651.75 *Sheet 1 of 2*

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B112	B123

Plotting Date: 10/15/2021

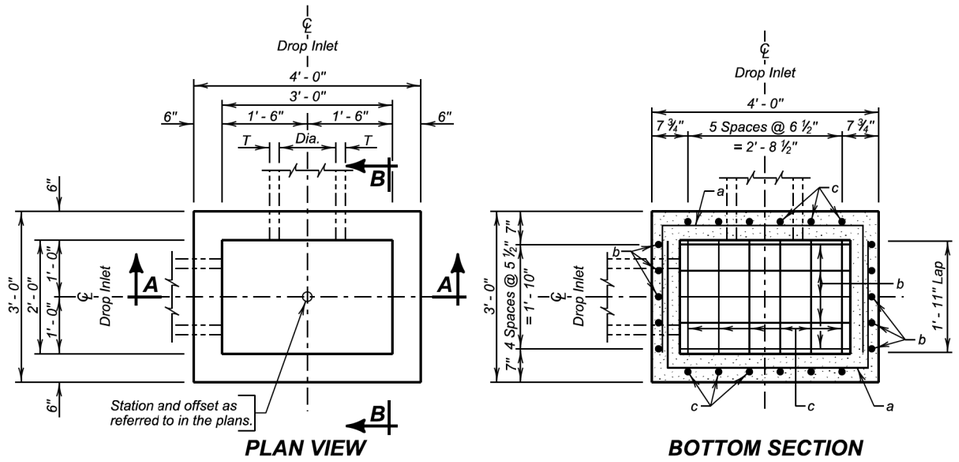
Plot Scale - 1:200



DETAIL A
(Use Appropriate Detail(s))

February 14, 2020

Published Date: 4th Qtr. 2021	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 2 of 2



ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
⚹ Class M6 Concrete	Cu. Yd.	0.26	0.22H
Reinforcing Steel	Lb.	83.03	28.97H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 24" DIAMETER PIPE

SPECIFICATIONS

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

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

GENERAL NOTES:

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

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

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

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

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

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

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

PIPE DISPLACEMENT REDUCTIONS

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

December 16, 2015

Published Date: 4th Qtr. 2021	SDDOT	2' X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.01
			Sheet 1 of 2

Plotted From - TRPR17192

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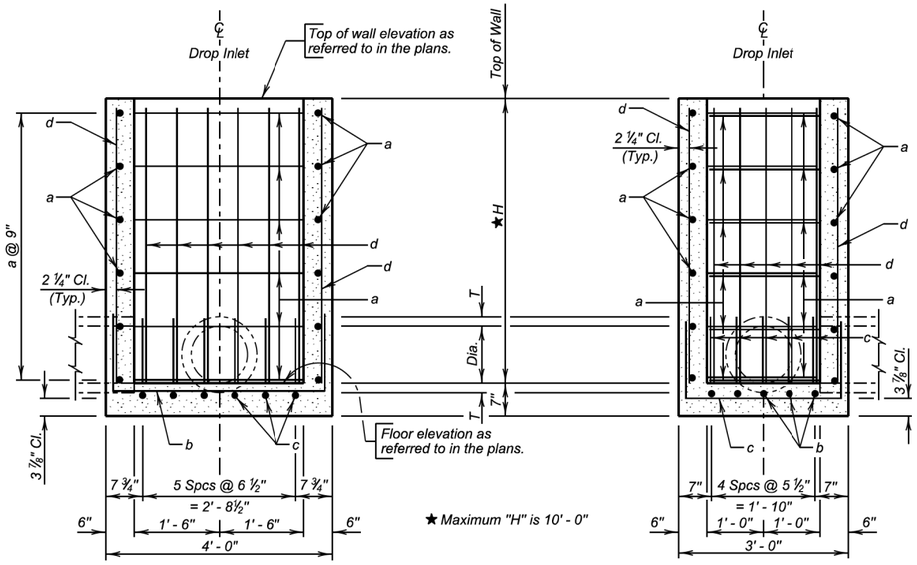
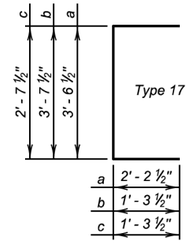


SEC. A - A **SEC. B - B**

REINFORCING SCHEDULE

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

NOTE:
All dimensions are out to out of bars.



December 16, 2015

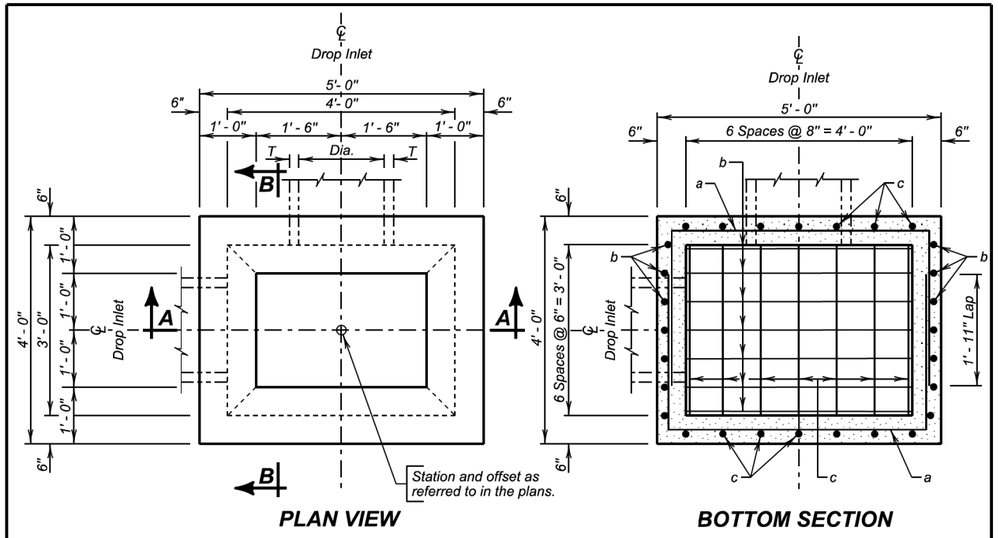
Published Date: 4th Qtr. 2021

SDDOT

2'X 3' TYPE B
REINFORCED CONCRETE DROP INLET

PLATE NUMBER 670.01

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

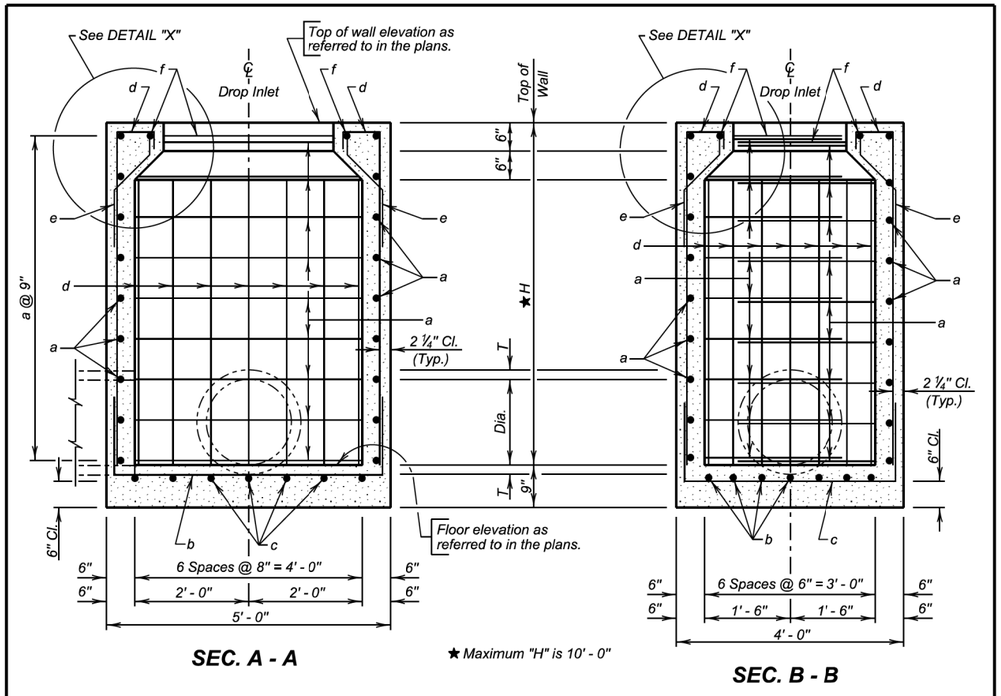
Published Date: 4th Qtr. 2021

SDDOT

3'X 4' TYPE B
REINFORCED CONCRETE DROP INLET

PLATE NUMBER 670.02

Sheet 1 of 2

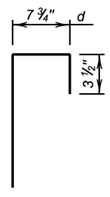


SEC. A - A **SEC. B - B**

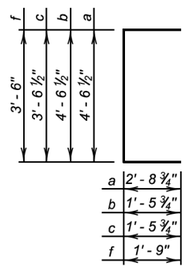
REINFORCING SCHEDULE

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

NOTE:
All dimensions are out to out of bars.

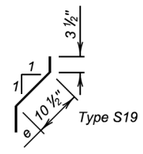


Type S17

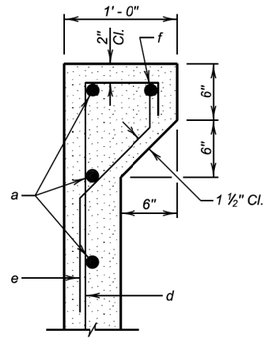


a	2' - 8 ¾"
b	1' - 5 ¾"
c	1' - 5 ¾"
f	1' - 9"

Type 17



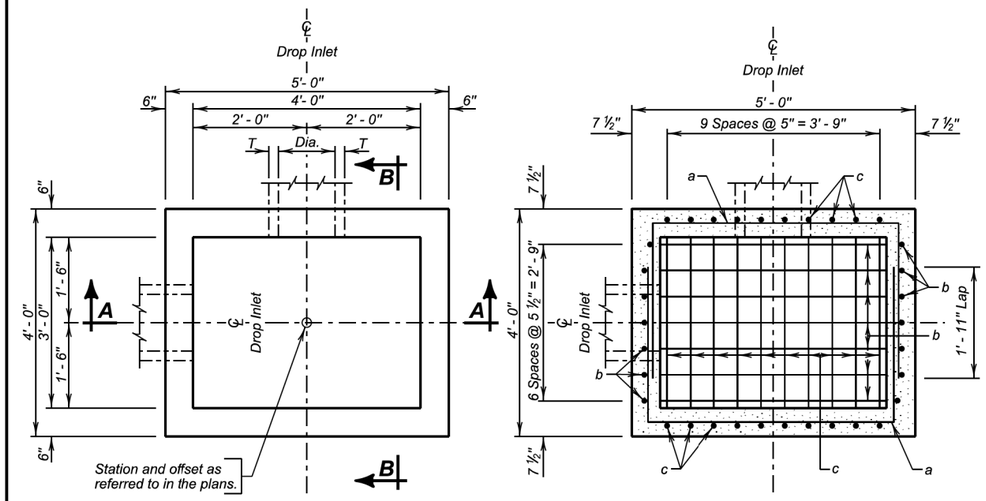
Type S19



DETAIL "X"

December 16, 2015

Published Date: 4th Qtr. 2021	SDDOT	3' X 4' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.02
			Sheet 2 of 2



PLAN VIEW **BOTTOM SECTION**

ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
⚹ Class M6 Concrete	Cu. Yd.	0.43	0.30H
Reinforcing Steel	Lb.	90.90	40.53H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

SPECIFICATIONS

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

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

GENERAL NOTES:

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

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

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

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

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

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

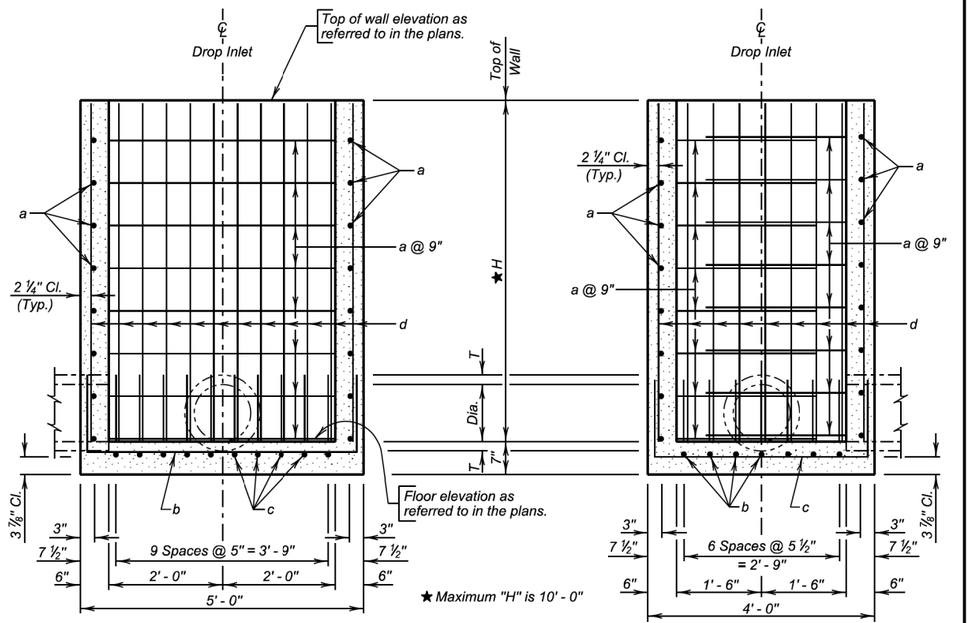
The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS

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

December 16, 2015

Published Date: 4th Qtr. 2021	SDDOT	3' X 4' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.10
			Sheet 1 of 2



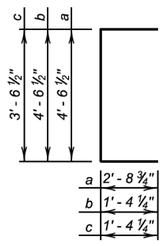
SEC. A - A

SEC. B - B

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	10' - 0"	17	
b	7	5	7' - 3"	17	
c	10	4	6' - 3"	17	
d	34	4	H - 2"	Str.	

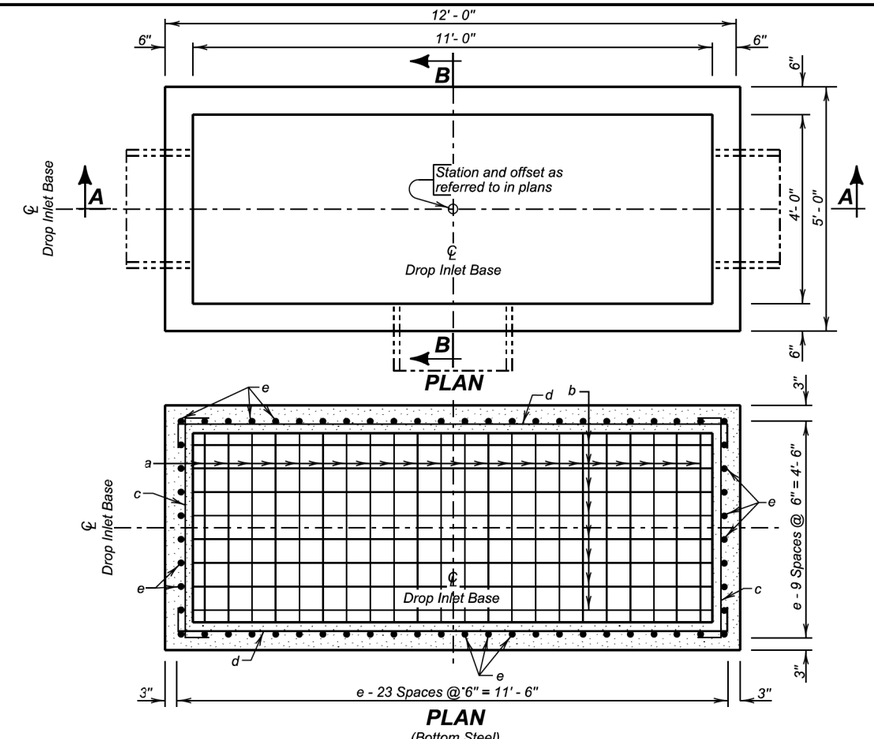
NOTE:
All dimensions are out to out of bars.



Type 17

December 16, 2015

Published Date: 4th Qtr. 2021	SDDOT	3'X 4'TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.10
			Sheet 2 of 2



PLAN
(Bottom Steel)
(Pipe Not Shown)

SPECIFICATIONS:

1. Design Specifications: AASHTO LRFD Bridge Design Specifications 2012 Edition.
2. 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:

1. Design Live Load: HL-93 loading. No construction loading in excess of legal load was considered.
2. Base is intended for use with a Precast Concrete Type S Drop Inlet Lid, Standard Plate 670.40. Base may be precast. If precast base used, and details differ from that shown, the precast base must be on the current approved list. The current approved list is available through proper channels from the SDDOT Office of Bridge Design.
3. To qualify for addition to the approved list, submit a checked design, by South Dakota Registered Professional Engineers and shop plans to the Office of Bridge Design for approval. Design shall be in accordance with the current edition of the AASHTO LRFD Bridge Design Specifications.
- ✳ 4. Reduce total quantities of concrete by the amount of concrete displaced by the pipe. 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.
5. Inlets shown may be modified by the addition or omission of connecting pipes as shown on the layouts. Connecting pipes shall not enter the inlet through the corners.
6. Maximum R.C.P. diameter shall not exceed 36 inches (30 inches for R.C. Arch) on the 4-foot wide side of the Drop Inlet.
7. Reinforcing steel shall conform to ASTM A615 Grade 60. Cut and bend reinforcing steel as required to place pipe(s) through the inlet wall.
8. Use 1 inch clear cover on all reinforcing steel unless otherwise noted.
9. The dimension of H is in feet. Maximum H is 8 feet.

June 26, 2015

Published Date: 4th Qtr. 2021	SDDOT	4'X 11'TYPE S DROP INLET BASE	PLATE NUMBER 670.32
			Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B116	B123

Plotting Date: 10/15/2021

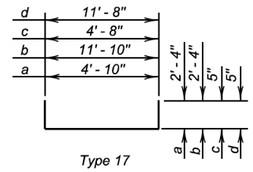
Plot Scale - 1:200

PIPE DISPLACEMENT REDUCTIONS

	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
	42	4 ½	0.26
	48	5	0.34
	54	5 ½	0.43
	60	6	0.52
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14
	36	4 ½	0.19
	42	4 ½	0.24
	48	5	0.32
	54	5 ½	0.39
	60	6	0.49
	72	7	0.70
	84	8	0.93

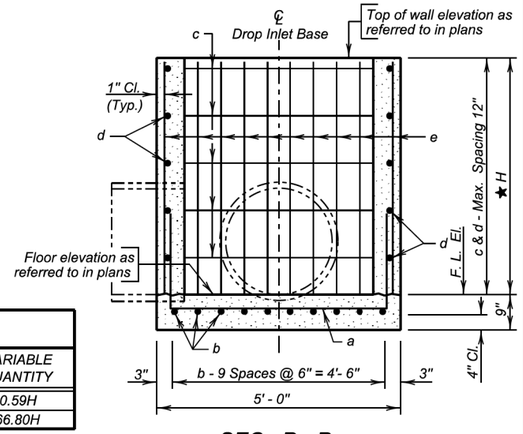
REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
a	24	5	9' - 6"	17
b	10	5	16' - 6"	17
c	2H	4	5' - 6"	17
d	2H	4	12' - 6"	17
e	64	4	H - 2"	Str.



Type 17

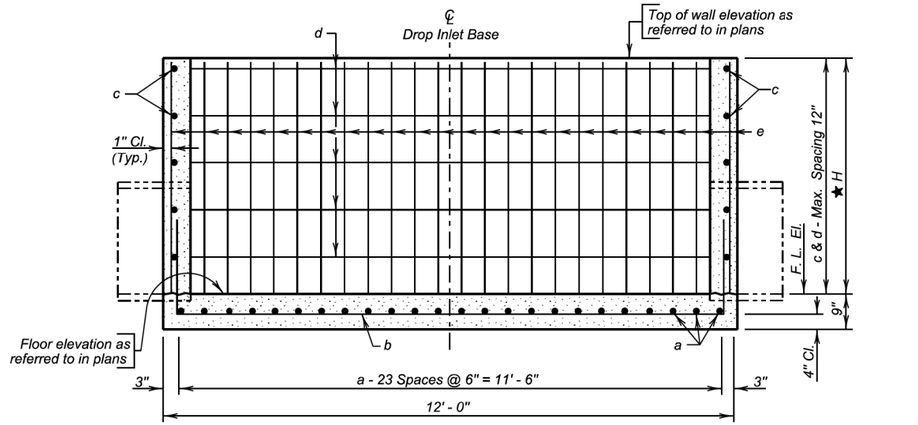
NOTE:
All dimensions are out to out of bars.



SEC. B - B

ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
✳ Class M6 Concrete	Cu. Yd.	1.67	0.59H
Reinforcing Steel	Lb.	402.77	66.80H

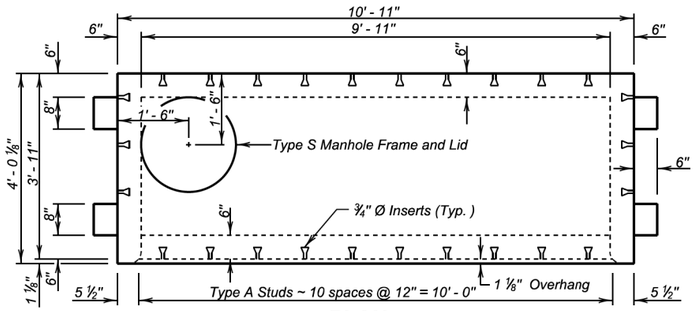


SEC. A - A

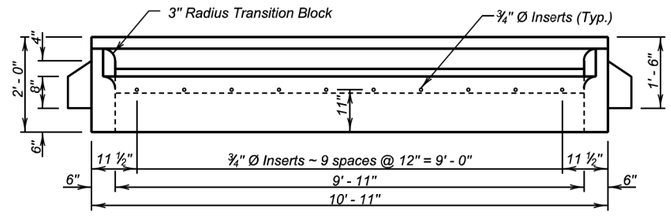
★ Maximum H is 8' - 0"

June 26, 2015

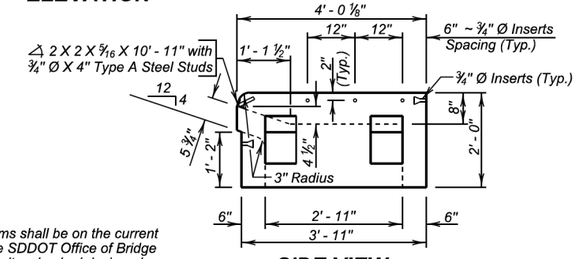
Published Date: 4th Qtr. 2021	SDDOT	4' X 11' TYPE S DROP INLET BASE	PLATE NUMBER 670.32
			Sheet 2 of 2



PLAN



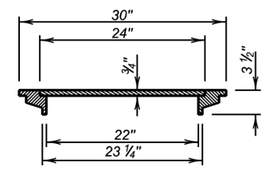
ELEVATION



SIDE VIEW
(With Sidewalk Inserts)

GENERAL NOTES:

1. The Precast Concrete Type S Drop Inlet Lid and the shims shall be on the current approved list available through proper channels from the SDDOT Office of Bridge Design. To qualify for addition to the approved list, submit a checked design, done by South Dakota Registered Professional Engineers, and shop plans to the Office of Bridge Design for approval. Design shall be in accordance with the current edition of the AASHTO LRFD Bridge Design Specifications.
2. Design Live Load shall be HL - 93.
3. Concrete mix shall be as per fabricators design, however, minimum compressive strength shall not be less than 4500 psi. Type II Cement is required.
4. The Type S Manhole Frame and Lid shall conform to AASHTO M105, Class 30.
5. Structural Steel shall conform to ASTM A36. The ¾ inch diameter Headed Type A Steel Studs shall conform to Section 7 of the current edition of AWS D1. 1 Structural Steel Welding Code.
6. The ¾ inch diameter Concrete Inserts shall be galvanized or made of a corrosion resistant material. Provide ¾ inch diameter x 1' - 6" long dowels conforming to ASTM A615, Gr. 60 threaded to fit inserts with each lid.
7. All costs associated with furnishing and installing the Precast Concrete Type S Drop Inlet Lid including the type S manhole frame and lid, shims, inserts, and dowels shall be included in the contract unit price per each for " 4' x 11' Precast Concrete Type S Drop Inlet Lid ".



TYPICAL SECTION THROUGH TYPE S MANHOLE FRAME AND LID
(Weight 140 Lbs.)

December 23, 2012

Published Date: 4th Qtr. 2021	SDDOT	4' X 11' PRECAST CONCRETE TYPE S DROP INLET LID	PLATE NUMBER 670.40
			Sheet 1 of 1

Plotted From - TRPR17192

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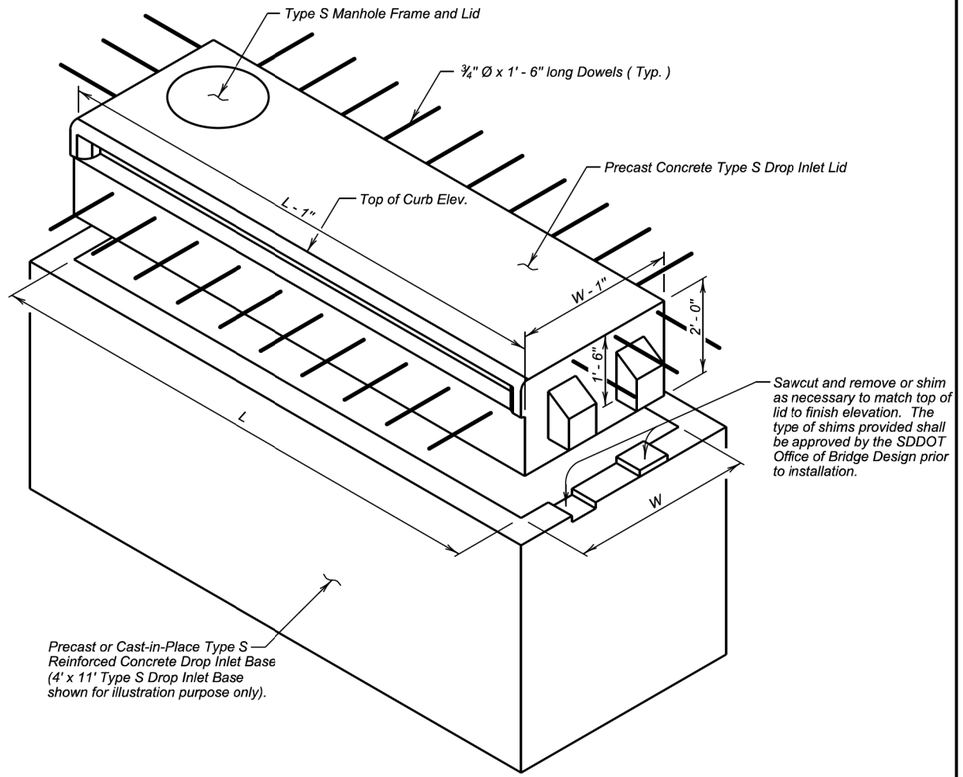
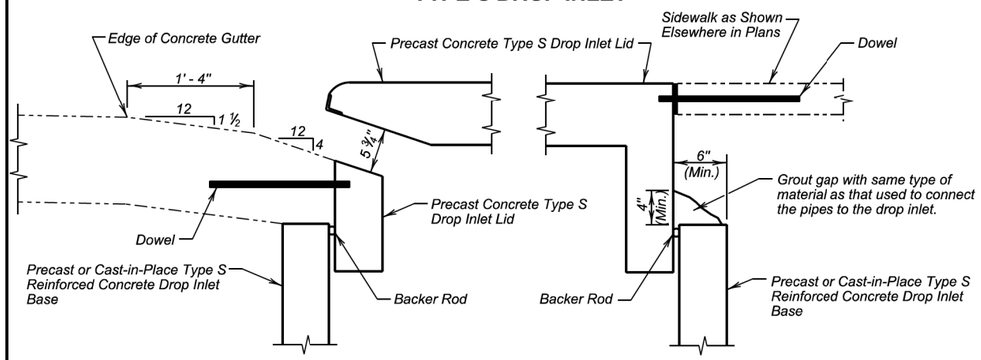


TYPE S DROP INLET

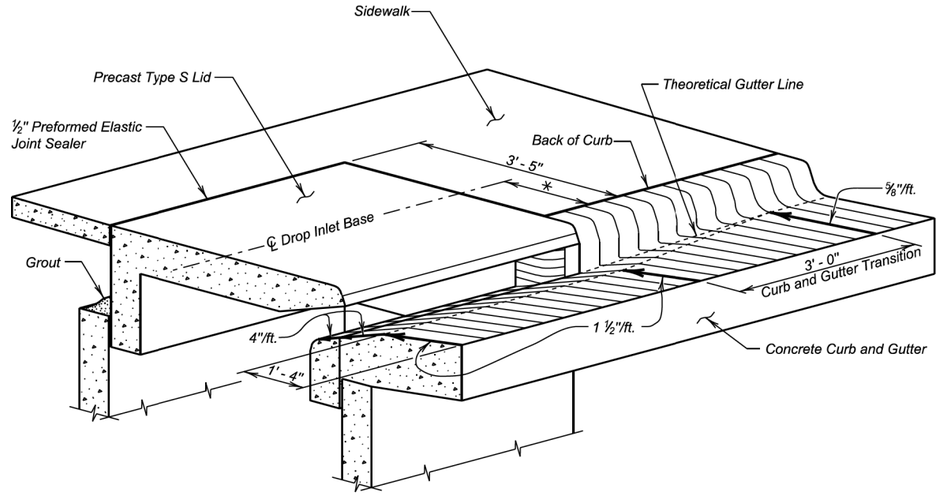


CONCRETE GUTTER DETAIL

GROUTING DETAIL
(Sides and Back, Adjacent to Sidewalk)

December 23, 2012

Published Date: 4th Qtr. 2021	SDDOT	INSTALLATION DETAILS FOR PRECAST CONCRETE TYPE S DROP INLET LID	PLATE NUMBER 670.45
			Sheet 1 of 2



CURB AND GUTTER TRANSITION DETAILS

Drop Inlet Base Unit Size	⚹ Distance
4' x 6'	1' - 5 ½"
4' x 11'	1' - 5 ½"
7' x 11'	2' - 11 ½"

GENERAL NOTES:

1. Dowels shall be used to anchor the precast concrete Type S drop inlet lid to the concrete gutter. See Standard Plate 670.38 or 670.40 as applicable. If there is sidewalk adjacent dowels shall be used to anchor the precast concrete Type S drop inlet lid to the sidewalk. If there is sidewalk adjacent to the drop inlet, the precast lid shall match the finish elevations and cross slopes of the sidewalk.
2. The sidewalk shall be steel reinforced when the sidewalk adjoins the precast lid. Refer to Standard Plate 651.70 for reinforced concrete sidewalk details.

December 23, 2012

Published Date: 4th Qtr. 2021	SDDOT	INSTALLATION DETAILS FOR PRECAST CONCRETE TYPE S DROP INLET LID	PLATE NUMBER 670.45
			Sheet 2 of 2

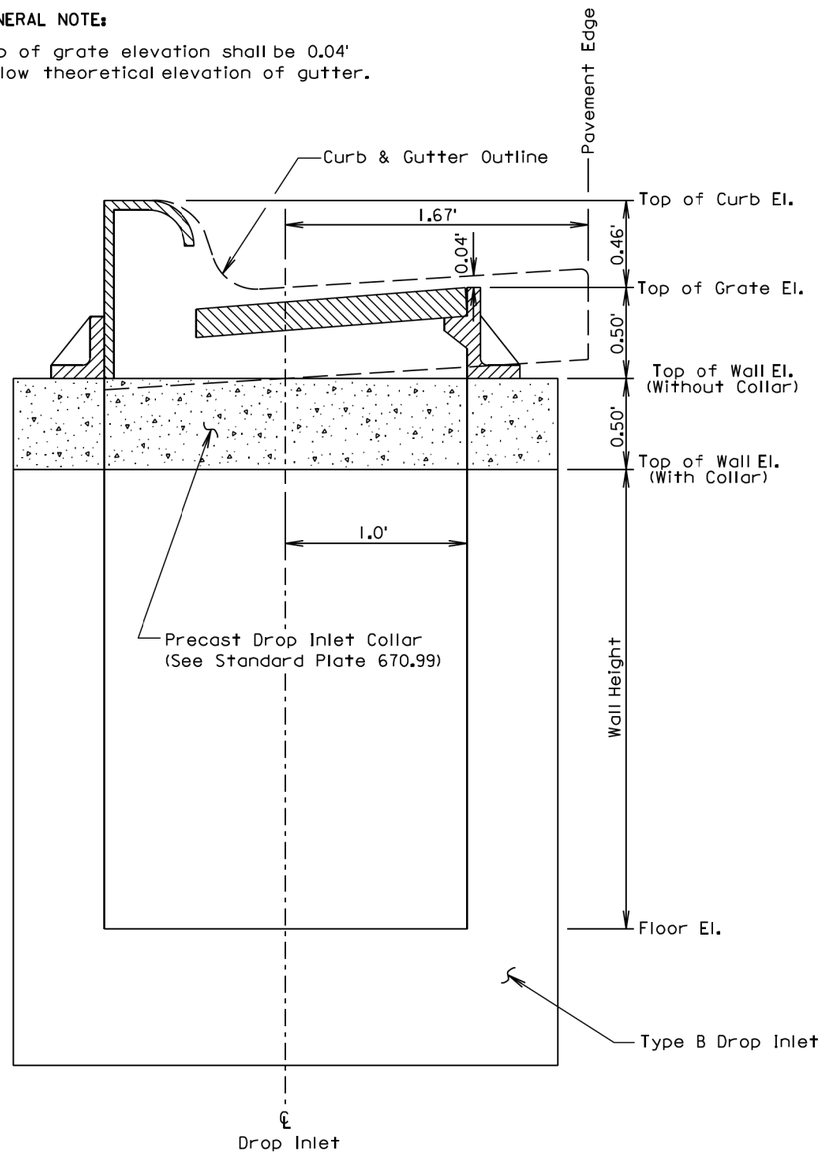
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B118	B123

Plotting Date: 10/15/2021

Plot Scale - 1:200

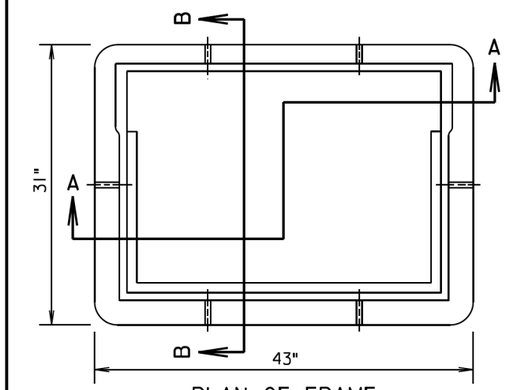
GENERAL NOTE:

Top of grate elevation shall be 0.04' below theoretical elevation of gutter.

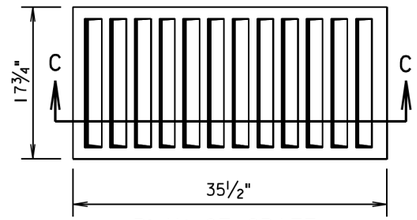


June 26, 2011

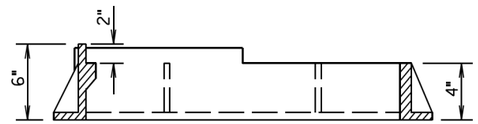
Published Date: 4th Qtr. 2021	SDDOT	INSTALLATION OF TYPE B DROP INLET	PLATE NUMBER 670.75
			Sheet 1 of 1



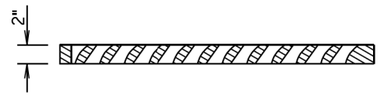
PLAN OF FRAME



PLAN OF GRATE

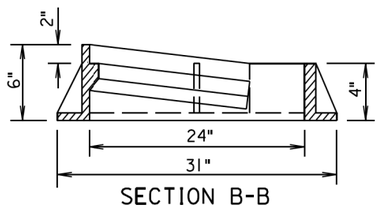


SECTION A-A

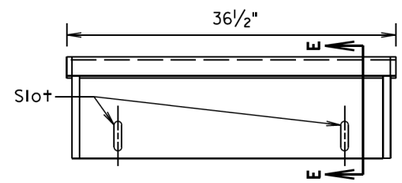


SECTION C-C

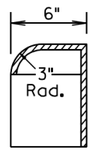
TOP VIEW OF CURB BOX



SECTION B-B



ELEVATION OF CURB BOX



SECTION E-E

GENERAL NOTE:

Total weight of the assembly shall be 490 Lbs. minimum and the curb box shall be adjustable 6" to 9".

March 31, 2000

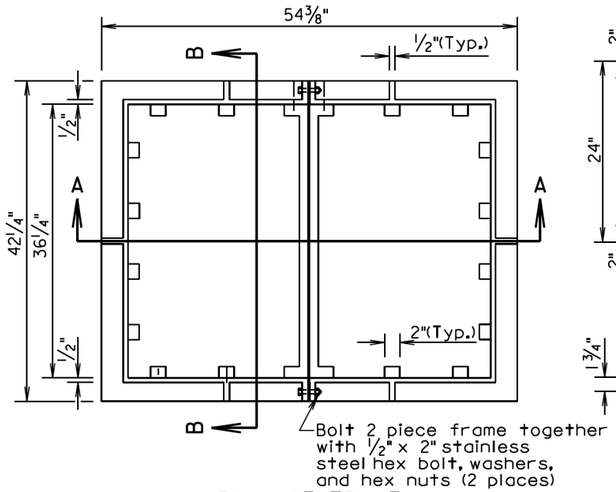
Published Date: 4th Qtr. 2021	SDDOT	TYPE B FRAME AND GRATE ASSEMBLY	PLATE NUMBER 670.80
			Sheet 1 of 1

Plotted From - TRPR17192

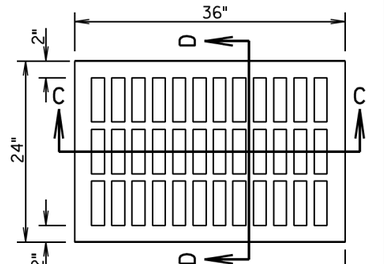
File - ...\penn04PD\StdPlateSectionB.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B119	B123

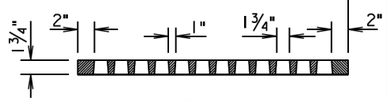
Plotting Date: 10/15/2021



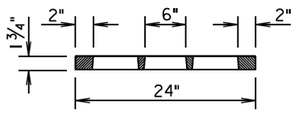
PLAN OF FRAME



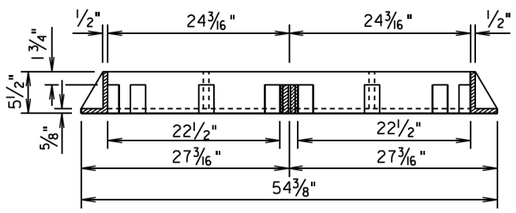
PLAN OF GRATE



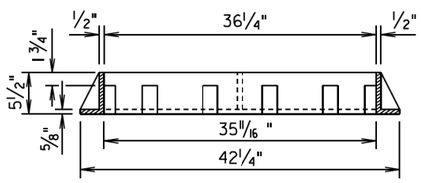
SECTION C-C



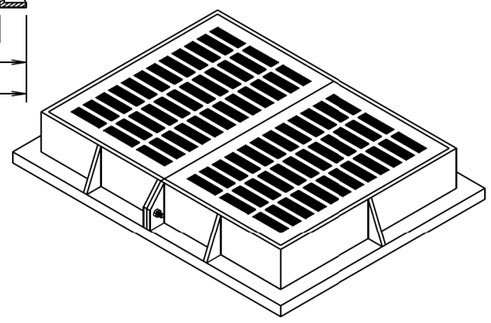
SECTION D-D



SECTION A-A



SECTION B-B



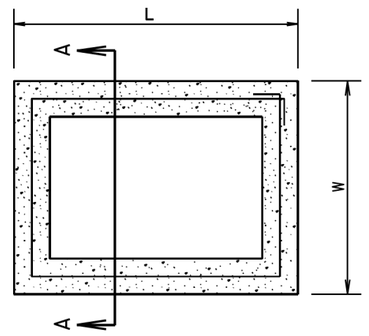
ASSEMBLED VIEW

GENERAL NOTE:

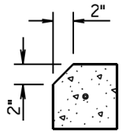
The total weight of the frame and grate shall be 850 pounds minimum.

March 31, 2000

Published Date: 4th Qtr. 2021	SDDOT	TYPE C FRAME AND GRATE	PLATE NUMBER 670.82
			Sheet 1 of 1

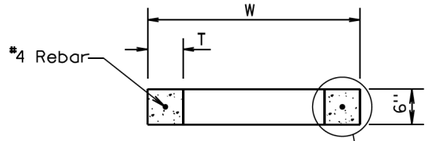


PLAN VIEW



For Type D Drop Inlets only:
Use Precast Drop Inlet Collar with 2" chamfer on L sides only.

DETAIL B



SECTION A-A

See Detail B (For Type D Drop Inlets Only)

INFORMATIONAL QUANTITIES

FRAME AND GRATE TYPE	L Ft-In	W Ft-In	T In	CLASS M6 CONCRETE CuYd	REINFORCING STEEL Lb
TYPE B	4'-0"	3'-0"	6	0.11	9
TYPE C	5'-0"	4'-0"	6	0.15	11
TYPE D	4'-0"	2'-6"	6	0.10	8

GENERAL NOTES:

All reinforcing steel shall conform to ASTM A615, Grade 60.

The 1/2" diameter bar shall lap 6"± and shall be centered in the concrete.

The cost of furnishing and installing Precast Drop Inlet Collars, including labor, materials, and incidentals shall be incidental to the contract unit price per Each for "Precast Drop Inlet Collar".

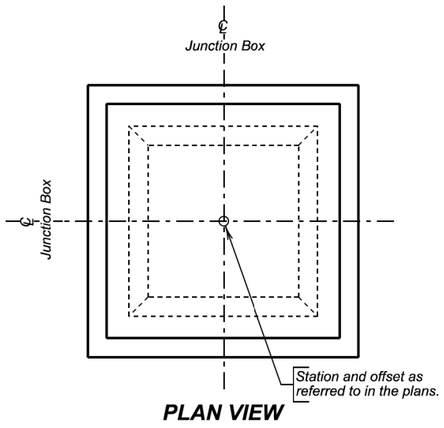
March 31, 2000

Published Date: 4th Qtr. 2021	SDDOT	PRECAST DROP INLET COLLAR	PLATE NUMBER 670.99
			Sheet 1 of 1

Plot Scale - 1:200

Plotted From - TRPR17192

File - ...\penn04PD\StdPlateSectionB.dgn



PLAN VIEW

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.

The design of the junction box is based on a maximum fill over the junction box of 5 feet and minimum fill over the junction box of 2 feet.

Reinforcing steel shall conform to ASTM A615 Grade 60. Cut and bend reinforcing steel as required to place pipe(s) through junction box wall.

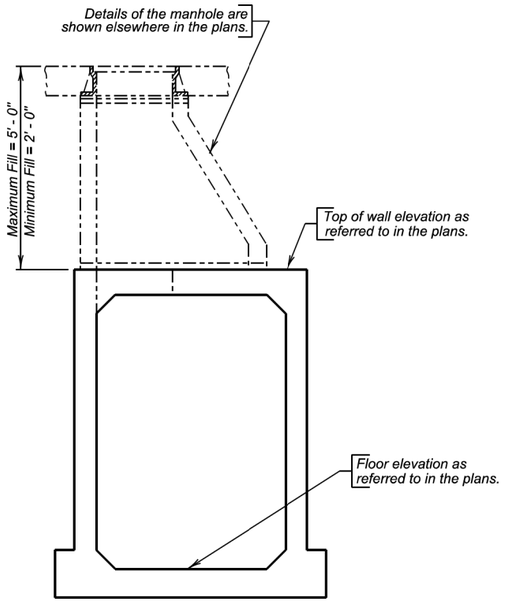
Junction box may be precast. If precast junction box details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

Use 1 inch clear cover on all reinforcing steel unless otherwise noted.

All exposed edges shall be chamfered ¾ inch.

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

The cost of furnishing and installing the manhole steps shall be incidental to the contract unit price per pound for "Reinforcing Steel".



ELEVATION VIEW

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	0.06
	24	3	0.11
	30	3 ½	0.16
	36	4	0.23
	42	4 ½	0.31
	48	5	0.40
	54	5 ½	0.50

ESTIMATED QUANTITIES

ITEM	✳Class M6 Concrete	Reinforcing Steel
UNIT	Cu. Yd.	Lb.
H = 4' - 0"	4.37	821
H = 4' - 6"	4.61	846
H = 5' - 0"	4.85	908
H = 5' - 6"	5.10	933
H = 6' - 0"	5.34	958
H = 6' - 6"	5.58	1020
H = 7' - 0"	5.82	1045
H = 7' - 6"	6.06	1071
H = 8' - 0"	6.30	1132

✳*Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). Quantity shown includes reduction for a 24-inch diameter manhole opening. The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard.*

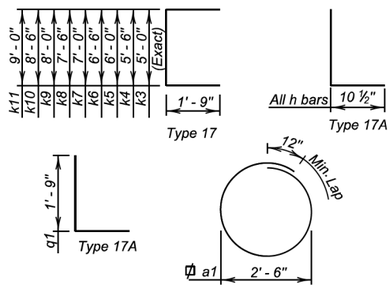
May 9, 2020

Published Date: 4th Qtr. 2021	SDDOT	5'X 5' JUNCTION BOX	PLATE NUMBER 671.01
			Sheet 1 of 3

REINFORCING SCHEDULE

	Mk.	No.	Size	Length	Type
H = 4' - 0"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	4	–	———	—
	h3	28	4	5' - 9"	17A
	k3	48	4	8' - 6"	17
	m1	18	5	6' - 9"	Str.
	n1	18	5	5' - 9"	Str.
	p1	52	4	5' - 0"	Str.
	q1	8	4	3' - 6"	17A
H = 4' - 6"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	4	–	———	—
	h4	28	4	6' - 3"	17A
	k4	48	4	9' - 0"	17
	m1	18	5	6' - 9"	Str.
	n1	18	5	5' - 9"	Str.
	p1	52	4	5' - 0"	Str.
	q1	8	4	3' - 6"	17A
H = 5' - 0"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	5	–	———	—
	h5	28	4	6' - 9"	17A
	k5	48	4	9' - 6"	17
	m1	18	5	6' - 9"	Str.
	n1	18	5	5' - 9"	Str.
	p1	52	4	5' - 0"	Str.
	q1	8	4	3' - 6"	17A
H = 5' - 6"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	5	–	———	—
	h6	28	4	7' - 3"	17A
	k6	48	4	10' - 0"	17
	m1	18	5	6' - 9"	Str.
	n1	18	5	5' - 9"	Str.
	p1	60	4	5' - 0"	Str.
	q1	12	4	3' - 6"	17A
H = 6' - 0"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	6	–	———	—
	h7	28	4	7' - 9"	17A
	k7	48	4	10' - 6"	17
	m1	18	5	6' - 9"	Str.
	n1	18	5	5' - 9"	Str.
	p1	60	4	5' - 0"	Str.
	q1	12	4	3' - 6"	17A
H = 6' - 6"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	6	–	———	—
	h8	28	4	8' - 3"	17A
	k8	48	4	11' - 0"	17
	m1	18	5	6' - 9"	Str.
	n1	18	5	5' - 9"	Str.
	p1	68	4	5' - 0"	Str.
	q1	16	4	3' - 6"	17A
H = 7' - 0"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	7	–	———	—
	h9	28	4	8' - 9"	17A
	k9	48	4	11' - 6"	17
	m1	18	5	6' - 9"	Str.
	n1	18	5	5' - 9"	Str.
	p1	68	4	5' - 0"	Str.
	q1	16	4	3' - 6"	17A

Bending Details



	Mk.	No.	Size	Length	Type
H = 7' - 6"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	7	–	———	—
	h10	28	4	9' - 3"	17A
	k10	48	4	12' - 0"	17
	m1	18	5	6' - 9"	Str.
	n1	18	5	5' - 9"	Str.
	p1	68	4	5' - 0"	Str.
	q1	16	4	3' - 6"	17A
H = 8' - 0"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	8	–	———	—
	h11	28	4	9' - 9"	17A
	k11	48	4	12' - 6"	17
	m1	18	5	6' - 9"	Str.
	n1	18	5	5' - 9"	Str.
	p1	76	4	5' - 0"	Str.
	q1	20	4	3' - 6"	17A

LEGEND FOR PLACING RE-STEEL

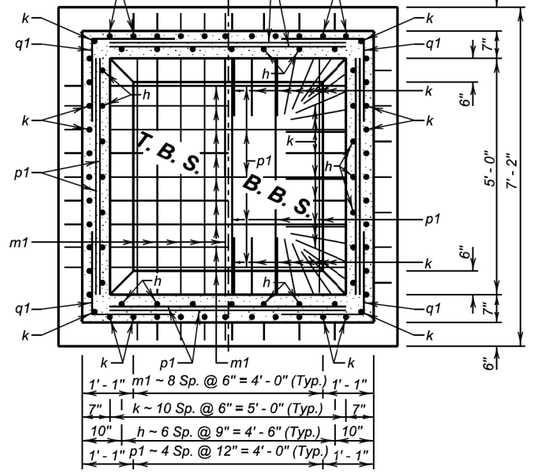
T. B. S. - Top of Bottom Slab

B. B. S. - Bottom of Bottom Slab

▼ *Cast iron Manhole Steps (R - 1980 - C) from Neenah Foundry or equivalant.*

⌀ *Locate in center of top slab with 3" clearance at manhole opening.*

All dimensions are out to out of bars.



SEC. A - A

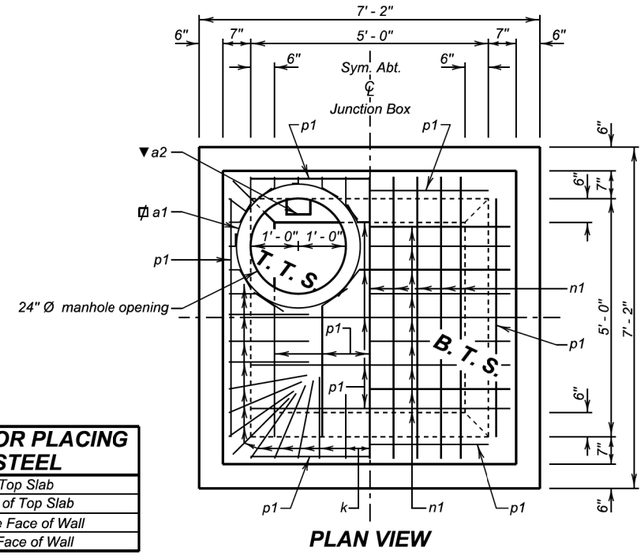
May 9, 2020

Published Date: 4th Qtr. 2021	SDDOT	5'X 5' JUNCTION BOX	PLATE NUMBER 671.01
			Sheet 2 of 3

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B121	B123

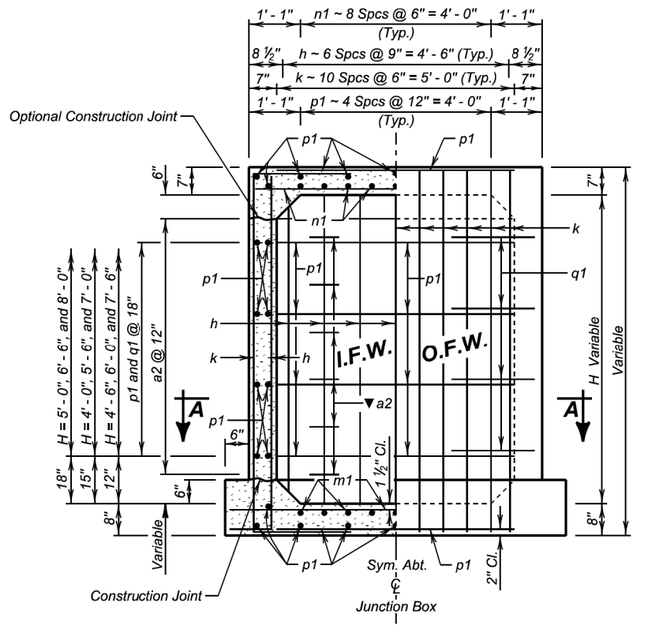
Plotting Date: 10/15/2021

Plot Scale - 1:200



PLAN VIEW

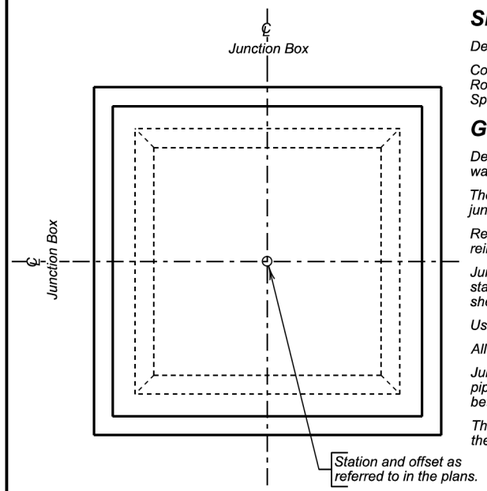
LEGEND FOR PLACING RE-STEEL
T. T. S. - Top of Top Slab
B. T. S. - Bottom of Top Slab
O. F. W. - Outside Face of Wall
I. F. W. - Inside Face of Wall



ELEVATION VIEW

May 9, 2020

Published Date: 4th Qtr. 2021	SDDOT: 5'X 5' JUNCTION BOX	PLATE NUMBER 671.01 / Sheet 3 of 3



PLAN VIEW

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.

The design of the junction box is based on a maximum fill over the junction box of 5 feet and minimum fil over the junction box of 2 feet.

Reinforcing steel shall conform to ASTM A615 Grade 60. Cut and bend reinforcing steel as required to place pipe(s) through junction box wall.

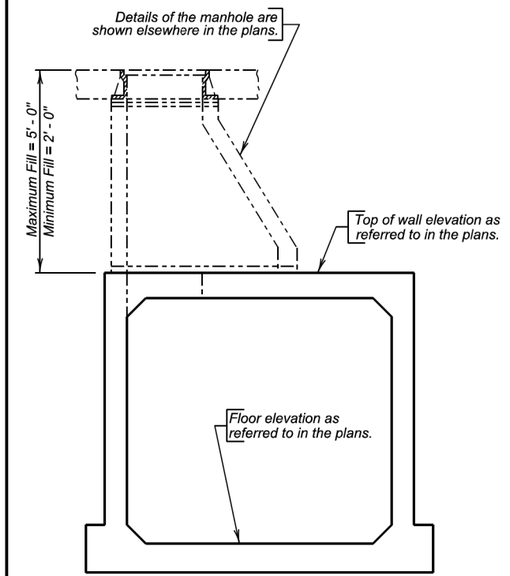
Junction box may be precast. If precast junction box details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

Use 1 inch clear cover on all reinforcing steel unless otherwise noted.

All exposed edges shall be chamfered ¾ inch.

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

The cost of furnishing and installing the manhole steps shall be incidental to the contract unit price per pound for "Reinforcing Steel".



ELEVATION VIEW

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	0.06
	24	3	0.11
	30	3 ½	0.16
	36	4	0.23
	42	4 ½	0.31
	48	5	0.40
	54	5 ½	0.50

ESTIMATED QUANTITIES

ITEM	✳Class M6 Concrete	Reinforcing Steel
UNIT	Cu. Yd.	Lb.
H = 4' - 0"	7.09	1506
H = 4' - 6"	7.42	1541
H = 5' - 0"	7.75	1622
H = 5' - 6"	8.08	1657
H = 6' - 0"	8.40	1692
H = 6' - 6"	8.73	1773
H = 7' - 0"	9.06	1808
H = 7' - 6"	9.39	1843
H = 8' - 0"	9.71	1924

✳*Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). Quantity shown includes reduction for a 24-inch diameter manhole opening. The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard.*

May 9, 2020

Published Date: 4th Qtr. 2021	SDDOT: 7'X 7' JUNCTION BOX	PLATE NUMBER 671.03 / Sheet 1 of 3

Plotted From - TRPR17192

File - ...\penn04PD\StdPlateSectionB.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B122	B123

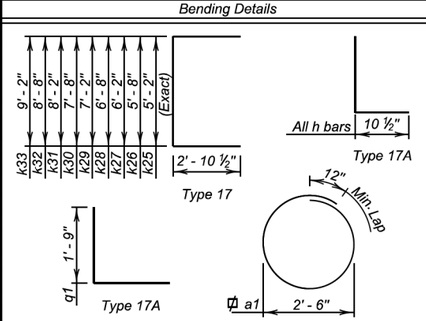
Plotting Date: 10/15/2021

Plot Scale - 1:200

REINFORCING SCHEDULE

	Mk.	No.	Size	Length	Type
H = 4' - 0"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	4	–	———	—
	h25	40	4	5' - 9"	17A
	k25	64	4	9' - 3"	17
	m3	26	6	8' - 9"	Str.
	n3	26	6	7' - 9"	Str.
	p3	60	4	7' - 0"	Str.
	q3	8	4	3' - 6"	17A
H = 4' - 6"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	4	–	———	—
	h26	40	4	6' - 3"	17A
	k26	64	4	9' - 9"	17
	m3	26	6	8' - 9"	Str.
	n3	26	6	7' - 9"	Str.
	p3	60	4	7' - 0"	Str.
	q1	8	4	3' - 6"	17A
H = 5' - 0"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	5	–	———	—
	h27	40	4	6' - 9"	17A
	k27	64	4	10' - 3"	17
	m3	26	6	8' - 9"	Str.
	n3	26	6	7' - 9"	Str.
	p3	68	4	7' - 0"	Str.
	q1	12	4	3' - 6"	17A
H = 5' - 6"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	5	–	———	—
	h28	40	4	7' - 3"	17A
	k28	64	4	10' - 9"	17
	m3	26	6	8' - 9"	Str.
	n3	26	6	7' - 9"	Str.
	p3	68	4	7' - 0"	Str.
	q1	12	4	3' - 6"	17A
H = 6' - 0"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	6	–	———	—
	h29	40	4	7' - 9"	17A
	k29	64	4	11' - 3"	17
	m3	26	6	8' - 9"	Str.
	n3	26	6	7' - 9"	Str.
	p3	68	4	7' - 0"	Str.
	q1	12	4	3' - 6"	17A
H = 6' - 6"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	6	–	———	—
	h30	40	4	8' - 3"	17A
	k30	64	4	11' - 9"	17
	m3	26	6	8' - 9"	Str.
	n3	26	6	7' - 9"	Str.
	p3	76	4	7' - 0"	Str.
	q1	16	4	3' - 6"	17A
H = 7' - 0"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	7	–	———	—
	h31	40	4	8' - 9"	17A
	k31	64	4	12' - 3"	17
	m3	26	6	8' - 9"	Str.
	n3	26	6	7' - 9"	Str.
	p3	76	4	7' - 0"	Str.
	q1	16	4	3' - 6"	17A

Bending Details



	Mk.	No.	Size	Length	Type
H = 7' - 6"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	7	–	———	—
	h32	40	4	9' - 3"	17A
	k32	64	4	12' - 9"	17
	m3	26	6	8' - 9"	Str.
	n3	26	6	7' - 9"	Str.
	p3	76	4	7' - 0"	Str.
	q1	16	4	3' - 6"	17A
H = 8' - 0"	⌀ a1	1	6	9' - 0"	T3
	▼ a2	8	–	———	—
	h33	40	4	9' - 9"	17A
	k33	64	4	13' - 3"	17
	m3	26	6	8' - 9"	Str.
	n3	26	6	7' - 9"	Str.
	p3	84	4	7' - 0"	Str.
	q1	20	4	3' - 6"	17A

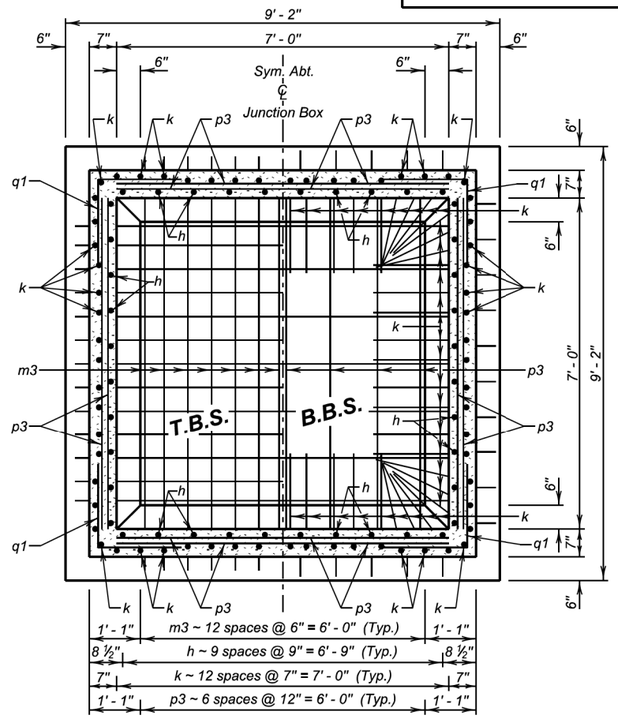
LEGEND FOR PLACING RE-STEEL

T.B.S. - Top of Bottom Slab
B.B.S. - Bottom of Bottom Slab

▼ Cast iron Manhole Steps (R - 1980 - C) from Neenah Foundry or equivalant.

⌀ Locate in center of top slab with 3" clearance at manhole opening.

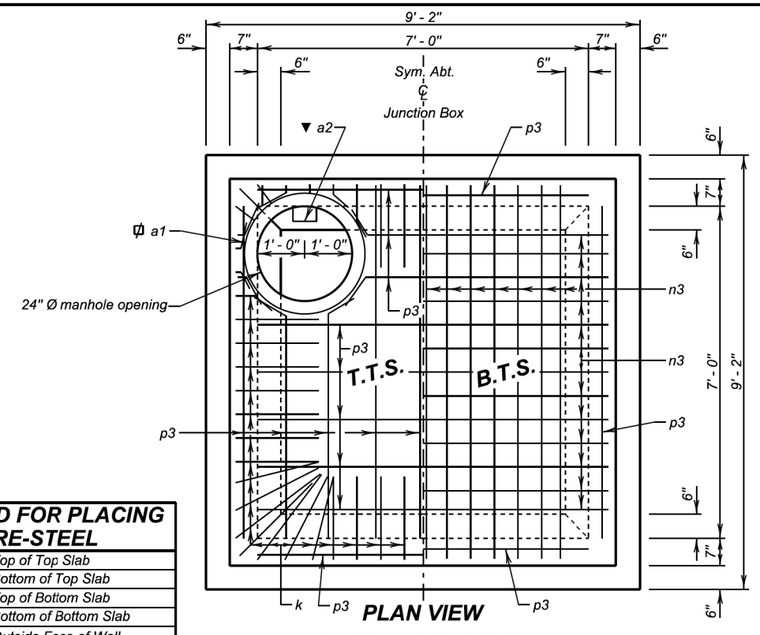
All dimensions are out to out of bars.



SEC. A - A

May 9, 2020

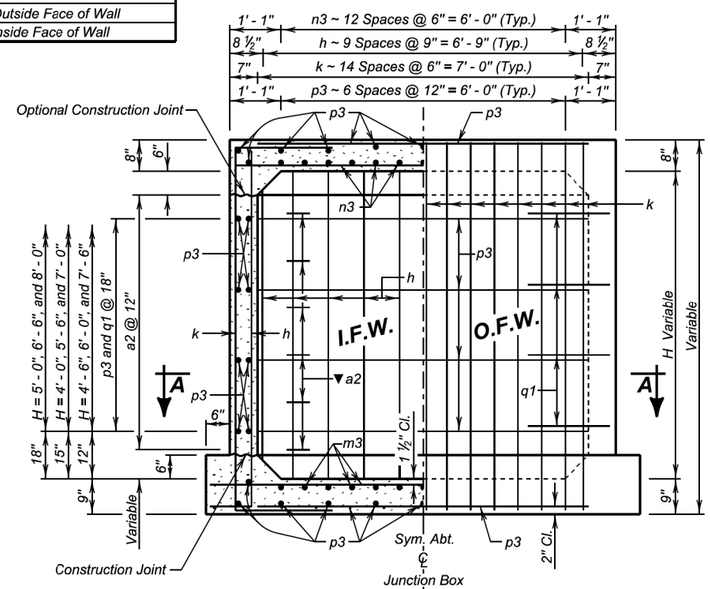
Published Date: 4th Qtr. 2021	SDDOT	7'X 7' JUNCTION BOX	PLATE NUMBER 671.03
			Sheet 2 of 3



LEGEND FOR PLACING RE-STEEL

T. T. S. - Top of Top Slab
B. T. S. - Bottom of Top Slab
T. B. S. - Top of Bottom Slab
B. B. S. - Bottom of Bottom Slab
O. F. W. - Outside Face of Wall
I. F. W. - Inside Face of Wall

PLAN VIEW



ELEVATION VIEW

May 9, 2020

Published Date: 4th Qtr. 2021	SDDOT	7'X 7' JUNCTION BOX	PLATE NUMBER 671.03
			Sheet 3 of 3

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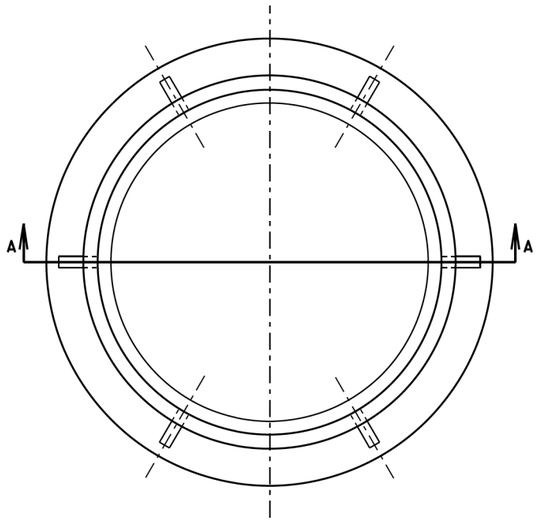
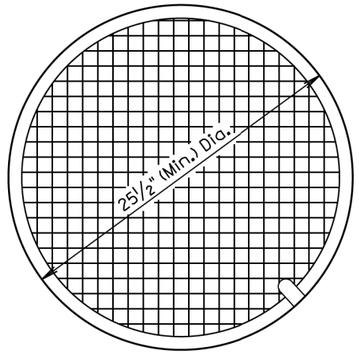
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0044(220)46	B123	B123

Plotting Date: 10/15/2021

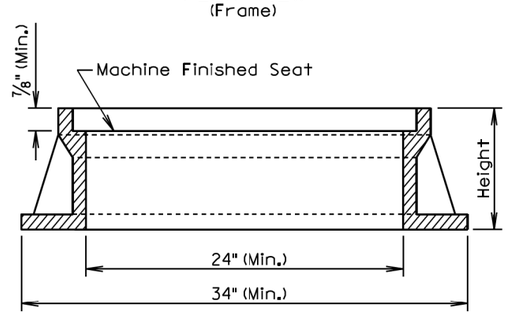
Plot Scale - 1:200



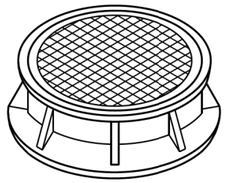
PLAN VIEW
(Frame)



PLAN VIEW
(Lid)



SECTION A-A



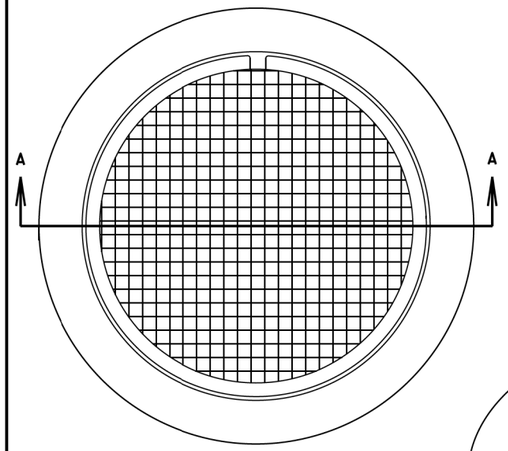
ISOMETRIC VIEW

TYPE	HEIGHT (Inches)	MINIMUM WEIGHT (Lb.)
A7	7	400
A8	8	440
A9	9	470
A10	10	480

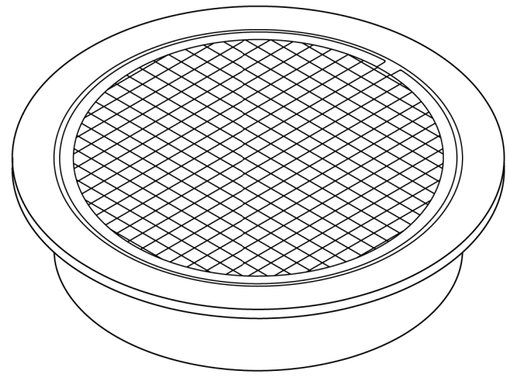
GENERAL NOTE:
Geometric pattern on top of lid other than that shown shall be approved by the Engineer.

June 26, 2016

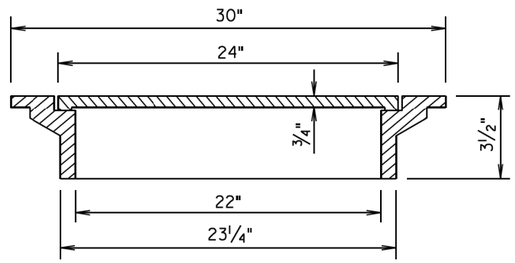
Published Date: 4th Qtr. 2021	SDDOT	TYPE A MANHOLE FRAME AND LID	PLATE NUMBER 671.10
			Sheet 1 of 1



PLAN VIEW



ASSEMBLED VIEW



SECTION A-A

GENERAL NOTE:
Total weight of the frame and lid shall be 140 Lbs. minimum.

March 31, 2000

Published Date: 4th Qtr. 2021	SDDOT	TYPE S MANHOLE FRAME AND LID	PLATE NUMBER 671.30
			Sheet 1 of 1

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