

# SECTION B: GRADING PLANS

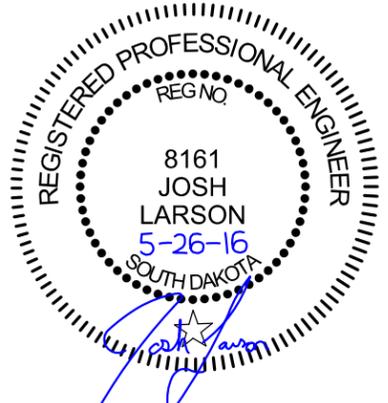
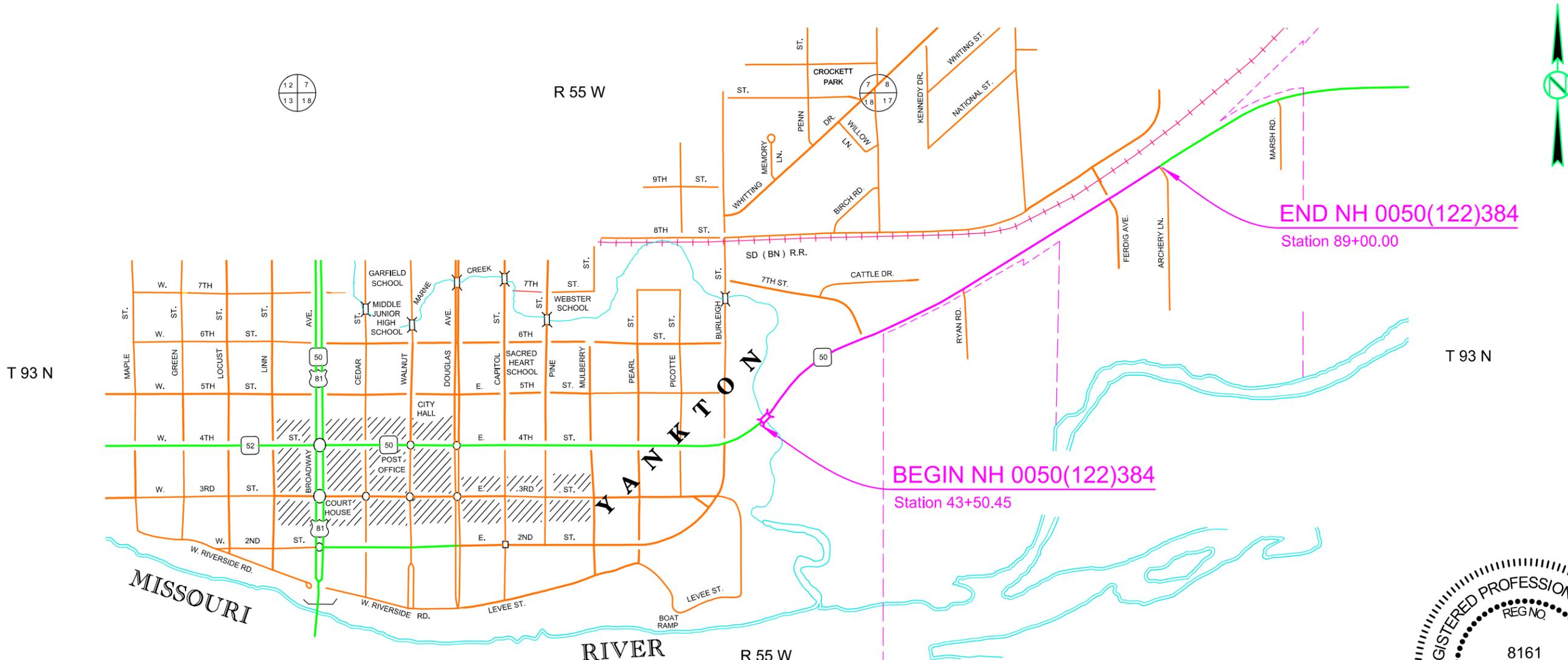
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B1	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

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**SECTION B ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3220	Reestablish Property Corner	85	Each
009E3230	Grade Staking	4.145	Mile
009E3250	Miscellaneous Staking	0.829	Mile
009E3280	Slope Staking	0.829	Mile
009E3300	Three Man Survey Crew	20.0	Hour
009E4300	Construction Schedule, Category III	Lump Sum	LS
100E0020	Clear and Grub Tree	1	Each
100E0100	Clearing	Lump Sum	LS
110E0300	Remove Concrete Curb and Gutter	215	Ft
110E0400	Remove Drop Inlet	10	Each
110E0460	Remove Manhole	8	Each
110E1010	Remove Asphalt Concrete Pavement	1,603.5	SqYd
110E1100	Remove Concrete Pavement	30,659.7	SqYd
110E1130	Remove Concrete Driveway Pavement	1,140.1	SqYd
110E1140	Remove Concrete Sidewalk	1,620.7	SqYd
120E0010	Unclassified Excavation	18,179	CuYd
120E0900	Contaminated Material Excavation	100	CuYd
120E2000	Undercutting	12,320	CuYd
120E6100	Water for Embankment	166.6	MGal
250E0020	Incidental Work, Grading	Lump Sum	LS
260E2010	Gravel Cushion	2,321.9	Ton
380E3520	6" PCC Approach Pavement	71.2	SqYd
380E3540	8" PCC Approach Pavement	1,112.8	SqYd
380E4070	9" PCC Fillet Section	28.3	SqYd
450E0122	18" RCP Class 2, Furnish	1,554	Ft
450E0130	18" RCP, Install	1,554	Ft
450E0142	24" RCP Class 2, Furnish	1,314	Ft
450E0150	24" RCP, Install	1,314	Ft
450E0162	30" RCP Class 2, Furnish	794	Ft
450E0170	30" RCP, Install	794	Ft
450E0182	36" RCP Class 2, Furnish	300	Ft
450E0190	36" RCP, Install	300	Ft
450E0192	42" RCP Class 2, Furnish	560	Ft
450E0200	42" RCP, Install	560	Ft
450E0222	60" RCP Class 2, Furnish	70	Ft
450E0230	60" RCP, Install	70	Ft
450E0424	30" RCP Bend, Furnish	1	Each
450E0425	30" RCP Bend, Install	1	Each
450E2024	30" RCP Flared End, Furnish	1	Each
450E2025	30" RCP Flared End, Install	1	Each
450E2304	18" RCP Safety End, Furnish	5	Each
450E2307	18" RCP Safety End, Install	5	Each
451E6080	Adjust Water Valve Box	2	Each

**SECTION B ESTIMATE OF QUANTITIES (CONTINUED)**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
462E0100	Class M6 Concrete	130.3	CuYd
464E0100	Controlled Density Fill	10.0	CuYd
480E0100	Reinforcing Steel	25,043	Lb
600E0300	Type III Field Laboratory	1	Each
650E0090	Type B69 Concrete Curb and Gutter	7,488	Ft
650E4690	Type P9 Concrete Gutter	736	Ft
651E0040	4" Concrete Sidewalk	19,029	SqFt
651E0060	6" Concrete Sidewalk	4,617	SqFt
651E3000	Grinding Miscellaneous Concrete	26.0	SqFt
651E7000	Type 1 Detectable Warnings	292	SqFt
670E1200	Type B Frame and Grate Assembly	12	Each
670E5340	4' x 11' Precast Concrete Type S Drop Inlet Lid	24	Each
670E5400	Precast Drop Inlet Collar	12	Each
671E5502	2" Adjusting Ring for Manhole	5	Each
671E6009	Type A9 Manhole Frame and Lid	1	Each
671E7010	Adjust Manhole	4	Each
720E1015	Bank and Channel Protection Gabion	6.0	CuYd
831E0110	Type B Drainage Fabric	20	SqYd
831E0300	Reinforcement Fabric (MSE)	4,239	SqYd
900E0010	Refurbish Single Mailbox	13	Each

**RESTRICTED WORK AREA**

The Contractor's work limits shall be confined to the area within the existing right-of-way for the parcels noted in the table below until the late spring of 2017. The Engineer will notify the Contractor of the date when work outside of the existing right-of-way may proceed.

Parcel No.	Station	to	Station	L/R
11, 11A, A55	53+95.91		58+25.56	R
14, 14A, 14B	58+25.56		59+89.41	R
15, 15A	59+89.41		61+50.80	R
16, 16A	61+50.80		63+78.80	R
17, 17A	63+78.80		65+41.39	R
19, 19A	66+56.61		72+09.53	R
20, 20A	72+09.53		73+07.73	R
21	73+07.73		76+23.08	R

**FOR BIDDING PURPOSES ONLY**

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**GRADING OPERATIONS**

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

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

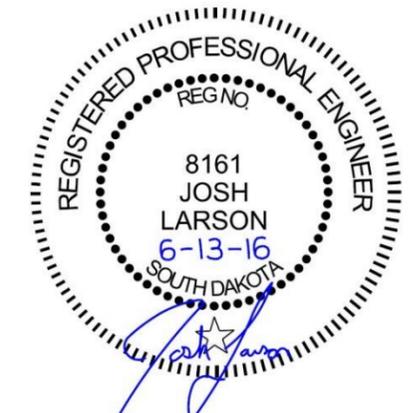
Special ditch grades and other sections of the roadway different than the typical section(s) shall be constructed to the limits shown on the cross sections. If significant changes to the cross sections are necessary during construction, the Engineer shall contact the Designer for the proposed change.

A copy of the soils profile is available for review at the Mitchell Region and Yankton Area offices.

**TYPE III FIELD LABORATORY**

The lab shall be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection shall be provided with a multi-port wireless router. The internet connection shall be a minimum speed of 512 Kb unless limited by job location and approved by the DOT. Prior to installing the wireless router the Contractor shall submit the wireless router's technical data to the Area Office to check for compatibility with the state's computer equipment. The internet connection is intended for state personnel usage only. The Contractor's personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer.

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



**UTILITIES**

The Contractor shall 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 shall 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.

**TABLE OF CLEAR AND GRUB TREE**

66+04 - 38' R

**SHRINKAGE FACTOR** Embankment +20%

**TABLE OF EXCAVATION QUANTITIES BY BALANCES**

Station to	Station	Excavation (CuYd)	* Undercut (CuYd)	Total Excavation (CuYd)	** Waste (CuYd)
43+50	89+00	4,520	12,320	16,840	178
TOTALS:		4,520	12,320	16,840	178

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

**TABLE OF UNCLASSIFIED EXCAVATION**

Excavation	(CuYd)	4,520
Undercut		12,320
Topsoil		1,339
Total:		18,179



**PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY FOR BIDDING PURPOSES ONLY**

Plan quantities shall be used for payment, the Unclassified Excavation quantity shall be used for final payment.

The following paragraphs are general earthwork information and information in regards to computing the Unclassified Excavation quantity:

The Topsoil quantity in the Table of Unclassified Excavation is an estimate. 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.

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

**UNDERCUTTING**

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

Shallow embankment sections, fills less than 1 foot in height measured at the finished subgrade shoulders, shall be undercut to ensure a minimum 1 foot height of earth embankment for the entire width of roadbed. The undercut material or other suitable material, as directed by the engineer, shall then be replaced and recompact 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 shall direct removal of these areas and the additional areas will be measured according to the Engineer.

**TABLE OF UNDERCUTTING**

Station to	Station	Quantity (CuYd)
43+50	89+00	12,320
Total:		12,320

**UNSTABLE SUBGRADE**

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Should any area become unstable, additional undercut and or replacement of the undercut material with suitable material should be considered.

If, in the opinion of the Engineer, the area will not stabilize by the method listed above or there are conflicts with utilities, Reinforcement Fabric (MSE) and granular material may be used. Stabilization will be accomplished by undercutting the subgrade and placing a layer of Reinforcement Fabric (MSE) at the bottom of the undercut. The undercut will then be backfilled with granular material and compacted. Contact the Geotechnical Engineering Activity (605-773-3725) for assistance should the use of geotextile become necessary. 4,239 sq. yds of Reinforcement Fabric (MSE) have been included in the materials quantities for bidding purposes. This quantity is assumed to cover 3,685.5 sq. yds. of subgrade. This is assuming full width coverage of the mainline subgrade for a distance of 500 feet. Additional quantities of granular material are included in the Gravel Cushion bid item for use in this application. These quantities can be adjusted or eliminated by CCO, depending on field conditions.

The geotextile will be on the Approved Products List for this material or will be certified by the supplier to meet this specification prior to installation.

Geotextile will be paid for at the contract unit price per square yard for Reinforcement Fabric (MSE). Payment quantities will be based on area covered plus 15%. Overlaps are accounted for by the additional 15%. Payment will be full compensation for furnishing and installing the geotextile only.

The geotextile will be placed as taut as possible with minimal wrinkles. Placement will be done so that subsequent granular cover does not shove, wrinkle, or distort the in place geotextile. The overlaps will be shingled in a manner that assures that granular material will not be forced under the geotextile during backfilling operations. The geotextile may be held in place with small piles of granular material or staples.

The top of the subgrade shall be prepared by smoothing the surface to minimize any ruts, ridges, and depressions. Any rocks or other protrusions that might damage the geotextile will be removed. The geotextile will be unrolled parallel to centerline and overlapped a minimum of 2 feet.

2,321.9 tons or gravel cushion have been included for use in this application. This quantity is based on 1 foot of coverage for 3,685.5 sq. yds. of subgrade.

The granular cushion will be placed by back dumping onto the geotextile from the truck and dozing or pushing the granular cushion from the covered areas to the uncovered areas. No traffic will be allowed on the uncovered geotextile. The first lift of granular cushion will be placed in an 8 inch lift or as directed by the Engineer. After the subgrade is stabilized, the remaining granular cushion will be placed in 4 inch max. lifts. The granular cushion will be compacted by the Specified Density Method.

**TABLE OF IN PLACE SURFACING AND GRANULAR CUSHION**

**Station 45+38 to Station 77+38**

Station	Centerline		Depth PCCP (Inches)	Depth Granular Base (Inches)	Pvmt Width (Ft)
	Feet Lt	Feet Rt			
48+00	24.5		8.0	4.0	57
53+00	24.0		8.0	4.0	56
60+00	24.0		8.0	4.0	56
67+00	24.5		8.0	4.0	57
74+00	23.5		8.0	4.0	56
Average:			8.0	4.0	56.4

**Station 77+38 to Station 89+00**

Station	Centerline		Depth PCCP (Inches)	Depth Granular Base (Inches)	Pvmt Width (Ft)
	Feet Lt	Feet Rt			
81+00	30.8		4.0	12.0	72
88+00	27.2		4.0	12.0	61
Average:			4.0	12.0	66.5

Based on the above thicknesses the average amount of in place surfacing per station is as follows:

Station 45+38 to Station 77+38.....209 cu.yd./ sta.  
 Station 77+38 to Station 89+00.....249 cu.yd./ sta.

These quantities were removed from the total amount of unclassified excavation. The thicknesses listed are as recorded at these specific locations during exploration of existing soil conditions. See REMOVAL OF EXISTING CONCRETE PAVEMENT for general pavement thickness and composition.

**WATER LEVELS**

Station	Offset	Boring Depth (Ft)	Initial Depth (Ft)	Final Depth (Ft)	Time Between Readings (hrs)
48+00	24.5 Lt	14.5	Dry /Caved 13.6	Dry /Caved 12.9	16
53+00	24.0 Lt	14.5	Dry /Caved 13.2	Dry /Caved 13.2	17.5
60+00	24.0 Lt	14.5	Dry /Caved 13.0	Dry /Caved 12.9	20
67+00	24.5 Lt	14.5	Dry /Caved 12.3	Dry /Caved 9.0	20
74+00	23.5 Lt	14.5	Dry /Caved 13.2	Dry /Caved 12.7	21
81+00	30.8 Lt	14.5	Dry /Caved 13.5	Dry /Caved 13.5	15
88+00	27.2 Lt	14.5	Dry /Caved 13.8	Dry /Caved 13.6	16

Proper protective measures will be required for the storm sewer construction. Seasonal changes also may affect groundwater elevations. Sumps and/or other dewatering methods may also be required. All protective measures required to install the storm sewer shall be incidental to the contract unit price per foot for the corresponding RCP Install bid item.

**EXCAVATION FROM STORM SEWER, JUNCTION BOXES, AND DROP INLET INSTALLATION**

The excavation and excess material which will result from installing drop inlets, junction boxes and storm sewer which are larger than previously existed or where no features existed before is not included in the Excavation or Waste quantity listed in the Table of Excavation Quantities. Storm sewer includes all concrete pipes for this project. Excavation and disposal of this excess material will be incidental to the corresponding contract pay items which required excavation and generated the excess material.

**INCIDENTAL WORK, GRADING**

Station	Station	Remarks
45+46 - 0' L	45+70 - 25' L	Take out 18" - 35' RCP
45+46 - 0' L	50+49 - 0' R	Take out 30" - 501' RCP
50+47 - 28' L	50+49 - 0' R	Take out 18" - 28' RCP
50+49 - 0' R	50+49 - 29' R	Take out 18" - 29' RCP
57+00 - 65' L		Remove & Replace Rocks
60+47 - 27' L	60+49 - 1' R	Take out 18" - 29' RCP
60+47 - 29' R	60+49 - 1' R	Take out 18" - 28' RCP
60+49 - 1' R	65+48 - 1' R	Take out 24" - 500' RCP
65+48 - 27' L	65+48 - 1' R	Take out 18" - 28' RCP
65+48 - 29' R	65+48 - 1' R	Take out 18" - 29' RCP
65+48 - 1' R	71+23 - 1' R	Take out 30" - 576' RCP
71+22 - 27' L	71+23 - 1' R	Take out 18" - 28' RCP
71+22 - 30' R	71+23 - 1' R	Take out 18" - 29' RCP
71+23 - 1' R	77+05 - 1' R	Take out 42" - 582' RCP
76+85 - 36' L	77+05 - 1' R	Take out 60" - 42' RCP
76+86 - 39' R	77+05 - 1' R	Take out 72" - 42' RCP
77+05 - 1' R	82+50 - 1' R	Take out 24" - 545' RCP
82+49 - 32' L	82+50 - 1' R	Take out 15" - 33' RCP
82+50 - 1' R	88+83 - 2' L	Take out 18" - 633' RCP
82+52 - 71' R	83+29 - 71' R	Take out 18" - 78' RCP
85+26 - 75' R	85+92 - 75' R	Take out 18" - 66' RCP
88+15 - 73' R	88+90 - 74' R	Take out 18" - 75' RCP

**FOR BIDDING PURPOSES ONLY**

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**REMOVAL OF EXISTING CONCRETE PAVEMENT  
 STA. 45+50.45 to STA. 77+38.00**

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 shall dispose of the concrete pavement and asphalt concrete at a site approved by the Engineer.

The existing 8 inch P.C.C. Pavement is typically 57 feet wide.

The existing contraction joints are spaced at approximately 20 feet.

The aggregate in the existing P.C.C. pavement is quartzite.

This information is from Underlying Plans and actual pavement thicknesses may vary.

**REMOVAL OF EXISTING CONCRETE PAVEMENT  
 STA. 77+38.00 to STA. 89+00.00**

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 shall dispose of the concrete pavement and asphalt concrete at a site approved by the Engineer.

The existing 8 inch P.C.C. Pavement is typically 66.5 feet wide.

The existing contraction joints are spaced at approximately 20 feet.

The aggregate in the existing P.C.C. pavement is quartzite. This information is from Underlying Plans and actual pavement thicknesses may vary.



FOR BIDDING PURPOSES ONLY

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**TABLE OF CONCRETE PAVEMENT REMOVAL**

Station	to	Station	L/R	Quantity (SqYd)
45+57.07		77+38	L&R	20,316.5
77+38		89+00	L&R	8,246.9
Total:				28,563.4

**\*TABLE OF MISCELLANEOUS CONCRETE PAVEMENT REMOVAL**

Station	to	Station	L/R	Quantity (SqYd)
43+50.45		44+02.70	L&R	317.6
45+22.20		45+57.07	L&R	206.9
45+97		47+19	R	299.7
55+81		57+19	L	460.3
82+37		84+08	L	622.3
82+61		83+01	R	189.5
Total:				2,096.3

\*Note: Table of Miscellaneous Concrete Pavement Removal includes concrete pavement that is not considered part of the mainline pavement. All costs for removal of the miscellaneous concrete pavement shall be incidental to the contract unit price per square yard for "Remove Concrete Pavement".

**TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL**

Station	to	Station	L/R	Quantity (SqYd)
46+11		46+82	L	110.8
49+34		49+77	L	75.7
58+34		60+08	R	253.3
61+11		61+29	R	17.5
77+44		77+84	R	72.2
78+91		79+67	R	186.8
82+49		83+25	R	300.1
85+20		85+91	R	279.7
88+03		89+00	R	307.4
Total :				1603.5

**TABLE OF CONCRETE CURB AND GUTTER REMOVAL**

Station	to	Station	Quantity (Ft)	
56+91.80	- 77.06' L	57+13.54	- 51.97' L	47.0
62+81.82	- 68.74' L	62+94.28	- 42.42' L	34.5
63+39.61	- 42.54' L	63+56.26	- 66.29' L	39.0
71+24.44	- 51.56' L	71+35.50	- 43.13' L	15.3
71+80.61	- 42.43' L	71+90.57	- 51.79' L	15.2
74+82.27	- 52.10' L	74+93.95	- 44.26' L	16.2
75+38.35	- 43.69' L	75+49.61	- 52.28' L	15.9
82+40.03	- 52.72' L	82+57.37	- 52.71' L	17.3
82+59.19	- 69.25' L	82+59.37	- 54.38' L	14.9
Total:			215.3	

**TABLE OF CONCRETE DRIVEWAY PAVEMENT REMOVAL**

Station	to	Station	Quantity (SqYd)	
46+07.67	- 31.76' L	46+48.55	- 32.23' L	23.1
49+23.72	- 33.48' R	49+74.29	- 33.60' R	25.0
49+37.43	- 32.47' L	49+84.30	- 32.62' L	22.9
51+30.94	- 32.55' L	51+76.80	- 32.47' L	23.1
51+56.84	- 62.65' L	51+68.31	- 62.60' L	58.3
52+16.94	- 32.36' L	53+05.47	- 32.38' L	43.3
53+22.19	- 42.85' L	53+72.37	- 45.58' L	17.7
53+55.40	- 32.56' L	54+04.58	- 32.83' L	23.1
54+58.95	- 32.24' L	55+06.24	- 32.43' L	22.9
57+33.07	- 35.01' R	58+84.51	- 34.83' R	85.7
59+66.55	- 34.65' R	60+12.23	- 34.72' R	24.9
61+12.91	- 34.60' R	61+60.61	- 34.71' R	27.2
62+03.97	- 34.58' R	62+51.46	- 34.50' R	26.5
62+85.05	- 71.38' L	63+49.21	- 71.28' L	170.1
62+91.26	- 34.69' R	63+36.93	- 34.51' R	23.7
62+94.41	- 35.38' L	63+39.56	- 35.41' L	41.4
64+60.95	- 34.57' R	64+84.75	- 34.37' R	11.8
65+25.19	- 34.28' R	65+45.87	- 33.86' R	9.0
66+49.79	- 34.57' R	66+99.35	- 34.64' R	22.6
67+38.30	- 34.53' R	67+86.03	- 34.34' R	22.4
69+76.43	- 34.68' R	70+26.50	- 34.54' R	24.1
71+27.44	- 54.14' L	71+86.24	- 54.32' L	55.7
71+35.50	- 43.13' L	71+80.71	- 43.01' L	82.4
71+36.16	- 34.58' R	71+84.54	- 34.53' R	23.6
72+12.70	- 34.82' R	72+61.55	- 34.46' R	23.8
72+98.45	- 35.34' R	73+45.29	- 35.43' R	26.5
73+92.32	- 35.41' R	74+15.29	- 35.29' R	14.6
74+85.43	- 35.16' R	75+31.65	- 34.89' R	27.0
74+88.63	- 54.56' L	75+45.08	- 54.54' L	49.3
74+93.95	- 44.26' L	75+38.57	- 44.34' L	88.4
Total:			1140.1	

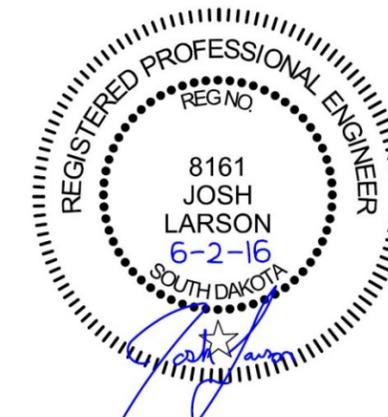
**TABLE OF SIDEWALK REMOVAL**

Station	to	Station	Quantity (SqYd)	
46+23.02	- 72.17' R	46+40.90	- 74.78' R	20.3
46+73.46	- 75.80' R	46+88.08	- 83.18' R	19.6
56+21.86	- 103.77' L	56+24.43	- 53.49' L	62.5
56+23.10	- 176.06' L	56+30.88	- 124.00' L	46.2
56+32.38	- 35.11' R	57+16.90	- 44.73' R	89.9
56+83.88	- 50.99' L	59+95.39	- 43.67' L	208.7
62+34.70	- 44.69' L	62+94.08	- 42.15' L	40.0
63+39.76	- 42.55' L	64+30.04	- 43.67' L	61.1
65+50.34	- 43.67' L	71+35.50	- 43.13' L	388.0
71+80.71	- 43.01' L	74+93.95	- 44.26' L	211.1
75+38.57	- 44.34' L	79+97.61	- 45.36' L	305.6
81+23.94	- 45.45' L	82+68.83	- 62.66' L	108.7
83+39.01	- 86.90' L	83+68.39	- 49.43' L	59.0
Total:			1,620.7	

**TABLE OF MANHOLE REMOVAL**

Station	Offset	Quantity (Each)
45+46	0' R	1 *
50+49	0' R	1
60+49	1' R	1
65+48	1' R	1
71+23	1' R	1
77+05	1' R	1
82+50	1' R	1
88+83	2' L	1
Total:		8

\* = Manhole at this location will be removed to 1 foot below undercut depth. The remainder of the manhole will be filled with Controlled Density Fill. Approximate depth of fill is 16 feet with an approximate diameter of 4 feet. All costs to remove top of manhole and fill remainder of manhole with controlled density fill as detailed shall be incidental to the contract unit price per each for "Remove Manhole".



**TABLE OF DROP INLET REMOVAL**

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

Station	Offset	Quantity (Each)
45+70	25' L	1
50+47	28' L	1
50+49	29' R	1
60+47	29' R	1
60+47	27' L	1
65+48	27' L	1
65+48	29' R	1
71+22	30' R	1
71+22	27' L	1
82+49	32' L	1
Total:		10

**CONTROLLED DENSITY FILL FOR PIPE**

Controlled density fill shall be in conformance with Section 464 of the Specifications and shall utilize the CLSM Mix Design.

**TABLE FOR CONTROLLED DENSITY FILL**

Station to	Station	Quantity (CuYd)	Fill Height (Inside Pipe)
44+91.18 - 0.04' L	45+46.10 - 0.02' L	10.0	30"
Total:		10.0	

**CONCRETE PIPE CONNECTIONS**

Pipe connections to existing pipes, manholes, junction boxes, and drop inlets shall be done by breaking a hole into the existing structure and inserting the pipe. A concrete collar shall 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 shall be made by placing a 2' wide by 6" thick M6 concrete collar around the outside of the connection. The concrete collar shall be reinforced with 6x6 W2.9 x W2.9 wire mesh.

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

**STORM SEWER**

Reinforced concrete pipe may be bell and spigot. The pipe sections shall 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 shall 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 shall extend for a distance of 10 feet beyond the water main. This measurement shall be from the sealed concrete joint to the outer most surface of the water main.

Watertight joint seals shall conform to the following requirements:

1. Reinforced Concrete Pipe (Circular): Gasketed pipe shall conform to the requirements of ASTM C443 and the gasket shall be in conformance with Section 990 of the Specifications. Non-gasketed concrete pipe shall be sealed with a mastic joint seal conforming to the requirements of ASTM C990 and encased with a minimum 2' wide by 6" thick M6 concrete collar reinforced with 6x6 W2.9 x W2.9 wire mesh.
2. Reinforced Concrete Pipe (Arch): Gasketed pipe shall conform to the requirements of ASTM C443 and the gasket shall be in conformance with Section 990 of the Specifications. Non-gasketed concrete pipe joints shall be sealed with a hydrophilic flexible water stop seal and wrapped with a 1-foot wide strip of fabric above the cradle. The fabric shall conform to the requirements of Section 831 of the Specifications for Type A Drainage Fabric. The hydrophilic flexible water stop shall be from the list below.
3. Drop Inlets, Manholes, and Junction Boxes: Joints shall 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' wide by 6" 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 shall conform to the requirements of Section 831 of the Specifications for Type A Drainage Fabric. The hydrophilic flexible water stop shall be from the list below.
  - c. A self-adhesive external joint seal wrap. The seal wrap shall be from the list below.

**FOR BIDDING PURPOSES ONLY**

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B6	B77

Plotting Date: 5/31/2016

**STORM SEWER (CONTINUED)**

Approved List of Self-adhesive Joint Wrap

Product	Manufacturer
Mar Mac Seal Wrap	Mar Mac Construction Products McBee, SD 843-335-5814 <a href="http://www.marmac.com/">http://www.marmac.com/</a>
ConWrap CS-217	Concrete Sealants, Inc. Tipp City, OH 800-332-7325 <a href="http://conseal.com/">http://conseal.com/</a>

Approved List of Hydrophilic Flexible Water Stop Seal:

Product	Manufacturer
Waterstop RX	Cetco Hoffman Estates, IL 800-527-9949 <a href="http://www.cetco.com/">http://www.cetco.com/</a>
Conseal CS-231	Concrete Sealants, Inc. Tipp City, OH 800-332-7325 <a href="http://conseal.com/">http://conseal.com/</a>

Gaskets and seals (mastic, waterstop, and seal wraps) shall 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 shall be incidental to the contract unit price per foot for the corresponding pipe bid item.



**DROP INLETS**

Where drop inlets are constructed within areas of curb and gutter, the Contractor shall construct weep holes of at least 3 inches in diameter in the drop inlet walls. The weep holes shall be constructed at the same elevation as the adjacent top of the earthen subgrade and shall be maintained clean and open at all times until the permanent surfacing is placed. The drop inlets shall 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 shall 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 shall 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, 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 TYPE B DROP INLETS AND QUANTITIES**

Station	L / R	Drop Inlet Size	Drop Inlet Type	Class M6 Conc. (CuYd)	Reinf. Steel (Lb)	Conc. Collar (Each)	Frame & Grate Type
45+69.87 - 26.80'	L	5.5 X 5.5	B	5.88	1,145	1	B
45+85.28 - 27.37'	R	4 X 4	B	3.53	558	1	B
50+45.23 - 31.67'	L	2 X 3	B	0.98	154	1	B
69+67.00 - 31.67'	L	2 X 3	B	0.91	147	1	B
69+67.00 - 31.67'	R	4 X 3	B	1.53	247	1	B
72+56.98 - 31.67'	L	2 X 3	B	0.92	148	1	B
72+56.98 - 31.67'	R	5.5 X 3	B	2.49	480	1	B
82+52.27 - 58.67'	L	3 X 4	B	1.50	219	1	B
82+75.42 - 69.64'	L	4 X 4	B	1.96	330	1	B
83+39.06 - 70.08'	L	2 X 3	B	0.85	142	1	B
83+92.00 - 31.67'	L	2 X 3	B	0.86	142	1	B
87+50.00 - 31.67'	L	2 X 3	B	0.92	157	1	B
Totals				22.33	3,869	12	

Total Type B Frame and Grate Assembly 12



**TABLE OF TYPE S DROP INLETS AND QUANTITIES**

Station	L / R	Drop Inlet Size	Drop Inlet Type	Class M6 Concrete (CuYd)	Reinf. Steel (Lb)
47+50.00 - 34.13'	R	4 X 11	S	5.20	834
49+20.15 - 34.13'	R	4 X 11	S	4.38	741
50+44.85 - 34.13'	R	4 X 11	S	3.78	673
51+68.00 - 34.13'	R	4 X 11	S	3.58	635
53+00.00 - 34.13'	R	4 X 11	S	3.32	595
58+70.00 - 34.13'	L	4 X 11	S	3.55	621
58+84.53 - 34.13'	R	4 X 11	S	3.72	651
61+94.00 - 34.13'	L	4 X 11	S	3.33	596
61+94.00 - 34.13'	R	4 X 11	S	3.68	656
65+26.43 - 34.13'	L	4 X 11	S	3.35	599
65+26.43 - 34.13'	R	4 X 11	S	3.85	681
68+10.00 - 34.13'	L	4 X 11	S	3.34	597
68+10.00 - 34.13'	R	4 X 11	S	3.96	706
71+22.00 - 34.13'	L	4 X 11	S	3.34	597
71+22.00 - 35.63'	R	7 X 11	S	6.71	1,915
73+97.00 - 34.13'	L	4 X 11	S	3.45	611
74+21.48 - 35.63'	R	7 X 11	S	8.02	2,163
77+05.20 - 35.63'	R	7 X 11	S	9.70	2,668
79+80.00 - 34.13'	L	4 X 11	S	3.32	595
79+80.00 - 34.13'	R	4 X 11	S	4.48	747
81+91.30 - 34.13'	L	4 X 11	S	3.32	595
82+26.48 - 34.13'	R	4 X 11	S	3.62	644
86+05.00 - 34.13'	L	4 X 11	S	3.56	623
88+55.00 - 34.13'	L	4 X 11	S	3.45	610
Totals				102.01	20,353

Total 4'x11' Precast Concrete Type S Drop Inlet Lid 24

**TABLE OF JUNCTION BOXES AND QUANTITIES**

Station	L / R	Width Size	Class M6 Concrete (CuYd)	Reinf. Steel (Lb)	2" Adj. Ring (Each)	Frame & Grate Type
82+75.42 - 33.13'	L	5 X 5 X 4.0	4.13	821	5	A9
Totals:			4.13	821	5	A9

Total Type A9 Frame and Lid: 1

The plan shown quantities of the junction box components such as Class M6 Concrete, Reinforcing Steel, 2" Adjusting Ring for Manhole, and Type A Manhole Frame and Lid will be the basis of payment for these items.

**CONCRETE FILL FOR JUNCTION BOX**

Class M6 concrete fill shall be placed in the bottom of the corresponding junction boxes to raise the floor elevation to the invert of the outlet pipe.

**FOR BIDDING PURPOSES ONLY**

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	NH 0050(122)384	B7	B77

Plotting Date: 6/13/2016 Rev. 6/13/16 JDL

**TABLE OF CONCRETE FILL FOR JUNCTION BOX**

Station	Quantity (CuYd)
82+75.42 - 33.13' L	1.80
Total:	1.80

**ADJUSTMENT OF MANHOLES**

The Contractor shall adjust manholes to the extent necessary on this project. Adjusting the manholes may consist of removing the upper course of brick or removing the concrete walls, replacing the removed materials with brick or Class M6 concrete, placing adjusting rings if necessary, and resetting the manhole frame and lid. The elevation of the lid shall be set at the same elevation of the adjacent new pavement or surrounding ground. All manhole frames, lids, and rings that are cracked or broken due to carelessness of the Contractor shall be replaced with new manhole frames, lids, and rings that conform with the Specifications at the Contractor's expense. Manholes shall be adjusted to the satisfaction of the Engineer. All costs involved in adjusting the manholes shall be incidental to the contract unit price per each for "Adjust Manhole".

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

**TABLE OF ADJUST MANHOLES**

Station	Adjustment	Quantity	Unit
49+02.18 - 25.24' R	0.03	1	Each
53+40.28 - 22.17' R	-0.10	1	Each
53+75.64 - 25.29' L	0.38	1	Each
77+56.93 - 40.07' R	0.49	1	Each
Total:		4	Each

**TABLE FOR ADJUSTMENT OF WATER VALVE BOXES**

Station	Adjustment	Quantity	Unit
56+04.90 - 46.79' L	0.12	1	Each
56+23.08 - 81.01' L	0.07	1	Each
Total:		2	Each

**TABLE OF BANK AND CHANNEL PROTECTION GABIONS AND DRAINAGE FABRIC**

Station	L/R	Bank and Channel Protection Gabion (CuYd)	Type B Drainage Fabric (SqYd)
45+26.6	42.1' L	6.0	20
Total:		6.0	20

**9" PCC FILLET SECTIONS**

Payment for "9" PCC Fillet Section" shall be based on plans quantity. If additions or reductions to the area of PCC fillet sections are ordered by the Engineer, payment will be made in accordance with the contract unit price per square yard for "9" PCC Fillet Section".

**TYPE 1 DETECTABLE WARNINGS**

Detectable warnings shall be in compliance with the Americans with Disability Act regulations.

The detectable warnings shall 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 shall be placed below the Type 1 Detectable Warnings. When concrete is placed below the detectable warnings then the concrete thickness shall be transitioned at the rate of 1" per foot to match the adjacent concrete sidewalk thickness.

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

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

Type 1 Detectable Warnings

<u>Product</u>	<u>Manufacturer</u>
Detectable Warning Plate Cast Iron Plate	Neenah Foundry Company Neenah, WI 800-558-5075 <a href="http://www.neenahfoundry.com/">http://www.neenahfoundry.com/</a>
Detectable Warning Plate Cast Iron Plate	Deeter Foundry Lincoln, NE 800-234-7466 <a href="http://www.deeter.com/">http://www.deeter.com/</a>
Detectable Warning Plate Cast Iron Plate(No Coating)	East Jordan Iron Works, Inc. 301 Spring Street East Jordan, MI 49727 800-626-4653 <a href="http://www.ejiw.com">http://www.ejiw.com</a>

**MAILBOXES**

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

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

**TABLE OF REFURBISH MAILBOX**

Station	L/R	Single (Each)
47+23	L	1
51+94	L	1
56+87	R	1
59+40	R	1
62+83	R	1
62+85	R	1
66+42	R	1
66+44	R	1
66+47	R	1
72+79	R	1
73+75	R	1
74+82	R	1
81+20	R	1
Total:		13

**FOR BIDDING PURPOSES ONLY**

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B8	B77

Plotting Date: 5/31/2016

**TABLE OF SUPERELEVATION / CROSS SLOPE TRANSITIONS**

**Eastbound Lanes**

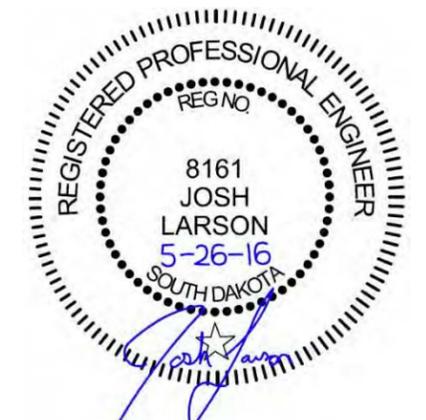
Station	to Station	Cross Slope	Description
	45+22.20	0.02 ft/ft	Match Existing Superelevation
45+22.20	45+70.00	-	Superelevation Transition
	45+70.00	0.0094 ft/ft	End Superelevation Transition / Begin Superelevation Transition
45+70.00	46+67.00	-	Superelevation Transition
46+67.00	89+00.00	-0.02 ft/ft	Normal Crown Section

**Two Way Left Turn Lane**

Station	to Station	Cross Slope	Description
	45+22.20	0.02 ft/ft	Match Existing Superelevation
45+22.20	45+70.00	-	Superelevation Transition
	45+70.00	0.0094 ft/ft	End Superelevation Transition / Begin Superelevation Transition
45+70.00	46+67.00	-	Superelevation Transition
46+67.00	89+00.00	-0.02 ft/ft	Cross Slope Right

**Westbound Lanes**

Station	to Station	Cross Slope	Description
	45+22.20	0.01 ft/ft	Match Existing Cross Slope
45+22.20	45+70.00	-	Cross Slope Transition
	45+70.00	0.0183 ft/ft	End Cross Slope Transition / Begin Superelevation Transition
45+70.00	46+97.00	-	Superelevation Transition
46+97.00	54+56.00	-0.02 ft/ft	Full Superelevation
54+56.00	56+10.00	-	Superelevation Transition
56+10.00	89+00.00	0.02 ft/ft	Normal Crown Section



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

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B9	B77

Plotting Date: 5/31/2016

Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Grade Staking		*Sets of Stakes	**Grade Staking Quantity (Mile)	Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)
					Length (Mile)	Lane Factor				
(Transition from 4 Lanes to 5 Lanes)	45+22	47+00	5	178	0.034	2.5	2	0.17	0.034	0.034
(5 Lane PCCP)	47+00	89+00	5	4200	0.795	2.5	2	3.975	0.795	0.795
Totals:								4.145	0.829	0.829

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

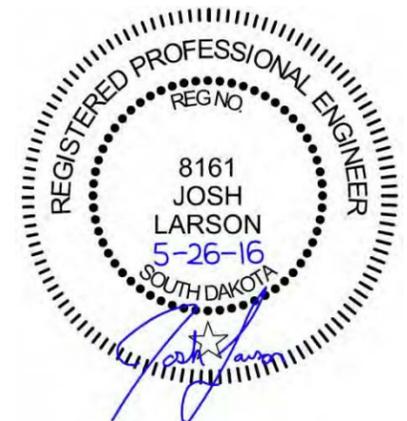
\*\* Grade Staking Quantity = (Length) x (Lane Factor) x (Sets of Stakes)

**REESTABLISH PROPERTY CORNER**

The Contractor shall have a Licensed Land Surveyor in the State of South Dakota reestablish property corners and set new Right of Way property corners as directed by the Engineer. It is estimated that 85 corners shall be reestablished or set. The Land Surveyor shall preserve the location and reestablish all corners in accordance with South Dakota DOT Survey Manual, Chapter 8 Section J – Marking of Public Land Corners. All corners shall be set after all surfacing operations are completed.

<http://sddot.com/business/design/docs/survey/smchap8.pdf>

All costs associated with Reestablishing Property Corners in accordance with South Dakota DOT Survey Manual, including all costs to furnish all materials shall be incidental to the contract unit price per each for "Reestablish Property Corner".





FOR BIDDING PURPOSES ONLY

# TABLE OF PAVEMENT, CURB AND GUTTER, AND SIDEWALK QUANTITIES

STATE OF SOUTH DAKOTA		PROJECT NH 0050(122)384	SHEET B11	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

Station to Station	PCC Fillet Section		Concrete Curb and Gutter		Concrete Gutter		Type A PCC Approach Pavement		Type B PCC Approach Pavement		Concrete Sidewalk		Detectable Warning		Grinding											
	9"		Type B		Type P								Type 1		PCC											
	SqYd		Ft		Ft		SqYd	SqYd	SqYd		SqFt	SqFt	SqFt		SqFt											
<b>Burleigh to Paddle Wheel Drive</b>																										
45+54.26 R			126									217		20												
43+87.01 L			88		40		58.9					495	167													
<b>Paddle Wheel to 7th Street</b>																										
46+70.73 R			857		76		110.2					571		30												
46+83.00 L			793		160		271.2	46.2				3527	492	10		26.0										
<b>7th to Sohler Properties</b>																										
55+90.00 R			547		120		174.0					106		10												
56+74.23 L			712									1999	549	37												
<b>Sohler Properties to Ferdig Ave.</b>																										
62+55.00 R			1793		260	71.2	388.7					1741	676	48												
63+49.00 L	28.3		1954		80		63.6					8725	739	67												
<b>Ferdig Ave. to Archery Lane</b>																										
83+25.65 L			618										496	20												
83+29.50 R												2436	710	50												
<b>Total:</b>																										
	28.3		7488		736	71.2	1066.6	46.2				19029.0	4617.0	292		26.0										

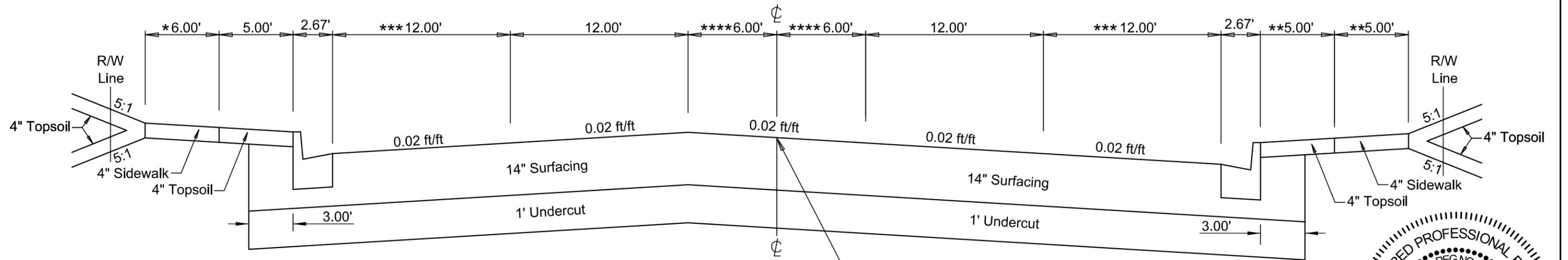


# TYPICAL GRADING SECTIONS

FOR BIDDING PURPOSES ONLY

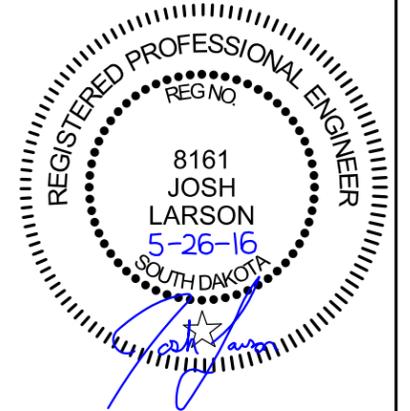
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B12	B77
Plotting Date: 5/31/2016			

## MAINLINE STA 45+57.07 TO STA 83+07.00

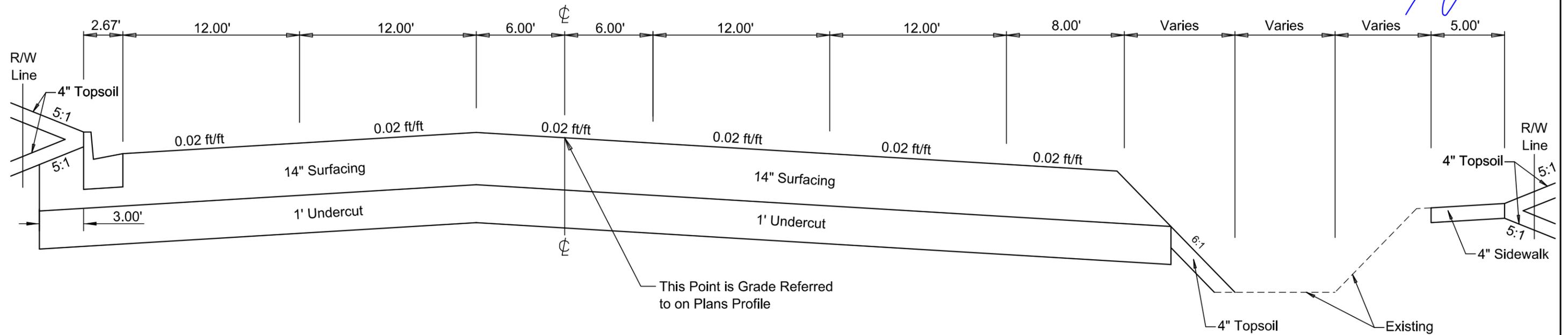


- \* -5.00' to 6.00' at Sta 55+88.75
- \*\* -See Curb and Gutter Sheets for locations where width is 0.00'
- \*\*\* -12.8' to 12' from Sta 45+57 to 47+00
- \*\*\*\* -0' to 6' from Sta 45+57 to 47+00

This Point is Grade Referred to on Plans Profile



## MAINLINE STA 83+07.00 TO STA 89+00.00



This Point is Grade Referred to on Plans Profile

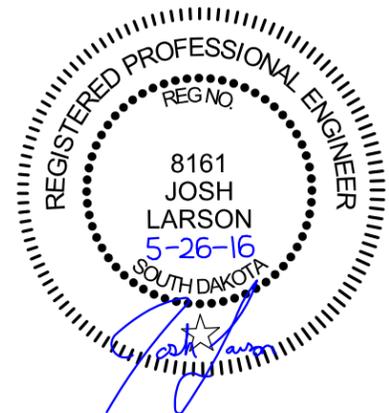
# HORIZONTAL ALIGNMENT DATA

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B13	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

4th Street/SD Highway 50				xr83 - Ferdig Avenue				
Type	Station		Northing	Easting	Type	Station	Northing	Easting
POB	36+97.72		209989.107	2759014.513	POB	0+00.00	212207.959	2762931.887
		TL= 49.16      S 89°09'09" E					TL= 13.83      N 3°01'45" W	
PC	37+46.89		209988.379	2759063.672	PC	0+13.83	212221.767	2762931.156
PI	41+92.42	R= 808.07    Delta = 57°44'27" L	209981.790	2759509.158	PI	0+74.35	212282.202	2762927.958
PT	45+61.24		210354.996	2759752.508	PT	1+32.07	212332.879	2762894.873
		TL= 814.35      S 89°09'09" E					TL= 18.16      N 33°08'22" W	
PI	45+61.24		210354.996	2759752.508	POE	1+50.23	212348.089	2762884.943
		TL= 71.36      N 33°06'23" E						
PC	46+32.60		210414.774	2759791.486				
PI	50+72.67	R= 1432.14    Delta = 34°09'45" R	210783.403	2760031.852				
PT	54+86.51		210953.449	2760437.745				
		TL= 853.91      N 33°06'23" E						
PI	54+86.51		210953.449	2760437.745				
		TL= 79.29      N 67°16'09" E						
PC	55+65.80		210984.087	2760510.877				
PI	62+61.62	R= 7639.49    Delta = 10°24'31" L	211252.954	2761152.652				
PT	69+53.61		211633.342	2761735.291				
		TL= 1387.81      N 67°16'09" E						
PI	69+53.61		211633.342	2761735.291				
		TL= 1446.39      N 56°51'38" E						
PI	84+00.00		212424.049	2762946.415				
		TL= 500.00      N 57°11'46" E						
PI	89+00.00		212694.933	2763366.679				
		TL= 400.57      N 56°27'33" E						
POE	93+00.57		212916.263	2763700.554				



The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. South Zone (NAD 83/2007); Geoid 09; SF=0.99993757



# LEGEND

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B15	B77

Plotting Date: 5/31/2016

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

**RIGHT OF WAY AND EASEMENT OWNERSHIP TABLE**

**FOR BIDDING PURPOSES ONLY**

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET NO. B16	TOTAL SHEETS B77
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Parcel No.	Station (Begin)	Station (End)	Side	Type	Purpose	Area	Property Owner	Property Description	Plotting Date: 5/31/2016
3	42+17.02	to 46+06.59	LT	TEMP	Cut, Fill, Sidewalk	27634 Sq.Ft.	City of Yankton, South Dakota, A Municipal Corporation	Lot 20 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
3	PURCHASE BY DESCRIPTION					0.06 Acres	City of Yankton, South Dakota, A Municipal Corporation	Lot 21 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
3A	PLAT PERMANENT EASEMENT		LT	PERM	Drainage	1351 Sq.Ft. 0.03 Acres	City of Yankton, South Dakota, A Municipal Corporation	Lot 20 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
4	PURCHASE BY DESCRIPTION					1637 Sq.Ft. 0.04 Acres	City of Yankton, South Dakota, A Municipal Corporation	Lot 18 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
5	PLAT					9162 Sq.Ft. 0.21 Acres	City of Yankton, South Dakota, A Municipal Corporation	Lot 7 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
5	54+57.90	to 56+10.35	LT	TEMP	Cut, Fill, Driveway	1630 Sq.Ft.	City of Yankton, South Dakota, A Municipal Corporation	Lot 7 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
A50	45+61.44	to 49+79.69	LT	TEMP	Cut, Fill, Driveway	2915 Sq.Ft.	Larry M. Clark and Joan A. Clark Family Trust	Lots Four (4) and Seventeen (17), Railroad Subdivision, City and County of Yankton, South Dakota.	
6	PURCHASE BY DESCRIPTION					4507 Sq.Ft. 0.10 Acres	City of Yankton, South Dakota	Lot 8 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
6A	PLAT PERMANENT EASEMENT		RT	PERM	Drainage	1392 Sq.Ft. 0.03 Acres	City of Yankton, A Municipal Corporation	Marne Creek Tract #19 in the City of Yankton, Yankton County, South Dakota	
6A	44+42.83	to 46+23.06	RT	TEMP	Cut, Fill	1855 Sq.Ft.	City of Yankton, A Municipal Corporation	Marne Creek Tract #19 in the City of Yankton, Yankton County, South Dakota	
7	PLAT					4280 Sq.Ft. 0.10 Acres	City of Yankton, South Dakota	Lot 34 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
7	46+93.03	to 54+85.59	RT	TEMP	Cut, Fill, Driveway	9649 Sq.Ft.	City of Yankton, South Dakota	Lot 34 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
A52	49+78.62	to 50+96.50	LT	TEMP	Cut, Fill, Driveway	923 Sq.Ft.	Robert W. Klimisch	Tract D of Lot Five (5), Railroad Subdivision, City and county of Yankton, South Dakota.	
A53	50+96.33	to 52+58.01	LT	TEMP	Cut, Fill, Driveway	2388 Sq.Ft.	Meridian Bridge, Inc.	Tract C of Lot Five (5), Railroad Subdivision, City and county of Yankton, South Dakota.	
8	PLAT					4 Sq.Ft. 0.00 Acres	Mitchell Family Limited Partnership	Lot 6 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
8	52+57.17	to 56+13.26	LT	TEMP	Cut, Fill, Driveway	1816 Sq.Ft.	Mitchell Family Limited Partnership	Lot 6 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
9	PURCHASE BY DESCRIPTION					169 Sq.Ft. 0.004 Acres	City of Yankton, South Dakota	Lot 9 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
10	PLAT					2202 Sq.Ft. 0.05 Acres	City of Yankton, South Dakota	Lot 12 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
10	56+96.81	to 58+74.30	LT	TEMP	Cut, Fill	1593 Sq.Ft.	City of Yankton, South Dakota	Lot 12 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
A54	56+93.79	to 57+38.71	LT	TEMP	Cut, Fill	540 Sq.Ft.	Sohler Properties, L.L.C.	Lots 10 and 11 of Railroad Subdivision, City and County of Yankton, South Dakota.	
11	PLAT					2916 Sq.Ft. 0.07 Acres	Pamela J. Frick and John G. Frick, Trustees of the John G. Frick Revocable Trust	Outlot 108 of the County Auditor's Plat of Outlots, City and County of Yankton, South Dakota.	
11A	PLAT					7738 Sq.Ft. 0.18 Acres	Pamela J. Frick and John G. Frick, Trustees of the John G. Frick Revocable Trust	Outlot 108 of the County Auditor's Plat of Outlots, City and County of Yankton, South Dakota.	
11A	53+95.91	to 58+33.88	RT	TEMP	Cut, Fill, Driveway	5522 Sq.Ft.	City of Yankton	Lot U1 in Outlot 108 of the County Auditor's Plat of Outlots, City and County of Yankton, South Dakota.	
A55	53+95.91	to 56+07.75	RT	TEMP	Cut, Fill, Driveway	2514 Sq.Ft.	Pamela J. Frick and John G. Frick, Trustees of the John G. Frick Revocable Trust	Outlot 108 of the County Auditor's Plat of Outlots, City and County of Yankton, South Dakota.	
12	PLAT					26799 Sq.Ft. 0.62 Acres	City of Yankton, South Dakota	Lot 16 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
12	58+69.83	to 82+52.30	LT	TEMP	Cut, Fill, Driveway	21727 Sq.Ft. 0.50 Acres	City of Yankton, South Dakota	Lot 16 of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
A56	62+69.00	to 64+35.00	LT	TEMP	Cut, Fill, Driveway	2377 Sq.Ft.	Sohler Properties, L.L.C.	Lot Fourteen (14) of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
	71+29.00	to 71+88.00	LT	TEMP	Cut, Fill, Driveway	315 Sq.Ft.	Sohler Properties, L.L.C.	Lot Fifteen (15) of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
13	PLAT					277 Sq.Ft. 0.01 Acres	Sohler Properties, L.L.C.	Lot Fifteen (15) of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
13	74+83.00	to 75+48.00	LT	TEMP	Cut, Fill, Driveway	347 Sq.Ft.	Sohler Properties, L.L.C.	Lot Fifteen (15) of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
	82+29.76	to 82+75.02	LT	TEMP	Cut, Fill, Driveway	944 Sq.Ft.	Sohler Properties, L.L.C.	Lot Fifteen (15) of Railroad Subdivision, in the City of Yankton, Yankton County, South Dakota.	
14	PLAT					745 Sq.Ft. 0.02 Acres	Gary Becker	Outlot A, Branaugh's Addition in Section Seventeen (17), Township Ninety-Three (93) North, Range Fifty-Five (55) West, of the 5th P.M., Yankton County, South Dakota.	
14A	PLAT					3150 Sq.Ft. 0.08 Acres	Gary Becker	Outlot A, Branaugh's Addition in Section Seventeen (17), Township Ninety-Three (93) North, Range Fifty-Five (55) West, of the 5th P.M., Yankton County, South Dakota.	
14A	58+29.81	to 59+90.11	RT	TEMP	Cut, Fill, Driveway	1591 Sq.Ft.	City of Yankton	Lot U1 in Outlot A, Branaugh's Addition in Section Seventeen (17), Township Ninety-Three (93) North, Range Fifty-Five (55) West, of the 5th P.M., Yankton County, South Dakota.	
14B	PLAT					72 Sq.Ft. 0.00 Acres	Gary Becker	Bernard Tramp Addition in Section Seventeen (17), Township Ninety-Three (93) North, Range Fifty-Five (55) West, of the 5th P.M., Yankton County, South Dakota.	
15	PLAT					487 Sq.Ft. 0.01 Acres	Gary Becker Et Al.	Outlot 1, Branaugh's Addition of Section Seventeen (17), Township Ninety-Three (93) North, Range Fifty-Five (55) West, of the 5th P.M., Yankton County, South Dakota.	
15A	PLAT					3300 Sq.Ft. 0.08 Acres	Gary Becker Et Al.	Outlot 1, Branaugh's Addition of Section Seventeen (17), Township Ninety-Three (93) North, Range Fifty-Five (55) West, of the 5th P.M., Yankton County, South Dakota.	

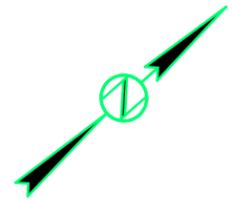




STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B18	B77

Plotting Date: 5/31/2016

**FOR BIDDING PURPOSES ONLY**



44+91-0' L to 45+46-0' L  
Controlled Density Fill  
For Pipe 30" - 55' RCP

45+26.6 - 42.1' L  
Install Bank and Channel  
Protection Gabions (6.0 CY)

45+46-0' L to 45+70-25' L  
Take out 18"-35' RCP  
(Incidental Work, Grading)

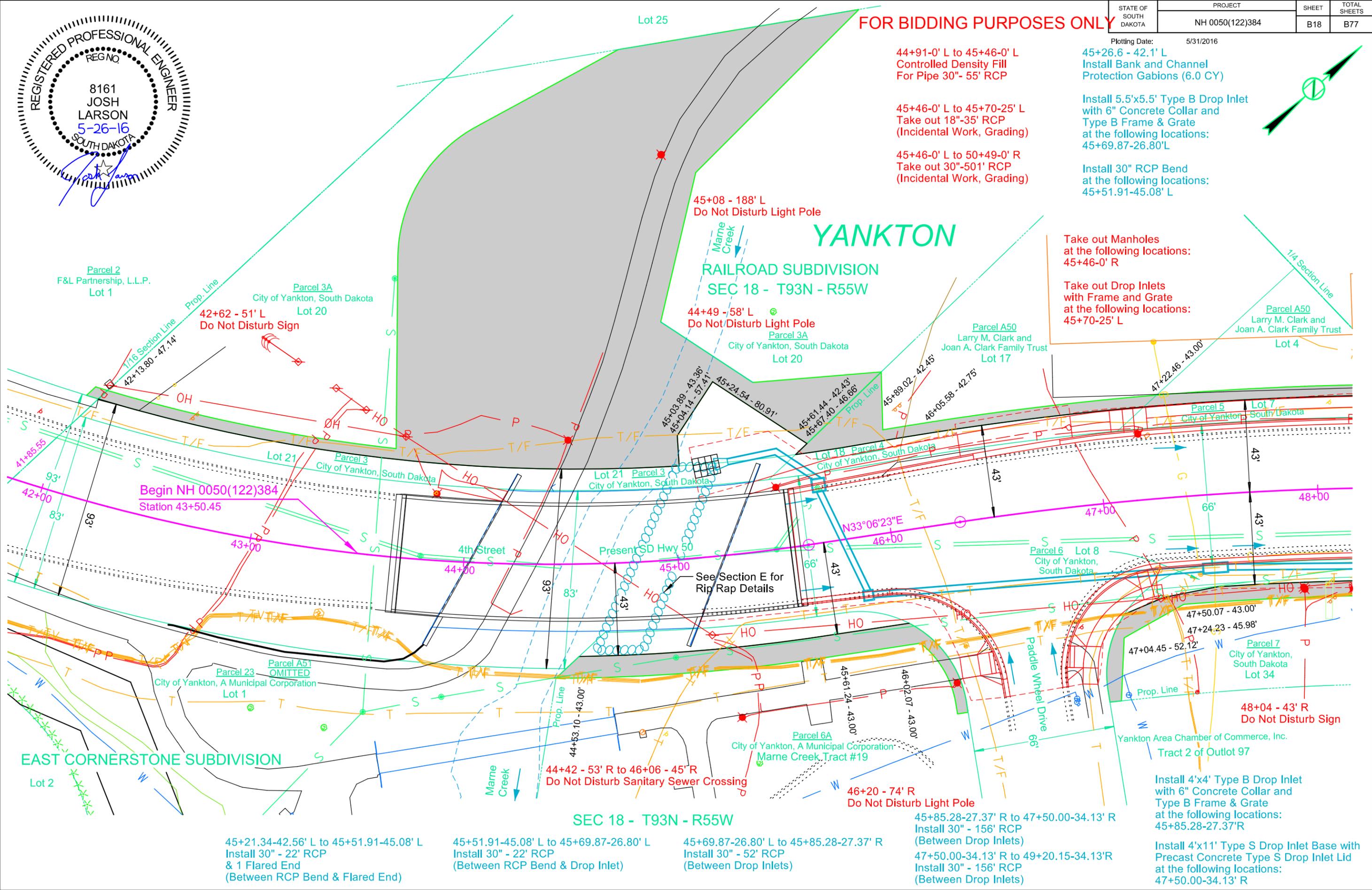
Install 5.5'x5.5' Type B Drop Inlet  
with 6" Concrete Collar and  
Type B Frame & Grate  
at the following locations:  
45+69.87-26.80'L

45+46-0' L to 50+49-0' R  
Take out 30"-501' RCP  
(Incidental Work, Grading)

Install 30" RCP Bend  
at the following locations:  
45+51.91-45.08' L

Take out Manholes  
at the following locations:  
45+46-0' R

Take out Drop Inlets  
with Frame and Grate  
at the following locations:  
45+70-25' L



45+08 - 188' L  
Do Not Disturb Light Pole

**YANKTON**

**RAILROAD SUBDIVISION  
SEC 18 - T93N - R55W**

44+49 - 58' L  
Do Not Disturb Light Pole

42+62 - 51' L  
Do Not Disturb Sign

Begin NH 0050(122)384  
Station 43+50.45

See Section E for  
Rip Rap Details

48+04 - 43' R  
Do Not Disturb Sign

44+42 - 53' R to 46+06 - 45' R  
Do Not Disturb Sanitary Sewer Crossing

46+20 - 74' R  
Do Not Disturb Light Pole

Install 4'x4' Type B Drop Inlet  
with 6" Concrete Collar and  
Type B Frame & Grate  
at the following locations:  
45+85.28-27.37'R

Install 4'x11' Type S Drop Inlet Base with  
Precast Concrete Type S Drop Inlet Lid  
at the following locations:  
47+50.00-34.13' R

45+21.34-42.56' L to 45+51.91-45.08' L  
Install 30" - 22' RCP  
& 1 Flared End  
(Between RCP Bend & Flared End)

45+51.91-45.08' L to 45+69.87-26.80' L  
Install 30" - 22' RCP  
(Between RCP Bend & Drop Inlet)

45+69.87-26.80' L to 45+85.28-27.37' R  
Install 30" - 52' RCP  
(Between Drop Inlets)

45+85.28-27.37' R to 47+50.00-34.13' R  
Install 30" - 156' RCP  
(Between Drop Inlets)  
47+50.00-34.13' R to 49+20.15-34.13' R  
Install 30" - 156' RCP  
(Between Drop Inlets)

**EAST CORNERSTONE SUBDIVISION**

**SEC 18 - T93N - R55W**

Parcel 2  
F&L Partnership, L.L.P.  
Lot 1

Parcel 3A  
City of Yankton, South Dakota  
Lot 20

Parcel 3A  
City of Yankton, South Dakota  
Lot 20

Parcel A50  
Larry M. Clark and  
Joan A. Clark Family Trust  
Lot 17

Parcel A50  
Larry M. Clark and  
Joan A. Clark Family Trust  
Lot 4

Parcel 5  
City of Yankton,  
South Dakota  
Lot 7

Lot 21  
Parcel 3  
City of Yankton, South Dakota

Lot 18  
Parcel 4  
City of Yankton, South Dakota

Parcel 6  
Lot 8  
City of Yankton,  
South Dakota

Parcel 7  
City of Yankton,  
South Dakota  
Lot 34

Parcel 23  
City of Yankton, A Municipal Corporation  
Lot 1

Parcel A51  
OMITTED  
City of Yankton, A Municipal Corporation

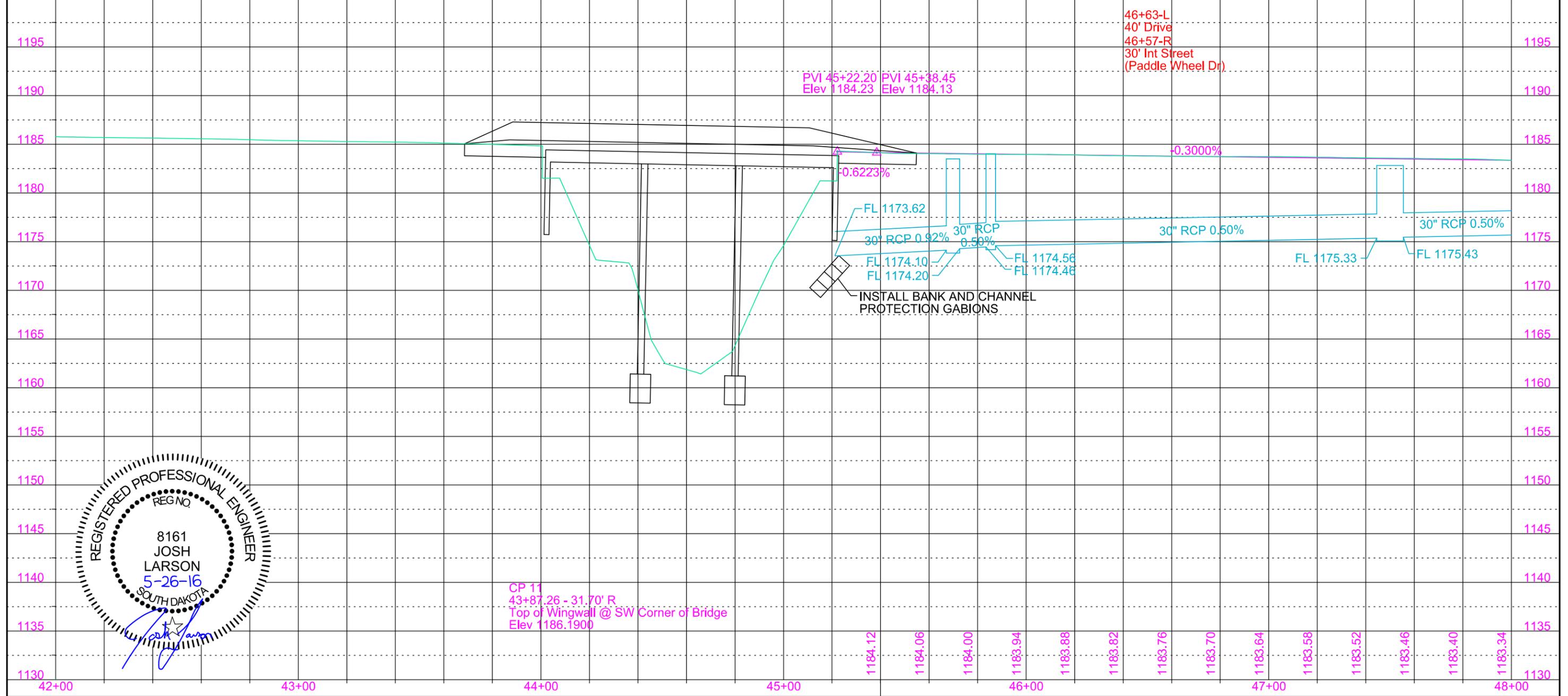
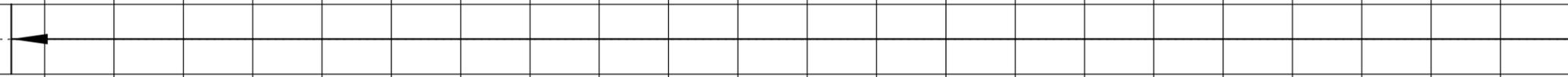
Parcel 6A  
City of Yankton, A Municipal Corporation  
Marne Creek Tract #19

Yankton Area Chamber of Commerce, Inc.  
Tract 2 of Outlot 97

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B19	TOTAL SHEETS B77
Plotting Date: 5/31/2016			

43+50.45  
Begin Work



46+63-L  
40' Drive  
46+57-R  
30' Int Street  
(Paddle Wheel Dr)

PVI 45+22.20 Elev 1184.23  
PVI 45+38.45 Elev 1184.13

-0.6223%

+0.3000%

FL 1173.62

30" RCP 0.52%

FL 1174.10  
FL 1174.20

30" RCP 0.50%

FL 1174.56  
FL 1174.46

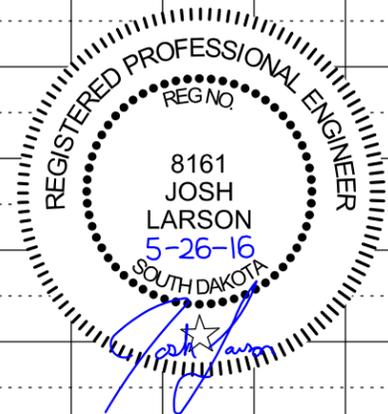
30" RCP 0.50%

FL 1175.33

FL 1175.43

INSTALL BANK AND CHANNEL  
PROTECTION GABIONS

CP 11  
43+87.26 - 31.70' R  
Top of Wingwall @ SW Corner of Bridge  
Elev 1186.1900



1184.12  
1184.06  
1184.00  
1183.94  
1183.88  
1183.82  
1183.76  
1183.70  
1183.64  
1183.58  
1183.52  
1183.46  
1183.40  
1183.34

42+00 43+00 44+00 45+00 46+00 47+00 48+00

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B20	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

**FOR BIDDING PURPOSES ONLY**

50+47-28' L to 50+49-0' R  
Take out 18"-28' RCP  
(Incidental Work, Grading)

50+49-0' R to 50+49-29' R  
Take out 18"-29' RCP  
(Incidental Work, Grading)

49+20.15-34.13' R to 50+44.85-34.13' R  
Install 30" - 112' RCP  
(Between Drop Inlets)

Take out Manholes  
at the following locations:  
50+49-0' R

Take out Drop Inlets  
with Frame and Grate  
at the following locations:  
50+47-28' L  
50+49-29' R

50+44.85-34.13' R to 50+45.23-31.67' L  
Install 18" - 64' RCP  
(Between Drop Inlets)

50+44.85-34.13' R to 51+68.00-34.13' R  
Install 24" - 110' RCP  
(Between Drop Inlets)

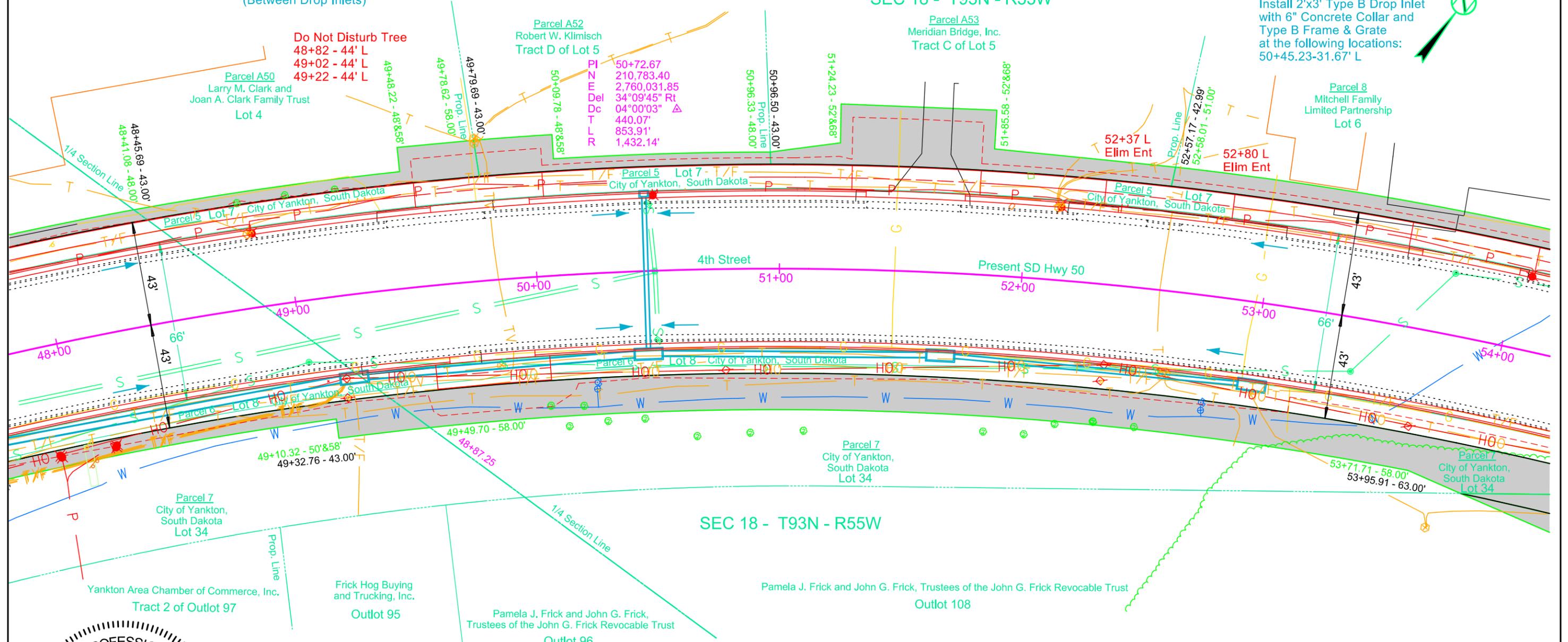
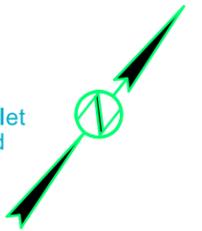
51+68.00-34.13' R to 53+00.00-34.13' R  
Install 18" - 118' RCP  
(Between Drop Inlets)

Install 4'x11' Type S Drop Inlet Base with Precast Concrete Type S Drop Inlet Lid at the following locations:  
49+20.15-34.13'R  
50+44.85-34.13'R  
51+68.00-34.13'R  
53+00.00-34.13'R

Install 2'x3' Type B Drop Inlet with 6" Concrete Collar and Type B Frame & Grate at the following locations:  
50+45.23-31.67' L

# YANKTON

## RAILROAD SUBDIVISION SEC 18 - T93N - R55W



### COUNTY AUDITOR'S PLAT OF OUTLOTS





STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B22	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

**FOR BIDDING PURPOSES ONLY**

57+00-65' L  
Remove and Replace  
Large Landscaping Rocks  
(Incidental Work, Grading)

Install 18" - 66' RCP  
(Between Drop Inlets)

58+84.53-34.13' R to 61+94.00-34.13' R  
Install 24" - 300' RCP  
(Between Drop Inlets)

Install 4'x11' Type S Drop Inlet Base with  
Precast Concrete Type S Drop Inlet Lid  
at the following locations:  
58+70.00-34.13' L  
58+84.53-34.13' R

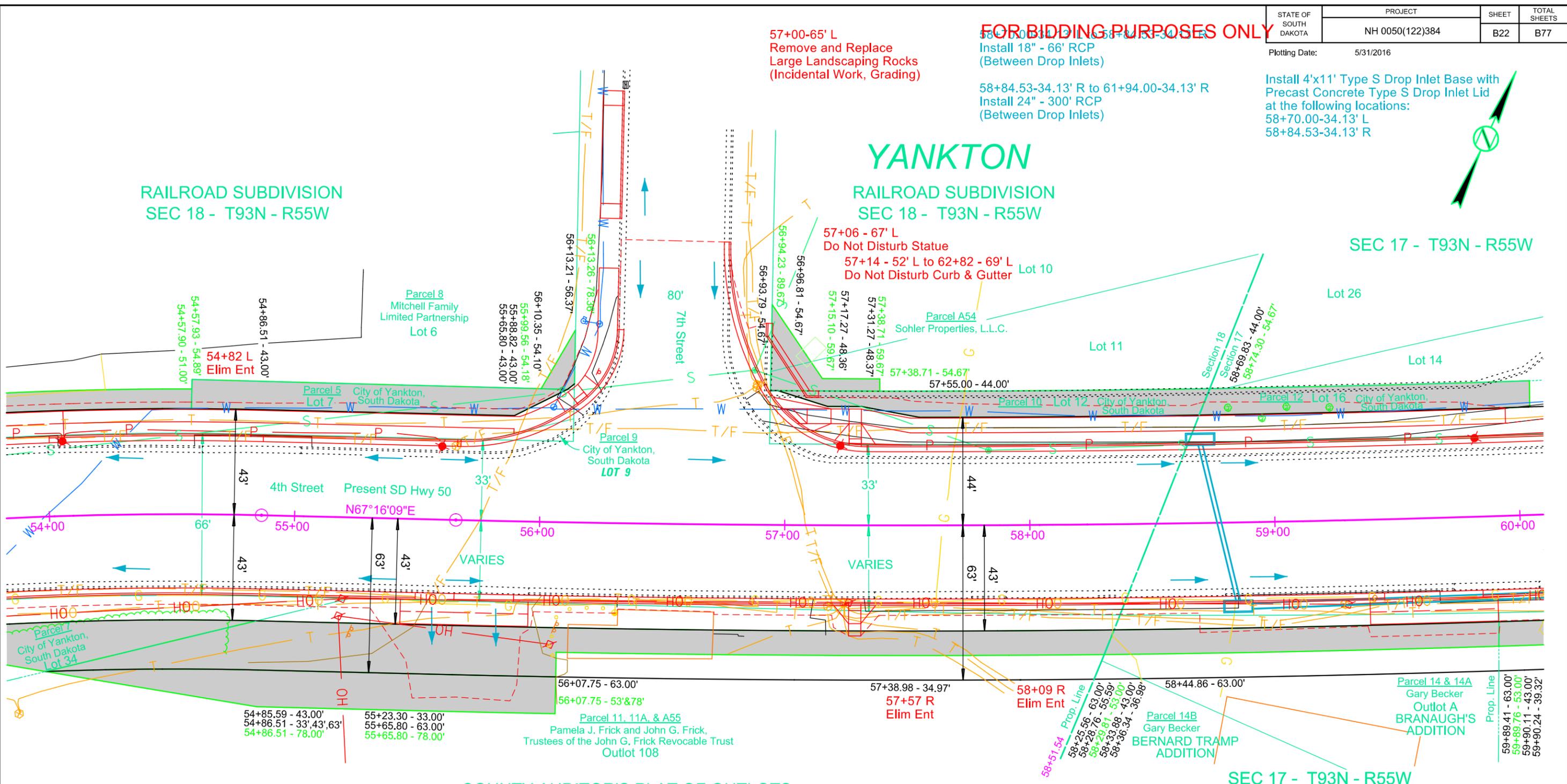


**YANKTON**  
RAILROAD SUBDIVISION  
SEC 18 - T93N - R55W

RAILROAD SUBDIVISION  
SEC 18 - T93N - R55W

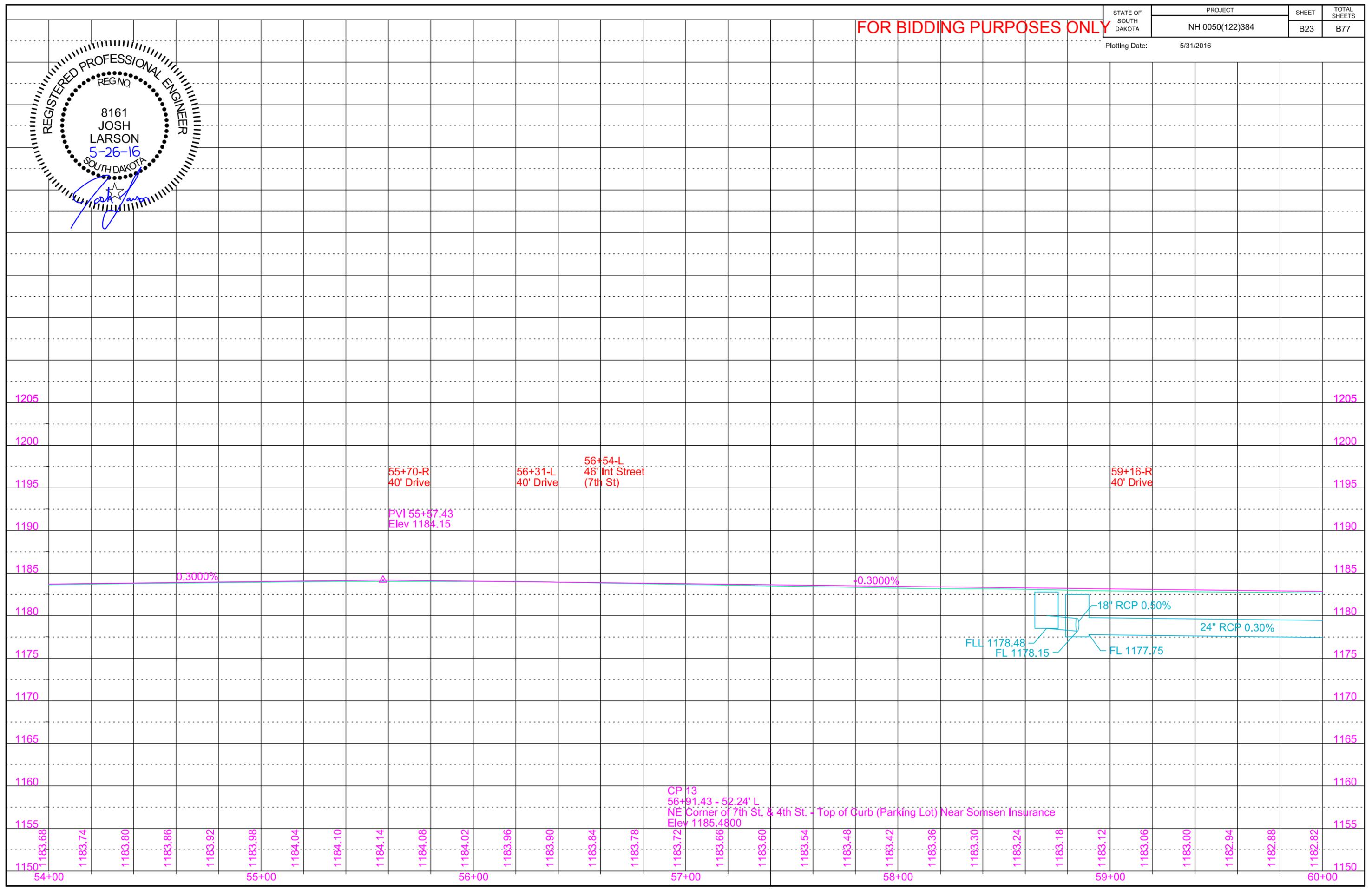
SEC 17 - T93N - R55W

COUNTY AUDITOR'S PLAT OF OUTLOTS  
SEC 18 - T93N - R55W



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B23	TOTAL SHEETS B77
Plotting Date: 5/31/2016			



55+70-R  
40' Drive

56+31-L  
40' Drive

56+54-L  
46' Int Street  
(7th St)

59+16-R  
40' Drive

PVI 55+37.43  
Elev 1184.15

0.3000%

+0.3000%

18" RCP 0.50%

24" RCP 0.30%

FL 1178.48  
FL 1178.15

FL 1177.75

CP 13  
56+91.43 - 52.24' L  
NE Corner of 7th St. & 4th St. - Top of Curb (Parking Lot) Near Somsen Insurance  
Elev 1185.4800

1150	1183.68	1183.74	1183.80	1183.86	1183.92	1183.98	1184.04	1184.10	1184.14	1184.08	1184.02	1183.96	1183.90	1183.84	1183.78	1183.72	1183.66	1183.60	1183.54	1183.48	1183.42	1183.36	1183.30	1183.24	1183.18	1183.12	1183.06	1183.00	1182.94	1182.88	1182.82	1155
54+00						55+00					56+00					57+00											59+00				60+00	1155

60+47-27' L to 60+49-1' R  
Take out 18"-29' RCP  
(Incidental Work, Grading)

60+47-29' R to 60+49-1' R  
Take out 18"-28' RCP  
(Incidental Work, Grading)

60+49-1' R to 65+48-1' R  
Take out 24"-500' RCP  
(Incidental Work, Grading)

Take out Manholes  
at the following locations:  
60+49-1' R  
65+48-1' R

Take out Drop Inlets  
with Frame and Grate  
at the following locations:  
60+47-27' L  
60+47-29' R  
65+48-27' L  
65+48-29' R

61+94.00-34.13' L to 61+94.00-34.13' R  
Install 18" - 66' RCP  
(Between Drop Inlets)

61+94.00-34.13' R to 65+26.43-34.13' R  
Install 24" - 324' RCP  
(Between Drop Inlets)

65+48-27' L to 65+48-1' R  
Take out 18"-29' RCP  
(Incidental Work, Grading)

65+48-29' R to 65+48-1' R  
Take out 18"-29' RCP  
(Incidental Work, Grading)

65+48-1' R to 71+23-1' R  
Take out 30"-576' RCP  
(Incidental Work, Grading)

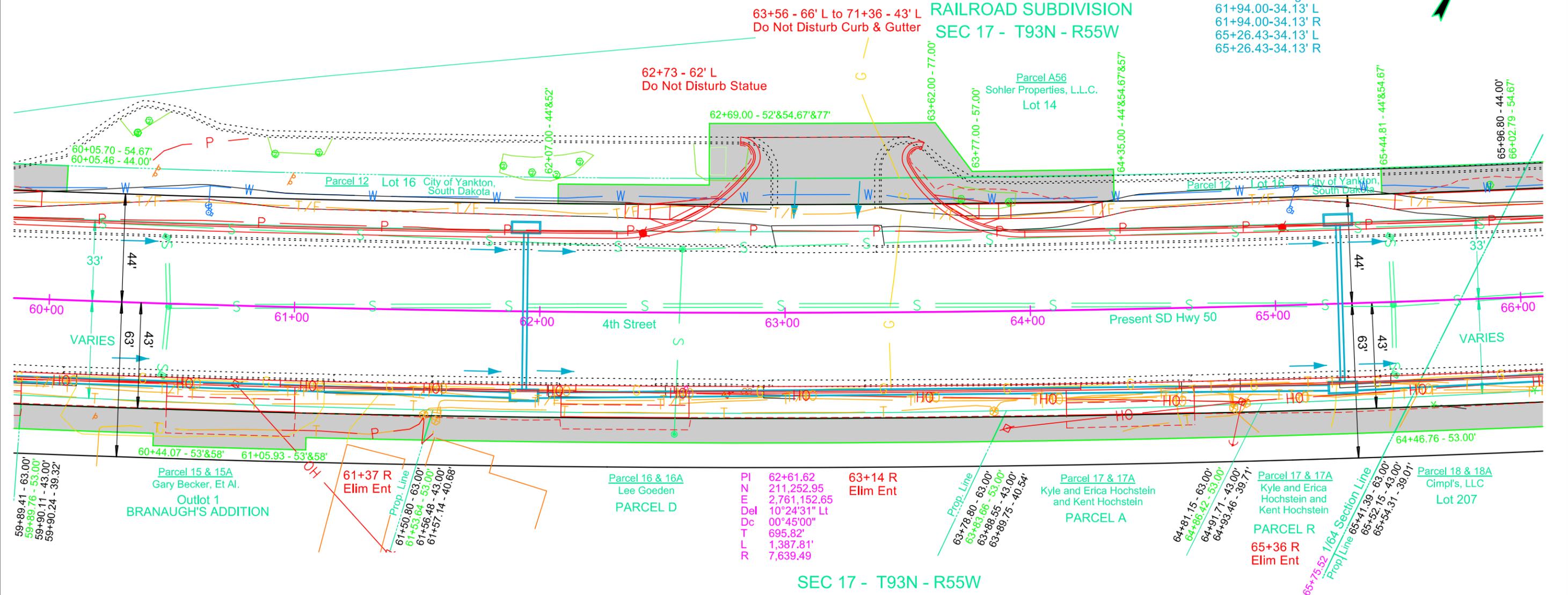
STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B24	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

# YANKTON

## RAILROAD SUBDIVISION

### SEC 17 - T93N - R55W

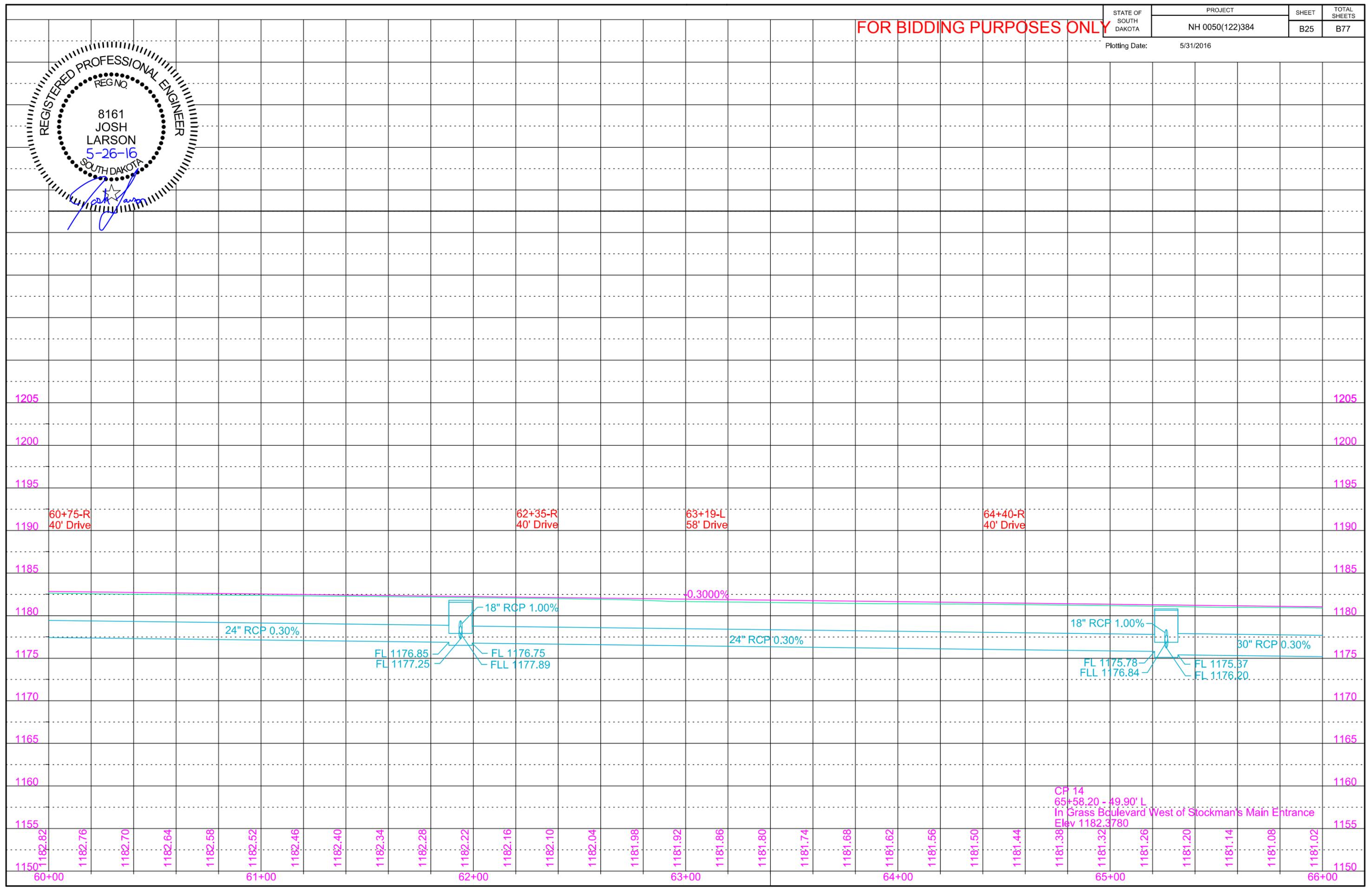
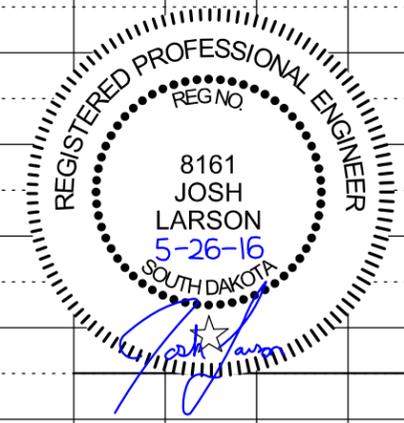


PI 62+61.62  
N 211,252.95  
E 2,761,152.65  
Del 10°24'31" Lt  
Dc 00°45'00"  
T 695.82'  
L 1,387.81'  
R 7,639.49

### SEC 17 - T93N - R55W

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B25	B77
Plotting Date: 5/31/2016			



1205  
1200  
1195  
1190  
1185  
1180  
1175  
1170  
1165  
1160  
1155  
1150

1205  
1200  
1195  
1190  
1185  
1180  
1175  
1170  
1165  
1160  
1155  
1150

60+00 61+00 62+00 63+00 64+00 65+00 66+00

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B26	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

68+10.00-34.13' L to 68+10.00-34.13' R  
Install 18" - 66' RCP  
(Between Drop Inlets)

68+10.00-34.13' R to 69+67.00-31.67' R  
Install 36" - 152' RCP  
(Between Drop Inlets)

69+67.00-31.67' L to 69+67.00-31.67' R  
Install 18" - 62' RCP  
(Between Drop Inlets)

69+67.00-31.67' R to 71+22.00-35.63' R  
Install 36" - 148' RCP  
(Between Drop Inlets)

71+22-27' L to 71+23-1' R  
Take out 18"-28' RCP  
(Incidental Work, Grading)

71+22-30' R to 71+23-1' R  
Take out 18"-29' RCP  
(Incidental Work, Grading)

71+23-1' R to 77+05-1' R  
Take out 42"-582' RCP  
(Incidental Work, Grading)

**FOR BIDDING PURPOSES ONLY**

Take out Manholes at the following locations:  
71+23-1' R

Take out Drop Inlets with Frame and Grate at the following locations:  
71+22-27' L  
71+22-30' R

71+22.00-34.13' L to 71+22.00-35.63' R  
Install 18" - 66' RCP  
(Between Drop Inlets)

71+22.00-35.63' R to 72+56.98-31.67' R  
Install 42" - 128' RCP  
(Between Drop Inlets)

Install 4'x11' Type S Drop Inlet Base with Precast Concrete Type S Drop Inlet Lid at the following locations:  
68+10.00-34.13' L  
68+10.00-34.13' R  
71+22.00-34.13' L

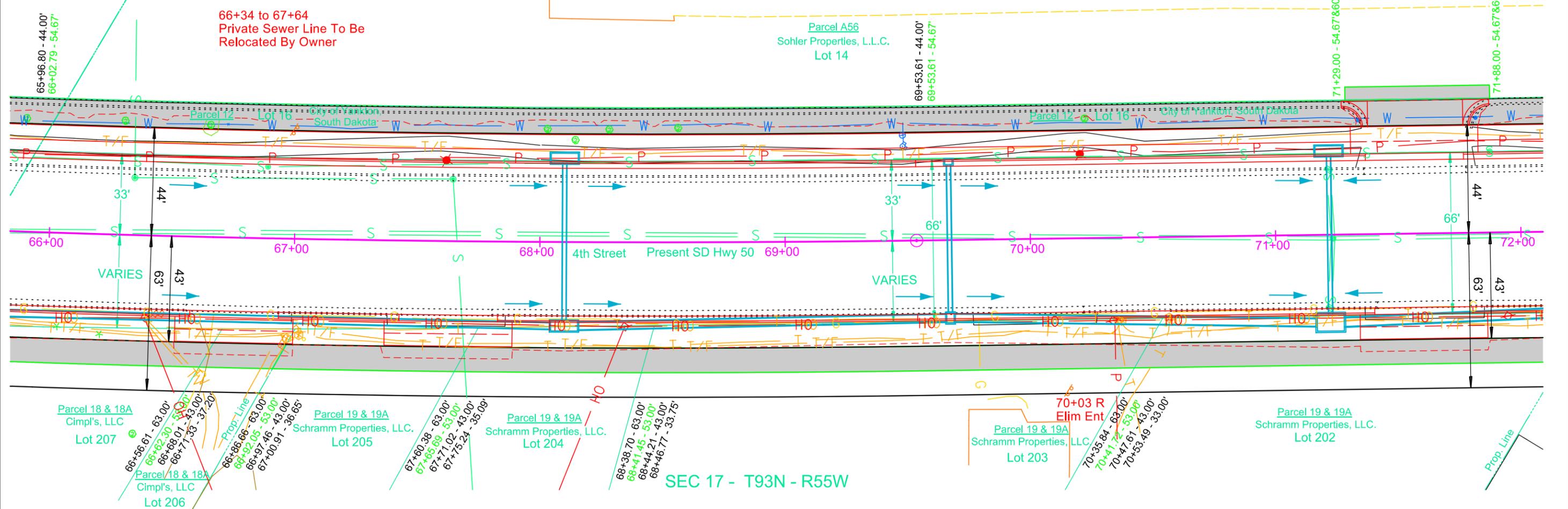
Install 2'x3' Type B Drop Inlet with 6" Concrete Collar and Type B Frame & Grate at the following location:  
69+67.00-31.67' L

71+78 - 43' L to 74+89 - 52' L  
Do Not Disturb Curb & Gutter

# YANKTON

## RAILROAD SUBDIVISION

### SEC 17 - T93N - R55W



66+34 to 67+64  
Private Sewer Line To Be Relocated By Owner

Parcel A56  
Sohler Properties, L.L.C.  
Lot 14

Parcel 18 & 18A  
Cimpl's, LLC  
Lot 207

Parcel 18 & 18A  
Cimpl's, LLC  
Lot 206

Parcel 19 & 19A  
Schramm Properties, LLC.  
Lot 205

Parcel 19 & 19A  
Schramm Properties, LLC.  
Lot 204

68+38.70 - 63.00'  
68+41.45 - 53.00'  
68+44.21 - 43.00'  
68+46.77 - 33.75'

### SEC 17 - T93N - R55W

Parcel 19 & 19A  
Schramm Properties, LLC  
Lot 203

Parcel 19 & 19A  
Schramm Properties, LLC.  
Lot 202



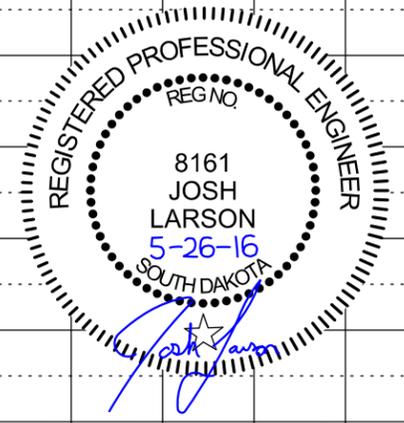
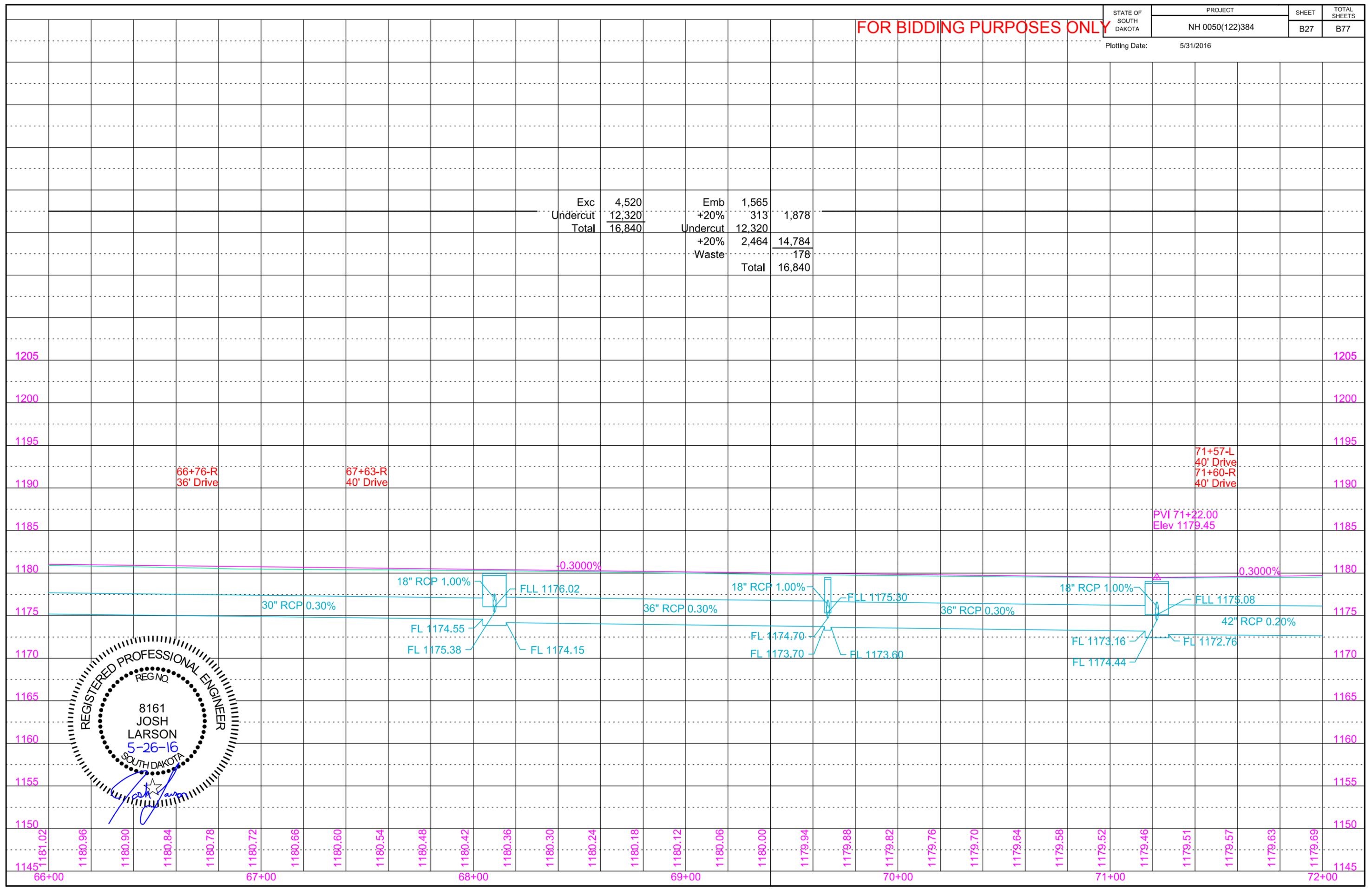
Install 4'x3' Type B Drop Inlet with 6" Concrete Collar and Type B Frame & Grate at the following location:  
69+67.00-31.67' R

Install 7'x11' Type S Drop Inlet Base with Precast Concrete Type S Drop Inlet Lid at the following locations:  
71+22.00-35.63' R

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B27	TOTAL SHEETS B77
Plotting Date: 5/31/2016			

Exc	4,520	Emb	1,565	
Undercut	12,320	+20%	313	1,878
Total	16,840	Undercut	12,320	
		+20%	2,464	14,784
		Waste		178
		Total	16,840	



STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B28	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

72+56.98-31.67' L to 72+56.98-31.67' R  
Install 18" - 60' RCP  
(Between Drop Inlets)

72+56.98-31.67' R to 74+21.48-35.63' R  
Install 42" - 158' RCP  
(Between Drop Inlets)

73+97.00-34.13' L to 74+21.48-35.63' R  
Install 18" - 70' RCP  
(Between Drop Inlets)

74+21.48-35.63' R to 77+05.20-35.63' R  
Install 42" - 274' RCP  
(Between Drop Inlets)

77+05.20-36.63' L to 77+05.20-35.63' R  
Install 60" - 70' RCP  
(Between Existing Pipe & Drop Inlet)

77+05.20-35.63' R to 79+80.00-34.13' R  
Install 24" - 264' RCP  
(Between Drop Inlets)

**FOR BIDDING PURPOSES ONLY**

at the following locations:  
77+05-1' R

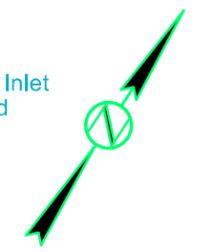
77+05-36' L to 77+05-1' R  
Take out 60"-42' RCP  
(Incidental Work, Grading)

77+05-1' R to 77+05-39' R  
Take out 72"-42' RCP  
(Incidental Work, Grading)

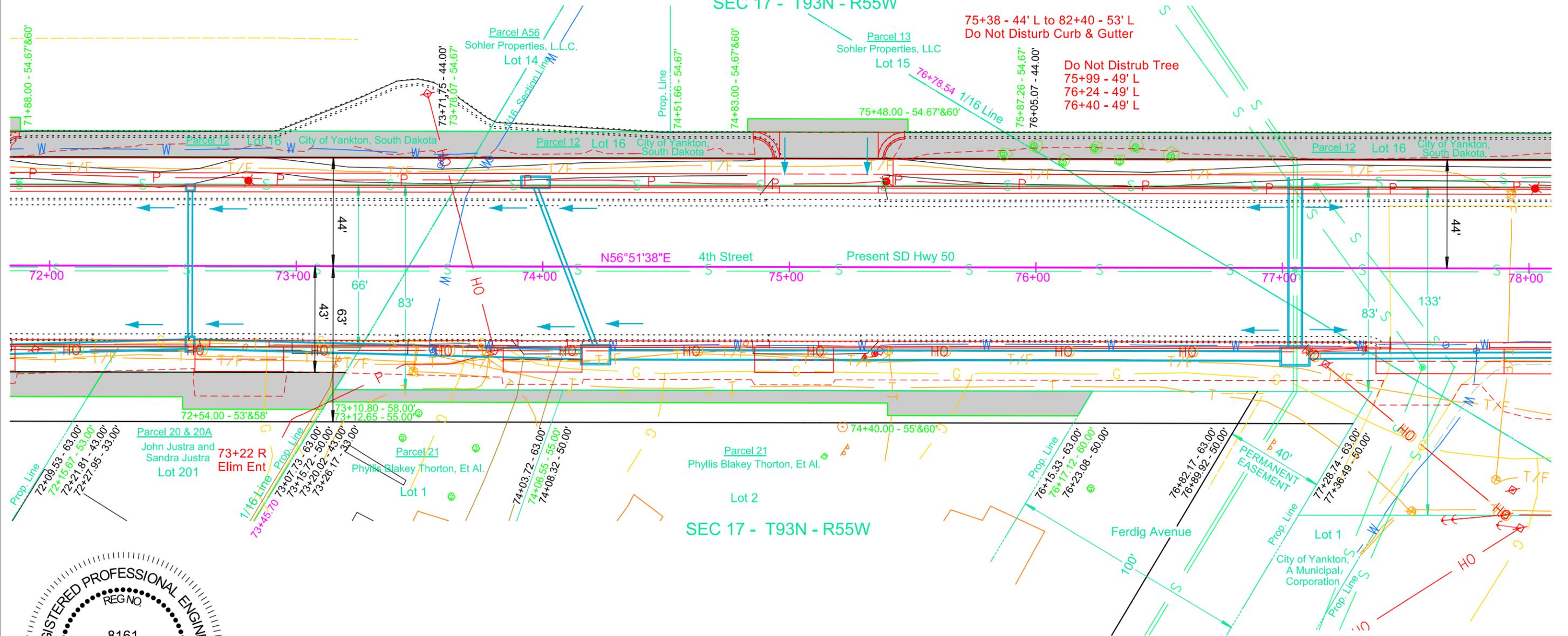
77+05-1' R to 82+50-1' R  
Take out 24"-545' RCP  
(Incidental Work, Grading)

Install 2'x3' Type B Drop Inlet with 6" Concrete Collar and Type B Frame & Grate at the following location:  
72+56.98-31.67' L

Install 5.5'x3' Type B Drop Inlet with 6" Concrete Collar and Type B Frame & Grate at the following location:  
72+56.98-31.67' R



**YANKTON**  
RAILROAD SUBDIVISION  
SEC 17 - T93N - R55W



75+38 - 44' L to 82+40 - 53' L  
Do Not Disturb Curb & Gutter

Do Not Disturb Tree  
75+99 - 49' L  
76+24 - 49' L  
76+40 - 49' L

PERMANENT EASEMENT  
P 40'



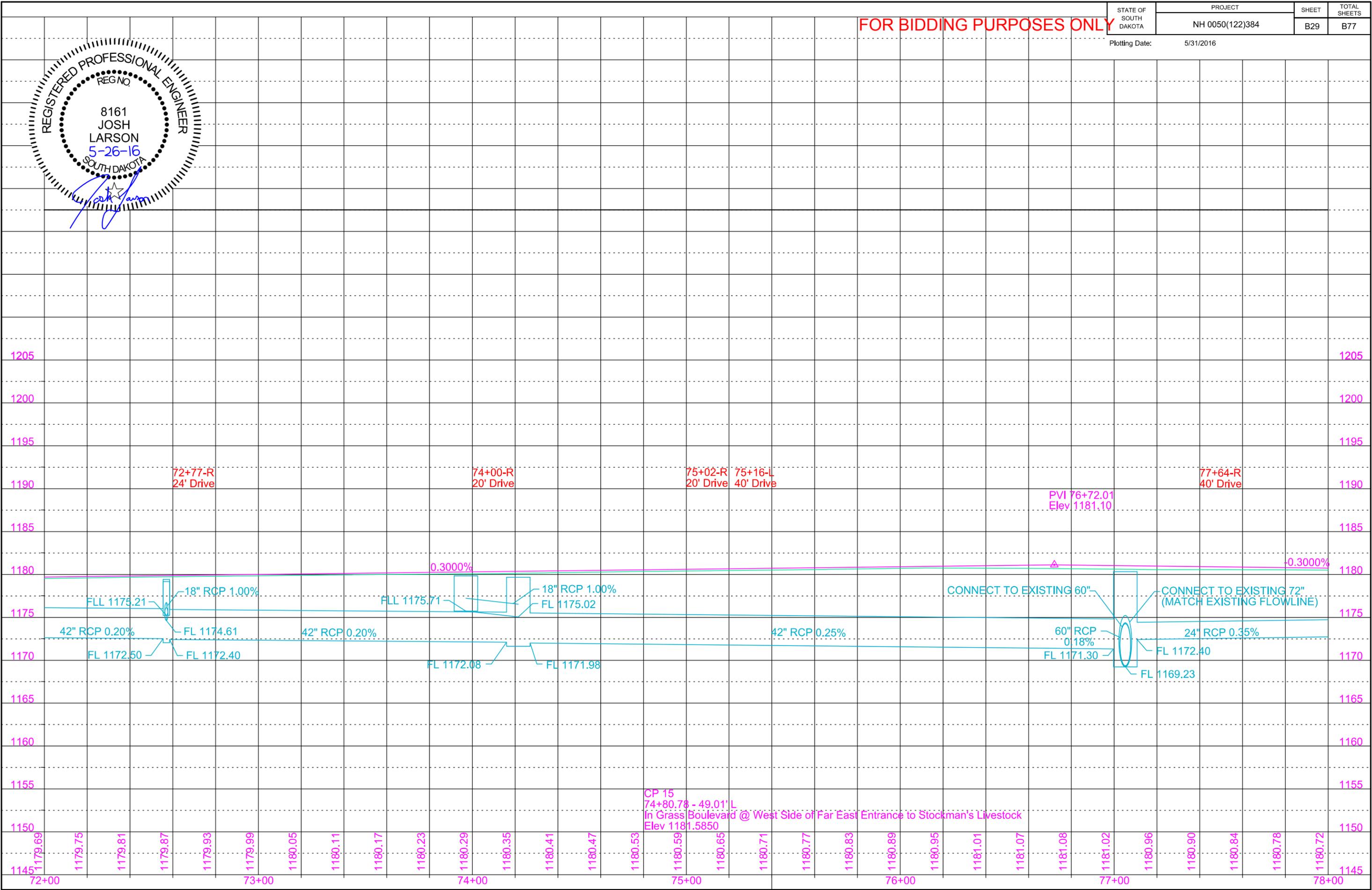
Install 4'x11' Type S Drop Inlet Base with Precast Concrete Type S Drop Inlet Lid at the following locations:  
73+97.00-34.13' L

Install 7'x11' Type S Drop Inlet Base with Precast Concrete Type S Drop Inlet Lid at the following locations:  
74+21.48-35.63' R  
77+05.20-35.63' R

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B29	TOTAL SHEETS B77
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Plotting Date: 5/31/2016



1205

1205

1200

1200

1195

1195

1190

1190

1185

1185

1180

1180

1175

1175

1170

1170

1165

1165

1160

1160

1155

1155

1150

1150

1145

1145

72+00

73+00

74+00

75+00

76+00

77+00

78+00

CP 15  
74+80.78 - 49.01' L  
In Grass Boulevard @ West Side of Far East Entrance to Stockman's Livestock  
Elev 1181.5850

72+77-R  
24' Drive

74+00-R  
20' Drive

75+02-R  
20' Drive

75+16-L  
40' Drive

77+64-R  
40' Drive

PVI 76+72.01  
Elev 1181.10

0.3000%

0.3000%

FLL 1175.21

FLL 1175.71

FL 1175.02

CONNECT TO EXISTING 60"

CONNECT TO EXISTING 72"  
(MATCH EXISTING FLOWLINE)

42" RCP 0.20%

18" RCP 1.00%

42" RCP 0.20%

18" RCP 1.00%

42" RCP 0.25%

60" RCP 0.18%

24" RCP 0.35%

FL 1172.50

FL 1174.61

FL 1172.40

FL 1172.08

FL 1171.98

FL 1171.30

FL 1172.40

FL 1169.23

1179.69

1179.75

1179.81

1179.87

1179.93

1179.99

1180.05

1180.11

1180.17

1180.23

1180.29

1180.35

1180.41

1180.47

1180.53

1180.59

1180.65

1180.71

1180.77

1180.83

1180.89

1180.95

1181.01

1181.07

1181.08

1181.02

1180.96

1180.90

1180.84

1180.78

1180.72

1180.66

1180.60

1180.54

1180.48

79+80.00-34.13' L to 79+80.00-34.13' R  
Install 18" - 66' RCP  
(Between Drop Inlets)

79+80.00-34.13' R to 82+26.48-34.13' R  
Install 24" - 236' RCP  
(Between Drop Inlets)

82+49-32' L to 82+50-1' R  
Take out 15"-33' RCP  
(Incidental Work, Grading)

81+91.30-34.13' L to 82+75.42-33.13' L  
Install 18" - 76' RCP  
(Between Drop Inlet & Junction Box)

82+26.48-34.13' R to 82+75.42-33.13' L  
Install 24" - 80' RCP  
(Between Drop Inlet & Junction Box)

82+50-1' R to 88+83-2' L  
Take out 18"-633' RCP  
(Incidental Work, Grading)

82+52-71' R to 83+29-71' R  
Take out 18"-78' RCP  
(Incidental Work, Grading)

82+52.27-58.67' L to 82+75.42-69.64' L  
Install 18" - 24' RCP  
(Between Drop Inlets)

82+75.42-69.64' L to 82+75.42-33.13' L  
Install 18" - 34' RCP  
(Between Drop Inlet & Junction Box)

82+75.42-69.64' L to 83+39.06-70.08' L  
Install 18" - 62' RCP  
(Between Drop Inlets)

**FOR PLUMBING PURPOSES ONLY**  
Take out Drop Inlets  
with Frame & Grate  
at the following locations:  
82+50-1' R

Take out Drop Inlets  
with Frame & Grate  
at the following locations:  
82+49-32' L

82+75.42-33.13' L to 83+92.00-31.67' L  
Install 18" - 114' RCP  
(Between Junction Box & Drop Inlet)

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B30	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

Install 4'x11' Type S Drop Inlet Base with  
Precast Concrete Type S Drop Inlet Lid  
at the following locations:  
79+80.00-34.13' L  
79+80.00-34.13' R  
81+91.30-34.13' L  
82+26.48-34.13' R

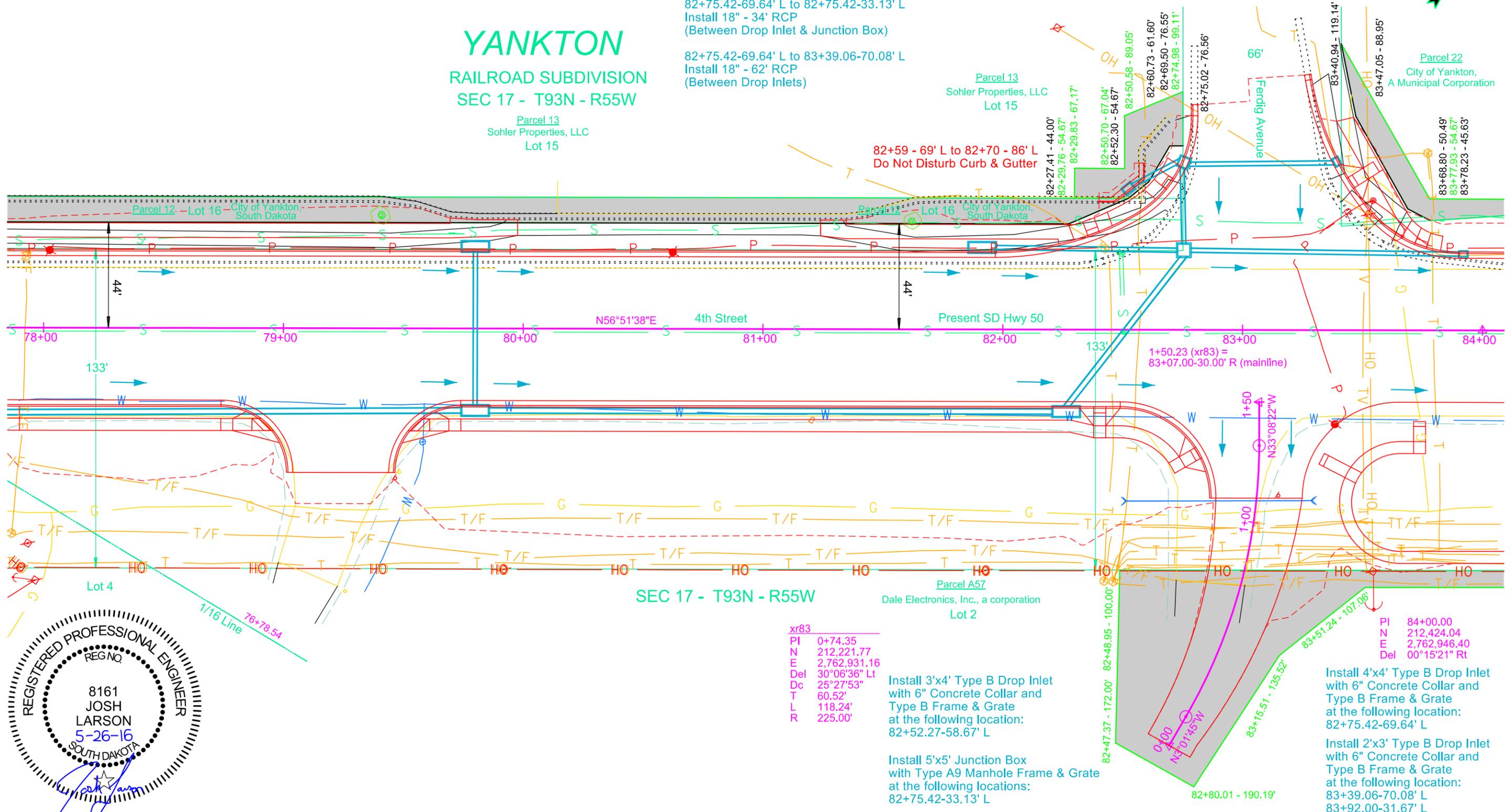


# YANKTON RAILROAD SUBDIVISION SEC 17 - T93N - R55W

Parcel 13  
Sohler Properties, LLC  
Lot 15

Parcel 13  
Sohler Properties, LLC  
Lot 15

Parcel 22  
City of Yankton,  
A Municipal Corporation



82+59 - 69' L to 82+70 - 86' L  
Do Not Disturb Curb & Gutter

1+50.23 (xr83) =  
83+07.00-30.00' R (mainline)

## SEC 17 - T93N - R55W

Parcel A57  
Dale Electronics, Inc., a corporation  
Lot 2

xr83  
PI 0+74.35  
N 212,221.77  
E 2,762,931.16  
Del 30°06'36" Lt  
Dc 25°27'53"  
T 60.52'  
L 118.24'  
R 225.00'

Install 3'x4' Type B Drop Inlet  
with 6" Concrete Collar and  
Type B Frame & Grate  
at the following location:  
82+52.27-58.67' L

Install 5'x5' Junction Box  
with Type A9 Manhole Frame & Grate  
at the following locations:  
82+75.42-33.13' L

PI 84+00.00  
N 212,424.04  
E 2,762,946.40  
Del 00°15'21" Rt

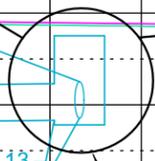
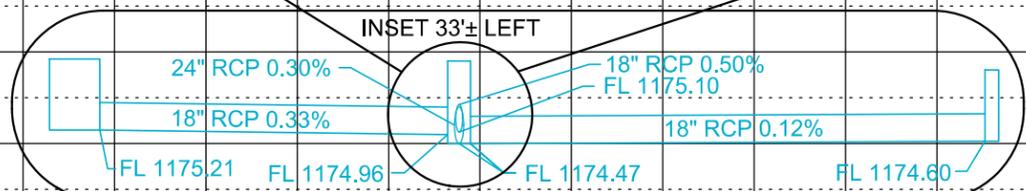
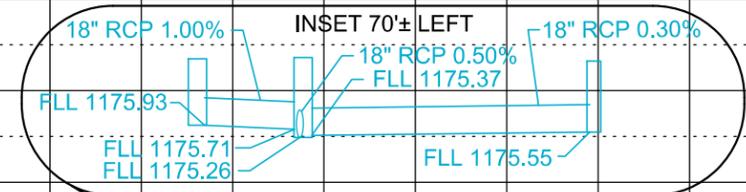
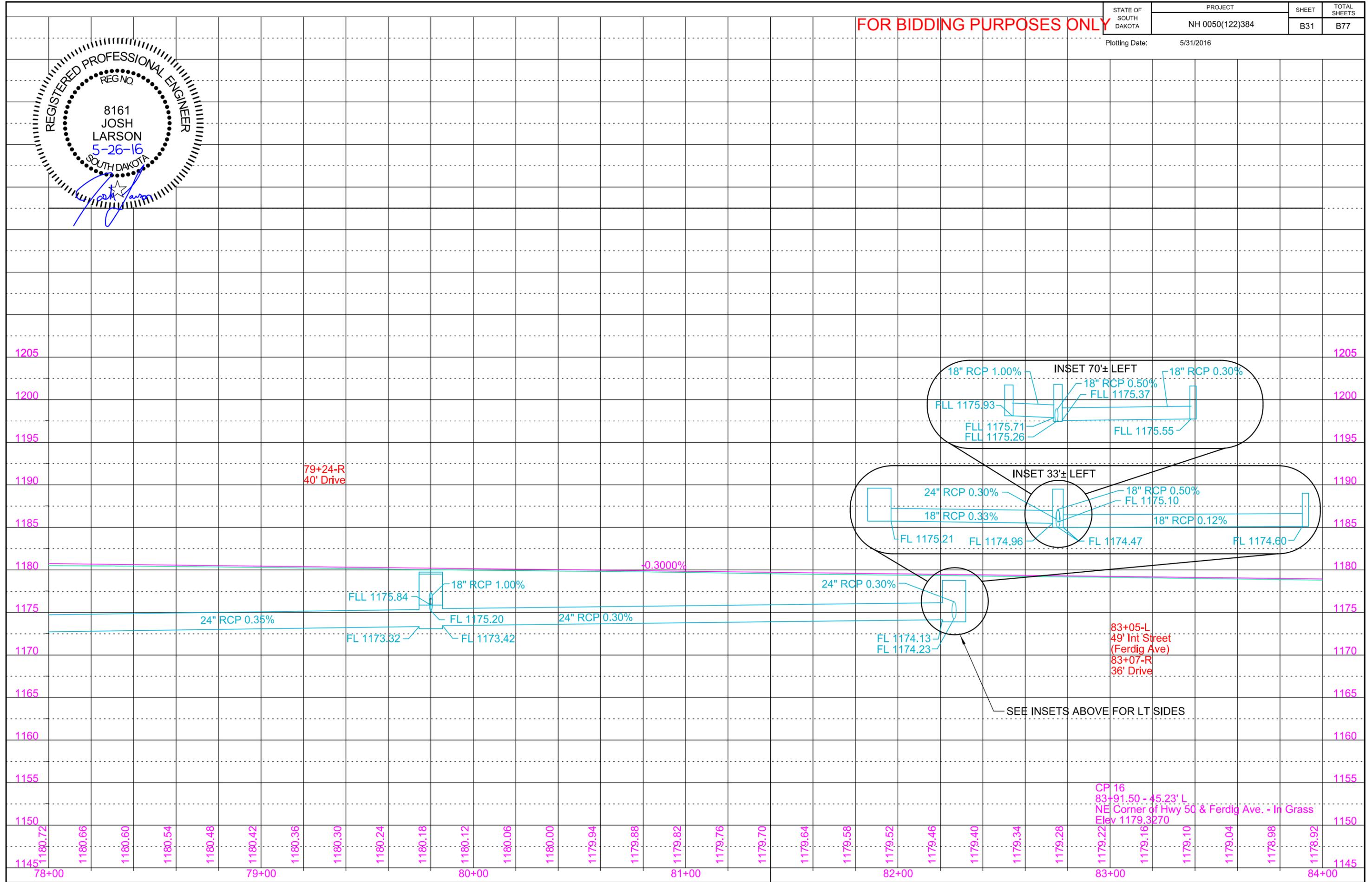
Install 4'x4' Type B Drop Inlet  
with 6" Concrete Collar and  
Type B Frame & Grate  
at the following location:  
82+75.42-69.64' L

Install 2'x3' Type B Drop Inlet  
with 6" Concrete Collar and  
Type B Frame & Grate  
at the following locations:  
83+39.06-70.08' L  
83+92.00-31.67' L



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B31	B77
Plotting Date: 5/31/2016			



STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B32	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

85+26-75' R to 85+92-75' R  
Take out 18"-66' RCP  
(Incidental Work, Grading)

86+05.00-34.13' L to 87+50.00-31.67' L  
Install 18" - 138' RCP  
(Between Drop Inlets)

88+15-73' R to 88+90-74' R  
Take out 18"-75' RCP  
(Incidental Work, Grading)

**FOR BIDDING PURPOSES ONLY**

at the following locations:  
88+83-2' L

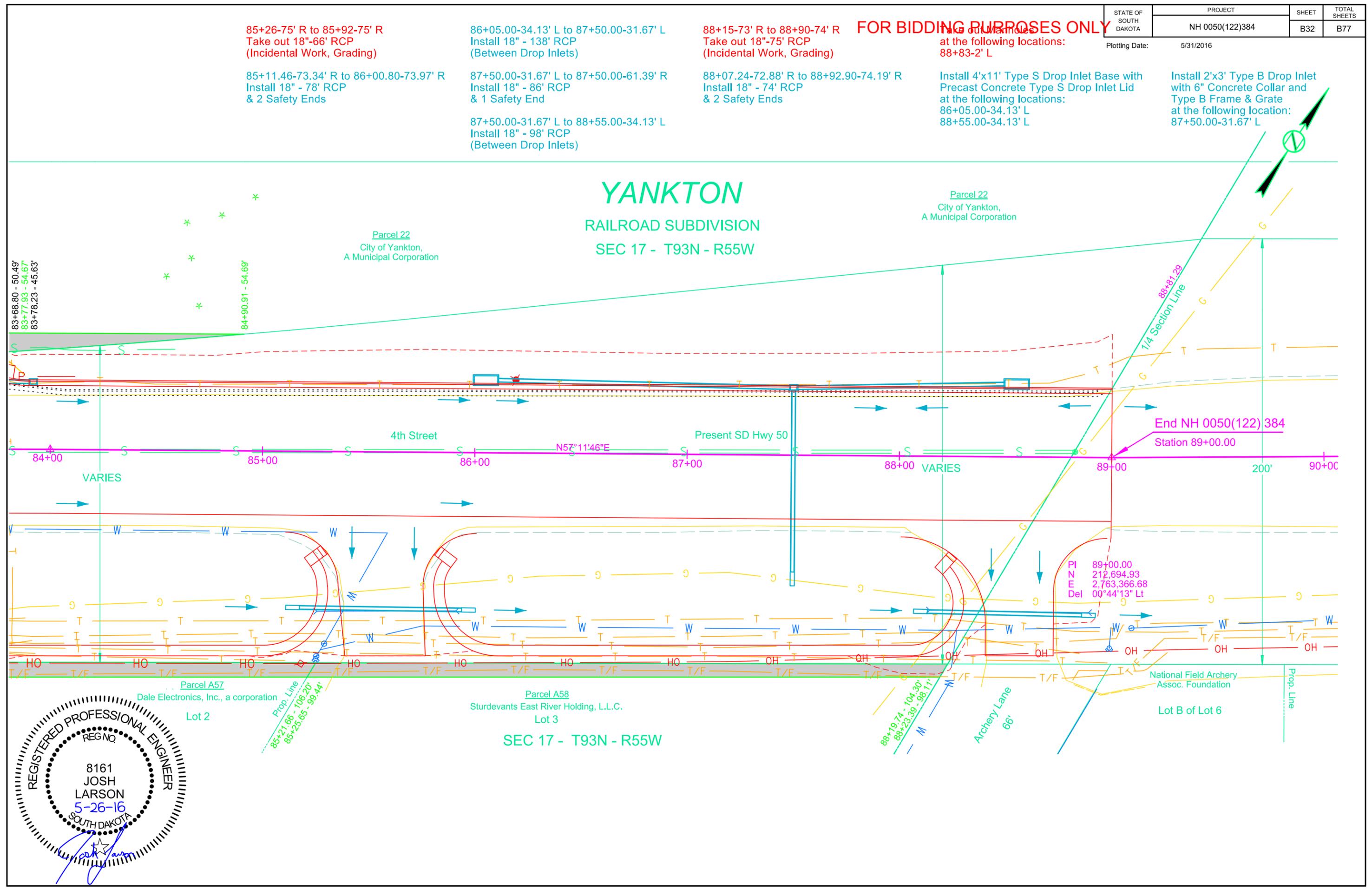
85+11.46-73.34' R to 86+00.80-73.97' R  
Install 18" - 78' RCP  
& 2 Safety Ends

87+50.00-31.67' L to 87+50.00-61.39' R  
Install 18" - 86' RCP  
& 1 Safety End

88+07.24-72.88' R to 88+92.90-74.19' R  
Install 18" - 74' RCP  
& 2 Safety Ends

Install 4'x11' Type S Drop Inlet Base with  
Precast Concrete Type S Drop Inlet Lid  
at the following locations:  
86+05.00-34.13' L  
88+55.00-34.13' L

Install 2'x3' Type B Drop Inlet  
with 6" Concrete Collar and  
Type B Frame & Grate  
at the following location:  
87+50.00-31.67' L



**YANKTON**  
RAILROAD SUBDIVISION  
SEC 17 - T93N - R55W



Parcel A57  
Dale Electronics, Inc., a corporation  
Lot 2

Parcel A58  
Sturdevants East River Holding, L.L.C.  
Lot 3

SEC 17 - T93N - R55W

88+19.74 - 104.30'  
88+23.39 - 98.11'  
Archery Lane  
66'

National Field Archery Assoc. Foundation  
Lot B of Lot 6

PI 89+00.00  
N 212,694.93  
E 2,763,366.68  
Del 00°44'13" Lt

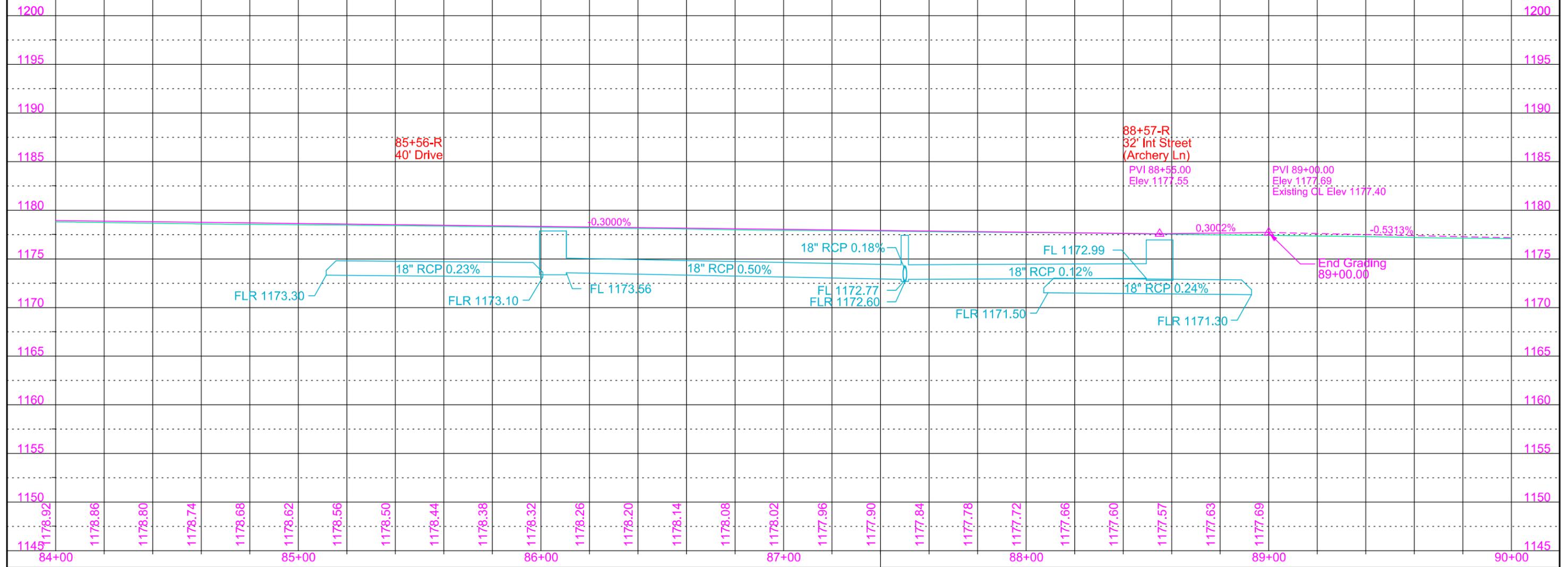
End NH 0050(122) 384  
Station 89+00.00

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B33	B77
Plotting Date:		5/31/2016	



STA 89+00.00  
END WORK



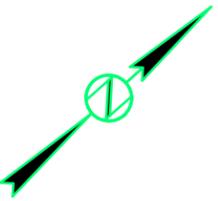


# CURB AND GUTTER LAYOUT

FOR BIDDING PURPOSES ONLY

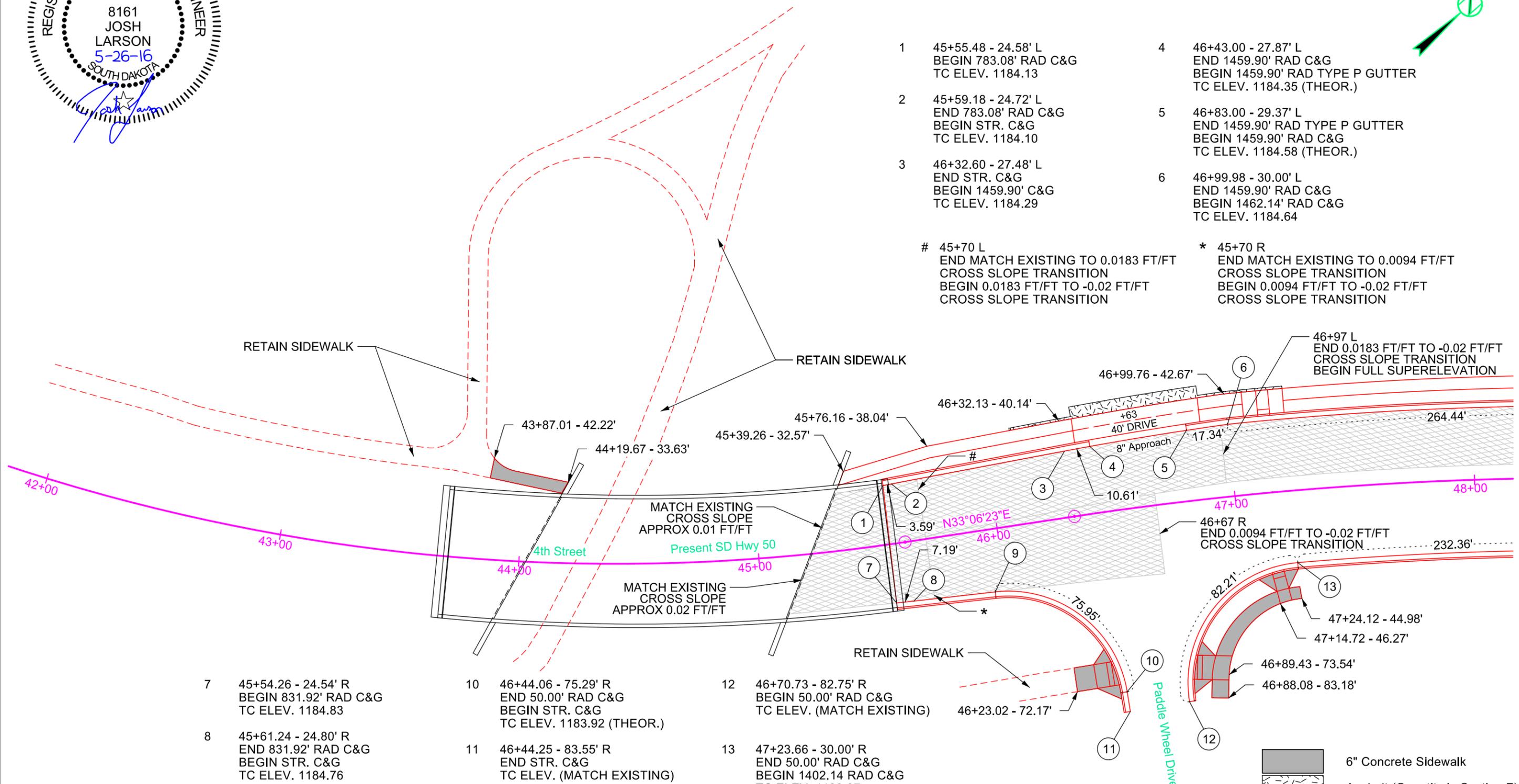
STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B34	TOTAL SHEETS B77
Plotting Date: 5/31/2016			

Note: All Curb & Gutter shown on this sheet is Type B69 and all P gutter is Type P9 except as noted.  
All curbside sidewalk is 6' wide and all boulevard sidewalk is 5' wide except as noted.



- |   |                                                                                  |   |                                                                                                              |
|---|----------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------|
| 1 | 45+55.48 - 24.58' L<br>BEGIN 783.08' RAD C&G<br>TC ELEV. 1184.13                 | 4 | 46+43.00 - 27.87' L<br>END 1459.90' RAD C&G<br>BEGIN 1459.90' RAD TYPE P GUTTER<br>TC ELEV. 1184.35 (THEOR.) |
| 2 | 45+59.18 - 24.72' L<br>END 783.08' RAD C&G<br>BEGIN STR. C&G<br>TC ELEV. 1184.10 | 5 | 46+83.00 - 29.37' L<br>END 1459.90' RAD TYPE P GUTTER<br>BEGIN 1459.90' RAD C&G<br>TC ELEV. 1184.58 (THEOR.) |
| 3 | 46+32.60 - 27.48' L<br>END STR. C&G<br>BEGIN 1459.90' C&G<br>TC ELEV. 1184.29    | 6 | 46+99.98 - 30.00' L<br>END 1459.90' RAD C&G<br>BEGIN 1462.14' RAD C&G<br>TC ELEV. 1184.64                    |

- |   |                                                                                                                                        |   |                                                                                                                                        |
|---|----------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------|
| # | 45+70 L<br>END MATCH EXISTING TO 0.0183 FT/FT<br>CROSS SLOPE TRANSITION<br>BEGIN 0.0183 FT/FT TO -0.02 FT/FT<br>CROSS SLOPE TRANSITION | * | 45+70 R<br>END MATCH EXISTING TO 0.0094 FT/FT<br>CROSS SLOPE TRANSITION<br>BEGIN 0.0094 FT/FT TO -0.02 FT/FT<br>CROSS SLOPE TRANSITION |
|---|----------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------|



- |   |                                                                                  |    |                                                                                          |    |                                                                                        |
|---|----------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------|
| 7 | 45+54.26 - 24.54' R<br>BEGIN 831.92' RAD C&G<br>TC ELEV. 1184.83                 | 10 | 46+44.06 - 75.29' R<br>END 50.00' RAD C&G<br>BEGIN STR. C&G<br>TC ELEV. 1183.92 (THEOR.) | 12 | 46+70.73 - 82.75' R<br>BEGIN 50.00' RAD C&G<br>TC ELEV. (MATCH EXISTING)               |
| 8 | 45+61.24 - 24.80' R<br>END 831.92' RAD C&G<br>BEGIN STR. C&G<br>TC ELEV. 1184.76 | 11 | 46+44.25 - 83.55' R<br>END STR. C&G<br>TC ELEV. (MATCH EXISTING)                         | 13 | 47+23.66 - 30.00' R<br>END 50.00' RAD C&G<br>BEGIN 1402.14 RAD C&G<br>TC ELEV. 1183.37 |
| 9 | 45+95.34 - 26.08' R<br>END STR. C&G<br>BEGIN 50.00' RAD C&G<br>TC ELEV. 1184.40  |    |                                                                                          |    |                                                                                        |

	6" Concrete Sidewalk
	Asphalt (Quantity in Section F)
	Concrete (Quantity in Section F)
	Gravel (Quantity in Section F)
	Cross Slope Differs From Typ. (See General Notes)

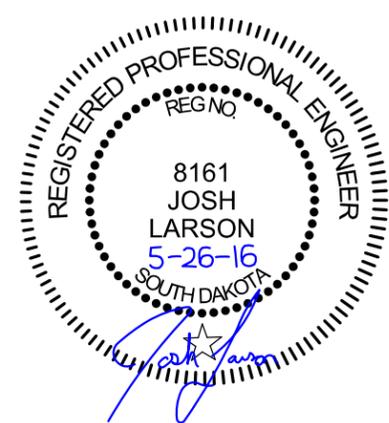
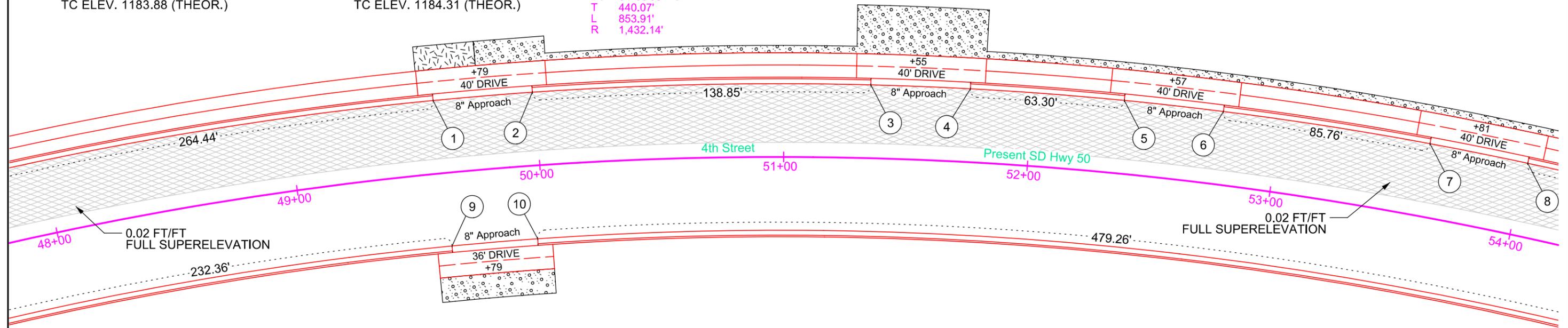
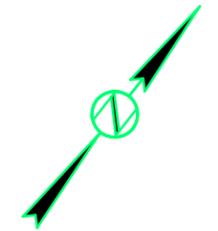
# CURB AND GUTTER LAYOUT

FOR BIDDING PURPOSES ONLY

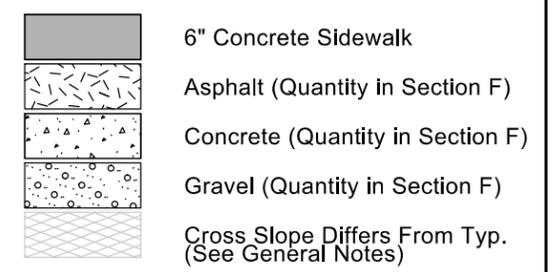
Note: All Curb & Gutter shown on this sheet is Type B69 and all P gutter is Type P9 except as noted.  
All curbside sidewalk is 6' wide and all boulevard sidewalk is 5' wide except as noted.

- |   |                                                                                                              |   |                                                                                                              |   |                                                                                                              |
|---|--------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------|
| 1 | 49+59.00 - 30.00' L<br>END 1462.14' RAD C&G<br>BEGIN 1462.14' RAD TYPE P GUTTER<br>TC ELEV. 1183.86 (THEOR.) | 4 | 51+75.00 - 30.00' L<br>END 1462.14' RAD TYPE P GUTTER<br>BEGIN 1462.14' RAD C&G<br>TC ELEV. 1184.00 (THEOR.) | 7 | 53+61.00 - 30.00' L<br>END 1462.14' RAD C&G<br>BEGIN 1462.14' RAD TYPE P GUTTER<br>TC ELEV. 1184.56 (THEOR.) |
| 2 | 49+99.00 - 30.00' L<br>END 1462.14' RAD TYPE P GUTTER<br>BEGIN 1462.14' RAD C&G<br>TC ELEV. 1183.74 (THEOR.) | 5 | 53+37.00 - 30.00' L<br>END 1462.14' RAD C&G<br>BEGIN 1462.14' RAD TYPE P GUTTER<br>TC ELEV. 1184.19 (THEOR.) | 8 | 54+01.00 - 30.00' L<br>END 1462.14' RAD TYPE P GUTTER<br>BEGIN 1462.14' RAD C&G<br>TC ELEV. 1184.68 (THEOR.) |
| 3 | 51+35.00 - 30.00' L<br>END 1462.14' RAD C&G<br>BEGIN 1462.14' RAD TYPE P GUTTER<br>TC ELEV. 1183.88 (THEOR.) | 6 | 52+77.00 - 30.00' L<br>END 1462.14' RAD TYPE P GUTTER<br>BEGIN 1462.14' RAD C&G<br>TC ELEV. 1184.31 (THEOR.) |   |                                                                                                              |

PI 50+72.67  
N 210,783.40  
E 2,760,031.85  
Del 34°09'45" Rt  
Dc 04°00'03" Δ  
T 440.07'  
L 853.91'  
R 1,432.14'



- |    |                                                                                                              |
|----|--------------------------------------------------------------------------------------------------------------|
| 9  | 49+61.00 - 30.00' R<br>END 1402.14' RAD C&G<br>BEGIN 1402.14' RAD TYPE P GUTTER<br>TC ELEV. 1182.66 (THEOR.) |
| 10 | 49+97.00 - 30.00' R<br>END 1402.14' RAD TYPE P GUTTER<br>BEGIN 1402.14' RAD C&G<br>TC ELEV. 1182.55 (THEOR.) |

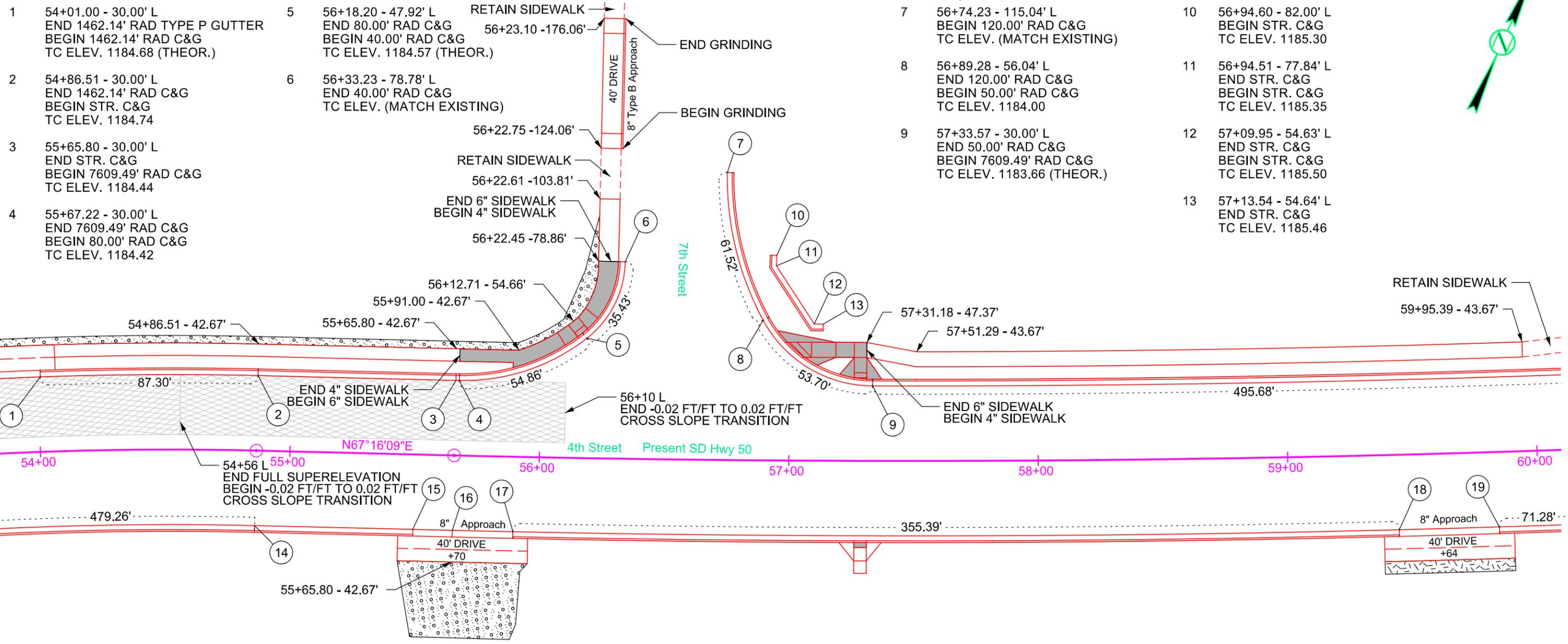


# CURB AND GUTTER LAYOUT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B36	TOTAL SHEETS B77
Plotting Date:	6/2/2016	Rev. 6/2/16 JDL	

Note: All Curb & Gutter shown on this sheet is Type B69 and all P gutter is Type P9 except as noted.  
All curbside sidewalk is 6' wide and all boulevard sidewalk is 5' wide except as noted.



- 1 54+01.00 - 30.00' L  
END 1462.14' RAD TYPE P GUTTER  
BEGIN 1462.14' RAD C&G  
TC ELEV. 1184.68 (THEOR.)
- 2 54+86.51 - 30.00' L  
END 1462.14' RAD C&G  
BEGIN STR. C&G  
TC ELEV. 1184.74
- 3 55+65.80 - 30.00' L  
END STR. C&G  
BEGIN 7609.49' RAD C&G  
TC ELEV. 1184.44
- 4 55+67.22 - 30.00' L  
END 7609.49' RAD C&G  
BEGIN 80.00' RAD C&G  
TC ELEV. 1184.42

- 5 56+18.20 - 47.92' L  
END 80.00' RAD C&G  
BEGIN 40.00' RAD C&G  
TC ELEV. 1184.57 (THEOR.)
- 6 56+33.23 - 78.78' L  
END 40.00' RAD C&G  
TC ELEV. (MATCH EXISTING)

- 7 56+74.23 - 115.04' L  
BEGIN 120.00' RAD C&G  
TC ELEV. (MATCH EXISTING)
- 8 56+89.28 - 56.04' L  
END 120.00' RAD C&G  
BEGIN 50.00' RAD C&G  
TC ELEV. 1184.00
- 9 57+33.57 - 30.00' L  
END 50.00' RAD C&G  
BEGIN 7609.49' RAD C&G  
TC ELEV. 1183.66 (THEOR.)

- 10 56+94.60 - 82.00' L  
BEGIN STR. C&G  
TC ELEV. 1185.30
- 11 56+94.51 - 77.84' L  
END STR. C&G  
BEGIN STR. C&G  
TC ELEV. 1185.35
- 12 57+09.95 - 54.63' L  
END STR. C&G  
BEGIN STR. C&G  
TC ELEV. 1185.50
- 13 57+13.54 - 54.64' L  
END STR. C&G  
TC ELEV. 1185.46

- 14 54+86.51 - 30.00' R  
END 1402.14' RAD C&G  
BEGIN STR. C&G  
TC ELEV. 1183.73
- 15 55+50.00 - 30.00' R  
END STR. C&G  
BEGIN TYPE P GUTTER  
TC ELEV. 1183.93 (THEOR.)
- 16 55+65.80 - 30.00' R  
END TYPE P GUTTER  
BEGIN 7669.49' RAD TYPE P GUTTER  
TC ELEV. 1183.92 (THEOR.)

- 17 55+90.00 - 30.00' R  
END 7669.49' RAD TYPE P GUTTER  
BEGIN 7669.49' RAD C&G  
TC ELEV. 1183.85 (THEOR.)
- 18 59+44.00 - 30.00' R  
END 7669.49' RAD C&G  
BEGIN 7669.49' RAD TYPE P GUTTER  
TC ELEV. 1182.29 (THEOR.)
- 19 59+84.00 - 30.00' R  
END 7669.49' RAD TYPE P GUTTER  
BEGIN 7669.49' RAD C&G  
TC ELEV. 1182.17 (THEOR.)



	6" Concrete Sidewalk
	Asphalt (Quantity in Section F)
	Concrete (Quantity in Section F)
	Gravel (Quantity in Section F)
	Cross Slope Differs From Typ. (See General Notes)

# CURB AND GUTTER LAYOUT

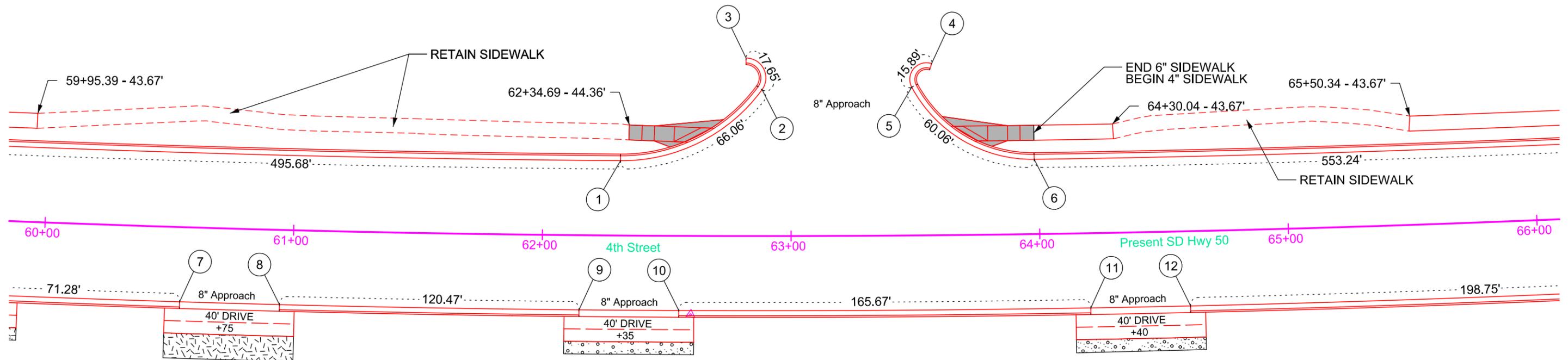
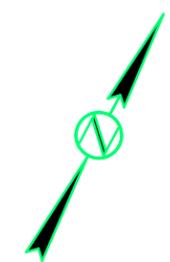
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B37	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

Note: All Curb & Gutter shown on this sheet is Type B69 and all P gutter is Type P9 except as noted.  
All curbside sidewalk is 6' wide and all boulevard sidewalk is 5' wide except as noted.

- |                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 62+31.20 - 30.00' L<br/>END 7609.49' RAD C&amp;G<br/>BEGIN 70.00' RAD C&amp;G<br/>TC ELEV. 1182.17</p> <p>2 62+88.33 - 58.72' L<br/>END 70.00' RAD C&amp;G<br/>BEGIN 8.00' RAD C&amp;G<br/>TC ELEV. 1183.05</p> <p>3 62+81.82 - 71.46' L<br/>END 8.00' RAD C&amp;G<br/>TC ELEV. (MATCH EXISTING)</p> | <p>4 63+57.16 - 68.92' L<br/>BEGIN 6.70' RAD C&amp;G<br/>TC ELEV. (MATCH EXISTING)</p> <p>5 63+49.00 - 59.50' L<br/>END 6.70' RAD C&amp;G<br/>BEGIN 55.00' RAD C&amp;G<br/>TC ELEV. 1182.62</p> <p>6 63+98.19 - 30.00' L<br/>END 55.00' RAD C&amp;G<br/>BEGIN 7609.49' RAD C&amp;G<br/>TC ELEV. 1181.67</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



PI 62+61.62  
N 211,252.95  
E 2,761,152.65  
Del 10°24'31" Lt  
Dc 00°45'00"  
T 695.82'  
L 1,387.81'  
R 7,639.49'

- |                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>7 60+55.00 - 30.00' R<br/>END 7669.49' RAD C&amp;G<br/>BEGIN 7669.49' RAD TYPE P GUTTER<br/>TC ELEV. 1182.46 (THEOR.)</p> <p>8 60+95.00 - 30.00' R<br/>END 7669.49' RAD TYPE P GUTTER<br/>BEGIN 7669.49' RAD C&amp;G<br/>TC ELEV. 1182.34 (THEOR.)</p> <p>9 62+15.00 - 30.00' R<br/>END 7669.49' RAD C&amp;G<br/>BEGIN 7669.49' RAD TYPE P GUTTER<br/>TC ELEV. 1181.98 (THEOR.)</p> | <p>10 62+55.00 - 30.00' R<br/>END 7669.49' RAD TYPE P GUTTER<br/>BEGIN 7669.49' RAD C&amp;G<br/>TC ELEV. 1181.85 (THEOR.)</p> <p>11 64+20.02 - 30.00' R<br/>END 7669.49' RAD C&amp;G<br/>BEGIN 7669.49' RAD TYPE P GUTTER<br/>TC ELEV. 1181.76 (THEOR.)</p> <p>12 64+60.02 - 30.00' R<br/>END 7669.49' RAD TYPE P GUTTER<br/>BEGIN 7669.49' RAD C&amp;G<br/>TC ELEV. 1181.57 (THEOR.)</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



	6" Concrete Sidewalk
	Asphalt (Quantity in Section F)
	Concrete (Quantity in Section F)
	Gravel (Quantity in Section F)

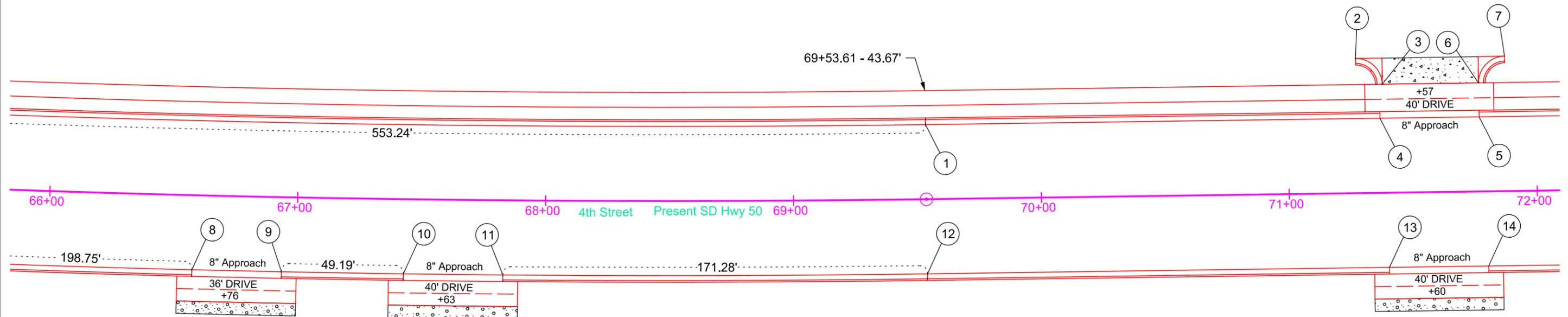
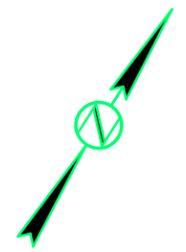
# CURB AND GUTTER LAYOUT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B38	TOTAL SHEETS B77
Plotting Date: 6/2/2016		Rev. 6/2/16 JDL	

- |                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 69+53.61 - 30.00' L<br/>END 7609.49' RAD C&amp;G<br/>BEGIN STR. C&amp;G<br/>TC ELEV. 1180.00</p> <p>2 71+27.45 - 54.22' L<br/>BEGIN 10.67' RAD FILLET<br/>TC ELEV. (MATCH EXISTING)</p> <p>3 71+38.09 - 43.67' L<br/>END 10.67' RAD FILLET<br/>TC ELEV. 1179.98 (THEOR.)</p> <p>4 71+37.00 - 30.00' L<br/>END STR. C&amp;G<br/>BEGIN TYPE P GUTTER<br/>TC ELEV. 1179.54 (THEOR.)</p> | <p>5 71+77.00 - 30.00' L<br/>END TYPE P GUTTER<br/>BEGIN STR. C&amp;G<br/>TC ELEV. 1179.66 (THEOR.)</p> <p>6 71+76.94 - 43.67' L<br/>BEGIN 10.67' RAD FILLET<br/>TC ELEV. 1179.98 (THEOR.)</p> <p>7 71+87.56 - 54.33' L<br/>END 10.67' RAD FILLET<br/>TC ELEV. (MATCH EXISTING)</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note: All Curb & Gutter shown on this sheet is Type B69 and all P gutter is Type P9 except as noted.  
All curbside sidewalk is 6' wide and all boulevard sidewalk is 5' wide except as noted.



- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>8 66+58.00 - 30.00' R<br/>END 7669.49' RAD C&amp;G<br/>BEGIN 7669.49' RAD TYPE P GUTTER<br/>TC ELEV. 1180.65 (THEOR.)</p> <p>9 66+94.00 - 30.00' R<br/>END 7669.49' RAD TYPE P GUTTER<br/>BEGIN 7669.49' RAD C&amp;G<br/>TC ELEV. 1180.54 (THEOR.)</p> <p>10 67+43.00 - 30.00' R<br/>END 7669.49' RAD C&amp;G<br/>BEGIN 7669.49' RAD TYPE P GUTTER<br/>TC ELEV. 1180.39 (THEOR.)</p> <p>11 67+83.00 - 30.00' R<br/>END 7669.49' RAD TYPE P GUTTER<br/>BEGIN 7669.49' RAD C&amp;G<br/>TC ELEV. 1180.27 (THEOR.)</p> | <p>12 69+53.61 - 30.00' R<br/>END 7669.49' RAD C&amp;G<br/>BEGIN STR. C&amp;G<br/>TC ELEV. 1179.76</p> <p>13 71+40.00 - 30.00' R<br/>END STR. C&amp;G<br/>BEGIN TYPE P GUTTER<br/>TC ELEV. 1179.31 (THEOR.)</p> <p>14 71+80.00 - 30.00' R<br/>END TYPE P GUTTER<br/>BEGIN STR. C&amp;G<br/>TC ELEV. 1179.43 (THEOR.)</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



	6" Concrete Sidewalk
	Asphalt (Quantity in Section F)
	Concrete (Quantity in Section F)
	Gravel (Quantity in Section F)

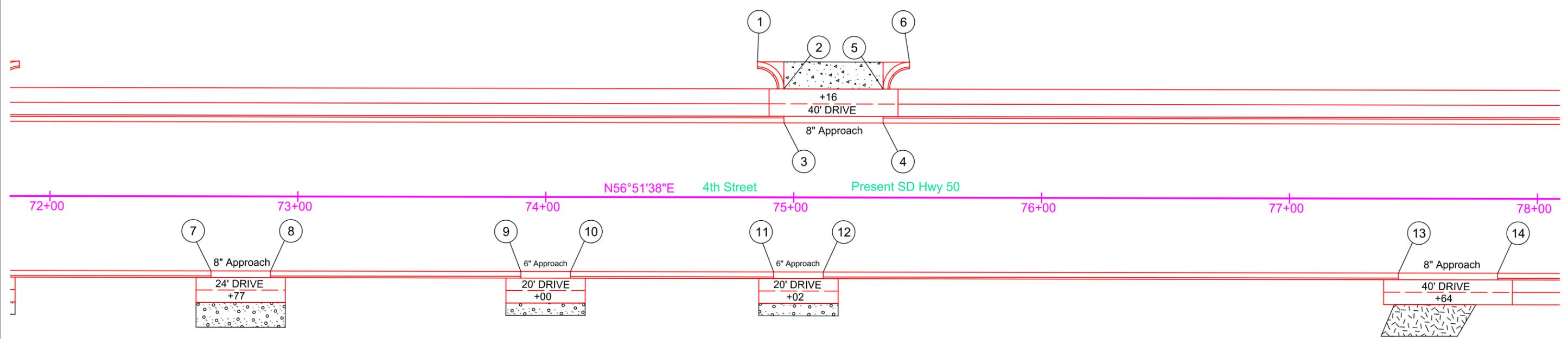
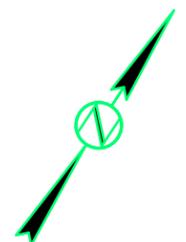
# CURB AND GUTTER LAYOUT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B39	TOTAL SHEETS B77
Plotting Date: 6/2/2016		Rev. 6/2/16 JDL	

- |   |                                                                             |   |                                                                                         |
|---|-----------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------|
| 1 | 74+85.28 - 54.56' L<br>BEGIN 10.67' RAD RILLET<br>TC ELEV. (MATCH EXISTING) | 4 | 75+36.00 - 30.00' L<br>END TYPE P GUTTER<br>BEGIN STR. C&G<br>TC ELEV. 1180.74 (THEOR.) |
| 2 | 74+95.97 - 43.67' L<br>END 10.67' RAD FILLET<br>TC ELEV. 1181.13 (THEOR.)   | 5 | 74+93.97 - 43.67' L<br>BEGIN 10.67' RAD FILLET<br>TC ELEV. 1181.19 (THEOR.)             |
| 3 | 74+96.00 - 30.00' L<br>BEGIN TYPE P GUTTER<br>TC ELEV. 1180.62 (THEOR.)     | 6 | 75+46.60 - 54.54' L<br>END 10.67' RAD FILLET<br>TC ELEV. (MATCH EXISTING)               |

Note: All Curb & Gutter shown on this sheet is Type B69 and all P gutter is Type P9 except as noted.  
All curbside sidewalk is 6' wide and all boulevard sidewalk is 5' wide except as noted.



- |    |                                                                                         |    |                                                                                         |
|----|-----------------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------|
| 7  | 72+65.00 - 30.00' R<br>END STR. C&G<br>BEGIN TYPE P GUTTER<br>TC ELEV. 1179.68 (THEOR.) | 11 | 74+92.00 - 30.00' R<br>END STR. C&G<br>BEGIN TYPE P GUTTER<br>TC ELEV. 1180.36 (THEOR.) |
| 8  | 72+89.00 - 30.00' R<br>END TYPE P GUTTER<br>BEGIN STR. C&G<br>TC ELEV. 1179.76 (THEOR.) | 12 | 75+12.00 - 30.00' R<br>END TYPE P GUTTER<br>BEGIN STR. C&G<br>TC ELEV. 1180.42 (THEOR.) |
| 9  | 73+90.00 - 30.00' R<br>END STR. C&G<br>BEGIN TYPE P GUTTER<br>TC ELEV. 1180.06 (THEOR.) | 13 | 77+44.00 - 30.00' R<br>END STR. C&G<br>BEGIN TYPE P GUTTER<br>TC ELEV. 1180.69 (THEOR.) |
| 10 | 74+10.00 - 30.00' R<br>END TYPE P GUTTER<br>BEGIN STR. C&G<br>TC ELEV. 1180.12 (THEOR.) | 14 | 77+84.00 - 30.00' R<br>END TYPE P GUTTER<br>BEGIN STR. C&G<br>TC ELEV. 1180.57 (THEOR.) |



	6" Concrete Sidewalk
	Asphalt (Quantity in Section F)
	Concrete (Quantity in Section F)
	Gravel (Quantity in Section F)

# CURB AND GUTTER LAYOUT

FOR BIDDING PURPOSES ONLY

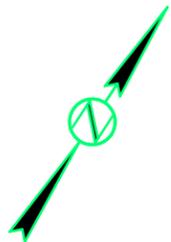
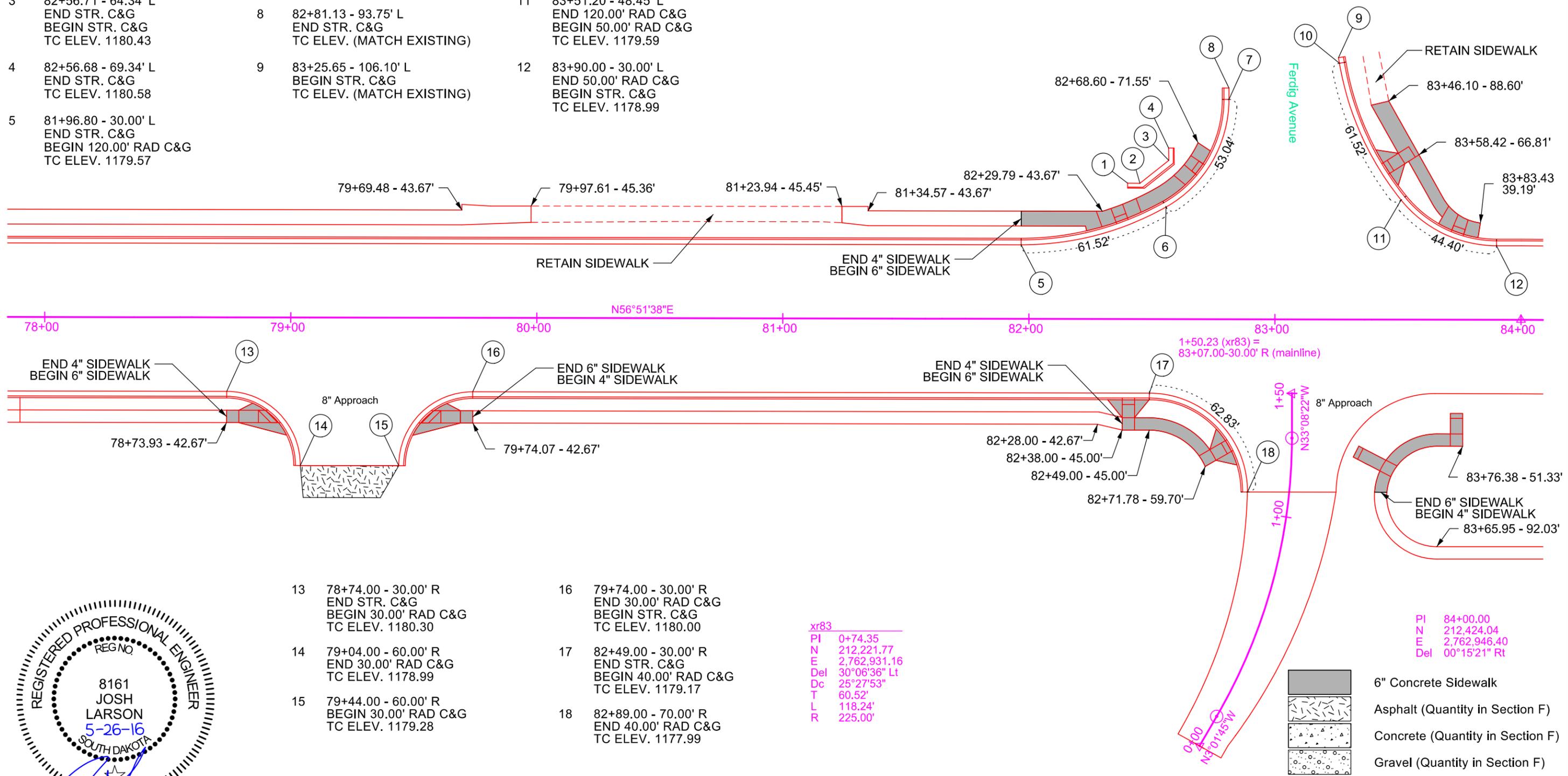
STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B40	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

- 1 82+40.04 - 55.08' L  
BEGIN STR. C&G  
TC ELEV. 1180.20
- 2 82+45.04 - 55.04' L  
END STR. C&G  
BEGIN STR. C&G  
TC ELEV. 1180.17
- 3 82+56.71 - 64.34' L  
END STR. C&G  
BEGIN STR. C&G  
TC ELEV. 1180.43
- 4 82+56.68 - 69.34' L  
END STR. C&G  
TC ELEV. 1180.58
- 5 81+96.80 - 30.00' L  
END STR. C&G  
BEGIN 120.00' RAD C&G  
TC ELEV. 1179.57
- 6 82+55.66 - 45.43' L  
END 120.00' RAD C&G  
BEGIN 50' RAD C&G  
TC ELEV. 1179.93
- 7 82+81.14 - 89.13' L  
END 50.00' RAD C&G  
BEGIN STR. C&G  
TC ELEV. 1180.22
- 8 82+81.13 - 93.75' L  
END STR. C&G  
TC ELEV. (MATCH EXISTING)
- 9 83+25.65 - 106.10' L  
BEGIN STR. C&G  
TC ELEV. (MATCH EXISTING)

Note: All Curb & Gutter shown on this sheet is Type B69 and all P gutter is Type P9 except as noted.  
All curbside sidewalk is 6' wide and all boulevard sidewalk is 5' wide except as noted.

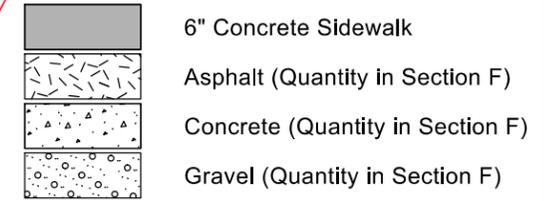
- 10 83+26.04 - 103.86' L  
END STR. C&G  
BEGIN 120.00' RAD C&G  
TC ELEV. 1180.44
- 11 83+51.20 - 48.45' L  
END 120.00' RAD C&G  
BEGIN 50.00' RAD C&G  
TC ELEV. 1179.59
- 12 83+90.00 - 30.00' L  
END 50.00' RAD C&G  
BEGIN STR. C&G  
TC ELEV. 1178.99



- 13 78+74.00 - 30.00' R  
END STR. C&G  
BEGIN 30.00' RAD C&G  
TC ELEV. 1180.30
- 14 79+04.00 - 60.00' R  
END 30.00' RAD C&G  
TC ELEV. 1178.99
- 15 79+44.00 - 60.00' R  
BEGIN 30.00' RAD C&G  
TC ELEV. 1179.28
- 16 79+74.00 - 30.00' R  
END 30.00' RAD C&G  
BEGIN STR. C&G  
TC ELEV. 1180.00
- 17 82+49.00 - 30.00' R  
END STR. C&G  
BEGIN 40.00' RAD C&G  
TC ELEV. 1179.17
- 18 82+89.00 - 70.00' R  
END 40.00' RAD C&G  
TC ELEV. 1177.99

xr83  
 PI 0+74.35  
 N 212,221.77  
 E 2,762,931.16  
 Del 30°06'36" Lt  
 Dc 25°27'53"  
 T 60.52'  
 L 118.24'  
 R 225.00'

PI 84+00.00  
 N 212,424.04  
 E 2,762,946.40  
 Del 00°15'21" Rt





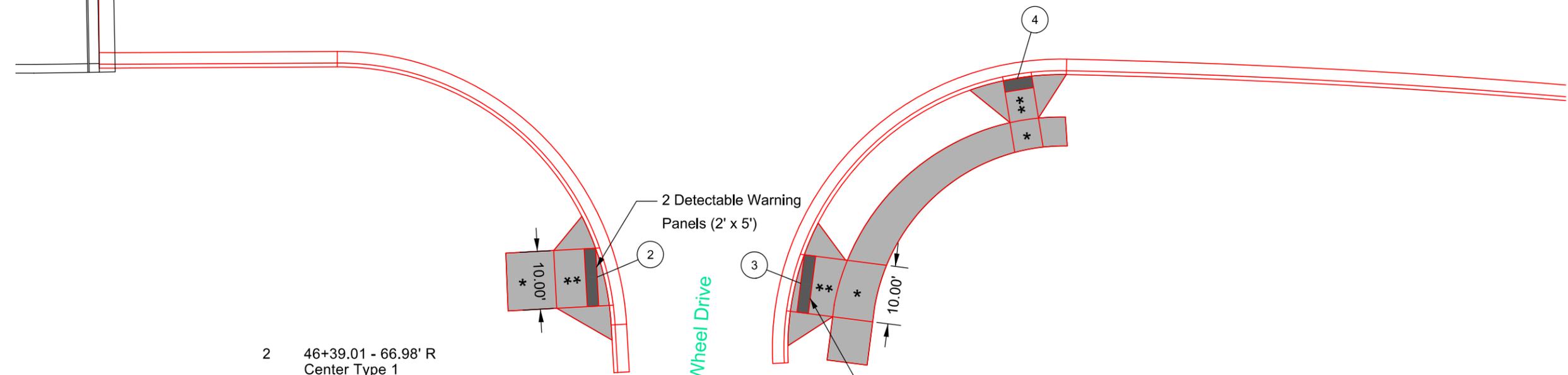
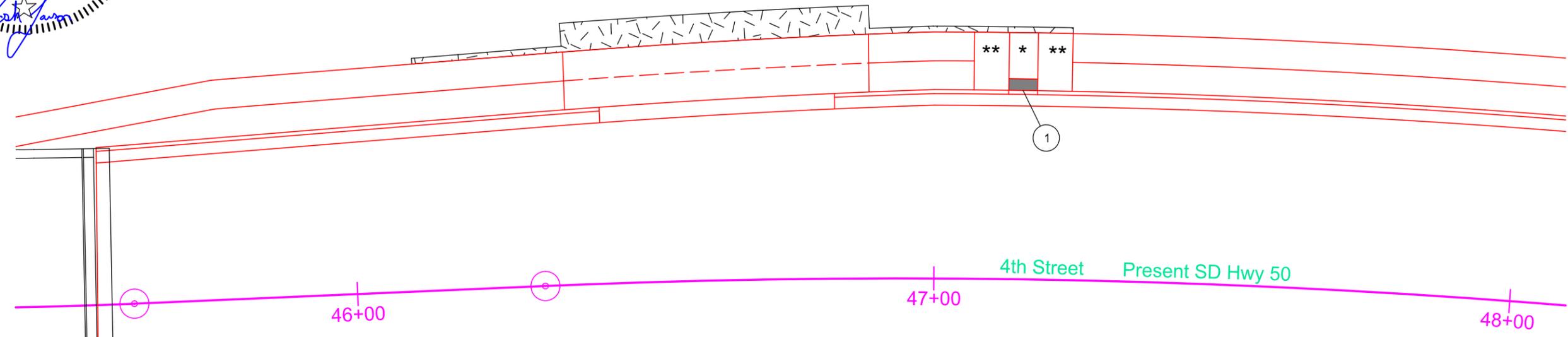
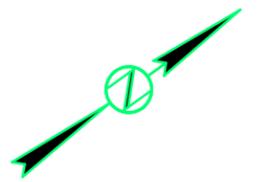


# CURB RAMP LAYOUT FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B42	TOTAL SHEETS B77
Plotting Date: 5/31/2016			

\* Turning Space with 1.5% slope  
 \*\* Curb Ramp with 7.5% slope and 1.5% cross slope

1 47+15.01 - 32.67' L  
 Center Type 3  
 Curb Ramp



2 46+39.01 - 66.98' R  
 Center Type 1  
 Curb Ramp

3 46+76.02 - 68.96' R  
 Center Type 1  
 Curb Ramp

4 47+15.01 - 33.47' R  
 Center Type 1  
 Curb Ramp

	6" Concrete Sidewalk
	Asphalt (Quantity in Section F)
	Concrete (Quantity in Section F)
	Gravel (Quantity in Section F)

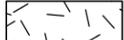


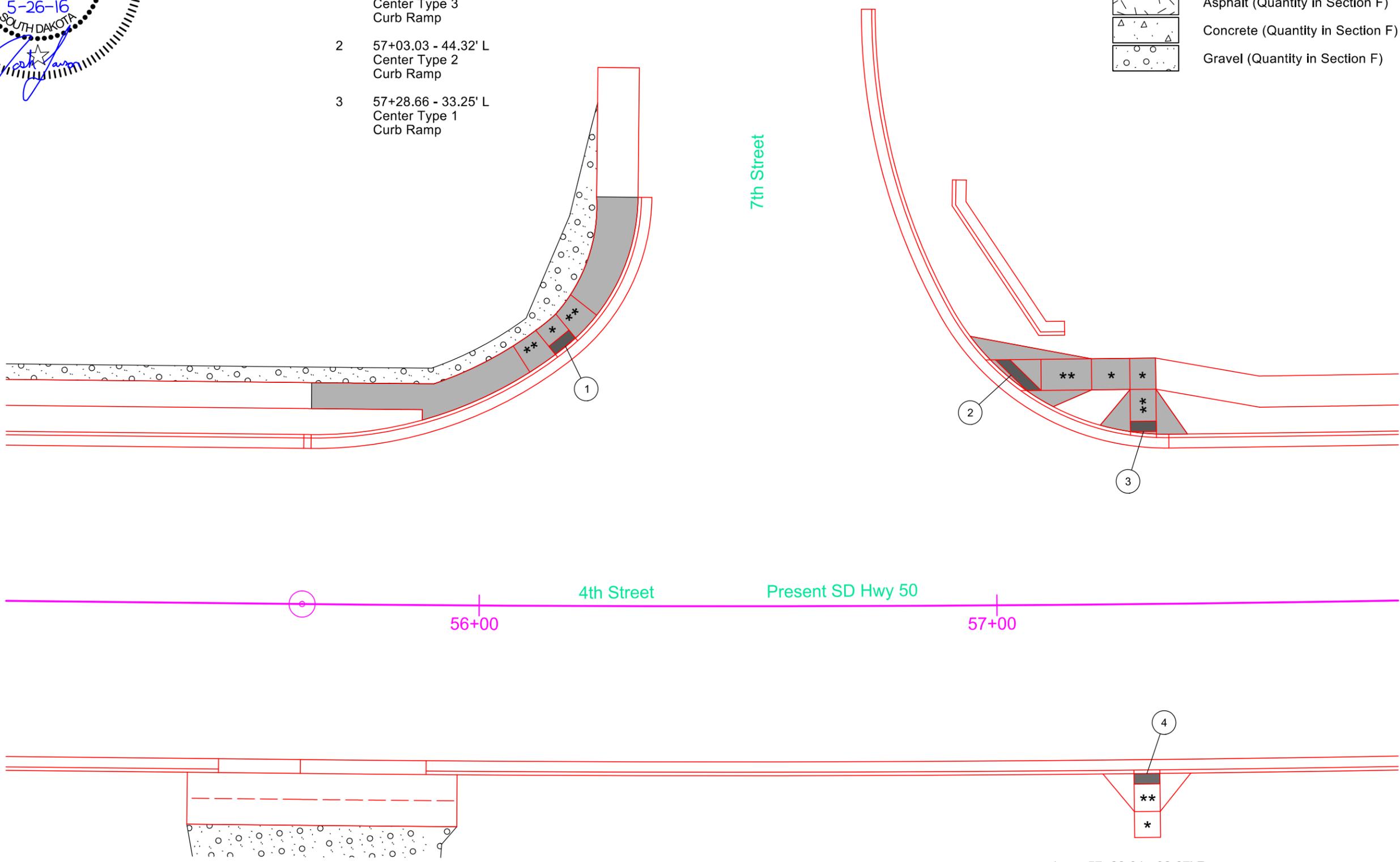
# CURB RAMP LAYOUT FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B43	B77
Plotting Date: 5/31/2016			

\* Turning Space with 1.5% slope  
 \*\* Curb Ramp with 7.5% slope and 1.5% cross slope

- 1 56+16.47 - 50.04' L  
Center Type 3  
Curb Ramp
- 2 57+03.03 - 44.32' L  
Center Type 2  
Curb Ramp
- 3 57+28.66 - 33.25' L  
Center Type 1  
Curb Ramp

-  6" Concrete Sidewalk
-  Asphalt (Quantity in Section F)
-  Concrete (Quantity in Section F)
-  Gravel (Quantity in Section F)



- 4 57+28.64 - 32.67' R  
Center Type 3  
Curb Ramp

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B44	B77
Plotting Date: 5/31/2016			

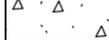
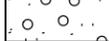
# CURB RAMP LAYOUT FOR BIDDING PURPOSES ONLY

\* Turning Space with 1.5% slope  
 \*\* Curb Ramp with 7.5% slope and 1.5% cross slope



- 1 62+62.35 - 40.47' L  
Center Type 2  
Curb Ramp
- 2 63+70.76 - 40.67' L  
Center Type 2  
Curb Ramp



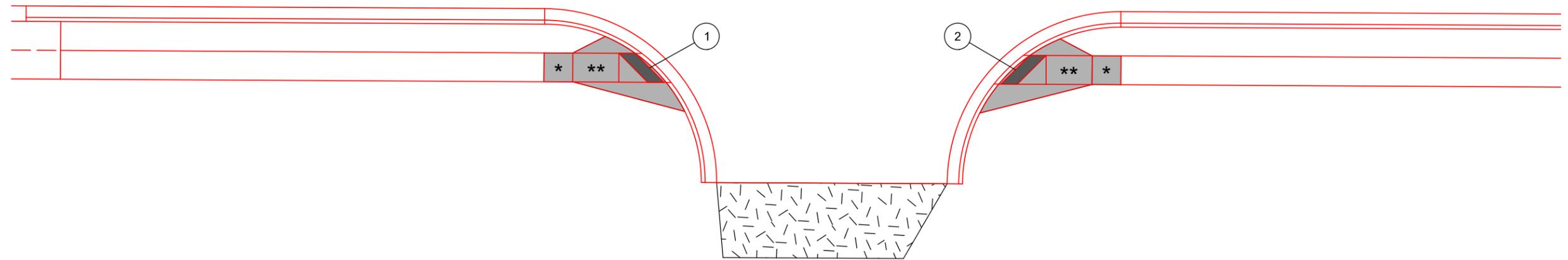
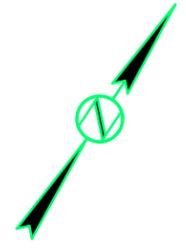
	6" Concrete Sidewalk
	Asphalt (Quantity in Section F)
	Concrete (Quantity in Section F)
	Gravel (Quantity in Section F)



# CURB RAMP LAYOUT FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B45	B77
Plotting Date:		5/31/2016	

\* Turning Space with 1.5% slope  
 \*\* Curb Ramp with 7.5% slope and 1.5% cross slope



- 1 78+92.26 - 40.17' R  
Center Type 2  
Curb Ramp
- 2 79+55.74 - 40.17' R  
Center Type 2  
Curb Ramp

	6" Concrete Sidewalk
	Asphalt (Quantity in Section F)
	Concrete (Quantity in Section F)
	Gravel (Quantity in Section F)



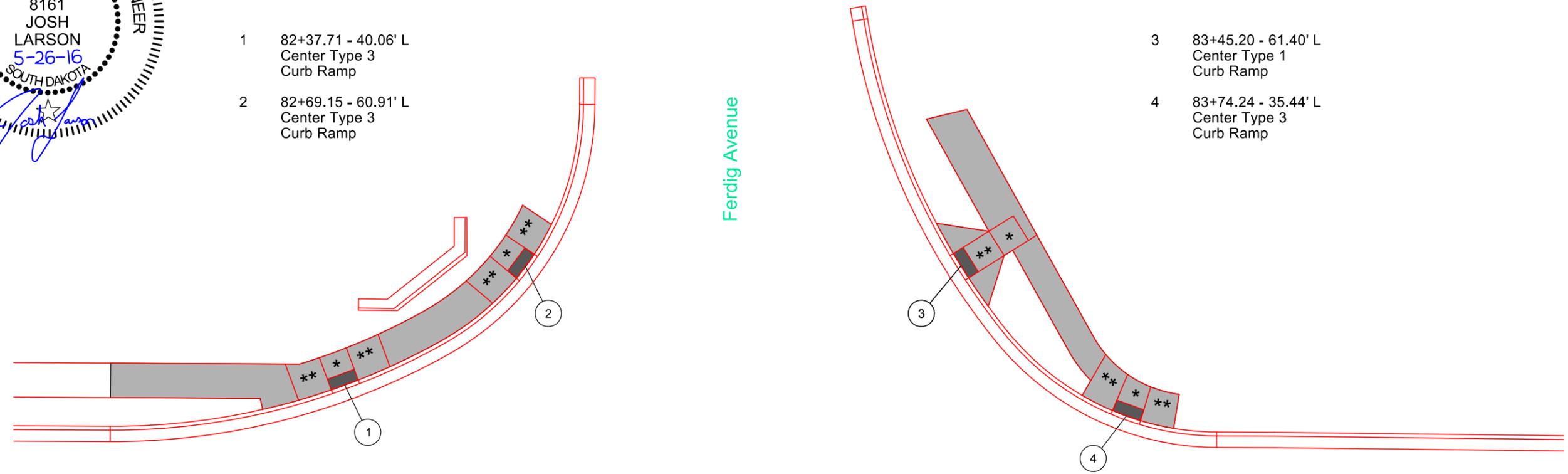
# CURB RAMP LAYOUT FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B46	B77
Plotting Date: 5/31/2016			

\* Turning Space with 1.5% slope  
 \*\* Curb Ramp with 7.5% slope and 1.5% cross slope

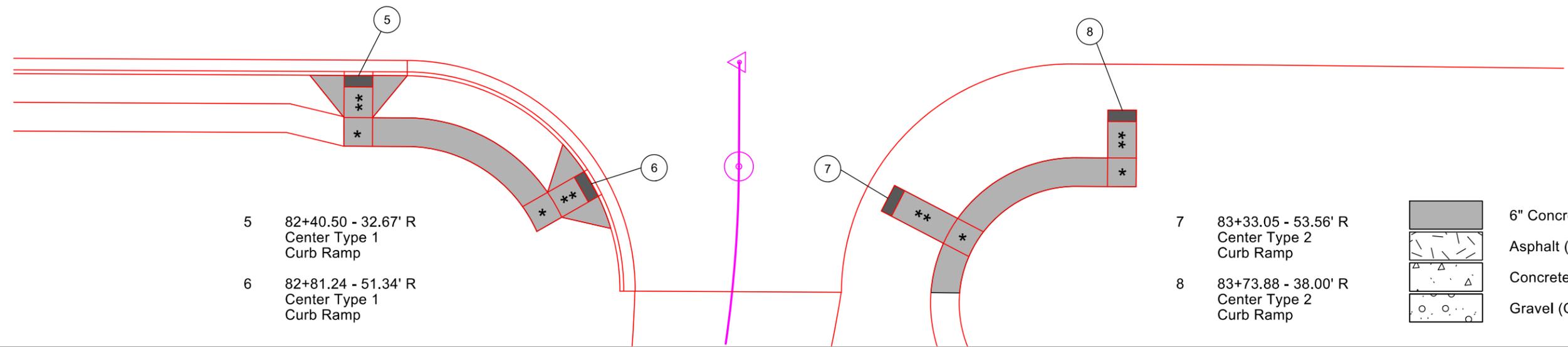
- 1 82+37.71 - 40.06' L  
Center Type 3  
Curb Ramp
- 2 82+69.15 - 60.91' L  
Center Type 3  
Curb Ramp

- 3 83+45.20 - 61.40' L  
Center Type 1  
Curb Ramp
- 4 83+74.24 - 35.44' L  
Center Type 3  
Curb Ramp



- 5 82+40.50 - 32.67' R  
Center Type 1  
Curb Ramp
- 6 82+81.24 - 51.34' R  
Center Type 1  
Curb Ramp

- 7 83+33.05 - 53.56' R  
Center Type 2  
Curb Ramp
- 8 83+73.88 - 38.00' R  
Center Type 2  
Curb Ramp

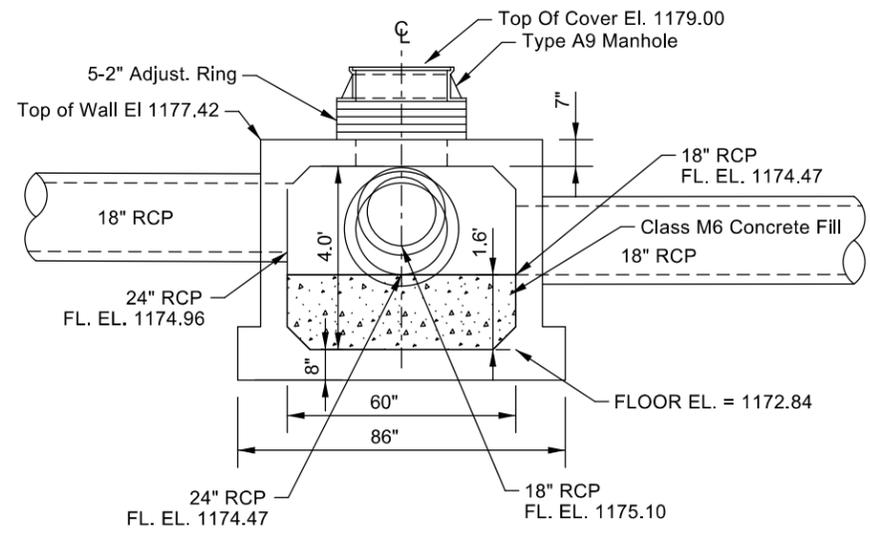
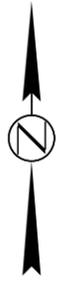
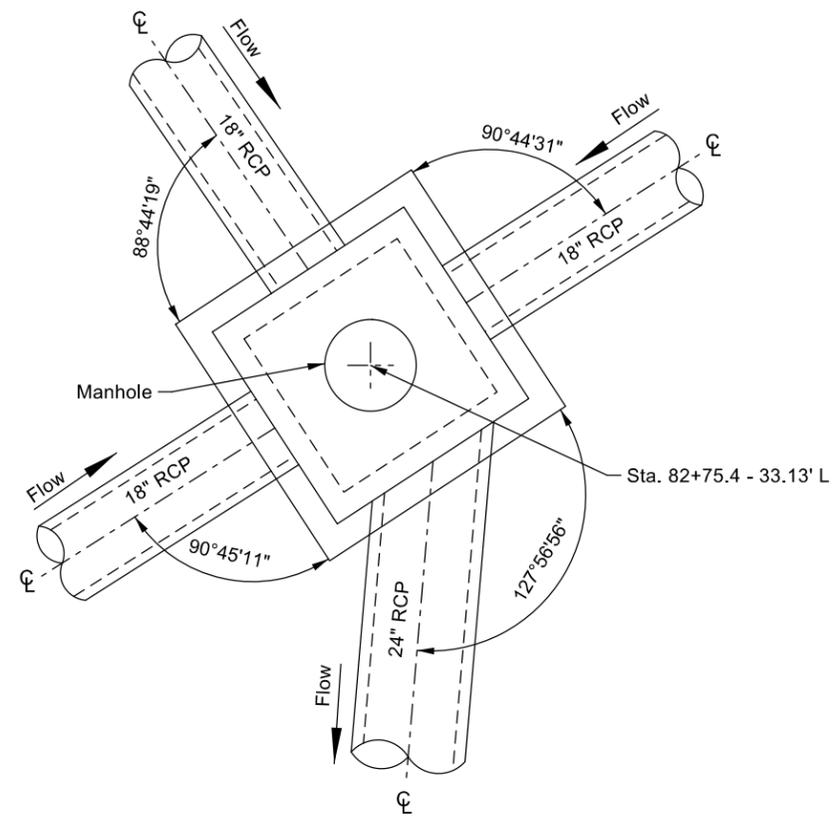


	6" Concrete Sidewalk
	Asphalt (Quantity in Section F)
	Concrete (Quantity in Section F)
	Gravel (Quantity in Section F)

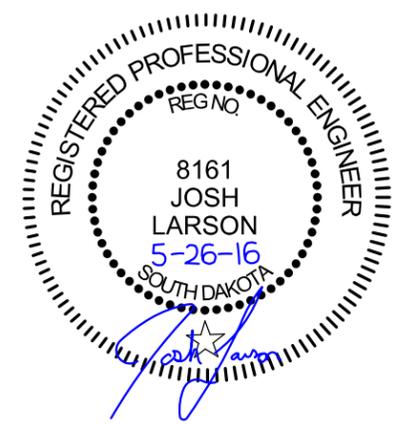
# JUNCTION BOX LAYOUT

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0050(122)384	B47	B77
Plotting Date:		5/31/2016	



Sta. 82+75.4 - 33.13' LT  
5' X 5' Junction Box



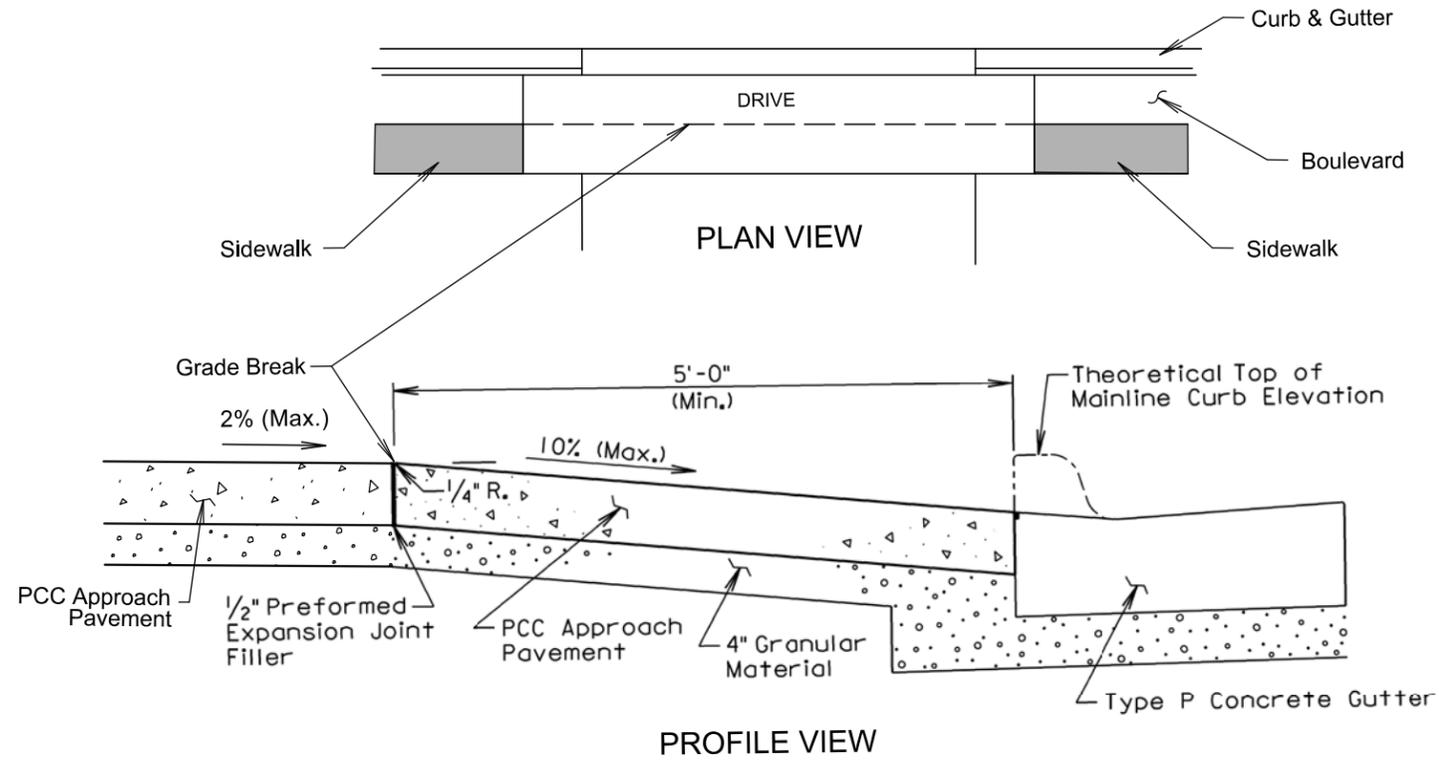
# SPECIAL DETAILS

FOR BIDDING PURPOSES ONLY

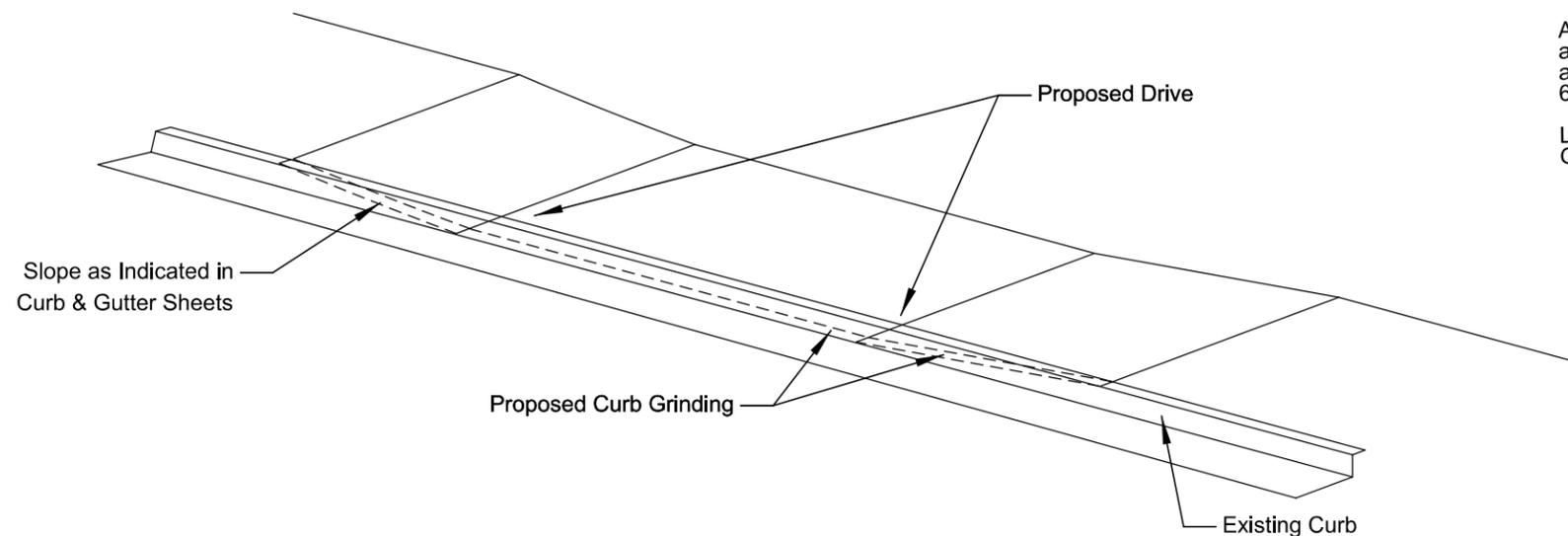
STATE OF SOUTH DAKOTA	PROJECT NH 0050(122)384	SHEET B48	TOTAL SHEETS B77
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Plotting Date: 5/31/2016

## GRADE BREAK FOR TYPE A APPROACH PAVEMENT

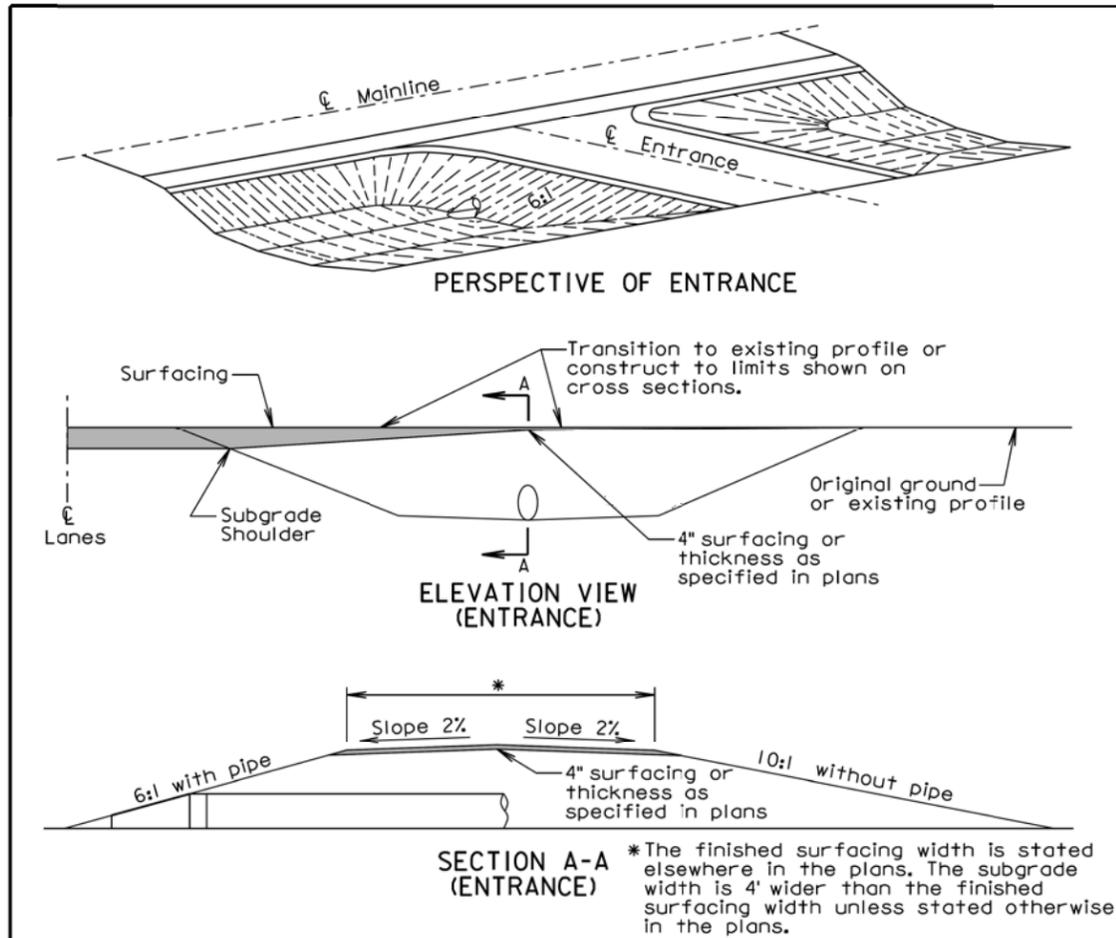


## GRINDING MISCELLANEOUS CONCRETE



Note: The grinding shall produce a smooth, uniform surface.  
 At completion of grinding, the ramp shall meet all applicable elevation, grade, and transition requirements as detailed for new construction in Standard Plates 651.01, 651.02 and 651.03, as well as all ADA requirements.  
 Location and length of grinding are shown on the Curb and Gutter Sheets.





**GENERAL NOTES:**

The ditch section shown above in the perspective and elevation view is only for illustrative purposes.

A 6:1 inslope shall be constructed for an entrance when a pipe is required. A 10:1 inslope shall be constructed when a pipe is not required.

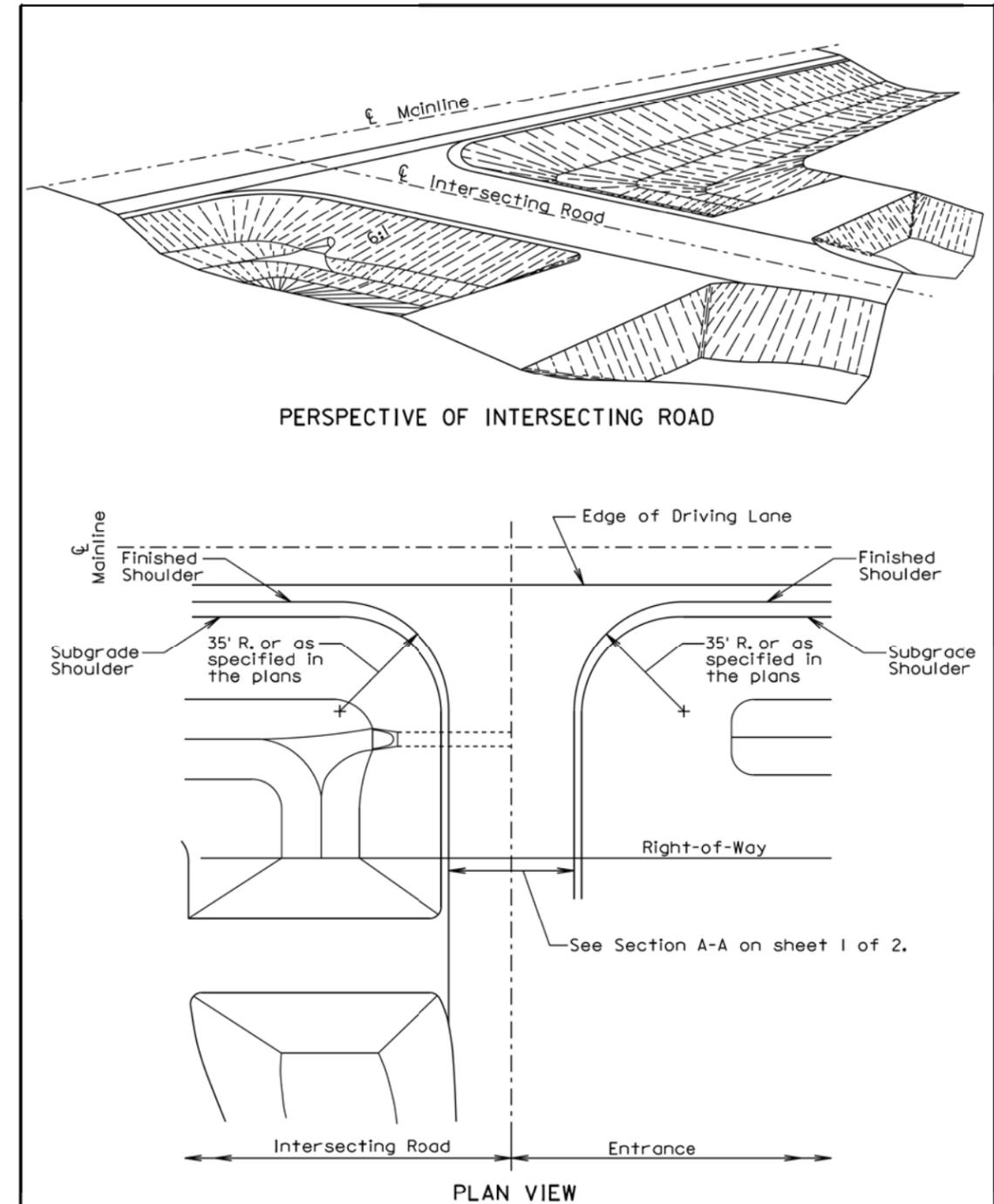
Pipe lengths shall be adjusted if necessary during construction to obtain the 6:1 slopes. For grading projects, the pipe lengths are estimated typically using a 4" thickness of surfacing directly over the subgrade above the pipe.

The transition area between the mainline inslope and the approach inslope for entrances shall be rounded to eliminate an abrupt transition.

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

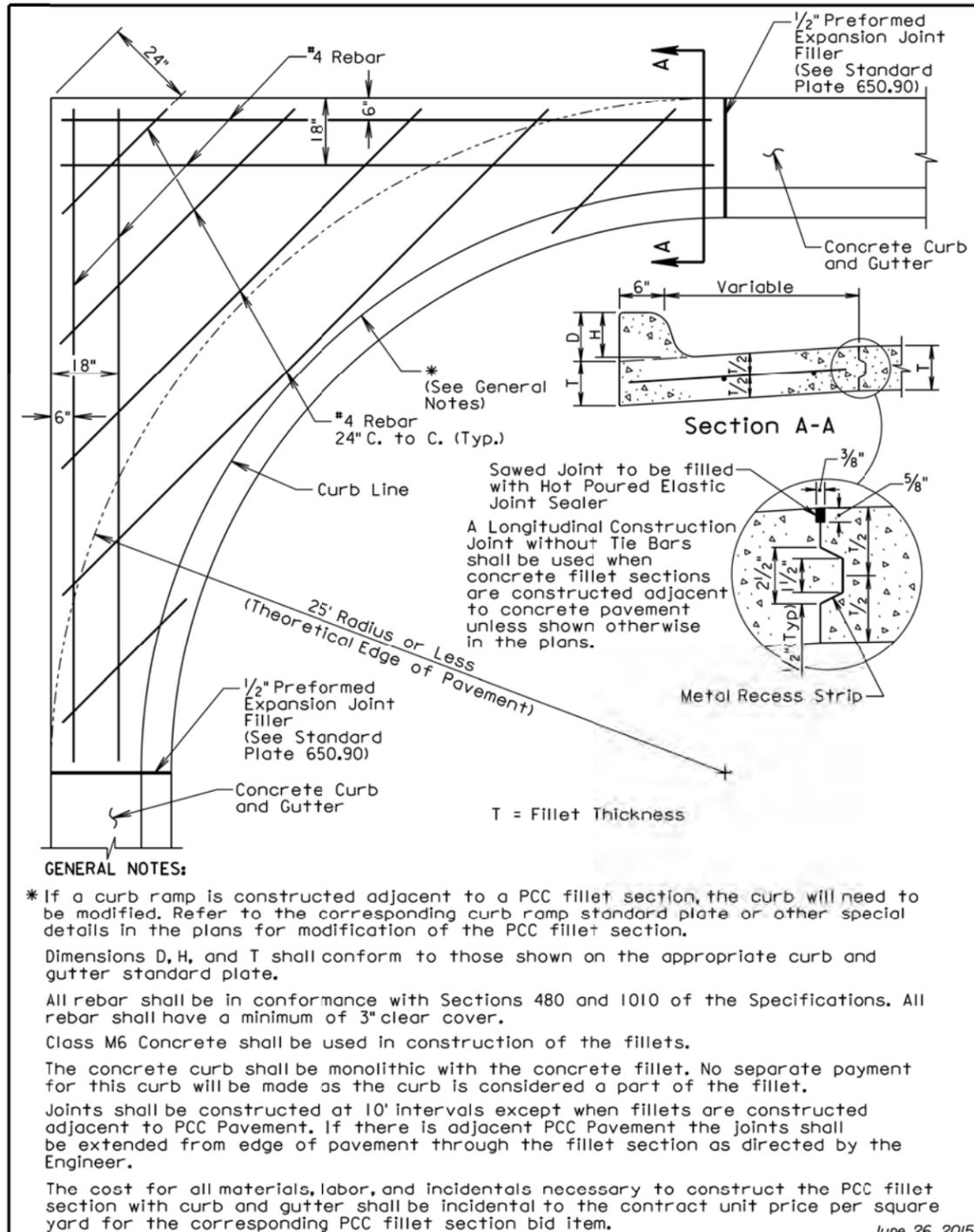
September 6, 2013

Published Date: 1st Qtr. 2016	S D D O T	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 1 of 2

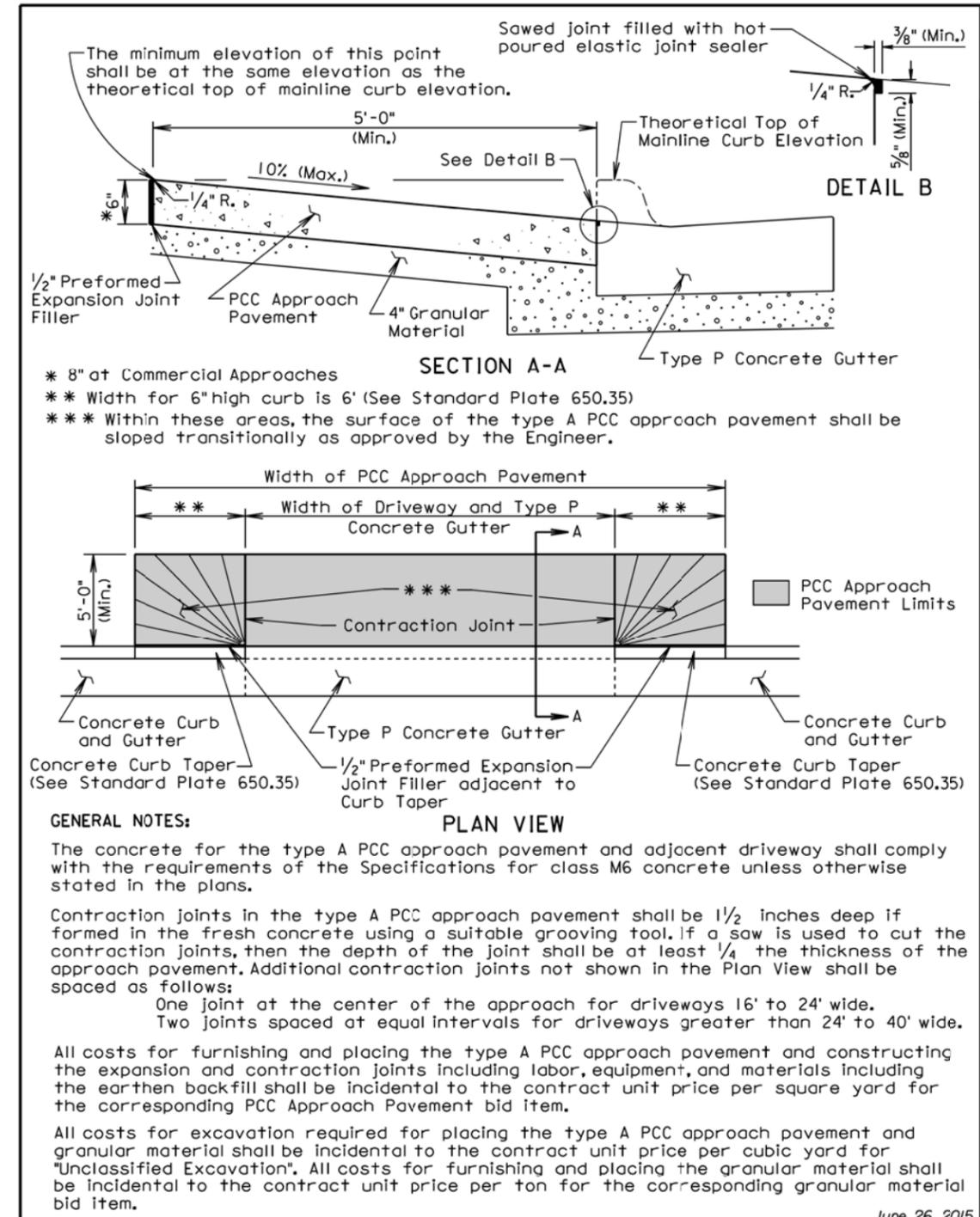


September 6, 2013

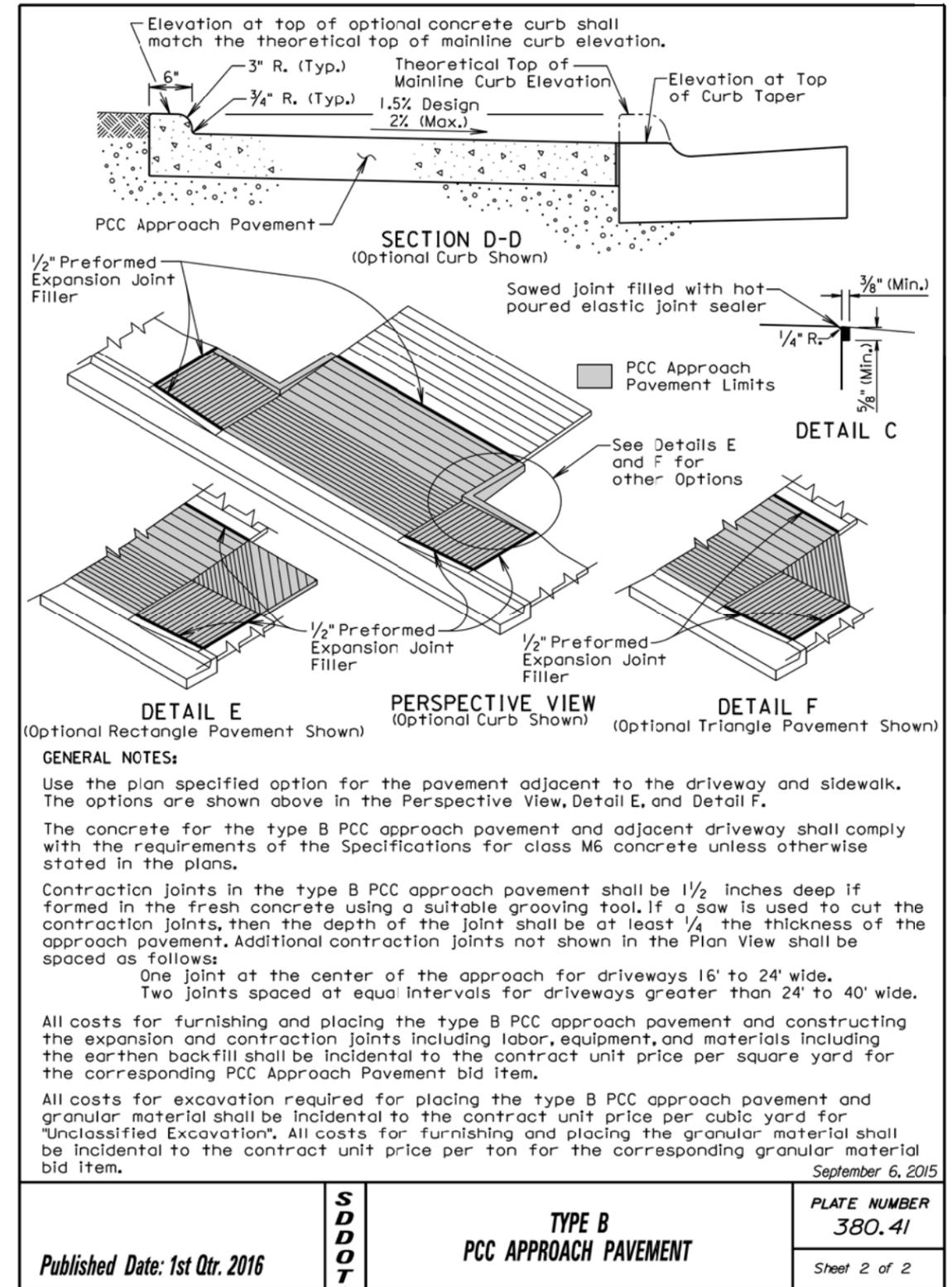
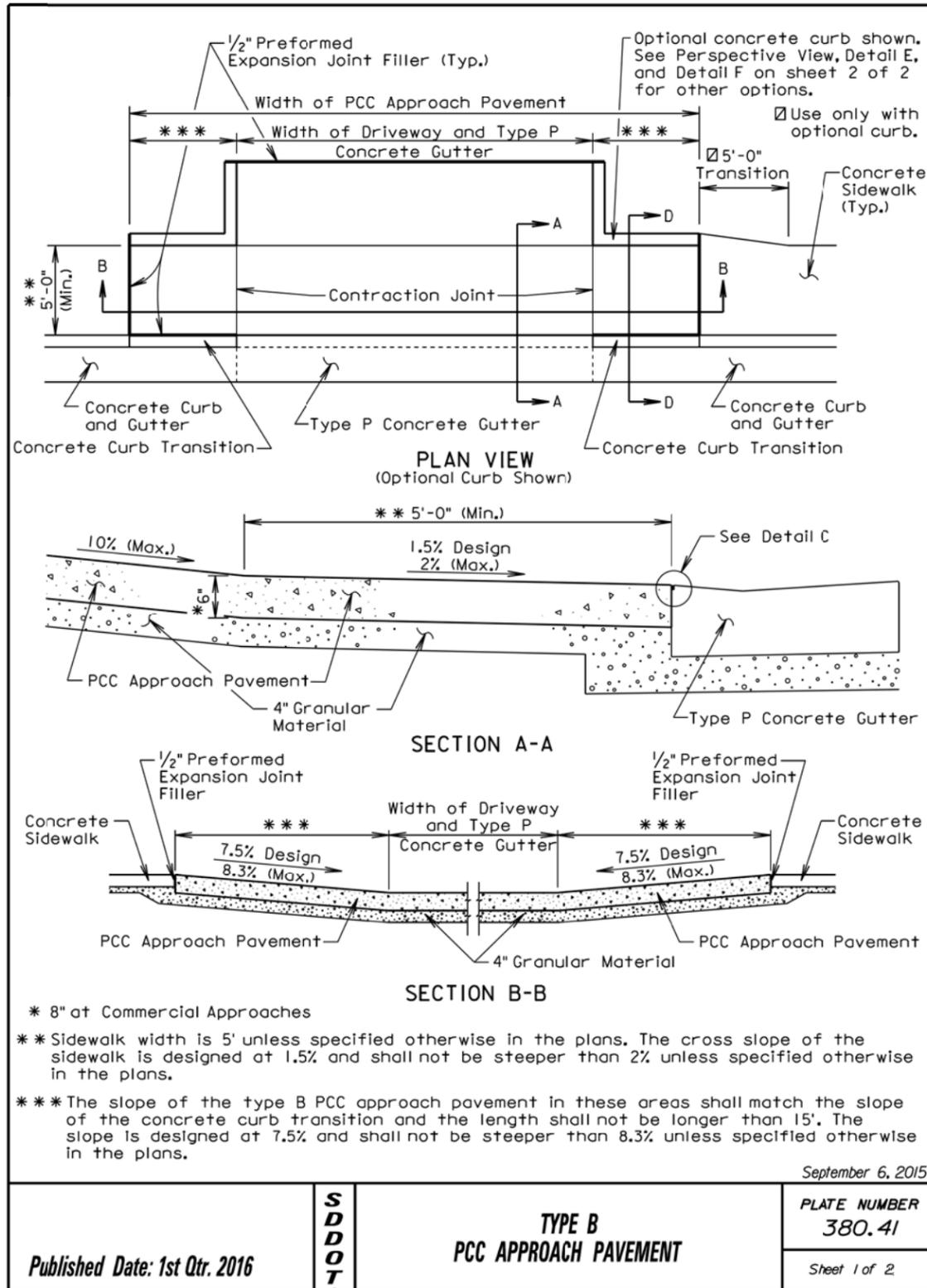
Published Date: 1st Qtr. 2016	S D D O T	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 2 of 2



Published Date: 1st Qtr. 2016	S D D O T	PCC FILLET SECTION WITH TYPE B CURB AND GUTTER	PLATE NUMBER 380.16
			Sheet 1 of 1

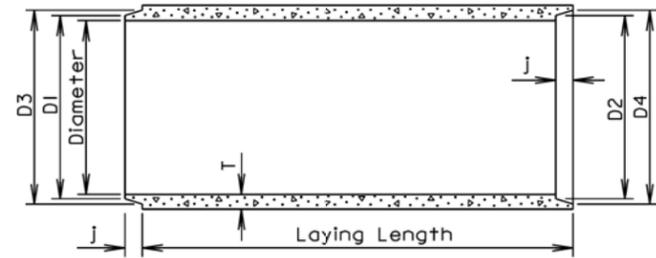


Published Date: 1st Qtr. 2016	S D D O T	TYPE A PCC APPROACH PAVEMENT	PLATE NUMBER 380.40
			Sheet 1 of 1

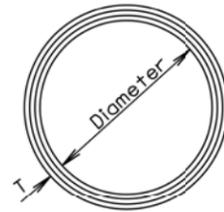


**TOLERANCES IN DIMENSIONS**

Diameter:  $\pm 1.5\%$  for 24" Dia. or less and  $\pm 1\%$  or  $\frac{3}{8}$ " whichever is more for 27" Dia. or greater.  
 Diameters at joints:  $\pm \frac{3}{16}$ " for 30" Dia. or less and  $\pm \frac{1}{4}$ " for 36" or greater.  
 Length of joint (j):  $\pm \frac{1}{4}$ ".  
 Wall thickness (T): not less than design T by more than 5% or  $\frac{3}{16}$ ", whichever is greater.  
 Laying length: shall not underrun by more than  $\frac{1}{2}$ ".



LONGITUDINAL SECTION



END VIEW

**GENERAL NOTES:**

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

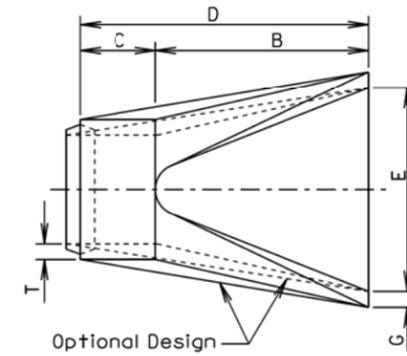
Not more than 2 four-foot sections shall be permitted near the ends of any culvert. Four-foot lengths shall be used only to secure the required length of culvert.

Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 1/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	3 1/4	3	29 1/4	29 5/8	30 1/4	30 5/8
30	384	3 1/2	3 1/4	32 3/8	32 3/4	33 1/2	33 7/8
36	524	4	3 3/4	38 3/4	39 1/4	40	40 1/2
42	685	4 1/2	4	45 1/8	45 5/8	46 1/2	47
48	867	5	4 1/2	51 1/2	52	53	53 1/2
54	1070	5 1/2	4 1/2	57 1/8	58 3/8	59 3/8	59 7/8
60	1296	6	5	64 1/4	64 3/4	66	66 1/2
66	1542	6 1/2	5 1/2	70 5/8	71 1/8	72 1/2	73
72	1810	7	6	77	77 1/2	79	79 1/2
78	2093	7 1/2	6 1/2	83 3/8	83 3/8	85 5/8	86 1/8
84	2410	8	7	89 3/4	90 1/4	92 1/8	92 5/8
90	2740	8 1/2	7	95 3/4	96 1/4	98 1/8	98 5/8
96	2950	9	7	102 1/8	102 5/8	104 1/2	105
102	3075	9 1/2	7 1/2	109	109 1/2	111 1/2	112
108	3870	10	7 1/2	115 1/2	116	118	118 1/2

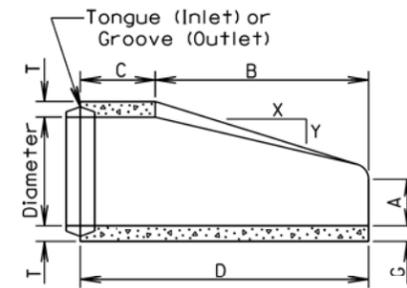
June 26, 2015

<b>S D D O T</b>	<b>REINFORCED CONCRETE PIPE</b>	PLATE NUMBER <b>450.01</b>
		Sheet 1 of 1

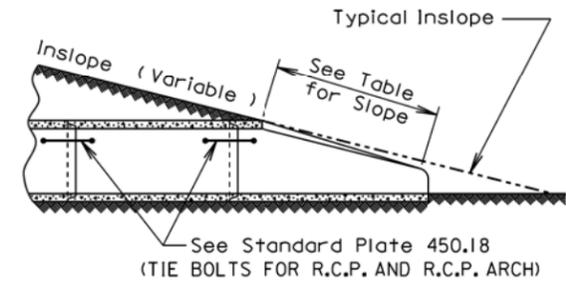
Published Date: 1st Qtr. 2016



TOP VIEW



LONGITUDINAL SECTION

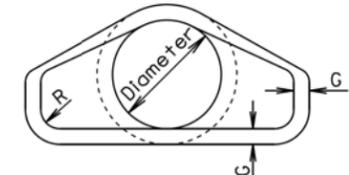


SLOPE DETAIL

**GENERAL NOTES:**

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

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



END VIEW

Dia. (in.)	Approx. Wt. of Section (lbs.)	Approx. Slope (X to Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)	R (in.)
12	530	2.4:1	2	4	24	48 7/8	72 7/8	24	2	1 1/2
15	740	2.4:1	2 1/4	6	27	46	73	30	2 1/4	1 1/2
18	990	2.3:1	2 1/2	9	27	46	73	36	2 1/2	1 1/2
21	1280	2.4:1	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	1 1/2
24	1520	2.5:1	3	9 1/2	43 1/2	30	73 1/2	48	3	1 1/2
27	1930	2.5:1	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	1 1/2
30	2190	2.5:1	3 1/2	12	54	19 3/4	73 1/4	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

<b>S D D O T</b>	<b>R. C. P. FLARED ENDS</b>	PLATE NUMBER <b>450.10</b>
		Sheet 1 of 1

Published Date: 1st Qtr. 2016

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.

**TOP VIEW**

**SIDE VIEW**

**ELEVATION VIEW**

Di. (in.)	T (in.)	R (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	No. Sections	No. Bars
<b>FOR CIRCULAR PIPE</b>										
15	2/4	3	6	48	9	57	6	18	1	3
18	2/2	3	6	69	9	78	9	24	1	3
*24	3	3	6	111	9	120	6	24	1 or 2	5
<b>FOR ARCH PIPE</b>										
**18	2/2	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

**S D D O T**

**R. C. P. SAFETY ENDS WITH OR WITHOUT BARS**

PLATE NUMBER 450.12

Sheet 1 of 1

Published Date: 1st Qtr. 2016

Wall "t" (in.)	Rod Dia. (in.)	Pipe Sleeve Dia. (nominal)
≤ 3/4	5/8	3/4
3/2-6/2	3/4	1
≥ 7	1	1 1/4

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

**ADJUSTABLE EYE BOLT TIE**

Pipe Dia. (in.)	"L" (in.)	Bolt Dia. (in.)
≤ 48	4	3/4
> 48	6	1

**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.

**ANGLE AND BOLT TIE**

**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.

**END VIEW "CIRCULAR"**      **END VIEW "ARCH"**

February 28, 2013

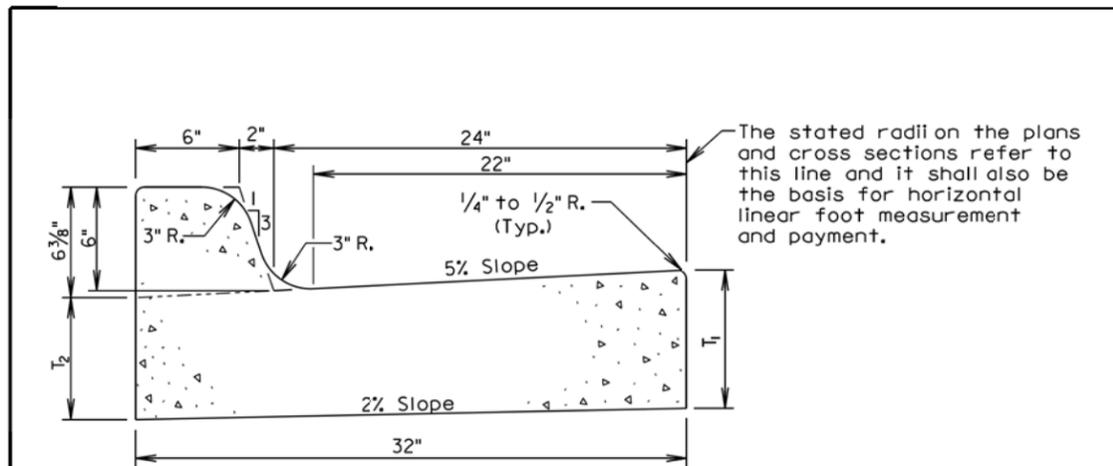
**S D D O T**

**TIE BOLTS FOR R.C.P. AND R.C.P. ARCH**

PLATE NUMBER 450.18

Sheet 1 of 1

Published Date: 1st Qtr. 2016



The stated radii on the plans and cross sections refer to this line and it shall also be the basis for horizontal linear foot measurement and payment.

Type	T <sub>1</sub> (Inches)	T <sub>2</sub> (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B66	6	5/16	0.057	17.7
B67	7	6/16	0.065	15.4
B68	8	7/16	0.073	13.7
B68.5	8.5	7 7/16	0.077	13.0
B69	9	8/16	0.081	12.3
B69.5	9.5	8 1/16	0.085	11.7
B610	10	9/16	0.090	11.2
B610.5	10.5	9 1/16	0.094	10.7
B611	11	10/16	0.098	10.2
B611.5	11.5	10 1/16	0.102	9.8
B612	12	11/16	0.106	9.4

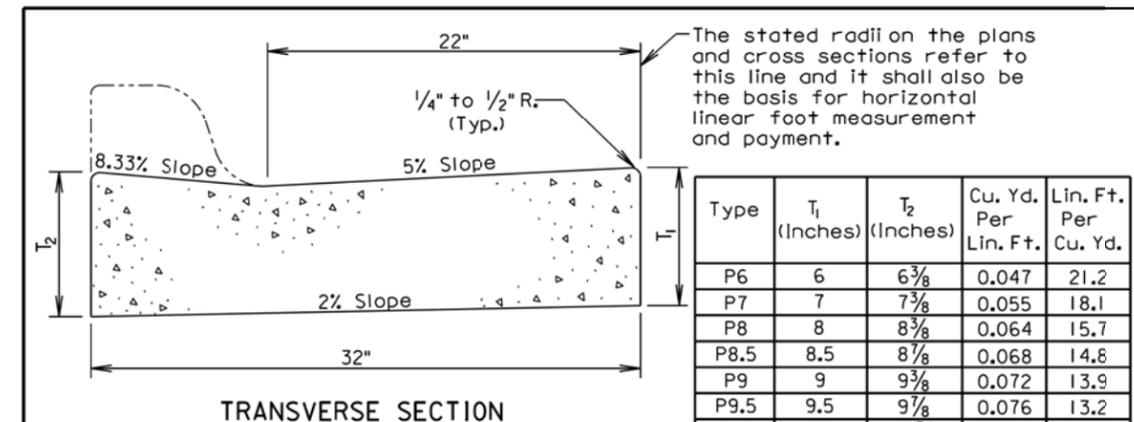
**GENERAL NOTES:**

When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment shall 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.

September 6, 2008

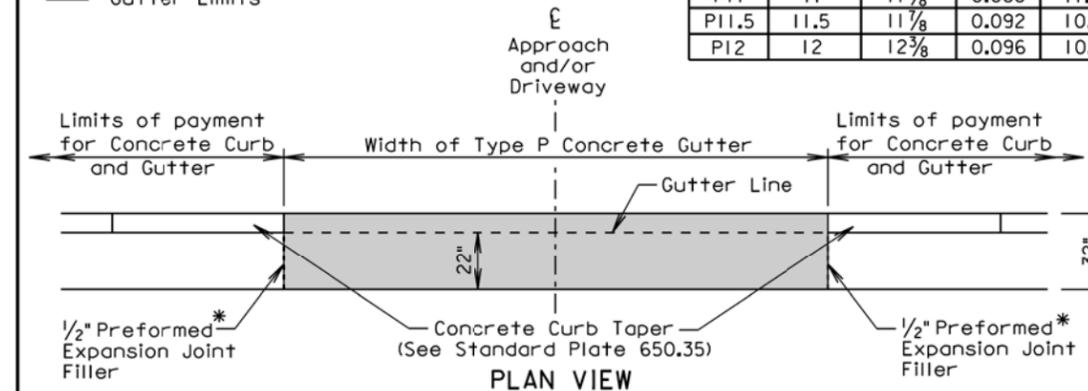
Published Date: 1st Qtr. 2016	S D D O T	TYPE B CONCRETE CURB AND GUTTER	PLATE NUMBER 650.01
			Sheet 1 of 1



The stated radii on the plans and cross sections refer to this line and it shall also be the basis for horizontal linear foot measurement and payment.

Type	T <sub>1</sub> (Inches)	T <sub>2</sub> (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
P6	6	6 3/8	0.047	21.2
P7	7	7 3/8	0.055	18.1
P8	8	8 3/8	0.064	15.7
P8.5	8.5	8 7/8	0.068	14.8
P9	9	9 3/8	0.072	13.9
P9.5	9.5	9 7/8	0.076	13.2
P10	10	10 3/8	0.080	12.5
P10.5	10.5	10 7/8	0.084	11.9
P11	11	11 3/8	0.088	11.3
P11.5	11.5	11 7/8	0.092	10.8
P12	12	12 3/8	0.096	10.4

Type P Concrete Gutter Limits



\* Joint will not be needed if concrete curb and gutter and type P concrete gutter is placed at the same time. If the 1/2" Preformed Expansion Joint Filler is provided, then the joint shall be sealed in accordance with Standard Plate 650.90.

**GENERAL NOTES:**

The concrete for the Type P Concrete Gutter shall comply with the requirements of the Specifications for Class M6 Concrete.

When concrete gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Standard Plate 380.11.

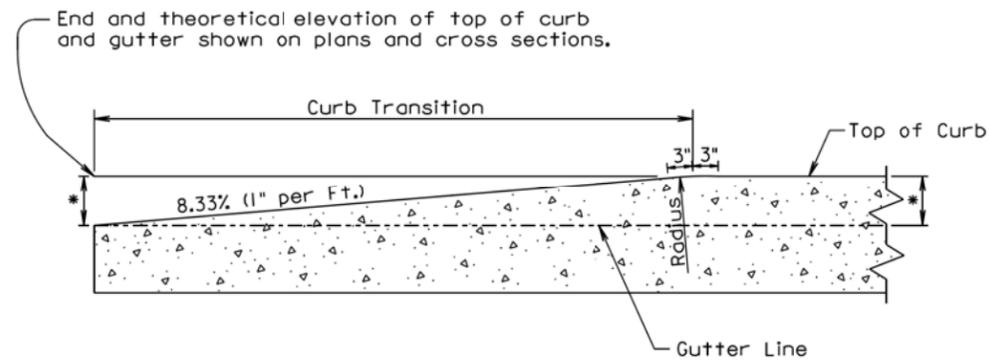
Transverse contraction joints shall be constructed at 10' intervals in the concrete gutter except when concrete gutter is constructed adjacent to mainline PCC pavement. When concrete gutter is constructed adjacent to mainline PCC pavement, a transverse contraction joint shall be constructed in the concrete 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 shall 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 shall be 1 1/2 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 shall be at least 1/4 the thickness of the concrete.

June 26, 2015

Published Date: 1st Qtr. 2016	S D D O T	TYPE P CONCRETE GUTTER	PLATE NUMBER 650.30
			Sheet 1 of 1

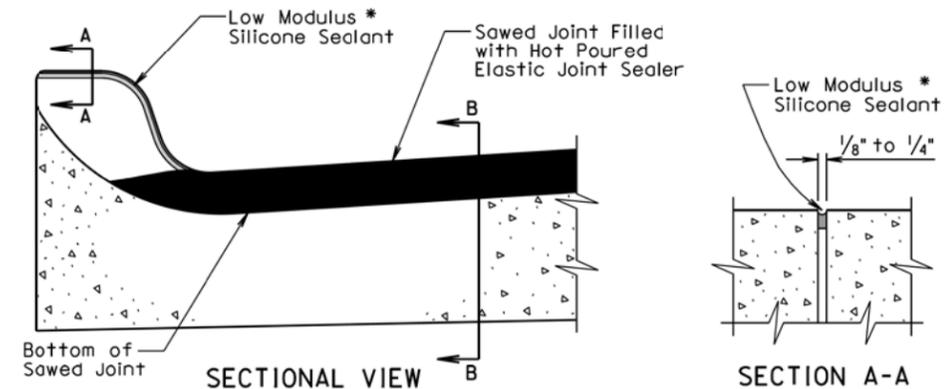


\* Height of Curb

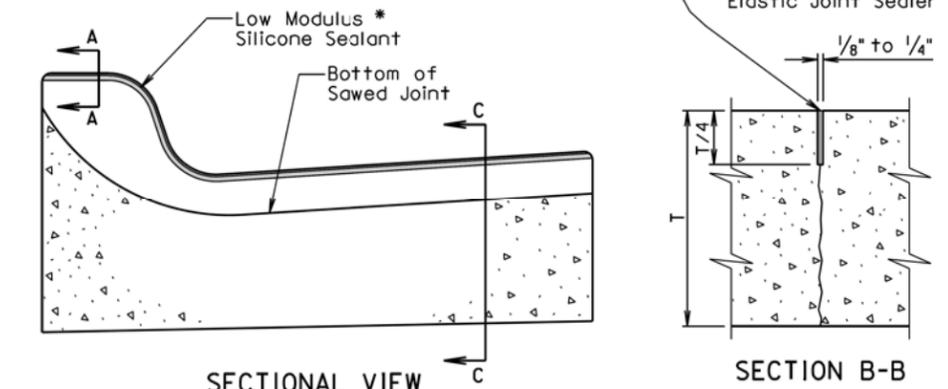
LONGITUDINAL SECTION OF CONCRETE CURB TAPER

September 14, 2005

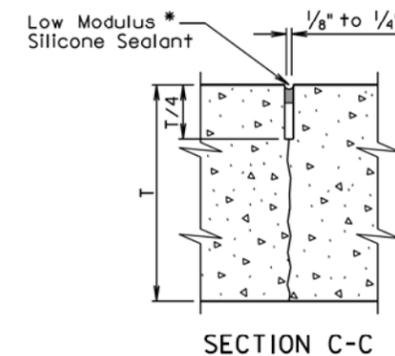
Published Date: 1st Qtr. 2016	S D D O T	CONCRETE CURB TAPER	PLATE NUMBER 650.35
			Sheet 1 of 1



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



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

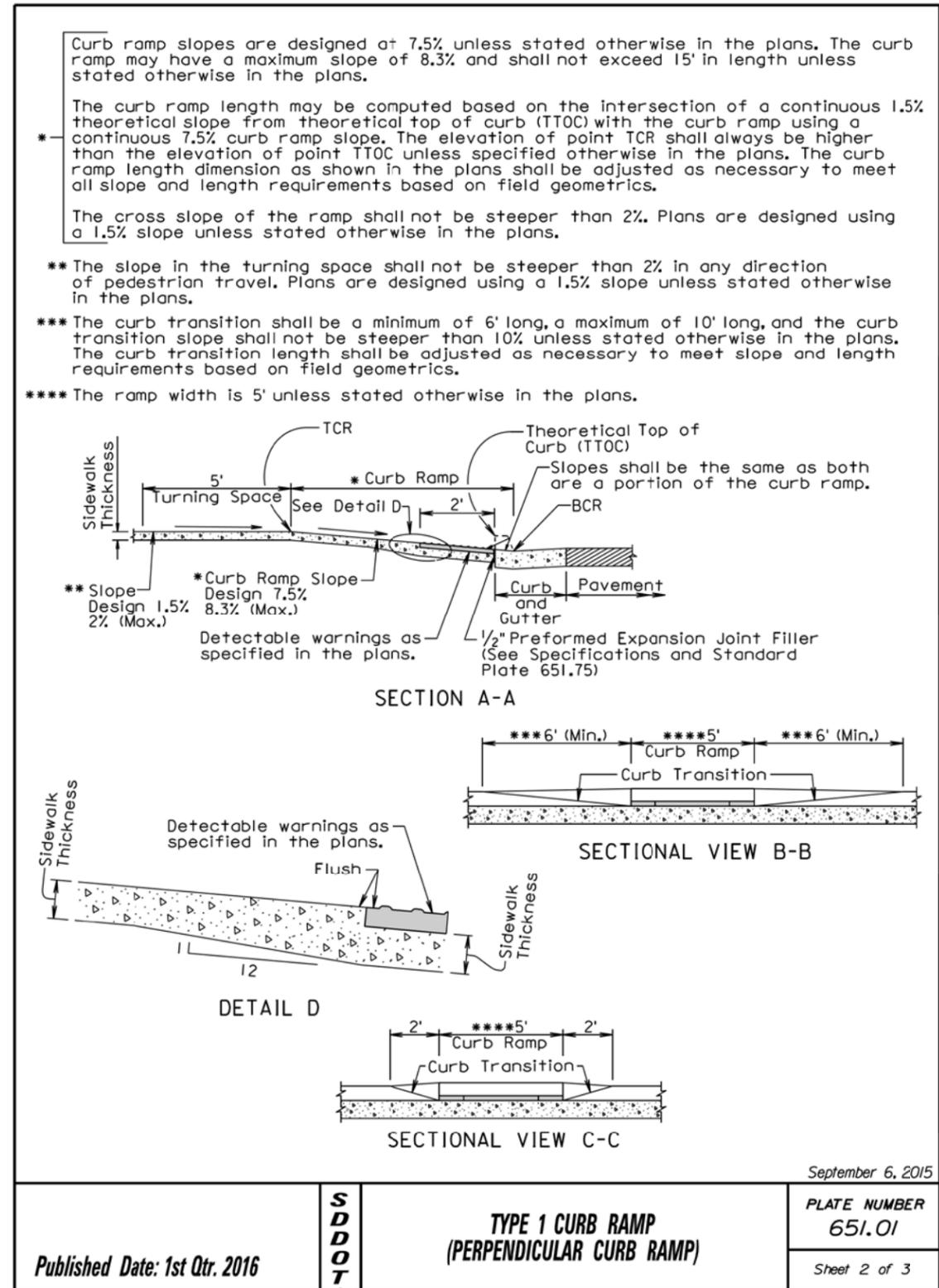
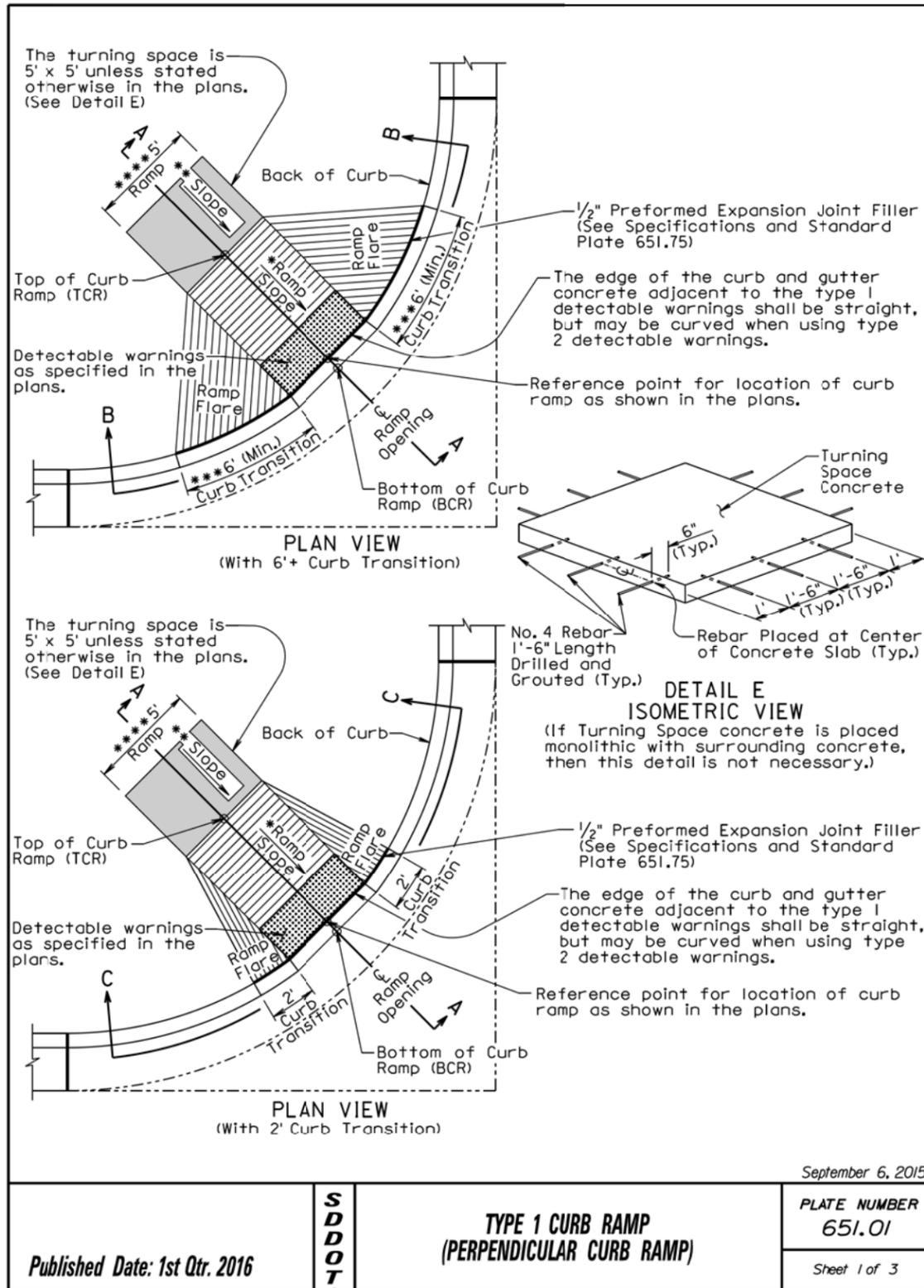


SECTION C-C

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

September 6, 2013

Published Date: 1st Qtr. 2016	S D D O T	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 1 of 2



**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 shall be placed at the location stated in the plans.

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

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

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

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

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

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

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

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

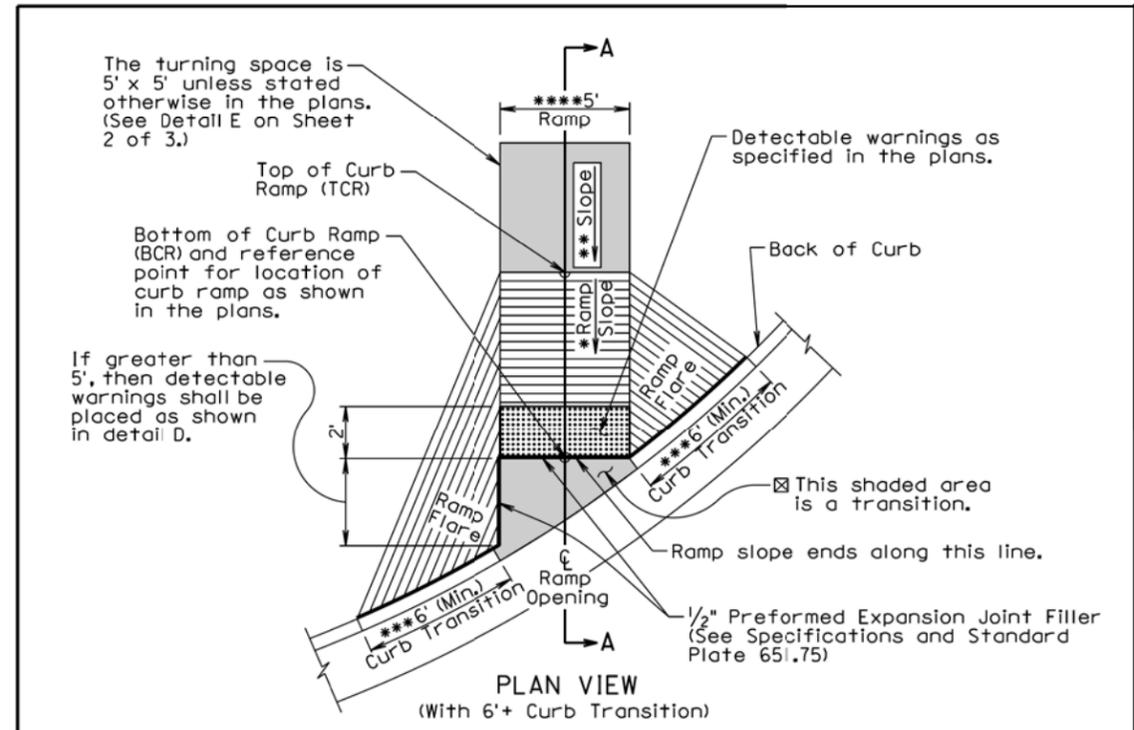
The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the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

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

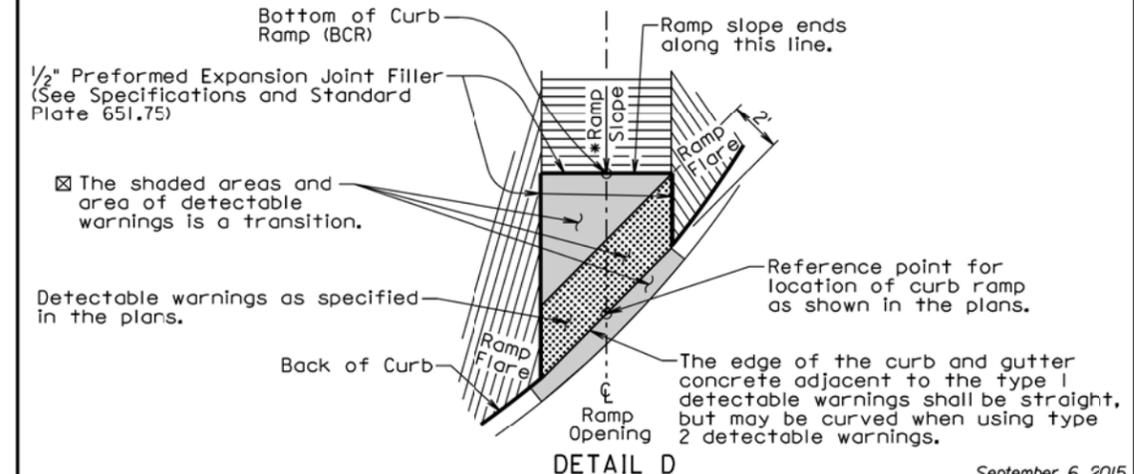
The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit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

September 6, 2015

<b>S D D O T</b>	<b>TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)</b>	PLATE NUMBER <b>651.01</b>
	Published Date: 1st Qtr. 2016	Sheet 3 of 3

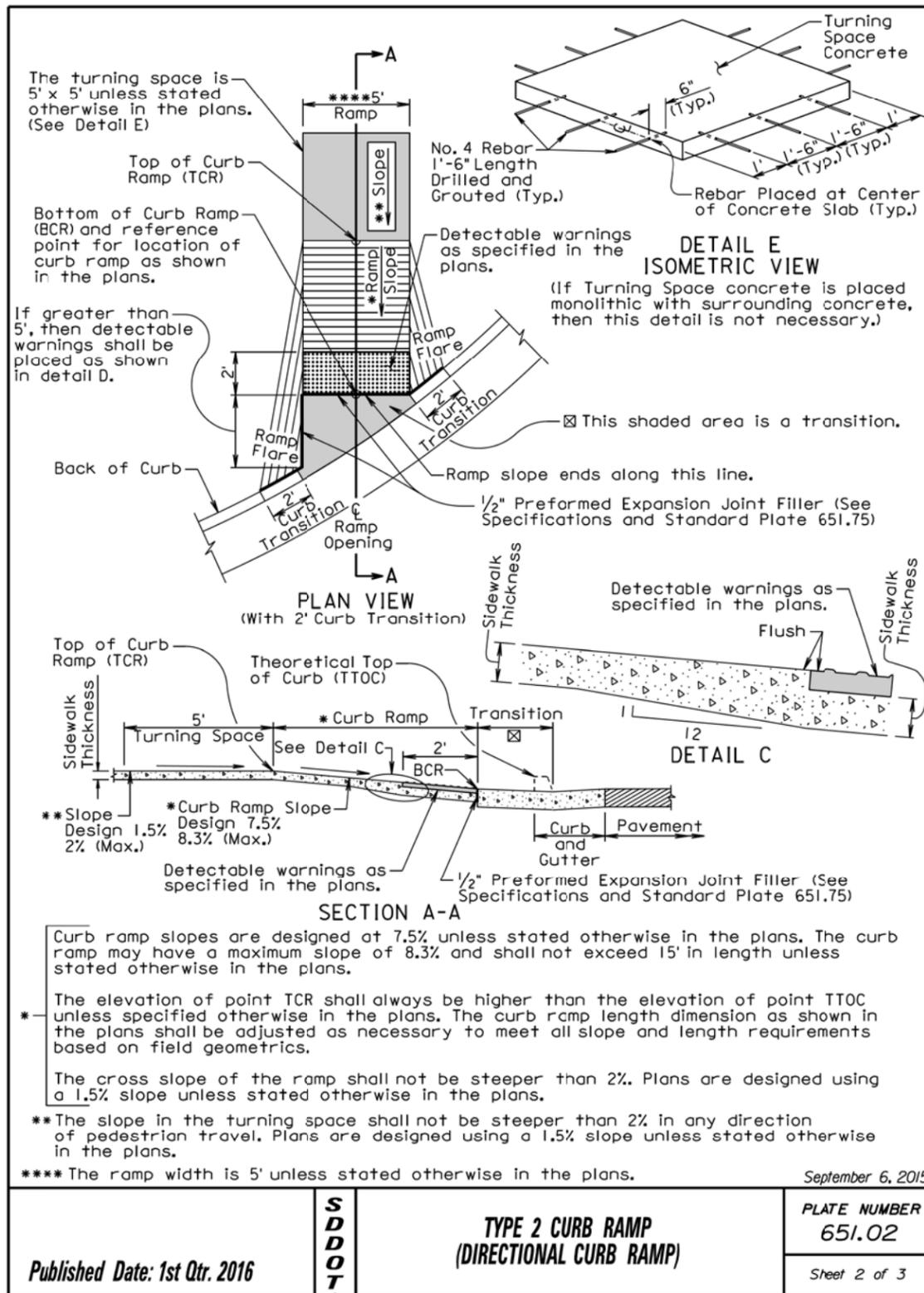


- ☒ The slope within the transition area shall not be steeper than 5%. The concrete within the transition shall be placed monolithic with the curb and gutter or fillet section concrete. The concrete thickness within the transition shall be the same as the curb and gutter or fillet section concrete thickness.
- \*\*\* The curb transition shall be a minimum of 6' long, a maximum of 10' long, and the curb transition slope shall not be steeper than 10% unless stated otherwise in the plans. The curb transition length shall be adjusted as necessary to meet slope and length requirements based on field geometrics.



September 6, 2015

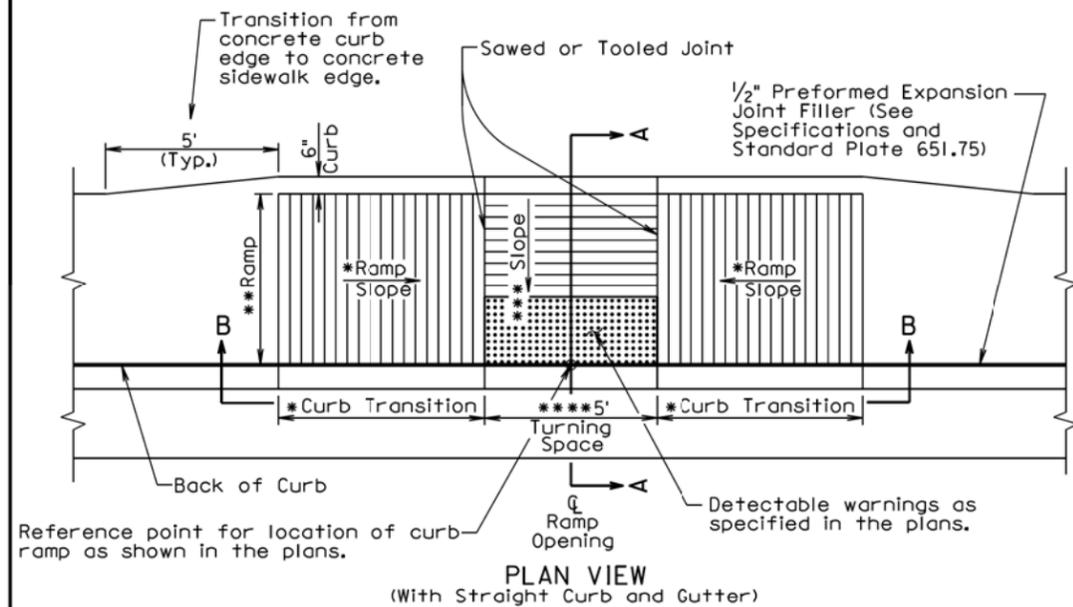
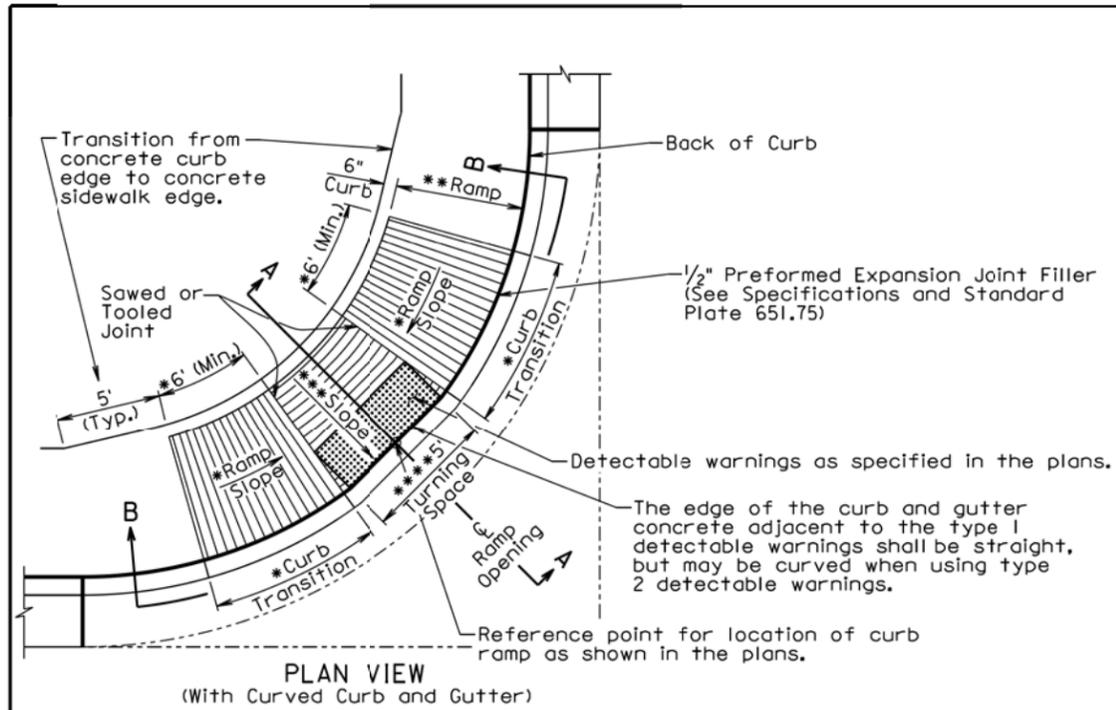
<b>S D D O T</b>	<b>TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)</b>	PLATE NUMBER <b>651.02</b>
	Published Date: 1st Qtr. 2016	Sheet 1 of 3



GENERAL NOTES:

- For illustrative purpose only, type 1 detectable warnings are shown in the drawings.
- The curb ramp depicted on this standard plate may be used with a PCC fillet section or curb and gutter. The curb ramp shall be placed at the location stated in the plans.
- Sidewalk shall not be placed adjacent to the curb ramp flares when a 2' curb transition is used unless shown otherwise in the plans.
- \*Care shall be taken to ensure a uniform grade on the curb ramp, free of sags and short grade changes.
- Surface texture of the curb ramp shall be obtained by coarse brooming transverse to the slope of the curb ramp.
- The normal gutter line profile shall be maintained through the area of the ramp opening.
- Joints shall be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking.
- Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.
- The detectable warnings shall be cut as necessary to fit the plan specified limits of the detectable warnings. Cost for cutting the detectable warnings shall be incidental to the corresponding detectable warning bid item.
- There will be no separate payment for curb ramps. The curb ramp shall be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk bid item. The square foot area of the detectable warnings shall 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 shall be incidental to the contract unit price per square foot for the corresponding concrete sidewalk bid item.
- The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.
- All costs for furnishing and installing the transition area at the base of the curb ramp shall be incidental to the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used and shall be incidental to the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.
- The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".
- The type 2 detectable warnings shall 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 shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

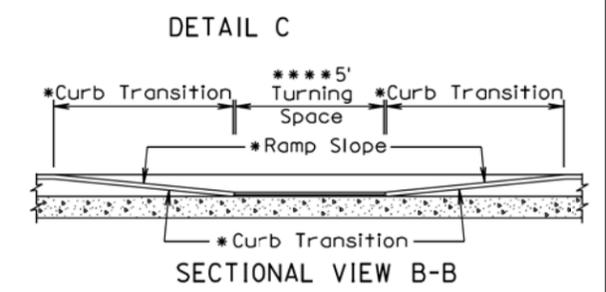
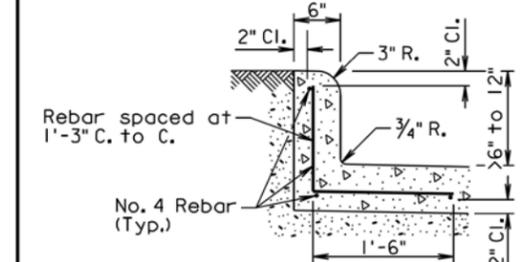
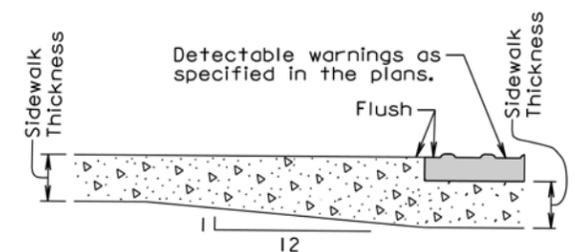
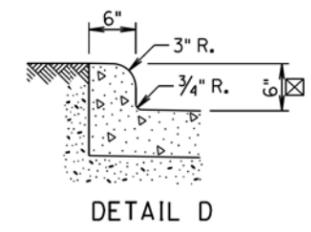
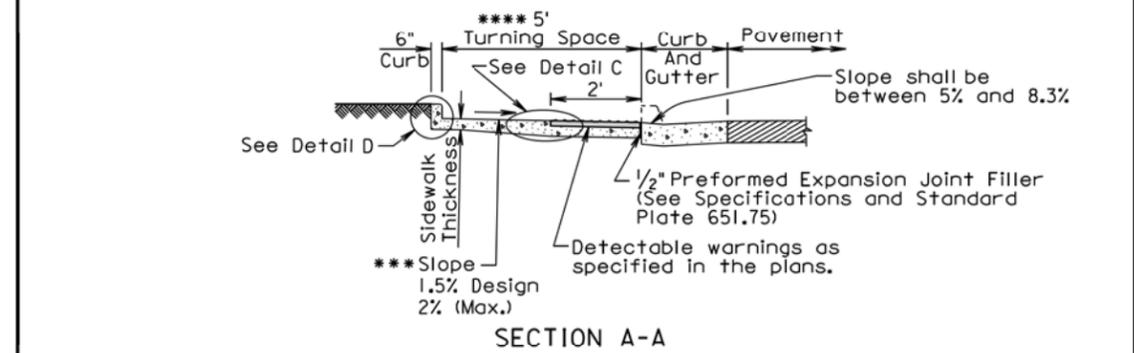




September 6, 2015

Published Date: 1st Qtr. 2016	S D D O T	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 1 of 3

- \* The curb transition slope shall 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 shall not exceed 15' in length unless stated otherwise in the plans. The curb transitions and curb ramp lengths shall be adjusted as necessary to meet all slope and length requirements based on field geometrics.
- \*\* The cross slope of the ramp shall 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 shall 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' x 5' unless stated otherwise in the plans.
- ☒ The curb height shall be 6" unless stated otherwise in the plans.



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

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Published Date: 1st Qtr. 2016	S D D O T	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 shall be placed at the location stated in the plans.

Sidewalk adjacent to the curb ramp shall be as shown in the plans.

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

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

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

Joints shall be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking (see plan view for joint location).

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

The detectable warnings shall be cut as necessary to fit the plan specified limits of the detectable warnings. Cost for cutting the detectable warnings shall be incidental to the corresponding detectable warning bid 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 shall conform to ASTM A615, Grade 60. Cost for furnishing and installing the reinforcing steel shall be incidental to the contract unit price per square foot for the corresponding concrete sidewalk bid item.

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

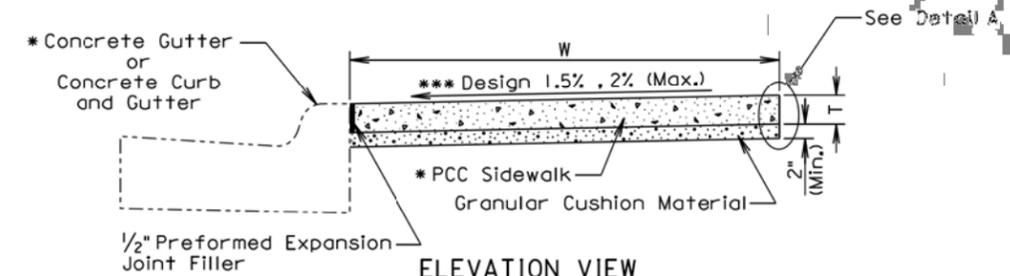
The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the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

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

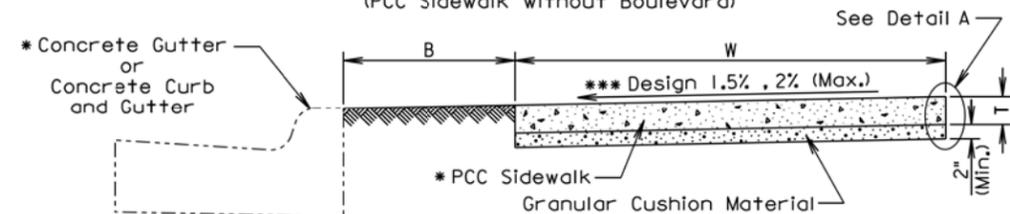
The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit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

September 6, 2015

<b>S D D O T</b>	<b>TYPE 3 CURB RAMP (PARALLEL CURB RAMP)</b>	PLATE NUMBER <b>651.03</b>
	Published Date: 1st Qtr. 2016	Sheet 3 of 3

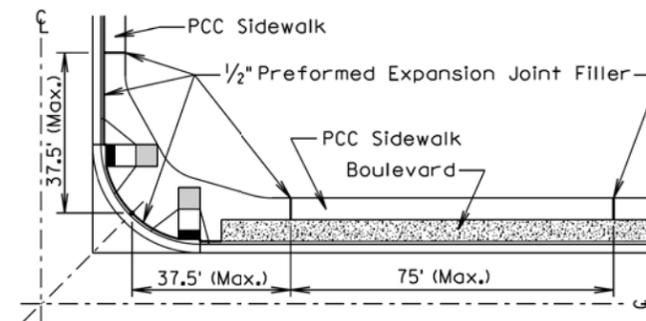


**ELEVATION VIEW**  
(PCC Sidewalk without Boulevard)



**ELEVATION VIEW**  
(PCC Sidewalk with Boulevard)

- B Width of boulevard as specified in the plans.
- T Thickness of PCC sidewalk as specified in the plans.
- W Width of PCC sidewalk as specified in the plans.
- \* Type as specified in the plans.



**PLAN VIEW**

**GENERAL NOTES:**

The PCC sidewalk shall 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 PCC sidewalk is 75 feet.

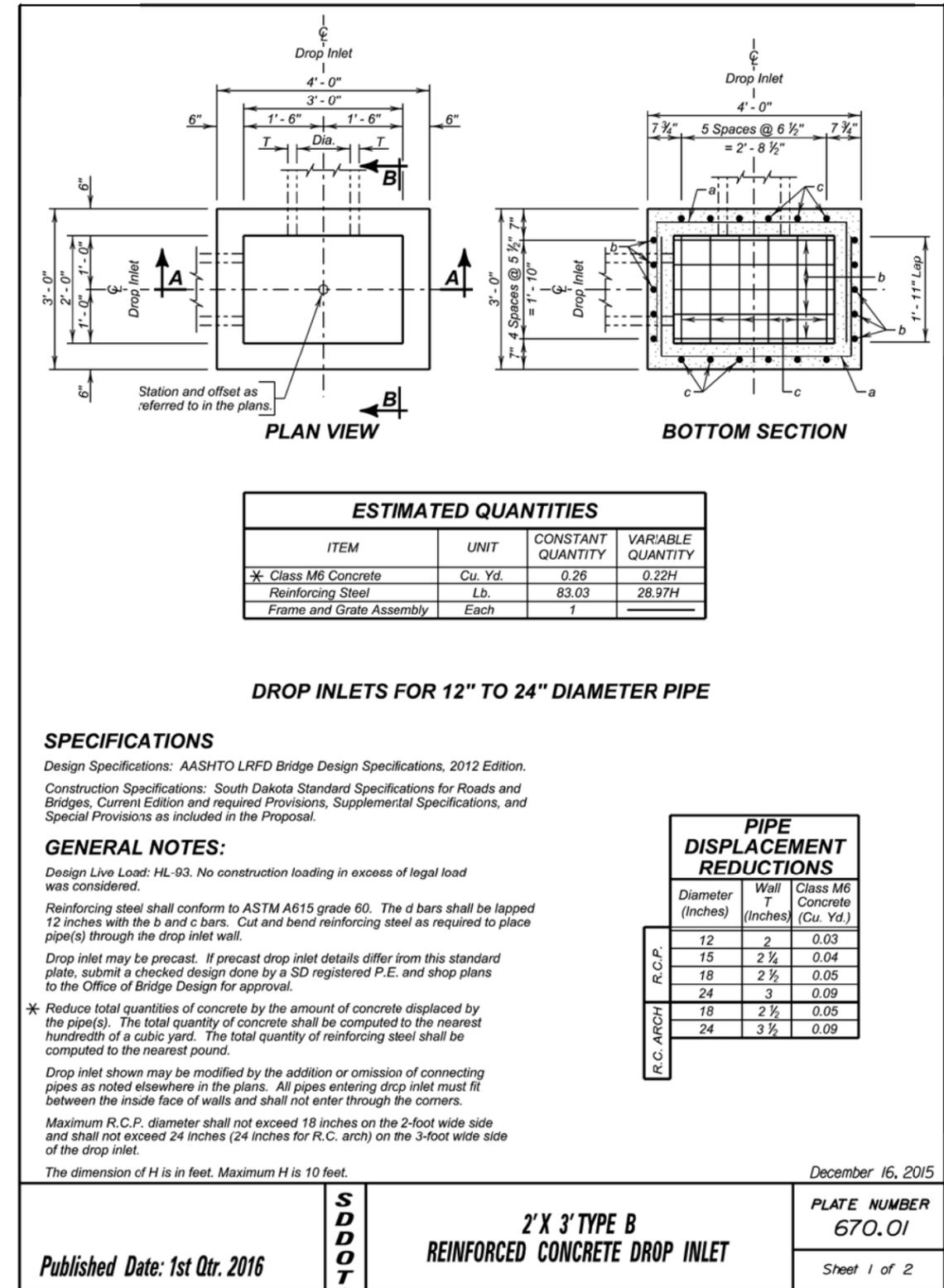
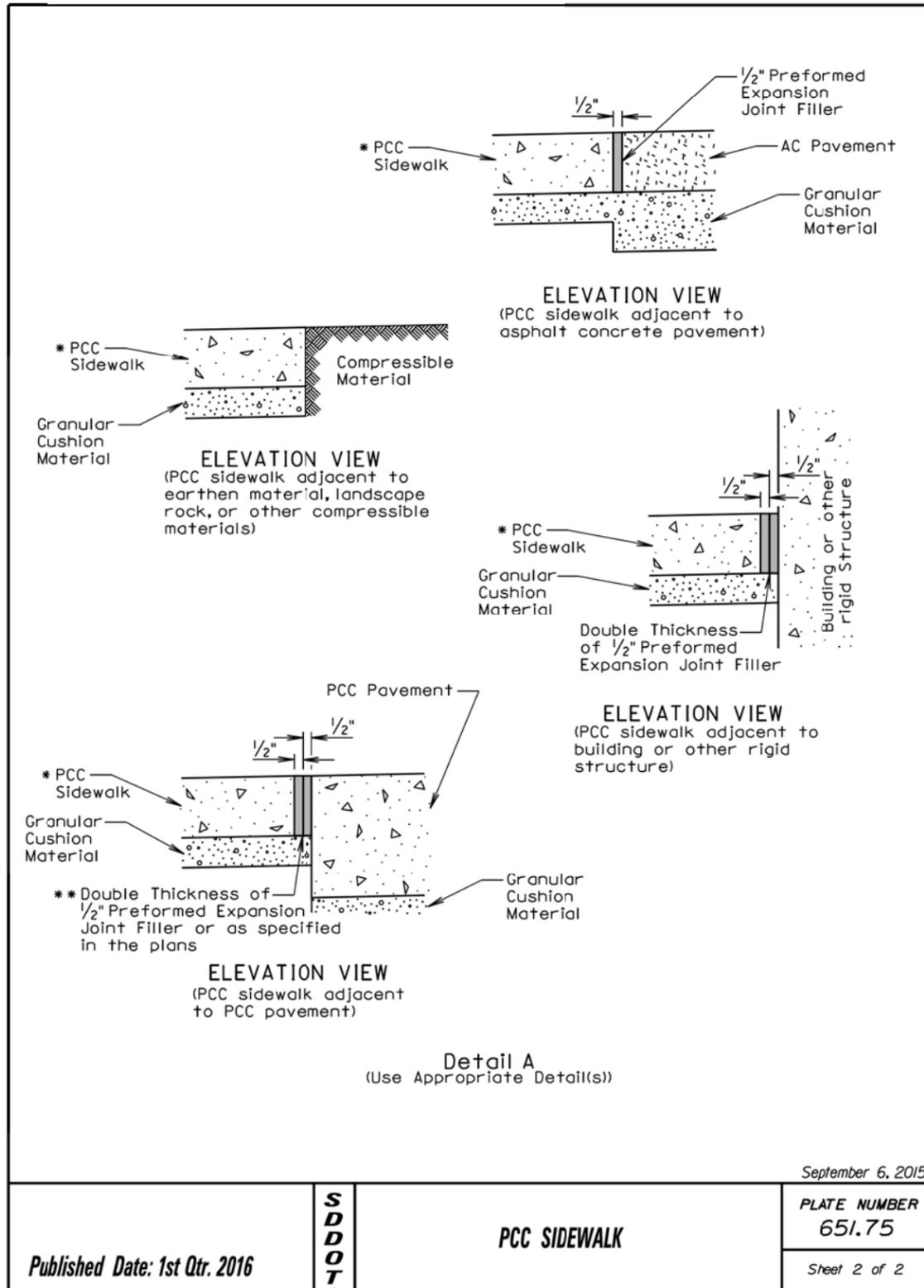
PCC sidewalk placed adjacent to intersection of roadways shall have an expansion joint placed transversely a maximum of 37.5 feet from the intersection. See PLAN VIEW.

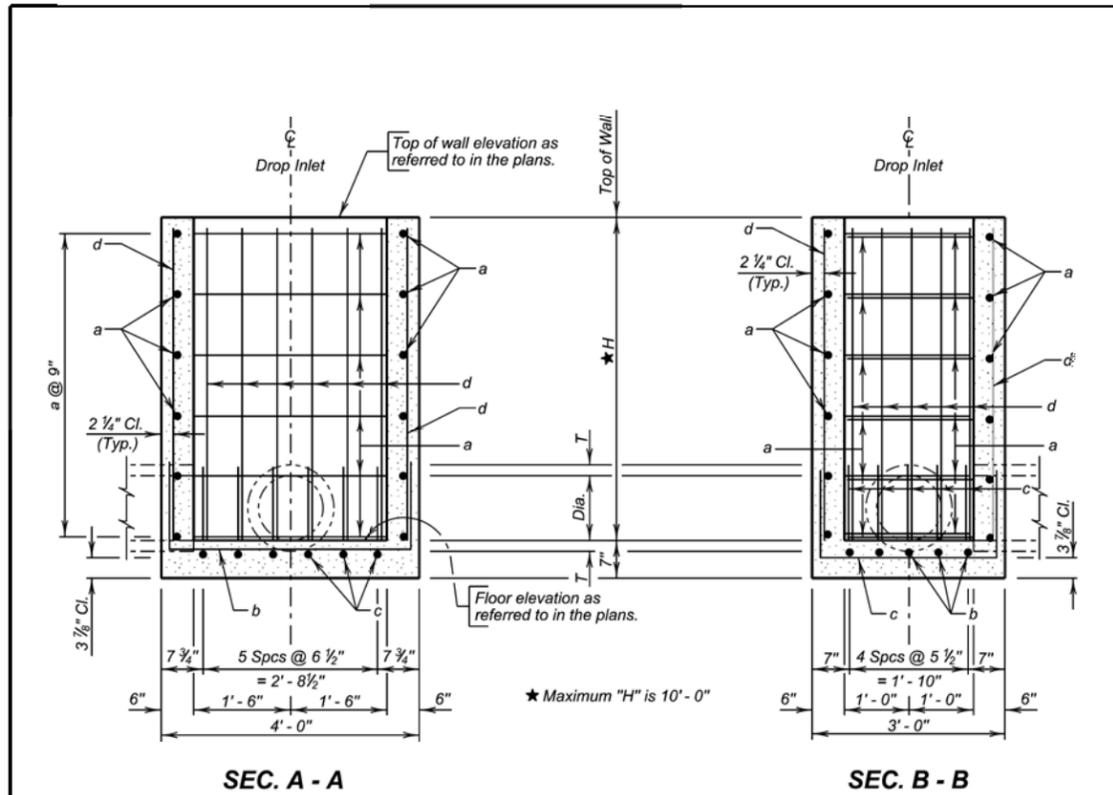
An expansion joint in PCC sidewalk shall consist of a 1/2 inch thick preformed expansion joint filler material placed full depth and width of the PCC sidewalk.

\*\* Large areas of PCC pavement adjacent to 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 shall construct the joint treatment in accordance with the plans.

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<b>S D D O T</b>	<b>PCC SIDEWALK</b>	PLATE NUMBER <b>651.75</b>
	Published Date: 1st Qtr. 2016	Sheet 1 of 2





REINFORCING SCHEDULE				
Mk.	No.	Size	Length	Type
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.

Bending Details	
c	2'-7 1/2"
b	3'-7 1/2"
a	3'-6 1/2"

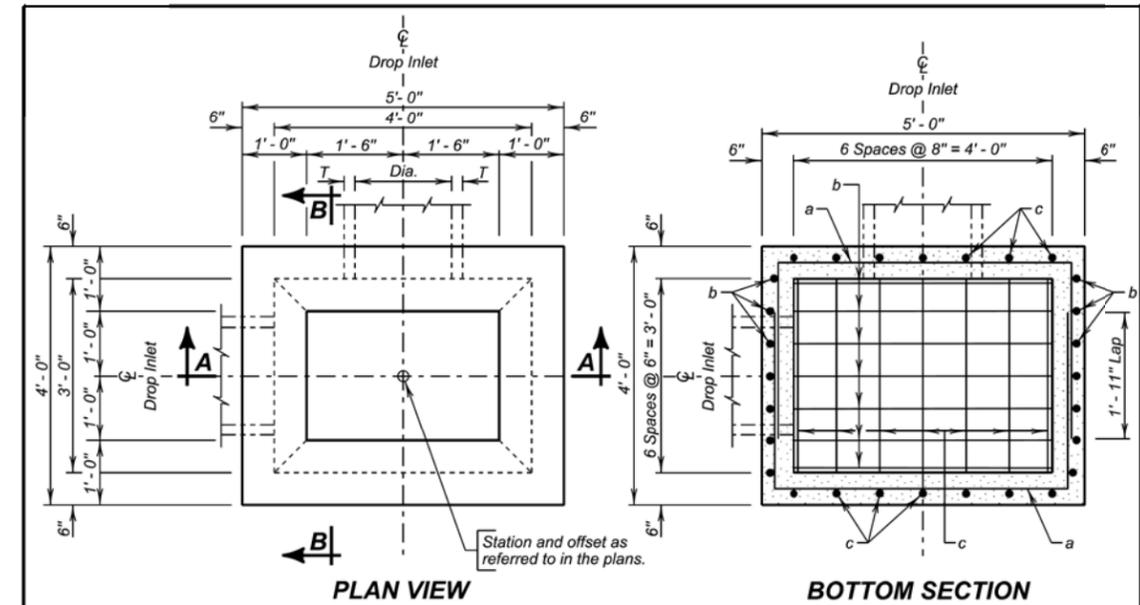
  

NOTE:  
All dimensions are out to out of bars.

a	2'-2 1/2"
b	1'-3 1/2"
c	1'-3 1/2"

December 16, 2015

<b>S D D O T</b>	<b>2' X 3' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.01</b>
	Published Date: 1st Qtr. 2016	Sheet 2 of 2



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.

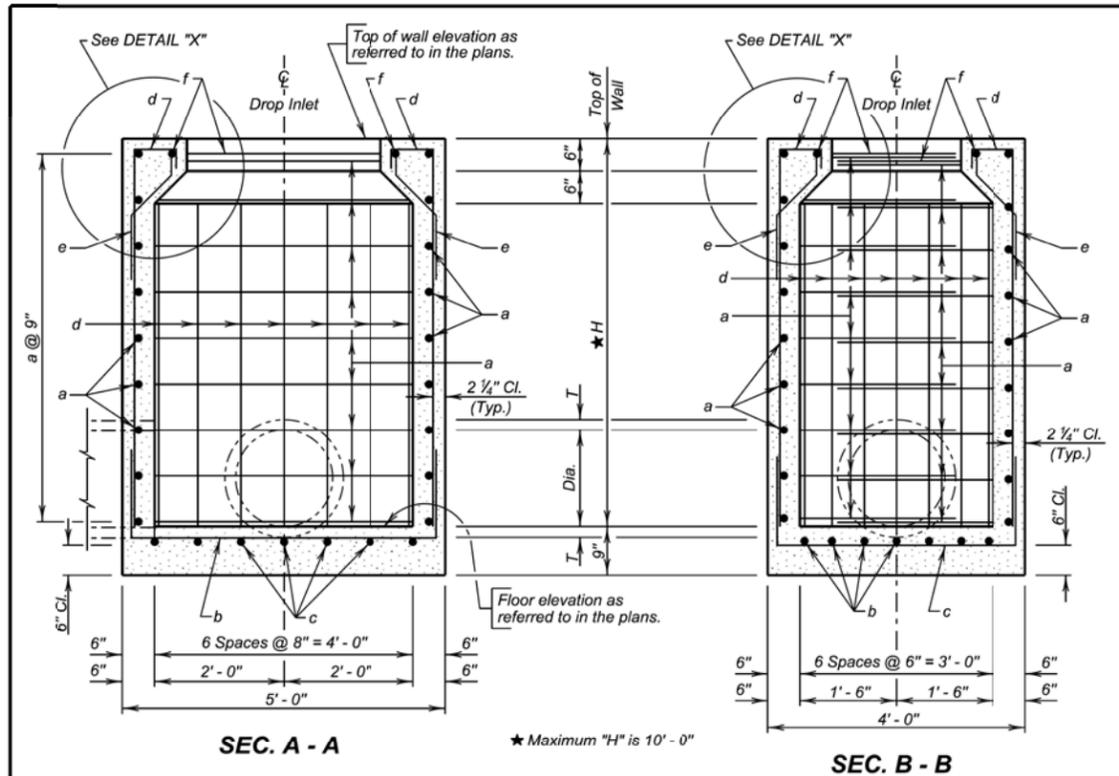
Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

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.)
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.05
24	3	0.09
30	3 1/2	0.14
36	4	0.20
18	2 1/2	0.05
24	3 1/2	0.09
30	4	0.14

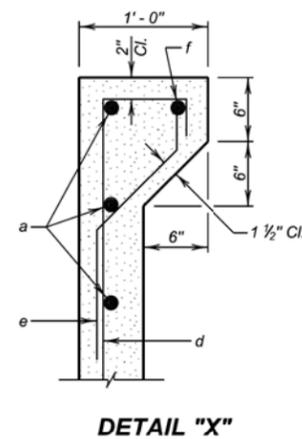
<b>S D D O T</b>	<b>3' X 4' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.02</b>
	Published Date: 1st Qtr. 2016	Sheet 1 of 2



★ Maximum "H" is 10' - 0"

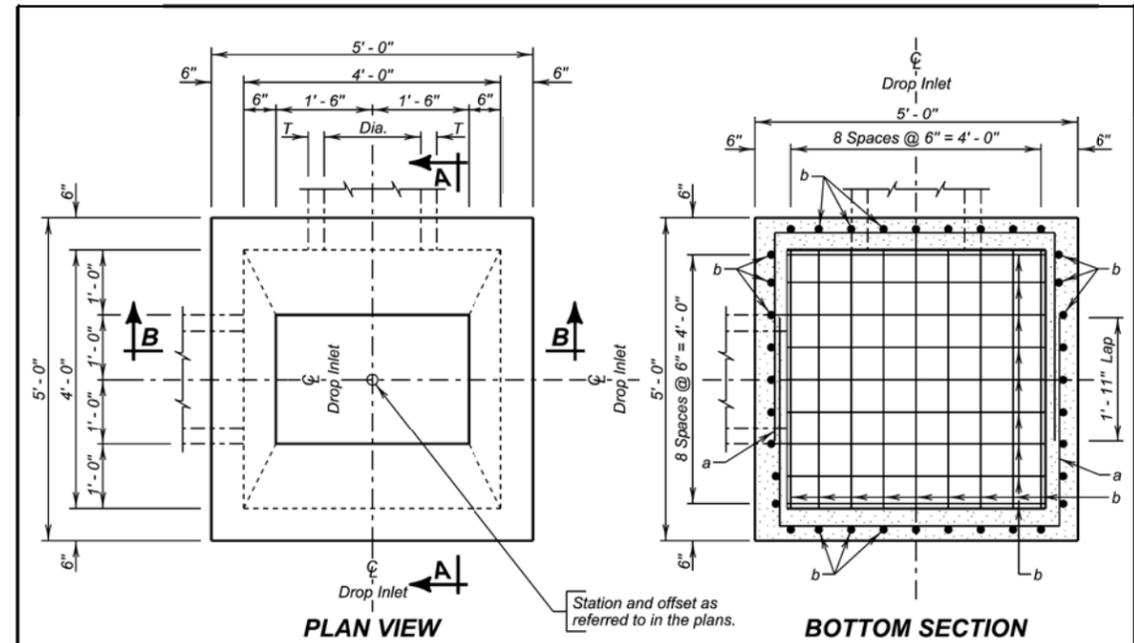
REINFORCING SCHEDULE				
Mk	No.	Size	Length	Type
a	2.67H	4	10' - 0"	17
b	7	4	7' - 6"	17
c	7	4	6' - 6"	17
d	28	4	H + 9"	S17
e	28	4	2' - 3"	S19
f	2	4	7' - 0"	17

NOTE:  
All dimensions are out to out of bars.



December 16, 2015

<b>S D D O T</b>	<b>3' X 4' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.02</b>
	Published Date: 1st Qtr. 2016	Sheet 2 of 2



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

**DROP INLETS FOR 12" TO 36" DIAMETER PIPE**

**SPECIFICATIONS**

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.  
Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

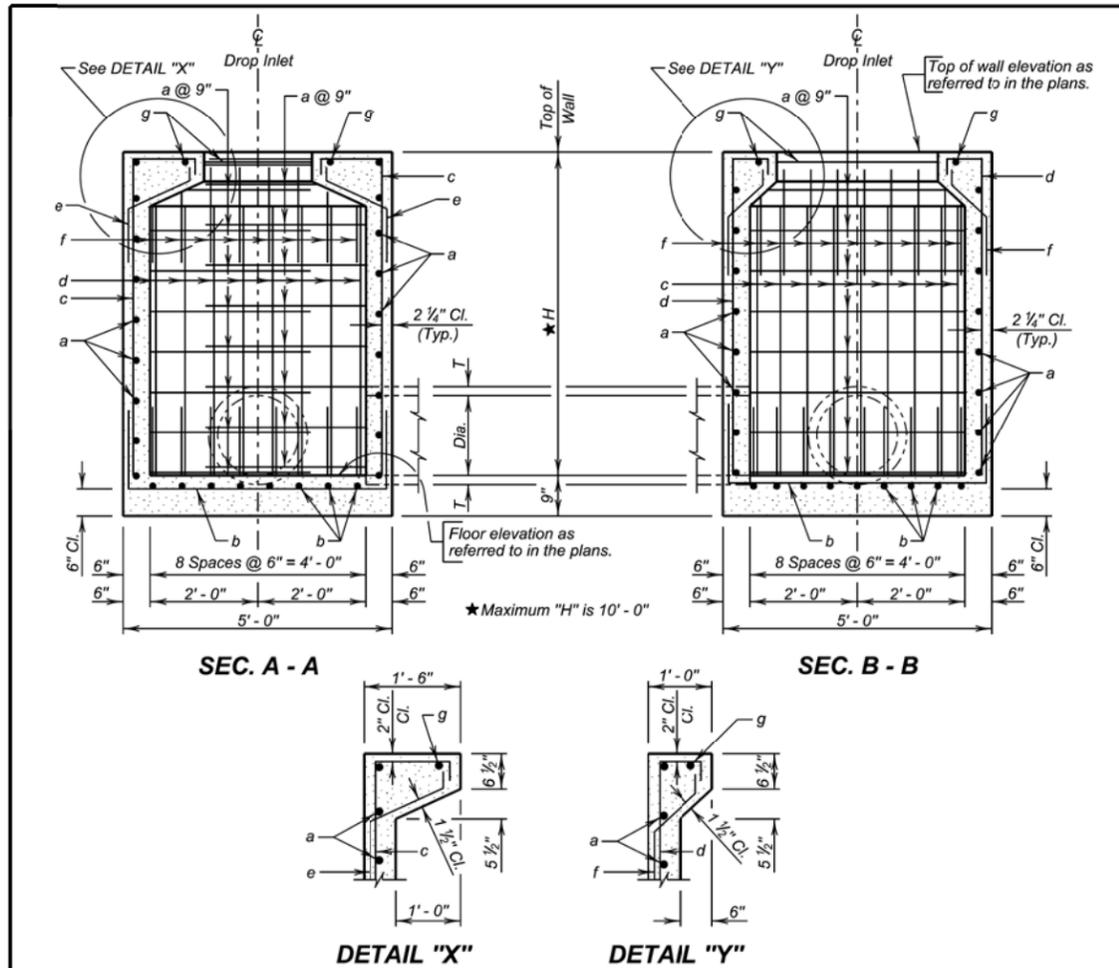
**GENERAL NOTES:**

- Design Live Load: HL-93. No construction loading in excess of legal load was considered.
- Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.
- Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.
- \* Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.
- Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.
- Maximum R.C.P. diameter shall not exceed 36 inches (30 inches for R. C. arch) on the 4-foot wide side of the drop inlet.
- The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS		
Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.05
24	3	0.09
30	3 1/2	0.14
36	4	0.20
R.C.P.		
18	2 1/2	0.05
24	3 1/2	0.09
30	4	0.14
R.C. ARCH		
18	2 1/2	0.05
24	3 1/2	0.09
30	4	0.14

December 16, 2015

<b>S D D O T</b>	<b>4' X 4' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.04</b>
	Published Date: 1st Qtr. 2016	Sheet 1 of 2



REINFORCING SCHEDULE				
Mk.	No.	Size	Length	Type
a	2.67H	4	11'-0"	17
b	18	4	7'-6"	17
c	18	4	H + 15"	S17
d	18	4	H + 9"	S17
e	18	4	2'-6"	S19
f	18	4	2'-3"	S19
g	2	4	7'-0"	17

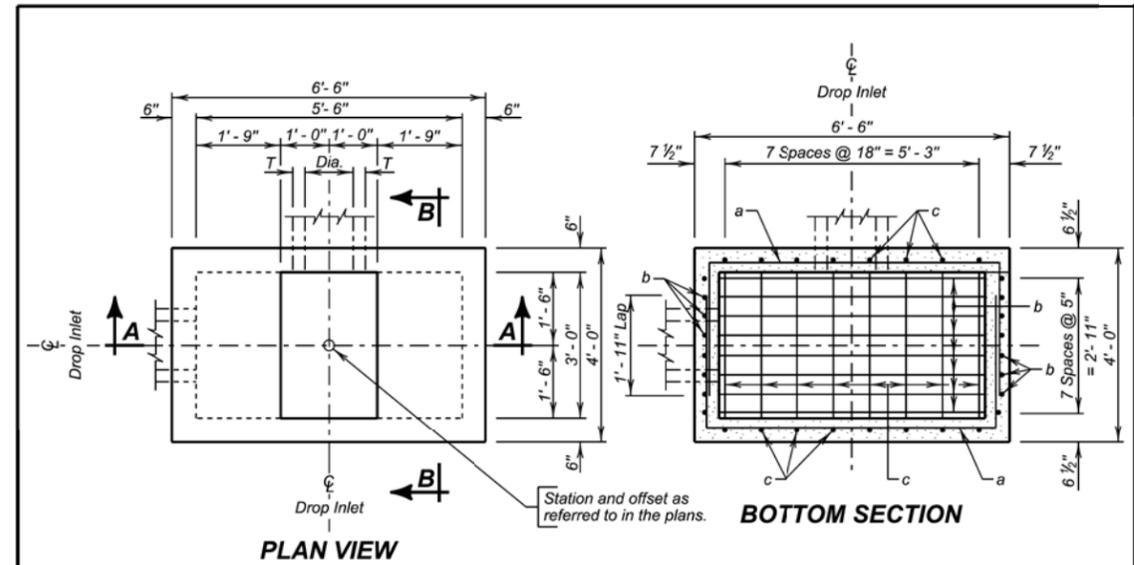
  

Bending Details			
Type 17	Type S17	Type S19	Type S19

NOTE: All dimensions are out to out of bars.

December 16, 2015

<b>S D D O T</b>	<b>4' X 4' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.04</b>
	Published Date: 1st Qtr. 2016	Sheet 2 of 2



ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
* Class M6 Concrete	Cu. Yd.	1.03	0.35H
Reinforcing Steel	Lb.	161.19	47.89H
Grate Assembly	Each	1	

**DROP INLETS FOR 12" TO 54" DIAMETER PIPE**

**SPECIFICATIONS**

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

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

**GENERAL NOTES:**

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

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

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

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

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

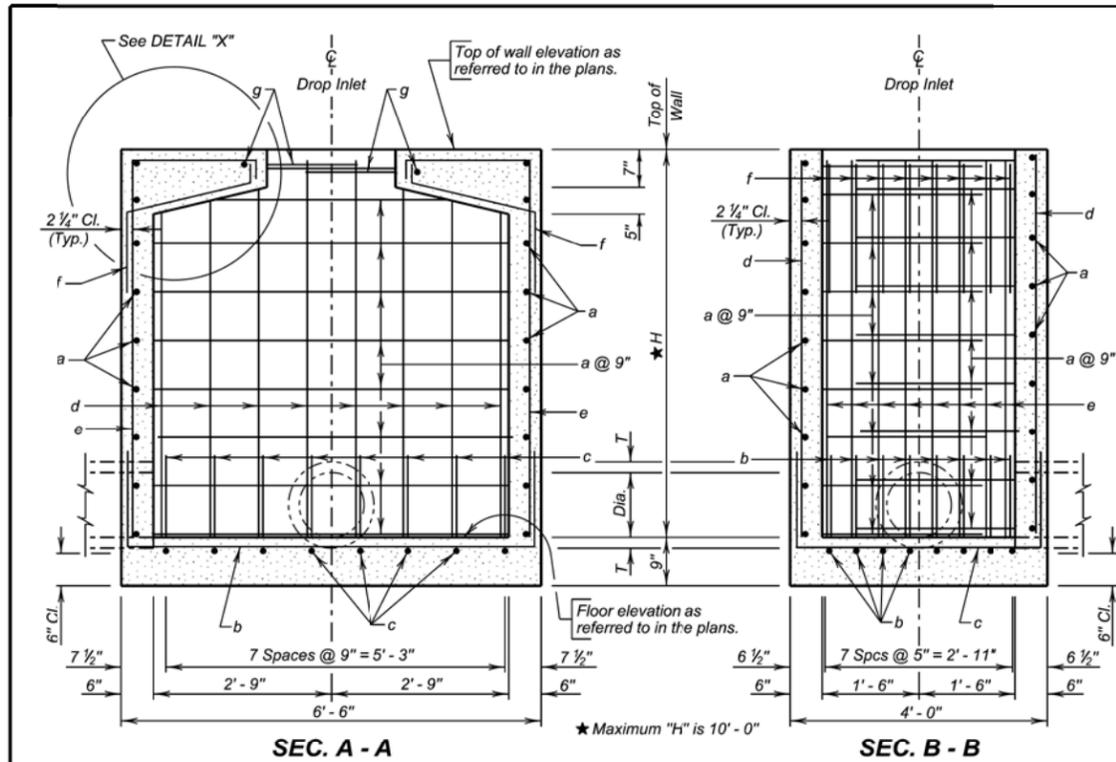
Maximum R.C.P. diameter shall not exceed 54 inches (42 inches for R. C. arch) on the 5.5-foot wide side and shall not exceed 24 inches (24 inches for R. C. arch) on the 3-foot wide side of the drop inlet.

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

PIPE DISPLACEMENT REDUCTIONS		
Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.05
24	3	0.09
30	3 1/2	0.14
36	4	0.20
42	4 1/2	0.26
48	5	0.34
54	5 1/2	0.43
18	2 1/2	0.05
24	3 1/2	0.09
30	4	0.14
36	4 1/2	0.19
42	4 1/2	0.24

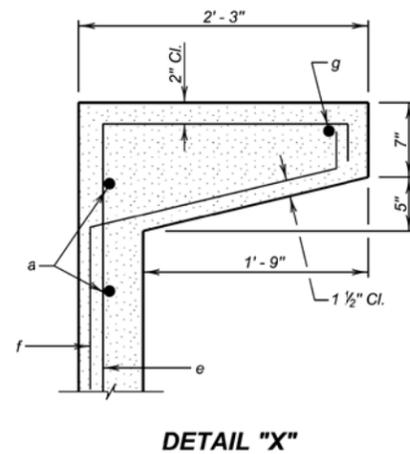
December 16, 2015

<b>S D D O T</b>	<b>5.5' X 3' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.05</b>
	Published Date: 1st Qtr. 2016	Sheet 1 of 2



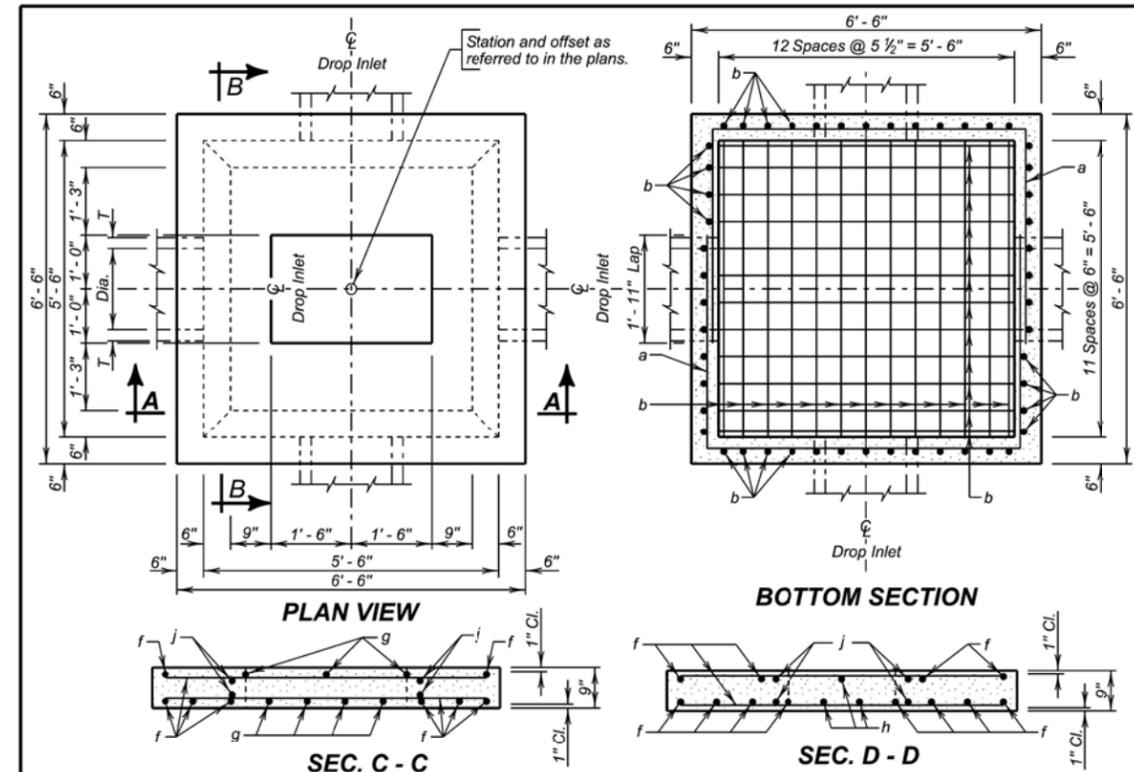
REINFORCING SCHEDULE				
Mk.	No.	Size	Length	Type
a	2.67H	4	11'-6"	17
b	8	4	9'-0"	17
c	8	4	6'-6"	17
d	16	4	H - 2"	Str.
e	16	5	H + 24"	S17
f	16	4	3'-6"	S19
g	2	4	7'-0"	17

NOTE:  
All dimensions are out to out of bars.



December 16, 2015

<b>S D D O T</b>	<b>5.5' X 3' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.05</b>
	Published Date: 1st Qtr. 2016	Sheet 2 of 2



**DROP INLETS FOR 12" TO 54" DIAMETER PIPE**

**SPECIFICATIONS**

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

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

**GENERAL NOTES:**

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

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

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

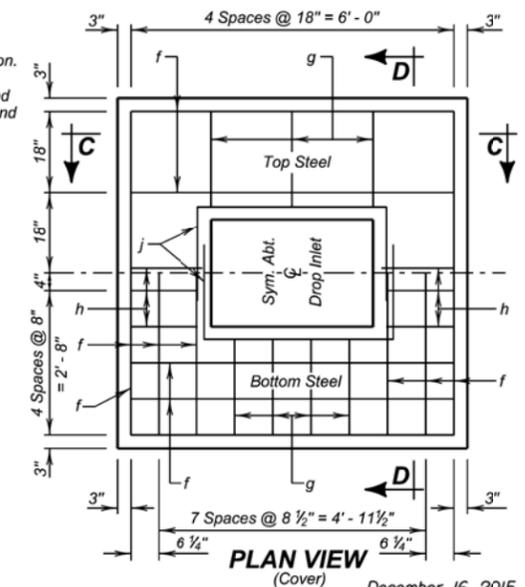
\* Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.

Apply a thin layer of grout between the drop inlet and cover to ensure uniform bearing. Grout shall conform to Section 460.2 K.

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

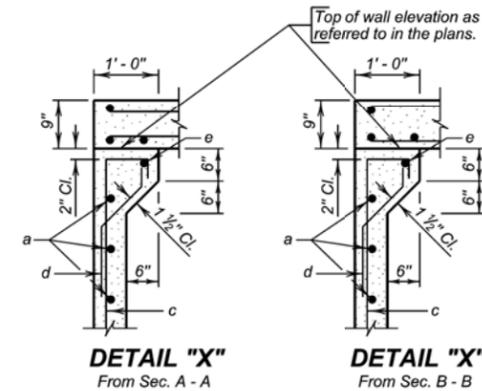
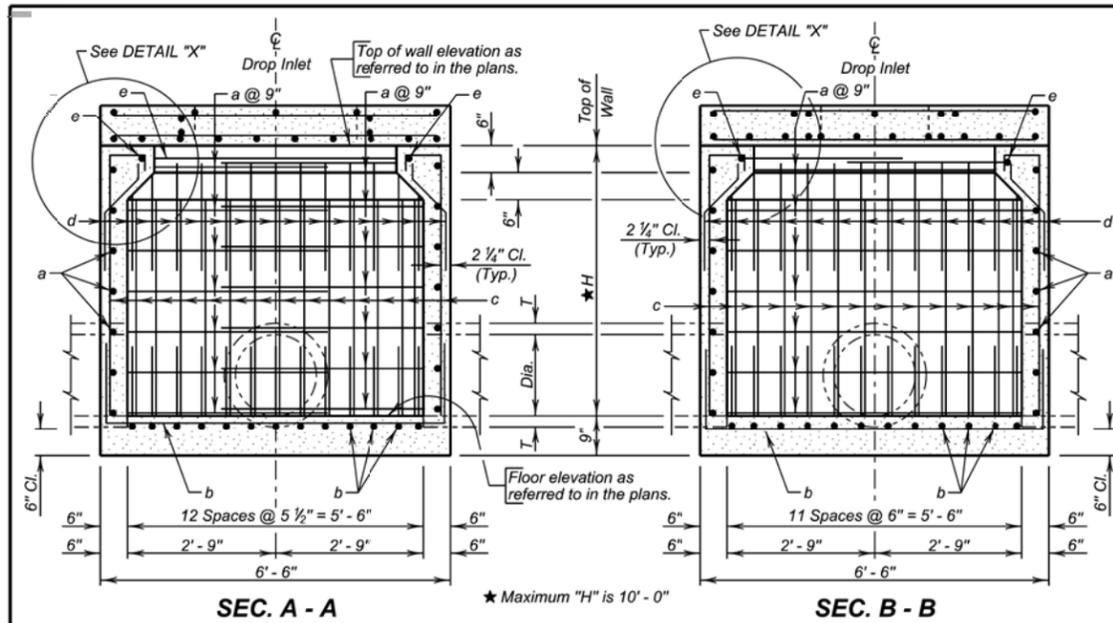
Maximum R.C.P. diameter shall not exceed 54 inches (42 inches for R. C. arch) of the drop inlet.

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



December 16, 2015

<b>S D D O T</b>	<b>5.5' X 5.5' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.06</b>
	Published Date: 1st Qtr. 2016	Sheet 1 of 2



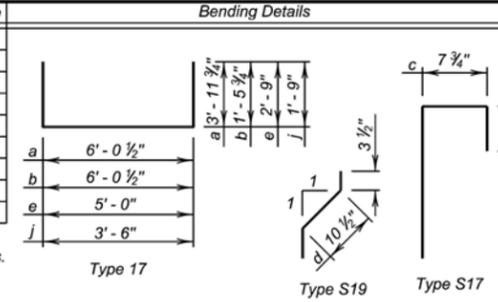
ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
* Class M6 Concrete	Cu. Yd.	2.46	0.44H
Reinforcing Steel	Lb.	380.09	58.37H
Frame and Grate Assembly	Each	1	

PIPE DISPLACEMENT REDUCTIONS		
Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.05
24	3	0.09
30	3 1/2	0.14
36	4	0.20
42	4 1/2	0.26
48	5	0.34
54	5 1/2	0.43
18	2 1/2	0.05
24	3 1/2	0.09
30	4	0.14
36	4 1/2	0.19
42	4 1/2	0.24

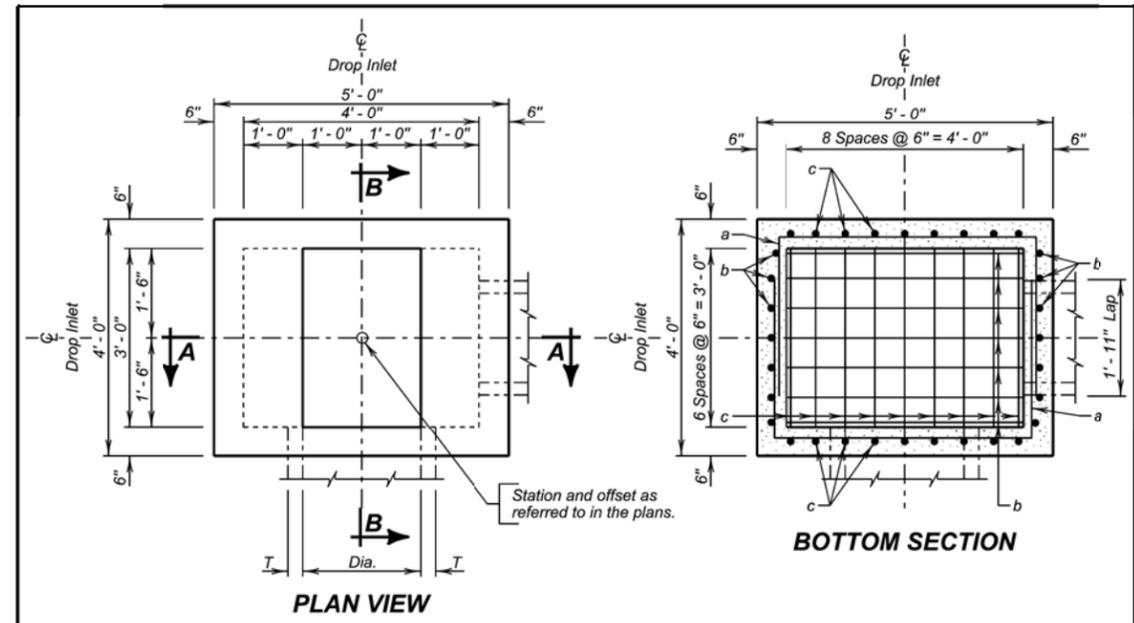
**REINFORCING SCHEDULE**

Mk.	No.	Size	Length	Type
a	2.67H	4	14'-0"	17
b	25	4	9'-0"	17
c	50	4	H+9"	S17
d	50	4	2'-3"	S19
e	2	4	10'-6"	17
f	18	4	6'-0"	Str.
g	14	4	1'-9"	Str.
h	10	4	1'-3"	Str.
j	4	4	7'-0"	17

NOTE: All dimensions are out to out of bars.



<b>S D D O T</b>	<b>5.5' X 5.5' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.06</b>
	Published Date: 1st Qtr. 2016	Sheet 2 of 2



ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
* Class M6 Concrete	Cu. Yd.	0.58	0.33H
Reinforcing Steel	Lb.	116.24	39.21H
Frame and Grate Assembly	Each	1	

**SPECIFICATIONS**

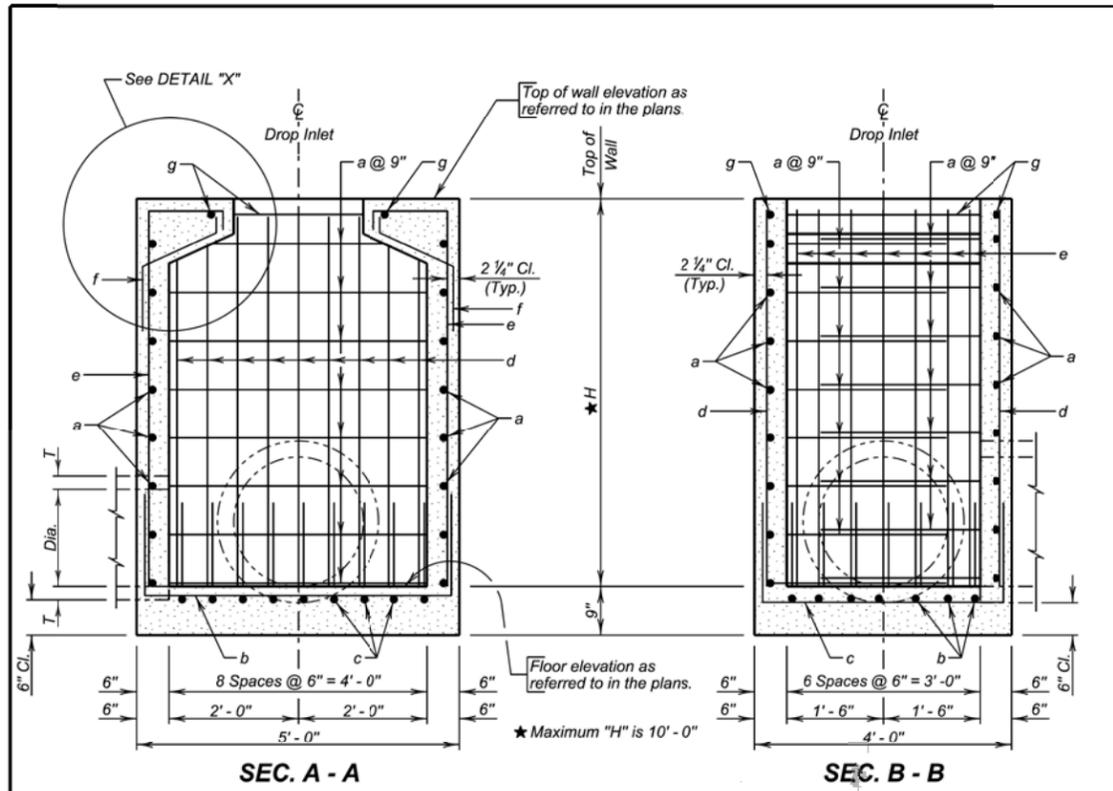
Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.  
 Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

**GENERAL NOTES:**

Design Live Load: HL-93. No construction loading in excess of legal load was considered.  
 Reinforcing steel shall conform to ASTM A615 grade 60. The d and e bars shall be lapped 12 inches with the c and b bars, respectively. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.  
 Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.  
 \* Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.  
 Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.  
 Maximum R.C.P. diameter shall not exceed 36 inches (30 inches for R. C. arch) on the 4-foot wide side and shall not exceed 24 inches (24 inches for R. C. arch) on the 3-foot wide side of the drop inlet.  
 The dimension of H is in feet. Maximum H is 10 feet.

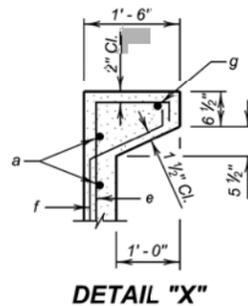
PIPE DISPLACEMENT REDUCTIONS		
Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.05
24	3	0.09
30	3 1/2	0.14
36	4	0.20
18	2 1/2	0.05
24	3 1/2	0.09
30	4	0.14

<b>S D D O T</b>	<b>4' X 3' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.07</b>
	Published Date: 1st Qtr. 2016	Sheet 1 of 2



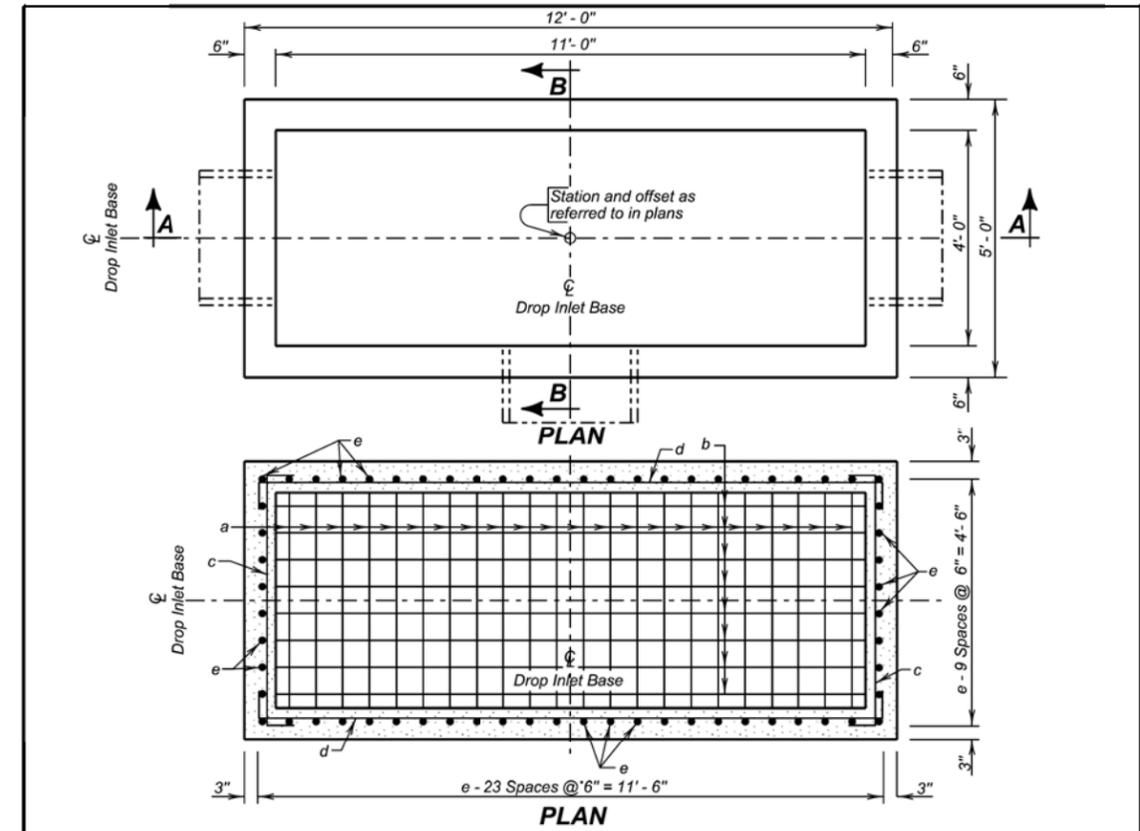
REINFORCING SCHEDULE				
Mk.	No.	Size	Length	Type
a	2.67H	4	10' - 0"	17
b	7	4	7' - 6"	17
c	9	4	6' - 6"	17
d	18	4	H - 2"	Str.
e	14	4	H + 15"	S17
f	14	4	2' - 6"	S19
g	2	4	6' - 9"	17

NOTE:  
All dimensions are out to out of bars.



December 16, 2015

<b>S D D O T</b>	<b>4' X 3' TYPE B REINFORCED CONCRETE DROP INLET</b>	PLATE NUMBER <b>670.07</b>
	Published Date: 1st Qtr. 2016	Sheet 2 of 2



- SPECIFICATIONS:**  
(Bottom Steel)  
(Pipe Not Shown)
- 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.

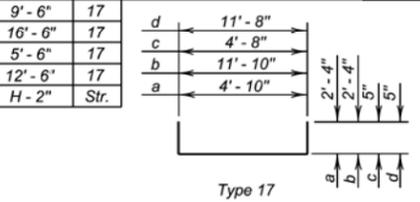
- GENERAL NOTES:**
- Design Live Load: HL-93 loading. No construction loading in excess of legal load was considered.
  - Base is intended for use with a Precast Concrete Type S Drop Inlet Lid, Standard Plate 670.40. Base may be precast. If precast base used, and details differ from that shown, the precast base must be on the current approved list. The current approved list is available through proper channels from the SDDOT Office of Bridge Design.
  - 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.
  - \* 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.
  - 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.
  - 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.
  - Reinforcing steel shall conform to ASTM A615 Grade 60. Cut and bend reinforcing steel as required to place pipe(s) through the inlet wall.
  - Use 1 inch clear cover on all reinforcing steel unless otherwise noted.
  - The dimension of H is in feet. Maximum H is 8 feet.

June 26, 2015

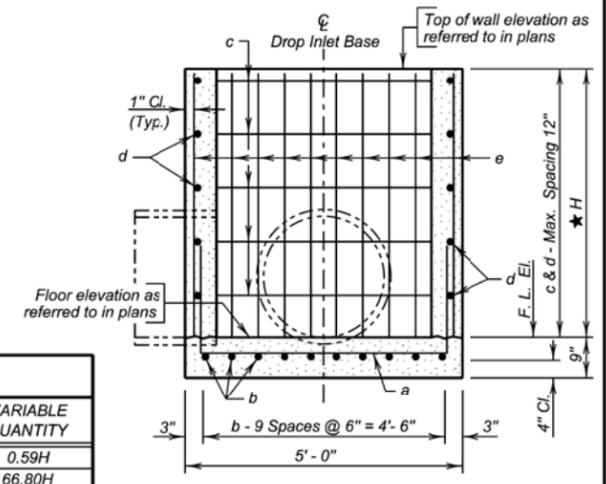
<b>S D D O T</b>	<b>4' X 11' TYPE S DROP INLET BASE</b>	PLATE NUMBER <b>670.32</b>
	Published Date: 1st Qtr. 2016	Sheet 1 of 2

PIPE DISPLACEMENT REDUCTIONS		
Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.05
24	3	0.09
30	3 1/2	0.14
36	4	0.20
42	4 1/2	0.26
48	5	0.34
54	5 1/2	0.43
60	6	0.52
66	6 1/2	0.61
72	7	0.70
78	7 1/2	0.80
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.

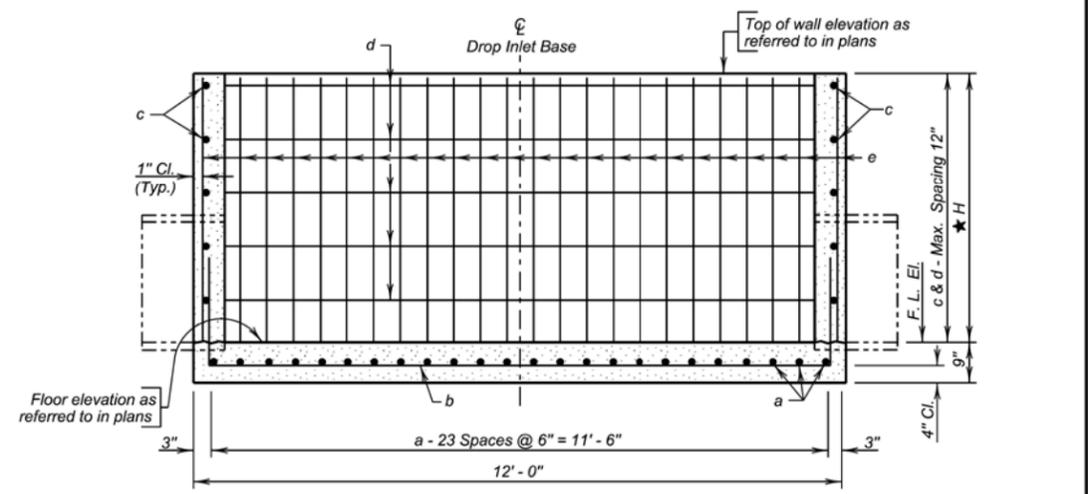


NOTE:  
All dimensions are out to out of bars.



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

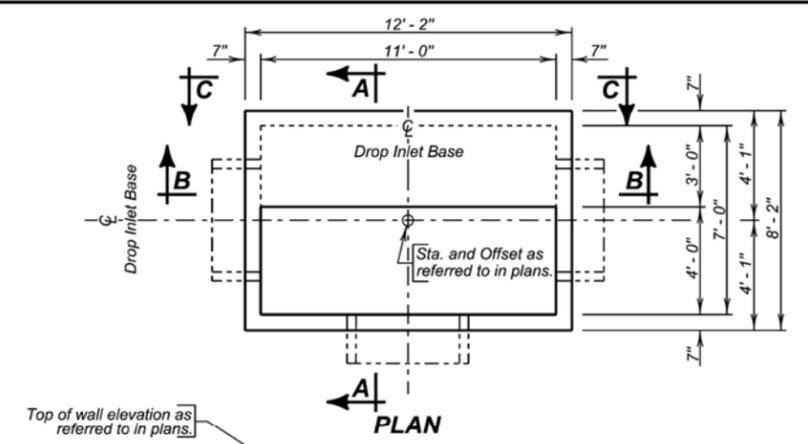


SEC. A - A

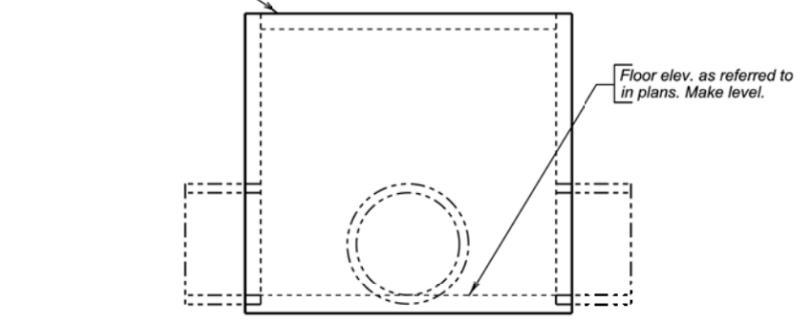
\* Maximum H is 8' - 0"

June 26, 2015

Published Date: 1st Qtr. 2016	S D D O T	4' X 11' TYPE S DROP INLET BASE	PLATE NUMBER 670.32
			Sheet 2 of 2



PLAN



ELEVATION

**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 loading. No construction loading in excess of legal load was considered.
- 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.
- 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.
- \* 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.
- 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.
- Maximum R.C.P. diameter shall not exceed 66 inches (54 inches for R.C. Arch) on the 7-foot wide side of the Drop Inlet.
- Reinforcing steel shall conform to ASTM A615 Grade 60. Cut and bend reinforcing steel as required to place pipe(s) through the inlet wall.
- Use 1 inch clear cover on all reinforcing steel unless otherwise noted.
- The dimension of H is in feet. Maximum H is 10 feet.

June 26, 2015

Published Date: 1st Qtr. 2016	S D D O T	7' X 11' TYPE S DROP INLET BASE	PLATE NUMBER 670.34
			Sheet 1 of 4



**REINFORCING SCHEDULE**

Mk.	No.	Size	Length	Type	Bending Details
b	19 + 4H	4	11' - 9"	Str.	
c	15 + 2H	4	7' - 9"	Str.	
c1	2 + 2H	4	11' - 10"	17	
c2	11	4	2' - 10"	Str.	
g	15	5	11' - 9"	Str.	
g1	23	5	7' - 9"	Str.	
h	46	5	H + 5"	Str.	
k	40	5	H + 5"	Str.	
q	76	5	5' - 6"	17A	
q1	23	5	6' - 8"	17A	

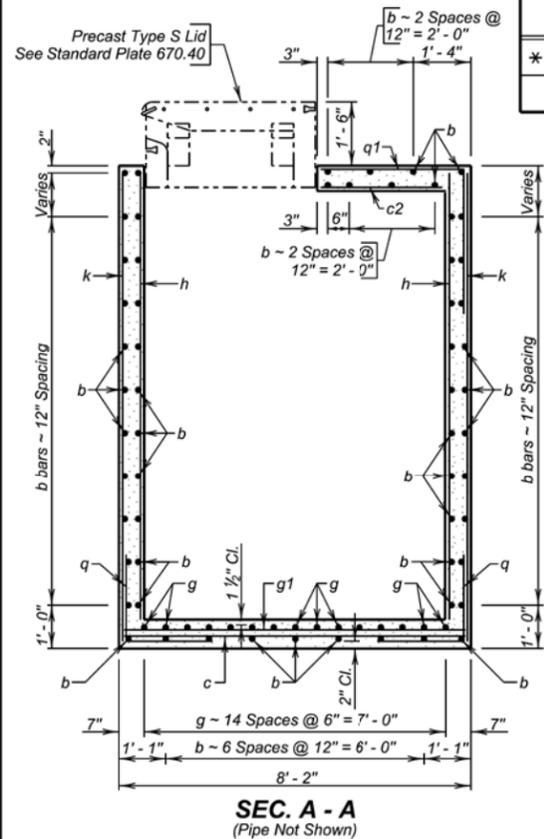
NOTE:  
All dimensions are out to out of bars

**ESTIMATED QUANTITIES**

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
* Class M6 Concrete	Cu. Yd.	3.65	0.83H
Reinforcing Steel	Lb.	1266	147.26H

**PIPE DISPLACEMENT REDUCTIONS**

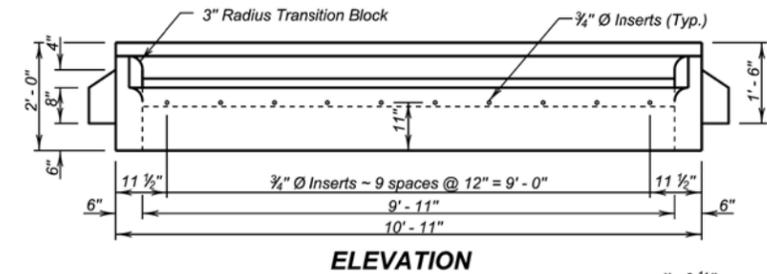
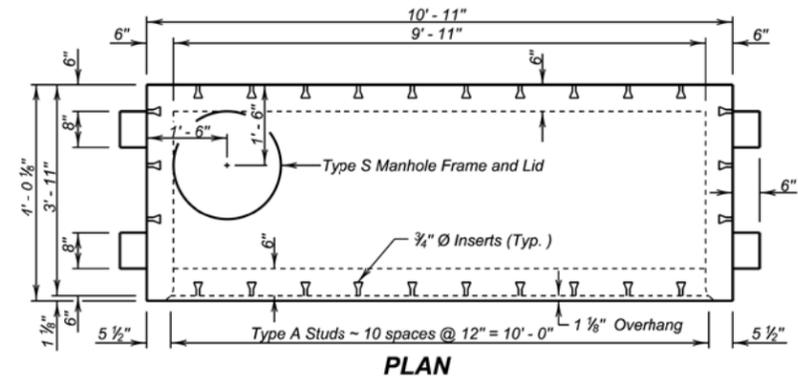
Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.06
24	3	0.11
30	3 1/2	0.16
36	4	0.23
42	4 1/2	0.31
48	5	0.40
54	5 1/2	0.50
60	6	0.61
18	2 1/2	0.06
24	3 1/2	0.11
30	4	0.16
36	4 1/2	0.22
42	4 1/2	0.29
48	5	0.37
54	5 1/2	0.46
60	6	0.57
72	7	0.82
84	8	1.09



June 26, 2015

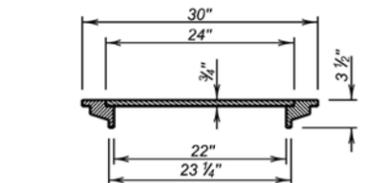
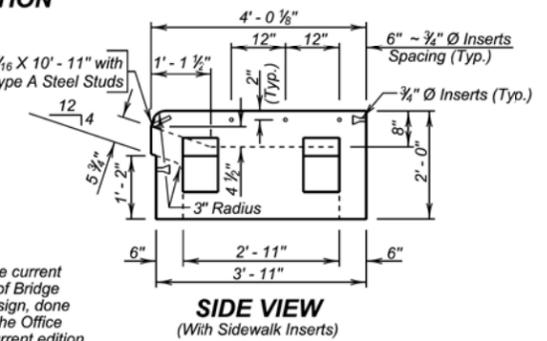
<b>S D D O T</b>	<b>7' X 11' TYPE S DROP INLET BASE</b>	PLATE NUMBER <b>670.34</b>
		Sheet 4 of 4

Published Date: 1st Qtr. 2016



**GENERAL NOTES:**

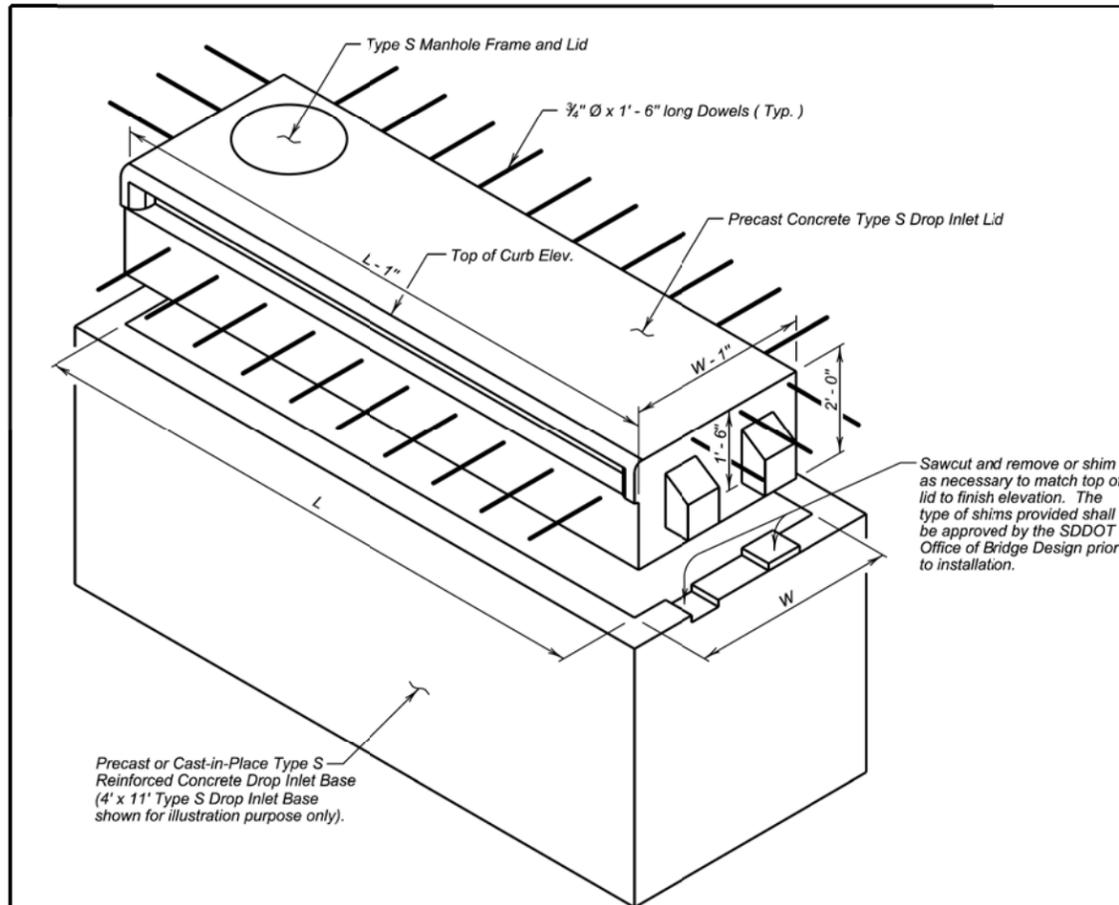
- The Precast Concrete Type S Drop Inlet Lid and the shims shall be on the current approved list available through proper channels from the SDDOT Office of Bridge Design. To qualify for addition to the approved list, submit a checked design, done by South Dakota Registered Professional Engineers, and 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.
- Design Live Load shall be HL - 93.
- Concrete mix shall be as per fabricators design, however, minimum compressive strength shall not be less than 4500 psi. Type II Cement is required.
- The Type S Manhole Frame and Lid shall conform to AASHTO M105, Class 30.
- Structural Steel shall conform to ASTM A36. The 3/4 inch diameter Headed Type A Steel Studs shall conform to Section 7 of the current edition of AWS D1. 1 Structural Steel Welding Code.
- The 3/4 inch diameter Concrete Inserts shall be galvanized or made of a corrosion resistant material. Provide 3/4 inch diameter x 1' - 6" long dowels conforming to ASTM A615, Gr. 60 threaded to fit inserts with each lid.
- 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".



December 23, 2012

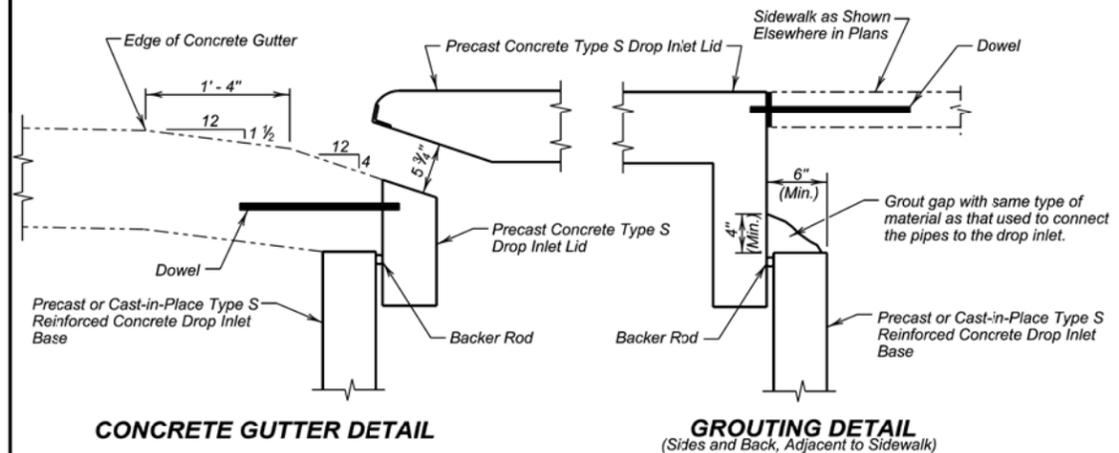
<b>S D D O T</b>	<b>4' X 11' PRECAST CONCRETE TYPE S DROP INLET LID</b>	PLATE NUMBER <b>670.40</b>
		Sheet 1 of 1

Published Date: 1st Qtr. 2016



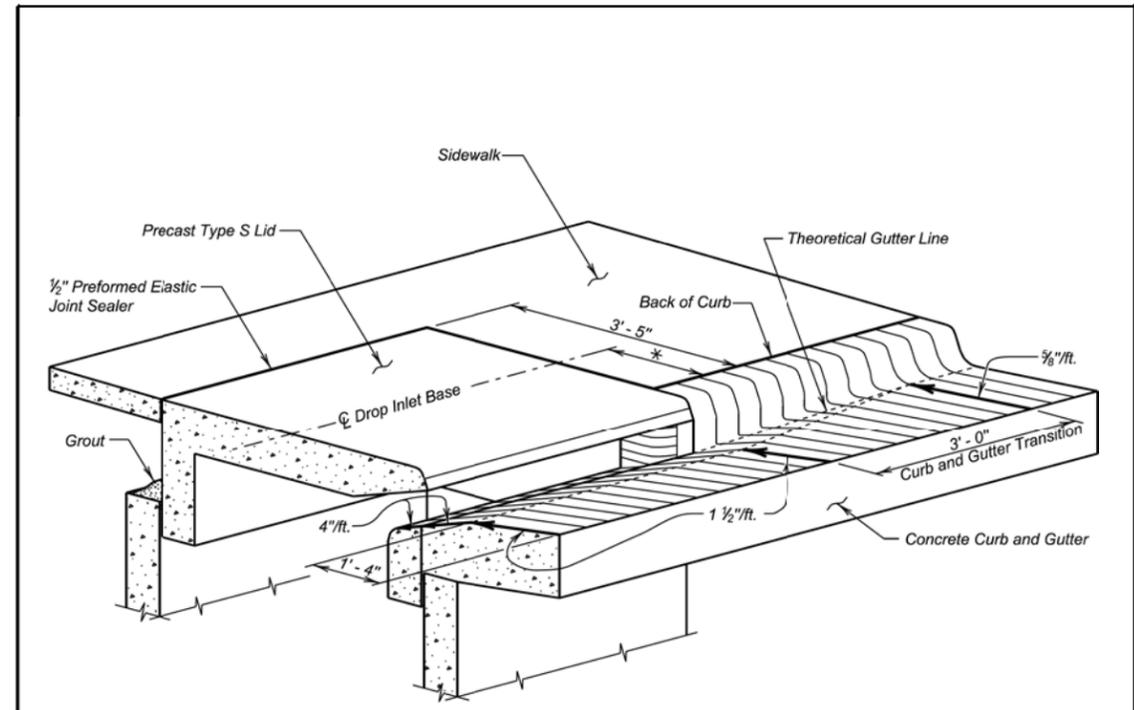
Precast or Cast-in-Place Type S Reinforced Concrete Drop Inlet Base (4' x 11' Type S Drop Inlet Base shown for illustration purpose only).

**TYPE S DROP INLET**



December 23, 2012

Published Date: 1st Qtr. 2016	S D D O T	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 1/2"
4' x 11'	1' - 5 1/2"
7' x 11'	2' - 11 1/2"

**GENERAL NOTES:**

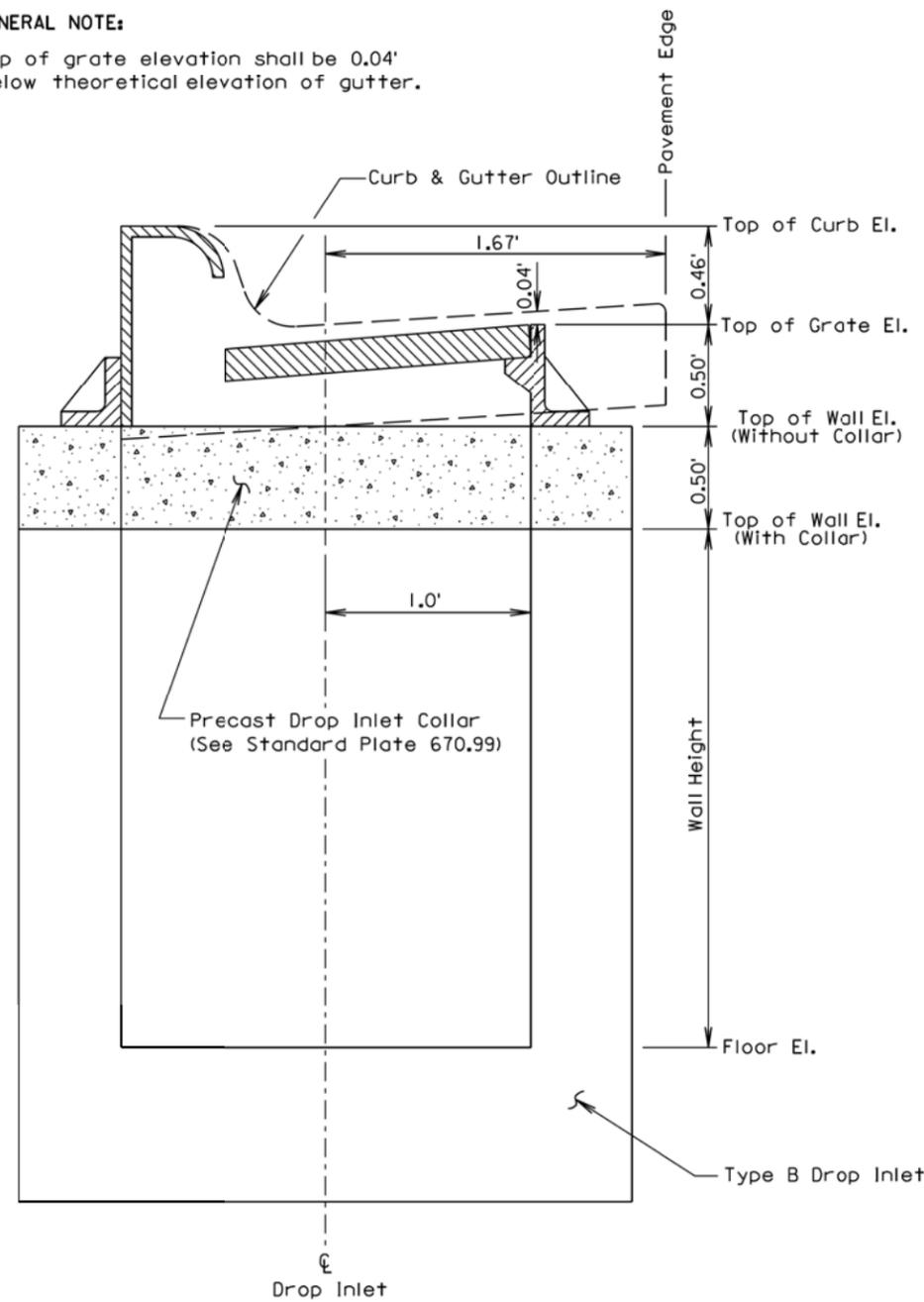
1. Dowels shall be used to anchor the precast concrete Type S drop inlet lid to the concrete gutter. See Standard Plate 670.38 or 670.40 as applicable. If there is sidewalk adjacent dowels shall be used to anchor the precast concrete Type S drop inlet lid to the sidewalk. If there is sidewalk adjacent 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: 1st Qtr. 2016	S D D O T	INSTALLATION DETAILS FOR PRECAST CONCRETE TYPE S DROP INLET LID	PLATE NUMBER 670.45
			Sheet 2 of 2

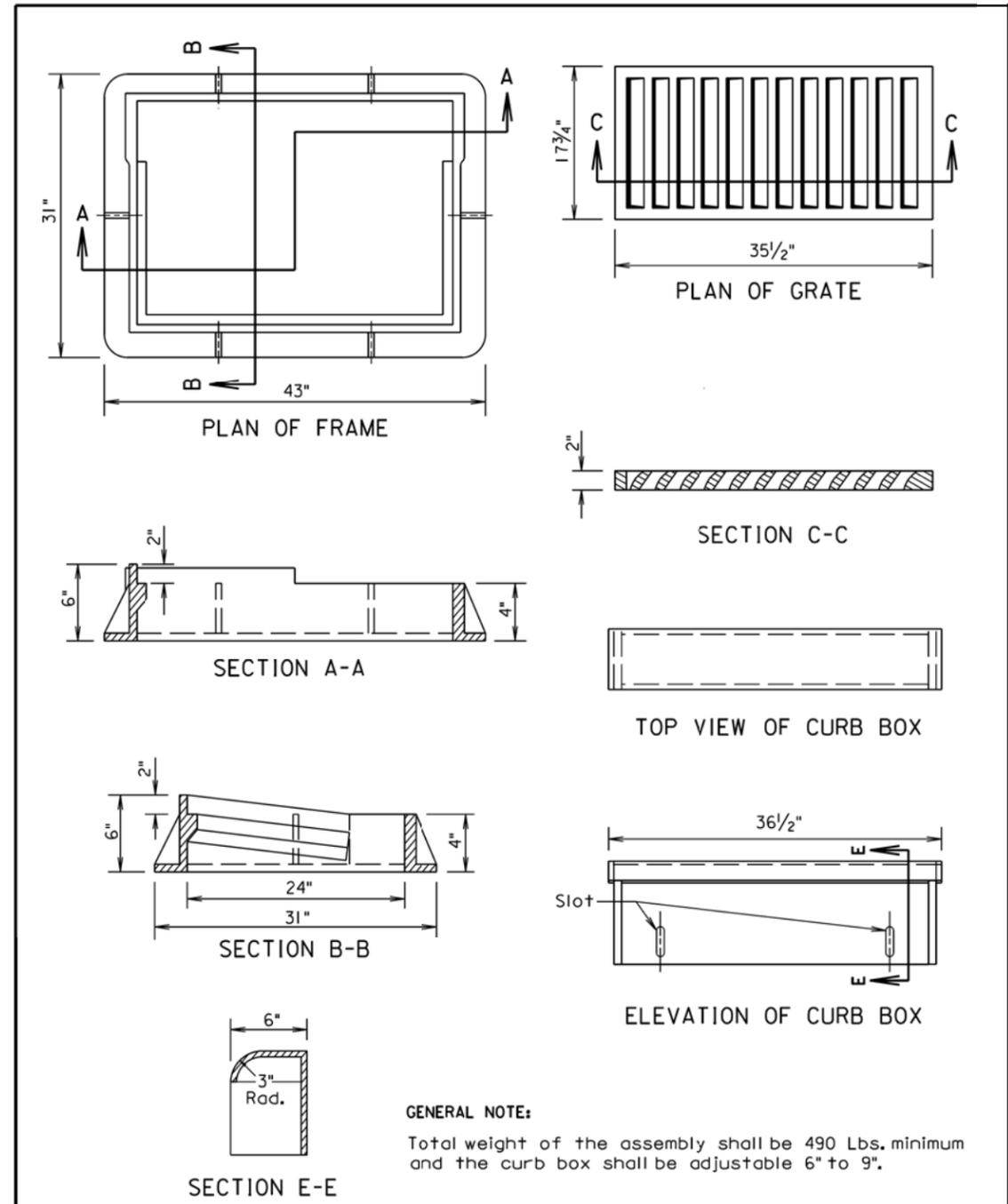
**GENERAL NOTE:**

Top of grate elevation shall be 0.04' below theoretical elevation of gutter.



June 26, 2011

Published Date: 1st Qtr. 2016	S D D O T	INSTALLATION OF TYPE B DROP INLET	PLATE NUMBER 670.75
			Sheet 1 of 1

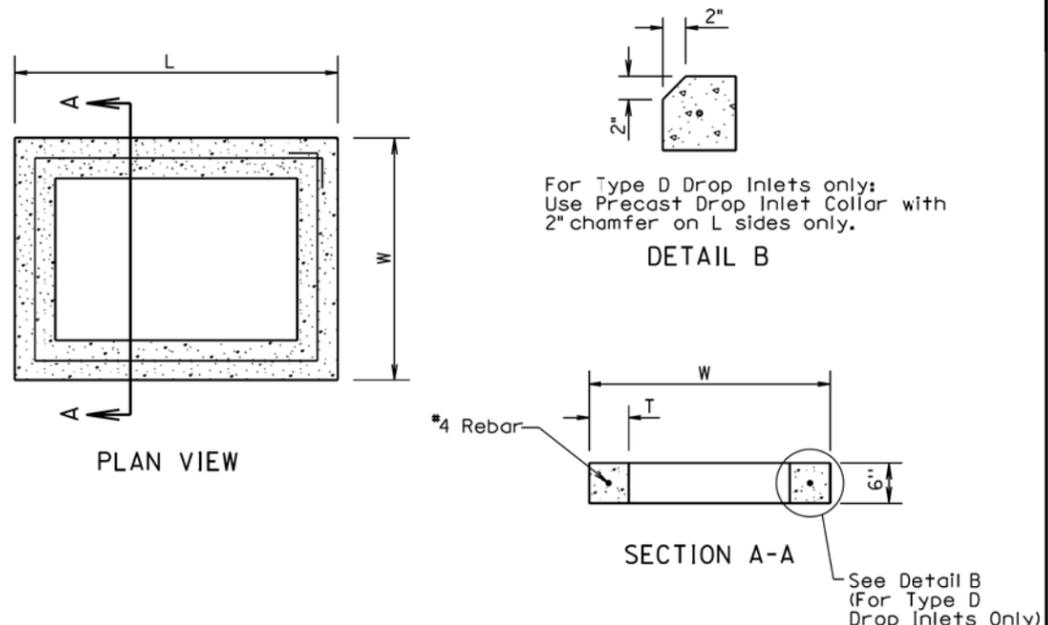


**GENERAL NOTE:**

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: 1st Qtr. 2016	S D D O T	TYPE B FRAME AND GRATE ASSEMBLY	PLATE NUMBER 670.80
			Sheet 1 of 1



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.

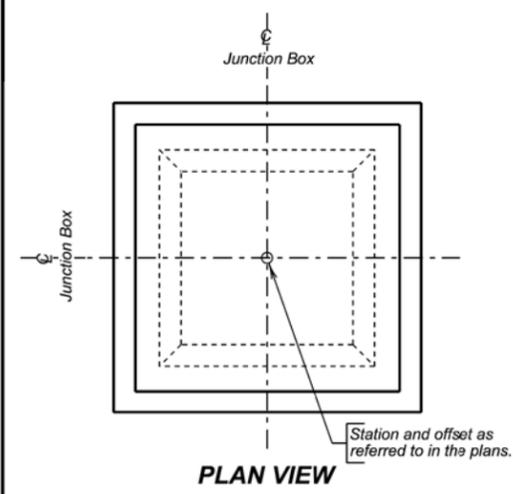
The 1/2" diameter bar shall lap 6"± and shall be centered in the concrete.

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

<b>S D D O T</b>	<b>PRECAST DROP INLET COLLAR</b>	PLATE NUMBER 670.99
		Sheet 1 of 1

Published Date: 1st Qtr. 2016



**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.

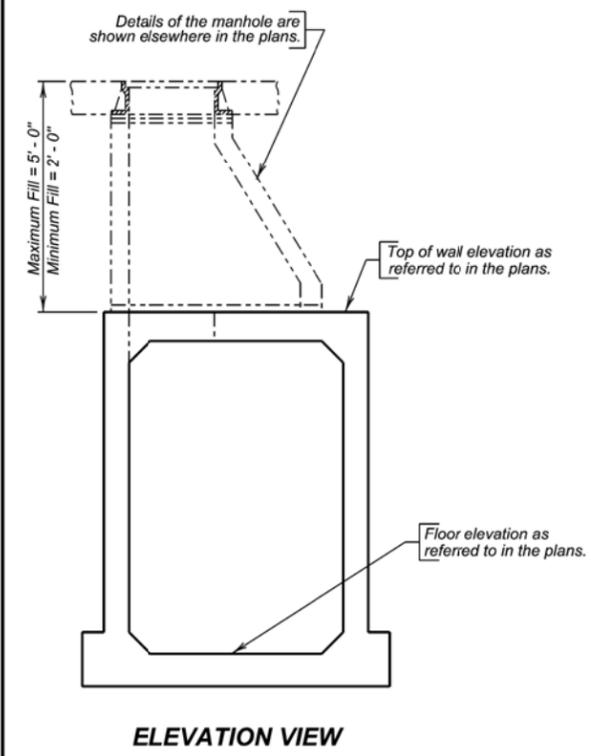
Junction box may be precast. If precast junction box details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

Use 1 inch clear cover on all reinforcing steel unless otherwise noted.

All exposed edges shall be chamfered 3/4 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".



PIPE DISPLACEMENT REDUCTIONS		
Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.05
24	3	0.09
30	3 1/2	0.14
36	4	0.20
42	4 1/2	0.26
48	5	0.34
54	5 1/2	0.43

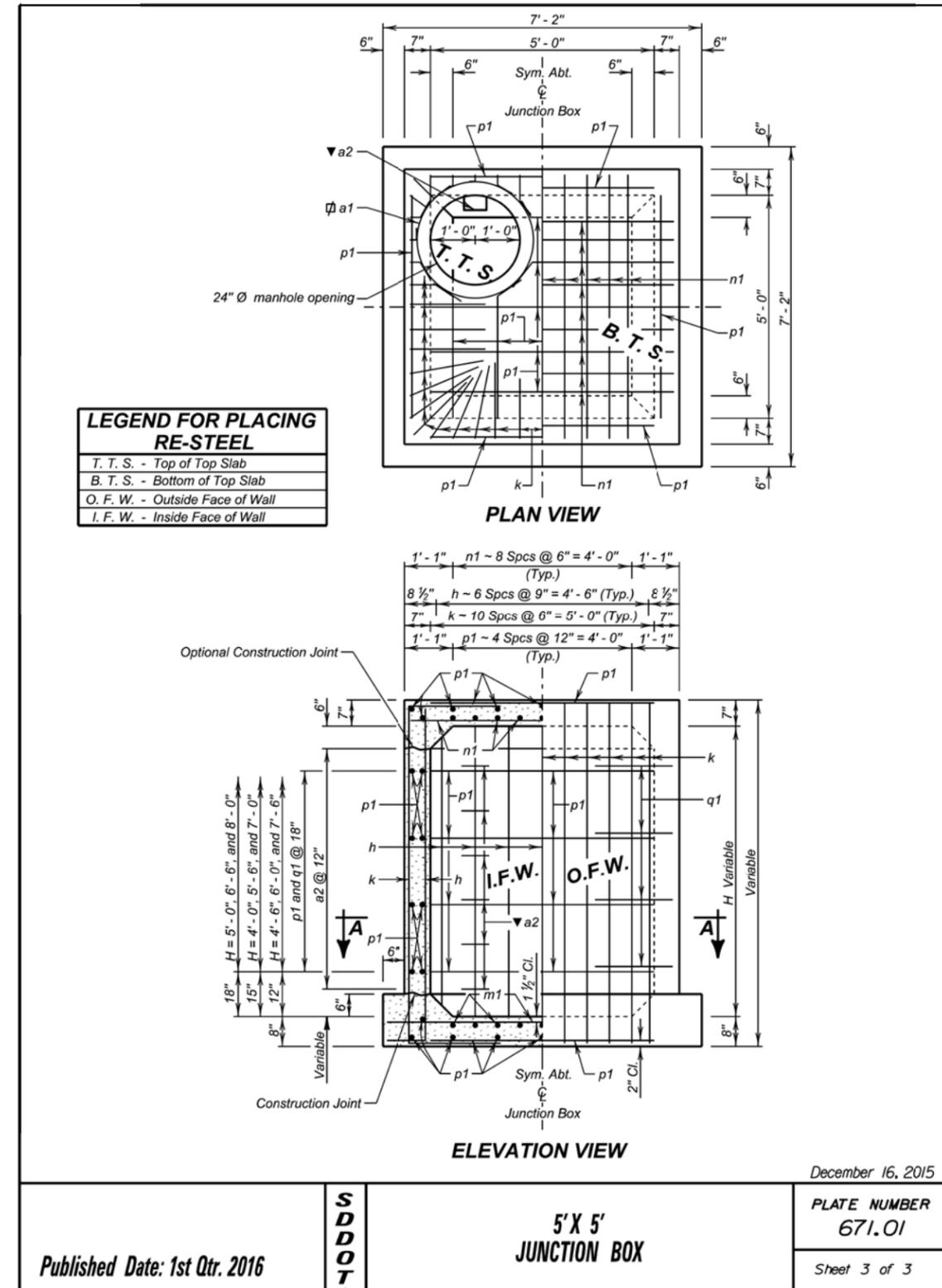
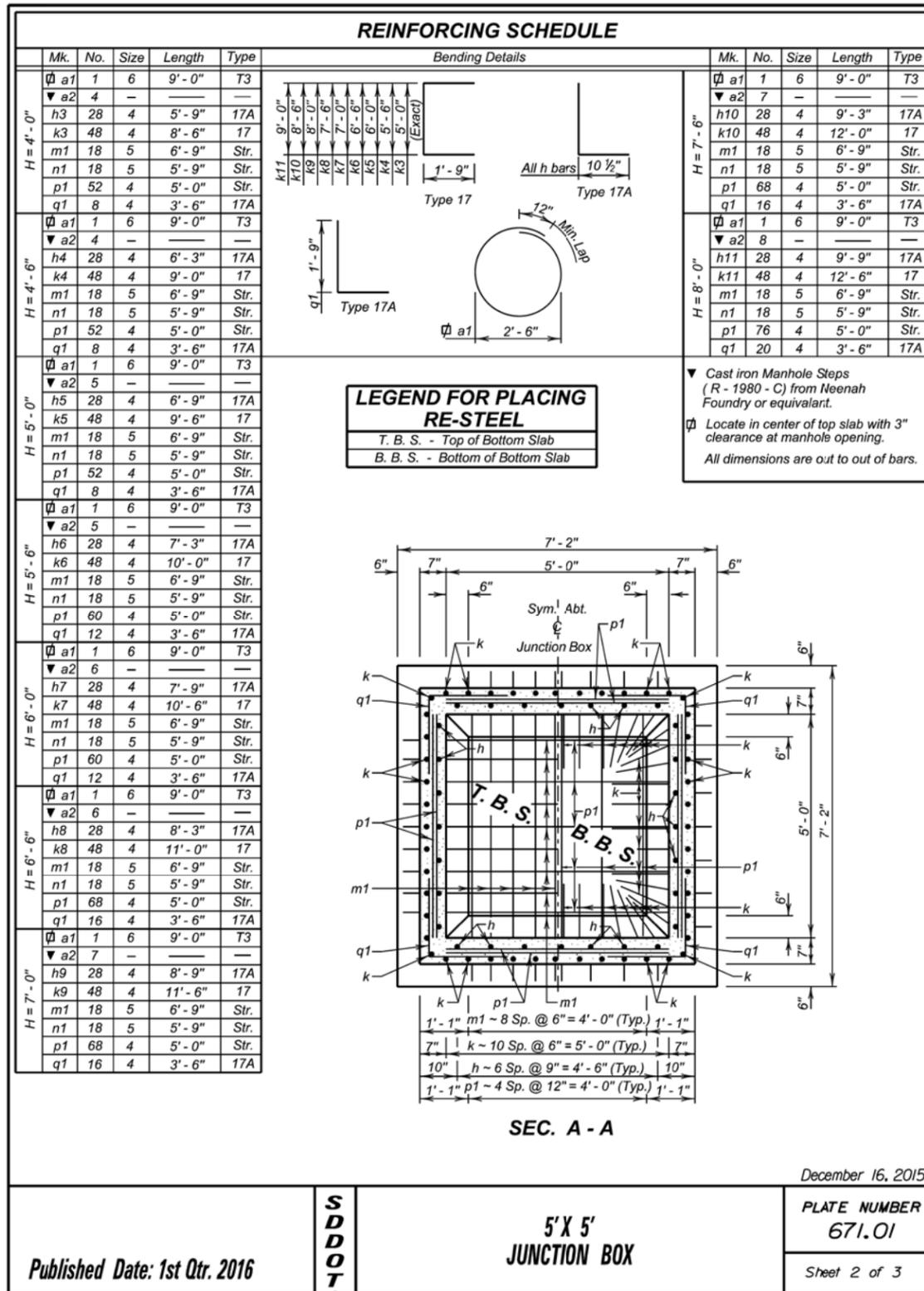
ESTIMATED QUANTITIES		
ITEM	* Class M6 Concrete	Reinforcing Steel
UNIT	Cu. Yd.	Lb.
H = 4'-0"	4.37	821
H = 4'-6"	4.61	846
H = 5'-0"	4.85	908
H = 5'-6"	5.10	933
H = 6'-0"	5.34	958
H = 6'-6"	5.58	1020
H = 7'-0"	5.82	1045
H = 7'-6"	6.06	1071
H = 8'-0"	6.30	1132

\* 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.

December 16, 2015

<b>S D D O T</b>	<b>5' X 5' JUNCTION BOX</b>	PLATE NUMBER 671.01
		Sheet 1 of 3

Published Date: 1st Qtr. 2016



**PLAN OF FRAME**

**PLAN OF LID**  
25 1/2" Min. Dia.

**SECTION A-A**  
Machine finished seat  
7" Min.  
24" Min.  
34" Min.

**ASSEMBLED VIEW**

TYPE	HEIGHT	MIN. WEIGHT
A7	7"	400lbs.
A8	8"	440lbs.
A9	9"	470lbs.
A10	10"	480lbs.

**GENERAL NOTE:**  
Geometric pattern on top of lid other than that shown shall be approved by the Engineer.

March 31, 2000

**S  
D  
D  
O  
T**

**TYPE A MANHOLE FRAME AND LID**

PLATE NUMBER  
671.10

Sheet 1 of 1

Published Date: 1st Qtr. 2016

**GABION DETAILS  
STANDARD SIZES**

SIZE	LENGTH	WIDTH	HEIGHT	NUMBER OF CELLS	CAPACITY, Cu. Yd.
A	6'-0"	3'-0"	3'-0"	2	2.0
B	9'-0"	3'-0"	3'-0"	3	3.0
C	12'-0"	3'-0"	3'-0"	4	4.0
D	6'-0"	3'-0"	1'-6"	2	1.0
E	9'-0"	3'-0"	1'-6"	3	1.5
F	12'-0"	3'-0"	1'-6"	4	2.0
G	6'-0"	3'-0"	1'-0"	2	0.7
H	9'-0"	3'-0"	1'-0"	3	1.0
I	12'-0"	3'-0"	1'-0"	4	1.3

Above Dimensions subject to mill tolerances.

**GENERAL NOTES:**

Lacing and internal connecting wire shall be 0.0866 inch diameter steel wire ASTM A641 Class 3 soft temper measured after galvanizing and for PVC coated gabions shall be 0.0866 inch diameter steel wire measured after galvanizing but before PVC coating.

The lacing procedure is as follows:

1. Cut a length of lacing wire approximately 1 1/2 times the distance to be laced but not exceeding 5 feet.
2. Secure the wire terminal at the corner by looping and twisting.
3. Proceed lacing with alternating single and double loops at a spacing not to exceed 6 inches.
4. Securely fasten the other lacing wire terminal.

Wire lacing or interlocking type fasteners shall be used for gabion assembly and final construction of gabion structures. Interlocking fasteners for galvanized gabions shall be high tensile 0.120 inch diameter galvanized steel wire measured after galvanizing. The galvanizing shall conform to ASTM A641-92 Class 3 coating. Fasteners shall also be in accordance with ASTM A764, Class II, Type III.

Interlocking fasteners for PVC coated gabions shall be high tensile 0.120 inch diameter stainless steel wire conforming to ASTM A313, Type 302, Class I. The spacing of the interlocking fasteners during all phases of assembly and construction shall not exceed 6 inches. All fasteners shall be placed where the mesh weaves around the selvage wire at the vertical and horizontal joints.

June 26, 2001

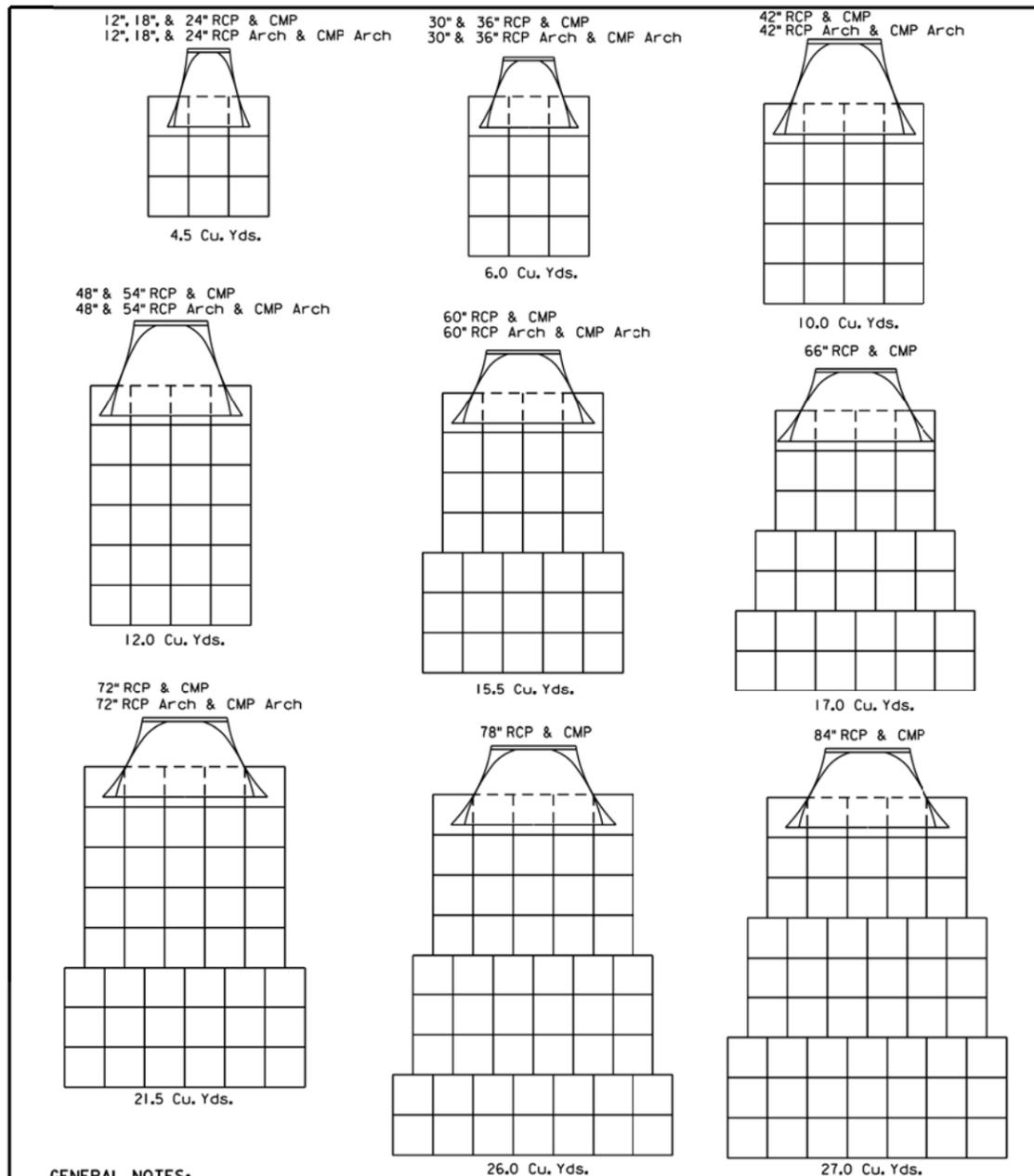
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**BANK AND CHANNEL PROTECTION GABIONS**

PLATE NUMBER  
720.01

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**GENERAL NOTES:**

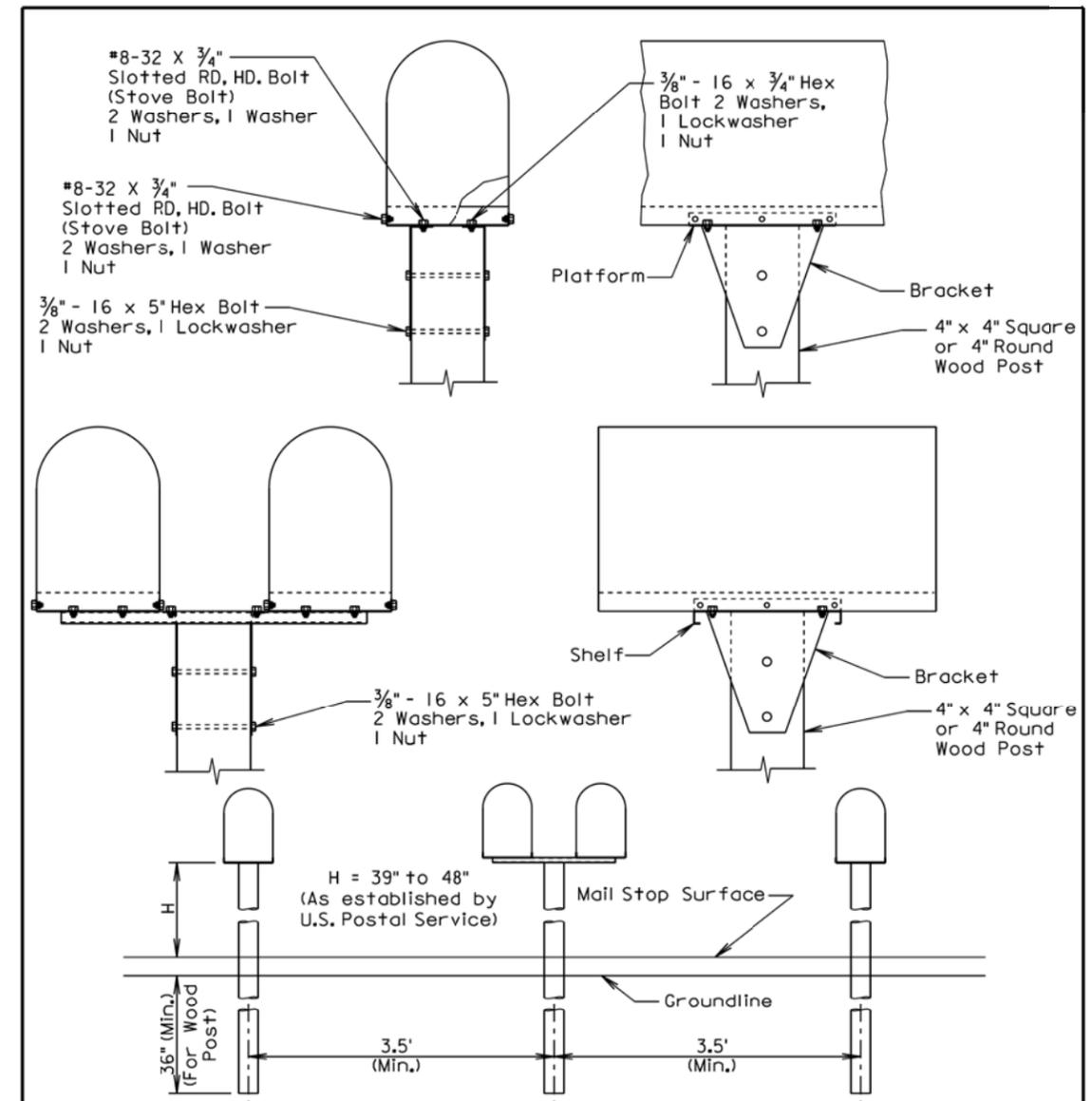
Gabions at outlets of C.M. pipe and R.C. pipe shall be placed under the end section a distance of 2' from the outlet end of the section. For C.M. pipe end section installations, the upper fabric of the gabions shall be modified to accommodate the metal end section in a manner approved by the Engineer.

Quantities shown on this standard plate are based on standard gabion sizes D, E, and F (See Standard Plate 720.01).

June 26, 2001

<b>S D D O T</b>	<b>BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS</b>	PLATE NUMBER <b>720.03</b>
		Sheet 1 of 1

Published Date: 1st Qtr. 2016



**GENERAL NOTES: SPACING FOR MULTIPLE POST INSTALLATION**

The post support assemblies provided should be consistent throughout the project. Single and double mailboxes may be in any sequence.

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

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

September 6, 2013

<b>S D D O T</b>	<b>SINGLE AND DOUBLE MAILBOX ASSEMBLIES</b>	PLATE NUMBER <b>900.02</b>
		Sheet 1 of 1

Published Date: 1st Qtr. 2016

