

# SECTION B: GRADING PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0021(174)127	B1	B34

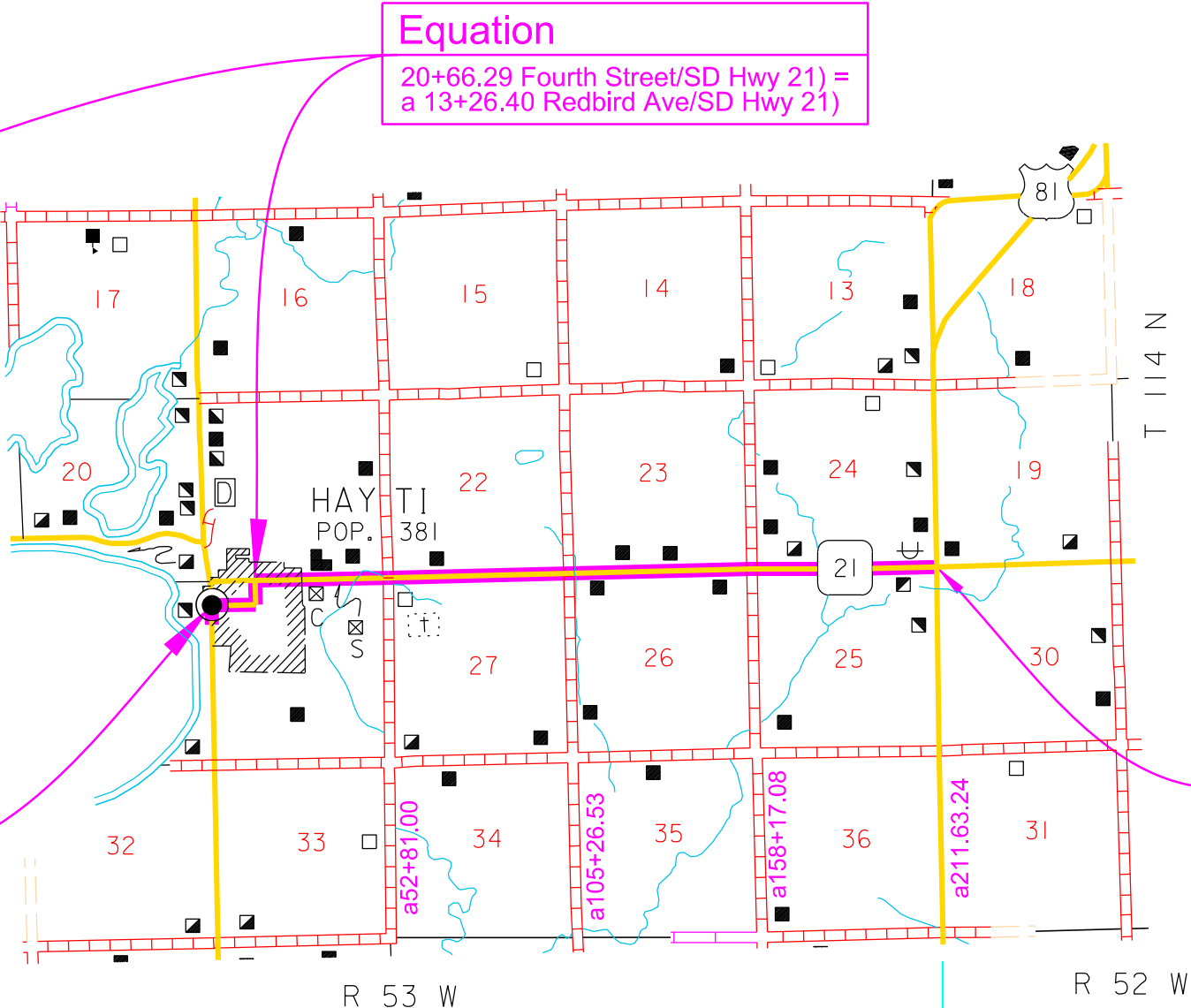
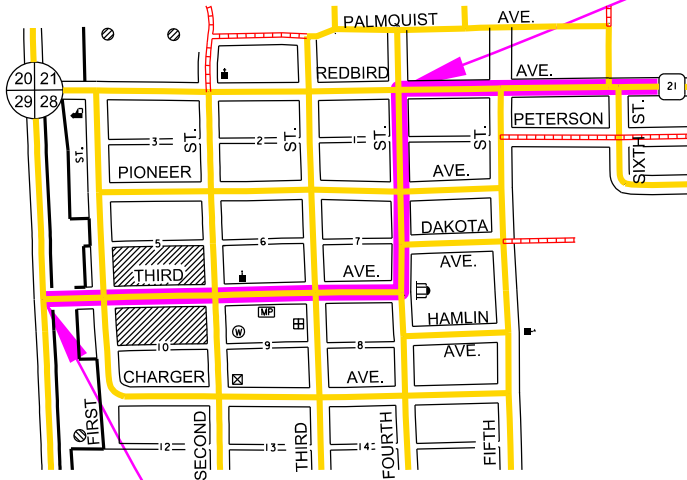
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Enlarged View of Beginning of Project in Hayti



Begin P 0021(174)127

Begin Project  
Sta. 0+00.0  
MRM 127.34 +0.000

End P 0021(174)127

End Project  
Sta. a 211+65.00  
MRM 131.00 +0.448

Equation

$20+66.29 \text{ Fourth Street/SD Hwy 21) =}$   
 $a \text{ 13+26.40 Redbird Ave/SD Hwy 21)}$

SECTION B ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3220	Reestablish Right-of-Way and Property Corner	4	Each
009E3250	Miscellaneous Staking	0.423	Mile
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
110E0300	Remove Concrete Curb and/or Gutter	710	Ft
110E0420	Remove Drop Inlet Frame and Grate Assembly	1	Each
110E1010	Remove Asphalt Concrete Pavement	220.0	SqYd
110E1100	Remove Concrete Pavement	52.2	SqYd
110E1140	Remove Concrete Sidewalk	620.2	SqYd
110E1300	Remove Concrete Retaining Wall	21.0	Ft
110E7150	Remove Sign for Reset	5	Each
120E0600	Contractor Furnished Borrow	17	CuYd
250E0020	Incidental Work, Grading	Lump Sum	LS
320E1200	Asphalt Concrete Composite	3.5	Ton
380E4050	8" PCC Fillet Section	80.0	SqYd
451E6080	Adjust Water Valve Box	3	Each
451E6510	Move Fire Hydrant	1	Each
632E1320	2.0"x2.0" Perforated Tube Post	65.0	Ft
632E3500	Reset Sign	5	Each
650E0060	Type B66 Concrete Curb and Gutter	682	Ft
650E4660	Type P6 Concrete Gutter	2	Ft
651E0040	4" Concrete Sidewalk	6,668	SqFt
651E7000	Type 1 Detectable Warnings	460	SqFt
670E1200	Type B Frame and Grate	1	Each
670E5400	Precast Drop Inlet Collar	1	Each
900E2030	Miscellaneous Work	1	Site

UTILITIES

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

CONTRACTOR FURNISHED BORROW EXCAVATION

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

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

Station	to	Station	Quantity (CuYd)
16+70 - 14' L		16+81 - 97' L	17
Total:			17

INCIDENTAL WORK, GRADING

Station to Station	Remarks
16+70 - 14' L to 16+81 - 97' L	Grading (172 SqYd)
a 13+00 - 35' L	Remove Tree

TABLE OF DROP INLET FRAME AND GRATE ASSEMBLY REMOVAL

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

Station	L/R	Quantity (Each)
a 14+98	26' R	1
Total:		1

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TABLE OF CONCRETE RETAINING WALL REMOVAL

Station	to	Station	Quantity (Ft)
a 12+83 - 33' L		a 13+04 - 33' L	21
Total:			21

TABLE OF WATER VALVE ADJUSTMENT

Station	Quantity	Unit
3+32 - 32' L	1	Each
7+42 - 31' L	1	Each
8+08 - 31' L	1	Each
Total	3	Each

TABLE OF MOVE FIRE HYDRANT

Station	to Station	Quantity	Unit
a 12+88 - 26' L	a 12+95 - 34' L	1	Each
Total:		1	Each



TABLE OF TYPE B FRAME AND GRATE ASSEMBLY

Station	L / R	Drop Inlet	Precast Drop Inlet Collar (Each)	Frame and Grate/Lid Type
a14+98	R	Type B	1	B
Totals:			1	

Total Type B Frame and Grate Assembly 1

SIDEWALK ADJACENT TO BUILDINGS

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

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

8" PCC FILLET SECTIONS

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

TYPE 1 DETECTABLE WARNINGS

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

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

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

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

Type 1 Detectable Warning Panels will be one of the following products, only cast iron plates will be used:

Type 1 Detectable Warnings

Product	Manufacturer
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>
Iron Dome Cast Iron Detectable Warning Tile	ADA Solutions, Inc. 323 Andover Street Suite 3 Wilmington, MA 01887 800-372-0519 <a href="https://adatile.com">https://adatile.com</a>
TufTile (wet-set) Cast Iron Replaceable Tile	TufTile 1200 Flex Court Lake Zurich, IL 60047 888-960-8897 <a href="http://www.tuftile.com/">http://www.tuftile.com/</a>
Advantage Tactile Detectable Warning Cast Iron Plate	Advantage Tactile Systems, Inc. 241 Main Street, Suite 100 Buffalo, NY 14203 800-679-4022 <a href="https://advantagetactile.com/">https://advantagetactile.com/</a>

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ASPHALT CONCRETE COMPOSITE

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

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

The Contractor will remove 2 feet of asphalt adjacent to all curb and gutter and fillets that are removed with this project. This width will provide a work area for the concrete forms used to install new curb and gutter and fillet sections. Once the new curb and gutter and fillet sections are installed and the forms removed, Asphalt Concrete Composite will be installed in the area between the existing paving and the curb and gutter and fillet sections. Sidewalk curb ramps will be completed on one side of the roadway at a time. Work can not begin on the other side of roadway until the concrete and asphalt work are completed.

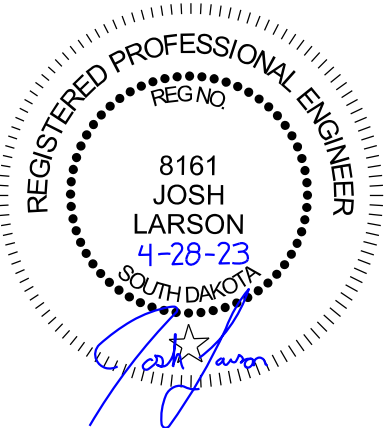


TABLE OF CONSTRUCTION STAKING  
(See Special Provision for Contractor Staking)

Roadway	Begin Station	End Station	Legth (Ft)	Length (Mile)	Miscellaneous Staking Quantity (Mile)
Main Ave	2+40	13+25	1,085	0.21	0.205
4th Street	13+25	20+66	741	0.14	0.140
Redbird Ave	a 12+78	a 16+88	410	0.08	0.078
Total:					0.423

MAILBOXES

The Contractor will remove and reset two existing mailboxes in same location. The local Postmaster will determine the recommended mounting location. The Contractor will coordinate with the Engineer on the proper postal representative to contact.

Two mailboxes are included in this one site. All costs for removing existing mailboxes, providing temporary mailboxes, and resetting mailboxes will be incidental to the contract unit price per site for "Miscellaneous Work".

TABLE OF MISCELLANEOUS WORK

Station	L/R	Quantity (Site)
8+13 - 42'	L	1
Total		1

REMOVE SIGN FOR RESET AND RESET SIGN

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

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

SQUARE TUBE ANCHOR SLEEVE

The Contractor will furnish and install new 2.5" x 2.5" x 18", 12 Gauge square tube anchor sleeve or equivalent components as approved by the Engineer for 2.0" x 2.0" perforated tube posts. A 2.25" x 2.25" x 4', 12 Gauge perforated tube post will be used as the anchor post for installation with the square tube anchor sleeve.

**SIGN POSTS**

The plan post lengths will be field verified by the Contractor

Supports will be cut to provide the proper sign height where necessary.

Post anchors will be 48" long. Two-piece anchor post systems are required for 2" and 2.5" perforated tube post stub posts.

Heavy gauge galvanized steel anchor stub posts that do not require stiffener sleeves may be required by the manufacturer for 2.0"x2.0" perforated tube direct drive anchor post installations.

Winged anchors are required for anchors supporting signs greater than seven square feet in total area.

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

The Contractor will have a Land Surveyor, licensed in the State of South Dakota, to set, reestablish or verify public land survey system (PLSS) corners, right of way (ROW) corners, and property corners as directed by the appropriate SDDOT Region Land Surveyor. It is estimated that 4 ROW and property corners will be set, reestablished, or verified for this project. The Contractor's Land Surveyor, under the direction of the Region Land Surveyor, will set, reestablish, or verify all corner monuments after surfacing and fencing operations are completed in accordance with the PUBLIC LANDS SURVEY SYSTEM CORNERS section and the RIGHT OF WAY AND PROPERTY CORNERS section in Chapter 8 of the SDDOT Survey Manual.

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

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





PAVEMENT, CURB AND GUTTER, AND SIDEWALK QUANTITIES															STATE OF SOUTH DAKOTA		PROJECT		SHEET	TOTAL SHEETS
																	P 0021(174)127		B5	B34
		REMOVE					INSTALL						Plotting Date: 04/28/2023							
		Concrete Curb and Gutter	Concrete Retaining Wall	Concrete Pavement	Asphalt Concrete Pavement	Concrete Sidewalk	Concrete Curb and Gutter	Concrete Gutter	Asphalt Concrete Composite	PCC Fillet Section	Concrete Sidewalk	Detectable Warnings								
							Type B66	Type P6	3"	8"	4"	Type 1								
Intersection	Quadrant	Ft	Ft	SqYd	SqYd	SqYd	Ft	Ft	Ton	SqYd	SqFt	SqFt								
1st Street & Main Street	Northeast	41.8			14.0	32.1	41.8		0.11		254.5	20								
	Southeast	61.7			19.7	53.2	61.0		0.15		481.5	30								
2nd Street & Main Street	Northwest	124.2			28.0	106.6	124.4		0.22		959.1	30								
	Northeast	86.0			18.6	99.1	79.1	2.0	0.15		894.1	30								
	Southwest	61.9			10.9	32.6	47.5		0.10		292.8	20								
	Southeast	61.6			14.0	43.1	61.1		0.11		396.1	20								
3rd Street & Main Street	Northwest	28.7			7.6	22.2	32.1		0.06		199.1	30								
	Northeast				2.2	15.0			0.02		134.3	20								
	Southwest	66.3			15.4	58.1	68.4		0.12		540.9	30								
	Southeast				2.2	11.6			0.02		157.9	20								
4th Street & Main Street	Northwest				2.2	4.8			0.02		103.0	20								
	Northeast	21.3			5.2	22.9	21.7		0.04		212.9	10								
	Southwest				2.2	4.4			0.02		133.8	20								
	Southeast	19.4			7.6	31.6	20.5		0.06		317.7	30								
Dakota Avenue & 4th Street	Northeast				1.1	7.9					73.6	10								
	Southeast				1.1	4.6					50.4	10								
Pioneer Avenue & 4th Street	Northwest					2.6					95.4	10								
	Southwest										84.0	10								
Redbird Avenue & 4th Street	Northwest		21.0		12.6	12.3	8.6		1.85	16.8	186.7	20								
	Northeast	14.4		15.3	11.7	25.7	12.5		0.10	16.8	250.0	20								
	Southeast	67.8		33.4	28.4		68.0		0.22	33.6	553.0	20								
Redbird Avenue & 5th Street	Northwest	22.2			5.0	12.1	22.2		0.05		120.2	10								
	Southwest	32.7		3.4	10.3	17.7	13.1		0.08	12.8	177.2	20								
Total:		710.0	21.0	52.2	220.0	620.2	682.0	2.0	3.50	80.0	6668.0	460.0								

REGISTERED PROFESSIONAL ENGINEER


REG NO.

8161

JOSH LARSON

4-28-23

SOUTH DAKOTA



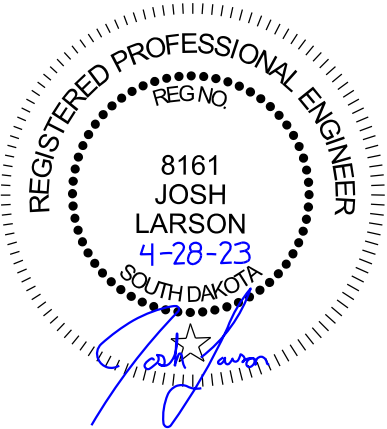
# HORIZONTAL ALIGNMENT DATA

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Main Avenue / SD Hwy 21					
Type	Station			Northing	Easting
POB	0+00.00			312827.972	2694595.370
		TL= 231.40	N 88°19'17" E		
PI	2+31.40			312834.750	2694826.676
		TL= 414.29	N 88°33'39" E		
PI	6+45.70			312845.155	2695240.837
		TL= 356.09	N 88°35'07" E		
PI	10+01.78			312853.946	2695596.816
		TL= 323.78	N 88°13'05" E		
POE	13+25.56			312864.014	2695920.437
Fourth Street / SD Hwy 21					
Type	Station			Northing	Easting
POB	0+00.00			311539.829	2695980.783
		TL= 1325.56	N 2°36'33" W		
PI	13+25.56			312864.014	2695920.437
		TL= 200.56	N 2°32'47" W		
PI	15+26.12			313064.378	2695911.525
		TL= 172.68	N 2°32'40" W		
PI	16+98.80			313236.884	2695903.860
		TL= 367.49	N 2°10'00" W		
POE	20+66.29			313604.115	2695889.966
Redbird Avenue / SD Hwy 21					
Type	Station			Northing	Easting
POB	a 0+00.00			313571.814	2694563.959
		TL= 1040.17	N 88°36'49" E		
PI	a 10+40.17			313596.979	2695603.828
		TL= 286.23	N 88°34'17" E		
PI	a 13+26.40			313604.115	2695889.966
		TL= 370.46	N 88°37'24" E		
PI	a 16+96.86			313613.015	2696260.321
		TL= 363.17	N 88°34'12" E		
PI	a 20+60.03			313622.078	2696623.376
		TL= 550.91	N 88°40'23" E		
PI	a 26+10.94			313634.836	2697174.134
		TL= 27.85	N 88°13'35" E		
PI	a 26+38.78			313635.698	2697201.966
		TL= 2638.03	N 88°36'09" E		
POE	a 52+76.81			313700.036	2699839.211

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North Zone (NAD 83/11); Epoch 2010.00; Geoid 12A; SF = 0.9998841329. The elevations Shown on this sheet are based on NAVD 88.

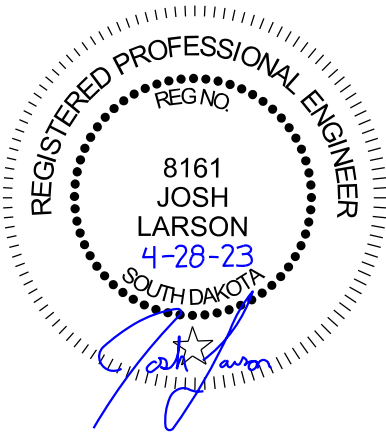


# CONTROL DATA

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SD HWY 21 - HAYTI - HORIZONTAL AND VERTICAL CONTROL POINTS					
POINT	STATION & OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	0+35.20 - 33.15' L	Benchmark	312862.268	2694633.844	1683.12
2	20+28.70 - 31.09' R	Benchmark	313571.984	2695922.298	1692.06
3	28+60.64 - 32.71' L	Benchmark	313656.288	2696687.583	1697.08



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LEGEND

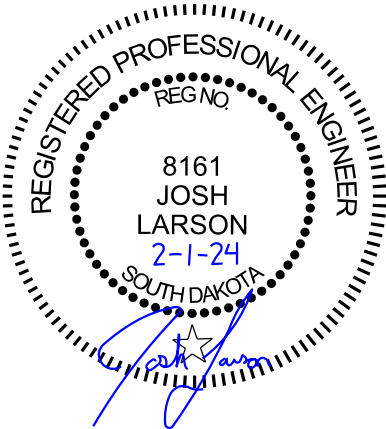
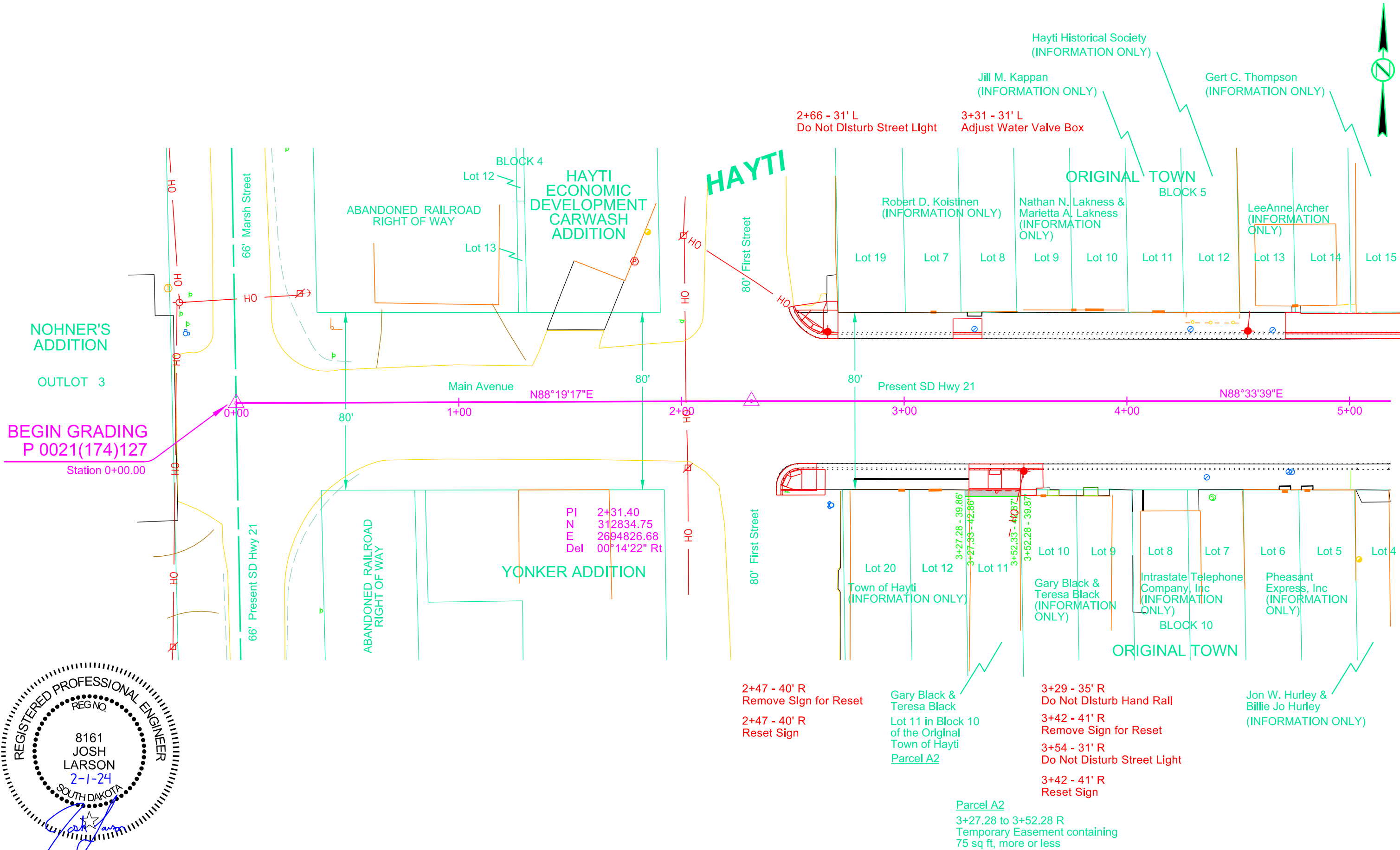
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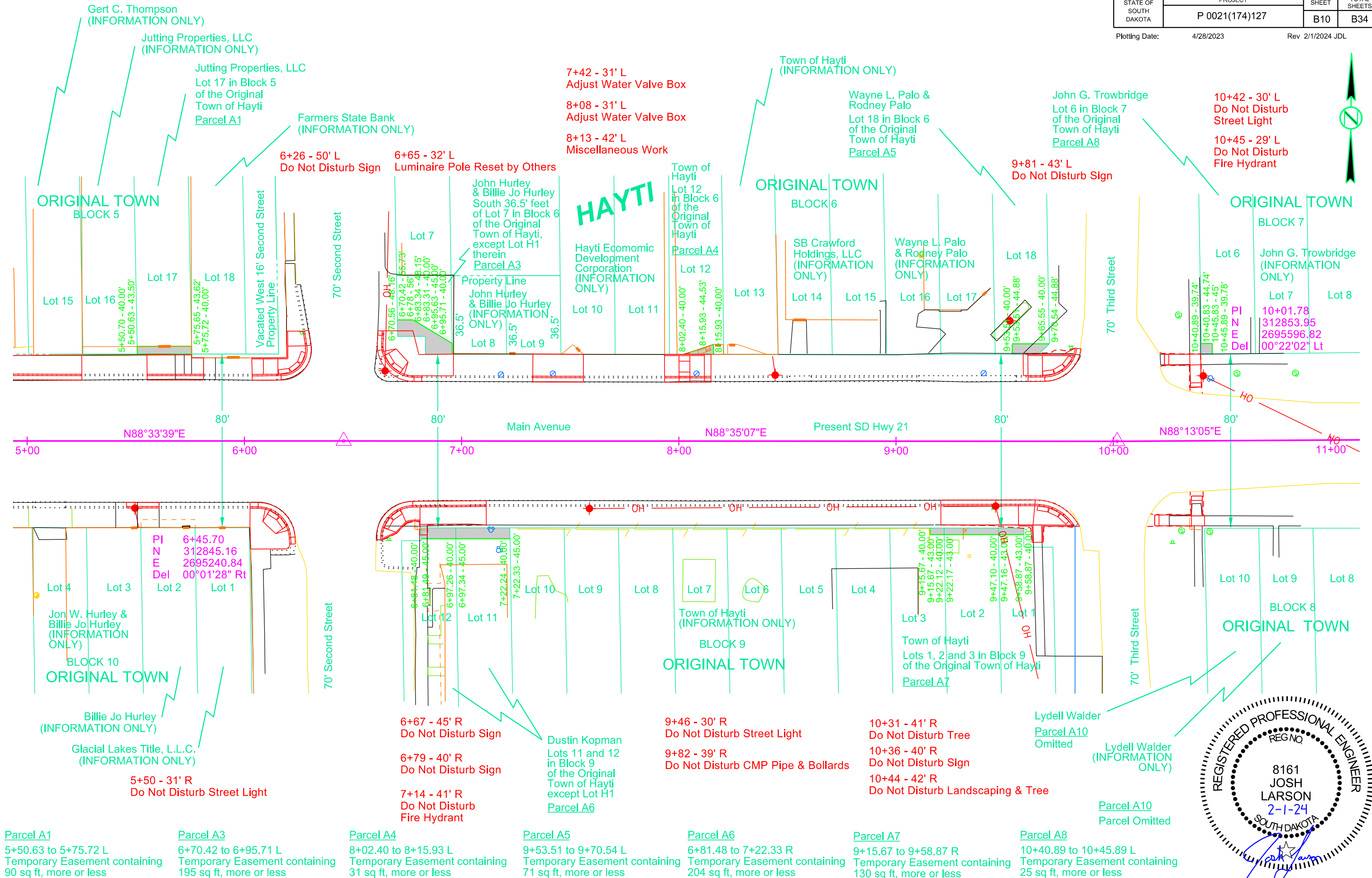
Anchor		Highway R.O.W. Marker		Shrub Tree		State and National Line	
Antenna		Interstate Close Gate		Sidewalk		County Line	
Approach		Iron Pin		Sign Face		Section Line	
Assumed Corner		Irrigation Ditch		Sign Post		Quarter Line	
Azimuth Marker		Lake Edge		Slough Or Marsh		Sixteenth Line	
BBQ Grill/ Fireplace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

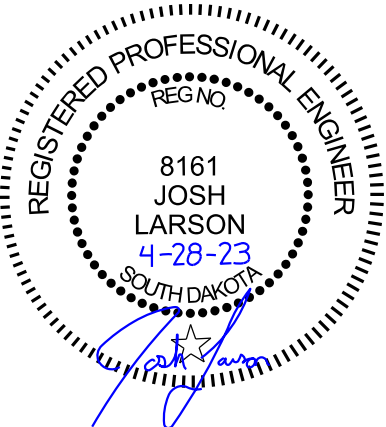
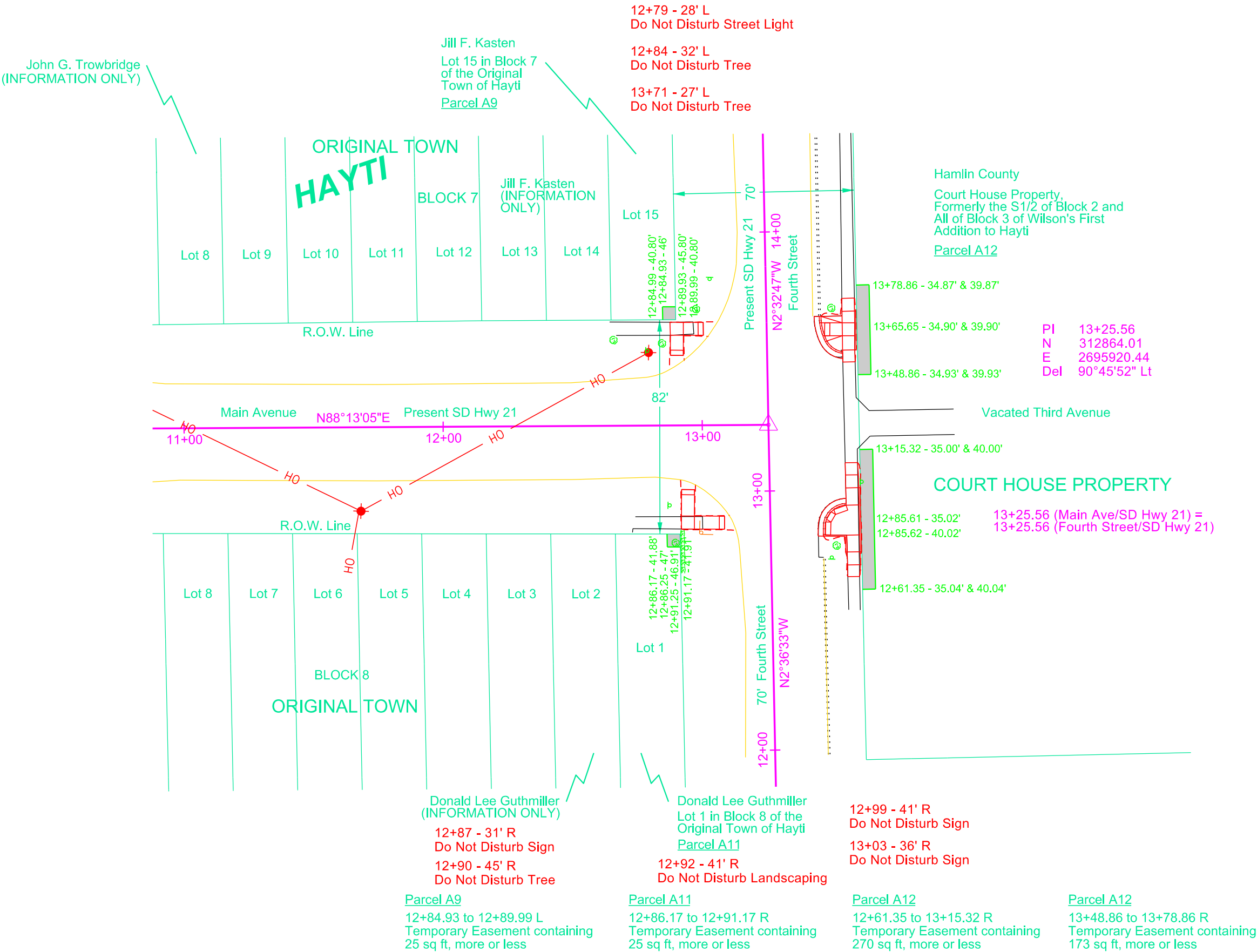
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16+70 - 14' L to 16+81 - 97' L  
Grading  
(Incidental Work, Grading)

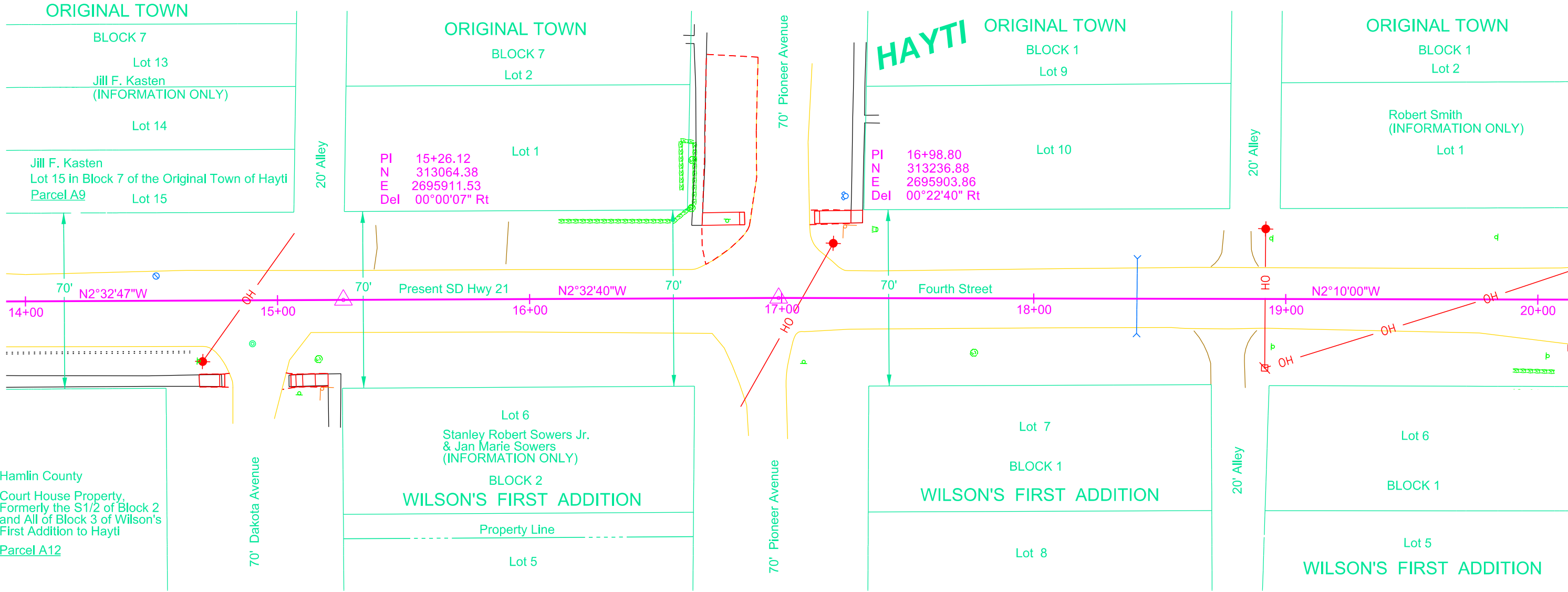
16+79 - 31' L  
Remove Sign for Reset

16+81 - 37' L  
Reset Sign

17+20 - 22' L  
Do Not Disturb Street Light

17+25 - 28' L  
Do Not Disturb Sign

17+26 - 41' L  
Do Not Disturb Fire Hydrant

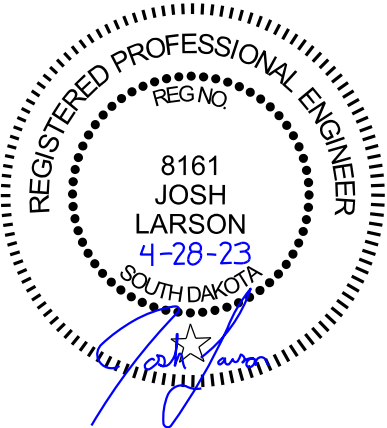


Hamlin County  
Court House Property,  
Formerly the S1/2 of Block 2  
and All of Block 3 of Wilson's  
First Addition to Hayti  
Parcel A12

14+70 - 24' R  
Do Not Disturb Street Light

15+08 - 37' R  
Do Not Disturb Sign

15+16 - 24' R  
Do Not Disturb Tree



- a 12+83 - 33' L to 13+04 - 33' L  
Remove Concrete Retaining Wall

a 12+88 - 26' L  
Move Fire Hydrant (to 12+95 - 34' L)

a 13+00 - 35' L  
Remove Tree  
(Incidental Work, Grading)

a 13+07 - 44' L  
Do Not Disturb Sign
- a 13+48 - 41' L  
Do Not Disturb Sign

a 13+63 - 36' L  
Do Not Disturb Landscaping

a 13+68 - 32' L  
Do Not Disturb Sign
- a 12+92 - 22' L  
Remove Sign for Reset

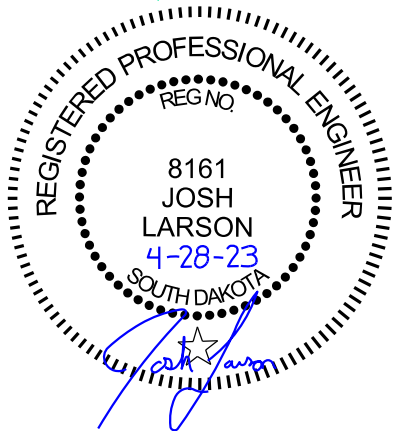
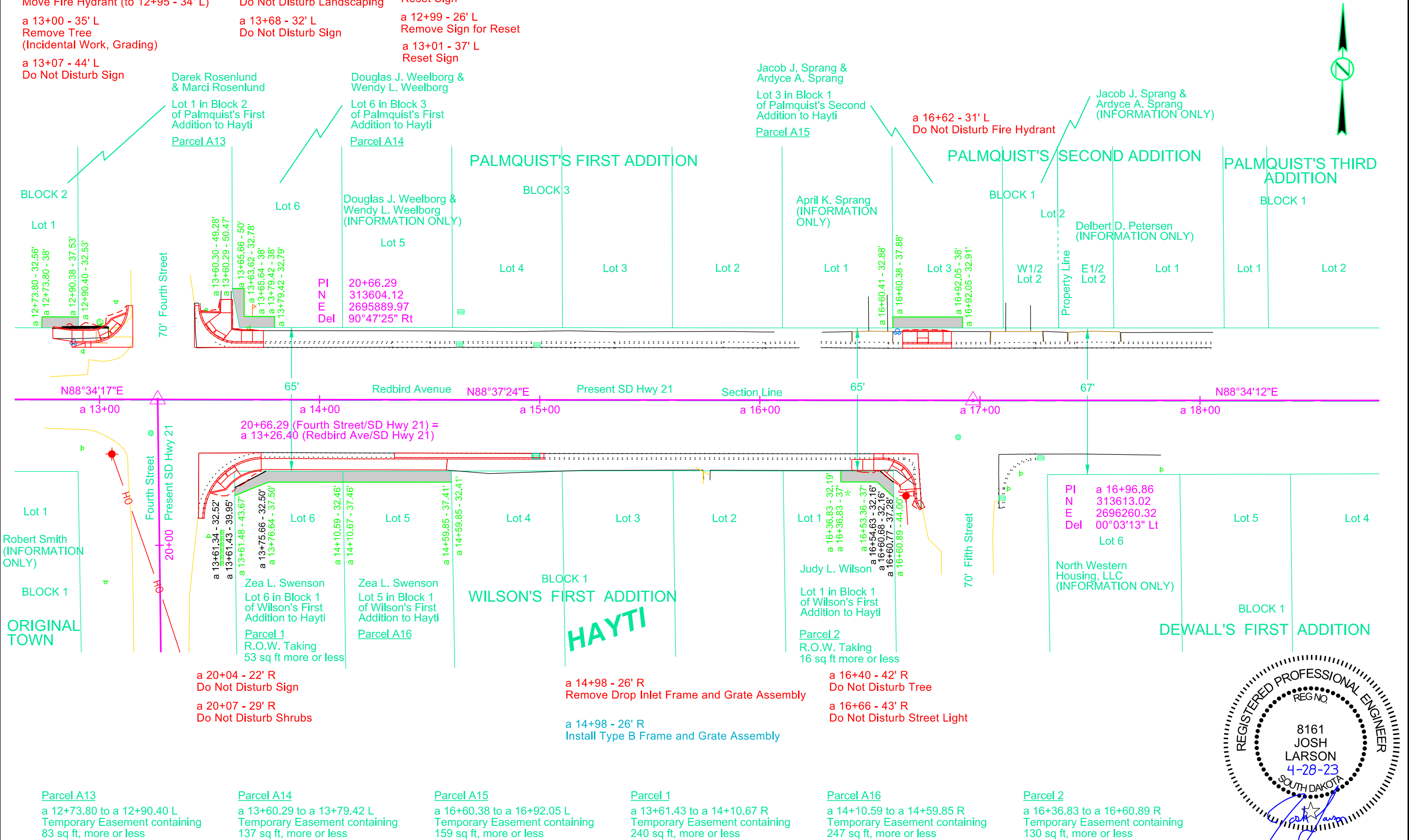
a 12+77 - 22' L  
Reset Sign

a 12+99 - 26' L  
Remove Sign for Reset

a 13+01 - 37' L  
Reset Sign

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0021(174)127	B13	B34

Plotting Date: 4/28/2023





- 1

2+48.13-42.08' L  
Begin 20' Rad C & G  
TC Elev 1690.06 (Theor)
- 2

2+48.94-39.75' L  
20' Rad C & G  
TC Elev 1690.10
- 3

2+52.16-34.49' L  
20' Rad C & G  
TC Elev 1690.21 (Theor)
- 4

2+56.00-34.63' L  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 5

2+60.63-31.69' L  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 6

2+62.66-28.01' L  
End 20' Rad C & G  
Begin Str C & G
- 7

2+63.72-28.02' L  
Str C & G  
TC Elev 1690.26 (Theor)
- 8

2+70.27-28.02' L  
End Str C & G  
TC Elev (Match Existing)
- 9

2+61.62-38.34' L  
Back of Turning Space

- 10

2+63.71-35.41' L  
Begin Ramp Slope
- 11

2+70.24-35.74' L  
End Ramp Slope
- 12

3+21.94-28.02' L  
Begin Str C & G  
TC Elev (Match Existing)
- 13

3+34.95-27.99' L  
End Str C & G  
TC Elev (Match Existing)

- 14

4+71.16-28.15' L  
Begin Str C & G  
TC Elev (Match Existing)
- 15

5+25.16-28.06' L  
End Str C & G  
TC Elev (Match Existing)

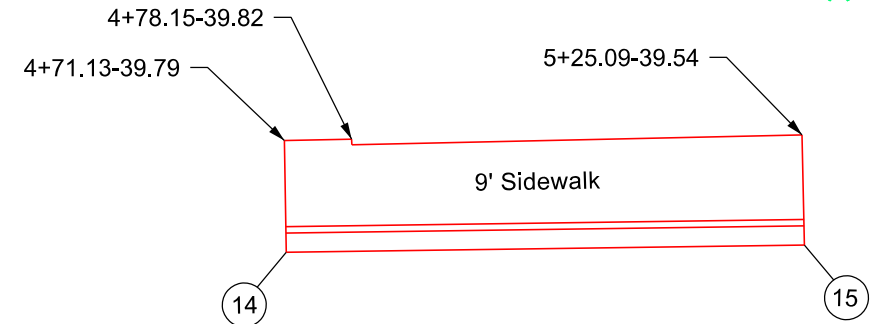
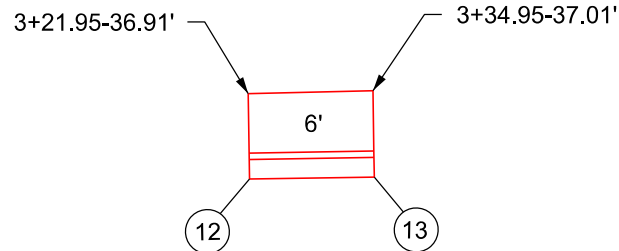
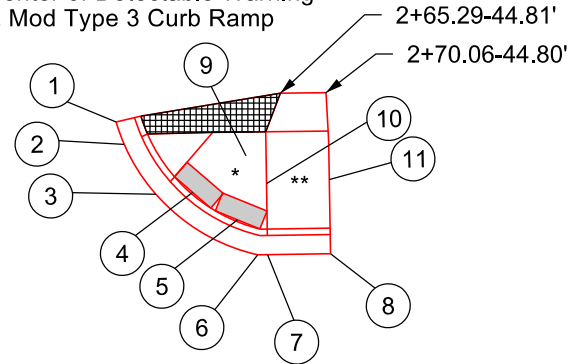
# CURB RAMP LAYOUT

\* Turning Space with 1.5% slope  
\*\* Curb Ramp with 7.5% slope and 1.5% cross slope  
Note: All curb and gutter shown on this sheet is Type B66 except as noted.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0021(174)127	B14	B34

Plotting Date: 4/28/2023

1st Street



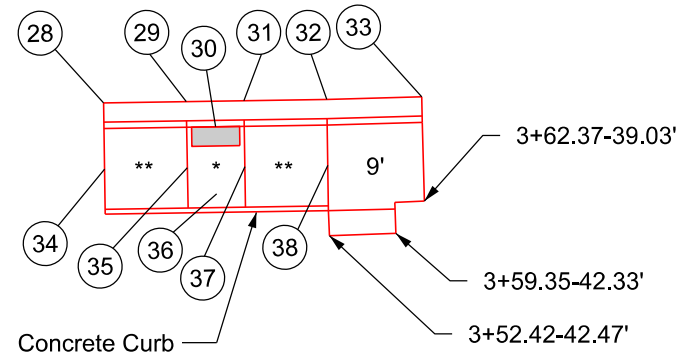
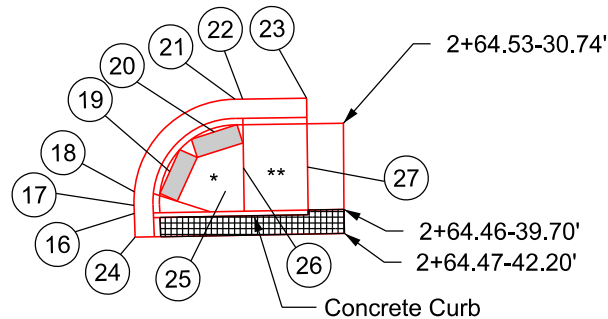
Main Ave. / Present SD Hwy. 21


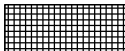
3+00

4+00

5+00

1st Street



-  Type 1 Detectable Warnings
-  3" Asphalt Concrete Composite

- 16

2+42.60-39.79' R  
Str C & G  
TC Elev 1690.01
- 17

2+42.58-38.94' R  
End Str C & G  
Begin 10.67' Rad C & G
- 18

2+42.64-37.53' R  
10.67' Rad C & G  
TC Elev 1690.08 (Theor)
- 19

2+46.37-35.47' R  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 20

2+51.06-31.43' R  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 21

2+53.31-28.04' R  
End 10.67' Rad C & G  
Begin Str C & G
- 22

2+54.08-28.04' R  
Str C & G  
TC Elev 1690.12 (Theor)
- 23

2+60.75-28.06' R  
End Str C & G  
TC Elev (Match Existing)
- 24

2+42.65-42.25' R  
Begin Str C & G  
TC Elev 1690.11 (Theor)

- 25

2+52.16-37.59' R  
Back of Turning Space
- 26

2+54.06-35.22' R  
Begin Ramp Slope
- 27

2+60.73-35.22' R  
End Ramp Slope
- 28

3+29.09-28.27' R  
Begin Str C & G  
TC Elev (Match Existing)
- 29

3+37.72-28.27' R  
Str C & G  
TC Elev 1691.35 (Theor)
- 30

3+40.73-30.93' R  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 31

3+43.72-28.27' R  
Str C & G  
TC Elev 1691.44 (Theor)
- 32

3+52.36-28.26' R  
Str C & G  
TC Elev 1691.44
- 33

3+62.27-28.15' R  
End Str C & G  
TC Elev (Match Existing)
- 34

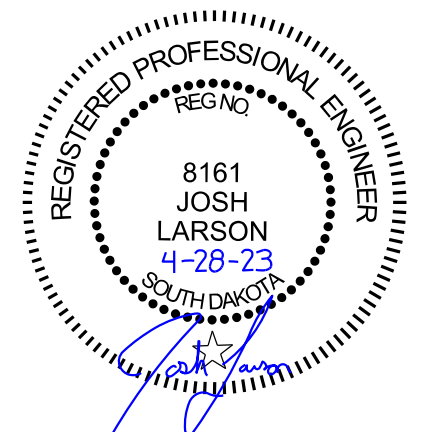
3+29.09-35.15' R  
Begin Ramp Slope
- 35

3+37.73-35.15' R  
End Ramp Slope
- 36

3+40.73-37.93' R  
Back of Turning Space
- 37

3+43.73-35.14' R  
Begin Ramp Slope
- 38

3+52.36-35.14' R  
End Ramp Slope







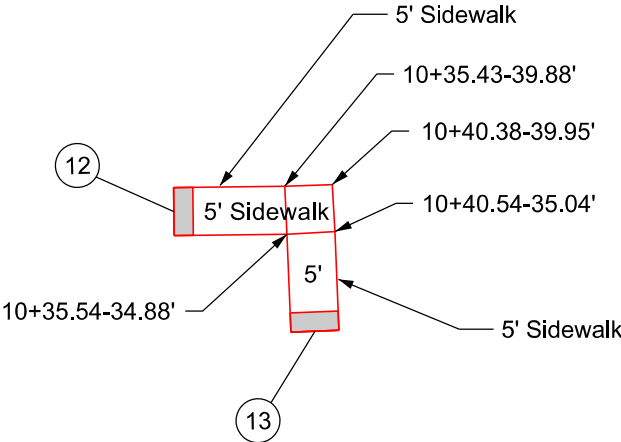
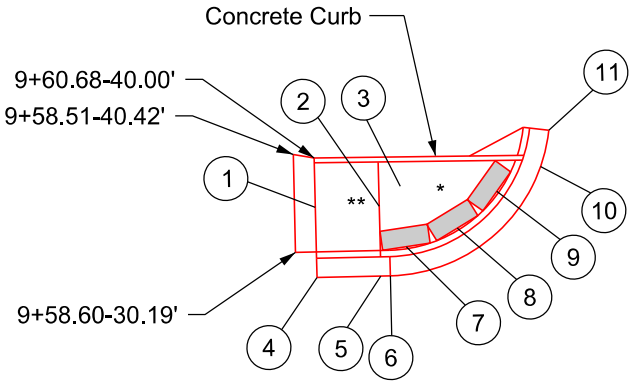
# CURB RAMP LAYOUT

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

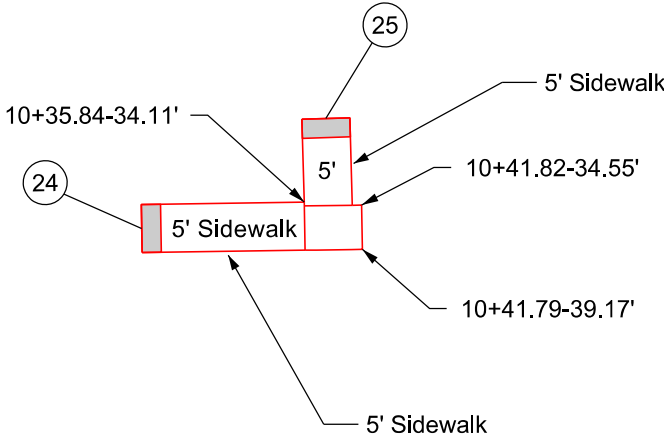
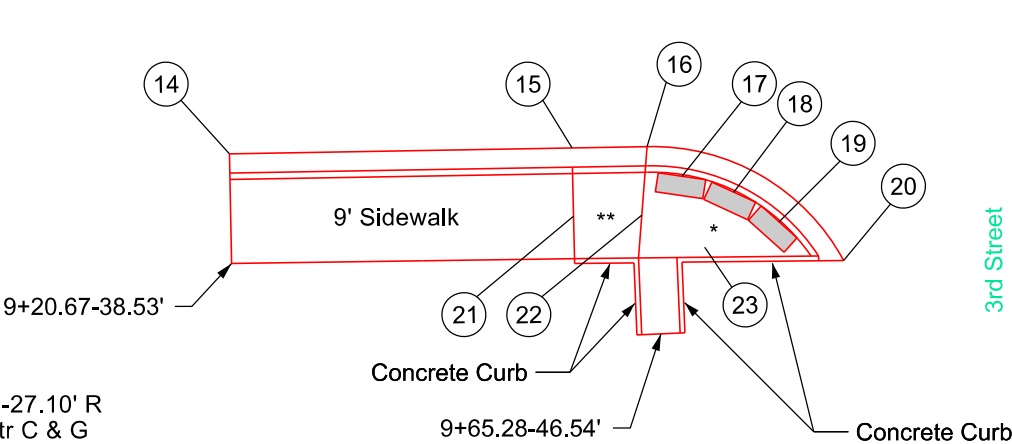
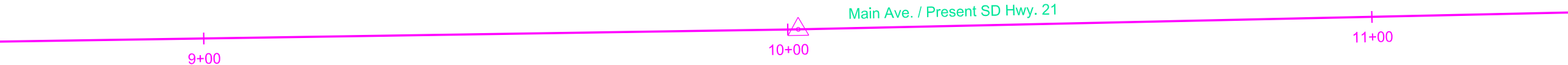
Note: All curb and gutter shown on this sheet is Type B66 except as noted.



- |   |  |    |  |
|---|--|----|--|
| 1 | 9+60.72-34.85' L<br>Begin Ramp Slope                                       | 9  | 9+79.66-36.24' L<br>Center of Detectable Warning<br>& Mod Type 3 Curb Ramp |
| 2 | 9+67.39-34.87' L<br>End Ramp Slope   | 10 | 9+84.25-38.76' L<br>17' Rad C & G<br>TC Elev 1693.81                       |
| 3 | 9+69.62-36.91' L<br>Back of Turning Space                                  | 11 | 9+85.17-42.54' L<br>End 17' Rad C & G<br>TC Elev 1693.37                   |
| 4 | 9+60.79-27.55' L<br>Begin Str C & G<br>TC Elev (Match Existing)            |    |  |
| 5 | 9+67.45-27.60' L<br>Str C & G<br>TC Elev 1693.83 (Theor)                   |    |  |
| 6 | 9+68.44-27.61' L<br>End Str C & G<br>Begin 17' Rad C & G                   |    |  |
| 7 | 9+70.16-30.62' L<br>Center of Detectable Warning<br>& Mod Type 3 Curb Ramp |    |  |
| 8 | 9+75.49-32.47' L<br>Center of Detectable Warning<br>& Mod Type 3 Curb Ramp |    |  |



- |    |   |
|----|---|
| 12 | 10+23.80-37.50' L<br>Center of Detectable Warning |
| 13 | 10+38.22-24.71' L<br>Center of Detectable Warning |



- |    |   |
|----|---|
| 24 | 10+18.85-36.50' R<br>Center of Detectable Warning |
| 25 | 10+38.28-25.44' R<br>Center of Detectable Warning |

- |    |  |    |  |
|----|--|----|--|
| 14 | 9+20.62-27.10' R<br>Begin Str C & G<br>TC Elev (Match Existing)                        | 19 | 9+77.77-35.06' R<br>Center of Detectable Warning<br>& Mod Type 3 Curb Ramp |
| 15 | 9+56.33-27.03' R<br>Str C & G<br>TC Elev 1693.25                                       | 20 | 9+84.44-39.18' R<br>End 22.67' Rad C & G<br>TC Elev 1692.56                |
| 16 | 9+64.14-27.01' R<br>End Str C & G<br>Begin 22.67' Rad C & G<br>TC Elev 1693.25 (Theor) | 21 | 9+56.37-34.16' R<br>Begin Ramp Slope                                       |
| 17 | 9+67.72-30.15' R<br>Center of Detectable Warning<br>& Mod Type 3 Curb Ramp             | 22 | 9+63.48-34.14' R<br>End Ramp Slope   |
| 18 | 9+73.10-31.89' R<br>Center of Detectable Warning<br>& Mod Type 3 Curb Ramp             | 23 | 9+69.98-37.58' R<br>Back of Turning Space                                  |

Type 1 Detectable Warnings



CURB RAMP LAYOUT

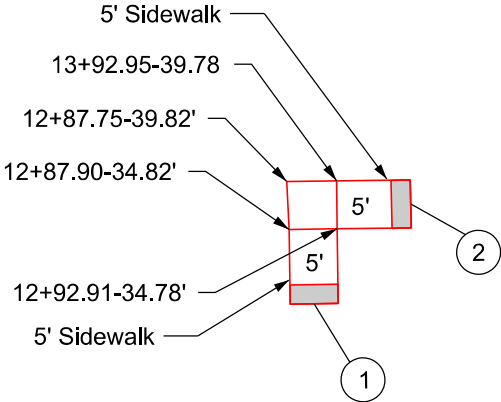
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0021(174)127	B17	B34

Plotting Date: 4/28/2023

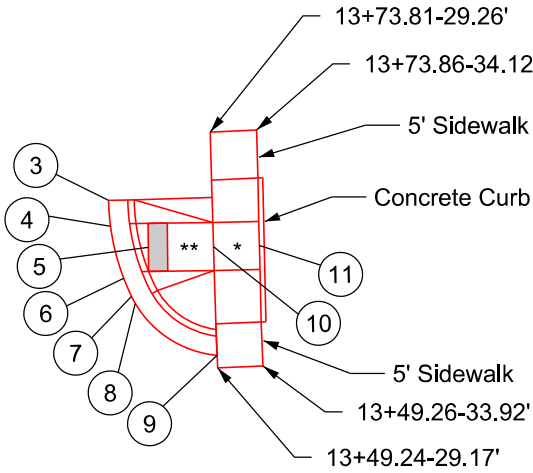
\* Turning Space with 1.5% slope  
\*\* Curb Ramp with 7.5% slope and 1.5% cross slope  
Note: All curb and gutter shown on this sheet is Type B66 except as noted.

Type 1 Detectable Warnings

- 1 12+90.34-27.02' L  
Center of Detectable Warning
- 2 13+00.62-37.20' L  
Center of Detectable Warning



Fourth Street / Present SD Hwy 21



13+25.56 (Main Ave/SD Hwy 21) =  
13+25.56 (Fourth Street/SD Hwy 21)

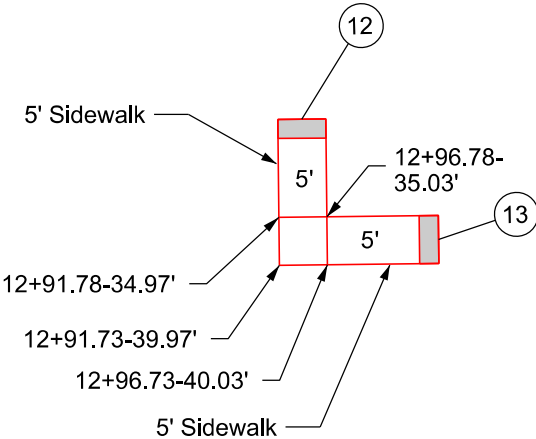


Main Ave. / Present SD Hwy. 21

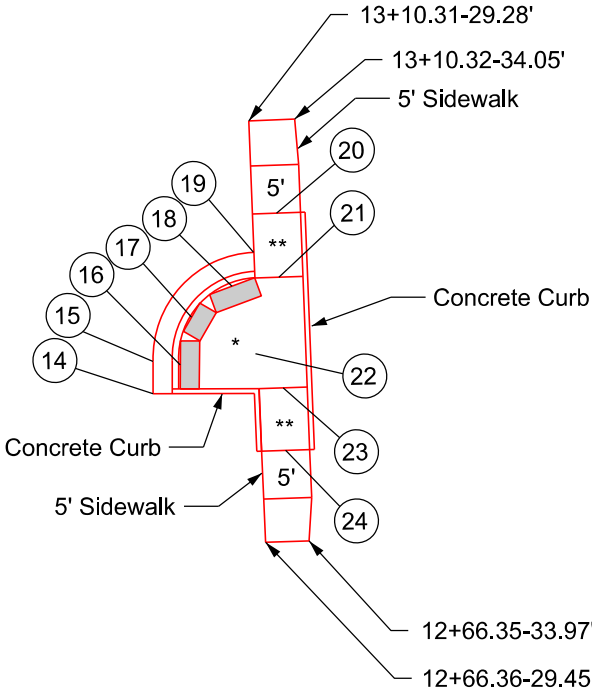
12+00

13+00

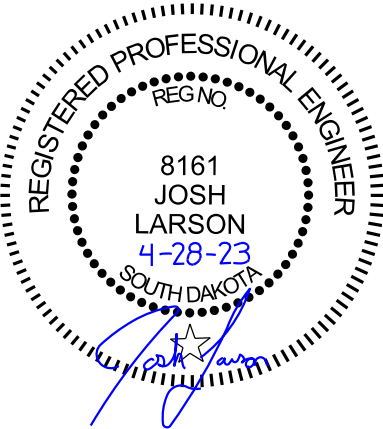
- 12 12+94.39-24.79' R  
Center of Detectable Warning
- 13 13+08.36-37.65' R  
Center of Detectable Warning



Fourth Street



- 3 13+67.07-18.43' R  
Begin 24' Rad C & G  
TC Elev (Match Existing)
- 4 13+64.38-18.54' R  
24' Rad C & G  
TC Elev 1696.04 (Theor)
- 5 13+62.03-22.40' R  
Center of Detectable Warning  
& Mod Type 2 Curb Ramp
- 6 13+58.90-19.74' R  
24' Rad C & G  
TC Elev 1696.13 (Theor)
- 7 13+56.99-20.48' R  
End 24' Rad C & G  
Begin 11' Rad C & G
- 8 13+56.25-20.85' R  
11' Rad C & G  
TC Elev 1696.17
- 9 13+50.53-29.17' R  
End 11' Rad C & G  
TC Elev 1696.25
- 10 13+61.87-29.19' R  
End Ramp Slope
- 11 13+61.82-33.97' R  
Back of Turning Space
- 14 12+82.26-18.30' R  
Begin Str C & G  
TC Elev (Match Existing)
- 15 12+85.62-18.42' R  
End Str C & G  
Begin 11' Rad C & G
- 16 12+85.16-21.23' R  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 17 12+90.08-22.58' R  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 18 12+93.15-26.92' R  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 19 12+96.61-29.28' R  
End 11' Rad C & G  
TC Elev 1696.32 (Theor)
- 20 13+00.59-31.81' R  
Begin Ramp Slope
- 21 12+93.93-31.83' R  
End Ramp Slope
- 22 12+86.03-29.09' R  
Back of Turning Space
- 23 12+82.37-31.85' R  
Begin Ramp Slope
- 24 12+75.86-31.88' R  
End Ramp Slope

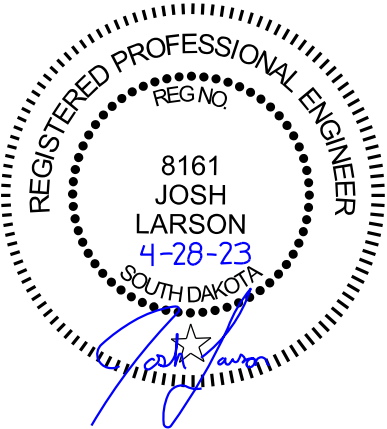
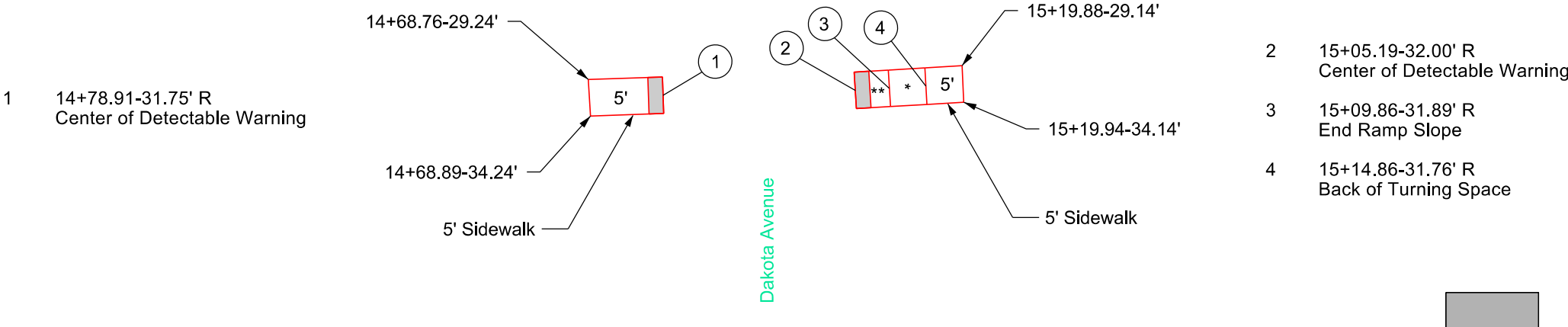
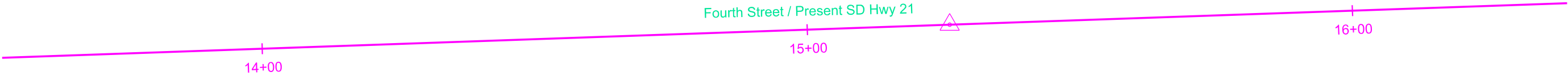


# CURB RAMP LAYOUT

\* Turning Space with 1.5% slope  
\*\* Curb Ramp with 7.5% slope and 1.5% cross slope  
Note: All curb and gutter shown on this sheet is Type B66 except as noted.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0021(174)127	B18	B34

Plotting Date: 4/28/2023

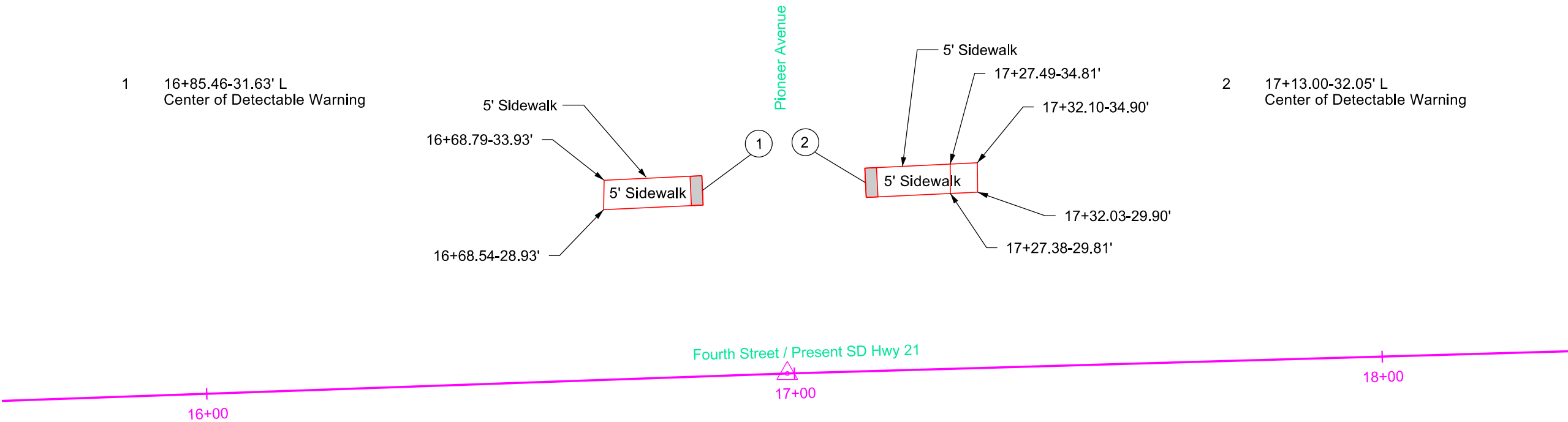



# CURB RAMP LAYOUT

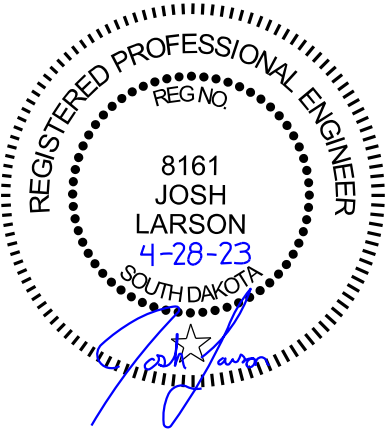
\* Turning Space with 1.5% slope  
\*\* Curb Ramp with 7.5% slope and 1.5% cross slope  
Note: All curb and gutter shown on this sheet is Type B66 except as noted.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0021(174)127	B19	B34

Plotting Date: 4/28/2023



 Type 1 Detectable Warnings





- 1

a 13+02.70-33.51' L  
Back of Turning Space

2

a 12+92.44-28.86' L  
Begin Ramp Slope

3

a 12+87.44-23.71' L  
Begin C & G Transition  
TC Elev 1695.00

4

a 12+92.44-23.71' L  
End C & G Transition  
Begin Str C & G  
TC Elev 1694.92

5

a 12+96.06-23.70' L  
End Str C & G  
Begin 19' Rad Fillet

6

a 12+99.90-29.40' L  
End Ramp Slope

7

a 13+00.78-26.36' L  
19' Rad Fillet  
TC Elev 1694.91 (Theor)

8

a 13+03.18-28.20' L  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp

9

a 13+07.79-31.60' L  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp

10

a 13+10.26-33.34' L  
19' Rad Fillet  
TC Elev 1694.79 (Theor)

11

a 13+12.62-38.82' L  
19' Rad Fillet  
TC Elev 1694.74

12

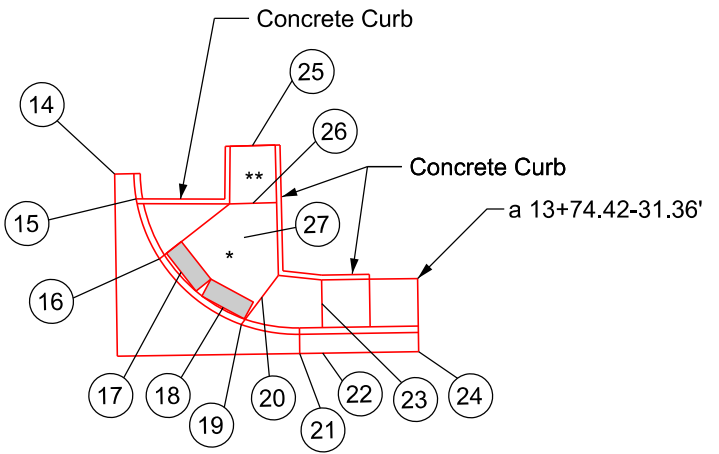
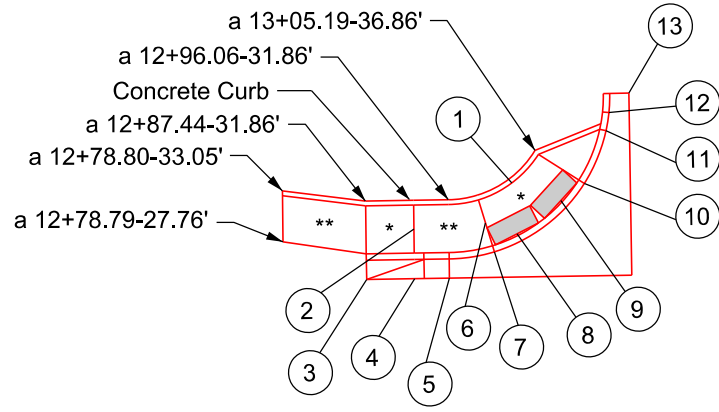
a 13+12.95-40.69' L  
19' Rad Fillet  
TC Elev 1694.72

13

a 13+15.06-42.69' L  
End 19' Rad Fillet  
TC Elev 1694.70 (Theor)

# CURB RAMP LAYOUT

\* Turning Space with 1.5% slope  
\*\* Curb Ramp with 7.5% slope and 1.5% cross slope  
Note: All curb and gutter shown on this sheet is Type B66 except as noted.



- 14

a 13+43.02-42.70' L  
Begin 19' Rad Fillet  
TC Elev (Match Existing)
- 15

a 13+45.23-40.08' L  
19' Rad Fillet  
TC Elev 1693.96
- 16

a 13+47.56-33.80' L  
19' Rad Fillet  
TC Elev 1693.72 (Theor)
- 17

a 13+49.81-32.37' L  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 18

a 13+54.12-28.63' L  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 19

a 13+55.99-26.83' L  
19' Rad Fillet  
TC Elev 1693.55 (Theor)
- 20

a 13+58.17-29.64' L  
Begin Ramp Slope
- 21

a 13+62.04-23.72' L  
End 19' Rad Fillet  
Begin Str C & G
- 22

a 13+64.43-23.73' L  
Str C & G  
TC Elev 1693.08  
Flowline Elev 1692.78
- 23

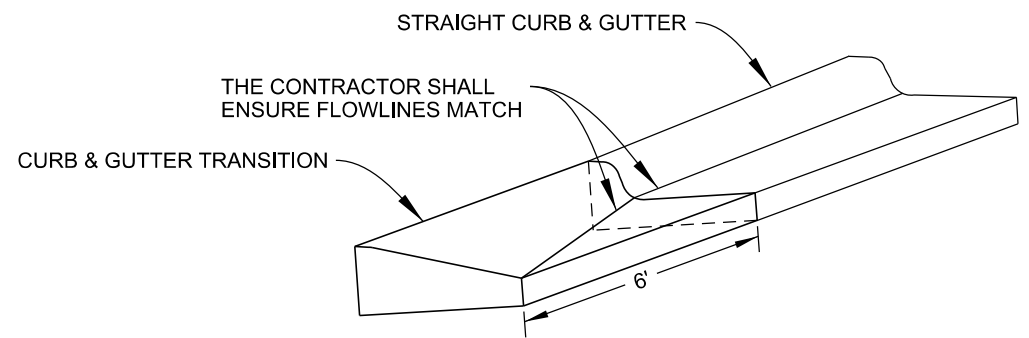
a 13+64.42-28.86' L  
End Ramp Slope
- 24

a 13+74.43-23.73' L  
End Str C & G  
TC Elev (Match Existing)
- 25

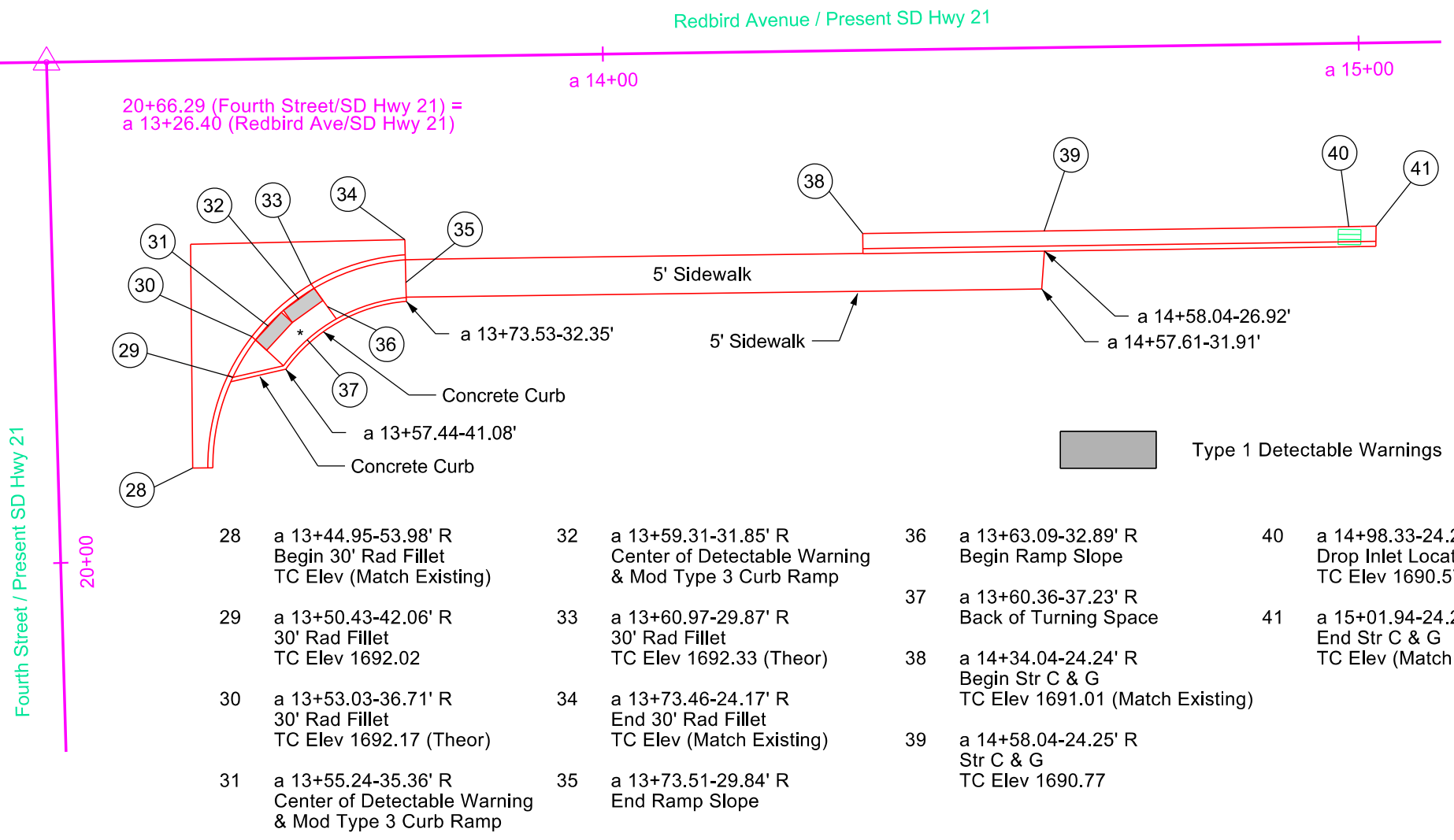
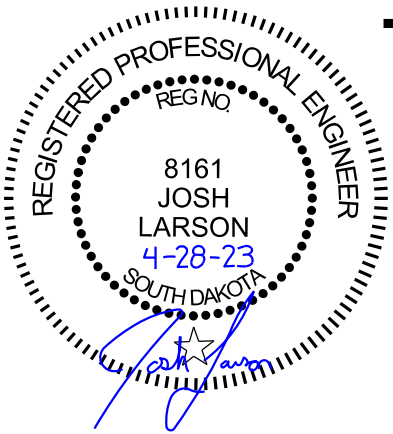
a 13+57.44-45.44' L  
Begin Ramp Slope
- 26

a 13+57.40-39.44' L  
End Ramp Slope
- 27

a 13+56.42-35.87' L  
Back of Turning Space



## CURB AND GUTTER TRANSITION DETAIL



CURB RAMP LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0021(174)127	B21	B34

Plotting Date: 4/28/2023

\* Turning Space with 1.5% slope  
\*\* Curb Ramp with 7.5% slope and 1.5% cross slope  
Note: All curb and gutter shown on this sheet is Type B66 except as noted.



- 1

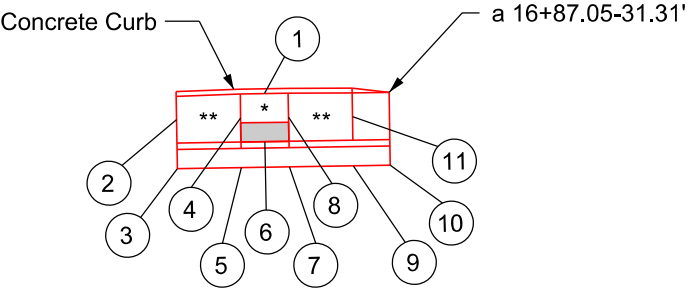
a 16+74.04-31.35' L  
Back of Turning Space
- 2

a 16+64.88-28.77' L  
Begin Ramp Slope
- 3

a 16+64.88-23.67' L  
Begin Str C & G  
TC Elev (Match Existing)
- 4

a 16+71.54-28.85' L  
End Ramp Slope
- 5

a 16+71.55-23.68' L  
Str C & G  
TC Elev 1693.35 (Theor)



- 6

a 16+74.04-26.35' L  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 7

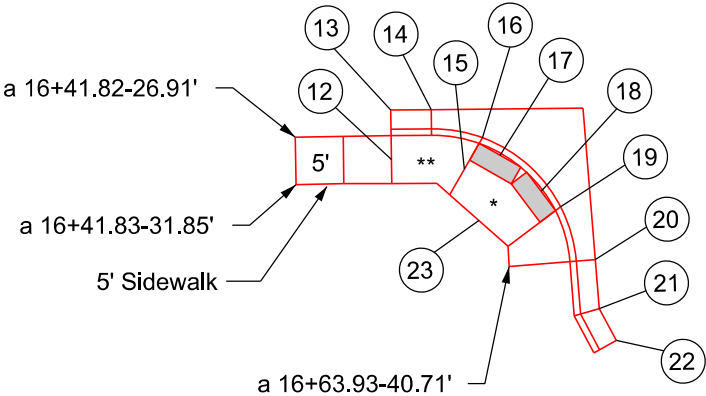
a 16+76.55-23.69' L  
Str C & G  
TC Elev 1693.41 (Theor)
- 8

a 16+76.54-28.85' L  
Begin Ramp Slope
- 9

a 16+83.21-23.70' L  
Str C & G  
TC Elev 1693.41
- 10

a 16+87.06-23.70' L  
End Str C & G  
TC Elev (Match Existing)
- 11

a 16+83.21-28.83' L  
End Ramp Slope



Fifth Street

- 12

a 16+51.83-29.39' R  
Begin Ramp Slope
- 13

a 16+51.82-24.23' R  
Begin Str C & G  
TC Elev (Match Existing)
- 14

a 16+56.04-24.25' R  
End Str C & G  
Begin 17' Rad Fillet
- 15

a 16+59.41-30.48' R  
End Ramp Slope
- 16

a 16+61.32-27.24' R  
17' Rad Fillet  
TC Elev 1691.87 (Theor)
- 17

a 16+63.13-29.09' R  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 18

a 16+67.36-32.93' R  
Center of Detectable Warning  
& Mod Type 3 Curb Ramp
- 19

a 16+69.38-34.55' R  
17' Rad Fillet  
TC Elev 1691.71 (Theor)
- 20

a 16+72.92-40.11' R  
End 17' Rad Fillet  
Begin Str C & G  
TC Elev 1691.42
- 21

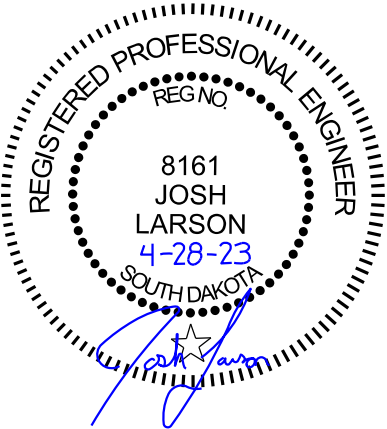
a 16+73.26-45.22' R  
Str C & G  
TC Elev 1690.96
- 22

a 16+74.97-48.57' R  
End Str C & G  
TC Elev 1690.68 (Theor)
- 23

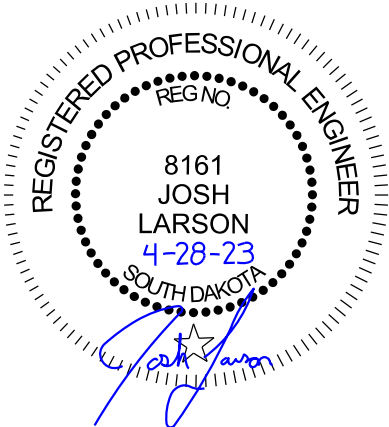
a 16+60.85-35.86' R  
Back of Turning Space

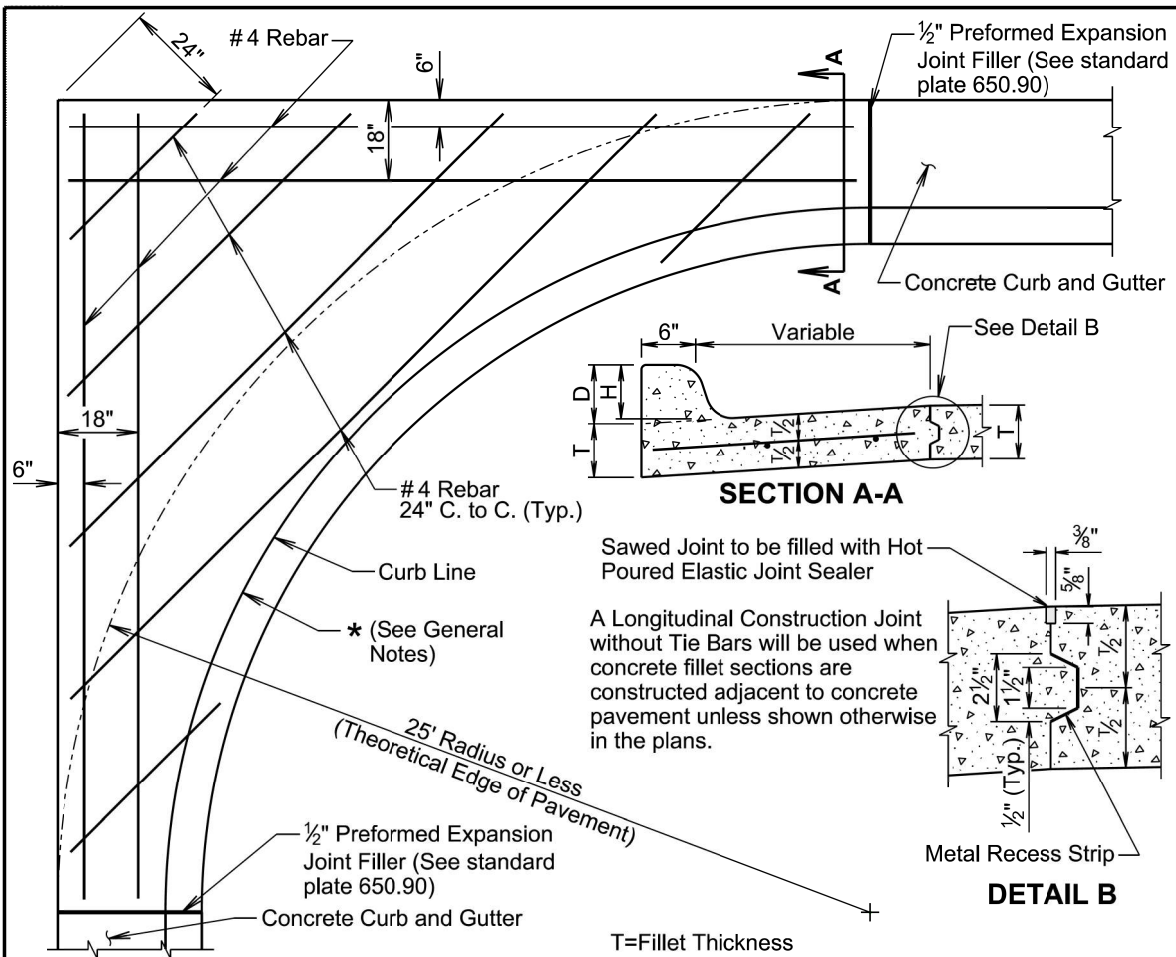


Type 1 Detectable Warnings



SIGN INSTALLATION TABLE										STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
											P 0021(174)127	B22	B34
SIGN DATA								NEW POST DATA			Plotting Date: 04/28/2023		
STATION	DESCRIPTION	SIGN CODE	SIGN SIZE (FT)	RESET SIGN (EACH)	SIGN FACES	SIGN HEIGHT - above edge of driving lane	SIGN OFFSET - from edge of shoulder to sign post	POST LENGTHS <span>⚠</span>			FIXED OR BREAK-AWAY**	SIZE/QUANTITY (FT)	
								INSIDE	CENTER	OUTSIDE		2.0" x 2.0" TUBE	
				632E3500								632E1320	
SD Hwy 21 - Main Avenue, Fourth Street, Redbird Avenue													
2+47 R	Stop Sign			1	South	7'	12'	13.0			A	13.0	
3+42 R	Reserved Handicap Parking			1	North	7'	12'	13.0			A	13.0	
16+79 L	Stop Sign			1	West	7'	12'*	13.0			A	13.0	
a 12+92 L	Speed Limit 20			1	East	7'	12'*	13.0			A	13.0	
a 12+99 L	4th St and Redbird Ave Street Sign			1	N,S,E,W	7'	12'*	13.0			A	13.0	
Total: <div>5</div> <div>65.0</div>													
PH 0021(174)127 TOTALS : <div>5</div> <div>65.0</div>													
**- (F)ixed Base, or Breakaway (S)lip Base, (A)nchor Stub Post, (M)ulti-directional Surface Mount, (D)irect drive, or (W)ood Post. <span>⚠</span> -Plan post lengths are estimates. The post lengths will be field verified by Contractor.													





**GENERAL NOTES:**

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

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

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

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

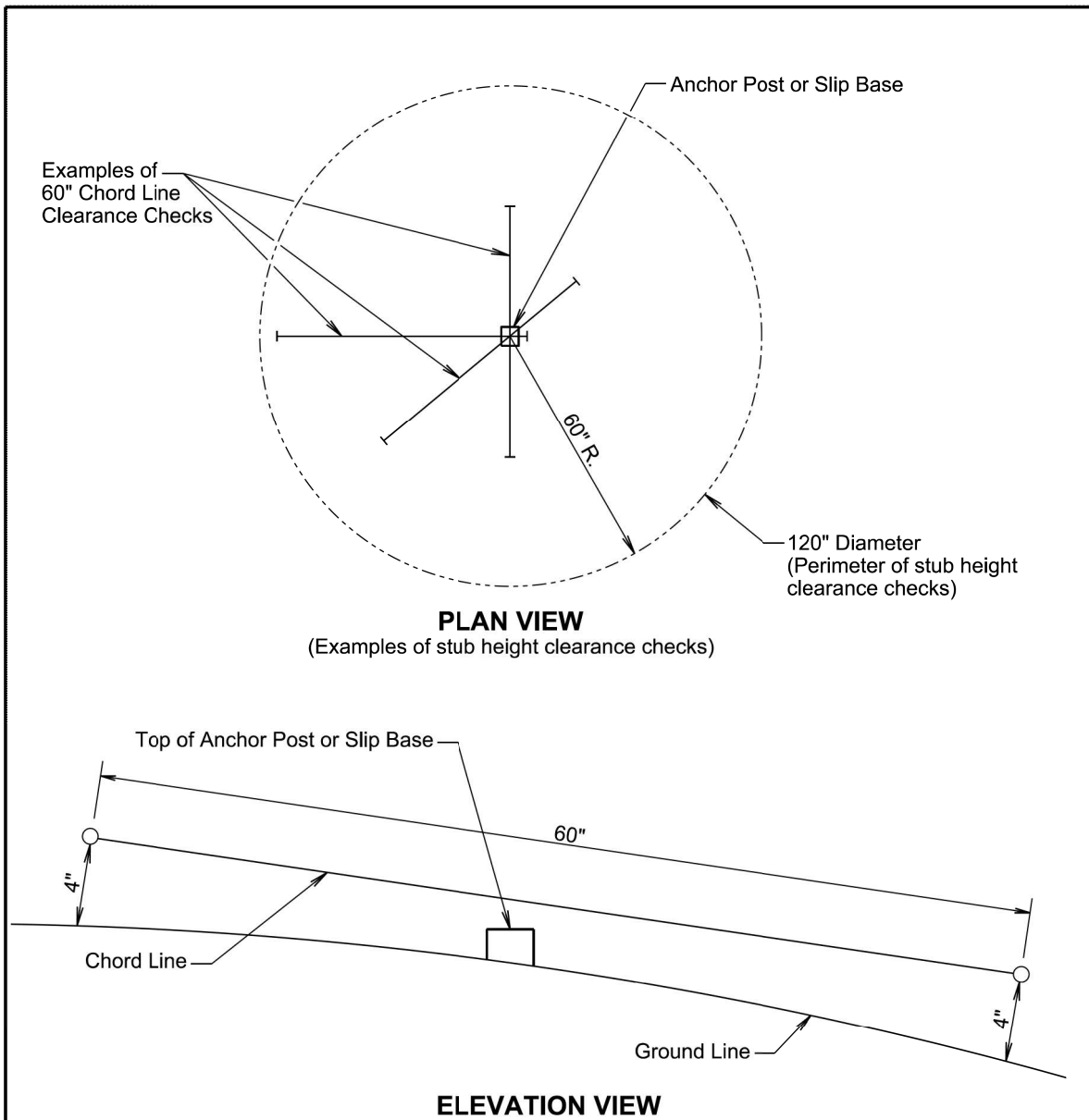
The concrete curb will be monolithic with the concrete fillet. No separate payment for this curb will be made as the curb is considered a part of the fillet.

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

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

November 19, 2022

Published Date: 2024	S D D O T	PCC FILLET SECTION WITH TYPE B CURB AND GUTTER	PLATE NUMBER 380.30
			Sheet 1 of 1



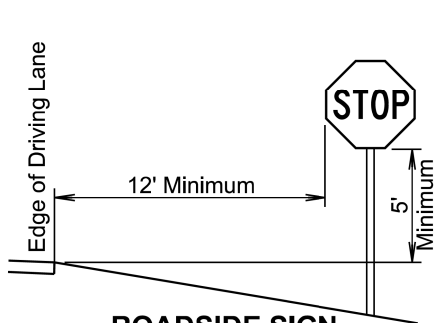
**GENERAL NOTES:**

The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

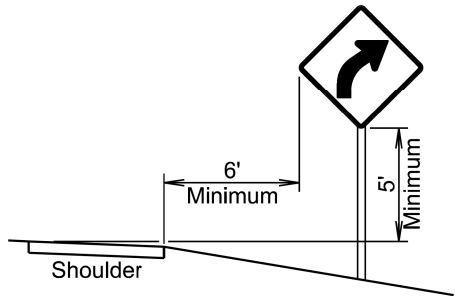
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

January 22, 2021

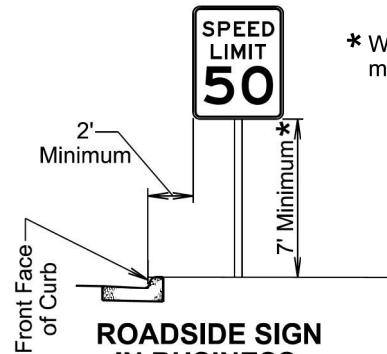
Published Date: 2024	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 632.18
			Sheet 1 of 1



ROADSIDE SIGN  
IN RURAL AREA

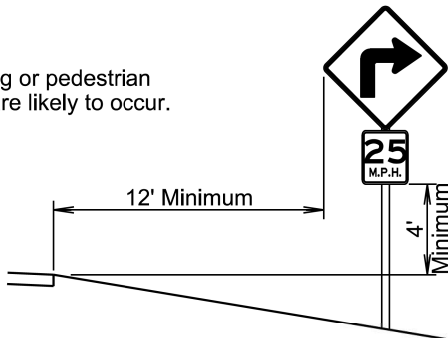


ROADSIDE SIGN  
IN RURAL AREA  
(If shoulder width is greater than 6 foot)

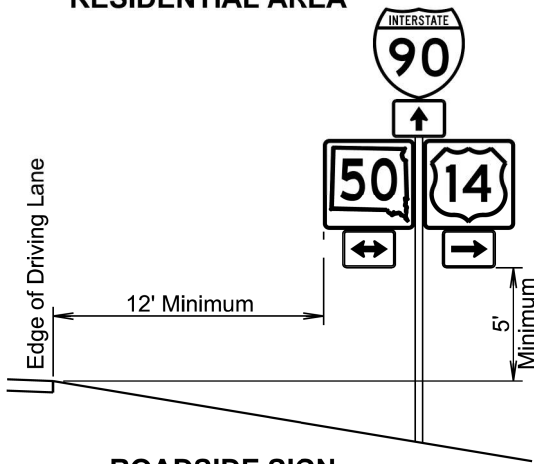


ROADSIDE SIGN  
IN BUSINESS,  
COMMERCIAL, OR  
RESIDENTIAL AREA

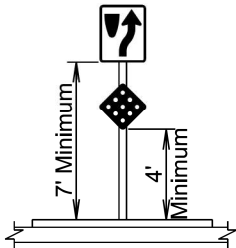
\* Where parking or pedestrian  
movements are likely to occur.



WARNING SIGN ADVISORY  
SPEED PLAQUE IN RURAL AREA



ROADSIDE SIGN  
IN RURAL AREA



SIGN ON NOSE  
OF MEDIAN

November 19, 2020

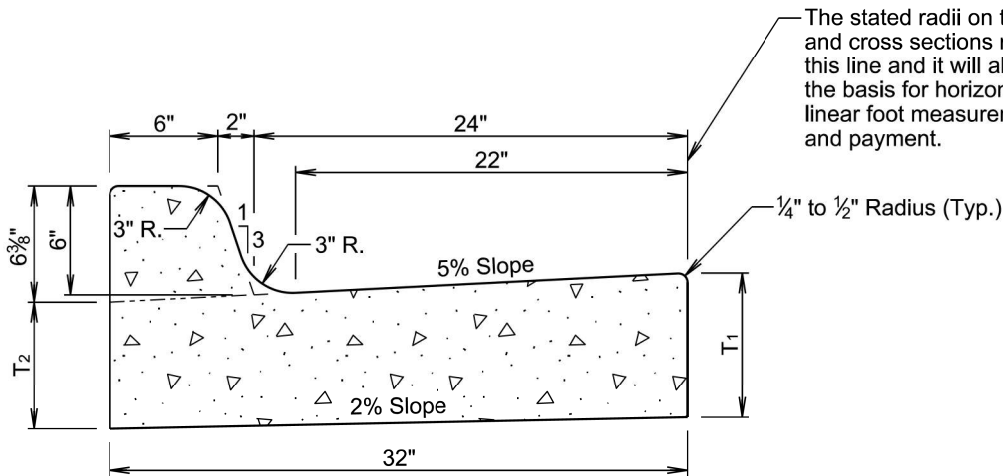
Published Date: 2024

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OFFSETS FOR SIGN INSTALLATION

PLATE NUMBER  
632.90

Sheet 1 of 1



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

1/4" to 1/2" Radius (Typ.)

TYPE B CONCRETE CURB AND GUTTER

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

GENERAL NOTES:

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

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

January 22, 2023

Published Date: 2024

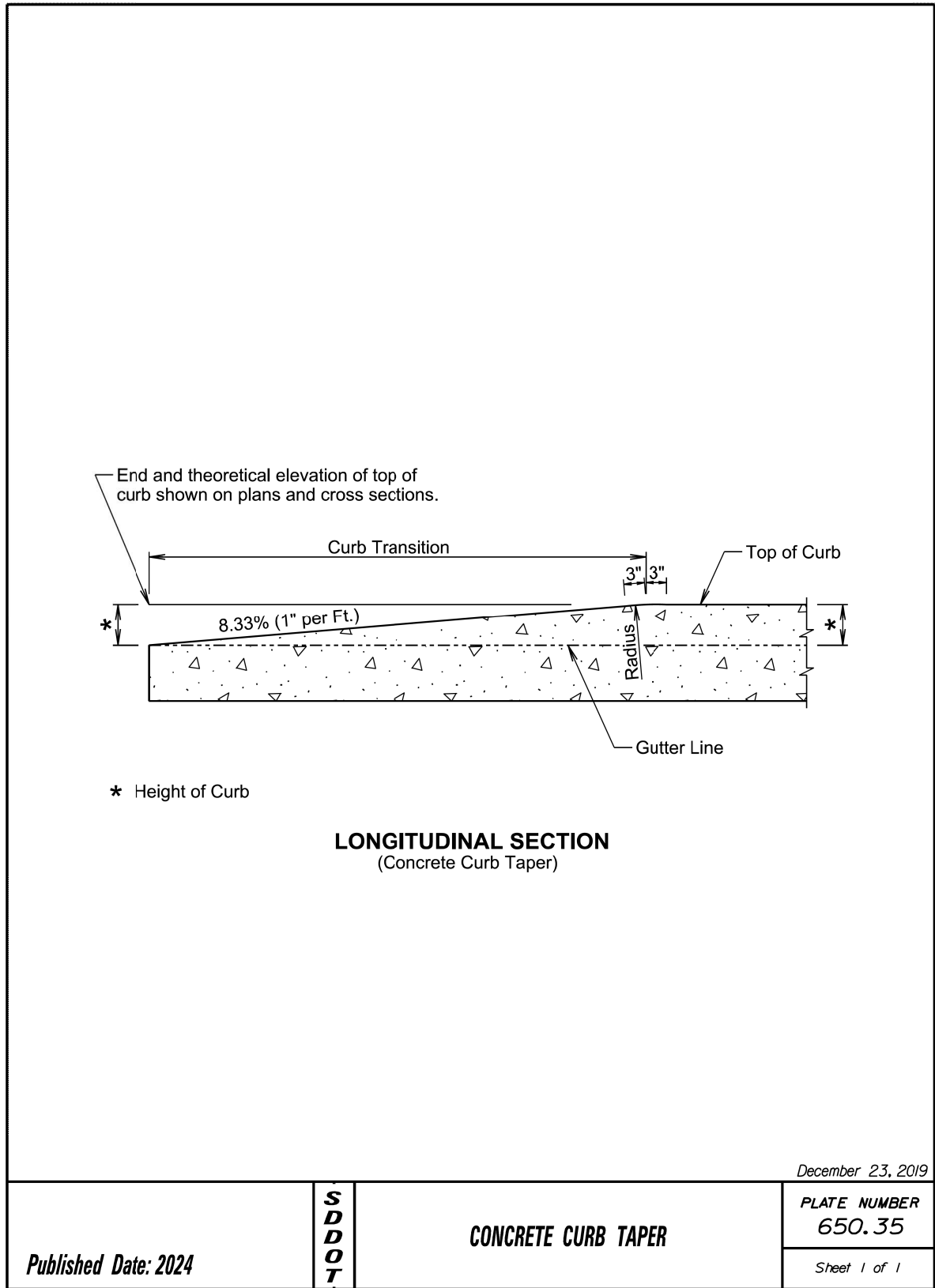
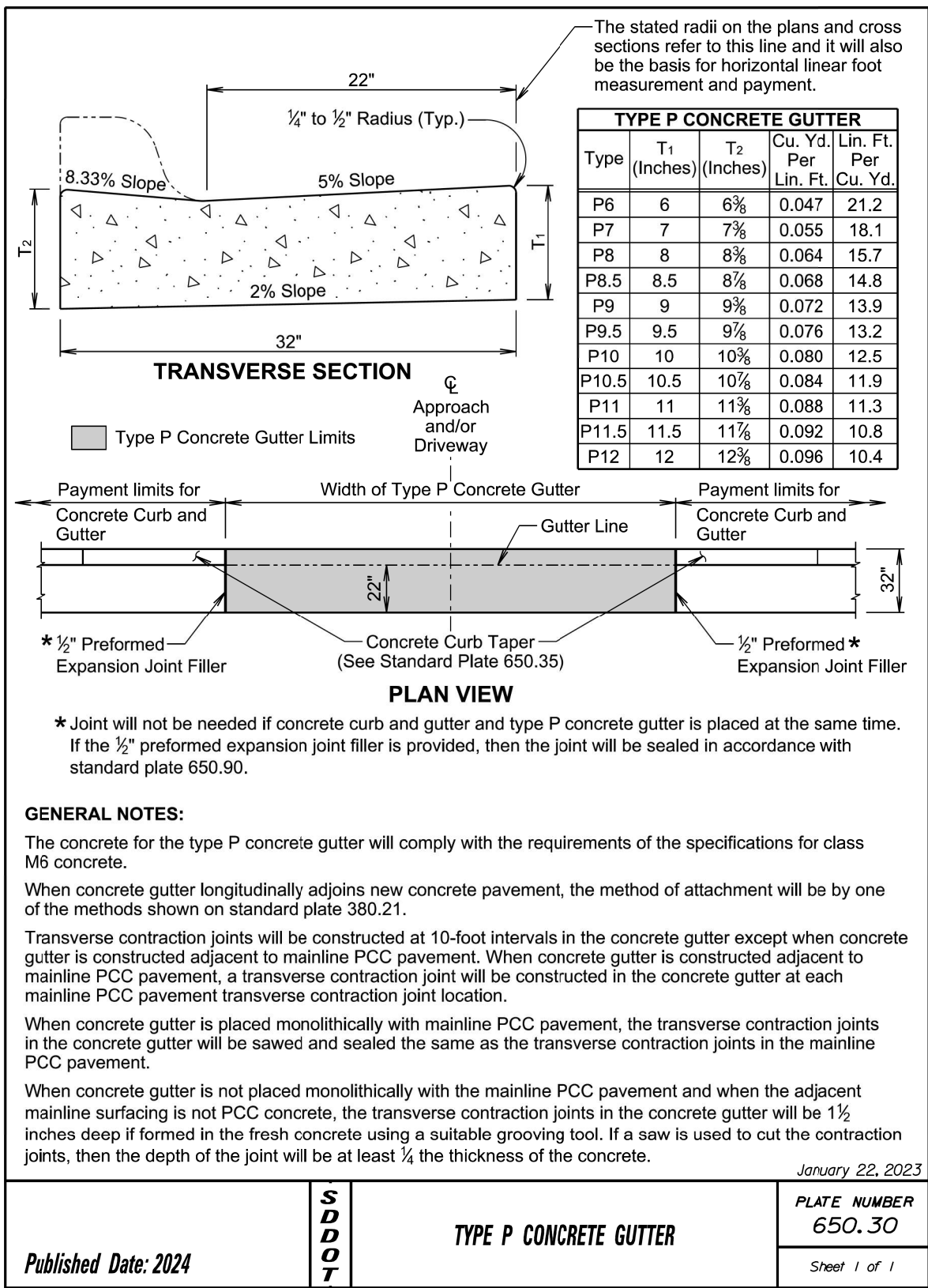
S  
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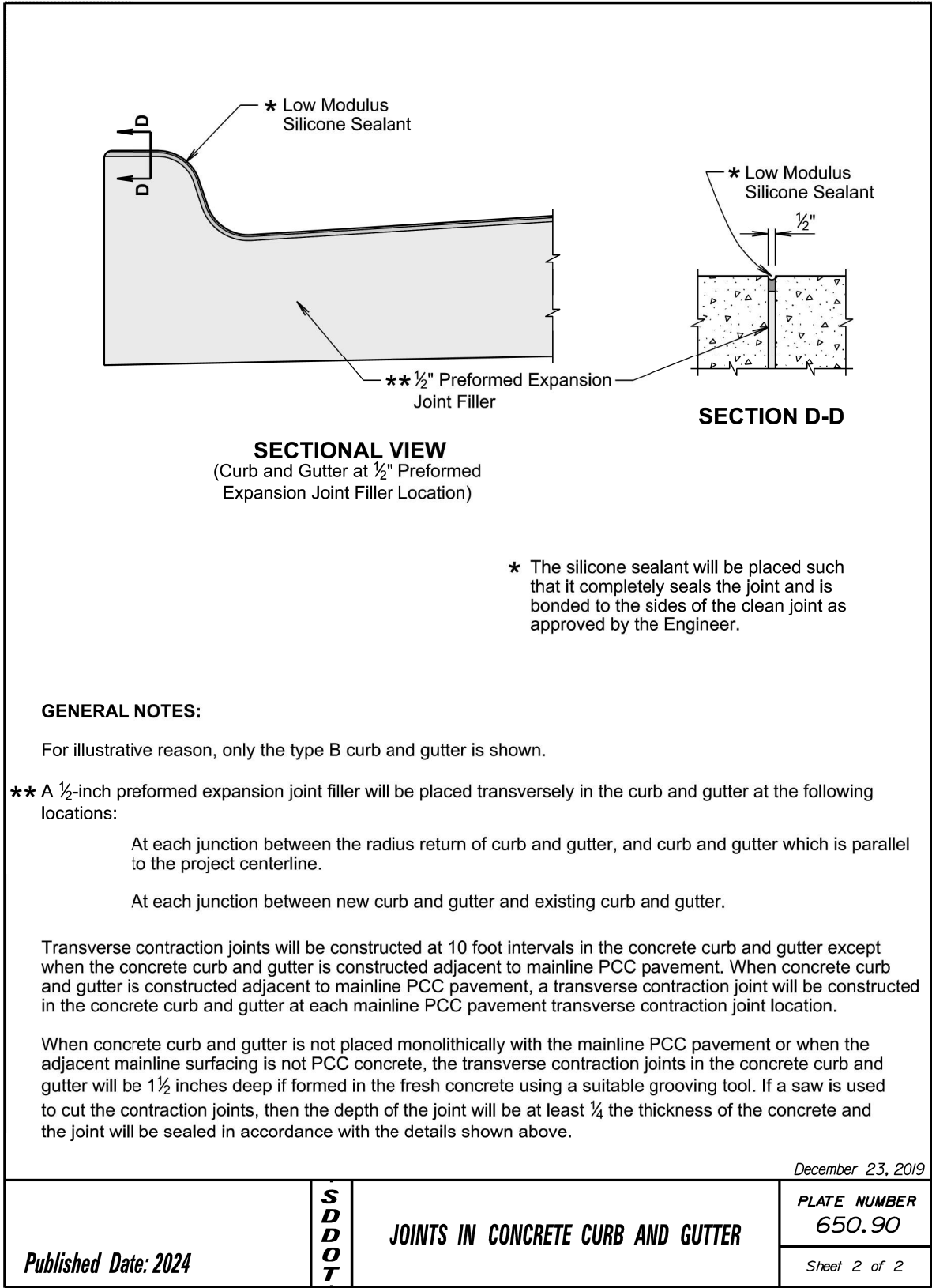
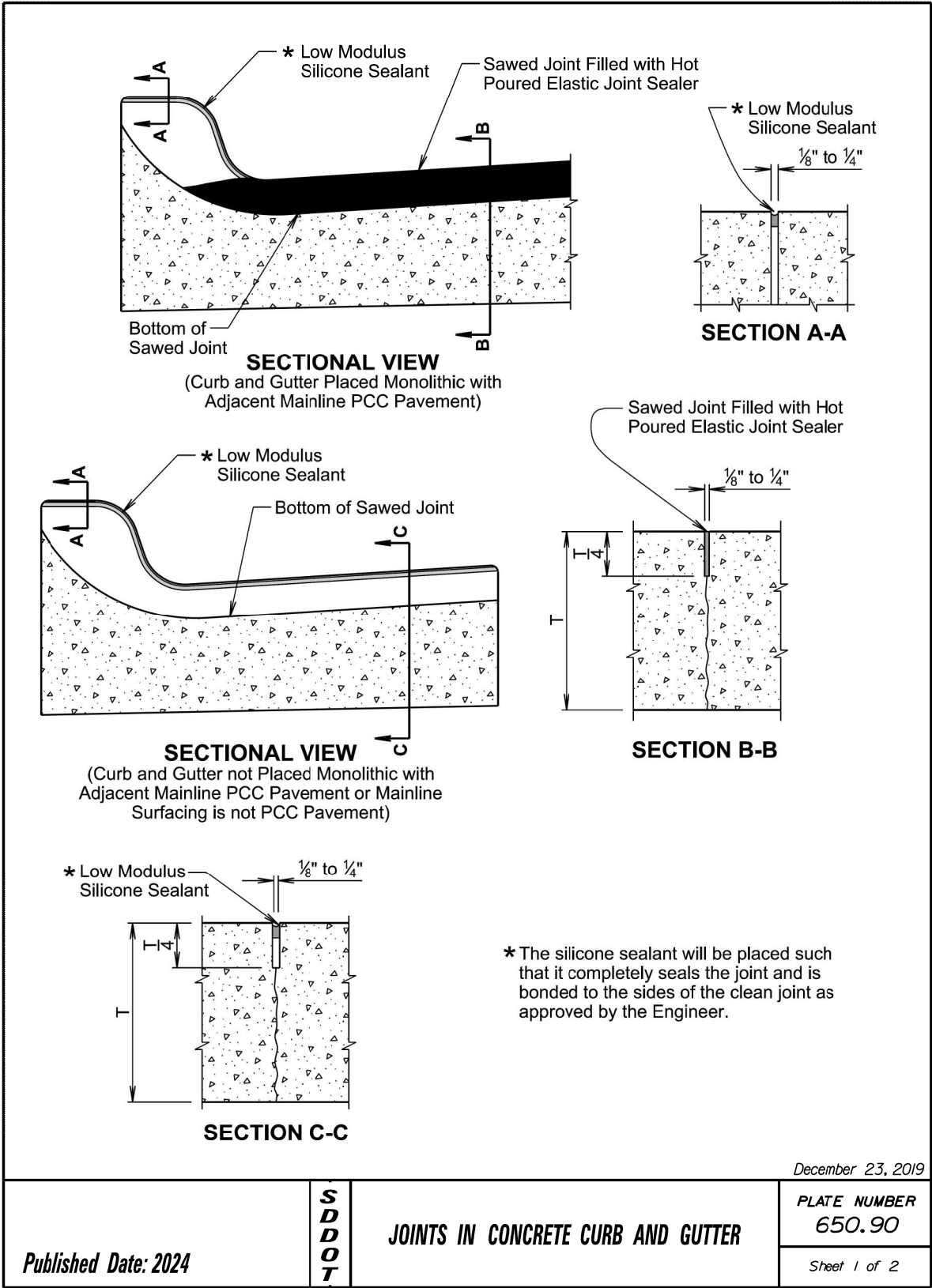
TYPE B CONCRETE CURB AND GUTTER

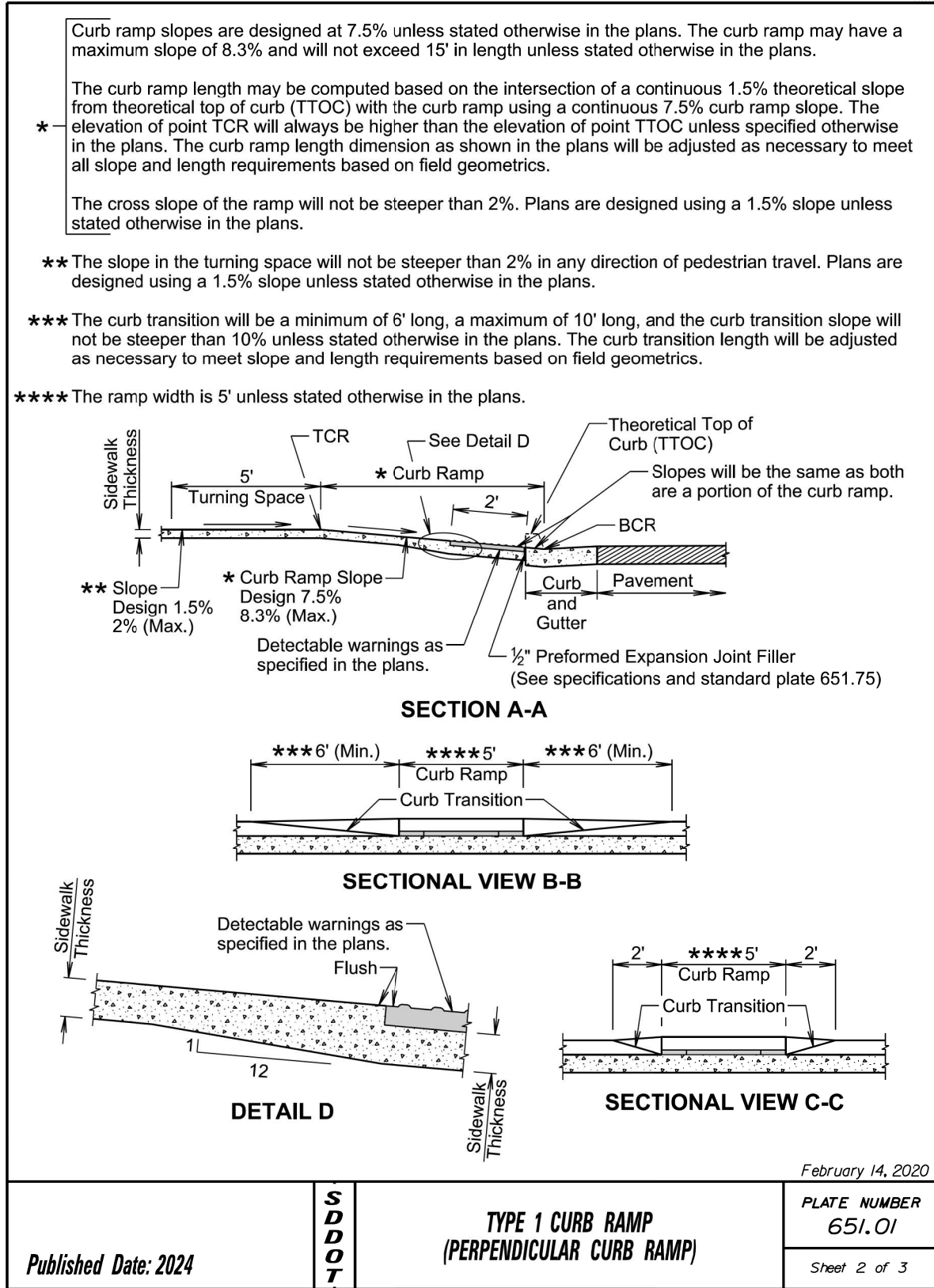
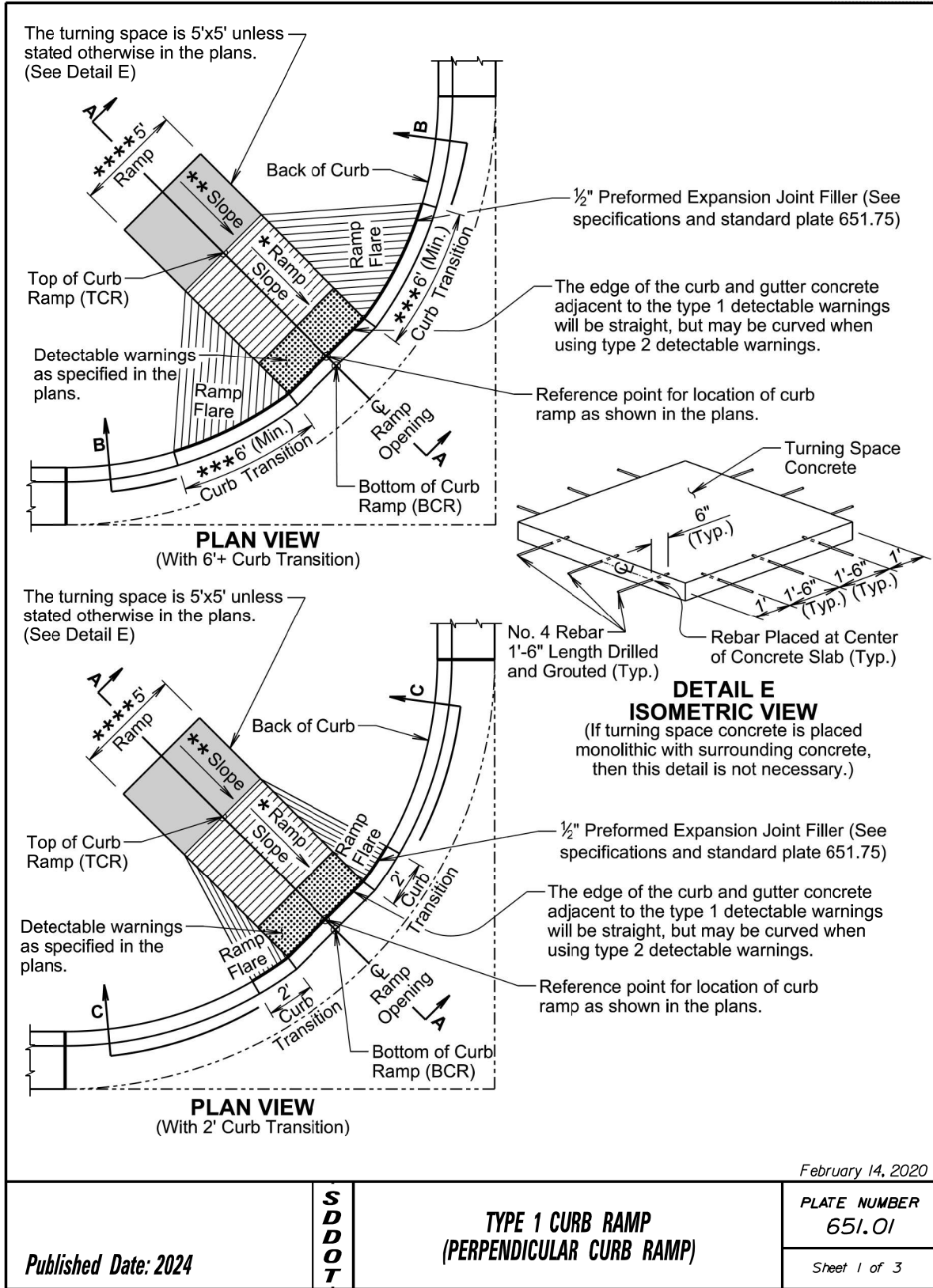
PLATE NUMBER  
650.01

Sheet 1 of 1









**GENERAL NOTES:**

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

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

For illustrative purpose only, the curb ramp location is shown at the center of a PCC fillet section. The curb ramp will be placed at the location stated in the plans.

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

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

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

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

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

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

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

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

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

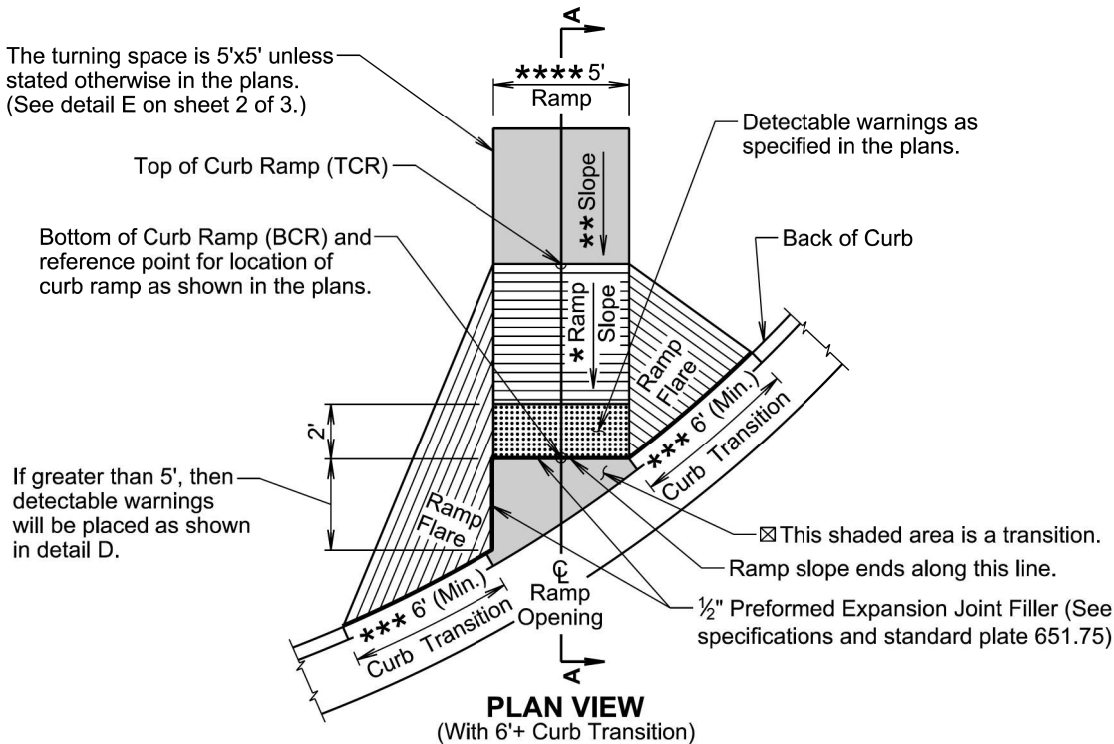
The curb transitions and ramp opening will be measured and paid for at the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used. The curb transitions and ramp opening will be measured and paid for at the contract unit price per square yard for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

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

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

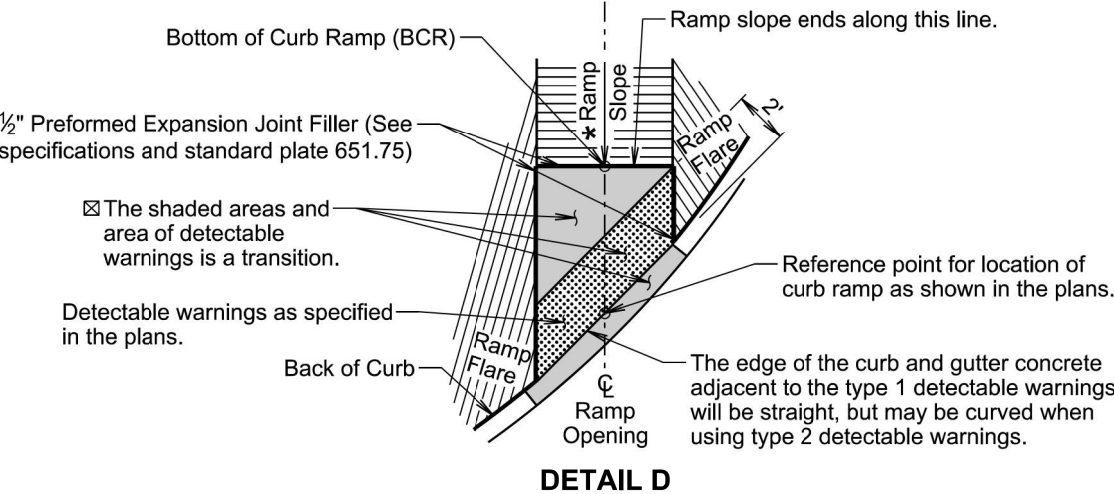
February 14, 2020

Published Date: 2024	S D D O T	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 3 of 3



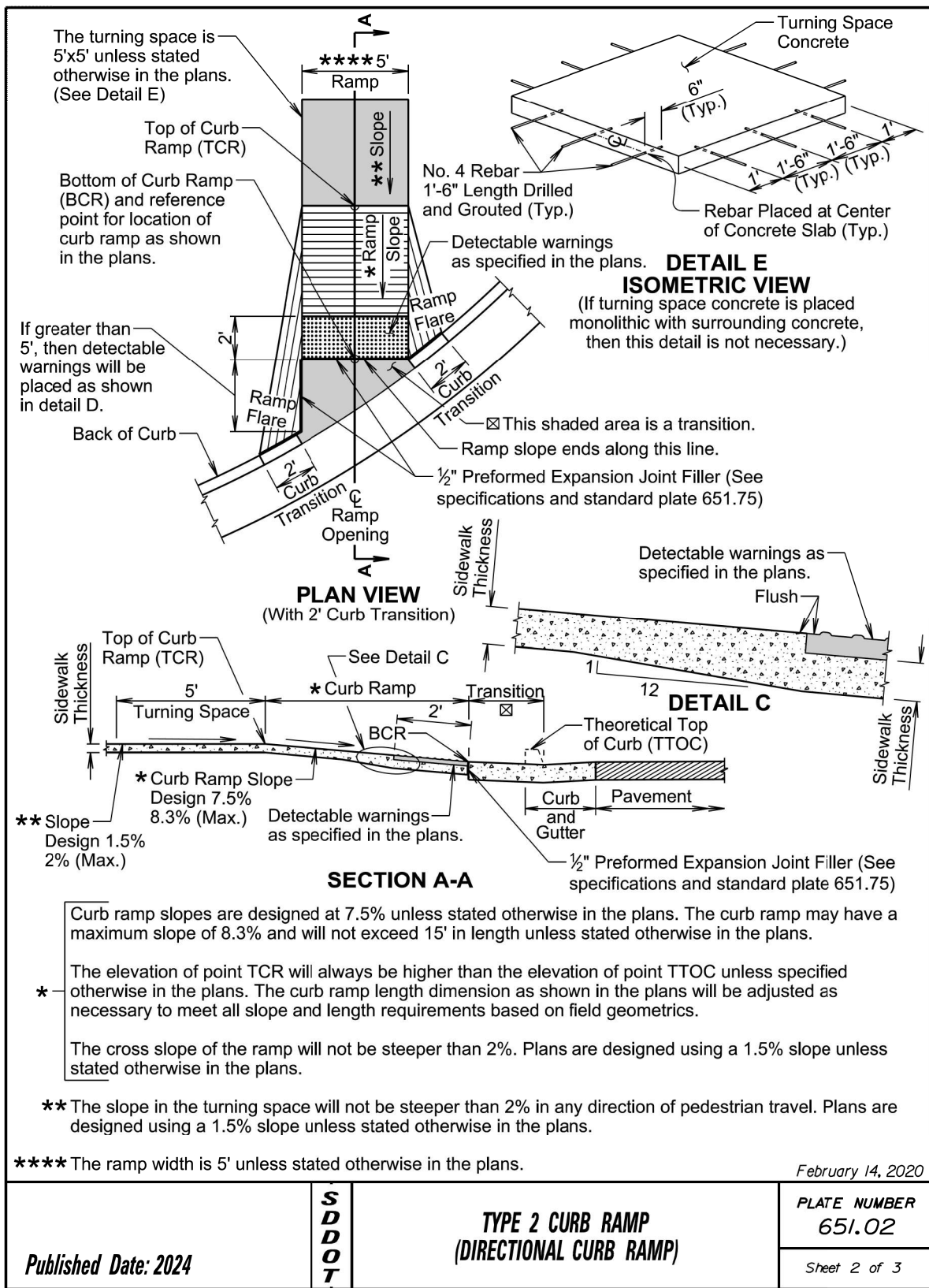
☒ The slope within the transition area will not be steeper than 5%. The concrete within the transition will be placed monolithic with the curb and gutter or fillet section concrete. The concrete thickness within the transition will be the same as the curb and gutter or fillet section concrete thickness.

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



February 14, 2020

Published Date: 2024	S D D O T	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02
			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 will be placed at the location stated in the plans.

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

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

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

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

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

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

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

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

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

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

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

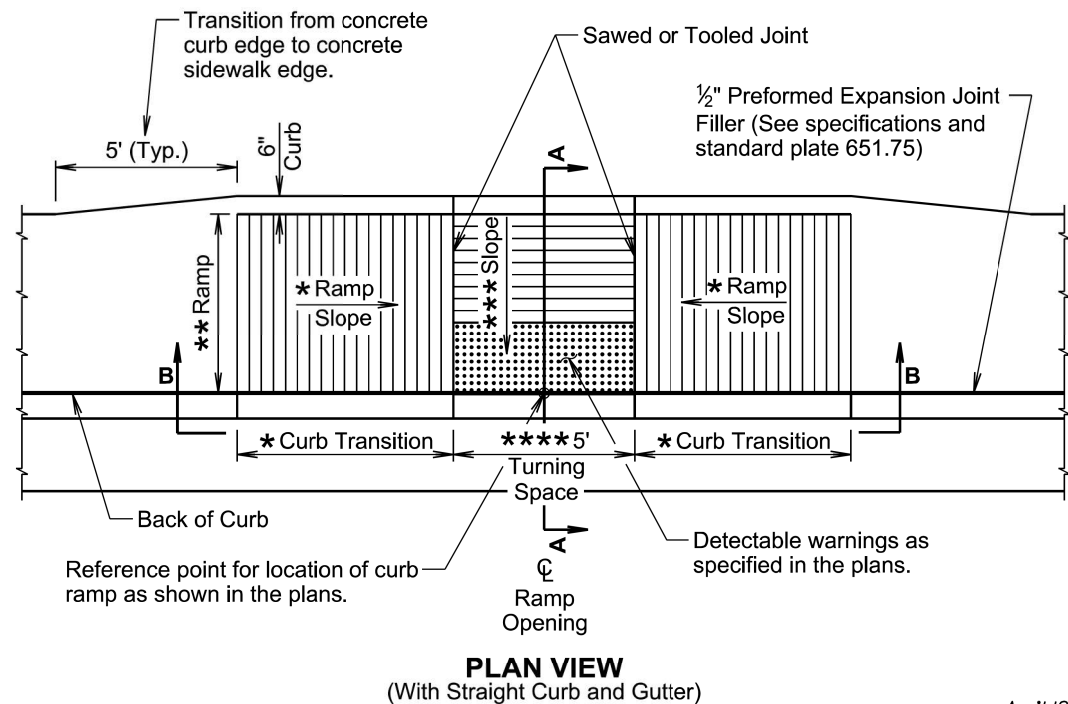
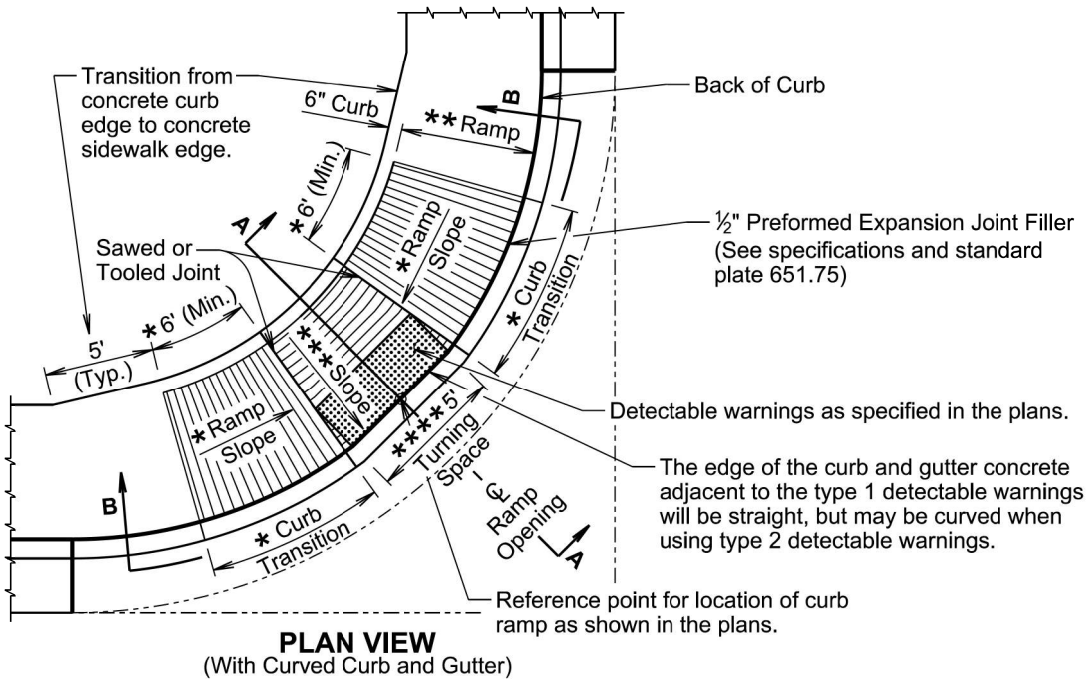
The type 1 detectable warnings will be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals will be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

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

February 14, 2020

Published Date: 2024	<b>SD DOT</b>	<b>TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)</b>	PLATE NUMBER 651.02
			Sheet 3 of 3





April 18, 2021

Published Date: 2024

SDOT

TYPE 3 CURB RAMP  
(PARALLEL CURB RAMP)

PLATE NUMBER  
651.03

Sheet 1 of 3

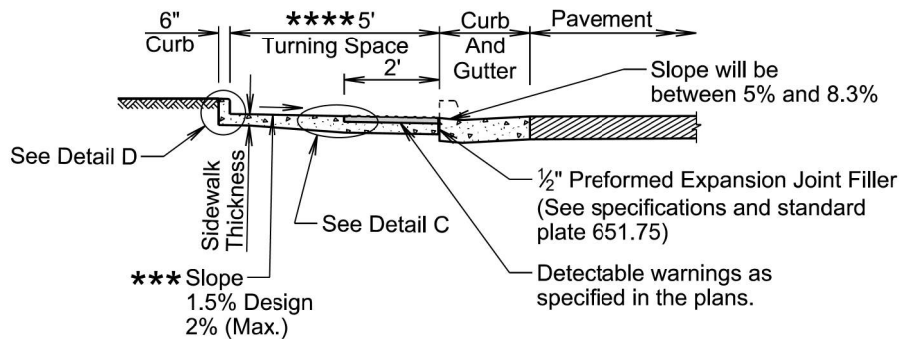
★ The curb transition slope will match the curb ramp slope. Curb ramp slopes are designed at 7.5% unless stated otherwise in the plans. The curb ramp may have a maximum slope of 8.3% at any location of the curb ramp and will not exceed 15' in length unless stated otherwise in the plans. The curb transitions and curb ramp lengths will be adjusted as necessary to meet all slope and length requirements based on field geometrics.

★★ The cross slope of the ramp will not be steeper than 2% and the ramp width is 5' unless stated otherwise in the plans. Plans are designed using a 1.5% cross slope for the ramp unless stated otherwise in the plans.

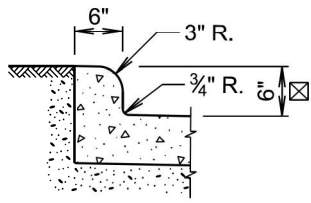
★★★ The slope in the turning space will not be steeper than 2% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

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

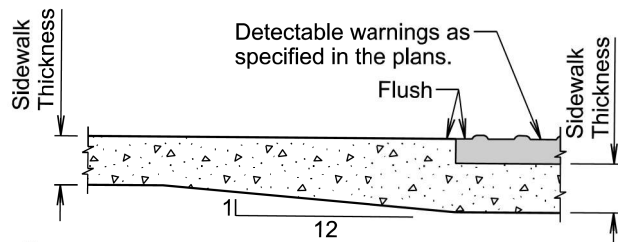
☒ The curb height will be 6" unless stated otherwise in the plans.



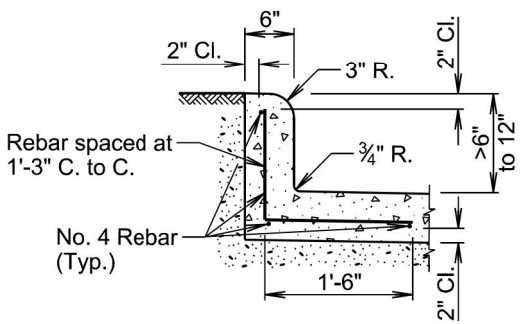
SECTION A-A



DETAIL D

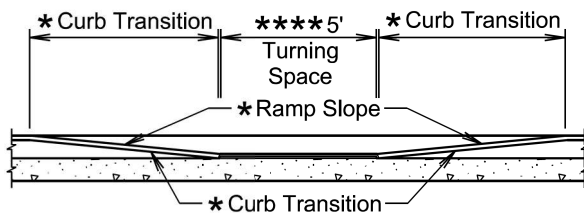


DETAIL C



DETAIL D

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



SECTIONAL VIEW B-B

April 18, 2021

Published Date: 2024

SDOT

TYPE 3 CURB RAMP  
(PARALLEL CURB RAMP)

PLATE NUMBER  
651.03

Sheet 2 of 3



GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

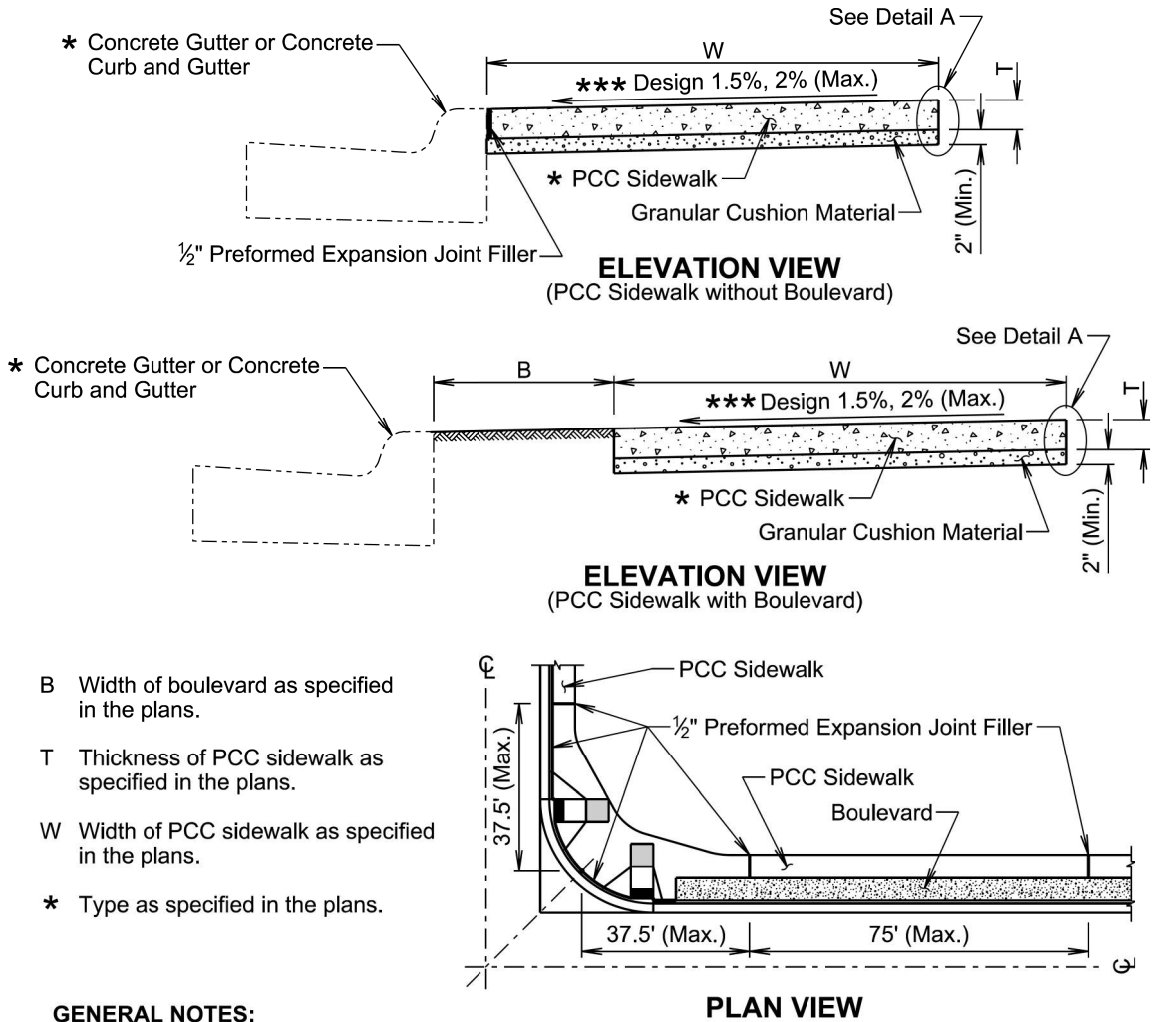
The curb transitions and ramp opening will be measured and paid for at the contract unit price per foot for the corresponding curb and gutter contract item when curb and gutter is used. The curb transitions and ramp opening will be measured and paid for at the contract unit price per square yard for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

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

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

April 18, 2021

Published Date: 2024	S D D O T	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 3 of 3



GENERAL NOTES:

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

\*\*\* The cross slope of the sidewalk is designed at 1.5% and the maximum slope allowed is 2% unless specified otherwise in the plans.

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

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

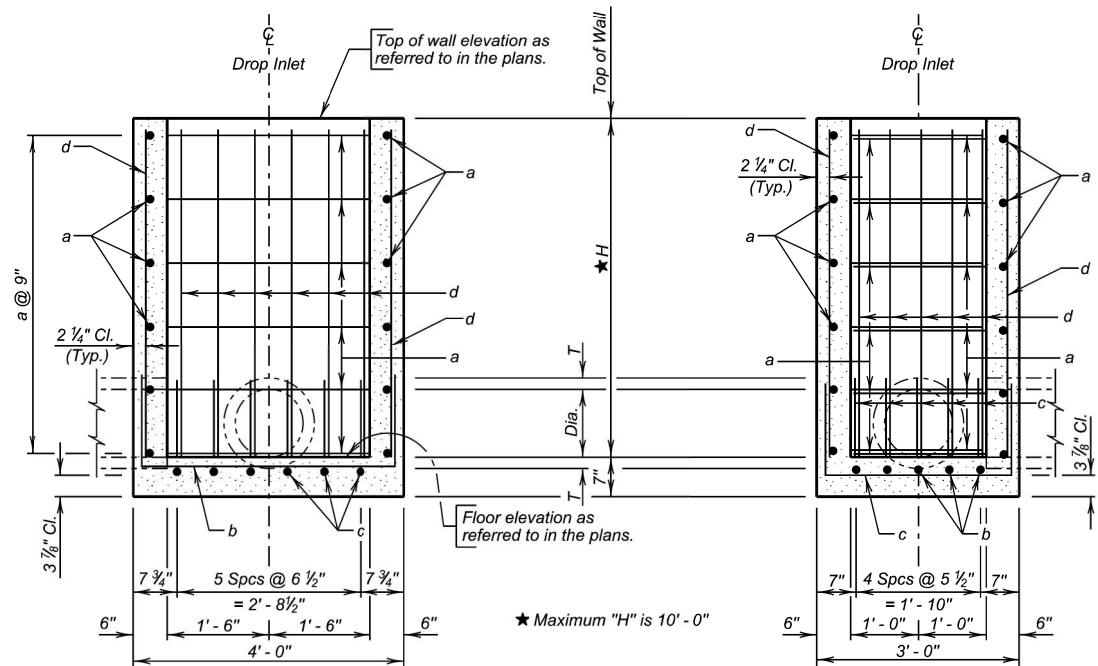
An expansion joint in the PCC sidewalk will consist of a 1/2 -inch thick preformed expansion joint filler material placed full depth and width of the PCC sidewalk.

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

February 14, 2020

Published Date: 2024	S D D O T	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 1 of 2





SEC. A - A

SEC. B - B

REINFORCING SCHEDULE

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

NOTE:  
All dimensions are out to out of bars.

December 16, 2015

Published Date: 2024

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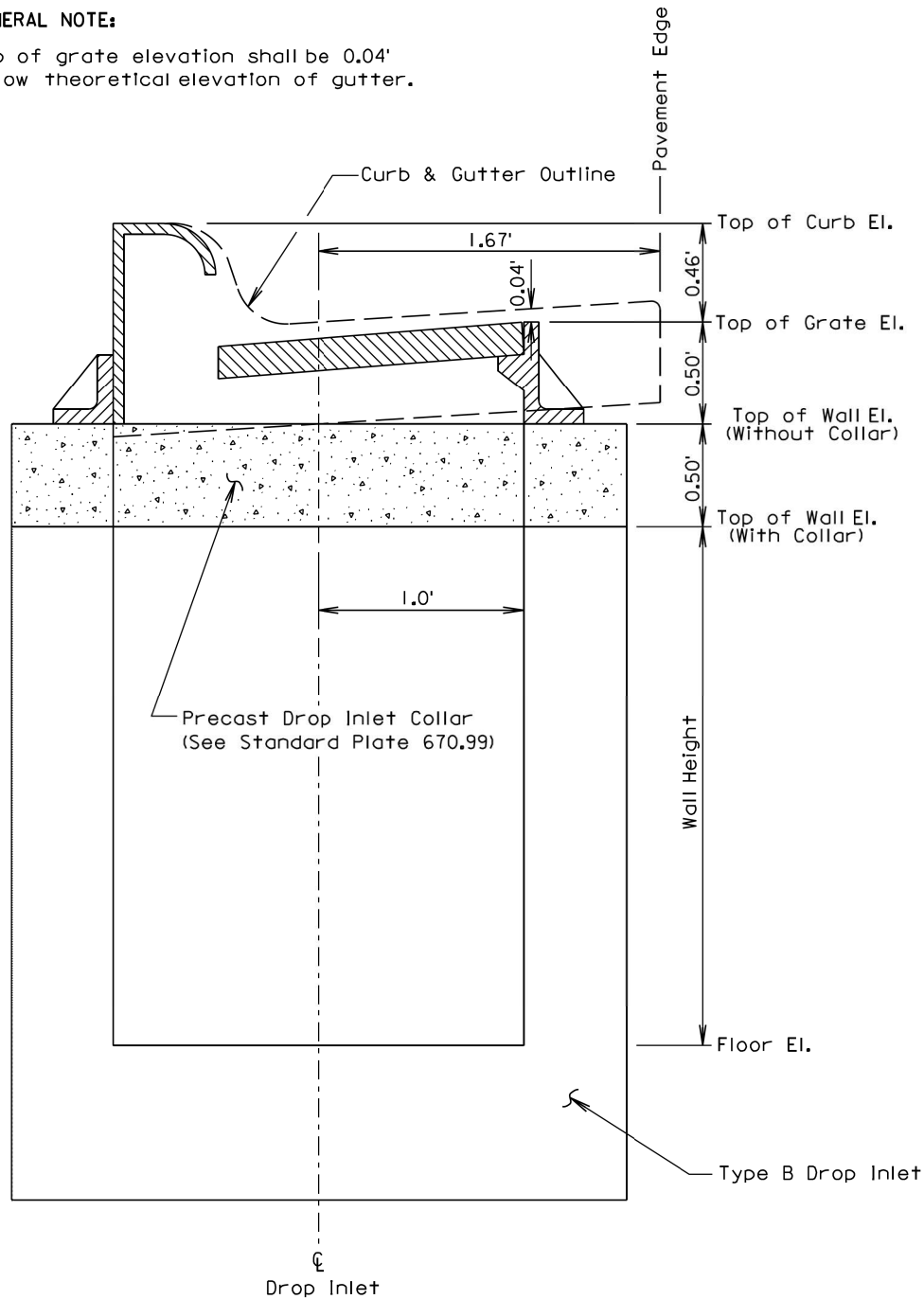
2' X 3' TYPE B  
REINFORCED CONCRETE DROP INLET

PLATE NUMBER  
670.01

Sheet 2 of 2

GENERAL NOTE:

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



June 26, 2011

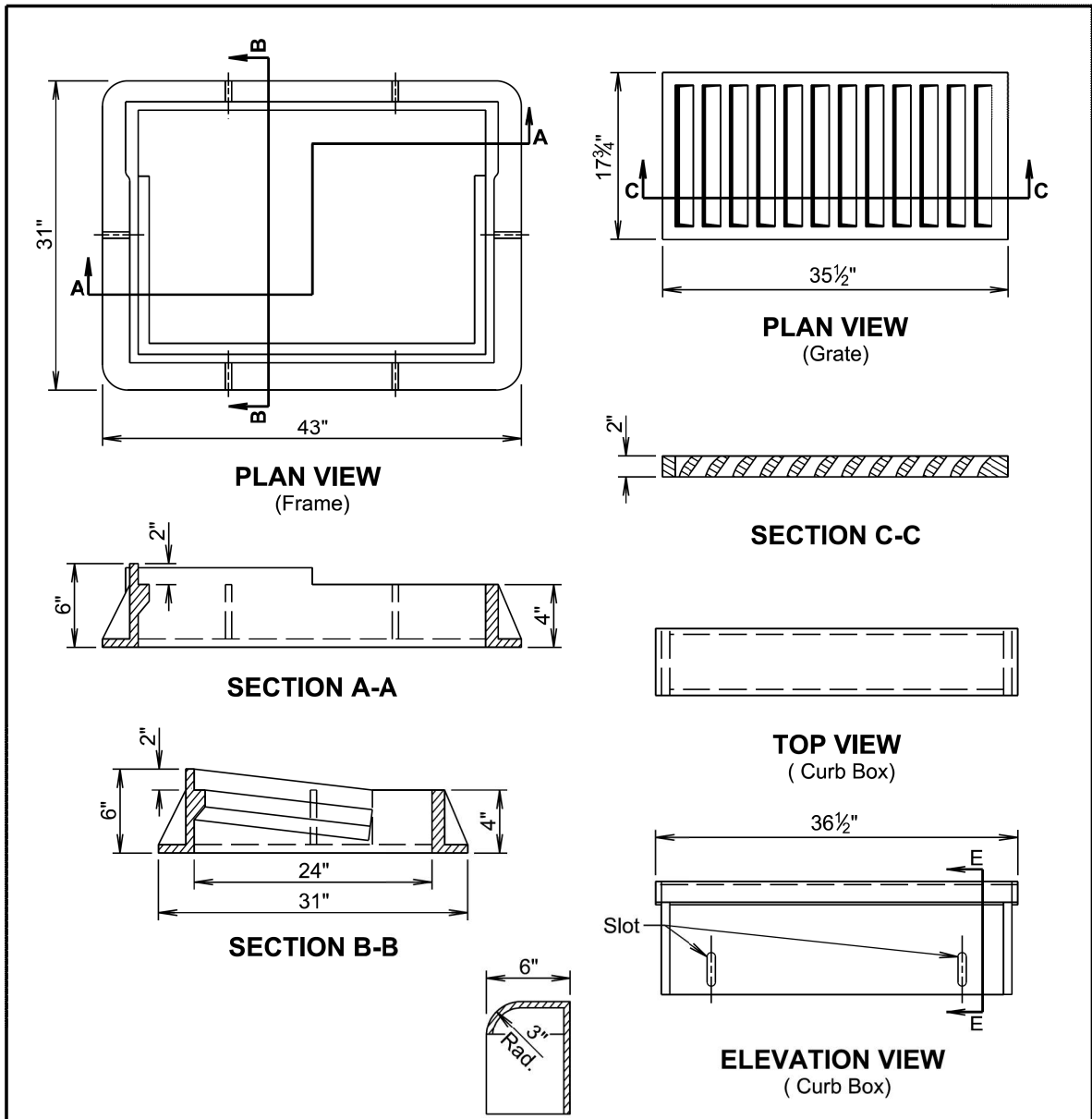
Published Date: 2024

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INSTALLATION OF TYPE B DROP INLET

PLATE NUMBER  
670.75

Sheet 1 of 1



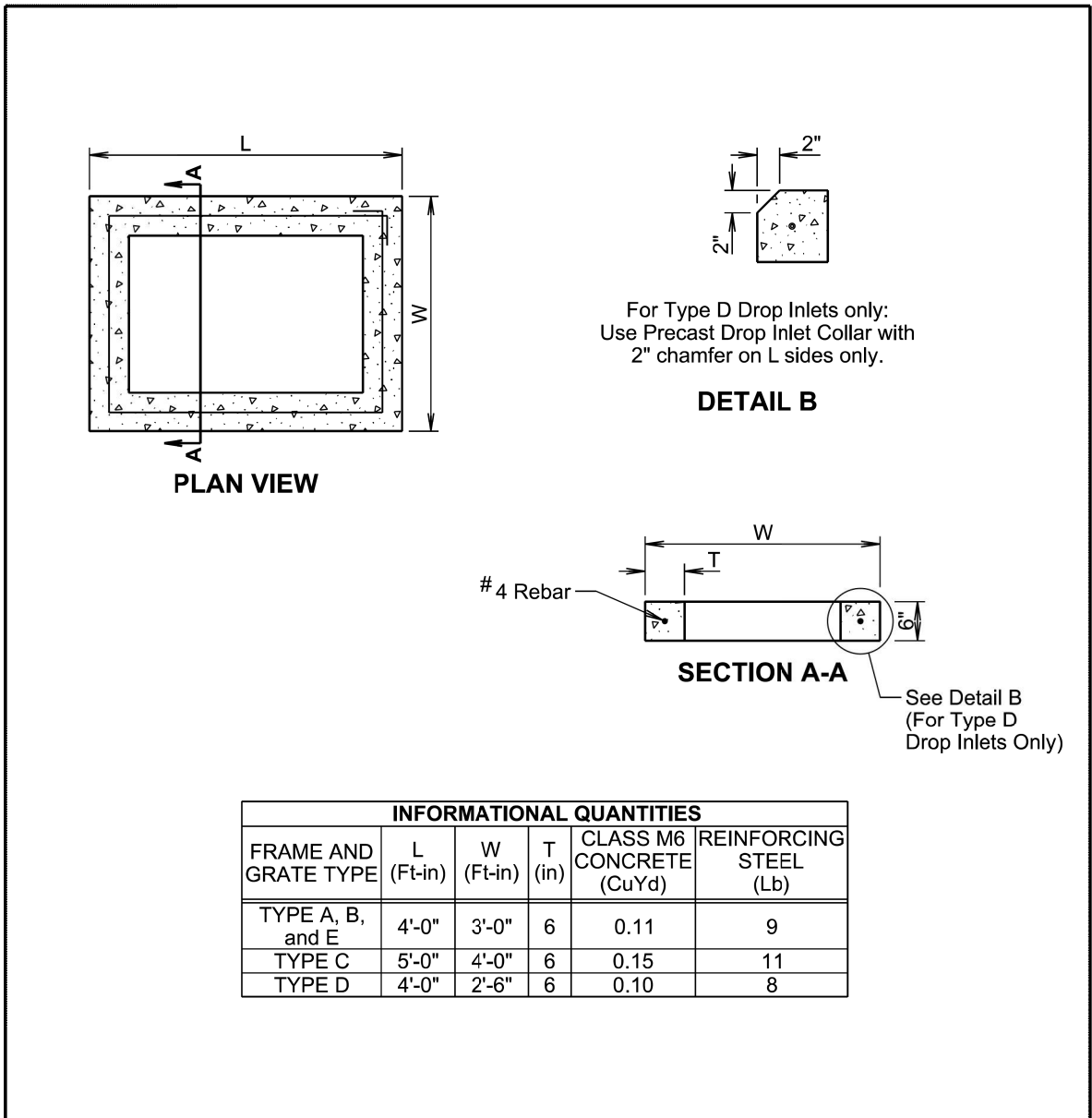
**GENERAL NOTES:**

The product dimensions may vary from those shown on the standard plate depending on the manufacturer. Grate size and configuration will be similar to the standard plate for hydraulic capacity and bicycle safety. Any variation in dimensions will be approved by the Engineer and the type B frame and grate assembly will be from a manufacturer on the approved products lists.

Design load for the grate will meet the requirements of AASHTO HL-93.

The curb box will be adjustable 6" to 9".

Published Date: 2024	S D D O T	TYPE B FRAME AND GRATE	PLATE NUMBER 670.80
			Sheet 1 of 1



**GENERAL NOTES:**

All reinforcing steel will conform to ASTM A615, Grade 60.

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

The cost of furnishing and installing Precast Drop Inlet Collars, including labor, materials, and incidentals will be incidental to the contract unit price per Each for "Precast Drop Inlet Collar".

Published Date: 2024	S D D O T	PRECAST DROP INLET COLLAR	PLATE NUMBER 670.99
			Sheet 1 of 1