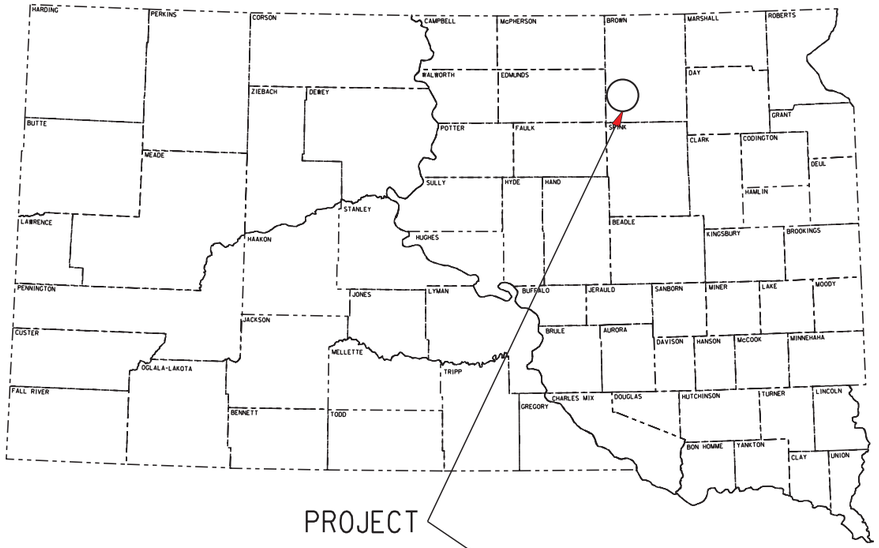


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT 012–151
US HIGHWAY 12
BROWN COUNTY

Sidewalk Repair
PCN i43t

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	1	11

Plotting Date: 05/04/2016

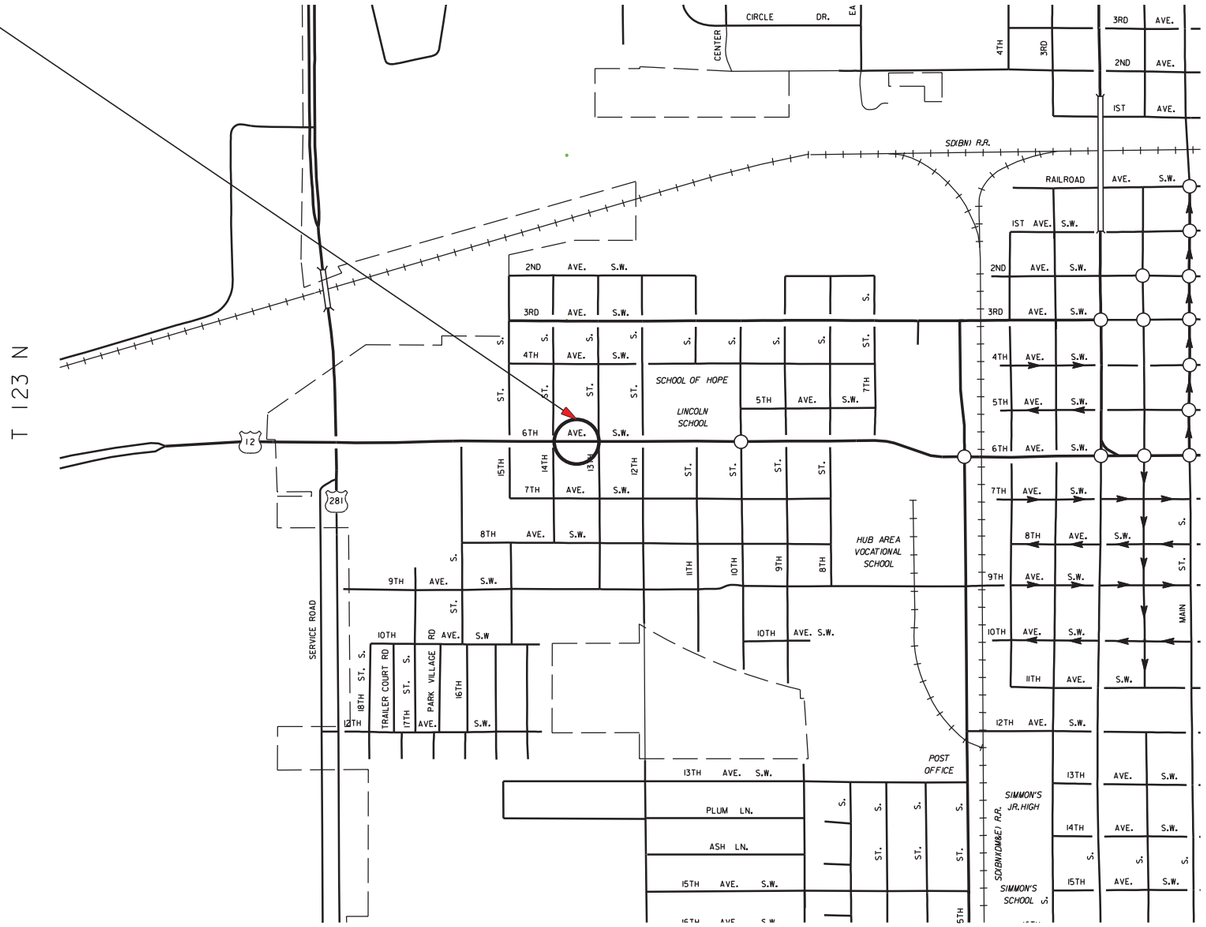
Index

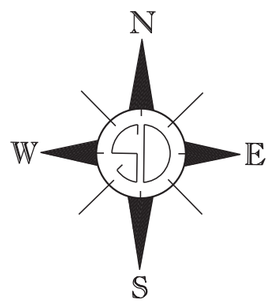
ABERDEEN

BROWN COUNTY SOUTH DAKOTA
T 123 N R 63 & 64 W

R 64 W

T 123 N





DESIGN DESIGNATION

ADT (2015)	10926
ADT (2035)	14094
DHV	1677
D	50%
T DHV	2.5%
T ADT	5.5%
V	40 MPH

Storm Water Permit
None Required

ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	2	11
Plotting Date: 05/04/2016			

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0300	Remove Concrete Curb and Gutter	31	Ft
110E1140	Remove Concrete Sidewalk	22.0	SqYd
250E0010	Incidental Work	Lump Sum	LS
634E0010	Flagging	20.0	Hour
634E0110	Traffic Control Signs	164.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	1	Each
634E0420	Type C Advance Warning Arrow Board	1	Each
634E0600	4" Temporary Pavement Marking Tape Type I	180	Ft
634E2000	Longitudinal Pedestrian Barricade	12	Ft
650E0095	Type B69.5 Concrete Curb and Gutter	31	Ft
651E0050	5" Concrete Sidewalk	198	SqFt
651E5000	Sidewalk Drain	6.7	Ft

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	3	11
Plotting Date: 05/04/2016			

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the Public ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT

Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

PLAN NOTES

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	4	11

Plotting Date: 05/04/2016

SCOPE OF WORK

Work on this project involves removing sidewalk and curb and gutter, remove for replace existing sidewalk drain and installation of new sidewalk and curb and gutter and sidewalk drain and reset of existing sidewalk drain.

TRAFFIC CONTROL

Work activities during non-daylight hours are subject to prior approval.

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, ground mounted, breakaway supports.

Traffic Control signs, as shown in the Itemized List for Traffic Control Signs, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

LONGITUDINAL PEDESTRIAN BARRICADE

Longitudinal Pedestrian Barricades should not be used to provide positive protection for pedestrians.

Barricade rail supports may not project into pedestrian routes more than 4 inches from the face of the barricade. To prevent any tripping hazard to pedestrians, ballast shall be located behind or internal to the device.

Longitudinal Pedestrian Barriers shall be used to close sidewalks in place of Type 1 Barricades as indicated in standard plate No 634.33. Sidewalk closed signs shall be mounted on the Longitudinal Pedestrian Barriers for sidewalk closures.

When Longitudinal Pedestrian Barricades are combined in a series, the maximum gap between devices that do not interlock shall be one inch. Joints between devices that do interlock shall be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing. When used as a sidewalk closure mechanism, Longitudinal Pedestrian Barricade must run the entire width of the sidewalk. Longitudinal Pedestrian Barricade should provide a color contrasting pattern. Black should not be used to color any base on a device. The devices should comply with the general color and stripe pattern requirements of Section 6F.68 of the MUTCD.

Longitudinal Pedestrian Barricade shall have continuous bottom and top surfaces. A gap height or opening from the walkway surface up to a maximum of 2 inches is allowed for drainage purposes. The top edge of the bottom portion shall be a minimum of 8 inches above the walkway. The top of the top portion shall be between 34 and 38 inches above the walkway. The top surface shall be smooth to allow safe hand trailing. Both upper and lower surfaces shall share a common vertical plane.

All costs shall be incidental to the contract unit price per foot for LONGITUDINAL PEDESTRIAN BARRICADE.

TABLE OF REMOVE SIDEWALK

Station	to	Station	L/R	Quantity (SqYd)
00+74.0		00+76.0	41.4' R	1.1
00+74.0		01+05.3	36.4' R	20.9
			Total:	22.0

TABLE OF REMOVE CURB & GUTTER

Station	to	Station	L/R	Quantity (Ft)
00+74.0		01+05.3	27.7' R	31.3
			Total:	31.3

INCIDENTAL WORK

The Contractor shall remove for reset the existing sidewalk drain installed in the repair area. Sufficient care shall be taken to avoid any damage to the existing drain. This drain is to be reset as stated in the Install sheet in the plans or as directed by the Engineer. All costs associated with removing and resetting the existing sidewalk drain shall be covered by the bid item INCIDENTAL WORK.

TABLE OF B69.5 CURB & GUTTER

Station	to	Station	L/R	Quantity (Ft)
00+74.0		01+05.3	27.7' R	31.3
			Total:	31.3

TABLE OF 5" CONCRETE SIDEWALK

Station	to	Station	L/R	Quantity (SqFt)
00+76.0		01+05.3	36.3' R	198.0
			Total:	198.0

SIDEWALK DRAINS

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

TABLE OF SIDEWALK DRAINS

Station	L/R	Length (Ft)
0+75	29.6' R	6.7
	Totals:	6.7

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	5	11
Plotting Date: 05/04/2016			

01 Sta 0+74, 27.65 ft Rt
Begin Remove Concrete C & G

02 Sta 1+05, 27.66 ft Rt
End Remove Concrete C & G

03 Sta 0+74, 36.37 ft Rt
Begin Remove Concrete Sidewalk

04 Sta 1+05, 36.34 ft
End Remove Concrete Sidewalk

05 Sta 0+74, 41.40 ft Rt
Begin Remove Concrete Sidewalk

06 Sta 0+76, 41.40 ft Rt
End Remove Concrete Sidewalk

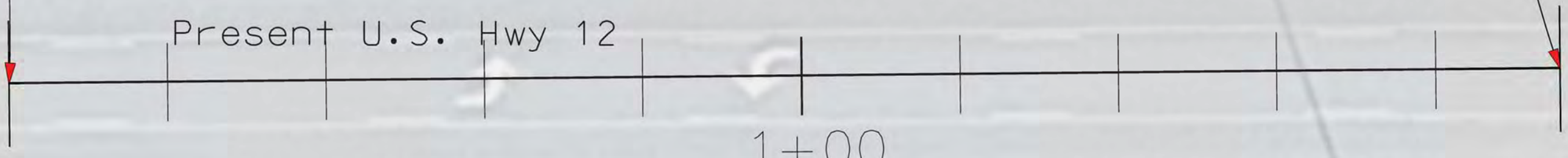
07 Sta 0+92, 30.00 ft Rt
Remove for Reset Sidewalk Drain

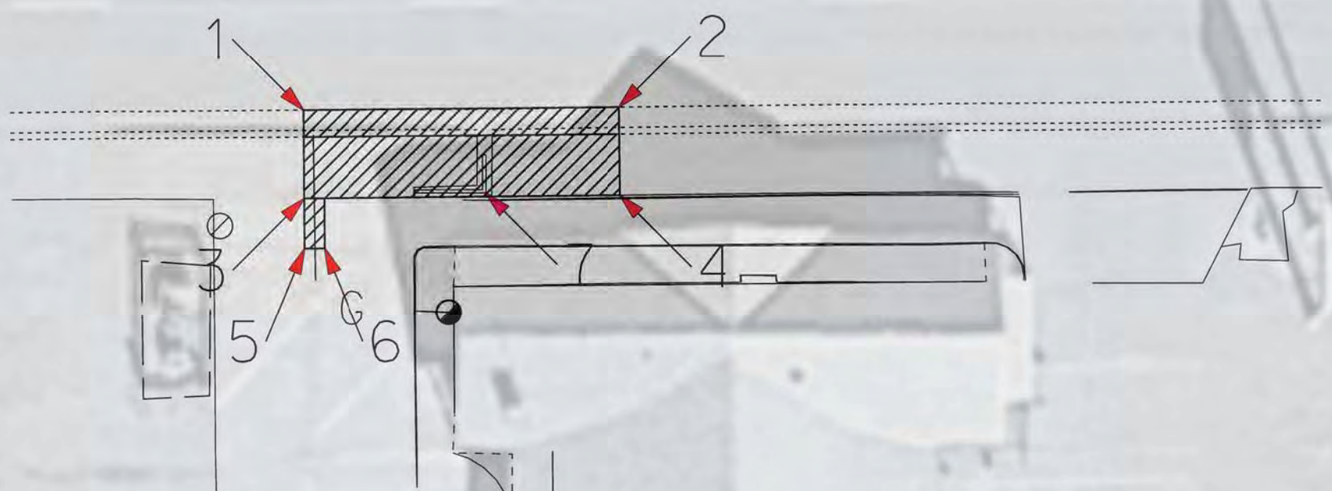
Northing: 596389.782

Easting: 2351324.877

Northing: 596391.689

Easting: 2351520.572





PLOT SCALE - 1:15

PLOTTED FROM - TRAB130004

PLOT NAME - 2

FILE - ...\SUNDOWN\SUNDOWN REMOVALS.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	6	11
Plotting Date: 05/04/2016			

01 Sta 0+74, 27.64 Ft Rt
Begin B69.5 Curb & Gutter
TC El Match Existing

02 Sta 1+05, 27.65 ft Rt
End B69.5 Curb & Gutter
TC El Match Existing

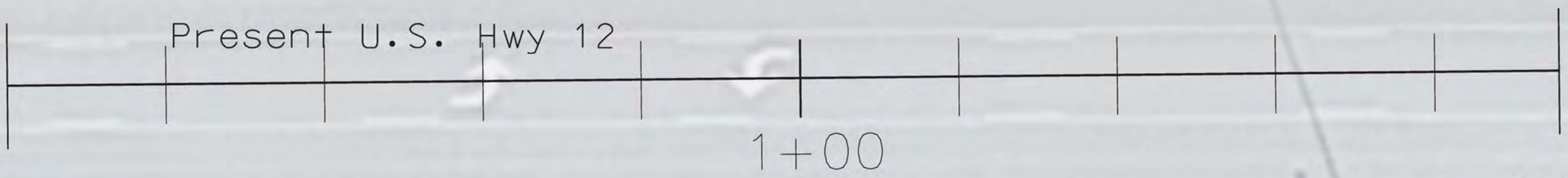
03 Sta 0+76, 36.37 ft Rt
Begin Concrete Sidewalk
TC El Match Existing

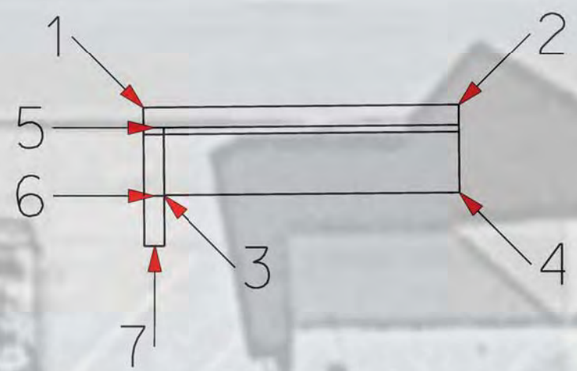
04 Sta 1+05, 36.34 ft Rt
End Concrete Sidewalk
TC El Match Existing

05 Sta 0+75, 29.64 ft Rt
Begin Sidewalk Drain
TC El Match Existing

06 Sta 0+75, 36.37 ft Rt
End Sidewalk Drain
Begin Reset Sidewalk Drain
TC El Match Existing

07 Sta 0+75, 41.31 ft Rt
End Reset Sidewalk Drain
TC El Match Existing





PLOT SCALE - 1:15

PLOT NAME - 3

FILE - ...\SUNDOWN\SUNDOWNINSTALL.DGN

PLOTTED FROM - TRAB18024

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	7	11

Plotting Date: 05/04/2016

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

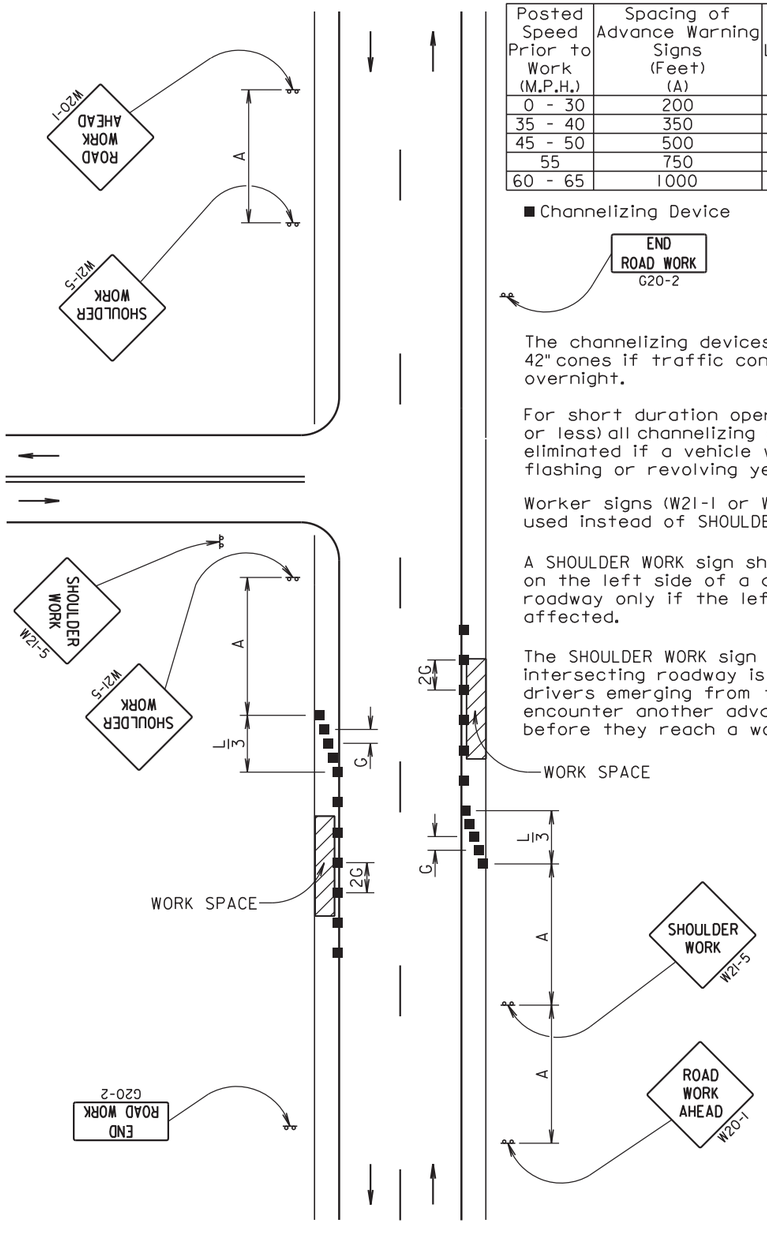
The channelizing devices shall be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

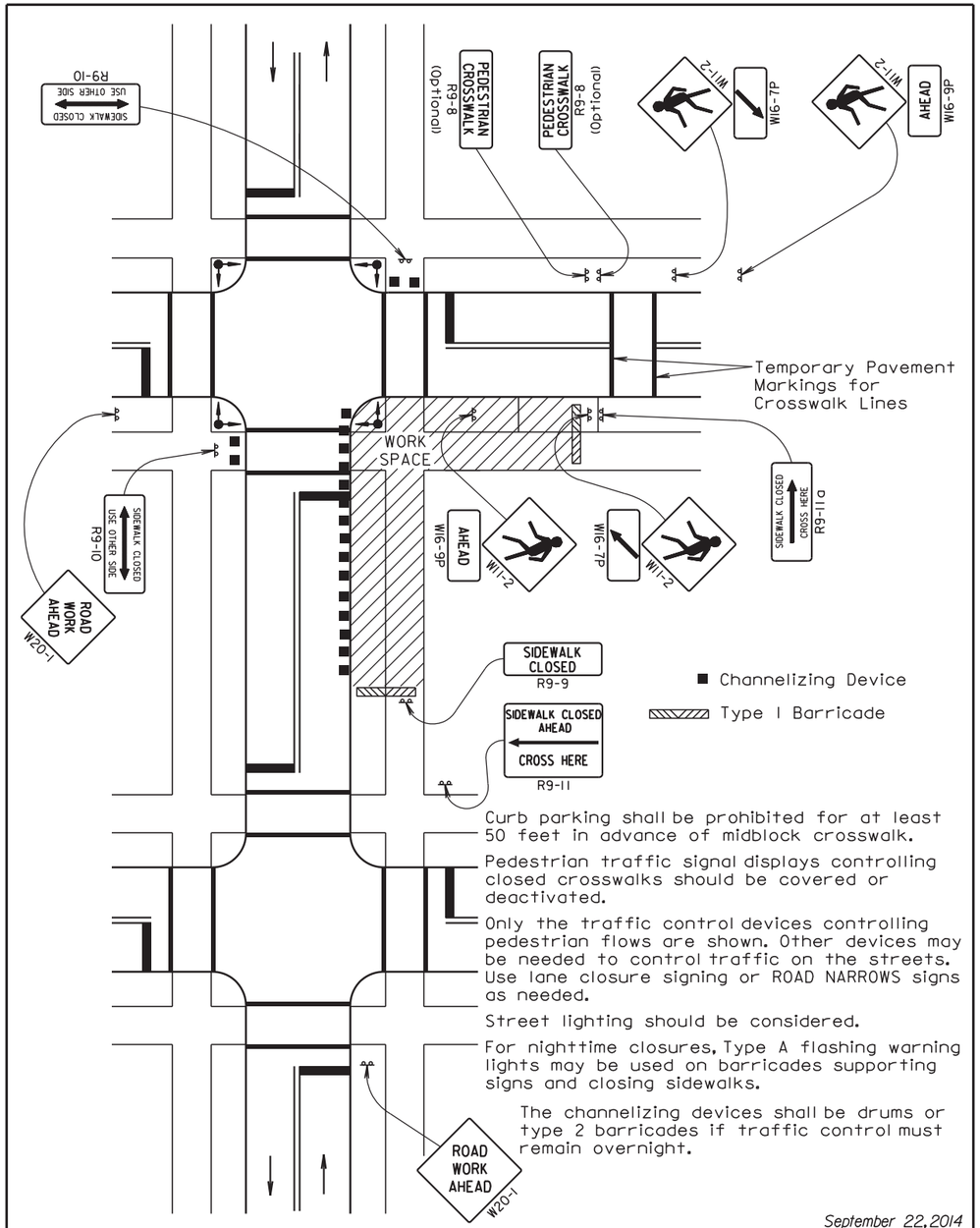
A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.



September 22, 2014

Published Date: 1st Qtr. 2016	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS	PLATE NUMBER 634.03 Sheet 1 of 1



Curb parking shall be prohibited for at least 50 feet in advance of midblock crosswalk.

Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.

Only the traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets. Use lane closure signing or ROAD NARROWS signs as needed.

Street lighting should be considered.

For nighttime closures, Type A flashing warning lights may be used on barricades supporting signs and closing sidewalks.

The channelizing devices shall be drums or type 2 barricades if traffic control must remain overnight.

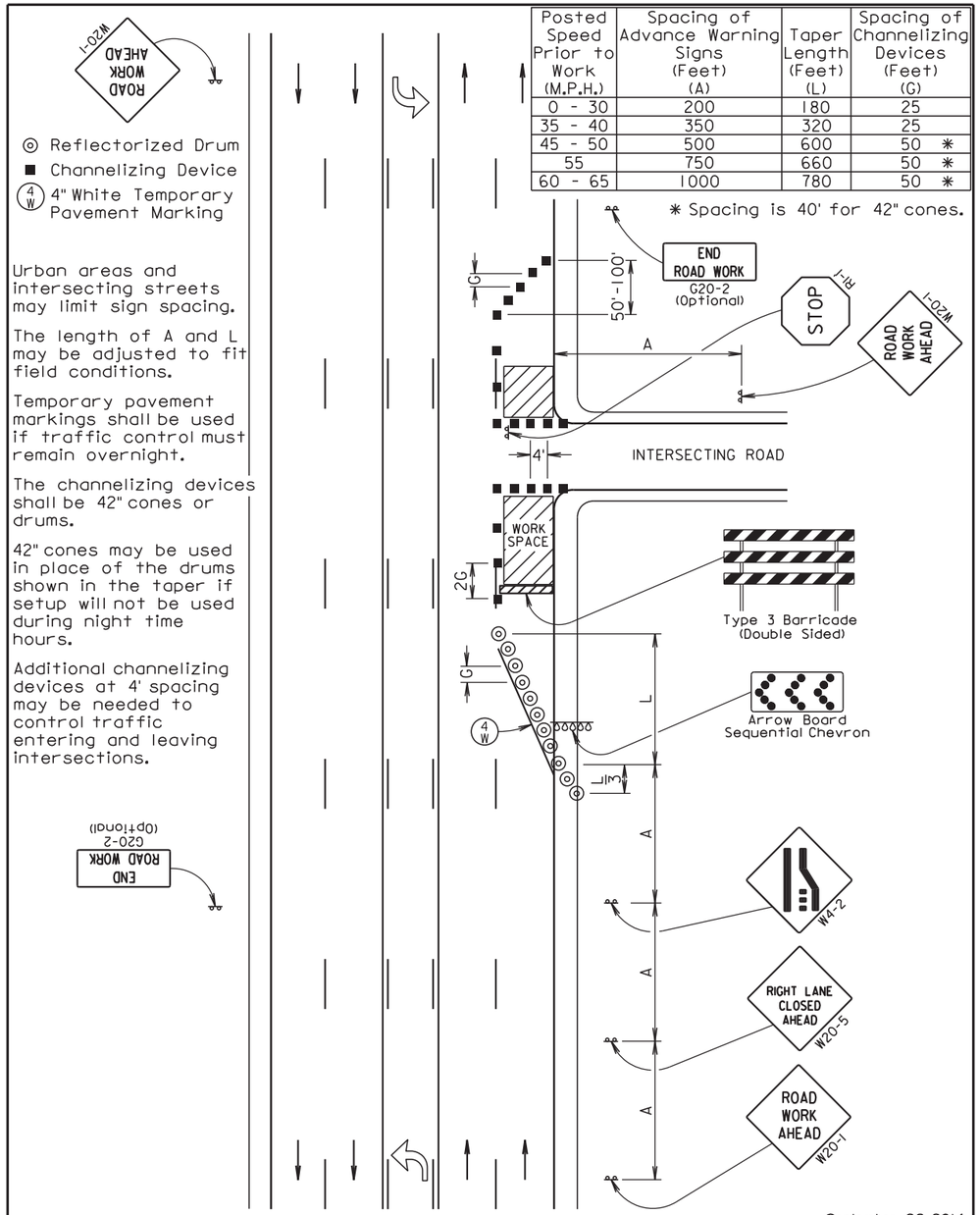
September 22, 2014

Published Date: 1st Qtr. 2016	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES SIDEWALK CLOSURES AND PEDESTRIAN DETOURS	PLATE NUMBER 634.33 Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	8	11
Plotting Date: 05/04/2016			

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50 *
55	750	660	50 *
60 - 65	1000	780	50 *

* Spacing is 40' for 42" cones.



September 22, 2014

Published Date: 1st Qtr. 2016	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES 5-LANE, OUTSIDE LANE CLOSED	PLATE NUMBER 634.60
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	9	11

Plotting Date: 05/04/2016

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R9-9	SIDEWALK CLOSED	2	24" x 12"	2	4
R9-11	SIDEWALK CLOSED AHEAD with ARROW (L or R) CROSS HERE	2	24" x 18"	3	6
W4-2	RIGHT LANE ENDS (symbol)	1	48" x 48"	16	16
W20-1	ROAD WORK AHEAD	4	48" x 48"	16	64
W20-5	RIGHT LANE CLOSED AHEAD	1	48" x 48"	16	16
W20-7	FLAGGER (symbol)	1	48" x 48"	16	16
W21-5	SHOULDER WORK	2	48" x 48"	16	32
G20-2	END ROAD WORK	2	36" x 18"	5	10
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			164

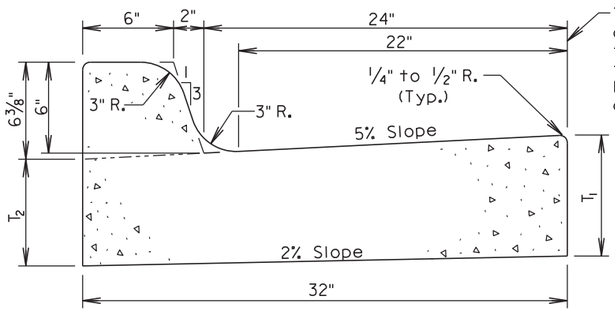
TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Double Sided	1 Each

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	1 Each

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	10	11
Plotting Date: 05/04/2016			



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_1 (Inches)	T_2 (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B66	6	5 1/16	0.057	17.7
B67	7	6 1/16	0.065	15.4
B68	8	7 1/16	0.073	13.7
B68.5	8.5	7 3/16	0.077	13.0
B69	9	8 1/16	0.081	12.3
B69.5	9.5	8 3/16	0.085	11.7
B610	10	9 1/16	0.090	11.2
B610.5	10.5	9 3/16	0.094	10.7
B611	11	10 1/16	0.098	10.2
B611.5	11.5	10 3/16	0.102	9.8
B612	12	11 1/16	0.106	9.4

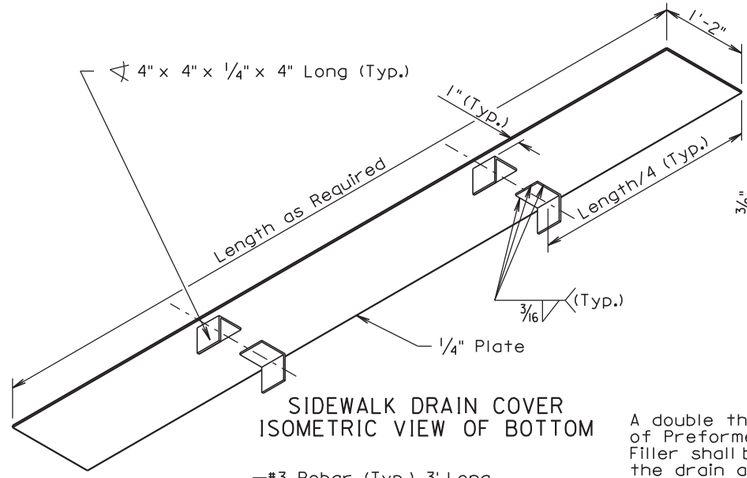
GENERAL NOTES:

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

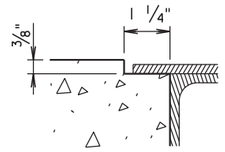
See Standard Plate 650.90 for expansion and contraction joints in the curb and gutter.

September 6, 2008

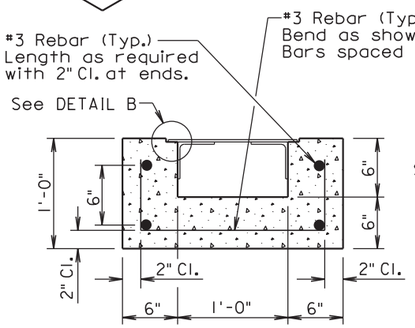
Published Date: 1st Qtr. 2016	SDDOT	TYPE B CONCRETE CURB AND GUTTER	PLATE NUMBER 650.01
			Sheet 1 of 1



SIDEWALK DRAIN COVER
ISOMETRIC VIEW OF BOTTOM

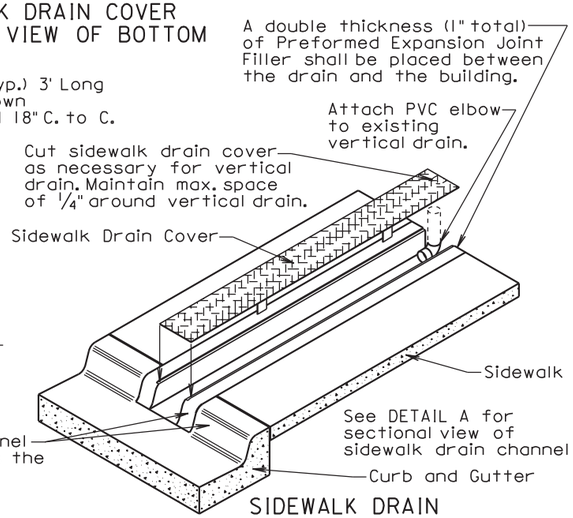


DETAIL B



DETAIL A

The end of the drain channel shall be the same shape as the adjacent curb face.



SIDEWALK DRAIN

GENERAL NOTES:

Concrete shall be Class M6 in accordance with Section 462 of the Specifications.

Reinforcing steel shall conform to ASTM A615, Grade 60.

Structural Steel shall conform to ASTM A36. The sidewalk drain cover shall conform to ASTM A786.

Welding and weld inspection shall be in conformance with the current edition of the AWS D1.1 Structural Welding Code-Steel.

The cover plate assembly shall be galvanized after fabrication. Galvanizing shall be in accordance with ASTM A123.

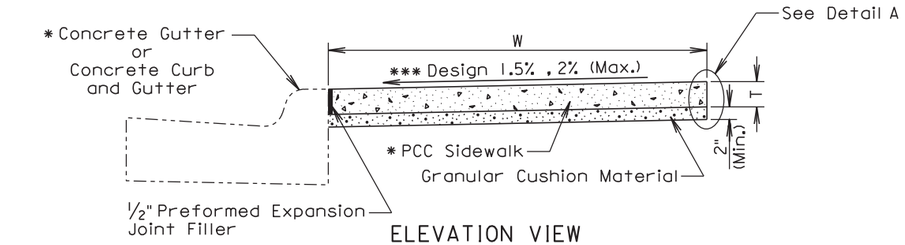
All costs associated for providing the required curb cut shall be incidental to the contract unit price per foot for the corresponding curb and gutter bid item.

The sidewalk drain shall be measured and paid for to the nearest tenth of a foot. The length of the drain shall be measured from the gutter to the necessary end location adjacent to the building. All costs associated with furnishing and installing the sidewalk drain channel and cover including the attachment to the vertical drain shall be incidental to the contract unit price per foot for "Sidewalk Drain".

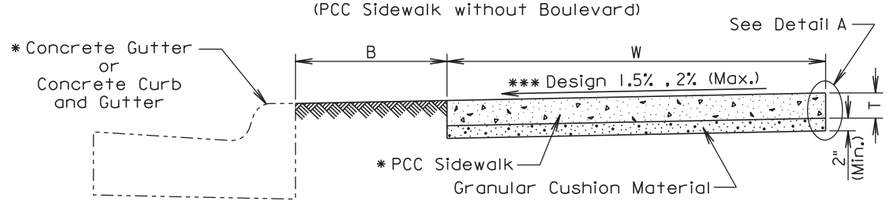
June 26, 2015

Published Date: 1st Qtr. 2016	SDDOT	SIDEWALK DRAIN	PLATE NUMBER 651.50
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151	11	11
Plotting Date: 05/04/2016			

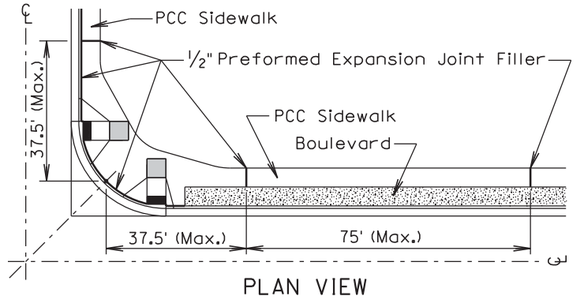


ELEVATION VIEW
(PCC Sidewalk without Boulevard)



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.

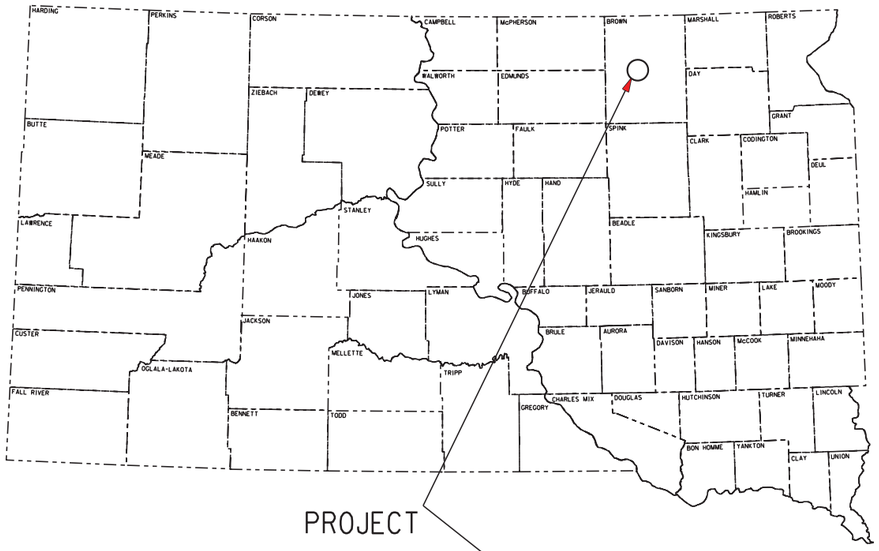
PCC sidewalk placed adjacent to intersection of roadways shall have an expansion joint placed transversely a maximum of 37.5 feet from the intersection. See PLAN VIEW.

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.

September 6, 2015

Published Date: 1st Qtr. 2016	SDDOT	**PCC SIDEWALK**	PLATE NUMBER 651.75
			Sheet 1 of 2



STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	1	83

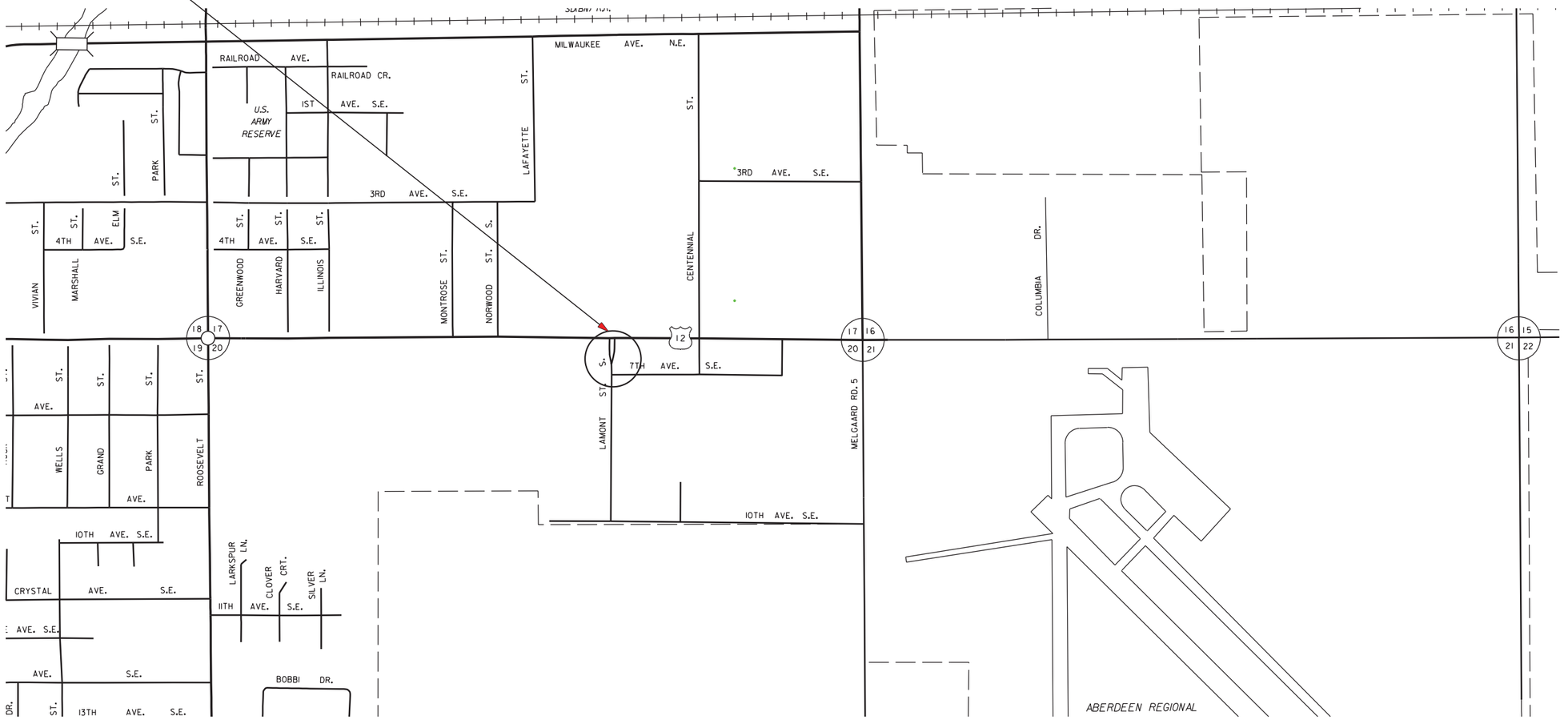
SEE SHEET 2 FOR INDEX OF SHEETS

PROJECT 000P–151
US HIGHWAY 12
BROWN COUNTY

PCC Pavement, Sidewalk & Traffic Signals
PCN i3p0

ABERDEEN

T 123 N R 63 & 64 W



DESIGN DESIGNATION

ADT (2015)	13502
ADT (2035)	17418
DHV	11.9%
D	50%
T DHV	6.6%
T ADT	1.3%
V	40 mph

STORM WATER PERMIT
None Required

ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0130	Remove Traffic Sign	5	Each
110E0400	Remove Drop Inlet	4	Each
110E1530	Remove Signal Pole Footing	4	Each
110E1540	Remove Luminaire Pole Footing	3	Each
110E1690	Remove Sediment	1.0	CuYd
110E1693	Remove Erosion Control Wattle	50	Ft
110E1695	Remove Sediment Filter Bag	24	Ft
110E5110	Salvage Signal Equipment	Lump Sum	LS
120E0010	Unclassified Excavation	2,653	CuYd
120E2000	Undercutting	677	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
250E0020	Incidental Work, Grading	Lump Sum	LS
260E1010	Base Course	1,286.6	Ton
260E2010	Gravel Cushion	324.8	Ton
320E1200	Asphalt Concrete Composite	155.5	Ton
380E0080	9.5" Nonreinforced PCC Pavement	949.1	SqYd
380E4080	9.5" PCC Fillet Section	49.6	SqYd
380E6000	Dowel Bar	744	Each
380E6110	Insert Steel Bar in PCC Pavement	210	Each
450E0102	12" RCP Class 2, Furnish	6	Ft
450E0110	12" RCP, Install	6	Ft
450E0122	18" RCP Class 2, Furnish	46	Ft
450E0130	18" RCP, Install	46	Ft
450E0408	18" RCP Bend, Furnish	2	Each
450E0409	18" RCP Bend, Install	2	Each
462E0100	Class M6 Concrete	3.7	CuYd
480E0100	Reinforcing Steel	404	Lb
632E1320	2.0"x2.0" Perforated Tube Post	10.0	Ft
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	54.3	SqFt
632E3520	Remove, Salvage, Relocate, and Reset Traffic Sign	1	Each
633E0010	Cold Applied Plastic Pavement Marking, 4"	1,690	Ft
633E0030	Cold Applied Plastic Pavement Marking, 24"	750	Ft
633E0040	Cold Applied Plastic Pavement Marking, Arrow	9	Each
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	1,690	Ft
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	750	Ft
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	9	Each
634E0010	Flagging	400.0	Hour
634E0110	Traffic Control Signs	308.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	20	Each
634E0420	Type C Advance Warning Arrow Board	1	Each

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0600	4" Temporary Pavement Marking Tape Type I	360	Ft
634E0900	Portable Temporary Traffic Control Signal	3	Unit
634E1002	Detour Signing	12.0	SqFt
634E1210	State Furnished Portable Changeable Message Sign	2	Each
634E2000	Longitudinal Pedestrian Barricade	200	Ft
634E2015	Temporary Pedestrian Access Route	Lump Sum	LS
634E2020	Temporary Curb Ramp	3	Each
634E2025	Longitudinal Pedestrian Barrier	100	Ft
635E2000	Pedestal Signal Pole	1	Each
635E3340	Roadway Luminaire, 400 Watt with Photoelectric Cell	4	Each
635E4030	3 Section Vehicle Signal Head	16	Each
635E5020	2' Diameter Footing	14.0	Ft
635E5025	2.5' Diameter Footing	30.0	Ft
635E5030	3' Diameter Footing	48.0	Ft
635E5301	Type 1 Electrical Junction Box	5	Each
635E5302	Type 2 Electrical Junction Box	6	Each
635E5303	Type 3 Electrical Junction Box	1	Each
635E5400	Electrical Service Cabinet	1	Each
635E5430	Traffic Signal Controller	1	Each
635E5515	Signal Head Battery Backup and Flash System	1	Each
635E5530	Preformed Detector Loop	9	Each
635E5535	Sawed-In, Preformed Detector Loop	16	Each
635E5550	Detector Unit	11	Each
635E5560	Emergency Vehicle Preemption Unit	1	Each
635E5570	Optical Detector	4	Each
635E5900	Pedestrian Push Button	8	Each
635E5910	Pedestrian Push Button Pole	8	Each
635E5922	Pedestrian Signal Head with Countdown Timer	8	Each
635E5930	Pedestrian Crossing Sign	8	Each
635E7018	Install Signal Pole with Mast Arm and Luminaire Arm	4	Each
635E7500	Remove and Reset Luminaire Pole	3	Each
635E8120	2" Rigid Conduit, Schedule 40	1,285	Ft
635E8130	3" Rigid Conduit, Schedule 40	55	Ft
635E8150	5" Rigid Conduit, Schedule 40	25	Ft
635E8220	2" Rigid Conduit, Schedule 80	315	Ft
635E8230	3" Rigid Conduit, Schedule 80	110	Ft
635E8240	4" Rigid Conduit, Schedule 80	240	Ft
635E9014	1/C #4 AWG Copper Wire	615	Ft
635E9016	1/C #6 AWG Copper Wire	3,650	Ft
635E9018	1/C #8 AWG Copper Wire	1,605	Ft
635E9504	4/C #14 AWG Copper Tray Cable, K2	2,157	Ft
635E9507	7/C #14 AWG Copper Tray Cable, K2	230	Ft
635E9519	19/C #14 AWG Copper Tray Cable, K2	605	Ft
635E9524	24/C #14 AWG Copper Tray Cable, K2	410	Ft

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
635E9600	#16 AWG Copper Twisted Shielded Pair	2,610	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	260	Ft
635E9800	Preemption Cable	1,880	Ft
650E0060	Type B66 Concrete Curb and Gutter	560	Ft
650E0095	Type B69.5 Concrete Curb and Gutter	474	Ft
651E0050	5" Concrete Sidewalk	2,941	SqFt
651E7000	Type 1 Detectable Warnings	60	SqFt
670E1200	Type B Frame and Grate Assembly	4	Each
670E5400	Precast Drop Inlet Collar	4	Each
734E0010	Erosion Control	Lump Sum	LS
734E0154	12" Diameter Erosion Control Wattle	50	Ft
734E0180	Sediment Filter Bag	24	Ft
734E0604	High Flow Silt Fence	24	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	2	Each
734E5010	Sweeping	50	Hour
900E1320	Construction Entrance	1	Each

Index of Sheets

ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

COMMITMENT D2: SURFACE WATER DISCHARGE

Action Taken/Required:

If construction dewatering is required, the Contractor shall obtain a Temporary Discharge Permit from the DENR and provide a copy to the Project Engineer. Contact the DENR Surface Water Program at 605-773-3351 to apply for a permit.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project.

Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state

Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

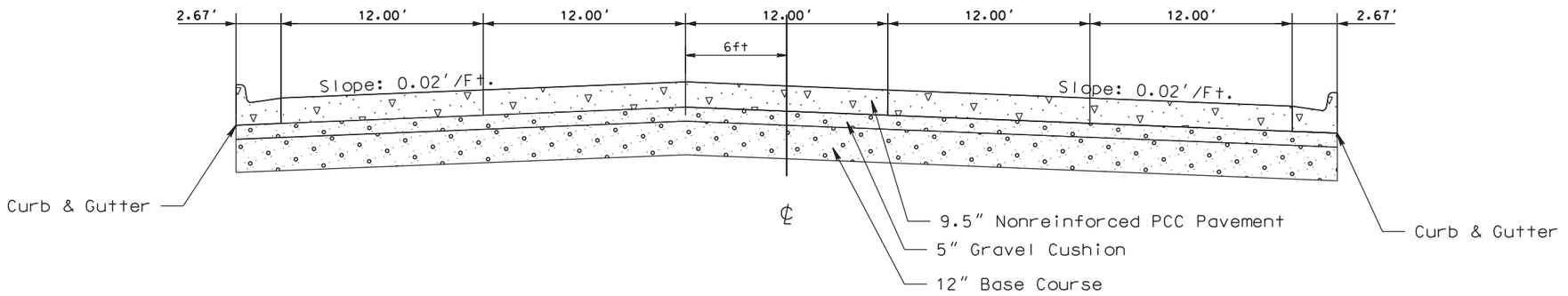
If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	4	83

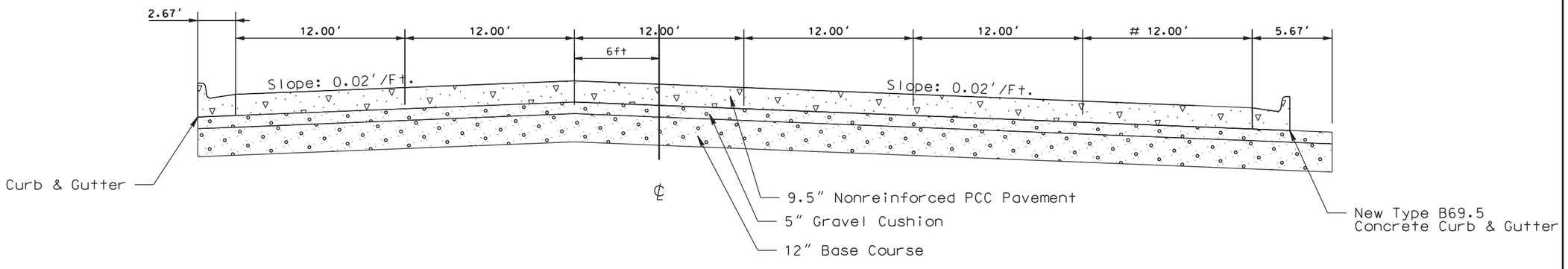
6th Ave.(US 12)
Existing Typical Section



6th Ave.(US 12)
Sta. 85+87 to Sta. 88+83
Proposed Typical Section

Transition:

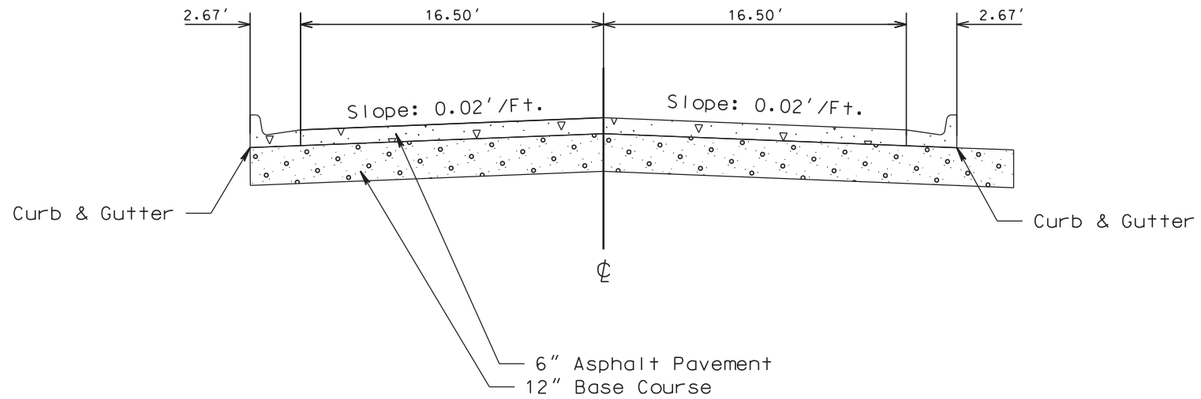
Sta. 85+87 to Sta. 86+48
Proposed Turning Lane 0' to 12'



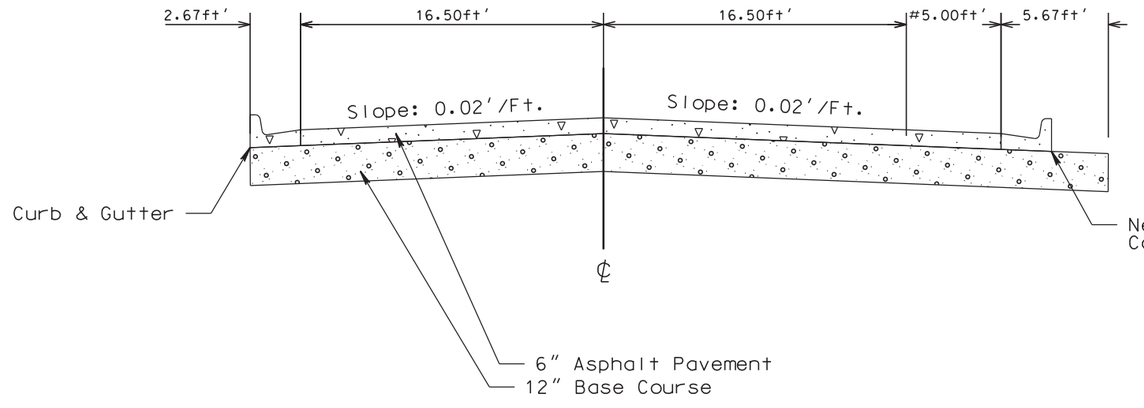
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	5	83

Lamont St.
Existing Typical Section South of 7th Ave
Sta 89+75.5, 503.7 Ft Rt - Sta 89+75.5, 323.0 ft Rt



Lamont St.
Proposed Typical Section South of 7th Ave
Sta 89+75.5, 503.7 Ft Rt - Sta 89+75.5, 323.0 ft Rt



Transition:

Sta. 89+75.5, 503.7 ft Rt to
Sta. 89+75.5, 472.5 ft Rt
Proposed Widened Typical Section 0' to 5'

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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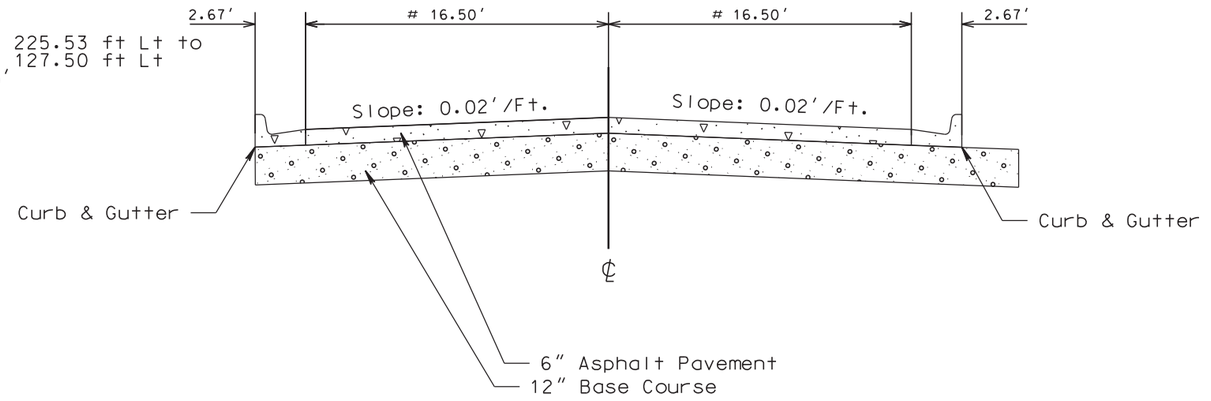
Lamont St.
Existing Typical Section North of 7th Ave
Sta 89+75.3, 260.41 Ft Rt - Sta 89+75.1, 127.50 ft Rt

Transition:

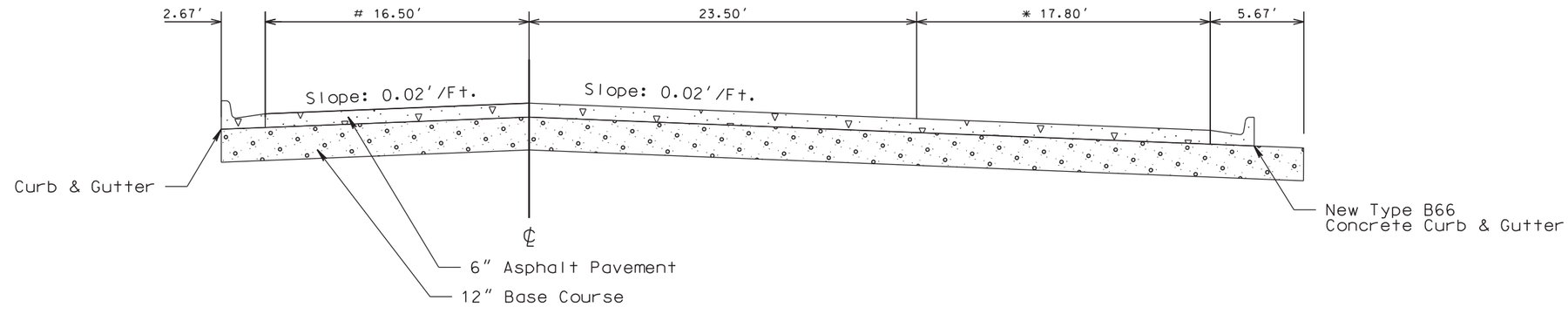
Sta. 89+75.3, 225.53 ft Lt to
Sta. 89+75.1, 127.50 ft Lt
16' to 33.5'



Lamont St.
Proposed Typical Section North of 7th Ave
Sta 89+75.0, 260.41 Ft Rt - Sta 89+75.0, 127.50 ft Rt

Transition:

Sta. 90+01.0, 247.0 ft Rt to
Sta. 90+18.8, 186.8 ft Rt
* Proposed Turning Lane
0' to 17.8'



TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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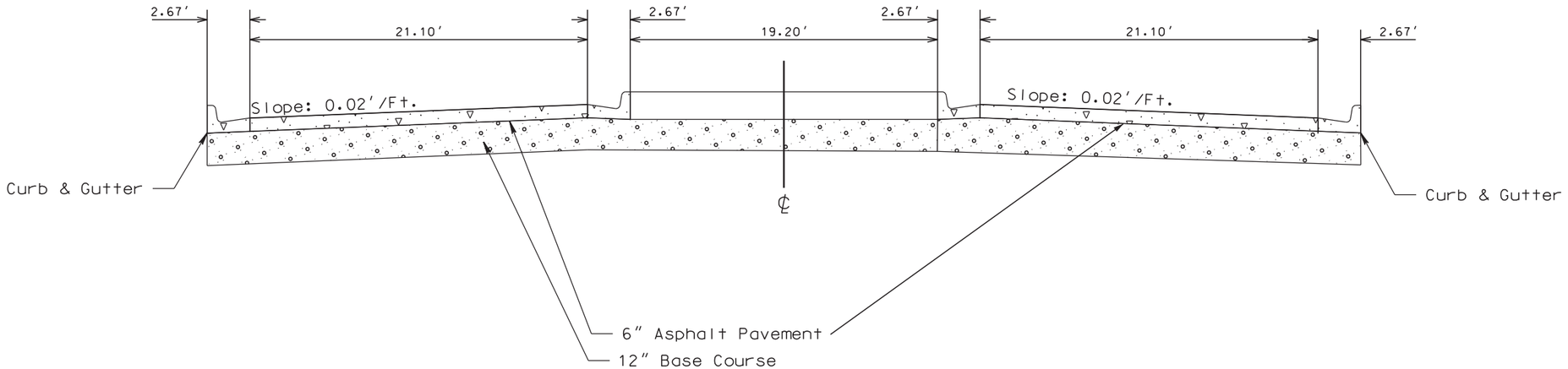
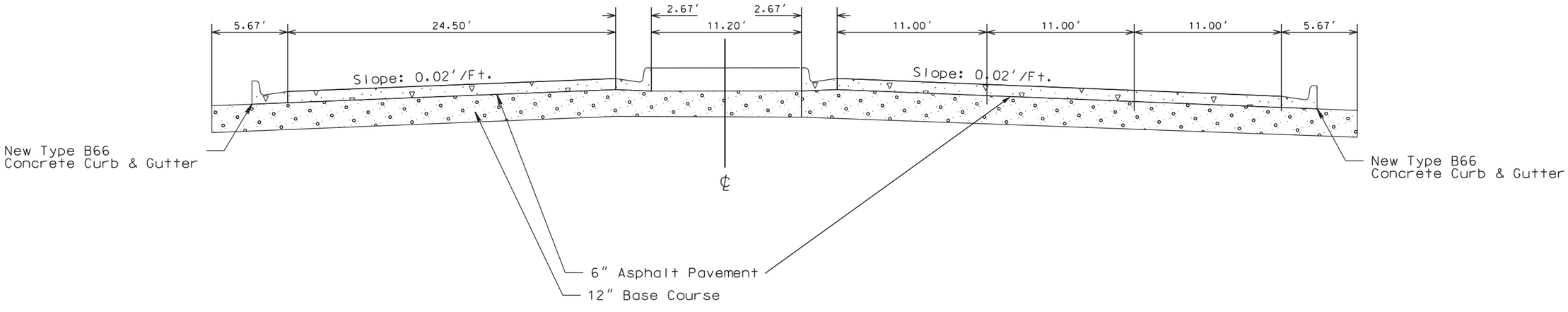
Lamont St.
Existing Typical Section
Sta 89+75.0,75.0 ft Rt to Sta 89+75.0,118.6 ft Rt



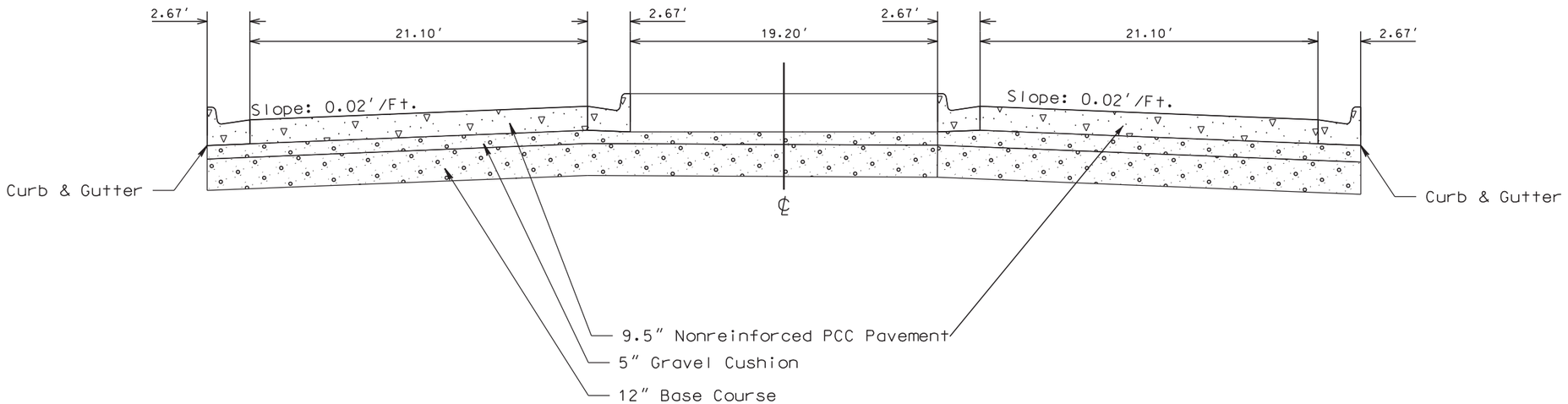
Lamont St.
Proposed Typical Section
Sta 89+75.0,75.0 ft Rt to Sta 89+75.0,118.6 ft Rt



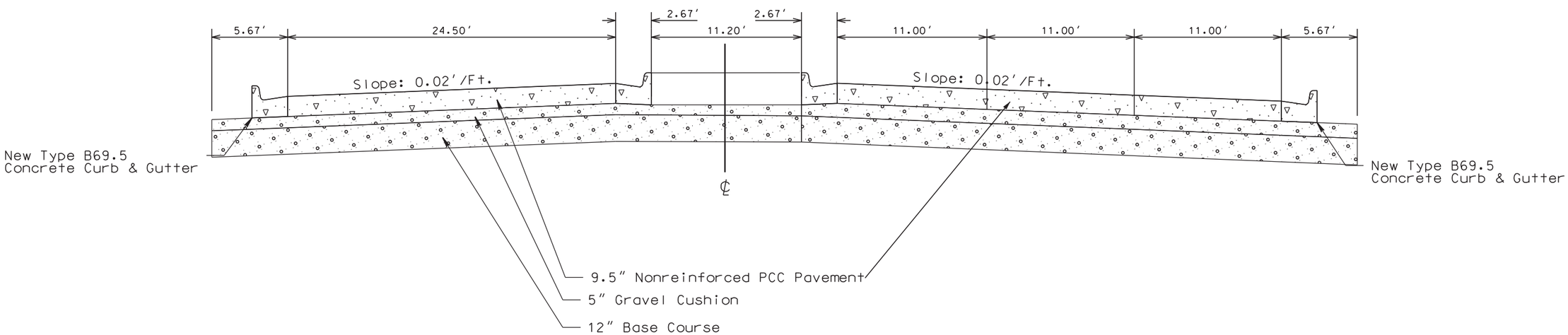
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	8	83

TYPICAL SURFACING SECTIONS

Lamont St.
Existing Typical Section
Sta 89+75.0, 75 ft Rt



Lamont St.
Proposed Typical Section
Sta 89+75.0, 75 ft Rt



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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Table of Conduit Quantities

		Rigid Conduit							Copper Wire				Copper Tray Cable, K2					Twisted Shielded Pair			Pole and Bracket Cable			Preemption Cable	
		Schedule 40			Schedule 80								#14												
Location to Location		2" Ft	3" Ft	5" Ft	2" Ft	3" Ft	4" Ft		1/C #4 AWG Ft	1/C #6 AWG Ft	1/C #8 AWG Ft		4/C Ft	7/C Ft	19/C Ft	24/C Ft		#16 AWG Ft			2/C #10 AWG Ft			Ft	
US HWY 12/6TH Ave Se & Lamont St S																									
SERVICE CABINET	Meter	15							60	60															
Meter	JA8	25							90	90															
JA1	CONTROLLER			25					90				240	60	60	90		330						240	
JA1	JA2	30																70							
JA1	A1		15							60				20		20								40	
JA1	PA1	15											20												
JA1	PA2	20											25												
JA1	JA8						120		375	375			250			125		375						250	
JA8	A5		20							75						25								50	
JA8	PA7	30											35												
JA8	PA8	20											25												
JA8	JA9	20																75							
JA9	JA10	110																230							
JA1	JA3						120			375			500	125	250	125		750						500	
JA3	A2		20							75				25		25								50	
JA3	PA3	20											25												
JA3	PA4	15											20												
JA3	JA4	30																110							
JA4	JA5	105																220							
JA3	JA6					110				345			230		230			345						230	
JA6	JA7	30																105							
JA6	A3	40								135					45									90	
JA6	A4	15													20										
JA6	PA5	20											25												
JA6	PA6	25											30												
SIGNAL POLE	A1												165								65			115	
SIGNAL POLE	A2												200								65			105	
SIGNAL POLE	A3												125								65			110	
SIGNAL POLE	A4												45								65			100	
SIGNAL POLE	A5												117												
PED PB POLE	PA1												10												
PED PB POLE	PA2												10												
PED PB POLE	PA3												10												
PED PB POLE	PA4												10												
PED PB POLE	PA5												10												
PED PB POLE	PA6												10												
PED PB POLE	PA7												10												
PED PB POLE	PA8												10												
JA11	REL1	160								660															
REL1	JA9	175								720															
JA9	JA12				165					680															
EJ1	REL3	140									435														
REL3	REL2	225			65						900														
REL2	Target Pole				85						270														
PCN I3P0	**Total:**	1,285	55	25	315	110	240		615	3,650	1,605		2,157	230	605	410		2,610			260			1,880	

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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000P-151, US 12 Permanent Sign Installation Table

Station	Side of Road	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	2.0"x2.0" Perforated Tube Post 12 ga. (FT)	(N.A.B.I.) Square Tube Anchor Sleeve (Each)	Remove Traffic Sign (Each)	Remove, Salvage, Relocate, and Reset Traffic Sign (Each)	Direction Sign Faces	Current Type of Post	Remarks
89+14	Lt.	S Lamont St		84	18	10.5			1		E	Mast Arm	Replace Existing Sign with New Sign on Mast Arm
89+35	Rt.	SE 6th Ave		72	18	9.0			1		N	Mast Arm	Replace Existing Sign with New Sign on Mast Arm
89+43	Rt.	Left only & Through/ Right Lane Configuration	R3-8	30	30	6.3			1		N	Mast Arm	Replace Existing Sign with New Sign on Mast Arm
90+11	Rt.	Left Lane Must Turn Left	R3-7	36	36	9.0	10	1			S		New Sign Install. At Station 90+11 Offset 246.5' R.
90+15	Rt.	Stop	R1-1							1	E	Telespar	Reset Existing Sign and Street Signs on Existing Post at Station 90+15 Offset 260.5' R.
90+18	Lt.	SE 6th Ave		72	18	9.0			1		S	Mast Arm	Replace Existing Sign with New Sign on Mast Arm
90+75	Rt.	S Lamont St		84	18	10.5			1		W	Mast Arm	Replace Existing Sign with New Sign on Mast Arm
					TOTAL	54.3	10.0	1	5	1			

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	11	83

SEQUENCE OF OPERATIONS

Work shall progress in phases.

Traffic Control devices shall be appropriately installed prior to any construction activity in any of the phases.

Phase 1 shall consist of work at the intersection of 6th Avenue (US 12) and Lafayette St.

During Phase 1 the Temporary Pedestrian Access Routes (TPAR) shall be constructed before any sidewalk is removed north of 6th Avenue. The sidewalk south of 6th Avenue shall be open before or at the same time the new curb ramp that is to be installed north of 6th avenue is completed.

The Contractor shall install the State Furnished Portable Changeable Message Signs at sites designated by the Engineer. The Contractor is to contact the Engineer to arrange pick up from the Aberdeen State DOT Yard.

Temporary Traffic Signals will be installed during Phase 1 but not activated. The Temporary Traffic Signals shall be installed at the intersection of Lafayette St & 6th Ave (US Hwy 12). The timing for the signals shall be provided by the Region Traffic Engineer. The temporary traffic signals shall be installed and ready to be activated prior to moving on to Phase 2.

Phase 2 shall consist of work at Intersection of 6th Avenue (US 12) and Lamont St & all work on Lamont St north of 7th Avenue.

During Phase 2 the Contractor will be allowed to close Lamont St between 6th and 7th Ave. The Contractor shall contact Dan Martell (605-6267879) prior to shutting down the intersection of Lamont and 6th Ave and activating the temporary signals.

The Temporary Pedestrian Access Routes in phase 2 along with the temporary traffic signals shall be installed and fully operational prior to the closing of Lamont St. Stop Signs shall be installed on Lamont Street stopping northbound traffic south of 7th Avenue and southbound traffic north of 6th Avenue. The Contractor shall have 14 calendar days to complete the northeast and northwest quads on Lamont St & 6th Ave except topsoil, seeding and signals.

The Contractor must accommodate pedestrian traffic across the north side of the intersection of Lamont St & 7th Avenue at all times. The Contractor will only be allowed to perform removals in such a way so that pedestrians will be allowed to cross Lamont St at any time, see traffic control drawings for details.

Phase 3 shall consist of work on Lamont St south of 7th Avenue.

If the Contractor wishes to alter the sequence of operations a plan must be submitted a minimum of 2 weeks prior to the pre-construction meeting.

Temporary Pedestrian Access Routes (TPAR) shall have top soil removed before installation of the TPAR and replaced after the TPAR is removed.

MAINTENANCE OF TRAFFIC

Traffic shall be maintained in accordance with the Manual on Uniform Traffic Control Devices and as Follows:

1. The Contractor shall notify the Aberdeen Region Traffic Engineer, Dan Martell (605) 626-7879, a minimum of 2 weeks prior to opening Phases 2 & 3 to traffic in order to verify the installation of the signing and signals by the Contractor
2. The Contractor shall designate an employee to maintain traffic as described in section 634.3 of the Specifications. This person shall be required to do weekend checks to ensure traffic control devices are in satisfactory condition. The Contractor shall submit a weekly log stating the time and date of all such inspections. The log shall be signed by the person doing the inspection. The cost of the traffic control person shall be incidental to the contract lump sum price for “Traffic Control Miscellaneous” The employee selected must be approved by the Engineer.

   A night inspection of traffic control signing shall be done by the Contractor’s designated employee after the signs are revised for each phase of construction. The Contractor shall submit additional log information for this inspection to the Engineer.
3. The Contractor will be responsible for maintaining all existing traffic control signing for the safety of the traveling public.
4. Construction operations will be allowed during daylight hours only.
5. Removing, relocating, salvaging and resetting street signing shall be the responsibility of the Contractor. The cost of this work shall be incidental to the various contract items unless otherwise specified in the plans. Any signs damaged or lost shall be replaced by the Contractor at no cost to the State or the City. Covering the signs shall not be an option.
6. All traffic control devices used on this project shall be new or in like-new condition, as approved by the Engineer
7. Drums and/or Type 3 Barricades shall be maintained to a minimum height of 3’ above the surface which is being used to maintain traffic.
8. Shoulder Drop-Off (W8-9a) signs and drums shall be installed at locations where the shoulder drop-off exceeds 3 inches. Shoulder Drop-Off signs shall be placed at the beginning of traffic control closures and other locations as determined by the Engineer. All shoulder drop off locations will be delineated with tubular markers. Payment for all tubular markers shall be incidental to TRAFFIC CONTROL MISCELLANEOUS.

The Contractor shall install No Parking signs along 7th Avenue between Lamont St & Lafayette St for Phase 2. The No Parking Signs shall be removed after the completion of Phase 2 or as directed by the Engineer. Included are 4 No Parking Signs for this purpose.

PEDESTRIAN TRAFFIC CONTROL

Pedestrian Traffic shall be maintained at all times.

The Contractor shall adhere to the requirements of the Americans with Disabilities Act (ADA) during construction. Tape, rope, or plastic chain strung between devices are not detectable and do not comply with the design standards in the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG) and should not be used as a control for pedestrian movements.

A smooth, continuous hard surface should be provided throughout the entire length of the temporary pedestrian facilities. There should be no curbs or abrupt changes in grade or terrain that could cause tripping or be a barrier to wheelchair use.

TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR)

A Temporary Pedestrian Access Route (TPAR) shall be provided when crosswalks, sidewalks, or other pedestrian facilities are blocked, closed, or relocated. A TPAR may consist of a combination of existing and/or temporary pedestrian facilities. The TPAR shall be kept free of any obstructions and hazards, such as holes, debris, mud, snow, construction equipment, traffic control signing, stored materials, etc.

The Contractor shall notify the Engineer at least 72 hours prior to start of any construction operation that will necessitate a change in pedestrian access. Pedestrian traffic signal displays controlling a crosswalk that is closed shall be covered or removed.

All costs associated with installing and maintaining a Temporary Pedestrian Access Route, including Temporary Pedestrian Sidewalk, shall be incidental to the contract lump sum price for TEMPORARY PEDESTRIAN ACCESS ROUTE.

TEMPORARY CURB RAMP

A temporary pedestrian ramp shall be provided by the Contractor in all cases where the intersection will carry pedestrian traffic.

Temporary Curb Ramps should be firm, stable, and have a non-slip surface. They shall not warp or buckle, and should be made of materials strong enough to support a weight of 800 pounds. Temporary Curb Ramps shall also be color contrasting and contain marked edges so they are noticeable by pedestrians who have visual impairments. Lateral joints or gaps between surfaces shall be a maximum of 0.5 inches in width. Temporary Curb Ramps shall include detectable warning panels.

Temporary Curb Ramps shall be the full width of the temporary pedestrian access route, with a recommended width of 60” and a minimum width of 48”. Temporary Curb Ramps shall have a maximum slope of 1:12, and have free draining surfaces with a maximum cross slope of 2 percent. Handrails on Temporary Curb Ramps are not required unless the curb ramp has a rise exceeding 6” and a length exceeding 72”.

TEMPORARY CURB RAMP CONTINUED

All costs shall be incidental to the contract unit price per each for TEMPORARY CURB RAMP.

LONGITUDINAL PEDESTRIAN BARRICADE

Longitudinal Pedestrian Barricades should not be used to provide positive protection for pedestrians.

Barricade rail supports may not project into pedestrian routes more than 4 inches from the face of the barricade. To prevent any tripping hazard to pedestrians, ballast shall be located behind or internal to the device.

Longitudinal Pedestrian Barriers shall be used to close sidewalks in place of Type 1 Barricades as indicated in standard plate No 634.33. Sidewalk closed signs shall be mounted on the Longitudinal Pedestrian Barriers for sidewalk closures.

When Longitudinal Pedestrian Barricades are combined in a series, the maximum gap between devices that do not interlock shall be one inch. Joints between devices that do interlock shall be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing. When used as a sidewalk closure mechanism, Longitudinal Pedestrian Barricade must run the entire width of the sidewalk. Longitudinal Pedestrian Barricade should provide a color contrasting pattern. Black should not be used to color any base on a device. The devices should comply with the general color and stripe pattern requirements of Section 6F.68 of the MUTCD.

Longitudinal Pedestrian Barricade shall have continuous bottom and top surfaces. A gap height or opening from the walkway surface up to a maximum of 2 inches is allowed for drainage purposes. The top edge of the bottom portion shall be a minimum of 8 inches above the walkway. The top of the top portion shall be between 34 and 38 inches above the walkway. The top surface shall be smooth to allow safe hand trailing. Both upper and lower surfaces shall share a common vertical plane.

All costs shall be incidental to the contract unit price per foot for LONGITUDINAL PEDESTRIAN BARRICADE.

LONGITUDINAL PEDESTRIAN BARRIER

When exposed to vehicular traffic, Longitudinal Pedestrian Barrier shall be crashworthy, and the bottom and top surfaces of the traffic side of devices shall have retroreflective sheeting or delineation for improved nighttime visibility.

When Longitudinal Pedestrian Barriers are combined in a series, the maximum gap between devices that do not interlock shall be one inch. Joints between devices that do interlock should be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing. Channelizing devices should provide a color contrasting pattern. Black should not be used to color any base on a device. The devices should comply with the general color and stripe pattern requirements of Chapter 6F of the MUTCD.

Longitudinal Pedestrian Barriers shall have continuous bottom and top surfaces. The lower edge of the bottom portion shall be a maximum of 2 inches above the walkway. The top edge of the bottom portion shall be a minimum of 8 inches above the walkway. The top of the top portion shall be a minimum of 32 inches above the walkway. The top surface shall be smooth to allow safe hand trailing.
Longitudinal Pedestrian Barriers shall be used to close sidewalks in place of Type 1 Barricades as indicated in standard plate No 634.33. Sidewalk closed signs shall be mounted on the Longitudinal Pedestrian Barriers for sidewalk closures.

All costs shall be incidental to the contract unit price per foot for LONGITUDINAL PEDESTRIAN BARRIER.

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.

Subsurface utility explorations were done for this project. The findings can be found in the SUBSURFACE UTILITY LOCATIONS table elsewhere in the plans. The table is provided to aid the Contractor during construction. All information in the table is approximate and shall be verified by the Contractor prior to construction in those areas.

INCIDENTAL WORK

There is a sprinkler system along 6th Ave and Lamont St on both sides of the roads. The Contractor is to remove the sprinkler system that is within the excavation limits and cap the ends before any excavation takes place. Upon completion of the project the sprinkler system shall be replaced behind the new curb and gutter at approximately the same interval as they were behind the existing curb & gutter according to the Engineer. All work to accomplish this shall be paid for as INCIDENTAL WORK.

The island in the middle of Lamont St has a retaining wall inside of the curb and gutter. The Contractor is to salvage the retaining wall bricks. After the new curb and gutter is installed and backfilled the Contractor will build a new retaining wall in a similar design, according to the Engineer, as the existing wall that was removed. All work for this shall be paid for as INCIDENTAL WORK

TABLE OF UNCLASSIFIED EXCAVATION

Excavation		1758.9 CY
Undercut		676.8 CY
Remove & Replace Topsoil		217.2 CY
	Total	2652.9

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

When plan quantities are 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 when final cross sections are taken in the field:

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

All work associated with the removal of the existing pavements, fillets, curb & gutter and sidewalk is included in the UNCLASSIFIED EXCAVATION quantity and shall be paid for with the UNCLASSIFIED EXCAVATION bid item.

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	L/R	Quantity (Each)
86+40.1	31.6’ R	1
89+16.3	31.5’ R	1
90+43.5	31.4’ R	1
89+92.3	440.1’ R	1
	Total:	4

REMOVAL OF EXISTING CONCRETE PAVEMENT STA. 89+18.9 to STA. 90+35.2

The Contractor shall dispose of the concrete pavement at a site approved by the Engineer.

The following tables for removal are for information purposes only. See Removals Sheets for Details.

TABLE OF CONCRETE PAVEMENT REMOVAL

Station	to	Station	Description	Quantity (SqYd)
89+18.9		90+33.2	US 12 & Lamont St. Intersection.	207.9
			Total:	207.9

REMOVAL OF EXISTING ASPHALT PAVEMENT STA. 89+18.9 to STA. 90+35.2

The Contractor shall dispose of the asphalt concrete at a site approved by the Engineer.

TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
89+42.4		90+07.6	R	1086.8
			Total:	1086.8

TABLE OF FILLET REMOVAL

Station	Offset	to	Station	Offset	Quantity (SqFt)
89+16.5	30.0’ L	to	89+40.5	53.6’ L	25.0
90+10.5	53.2’ L	to	90+35.2	30.1’ R	25.2
				Total:	50.2

TABLE OF CONCRETE CURB AND GUTTER REMOVAL

Station	Offset	to	Station	Offset	Quantity (Ft)
83+30.3	32.6’ L	to	83+47.3	32.6’ L	17.0
85+87.0	32.0’ R	to	89+41.1	107.0’ R	414.2
89+75.3	56.7’ R	to	89+75.8	125.5’ R	160.5
90+21.2	274.4’ R	to	90+76.3	31.8’ R	323.4
89+92.8	503.3’ R	to	90+13.5	309.9’ R	207.7
				Total:	1122.8

TABLE OF SIDEWALK REMOVAL

Station	L/R	to	Station	L/R	Quantity (SqFt)
83+25.4	37.6’ L	to	83+52.3	37.5’ L	134.5
89+20.8	39.2’ R	to	89+31.9	94.1’ R	330.5
90+21.2	268.7’ R	to	90+29.9	37.9’ R	1465.5
89+11.6	37.6’ L	to	89+32.9	55.8’ L	179.5
90+18.3	58.2’ L	to	90+40.0	37.6’ L	190.8
				Total:	2300.8

UNDERCUTTING

In all cut sections the earthen subgrade shall be undercut 12 inches below the proposed subgrade surface, see Unclassified Excavation sheet for details. 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.

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)
85+87.0		90+76.3	676.8
		Total:	676.8

See Unclassified Excavation sheets for details.

INCIDENTAL WORK, GRADING

Station	L/R	Remarks
89+16.4	R	Remove 23.5 ft of 12” PVC Pipe
89+16.4	R	Connect Existing Pipe to New Drop Inlet

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 either bell and spigot or tongue and groove. 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. 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): Joints shall be sealed with a waterstop seal meeting the requirements of ASTM C990. Waterstop seals shall consist of hydrophilic compounds such as Waterstop-RX or ConSeal CS-231.

3. Drop Inlets, Manholes, and Junction Boxes: Joints shall be sealed with a waterstop seal or seal wrap meeting the requirements of ASTM C990 or encased with a minimum 2’ wide by 6” thick M6 concrete collar reinforced with 6x6 W2.9 x W2.9 wire mesh. Waterstop seal shall contain hydrophilic compounds such as Waterstop-RX or ConSeal CS-231. Seal wrap shall be a self-adhesive external joint wrap such as ConWrap CS-217 or Mar Mac Seal Wrap

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, waterstop 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.

TABLE PIPE QUANTITIES

Station	Pipe	Quantity (ft)	Bend	Quantity (ft)
86+40	18” RCP	10.9		
89+16	18” RCP	22.3	RCP-15	1
90+43	18” RCP	9.8	RCP-30	1
89+97	12” RCP	4.3		

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 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 and Precast Drop Inlet Collar will be the basis of payment for these items.

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

TABLE OF DROP INLETS AND QUANTITIES

Station	L/R	Drop Inlet Size	Drop Inlet Type	Class M6 Concrete (CuYd)	Reinf. Steel (Lb)	Precast Drop Inlet Collar (Each)	Frame and Grate/Lid Type
86+39.7	R	2'x3'	B	1.00	108.4	1	1
89+15.5	R	3'x4'	B	0.93	103.0	1	1
90+45.5	R	3'x4'	B	1.00	108.5	1	1
89+97.4	R	3'x4'	B	0.73	84.5	1	1
			Totals:	3.66	404.4	4	4
Total Type B Frame and Grate Assembly						4	

TABLE OF DROP ELEVATIONS AND DEPTHS

Station	Top of Wall Elev. (ft)	Flow Line Elev. (ft)	Depth (ft)
86+39.7	1299.62	1296.06	3.56
89+15.5	1298.09	1294.79	3.29
90+45.5	1297.79	1294.23	3.57
89+97.4	1296.32	1293.94	2.37

TABLE OF TYPE B69.5 CONCRETE CURB AND GUTTER

Station	to	Station	L/R	Quantity (Ft)
83+30.3		83+47.3	L	17.0
85+87.0		89+34.3	R	361.2
89+69.5		89+80.7	R	19.8
90+20.8		90+76.3	R	76.5
			Total:	474.5

TABLE OF TYPE B66 CONCRETE CURB AND GUTTER

Station	to	Station	L/R	Quantity (Ft)
89+34.3		89+40.4	R	32.1
89+69.5		89+80.7	R	106.8
90+20.8		90x+21.2	R	217.1
89+93.5		90+13.5	R	203.9
			Total:	559.9

9.5" PCC FILLET SECTIONS

Payment for 9.5" 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 9.5" PCC Fillet Section".

TABLE OF 9.5" PCC FILLET SECTION

Station	to	Station	L/R	Radius (Ft)	Quantity (SqYd)
89+16.5		89+40.5	L	25	24.8
90+10.5		90+34.9	L	25	24.8
				Total:	49.6

TYPE 1 DETECTABLE WARNINGS

Detectable warnings shall be in compliance with the Americans with Disabilities 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

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

TABLE OF TYPE 1 DETECTABLE WARNINGS

Station	L/R	Quantity (SqFt)
83+38.8	32.6' L	10
89+31.1	39.0' L	10
90+20.4	38.8' L	10
89+27.2	65.5' R	10
90+04.9	269.9' R	10
90+33.7	51.8' R	10
	Total:	60

TABLE OF 5" CONCRETE SIDEWALK

Station	to	Station	L/R	Quantity (SqFt)
83+25.4		83+52.3	L	145.5
83+37.9		83+37.0	R	185.8
89+12.0		89+32.9	L	204.7
90+18.3		90+39.3	L	203.5
88+83.0		89+31.9	R	755.6
90+21.2		90+76.3	R	1445.6
			Total:	2940.7

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite shall be paver laid in lifts not exceeding 3" in depth.

It can be anticipated that hand work will be required to shape the asphalt concrete for some areas.

9.5" NONREINFORCED PCC PAVEMENT

The aggregate may require screening as determined by the Engineer.

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

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

Trimming will be considered incidental to the related items required for PCC Pavement.

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

The transverse contraction joints shall be perpendicular to the centerline as detailed in the standard plates 380.01 and 380.08. In multilane areas the transverse contraction joints shall be perpendicular to the centerline and be in a straight line across the width of the pavement. In special situations the Engineer may pre-approve transverse contraction joints that do not meet these requirements. All nonconforming transverse contraction joints that are not pre-approved shall be removed at the Contractor's expense. Any method of placement that cannot produce these requirements shall not be allowed to continue.

The surface of the mainline paving shall be transversely tined. All other areas shall be tined as directed by the Engineer. The surface of the mainline paving shall be tined to within 2 or 3 feet of the face of the curb. A self-propelled mechanical tiner will not be required.

ALKALI SILICA REACTIVITY –

Fine aggregate shall conform to Section 800.2 D. Alkali Silica Reactivity (ASR) Requirements.

Below is a list of known fine aggregate sources and the average corresponding 14 day expansion values:

Source	Location	Expansion Value
Bachman	Winner, SD	0.335*
Bitterman	Delmont, SD	0.316*
Concrete Materials	Corson, SD	0.170
Croell	Hot Springs, SD	0.089
Croell	Wasta, SD	0.212
Emme Sand & Gravel	Oneil, NE	0.217
Fisher S&G - Mickelson Pit	E of Nisland, SD	0.129
Fisher S&G - Vallery Pit	Nisland, SD	0.110
Fisher S&G	Rapid City, SD	0.092
Fisher S&G	Spearfish, SD	0.053
Fisher S&G	Wasta, SD	0.159
Fuchs	Pickstown, SD	0.275*
Higman	Akron, IA	0.203
Higman	Hudson, SD	0.187
Hilde	Madison, SD	0.116
Jensen	Herried, SD	0.276*
L.G. Everist	Brookings, SD	0.186
L.G. Everist	Hawarden, IA	0.166
L.G. Everist	Summit, SD	0.178
Morris	Blunt, SD	0.192
Morris - Richards Pit	Onida, SD	0.188
Morris - Shawn's Pit	E of Sturgis, SD	0.168
Myrl & Roys - Ode Pit	E Sioux Falls, SD	0.214
Myrl & Roys - Nelson Pit	NE Sioux Falls, SD	0.156
Northern Concrete Agg.	Rauville, SD	0.113
Northern Concrete Agg.	Luverne, MN	0.133
Opperman - Gunvordahl Pit	Burke, SD	0.362*
Opperman - Cahoy Pit	Herrick, SD	0.307*
Opperman - Jones Pit	Burke, SD	0.321*
Opperman - Randall Pit	Pickstown, SD	0.239
Pete Lien & Sons	Creston, SD	0.158
Pete Lien & Sons	Oral, SD	0.129
Pete Lien & Sons	Wasta, SD	0.192
Thorpe Pit	Britton, SD	0.098
Wagner Building Supplies	Pickstown (Wagner), SD	0.241
Winter Brothers- Whitehead Pit	Brookings, SD	0.197

* These sources will require Type V cement in the concrete mix design and Class F (Modified) fly ash as specified.

The Department will use the running average of the last three known expansion test results or less for determining acceptability of source and the required Type of cement. These expansion results are reported in the preceding table. Additional testing, when requested by the Contractor, will be performed by the Department at the Contractor's expense.

The values listed in the table are intended for use in bidding. If a previously tested pit by SDDOT with acceptable test values (less than 0.250) is discovered after letting to require Type V cement (greater than 0.250) the Department will accept financial responsibility for the change from Type II to Type V cement.

Type II or Type V cement will not change the requirement for the fly ash. The cost for either type of cement shall be subsidiary to the contract item.

LOCATION OF CONCRETE PAVEMENT JOINTS

The location of joints, as shown and designated on this sheet and on the PCC PAVEMENT JOINT LAYOUT sheet are only approximate locations to be used as a guide in the final location of joints and to afford bidders a basis for estimating the construction costs of the joints. The final location of the joints are to be designated by the Engineer during construction.

STEEL BAR INSERTION

The Contractor shall insert the Steel Bars (No. 5 x 24 inch epoxy coated deformed tie bars) into drilled holes in the existing concrete pavement in accordance with the specifications.

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

Epoxy coated deformed steel bars shall be inserted on 30 inch centers in the longitudinal joint and shall be placed a minimum of 15 inches from the existing transverse contraction joint.

TABLE OF STEEL BAR INSERTION

LOCATION	QUANTITY OF BARS No. 5
Sta 89+40.5, 30' Lt. – 52.6' Lt.	8
Sta 90+10.8, 30' Lt – 52' Lt.	8
Sta 85+87 – Sta 90+76.33, 30' Rt	194
Totals:	210

GRAVEL CUSHION

5" of gravel cushion is to be placed under any new concrete surfacing. All work for furnishing and placing this material shall be paid for by the bid item GRAVEL CUSHION.

BASE COURSE

12" of Base course is to be placed under the gravel cushion in all areas to be surfaced with concrete. 12" of Base course shall also be placed under the new asphalt surface. All work for furnishing and placing this material shall be paid for by the bid item BASE COURSE.

REMOVE AND REPLACE TOPSOIL

Topsoil shall also be salvaged and stockpiled prior to construction. Limits of this work, depth of salvage, and stockpile location will be directed by the Engineer. Following completion of construction, topsoil shall be spread evenly over the disturbed areas.

The estimated amount of topsoil to be removed and replaced is 217 CuYd.

All costs associated with removing and replacing the topsoil along areas to be resurfaced shall be incidental to the contract lump sum price for "Remove and Replace Topsoil".

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum shall consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier shall provide certification of the fungal species claimed and the live propagule count. The inoculum shall include the following fungal species:

Glomus intraradices 25%
Glomus aggregatu 25%
Glomus mosseae 25%
Glomus etunicatum 25%

All seed shall be inoculated by the seed supplier with a minimum of 20,000 live propagules of mycorrhizal fungi per 1,000 square feet. All costs of inoculating the seed shall be incidental to the contract lump sum price for EROSION CONTROL.

The mycorrhizal inoculum shall be as shown below or an approved equal:

Product	Manufacturer
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 http://www.mycorrhizae.com/

FERTILIZING

Application of fertilizer will not be required on this project.

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways and temporary easements under cultivation.

Type D Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/1000 SqFt)
Kentucky Bluegrass	Avalanche, Appalachian, Wildhorse, Blue Bonnet	1.4
Perennial Ryegrass	Turf Type Varieties	1.4
Creeping Red Fescue	Epic, Boreal	1.4
Chewings Fescue	Ambrose, K2, VNS, Zodiac	1.4
Alkali Grass	Fults, Fults II, Quill, Salty	1.4
	Total:	7

FIBER MULCHING

Fiber mulch shall be applied in a separate operation following permanent seeding.

The Contractor shall allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

The fiber mulch provided shall be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

http://sddot.com/business/certification/products/Default.aspx

TABLE OF FIBER MULCHING

For information purpose only, quantity maybe adjusted as determined by the Engineer.

Station	to	Station	L/R	Quantity (Lb)
85+87		90+76.33	L&R	188
			Total:	188

EROSION CONTROL

The estimated area requiring erosion control is 4000 square feet. All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, seeding and mulching shall be incidental to the contract lump sum price for "Erosion Control".

The limits of erosion control work will be determined by the Engineer during construction.

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment shall be installed at locations at locations determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

The Contractor shall provide certification that the erosion control wattles do not contain noxious weed seeds.

Erosion control wattles shall remain on the project until vegetation has been established and then they shall be removed in accordance with the Engineer.

The erosion control wattle provided shall be from the approved product list. The approved product list for erosion control wattle may be viewed at the following internet site:

http://sddot.com/business/certification/products/Default.aspx

INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES AFTER SURFACING REMOVAL AND BEFORE PLACEMENT OF SURFACING

Refer to Standard Plate 734.05 for details of installation of high flow silt fence at drop inlets, manholes, and junction boxes.

The high flow silt fence fabric provided shall be from the approved product list. The approved product list for high flow silt fence may be viewed at the following internet site:

http://sddot.com/business/certification/products/Default.aspx

In addition, the Contractor shall do the following for this installation:

- A space of at least 1' shall be provided between the silt fence installation and the inlet. This space shall be filled completely with a 2" depth of aggregate, 2" minus or smaller.
- The top elevation of the silt fence shall be such that a 12" horizontal flap of silt fence will remain at the bottom.
- The base of the silt fence shall conform to the natural ground profile but does not need to be trenched in at the bottom.
- The extra 12" of the silt fence material may be cut so that the material will lay flat upon the subgrade.
- Sediment filter bags shall be placed on the 12" flap around the perimeter of the silt fence installation. The sediment filter bags shall overlap 6" at the ends and be placed tightly together.
- The sediment filter bags shall be filled with clean aggregate 2" minus or smaller.

INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES AFTER SURFACING REMOVAL AND BEFORE PLACEMENT OF SURFACING CONTINUED

Sediment Filter Bag

Product	Manufacturer
Snake Bag	Sacramento Bag Manufacturing Co. Sacramento, CA Phone: 1-800-287-2247 www.sacbag.com

The sediment filter bag shall be the Snake Bag from Sacramento Bag Manufacturing Company or an approved equal.

All costs for furnishing and installing the sediment filter bags shall be incidental to the contract unit price per foot for “Sediment Filter Bag.”

All costs for removing the sediment filter bags shall be incidental to the contract unit price per foot for “Remove Sediment Filter Bag”.

Payment for high flow silt fence shall be as stated in Section 734.5 of the Specifications.

All costs for furnishing, installing, and removing the 2” depth of aggregate shall be incidental to other erosion and sediment control bid items.

All costs for removing and disposing of sediment collected by the sediment control device shall be incidental to the contract unit price per cubic yard for “Remove Sediment”.
The removed sediment shall be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

The Contractor and Engineer shall inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event greater than 1/2”.

TABLE OF INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES AFTER SURFACING REMOVAL AND BEFORE PLACEMENT OF SURFACING

Station	L/R	High Flow Silt Fence Quantity (Ft)	Sediment Filter Bag Quantity (Ft)	Remove Sediment Quantity (CuYd)
86+39.7	R	6	6	0.25
89+15.5	R	6	6	0.25
90+45.5	R	6	6	0.25
89+97.4	R	6	6	0.25
	Totals:	24	24	1.0

SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

This type of sediment control device should be used where there is pavement in the vicinity of the drop inlets and storm water or sediment could possibly enter the frame and grate. Sediment Control at Inlet with Frame and Grate shall be installed prior to working in the vicinity of the drop inlets.

The Contractor shall be responsible for maintaining and repairing the sediment control devices for the duration of the project for which sediment control measures are required. Maintenance shall be scheduled to prevent storm water from backing up into the driving lane.

“Sediment Control at Inlet with Frame and Grate” will be paid for one time at each location, regardless of the number of times the sediment control devices are installed, inspected, cleaned, removed, repaired, or replaced. All costs associated with furnishing, installing, inspecting, maintaining, cleaning, sediment removal, and repairing Sediment Control at Inlet with Frame and Grate shall be incidental to the contract unit price per each for “Sediment Control at Inlet with Frame and Grate”.

Sediment collection devices shall be:

A commercial made sediment collection device from the “Sediment Control at Inlet with Frame and Grate” list or an approved equal. The device shall be installed in reinforced concrete drop inlets according to the manufacturer’s recommendations.

Sediment Control at Inlet with Frame and Grate Approved List:

Product	Manufacturer
InfraSafe Debris Collection Device with filter sock	Royal Environmental Systems, Inc. Stacy, MN Phone: 1-800-817-3240 www.royalenterprises.net
Dandy Curb Sack	Dandy Products Inc. Dublin, OH Phone: 1-800-591-2284 www.dandyproducts.com
Silt Trapper	Storm Water Solutions Lakeville, MN Phone: 1-952-461-4376 www.silttrapper.com
DIP Basket	Skyview Construction Co., LLC Waubay, SD Phone: 1-605-520-0555 www.skyviewconst.com
FLEXSTORM Inlet Filters	Inlet and Pipe Protection, Inc. Naperville, IL Phone: 1-866-287-8655 www.inletfilters.com
GR-8 Guard or Combo Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com
Sediment Catchers	Shaun Jensen Brookings, SD Phone: 1-605-690-4950
Grate FX, Slammer, or VertPro	Enviroscape ECM, Ltd. Oakwood, OH Phone: 1-419-594-3210 www.strawblanket.com
BX Inlet Sediment Boxes	BX Civil and Construction Dell Rapids, SD Phone: 1-605-428-5483 bx-cc.com

TABLE OF SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

Station	L/R	Quantity (Each)
89+97.4	R	1
89+65.4	R	1
	Total:	2

STREET SWEEPING

Vehicle tracking of sediment from the construction site shall be minimized. Street sweeping shall be used if erosion and sediment control best management practices are not adequate to prevent sediment from being tracked onto the street.

The Contractor shall use a pickup broom having integral self-contained storage to clean the roadway. The pickup broom used shall be a minimum of 6 feet wide and have working gutter brooms.

At a minimum, sweeping will be required:
1. Prior to opening any segment or roadway to traffic.
2. Following pavement grooving operations and prior to the application of the pavement marking tape.

All costs for cleaning the roadway with a pickup broom shall be incidental to the contract unit price per hour for “Sweeping”.

CONSTRUCTION ENTRANCE

The Contractor shall install a Construction Entrance at locations where there is a potential for mud tracking and sediment flow from the construction site and work area onto a paved public roadway.

It is the Contractor's option to use the SDDOT Construction Entrance (See SDDOT Construction Entrance notes and details), a product from the list provided in these notes, or other products or processes as approved by the Engineer during construction.

If the Contractor elects to use one of the products listed in the table, then the Contractor shall install the construction entrance product in accordance with the manufacturer's installation instructions or as directed by the Engineer.

The Contractor shall maintain the construction entrance such that mud tracking and sediment flow will not enter the roadway or adjacent drainage areas. The construction entrance shall be routinely inspected and the Contractor shall repair or replace material as deemed necessary by the Engineer.

All costs for furnishing, installing, maintaining, and removal of the construction entrance including equipment, labor, materials, and incidentals shall be included in the contract unit price per each for "Construction Entrance".

The following table is a list of known construction entrance products available for use:

Product	Manufacturer
Grizzly Rumble Grate (10' width and 24' length required)	Trackout Control, LLC Tempe, AZ Phone: 1-800-761-0056 www.trackoutcontrol.com
Rumble Grid (12' width and 24' length including combination of grids and ramps required)	Pro-Tec Equipment, Inc. Charlotte, MI Phone: 1-800-292-1225 www.pro-tecequipment.com

SDDOT CONSTRUCTION ENTRANCE

If the SDDOT Construction Entrance is utilized, then the Contractor shall install the SDDOT Construction Entrance in accordance with these notes and the detail drawings.

Pit run material shall be obtained from a granular source and shall conform to the following gradation:

Sieve Size	Percent Passing
6"	100%
#4	0-60%
#200	0-20%

The pit run material shall be compacted to the satisfaction of the Engineer.

The aggregate for the granular material shall conform to the following gradation requirements:

Sieve Size	Percent Passing
3"	100%
2 ½"	90-100%
1 ½"	25-60%
¾"	0-10%
½"	0-5%

The granular material shall be placed in 6" maximum lifts.

It is anticipated that the granular material will need to be periodically removed and replaced as it becomes inundated with mud and sediment.

The reinforcement fabric (MSE) shall conform to Section 831 of the Specifications. The MSE geotextile shall be on the Approved Products List for this material or will be certified by the supplier to meet this specification prior to installation.

The reinforcement fabric (MSE) should be kept as taut as possible prior to placing.

Equipment shall not be allowed on the reinforcement fabric (MSE) until the first lift of granular material is in place.

All seams in the reinforcement fabric (MSE) shall be overlapped at least 2' and shingled.

GENERAL PERMANENT SIGNING NOTES

Signs that are to be installed shall be staked in the field by the Contractor and checked by the Engineer. The Contractor shall give the Engineer a minimum of one week to check staked locations prior to sign/post installation.

The Contractor shall be responsible for contacting South Dakota One Call to locate the utilities at the staked sign installation locations.

Prior to ordering sign posts, the Contractor shall verify post lengths. The height of the post shall not exceed the minimum height needed by more than 0.5 feet. Any portion that extends above the sign shall be cut off. No separate payment will be made for cutting the post or for that length cut off.

Prior to ordering signs, the Contractor shall verify dimensions, background, border, and legend of the signs.

NEW PERMANENT SIGNING

New signs for installation are summarized in the Sign Table.

Sign Design

Signs shall be constructed as required per the Manual on Uniform Traffic Control Devices (MUTCD), the latest edition of "Standard Highway Signs", and as specified on the Special Sign Design sheets.

All upper/lower case letters and numerals shall be as required per the MUTCD, the latest edition of "Standard Highway Signs", and as illustrated on the Special Sign Design sheets.

The Contractor shall furnish the Aberdeen Region Traffic Engineer (P.O. Box 1767; Aberdeen, SD 57402) with a detailed sign layout sheet for each sign shown. These detailed sign layouts shall be approved by the Region Traffic Engineer prior to ordering the signs.

Sign Sheeting

All signs shall be manufactured in accordance with the sheeting manufacturer's recommendations utilizing a matched component system, including inks, electronic cuttable films, and protective overlay films. Digitally printed signs will not be accepted.

Sign Installation Hardware

Aluminum U-Channel stiffeners shall be used on all standard highway signs greater than 36 inches in width and shall conform to Alloy 6063-T6 or 6061-T6. The U-Channel shall be 2 inches in width and free of holes. The U-Channel stiffeners shall also be used to connect various signs together so that an entire sign assembly can be erected on a single installation.

Stiffeners may be fastened to signs by use of ¼ inch diameter drive rivets.

Refer to the Breakaway Sign Supports diagram for typical sign and stiffener details.

The Contractor shall use 3/8 inch diameter rust proof machine sign bolts, flat metal washers, neoprene washers (against the sign sheeting), lock washers, and nuts to fasten the sign to the channel aluminum and posts. A minimum of two bolts shall extend through each post.

All costs associated with furnishing and installing the new permanent signs, and with furnishing and installing stiffeners and hardware shall be incidental to the contract unit price per square foot for Flat Aluminum Sign, Nonremovable Copy High Intensity.

SQUARE TUBE ANCHOR SLEEVE

The Contractor shall furnish and install new square tube anchor sleeve as follows:

2.5" x 18", 12 Gauge square tube anchor sleeve, (or equivalent components as approved by the Engineer).

A 2.25" x 2.25" x 4' perforated tube post (12 Gauge) shall be used as the anchor post for installation with the square tube anchor sleeve.

OVERHEAD AND POLE MOUNTED SIGNS

The Contractor shall install the new overhead signs on the existing double beam type brackets with new connection hardware and mast arm mounting hardware.

Signs that are mounted on luminaire, utility, and signal poles, and on signal mast arms shall be attached with high strength stainless steel bands or galvanized pole clamps, and signs shall be attached as recommended by the manufacturer. All sign mounting hardware shall be stainless steel or galvanized steel. Pole mounted signs shall be mounted a minimum of 7 ft above the ground.

Mounting heights are measured to the bottom of the signs.

Costs for pole and mast arm sign mounting hardware shall be incidental to the contract unit price per square foot for Flat Aluminum Sign, Nonremovable Copy High Intensity.

COLD APPLIED PLASTIC PAVEMENT MARKING

All materials shall be applied as per the manufacturer's recommendations.

Cold Applied Plastic Pavement Markings shall be 3M Series 380 AW or an approved equal.

GROOVING FOR COLD APPLIED PLASTIC PAVEMENT MARKING

The Contractor shall establish a positive means for the removal of the grinding and/or grooving residue. Residue from dry grooving shall be vacuumed. Solid residue shall be removed from the pavement surfaces before being blown by traffic action or wind. Residue from wet grooving shall not be permitted to flow across lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, shall be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state. All costs for removal of grinding and/or grooving residue shall be included in the contract unit price per foot for "Grooving for Cold Applied Plastic Pavement Marking".

SUPPLYING AS BUILT PLANS

If the traffic signal systems or roadway lighting systems are constructed differently than what is stated in the plans, the Contractor shall supply as built plans to the Engineer and a copy shall be sent to the Traffic Design Engineer. The as built plans may include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans.

INCIDENTAL WORK

Incidental work includes, but is not limited to, the restoration of all disturbed areas to the satisfaction of the Engineer.

SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor shall submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications.

Adobe PDF submittals shall be sent to the following email addresses:

Corey.Pinkley@state.sd.us
Pete.Longman@state.sd.us

ON-SITE INSPECTION

An on-site inspection of the traffic signal shall be conducted before acceptance of the project, once the traffic signal is completed and operational. The on-site inspection shall be conducted by the Project Engineer or Region Traffic Engineer with the Contractor, City Traffic Engineer, and the Traffic Design Engineer present.

SALVAGE SIGNAL EQUIPMENT

Existing signal equipment shall be salvaged and delivered to the City of Aberdeen by the Contractor. The Contractor shall notify the City 5 days before the delivery of the salvaged signal equipment. The City contact is Brad Holm at (605) 216-4622.

All costs for work involved in the salvage and delivery of the existing signal equipment shall be incidental to the contract lump sum price for “Salvage Signal Equipment”.

REMOVE LUMINAIRE POLE FOOTING

The footings of existing luminaire poles EL1-EL3 shall be removed by the Contractor to a minimum of 2’ below the ground surface. Restoration of the disturbed area shall be to the satisfaction of the Engineer.

All costs for removing the footings of the existing luminaire poles shall be incidental to the contract unit price per each for “Remove Luminaire Pole Footing”.

REMOVE AND RESET LUMINAIRE POLE

Existing luminaire pole EL1 shall be removed and reset as REL1 as shown on the plan sheets. The existing anchor bolts were a j-hook style which is no longer acceptable. A recommendation from the manufacturer will be required to be supplied to the Engineer for the design of the anchor bolts.

Existing luminaire poles EL2–EL3 shall be removed and reset as REL2-REL3 as shown on the plan sheets. A recommendation from the manufacturer will be required to be supplied to the Engineer for the design of the anchor bolts.

It shall be the Contractor’s responsibility to obtain the bolt circle pattern and anchor bolts for the relocated poles from the pole manufacturer listed below. Pole EL1 was originally installed under Project F 0012(73)291, Drawing No. BSD46098. Poles EL2-EL3 were originally installed by Target. The part number for poles EL2-EL3 is BB36827.

Valmont Industries, Inc.
P.O. Box 358
Valley, NE 68064
Phone (402) 359-2201

Luminaire poles and luminaires damaged during relocation shall be repaired or replaced by the Contractor at no cost to the State.

All costs involved with removing and resetting the existing luminaire poles including new anchor bolts with associated hardware, shall be incidental to the contract unit price per each for “Remove and Reset Luminaire Pole”.

TABLE OF FOOTING DATA

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
A4	2’ - 0”	6’ - 0”	1’ - 8”	44’ - 3”	8-#7 x 5’ - 6”
REL1	2’ - 0”	8’ - 0”	1’ - 8”	54’ - 9”	8-#7 x 7’ - 6”
REL2-REL3	2’ - 6”	15’ - 0”	2’ - 2”	98’ - 3”	12-#7 x 14’ -6”
A1-A3, A5	3’ - 0”	12’ - 0”	2’ - 8”	120’ - 9”	14-#8 x 11’ -6”

* Footing depth shall be below ground level. Exception: Footings for REL2-REL3 shall have a 12’ below ground depth and 3’ above ground height.
** The size of all spirals shall be #3.

FOOTING DATA

During construction of the cylindrical footings, concrete placement operations should closely follow excavation procedures. The longer the excavations are left open the more likely caving may occur.

Concrete shall not be dropped through standing water. If water is present in the excavation it shall be removed prior to concrete placement or the concrete shall be tremied.

PEDESTAL SIGNAL POLES

Pedestal signal poles may be aluminum. Aluminum poles shall conform to the following requirements:

Aluminum shall conform to ASTM B221, Alloy 6061, and Temper T6.

Poles shall be round with a minimum outside pole diameter of 4 inches, and the pole assembly shall have a square, cast aluminum base with aluminum access door. The base shall conform to the breakaway requirements of NCHRP 350 or MASH. A grounding lug shall be provided in the base.

The pole to base connection shall be a threaded connection; threads shall be 8 TPI, NPT. A collar (integral or non-integral) to prevent wind-induced loosening of pole shall be provided. All bolt and connection threads shall be coated with a commercially available anti-seize compound intended for use in aluminum-to-aluminum and steel-to-aluminum connections.

The pole finish shall either be brushed satin or spun. The top of the pole shall be sealed by the traffic signal head mounting hardware or by an aluminum cap.

Measurement and payment for aluminum poles shall be as specified in Specifications Section 635.

INSTALL SIGNAL POLE WITH MAST ARM AND LUMINAIRE ARM

The signal poles, mast arms, and luminaire arms will be furnished by the SDDOT and installed by the Contractor. The total cost of the furnished items for tax purposes is $32,337.00.

Signal poles, mast arms, luminaire arms, and luminaire poles with arms shall be installed by the Contractor as indicated on the Signal Layout and Conduit Layout Sheets. The signal poles, mast arms, luminaire arms, and luminaire poles with arms are located in the SDDOT Aberdeen Region Yard. The Contractor shall be responsible for transporting the signal poles, mast arms, luminaire arms, and luminaire poles with arms from the SDDOT Aberdeen Region Yard to the sites indicated on the Signal Layout and Conduit Layout Sheets. The Contractor may contact the Area Engineer for signal pole, mast arm, luminaire arm, and luminaire poles with arms pick up information. The Area Engineer is Phil Dwight, (605) 626-7898.

All work involved in installing and transporting the signal poles, mast arms, luminaire arms, shall be incidental to the contract unit price per each for “Install Signal Pole with Mast Arm and Luminaire Arm”.

LUMINAIRES

Luminaires shall be High Pressure Sodium, medium, semi-cutoff, type III.

Three copies of the isofootcandle charts and utilization curves shall be furnished to the Engineer for approval. The Contractor must get approval from the Engineer prior to installation of the luminaires.

The approved isofootcandle data for each case shall be used to determine the correct socket position at each site. Each luminaire shall be installed with its lamp socket in the proper position and in a level attitude.

TRAFFIC SIGNAL METER SOCKETS

The meter sockets provided for traffic signals by the Contractor shall be a 200 amp, positive by-pass.

MULTICONDUCTOR CONTROL CABLE FOR SIGNAL CIRCUITS

The cable furnished for signal circuits shall be furnished with the number and size of the conductors shown in the plans and shall meet the specifications for either of the two types specified below.

1. General Purpose Control Cable with stranded copper conductors, ICEA S-61-402, PE-PV Insulated (20-10), 600 volts.

2. General Purpose Control Cable, with standard copper conductors, Aerial and Duct., IMSA 20-1, 600 volts.

The Conductor Jackets for the above cables shall be color coded in accordance with ICEA S-73-532 Table E2.

SIGNAL BACKPLATES

Signal backplates shall extend not less than 5 inches from the edge of the signal head at the top, bottom, and sides. The bottom of the backplate on vehicle signal faces mounted directly above pedestrian signal indications shall be sized to permit the separate adjustment of the vehicle and pedestrian signal indication and may be less than 4 inches.

TRAFFIC SIGNAL CONTROLLER

Vehicle detectors W1-W3, N1-N6, E1-E3, and S1-S9 shall operate in the presence (non-locking) mode and shall have call delay timing capability. The call delay feature shall be inhibited by the controller. Set these detectors to 3 seconds delay.

Vehicle detectors W4,W5,E4,E5 shall operate in the passage (locking) mode

The provision of a USB port on the traffic signal controller is optional.

The Contractor is responsible for programming controllers with the signal timings provided in these plans.

All costs for constructing the concrete pad and footing, materials, labor, and furnishing and installing the controller cabinet shall be incidental to the contract unit price per each for “Traffic Signal Controller”.

CONTROLLER PROGRAMMING

The Contractor shall furnish the Region Traffic Design Office with a copy of the data programmed into the Controller prior to the full operation of the Controller for approval. The address is as follows:

Corey Pinkley
Region Traffic Engineer
Aberdeen region
P.O. Box 1767
Aberdeen, SD 57402

BATTERY BACKUP CABINET

The Contractor shall supply a cabinet with concrete pad and footing for housing the battery backup at the traffic signal controller at the intersection of US 12 and Lamont St. S. The cabinet shall be an aluminum NEMA 3R type. The cabinet shall be securely attached to the concrete pad with steel anchors and to the side wall of the controller cabinet using chase nipples as approved by the Engineer.

ELECTRICAL SERVICE CABINET WITH SECONDARY DISCONNECT

The electrical service cabinet shall be a standard electrical service cabinet located adjacent to the power source.

The contractor shall install a Nema 3R rainproof, 60 amp rated, non-fused safety switch (with lock) adjacent to the traffic signal cabinet. The secondary disconnect shall be mounted on a galvanized steel post in accordance with Standard Plate 635.41.

PEDESTRIAN PUSH BUTTON POLE

Pedestrian push button poles shall be one of the following types, or an approved equal:

Product	Manufacturer
Crosswalk Pedestal CP6ACT4840TCSS	Frey Manufacturing Corp. Norwood, MN 55368-9675 Phone: 1-952-467-4402 www.freymfgcorp.com
Ped Poles SP-3022-NY-SP0001	Pelco Products, Inc Edmond, OK 73013 Phone: 1-405-340-3434 www.pelcoinc.com

Phase 1 Traffic Control

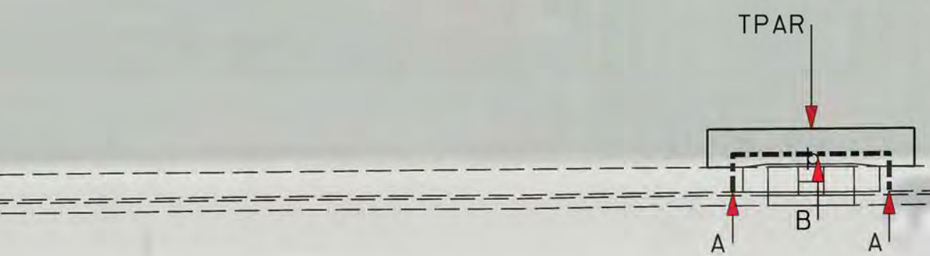
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	22	83

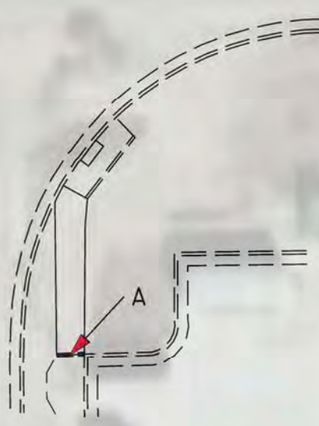
Plotting Date: 05/13/2016

A — Longintudinal Pedestrian Barricade With Sidewalk Closed Sign

B — Special Sign "No 6th Ave Crossing Ahead"

—--- Longitudinal Pedestrian Barricade





PLOT SCALE - 1:30

PLOTTED FROM - TRAB18004

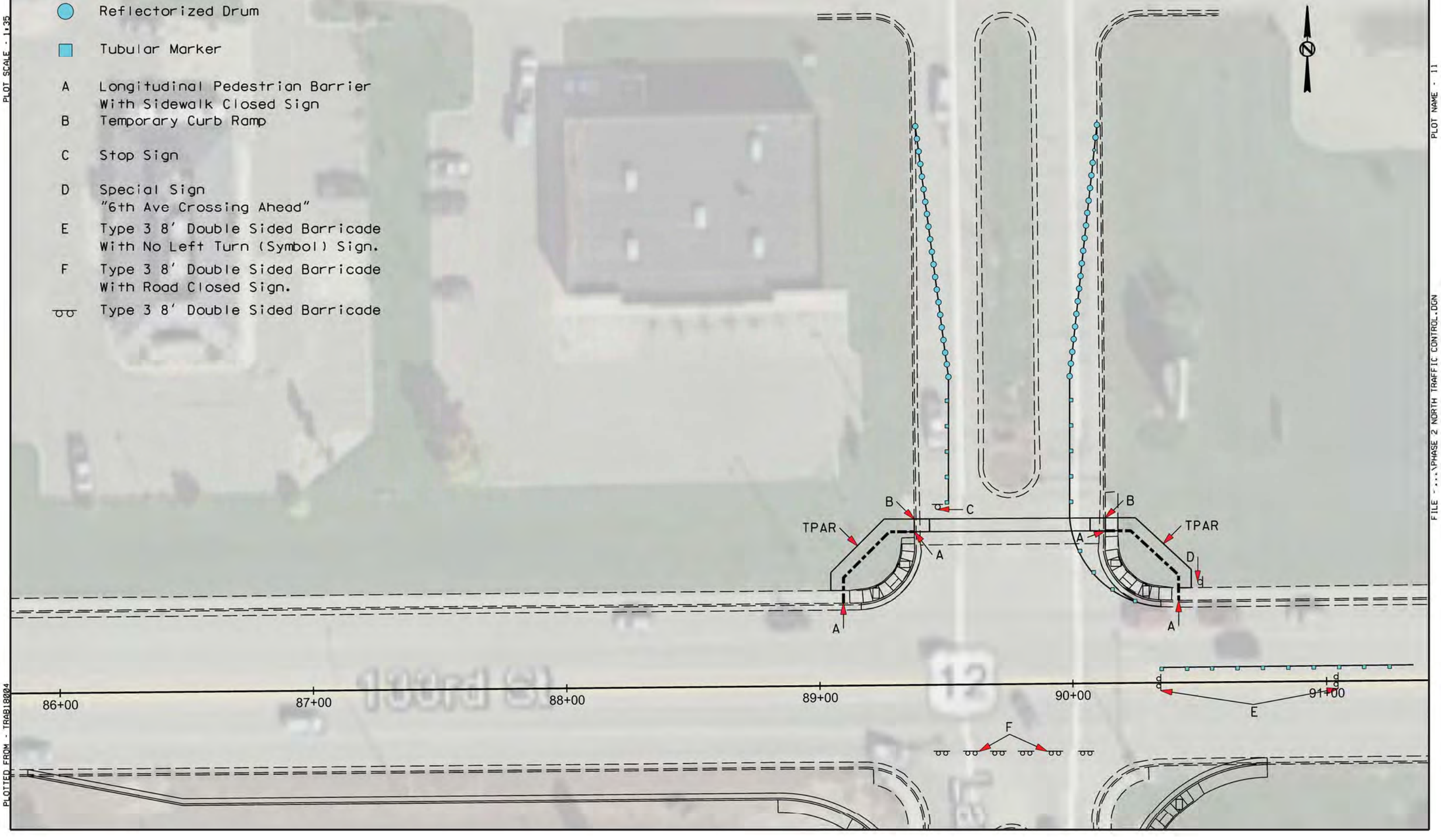
PLOT NAME - 10

FILE - ...\PRJ\BRWN13P0\PHASE 1 TC.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	23	83
Plotting Date: 05/13/2016			

Phase 2 Traffic Control

- Reflectorized Drum
- Tubular Marker
- A Longitudinal Pedestrian Barrier With Sidewalk Closed Sign
- B Temporary Curb Ramp
- C Stop Sign
- D Special Sign "6th Ave Crossing Ahead"
- E Type 3 8' Double Sided Barricade With No Left Turn (Symbol) Sign.
- F Type 3 8' Double Sided Barricade With Road Closed Sign.
- oo Type 3 8' Double Sided Barricade



PLOT SCALE - 1:35

PLOT NAME - 11

FILE -...\PHASE 2 NORTH TRAFFIC CONTROL.DGN

PLOTTED FROM - TRAB18024

Phase 2 Traffic Control

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	24	83

Plotting Date: 05/13/2016

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

A Longitudinal Pedestrian Barrier With Sidewalk Closed Sign

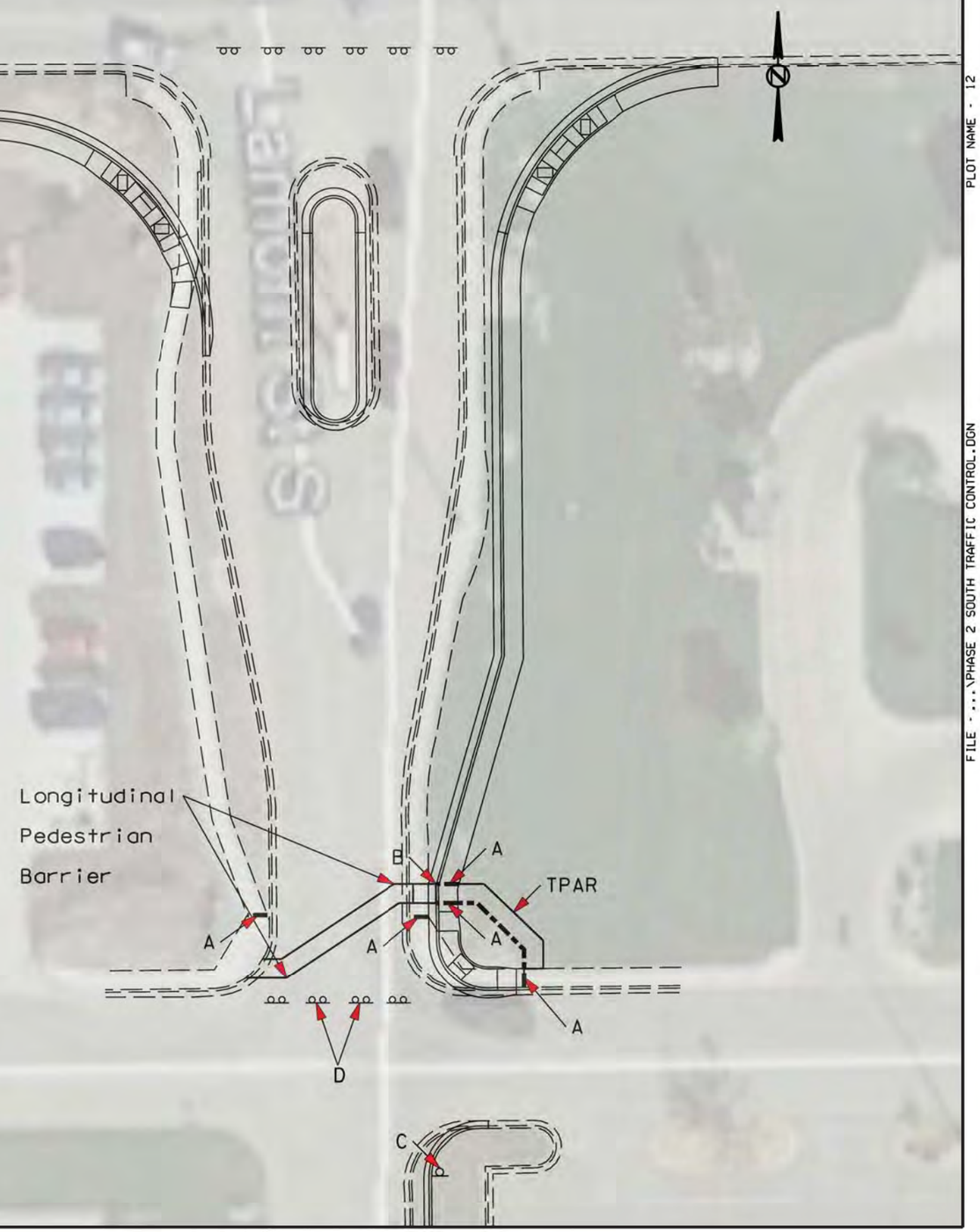
B Temporary Curb Ramp

C Stop Sign

D Type 3 8' Double Sided Barricade With Road Closed Sign

Type 3 8' Double Sided Barricade

Longitudinal Pedestrian Barricade



PLOT SCALE - 1:35

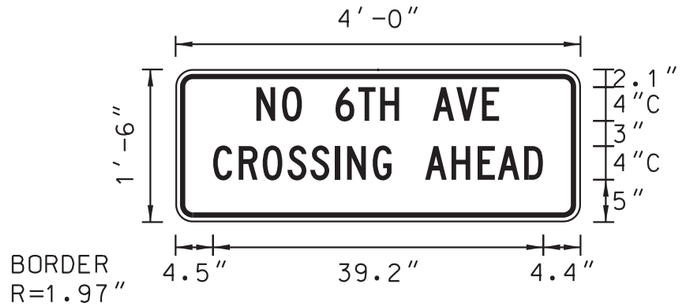
PLOT NAME - 12

FILE - ...\PHASE 2 SOUTH TRAFFIC CONTROL.DGN

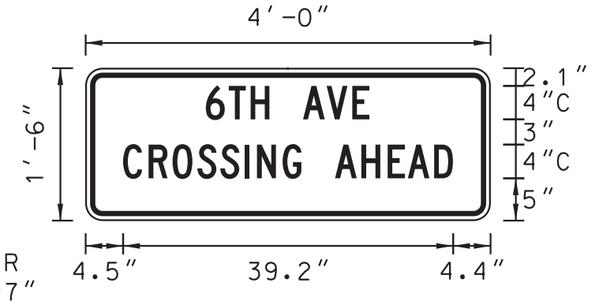
PLOTTED FROM - TRAB18004

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	25	83
Plotting Date: 05/16/2016			

DETOUR SIGN DESIGN



BORDER
R=1.97"
TH=0.47"
IN=0.47"



BORDER
R=1.97"
TH=0.47"
IN=0.47"

All signs on this sheet shall have a orange background with black legend and black border

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	26	83

Plotting Date: 05/16/2016

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

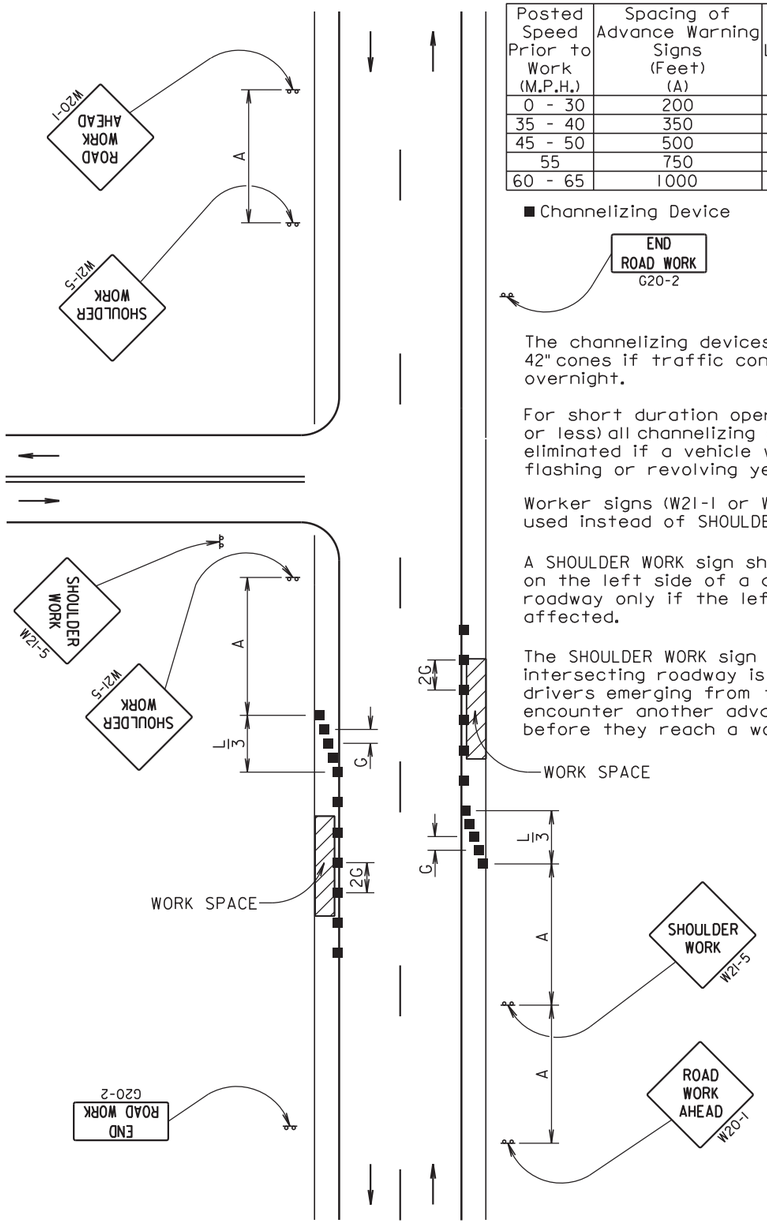
The channelizing devices shall be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

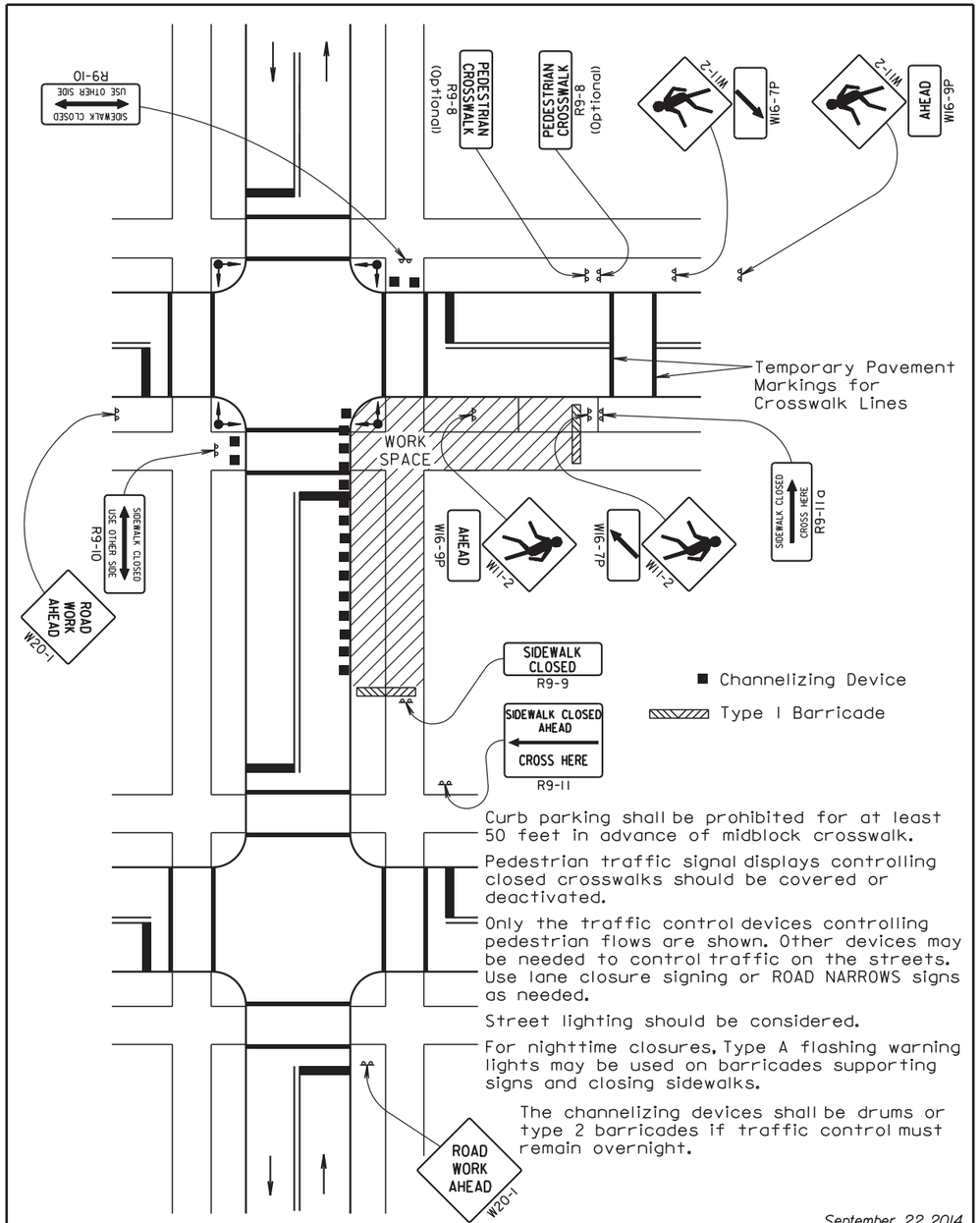
A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.



September 22, 2014

Published Date: 2nd Qtr. 2016	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS	PLATE NUMBER 634.03
			Sheet 1 of 1



Curb parking shall be prohibited for at least 50 feet in advance of midblock crosswalk.

Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.

Only the traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets. Use lane closure signing or ROAD NARROWS signs as needed.

Street lighting should be considered.

For nighttime closures, Type A flashing warning lights may be used on barricades supporting signs and closing sidewalks.

The channelizing devices shall be drums or type 2 barricades if traffic control must remain overnight.

September 22, 2014

Published Date: 2nd Qtr. 2016	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES SIDEWALK CLOSURES AND PEDESTRIAN DETOURS	PLATE NUMBER 634.33
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	27	83
Plotting Date: 05/16/2016			

Only the traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets. Use lane closure signing or ROAD NARROWS signs, as needed.

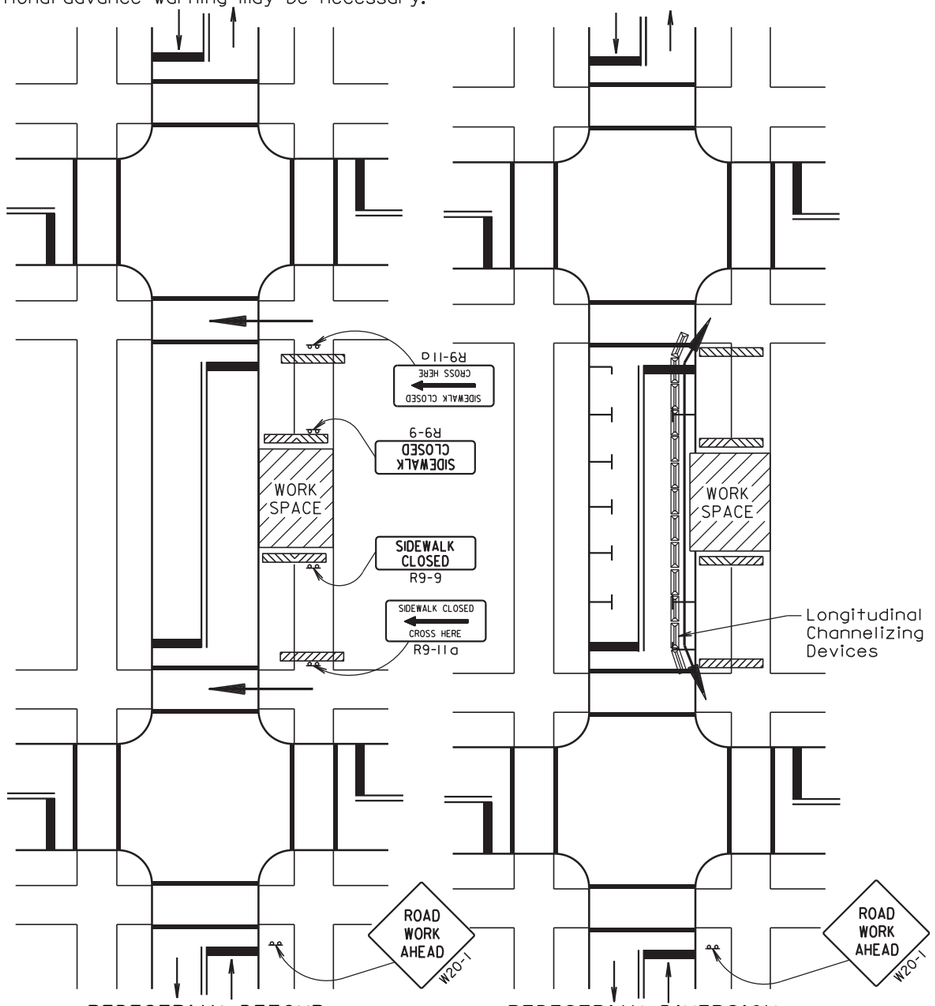
Signs may be placed along a temporary diversion to guide or direct pedestrians. Examples include KEEP RIGHT and KEEP LEFT signs.

Additional advance warning may be necessary.

For nighttime closures, Type A flashing warning lights may be used on barricades supporting signs and closing sidewalks. Type C steady-burn lights may be used on channelizing devices separating the temporary pedestrian diversion from vehicular traffic.

Street lighting should be considered.

Type I Barricade and



September 22, 2014

Published Date: 2nd Qtr. 2016	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES PEDESTRIAN DETOUR AND PEDESTRIAN DIVERSION	PLATE NUMBER 634.34 Sheet 1 of 1

ROAD WORK AHEAD W20-1

- ◎ Reflectorized Drum
- ■ Channelizing Device
- (4 W) 4" White Temporary Pavement Marking

Urban areas and intersecting streets may limit sign spacing.

The length of A and L may be adjusted to fit field conditions.

Temporary pavement markings shall be used if traffic control must remain overnight.

The channelizing devices shall be 42" cones or drums.

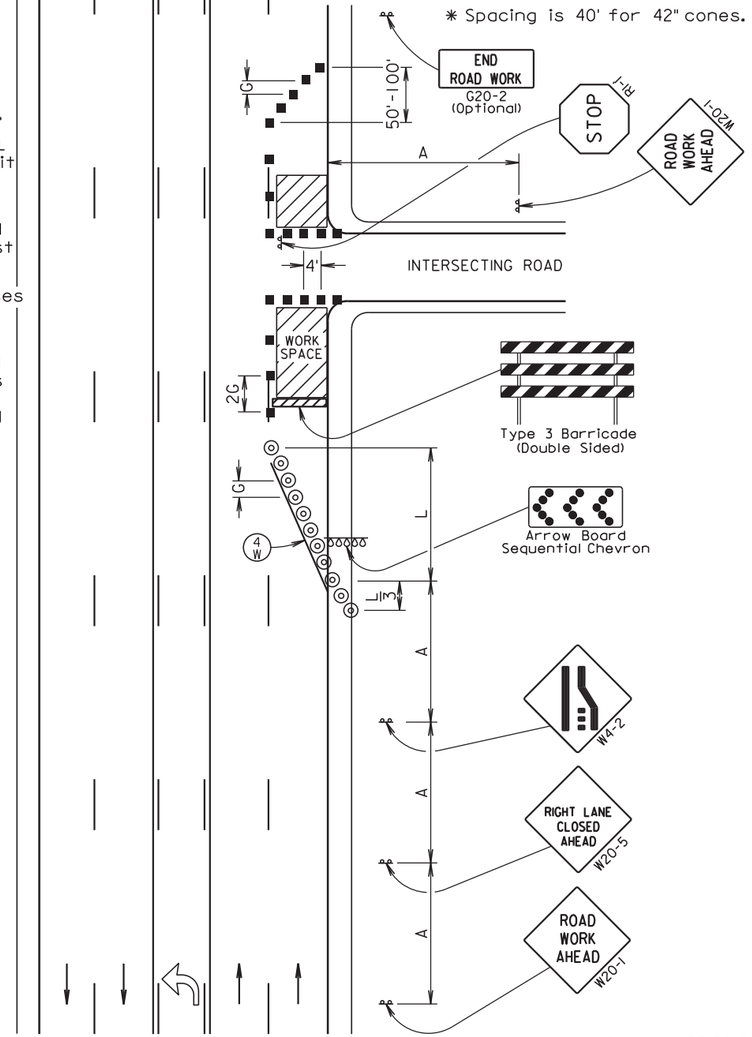
42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

Additional channelizing devices at 4' spacing may be needed to control traffic entering and leaving intersections.

END ROAD WORK (Optional) G20-2

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50 *
55	750	660	50 *
60 - 65	1000	780	50 *

* Spacing is 40' for 42" cones.

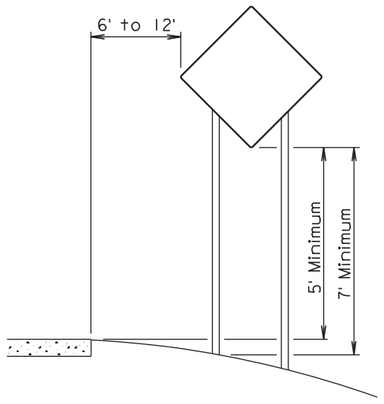


September 22, 2014

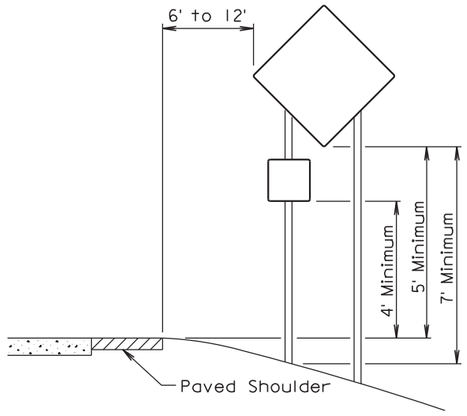
Published Date: 2nd Qtr. 2016	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES 5-LANE, OUTSIDE LANE CLOSED	PLATE NUMBER 634.60 Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	28	83

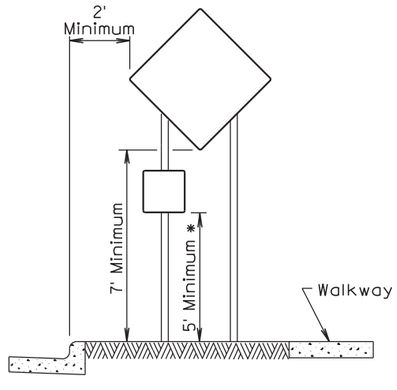
Plotting Date: 05/16/2016



RURAL DISTRICT

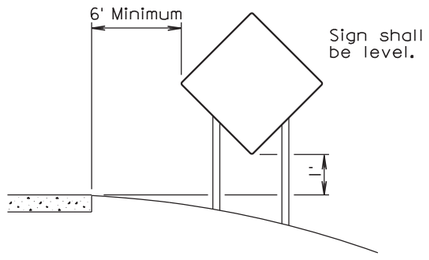


RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

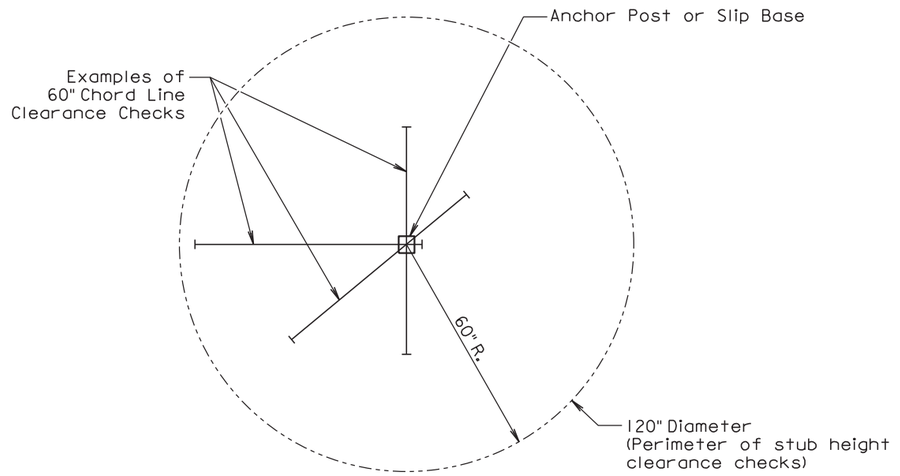


RURAL DISTRICT
3 DAY MAXIMUM

(Not applicable to regulatory signs)

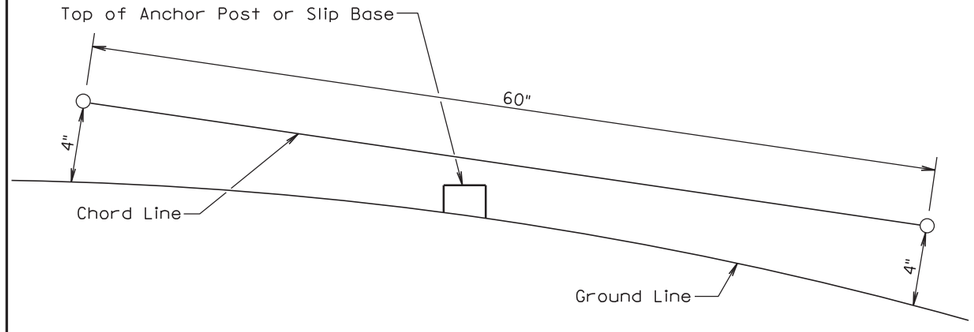
September 22,2014

Published Date: 2nd Qtr. 2016	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW

(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

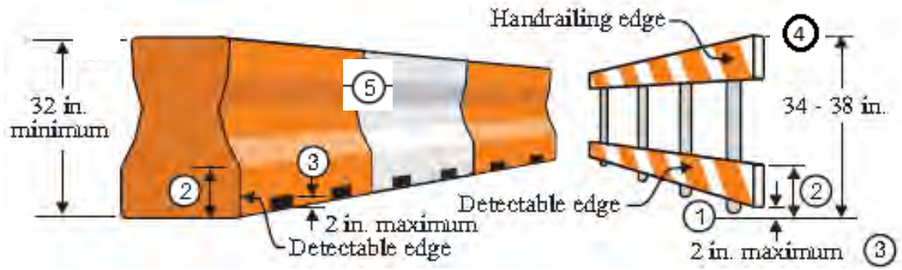
The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

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

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

Published Date: 2nd Qtr. 2016	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1



Longitudinal Pedestrian Barrier **Longitudinal Pedestrian Barricade**

1. Barricade rail supports may not extend into the pedestrian walkway more than 4 inches from the face of the barricade.

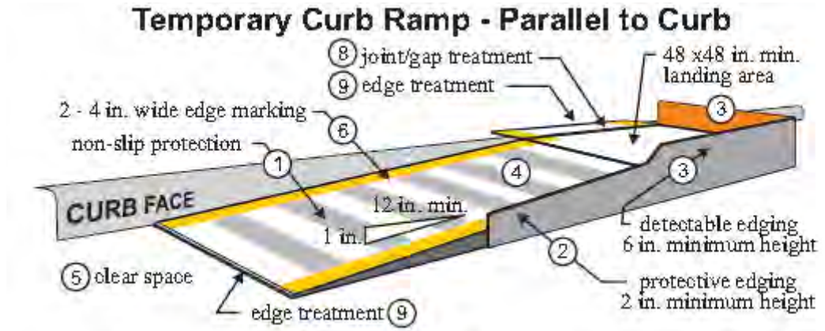
2. The top edge of the bottom portion shall be a minimum of 8 inches above the walkway.

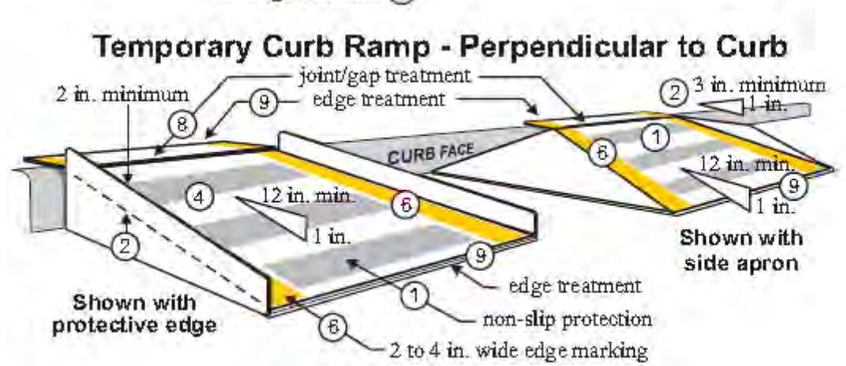
3. Devices shall not block water drainage from the walkway. A gap height or opening from the walkway surface up to a maximum of 2 inches in height is allowed for drainage purposes.

4. The top edge of the Longitudinal Pedestrian Barricade is to be used as a guiderail to provide visual and tactile guidance to pedestrians along a designated route. The top surface should have a minimum width of 0.5 inches to allow the hand to feel the surface. The surface should be smooth and free of any sharp or abrasive elements to allow safe hand trailing.

5. Longitudinal Pedestrian Barrier used to provide positive protection from traffic to pedestrians should be crashworthy.

6. When either device is combined in a series, the maximum gap between devices that do not interlock shall be 1 inch. Joints between devices that do interlock should be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing.





NOTES:

1. Curb ramps shall be 48 inch minimum width with a firm, stable, and non-slip surface.
2. Protective edging with a 2 inch minimum height shall be installed when the curb ramp or landing platform has a vertical drop of 6 inches or greater or has a side apron slope steeper than 1:33 (33%). Protective edging should be considered when curb ramps or landing platforms have a vertical drop of 3 inches or more.
3. Detectable edging with 6 inches minimum height and contrasting color shall be installed on all curb ramp landings where the walkway changes direction (turns).
4. Curb ramps and landings should have a 1:50 (2%) maximum cross slope.
5. A minimum clear space of 48 inch x 48 inch minimum shall be provided above and below the curb ramp, with a 60 inch x 60 inch clear space preferred.
6. 6. The curb ramp walkway edge shall be marked with a contrasting color 2 to 4 inch wide marking. The marking is optional where color contrasting edging is used.
7. Water flow in the gutter system shall have minimal restriction.
8. Lateral joints or gaps between surfaces shall be less than 0.5 inches in width.
9. Changes between surface heights should not exceed 0.5 inches. Lateral edges should be vertical up to 0.25 inches in height, and beveled at 1:2 between 0.25 inches and 0.5 inches in height.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	30	83

Plotting Date: 05/16/2016

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	2	30" x 30"	6	12
R3-1	NO RIGHT TURN (symbol)	2	24" x 24"	4	8
R3-2	NO LEFT TURN (symbol)	2	24" x 24"	4	8
R8-3	NO PARKING (symbol)	4	24" x 24"	4	16
R9-9	SIDEWALK CLOSED	10	24" x 12"	2	20
R10-6	STOP HERE ON RED	2	24" x 36"	6	12
R11-2	ROAD CLOSED	4	48" x 30"	10	40
W4-2	LEFT or RIGHT LANE ENDS (symbol)	1	48" x 48"	16	16
W8-17	SHOULDER DROP-OFF (symbol)	2	48" x 48"	16	32
W20-1	ROAD WORK AHEAD	6	48" x 48"	16	96
W20-3	ROAD CLOSED AHEAD	1	48" x 48"	16	16
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	1	48" x 48"	16	16
W20-7	FLAGGER (symbol)	1	48" x 48"	16	16
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			308

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Double Sided	20 Each

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	1 Each

DETOUR SIGNING

Item Description	Quantity
Detour Signing	12 SF

SUBSURFACE UTILITY LOCATIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	31	83

Subsurface utility explorations were done at the following locations. The information below states what was located in the specified areas. This table is provided to aid the Contractor during construction and does not substitute or replace the requirements of SD One Call. All information is approximate and the Contractor shall verify all utility locations before construction in those areas as mandated in SDCL 49-7A.

Test Hole	Station	Offset	Finding	Existing Ground Elev.	Utility Depth (Ft.)	Utility Elevation	Northing	Easting
1a	90+36.94	43.57' L	1 - 4" Steel Gas Runs South/West	1300.18	7.40	1292.78	596623.158	2368487.659
1b	90+36.94	43.57' L	1 - 2" Steel Gas Runs East/West	1300.18	7.40	1292.78	596623.158	2368487.659
2	89+19.26	69.05' R	1 - 1" PE Conduit Electric	1300.16	3.44	1296.72	596509.432	2368371.048
3	89+24.77	67.18' R	1 - 2" Direct Bury Cable F	1300.12	5.30	1294.82	596511.354	2368376.535
4	89+26.87	53.70' R	2 - 1" PE Conduit Electric	1300.12	0.70	1299.42	596524.851	2368378.511
5	90+76.15	36.08' R	3 - 12" PVC Water	1299.75	6.55	1293.2	596543.877	2368527.618
6	90+36.48	35.71' R	1 - 1" Steel Gas	1299.94	5.2	1294.74	596543.877	2368487.949
7	90+39.01	35.51' R	3 - 12" PVC Water	1299.83	6.55	1293.28	596544.100	2368490.470
8	90+42.72	49.24' R	4 - 2" Direct Bury Cable Telephone	1299.45	5.88	1293.57	596530.402	2368494.314

Test Hole Owner Identification Number Codes (First number denotes utility ownership)

1 = Northwestern Energy, 2 = City of Aberdeen Electric, 3 = City of Aberdeen Water, 4 = Century Link / Qwest

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	32	83

HORIZONTAL ALIGNMENT DATA

MAINLINE

Type	Station			Northing	Easting
POB	81+89.0			596550.041	2368527.741
		TL=951.4	N 89°31'40" E		
POE	91+40.4			596580.544	2368591.560

CONTROL DATA

POS 1
FCRD N: 597916.302 E: 2356936.629 Z: 1348.987
CODE refmrk
NOTES city base
NOTE: This is an Edited Record

POS 100
FCRD N: 596444.534 E: 2369863.791 Z: 1300.730
CODE refmrk

POS 101
FCRD N: 596504.880 E: 2369618.394 Z: 1300.952
CODE refmrk

POS 102
FCRD N: 596487.953 E: 2369148.417 Z: 1298.822
CODE refmrk

POS 103
FCRD N: 596933.227 E: 2369106.411 Z: 1298.529
CODE refmrk

POS 104
FCRD N: 596677.581 E: 2368043.307 Z: 1299.526
CODE refmrk

POS 105
FCRD N: 596242.216 E: 2368488.978 Z: 1298.464
CODE refmrk

PHASE 1 REMOVALS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	33	83
Plotting Date: 05/12/2016			

Remove Curb & Gutter

01 Sta 83+30.3, 32.6' L
02 Sta 83+47.3, 32.6' L

Remove Sidewalk

03 Sta 83+25.4, 37.6' L
04 Sta 83+52.3, 37.5' L

81+89 83+00 84+00 12 85+00 86+00

PLOT SCALE - 1:40

PLOTTED FROM - TRAB18024

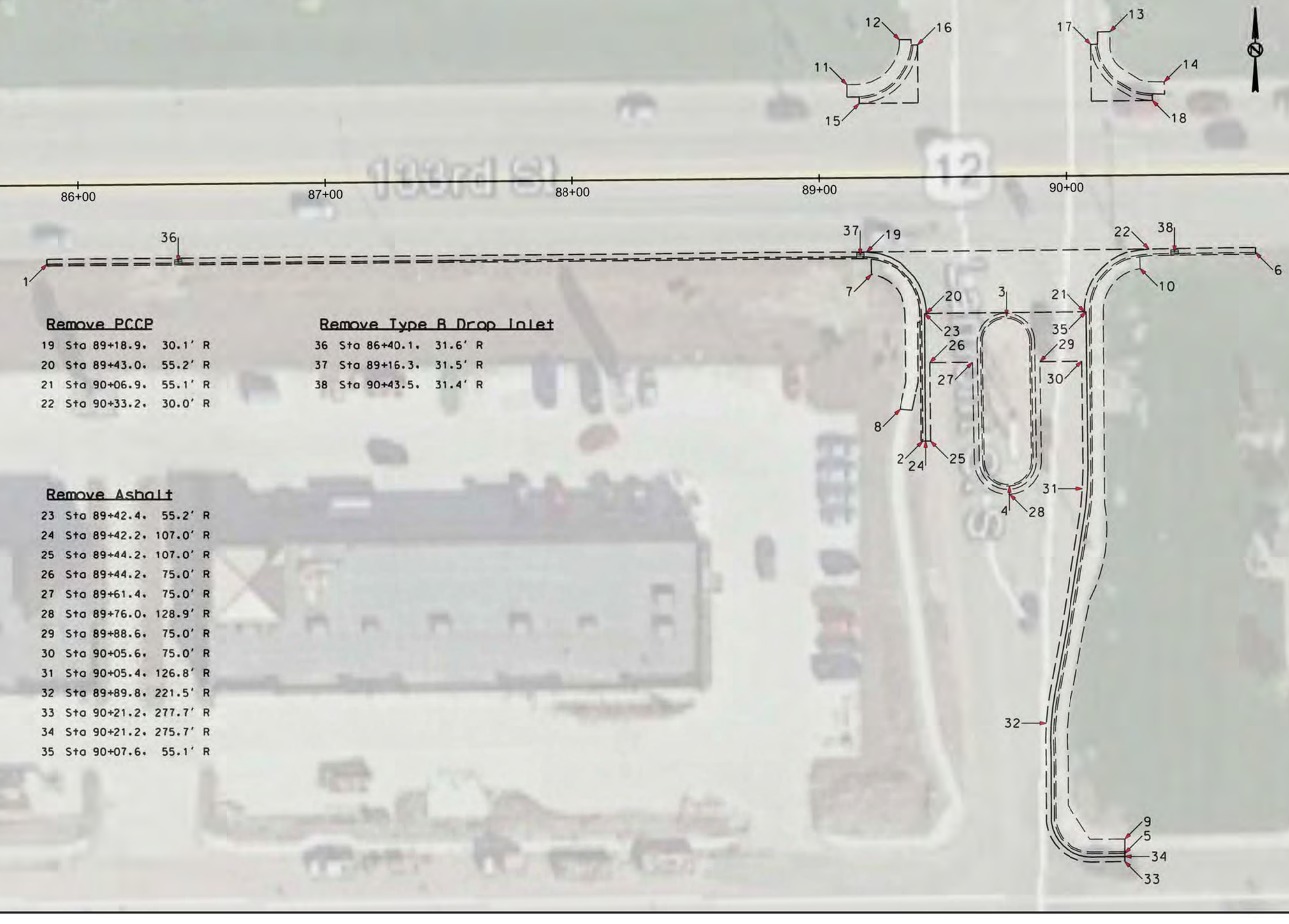
PLOT NAME - 1

FILE - ...\BRWN13P0\PHASE 1 REMOVALS.DGN

PHASE 2 REMOVALS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	34	83

Plotting Date: 05/12/2016



Remove Curb & Gutter

01 Sta 85+87.0. 32.0' R
02 Sta 89+41.1. 107.0' R
03 Sta 89+75.3. 56.7' R
04 Sta 89+75.8. 125.5' R
05 Sta 90+21.2. 274.4' R
06 Sta 90+76.3. 31.8' R

Remove Sidewalk

07 Sta 89+20.8. 39.2' R
08 Sta 89+31.9. 94.1' R
09 Sta 90+21.2. 268.7' R
10 Sta 90+29.6. 37.9' R
11 Sta 89+11.6. 37.6' L
12 Sta 89+32.9. 55.8' L
13 Sta 90+18.3. 58.2' L
14 Sta 90+40.0. 37.6' L

Remove Fillet

15 Sta 89+16.5. 30.0' L
16 Sta 89+40.5. 53.6' L
17 Sta 90+10.5. 53.2' L
18 Sta 90+35.2. 30.1' L

Remove PCCP

19 Sta 89+18.9. 30.1' R
20 Sta 89+43.0. 55.2' R
21 Sta 90+06.9. 55.1' R
22 Sta 90+33.2. 30.0' R

Remove Asphalt

23 Sta 89+42.4. 55.2' R
24 Sta 89+42.2. 107.0' R
25 Sta 89+44.2. 107.0' R
26 Sta 89+44.2. 75.0' R
27 Sta 89+61.4. 75.0' R
28 Sta 89+76.0. 128.9' R
29 Sta 89+88.6. 75.0' R
30 Sta 90+05.6. 75.0' R
31 Sta 90+05.4. 126.8' R
32 Sta 89+89.8. 221.5' R
33 Sta 90+21.2. 277.7' R
34 Sta 90+21.2. 275.7' R
35 Sta 90+07.6. 55.1' R

Remove Type R Drop Inlet

36 Sta 86+40.1. 31.6' R
37 Sta 89+16.3. 31.5' R
38 Sta 90+43.5. 31.4' R

PLOT SCALE - 1:40
PLOTTED FROM - TRAB18004
PLOT NAME - 2
FILE - ...\BRWN13P0\PHASE 2 REMOVALS.DGN

PHASE 3 REMOVALS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	35	83

Plotting Date: 05/12/2016

7th Ave

LaMont St.

Remove Curb & Gutter

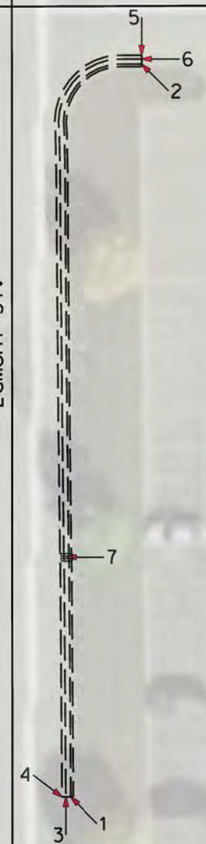
01 Sta 89+92.8. 503.3' R
02 Sta 90+13.5. 309.9' R

Remove Asphalt

03 Sta 89+91.5. 503.3' R
04 Sta 89+90.5. 503.3' R
05 Sta 90+13.5. 307.6' R
06 Sta 90+13.5. 308.6' R

Remove Type B Drop Inlet

07 Sta 89+92.3. 440.1' R



PLOT SCALE - 1:40

PLOTTED FROM - TRAB18004

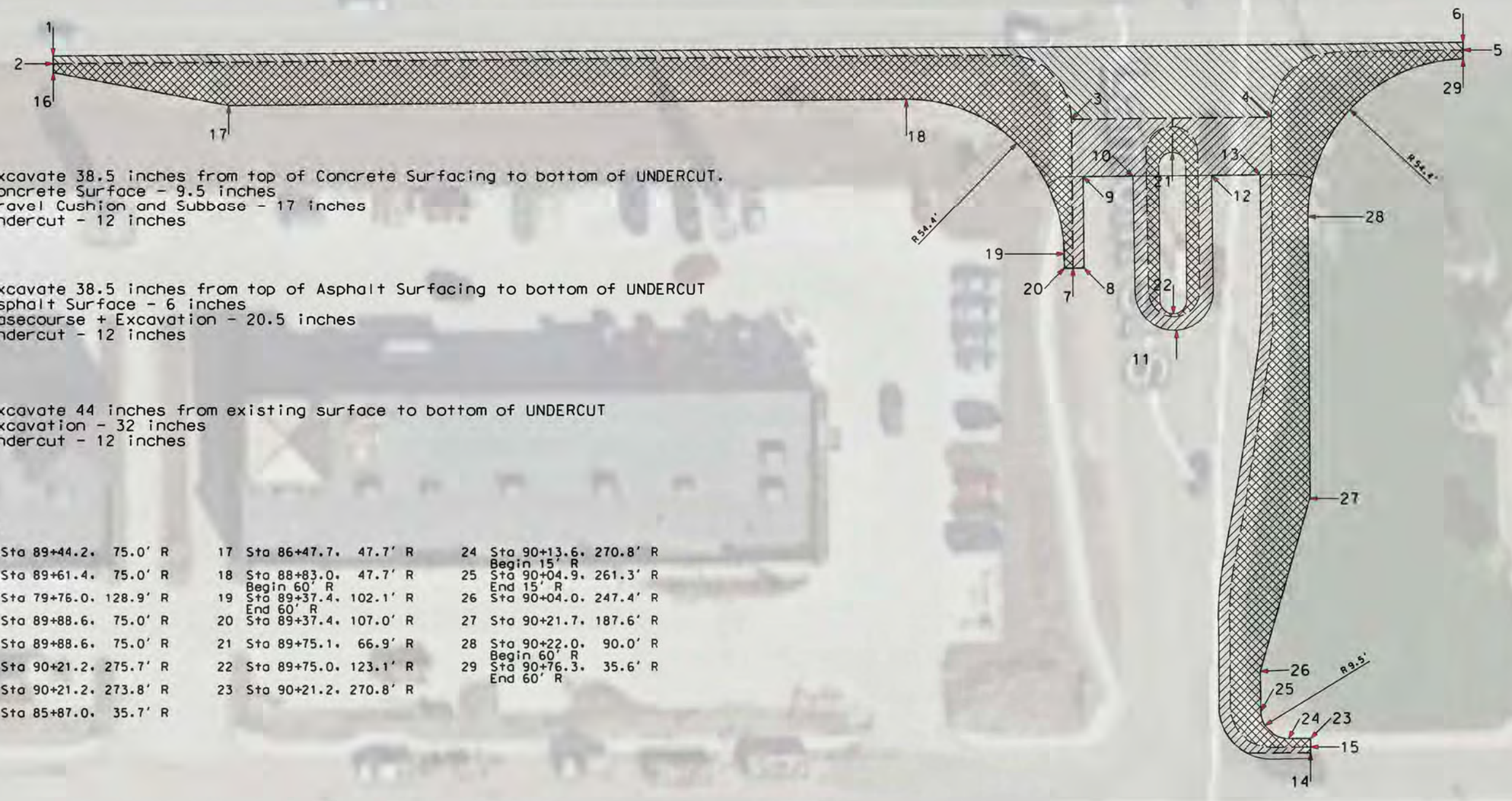
PLOT NAME - 3

FILE - ...\BRWN13P0\PHASE 3 REMOVALS.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	36	83

Plotting Date: 05/13/2016

PHASE 2
Unclassified Excavation



Excavate 38.5 inches from top of Concrete Surfacing to bottom of UNDERCUT.
Concrete Surface - 9.5 inches
Gravel Cushion and Subbase - 17 inches
Undercut - 12 inches

Excavate 38.5 inches from top of Asphalt Surfacing to bottom of UNDERCUT
Asphalt Surface - 6 inches
Basecourse + Excavation - 20.5 inches
Undercut - 12 inches

Excavate 44 inches from existing surface to bottom of UNDERCUT
Excavation - 32 inches
Undercut - 12 inches

Unclassified Excavation

01	Sta 85+87.0. 30.0' R	09	Sta 89+44.2. 75.0' R	17	Sta 86+47.7. 47.7' R	24	Sta 90+13.6. 270.8' R Begin 15' R
02	Sta 85+87.0. 32.6' R	10	Sta 89+61.4. 75.0' R	18	Sta 88+83.0. 47.7' R Begin 60' R	25	Sta 90+04.9. 261.3' R End 15' R
03	Sta 89+40.3. 55.2' R	11	Sta 79+76.0. 128.9' R	19	Sta 89+37.4. 102.1' R End 60' R	26	Sta 90+04.0. 247.4' R
04	Sta 90+09.6. 55.1' R	12	Sta 89+88.6. 75.0' R	20	Sta 89+37.4. 107.0' R	27	Sta 90+21.7. 187.6' R
05	Sta 90+76.3. 32.5' R	13	Sta 89+88.6. 75.0' R	21	Sta 89+75.1. 66.9' R	28	Sta 90+22.0. 90.0' R Begin 60' R
06	Sta 90+76.3. 29.8' R	14	Sta 90+21.2. 275.7' R	22	Sta 89+75.0. 123.1' R	29	Sta 90+76.3. 35.6' R End 60' R
07	Sta 89+40.4. 107.0' R	15	Sta 90+21.2. 273.8' R	23	Sta 90+21.2. 270.8' R		
08	Sta 89+44.2. 107.0' R	16	Sta 85+87.0. 35.7' R				

PHASE 3
Unclassified Excvation

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	37	83

Plotting Date: 05/13/2016

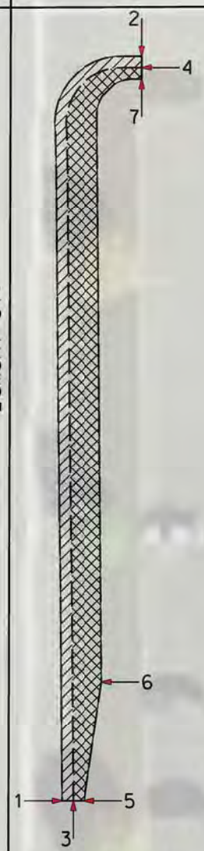
PLOT SCALE - 1:40

7th Ave

LaMont St.

Excavate 38.5 inches from top of Asphalt Surfacing to bottom of UNDERCUT
Asphalt Surface - 6 inches
Basecourse + Excavation - 20.5 inches
Undercut - 12 inches

Excavate 44 inches from existing surface to bottom of UNDERCUT
Excavation - 32 inches
Undercut - 12 inches



Unclassified Excavation

01 Sta 89+90.5. 504.1' R
02 Sta 90+13.5. 307.6' R
03 Sta 89+93.5. 504.1' R
04 Sta 90+13.5. 310.6' R
05 Sta 89+96.5. 504.1' R
06 Sta 90+01.3. 472.7' R
07 Sta 90+13.5. 313.6' R

PLOTTED FROM - TRAB18004

PLOT NAME - 5

FILE - ...\BRWN13P0\PHASE 3 UNDERCUT.DGN

PHASE 1 C&G AND SIDEWALK

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	38	83

Plotting Date: 05/13/2016

Install B69.5 C&G

01 Sta 83+30.3. 32.6' L

02 Sta 83+47.3. 32.6' L

Install 5' wide 5" thick Sidewalk

03 Sta 83+25.4. 37.6' L

04 Sta 83+52.3. 37.5' L

05 Sta 83+38.8. 32.6' L
Center of Type 3 Curb Ramp
and Detectable Warning

06 Sta 83+37.9. 65.3' R

07 Sta 83+37.0. 95.9' R

PLOT SCALE - 1:40

PLOTTED FROM - TRAB18024

PLOT NAME - 6

FILE - ...\PRJ\BRWN13P0\PHASE 1 C&G.DGN

PHASE 2 C&G & SIDEWALK

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	39	83

Plotting Date: 05/13/2016

Install Storm Sewer

72 Sta 86+40.1. 29.7' R
Begin 18" RCP

73 Sta 86+40.0. 40.0' R
End 18" RCP

74 Sta 86+39.7. 41.7' R
2 x 3 Drop Inlet W/Collar
Type B Frame & Grate

75 Sta 89+16.4. 29.8' R
Begin 18" RCP

76 Sta 89+17.2. 48.4' R
End 18" RCP
18" 15 Degree Bend

77 Sta 89+17.1. 49.2' R
Begin 18" RCP

78 Sta 89+16.6. 51.5' R
End 18" RCP

79 Sta 89+15.5. 53.1' R
3 x 4 Drop Inlet w/Collar
Type B Frame & Grate

80 Sta 90+43.5. 29.6' R
Begin 18" RCP

81 Sta 90+43.7. 36.7' R
End 18" RCP
18" 30 Degree Bend

82 Sta 90+43.9. 37.5' R
Begin 18" RCP

83 Sta 90+44.6. 38.7' R
End Install 18" RCP

84 Sta 90+45.5. 40.1' R
3 x 4 Drop Inlet w/Collar
Type B Frame & Grate

Install Curb & Gutter

01 Sta 89+16.5. 30.0' L
Begin 25' R Fillet

02 Sta 89+40.5. 52.6' L
End 25' R Fillet

03 Sta 90+10.5. 52.0' "
Begin 25' R Fillet

04 Sta 90+34.9. 30.1' L
End 25' R Fillet

05 Sta 85+87.0. 32.6' R
Begin B69.5 C&G Taper

06 Sta 86+48.0. 44.7' R
End B69.5 C&G Taper
Begin Str B69.5 C&G

07 Sta 88+83.0. 44.7' R
End Str B69.5 C&G
Begin 60' R B69.5 C&G

08 Sta 89+34.3. 76.2' R
End B69.5 C&G
Begin B66 C&G

09 Sta 89+40.4. 102.1' R
End 60' R B66 C&G
Transition to Ex. C&G

10 Sta 89+40.4. 107.0' R
End C&G

11 Sta 89+69.5. 71.5' R
Begin Str B69.5 C&G

12 Sta 89+69.5. 75.0' R
End Str B69.5 C&G
Begin Str B66 C&G

13 Sta 89+69.4. 118.5' R
End Str B66 C&G
Begin 8' R B66 C&G

14 Sta 89+80.6. 118.6' R
End 8' R B66 C&G
Begin Str B66 C&G

15 Sta 89+80.7. 75.0' R
End Str B66 C&G
Begin Str B69.5 C&G

16 Sta 89+80.7. 71.5' R
End Str B69.5 C&G
Begin 8' R B69.5 C&G

17 Sta 90+21.2. 273.8' R
Transition from Ex.

18 Sta 90+16.2. 274.4' R
End Transition
Begin Str B66 C&G

19 Sta 90+13.6. 274.4' R
End Str B66 C&G
Begin 15' R B66 C&G

20 Sta 90+00.4. 261.3' R
End 15' R B66 C&G
Begin Str B66 C&G

21 Sta 90.01.0. 247.0' R
End Str B66 C&G
Begin B66 C&G Taper

22 Sta 89+18.8. 186.8' R
End B66 C&G Taper
Begin Str B66 C&G

23 Sta 90+19.0. 90.0' R
End Str B66 C&G
Begin 60' R B66 C&G

24 Sta 90+20.8. 75.7' R
End 60' R B66 C&G
Begin 60' R B69.5 C&G

25 Sta 90+76.3. 32.6' R
End 60' R B69.5 C&G

Install 5' wide, 5" thick Sidewalk

26 Sta 89+12.0. 37.6' L
Begin Sidewalk

27 Sta 889+31.. 39.0' L
Begin Ramp

28 Sta 89+19.9. 38.2' L
End Ramp
Begin Push Button Area

29 Sta 89+23.2. 39.4' L
End Push Button Area
Begin Ramp

30 Sta 89+25.8. 40.9' L
End Ramp
Begin Landing

31 Sta 89+31.1. 39.0' L
Detectable Warning

32 Sta 89+29.4. 44.4' L
End Landing
Begin Ramp

33 Sta 89+31.0. 46.9' L
End Ramp
Begin Push Button Area

34 Sta 89+32.3. 50.2' L
End Push Button Area
Begin Ramp

35 Sta 89+32.9. 53.1' L
End Ramp

36 Sta 89+32.9. 58.1' L
End Sidewalk

37 Sta 90+18.3. 57.9' L
Begin Sidewalk

38 Sta 90+18.1. 52.9' L
Begin Ramp

39 Sta 90+18.7. 50.0' L
End Ramp
Begin Push Button Area

40 Sta 90+20.1. 46.8' L
End Push Button Area
Begin Ramp

41 Sta 90+22.0. 44.1' L
End Ramp
Begin Landing

42 Sta 90+20.4. 38.8' L
Detectable Warning

43 Sta 90+25.7. 40.7' L
End Landing
Begin Ramp

44 Sta 90+28.0. 39.4' L
End Ramp
Begin Push Button Area

45 Sta 90+31.3. 38.2' L
End Push Button Area
Begin Ramp

46 Sta 90+34.3. 37.8' L
End Ramp

47 Sta 90+39.3. 37.6' L
End Sidewalk

48 Sta 88+83.0. 49.7' R
Begin Sidewalk

49 Sta 88+13.9. 59.7' R
Begin Ramp

50 Sta 89+16.3. 61.6' R
End Ramp
Begin Push Button Area

51 Sta 89+19.6. 64.6' R
End Push Button Area
Begin Ramp

52 Sta 89+21.7. 66.7' R
End Ramp
Begin Landing

53 Sta 89+27.2. 65.5' R
Detectable Warning

54 Sta 89+24.9. 70.6' R
End Landing
Begin Ramp

55 Sta 89+26.7. 73.0' R
End Ramp
Begin Push Button Area

56 Sta 89+30.0. 76.9' R
End Push Button Area
Begin Ramp

57 Sta 89+30.3. 79.6' R
End Ramp

58 Sta 89+32.5. 87.6' R
Transition to
Existing Sidewalk

59 Sta 89+31.9. 94.1' R
End Sidewalk

60 Sta 90+21.2. 268.7' R
Begin Sidewalk

61 Sta 90+04.9. 269.9' R
Detectable Warning
Type 3 Curb Ramp

62 Sta 90+30.0. 65.7' R
Begin Ramp

63 Sta 90+31.4. 63.1' R
End Ramp
Begin Ped Button Area

64 Sta 90+33.9. 59.3' R
End Ped Button Area
Begin Ramp

65 Sta 90+35.7. 57.0' R
End Ramp
Begin Landing

66 Sta 90+33.7. 51.8' R
Detectable Warning

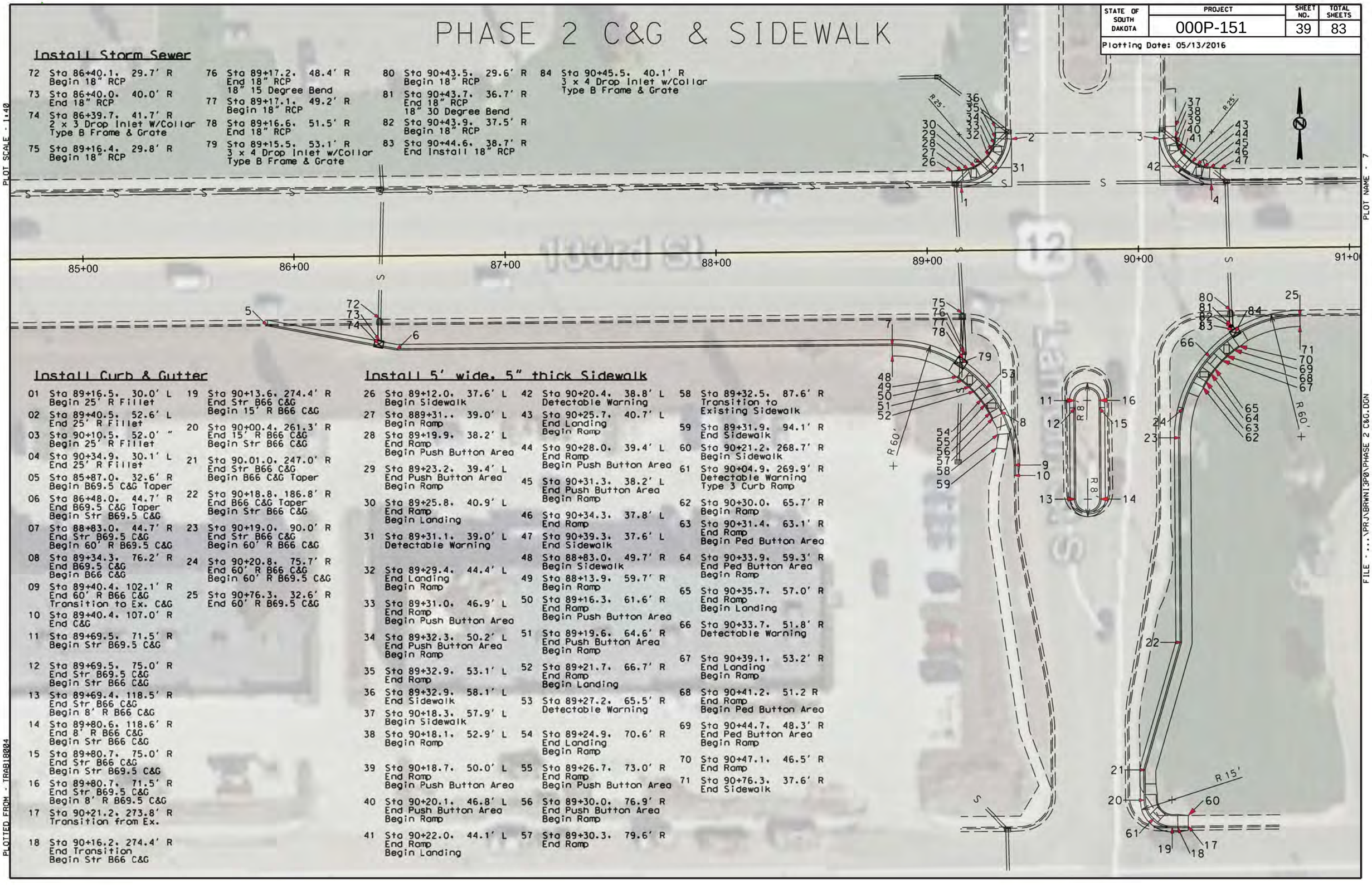
67 Sta 90+39.1. 53.2' R
End Landing
Begin Ramp

68 Sta 90+41.2. 51.2 R
End Ramp
Begin Ped Button Area

69 Sta 90+44.7. 48.3' R
End Ped Button Area
Begin Ramp

70 Sta 90+47.1. 46.5' R
End Ramp

71 Sta 90+76.3. 37.6' R
End Sidewalk



PLOT SCALE - 1:40

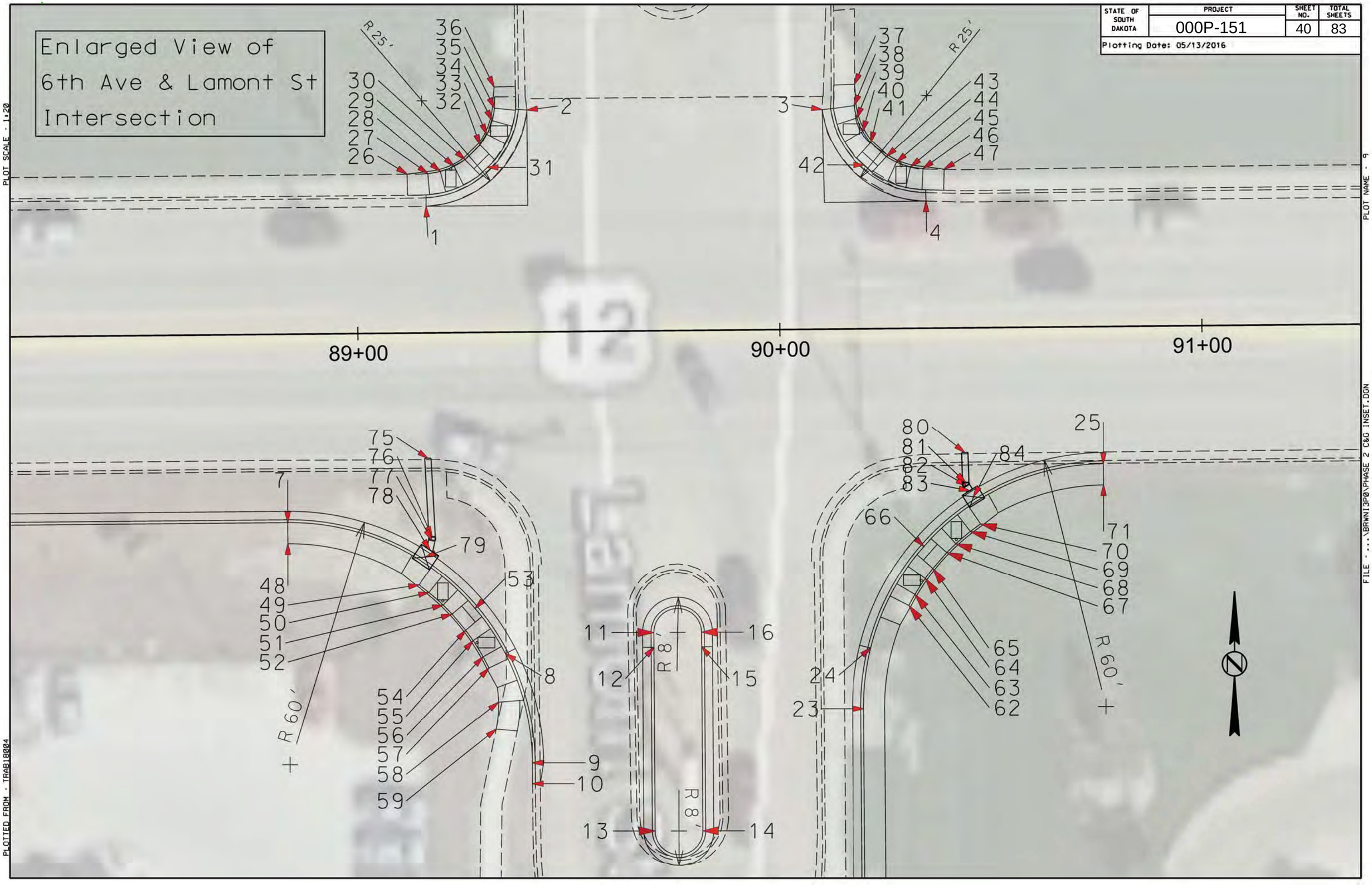
PLOT NAME - 7

FILE - ...\PRJ\BRWN13P0\PHASE 2 C&G.DGN

PLOTTED FROM - TRAB18004

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	40	83
Plotting Date: 05/13/2016			

Enlarged View of 6th Ave & Lamont St Intersection



PLOT SCALE - 1:20

PLOT NAME - 9

FILE - ...\BRWN13P0\PHASE 2 C&G INSET.DGN

PLOTTED FROM - TRAB18004

PHASE 3 C&G & SIDEWALK

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	41	83

7th Ave

LaMont St.

Install Curb & Gutter

01 Sta 89+93.5, 503.7' R
Begin B66 C&G Taper

02 Sta 89+98.3, 472.5' R
End B66 C&G Taper
Begin Str B66 C&G

03 Sta 89+98.6, 323.0' R
End Str B66 C&G
Begin 15' R B66 C&G

04 Sta 90+11.2, 310.6' R
End 15' R B66 C&G
Begin Str B66 C&G

05 Sta 90+13.5, 310.6' R
End B66 C&G

Install Storm Sewer

06 Sta 89+91.6, 440.2' R
Begin 12" RCP

07 Sta 89+95.9, 440.1' R
End 12" RCP

08 Sta 89+97.4, 440.1' R
3 x 4 Drop Inlet w/
Type B Frame & Grate

R 15.00'

PLOT SCALE - 1:40

PLOTTED FROM - TRAB18004

PLOT NAME - B

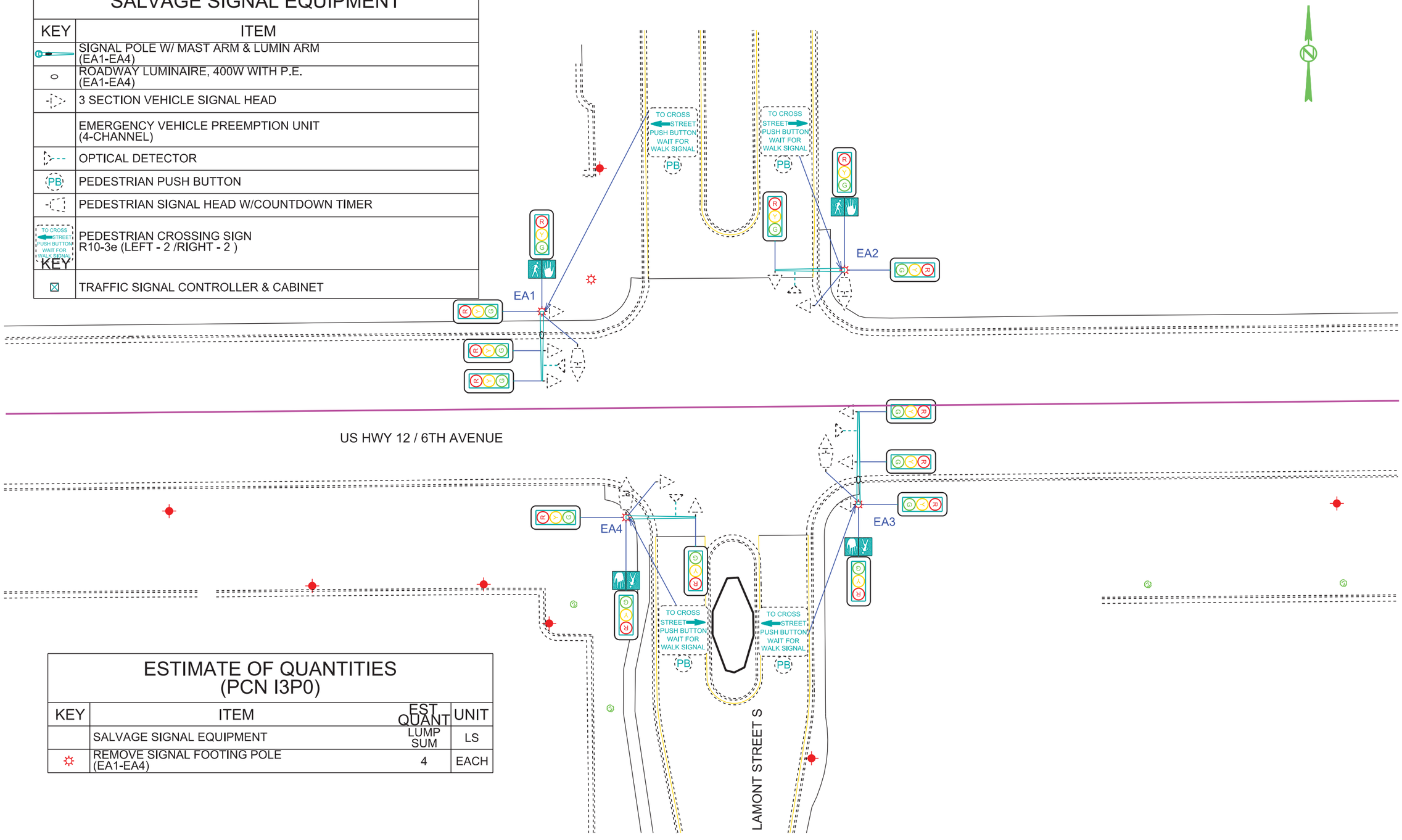
FILE - ...\PRJ\BRWN13P0\PHASE 3 C&G.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	42	83
Plotting Date: 05/10/2016			

EXISTING SIGNAL LAYOUT

US HWY 12 / 6TH AVENUE SE & LAMONT STREET S

SALVAGE SIGNAL EQUIPMENT	
KEY	ITEM
	SIGNAL POLE W/ MAST ARM & LUMIN ARM (EA1-EA4)
	ROADWAY LUMINAIRE, 400W WITH P.E. (EA1-EA4)
	3 SECTION VEHICLE SIGNAL HEAD
	EMERGENCY VEHICLE PREEMPTION UNIT (4-CHANNEL)
	OPTICAL DETECTOR
PB	PEDESTRIAN PUSH BUTTON
	PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER
KEY	PEDESTRIAN CROSSING SIGN R10-3e (LEFT - 2 /RIGHT - 2)
	TRAFFIC SIGNAL CONTROLLER & CABINET



ESTIMATE OF QUANTITIES (PCN I3P0)			
KEY	ITEM	EST QUANT	UNIT
	SALVAGE SIGNAL EQUIPMENT	LUMP SUM	LS
☼	REMOVE SIGNAL FOOTING POLE (EA1-EA4)	4	EACH

PLOT SCALE - 1:40

PLOTTED FROM - TRAB10100

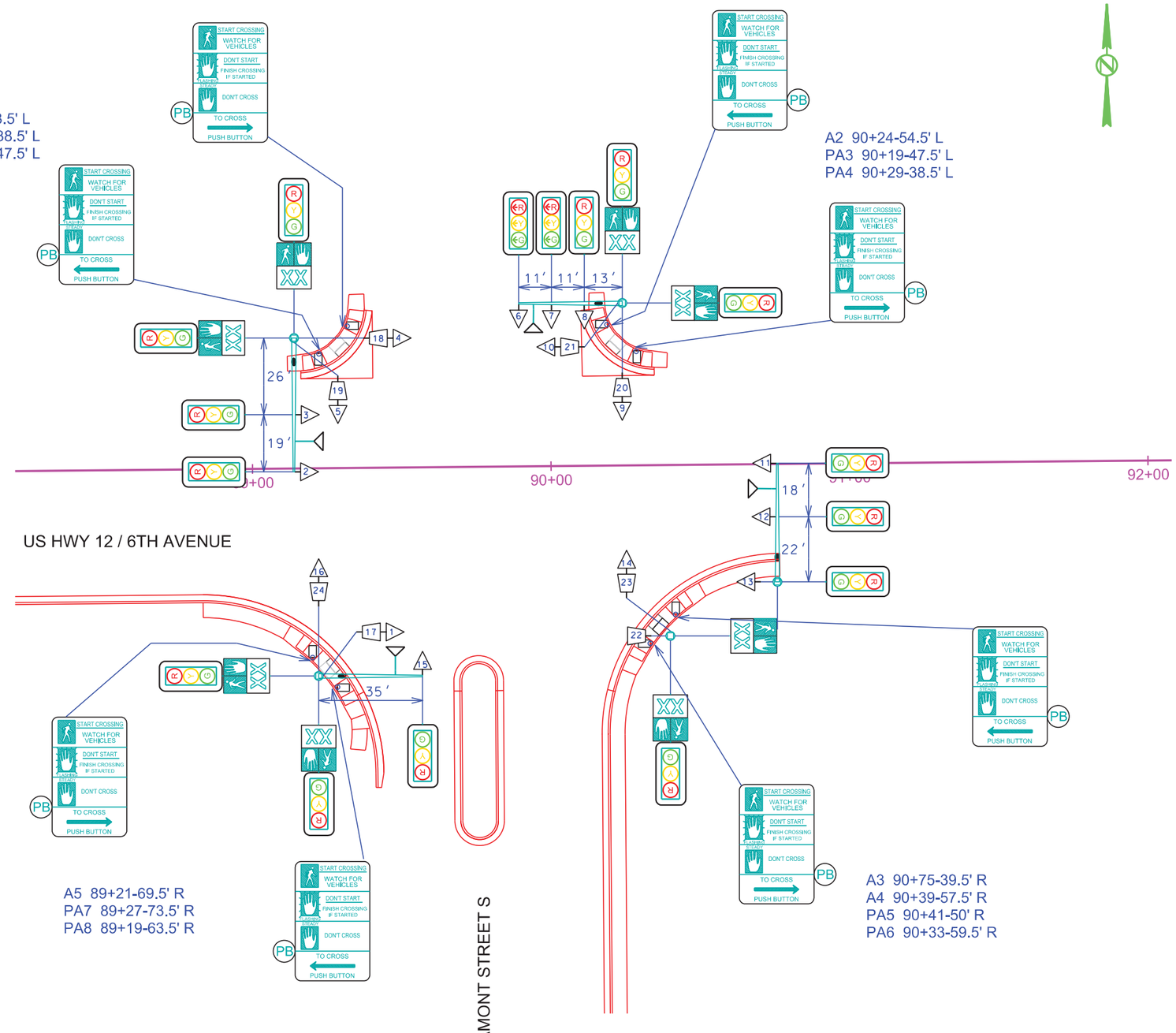
PLOT NAME - 1

FILE - ...\BRWN13P0\SECTION LY90ES.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	43	83
Plotting Date: 05/10/2016			

SIGNAL LAYOUT

US HWY 12 / 6TH AVENUE SE & LAMONT STREET S



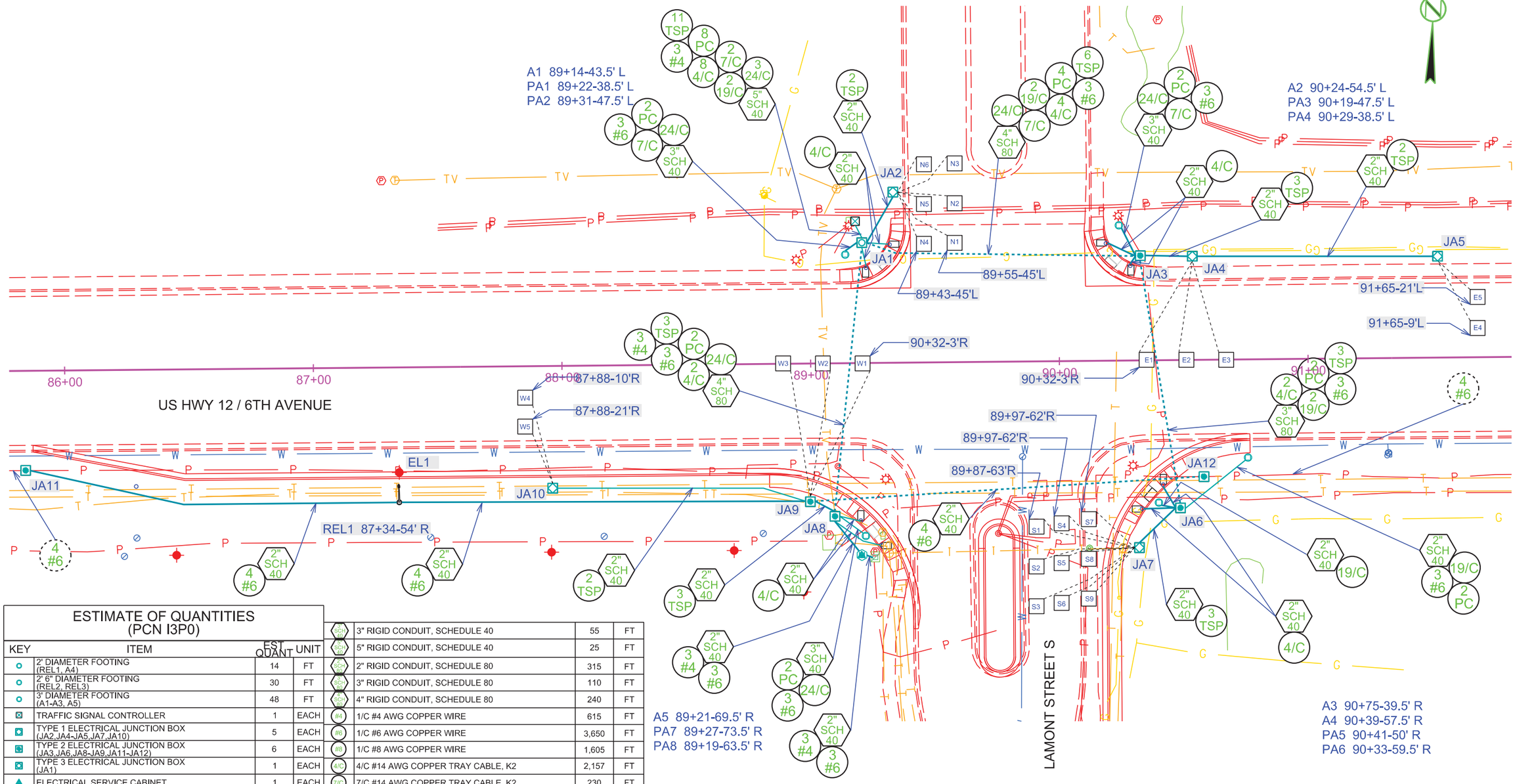
ESTIMATE OF QUANTITIES (PCN I3P0)

KEY	ITEM	EST QUANT	UNIT
	INSTALL SIGNAL POLE W/ MAST ARM & LUMIN ARM (35' MAST ARM & 8' LUMIN ARM: A2,A5)	2	EACH
	INSTALL SIGNAL POLE W/ MAST ARM & LUMIN ARM (40' MAST ARM & 8' LUMIN ARM: A3)	1	EACH
	INSTALL SIGNAL POLE W/ MAST ARM & LUMIN ARM (45' MAST ARM & 8' LUMIN ARM: A1)	1	EACH
	PEDESTAL SIGNAL POLE (A4)	1	EACH
	ROADWAY LUMINAIRE, 400W WITH P.E. (A1,A2,A3,A5)	4	EACH
	3 SECTION VEHICLE SIGNAL HEAD (1-16)	16	EACH
	EMERGENCY VEHICLE PREEMPTION UNIT (4-CHANNEL)	1	EACH
	OPTICAL DETECTOR	4	EACH
PB	PEDESTRIAN PUSH BUTTON	8	EACH
	PEDESTRIAN PUSH BUTTON POLE (PA1-PA8)	8	EACH
	PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER (17-24)	8	EACH
	PEDESTRIAN CROSSING SIGN R10-3e (LEFT - 4 /RIGHT - 4)	8	EACH

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	44	83
Plotting Date: 05/13/2016			

CONDUIT LAYOUT

US HWY 12 / 6TH AVENUE SE & LAMONT STREET S



ESTIMATE OF QUANTITIES (PCN I3P0)

KEY	ITEM	EST QUANT	UNIT
○	2' DIAMETER FOOTING (REL1, A4)	14	FT
○	2' 6" DIAMETER FOOTING (REL2, REL3)	30	FT
○	3' DIAMETER FOOTING (A1-A3, A5)	48	FT
⊠	TRAFFIC SIGNAL CONTROLLER	1	EACH
◘	TYPE 1 ELECTRICAL JUNCTION BOX (JA2,JA4-JA5,JA7,JA10)	5	EACH
◘	TYPE 2 ELECTRICAL JUNCTION BOX (JA3,JA6,JA8-JA9,JA11-JA12)	6	EACH
◘	TYPE 3 ELECTRICAL JUNCTION BOX (JA1)	1	EACH
▲	ELECTRICAL SERVICE CABINET	1	EACH
□	PREFORMED DETECTOR LOOP (S1-S9)	9	EACH
□	SAWED-IN PREFORMED DETECTOR LOOP (E1-E5,N1-N6,W1-W5)	16	EACH
	DETECTOR UNIT (2-CHANNEL)	11	EACH
	SIGNAL HEAD BATTERY BACKUP and FLASH SYSTEM	1	EACH
2" SCH 40	2" RIGID CONDUIT, SCHEDULE 40	1285	FT
3" SCH 40	3" RIGID CONDUIT, SCHEDULE 40	55	FT
5" SCH 40	5" RIGID CONDUIT, SCHEDULE 40	25	FT
2" SCH 80	2" RIGID CONDUIT, SCHEDULE 80	315	FT
3" SCH 80	3" RIGID CONDUIT, SCHEDULE 80	110	FT
4" SCH 80	4" RIGID CONDUIT, SCHEDULE 80	240	FT
#4	1/C #4 AWG COPPER WIRE	615	FT
#6	1/C #6 AWG COPPER WIRE	3,650	FT
#8	1/C #8 AWG COPPER WIRE	1,605	FT
4/C	4/C #14 AWG COPPER TRAY CABLE, K2	2,157	FT
7/C	7/C #14 AWG COPPER TRAY CABLE, K2	230	FT
19/C	19/C #14 AWG COPPER TRAY CABLE, K2	605	FT
24/C	24/C #14 AWG COPPER TRAY CABLE, K2	410	FT
TSP	#16 AWG COPPER TWISTED SHIELDED PAIR	2,610	FT
	2/C #10 AWG COPPER POLE & BRACKET CABLE	260	FT
PC	PREEMPTION CABLE	1,880	FT

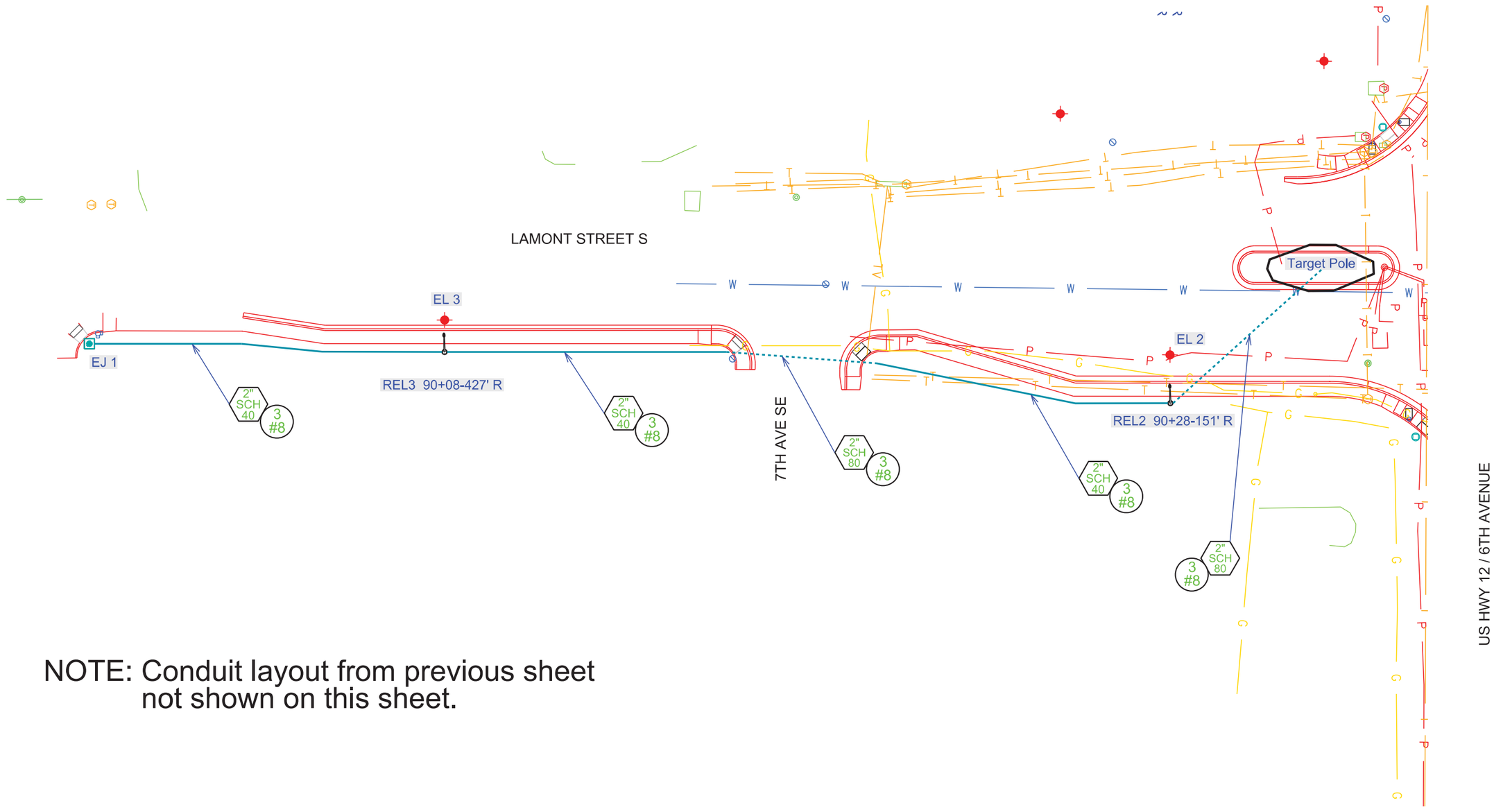
RELOCATE LIGHTING EQUIPMENT

KEY	ITEM	EST QUANT	UNIT
✦	REMOVE AND RESET LUMINAIRE POLE (EL1-EL3)	3	EACH
	REMOVE LUMINAIRE POLE FOOTING	3	EACH

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	45	83
Plotting Date: 05/13/2016			

CONDUIT LAYOUT

LAMONT STREET S



NOTE: Conduit layout from previous sheet not shown on this sheet.

WIRING DIAGRAM

US HWY 12 / 6TH AVENUE SE & LAMONT STREET S

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	46	83

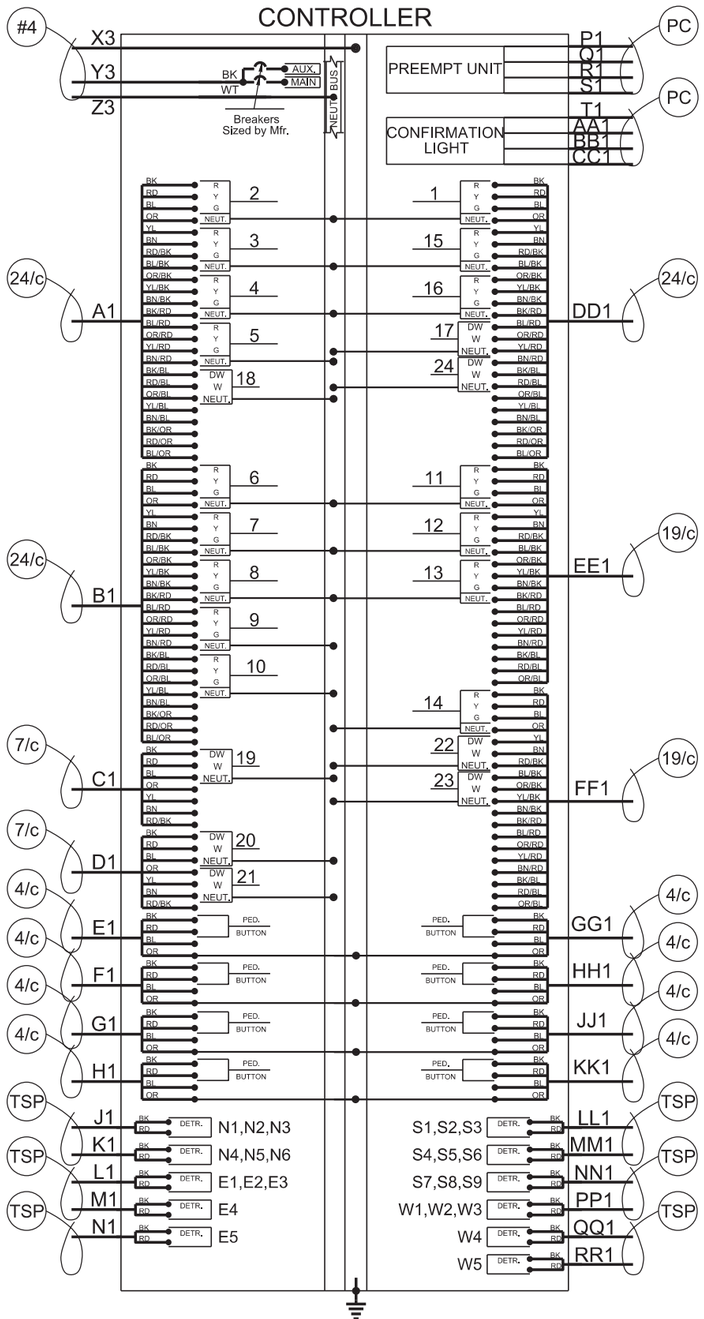
Plotting Date: 05/09/2016

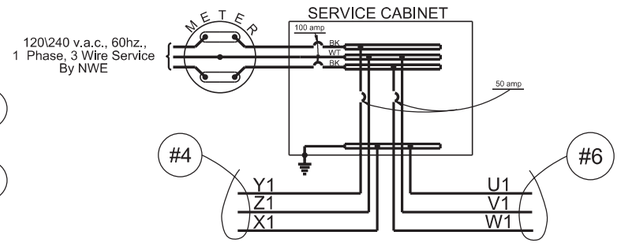
LEGEND:

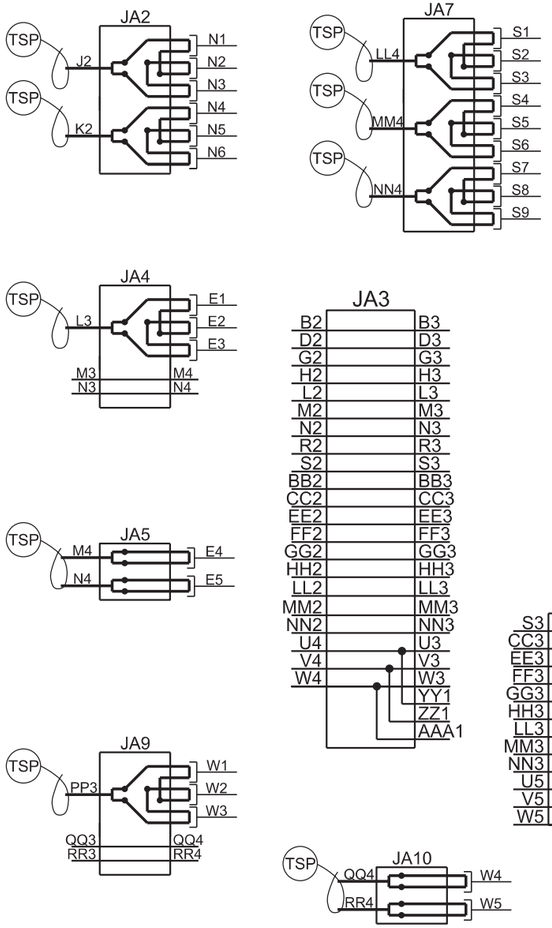
FUSE: 6 amp. Non-Time Delay or 2 8/10 amp. Dual Element

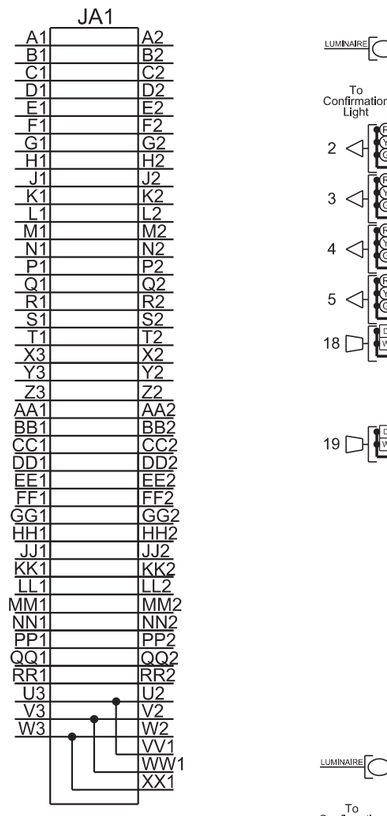
LUMINAIRE: 400 watt High Pressure Sodium Lamp

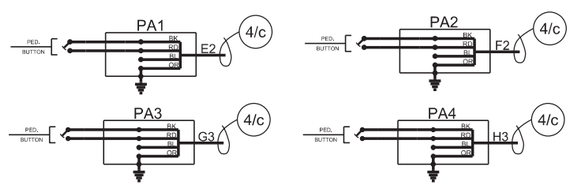
NOTE:
All circuits shall be bonded in accordance with the NATIONAL ELECTRICAL CODE. Quantities for bonding conductors are not included in these plans.











PLOTTED FROM - TRAB10100

PLOT SCALE - 1140

PLOT NAME - 1

FILE - ...\BRWN13P0\SECTION L\090W.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	47	83
Plotting Date:	05/09/2016		

SIGNAL TIMING

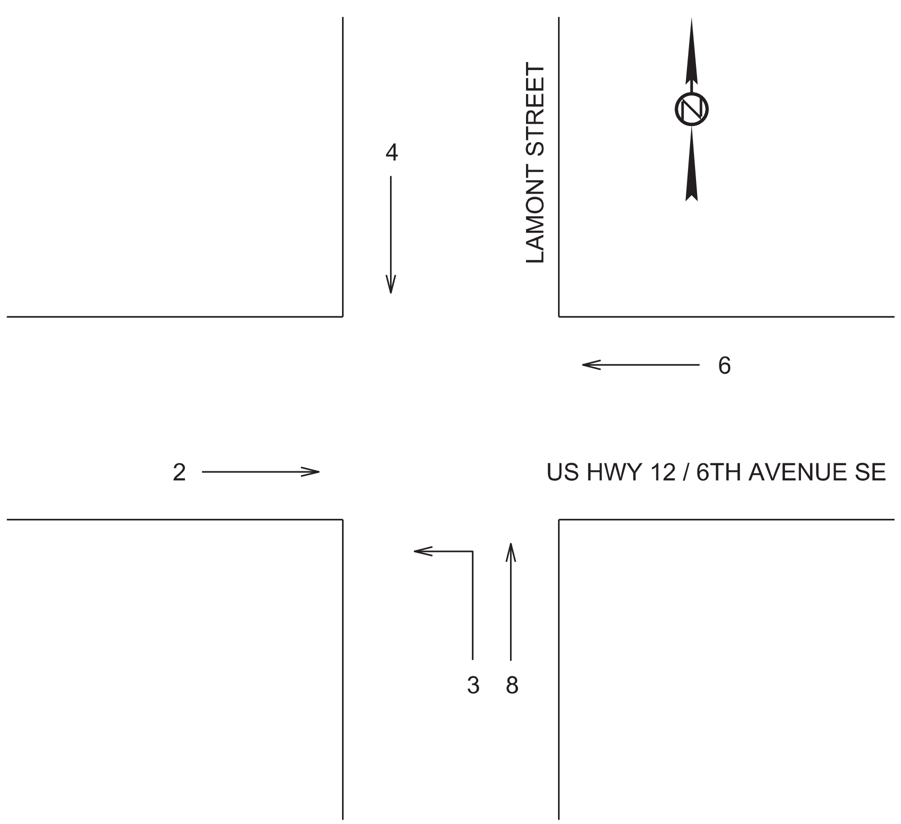
US HWY 12 / 6TH AVENUE SE & LAMONT STREET

PHASING AND SEQUENCING																		
INTERVAL / SIGNAL HEAD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	FLASH DISPLAY
1,2,3,4	G	Y		G	G	Y												Y
10,11,12,13	G	Y		G	G	Y												Y
6,7								<G	<Y									R
5,8,9								G	G	G	G	Y		G	G	Y		R
14,15,16											G	Y		G	G	Y		R
17,18,21,22	DW	DW	DW	W	F DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	NO DISPLAY
19,20,23,24	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	F DW	DW	DW	NO DISPLAY
MOVEMENTS	2&6			2&6 W/PED							4&8			4&8 W/PED				
PHASES	or										or							

TIMING PLAN 1	
TIME OF DAY (TOD)	PATTERN (C/S/O)
6:00 -23:00	FREE
23:00 - 6:00	FLASH

CONTROLLER TIMINGS (FREE OPERATION)								
MOVEMENT	1	2	3	4	5	6	7	8
PHASE								
MIN GREEN		15	10	10		15		10
ADDED INITIAL								
MAX INITIAL								
PASSAGE TIME		4	3	3		4		3
MAXIMUM		20	14	14		20		14
TIME BEFORE		10				10		
TIME TO REDUCE		5				5		
MINIMUM GAP		3.5				3.5		
YELLOW CHANGE		4		4		4		4
RED CLEARANCE		2		2		2		2
WALK		8		8		8		8
PED CLEARANCE		25		24		25		24
RECALL		SOFT		NONE		SOFT		NONE

WEEKLY PROGRAM							
	SUN	MON	TUE	WED	THU	FRI	SAT
TIMING PLAN	1	1	1	1	1	1	1

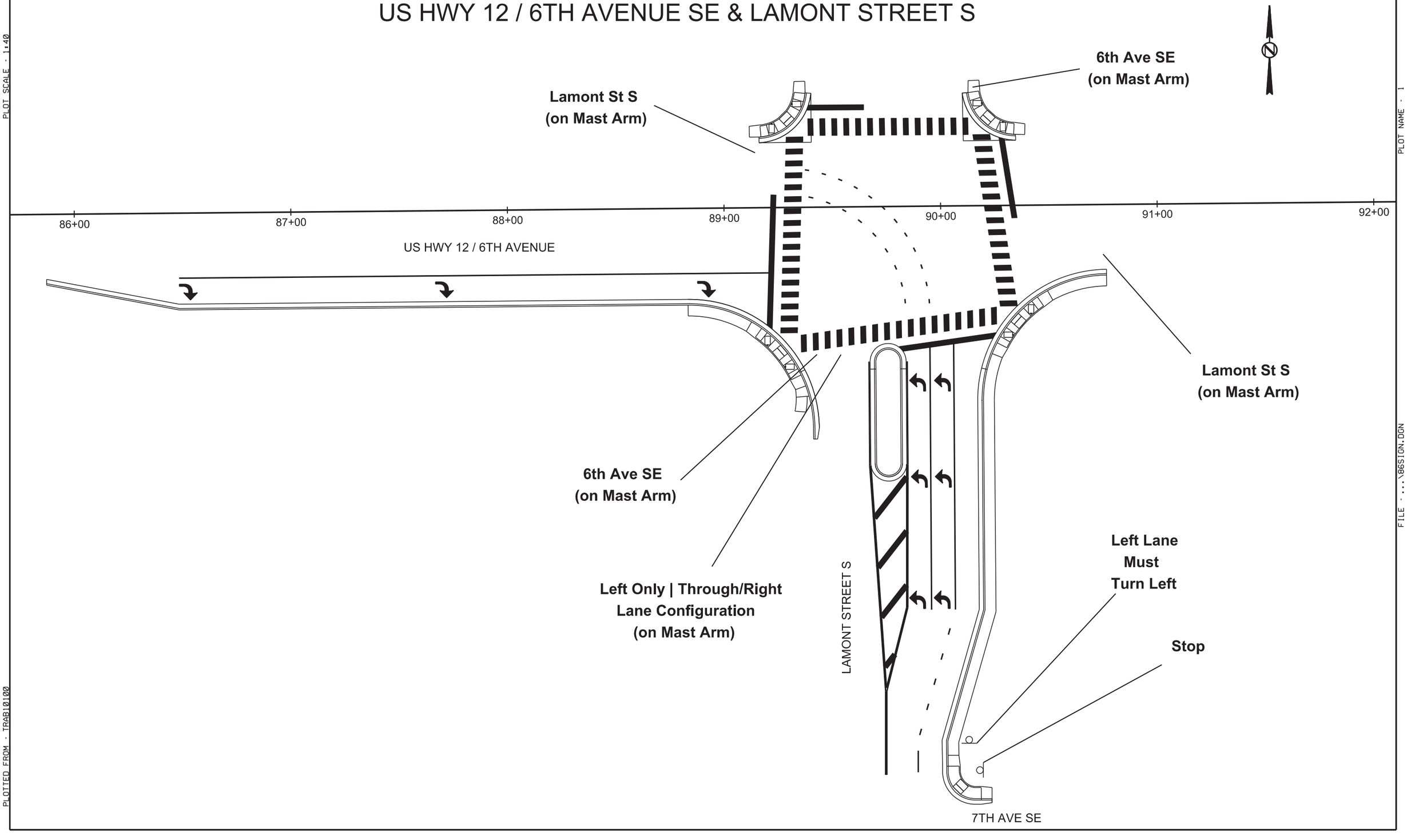


DETECTOR SETTINGS								
DETECTOR LABEL	AMPLIFIED CHANNEL DETECTOR	DETECTOR TYPE	DETECTOR OPERATION			LOCKING CALL	MOVEMENT CALLED	MOVEMENT EXTENDED
			CALLS & EXTENDS	CALLS ONLY	EXTENDS ONLY			
W1,W2,W3	1	SAWED-IN PREFORMED	X				2	2&6
W4	2	SAWED-IN PREFORMED	X			X	2	2&6
W5	3	SAWED-IN PREFORMED	X			X	2	2&6
N1,N2,N3	4	SAWED-IN PREFORMED	X				4	4&8
N4,N5,N6	5	SAWED-IN PREFORMED	X				4	4&8
E1,E2,E3	6	SAWED-IN PREFORMED	X				6	2&6
E4	7	SAWED-IN PREFORMED	X			X	6	2&6
E5	8	SAWED-IN PREFORMED	X			X	6	2&6
S1,S2,S3	9	PREFORMED	X				3	3
S4,S5,S6	10	PREFORMED	X				3	3
S7,S8,S9	11	PREFORMED	X				8	4&8

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	48	83
Plotting Date: 05/10/2016			

PERMANENT SIGNING LAYOUT

US HWY 12 / 6TH AVENUE SE & LAMONT STREET S



PLOT SCALE - 1:40

PLOT NAME - 1

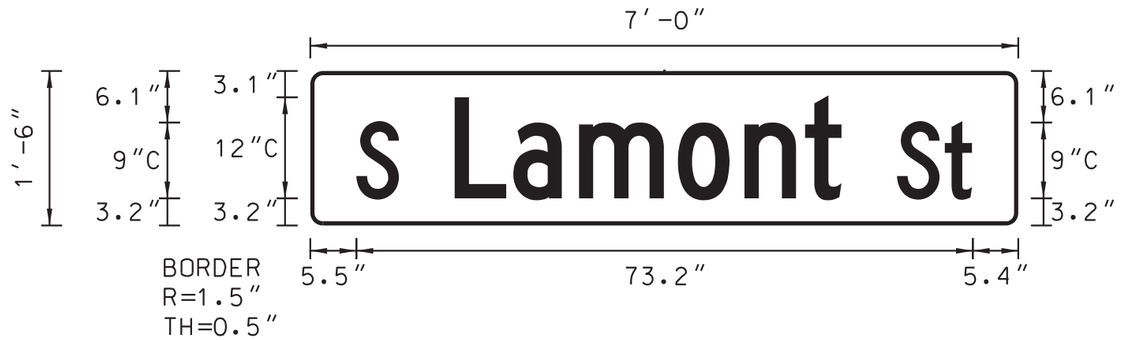
FILE - ...\86SIGN.DGN

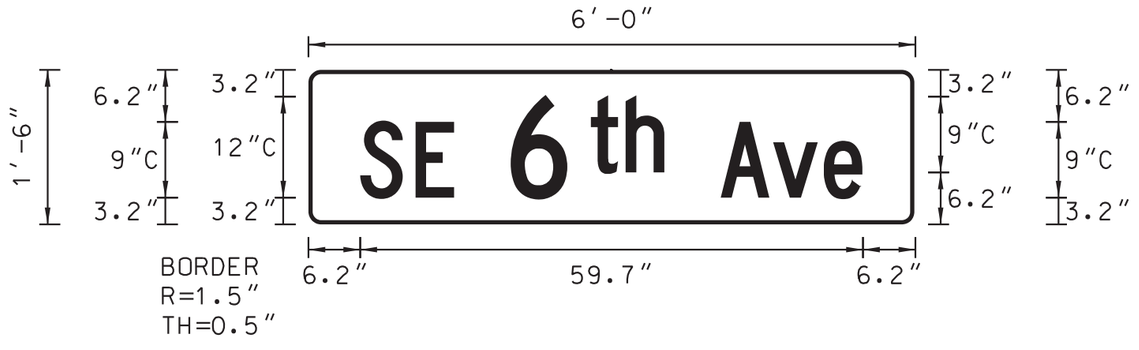
PLOTTED FROM - TRAB10100

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	49	83

Plotting Date: 05/10/2016

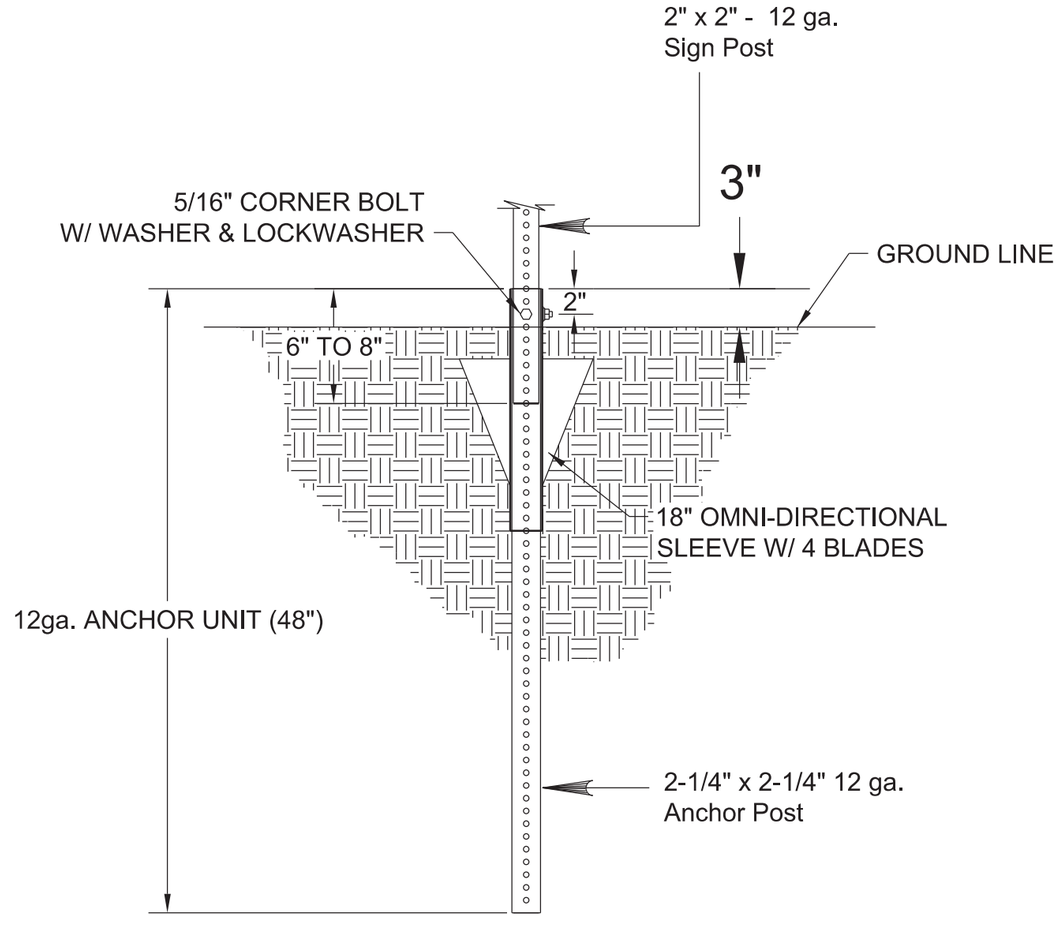
SPECIAL SIGN DESIGN





All signs on this sheet shall have a green background with white legend and white border

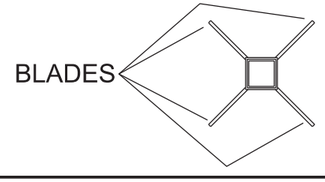
SQUARE TUBE
4 BLADE ANCHOR DETAIL



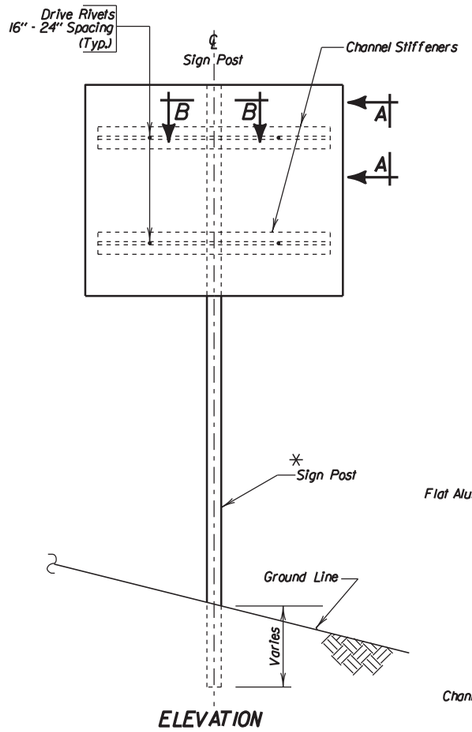
2-1/2" x 18" OMNI-ANCHOR SLEEVE
FOR SOIL STABILIZATION.

2-1/2" x 18" 12 ga. Omni-Sleeve

ANCHOR SLEEVE
TOP VIEW



ONE POST BREAKAWAY SIGN SUPPORTS



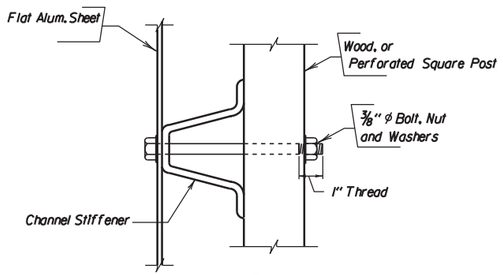
ELEVATION

Ø A plastic washer, as recommended by the sheeting manufacturer, shall be installed between the sign face and the metal washer shown.

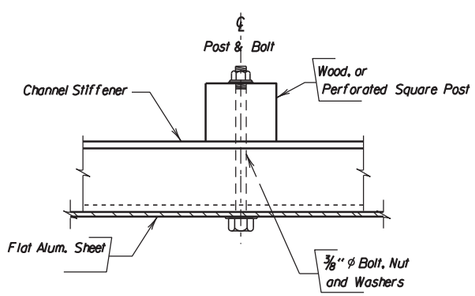
Height and lateral distance as recommended by latest edition of MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

* Single post installation shown. (See applicable Details or Standard Plates shown in these plans for multiple post spacing requirements.)

(Typical Sign and Stiffener Details)

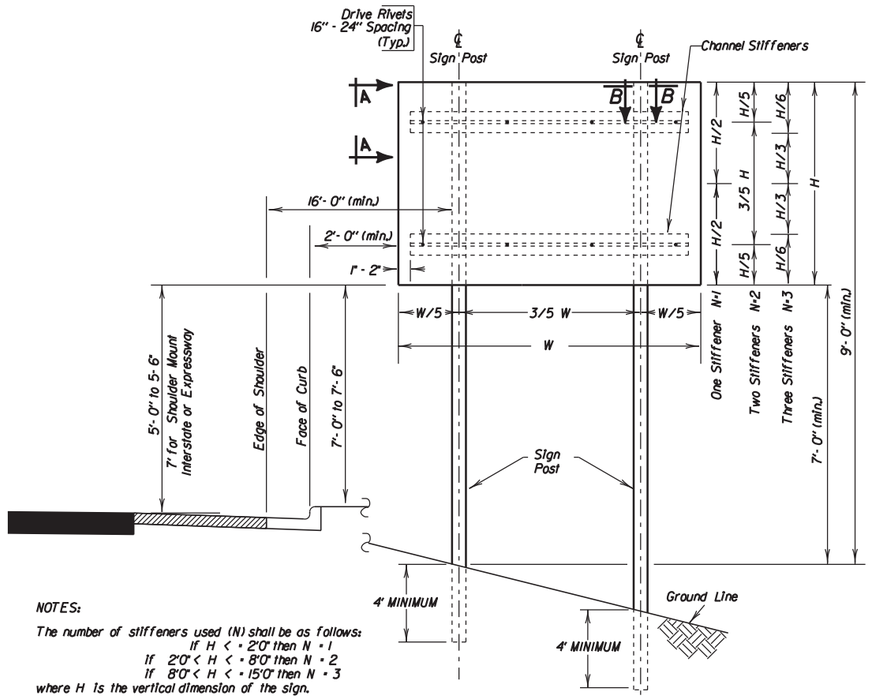


SEC. A-A



SEC. B-B

TWO POST BREAKAWAY SIGN SUPPORTS



NOTES:

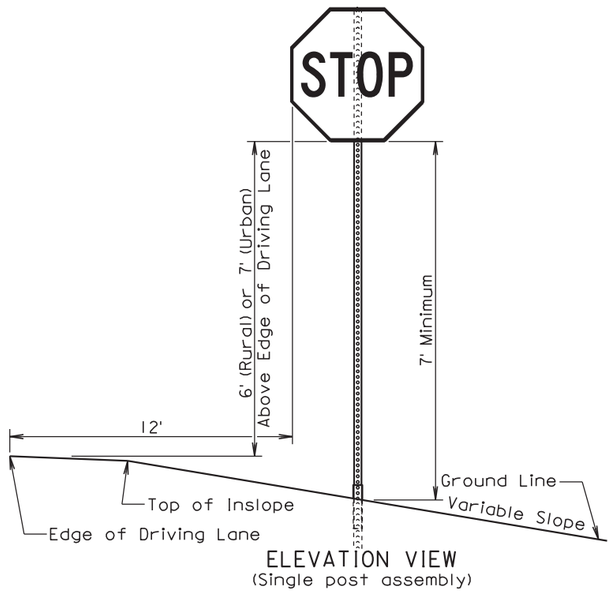
The number of stiffeners used (N) shall be as follows:

If H < = 2'0" then N = 1
If 2'0" < H < = 8'0" then N = 2
If 8'0" < H < = 15'0" then N = 3

where H is the vertical dimension of the sign.

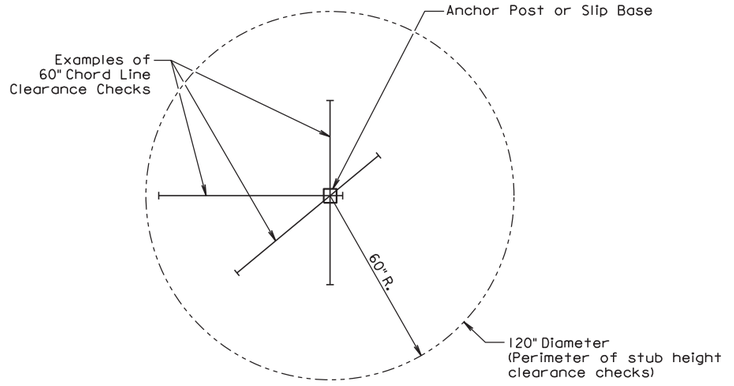
A minimum of two bolts shall be required to fasten the sign to each post.

INSTALLATION DETAILS FOR STOP SIGNS

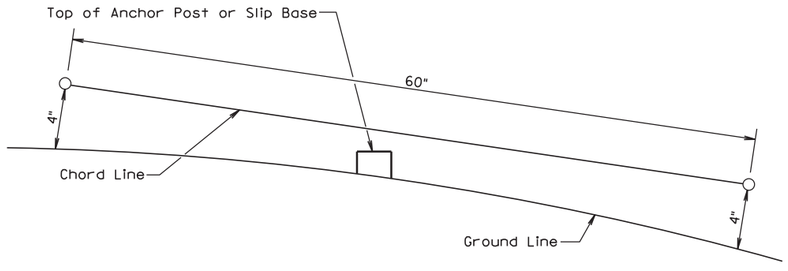


ELEVATION VIEW
(Single post assembly)

BREAKAWAY SUPPORT STUB CLEARANCE



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

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

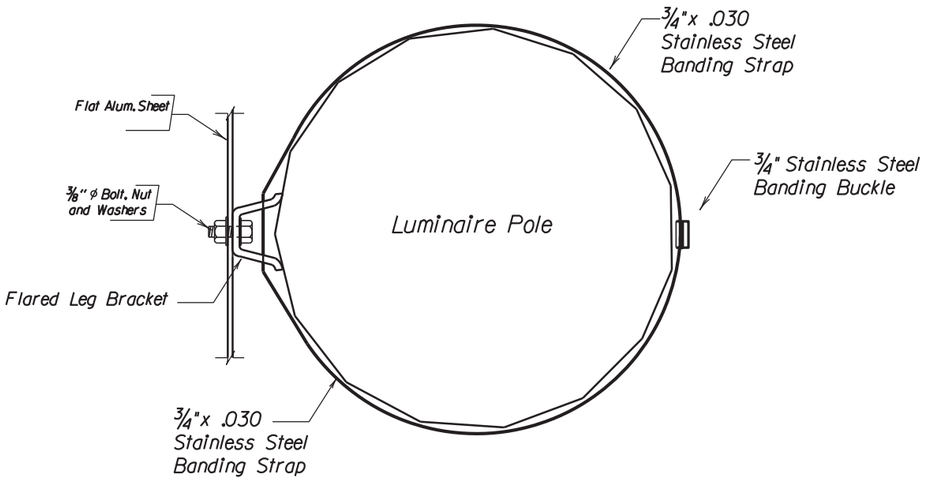
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	53	83

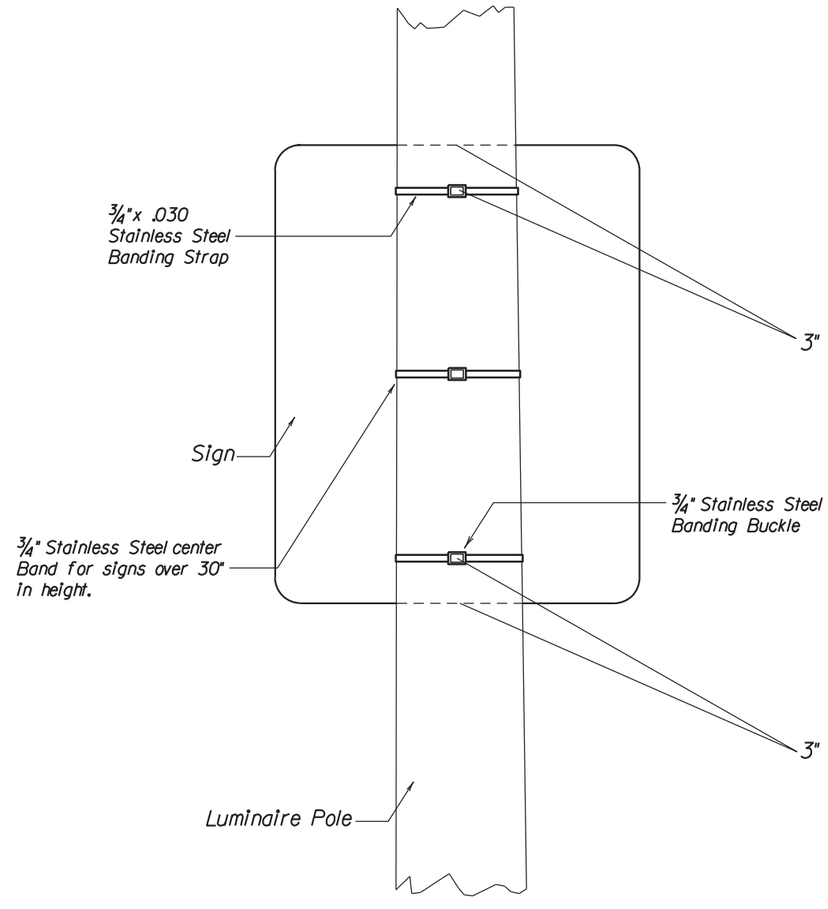
Plotting Date: 05/12/2016

SIGN BANDING TO LUMINAIRE/SIGNAL POLE

Top View



Back View



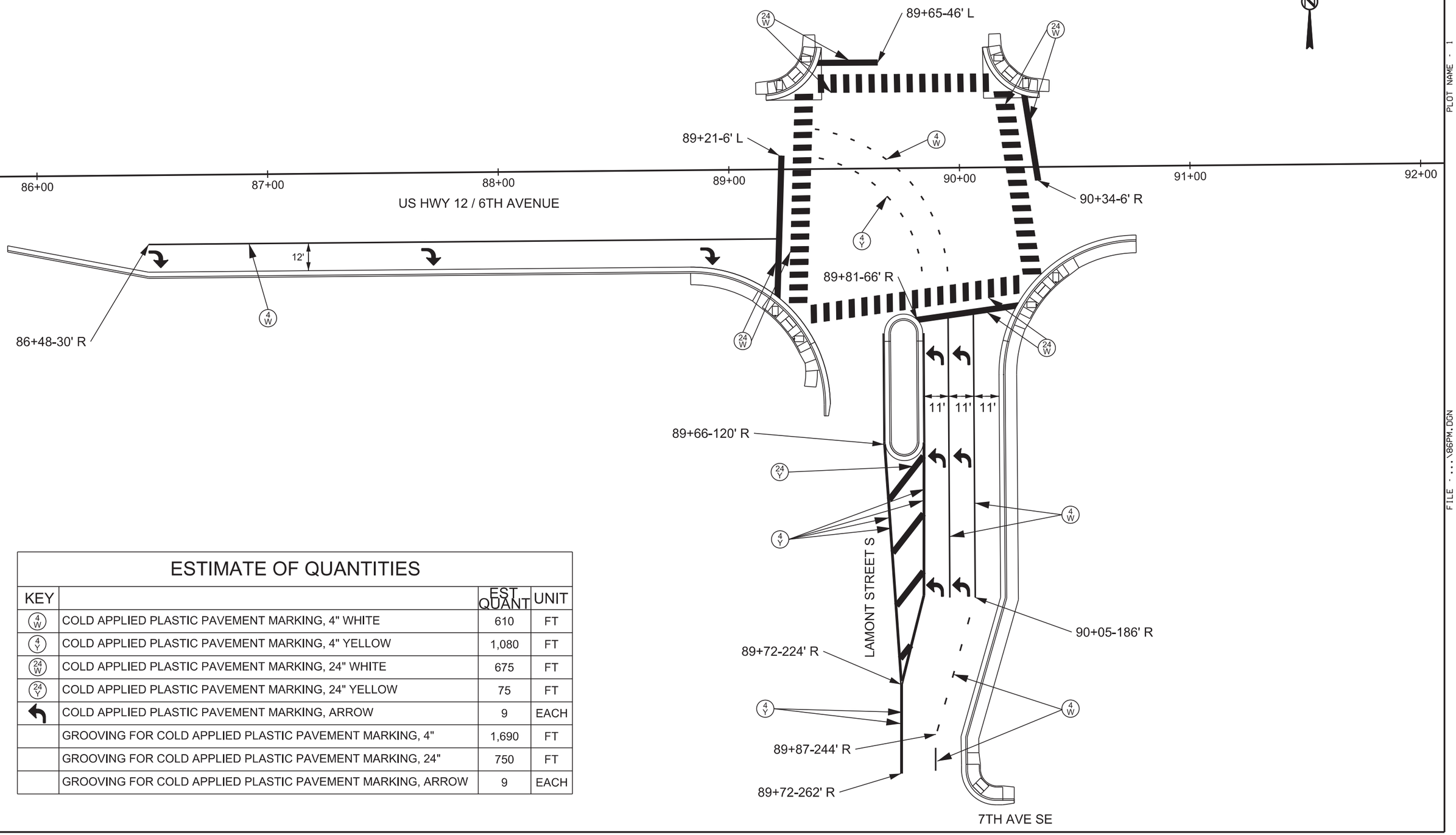
ø A plastic washer, as recommended by the sheeting manufacturer, shall be installed between the sign face and the metal washer shown.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	54	83

Plotting Date: 05/12/2016

PAVEMENT MARKING LAYOUT

US HWY 12 / 6TH AVENUE SE & LAMONT STREET S



ESTIMATE OF QUANTITIES

KEY		EST QUANT	UNIT
(4 W)	COLD APPLIED PLASTIC PAVEMENT MARKING, 4" WHITE	610	FT
(4 Y)	COLD APPLIED PLASTIC PAVEMENT MARKING, 4" YELLOW	1,080	FT
(24 W)	COLD APPLIED PLASTIC PAVEMENT MARKING, 24" WHITE	675	FT
(24 Y)	COLD APPLIED PLASTIC PAVEMENT MARKING, 24" YELLOW	75	FT
↰	COLD APPLIED PLASTIC PAVEMENT MARKING, ARROW	9	EACH
	GROOVING FOR COLD APPLIED PLASTIC PAVEMENT MARKING, 4"	1,690	FT
	GROOVING FOR COLD APPLIED PLASTIC PAVEMENT MARKING, 24"	750	FT
	GROOVING FOR COLD APPLIED PLASTIC PAVEMENT MARKING, ARROW	9	EACH

PLOT SCALE - 1:40

PLOTTED FROM - TRAB10100

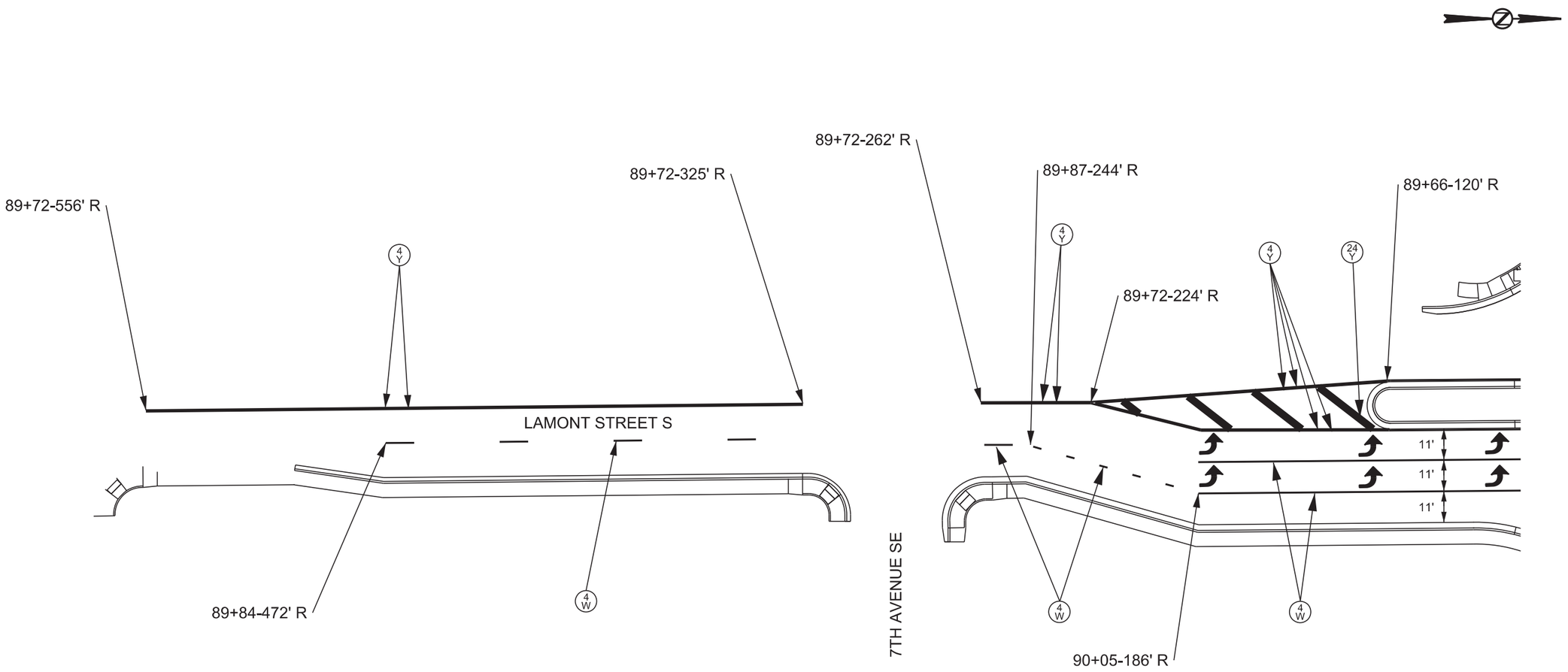
PLOT NAME - 1

FILE - ...\86PM.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	55	83
Plotting Date: 05/12/2016			

PAVEMENT MARKING LAYOUT

US HWY 12 / 6TH AVENUE SE & LAMONT STREET S



PLOT SCALE - 1:40

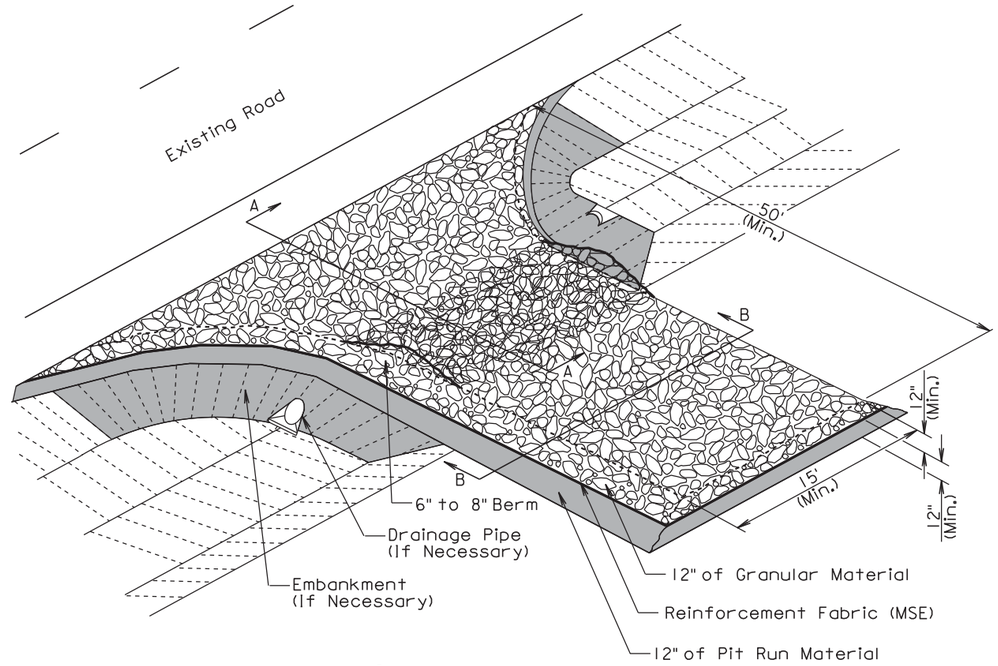
PLOT NAME - 2

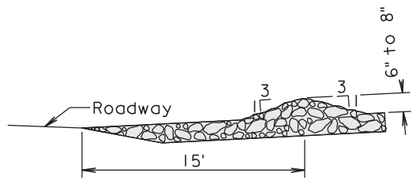
PLOTTED FROM - TRAB10100

FILE - ...\88PM.DGN

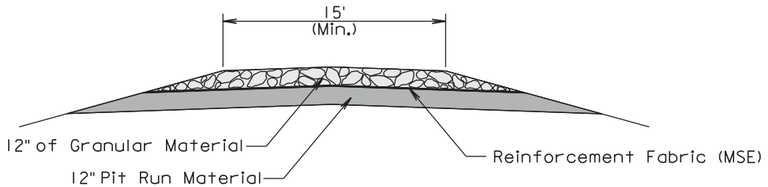
SDDOT CONSTRUCTION ENTRANCE

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	56	83





SECTION A-A



SECTION B-B

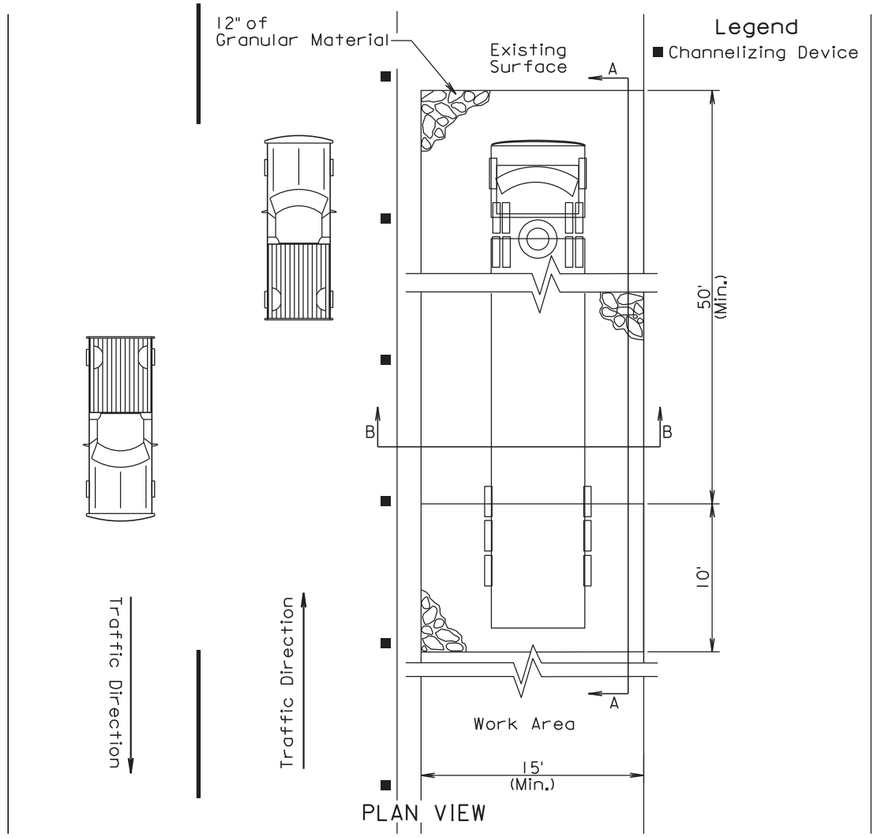
GENERAL NOTES:

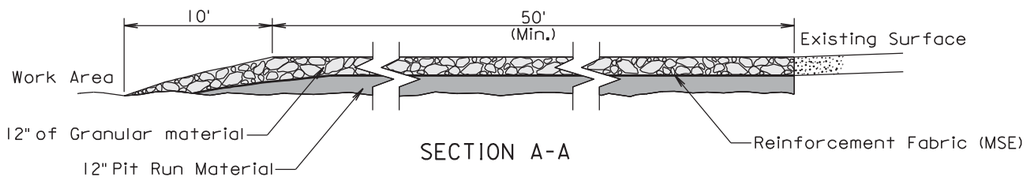
If the grade of the entrance slopes down to the roadway, a berm of extra rock shall be used to prevent sediment or mud from being deposited on the roadway. See SECTION A-A.

If a drainage pipe is necessary the size and type shall be determined by the Contractor to meet field conditions. All cost shall be incidental to the various bid items.

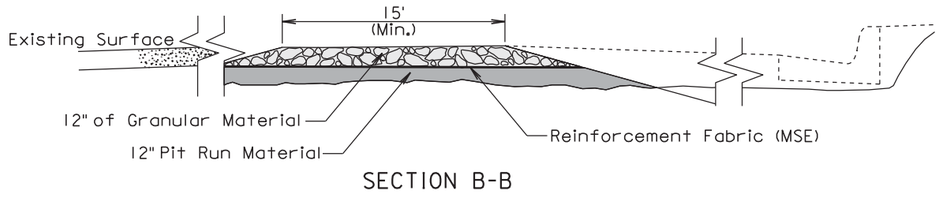
If embankment is necessary it shall be pit run material.

TRANSVERSE TO ROADWAY





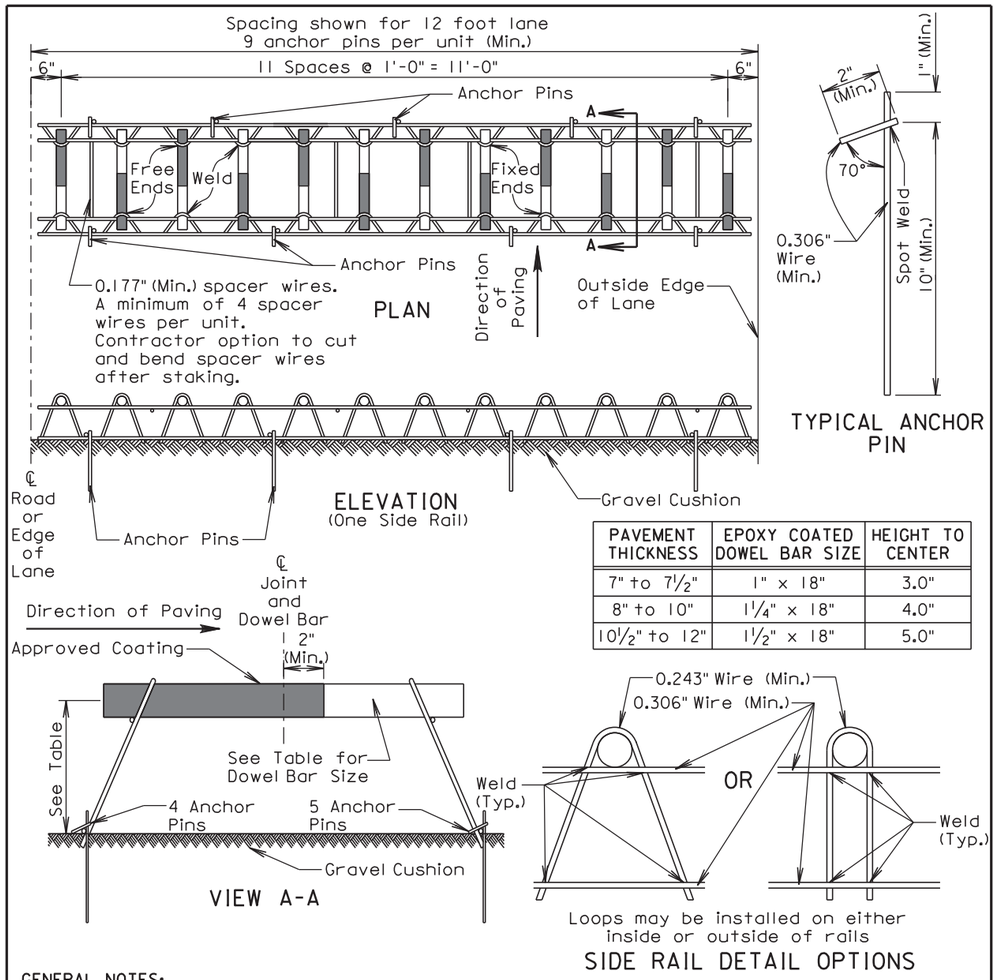
SECTION A-A



SECTION B-B

PARALLEL TO ROADWAY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	57	83



PAVEMENT THICKNESS	EPOXY COATED DOWEL BAR SIZE	HEIGHT TO CENTER
7" to 7½"	1" x 18"	3.0"
8" to 10"	1¼" x 18"	4.0"
10½" to 12"	1½" x 18"	5.0"

GENERAL NOTES:

Longitudinal joint tie bars shall be placed a minimum of 15 inches from the transverse contraction joint.

Centerline of individual dowel bars shall be parallel to top of subgrade ±1/8 inch in 18 inches and to all other dowel bars in the assembly ±1/16 inch in 18 inches.

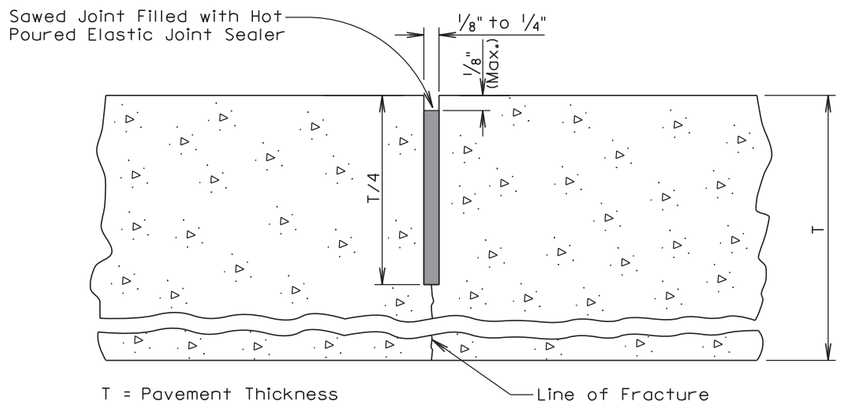
Centerline of individual dowel bars shall be parallel to the centerline of the roadway ±1/2 inch in 18 inches.

The transverse contraction joints shall be sawed perpendicular to the centerline of the roadway and the dowel bars shall be centered on the sawed joint ±1 inch.

Supporting devices as shown on this sheet, or equivalent as approved by the Engineer, shall be used to maintain proper horizontal and vertical alignment of the dowel bars.

August 30, 2013

Published Date: 2nd Qtr. 2016	SDDOT	**PCC PAVEMENT DOWEL BAR ASSEMBLY FOR TRANSVERSE CONTRACTION JOINTS 12 Bar Assembly on Granular Base Material**	PLATE NUMBER 380.01 Sheet 1 of 1



GENERAL NOTES:

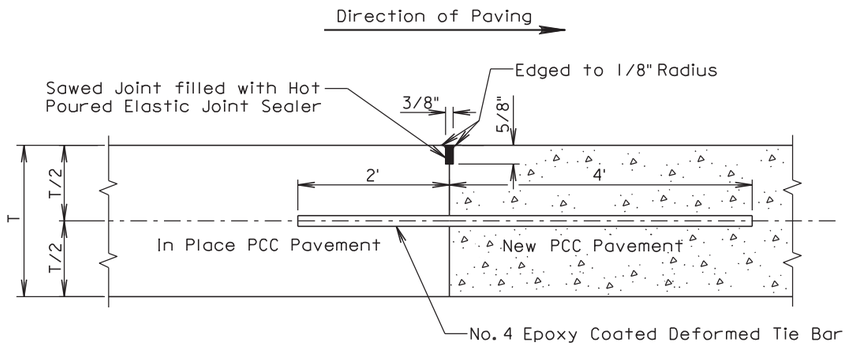
If an early entrance sawcut does not develop the full transverse crack, then the saw cut to control cracking shall be a minimum of ¼ the thickness of the pavement.

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

June 26, 2015

Published Date: 2nd Qtr. 2016	SDDOT	**PCC PAVEMENT TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY**	PLATE NUMBER 380.05 Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	58	83



T = Pavement Thickness

GENERAL NOTES:

No. 4 epoxy coated deformed tie bars shall be spaced 12 inches center to center and shall be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

The minimum distance between a transverse construction joint with tie bars and an adjacent transverse contraction joint shall be 5 feet.

When a transverse construction joint is made, paving will not be allowed in this area for 12 hours.

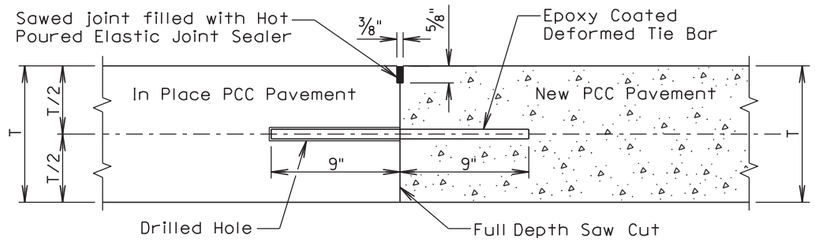
A transverse construction joint may be placed in lieu of the transverse contraction joint when shown in the plans.

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

June 26, 2013

Published Date: 2nd Qtr. 2016	SDDOT	PCC PAVEMENT MID PANEL TRANSVERSE CONSTRUCTION JOINT	PLATE NUMBER 380.07
			Sheet 1 of 1

DETAIL A
TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS



T = In Place PCC Pavement and New PCC Pavement Thickness

GENERAL NOTES:

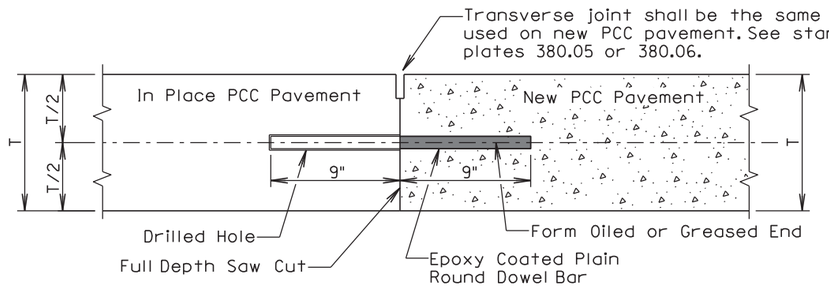
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

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

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

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

DETAIL B
TRANSVERSE CONSTRUCTION JOINT WITH DOWEL BARS



T = In Place PCC Pavement and New PCC Pavement Thickness

GENERAL NOTES:

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

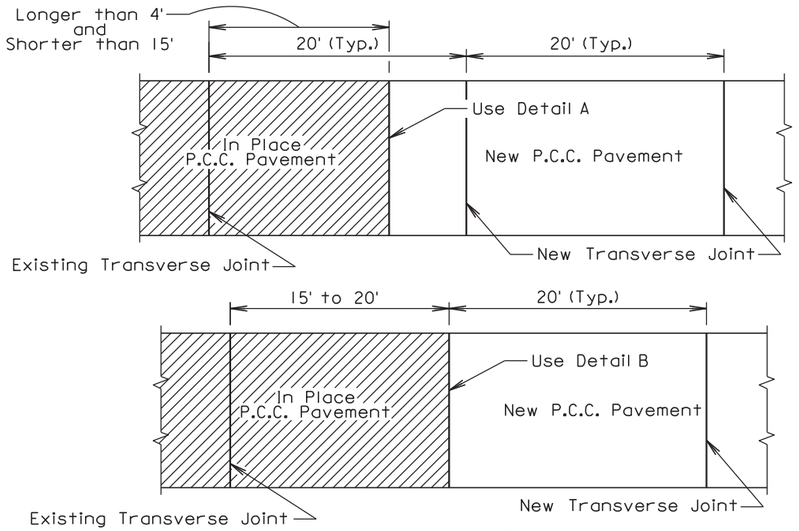
See sheet 2 of 2 of this standard plate to determine if Detail B shall be used.

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

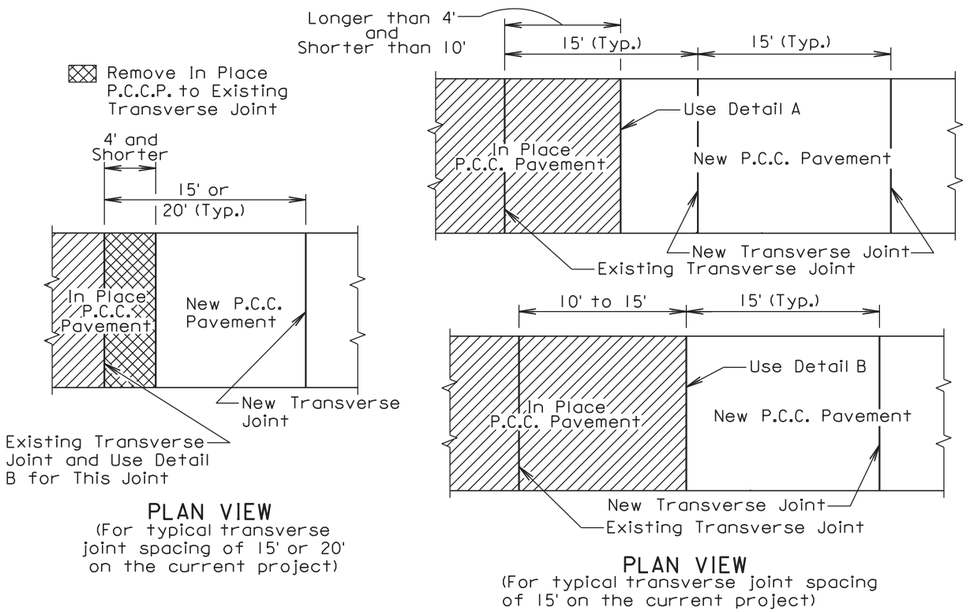
The epoxy coated plain round dowel bar size, number, and spacing shall be the same as detailed on the corresponding dowel bar assembly standard plate (380.01, 380.02, 380.03, or 380.04). The epoxy coated plain round dowel bars shall be a minimum of 3 inches and a maximum of 6 inches from the pavement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

September 6, 2013

Published Date: 2nd Qtr. 2016	SDDOT	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER 380.08
			Sheet 1 of 2



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



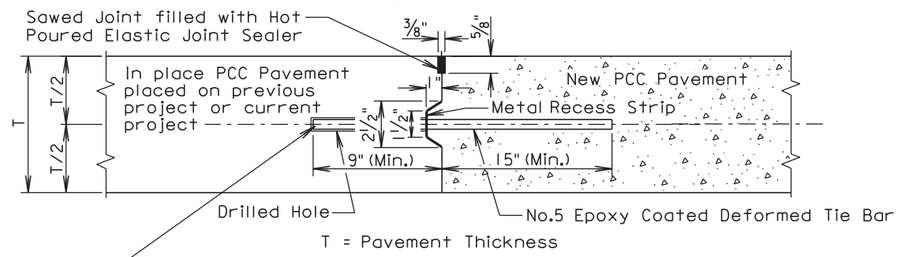
PLAN VIEW
(For typical transverse joint spacing of 15' or 20' on the current project)

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

September 6, 2013

Published Date: 2nd Qtr. 2016	SDDOT	PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS	PLATE NUMBER 380.08
			Sheet 2 of 2

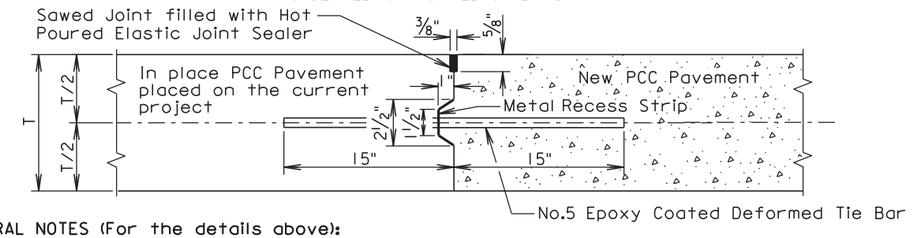
LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(DRILLED IN BARS)



T = Pavement Thickness

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

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(INSERTED OR FORMED IN BARS)



GENERAL NOTES (For the details above):

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

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

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

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

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

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

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

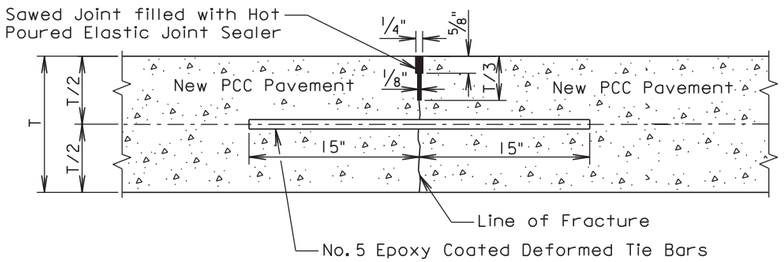
August 31, 2013

Published Date: 2nd Qtr. 2016	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10
			Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	60	83

SAWED LONGITUDINAL JOINT WITH TIE BARS

(POURED MONOLITHICALLY)



T = Pavement Thickness

GENERAL NOTES (For the detail above):

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

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

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

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

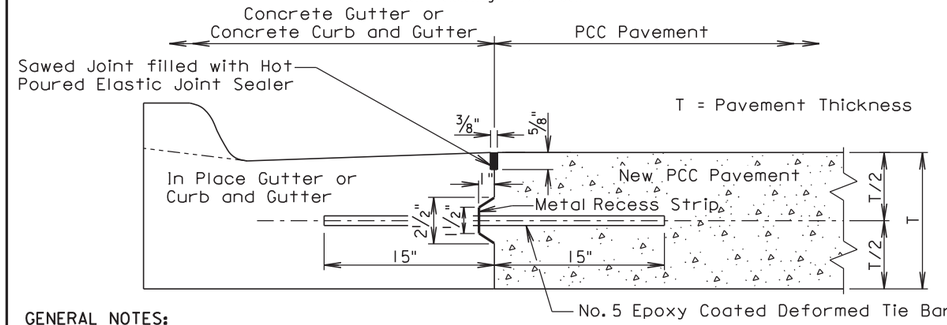
The first saw cut to control cracking shall be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer is necessary.

August 31, 2013

Published Date: 2nd Qtr. 2016	SDDOT	*PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS*	*PLATE NUMBER 380.10*
			Sheet 2 of 2

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS

(Individually Formed)



GENERAL NOTES:

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

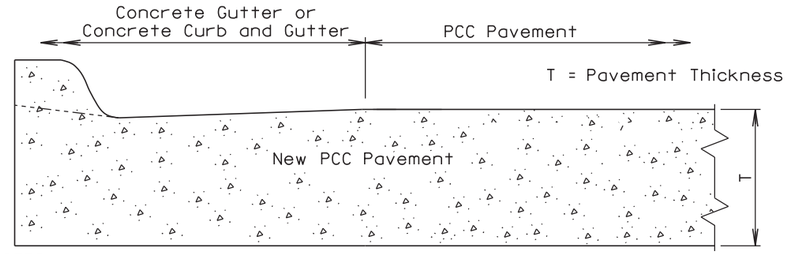
The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

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

The transverse contraction joints in the concrete gutter or concrete curb and gutter shall be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter shall be 1 1/2 inches deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint shall be at least 1/4 the thickness of the concrete gutter or concrete curb and gutter.

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

POURED MONOLITHICALLY



GENERAL NOTES:

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

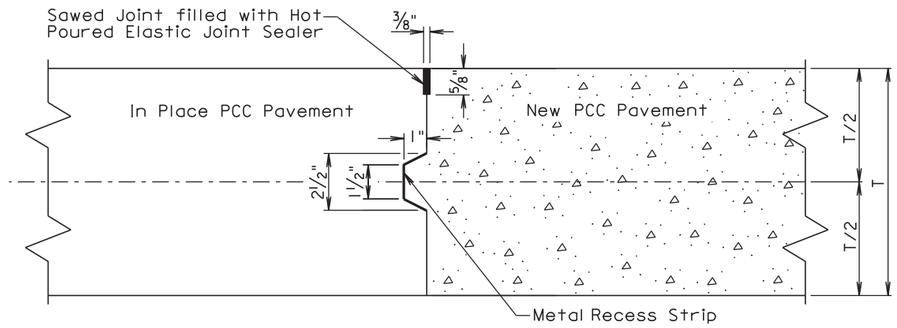
The gutter or curb and gutter shall be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter shall be sawed and sealed same as the transverse contraction joints in the PCC pavement.

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

June 26, 2013

Published Date: 2nd Qtr. 2016	SDDOT	*PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER*	*PLATE NUMBER 380.11*
			Sheet 1 of 1

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS



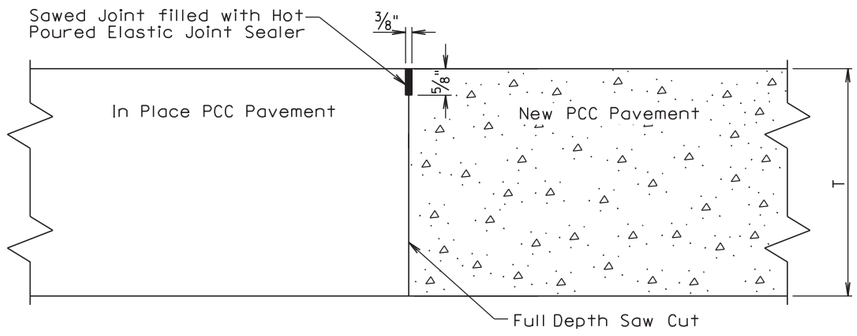
T = Pavement Thickness

GENERAL NOTES:

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

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

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS



T = Pavement Thickness

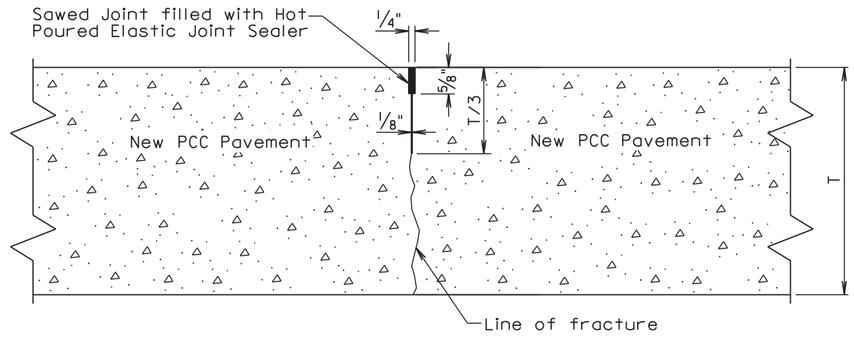
GENERAL NOTE:

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

September 14, 2001

Published Date: 2nd Qtr. 2016	SDDOT	*PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS*	*PLATE NUMBER* 380.12
			Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITHOUT TIE BARS



T = Pavement Thickness

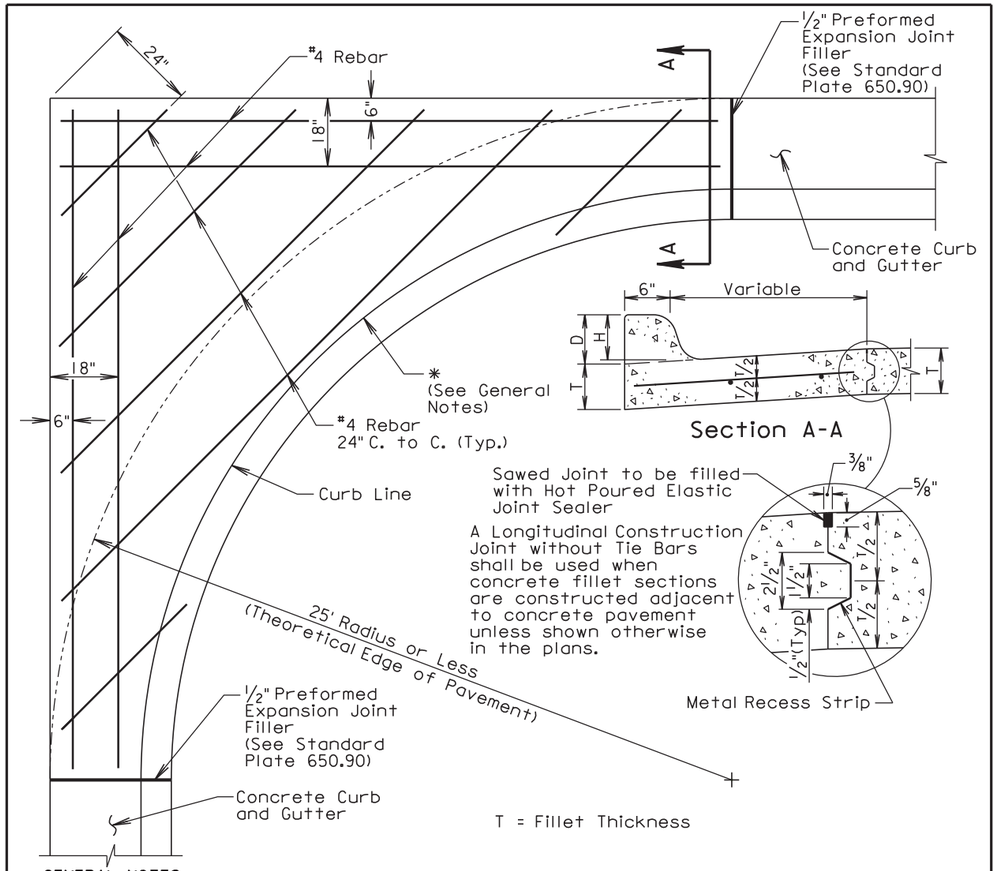
GENERAL NOTE:

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

September 14, 2001

Published Date: 2nd Qtr. 2016	SDDOT	*PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS*	*PLATE NUMBER* 380.12
			Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	62	83



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 shall conform to those shown on the appropriate curb and gutter standard plate.

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

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

The concrete curb shall 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 shall be constructed at 10' intervals except when fillets are constructed adjacent to PCC Pavement. If there is adjacent PCC Pavement the joints shall be extended from edge of pavement through the fillet section as directed by the Engineer.

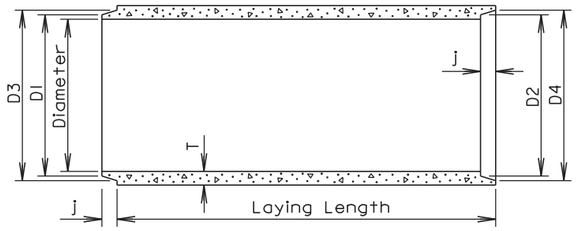
The cost for all materials, labor, and incidentals necessary to construct the PCC fillet section with curb and gutter shall be incidental to the contract unit price per square yard for the corresponding PCC fillet section bid item.

June 26, 2015

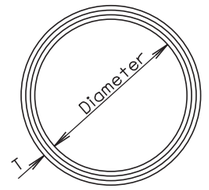
Published Date: 2nd Qtr. 2016	SDDOT	PCC FILLET SECTION WITH TYPE B CURB AND GUTTER	PLATE NUMBER 380.16
			Sheet 1 of 1

TOLERANCES IN DIMENSIONS

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



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

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

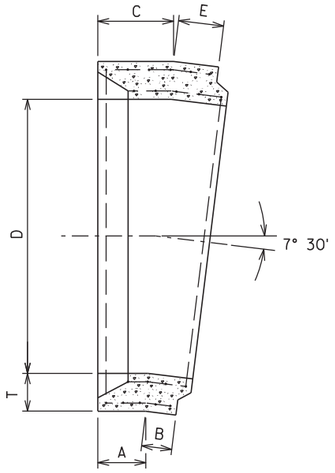
Not more than 2 four-foot sections shall be permitted near the ends of any culvert. Four-foot lengths shall be used only to secure the required length of culvert.

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

June 26, 2015

Published Date: 2nd Qtr. 2016	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	63	83



D (in.)	Laying Length at Center of Pipe (in.)	Laying Length at Outside of Curve (in.)	T (in.)	A (in.)	B (in.)	C (in.)	E (in.)	Radius of Curve (ft.)	Weight of Section (lbs.)
12	7 3/4	8	2	4 3/4	2	5 3/4	3	4.9	70
15	11 1/4	12 1/2	2 1/4	5 1/4	4 3/4	6 1/2	6	7.2	120
18	12 1/8	13 5/8	2 1/2	5 1/2	5 1/8	7	6 5/8	7.7	170
21	9 1/2	11 1/4	2 3/4	5 1/2	2 1/4	7 1/4	4	6.1	170
24	9 13/16	11 3/4	3	5 9/16	2 5/8	7 1/2	4 1/4	6.2	215
27	9 11/16	12 1/8	3 1/4	5 7/16	2 5/16	7 5/8	4 1/2	6.2	260
30	10	12 3/8	3 1/2	5 5/16	2 5/16	7 11/16	4 11/16	6.4	320
33	11 3/16	13 7/8	3 3/4	5 15/16	2 9/16	8 5/8	5 1/4	7.1	420
36	12 3/16	15 1/16	4	6 1/2	2 5/16	9 3/8	5 11/16	7.7	530
42	14 1/16	17 1/2	4 1/2	6 13/16	3 13/16	10 5/16	7 3/16	8.9	800
48	16 1/16	20 1/4	5	7 15/16	4 11/16	11 3/4	8 1/2	10.5	1190
54	18 1/16	22 5/16	5 1/2	7 5/8	6 3/16	11 7/8	10 7/16	11.5	1600
60	20 1/2	25 1/4	6	8 5/8	7 1/8	13 3/8	11 7/8	13.0	2210
66	21 5/8	26 15/16	6 1/2	9	7 3/8	14 5/16	12 5/8	13.8	2790
72	22 5/8	28 1/4	7	9 3/8	7 5/8	13 1/4	15	14.4	3420

March 31, 2000

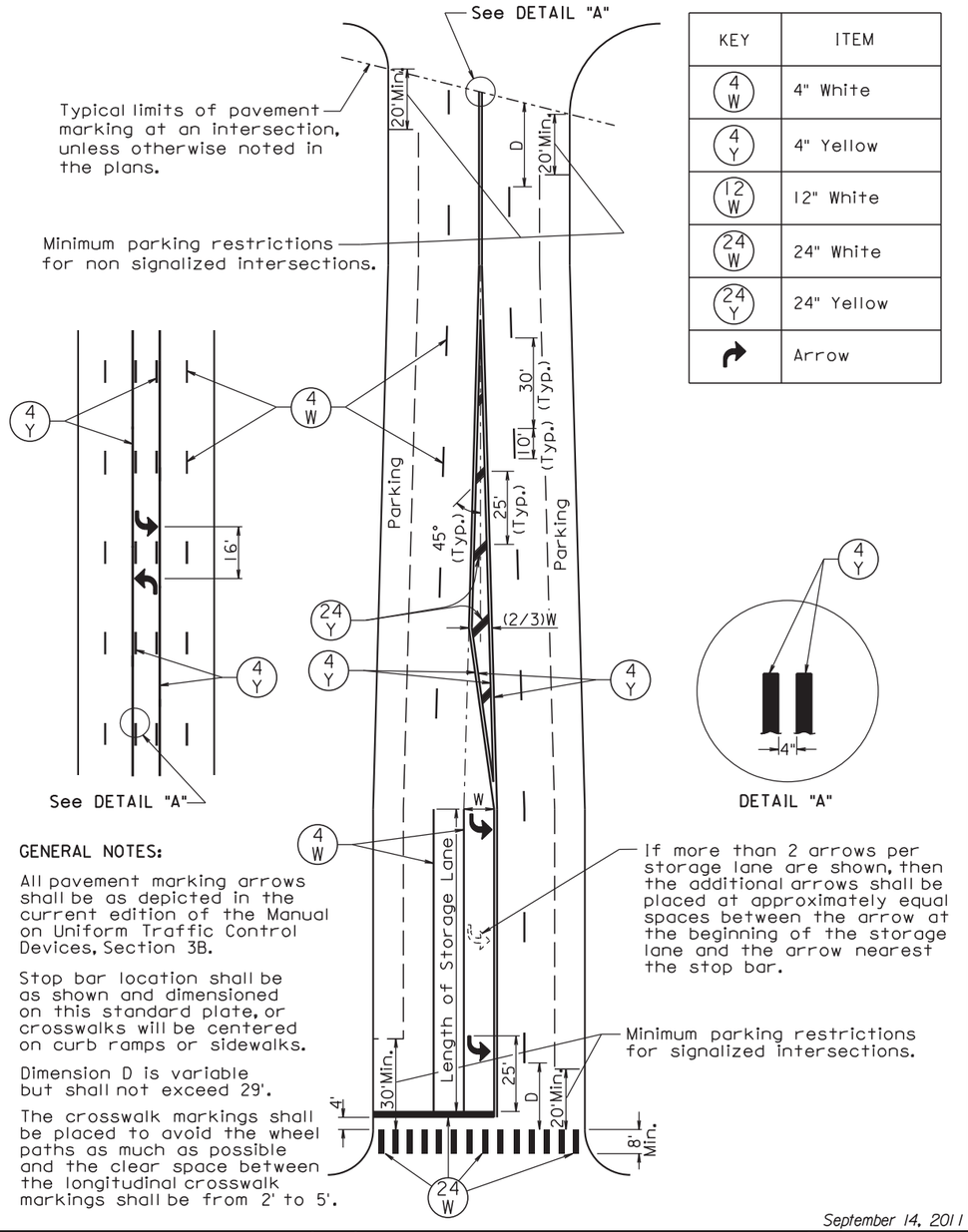
Published Date: 2nd Qtr. 2016

SDDOT

REINFORCED CONCRETE PIPE SHORT RADIUS BEND

PLATE NUMBER 450.03

Sheet 1 of 1



KEY	ITEM
4 W	4" White
4 Y	4" Yellow
12 W	12" White
24 W	24" White
24 Y	24" Yellow
	Arrow

GENERAL NOTES:

All pavement marking arrows shall be as depicted in the current edition of the Manual on Uniform Traffic Control Devices, Section 3B.

Stop bar location shall be as shown and dimensioned on this standard plate, or crosswalks will be centered on curb ramps or sidewalks.

Dimension D is variable but shall not exceed 29'.

The crosswalk markings shall be placed to avoid the wheel paths as much as possible and the clear space between the longitudinal crosswalk markings shall be from 2' to 5'.

September 14, 2011

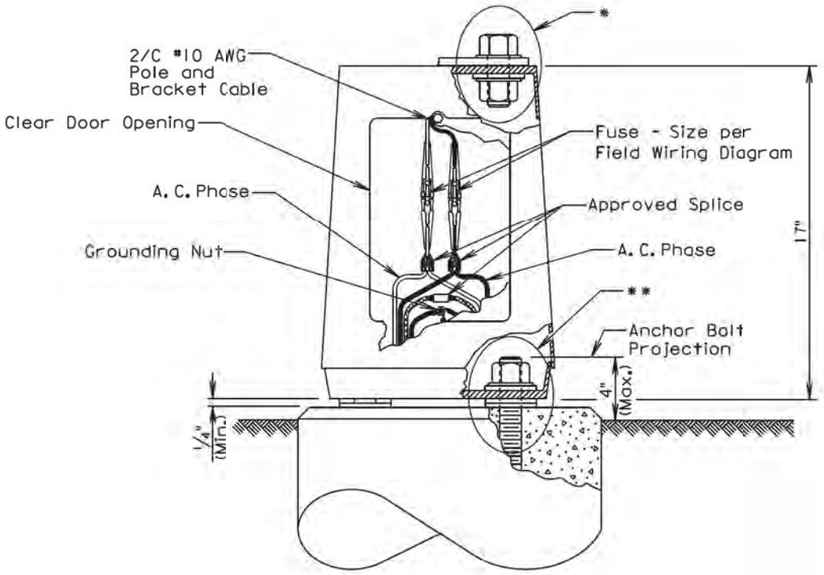
Published Date: 2nd Qtr. 2016

SDDOT

PAVEMENT MARKINGS FOR ADJACENT INTERSECTIONS AND CENTER TURN LANE

PLATE NUMBER 633.01

Sheet 1 of 1



GENERAL NOTES:

Base details are provided for example only and are not intended to be a complete design.

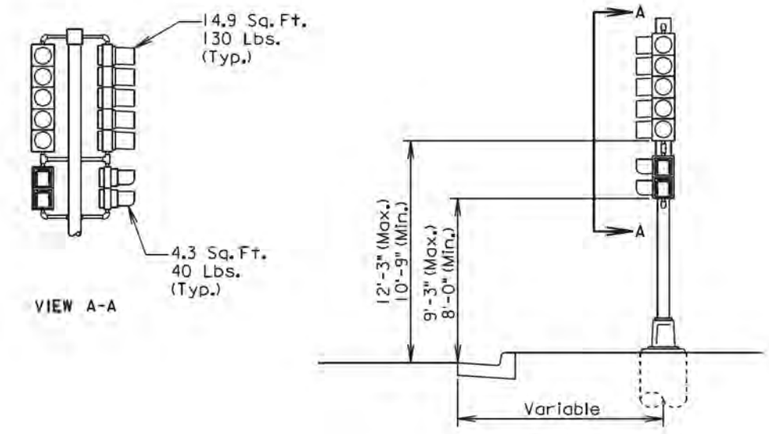
Fused connectors shall be breakaway type.

*Hardware connecting the pole to the base shall be installed in accordance with the manufacturer's recommendation.

**Hardware connecting the base to the footing shall be installed in accordance with the manufacturer's recommendation. The Contractor shall install leveling devices in accordance with the manufacturer's recommendation if shimming is necessary to install the light poles plumb and level. The washers and shims shall be installed around the anchor bolts.

September 6, 2015

Published Date: 2nd Qtr. 2016	SDDOT	ROADWAY LUMINAIRE POLE BREAKAWAY TRANSFORMER BASE	PLATE NUMBER 635.21
			Sheet 1 of 1



GENERAL NOTE:

The signal heads are shown with backplates removed so that the mounting hardware is visible.

October 15, 2007

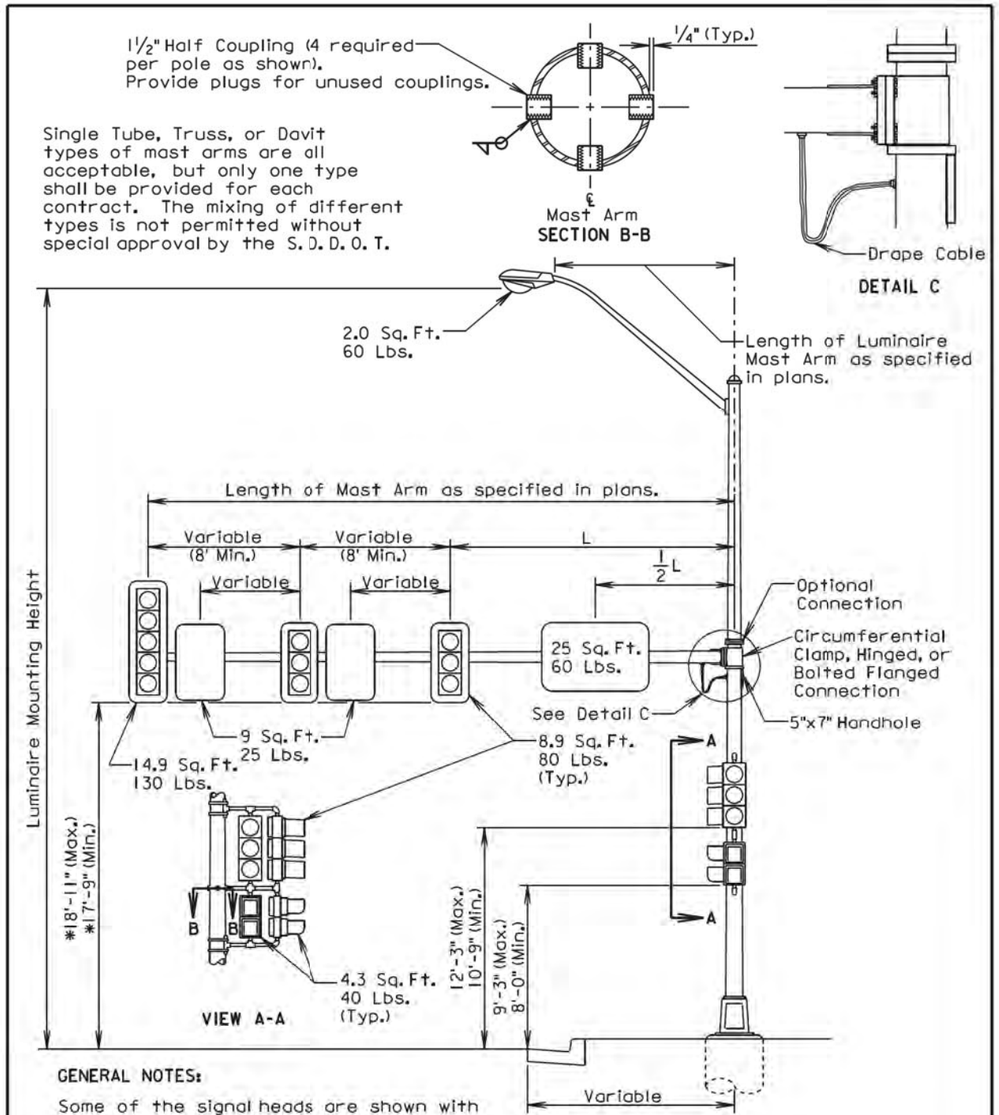
Published Date: 2nd Qtr. 2016	SDDOT	SIGNAL POLE (PEDESTAL)	PLATE NUMBER 635.30
			Sheet 1 of 1

PLOT SCALE - 1:200

PLOT NAME - 2

FILE - ...\SECTION L\635.21 & 635.30.DGN

-PLOTTED FROM - TRAB10100



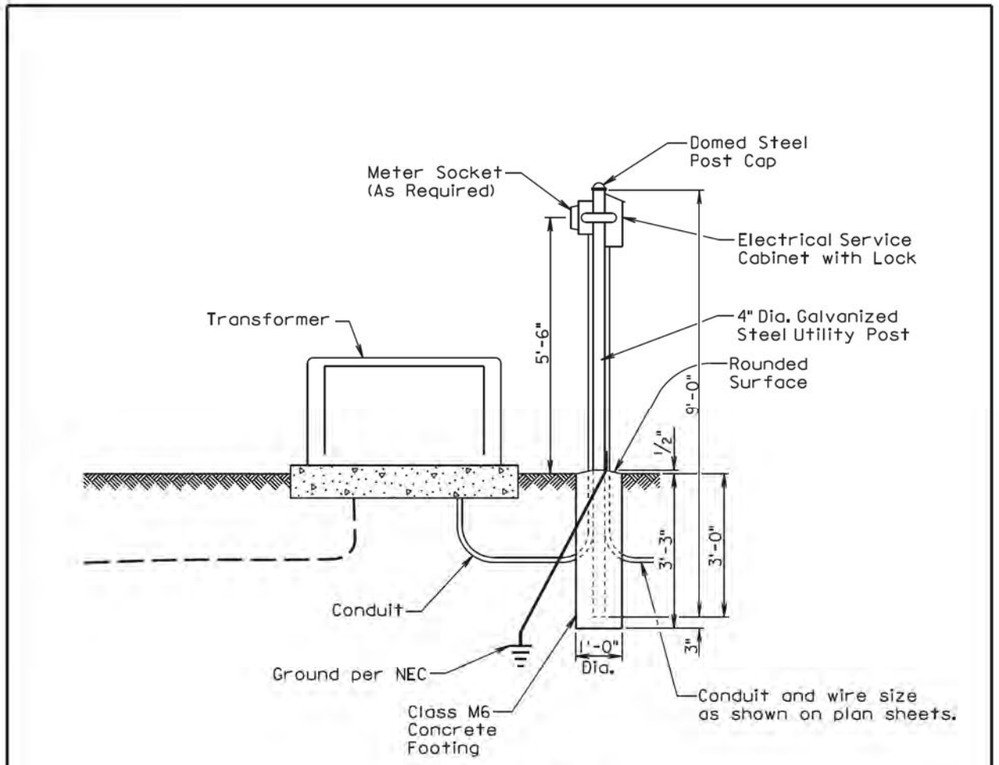
GENERAL NOTES:

Some of the signal heads are shown with backplates removed so that the mounting hardware is visible.

* The signal height allowances shown above are based on a horizontal distance greater than 53' between the signals and stop line. For horizontal distance of 53' and less between the signals and the stop line, the height allowances shall be as specified in Section 4D.15 of the MUTCD.

December 23, 2008

Published Date: 2nd Qtr. 2016	SDDOT	SIGNAL POLE (WITH MAST ARM AND LUMINAIRE EXTENSION)	PLATE NUMBER 635.32 Sheet 1 of 1



ELEVATION

GENERAL NOTES:

The concrete for the post footing shall be class M6 concrete.

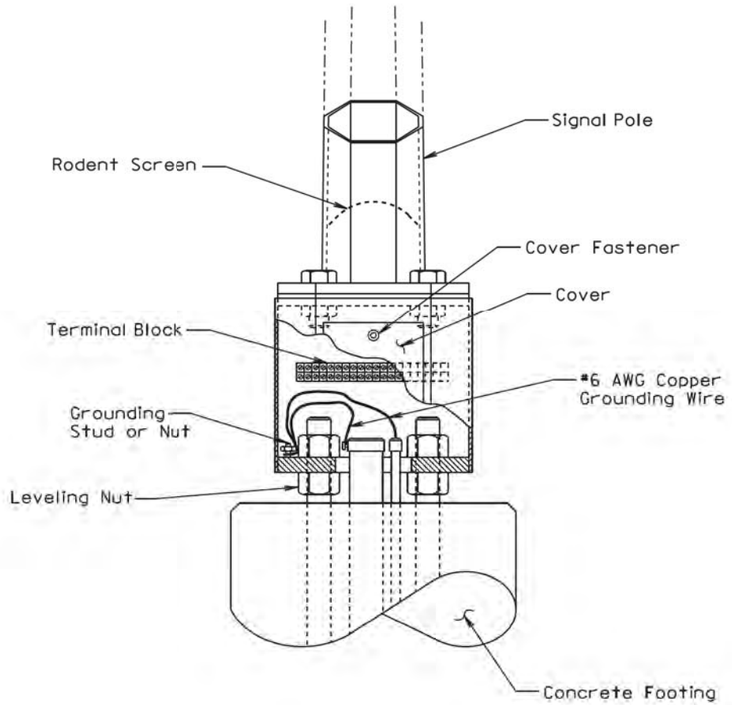
The 4" diameter galvanized steel utility post shall be 9' long and shall be in conformance with AASHTO Standard Specifications M181. The post shall be Type 1 and either Grade 1 or Grade 2. The domed steel post cap shall be in conformance with AASHTO Standard Specifications M181 and shall be Type 1.

The Contractor shall contact and coordinate his/her work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary.

All costs for furnishing and installing all materials from the electrical service cabinet to the transformer including labor, equipment, hookup fees, all items within the cabinet, post, concrete footing, post cap, meter socket if required, conduit, and incidentals shall be incidental to the contract unit price per each for "Electrical Service Cabinet".

June 26, 2006

Published Date: 2nd Qtr. 2016	SDDOT	SERVICE FROM PAD MOUNTED TRANSFORMER WITH METER ON A GALVANIZED STEEL UTILITY POST	PLATE NUMBER 635.41 Sheet 1 of 1



GENERAL NOTES:

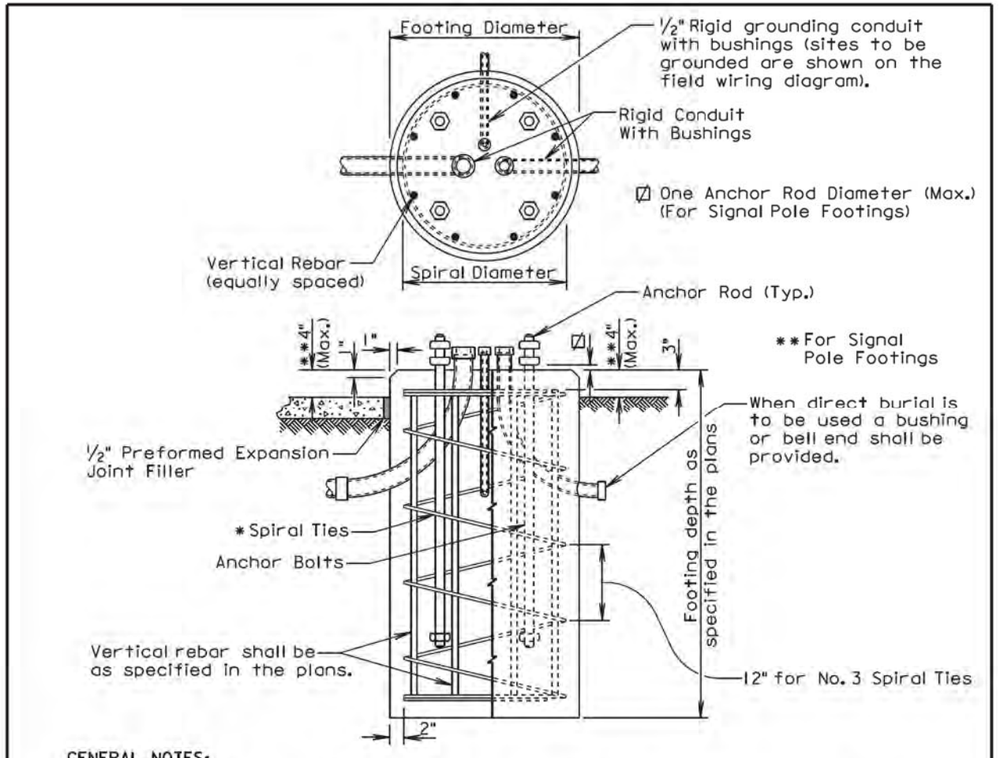
Base details are provided for example only and are not intended to be a complete design.

The Contractor shall furnish and install a rodent screen in the signal pole above the tranformer base. The rodent screen shall be a galvanized steel mesh with a maximum opening size of 1/4 inch. The rodent screen shall be friction fitted or installed by other methods approved by the Engineer.

All costs for furnishing and installing the rodent screen including labor, equipment, and materials shall be incidental to the contract unit price per each for the corresponding signal pole bid item.

December 23, 2008

Published Date: 2nd Qtr. 2016	SDDOT	TRANSFORMER SIGNAL POLE BASE	PLATE NUMBER 635.50
			Sheet 1 of 1



GENERAL NOTES:

* Circular ties may be used in lieu of the spiral ties. The No. 3 ties shall be spaced 12 inches apart except for the top two which shall be spaced 6 inches apart. The ties shall be lapped 18 inches and the laps shall be staggered around the cage.

Spiral ties shall have 1-1/2 extra turns at each end.

See Section 985 of the Specifications for footing materials.

Conduits and bushings may project 2½ inches to 6 inches above footing for fixed base poles but shall not project above the slip plane or fracture plane for breakaway poles.

Conduits shall be sealed water-tight during all phases of construction until poles are in place.

The anchor rods shall fit inside the reinforcing steel cage. If the anchor rods designed by the Pole Manufacturer do not fit, contact the Office of Bridge Design for footing redesign. No additional payment will be made for the redesigned footing.

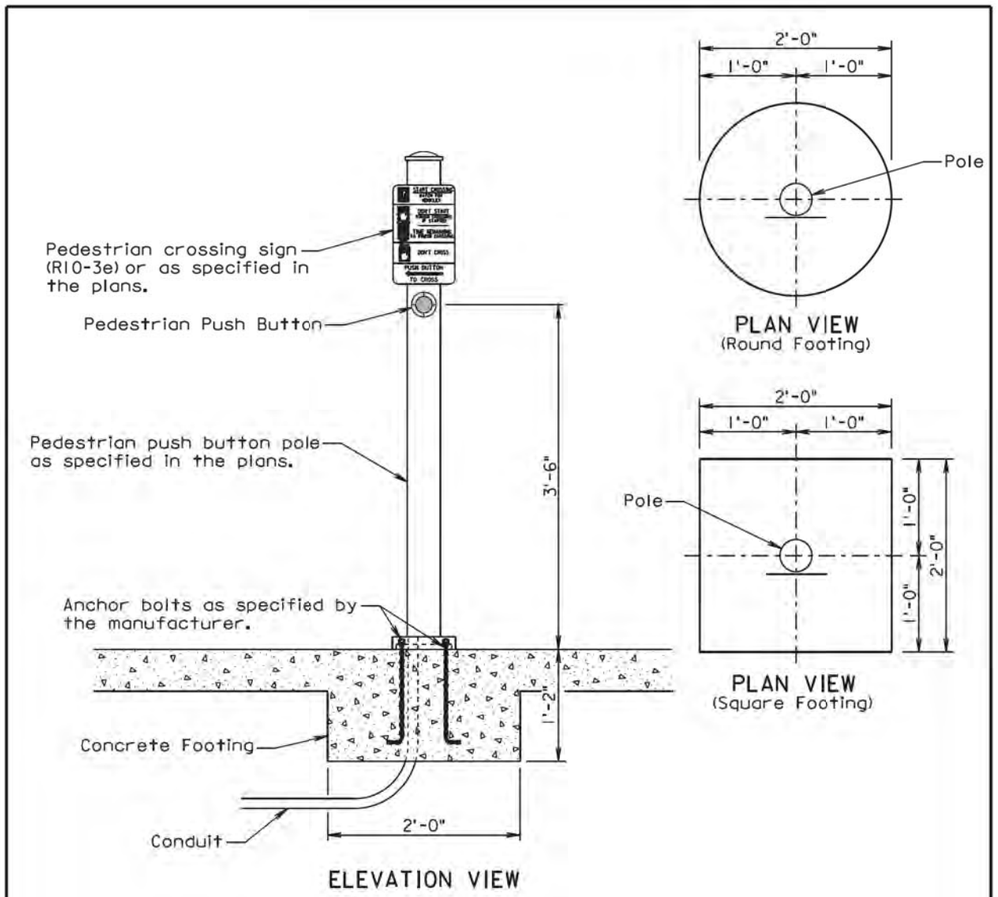
Costs of conduit and conduit bushings shown on footing detail shall be incidental to the footing bid item(s).

The pole shall not be installed until the concrete has attained design strength (4000 psi).

The contour of the area surrounding the breakaway pole shall be flat, though not necessarily level for a distance of 5 feet in all directions. The Contractor may be required to provide finish grading at some breakaway pole locations.

June 26, 2015

Published Date: 2nd Qtr. 2016	SDDOT	POLE FOOTING	PLATE NUMBER 635.55
			Sheet 1 of 1



GENERAL NOTES:

The pedestrian push button pole shall be as specified in the plans.

The Contractor shall install either the round or the square concrete footing. For informational purpose, the quantity of concrete for one footing is 0.14 cubic yards for the round footing and 0.17 cubic yards for the square footing.

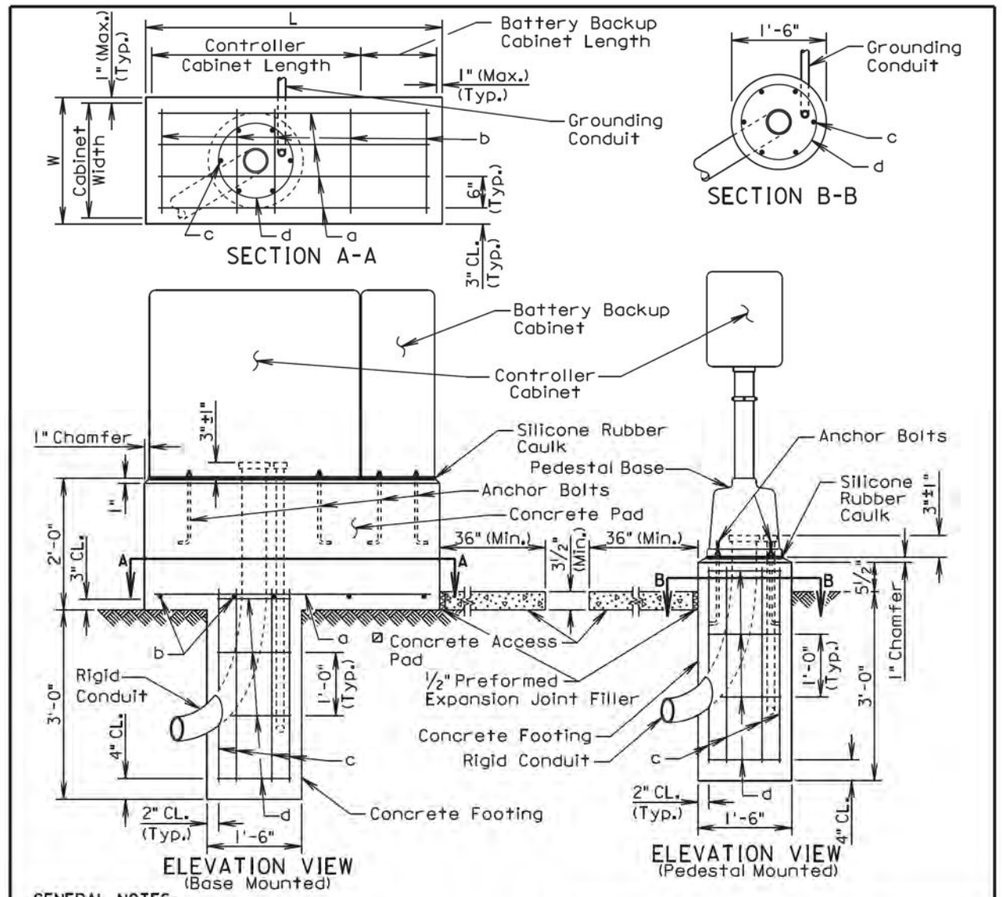
The concrete for the footing shall be class M6 concrete.

All costs for furnishing and installing the concrete footing shall be incidental to the contract unit price per square foot for the corresponding concrete sidewalk bid item.

All costs for furnishing and installing the pedestrian push button pole including labor, equipment, and materials including the pole, cap, and the conduit in the footing shall be incidental to the contract unit price per each for "Pedestrian Push Button Pole".

March 21, 2016

Published Date: 2nd Qtr. 2016	SDDOT	PEDESTRIAN PUSH BUTTON POLE	PLATE NUMBER 635.57
			Sheet 1 of 1



GENERAL NOTES:

The concrete pad shall conform to the base of the controller and battery backup cabinets to the satisfaction of the Engineer.

Conduits shall be sealed water-tight until the conductor cables are installed.

☑ If the controller and battery backup concrete pad and footing is not located within or adjacent to an existing sidewalk, the Contractor shall provide a concrete access pad as directed by the Engineer.

Anchor bolts and related hardware shall conform to the controller and battery backup cabinets manufacturer's specifications.

A continuous bead of silicone rubber caulk shall provide a weather-tight seal between the concrete pad or footing, and the cabinet or base.

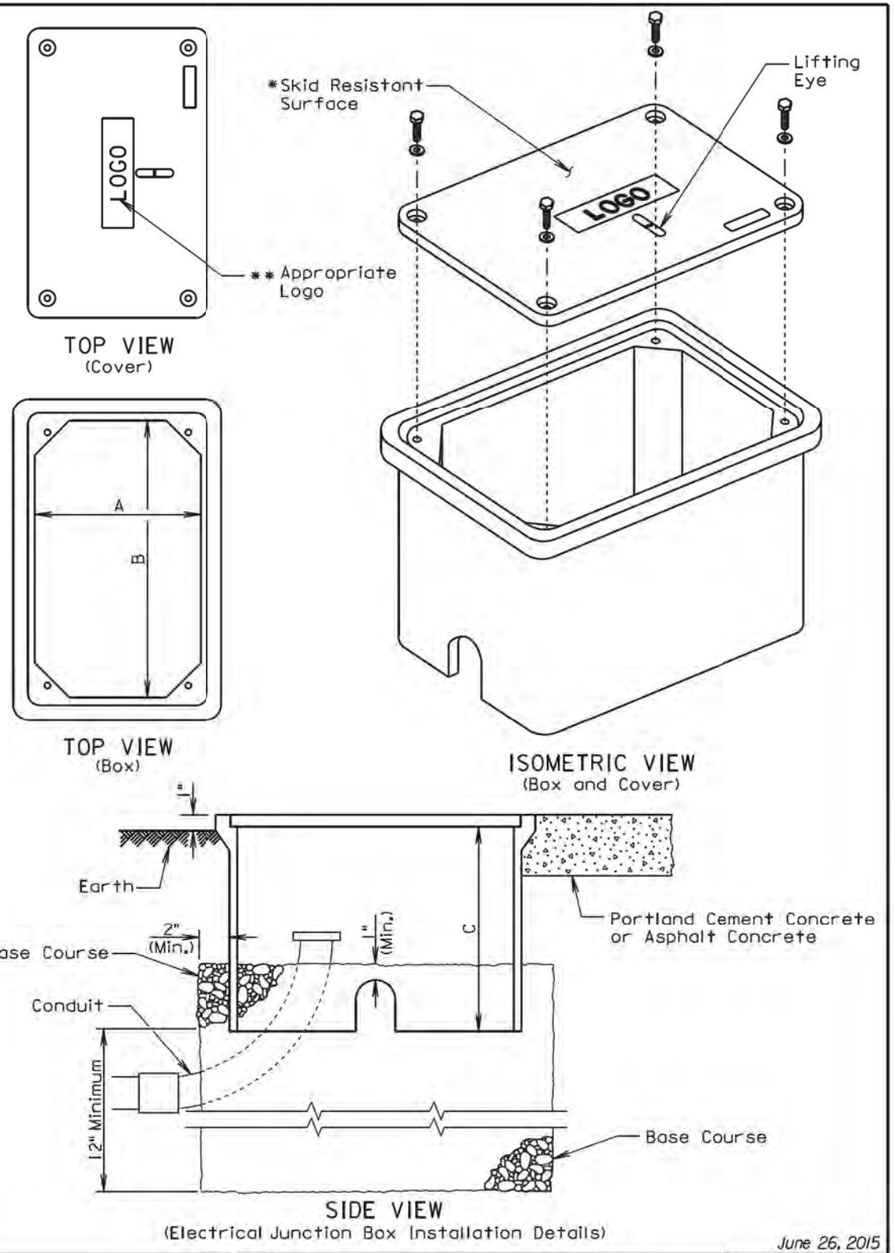
REINFORCING SCHEDULE
(for one footing)

Mk.	No.	Size	Length	Type	Bending Detail
a	*	3	L - 4"	Str.	
b	*	3	W - 4"	Str.	
c	6	6	3'-0"	Str.	
d	4	3	4'-0"	T3	6" Min. Lap, 1'-2", Type T3

Note: Dimensions are out to out of bar
* Vary number of bars as required by footing size.

March 21, 2016

Published Date: 2nd Qtr. 2016	SDDOT	CONTROLLER CABINET AND FOOTING	PLATE NUMBER 635.60
			Sheet 1 of 1



June 26, 2015

Published Date: 2nd Qtr. 2016	SDDOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65 Sheet 1 of 2

ELECTRICAL JUNCTION BOX

TYPE	DESCRIPTION	DIMENSIONS		
		A	B	C
1	Open Bottom with Gasket	11"-15"	18"-21"	18" (Min.)
2	Open Bottom with Gasket	13"-18"	23"-28"	18" (Min.)
3	Open Bottom with Gasket	17"-22"	24"-30"	18" (Min.)
4	Open Bottom with Gasket	28"-33"	36"-48"	24" (Min.)

GENERAL NOTES:

The cover shall be gasketed with a minimum of two stainless steel bolts and washers.

The cover shall have a lifting eye.

* The surface of the cover shall have a minimum wet and dry coefficient of friction value of 0.5 as determined by ASTM F 609.

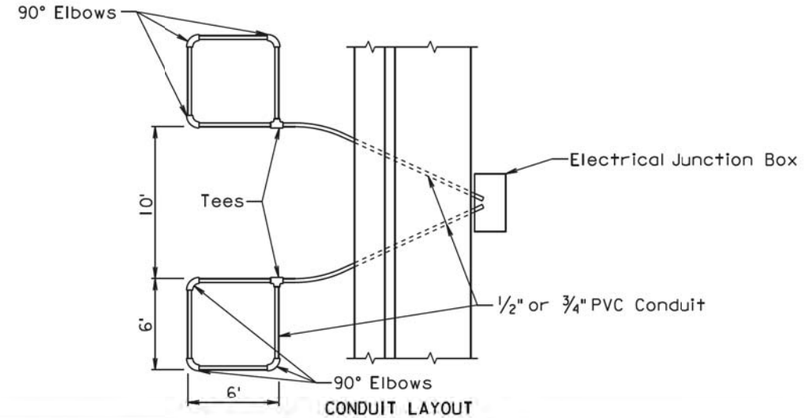
** The cover of the junction box shall have the appropriate logo in one inch size letters and shall be recessed. When the junction box contains cables or wires for a traffic signal then the logo shall be "Signal". When the junction box contains lighting conductors then the logo shall be "Lighting".

The electrical junction boxes shall comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all the electrical junction boxes shall be Tier 8 of ANSI/SCTE 77 2007.

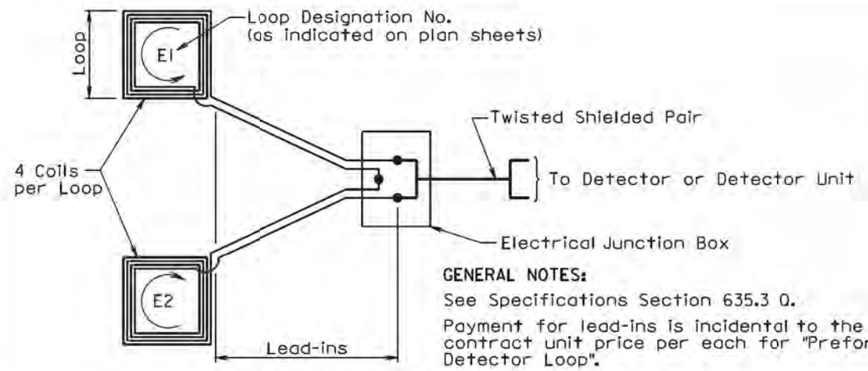
The electrical junction boxes shall be UL listed.

June 26, 2015

Published Date: 2nd Qtr. 2016	SDDOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65 Sheet 2 of 2



CONDUIT LAYOUT

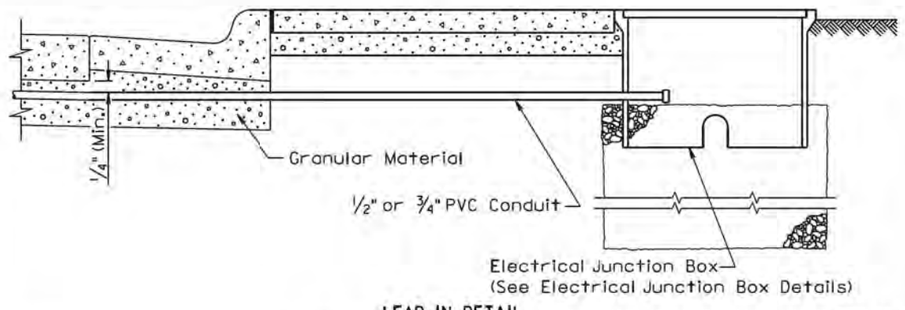


GENERAL NOTES:

See Specifications Section 635.3 O.

Payment for lead-ins is incidental to the contract unit price per each for "Preformed Detector Loop".

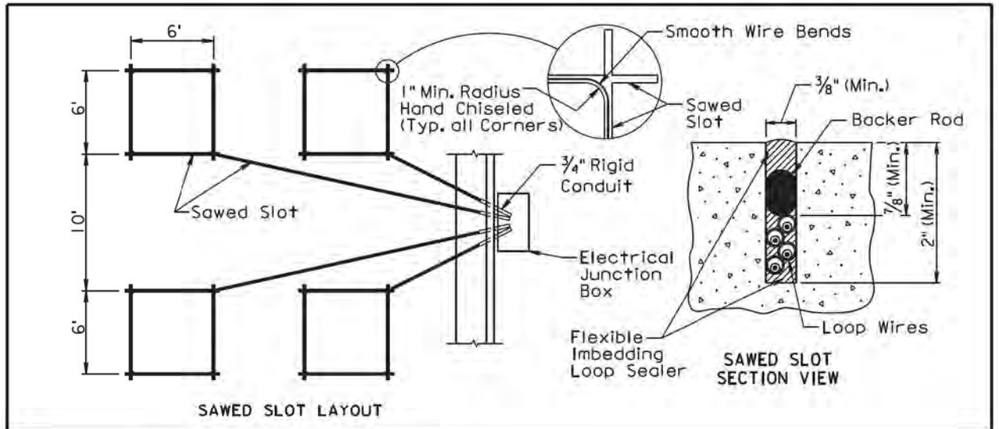
WIRING DIAGRAM



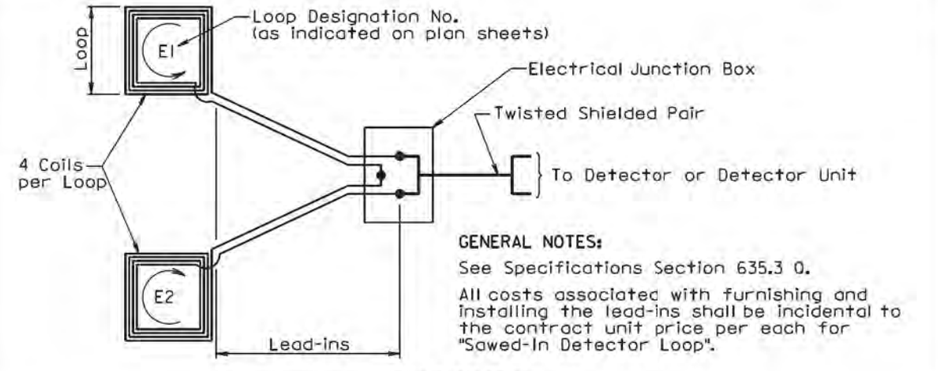
LEAD-IN DETAIL

June 26, 2015

Published Date: 2nd Qtr. 2016	SDDOT	PREFORMED DETECTOR LOOP	PLATE NUMBER 635.70 Sheet 1 of 1



SAWED SLOT LAYOUT

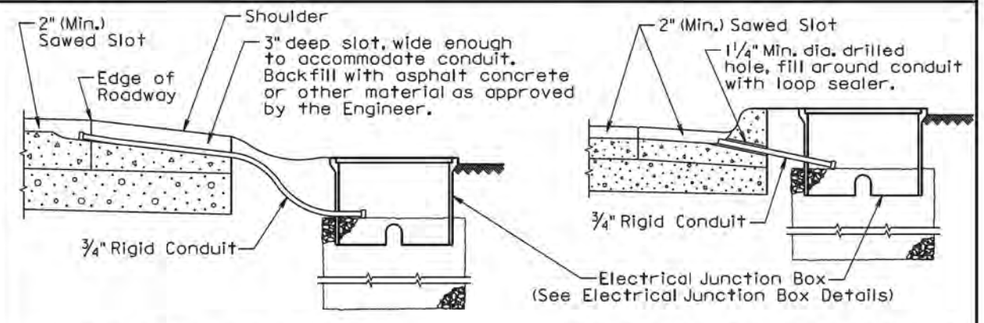


GENERAL NOTES:

See Specifications Section 635.3 O.

All costs associated with furnishing and installing the lead-ins shall be incidental to the contract unit price per each for "Sawed-In Detector Loop".

WIRING DIAGRAM

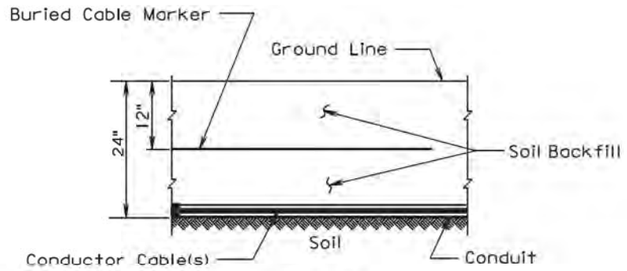


LEAD-IN THROUGH SHOULDER DETAIL

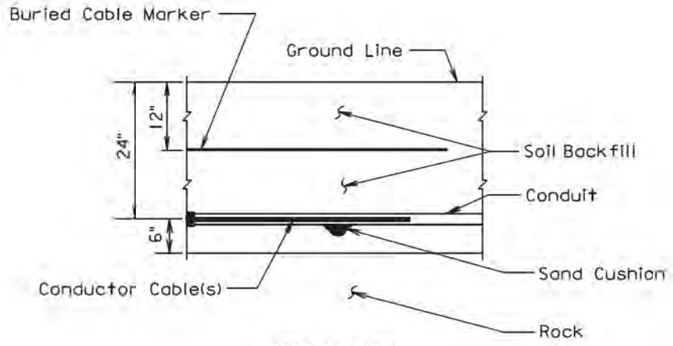
LEAD-IN THROUGH CURB AND GUTTER DETAIL

June 26, 2015

Published Date: 2nd Qtr. 2016	SDDOT	SAWED-IN DETECTOR LOOP	PLATE NUMBER 635.71 Sheet 1 of 1



SECTION VIEW



SECTION VIEW

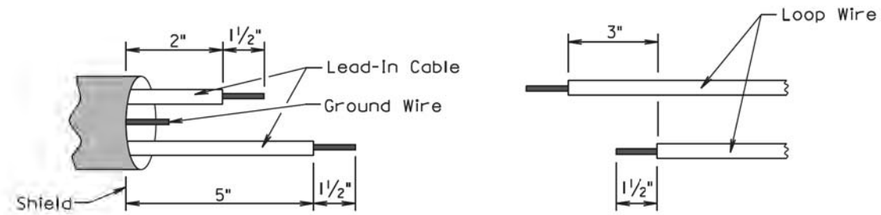
GENERAL NOTE:

The Buried Cable Marker shall be plastic, approximately 6" wide, and shall be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker shall have a life expectancy approximately equal to that of the conductor(s) beneath it. A phrase indicating the presence of a buried electric circuit below shall be printed in a contrasting color on the cable marker. The Buried Cable Marker shall be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker shall be incidental to the contract unit price per Foot for the bid item used for the electrical conductor.

March 31, 2000

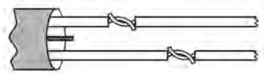
Published Date: 2nd Qtr. 2016	SDDOT	CONDUIT INSTALLATION	PLATE NUMBER 635.76
			Sheet 1 of 1

Step 1. Strip loop wires and lead-in cable.

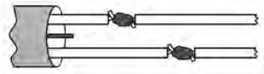


Step 2. Connect and solder.

Twist bare conductors together

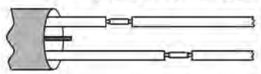


and solder with 60/40 (tin/lead) resin solder

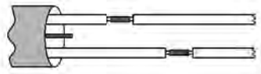


OR

Crimp bare conductors together with an uninsulated butt connector

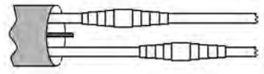


and solder with 60/40 (tin/lead) resin solder



Step 3. Insulate each solder joint seperately.

Electrical Tape



OR

Shrink Tube

Step 4. Environmentally seal total splice against weather, moisture and abrasion. Methods for environmentally sealing the splice include heat-shrinkable tubing, special sealing kits, special forms to be filled by sealant, and tape and coating.

June 20, 2000

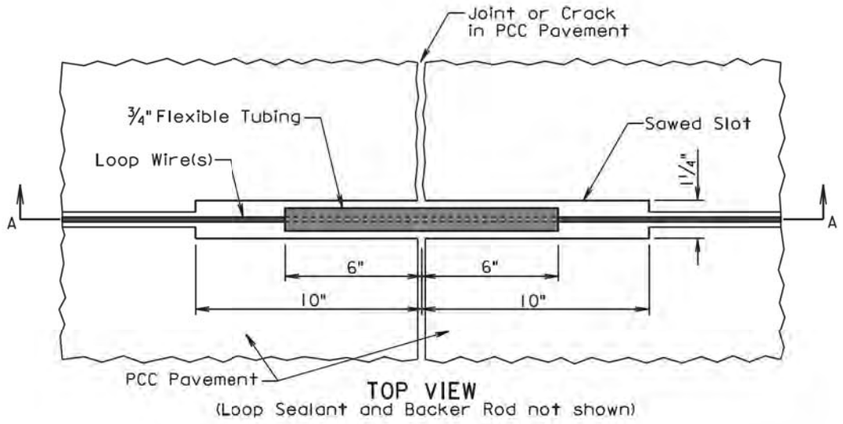
Published Date: 2nd Qtr. 2016	SDDOT	DETECTOR LOOP WIRE SPLICING	PLATE NUMBER 635.77
			Sheet 1 of 1

PLOT SCALE - 1:200

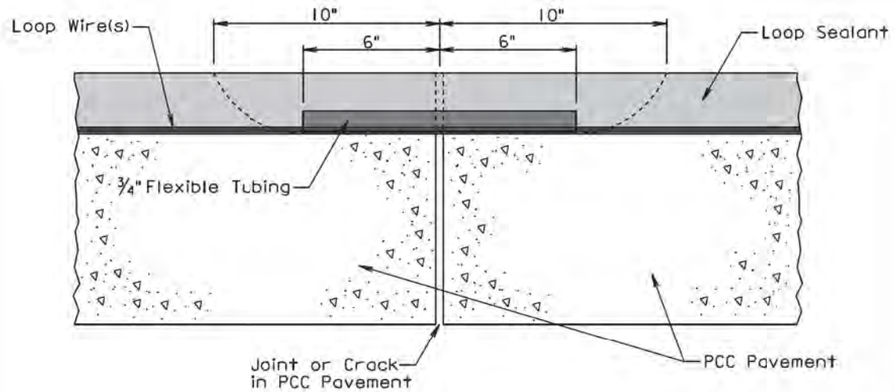
PLOT NAME - 8

FILE - ...\SECTION L\635.76 & 635.77.DGN

-PLOTTED FROM - TRAB10100



TOP VIEW
(Loop Sealant and Backer Rod not shown)



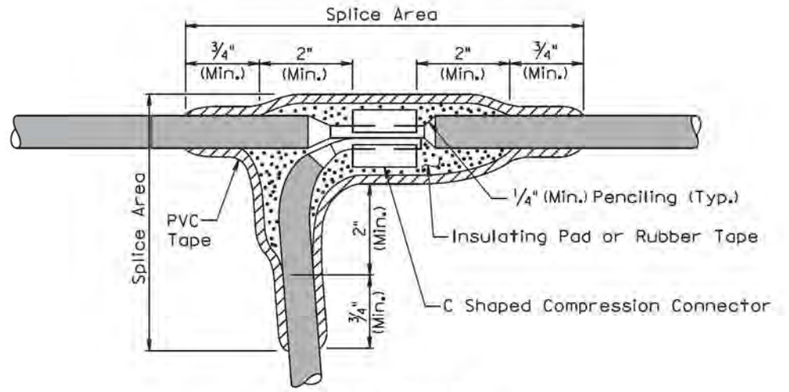
SECTION A-A
(Backer Rod not shown)

GENERAL NOTE:

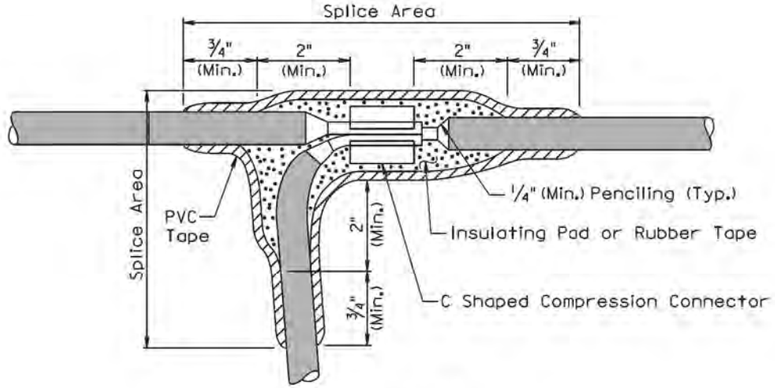
All costs for constructing the sawed-in detector loop protection including labor, equipment, and materials shall be incidental to the contract unit price per each for "Sawed-In Detector Loop".

March 28, 2001

Published Date: 2nd Qtr. 2016	SDDOT	***SAWED-IN DETECTOR LOOP PROTECTION AT JOINT OR CRACK IN PCC PAVEMENT***	*PLATE NUMBER* 635.78 *Sheet 1 of 1*



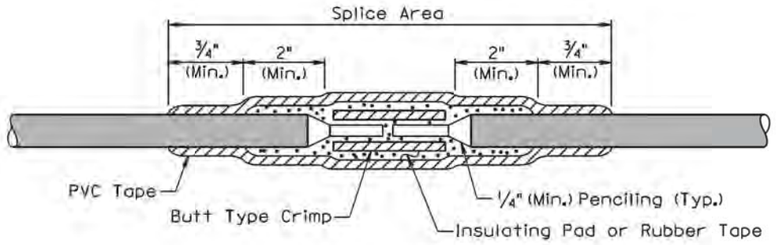
TYPE C SPLICE
(Between 1 free end and 1 through conductor)



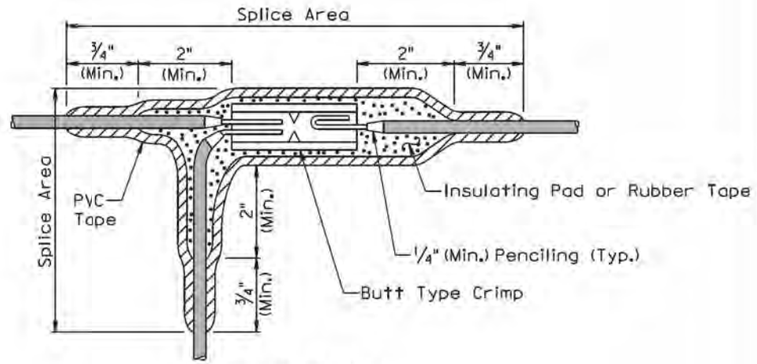
TYPE T SPLICE
(For 3 free ends)

February 14, 2010

Published Date: 2nd Qtr. 2016	SDDOT	***WIRE SPLICING FOR LIGHTING (LOW VOLTAGE CIRCUITS (0 to 600 V))***	*PLATE NUMBER* 635.80 *Sheet 1 of 2*



TYPE S SPLICE
(Between 2 free ends)



TYPE ST SPLICE
(For 3 free ends)

GENERAL NOTES:

The splice shall be environmentally sealed for protection from weather, moisture, and abrasion in accordance with the method stated below.

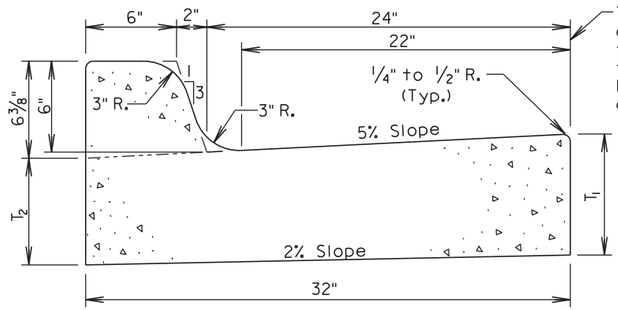
The rubber tapes shall be rolled after application.

Method for insulating splice area:

1. The splice area shall be completely covered with electrical insulating coating and dried.
2. Apply two layers of 1/8" minimum thickness electrical insulating pad or two layers of half lapped synthetic oil resistant self fusing rubber tape.
3. Three layers of half lapped polyvinyl chloride tape shall be applied.
4. The entire splice area shall be covered with electrical insulating coating and dried.

February 14, 2010

Published Date: 2nd Qtr. 2016	SDDOT	WIRE SPLICING FOR LIGHTING (LOW VOLTAGE CIRCUITS (0 to 600 V))	PLATE NUMBER 635.80
			Sheet 2 of 2



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_1 (Inches)	T_2 (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B66	6	5 1/16	0.057	17.7
B67	7	6 1/16	0.065	15.4
B68	8	7 1/16	0.073	13.7
B68.5	8.5	7 9/16	0.077	13.0
B69	9	8 1/16	0.081	12.3
B69.5	9.5	8 9/16	0.085	11.7
B610	10	9 1/16	0.090	11.2
B610.5	10.5	9 9/16	0.094	10.7
B611	11	10 1/16	0.098	10.2
B611.5	11.5	10 9/16	0.102	9.8
B612	12	11 1/16	0.106	9.4

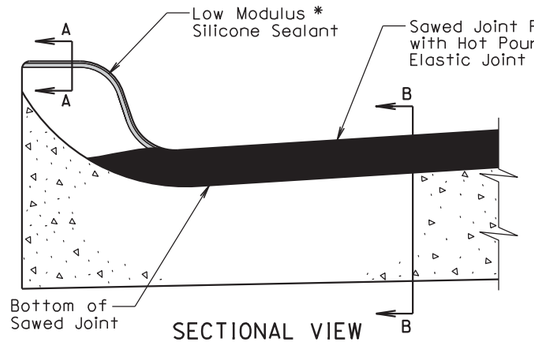
GENERAL NOTES:

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

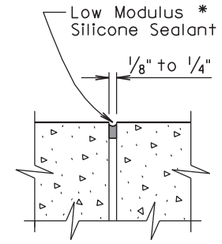
September 6, 2008

Published Date: 2nd Qtr. 2016	SDDOT	TYPE B CONCRETE CURB AND GUTTER	PLATE NUMBER 650.01
			Sheet 1 of 1

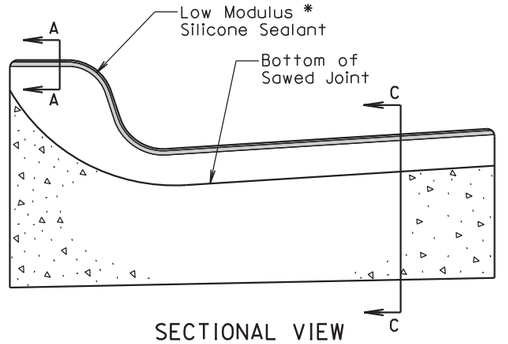


SECTIONAL VIEW

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

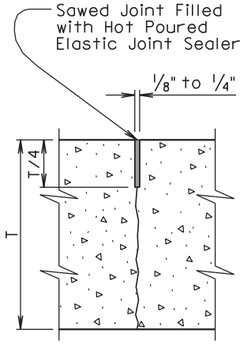


SECTION A-A

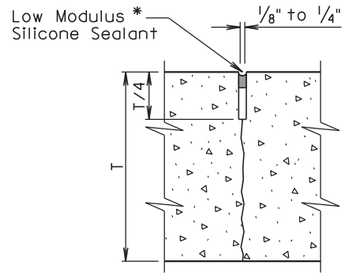


SECTIONAL VIEW

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



SECTION B-B



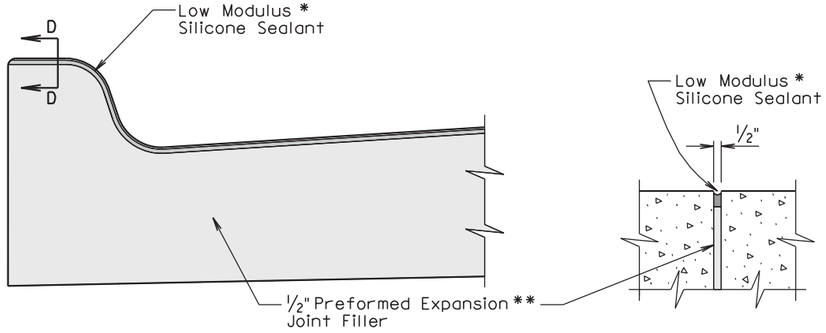
SECTION C-C

* The silicone sealant 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: 2nd Qtr. 2016	SDDOT	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	74	83



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

SECTION D-D

* 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.

GENERAL NOTES:

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

** A ½" preformed expansion joint filler shall be placed transversely in the curb and gutter at the following locations:

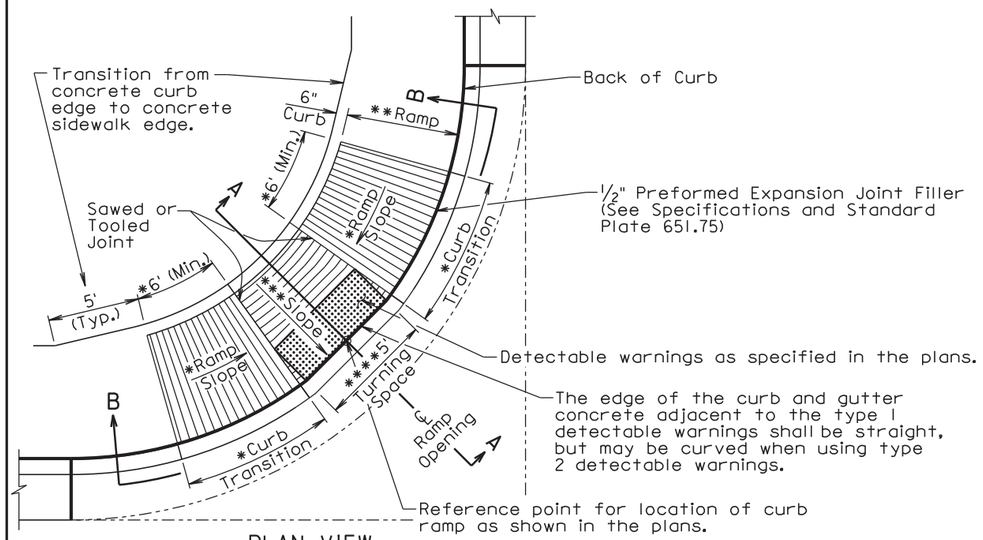
1. At each junction between the radius return of curb and gutter and curb and gutter which is parallel to the project centerline.
2. At each junction between new curb and gutter and existing curb and gutter.

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

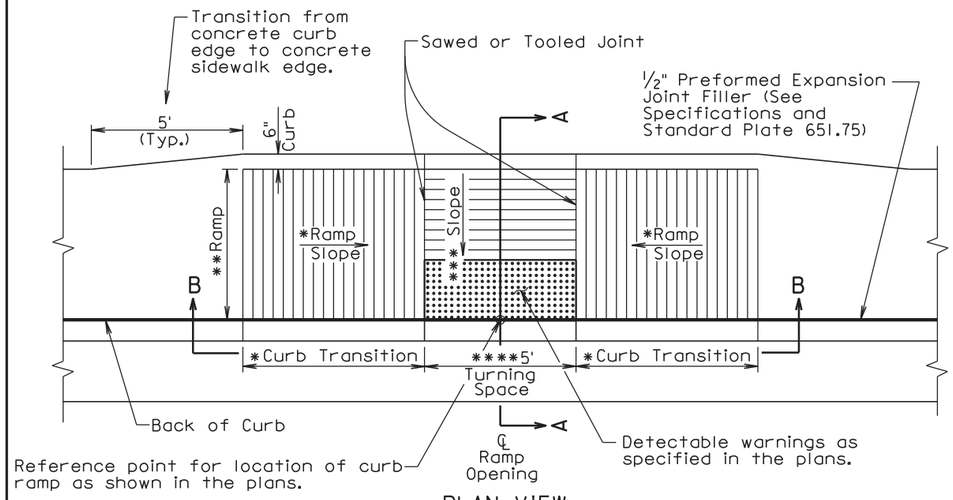
When concrete curb and gutter is not placed monolithically with the mainline PCC pavement or when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete curb and gutter shall be 1½ inches deep if formed in the fresh concrete using a suitable grooving tool.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

September 6, 2013

Published Date: 2nd Qtr. 2016	SDDOT	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 2 of 2



PLAN VIEW
(With Curved Curb and Gutter)



PLAN VIEW
(With Straight Curb and Gutter)

September 6, 2015

Published Date: 2nd Qtr. 2016	SDDOT	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 1 of 3

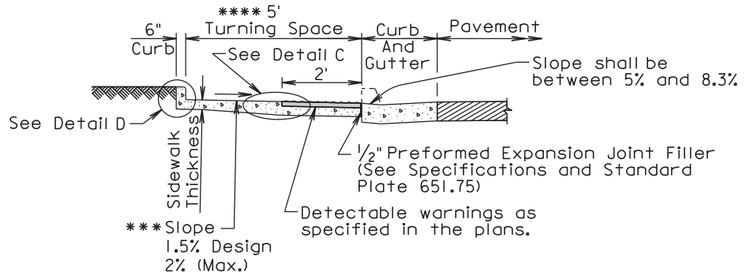
* The curb transition slope shall match the curb ramp slope. Curb ramp slopes are designed at 7.5% unless stated otherwise in the plans. The curb ramp may have a maximum slope of 8.3% at any location of the curb ramp and shall not exceed 15' in length unless stated otherwise in the plans. The curb transitions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

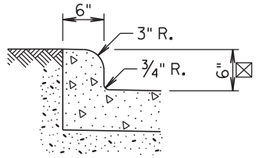
*** The slope in the turning space shall not be steeper than 2% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

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

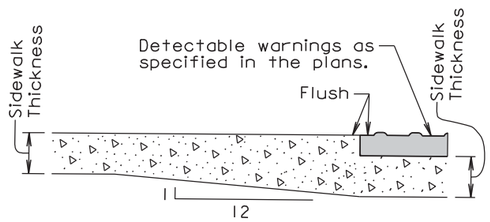
☒ The curb height shall be 6" unless stated otherwise in the plans.



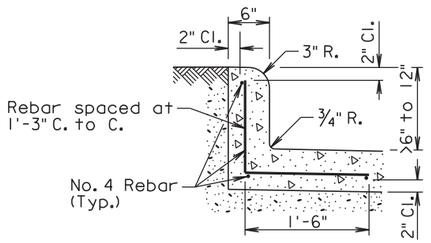
SECTION A-A



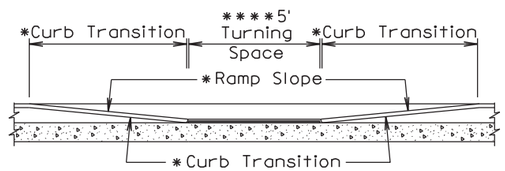
DETAIL D



DETAIL C



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



SECTIONAL VIEW B-B

September 6, 2015

Published Date: 2nd Qtr. 2016	SDDOT	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 2 of 3

GENERAL NOTES:

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

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

The curb ramp 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.

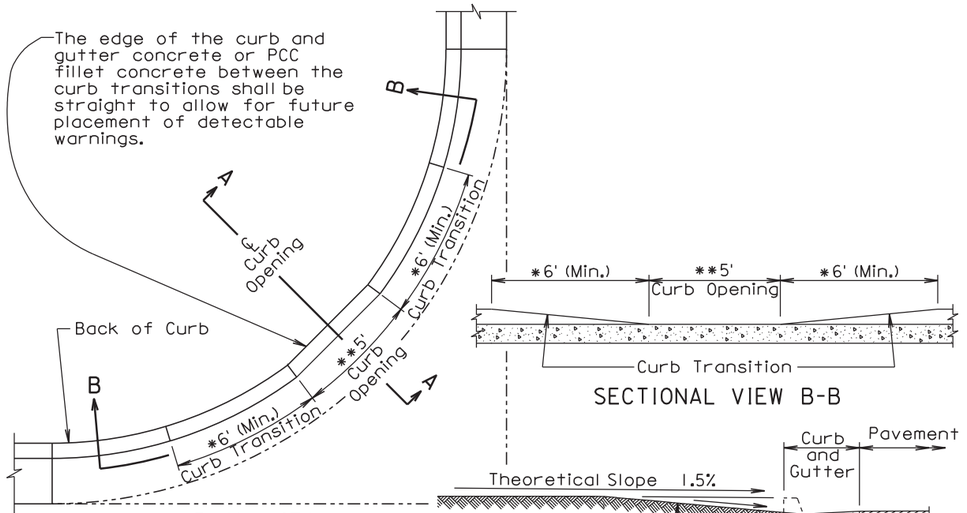
The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the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

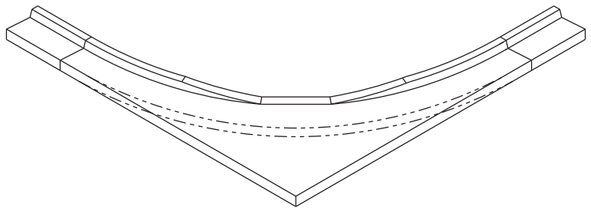
The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

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

Published Date: 2nd Qtr. 2016	SDDOT	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 3 of 3





PERSPECTIVE VIEW

GENERAL NOTES:

For illustrative purpose only, the curb opening location is shown at the center of the fillet section. The curb opening shall be placed at the location(s) stated in the plans.

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

* 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 the slope and length requirements based on the field geometrics.

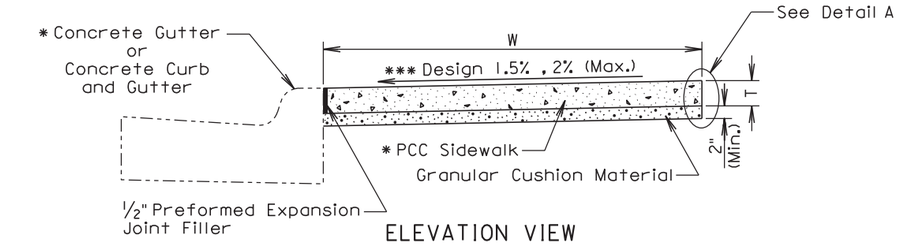
** The curb opening width is 5' unless stated otherwise in the plans.

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

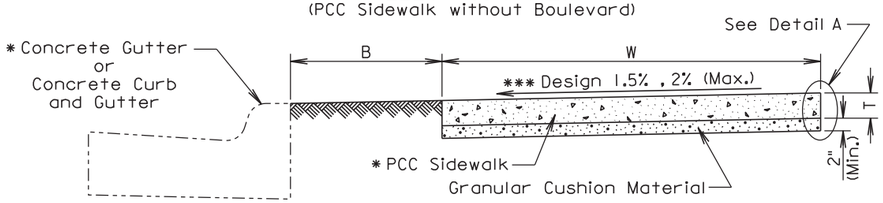
The curb transitions and opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and opening shall be measured and paid for at the contract unit price per square yard for the corresponding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

September 6, 2015

Published Date: 2nd Qtr. 2016	SDDOT	*CURB OPENING AND CURB TRANSITIONS IN CURB AND GUTTER FOR FUTURE CURB RAMP AND CURBSIDE SIDEWALK*	*PLATE NUMBER* 651.15 *Sheet 1 of 1*

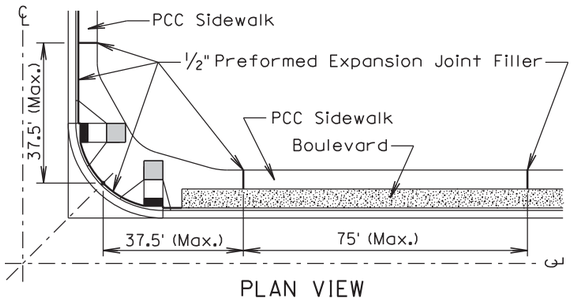


ELEVATION VIEW
(PCC Sidewalk without Boulevard)



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.

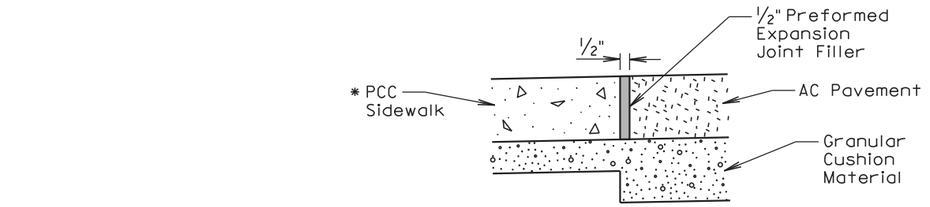
PCC sidewalk placed adjacent to intersection of roadways shall have an expansion joint placed transversely a maximum of 37.5 feet from the intersection. See PLAN VIEW.

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.

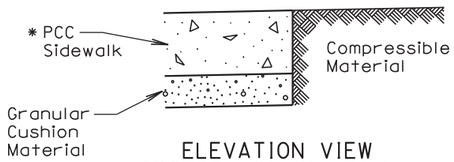
** Large areas of PCC pavement adjacent to PCC sidewalk may require a different joint treatment than shown in the detail. If a different joint detail is necessary, plans will contain the joint detail and the Contractor shall construct the joint treatment in accordance with the plans.

September 6, 2015

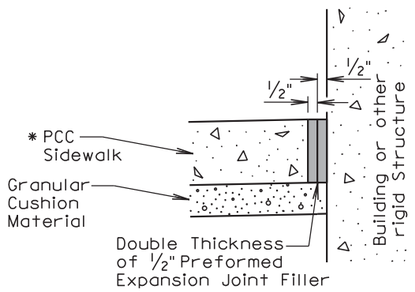
Published Date: 2nd Qtr. 2016	SDDOT	*PCC SIDEWALK*	*PLATE NUMBER* 651.75 *Sheet 1 of 2*



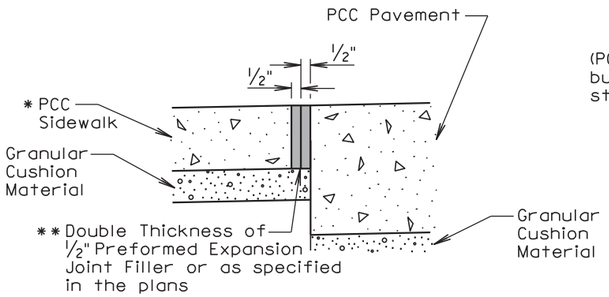
ELEVATION VIEW
(PCC sidewalk adjacent to asphalt concrete pavement)



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



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

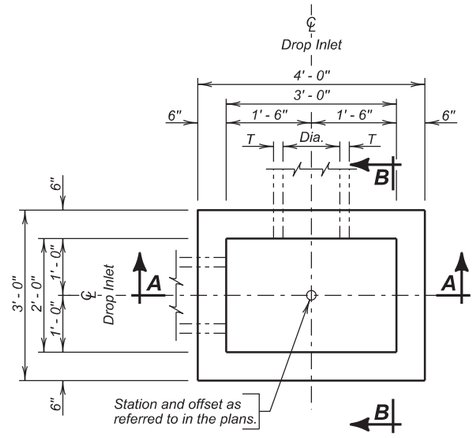


ELEVATION VIEW
(PCC sidewalk adjacent to PCC pavement)

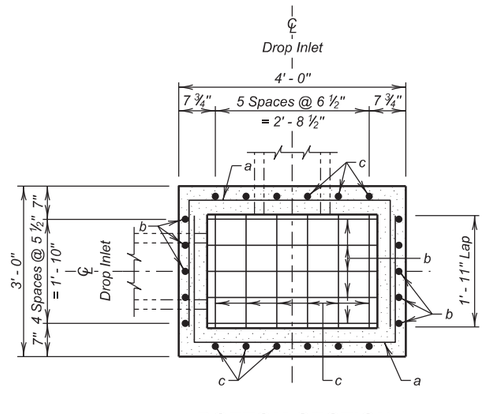
Detail A
(Use Appropriate Detail(s))

September 6, 2015

Published Date: 2nd Qtr. 2016	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 2 of 2



PLAN VIEW



BOTTOM SECTION

ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
⚹ Class M6 Concrete	Cu. Yd.	0.26	0.22H
Reinforcing Steel	Lb.	83.03	28.97H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 24" DIAMETER PIPE

SPECIFICATIONS

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

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

GENERAL NOTES:

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

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

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

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

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

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

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

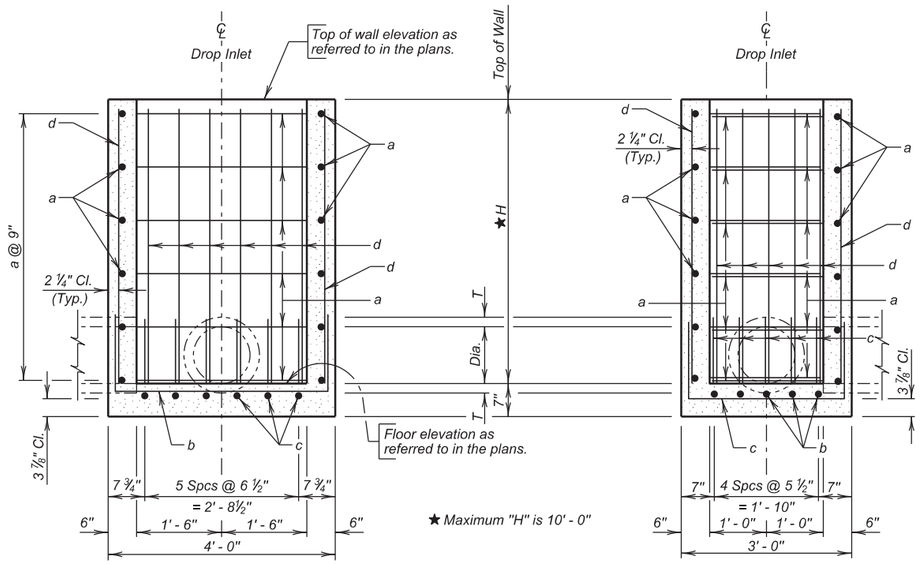
PIPE DISPLACEMENT REDUCTIONS

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

December 16, 2015

Published Date: 2nd Qtr. 2016	SDDOT	2' X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.01
			Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	78	83

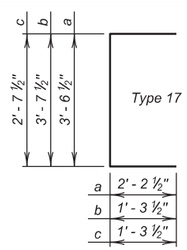


SEC. A - A **SEC. B - B**

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

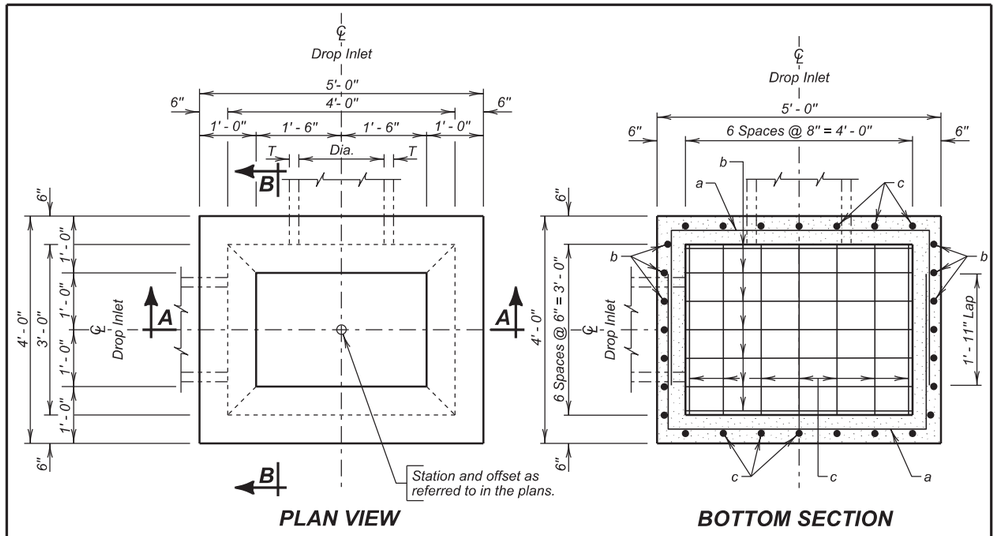
Published Date: 2nd Qtr. 2016

SDDOT

2' X 3' TYPE B
REINFORCED CONCRETE DROP INLET

PLATE NUMBER 670.01

Sheet 2 of 2



PLAN VIEW **BOTTOM SECTION**

ESTIMATED QUANTITIES

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

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

SPECIFICATIONS

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

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

GENERAL NOTES:

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

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

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

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

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

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

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

PIPE DISPLACEMENT REDUCTIONS

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

December 16, 2015

Published Date: 2nd Qtr. 2016

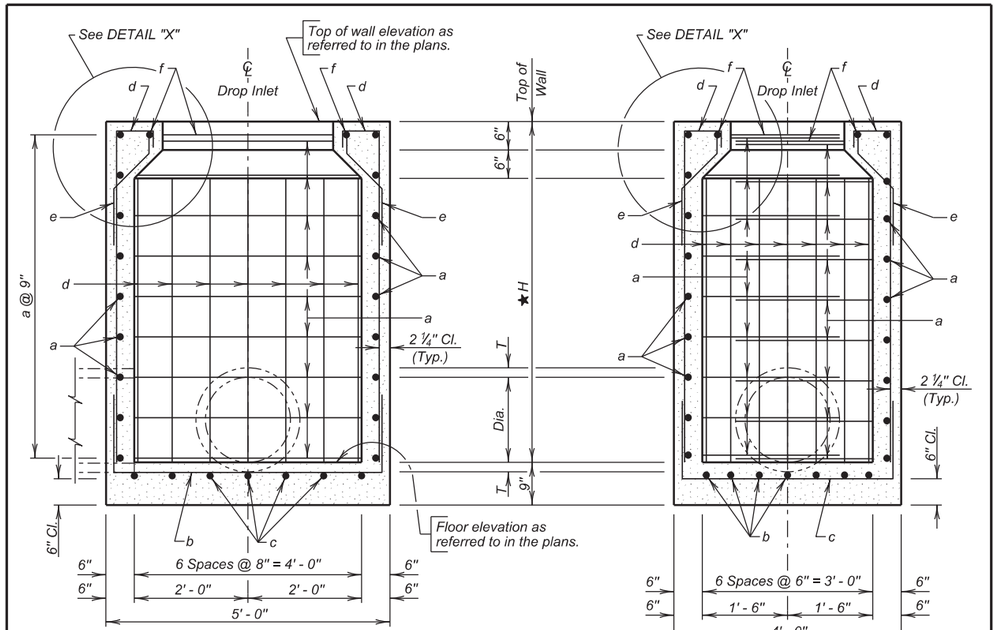
SDDOT

3' X 4' TYPE B
REINFORCED CONCRETE DROP INLET

PLATE NUMBER 670.02

Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	79	83

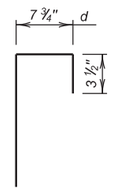


SEC. A - A **SEC. B - B**

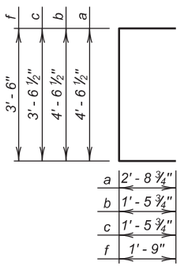
REINFORCING SCHEDULE

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

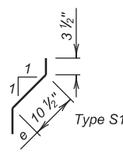
NOTE:
All dimensions are out to out of bars.



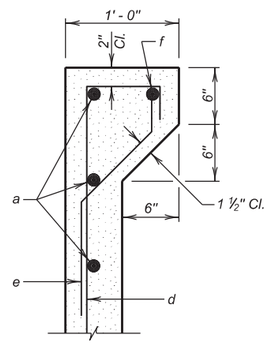
Type S17



Type 17



Type S19



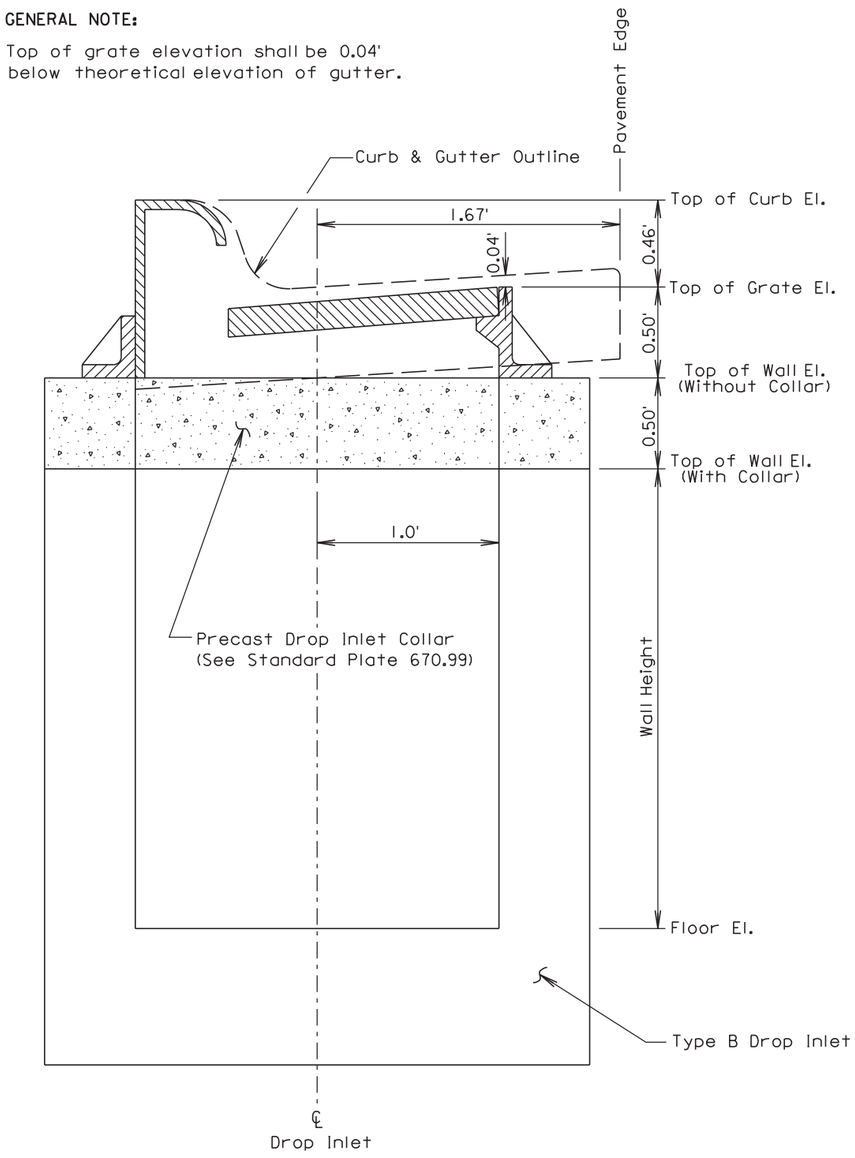
DETAIL "X"

December 16, 2015

Published Date: 2nd Qtr. 2016	SDDOT	3' X 4' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.02
			Sheet 2 of 2

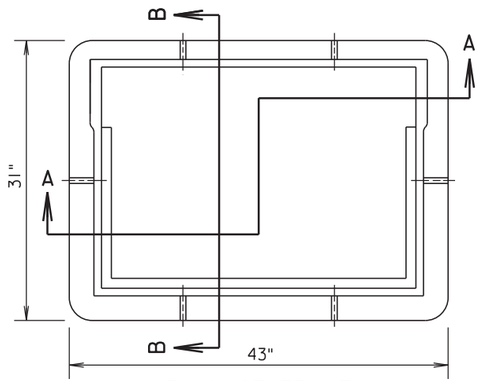
GENERAL NOTE:

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

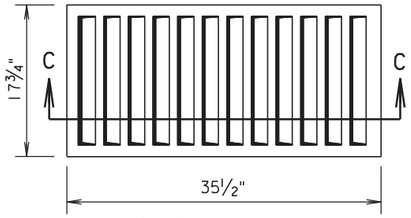


June 26, 2011

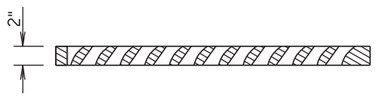
Published Date: 2nd Qtr. 2016	SDDOT	INSTALLATION OF TYPE B DROP INLET	PLATE NUMBER 670.75
			Sheet 1 of 1



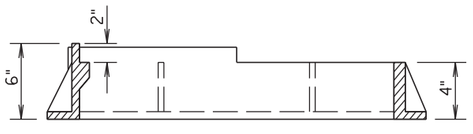
PLAN OF FRAME



PLAN OF GRATE

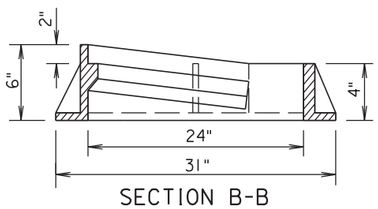


SECTION C-C

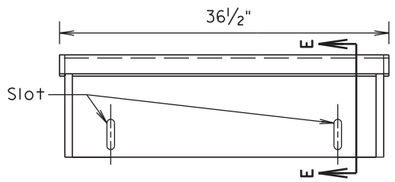


SECTION A-A

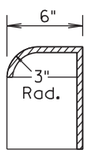
TOP VIEW OF CURB BOX



SECTION B-B



ELEVATION OF CURB BOX



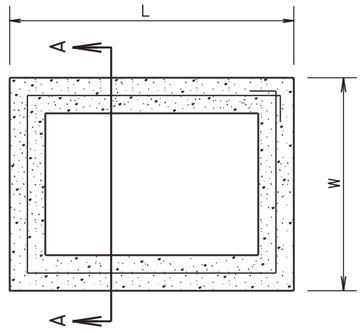
SECTION E-E

GENERAL NOTE:

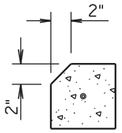
Total weight of the assembly shall be 490 Lbs. minimum and the curb box shall be adjustable 6" to 9".

March 31, 2000

Published Date: 2nd Qtr. 2016	SDDOT	***TYPE B FRAME AND GRATE ASSEMBLY***	*PLATE NUMBER* 670.80
			Sheet 1 of 1

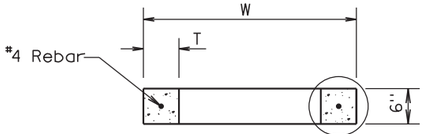


PLAN VIEW



For Type D Drop Inlets only:
Use Precast Drop Inlet Collar with 2" chamfer on L sides only.

DETAIL B



SECTION A-A

INFORMATIONAL QUANTITIES

FRAME AND GRATE TYPE	L Ft-In	W Ft-In	T In	CLASS M6 CONCRETE CuYd	REINFORCING STEEL Lb
TYPE 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 ½" diameter bar shall lap 6" ± and shall be centered in the concrete.

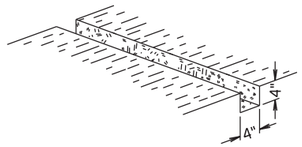
The cost of furnishing and installing Precast Drop Inlet Collars, including labor, materials, and incidentals shall be incidental to the contract unit price per Each for "Precast Drop Inlet Collar".

March 31, 2000

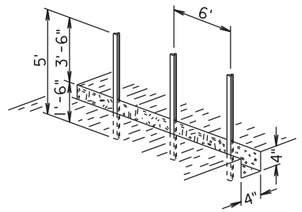
Published Date: 2nd Qtr. 2016	SDDOT	***PRECAST DROP INLET COLLAR***	*PLATE NUMBER* 670.99
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	81	83

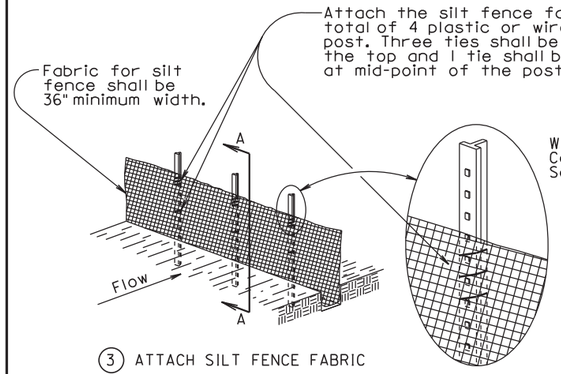
MANUAL HIGH FLOW SILT FENCE INSTALLATION



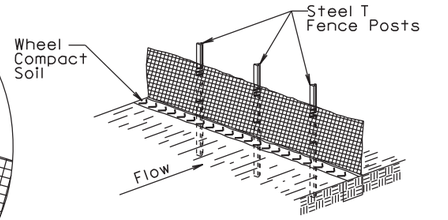
(1) EXCAVATE TRENCH



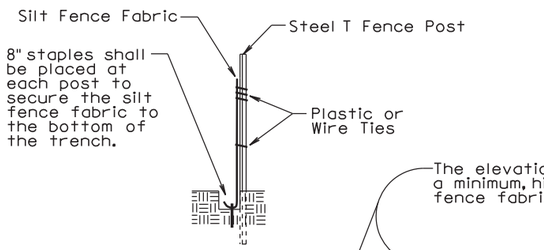
(2) DRIVE STEEL T FENCE POSTS



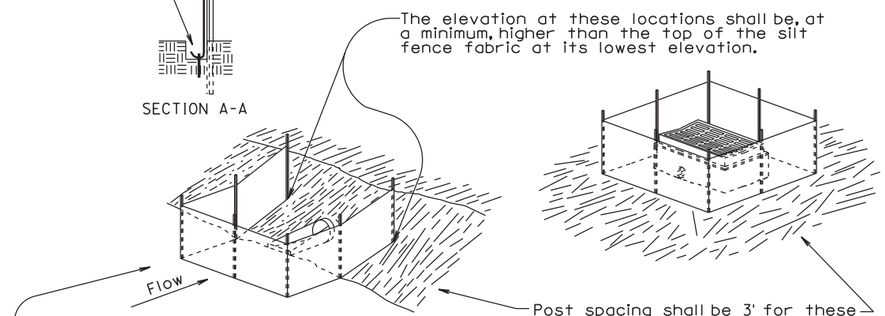
(3) ATTACH SILT FENCE FABRIC



(4) BACKFILL TRENCH AND WHEEL COMPACT SOIL



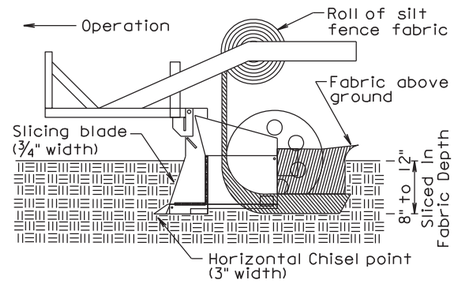
SECTION A-A



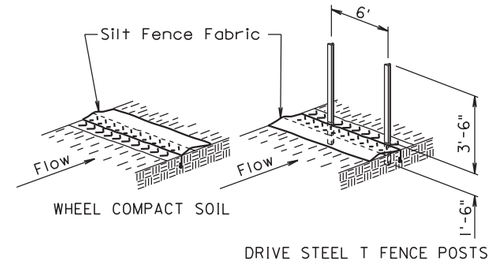
December 23, 2003

Published Date: 2nd Qtr. 2016	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

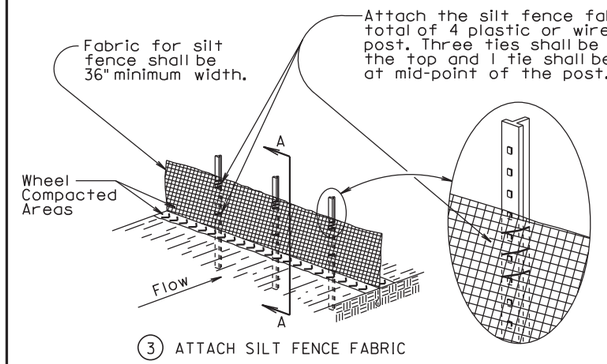
MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



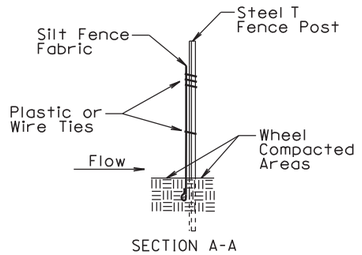
(1) INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.



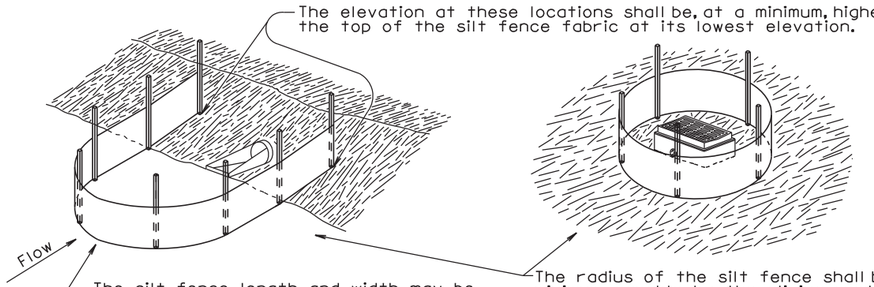
(2) WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.



(3) ATTACH SILT FENCE FABRIC



SECTION A-A

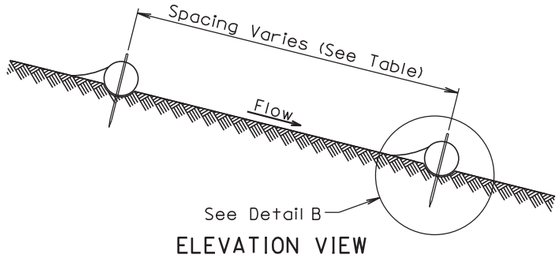


GENERAL NOTE:

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end shall be provided on top of the extra length of silt fence fabric to prevent underflow.

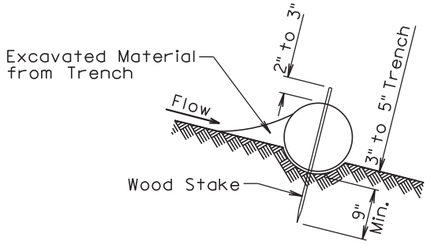
December 23, 2003

Published Date: 2nd Qtr. 2016	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 2 of 2

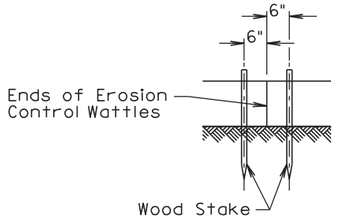


ELEVATION VIEW
CUT OR FILL SLOPE INSTALLATION

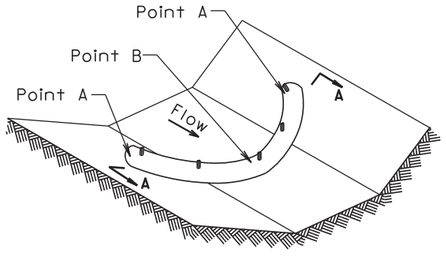
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft)
1:1	10
2:1	20
3:1	30
4:1	40



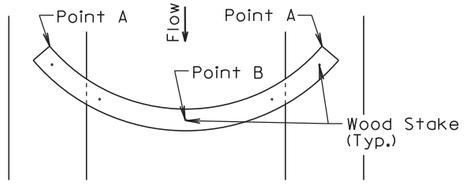
DETAIL B
(TYPICAL OF ALL INSTALLATIONS)



DETAIL C

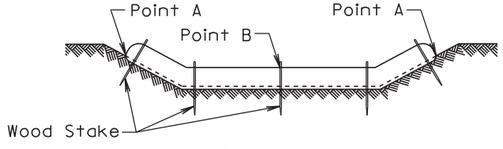


ISOMETRIC VIEW
DITCH INSTALLATION



PLAN VIEW
DITCH INSTALLATION

DITCH INSTALLATION	
Grade	Spacing (Ft)
2%	150
3%	100
4%	75
5%	50



SECTION A-A

December 23, 2004

Published Date: 2nd Qtr. 2016	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

GENERAL NOTES:

At cut or fill slope installations, wattles shall be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor shall dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes shall be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes shall be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles shall be 3' to 4'.

Where installing running lengths of wattles, the Contractor shall butt the second wattle tightly against the first and shall not overlap the ends. See Detail C.

The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than ½". The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping shall be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping shall be incidental to the contract unit price per cubic yard for "Remove Sediment".

All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials shall be incidental to the contract unit price per foot for the corresponding erosion control wattle bid item.

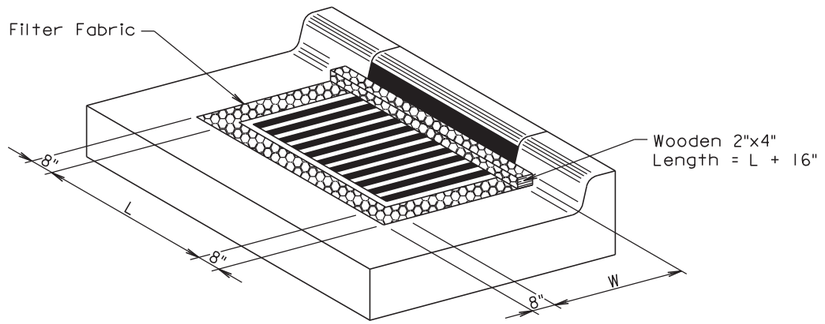
All costs for removing the erosion control wattle from the project including labor, equipment, and materials shall be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

December 23, 2004

Published Date: 2nd Qtr. 2016	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-151	83	83

L = Length of Grate
W = Width of Grate



ISOMETRIC VIEW

GENERAL NOTES:

The grate and curb and gutter shown are for illustrative purposes only.

The sediment control at inlet with frame and grate shall be placed at locations stated in the plans or at locations determined by the Engineer.

The filter fabric shall be the type specified in the plans.

The filter fabric shall be placed in the inlet opening prior to placing the grate. Approximately 18 inches of excess filter fabric shall be wrapped around the 2"x4" and stapled securely to the 2"x4" after the grate has been placed.

The Contractor shall inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event. The Contractor shall maintain the sediment control device by removing accumulated sediment and replacing torn filter fabric with new filter fabric.

The removed sediment shall be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

All costs for furnishing, installing, inspecting, maintaining, removing, and replacing the sediment control device at the inlet including labor, equipment, and materials shall be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

September 14, 2005

Published Date: 2nd Qtr. 2016	SDDOT	***SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES***	***PLATE NUMBER*** *734.10*
			Sheet 1 of 1