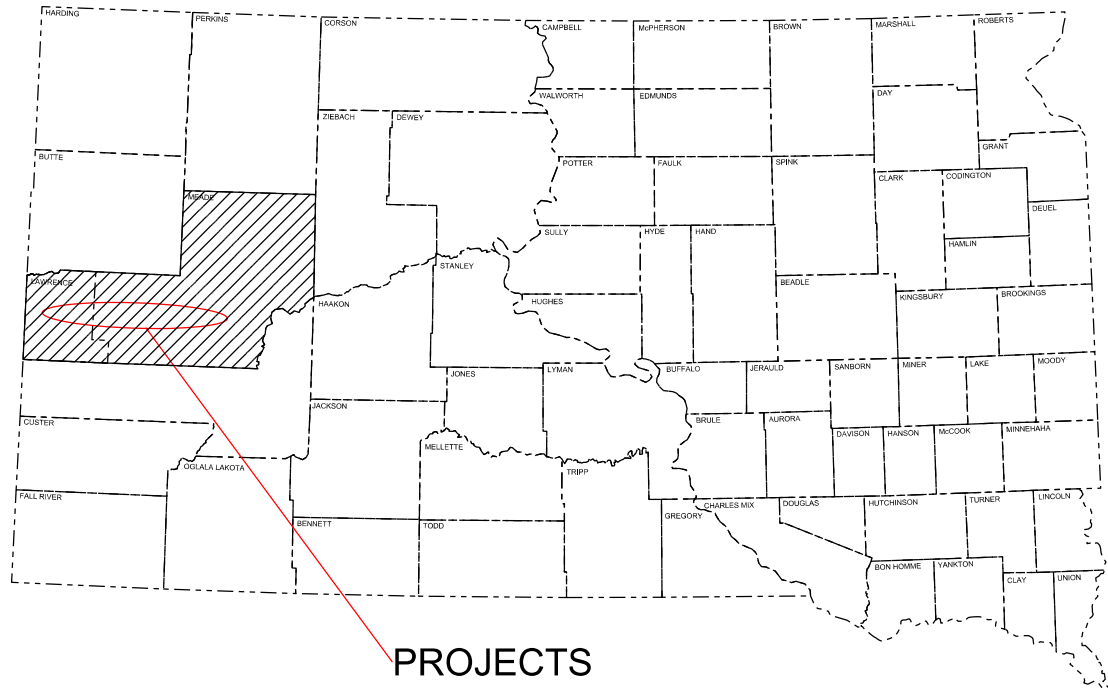


Plot Scale - 1:200

TRRC11626

Plotted From -



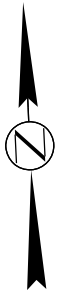
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECTS 014A-451 & 034-451
US HIGHWAY 14A &
SD HIGHWAY 34
LAWRENCE &
MEADE COUNTIES
CURB & GUTTER AND EROSION CONTROL
PCNs i5j0 & i5j1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014A-451 & 034-451	1	17

Plotting Date: 05/02/2019

INDEX OF SHEETS	
1	General Layout with Index
2-6	Estimate With General Notes & Tables
7-10	Plan Sheets
11-17	Details & Standard Plates



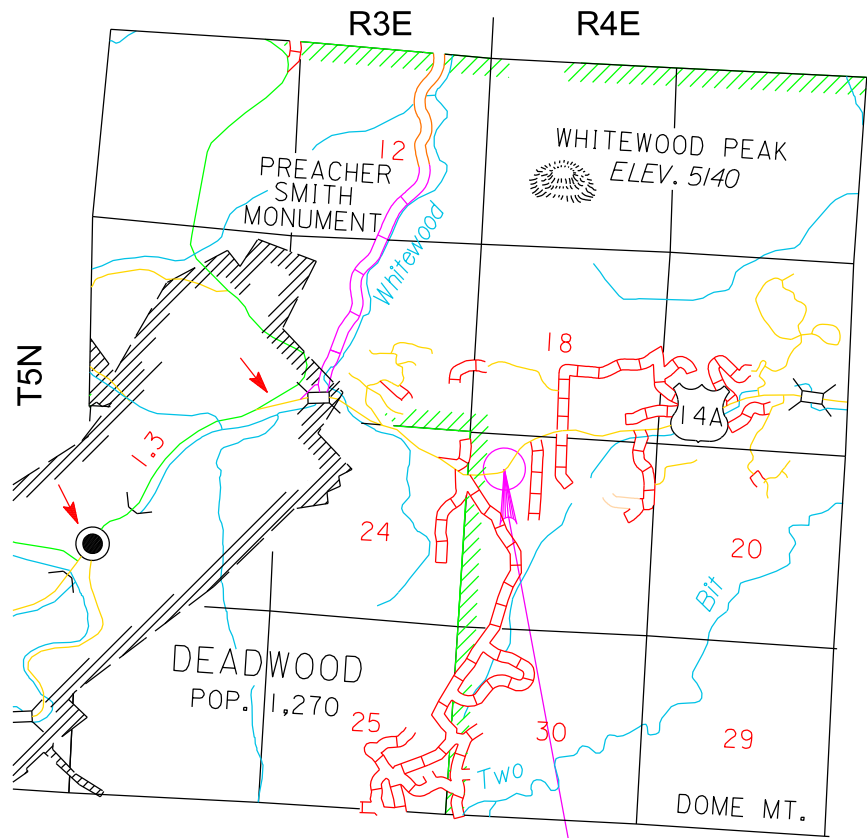
DESIGN DESIGNATION - SD34

ADT (2018)	8,337
ADT (2038)	10,296
DHV	1,163
D	52%
T DHV	1.6%
T ADT	3.5%
V	65 mph

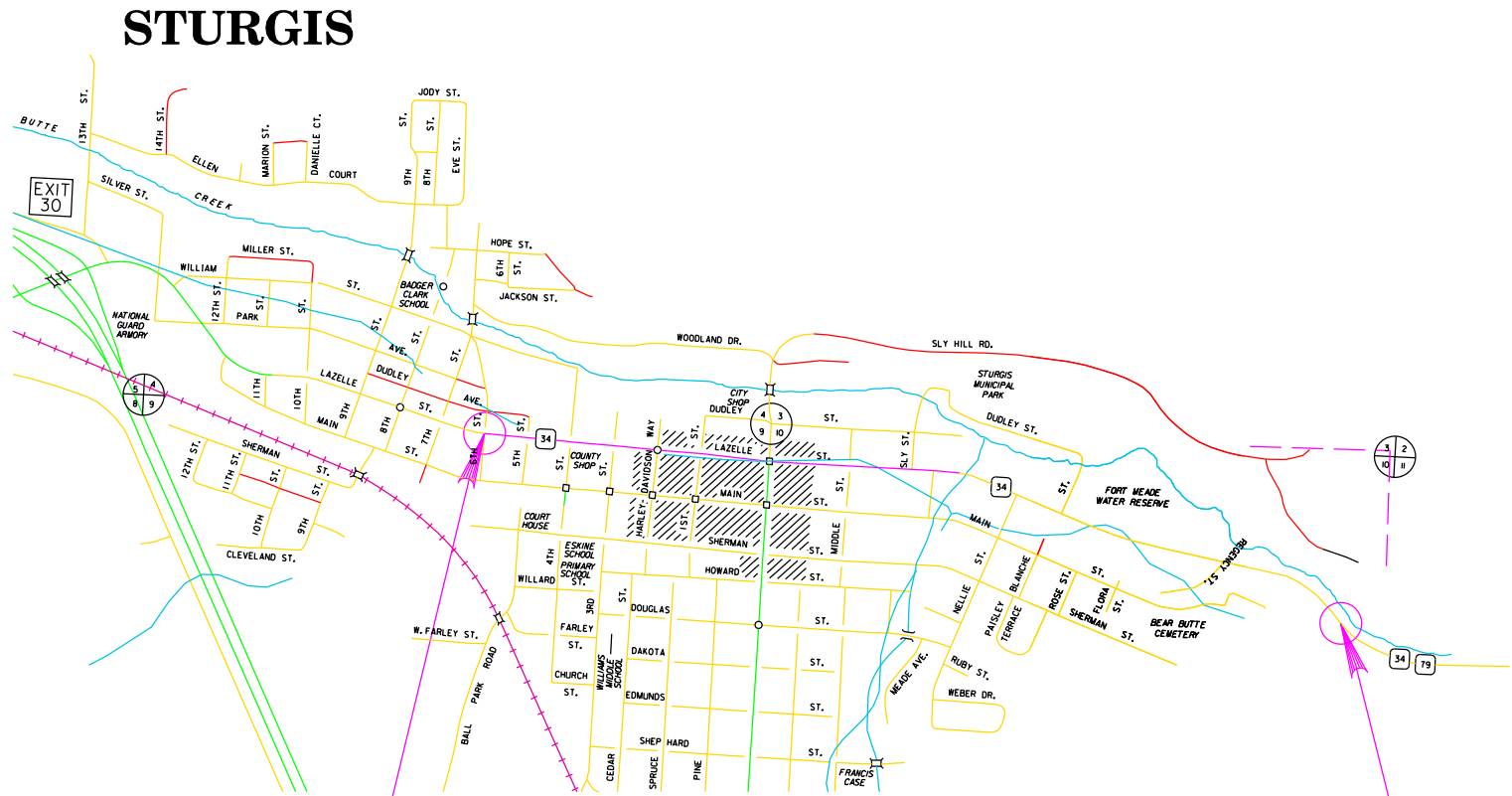
DESIGN DESIGNATION - US14A

ADT (2018)	4,710
ADT (2038)	6,373
DHV	1,007
D	51%
T DHV	5.7%
T ADT	12.6%
V	65 mph

STORM WATER PERMIT
None Required



Project 014A-451
PCN i5j0
MRM 43.45



Begin 0034-451
PCN i5j1
MRM 34.50

End 0034-451
PCN i5j1
MRM 36.10

Estimate of Quantities

PCN i5j0			
BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E7152	Remove Delineator for Reset	2	Each
120E0010	Unclassified Excavation	34	CuYd
230E0020	Contractor Furnished Topsoil	25	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
380E1000	6" Miscellaneous PCC Pavement	7	SqYd
632E2100	Reset Delineator	2	Each
634E0010	Flagging	100	Hour
634E0110	Traffic Control Signs	73	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
634E0420	Type C Advance Warning Arrow Board	1	Each
650E4390	Type D49 Concrete Curb and Gutter	500	Ft
650E4689	Modified Type P9 Concrete Gutter	19	Ft
734E0010	Erosion Control	Lump Sum	LS
734E0133	Type 3 Turf Reinforcement Mat	6.9	SqYd
734E0154	12" Diameter Erosion Control Wattle	60	Ft

PCN i5j1			
BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0300	Remove Concrete Curb and/or Gutter	840	Ft
110E1010	Remove Asphalt Concrete Pavement	520	SqYd
110E1140	Remove Concrete Sidewalk	16.7	SqYd
110E7150	Remove Sign for Reset	2	Each
110E7152	Remove Delineator for Reset	3	Each
110E7700	Remove Drop Inlet Frame and Grate Assembly for Reset	1	Each
120E0010	Unclassified Excavation	48	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
320E1200	Asphalt Concrete Composite	146.0	Ton
632E2100	Reset Delineator	3	Each
632E3500	Reset Sign	2	Each
634E0010	Flagging	100	Hour
634E0110	Traffic Control Signs	146	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	2	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
650E0060	Type B66 Concrete Curb and Gutter	840	Ft
651E0040	4" Concrete Sidewalk	150	SqFt
670E7000	Reset Drop Inlet Frame and Grate Assembly	1	Each
734E0010	Erosion Control	Lump Sum	LS

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Section A Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified 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.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <http://www.sddot.com/resources/Manuals/EnvironProcManual.pdf>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

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 S: FIRE PREVENTION IN THE BLACK HILLS AREA

This project is located within the Black Hills Forest Fire Protection Boundary.

Action Taken/Required:

The Contractor shall adhere to the "Special Provision for Fire Plan".

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will 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) will 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) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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) will be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

State Historical Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities require a cultural resource review prior to scheduling the pre-construction meeting. 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 will arrange and pay for a record search and when necessary, a cultural resource survey. 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 if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view of 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 will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office to determine an appropriate course of action.

The Contractor is responsible 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 will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

UNCLASSIFIED EXCAVATION

The quantity of Unclassified Excavation provided in these plans is for the necessary removal of asphalt surfacing and granular base materials required to install the new Curb and Gutter on Hwy 14A and to remove the excess material below the topsoil behind the Westbound curb up to the bike path on Hwy 34. The excavated materials will be used to back fill the curb and gutter as needed.

The estimated amount of Unclassified Excavation for each location is shown in the Table of Quantities. No measurement will be made in the field for the Unclassified Excavation quantity.

REMOVE AND REPLACE TOPSOIL

Prior to beginning curb and gutter installation, a 4” depth of topsoil shall be removed or bladed down the respective inslope and left in a windrow a maximum of 10’ from the edge of the existing shoulder. Following completion of construction, topsoil shall be spread evenly over the disturbed areas.

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”.

REMOVE ASPHALT CONCRETE PAVEMENT

The Contractor shall remove asphalt full depth 6 ft wide in front of the curb and gutter removals between MRM 35.90 and MRM 36.10 on Hwy 34 in both the Eastbound and Westbound driving lanes. All costs for removal and disposing of the asphalt, and grading of the base below the asphalt to ensure proper thickness of asphalt when replaced shall be incidental to the contract unit price per square yard for “Remove Asphalt Concrete Pavement”.

EROSION CONTROL

The work area requiring erosion control is less than one acre for the project. All costs for furnishing, placing, and maintaining erosion control including equipment, labor, seeding, fertilizing, mycorrhizal inoculum, and fiber 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.

Permanent Seeding

The areas to be seeded consist of areas with minimal vegetation at various locations within the project area. The Engineer will mark out the locations with minimal vegetation needing topsoil and seed.

Type F Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Green Needlegrass	Lodorm, AC Mallard Ecovar	4
Sideoats Grama	Butte, Pierre	3
Blue Grama	Bad River	2
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26

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>

Fertilizing

The Contractor shall apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer shall have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer shall be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer shall have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer shall also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer shall be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer’s recommended method of application.

The all-natural slow release fertilizer shall be as shown below or an approved equal:

Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 www.perfect-blend.com

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:

- 25% *Glomus intraradices*
- 25% *Glomus aggregatum or deserticola*
- 25% *Glomus mosseae*
- 25% *Glomus etunicatum*

All seed shall be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre.

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 www.mycorrhizae.com
AM 120 Multi Species Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 www.reforest.com

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment shall be installed at locations noted in the table and 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 to decompose.

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>

**REMOVE DROP INLET FRAME AND GRATE ASSEMBLY FOR RESET
and RESET DROP INLET FRAME AND GRATE ASSEMBLY**

The Contractor shall remove the drop inlet assembly at MRM 36.0 Rt on Hwy 34 for reset. The frame and grate will be reset to accept flow from the new curb and gutter. All costs associated with removing the assembly, resetting the assembly to the new elevation, and any concrete required for setting shall be incidental to the contract unit price per each for Remove Drop Inlet Frame and Grate Assembly for Reset, and Reset Drop Inlet Frame and Grate Assembly.

6” MISCELLANEOUS PCC PAVEMENT

The Contractor shall place No. 5 Epoxy coated steel bars in the joints between the 6” Miscellaneous PCC Pavement and the back of the Modified Type P9 Concrete Gutter. The bars shall be installed in accordance with Standard Plate 380.11. All costs to furnish and place the steel bars shall be incidental to the contract unit price per square yard for 6” Miscellaneous PCC Pavement. The purpose of placing the steel bars is to prevent any settlement that may occur at the joint.

CONTRACTOR FURNISHED TOPSOIL

The Contractor will be required to furnish and place 4 inches of topsoil 8’ wide for low areas behind the curb and gutter and areas as determined by the Engineer during construction.

Contractor furnished topsoil shall be free from clay lumps, stones, coarse gravel, or similar objects larger than 1/2 inch in diameter. Brush, stumps, roots, wood, objectionable weeds, litter, or any other material which may be harmful to plant growth will not be allowed. Organic material shall be decomposed.

All costs to furnish and place the Contractor furnished topsoil shall be incidental to the contract unit price per cubic yard for “Contractor Furnished Topsoil”. The topsoil quantity for “Contractor Furnished Topsoil” as shown in the Estimate of Quantities will be measured in the hauling vehicle.

TABLE OF QUANTITIES

Location to	Location	Unclassified Excavation	Contractor Furnished Topsoil	Remove Concrete Curb and/or Gutter	Remove Concrete Sidewalk	Remove Drop Inlet Frame and Grate Assembly for Reset	Type D49 Concrete Curb & Gutter	Modified Type P9 Concrete Gutter	Type B66 Concrete Curb & Gutter	4" Concrete Sidewalk	6" Misc PCC Pavement	Reset Drop Inlet Frame and Grate Assembly	Remove & Reset Delineator	Remove & Reset Sign	Type 3 Turf Reinforcement Mat	12" Diameter Erosion Control Wattle	Remove Asphalt Concrete Pavement	Asphalt Concrete Composite
MRM	MRM	CuYd	CuYd	ft	SqYd	Each	ft	Ft	Ft	SqFt	SqYd	Each	Each	Each	SqYd	Ft	SqYd	Ton
SD Hwy 14A - PCN i5j0																		
Eastbound																		
43.40	43.50	34	25				500	19			7		2		6.9	60		
US Hwy 34 - PCN i5j1																		
Eastbound																		
35.90	35.95			500		1			500			1		2			333	94
Westbound																		
34.50	34.50			30	5.6				30	50								
35.40	35.40			30	11.1				30	100								
35.90	36.10	48		280					280				3				187	53
Totals:		82	25	840	16.7	1	500	19	840	150	7	1	5	2	6.9	60	520	146

TRAFFIC CONTROL – GENERAL NOTES

Requests to deviate from the sequence of operations shall be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department’s intent for traffic control and sequencing of the work. An alternate sequence shall be submitted for review a minimum of one week prior to potential implementation.

Unless otherwise stated in these plans, no work will be allowed during hours of darkness.

Existing guide, route, informational logo, regulatory, warning signs and delineation shall be temporarily reset and maintained during construction as directed by the Engineer. Removing, relocating, salvaging and resetting of the above items shall be the responsibility of the Contractor.

Non-applicable traffic control devices shall be completely covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 2 calendar days.

All regulatory signs shall have a minimum mounting height of 5’ in rural locations, even when mounted on portable supports.

All materials and equipment shall be stored a minimum distance of 30’ from the traveled way during nonworking hours.

The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

All haul trucks shall be equipped with a second flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights shall be incidental to the various related contract bid items.

All construction operations shall be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD – whichever is more stringent shall be used, as determined by the Engineer.

Drums are required in all lane closure tapers.

Reflectorized Drums shall be used for lane closure tapers or lane shift tapers.

SHEETING FOR TRAFFIC CONTROL SIGNS

All fluorescent orange background material on traffic control signs, all temporary delineators, and all temporary STOP (R1-1), YIELD (R1-2), DO NOT ENTER (R5-1), and WRONG WAY (R5-1a) signs shall conform to the requirements of ASTM D4956 Type IX or XI. All other traffic control signs and background colors shall conform to the requirements of ASTM D4956 Type IV.

INVENTORY OF TRAFFIC CONTROL DEVICES

PCN i5j0

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	1	48" x 48"	16.0	16.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	1	48" x 48"	16.0	16.0
W20-7	FLAGGER (symbol)	1	48" x 48"	16.0	16.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			
		89.0			

PCN i5j1

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	1	48" x 48"	16.0	16.0
G20-2	END ROAD WORK	4	36" x 18"	4.5	18.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			
		162.0			

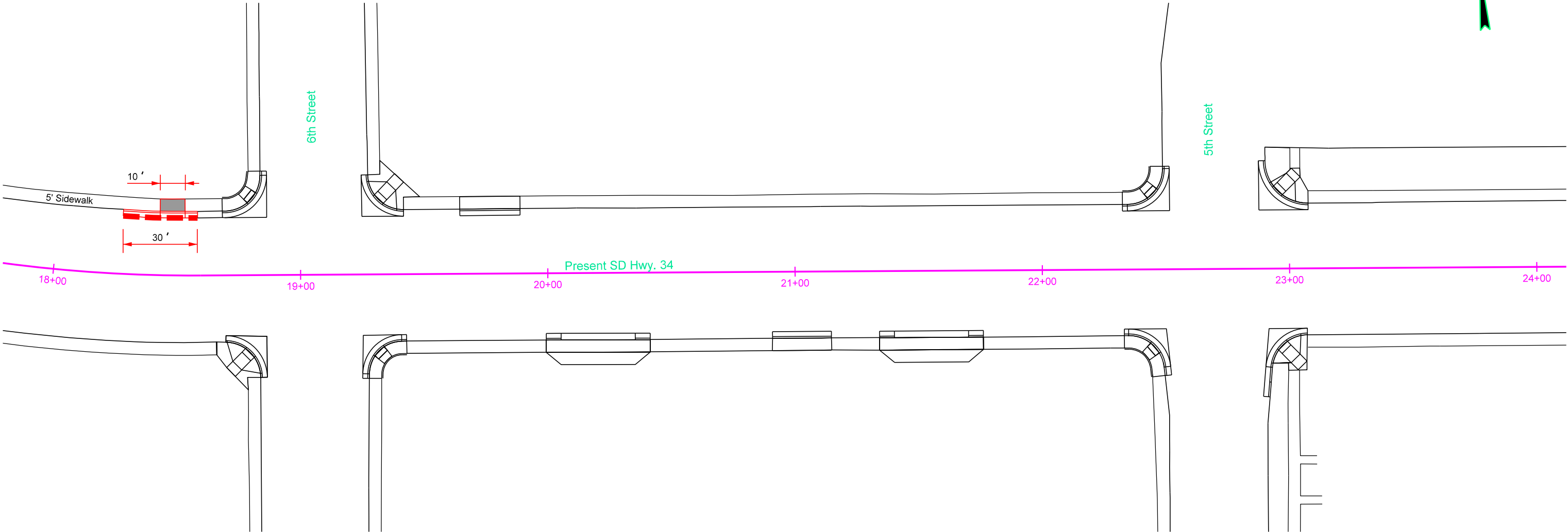
CURB & GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014A-451 & 034-451	7	17

Plotting Date: 05/02/2019

Plot Scale - 1"=40'

MRM 34.5
Install 30' Type B66 Curb and Gutter
Install 10' Sidewalk (4")



Plotted From - TRR011626

File - ...6thStreet.dgn

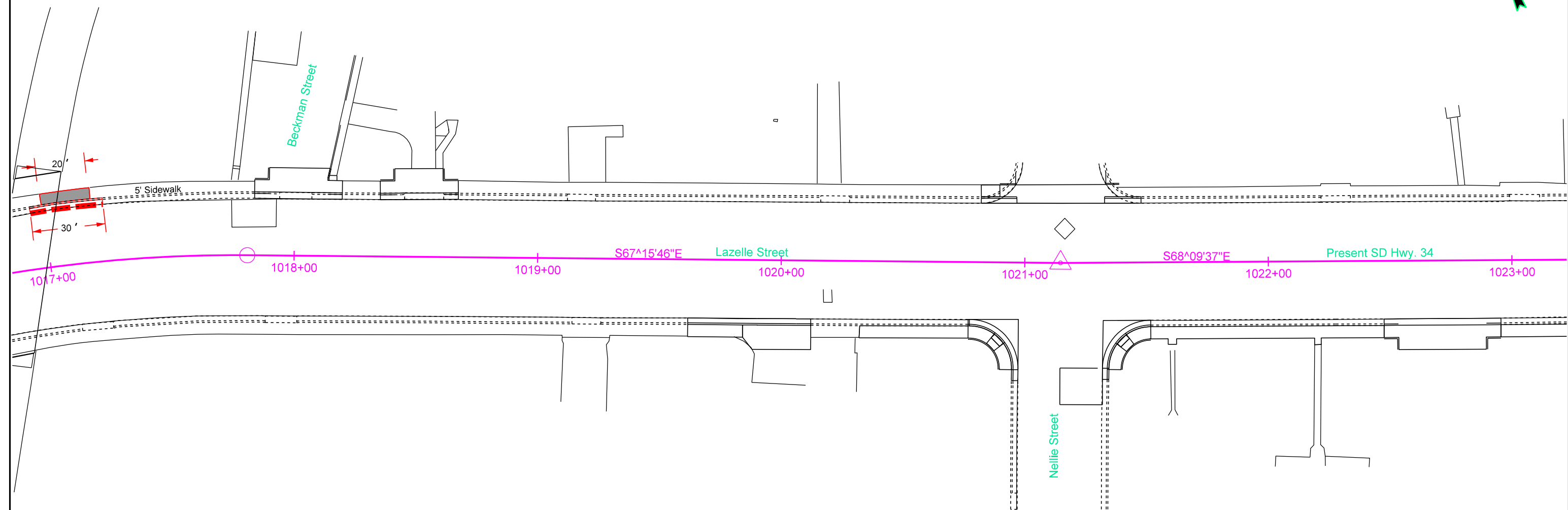
CURB & GUTTER LAYOUT



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014A-451 & 034-451	8	17

Plotting Date: 05/02/2019

Plot Scale - 1"=40'

MRM 35.4
Install 30' Type B66 Curb and Gutter
Install 20' Concrete Sidewalk (4")



-  Remove & Replace Concrete Sidewalk
-  Remove & Replace Concrete Curb and Gutter

Plotted From - TRR011626

File - ...BeckmanStdgn

CURB & GUTTER LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014A-451 & 034-451	9	17

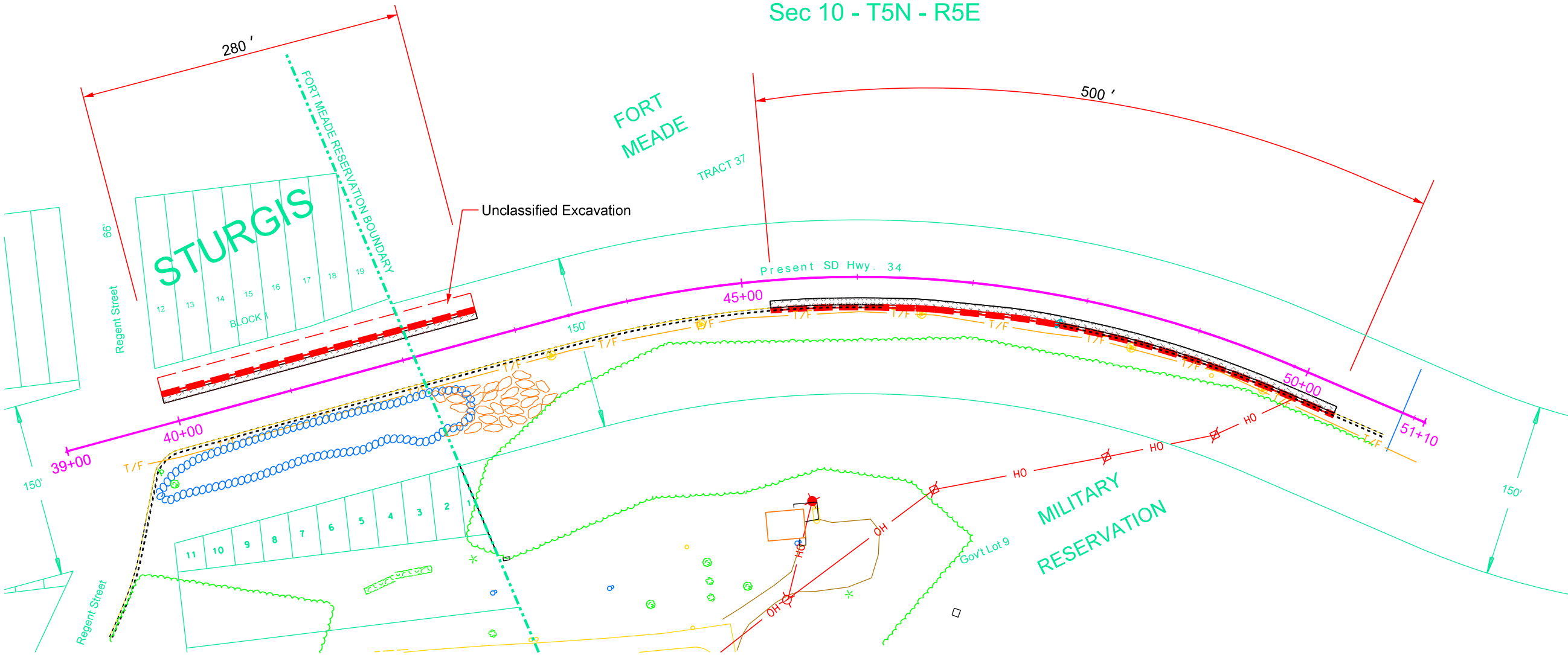
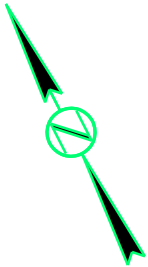
Plotting Date: 05/02/2019



Install 280' Type B66 Curb and Gutter

Install 500' Type B66 Curb and Gutter

47+80 R
Remove & Reset Drop Inlet
Frame and Grate

Sec 10 - T5N - R5E



-  Remove & Replace Asphalt Concrete Pavement
-  Remove & Replace Concrete Curb and Gutter

Plot Scale - 1:100

Plotted From - TRR011626

File - ...040.dgn

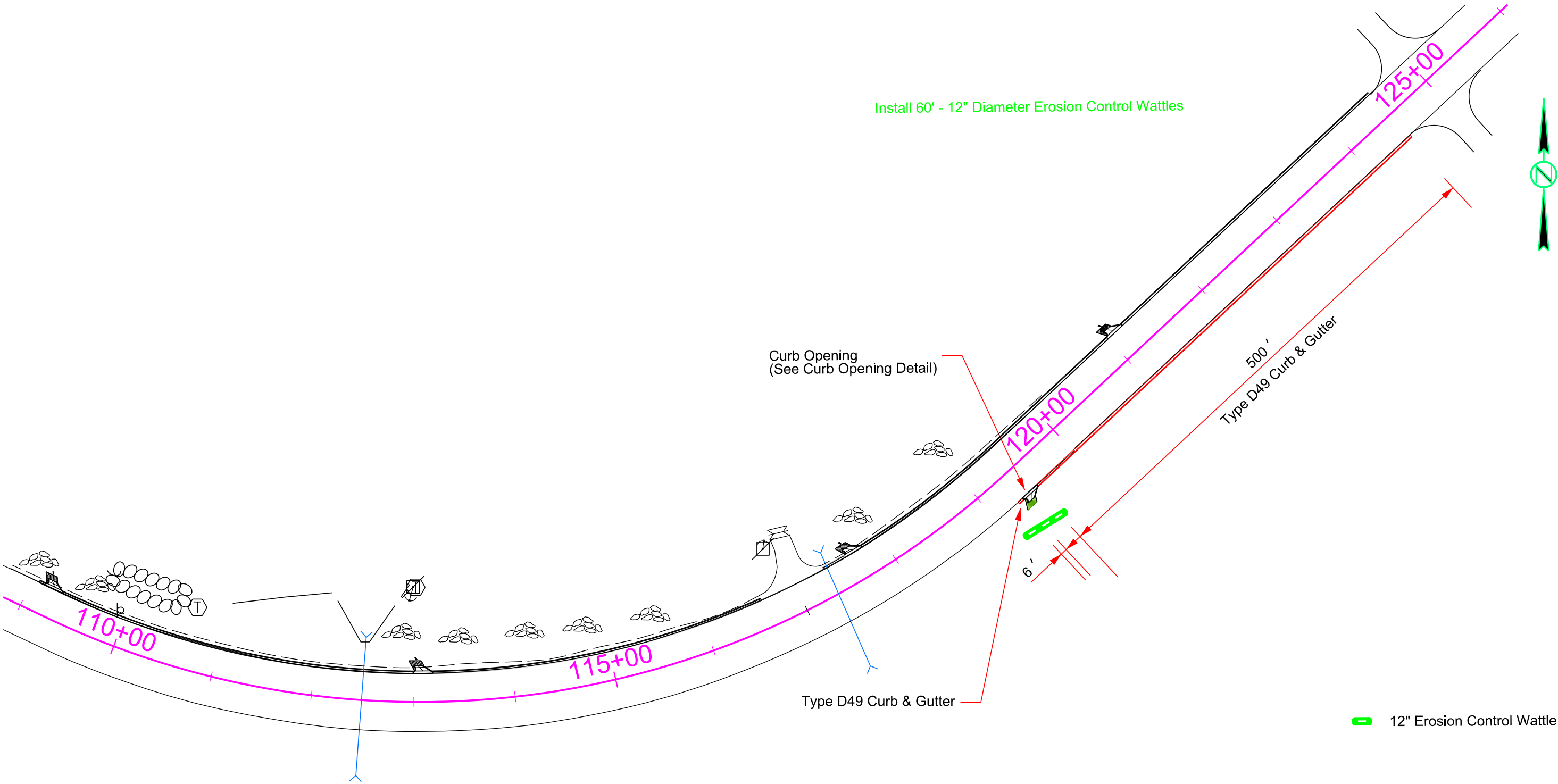
Plot Scale - 1:100

Plotted From - TRR011626

Eastbound MRM 43.25

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014A-451 & 034-451	10	17

Plotting Date: 05/02/2019



Install 60' - 12" Diameter Erosion Control Wattles

Curb Opening
(See Curb Opening Detail)

Type D49 Curb & Gutter

12" Erosion Control Wattle

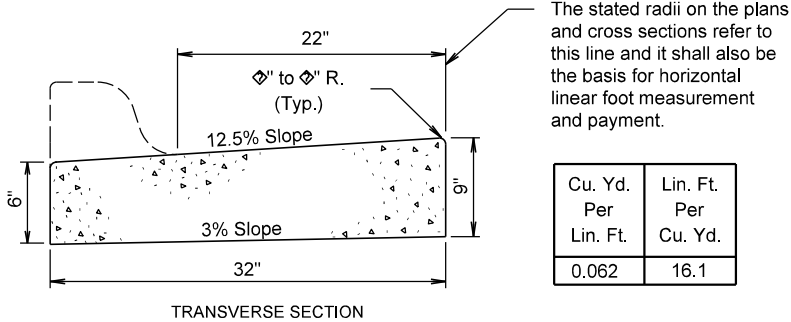


1:3.88235
Plot Scale -
1:3.88235
Plotted From -
trc11639

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014-451 & 034-451	11	17

Plotting Date: 05/02/2019

MODIFIED TYPE P9 CONCRETE GUTTER



GENERAL NOTES:

The concrete for the Modified Type P9 Concrete Gutter shall comply with the requirements of the Standard Specifications for Class M6 Concrete.

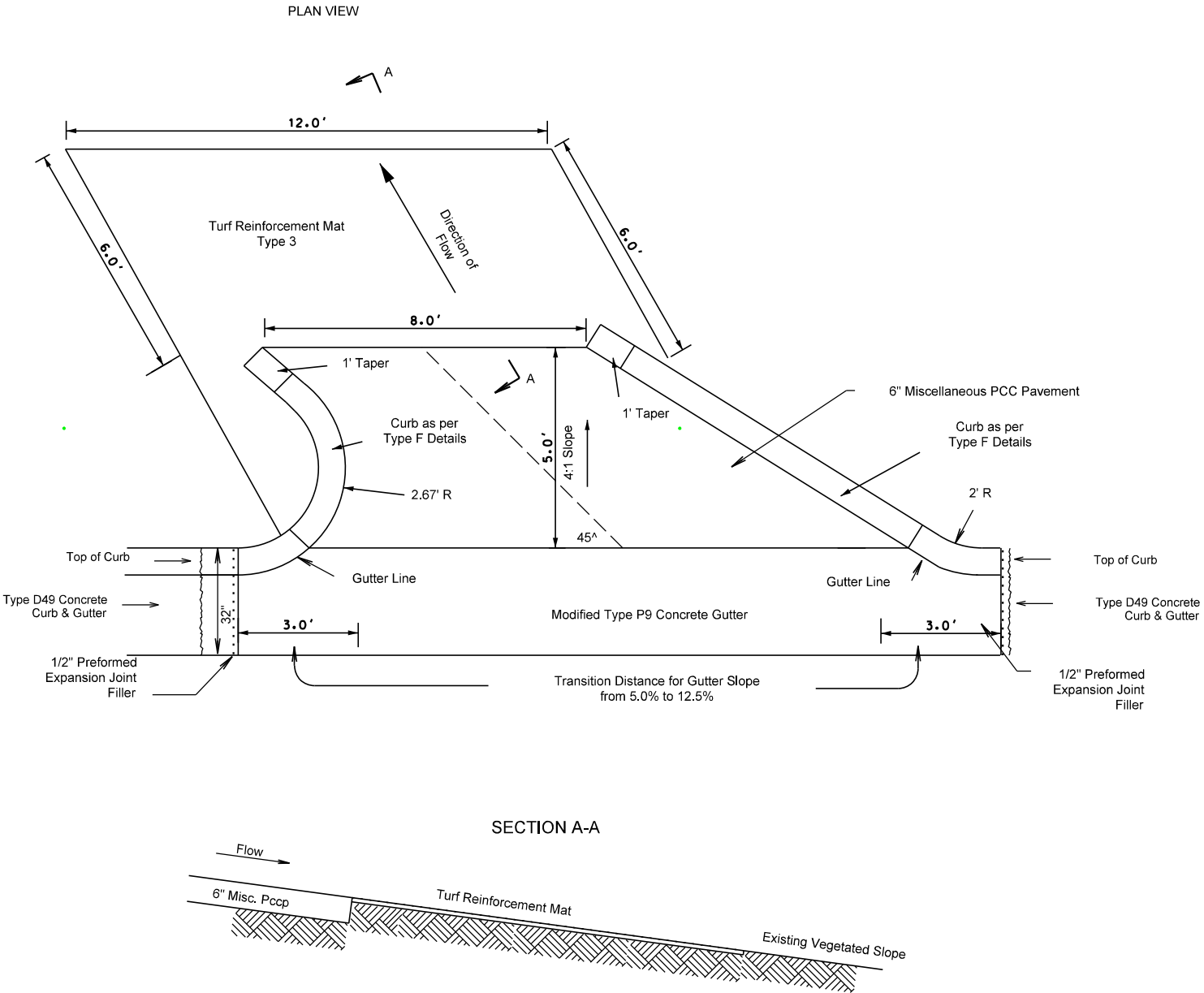
When concrete gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Standard Plate 380.11.

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

When concrete gutter is placed monolithically with mainline PCC pavement, the transverse contraction joints in the concrete gutter shall be sawed and sealed the same as the transverse contraction joints in the mainline PCC pavement.

When concrete gutter is not placed monolithically with the mainline PCC pavement and when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete gutter shall be 1 1/2 inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint shall be at least 1/4 the thickness of the concrete.

CURB OPENING DETAILS



LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(Individually Formed)

Concrete Gutter or Concrete Curb and Gutter

PCC Pavement

Sawed Joint filled with Hot Poured Elastic Joint Sealer

In Place Gutter or Curb and Gutter

New PCC Pavement

Metal Recess Strip

No.5 Epoxy Coated Deformed Tie Bar

T = Pavement Thickness

3/8"

5/8"

2 1/2"

1 1/2"

15"

15"

T/2

T/2

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

Concrete Gutter or Concrete Curb and Gutter

PCC Pavement

T = Pavement Thickness

New PCC Pavement

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.

Published Date: 1st Qtr. 2019	S D D O T	PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER	PLATE NUMBER 380.11
			Sheet 1 of 1

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	500	600	25
50	500	600	50 *
55	750	660	50 *
60 - 65	1000	780	50 *

* Spacing is 40' for 42" cones.

⊙ Reflectorized Drum

■ Channelizing Device

④ 4" White Temporary Pavement Marking

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.

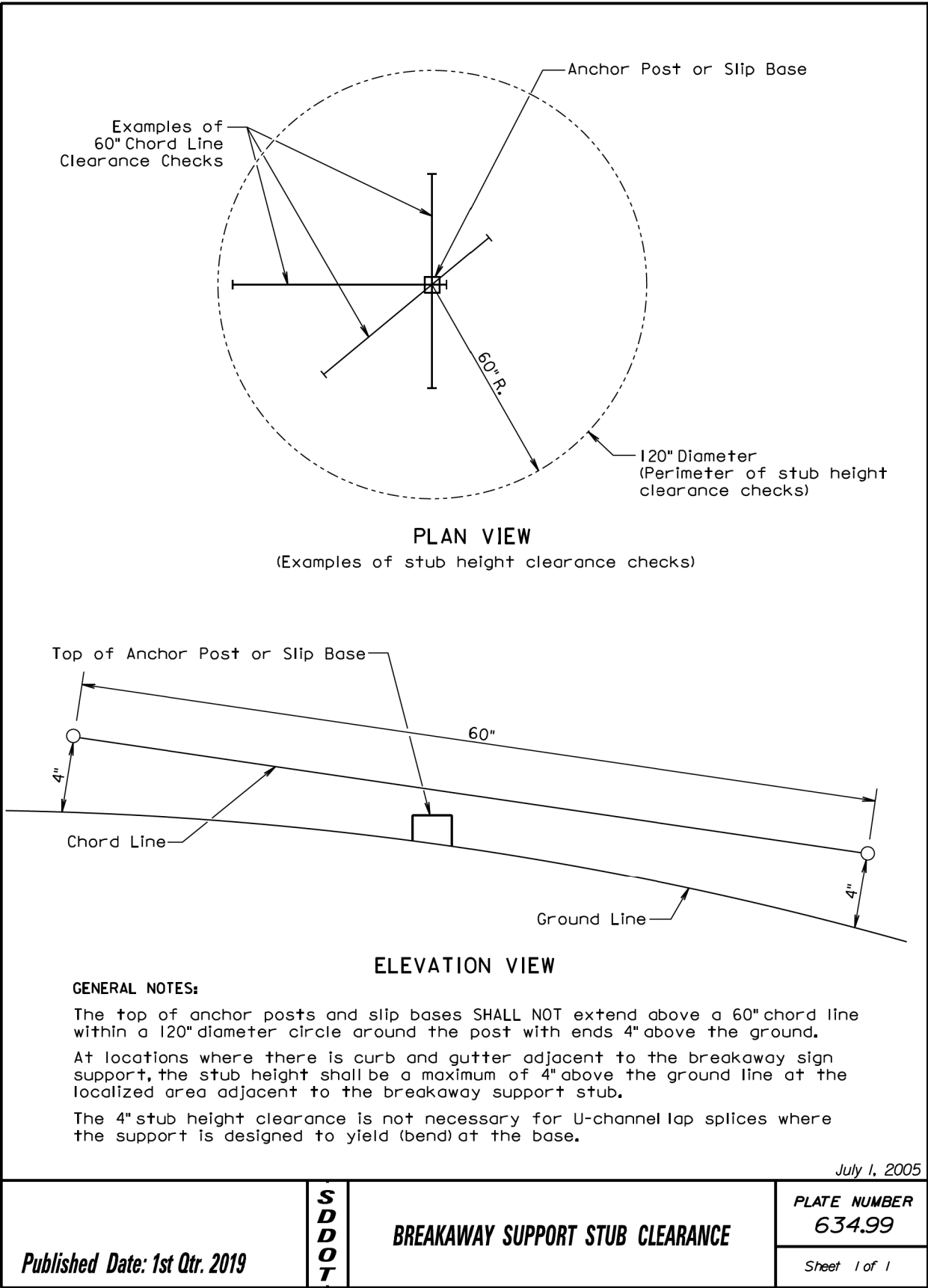
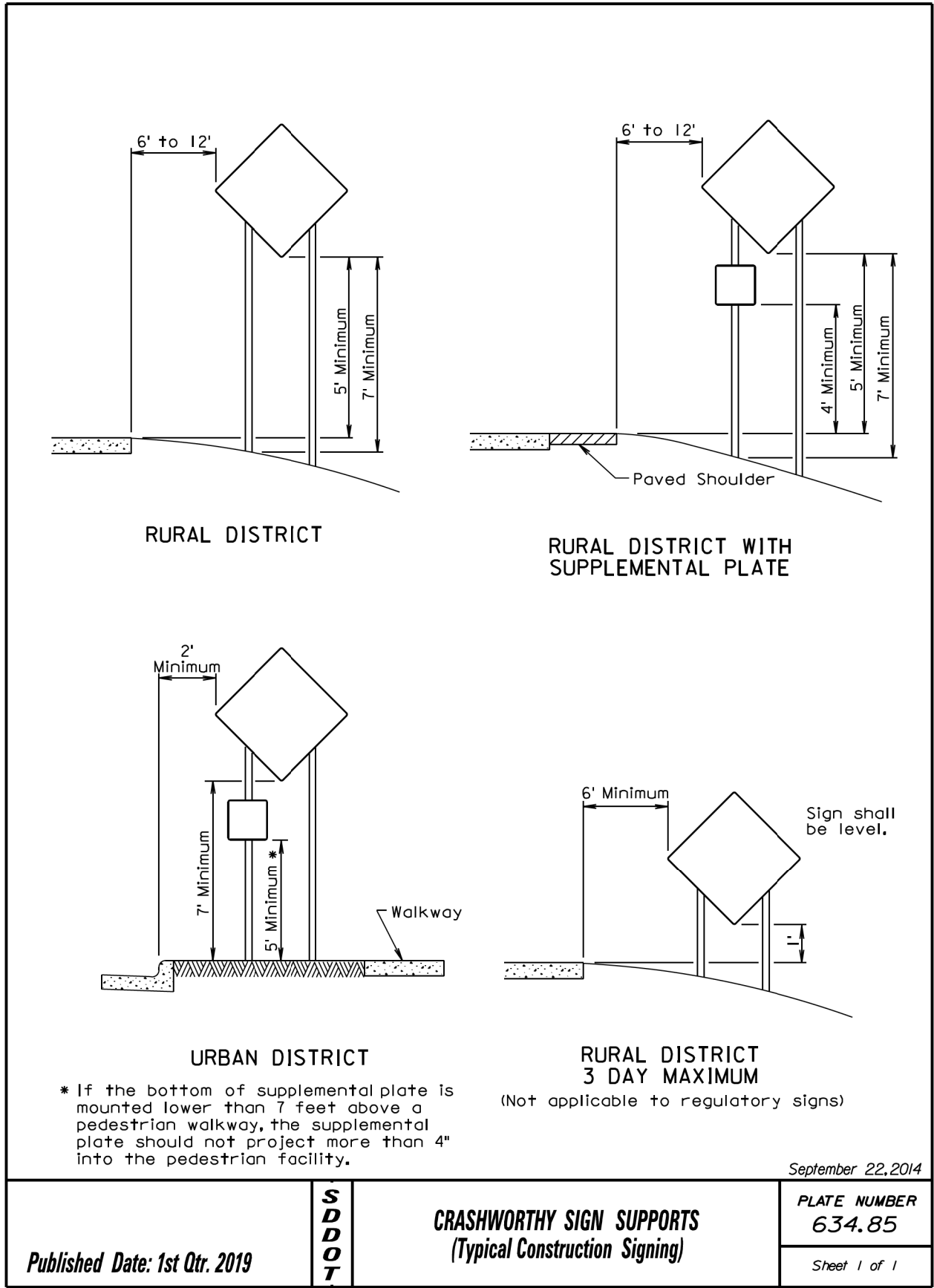
Temporary pavement markings shall be used if traffic control must remain overnight.

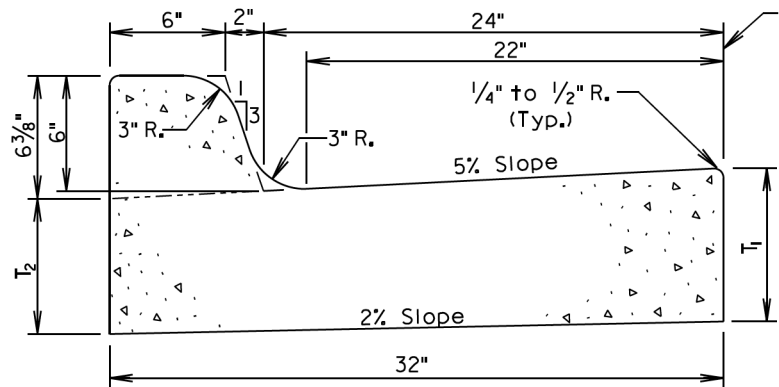
The length of A and L may be adjusted to fit field conditions.

Published Date: 1st Qtr. 2019	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES 4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER 634.47
			Sheet 1 of 1

File - ...Seed File:Standard Plates - Page 2.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014-451 & 034-451	13	17
Plotting Date: 02/26/2019			





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.

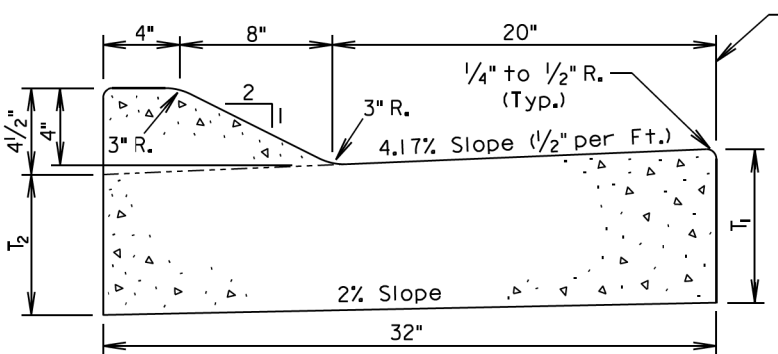
Type	T ₁ (Inches)	T ₂ (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B66	6	5 ⁵ / ₁₆	0.057	17.7
B67	7	6 ⁵ / ₁₆	0.065	15.4
B68	8	7 ⁵ / ₁₆	0.073	13.7
B68.5	8.5	7 ⁹ / ₁₆	0.077	13.0
B69	9	8 ⁵ / ₁₆	0.081	12.3
B69.5	9.5	8 ⁹ / ₁₆	0.085	11.7
B610	10	9 ⁵ / ₁₆	0.090	11.2
B610.5	10.5	9 ⁹ / ₁₆	0.094	10.7
B611	11	10 ⁵ / ₁₆	0.098	10.2
B611.5	11.5	10 ⁹ / ₁₆	0.102	9.8
B612	12	11 ⁵ / 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. 2019	S D D O T	TYPE B CONCRETE CURB AND GUTTER	PLATE NUMBER 650.01
			Sheet 1 of 1



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

Type	T ₁ (Inches)	T ₂ (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
D46	6	5 ⁵ / ₁₆	0.056	18.0
D47	7	6 ⁵ / ₁₆	0.064	15.7
D48	8	7 ⁵ / ₁₆	0.072	13.9
D48.5	8.5	7 ⁹ / ₁₆	0.076	13.1
D49	9	8 ⁵ / ₁₆	0.080	12.5
D49.5	9.5	8 ⁹ / ₁₆	0.084	11.9
D410	10	9 ⁵ / ₁₆	0.088	11.3
D410.5	10.5	9 ⁹ / ₁₆	0.093	10.8
D411	11	10 ⁵ / ₁₆	0.097	10.3
D411.5	11.5	10 ⁹ / ₁₆	0.101	9.9
D412	12	11 ⁵ / ₁₆	0.105	9.5

GENERAL NOTES:

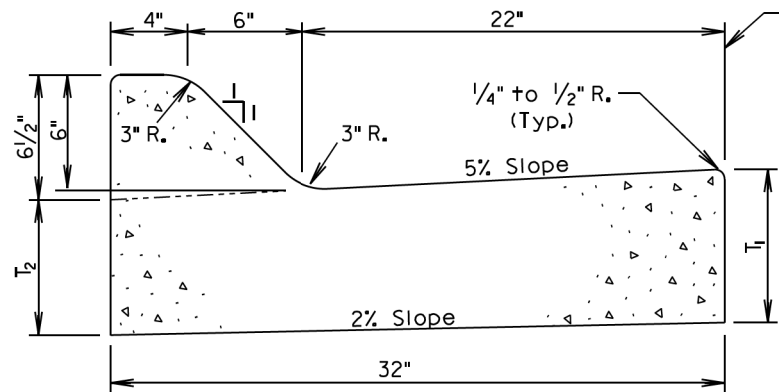
When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Standard Plate 380.11.
See Standard Plate 650.90 for expansion and contraction joints in the curb and gutter.

September 6, 2006

Published Date: 2nd Qtr. 2019	S D D O T	TYPE D CONCRETE CURB AND GUTTER	PLATE NUMBER 650.15
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014-451 & 034-451	15	17

Plotting Date: 05/01/2019



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.

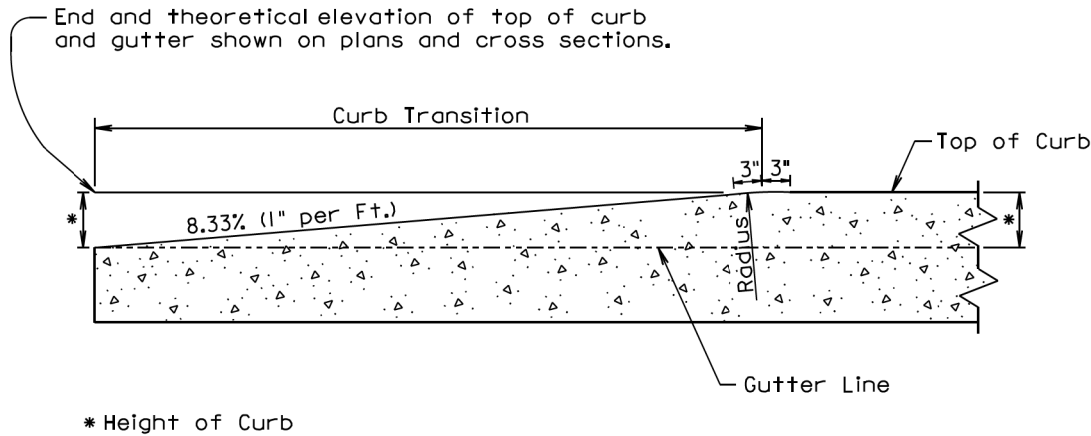
Type	T ₁ (Inches)	T ₂ (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
F66	6	5 ¹ / ₁₆	0.057	17.6
F67	7	6 ¹ / ₁₆	0.065	15.4
F68	8	7 ¹ / ₁₆	0.073	13.6
F68.5	8.5	7 ⁹ / ₁₆	0.077	12.9
F69	9	8 ¹ / ₁₆	0.082	12.3
F69.5	9.5	8 ⁹ / ₁₆	0.086	11.7
F610	10	9 ¹ / ₁₆	0.090	11.1
F610.5	10.5	9 ⁹ / ₁₆	0.094	10.7
F611	11	10 ¹ / ₁₆	0.098	10.2
F611.5	11.5	10 ⁹ / ₁₆	0.102	9.8
F612	12	11 ¹ / ₁₆	0.106	9.4

GENERAL NOTES:

When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment 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. 2019	S D D O T	TYPE F CONCRETE CURB AND GUTTER	PLATE NUMBER 650.20
			Sheet 1 of 1



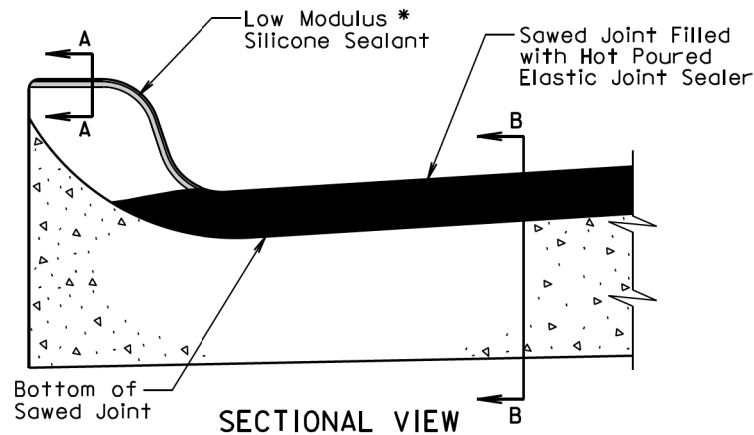
LONGITUDINAL SECTION OF CONCRETE CURB TAPER

September 14, 2005

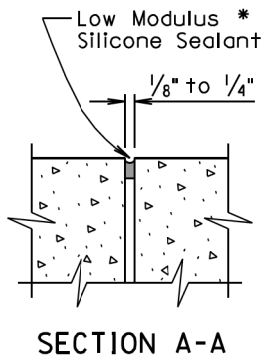
Published Date: 2nd Qtr. 2019	S D D O T	CONCRETE CURB TAPER	PLATE NUMBER 650.35
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014-451 & 034-451	16	17

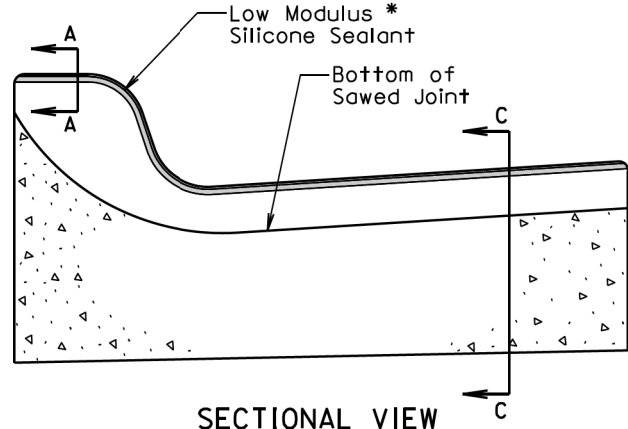
Plotting Date: 05/01/2019



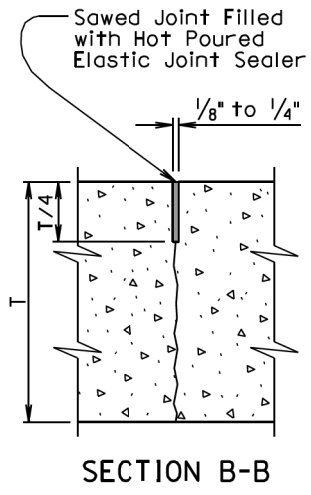
SECTIONAL VIEW
(Curb and Gutter Placed Monolithic with Adjacent Mainline PCC Pavement)



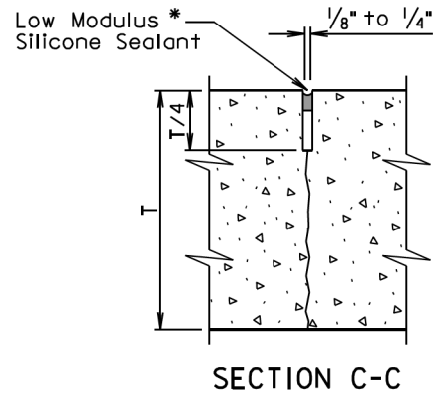
SECTION A-A



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



SECTION B-B

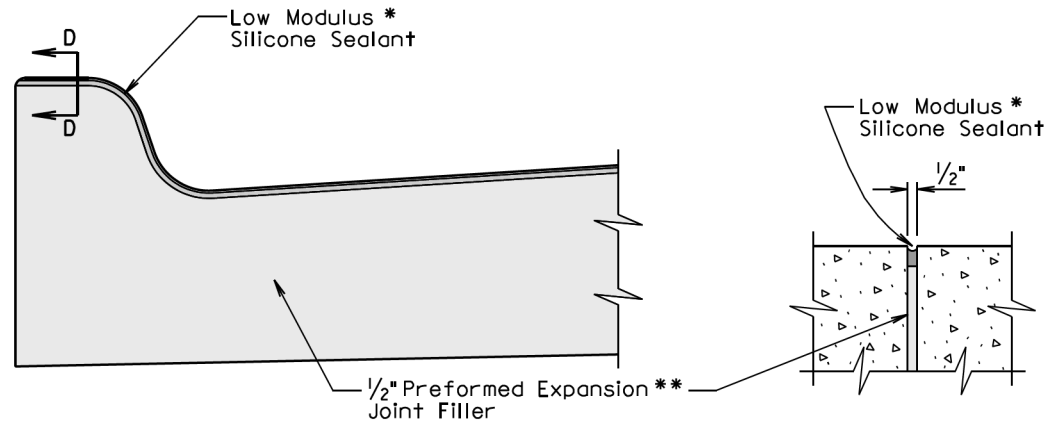


SECTION C-C

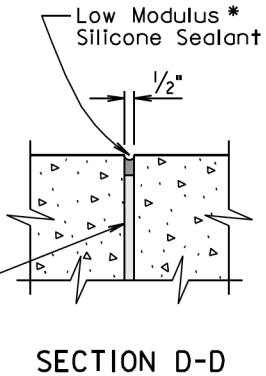
* The silicone sealant shall be placed such that it completely seals the joint and is bonded to the sides of the clean joint as approved by the Engineer.

September 6, 2013

Published Date: 2nd Qtr. 2019	S D D O T	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 1 of 2



SECTIONAL VIEW
(Curb and Gutter at 1/2" 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 1/2" 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.

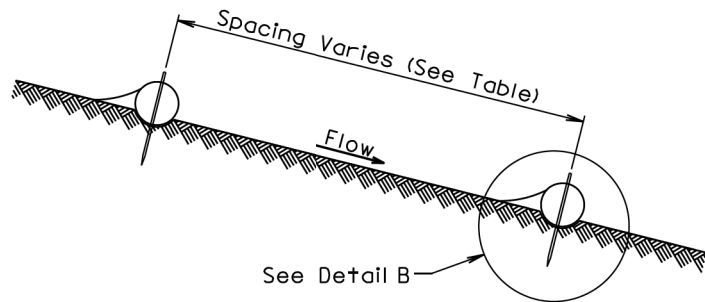
When concrete curb and gutter is not placed monolithically with the mainline PCC pavement or when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete curb and gutter shall be 1 1/2 inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint shall be at least 1/4 the thickness of the concrete and the joint shall be sealed in accordance with the details shown above.

September 6, 2013

Published Date: 2nd Qtr. 2019	S D D O T	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 2 of 2

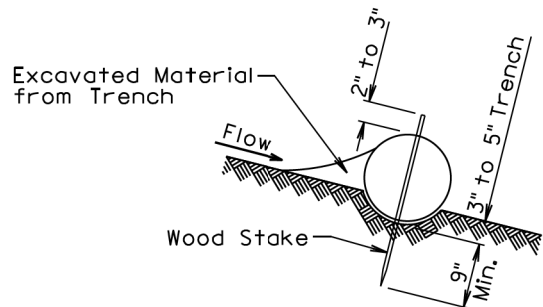
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014-451 & 034-451	17	17

Plotting Date: 05/01/2019

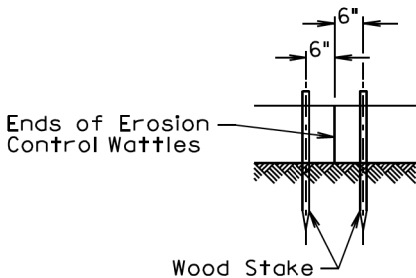


ELEVATION VIEW
CUT OR FILL SLOPE INSTALLATION

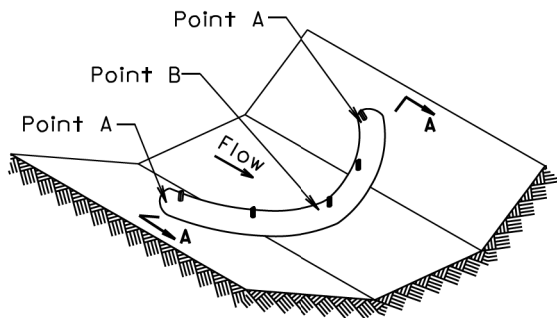
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft)
1:1	10
2:1	20
3:1	30
4:1	40



DETAIL B
(TYPICAL OF ALL INSTALLATIONS)

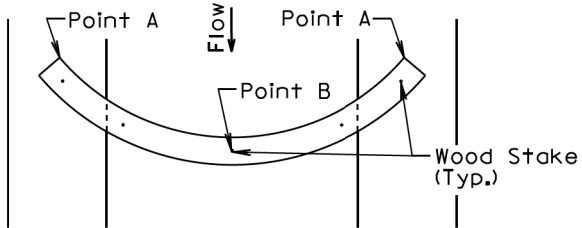


DETAIL C

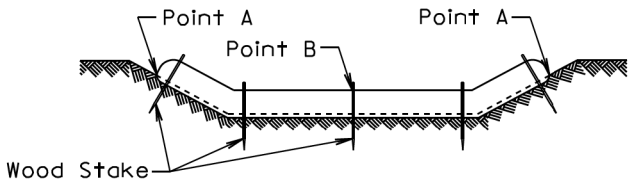


ISOMETRIC VIEW
DITCH INSTALLATION

DITCH INSTALLATION	
Grade	Spacing (Ft)
2%	150
3%	100
4%	75
5%	50



PLAN VIEW
DITCH INSTALLATION



SECTION A-A

December 23, 2004

Published Date: 2nd Qtr. 2019	S D D O T	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 1/2". 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. 2019	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2