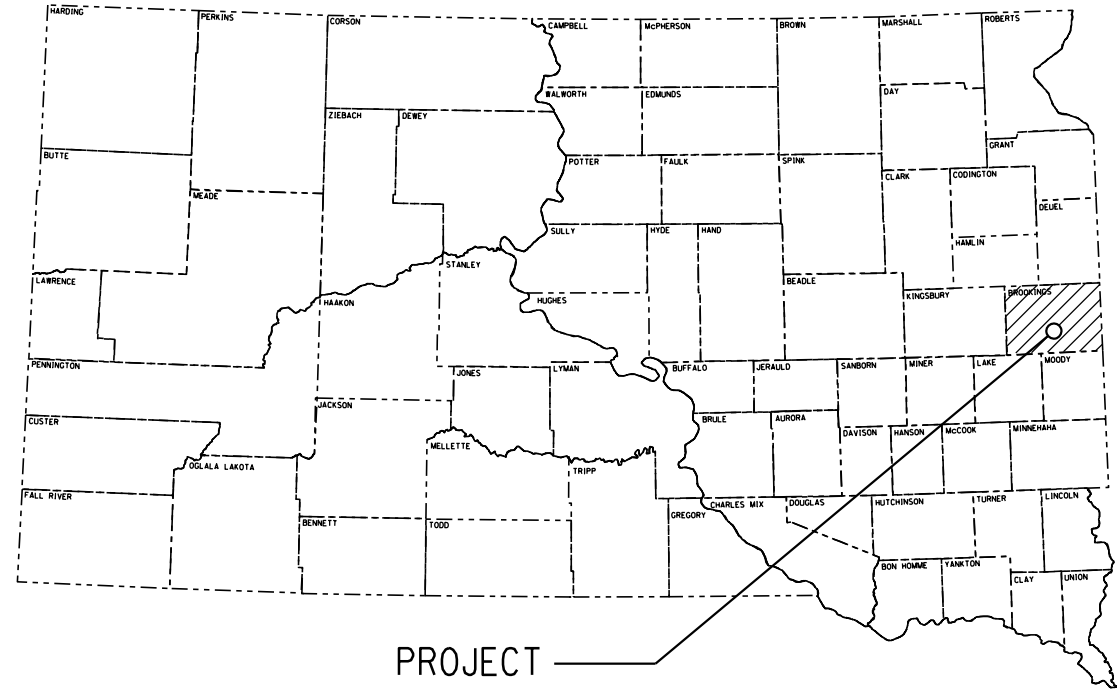


PLOT SCALE - 1:6986.31

PLOTTED FROM - TRBR1N112



STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED  
**PROJECT 014 B-171**  
**U.S. HIGHWAY 14 B**  
**BROOKINGS COUNTY**  
IMPROVE RADIUS OF INTERSECTION  
PCN i4yd

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014 B-171	1	12
Plotting Date: 03/06/2018			

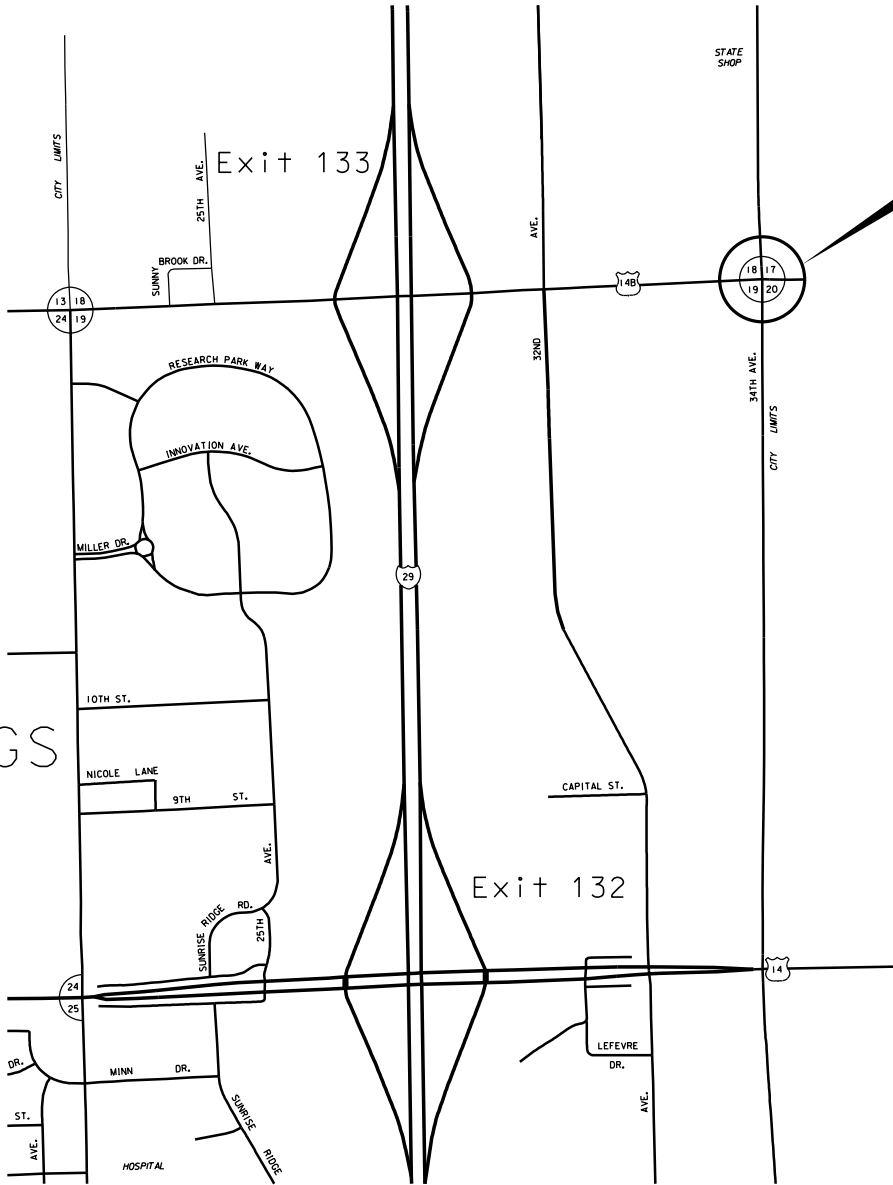
INDEX OF SHEETS

SHEET NO. 1	TITLE SHEET & LAYOUT MAP
SHEET NO. 2	ESTIMATE OF QUANTITIES & SPECIFICATIONS
SHEET NO. 3	ENVIRONMENTAL COMMITMENTS
SHEET NO. 4-5	PLAN NOTES
SHEET NO. 6-8	TRAFFIC CONTROL
SHEET NO. 9	SURFACING REMOVAL LAYOUT
SHEET NO. 10	NEW SURFACING LAYOUT
SHEET NO. 11	EXISTING UTILITIES
SHEET NO. 12	STANDARD PLATES

PROJECT LOCATION  
Jct. US14 B/34th Ave.  
MRM 421.83



BROOKINGS



STORM WATER PERMIT  
None Required

ADT (2016) 3432

PLOT NAME - 1

FILE - ...\\14YD.TITLE SHEET.DGN

PLOT SCALE - 1:6984.21

PLOTTED FROM - TRBR1NT12

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014 B-171	2	12
Plotting Date: 02/16/2018			

# ESTIMATE OF QUANTITIES & SPECIFICATIONS

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0300	Remove Concrete Curb and/or Gutter	126	Ft
110E1010	Remove Asphalt Concrete Pavement	202.9	SqYd
120E0010	Unclassified Excavation	170	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
260E1010	Base Course	370.3	Ton
320E1200	Asphalt Concrete Composite	239.6	Ton
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	254.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	2	Each
734E0010	Erosion Control	Lump Sum	LS

## SPECIFICATIONS

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

PLOT NAME - 1

FILE - ...\\14YD.TITLE SHEET.DGN

PLOT SCALE - 1:6984.21

PLOTTED FROM - TRBR1NT12

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014 B-171	3	12
Plotting Date: 02/16/2018			

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 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 pit, or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

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 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:

- 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".
- 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 proposed 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 historic or 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.

PLOT NAME - 1

FILE - ...\\4YD-TITLE SHEET.DGN

PLOT SCALE - 1:6984.21

PLOTTED FROM - TRBR1N12

PLOT NAME - 1

FILE - ...\\4YD.TITLE SHEET.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014 B-171	4	12
Plotting Date: 02/16/2018			

COORDINATION OF WORK

A separate contract for Project IM-NH-P 0012(203) PCN 05L7 Brookings County will be awarded to another Contractor for asphalt surface treatment on US 14 B.

The Contractor shall schedule his work so as not to interfere with or hinder the progress of the work performed by other contractors on the above projects.

UTILITIES

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.

The lightpole located at Sta. 211+41 – 84’ Rt. is to be removed/relocated by Brookings Municipal Utilities in advance of the project. The Contractor shall confirm with Brookings Municipal Utilities prior to work that this has been completed. Contact: Ryan Thompson (605-692-6325)

TRAFFIC CONTROL

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

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

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

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.

One Type 3 Barricade, 8’ Double Sided shall be placed at the beginning of the shoulder work area. Maximum spacing of channelizing devices shall be 25 feet.

Traffic Control Signs, as shown in the Estimate of Quantities, 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.

TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
210+42.85		211+52	R	202.9

TABLE OF CONCRETE CURB AND GUTTER REMOVAL

Station	to	Station	Quantity (Ft)
211+49 – 82’ R		211+49 – 208’ R	126.0

A 3 foot taper shall be ground into the existing curb that remains inplace. All costs to grind taper in existing curb shall be incidental to the contract unit price per foot for “Remove Concrete Curb and/or Gutter”.

UNCLASSIFIED EXCAVATION

Plans estimated quantity of 170 cu.yds shall be the basis of payment. A shrinkage factor of 35% was used when computing the volume.

REMOVE AND REPLACE TOPSOIL

Topsoil shall be salvaged and stockpiled prior to constructing the intersection radius improvement. 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 62.4 cu.yds.

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

SAWING IN EXISTING SURFACING

Where new asphalt concrete is placed adjacent to existing asphalt concrete or existing PCC Pavement, the existing pavement shall be sawed full depth to a true, straight vertical face. No separate payment shall be made for sawing.

BASE COURSE

Base Course shall conform to the specifications, except that the compaction shall be to the satisfaction of the Engineer.

WATER FOR COMPACTION OF GRANULAR MATERIALS

Cost of water for compaction of the granular material shall be incidental to the contract unit price for the various contract items. Six percent, plus or minus, moisture will be required at the time of compaction unless otherwise directed by the Engineer.

ASPHALT CONCRETE COMPOSITE

The asphalt binder used in the mixture shall be a PG 64-22, PG 64-28, or PG 64-34 Asphalt Binder.

All other requirements in the specifications for Asphalt Concrete Composite shall apply.

EROSION CONTROL

The estimated area requiring erosion control is 6840 square feet. All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, seeding, fertilizing, and hydraulic straw mulching shall be incidental to the contract lump sum price for “Erosion Control”.

Permanent Seeding

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways, 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, Action	1.4
Perennial Ryegrass	Turf Type Varieties	1.4
Creeping Red Fescue	Epic, Boreal, Chantilly	1.4
Chewings Fescue	Ambrose, K2, Zodiac, Shadow III	1.4
Alkali Grass	Fults, Fults II, Quill, Salty	1.4
Total:		7

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 20,000 live propagules of mycorrhizal fungi per 1,000 square feet.

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

PLOT SCALE - 1:6984.21

PLOTTED FROM - TRBR1NT12

PLOT NAME - 1

FILE - ...\\14YD\_TITLE SHEET.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014 B-171	5	12
Plotting Date: 02/16/2018			

EROSION CONTROL, CONTINUED

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 application rate is 34 pounds per 1,000 square feet 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

Hydraulic Straw Mulch

Hydraulic straw mulch shall be applied to all disturbed areas. The application rate is 3,000 pounds per acre.

The hydraulic straw mulch shall be from the list below or an approved equal:

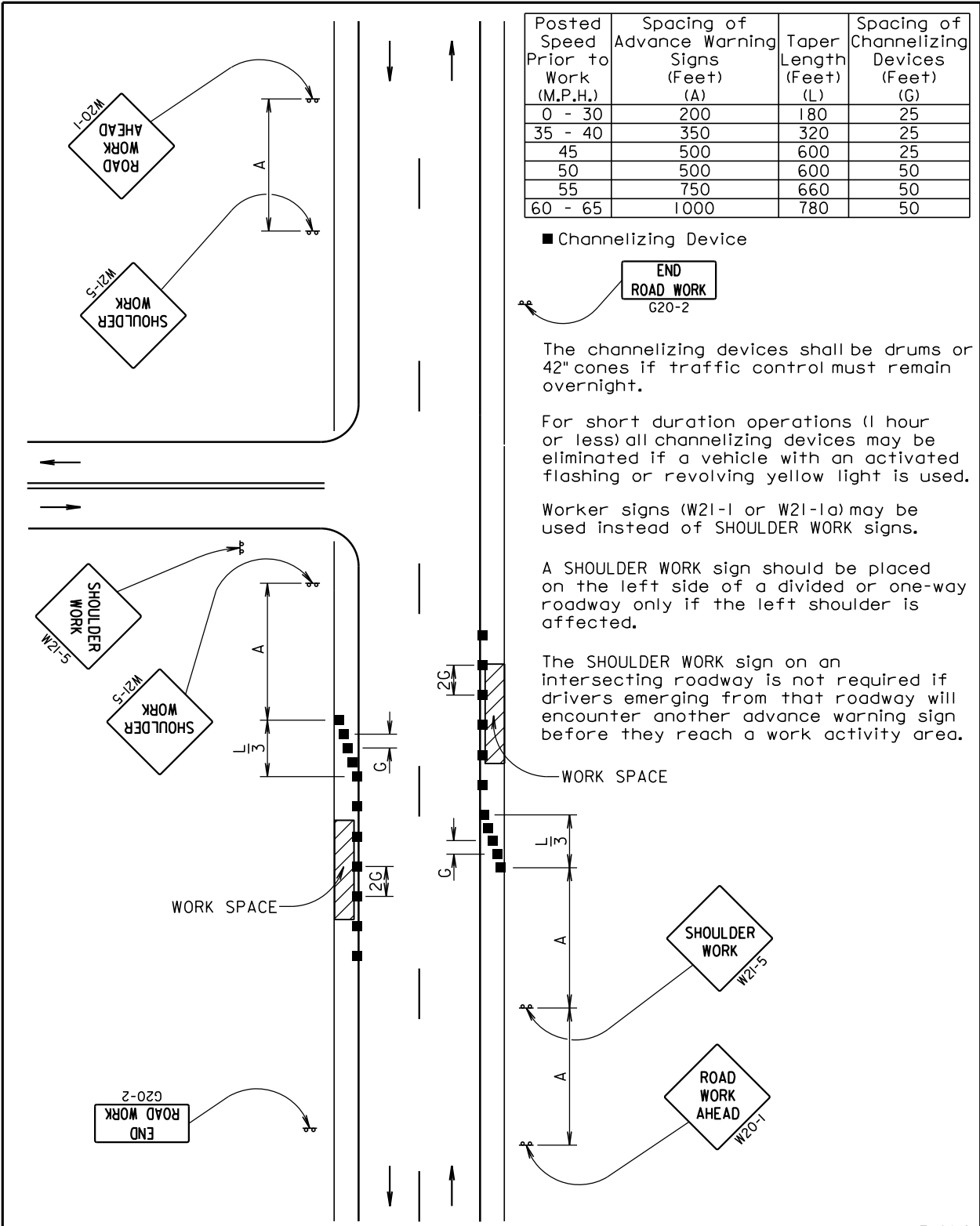
Product	Manufacturer
HydroStraw, HydroStraw Fiber Plus, HydroStraw Guar Plus, or HydroStraw BFM	HydroStraw, LLC Manteno, IL Phone: 1-800-545-1755 hydrostraw.com
HydroGold	Verdyol Riverton, Manitoba Canada Phone: 1-866-280-7327 www.bioticearth.com

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16.0	32.0
W8-17	SHOULDER DROP-OFF (symbol)	2	48" x 48"	16.0	32.0
W9-3	CENTER LANE CLOSED AHEAD	1	48" x 48"	16.0	16.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
W21-5	SHOULDER WORK	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			
		254.6			

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Double Sided	2 Each



June 3, 2016

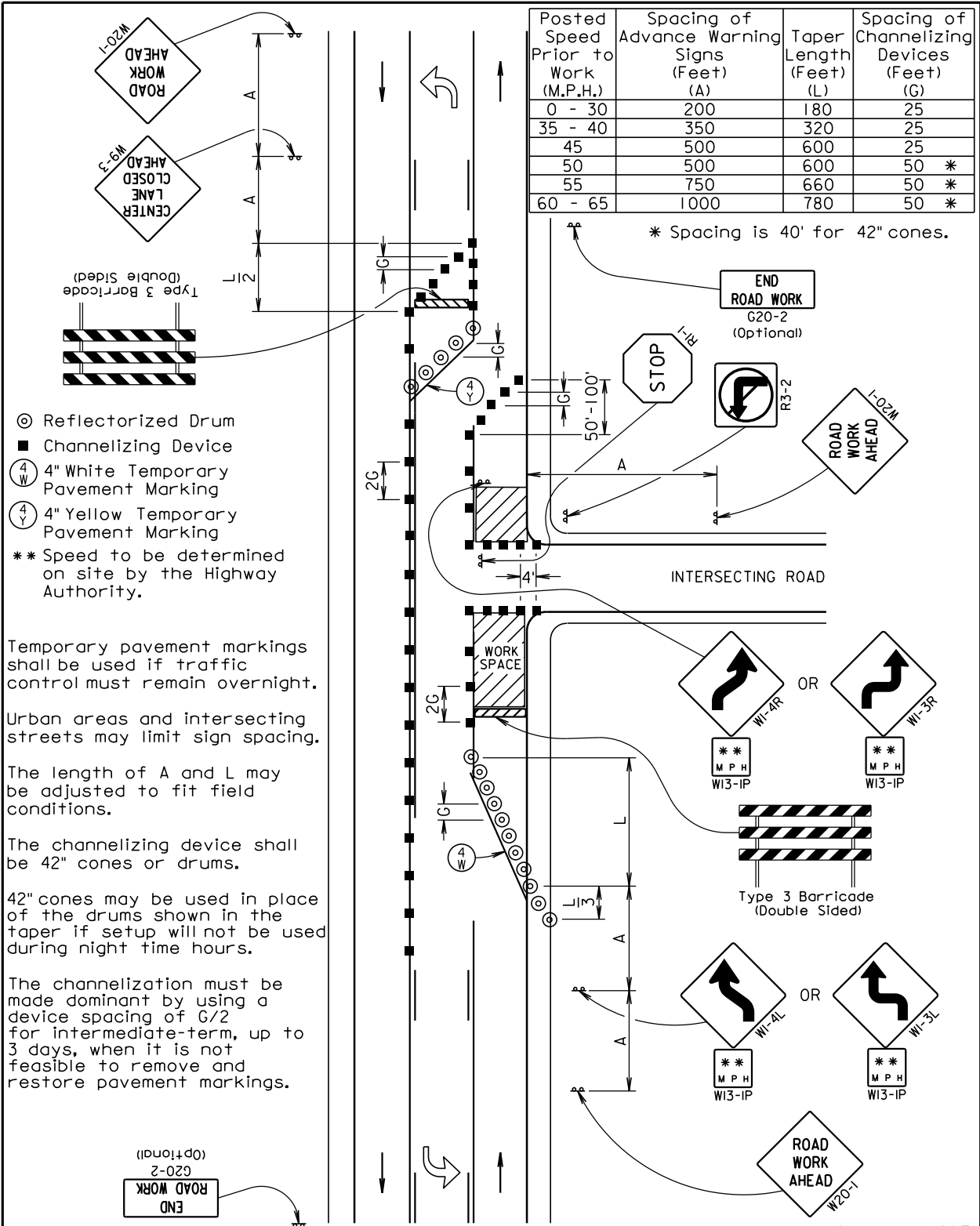
Published Date: 1st Qtr. 2018

SDOT

GUIDES FOR TRAFFIC CONTROL DEVICES  
WORK ON SHOULDERS

PLATE NUMBER  
634.03

Sheet 1 of 1



September 14, 2017

Published Date: 1st Qtr. 2018

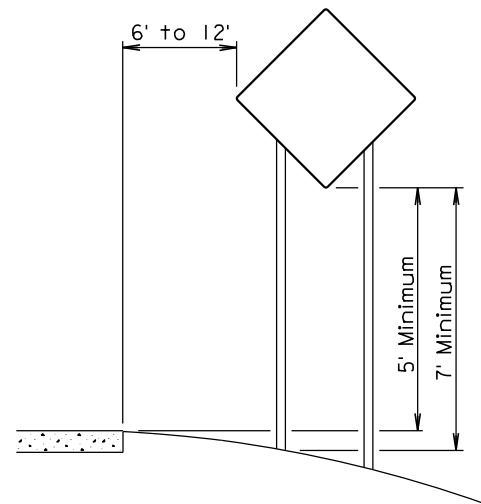
SDOT

GUIDES FOR TRAFFIC CONTROL DEVICES  
3-LANE, OUTSIDE LANE CLOSED

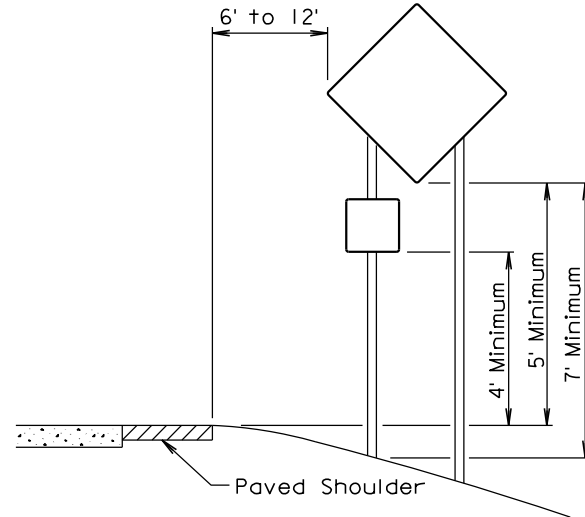
PLATE NUMBER  
634.53

Sheet 1 of 1

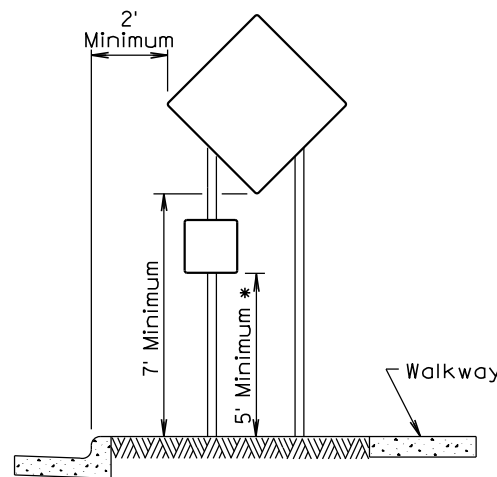
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014 B-171	8	12
Plotting Date: 02/16/2018			



RURAL DISTRICT

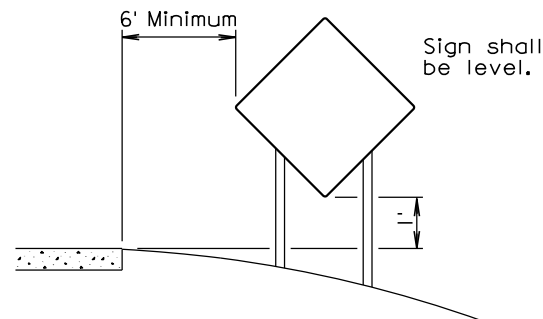


RURAL DISTRICT WITH  
SUPPLEMENTAL PLATE



URBAN DISTRICT

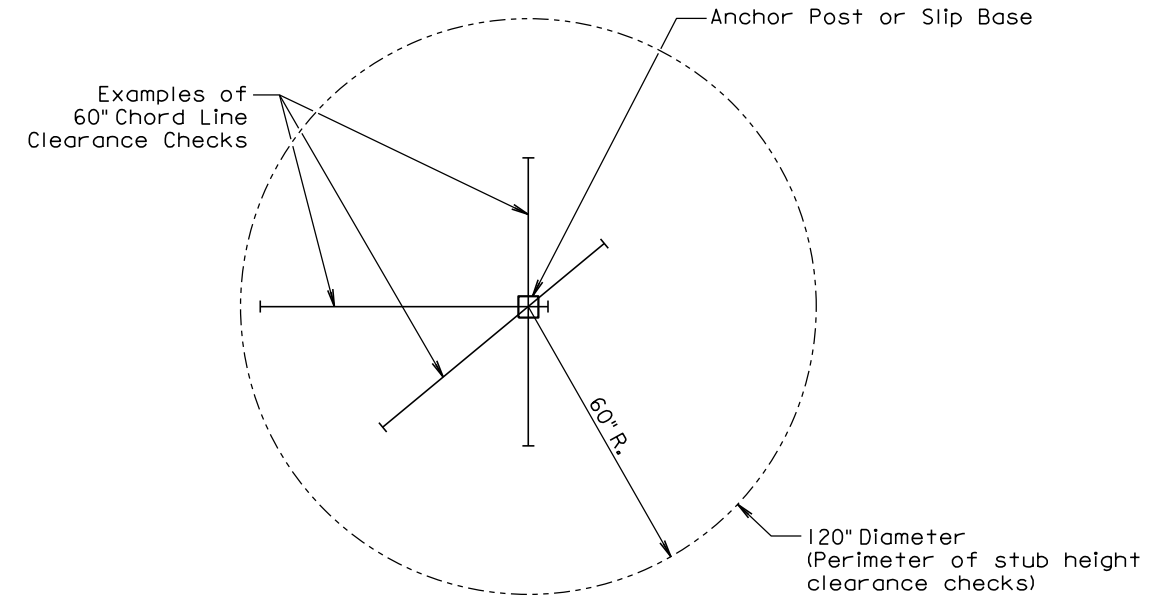
\* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.



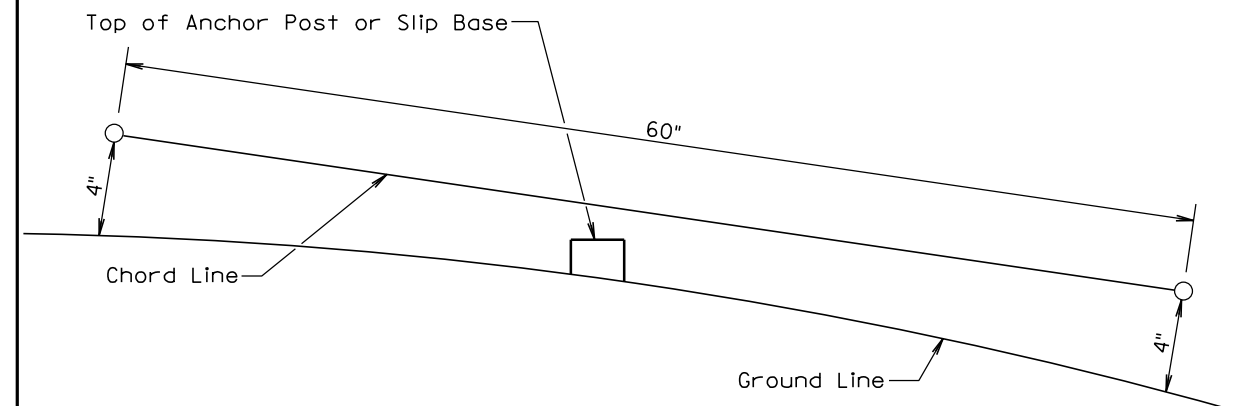
RURAL DISTRICT  
3 DAY MAXIMUM  
(Not applicable to regulatory signs)

September 22, 2014

Published Date: 1st Qtr. 2018	S D D O T	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.

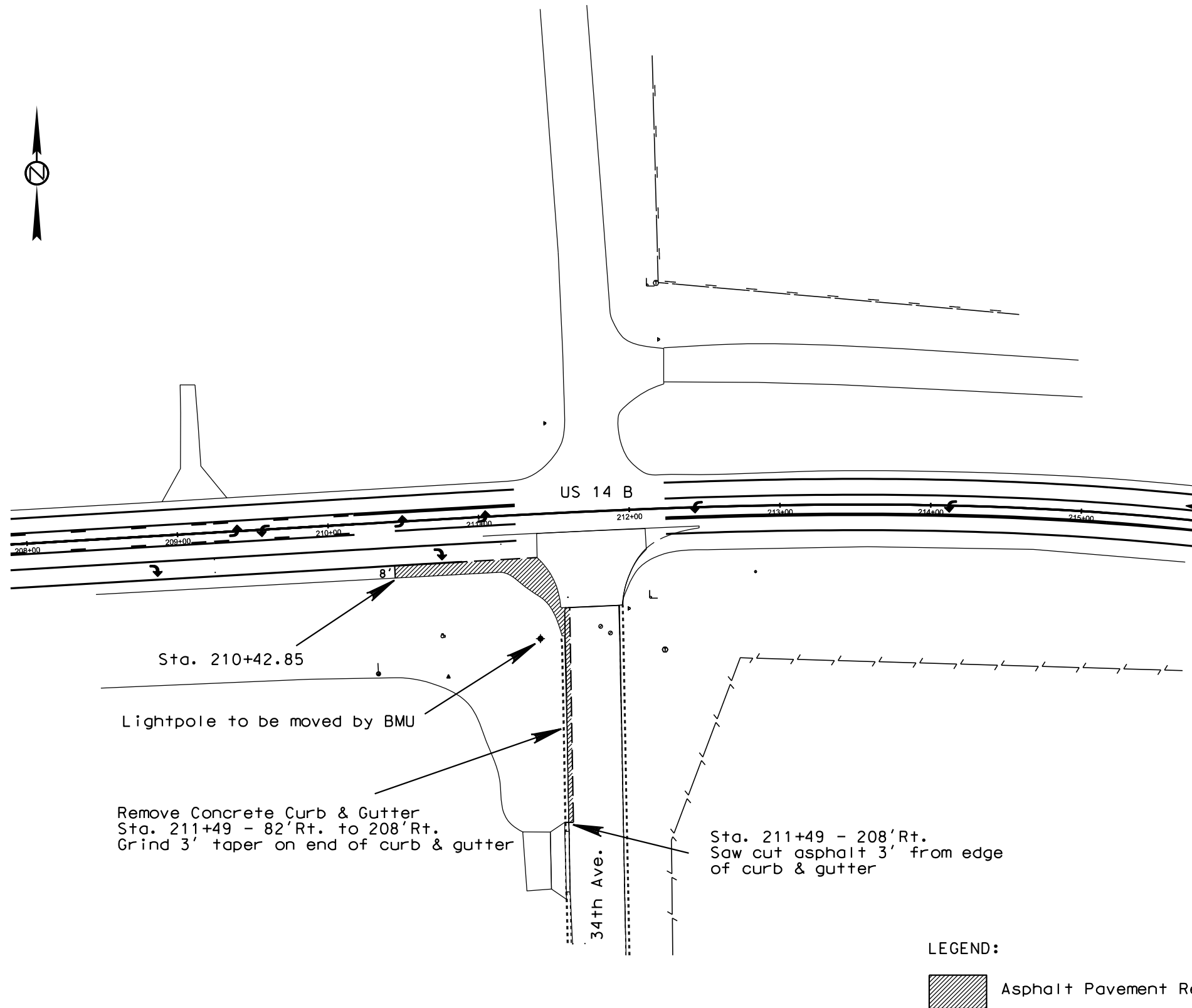
July 1, 2005

Published Date: 1st Qtr. 2018	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014 B-171	9	12
Plotting Date: 03/06/2018			

# EXISTING SURFACING REMOVALS



## LEGEND:

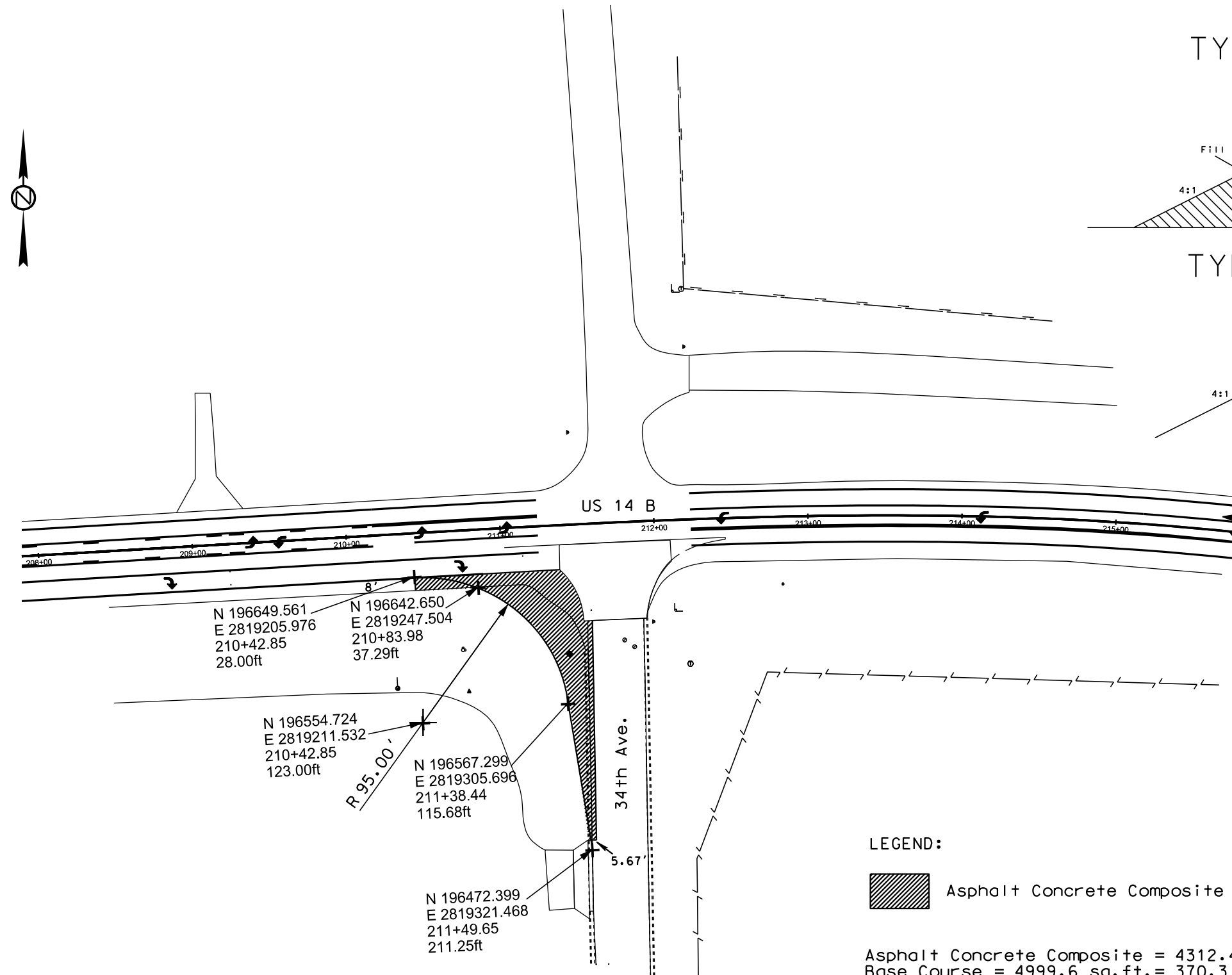
 Asphalt Pavement Removal Area = 1826 sq.ft.

PLOT SCALE - 1:79,8076

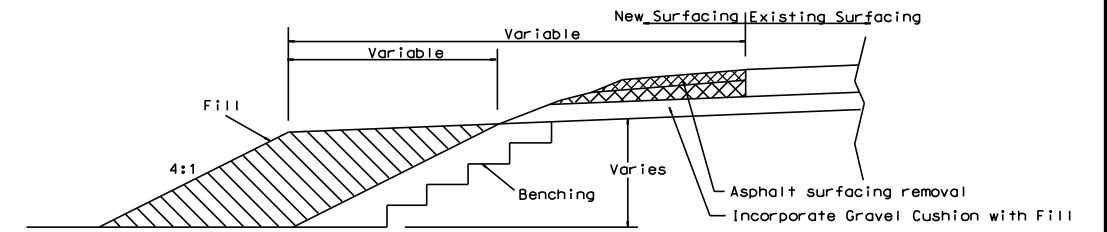
PLOTTED FROM - TRBR1N112

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014 B-171	10	12
Plotting Date: 03/06/2018			

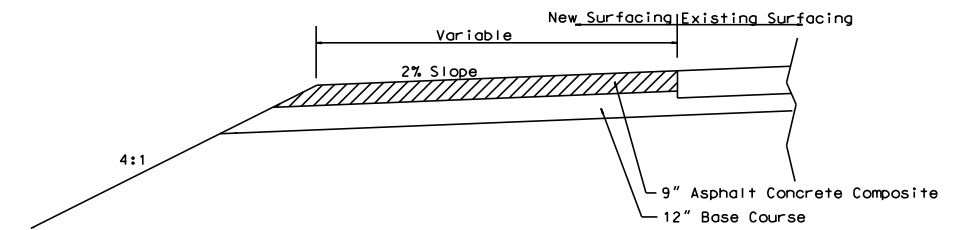
# NEW SURFACING LIMITS



## TYPICAL GRADING SECTION



## TYPICAL SURFACING SECTION



### LEGEND:



Asphalt Concrete Composite

Asphalt Concrete Composite = 4312.4 sq.ft. = 239.6 tons  
Base Course = 4999.6 sq.ft. = 370.3 tons

PLOT NAME - 1

FILE - ... \14YD.LAYOUT.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014 B-171	11	12
Plotting Date: 03/06/2018			

# EXISTING UTILITIES

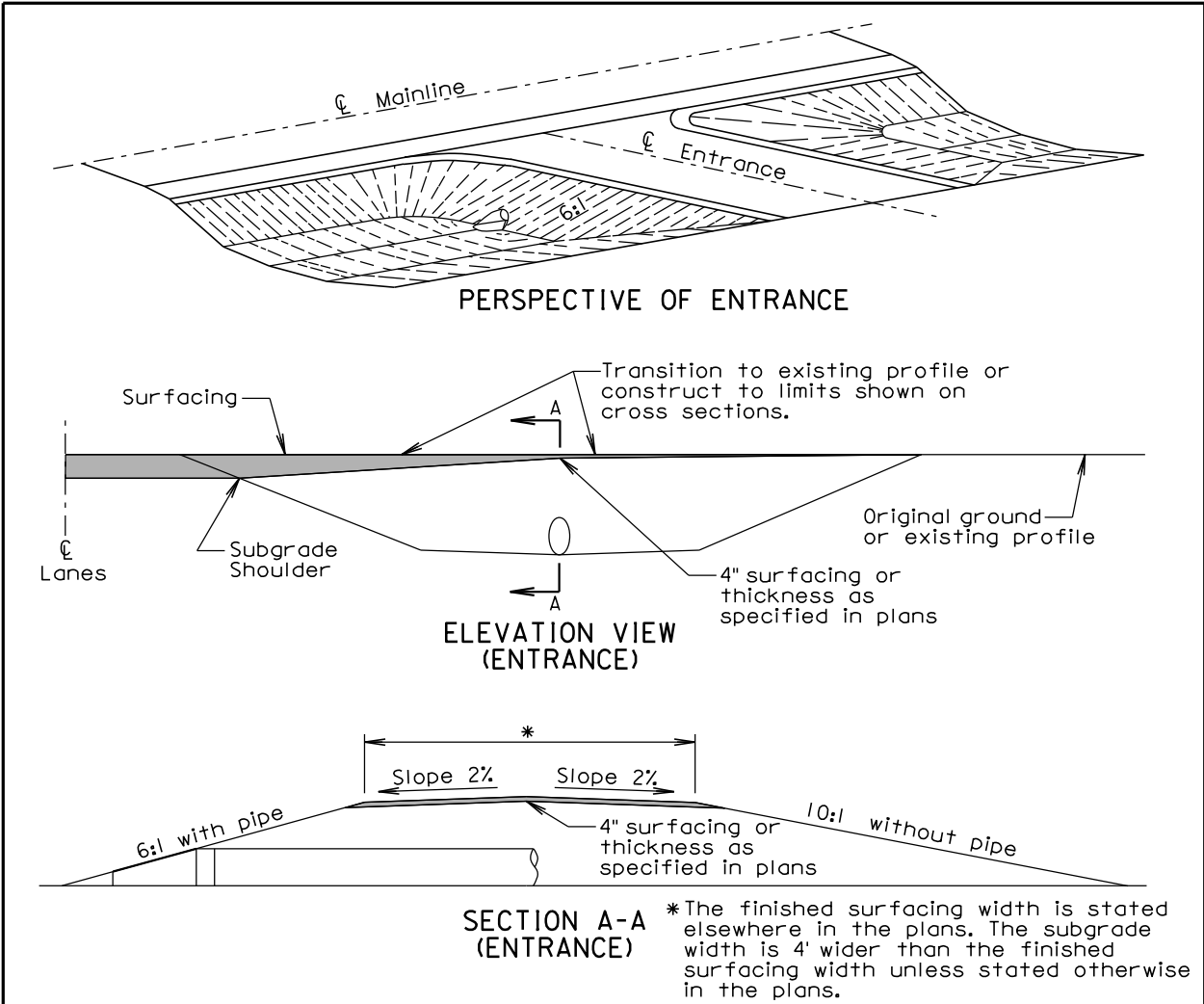
(For Information Only)



PLOT SCALE - 1:6984.21

PLOTTED FROM - TRBR1NT12

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	014 B-171	12	12
Plotting Date: 02/16/2018			



**GENERAL NOTES:**

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

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

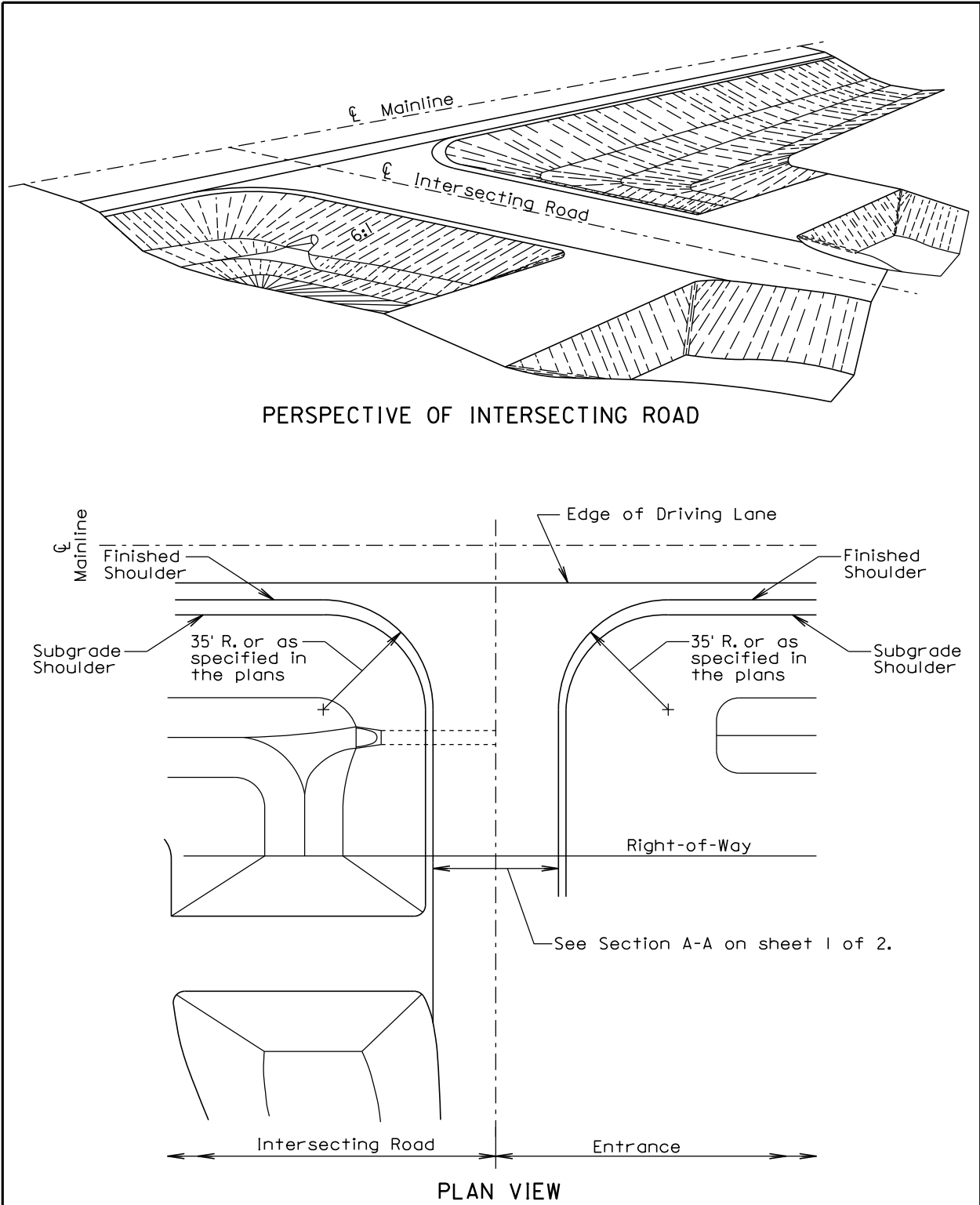
Pipe lengths shall be adjusted if necessary during construction to obtain the 6:1 slopes. For grading projects, the pipe lengths are estimated typically using a 4" thickness of surfacing directly over the subgrade above the pipe.

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

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

September 6, 2013

Published Date: 1st Qtr. 2018	S D D O T	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 1 of 2



September 6, 2013

Published Date: 1st Qtr. 2018	S D D O T	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 2 of 2

PLOT NAME - 1

FILE - ...\\14YD.TITLE SHEET.DGN