

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 6419 (08) P 6641 (02) P 6642 (02)	1	11
Plotting Date: 12/07/15 Revised Date: mm/dd/yy Initials: JHE			

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

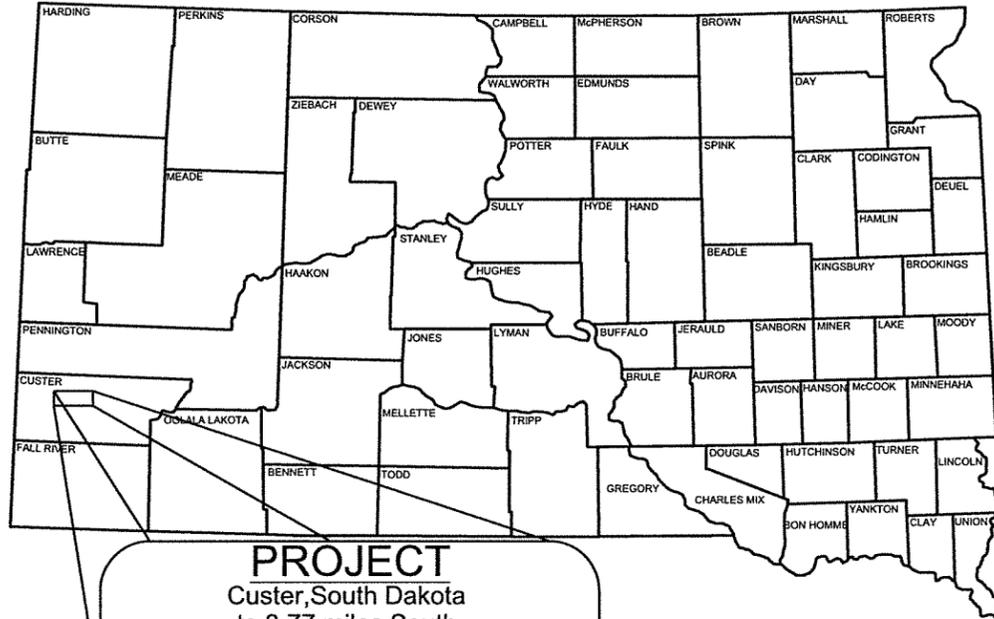
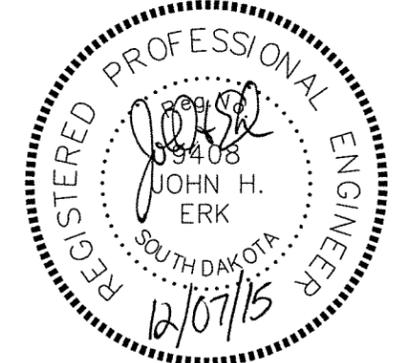
PLANS FOR PROPOSED
PROJECTS P 6419(08),
P 6641(02) & P 6642(02)

CUSTER COUNTY
ASPHALT SURFACE TREATMENT

PCNs 04VK, 04VL & 04VM

INDEX OF SHEETS

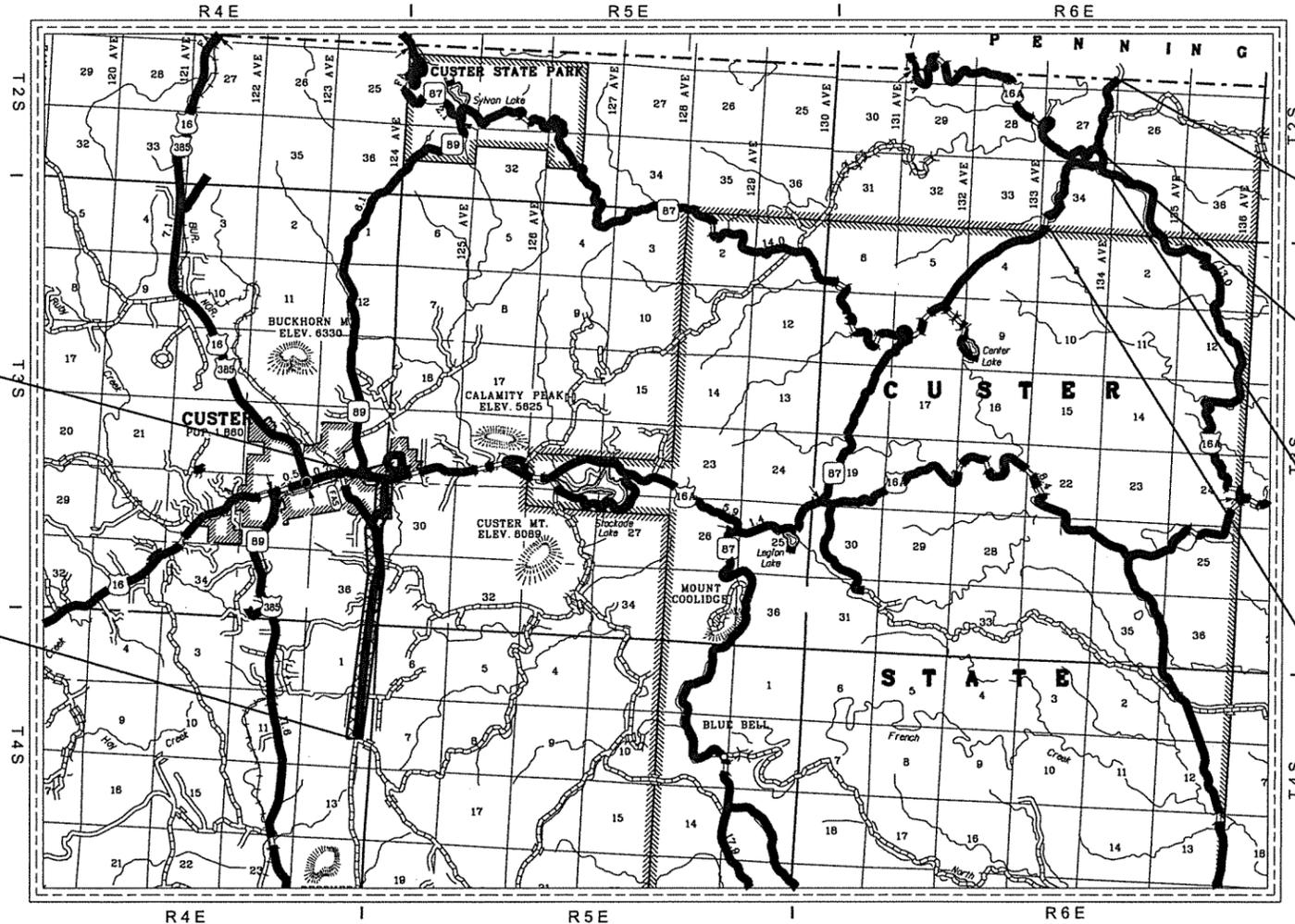
SHEET NO. 1	TITLE AND LAYOUT MAP
SHEET NO. 2-5	ESTIMATE OF QUANTITIES & NOTES
SHEET NO. 6-7	TYPICAL SECTION & RATES OF MATERIAL
SHEET NO. 8-9	TRAFFIC CONTROL
SHEET NO. 10-11	STANDARD PLATES



PROJECT
Custer, South Dakota
to 3.77 miles South
N. Playhouse Rd., US HWY 16A,
to 1.14 miles North
S. Playhouse Rd., US HWY 16A,
to 1.49 miles Southwest

END PROJECT P 6419(08) - Sidney Park Rd
Sta. 199+30 at the Intersection of Sidney Park Rd
and US HWY 16A.

BEGIN PROJECT P 6419(08) - Sidney Park Rd
Sta. 0+00 at the Intersection of Sidney Park Rd
and Flynn Creek Rd



End Project P 6641(02) - N. Playhouse Rd
Station 60+25 at the Intersection of
N. Playhouse Rd. and North County Line

Begin Project P 6641(02) - N. Playhouse Rd
Station 0+00 at the Intersection of
N. Playhouse Rd. and US HWY 16A

End Project P 6642(02) - S. Playhouse Rd
Station 78+50 at the Intersection of
S. Playhouse Rd. and US HWY 16A

Begin Project P 6642(02) - S. Playhouse Rd
Station 0+00 at the Intersection of
S. Playhouse Rd. and Custer State Park Boundary

STORM WATER PERMIT (None Required)

DESIGN DESIGNATION		DESIGN DESIGNATION	
P 6419(08)		P 6641(02)	
ADT (2008)	355	ADT (2008)	365
ADT (2028)	380	ADT (2028)	390
DHV	55	DHV	55
D	50%	D	50%
T DHV	3.8%	T DHV	3.8%
T*ADT	8.4%	T*ADT	8.4%

PLANS	
Survey by:	Brosz Engineering, Inc. Sturgis, SD
Plans by:	Brosz Engineering, Inc. Sturgis, SD

Gross length	33805 Feet	6.402 Miles
Length of exceptions	none Feet	0.00 Miles
Net length	33805 Feet	6.402 Miles

ESTIMATE OF QUANTITIES & PLAN NOTES

STATE OF SOUTH DAKOTA	PROJECT		SHEET NO	TOTAL SHEETS
	P 6419(08) P 6641(02) P 6642(02)		2	11
Plotting Date:		12/11/2015		
Revised Date:		12/11/2015		
Initials:		JHE		

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	P 6419(08) PCN 04VK QUANTITY	P 6641(02) PCN 04VL QUANTITY	P 6642(02) PCN 04VM QUANTITY	TOTAL QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	94	29	37	160	CuYd
260E1010	Base Course	132.0	57.1	446	692.2	Ton
320E1200	Asphalt Concrete Composite	94.3	28.5	132.1	254.9	Ton
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	12.4	3.0	4.0	19.4	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	80.5	19.1	26.2	125.8	Ton
360E1200	Modified Cover Aggregate	711.1	168.6	230.3	1 110.0	Ton
633E1300	Pavement Marking Paint, White	255			255	Gal
633E1305	Pavement Marking Paint, Yellow	94			94	Gal
633E1445	Pavement Marking Paint, Arrow	5			5	Each
634E0010	Flagging	100.0	60.0	60.0	220.0	Hour
634E0020	Pilot Car	50.0	30.0	30.0	110.0	Hour
634E0110	Traffic Control Signs	470	352	246	1 068	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
634E0630	Temporary Pavement Marking	7.5			7.5	Mile

SPECIFICATIONS

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

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 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 or County 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 or County 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.

PLAN NOTES

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO	TOTAL SHEETS
	P 6419(08) P 6641(02) P 6642(02)	3	11
Plotting Date: 12/7/2015			
Revised Date: mm/dd/yy			
Initials: JHE			

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.

COMMITMENT R: FIRE PREVENTION IN THE BLACK HILLS AREA

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

Action Taken/Required:

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

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.

ESTIMATED QUANTITIES

The quantities of asphalt for surface treatment and cover aggregate are based on the rates shown in the Rates of Materials. This is only an estimate. The actual application rates of materials will be determined by mix design as stated in these plans. The mix design rates may vary from the estimated rates stated in the Rates of Materials depending on the aggregate source, gradation and flakiness index. The application rates may also be adjusted in the field due to results of gradations, flakiness index and differing surface conditions. Pay quantities will be based off the actual target rates the inspectors use even though they may vary significantly from plans estimates.

SEQUENCE OF OPERATIONS

The following sequence of operations will be followed on a per project basis unless an alternate sequence is submitted in writing to and approved by the engineer at least two weeks prior to the requested change.

1. Install fixed location traffic control devices.
2. Install and remove temporary traffic control devices as needed.
3. Complete digouts, base course and Asphalt Concrete Composite as determined by the Engineer.
4. Place temporary pavement marking tabs not more than 72 hours prior to asphalt surface treatment application.
5. Apply asphalt surface treatment.
6. Remove plastic covers on tabs after asphalt surface treatment application.
7. Broom asphalt treated areas.
8. Apply fog seal.
9. Remove the second set of plastic covers on tabs after fog seal application.
10. Apply permanent pavement marking paint.
11. Remove "for construction only" traffic control devices.

EXISTING PAVEMENT CONDITIONS AND TRAFFIC VOLUMES

The existing pavement conditions for each project are listed below. The traffic volumes are also shown.

Project	Surface Condition	Traffic Volume ADT
P 6419(08)	Slightly pocked, porous & oxidized, moderate cracking	355
P 6641(02)	Slightly pocked, porous & oxidized, minor cracking	365
P 6642(02)	Slightly pocked, porous & oxidized, minor cracking	Not Available

SHOULDER WORK

Prior to construction, Custer County employees will inspect shoulders for excess vegetation and spray if necessary. It will be the Contractor's responsibility to notify the County a minimum of 30 days prior to commencing work on the project. The County assumes no responsibility for the effectiveness of the herbicide applied. The contact person for Custer County is Highway Superintendent Gary Woodford 605-673-5678.

Vegetation and accumulated material on or adjacent to the roadway shall be removed by the Contractor to the satisfaction of the engineer prior to asphalt surface treatment. This work is considered incidental to other contract items and separate measurement or payment will not be made.

UNCLASSIFIED EXCAVATION, DIGOUTS

Unclassified Excavation, Digouts will include all excavation and removal of unsatisfactory material. Unstable material will be excavated and removed to a maximum depth of 1', cut to a true line with a vertical face or as directed by the Engineer. Base course gravel will be placed and compacted to the satisfaction of the Engineer to within 4 inches of the top of the digout area. Asphalt concrete will be placed in the top 4 inches of the digout area in two 2 inch lifts on project P 6419(08). On projects P 6641(02) and P 6642(02) base course will be placed in the bottom 9" of the digout and two 1.5 inch lifts of asphalt concrete will be placed on top.

The quantity will be measured and paid for per cubic yard of the removed volume. Base Course materials will be paid for by the ton. Asphalt Concrete will be paid for under the Asphalt Concrete Composite Item by the ton. Traffic will be maintained and controlled by the contractor through the digout locations.

PLAN NOTES

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO	TOTAL SHEETS
	P 6419(08) P 6641(02) P 6642(02)	4	11
Plotting Date: 12/7/2015			
Revised Date: mm/dd/yy			
Initials: JHE			

UNCLASSIFIED EXCAVATION, DIGOUTS (Cont.)

Unclassified Excavation, Digouts shall be estimated at 25 cubic yards per mile. The Base Course is estimated to be 35 ton per mile on P 6419(07), 50 ton per mile on P 6641(02) and 300 ton per mile on P 6642(02).

WATER FOR COMPACTION OF GRANULAR MATERIALS

Cost of water for compaction of the granular material shall be incidental to the Base Course item. Three percent, plus or minus of optimum, moisture shall be required at the time of compaction unless otherwise directed by the Engineer.

MAINTENANCE PATCHING - P 6419(08)

Prior to the Asphalt Surface Treatment the Contractor shall remove and backfill any digout locations, repair any surface deformations, pot holes, edge breakups, wheel ruts or irregularities by removing the unstable material, cutting to a true line with a vertical face or as directed by the Engineer; and place hot mix asphalt concrete in the repair area. The repair shall restore the driving surface to a smooth and stable condition. The turn lane transition at station 198+75 Rt. will be patched to correct the edge breakup.

The repair areas will be inspected and accepted by the Engineer prior to the placement of the Asphalt Surface Treatment. Payment for Asphalt Concrete Composite will be by the ton. The contractor should inspect the roadway for an accurate assessment of the surface condition prior to bidding the work.

Asphalt Concrete Composite for Maintenance patching shall be estimated at 25 tons per mile The Asphalt Concrete furnished by the contractor for Maintenance Patching shall meet the requirements for Asphalt Concrete Composite, Class E, Type 1.

MAINTENANCE PATCHING - P 6641(02) and P 6642(02)

Prior to the Asphalt Surface Treatment the Contractor shall remove and backfill any digout locations, repair any surface deformations, pot holes, edge breakups, wheel ruts or irregularities by removing the unstable material, cutting to a true line with a vertical face or as directed by the Engineer; and place base course in the repair area and apply CRS-2P asphalt and chips on repair. The repair shall restore the driving surface to a smooth and stable condition.

The repair areas will be inspected and accepted by the Engineer prior to the placement of the Asphalt Surface Treatment. Payment for Asphalt Concrete Composite will be by the ton. The contractor should inspect the roadway for an accurate assessment of the surface condition prior to bidding the work.

Asphalt Concrete Composite for Maintenance patching shall be estimated at 110 tons per mile on P 6642(02) and 25 tons per mile on P 6641(02). The Asphalt Concrete furnished by the contractor for Maintenance Patching shall meet the requirements for Asphalt Concrete Composite, Class E, Type 1.

MODIFIED COVER AGGREGATE

Cover aggregate shall conform to the requirements of the SDDOT Standard Specifications for Aggregates for Asphalt Surface Section 881, Treatment **Type 2A** except:

Percent Passing #200 will be: 0-1.5%

ASPHALT FOR FOG SEAL

An SS-1h or CSS-1h emulsion shall be used for Fog Seal. The oil will be blended 1/2 water and 1/2 oil for a diluted solution applied at a rate of 0.10 gallons per square yard (0.05 gallons per square yard of oil). The water will not be paid for separately.

The Fog Seal will be applied after waiting a minimum of 48 hours but no more than 5 calendar days after the completion of the Asphalt Surface Treatment.

Prior to applying the fog seal the entire surface shall be broomed from the center outward to the edge of the shoulder. This will be considered incidental to the item SS-1h or CSS-1h Asphalt for Fog Seal.

TEMPORARY PAVEMENT MARKING

Paint will not be allowed for Temporary Pavement Marking.

Prior to asphalt surface treatment the Contractor shall install night visible temporary flexible vertical markers (tabs) as per section 634.3 L.2.c of the Specifications. The Contractor shall install DO NOT PASS signs at the beginning of all No Passing Zones and PASS WITH CARE signs at the end of all No Passing Zones. For informational use only the number of Do Not Pass signs needed for the projects is estimated at 18 signs and the number of PASS WITH CARE signs is estimated at 15 signs.

The temporary flexible vertical markers (tabs) shall have secure covers. If the covers become detached, prior to sealing, the temporary flexible

vertical marker shall be replaced with a new marker. Any markers that are non-reflective shall be cleaned or replaced.

The Contractor shall take steps necessary to assure that the temporary markings on the final surface match the markings on the existing surface.

The Contractor shall remove and dispose of the temporary flexible vertical markers (tabs) after the Permanent Pavement Marking has been applied. Method of removal shall be non-destructive to the road surface and shall result in the marker being separated from the adhesive (the adhesive shall remain on the road surface and the marker is discarded) or the marker shall be cut in such a manner that no more than a 1/4" of the vertical portion of the marker remains on the road surface. Removal shall be accomplished within seven days of completion of the Permanent Pavement Marking.

Flagger symbol signs and flaggers or shadow vehicle with rotating amber or strobe lights shall be positioned on the roadway shoulder in advance of the workers in both directions of traffic during the installation and removal of the temporary flexible vertical markers (tabs).

The traffic control shall be moved intermittently to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1), FLAGGER Symbol (W20-7) or BE PREPARED TO STOP (W3-4) shall be mounted on the rear of the shadow vehicle.

The method of traffic control used for this operation shall be approved by the Engineer.

The cost for the traffic control to remove and install the temporary flexible vertical markers (tabs) shall be incidental to the contract unit price per mile for Temporary Pavement Marking.

GENERAL MAINTENANCE OF TRAFFIC

Work activities shall be conducted during daylight hours only. During nights, weekends and other nonworking hours, all materials and equipment shall be removed from the roadway.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to 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 owner and to the satisfaction of the Engineer.

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

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO	TOTAL SHEETS
	P 6419(08) P 6641(02) P 6642(02)	5	11
Plotting Date: 12/7/2015			
Revised Date: mm/dd/yy			
Initials: JHE			

PLAN NOTES

GENERAL MAINTENANCE OF TRAFFIC (Cont.)

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 or County.

The Contractor shall furnish any flagging required. Only SDDOT certified flaggers will be allowed. Tickets showing the name, certification number of the flagger and the number of hours flagging shall be supplied to the Engineer, daily.

In addition to the traffic control shown in the layouts contained in these plans, the Contractor shall provide additional flagger(s) and flagger symbol sign(s) at major intersections during daylight hours after the asphalt surface treatment has been applied and prior to the initial brooming being completed.

The Contractor shall furnish, install and maintain TRUCK CROSSING signs. The TRUCK CROSSING signs shall be displayed at all times when haul vehicles are hauling material. When hauling conditions no longer exist, the signs shall be covered or removed from view. The exact number and location shall be determined on construction. Payment for additional signs will be based on the contract unit price per square foot for Traffic Control Signs.

Flagger(s) shall provide each motorist with a printed notice on the Contractor's letterhead similar to the one shown. Cost for the notice shall be incidental to the contract unit prices for the various items.

"CONTRACTOR'S LETTERHEAD"

THIS ROADWAY IS BEING RESURFACED WITH A CHIP SEAL APPLICATION.

THIS TYPE OF CONSTRUCTION HAS THE POTENTIAL OF CAUSING VEHICLE DAMAGE SUCH AS CHIPPED WINDSHIELDS AND BROKEN HEADLIGHTS DUE TO ROCKS BEING THROWN BY HIGH SPEED ONCOMING TRAFFIC.

YOU MAY WISH TO CONSIDER TAKING AN ALTERNATE ROUTE. IF YOU PROCEED, KEEP TO THE RIGHT AND DRIVE 40 MPH OR LESS. ANOTHER FLAGGER AND A PILOT CAR WILL BE ESCORTING YOU AROUND THE SEAL COAT APPLICATION AREA.

THANK YOU!

PERMANENT PAVEMENT MARKING PAINT

Permanent pavement markings shall be furnished and applied by the Contractor in accordance with Section 633 of the Specifications, the details in these plans and as per manufacturer's recommendations.

The application of Permanent Pavement Marking Paint may begin 7 calendar days following completion of final surfacing and shall be completed within 14 calendar days following completion of final surfacing when DO NOT PASS and PASS WITH CARE signs are used to mark No Passing Zones.

The Contractor shall be required to repaint all existing pavement markings including centerline, edge line, lane lines, gore areas, stop bars, etc. The Contractor will be required to inventory and mark, with appropriate colored tabs, the extent and location of the existing word messages, turn arrows, stop bars, railroad crossings, pedestrian crossings, gore areas etc. before the markings are obliterated. The cost of the tabs shall be incidental to the contract unit prices for the various items.

For each working day the application of permanent pavement marking paint remains uncompleted after the previously stated time requirements, the Contractor will be assessed liquidated damages at the rate of \$250.00 per day. This provision applies up to the Contract Completion Date, as extended. After the completion date, liquidated damages will be assessed in accordance with section 8.8, until the Permanent Pavement Marking is completed, even though the project may be open to traffic.

The approximate paint application rates shall be as follows:

- 4" Edgeline – 33.8± gallons per mile of white paint.
- 4" Centerline – 25± gallons per pass mile of yellow paint
(Includes No Passing Zones & Turn Lanes)

The rate of application of glass beads shall be 8 lbs per gallon of paint.

PROJECT	Length	Pavement Marking Paint	
		White	Yellow
<i>P 6419(08), PCN 04VK</i>			
<i>4" Edgeline</i>	<i>7.54 Miles</i>	<i>254.9 gallons</i>	
<i>4" Centerline</i>	<i>3.77 Miles</i>		<i>94.3 gallons</i>

FOR BIDDING PURPOSES ONLY

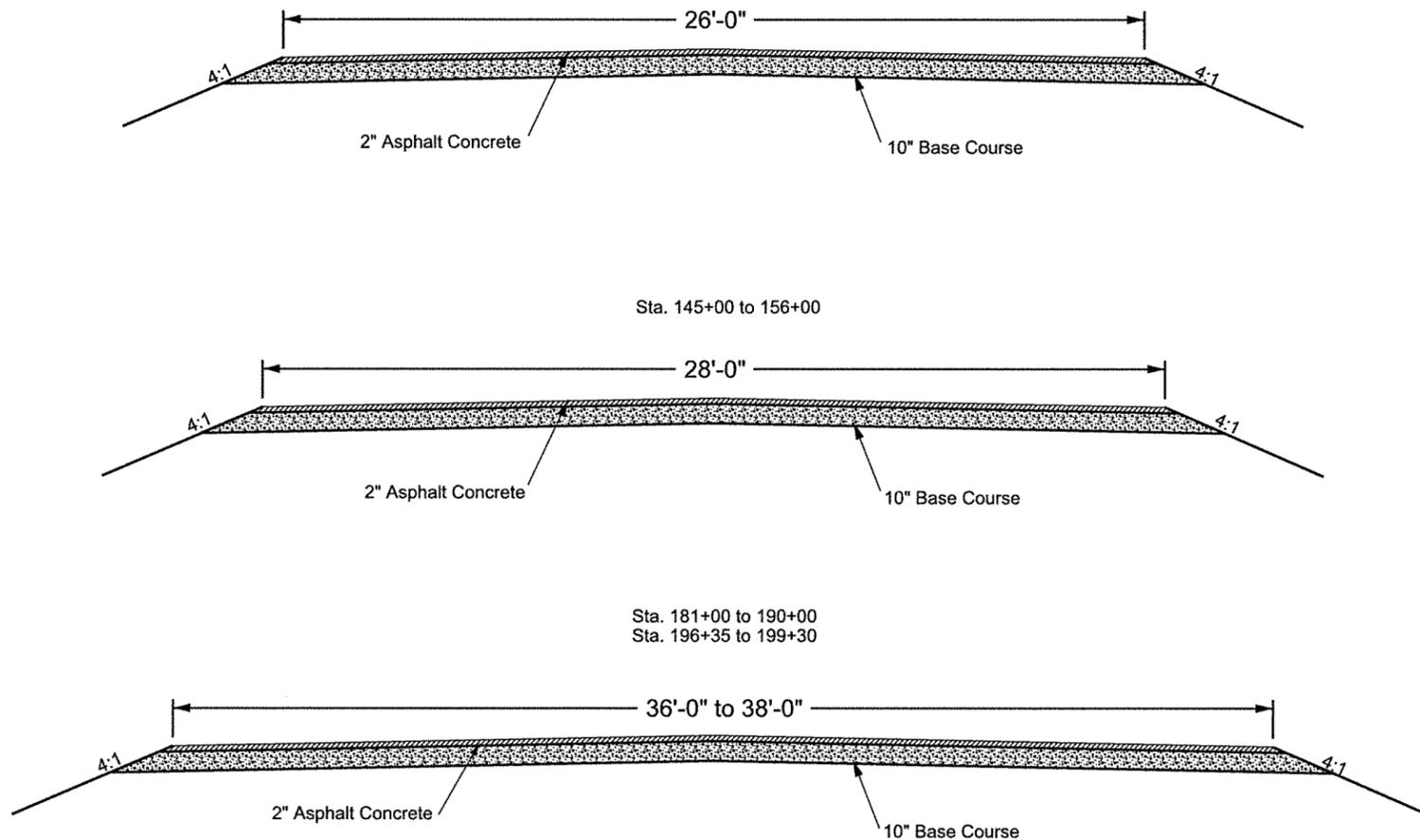
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL
	P 6419(08) P 6641(02) P6642(02)	NO.	SHEETS
		6	11
Plotting Date: 12/07/15 Revised Date: mm/dd/yy Initials: JHE			

Typical Section

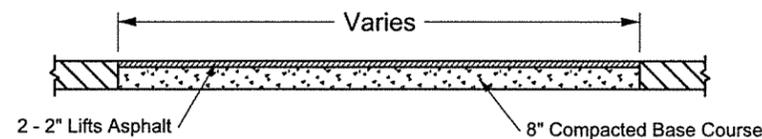
Not to Scale
Existing Conditions

Sta. 0+00 to 145+00
Sta. 156+00 to 181+00
Sta. 190+00 to 196+35

P6419(08), PCN 04VK



Digout Detail



RATES OF MATERIALS

CUSTER COUNTY
Sidney Park Road
P 6419(08), PCN 04VK

The Estimate of Quantities is based on the following quantities of materials per mile (project length = 3.77 miles).

0+00 to 145+00
156+00 to 181+00
190+00 to 196+35

CRS-2P Asphalt for Surface Treatment at the rate of 20.7 tons/mile applied 26 feet wide (Rate = 0.32 gallons per square yard).

Cover Aggregate, (Modified) at the rate of 183.0 tons/mile applied 26 feet wide (Rate = 24 pounds per square yard).

SS-1h or CSS-1h for Fog Seal at a rate of 3.2 tons/mile applied 26 feet wide (Rate = 0.05 gallons per square yard).

145+00 to 156+00

CRS-2P Asphalt for Surface Treatment at the rate of 22.3 tons/mile applied 28 feet wide (Rate = 0.32 gallons per square yard).

Cover Aggregate, (Modified) at the rate of 197.1 tons/mile applied 28 feet wide (Rate = 24 pounds per square yard).

SS-1h or CSS-1h for Fog Seal at a rate of 3.4 tons/mile applied 28 feet wide (Rate = 0.05 gallons per square yard).

181+00 to 190+00
196+35 to 199+30

CRS-2P Asphalt for Surface Treatment at the rate of 29.5 tons/mile applied 36-38 feet wide (Rate = 0.32 gallons per square yard).

Cover Aggregate, (Modified) at the rate of 260.5 tons/mile applied 36-38 feet wide (Rate = 24 pounds per square yard).

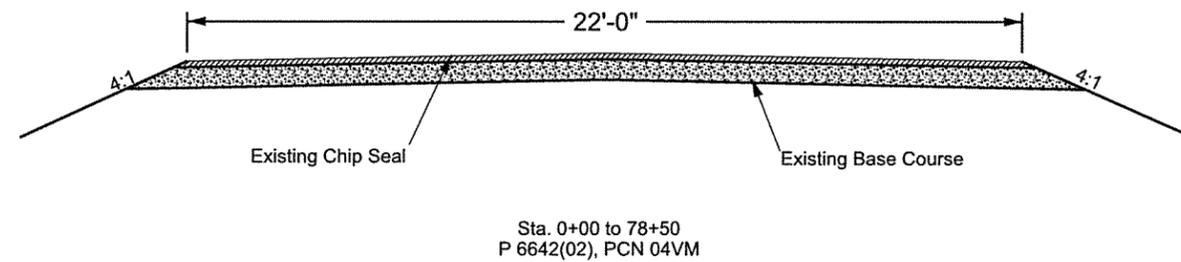
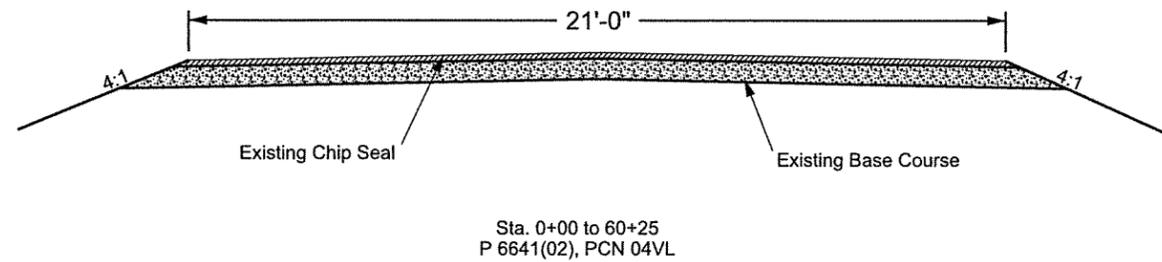
SS-1h or CSS-1h for Fog Seal at a rate of 4.5 tons/mile applied 36-38 feet wide (Rate = 0.05 gallons per square yard).



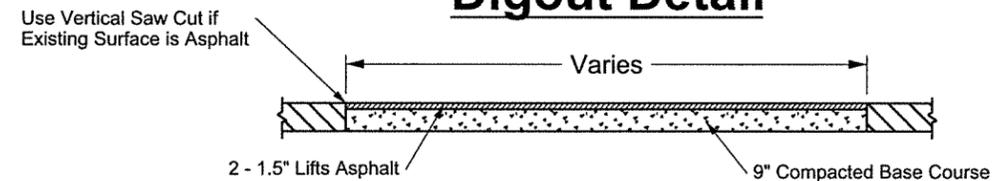
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL
	P 6419(08) P 6641(02) P6642(02)	NO.	SHEETS
		7	11
Plotting Date: 12/07/15 Revised Date: mm/dd/yy Initials: JHE			

Typical Section



Digout Detail



RATES OF MATERIALS

CUSTER COUNTY
North Playhouse Road
P 6641(02), PCN 04VL

The Estimate of Quantities is based on the following quantities of materials per mile (project length = 1.14 miles).

0+00 to 60+25

CRS-2P Asphalt for Surface Treatment at the rate of 16.7 tons applied 21 feet wide (Rate = 0.32 gallons per square yard).

Cover Aggregate, (Modified) at the rate of 147.8 tons applied 21 feet wide (Rate = 24 pounds per square yard).

SS-1h or CSS-1h for Fog Seal at a rate of 2.6 tons applied 21 feet wide (Rate = 0.05 gallons per square yard).

RATES OF MATERIALS

CUSTER COUNTY
South Playhouse Road
P 6642(02), PCN 04VM

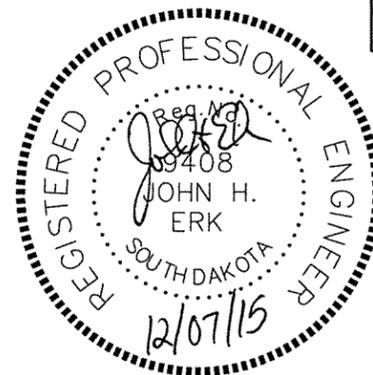
The Estimate of Quantities is based on the following quantities of materials per mile (project length = 1.49 miles).

0+00 to 78+50

CRS-2P Asphalt for Surface Treatment at the rate of 17.6 tons applied 22 feet wide (Rate = 0.32 gallons per square yard).

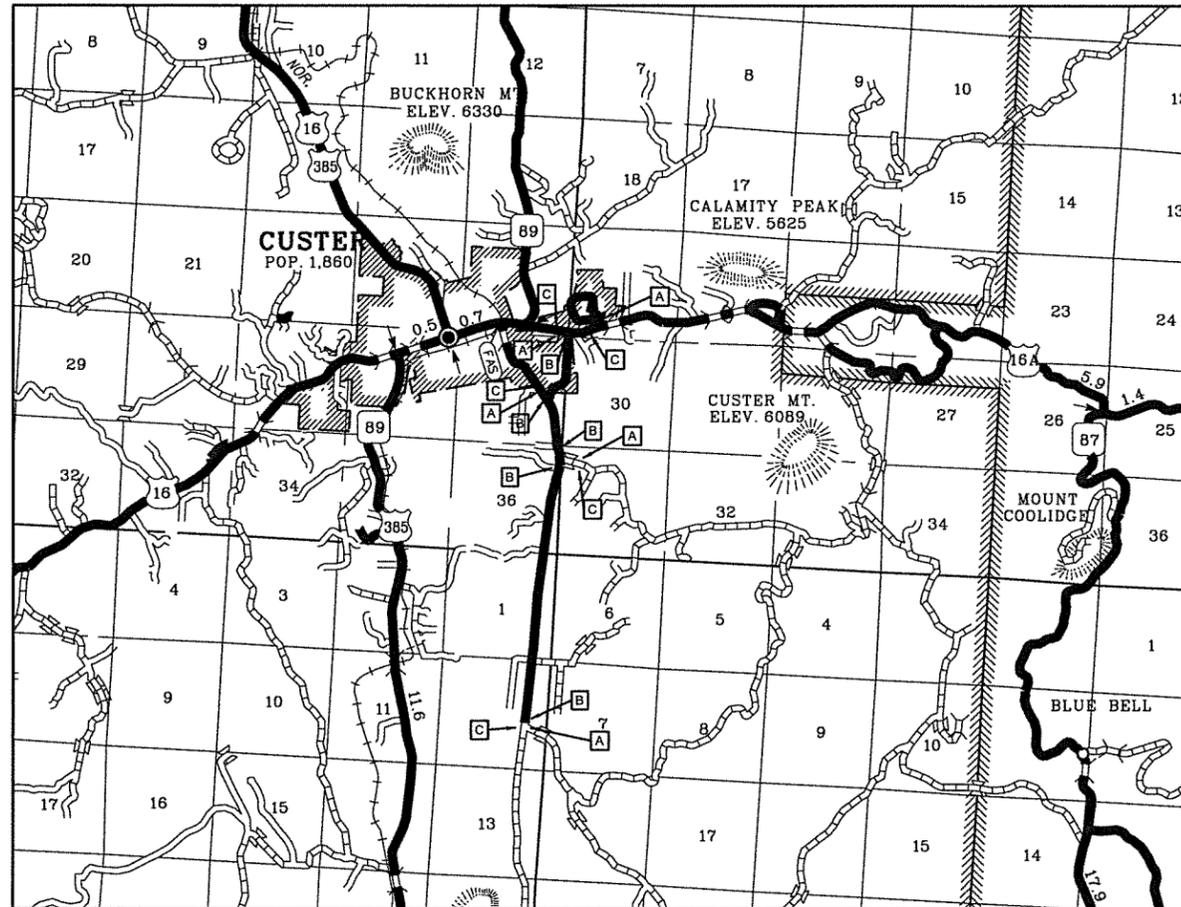
Cover Aggregate, (Modified) at the rate of 154.9 tons applied 22 feet wide (Rate = 24 pounds per square yard).

SS-1h or CSS-1h for Fog Seal at a rate of 2.7 tons applied 22 feet wide (Rate = 0.05 gallons per square yard).



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL
	P 6419 (08) P 6641 (02) P 6642 (02)	NO. 8	SHEETS 11
Plotting Date: 12/07/15 Revised Date: mm/dd/yy Initials: JHE			



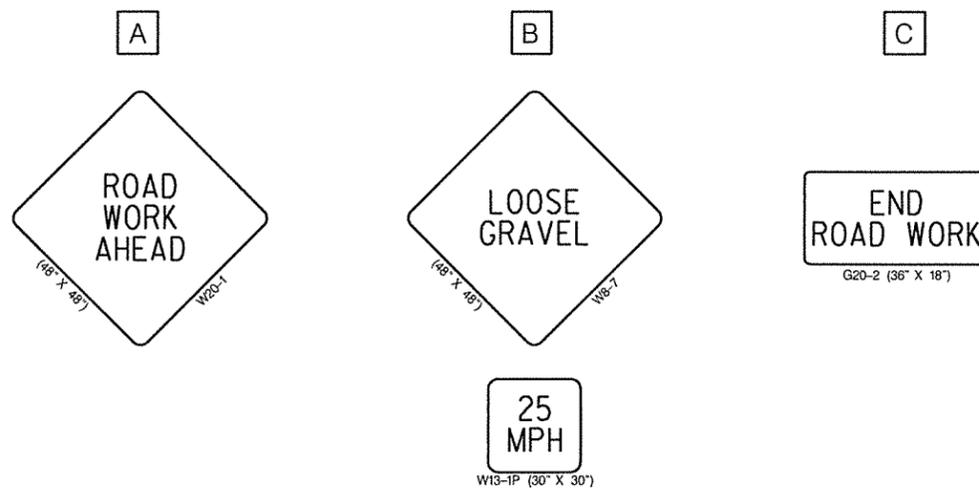
TRAFFIC CONTROL CUSTER COUNTY

FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
P 6419(08), PCN 04VK

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	3	48" x 48"	16.0	48.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	5	48" x 48"	16.0	80.0
W13-1P	ADVISORY SPEED (plaque)	5	30" x 30"	6.3	31.5
W20-1	ROAD WORK AHEAD	5	48" x 48"	16.0	80.0
W20-4	ONE LANE ROAD AHEAD	3	48" x 48"	16.0	48.0
W20-7	FLAGGER (symbol)	3	48" x 48"	16.0	48.0
W21-2	FRESH OIL	5	48" x 48"	16.0	80.0
G20-2	END ROAD WORK	5	36" x 18"	4.5	22.5
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			470

P 6419(08), PCN 04VK
Sidney Park Road



Notes:

All Fixed Location signs shall remain in place until the permanent pavement marking is complete.

All Fixed Location signs shall be placed 200' to 300' from intersection. Exact location to be approved by the Engineer.

Construction signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL
	P 6419 (08) P 6641 (02) P 6642 (02)	NO. 9	SHEETS 11
Plotting Date: 12/07/15 Revised Date: mm/dd/yy Initials: JHE			

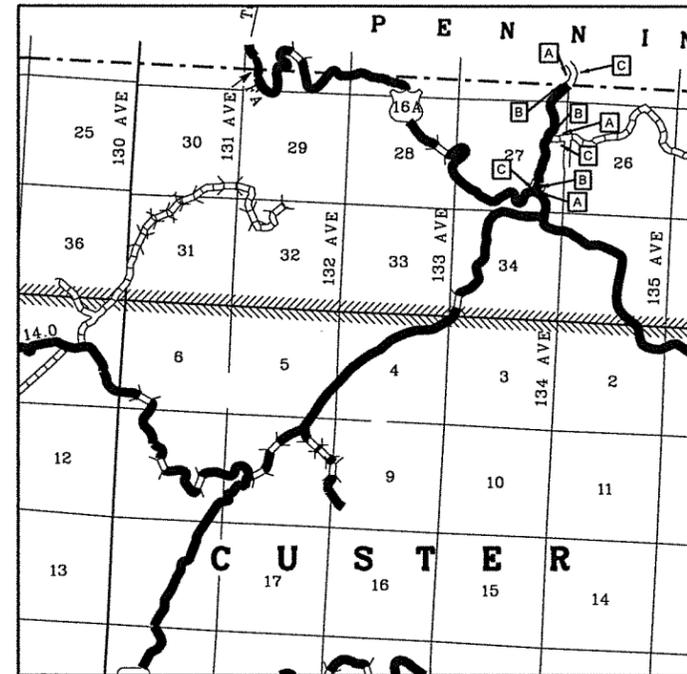
TRAFFIC CONTROL CUSTER COUNTY

FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
P 6641(02), PCN 04VL
P 6642(02), PCN 04VM

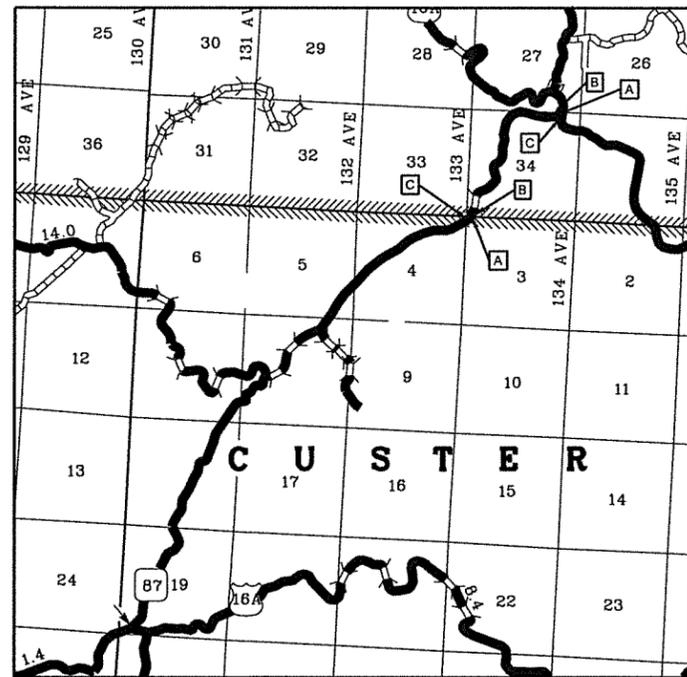
P 6641(02), PCN 04VL
North Playhouse Road

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	3	48" x 48"	16.0	48.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	3	48" x 48"	16.0	48.0
W13-1P	ADVISORY SPEED (plaque)	3	30" x 30"	6.3	18.9
W20-1	ROAD WORK AHEAD	3	48" x 48"	16.0	48.0
W20-4	ONE LANE ROAD AHEAD	3	48" x 48"	16.0	48.0
W20-7	FLAGGER (symbol)	3	48" x 48"	16.0	48.0
W21-2	FRESH OIL	3	48" x 48"	16.0	48.0
G20-2	END ROAD WORK	3	36" x 18"	4.5	13.5
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					352



P 6641(02), PCN 04VL

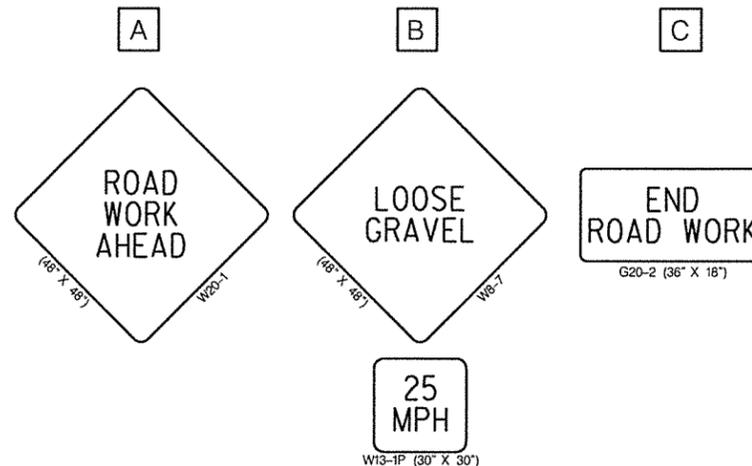


P 6642(02), PCN 04VM

P 6642(02), PCN 04VM
South Playhouse Road

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-2	FRESH OIL	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					246



Notes:

All Fixed Location signs shall remain in place until the permanent pavement marking is complete.

All Fixed Location signs shall be placed 200' to 300' from intersection. Exact location to be approved by the Engineer.

Construction signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.



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

- Flagger
- Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices shall be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

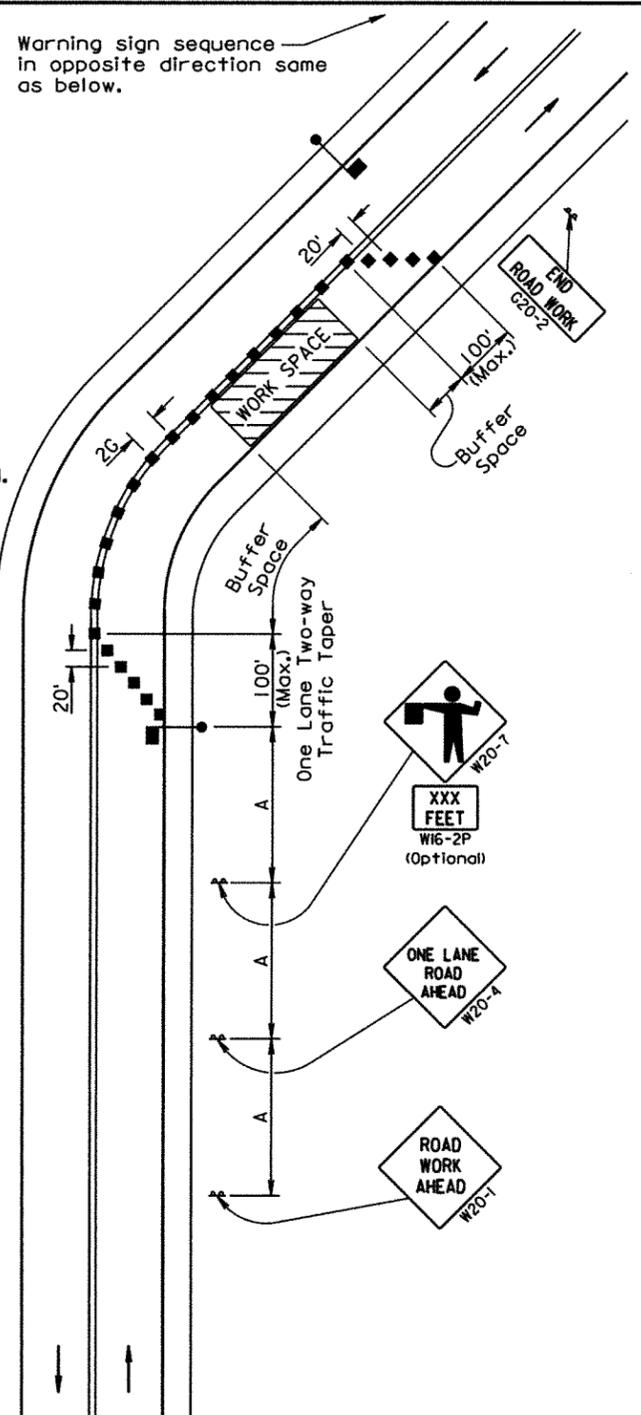
2-023
ROAD WORK
END

Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

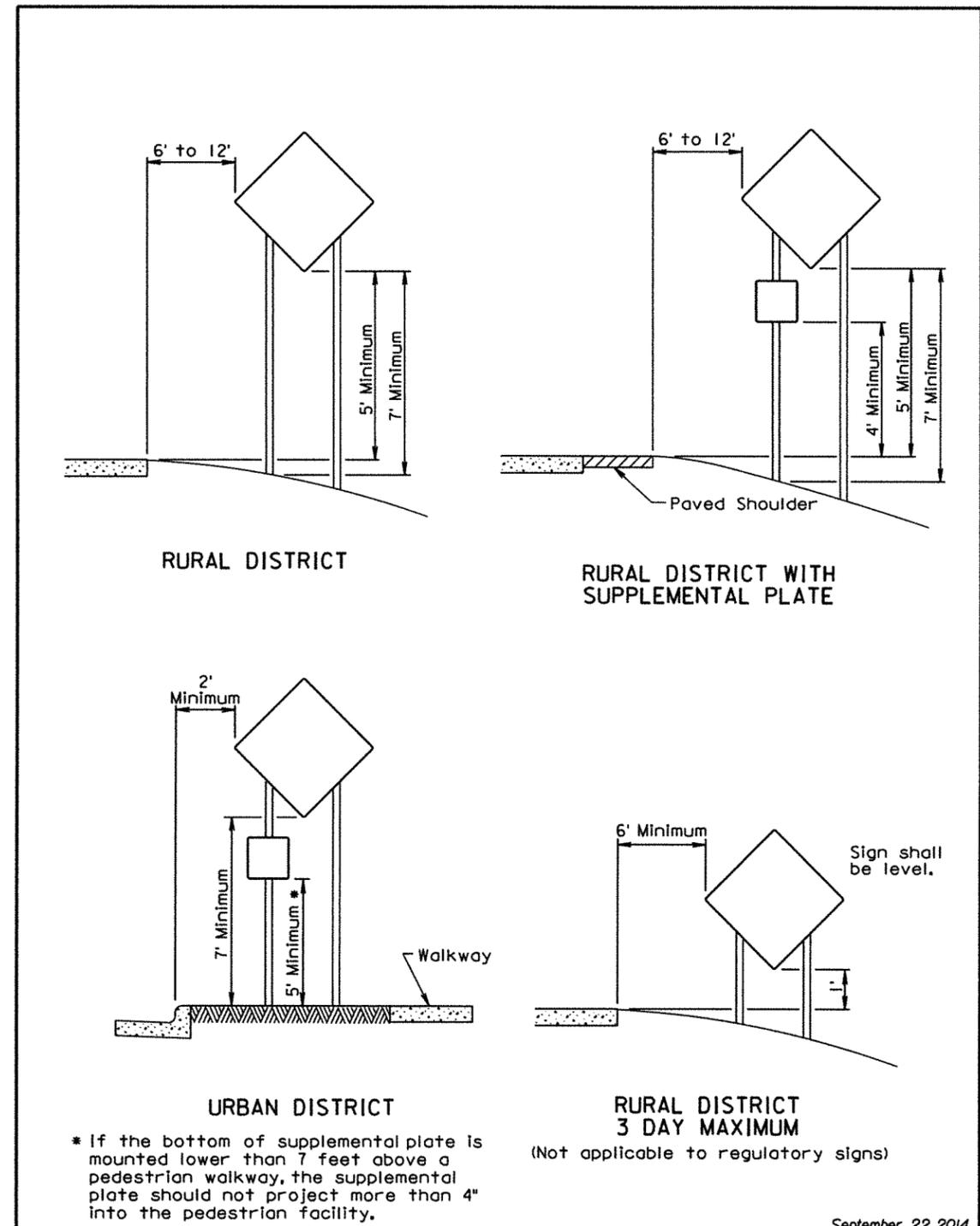
The length of A may be adjusted to fit field conditions.

Warning sign sequence in opposite direction same as below.



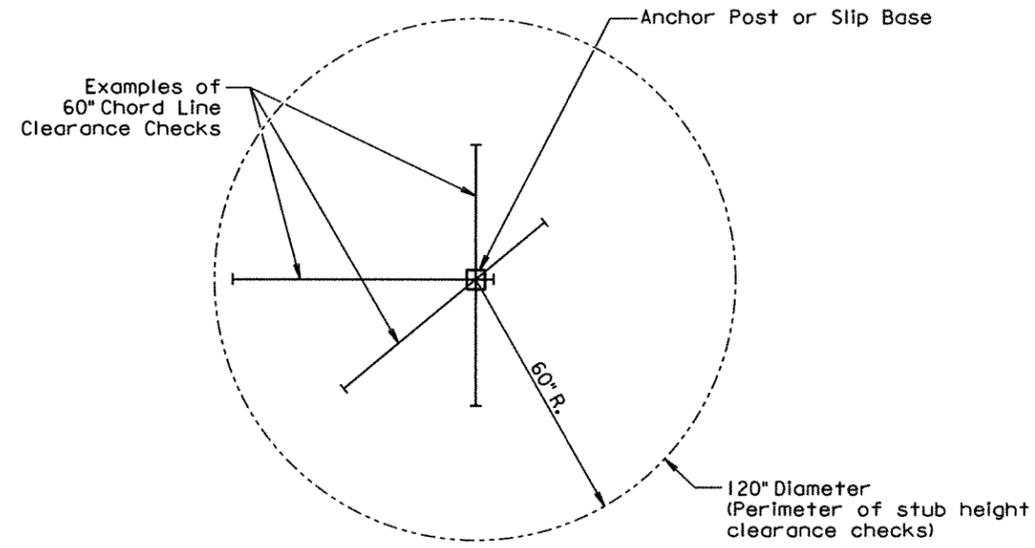
September 22, 2014

Published Date: 4th Qtr. 2015	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1

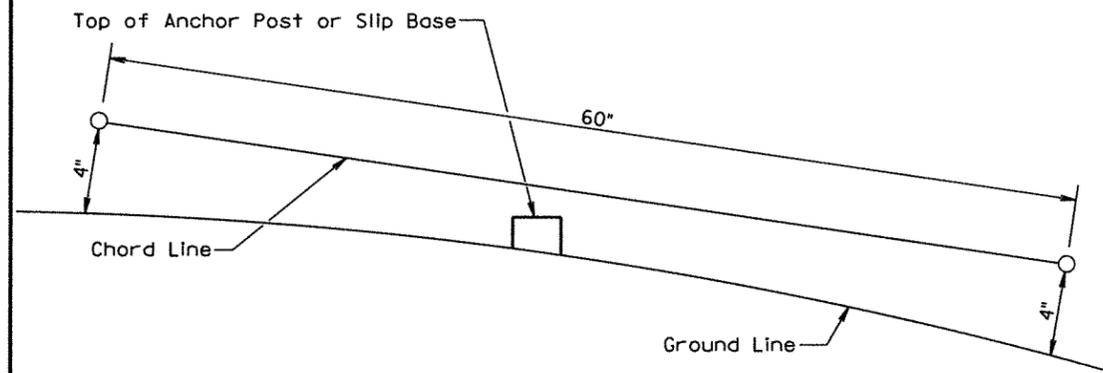


Published Date: 4th Qtr. 2015	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL
	P 6419 (08) P 6641 (02) P 6642 (02)	NO. 11	SHEETS 11
Plotting Date: 12/07/15 Revised Date: mm/dd/yy Initials: JHE			



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

<i>Published Date: 4th Qtr. 2015</i>	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1