

PLOT SCALE - 200.000000:1.000000

PLOTTED FROM - TRM111118

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED

PROJECT P 0281(00)59  
US HIGHWAY 281 DETOUR  
COUNTY ROADS 41 & 4  
DAVISON COUNTY

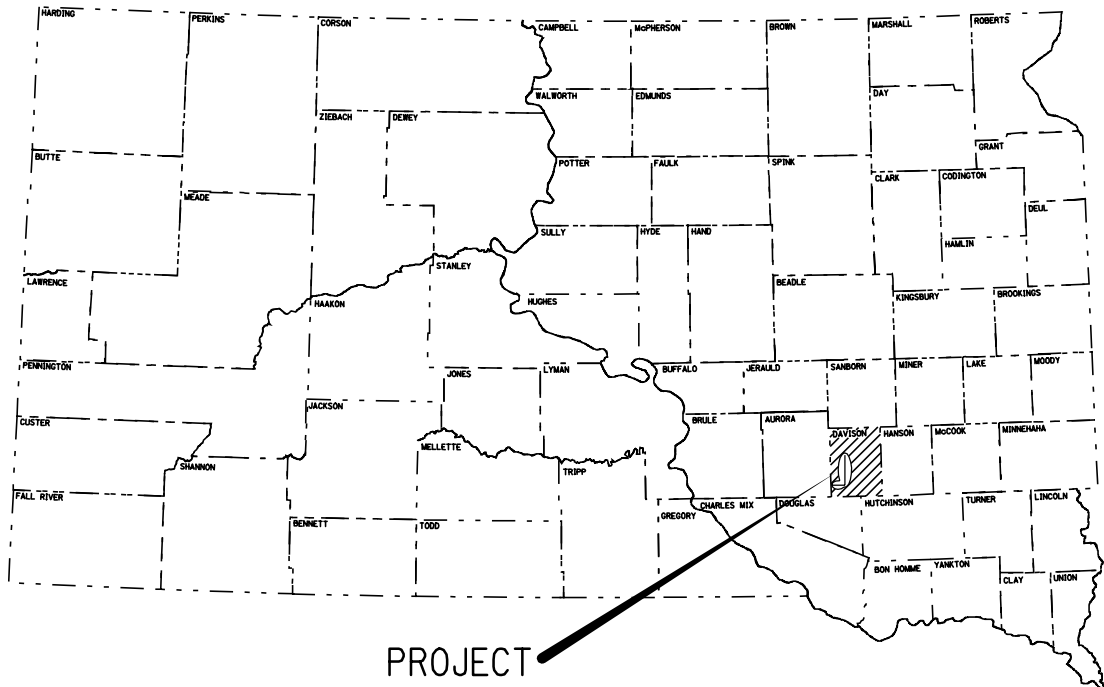
PROCESS IN PLACE, PRIME AND BLOTTER SURFACE  
& ASPHALT SPOT PATCHING  
PCN 00UT

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0281(00)59	1	10

Plotting Date: 14-JUN-2006

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PROJECT

DAVISON COUNTY  
ROAD 41  
DESIGN DESIGNATION

ADT(1999)	95
ADT(2019)	120
DHV	17
D	50%
T DHV	3.8%
T ADT	8.3%
V	55 MPH

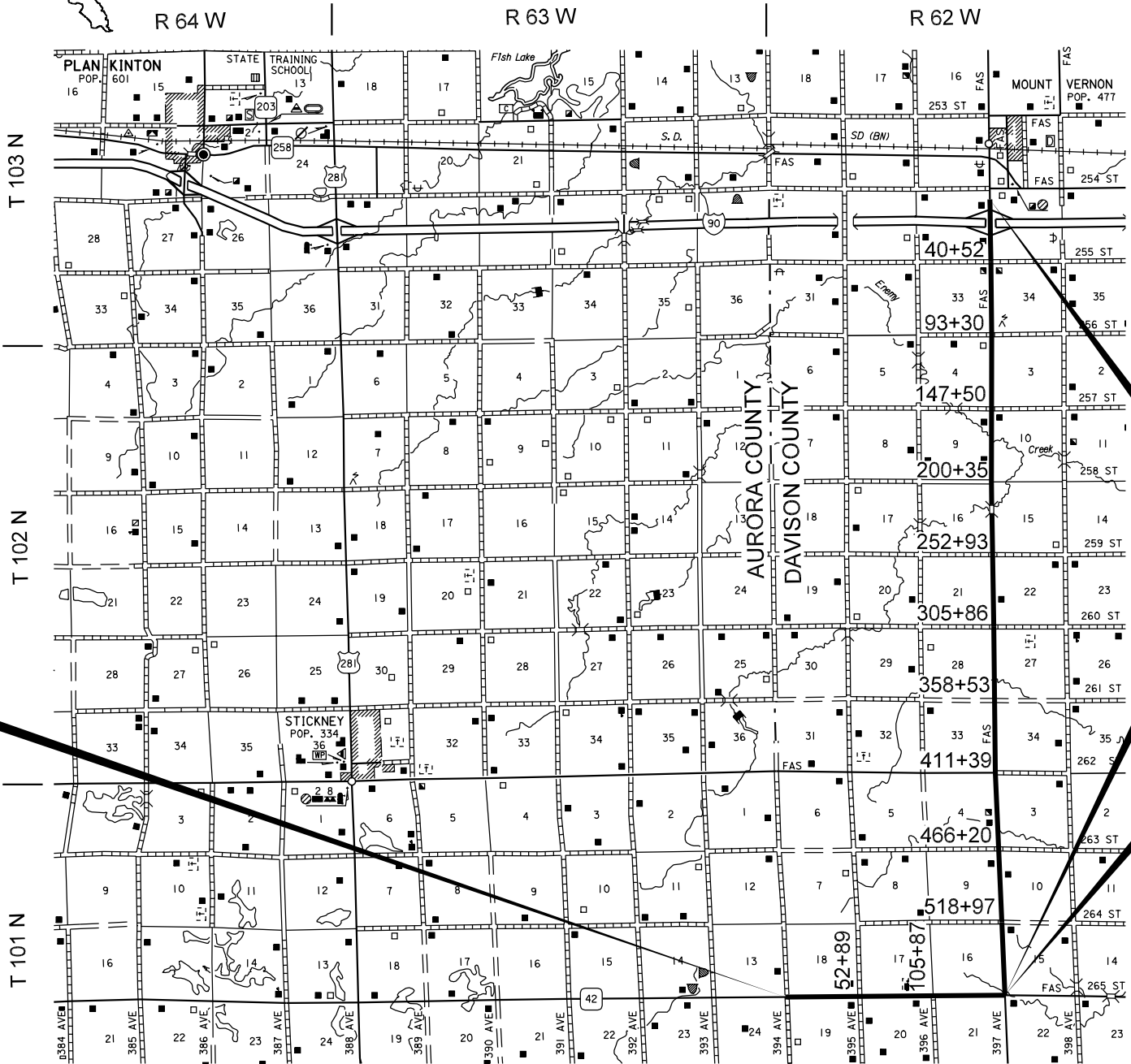
DAVISON COUNTY  
ROAD 4  
DESIGN DESIGNATION

ADT(1999)	380
ADT(2019)	470
DHV	65
D	50%
T DHV	3.8%
T ADT	8.3%
V	55 MPH

BEGIN DAVISON  
COUNTY ROAD 41  
STA. 0+00

DAVISON COUNTY ROAD 41

GROSS LENGTH	15805 FEET	2.993 MILES
LENGTH OF EXCEPTIONS	0 FEET	0.000 MILES
NET LENGTH	15805 FEET	2.993 MILES



BEGIN DAVISON  
COUNTY ROAD 4  
STA. 0+00

END DAVISON  
COUNTY ROAD 4  
STA 571+59

END DAVISON  
COUNTY ROAD 41  
STA 158+05

FILE - U:\REGION\DESIGN\MAINT\2006\RESURFACING\AURO000\TITL00UT.DGN PLOT NAME - TITL00UT

ESTIMATE OF QUANTITIES

RATES OF MATERIALS

Section 1  
County Road 41  
Sta. 0+00.00 to Sta. 158+05.00

The Estimate of quantities is based on the following quantities of materials per mile.

PROCESS IN PLACE SURFACING

Water for Granular Material 49 MGals

MC-70 Asphalt for Prime at the rate of 20.2 tons applied 29 feet wide (Rate = 0.3 gallon per square yard).

Blotting Sand for Prime at the rate of 70 tons applied 24 feet wide (Rate = 10 pounds per square yard).

ASPHALT SURFACE TREATMENT

AE150S Asphalt for Surface Treatment at the rate of 24.4 tons applied 28 feet wide (Rate = 0.35 gallon per square yard).

Type 3 Cover Aggregate at the rate of 329 tons applied 28 feet wide (Rate = 40 pounds per square yard).

RATES OF MATERIALS (For No Passing Zone Modification)

Section 2  
County Road 4  
Sta. 136+00.00 to Sta. 239+00.00  
Sta. 436+00.00 to Sta. 571+59.00

The Estimate of quantities is based on the following quantities of materials per mile.

ASPHALT SURFACE TREATMENT

CRS-2 Asphalt for Surface Treatment at the rate of 1.2 tons applied 2 feet wide on centerline (Rate = 0.25 gallon per SqYd).

Type 2A Cover Aggregate at the rate of 11 tons applied 2 feet wide on centerline (Rate = 18 pounds per SqYd).

TABLE OF MATERIALS QUANTITIES

SECT. LOCATION		WATER FOR GRAN. MATER.	PROCESS IN PLACE SURFACING	ASPHALT CONCRETE COMPOSITE	MC-70 ASPH. FOR PRIME	BLOTTING SAND FOR PRIME	SS-1h/ CSS-1h ASPH. FOR TACK	CRS-2 ASPH. FOR SURF. TREAT	TYPE 2A COVER AGGR.	AE150S ASPH. FOR SURF. TREAT	TYPE 3 COVER AGGR.
		MGal	SqYd	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton
1	County Road 41	147	49171	-	60.5	210	-	-	-	73.0	985
2	County Road 4	-	-	-	-	-	-	5.4	50	-	-
Subtotals:		147	49171	-	60.5	210	-	5.4	50	73.0	985
Additional Quantities:		-	-	1000	-	-	4.0	-	-	-	-
Totals:		147	49171	1000	60.5	210	4.0	5.4	50	73.0	985

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PLOTTED FROM - TRM11118

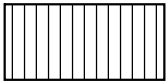
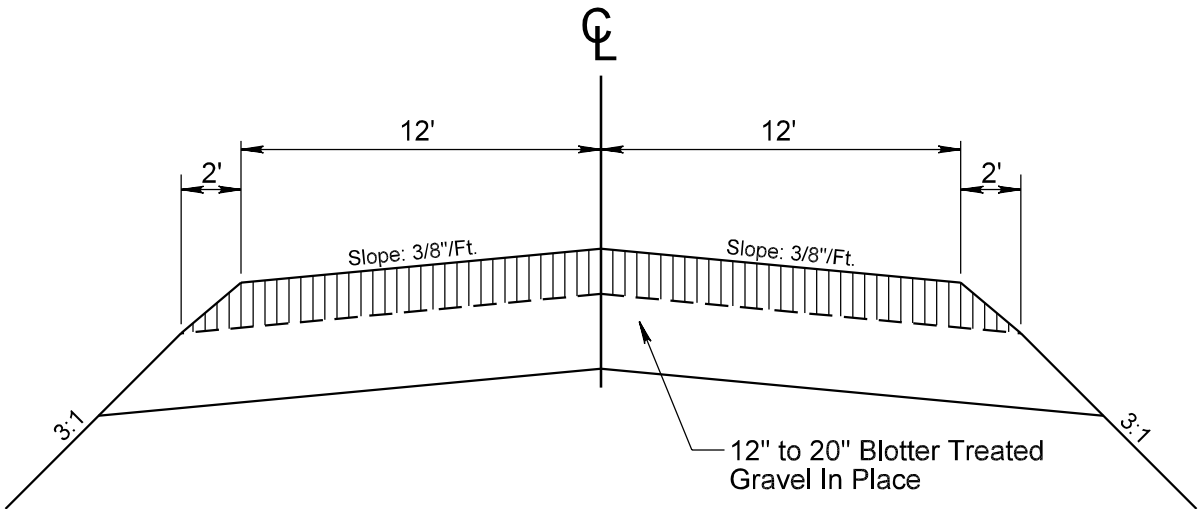
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0281(00)59	3	10

Plotting Date: 14-JUN-2006

# TYPICAL PROCESS IN PLACE SECTION

## SECTION 1

Sta. 0+00 to Sta. 158+05

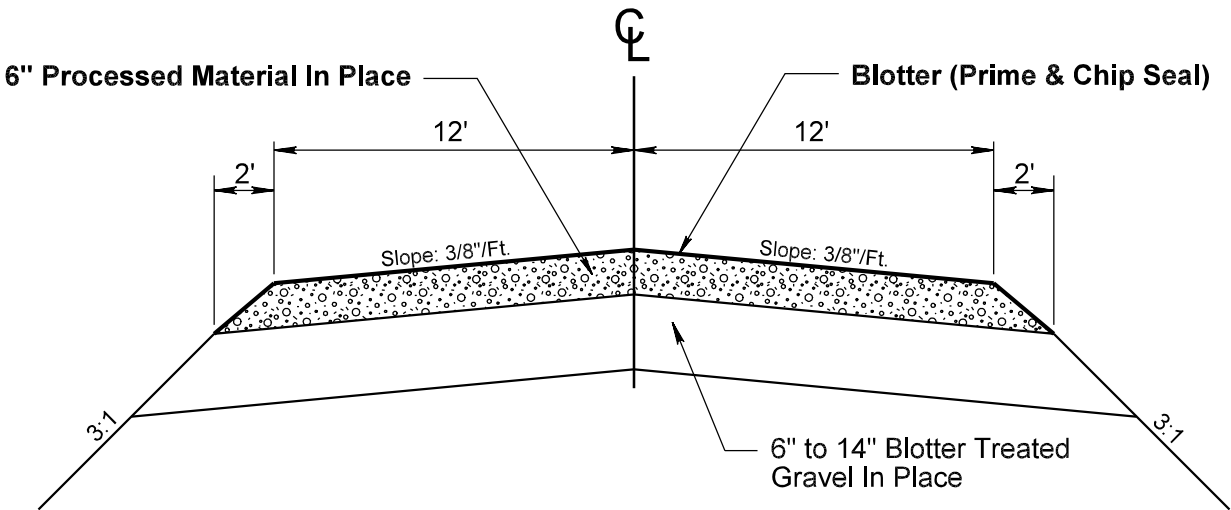


Process In Place Surfacing  
6" Depth

# TYPICAL RESURFACING SECTION

## SECTION 1

Sta. 0+00 to Sta. 158+05



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0281(00)59	4	10

**SPECIFICATIONS**

Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

**COMPLETION DATE**

All work shall be completed on or before September 15, 2006.

**SURFACING THICKNESS DIMENSIONS**

Plans quantities will be applied even though the thickness may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, plans quantities may be varied to achieve the required elevation.

**INTERSECTING ROADS AND ENTRANCES**

Intersecting roads and entrances shall be satisfactorily cleared of vegetation, shaped and compacted prior to placement of mainline surfacing. This work will be considered incidental to other contract items. Separate measurement and payment will not be made.

**SHOULDER WORK**

Prior to construction, Department of Transportation Maintenance Forces will spray the shoulders to kill existing vegetation. It is the Contractor's responsibility to notify the State a minimum of thirty days prior to starting work on the surface of the highway. The State assumes no responsibility for the effectiveness of the herbicide applied.

Vegetation and accumulated material on or adjacent to the existing roadway edge shall be removed to the satisfaction of the Engineer prior to Process in Place Surfacing. Any remaining windrow of accumulated material shall be spread evenly on the inslope adjacent to the asphalt shoulder, to the satisfaction of the Engineer, prior to the application of the flush seal.

Shoulder work shall be incidental to other contract items. Separate measurement and payment will not be made.

**WASTE DISPOSAL SITE**

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

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

All construction/demolition debris generated by this project shall be cleaned up and disposed of by the Contractor.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway 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 Engineer.

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

**WASTE DISPOSAL SITE (CONTINUED)**

1. Construction/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 / 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. Seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates and placement of a sign or signs at the entrance to the site stating No Dumping Allowed.
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

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

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

Cost for furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates & signs) and reclamation of the waste disposal site(s) shall be incidental to the contract unit prices for the various items.

**WATER SOURCE**

The Contractor shall not withdraw water directly from streams in watersheds of the James, Vermillion, and Big Sioux Rivers without prior approval from the SDDOT Environmental Office, contact Dave Graves at (605) 773-5727. Water may be obtained from other sources not directly connected to these streams such as stock dams, wetlands, or wells. This note does not relieve the Contractor of his/her responsibility to obtain the necessary permits from other agencies such as DENR (South Dakota Department of Environment and Natural Resources) and COE (Corps of Engineers).

**PROCESS IN PLACE SURFACING**

The processed material shall be stockpiled at a site, which may include the shoulders and inslopes, satisfactory to the Engineer.

Proper drainage shall be maintained so water will not pond on the mainline granular surfacing or embankment. Proper drainage will be to the satisfaction of the Engineer.

**ASPHALT CONCRETE COMPOSITE**

Mineral aggregate for the Asphalt Concrete shall conform to the requirements of the Standard Specifications for Class E, Type 1.

Asphalt Concrete may be obtained from a hot plant producing asphalt concrete for the SDDOT in accordance with Class Q, low, medium or high traffic volume or Superpave 12.5mm or 19mm asphalt concrete specifications.

- If the asphalt mixture used on the project is a Class Q-LVT, MVT, HVT, Superpave 12.5mm or 19mm from another project the job-mix formula for the mix shall apply.
- Testing requirements for the mineral aggregate shall be in accordance with Asphalt Concrete Composite specifications.

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

The asphalt binder used in the mixture shall be PG 58-28, PG 58-34, PG 64-22, PG 64-28 or PG 64-34 Asphalt Binder.

**ADDITIONAL QUANTITIES**

Included in the Estimate of Quantities are 1000 tons of Asphalt Concrete Composite for patching of the existing surface on Davison County Road 4. Asphalt Concrete Composite shall be paved in numerous areas to strengthen the existing surface. Patches shall be matched up to cover both sides of the roadway at a depth of approximately 1".

Included in the Estimate of Quantities are 4 tons of SS-1h or CSS-1h Asphalt for Tack (Rate = 0.05 gallon per square yard) for patching throughout the project.

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**TEMPORARY PAVEMENT MARKING**

The total length of no passing zone on this project is estimated to be 0.4 mile.

It is estimated that 32 DO NOT PASS and 32 PASS WITH CARE signs will be required to mark the no passing zones, should the Contractor elect to use these signs.

Use of DO NOT PASS and PASS WITH CARE signs will be allowed for a two week duration.

Cost for furnishing, installing and removing the DO NOT PASS and PASS WITH CARE signs shall be incidental to the contract unit price per mile for Temporary Pavement Marking.

Temporary road markers shall be used as the temporary pavement marking where marking will be obliterated by the work.

Cost for furnishing, applying and uncovering of the Temporary Road Markers shall be included in the contract unit price per mile for Temporary Pavement Marking.

In the absence of a signed lane closure or pilot car operation, Flagger symbol signs (W20-7a) and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights shall be positioned on the roadway shoulder in advance of workers for both directions of traffic during the installation and removal of temporary road markers. The traffic control device used shall be moved intermittently to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1), a Workers symbol sign (W21-1a) or a BE PREPARED TO STOP (W3-4) warning sign shall be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work shall be approved by the Engineer.

Cost for the traffic control to install the Temporary Road Markers shall be incidental to the contract unit price per mile for Temporary Pavement Marking.

**PERMANENT PAVEMENT MARKING**

The Contractor shall advise the Engineer a minimum of 2 weeks prior to the application of the permanent pavement marking to allow the State to check and mark the location of no passing zones.

Application of permanent pavement marking shall be completed within 14 days following completion of the final surfacing.

**SEQUENCE OF OPERATIONS**

The following Sequence of Operation shall be followed by the Contractor unless an alternate Sequence of Operations is submitted in writing and approved by the Engineer.

1. Install traffic control as detailed in these plans.
2. Complete process in place surfacing & asphalt surface treatment on Davison County Road 41.
3. Complete patching with Asphalt Concrete Composite & asphalt surface treatment on Davison County Road 4.
4. Complete permanent pavement marking and No Passing Zone signing upgrade.

**GENERAL MAINTENANCE OF TRAFFIC**

Removing, relocating, covering, salvaging and resetting of permanent 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.

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

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 Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

Sufficient traffic control devices have been included in these plans to sign one workspace. If the Contractor elects to work on additional sites simultaneously, the cost for additional traffic control devices shall be incidental to the contract unit price per unit for Traffic Control.

FURNISHING AND APPLYING PAVEMENT MARKING PAINT

TWO LANE ROADWAY

Approximate paint application rates shall be as follows:

Two Lane Roadway (Rates for one line)
Dashed Yellow Centerline Rate = 4.6 Gals./Pass-Mile
Solid Yellow Centerline Rate = 16.9 Gals./Pass-Mile
Solid White Edgeline (Rate for one 8" line) Rate = 33.8 Gals./Pass-Mile
Glass Beads = 6 Lbs./Gal.

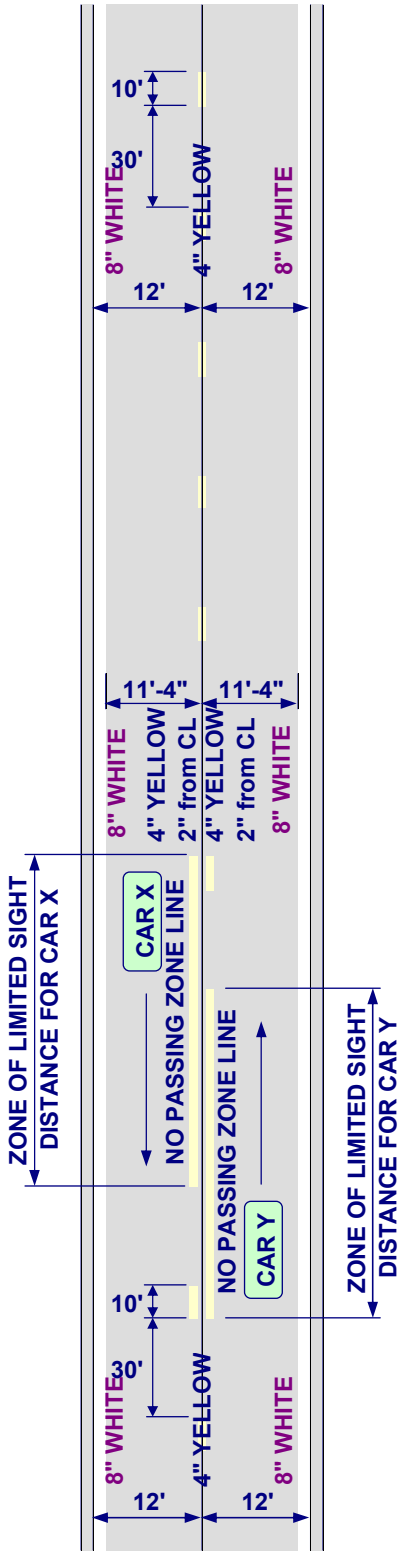
Typical pavement marking as shown on this sheet shall be applied throughout the entire length of undivided roadway.

Traffic Control shall be incidental to the cost of application. The striper and advance or trailing warning vehicle shall be equipped with flashing amber lights or advance warning arrow panel.

ESTIMATED QUANTITIES	
PAVEMENT MARKING PAINT	QUANTITY
WHITE	935 GALLONS
YELLOW	106 GALLONS

Included in the above quantities are:

- 1 Gallon white for:
- 1 24" Stop Bar



**NOTE:** All pavement marking dimensions are based on 12' driving lanes.











