

# STATE OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED HIGHWAYS US 16B, SD 34 US 14A, US 385, I-90 & I-90 PROJECTS 016WB-452, 016EB-452, 014A-451, 385-451, 090W-452 & 09 MEADE, LAWRENCE & PENNINGTON COUNTI ASPHALT CONCRETE PAVEMENT REPAIL PCNs i3ce, i3cf, i3dw, i3dx, i3dy, i3e0 & i3e1

# () US 16B

MRM 72.9 to 73.1,016WB-452,pcn i3ce & 016EB-452,pcn i3cf

# 2) SD 34

MRM 35.8 to MRM 36.1,034-451,pcn i3dw

(3) US 14A MRM 41.6 to MRM 42.0,014A-451,pcn i3dx

(4) US 385 MRM 116.7 to MRM 121.0, 385-451, pcn i3dy

(5) I-90 W MRM 98.5 to MRM 98.5,090W-452,pcn i3e0

6 I-90 EF Service Road MRM 50.2 to MRM 50.2,090EF-452,pcn i3el



Storm Water Permit No Permit Required

	STATE OF	PROJECT	SHEET	TOTAL SHEETS
	DAKOTA	016WB-452, 016EB-452 & etc.	1	34
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SD & L	34, .901			
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B-45	52. (	)34-451.		
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#### ESTIMATE OF QUANTITIES (US 16WB, PCN i3ce)

Bid Item Number	Item	Quantity	
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	174.6	Ton
332E0010	Cold Milling Asphalt Concrete	1,571	SqYd
633E0010	Cold Applied Plastic Pavement Marking, 4"	453	Ft
633E0020	Cold Applied Plastic Pavement Marking, 8"	398	Ft
633E0030	Cold Applied Plastic Pavement Marking, 24"	80	Ft
633E0040	Cold Applied Plastic Pavement Marking, Arrow	2	Each
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	453	Ft
633E5005	Grooving for Cold Applied Plastic Pavement Marking, 8"	398	Ft
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	80	Ft
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	2	Each
634E0010	Flagging	80	Hour
634E0100	Traffic Control	490	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
634E0640	Temporary Pavement Marking	1,831	Ft

#### ESTIMATE OF QUANTITIES (US 16EB, PCN i3cf)

Bid Item Number	ltem Qu		Unit
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	180.6	Ton
332E0010	Cold Milling Asphalt Concrete	1,625	SqYd
633E0010	Cold Applied Plastic Pavement Marking, 4"	479	Ft
633E0020	Cold Applied Plastic Pavement Marking, 8"	301	Ft
633E0030	Cold Applied Plastic Pavement Marking, 24"	80	Ft
633E0040	Cold Applied Plastic Pavement Marking, Arrow	2	Each
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	479	Ft
633E5005	Grooving for Cold Applied Plastic Pavement Marking, 8"	301	Ft
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	80	Ft
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	2	Each
634E0010	Flagging	80	Hour
634E0100	Traffic Control	510	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
634E0640	Temporary Pavement Marking	1,760	Ft

#### ESTIMATE OF QUANTITIES (SD 34, PCN i3dw)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	345.4	Ton
332E0010	Cold Milling Asphalt Concrete	3,238	SqYd
633E1400	Pavement Marking Paint, 4" White	304	Ft
633E1405	Pavement Marking Paint, 4" Yellow	2,429	Ft
634E0010	Flagging	40	Hour
634E0100	Traffic Control	518	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	2	Each
634E0640	Temporary Pavement Marking	5,465	Ft

#### ESTIMATE OF QUANTITIES (US 14A, PCN i3dx)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	312.4	Ton
332E0010	Cold Milling Asphalt Concrete	3,604	SqYd
633E1400	Pavement Marking Paint, 4" White	581	Ft
633E1405	Pavement Marking Paint, 4" Yellow	1,932	Ft
634E0010	Flagging	40	Hour
634E0100	Traffic Control	528	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	2	Each
634E0640	Temporary Pavement Marking	2,043	Ft

#### ESTIMATE OF QUANTITIES (US 385, PCN i3dy)

Bid Item Number	Item	Quantity	Unit
09E0010	Mobilization	Lump Sum	LS
20E0100	Unclassified Excavation, Digouts	324	CuYd
60E1010	Base Course	323.9	Ton
20E2000	Maintenance Patching	323.9	Ton
33E1400	Pavement Marking Paint, 4" White	729	Ft
33E1405	Pavement Marking Paint, 4" Yellow	1,134	Ft
34E0010	Flagging	40	Hour
34E0100	Traffic Control	306	Unit
34E0120	Traffic Control, Miscellaneous	Lump Sum	LS
34E0420	Type C Advance Warning Arrow Panel	1	Each
34E0640	Temporary Pavement Marking	729	Ft

#### ESTIMATE OF QUANTITIES (I-90W, PCN i3e0)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	21.3	Ton
332E0010	Cold Milling Asphalt Concrete	199	SqYd
633E1400	Pavement Marking Paint, 4" White	66	Ft
633E1405	Pavement Marking Paint, 4" Yellow	53	Ft
634E0010	Flagging	20	Hour
634E0100	Traffic Control	610	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
634E0640	Temporary Pavement Marking	119	Ft

#### ESTIMATE OF QUANTITIES (I-90EF, PCN i3e1)

Bid Item Number	ltem	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	18.0	Ton
332E0010	Cold Milling Asphalt Concrete	169	SqYd
633E1400	Pavement Marking Paint, 4" White	63	Ft
633E1405	Pavement Marking Paint, 4" Yellow	79	Ft
634E0010	Flagging	40	Hour
634E0100	Traffic Control	416	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0640	Temporary Pavement Marking	143	Ft

#### SPECIFICATIONS

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

## WASTE DISPOSAL SITE

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

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:

1.

2.

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.

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	016WB-452, 016EB-452 & etc.	2	34

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

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. 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

#### HISTORICAL PRESERVATION OFFICE CLEARANCES

To obtain State Historical Preservation Office (SHPO) clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. In lieu of a cultural resources survey, the Contractor could request a records search from Jim Donohue, State Archaeological Research Center (SARC). Provide SARC 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 no artifacts have been found *on* the site. The Contractor shall arrange and pay for the cultural resource survey and/or records search.

If any earth disturbing activities occur within the current geographical or historic boundaries of any South Dakota reservation, the Contractor shall obtain Tribal Historical Preservation Office (THPO) clearance. If no THPO exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO or THPO responses, the Contractor should submit a records search or cultural resources survey report to the DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3268). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO/THPO approval. The Contractor is responsible for obtaining all required permits and clearances for staging areas, borrow sites, waste disposal sites, and all material processing sites. The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

#### **MAINTENANCE PATCHING**

Maintenance Patching shall be in accordance with the requirements of Section 324 of the Standard Specifications, Asphalt Concrete Composite.

#### UNCLASSIFIED EXCAVATION DIGOUTS

Provided in the Estimate of Quantities is Unclassified Excavation-Digouts at the Maintenance Patching locations for the necessary removal of existing asphalt concrete and base material. The dimensions provided in these plans are subject to change in the field, at the discretion of the Engineer. Payment will be based on the actual quantities installed. Unclassified Excavation Digouts depth shall be 1 foot or as directed by the Engineer. Backfill shall be 6" of Base Course placed in 3" lifts and 6" of Maintenance Patching placed in 3" lifts.

The existing asphalt concrete shall be sawed full depth with a vertical face to the removal limits established by the Engineer.

All costs associated with sawing, removal and disposal of existing asphalt and base material shall be incidental to the contract unit price per cubic yard "Unclassified Excavation Digouts".

#### COLD MILLING

The removed material from the Cold Milling operation shall be properly disposed of by the Contractor.

The asphalt surfacing on US14A, Deadwood shall be removed from the portland cement concrete pavement that lies directly beneath. The asphalt thickness is 1.25". The Contractor shall take the necessary precautions to complete this work.

The Contractor shall provide temporary asphalt ramps with a 50:1 transition at all locations where traffic is transitioning from a milled to a paved surface and vice versa. All costs associated with this work shall be incidental to the various bid items on the project.

#### SURFACING THICKNESS DIMENSIONS

The thickness may vary from that shown in the plans. At those locations where material must be placed to achieve a required elevation for smoothness, plans tonnage may be varied to achieve the required elevation.

#### ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite shall be furnished by the Contractor.

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

SS-1h or CSS-1h Emulsified Asphalt for Tack shall be applied at the rate of 0.05 gallons per square yard.

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

A Flush Seal will not be required on the asphalt concrete patching.

Locations and quantities of asphalt repair are subject to change. The exact locations will be determined in the field by the Engineer. The Engineer reserves the right to adjust quantities and/or add locations at no additional cost to the state.

OTAL IEETS
34

# TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (US 16WB, PCN i3ce)

Highway	MRM	Description	Area	Depth	Asphalt Concrete Composite	Cold Milling Asphalt Concrete	Temporary Pavement Marking	Cold Applied Plastic Pavement Marking, 4"	Cold Applied Plastic Pavement Marking, 8"	Cold Applied Plastic Pavement Marking, 24"	Cold Applied Plastic Pavement Marking, Arrow
			(SqFt)	(Inches)	(Tons)	(SqYd)	(Ft)	(Ft)	(Ft)	(Ft)	(Each)
US 16B	72.9 to 73.1	Westbound, Mainline	10,415	2	128.6	1,157	1,522	336	398	48	2
US 16B	72.9 to 73.1	Westbound, Ramp C	3,724	2	46.0	414	309	117	-	32	-
				Totals	174.6	1,571	1,831	453	398	80	2

#### TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (US 16EB, PCN i3cf)

Highway	MRM	Description	Area	Depth	Asphalt Concrete Composite	Cold Milling Asphalt Concrete	Temporary Pavement Marking	Cold Applied Plastic Pavement Marking, 4"	Cold Applied Plastic Pavement Marking, 8"	Cold Applied Plastic Pavement Marking, 24"	Cold Applied Plastic Pavement Marking, Arrow
			(SqFt)	(Inches)	(Tons)	(SqYd)	(Ft)	(Ft)	(Ft)	(Ft)	(Each)
US 16B	72.9 to 73.1	Eastbound, Mainline	10,382	2	128.2	1,154	1,435	346.0	301	48	2
US 16B	72.9 to 73.1	Eastbound, Ramp A	4,245	2	52.4	472	325	133.0		32	-
				Totals	180.6	1,625.2	1,760	479.0	301	80	2

## TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (SD 34, PCN i3dw)

Highway	Direction	MRM to	MRM	Width (Ft)	Length (Ft)	Depth (Ft)	Asphalt Concrete Composite (Tons)	Cold Milling (SqYd)	Temporary Pavement Marking (Ft)	Pavement Marking Paint, 4" White (Ft)	Pavement Marking Paint, 4" Yellow (Ft)
SD 34	Eastbound	35.850	36.080	24	1,214	0.16	345.4	3,238	5,465	304	2,429

# TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (US 14A, PCN i3dx)

Highway	MRM	MRM	Description	Width (Ft)	Length (Ft)	Depth (Ft)	Asphalt Concrete Composite (Ton)	Cold Milling Asphalt Concrete (SqYd)	Temporary Pavement Marking (Ft)	Pavement Marking Paint, 4" White (Ft)	Pavement Marking Paint, 4" Yellow (Ft)
US 14A	41.688	41.813	Eastbound, Driving and Passing Lane	24	660	0.13	152.5	1,760	660	165	1,320
US 14A	41.678	41.845	Westbound Driving Lane	12	882	0.13	101.9	1,176	882	220	
US 14A	41.678	41.736	Westbound Passing Lane	12	306	0.13	35.4	408	306		612
US 14A	41.886	41.923	Westbound Merge Lane	12	195	0.13	22.6	260	195	195	
						Totals	312.4	3,604	2,043	581	1,932

STATE OF	PROJECT	SHEET	TOTAL SHEETS
DAKOTA	016WB-452, 016EB-452 & etc.	4	34

#### TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (US 385, PCN i3dy)

Highway	MRM	Description	Width	Length	Digout Depth	Maintenance Patching	Unclassified Excavation Digouts	Base Course	Temporary Pavement Marking	Pavement Marking Paint, 4" White	Pavement Marking Paint, 4" Yellow
			(Ft)	(Ft)	(Ft)	(Tons)	(CuYds)	(Tons)	(Ft)	(Ft)	(Ft)
US 385	120.600	Southbound	6	150	1	33.3	33.3	33	150	150	
US 385	118.800	Southbound Driving Lane	12	12	1	5.3	5.3	5	12	12	
US 385	118.600	Southbound	14	228	1	118.2	118.2	118	228	228	456
US 385	116.750	Northbound	14	220	1	114.1	114.1	114	220	220	440
US 385	116.800	Southbound	12	70	1	31.1	31.1	31	70	70	140
US 385	121.000	Northbound	12	49	1	21.8	21.8	22	49	49	98
				729	Totals	323.9	324	323.9	729	729	1,134

#### TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (I-90 W, PCN i3e0)

Highway	Direction	MRM to	MRM	Width (Ft)	Length (Ft)	Depth (Ft)	Asphalt Concrete Composite (Tons)	Cold Milling (SqYd)	Temporary Pavement Marking (Ft)	Pavement Marking Paint, 4" White (Ft)	Pavement Marking Paint, 4" Yellow (Ft)
I-90	Westbound	98.470	98.480	34	53	0.16	21.3	199	119	66	53

#### TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (I-90 EF, PCN i3e1)

Highway	Description	MRM to	MRM	Width (Ft)	Length (Ft)	Depth (Ft)	Asphalt Concrete Composite (Tons)	Cold Milling (SqYd)	Temporary Pavement Marking (Ft)	Pavement Marking Paint, 4" White (Ft)	Pavement Marking Paint, 4" Yellow (Ft)
I-90 EF	Summerset Service Rd	50.200	50.206	48	32	0.16	18.0	169	143	63	79

#### **TEMPORARY PAVEMENT MARKING**

Temporary Road Markers shall be used for temporary pavement marking.

The Contractor shall be responsible for maintaining a visible and reflective centerline throughout the project. Any marking covered or damaged shall be replaced prior to the end of the day. All costs associated with this work shall be incidental to the contract unit price per mile for "Temporary Pavement Marking".

All costs for temporary pavement marking including furnishing, applying, maintenance, removal and disposing of temporary road markers shall be incidental to the contract unit price per mile for "Temporary Pavement Marking".

Payment for temporary pavement marking will be by the foot per 4" line or equivalent. Any temporary pavement marking arrows that are needed will be paid for as 250' of Temporary Pavement Marking. Payment will be for all costs to furnish, and install temporary pavement markings.

The quantities of temporary pavement marking provided in the tables are for opening completed repair areas to traffic. The temporary pavement marking for traffic control in accordance with the standard plates and details in these plans shall be incidental to the contract unit price per lump sum for "Traffic Control, Miscellaneous".

### **PAVEMENT MARKING**

The pavement marking material shall be as defined in Section 983 of the Standard Specifications.

#### COLD APPLIED PLASTIC PAVEMENT MARKING

The Contractor shall apply the Cold Applied Plastic Pavement Marking material as per manufacturer's instructions.

Cold applied plastic pavement markings shall be placed into a recessed groove on the surface.

Final locations of markings will be determined by Engineer.

The Contractor shall establish a positive means for the removal of the grinding and/or grooving residue. Solid residue shall be removed from the pavement surfaces before being blown by traffic action or wind. Residue shall not be permitted to flow across lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, shall be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state.

The grooving shall be completed within the following tolerance:

Depth of Groove: 100 mils, ± 10 mils.

STATE OF	PROJECT	SHEET	TOTAL
SOUTH DAKOTA	016WB-452, 016EB-452 & etc.	5	34

## **GROOVE PAVEMENT FOR PAVEMENT MARKING**

#### **GROOVE PAVEMENT FOR PAVEMENT MARKING (CONTINUED)**

Existing grooves that do not meet the 100 mil depth requirement shall be regrooved. In areas where the existing groove depth meets the 100 mil depth requirements and portions of the existing markings are still in place, the existing markings shall be removed.

Markings that fall outside of the groove shall be removed (at least 90%) using additional methods approved by the Engineer. All costs for materials, labor, and equipment necessary to remove the existing markings shall be incidental to the contract unit price per foot for Grooving for Cold Applied Plastic Pavement Marking, 4"; Cold Applied Plastic Pavement Marking, 8"; Cold Applied Plastic Pavement Marking, 24"; and Cold Applied Plastic Pavement Marking, Arrow.

## **PERMANENT PAVEMENT MARKINGS**

The location of the existing pavement marking shall be documented prior to removal, so that replacement can be at the existing location.

Application of permanent pavement marking shall be completed within 14 calendar days following completion of the pavement repair.

## **RATES OF APPLICATION**

*Edgeline striping	– 16.9 gallons per mile
Glass beads	<ul> <li>8.0 pounds per gallon</li> </ul>

\*Rate is the Region average and is for one 4" edgeline.

## **TRAFFIC CONTROL – GENERAL NOTES**

- 1. 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.
- 2. Unless otherwise stated in these plans, no work will be allowed during hours of darkness. Hours of darkness are defined as 1/2 hour after sunset until 1/2 hour before sunrise.
- 3. Storage of vehicles and equipment shall be as near the right-of-way as possible. 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 of 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.

- 4. Existing guide, route, informational logo, regulatory, and warning signs shall be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Non-applicable signing shall be covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 60 hours. The cost of removing or covering non-applicable signs shall be incidental to the contract lump sum price for "Traffic Control. Miscellaneous".
- 5. Construction signing mounted on portable supports shall not be used for a duration of more than 3 days, unless approved by the Engineer. Construction signing that remains in the same location for more than 3 days shall be mounted on fixed location, ground mounted, breakaway supports.
- 6. The quantity of signs paid for will be for the greatest number of installations per sign per PCN in place at any one time regardless of the number of set-ups on the project.
- 7. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.
- 8. All materials and equipment shall be stored a minimum distance of 30' from the traveled way during nonworking hours.
- 9. The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.
- 10. The Contractor shall be required to have a person available 24 hour/day, 7 days/week to maintain traffic control devices. The name and cellular telephone number of this individual shall be given to the Engineer at the preconstruction meeting.
- 11. The Contractor or designated traffic control subcontractor shall make night inspections at the initial set up of traffic control and every week thereafter to ensure the adequacy, legibility and reflectivity of each sign and device. A written summary of each inspection shall be given to the Engineer within 24 hours after completion of the inspection. The cost for the nighttime inspection work shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".
- 12. Vehicles working in traffic or alongside traffic shall be equipped with a flashing amber light visible from all directions. The amber light shall be mounted on the uppermost part of the Contractor's vehicle. Lights must have peak intensity within the range of 40 to 400 candelas and must flash at 75 ± 15 flashes per minute. Vehicle flasher/hazard lights are not acceptable. 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.
- 13. All construction operations shall be conducted in the general direction of traffic movement.

- traffic.
- shall be spaced at 25'.
- deck.

STATE OF	PROJECT	SHEET	TOTAL
SOUTH DAKOTA	016WB-452, 016EB-452 & etc.	6	34

14. 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.

15. Temporary Road Markers (Tabs) shall be used for lane closure tapers or lane shift tapers and shall be installed at 5' spacing. Tabs used for tapers and shifts will not be measured for payment. All costs associated to furnish, install, maintain (including replacement as required by the Engineer at no added cost to the Department), and remove all markers will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

16. Drums are required in all lane closure tapers.

17. A 16' northbound and southbound width restriction will need to be put in place on Elk Vale Road. Channelizing devices shall be placed in order to provide at a minimum, 16' of roadway width.

18. Permanent pavement markings, signs, and delineation shall be installed prior to opening each completed phase of construction to

19. Channelizing devices on Elk Vale Road shall be spaced at 25'. If inappropriate/conflicting pavement markings exist, the spacing of the channelizing devices in the area where the pavement markings conflict shall be placed at a spacing of 12.5'. Channelizing devices on the on and off ramps shall be spaced at 50' except adjacent to ramp work areas. Channelizing devices adjacent to ramp work areas

20. Speed limit on Elk Vale Road shall be reduced to 30 mph between Cheyenne Blvd. /Eglin St. and Mall Drive.

21. Storage of equipment or materials on the bridge deck will not be allowed. No equipment or materials will be allowed on the bridge

#### **SEQUENCE OF OPERATIONS**

#### US 385, PCN i3dy

#### I-90 W, PCN i3e0

- 1. Setup traffic control and close passing lane using Standard Plate 634.63.
- 2. Complete cold milling and asphalt concrete composite in the passing lane.
- 3. Install temporary pavement markings.
- Switch traffic control and close driving lane using Standard Plate 4. 634.63 and Ramp Entrance and Exit Signing Details #1 and #2.
- 5. Complete cold milling and asphalt concrete composite in the driving lane and on ramp acceleration lane.
- 6. Install temporary pavement markings.
- 7. Install permanent pavement markings.

#### I-90 EF, PCN i3e1

- 1. Complete cold milling using Standard Plate 634.23.
- 2. Install temporary pavement markings, Bump and Grooved Pavement signs.
- Complete asphalt concrete composite using Standard Plate 634.23. 3.
- Install temporary pavement markings. 4.
- Complete permanent pavement markings. 5.
- 6. Traffic control shall be removed and all traffic lanes restored to unimpeded traffic prior to nightfall each day.

#### SD 34, PCN i3dw

- 1. Complete cold milling using Standard Plates 634.47 and 634.48. When using Standard Plate 634.48, setup opposing left lane closure.
- 2. Install temporary pavement markings, Bump, Grooved Pavement, and Uneven Lanes signs.
- 3. Complete asphalt concrete composite using Standard Plates 634.47 and 634.48. When using Standard Plate 634.48, setup opposing left lane closure.
- 4. Install temporary pavement markings.
- Complete permanent pavement markings. 5.
- 6. Traffic control shall be removed and all traffic lanes restored to unimpeded traffic prior to nightfall each day.

#### US 14A, PCN i3dx

- 1. Setup traffic control and close the westbound and eastbound driving lanes using Standard Plate 634.47.
- 2. Complete cold milling and asphalt concrete composite in the westbound and eastbound driving lanes.
- 3. Install temporary pavement markings.
- 4. Switch traffic control and close the westbound and eastbound passing lanes using Standard Plate 634.48.
- 5. Complete cold milling and asphalt concrete composite in the westbound and eastbound passing lanes.
- 6. Install temporary pavement markings.
- 7. Complete permanent pavement markings.

- 1. Setup traffic control according to the "US385 Traffic Control Devices Lane Closure on Climbing Lane Section of Highway" detail sheets as required to complete repair area.
- 2. Complete the required work in the repair area. Only one repair area shall be worked on at a time, and shall be completed prior to starting work on another repair area.
- 3. Install temporary pavement markings.
- 4. Complete permanent pavement markings.

## US 16WB, PCN i3ce & US 16EB, PCN i3cf

NOTE:

- All work shall be completed between the hours of 7:00pm and 6:00am. A day of work shall be defined as 7:00pm to 6:00am.
- All traffic control shall be removed from the roadway and all traffic lanes open to unimpeded traffic prior to 6:00am.
- At the end of the work day, uneven lanes will not be allowed during • the cold milling or asphalt resurfacing process.
- All of the cold milling for each phase (1A thru 1D, 2A thru 2C, and 3A thru 3C) shall be completed in one day so that there will not be any uneven lanes when the traffic control is removed and all traffic lanes are opened to unimpeded traffic at the end of the day of work.
- All of the asphalt paving for each phase (1A thru 1D, 2A thru 2C, and 3A thru 3C) shall be completed in one day so that there will not be any uneven lanes when the traffic control is removed and all traffic lanes are opened to unimpeded traffic at the end of the day of work.
- After the asphalt surfacing has been completed in a traffic lane, the asphalt shall cool for a minimum of 2.0 hours before switching traffic control and putting traffic on the new asphalt pavement. The permanent pavement markings shall be install during this time prior to traffic control being switch and traffic being put on the new asphalt.
- The Contractor may do more than one phase of work in a day so long as once a phase of work is started the entire work in that phase is completed that day, but only one phase of work can be worked on at a time.
- 1. Setup traffic control as shown in the traffic control sheets for the phase of work being completed and complete the cold milling.
- 2. Install temporary pavement markings.
- 3. Remove traffic control and repeat steps 1 and 2 for remaining phases of cold milling work.
- 4. Setup traffic control as shown in the traffic control sheets for the phase of work being completed and complete the asphalt paving and permanent pavement markings. Repeat for remaining phases of work.

The quantity of Type C Advance Warning Arrow Panels paid for will be the most installations in place at any one time regardless of the number of setups on the project.

### PRESS RELEASE ANNOUNCEMENTS

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	016WB-452, 016EB-452 & etc.	7	34

## **TYPE C ADVANCE WARNING ARROW PANEL**

The SDDOT will prepare a Press Release to be released 5 days prior to any phase change or any other major change that affects traffic flow. The SDDOT will be responsible to keep law enforcement, emergency services, and the traveling public notified of changes in project access. The Contractor shall provide the Engineer with pertinent information 7 days prior to any phase change or any other major changes that affect traffic flow.

#### TABLE OF TRAFFIC CONTROL (US 16WB, PCN i3ce)

SIGN CODE	SIGN SIZE	DESCRIPTION	#	PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
R2-1	24" x 30"	SPEED LIMIT ##	1	18	18
W3-5	48" x 48"	REDUCED SPEED LIMIT AHEAD	1	34	34
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	1	34	34
W20-1	48" x 48"	ROAD WORK AHEAD	6	34	204
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	1	34	34
R3-20R	24" x 36"	BEGIN RIGHT TURN LANE	1	20	20
****		TYPE 3 BARRICADE - 8 FT. DOUBLE SIDED	2	56	112
		TOTAI	_ U		490

#### TABLE OF TRAFFIC CONTROL (US 16EB, PCN i3cf)

TABLE OF TRAFFIC CONTROL (SD 34, PCN i3dw)

SIGN

CODE

G20-2

W4-2

W8-1

W8-11

W20-1

SIGN CODE	SIGN SIZE	DESCRIPTION	#	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
R2-1	24" x 30"	SPEED LIMIT ##	1	18	18
W3-5	48" x 48"	REDUCED SPEED LIMIT AHEAD	1	34	34
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	1	34	34
W20-1	48" x 48"	ROAD WORK AHEAD	6	34	204
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	1	34	34
R3-20L	24" x 36"	BEGIN LEFT TURN LANE	1	20	20
R3-20R	24" x 36"	BEGIN RIGHT TURN LANE	1	20	20
****		TYPE 3 BARRICADE - 8 FT. DOUBLE SIDED	2	56	112
		TYPE 3 BARRICADE - 8 FT. DOUBLE SIDED	2	56	112

#### TABLE OF TRAFFIC CONTROL (US 14A, PCN i3dx)

SIGN CODE	SIGN SIZE	DESCRIPTION	#	UNITS PER SIGN	UNITS		
G20-2	36" x 18"	END ROAD WORK	2	17	34		
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68		
W8-1	48" x 48"	BUMP	2	34	68		
W8-11	48" x 48"	UNEVEN LANES	2	34	68		
W8-15	48" x 48"	GROOVED PAVEMENT	1	34	34		
W13-1P	30" x 30"	ADVISORY SPEED PLATE	2	21	42		
W20-1	48" x 48"	ROAD WORK AHEAD	2	34	68		
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	2	34	68		
W20-7	48" x 48"	FLAGGER (SYMBOL)	2	34	68		
TOTAL UNITS 518							

#### TABLE OF TRAFFIC CONTROL (US 385, PCN i3dy)

SIGN CODE	SIGN SIZE	DESCRIPTION		UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
W1-4	48" x 48"	REVERSE CURVE SIGN (LEFT OR RIGHT)	2	34	68
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	1	34	34
W20-1	48" x 48"	ROAD WORK AHEAD	2	34	68
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	1	34	34
W20-7	48" x 48"	FLAGGER (SYMBOL)	2	34	68

# TOTAL UNITS 306

# TOTAL UNITS 510 TABLE OF TRAFFIC CONTROL (I-90W, PCN i3e0)

#### UNITS SIGN SIZE DESCRIPTION PER UNITS # SIGN 36" x 18" END ROAD WORK 17 34 LEFT OR RIGHT LANE ENDS (SYMBOL) 2 2 1 2 2 2 2 2 48" x 48" 34 68 48" x 48" BUMP 34 68 48" x 48" UNEVEN LANES 34 68 W8-15 48" x 48" GROOVED PAVEMENT 34 34 W13-1P ADVISORY SPEED PLATE 21 30" x 30" 42 48" x 48" ROAD WORK AHEAD 34 68 48" x 48" LT. OR RT. LANE CLOSED AHEAD W20-5 34 68 48" x 48" FLAGGER (SYMBOL) 2 W20-7 34 68 TOTAL UNITS 518

SIGN CODE	SIGN SIZE	DESCRIPTION	#	UNITS PER SIGN	UNITS	
G20-2	36" x 18"	END ROAD WORK	1	17	17	
R1-2	36" x 36"	YIELD	1	27	27	
R2-1	24" x 30"	SPEED LIMIT ##	3	18	54	
R2-6aP	24" x 18"	FINES DOUBLE	2	7	14	
W3-2	48" x 48"	YIELD AHEAD (SYMBOL)	1	34	34	
W3-5	48" x 48"	REDUCED SPEED LIMIT AHEAD	2	34	68	
W4-1	48" x 48"	MERGE (SYMBOL)	2	34	68	
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68	
W20-1	48" x 48"	ROAD WORK AHEAD	3	34	102	
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	2	34	68	
W20-7	48" x 48"	FLAGGER (SYMBOL)	1	34	34	
****		TYPE 3 BARRICADE - 8 FT. DOUBLE SIDED	1	56	56	
TOTAL UNITS 610						

# TABLE OF TRAFFIC CONTROL (I-90EF, Service Rd., PCN i3e1)

SIGN CODE	SIGN SIZE
G20-2	36" x 18"
W8-1	48" x 48"
W8-15	48" x 48"
W13-1P	30" x 30"
W20-1	48" x 48"
W20-4	48" x 48"
W20-7	48" x 48"

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	016WB-452, 016EB-452 & etc.	8	34

DESCRIPTION	#	UNITS PER SIGN	UNITS	
END ROAD WORK	2	17	34	
BUMP	2	34	68	
GROOVED PAVEMENT	2	34	68	
ADVISORY SPEED PLATE	2	21	42	
ROAD WORK AHEAD	2	34	68	
ONE LANE ROAD #### FT. OR AHEAD	2	34	68	
FLAGGER (SYMBOL)	2	34	68	
TOTAL UNITS 416				

Elk Vale Road I-90 Exit 61







	07175.05	PROJECT	OUEET	TOTAL
	SOUTH		SHEET	SHEETS
	DAKOTA	01670B-452, 016EB-452 & etc.	11	34
	Plotting Date:	04/21/2014		
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Shoulder

Edge of Driving Lane

12′

4″<u>White</u>

(A)

	STATE OF	PROJECT	SHEET	TOTAL SHEETS
	SOUTH DAKOTA	016WB-452, 016EB-452 & etc.	13	34
	Plotting	Date: 04/30/2013		
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<u>4</u> )				



- SIGN SPACING, BARREL SPACING AND TAPER LENGTHS SHALL CONFORM TO STANDARD PLATES.

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	016WB-452, 016EB-452 & etc.	14	34
Plotting Date:	03/14/2014		
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	TRAFFIC FLOW		



























# **US 385 TRAFFIC CONTROL DEVICES**



# **TRAFFIC CONTROL**

RAMP ENTRANCE AND EXIT SIGNING DETAILS #1



ST	TATE OF	PROJECT	SHEET	TOTAL SHEETS
D	АКОТА	016WB-452, 016EB-452 & etc.	29	34
Plot	ting Date:	05/15/2014		

# **TRAFFIC CONTROL**

RAMP ENTRANCE AND EXIT SIGNING DETAILS #2



STATE OF	PROJECT	SHEET	TOTAL SHEETS
DAKOTA	016WB-452, 016EB-452 & etc.	30	34
Plotting Date:	05/15/2014		









STATE OF<br/>SOUTH<br/>DAKOTAPROJECTSHEETTOTAL<br/>SHEETSO16WB-452, 016EB-452 & etc.3234







