



# Department of Transportation

## Office of Project Development

700 E Broadway Avenue

Pierre, South Dakota 57501-2586 605/773-3268

FAX: 605/773-6608

April 11, 2014

### ADDENDUM NO. 1

**RE: Item #8, April 16, 2014 Letting - NH-P 0013(26), PCN 045U, Beadle, Clark, Hand, Hyde, Kingsbury, Miner, Spink County - Asphalt Surface Treatment (Chip Seal)**

#### **TO WHOM IT MAY CONCERN:**

The following addenda to the plans shall be inserted and made a part of your proposal for the referenced project.

#### **SPECIAL PROVISIONS: NO CHANGE**

#### **BID ITEM FILE: Quantities for Bid Items were changed:**

Bid Item 330E0300 "SS-1h or CSS-1h Asphalt for Fog Seal" changed from 444.0 to 421.0 Ton

Bid Item 330E3000 "Sand for Fog Seal" changed from 250.0 to 225.0 Ton

Bid Item 360E0042 "CRS-2P Asphalt for Surface Treatment" changed from 2,388.0 to 2,264.4 Ton

Bid Item 360E1200 "Modified Cover Aggregate" changed from 2,677.2 to 2,462.8 Ton (Segment 5)

Bid Item 633E0030 "Cold Applied Plastic Pavement Marking, 24"" changed from 538 to 470 Ft

Bid Item 633E0035 "Cold Applied Plastic Pavement Marking, Area" changed from 125 to 87 SqFt

Bid Item 633E0040 "Cold Applied Plastic Pavement Marking, Arrow" changed from 15 to 13 Each

Bid Item 633E1300 "Pavement Marking Paint, White" changed from 3,831 to 3,600 Gal

Bid Item 633E1305 "Pavement Marking Paint, Yellow" changed from 1,036.0 to 1,005.0 Gal

Bid Item 633E5015 "Grooving for Cold Applied Plastic Pavement Marking, 24"" changed from 538 to 470 Ft

Bid Item 633E5020 "Grooving for Cold Applied Plastic Pavement Marking, Area" changed from 125 to 87 SqFt

Bid Item 633E5025 "Grooving for Cold Applied Plastic Pavement Marking, Arrow" changed from 15 to 13 Each

Bid Item 633E6020 "Pavement Marking Masking, 25"" changed from 538 to 470 Ft

Bid Item 633E6025 "Pavement Marking Masking, Area" changed from 125 to 87 SqFt

Bid Item 633E6030 "Pavement Marking Masking, Arrow" changed from 15 to 13 Each

Bid Item 634E0010 "Flagging" changed from 1,074 to 1,012 Hour  
Bid Item 634E0100 "Traffic Control" changed from 10,050 to 9,116 Unit  
Bid Item 634E0630 "Temporary Pavement Marking" changed from  
175.4 to 165.2 Mile

**Bid Items were removed:**

Bid Item 360E1200 "Modified Cover Aggregate" 632.8 Ton (Segment 10)

**PLANS:** Please destroy sheets 1, 3, 5, 6, 8 through 13, 25, and 33 and replace with the enclosed sheets, dated 3/31/14 and 4/1/14.

**Sheet 1:** Project length was revised and Hughes County was removed.

**Sheet 3:** Segment 5 was revised and Exception Area was added.

**Sheet 5:** Segment 10 was removed.

**Sheet 6:** **Quantities for Bid Items were changed:**

Bid Item 330E0300 "SS-1h or CSS-1h Asphalt for Fog Seal" changed from  
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175.4 to 165.2 Mile

**Bid Items were removed:**

Bid Item 360E1200 "Modified Cover Aggregate" 632.8 Ton (Segment 10)

**Sheet 8:** TABLE OF QUANTITIES was revised.

**Sheet 9:** RATES OF MATERIAL, Segment 5 was revised.

**Sheet 10:** RATES OF MATERIAL, Segment 110 was removed and TABLE:  
ADDITIONAL ASPHALT AND AGGREGATE QUANTITIES was revised.  
Note placement was adjusted.

**Sheet 11:** PROJECT BROOMING TABLE was revised and note placement was  
adjusted.

**Sheet 12:** TEMPORARY PAVEMENT MARKINGS was revised and note placement  
was adjusted.

**Sheet 13:** COLD APPLIED PLASTIC PAVEMENT MARKING and PAVEMENT  
MARKING MASKING tables were revised. Note placement was adjusted.

**Sheet 25:** FIXED LOCATION SIGNS map for Segment 10 was removed.

**Sheet 33:** ITEMIZED LIST FOR TRAFFIC CONTROL SD 14 (Segment 10) was  
removed.

Sincerely,

Brace Prouty, P.E.  
Engineering Supervisor

BP/cj

CC: Jeff Senst, Aberdeen Region Engineer  
Wayne Cramer, Huron Area Engineer

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH-P 0013(26)	1	36
Plotting Date: 04/01/2014			

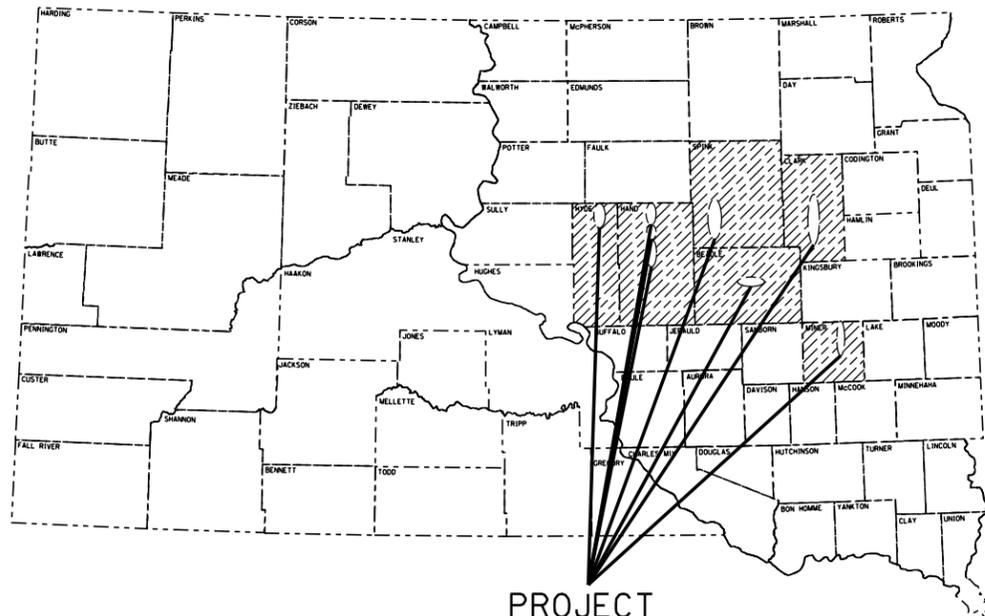
**STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION**

**PLANS FOR PROPOSED  
Project NH-P 0013(26)**

**US HWY 14 & 281  
SD HWY 26, 25, 45, & 47  
BEADLE, CLARK, HAND, HYDE,  
KINGSBURY, MINER, & SPINK COUNTIES  
ASPHALT SURFACE TREATMENT  
(SAND SEAL)  
PCN 045U**

**INDEX OF SHEETS**

Sheet 1-5	TITLE SHEET & LAYOUT MAPS
Sheet 6	ESTIMATE OF QUANTITIES
Sheet 7	ENVIRONMENTAL COMMITMENTS
Sheet 8	TABLE OF QUANTITIES
Sheet 9-18	PLAN NOTES
Sheet 19-25	FIXED LOCATION SIGN LAYOUT
Sheet 26-30	STANDARD PLATES
Sheet 31-33	SIGN TABULATION PER SEGMENT
Sheet 34-36	TEMPORARY PAVEMENT MARKING DETAILS



PROJECT

BEGIN SEGMENT 1  
STATION 0 + 00.0  
MRM 88.86 + 0.000  
MILEAGE: 46.679

**SD HWY 25  
SEGMENT #1  
KINGSBURY & MINER COUNTIES  
LENGTH: 13.115 MILES**

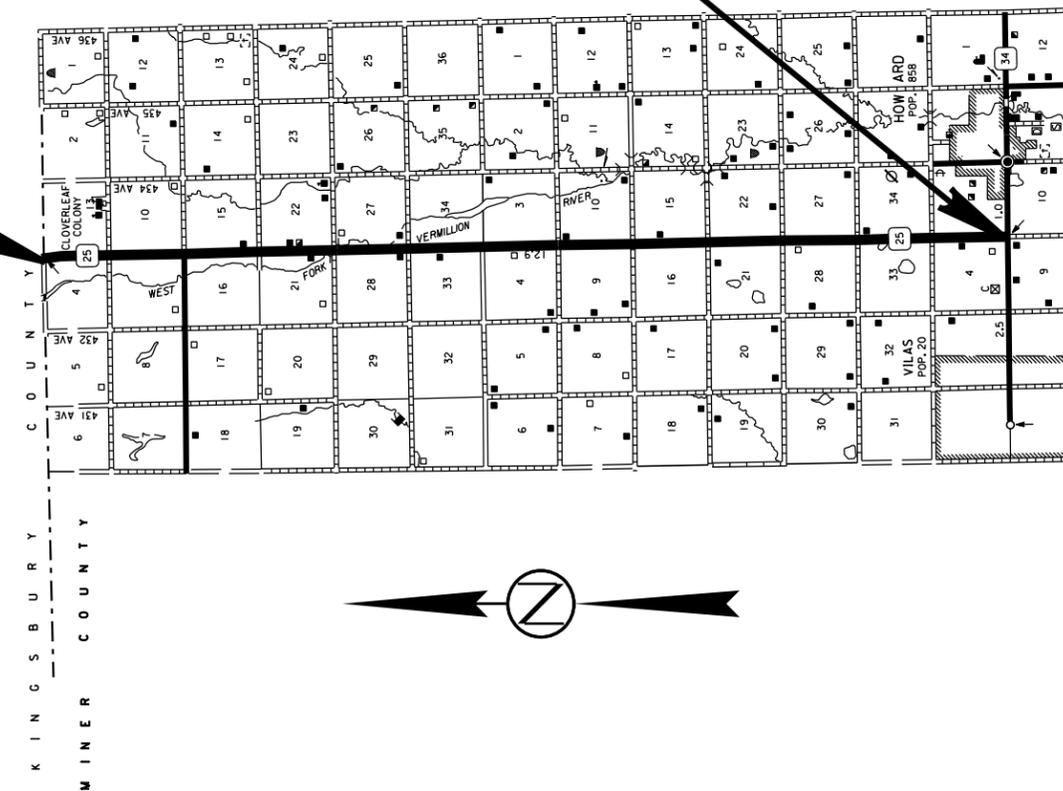
END SEGMENT 1  
STATION 692 + 47.2  
MRM 101.77+ 0.217  
MILEAGE: 59.794

**DESIGN DESIGNATION**

ADT (2013)	917
ADT (2033)	1063
DHV	115
D	50.0%
T DHV	2.5
T*ADT	21.0%
V	65 MPH

**STORM WATER PERMIT**

(NONE REQUIRED)



GROSS LENGTH 82.391 MILES  
LENGTH OF EXCEPTIONS 1.398 MILES  
NET LENGTH 80.993 MILES

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH-P 0013(26)	3	36
Plotting Date: 04/01/2014			

# US HWY 14 (EAST & WEST) SEGMENT #3 & #4 BEADLE COUNTY LENGTH: 3.608 MILES & 3.594 MILES

# US HWY 281 SEGMENT #5 SPINK COUNTY LENGTH: 14.809 MILES

BEGIN SEGMENT 3  
EASTBOUND  
STATION 0 + 00.0  
MRM 347.65 + 0.341  
MILEAGE: 11.161

END SEGMENT 3  
EAST BOUND  
STATION 189 + 86.88  
MRM 351.62 + 0.000  
MILEAGE: 14.769

BEGIN SEGMENT 4  
WESTBOUND  
STATION 0 + 00.0  
MRM 348.00 + 0.002  
MILEAGE: 10.794

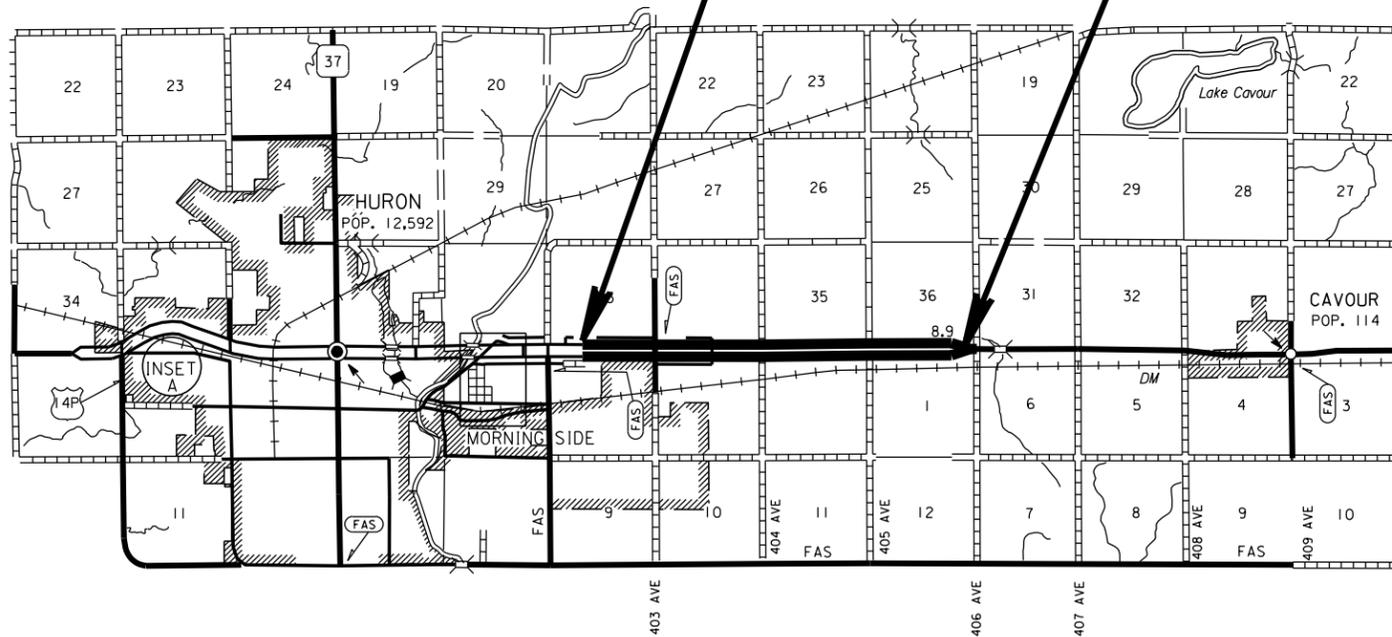
END SEGMENT 4  
WESTBOUND  
STATION 189 + 86.88  
MRM 351.62 + 0.000  
MILEAGE: 14.568

END EXCEPTION  
MRM 146.39 + 0.374  
STA 540 + 35.52

BEGIN EXCEPTION  
MRM 145.00 + 0.446  
STA 470 + 18.40

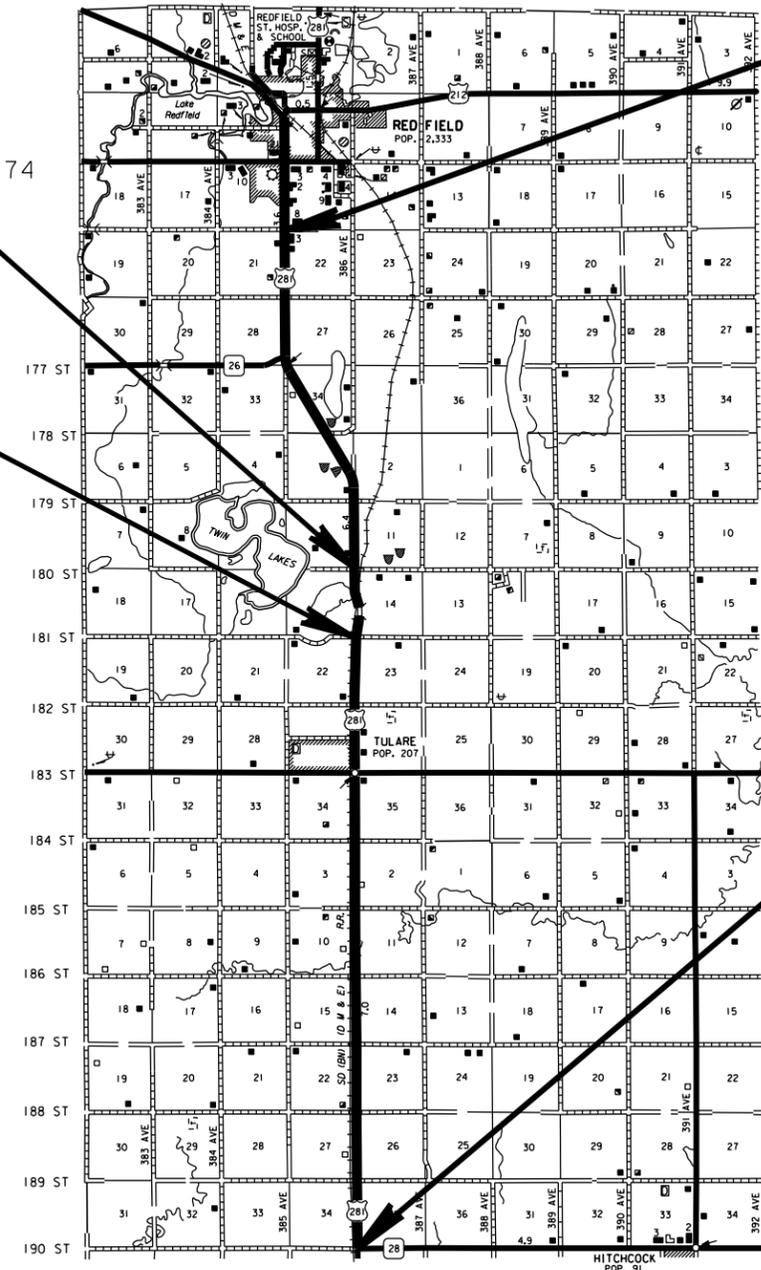
END SEGMENT 5  
STATION 852.0 + 08.64  
MRM 152.00 + 0.675  
MILEAGE: 110.593

BEGIN PROJECT  
STATION 0 + 00.0  
MRM 136.42 + 0.105  
MILEAGE: 94.455



**DESIGN DESIGNATION**

ADT (2013)	2154
ADT (2033)	2856
DHV	269
D	50.0%
T DHV	2.9
T ADT	17.8%
V	65 MPH



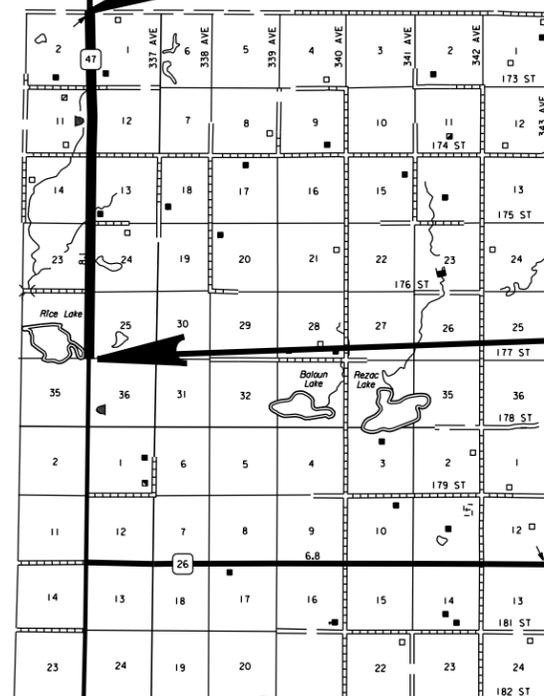
**DESIGN DESIGNATION**

ADT (2013)	2056
ADT (2033)	2430
DHV	257
D	50.0%
T DHV	5.1
T ADT	24.4%
V	65 MPH

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH-P 0013(26)	5	36
Plotting Date: 03/31/2014			

# SD HWY 47 SEGMENT #9 HYDE COUNTY LENGTH: 5.134 MILES

END SEGMENT 9  
STATION 271 + 07.52  
MRM 162.90 + 0.000  
MILEAGE: 127.031



BEGIN SEGMENT 9  
STATION 0 + 00.0  
MRM 157.00 + 0.778  
MILEAGE: 121.897



DESIGN DESIGNATION

ADT (2013)	267
ADT (2033)	333
DHV	33
D	51.0%
T DHV	3,6
T•ADT	29.7%
V	65 MPH

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH-P 0013(26)	6	36
Plotting Date: 02/03/2014			

REVISED: 2/19/2014 TPJ  
REVISED: 3/31/2014 TPJ

## ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	421.0	Ton
330E3000	Sand for Fog Seal	225.0	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	2,264.4	Ton
360E1200	Modified Cover Aggregate	2,462.8	Ton
360E1200	Modified Cover Aggregate	3,407.5	Ton
360E1200	Modified Cover Aggregate	3,041.7	Ton
360E1200	Modified Cover Aggregate	2,793.0	Ton
360E1200	Modified Cover Aggregate	1,189.7	Ton
360E1200	Modified Cover Aggregate	187.1	Ton
360E1200	Modified Cover Aggregate	1,481.1	Ton
360E1200	Modified Cover Aggregate	960.8	Ton
633E0030	Cold Applied Plastic Pavement Marking, 24"	470	Ft
633E0035	Cold Applied Plastic Pavement Marking, Area	87	SqFt
633E0040	Cold Applied Plastic Pavement Marking, Arrow	13	Each
633E0055	Cold Applied Plastic Pavement Marking, Railroad Crossing	2	Each
633E1300	Pavement Marking Paint, White	3,600.0	Gal
633E1305	Pavement Marking Paint, Yellow	1,005.0	Gal
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	470	Ft
633E5020	Grooving for Cold Applied Plastic Pavement Marking, Area	87	SqFt
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	13	Each
633E5040	Grooving for Cold Applied Plastic Pavement Marking, Railroad Crossing	2	Each
633E6020	Pavement Marking Masking, 25"	470	Ft
633E6025	Pavement Marking Masking, Area	87	SqFt
633E6030	Pavement Marking Masking, Arrow	13	Each
633E6045	Pavement Marking Masking, Railroad Crossing	2	Each
634E0010	Flagging	1,012	Hour
634E0020	Pilot Car	490	Hour
634E0100	Traffic Control	9,116	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	3	Each
634E0630	Temporary Pavement Marking	165.2	Mile
998E0100	Railroad Protective Insurance	Lump Sum	LS

## SPECIFICATIONS

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

### TABLE OF QUANTITIES (FOR INFORMATION ONLY)

ITEM	SEGMENT 1	SEGMENT 2	SEGMENT 3	SEGMENT 4	SEGMENT 5	SEGMENT 6	SEGMENT 7	SEGMENT 8	SEGMENT 9	TOTAL	UNIT
	SD 25	SD 25	US HWY 14, EAST	US HWY 14, WEST	US HWY 281	SD 45	SD 26	SD 45	SD 47		
Mobilization	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
SS-1H OR CSS-1H FOR FOG SEAL	75.8	92.5	16.0	16.0	66.8	40.2	5.1	82.5	26.1	421.0	Ton
Sand for Fog Seal	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	225.0	Ton
CRS-2P APHALT FOR SURFACE TREATMENT	407.6	497.3	86.3	86.0	359.4	216.2	27.3	443.9	140.2	2264.4	Ton
Modified Cover Aggregate	2793.0	-	-	-	-	-	-	-	-	2793.0	Ton
Modified Cover Aggregate	-	3407.5	-	-	-	-	-	-	-	3407.5	Ton
Modified Cover Aggregate	-	-	600.6	589.1	-	-	-	-	-	1189.7	Ton
Modified Cover Aggregate	-	-	-	-	2462.8	-	-	-	-	2462.8	Ton
Modified Cover Aggregate	-	-	-	-	-	1481.1	-	-	-	1481.1	Ton
Modified Cover Aggregate	-	-	-	-	-	-	187.1	-	-	187.1	Ton
Modified Cover Aggregate	-	-	-	-	-	-	-	3041.7	-	3041.7	Ton
Modified Cover Aggregate	-	-	-	-	-	-	-	-	960.8	960.8	Ton
Cold Applied Plastic Pavement Marking, 24"	-	-	247	-	223	-	-	-	-	470	Ft
Cold Applied Plastic Pavement Marking, Area	-	-	-	-	86.6	-	-	-	-	87	SqFt
Cold Applied Plastic Pavement Marking, Arrow	-	-	4	4	5	-	-	-	-	13	Each
Cold Applied Plastic Pavement Marking, Rail Road Crossing	-	2	-	-	-	-	-	-	-	2	Each
Groove Pavement for Pavement Marking, 24"	-	-	247	-	223	-	-	-	-	470	Ft
Groove Pavement for Pavement Marking, Area	-	-	-	-	86.6	-	-	-	-	87	SqFt
Groove Pavement for Pavement Marking, Arrow	-	-	4	4	5	-	-	-	-	13	Each
Groove Pavement for Pavement Marking, Rail Road Crossing	-	2	-	-	-	-	-	-	-	2	Each
Pavement Marking Masking, 25"	-	-	247	-	223	-	-	-	-	470	Ft
Pavement Marking Masking, Area	-	-	-	-	86.6	-	-	-	-	87	SqFt
Pavement Marking Masking, Arrow	-	-	4	4	5	-	-	-	-	13	Each
Pavement Marking Masking, Rail Road Crossing	-	2	-	-	-	-	-	-	-	2	Each
Pavement Marking Paint, White	590	766	106	105	669	356	45	731	231	3600	Gal
Pavement Marking Paint, Yellow	129	284	83	83	182	53	9	116	67	1005	Gal
Flagging	161	209	45	45	180	97	12	199	63	1012	Hour
Pilot Car	80	104	-	-	90	48	6	100	31	490	Hour
Traffic Control	1196	1340	747	747	1539	785	620	1200	942	9116	Unit
Traffic Control, Miscellaneous	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
Temporary Pavement Marking	26.2	34.1	7.4	7.4	29.5	15.8	2.0	32.5	10.3	165.2	Mile
Type C Advance Warning Arrow Panel	-	-	1	1	-	-	-	-	-	2	Each
Rail Road Protective Insurance	-	Lump Sum	-	-	-	-	-	-	-	Lump Sum	LS

**RATES OF MATERIALS**

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

**ASPHALT SURFACE TREATMENT:**

Segment	ROUTE	Station		Station
1	HWY 25	0+00	to	692+47.2

CRS-2P Asphalt for Surface Treatment at the rate of 31.1 tons applied 33 feet wide.  
 (Rate = 0.38 Gal./S.Y.).

Modified Cover Aggregate at the rate of 213.0 tons applied 33 feet wide.  
 (Rate= 22 Lbs./S.Y.).

CSS-1H or SS-1H for Fog Seal at the rate of 5.8 tons applied 33 feet wide.  
 (Rate = 0.07 Gal./S.Y.)

Segment	ROUTE	Station		Station
2	SD HWY 25	0+00	to	899+28.96

CRS-2P Asphalt for Surface Treatment at the rate of 29.2 tons applied 31 feet wide.  
 (Rate = 0.38 Gal./S.Y.).

Modified Cover Aggregate at the rate of 200.1 tons applied 31 feet wide.  
 (Rate= 22 Lbs./S.Y.).

CSS-1H or SS-1H for Fog Seal at the rate of 5.4 tons applied 31 feet wide.  
 (Rate = 0.07 Gal./S.Y.)

Segment	ROUTE	Station		Station
3	US HWY 14	0+00	to	189+86.88

CRS-2P Asphalt for Surface Treatment at the rate of 23.5 tons applied 25 feet wide.  
 (Rate = 0.38 Gal./S.Y.).

Modified Cover Aggregate at the rate of 161.3 tons applied 25 feet wide.  
 (Rate= 22 Lbs./S.Y.).

CSS-1H or SS-1H for Fog Seal at the rate of 4.4 tons applied 25 feet wide.  
 (Rate = 0.07 Gal./S.Y.)

Segment	ROUTE	Station		Station
4	US HWY 14	0+00	to	189+86.88

CRS-2P Asphalt for Surface Treatment at the rate of 23.5 tons applied 25 feet wide.  
 (Rate = 0.38 Gal./S.Y.).

Modified Cover Aggregate at the rate of 161.3 tons applied 25 feet wide.  
 (Rate= 22 Lbs./S.Y.).

CSS-1H or SS-1H for Fog Seal at the rate of 4.4 tons applied 25 feet wide.  
 (Rate = 0.07 Gal./S.Y.)

Segment	ROUTE	Station		Station
5	US HWY 281	0+00	to	470+18.4
5	US HWY 281	540+35.52	to	852+8.64

CRS-2P Asphalt for Surface Treatment at the rate of 23.5 tons applied 25 feet wide.  
 (Rate = 0.38 Gal./S.Y.).

Modified Cover Aggregate at the rate of 161.3 tons applied 25 feet wide.  
 (Rate= 22 Lbs./S.Y.).

CSS-1H or SS-1H for Fog Seal at the rate of 4.4 tons applied 25 feet wide.  
 (Rate = 0.07 Gal./S.Y.)

Segment	ROUTE	Station		Station
6	SD HWY 45	0+00	to	417+85.92

CRS-2P Asphalt for Surface Treatment at the rate of 27.3 tons applied 29 feet wide.  
 (Rate = 0.38 Gal./S.Y.).

Modified Cover Aggregate at the rate of 187.1 tons applied 29 feet wide.  
 (Rate= 22 Lbs./S.Y.).

CSS-1H or SS-1H for Fog Seal at the rate of 5.1 tons applied 29 feet wide.  
 (Rate = 0.07 Gal./S.Y.)

Segment	ROUTE	Station		Station
7	SD HWY 26	0+00	to	52+80.0

CRS-2P Asphalt for Surface Treatment at the rate of 27.3 tons applied 29 feet wide.  
 (Rate = 0.38 Gal./S.Y.).

Modified Cover Aggregate at the rate of 187.1 tons applied 29 feet wide.  
 (Rate= 22 Lbs./S.Y.).

CSS-1H or SS-1H for Fog Seal at the rate of 5.1 tons applied 29 feet wide.  
 (Rate = 0.07 Gal./S.Y.)

Segment	ROUTE	Station		Station
8	SD HWY 45	0+00	to	858+15.84

CRS-2P Asphalt for Surface Treatment at the rate of 27.3 tons applied 29 feet wide.  
 (Rate = 0.38 Gal./S.Y.).

Modified Cover Aggregate at the rate of 187.1 tons applied 29 feet wide.  
 (Rate= 22 Lbs./S.Y.).

CSS-1H or SS-1H for Fog Seal at the rate of 5.1 tons applied 29 feet wide.  
 (Rate = 0.07 Gal./S.Y.)

Segment	ROUTE	Station		Station
9	SD HWY 47	0+00	to	271+7.52

CRS-2P Asphalt for Surface Treatment at the rate of 27.3 tons applied 29 feet wide.  
 (Rate = 0.38 Gal./S.Y.).

Modified Cover Aggregate at the rate of 187.1 tons applied 29 feet wide.  
 (Rate= 22 Lbs./S.Y.).

CSS-1H or SS-1H for Fog Seal at the rate of 5.1 tons applied 29 feet wide.  
 (Rate = 0.07 Gal./S.Y.)

**Table: Additional Asphalt and Aggregate Quantities**

Segment	Route	Location	CRS-2P (Tons)	Aggregate (Tons)	CSS-1H (Tons)
3	US HWY 14	US HWY 14	1.35	9.26	0.25
4	US HWY 14	US HWY 14	1.35	9.26	0.25
5	US HWY 281	Turn Lane 175 <sup>th</sup> St. Intersection	2.07	14.15	0.38
5	US HWY 281	Turn Lane 177 <sup>th</sup> St. Intersection	1.45	9.94	0.27
5	US HWY 281	Turn Lane at Tulare, SD	1.73	11.87	0.32

**SEQUENCE OF OPERATIONS**

The following Sequence of Operations shall be used for this project. The Contractor may submit an alternate Sequence of Operations, which shall be submitted to the Area Engineer a minimum of 2 weeks prior to the preconstruction meeting.

1. Install Construction Signing
2. Install Cold Applied Plastic Pavement Markings
3. Install Pavement Marking Masking
4. Install Temporary Pavement Markings
5. Apply Asphalt Surface Treatment
6. Apply Fog Seal
7. Apply Permanent Pavement Markings
8. Project Cleanup and Removal of Construction Signing

**TRAFFIC CONTROL**

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

Storage of vehicles and equipment shall be 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.

**TRAFFIC CONTROL (CONTINUED)**

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

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

Traffic approaching the project from intersecting roadways, streets, and approaches must be adequately accommodated. Major intersections or large commercial entrances may require additional signing, flaggers, and channelizing devices on a temporary basis until work activities pass these areas.

"ROAD WORK NEXT \_\_\_ MILES", "LOOSE GRAVEL", and "END ROAD WORK" signs are the only signs that need to be mounted on Fixed Location Breakaway Sign Supports. "ROAD WORK AHEAD", "FLAGGER", "ONE LANE ROAD AHEAD" and any other signs may be mounted on portable supports. The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas, and one foot above the pavement in rural areas. The signs mounted on portable supports shall be moved as necessary to keep current with the work activities.

Traffic Control units, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used. Traffic Control units will be paid for separately for each project.

The Contractor shall furnish, install and maintain "LOOSE GRAVEL" signs with "40 MPH" advisory speed plate signs upon start of surface treatment operations at each end of the project. In addition, "LOOSE GRAVEL" signs with "40 MPH" advisory speed plates shall be installed at 3 mile intervals throughout each project and at other location(s) determined in the field by the Engineer. The aforementioned signs shall be removed after the final brooming has been completed.

Until initial brooming, additional flagger(s) and FLAGGER symbol sign(s) shall be provided to alert the traveling public entering completed portions of the project to the potential of airborne chips.

The flagger(s) shall provide each motorist with a printed notice on the Contractor's letterhead similar to the one shown. Cost of the notice shall be incidental to other contract bid items.

**"CONTRACTORS LETTERHEAD"**

***THIS HIGHWAY IS BEING RESURFACED WITH A CHIP SEAL COAT.***

***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 OR PASSING 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.***

The Contractor shall have enough printed notices on hand to allow one for every vehicle (Current ADT).

**PROJECT BROOMING**

All material shall be broomed off of bridges and curb & gutter areas adjacent to the bridges. No material shall be broomed under the guardrail, including the 3 cable guardrail or into the drop inlets. This material from the curb & gutter areas of the bridges, the guardrail areas of the bridges and the drop inlets shall be disposed of in a manner satisfactory to the Engineer.

No material shall be broomed into the ditches or on the boulevards in residential and commercial areas where the adjacent landowner conducts the mowing of the right-of-way. This material shall be disposed of in a manner satisfactory to the Engineer.

Material that is broomed onto the roadway inslopes shall not be left in piles or windrows. The material shall be evenly distributed at a height that will not hinder mowing operations or cause dispersion of the material into the traveled roadway when passed over with a mower.

In lieu of the requirements of Sec. 360.3H, paragraph 5 of the Standard Specifications, loose material at the following locations in the table below shall be removed by the Contractor by means of a pickup broom having integral mounted self-contained storage using water to control dust and shall be removed during the cool period of early morning of the day following application or as directed by the Engineer. Removed material shall be disposed of at sites provided by the Contractor and approved by the Engineer.

Segment	Route	Description
5	US 281	City Limits of Tulare
8	SD 45	City Limits of Miller

This list may not be complete. Additional areas may need attention as directed by the Engineer.

At no time before, during, or after placement of Asphalt Surface Treatment will a broom without working integral mounted self-contained storage using water (in working condition) be used.

Brooming will be incidental to the contract for Asphalt Surface Treatment.

**MODIFIED COVER AGGREGATE (SEGMENT 1 THRU 9)**

A minimum of 14 days prior to construction the Contractor shall submit aggregate samples from each aggregate source used for the project to be tested by the Area Office along with the Contractor's production sample test results. Project operations may not begin until production test results are received and informational samples are tested. The samples must be collected from the stockpile location. A passing sample is required prior to use on the project from each source.

Quality tests on the Cover Aggregate are required by specification. The Contractor shall notify the Area Office prior to sampling and a representative from the Area Office shall witness all sampling of aggregates to be submitted to the Central Testing Laboratory.

**MODIFIED COVER AGGREGATE (SEGMENT 1 THRU 9) (CONTINUED)**

Cover Aggregate shall be screened over a 1-inch screen prior to immediate application.

Cover Aggregate shall conform to the following gradation requirements:

Sieve Size	Percent Passing
3/8 inch	100
¼ inch	25-70
No. 4	0 - 25
No. 8	0 - 5
No. 200	0 - 1.3

The Flakiness Index shall not exceed 30%. Non-processed natural aggregate shall be subject to flakiness testing at a frequency of one test minimum per aggregate source.

Application of the Modified Cover Aggregate shall be maintained within 500 feet or have a time limit of 1 minute between the application of the CRS-2P for Asphalt Surface Treatment and the application of the cover aggregate, whichever amounts to the shorter period of time.

The Contractor shall continue chip spreader progress, forward, thru the asphalt application at any end where work will be temporarily shut down for a time greater than 5 minutes, to allow for satisfactory uniform rolling of the placed aggregate. The Contractor shall not allow the chip spreader, trucks, or other equipment to lie dormant on the aggregate while transitioning between asphalt distributor loads and or any other temporary shutdown of production, before uniform rolling is complete.

All passes of the rollers shall be completed within 8 minutes of application of the CRS-2P Asphalt for Surface Treatment.

All other requirements for Type 1B Cover Aggregate shall apply.

A failure on the #200 sieve will cause all operations to cease immediately and the Engineer will determine correction, if necessary, needed prior to restarting operations.

**FOG SEAL**

The fog seal shall be placed following the completion of the chip seal and prior to the placement of the permanent pavement marking. Application of the fog seal shall begin no earlier than the morning following application of the chip seal but no later than three days after the application of each day's chip seal.

The application of the fog seal will be permitted only when the ambient air and surface temperature on the project are both at least 60° F in the shade and conditions are dry.

Immediately prior to the application of the fog seal the Contractor will be required to broom the entire width of the chip seal. A CSS-1h or SS-1h emulsion shall be used for the fog seal application. A water-to-emulsion rate of 1:1 should be used for the binder application.

Bill of Laidings showing both the CSS-1h or SS-1h and water will be required.

The Contractor shall avoid placing the Fog Seal over the newly placed Cold Applied Permanent Pavement Markings. The Contractor shall be responsible for removing any CSS-1h or SS-1h that is on the markings. All costs associated with cleaning the pavement markings shall be incidental to the contract unit price per ton for CSS-1h or SS-1h.

Blotting Sand for Fog Seal shall conform to the Standard Specifications Section 879.1.B except for the following requirements:

Passing a 3/8 Inch Sieve	100%
Passing a No. 4 Sieve	85-100%
Passing a No. 8 Sieve	60-95%
Passing a No. 40 Sieve	5-45%
Passing a No. 200 Sieve	0-10.0%

The Plasticity Index shall not exceed three (3).

The shale content or other particles of low specific gravity (less than 1.95) passing the No. 4 sieve shall not exceed 4.5%

Prior to hauling, Blotting Sand shall be screened to minimize segregation, eliminate oversize and effectively breakup or discard material bonded into chunks.

The Contractor shall maintain traffic control on the fog sealing area until the fog seal is cured enough to prevent pickup on vehicles. Any areas where vehicles are allowed to drive and pickup will be considered unacceptable and the quantities will be deducted. Sand shall be applied at intersections or other locations as directed by the Engineer.

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**BRIDGES, APPROACH SLABS, SLEEPER SLABS, STRIP SEALS,  
RAILROAD CROSSINGS, MANHOLES, WATER VALVES AND CONCRETE**

Asphalt Surface Treatment shall not be placed on any of the bridges, approach slabs, sleeper slabs, strip seals, railroad crossings, manholes, water valves or any type of concrete on these projects.

All areas listed shall be protected with proper masking prior to application of the Asphalt Surface Treatment. Any areas not properly protected shall be cleaned to the satisfaction of the Engineer at the Contractor's expense.

**HAUL ROAD**

The Contractor shall be responsible for any haul roads used to transport material to the project site. The State will not participate in the cost of restoration of any haul roads used by the Contractor.

**TEMPORARY PAVEMENT MARKINGS**

**Paint will not be allowed for Temporary Pavement Marking.** Temporary road markers shall be used to mark dashed centerline and applicable lane lines.

The temporary road markers shall have secure covers. The Contractor will be required to remove the covers manually and properly dispose the covers. Any markers that are non-reflective will be cleaned. Cleaning of road markers will be incidental to the contract unit price per mile for TEMPORARY PAVEMENT MARKINGS. Petroleum products shall not be used to clean markers.

All costs associated with furnishing, installing, removing covers and cleaning of the Temporary Road Markers used on this project will be incidental to the contract unit price per mile for TEMPORARY PAVEMENT MARKINGS.

The Contractor is allowed to use DO NOT PASS and PASS WITH CARE signs for a period of 2 weeks to mark no passing zones on roads with an average daily traffic of 2500 vehicles or less. It is estimated that the following amounts of DO NOT PASS and PASS WITH CARE signs will be required to mark the no passing zones, should the Contractor elect to use these signs.

*Table: Estimated DO NOT PASS and PASS WITH CARE signs per segment*

Segment	Location	DO NOT PASS	PASS WITH CARE
1	SD HWY 25	14	13
2	SD HWY 25	49	47
3	US HWY 14	0	0
4	US HWY 14	0	0
5	US HWY 281	14	13
6	SD HWY 45	2	1
7	SD HWY 26	4	4
8	SD HWY 45	6	5
9	SD HWY 47	10	9

**TEMPORARY PAVEMENT MARKINGS (CONTINUED)**

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.

Flagger symbol signs (W20-7) 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 of temporary road markers. The traffic control device used shall be moved to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1) sign, a Workers symbol sign (W21-1), 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.

The total length of no passing zone on this project is estimated to be 15.58 miles.

*Table: Estimated Total No Pass Zones per Segment*

Segment	Location	Miles
1	SD HWY 25	1.99
2	SD HWY 25	7.55
5	US HWY 281	2.84
6	SD HWY 45	0.16
7	SD HWY 26	0.65
8	SD HWY 45	0.67
9	SD HWY 47	1.53

Quantities of Temporary Pavement Markings consist of:  
One pass on top of the Seal Coat and one pass on Fog Seal.

**PERMANENT PAVEMENT MARKINGS**

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 with an optional advance warning arrow panel.

All materials shall be applied as per manufacturer's recommendations.

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. All materials shall be applied as per manufacturer's recommendations.

The Contractor will be required to repaint all existing pavement marking including centerline, edge line, lane lines, word messages, turn arrows, stop bars, railroad crossings, pedestrian crossings, etc. This list is approximate. 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, etc. before the markings are obliterated. The Engineer will be provided a copy of the pavement marking inventory. Additional quantities are included in the estimate of quantities to paint the additional pavement marking. The cost of the tabs shall be incidental to the contract unit prices for the various items.

Permanent pavement markings shall be furnished and applied by the Contractor in accordance with Section 633 of the Standard Specifications and the details in these plans. **The rate of application of glass beads shall be 8 lbs per gallon of paint.**

The application of permanent pavement marking paint shall not begin until 7 calendar days following completion of final surfacing and shall be completed within 21 calendar days following completion of final surfacing when temporary road markers are used to mark No Passing Zones.

The application of permanent pavement marking paint shall not begin until 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.

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.

The liquidated damages shall apply up to the Contract Completion Date, as extended. After the completion date, liquidated damages will be assessed in accordance with section 8.7 of the Standard Specifications, until the Permanent Pavement Marking is completed, even though the project may be open to traffic.

Permanent Pavement Markings shall be applied to the entire corridor for Segment 5, Station 0+00.00 to Station 852 + 08.64.

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**COLD APPLIED PLASTIC PAVEMENT MARKING**

Cold Applied Plastic Pavement Marking shall be placed prior to asphalt surface treatment on all projects as noted in the plans and as directed by the Engineer.

Cold Plastic Pavement Marking shall be placed in the same location as existing markings, unless otherwise directed by the Engineer. Existing pavement markings shall be completely removed by grinding prior to installing the new Cold Plastic Pavement Marking.

It shall be the Contractor's responsibility to visit the project site to determine what type of material(s) are present and the extent of the work required to remove the existing pavement markings. Cost for removing existing pavement marking shall be incidental to the various contract unit prices for pavement marking.

Once work starts on this portion of the project it shall be pursued in a continuous manner until the project is completed. Cold Plastic Pavement Markings shall be installed as follows:

*Table: Estimated Cold Applied Plastic Pavement Markings per segment*

Segment	ITEM	LOCATION	QUANTITY
2	RAILROAD CROSSING	SD 25	2
3	GORE AREAS, 24" YELLOW	US HWY 14	247'
3	RIGHT-TURN ARROWS	US HWY 14, EBL	4
4	LEFT-TURN ARROWS	US HWY 14, WBL	4
5	RIGHT-TURN ARROWS	US HWY 281 & 177 <sup>TH</sup> ST JUNCTION	3
5	LEFT-TURN ARROWS	US HWY 281 & MAIN ST. JUNCTION; TULARE, SD	2
5	GORE AREAS, 24" YELLOW	US HWY 281 & MAIN ST. JUNCTION; TULARE, SD	223'
5	BULLET NOSE AREA	US HWY 281 & MAIN ST. JUNCTION; TULARE, SD	86.6 SqFt

New pavement markings shall be provided and applied by the Contractor.

**PAVEMENT MARKING MASKING**

Immediately prior to sealing, durable markings shall be covered with an approved pavement marking masking. All cost for furnishing, installing, removing, and disposing of masking shall be incidental to the various contract unit prices for Pavement Marking Masking.

The following items shall be masked:

*Table: Estimated pavement marking Masking per segment*

Segment	ITEM	LOCATION	QUANTITY
2	RAILROAD CROSSING	SD 25	2
3	GORE AREAS, 24" YELLOW	US HWY 14	247'
3	RIGHT-TURN ARROWS	US HWY 14, EBL	4
4	LEFT-TURN ARROWS	US HWY 14, WBL	4
5	RIGHT-TURN ARROWS	US HWY 281 & 177 <sup>TH</sup> ST JUNCTION	3
5	LEFT-TURN ARROWS	US HWY 281 & MAIN ST. JUNCTION; TULARE, SD	2
5	GORE AREAS, 24" YELLOW	US HWY 281 & MAIN ST. JUNCTION; TULARE, SD	223'
5	BULLET NOSE AREA	US HWY 281 & MAIN ST. JUNCTION; TULARE, SD	86.6 SqFt

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### ITEMIZED LIST FOR TRAFFIC CONTROL SD 47 (Segment 9)

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-1	36" x 18"	ROAD WORK NEXT ## MILES	2	17	34
G20-2	36" x 18"	END ROAD WORK	2	17	34
W3-4	48" x 48"	BE PREPARED TO STOP	2	34	68
W8-7	48" x 48"	LOOSE GRAVEL	6	34	204
W13-1P	30" x 30"	ADVISORY SPEED PLATE	6	21	126
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	6	34	204
W20-4	48" x 48"	ONE LANE ROAD ##### FT. OR AHEAD	4	34	136
W20-7	48" x 48"	FLAGGER (SYMBOL)	4	34	136
				<b>TOTAL UNITS</b>	<b>942</b>