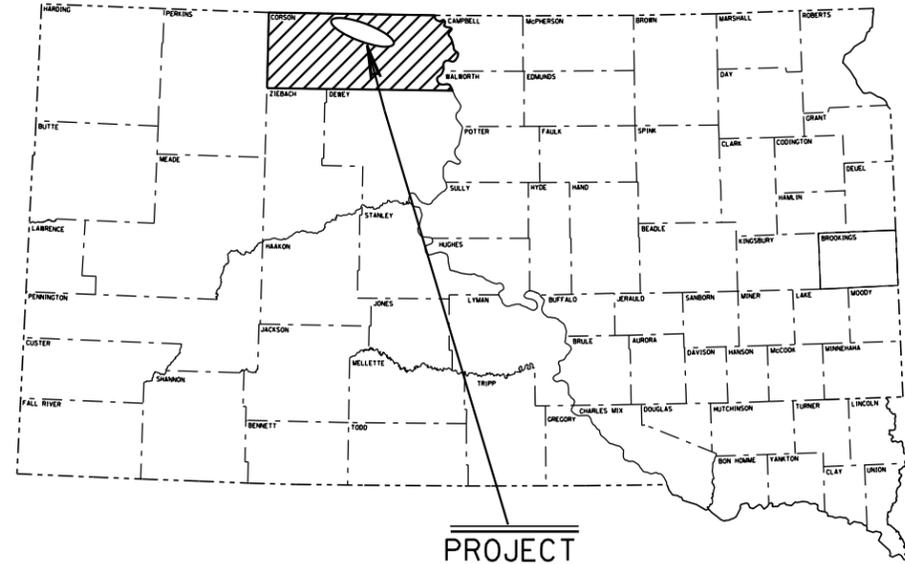


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|---------------------------|--------------|-----------|--------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
| | PH 000S(253) | 1 | 4 |
| Plotting Date: 01/24/2014 | | | |



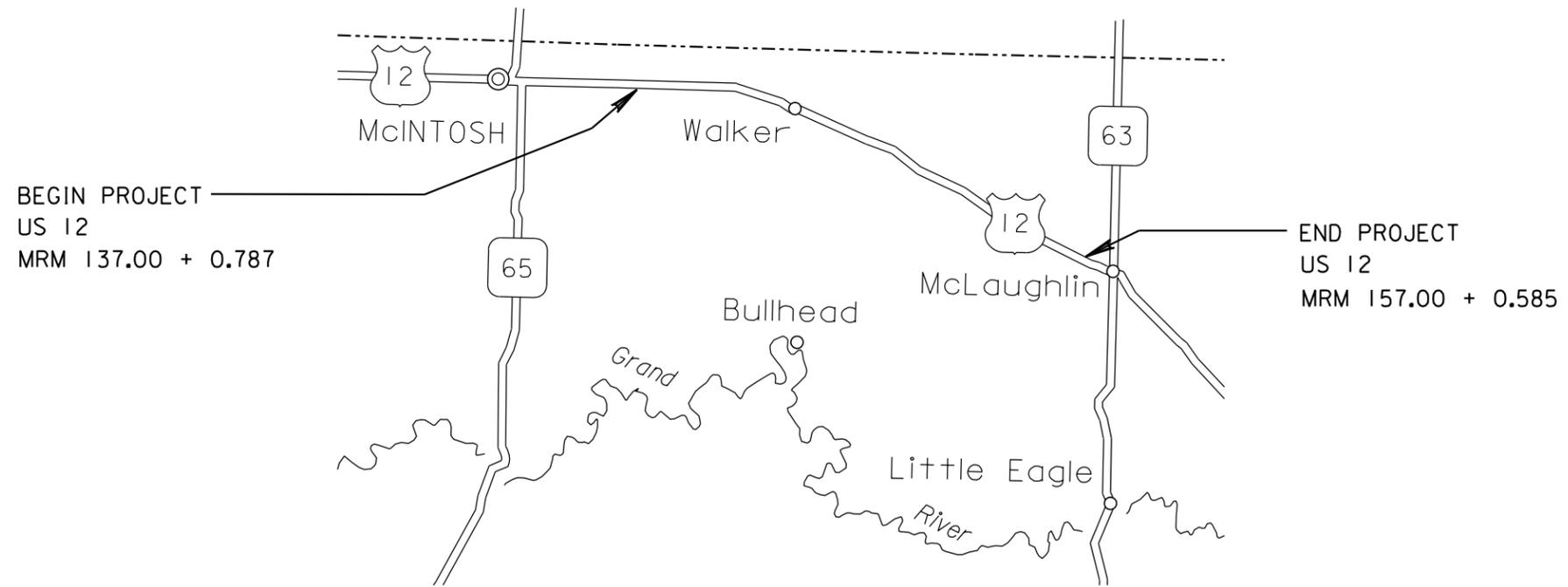
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
PROJECT PH 000S(253)
US HIGHWAY 12
CORSON COUNTY

DURABLE PAVEMENT MARKING
PCN 02AY

INDEX OF SHEETS

| | |
|--------------|--------------------------|
| Sheet 1 | Title Sheet |
| Sheets 2 & 3 | Estimate and Notes |
| Sheet 4 | Pavement Marking Details |



DESIGN DESIGNATION

| | |
|------------|--------|
| ADT (2012) | 418 |
| ADT (2032) | 603 |
| DHV | 91.1 |
| D | 51% |
| T DHV | 11.6% |
| T ADT | 25.6% |
| V | 70 MPH |

STORM WATER PERMIT
(None Required)

LENGTH 19.798 MILES

11

PLOT SCALE - 1:176,923

PLOTTED FROM - IRPR25291

PLOT NAME - 1
FILE - ... \DGN\ DURABLES\2014\ DURABLES.DGN

| | | | |
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ESTIMATE OF QUANTITIES

| Bid Item Number | Item | Quantity | Unit |
|-----------------|---|----------|------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 633E1200 | Waterborne Pavement Marking Paint with High Grade Polymer, White | 1,098.0 | Gal |
| 633E1205 | Waterborne Pavement Marking Paint with High Grade Polymer, Yellow | 227.0 | Gal |
| 633E5100 | Grooving for Durable Pavement Marking, 4" | 251,518 | Ft |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |

SPECIFICATIONS

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

GENERAL NOTES

Surface preparation, removal and cleaning work shall be conducted in such a manner as to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or nuisance to property owners.

Work will be allowed only during daylight hours.

MAINTENANCE OF TRAFFIC

Traffic shall be maintained in accordance with the Manual on Uniform Traffic Control Devices and as follows:

Mobile operations shall have appropriate devices on the equipment (that is, high-intensity rotating, flashing, oscillating, or strobe lights, signs, or special lighting) all other equipment shall display flashing amber lights visible to traffic in all directions as a minimum, or shall use a separate vehicle with appropriate warning devices.

Each vehicle in the pavement marking operation is required to display a slow moving vehicle emblem when operating at speeds of 25 miles per hour or less (These signs are removed when operating above 25 miles per hour).

A lead vehicle is optional if the striper operates in its own lane. A trail vehicle shall be used at all times. The trail vehicle shall operate in the same position as the striper. The trail vehicle shall display a sign with the legend "WET PAINT AHEAD" and an arrow panel operating in the caution mode (2 lane highways), or an alternative acceptable to the Engineer shall be used at all times. PASS WITH CARE SIGNS shall also be used.

All cost for signs and traffic control devices shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

GROOVE PAVEMENT FOR PAVEMENT MARKING, 4"

The groove shall be made using stacked diamond tipped blade cutting heads to prevent damage at the joints.

Grooving for durable pavement markings will replicate the existing 4" pavement marking lines.

Unless otherwise specified in the plans, the Contractor shall groove the surface for pavement markings as specified below:

The grooving shall be completed within the following tolerances:

Depth of groove - Sum of pavement marking thickness and reflective media + 15 mils ±5 mils

Width of groove 5" to 6" ± 1/8"

Length of skip lines 10'-6" ± 3"

Tapers at begin/end lines 6" to 9"

The equipment shall be capable of:

- grooving the total width of the groove in one pass or uniform depths with multiple passes
- grooving without causing damage to the pavement joints or joint sealant material
- providing uniform alignment and depth
- moving continuously to permit a mobile traffic work operation

If damage to joints, joint sealant material, backer rod, etc. occurs, the grooving operation shall be stopped and modifications shall be made to the grooving operation to prevent further damage. Damage caused to joints, the joint sealant material, backer rod, etc. shall be repaired or replaced by the Contractor, as directed by the Engineer. No additional payment will be made for the repair work or any reapplication of the pavement marking in the area of the repair.

The bottom of the groove shall be uniform and free of loose material. The groove shall be flat and of uniform depth for the entire width of the groove.

PAVEMENT MARKING PAINT WITH HIGH-BUILD ACRYLIC POLYMER

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

The Contactor shall complete the application of Permanent Pavement Marking within 14 calendar days following completion of existing marking removal.

This material shall be comprised of a durable high build, low VOC, fast drying, waterborne traffic paint with an acrylic polymer emulsion and with reflective media adhered to the paint. The reflective media shall consist of glass beads as well as bonded core reflective elements.

The bonded core reflective elements shall contain either clear or yellow tinted microcrystalline ceramic beads bonded to the outer surface. All microcrystalline ceramic beads bonded to reflective elements shall have a minimum index of refraction of 1.8 when tested using the liquid oil immersion method.

The initial retro-reflectance shall be at least 350 mcd/ft²/fc for white and at least 275 mcd/ft²/fc for yellow with the measurements taken within 7 days of application.

RATES OF MATERIALS FOR HIGH-BUILD ACRYLIC POLYMER PAINT

Solid 4" line = 27.8 Gals/Mile
Glass Beads = 5.3 Lbs/Gal.
Composite Reflective Elements = 2.1 Lbs/Gal.

All cost for materials, labor and equipment necessary to furnish and install the pavement markings shall be incidental to the contract unit price per gallon for Waterborne Pavement Marking Paint with High Grade Polymer, White or Yellow.

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| S.D. | PH 000S (253) | 3 | 4 |

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

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

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

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 designated option borrow 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: staging areas, borrow sites, waste disposal sites, and all material processing sites.

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.

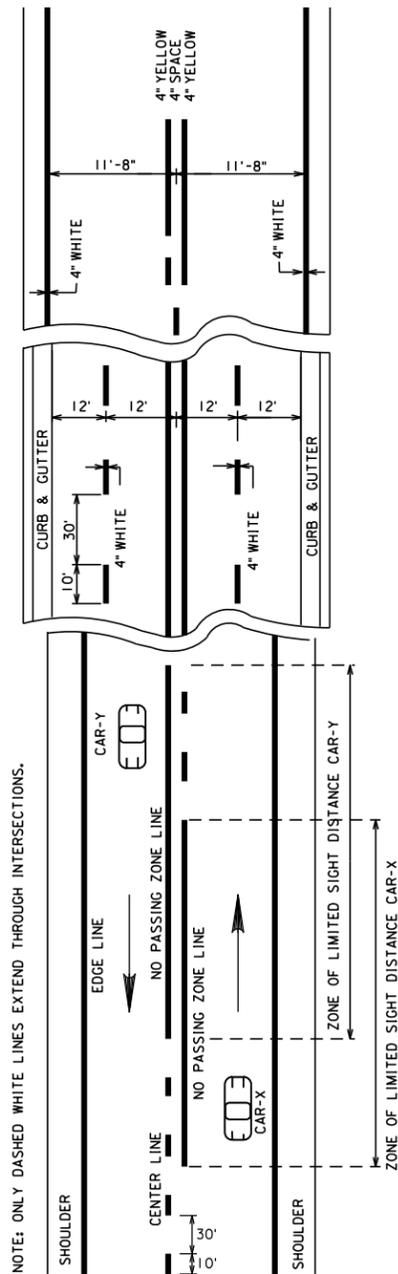
SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

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|-----------------------------|---------------|--------------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
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| Plotting Date: 01/08/2014 | | | |

PAVEMENT MARKING DETAILS

APPLICATION OF PAVEMENT MARKING FOR

UNDIVIDED ROADWAY



| ESTIMATE OF QUANTITIES | | |
|------------------------|--------------------------------|-----------|
| ROUTE | ACRYLIC PAVEMENT MARKING PAINT | |
| | WHITE | YELLOW |
| US 12 | 1098 Gals. | 227 Gals. |
| TOTALS | 1,098 Gals. | 227 Gals. |