



Iowa Department of Transportation

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM HARRISON COUNTY MISCELLANEOUS

1 Mile E. Of Missouri River (Trap Bag Removal)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.

NO MILEAGE SUMMARY



REVISIONS

TOTAL

8

PROJECT IDENTIFICATION NUMBER

12-43-030-010

PROJECT NUMBER

ER-30-1(141)--28-43

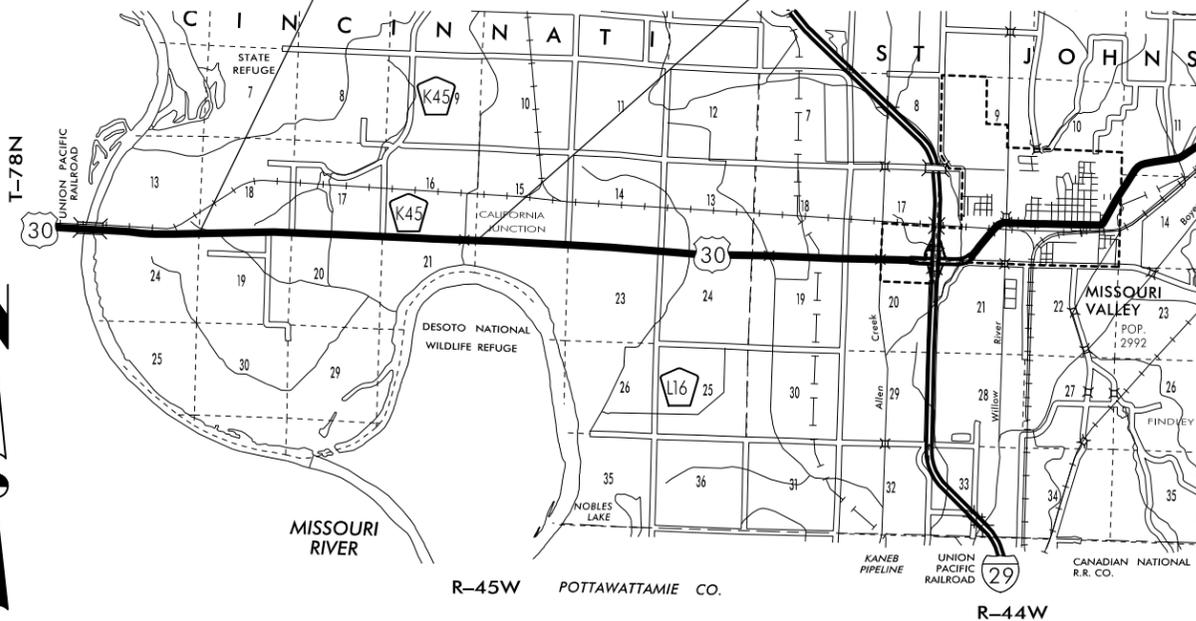
R.O.W. PROJECT NUMBER

INDEX OF SHEETS

| No. | DESCRIPTION |
|-----------------|---|
| A Sheets | Title Sheets |
| A.1 | Title Sheet & Location Map |
| B Sheets | Typical Cross Sections and Details |
| B.1 - 2 | Typical Cross Sections and Details |
| C Sheets | Quantities and General Information |
| C.1 | Project Description |
| C.1 | Estimated Project Quantities |
| C.2 | Estimate Reference Information |
| C.3 | Standard Road Plans |
| C.3 | General Notes |
| C.3 - 4 | Tabulations (beg. with tab. of incidentals if needed) |
| J Sheets | Traffic Control and Staging Sheets |
| J.1 | Tabulation of Special Events |
| J.1 | Traffic Control Plan |
| J.1 | Staging Plan |

STA. 1+00
BEGIN PROJECT

STA. 159+60
END PROJECT



NOT TO SCALE

DESIGN DATA RURAL

| | | |
|--------------|------|--------|
| 2010 AADT | 5100 | V.P.D. |
| 20 AADT | | V.P.D. |
| 20 DHV | | V.P.H. |
| TRUCKS | 28 % | |
| Total | | |
| Design ESALs | | |

INDEX OF SEALS

| SHEET NO. | NAME | TYPE |
|-----------|------------------|-------------------------|
| A.1 | James Schoenrock | Primary Signature Block |
| | | |
| | | |
| | | |
| | | |

ROADWAY DESIGN



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

James Schoenrock 10-04-2011
Signature Date

James Schoenrock
Printed or Typed Name

My license renewal date is December 31, 2012

Pages or sheets covered by this seal: A.1, B.1-B.2, C.1-C.4, J.1

MISCELLANEOUS
ER-30-1(141)--28-43

LETTING DATE
10-12-2011

HARRISON CO.

ENGLISH

IOWA DOT

DESIGN TEAM Schoenrock\Drake

HARRISON COUNTY

PROJECT NUMBER

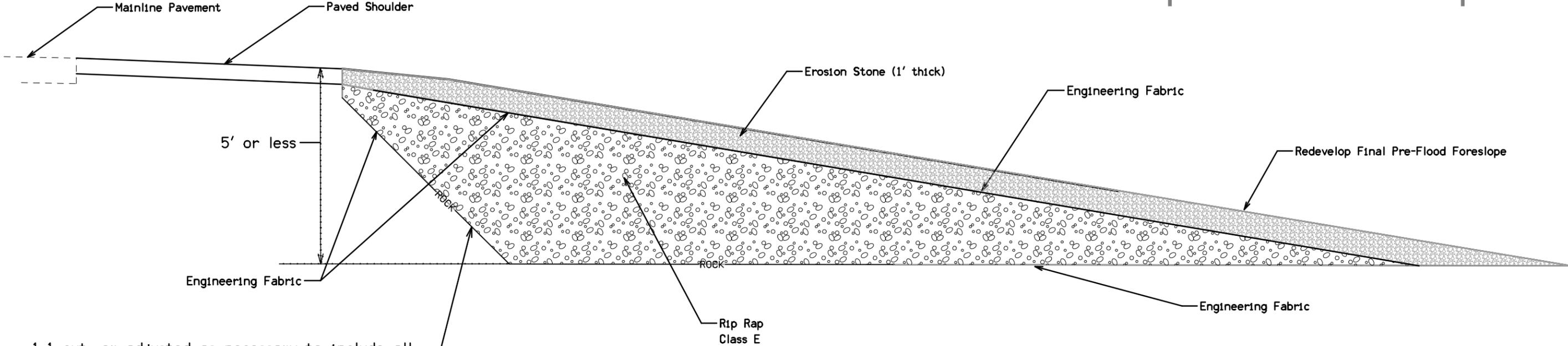
ER-30-1(141)--28-43

SHEET NUMBER

A.1

PCC Shoulder with Armored Foreslope

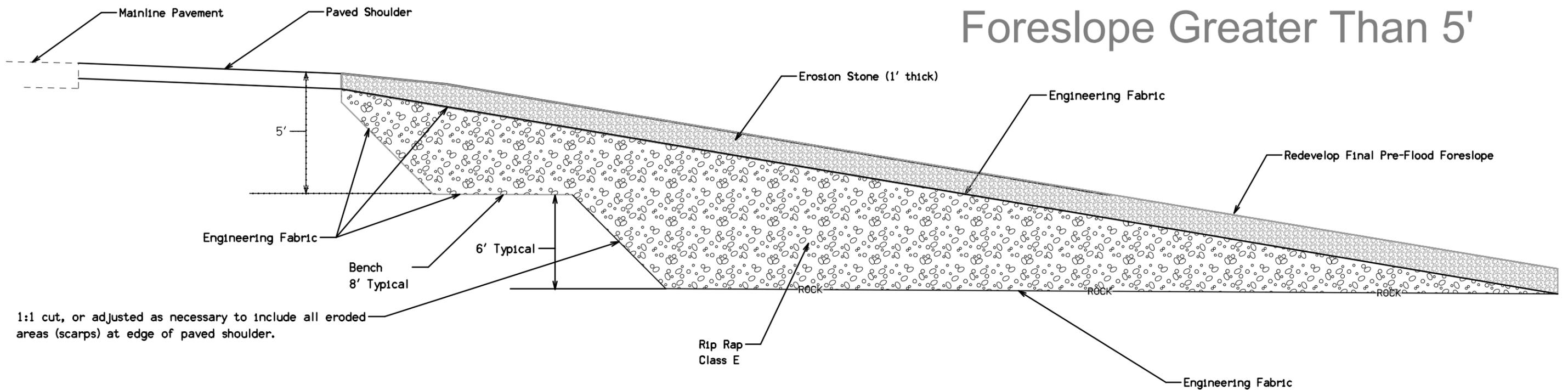
Foreslope < 5 Ft. In Depth



The Contractor shall construct benches for the riprap material on the foreslope as shown on this sheet. All loose soil from the foreslope and benching shall be deposited at the toe of slope. The contractor shall re-blade this loose soil back over the foreslope after riprap and erosion stone has been placed on the foreslope.

| Location | Station | Station | Distance | Depth | Width |
|--------------|---------|---------|----------|-------|-------|
| | | | (ft.) | (ft.) | (ft.) |
| N. Foreslope | None | | 300 | 1 | 20 |
| S. Foreslope | 19+00 | 28+00 | 900 | 1 | 15 |
| | 28+00 | 28+50 | 50 | 2 | 20 |
| | 90+75 | 104+00 | 1,325 | 1 | 10 |
| | 104+00 | 105+00 | 5,400 | 1 | 10 |
| | 105+00 | 159+00 | 100 | 2 | 10 |

PCC Shoulder with Armored Foreslope



| Location | Station | Station | Distance | Depth | Width |
|--------------|---------|---------|----------|-------|-------|
| | | | (ft.) | (ft.) | (ft.) |
| S. Foreslope | 35+00 | 42+00 | 700 | 6 | 2 |
| | 28+50 | 35+00 | 650 | 5 | 10 |
| | | | | | |
| | | | | | |
| | | | | | |

If foreslope is more than 12' high, additional benches similar to above will be needed to address individual site damage.

Where applicable the Contractor shall construct benches for the riprap material on the foreslope as shown on this sheet. All loose soil from the foreslope and benching shall be deposited at the toe of slope. The contractor shall re-blade this loose soil back over the foreslope after riprap and erosion stone has been placed on the foreslope.

Additional Areas 5 feet and deeper will be determined by the Engineer in the field.

PROJECT DESCRIPTION

100-1D
10-18-05

The intent of this project is to remove the flood mitigation measures and return the roadway to its pre-flood configuration. These measures entail removal of approximately 20,410 LF of Trap Bags containing approximately 23,472 Ton of granular material, to be transported to 5 different sites within Harrison and Pottawattamie Counties. The project also includes rebuilding the existing shoulders with riprap and erosion stone.

The Contractor is required to provide the Engineer 7 days notice in advance of intent to begin work on this project.

ESTIMATED PROJECT QUANTITIES

| ITEM NO. | ITEM CODE | ITEM | UNIT | QUANTITIES | | | | |
|----------|--------------|--|------|------------|------------|--------------|------------|------------|
| | | | | ESTIMATED | | | AS BUILT | |
| | | | | Division 1 | Division 2 | TOTAL | Division 1 | Division 2 |
| 1 | 2507-3250005 | ENGINEERING FABRIC | SY | 71,840.0 | | 71840 | | |
| 2 | 2507-6800061 | REVTMENT, CLASS E | TON | 7,076.0 | | 7076 | | |
| 3 | 2507-8029000 | EROSION STONE | TON | 7,694.0 | | 7694 | | |
| 4 | 2518-6910000 | SAFETY CLOSURE | EACH | 2 | | 2 | | |
| 5 | 2527-9263109 | PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED | STA | 234.00 | | 234 | | |
| 6 | 2528-8445110 | TRAFFIC CONTROL | LS | 1.00 | | 1 | | |
| 7 | 2528-8445113 | FLAGGERS | EACH | | | See Proposal | | |
| 8 | 2528-8445115 | PILOT CARS | EACH | | | See Proposal | | |
| 9 | 2533-4980005 | MOBILIZATION | LS | 1.00 | | 1 | | |
| 10 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , GRANULAR MATERIAL, MISSOURI VALLEY MAINTENANCE GARAGE | LS | | 1.00 | 1 | | |
| 11 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , GRANULAR MATERIAL, N. CB MAINTENANCE GARAGE | LS | | 1.00 | 1 | | |
| 12 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , GRANULAR MATERIAL, NEOLA MAINTENANCE GARAGE | LS | | 1.00 | 1 | | |
| 13 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , GRANULAR MATERIAL, S. CB MAINTENANCE GARAGE | LS | | 1.00 | 1 | | |
| 14 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , GRANULAR MATERIAL, SB 1-29 WEIGH SCALE | LS | | 1.00 | 1 | | |
| 15 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , TEMPORARY CRASH CUSHIONS | LS | | 1.00 | 1 | | |
| 16 | 2599-9999009 | TRAP BAG REMOVAL | LF | 20,410.0 | | 20410 | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

ESTIMATE REFERENCE INFORMATION

| ITEM NO. | ITEM CODE | DESCRIPTION |
|----------|--------------|--|
| 1 | 2507-3250005 | ENGINEERING FABRIC Refer to the B-sheets for additional information and placement location. |
| 2 | 2507-6800061 | REVTMENT, CLASS E Riprap shall be placed along the foreslope of US 30 as noted in the C-sheets. The Contractor shall construct benches for the riprap material on the foreslope as shown on sheets B.1 and B.2. All loose soil from the foreslope and benching shall be deposited at the toe of the slope. The Contractor shall re-blade this loose soil back over the foreslope after riprap and erosion stone have been placed on the foreslope. This work will be considered incidental to the bid item Revetment, Class E. |
| 3 | 2507-8029000 | EROSION STONE Erosion Stone shall be placed over the Revetment on foreslopes of US 30 as shown on the B-sheets and noted on the C-sheets. |
| 4 | 2518-6910000 | SAFETY CLOSURE Refer to Tab. 108.13A in the C-sheets for locations. |
| 5 | 2527-9263109 | PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED Refer to Tabulation 108-22 for location. |
| 6 | 2528-8445110 | TRAFFIC CONTROL -- |
| 7 | 2528-8445113 | FLAGGERS -- |
| 8 | 2528-8445115 | PILOT CARS -- |
| 9 | 2533-4980005 | MOBILIZATION -- |
| 10 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , GRANULAR MATERIAL, MISSOURI VALLEY MAINTENANCE GARAGE 3,000 ton is to be stockpiled at the Missouri Valley Maintenance Garage. The Contractor may temporarily stockpile the granular material at the abandoned SB or NB 1-29 Weigh Scales but must have all material moved to the Missouri Valley Maintenance Garage within the number of working days specified by the contract. Mileage from the US-30 Trap Bag installation to the Missouri Valley Maintenance Garage is 10.9 miles. The Contractor will need to contact Todd Frank, Phone# 712-243-3114, 48 hours prior to anticipated delivery of granular material to the Missouri Valley Maintenance Garage. Hauling cost shall be reflected in the bid item for Delivery and Stockpile Materials, Granular Material. |
| 11 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , GRANULAR MATERIAL, N. CB MAINTENANCE GARAGE 1,000 ton is to be stockpiled at the Council Bluffs N. Maintenance Garage. The Contractor may temporarily stockpile the granular material at the abandoned SB or NB 1-29 Weigh Scales but must have all material moved to the Council Bluffs N. Maintenance Garage within the number of working days specified by the contract. Mileage from the US-30 Trap Bag installation to the Council Bluffs N. Maintenance Garage is 27.8 miles. The Contractor will need to contact Dick Mattox, Phone# 712-366-7543, 48 hours prior to anticipated delivery of granular material to the Council Bluffs N. Maintenance Garage. Hauling cost shall be reflected in the bid item for Delivery and Stockpile Materials, Granular Material. |
| 12 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , GRANULAR MATERIAL, NEOLA MAINTENANCE GARAGE 18,038 ton is to be stockpiled at the Neola Maintenance Garage. The Contractor may temporarily stockpile the granular material at the abandoned SB or NB 1-29 Weigh Scales but must have all material moved to the Neola Maintenance Garage within the number of working days specified by the contract. Mileage from the US-30 Trap Bag installation to the Neola Maintenance Garage is 29.5 miles. The Contractor will need to contact Todd Frank, Phone# 712-243-3114, 48 hours prior to anticipated delivery of granular material to the Neola Maintenance Garage. Hauling cost shall be reflected in the bid item for Delivery and Stockpile Materials, Granular Material. |
| 13 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , GRANULAR MATERIAL, S. CB MAINTENANCE GARAGE 1,000 ton is to be stockpiled at the Council Bluffs S. Maintenance Garage. The Contractor may temporarily stockpile the granular material at the abandoned SB or NB 1-29 Weigh Scales but must have all material moved to the Council Bluffs S. Maintenance Garage within the number of working days specified by the contract. Mileage from the US-30 Trap Bag installation to the Council Bluffs S. Maintenance Garage is 34.3 miles. The Contractor will need to contact Dick Mattox, Phone# 712-366-7543, 48 hours prior to anticipated delivery of granular material to the Council Bluffs S. Maintenance Garage. Hauling cost shall be reflected in the bid item for Delivery and Stockpile Materials, Granular Material. |

ESTIMATE REFERENCE INFORMATION

| ITEM NO. | ITEM CODE | DESCRIPTION |
|----------|--------------|---|
| 14 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , GRANULAR MATERIAL, SB 1-29 WEIGH SCALE 434 ton is to be stockpiled at the SB Abandoned Weigh Scale near MP 73. The Contractor may temporarily stockpile the granular material at the abandoned SB or NB 1-29 Weigh Scales but must have all material moved to the Council Bluffs S. Maintenance Garage within the number of working days specified by the contract. Mileage from the US-30 Trap Bag installation to the SB Abandoned weigh scales is 9.2 miles. The Contractor will need to contact Todd Frank, Phone# 712-243-3114, 48 hours prior to anticipated delivery of granular material to the SB Abandoned Weigh Scale. Hauling cost shall be reflected in the bid item for Delivery and Stockpile Materials, Granular Material. |
| 15 | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS , TEMPORARY CRASH CUSHIONS This item includes removing and neatly stockpiling 4 complete sets of sand barrel arrays consisting of 15 barrels each at the Missouri Valley Maintenance Garage located at 2308 US 30, Missouri Valley, Iowa. This also includes delivery of 120' of temporary barrier rail to the Missouri Valley Maintenance Garage, which shall be incidental to this bid item. The Contractor will need to contact Todd Frank, Phone# 712-243-3114, 48 hours prior to anticipated delivery of the crash cushions. Hauling cost shall be reflected in the bid item for Delivery and Stockpile Materials, Crash Cushions. |
| 16 | 2599-9999009 | TRAP BAG REMOVAL 20,410 L.F. of Trap Bags shall be removed from US 30. The Contractor is required to stockpile all granular material from the trap bags as specified in Division 2 of the contract. The bid item also includes 140 L.F. of sand bag removal and 120 L.F. of Temporary Barrier Rail Removal (TBR). All other materials from the trap bags shall be disposed of as per Standard Note 213-1. This includes conventional sand bags and plastic sheeting. Trap Bags may need to be shaken to obtain all aggregate from the bags. Following Trap Bag removal; broom and wash surface of pavement and paved shoulders by mechanical means to ensure foreign material is removed. Material removed may be disposed in the adjacent ditch. Method of Measurement: The Engineer shall measure the lineal feet of trap bags removed. Removal and disposal of conventional sand bags and plastic sheeting, as well as removal, transportation, and stockpile of TBR will be considered incidental to Trap Bag Removal. Basis of Payment: The Contractor will be paid for the lineal feet of trap bags removed. Removal and disposal of conventional sand bags and plastic sheeting, as well as removal, transportation, and stockpile of TBR will be considered incidental to Trap Bag Removal. This will be full compensation for retrieving the aggregate from the trap bags, brooming the pavement, providing wash water (including pumping and transportation to the project), washing the paved surface, and disposing of excess trap bag material. Hauling cost shall be reflected in the bid item for Delivery and Stockpile Materials, Granular Materials. |

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

| Number | Date | Title |
|--------|----------|---|
| PM-110 | 04-19-11 | Line Types |
| TC-1 | 10-18-11 | Work Not Affecting Traffic (Two-Lane or Multi-Lane) |
| TC-202 | 04-20-10 | Shoulder Closure (One Lane) |
| TC-214 | 04-19-11 | Lane Closure with Flaggers for use with Pilot Car |
| TC-252 | 10-20-09 | Road Closure |
| | | |
| | | |

108-13A
08-01-08

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

| Station | Closure Type | | Remarks |
|----------|--------------|-------------|-----------------------|
| | Road Qty. | Hazard Qty. | |
| 159+00.0 | 1 | | |
| | 1 | | Co. Rd. 318, Nebraska |
| | | | |

213-1
04-15-08

WASTE (NON-DESIRABLE MATERIAL)

It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project.

It shall be the contractor's responsibility to ensure that areas (including haul roads) selected for waste or disposal not impact 1) culturally sensitive sites or graves or 2) wetlands or "Waters of the U.S.", including streams or stream banks below the "ordinary high water mark", without an approved U.S. Army Corps of Engineers Section 404 Permit.

No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans.

108-30
04-20-10

CRASH CUSHIONS

① Lane(s) to which the installation is adjacent.
② Complete this section when using the Temporary Crash Cushion bid item. Refer to BA-500
* Bid Item

| No. | Direction of Traffic | Location Station | Side | Obstacle Width FT | Crash Cushion (Select One)* | | | | | Sand Barrel Details ② | | | | | Earthwork* | | Remarks |
|---|----------------------|------------------|------|----------------------|-----------------------------|-----------------------|----------------------|-----------|----------------------|-----------------------|--------------|--------------|--------------|--------------|---------------------------|---------------------------|---------|
| | | | | | Temporary | Temporary Redirective | Temporary Severe Use | Permanent | Permanent Severe Use | V | W | X | Y | Z | Excavation Class 10 CY | Embankment in Place CY | |
| | | | | | | | | | | Length FT | Length FT | Length FT | Length FT | Length FT | | | |
| 1 | EB | *1 | R | | X | | | | | | | | | | | | |
| 2 | EB | *1 | L | | X | | | | | | | | | | | | |
| 3 | WB | *1 | R | | X | | | | | | | | | | | | |
| 4 | WB | *1 | L | | X | | | | | | | | | | | | |
| *1 All Crash Cushions listed are to be removed and stockpiled. Refer to Tabulation 110-13 for location. | | | | | | | | | | | | | | | | | |

110-13
04-20-10

DELIVERY AND STOCKPILING

| Item Description | Quantity | Units | Delivery Location | Contact Name & Number | Remarks |
|------------------------|----------|-------|---|--|---------------------|
| Crash Cushions | 4 | Each | Missouri Valley | Todd Frank | 15 barrels each set |
| Temporary Barrier Rail | 120 | L.F. | Maintenance Garage | 2308 US 30, Missouri Valley | |
| Trap Bag Aggregate | 3000 | Ton | | Iowa, 51555 | |
| Trap Bag Aggregate | 434 | Ton | SB I-29 Weight Scale | (712)-243-3114 | |
| Trap Bag Aggregate | 1000 | Ton | Council Bluffs N. Maintenance Garage | Dick Mattox 3540 S. Expressway Council Bluffs, IA 555484 712-366-0332 | |
| Trap Bag Aggregate | 1000 | Ton | Council Bluffs S. Maintenance Garage | Dick Mattox 2501 N. 25th St. Council Bluffs, IA 555484 712-332-7543 | |
| Trap Bag Aggregate | 18038 | Ton | Neola Maintenance Garage | Todd Frank 2308 US 30, Missouri Valley Iowa, 51555 (712)-243-3114 | |

TABULATION OF SPECIAL EVENTS

| Event | Location | Date |
|----------------|----------|------|
| None provided. | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

TRAFFIC CONTROL PLAN

1. The Contractor is required to provide the Engineer 7 days notice in advance of intent to begin work on this project.
2. Traffic control will be divided between 2 separate operations (Stages).
3. Stage 1 Traffic Control
 - A. Stage 1 construction requires the Contractor to close US 30 to traffic for five (5) continuous days by using Road Standard TC-252.
 - B. Traffic control for Stage 2 shall be put in place and pavement markings placed prior to completion of Stage 1 construction.
 - C. The IA DOT will provide the detour signing.
4. Stage 2 Traffic Control
 - A. Stage 2 construction requires the Contractor to open US 30 to single lane traffic during daylight hours with the use of flaggers and pilot cars using Road Standard TC-214.
 - B. Stage 2 construction requires the Contractor to open all lanes of US 30 to traffic during night time hours by using a shoulder closure, Road Standard TC-202.

STAGING NOTES

It is not the intent of the sequence of construction to confine the Contractor's activities to the area of the suggested stages alone. It is understood that some of the various steps, though listed in a numerical order, may occur simultaneously. Therefore, the Contractor may conduct several operations concurrently on the project, provided that the existing traffic is maintained and that these operations do not conflict with the staging indicated here in.

It is recognized that as various activities related to construction progress, certain situations may arise which will preclude adhering to the original construction sequence or, which in the opinion of the Contractor, would readily adhere itself to a more efficient staging operation. Should this occur, and the Contractor desire to deviate from the original plan, they shall submit an alternative plan for approval by the Engineer.

Stage 1:
Traffic:
Close US 30 to traffic using Road Standard TC-252.

Construction:
Remove granular material from Trap Bags, stockpile all granular material, dispose of plastic bag material, broom and wash surface of pavement and paved shoulders, dispose of all sand bags and plastic materials, and place final pavement markings.

Stage 2:
Traffic:
Open US 30 during daylight hours to a single lane traffic in the EB direction using pilot cars and flaggers using Road Standard TC-214. Open both lanes of US 30 to traffic during night time hours using a shoulder closure, Road Standard TC-202.

Construction:
Blade off all loose soil from the damaged WB US 30 foreslope, deposit a layer of revetment, deposit a layer of erosion stone over revetment, re-blade loose soil back over the erosion stone, smooth out foreslope to original 3:1 slope, and broom all loose materail from the shoulder.

Stage 3:
Traffic:
Open US 30 during daylight hours to a single lane traffic in the WB direction using pilot cars and flaggers using Road Standard TC-214. Open both lanes of US 30 to traffic during night time hours using a shoulder closure, Road Standard TC-202.

Construction:
Blade off all loose soil from the damaged EB US 30 foreslope, deposit a layer of revetment, deposit a layer of erosion stone over revetment, re-blade loose soil back over the erosion stone, smooth out foreslope to original 3:1 slope, and broom all loose materail from the shoulder.

Upon completion of foreslope repair, re-open all lanes of US 30 to traffic.