



Iowa Department of Transportation

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM FREMONT COUNTY REVETMENT

Over Horse Creek 1 Mile W. Of I-29

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

6

PROJECT IDENTIFICATION NUMBER

12-36-002-010

PROJECT NUMBER

ER-002-1(94)--28-36

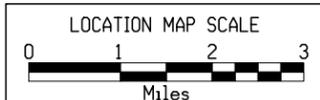
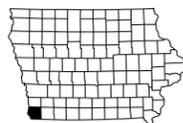
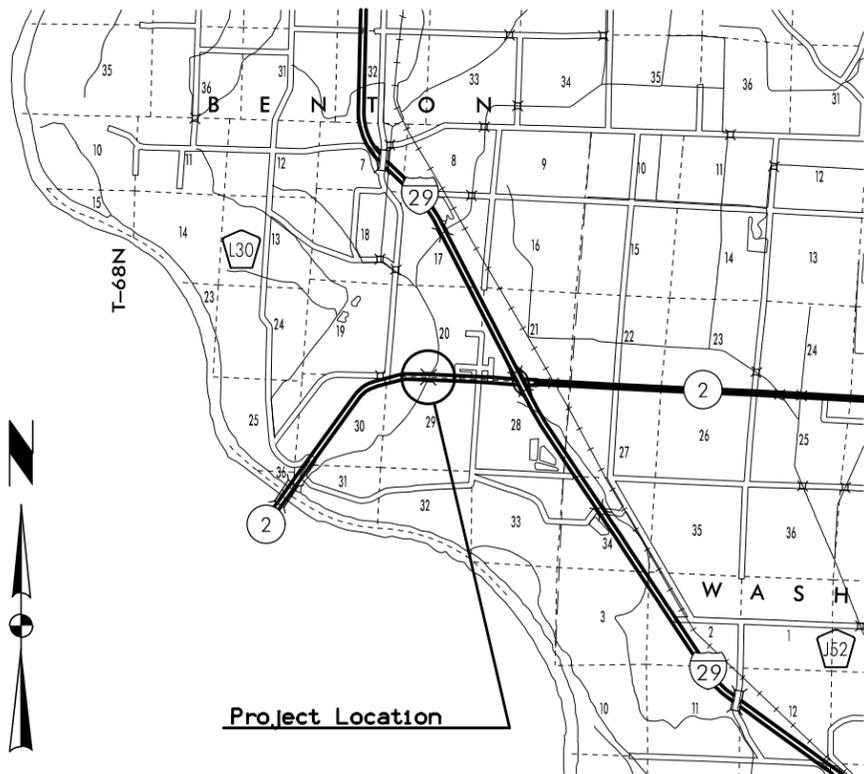
R.O.W. PROJECT NUMBER

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
C Sheets	Quantities and General Information
C.1	Project Description
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.1	Standard Road Plans
C.1	General Notes
C.2	Pollution Prevention Plan
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
V Sheets	Bridge and Culvert Situation Plans
* V.1 - 2	Bridge and Culvert Situation Plans
	* Color Plan Sheets

LETTING DATE
11/9/2011
REVETMENT
ER-002-1(94)--28-36

FREMONT CO.



IA 2 DESIGN DATA RURAL			
2006	AADT	7,800	V.P.D.
2026	AADT	12,200	V.P.D.
20	DHV		V.P.H.
	TRUCKS	29	%
	Total		
	Design ESALs		

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Kelly C. Bell	Primary Signature Block
V.1	Christine E. King	Hydraulic 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.

Signature: Kelly C. Bell Date: 10/26/2011

Printed or Typed Name: Kelly C. Bell

My license renewal date is December 31, 2011.

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

100-1D
10-18-05

PROJECT DESCRIPTION

This project is for emergency streambank repair at the existing bridges on Iowa 2 over Horse Creek, 1.0 mile west of the I-29 junction.

100-0A
10-28-97

ESTIMATED ROADWAY QUANTITIES

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2528-8445110	TRAFFIC CONTROL	LS	1	
2	2533-4980005	MOBILIZATION	LS	1	
3	2602-0000212	FLOATING SILT CURTAIN (HANGING)	LF	200	

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2528-8445110	TRAFFIC CONTROL
-	-	-
2	2533-4980005	MOBILIZATION
-	-	-
3	2602-0000212	FLOATING SILT CURTAIN (HANGING)
-	-	Refer to Developmental Specifications for Floating Silt Curtain.
-	-	-

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
EC-202	10-18-11	Floating Silt Curtain
TC-1	10-18-11	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-402	04-20-10	Shoulder Closure (Multi-Lane)
TC-418	10-18-11	Lane Closure on Divided Highway

203-2
10-18-11

**PLANS
(COORDINATING OPERATIONS)**

Coordinate operations with those of other contractors working within the same area. Other work in progress during the same period of time will include construction of the following projects:

Project	Type of Work
BRFN-002-1(83)--39-36	Bridge Cleaning
IMX-029-1(79)10--02-36	HMA Resurfacing
ER-029-1(95)0--06-36	PCC Pavement - Grade and New
ER-002-1(92)--28-36	Debris Removal
ER-002-1(93)--28-36	PCC Pavement - Grade and Replace

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.

262-6
10-18-05

**UTILITIES
(NOT A POINT 25 PROJECT)**

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

281-1
10-18-11

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide Permit 3. A copy of this permit is available from the Iowa DOT Office of Contracts upon request. The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

POLLUTION PREVENTION PLAN

This Base Pollution Prevention Plan (PPP) includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed per plan revisions or by contract modification, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITIES**A. Designer:**

1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Signature authority on the Base PPP and NOI.

B. Contractor/Subcontractor:

1. Affected contractors/subcontractors are co-permittees with the IDOT and will sign a certification statement adhering to the requirements of the NPDES permit and this PPP plan. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Submit a detailed schedule according to Article 2602 of the Specifications and any additional plan notes.
3. Install and maintain appropriate controls.
4. Supervise and implement good housekeeping practices.
5. Conduct joint required inspections of the site with inspection staff.
6. Signature authority on Co-Permittee Certification Statements and storm water inspection reports.

C. RCE/Inspector:

1. Update PPP whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the discharge of pollutants from the project.
2. Maintain an up-to-date list that identifies contractors and subcontractors as co-permittees.
3. Make these plans available to the DNR upon their request.
4. Conduct joint required inspections of the site with the contractor/subcontractor.
5. Complete an inspection report after each inspection.
6. Signature authority on storm water inspection reports and Notice of Discontinuation (NOD).

II. PROJECT SITE DESCRIPTION

- A. This Pollution Prevention Plan (PPP) is for the construction of flood repairs to Iowa 2 from MP 0.0 to MP 8.0.
- B. This PPP covers approximately 230 acres with an estimated 155 acres being disturbed. The portion of the PPP covered by this contract has 0.06 acres disturbed.
- C. The PPP is located in an area of one soil association (Luton - Onawa - Salix). The estimated average SCS runoff curve number for this PPP after completion will be 77.
- D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
 1. Drainage patterns - Plan and Profile sheets and Situation plans.
 2. Proposed Slopes - Cross Sections.
 3. Areas of Soil Disturbance - construction limits shown on Plan and Profile sheets.
 4. Location of Structural Controls - Tabulations on C sheets.
 5. Locations of Non-structural Controls - Tabulations on C sheets.
 6. Locations of Stabilization Practices - generally within construction limits shown on Plan and Profile sheets.
 7. Surface Waters (including wetlands) - Plan and Profile sheets.
 8. Locations where storm water is discharged - Plan and Profile sheets.
- E. The base site map is amended by contract modifications and progress payments of completed erosion control work.
- F. Runoff from this work will flow into ditches into the Missouri River.

III. CONTROLS

- A. The contractor's work plan and sequence of operations specified in Article 2602.03 for accomplishment of storm water controls should clearly describe the intended sequence of major activities and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Section 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B.
 1. EROSION AND SEDIMENT CONTROLS
 - a. Stabilization Practices
 - 1) Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized.
 - 2) Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased.
 - 3) Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days. Other stabilizing methods shall be used outside the seeding time period.
 - 4) Stabilization measures to be used for this project are located in the Estimated Project Quantities (100-1A) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional items may be found in the Inspector's Daily Reports (IDR) or Contract Modifications.
 - b. Structural Practices
 - 1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site.
 - 2) Structural items to be used for this project are located in the Estimated Project Quantities (100-1A) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B sheets of the plan or are referenced in the Standard Road Plans Tabulation.
 - c. Storm Water Management
 - 1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.
 2. OTHER CONTROLS
 - a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state

POLLUTION PREVENTION PLAN

and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.

- 1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
- 2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
- 3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
- 4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
- 5) Spill Prevention and Control - Implement procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
- 6) Concrete Residuals and Washout Wastes - Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located.
- 7) Vehicle and Equipment Cleaning - Employ washing practices that prevent contamination of surface and ground water from wash water.
- 8) Vehicle and Equipment Fueling and Maintenance - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of on-site fuels and proper disposal of used engine oil or other fluids on site.
- 9) Litter Management - Ensure employees properly dispose of litter.

3. APPROVED STATE OR LOCAL PLANS

During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES

The contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS

- A. Inspections shall be made jointly by the contractor and the contracting authority at least once every seven calendar days and after each rain event that is $\frac{1}{8}$ " or greater. Storm water monitoring inspections will include:
 1. Date of the inspection.
 2. Summary of the scope of the inspection.
 3. Name and qualifications of the personnel making the inspection.
 4. Rainfall amount.
 5. Review erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
 6. Major observations related to the implementation of the PPP.
 7. Identify corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water monitoring inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found and complete all actions within 3 calendar days of the inspection.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone, erosion stone or other appropriate materials.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - May include Plan Revisions or Contract Modifications for new items and fieldbook entries made by the inspector.
- C. IDR - Inspector's Daily Report - this contains the inspector's daily diary and item postings.
- D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials.
- E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

TRAFFIC CONTROL PLAN

1. Iowa 2 westbound is currently closed to traffic. Traffic is currently two-lane, two-way on the eastbound lanes.
2. The Contractor is responsible for replacing traffic control devices that are moved for Contractor access.
3. It will be the responsibility of the Contractor to replace any barricades disturbed by them to the barricades original setting. The Contractor shall be responsible to replace all disturbed barricades at the end of the day.

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2402-0425031	GRANULAR BACKFILL	TON	5,800.0	
2	2402-2723000	EXCAVATION, CLASS 23	CY	600	
3	2506-4984000	FLOWABLE MORTAR	CY	140.0	
4	2507-3250005	ENGINEERING FABRIC	SY	2,400.0	
5	2507-6800061	REVTMENT, CLASS E	TON	4,100.0	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2402-0425031	<p>GRANULAR BACKFILL ESTIMATED AT 1.7 TON/CY.</p> <p>GRANULAR BACKFILL WILL BE MEASURED IN TONS OF MATERIAL PLACED.</p> <p>INCLUDES FURNISH AND PLACEMENT OF BACKFILL MATERIAL DUE TO AN ANTICIPATED DEFICIT IN ON-SITE EXCAVATED MATERIAL. GRANULAR BACKFILL SHALL NOT BE PROCURED AND DELIVERED TO THE SITE UNTIL COMPLETION OF ROUGH GRADING INDICATES ADDITIONAL MATERIAL IS NEEDED TO FINISH TO THE LINES AND GRADES SHOWN ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER.</p>
2	2402-2723000	<p>EXCAVATION, CLASS 23 INCLUDES ALL WORK IN PREPARATION OF GRADE FOR PLACEMENT OF REVTMENT INCLUDING EXCAVATION TO THE LIMITS SHOWN ON THE DRAWINGS, BACKFILL UTILIZING SUITABLE EXCAVATED MATERIAL, AND DISPOSAL OF EXCESS EXCAVATED MATERIAL. THE BOUNDING LIMITS IN ACCORDANCE WITH ARTICLE 2402.04, B, OF THE STANDARD SPECIFICATIONS ARE NOT APPLICABLE.</p> <p>STONE AND BACKFILL MATERIAL PLACED UNDER A PREVIOUS PROJECT, ER-2-1(92)--28-36, IS EXPECTED TO REMAIN IN PLACE AND IS NOT CONSIDERED AS AN EXCAVATED QUANTITY.</p> <p>EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OF AS SPECIFIED IN NOTE 213-1.</p>
3	2506-4984000	<p>FLOWABLE MORTAR INCLUDES ALL MATERIAL, EQUIPMENT AND LABOR TO FILL THE VOIDS AT ALL EXPOSED ABUTMENT PILING.</p> <p>WORK AT THE EAST ABUTMENT OF THE WESTBOUND BRIDGE INCLUDES DRILLING HOLES AT PRE-IDENTIFIED LOCATIONS IN THE APPROACH SECTION AND FILLING IN VOIDS.</p>
4	2507-3250005	<p>ENGINEERING FABRIC ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.</p>
5	2507-6800061	<p>REVTMENT, CLASS E ESTIMATED AT 1.6 TON/CY.</p>

HYDRAULIC 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.


10/19/11
 Signature _____ Date _____
 Printed or Typed Name **Christine E. King**

My license renewal date is December 31, 2012

Pages or sheets covered by this seal: DES. SHT. V.1, V.2

LOCATION

1A 2 OVER HORSE CREEK
 T-68N R-43W
 SECTION 20
 BENTON TOWNSHIP
 FREMONT COUNTY
 BRIDGE MAINT. NO. 3602.4L002, 3602.4R002
 LATITUDE 40.689490 N
 LONGITUDE 95.802075 W

DESIGN FOR 25° SKEW LA

STREAMBANK REPAIR

120' X 40'/120' X 44' CCS BRIDGES

36'-6 END SPANS 47'-0 CENTER SPAN

QUANTITIES

STATION: 1485+47.80 LT., 1485+17.95 RT.

FREMONT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. ____ OF ____ FILE NO. 30675 DESIGN NO. 112

930	BERM ELEV.=923.8	TOP OF RIPRAP ELEV.=905.0	BERM ELEV.=923.7	930
920			BOTTOM OF FOOTING ELEV.=921.68	920
910			FLOWABLE MORTAR	910
900	BOTTOM OF FOOTING ELEV.=921.80			900
890	FLOWABLE MORTAR	BACKFILL/STONE PLACED UNDER PROJECT NO. ER-002-1(92)--28-36 (APPROXIMATE LIMITS)	SHEET PILE AT WESTBOUND BRIDGE PROJECT NO. ER-002-1(92)--28-36	890
880				880

GENERAL NOTES:

THIS DESIGN IS FOR EMERGENCY STREAMBANK REPAIR AT THE EXISTING 120'-0 X 40' AND 120'-0 X 44' CONTINUOUS CONCRETE SLAB (CCS) BRIDGES ON IA 2 OVER HORSE CREEK, 1.0 MILE WEST OF JCT. 1-29, FREMONT COUNTY. COPIES OF THE ORIGINAL DESIGN PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - HIGHWAY DIVISION - IOWA D.O.T. - AMES.

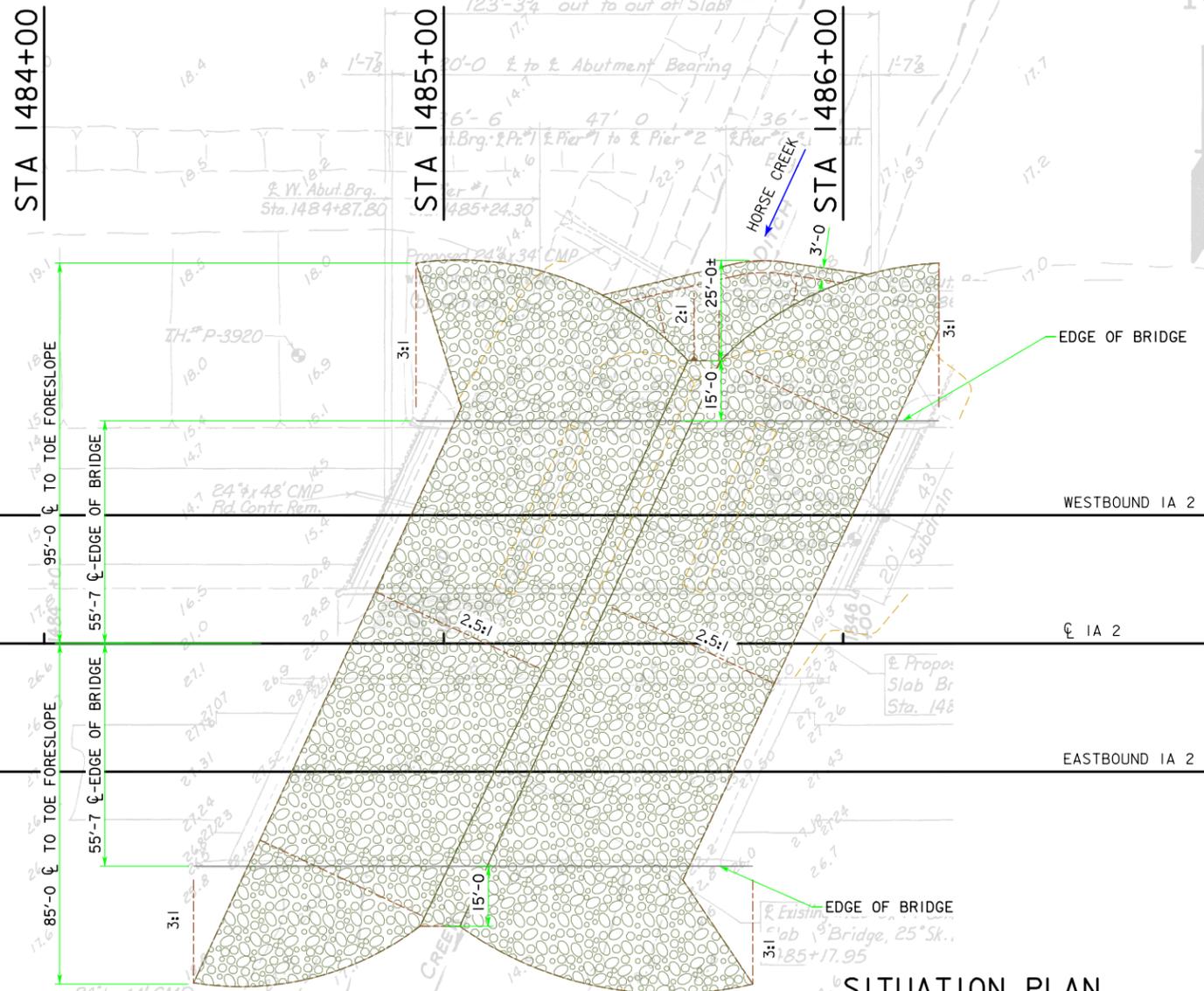
THE REPAIR SHALL CONSIST OF THE FOLLOWING WORK. FILL VOIDS BENEATH AND BEHIND THE ABUTMENT FOOTINGS WITH FLOWABLE MORTAR. REFER TO FLOWABLE MORTAR SCHEMATIC. AT EAST ABUTMENT OF THE WESTBOUND BRIDGE, FLOWABLE MORTAR WILL HAVE TO BE PLACED FROM ABOVE AND FROM BELOW THE BRIDGE.

REGRADE BERMS AND CHANNEL BOTTOM IN THE AREA INDICATED. THE TOPS OF THE GRADED SLOPES SHOULD BE 3 FT. BELOW THE FINISHED GRADING SURFACE. THE CHANNEL BOTTOM SHOULD BE GRADED TO ELEVATION 902.0 FROM A DISTANCE OF 15 FT. UPSTREAM TO A DISTANCE OF 15 FT. DOWNSTREAM OF THE EDGE OF BRIDGES. AT THE UPSTREAM END, GRADE AT A SLOPE OF 2:1 TO THE EXISTING CHANNEL BOTTOM. PROVIDE A 3 FT. WIDE AND 3 FT. DEEP TRENCH AT THE TOE OF THE 2:1 SHAPING. THE DOWNSTREAM END SHOULD TIE INTO THE EXISTING CHANNEL AT THE LIMITS SHOWN WITHOUT ADDITIONAL SHAPING. STONE AND BACKFILL MATERIAL PLACED AT THE WESTBOUND BRIDGE IS TO BE RE-USED AS BASE. THIS QUANTITY IS NOT INCLUDED IN THE QUANTITY FOR GRANULAR BACKFILL. EXCAVATION CONSISTS OF SHAPING AT THE EASTBOUND BRIDGE AND PROVIDING THE UPSTREAM TRENCH. ACCEPTABLE EXCAVATED MATERIAL MAY BE RE-USED AS BASE. NO REDUCTION HAS BEEN MADE TO THE GRANULAR BACKFILL QUANTITY FOR RE-USE OF THIS EXCAVATED MATERIAL.

PLACE A 3 FT. THICK CLASS E RIPRAP BLANKET UNDERLAIN WITH ENGINEERING FABRIC ON ALL GRADED AREAS. FILL THE UPSTREAM TRENCH WITH RIPRAP. IT IS NOT NECESSARY TO PLACE ENGINEERING FABRIC IN THE TRENCH. ALONG THE CHANNEL BOTTOM, THE RIPRAP IS TO TIE INTO THE EXISTING NATURAL CHANNEL ELEVATION AT THE LIMITS OF THE PROJECT. ALONG THE BERMS, WRAP THE RIPRAP AROUND THE BERM FORESLOPE FROM BENEATH THE BRIDGE TO THE ENDS OF WINGS. TIE THIS RIPRAP TO NATURAL GROUND AT THE TOES OF THE FORESLOPES AT THE ENDS OF THE BRIDGE WINGS.

DIMENSIONS AND ELEVATIONS SHOWN ON THESE PLANS ARE BASED ON DESIGN PLANS (DESIGN NUMBERS 484 AND 568). FEATURES FROM DESIGN NUMBERS 484 AND 568 ARE DRAWN VERY LIGHTLY ON THIS SHEET AND ARE FOR INFORMATION ONLY. LOCATIONS OF FEATURES SHOWN ARE APPROXIMATE. FIELD VERIFICATION IS RECOMMENDED.

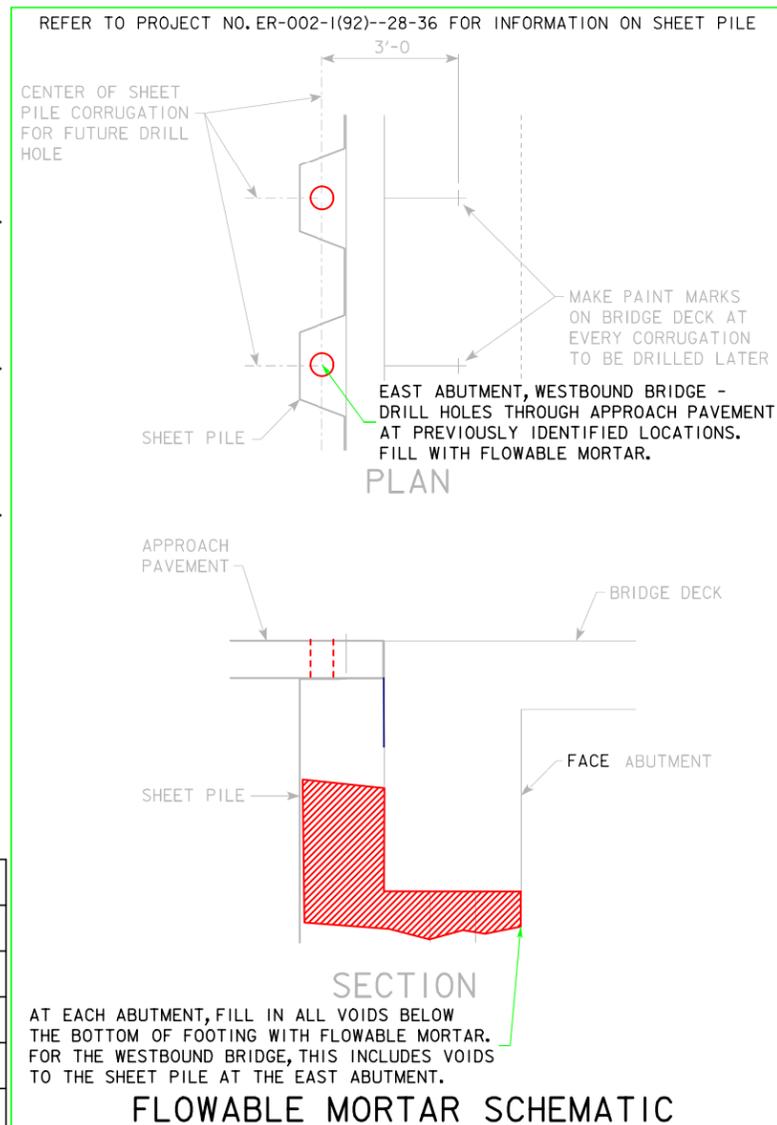
LONGITUDINAL SECTION ALONG ϕ WB ROADWAY



SITUATION PLAN

LONGITUDINAL SECTION ALONG ϕ EB ROADWAY

930	BERM ELEV.=923.6	TOP OF RIPRAP ELEV.=905.0	BERM ELEV.=923.6	930
920			BOTTOM OF FOOTING ELEV.=921.66	920
910	BOTTOM OF FOOTING ELEV.=921.66		FLOWABLE MORTAR	910
900				900
890	FLOWABLE MORTAR	41' P10-A Piling - 16" Type I or 58' P10-A Piling - 16" Type II or 50' P10-A Piling - 16" Type IV	FLOWABLE MORTAR	890
880				880



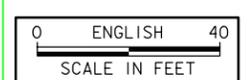
FLOWABLE MORTAR SCHEMATIC

AT EACH ABUTMENT, FILL IN ALL VOIDS BELOW THE BOTTOM OF FOOTING WITH FLOWABLE MORTAR. FOR THE WESTBOUND BRIDGE, THIS INCLUDES VOIDS TO THE SHEET PILE AT THE EAST ABUTMENT.

REFER TO PROJECT NO. ER-002-1(92)--28-36 FOR INFORMATION ON SHEET PILE

MAKE PAINT MARKS ON BRIDGE DECK AT EVERY CORRUGATION TO BE DRILLED LATER

EAST ABUTMENT, WESTBOUND BRIDGE - DRILL HOLES THROUGH APPROACH PAVEMENT AT PREVIOUSLY IDENTIFIED LOCATIONS. FILL WITH FLOWABLE MORTAR.



HYDRAULIC DATA

DRAINAGE AREA= 45 MI²
STREAM SLOPE= 1.65 FT./MI.

LOCATION

IA 2 OVER HORSE CREEK
T-68N R-43W
SECTION 20
BENTON TOWNSHIP
FREMONT COUNTY
BRIDGE MAINT. NO. 3602.4L002, 3602.4R002
LATITUDE 40.689490 N
LONGITUDE 95.802075 W

DESIGN FOR 25° SKEW LA
STREAMBANK REPAIR
120' X 40'/120' X 44' CCS BRIDGES
36'-6 END SPANS 47'-0 CENTER SPAN
SITUATION PLAN
STATION: 1485+47.80 LT., 1485+17.95 RT.
FREMONT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. _____ OF _____ FILE NO. 30675 DESIGN NO. 112