



Iowa Department of Transportation

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM FREMONT COUNTY REVETMENT

Main Ditch #6, 0.4 Mile S. Of Ia. 333 (NBL/SBL)

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

9

PROJECT IDENTIFICATION NUMBER

12-36-029-030

PROJECT NUMBER

ER-029-1(96)1--06-36

R.O.W. PROJECT NUMBER

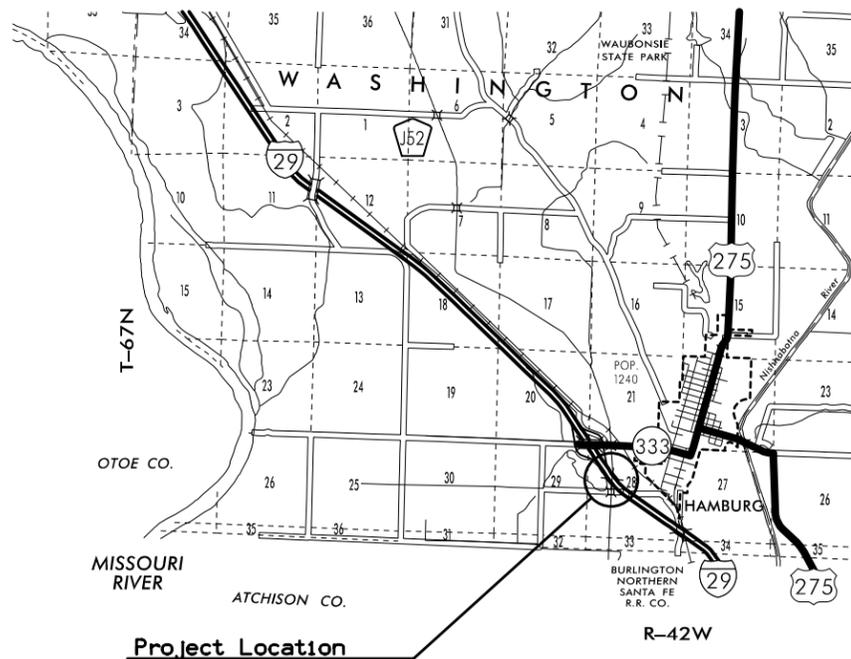
INDEX OF SHEETS

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
* V.3 - 5	Bridge As-Built (For Information Only)
	* Color Plan Sheets

LETTING DATE
11/9/2011

REVETMENT
ER-029-1(96)1--06-36

FREMONT CO.



I-29 DESIGN DATA RURAL			
2011 AADT	13,800	V.P.D.	
20-- AADT	--	V.P.D.	
20-- DHV	--	V.P.H.	
TRUCKS	28	%	
Total Design ESALs	30,000,000		

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Kelly C. Bell	Primary Signature Block
V.1	Steven L. Seivert	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 repairs to the existing bridges on I-29 over main ditch No. 6.

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
IMX-029-1(79)10--02-36	HMA Resurfacing
ER-029-1(95)0--06-36	PCC Pavement - Grade and New

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.

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

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.

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 I-29 from MP 0.0 to MP 10.0.
- B. This PPP covers approximately 350 acres with an estimated 205 acres being disturbed. The portion of the PPP covered by this contract has 0.1 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 78.
- 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. I-29 is open to traffic.
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	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	2,020.0	
2	2402-0425031	GRANULAR BACKFILL	TON	8,335.0	
3	2506-4984000	FLOWABLE MORTAR	CY	100.0	
4	2507-3250005	ENGINEERING FABRIC	SY	3,823.0	
5	2507-6800061	REVTMENT, CLASS E	TON	3,796.0	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW INCLUDES FURNISH AND PLACEMENT OF FILL MATERIAL ABOVE THE WATER LEVEL AT THE TIME OF CONSTRUCTION. CONTRACTOR SUPPLIED BORROW ESTIMATED AT 2020 CY.
2	2402-0425031	GRANULAR BACKFILL ESTIMATED AT 1.7 TON/CY. GRANULAR BACKFILL WILL BE MEASURED IN TONS OF MATERIAL PLACED. PERCENT PASSING THE NO. 200 SIEVE SHALL NOT EXCEED 5%. INCLUDES FURNISH AND PLACEMENT OF BACKFILL MATERIAL BELOW THE WATER LEVEL AT THE TIME OF CONSTRUCTION.
3	2506-4984000	FLOWABLE MORTAR INCLUDES ALL MATERIAL, EQUIPMENT AND LABOR TO FILL THE VOIDS BELOW BOTH ABUTMENTS ON THE NORTHBOUND BRIDGE AND BELOW THE NORTH ABUTMENT ON THE SOUTHBOUND BRIDGE AS DETAILED. INCLUDES ALL MATERIAL, EQUIPMENT AND LABOR TO FILL THE VOIDS BETWEEN THE EXISTING SHEET PILING AND THE NORTH ABUTMENT ON THE SOUTHBOUND BRIDGE. COSTS FOR DRILLING THE FILL HOLES IN THE APPROACH PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO THE UNIT BID PRICE FOR FLOWABLE MORTAR. LOCATION OF FILL HOLES WILL BE DETERMINED BY THE ENGINEER.
4	2507-3250005	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.
5	2507-6800061	REVTMENT, CLASS E ESTIMATED AT 1.6 TON/CY.

GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO THE EXISTING DUAL 170'-0 X 40' CONTINUOUS I-BEAM BRIDGES ON I-29 OVER MAIN DITCH NO. 6. 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.

REPAIR SHALL CONSIST OF:

1. INSTALLATION OF FLOWABLE MORTAR TO FILL VOIDS AT THE ABUTMENTS
2. INSTALLATION OF FILL MATERAIL. - BERM AND BANK STABILIZATION.
3. INSTALLATION OF CLASS E REVETMENT - BANK AND BERM STABILIZATION.

ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

REFER TO TITLE SHEET FOR TRAFFIC DATA.

SPECIFICATIONS:

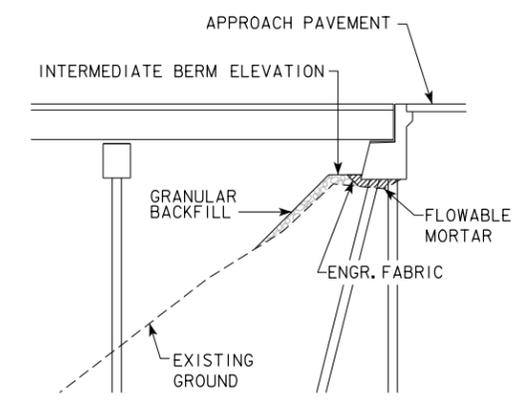
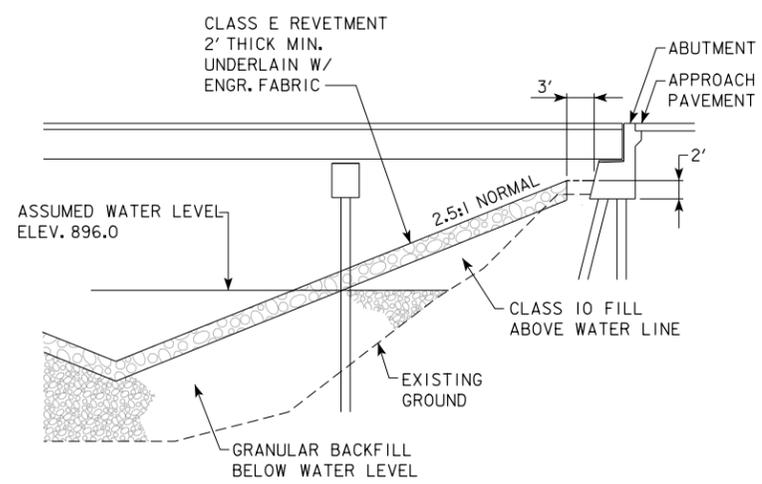
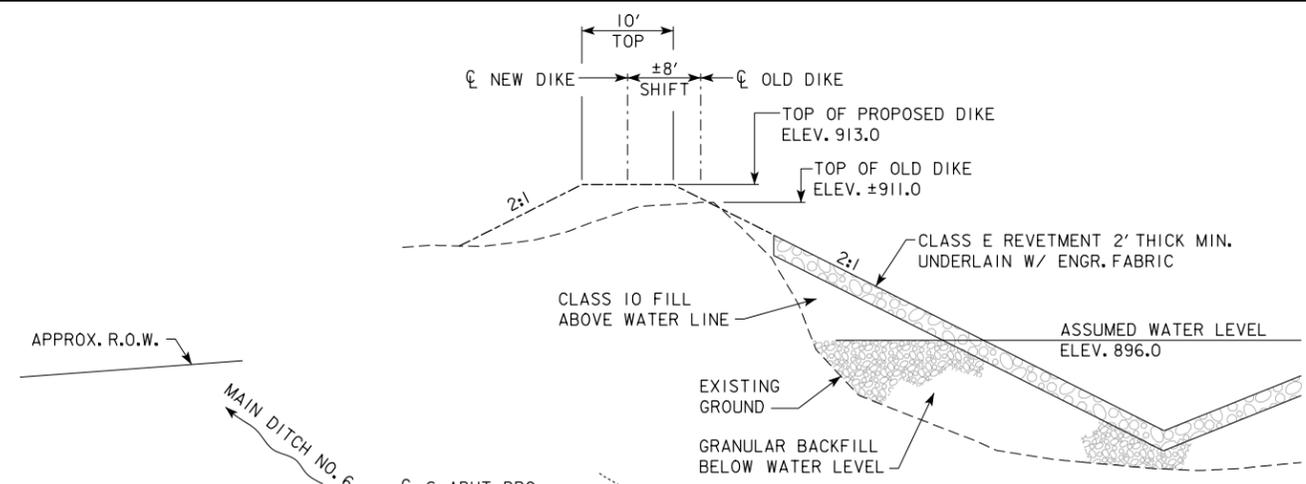
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES OF 2009, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

PREVIOUS EMERGENCY WORK PERFORMED AT THIS SITE:

1. SHEET PILE INSTALLED AT NORTH ABUTMENT OF SOUTHBOUND BRIDGE WITH NEW APPROACH PAVEMENT. SEE SHEET V.04 FOR INFORMATION ONLY.
2. SHEET PILE INSTALLED AT SOUTH ABUTMENT OF NORTHBOUND BRIDGE WITH NEW APPROACH PAVEMENT. GRANULAR BACKFILL INSTALLED AT BOTH ABUTMENTS AND BOTH PIERS OF THE NORTHBOUND BRIDGE. SEE SHEET V.05 FOR INFORMATION ONLY.

HYDRAULIC DESIGN	
	<p>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.</p> <p><i>Steven L. Seivert</i> 10/20/2011 Signature Date</p> <p>Steven L. Seivert Printed or Typed Name</p> <p>My license renewal date is December 31, 2012</p> <p>Pages or sheets covered by this seal: V.01, V.02</p>

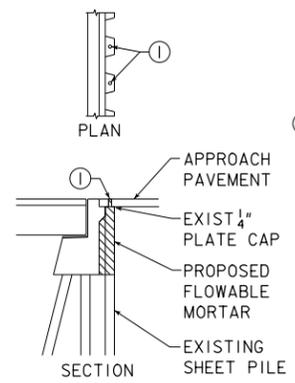
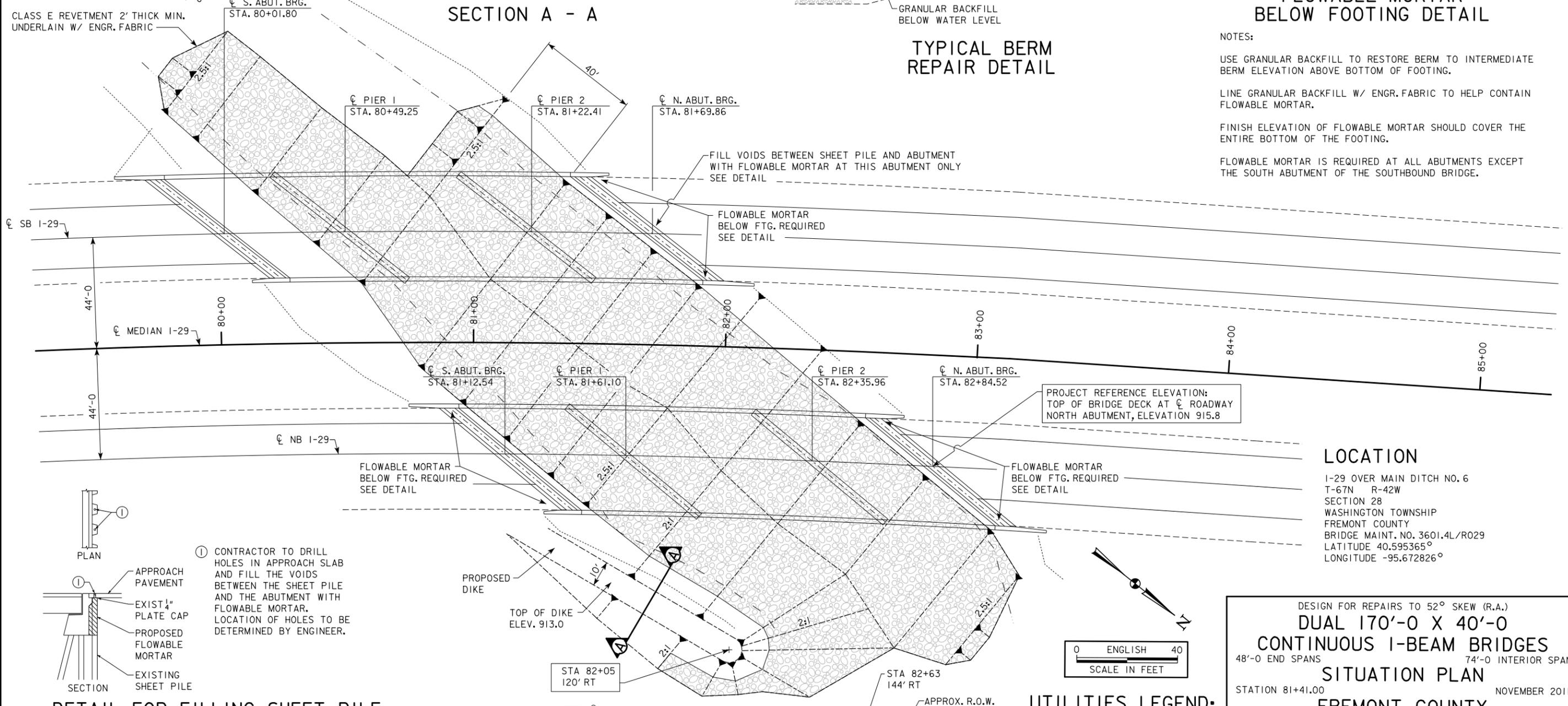
DESIGN FOR REPAIRS TO 52° SKEW (R.A.) DUAL 170'-0 X 40'-0 CONTINUOUS I-BEAM BRIDGES 48'-0 END SPANS 74'-0 INTERIOR SPAN QUANTITIES AND GENERAL NOTES STATION 81+41.00 NOVEMBER 2011 FREMONT COUNTY IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION DESIGN SHEET NO. <u>1</u> OF <u>2</u> FILE NO. <u>30664</u> DESIGN NO. <u>611</u>	
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FLOWABLE MORTAR BELOW FOOTING DETAIL

NOTES:

- USE GRANULAR BACKFILL TO RESTORE BERM TO INTERMEDIATE BERM ELEVATION ABOVE BOTTOM OF FOOTING.
- LINE GRANULAR BACKFILL W/ ENGR. FABRIC TO HELP CONTAIN FLOWABLE MORTAR.
- FINISH ELEVATION OF FLOWABLE MORTAR SHOULD COVER THE ENTIRE BOTTOM OF THE FOOTING.
- FLOWABLE MORTAR IS REQUIRED AT ALL ABUTMENTS EXCEPT THE SOUTH ABUTMENT OF THE SOUTHBOUND BRIDGE.



① CONTRACTOR TO DRILL HOLES IN APPROACH SLAB AND FILL THE VOIDS BETWEEN THE SHEET PILE AND THE ABUTMENT WITH FLOWABLE MORTAR. LOCATION OF HOLES TO BE DETERMINED BY ENGINEER.

DETAIL FOR FILLING SHEET PILE VOIDS AT N. ABUT. OF S.B. BRIDGE

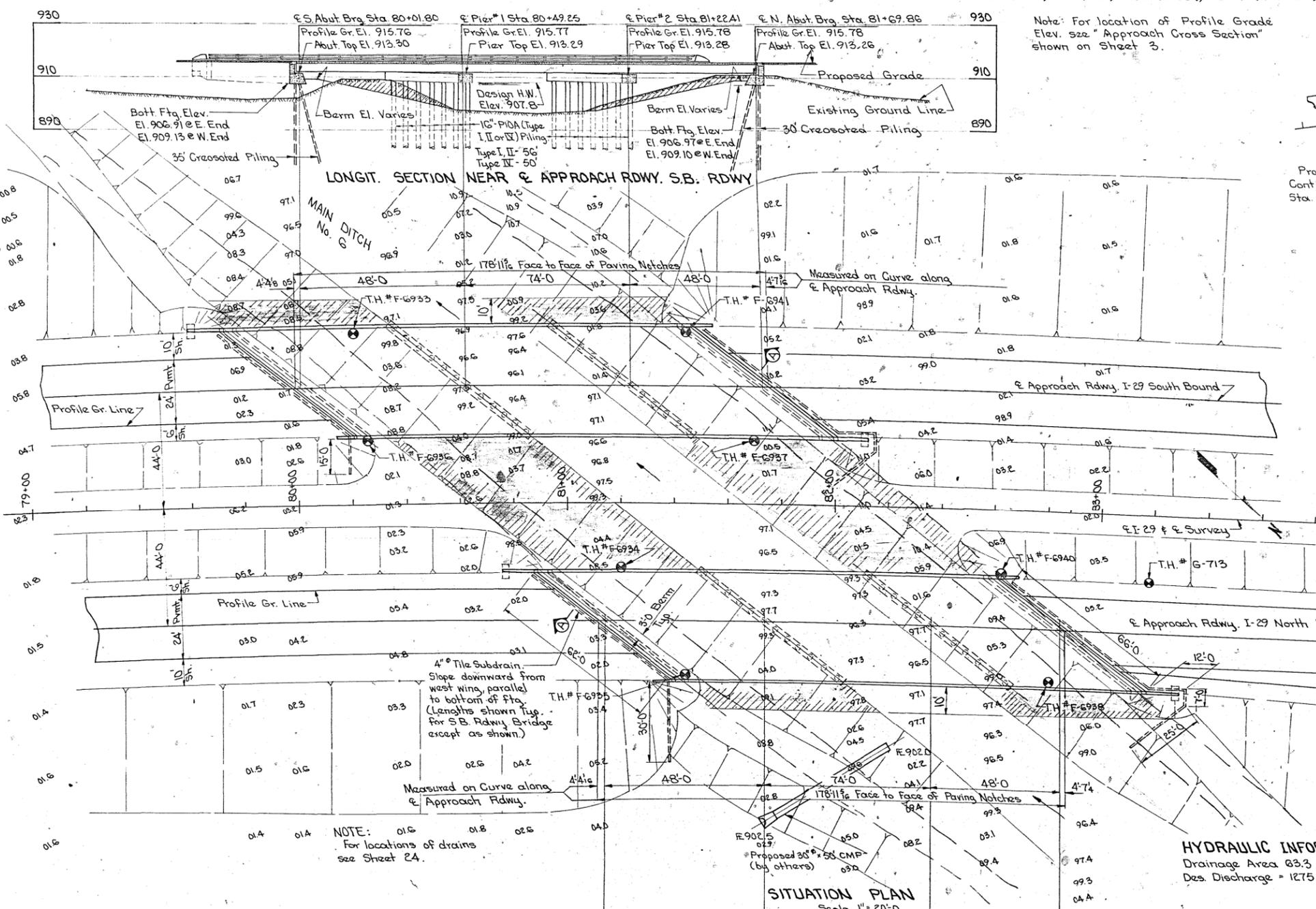
LOCATION

I-29 OVER MAIN DITCH NO. 6
 T-67N R-42W
 SECTION 28
 WASHINGTON TOWNSHIP
 FREMONT COUNTY
 BRIDGE MAINT. NO. 3601.4L/R029
 LATITUDE 40.595365°
 LONGITUDE -95.672826°

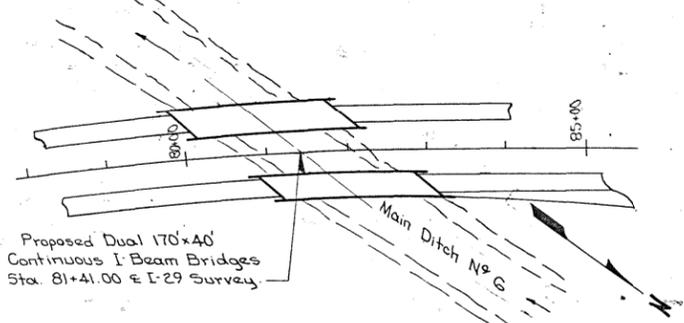
DESIGN FOR REPAIRS TO 52° SKEW (R.A.)
DUAL 170'-0 X 40'-0
CONTINUOUS I-BEAM BRIDGES
 48'-0 END SPANS 74'-0 INTERIOR SPAN
SITUATION PLAN
 STATION 81+41.00 NOVEMBER 2011
FREMONT COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 2 FILE NO. 30664 DESIGN NO. 611

UTILITIES LEGEND:
 UTILITY SURVEY NOT CONDUCTED

Bench Mark No. 7 Sta. 82+25.00 at NE corner of curb, SBL Elev. = 935.24
 Bench Mark No. 7 Sta. 82+107, 28' L.I.C. B.M. NE corner of curb, SBL Elev. = 935.24



Note: For location of Profile Grade Elev. see "Approach Cross Section" shown on Sheet 3.



GENERAL PLAN
Scale 1" = 100'-0"

+0.08% -0.13%
 P.I. Sta. 82+25.00
 P.I. Elev. 915.98
 V.C. = 800'

PROPOSED GRADE
ON I-29

CURVE DATA

I-29
 $\Delta = 21'44"$ Rt. $\Delta = 19'29"$ Rt.
 $\Delta_s = 1.125^\circ$ $D = 1'30"$
 $L_s = 150'$ $T = 655.80'$
 $T_s = 808.32'$ $L = 1298.88'$
 $E_s = 70.07'$ $E = 55.87'$
 $P = 0.25'$ $R = 3820.0'$
 $K = 75.00'$ $e = .053 \%$
 $X_c = 149.99'$ $s = \text{Spiral}$
 $Y_c = 0.98'$ $PI = \text{Sta. } 76+22.40$
 $LT = 100.0'$
 $ST = 50.0'$
 $LC = 100.0'$

THIS SHEET IS INCLUDED
FOR INFORMATION ONLY.

LOCATION:
 I-29 Over
 Main Ditch No. 6
 T67N R42W
 Washington Twp.
 Section 28
 Fremont County

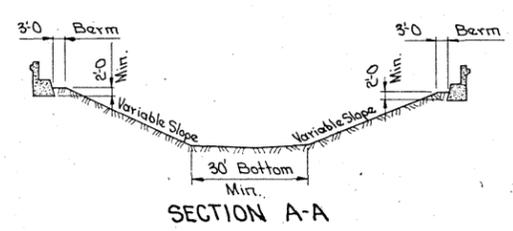
TRAFFIC COUNT:
 7430 V.P.D. - 1990

IN.R.C.:
 Approval No. 70-87 Dated 5-4-70

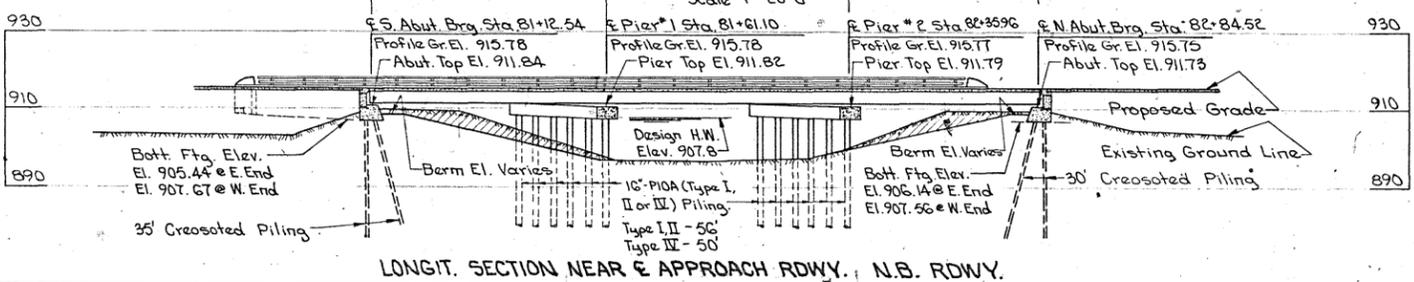
HYDRAULIC INFORMATION:
 Drainage Area 83.3 Sq. Mi.
 Des. Discharge = 1275 C.F.S.

SITUATION PLAN
Scale 1" = 20'-0"

NOTE:
 For locations of drains
 see Sheet 24.



SECTION A-A



LONGIT. SECTION NEAR & APPROACH RDWY., N.B. RDWY.

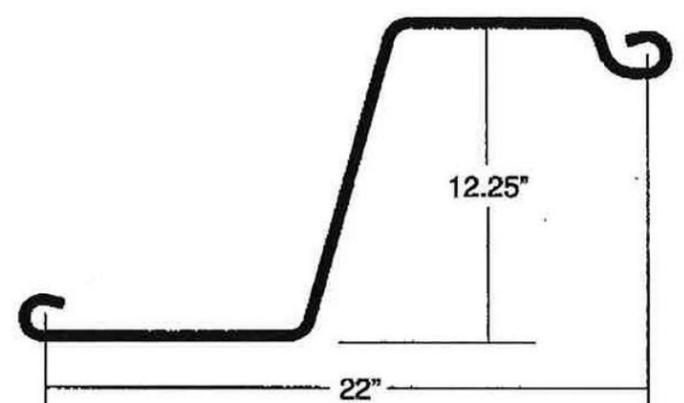
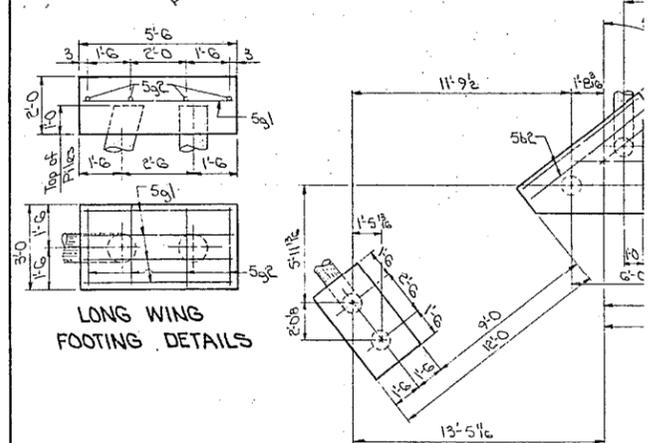
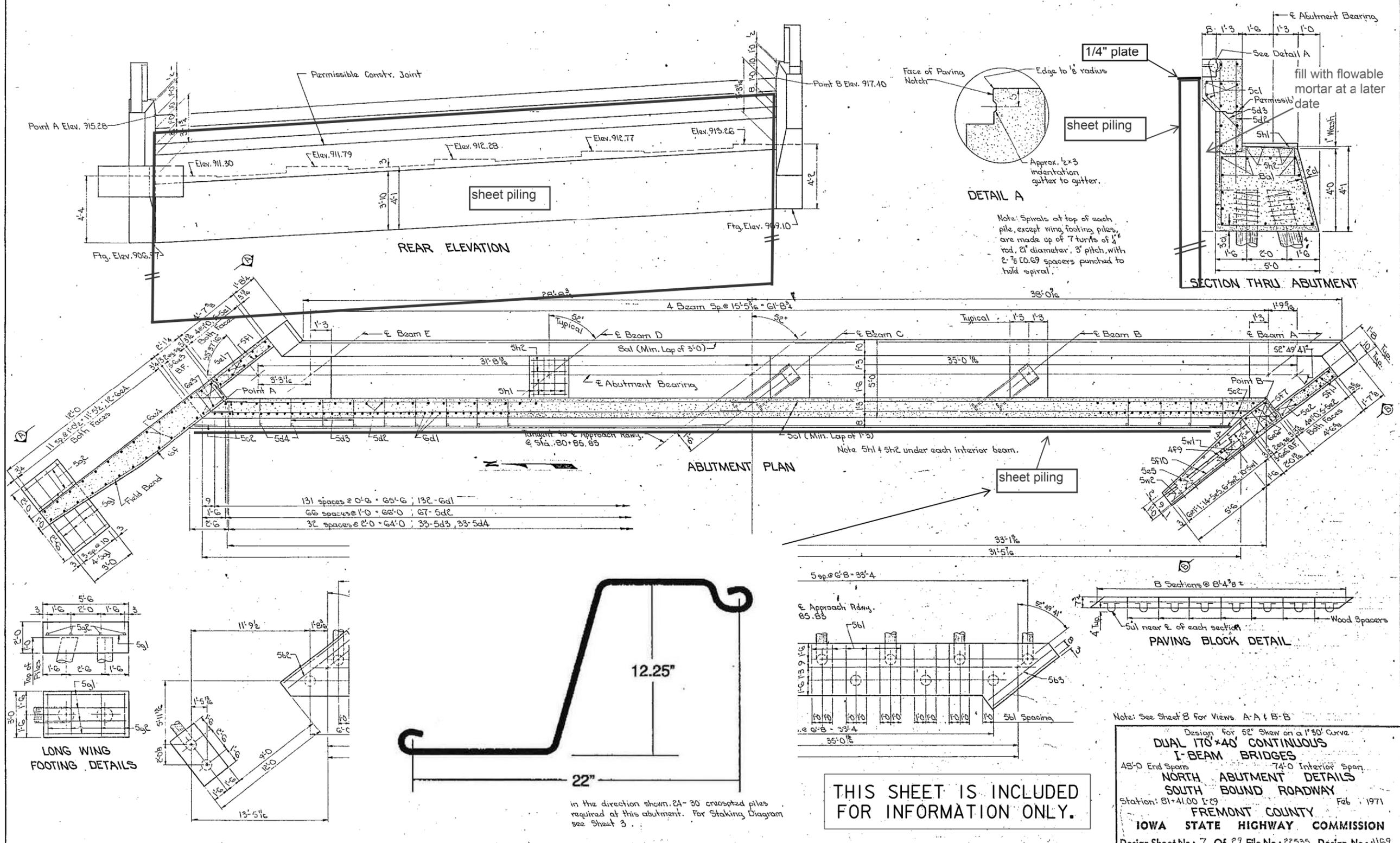
DESIGNED BY: *[Signature]*
 TRACED BY: *[Signature]*
 DETAILED BY: *[Signature]*
 CHECKED BY: *[Signature]*

SECTION LEADER: *[Signature]* FREMONT COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-29-1(14)0--04-36	IOWA			3	31

Design for 52° Skew on a 1'30" Curve
DUAL 170'-0" x 40'-0" CONTINUOUS I-BEAM BRIDGES
 48'-0" End Spans 74'-0" Interior Span
SITUATION PLAN
 Station: 81+41.00 I-29 Feb. 1971
FREMONT COUNTY
IOWA STATE HIGHWAY COMMISSION
 Design Sheet No. 1 Of 29 File No. 22535 Design No. 1169

Bench Mark 7 2. See Sheet 5.



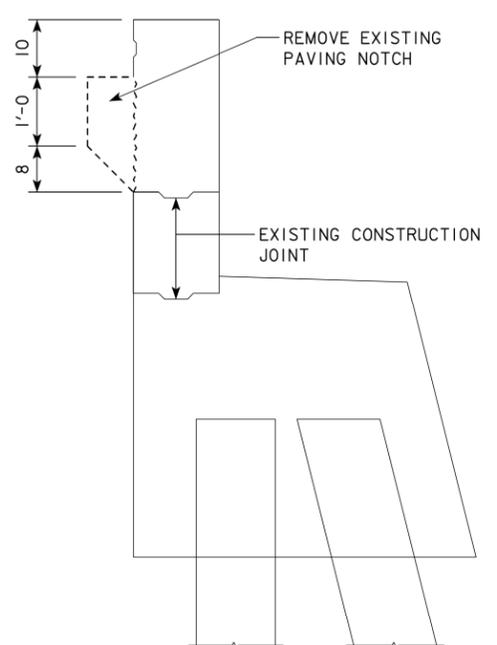
In the direction shown, 24-30 crimped piles required at this abutment. For Staking Diagram see Sheet 3.

THIS SHEET IS INCLUDED FOR INFORMATION ONLY.

Note: See Sheet 8 for Views A-A & B-B
 Design for 5° Skew on a 150' Curve
DUAL 170'x40' CONTINUOUS I-BEAM BRIDGES
 45'-0" End Spans 74'-0" Interior Span
NORTH ABUTMENT DETAILS
SOUTH BOUND ROADWAY
 Station: 81+41.00 I-29 Feb 1971
FREMONT COUNTY
IOWA STATE HIGHWAY COMMISSION
 Design Sheet No. 7 Of 22 File No. 22535 Design No. 1169

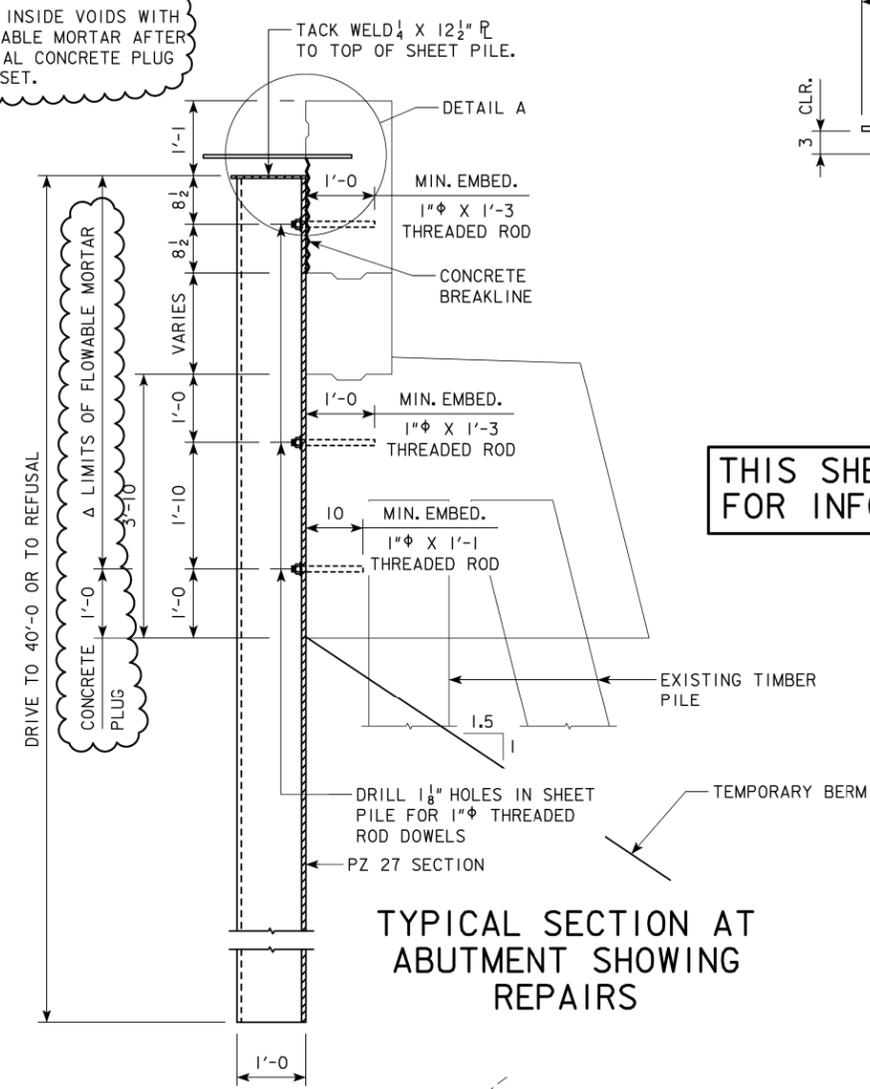
DESIGNED BY: EL. Orberg
 TRACED BY: Dawn Warrington
 DETAILED BY: Dawn Warrington
 CHECKED BY: H. Feas

FREMONT COUNTY PROJECT NUMBER ER-029-1(96)1--04-36 STATE IOWA DIST. NO. 8 FISCAL YEAR 71 SHEET NO. 21 TOTAL SHEETS 24

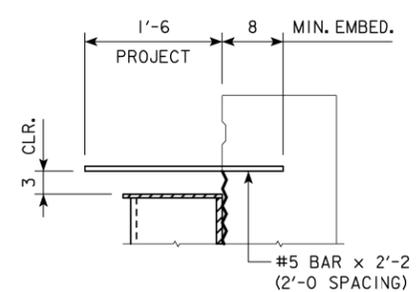


TYPICAL SECTION AT EXISTING ABUTMENT

Δ FILL INSIDE VOIDS WITH FLOWABLE MORTAR AFTER INITIAL CONCRETE PLUG HAS SET.

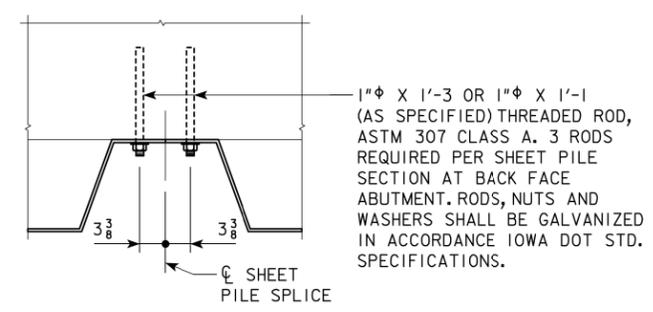


TYPICAL SECTION AT ABUTMENT SHOWING REPAIRS



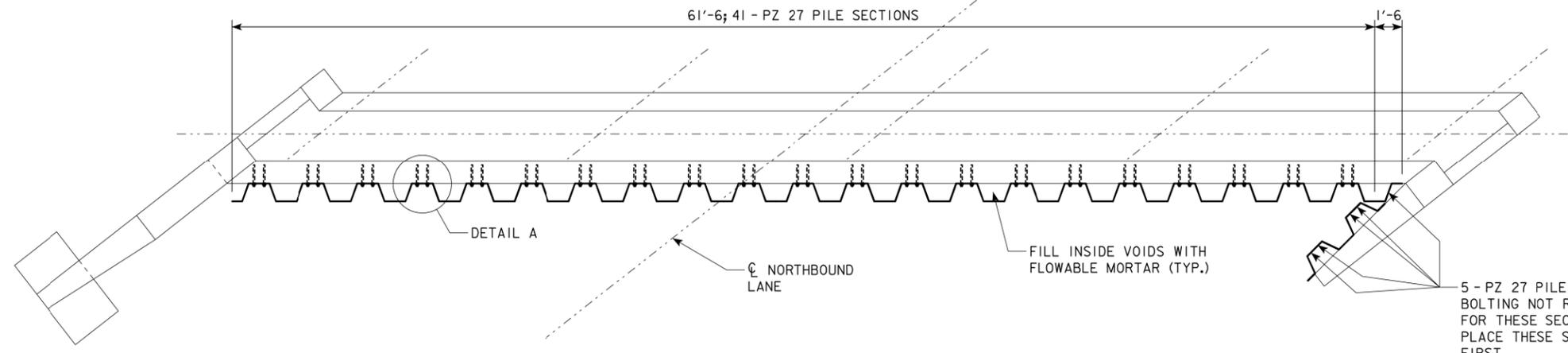
DETAIL B

THIS SHEET IS INCLUDED FOR INFORMATION ONLY.



DETAIL A

DOWEL SETTING NOTE :
 THE 1" Φ THREADED RODS AND #5 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 8", 10" OR 12" DEEP (AS SPECIFIED). THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. A POLYMER GROUT SYSTEM SHALL BE USED AS A BONDING AGENT IN ACCORDANCE WITH ARTICLE 2301.03, E, OF THE STANDARD SPECIFICATIONS.



REPAIR PLAN NORTHBOUND BRIDGE: SOUTH ABUTMENT



LOCATION
 I-29 OVER
 MAIN DITCH NO.6
 T-67N R-42W
 SECTION 28
 WASHINGTON TWP.
 MAINT. NO. 3601.4R029
 FHWA NO. 600030

DESIGN FOR REPAIRS TO 52° SKEW R.A.
170'-0 x 40'-0 CONTINUOUS I-BEAM BRIDGE (NORTHBOUND)
 48'-0 END SPANS 74'-0 INTERIOR SPAN
REPAIR DETAILS - NORTH ABUT.
 STA. 81+41.00 OCTOBER, 2011
FREMONT COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___

MATERIAL LIST		
ITEM	UNITS	QUANTITY
PZ 27 SHEET PILE 40'-0	SF	2760
* 1" Φ x 1'-3	EACH	82
* 1" Φ x 1'-1	EACH	41
#5 BAR x 2'-2	EACH	30

* INCLUDES NUTS & WASHERS