

BRIDGE AND APPROACHES - PPCB
BRF-25-2 (18)--38-88
LETTING DATE 4/15/03

- CONVENTIONAL SIGNS
- DIVIDED HIGHWAY
 - PAVED ROAD
 - BITUMINOUS ROAD
 - GRAVEL ROAD
 - EARTH ROAD
 - INTERSTATE HIGHWAY
 - UNITED STATES HIGHWAY
 - STATE HIGHWAY
 - COUNTY HIGHWAY
 - RAILROAD
 - PIPELINE
 - AIRPORT
 - HYDROLOGY
 - BRIDGE
 - STATE BOUNDARY
 - COUNTY BOUNDARY
 - CORPORATE LIMIT LINE
 - TOWNSHIP LINE
 - SECTION LINE

Iowa Department of Transportation
Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE
PRIMARY ROAD SYSTEM
UNION COUNTY
BRIDGE AND APPROACHES - PPCB
OVER PLATTE RIVER
3.4 MILES S.OF U.S. 34

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2001, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS, SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

VALUE ENGINEERING SAVES. REFER TO THE GENERAL NOTES IN THESE PLANS.

TOTAL SHEETS	60
PROJECT NUMBER	BRF-25-2 (18)--38-88
R.O.W. PROJECT NUMBER	
PROJECT IDENTIFICATION NUMBER	98-88-025-010

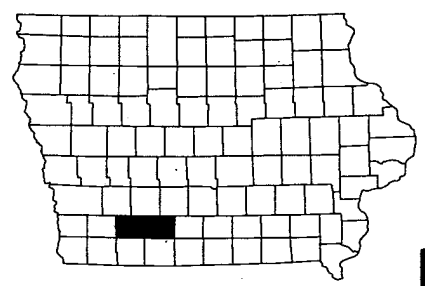
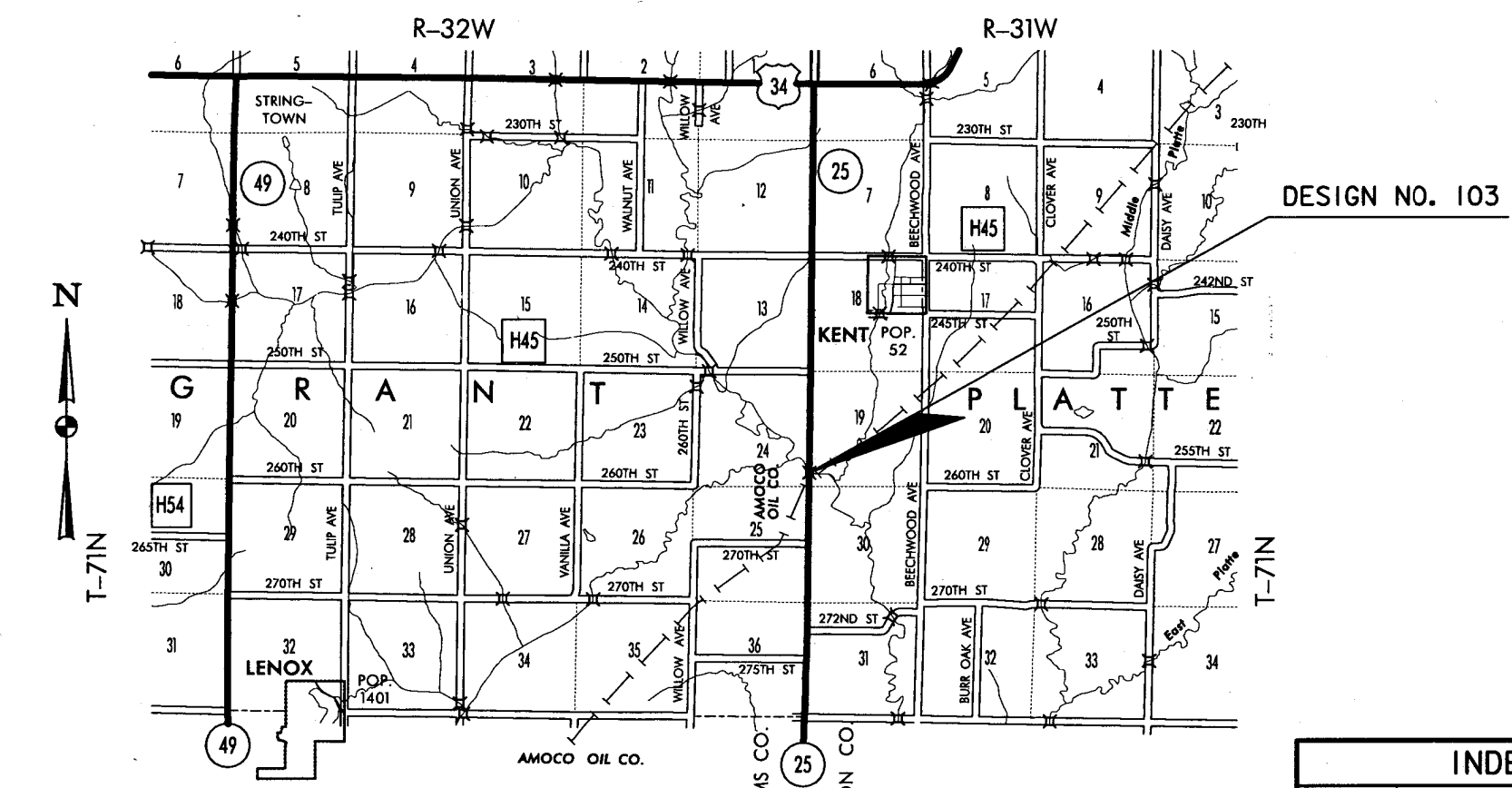
INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	BRIDGE ESTIMATE SHEET
2-24	BRIDGE DESIGN NO. 103
25	GEOTECHNICAL DESIGN
28	ROADWAY ESTIMATE SHEET
26-60	ROADWAY SHEETS

ENGLISH STANDARD BRIDGE PLANS		
STANDARD	ISSUED	REVISED

STANDARD ROAD PLANS
STANDARD ROAD PLANS ARE LISTED ON SHEET 29

DESIGN DATA RURAL			
2002 AADT	1120	V.P.D.	
2022 AADT	1460	V.P.D.	
2022 DHV	150	V.P.H.	
TRUCKS	13	%	
TOTAL DESIGN ESALs	525,000		

REVISIONS	



LOCATION MAP
70 KGH
150
PROJECT DIRECTORY NAME: 88025010A98

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
1	GORDON L. PORT	STRUCTURAL DESIGN
25,32	ROBERT L. STANLEY	GEOTECHNICAL DESIGN
26	JOHN R. ABRAMS	ROADWAY DESIGN

STRUCTURAL 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: *Gordon L. Port* Date: 1/29/03

Printed or Typed Name: Gordon L. Port

My license renewal date is December 31, 2004

Pages or sheets covered by this seal: SHEETS 1 THRU 24 OF 60

UNION COUNTY - DESIGN NO. 103

UNION COUNTY

ESTIMATED BRIDGE QUANTITIES					
ITEM NO.	ITEM CODE	ITEM DESCRIPTION	UNIT	TOTAL	AS BUILT QUANTITY
1	2401-6745650	RMVL OF EXIST STRUCTURES	LS	1	\$50,000
2	2402-2720000	EXCAVATION, CL 20	CY	509	509
3	2402-2721000	EXCAVATION, CL 21	CY	250	250
4	2403-0100010	STRUCT CONC (BRIDGE)	CY	526.5	526.500
5	2404-7775000	REINFORC STEEL	LB	32,613	32,613
6	2404-7775005	REINFORC STEEL, EPOXY COATED	LB	68,912	68,912
7	2407-0580440	BEAM, PPC, LXD40	EACH	12	12
8	2407-0580505	BEAM, PPC, LXD105	EACH	6	6
9	2408-7800000	STRUCTURAL STEEL	LB	5296	5,296
10	2414-6424110	CONC BARRIER RAIL	LF	430	430
11	2501-5425042	PILE, DRIVE STEEL BEAR, HP 10X42	LF	3600	3,401.900
12	2501-5550042	PILE, FURN STEEL BEAR, HP 10X42	LF	3600	3,600
13	2501-6335010	PREBORED HOLE	LF	180	180
14	2507-3250005	ENGINEERING FABRIC	SY	3150	3,150
15	2507-6800061	REVTMENT, CLASS E	TON	4300	4,313.300
16	2533-4980005	MOBILIZATION	LS	1	\$40,000

ITEM NO.	ESTIMATE REFERENCE INFORMATION
4	INCLUDES FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), GRANULAR BACKFILL, POROUS BACKFILL AND SUBDRAIN OUTLETS AT ABUTMENTS. INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED. INCLUDES FURNISHING AND PLACING ENGINEERING FABRIC, MACADAM STONE, 4"x6" TREATED TIMBERS, 1/2" DIAMETER STEEL PINS (OR REBARS), AND ALL REQUIRED EXCAVATING, SHAPING AND COMPACTING. IF THE PRECAST PRESTRESSED CONCRETE DECK PANELS ARE USED PAYMENT WILL BE MADE BASED ON PLAN QUANTITY BUT THE VOLUME ACTUALLY REQUIRED WILL BE 46.6 CU.YDS. LESS THAN PLAN QUANTITY.
6	IF THE PRECAST PRESTRESSED CONCRETE DECK PANELS ARE USED PAYMENT WILL BE MADE BASED ON PLAN QUANTITY BUT THE AMOUNT ACTUALLY REQUIRED WILL BE 16,294 LBS. LESS THAN PLAN QUANTITY.
7 & 8	INCLUDES PIER AND ABUTMENT BEARING MATERIAL AND COIL RODS. GRADATION OF COARSE AGGREGATES FOR PRESTRESSED CONCRETE BRIDGE UNITS SHALL MEET THE REQUIREMENTS OF SECTION 4115 CLASS 3 DURABILITY. GRADATION OF THE COARSE AGGREGATE SHALL MEET THE REQUIREMENTS OF SECTION 2407.02A.
9	INCLUDES 12 DECK DRAINS AT 106 LBS. PER DRAIN.
15	INCLUDES GRADING AND SHAPING TO PLACE REVTMENT.

CHANGE ORDERS				
CO #	ITEM CODE	ITEM	UNITS	QUANTITY
1	2501-2500010	DYNAMIC PILE TEST	LS	\$250.00
3	2599-9999010	('LUMP SUM' ITEM) Drainage System	LS	\$500.00
4	6200-1108010	PRICEADJLIQUIDATED DAMAGES	DAY	-1.500

TRAFFIC CONTROL PLAN :

NOTE :
THE ROADWAY WILL BE CLOSED TO THRU TRAFFIC.
REFER TO THE TRAFFIC CONTROL PLAN SHOWN
ELSEWHERE IN THESE PLANS.

NOTE:
ROADWAY QUANTITIES SHOWN
ELSEWHERE IN THESE PLANS.

NOTE:
POLLUTION PREVENTION PLAN SHOWN
ELSEWHERE IN THESE PLANS.

DESIGN STRESSES :

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 1996.
REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.
CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 3500 PSI.
PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEET 15.
STRUCTURAL STEEL IN ACCORDANCE WITH SECTION 10, ASTM A709.

SPECIFICATIONS:

DESIGN: AASHTO SERIES OF 1996.
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2001, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

GENERAL NOTES :

THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 180'-0 x 24' CONTINUOUS I-BEAM BRIDGE OVER THE PLATTE RIVER, ADAMS COUNTY DESIGN NO. 134. PLANS OF THE EXISTING STRUCTURE WILL BE MADE AVAILABLE TO THE CONTRACTOR, CONTACT THE OFFICE OF CONTRACTS - HIGHWAY DIVISION - IOWA D.O.T. - AMES.

THIS BRIDGE IS DESIGNED FOR HS20-44, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE STARTING DATE.

THE BRIDGE CONTRACTOR WILL BE THE ONLY CONTRACTOR AT THE SITE AND IS RESPONSIBLE FOR THE COMPLETION OF ALL WORK AS DETAILED AND NOTED IN THESE PLANS. REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS.

THE LUMP SUM BID FOR "REMOVAL OF EXISTING STRUCTURES" SHALL INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE 180'-0 x 24' CONTINUOUS I-BEAM BRIDGE. THE EXISTING BRIDGE, INCLUDING APPROXIMATELY 140,000 LBS OF STRUCTURAL STEEL, WILL BECOME THE PROPERTY OF AND REMOVED FROM THE SITE BY THE CONTRACTOR.

IT SHALL BE THE BRIDGE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SITES FOR EXCESS EXCAVATED MATERIAL. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.

A SCRAPE SAMPLE WAS TAKEN FROM AN AREA OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE OF AND LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. ANALYSIS OF TOTAL LEAD ON THIS SAMPLE WAS <50 PARTS PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THIS SAMPLE WAS 750 PPM. THESE ANALYSES SHOW THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS. NO OTHER CONSTITUENTS WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THE DEPARTMENT'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

THE BRIDGE CONTRACTOR SHALL PREBORE HOLES FOR ABUTMENT PILES. HOLES SHALL BE BORED TO THE ELEVATIONS SHOWN ON THE "LONGITUDINAL SECTION ALONG CENTERLINE ROADWAY" ON DESIGN SHEET 2. PILES SHALL BE DRIVEN THROUGH THE HOLES TO AT LEAST THE SPECIFIED DESIGN BEARING.

THE BRIDGE CONTRACTOR IS TO INSTALL SUBDRAINS BEHIND THE ABUTMENTS, SEE DESIGN SHEET 20 FOR DETAILS.

THE CONTRACTOR SHALL NOTE THE STANDARD ABUTMENT DETAILS HAVE BEEN MODIFIED TO OFFSET THE ABUTMENT FOOTING FROM THE WINGWALL TO AID IN TYING THE REINFORCING STEEL BETWEEN THE FOOTING TO WINGWALL AND THE FOOTING TO BACKWALL.

IF NECESSARY TO PREVENT DAMAGE TO THE END OF THE BRIDGE DECK OR BACKWALL FROM CONSTRUCTION EQUIPMENT, AN APPROPRIATE METHOD OF PROTECTION APPROVED BY THE ENGINEER SHALL BE PROVIDED BY THE CONTRACTOR AT NO EXTRA COST TO THE STATE.

AT THE OPTION OF THE BRIDGE CONTRACTOR, THE PRECAST PRESTRESSED CONCRETE DECK PANELS AS SHOWN ON DESIGN SHEETS 22 & 23 MAY BE USED IN CONSTRUCTION OF THE BRIDGE DECK IN LIEU OF THE CONVENTIONAL DECK AS SHOWN ON DESIGN SHEET 10.

THE BRIDGE CONTRACTOR IS ENCOURAGED TO TAKE FULL ADVANTAGE OF SPECIFICATION 1105.15 -- VALUE ENGINEERING INCENTIVE PROPOSAL. A PAMPHLET AND CONCEPTUAL PROPOSAL FORM WILL BE AVAILABLE AT THE PRECONSTRUCTION CONFERENCE.

THE BRIDGE CONTRACTOR IS TO PLACE CLASS E REVTMENT AND ENGINEERING FABRIC TO THE APPROXIMATE LIMITS SHOWN ON DESIGN SHEET 2. NO EXCAVATION IS TO BE DONE IN THE CHANNEL FOR PLACEMENT OF THE REVTMENT. DO ONLY ENOUGH SHAPING OF THE BERMS TO TIE INTO THE LEVEES. DIMENSIONS FOR WIDTH OF BERMS AND LEVEE TIE-INS SHOWN ARE APPROXIMATE. THE CLASS E REVTMENT IS TO BE 2 FOOT THICK AND PLACED ON ENGINEERING FABRIC. PROVIDE A 10 FOOT TOE ON THE REVTMENT PLACED ON THE BERMS.

DESIGN HISTORY
AT THIS SITE

DES. NO.	TYPE OF WORK
134	ORIGINAL DESIGN
103	188'-0 x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

DESIGN FOR 18° SKEW (L.A.)
**188'-0 x 36' PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE**

40'-9 END SPANS 106'-6 INTERIOR SPAN
GENERAL NOTES AND QUANTITIES
STATION : 110+90.62 (§ IOWA 25)
APRIL, 2003

UNION COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 23 FILE NO. 29876 DESIGN NO. 103

DESIGNED BY E.SOUHRADA
DETAILED BY R.RYSAVY

CHECKED BY G.KOTLERS
CADD FILE h880103.s01

UNION COUNTY

PROJECT NUMBER

BRF-25-2 (18)--38-88

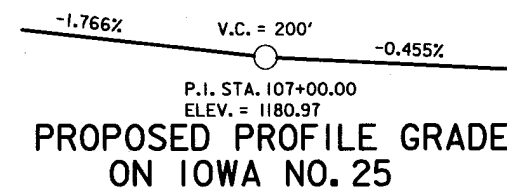
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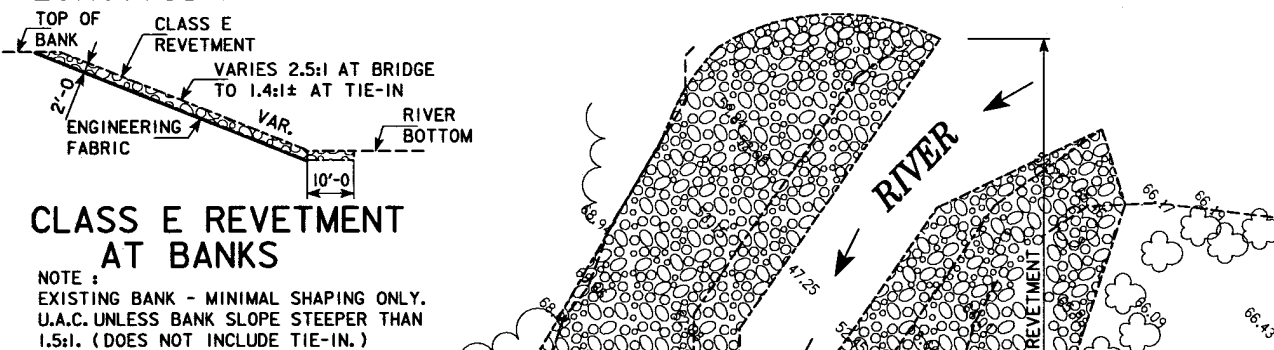
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BENCH MARK: NO. 501A STA. 109+94, 18.75LT., IOWA D.O.T. BRASS PLUG IN TOP BARRIER RAIL SOUTHWEST CORNER OF BRIDGE, ELEVATION 1182.21



LONGITUDINAL SECTION ALONG PROFILE GRADE IOWA NO. 25



CLASS E REVETMENT AT DITCHES

NOTE: WHERE DITCHES ARE ERODING (SOUTH BANK) CARRY CLASS E REVETMENT BACK 10' (±) FROM ERODED PORTION OF DITCH.

CLASS E REVETMENT NOTES: GRADING SHOULD BE MINIMAL, BUT PROVIDE AT LEAST 2.5:1 SLOPE AT BRIDGE AND TIE BACK INTO BANKS AT LOCATIONS SHOWN. PLACE ENGINEERING FABRIC ON GRADED SLOPES AT ABUTMENTS AND ALONG CHANNEL BANKS. PLACE CLASS E REVETMENT BLANKET 2 FOOT THICK ON ENGINEERING FABRIC AND PROVIDE 10 FOOT TOE. DITCHES ARE NOT TO BE BLOCKED.

CLASS E REVETMENT AT BANKS

NOTE: EXISTING BANK - MINIMAL SHAPING ONLY. U.A.C. UNLESS BANK SLOPE STEEPER THAN 1.5:1. (DOES NOT INCLUDE TIE-IN.)

HYDRAULIC DATA

DRAINAGE AREA= 92.1 MI²
 STREAM SLOPE= 4.35 FT./MI.
 Q₅₀ = 8322 CFS
 STAGE W/BACKWATER= 1169.56
 NATURAL STAGE AT BRIDGE=1168.65
 Q₁₀₀ = 9762 CFS
 STAGE W/BACKWATER= 1170.89
 NATURAL STAGE AT BRIDGE=1169.85
 CALCULATED SCOUR= 1144.50
 Q₅₀₀ = 13,392 CFS
 NATURAL STAGE= 1172.82
 AVG. LOW WATER STAGE= 1152.99
 EXTREME HW STAGE= 1175.0
 DATE= 1993

TRAFFIC ESTIMATE :

1120 V.P.D. (2002)
 1460 V.P.D. (2022)
 13% TRUCKS
 DESIGN ESALs 525,000



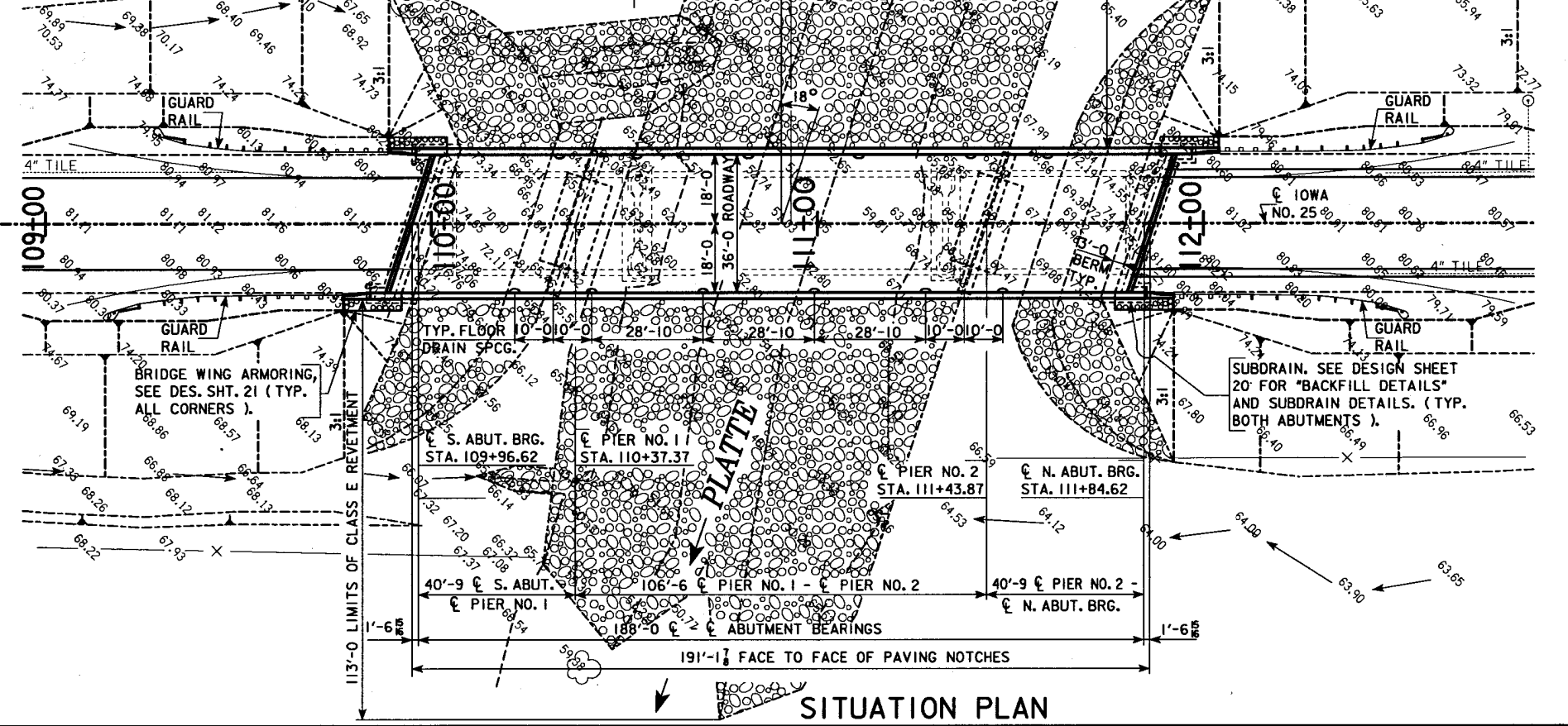
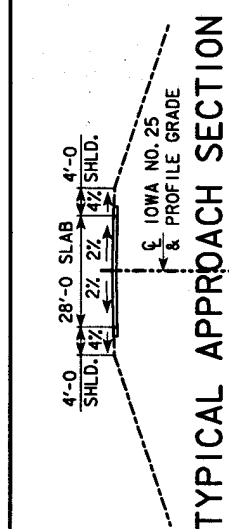
LOCATION :

IOWA 25 OVER
 PLATTE RIVER
 SECTIONS 24 & 19
 T-71 N R-32 & 31 W
 GRANT & PLATTE TWP.
 ADAMS/UNION COUNTY

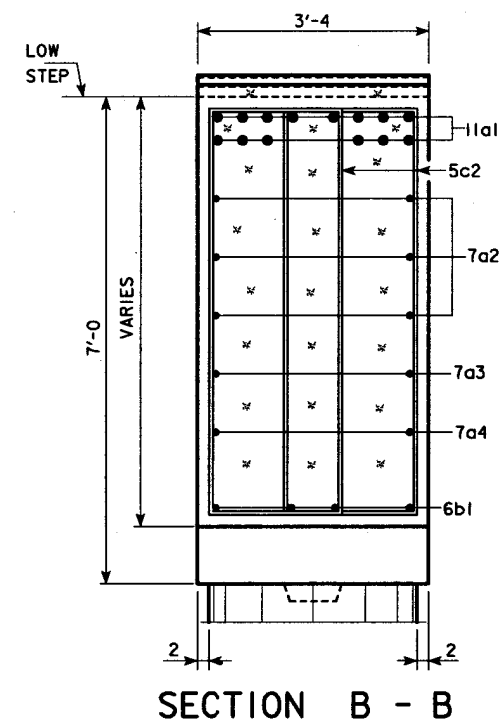
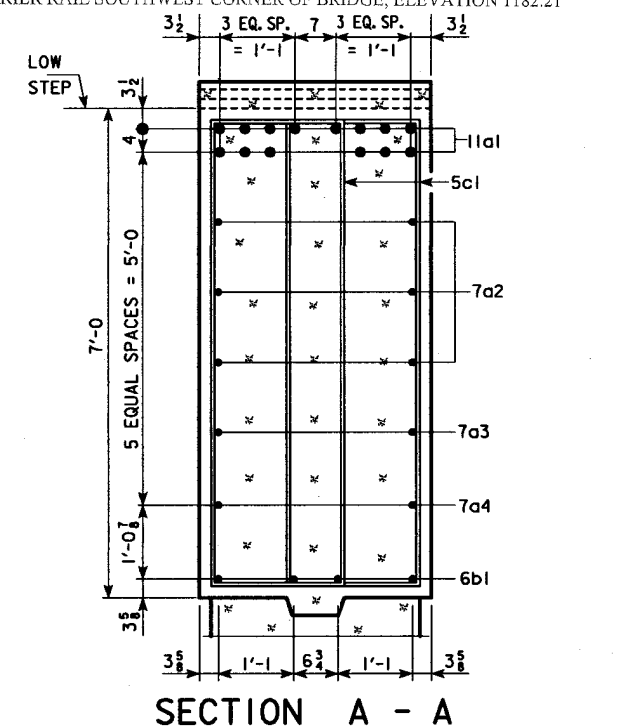
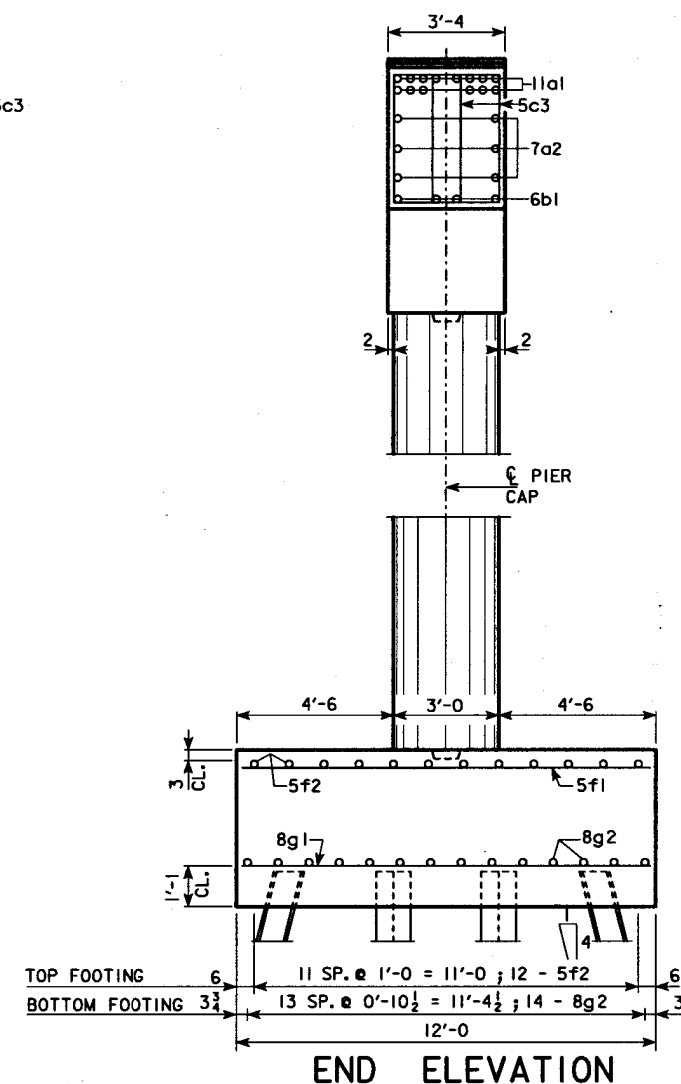
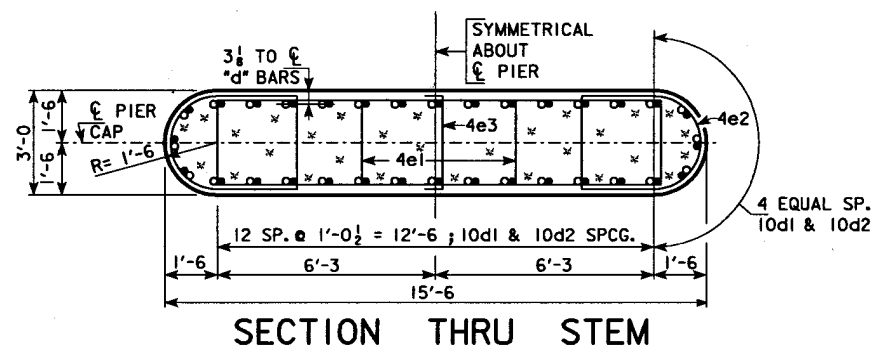
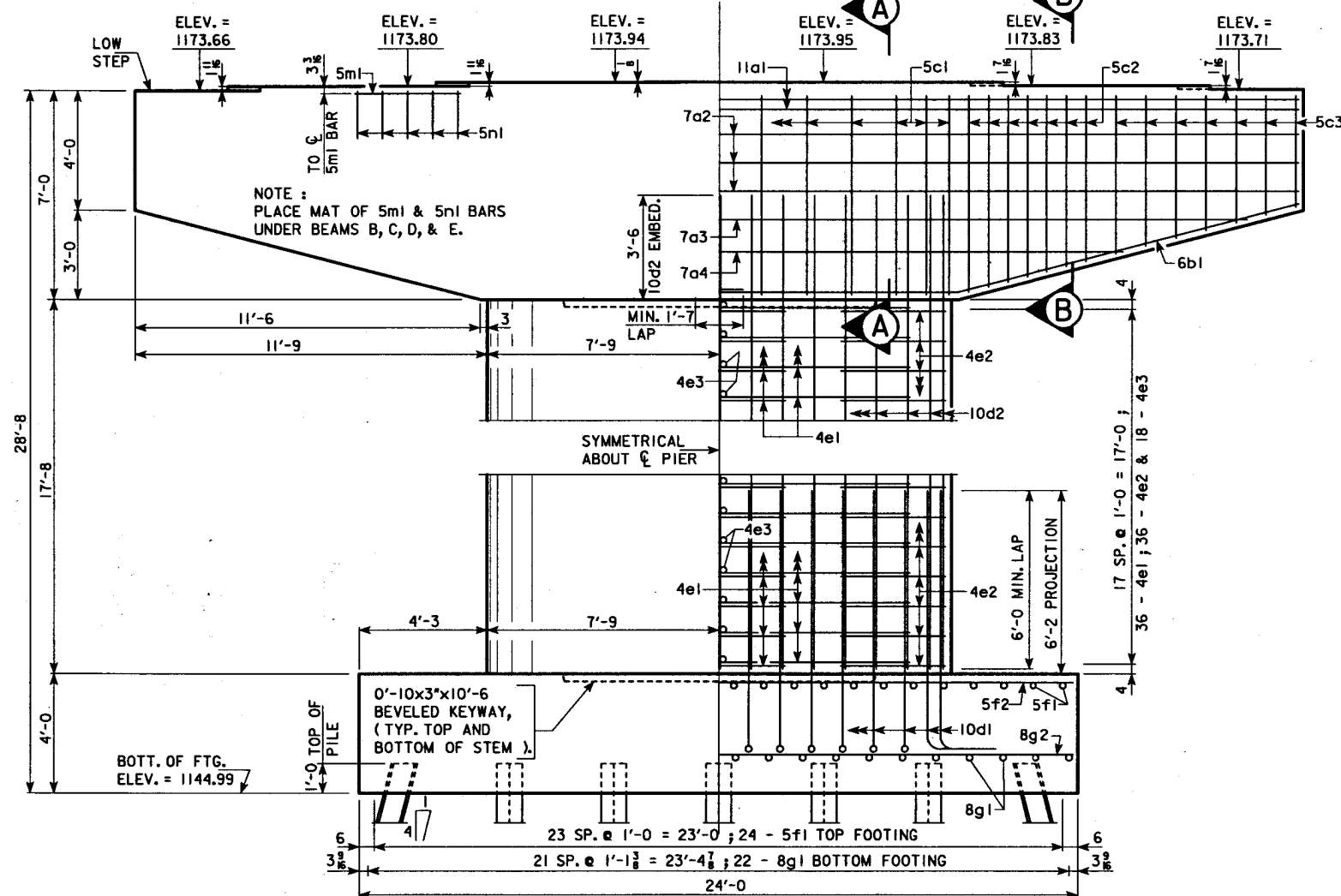
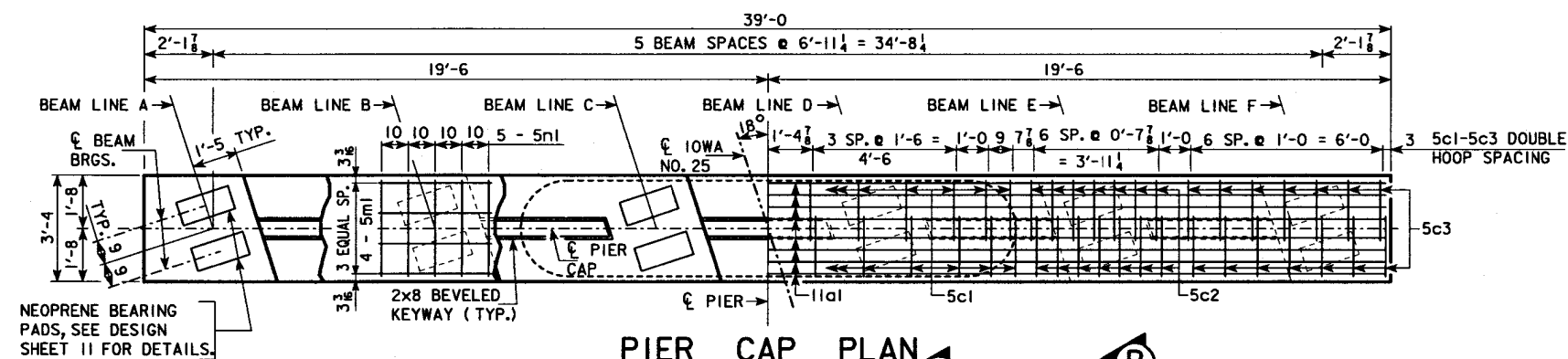
BRIDGE MAINTENANCE NO.
 8824.7S025
 FHWA NO. 050141

DESIGN FOR 18° SKEW (L.A.)
188'-0 x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
 40'-9 END SPANS 106'-6 INTERIOR SPAN
SITUATION PLAN
 STATION : 110+90.62 (± IOWA 25)
UNION COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 23 FILE NO. 29876 DESIGN NO. 103

TYPICAL APPROACH SECTION



DESIGNED BY E.SOUHRADA CHECKED BY G.KOTLERS
 DETAILED BY R.RYSAY CADD FILE H880103.S02



BENCH MARK: NO. 501A STA. 109+94, 18.75LT., IOWA D.O.T. BRASS PLUG IN TOP BARRIER RAIL SOUTHWEST CORNER OF BRIDGE. ELEVATION 1182.21

NOTE :
SEE DESIGN SHEET 5 FOR
FOOTING PLAN AND OTHER
PIER DETAILS.

DESIGN FOR 18° SKEW (L.A.)

188'-0 x 36' PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

40'-9 END SPANS 106'-6 INTERIOR SPAN

PIER NO. 1 DETAILS

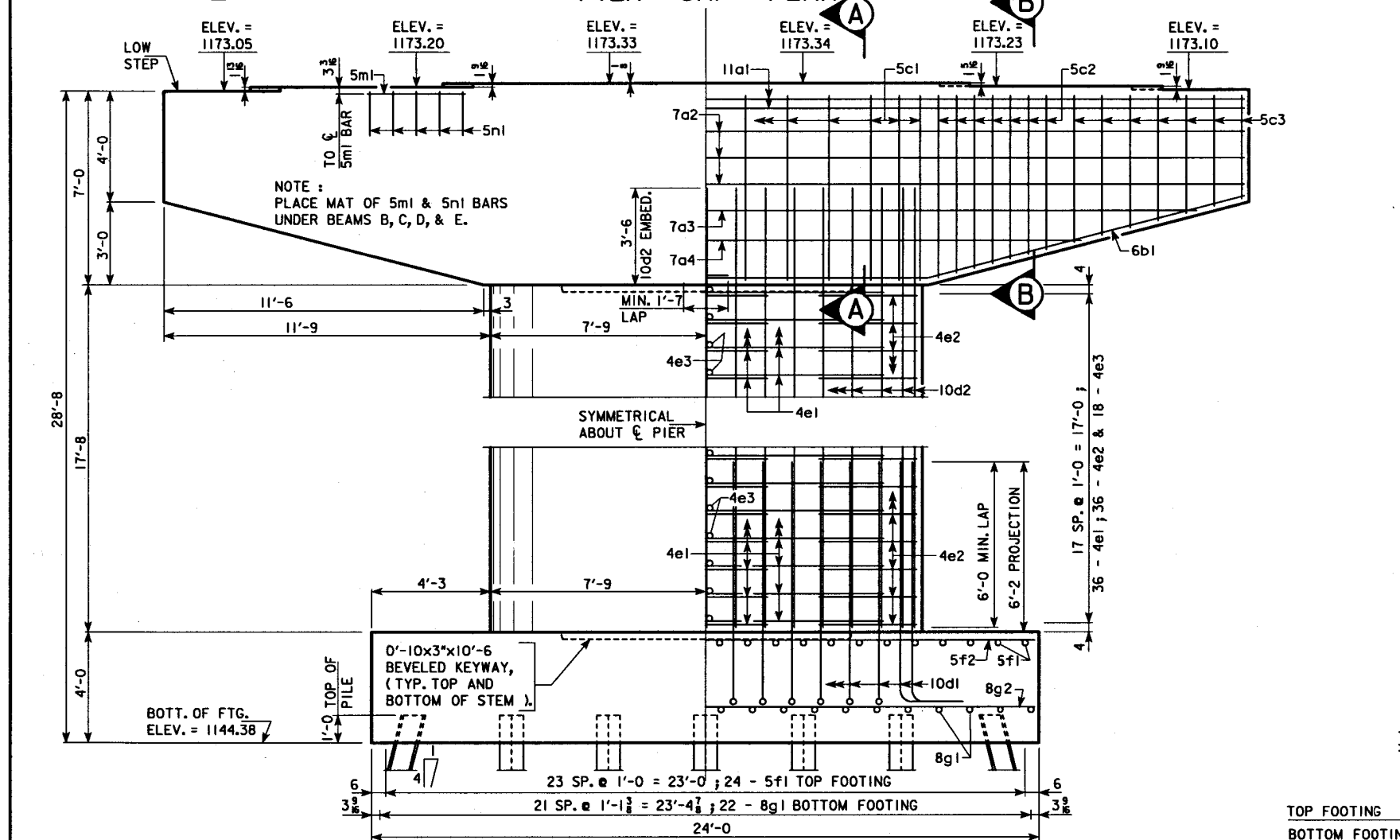
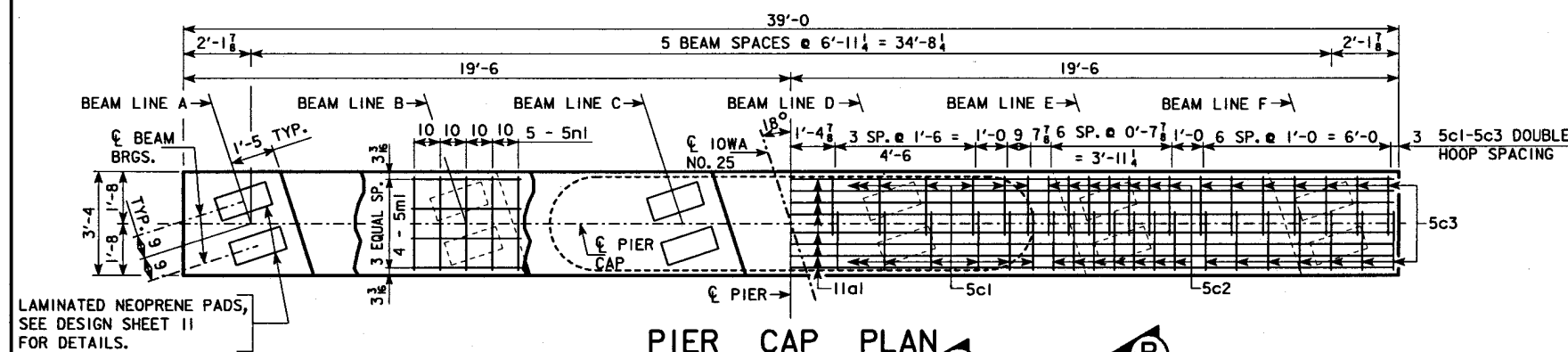
STATION : 110+90.62 (@ IOWA 25) APRIL, 2003

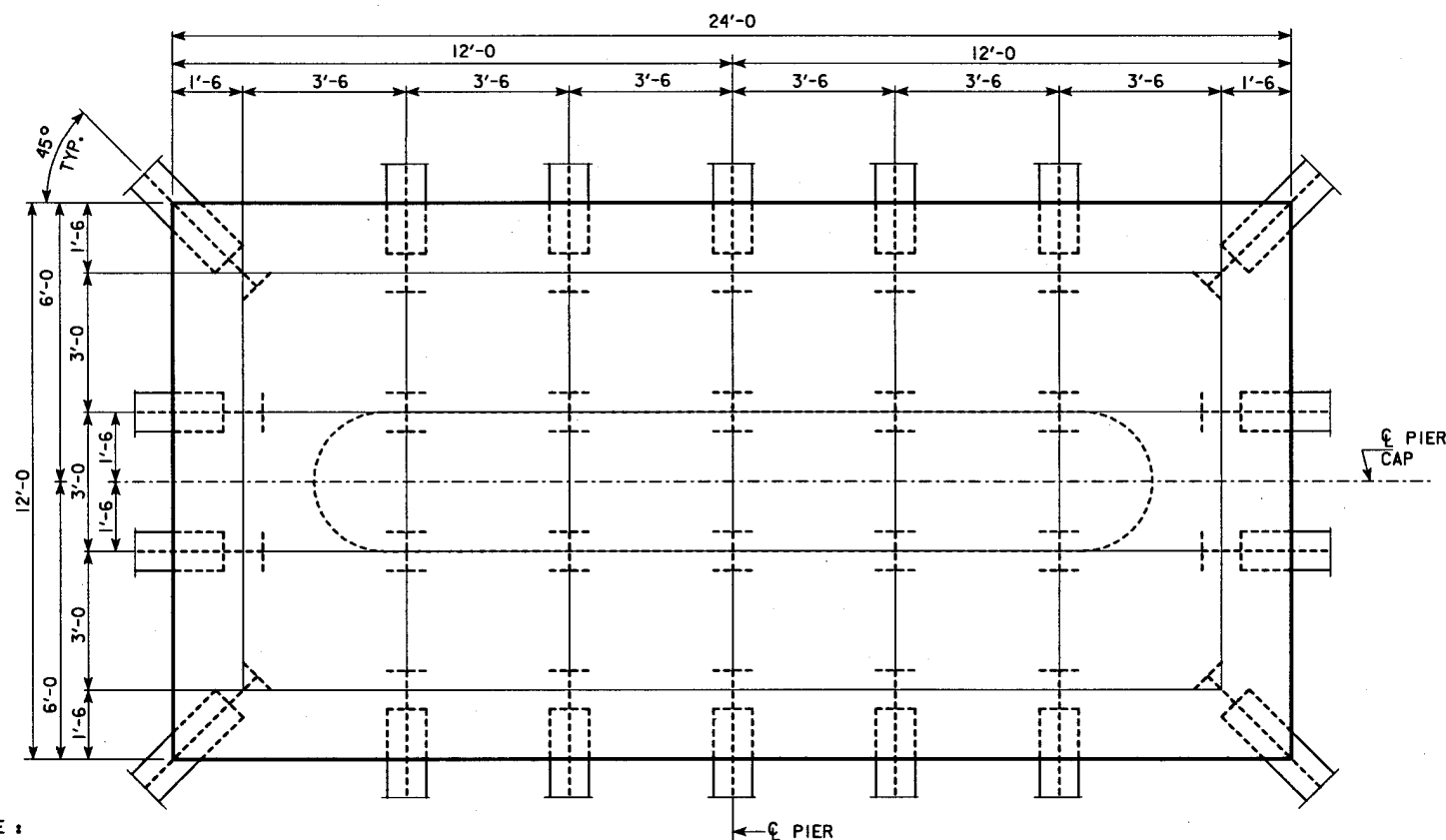
UNION COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 23 FILE NO. 29876 DESIGN NO. 103

BENCH MARK: NO. 501A STA. 109+94, 18.75LT., IOWA D.O.T. BRASS PLUG IN TOP BARRIER RAIL SOUTHWEST CORNER OF BRIDGE, ELEVATION 1182.21





NOTE :
DIMENSIONS SHOWN ARE AT BOTTOM OF FOOTING.
BATTER PILES 1:4 IN THE DIRECTION SHOWN.

28 - HP10x42 STEEL BEARING PILING REQUIRED
AT PIER NO. 1.
28 - HP10x42 STEEL BEARING PILING REQUIRED
AT PIER NO. 2.

PILE PLAN
(TYPICAL FOR PIER NO. 1 AND PIER NO. 2)

CONCRETE PLACEMENT QUANTITIES

LOCATION	PIER NO. 1	PIER NO. 2	QUANTITY
FOOTING	42.7	42.7	85.4
STEM	29.2	29.2	58.4
CAP & STEPS	30.3	30.3	60.6
TOTAL - CU.YDS.	102.2	102.2	204.4

ESTIMATED PIER QUANTITIES - TWO PIERS

ITEM	UNITS	PIER NO. 1	PIER NO. 2	QUANTITY
STRUCTURAL CONCRETE	CU.YDS	102.2	102.2	204.4
REINFORCING STEEL	LBS.	12,831	12,831	25,662
HP10x42 STEEL	FURNISH	28 @ 45'	28 @ 45'	2520
BEARING PILING	DRIVE	28 @ 45'	28 @ 45'	2520
CLASS 20 EXCAVATION	CU.YDS	175	200	375
CLASS 21 EXCAVATION	CU.YDS	120	130	250

PIER NOTES :

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN

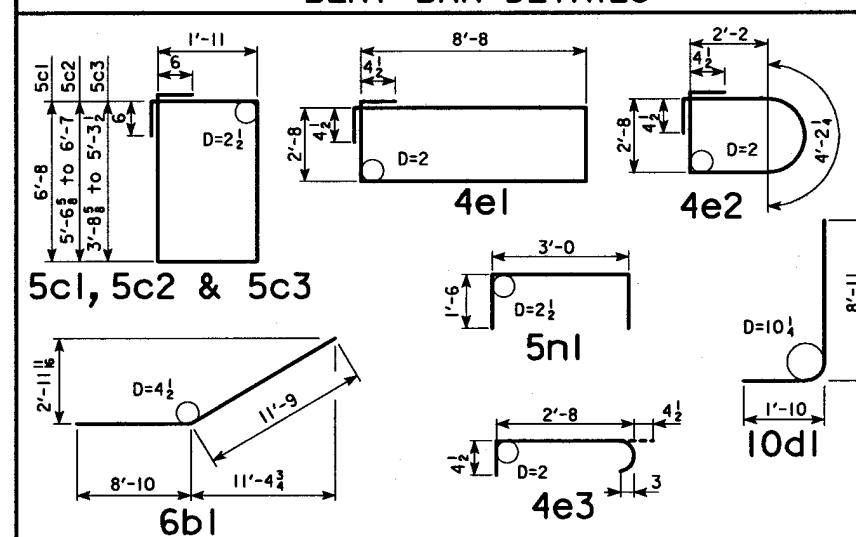
CONSTRUCTION JOINTS ARE TO BE FORMED WITH A 3 x 10 x 10'-6 DRESSED AND BEVELED STRIP.

THE DESIGN BEARING FOR THE PIER PILES IS 36 TONS.

REINFORCING BAR LIST - ONE PIER

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
11a1	CAP, LONGIT., TOP	—	14	38'-8	2876
7a2	CAP, LONGIT., SIDES	—	6	38'-8	474
7a3	CAP, LONGIT., SIDES	—	2	32'-7	133
7a4	CAP, LONGIT., SIDES	—	2	24'-11	102
6b1	CAP, LONGIT., BOTTOM	—	8	20'-7	247
5c1	CAP HOOPS	□	26	18'-2	493
5c2	CAP HOOPS, CANTILEVER	□	28	VARIES	496
5c3	CAP HOOPS, CANTILEVER	□	28	VARIES	404
10d1	FOOTING TO STEM DOWELS	—	32	10'-9	1480
10d2	STEM, VERTICAL	—	32	21'-0	2892
4e1	STEM HOOPS	□	36	23'-5	563
4e2	STEM TIES AT ENDS	□	36	12'-0	289
4e3	STEM TIES	—	18	3'-5	41
5f1	FOOTING, TRANSV. - TOP	—	24	11'-8	292
5f2	FOOTING, LONGIT. - TOP	—	12	23'-8	296
8g1	FOOTING, TRANSV. - BOTTOM	—	22	11'-8	685
8g2	FOOTING, LONGIT. - BOTTOM	—	14	23'-8	885
5m1	CAP, STEPS, LONGIT.	—	16	3'-6	58
5n1	CAP, STEPS, TRANSV.	—	20	6'-0	125
REINFORCING STEEL TOTAL - (LBS.)					12,831

BENT BAR DETAILS



NOTE : ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

DESIGN FOR 18° SKEW (L.A.)
188'-0 x 36' PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE
40'-9 END SPANS 106'-6 INTERIOR SPAN
PIER DETAILS
STATION : 110+90.62 (± 10WA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 5 OF 23 FILE NO. 29876 DESIGN NO. 103

DESIGNED BY E.SOUHRADA CHECKED BY G.KOTLERS
DETAILED BY R.RYSAVY CADD FILE h880103.s05

UNION COUNTY

PROJECT NUMBER

BRF-25-2 (18)-38-88

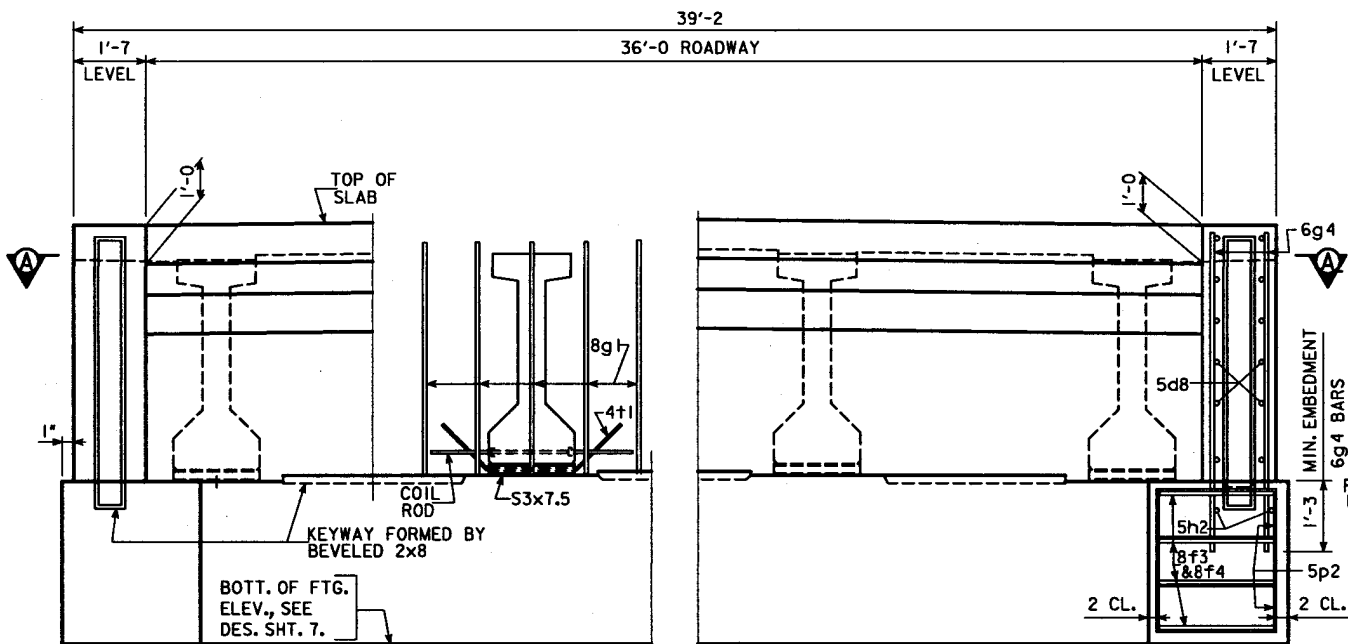
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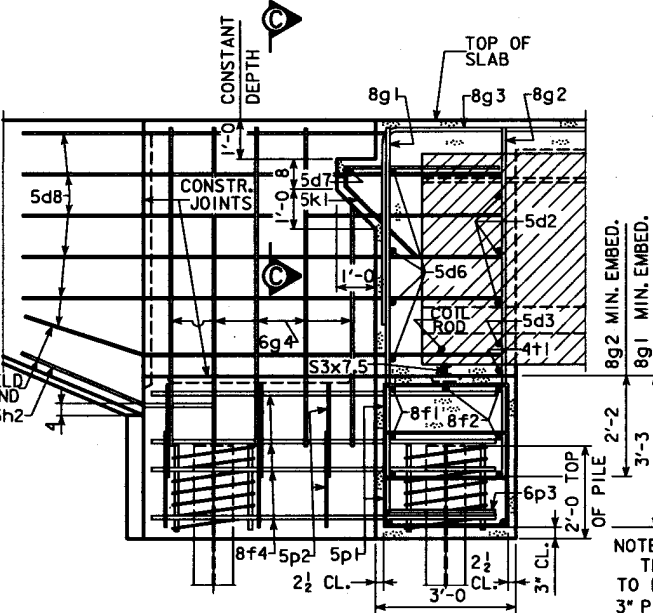
rrysavy

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BENCH MARK: NO. 501A STA. 109+94, 18.75LT., IOWA D.O.T. BRASS PLUG IN TOP BARRIER RAIL SOUTHWEST CORNER OF BRIDGE, ELEVATION 1182.21

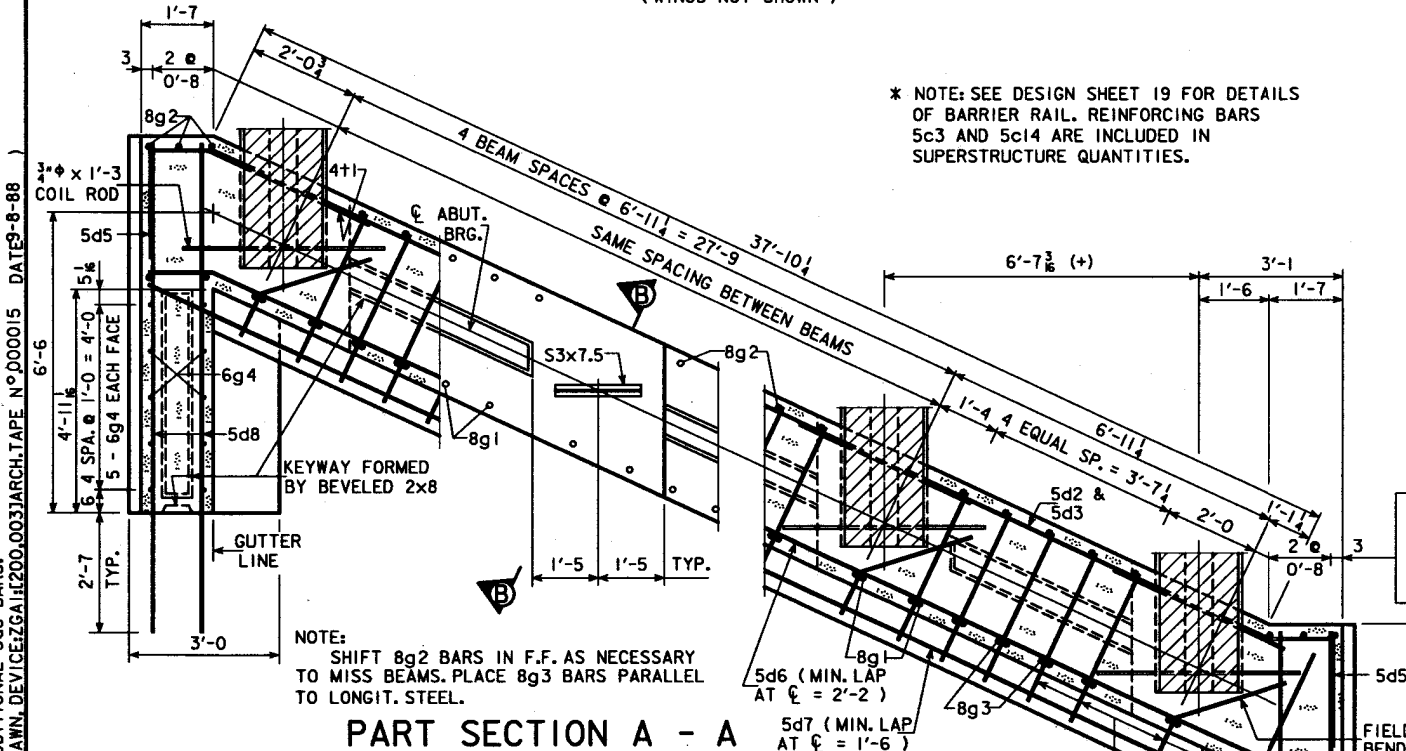


PART REAR ELEVATION AT ABUTMENT
(WINGS NOT SHOWN)

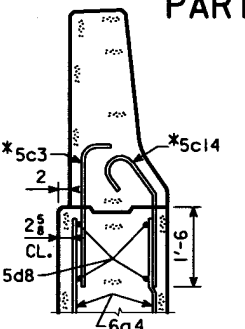


PART SECTION B - B

NOTE:
THE SPIRAL AT THE TOP OF EACH PILE
TO BE 7 TURNS OF NO. 2 BAR, 21" DIAMETER,
3" PITCH WITH 2 - L 1/2 x 1/2 x 1/2 SPACERS
PUNCHED TO HOLD SPIRAL.



PART SECTION A - A

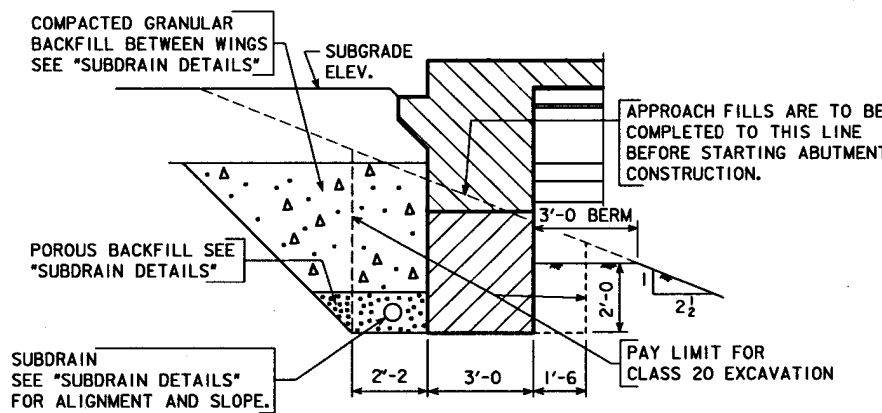


PART SECTION C-C

SPACING FOR :
35 - 8g1 BACK FACE
31 - 8g2 FRONT FACE
31 - 8g3 BACK FACE
32 - 5k1 BACK FACE

ABUTMENT NOTES:
MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN. THE DESIGN BEARING FOR THE ABUTMENT PILES IS 36 TONS.

NOTE: BARRIER RAIL NOT SHOWN IN DETAILS.



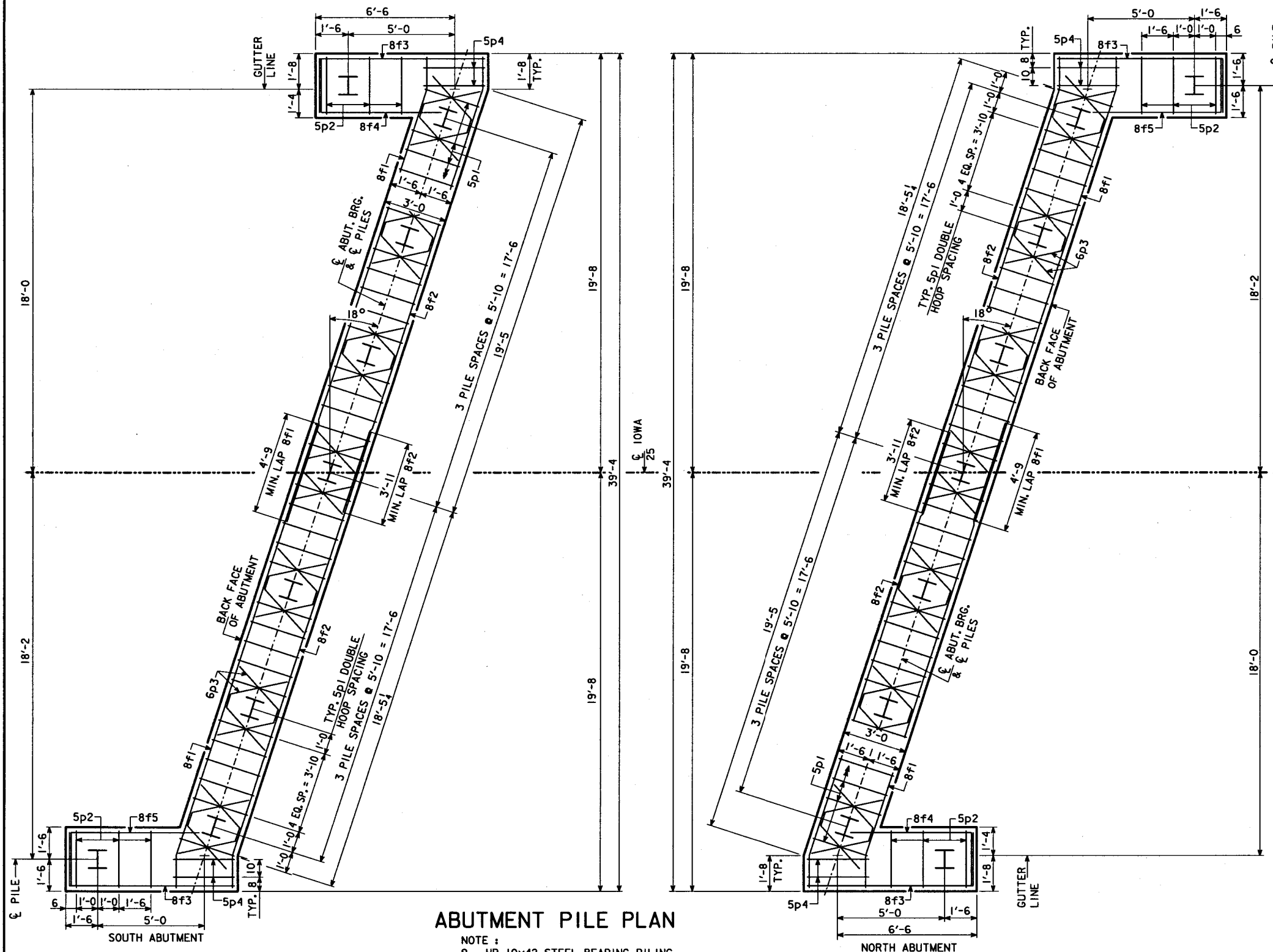
ABUTMENT EXCAVATION DETAILS

NOTE :
SEE DESIGN SHEET 7 FOR ABUTMENT PILE
LAYOUT AND ABUTMENT STEP DIAGRAM.

DESIGN FOR 18° SKEW (L.A.)
188'-0" x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
40'-9" END SPANS 106'-6" INTERIOR SPAN
ABUTMENT DETAILS
STATION : 110+90.62 (± IOWA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 6 OF 23 FILE NO. 29876 DESIGN NO. 103

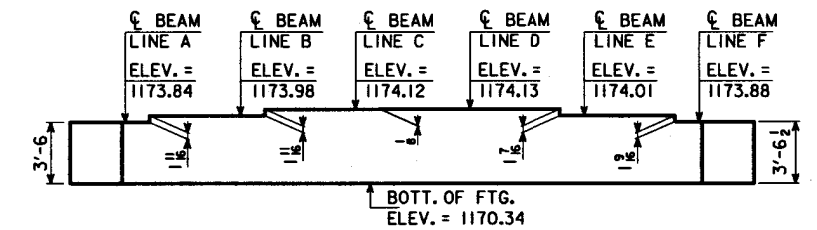
REVISED 09-01 - PART SECTION C-C ADDED AND ADDITIONAL 5d8 BARS.
HE2088.S01 (HSTD02088.S01--WRJ) THIS SHEET REDRAWN. DEVICE: IGH200.003JARCH.TAPE NO. 000015 DATE: 8-88

BENCH MARK: NO. 501A STA. 109+94, 18.75LT., IOWA D.O.T. BRASS PLUG IN
TOP BARRIER RAIL SOUTHWEST CORNER OF BRIDGE, ELEVATION 1182.21

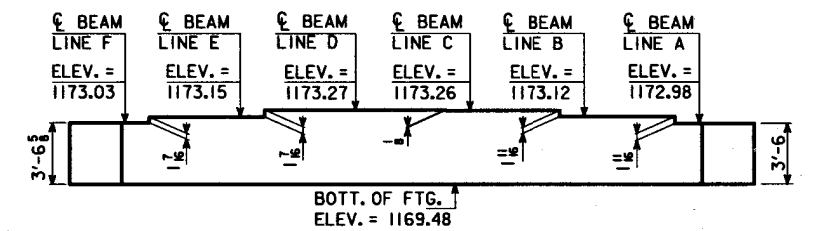


ABUTMENT PILE PLAN

NOTE:
9 - HP 10x42 STEEL BEARING PILING
REQUIRED AT EACH ABUTMENT.



REAR ELEVATION - SOUTH ABUTMENT



REAR ELEVATION - NORTH ABUTMENT

DESIGN FOR 18° SKEW (L.A.)
**188'-0" x 36' PRETENSIONED PRESTRESSED
 CONCRETE BEAM BRIDGE**
 40'-9" END SPANS 106'-6" INTERIOR SPAN
ABUTMENT DETAILS
 STATION : 110+90.62 (E IOWA 25) APRIL, 2003
UNION COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 7 OF 23 FILE NO. 29876 DESIGN NO. 103

DESIGNED BY E.SOUHRADA CHECKED BY G.KOTLERS
 DETAILED BY R.RYSAVY CADD FILE h880103.s07

UNION COUNTY

PROJECT NUMBER BRF-25-2 (18)-38-88

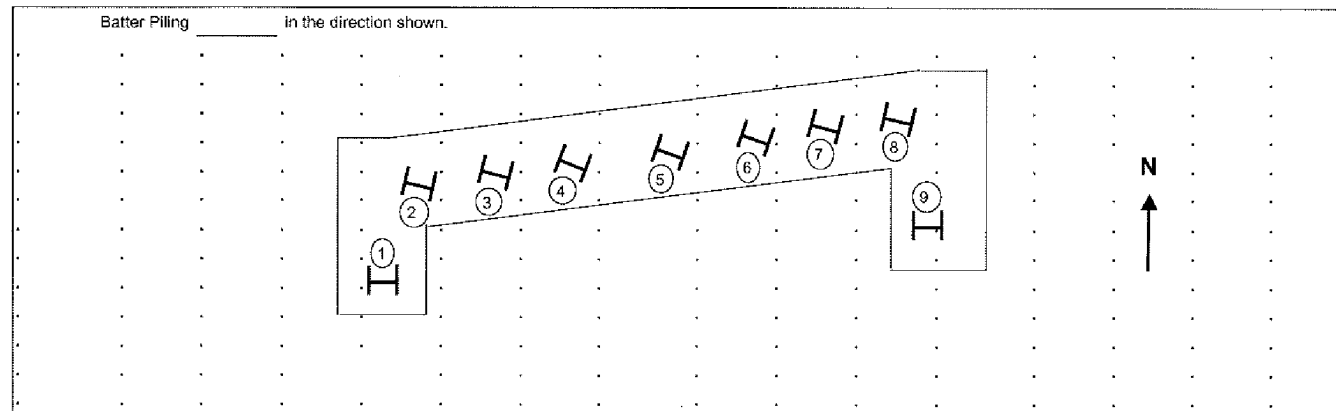
SHEET NUMBER 8

29-JAN-2003 10:21

rrysavy

W:\Projects\88025010A98\BRF\Ina\h880103.s07

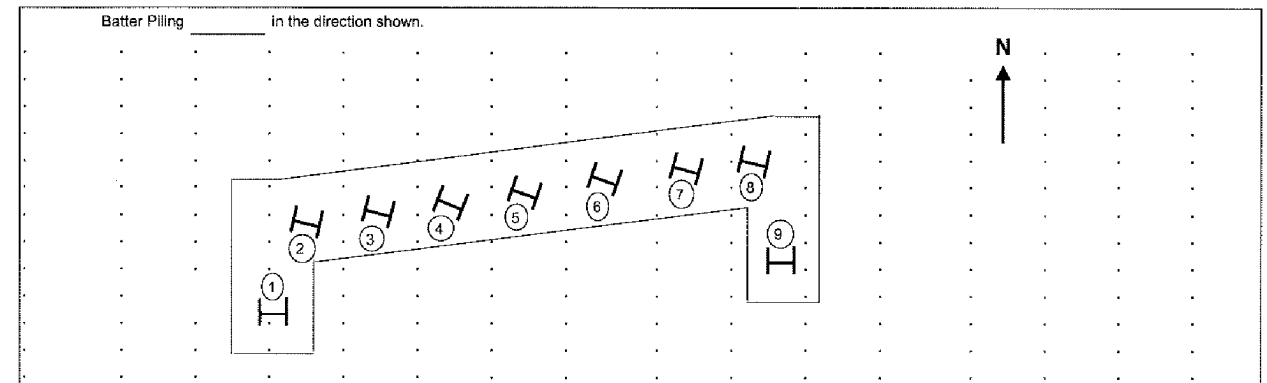
Sketch foundation below. Locate each pile by circles with numbers therein. Note battered piles on sketch, and give the amount of batter. Place name and certificate number of welder below if welding was necessary. Forward copies as outlined in the construction manual. Note on drawing which pile has been logged.

[illegible]

Remarks: _____

Todd McCullough 08/06/03 _____ Engineer
 Inspector Date Title

Sketch foundation below. Locate each pile by circles with numbers therein. Note battered piles on sketch, and give the amount of batter. Place name and certificate number of welder below if welding was necessary. Forward copies as outlined in the construction manual. Note on drawing which pile has been logged.

[illegible]

<u>Todd McCullough</u>	<u>08/06/03</u>	<u>Engineer</u>
Inspector	Date	Title

Iowa Department of Transportation
LOG OF PILING DRIVEN WITH WAVE EQUATION

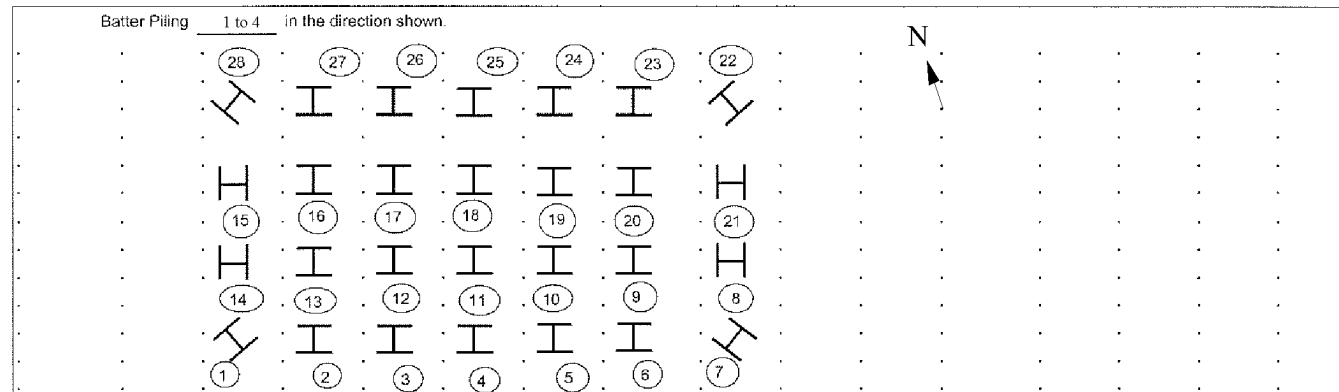
Project No.:	BRF-25-2-(18)-38-88
County:	Union
Design No.:	103
Sta. of Foundation:	110+37.37
Location:	South Pier
Contractor:	Godbersen-Smith Construction
Driving Graph No.:	88-103-02-830

Type of Piling: Steel H Pile
(Wood Species, Steel Size & Type, Concrete Size & Type)

Hammer (Model & Type): Diesel, Delmag 16-32
(Gravity, Diesel, or Air)

Plan Tip Elevation:	<u>1100.38</u>	Ft.
Plan Driving Resistance:	<u>36</u>	Tons
Observed Blows / Minute:	<u>49</u>	Hammer Energy: <u>22.42</u> Ft. - Kips

Sketch foundation below. Locate each pile by circles with numbers therein. Note battered piles on sketch, and give the amount of batter. Place name and certificate number of welder below if welding was necessary. Forward copies as outlined in the construction manual. Note on drawing which pile has been logged.

[illegible]

- 1 For trestle pile, give length in ground plus length in structure.
2 indicate date of retap in date column (1 day delay min.). List only pile actually checked.
3 Additional pile length to be authorized by Construction Office.

Length In Structure:	<u>1004.4</u>	Feet
Cutoffs 5.0' & Under:	<u>75.6</u>	Feet
Cutoffs Over 5.0':	<u>0.0</u>	Feet
Furnished Length:	<u>1080.0</u>	Feet

Welders Name: _____ Lab No.: _____ Exp. Date: _____

Remarks:

Inspector

Date _____

Engineer

Title

Iowa Department of Transportation
LOG OF PILING DRIVEN WITH WAVE EQUATION

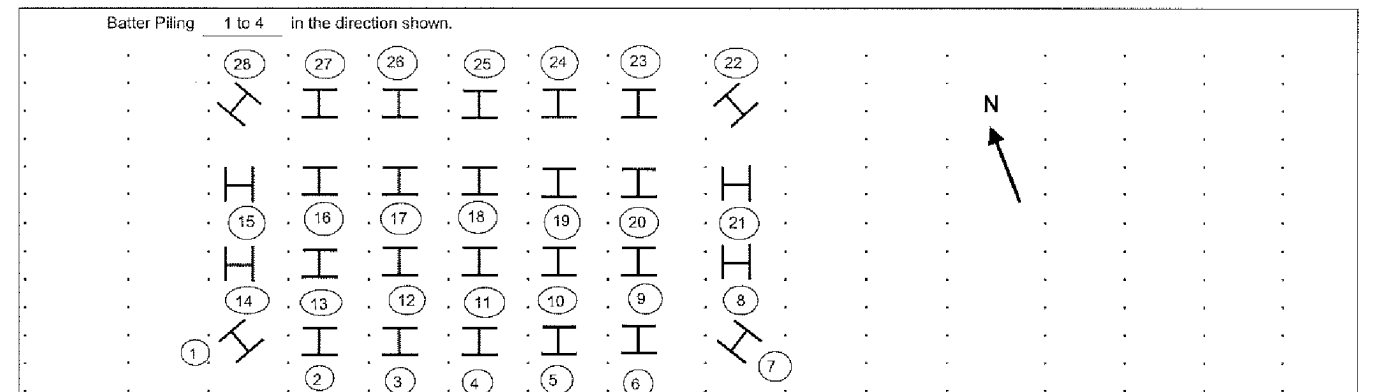
Project No.:	BRF-25-2-(18)-38-88
County:	Union
Design No.:	103
Sta. of Foundation:	110+37.37
Location:	South pier
Contractor:	Godbersen-Smith Construction
Driving Graph No.:	88-103-02-830

Type of Piling: Steel H Pile
(Wood Species, Steel Size & Type, Concrete Size & Type)

Hammer (Model & Type): Diesel, Delmag 16-32
(Gravity, Diesel, or Air)

Plan Tip Elevation: 1100.99 Ft
Plan Driving Resistance: 36 Tons
Observed Blows / Minute: 49 Hammer Energy: 22.42 Ft. - Kips

Sketch foundation below. Locate each pile by circles with numbers therein. Note battered piles on sketch, and give the amount of batter. Place name and certificate number of welder below if welding was necessary. Forward copies as outlined in the construction manual. Note on drawing which pile has been logged.

[illegible]

- 1 For trestle pile, give length in ground plus length in structure.
2 Indicate date of retap in date column (1 day delay min.). List only pile actually checked.
3 Additional pile length to be authorized by Construction Office.

Length In Structure:	<u>164.3</u>	Feet
Cutoffs 5.0' & Under:	<u>15.7</u>	Feet
Cutoffs Over 5.0':	<u>0.0</u>	Feet
Furnished Length:	<u>180.0</u>	Feet

Welders Name: _____ Lab No.: _____ Exp. Date: _____

Remarks:

Todd McCullough

Inspector

08/21/03

Date _____

Engineer

Title

Type of Piling:	<u>Steel H Pile</u>
	(Wood Species, Steel Size & Type, Concrete Size & Type)
Hammer (Model & Type):	<u>Diesel</u>
	(Gravity, Diesel, or Air)
Plan Tip Elevation:	<u>1100.38</u> Ft.
Plan Driving Resistance:	<u>36</u> Tons
Observed Blows / Minute:	<u>49</u> Hammer Energy: <u>22</u> Ft. - Kips

Batter Piling 1 to 4 in the direction shown.

The diagram shows a grid of batter piles. The piles are numbered 1 through 28. Piles 1, 7, 8, 14, 15, 22, and 28 are angled, while piles 2 through 6, 9 through 13, 16 through 21, and 23 through 27 are straight. A north arrow points towards the upper right.

1	For trestle pile, give length in ground plus length in structure.	
2	Indicate date of retap in date column (1 day delay min.). List only pile actually checked.	Length In Structure: <u>1032.7</u> Feet
3	Additional pile length to be authorized by Construction Office.	Cutoffs 5.0' & Under: <u>47.4</u> Feet
		Cutoffs Over 5.0': <u>0.0</u> Feet
Welders Name: _____ Lab No.: _____ Exp. Date: _____		Furnished Length: <u>1080.0</u> Feet
Remarks: _____		

Iowa Department of Transportation
LOG OF PILING DRIVEN WITH WAVE EQUATION

Type of Piling: Steel H Pile
(Wood Spices, Steel Size & Type, Concrete Size & Type)

Hammer { Model & Type}: Diesel
(Gravity, Diesel, or Air)

Plan Tip Elevation: 1100.38 Ft.

Plan Driving Resistance: 36 Tons

Observed Blows / Minute: 49 Hammer Energy: 22 Ft. - Kips

Better Piling 1 to 4 in the direction shown.

The diagram shows a grid of 28 numbered piling locations arranged in 7 rows and 4 columns. The locations are numbered 1 through 28. A north arrow points towards the top right of the grid.

Row	Col 1	Col 2	Col 3	Col 4
1	28	27	26	25
2	24	23	22	
3	15	16	17	18
4	14	13	12	11
5	10	9	8	7
6	3	4	5	6
7	1	2	3	4

1	For trestle pile, give length in ground plus length in structure.		
2	Indicate date of retap in date column (1 day delay min.). List only pile actually checked.	Length in Structure:	<u>171.4</u> Feet
3	Additional pile length to be authorized by Construction Office.	Cutoffs 5.0' & Under:	<u>8.6</u> Feet
		Cutoffs Over 5.0':	<u>0.0</u> Feet
Welders Name: _____		Lab No.: _____	Exp. Date: _____
Remarks: _____		Furnished Length:	<u>180.0</u> Feet

Todd McCullough
Inspector

07/28/03
Date

Title

Type of Piling: Steel H Pile
(Wood Species, Steel Size & Type, Concrete Size & Type)

Hammer (Model & Type): Diesel
(Gravity, Diesel, or Air)

Plan Tip Elevation: 1100.99 Ft.

Plan Driving Resistance: 36 Tons

Observed Blows / Minute: 49 **Hammer Energy:** 22 Ft. - Kips

Batter Piling 1 to 4 in the direction shown.

N

1	For trestle pile, give length in ground plus length in structure.		
2	Indicate date of relap in date column (1 day delay min.). List only pile actually checked.	Length in Structure:	<u>0.0</u> Feet
3	Additional pile length to be authorized by Construction Office.	Cutoffs 5.0' & Under:	<u>0.0</u> Feet
		Cutoffs Over 5.0':	<u>0.0</u> Feet
Welders Name: _____		Lab No.: _____	Exp. Date: _____
		Furnished Length:	<u>0.0</u> Feet

Welders Name: _____	Lab No.: _____	Exp. Date: _____	Furnished Length: <u>0.0</u>
Remarks: <u>Did not achieve bearing on initial drive.</u>			
<u>Todd McCullough</u>	<u>08/20/03</u>	_____	Engineer
Inspector	Date	_____	Title

Type of Piling: Steel H Pile
(Wood Species, Steel Size & Type, Concrete Size & Type)

Hammer (Model & Type): Diesel
(Gravity, Diesel, or Air)

Plan Tip Elevation: 1100.38 Ft.

Plan Driving Resistance: 36 Tons

Observed Blows / Minute: 49 Hammer Energy: 22 Ft. - Kips

Batter Piling 1 to 4 in the direction shown.

1	For trestle pile, give length in ground plus length in structure.		
2	Indicate date of retap in date column (1 day delay min.). List only pile actually checked.	Length in Structure:	<u>0.0</u> Feet
3	Additional pile length to be authorized by Construction Office.	Cutoffs 5.0' & Under:	<u>0.0</u> Feet
		Cutoffs Over 5.0':	<u>0.0</u> Feet
Welders Name:	Lab No.:	Exp. Date:	Furnished Length: <u>0.0</u> Feet

Welders Name: _____	Lab No.: _____	Exp. Date: _____	Furnished Length: <u>0.0</u>
Remarks: _____			
Todd McCullough	07/24/03	Engineer	
Inspector	Date	Title	

Type of Piling:	<u>Steel H Pile</u> (Wood Species, Steel Size & Type, Concrete Size & Type)	
Hammer (Model & Type):	<u>Diesel (Deimag D16-32)</u> (Gravity, Diesel, or Air)	
Plan Tip Elevation:	<u>1111.48</u>	Ft.
Plan Driving Resistance:	<u>36</u>	Tons
Observed Blows / Minute:	<u>45</u>	Hammer Energy: <u>22</u> Ft. - Kips

Batter Piling _____ in the direction shown.

The diagram shows a T-shaped pile field on a grid. The vertical stem contains piles 1, 2, 3, 4, 5, 6, 7, and 8, numbered from top to bottom. The horizontal crossbar contains pile 9 on the right. A north arrow is located to the right of the pile field, pointing downwards.

Total Welds: 0

- | | | |
|-----------------------|--------------|------|
| Length in Structure: | <u>515.0</u> | Feet |
| Cutoffs 5.0' & Under: | <u>25.0</u> | Feet |
| Cutoffs Over 5.0': | <u>0.0</u> | Feet |
| Furnished Length: | <u>540.0</u> | Feet |

Remarks: Pile analyzer test performed on pile 5 by Kyle Frame, Wayne Sunday and John Smythe.

Engineer

Title

Type of Piling:	<u>Steel H Pile</u>		
	<u>(Wood Species, Steel Size & Type, Concrete Size & Type)</u>		
Hammer (Model & Type):	<u>Diesel (Delmag D16-32)</u>		
	<u>(Gravity, Diesel, or Air)</u>		
Plan Tip Elevation:	<u>1111.48</u>	Ft.	
Plan Driving Resistance:	<u>36</u>	Tons	
Observed Blows / Minute:	45	Hammer Energy:	22 Ft. - Kips

Batter Piling _____ in the direction shown.

The diagram shows a pile field on a grid. There are 9 piles, each represented by a circle with a number inside and a vertical line with a crossbar. The piles are numbered 1 through 9. Piles 1, 2, 3, 4, 5, 6, 7, and 8 are arranged in a line that slopes downwards from left to right. Pile 9 is located below pile 8. A north arrow is located to the right of the pile field, pointing upwards and labeled 'N'.

Total Welds: 0

- | | | |
|-----------------------|------------|------|
| Length In Structure: | <u>0.0</u> | Feet |
| Cutoffs 5.0' & Under: | <u>0.0</u> | Feet |
| Cutoffs Over 5.0': | <u>0.0</u> | Feet |
| Furnished Length: | <u>0.0</u> | Feet |

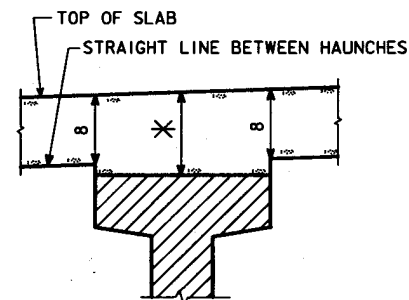
Remarks:

Remarks:

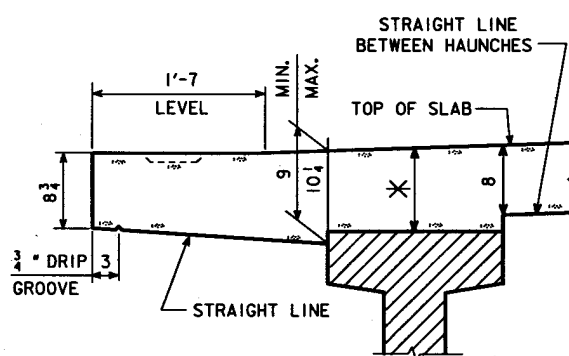
Engineer

Title

REVISED 02-00 - 5/11 BARS ADDED TO SECTIONS. HE4382.SOI (HST004382.SOI) - LEP. THIS SHEET REDRAWN, DEVICE:ZHAQ(200.004) ARCH.TAPE NO. 15 DATE 9-8-88



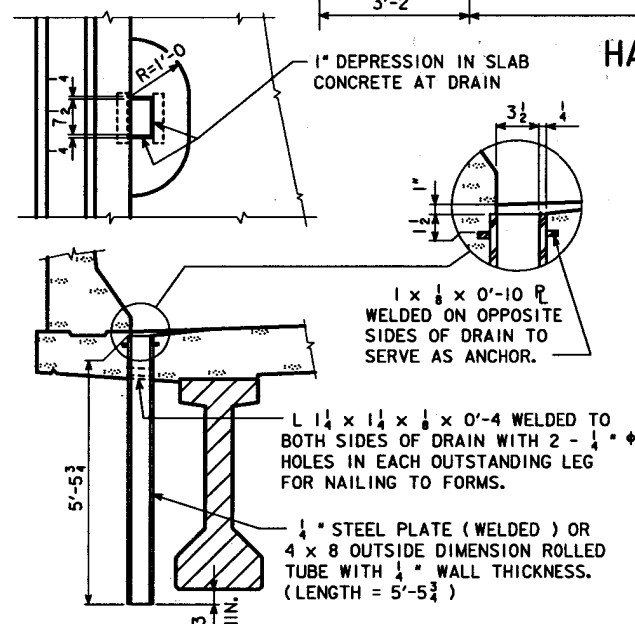
INTERIOR BEAMS



EXTERIOR BEAMS

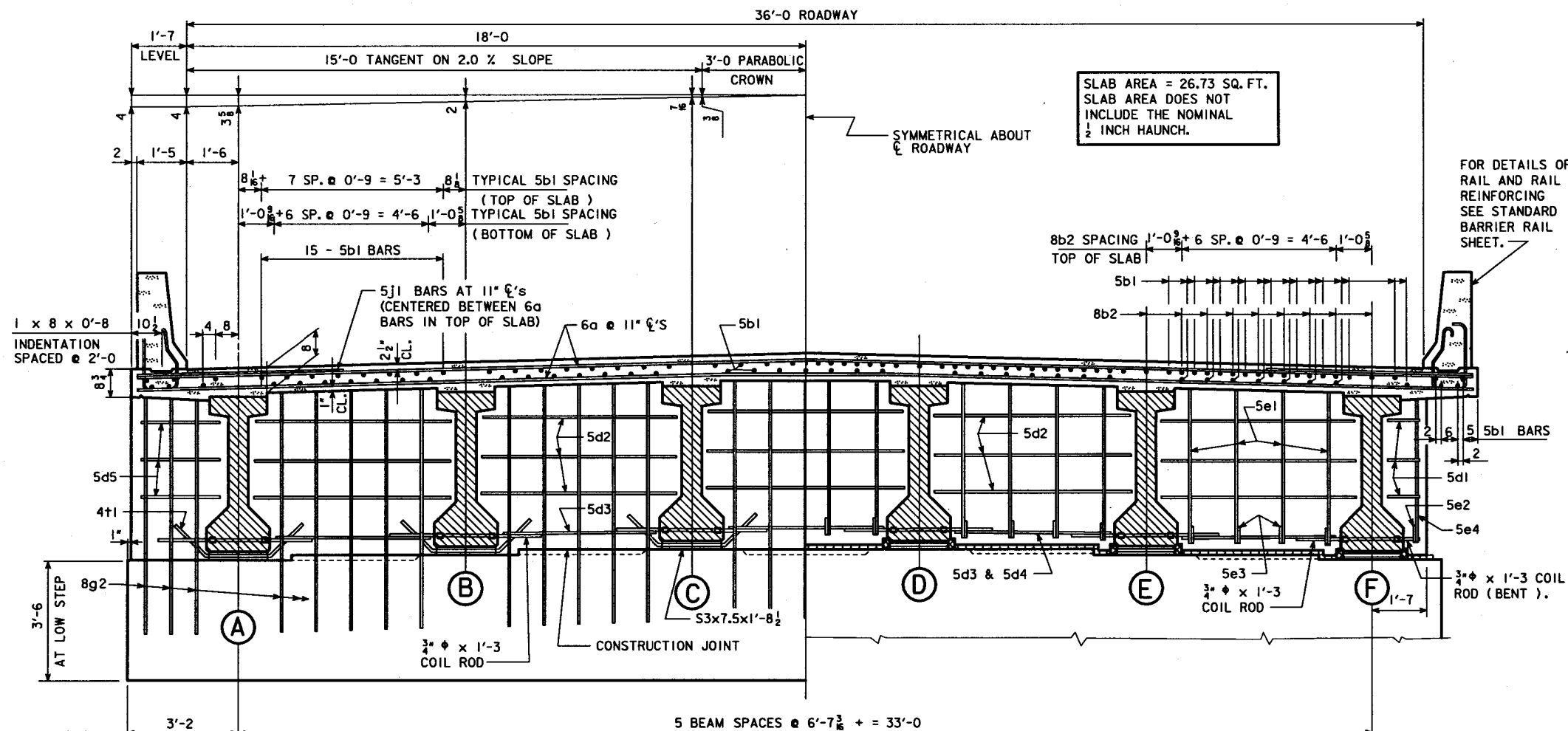
TYPICAL SLAB AND HAUNCH DETAIL

* FOR SLAB THICKNESS OVER BEAMS SEE "SLAB THICKNESS DETAILS" ON DESIGN SHEET NO. 12.



DRAIN DETAILS

NOTE: DRAINS ARE TO BE GALVANIZED. 12 DRAINS REQUIRED. SEE "SITUATION PLAN" ON DESIGN SHEET 2 FOR LOCATION. WEIGHT OF DRAINS IS INCLUDED IN THE QUANTITY FOR "STRUCTURAL STEEL". WEIGHT (106/DRAIN) IS BASED ON ROLLED TUBE.



HALF SECTION NEAR ABUTMENT

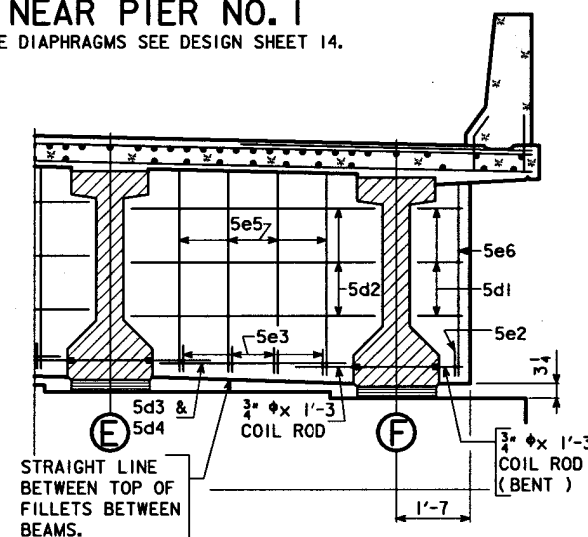
HALF SECTION NEAR PIER NO. 1

NOTE: FOR DETAILS OF INTERMEDIATE DIAPHRAGMS SEE DESIGN SHEET 14.

NOTE: ENCIRCLED LETTERS ARE BEAM LINES, SEE DESIGN SHEET 12 FOR BEAM LAYOUT.

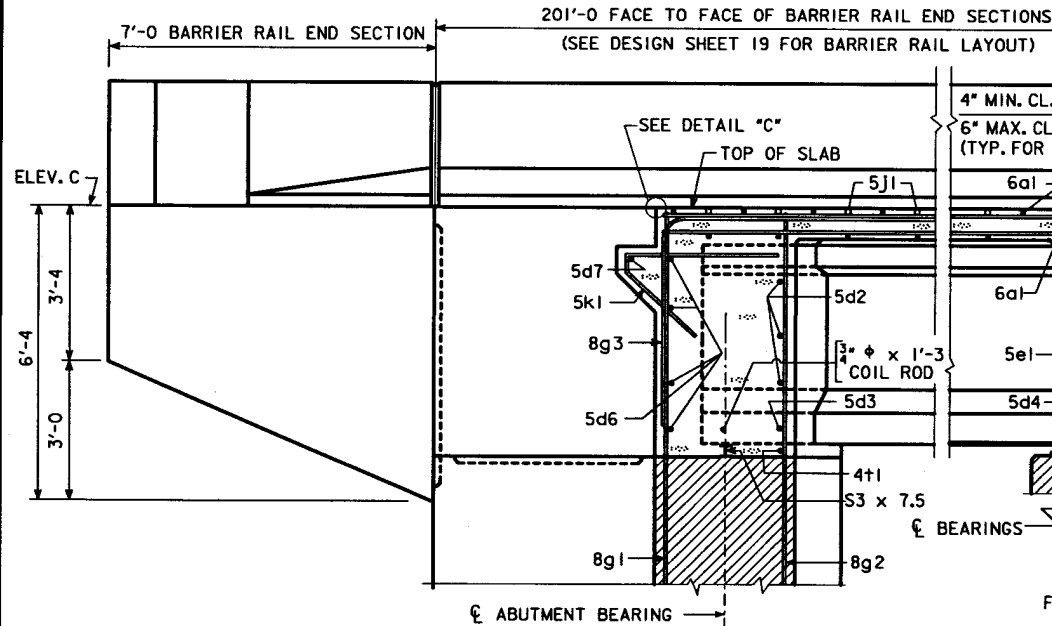
SUPERSTRUCTURE NOTES:

THE FLOOR SLAB AS SHOWN INCLUDES 1/2" INTEGRAL WEARING SURFACE.
THE PIER AND ABUTMENT DIAPHRAGM CONCRETE IS TO BE PLACED MONOLITHICALLY WITH THE FLOOR SLAB.
COST OF ALL PREFORMED EXPANSION JOINT FILLER MATERIAL IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)".
ALL BEAMS ARE TO BE SET VERTICAL.
FORMS FOR THE SLAB AND BARRIER RAIL ARE TO BE SUPPORTED BY THE PRESTRESSED CONCRETE BEAMS.
CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.
ALL SLAB AND DIAPHRAGM REINFORCING IS TO BE WIRED IN PLACE AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS PLACED.
TOP TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 2 1/2" CLEAR BELOW TOP OF SLAB. BOTTOM TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 1" CLEAR ABOVE BOTTOM OF SLAB.
TOP AND BOTTOM REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL EPOXY COATED METAL BAR CHAIRS SPACED AT NOT MORE THAN 3'-0" CENTERS LONGITUDINALLY AND TRANSVERSELY, OR BY CONTINUOUS ROWS OF EPOXY COATED METAL BAR HIGH CHAIRS OR SLAB BOLSTERS SPACED 4'-0" APART.
COST OF BEARING MATERIAL IS TO BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".

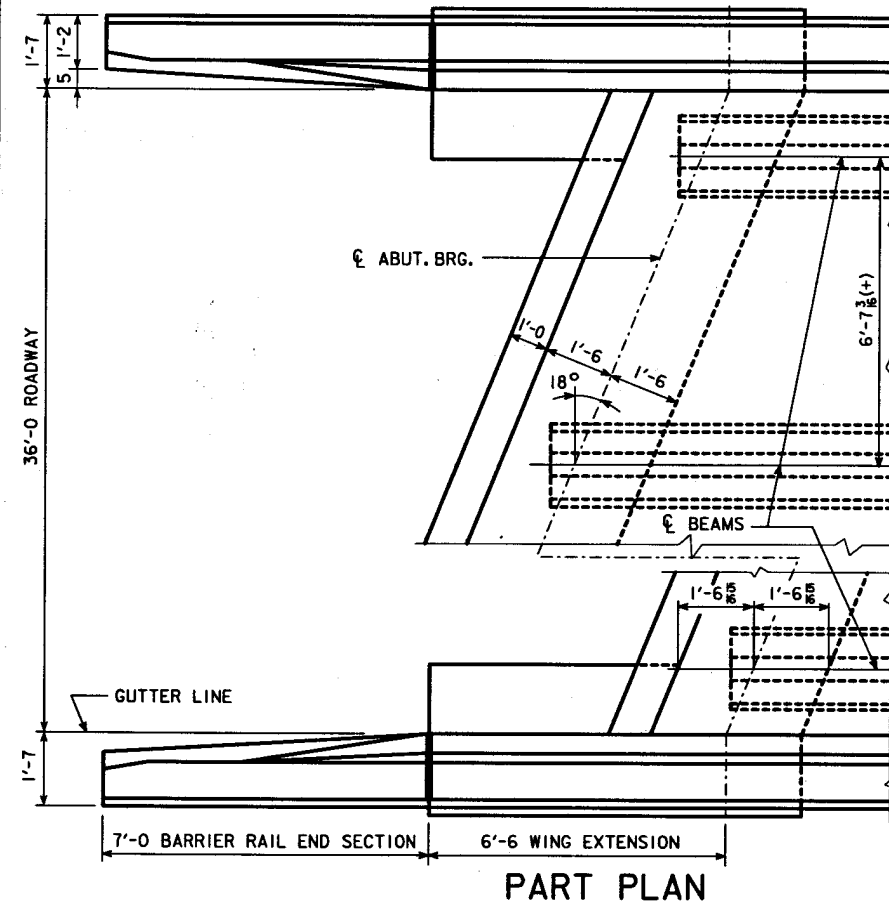


PART SECTION NEAR PIER NO. 2

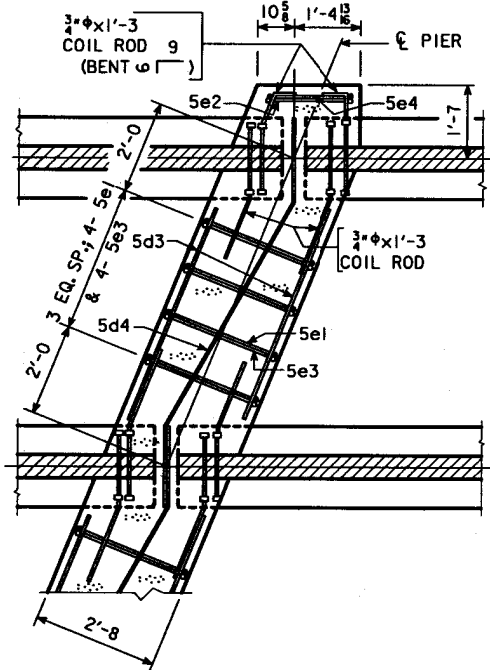
DESIGN FOR 18° SKEW (L.A.)
188'-0" x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
40'-9" END SPANS 106'-6" INTERIOR SPAN
SUPERSTRUCTURE DETAILS
STATION: 110+90.62 (IOWA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 8 OF 23 FILE NO. 29876 DESIGN NO. 103



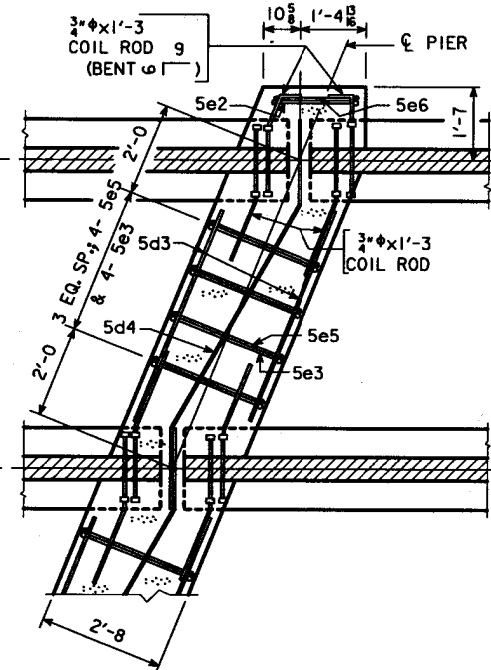
PART LONGITUDINAL SECTION NEAR GUTTER
(FOR DETAILS OF INTERMEDIATE DIAPHRAGM SEE DESIGN SHEET 14)



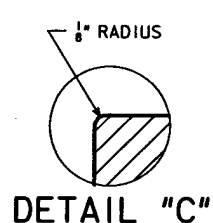
PART PLAN



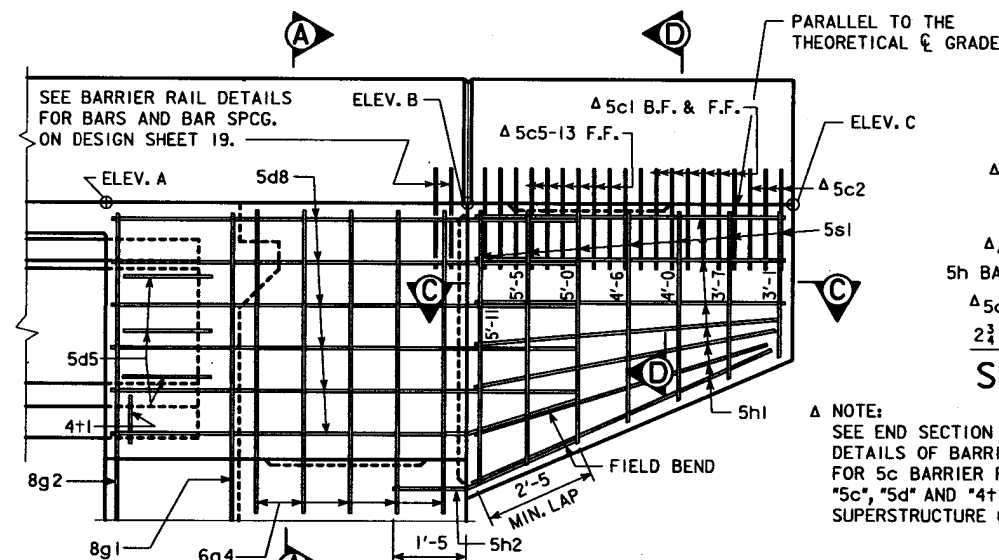
PART SECTION AT PIER NO. 1
FIXED PIER



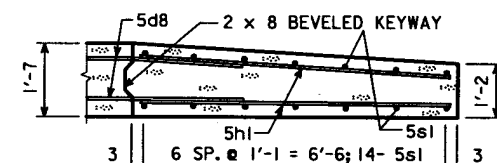
PART SECTION AT PIER NO. 2
EXPANSION PIER



DETAIL "C"



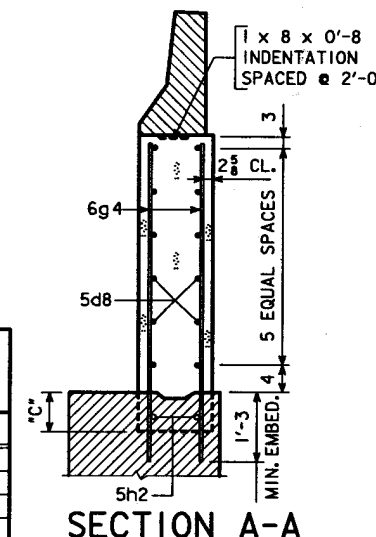
PART END VIEW AT ABUTMENT



PART SECTION C-C

BENCH MARK: NO. 501A STA. 109+94, 18.75LT, IOWA D.O.T. BRASS PLUG IN TOP BARRIER RAIL SOUTHWEST CORNER OF BRIDGE, ELEVATION 1182.21

TABLE OF WINGWALL ELEVATIONS				
LOCATION	DIM "C"	ELEV. A	ELEV. B	ELEV. C
S.W. CORNER	10'	1179.25	1179.29	1179.32
N.W. CORNER	11'	1178.41	1178.38	1178.34
S.E. CORNER	10'	1179.31	1179.35	1179.38
N.E. CORNER	11'	1178.47	1178.43	1178.40

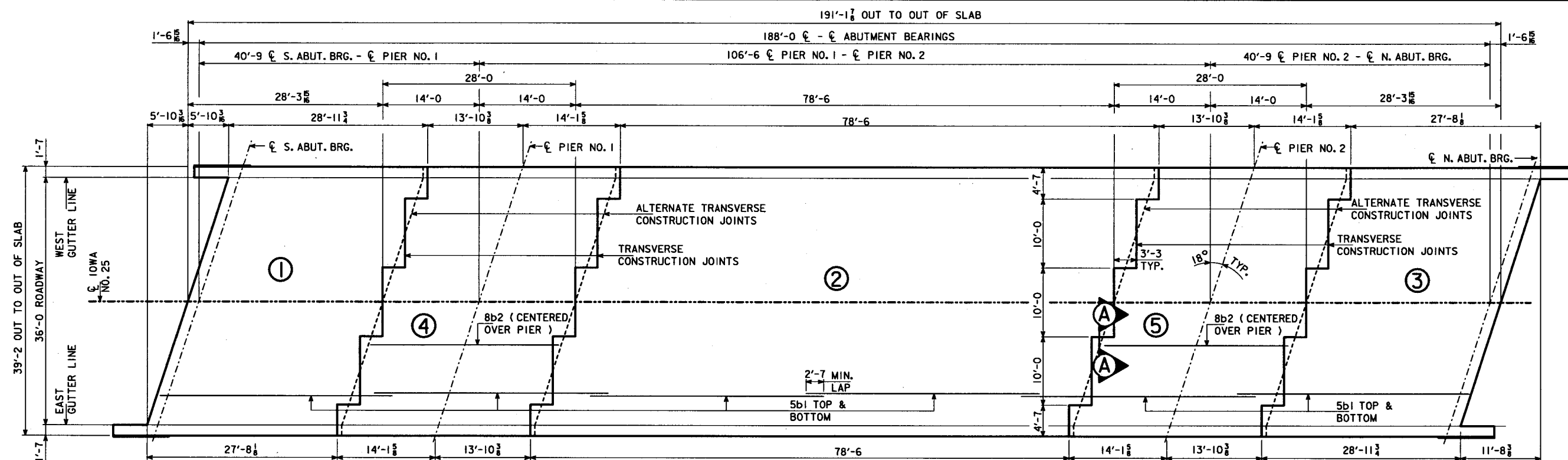


SECTION A-A

NOTE:
SEE DESIGN SHEET 11 FOR
TOP OF PIER DETAILS AT
PIERS NO. 1 & NO. 2.

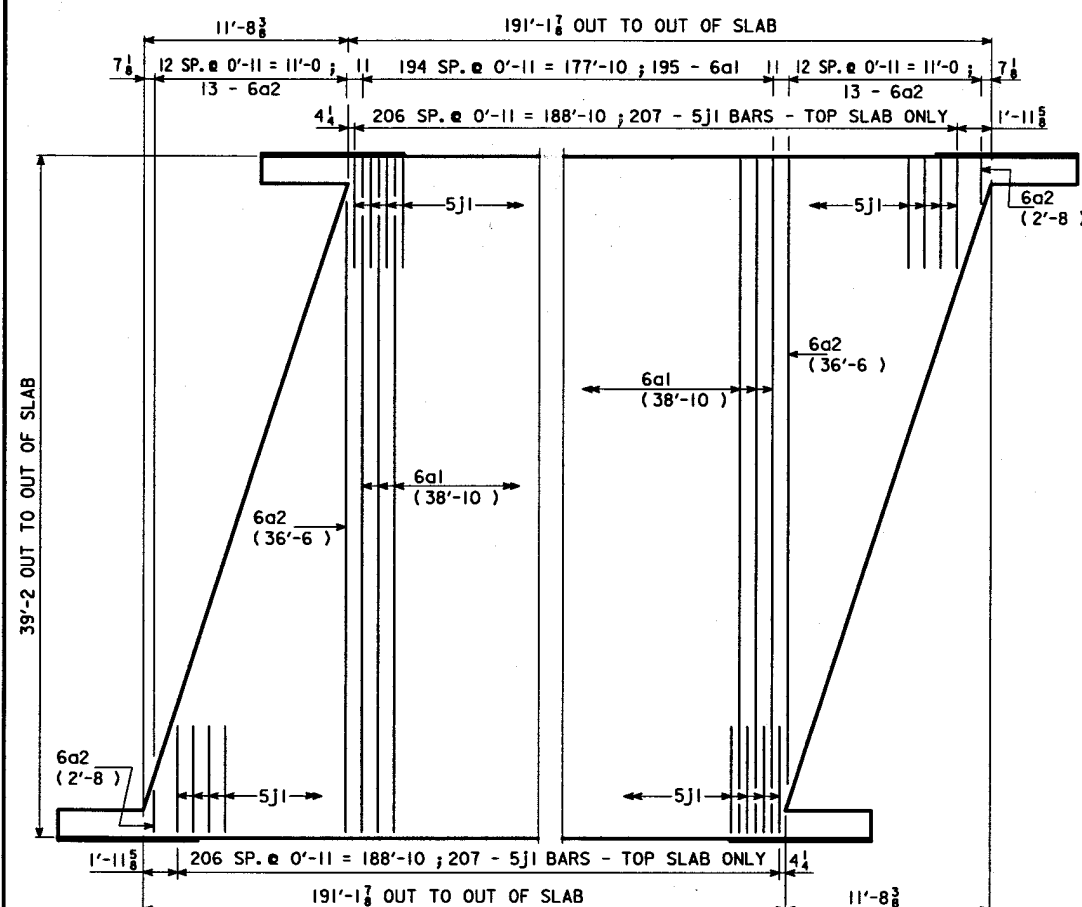
DESIGN FOR 18° SKEW (L.A.)
**188'-0" x 36' PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE**
40'-9" END SPANS 106'-6" INTERIOR SPAN
SUPERSTRUCTURE DETAILS
STATION: 110+90.62 (IOWA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 9 OF 23 FILE NO. 29876 DESIGN NO. 103

REVISED 09-01 - ADDITIONAL 5d8 & 5h BARS IN WING. BARRIER RAIL END SECTION DETAILS CHANGED.
REDESIGNED BY R. RYSAVY CHECKED BY G. KOYLERS
DESIGNED BY E. SOUHRADA CADD FILE h880103.s09
29-JAN-2003 10:22 rrysavv W:\Projects\88025010A98\BRF1na\h880103.s09

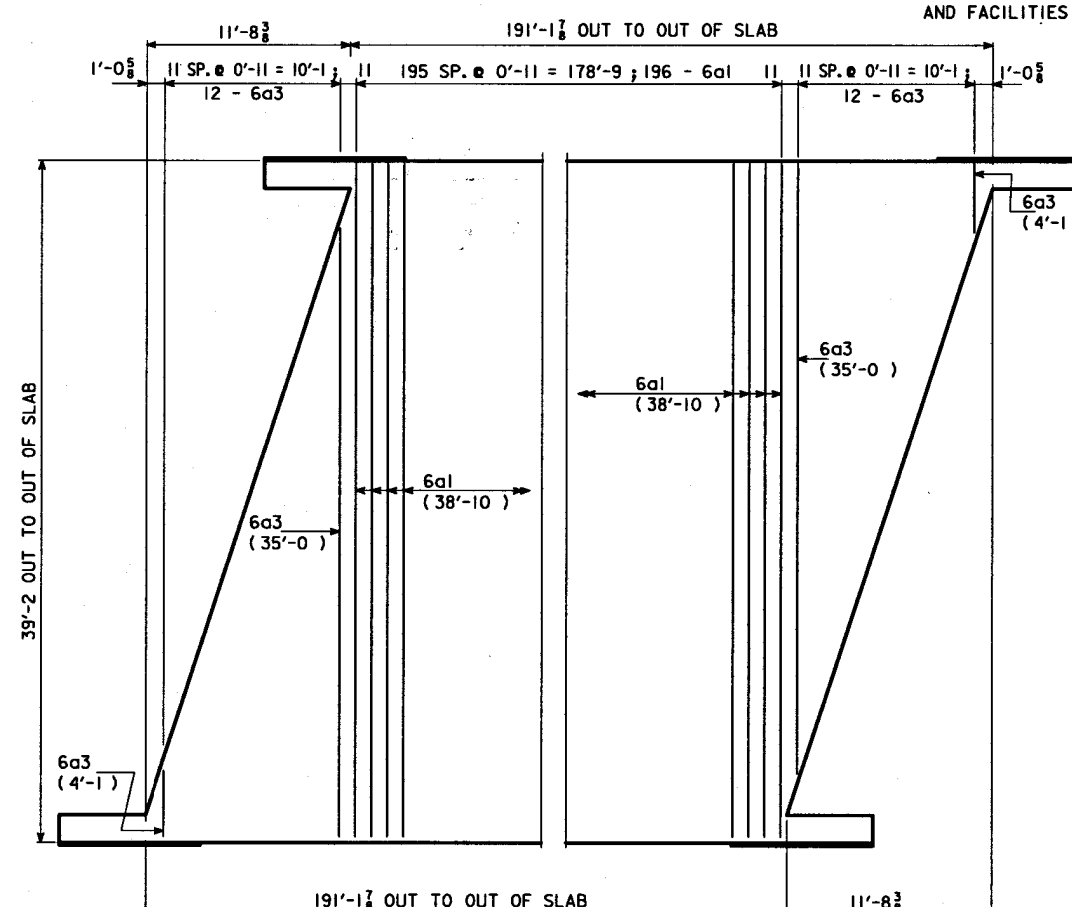


CONCRETE PLACEMENT DIAGRAM AND LONGITUDINAL REINFORCING LAYOUT

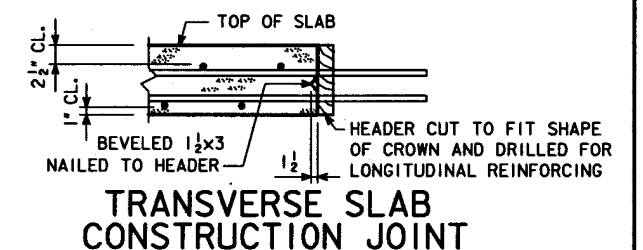
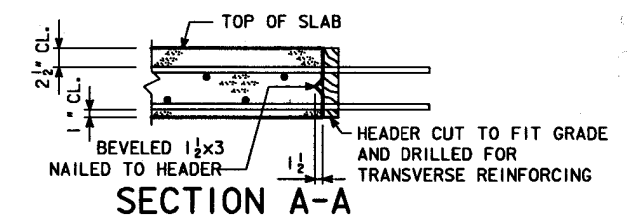
NOTE:
ROADWAY SLAB SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. ALTERNATE PROCEDURES FOR PLACING SLAB CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULTS.



TOP TRANSVERSE REINFORCING LAYOUT



BOTTOM TRANSVERSE REINFORCING LAYOUT



DESIGN FOR 18° SKEW (L.A.)
188'-0" x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
40'-9" END SPANS 106'-6" INTERIOR SPAN
SUPERSTRUCTURE DETAILS
STATION : 110+90.62 (IOWA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 10 OF 23 FILE NO. 29876 DESIGN NO. 103

DESIGNED BY E. SOUHRADA CHECKED BY G. KOTLERS
DETAILED BY R. RYSAVY CADD FILE h880103.s10

29-JAN-2003 10:23

rrysavy

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UNION COUNTY

PROJECT NUMBER

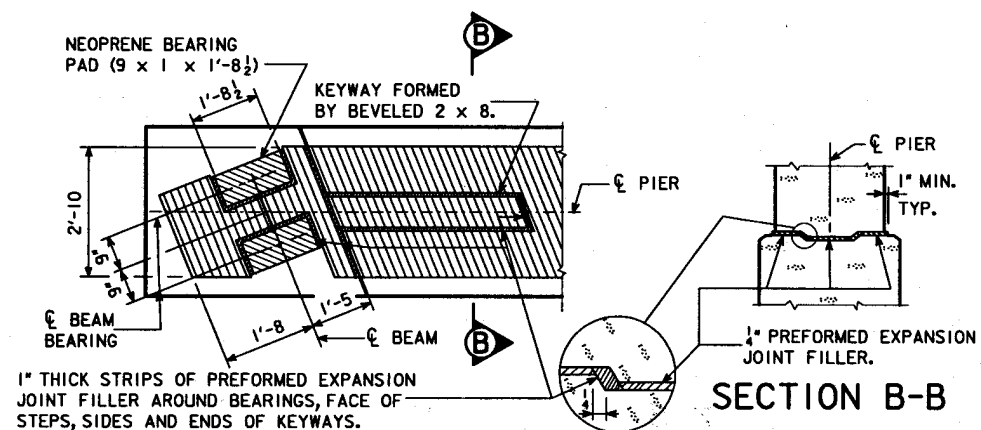
BRF-25-2 (18)-38-88

SHEET NUMBER 11



NOTE: COST OF NEOPRENE PADS SHALL BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".

BEARING DETAILS
PIER NO. 2

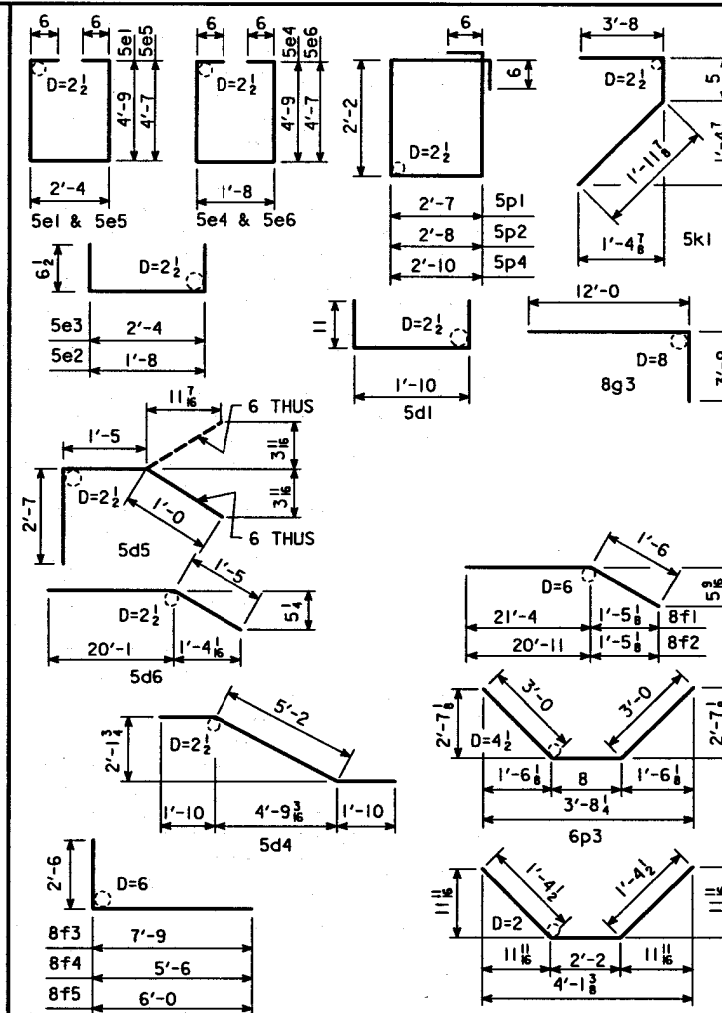


PART PLAN

TOP OF PIER DETAILS
PIER NO. 1

IF THE PRECAST PRESTRESSED CONCRETE DECK PANELS ARE TO BE USED IN THE CONSTRUCTION OF THE BRIDGE DECK IN LIEU OF THE CONVENTIONAL CAST-IN-PLACE DECK, THE FOLLOWING ADJUSTMENTS TO THE SUPERSTRUCTURE EPOXY COATED REINFORCING STEEL SHALL BE MADE.

ADJUSTMENTS TO EPOXY COATED REINFORCING STEEL						
DELETE	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
	6a1	SLAB TRANSV. BOTT.	—	196	38'-10	11,432
	6a3	SLAB TRANSV. BOTT., ENDS	—	24	VARIES	704
	5b1	SLAB LONGIT. BOTT.	—	210	34'-0	7447
ADD	6a1a	SLAB TRANSV. BOTT.	—	416	3'-1	1927
	4b1b	SLAB LONGIT. BOTT.	—	60	34'-0	1362
REINFORCING STEEL EPOXY COATED - REDUCTION (LBS.)						16,294



NOTE: ALL DIMENSIONS ARE OUT TO OUT. D= PIN DIAMETER.

BENT BAR DETAILS

CONC. PLACEMENT QUANTITIES		ONE SUPER. & TWO ABUTS.
LOCATION		QUANTITY
SECTION 1, SLAB & ABUT. DIAPH.		53.1
SECTION 2, SLAB		79.6
SECTION 3, SLAB & ABUT. DIAPH.		53.1
SECTION 4, SLAB & PIER DIAPH.		44.3
SECTION 5, SLAB & PIER DIAPH.		43.8
ABUTMENT FOOTINGS	2 AT 20.7	41.4
ABUTMENT WINGS	4 AT 1.7	6.8
	TOTAL (CU. YDS.)	322.1

ESTIMATED QUANTITIES		ONE SUPER. & TWO ABUT.	
ITEM		UNIT	QUANTITY
STRUCTURAL CONCRETE (BRIDGE)		CU. YD.	322.1
STRUCTURAL STEEL		LBS.	5296
REINFORCING STEEL EPOXY COATED		LBS.	68,912
REINFORCING STEEL		LBS.	6951
PRETENSIONED PRESTRESSED CONCRETE BEAMS	LXD40	EACH	12
	LXD105	EACH	6
CLASS 20 EXCAVATION		CU. YD.	134
HP10x42 STEEL	FURNISH 9 @ 60' S.A.; 9 @ 60' N.A.	L.F.	1080
BEARING PILING	DRIVE 9 @ 60' S.A.; 9 @ 60' N.A.	L.F.	1080
PREBORED HOLES	18 @ 10'	L.F.	180

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	SLAB TRANSV. TOP & BOTT.	—	391	38'-10	22,806
6a2	SLAB TRANSV. TOP ENDS	—	26	VARIES	765
6a3	SLAB TRANSV. BOTT. ENDS	—	24	VARIES	704

EPOXY COATED REINFORCING					
5b1	SLAB LONGIT. TOP & BOTT.	—	522	34'-0	18,511
8b2	SLAB LONGIT. TOP AT PIERS	—	82	27'-8	6057
5d6	ABUT. DIAPH. LONGIT. B.F.	↘	16	21'-6	359
5d7	PAVING NOTCH LONGIT.	—	4	21'-2	88
8f1	ABUT. FOOTING LONGIT. B.F.	↘	16	22'-10	975
8g1	ABUT. VERT. B.F.	—	70	8'-7	1604
8g3	ABUT. DIAPH. VERT. B.F.	└	62	15'-9	2607
5j1	SLAB TRANSV. TOP (AT RAIL)	—	414	6'-3	2699
5k1	PAVING NOTCH TRANSV.	└	64	6'-1	406
5p1	ABUT. HOOPS	□	128	10'-6	1402
6p3	ABUT. BOTT. AT PILES	↘	28	6'-8	280
5p4	ABUT. HOOPS AT ENDS	□	16	11'-0	184

	BARRIER RAIL - SEE DESIGN SHT. NO. 19.	9465
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	REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)	68,912

5d1	PIER DIAPH. ENDS		12	3'-8	46
5d2	PIER & ABUT. DIAPH. LONGIT.		90	6'-0	563
5d3	PIER & ABUT. DIAPH. LONGIT.		30	4'-9	149
5d4	PIER DIAPH. LONGIT.		10	8'-10	92
5d5	ABUT. DIAPH. ENDS		12	5'-0	63
5d8	ABUT. DIAPH. WING EXT. LONGIT.		48	10'-6	526

5e1	PIER DIAPH. HOOPS - PIER NO. 1	☐	20	12'-10	268
5e2	PIER DIAPH. TIES ENDS	☐	4	2'-9	11
5e3	PIER DIAPH. TIES - PIER NO. 1 & 2	☐	40	3'-5	143
5e4	PIER DIAPH. HOOPS ENDS - PIER NO. 1	☐	2	12'-2	25
5e5	PIER DIAPH. HOOPS - PIER NO. 2	☐	20	12'-6	261
5e6	PIER DIAPH. HOOPS ENDS - PIER NO. 2	☐	2	11'-10	25

8f2	ABUT. FOOTING LONGIT. F.F.		20	22'-5	1197
8f3	ABUT. EXTENSION LONGIT.		16	10'-3	438
8f4	ABUT. EXTENSION LONGIT.		8	8'-0	171
8f5	ABUT. EXTENSION LONGIT.		8	8'-6	182

8g2	ABUT. VERT. F.F.	—	62	7'-6	1242
6g4	ABUT. DIAPH. WING EXT. VERT.	—	40	6'-7	396

5h1	ABUT. WING HORIZ.	—	56	6'-8	389
5h2	ABUT. TO WING ANCHOR	—	8	4'-0	33

NON	5p2	ABUT. EXTENSION HOOPS	☐	24	10'-8	267

5s1	WING VERT.		56	VARIES	263
4t1	UNDER BEAMS AT ABUTMENTS		12	4'-11	39

#2	PILE SPIRAL		18	38'-6	116
	SPIRAL SPACERS, L x x x 0.70	—	36	1'-10	46

	REINFORCING STEEL - TOTAL (LBS.)	6951
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DESIGN FOR 18° SKEW (L.A.)

188'-0 x 36' PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

40'-9 END SPANS 106'-6 INTERIOR SPAN

SUPERSTRUCTURE DETAILS

STATION : 110+90.62 (& IOWA 25) APRIL, 2003

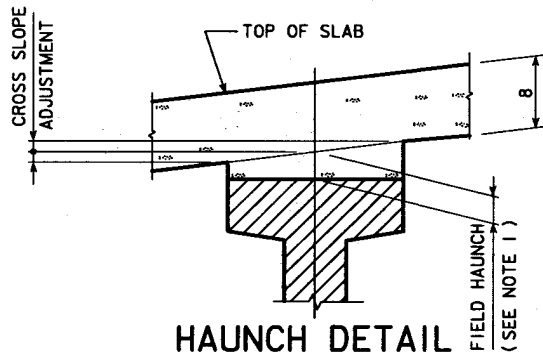
UNION COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 11 OF 23 FILE NO. 29876 DESIGN NO. 103

TABLE OF BEAM LINE HAUNCH ELEVATIONS (SEE NOTE 1)																						
	☉ S. ABUT. BEARING					☉ PIER #1 BEARINGS											☉ PIER #2 BEARINGS					☉ N. ABUT. BEARING
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
BEAM LINE A	1178.63	1178.59	1178.54	1178.50	1178.45	1178.44	1178.45	1178.45	1178.43	1178.40	1178.36	1178.31	1178.24	1178.16	1178.07	1177.96	1177.96	1177.91	1177.87	1177.82	1177.77	
BEAM LINE B	1178.77	1178.73	1178.68	1178.64	1178.59	1178.58	1178.59	1178.59	1178.57	1178.54	1178.50	1178.45	1178.38	1178.30	1178.21	1178.10	1178.10	1178.05	1178.01	1177.96	1177.91	
BEAM LINE C	1178.91	1178.87	1178.83	1178.78	1178.73	1178.72	1178.73	1178.73	1178.71	1178.68	1178.64	1178.59	1178.52	1178.44	1178.35	1178.25	1178.24	1178.20	1178.15	1178.11	1178.06	
BEAM LINE D	1178.92	1178.88	1178.84	1178.79	1178.74	1178.73	1178.74	1178.74	1178.72	1178.69	1178.65	1178.60	1178.53	1178.45	1178.36	1178.26	1178.25	1178.21	1178.16	1178.12	1178.07	
BEAM LINE E	1178.80	1178.76	1178.71	1178.67	1178.62	1178.61	1178.62	1178.62	1178.60	1178.57	1178.53	1178.48	1178.41	1178.33	1178.24	1178.13	1178.13	1178.09	1178.04	1177.99	1177.94	
BEAM LINE F	1178.68	1178.64	1178.59	1178.54	1178.50	1178.49	1178.50	1178.49	1178.48	1178.45	1178.41	1178.35	1178.29	1178.21	1178.12	1178.01	1178.00	1177.96	1177.92	1177.87	1177.82	

		MISCELLANEOUS DATA TABLE																						
	BEAM LINE		☉ S. ABUT. BEARING					☉ PIER #1 BEARINGS										☉ PIER #2 BEARINGS						☉ N. ABUT. BEARING
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
ANTICIPATED DEFLECTION DUE TO SLAB (ft.)	ALL		0	0	0.01	0	0	0	0	0.06	0.10	0.13	0.15	0.16	0.15	0.13	0.10	0.06	0	0	0	0.01	0	0
CROSS SLOPE ADJUSTMENTS	A,B,C,D,E,F																							
ALLOWABLE FIELD HAUNCH	MAX.	ALL	+ 2 1/2																					
	MIN.	ALL	- 1/2																					



NOTE:
BRIDGE SEAT ELEVATIONS ARE SET BASED ON THEORETICAL CAMBER AND BEAM DEFLECTIONS. THESE BRIDGE SEATS WILL PROVIDE A THEORETICAL BEAM HAUNCH WITHIN DESIGN PARAMETERS. ACTUAL HAUNCHES ARE DETERMINED USING SURVEYED TOP OF BEAM ELEVATIONS AND "BEAM LINE HAUNCH ELEVATION" DATA. ALLOWABLE MAXIMUM AND MINIMUM "FIELD HAUNCH" VALUES ARE GIVEN IN THE "MISCELLANEOUS DATA" TABLE. "CROSS SLOPE ADJUSTMENT" VALUES FROM THE "MISCELLANEOUS DATA" TABLE WILL AID THE CONTRACTOR IN DETERMINING ACTUAL FORMED HAUNCH DIMENSIONS AT THE EDGES OF THE TOP FLANGE.

NOTE 1 :
TO CALCULATE FIELD HAUNCH REQUIRED AT EACH LOCATION, SURVEY THE BEAM TOPS CONSISTENT WITH THE SPACINGS SHOWN ON THE "TOP OF SLAB ELEVATIONS LAYOUT" ON DESIGN SHEET 12. SUBTRACT THE SURVEYED BEAM SHOT FROM THE "BEAM LINE HAUNCH ELEVATION". THIS VALUE WILL BE THE HAUNCH NEEDED (SEE "FIELD HAUNCH" IN HAUNCH DETAIL). THE "BEAM LINE HAUNCH ELEVATION" INCLUDES ADJUSTMENTS FOR SLAB THICKNESSES AND ANTICIPATED DEFLECTIONS. NO ADDITIONAL CALCULATIONS ARE REQUIRED. IF THE FIELD HAUNCH EXCEEDS THE MAXIMUMS AND MINIMUMS INDICATED IN THE MISCELLANEOUS DATA TABLE, ADJUSTMENTS TO THE GRADE OR ADDITIONAL HAUNCH REINFORCEMENT WILL BE REQUIRED.

NOTE :
HAUNCH LOCATIONS ARE AT THE SAME LOCATION AS THE ENCIRCLED LETTERS AND NUMBERS SHOWN ON DESIGN SHEET 12.

DESIGN FOR 18° SKEW (L.A.)
188'-0 x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
40'-9 END SPANS 106'-6 INTERIOR SPAN
SUPERSTRUCTURE DETAILS
STATION : 110+90.62 (☉ IOWA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 13 OF 23 FILE NO. 29876 DESIGN NO. 103



The diagram illustrates the vertical placement of beam coil ties for three different bridge components. Each component is shown as a cross-section of a trapezoidal structure with three horizontal reinforcement bands. For the Abutment, a single tie is positioned 5 inches from the bottom. For Pier No. 1 (Fixed), two ties are shown, with the bottom tie 5 inches from the base and the top tie 4 inches from the bottom tie. For Pier No. 2 (Expansion), the same two-tie arrangement is shown, with the bottom tie 5 inches from the base and the top tie 4 inches from the bottom tie. Dimension lines and arrows indicate the 5-inch and 4-inch measurements.

ABUTMENT

PIER NO. 1
(FIXED)

PIER NO. 2
(EXPANSION)

BEAM COIL TIE LOCATIONS

DETAIL D

7/8" ϕ H.T.S. BOLT WITH HEX NUT AND 2 HARDENED WASHERS.

L 6 x 4 x 1/2 x 1'-3 1/4"

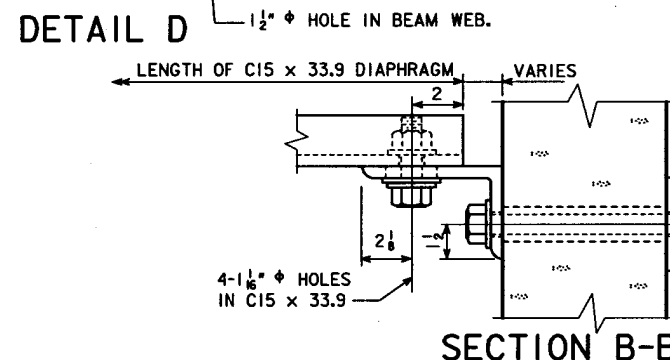
C15 x 33.9

4 - 1 1/8" x 2 1/4" SLOTTED HOLES IN 6" LEG OF L. 4 - 7/8" ϕ H.T.S. BOLTS WITH HEX. NUT, 1-1" ϕ I.D. BY 2 1/2" ϕ O.D. PLAIN WASHER AND 2 HARDENED WASHERS.

1 1/8" ϕ HOLE IN 4" LEG OF L AND IN 4 x 3/8 x 1'-3 1/4" L.

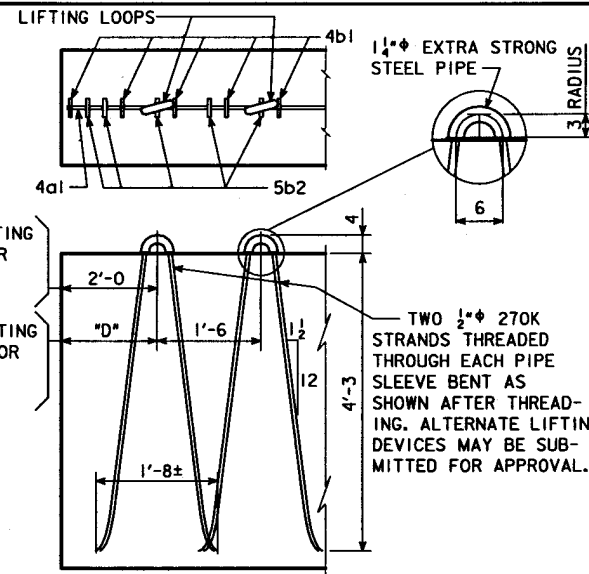
1 1/2" ϕ HOLE IN BEAM WEB.

LENGTH OF C15 x 33.9 DIAPHRAGM Varies



REVISED: 10-31-95; NOTE TO TIGHTEN DIAPHRAGM BOLTS ADDED.
 IE1036.SOI (HST001036.SOI:--LEP; THIS SHEET REDRAWN, DEVICE#ZHA04(200,004) ARCH.TAPE NO. 15 DATE 9-8-88)

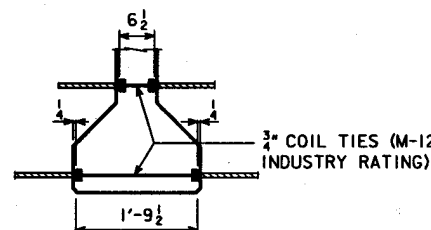
REVISED: 01-02 - MATERIAL SPECIFICATION ADDED FOR COARSE AGGREGATE. OVERHANG LENGTH UPDATED FOR LXD100 AND LXD105 BEAMS.
LXD4630.S01 - ISSUED DATE 06-01-90



LIFTING LOOP DETAIL

"D" = 6'-3" FOR LXD105

NUMBER AND EXACT LOCATION OF COIL TIES TO BE AS DETAILED ON SPECIFIC BRIDGE DESIGN.



COIL TIE DETAIL

DESIGN STRESSES:

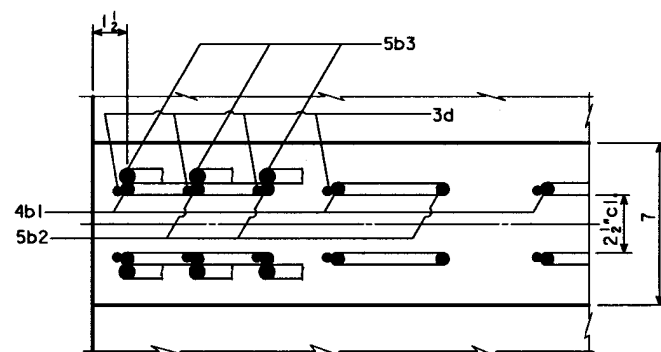
DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE TO BE IN ACCORDANCE WITH A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 1989:

REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.
CONCRETE IN ACCORDANCE WITH SECTION 9, $f'_c = 5000$ psi. (EXCEPT AS NOTED).
PRESTRESSING STEEL IN ACCORDANCE WITH SECTION 9, $f'_s = 270,000$ psi.

A SIZE
B NO.

THE TOP STRAIGHT STRANDS OF BEAMS LXD40 ARE TO BE CUT WITH 1'-0" PROJECTIONS AND SHOP BENT UP. THE TOP AND BOTTOM DEFLECTED STRANDS OF BEAMS LXD105 ARE TO BE CUT WITH 1'-0" PROJECTIONS AND SHOP BENT UP OR DOWN AS SHOWN. THE REMAINING TOP STRANDS ARE TO BE CUT WITH 0'-5" PROJECTIONS. FOUR BOTTOM STRANDS ARE TO BE CUT WITH 1'-0" PROJECTIONS AND SHOP BENT AS SHOWN. THE REMAINING BOTTOM STRANDS SHALL BE CUT OFF REASONABLY FLUSH WITH THE CONCRETE.

STRAND PROJECTION AT BEAM ENDS WHEN EMBEDDED IN CONCRETE END DIAPHRAGMS



SECTION A-A SHOWING PLACEMENT OF STIRRUPS NEAR END OF BEAM

SPECIFICATIONS:

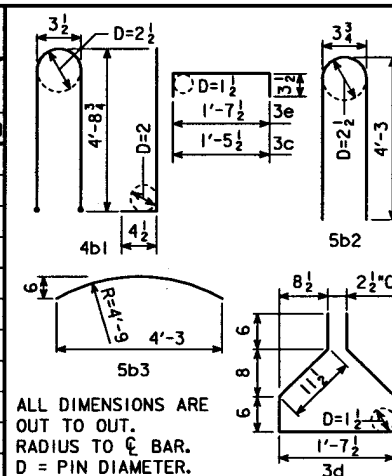
CONSTRUCTION: STANDARD SPECIFICATIONS OF THE IOWA DEPARTMENT OF TRANSPORTATION, CURRENT SERIES, WITH CURRENT APPLICABLE SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS.

DESIGN: A.A.S.H.T.O., SERIES OF 1989, WITH MINOR MODIFICATIONS.

MATERIAL SPECIFICATION: COARSE AGGREGATE: COARSE AGGREGATE USED IN THE CONCRETE FOR THE BEAMS SHALL MEET CLASS 3 DURABILITY REQUIREMENTS PER SECTION 4115.04 OF THE IOWA DOT STANDARD SPECIFICATIONS.

REINFORCING BAR LIST

BEAM	SPAN	LXD40	LXD105
		40'-0"	105'-0"
BAR	SHAPE	NO.	LENGTH
4a1	—	2	4'-0"
a2	—	—	—
a3	—	—	—
4b1	—	37	10'-4"
5b2	—	6	8'-8"
5b3	—	4	4'-4"
3c	—	37	2'-1"
3d	—	37	5'-7"
3e	—	12	2'-3"



LXD BEAM DATA

BEAM	SPAN LENGTH @ BEARING	OVERALL BEAM LENGTH (L)	STRAND SIZE	NO. OF STRANDS	TOTAL INITIAL PRESTRESS KIPS	HOLD DOWN FORCE-KIPS	CAMBER (in.)		DEFLECTION (in.)		PERMISSIBLE SPACING		WEIGHT (TONS)	CONCRETE (C.Y.)	REINFORCING STEEL - (lbs.)
							AT RELEASE	AFTER LOSSES	IMMEDIATE (ELASTIC) Δ_i	TIME (PLASTIC) Δ_t	HS20 LOADING	STEEL DIAPH.			
LXD40	40'-0"	41'-0"	1/2"	14	420	—	0.10	0.18	0.05	0.01	7'-6"	13.6	6.7	450	
LXD105	105'-0"	106'-0"	1/2"	30	1239	26.9	2.15	3.78	1.92	0.48	7'-6"	35.3	17.4	1519	

① DEFLECTIONS AT MID-SPAN DUE TO WEIGHT OF SLAB AND DIAPHRAGM. THE DEFLECTIONS SHOWN ARE FOR A SLAB WEIGHT OF 760 #/FT. (8" SLAB AND 7'-6" BEAM SPACING) AND ONE STEEL DIAPHRAGM (285 #) AT 1/2 OF SPAN. FOR DIFFERENT SLAB AND DIAPHRAGM WEIGHTS, DEFLECTIONS WILL BE DIRECTLY PROPORTIONAL.

② DEFLECTIONS DUE TO THE COMBINED EFFECT OF CREEP DUE TO WEIGHT OF SLAB AND SHRINKAGE OF SLAB.

TOTAL BEAM DEFLECTIONS AT 1/2 OF SPAN, Δ_D , DUE TO WEIGHT OF SLAB AND DIAPHRAGMS FOR DETAILING PURPOSE:

(A) $\Delta_D = \Delta_i + \Delta_t$ FOR SIMPLE SPAN.
(B) $\Delta_D = \Delta_i + \frac{1}{2}\Delta_t$ FOR END SPANS OF CONTINUOUS BRIDGE.
(C) $\Delta_D = \Delta_i + \frac{1}{4}\Delta_t$ FOR INTERIOR SPANS OF CONTINUOUS BRIDGE.

③ TOTAL INITIAL PRESTRESS FOR LXD40 IS BASED ON 72.664% f'_s , AND FOR LXD105 ON 75% f'_s . $f'_s = 270$ ksi AND $A_s = 0.153$ sq. in.

* MINIMUM CONCRETE f'_c (AT 28 DAYS) SHALL BE 6000 psi. MINIMUM f'_c AT RELEASE SHALL BE 5000 psi.

NOTES:

IF THE STEEL DIAPHRAGM OPTION IS ALLOWED AND USED, HOLES MUST BE CAST IN THE WEB TO ACCOMMODATE THE STEEL DIAPHRAGM ATTACHMENTS AS DETAILED ON THE STEEL DIAPHRAGM DETAIL SHEET.

NOTES:

THESE BEAMS ARE DESIGNED FOR AASHTO LIVE LOADS AS INDICATED IN ABOVE TABLE WITH AN ALLOWANCE OF 20 LB. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

HOLD DOWN POINTS FOR DEFLECTED STRANDS MAY BE MOVED TOWARD ENDS OF BEAM A DISTANCE OF 0.05 L MAXIMUM AT PRODUCER'S OPTION.

ALL PRESTRESSING STRANDS SHALL CONFORM TO ASTM A416 GRADE 270 LOW RELAXATION STRANDS.

TOPS OF BEAMS ARE TO BE STRUCK OFF LEVEL AND INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY 1/4 INCH.

BEARINGS SHALL BE AS DETAILED ON OTHER DESIGN SHEETS. BEAMS TO BE USED IN BRIDGES MADE CONTINUOUS BY THE POURED IN PLACE FLOOR, ARE TO BE AT LEAST 28 DAYS OLD BEFORE THE FLOOR IS PLACED UNLESS A SHORTER CURING TIME IS APPROVED BY THE BRIDGE ENGINEER.

THE PORTIONS OF THE PRESTRESS BEAMS THAT ARE TO BE EMBEDDED IN THE ABUTMENT AND PIER DIAPHRAGMS SHALL BE ROUGHENED FOR A DISTANCE OF 10" FROM THE BEAM END BY SANDBLASTING OR OTHER APPROVED METHODS TO PROVIDE SUITABLE BOND BETWEEN THE BEAM AND THE DIAPHRAGM IN ACCORDANCE WITH ARTICLE 2403.14 OF THE SPECIFICATIONS. UNLESS OTHERWISE NOTED ALL BEAMS ARE TO BE INCREASED IN LENGTH BY .0005L TO COMPENSATE FOR ELASTIC SHORTENING, CREEP AND SHRINKAGE.

FOR TRANSPORTING, THE OVERHANG SHALL BE IN ACCORDANCE WITH ART. 2407.13 OF STD. SPEC., EXCEPT THE OVERHANG MAY BE INCREASED TO A MAXIMUM OF 5 FEET FOR THE LXD105 BEAM.

IF BEAM CONCRETE STRENGTH $f'_c = 7500$ psi, THEN BEAM OVERHANG MAY BE INCREASED AS FOLLOWS: 12 FEET FOR THE LXD105 BEAM.

THE CONTRACTOR SHALL ASSURE THE LATERAL STABILITY OF THE LXD105 BEAMS DURING HANDLING, TRANSPORTING AND ERECTION BY PROVIDING TEMPORARY BRACING AS NEEDED.

IF THE PRECAST PANEL OPTION IS ALLOWED AND USED FOR BRIDGE DECK FORMATION, TOP FLANGE FINISH SHALL BE MODIFIED AS PER DETAILS ON THE PRECAST PANEL SHEET.

1/2" DIAMETER STRANDS STRESSED TO NOT MORE THAN 3,000 LBS. EACH MAY BE USED IN LIEU OF THE 6 BARS WHICH RUN THE FULL LENGTH OF THE BEAM IN THE TOP FLANGE.

DESIGN FOR 18° SKEW (L.A.)

188'-0" x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

40'-9" END SPANS 106'-6" INTERIOR SPAN

BEAM DETAILS

STATION : 110+90.62 (1/2 IOWA 25) APRIL, 2003

UNION COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 15 OF 23 FILE NO. 29876 DESIGN NO. 103

DESIGNED BY E.SOUHRADA CHECKED BY G.KOTLERS
DETAILED BY R.RYSAYV CADD FILE h880103.s15

LXD BEAMS

STANDARD SHEET 4630

UNION COUNTY

PROJECT NUMBER

BRF-25-2 (18)-38-88

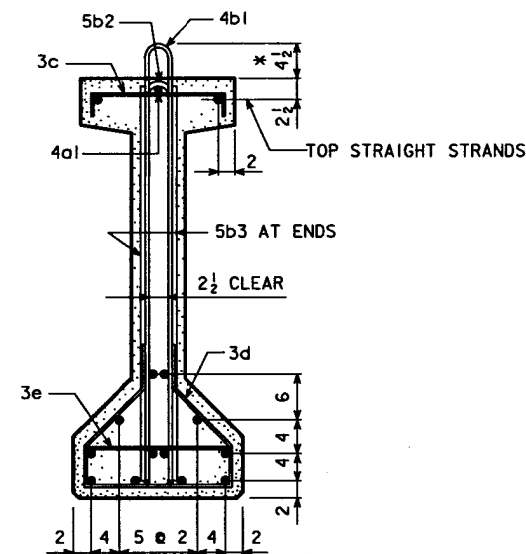
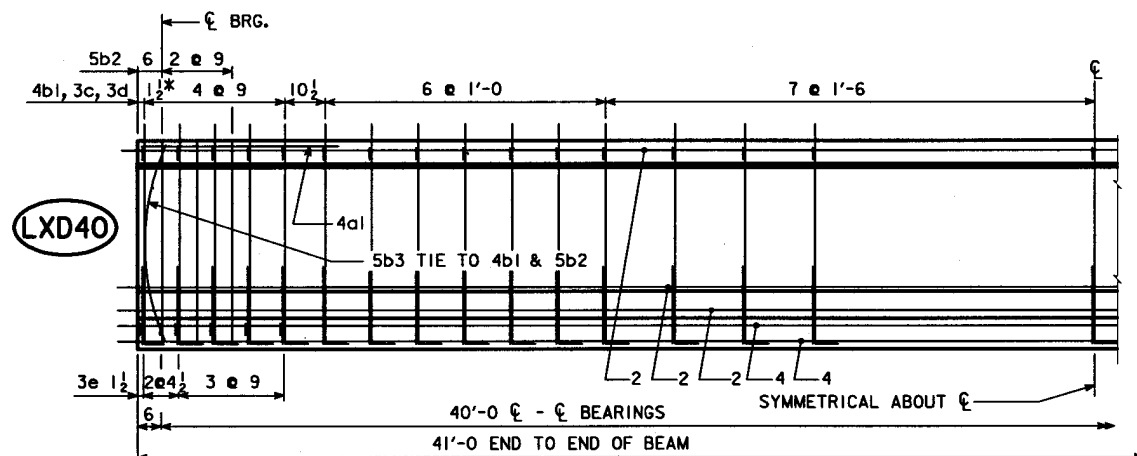
SHEET NUMBER 16

29-JAN-2003 10:25

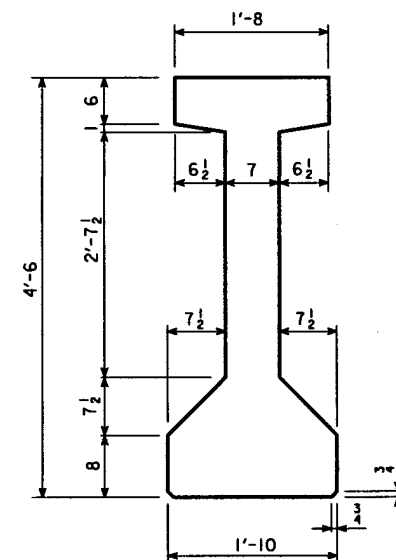
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HLXD4631.S01 (HLXD04631.S01--GJP, THIS SHEET REISSUED, DEVICE: ZHA14200,005) ARCH. TAPE 9 DATE 05-24-90)



BEAMS LXD40



TYPICAL "LXD" BEAM
CROSS SECTION

AREA = 638.75 in.²
Y_b = 24.37 in.
I = 214,974 in.⁴

* KEEP

NOTE:
IF THE PRECAST PRESTRESSED CONCRETE DECK PANELS ARE TO BE USED IN CONSTRUCTION OF THE BRIDGE DECK IN LIEU OF THE CONVENTIONAL CAST-IN-PLACE DECK, THE 4b1 OR 4b3 STIRRUPS SHOWN ON THIS SHEET SHALL BE MODIFIED AS SHOWN ON DESIGN SHEET 22.

DESIGN FOR 18° SKEW (L.A.)
**188'-0 x 36' PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE**
40'-9 END SPANS 106'-6 INTERIOR SPAN
BEAM DETAILS
STATION : 110+90.62 (CL IOWA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 16 OF 23 FILE NO. 29876 DESIGN NO. 103

DESIGNED BY E.SOUHRADA CHECKED BY G.KOTLERS
DETAILED BY R.RYSAYV CADD FILE h880103.s16

LXD BEAMS

STANDARD SHEET 4631
ISSUE DATE 06-01-90

UNION COUNTY

PROJECT NUMBER BRF-25-2 (18)--38-88

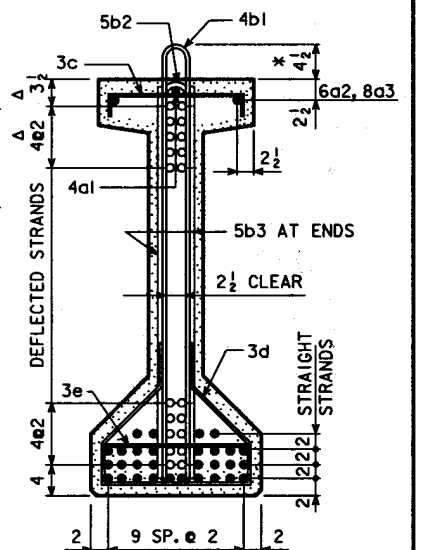
SHEET NUMBER 17

29-JAN-2003 10:25

rrysavv

W:\Projects\88025010A98\BRF1nal\h880103.s16

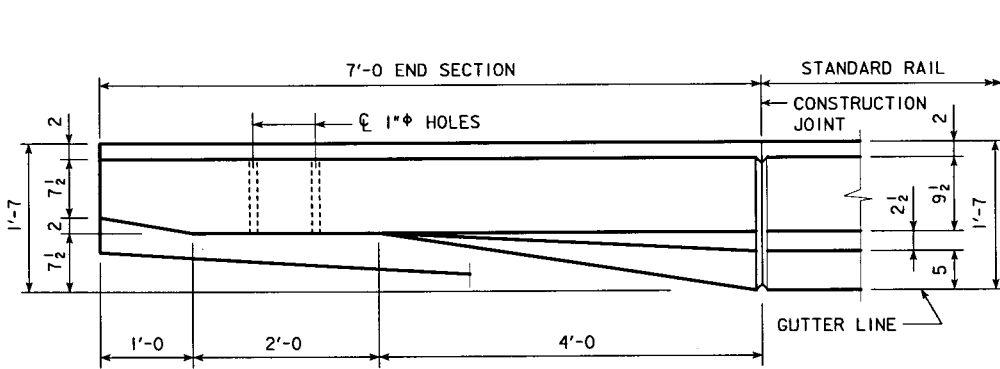
HLXD4635.S01 (HLXD04635.S01)--GJP: THIS SHEET REISSUED, DEVICE: ZHA1:(200,005) ARCH. TAPE 9 DATE 05-24-90)



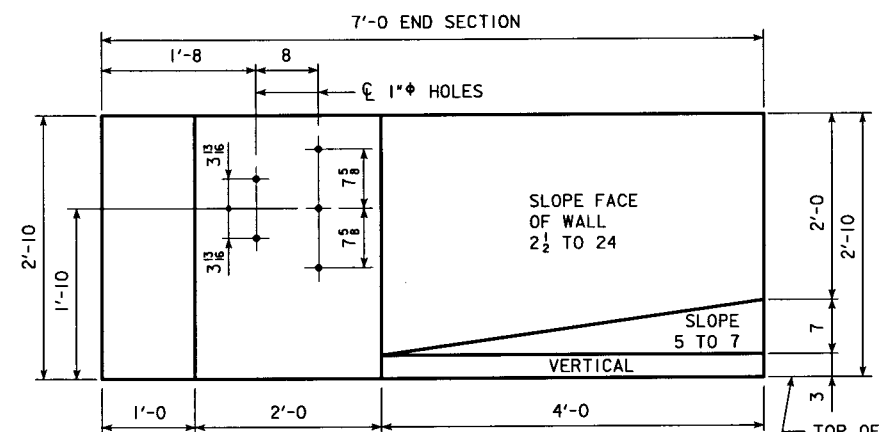
- o DEFLECTED STRANDS
- * KEEP
- Δ DIMENSIONS AT END OF BEAM

$$\begin{aligned} \text{AREA} &= 638.75 \text{ in.}^2 \\ Y_b &= 24.37 \text{ in.} \\ I &= 214,974 \text{ in.}^4 \end{aligned}$$

BEAM DETAILS
STATION : 110+90.62 (E IOWA 25) **APRIL, 2003**
UNION COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 17 OF 23 FILE NO. 29876 DESIGN NO. 103

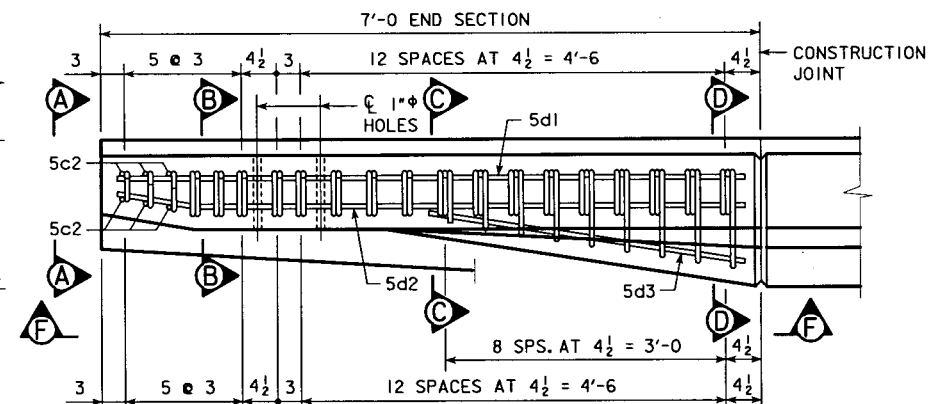


PART PLAN VIEW

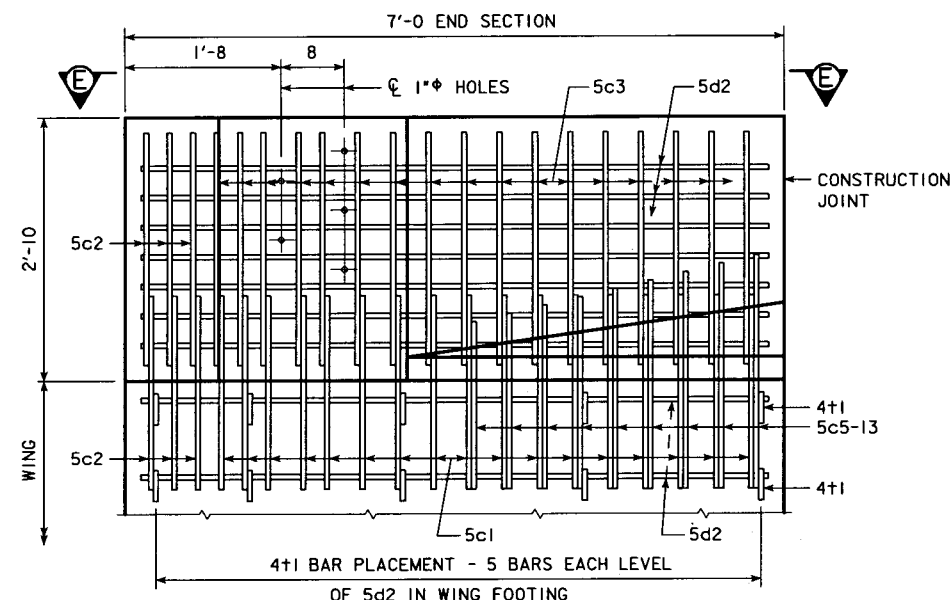


PART ELEVATION VIEW

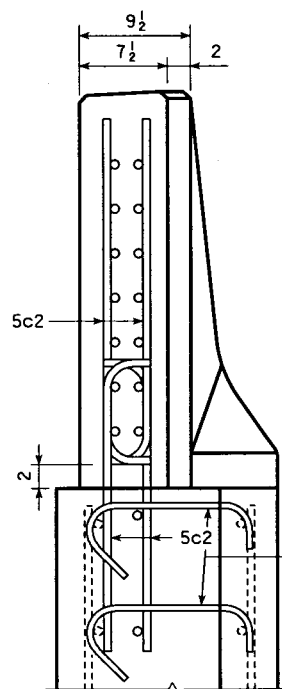
PROVIDE 5 HOLES FORMED WITH 1" PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE BID FOR CONCRETE BARRIER RAILING.



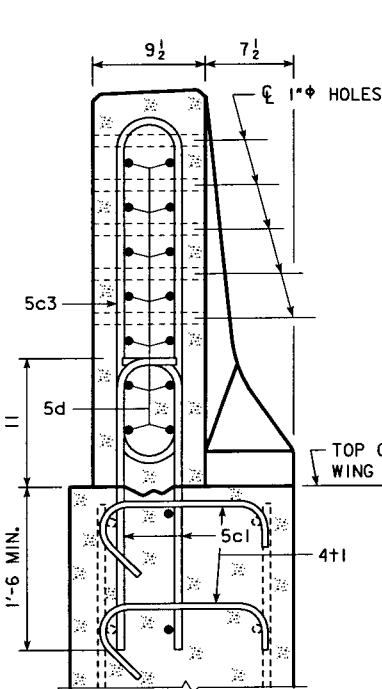
PART VIEW E-E



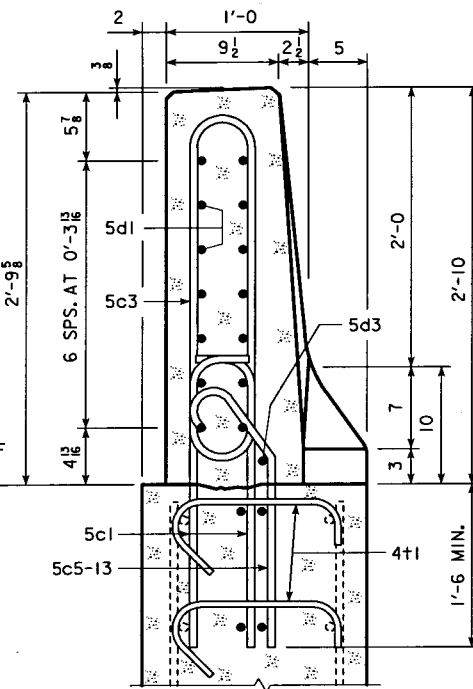
PART VIEW F-F



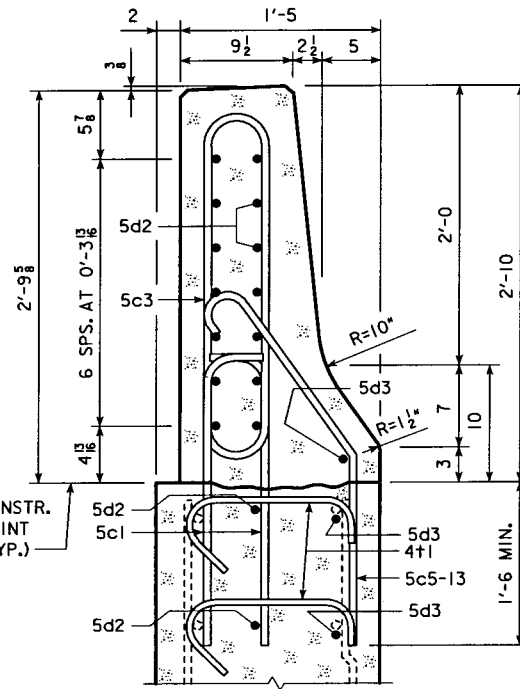
VIEW A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTE:
CONSTRUCTION JOINT BETWEEN TOP OF WING AND BARRIER RAIL SHALL BE ROUGHENED CONCRETE.

NOTE:
THE 10" RADIUS AND 1 1/2" RADIUS ARE TYPICAL AND SHALL BE USED WHEN CONSTRUCTING THE CORNERS FOR VIEW A-A, SECTION B-B, SECTION C-C AND SECTION D-D.

NOTE:
THE 5c1, 6 - 5c2, 5c5-13, 4+1, 2 - 5d2 AND 2 - 5d3 BARS ARE TO BE PLACED WITH THE ABUTMENT WING FOOTING. THE DETAILS FOR PLACEMENT ARE SHOWN ON THE SUPERSTRUCTURE DETAIL SHEET 9.

NOTE:
DASHED LINES BELOW THE TOP OF WING ARE THE ABUTMENT WING REINFORCING STEEL. SEE ABUTMENT DETAIL SHEETS AND SUPERSTRUCTURE DETAIL SHEET 9 FOR PLACEMENT.

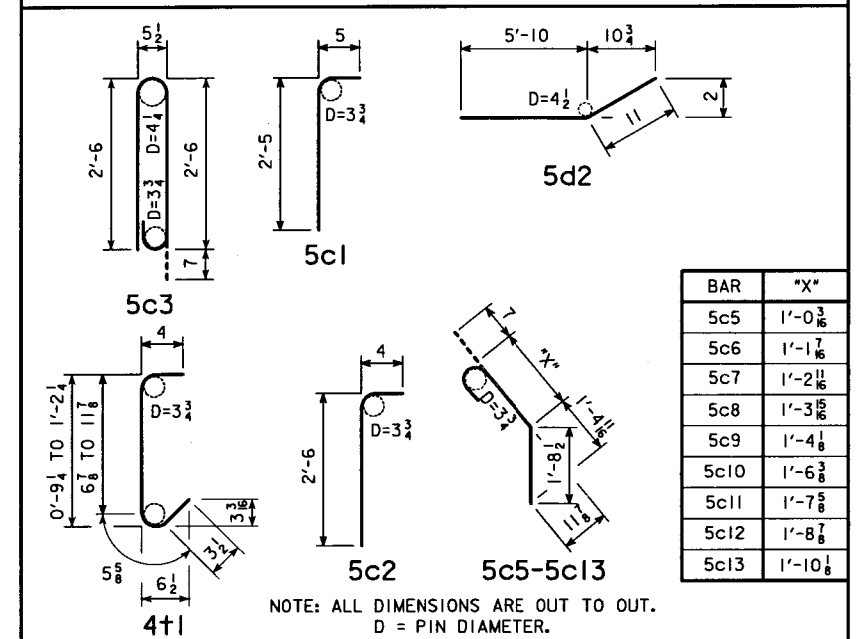
EPOXY REINFORCING STEEL - ONE END SECTION

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5c1	VERTICAL, RAIL TO WING FOOTING	U	34	2'-10	100
5c2	VERTICAL AT NOSE, RAIL TO WING FOOTING	U	12	2'-10	35
5c3	VERTICAL	U	17	6'-1	108
5c5-13	VERTICAL	U	9	VARIES	34
5d1	HORIZONTAL	—	7	6'-8	49
5d2	HORIZONTAL	—	9	6'-9	63
5d3	HORIZONTAL	—	3	3'-5	11
4+1	WING FOOTING TIE BARS	U	10	VARIES	13
(INCLUDE WITH BARRIER RAIL REINFORCING)					TOTAL WEIGHT (LBS.) 413

CONCRETE PLACEMENT SUMMARY

SECTION	TOTAL
BARRIER RAIL ONE END SECTION	0.62 CU. YD.

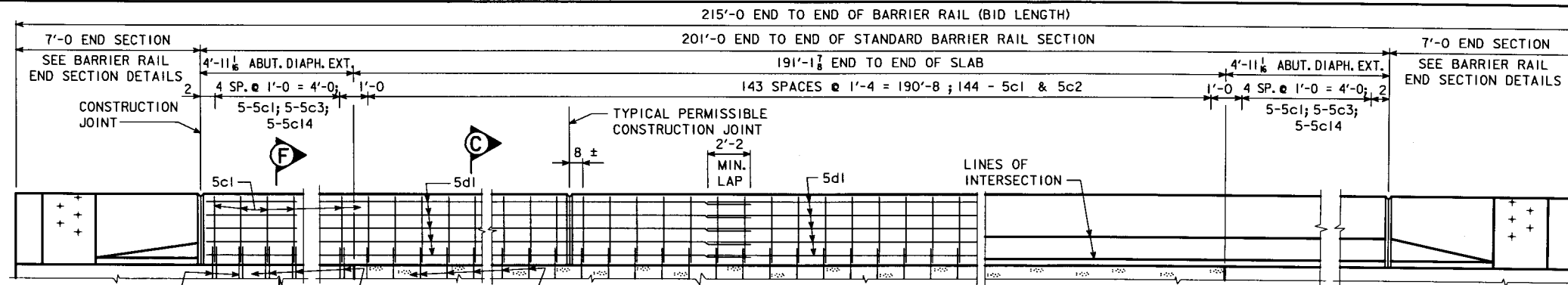
BENT BAR DETAILS



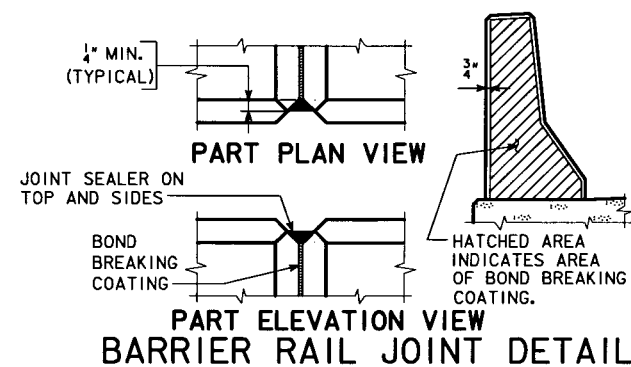
NOTE: ALL DIMENSIONS ARE OUT TO OUT.
D = PIN DIAMETER.

DESIGN FOR 18° SKEW (L.A.)
188'-0 x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
40'-9 END SPANS 106'-6 INTERIOR SPAN
END SECTION DETAILS
STATION : 110+90.62 (± 10WA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 18 OF 23 FILE NO. 29876 DESIGN NO. 103

REVISED 09-01 - STD. SHEET NO. RENAMED 1020C (CADD NAME HE1020C.S01). BARRIER RAIL END SECTION DETAILS MOVED TO STD. SHEET 1017.
HE1020CF.S01 - 02-00 THIS SHEET ISSUED.

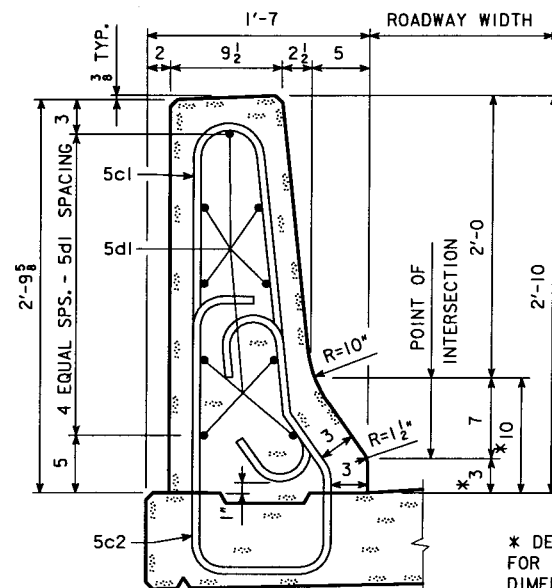


C ELEVATION OF BARRIER RAIL LAYOUT



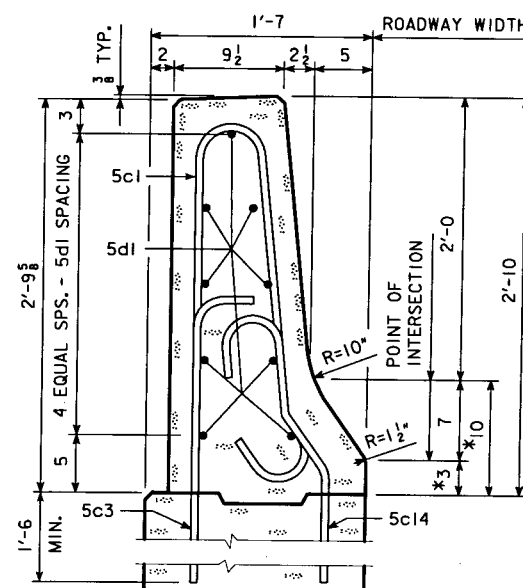
BARRIER RAIL NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.
THE PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE PLACED BETWEEN VERTICAL BARS AT A MINIMUM SPACING OF 20 FEET. CONSTRUCTION JOINT CONTACT SURFACES ARE TO BE COATED WITH AN APPROVED BOND BREAKER. COST OF THE JOINT SEALER AND BOND BREAKER SHALL BE CONSIDERED INCIDENTAL TO OTHER CONSTRUCTION.
ALL BARRIER RAIL REINFORCING STEEL IS TO BE EPOXY COATED.
THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAL FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS. IF CONDUIT IS REQUIRED IN THIS PLAN THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.
ALL BARRIER RAIL REINFORCING STEEL IS TO BE INCLUDED WITH THE SUPERSTRUCTURE REINFORCING STEEL.
THE JOINT SEALER SHALL BE LIGHT GRAY NONSAG LATEX CAULKING SEALER MARKETED FOR OUTDOOR USE. NO TESTING OR CERTIFICATION IS REQUIRED.
TOP OF THE BARRIER RAIL IS TO BE PARALLEL TO THE THEORETICAL & GRADE.
CROSS SECTIONAL AREA OF THE STANDARD SECTION OF THE BARRIER RAIL = 2.84 SQUARE FEET.



PART SECTION C-C

* DENOTES THE MAXIMUM VALUE FOR THIS DIMENSION. THIS DIMENSION MAY VARY DUE TO CONSTRUCTION INACCURACIES.

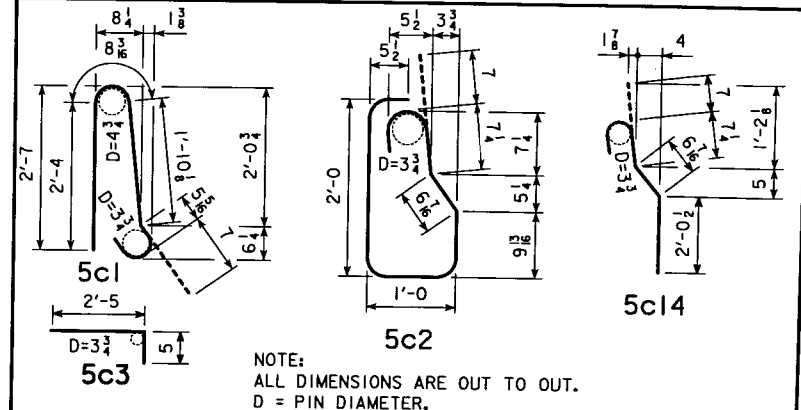


PART SECTION F-F

EPOXY REINF. STEEL-TWO BARRIER RAILS

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTION	5c1	VERTICAL	A	308	5'-11"	1901
	5c2	VERTICAL	B	288	6'-0"	1802
	5c3	VERTICAL	C	20	2'-10"	59
	5c14	VERTICAL	D	20	3'-10"	80
	5d1	LONGITUDINAL	E	108	35'-3"	3971
BARRIER RAIL END SECTION						4 AT 413 LBS. 1652
(INCLUDE WITH SUPERSTRUCTURE REINFORCING)						TOTAL (LBS.) 9465

BENT BAR DETAILS



CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION	402.0 @ 0.1052 CU. YD. PER FT.	42.3
BARRIER RAIL END SECTION	4 @ 0.62 CU. YD.	2.5
TOTAL (CU. YD.)		44.8

CONCRETE BARRIER RAIL QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE BARRIER RAILING	L.F.	430.0

DESIGN FOR 18° SKEW (L.A.)
188'-0" x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
40'-9" END SPANS 106'-6" INTERIOR SPAN
BARRIER RAIL DETAILS
STATION : 110+90.62 (& IOWA 25)
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 19 OF 23 FILE NO. 29876 DESIGN NO. 103
APRIL, 2003

DESIGNED BY E.SOUHRADA CHECKED BY G.KOTLERS
DETAILED BY R.RYSAY CADD FILE h880103.s19

BARRIER RAIL -- INTEGRAL ABUTMENTS
WITH WING EXTENSIONS

STANDARD SHEET 1020C

UNION COUNTY

PROJECT NUMBER

BRF-25-2 (18) --38-88

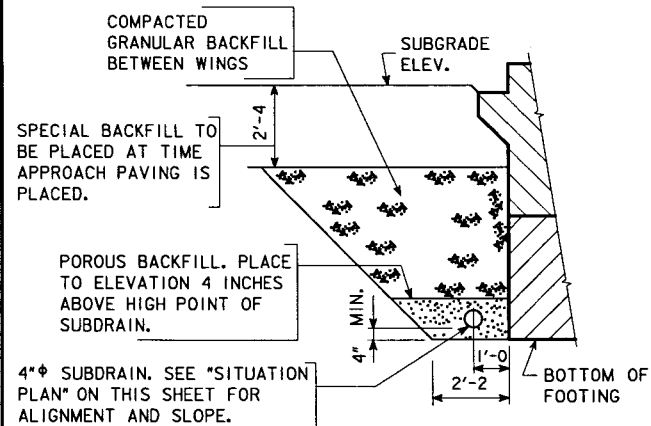
SHEET NUMBER 20

29-JAN-2003 10:26

rrysay

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HE1007C.S01 - THIS SHEET ISSUED 06-02 FOR WATER CROSSINGS.

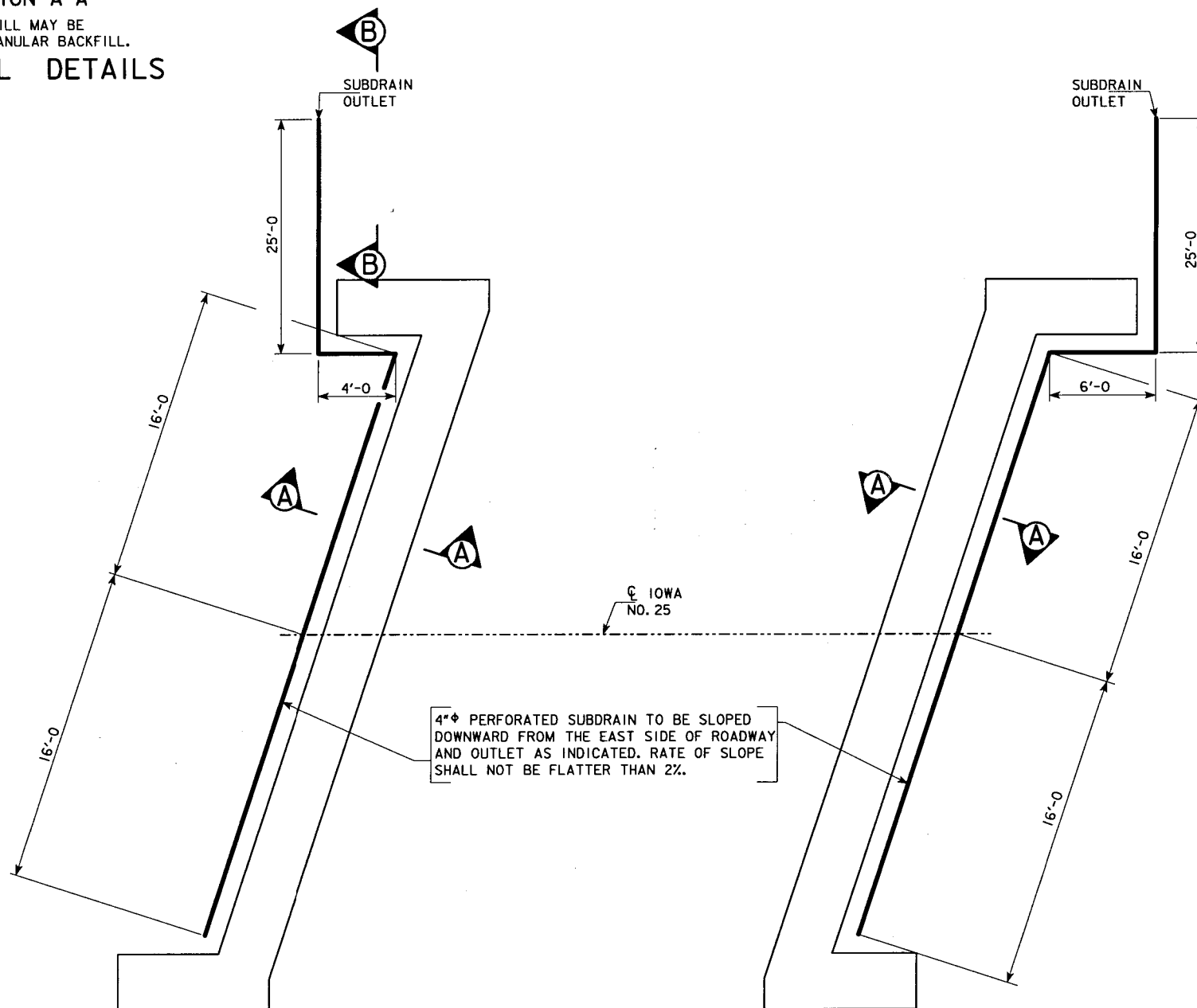


SECTION A-A

NOTE: SPECIAL BACKFILL MAY BE SUBSTITUTED FOR GRANULAR BACKFILL.

GRANULAR BACKFILL DETAILS

BENCH MARK: NO. 501A STA. 109+94, 18.75LT., IOWA D.O.T. BRASS PLUG IN TOP BARRIER RAIL SOUTHWEST CORNER OF BRIDGE, ELEVATION 1182.21



PART SITUATION PLAN
SHOWING SUBDRAIN LOCATIONS

SUBDRAIN NOTES:

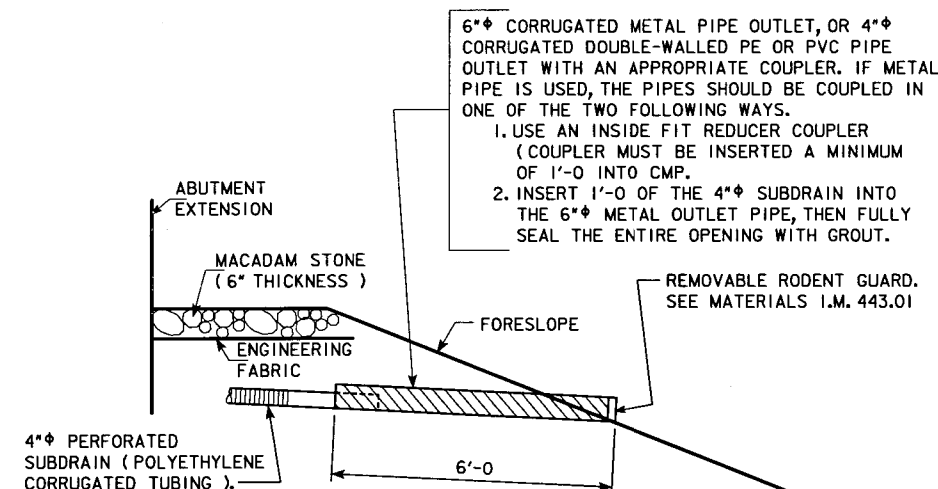
THIS PLAN SHEET SHOWS DETAILS FOR PLACING ALL SUBDRAINS AND SUBDRAIN OUTLETS REQUIRED FOR THIS STRUCTURE.
THE SUBDRAINS SHALL BE 4" IN DIAMETER AND MEET THE REQUIREMENTS OF SECTION 4143.01 B OF THE CURRENT I.D.O.T. STANDARD SPECIFICATION. THE SUBDRAIN OUTLET SHALL CONSIST OF A 6'-0" LENGTH OF PIPE WITH A REMOVABLE RODENT GUARD AS DETAILED ON THIS SHEET.

THE COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), GRANULAR BACKFILL, POROUS BACKFILL, AND SUBDRAIN OUTLET IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)". NO EXTRA PAYMENT WILL BE MADE.

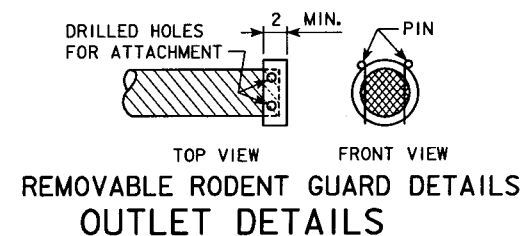
THE DIMENSIONS SHOWN FOR THE PROPOSED SUBDRAINS ARE BASED ON THE PROPOSED GRADING LAYOUT OF BRIDGE BERMS. THE DIMENSIONS SHOWN ARE FOR ESTIMATING ONLY. REQUIRED LENGTHS AND GENERAL LOCATIONS OF SUBDRAINS ARE SUBJECT TO CHANGE DUE TO FIELD ADJUSTMENTS OF THE GRADING LAYOUT.

SUBDRAIN OUTLET ELEVATIONS

LOCATION	ELEVATION
NORTH ABUTMENT	1169.4
SOUTH ABUTMENT	1170.3



PART VIEW B-B OF SUBDRAIN OUTLET



TOP VIEW FRONT VIEW

REMOVABLE RODENT GUARD DETAILS
OUTLET DETAILS

DESIGN FOR 18° SKEW (L.A.)
188'-0" x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
40'-9" END SPANS 106'-6" INTERIOR SPAN
SUBDRAIN DETAILS
STATION : 110+90.62 (¢ IOWA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 20 OF 23 FILE NO. 29876 DESIGN NO. 103

DESIGNED BY E.SOUHRADA CHECKED BY G.KOTLERS
DETAILED BY R.RYSAVY CADD FILE h880103.s20

SUBDRAIN DETAILS (WATER CROSSING)

STANDARD SHEET 1007C
MODIFIED

UNION COUNTY

PROJECT NUMBER

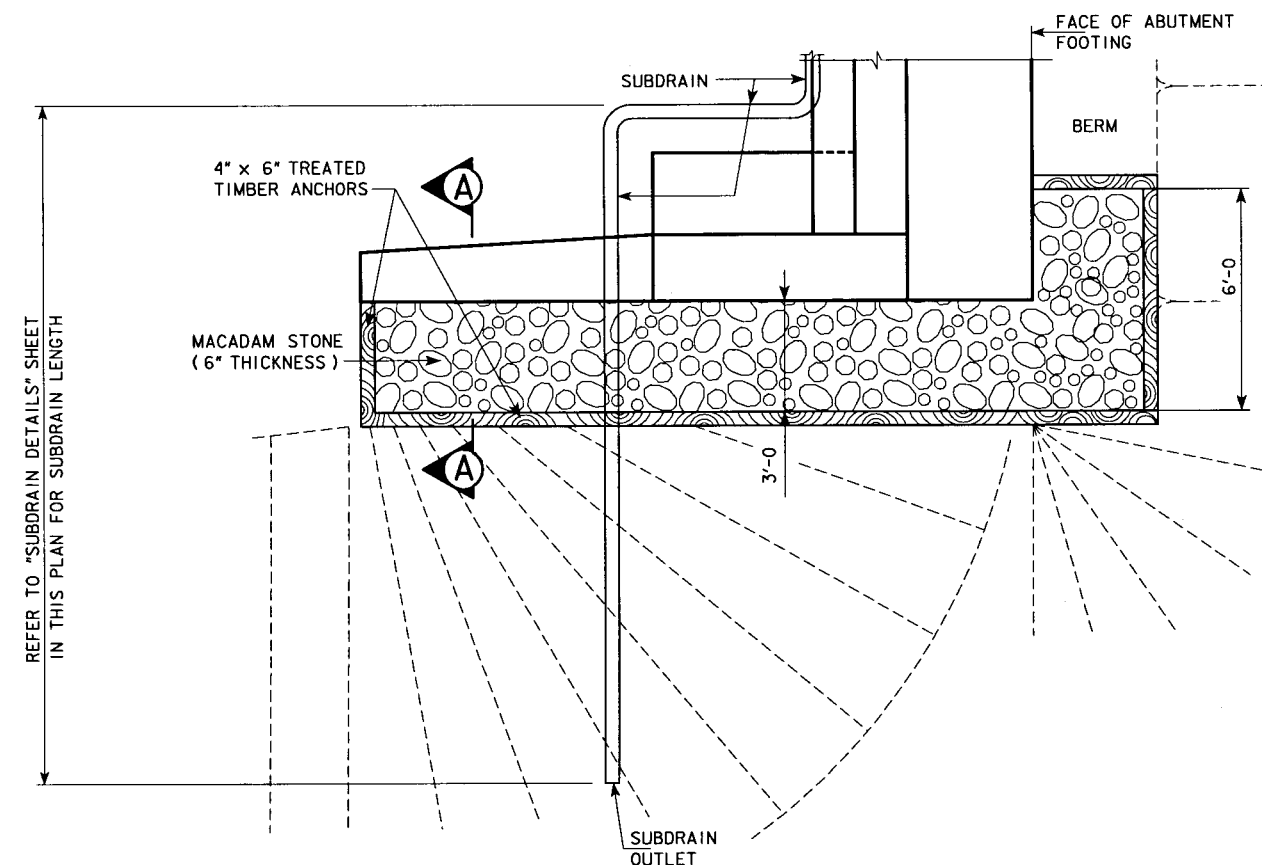
BRF-25-2 (18)--38-88

SHEET NUMBER 21

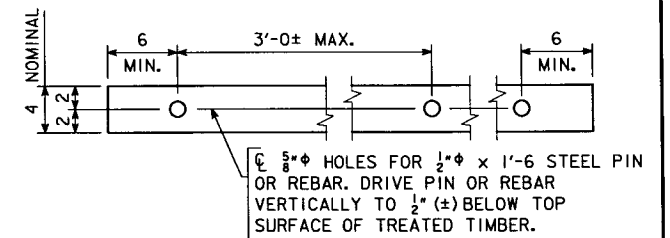
30-JAN-2003 09:28

rrysavy

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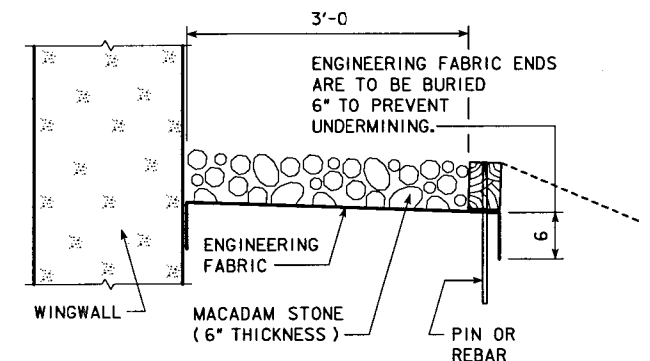


TOP VIEW OF WING ARMORING WITH WING EXTENSION



4" x 6" TREATED TIMBER EDGING DETAILS

TYPICAL SECTION OF SUBDRAIN OUTLET



PART SECTION A - A

GENERAL NOTES:

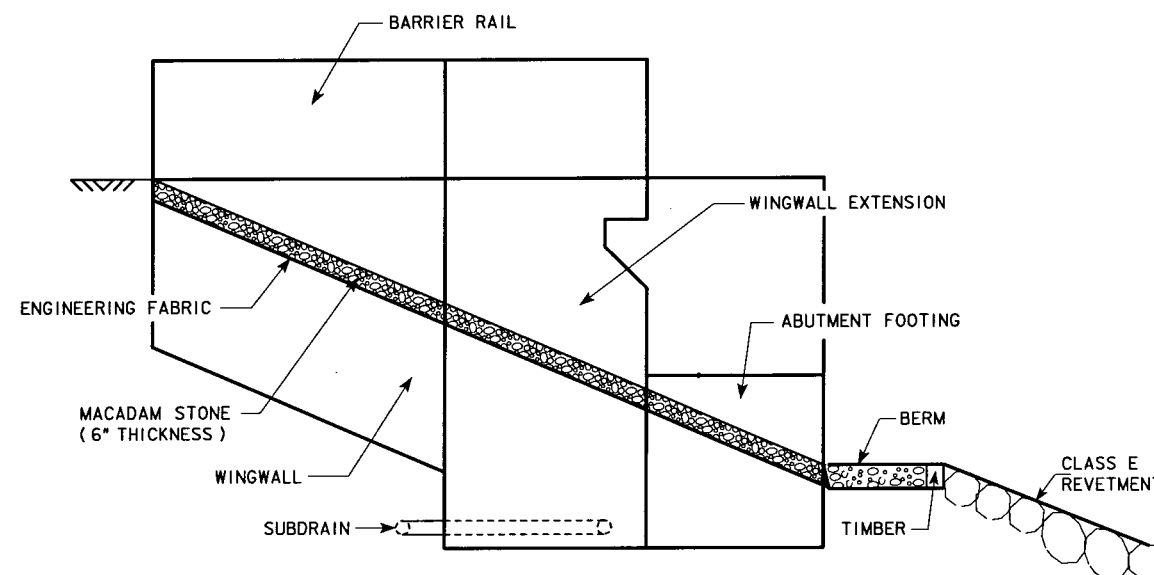
MACADAM STONE SHALL BE PLACED ALONG THE SIDE OF THE WING AND ABUTMENT FOOTING AS SHOWN IN PART SECTION A-A. THIS IS TYPICAL AT EACH CORNER OF THE BRIDGE UNLESS OTHERWISE NOTED IN THE PLANS. THE MACADAM STONE AT THESE LOCATIONS SHALL BE UNDERLAYED WITH ENGINEERING FABRIC MEETING THE REQUIREMENTS OF 4196.01 C.

THE MACADAM STONE SHALL MEET THE REQUIREMENTS OF 4122.02, COARSE MATERIAL (NO CHOKE STONE IS ALLOWED).

WOOD PRESERVATIVE TREATMENT FOR THE TIMBER EDGING SHALL MEET THE REQUIREMENTS FOR GUARDRAIL POSTS, SAWED FOUR SIDES, AS SPECIFIED IN 4161.

THE MACADAM STONE SHALL BE DEPOSITED, SPREAD, CONSOLIDATED AND SHAPED BY MECHANICAL OR HAND METHODS THAT WILL PROVIDE UNIFORM 6" DEPTH AND DENSITY AND PROVIDE UNIFORM SURFACE APPEARANCE.

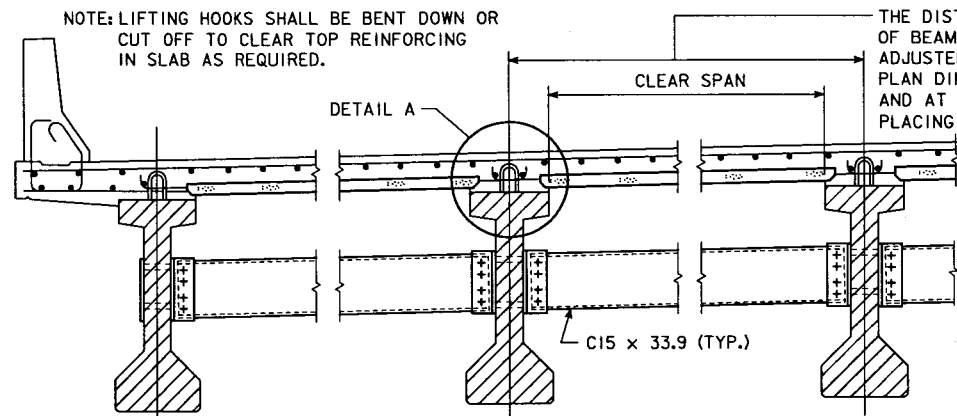
PAYMENT FOR THE BRIDGE WING ARMORING SHALL BE INCIDENTAL TO THE BID ITEM "STRUCTURAL CONCRETE (BRIDGE)" AND SHALL INCLUDE COSTS OF ALL MATERIAL AND LABOR TO CONSTRUCT THE WING ARMORING AS SHOWN ON THESE PLANS.



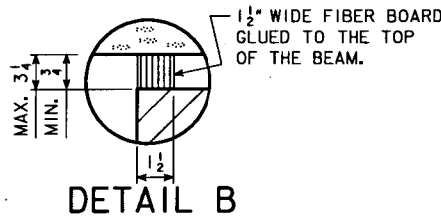
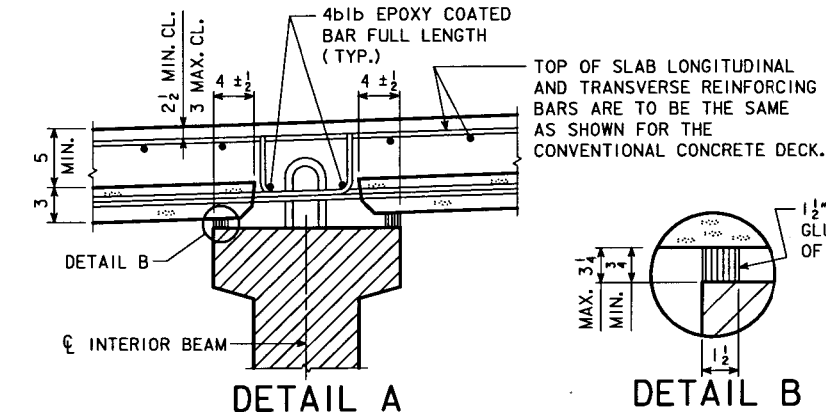
PROFILE VIEW OF WING ARMORING WITH WING EXTENSION

DESIGN FOR 18° SKEW (L.A.)
188'-0 x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
 40'-9 END SPANS 106'-6 INTERIOR SPAN
BRIDGE WING ARMORING
 STATION : 110+90.62 (± 10WA 25) APRIL, 2003
 UNION COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 21 OF 23 FILE NO. 29876 DESIGN NO. 103

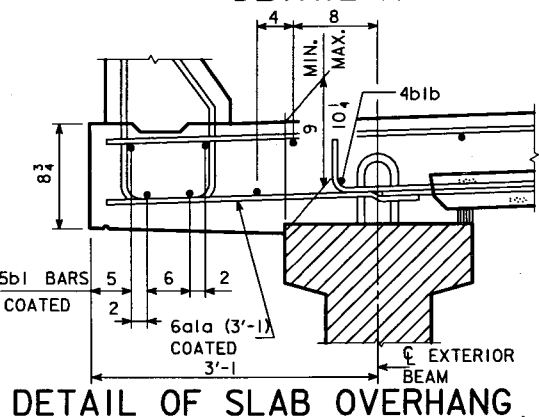
REVISED: AASHTO SERIES UPDATED TO 1992 SERIES, TAPE NO. 19, DATED 11-9-92.
REVISED: IDOT STANDARD SPECIFICATIONS, UPDATE ARCH. TAPE NO. 12, DATE 4-20-92.
REVISED: "L" DIMENSION ON 4b1 BARS CHANGED, TAPE NO. 9, DATED 5-21-90.
REVISED: 5-99 - MAXIMUM CLEAR SPAN AND STRAND EXTENSION CHANGED.
HE1037.S01 (HSTD01037.S01--LEP: THIS SHEET REDRAWN, DEVICE: ZHAO4200.004) ARCH. TAPE NO. 10 DATE 12-27-89



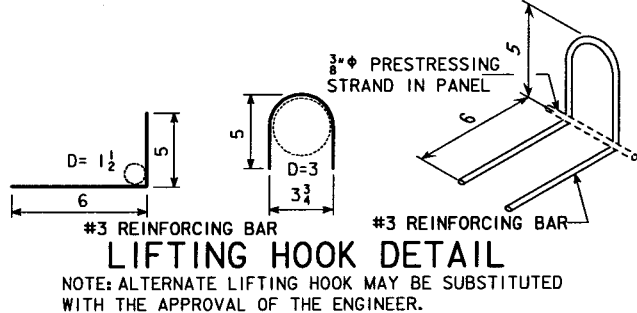
SECTION SHOWING INTERMEDIATE DIAPHRAGM



NOTE:
VARIATION IN HAUNCH DIMENSION IS TO BE ACCOMPLISHED BY VARYING THE THICKNESS OF FIBER BOARD IN ORDER TO SECURE A UNIFORM DECK THICKNESS. A MINIMUM CAST-IN-PLACE SLAB THICKNESS AS SHOWN IN DETAIL A SHALL BE MAINTAINED. THE SLAB MAY BE THICKENED WHEN THE MAXIMUM HAUNCH SHOWN IS NOT SUFFICIENT TO ADJUST THE SLAB TO A SMOOTH PROFILE, EXCEPT NO SLAB THICKENING WILL BE ALLOWED WITHIN THE MIDDLE HALF OF A SPAN. REINFORCING BAR CLEARANCES AS SHOWN ON DETAIL A SHALL BE STRICTLY ADHERED TO, WHICH MAY REQUIRE THE USE OF VARIABLE HEIGHT BAR CHAIRS. THE FIBER BOARD SHALL BE ASPHALT IMPREGNATED FIBER BOARD AS PER AASHTO M-213 OR FIBER BOARD SHEATHING AS PER ASTM C208, IMPREGNATED WITH ASPHALT.



DETAIL OF SLAB OVERHANG

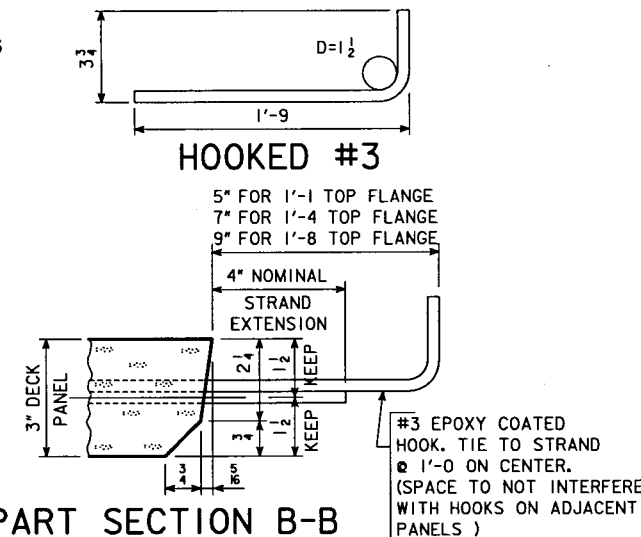
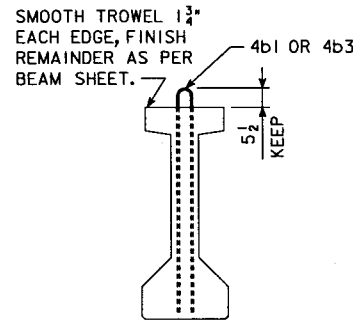


NOTE: ALTERNATE LIFTING HOOK MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.

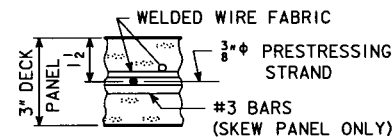
4b1 OR 4b3 DIMENSIONS	
BEAM DEPTH	L
2'-8	2'-11 3/4
3'-3	3'-6 3/4
3'-9	4'-0 3/4
4'-6	4'-9 3/4

STIRRUP 4b1 OR 4b3 DETAILS

NOTE:
BEAM STIRRUP 4b1 OR 4b3 SHALL BE MODIFIED AS SHOWN WHEN DECK PANELS ARE USED.
D = PIN DIAMETER.
STIRRUP DIMENSIONS ARE OUT TO OUT.

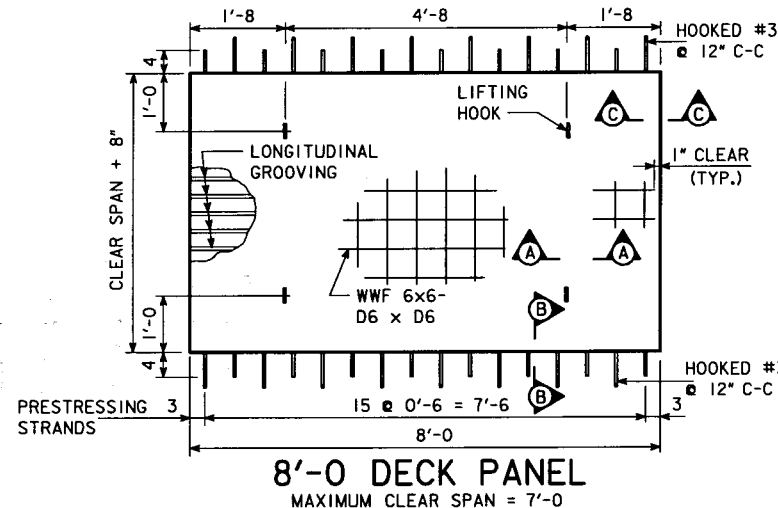


PART SECTION B-B

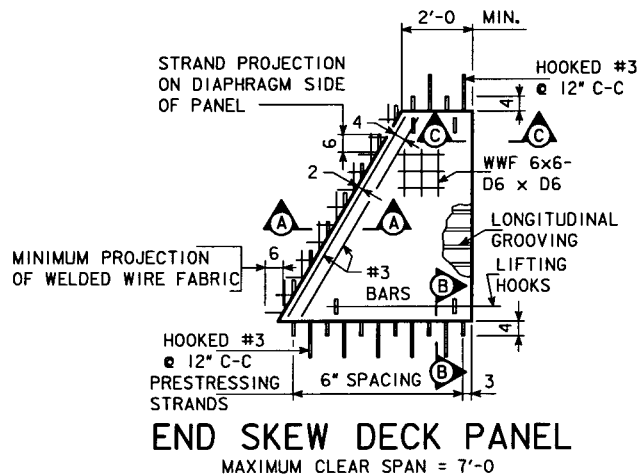


PART SECTION A-A

PART SECTION C-C

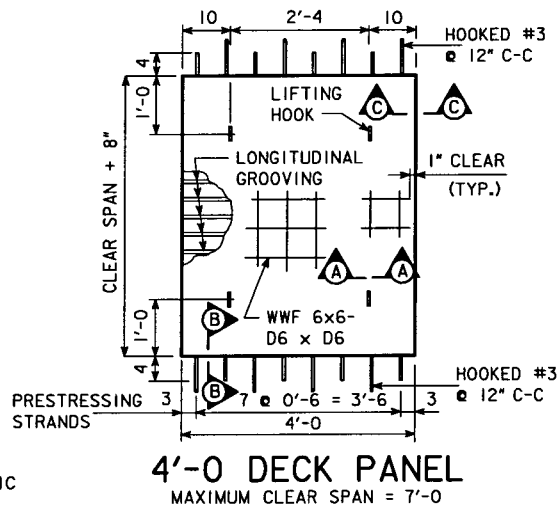


8'-0\"/>



END SKEW DECK PANEL

NOTE: FOR 0° SKEWS, NO MINIMUM PROJECTION OF WELDED WIRE FABRIC OVER DIAPHRAGMS ARE REQUIRED; MAINTAIN 1\"/>



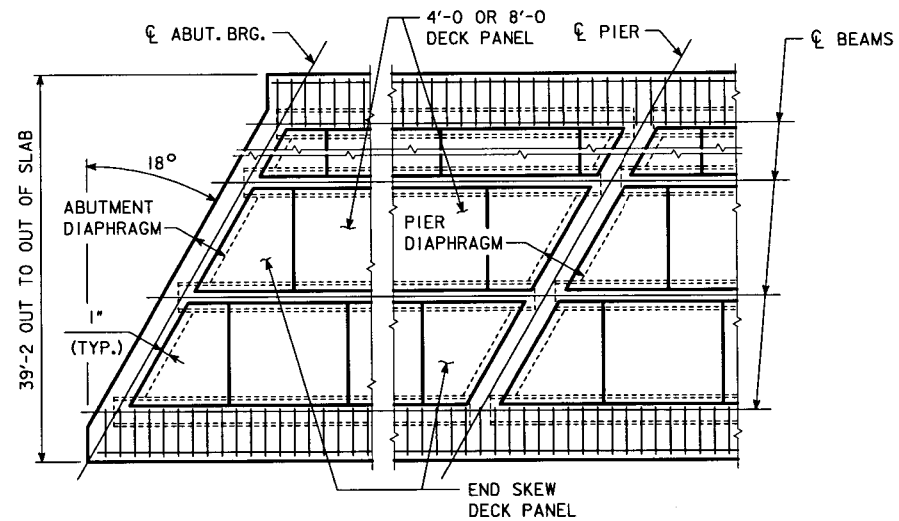
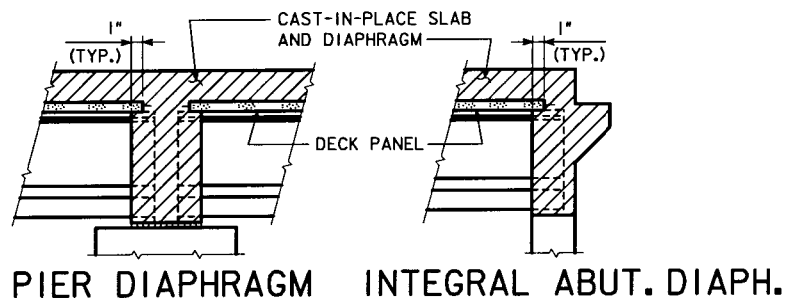
4'-0\"/>

GENERAL NOTES:
THE STAY-IN-PLACE DECK PANELS ARE DESIGNED TO SUPPORT THE DEAD LOAD OF THE PANEL, REINFORCEMENT, PLASTIC CAST-IN-PLACE CONCRETE AND 50 LBS. PER SQUARE FOOT OF CONSTRUCTION LOAD. THE PANEL AND CAST-IN-PLACE SLAB, ACTING AS A COMPOSITE SECTION IS DESIGNED FOR HS20-44 LOADING PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.
SHOP DRAWINGS SHOWING LAYOUT AND CONSTRUCTION DETAILS OF THE DECK PANELS SHALL BE SUBMITTED FOR APPROVAL.
THE MAXIMUM ALLOWABLE DIMENSIONAL TOLERANCE FOR THE DECK PANELS SHALL BE AS FOLLOWS:
THICKNESS + 3/16\"/>

SPECIFICATIONS:
DESIGN: AASHTO SERIES OF 1996.
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, CURRENT SERIES, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.
DESIGN STRESSES:
DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 1996.
REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.
CONCRETE IN ACCORDANCE WITH SECTION 9, f'c = 6,000 PSI.
PRESTRESSING STEEL IN ACCORDANCE WITH SECTION 9, f's = 270,000 PSI.

DESIGN FOR 18° SKEW (L.A.)
188'-0 x 36' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
40'-9 END SPANS 106'-6 INTERIOR SPAN
PRECAST DECK PANEL DETAILS
STATION : 110+90.62 (¢ IOWA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 22 OF 23 FILE NO. 29876 DESIGN NO. 103

REVISED: 463 ADDED TO NOTE AND WORD "QUANTITY REMOVED FROM NOTE AND REINFORCING STEEL ADJUSTMENT TABLE. TAPE NO. 9 DATED 5-21-90 .
REVISED: 6-21-93 - "LIN. FT." COLUMN DELETED FROM REINFORCING BAR LIST.
REVISED: 5-99 - REINFORCING BAR LIST CHANGED.
HE1037A.SOI (HSTD1037A.SOI)---LEP: THIS SHEET REDRAWN, DEVICE:ZHA04(200.004) ARCH.TAPE NO. 10 DATE 12-27-89)



DECK PANEL LOCATION PART PLAN

NOTE:
AREAS OUTSIDE OF PANEL SECTIONS ARE FULL DEPTH CAST-IN-PLACE
SLAB AND DIAPHRAGMS. ALTERNATE DETAIL OF USING FULL DEPTH
CAST-IN-PLACE SLAB AT THE SKEWED ENDS MAY BE SUBMITTED FOR
APPROVAL.

DESIGN FOR 18° SKEW (L.A.)
**188'-0 x 36' PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE**
40'-9 END SPANS 106'-6 INTERIOR SPAN
PRECAST DECK PANEL DETAILS
STATION : 110+90.62 (CL IOWA 25) APRIL, 2003
UNION COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 23 OF 23 FILE NO. 29876 DESIGN NO. 103

DESIGNED BY <u>E.SOUHRADA</u>	CHECKED BY <u>G.KOTLERS</u>	PRECAST PRESTRESSED CONCRETE DECK PANEL	STANDARD SHEET 1037A MODIFIED	UNION COUNTY	PROJECT NUMBER BRF-25-2 (18)--38-88	SHEET NUMBER 24
DETAILED BY <u>R.RYSAVY</u>	CADD FILE <u>h880103.s23</u>					

ESTIMATED PROJECT QUANTITIES

100-1A
07-15-97

Item No.	Item Code	Item	Unit	Total	As Built Quan.
1	2101-0850001	CLEAR+GRUBB	ACRE	0.25	.250
2	2102-2625000	EMBANKMENT-IN-PLACE	CY	3957	3,957
3	2102-2712015	EXCAVATION, CL 12, BOULDER/ROCK FRAGMENT	CY	20	0
4	2102-2713090	EXCAVATION, CL 13, WASTE	CY	286	286
5	2105-8425015	TOPSOIL, STRIP, SALVAGE+SPREAD	CY	235	235
6	2115-0100000	MODIFIED SUBBASE	CY	1688	818.380
7	2121-7425010	GRANULAR SHLD, TYPE A	TON	375	231.750
8	2122-5190500	PAVED SHLD, PCC (PANEL FOR RF-38/RF-39)	SY	20	22.333
9	2123-7450000	SHLD CONSTRUCTION, EARTH	STA	15.4	15.400
10	2301-0685100	BRIDGE APPROACH SECTION	SY	480	480
11	2301-1033100	STD/S-F PCC PAV'T, CL C CL 3, 10"	SY	2144	2145.110
12	2301-6911722	PCC PAV'T SAMPLE	LS	1	0
13	2499-0695039	BRIDGE END DRAIN, RF-39	EACH	2	2
14	2502-8212014	SUBDRAIN, LONGITUDINAL, 4"	LF	781	764
15	2502-8220196	SUBDRAIN OUTLET, RF-19E	EACH	4	4
16	2505-4008100	RMV G'RAIL	LF	384	384
17	2505-4008200	INSTALL OF G'RAIL	LF	250	250
18	2505-4021690	G'RAIL, END ANCHOR, BEAM, RE-69	EACH	4	4
19	2505-4021761	G'RAIL TERMINAL, BEAM, RE-76	EACH	4	4
20	2507-6800061	REVTMENT, CLASS E	TON	28.1	28.100
21	2510-6745850	RMVL OF PAV'T	SY	2046	2,053.334
22	2518-6910000	SAFETY CLOSURE	EACH	4	4
23	2527-9263110	PAINTED PAV'T MARK,	STA	23	53.015
24	2528-8445110	TRAFFIC CONTROL	LS	1	\$5,000.00
25	2601-2634100	MULCH	ACRE	3.5	2.850
26	2601-2636015	NATIVE GRASS SEEDING	ACRE	2.9	2.180
27	2601-2636041	SEED+FERTILIZE	ACRE	0.6	.670
28	2601-2640350	SPECIAL DITCH CONTROL,WOOD EXCELSIOR MAT	SQ	64	0
29	2601-2642100	STABILIZE CROP - SEED+FERTILIZE	ACRE	3.5	0
30	2601-2643110	WATER-SOD/SPEC DITCH CNTL/SLOPE PROTECT	MGAL	12.8	0
31	2602-0000020	SILT FENCE	LF	2530	406
32	2602-0000030	SILT FENCE-DITCH CHECKS	LF	120	100

TABULATION OF UTILITIES

102-13
02-23-93

B.P. Pipeline North America
1501 NW 86th St.
Des Moines, IA. 50235
Attn: Dave Miller
Phone No. 515-225-0503

Iowa Telecommunications Service
11 Eleventh Ave. P.O. Box 330
Grinnell, IA. 50112-0330

Southern Iowa Rural Water Assoc.
1391 190th St.
Creston, IA. 50801

Alliant Energy
208 W. Taylor
Creston, IA. 50801

04-30-02
101-4

DESIGN DATA RURAL

2002 AADT 1120 V.P.D.
2022 AADT 1460 V.P.D.
2022 DHV 150 V.P.H.
TRUCKS 13 %
Total
Design ESALs 525,000

TABULATION OF SPECIAL EVENTS

102-15
10-29-02

Event	Location	Date
Adams County		
Le Festival De L'Heritage Francais	Corning	First Saturday in June
Adams County Fair	Corning	Second week of July
Corn Carnival	Nodaway	Last week in August
Septemberfest	Prescott	Labor Day weekend
Union County		
Memorial Day Flag Ceremony	Creston	Memorial Day
Pre-Fourth Celebration	Afton	Sunday before July 4th
4th of July Celebration by 10,000 Crestonians	Creston	July 4th
Union County Fair	Afton	Last week of July
Old Settler's Picnic	Arispe	Second Sunday in August
Car & Motorcycle Show in Afton	Afton	Last week of August
SW Iowa Year End Rodeo Finals	Afton	First weekend in September
SW Iowa Professional Balloon Races	Creston	Third weekend of September
Mason Dixon Days in Creston	Creston	Last weekend in September
Taylor County		
Lenox RAT Bike Ride-A-Cross-Taylor County	Lenox	First Saturday in June
All Over Town Yard Sale	Lenox	First Saturday in June
Bull-A-Rama	Lenox	First week in June
Taylor County Fair	Bedford	Third week in July
Lenox Rodeo and Youth Rodeo	Lenox	Last Wednesday thru Sunday in July
Hobby Show	Lenox	Fourth Saturday in October

ESTIMATE REFERENCE INFORMATION

100-4
10-29-02

Item No.	Item Code	Description
		Project Summary Replacement of the existing Bridge over the Platte River with a new 188'x36' PPCB Bridge. The profile grade will be lowered slightly requiring approximately 4 Sta. of existing pavement on either side of the bridge to be removed and replaced.
2	2102-2625000	EMBANKMENT-IN-PLACE A. Fill requirements are 3768 Cu. Yds. and 5% subsidence. 3317 Cu. Yds. of material is estimated to be available from project cut. B. Contractor to furnish 640 cu. Yds. of Embankment Fill needs.
3	2102-2712015	EXCAVATION, CL 12, BOULDER/ROCK FRAGMENT See Tab 103-7.
4	2102-2713090	EXCAVATION, CL 13, WASTE A. For the removal of debris (broken concrete, rock, etc.) located under the existing structure, and includes limestone slope protection adjacent to each abutment. B. The material removed as Class 13 Excavation could be deposited on the north riverbank in the section that has been eroded severely. (Immediately downstream of the exist. struct.) If Class 13 material is deposited in the exist. washout area, it will be covered with rip-rap according to the plans.
5	2105-8455015	TOPSOIL STRIP, SALVAGE & SPREAD A. Topsoil located from Sta. 106+00 to Sta. 109+96.62. See Cross Sections for locations and details. B. Topsoil will be placed on the foreslopes as the top layer until depletion from Sta. 106+00 to 109+00.
6	2115-0100000	MODIFIED SUBBASE Contractor may recycle the PCC and/or HMA portion of the existing pavement if crushed to modified subbase gradation.
7	2121-7425010	GRANULAR SHOULDERS, TYPE A Contractor may recycle the HMA portion of the existing pavement, if crushed to granular shoulder gradation, and mixed as per spec. 2102.02.
8	2122-5190500	PAVED SHLD, PCC (PANEL FOR RF-38/RF-39) See Tab 104-8AM.
9	2123-7450000	SHLD CONSTRUCTION, EARTH See Typical 7110 for details. Contractor to furnish 848 cu. yds. of Earth Shoulder Fill.
10	2301-0685100	BRIDGE APPROACH SECTION See Tab 112-6.
13	2499-0695039	BRIDGE END DRAIN, RF-39 See Tab 104-8AM. Class E Revetment to be used in lieu of sod for flumes.
14	2502-8212014	SUBDRAIN, LONGITUDINAL 4"
15	2502-8220196	SUBDRAIN OUTLET, RF-19E See Tab 104-9M.
16	2505-4008100	RMVL G'RAIL See Tab 110-7A. There is no handrail on the existing bridge.

ESTIMATE REFERENCE INFORMATION

100-4
10-29-02

Item No.	Item Code	Description
		The existing guardrail and posts are to be salvaged and remain property of the Contracting Authority as per Article 2505.03 of the Standard Specifications, series 2001. Guardrail and posts are to be delivered to the DOT Maintenance Facility in Corning, IA. All other guardrail materials, including end anchorages, delineator posts, object markers and any other item not suitable for future use shall be removed from the project and become the property of the contractor.
17	2505-4008200	INSTALL OF G'RAIL
18	2505-4021690	G'RAIL, END ANCHOR, BEAM, RE-69
19	2505-4021761	G'RAIL TERMINAL, BEAM, RE-76 See. Tab 108-8A.
20	2507-6800061	REVTMENT, CLASS E For Rock Flumes. See Tab 104-8AM.
21	2510-6745850	RMVL OF PAV'T See Tab 102-5 and Tab 110-1.
22	2518-6910000	SAFETY CLOSURE See Tab 108-13A for locations.
23	2527-9263111	PAINTED PAV'T MARK, WATERBORNE See Tab 108-22 for quantity breakdown and placement locations.
24	2528-8445110	TRAFFIC CONTROL See Tab 108-23 for Traffic Control Plan.
25	2601-2634100	MULCH Mulch: Rate--1 1/2 tons of dry cereal straw per acre. All mulch to be consolidated into the soil with the mulch tiller.
26	2601-2636015	NATIVE GRASS SEEDING Included for all disturbed areas including borrow following final construction as designated by the engineer. Seed Mixture:(Area outside 15' Adj. to shoulder Canada Wildrye 10lbs. PLS per acre Annual Ryegrass 40lbs. per acre Indiangrass (NE 54, Otto or Holt) 10lbs. PLS per acre Big Bluestem (Kaw, Pawnee or Champ) 10lbs. PLS per acre Switchgrass (Blackwell, Neb. 28, Pathfinder, Or Cave-in-Rock) 5lbs. PLS per acre Sideoats Grama 5 (Butte, Trailway or El Reno) 5lbs. PLS per acre Little Bluestem (Blaze, Aldous or Camper) 5lbs. PLS per acre Blackeyed Susan 4 ozs. PLS per acre Purple Prairie Clover 4 ozs. PLS per acre Prairie Blazing Star 4 ozs. PLS per acre Grayhead Prairie Coneflower 4 ozs. PLS per acre Purple Coneflower 4 ozs. PLS per acre Fertilizer: Rate--400 lbs. of 13-13-13 or equivalent chemically combined commercial fertilizer per acre.

Design No. 103
File No. 29876
Design Sheet No. C.01

OFFICE OF DESIGN • CADD • PRODUCED

STATE OF IOWA

FHWA REGION 7

FISCAL YEAR

UNION

COUNTY

PROJECT NUMBER

BRF-25-2(18)--38-88

SHEET NUMBER

28

25-FEB-2003 07:57 sbartle w:\Projects\88025010A98\Design\k88025018.c01

ESTIMATE REFERENCE INFORMATION 100-410-29-02			POLLUTION PREVENTION PLAN 110-1202-23-93			POLLUTION PREVENTION PLAN 110-1202-23-93			TRAFFIC CONTROL PLAN 108-2304-04-89																																																																																									
<table><tr><th>Item No.</th><th>Item Code</th><th>Description</th></tr><tr><td>27</td><td>2601-2636041</td><td>SEED+FERTILIZE Included for all disturbed areas including borrow following final construction as designated by the engineer.</td></tr><tr><td>28</td><td>2601-2640350</td><td>SPECIAL DITCH CONTROL,WOOD EXCELSIOR MAT Refer to RC-5. Locations to be designated by the engineer. Sta. 160+00 +/- to Sta. 110+00 +/- Rt. (16' width)</td></tr><tr><td>29</td><td>2601-2642100</td><td>STABILIZE CROP - SEED+FERTILIZE Included for all disturbed areas as designated by the engineer. Seed Mixture: Spring-- March 1 to May 20 Oats 2 bu. Per acre Annual Ryegrass 25 lbs. Per acre Red Clover 5 lbs. Per acre Timothy 10 lbs. Per acre Summer--May 21 to July 20 Oats 2 bu. Per acre Annual Ryegrass 25 lbs. Per acre Red Clover 10 lbs. Per acre Timothy 15 lbs. Per acre Fall--July 21 to September 30 Oats 2 bu. Per acre Annual Ryegrass 25 lbs. Per acre Red Clover 5 lbs. Per acre Timothy 10 lbs. 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Union County All contractors/subcontractors shall conduct their operations in a manner that minimizes erosion and prevents sediments from leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the Pollution Prevention Plan (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. 1. SITE DESCRIPTION This Pollution Prevention Plan (PPP) is for the construction of a bridge on IA 25 over Branch Platte River, approximately 2.9 miles south of Jct. U.S. 34 in Union County, Iowa. This PPP covers approximately 8.2 acres with an estimated 3.5 acres being disturbed. The portion of the PPP covered by this contract has 3.5 acres disturbed. The PPP is located in an area of soil association Shelby Sharpsburg-Macksburg. The estimated average SCS runoff curve number for this PPP after completion will be 74. Refer to the BRF-25-2(18)--38-88 plan (Union County) for locations of typical slopes, ditch grades, and major structural and non-structural controls. A copy of this plan will be on file at the project engineer's office. Runoff from this work will flow into various unnamed ditches and waterways, into Branch Platte River, which flows into the Platte River, and then into the Missouri River. POTENTIAL SOURCES OF POLLUTION: Site sources of pollution generated as a result of this work relate to silts and sediment which may be transported as a result of a storm event. However, this PPP provides conveyance for other (non-project related) operations. These other operations have storm water runoff, the regulation of which is beyond the control of this PPP. Potentially this runoff can contain various pollutants related to site-specific land uses. Examples are: Rural Agricultural Activities: Runoff from agricultural land use can potentially contain chemicals including herbicides, pesticides, fungicides and fertilizers. Commercial and Industrial Activities: Runoff from commercial, industrial, and commerce land use may contain constituents associated with the specific operation. Such operations are subject to potential leaks and spills which could be commingled with run-off from the facility. Pollutants associated with commercial and industrial activities are not readily available since they are typically proprietary. 2 CONTROLS At locations where runoff can move offsite, silt fence shall be placed along the perimeter of the areas to be disturbed prior to beginning grading, excavation or clearing and grubbing operations. Vegetation in areas not needed for construction shall be preserved. As areas reach their final grade, additional silt fences, silt basins, intercepting ditches, sod flumes, letdowns, bridge end drains, and earth dikes shall be installed as specified in the plans and/or as required by the project engineer. This will include using silt fence as ditch checks and to protect intakes. 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. No more than 750,000 square feet of exposed erodible area is allowed in any one grading spread without permission of the project engineer. Other stabilizing methods shall be used outside the seeding time period. This work shall be done in accordance with Section 2602 of the Standard Specification. If the work involved is not applicable to any contract items, the work shall be paid for according to Article 1109.03 paragraph B.			As the work progresses, additional erosion control items may be required as determined by the engineer after field investigation. These may be items such as silt fence, ditch checks and other appropriate measures that shall be installed by the Bridge Contractor, as directed by the engineer. The Bridge Contractor will complete the construction with the establishment of permanent perennial vegetation of all disturbed areas. 3 OTHER CONTROLS Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state 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. 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. 4 MAINTENANCE The contractor is required to maintain all temporary erosion control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. Cleaning of silt control devices shall begin when the features have lost 50% of their capacity. 5 INSPECTIONS Inspections shall be made jointly by the contractor and the contracting authority every seven calendar days and after each rain event that is 1/4" or greater. The contractor shall immediately begin corrective action on all deficiencies found. The findings of this inspection shall be recorded in the project diary. This PPP may be revised based on the findings of the inspection. The contractor shall implement all revisions. All corrective actions shall be completed within 3 calendar days of the inspection. 6 NON-STORM DISCHARGES This includes subsurface drains (i.e. longitudinal and standard subdrains), slope drains and bridge end drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone or erosion stone.			1. Through traffic on IA 25 will be detoured off of the project site via the following route: Begin at Jct. Of IA 25 and Co. Rd. J13 and extend west to IA 49, then north on IA 49 and U.S. 34, then east on U.S. 34 to the Jct. of IA 25. 2. Traffic control on this project shall be found in accordance with Standard Road Plans of the "RS" series listed in tabulation 105-4. For additional complementary information, refer to Part VI of the Manual on Uniform Traffic Control Devices and to the current Standard Specifications. 3. All traffic control devices shall be furnished, erected, maintained, and removed by the contractor. 4. Where possible, all post-mounted signs shall be placed at least 2 feet beyond the curb or edge of shoulder. 5. The location for storage of equipment by the contractor during nonworking hours shall be as approved by the engineer in charge of construction. 6. The engineer may require modifications to the pavement marking details as shown. Conflicting permanent edge lines, centerlines, or land lines shall be removed. As applicable, permanent edge lines, centerlines, and line lines shall be placed before the roadway is returned to normal traffic. The current Standard Specifications and Supplemental Specifications shall apply. 7. Proposed sign spacing may be modified as approved by the engineer to meet existing field conditions or to prevent obstruction of the motorist's view of permanent signing. 8. Permanent signing that conveys a message contrary to the message of the temporary signing and not applicable to the working conditions shall be covered by the contractor when directed by the engineer. 9. Proposed changes in the traffic control plan shall be reviewed with the Office of Construction before changes are made.																																																																				
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						STAGING NOTES 108-2608-30-88																																																																																												
						1. IA 25 shall be closed and through traffic shall be detoured according to the route specified in Item 1 on Tab 108-23. 2. The project shall be completed and reopened to through traffic.																																																																																												
						STANDARD ROAD PLANS 105-412-03-96 The following Standard Road Plans shall be considered applicable to construction work on this project. <table><tr><th>NUMBER</th><th>DATE</th><th>NUMBER</th><th>DATE</th><th>NUMBER</th><th>DATE</th></tr><tr><td>RC-5</td><td>4/27/99</td><td>RE-69A</td><td>10/29/02</td><td>RH-55</td><td>4/15/03</td></tr><tr><td>RC-16A</td><td>10/27/98</td><td>RE-76</td><td>4/15/03</td><td>RH-56</td><td>4/15/03</td></tr><tr><td>RC-16B</td><td>9/21/99</td><td>RF-19C</td><td>4/15/03</td><td>RH-57</td><td>4/15/03</td></tr><tr><td>RE-2B</td><td>4/3/01</td><td>RF-19E</td><td>10/3/00</td><td>RK-19A</td><td>10/29/02</td></tr><tr><td>RE-12A</td><td>10/2/01</td><td>RF-39</td><td>4/30/02</td><td>RK-19C</td><td>10/29/02</td></tr><tr><td>RE-12B</td><td>10/2/01</td><td>RH-22</td><td>1/12/99</td><td>RL-14</td><td>1/12/99</td></tr><tr><td>RE-47</td><td>4/3/01</td><td>RH-37D</td><td>4/3/01</td><td>RS-1</td><td>10/27/98</td></tr><tr><td>RE-48A</td><td>4/3/01</td><td>RH-50</td><td>4/27/99</td><td>RS-2</td><td>10/27/98</td></tr><tr><td>RE-65A</td><td>10/29/02</td><td>RH-51</td><td>4/30/02</td><td>RS-27</td><td>10/28/97</td></tr><tr><td>RE-68</td><td>4/15/03</td><td>RH-52</td><td>8/20/96</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>			NUMBER	DATE	NUMBER	DATE	NUMBER	DATE	RC-5	4/27/99	RE-69A	10/29/02	RH-55	4/15/03	RC-16A	10/27/98	RE-76	4/15/03	RH-56	4/15/03	RC-16B	9/21/99	RF-19C	4/15/03	RH-57	4/15/03	RE-2B	4/3/01	RF-19E	10/3/00	RK-19A	10/29/02	RE-12A	10/2/01	RF-39	4/30/02	RK-19C	10/29/02	RE-12B	10/2/01	RH-22	1/12/99	RL-14	1/12/99	RE-47	4/3/01	RH-37D	4/3/01	RS-1	10/27/98	RE-48A	4/3/01	RH-50	4/27/99	RS-2	10/27/98	RE-65A	10/29/02	RH-51	4/30/02	RS-27	10/28/97	RE-68	4/15/03	RH-52	8/20/96																										
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RE-12A	10/2/01	RF-39	4/30/02	RK-19C	10/29/02																																																																																													
RE-12B	10/2/01	RH-22	1/12/99	RL-14	1/12/99																																																																																													
RE-47	4/3/01	RH-37D	4/3/01	RS-1	10/27/98																																																																																													
RE-48A	4/3/01	RH-50	4/27/99	RS-2	10/27/98																																																																																													
RE-65A	10/29/02	RH-51	4/30/02	RS-27	10/28/97																																																																																													
RE-68	4/15/03	RH-52	8/20/96																																																																																															
						CHANGE ORDERS <table><tr><th>CO #</th><th>ITEM CODE</th><th>ITEM</th><th>UNITS</th><th>QUANTITY</th></tr><tr><td>2</td><td>6100-2510010</td><td>EWOARMVL of Anchor Lug per lane</td><td>EA</td><td>8.000</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>			CO #	ITEM CODE	ITEM	UNITS	QUANTITY	2	6100-2510010	EWOARMVL of Anchor Lug per lane	EA	8.000																																																																																
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OFFICE OF DESIGN • CADD • PRODUCED			STATE OF IOWA	FHWA REGION 7	FISCAL YEAR	UNION	COUNTY	PROJECT NUMBER	BRF-25-2(18)--38-88	SHEET NUMBER	29																																																																																							

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04-03-01203-2

During construction of this project, the contractor will be required to coordinate his operations with those of other contractors working within the same area. Other work in progress during the same period of the time will include construction of the following projects:

Project

Type of Work

None.

10-29-02213-1

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. These areas shall not impact wetlands or "Waters Of The U.S." 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.

01-20-84232-5

The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service areas) will be subject to the approval of the resident engineer.

09-29-92203-4

The contractor is encouraged to take full advantage of specification 1105.15 - Value Engineering Incentive Proposal. A pamphlet and conceptual proposal form will be available at the preconstruction conference.

01-09-90232-6

Selective clearing will be required on this project. Any trees outside of the construction limits shall be removed only by the approval of the engineer.

06-07-94232-8

The top six (6) inches of the disturbed areas shall be free of rock and debris and shall be suitable for the establishment of vegetation, subject to the approval of the Engineer.

01-20-84204-2

All holes resulting from operations of the contractor, including removal of guardrail posts, fence posts, utility poles, or foundation studies, shall be filled and consolidated to finished grade as directed by the engineer to prevent future settlement. The voids shall be filled as soon as practical - preferably the day created and not later than the following day. Any portion of the right-of-way or project limits (including borrow areas and operation sites) disturbed by any such operations shall be restored to an acceptable condition. This operation shall be considered incidental to other bid items in project.

10-28-97232-10

The contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features on the project. This may involve seeding, silt fence, rock ditch checks, silt basins, or silt dikes.

10-22-93204-4

All guardrail materials that are removed and not reused on this project shall become the property of the contractor. Any material to be used on this project that is damaged due to the carelessness of the contractor shall be replaced at the contractor's expense without cost to the State of Iowa.

10-29-02262-3

BEFORE YOU DIG:
IOWA ONE CALL# 1-800-292-8989

TABULATION OF EXISTING PAVEMENT										102-5
										10-29-02
No.	Location	Existing Pavement (Type)	Coarse Aggregate				Pavement Thickness (Inches)	Reinforcement (Type)	Detail Typical	
			TYPE		Source	Durability Class				
			Gravel	Crushed Stone						
1	MP 22.59 to 28.07	AAC		C. LST.	MENLO		1.0			
2	MP 22.59 to 28.07	BAC		C. LST.	CORNING		3.0			
3	MP 22.59 to 28.07	PCC		C. LST.	STANZEL	1, DUR=0	8.0			

REMOVE or REMOVE & REINSTALL BEAM GUARDRAIL												110-7A
												10-29-02
① Lane(s) to which the installation is adjacent.												
Location			Side	Steel Beam Guardrail		Posts		End Anchorage		Remarks		
No.	① Direction of Traffic	Station		Remove (Lin. Ft.)	Remove & Reinstal (Lin. Ft.)	Remove (No.)	Remove & Reinstall (No.)	Remove (No.)	Remove & Reinstall (No.)			
1		110+00	Rt.	96		17		1		RE-52	1 Type J terminal section	
2		110+00	Lt.	96		17		1		RE-52	1 Type J terminal section	
3		112+00	Rt.	96		17		1		RE-52	1 Type J terminal section	
4		112+00	Lt.	96		17		1		RE-52	1 Type J terminal section	
Totals:				384		68						

REMOVAL OF PAVEMENT						110-1
						10-29-02
Station to Station		Pavement Type	Area (Sq. Yds.)	Saw Cut* (Lin. Ft.)	Remarks	
106+00	110+03.1	PCC/ACC	982	22	See Tab 102-5 for more specific pavement types.	
111+83.1	116+20.0	PCC/ACC	1064	22	See Tab 102-5 for more specific pavement types.	
Total:			2046			

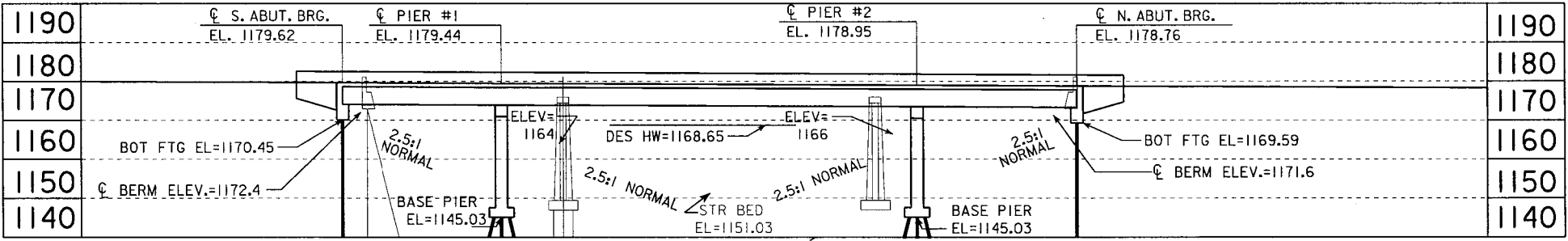
TABULATION OF GRADING FOR GUARDRAIL INSTALLATIONS														107-23 04-27-99			
① Lane(s) to which the installation is adjacent.														② Refer to Standard Road Plans RL-12, RL-14, and Typical 4303 or 4306.			
LOCATION POINT				TYPE	DIMENSIONS ②				CLASS 10 EXCAV. Cu. Yds.	EMBANK. IN PLACE Cu. Yds.	PIPE			REMARKS			
No.	① Direction of Traffic	Station	SIDE		③ BY		④ Z				Size Inches	Type	Length Lin. Ft.				
					Feet		Feet										
					A	T	A	T									
1	NB	110+90.62	Out	1	8		50		*				* Included in mainline embank. in place quant.				
2	NB	110+90.62	Out	1	8		50		*								
3	SB	110+90.62	Out	1	8		50		*								
4	SB	110+90.62	Out	1	8		50		*								

TABULATION OF ROCK FLUME FOR BRIDGE END DRAIN										104-8AM
										Modified
Refer to Standard Road Plan RF-39										
① Not a Bid Item										
LOCATION		SHOULDER		Polymer Grid ① Sq. Yds.	Revetment Class E tons	REMARKS				
Bridge Station	Bridge Corner	Distance DI-1 or DI-2	Panels Required A B C or D							
110+90.62	NW	28.125	B	10	14.4	14.6				Sta. 112+19.50 Lt.
110+90.62	NE	21.875	A	10	14.4	13.5				Sta. 112+13.41 Rt.

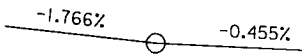
TABULATION OF BRIDGE APPROACH SECTION														112-6			
(Refer to Standard Road Plan RF-19E, RK-16, RK-19A, RK-19B, RK-19C, RK-19D, RK-19E, RK-19F, RK-19G, RK-19H, or RK-19J)														① Not a bid item		10-03-00	
LOCATION		APPROACH PAVEMENT				Fixed or Movable Abutment F or M	SUBDRAIN				APPROACH SUBGRADE		REMARKS				
Bridge Station	End	Ⓣ Thickness Inches	Pay Length Feet	Non-Reinf. Pavement Area Sq. Yds.	Reinforced Pavement Area Sq. Yds.		Perforated Subdrain ① 4"	Subdrain Outlet ①		Porous ① Backfill Cu. Yds.	Class 'A' Crushed Stone ① Backfill Cu. Yds.	Modified Subbase ① Tons		Polymer Grid ① Sq. Yds.			
								Station	Side								
110+90.62	A	10	70	155.6	84.44	M	50	109+35.12	Rt	1.7		300	269				
110+90.62	T	10	70	155.6	84.44	M	50	112+46.12	Rt	1.7		300	269				

TABULATION OF SAFETY CLOSURES				108-13A
				10-26-97
Refer to Section 2518 of the Standard Specifications				
STATION	CLOSURE TYPE		REMARKS	
	Road Qty.	Hazard Qty.		
106+00	1		(1)	
116+20	1		(1)	
109+50	1		(1)	
111+50	1		(1)	
			(1) RS-26A	

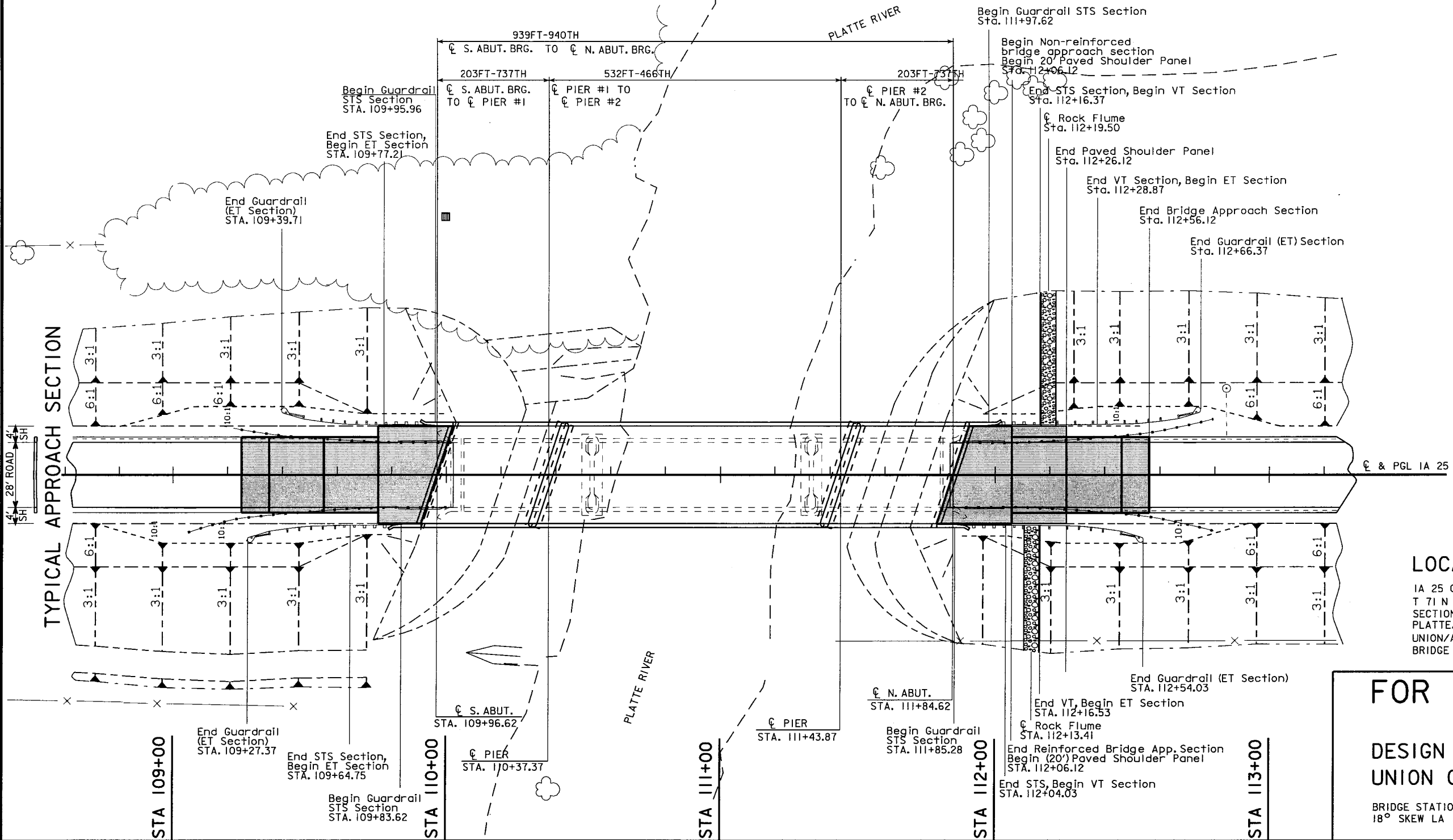
Design No. 103
File No. 29876
Design Sheet No. C.03



LONGITUDINAL SECTION ALONG PGL ROADWAY



PI STA 107+00.00 VC = 200'
PI ELEV 1180.97
**PROPOSED PROFILE GRADE
ON IA 25**
PROFILE GRADE LINE (PGL) IS AT CL LANES.



NOT TO SCALE

LOCATION

IA 25 OVER PLATTE RIVER
T 71 N R 31,32 W
SECTION 19, 24
PLATTE/GRANT TOWNSHIP
UNION/ADAMS COUNTY
BRIDGE MAINT. NO. 8824.7S025

**FOR INFORMATION
ONLY**
DESIGN SITUATION PLAN
UNION COUNTY

BRIDGE STATION: 110+90.62
18° SKEW LA

Design No. 103
File No. 29876
Design Sheet No. U.01