

GENERAL NOTES:

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

THE ROAD WILL BE CLOSED TO TRAFFIC DURING CONSTRUCTION.

THE IOWA DEPARTMENT OF NATURAL RESOURCES WHOSE FACILITIES INCLUDE THE FISH REARING PONDS SHOWN ON THE PLANS AND CITY AND 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 CONSTRUCTION STARTING DATE.

FAINT LINES ON TRACINGS AND ON PRINTS INDICATE THE EXISTING STRUCTURE.

THE BRIDGE CONTRACTOR IS TO INSTALL SUBDRAINS BEHIND THE ABUTMENTS AS DETAILED. THE SUBDRAINS SHALL BE AT LEAST 4 INCHES IN DIAMETER AND MEET REQUIREMENTS FOR THE TYPES PERMITTED IN SECTION 4143.01C. WHEN THE SUBDRAINS ARE INSTALLED USING FLEXIBLE TUBING OR SHORT LENGTHS OF CONCRETE OR CLAY TILE, THE ENDS SHALL CONSIST OF 6 FOOT LENGTHS OF CORRUGATED METAL PIPE (CMP) THAT PROTRUDE A MINIMUM THROUGH THE FORESLOPE. THE CONNECTION BETWEEN THE FLEXIBLE TUBING OR TILE AND THE CMP MAY BE MADE WITH A REDUCER COUPLING OR BY EXTENDING THE FLEXIBLE TUBING OR TILE INTO THE CMP A MINIMUM OF 6 INCHES AND PACKING THE OPEN SPACE BETWEEN THE PIPES WITH GROUT. A REMOVABLE 3/8" MESH GALVANIZED SCREEN IS TO BE FASTENED TO THE END OF EACH OUTLET PIPE. ALL MATERIAL, LABOR AND EXCAVATION NECESSARY FOR SUBDRAIN INSTALLATION IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE".

THE 4 INCH PERFORATED SUBDRAIN UNDER THE CONCRETE SLOPE PROTECTION AT THE NORTH ABUTMENT SHALL BE SLOPED DOWNWARD 1/8" PER FOOT FROM THE C OF BRIDGE ROADWAY. BOTH ENDS SHALL EXTEND UNDER THE BIKE PATH AND THRU THE 2 1/2' BERM SLOPE TO DRAIN INTO THE RIVER. SEE ADDITIONAL DETAILS AND NOTES IN THESE PLANS.

THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 260' x 24' CONTINUOUS PLATE GIRDER BRIDGE, ORIGINAL DES. NO. 335, AND WAS REPAIRED UNDER DES. NO. 178. PLANS OF THE EXISTING STRUCTURE WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - PROJECT DEVELOPMENT DIVISION - IOWA DOT - AMES.

THE LUMP SUM BID FOR "REMOVAL OF EXISTING STRUCTURES" SHALL INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE EXISTING 260' x 24' CONTINUOUS PLATE GIRDER BRIDGE. THE EXISTING PIER NO. 2 SHALL BE COMPLETELY REMOVED TO FACILITATE PLACEMENT OF THE NEW PIER NO. 2. REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS.

A SCRAPE SAMPLE WAS TAKEN FROM ONE AREA OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE OF THE LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. ANALYSIS OF TOTAL LEAD ON THIS SAMPLE WAS 9170 PARTS PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THIS SAMPLE WAS 1810 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 APPROACH FILLS AS SHOWN ARE NOT A PART OF THIS CONTRACT, BUT ARE TO BE IN PLACE BEFORE ABUTMENT PILES ARE DRIVEN. THE BRIDGE CONTRACTOR IS TO LEVEL OFF AND SHAPE THE BERMS TO THE ELEVATIONS AND DIMENSIONS SHOWN. DRESSING OF SLOPES OUTSIDE THE BRIDGE AREA NOT DISTURBED BY THE BRIDGE CONTRACTOR SHALL BE PAID FOR AS EXTRA WORK.

THE CHANNEL EXCAVATION AS SHOWN IS NOT A PART OF THIS CONTRACT, BUT SHALL BE COMPLETED BEFORE ABUTMENT PILES ARE DRIVEN.

CLASS 20 EXCAVATION QUANTITIES ARE BASED ON THE ASSUMPTION THAT THE CHANNEL EXCAVATION IS COMPLETED PRIOR TO STARTING CONSTRUCTION OF THE ABUTMENTS AND PIERS.

THE BRIDGE CONTRACTOR SHALL PREBORE HOLES FOR ABUTMENT PILES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. 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 HOLDS TO AT LEAST THE SPECIFIED DESIGN BEARING.

LEAD SHEETS UNDER BEARINGS ARE A PART OF THE STRUCTURAL STEEL QUANTITY. UNIT PRICE BID FOR "STRUCTURAL STEEL" SHALL INCLUDE ALLOWANCE FOR COST OF LEAD SHEETS. GUARDRAIL IS TO BE PLACED BY OTHERS.

THIS STRUCTURE IS TO BE BUILT UNDER THE CONDITIONS OF ARMY CORPS OF ENGINEERS NATION WIDE 404 PERMIT NUMBER 14.

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.

TOTAL BRIDGE QUANTITIES

	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
	2401-6745650	REMOVAL OF EXISTING STRUCTURES	LS		1.0
	2402-2720000	EXCAVATION, CLASS 20	CY		150.0
	2402-2721000	EXCAVATION, CLASS 21	CY		60.0
	2402-2722000	EXCAVATION, CLASS 22	CY		107.0
	2403-0900000	STRUCTURAL CONCRETE	CY		1045.1
	2404-7775000	REINFORCING STEEL	LB		60694.0
	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB		158674.0
	2407-0580510	BEAMS, PRETENSIONED PRESTRESSED CONCRETE LXD110	EACH		24.0
	2408-7800000	STRUCTURAL STEEL	LB		14435.0
	2414-6424110	CONCRETE BARRIER RAIL	LF		720.1
	2499-0925100	CONCRETE SLOPE PROTECTION	SY		174.0
	2501-5425042	PILING, DRIVE STEEL BEARING, HP10 x 42	LF		579.883
	2501-5550042	PILING, FURNISH STEEL BEARING, HP10 x 42	LF		742.50
	2501-6335010	PREBORED HOLES	LF		208.0
	2523-0960100	CONDUIT, RIGID STEEL, 1 IN. DIA.	LF		170.0
	2523-0960200	CONDUIT, RIGID STEEL, 2 IN. DIA.	LF		360.0
	2526-8285000	CONSTRUCTION SURVEY	LS		1
	2533-4980005	MOBILIZATION	LS		1
	2599-8447010	TRAINEE REIMBURSEMENT	hour		449.5
		BEAM SOLE PLATES			32

ITEM CODE

REFERENCE INFORMATION

2403-0900000

INCLUDES COST OF ALL PREFORMED EXPANSION JOINT FILLER REQUIRED.
INCLUDES COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION),
GRANULAR BACKFILL AND POROUS BACKFILL AT ABUTMENTS.
INCLUDES COST OF ANCHOR BOLTS AND PLATES AT LIGHT POLE BASES.

2407-0580510

INCLUDES COST OF SOLE PLATES THAT ARE CAST IN THE BEAMS,
COIL RODS AND S3 x 7.5 BEARING MATERIAL AT ABUTMENTS.

2499-0925100

INCLUDES COST OF FURNISHING AND PLACING ENGINEERING FABRIC, POROUS BACKFILL,
SUBDRAIN INCLUDING OUTLETS, GRANULAR SUBBASE, REINFORCING STEEL,
EXCAVATION, PREFORMED JOINT FILLER, AND CLASS "C" STRUCTURAL CONCRETE.

TRAFFIC CONTROL PLAN

NOTE: THE ROADWAY WILL BE CLOSED TO THRU TRAFFIC. ROAD CLOSURE WILL BE THE RESPONSIBILITY OF THE ROAD CONTRACTOR AS SHOWN ON THE ROAD PLANS.

DURING CONSTRUCTION OF THIS PROJECT THE BRIDGE CONTRACTOR WILL BE REQUIRED TO COORDINATE BRIDGE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO CONSTRUCTION OF THE FOLLOWING PROJECTS:

BRF-169-7 (35) --38-46

GRADE & PAVE

City of Humboldt Trail Contractor

SPECIFICATIONS:

DESIGN: AASHTO SERIES OF 1992.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION SPECIFICATION, SERIES OF 1992, 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 1992.
REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.
CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 3,500 PSI.
PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEET 18
STRUCTURAL STEEL IN ACCORDANCE WITH SECTION 10. ASTM A 36.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA

9/17/96
DATE

Gordon L. Port
GORDON L. PORT

REG. NO. 8377

DESIGN FOR 0° SKEW
333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE

110'-9 END SPANS 111'-6 CENTER SPAN

BRIDGE QUANTITIES & GENERAL NOTES

STATION: 281+90.02 JUNE 1996

HUMBOLDT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 1 OF 23 FILE NO. 26188 DESIGN NO. 196

DESIGNED BY CARL SCHUMANN CHECKED BY J. NEIDERHISER
DETAILED BY DOUG WARRINGS CADD FILE H46Q196.S22

SECTION LEADER

G. Port

HUMBOLDT COUNTY

PROJECT NUMBER

BRF-169-7 (27) --38-46

STATE

IOWA

FHWA
REGION

7

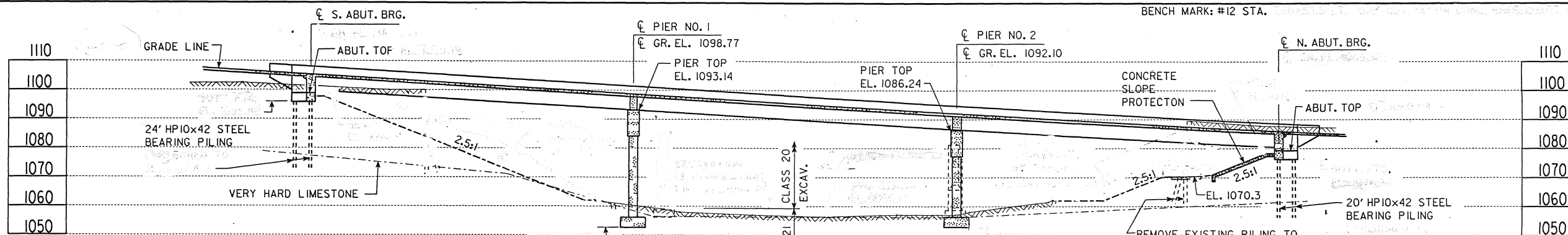
FISCAL
YEAR

SHEET
NO.

2

TOTAL
SHEETS

22



PROFILE

-6.00% -0.40%

PI STA 284+36.43 VC = 300'
PI ELEV 1080.65

GRADE ON US #169

LONGITUDINAL SECTION ALONG CL ROADWAY

HYDRAULIC DATA

DRAINAGE AREA= 2256 SQ MILES
STREAM SLOPE= 2.64 FT./MI.

Q50= 16,900 CFS
NATURAL STAGE= 1073.1

Q100 = 19,400 CFS
NATURAL STAGE= 1074.1

Q500= 25,690 CFS
STAGE W/BACKWATER= 1176.8

EXTREME HW STAGE= 1073.9
DATE= APRIL 14, 1969

LOCATION

U.S. NO. 169
OVER WEST FORK
DES MOINES RIVER
T 91 N R 29 W
SECTION 1 & 2
CORINTH TOWNSHIP
HUMBOLDT COUNTY
CITY OF HUMBOLDT

TRAFFIC ESTIMATE

1991: 6,320 VPD
2011: 8,090 VPD
11% TRUCKS

DNR APPROVAL:

PERMIT #: FP92-32
DATE: 03-03-92

NOTE:
FOR CONDUIT AND LIGHTING DETAILS
SEE DES. SHS. 19 & 20

DESIGN FOR 0° SKEW
333'-0" x 56'-0" PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
110'-9" END SPANS 111'-6" CENTER SPAN

SITUATION PLAN

STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 2 OF 23 FILE NO. 26188 DESIGN NO. 196

TYPICAL APPROACH SECTION

10' SHLD
54' B-B
10' SHLD

THIS STRUCTURE BUILT UNDER THE
CONDITIONS OF ARMY CORPS OF ENGINEERS
NATION WIDE 404 PERMIT NUMBER 14.

DESIGNED BY CARL SCHUMANN CHECKED BY J. NEIDERHISER
DETAILED BY DOUG WARRINGS CADD FILE H460196.S01

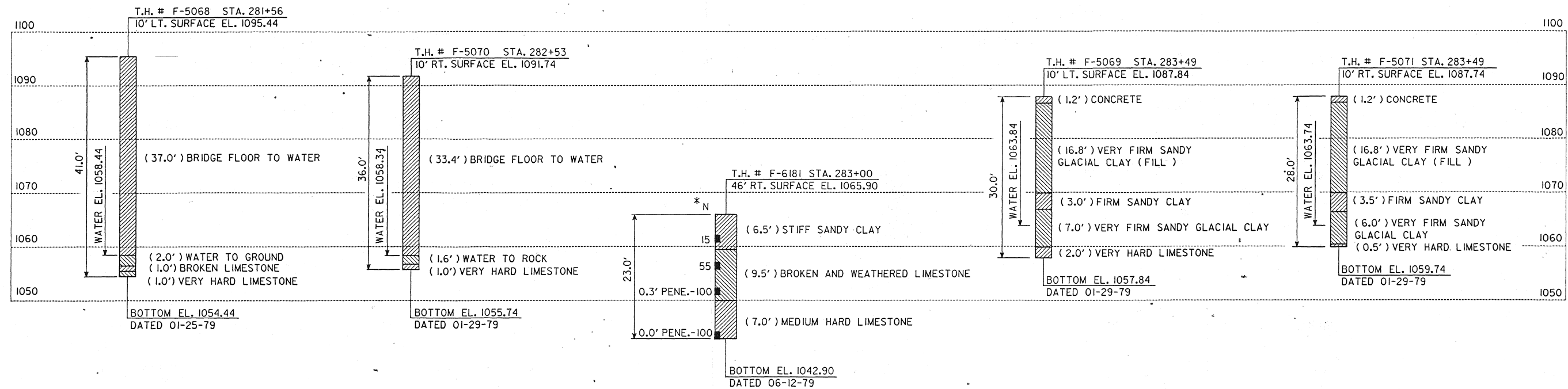
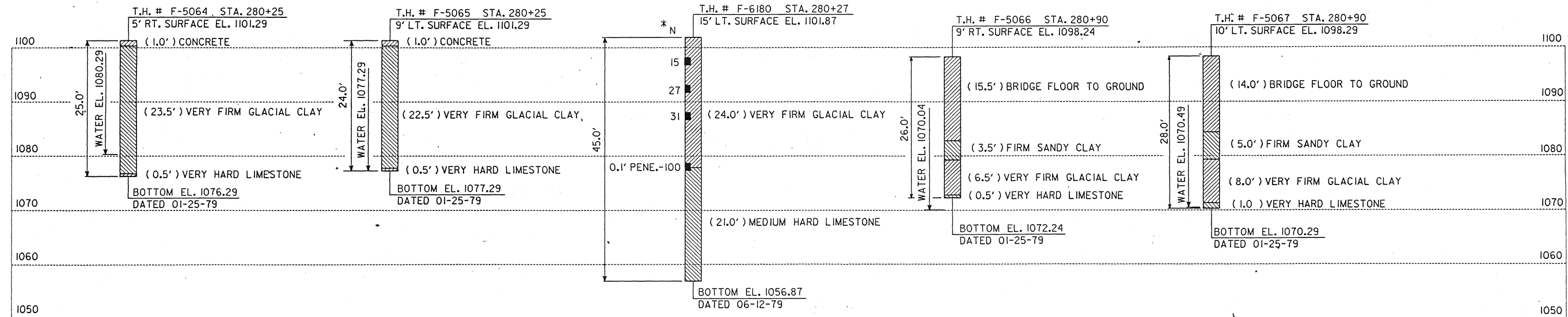
SITUATION PLAN

HUMBOLDT COUNTY

PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		3	23

BENCH MARK: #12 STA.



SOUNDING DATA
* N = NUMBER OF BLOWS PER FOOT

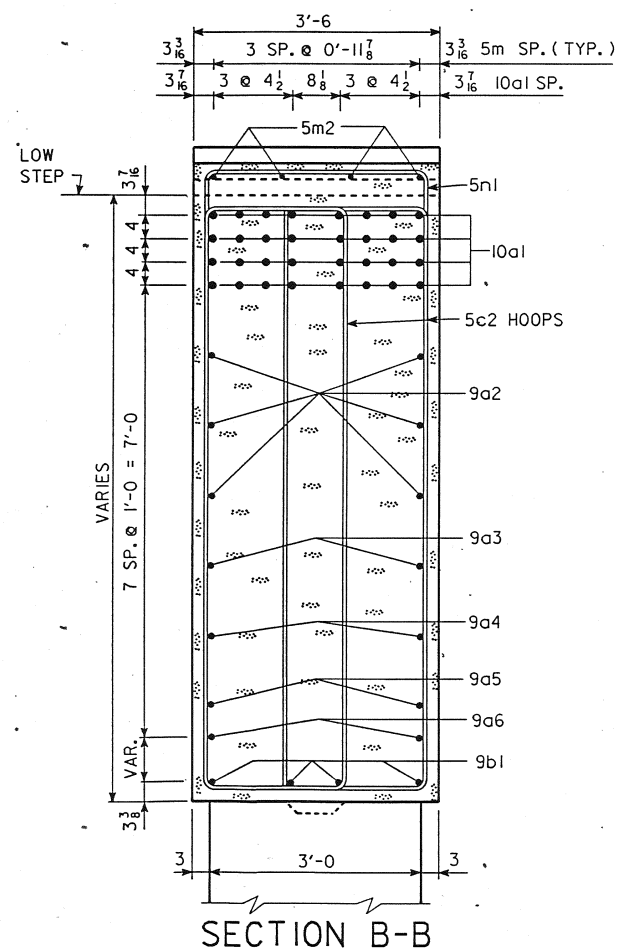
DESIGN FOR 0° SKEW
333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
110'-9 END SPANS 111'-6 CENTER SPAN
SOUNDING DATA
STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 3 OF 23 FILE NO. 26188 DESIGN NO. 196

DESIGNED BY CARL SCHUMANN CHECKED BY J. NEIDERHISER
DETAILED BY DOUG WARRINGS CADD FILE H460196.S20

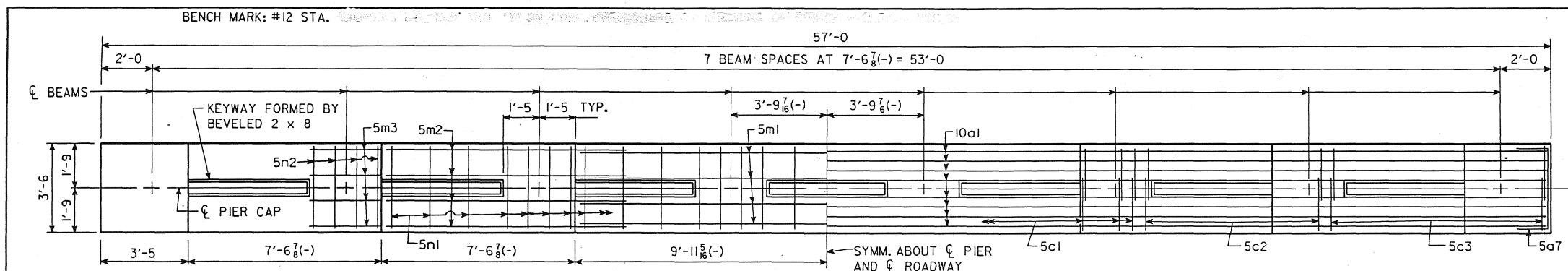
HUMBOLDT COUNTY

PROJECT NUMBER

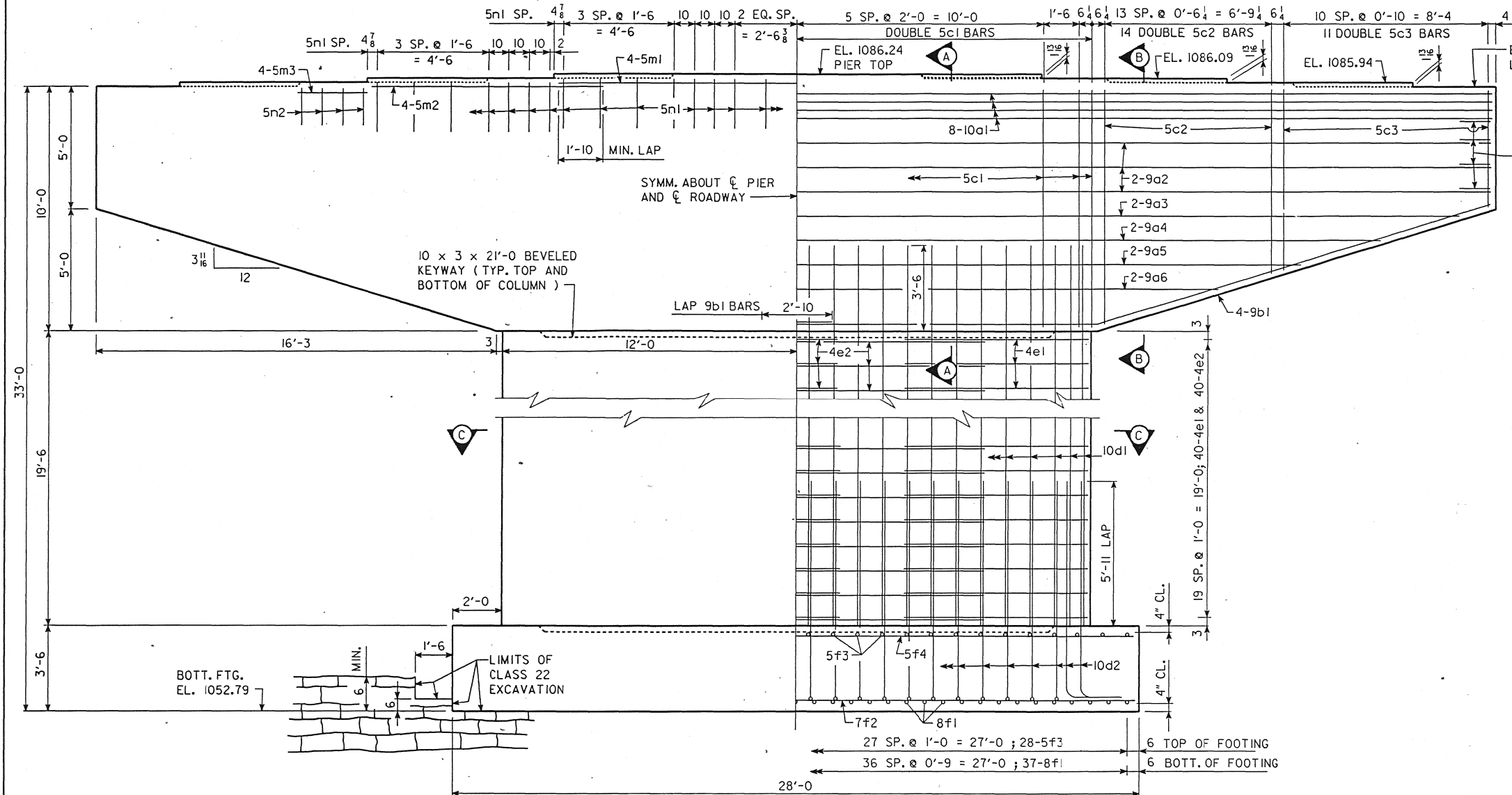
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		4	22



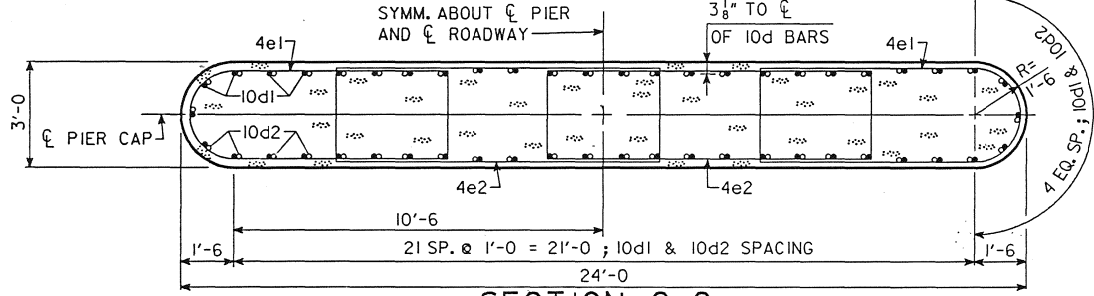
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		5	22



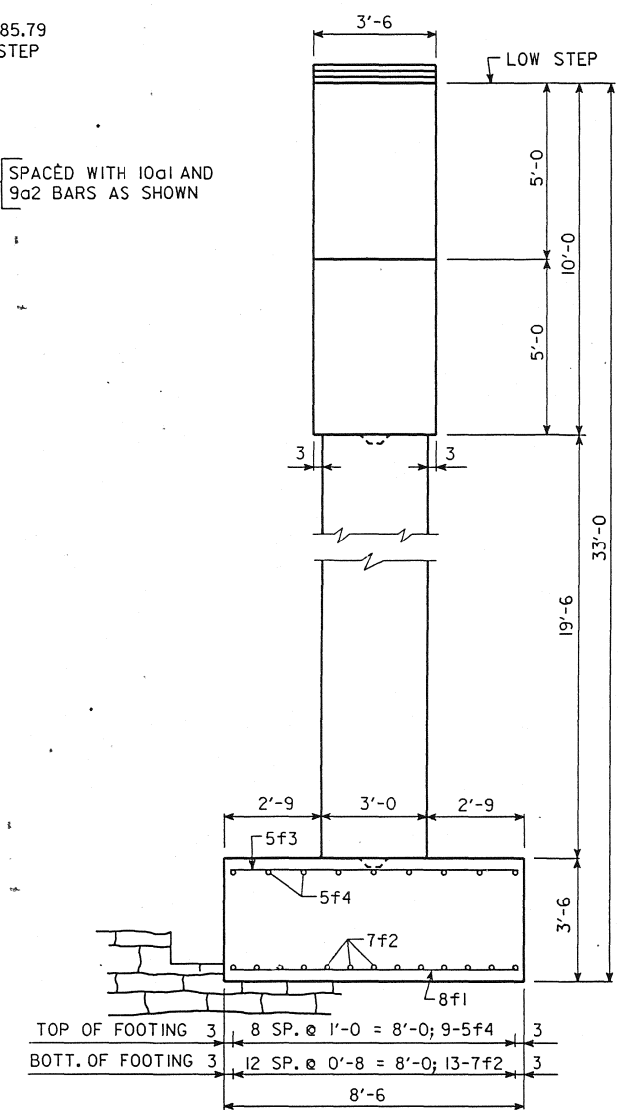
PIER NO. 2 CAP PLAN



ELEVATION VIEW PIER NO. 2



SECTION C-C

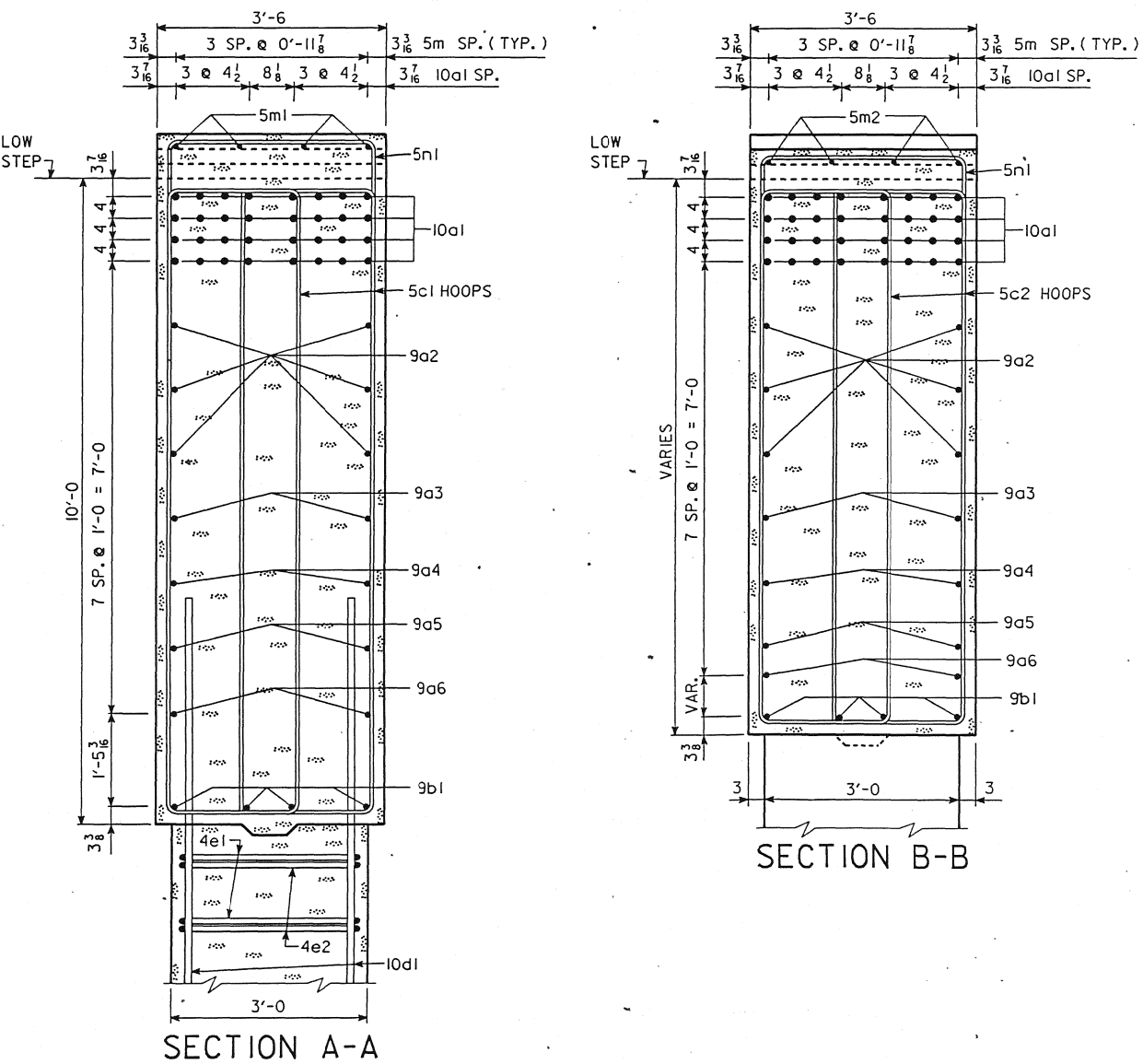


END ELEVATION VIEW

NOTE: SEE DES. SH. 7 FOR SECTIONS A-A AND B-B AND ADDITIONAL PIER NO. 2 DETAILS.

DESIGN FOR 0° SKEW
**333'-0" x 56'-0" PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 110'-9" END SPANS 111'-6" CENTER SPAN
PIER NO. 2 DETAILS
 STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
 DESIGN SHEET NO. 6 OF 23 FILE NO. 26188 DESIGN NO. 196

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		6	22



CONCRETE PLACEMENT QUANTITIES PIER NO. 2

LOCATION	UNIT	QUANTITY
PIER CAP	CU. YD.	65.5
PIER COLUMN	CU. YD.	50.6
PIER FOOTING	CU. YD.	30.9
TOTAL CU. YDS.		147.0

TOTAL QUANTITIES PIER NO. 2

ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE CLASS "C"	CU. YD.	147.0
REINFORCING STEEL	LBS.	24845
CLASS 21 EXCAVATION	CU. YD.	20
CLASS 22 EXCAVATION	CU. YD.	52

PIER NO. 2 NOTES:

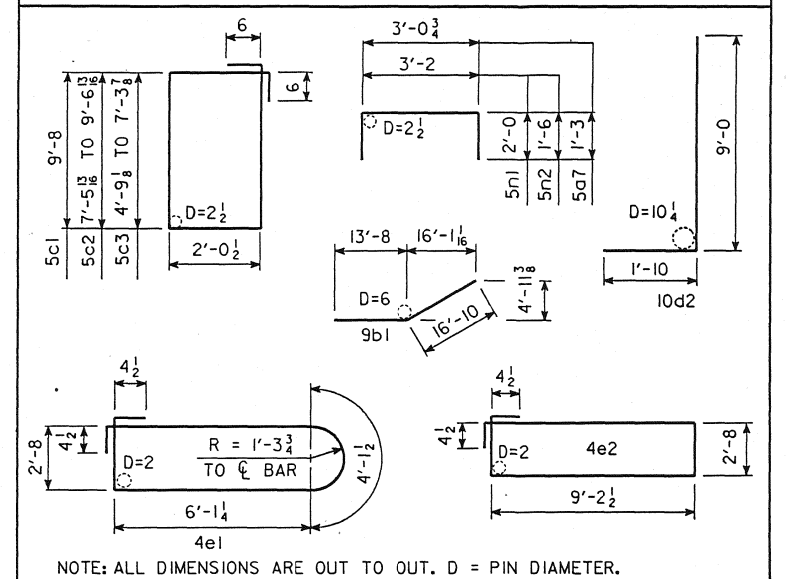
MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN. CONSTRUCTION JOINTS ARE TO BE FORMED WITH A 3 x 10 x 21' DRESSED AND BEVELED STRIP.

THE DESIGN BEARING PRESSURE FOR THE FOOTING ON HARD LIMESTONE IS 9 TONS PER SQ. FT. FOOTING TO EXTEND AT LEAST 6" INTO HARD LIMESTONE WITH THE FINAL 6" OF EXCAVATION TO BE TO NEAT LINES OF THE FOOTING.

REINFORCING BAR LIST - PIER NO. 2

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
10a1	CAP LONGIT. TOP	—	32	56'-8"	7803
9a2	CAP LONGIT. SIDES	—	6	56'-8"	1156
9a3	CAP LONGIT. SIDES	—	2	53'-8"	365
9a4	CAP LONGIT. SIDES	—	2	47'-2"	321
9a5	CAP LONGIT. SIDES	—	2	40'-8"	277
9a6	CAP LONGIT. SIDES	—	2	34'-2"	232
5a7	CAP ENDS	—	8	5'-7"	47
9b1	CAP LONGIT. BOTTOM	—	8	30'-6"	830
5c1	CAP HOOPS	□	30	24'-5"	764
5c2	CAP HOOPS - CANTILEVER	□	56	VARIES	1293
5c3	CAP HOOPS - CANTILEVER	□	44	VARIES	788
10d1	COLUMN VERTICAL	—	50	23'-0"	4948
10d2	FOOTING TO COLUMN DOWEL	—	50	10'-10"	2331
4e1	COLUMN HOOPS	□	40	19'-9"	528
4e2	COLUMN HOOPS	□	40	24'-6"	655
8f1	FOOTING TRANSVERSE - BOTTOM	—	37	8'-2"	807
7f2	FOOTING LONGITUDINAL - BOTTOM	—	13	27'-8"	735
5f3	FOOTING TRANSVERSE - TOP	—	28	8'-2"	238
5f4	FOOTING LONGITUDINAL - TOP	—	9	27'-8"	260
5m1	STEPS - LONGITUDINAL	—	4	19'-6"	81
5m2	STEPS - LONGITUDINAL	—	8	9'-5"	79
5m3	STEPS - LONGITUDINAL	—	8	2'-10"	24
5n1	STEPS - TRANSVERSE	—	31	7'-2"	232
5n2	STEPS - TRANSVERSE	—	8	6'-2"	51
REINFORCING STEEL TOTAL - LBS.					24845

BENT BAR DETAILS



DESIGN FOR 0° SKEW
333'-0" x 56'-0" PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE

110'-9" END SPANS 111'-6" CENTER SPAN

PIER NO. 2 DETAILS

STATION: 281+90.02 JUNE 1996

HUMBOLDT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 7 OF 23 FILE NO. 26188 DESIGN NO. 196

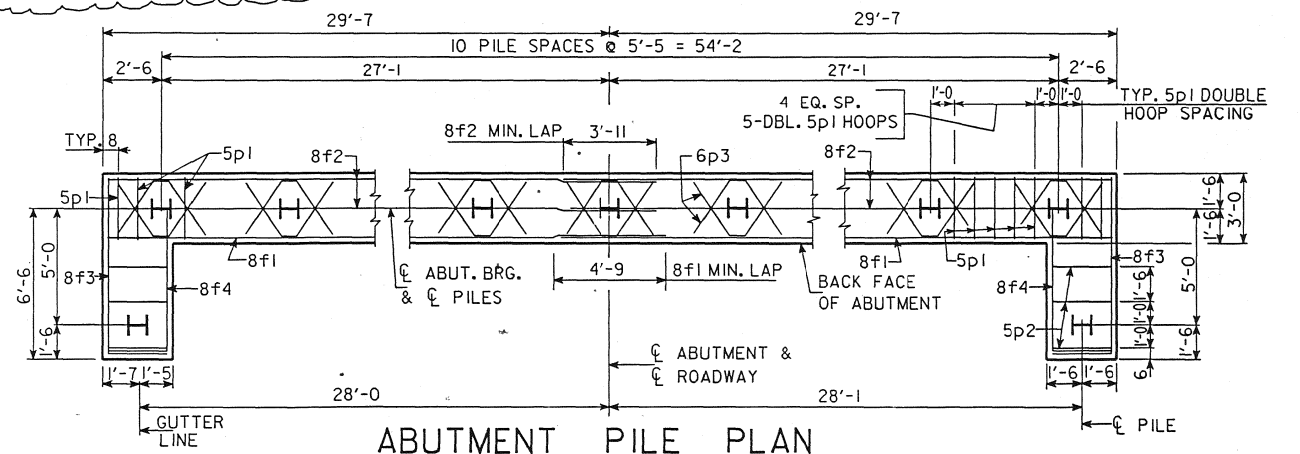
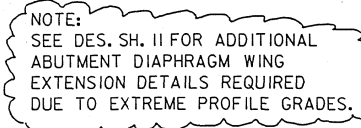
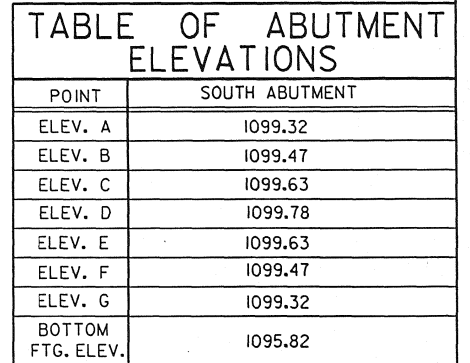
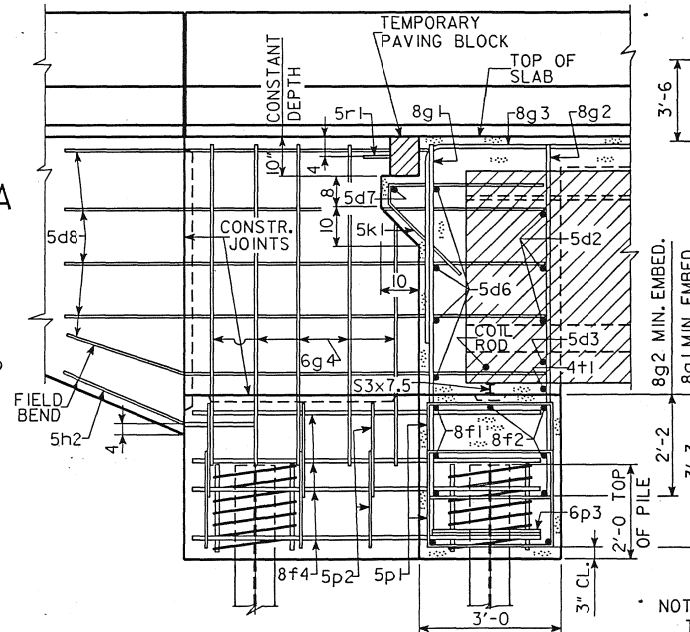
NOTE: SEE DES. SH. 5 FOR LOCATION OF SECTIONS A-A AND B-B AND ADDITIONAL PIER NO. 2 DETAILS.

DESIGNED BY CARL SCHUMANN CHECKED BY J. NEIDERHISER
DETAILED BY DOUG WARRINGS CADD FILE H46Q196.S19

HUMBOLDT COUNTY

PROJECT NUMBER

STATE	REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		7	22



COMPACTED GRANULAR BACKFILL BETWEEN WINGS.

SUBGRADE ELEV.

APPROACH FILL IS TO BE COMPLETED TO THIS LINE BEFORE STARTING ABUTMENT CONSTRUCTION.

NOTE : SPECIAL BACKFILL MAY BE SUBSTITUTED FOR GRANULAR BACKFILL.

SPECIAL BACKFILL TO BE PLACED AT TIME APPROACH PAVING IS PLACED.(BY OTHERS)

2'-4"

POROUS BACKFILL. PLACE TO ELEV. 4" ABOVE HIGH POINT OF SUBDRAIN.

4" MIN.

SUBDRAIN. SEE " SITUATION PLAN FOR ALIGNMENT AND SLOPE.

1'-0"

2'-2"

3'-0"

1'-6"

3'-0" BERM

2'-0"

1 1/2"

PAY LIMIT FOR CLASS 20 EXCAVATION

GRANULAR BACKFILL DETAIL

DESIGN FOR 0° SKEW

333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE

110'-9 END SPANS 111'-6 CENTER SPAN

SOUTH ABUTMENT DETAILS

STATION: 281+90.02 JUNE 1996

HUMBOLDT COUNTY

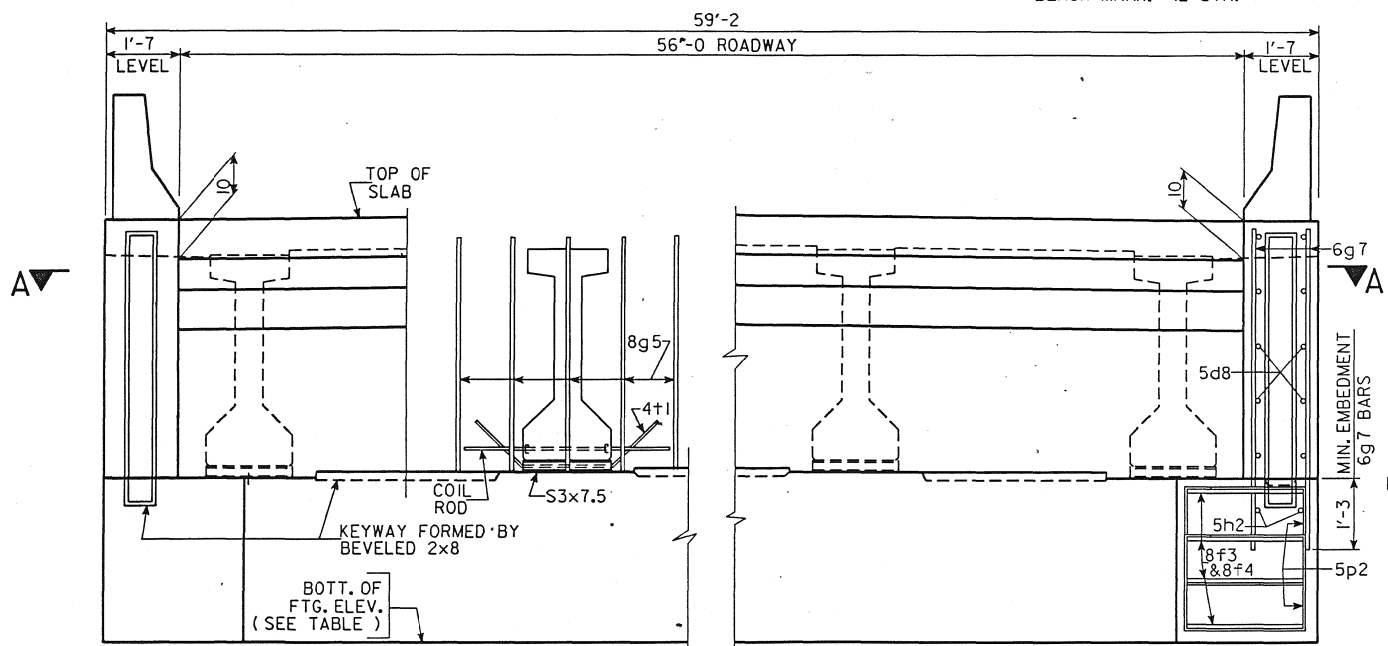
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DRAWING SHEET NO. 8 OF 23 FILE NO. 26188 DESIGN NO. 196

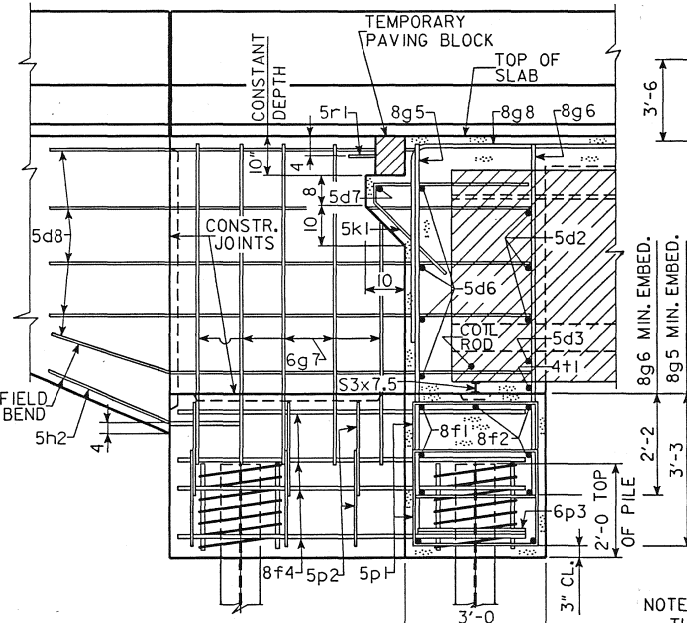
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		8	22

REVISED: "ABUTMENT NOTES" CHANGED AND VARIOUS NOTES CHANGED ON "GRANULAR BACKFILL DETAIL". TAPE NO. 19, DATED 11-9-92.
REVISED: SPIRAL SPACERS CHANGED. TAPE NO. 17 DATED 10-28-91.
REVISED: 5'-23'-9" LAP LENGTHS AND EMBEDMENT LENGTHS CHANGED AND BEARING NOTE ADDED. DEVICE: ZGAIH200,003JARCH. TAPE NO. 000016 DATE 5-23-91.
HSD002085.S01--WR--THIS SHEET REDRAWN, DEVICE:ZGAIH200,003JARCH.TAPE NO. 000015 DATE 9-8-88

BENCH MARK: #12 STA.



PART REAR ELEVATION AT NORTH ABUTMENT
(WINGS NOT SHOWN)

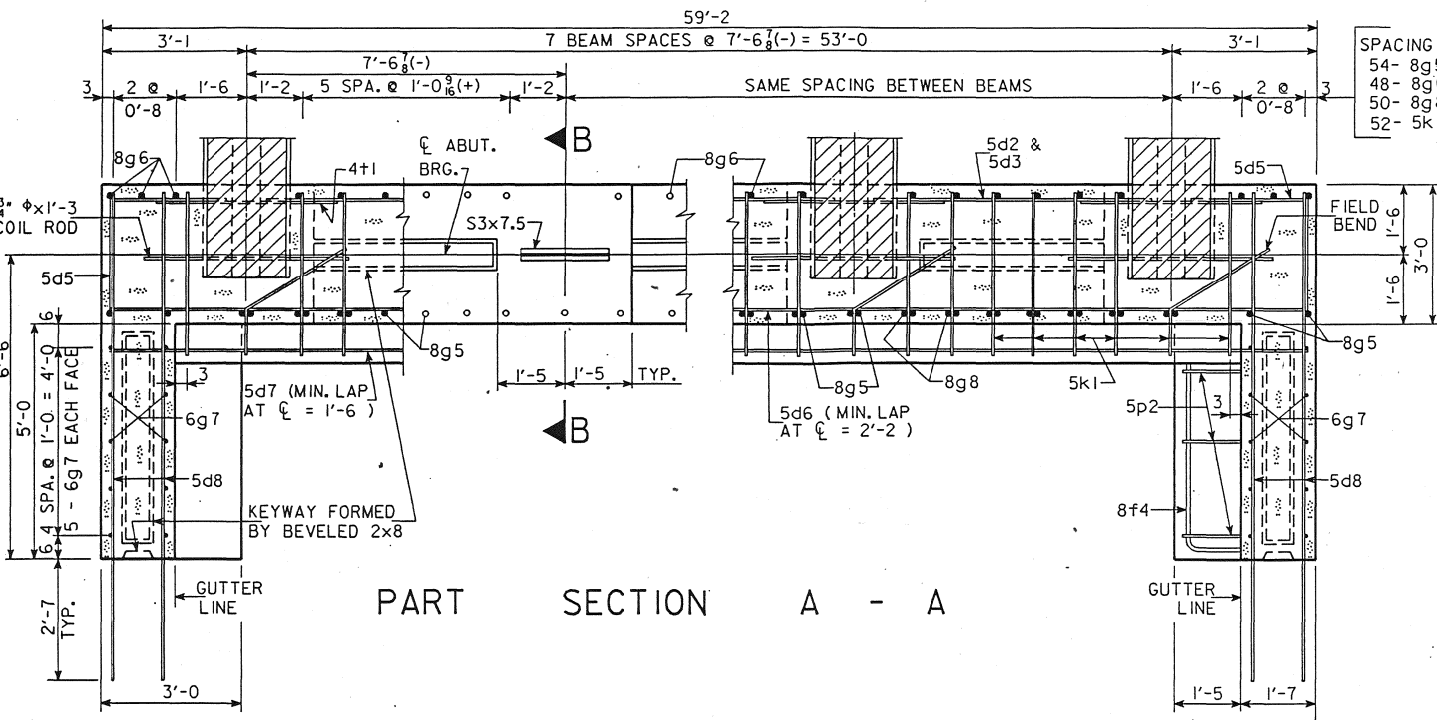


PART SECTION B - B

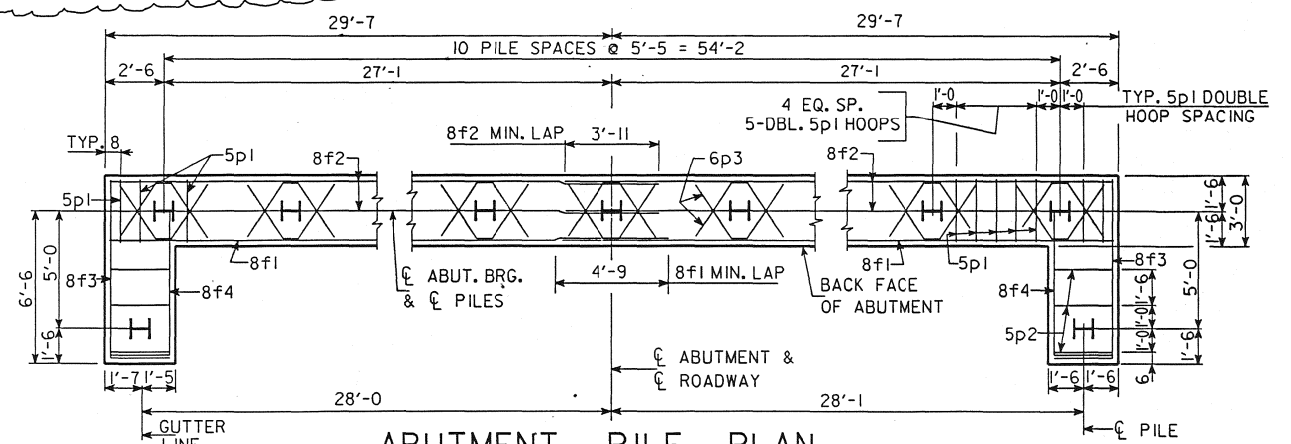
NOTE:
THE SPIRAL AT THE TOP OF EACH PILE
TO BE 7 TURNS OF No. 2 BAR, 2 1/2" DIAMETER,
3" PITCH WITH 2 - L 3/8 x 7/8 x 1/8 SPACERS
PUNCHED TO HOLD SPIRAL.

NOTE:
SEE DES. SH. 10 FOR ADDITIONAL
ABUTMENT DIAPHRAGM WING
EXTENSION DETAILS REQUIRED
DUE TO EXTREME PROFILE GRADES.

SPACING FOR:
54- 8g5 BACK FACE
48- 8g6 FRONT FACE
50- 8g8 BACK FACE
52- 5k1 BACK FACE



PART SECTION A - A

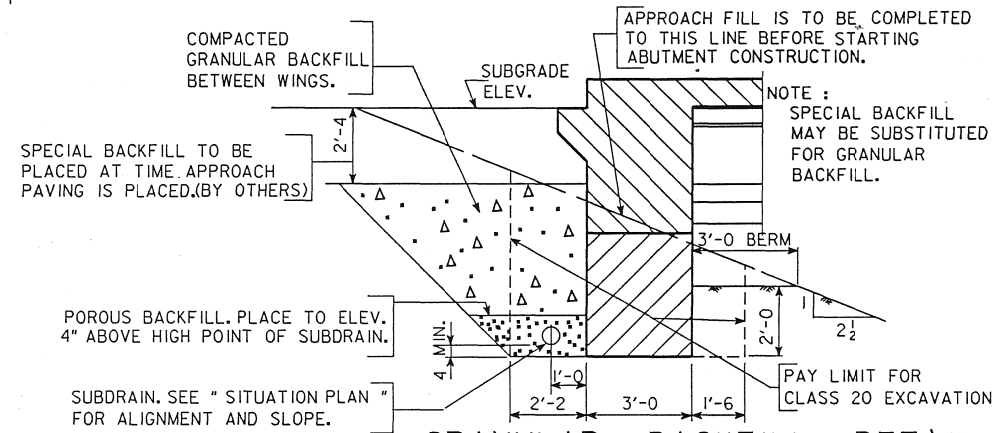


ABUTMENT PILE PLAN

NOTE:
13 - 20' HP10x42 STEEL BEARING PILING REQUIRED
AT THE NORTH ABUTMENT.

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 55 TONS.
THE COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION),
GRANULAR BACKFILL AND POROUS BACKFILL IS TO BE INCLUDED IN THE PRICE
BID FOR "STRUCTURAL CONCRETE".



GRANULAR BACKFILL DETAIL

DESIGN FOR 0° SKEW
**333'-0" x 56'-0" PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE**
110'-9" END SPANS 111'-6" CENTER SPAN
NORTH ABUTMENT DETAILS
STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 9 OF 23 FILE NO. 26188 DESIGN NO. 196

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		9	22

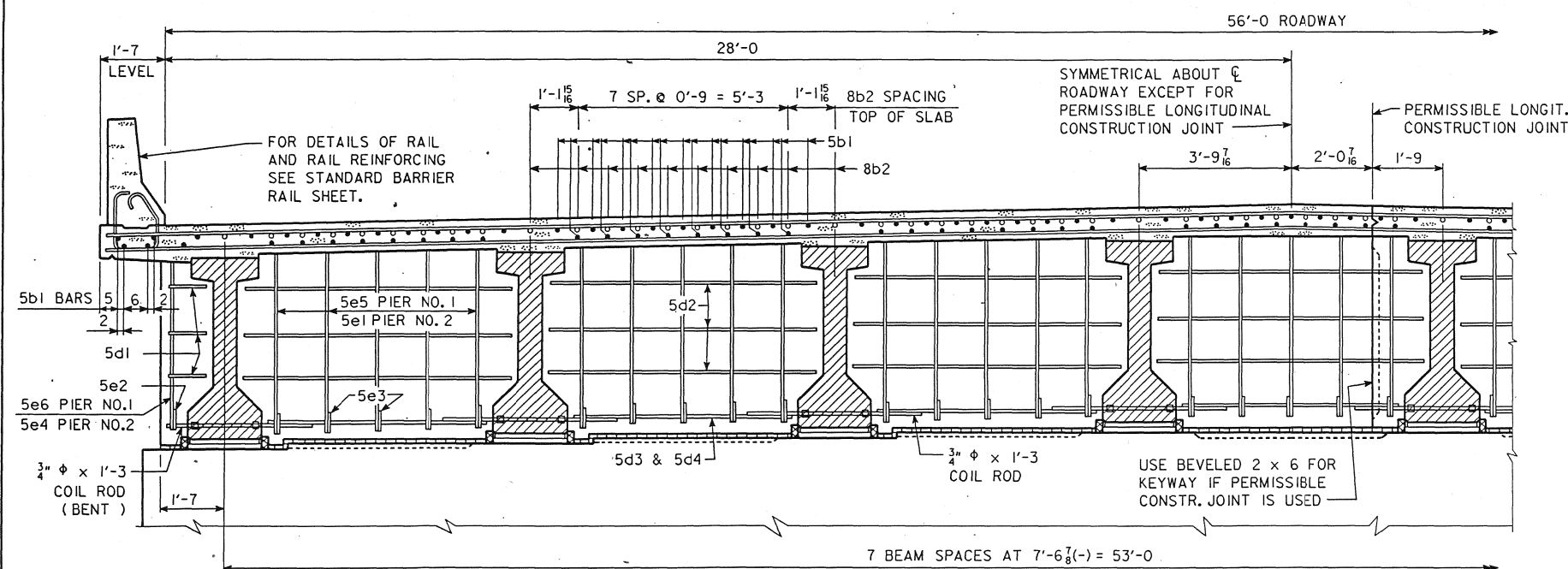
DESIGNED BY CARL SCHUMANN CHECKED BY J. NEIDERHISER
DETAILED BY DOUG WARRINGS CADD FILE H460196.S13

"D" BEAMS - INTEGRAL ABUT. DETAILS - 0° SKEW

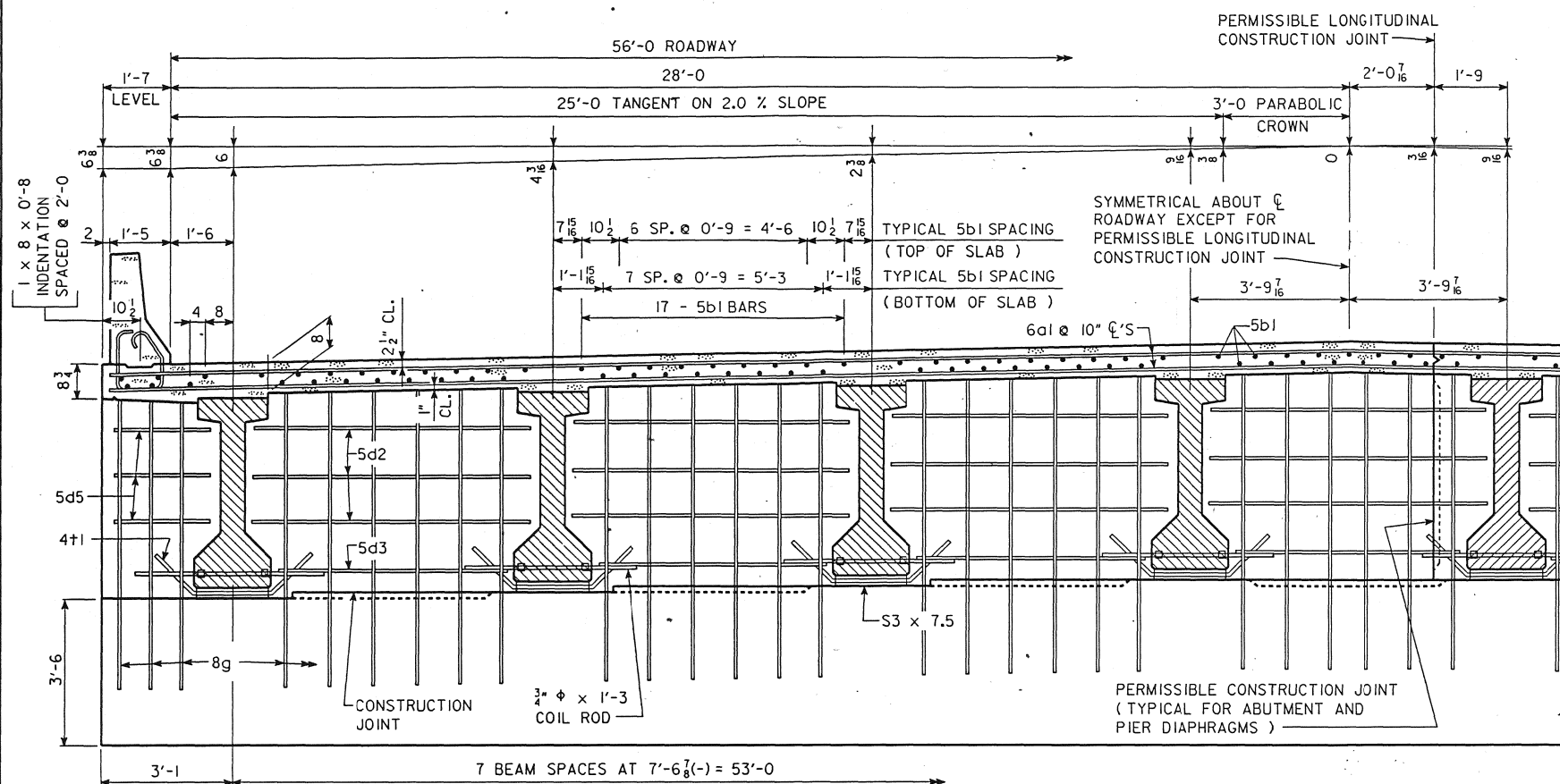
STANDARD SHEET 2085

HUMBOLDT COUNTY

PROJECT NUMBER



PART SECTION NEAR PIER

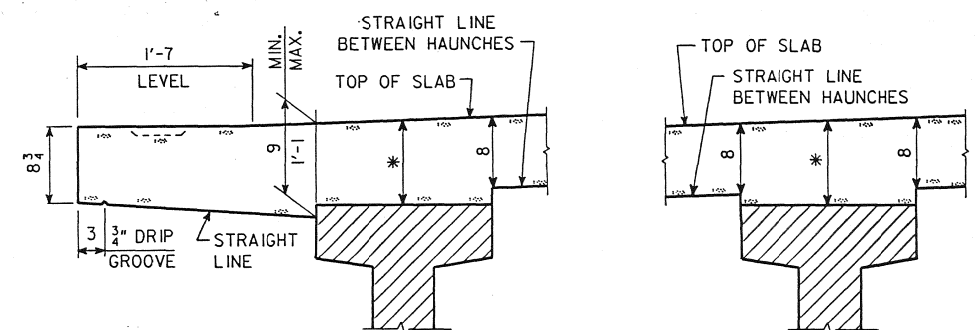


PART SECTION NEAR ABUTMENT

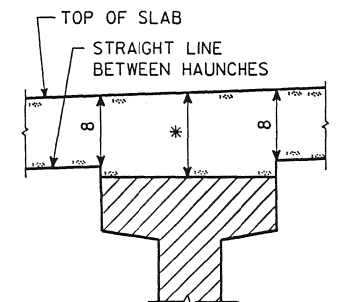
LENGTH OF S3 x 7.5
(ABUTMENT BEAM SEAT)

BEAM BOTTOM FLANGE WIDTH	LENGTH OF S3 x 7.5
1'-10	1'-8 1/2

NOTE:
THE PERMISSIBLE LONGITUDINAL CONSTRUCTION JOINT MAY BE PLACED ON EITHER SIDE OF THE CL OF ROADWAY AT THE CONTRACTORS OPTION.



EXTERIOR BEAMS
TYPICAL SLAB AND
HAUNCH DETAIL



INTERIOR BEAMS

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

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".

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.

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.

THE COST OF THE S3 x 7.5 BEARING MATERIAL AT THE ABUTMENTS IS TO BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS". PIER BEARING MATERIALS SHALL BE BID IN ACCORDANCE WITH THE BEARING NOTES ON DES. SH. 16.

IF THE "PERMISSIBLE LONGITUDINAL CONSTRUCTION JOINT" IS USED THE INTERMEDIATE DIAPHRAGM CONNECTION BOLTS IN THE CENTER BEAM BAY SHALL BE LEFT LOOSE UNTIL BOTH STAGES OF THE SLAB ARE PLACED.

TRANSVERSE SLAB REINFORCING MAY BE SPLICED WITH ONE LAP LOCATED AS FOLLOWS:

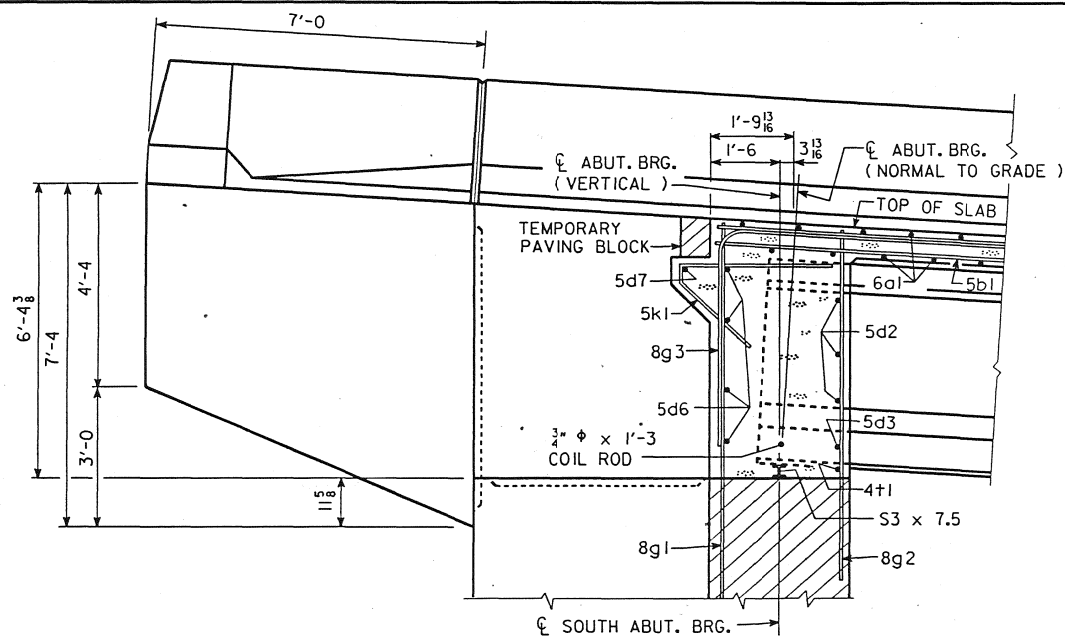
TOP BARS - LAP MIDWAY BETWEEN BEAMS (MIN. LAP = 2'-5).

BOTTOM BARS - LAP OVER BEAMS (MIN. LAP = 2'-5).

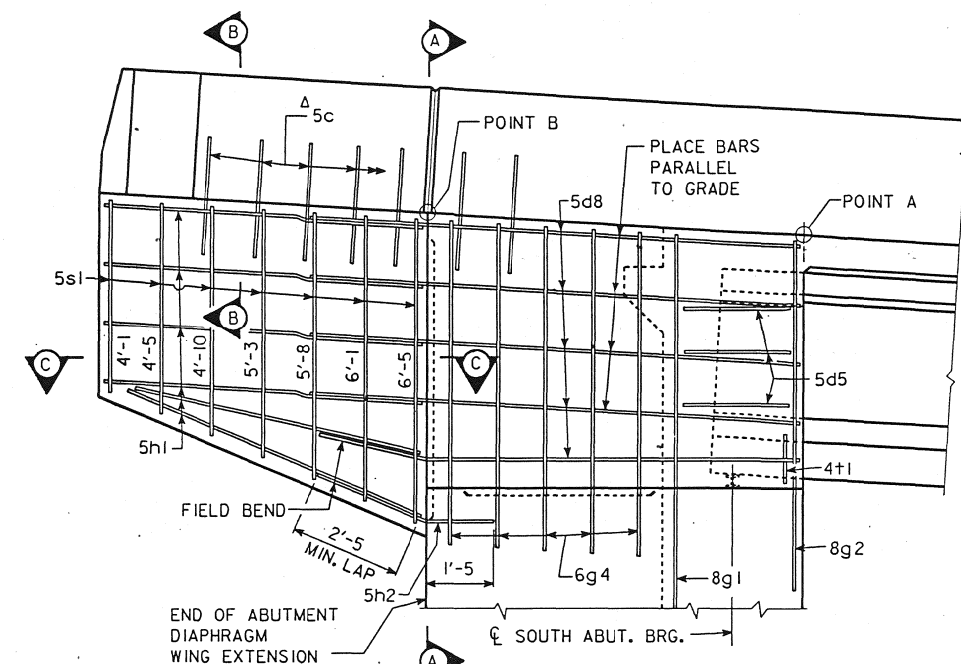
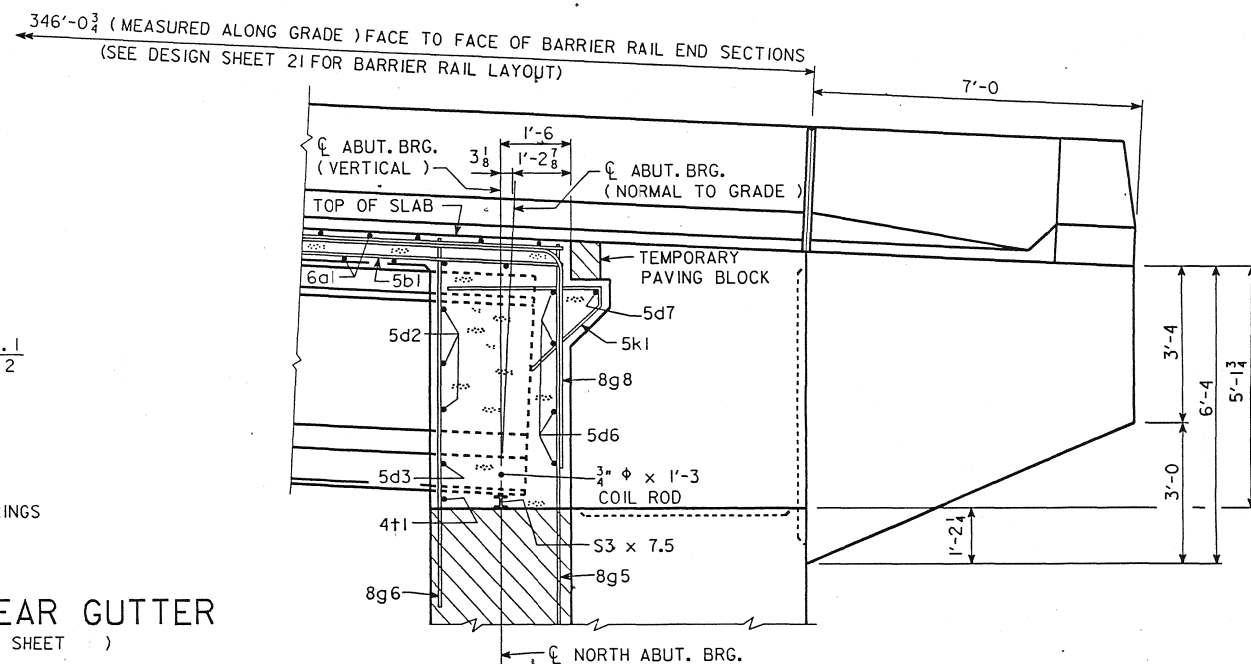
PAYMENT FOR REINFORCING BARS SHALL BE BASED ON NO SPLICES, AND NO ALLOWANCE SHALL BE MADE FOR THE ADDITIONAL LENGTH OF BAR REQUIRED FOR THE USE OF SPLICES.

DESIGN FOR 0° SKEW
333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
110'-9 END SPANS 111'-6 CENTER SPAN
SUPERSTRUCTURE DETAILS
STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 10 OF 23 FILE NO. 26188 DESIGN NO. 196

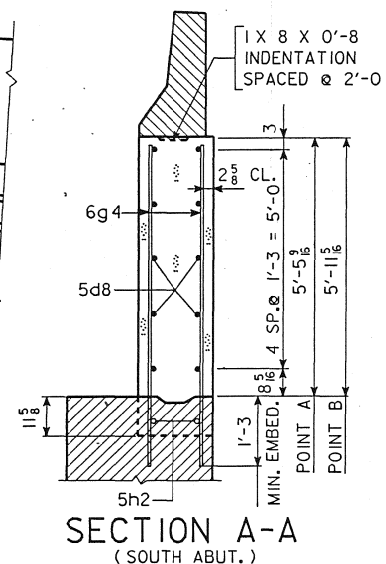
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		10	22



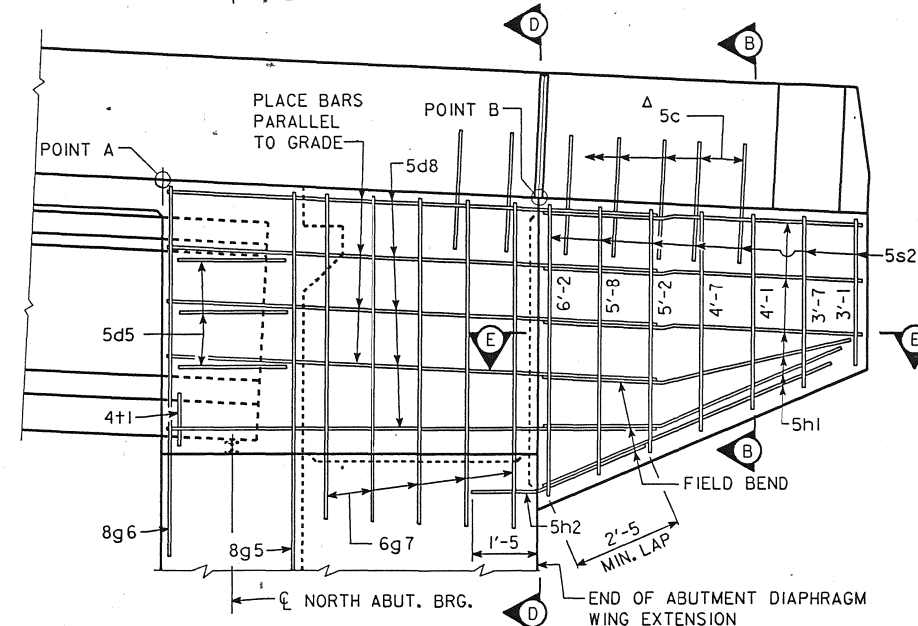
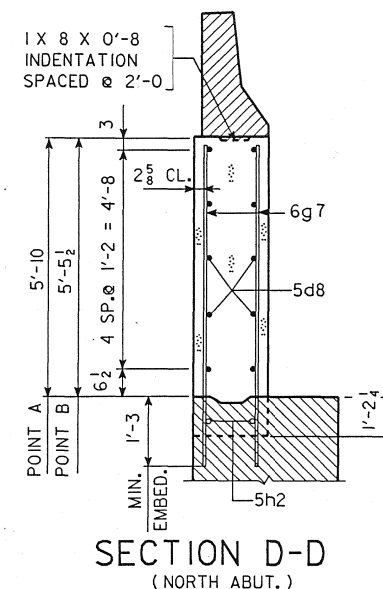
PART LONGITUDINAL SECTION NEAR GUTTER
(FOR DETAILS OF INTERMEDIATE DIAPHRAGM SEE DESIGN SHEET)



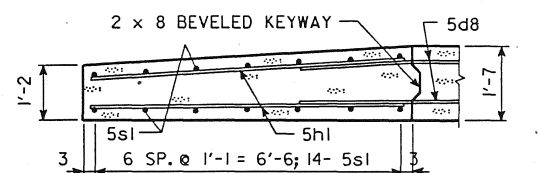
PART END VIEW AT SOUTH ABUTMENT



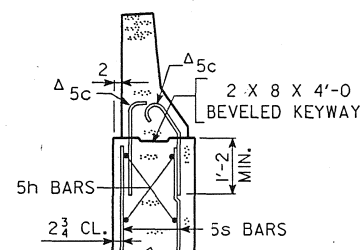
NOTE:
5d8 BAR SPACING IS SHOWN AT THE END OF THE ABUTMENT DIAPHRAGM WING EXTENSION (POINT B).



PART END VIEW AT NORTH ABUTMENT

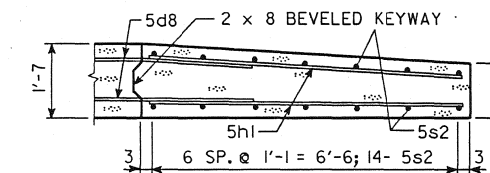


PART SECTION C-C (SOUTH ABUT.)



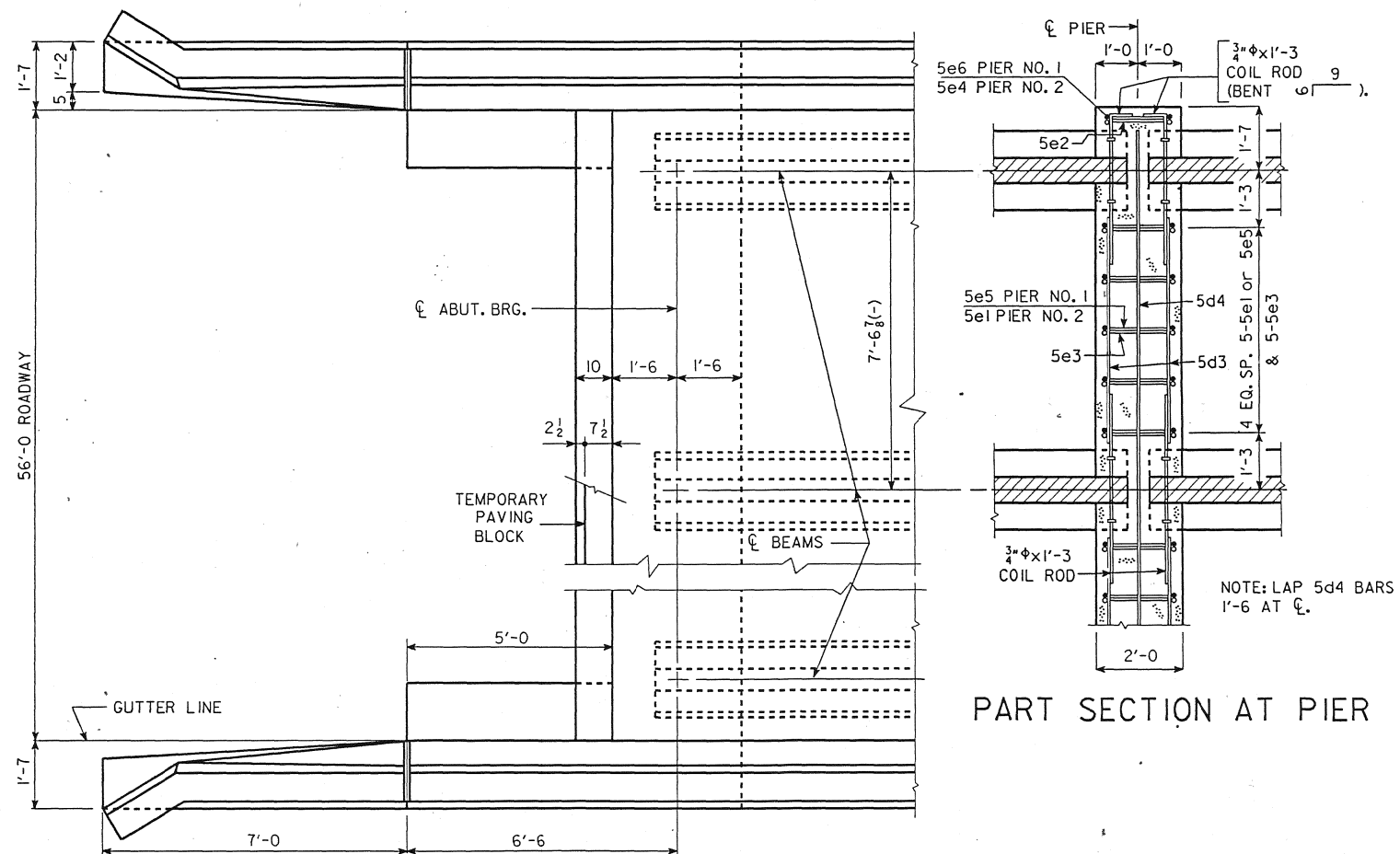
SECTION B-B

NOTE:
SEE DESIGN SHEET NO. 21 FOR DETAILS OF BARRIER RAIL AND SPACING FOR 5c BARRIER RAIL BARS. REINFORCING BARS "5c" ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES.



PART SECTION E-E (NORTH ABUT.)

DESIGN FOR 0° SKEW
333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
110'-9 END SPANS 111'-6 CENTER SPAN
SUPERSTRUCTURE DETAILS
STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 11 OF 23 FILE NO. 26188 DESIGN NO. 196



PART SECTION AT PIER

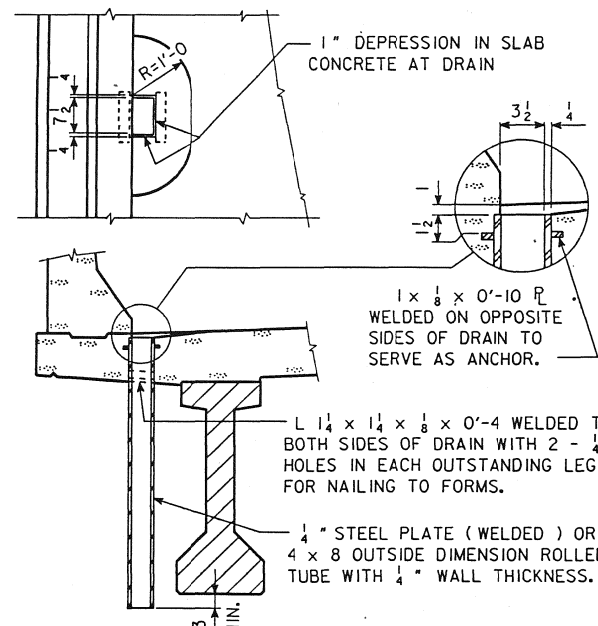
[illegible]

FOUNDATION NUMBER	PILING LOG	KIND OF PILING
NORTH ABUTMENT		HP 10 X 42

The diagram shows a cross-section of a bridge pier. At the top, there are two rectangular blocks representing pile caps. The left cap has a single pile labeled 'H 1' extending downwards. The right cap has a single pile labeled 'H 13' extending downwards. Between these two caps is a horizontal rectangular section representing the main body of the pier. Along the bottom edge of this section, there is a row of 11 piles labeled 'H 2' through 'H 12'. A vertical dashed line runs through the center of the pier, starting from a cross at the top and ending at a cross at the bottom.

PILE NO.	LENGTH IN STRUCTURE	BEARING (in Tons)	PILE NO.	LENGTH IN STRUCTURE	BEARING (in Tons)	PILE NO.	LENGTH IN STRUCTURE	BEARING (in Tons)
1	20	65						
2	20	65						
3	20	62						
4	20	44						
5	20	31						
6	20	37						
7	20	36						
8	20	31						
9	20	62						
10	20	30						
11	20	65						
12	20	65						
13	20	65						
LOGGED PILE								
9	15	35						
	16	41						
	17	41						
	18	51						
	19	62						

DESIGN FOR 0° SKEW
333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
110'-9 END SPANS 111'-6 CENTER SPAN
SUPERSTRUCTURE DETAILS
STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 12 OF 23 FILE NO. 26188 DESIGN NO. 196

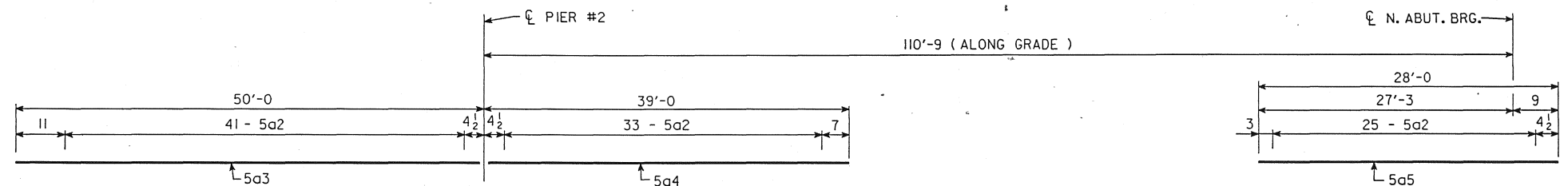


NOTE: DRAINS ARE TO BE GALVANIZED. 14 DRAINS REQUIRED. SEE "SITUATION PLAN" ON DESIGN SHEET 2 FOR LOCATION. WEIGHT OF DRAINS IS INCLUDED IN THE QUANTITY FOR "STRUCTURAL STEEL". WEIGHT IS BASED ON ROLLED TUBE.

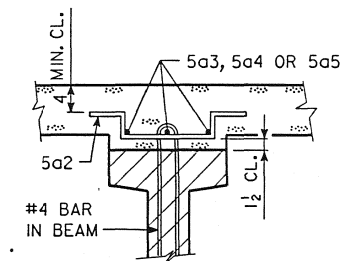
DRAIN DETAILS

DATA FOR ONE DRAIN

BEAM SIZE	D
WT. LBS.	108
LENGTH FT.	5'-7 1/4

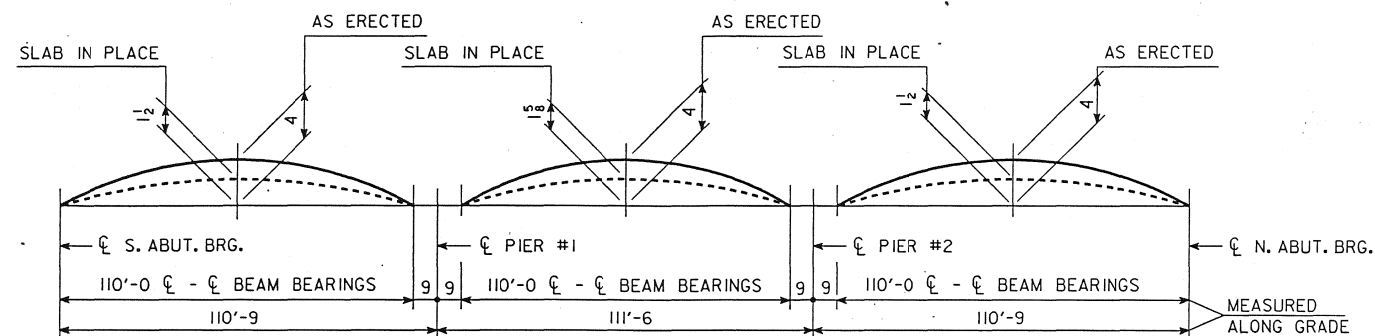


HAUNCH REINFORCING LAYOUT (REQUIRED AT ALL BEAMS)

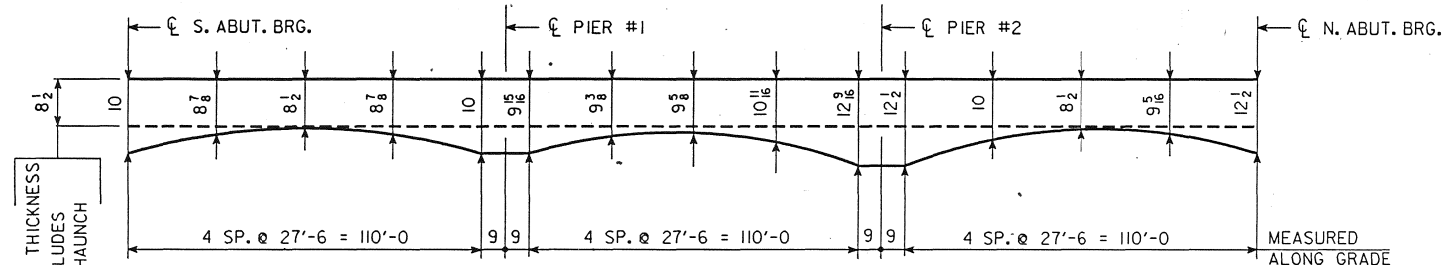


SECTION THRU SLAB HAUNCH TYPICAL EACH LINE OF BEAMS

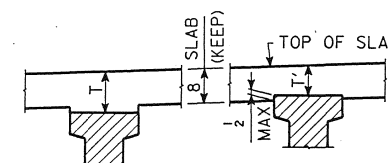
NOTE: PLACE ONE 5a2 BAR ADJACENT TO EACH #4 BEAM STIRRUP (4b1 BARS ON DES. SH. 17) THAT EXTEND FROM THE BEAMS INTO THE SLAB HAUNCH. THE 5a2 BARS MAY BE TILTED AS NECESSARY TO FIT UNDER THE TOP OF "SLAB REINFORCING MAT" AND MAINTAIN THE 4" MINIMUM DIMENSION SHOWN.



BEAM CAMBER DATA

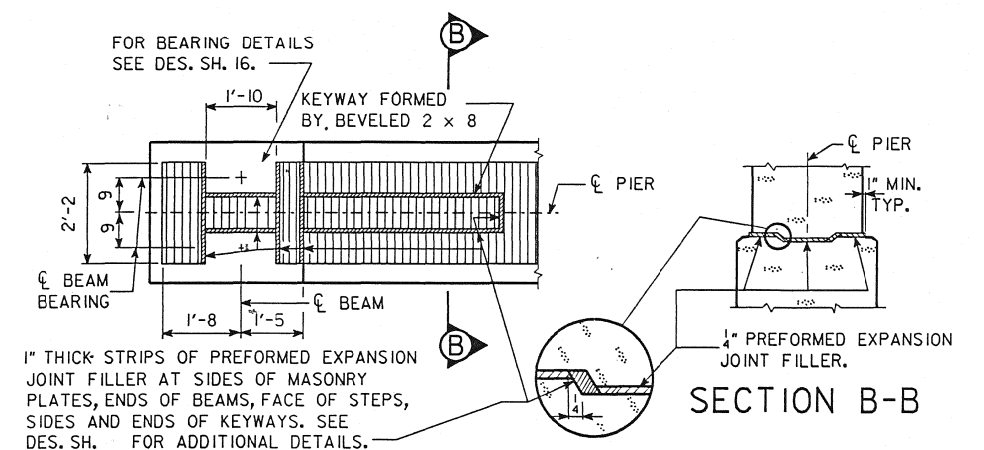


SLAB THICKNESS AT BEAMS (T)



SLAB THICKNESS DETAILS

NOTE: THE SLAB THICKNESS (T) AT BEAMS IS BASED ON THE ANTICIPATED BEAM CAMBER REMAINING AFTER PLACING THE SLAB, BUT IS NOT GUARANTEED FOR CONSTRUCTION. IF BEAM IS UNDER CAMBERED, INCREASE SLAB THICKNESS (T) AT BEAMS TO COMPENSATE. IF BEAM IS OVER CAMBERED, THE SLAB THICKNESS (T) MAY BE DECREASED TO A MAXIMUM OF 1/2" EMBEDMENT AT THE BEAM (T'). IF MORE THAN 1/2" EMBEDMENT IS REQUIRED OR IF THE HAUNCH EXCEEDS 5", THE GRADE LINE IS TO BE REVISED.



PART PLAN TOP OF PIER DETAILS

DESIGN FOR 0° SKEW
333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
110'-9 END SPANS 111'-6 CENTER SPAN
SUPERSTRUCTURE DETAILS
STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 13 OF 23 FILE NO. 26188 DESIGN NO. 196

DESIGNED BY CARL SCHUMANN CHECKED BY J. NEIDERHISER
DETAILED BY DOUG WARRINGS CADD FILE H460196.S04

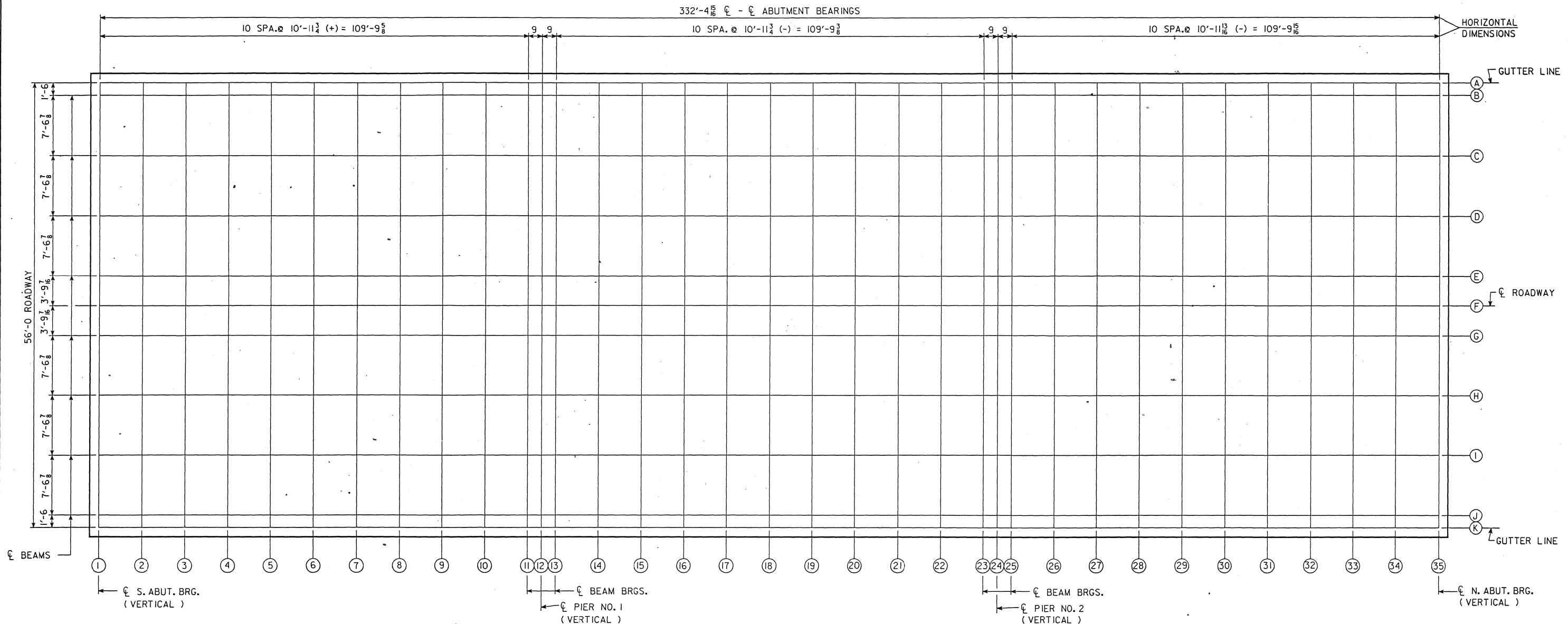
HUMBOLDT COUNTY

PROJECT NUMBER

STATE	FWHA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		13	22

BENCH MARK: #12 STA.

TOP OF SLAB ELEVATIONS																																			
← ADD 1100 TO THE ELEVATIONS SHOWN								← ADD 1000 TO THE ELEVATIONS SHOWN																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
A	04.88	04.22	03.56	02.90	02.24	01.58	00.92	00.27	99.61	98.95	98.29	98.24	98.20	97.54	96.88	96.22	95.56	94.90	94.25	93.59	92.93	92.27	91.61	91.57	91.52	90.86	90.20	89.54	88.89	88.25	87.63	87.03	86.46	85.91	85.39
B	04.91	04.25	03.59	02.93	02.27	01.61	00.95	00.30	99.64	98.98	98.32	98.27	98.23	97.57	96.91	96.25	95.59	94.93	94.28	93.62	92.96	92.30	91.64	91.60	91.55	90.89	90.23	89.57	88.92	88.28	87.66	87.06	86.49	85.94	85.42
C	05.06	04.40	03.74	03.08	02.42	01.76	01.11	00.45	99.79	99.13	98.47	98.42	98.38	97.72	97.06	96.40	95.74	95.09	94.43	93.77	93.11	92.45	91.79	91.75	91.70	91.04	90.38	89.72	89.07	88.43	87.81	87.22	86.64	86.09	85.57
D	05.21	04.55	03.89	03.23	02.57	01.92	01.26	00.60	99.94	99.28	98.62	98.58	98.53	97.87	97.21	96.56	95.90	95.24	94.58	93.92	93.26	92.60	91.94	91.90	91.85	91.19	90.54	89.88	89.22	88.58	87.96	87.37	86.80	86.25	85.72
E	05.36	04.70	04.04	03.38	02.73	02.07	01.41	00.75	00.09	99.43	98.77	98.73	98.68	98.02	97.37	96.71	96.05	95.39	94.73	94.07	93.41	92.75	92.09	92.05	92.00	91.35	90.69	90.03	89.37	88.73	88.11	87.52	86.95	86.40	85.87
F	05.41	04.75	04.09	03.43	02.77	02.11	01.46	00.80	00.14	99.48	98.82	98.77	98.73	98.07	97.41	96.75	96.09	95.44	94.78	94.12	93.46	92.80	92.14	92.10	92.05	91.39	90.73	90.07	89.42	88.78	88.16	87.57	86.99	86.44	85.92
G	05.36	04.70	04.04	03.38	02.73	02.07	01.41	00.75	00.09	99.43	98.77	98.73	98.68	98.02	97.37	96.71	96.05	95.39	94.73	94.07	93.41	92.75	92.09	92.05	92.00	91.35	90.69	90.03	89.37	88.73	88.11	87.52	86.95	86.40	85.87
H	05.21	04.55	03.89	03.23	02.57	01.92	01.26	00.60	99.94	99.28	98.62	98.58	98.53	97.87	97.21	96.56	95.90	95.24	94.58	93.92	93.26	92.60	91.94	91.90	91.85	91.19	90.54	89.88	89.22	88.58	87.96	87.37	86.80	86.25	85.72
I	05.06	04.40	03.74	03.08	02.42	01.76	01.11	00.45	99.79	99.13	98.47	98.42	98.38	97.72	97.06	96.40	95.74	95.09	94.43	93.77	93.11	92.45	91.79	91.75	91.70	91.04	90.38	89.72	89.07	88.43	87.81	87.22	86.64	86.09	85.57
J	04.91	04.25	03.59	02.93	02.27	01.61	00.95	00.30	99.64	98.98	98.32	98.27	98.23	97.57	96.91	96.25	95.59	94.93	94.28	93.62	92.96	92.30	91.64	91.60	91.55	90.89	90.23	89.57	88.92	88.28	87.66	87.06	86.49	85.94	85.42
K	04.88	04.22	03.56	02.90	02.24	01.58	00.92	00.27	99.61	98.95	98.29	98.24	98.20	97.54	96.88	96.22	95.56	94.90	94.25	93.59	92.93	92.27	91.61	91.57	91.52	90.86	90.20	89.54	88.89	88.25	87.63	87.03	86.46	85.91	85.39
← ADD 1100 TO THE ELEVATIONS SHOWN								← ADD 1000 TO THE ELEVATIONS SHOWN																											



TOP OF SLAB ELEVATIONS

DESIGN FOR 0° SKEW

333'-0 x 56'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

110'-9 END SPANS 111'-6 CENTER SPAN

TOP OF SLAB ELEVATIONS

STATION: 281+90.02 JUNE 1996

HUMBOLDT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 15 OF 23 FILE NO. 26188 DESIGN NO. 196

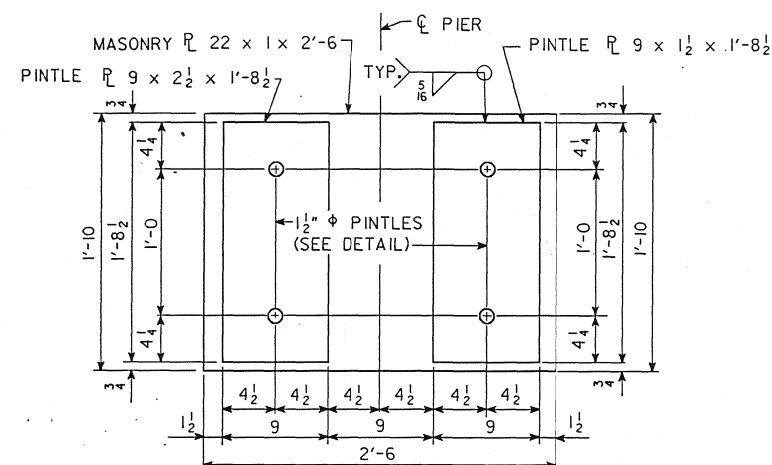
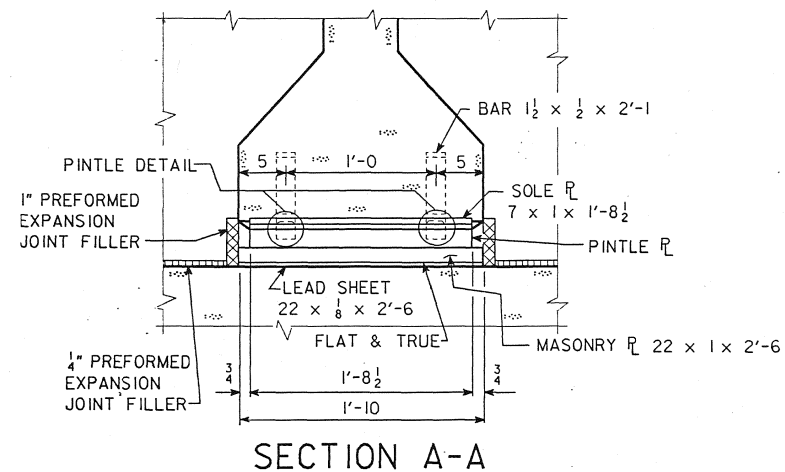
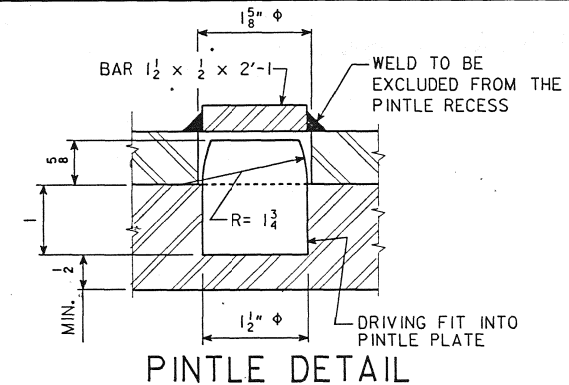
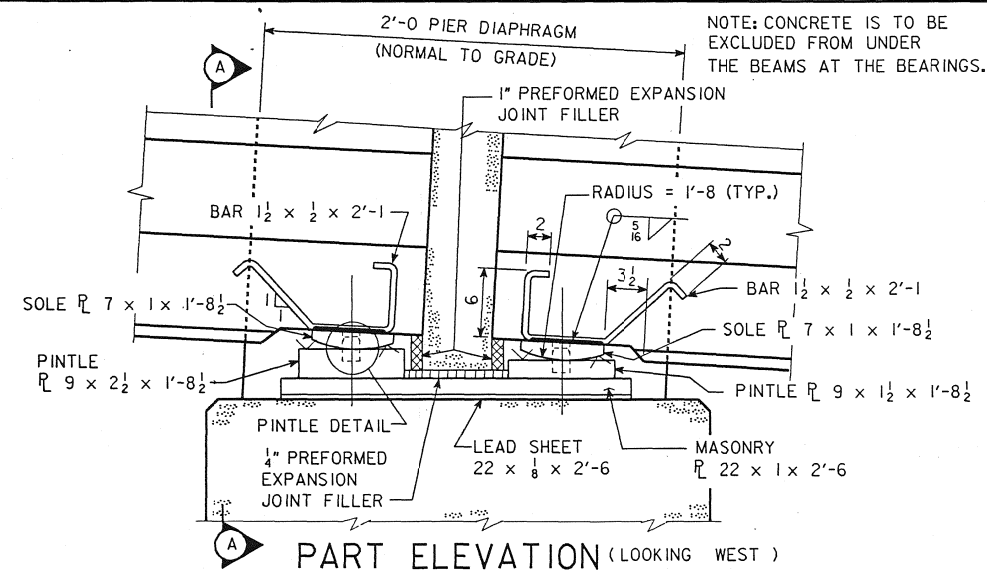
STATE	REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		15	22

DESIGNED BY CARL SCHUMANN CHECKED BY J. NEIDERHISER

DETAILED BY DOUG WARRINGS CADD FILE H460196.S02

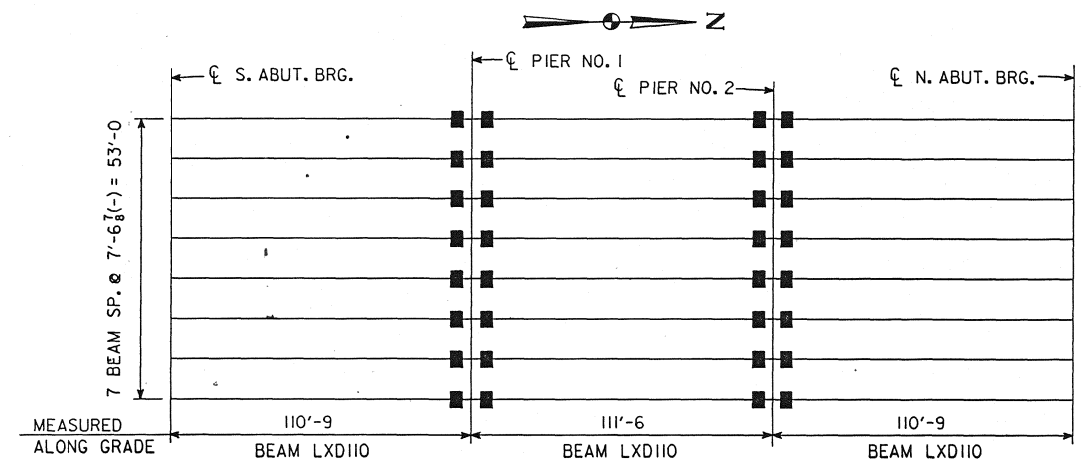
HUMBOLDT COUNTY

PROJECT NUMBER



PLAN VIEW OF MASONRY AND PINTLE PLATES
PIER BEARING NOTES:

SURFACES MARKED "V" SHALL BE FINISHED ANSI 250.
MASONRY PLATES ARE TO BE SET ON A $\frac{1}{8}$ " LEAD SHEET.
PINTLE PLATES, MASONRY PLATES, AND LEAD SHEETS ARE A PART OF THE
SUPERSTRUCTURE STRUCTURAL STEEL QUANTITY. UNIT PRICE BID FOR
"STRUCTURAL STEEL" SHALL INCLUDE ALLOWANCE FOR COST OF THE LEAD SHEETS.
COST OF ANCHORED CURVED SOLE PLATES IS TO BE INCLUDED IN THE PRICE BID
FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".
THE SOLE PLATES, PINTLE PLATES, AND MASONRY PLATES SHALL BE GALVANIZED.
ALL WELDING SHALL BE COMPLETED PRIOR TO GALVANIZING. THE SURFACE OF
THE PINTLE PLATE IN CONTACT WITH THE MASONRY PLATE SHALL BE FREE OF
PROJECTIONS DUE TO GALVANIZING.
SOLE PLATES ARE TO BE SET IN FORMS WHEN BEAMS ARE CAST AND THE BOTTOM
OF BEAMS FORMED OUT AS SHOWN TO EXCLUDE CONCRETE.



NOTE: ■ INDICATES LOCATION OF SOLE PLATES.

SOLE PLATE LOCATIONS

DESIGN FOR 0° SKEW

333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE

110'-9 END SPANS 111'-6 CENTER SPAN

PIER BEARING DETAILS

STATION: 281+90.02 JUNE 1996

HUMBOLDT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

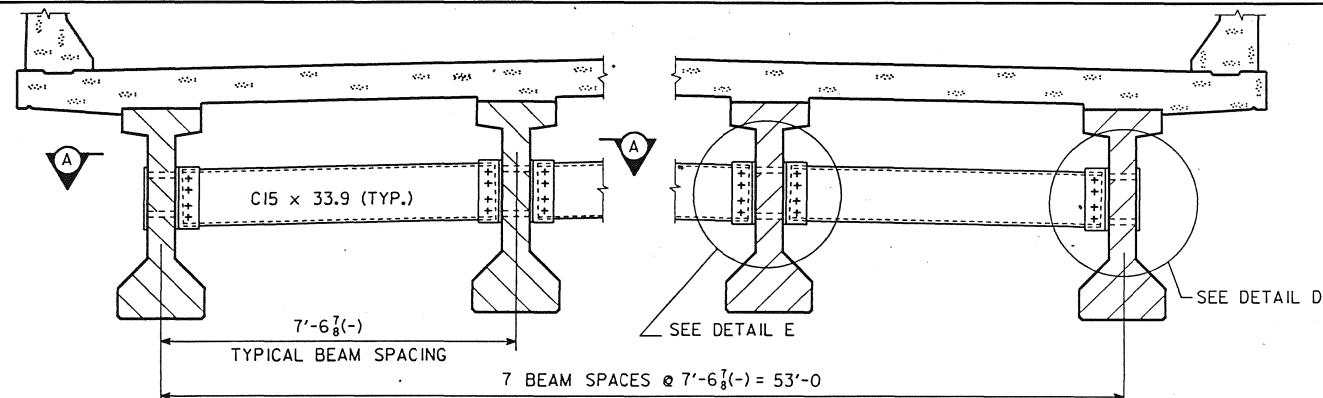
DESIGN SHEET NO. 16 OF 23 FILE NO. 26188 DESIGN NO. 196

DESIGNED BY CARL SCHUMANN CHECKED BY J. NEIDERHISER
 DETAILED BY DOUG WARRINGS CADD FILE H460196.S05

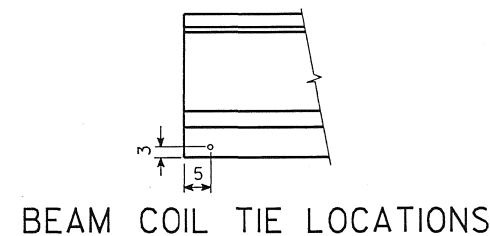
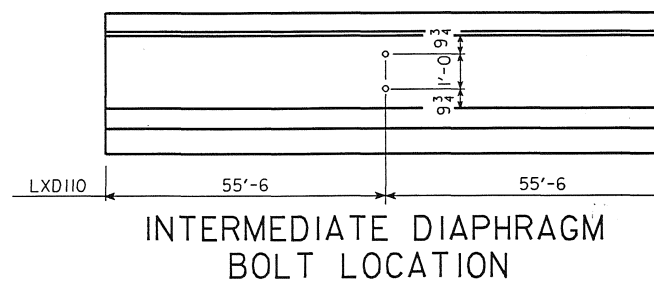
PPC BEAM BRIDGES - PIER BEARING DETAILSSTANDARD SHEET 454IAHUMBOLDT COUNTY

PROJECT NUMBER

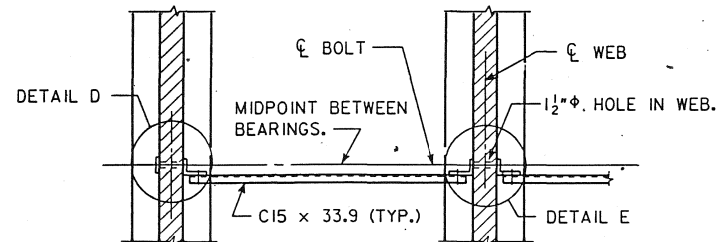
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		15	22



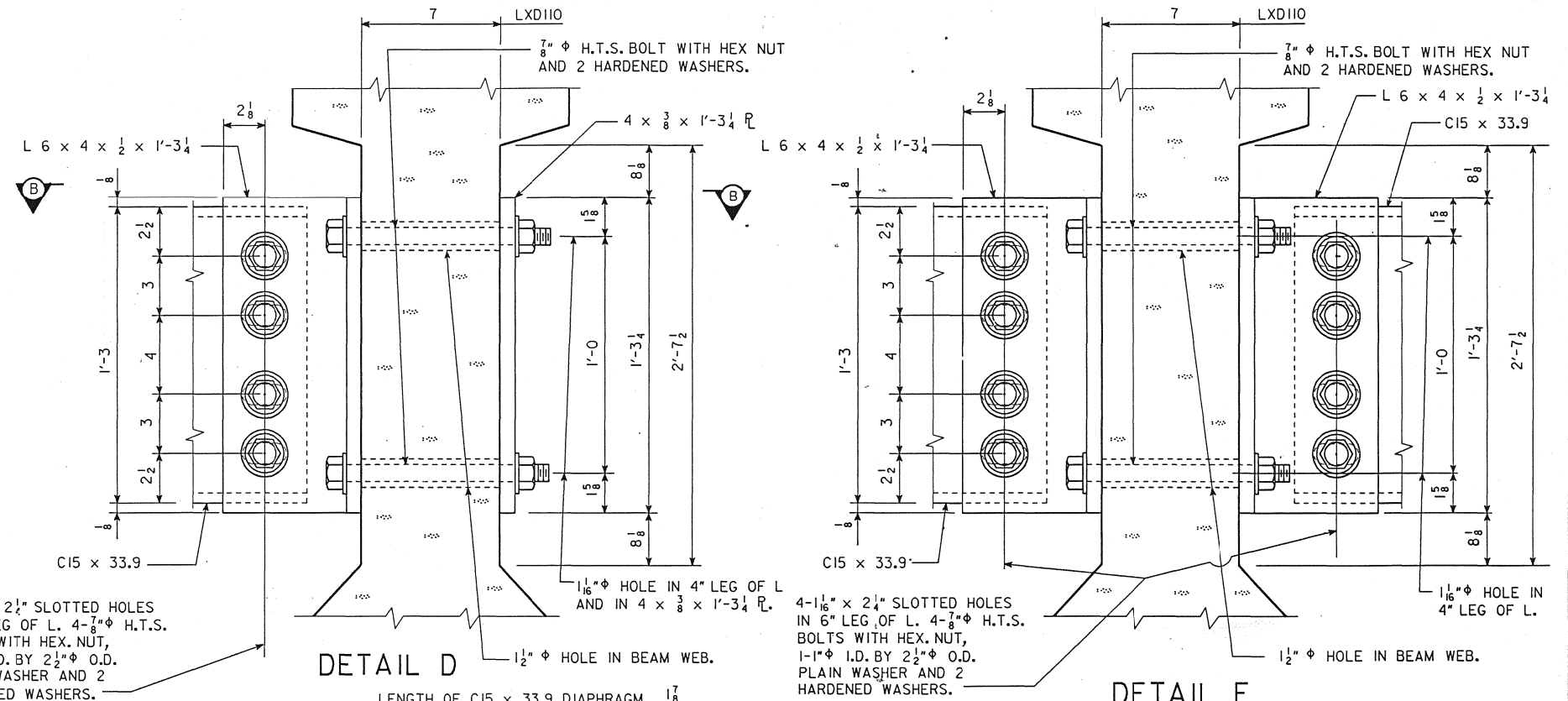
SECTION SHOWING INTERMEDIATE DIAPHRAGM



NOTES:
ALL DIAPHRAGM MATERIALS, INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.
SHOP DRAWINGS OF THE STEEL DIAPHRAGMS SHOWING LAYOUT AND DETAILS OF THE DIAPHRAGMS SHALL BE SUBMITTED FOR APPROVAL.
ALL COSTS FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN THE PRICE BID FOR STRUCTURAL STEEL.
THE 1 1/2\"/>

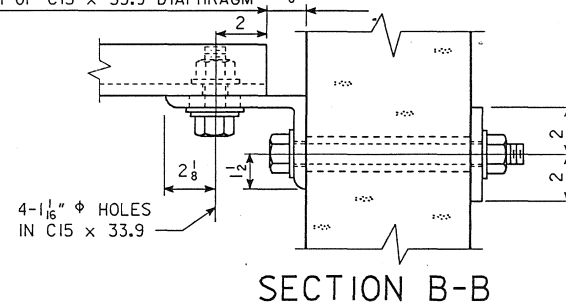


SECTION A-A



INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL																	
ONE CONNECTION DETAIL "E"								WEIGHT									
								2 - $\frac{7}{8}\phi \times$ LENGTH H.T.S. BOLTS WITH NUTS AND WASHERS									
								WEB THICKNESS		LENGTH OF H.T.S. BOLTS		WEIGHT PER DETAIL "E"		NUMBER OF DETAIL "E"			
								7"		10"		4.66 LB		18			
2 - L 6 x 4 x $\frac{1}{2} \times 1'-3\frac{1}{4} =$								41.2 LB		18		741.6					
ONE CONNECTION DETAIL "D"										WEIGHT							
										2 - $\frac{7}{8}\phi \times$ LENGTH H.T.S. BOLTS WITH NUTS AND WASHERS							
										WEB THICKNESS		LENGTH OF H.T.S. BOLTS		WEIGHT PER DETAIL "D"		NUMBER OF DETAIL "D"	
										7"		10"		4.66 LB		6	
1 - BACKING $\angle 4 \times \frac{3}{8} \times 1'-3\frac{1}{4} =$								6.5 LB		6		39.0					
1 - L 6 x 4 x $\frac{1}{2} \times 1'-3\frac{1}{4} =$								20.6 LB		6		123.6					
ONE C15 x 33.9 DIAPHRAGM																	
BEAM SPACING										7'-6 $\frac{7}{8}$ (-)							
										UNIT WEIGHT (LB)							
WEB THICKNESS										LENGTH		226.4					
7"										6'-8 $\frac{1}{8}$		226.4					
DIAPHRAGM WEIGHTS										UNIT WEIGHT		NUMBER OF DIAPHRAGMS					
										226.4 LB.		21		4754.4			
DIAPHRAGM CONNECTION BOLTS										8 - $\frac{7}{8}\phi \times 0'-2\frac{3}{4}$ H.T.S. BOLTS WITH NUTS AND WASHERS, PER UNIT DIAPHRAGM		NUMBER OF DIAPHRAGMS					
										10.3 LB		21		216.3			
INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL (TOTAL LB) =												5987					

DESIGN FOR 0° SKEW
333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
110'-9 END SPANS 111'-6 CENTER SPAN
INTERMEDIATE DIAPHRAGM DETAILS
STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 17 OF 23 FILE NO. 26188 DESIGN NO. 196



SECTION B-B

REVISED: 10-31-95; NOTE TO TIGHTEN DIAPHRAGM BOLTS ADDED.
REVISED: LENGTH OF BACKING PLATES AND ANGLES CHANGED. TAPE NO. 11 DATE 11-29-90
REVISED: NOTE PERTAINING TO WASHERS CORRECTED. DEVICE: ZHAI(200,7) ARCH. TAPE NO. 000016 DATE 11-28-88
HSTD01036.SOI --LEP: THIS SHEET REDRAWN, DEVICE: ZHAO(200,004) ARCH. TAPE NO. 15 DATE 9-8-88

DESIGNED BY CARL SCHUMANN CADD FILE J. NEIDERHISER
DETAILED BY DOUG WARRINGS CHECKED BY H460196.S07

STEEL INTERMEDIATE DIAPHRAGMS FOR PC BM. BRIDGES

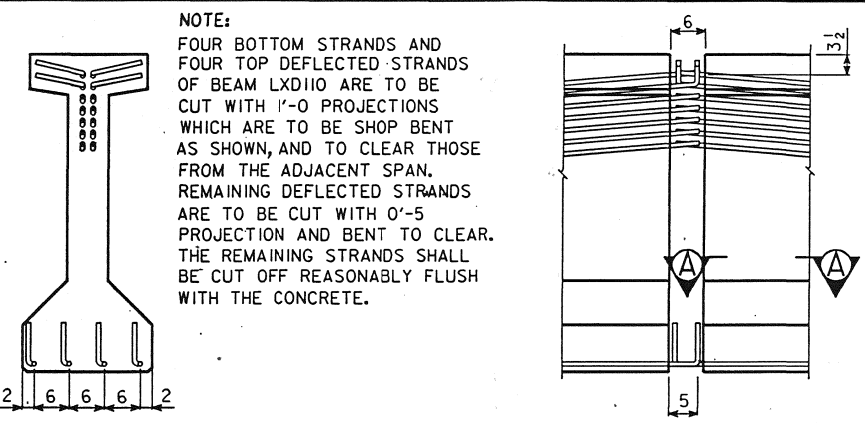
STANDARD SHEET 1036

HUMBOLDT COUNTY

PROJECT NUMBER

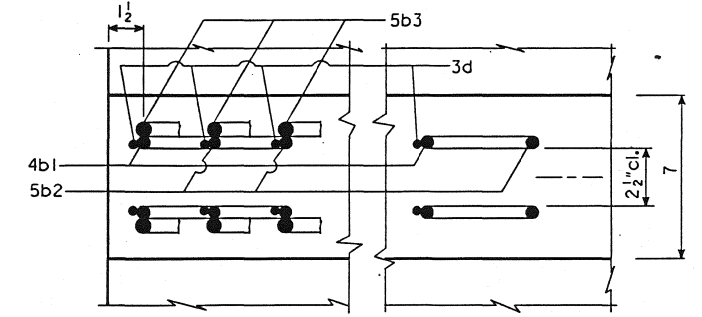
STATE	FWHA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		17	22

REVISED: 4-21-95; SHOP BEND OF STRAND PROJECTION AT BEAM ENDS CHANGED;
REVISED: SPECIFICATION ARTICLE NUMBER CHANGED, AASHTO SERIES CHANGED TO 1992, TAPE NO. 19, DATED 11-9-92
REVISED: NOTES; FINISH ON TOP OF BEAM CHANGED; DEVICE: ZHAIR(200,005) ARCH. TAPE 12 DATED 2-20-92
HLXDO0636.S01 -- LEP; THIS SHEET ISSUED. TAPE NO. 12 DATED 2-18-92

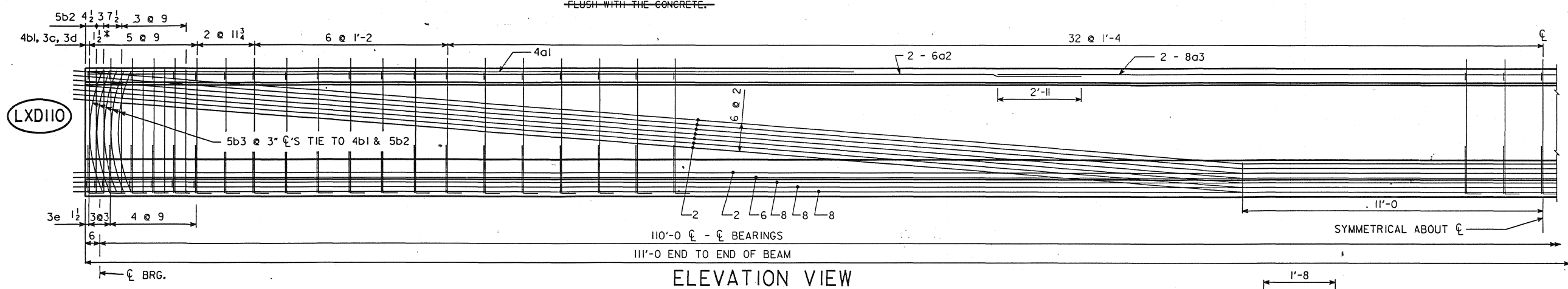


NOTE:
FOUR BOTTOM STRANDS AND
FOUR TOP DEFLECTED STRANDS
OF BEAM LXDIIO ARE TO BE
CUT WITH 1'-0 PROJECTIONS
WHICH ARE TO BE SHOP BENT
AS SHOWN, AND TO CLEAR THOSE
FROM THE ADJACENT SPAN.
REMAINING DEFLECTED STRANDS
ARE TO BE CUT WITH 0'-5
PROJECTION AND BENT TO CLEAR.
THE REMAINING STRANDS SHALL
BE CUT OFF REASONABLY FLUSH
WITH THE CONCRETE.

STRAND PROJECTION AT BEAM ENDS WHEN
EMBEDDED IN CONCRETE END DIAPHRAGMS

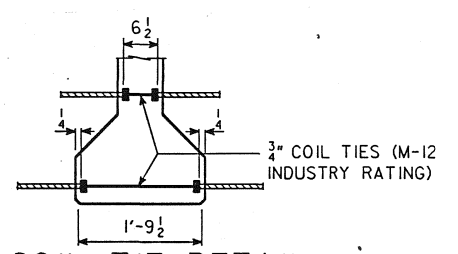
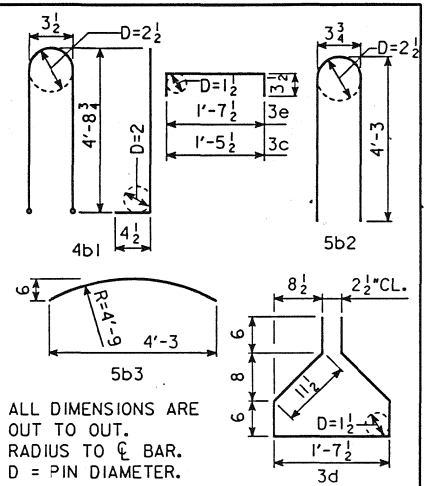


PART SECTION A-A SHOWING PLACEMENT
OF STIRRUPS NEAR END OF BEAM



ELEVATION VIEW

REINFORCING BAR LIST BEAM LXDIIO			
BAR	SHAPE	NO.	LENGTH
4a1		2	26'-6
6a2		4	38'-4
8a3		2	40'-0
4b1		91	10'-4
5b2		12	8'-8
5b3		20	4'-4
3c		91	2'-1
3d		91	5'-7
3e		16	2'-3



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

NOTES:
THESE BEAMS ARE DESIGNED FOR AASHTO LIVE LOADS AS
INDICATED IN BEAM DATA 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 INTEN-
TIONALLY 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. SPECIFICATIONS.
THE CONTRACTOR SHALL ASSURE THE LATERAL STABILITY OF
THE 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.~~
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.
IF SOLE PLATE IS REQUIRED FOR BEARING, SOLE PLATE IS TO
BE SET IN FORMS WHEN BEAM IS CAST AND FORMED OUT BELOW
TO EXCLUDE CONCRETE AS DETAILED ON THE BEARING SHEET.
~~IF STUD ABUTMENTS ARE USED, ALL STRANDS AT THE ENDS~~
~~OF BEAMS AT STUD ABUTMENTS SHALL BE CUT OFF REASONABLY~~
~~FLUSH WITH THE CONCRETE.~~

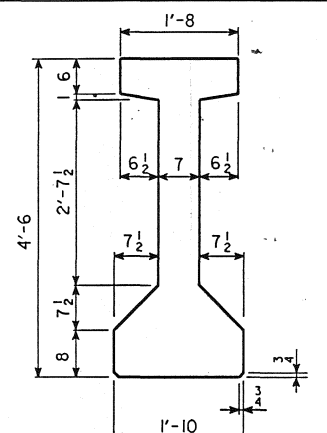
SPECIFICATIONS:

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

DESIGN: A.A.S.H.T.O., SERIES OF 1992, WITH MINOR MODIFICATIONS.

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 1992:
REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.
CONCRETE IN ACCORDANCE WITH SECTION 9.
MINIMUM CONCRETE f'_c (AT 28 DAYS) SHALL BE 7000 psi.
MINIMUM f'_c AT RELEASE SHALL BE 6000 psi.
PRESTRESSING STEEL IN ACCORDANCE WITH SECTION 9,
 $f'_s = 270,000$ psi.



LXDIIO BEAM
CROSS SECTION

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

LXDIIO BEAM DATA

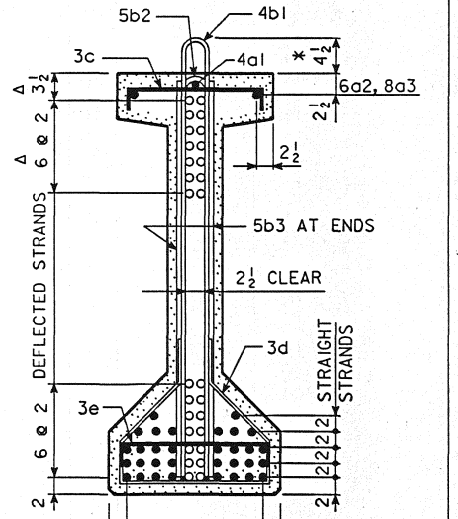
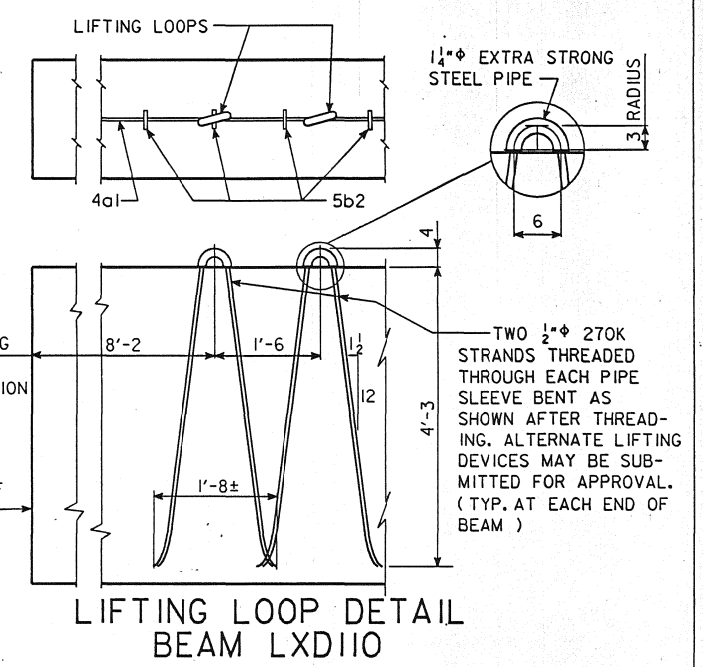
BEAM	SPAN LENGTH ℓ - BEARING	OVERALL BEAM LENGTH (L)	# STRAND SIZE	NO. OF STRANDS		TOTAL INITIAL PRESTRESS KIPS ⑤	HOLD DOWN FORCE-KIPS	CAMBER (in.)		DEFLECTION (in.) Δ _D		PERMISSIBLE SPACING		WEIGHT (TONS)		CONCRETE (C.Y.)	REINFORCING STEEL - (lbs.)
				STRAIGHT	DEFLECTED			AT RELEASE	AFTER LOSSES	IMMEDIATE ① (ELASTIC) Δ _E	TIME ② (PLASTIC) Δ _T	HS20 LOADING					
LXD110	110'-0	111'-0	1/2" Φ	32	14	1424	33.7	2.29	4.02	2.15	0.54			7'-6 1/8	36.9	18.2	1581

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 CONCRETE DIAPHRAGM (3191 #) OR ONE
STEEL DIAPHRAGM (285 #) AT ℓ 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 ℓ OF SPAN, Δ_D, DUE TO
WEIGHT OF SLAB AND DIAPHRAGMS FOR DETAILING PURPOSE:
(A) Δ_D = Δ_E + Δ_T FOR SIMPLE SPAN.
(B) Δ_D = Δ_E + 3/4 Δ_T FOR END SPANS OF CONTINUOUS BRIDGE.
(C) Δ_D = Δ_E + 1/2 Δ_T FOR INTERIOR SPANS OF CONTINUOUS BRIDGE.

③ TOTAL INITIAL PRESTRESS FOR LXDIIO IS BASED ON 75% F_{su}.
F_{su} = 270 ksi AND A_s = 0.153 sq. in.

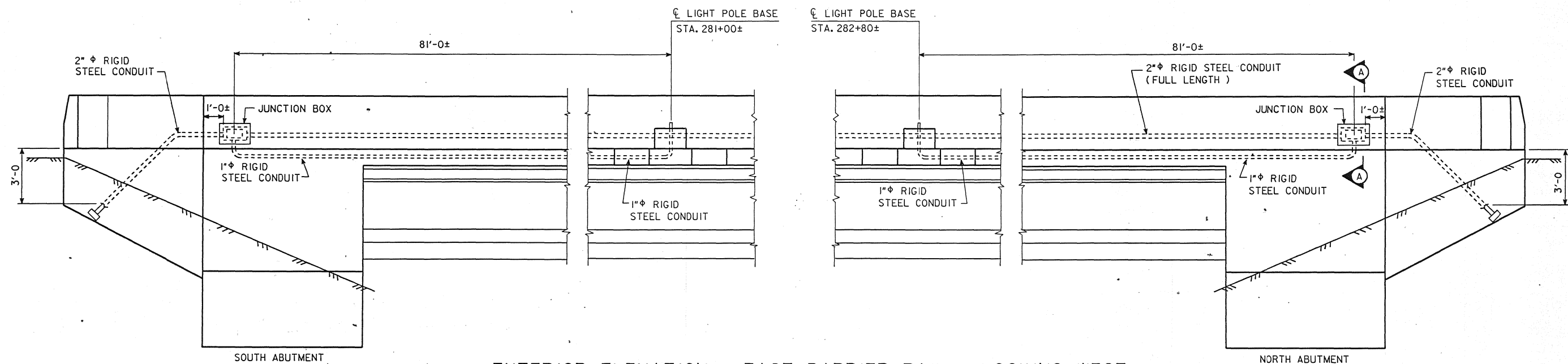


BEAM LXDIIO

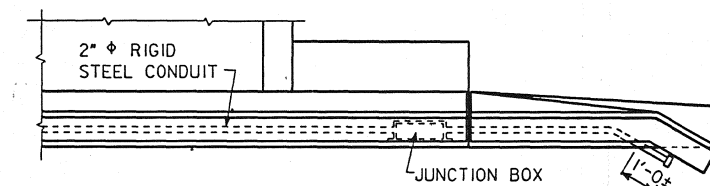
NOTE: DIMENSIONS FOR THE LOCATION OF THE
DEFLECTED STRANDS ARE AT ℓ BEAM AND
END OF BEAM.
○ DEFLECTED STRANDS
* KEEP
Δ DIMENSIONS AT END OF BEAM

DESIGN FOR 0° SKEW
**333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE**
110'-9 END SPANS 111'-6 CENTER SPAN
LXDIIO BEAM DETAILS
STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 18 OF 23 FILE NO. 26188 DESIGN NO. 196

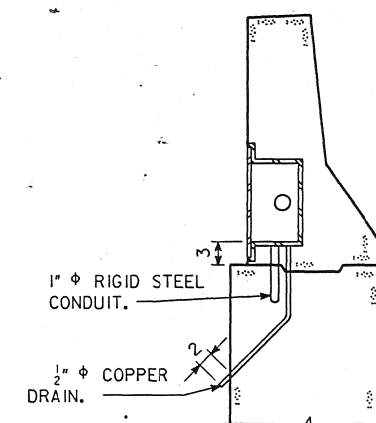
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		18	22



EXTERIOR ELEVATION - EAST BARRIER RAIL - LOOKING WEST



PART PLAN AT WING



SECTION A-A

DESIGN FOR 0° SKEW
 333'-0 x 56'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE
 110'-9 END SPANS 111'-6 CENTER SPAN
 LIGHTING DETAILS
 STATION: 281+90.02 JUNE 1996
 HUMBOLDT COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
 DESIGN SHEET NO. 19 OF 23 FILE NO. 26188 DESIGN NO. 196

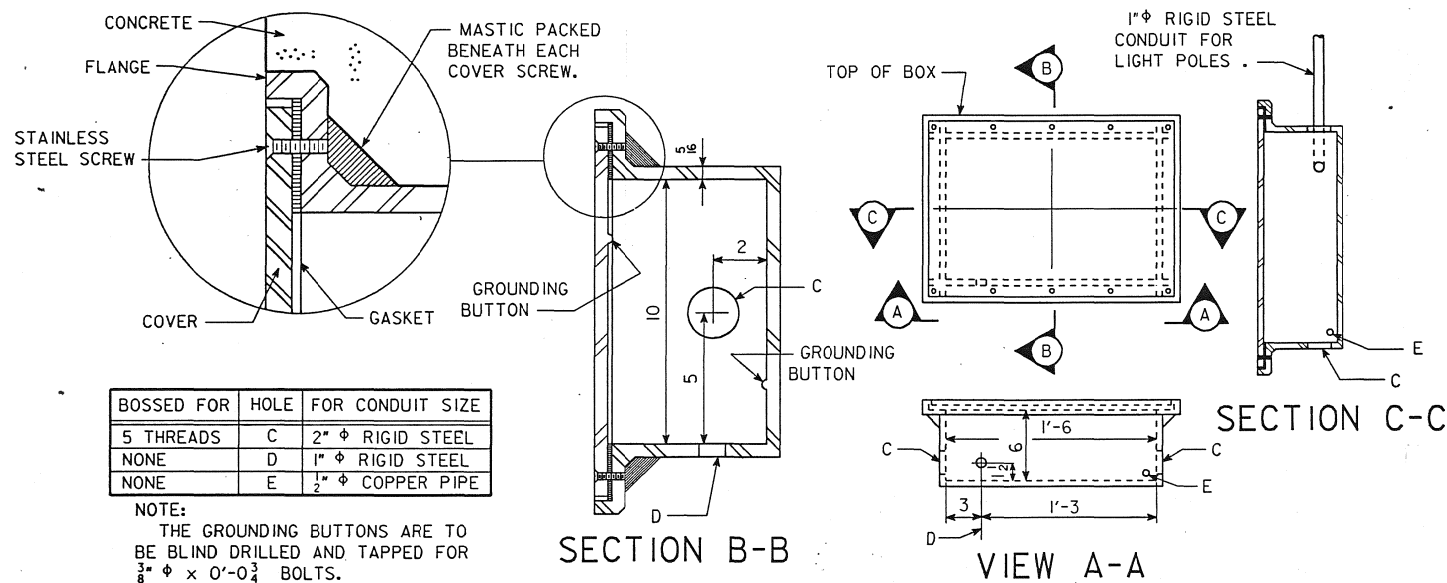
NOTE: SEE DESIGN SHEET 20 FOR ADDITIONAL LIGHTING DETAILS.

DESIGNED BY CARL SCHUMANN CHECKED BY J. NEIDERHISER
 DETAILED BY DOUG WARRINGS CADD FILE H460196.S08

HUMBOLDT COUNTY

PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		19	22



BOSSED FOR	HOLE	FOR CONDUIT SIZE
5 THREADS	C	2" ϕ RIGID STEEL
NONE	D	1" ϕ RIGID STEEL
NONE	E	1/2" ϕ COPPER PIPE

NOTE:
THE GROUNDING BUTTONS ARE TO BE BLIND DRILLED AND TAPPED FOR 3/8" ϕ x 0'-0 3/4" BOLTS.

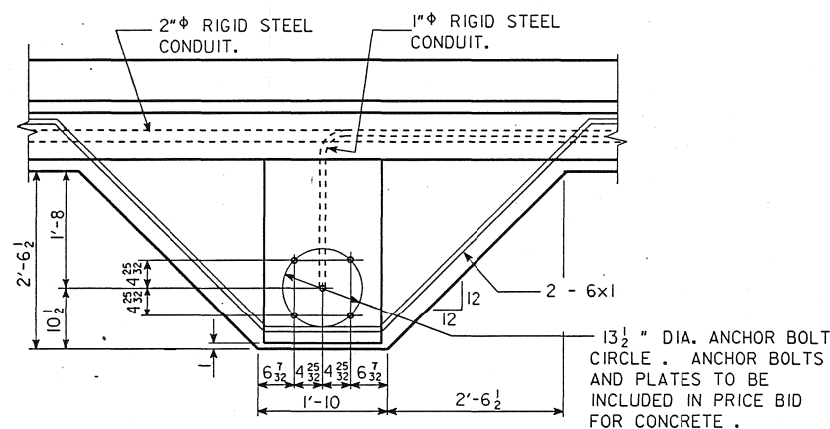
SECTION B-B

VIEW A-A

SECTION C-C

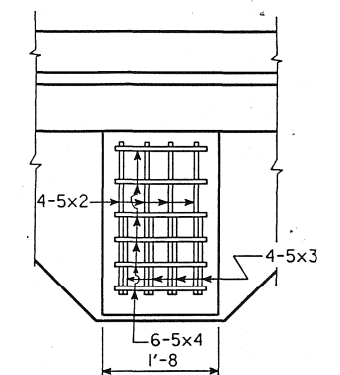
RM-9, TYPE I JUNCTION BOX

WATERTIGHT, CAST IRON - FLUSH MOUNT

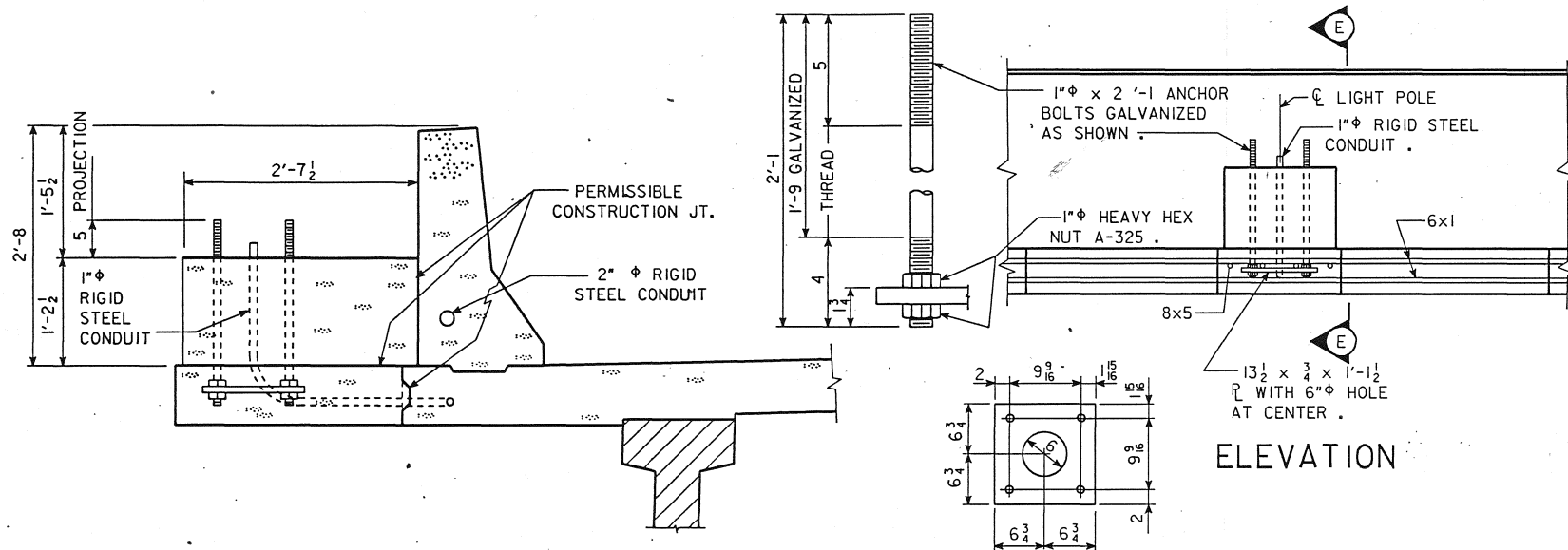


PLAN OF POLE BASE

BASE REINFORCING BARS NOT SHOWN

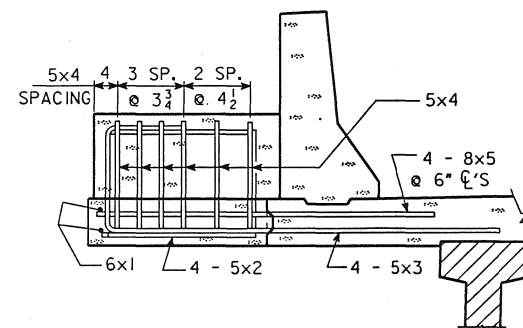


PLAN OF POLE BASE REINFORCING



SECTION E-E

ELEVATION

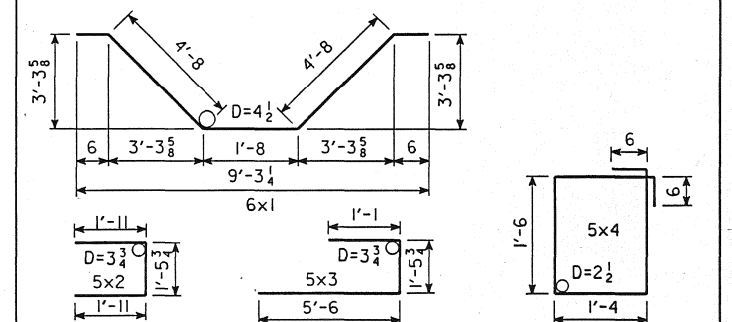


SECTION THROUGH BASE SHOWING REINFORCING

LIGHTING NOTES :
CONSTRUCTION SHALL CONFORM TO THE CURRENT IOWA D.O.T. STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS AND CURRENT SUPPLEMENTAL SPECIFICATIONS FOR HIGHWAY LIGHTING .
CONDUIT INSTALLATION SHALL COMPLY WITH THE ARTICLE "ELECTRICAL DUCTS ", SECTION 2523 .
ALL " C " ENTRANCE HOLES IN JUNCTION BOXES SHALL BE DRILLED AND TAPPED FOR THE SPECIFIED CONDUIT SIZE . ALL OTHER HOLES SHALL HAVE A CONCRETE - TIGHT SLIP FIT . CONDUIT ENDS SHALL NOT PROTRUDE INTO JUNCTION BOX MORE THAN 1/4" . DRAIN PIPE END SHALL BE FLUSH WITH INSIDE SURFACE OF BOX . GROUNDING BUTTONS SHALL BE LOCATED APPROXIMATELY 3" FROM THE INSIDE SURFACE OF THE BOX WALL , AND NOT CLOSER THAN 3" TO THE EDGE OF ANY HOLE IN THE BOX FLOOR . HOLES FOR DRAIN PIPE SHALL BE PLACED IN THE LOW CORNER OF THE BOX , WITH A MINIMUM CLEARANCE OF 1" BETWEEN THE EDGE OF THE HOLE AND THE INSIDE SURFACE OF THE BOX WALL . TYPICAL DETAILS ARE SHOWN ON THIS SHEET .
THE CONTRACT UNIT PRICE PER LINEAL FOOT OF CONDUIT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING JUNCTION BOXES AND FITTINGS), LABOR AND ANY WORK INCIDENTAL TO THE INSTALLATION . THE CONCRETE AND WEIGHT OF REINFORCING STEEL IS INCLUDED IN THE SUPERSTRUCTURE ESTIMATED QUANTITIES .
THE LENGTH OF CONDUIT INSTALLED SHALL BE MEASURED IN FEET BY THE ENGINEER .
COST OF FURNISHING AND INSTALLING POLES , LIGHTS AND LIGHTING CONDUCTOR IS NOT A PART OF THIS ESTIMATE .
ANCHOR BOLT MATERIAL SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A-325 OR A-193 GRADE B7 . ANCHOR BOLT NUTS SHALL COMPLY WITH ASTM A-325 . ANCHOR BOLTS SHALL BE GALVANIZED .

EPOXY REINFORCING STEEL-ONE BASE

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6x1	SLAB ANCHORS		2	12'-0	36
5x2	POLE BASE TO SLAB		4	5'-4	22
5x3	POLE BASE TO SLAB		4	8'-1	34
5x4	POLE BASE HOOP		6	6'-8	42
8x5	SLAB TRANSVERSE		4	5'-8	61
TOTAL WEIGHT (LBS.)					195



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

LIGHTING QUANTITIES 2 BASES

ITEM	AMOUNT
* STRUCTURAL CONCRETE CLASS C 2 @ 0.2	0.4 C. Y.
REINFORCING STEEL - EPOXY COATED	390 LBS.
2" ϕ RIGID STEEL CONDUIT	360 L. F.
1" ϕ RIGID STEEL CONDUIT	170 L. F.

* INCLUDES ONLY THE PORTION ABOVE THE SLAB AND MAY BE EITHER CLASS "C" OR CLASS "D".

NOTE : FOR LOCATION AND LENGTHS OF CONDUITS NEEDED SEE DES. SH. TOTAL QUANTITIES FOR CONCRETE AND REINFORCING STEEL FOR POLE BASES ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES ON ANOTHER SHEET .

DESIGN FOR 0° SKEW
**333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE**
110'-9 END SPANS 111'-6 CENTER SPAN

LIGHTING DETAILS

STATION: 281+90.02

JUNE 1996

HUMBOLDT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 20 OF 23 FILE NO. 26188 DESIGN NO. 196

DESIGNED BY CARL SCHUMANN CHECKED BY J. NEIDERHISER
DETAILED BY DOUG WARRINGS CADD FILE H460196.S09

LIGHTING

STANDARD SHEET 1030A

HUMBOLDT COUNTY

PROJECT NUMBER

STATE	FWHA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		20	22

REVISED: 10-31-95 - CHANGE SPACING OF 5x4 BAR AND BAR LENGTH FOR 5x2 BAR.
REVISED: 6-21-93 - "LIN. FT." COLUMN DELETED FROM REINFORCING BAR LIST.
HSD1030A.S01 --LEP: THIS SHEET REDRAWN, DEVICE:ZHA04200,004 ARCH:TAPE NO. 15 DATE 9-8-88
REVISED: 10-31-95 - CHANGE SPACING OF 5x4 BAR AND BAR LENGTH FOR 5x2 BAR.

ENGINEERING FABRIC ENDS ARE TO BE BURIED 6" TO PREVENT UNDERMINING.

DETAIL "A"

SECTION A-A

1" PREFORMED JOINT MATERIAL.

SLOPE 1" PER FOOT

END OF ENGINEERING FABRIC

ENGINEERING FABRIC (FOR TRANSVERSE LIMITS OF FABRIC SEE SECTIONS B-B & D-D).

SLOPE 1" PER FOOT

SEE DETAIL "A"

GRANULAR SUBBASE

SLOPE 2 1/2 : 1

END OF ENGINEERING FABRIC

19'-6"

No. 4 BARS 2'-4" LONG @ ABOUT 1'-6" CENTERS TO BE PLACED BETWEEN DROP WALL SECTION AND THE LOWEST COURSE OF SLOPE PROTECTION.

1'-6"

3'-0"

10' BIKE PATH

3'-0"

EDGE OF BIKE PATH ELEVATION = 1070.3

2.0 %

4 %

5:1

5:1

No. 4 BARS 2'-6"

FORMS REQUIRED FOR TOP 1' ONLY

4" PERFORATED SUBDRAIN

1'-0"

1'-0"

10' MIN.

1'-0"

1'-0"

10' MIN.

3'-0"

10' BIKE PATH

JOINTS BETWEEN BLOCKS TO BE STAGGERED 1/2 BLOCK WIDTH IN ALTERNATE COURSES.

1" THICK X 2" DEEP PARTING STRIP IN DIRECTION OF SLOPE.

10' (±) BETWEEN JOINTS

DO NOT EDGE 1" PREFORMED JOINT FILLER AT GUTTER.

6" CURB LUG

NOMINAL DIMENSION OF CAST IN PLACE CONCRETE BLOCKS = 10' X 10'.

END CURB LUG TO AVOID INTERFERENCE WITH SUBDRAIN

1'-0"

4" PERFORATED SUBDRAIN

DETAIL "A"

SECTION C - C

1/4" PREFORMED JOINT FILLER

3'-0

1'-6

1'-4

FORMS REQUIRED FOR TOP 1' ONLY

SEE CURB DETAIL

No. 4 BARS

2'-4

LONG @ ABOUT 1'-6 CENTERS

1'-0 (+/-)

6

10

3

4

2'-0

GRANULAR SUBBASE

ENGINEERING FABRIC

SEE DETAIL "A"

SECTION B - B
(THROUGH 4" THICK GRANULAR SUBBASE)

3'-0

1'-6

1'-4

FORMS REQUIRED FOR TOP 1' ONLY

SEE CURB DETAIL

No. 4 BARS

ENGINEERING FABRIC

4" PREFORMED JOINT FILLER

No. 4 BARS 2'-0" LONG @ ABOUT 1'-6" CENTERS

VARIES 4" TO 3"

2'-0

GRANULAR SUBBASE

SEE DETAIL "A"

SECTION D - D

(THROUGH VARIABLE THICKNESS GRANULAR SUBBASE)

SECTION D - D (THROUGH VARIABLE THICKNESS GRANULAR SUBBASE)

PART LONGITUDINAL SECTION
ALONG C ROADWAY

4" PERFORATED SUBDRAIN IS TO BE INSTALLED AT A RATE OF SLOPE NOT FLATTER THAN $\frac{1}{8}$ INCH PER FOOT FROM $\frac{1}{2}$ OF BRIDGE ROADWAY AND OUTLET INTO THE RIVER AS INDICATED ON THE SITUATION PLAN AND AS DIRECTED BY THE ENGINEER.

BRIDGE ROADWAY

OUT TO OUT OF SLAB

3'-0"

4" PERFORATED SUBDRAIN

SLOPE PROTECTION LAYOUT

GENERAL NOTES :

THIS PLAN SHEET SHOWS DETAILS FOR PLACING A PORTLAND CEMENT CONCRETE SLOPE PROTECTION UNDER THE BRIDGE AT THE NORTH ABUTMENT ONLY.

THE CURRENT SPECIFICATIONS OF THE IOWA DEPARTMENT OF
TRANSPORTATION SHALL APPLY WITH MODIFICATIONS OR
ADDITIONS LISTED BELOW :

FINISH - CLASS I, FLOATED SURFACE FINISH.

CURE - CURE AS PER CURRENT SPECIFICATIONS.

GRANULAR SUBBASE - THIS PREWETTED MATERIAL SHALL BE DEPOSITED BY A METHOD APPROVED BY THE ENGINEER AND BE THOROUGHLY TAMPED OR VIBRATED TO INSURE COMPACTION. FINISHED SHAPE SHALL BE AS SHOWN IN SECTION A-A.

SECTION A-A.
SUBGRADE PREPARATION - THE SUBGRADE SHALL BE
COMPACTED AND SHAPED AS SHOWN IN SECTION A-A ON
THIS SHEET. THE SUBGRADE SHALL BE FIRM WHEN THE
ENGINEERING FABRIC AND GRANULAR SUBBASE ARE PLACED.

IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF ONE FOOT IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.

THE CAST IN PLACE CONCRETE IS TO BE POURED IN APPROXIMATELY 10' WIDE COURSES, BUT ALL COURSES ON ONE SLOPE SHOULD HAVE APPROXIMATELY EQUAL WIDTHS. ADJACENT COURSES SHALL NOT BE POURED WITHIN 15 HOURS OF ONE ANOTHER. THE JOINTS IN THE DIRECTION OF THE SLOPE ARE TO BE STAGGERED ABOUT 1/2 BLOCK WIDTH.

PAYMENT FOR "CONCRETE SLOPE PROTECTION" WILL BE MADE ON A SQUARE YARD BASIS FOR SLOPE PROTECTION CONSTRUCTED. THE UNIT PRICE BID PER SQUARE YARD IS TO INCLUDE COSTS OF ALL MATERIALS AND LABOR REQUIRED TO CONSTRUCT THE SLOPE PROTECTION AS SHOWN ON THESE PLANS. THE DISPOSAL OF EXCESS SOIL FROM SHAPING OR TRENCHING, AS DIRECTED BY THE ENGINEER, SHALL BE CONSIDERED INCIDENTAL TO PLACING THE CONCRETE SLOPE PROTECTION.

WHERE EROSION CONTROL WORK IS COMPLETED THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY PLANT MATERIALS DESTROYED ADJACENT TO SLOPE PROTECTION AREA. THE CONTRACTOR SHALL REPLANT, RESEED AND REMULCH ALL AREAS IN ACCORDANCE WITH SECTION 2601 OF THE CURRENT STANDARD SPECIFICATIONS, AT HIS EXPENSE.

THE BRIDGE CONTRACTOR IS TO INSTALL A SUBDRAIN AT THE TOE OF THE BRIDGE BERM ABOVE THE BIKE PATH AS DETAILED ON THIS SHEET AND AS SHOWN ON THE SITUATION PLAN. THE SUBDRAIN SHALL BE 4" IN DIAMETER AND MEET THE REQUIREMENTS OF SECTION 4143.01B. THE SUBDRAIN OUTLET SHALL CONSIST OF A 6' LENGTH OF CORRUGATED METAL PIPE (CMP) THAT DRAINS UNDER THE BIKE PATH INTO THE RIVER. THE CONNECTION BETWEEN THE SUBDRAIN TUBING AND THE CMP CAN BE MADE WITH A REDUCER COUPLING OR BY EXTENDING THE SUBDRAIN TUBING INTO THE CMP A MINIMUM OF 6 INCHES AND PACKING THE OPEN SPACE BETWEEN THE PIPE WITH GROUT, A REMOVABLE $\frac{3}{8}$ " MESH GALVANIZED SCREEN IS TO BE FASTENED TO THE END OF EACH OUTLET PIPE.

QUANTITIES		
DESCRIPTION	LOCATION	QUANTITY
CONCRETE SLOPE PROTECTION	NORTH ABUT.	174 SQ.YDS.
TOTAL		174 SQ.YDS.

ITEMS TO BE INCLUDED IN "CONCRETE SLOPE PROTECTION":
ENGINEERING FABRIC
GRANULAR SUBBASE
CLASS "C" STRUCTURAL CONCRETE
#4 REINFORCING
POROUS BACKFILL
PREFORMED JOINT FILLER
EXCAVATION, SHAPING AND COMPACTING
FURNISHING AND PLACING SUBDRAIN INCLUDING OUTLETS.

DESIGN FOR 0° SKEW
333'-0" x 56'-0" PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
110'-9" END SPANS 111'-6" CENTER SPAN
CONCRETE SLOPE PROTECTION
STATION: 281+90.02 JUNE 1996
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 22 OF 23 FILE NO. 26188 DESIGN NO. 196

SECTION SHEET NO. _____	STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	7		23	22

DESIGNED BY	CARL SCHUMANN	TRACED BY	J. NEIDERHISER
DETAILED BY	DOUG WARRINGS	CHECKED BY	H460196.S21

CONCRETE SLOPE PROTECTION (INTEGRAL ABUTMENTS)

STANDARD SHEET 1006A
MODIFIED

HUMBOLDT COUNTY

PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		23	22

A cross-sectional diagram of a curb. The top horizontal dimension is labeled '1'-6"'. The vertical height of the curb is labeled '3"'. The curb has a sloped top surface and a wavy bottom edge. The text 'CURB DETAIL' is written below the diagram.