STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		1	85

PROJECT NUMBER
I-35-6(16)166--01-35

R.O.W. PROJECT NUMBER
I-35-6(10)01--01-35

STATE OF IOWA
STATE HIGHWAY COMMISSION

PLANS OF ~~PROPOSED~~ IMPROVEMENT
ON THE
INTERSTATE ROAD SYSTEM
FRANKLIN COUNTY
BRIDGES AND CULVERTS
NORTH END OF IOWA NO. 3 INTERCHANGE N.E. 5.6 MILES

SCALES: AS NOTED

THE IOWA STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR CONSTRUCTION WORK, SERIES OF 1972 ~~SHALL~~ APPLY TO WORK ON THIS PROJECT
(PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS)

All Welding ~~shall~~ met the requirements of the Eighth Edition of the "Specifications for Welded Highway and Railway Bridges "(AWS D2.0-69) of the American Welding Society, except as modified by the Standard Specifications and the current Supplemental Specifications.

Design stresses for the following materials ~~are~~ were in accordance with AASHO'S Standard Specifications for Highway Bridges, Series of 1969, Interim Specifications.

Concrete in accordance with Section 1.5.1, f'c = 3,500 psi.

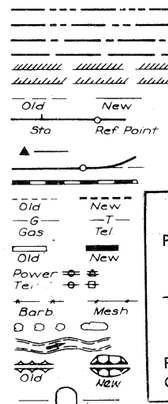
Reinforcing steel in accordance with Section 1.5.1 D fs = 20,000 psi.

Structural Steel in accordance with Section 1.7.1, ASTM A-36, fs = 20,000 psi.

Prestressed Concrete in accordance with Section 1.6.7, f'c= 5,000 psi.
Prestressing Steel in accordance with Section 1.6.7, f's= 270,000 psi.

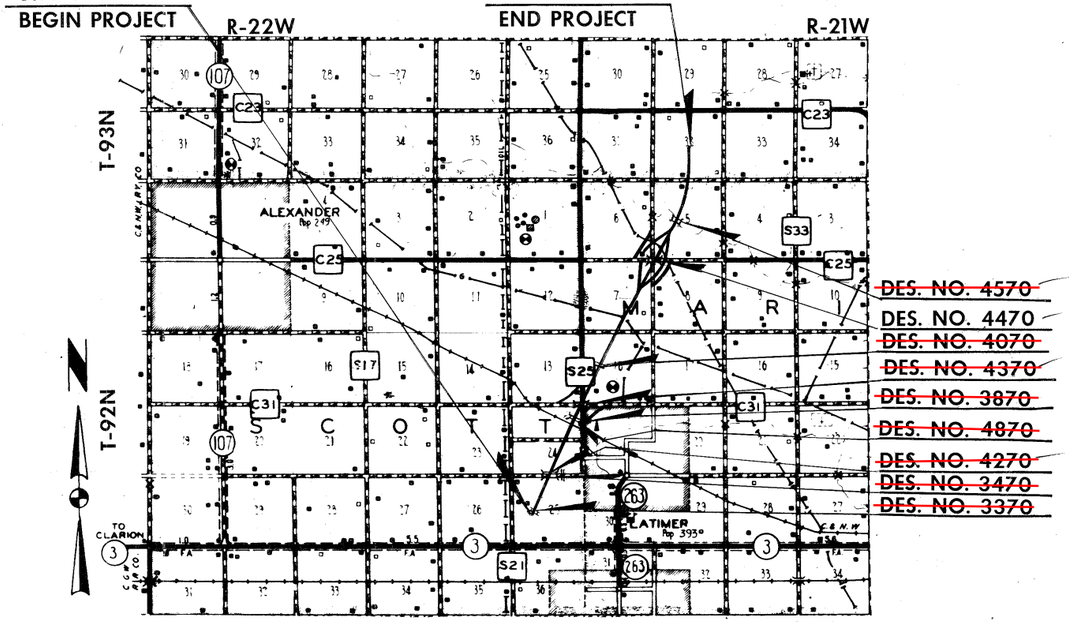
CONVENTIONAL SIGNS

State Line
Co. Line
Twp. Line
Sec. Line
Corp. Line
Urban Bdry.
R.O.W. Lines
Survey Line
Sec. Corner
Profile Grade
Railroad
Field Tile
Underground Lines
Culverts
Utility Poles
Fences
Trees Or Brush
Stream
Dike
County Road No.
Primary Road No.
U. S. Road No.
Interstate Road No.



CONSTRUCTION PLANS SHOWING PROJECT AS BUILT
Prepared by Logan W. Hotchkiss, P.E. Date 2-27-1976
Res. Const. Engineer
Approved and Forwarded to Ames
Alan L. Simmons Date 5-14-76
District Const. Engineer
After Microfilming Return This Copy to:
D. D. CAMPBELL District Engineer
Prime Contractor:
Contract Amount: $1,407,715.48

CONTRACT NO	CONTRACTOR	DESIGN NOS.	AMOUNT
07915	Herberger Const. Co.	4570	$169,564.89
07914	"	4470	$204,551.02
07913	"	4270	$181,656.13
07918	United Contractors	4370	$615,059.04
07912	Gus Const. Co.	4070	
"	"	3370	$42,736.80
07919	Winnebago Const. Inc.	3470	$59,805.50
07916	Lauritsen Const. Co.	3870	$44,814.08
07917	"	4870	$89,528.02



LOCATION MAP

LOCATION MAP SCALE
0 1 2 3
miles

35-1100
STATE CONTROL SECTION NUMBER

INDEX OF SHEETS
105-3

NO.	DESCRIPTON
1	TITLE SHEET
1A	REVISION SHEET
2A	ESTIMATE SHEET *BRIDGES*
2B	ESTIMATE SHEET *CULVERTS*
3	MISC. DETAIL SHEET FWH-0°
4	MISC. DETAIL SHEET FWH-15°
5	MISC. DETAIL SHEET FWH-30°
~~6-20~~	~~BRIDGE DESIGN NO. 4270~~
~~21-42~~	~~BRIDGE DESIGN NO. 4370~~
43-59	BRIDGE DESIGN NO. 4470
~~60-70~~	~~BRIDGE DESIGN NO. 4570~~
~~71~~	~~CULVERT DESIGN NO. 3370~~
~~72-76~~	~~TWIN CULVERT DESIGN NO. 3470~~
~~77-80~~	~~TWIN CULVERT DESIGN NO. 3870~~
~~81~~	~~CULVERT DESIGN NO. 4070~~
~~82-85~~	~~TWIN CULVERT DESIGN NO. 4870~~

IOWA STATE HIGHWAY COMMISSION STANDARDS REQUIRED
(Available at the I.S.H.C. Storeroom)

STANDARD	ISSUED	REVISED
P10A	1959	6-12-72

35 Plan

D

MILEAGE SUMMARY
105-1

DIV.	LOCATION	LIN. FT.	MILES	STATE CONTROL SECTION NO.
	Bridge @ Sta. 816+87.00	158.510'	.030	
	Str. @ Sta. 662+25.00	25.0'	.005	
	Total		.035	

DESIGN DATA RURAL

1973 AADT	6014	V.P.D.
1993 AADT	9218	V.P.D.
1993 DHV	1135	V.P.H.
DIRECTIONAL	60.8	%
TRUCKS	8	%
DESIGN V	70	M.P.H.
CLASS FULL ACCESS CONTROL		

SEE FOLLOWING SHEET 1A

APPROVED
DEPUTY CHIEF ENGINEER
IOWA HIGHWAY COMMISSION DATE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY SUPERVISION AND THAT ENGINEERING DECISIONS WITH REGARD TO THE DESIGN WERE MADE BY ME OR BY OTHER DULY REGISTERED PROFESSIONAL ENGINEERS UNDER THE LAWS OF THE STATE OF IOWA.
E. Hotchkiss
8792 1-18-73
IOWA REGISTRATION NUMBER DATE

U.S. DEPT. TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ENGINEER DATE

FRANKLIN COUNTY
BRIDGES AND CULVERTS
I-35-6(16)166--01-35
LETTING DATE MAR. 6-1973

FILE NO. 23230 FRANKLIN COUNTY PROJECT NO. I-35-6(16)166--01-35 SHEET NO. 1

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.

Jan 17, 1973 DATE — James R. Sassaman JAMES R. SASSAMAN — REG NO 2663

IN LETTING OF March 6, 1973

DESIGN NO. 4270 — STA. 1613+95.40
FRANKLIN CO. — LOCAL ROAD OVER I-35 — STA. 613+95.40
SECTIONS 24 & 25 — T-92N R-22W — SCOTT TWP.

DESIGN FOR 23° 03' SKEW
314'-0 x 30' CONTINUOUS WELDED GIRDER BRIDGE

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
14	Structural Concrete	Cu. Yds.	~~439.0~~ ~~542.3~~
15	Reinforcing Steel	Lbs.	135 751
16	Structural Steel	Lbs.	240 844
17	Class 20 Excavation	Cu. Yds.	306
18	Granular Backfill	Cu. Yds.	134
19	Creosoted Piling	~~Lin. Ft.~~	~~2 860~~ 0
20	4"ø Tile Subdrain	Lin. Ft.	204
21A	Aluminum Handrail or ~~Steel Handrail~~	Lin. Ft. ~~Lin. Ft.~~	650.5 ~~650.5~~
22	Concrete Slope Protection	Sq. Yds.	~~452~~ 491.1
23	Creosoted Test Piling	L.S.	~~Lump Sum~~ 300.00
24	BRIDGE SEAT SEALER	SQ. FT.	~~197~~ 196.65
25	Trainee Reimbursment	Hrs.	1074.000
8001	Piling Creosoted 30Ft	LF	236620
8002	Piling Creosoted 50Ft	LF	1641.75
8003	Piling Test Load	FA	$20743
8004	Structural Concrete with Retarder	Cu.Yds.	108.300

ESTIMATE REFERENCE INFORMATION 100-4

Data listed below ~~was~~ is for informational purposes only and ~~shall~~ did not constitute a basis for any extra work orders.

ITEM NO.	DESCRIPTION
14	The floor slab, curb and end posts, ~~385.6~~ 195.3 Cu. Yds., ~~are to be~~ were Class "D" Concrete. The remainder, 238.7 Cu. Yds., ~~is to be~~ was Class "C" Concrete.

These bridges ~~will~~ required bridge sign assemblies, furnished and placed by others, as specified in Section 2 C-5 of the I.S.H.C. manual on "Uniform Traffic Control Devices", dated January - 1963.

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.

Jan. 15, 1973 DATE — William A. Lundquist WM. A. LUNDQUIST — REG. NO. 4449

IN LETTING OF March 6, 1973

DESIGN NO. 4370 — STA. 1671+18.20 CO. RD S-25
FRANKLIN COUNTY — COUNTY RD. S-25 OVER I-35 — STA. 671+18.20 I-35
SECTION 24-13-19-18 — T-92N R-22W — SCOTT TWP.

DESIGN FOR
764'-0 x 32'-0 CONTINUOUS WELDED GIRDER BRIDGE

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
26	Structural Concrete	Cu. Yds.	~~803.9~~ ~~1509.9~~
27	Reinforcing Steel	Lbs.	387 496
28	Structural Steel	Lbs.	1 360 200
29A	Aluminum Handrail or ~~Steel Handrail~~	L.F. ~~L.F.~~	1 621.31 ~~1 621.31~~
30	Class 20 Excavation	Cu. Yds.	830
31	Granular Backfill	Cu. Yds.	290
32	4' ø Tile Subdrain	L.F.	220
33	Concrete Slope Protection	Sq. Yds.	510
34	Creosoted Piling	L.F.	~~6 435~~ 1801.9
35	Creosoted Test Piling	L.S.	~~Lump Sum~~ 1.000
36	Bridge Seat Sealer	Sq. Ft.	280
37	Trainee Reimbursment	Hrs	1172.500
8001	Piling Creosoted Test 35Ft.	L.S	$500.00
8002	Piling Test Load	FA	$305.65
8003	Piling Creosoted 25Ft.	LF	5508.40
8004	Piling Creosoted 50Ft.	LF	246.50
8005	Concrete Structural with Retarder	Cu Yds	706.50

ESTIMATE REFERENCE INFORMATION 100-4

Data listed below ~~was~~ is for informational purposes only and ~~shall~~ did not constitute a basis for any extra work orders.

ITEM NO.	DESCRIPTION
26	~~882.5~~ 895.8 Cu. Yds. Class "D" structural Concrete for Superstructure. 707.6 Cu. Yds. Class "C" Structural Concrete for Superstructure.
28	Included 900 lbs. of Lubricated Bronze PL.

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

Jan 17, 1973 DATE — James R. Sassaman JAMES R SASSAMAN — REG NO 2663

IN LETTING OF March 6, 1973

DESIGN NO. 4470 — STA. 3790+62.40 (LOCAL RD.)
FRANKLIN COUNTY — COUNTY ROAD OVER I-35 — STA. 790+62.40 (I-35)
SECTIONS 5 & 8 — T-92N R-21W — MARION TWP.

DESIGN FOR 29° 07' 30" SKEW
330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
38	Structural Concrete	Cu. Yds.	~~327.9~~ ~~628.7~~
40	Structural Steel	Lbs.	276 630
39	Reinforcing Steel	Lbs.	159 408
41	Class 20 Excavation	Cu. Yds.	395
42A	Aluminum Handrail or ~~Steel Handrail~~	Lin. Ft. ~~Lin. Ft.~~	687.1 ~~687.1~~
43	Creosoted Piling	~~Lin. Ft.~~	~~3 665~~ 0
44	Granular Backfill	Cu. Yds.	160
45	4" ø Tile Subdrain	Lin. Ft.	136
46	Concrete Slope Protection	Sq. Yds.	~~510~~ 558.777
47	Creosoted Test Piling	L.S.	~~Lump Sum~~ 300.00
48	2"ø Rigid Steel Conduit	Lin. Ft.	720
49	BRIDGE SEAT SEALER	SQ. FT.	240
50	Trainee Reimbursment	Hrs.	1299.500

ESTIMATE REFERENCE INFORMATION 100-4

Data listed below ~~was~~ is for informational purposes only and ~~shall~~ did not constitute a basis for any extra work orders.

ITEM NO.	DESCRIPTION
38	The floor slab, and end posts, ~~344.8~~ 439.8 Cu. Yds., ~~are to be~~ were Class "D" Concrete. The remainder, 284.1 Cu. Yds., ~~is to be~~ was Class "C" Concrete.

8001	Piling Test Load	Lump Sum	$66.71
8002	Piling - Anchor	Lin. Ft.	70
8003	Piling - Creosoted - 55'	Lin. Ft.	1641.0
8004	Piling - Creosoted - 35'	Lin. Ft.	2975.0
8005	Concrete, Structural With Retarder	Cu. Yds.	300.800
8006	Reconstruction of Bridge Berm	L.S.	$150.00

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.

Jan 17, 1973 DATE — James R. Sassaman JAMES R. SASSAMAN — REG. NO. 2663

IN LETTING OF March 6, 1973

DESIGN NO. 4570 — STA. 816+87.00
FRANKLIN COUNTY — I-35 OVER BUFFALO CREEK
SECTION 5 — T-92N R-21W — MARION TWP.

DESIGN FOR 4° SKEW
DUAL 155'-6 x 40' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM			UNIT	TOTAL
51	Structural Concrete			Cu. Yds.	~~552.78~~ ~~562.6~~ 563.6
52	Reinforcing Steel			Lbs.	123 588
53	Pretensioned Prestressed	B42		No.	28
54	Concrete Beams	B67		No.	14
55	Granular Backfill			Cu. Yds.	224
56	Creosoted Piling			Lin. Ft.	~~1 820~~ 35
57A	16" P10A	Type I	Furnish	Lin. Ft.	2 784
58A		or	Drive	Lin. Ft.	2 784
	~~Type~~	~~Type II~~	~~Furnish~~	~~Lin. Ft.~~	~~2 784~~
		~~or~~	~~Drive~~	~~Lin. Ft.~~	~~2 784~~
	~~Piling~~	~~Type IV~~		~~Lin. Ft.~~	~~2 400~~
60	4"ø Tile Subdrain			Lin. Ft.	256
61	Class 20 Excavation			Cu. Yds.	194
62A	Aluminum Handrail			Lin. Ft.	637.4
63	~~Steel Handrail~~ Trainee or Reimburs.			~~Lin. Ft.~~ Hr.	1722 ~~637.4~~ 000
8001	PILING, CREOSOTED			Lin. Ft.	2279.4
8002	PILE LOADING TEST			Lump Sum	$297.11
8003	TRANSPORT MATERIALS (PILING)			Lump Sum	$354.00
8004	RETARDER			Cu. Yds.	77.620

ESTIMATE REFERENCE INFORMATION 100-4

Data listed below ~~was~~ is for informational purposes only and ~~shall~~ did not constitute a basis for any extra work orders.

ITEM NO.	DESCRIPTION
51	The piers, abutments, and pavement blocks, 129.2 Cu. Yds, ~~are to be~~ were Class "C" Concrete. The remainder, ~~433.4~~ 423.78 Cu. Yds., ~~is to be~~ was Class "D" Concrete.

Revised 3-7-73: Design 4570 -- Concrete quantity corrected.

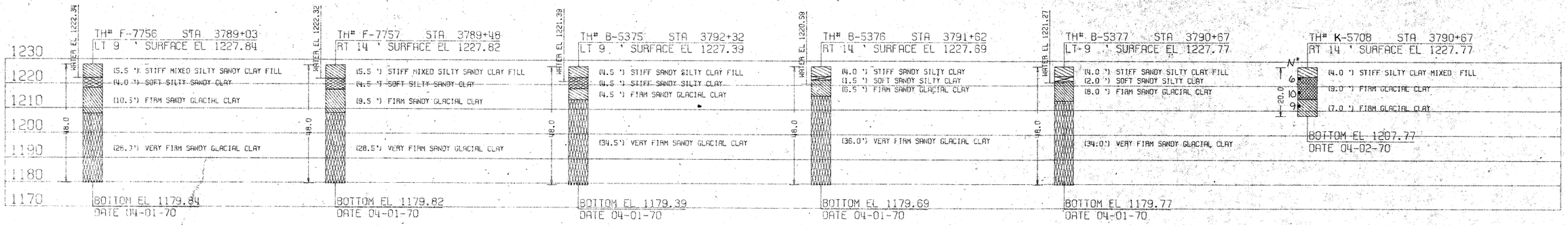
QUANTITY SHEET -- BRIDGES

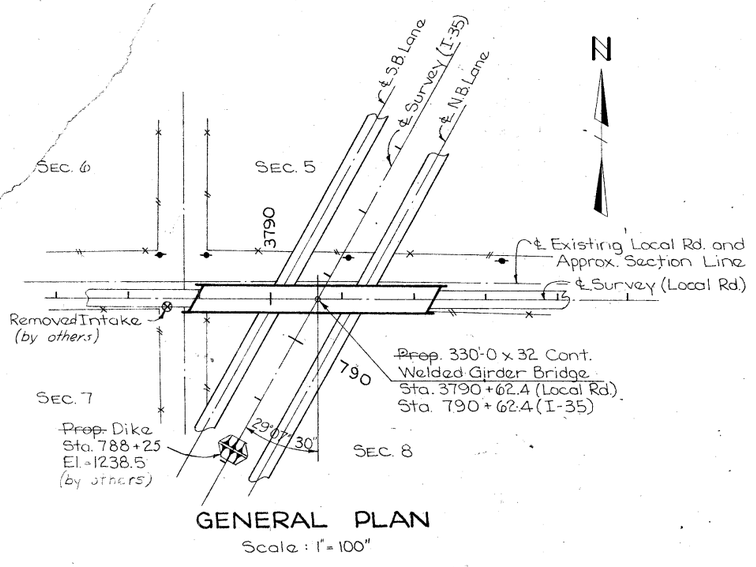
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6(16)166--01-35	IOWA	5		24	85

File Nº 23230 — FRANKLIN County

Bench Mark No. 94, Sta. 3792 + 25, 17' Lt. I.S.H.C. Marker in North East Curb County Road Bridge Elev. 1261.22

~~Bench Mark N° 60, Sta. 790+13, Lt. 223, Found Lag Bolt S. Side Tel. Pole, Elev. = 1231.14.~~





GENERAL PLAN

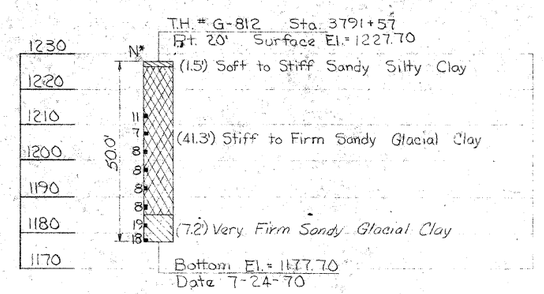
Scale : 1" = 100'

SOUNDING DATA

Scale: 1" = 20'

Dated as shown

N = *N° of blows per foot of penetration*



GENERAL NOTES:

This bridge ~~is~~ was designed for HS20-44 loading (two lanes) plus 20 lbs. per square foot of roadway for future wearing surface.

The approach fills ~~are~~ were not a part of this estimate but ~~are to be~~ were in place before the abutment piles ~~are~~ were 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~~ will be paid for as extra work.

Abutment piles ~~are to be~~ were driven in oversize holes drilled through the fill to Elev. 1232± W. Abut. and Elev. 1230± E. Abut. The minimum diameter of the drilled holes ~~is to be~~ was 4" greater than the diameter of the pile 3 feet from the butt. Voids around the piles ~~are to be~~ were filled with dry sand. No separate payment ~~will be~~ was made for drilling holes or filling voids since it ~~is~~ was considered incidental to driving piles.

The Bridge Contractor ~~is to~~ will install the tile subdrain behind each abutment as shown and noted on sheets 2 and 4 of 17. The price bid for "4" ø Tile Subdrain" ~~is to include~~ included the excavation necessary for installation.

The excavation for piers ~~is~~ was based on the assumption that the grading work ~~has been~~ was done by others before starting pier excavation.

Test pile ~~is~~ was for determining pile length.

TEST PILE NOTE:

The lengths shown for Creosoted Piling ~~are~~ were estimated lengths for bidding purposes only. One test pile ~~shall be~~ was driven at Pier 2 before ordering additional piling. Before driving the test pile, the test pile area ~~must be~~ was excavated to bottom of footing elevation. Pile lengths ~~will be~~ were determined from test pile results. The price bid for "Creosoted Test Piling" ~~is to include~~ included all cost of furnishing and driving the test pile at the location shown on the plans and as directed by the Engineer. Test pile ~~shall~~ was remain in place as a part of the completed structure. * See E.W.O. for Pile Loading Test.

DESIGN STRESSES:

Design stresses for the following materials ~~are~~ were in accordance with A. A. S. H. O. Standard Specifications for Highway Bridges, Series of 1969, and Interim Specifications.

Concrete in accordance with Section 1. 5. 1 f'c = 3500 psi.

Reinforcing Steel in accordance with Section 1. 5. 1. D fs = 20,000 psi.

Structural Steel in accordance with Section 1. 7. 1 ASTM A-36, fs=20,000 psi.

SPECIFICATIONS:

Design: A. A. S. H. O., Series of 1969 (except designed for two lanes), and Interim Specifications.

Construction: Standard Specifications of the Iowa State Highway Commission, Series of 1972, plus current Special Provisions and Supplemental Specifications.

BRIDGE SEAT SEALER NOTE:

"Bridge seat sealer ~~is to be~~ was applied to the exposed bridge seat surface at the abutments.

The bridge seat surface ~~is to include~~ included all surfaces of the bridge seat steps, the wash between the steps, and the edge fillets. At the abutments the sealer ~~is to extend~~ was extended six inches up the front face of the backwall. The bridge seat protective coating ~~shall be~~ was Steelcote PE-50 penetrating sealer, ~~or an approved equal,~~ and ~~shall be~~ was applied in accordance with the manufacturers recommendations at a rate of 100 square feet per gallon when the temperature of the bridge seat surface ~~is~~ was above 60° F."

TOTAL ~~ESTIMATED~~ QUANTITIES

Item No.	Item	Unit	2 Abuts.	3 Piers	Superstr.	Total
38	Structural Concrete	cu. yds.	101.6	184.7	~~342.4~~ 41.6	~~628.7~~ 327.90 + (300.8) with retarder (See 8005)
40	Structural Steel	lbs.			276,630	276,630
39	Reinforcing Steel	lbs.	11,692	29,350	118,366	159,408
41	Class 20 Excavation	cu.yds.	116	279		395
42A	Aluminum Handrail	lin. ft.				687.1
5	~~Steel Handrail~~ or					
43	~~Creosoted Piling~~	~~lin.ft.~~	~~30@45'~~	~~28@30+59@25~~		~~3665~~ 0
44	Granular Backfill	cu.yds.	160			160
45	4" ø Tile Subdrain	lin.ft.				136
46	Conc. Slope Protection	sq. yds				~~549~~ 558.777
47	Creosoted Test Piling	L. S.		1@35'		~~Lump Sum~~ $ 300.00
48	2" ø Rigid Steel Conduit	lin. ft.				720
49	Bridge Seat Sealer	sq. ft.				240
50	Trainee Reimbursment	Hrs.				1299.50
8001	Pile Loading Test	Lump Sum				$ 66.71
8002	Pile Anchor	L.F.				70.00

Item N° ~~Estimate~~ Reference Information 43.8

38 The floor slab, curbs and end posts, ~~344.2~~ cu yds, ~~are to be~~ were Class "D" concrete. The remainder, 284.1 cu yds., ~~is to be~~ was Class "C" concrete.

8003	Piling Creosoted 35Ft.	L.F.		1641.00
8004	Piling Creosoted 35Ft.	L.F.		2926.00
8005	Concrete Structural (with retarder)	Cu.yds.		300.80
8006	Reconstruction bridge berm	L.S.		$ 160.00

Design For 29°07'30" Skew

330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans 107'-0 Interior Spans

SOUNDING DATA

Station : 3790 + 62.4 (Local Rd.)

Station : 790 + 62.4 (I-35) June , 1972

FRANKLIN COUNTY

IOWA STATE HIGHWAY COMMISSION

Design Sht. N° 1 of 17 File N° 23230 Design N°. 4470

DESIGNED BY: Somsak Kimsuwan TRACED BY:

DETAILED BY: D. Hanson CHECKED BY: F. Phillips

for J. Sassaman

FRANKLIN COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6(16)166--01-35	IOWA	5		4.9	85

I set proofs to Ames 7-14-72

E.W.O. No. 2 Blanket

A- Description:

8001 - The Contractor ~~is to~~ furnished the Labor and equipment necessary to set up and remove the ISHC's loading equipment used to apply a test load to one of the vertical creosoted piles in the south pad of Pier 2 on this structure.

B- Reason:

8001 - The results of test pile (Contract Item No. 47) driven in the south pad of Pier No. 2 ~~have~~ had been reviewed and it had been determined by the engineer that a load test of the test pile ~~will be~~ was required to determine the bearing capacity of the pile before ordering the piling for this structure.

C- Settlement: FORCE ACCOUNT

8001 - Pile Loading Test
Lump Sum of $70.00 _____ _____ _____ _____ $ 70.00

~~Estimated~~ Cost
Labor $ 40.00
Equip. rental 30.00
Total ~~Est~~ Cost $ 70.00

E.W.O. 3 Blanket

A - Description:

8002 - The contractor ~~is to~~ furnished and drove the following lengths of creosoted wood piling in the locations detailed on the plans or as directed by the Engineer:
Pier No. 2: 2 @ 35' = 70 L.F.

B - Reason:

8002 - It was ~~will be~~ necessary to drive 2 anchor piling in Pier No. 2 to perform the load test on the test pile in Pier No. 2 (Refer to E.W.O. No. 2 - Blanket) It was ~~is~~ necessary to determine the bearing capacity of the test pile before ordering the piling for this structure.

C - Settlement: Agreed Unit Price

8002 - Piling, Creosoted, Anchor (35 Ft.)
Add 70 L.F. @ $ 3.704 _____ _____ _____ _____ $ 259.28

The 2-35' piling ordered by the engineer take the place of 2-25' piling in the original estimate. The increased/decreased cost delivered per invoice and Article 2501.22A, 1972 std Specs. is:

8002 - Piling, Creosoted, Anchor (35ft.)

Invoice delivered cost @ 4570 (35ft.)	$ 1700/L.F.
Deliverey from 4570 to 4470 (35ft.)	0300/L.F.
Invoice delivered cost (35ft.)	$ 2.000/L.F.
Original invoice delivered Cost (25ft.)	1.597/L.F.
Increased cost	$ 0.403/L.F.
3% Iowa sales tax	0.051/L.F.
Total increased cost	$ 0.454/L.F.
Contract unit price	3.250/L.F.
Agreed Unit Price	$ 3.704/L.F.

E.W.O 4 Blanket

A - Description:

The contractor ~~is to~~ furnished and drove the following lengths of creosoted wood piling in the locations detailed on the plans:

8003 - W Abut.: 15 @ 55' = 825 L.F.; East Abut.: 15 @ 55' = 825 L.F.
(Total ~~2975~~ 1650 L.F.)

8004 - Pier 1: 28 @ 35' = 980 L.F.; Pier 2: 29 @ 35' = 1015 L.F.; Pier 3: 28 @ 35 = 980 L.F.
(Total = 2975 L.F.)

B. - Reason:

7001 - The pile lengths shown on the plans were estimated for bidding purposes only.

8003 & 8004 The load test (Item No 8002) of the 35ft. test pile in Pier No. 2 indicated that the lengths described above ~~will be~~ were necessary to obtain the minimum required bearing.

C Settlement: CONTRACT UNIT PRICE

7001 - Contract Item No. 43 - Piling Creosoted
Decrease 3665 L.F. @ $ 3.25 _____ _____ _____ _____ $ 11,911.25 CR

Agreed Unit Prices

8003 - Piling, Creosoted (55ft.)
Add 1650 L.F. @ $ 4.008 _____ _____ _____ _____ _____ $ 6,613.20

8004 - Piling, Creosoted (35ft.)
Add 2975 L.F. @ $ 3.699 _____ _____ _____ _____ _____ $ 11,004.53
$ 5,706.48

Justification of Agreed Unit Price see office copy

E.W.O. 5 Blanket

A- Description:

The contractor ~~is to~~ added an approved admixture to the class "D" floor slab concrete for the purpose of retarding hardening.
7002 - Decreased contract Item No. 38 - Concrete - Structural by 300.800 cu yds.
8005 - Added new item - Concrete, Structural with Retarder.
Added 300.800 cu yds.

B Reason:

7002 - Ordered by the Engineer to permit a continuous pour of the floor slab
& 8005 or sections and to delay hardening of the concrete during hot dry weather.

C- Settlement: CONTRACT UNIT PRICE

7002 - Contract Item No 38 - Concrete, Structural
Decreased 300.800 cu yds. @ $ 90.00 _____ _____ _____ _____ _____ $ 27,072.00 CR

AGREED UNIT PRICE

8005 - Concrete, Structural with Retarder
Add 300.800 cu yds. @ $ 9/50 _____ _____ _____ _____ _____ $ 27,523.20
Total This E.W.O $ 451.20

Justification of Agreed Unit Price: Article 2403.25, 1972 Std. Specifications.

E.W.O. 6

A- Description:

8006 - The contractor ~~is to~~ furnished the labor and equipment necessary to reshape the face of the berm for the west bridge abutment as directed by the engineer prior to placement of the slope protection for the west abutment.

B- Reason:

8006 - Required to correct improper berm construction which resulted from an error in elevation on the plans for the face of the berm. This shaping conformed to the original intent of the design.

C - Settlement: Agreed Total Price

8006 - Reconstruct portion of Bridge Berm _____ _____ _____ _____ _____ $ 150.00

JUSTIFICATION OF AGREED TOTAL PRICE

Compared favorably with similar work on recently completed work on other I-35 Projects in this residency.

E.W.O No. 1 Blanket

A. Description

8999 - The contractor ~~shall~~ stockpiled the following materials which will later became incorporated in the work and ~~be~~ paid at contract prices.
Steel, reinforcing
Steel, structural
Piling, creosoted
Handrail, aluminum

B. Reason

8999 - To pay for stockpiled materials of acceptable quality which had been stockpiled in a manner acceptable to the Engineer.
Article 1109.06, Std. Spec. Series of 1972

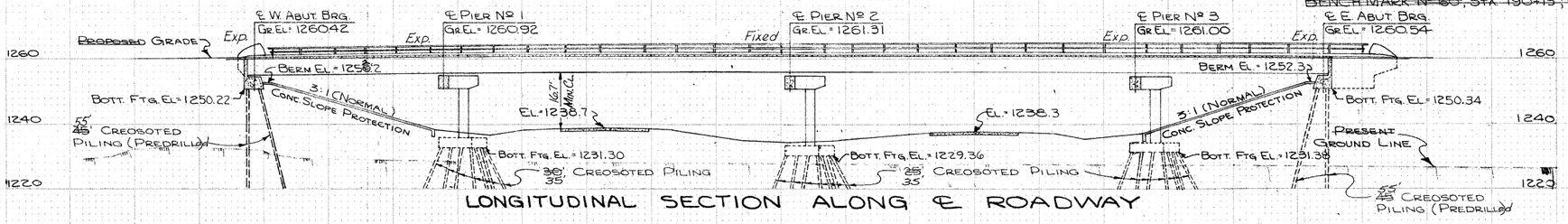
C. Settlement

Invoice prices of materials delivered on the work or 90% of the invoice price of materials stored elsewhere in Iowa

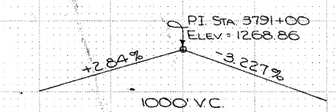
8999 Stockpiled materials
~~Estimated~~ total invoice price $ 79,000.00

Bench Mark No. 94, Sta. 3792+25, 17' Lt. I.S.H.C. Marker in North East Curb County Road Bridge Elev. 1261.22

~~BENCH MARK N° 60, STA. 790+13, FOUND LAG BOLT S SIDE TEL. POLE 228' Lt. EL. = 1231.14~~

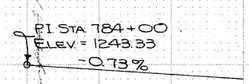


LONGITUDINAL SECTION ALONG ℄ ROADWAY

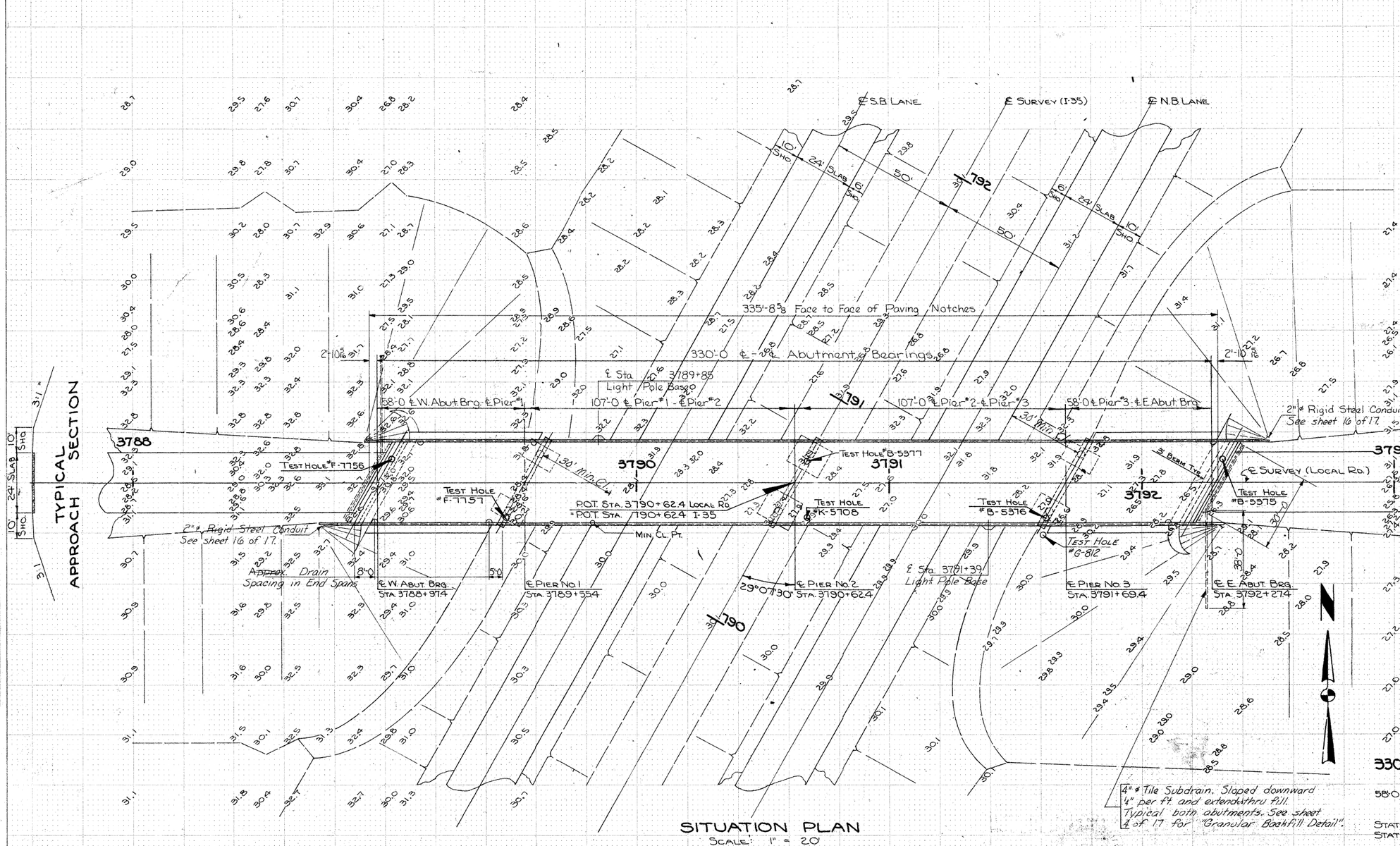


~~PROPOSED~~ GRADE
LOCAL ROAD

Traffic Count: 305 A.D.T. (1990)



~~PROPOSED~~ GRADE
ON I-35



TYPICAL APPROACH SECTION

SITUATION PLAN

Scale: 1" = 20'

LOCATION:
County Road
over I-35
T-92N R-21W
Marion Twp.
Sec. 5 & 8
Franklin County

Design For 29°07'30" Skew

330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans — 107'-0 Interior Spans

SITUATION PLAN

Station: 3790+62.4 (Local Rd.)
Station: 790+62.4 (I-35)

June, 1972

FRANKLIN COUNTY

Iowa State Highway Commission
Design Sht. N° 2 of 17 File N° 23230 Design N° 4470

FINAL SURVEY	DATE	BY
SURVEYED		
PLOTTED		
TRACING		
NOTE BOOK		
NO.		
AREAS CHECKED		

ORIGINAL SURVEY	DATE	BY
SURVEYED		
PLOTTED		
TRACING		
NOTE BOOK		
NO.		
AREAS CHECKED		

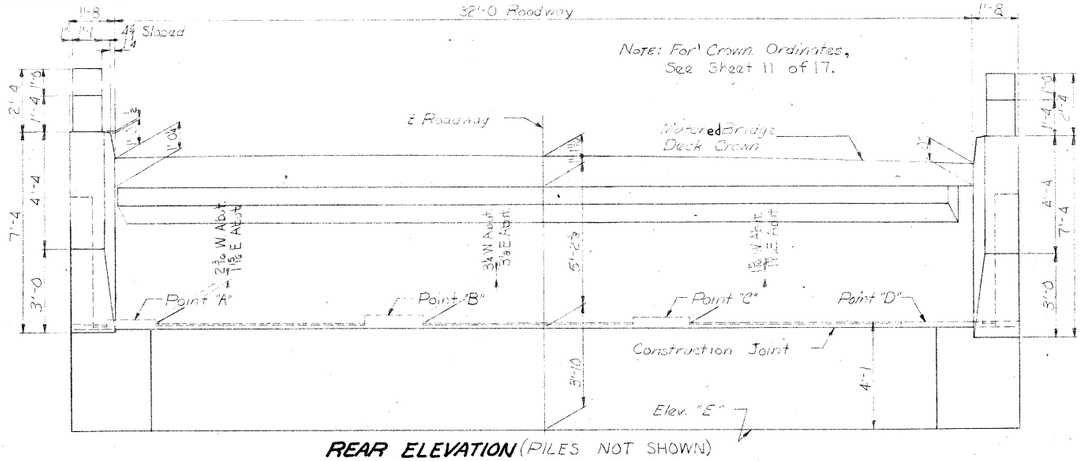
DESIGNED BY: Sam I Kanan — TRACED BY: D. Hansen
DETAILED BY: — CHECKED BY: L. Phillips

DESIGN N° 4470 FRANKLIN COUNTY

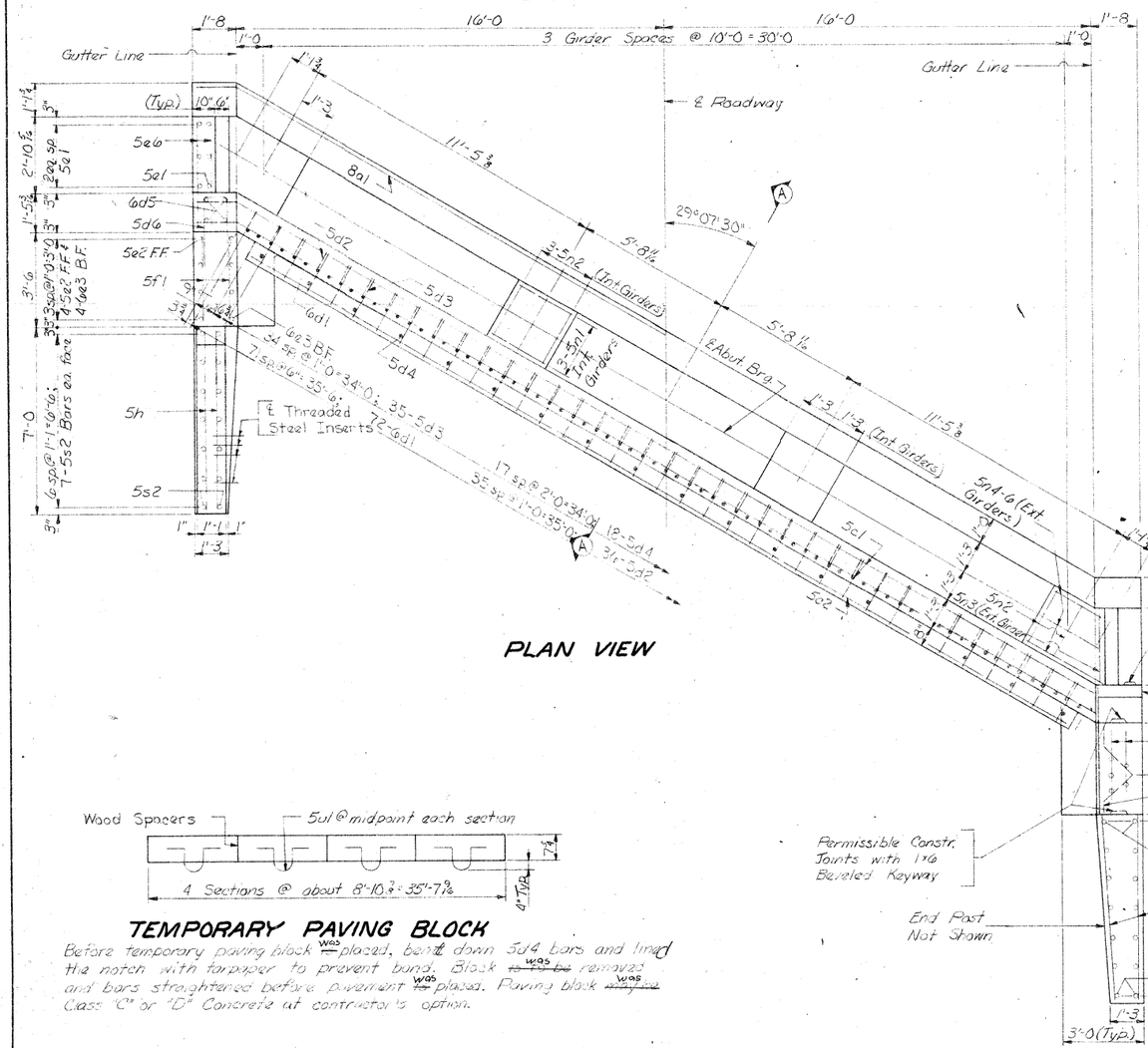
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I 35-6(16)166--01-35	IOWA	5		44	85

No. 94, Sta. 3792+25, 17' Lt. I.S.H.C. Marker in North East Curb County Road Bridge.

BENCH MARK: ~~No 60, Sta 790+5, 223' Lt., Found Lag Bolt in S. Side Telephone Pole, Elev = 231.14~~ Elev. 1261.22



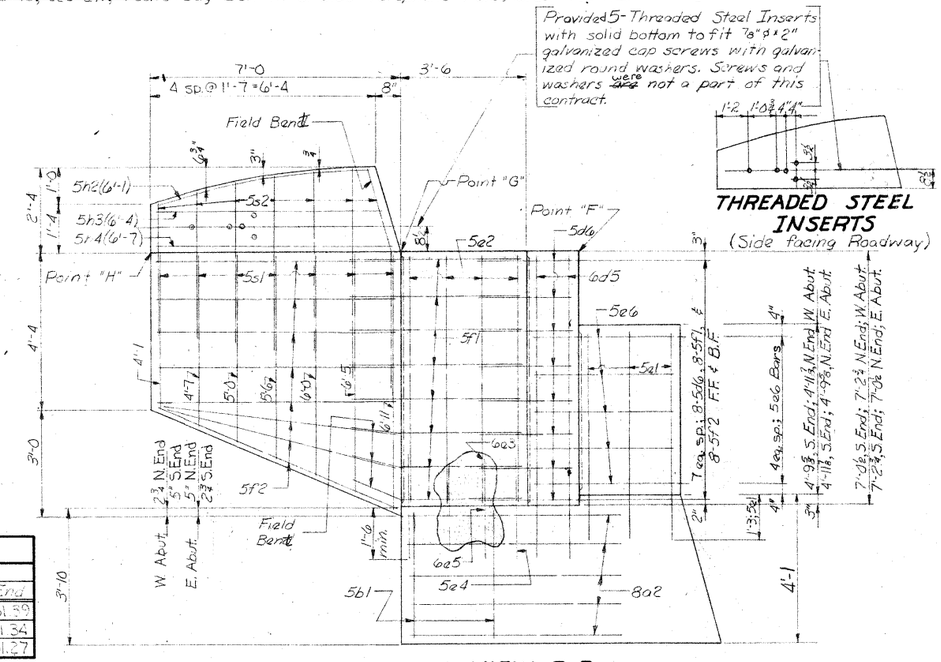
REAR ELEVATION (PILES NOT SHOWN)



PLAN VIEW

TEMPORARY PAVING BLOCK

Before temporary paving block ~~is~~ was placed, bend down 5u4 bars and lined the notch with tarpaper to prevent bond. Block ~~is to be~~ was removed and bars straightened before pavement ~~is~~ was placed. Paving block ~~shall be~~ was Class "C" or "D" Concrete at contractor's option.

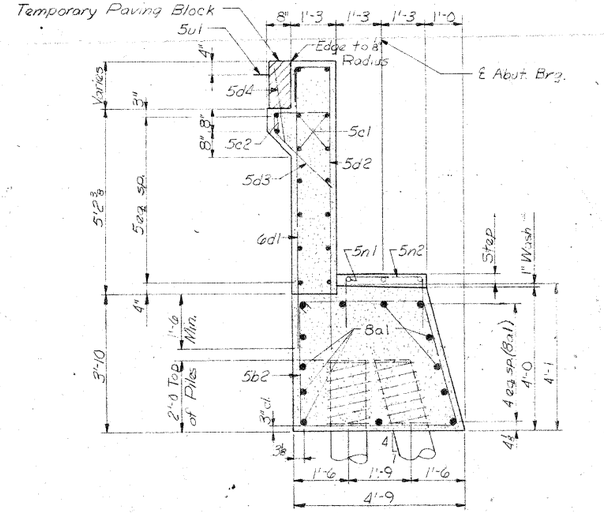


VIEW B-B

THREADED STEEL INSERTS (Side facing Roadway)

WING ELEVATIONS

Point	West Abut. N. End	West Abut. S. End	East Abut. N. End	East Abut. S. End
"F"	1261.28	1261.09	1261.21	1261.39
"G"	1261.23	1261.04	1261.16	1261.34
H	1261.16	1260.96	1261.09	1261.27



SECTION A-A

TABLE OF ELEVATIONS

Point	W. Abut.	E. Abut.
"A"	1254.48	1254.58
"B"	1254.57	1254.68
"C"	1254.51	1254.63
"D"	1254.30	1254.42
"E" (Bott. of Ftg.)	1250.22	1250.34

Design For 29°07'30" Skew

330'-0 - 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans — 107'-0 Interior Spans

ABUTMENT DETAILS

Station: 3790+62.40 (Local Rd.)

Station: 790+62.40 (I-35)

June, 1972

FRANKLIN COUNTY

IOWA STATE HIGHWAY COMMISSION

Design Sheet No.: 3 Of 17 File No.: 23230 Design No.: 4470

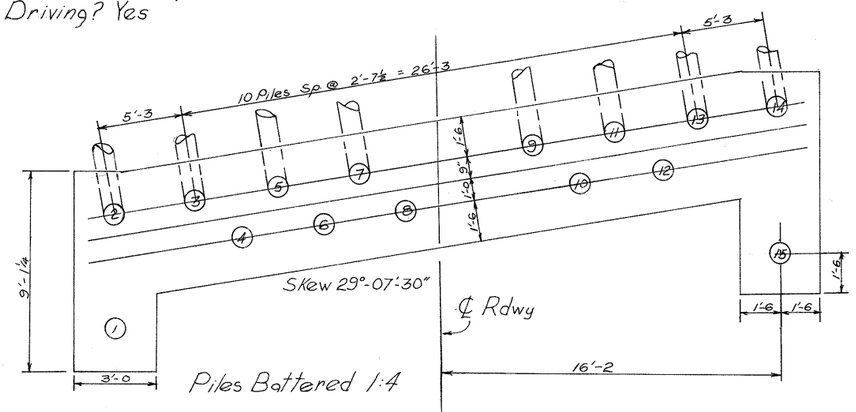
DESIGNED BY: S. Kanao — TRACED BY: — DETAILED BY: D.A. Lundt — CHECKED BY: J. R. Ellis

FRANKLIN COUNTY

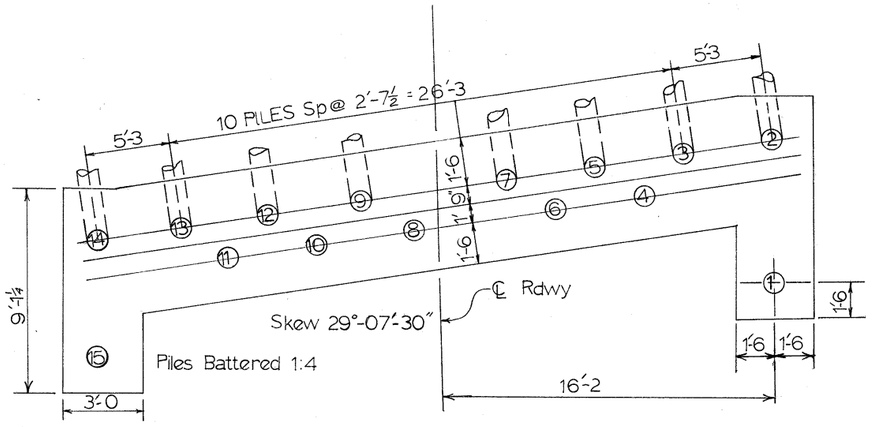
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6(16)166--01-35	IOWA	5		45	85

Kind of piling Treated Yellow Pine
Type of Hammer Diesel
I.H. Comm. No. of Hammer Delmag D-12
Gross Weight of Hammer 2750 LBS. Effective Wt. 2750
Hammer Energy W x Ave. H Ft. Tons. — Wt. 1030
Driving Cap No 2115
Weight of Pile 2030 lbs
Formula Used P = 3E ÷ S + 0.1 x W ÷ W + M
Plan Length 45'
Required Bearing Not Less 18 Ton Nor More 40 Ton
Was Bearing Determined Immediately
Upon Completion of Driving? Yes

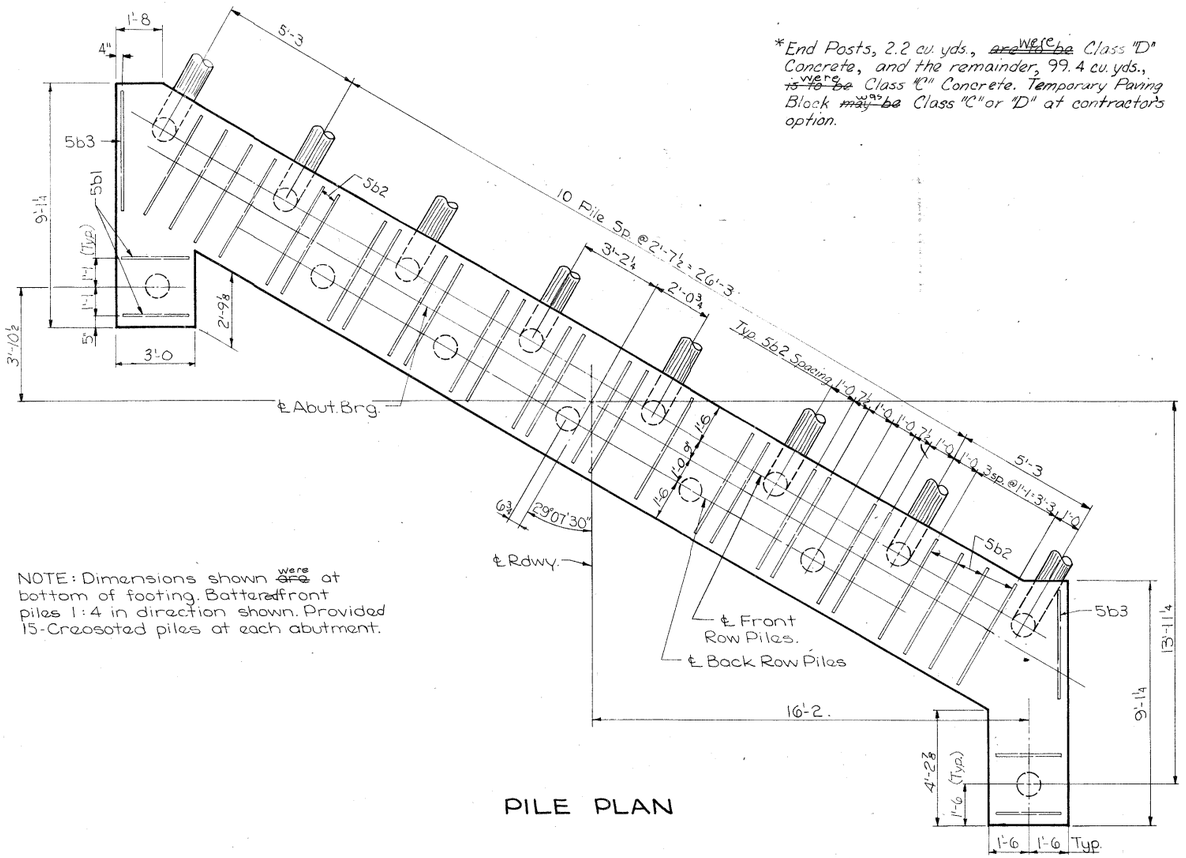
Proj. No I-35-6(16)166--01-35 County Franklin
Contractor Herberger Const. Co.
Design No. 4470 Sta of C.L. 790+62.4 I-35
Foundation No. East Abutment & West Abutment
Length Width and Type of Structure 330' x 32' Continuous Welded Girder Bridge
Remarks: 55' Piling ordered by central office
Bearing was determined by test load
10 Ton Min. 40 Ton Max.



Pile No.	Date Driven	Length in Leads Nearest Ft.	Length Cut off Nearest Tenth Ft.	Length in Structure	Ave. Penetration Last 10 Blows	Ave. H in Feet	Bearing in TONS
1	3-20-74	55'	0.2	54.8	0.600	5.5	13.4
B2	3-20-74	55'	0.2	54.8	0.400	6.0	20.5
B3	3-20-74	55'	0.0	55.0	0.425	5.5	17.9
4	3-20-74	55'	0.2	54.8	0.450	5.5	17.1
B5	3-20-74	55'	0.6	54.4	0.400	5.5	18.8
6	3-20-74	55'	0.5	54.5	0.475	5.5	16.3
B7	3-20-74	55'	1.0	54.0	0.350	6.0	22.8
8	3-21-74	55'	0.2	54.8	0.525	6.0	16.4
B9	3-21-74	55'	0.3	54.7	0.625	6.0	14.1
10	3-21-74	55'	0.5	54.5	0.375	5.5	19.8
B11	3-21-74	55'	0.6	54.4	0.725	6.0	12.4
12	3-21-74	55'	0.5	54.5	0.675	5.5	12.1
B13	3-21-74	55'	0.7	54.3	0.500	6.0	17.1
B14	3-21-74	55'	0.3	54.7	0.550	5.5	14.5
15	3-21-74	55'	1.3	53.7	0.650	5.5	12.5
	Total	825'	7.1	817.9			
	Length in structure = 800.1 Ft.						
	Total cut off 1.5' or Less = 6.9 Ft.						
	½ cut off 1.6' or greater = 0.0 Ft.						
	Length measured for Payment = 816.0 Ft.						



Pile No.	Date Driven	Length in Leads Nearest Ft.	Length Cut off Nearest Tenth Ft.	Length in Structure	Ave Penetration Last 10 Blows	Ave H in Feet	Bearing in Tons
1	3-13-74	55'	1.6	53.4	0.175	5.0	31.1
B2	3-13-74	55'	7.8	47.2	0.125	5.0	38.0
B3	3-13-74	55'	1.6	53.4	0.300	6.0	25.6
4	3-13-74	55'	1.6	53.4	0.175	5.5	34.2
B5	3-13-74	55'	1.4	53.6	0.475	5.5	16.3
6	3-13-74	55'	1.1	53.9	0.175	5.0	31.1
B7	3-13-74	55'	1.2	53.8	0.325	5.5	22.1
8	3-13-74	55'	0.9	54.1	0.475	5.5	16.3
B9	3-13-74	55'	1.1	53.9	0.400	5.5	18.8
10	3-14-74	55'	0.4	54.6	0.275	4.5	20.5
11	3-14-74	55'	0.4	54.6	0.200	5.0	28.5
B12	3-14-74	55'	0.2	54.8	0.200	4.5	25.6
B13	3-14-74	55'	0.2	54.8	0.175	5.5	34.2
B14	3-15-74	55'	5.4	49.6	0.100	4.5	38.4
15	3-15-74	55'	0.0	55.0	0.400	4.5	15.4
	Total	825'	24.9	800.1			
	Length in Structure = 800.1 Ft.						
	Total cut off 1.5' or Less = 2.9 Ft.						
	½ cut off 1.6' or greater = 0.0 Ft.						
	Length measured for Payment = 816.0 Ft.						



PILE PLAN

*End Posts, 2.2 cu. yds., ~~are to be~~ were Class "D" Concrete, and the remainder, 99.4 cu. yds., ~~is to be~~ were Class "C" Concrete. Temporary Paving Block ~~may be~~ was Class "C" or "D" at contractor's option.

NOTE: Dimensions shown ~~are~~ were at bottom of footing. Battered front piles 1:4 in direction shown. Provided 15-Creosoted piles at each abutment.

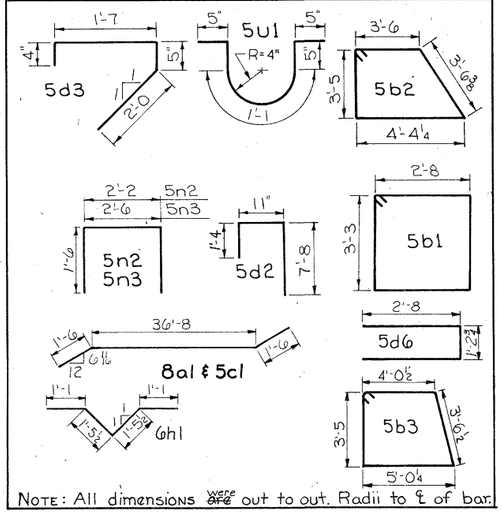
CONCRETE PLACEMENT QUANTITIES

Location	W. Abut.	E. Abut.
Footing & Steps	27.6	27.6
Backwall	12.8	12.8
Maskwalls	0.9	0.9
Wings & Wingwalls	7.5	7.5
Paving Block	0.9	0.9
End Posts 2 @ 0.54	1.1	1.1
Total - Cu. Yds.	50.8	50.8

~~ESTIMATED~~ QUANTITIES - TWO ABUTS.

Item	Unit	W. Abuts	E. Abuts.	Total
*Structural Concrete	C.Y.	50.8	50.8	101.6
Reinforcing Steel	Lbs.	5,846	5,846	11,692
Class 20 Excavation	C.Y.	58	58	116
Granular Backfill	C.Y.	80	80	160
Creosoted Piling	L.F.	~~15 @ 45'~~ 15 @ 55'	~~15 @ 45'~~ 15 @ 55'	~~1350~~ 1650

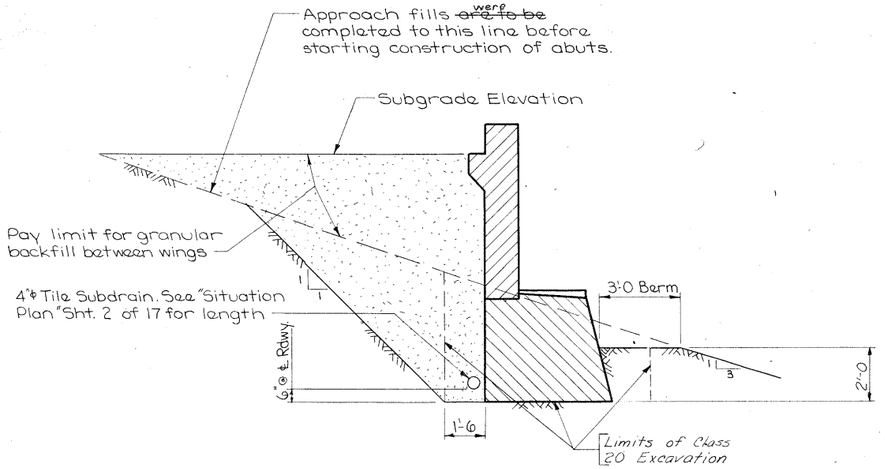
BENT BAR DETAILS



NOTE: All dimensions ~~are~~ were out to out. Radii to ℄ of bar.

REINFORCING BAR LIST - ONE ABUT.

Bar	Location	Shape	No	Length	Weight
8a1	Footing Longitudinal		13	39'-8	1377
8a2	"	—	20	6'-0	320
5b1	Footing, Hoops		4	12'-7	52
5b2	" "		28	15'-6	453
5b3	" "		2	16'-9	35
5c1	Backwall, Longit.		14	39'-8	579
5c2	Paving Support, Longit.	—	2	34'-9	72
6d1	Backwall, Vert., B.F.	—	72	7'-8	829
5d2	" " , F.F.	—	36	9'-9	366
5d3	Paving Support		35	4'-2	152
5d4	" Dowels	—	18	1'-9	33
6d5	Backwall, Vert. Ends	—	8	8'-6	102
5d6	Backwall to Wing		16	6'-5	107
5e1	Maskwall, Vert., B.F. & F.F.	—	12	6'-0	75
5e2	Wingwall, " , F.F.	—	8	8'-6	71
6e3	" " , B.F.	—	8	8'-6	102
5e4	Footing to Wing Dowels, F.F.	—	8	3'-0	25
6e5	" " " " , B.F.	—	8	3'-0	36
5e6	Maskwall, Horiz., B.F. & F.F.	—	20	3'-11	82
5f1	Wingwall, Horiz., B.F. & F.F.	—	32	4'-9	159
5f2	Wing " " "	—	32	6'-8	223
6h1	Rail Post Anchor		2	5'-0	15
5h2	End Posts, Horiz.	—	4	6'-1	25
5h3	" " "	—	4	6'-4	26
5h4	" " "	—	4	6'-7	27
5s1	Wing, Vertical	—	28	Varies	161
5s2	" "	—	28	3'-7	105
5u1	Paving Block Lifting Hoops		4	2'-7	11
5n1	Bridge Seat, Horiz., Int.	—	6	2'-2	14
5n2	" " , Vert., "		10	5'-0	52
5n3	" " " , Ext.		2	5'-4	11
5n4-6	" " , Horiz., "	—	6	Varies	15
#2	Pile Spiral		15	38'-6	96
	Spiral Spacers C 508 x 0.65	—	30	1'-10	38
				Total (Lbs.)	5,846



GRANULAR BACKFILL DETAIL

ABUTMENT NOTES:

All exposed corners of 90° or sharper ~~are to be~~ were filleted with a 3/4" dressed and beveled strip.

The minimum clear distance from face of concrete to near reinforcing bar ~~is to be~~ was 2" unless otherwise noted or shown. All reinforcing steel ~~is to be~~ was securely wired in place before concrete ~~is~~ was placed.

All backfill behind the abutment between the wings ~~is to be~~ was granular backfill. The remainder of the abutment excavation ~~is to be~~ was backfilled with soil. See sheet 4 of 17.

The backwall ~~is to be~~ was placed after the superstructure slab ~~is~~ was in place

The maskwall ~~is to be~~ was in place before the superstructure slab ~~is~~ was placed.

The cost of all preformed joint material ~~is to be~~ was included in the price bid for concrete

The creosoted wood piles in the abutment footings ~~are to be~~ were driven to full penetration if applicable, but in no case to a bearing value less than 18 tons nor more than 40 tons. * See Abutment Pile Log.

The spirals at the top of each pile are made up of 7 turns of 1/4"ϕ rod, 21" diameter, 3" pitch, with 2 - C 508 x 0.65 spacers punched to hold spiral.

Design For 29°07'30" Skew

330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans 107'-0 Interior Spans

ABUTMENT DETAILS

Station: 3790 + 62.4 (Local Rd.)
Station: 790 + 62.4 (I-35)

June, 1972

FRANKLIN COUNTY

IOWA STATE HIGHWAY COMMISSION

Design Sheet No.: 4 Of 17 File No.: 23230 Design No.: 4470

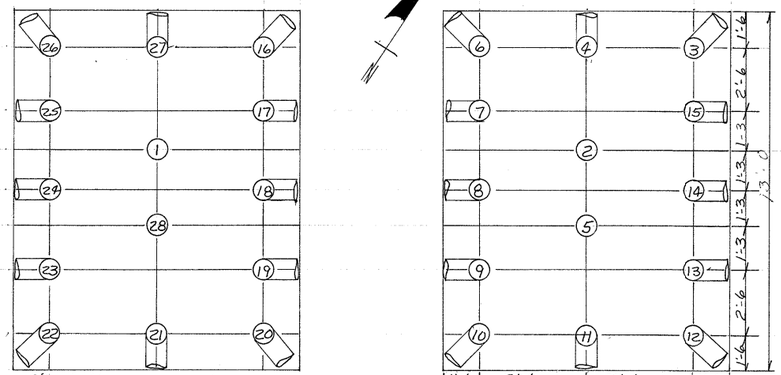
DESIGNED BY: Sameh Kanan
DETAILED BY:
TRACED BY: D Ranson
CHECKED BY: T Chilliss

FRANKLIN COUNTY

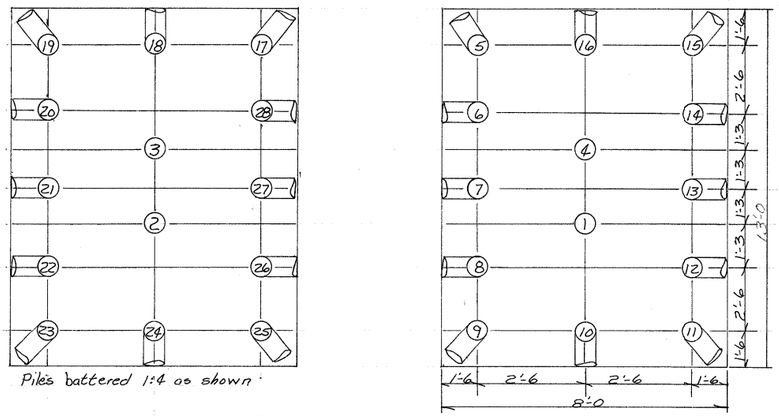
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6(16)166--01-35	IOWA	5		46	85

Kind of Piling ___ ___ ___ Treated Yellow Pine
Type of Hammer ___ ___ ___ Diesel
I.H. Comm. N° of Hammer ___ Delmag D-12
Gross Wt. of Hammer ___ ___ 2750 lbs. Effective Wt. 2750 lbs.
Hammer Energy ___ ___ ___ W x Ave H. Ft. Tons
Driving Cap N° ___ ___ ___ 2115 W Wt. 1050 lbs
Weight of Pile ___ ___ ___ 1246 lbs.
Formula Used ___ ___ ___ P=(3E÷S+01)X W÷W+M)
Plan Length ___, ___ ___ ___ 30'
Required Bearing ___ ___ ___ 20 ton min, 40 ton max.
Was bearing determined immediately upon completion of driving? ___ ___ Yes

Project N° 1-35-6(16)166--01-35 Franklin County
Contractor Herberger Const. Co.
Design N° 4470 Sta. of ℄ 790 + 62.4
Foundation N° Pier N° 1 & Pier N° 3
Length, Width, ℄ 330'-0 x 32'-0 Continuous
Type of Structure Welded Girder Bridge
Remarks: 35' piling ordered by the Central office. Bearing was determined by test load, 10 ton min; 40 ton max.



Piles battered 1:4 as shown



Piles battered 1:4 as shown

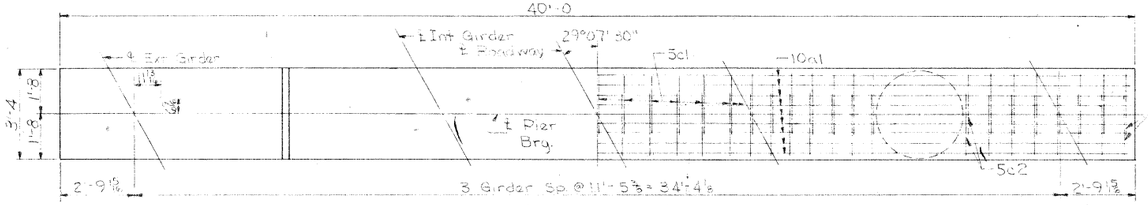
Pier #1

Pile N°	Date Driven	Length in Leads Nearest Foot	Length in Structure	Length Cut off Nearest Tenth Foot	Ave. Penetration Last 10 Blows	Ave. H. in Feet	Bearing in Tons
1	2-7-74	35'	34.1	0.9	0.275	5.5	28.4
2	2-7-74	35'	34.4	0.6	0.250	5.0	27.7
B 3	2-7-74	35'	34.6	0.4	0.275	5.5	28.4
B 4	2-7-74	35'	34.7	0.3	0.225	5.5	32.8
5	2-8-74	35'	34.5	0.5	0.300	5.5	26.6
B 6	2-8-74	35'	34.6	0.4	0.550	5.0	16.9
B 7	2-8-74	35'	34.5	0.5	0.275	5.5	28.4
B 8	2-8-74	35'	34.3	0.7	0.375	5.0	20.4
B 9	2-8-74	35'	34.4	0.6	0.350	5.0	21.5
B 10	2-8-74	35'	34.9	0.1	0.375	5.5	22.4
B 11	2-8-74	35'	34.8	0.2	0.275	5.5	28.4
B 12	2-8-74	35'	34.8	0.2	0.325	5.5	25.1
B 13	2-8-74	35'	34.8	0.2	0.350	5.5	23.7
B 14	2-8-74	35'	34.4	0.6	0.725	5.0	11.7
B 15	2-8-74	35'	34.3	0.7	0.300	5.5	26.6
B 16	2-8-74	35'	34.4	0.6	0.325	5.0	22.8
B 17	2-8-74	35'	34.3	0.7	0.325	5.5	25.1
B 18	2-8-74	35'	34.5	0.5	0.375	5.0	20.4
B 19	2-8-74	35'	34.6	0.4	0.450	5.5	19.4
B 20	2-8-74	35'	34.7	0.3	0.350	5.5	23.7
B 21	2-8-74	35'	34.8	0.2	0.425	5.0	18.5
B 22	2-8-74	35'	34.8	0.2	0.450	5.0	17.6
B 23	2-8-74	35'	34.3	0.7	0.350	5.5	23.7
B 24	2-8-74	35'	34.3	0.7	0.400	5.5	21.3
B 25	2-8-74	35'	34.4	0.6	0.275	5.5	28.4
B 26	2-8-74	35'	34.2	0.8	0.350	5.5	23.7
B 27	2-8-74	35'	34.4	0.6	0.350	5.5	23.7
28	2-8-74	35'	33.8	1.2	0.275	5.5	28.4
	Total	980	965.6	- 14.4			
	Length in Structure =			965.6 Ft.			
	Total Cutoff 1.5 or less =			14.4 Ft.			
	½ Cutoff 1.6' or greater =			0.0 Ft.			
	Length measured for payment =				980.0 Ft.		

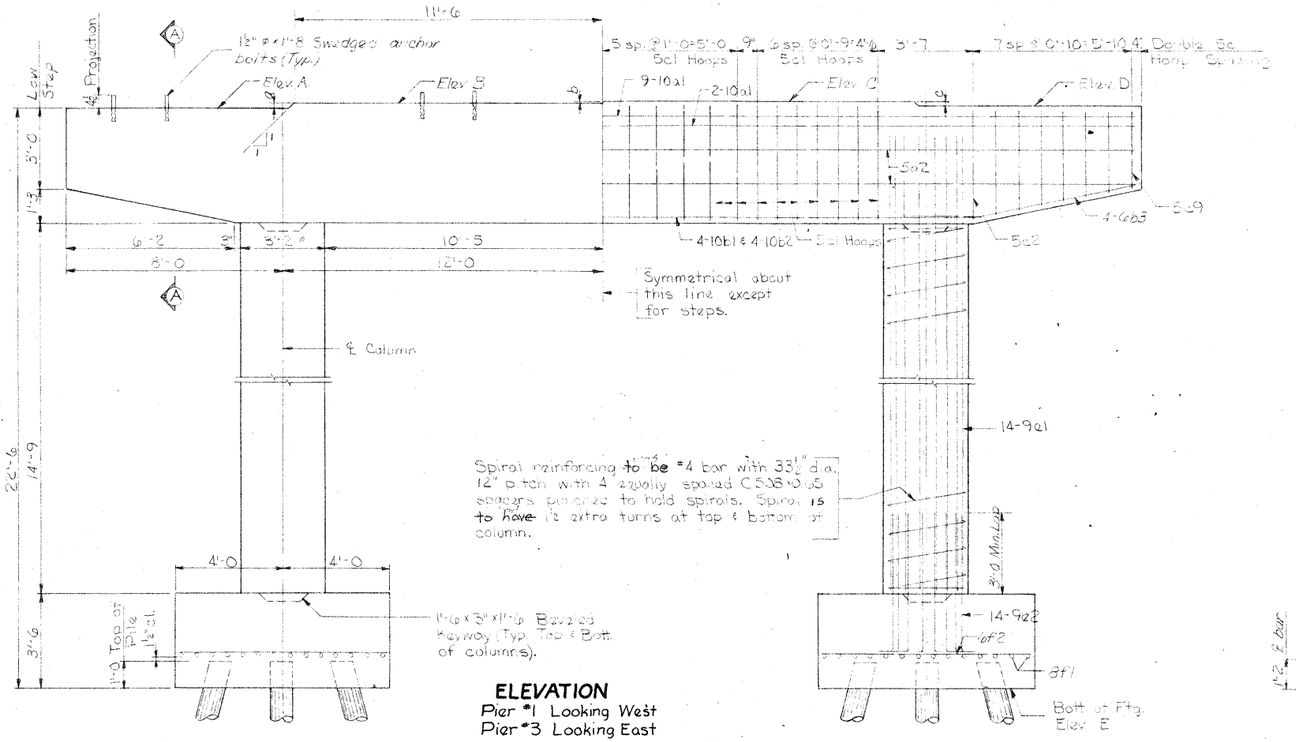
Pier #3

1	2-8-74	35'	33.7	1.3	0.550	4.5	13.4
2	2-8-74	35'	33.7	1.3	0.475	4.5	15.2
3	2-8-74	35'	33.6	1.4	0.475	4.5	15.2
4	2-11-74	35'	33.7	1.3	0.175	5.5	38.7
B 5	2-11-74	35'	34.0	1.0	0.350	6.0	25.8
B 6	2-11-74	35'	33.8	1.2	0.200	5.5	35.5
B 7	2-11-74	35'	33.9	1.1	0.325	5.0	22.8
B 8	2-11-74	35'	33.9	1.1	0.375	5.5	22.4
B 9	2-11-74	35'	34.2	0.8	0.350	5.0	21.5
B 10	2-11-74	35'	34.3	0.7	0.425	5.0	18.5
B 11	2-11-74	35'	34.0	1.0	0.275	5.5	28.4
B 12	2-11-74	35'	34.0	1.0	0.250	5.5	30.4
B 13	2-11-74	35'	33.8	1.2	0.275	5.0	25.8
B 14	2-11-74	35'	33.8	1.2	0.250	5.5	30.4
B 15	2-11-74	35'	34.1	0.9	0.350	5.0	21.5
B 16	2-11-74	35'	34.0	1.0	0.375	5.0	20.4
B 17	2-11-74	35'	34.2	0.8	0.425	5.0	18.5
B 18	2-11-74	35'	34.2	0.8	0.375	5.5	22.4
B 19	2-11-74	35'	34.2	0.8	0.300	5.0	26.2
B 20	2-11-74	35'	34.1	0.9	0.550	5.5	16.9
B 21	2-11-74	35'	34.0	1.0	0.400	5.0	19.4
B 22	2-11-74	35'	34.1	0.9	0.325	5.0	22.8
B 23	2-11-74	35'	34.4	0.6	0.600	5.0	13.8
B 24	2-11-74	35'	34.2	0.8	0.650	5.0	12.9
B 25	2-11-74	35'	34.1	0.9	0.475	4.5	15.2
B 26	2-11-74	35'	34.1	0.9	0.675	5.0	12.5
B 27	2-11-74	35'	34.0	1.0	0.475	5.0	16.8
B 28	2-11-74	35'	34.0	1.0	0.425	5.0	18.5
	Total	980	952.1	27.9			
	Length in structure =			952.1 Ft.			
	Total Cutoff 1.5 or less =			27.9 Ft.			
	½ Cutoff 1.6 or greater =			0.0 Ft.			
	Length measured for payment =				980.0 Ft.		

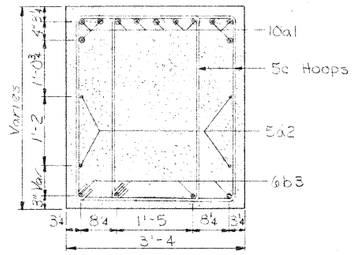
Bench Mark No. 94, Sta. 3792+25, 17' Lt. I.S.H.C. Marker in North East Curb County Road Bridge Elev. 1261.22



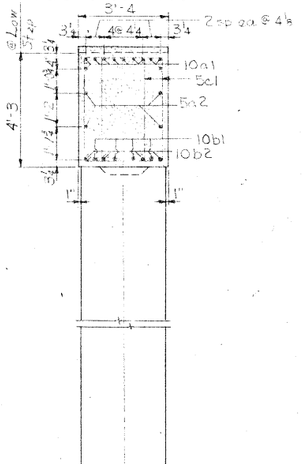
PLAN OF CAP



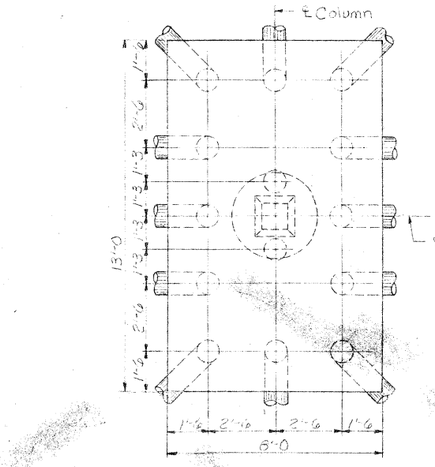
ELEVATION
Pier #1 Looking West
Pier #3 Looking East



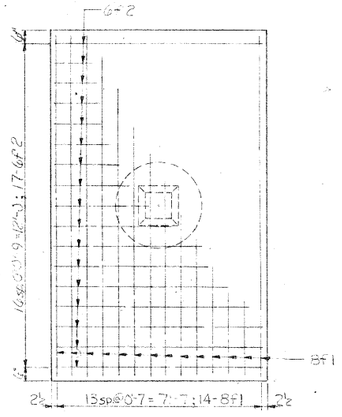
SECTION A-A



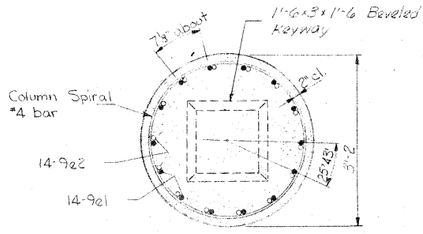
℄ SECTION



PILE LAYOUT



FOOTING REINFORCING LAYOUT



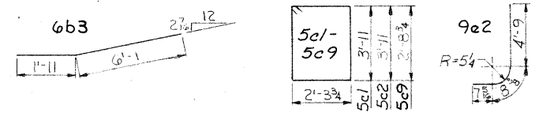
SECTION THRU COLUMN

TABLE OF ELEVATIONS & STEPS					
Elev.	Pier #1	Pier #3	Steps	Pier #1	Pier #3
A	1253.80	1253.88	a	2 5/16	2 5/16
B	1253.99	1254.07			
C	1254.03	1254.10	b	½	⅜
D	1253.91	1253.98	c	1 7/16	1 7/16
E	1231.30	1231.38			

REINFORCING BAR LIST ~ ONE PIER

Bar	Location	Shape	No	Length	Weight
10a1	Cap, Top, Longit.	——	11	39'-8	1878
5a2	" , Sides, Longit.	——	4	39'-8	165
10b1	Cap, Bott., Longit.	——	4	21'-0	361
10b2	" , " , "	——	4	27'-0	465
6b3	Cantilever, Bott., Longit.	—/	8	8'-0	96
5c1	Cap Hoops	⊓	50	13'-2	687
5c2-9	Cantilever Hoops	⊓	32	Varies	400
9e1	Column, Vert.	——	28	18'-0	1714
9e2	Footing to Column Dowels	⌐	28	6'-1	579
8f1	Footing, Longit.	——	28	12'-8	947
6f2	" , Transv.	——	34	7'-8	392
	Spiral Spacers C 508 ×0.65	——	8	14'-9	81
#4bar	Column Spiral	⌀	2	153'-9	205
				Total (Lbs.)	7970

BENT BAR DETAILS



Note: All dimensions ~~are~~ were out to out. Radii to ℄ of bar.

CONCRETE PLACEMENT QUANTITIES - PIERS #1 & #3

Item	Pier #1	Pier #3
Pier Cap	20.7	20.7
Pier Columns	8.6	8.6
Pier Footings	26.2	26.2
Total - Cu. Yds.	55.5	55.5

PIER NOTES:

All exposed corners 90° or sharper ~~are to be~~ were filleted with a ¾" dressed and beveled strip.

Minimum clear distance from face of concrete to near reinforcing bar ~~is to be~~ was 2" unless otherwise noted or shown.

Reinforcing steel ~~is to be~~ was securely wired in place before concrete ~~is~~ was placed.

Anchor bolts ~~are to be~~ were preset. Anchor bolts ~~are~~ were included in superstructure "Structural Steel" quantity.

The spiral reinforcing ~~may~~ was be spliced by lapping 1½ turns. The length of the spiral shown ~~does~~ did not include the lapped length of the splices. The cost of the laps ~~is to be~~ was included in the price bid for other reinforcing.

The pier piles ~~are to be~~ were driven to full penetration, if practicable, but in no case to a bearing less than 21 tons for Pier 2 and 20 tons for Piers 1 & 3 nor more than 40 tons per pile.* See Pier Pile Log.

Note: See Sheet 6 of 17 for "~~Estimated~~ Quantities - Three Piers".

Design For 29° 07' 30" Skew
330'-0 × 32' CONTINUOUS WELDED GIRDER BRIDGE
58'-0 End Spans 107'-0 Center Span
PIER #1 & #3 DETAILS
Station: 3790 + 62.40 (Local Rd.)
Station: 790 + 62.40 (I-35)
June, 1972
FRANKLIN COUNTY
IOWA STATE HIGHWAY COMMISSION
Design Sheet No.: 5 Of 17 File No.: 23230 Design No.: 4470

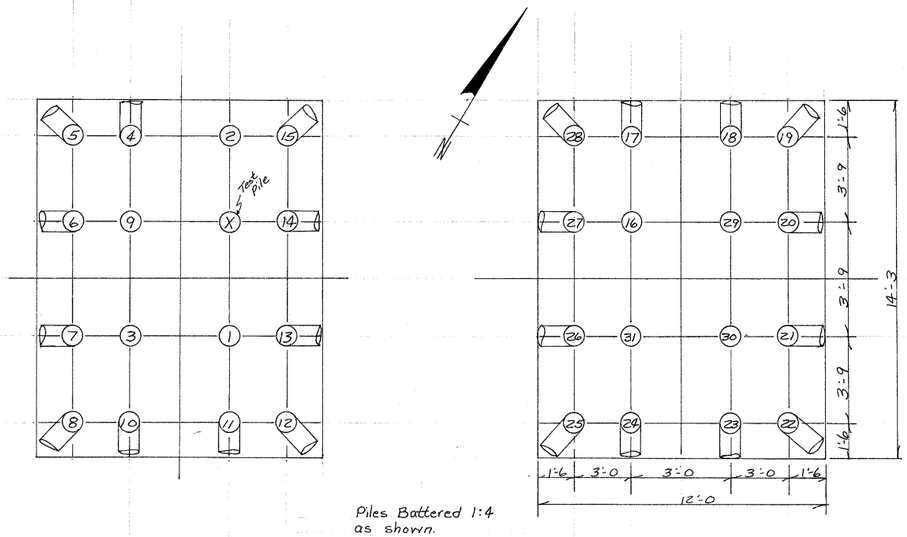
DESIGNED BY L. Phillips
DETAILED BY C. Dysart
TRACED BY
CHECKED BY B. Watson

FRANKLIN COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6(16)166--01-35	IOWA	3		47	95

Kind of Piling: Treated Yellow Pine
Type of Hammer: Diesel
I.H. Comm. Nº of Hammer: Delmag D-12
Gross Weight of Hammer: 2750 lbs. Effective Wt. 2750 lbs.
Hammer Energy: W x Ave H. Ft. Tons
Driving Cap. Nº: 2115 W Wt. 1050 lbs.
Formula Used: P=(3E÷S+0.1)X W÷(W+M)
Plan Length: 25'
Required Bearing: 21 Ton min; 40 Ton max.
Was bearing determined immediately upon completion of driving? Yes

Project Nº: I-35-6(16)166--01-35 Franklin Co.
Contractor: Herberger Const Co.
Design Nº: 4470 sta. of ℄ 790 + 62.4
Foundation Nº: Pier Nº 2
Length, Width, ℄ 330'x 32' Continuous
Type of Structure: Welded Girder Bridge
Remarks: 35' Piling ordered by the Central Office. Bearing was determined by test load. 10 ton min. 40 ton max.
Note: Piles Nº 1 & 2 were anchor piles for test load.

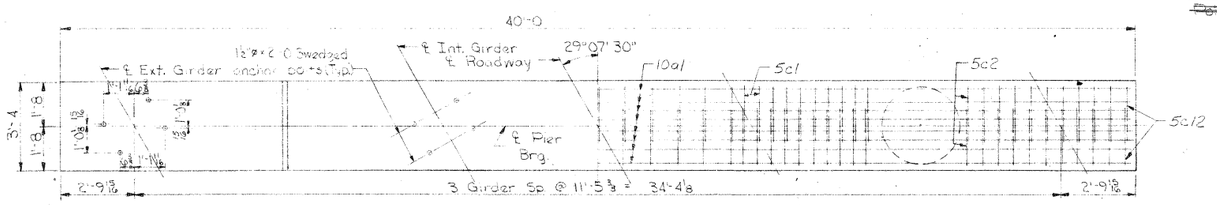


Piles Battered 1:4 as shown.

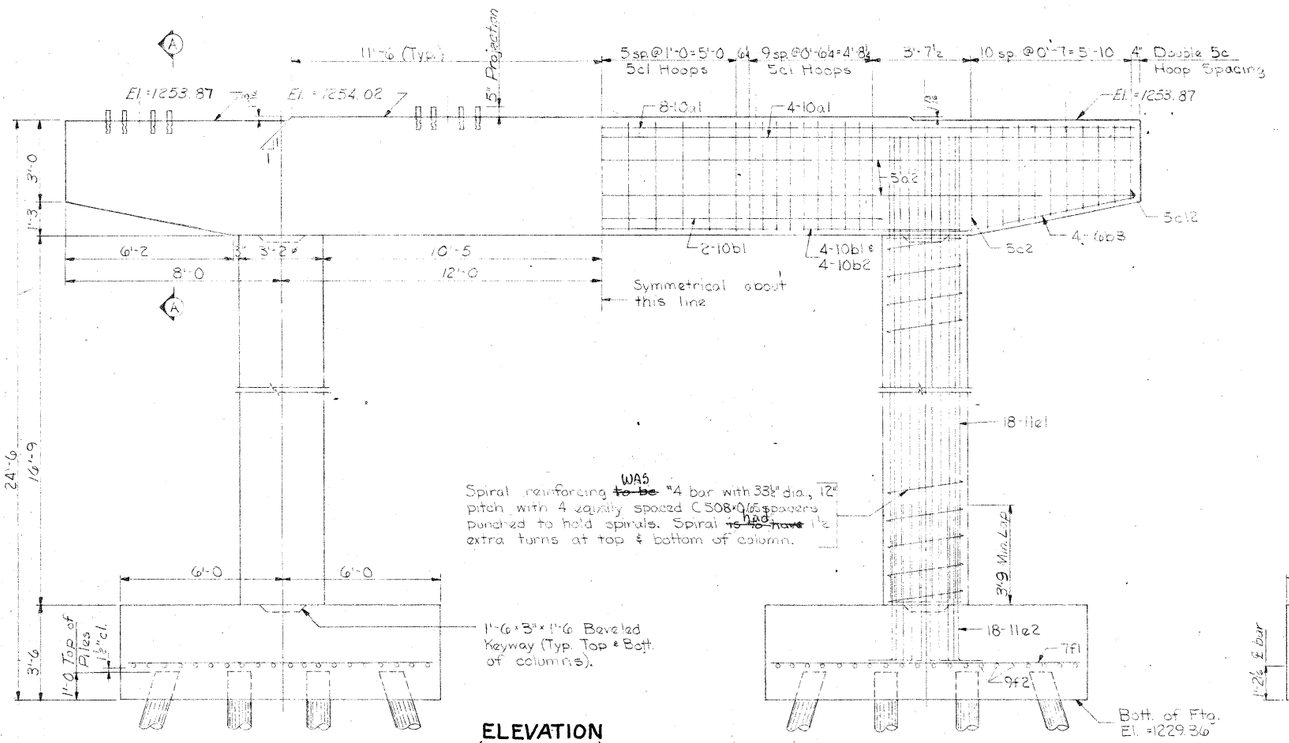
Pile Nº	Date Driven	Length in Leads Nearest Foot	Length Cutoff Nearest Tenth Foot	Length in Structure	Ave. Penetration Last 10 Blows	Ave. H. in Feet	Bearing in Tons
1	2-6-74	35	1.4	33.6	0.100	5.0	48.4
2	2-6-74	35	1.1	33.9	0.100	5.5	53.3
3	2-6-74	35	0.2	34.8	0.475	4.5	15.2
B 4	2-6-74	35	0.3	34.7	0.825	5.0	10.5
B 5	2-6-74	35	0.4	34.6	0.725	5.0	11.7
B 6	2-6-74	35	0.2	34.8	0.875	5.0	9.9
B 7	2-6-74	35	0.2	34.8	0.700	5.0	12.1
B 8	2-6-74	35	0.3	34.7	0.625	5.0	13.4
9	2-7-74	35	0.7	34.3	0.275	5.0	25.8
B 10	2-7-74	35	0.2	34.8	0.550	5.0	14.9
B 11	2-7-74	35	0.3	34.7	0.775	5.0	11.1
B 12	2-7-74	35	0.2	34.8	0.550	5.0	16.1
B 13	2-7-74	35	0.2	34.8	0.200	4.0	25.8
B 14	2-7-74	35	0.4	34.6	0.425	5.0	18.5
B 15	2-7-74	35	0.7	34.8	0.750	5.0	11.4
B 16	2-7-74	35	0.5	34.5	0.675	4.5	11.2
B 17	2-7-74	35	0.2	34.8	0.700	5.0	12.1
B 18	2-7-74	35	0.2	34.8	0.750	5.0	11.4
B 19	2-7-74	35	0.2	34.8	0.725	5.0	11.7
B 20	2-7-74	35	0.4	34.6	0.600	5.0	13.8
B 21	2-7-74	35	0.2	34.8	0.525	4.5	13.9
B 22	2-7-74	35	0.4	34.6	0.500	5.0	16.1
B 23	2-7-74	35	0.2	34.8	0.700	5.0	12.1
B 24	2-7-74	35	0.3	34.7	0.825	5.0	10.5
B 25	2-7-74	35	0.3	34.7	0.550	5.0	14.9
B 26	2-7-74	35	0.6	34.4	0.350	5.0	21.5
B 27	2-7-74	35	0.3	34.7	0.600	5.0	13.8
B 28	2-7-74	35	0.2	34.8	0.650	5.0	12.9
29	2-7-74	35	0.6	34.4	0.775	4.5	10.0
30	2-7-74	35	0.8	34.2	0.475	4.5	15.2
31	2-7-74	35	0.8	34.2	0.600	4.5	12.5
X	Test Pile						
	Total	1085.0	12.5	1072.5			
	Length in structure =			1072.5 Ft.			
	Total Cutoff 1.5' or less =			12.5 Ft.			
	½ Cutoff 1.6' or greater =			0.0 Ft.			
	Length measured for payment =			1015.0 Ft.			
	Piles Nº 1 & 2 are anchor piles. They are deducted from this Log and placed under B002 Series (70 L.F.)						

Bench Mark No. 94, Sta. 3792+25, 17' Lt. I.S.H.C. Marker in North East Curb County Road Bridge Elev. 1261.22

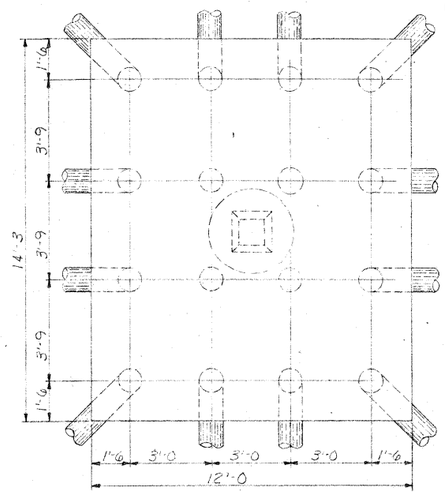
Bench Mark No. 95, Sta. 790+13, Lt. 28', Round Top Bolt S. Side Elev. 1261.74



PLAN OF CAP



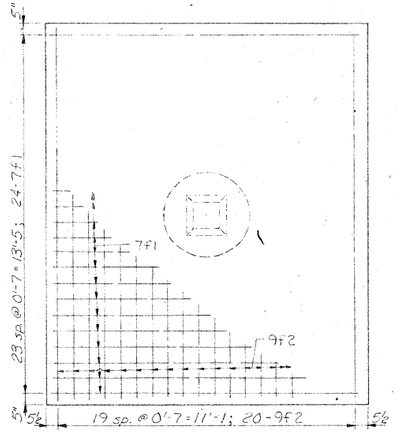
ELEVATION (Looking West)



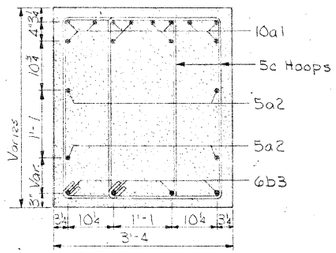
PILE LAYOUT

Note: Pile dimensions were at bottom of footing. Battered piles 1:4 in direction shown. 32 Creosoted piles required.

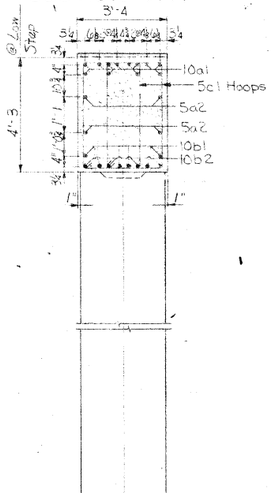
Note: Test pile ~~is to be~~ one of the vert. piles.



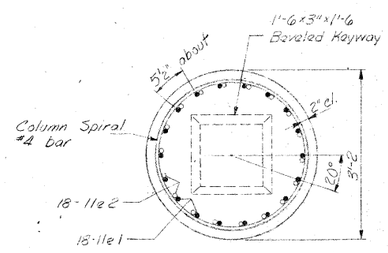
FOOTING REINFORCING LAYOUT



SECTION A-A



℄ SECTION



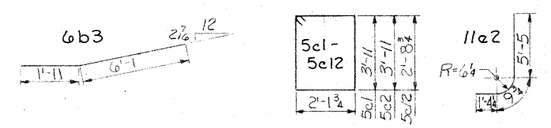
SECTION THRU COLUMN

Spiral reinforcing ~~to be~~ WAS "4 bar with 33½" dia., 12" pitch with 4 equally spaced C 508×065 spacers punched to hold spirals. Spiral ~~is to have~~ had 1½ extra turns at top & bottom of column.

REINFORCING BAR LIST ~ PIER #2

Bar	Location	Shape	№	Length	Weight
10a1	Cap, Top, Longit.	——	12	39'-8	2048
5a2	" , Sides	——	4	39'-8	165
10b1	Cap, Bott., Longit.	——	6	21'-0	542
10b2	" , " , "	——	4	27'-0	465
6b3	Cantilever, Bott., Longit.	⟋	8	8'-0	96
5c1	Cap Hoops	□	62	12'-10	830
5c2-12	Cantilever Hoops	□	44	Varies	534
11e1	Column, Vert.	——	36	20'-6	3921
11e2	Footing to Column Dowels	⌐	36	7'-7	1450
7f1	Footing, Transv.	——	48	11'-8	1145
9f2	" , Longit.	——	40	13'-11	1895
	Spiral Spacers C 508×0.65	——	8	16'-9	92
#4 bar	Column Spiral	(000)	2	171'-5	229
				Total ~ (Lbs.)	13,410

BENT BAR DETAILS



Note: All dimensions ~~were~~ are out to out. Radii to ℄ of bar.

CONCRETE PLACEMENT QUANTITIES PIER #2

Item	Quantity
Pier Cap	20.5
Pier Columns	9.8
Pier Footings	43.4
Total Cu. Yds.	73.7

~~ESTIMATED~~ QUANTITIES ~ THREE PIERS

Item	Unit	Pier #1	Pier #2	Pier #3	Total
Structural Conc. Class "C"	Cu.Yds.	55.5	73.7	55.5	184.7
Reinforcing Steel	Lbs.	7970	13,410	7970	29,350
Excavation Class 20	Cu.Yds.	88	100	91	279
Creosoted Piling	L.F.	28@~~50'~~ 35'	31@35'	28@35'	~~2315~~ 2975.00
Creosoted Test Piling	~~L.S.~~	——	1@35'	——	~~Lump Sum~~ 300.00

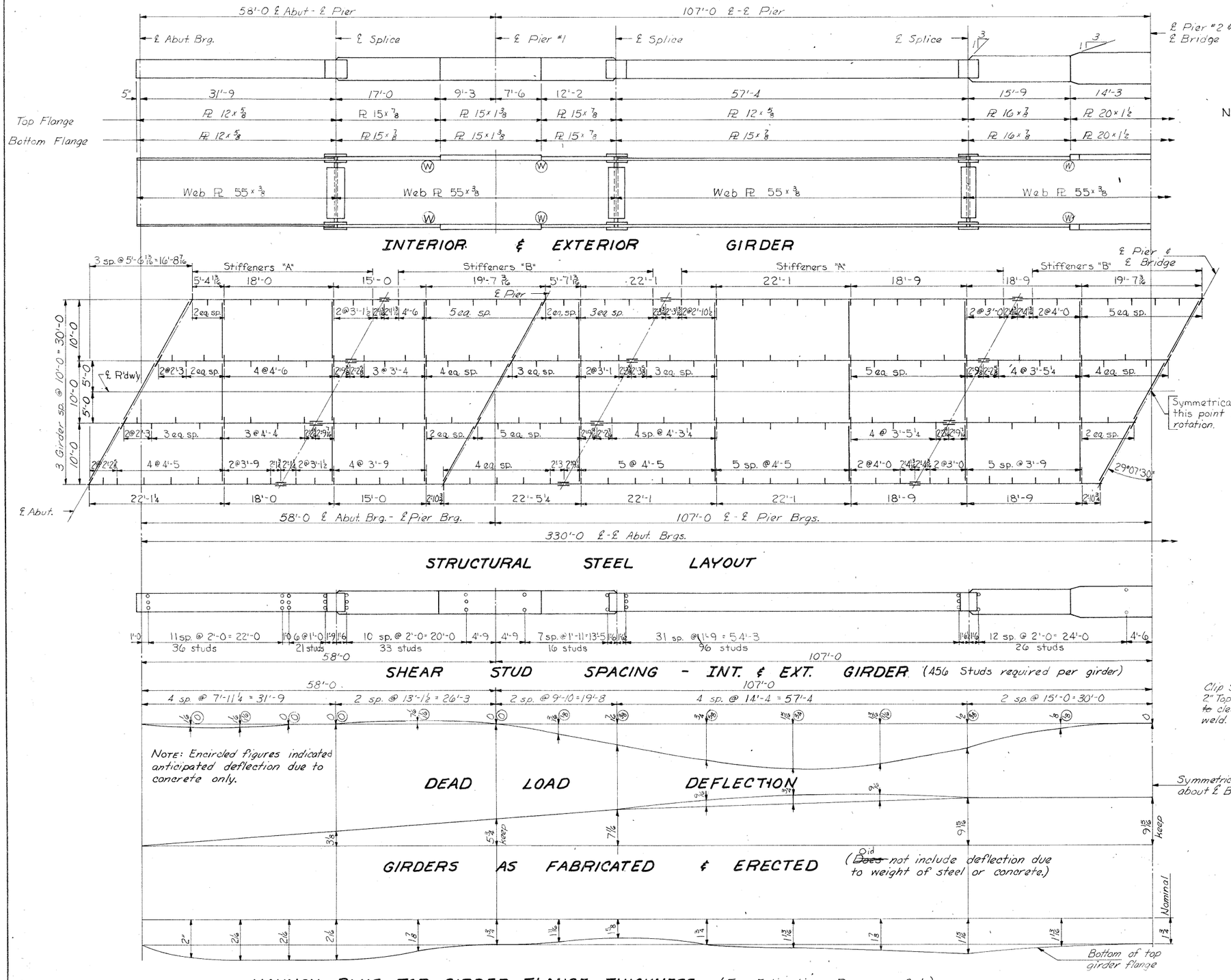
Note: See Sheet 5 of 17 for Pier Notes.

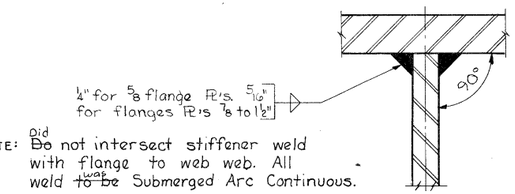
Design For 29° 07' 30" Skew
330'-0 × 32' CONTINUOUS WELDED GIRDER BRIDGE
58'-0 End Spans 107'-0 Center Span
PIER #2 DETAILS
Station: 3790 + 62.4 (Local Rd)
Station: 790 + 62.4 (I-35)
June, 1972
FRANKLIN COUNTY
IOWA STATE HIGHWAY COMMISSION
Design Sheet No.: 6 Of 17 File No.: 23230 Design No.: 4470

DESIGNED BY: L. A. Billings
DETAILED BY: D.A.L.
TRACED BY:
CHECKED BY: D. Mattson

FRANKLIN COUNTY

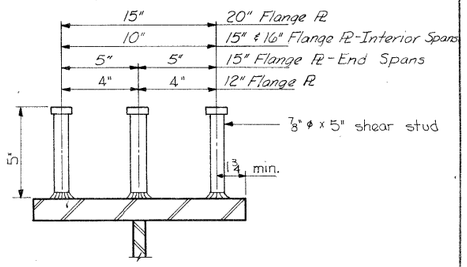
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6(16)166--01-35	IOWA	5		48	85



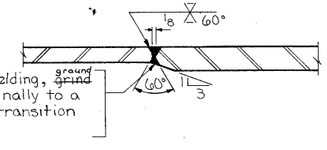


Note: Did not intersect stiffener weld with flange to web web. All weld ~~to be~~ was Submerged Arc Continuous.

FLANGE TO WEB WELD



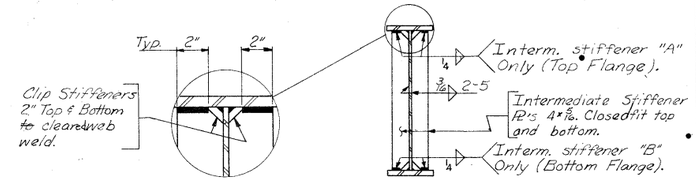
SHEAR STUD DETAIL



FLANGE WELD

(For welding PL 16 x 7/8 to PL 20 x 1 1/2 & PL 15 x 7/8 to PL 15 x 1 3/8)

Note: Ⓦ indicated bench weld.



INTERMEDIATE STIFFENER DETAILS

Continuous 3/16" fillet welds ~~may be~~ were substituted for the intermittent stiffener to web welds shown at the fabricator's option.

~~PROJECT CONSTRUCTED ACCORDING TO STANDARDS~~

Note: For Girder Splice Details see sheet 11 of 17

Design For 29°07'30" Skew

330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans 107'-0 Interior Spans

SUPERSTRUCTURE DETAILS

Station: 3790 + 62.40 (Local Rd.)
Station: 790 + 62.40 (I-35)

June, 1972

FRANKLIN COUNTY
IOWA STATE HIGHWAY COMMISSION

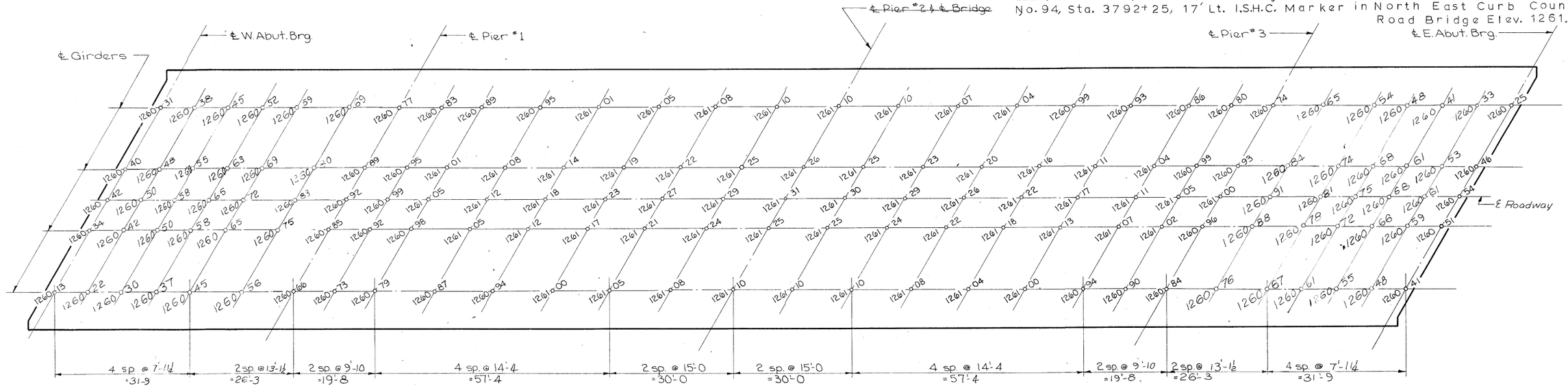
Design Sheet No.: 7 Of 17 File No.: 23230 Design No.: 4470

DESIGNED BY: S. Kanan
DETAILED BY:
TRACED BY: D.A. Wright
CHECKED BY: L. Phillips

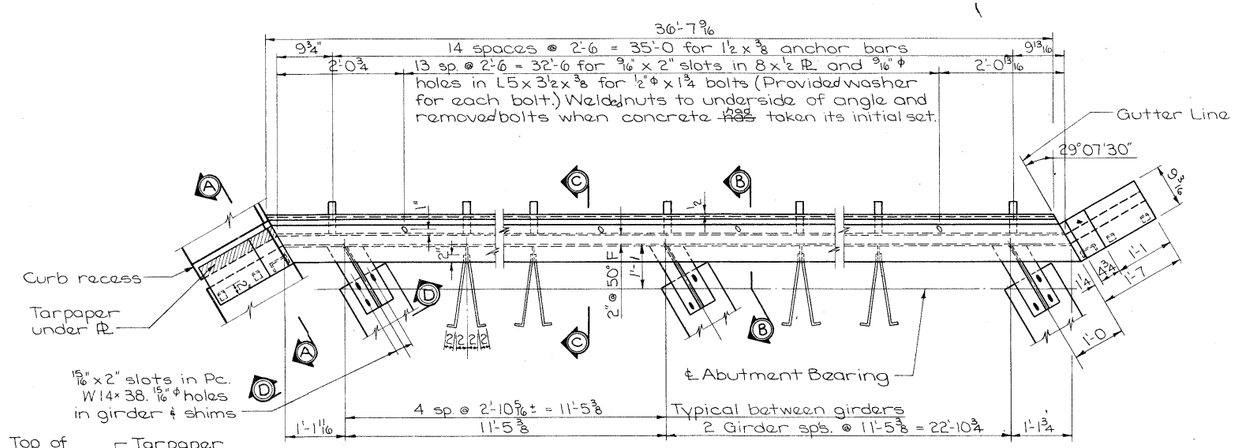
FRANKLIN COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6(16)166--01-35	IOWA	5		42	85

BENCH MARK: ~~No 60, Sta. 790+13, 223' Lt., Found Lag Bolt in S. side Telephone Pole, Elev. = 1231.14.~~ No. 94, Sta. 3792+25, 17' Lt. I.S.H.C. Marker in North East Curb County Road Bridge Elev. 1261.22



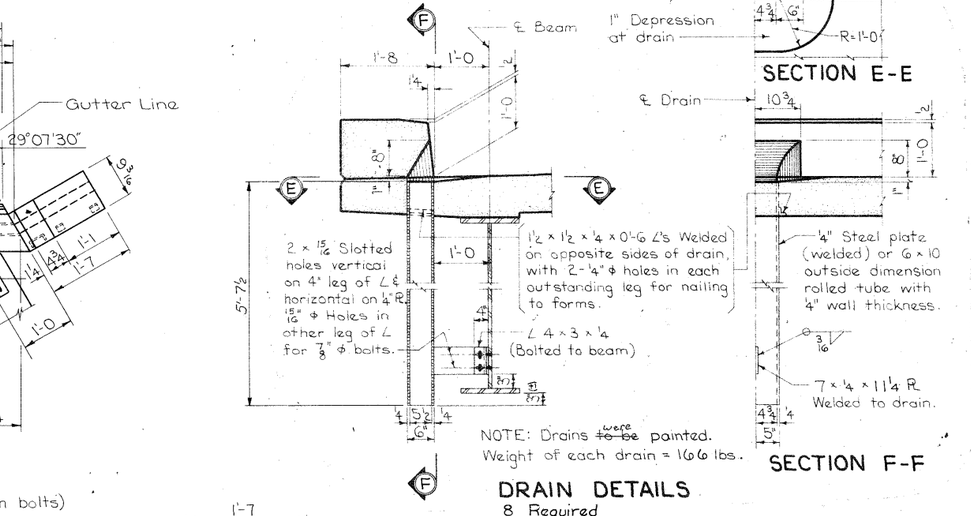
TOP OF SLAB ELEVATIONS



EXPANSION PLATE DETAILS

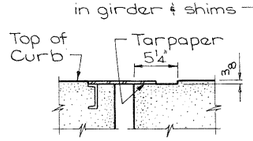
Note: 2 Required
Weight: 1848 lbs. (~~Does~~ Did not include girder connection bolts)

Note: See sheet 10 of 17 for "D" dimension.

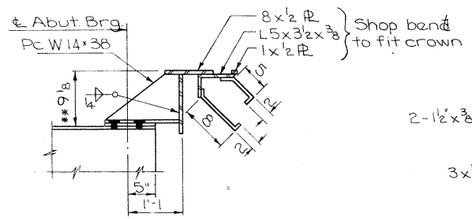


DRAIN DETAILS

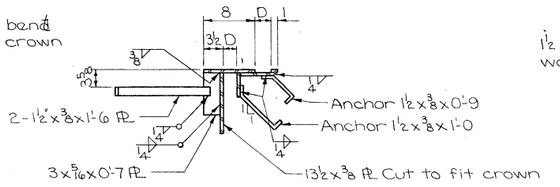
8 Required
See sheet 2 of 17 for location.



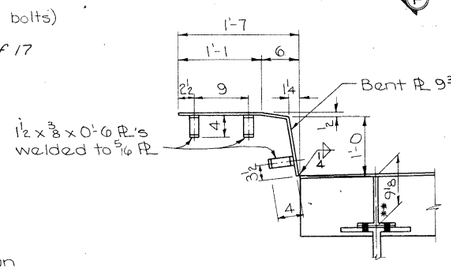
SECTION A-A



SECTION B-B



SECTION C-C



VIEW D-D

** Included 2 - 6¾ x ⅛ shims (Furnished 4 shims for each WF support.)

~~PROJECT CONSTRUCTED ACCORDING TO STANDARDS~~

Design For 29°07'30" Skew

330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans 107'-0 Interior Spans

SUPERSTRUCTURE DETAILS

Station: 3790+62.4 (Local Rd.)
Station: 790+62.4 (I-35)

June, 1972

FRANKLIN COUNTY

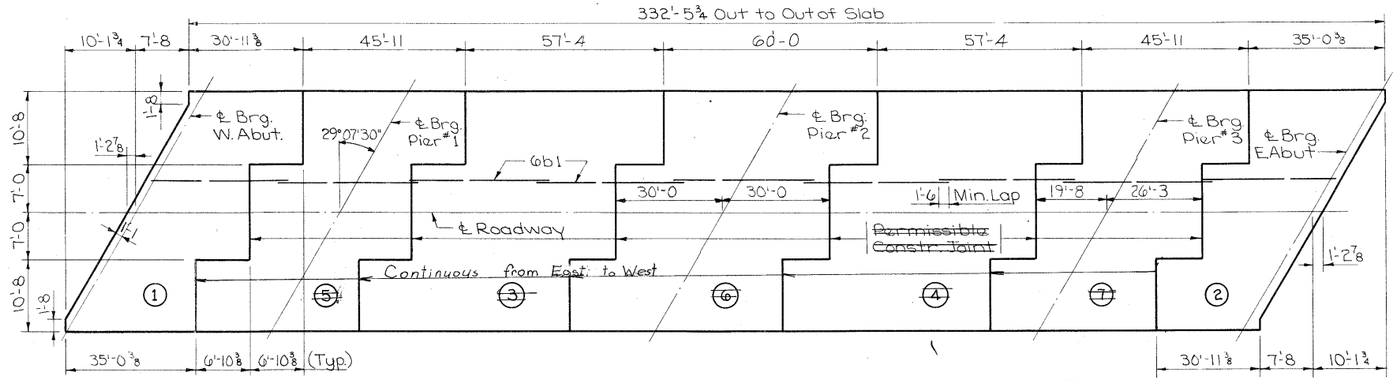
IOWA STATE HIGHWAY COMMISSION

Design Sheet No.: 8 Of 17 File No.: 23230 Design No.: 4470

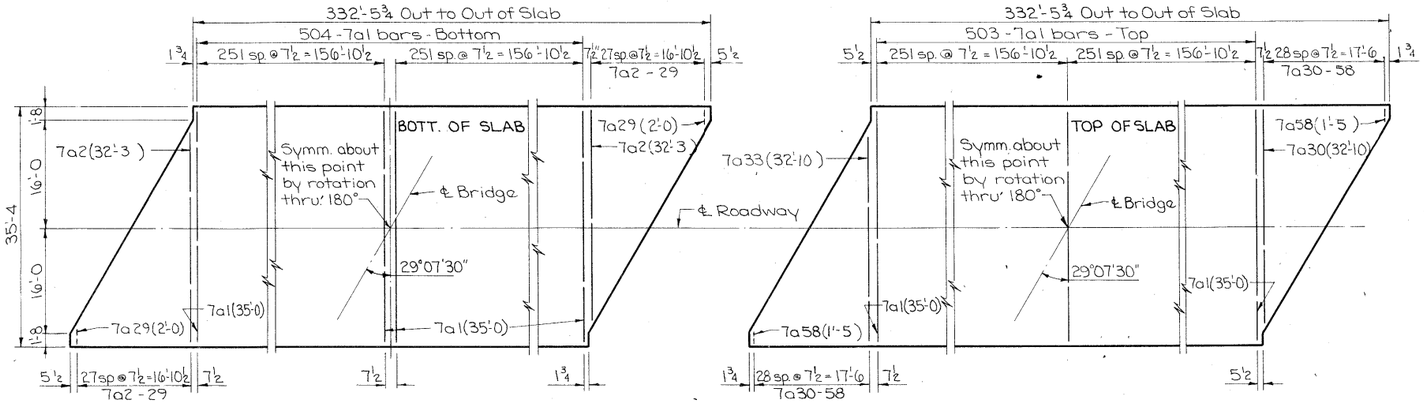
DESIGNED BY: Samch Konan
DETAILED BY:
TRACED BY: D. Hanson
CHECKED BY: L. Phillips

FRANKLIN COUNTY

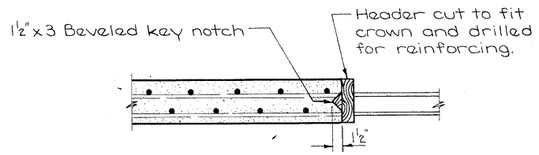
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6(16)166--01-35	IOWA	5		50	85



SLAB LONGITUDINAL REINFORCING STEEL LAYOUT AND CONCRETE PLACEMENT DIAGRAM



TRANSVERSE SLAB REINFORCING STEEL



SLAB CONSTRUCTION JOINT DETAIL

MOMENTS IN FT.-KIPS — **MOMENTS AND REACTIONS** — REACTIONS IN KIPS

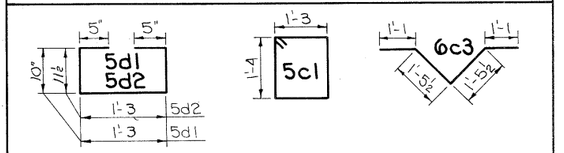
	LOADS; Kips		Max. Pos. Mom. End Span		Max. Neg. Mom. Pier 1 & 3		Max. Pos. Mom. Span 2 & 3		Max. Neg. Mom. Pier 2		Abutment Reaction		Pier 1 & 3 Reaction		Pier 2 Reaction	
	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.
D.L. * 1	0.958	1.225	92.91	118.80	734.54	939.26	380.33	486.91	1245.92	1593.16	15.12	19.33	86.92	111.14	112.07	143.30
D.L. * 2	0.404	0.200	45.08	22.32	295.01	146.05	215.34	106.6	430.67	213.20	6.67	3.30	37.15	18.39	45.77	22.66
U.L.L.	0.4924	0.5818	———	———	451.70	533.71	———	———	568.33	671.52	———	———	50.38	59.53	58.21	68.78
C.L.L. *	13.84 / 20.002	16.36 / 25.63	———	———	213.60	252.43	———	———	243.18	287.38	———	———	20.00	23.64	20.00	23.64
HS 20 TR.	24.616	29.091	499.16	589.91	———	———	778.11	919.57	———	———	44.96	53.14	———	———	———	———
Impact	———	———	136.37	161.16	160.34	189.46	167.68	198.17	174.88	206.65	12.28	14.52	16.96	20.04	16.86	19.92
Total	———	———	———	———	1855.19	2060.91	———	———	2662.98	2971.91	79.03	90.29	211.41	232.74	252.91	278.30

* Upper figure is for moment.
Lower figure is for shear.

REINFORCING BAR LIST - SUPERSTRUCTURE

Bar	Location	Shape	N°	Length	Weight
7a1	Slab, Transverse, Top & Bott.	——	1007	35'-0	72,041
7a2-29	" " , Bott.	——	56	Varies	1960
7a30-58	" " , Top	——	58	Varies	2030
6b1	Slab, Longitudinal, Top & Bott.	——	513	38'-3	29,473
5c1	Curb, Hoops	▭	530	5'-11	3,271
5c2	" , Longitudinal	——	36	38'-1	1,430
6c3	" , Transv. @ ea. Railpost	⩛	78	5'-0	586
7c4	Curb & Slab over Pier	——	84	40'-0	6868
5d1	Abut. Diaphragm Hoops	⊓	36	3'-5	128
5d2	" " "	⊓	18	3'-8	69
5e1	Abut. Diaph., between girders	——	12	11'-0	138
5e2	" " , Longit.	——	4	34'-0	142
	Two light pole bases - See sht. 16 of 17				230
				Total (Lbs.)	118,366

BENT BAR DETAILS



NOTE: All dimensions ~~are~~ were out to out. Radii to ℄ of bar.

CONCRETE PLACEMENT QUANTITIES

Location		Quantity in C.Y.
Section	1 (with retarder)	30.9
"	2 " "	30.9
"	3 " "	51.3
"	4 " "	51.3
"	5 " "	41.0
"	6 " "	53.6
"	7 " "	41.0
Curbs, two @ 20.8 c.y. (with retarder)		41.6
Two light pole bases		0.8
Total (C.Y.)		342.4

~~ESTIMATED~~ QUANTITIES - SUPERSTRUCTURE

Item	Unit	Quantity
Reinforcing Steel	lbs.	118,366
Structural Concrete Class "D"	C.Y.	342.4
Structural Steel	lbs.	276,630

NOTE: Roadway slab ~~shall be placed in sections and in sequence indicated by encircled number on placement diagram and preferably at interval not exceeding 24 hours.~~ was placed continuous. from East to West Curbs ~~may be~~ was placed continuously. All slab reinforcing steel ~~is to be~~ was in place before any section ~~is~~ was placed. Alternate procedures for placing concrete ~~may be~~ was submitted for approval, together with a statement of the proposed method, and evidence that the Contractor ~~possesses~~ possessed the necessary equipment and facilities to accomplish the required result. ANY ALTERNATE PROCEDURE, HOWEVER, ~~MUST~~ PROVIDED FOR THE PLACEMENT OF THE END SECTIONS BEFORE INTERIOR SECTIONS.

Design For 29°07'30" Skew

330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans — 107'-0 Interior Spans

SUPERSTRUCTURE DETAILS

Station: 3790 + 62.4 (Local Rd.)
Station: 790 + 62.4 (I-35)

June, 1972

FRANKLIN COUNTY

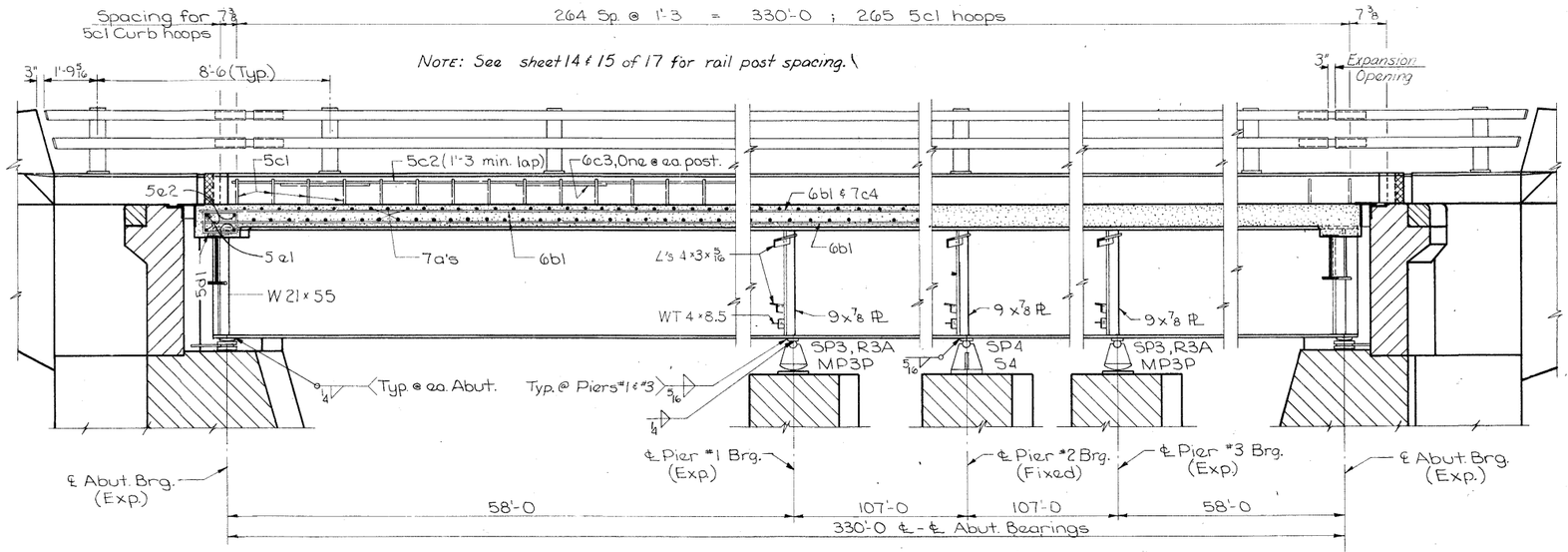
IOWA STATE HIGHWAY COMMISSION

Design Sheet No.: 9 Of 17 File No.: 23230 Design No.: 4470

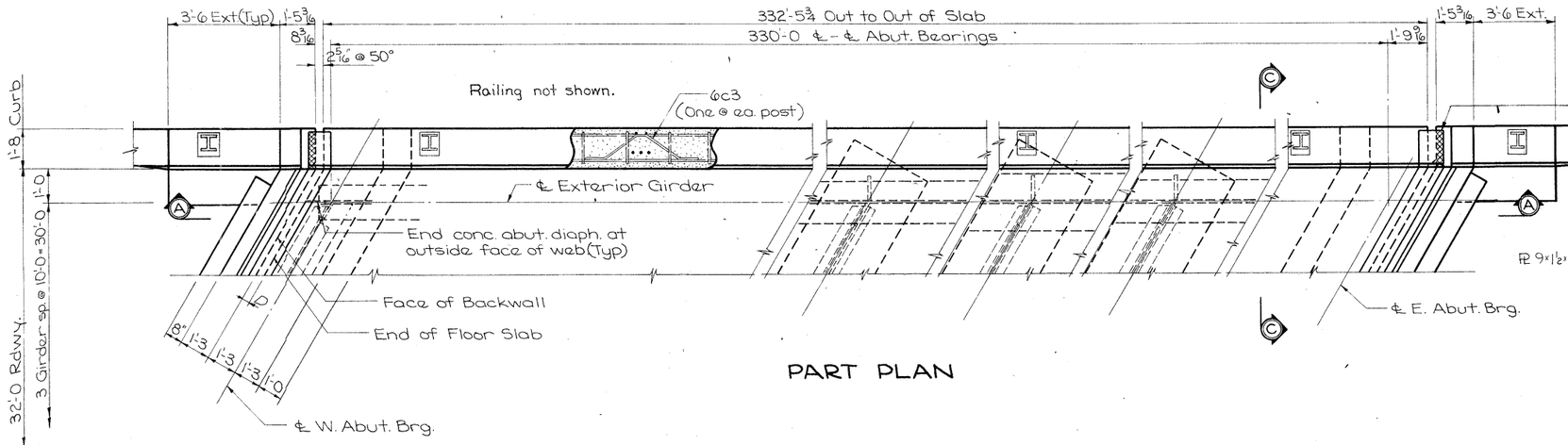
DESIGNED BY: Samad Kamam
DETAILED BY:
TRACED BY: D. Hanson
CHECKED BY: L. Phillips

FRANKLIN COUNTY

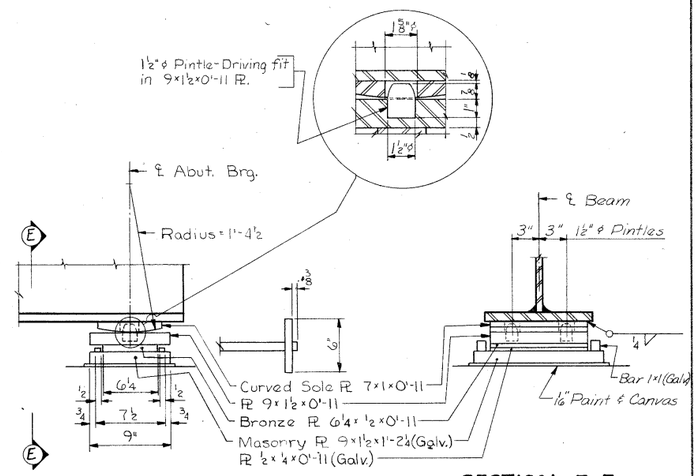
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6(16)166--01-35	IOWA	5		51	85



LONGITUDINAL SECTION NEAR CURB
(SECTION A-A)



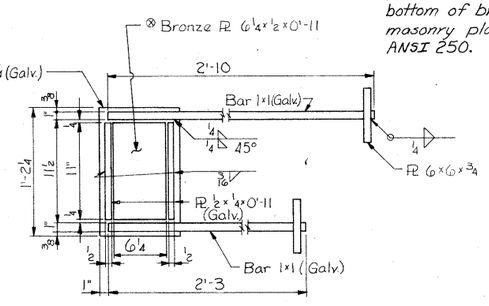
PART PLAN



PART ELEVATION

SECTION E-E

Note: Scribed edges of plates on ℄ to aid in setting. Top of bronze plate and bottom of plate 9x1½x0'-11 ~~shall be~~ except finished ANSI 125. Bottom of curved plate and top of plate 9x1½x0'-11, bottom of bronze plate and top of masonry plate ~~shall be~~ except finished ANSI 250.



PLAN OF MASONRY PLATE

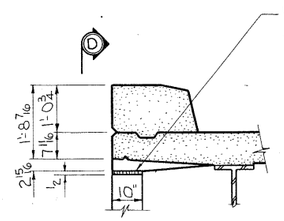
⊗ Bronze plate ~~shall be~~ except lubricated in accordance with I.S.H.C. Spec. Article 4190.03 (sliding surface only). Top edges of bronze plate ~~shall be~~ except beveled ⅛ inch. 8 required each 162 lbs. (Included weight of bronze PL and curved sole PL).

ABUTMENT BEARING DETAILS

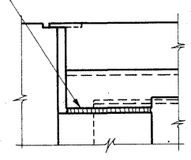
EXPANSION PLATE & BEARING SETTING TABLE

Temperature at time of setting	"D" W. Abut.	W. Abut.	Pier #1	Pier #2	Pier #3	E. Abut.	"D" E. Abut.
10°	2 1/16	-½"	-5/16"	—	-5/16"	-½"	2 1/16
50°	2"	0	0	—	0	0	2"
90°	1 15/16	+½"	+5/16"	—	+5/16"	+½"	1 15/16

Note: Rockers ~~are to be~~ were set vertically and masonry plates ~~are to be~~ were centered under rockers at 50° F. For temperatures above 50° F. set masonry plate towards the fixed bearing (+). For temperatures below 50° F. set masonry plate away from fixed bearing (-). Setting for tempertures not shown ~~are~~ were proportional to those shown.



SECTION C-C



VIEW D-D

Design For 29°07'30" Skew
330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE
58'-0 End Spans 107'-0 Interior Spans
SUPERSTRUCTURE DETAILS
Station: 3790 + 62.4 (Local Rd.)
Station: 790 + 62.4 (I-35)
June, 1972
FRANKLIN COUNTY
IOWA STATE HIGHWAY COMMISSION
Design Sheet No.: 10 Of 17 File No.: 23230 Design No.: 4470

DESIGNED BY: Samch Kanan
DETAILED BY:
TRACED BY: D. Hansen
CHECKED BY: L. Phillips

FRANKLIN COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-2(16)166-01-35	IOWA	5		52	85

SUPERSTRUCTURE NOTES:

This bridge ~~is~~ was designed for HS20-44 loading, two lane, plus 20 lb. per square foot of roadway for future wearing surface.

Minimum clear distance from edge of bar to face of concrete ~~is to be~~ was 2" unless otherwise noted or shown.

The floor slab as shown includes 1/2" of wearing surface.

All field connections ~~are to be~~ were bolted using "High Tensile Strength Bolts". Unless otherwise noted, all open holes ~~are to be~~ were 15/16" ϕ and all bolts ~~are to be~~ were 7/8" ϕ

Bottom flanges ~~are to be~~ were perpendicular to webs at the reaction points.

All paint ~~is to be~~ was omitted on tops of top flanges and on other steel surfaces in contact with concrete. Parts inaccessible after erection ~~are to be~~ were given three coats of paint in the shop.

Forms for the slab and curb ~~are to be~~ was supported by the girders.

Fill thicknesses shown on plans ~~are~~ were based on nominal beam or girder dimensions. These thicknesses ~~are to be~~ were verified or adjusted during fabrication to secure a close fit. Each fill plate ~~shall~~ fit to the nearest 1/16" in thickness and single plates ~~are~~ were required at any fill location. Beams or girders ~~are to be~~ were truly square at splice points with flanges perpendicular to webs.

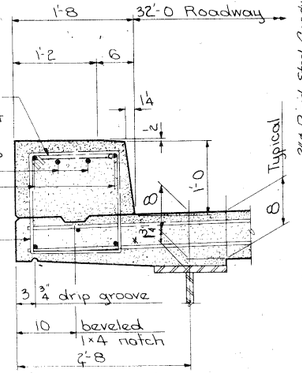
The design drawings indicate AWS ~~a~~ prequalified welded joints, and unless otherwise noted the design joint details ~~are~~ were for manual shielded metal-arc welding. Alternate joint details ~~may be~~ were submitted for approval.

The stiffener to flange welds ~~are~~ was not to intersect the longitudinal flange to web welds.

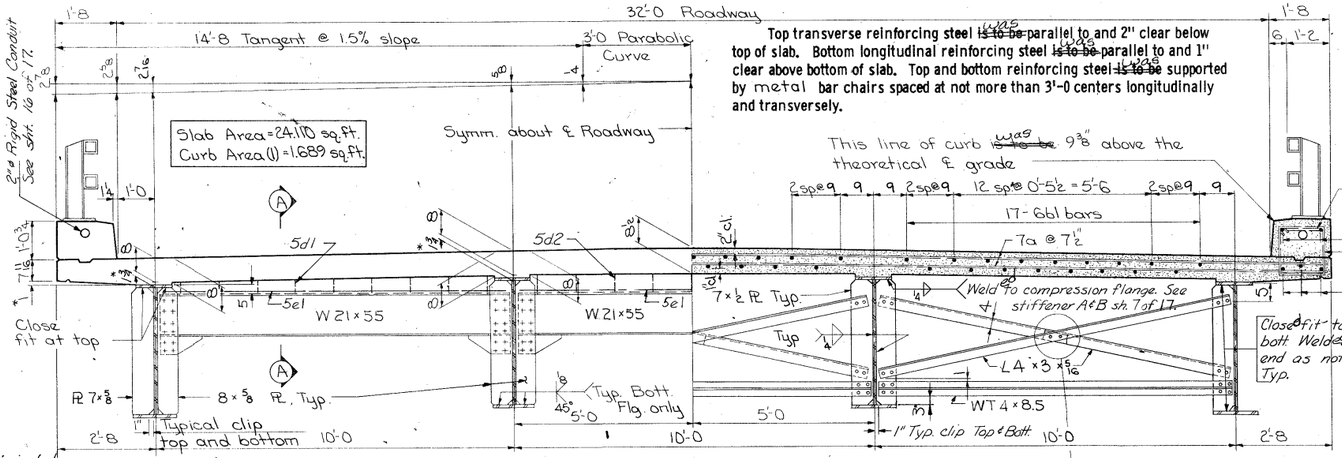
Magnetic particle inspection of welds, in accordance with Article 2408.15 of the Standard Specifications, ~~will be~~ were required for the web to flange welds and the bearing stiffener welds of the girders.

Faying surfaces at diaphragm connections ~~are to be~~ was given the shop coat of paint.

Stud shear connectors ~~are to be~~ were welded in the shop or in the field at the locations shown on the design plans or the approved shop drawings. Studs ~~shall be~~ were furnished and installed in accordance with Part VI of the Eighth Edition of the "Specifications for Welded Highway and Railway Bridges" (AWS D2.0-69) of the American Welding Society.



CURB DETAILS

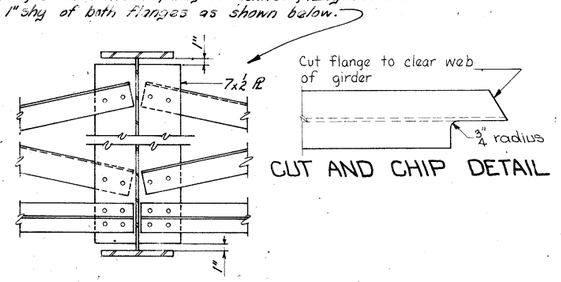


HALF SECTION NEAR ABUTMENT

HALF INTERMEDIATE SECTION

The Contractor ~~may~~, at his option, eliminated the transverse intermediate stiffeners (4×⅜ PLs) detailed on sheet 7 of 17 by using a ⅝" web PL for girder sections over the piers and a ½" web plate for remaining girder sections. Pay weight, however, ~~is~~ was based on the girders as detailed and no increase in price due to the use of the thicker web plates ~~will be~~ was allowed.

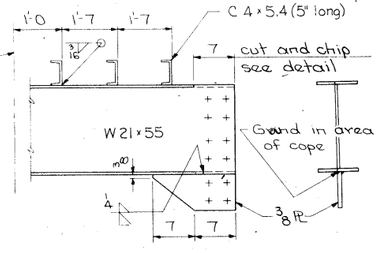
If the thicker web ~~is~~ was selected, the 7×½" stiffener plates, to which the diaphragms connect, ~~may be~~ were cut 1" shy of both flanges as shown below.



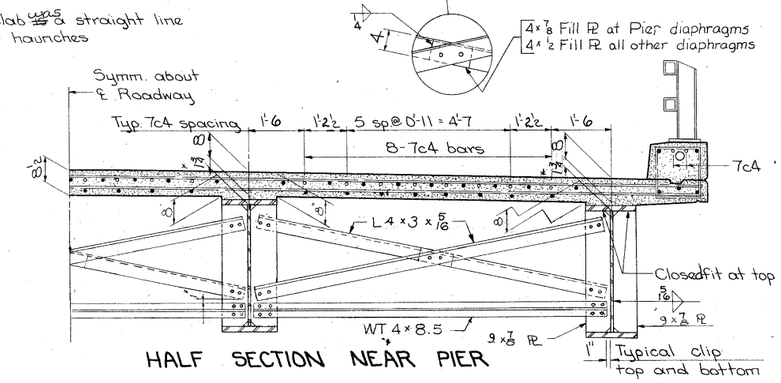
CUT AND CHIP DETAIL

Note: Spaced 5d hoops with top 6b1 bars.

Note: Bottom of slab ~~is~~ was a straight line between tops of haunches

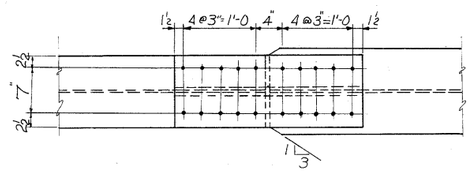


ABUT. DIAPHRAGM CONNECTION

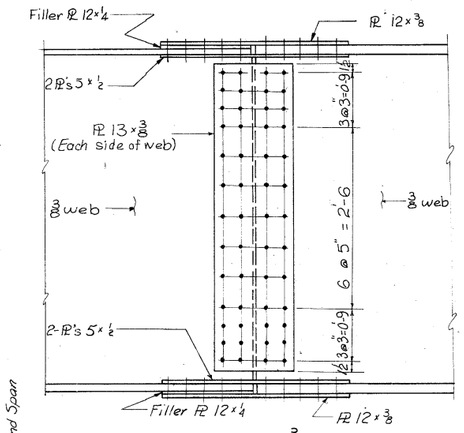


HALF SECTION NEAR PIER

Note: 7c4 bars ~~are to be~~ were centered over pier.

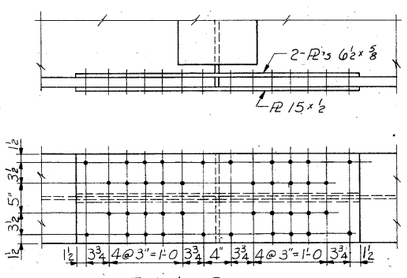


ALTERNATE INTERMEDIATE SECTION



End Spans

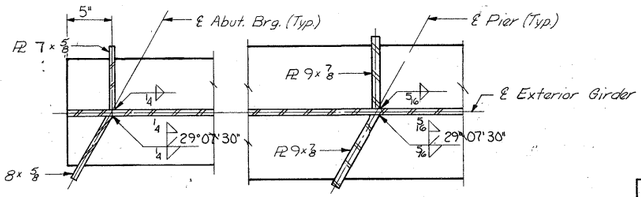
Note: Web and Top Flange Splices are the same as for End Spans.



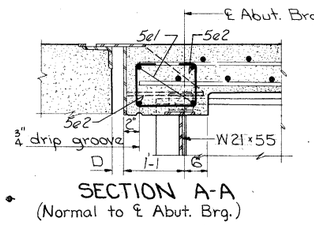
Interior Span

GIRDER SPLICE DETAILS

**The dimension shown ~~is~~ was the nominal haunch plus top girder flange thickness dimension at the abutments and piers. For the slab thickness over the beam at any location see "Haunch Plus Top Girder Flange Thickness" on sheet 7 of 17. The dimensions shown ~~may be~~ were increased or decreased to compensate for construction inaccuracies, however the maximum dimension allowed ~~is~~ was 2⅝ inches and the minimum dimension allowed ~~is~~ was such that there ~~will be~~ was no thinning of the nominal 8" slab.*



BEARING STIFFENER DETAILS



SECTION A-A
(Normal to ℄ Abut. Brg.)

PROJECT CONSTRUCTED ACCORDING TO STANDARDS

Design For 29°07'30" Skew
330'-0 × 32' CONTINUOUS WELDED GIRDER BRIDGE
58'-0 End Spans 107'-0 Interior Spans
SUPERSTRUCTURE DETAILS
Station: 3790+62.4 (Local Rd.)
Station: 790+62.4 (I-35)
June, 1972
FRANKLIN COUNTY
Iowa State Highway Commission
Design Sheet No. 11 Of 17 File No. 23230 Design No. 4470

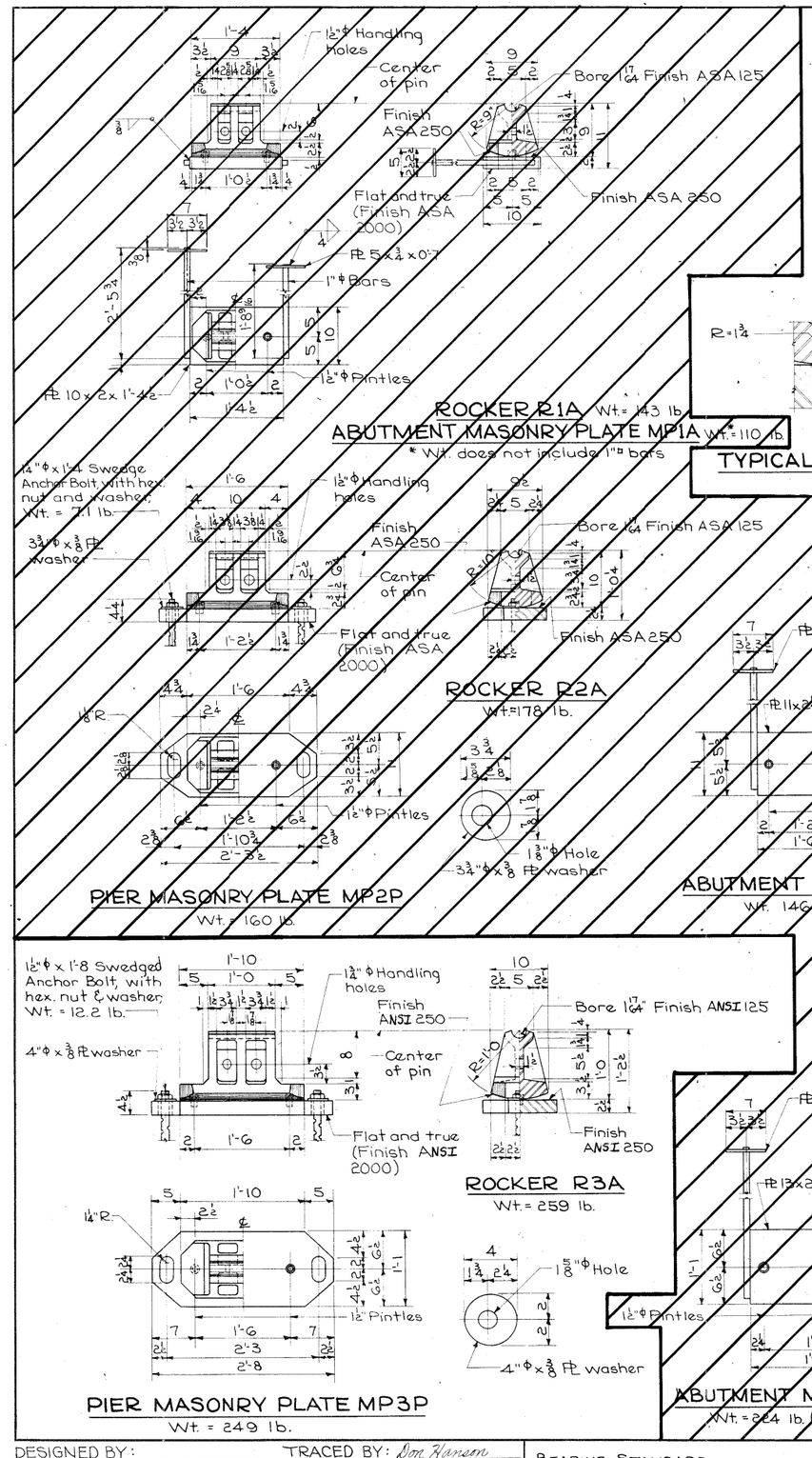
Revised 11-23-70: Spacing of longitudinal bars in slab changed.
Revised 7-1-70: Haunch dimension note changed and Shear stud note added.

Standard Sheet for girder bridges with web depths greater than 45" and skews of not more than 30°, without intermediate web stiffeners.

DESIGNED BY: S. Kanan TRACED BY:
DETAILED BY: S. K. CHECKED BY: L. Phillips

Steel Cross Section (B) 32'-0 Roadway | Standard Sheet 4059 | FRANKLIN COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6(16)166-01-35	IOWA	5		59	85



BEARING NOTES:

The casting of ~~R1A~~, ~~R2A~~, ~~S2~~, R3A and ~~S3~~ ~~shall~~ complied with Article 4153.04 of the I.H.C. Standard Specifications. Castings ~~shall be~~ were Gray Iron or Nodular Iron.

The masonry plates marked ~~MP1A~~, ~~MP2A~~, ~~MP2P~~, ~~MP3A~~ and MP3P ~~shall~~ complied with the requirements of ASTM A-36 steel.

The pins ~~shall~~ complied with Article 4153.02 of the I.H.C. Standard Specifications and with the requirements of ASTM A-108 steel.

All bearings ~~are to be~~ were set in paint and canvas.

Anchor bolts ~~shall be~~ were set in accordance with Article 2405.09 of the I.H.C. Standard Specifications.

After masonry plates, rockers and shoes ~~are~~ were in correct location, pour mortar around anchor bolts to fill the slotted holes.

The weight of bearings shown ~~does~~ did not include the weight of paint.

As soon as the surfacing process is done, the surfaces with ~~with~~ on ANSI 125 ~~shall be~~ were shop coated with an application of water proof National Lubricating Grease Institute No3 multipurpose grease. Just before the erection of the structural steel in the field, the shop coated surfaces ~~are to be~~ were wiped clean and a field coat of N.L.G.I. No.3 Grease ~~is to be~~ was applied.

Masonry plates MP1A, ~~MP2A~~ and ~~MP3A~~ ~~shall be~~ were galvanized after the 1" ϕ bars ~~have been~~ were welded to the masonry plate.

ITEMS REQUIRED	
~~Two Abuts.~~	~~8 - SP1~~ ~~8 - R1A~~ ~~8 - MP1A~~
~~Pier "2"~~	~~4 - SP3~~ ~~4 - S2~~
Pier "1 & 3	8 - SP3 8 - R3A 8 - MP3P

DISTANCE FROM TOP OF SOLE PLATE TO BRIDGE SEAT	
Rockers & Fixed Shoes	*D
~~R1A~~	~~1'-0 11/16~~
~~R2A & S2~~	~~1'-1 15/16~~
R3A & ~~S3~~	1'-4 3/16

* Includes ~~1/16~~ paint and canvas.

MAXIMUM REACTION (In Kips)		
~~R1A~~	~~R2A~~	R3A
~~132~~	~~171~~	263

PROJECT CONSTRUCTED ACCORDING TO STANDARDS.

Design For 29°07'30" Skew

330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans 107'-0 Interior Spans

BEARING DETAILS

Station : 3790 + 62.4 (Local Rd.)
Station : 790 + 62.4 (I-35)

June, 1972

FRANKLIN COUNTY

IOWA STATE HIGHWAY COMMISSION

Design Sheet No 12 Of 17 File No 23230 · Design No 4470

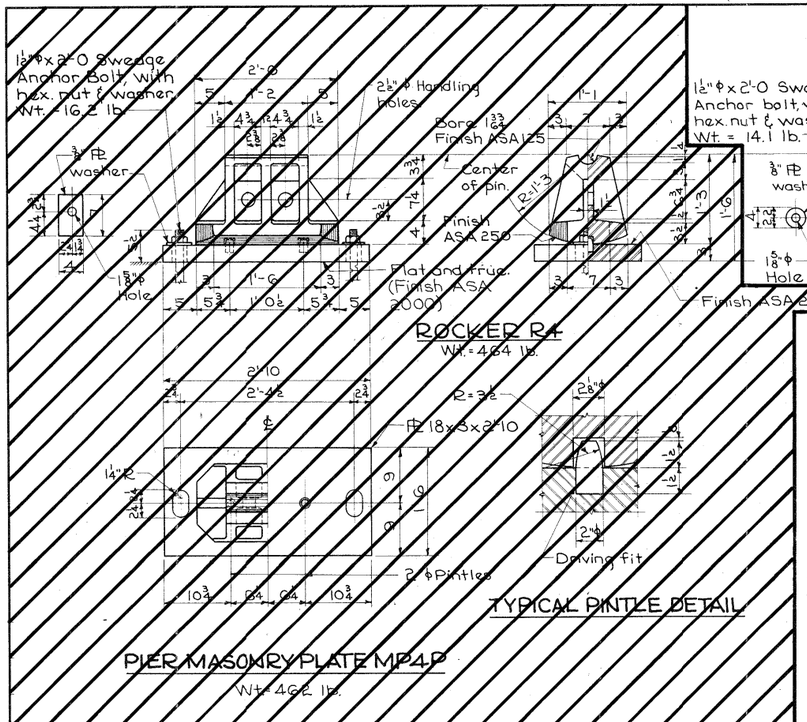
Revision (7-6-64) Finish on shoes and masonry plates in contact with concrete added.
Revision (6-1-65) Specifications for Rocker and Shoe material clarified.
Revision (7-8-71) Note concerning galvanizing of abutment masonry plates added.
Revision (3-28-72) ASA Changed to ANSI
Revision (11-22-72) Note concerning finishing changed.
This sheet brought up to date 1-17-73 G.J.P.

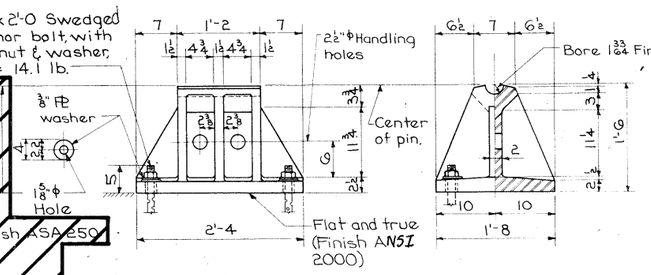
DESIGNED BY: TRACED BY: Don Hanson
DETAILED BY: CHECKED BY:

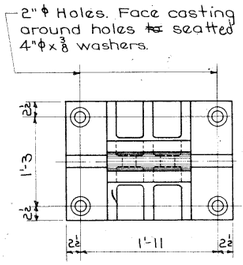
BEARING STANDARD | STANDARD SHEET 1008 | FRANKLIN COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. No	FISCAL YEAR	SHEET No	TOTAL
I-35-6(16)166--01-35	IOWA	5		64	85

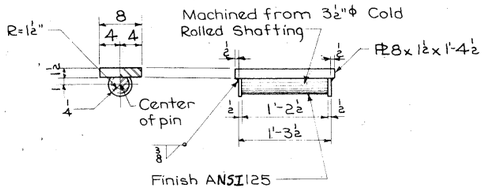
Revision (12-12-62) Pintle size changed.
Revision (7-6-64) Finish on shoes and masonry plates in contact with concrete added.
Revision (5-27-65) Weights for MP4P, MP5Pa and MP5Pb changed.
Revision (6-20-66) Nodular Iron Casting ASTM number and grade changed.
Revision (3-28-72) R50 changed to R4552
Revision (11-22-72) Note concerning finishing changed. } This sheet brought up to date 1-17-73 G.J.P.







FIXED SHOE S4
Wt. = 735 lb.



SOLE PLATES SP4 FOR R4 & S4
Wt. = 85 lb.

BEARING NOTES:

Nodular Iron Castings ~~shall~~ complied with Article 4153.04 of the Standard Specifications except ASTM A-536, Grade 65-45-12 ~~will be~~ required in lieu of ASTM A-339 Grade 60-45-10.

The following ~~shall be~~ were Nodular Iron Castings:
~~R4 MP4P S4~~
~~R5 MP5P S5~~

All plates and bars ~~shall~~ complied with ASTM A-36.
Pins ~~shall~~ complied with Article 4153.02 of the Standard Specifications and with ASTM A-108.
All bearings ~~are to be~~ were set in paint and canvas.
Anchor bolts ~~shall be~~ were set in accordance with Article 2405.09 of the Standard Specifications.
After masonry plates, rockers and shoes ~~are~~ were in correct location, pour mortar around anchor bolts to fill slotted holes.
The weight of bearings shown ~~does~~ did not include the weight of paint.
As soon as the surfacing process ~~is~~ was done, the surfaces finished with ANSI 125 finish ~~shall be~~ were shop-coated with an application of waterproof National Lubricating Grease Institute No. 3 multipurpose grease. Just before the erection of the structural steel in the field, the shop coated surfaces ~~are to be~~ were wiped clean and a field coat of N.L.G.I. No. 3 grease ~~is to be~~ was applied.

Provided:
4-S4
4-SP4 } Pier #2

DISTANCE FROM TOP OF SOLE PLATE TO BRIDGE SEAT	
Rockers & Fixed Shoes	* D
~~R4~~ & S4	1'-8 9/16
~~R5 & S5~~	~~2'-0 13/16~~

* Includes ~~1/16~~ 1/16" paint and canvas.

MAXIMUM REACTION (In Kips)	
~~R4~~ S4	~~R5~~ ~~S5~~
475	~~650~~

PROJECT CONSTRUCTED ACCORDING TO STANDARDS

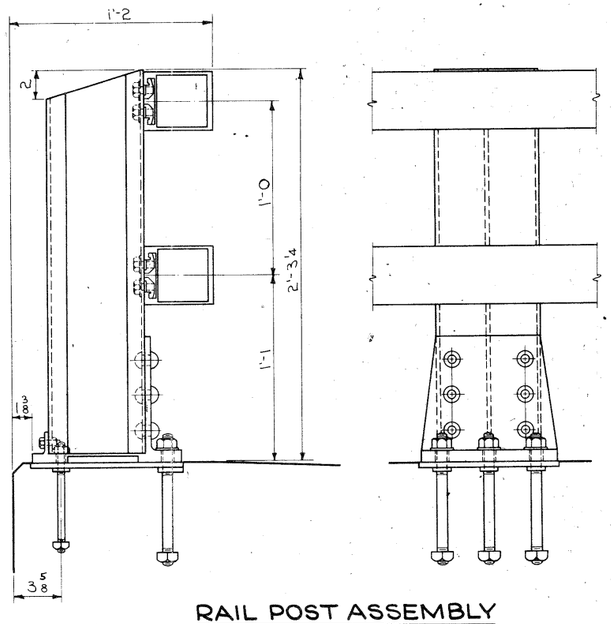
Design For 29°07'30" Skew
330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE
58'-0 End Spans *107'-0 Interior Spans*
BEARING DETAILS
Station: 3790+62.40 (Local Rd.)
Station: 790+62.40 (I-35)
June, 1972
FRANKLIN COUNTY
IOWA 'STATE HIGHWAY COMMISSION
Design Sheet No. 13 Of 17 File No. 23230 Design No. 4470

DESIGNED BY: TRACED BY: RH Wright
DETAILED BY: CHECKED BY: S. Bolton
BEARING STANDARD
STANDARD SHEET 1009
FRANKLIN COUNTY
PROJECT NUMBER I-35-6(16)166--01-35

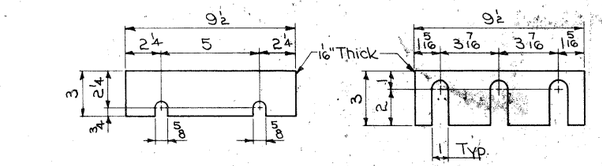
STATE	FED. ROAD DIST. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
Iowa	5		55	85

Revised 12-26-68: Added explanation for material for clamp bar bolt.
Revised 6-7-67: Red lead shop coat paint note added.
Revised 5-2-67: Material specifications for aluminum and stainless steel changed.
Revised 10-13-66: Note concerning 2"ϕ drain holes added.
Revised 9-23-66: Gage of holes in Post Base Plate changed.
Revised 8-19-66: Post base Plate and Anchor Bolt Assembly Plate details changed.
Revised 7-25-66: Caulking at posts eliminated.
Revised 3-14-66: Minor changes made.

Revised 8-2-72: Rear post bolt size & type changed. This sheet brought up to date 1-77.
Revised 11-13-70: Exposed anchor bolt nuts & washers changed from aluminum to stainless steel.

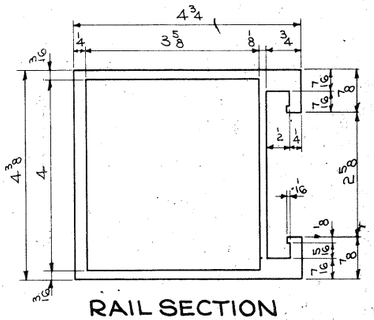


RAIL POST ASSEMBLY

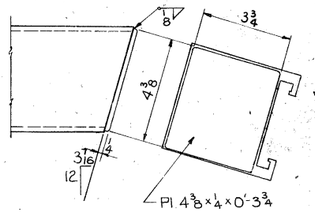


SHIM "A" DETAIL

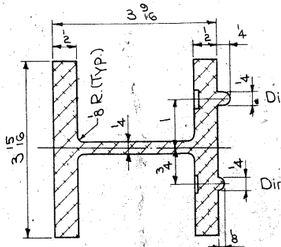
SHIM "B" DETAIL



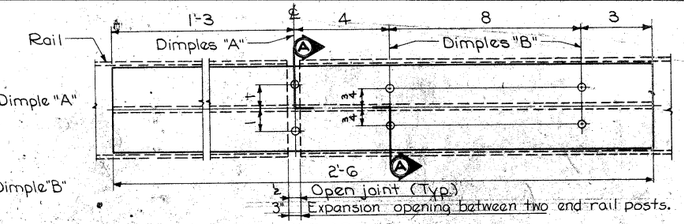
RAIL SECTION



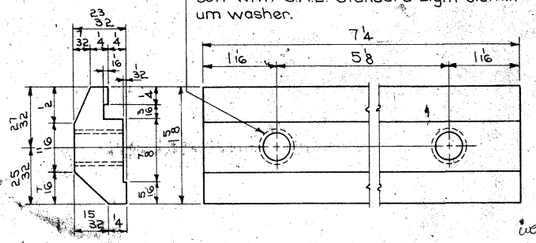
RAIL END CAP DETAILS



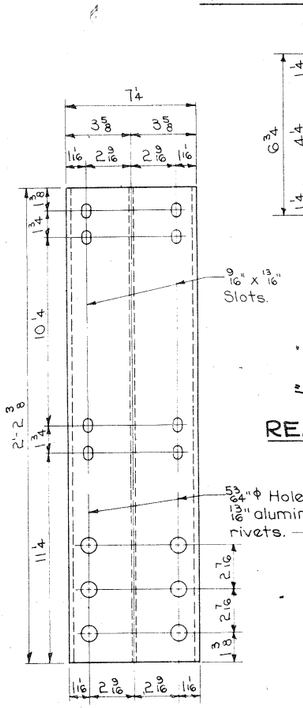
SECTION A-A



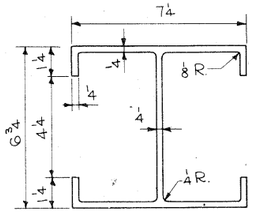
RAIL SPLICE DETAIL



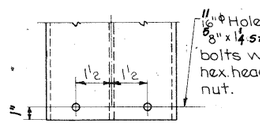
CLAMP BAR DETAILS



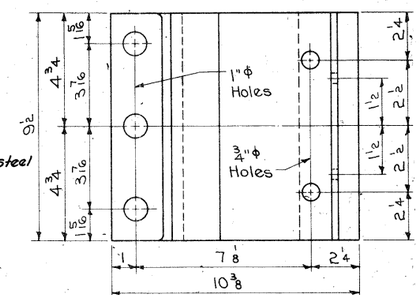
POST

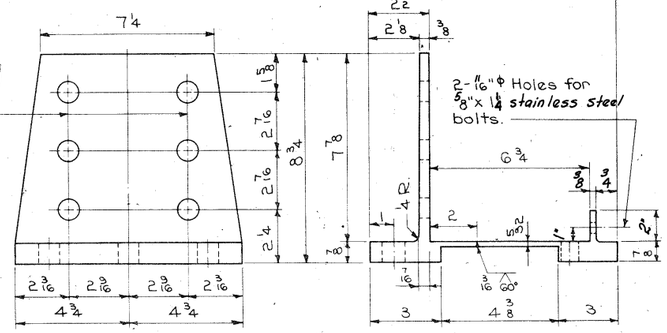


POST SECTION

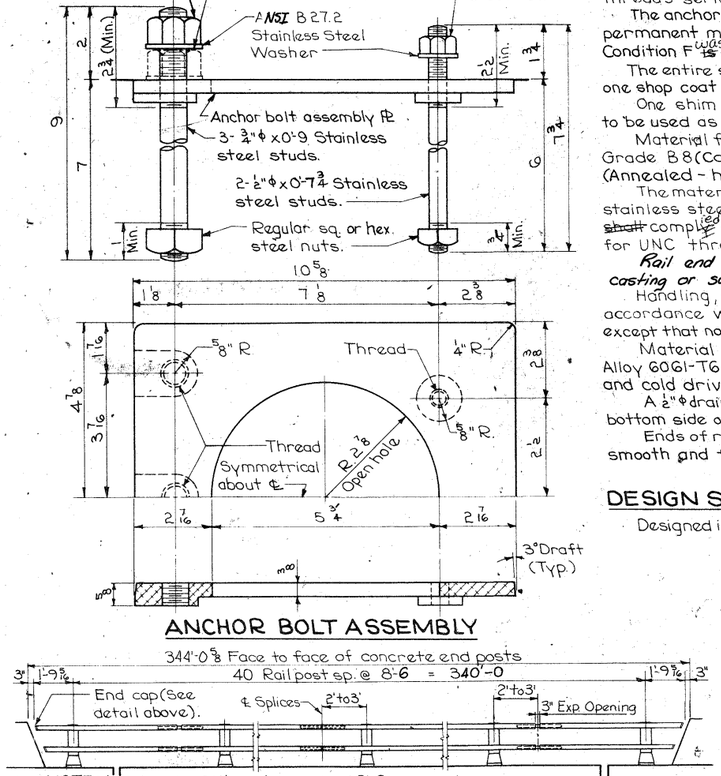


REAR VIEW OF POST





POST BASE PLATE DETAILS



ANCHOR BOLT ASSEMBLY

TYPICAL ELEVATION OF RAILING AND RAIL POST LAYOUT

ALUMINUM HANDRAIL NOTES:

The aluminum handrail ~~is to be~~ was bid on a lineal foot basis measured from end to end of rail. The price bid for "Aluminum Handrail" ~~shall be~~ was full compensation for furnishing all material including the anchor bolts and all of the equipment and labor required to erect the rail in accordance with these plans and specifications.

Each rail section ~~must be~~ was attached to as many posts as possible but to at least three posts before being spliced, ~~except for end rail sections~~.

Material for rails, post, post base plate, rail splice bar and clamp bar ~~shall be~~ was ASTM B-221 Alloy 6061-T6.

Material for aluminum washers and shims ~~shall be~~ was ASTM B-209; Alloy Alclad 2024-T3 for washers and Alloy 1100-O for shims.

Material for anchor studs ~~shall be~~ was an ASTM A276 Stainless steel with a minimum ultimate strength of 100,000 psi, a minimum elongation in two inches of 12% and a minimum reduction of area of 40%. Stud thread ~~shall~~ conform to ANSI B-1.1 for UNC threads series, class 2A fit. Threads ~~may~~ were be rolled or cut. Diameter of stud ~~shall be~~ was not less than pitch diameter of threads.

Material for steel nuts ~~shall be~~ was A.S.T.M. A-307 Grade A, and ~~shall~~ conform to ANSI B-18.2. Threads ~~shall~~ comply with ANSI. B-1.1 for UNC threads series, class 2B fit.

The anchor bolt assembly plate ~~shall be~~ was a flat and true aluminum alloy permanent mold casting complying with ASTM B-108 Alloy SG70 A or B. Condition F ~~is~~ was acceptable. Suitable alternates ~~will be~~ were considered for approval.

The entire surfaces of anchor bolt assembly plate and the shims ~~are to be~~ were given one shop coat of zinc chromate shop coat paint or red lead shop coat paint.

One shim "A" and one shim "B" ~~is to be~~ were furnished for each post, to be used as required.

Material for clamp bar bolt ~~shall be~~ was stainless steel A.S.T.M. A-193, Grade B8 (Carbide solution treated) or ASTM A-276 Type 430 (Annealed - hot or cold finished).

The material for the stainless steel nuts and washers ~~shall be~~ was non-magnetic stainless steel. The stainless steel nuts ~~shall be~~ were hexagonal, finished and ~~shall~~ comply with ANSI B-18.2. Threads ~~shall~~ comply with ANSI B-1.1 for UNC threads series, class 2B fit.

~~Rail end caps may be~~ were either alluminum alloy permanent mold casting or sand mold casting.

Handling, storage and installation of aluminum handrail ~~shall be~~ was in accordance with Section 2414.06 of the Standard Specifications, except that no caulking ~~will be~~ was required.

Material for aluminum rivets ~~shall be~~ was A.S.T.M. B-316 or B-221 Alloy 6061-T6. Rivets ~~shall be~~ were button head, cone point and cold driven.

A ½"ϕ drain hole ~~is to be~~ was provided, 3 inches in from the end, at the bottom side of the end sections of all rails.

Ends of rail sections ~~to be~~ were sawed or milled. Cut ends ~~to be~~ were true, smooth and free from burrs or ragged edges.

DESIGN SPECIFICATIONS:

PROJECT CONSTRUCTED ACCORDING TO STANDARDS

Designed in accordance with 1964 interim A.A.S.H.O. Specifications.

ALUMINUM HANDRAIL QUANTITIES		
Aluminum Handrail	687.1	Lin.Ft.

Design For 29°07'30" Skew

330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans — 107'-0 Interior Spans

ALUMINUM HANDRAIL DETAILS

Station: 3790+62.4 (Local Rd.)
Station: 790+62.4 (I-35)

June, 1972

FRANKLIN COUNTY

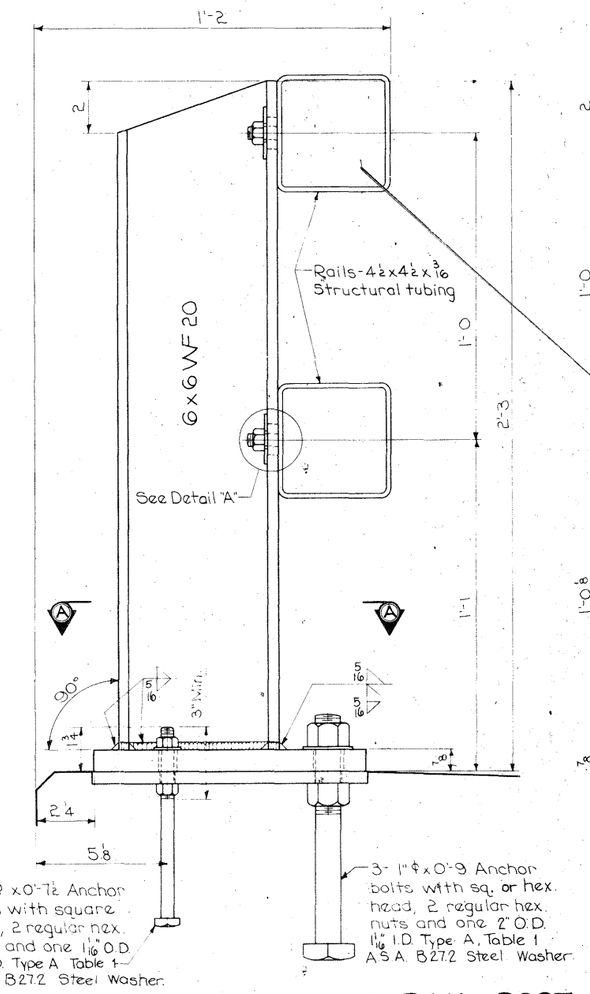
IOWA STATE HIGHWAY COMMISSION

Design Sheet № 14 Of 17 File № 23230 Design № 4470

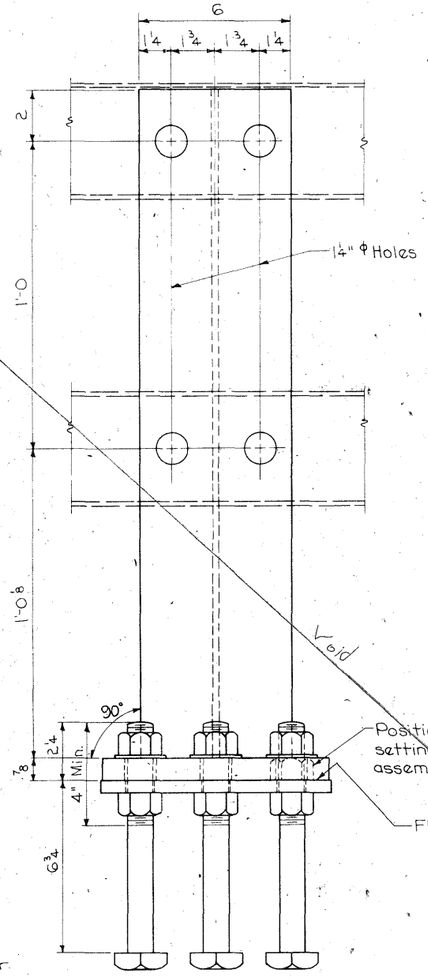
DESIGNED BY: _____ TRACED BY: D. Hanson
DETAILED BY: _____ CHECKED BY: L. Phillips

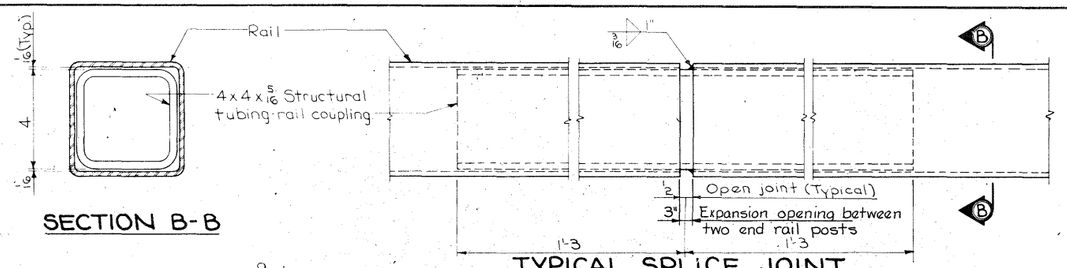
ALUMINUM HANDRAIL DETAILS | STANDARD SHEET 1012 A | FRANKLIN COUNTY | PROJECT NUMBER I-35-6(16)166--01-35

STATE	FED ROAD DIST. №	FISCAL YEAR	SHEET №	TOTAL SHEETS
IOWA	5		56	85



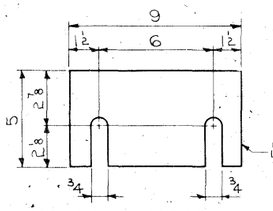
RAIL POST



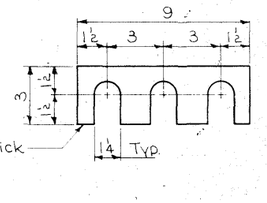


SECTION B-B

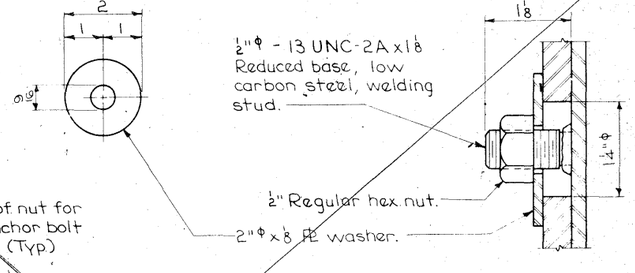
TYPICAL SPLICE JOINT



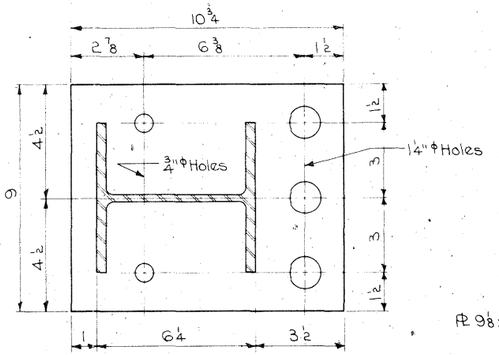
SHIM "A" DETAIL



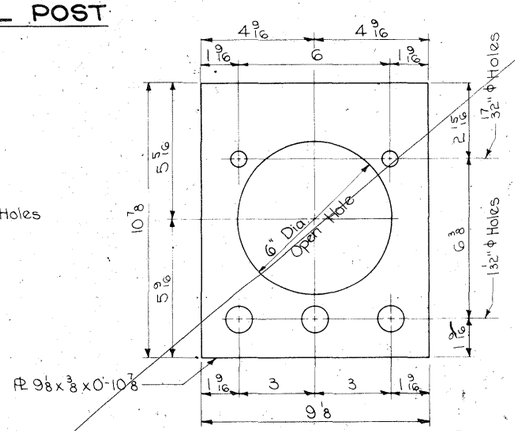
SHIM "B" DETAIL



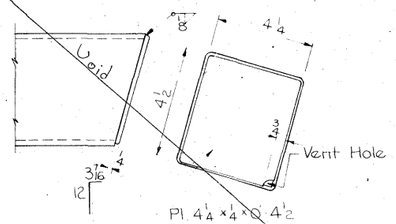
DETAIL "A"



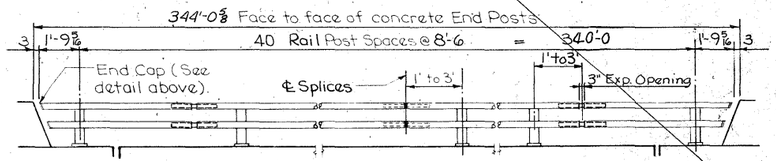
SECTION A-A



ANCHOR CAGE DETAILS



RAIL END CAP DETAILS



NOTE:
Maximum rail post spacing = 8'-6.

TYPICAL ELEVATION OF RAILING AND RAIL POST LAYOUT

STEEL HANDRAIL NOTES:

The steel handrail is to be bid on a lineal foot basis measured from end to end of rail. The price bid for "Steel Handrail" shall be full compensation for furnishing all material including the anchor bolts and all equipment and labor required to erect the rail in accordance with these plans and Specifications.

Each rail section must be attached to as many posts as possible, but to at least three posts before being spliced, except for end rail sections.

Material for rail tubing, post, base plate and anchor cage shall be A.S.T.M. A-36 and are to be galvanized after fabrication to A.S.T.M. A-123.

Material for anchor bolts and nuts, and rail to post attachment nuts shall be A.S.T.M. A-307 - Gr.T, Grade A.

Anchor bolts and nuts, rail to post attachment nuts, end caps, washers and shims are to be galvanized to A.S.T.M. A-153.

Ends of tube sections to be sawed or milled. Cut ends to be true, smooth and free from burrs or ragged edges.

Welding shall be in accordance with Section 2408.15 of the Standard Specifications.

Handling, storage and installation of steel handrail shall be in accordance with Section 2414.06 of the Standard Specifications, except that no caulking will be required.

One shim "A" and one shim "B" is to be furnished for each post, to be used as required.

A surface is considered to be "Flat and True" when the deviation from a straight edge placed on this surface in any position, is less than 1/16".

No painting will be required.

Rail studs shall be provided with adequate protection during shipment.

DESIGN SPECIFICATIONS:

Designed in accordance with 1964 interim A.A.S.H.O. Specifications.

STEEL HANDRAIL QUANTITIES	
~~Steel Handrail~~	~~687.1 Lin. Ft.~~

PROJECT CONSTRUCTED ACCORDING TO STANDARDS

Design For 29°07'30" Skew

330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans — 107'-0 Interior Spans

STEEL HANDRAIL DETAILS

Station: 3790+62.4 (Local Rd.)
Station: 790+62.4 (I-35)

June, 1972

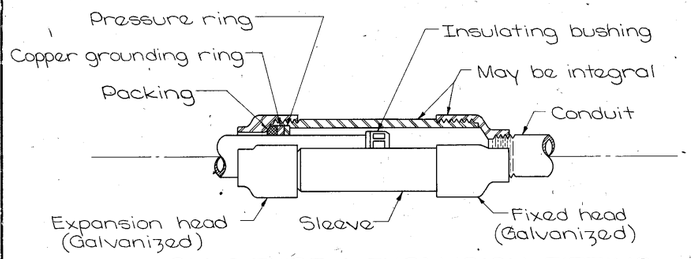
FRANKLIN COUNTY

IOWA STATE HIGHWAY COMMISSION

Design Sheet № 15 Of 17 File № 23230 Design № 4470

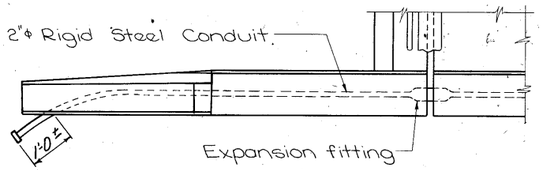
Revised 7-25-66: Caulking at posts eliminated.

DESIGNED BY:	TRACED BY: D. Hanson	STEEL HANDRAIL DETAILS	STANDARD SHEET 1013A	FRANKLIN COUNTY	PROJECT NUMBER	STATE	FED ROAD DIST. №	FISCAL YEAR	SHEET №	Total SHEETS
DETAILED BY:	CHECKED BY: L. Phillips				I-35-6(16)166--01-35	IOWA	5		57	85

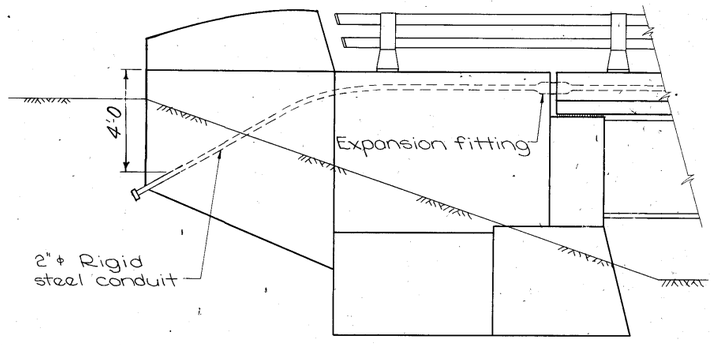


RM-2, TYPE 1 EXPANSION FITTING

Expansion chamber length ~~was~~ 6 inches.



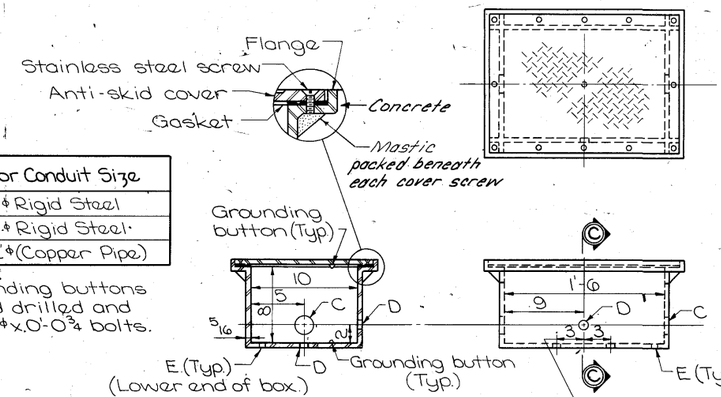
PART PLAN



PART ELEVATION

Bossed For	Hole	For Conduit Size
5 Threads	C	2"ϕ Rigid Steel
None	D	1"ϕ Rigid Steel
None	E	½"ϕ (Copper Pipe)

NOTE: The grounding buttons ~~are to be~~ were blind drilled and tapped for ⅜"ϕ x 0'-0¾" bolts.

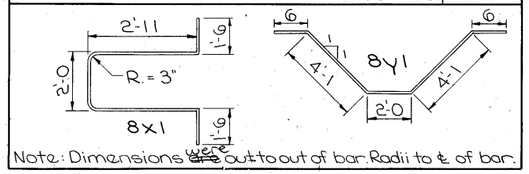


RM-9, TYPE 1 JUNCTION BOX

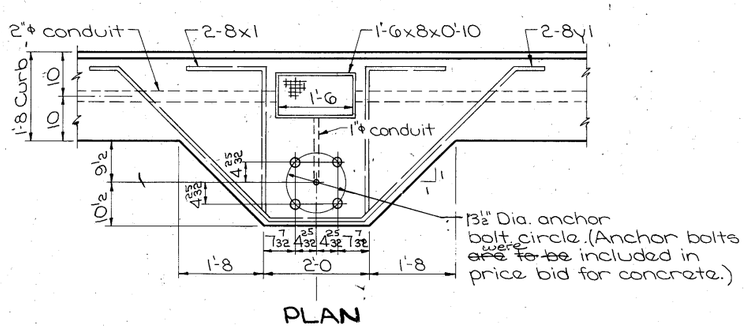
WATERTIGHT, CAST IRON – FLUSH MOUNT

REINFORCING BAR LIST — ONE BASE

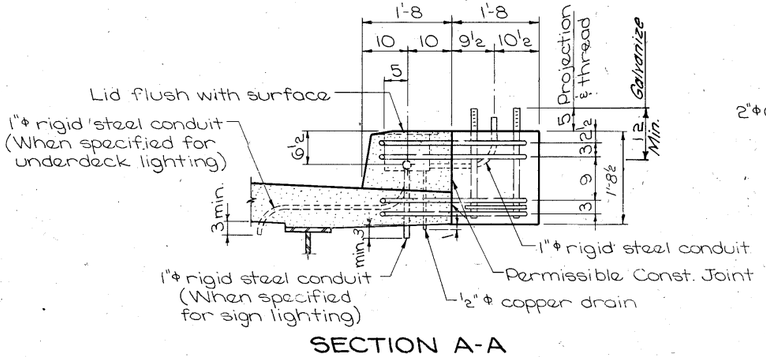
Bar	Location	Shape	No.	Length	Weight
8x1	Pole Anchors		2	10'-3	55
8y1	Curb Anchors		2	11'-2	60
				Total lbs.	115



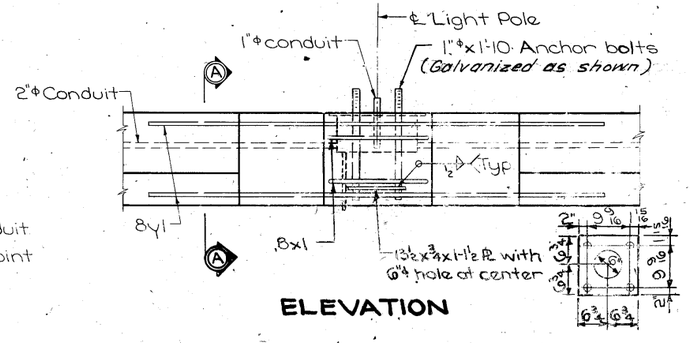
Note: Dimensions ~~are~~ were out to out of bar. Radii to ℄ of bar.



PLAN



SECTION A-A



ELEVATION

LIGHTING NOTES:

Construction ~~shall~~ conformed with the current Iowa State Highway Commission Standard Specifications plus current Special Provisions and current Supplemental Specifications for Highway Lighting.

Anchor bolts ~~shall be~~ were galvanized as shown and ~~shall~~ conform to the requirements of ASTM A-325.

After conduit runs ~~have~~ had been installed a stiff, oversize wire brush, or mandrel ~~shall be~~ was pulled through the conduit to make certain that no appreciable foreign material remained in the conduit, and that the conduit had not been flattened or otherwise blocked during construction. Each open end of the conduit ~~shall be~~ were threaded. Threads ~~shall be~~ were protected with an approved bituminous compound. Temporary caps or plugs ~~shall be~~ were installed to exclude dirt and moisture.

All entrance holes in junction boxes except for drain pipes ~~shall be~~ were tapped for the specified conduit size. Grounding buttons ~~shall be~~ were 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~~ were 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.

Location of the ℄ of light pole ~~may be~~ was shifted ± 1'-0 so that the location of the junction box ~~does~~ did not interfere with the rail post anchor bolts and base plate.

The contract unit price per lineal foot of conduit ~~shall be~~ was 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~~ was included in the Superstructure Estimated Quantities.

The length of conduit installed ~~shall be~~ was measured in feet by the Engineer.

Cost of furnishing and installing poles, lights and lighting conductor ~~is~~ was not a part of this estimate.

Expansion fitting ~~shall be~~ was as specified or as approved by the Engineer. Typical details are shown on this sheet.

TOTAL ~~ESTIMATED~~ QUANTITIES BASES

Item	Amount
2"ϕ Rigid Steel Conduit *	720 L.F.

* Quantity included 716 L.F. of 2"ϕ conduit and 4 L.F. of 1"ϕ conduit.

PROJECT CONSTRUCTED ACCORDING TO STANDARDS

Design For 29° 07' 30" Skew

330'-0 x 32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 End Spans 107'-0 Center Span

LIGHTING DETAILS

Station: 3790 + 62.40 (Local Rd.)
Station: 790 + 62.40 (I-35)

June, 1972

FRANKLIN COUNTY

IOWA STATE HIGHWAY COMMISSION
Design Sheet № 16 Of 17 File № 23230 Design № 4470

Revised 3-14-72: Anchor bolts changed, mastic added, steel conduit changed.
Revised 11-12-71: End post details revised.

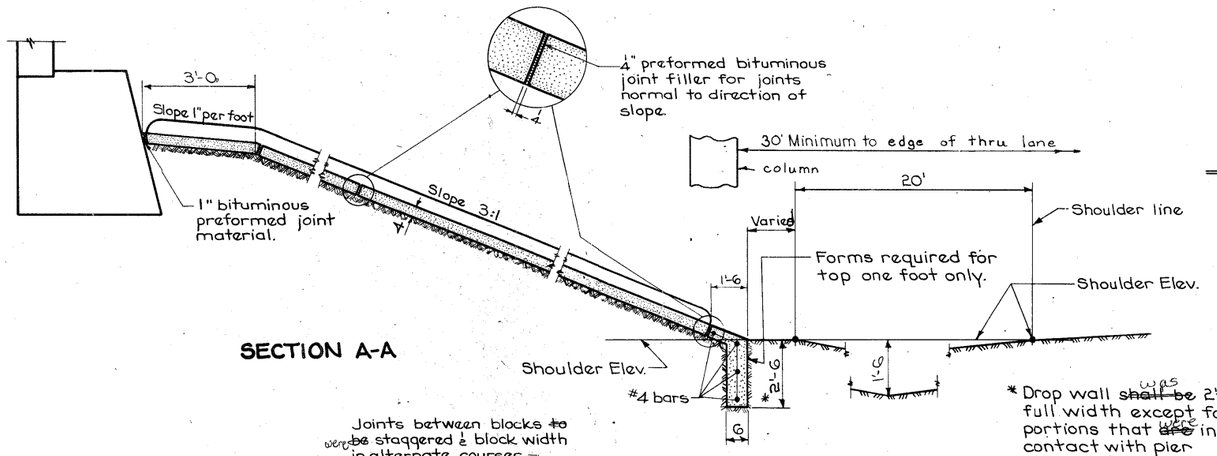
DESIGNED BY: _____ TRACED BY: D.A. Wright
DETAILED BY: _____ CHECKED BY: L. Phillips

LIGHTING DETAILS | STANDARD SHEET 1014 A | FRANKLIN COUNTY | PROJECT NUMBER I-35-6(16)166--01-35

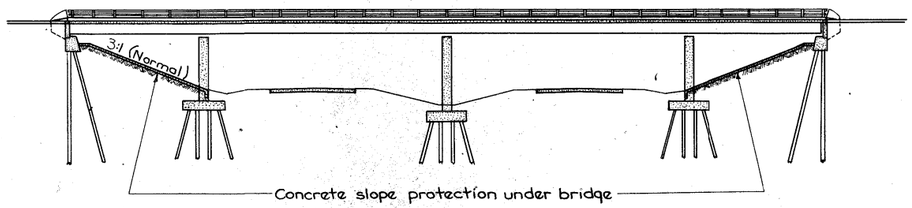
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO	TOTAL SHEETS
IOWA	5		58	85

Revised 2-8-72 - Material in form out around column changed.
Revised 6-4-70 - Ditch Depth Changed.
Revised 9-19-68 - Column clearance dimension changed from edge of shoulder to edge of thru lane.
Revised 9-18-68 - Form-out around column and crushed stone added.
Revised 6-1-68 - Toe of slope protection changed and ditch and column clearances dimensions added.

Revised 6-20-67 - Dowel bar length changed and note added.
Revised 3-2-65 - Curb added.
Revised 10-30-64 - Revised for 1964 Standard Spec's.
Revised 1-19-61 - Curb dowel bars added.
Revised 7-21-60 - Corrected for 1960 Standard Specifications.
Revised 2-15-60 - Precast block construction deleted. Curb added to sides.
Revised 9-15-59 - Statement concerning erosion control added.
Revised 9-4-59 - Statement concerning disposal of excess earth added.

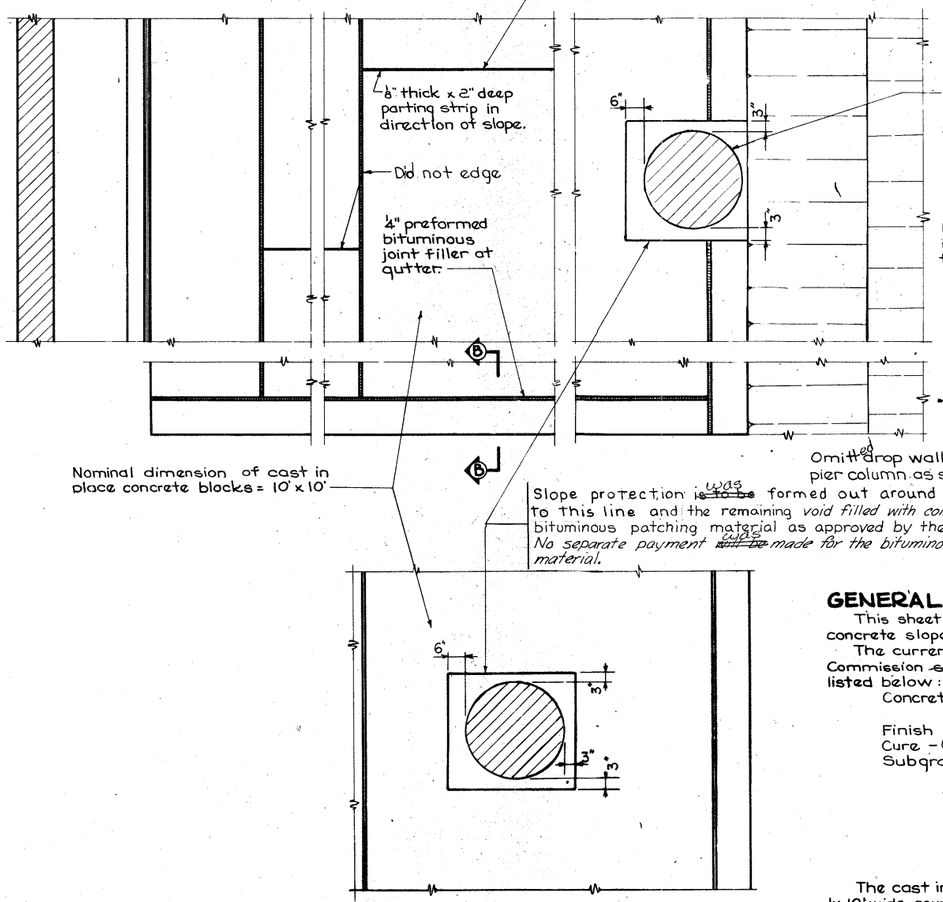


SECTION A-A



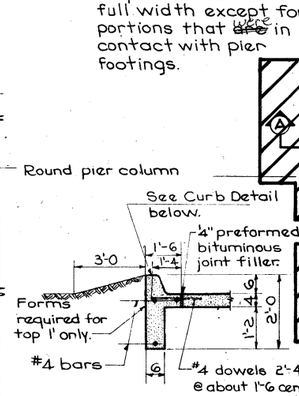
LONGITUDINAL SECTION ALONG ℄ OF ROADWAY

* Drop wall ~~shall be~~ was 2'-6 full width except for portions that ~~are~~ were in contact with pier footings.

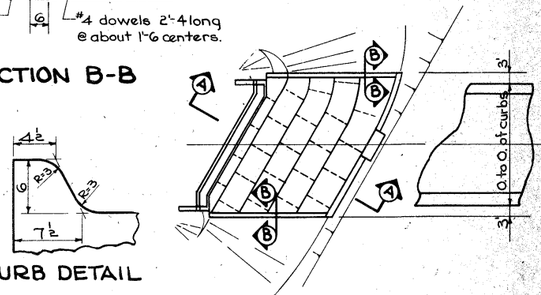


PART SLOPE PROTECTION PLAN (0° SKEW) FOR COLUMNS IN SLOPE

Scale: 1" = 1'-0

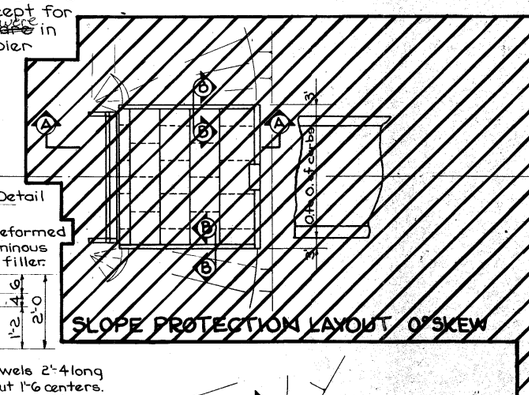


SECTION B-B

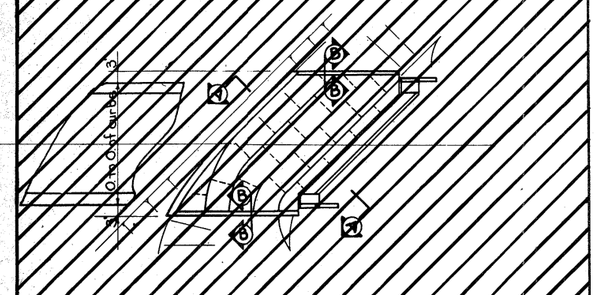


CURB DETAIL

SLOPE PROTECTION LAYOUT 0° SKEW



SLOPE PROTECTION LAYOUT 15° SKEW



SLOPE PROTECTION LAYOUT 45° SKEW

SLOPE PROTECTION LAYOUT 29°07'30" SKEW

GENERAL NOTES:

This sheet shows details for placing portland cement concrete slope protection under overhead structures.

The current specifications of the Iowa Highway Commission ~~shall~~ apply with modifications or additions listed below:

Concrete - Class C Structural.

Finish - Class 1, Floated Surface Finish.

Cure - Cure as per current Specifications.

Subgrade Preparation - The subgrade ~~is to be~~ was shaped and compacted so that finished slope protection ~~will be~~ was similar to examples shown on this sheet. The subgrade ~~shall be~~ was firm when concrete ~~is~~ was placed. Sprinkling required ~~shall be~~ was done early enough so that concrete ~~is not~~ was placed on a muddy subgrade. No subgrade paper ~~will be~~ was required.

The cast in place concrete ~~is to be~~ was poured in approximately 10' wide courses, but all courses on one slope ~~should have~~ were approximately equal widths. Adjacent courses ~~shall not be~~ were not poured within 15 hours of one another. The joints in the direction of the slope ~~are to be~~ were staggered about ½ block width.

Basis of payment: Payment ~~will be~~ was made on a square yard basis for slope protection constructed. The unit price bid per square yard ~~is to~~ includes costs of all materials and labor required to construct this protection as shown or intended by these plans. The subgrade preparation including any necessary excavation or filling required to shape the slope to the lines shown on the plans and disposal of excess earth excavated as directed by the Engineer, ~~are~~ was considered incidental to placing the concrete slope protection.

Pay quantities ~~are to be~~ were based on field measured out to out dimensions.

Where erosion control work ~~is~~ was completed the Contractor ~~shall be~~ was responsible for any plant materials destroyed adjacent to slope protection area. The Contractor ~~shall~~ replant, reseeded and re mulch all areas disturbed adjacent to slope protection areas in accordance with section 2601 of Standard Specifications, Series of 1964, at his expense.

PROJECT CONSTRUCTED ACCORDING TO STANDARDS

CONCRETE SLOPE PROTECTION	
ITEM	QUANTITY
East Berm.	~~287,222~~ 260 Sq.Yd.
West Berm.	~~292,555~~ 250 Sq.Yd.
Total:	~~579,777~~ 510 Sq.Yd.

Design For 29°07'30" Skew
330'-0 x 32 CONTINUOUS WELDED GIRDER BRIDGE
58'-0 End Spans 107'-0 Interior Spans
CONCRETE SLOPE PROTECTION
Station: 3790 + 62.4 (Local Rd.)
Station: 790 + 62.4 (I-35)
June, 1972
FRANKLIN COUNTY
IOWA STATE HIGHWAY COMMISSION
Design Sheet № 17 Of 17 File № 23230 Design № 4470

DESIGNED BY: _____ TRACED BY: D Hanson
DETAILED BY: _____ CHECKED BY: J RP 10-30-64

CONCRETE SLOPE PROTECTION | STANDARD SHEET 1006 | FRANKLIN COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-35-6 (16)166--01-35	IOWA	3		59	85