

STATE OF IOWA
STATE HIGHWAY COMMISSION
DESIGN FOR

BRIDGE WIDENINGS

PROJECT NO. F.N. 152

PRIMARY ROAD SYSTEM

ADAMS COUNTY

SEPTEMBER 16 1958

CONSTRUCTION PLANS SHOWING PROJECT AS BUILT
ONE COPY PREPARED

PREPARED BY: *Dwight E. Richardson* RESIDENT ENGINEER

DATE: DECEMBER 1, 1959

THIS COPY APPROVED AND FORWARDED TO AMES

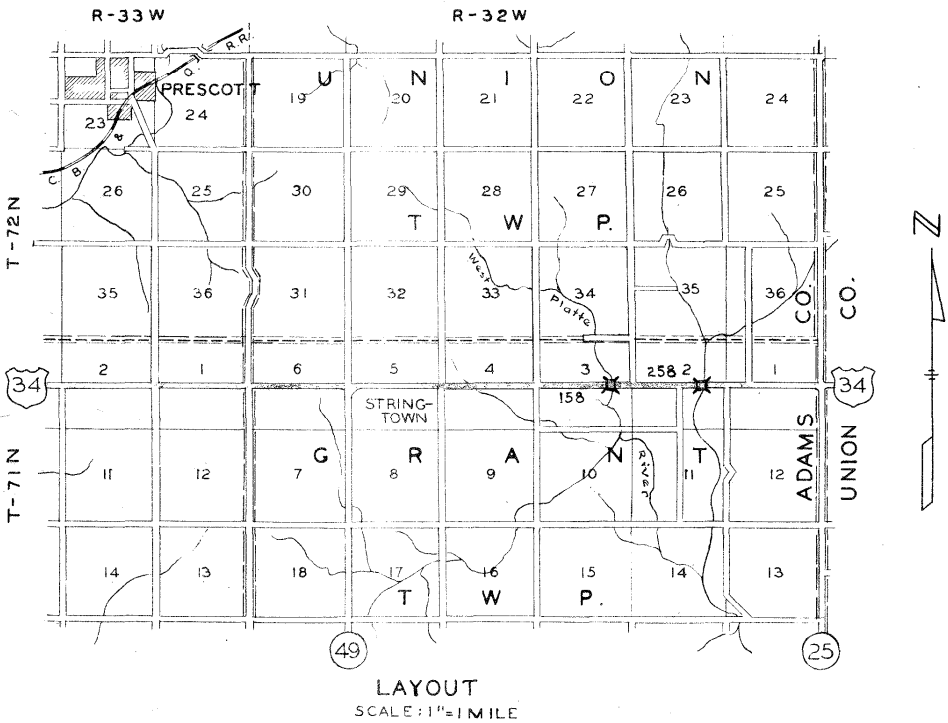
DATE: *July 19, 1962*

Ray M. Collins
Dist. Constr. Engineer

Two copies to be made and returned to:

Robert H. Given -- District Engineer

Harvey Porter -- Res. Maint. Engineer



DESIGN NO. 158
SECTION NO. 3

STA. 624+73 ON #34
OVER W. PLATTE RIVER
GRANT TOWNSHIP

REPLACE 50'X 20' PONY TRUSS WITH
50'X 30' I-BEAM BRIDGE

ESTIMATE OF QUANTITIES

ITEM	UNIT	TOTAL
Run Around		Lump Sum
Concrete	Cu. Yds.	96.9 11
Reinforcing Steel	Lbs.	14,083 14,014
Structural Steel	Lbs.	38,023 37,412
PI0A Precast Concrete Piling	Lin. Ft. 4 @ 25'	100
Excavation Class 20	Cu. Yds.	70
Excavation Class 21	Cu. Yds.	14.0
Excavation Class 24	Cu. Yds.	44.0
Pavement Widening	Sq. Yds.	12
Flood Lighting	L. S.	Lump Sum
Removal of Concrete	L. S.	Lump Sum
Storing of Old Structural Steel	L. S.	Lump Sum

Letting of September 16, 1958

Specifications:
All Material & Construction to be in Accordance with
Iowa State Highway Commission Standard Specifications,
Series 1956, Plus Current Special Provisions.

These Bridges Will Require Bridge Sign Assemblies, Furnished and
Placed by Others, As Specified in S & T Instructions No. 11.
Revised March 1, 1956.

Work Order No. 2 (Notes as per Art. 2403.30 Std. Spec.)

1. Heat materials & protect Conc. = 74.31 cy.
Heat water & protect Conc. = 74.31 cy.
Heat water only = 2.15 cy.

Work Order No. 3 (Contract Prices)

1. Conc. to raise bridge seats = 0.61 cy.
2. Conc. to raise wing post bases = 1.14 cy.

DESIGN NO. 258
SECTION 2

STA. 676 + 56.4 ON * 34
GRANT TOWNSHIP

REPLACE 70' X 20' PONY TRUSS WITH
70' X 30' CONTINUOUS I-BEAM BRIDGE

ESTIMATE OF QUANTITIES

ITEM	UNIT	TOTAL
Concrete	Cu. Yds.	126.7
Reinforcing Steel	Lbs.	19,336 19,106
Structural Steel	Lbs.	30,385
* 16" Precast Concrete Piling	Lin. Ft.	663.60 4 @ 31 10 @ 46
Pavement Widening	Sq. Yds.	12
Excavation Class 10	Cu. Yds.	30
Excavation Class 20	Cu. Yds.	50
Excavation Class 21	Cu. Yds.	10
Flood Lighting	L. S.	Lump Sum
Run Around	L. S.	Lump Sum
Removal & Disposal of Old Concrete	L. S.	Lump Sum

* PI0B or Prestressed

Revised 10-14-58: Expansion joint and reinforcing
steel changed - Design No. 258

Revised 10-14-58 Quantities changed - Design 158

Work Order No. 2 (Notes as per Art. 2403.30 Std. Spec.)
Heat materials & protect Conc. = 74.31 cy.
Heat water & protect Conc. = 74.31 cy.
Heat water only = 2.15 cy.
Protection of Concrete only

7-Sheets

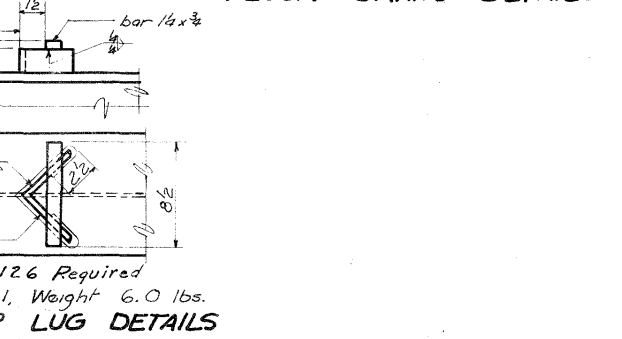
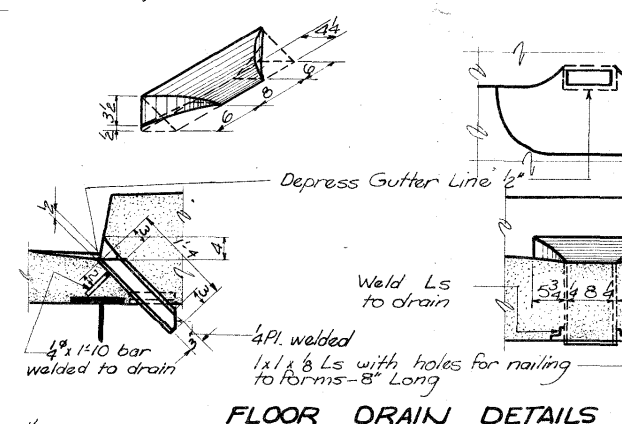
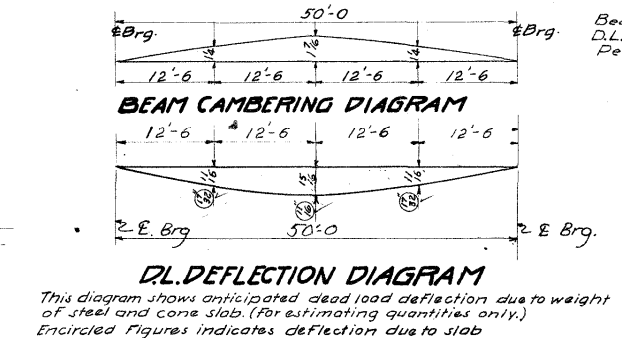
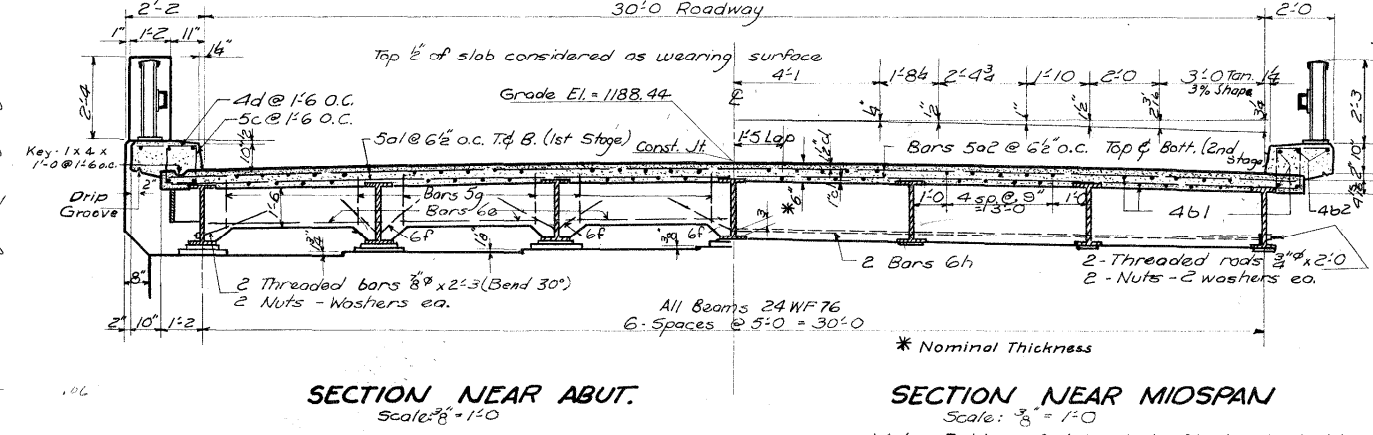
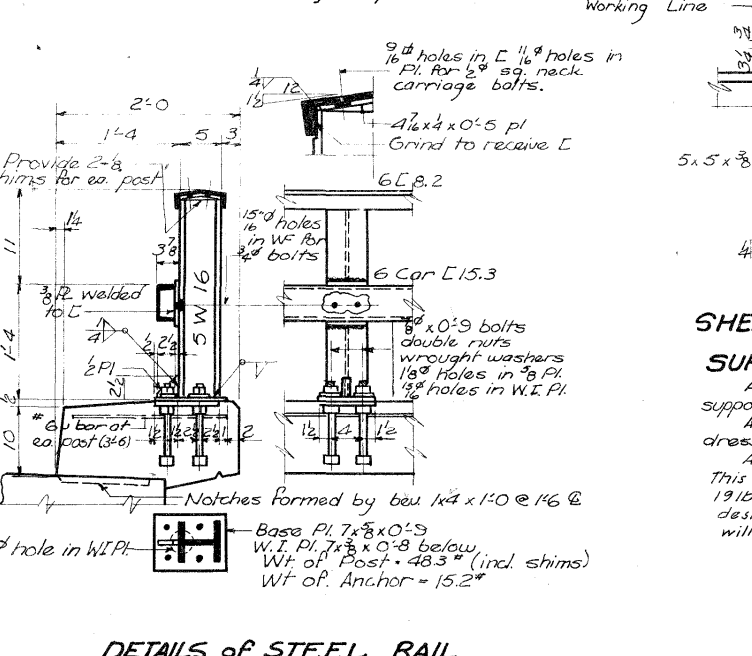
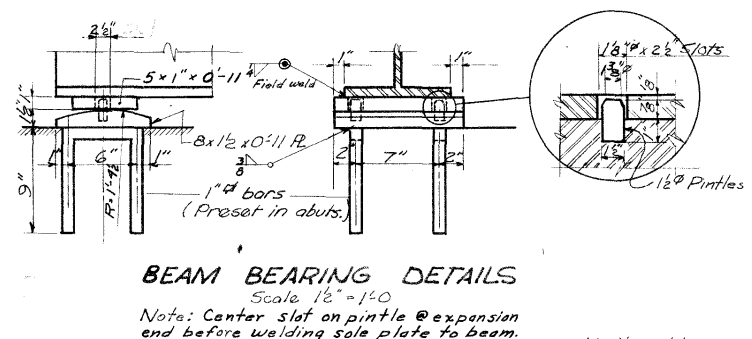
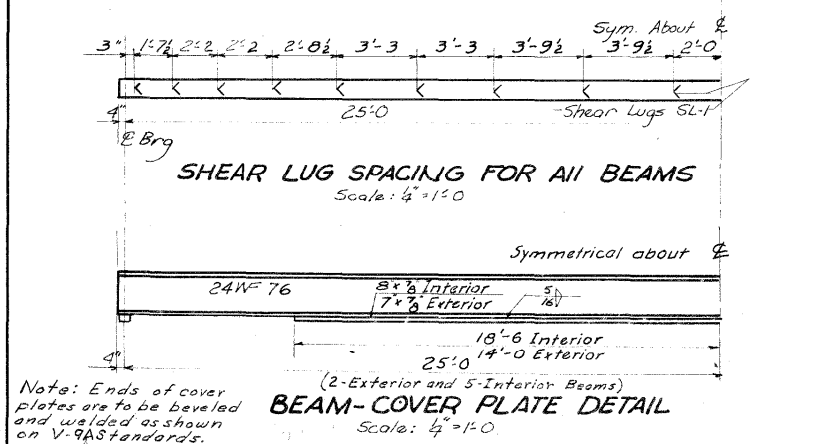
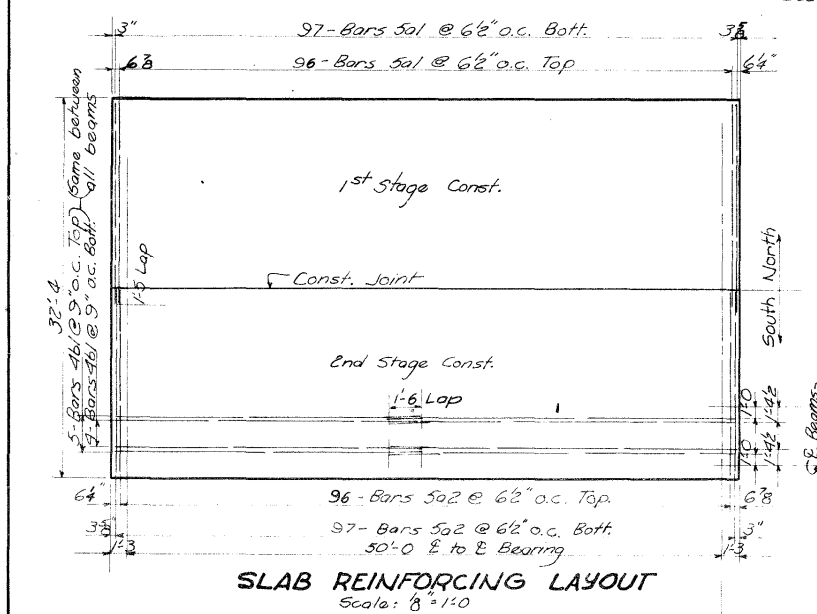
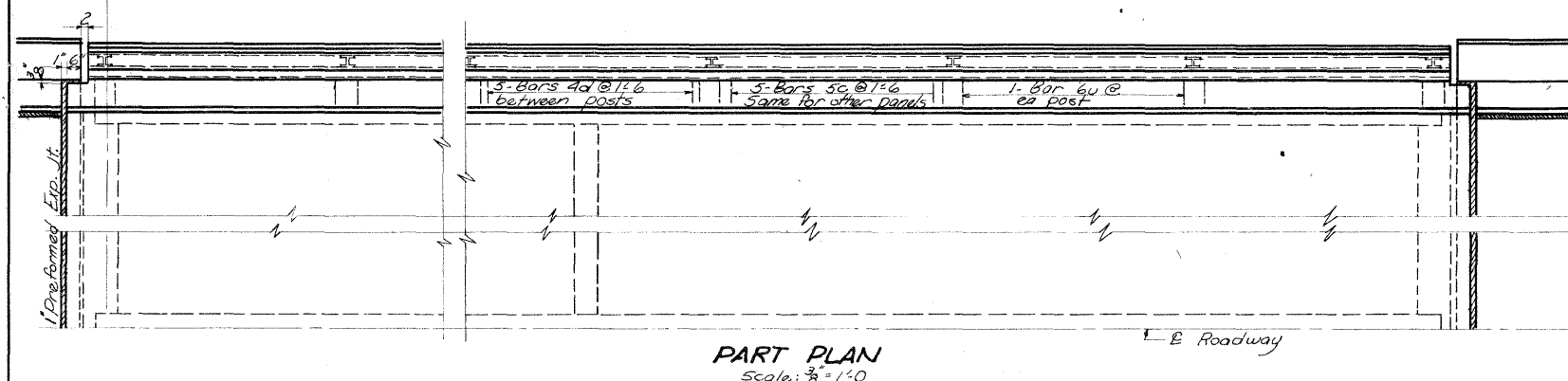
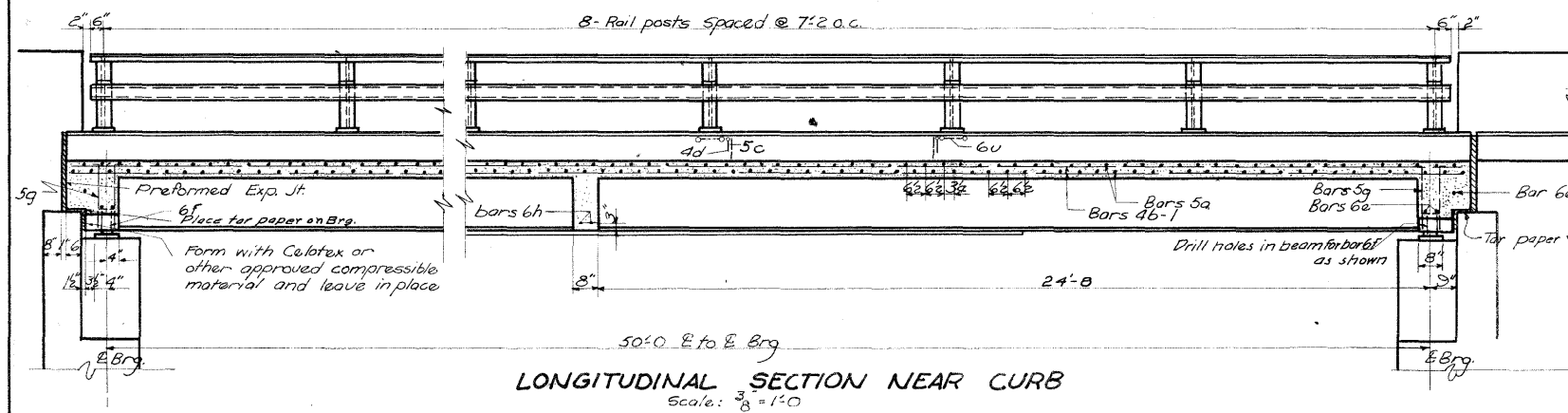
APPROVED

CHIEF ENGINEER DATE
IOWA HIGHWAY COMMISSION

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

DIVISION ENGINEER DATE



BILL OF REINFORCING STEEL - SUPER					
Bar	Location	Shape	No.	Length	Weight
5a1	Slab Transv. 1st stage	—	192	17'-4"	3471
5a2	" " 2nd "	—	192	15'-10"	3204
4b1	Slab & Curb Longitudinal	—	50	53'-0"	2073
4b2	Curb Longitudinal	—	6	51'-0"	211
5c	" Anchors	—	70	3'-6"	231
4d	" Transverse	—	70	1'-11"	86
6e	End Diaphragm	—	24	4'-0"	168
6e1	" "	—	4	15'-12"	99
6f	" "	—	20	4'-0"	120
5g	" "	—	24	4'-4"	108
6h	Center "	—	4	16'-6"	94
6u	Rail Post Anchors	—	16	2'-10"	82
					9957

SUPERSTRUCTURE QUANTITIES	
Item	Quantity
Reinforcing Steel	9957 lbs.
Structural Steel	38023 lbs.
Concrete	44.8 cy.

LOCATION—
On US 34
Over West Platte River
Grant Twp.
7-71N R-32W
Section 3
Adams County

Design For Replacing Under Traffic
50x20' PONY TRUSS WITH 50x30' I-BEAM BRIDGE
Concrete Floor 2'-0" Curb - Steel Rail

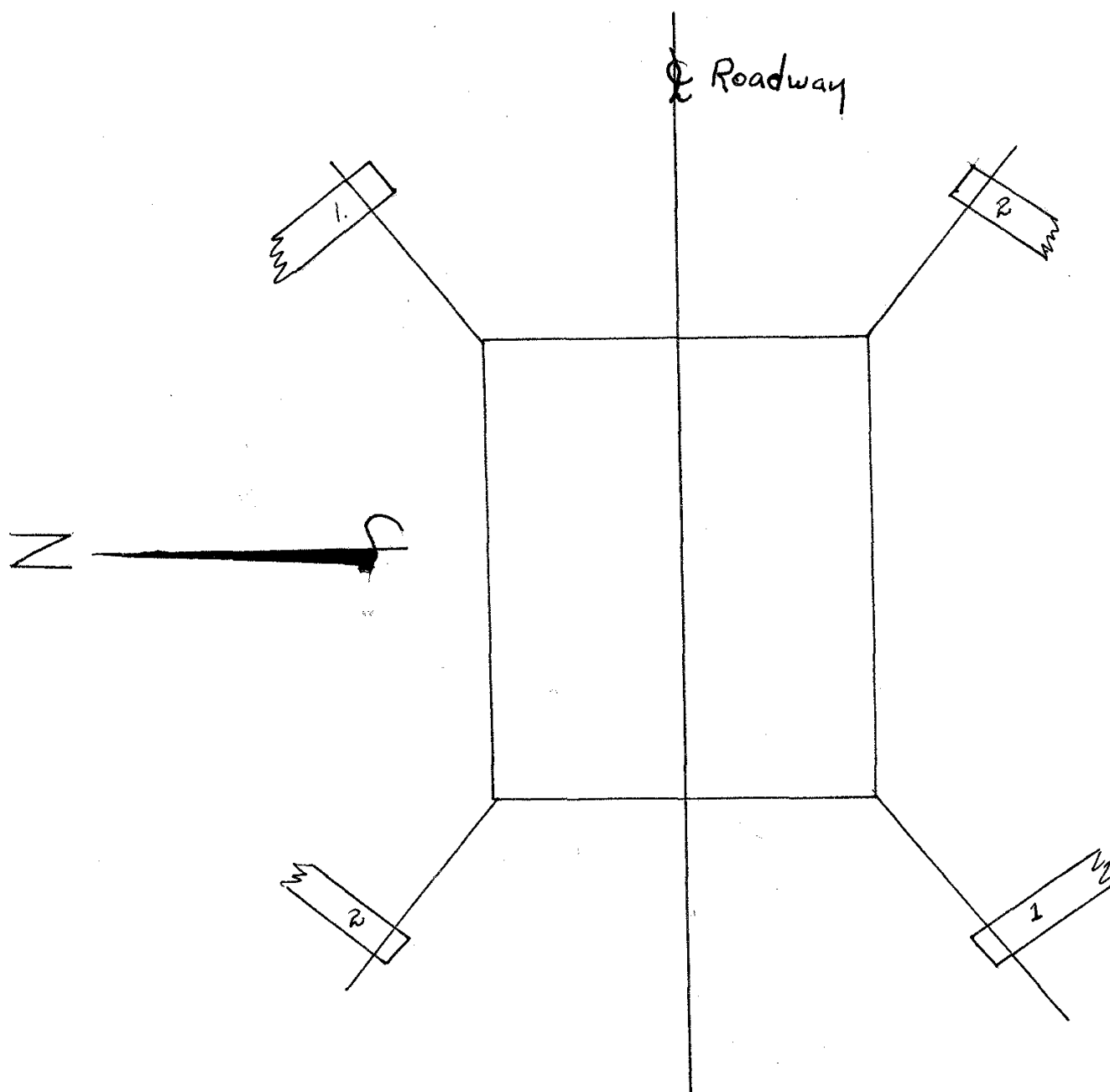
SUPERSTRUCTURE DETAILS
Station 624+73 Project FN-152W
ADAMS COUNTY
Iowa State Highway Commission
January 1958 Sheet 2 of 2

SUPERSTRUCTURE NOTES—
All reinforcing to be securely wired in place and adequately supported on bar chairs before concrete is placed.
All exposed corners of 90° or sharper are to be filleted with a 3/8" dressed and beveled strip.
All threaded rods included in structural steel quantities.
This Superstructure designed for H 20-44 loading plus an allowance of 19 lbs. per sq. ft. of roadway for future wearing surface. The beams are so designed that with a 100% increase in live load and impact the overstress will not exceed 50%.

SHEAR LUG DETAILS
126 Required
SL1, Weight 6.0 lbs.

DETAILS OF STEEL RAIL
Base PL 7'-8" x 0'-9" W.I. PL 7'-8" x 0'-8" below Wt. of Post = 48.3" (incl. shims) Wt. of Anchor = 15.2"

Revised 10-3-58 Beam camber revised.
Revised 10-14-58 Beam and cover plate sizes. Bar list and quantities changed.



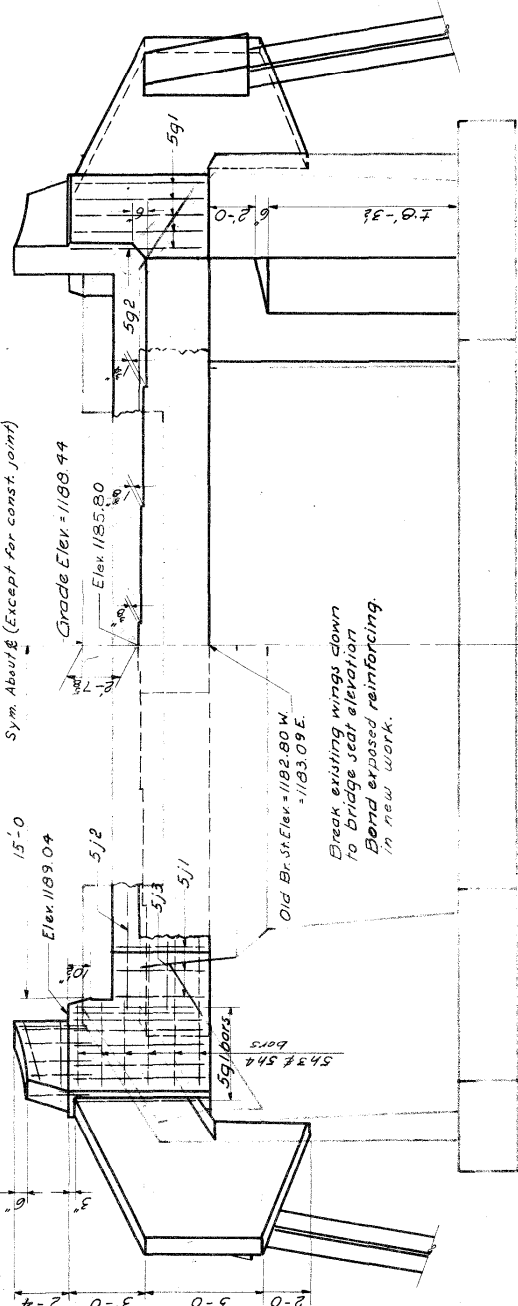
EAST ABUTMENT			
PILE No	DATE DRIVEN	LENGTH IN STRUCTURE	BEARING IN TONS
1	1-30-59	25.0	11.7
2	3-13-59	25.0	13.3

WEST ABUTMENT			
PILE No	DATE DRIVEN	LENGTH IN STRUCTURE	BEARING IN TONS
1	2-28-59	25.0	16.0
2	2-5-59	25.0	15.3

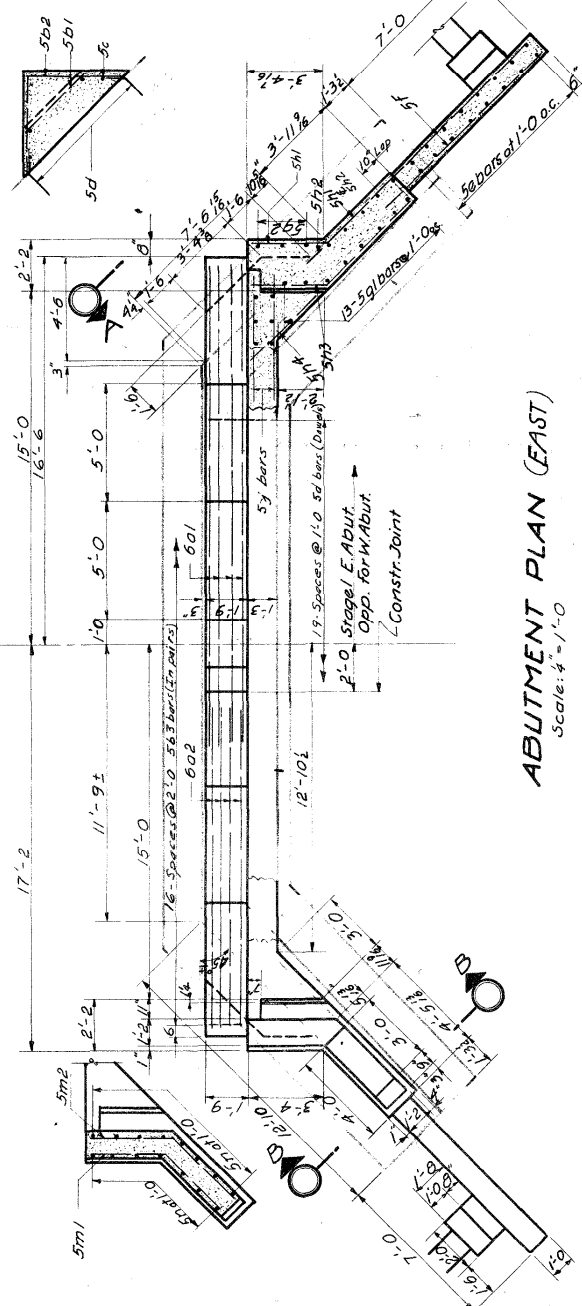
BENCH MARK
Top of Bearing Block N. Side - E. Abut. Elev. = 1183.36
#69 N.W. Wing I.H.C. B.M. Elev. = 1189.26
99
Gr. Elev. = 1188.48
Gr. Elev. = 1189.44

Bar	Location	Shape	No.	Length	Weight
6a1	Bridge Seat Stage 1	"	8	19'-9"	23.8
6a2	" " " 2	"	8	14'-3"	17.2
5a1	Pilaster Horiz.	"	12	6'-10"	8.5
5a2	" " "	"	2	8'-0"	1.7
5b3	Bridge Seat	"	34	4'-7"	16.3
5c	Pilaster Vertical	"	60	12'-0"	10.8
5d	Dowels (field bend)	"	20	2'-0"	12.5
5e	Wing Wall Vertical	"	32	Varies	21.8
5f	" " Horiz.	"	26	Varies	26.4
5g1	Wing Post Base Vert.	"	6	2'-5"	1.6
5g2	" " " Horiz.	"	6	7'-1"	4.4
5h1	" " " "	"	6	5'-0"	3.1
5h2	" " " "	"	6	7'-10"	4.9
5h3	" " " "	"	6	9'-6"	6.0
5h4	" " " "	"	12	4'-0"	5.0
5j1	Backwall Vert.	"	4	5'-6"	2.3
5j2	" " Horiz. Top	"	4	3'-6"	1.5
5j3	" " Bottom	"	6	3'-10"	2.4
5k1	Pile Cap Vert.	"	10	Varies	5.9
5k2	" " Horiz.	"	4	6'-5"	2.7
5m1	Wing Post Horiz.	"	4	7'-4"	3.1
5m2	" " Vertical	"	30	3'-2"	9.9
5n	" " "	"	Total		206.3

ABUTMENT QUANTITIES - 2 ABUTS.	
Concrete	52.1 C.Y.
Reinforcing Steel	412.6 Lbs.
P10-A (Precast Conc. Piling) 4@25'	100 L.F.

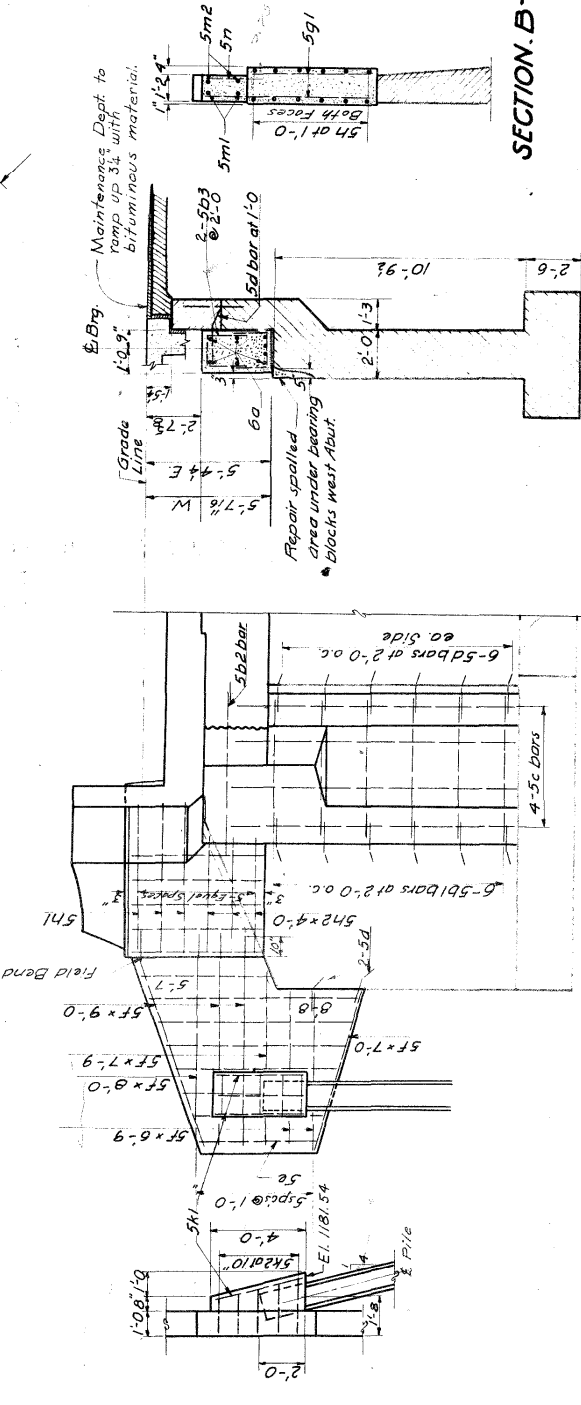


HALF BACKFACE ELEVATION



HALF FRONT FACE ELEVATION

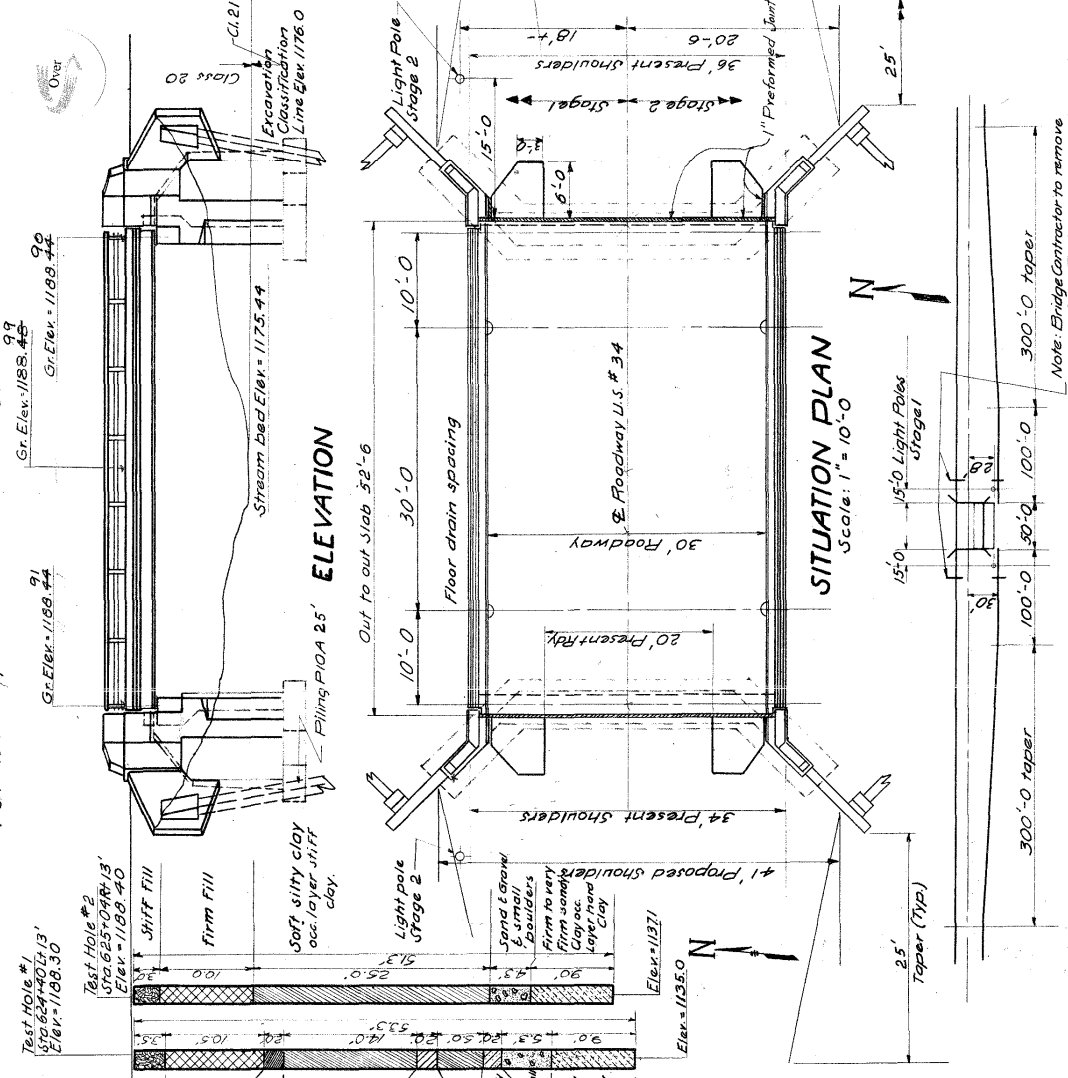
ABUTMENT PLAN (EAST)
Scale: 1/4" = 1'-0"



VIEW A-A

SECTION B-B

E SECTION



SITUATION PLAN
Scale: 1" = 10'-0"

RUN AROUND PLAN
Scale: 1" = 10'-0"

GENERAL NOTES.
This design shows details for replacing the present 50' x 20' Pony Truss (I.H.C. Design #478) with a 50' x 30' I-Beam Bridge. The bridge is designed for H20 loading plus 19 lbs. per sq. ft. of roadway for future wearing surface.
The existing truss span is to be moved 15' South for run around. The weights to be moved and supported at each corner are 12.4 k L.L. + Imp. 4 k. Dirt for run around embankment is to be taken from side ditch near site (about 135 ft.) as directed by Eng. The item run around includes furnishing all materials construction, maintenance, and removal. The item 'Starting Old Structural Steel' includes the cost of hauling and placing in storage at the maintenance yard in Corning.
The Bridge Contractor is to completely fill wings and widen shoulders as shown using material from run around embankment (about 44 cu yd.).
Piling to be driven to full penetration if practicable.
Red lines on tracing and first lines on prints indicate existing structure.
All exposed corners of concrete of 90° or sharper are to be formed with a 3" dressed and beveled fillet as to construct the entire proposed bridge of one time. If this is done the Contractor is to provide free of cost to the Highway Commission the additional Right of Way borrow surfacing material, flood lights and all other items that are in excess of the quantities shown on the plans.
All additional run-around increases of that shown on the plans is to be removed by the Contractor.
Before the construction of additional run-around the Contractor is to submit his plans for the run-around to the Engineer.
All bas to have a clear distance of 12' unless shown otherwise.

LOCATION.
On U.S. Highway # 34
Over West Fork River
Section 3
County Twp.
R-32 W
Adams County

SPECIFICATIONS.

Design: AASHTO Series 1953
Construction: Iowa State Highway Commission -
Series 1956 - Special Provisions for Bridge
Widening Projects #30-57 and other Special
Provisions applicable.

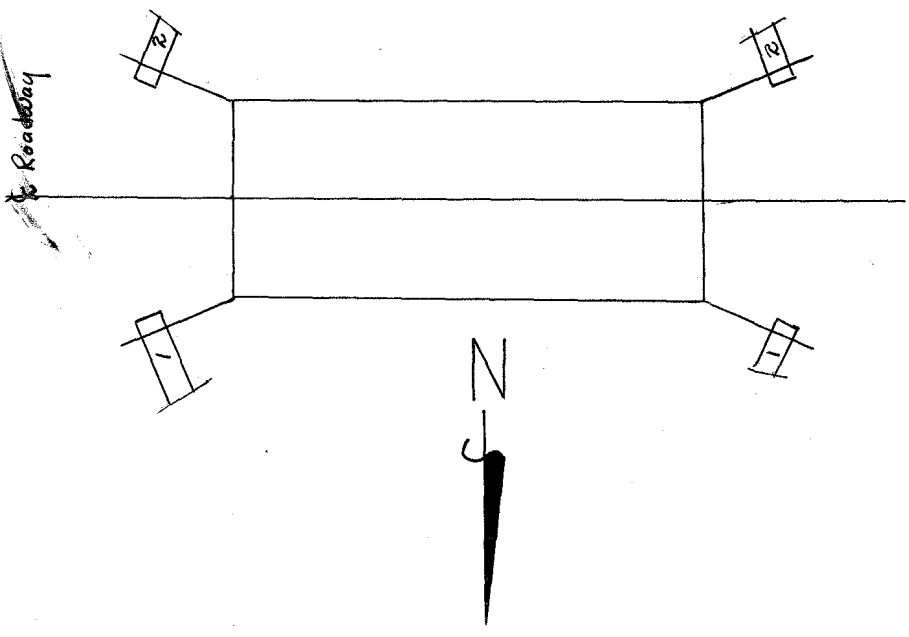
TOTAL ESTIMATED QUANTITIES			
Item	Unit	Amount	Total
Run around	C.Y.	52.1	44.8
Concrete	Lbs.	412.6	99.9
Reinforcing Steel	Lbs.	412.6	99.9
Structural Steel	Lbs.	38,023	38,023
P10-A Precast Conc. Piling	Lin. Ft.	100	100
Excavation Class 20	C.Y.	70	70
" " " 21	C.Y.	14.0	14.0
" " " 24	C.Y.	44.0	44.0
Pavement Widening	Sq. Yd.		12
Flood Lighting	L.S.		
Removal of Concrete	L.S.		
Widening old Str. Steel	"		

Design for Replacing under Traffic.
50' x 20' PONY TRUSS WITH
50' x 30' I-BEAM BRIDGE
Concrete Floor 2'-0" Curb - Steel Rail

ADAMS COUNTY
Station 624+73
Project # FN-152W

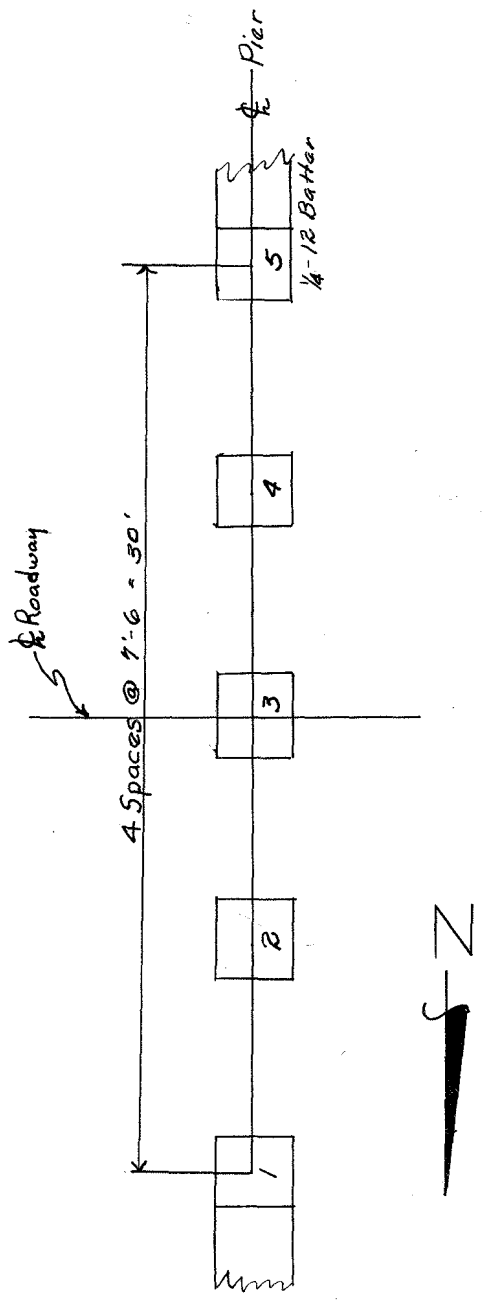
Iowa State Highway Commission

Revised 10-14-58 Bridge seat lowered 2" and quantities changed
Revised 10-3-58 Beam Camber revised



EAST ABUTMENT			
PILE N ^o	DATE DRIVEN	LENGTH IN STRUCTURE	BEARING IN TONS
1	11-14-58	31.0	14.1
2	12-30-58	31.0	16.6

WEST ABUTMENT			
PILE N ^o	DATE DRIVEN	LENGTH IN STRUCTURE	BEARING IN TONS
1	11-14-58	31.0	18.6
2	1-5-59	31.0	17.0



EAST PIER			
PILE N ^o	DATE DRIVEN	LENGTH IN STRUCTURE	BEARING IN TONS
1	11-14-58	54.1	30.6
2	11-13-58	51.6	30.7
3	11-13-58	52.5	31.5
4	12-30-58	53.5	34.5
5	12-30-58	54.6	34.4

WEST PIER			
PILE N ^o	DATE DRIVEN	LENGTH IN STRUCTURE	BEARING IN TONS
1	11-14-58	54.7	31.4
2	11-14-58	54.7	34.6
3	11-14-58	55.3	34.6
4	12-30-58	54.8	46.0
5	12-30-58	54.8	34.4