PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
F 61 (9)			

STATE OF IOWA

STATE HIGHWAY COMMISSION

DESIGN

42'-6"X 30' CONC[illegible] GIRDER

PRIMARY ROAD SYSTEM [illegible] No. F. 61 (9)

CERRO GORDO COUNTY

March 19[illegible]

In letting of April 6, 1954

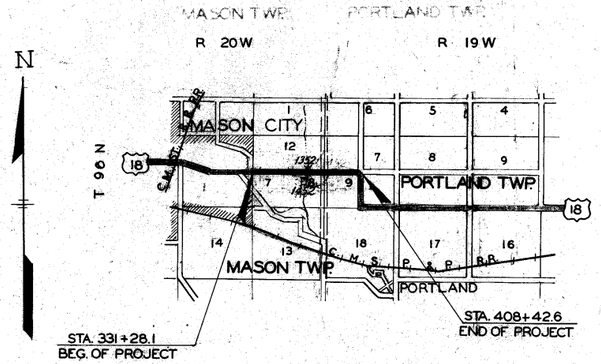
Design No. 1352 Section 12	Station 371+97 Mason Twp.
42'-6"X30' CONC. DECK GIRDER BR.	
ESTIMATE OF QUANTITIES	
Concrete	261.9 Cu. Yds.
Reinforcing Steel	30,197 Lbs.
Structural Steel	80 Lbs.
Excavation, Cl. 20	135 Cu. Yds.
Excavation, Cl. 21	236 Cu. Yds.
Excavation, Cl. 22	21 Cu. Yds.
Excavation, Channel	180 Cu. Yds.
Removal of Old Bridge	Lump Sum

~~Design No. 1452 Station 371+73.65 Ft. Section 12 Mason Twp.~~

~~34'-4" X 20' I - BEAM BRIDGE~~

~~ESTIMATE OF QUANTITIES~~

~~Lumber~~	~~8974 FBM~~
~~Hardware~~	~~328 Lbs.~~
~~Structural Steel~~	~~15,900 Lbs.~~
~~Concrete~~	~~1.4 Cu. Yds.~~
~~Untreated Wood Pile 10@10'4@16' = 164 Lin. Ft.~~	
~~Excavation Cl 20~~	~~6 Cu. Yds.~~
~~Excavation Cl. 21~~	~~20 Cu. Yds.~~
~~Excavation Cl. 22~~	~~1.4 Cu. Yds.~~
~~Removal of Temporary Bridge~~	~~Lump Sum~~



LAYOUT

SCALE 1 INCH = 1 MILE

Specifications:
All material and construction to be in accordance with Iowa State Highway Commission Standard Specifications, Series of 1952.

Mileage Summary:
Br. at Sta. 371+97 - 44'-10" = .008 Mi.

APPROVED:

[redacted]

CHIEF ENGINEER
IOWA HIGHWAY COMMISSION

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

[redacted]

APPROVED:

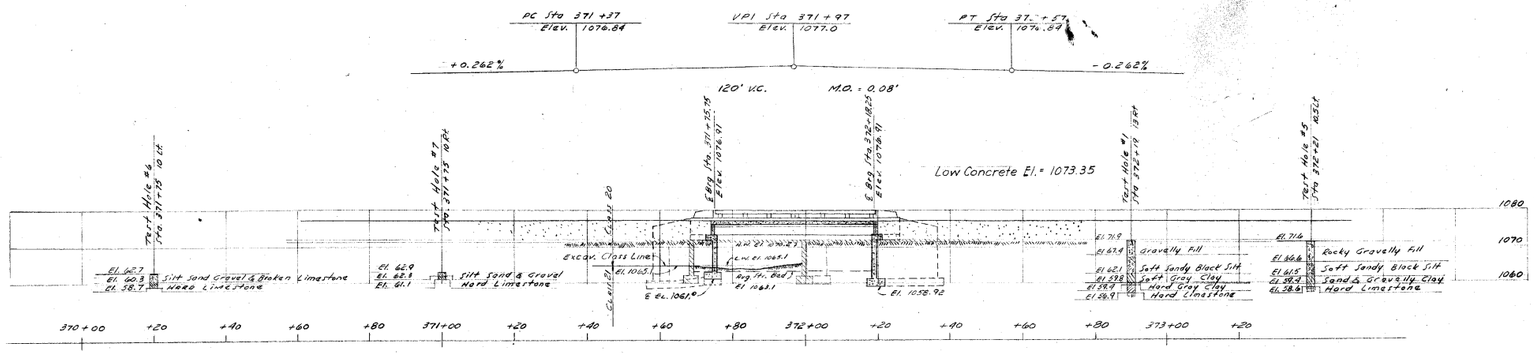
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DISTRICT ENGINEER

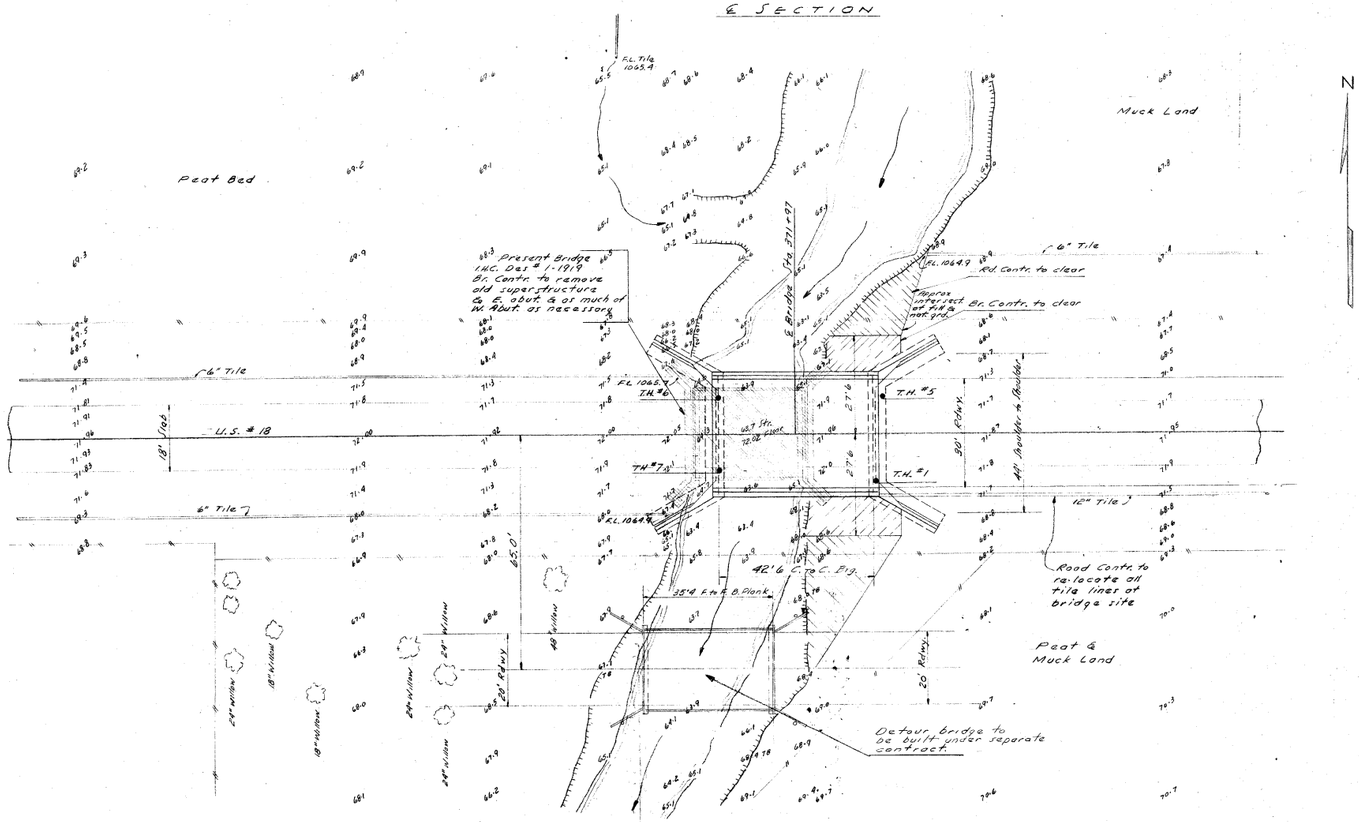
April 6, 1954

CERRO GORDO. PROJ. NO. F 61 (9)

BENCH MARK #55: Sta 371+[illegible] [illegible] at 30.5', 24' I. Brn. 18' Lt.: El. 1074.89



℄ SECTION



SITUATION PLAN
Scale 1" = 20'-0"



TVR ROADWAY CROSS SECT.
Scale 1" = 20'-0

N

Dr. Area = 10.6 Sq. mi. R.F.
N. of waterway below Est. H.W. = 302 Sq. ft.
C = 302/698 = 0.43

GENERAL NOTES

This bridge is designed for H-20 loading with 40# per sq. ft. of roadway for future wearing surface, under the 1949 AASHO Standard Specifications. The slab shown includes ½" W.S.

Bridge Contractor to clear channel down to Elev. 1065.1 and extending 27'-6" either side of the ℄ of roadway.

The existing east abutment of the old bridge is to be removed down to the top of the footing.

Removal of the existing concrete bridge shall include the following: the removal and disposition of the old superstructure and the east abutment, and such portion of the West abutment as interferes with the construction of the new bridge.

Temporary bridge is to be built under separate contract and according to separate plans accompanying this project.

Construction to be in accordance with the 1952 Standard Specifications of the Iowa State Highway Commission.

SUMMARY OF QUANTITIES

ITEM	EAST ABUTMENT	WEST ABUTMENT	SUPER-STRUCT.	TOTAL
Concrete Class "A"	93.4 cu.yd	87.2 cu.yd	75.7 cu.yd	256.3 cu.yd.
" " "C"	1.2 "	1.2 "	3.2 "	5.6 cu.yd.
Reinforcing Steel	6274 lbs	5504 lbs	18,419 lbs.	30,197 lbs.
Structural Steel	— "	— "	80. "	80. lbs.
			"	
Excavation Cl. 20	116. cu.yd	19. cu.yd	—	135. cu.yd.
" Cl. 21	141. "	95. "	—	236. cu.yd.
" Cl. 22	12. "	9. "	—	21. cu.yd.
" Channel	— "	— "	—	180. cu.yd.
Removal Old Bridge	—	—	—	Lump Sum

Design For

42'6" x 30' CONCR. DECK GIRDER BRIDGE

Concr. Ret. Wall Abuts Conc. Rest

SITUATION PLAN

Station 371+97 Project FG(1)M

CERRO GORDO COUNTY

Iowa State Highway Commission

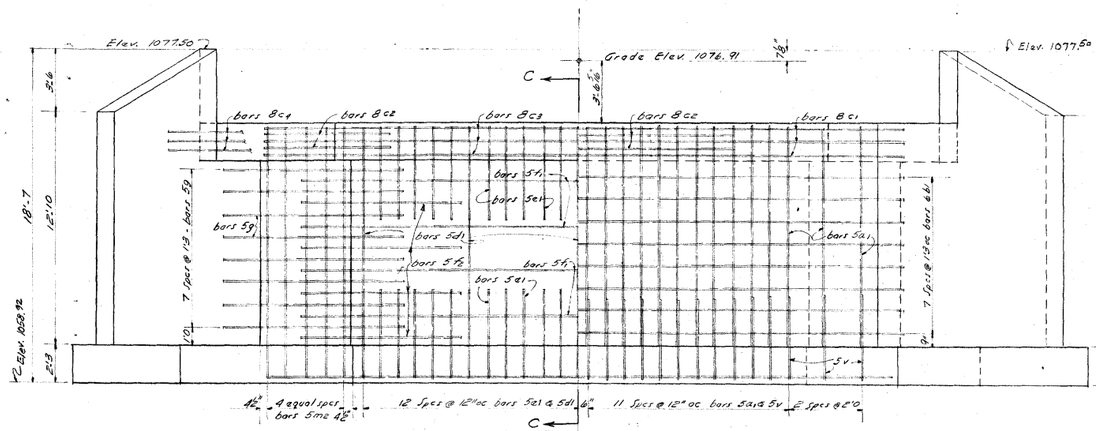
LOCATION
Over Creek
Section 12
Twp 96 N. R20 W
Mason Twp.
Cerro Gordo Co.

Plans Prepared By: Nemmers & Clark, Engineers

June 1952 Sheet 1 of 4

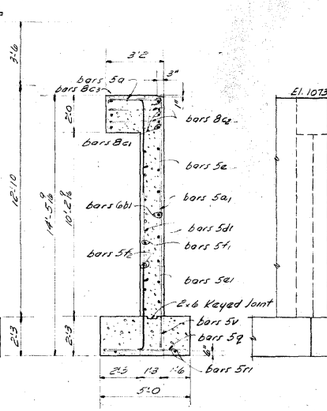
Design No. 1352 Cerro Gordo County File No 14263

BENCH MARK: # 55 Sta 371+84 "X" on North Handrail at 3... ...8m. 13' Lt. Elev. 1074.89

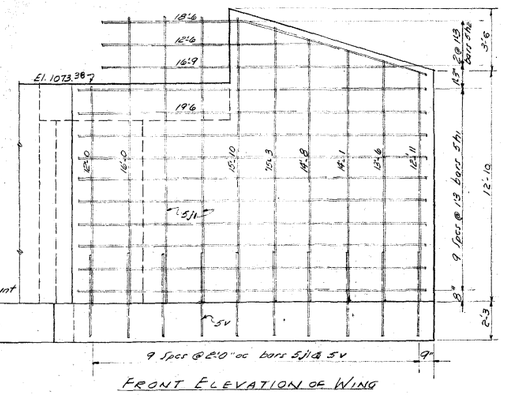


HALF REAR ELEVATION
Back face reinf'g.

HALF FRONT ELEVATION
Front face reinf'g.



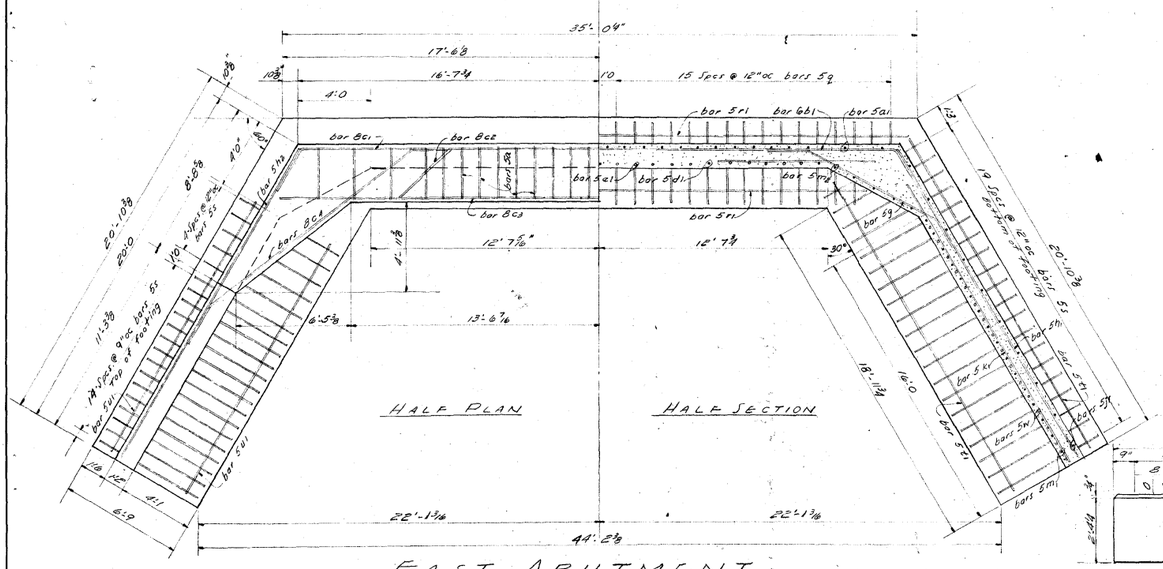
SECTION C-C



FRONT ELEVATION OF WING
FRONT FACE REINF'G.

BILL OF REINFORCING STEEL - EAST ABUT.

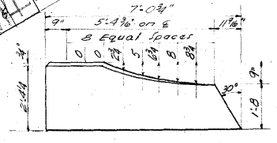
MARK	LOCATION	STR.	NO.	LENGTH	WEIGHT
5a1	Stem Wall R.F.V.		18	14'-10	934
6b1	" " R.F.H.		8	39'-10	469
8c1	Bridge Seat R.F.H.		3	39'-9	318
8c2	" " R.F.H.		2	37'-6	200
8c3	" " B.F.H.		3	34'-10	272
8c4	" " Corner		8	9'-6	296
5d1	Stem Wall B.R.V.		5	13'-10	72
5a1	" " "		40	6'-0	250
5f1	" " B.F.H.		4	30'-2	125
5f2	" " "		8	9'-0	75
5g	" " Fillet B.F.H.		16	12'-6	200
5m1	Wing Wall F.F.H.		20	19'-4	406
5m2	" " " Top		6	Varies Avg. 16'-8	100
5j1	" " F.R.V.		20	Varies Avg. 15'-3	306
5k1	" " B.F.H.		24	17'-9	445
4k2	" " " Top		6	Varies Avg. 11'-6	69
5m1	" " B.F.V.		32	Varies Avg. 16'-5	525
5m2	" " Fillet Vert.		10	14'-1	147
4n	Post Support R.R.V.		16	5'-10	62
4o1	Rail Post B.F.H.		6	6'-10	27
4o2	" " F.F.H.		6	5'-10	24
4p	" " Vertical		28	4'-0	75
5q	Stem Wall Footing		33	4'-8	161
5r1	" " "		2	34'-0	71
5s	Wing Wall Ftg. Top & Bot.		80	6'-5	535
5t1	" " Bot.		4	20'-0	83
5u1	" " Top		4	16'-3	68
5v	Stem & Wing Wall Dowels		48	4'-6	225
5w1	Wing Wall R.F.V.		32	7'-0	234
				TOTAL	6274 lbs.



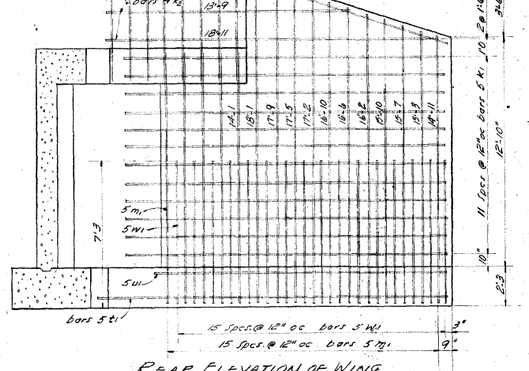
HALF PLAN

HALF SECTION

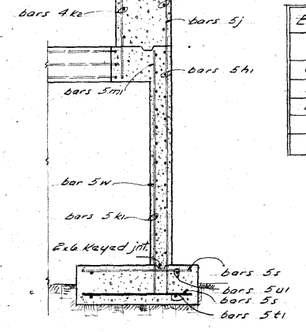
EAST ABUTMENT
Scale ¼" = 1'0



TOP OF POST
DEVELOPED



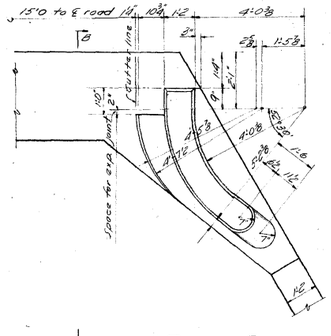
REAR ELEVATION OF WING
Back Face Reinf'g.
Scale ¼"=1'0



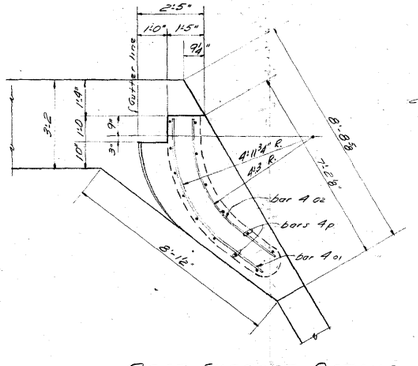
SECTION AA
Scale 4"=1'0

EST. QUAN. - EAST ABUTMENT

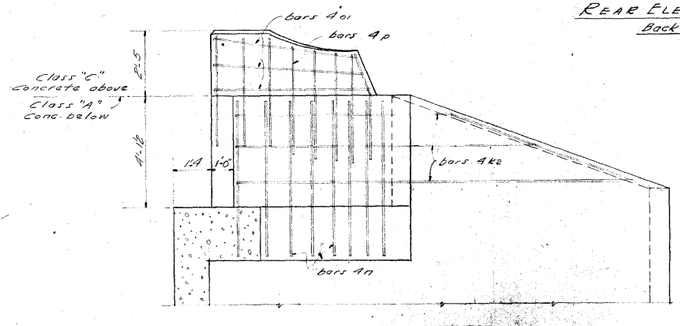
ITEM			QUANTITY
Concrete (Class A	93.6 c.y.	1.2 c.y.	94.6 c.y.
Reinforcing Steel			6274 lbs.
Excavation	Class 20		116. cu.yd.
"	"	21	161. cu.yd.
"	"	22	12. cu.yd.



POST DETAILS
Scale ½"=1'0



POST SUPPORT DETAILS
Scale ½"=1'0



SECTION AA
Scale ½"=1'0

GENERAL NOTES

All exposed corners 90° or sharper to be filleted with a ¾" dressed, beveled strip. All reinforcing to have a minimum edge distance of 2" unless otherwise shown.

Material and Construction to be in accordance with Standard Specifications of the Iowa State Highway Commission Series of 1952.

LOCATION
Over Creek
Section 12
, Twp 96 N R20W
Mason Twp.
Cerro Gordo Co.

Design for
42'6"-30' CONCR. DECK GIRDER BRIDGE
Conc. Ret. Wall Abuts. · Conc. Rail

SUBSTRUCTURE DETAILS

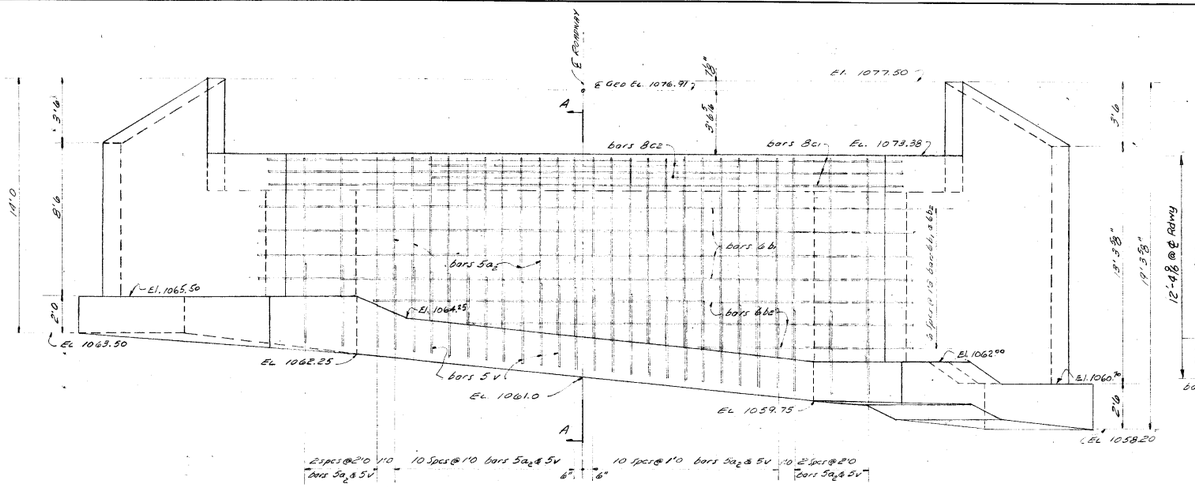
Station 371+97 Project FAI (9)

CERRO GORDO COUNTY
Iowa State Highway Commission

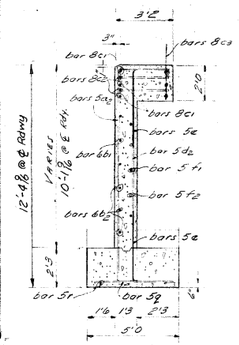
Plans Prepared By: Nemmers & Clark, Engineers
June 1952 Sheet 2 of 9

Design No. 1352 Cerro Gordo County File No. 14284

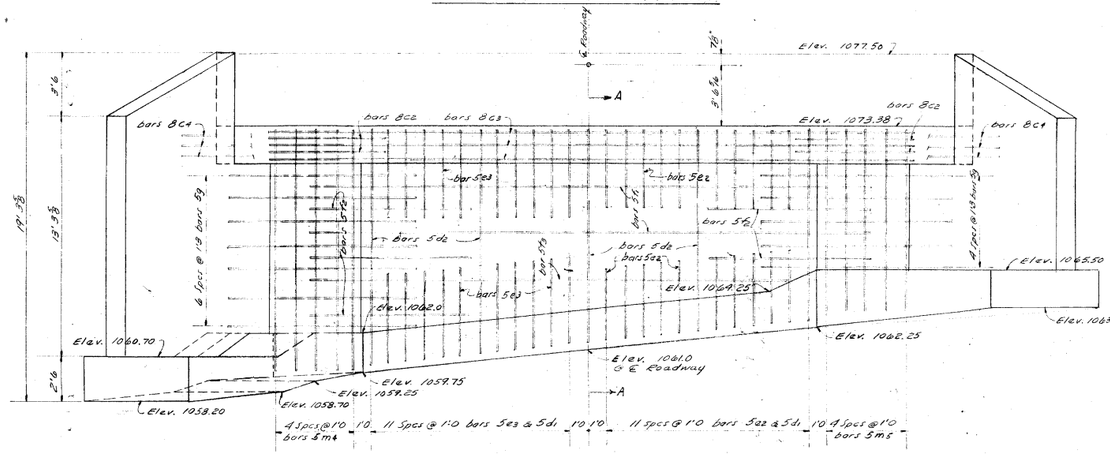
BENCH MARK: #55 Sta 371+84 'x' on North Handrail of 30° ∠ 24' I-B[illegible] Elev. 1071.89



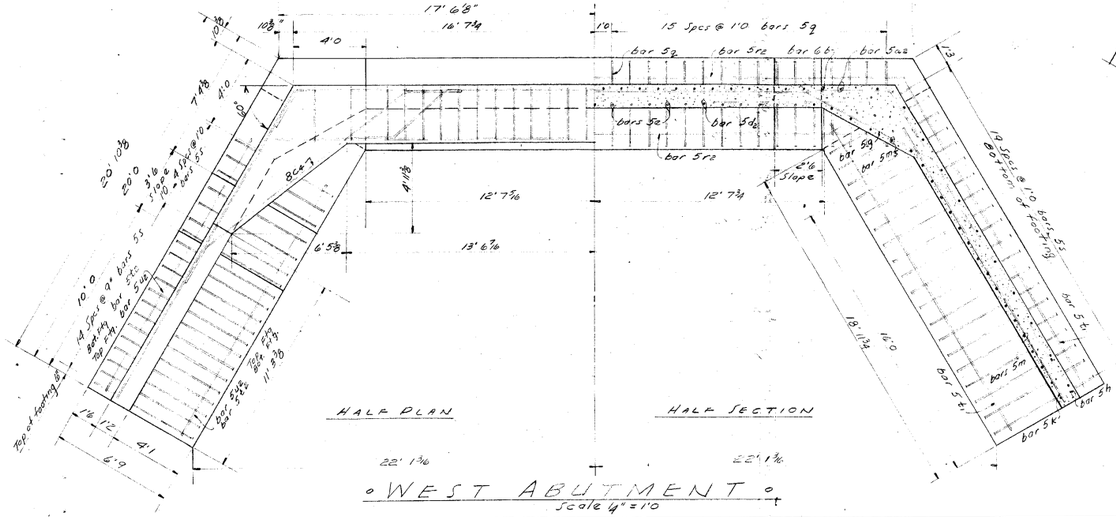
FRONT ELEVATION



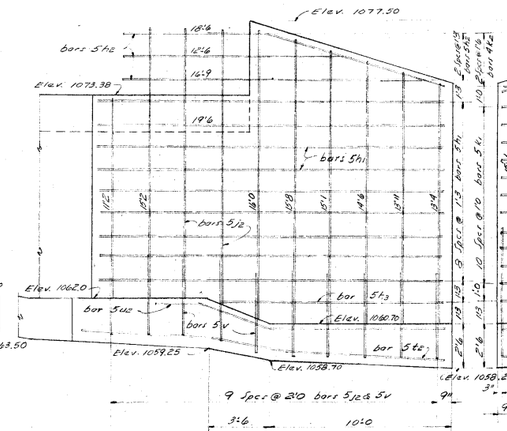
℄ SECT. A-A



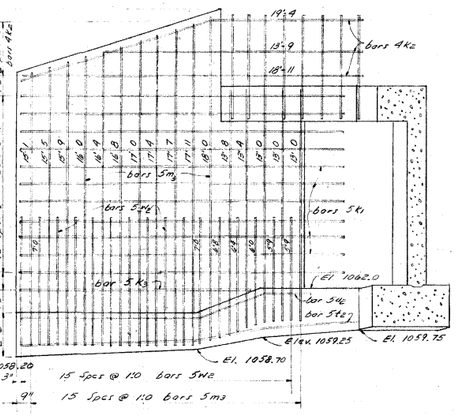
REAR ELEVATION



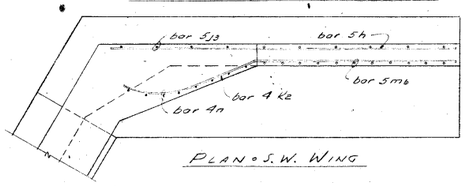
℄ WEST ABUTMENT ℄
Scale 4" = 1'0



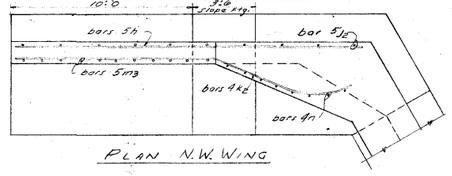
FRONT ELEVATION ◦ N.W. WING



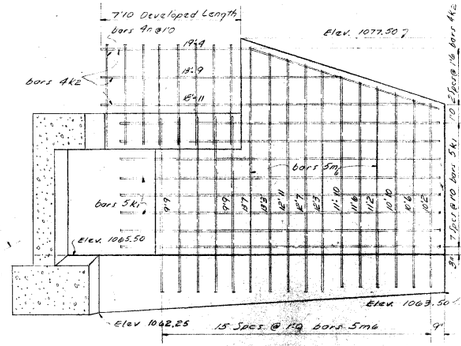
REAR ELEVATION ◦ N.W. WING



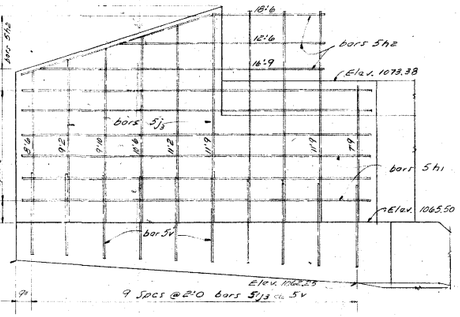
PLAN ◦ S.W. WING



PLAN N.W. WING



REAR ELEVATION ◦ S.W. WING



FRONT ELEVATION ◦ S.W. WING

BILL OF REINF. WEST ABUTMENT

MARK	LOCATION	SHAPE	NUMBER	LENGTH	WEIGHT
5a2	Stem Wall B.F.V.		28	Varies Avg. 12'-1	378
6b1	" " F.P.H.		4	39'0	234
6b2	" " "		3	Varies Avg. 23'5	105
8c1	Bridge Seat F.P.		3	39'9	318
8c2	" " F.P.H.		2	37'6	200
8c3	" " B.P.H.		3	34'0	272
8c4	" " corner		6	18'6	296
5d2	Stem Wall B.F.V.		8	Varies Avg. 16'3	64
5e2	" " "		20	5'0	100
5a5	" " "		20	5'6	115
5f1	" " B.P.H.		2	30'0	63
5f2	" " "		5	9'0	47
5f3	" " "		1	26'0	27
5g	" " Fillet B.P.H.		15	12'0	180
5h1	Wing Wall F.P.H.		15	19'6	306
5h2	" " " Top		8	Varies Avg. 13'4	100
5h3	" " " Bot.		8	12'8	13
5j2	N.W. Wing Wall F.P.V.		1	Varies Avg. 16'6	151
5j3	S.W. " " "		1	Varies Avg. 11'3	108
5k1	Wing Walls B.F.H.		4	7'9	352
4k2	" " " Top		6	Varies Avg. 17'4	69
5k3	N.W. Wing Wall B.F.H. Bot.		1	12'8	13
5m3	" " " B.P.V.		16	Varies Avg. 13'3	260
5m4	" " " Fillet B.P.H.		5	13'9	70
5m5	S.W. " " " "		5	7'9	51
5m6	" " " B.P.V.		16	Varies Avg. 11'3	188
4n	Post Support B.F.V.		16	5'10	62
4o1	Rail Post B.F.H.		6	6'10	27
4o2	" " F.P.H.		6	5'10	24
4p	" " Vertical		28	4'0	75
5q	Stem Wall Footing		33	4'8"	161
5r2	" " Ftg. Longit.		2	34'3	72
5s	Wing Wall Ftg. Top & Bot.		80	6'5	536
5t1	S.W. Wing Ftg. Bot.		2	20'0	42
5t2	N.W. " " "		2	20'5	43
5u1	S.W. Wing Ftg. Top		2	16'3	34
5u2	N.W. " " Top		2	16'6	35
5v	Stem & Wing Wall Dowel		98	9'6	226
5w2	N.W. Wing Wall B.F.V.		16	Varies Avg. 6'9	173
				TOTAL	5504. lbs.

EST. QUANTITIES ◦ WEST ABUTMENT

ITEM		QUANTITY
Concrete	Class A 87.2 cu.yds. Class C 1.2 cu.yds.	88.4 cu.yd.
Reinforcing Steel		5504 lbs.
Excavation Class 20		19. cu.yd.
" " 21		95. cu.yd.
" " 22		9 cu.yd.

See Sheet No. 2 for General Notes and post and post support details.

LOCATION:
Over Creek
Section 12
TWP 96 N R20W
Mason Twp
Cerro Gordo Co.

Design for
42'6"-30' CONCR. DECK GIRDER BRIDGE
Conc. Ret. Wall Abuts.. Conc. Rail

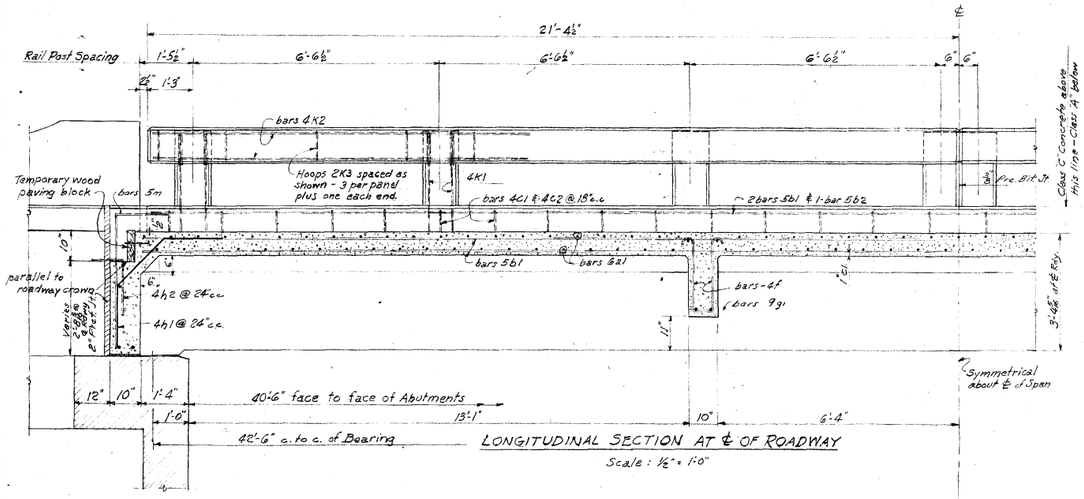
SUBSTRUCTURE DETAILS

Station 371+97 Project FG(19)

CERRO GORDO COUNTY
Iowa State Highway Commission

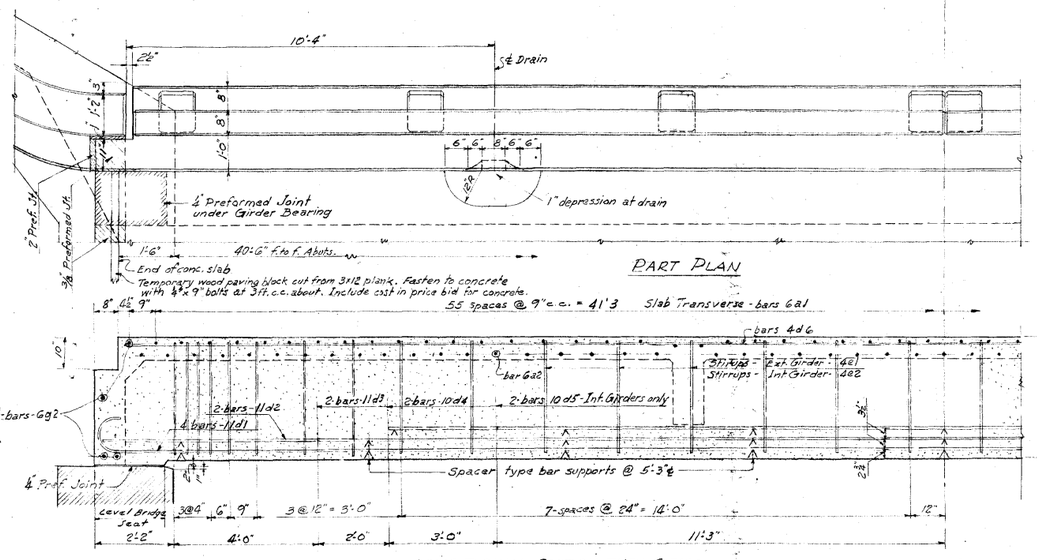
Plans Prepared By: Nammers & Clark, Engineers
June 1952 Sheet 3 of 4

Design No 1352 Cerro Gordo County File No. 14229



LONGITUDINAL SECTION AT ℄ OF ROADWAY

Scale: ½" = 1'-0"

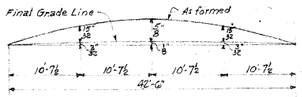


PART PLAN

LONGITUDINAL SECTION THRU GIRDER

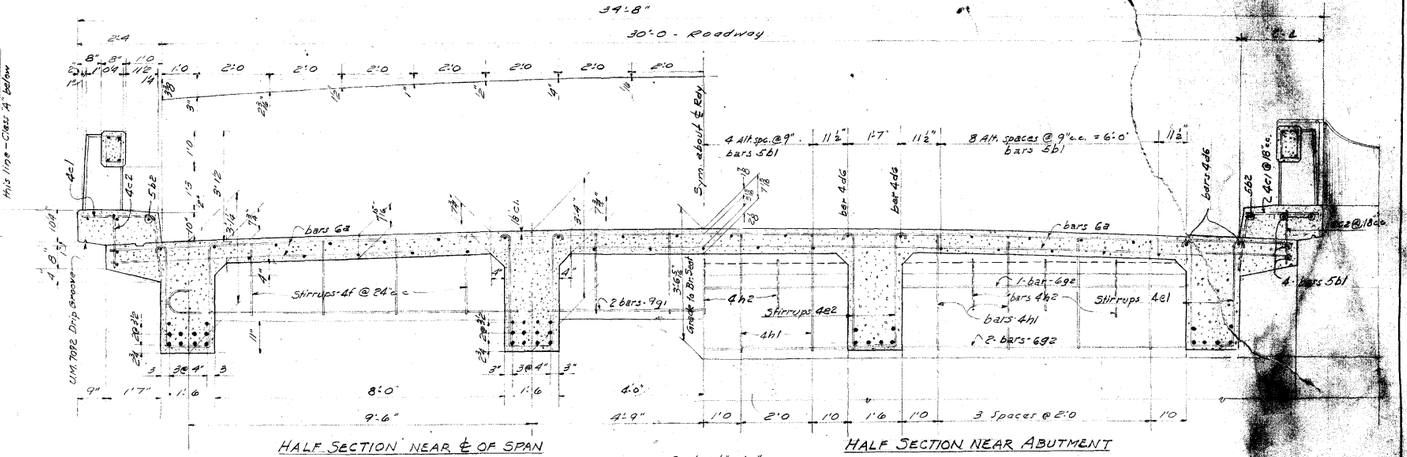
Typical for Ext. & Int. Girder

Scale: ½" = 1'-0"



DEAD LOAD DEFLECTION AND CAMBER DIAGRAM

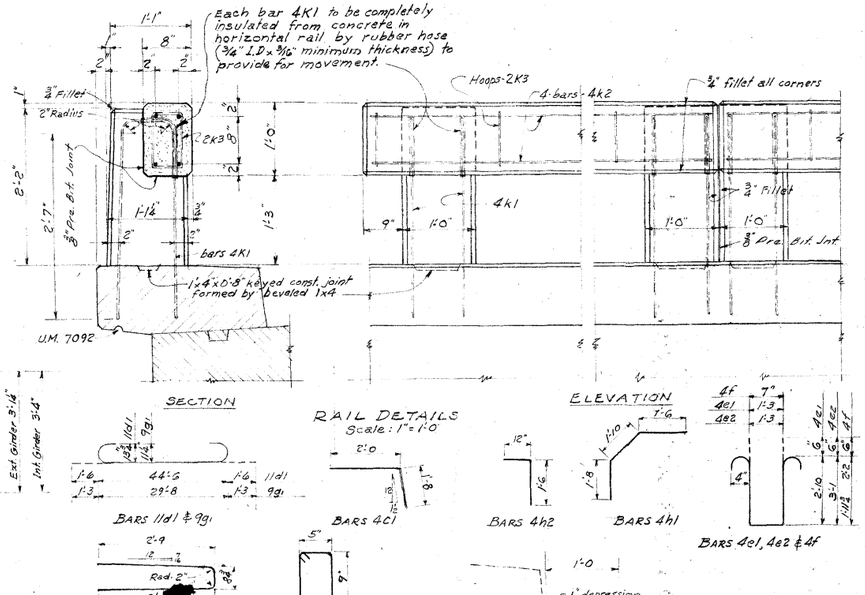
NOTE: The 5/16" dead load deflection at ℄ of span as shown above does not include any allowance for form settlement.



HALF SECTION NEAR ℄ OF SPAN

HALF SECTION NEAR ABUTMENT

Scale: ½" = 1'-0"



SECTION

RAIL DETAILS

Scale: 1" = 1'-0"

ELEVATION

BARS 11d1 & 9g1

BARS 4c1

BARS 4h2

BARS 4h1

BARS 4c1, 4c2 & 4f

BARS 4k

BARS 2K3

GENERAL NOTE:

This bridge is designed for H20-44 Loading plus 19* per sq. ft. of roadway for future wearing surface.

Allowable f_s for steel = 20,000 psi.

Allowable f_c for concrete = 1200 psi.

All exposed corners of 90° or sharper are to be filleted with ¾" dressed and bevelled strip.

All reinforcing is to be securely wired in position before concrete is placed, except bars 4c1 and 4c2, which may be placed any time before concrete has taken its initial set.

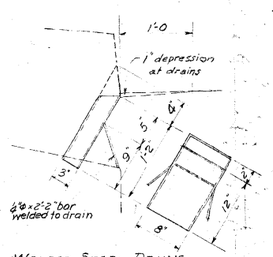
Cost of temporary paving blocks and preformed asphalt joint material is to be included in price bid for concrete.

Slab as detailed includes ½" wearing surface

SPECIFICATIONS:

Design: AASHO Series of 1949, modified as above.

Construction: Iowa State Highway Commission Specifications, Series of 1952



WELDED STEEL DRAINS

Material ⅜" plate

4 Required - weight 20* each

Scale: 1" = 1'-0"

NOTE: Number preceding letter in bar designation is the number of ⅛ inches in the nominal diameter.

BILL OF REINFORCING BARS — SUPERSTRUCTURE

Mark	Location	Shape	No.	Length	Weight
6a1	Slab Trans. top & bottom	——	109	32'-10	5375.
6a2	" " at Drain	——	2	30'-6	92.
5b1	Slab & Curb - longitudinal	——	70	22'-2	1619
5b2	Curb Longitud. Roy. side	——	4	22'-9	95.
4c1	Curb Vertical	⌐	60	3'-8	147.
4c2	" "	|	60	1'-5	57.
11d1	Girder Longit. - bottom layer	⊂ ⊃	16	47'-6	4038.
11d2	" " 2nd layer	——	8	44'-6	1891.
11d3	" " " "	——	8	32'-6	1381.
10d4	" " 3rd layer	——	8	28'-6	981.
10d5	Int " " " "	——	4	22'-6	387.
4d6	" Stirrup supports	——	16	22'-2	237.
4e1	Stirrups - ext. girder	⊓	64	7'-9	331.
4e2	" int. "	⊓	64	8'-3	353
4f	" diaphragm	⊓	24	Ave. 5'-7	89.
9g1	Diaphragm Longit.	⊂ ⊃	4	32'-2	438.
6g2	End Diaphragm "	——	8	31'-6	379.
4h1	" " Verticals	⌐	24	5'-0	80
4h2	" " "	⌐	18	2'-6	30
4k1	Rail Post Verticals	═	32	6'-2	132.
4k2	" Horizontals	——	16	21'-0	224
2k3	" Hoops	□	40	2'-10	19.
5m	Curb ends	⌐	8	5'-3	44.
				TOTAL	18,419#

MOMENT & SHEAR TABLE

Load \ Stress	Moment - k Ext.	Moment - k Int.	Shear - k Ext.	Shear - k Int.
Dead Load	435.7	404.7	40.7	37.4
Live Load	204.2*	351.0*	21.9▲	35.5*
Impact	61.4	105.5	6.5	10.4
Total	701.3	861.2	69.1	83.3

* Truck Loading Governs

▲ Lane Loading Governs

ESTIMATED QUANTITIES - SUPERSTRUCTURE

Concrete - Class A	75.7 cu. yds.
" " "C"	3.2 " "
Reinforcing Bars	18,419. pounds
Structural Steel	80. "

Design For

42'6" x 30' CONCR. DECK GIRDER BRIDGE

Concr. Ret. Wall Abuts Conc. Rail

SUPERSTRUCTURE DETAILS

Station 371+97 Project F61(9)

CERRO GORDO COUNTY

Iowa State Highway Commission

Location
Over Creek
Section 12
TWP 96N R20W
Mason TWP.
Cerro Gordo Co.

Plans Prepared By: Nemmers & Clark, Engineers

June 1952 Sheet 4 of 4

Design No. 1352 Cerro Gordo County File No 14229