

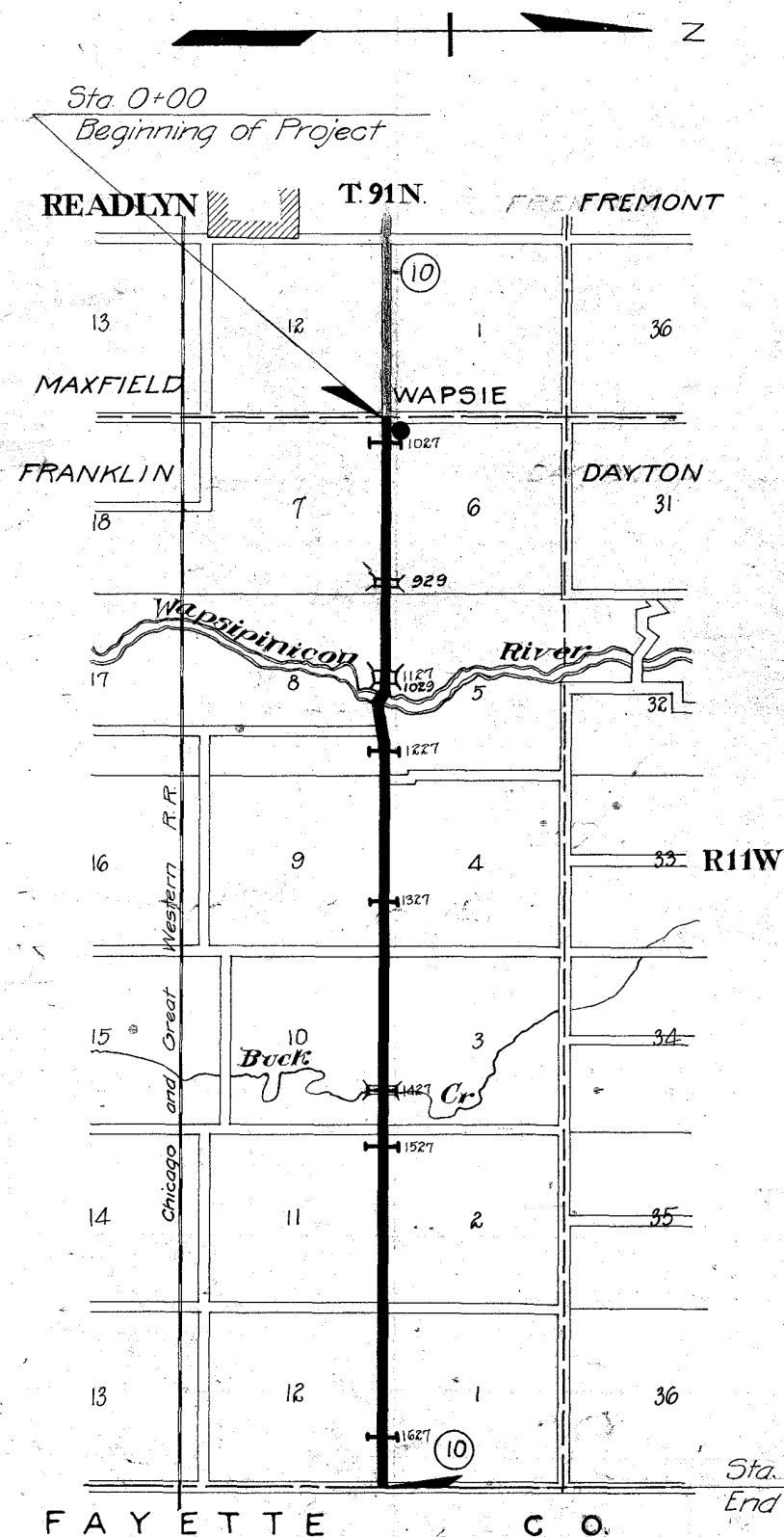
PRIMARY ROAD SYSTEM PRIMARY ROAD PROJECT NO.483

PRIMARY BRIDGE PROJECT NO. B-399

IOWA STATE HIGHWAY COMMISSION

JUNE - 1927

DEVELOPMENT FUND PROJECT



DESIGN	LOCATION			DESCRIPTION SIZE AND TYPE	ESTIMATE OF QUANTITIES				
	SEC.	TOWNSHIP	STATION		CONCRETE	REIN. STEEL	STR. STEEL	PLING	LUMBER
1027	6-7	Franklin	5+58	3'x2' Ext. Box Culvert	59	410			
* 1127	5-8	"	72+55	4'32"x19' Span I-Beam Br.			65,720	14	17,500
1227	"	"	94+00	3'x3'x31' Box Culvert	16.5	1230			
1327	4-9	"	147+64	2'x2'x34' " "	12.0	925			
1427	3-10	"	196+80	2-60'x20' Pony Truss Br.	309.3	23570	107,000	86	
1527	2-11	"	211+17	2'x2'x38' Box Culvert	13.1	1060			
1627	1-12	"	303+46	3'x2'x33' " "	13.7	1055			
Total					370.5	28250	172,720	100	17,500
929	6-7	"	410+00	40'x24' I-Beam Bridge	121.3	10170	29,580	38@20	
1029	5-8	"	436+14.79	3-32'x19' Sp. Add. to I-B Br.	1.1		46,340	15@25' 50" 50' 30" 20' 16"	4750 (req.) 8580

* See design 1127, for detailed estimate.

CONVENTIONAL SIGNS

City Limits _____ 

County Line _____ 

Township Line _____ 

Railroad _____ 

Bridges _____ 

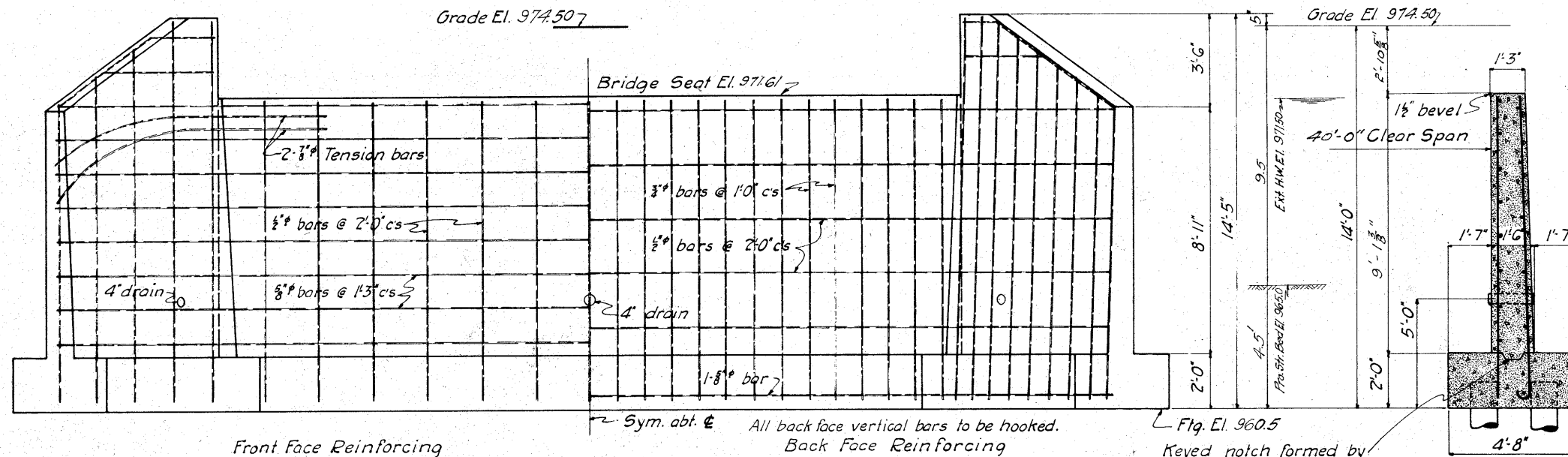
Culverts _____ 

Approved

Date

T. R. White 12/23
Chief Engineer - Iowa Highway Commission

Primary Road Proj No 483-B-399-1927



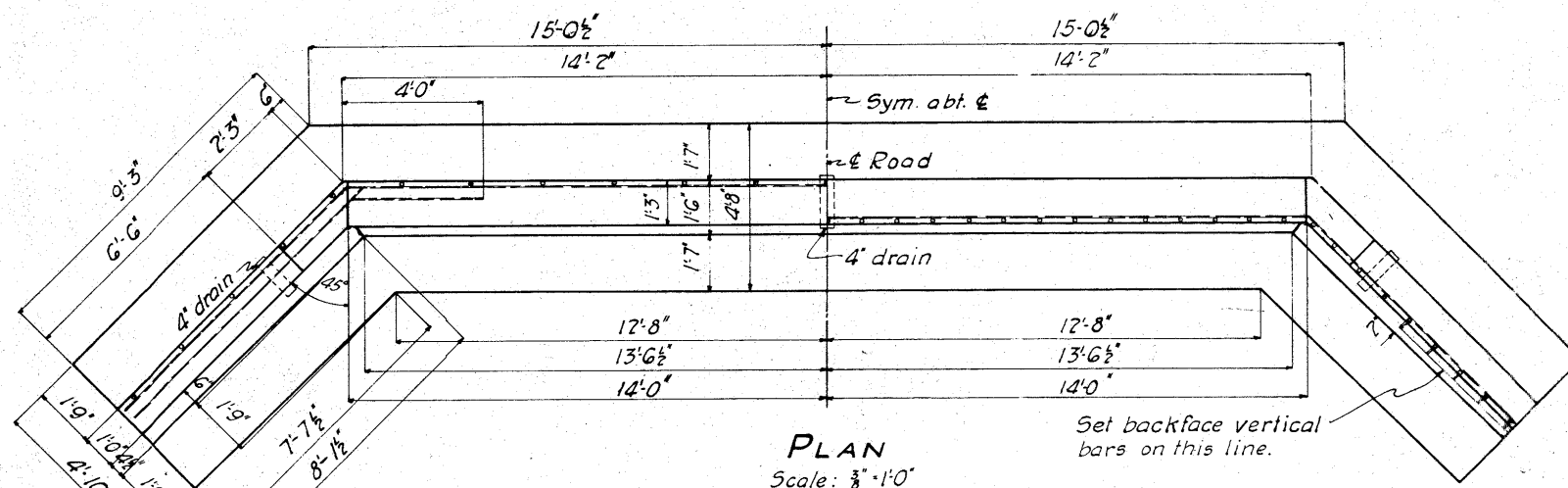
Front Face Reinforcing

ELEVATION
Scale: 3/8" = 1'-0"

Sym. abt. & All back face vertical bars to be hooked.
Back Face Reinforcing

Flg. El. 960.5
Keyed notch formed by
beveled 3x10 plank extending
thru entire footing.

& SECTION
Scale: 3/8" = 1'-0"

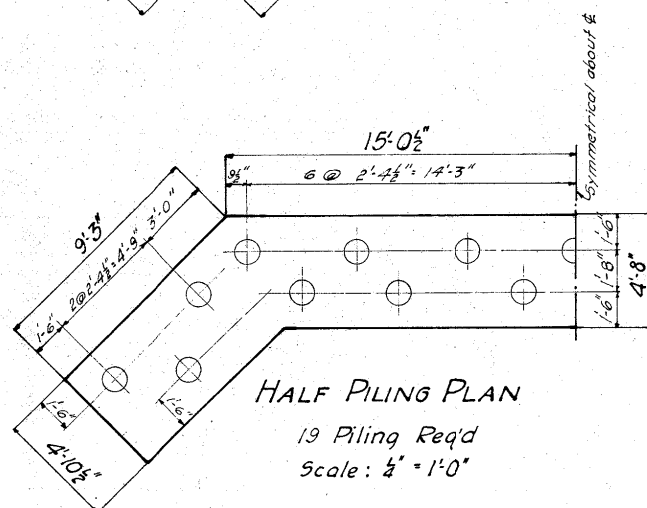


PLAN
Scale: 3/8" = 1'-0"

Set backface vertical
bars on this line.

General Notes:

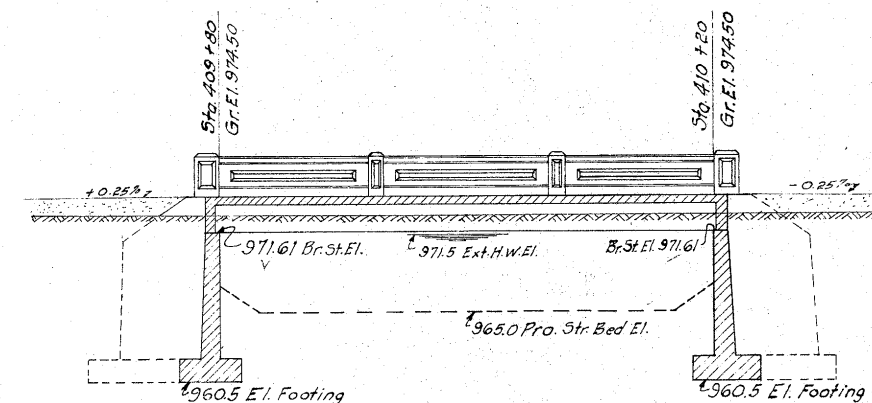
All exposed corners of 90° or sharper to be
filleted with a 1" dressed beveled strip.
Horizontal reinforcing bars may be spliced
at or near the &. Use a 50 diameter lap on all splices
and a 16 diameter hook on all hooked bars
Use piling as shown in plan
For details of Superstructure see Standard V 3 A
Standard Specifications of the Iowa Highway
Commission, Series of 1925.



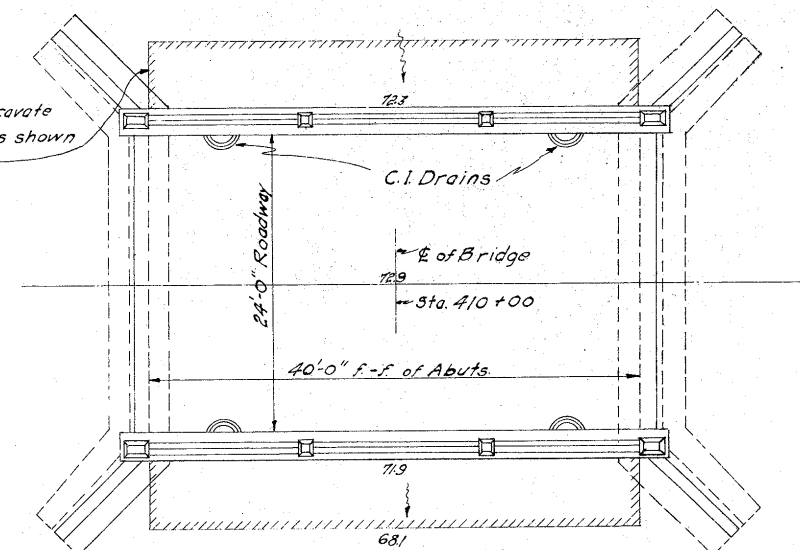
HALF PILING PLAN
19 Piling Req'd
Scale: 1/4" = 1'-0"

ESTIMATED QUANTITIES				
Part	Concrete	Rein. Steel	Str. Steel	Piling
Superstructure	47.3 Cu. Yds.	6690 #	29.580	
Substructure	74.0	3480		38 @ 20'-0"
Totals	121.3 Cu. Yds.	10170 #		38 @ 20'-0"

Bridge No.
Section 6-7
Franklin Twp.
Bremer Co.

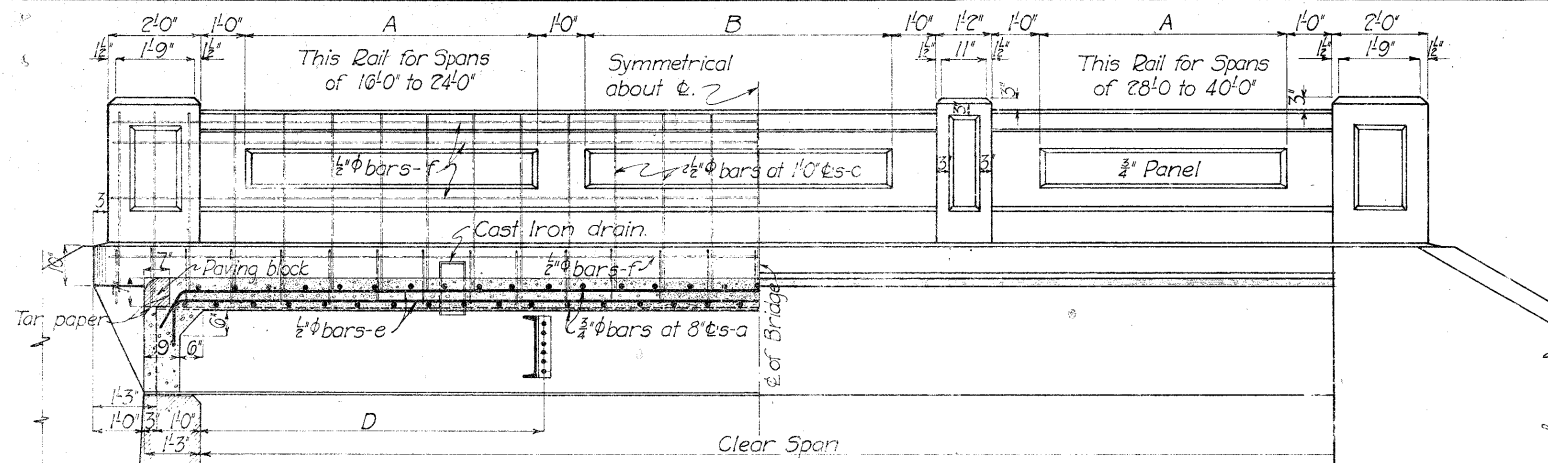


Note:
Bridge Contr. to excavate
channel to El. 9650 as shown
by shaded area.
Approx. 400 Cu. Yds.



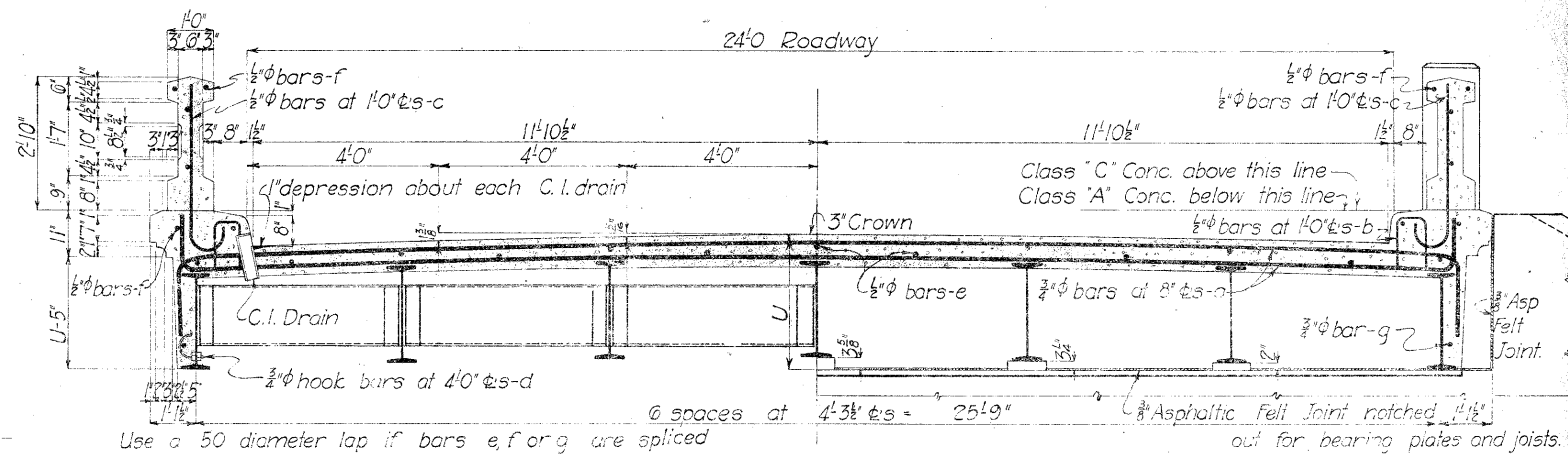
SITUATION PLAN
Scale: 1/8" = 1'-0"

Design for
40' x 24' I-BEAM BRIDGE
Concrete Floor and Abutments
ABUTMENT DETAILS
Sta. 410+00 Prim. Proj. No. 483
BREMER COUNTY
Iowa Highway Commission
Nov. 1929 Scales as noted



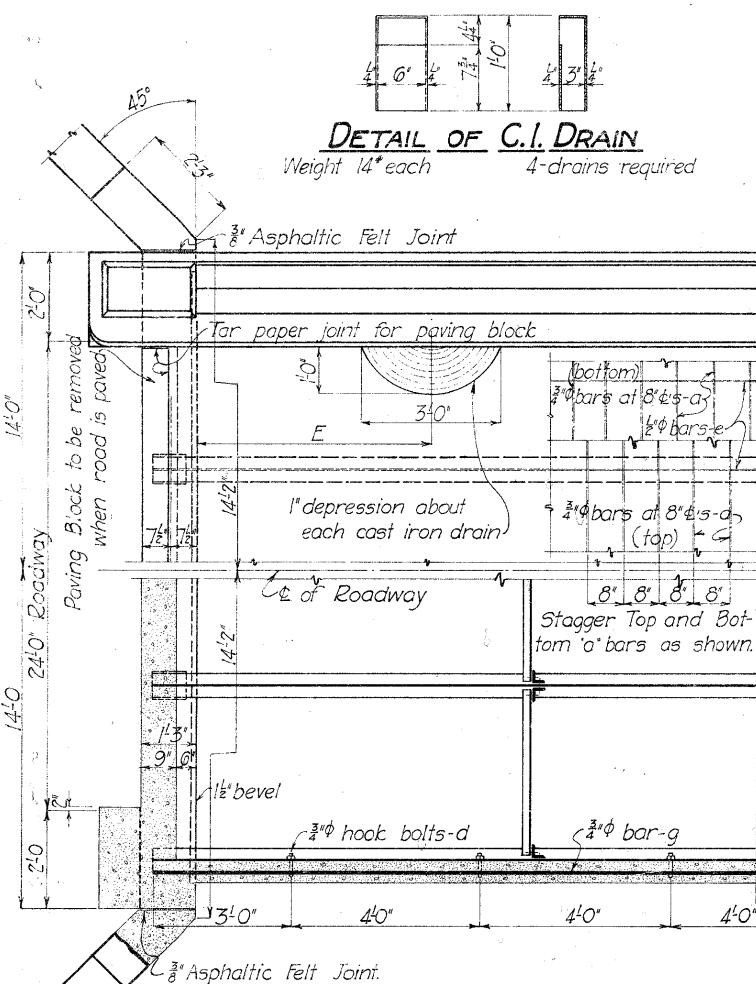
SECTION NEAR CURB

ELEVATION



INTERMEDIATE SECTION

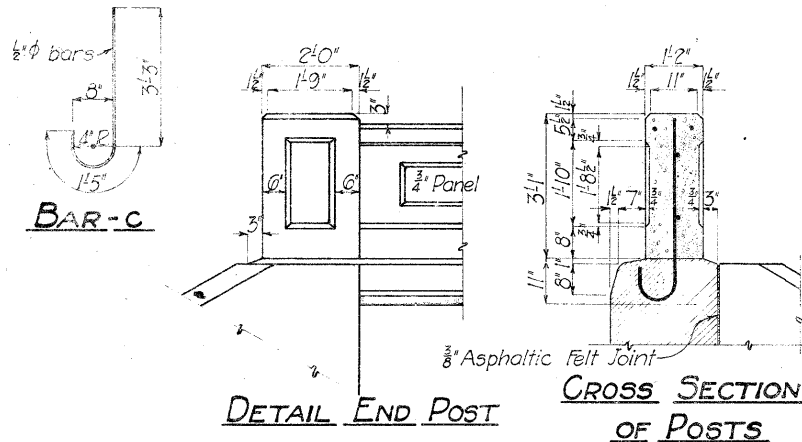
SECTION AT ABUTMENT



DETAIL OF C.I. DRAIN

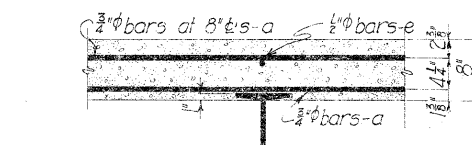
Weight 14" each 4-drains required

PLAN

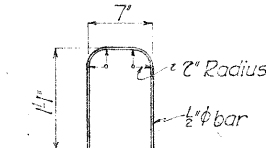


DETAIL END POST

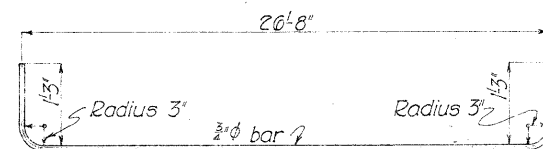
CROSS SECTION OF POSTS



SECTION THRU SLAB



DETAIL BAR-b

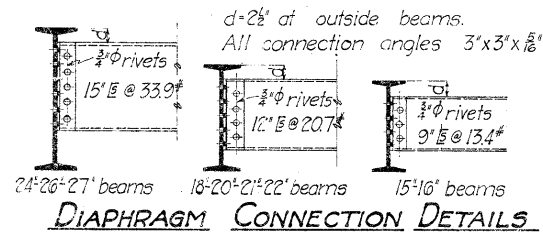


DETAIL BAR-a

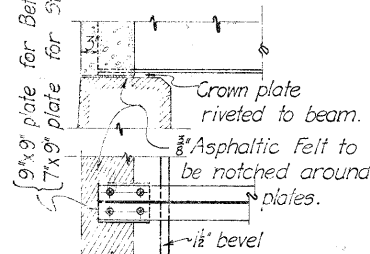
SKEW DATA		Dimensions		Add Conc. per Span	
Skew	Y	X	Z	V	W
20°	14'11"	15'3"	8'	2'0"	2'6"
30°	16'2"	16'8"	8'	1'9"	2'9"
45°	19'9"	20'7"	10'	1'6"	3'6"

TYPICAL SKEW DETAIL

Note: The joists for a skew span will be the same as for a straight span except for additional punching for the diaphragm connections.



DIAPHRAGM CONNECTION DETAILS



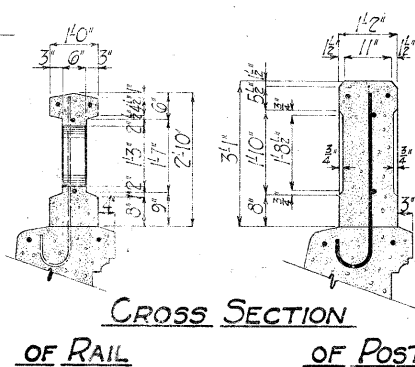
CROWN PLATE DETAIL

Clear Span	Span c/c Abuts	GENERAL DATA																	ESTIMATED QUANTITIES													
		Number of bars					Length of bars							Reqd. Length	Standard Beams		Permissible Substitutions				Concrete		Reinfor.									
		A	B	D	E	U	a	b	c	d	e	f	g	a	b	c	d	e	f	g	Sec. Mod.	Beams	Size - Beams	Weight	Belt. I-Beam	Weight	Corn. I-Beams	Weight	Class C	Class A	Total	Steel
16'0"	17'3"	3'8"	4'8"	4'9"	3'0"	2'18"	51	42	42	8	13	12	2	29'0"	2'8"	4'8"	1'0"	19'5"	19'9"	18'0"	575	18'0"	15'1" @ 42.9"	6540'	B.15'1" @ 42.5"	6342'	C.B.16'1" @ 38.0"	6360'	3.3	18.5	21.8	2820'
20'0"	21'3"	5'0"	6'0"	6'2"	4'0"	2'4"	63	50	50	10	13	12	2	29'0"	2'8"	4'8"	1'0"	23'9"	23'9"	22'0"	764	22'0"	18'1" @ 54.7"	10300'	B.18'1" @ 47.0"	9250'	C.B.18'1" @ 47.0"	9250'	3.8	20.1	25.9	3460'
24'0"	25'3"	6'4"	7'4"	7'4"	5'0"	2'6"	75	58	58	12	13	12	2	29'0"	2'8"	4'8"	1'0"	27'1"	27'9"	26'0"	98.0	26'0"	20'1" @ 65.4"	13800'	B.20'1" @ 56.0"	12230'	C.B.21'1" @ 53.0"	12590'	4.4	25.8	30.2	4100'
28'0"	29'3"	6'4"	7'0"	8'8"	6'0"	2'10"	87	66	66	14	13	12	2	29'0"	2'8"	4'8"	1'0"	32'3"	31'9"	30'0"	124.0	30'0"	24'1" @ 79.9"	19420'	B.22'1" @ 58.0"	14960'	C.B.21'1" @ 60.0"	15370'	5.3	30.1	35.4	4760'
32'0"	33'3"	7'6"	8'8"	10'0"	6'0"	2'10"	99	74	74	16	13	12	2	29'0"	2'8"	4'8"	1'0"	36'3"	35'9"	34'0"	151.1	34'0"	24'1" @ 79.9"	21670'	B.24'1" @ 70.0"	19460'	C.B.24'1" @ 70.0"	19460'	5.9	35.4	39.3	5400'
36'0"	37'3"	8'10"	10'0"	11'4"	6'0"	2'10"	111	82	82	18	13	12	2	29'0"	2'8"	4'8"	1'0"	40'3"	39'9"	38'0"	180.2	38'0"	24'1" @ 79.9"	23910'	B.26'1" @ 81.0"	24360'	C.B.24'1" @ 76.0"	23020'	6.4	36.9	43.3	6050'
40'0"	41'3"	10'0"	11'8"	12'8"	6'0"	2'10"	123	90	90	20	13	12	2	29'0"	2'8"	4'8"	1'0"	44'3"	43'9"	42'0"	215.6	42'0"	24'1" @ 79.9"	29700'	B.26'1" @ 85.5"	27950'	C.B.27'1" @ 91.0"	29530'	6.9	40.4	47.3	6690'

Note: All shop rivets to be 3/4" φ

ALTERNATE HANDRAIL DATA		Dimensions		No. bars c	Corrections to apply to Standard	
Span	L	M	N		Conc.	Steel
28'	6'8"	7'	9'2"	82	-0.6	+50
32'	8'4"	8'	10'0"	92	-0.7	+56
36'	9'2"	8'	12'6"	102	-0.8	+62
40'	10'10"	5'	13'4"	112	-0.9	+69

Note: Spans 16'0" to 24'0" incl. to have solid handrail only.



CROSS SECTION OF RAIL

CROSS SECTION OF POST

DETAIL OF SKELETON HANDRAIL
Alternate for Standard Slab Rail.

General Notes :-

This series designed for class 'A' Loading plus 38# per sq. ft. of roadway, for future wearing surface. The slab as shown includes 1" of wearing surface. Beams to have depth ratio of 1/8 of span, web 1/8" minimum. Concrete forms to be supported by the beams.

All reinforcing to be securely wired in place before conc. is placed. Field connections to be bolted. Use 3/4" bolts unless otherwise noted. Bolts to be furnished 5% in excess of the number actually req'd.

Shop coat of paint to be omitted on all tops of top flanges and on outside of outside beams. Unpainted surfaces to be thoroughly cleaned before the concrete is placed.

Skeleton handrail as shown on this sheet may be substituted for the standard slab handrail on spans 28'0" to 40'0" inclusive.

Standard Specifications of the Iowa State Highway Commission. Series of 1925.

COVER PLATE DETAIL FOR
STANDARD I'S ON 40'0 SPANS

Design for
STANDARD I-BEAM SPANS
24'0" Roadway

CLASS-A-LOADING
Concrete Floor and Handrail
Iowa State Highway Commission
Jan. 1928

Approved by
Chief Engineer

Beam spacing revised May, 12, 1928.

13A