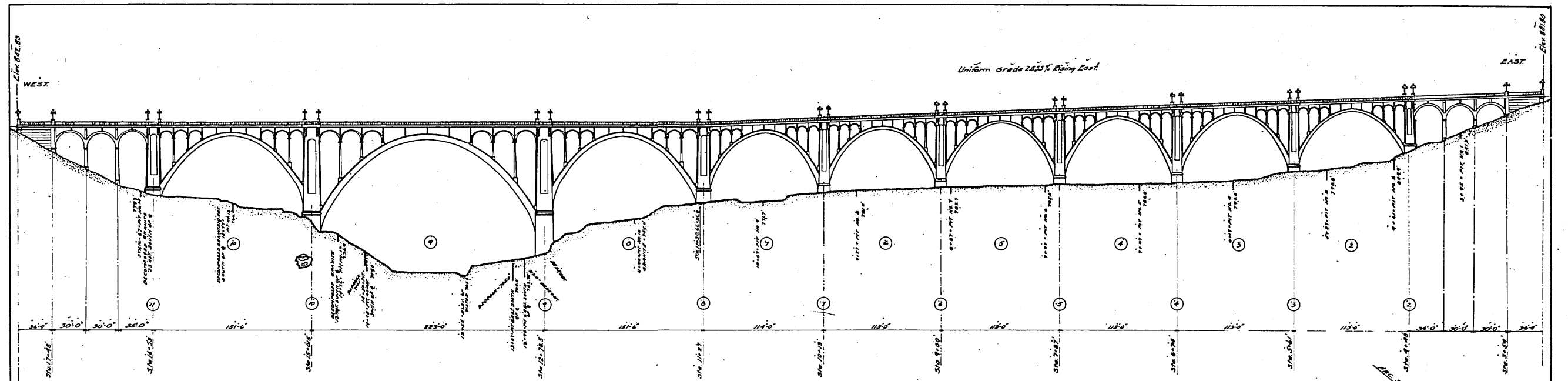


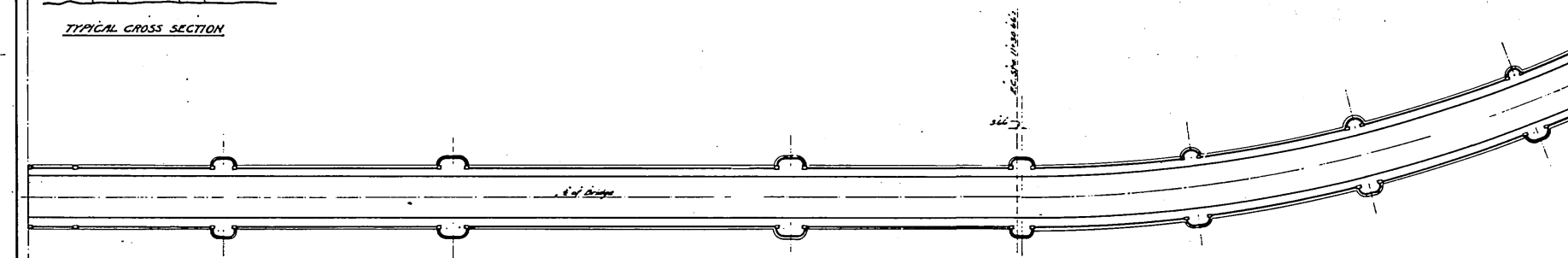
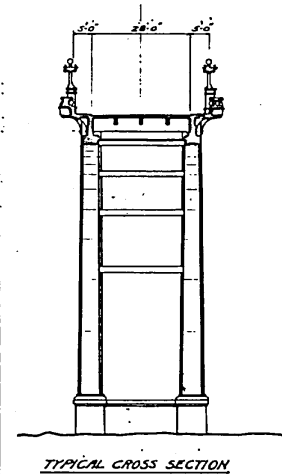
PLANS FOR
ARROYO SECO BRIDGE
PASADENA, CALIFORNIA
WADDELL & HARRINGTON
CONSULTING ENGINEERS

COLORADO ST BRIDGE

5384 SHH |

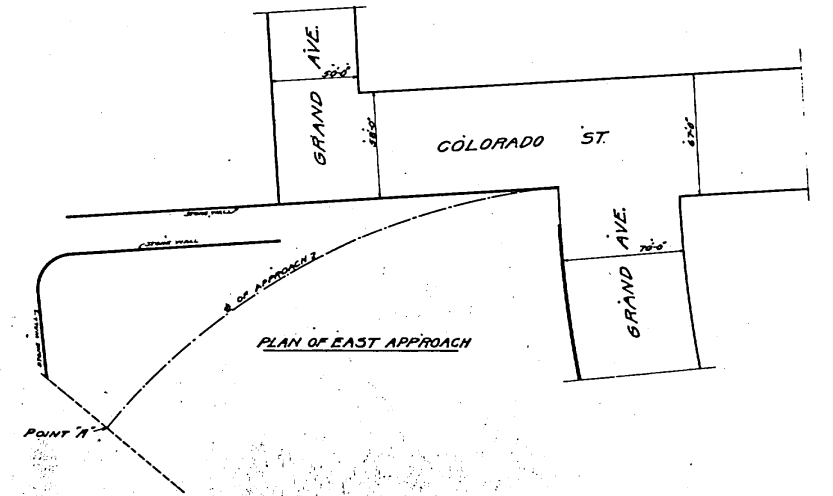


ELEVATION



Note: Sta. Values for Piers around curve are measured on chords between E. of springings

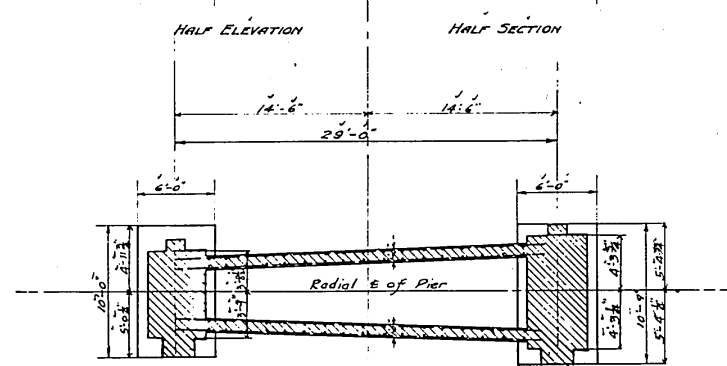
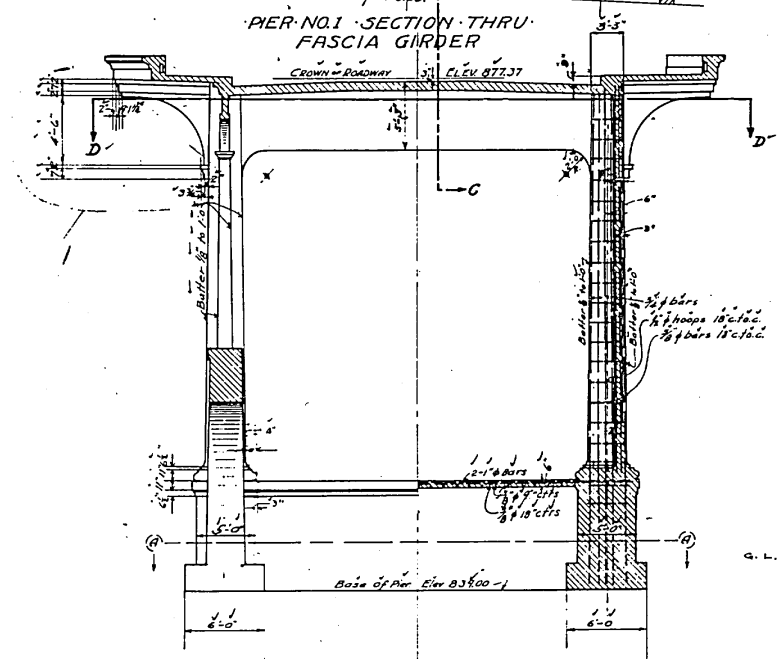
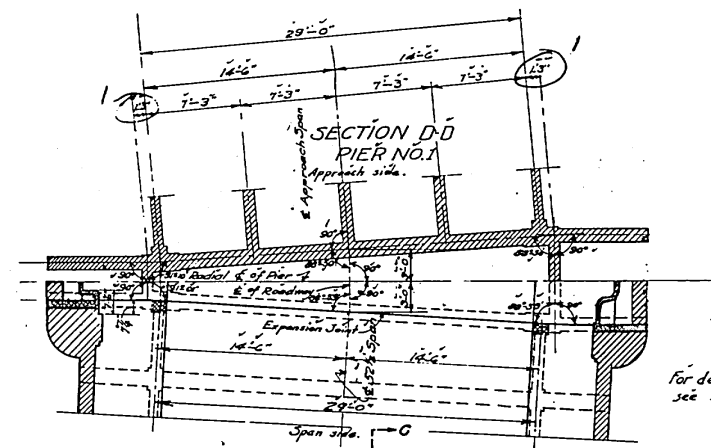
Span	Span Length Theoretical	Pier
21	105'-0"	59'-4"
3032.85	105'-4"	60'-0"
88'-70"	140'-0"	58'-0"
48	210'-0"	60'-0"



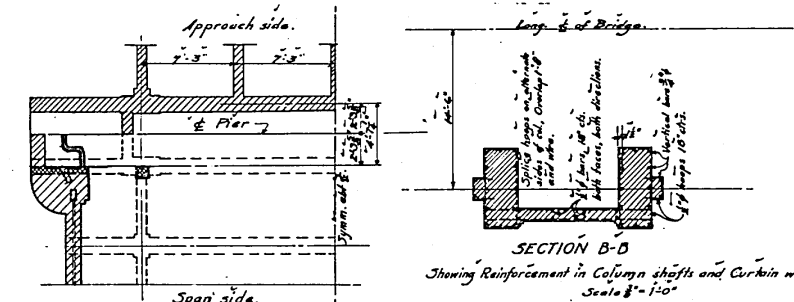
BRIDGE OVER THE ARROYO SECO
PASADENA, CALIFORNIA.
GENERAL PLAN AND ELEVATION

Scale: 1" = 40'
Made by J.E.E. Date 2-1-12
Traced by J.E.E. Date 3-10-12
Checked by J.E.E. Date 3-10-12
WADSWORTH & PARTNERS
CONSULTING ENGINEERS
KANSAS CITY, MO.
SHEET NO. 1

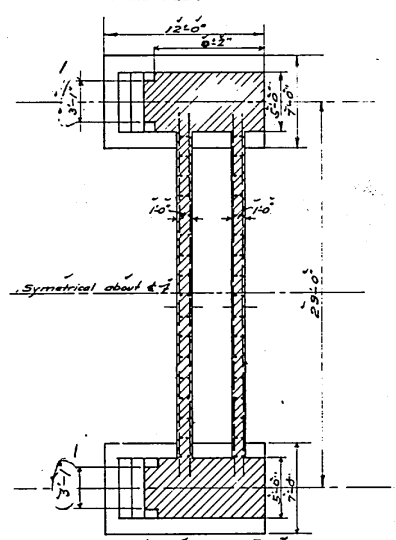
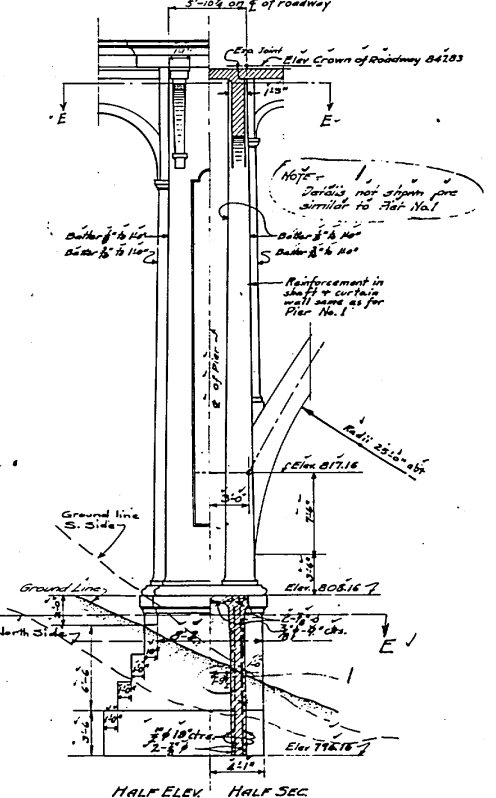
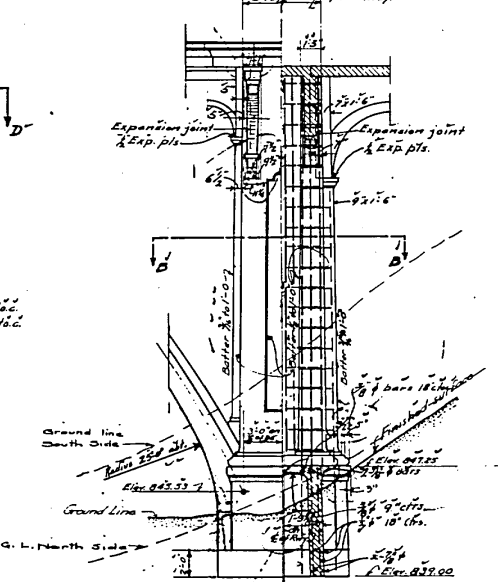
5384 SHIT 2



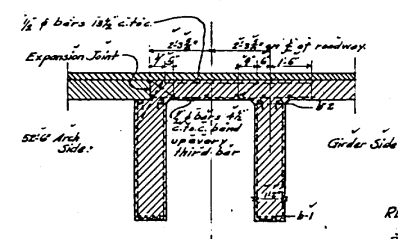
PIER NO. 12
SECTION E-E



PIER NO. 12 SECTION THRU FASCIA GIRDER.

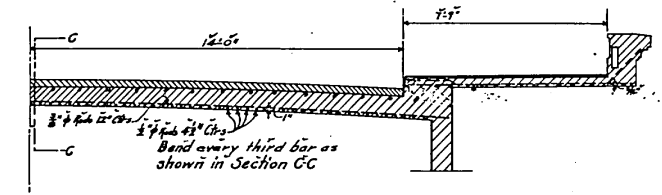


SECTION E-E
PIER NO. 12

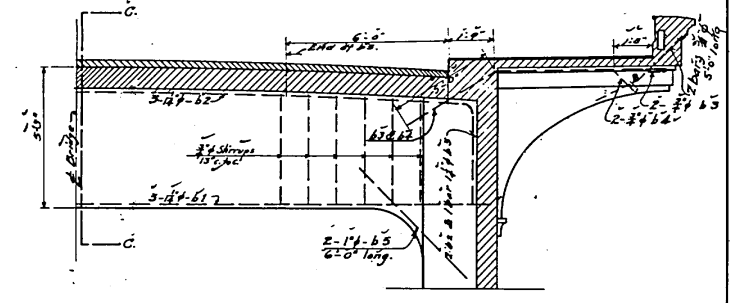


SECTION G-G
Scale 1/2" = 1'-0"

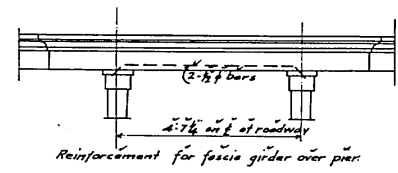
REINFORCEMENT IN SIDEWALK SLAB
South Side of Pier No. 12
3/8" Bars 6' c/c both directions
bend every other transverse bar up
as shown.
North Side of Pier No. 12
3/8" Bars 6' c/c both directions
bend every other transverse bar up
as shown.
PIER NO. 12
3/8" Bars 6' c/c both directions
bend every other transverse bar up
as shown.



CROSS SECTION OF FLOOR AT E OF PIER



CROSS GIRDER & CANTILEVER
Scale 1/2" = 1'-0"



NOTE-
Drain Pipes to be Provided from
Roadway to bottom of Piers.
Except when noted otherwise on the
drawings, bars shall be placed with
their centers at a distance of two
diameters from the surface of the
concrete as nearly as possible,
and never less than this.

BRIDGE OVER THE ARROYO SECO
AT
PASADENA, CALIFORNIA.
DETAILS OF PIERS 1 & 12

Scale: 1/2" = 1'-0" except as noted.
Made by W.E.W. Dec. 2-10-12
Traced by M.M. Lutz 2-10-12
Checked by S.H. Dec. 3-12-12
Revised by W.E.W. 3-12-12
Checked by S.H. 3-12-12
WIDOM & HANSEN
CONSULTING ENGINEERS
KANSAS CITY, MO.
SHEET NO. 2 A

5384 SHIT 3

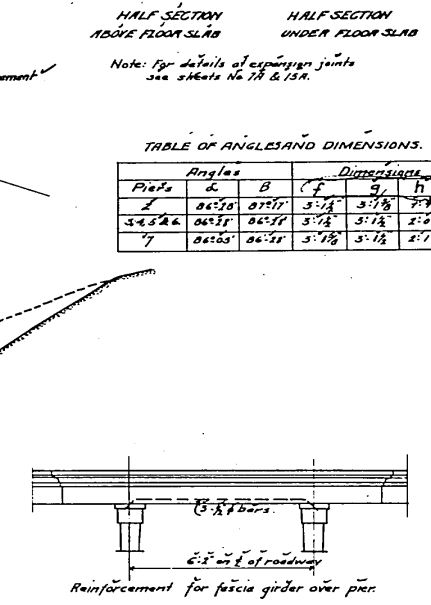
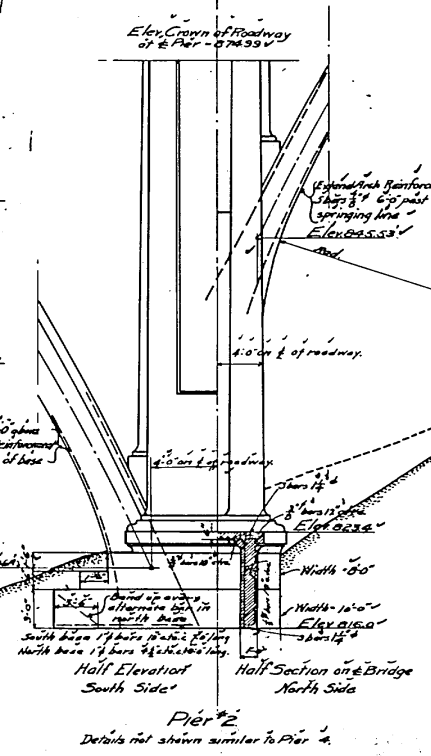
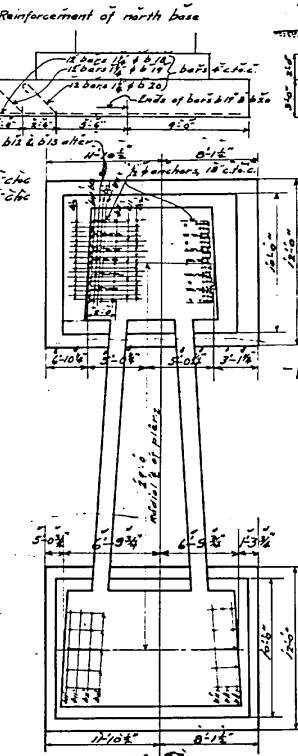
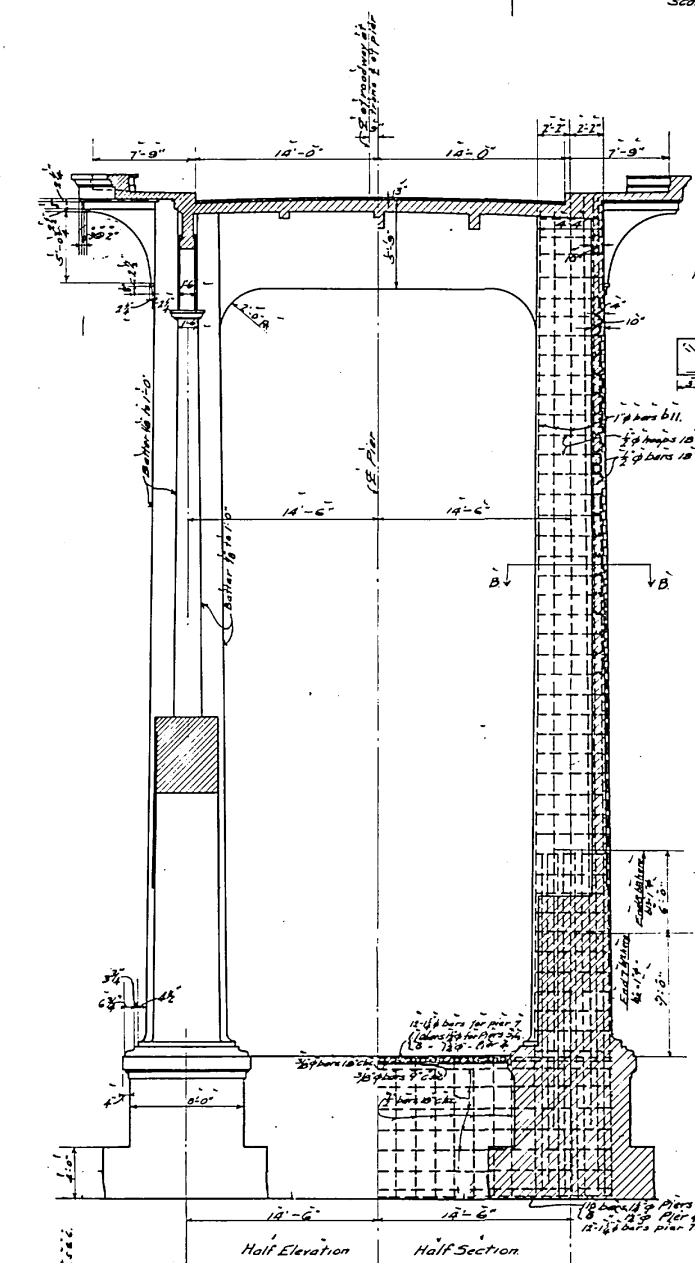
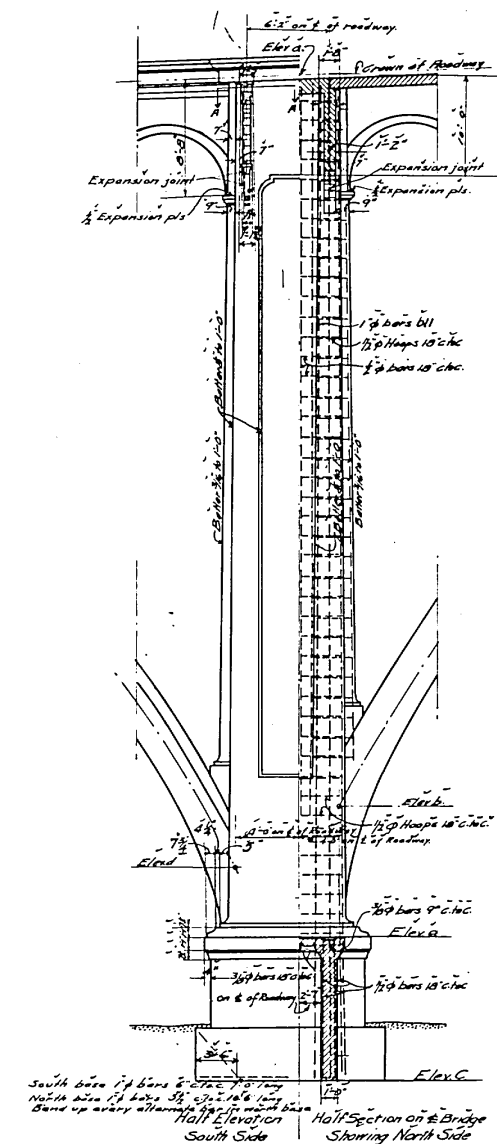
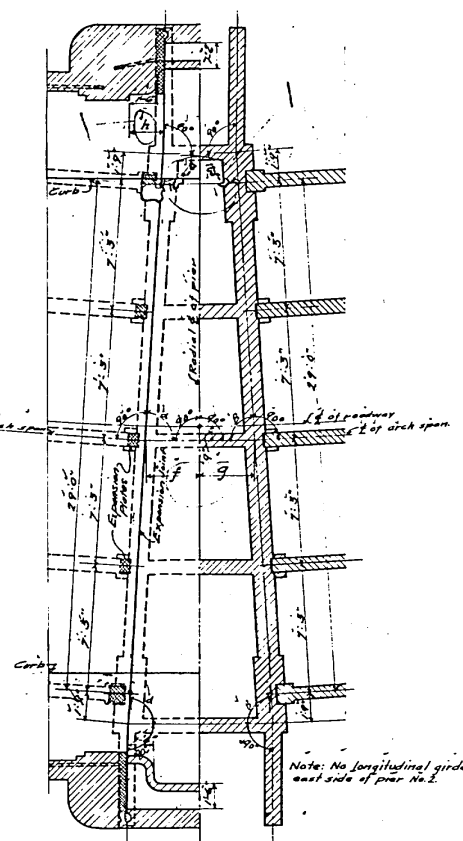
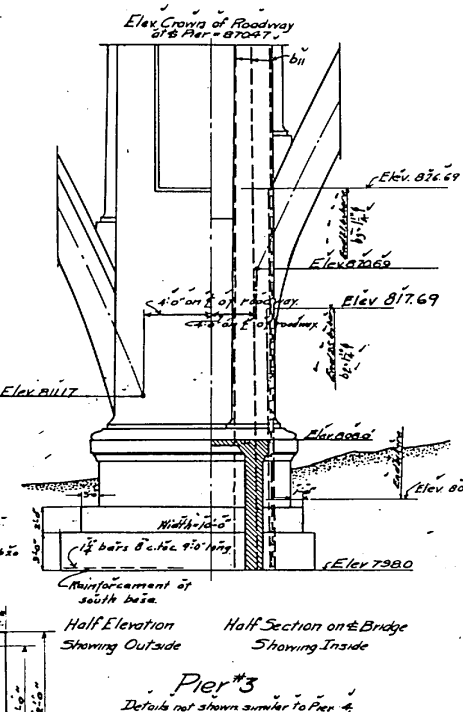
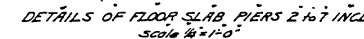
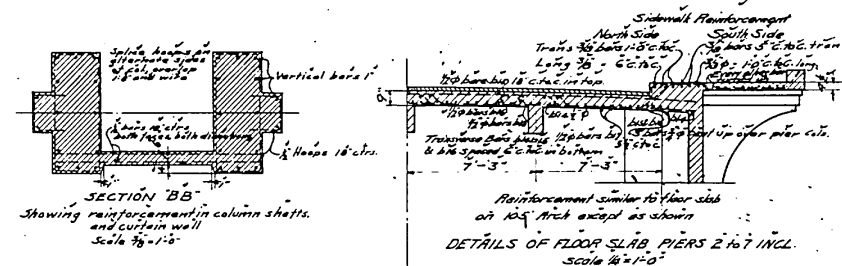
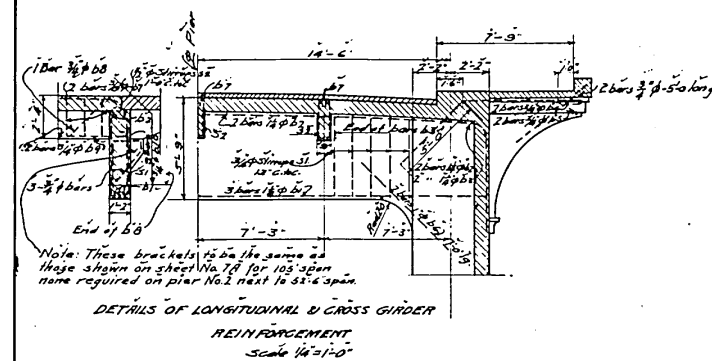


Table of Dimensions

	a'	b'	c'	d'	e'
Prer ¹ 4'	363.33	40.17	790.0	306.63	800.10
" 5'	367.43	50.65	700.0	302.13	795.25
" 6'	358.27	60.13	782.5	374.4	791.44
" 7'	352.39	79.64	700.0 100.0 100.0	381.09	706.92

Piers	Angles		Dimensions		
	α	β	f	g	h
2	$86^{\circ}20'$	$87^{\circ}17'$	$5 \cdot 1\frac{1}{2}$	$5 \cdot 1\frac{1}{2}$	$7 \cdot 3$
3 & 4	$86^{\circ}35'$	$86^{\circ}34'$	$5 \cdot 1\frac{1}{2}$	$5 \cdot 1\frac{1}{2}$	$7 \cdot 3$
7	$86^{\circ}05'$	$86^{\circ}35'$	$5 \cdot 1\frac{1}{2}$	$5 \cdot 1\frac{1}{2}$	$7 \cdot 1$

Note: Roadway drainage to be provided at all piers see sheet #131.
Except when noted otherwise on the drawings
bars shall be placed with their centers at a distance of two
diameters from the surface of the concrete as nearly
as possible, and never less than this.

BRIDGE OVER THE ARROYO SECO
AT
PASADENA, CALIFORNIA.
DETAILS OF PIERS 2, 3, 4, 5, 6 & 7

Scale: 1" = 10'

Made by C. L. D. D. 2/10/12

Traced by C. L. D. D. 2/10/12

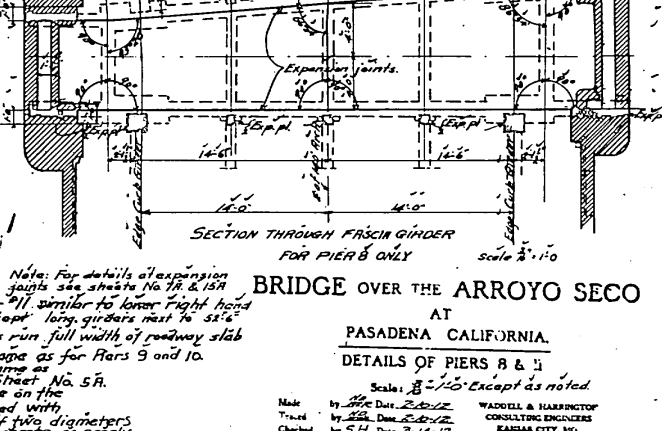
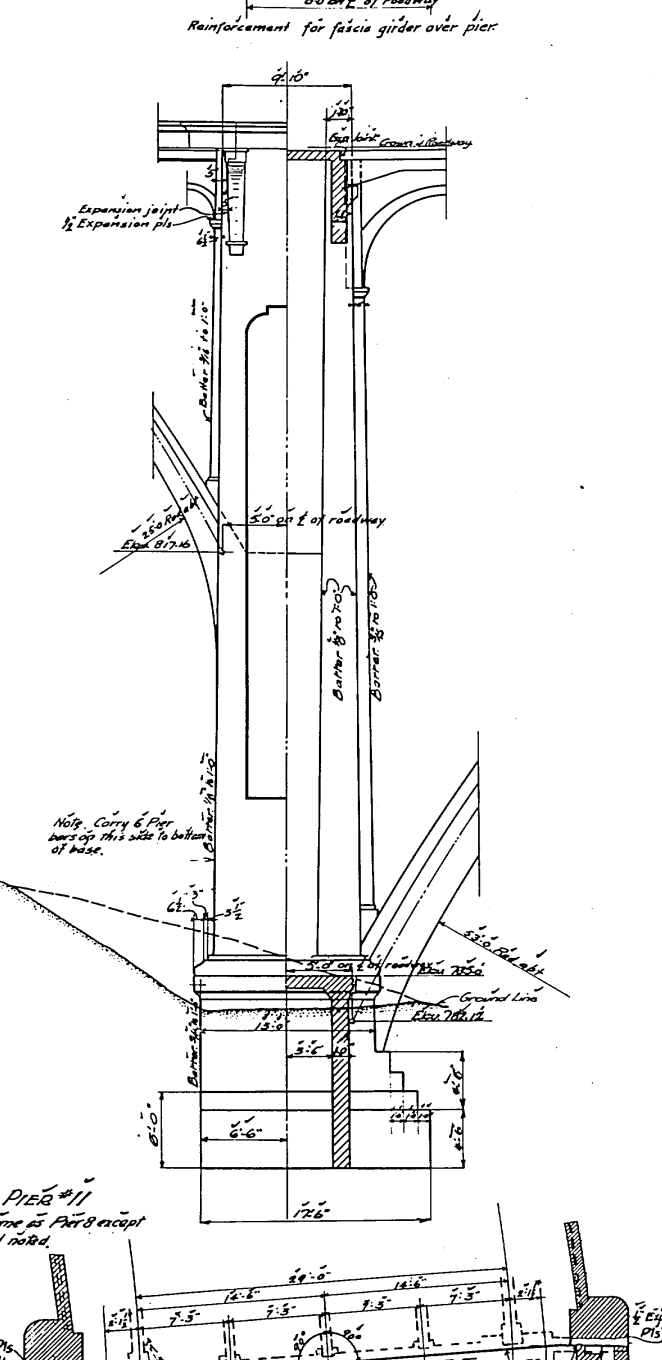
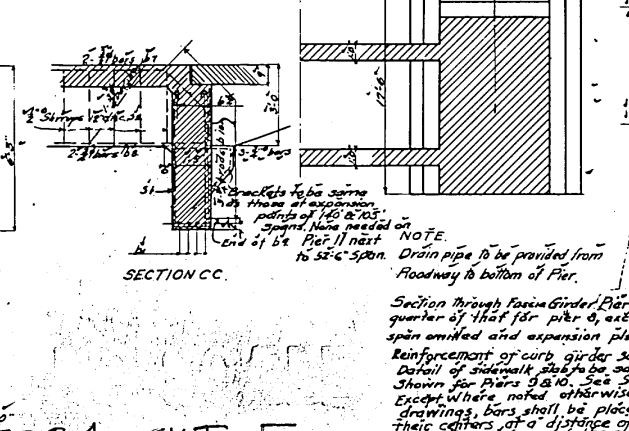
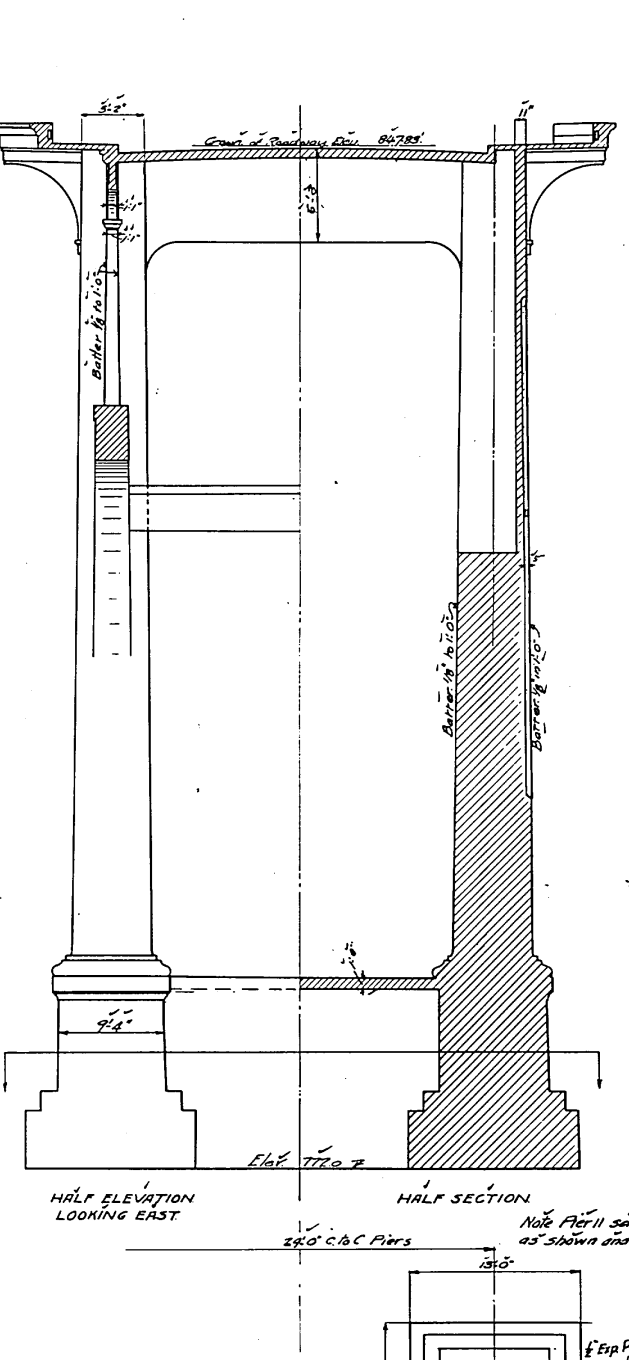
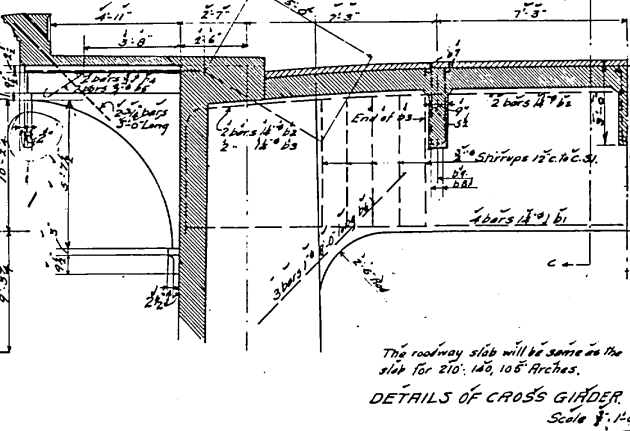
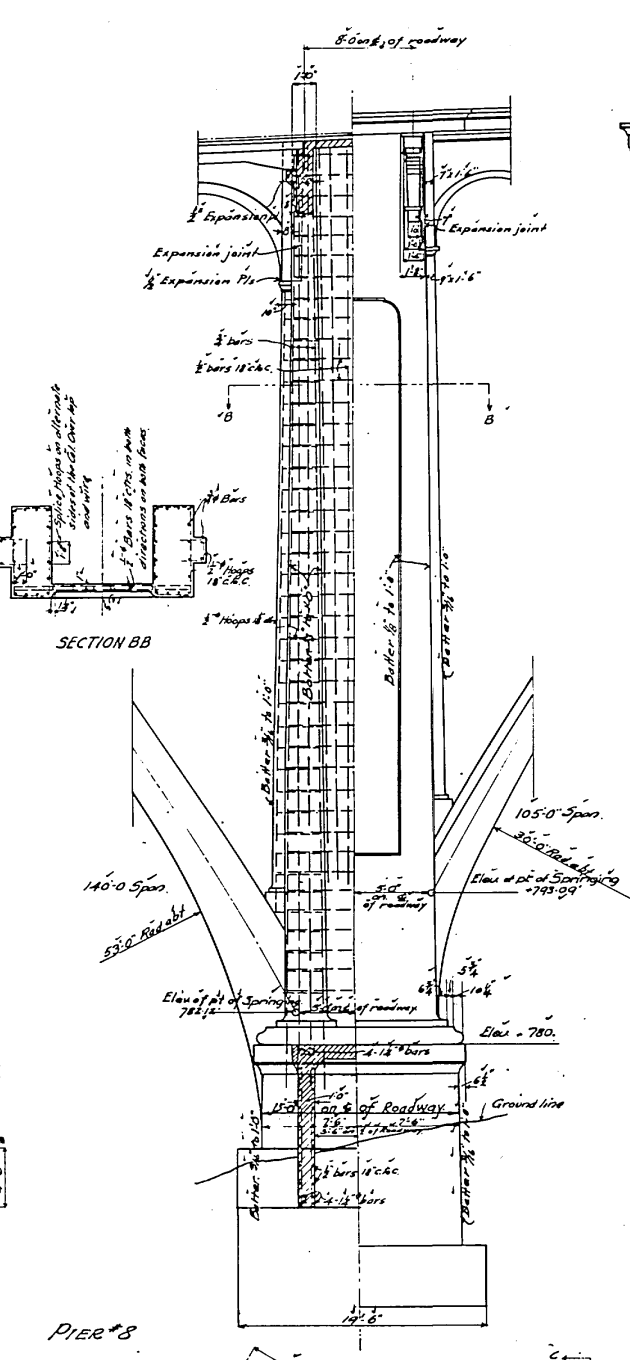
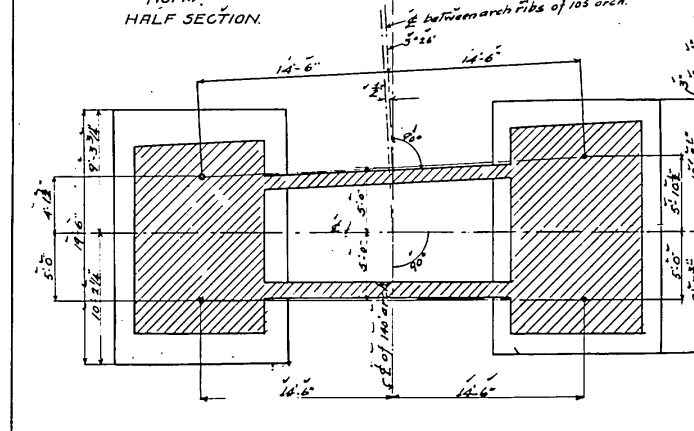
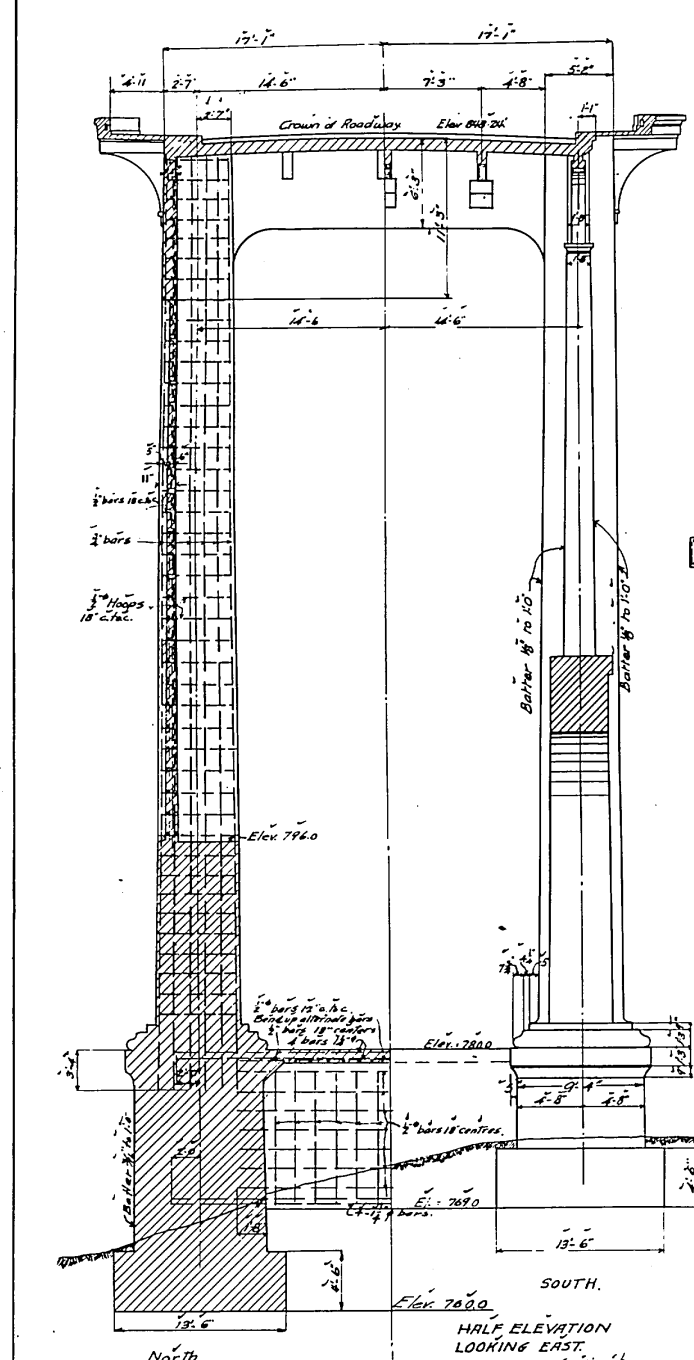
Checked by S. H. D. 3-15-12

Detailed by Complete 3-15-12

WADSWELL & HARRINGTON
CONSTRUCTION ENGINEERS
KANSAS CITY, MO.

SHEET NO. 3A

Revised By - C.S.deG 4-18-12
Revision Checked By - S.H. 4-18-12

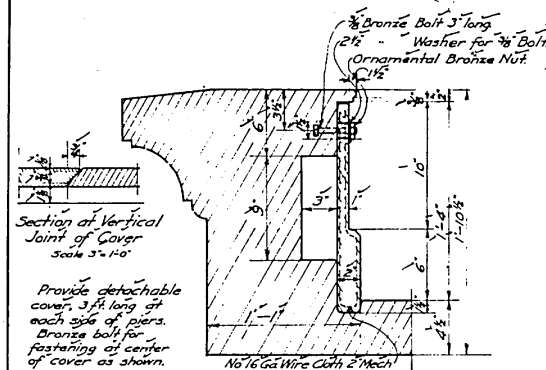


The roadway slab will be same as the slab for 210', 140', 108' Arches.

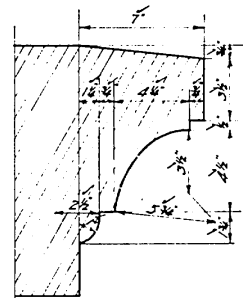
5384 SH 5

NOTE: For details of expansion joints see sheets No. 78 & 15A. Section through fascia girder Pier 11, similar to lower right hand quarter of that for pier 8, except long girders rest on 32' spans omitted and expansion piers run full width of roadway slab. Reinforcement of curb girder same as for Piers 9 and 10. Detail of sidewalk slab to be same as shown for Piers 9 & 10. See Sheet No. 5A. Except where noted otherwise on the drawings, bars shall be placed with their centers at a distance of two diameters from the surface of the concrete, as nearly as possible, and never less than this.

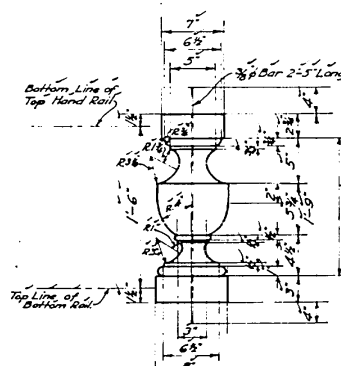
BRIDGE OVER THE ARROYO SECO
AT
PASADENA, CALIFORNIA.
DETAILS OF PIERS 8 & 11
Scale: 1/4" = 1'-0" Except as noted
Made by: J. H. Dwyer, Inc.
Checked by: J. H. Dwyer, Inc.
Designed by: J. H. Dwyer, Inc.
SHEET NO. 4 A



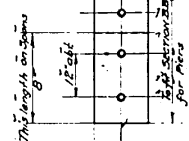
DETAIL OF CHANNEL FOR CONDUITS.
Scale 3/4"=1'-0"



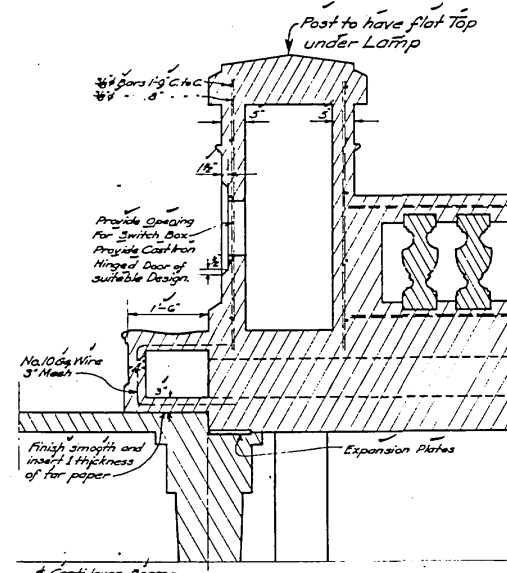
DETAIL OF CORNICE
Scale 3/4"=1'-0"



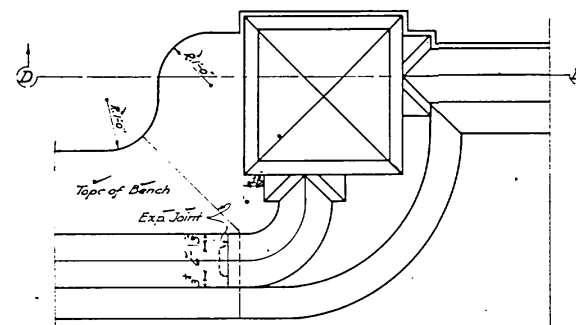
DETAIL OF BALUSTER
Scale 1/2"=1'-0"



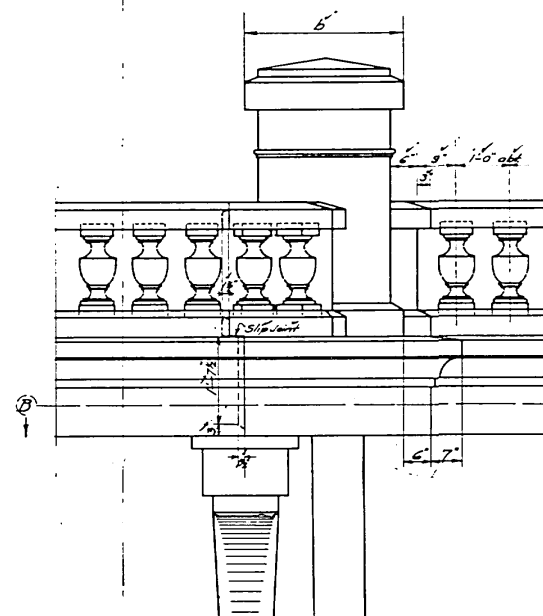
DETAILS OF EXPANSION PLATES
FOR PIER 12
Scale 1/2"=1'-0"



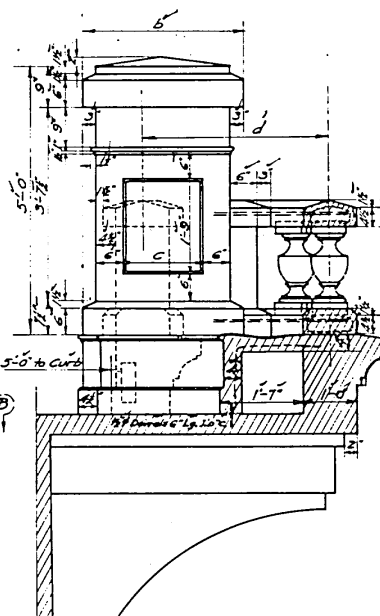
SECTION D D



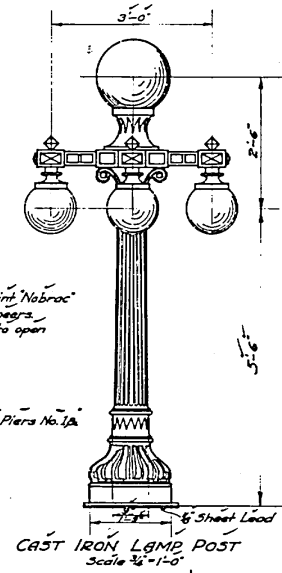
SECTION B B



MAIN POST AND REFUGE BAY
Scale 3/4"=1'-0"

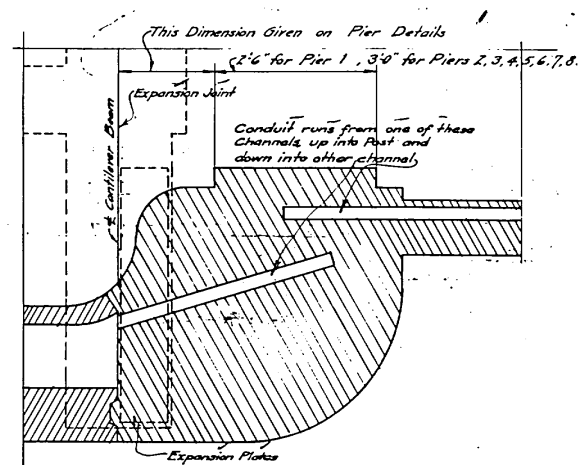


SECTION E E

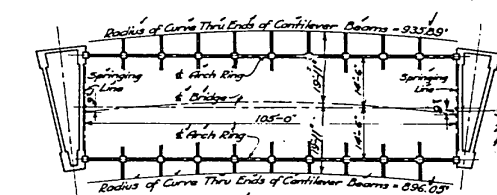
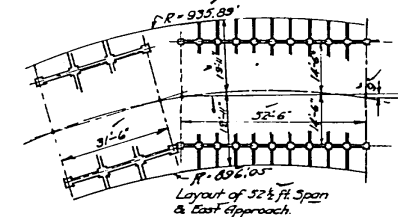


CAST IRON LAMP POST
Scale 3/4"=1'-0"

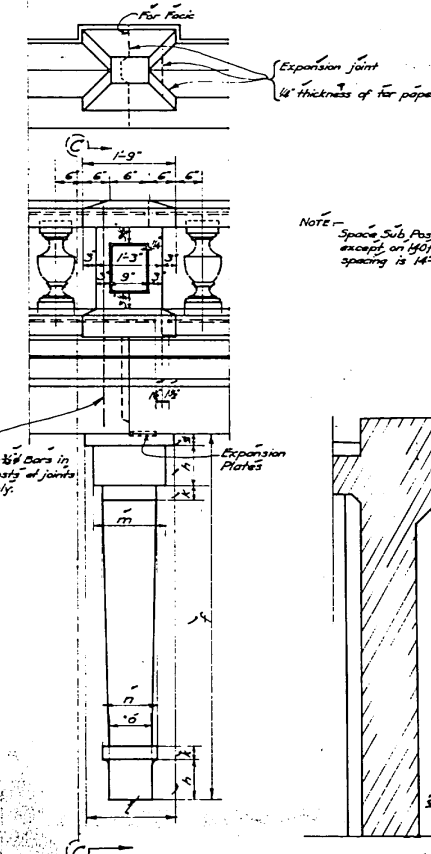
NOTE—
Globes to be of Ground Glass.
Metal to receive 3 coats of Paint 'Nabroc'
or equivalent acceptable to Engineers.
Provide 1" conduit from lights to open
space in blank rail.
Metal not less than 3/8" thick.
5 Lights; 18 Globe Center
12" Others.
Location—
At all Large Posts, Except at Piers No. 12
No. 12.



SECTION B B
For North End of Piers on Curve



SECTION C C
Showing Layout of 105' Spans on Curve



SECTION C C
DETAIL OF HAND RAIL
AND
CANTILEVER BRACKET
Scale 3/4"=1'-0"

BRIDGE OVER THE ARROYO SECO
AT
PASADENA, CALIFORNIA.
DETAILS OF HAND RAIL, REFUGE BAY,
CANTILEVER BEAMS, ETC.

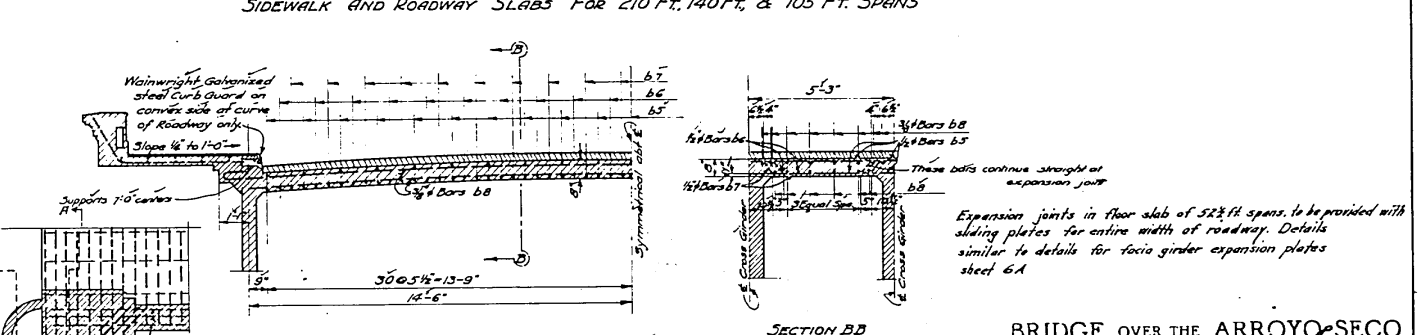
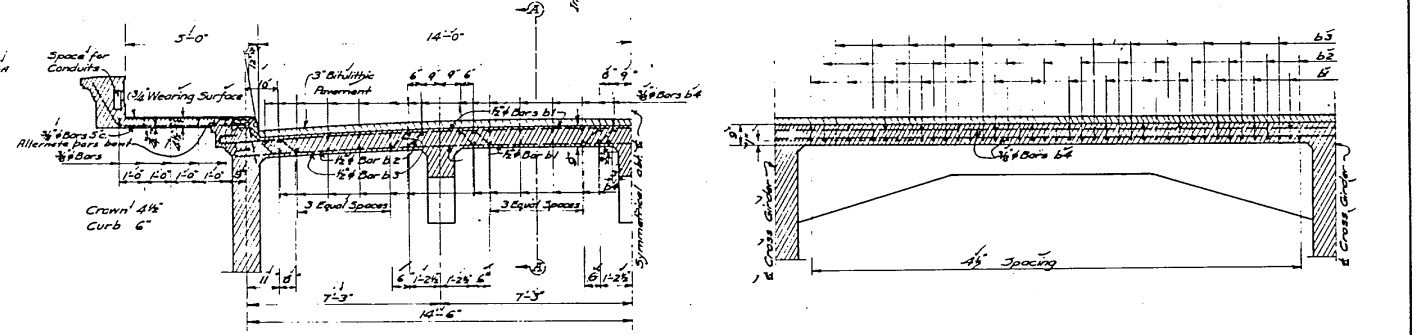
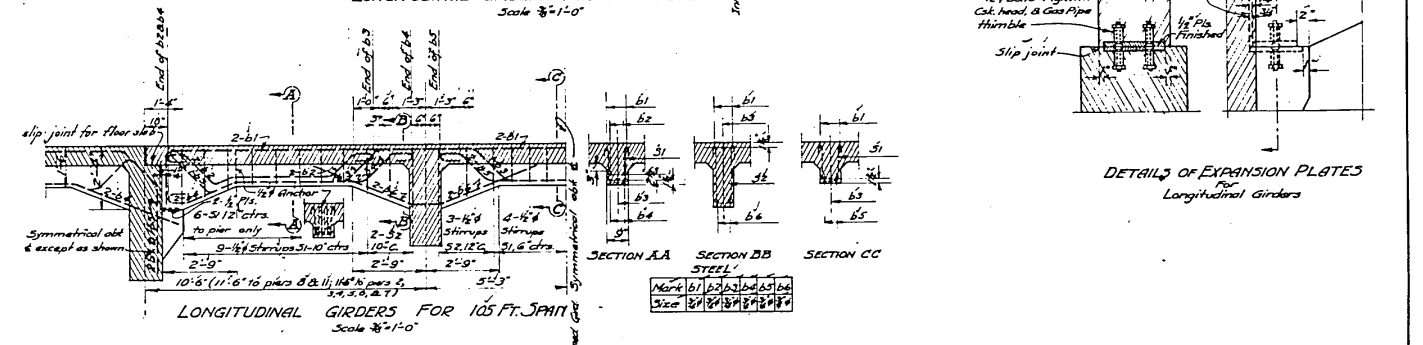
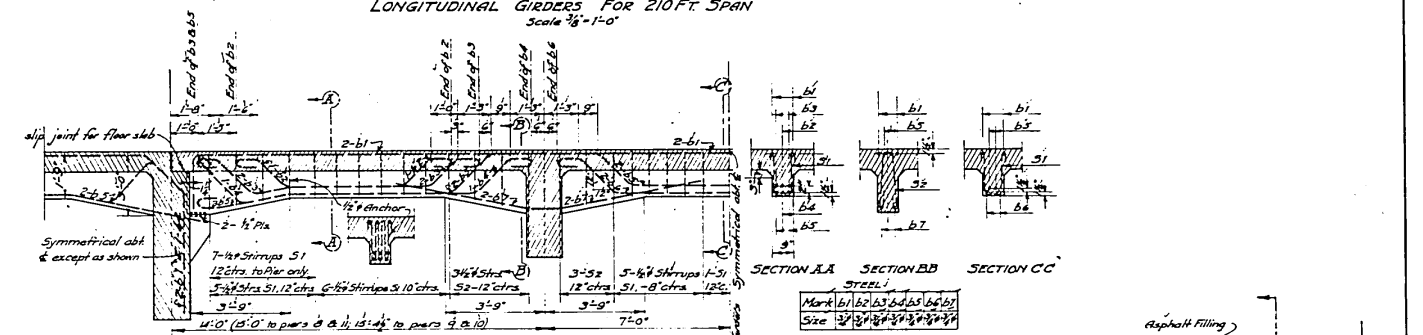
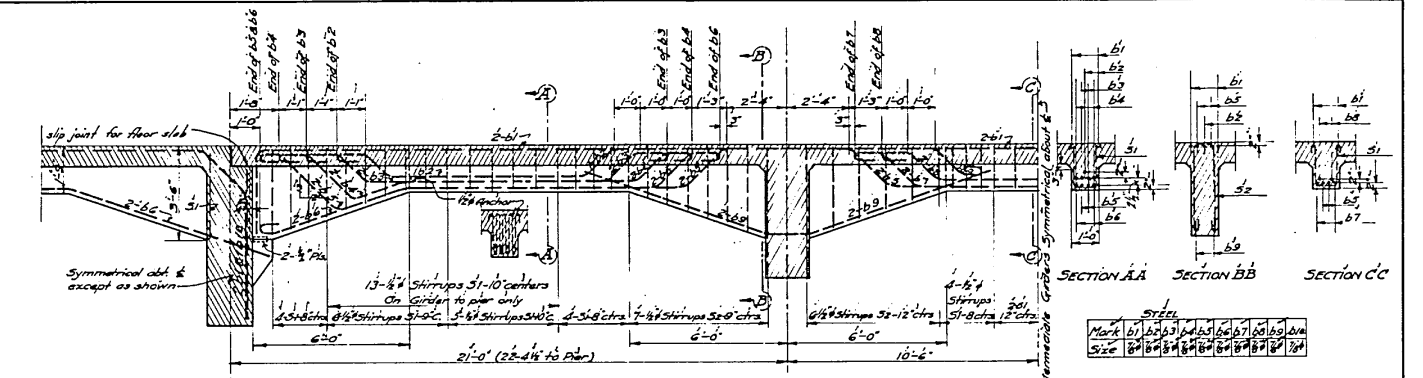
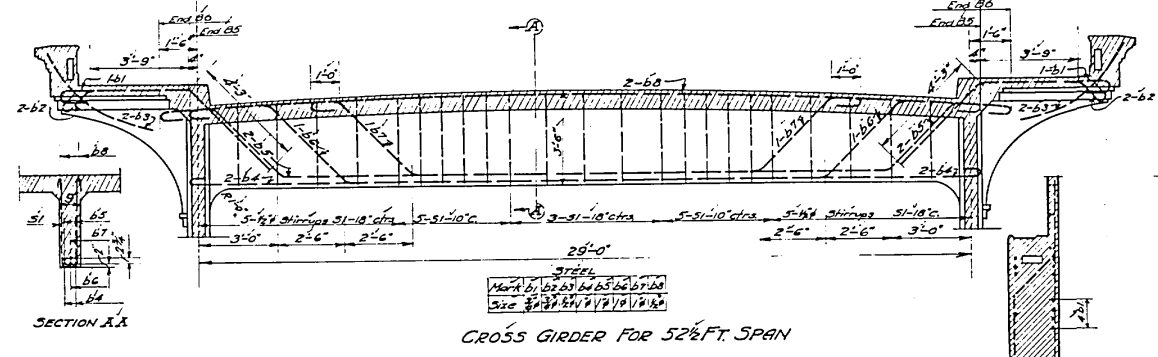
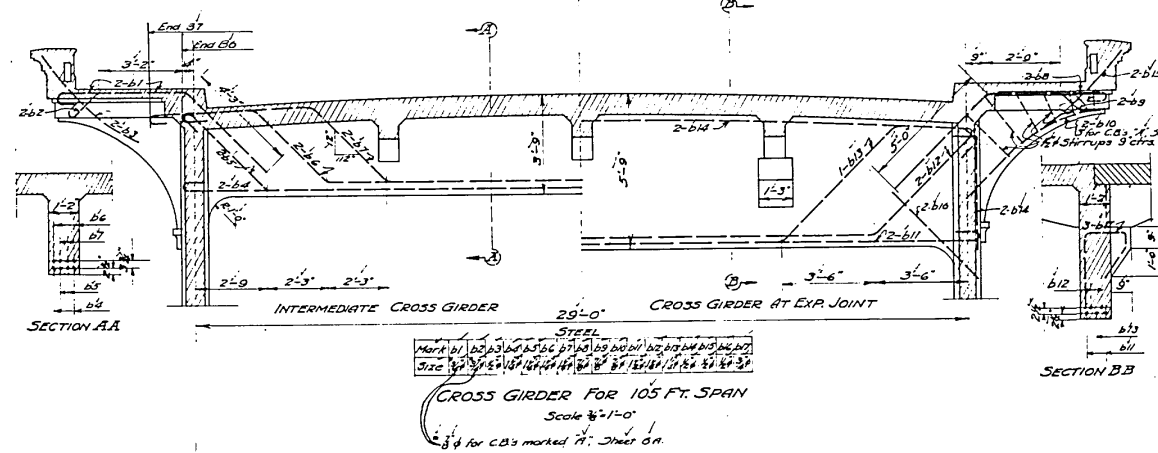
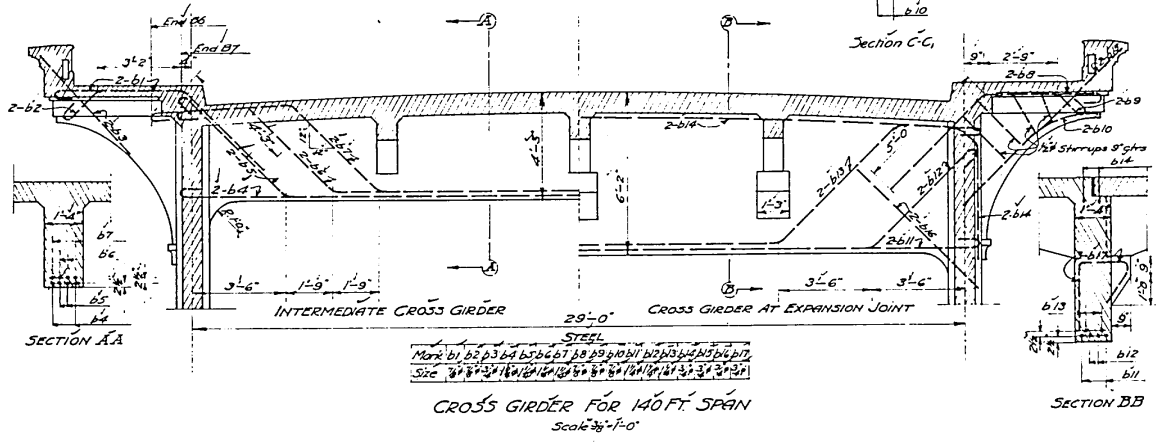
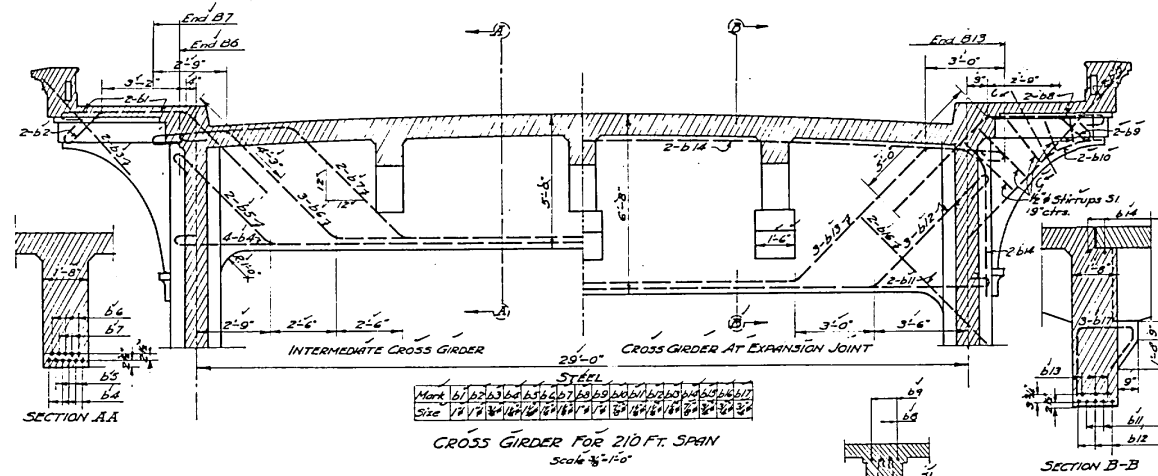
Scale As Noted
Made by E. J. ...
Traced by M. J. ...
Checked by M. J. ...
SHEET NO. 6A

TABLE OF VARIABLE DIMENSIONS

Dimensions for	a	b	c	d	e	f	g	h	k	i	m	n	o	p	r
20 ft Span	2'-0"	3'-0"	1'-6"	3'-6"	5'-0"	6'-0"	3'-6"	9'-0"	3'-0"	1'-6"	1'-0"	10'-0"	2'-0"	5'-0"	
40 ft Span	2'-0"	3'-0"	1'-6"	3'-6"	5'-0"	6'-0"	3'-6"	9'-0"	3'-0"	1'-6"	1'-0"	10'-0"	2'-0"	5'-0"	
105 ft Span	2'-0"	3'-0"	1'-6"	3'-6"	5'-0"	6'-0"	3'-6"	9'-0"	3'-0"	1'-6"	1'-0"	10'-0"	2'-0"	5'-0"	
50 ft Span	2'-0"	3'-0"	1'-6"	3'-6"	5'-0"	6'-0"	3'-6"	9'-0"	3'-0"	1'-6"	1'-0"	10'-0"	2'-0"	5'-0"	

5384 SHT 7

© Revised 3-13-12 by H.G.M. Revisions Checked 3-13-12 by E.J.

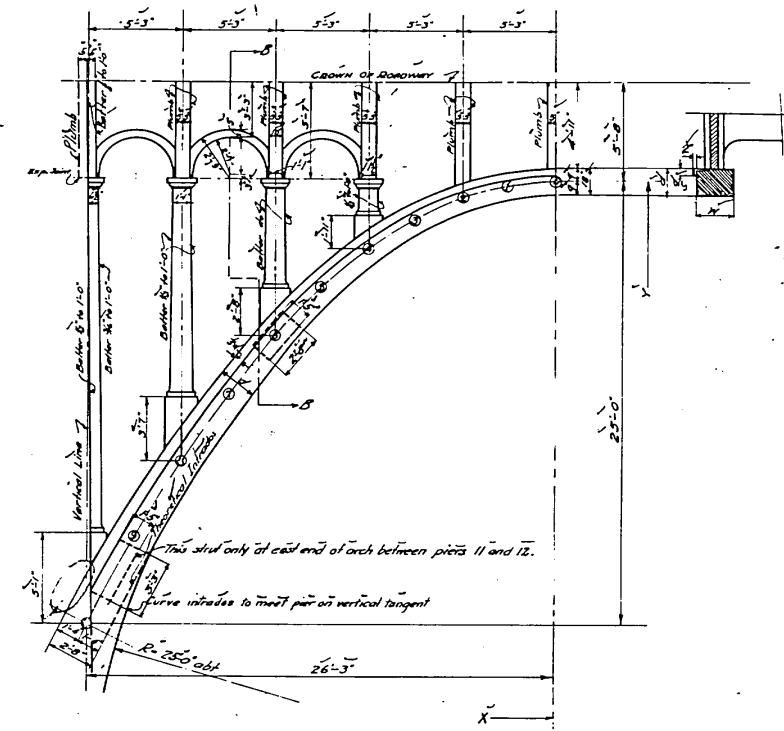
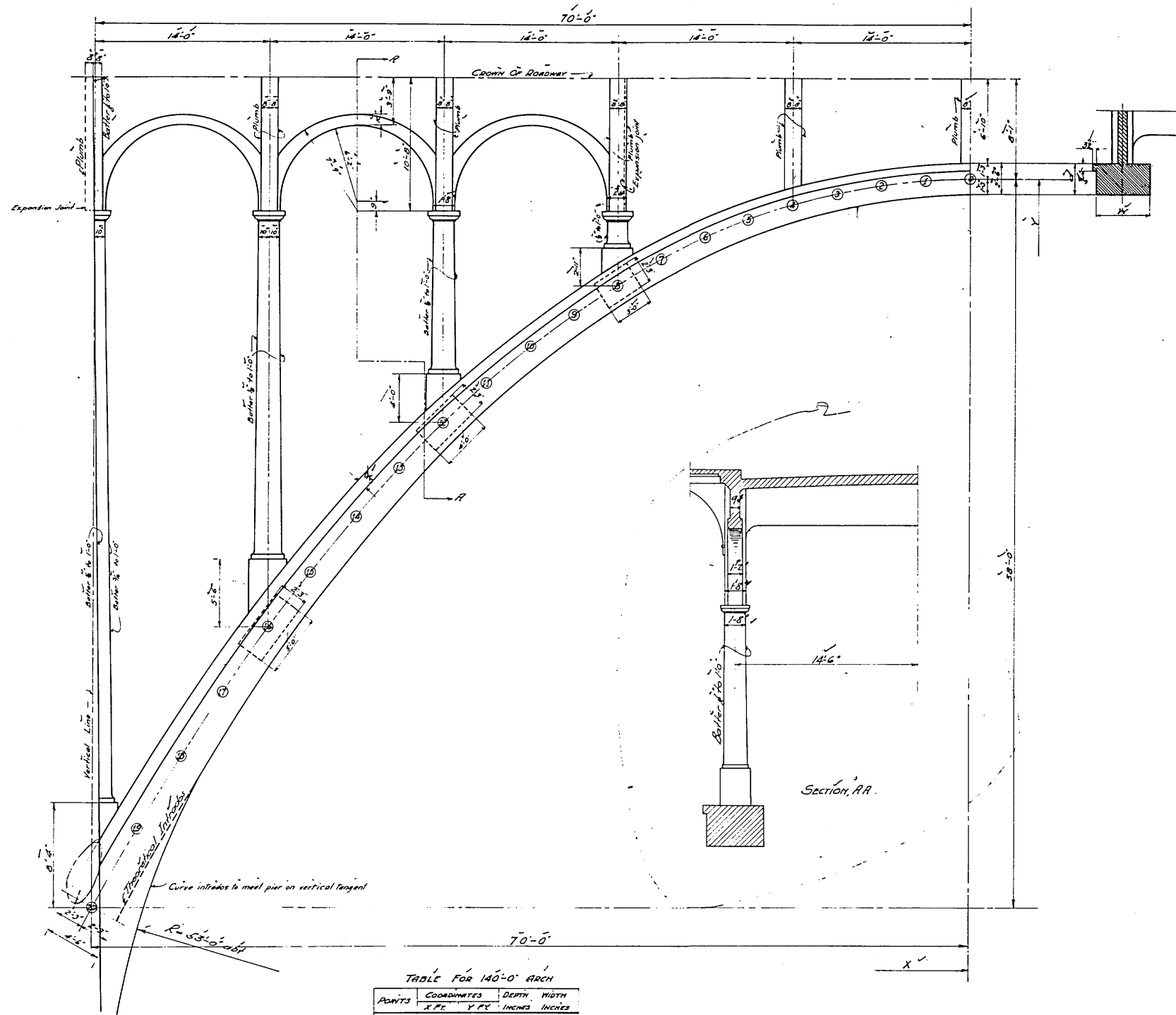


BRIDGE OVER THE ARROYO SECO
AT
PASADENA, CALIFORNIA
DETAILS OF FLOOR SYSTEM

Scale: $\frac{3}{8}''=1'-0''$
Made by *[Signature]* Date 3-11-12
Traced by *[Signature]* Date 3-12-12
Checked by *[Signature]* Date 3-12-12
WADDELL & HARRINGTON
CONSULTING ENGINEERS
KANSAS CITY, MO.
SHEET NO. 7A.

5384 SH-T 8

Revised 3-12-12 by M.G.M. Revisions Checked 3-12-12 by L.S.B.



52'-6" ARCH

POINTS	COORDINATES X FE. Y FE.	DEPTH INCHES	WIDTH INCHES
0	0	0	26
1	2.62	0.24	18 1/2
2	5.23	0.95	19 1/2
3	7.88	2.15	20 1/2
4	10.50	3.84	21 1/2
5	13.12	6.02	22 1/2
6	15.73	8.72	23 1/2
7	18.38	11.93	25 1/2
8	21.00	15.72	27 1/2
9	23.62	20.06	29 1/2
10	26.23	25.00	32

Coordinates for Arch Ring
NOTE: Coordinates Measured from S. of Arch Ring or Crown
Depth Measured Normal to S.

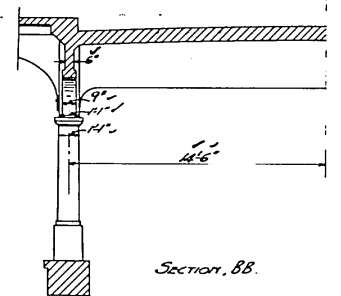
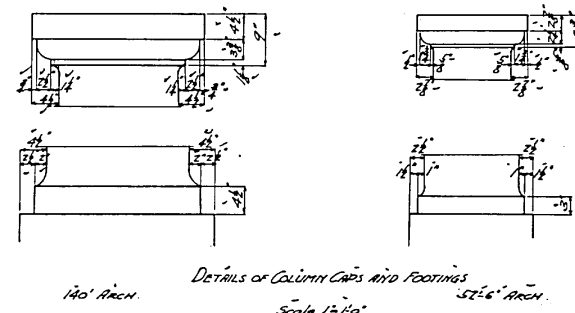


TABLE FOR 140'-0" ARCH

POINTS	COORDINATES X FE. Y FE.	DEPTH INCHES	WIDTH INCHES
0	0	0	30
1	5.5	1.13	30 1/2
2	11	3.0	31 1/2
3	16.5	5.14	32 1/2
4	22	7.22	33 1/2
5	27.5	9.27	34 1/2
6	33	11.28	35 1/2
7	38.5	13.24	36 1/2
8	44	15.16	37 1/2
9	49.5	17.04	38 1/2
10	55	18.87	39 1/2
11	60.5	20.64	40 1/2
12	66	22.36	41 1/2
13	71.5	24.02	42 1/2
14	77	25.63	43 1/2
15	82.5	27.19	44 1/2
16	88	28.70	45 1/2
17	93.5	30.16	46 1/2
18	99	31.57	47 1/2
19	104.5	32.93	48 1/2
20	110	34.24	49 1/2

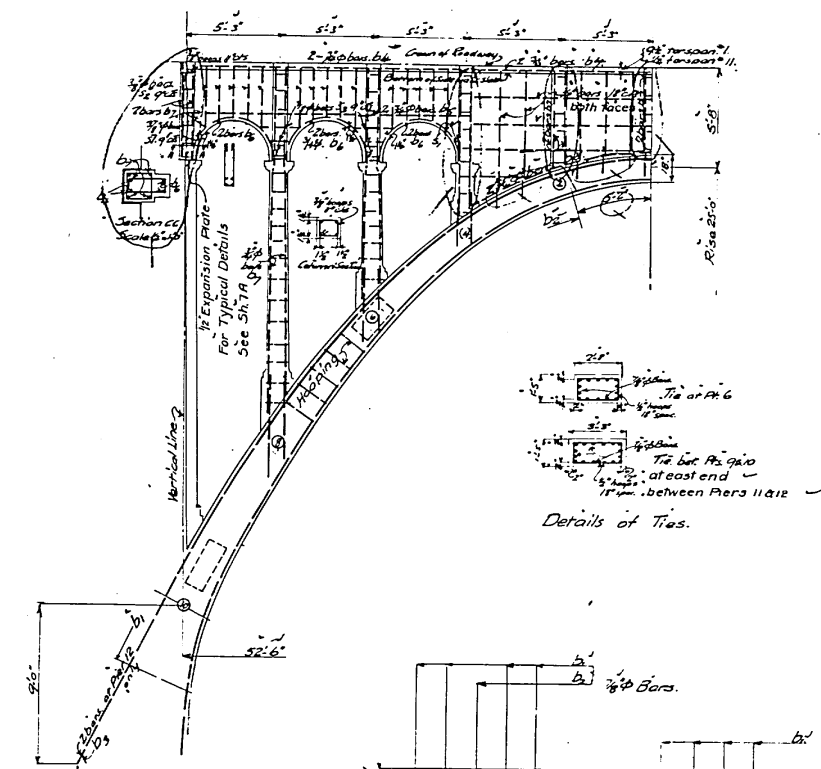
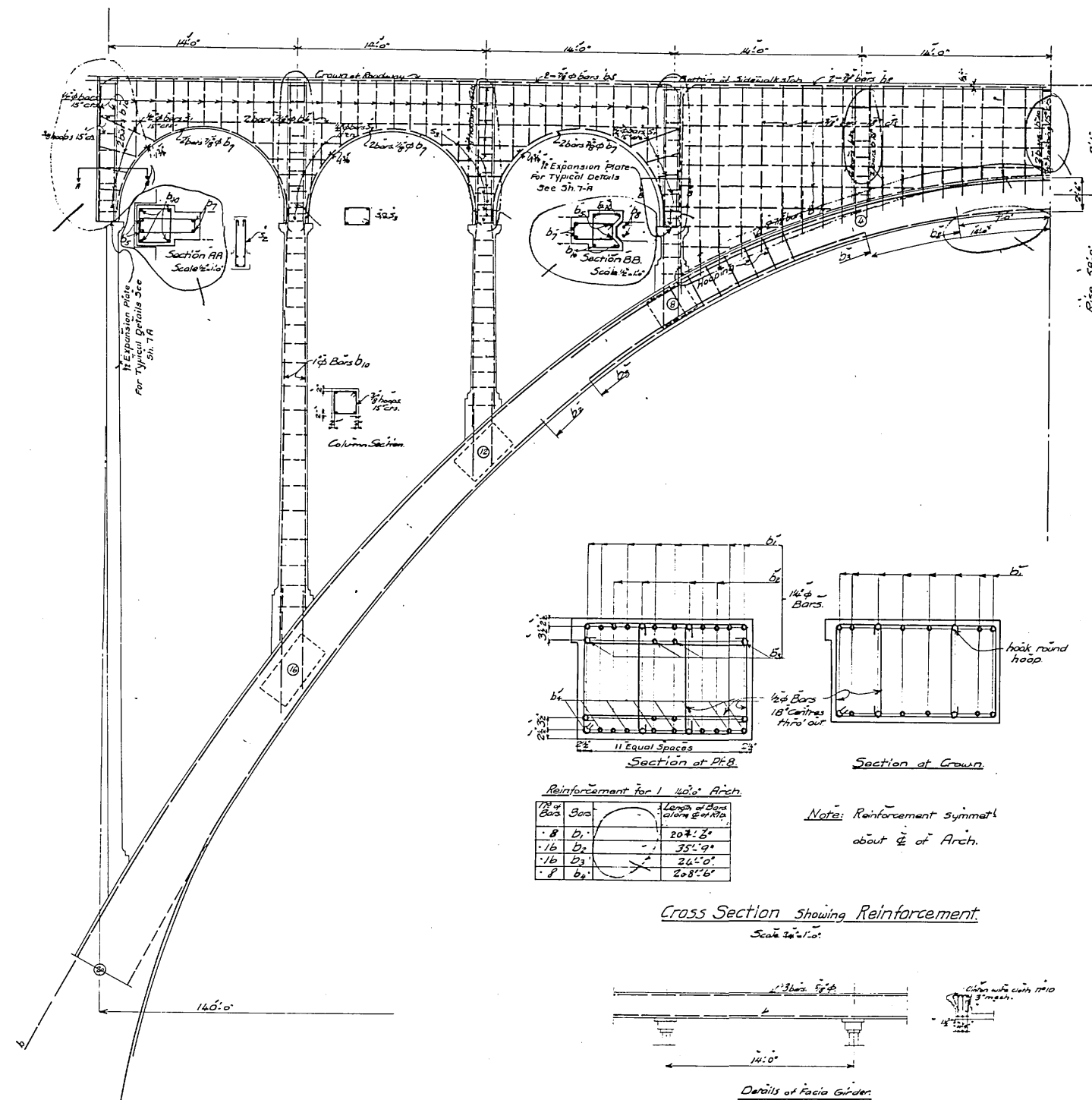
Coordinates for Arch Ring
NOTE: Coordinates Measured from S. of Arch Ring or Crown
Depth Measured Normal to S.



BRIDGE OVER THE ARROYO SECO
AT
PASADENA, CALIFORNIA.
CONCRETE DETAILS OF 52'-6" & 140' SPANS

Scale: 1" = 10'
Made by: H. L. L. & S. L. L.
Traced by: H. L. L. & S. L. L.
Checked by: H. L. L. & S. L. L.
WADSWORTH & H. L. L. L.
CONCRETE ENGINEERS
PASADENA, CALIF.
SHEET NO. 8A

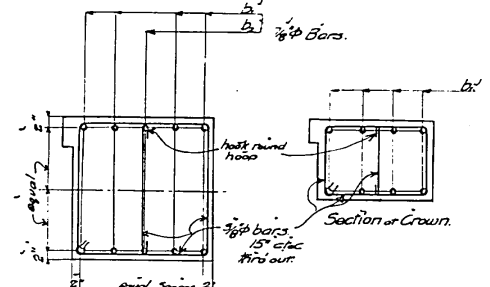
5384 SH 9



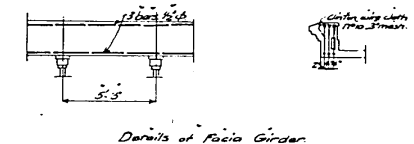
Reinforcement for 1. 52.6° Arc

Top of Deck	Bar.		Length of Bars along E.R.D.
-6	-b ₁		86.2°
-4	-b ₂		34.10°
+2	+b ₃		94.0°
+2	+b ₁		86.0° ✓

for all other angles

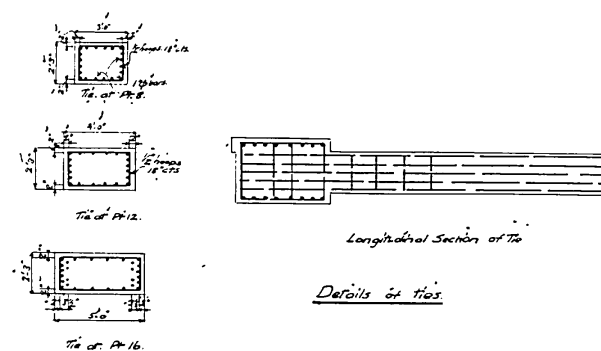


Cross Section showing Reinforcement.
Scale: $\frac{3}{8}'' = 1'-0''$



Cross Section showing Reinforcement.
Scale 1/4" = 1'-0"

Details of Facio Girder:



BRIDGE OVER THE ARROYO SECO
AT
PASADENA, CALIFORNIA.
REINFORCEMENT FOR 52-5 AND 140 SPANS

Scale, $\frac{1}{4}" = 10'$

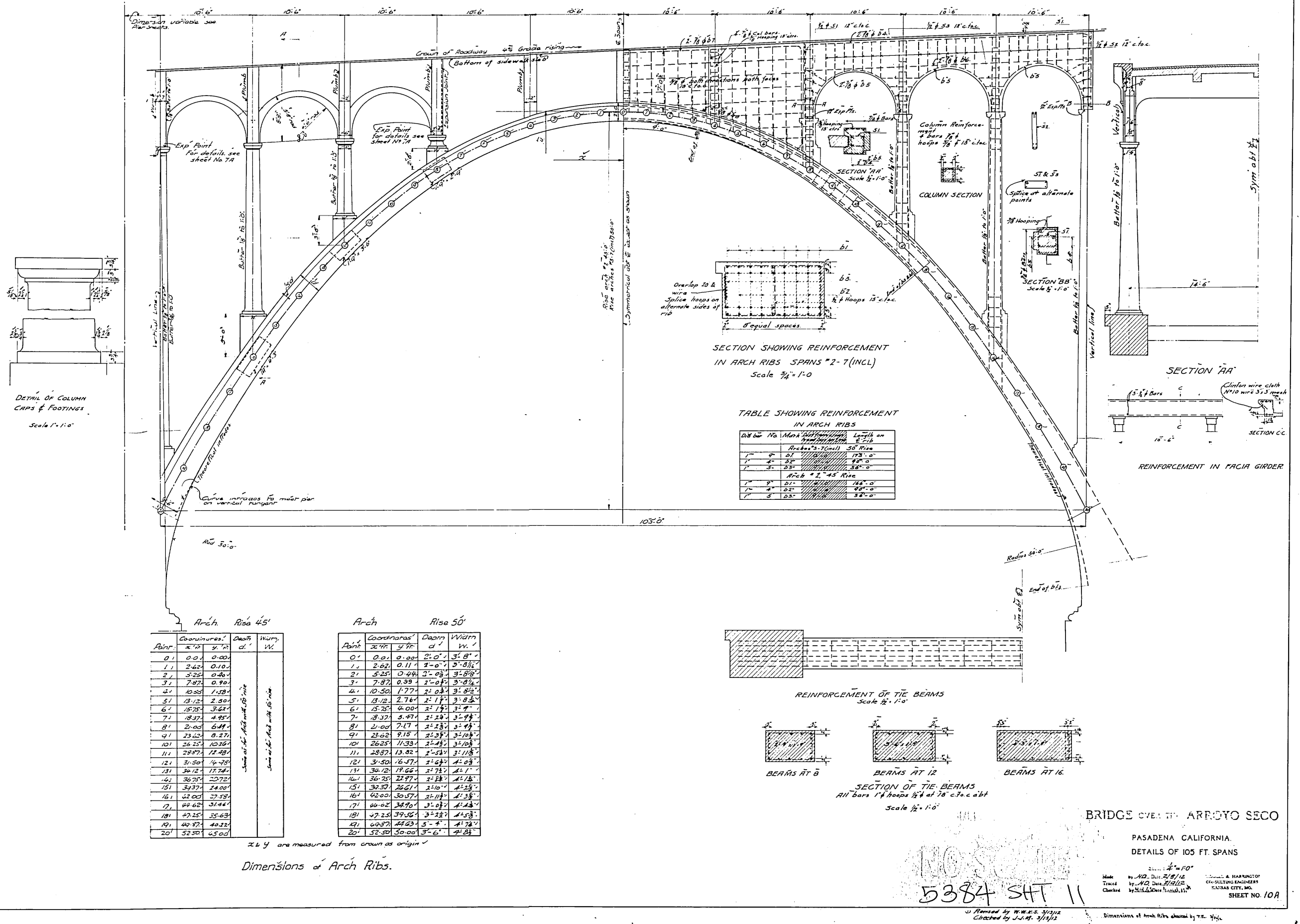
Made by HD Date 3/12/12

Traced by HD Date 3/12/12

Checked by CHL Date 3/16/12

WADDILL & DARRINGTON
CONSULTING ENGINEERS
KANSAS CITY MO.
SHEET NO.

5384 SHT 10



Arch. Rise 45'

Point	Coordinates	Depth	Width
	X-Y	d'	W'
0	0.00	0.00	
1	2.62	0.10	
2	5.25	0.40	
3	7.87	0.90	
4	10.50	1.50	
5	13.12	2.50	
6	15.75	3.62	
7	18.37	4.95	
8	21.00	6.49	
9	23.62	8.27	
10	26.25	10.26	
11	28.87	12.48	
12	31.50	14.93	
13	34.12	17.74	
14	36.75	20.72	
15	39.37	24.00	
16	42.00	27.59	
17	44.62	31.46	
18	47.25	35.63	
19	49.87	40.12	
20	52.50	45.00	

Sum of the Arch with 50' rise

Sum of the Arch with 45' rise

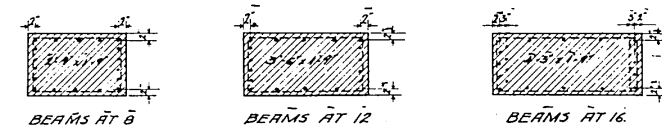
Arch. Rise 50'

Point	Coordinates	Depth	Width
	X-Y	d'	W'
0	0.00	0.00	
1	2.62	0.11	3'-8 1/2"
2	5.25	0.44	3'-8 1/2"
3	7.87	0.99	3'-8 1/2"
4	10.50	1.77	3'-8 1/2"
5	13.12	2.76	3'-8 1/2"
6	15.75	4.00	3'-9"
7	18.37	5.49	3'-9"
8	21.00	7.17	3'-9"
9	23.62	9.15	3'-10 1/2"
10	26.25	11.33	3'-10 1/2"
11	28.87	13.82	3'-11 1/2"
12	31.50	16.57	3'-11 1/2"
13	34.12	19.66	4'-1"
14	36.75	23.07	4'-1 1/2"
15	39.37	26.81	4'-2 1/2"
16	42.00	30.87	4'-3 1/2"
17	44.62	35.20	4'-4 1/2"
18	47.25	39.86	4'-5 1/2"
19	49.87	44.83	4'-6 1/2"
20	52.50	50.00	4'-8 1/2"

X & Y are measured from crown as origin

Dimensions of Arch Ribs.

REINFORCEMENT OF TIE BEAMS
Scale 1/2" = 1'-0"



SECTION OF TIE BEAMS
All bars 1" hoops 1/2" at 18" c.to.c abt
Scale 1/2" = 1'-0"

BRIDGE OVER THE ARROYO SECO
PASADENA, CALIFORNIA.
DETAILS OF 105 FT. SPANS

Scale 1/4" = 1'-0"
Made by A.D. Date 2/8/12
Checked by A.D. Date 2/12/12
SHEET NO. 10A

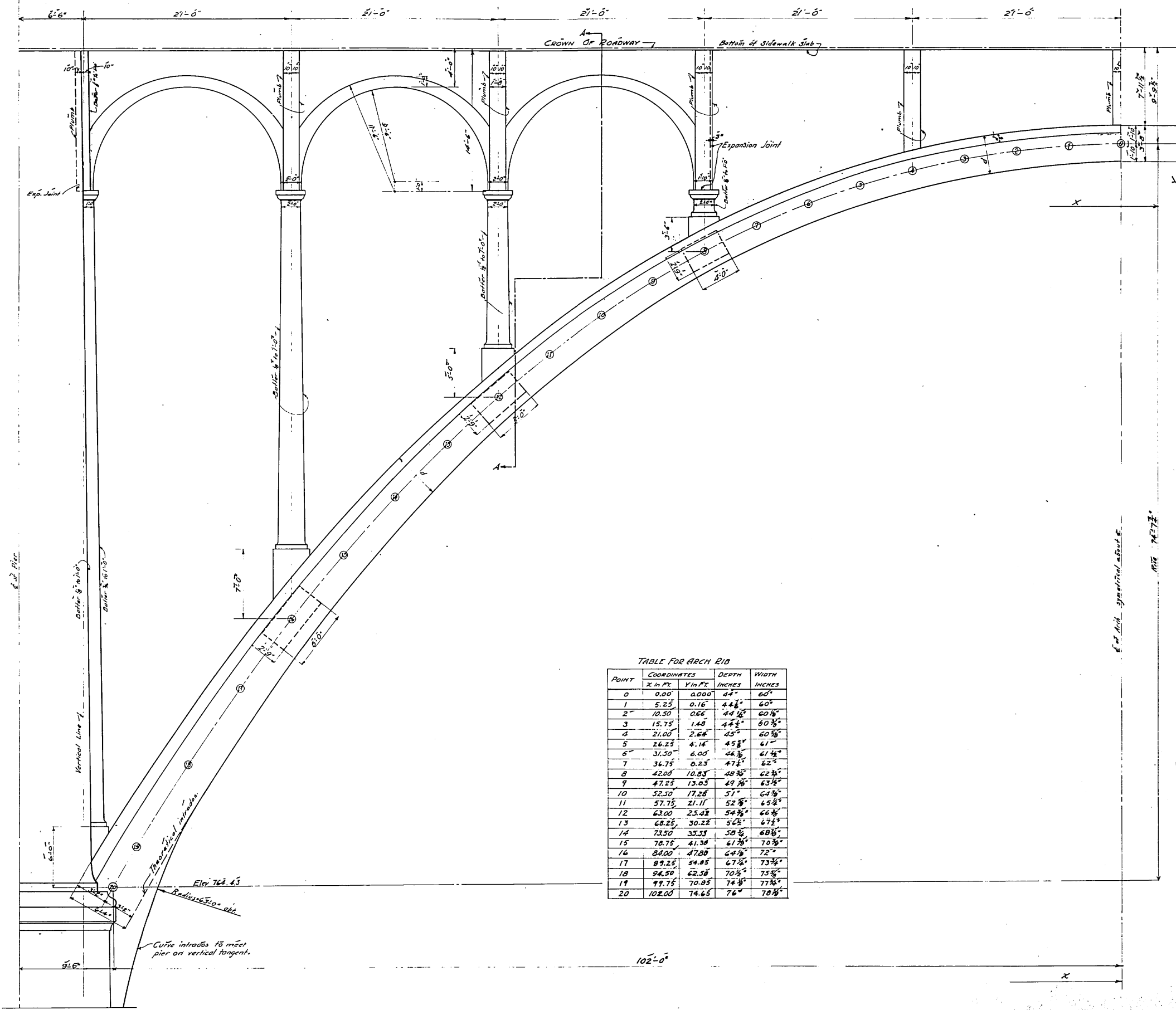
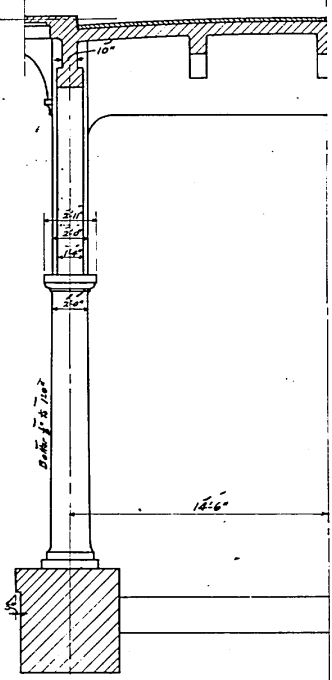
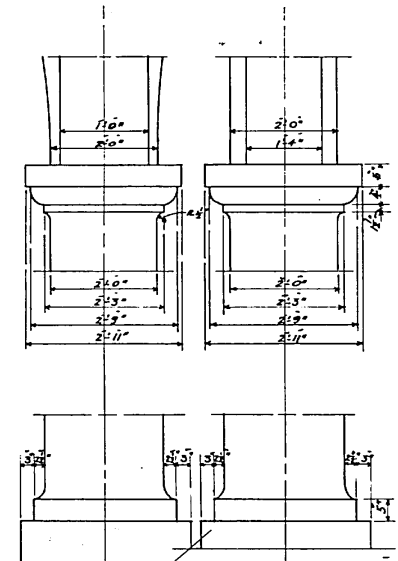


TABLE FOR ARCH RIB

POINT	COORDINATES		DEPTH	WIDTH
	X IN FT.	Y IN FT.	INCHES	INCHES
0	0.00	0.000	44"	60"
1	5.25	0.16	44 1/2"	60"
2	10.50	0.66	44 1/2"	60 3/8"
3	15.75	1.40	44 1/2"	60 3/8"
4	21.00	2.66	45"	60 3/8"
5	26.25	4.16	45 1/2"	61"
6	31.50	6.00	46 1/2"	61 1/2"
7	36.75	8.25	47 1/2"	62"
8	42.00	10.85	48 3/8"	62 3/8"
9	47.25	13.65	49 3/8"	63 3/8"
10	52.50	17.26	51"	64 3/8"
11	57.75	21.11	52 1/8"	65 3/8"
12	63.00	25.42	54 3/8"	66 3/8"
13	68.25	30.22	56 3/8"	67 1/2"
14	73.50	35.33	58 1/2"	68 3/8"
15	78.75	41.38	61 3/8"	70 3/8"
16	84.00	47.88	64 1/2"	72"
17	89.25	54.85	67 1/2"	73 3/8"
18	94.50	62.58	70 3/8"	75 3/8"
19	99.75	70.85	74 1/8"	77 3/8"
20	105.00	74.65	76"	78 3/8"



SECTION A-A

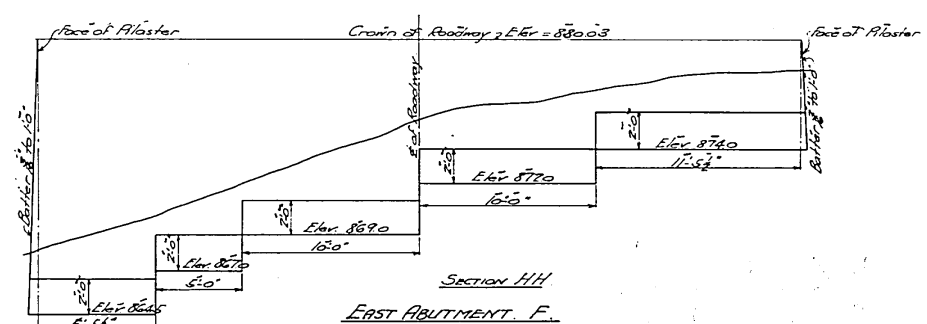
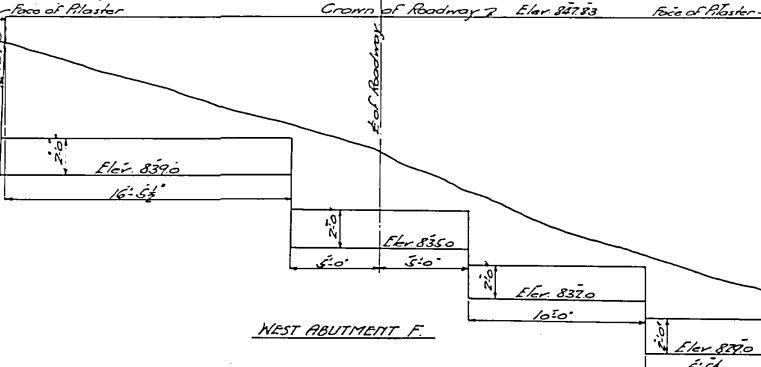
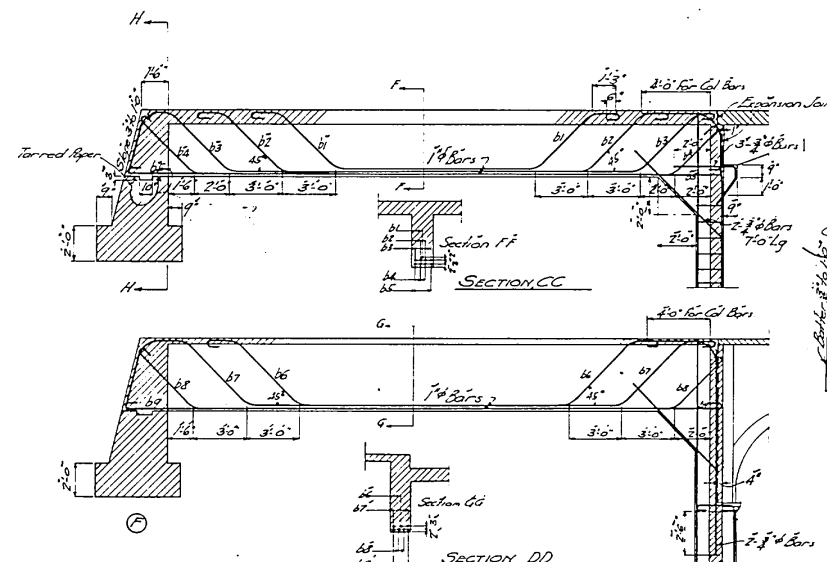
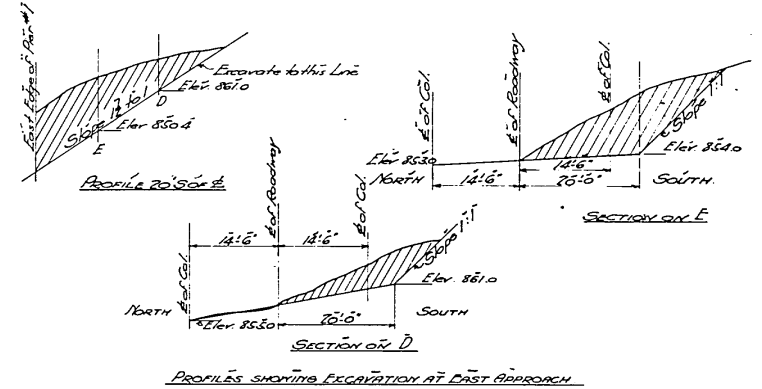
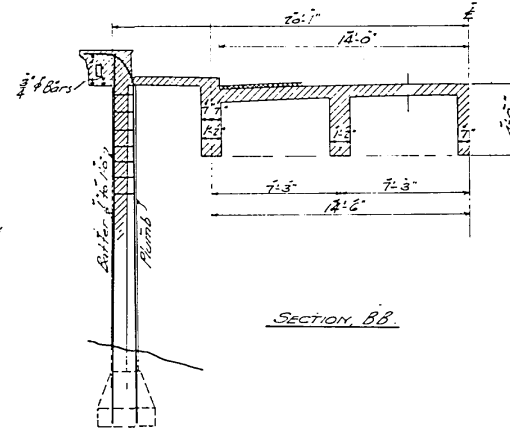
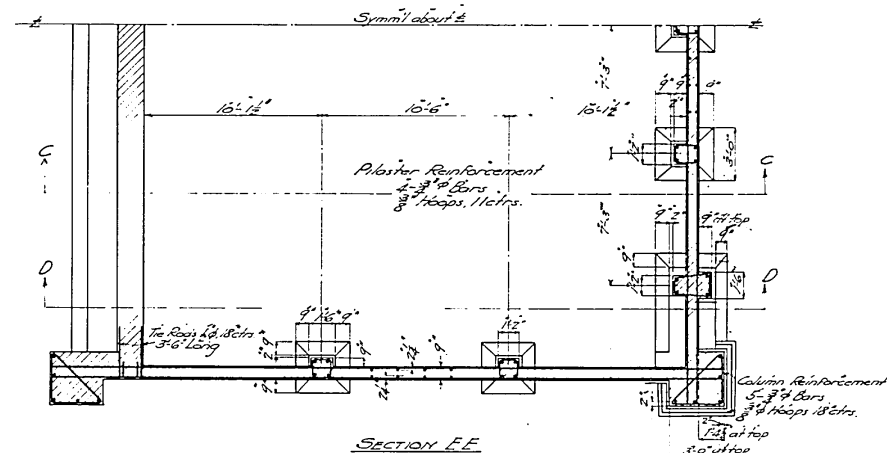
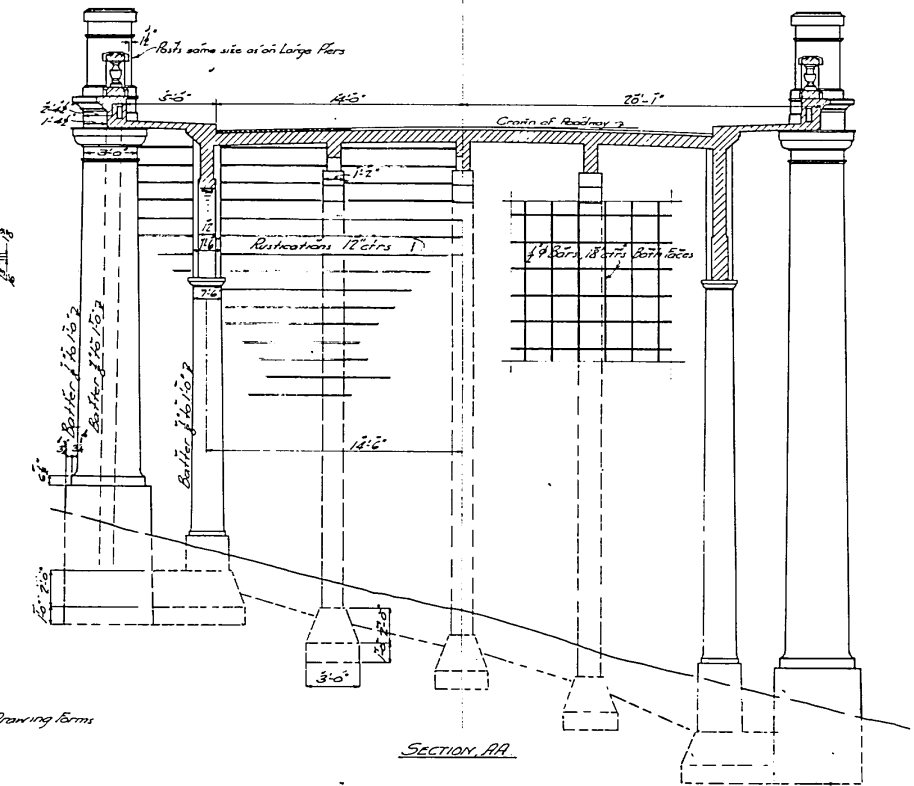
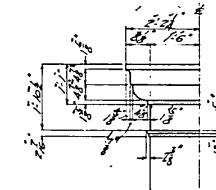
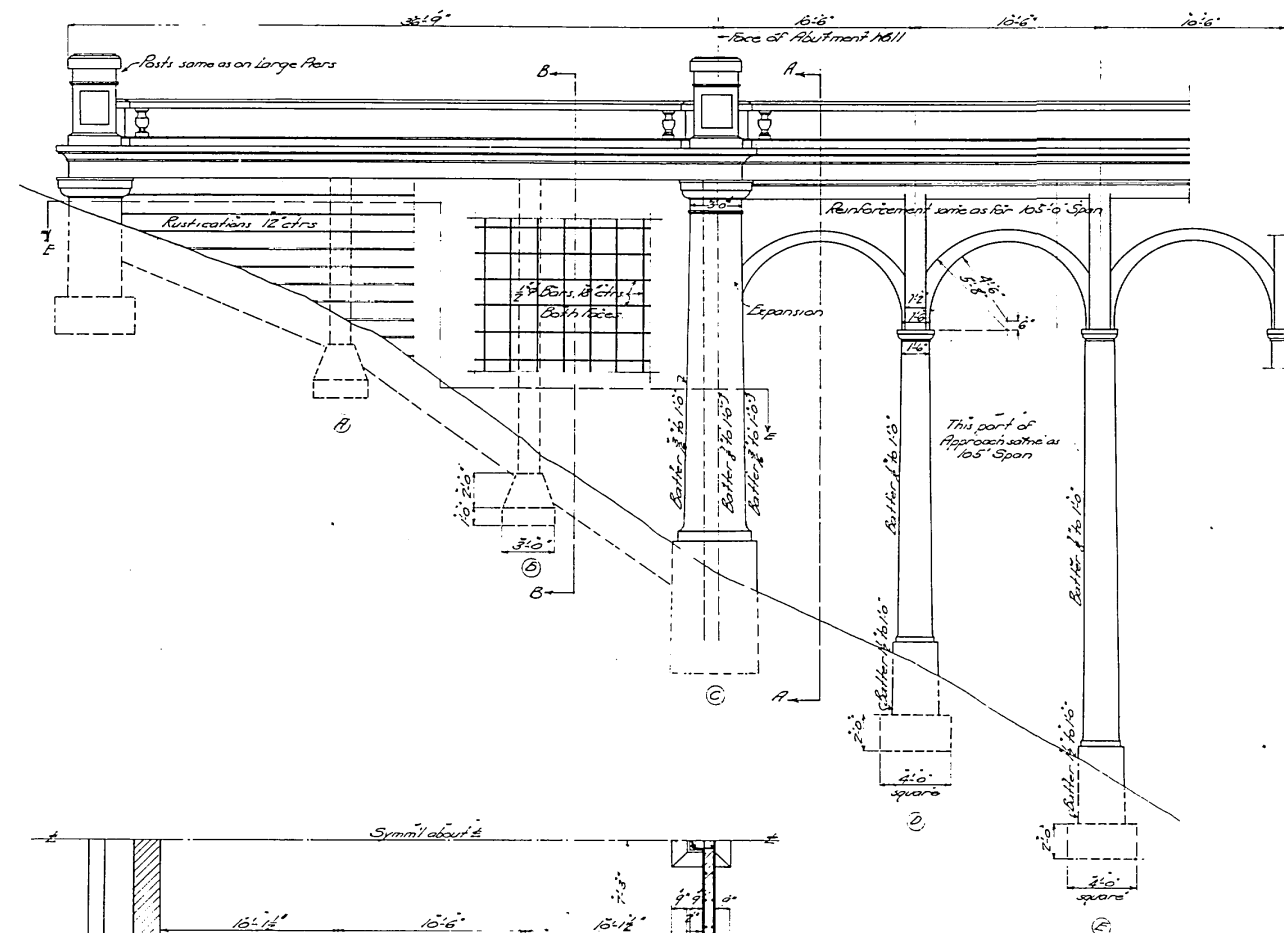


DETAILS OF COLUMNS.

BRIDGE OVER THE ARROYO SECO
AT
PASADENA, CALIF. 1A.
CONCRETE DETAILS OF 210 F. SPAN

Scale: 1/4" = 1'-0"
Made by N.E.P. Date 7.8.12
Traced by M.H. Date 7.9.12
Checked by M.H. Date 7.9.12
WAGGILL & HARRINGTON
CONSULTING ENGINEERS
PASADENA, CALIF.
SHEET NO. 11A

5384 SHIT 12



West Approach		East Approach			
Reinforced	Location of Reinforced	Reinforced	Location of Reinforced		
	South	North	South	North	
A	839.0	875.0	A	874.0	858.0
B	831.0	879.0	B	871.0	857.0
C	873.0	874.0	C	867.0	855.0
D	819.0	872.0	D	860.5	855.5
E	814.0	807.0	E	850.5	853.5

APPROXIMATE ELEVATION OF TOP OF PIESTALS
This elevation "C" given for top of footing

NO SCALE

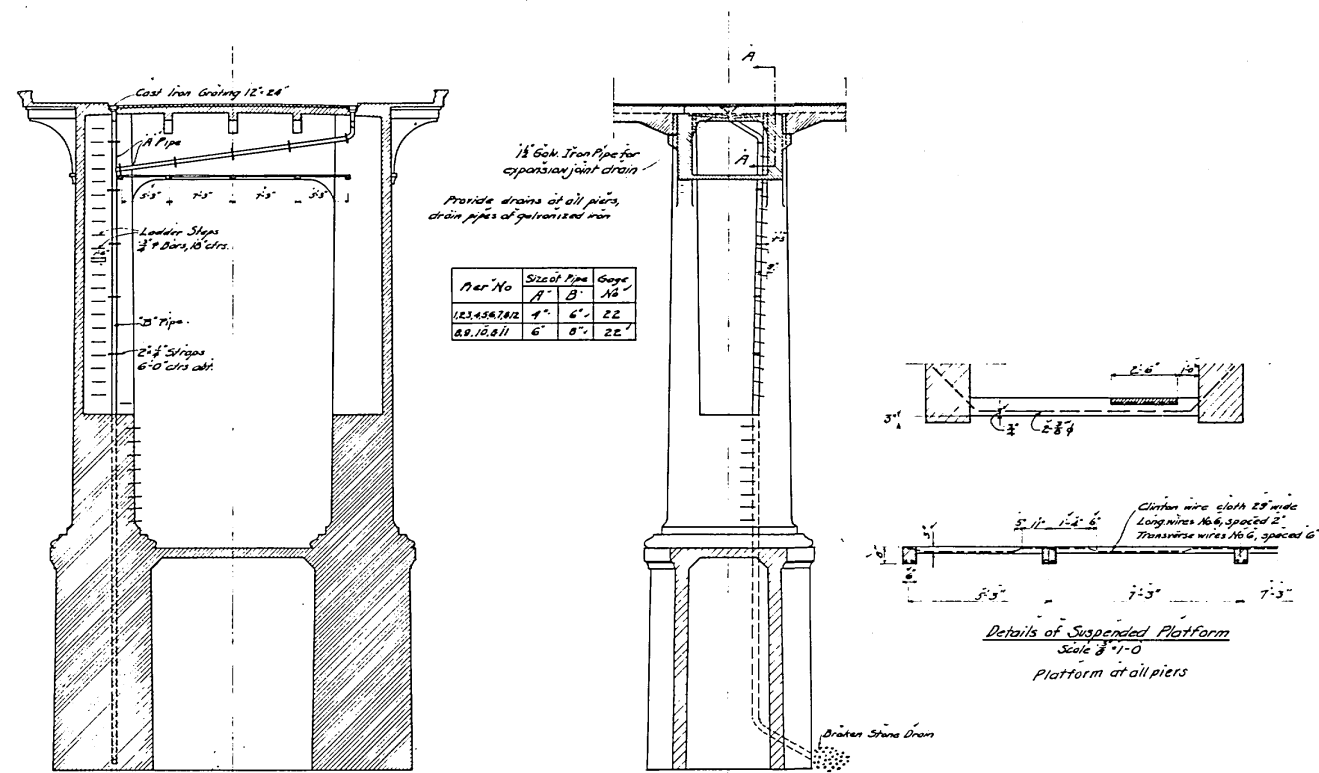
BRIDGE OVER THE ARFOYO SECO
AT
PASADENA, CALIFORNIA.
DETAILS OF APPROACHES

Scale: 1/4" = 1'-0"

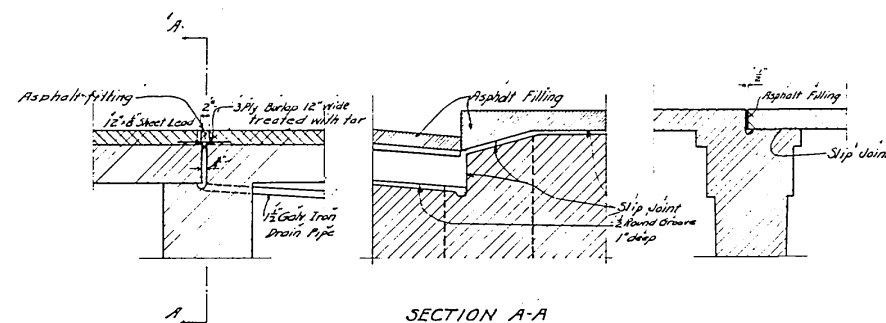
Drawn by: W.E. R. 3-11-12
Checked by: W.E. R. 3-11-12

WHEELER & HARRINGTON
CONSULTING ENGINEERS
KANSAS CITY, MO.
SHEET NO. 43A

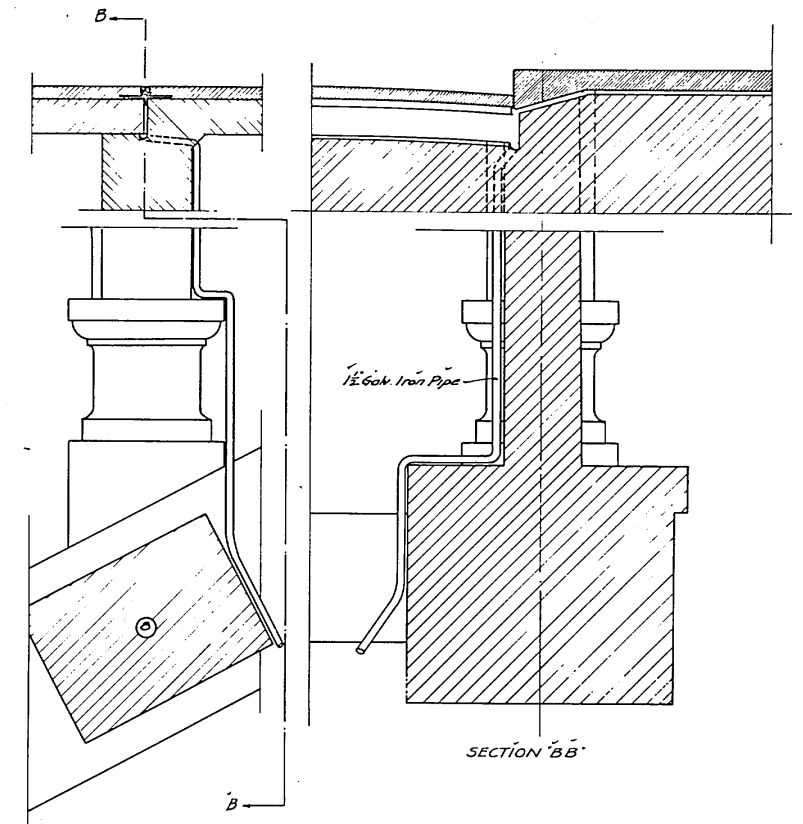
5384 SH 14



TYPICAL DETAIL OF DRAIN
Scale 3/4" = 1'-0"



SECTION A-A
Detail of Expansion Joint and Drain at Piers
Scale 3/4" = 1'-0"



Detail of Expansion Joint and Drain over Span
Scale 3/4" = 1'-0"

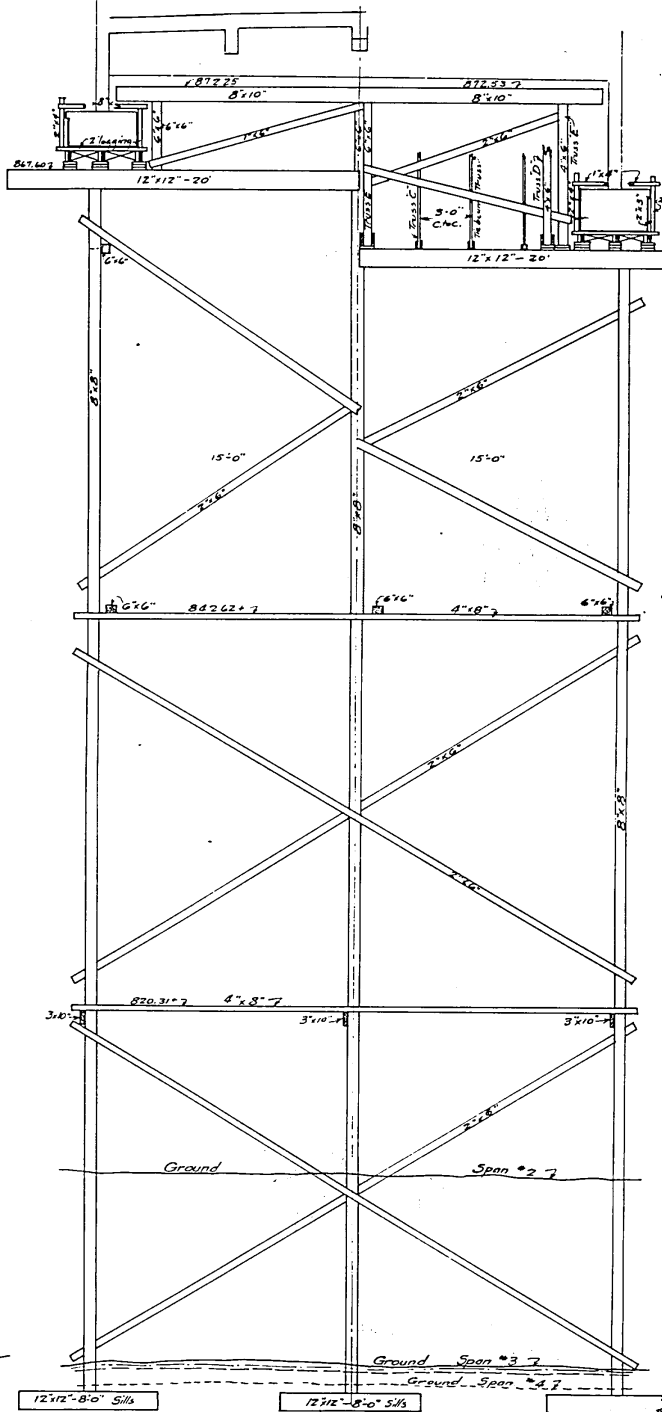
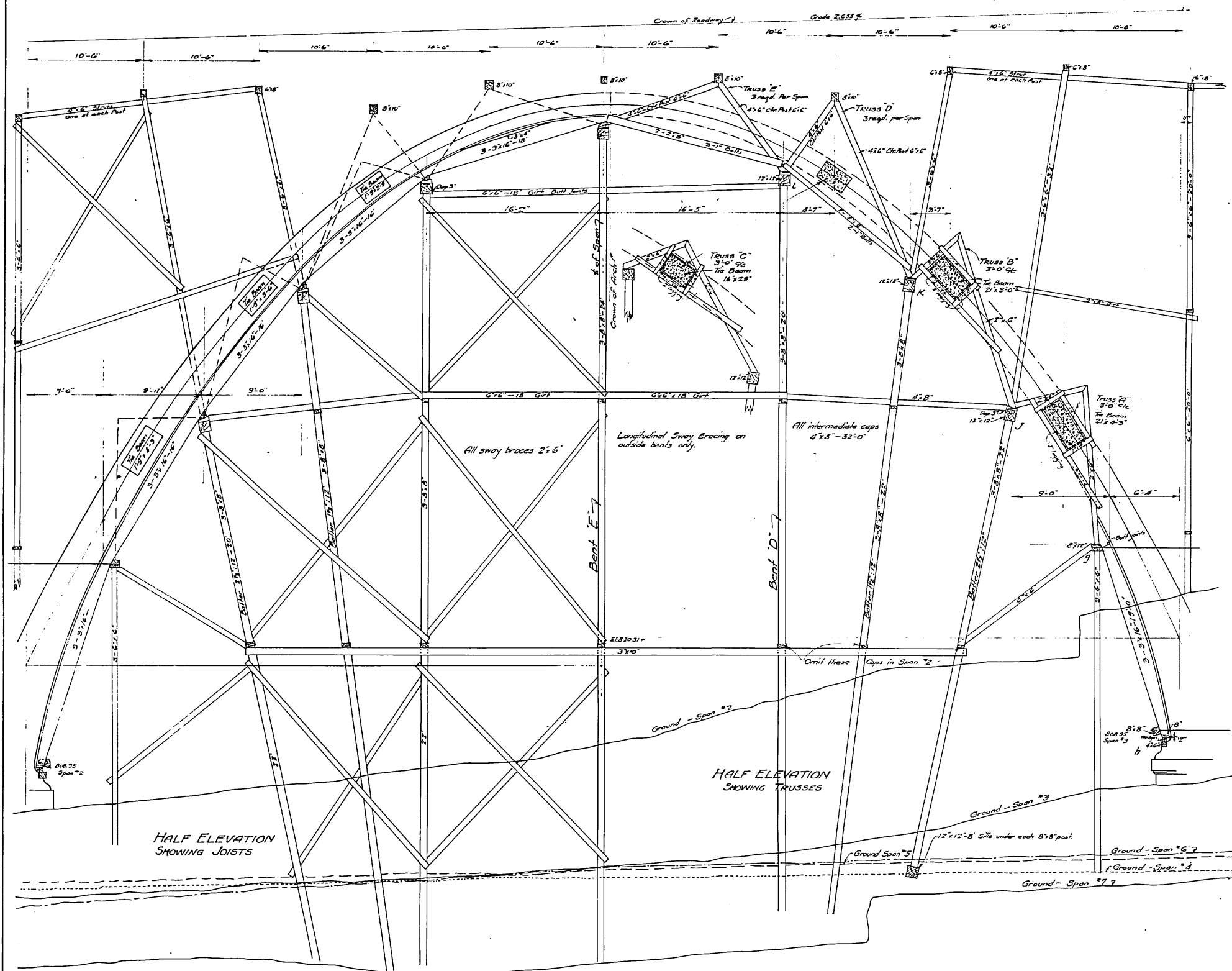
Note: Details are the same as for expansion joint at pier except for drain pipe as shown.

Expansion joint and drain at abutment
Make similar to that over span, but carry water out to front of abutment.

BRIDGE OVER THE ARROYO SECO
AT
PASADENA, CALIFORNIA.
DETAILS OF DRAINS

Drawn by S.H. Date 3-1-12
Checked by S.H. Date 3-1-12
WADSWORTH & HAMILTON
CONSULTING ENGINEERS
KANSAS CITY, MO.
SHEET NO. 15A

5384 SHIT 15



HALF BENT E HALF BENT D
CROSS SECTION

BRIDGE OVER THE ARROYO SECO
AT
PASADENA CALIFORNIA
CENTERS FOR 105 SPANS

Traced from Record Drawing R35-12, S4.8 Scale 1/8"=1'-0"
Made by Mercereau Bridge & Construction Co.

5384 SHT 17