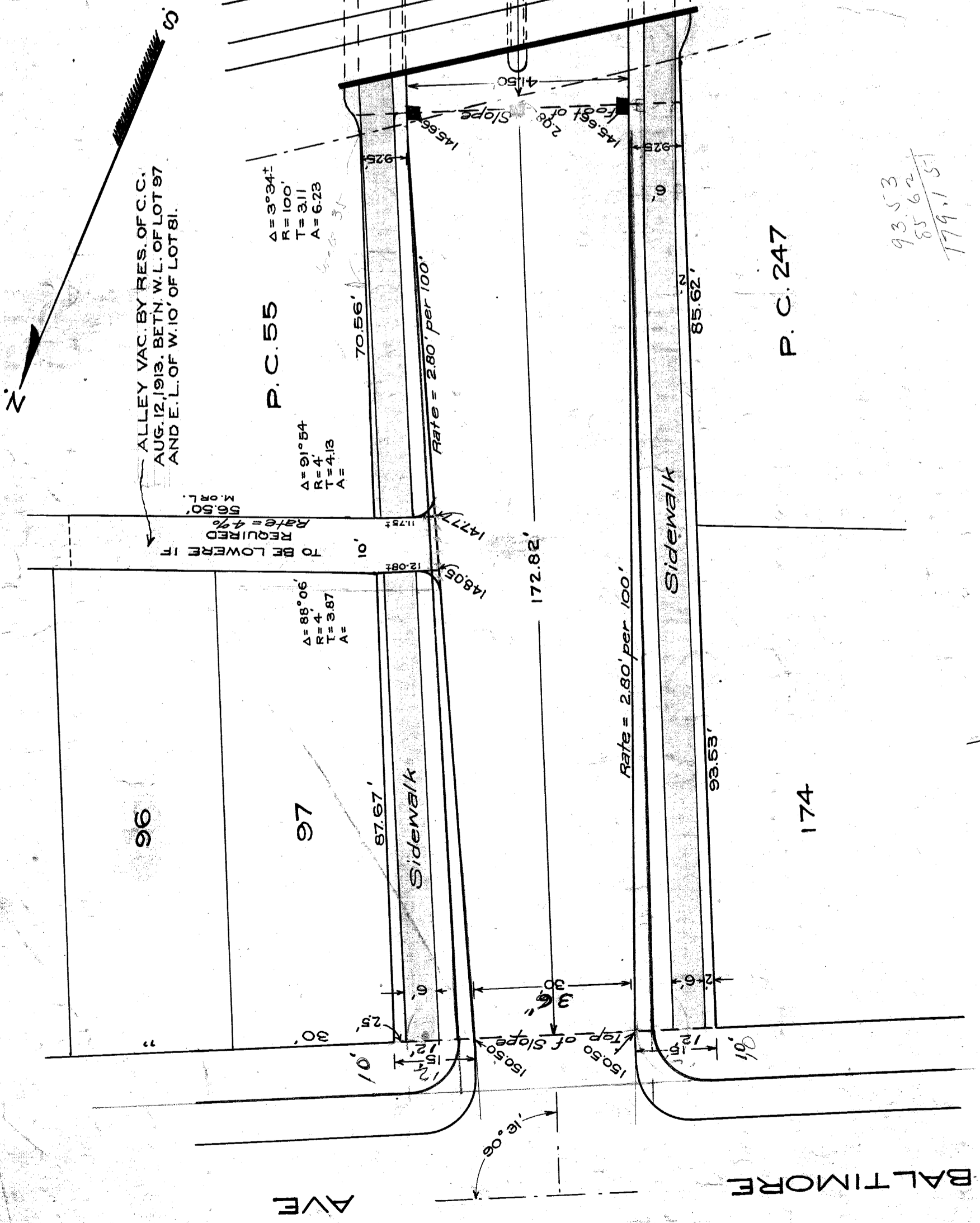
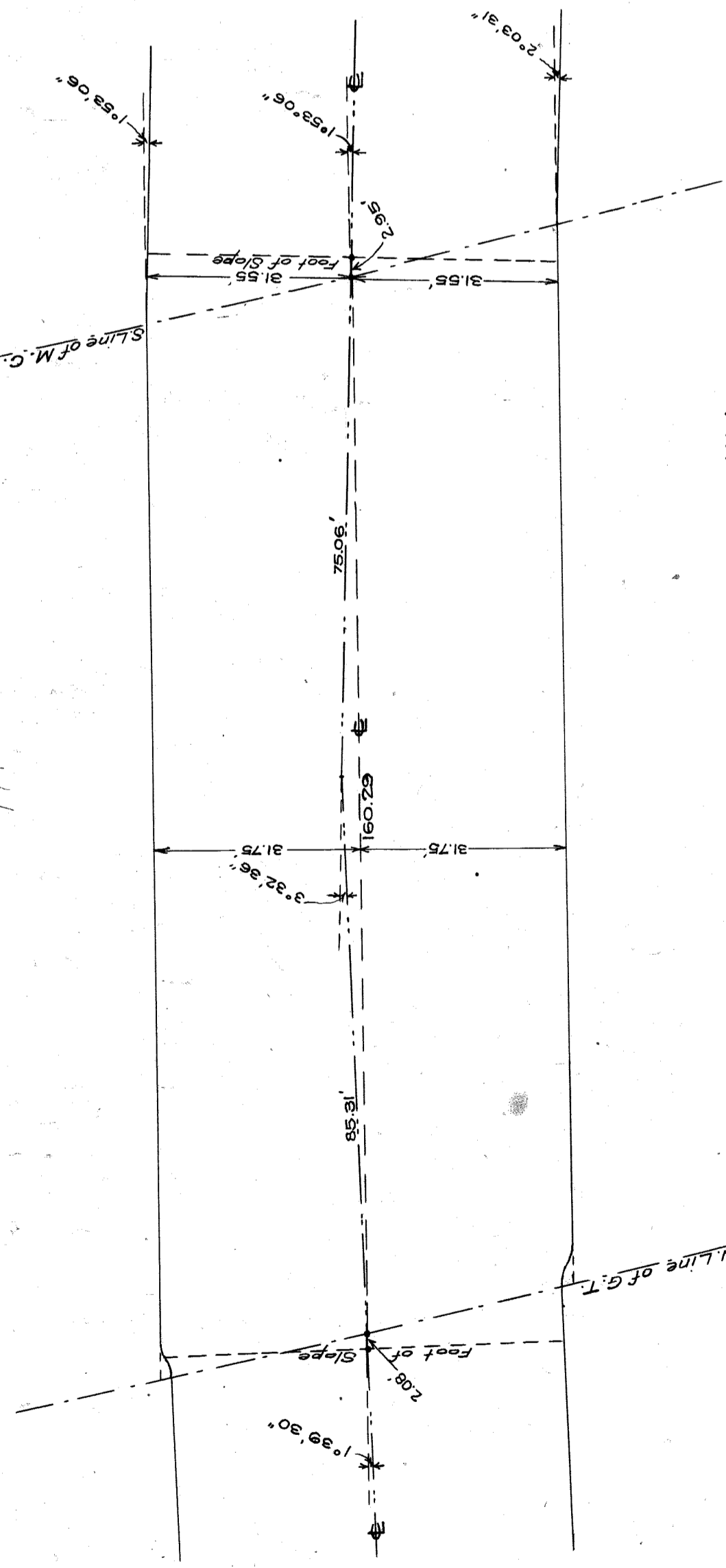


PLAN OF PROPOSED SUBWAY IN THIRD AVENUE UNDER D. & B. C. DIV. OF M. C. R. R., L. S. & M. S. R. R. & G. T. R. R.

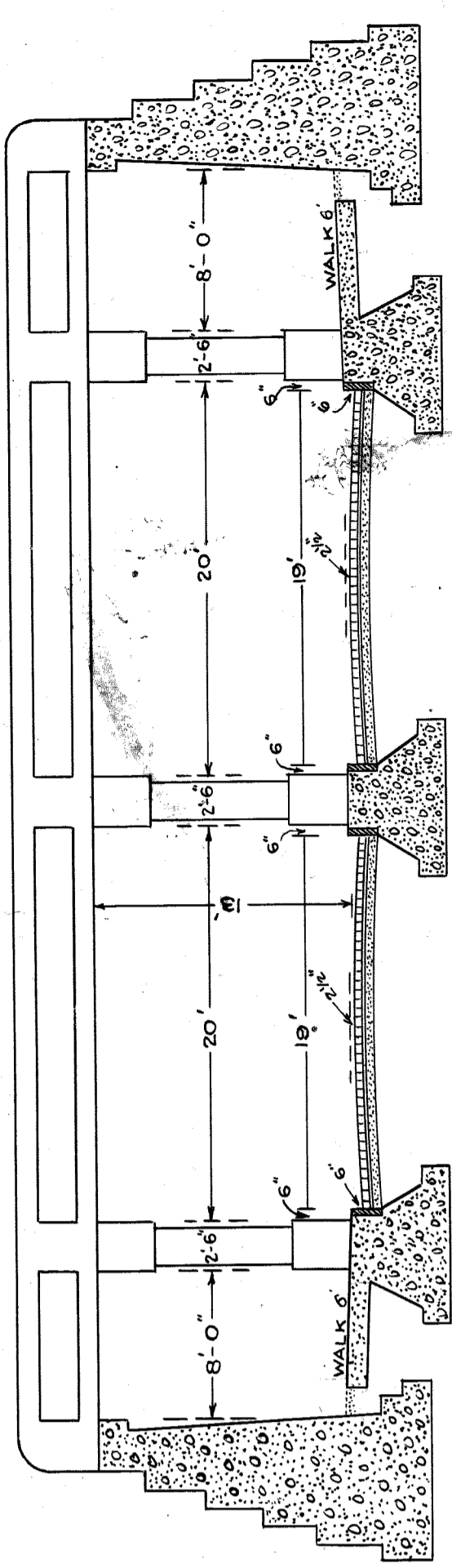


PLAN
SCALE, ONE INCH = 20'

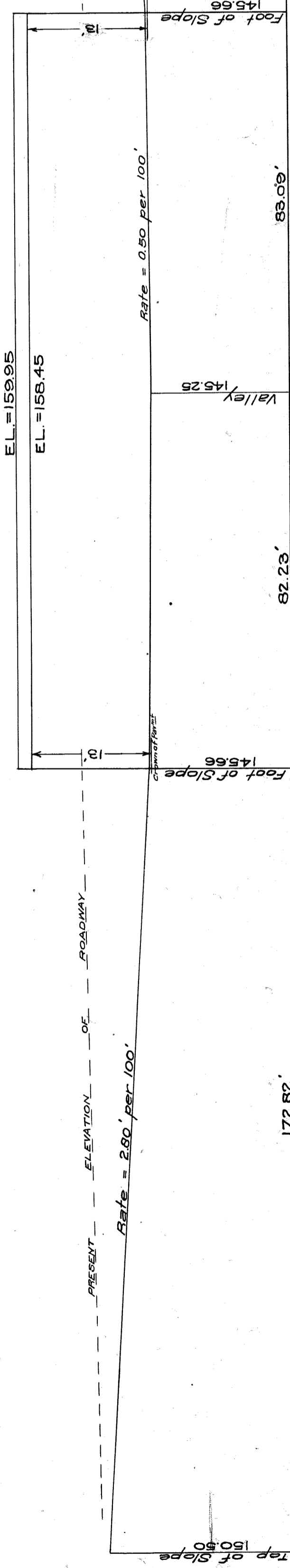
NOTE: **+**
LINES SHOWN IN RED INDICATE
PRESENT CURB 7-28-17
800X 5-667



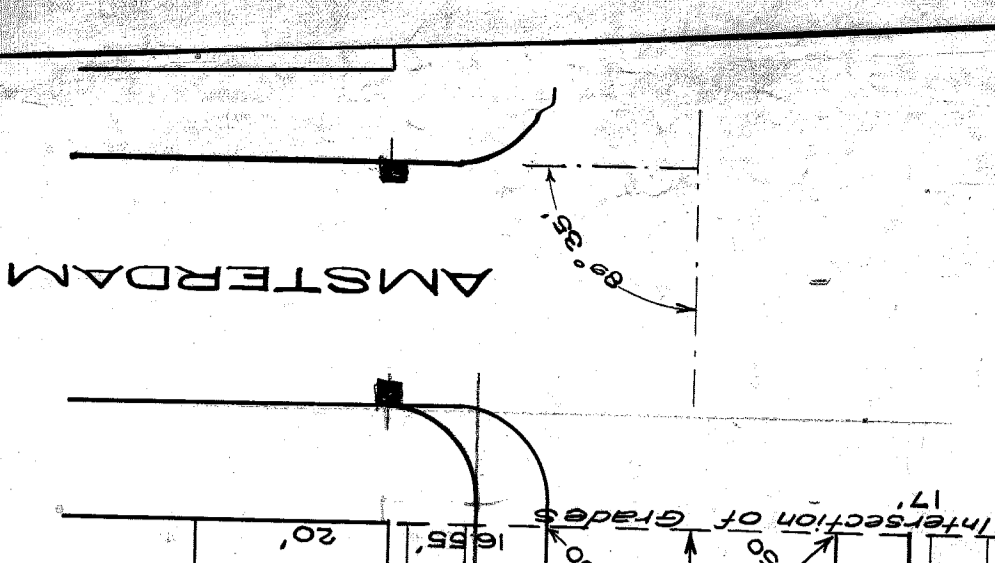
DETAIL OF CENTRE LINE OF SUBWAY
SCALE, ONE INCH = 20 FT.



CROSS SECTION
SCALE, ONE INCH = 8'



LONGITUDINAL SECTION
HOR. SCALE, ONE INCH = 20 FEET
VER. " " = 10 "



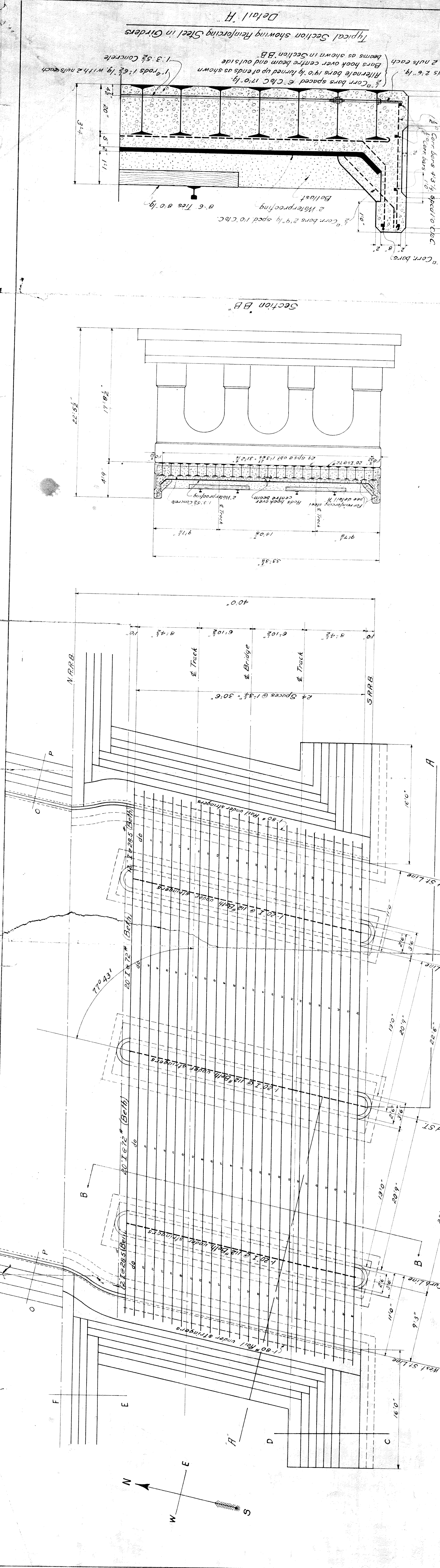
3 RD. AVE.

Dated, Aug 5th 1912.
Approved: *W.H. Connelley* City Engineer.
Approved: *W.H. Connelley* Chief Eng., M. C. R. R.

CITY ENGINEER'S OFFICE
GRADE SECTION A BRIDGE

Third Ave

City Engineer's Office.



Material for 1 Centre Bent

No	Size	Length	Location	No	Size	Length	Location
48	1/2"	3'0"	Dovels	96	1/2"	3'0"	Dovels
32	3/4"	7'0"	Base H	64	3/4"	7'0"	Base H
33	3/4"	7'6"	"	66	3/4"	7'6"	"
11	1/2"	32'3"	Length in Bent	144	3/4"	32'3"	Length in Bent
7	3/4"	36'0"	"	144	3/4"	36'0"	"
10	1/2"	36'0"	"	144	3/4"	36'0"	"
39	1/2"	9'6"	Gross in "	60	3/4"	16'0"	Straps in "
38	1/2"	19'2"	Straps in "	78	3/4"	6'6"	Gross in railing
36	1/2"	11'0"	Vert in Coll.	144	3/4"	2'14"	Diag. "
36	1/2"	11'0"	Col Hoops (min)	144	3/4"	7'0"	Top over beams
36	1/2"	11'9"	Col Hoops (max)	144	3/4"	7'0"	"
32	1/2"	7'9"	Vert in base of Bent	64	3/4"	7'0"	Vert in base of Bent

Material for Floor and 2 Girders

Estimated Weight of Steel

Corr. bars in Floor + Girders 8633 lbs

Bent 20200

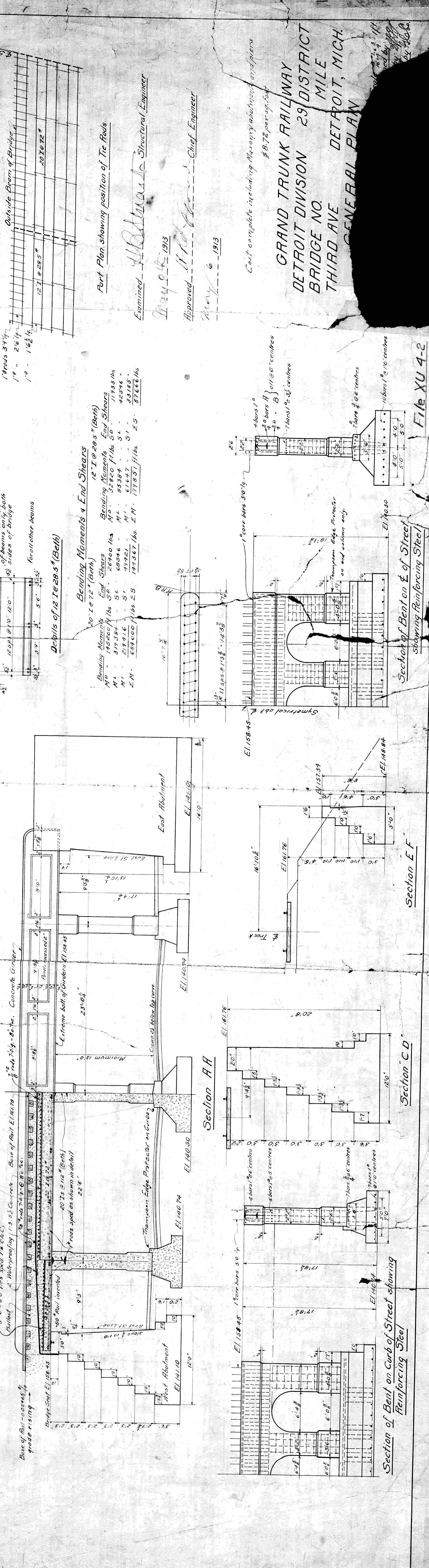
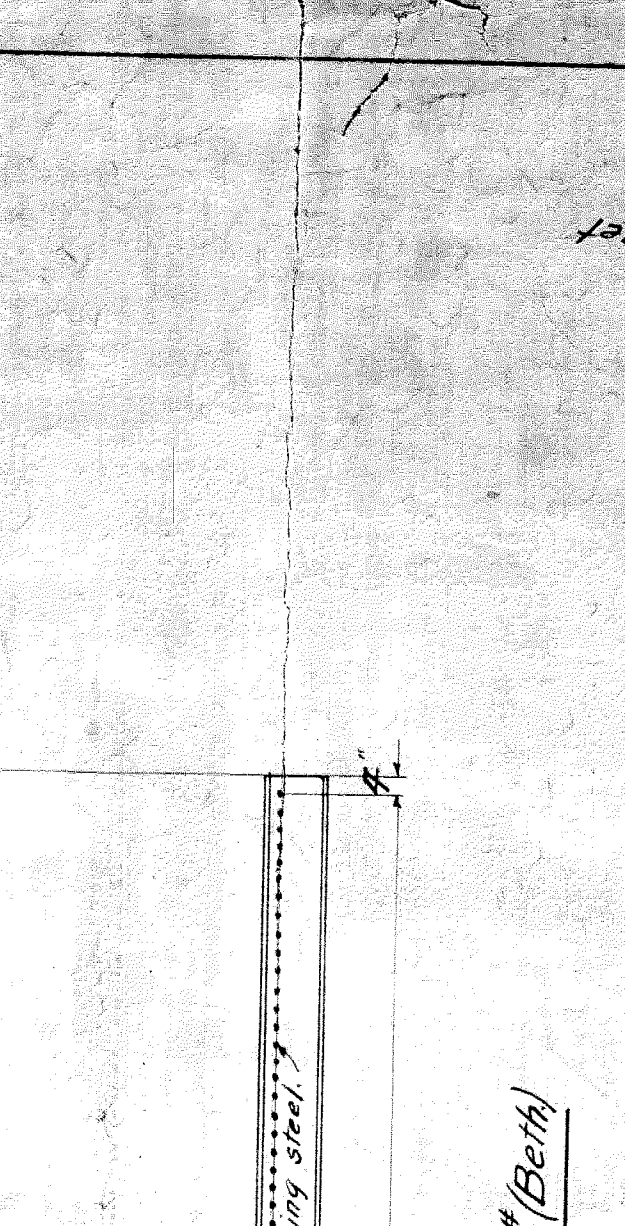
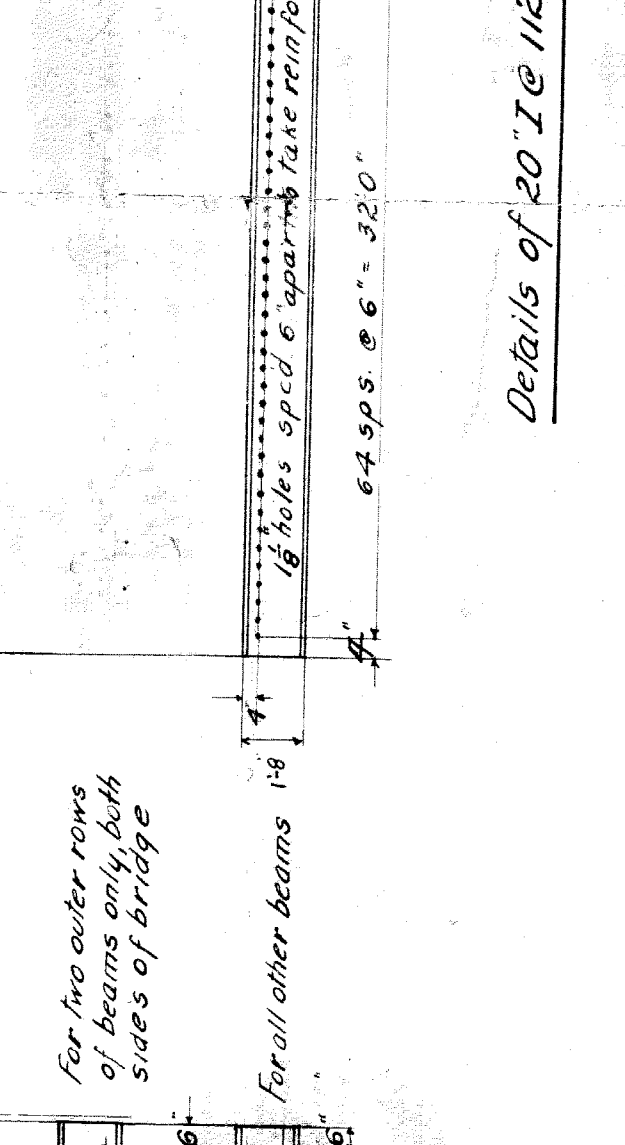
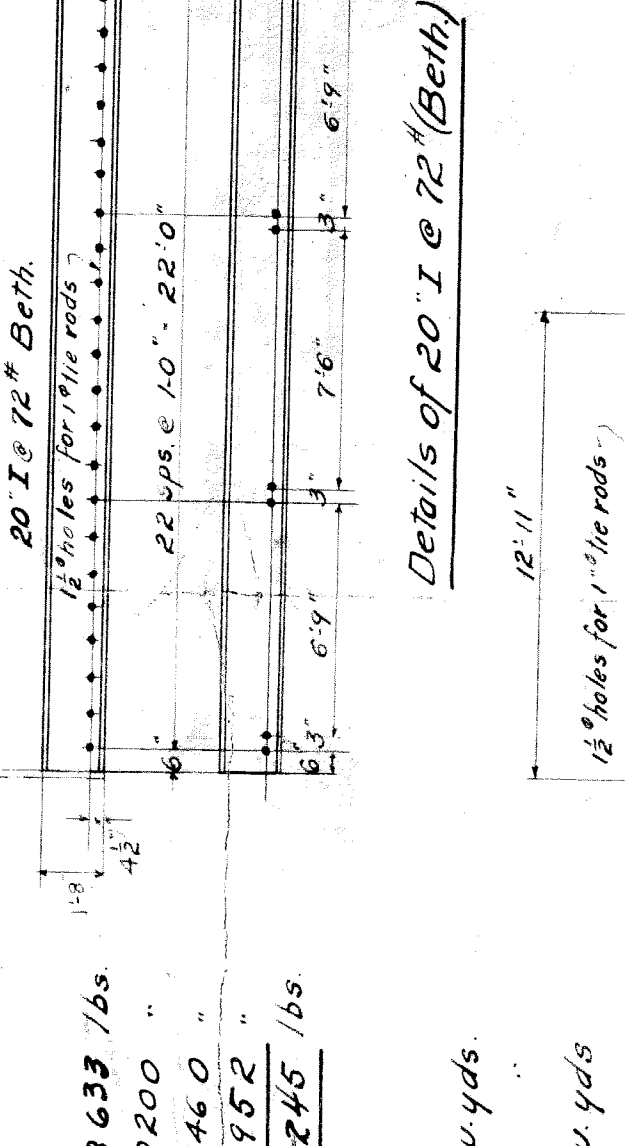
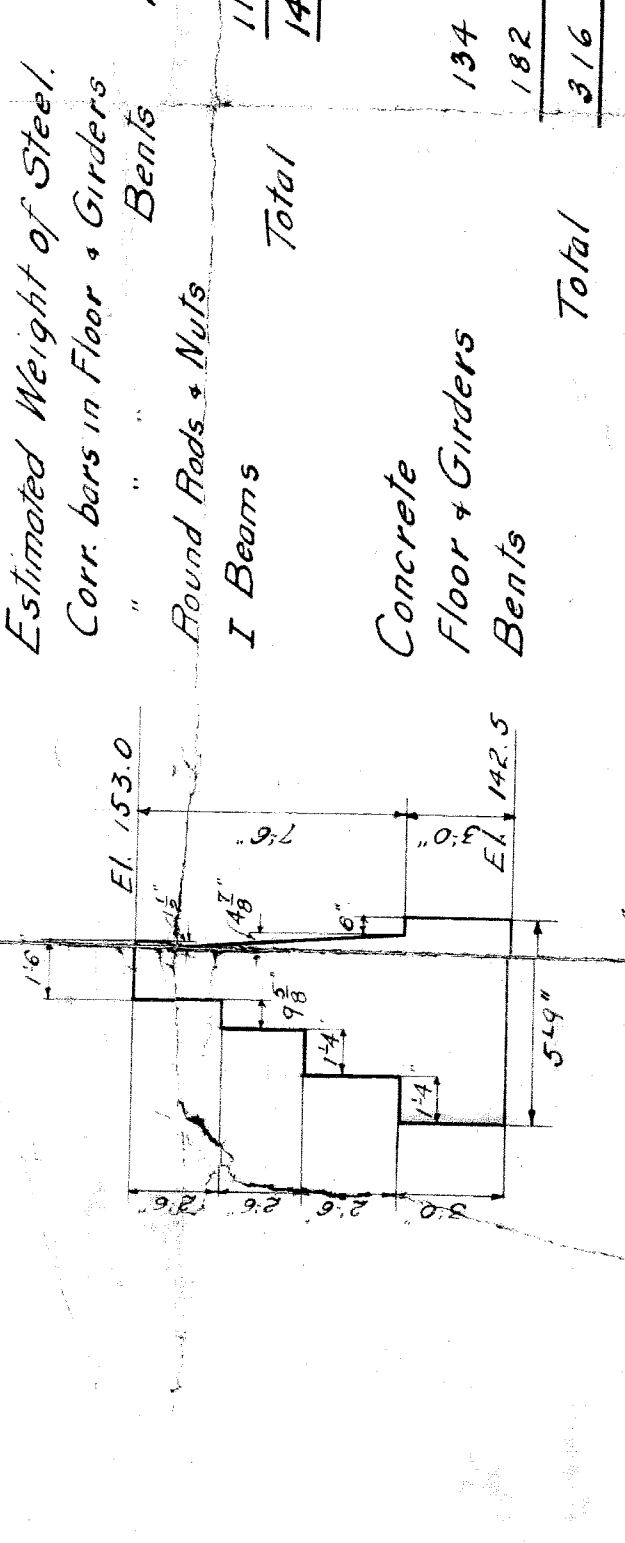
Round Rods + Nuts 11152

I Beams Total 143245 lbs

Concrete 134 cu yds

Bent 182

Total 316 cu yds



Bending Moments and End Shears

Moment	End Shear	End Shears
M ₁ 142820 lb ft	M ₂ 22600 lb ft	M ₃ 17330 lb ft
M ₄ 31438 lb ft	M ₅ 6896 lb ft	M ₆ 4504 lb ft
M ₇ 2934 lb ft	M ₈ 1342 lb ft	M ₉ 3022 lb ft
M ₁₀ 69200 lb ft	M ₁₁ 14156 lb ft	M ₁₂ 5766 lb ft

Part Plan showing position of Tie Rods

Examined *A. R. [Signature]* Structural Engineer

Approved *H. [Signature]* Chief Engineer

March 6 1913

Cost complete including Masonry, abutments and splices \$8,728 per ft. span

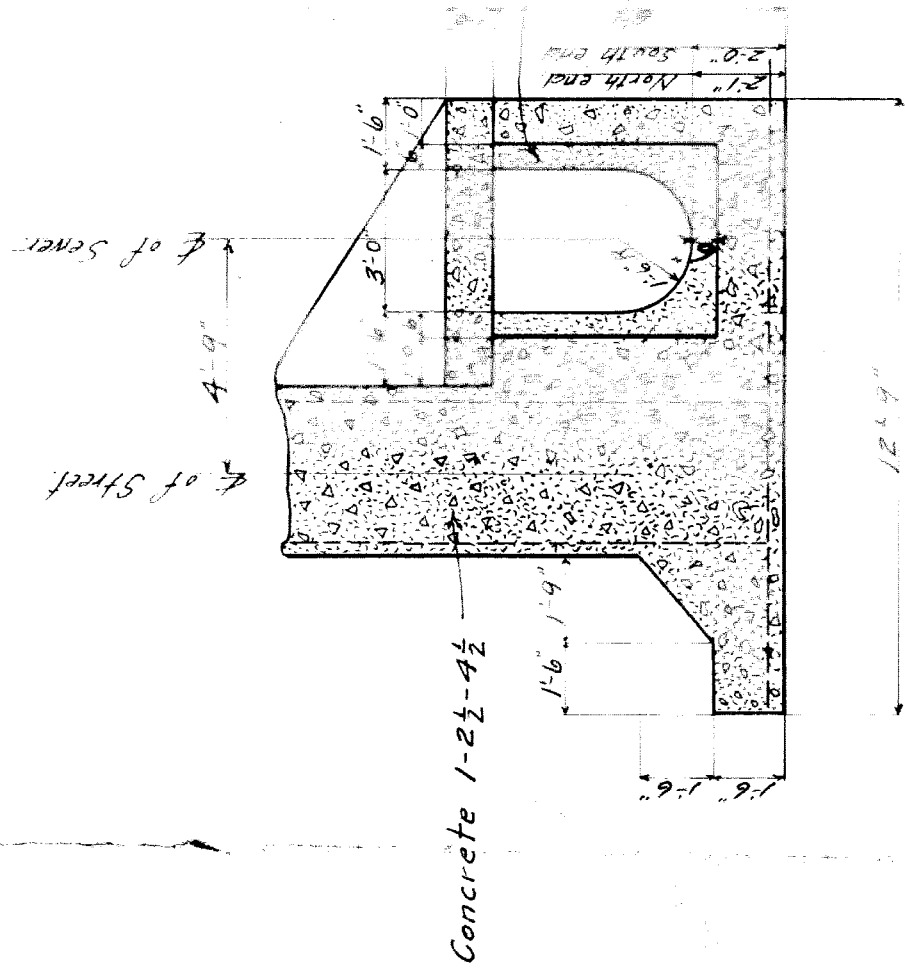
GRAND TRUNK RAILWAY
DETROIT DIVISION 29 DISTRICT
BRIDGE NO. MILE
THIRD AVE DETROIT, MICH
GENERAL PLAN

File XU 4-2

S.G.T. Right of Way

Proposed sewer to be of same construction as present sewer between north end of pier and Grand Trunk right of way.

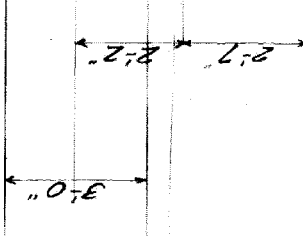
APPROVED Date April 14th 1913
 By H. E. Brown Bridge Eng. M.C.R.R. Bay City Div.
 Plan showing diversion of sewer at THIRD AVE
 Scale $\frac{1}{4} = 1' = 0$ E.K.C. 4/15/13
 City Eng. W. M. Brown of party
 File **XU 4-3**



Section of sewer under Pier

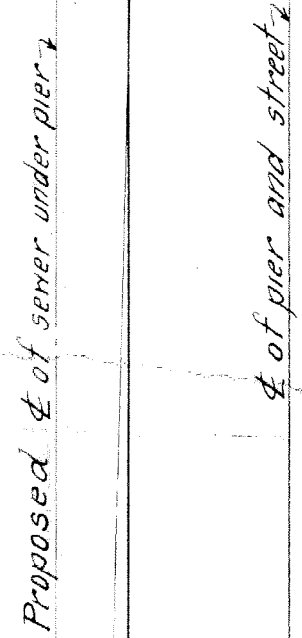
Concrete 1-2-3

North end of pier



Plan showing new location of sewer

Proposed sewer to be of same construction as present sewer between South end of pier and connection with present sewer.



Present ϕ of sewer

Proposed ϕ of sewer under pier

ϕ of pier and street

60'-3"

43'-0"

3'-0"

2'-7"

Present ϕ of sewer

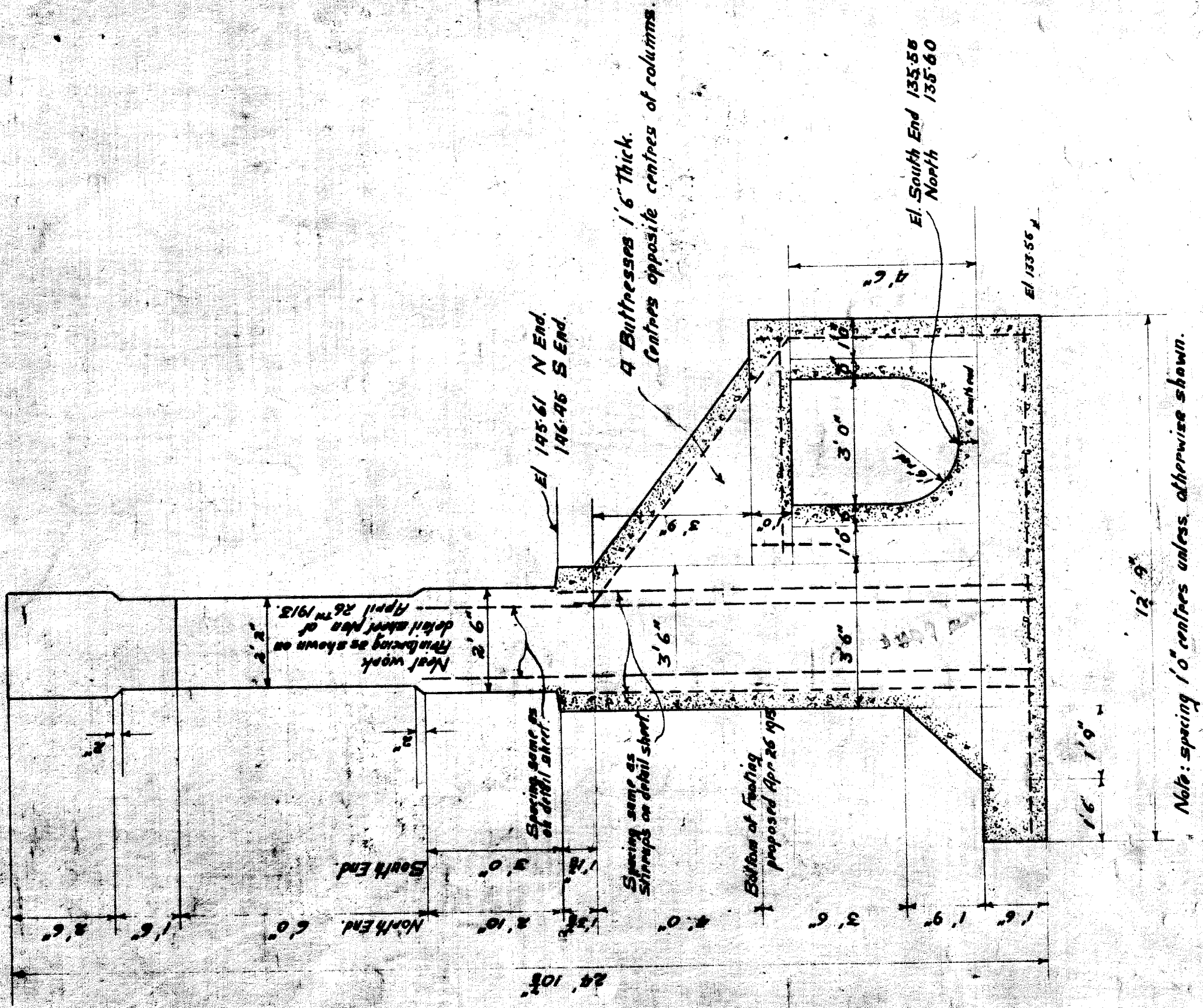
South end of pier

15'-0" Road

15'-0" Road

MATERIAL FOR CENTRE PIER
ALL TO BE SQUARE UNLESS OTHERWISE SPECIFIED.

No.	Size	Length	Location
28	1 1/2"	3' 0"	Downs
29	1 1/2"	3' 0"	Bar A
30	1 1/2"	3' 0"	Bar B
31	1 1/2"	3' 0"	Length in Top of Emb.
32	1 1/2"	3' 0"	Bar C
33	1 1/2"	3' 0"	Bar D
34	1 1/2"	3' 0"	Bar E
35	1 1/2"	3' 0"	Bar F
36	1 1/2"	3' 0"	Bar G
37	1 1/2"	3' 0"	Bar H
38	1 1/2"	3' 0"	Bar I
39	1 1/2"	3' 0"	Bar J
40	1 1/2"	3' 0"	Bar K
41	1 1/2"	3' 0"	Bar L
42	1 1/2"	3' 0"	Bar M
43	1 1/2"	3' 0"	Bar N
44	1 1/2"	3' 0"	Bar O
45	1 1/2"	3' 0"	Bar P
46	1 1/2"	3' 0"	Bar Q
47	1 1/2"	3' 0"	Bar R
48	1 1/2"	3' 0"	Bar S
49	1 1/2"	3' 0"	Bar T
50	1 1/2"	3' 0"	Bar U
51	1 1/2"	3' 0"	Bar V

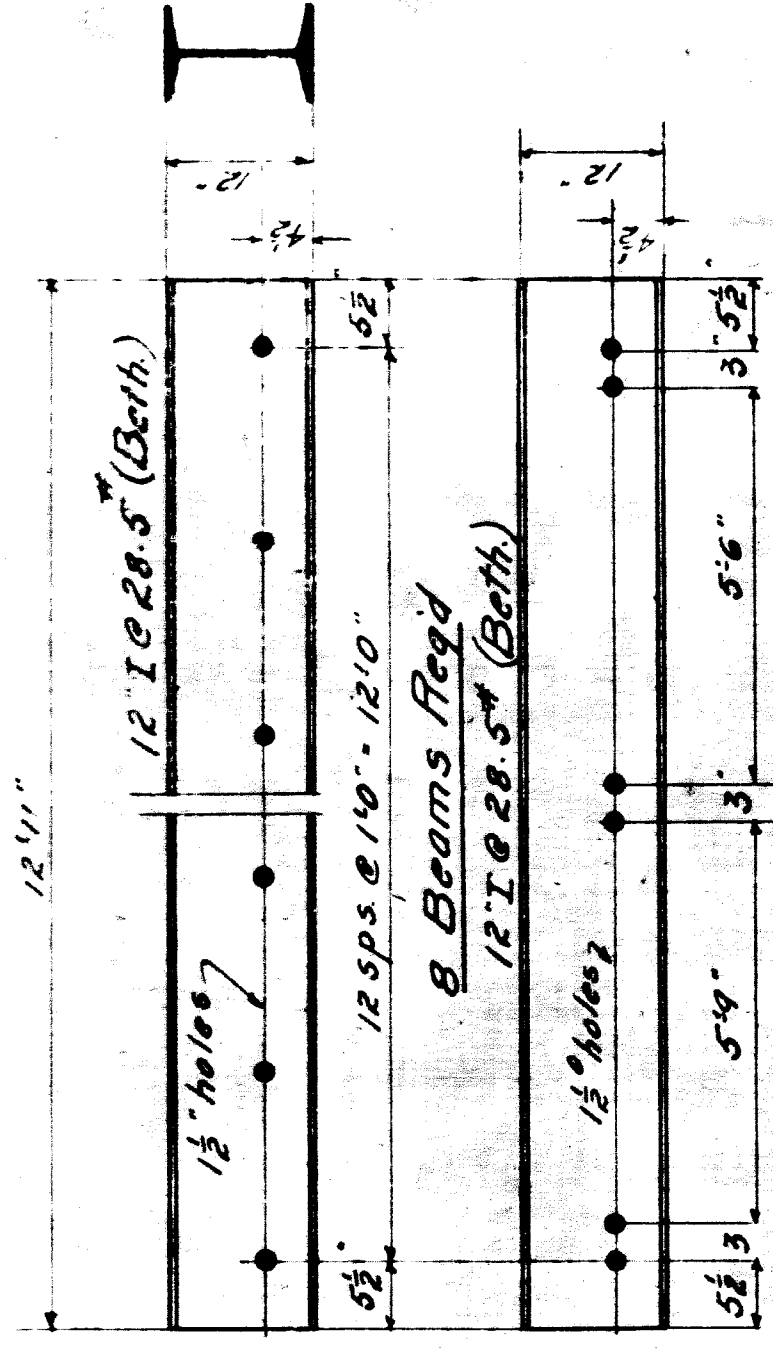
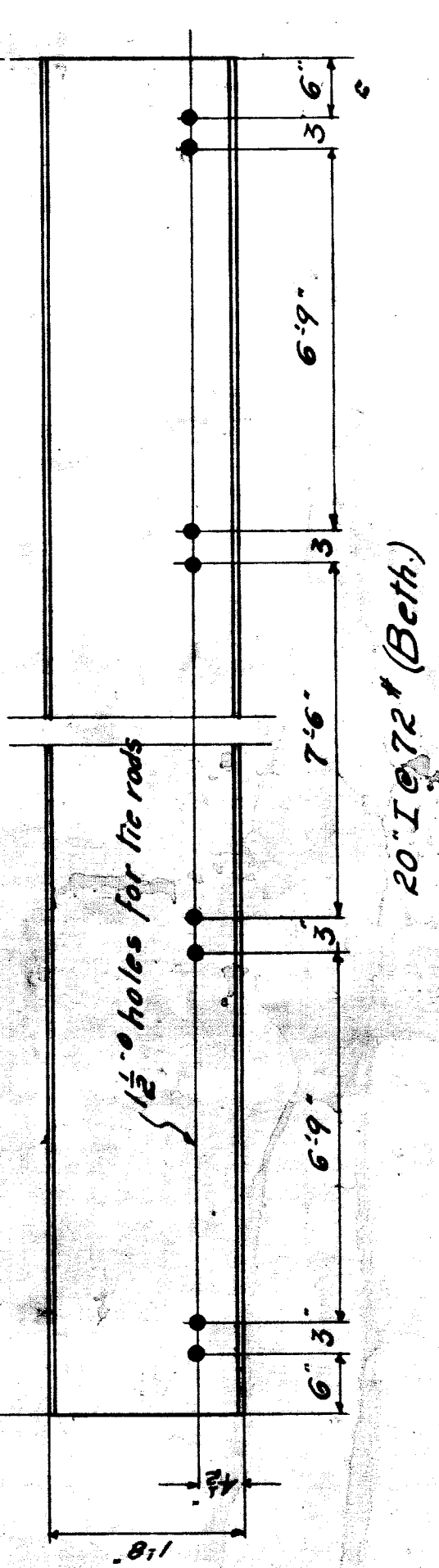
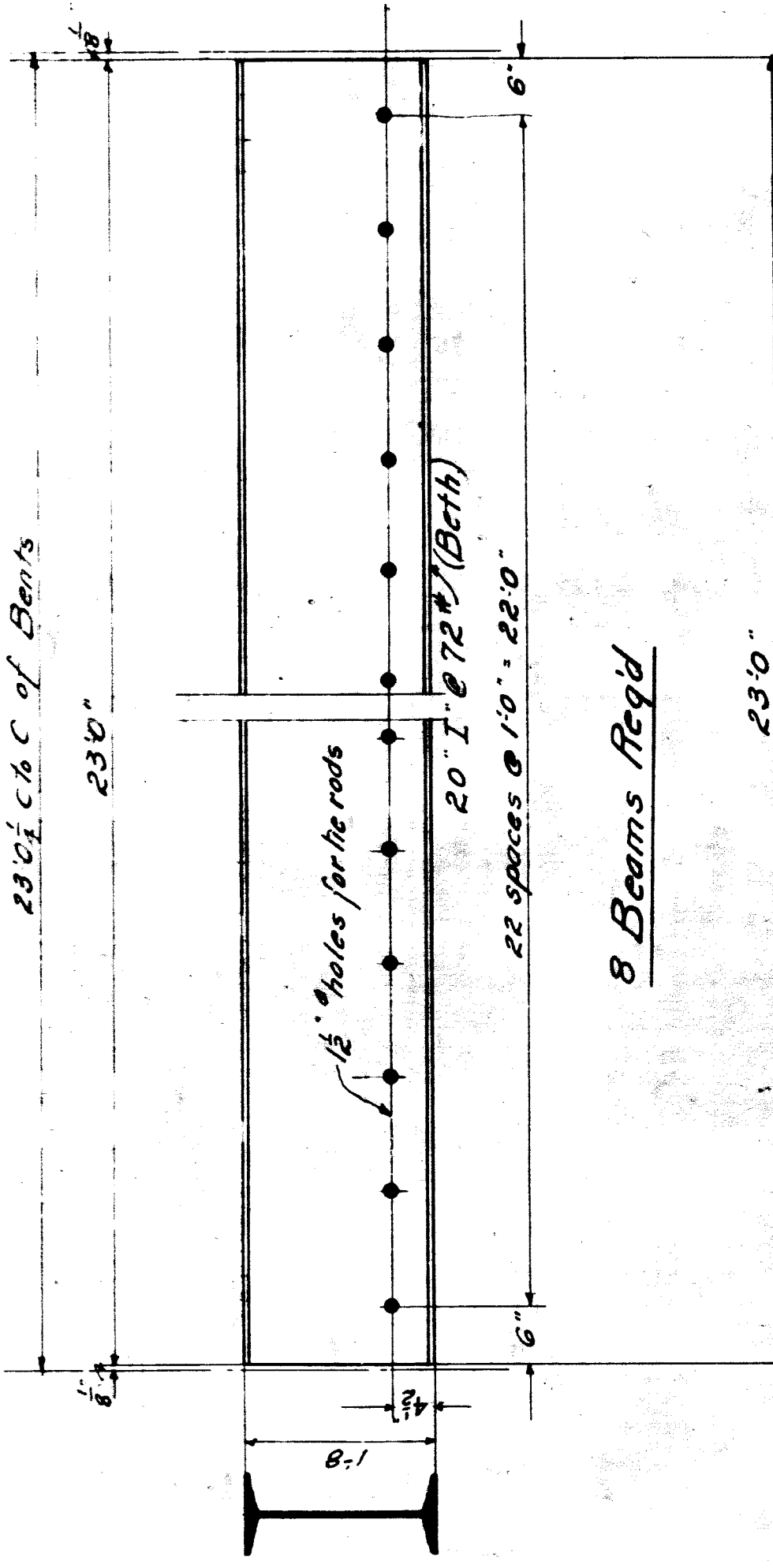


GRAND TRUNK RAILWAY SYSTEM.
DETROIT DIVISION, 29TH DISTRICT.

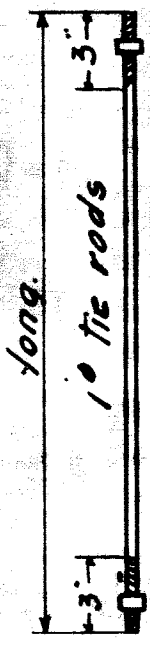
OVER
THIRD AVENUE DETROIT
CROSS SECTION THROUGH PIER.
SHOWING SEWER.

Designed by E. V. A. DeWitt
Drawn by J. J. H.
Scale 3/8" = 1' H. Checked by H. W. M.
Office of Chief Engineer Montreal June 25TH 1914

File No. _____
Journal No. _____



42 Beams Req'd



28 Req'd	3'9" x 1/4"	} With 2 nuts each
116	2'6"	
280	1'6 1/2" x 1/4"	

Examined [Signature] Structural Engineer

11/24/13

Approved [Signature] Chief Engineer

11/24/13

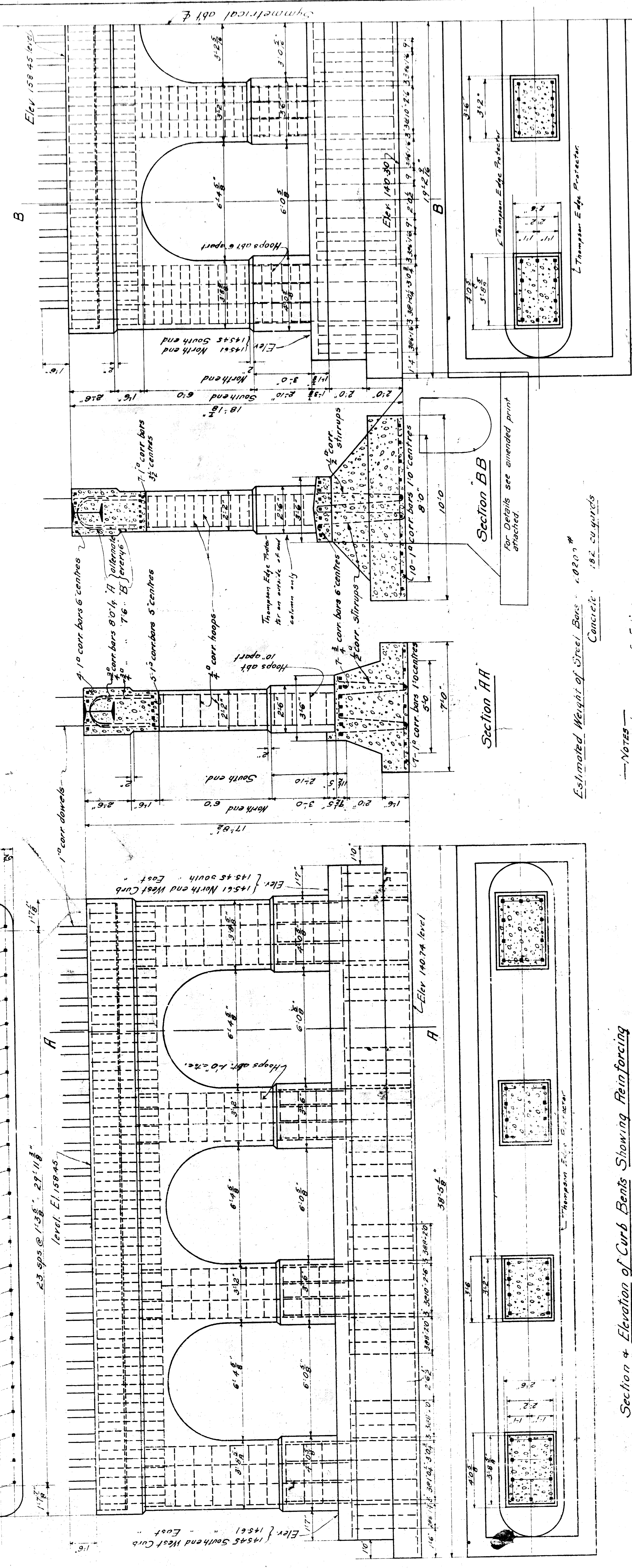
Note: Shop paint, one coat red lead and linseed oil in proportion of 30lbs. of lead to 1 gal. of oil.

GRAND TRUNK RAILWAY
DETROIT DIVISION 29 DISTRICT
BRIDGE NO. MILE
THIRD AVE DETROIT MICH.
STEEL DETAILS

Office of Chief Engineer, Montreal
April 30th 1913

Scale 3/4" = 1ft
Designed by: [Signature]
Drawn by: [Signature]
Checked by: [Signature]

Top view same as curb bent.



Section & Elevation of Curb Bents Showing Reinforcing

All Material to be Square Corrugated

Material for 2 Curb Bents		Material for 1 Centre Bent	
No	Size	Length	Location
96	1" x 1"	3'-0"	Dowels
64	3/4" x 3/4"	8'-0"	Bar "A"
66	3/4" x 3/4"	7'-6"	" " " " " " " "
18	1" x 1"	32'-3"	Longit. in top of Bent.
14	3/4" x 3/4"	36'-0"	" " " " " " " "
14	1" x 1"	38'-0"	Cross " " " " " "
78	3/4" x 3/4"	6'-6"	Vertical in Cols.
72	3/4" x 3/4"	11'-0"	Hoops in End Cols.
44	1" x 1"	11'-9"	" " " " " " " "
44	1" x 1"	11'-0"	" " " " " " " "
64	3/4" x 3/4"	7'-0"	Vertical in Base of Bent
60	1" x 1"	16'-0"	Stirrups

Make concrete 1 cement, 2 1/2 sand, 3 1/2 broken stone, for Fairings and Beams
 Lap all bars at 40 diam. 2" and 3" bars with 24 turns of #14 wire
 All reinforcing bars must be accurately spaced.
 Finish top surface with corners and edges with 1" triangular mauling
 Finish bottom surface with 1" triangular mauling. Columns from footing to Elevation of "H" to
 be completed in wet pouring. Columns above "H" and Beams to be completed
 in dry pouring.
 Rub all exposed surfaces as soon as forms are removed.

Half Section and Half Elevation of Centre Bent showing Reinforcing

Examined 1913 Structural Engineer

Approved 1913 Chief Engineer

GRAND TRUNK RAILWAY
 DETROIT DIVISION 29 DISTRICT
 BRIDGE NO. MILE
 THIRD AVE. DETROIT, MICH.
 DETAILS OF BENTS

Office of Chief Engineer, Montreal
 April 12, 1913
 Scale 3/4" = 1'-0"
 Designed by
 Drawn by
 Checked by

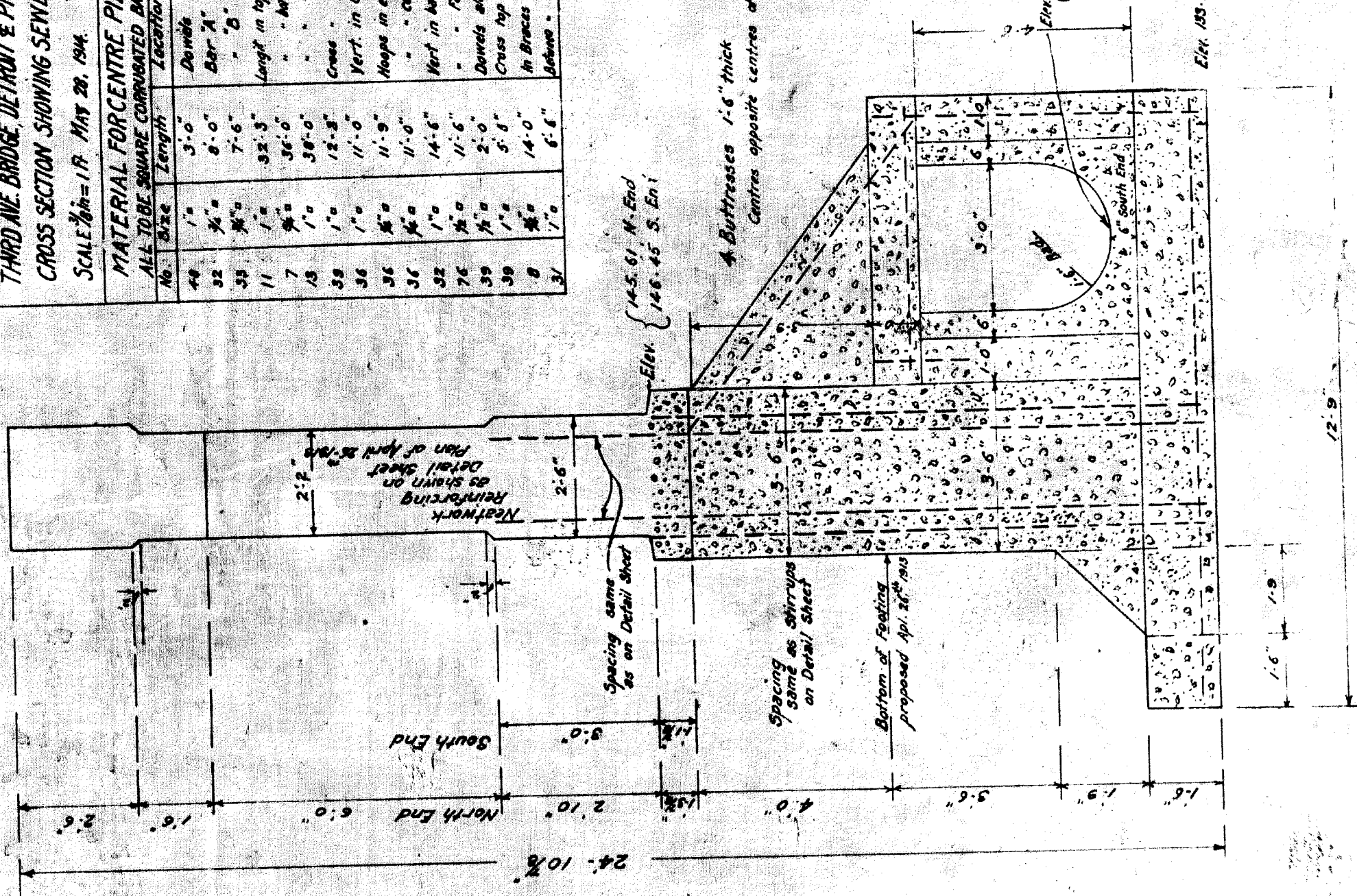
Details in red show work as constructed
 Nov 1917

GRAND TRUNK RAILWAY SYSTEM
 WESTERN LINES 29TH DIST DETROIT DIV.
 THIRD AVE. BRIDGE, DETROIT & PIER.
 CROSS SECTION SHOWING SEWER

SCALE 3/8" = 1' MAY 28, 1914.
 DRAWN BY
 E.A.S.A.
 DETROIT

MATERIAL FOR CENTRE PIER

ALL TO BE SQUARE CORRUGATED BARS		Location	
No.	Size	Length	Location
49	1"	3'-0"	Dowels
32	3/4"	8'-0"	Bar "A"
39	3/4"	7'-6"	" " "B"
11	1"	32'-3"	Length in top of Bars
7	3/4"	36'-0"	" " bottom "
13	1"	38'-0"	" " Footings
39	1"	12'-3"	Cross
36	1"	11'-0"	Vert. in Cols.
36	3/4"	11'-9"	Hoops in end Cols.
36	3/4"	11'-0"	" " centre Cols.
32	1"	14'-6"	Vert. in base of Cols.
76	3/4"	11'-6"	" " Footings
39	3/4"	2'-0"	Dowels along Sewer
39	1"	5'-8"	Cross top of Sewer
8	3/4"	14'-0"	In Braces along "
31	1"	6'-6"	Below " " "



Note: Spacing 1-0 Centres unless otherwise shown.

Trace from B.P.
 Chief Eng. J.H. ...
 1914

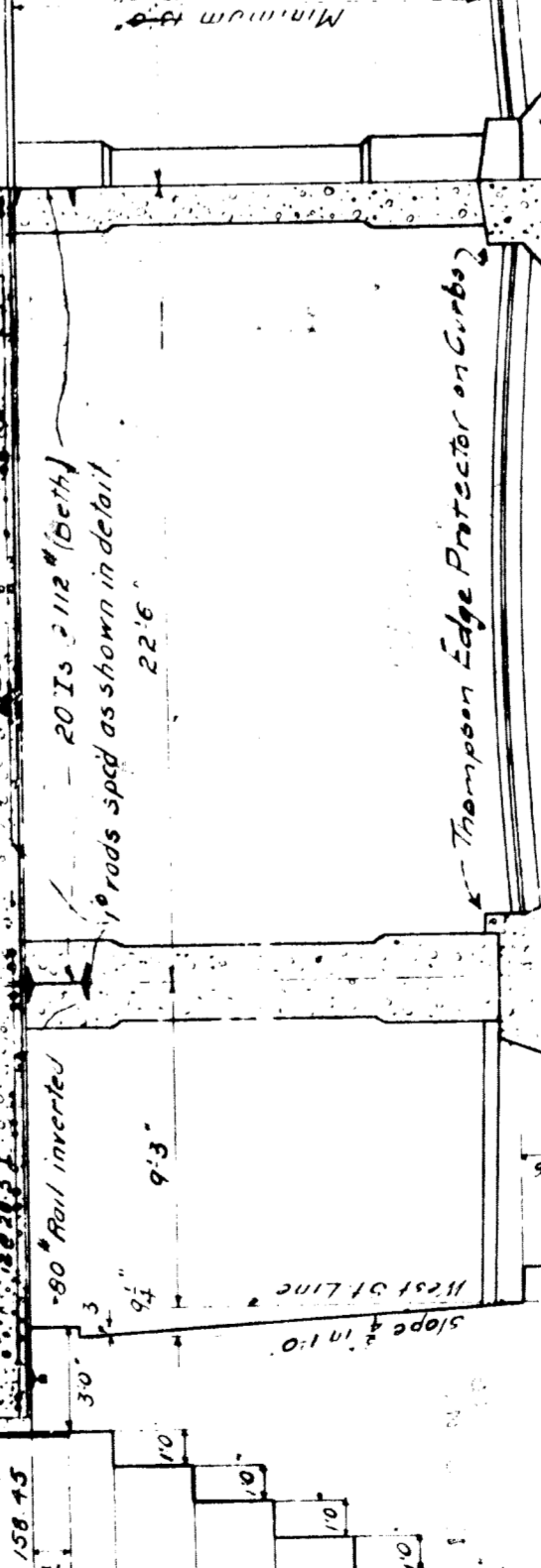
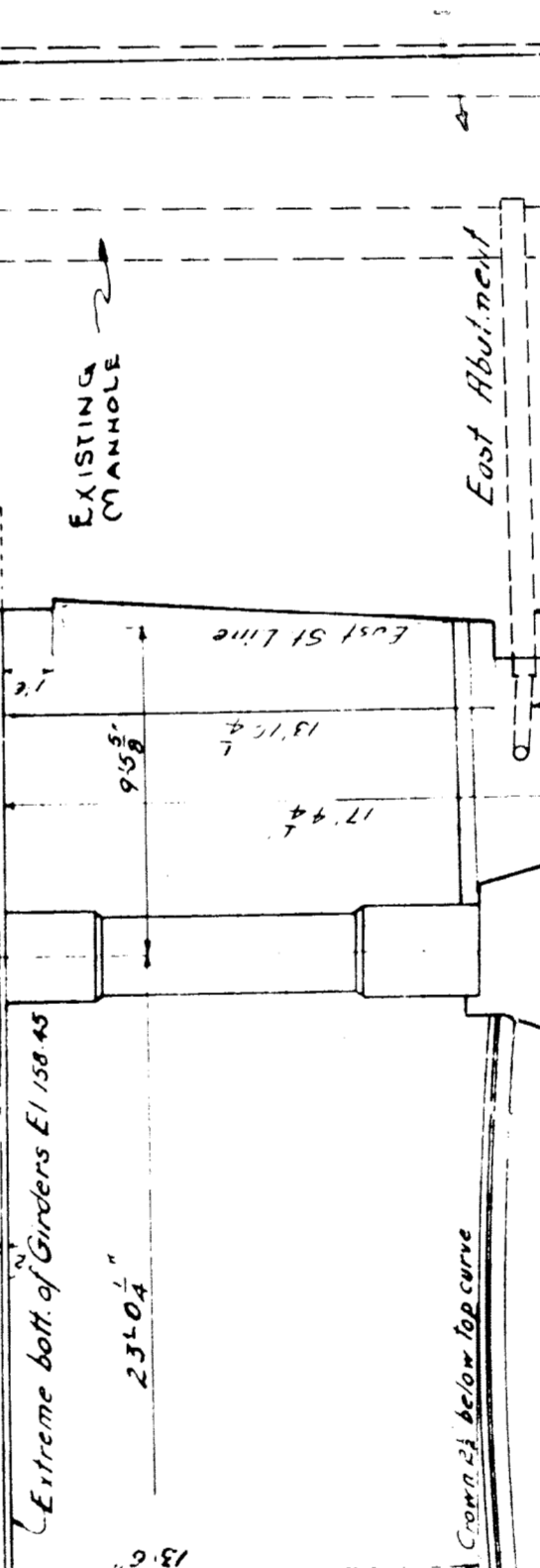
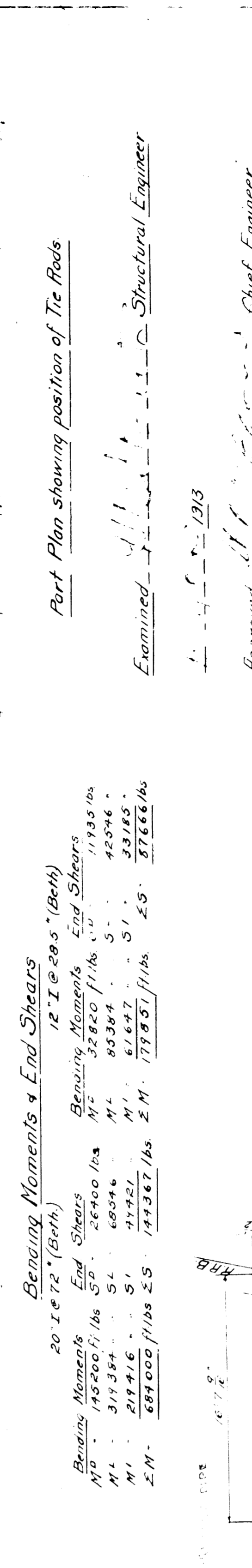
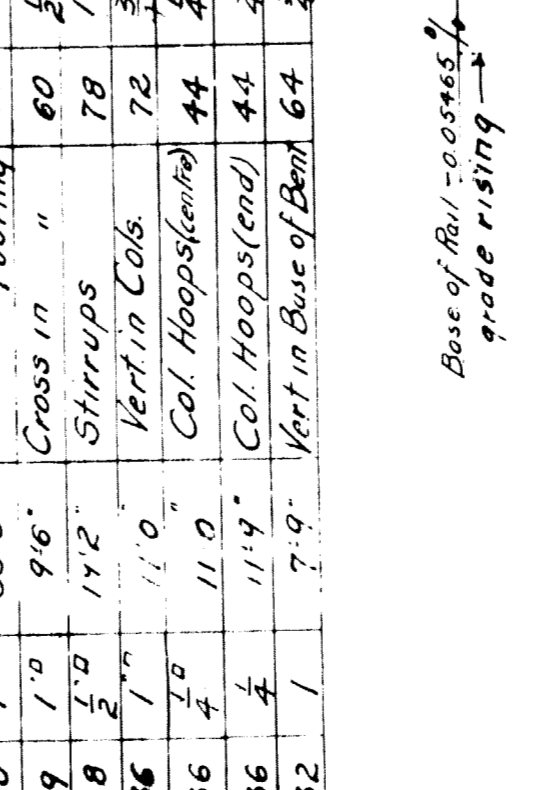
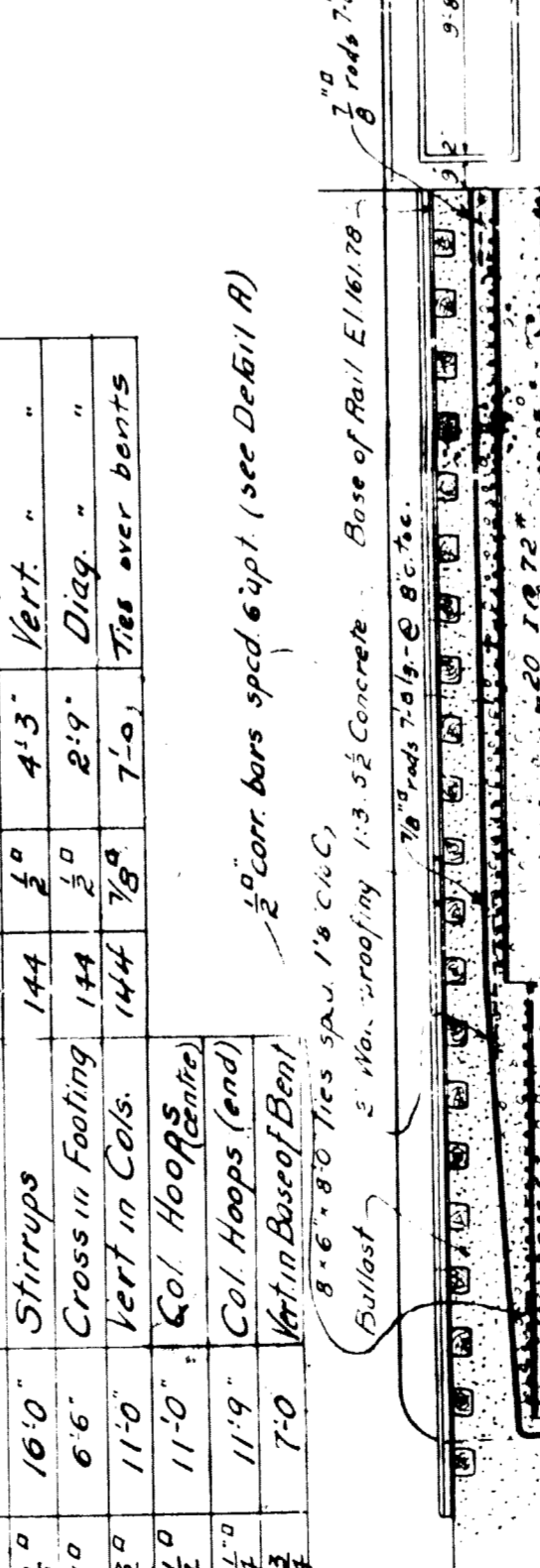
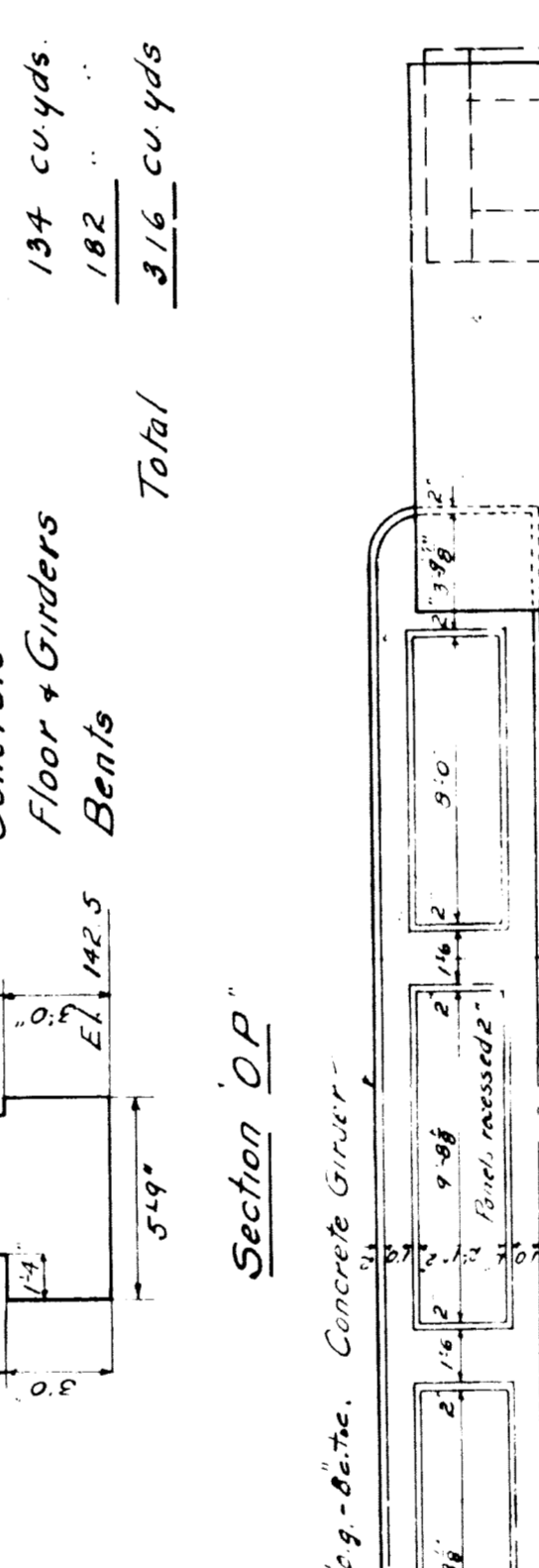
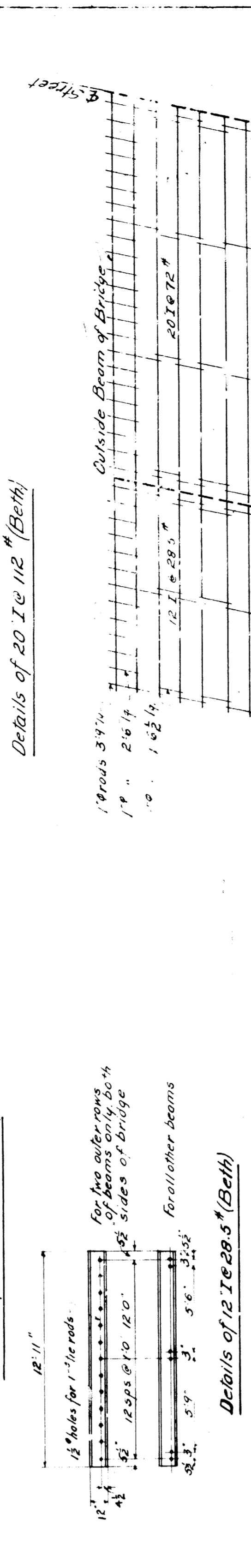
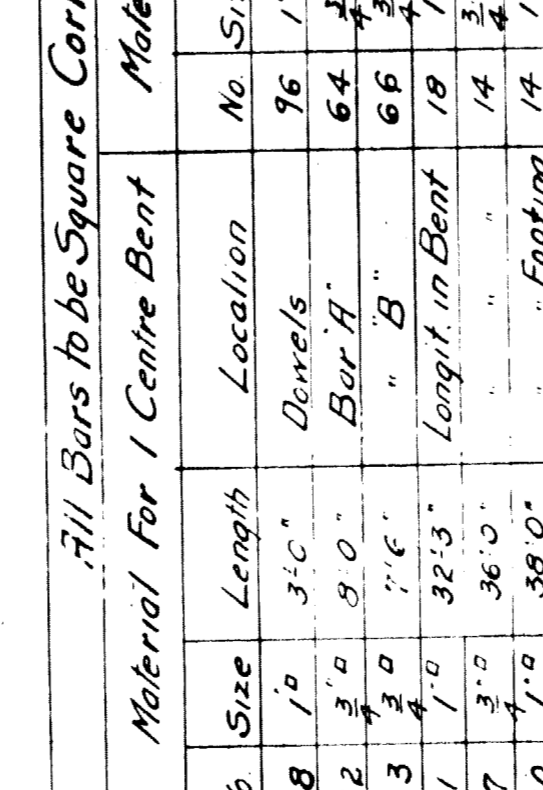
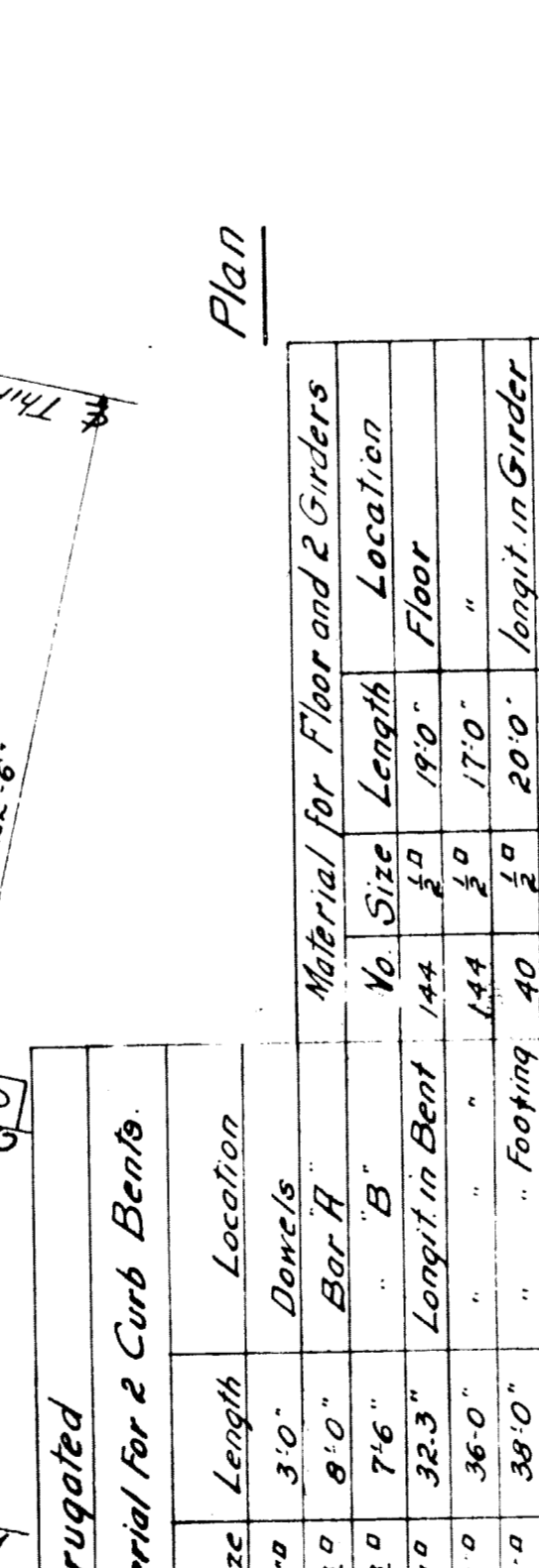
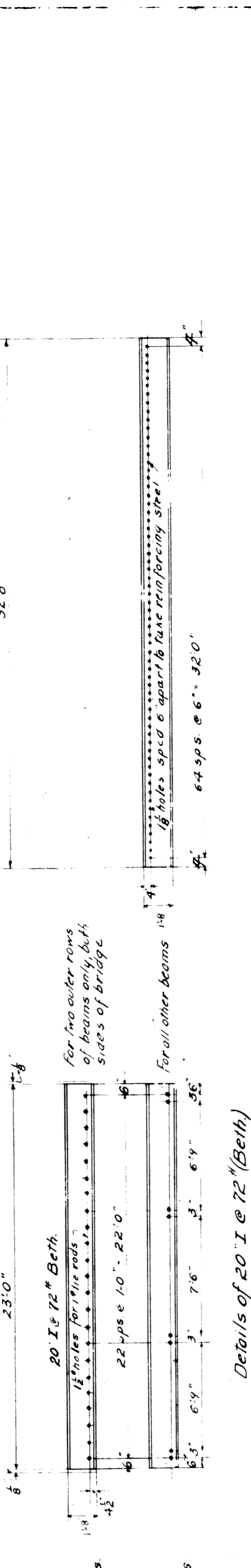
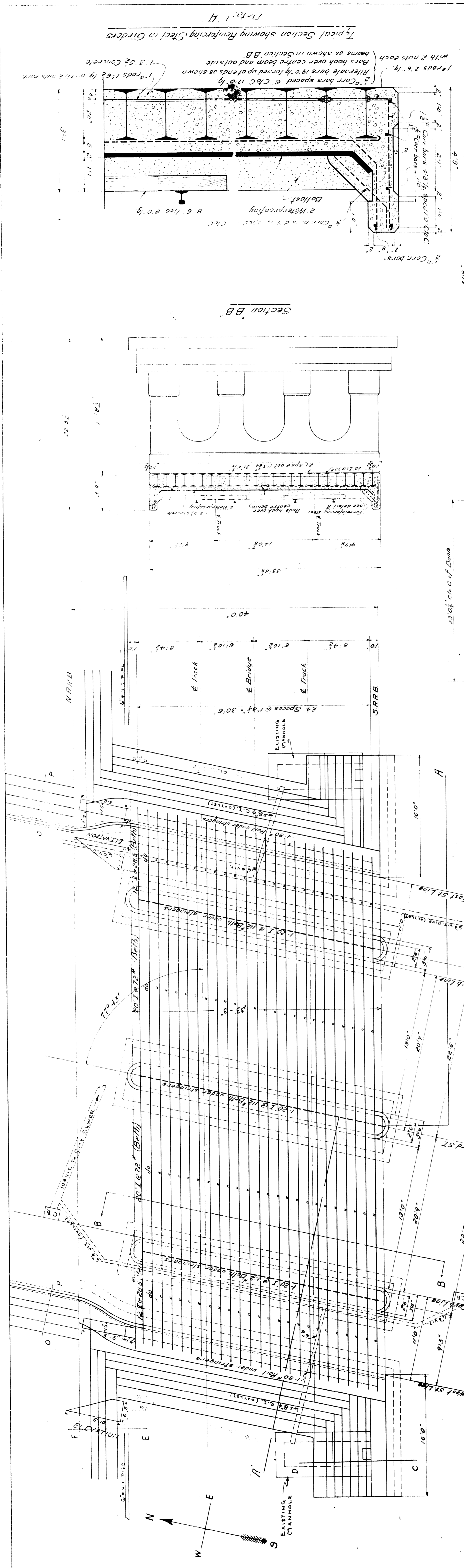
W-4360

Elev. 133.55

South End
 Elev. 135.55
 North End
 Elev. 133.60

GENERAL PLAN
THIRD AVE DETROIT, MICH.
BRIDGE NO. 29 DISTRICT
DETROIT DIVISION

Scale 1/4" = 1'-0"
Designed by [Name]
Drawn by [Name]
Checked by [Name]
Office of Chief Engineer, Detroit, Mich.
April 16, 1915



Estimated Weight of Steel
Corr. bars in Floor + Girders 8633 lbs
20200
2460
11152
143245 lbs
Total

Round Rods + Nuts
134 cu yds
182
316 cu yds
Total

Concrete
Floor + Girders
134 cu yds
182
316 cu yds
Total

All Bars to be Square Corrugated Material for a Curb Bent.

No	Size	Length	Location
48	1/2"	3'-0"	Donuts
32	3/4"	8'-0"	Bar A
33	3/4"	7'-6"	Bar B
11	1/2"	32'-3"	Length in Bent
7	1/2"	36'-0"	Feetings
10	1/2"	30'-0"	Stirrups
39	1/2"	6'-6"	Cross in Feetings
38	1/2"	14'-0"	Feetings in Cols.
36	1/2"	11'-0"	Col Hoops
36	1/2"	11'-0"	Col Hoops (cont)
36	1/2"	11'-0"	Part in Base of Bent

2" Corr. bars spaced 6" (see Detail A)
8" x 8" x 8" concrete base of Bent
2" corr. bars spaced 6" (see Detail A)

Bending Moments + End Shears
20 I x 72 (Bent)
12 I x 20 (Bent)

Bar	Moments	End Shears
A	152000 lbs	3200 lbs
B	31734	6000
C	21716	5100
D	28200	19387

Part Plan showing position of Tie Rods
Examined [Name] 1/15/15
Approved [Name] 1/15/15
Chief Engineer

Scale 1/4" = 1'-0"
Designed by [Name]
Drawn by [Name]
Checked by [Name]