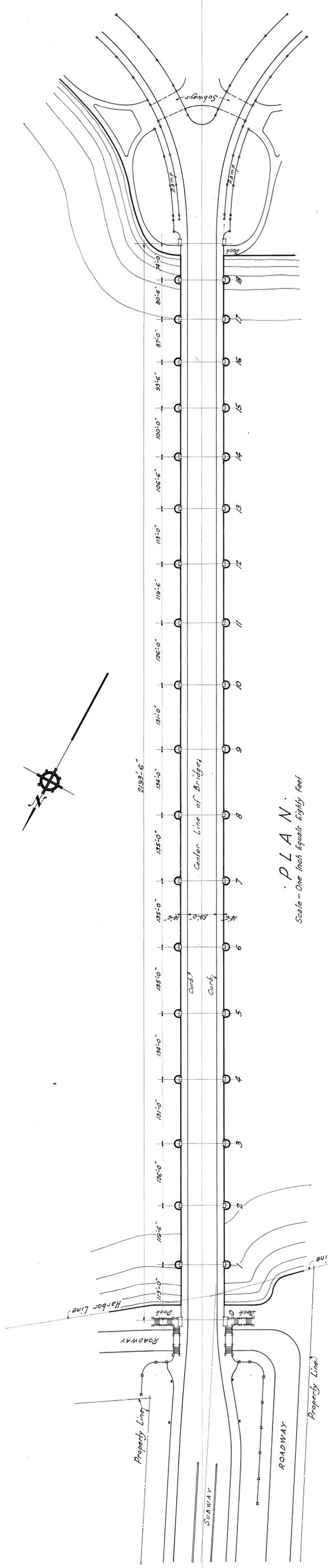


PROFILE.
Scale - One Inch Equals Eighty Feet

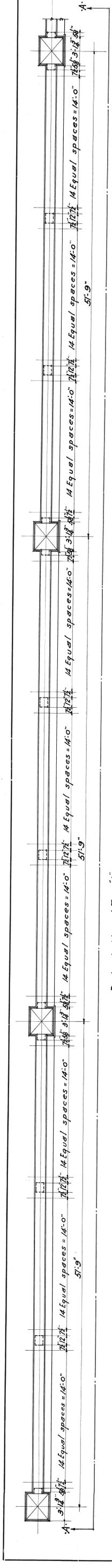
ELEVATION.
Scale - One Inch Equals Eighty Feet



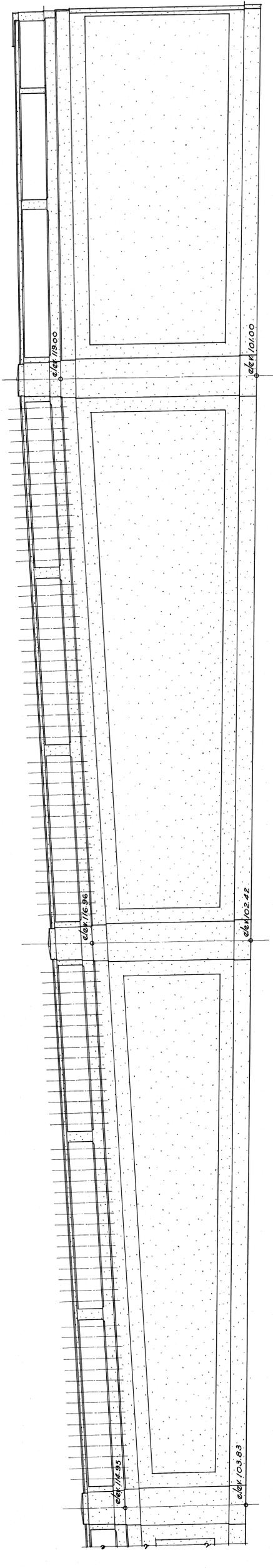
PLAN.
Scale - One Inch Equals Eighty Feet

PLAN AND ELEVATION.	
CITY OF DETROIT	
DEPARTMENT OF PUBLIC WORKS	
JOSEPH A. MARTIN, COMMISSIONER	
BELLE ISLE BRIDGE	
DRAWN BY W. H. B. TRACED BY W. H. B. CH. BY DATE 10-20-20 REVISED	JOB NO. 210 ENGINEERS ESSELSTYN, MURPHY & HANFORD LEWIS M. GRAY, ASSOCIATE DETROIT, MICH.
SHEET NO.	
1	

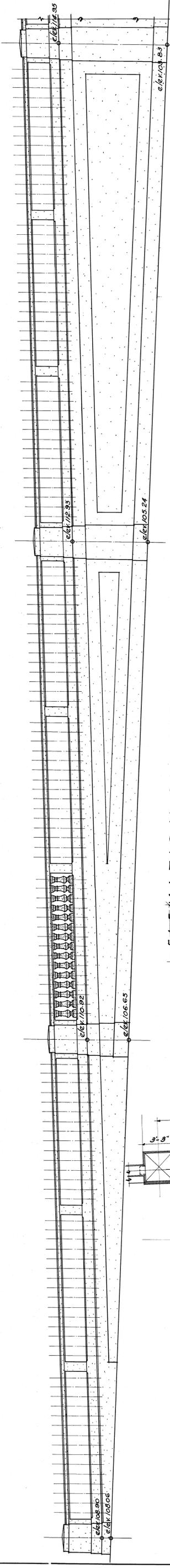
File B1111-269



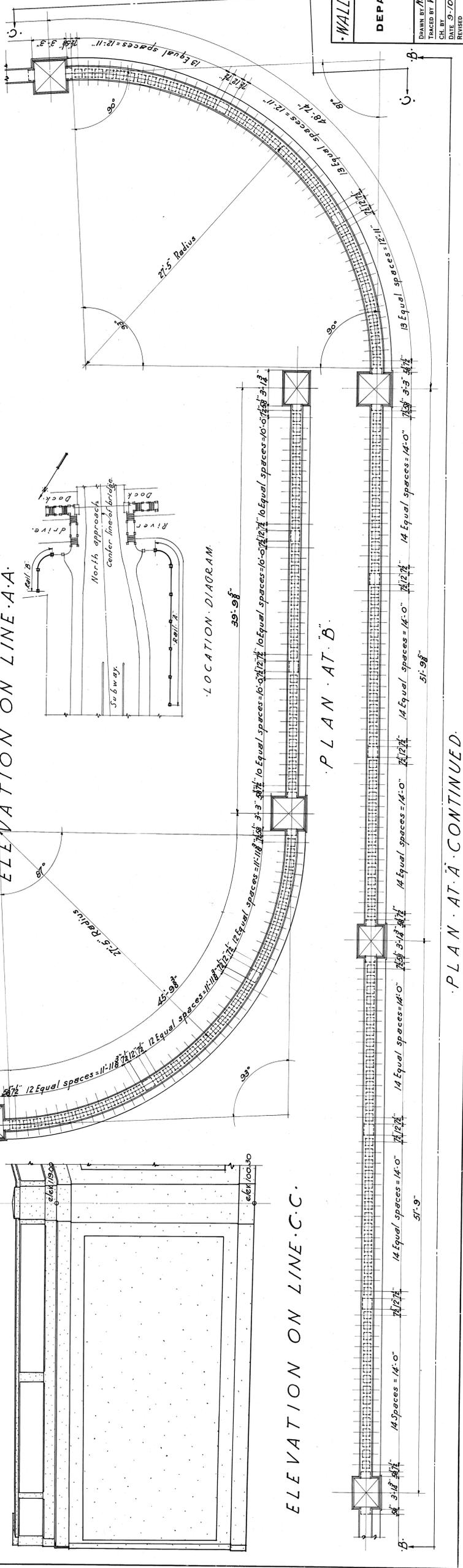
PLAN AT A



ELEVATION ON LINE B-B



ELEVATION ON LINE C-C



LOCATION DIAGRAM

ELEVATION ON LINE C-C

PLAN AT B

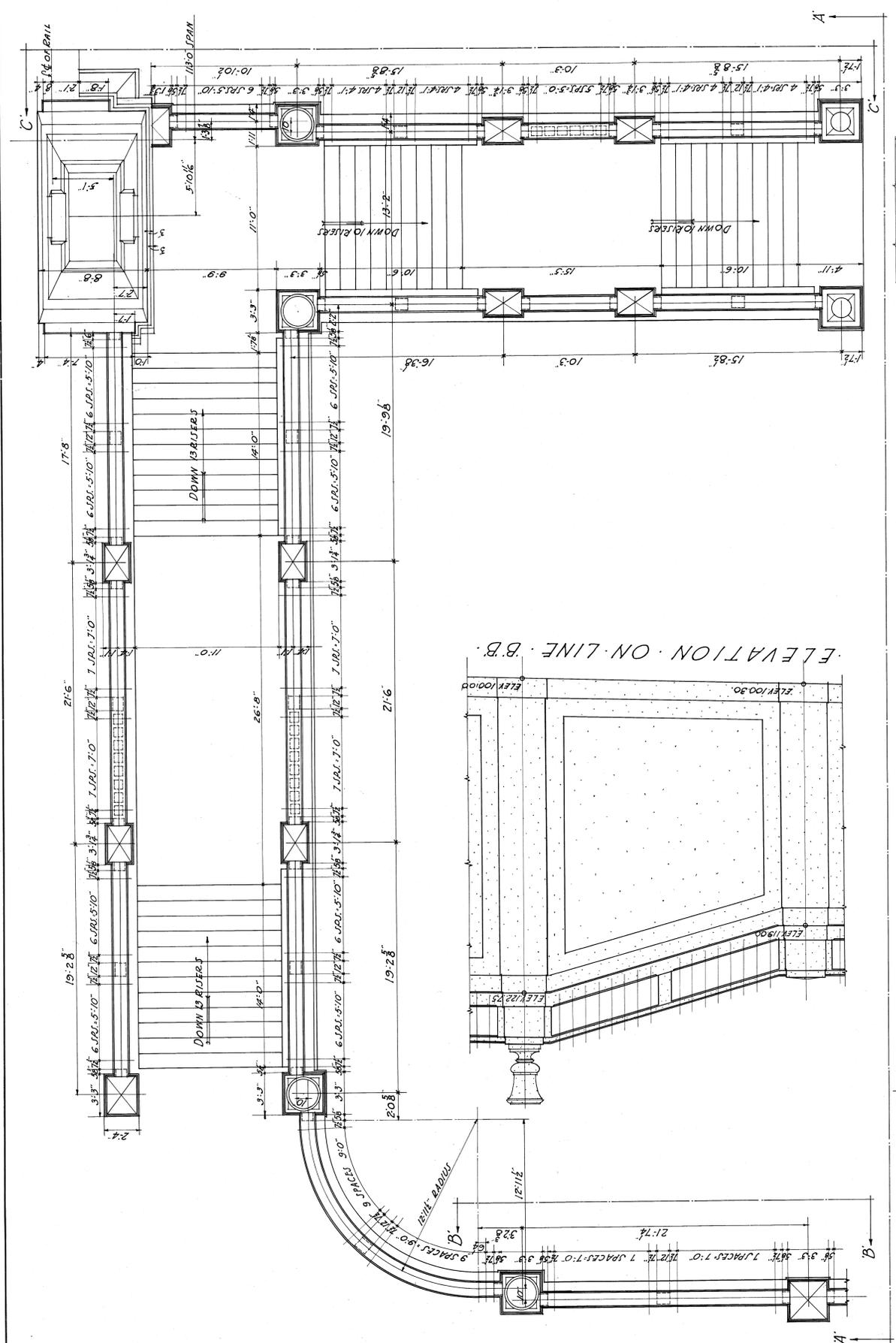
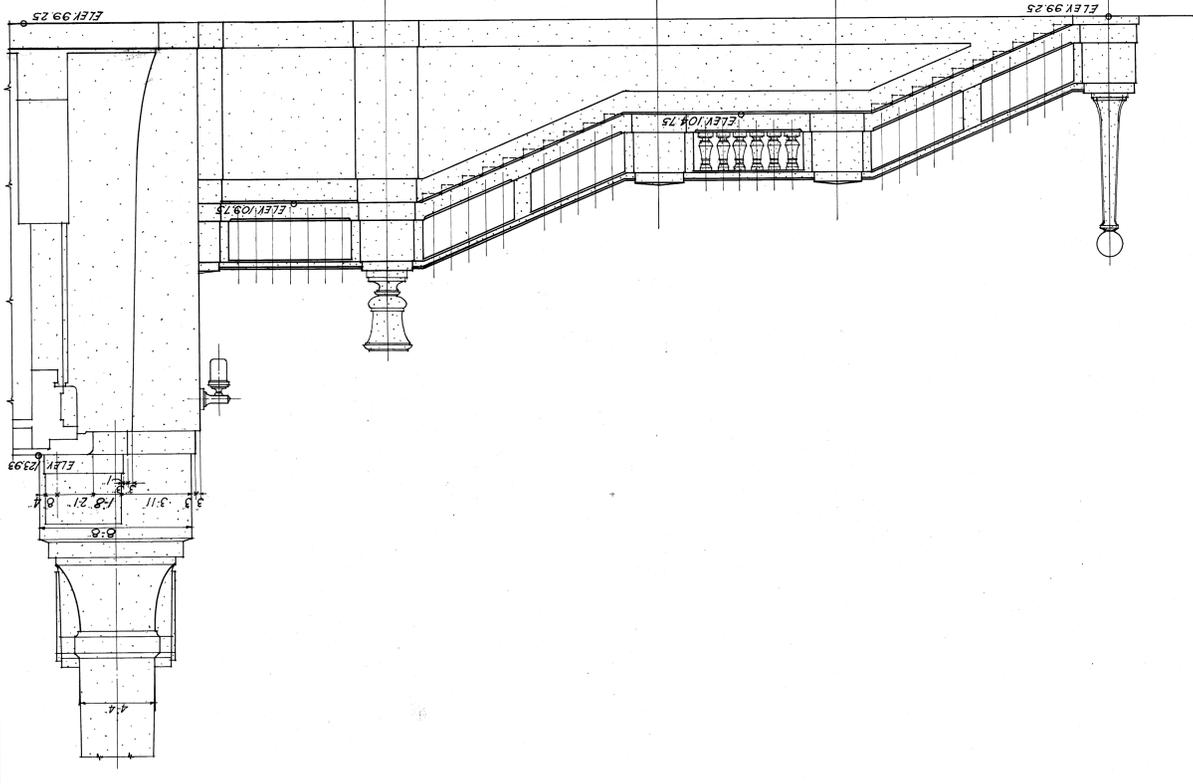
Scale: 1/4" = 1'-0"

WALL - DETAILS - NORTH APPROACH.

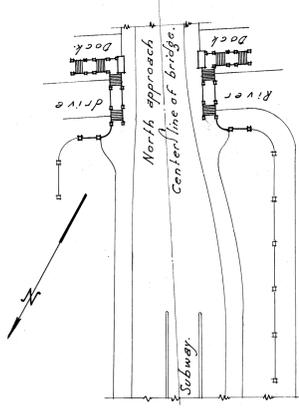
CITY OF DETROIT	DEPARTMENT OF PUBLIC WORKS	JOB NO.
JOSEPH A. MARTIN, COMMISSIONER	ESSELSTYN, MURPHY & HANFORD	210.
BELLE ISLE BRIDGE	ENGINEERS	SHEET NO.
DRAWN BY: A.C.K.	LEWIS M. GRAM, ASSOCIATE	2.
CH. BY: F.M.	DETROIT, MICH.	
DATE: 9-10-20		

PLAN AT A - CONTINUED.

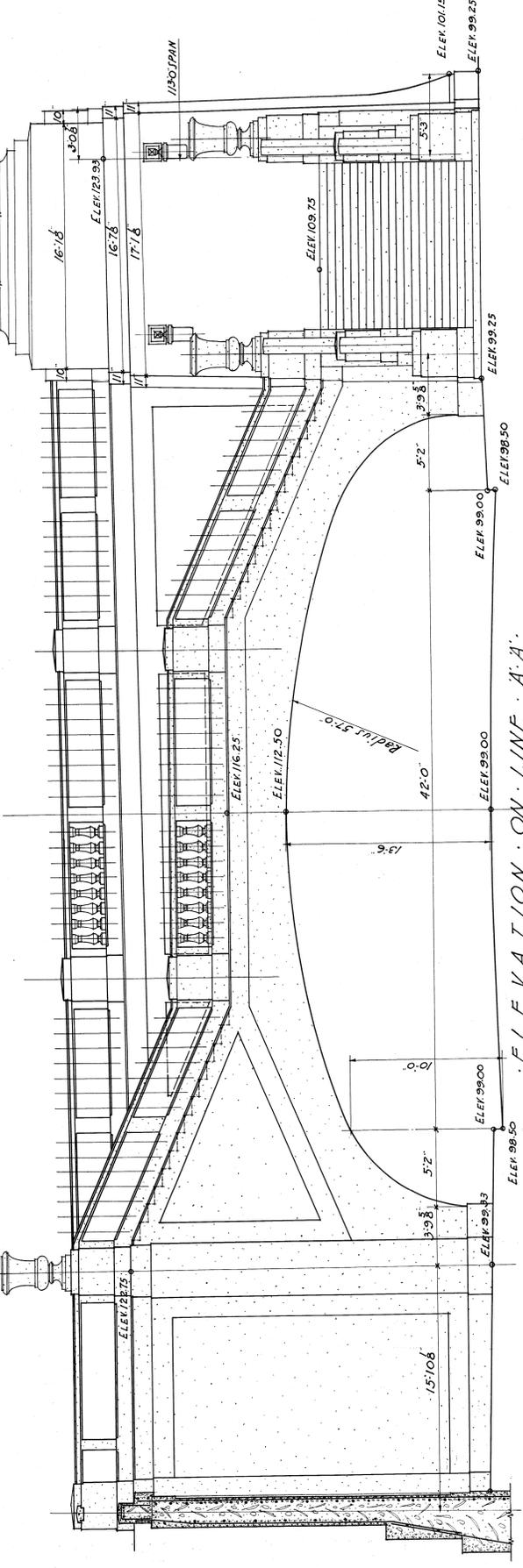
ELEVATION ON LINE C-C



ELEVATION ON LINE B-B



LOCATION DIAGRAM



ELEVATION ON LINE A-A

STAIR - DETAILS - NORTH SHORE SPAN

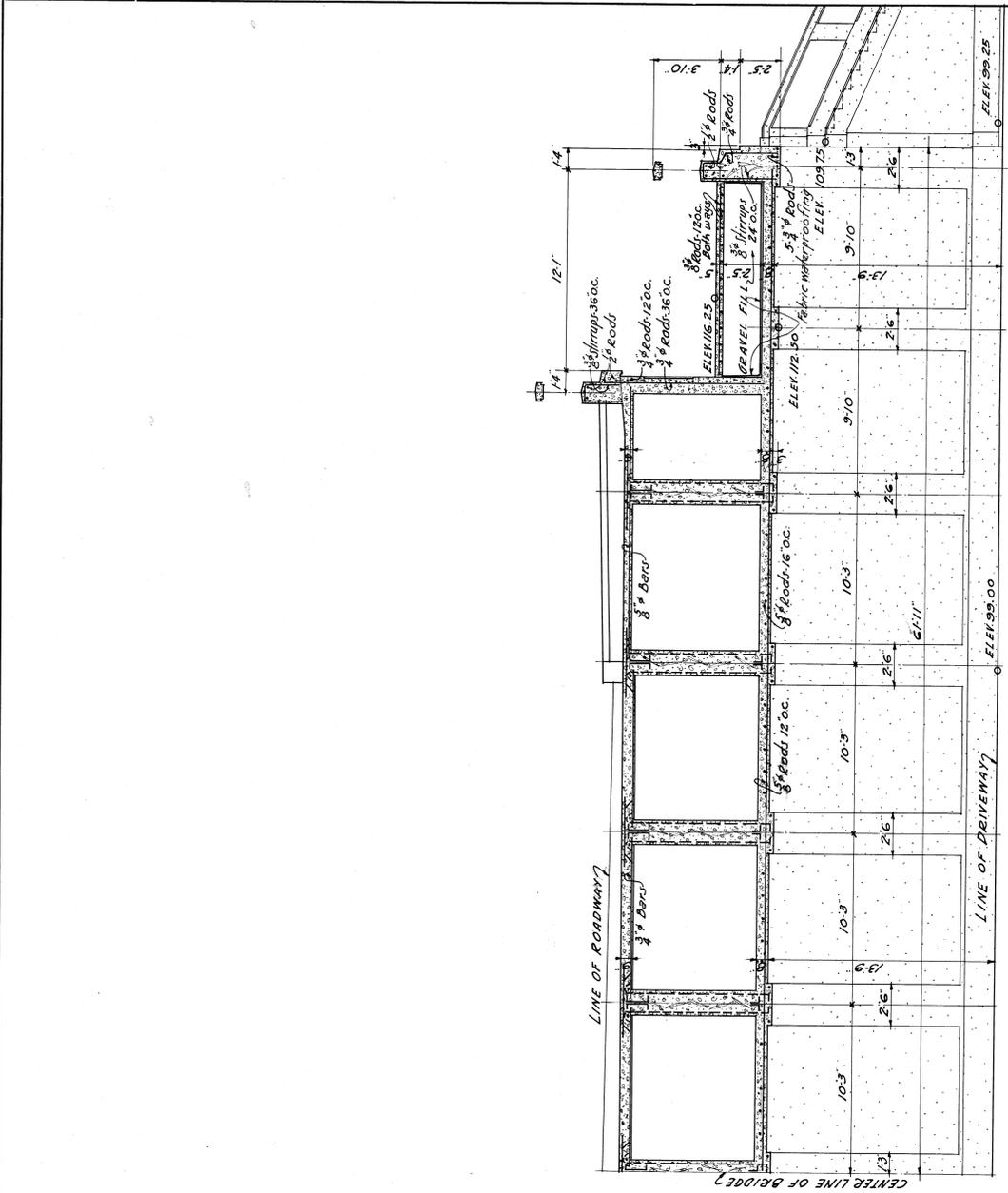
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
 JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

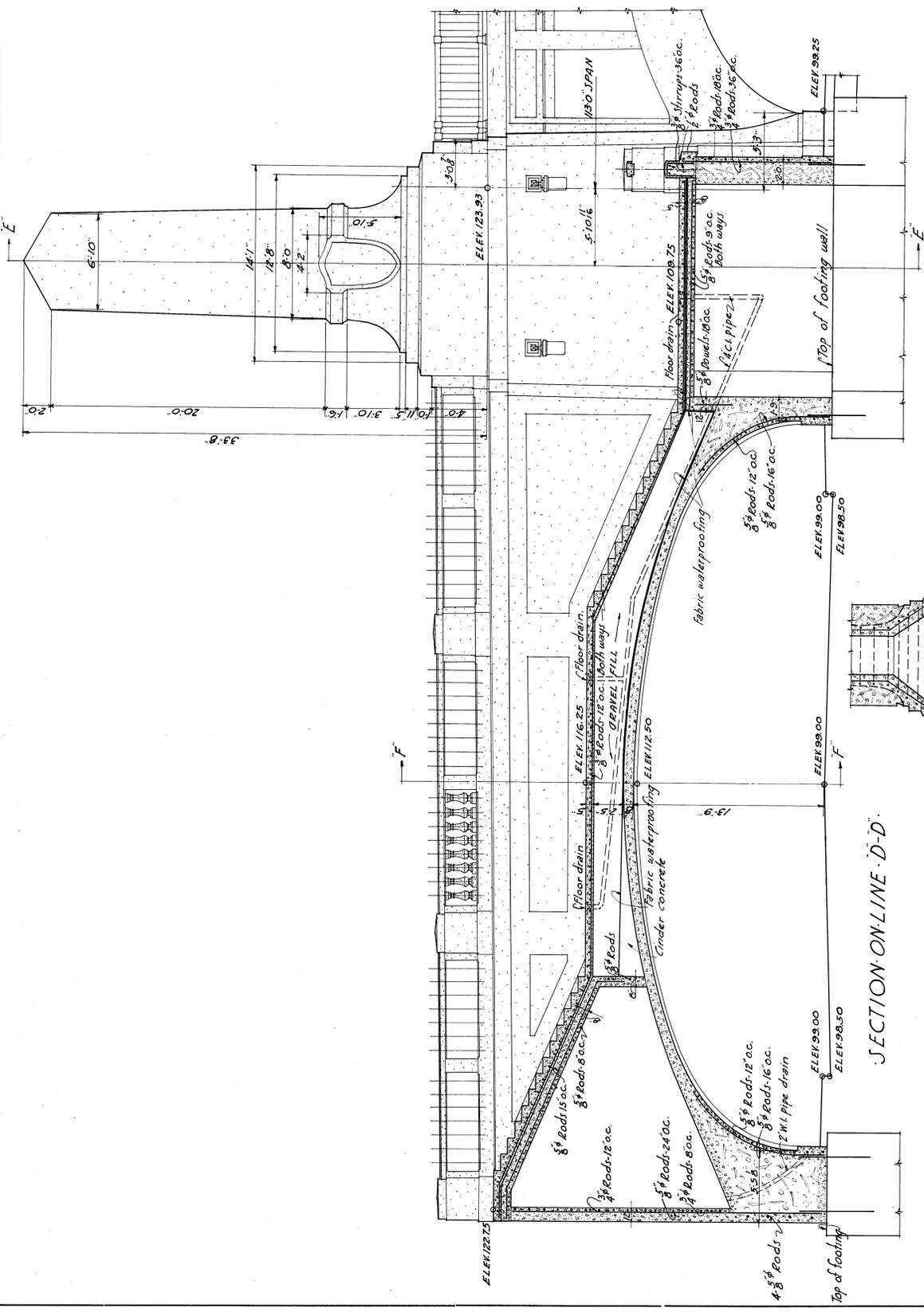
DRAWN BY: M.C.A. ESSELSTYN, MURPHY & HANFORD ENGINEERS
 CHECKED BY: W.L.L.
 DATE: 5-10-20
 REVISION: 4

JOB NO. 210
 SHEET NO. 4

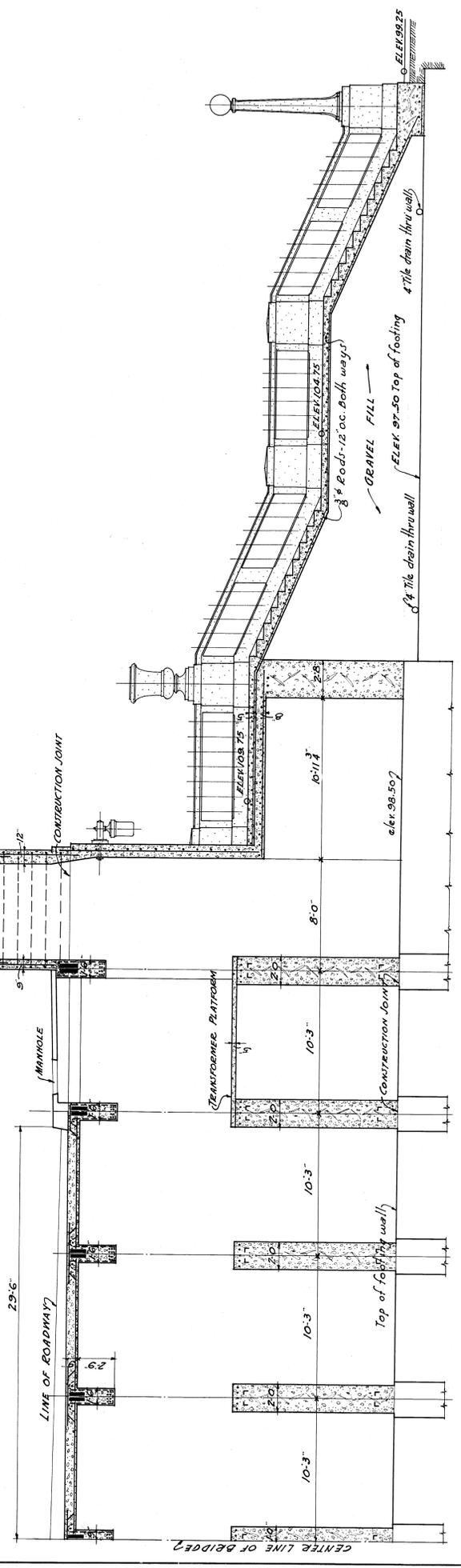
LEWIS M. GRAM, ASSOCIATE
 DETROIT, MICH.



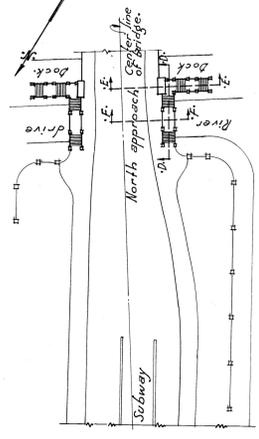
SECTION ON LINE F-F



SECTION ON LINE D-D



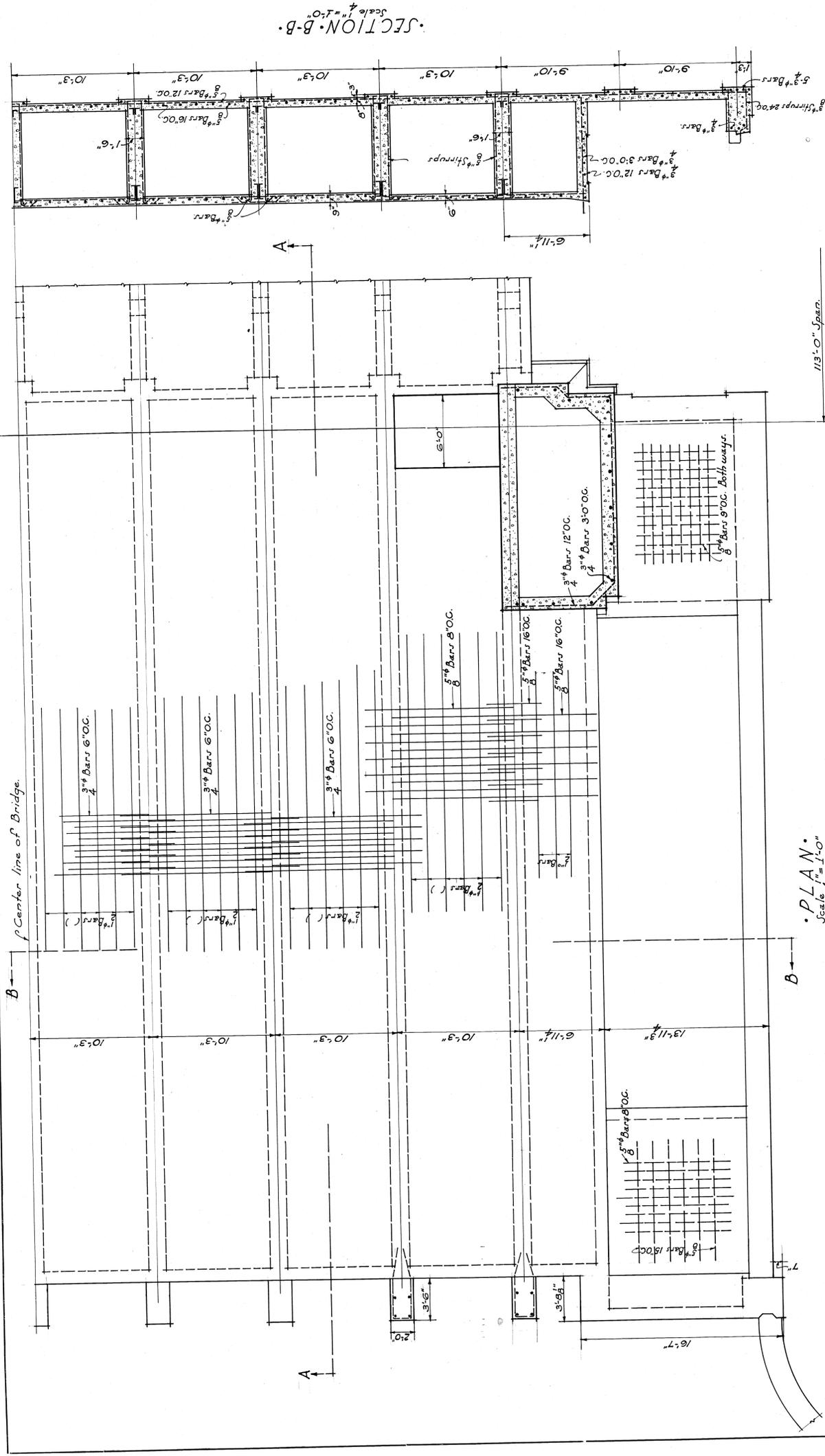
SECTION ON LINE E-E



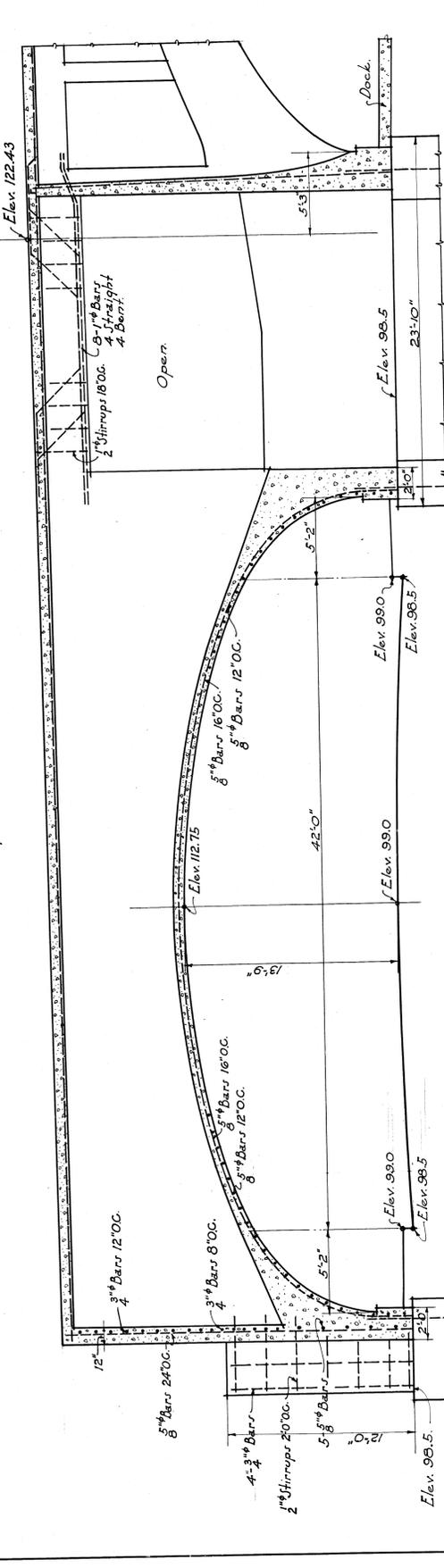
LOCATION DIAGRAM

ELEVATIONS OF SECTIONS N-SHORE SPAN

CITY OF DETROIT		JOB NO.	210
DEPARTMENT OF PUBLIC WORKS		ENGINEERS	ESSELSTYN, MURPHY & HANFORD
JOSEPH A. MARTIN, COMMISSIONER		ASSOCIATE	LEWIS M. GRAM
BELLE ISLE BRIDGE		REVISIONS	DATE 5-10-20
DRAWN BY	ACE	REVISIONS	DATE 5-10-20
TRACED BY	ACE	REVISIONS	DATE 5-10-20
CHK. BY	ACE	REVISIONS	DATE 5-10-20
DATE	5-10-20	REVISIONS	DATE 5-10-20
REVISED		REVISIONS	DATE 5-10-20



SECTION B-B
Scale 1/4" = 1'-0"



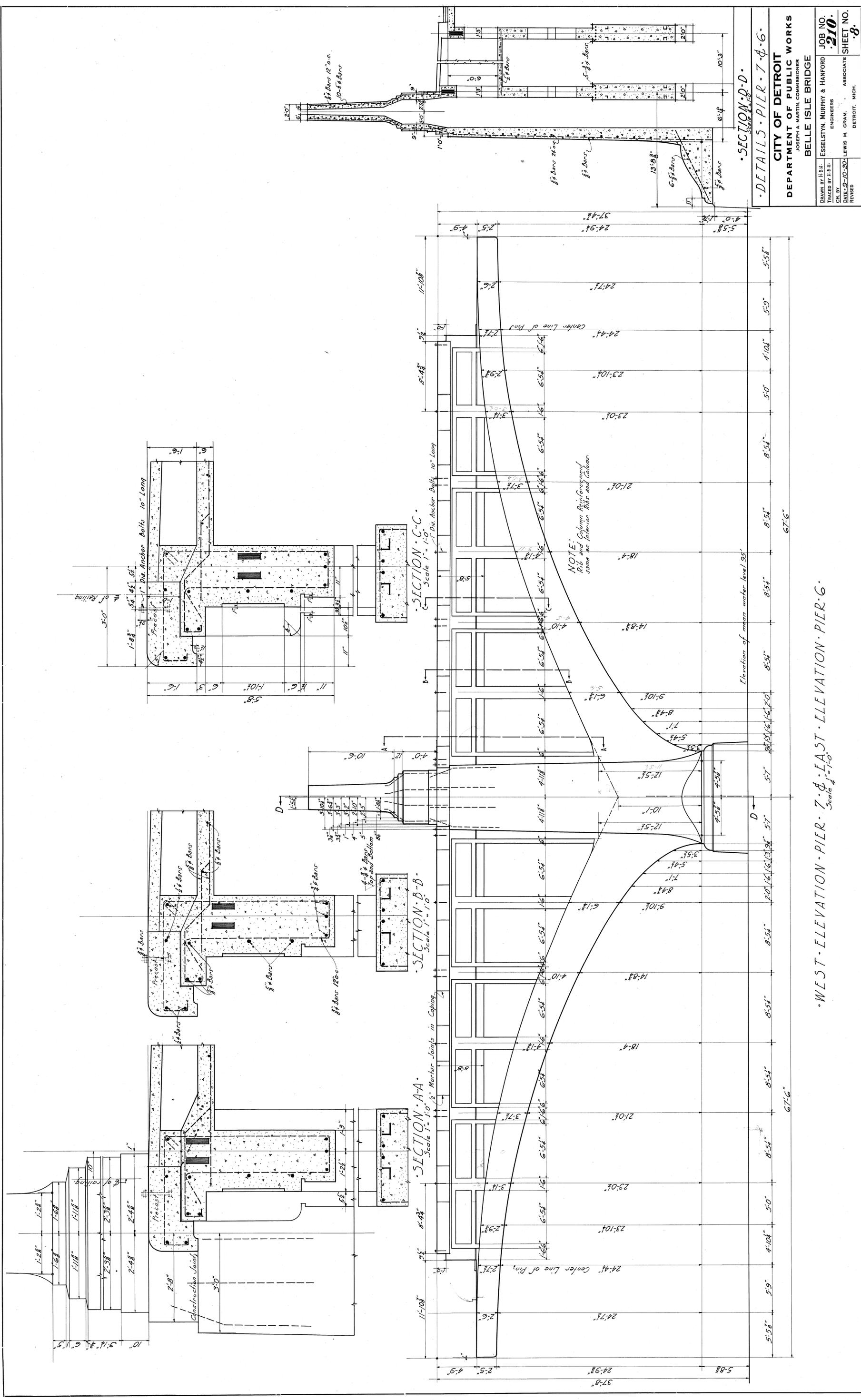
SECTION A-A
Scale 1/4" = 1'-0"

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

PLAN of SECTIONS NORTH-SHORE SPAN.

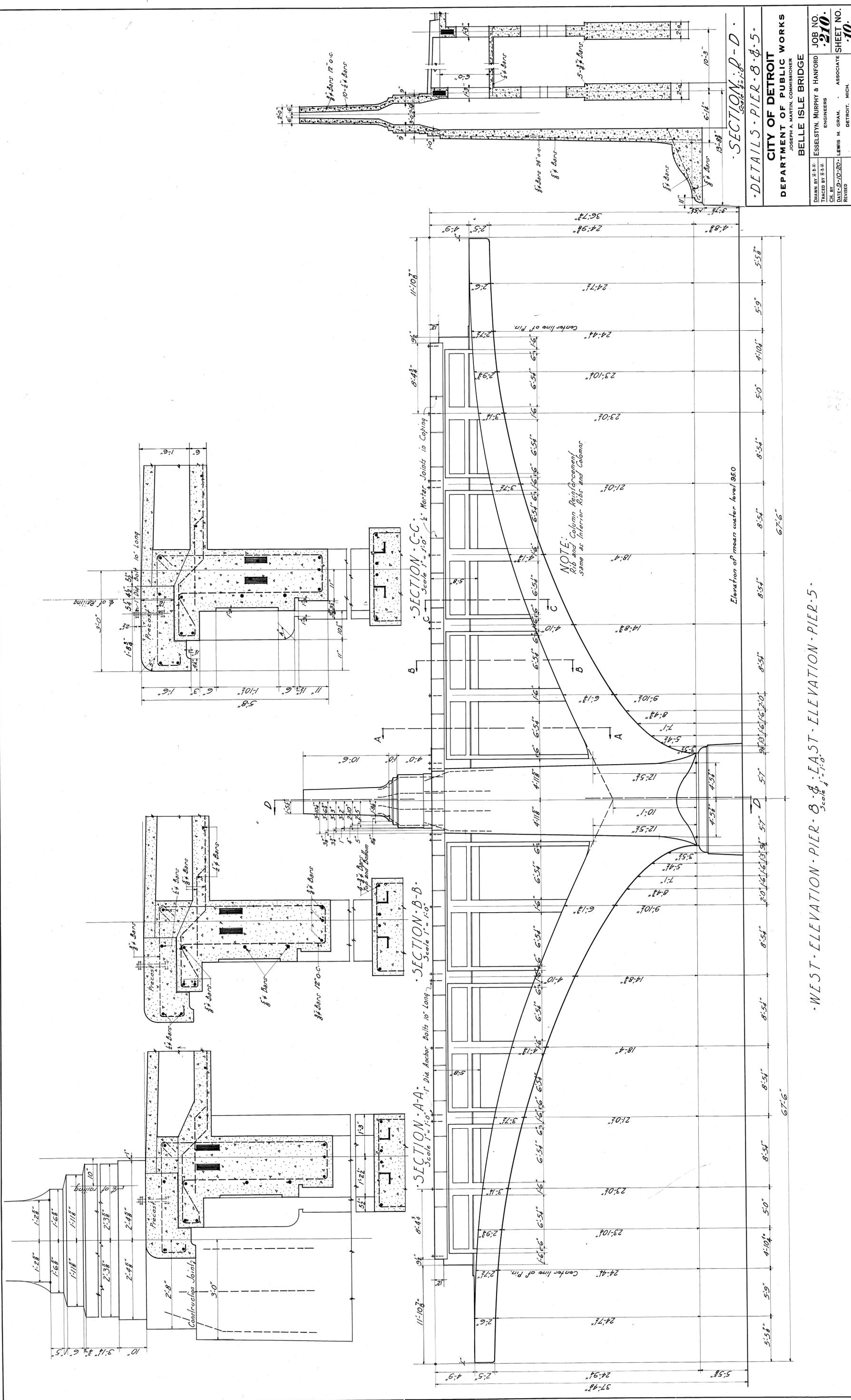
CITY OF DETROIT		JOB NO. 210.	
DEPARTMENT OF PUBLIC WORKS		SHEET NO. 6.	
JOSEPH A. MARTIN, COMMISSIONER			
BELLE ISLE BRIDGE		ENGINEERS	
DRAWN BY E. F.	ESSELSTYN, MURPHY & HANFORD	ASSOCIATE	
TRACED BY E. F.	ESSELSTYN, MURPHY & HANFORD	ENGINEERS	
CH. BY	LEWIS M. GRAM	DETROIT, MICH.	
DATE: 9-10-20	REVISED		

File BW201-274



CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 BELLE ISLE BRIDGE
 JOSEPH A. MARTIN, COMMISSIONER
 ENGINEERS
 ESSELSTYN, MURPHY & HANFORD
 LEWIS M. GRAM, ASSOCIATE
 DETROIT, MICH.
 JOB NO. 210
 SHEET NO. 8
 DATE 9-10-20
 REVISED

WEST ELEVATION - PIER 7 - EAST ELEVATION - PIER 6
 Scale 1/4" = 1'-0"



SECTION A-A
Scale 1" = 1'-0"

SECTION B-B
Scale 1" = 1'-0"

SECTION C-C
Scale 1" = 1'-0"

NOTE:
Rib and Column Reinforcement
same as Interior Ribs and Columns

Elevation of mean water level 98.0

SECTION D-D
Scale 1" = 1'-0"

DETAILS - PIER - 8 - & - 5

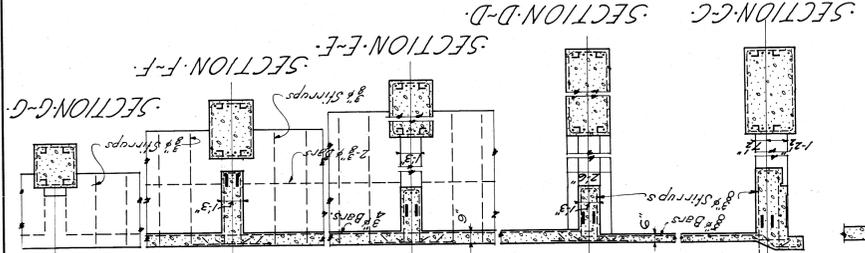
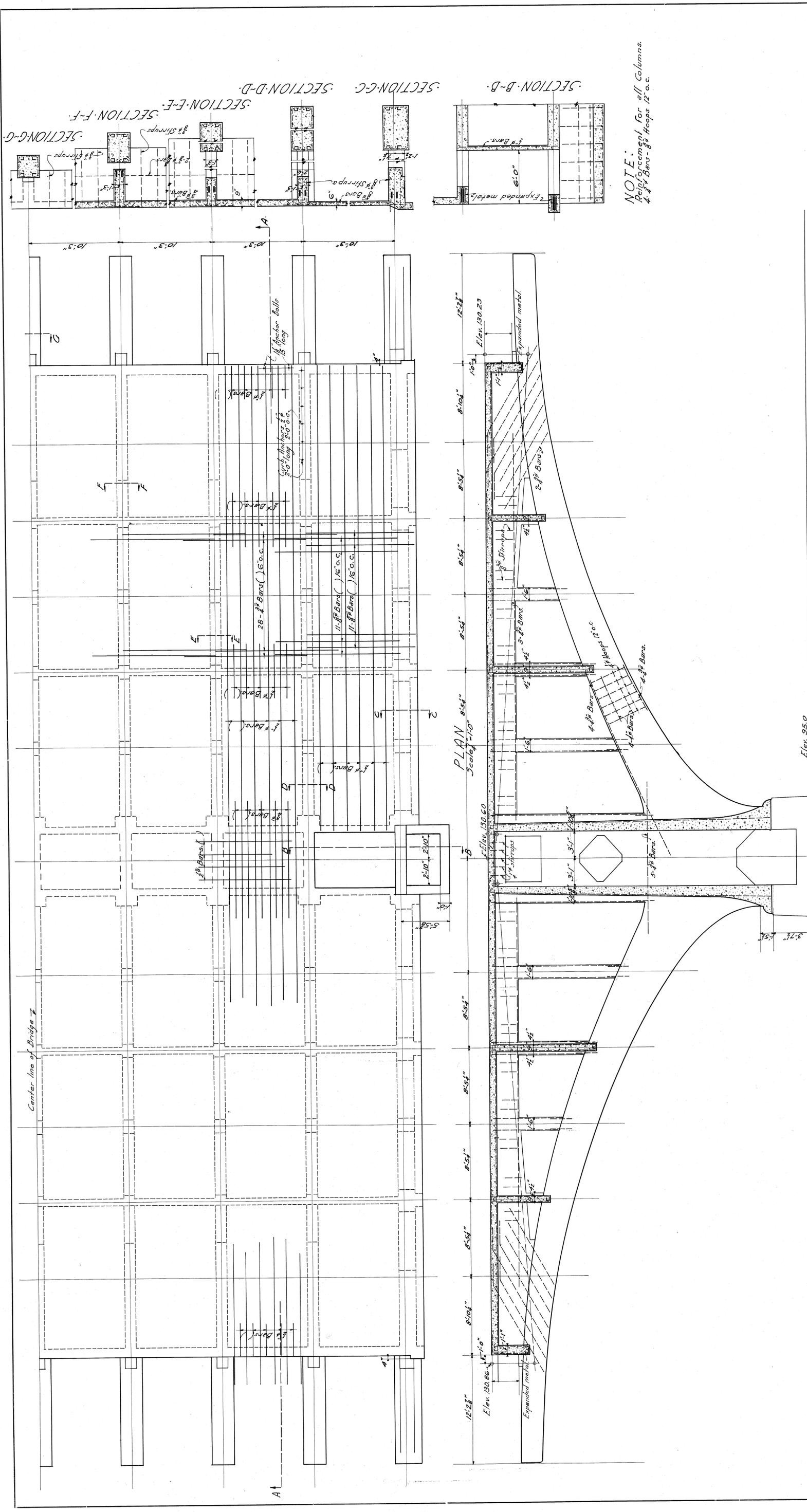
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

DRAWN BY H. H. H. ESSELSTYN, MURPHY & HANFORD ENGINEERS
CHECKED BY L. H. H. LEWIS, M. GRAM, ASSOCIATE ENGINEER
DATE: 9-10-20
REVIEWED: DETROIT, MICH.

JOB NO. 210
SHEET NO. 10

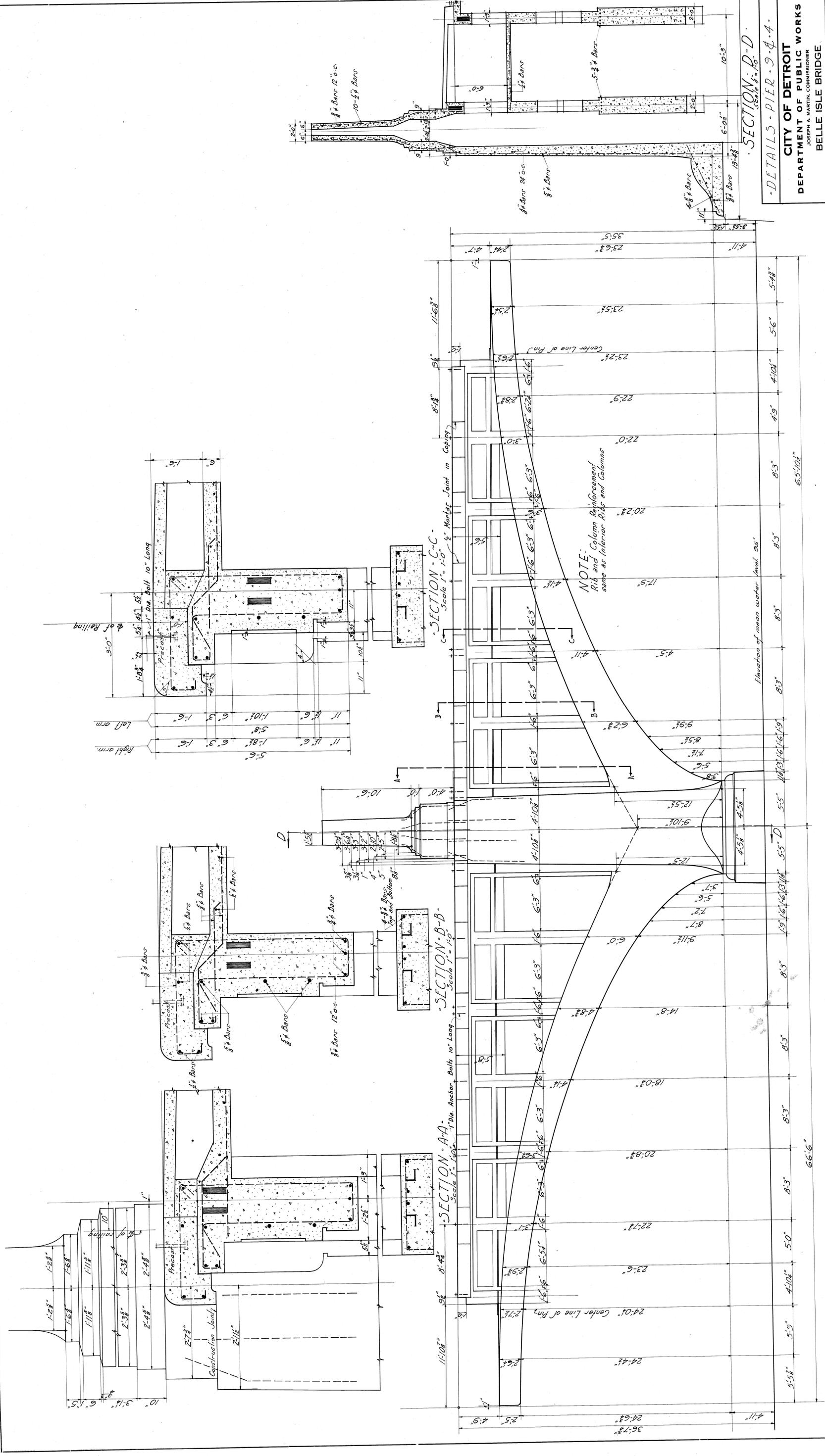
WEST ELEVATION - PIER - 8 - & - 5 - EAST ELEVATION - PIER - 5
Scale 1" = 1'-0"



NOTE:
Reinforcement for all columns.
4# Bars - 8# Hoops 12" o.c.

PLAN & SECTIONS - PIER 8 & 5	
CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS JOSEPH A. MARTIN, COMMISSIONER	
DRAWN BY: H.B.H. TRACED BY: H.B.H. DATE: 9-20-20 REVISED	JOB NO. 210 ENGINEERS ESSELSTYN, MURPHY & HANFORD LEWIS N. GRAM, ASSOCIATE DETROIT, MICH.

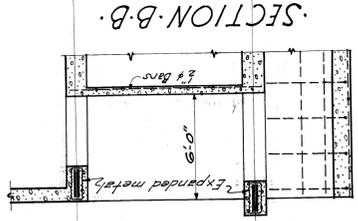
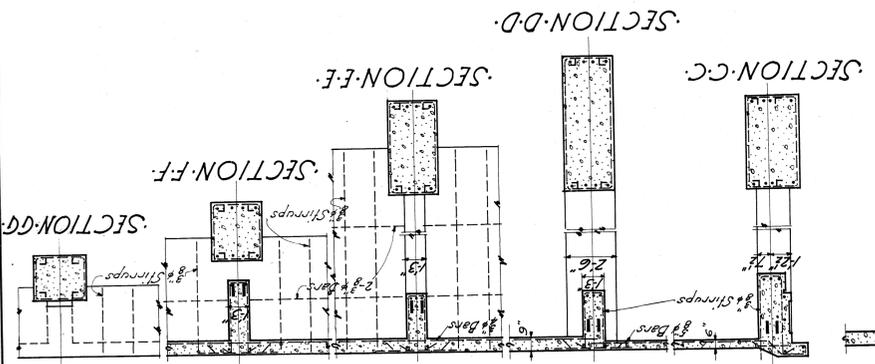
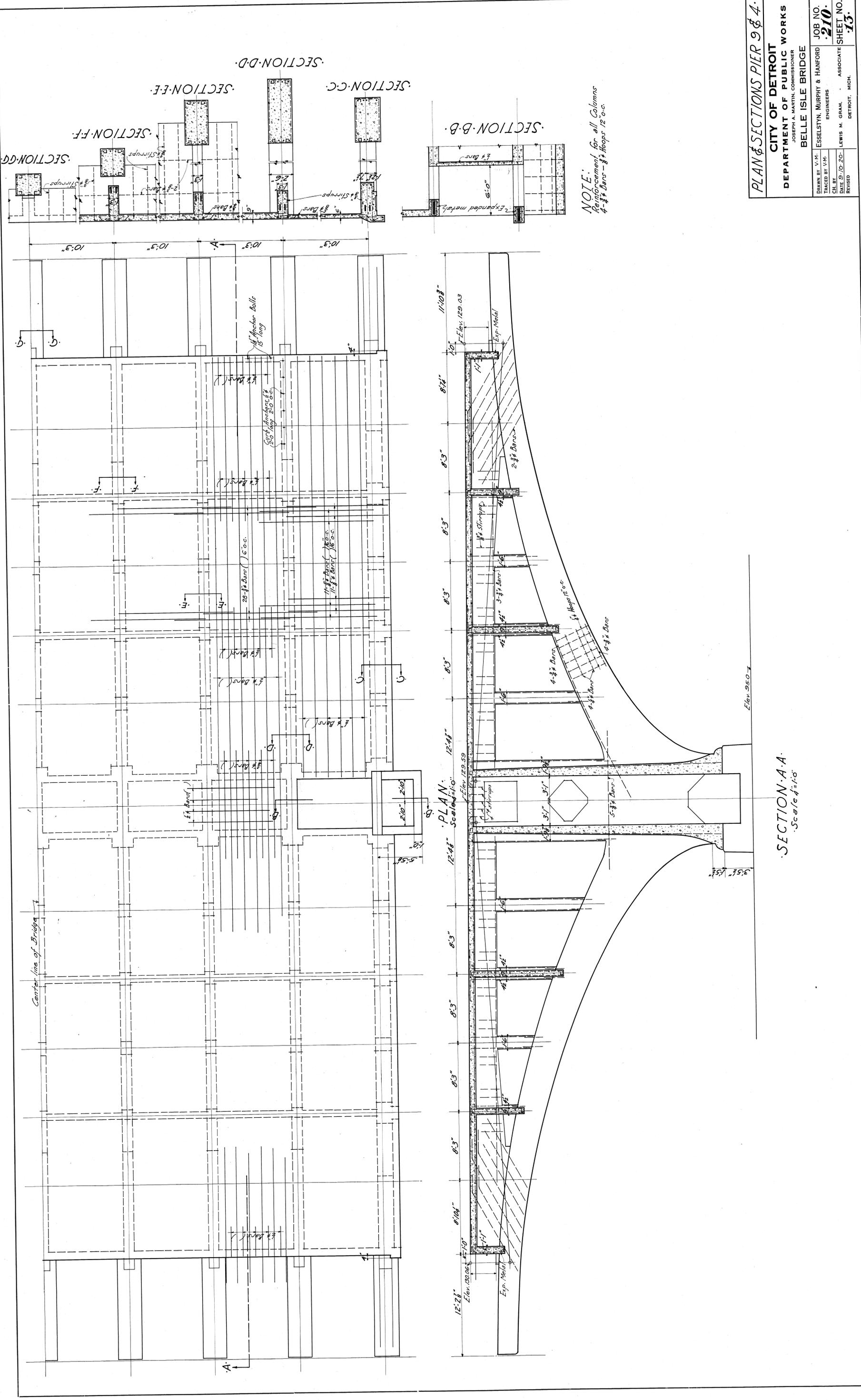
SECTION A-A
Scale = 1/4"



CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 JOSEPH A. MARTIN, COMMISSIONER
 BELLE ISLE BRIDGE
 JOB NO. 210
 DRAWN BY H. B. H. ESSELSTYN, MURPHY & HANFORD ENGINEERS
 CHECKED BY H. B. H. ESSELSTYN, MURPHY & HANFORD ENGINEERS
 DATE 10-10-20
 ASSOCIATE LEWIS M. GRAM, DETROIT, MICH.
 SHEET NO. 12

WEST ELEVATION - PIER 9 & 8 EAST ELEVATION - PIER 4
 Scale 1/4" = 1'-0"

File 8W201-280



NOTE:
 Reinforcement for all Columns
 4-#8 Bars - #8 Hoops 12" o.c.

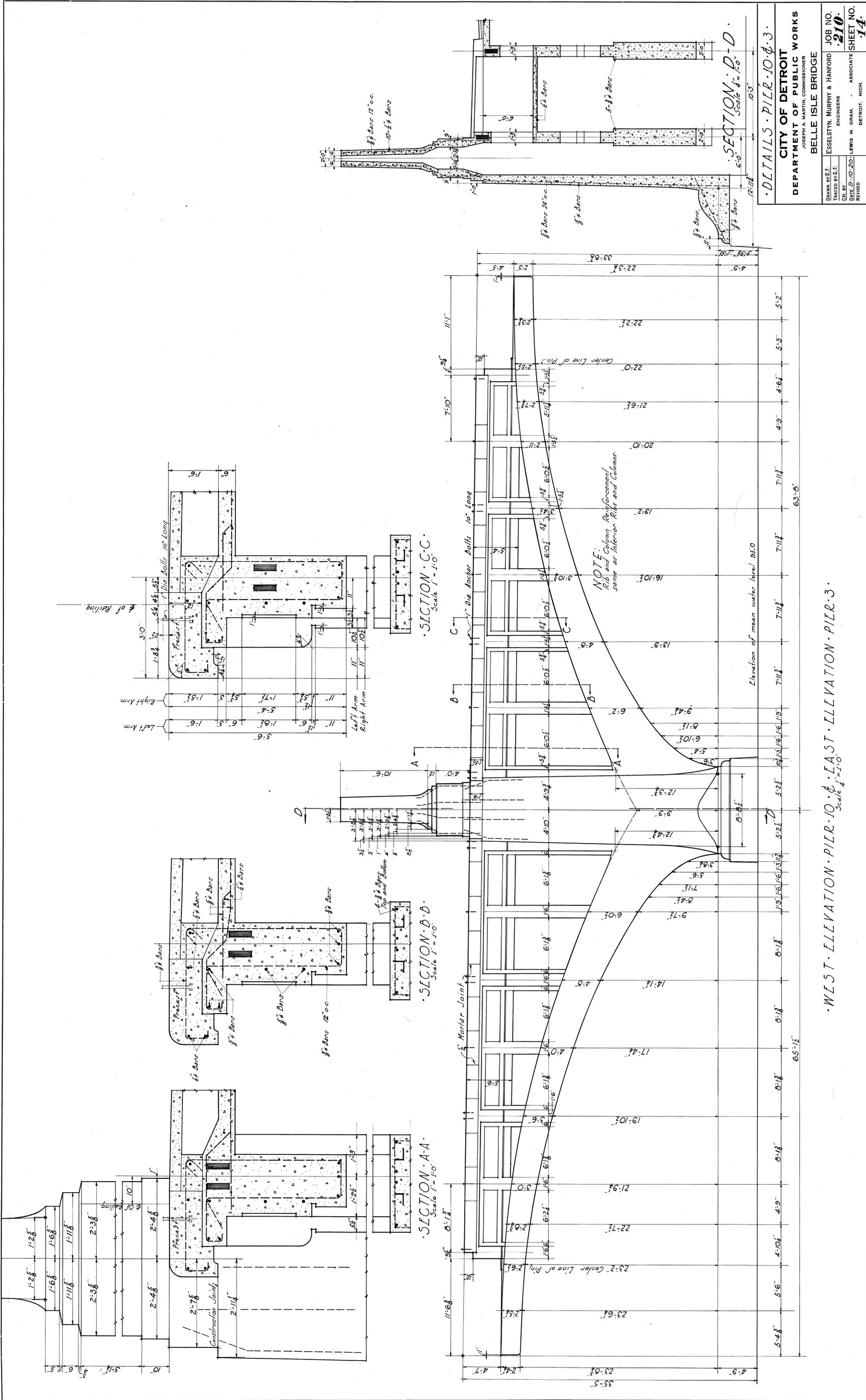
PLAN & SECTIONS PIER 9 & 4.

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

DRAWN BY: V.M.	ESSELSTYN, MURPHY & HANFORD	JOB NO.	210.
TRACED BY: V.M.	ENGINEERS	DATE: 9/20/20	ASSOCIATE SHEET NO.
CH. BY:		REVISED	13.
			DETROIT, MICH.

File BW201-281



DETAILS - PIER 10 & 3
Scale 1" = 1'-0"

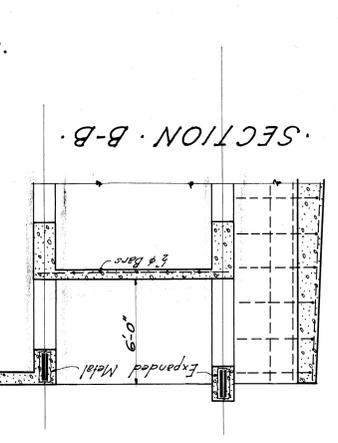
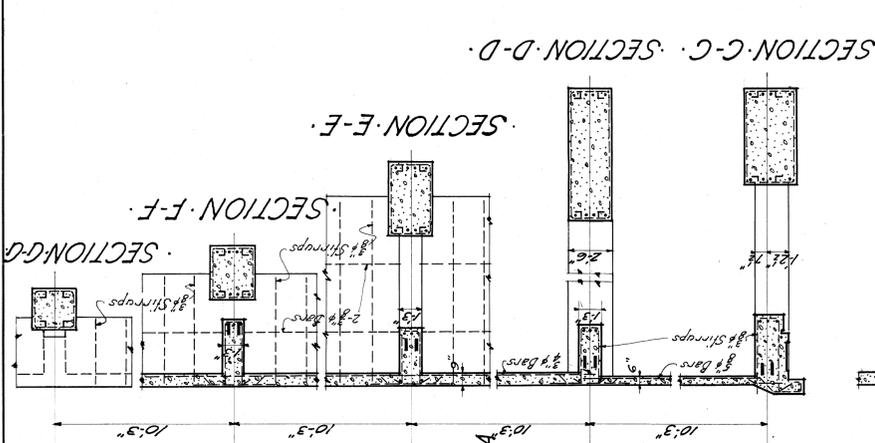
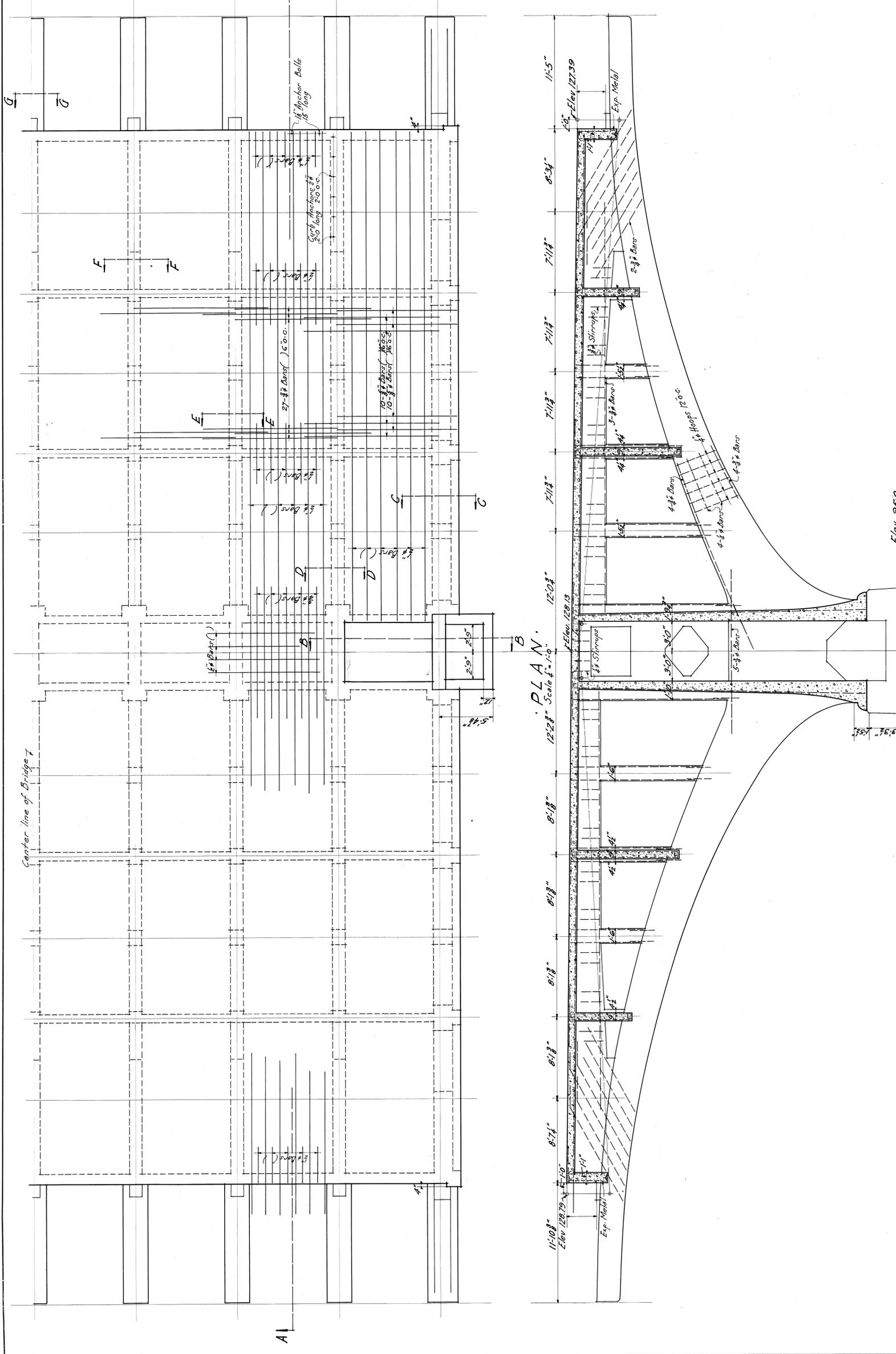
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

ENGINEERS
ESSELSTYN, MURPHY & HANFORD
LEWIS M. GRAM, ASSOCIATE
DETROIT, MICH.

JOB NO. **210**
SHEET NO. **14**

WEST ELEVATION - PIER 10 & 3
Scale 1" = 1'-0"

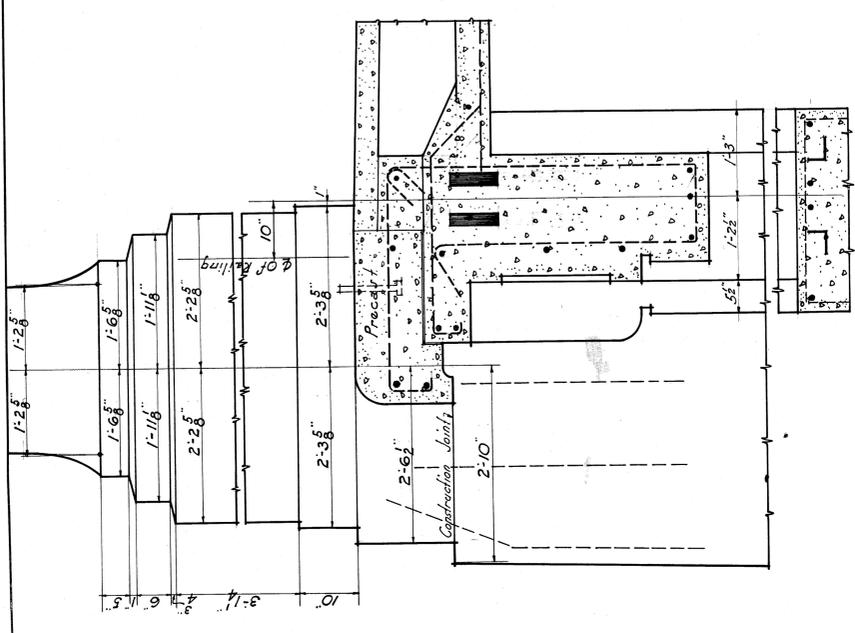


NOTE:
Reinforcement for all Columns
4-3/4 Bars - 3/8 Hoops 12" c.

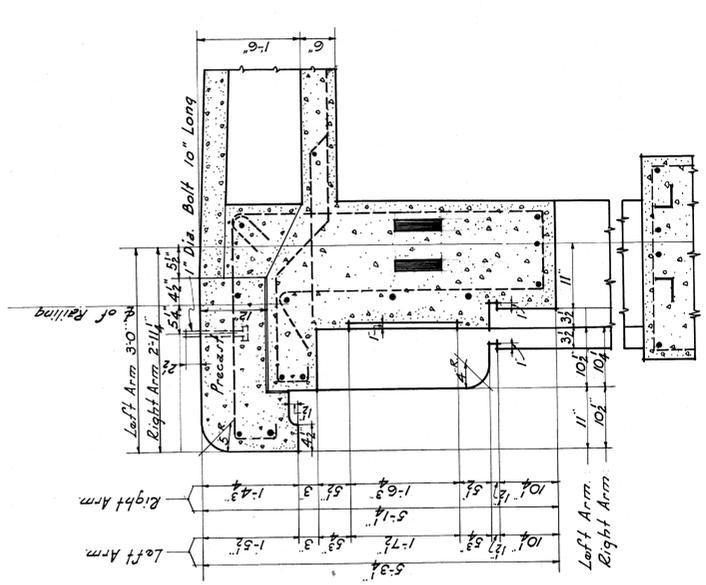
PLAN
Scale 1/4" = 1'-0"

SECTION A-A
Scale 1/4" = 1'-0"

PLAN & SECTIONS - PIER 10 & 3	
CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS JOSEPH A. MARTIN, COMMISSIONER	
BELLE ISLE BRIDGE	
DRAWN BY: W.H.P. TRACED BY: W.H.P.	ENGINEERS ESSELSTYN, MURPHY & HANFORD
CH. BY: DATE: 9-10-20	ASSOCIATE LEWIS M. GRAM, DETROIT, MICH.
JOB NO. 210	SHEET NO. 15



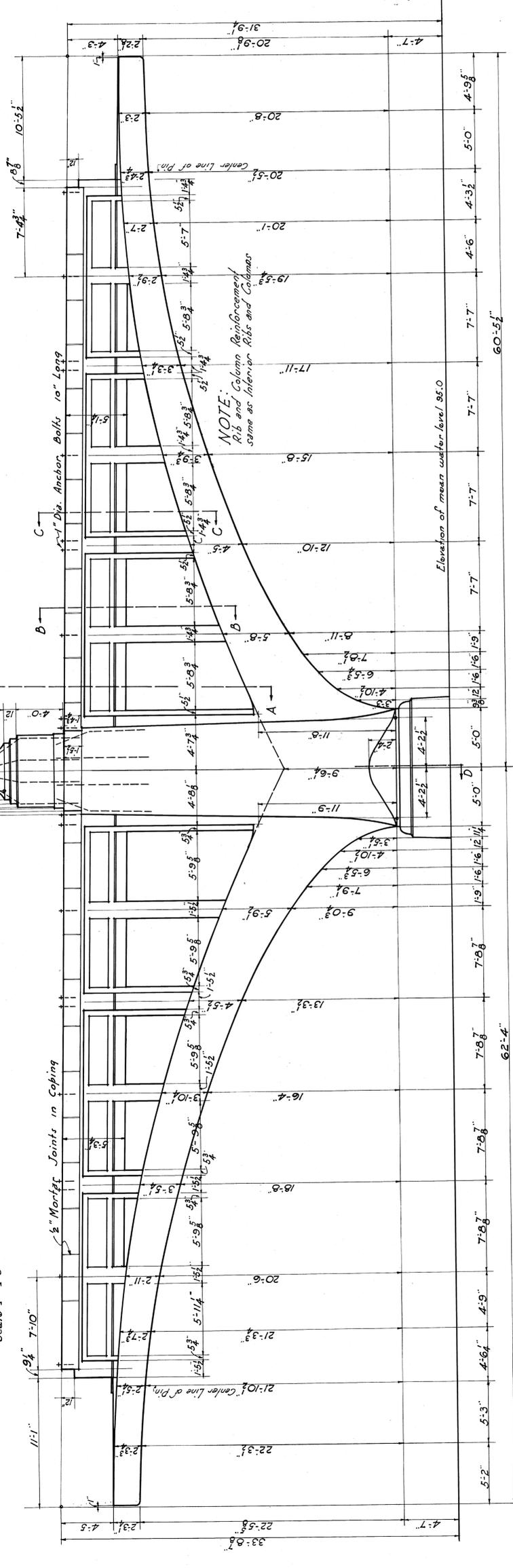
SECTION A-A
Scale 1/2" = 1'-0"



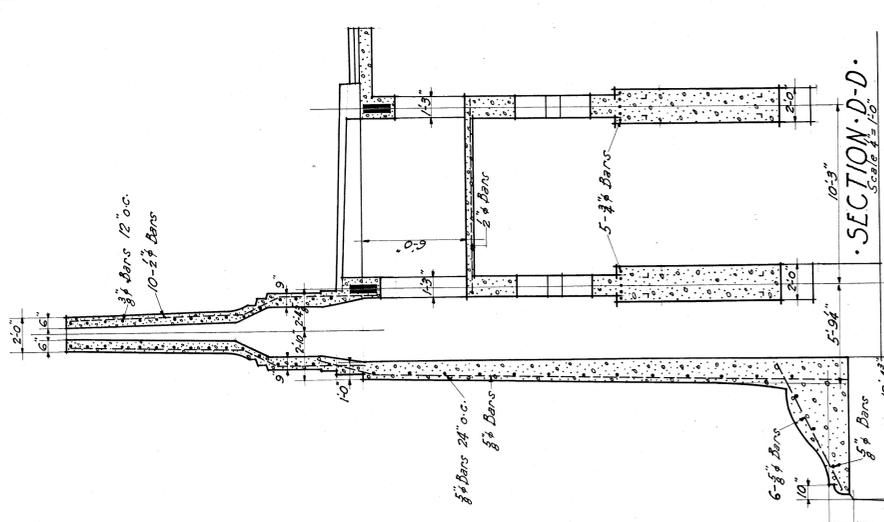
SECTION B-B
Scale 1/2" = 1'-0"



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



WEST ELEVATION PIER 11
Scale 1/4" = 1'-0"



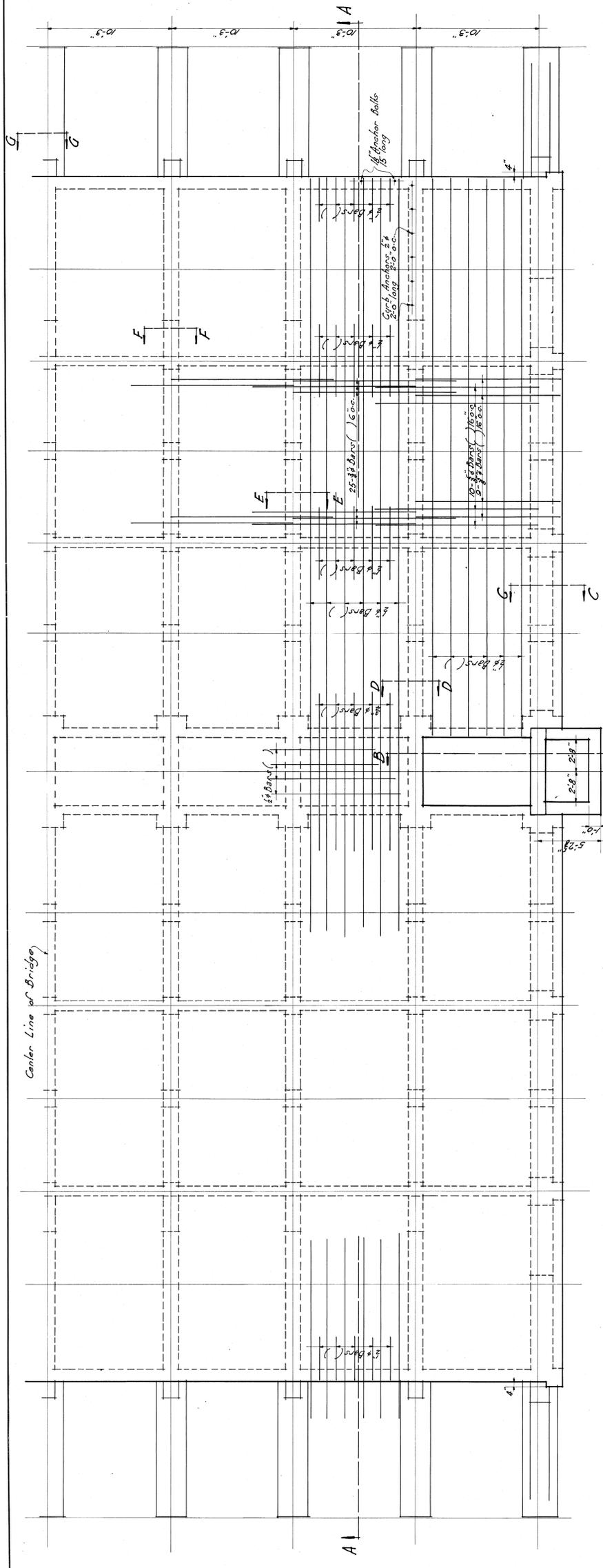
SECTION D-D
Scale 1/2" = 1'-0"

DETAILS PIER 5-11-2

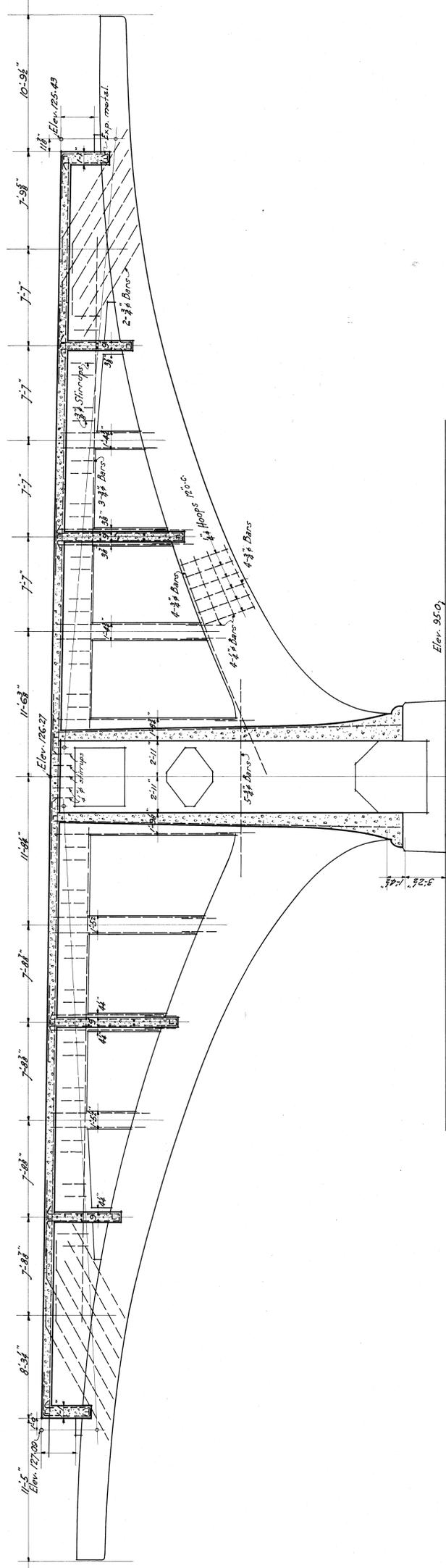
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

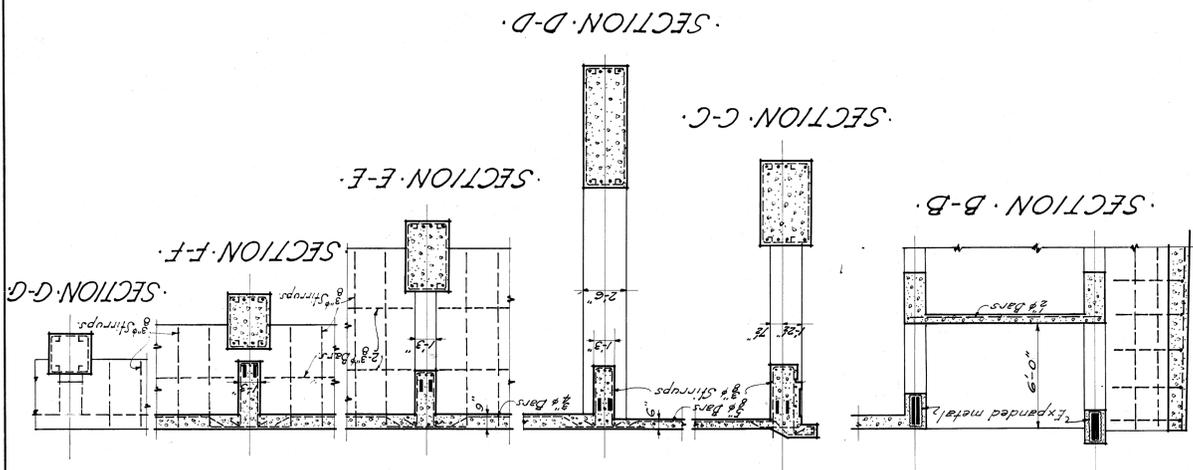
JOHN NO. **210**
ESSELSTYN, MURPHY & HANFORD
ENGINEERS
CHIEF BY DATE 9-10-20
LEWIS M. GRAM, ASSOCIATE
DETROIT, MICH.
SHEET NO. **16**



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

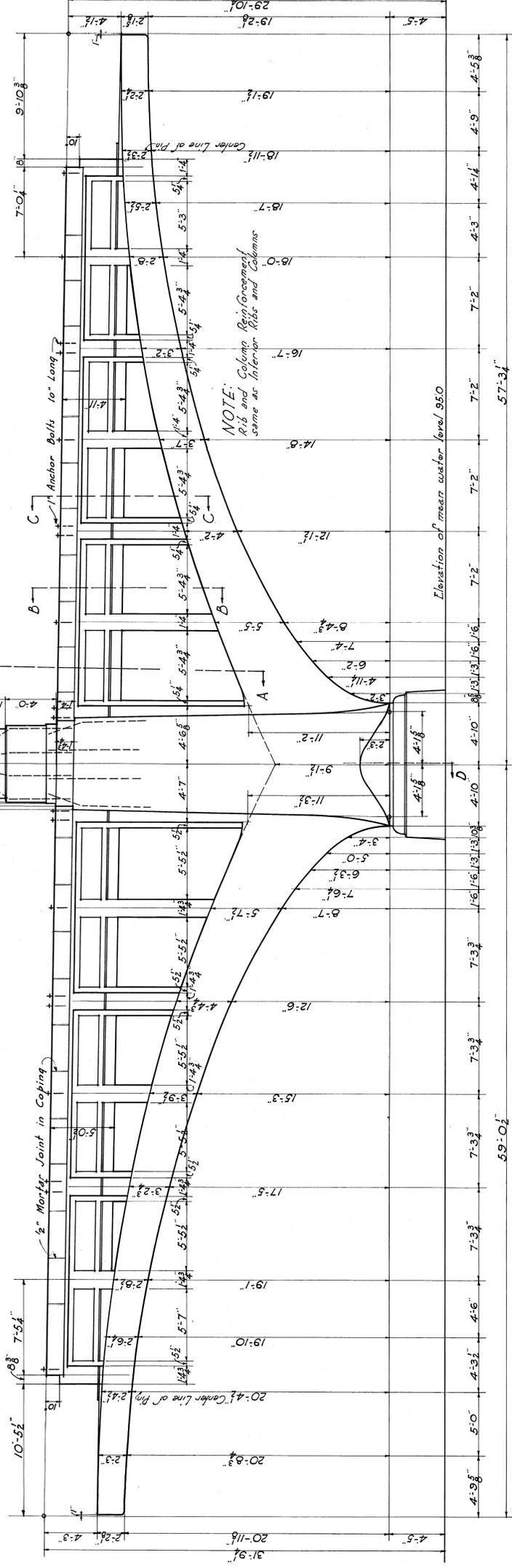
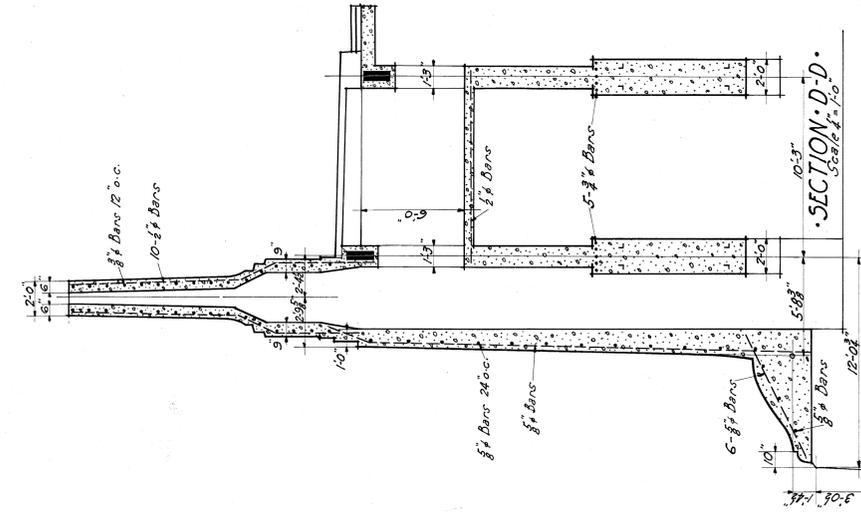
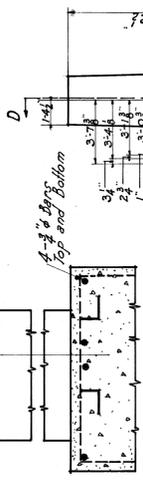
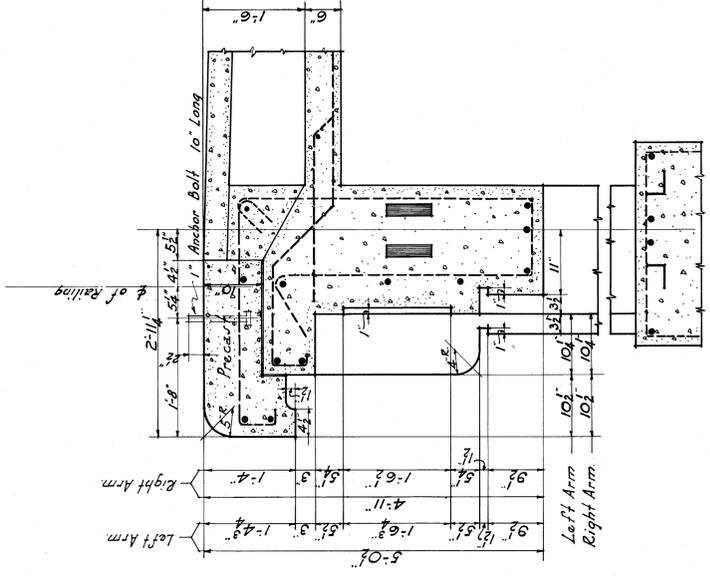
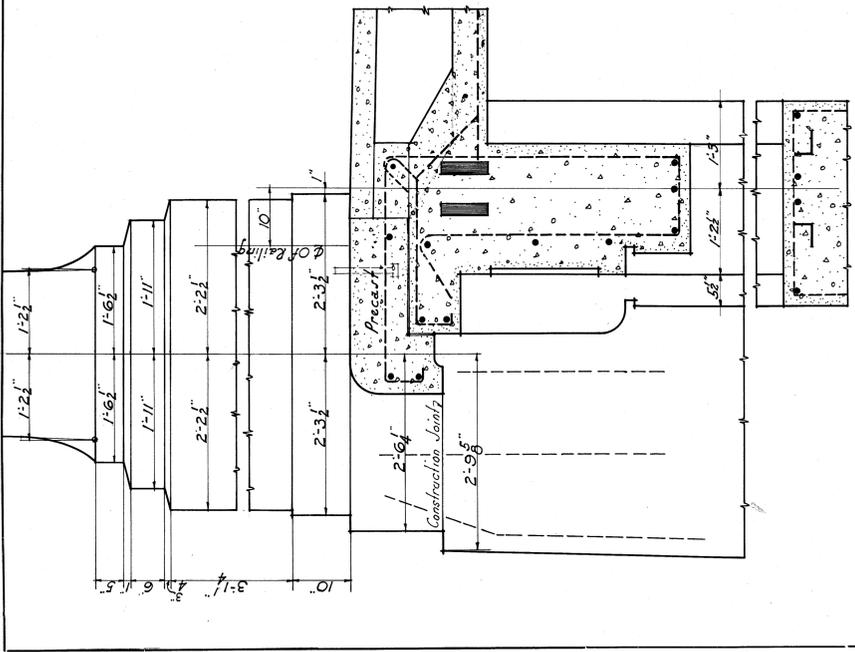


SECTION A-A
Scale 1/4" = 1'-0"



NOTE:
Reinforcement for all Columns
4# 8# Bars - 8# Hoops 12" o.c.

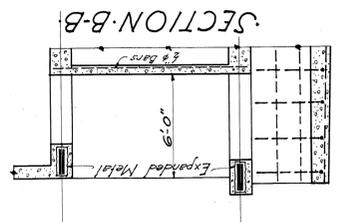
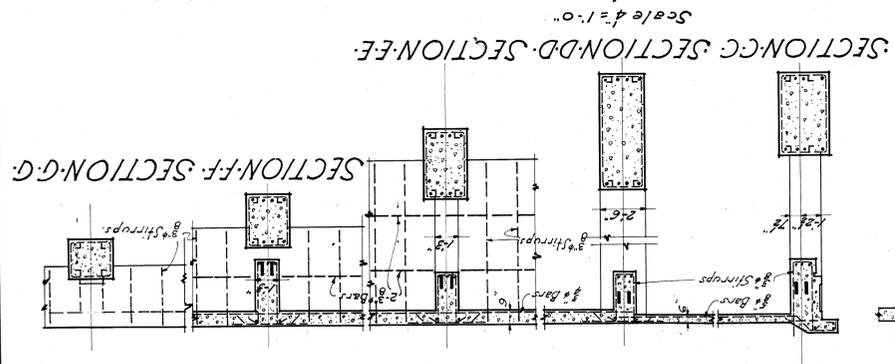
PLAN & SECTIONS PER 11 & 12	
CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS JOSEPH A. MARTIN, COMMISSIONER	
BELLE ISLE BRIDGE	
DRAWN BY W.H.B.	JOB NO. 210
TRACED BY W.H.B.	ENGINEERS ESSELSTYN, MURPHY & HANFORD
CH. BY	DATE 9./10./20
REVISED	ASSOCIATE SHEET NO. 17
	LEWIS M. GRAM, DETROIT, MICH.



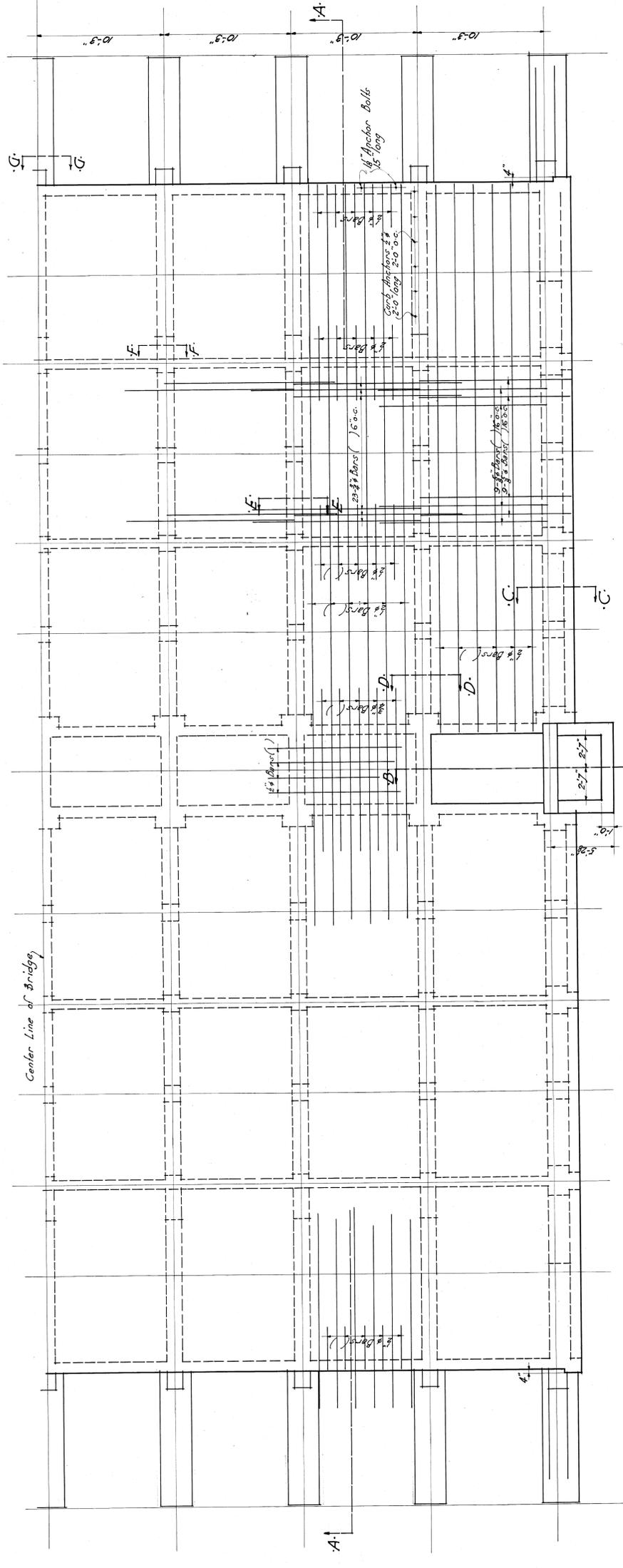
DETAILS PIER 5.12.1

CITY OF DETROIT		DEPARTMENT OF PUBLIC WORKS		JOB NO. 210	
JOSEPH A. MARTIN, COMMISSIONER		BELLE ISLE BRIDGE		ENGINEERS	
DRAWN BY: E.T.		ESSELSTYN, MURPHY & HANFORD		SHEET NO. 18	
CHECKED BY: J.M.		ASSOCIATE ENGINEERS		REVISIONS	
DATE: 9.10.20		LEWIS M. GRAM		DETROIT, MICH.	

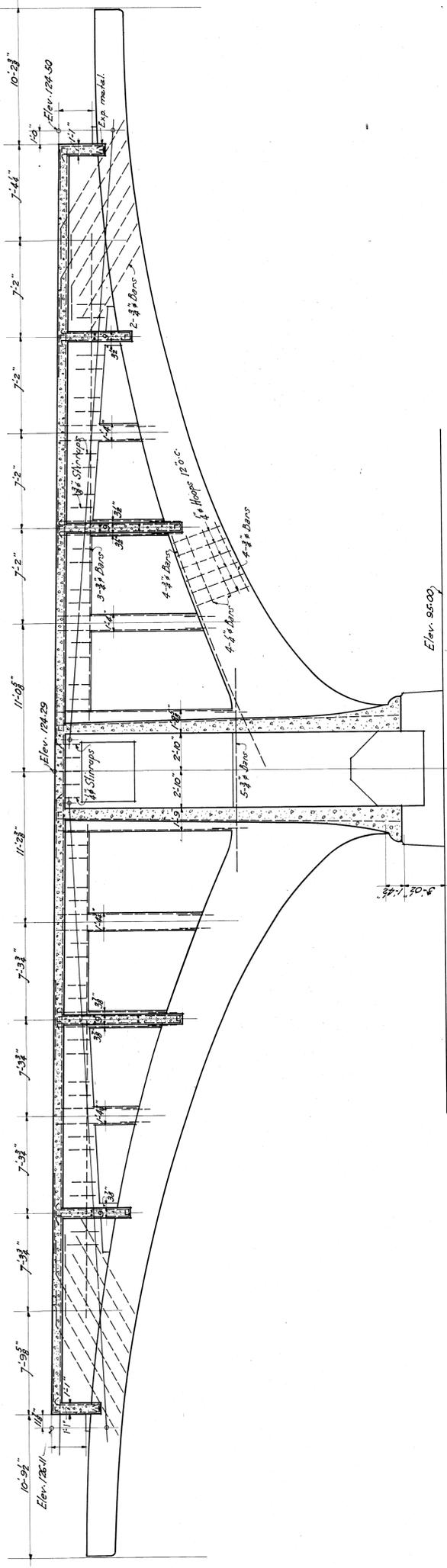
WEST ELEVATION PIER 12 EAST ELEVATION PIER 1



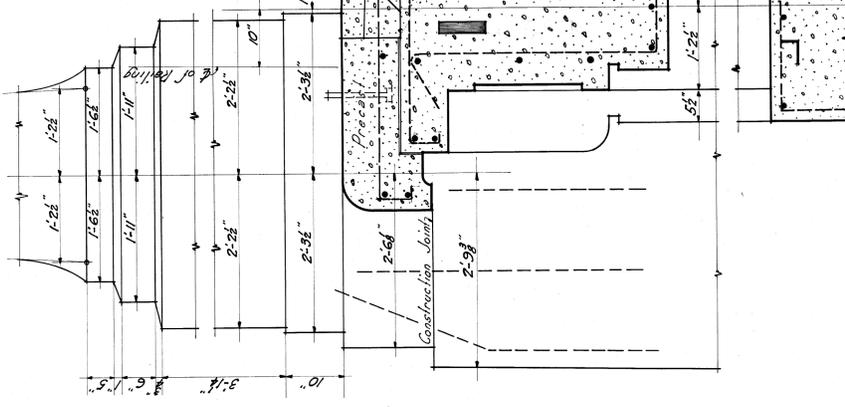
NOTE:
 Reinforcement for all Columns
 4-#8 Bars-#8 Hoops 12" o.c.



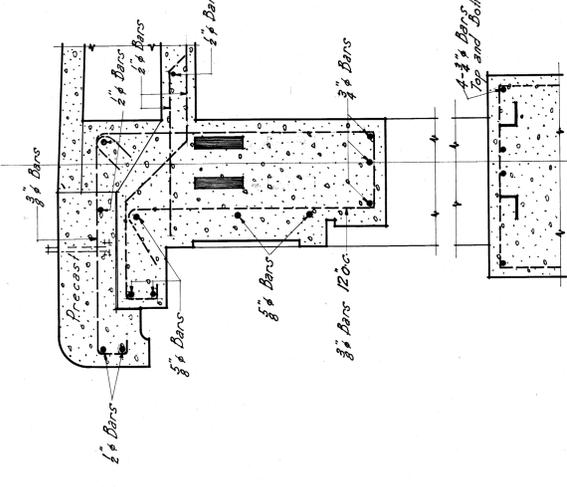
PLAN
 Scale 4"=1'-0"



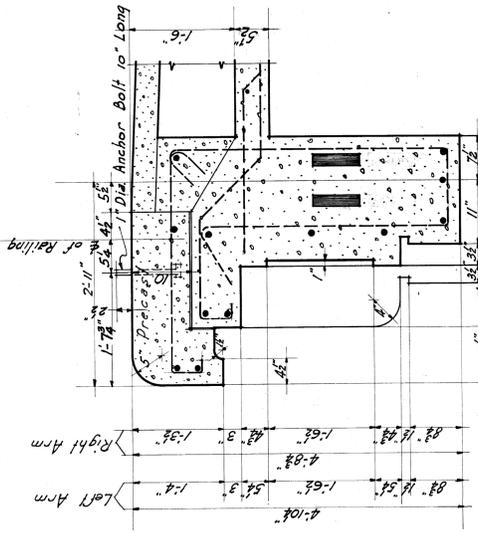
SECTION-A-A
 Scale 4"=1'-0"



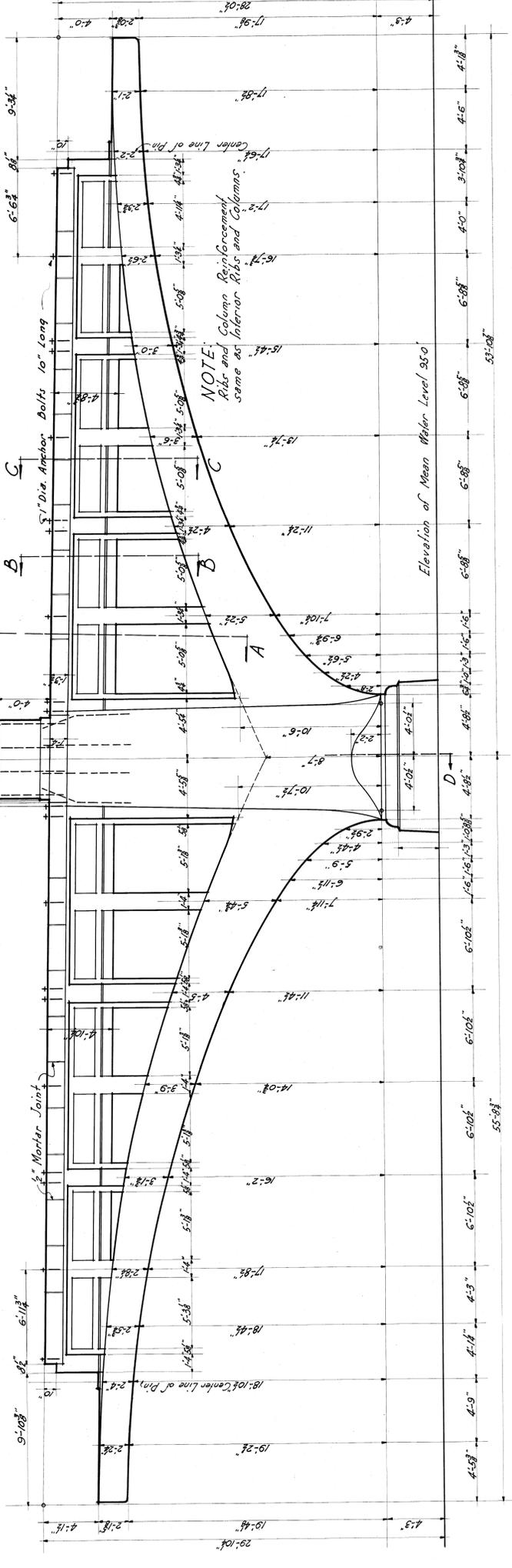
SECTION A-A
Scale 1/2" = 1'-0"



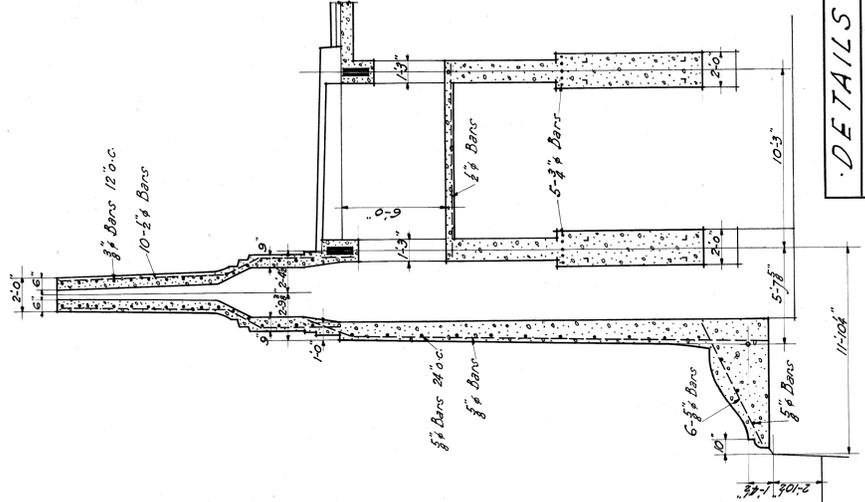
SECTION B-B
Scale 1/2" = 1'-0"



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

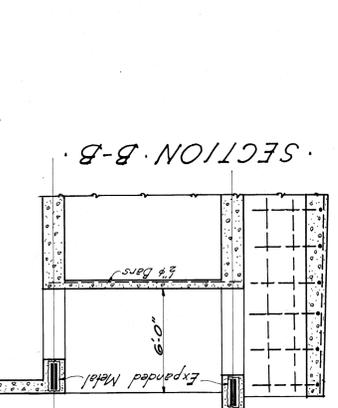
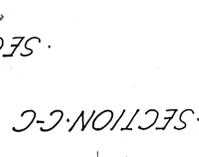
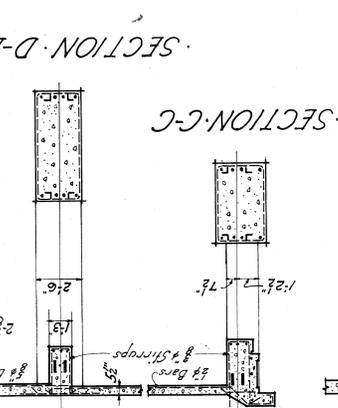
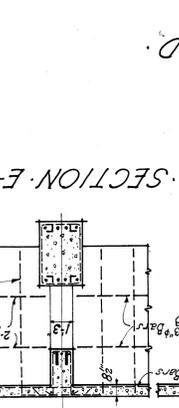
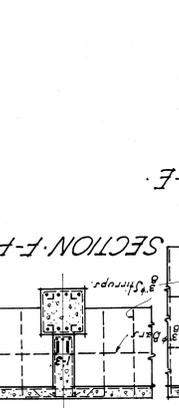
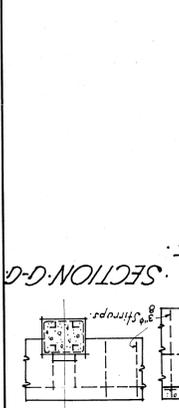
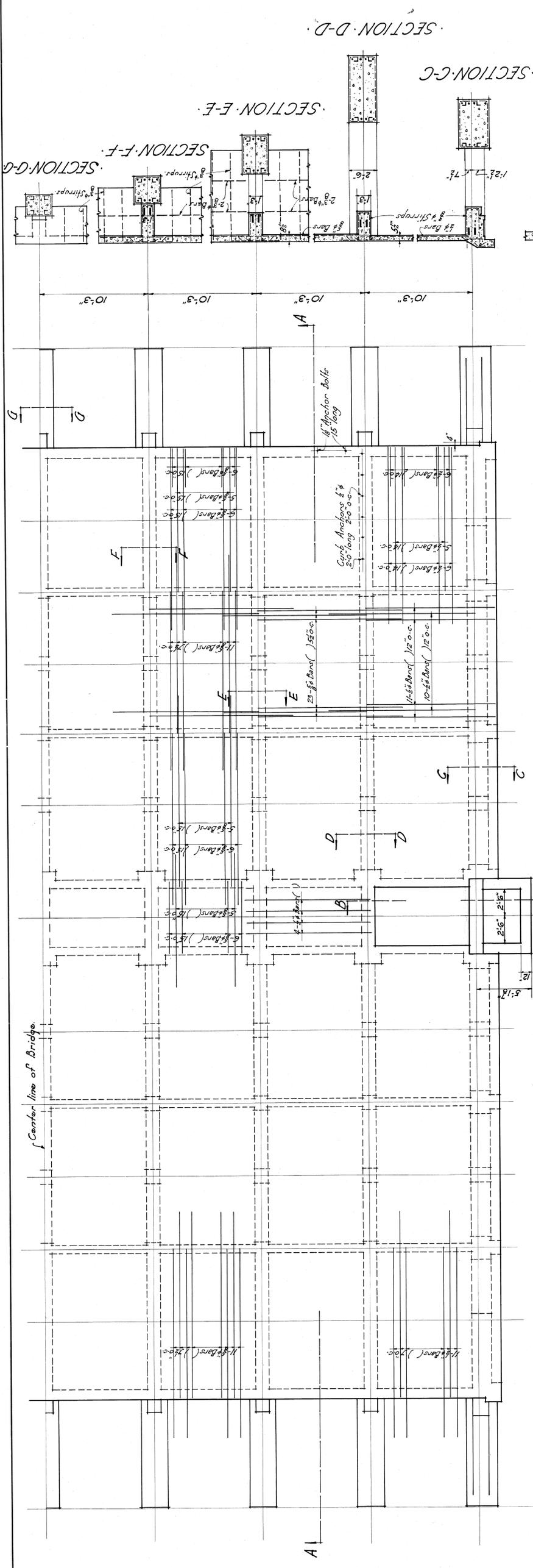


SECTION D-D
Scale 1/4" = 1'-0"

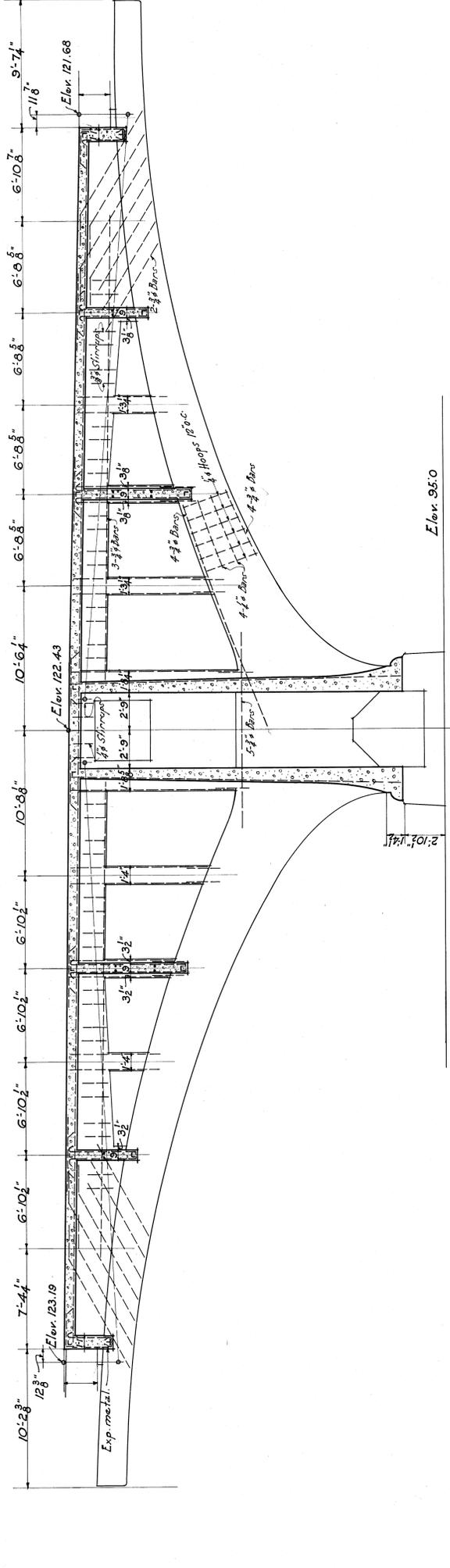


CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS JOSEPH A. MARTIN, COMMISSIONER		BELLE ISLE BRIDGE	
DRAWN BY W.H.B. TRACED BY W.H.B. CH. BY DATE: 9-10-20 REVISED	ESSELSTYN, MURPHY & HANFORD ENGINEERS LEWIS M. GRAM, ASSOCIATE DETROIT, MICH.	JOB NO. 210.	SHEET NO. 20.

WEST ELEVATION PIER 13
Scale 1/4" = 1'-0"

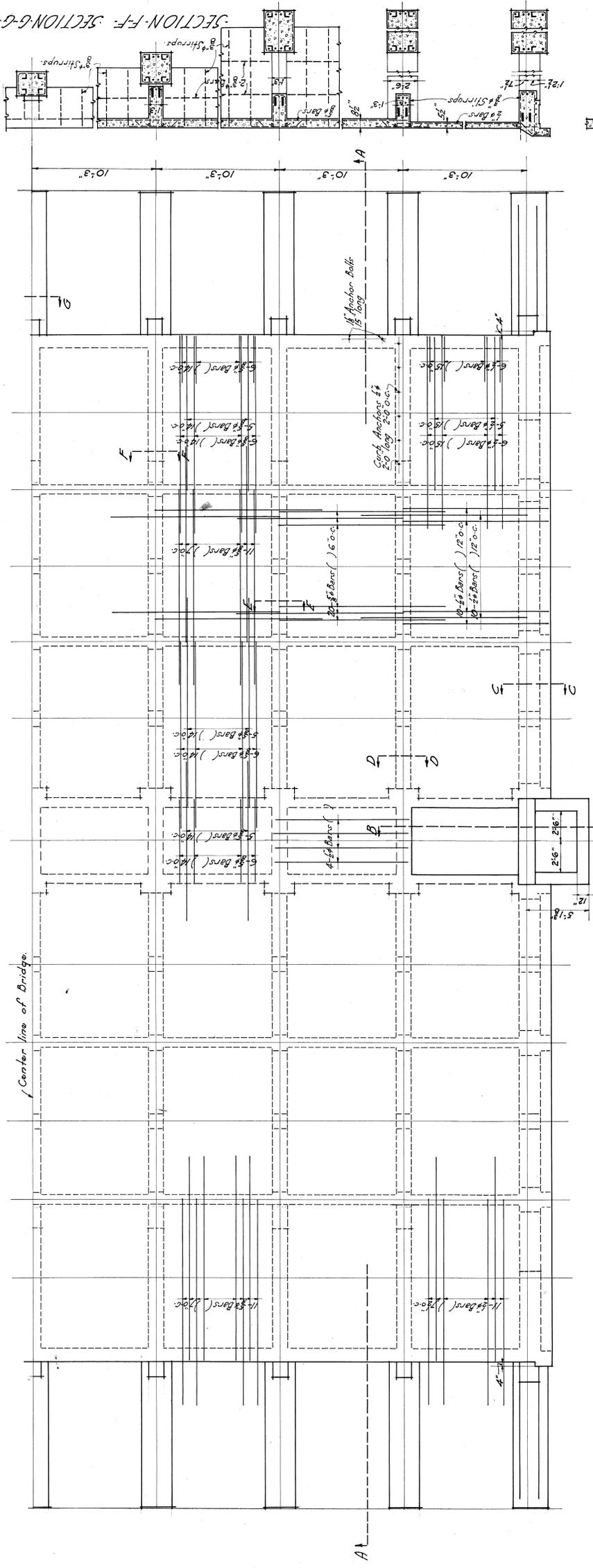


NOTE:
Reinforcement for all Columns
4 #8 Bars - 3 # Hoops 12'0" c.

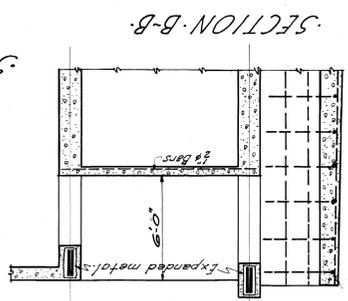


SECTION A-A
Scale 1/4" = 1'-0"

PLAN & SECTIONS PIER 13	
CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS JOSEPH A. MARTIN, COMMISSIONER	
BELLE ISLE BRIDGE	
DRAWN BY W.H.P.	JOB NO. 210
TRACED BY W.H.P.	ENGINEERS ESSELSTYN, MURPHY & HANFORD
CHK. BY	DATE 9-20-20
REVISED	ASSOCIATE SHEET NO. 21
	LEWIS M. GRAM, DETROIT, MICH.

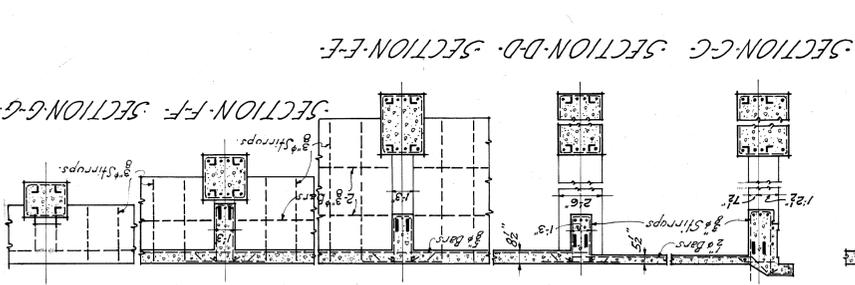


PLAN.
Scale 1/4"=1'-0"

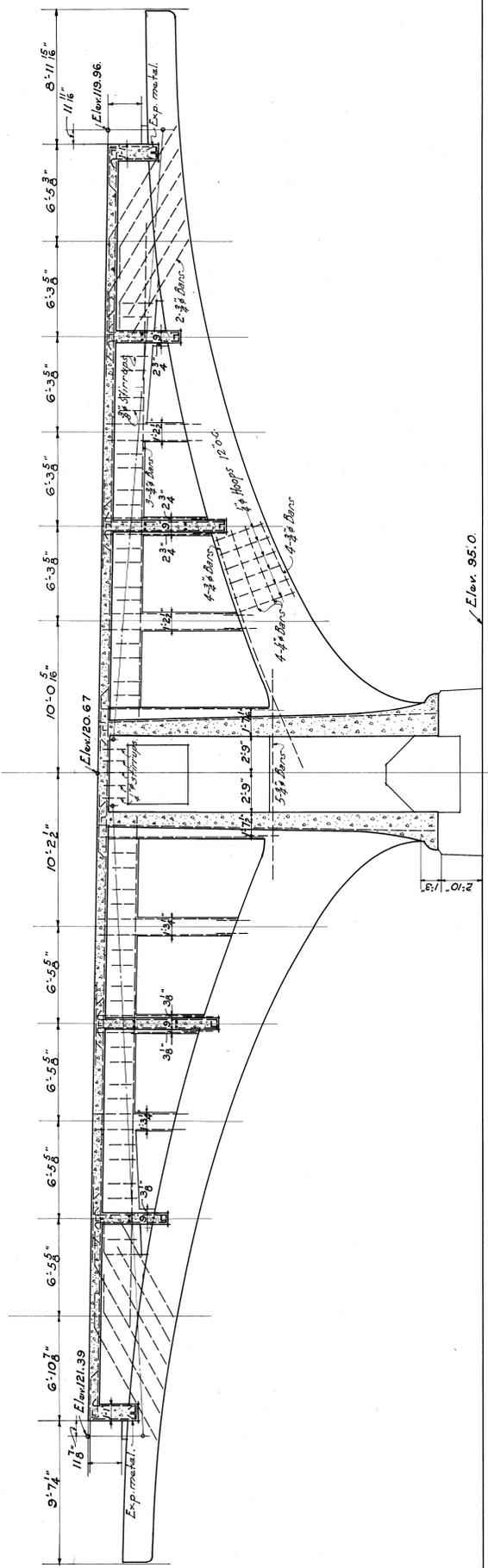


SECTION B-B.

NOTE:
Reinforcement for all Columns
4 #8 Bars - 3' Hoops 12" O.C.



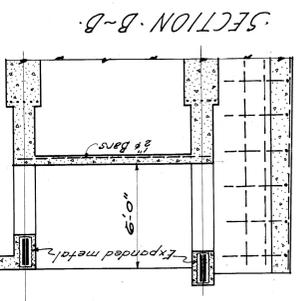
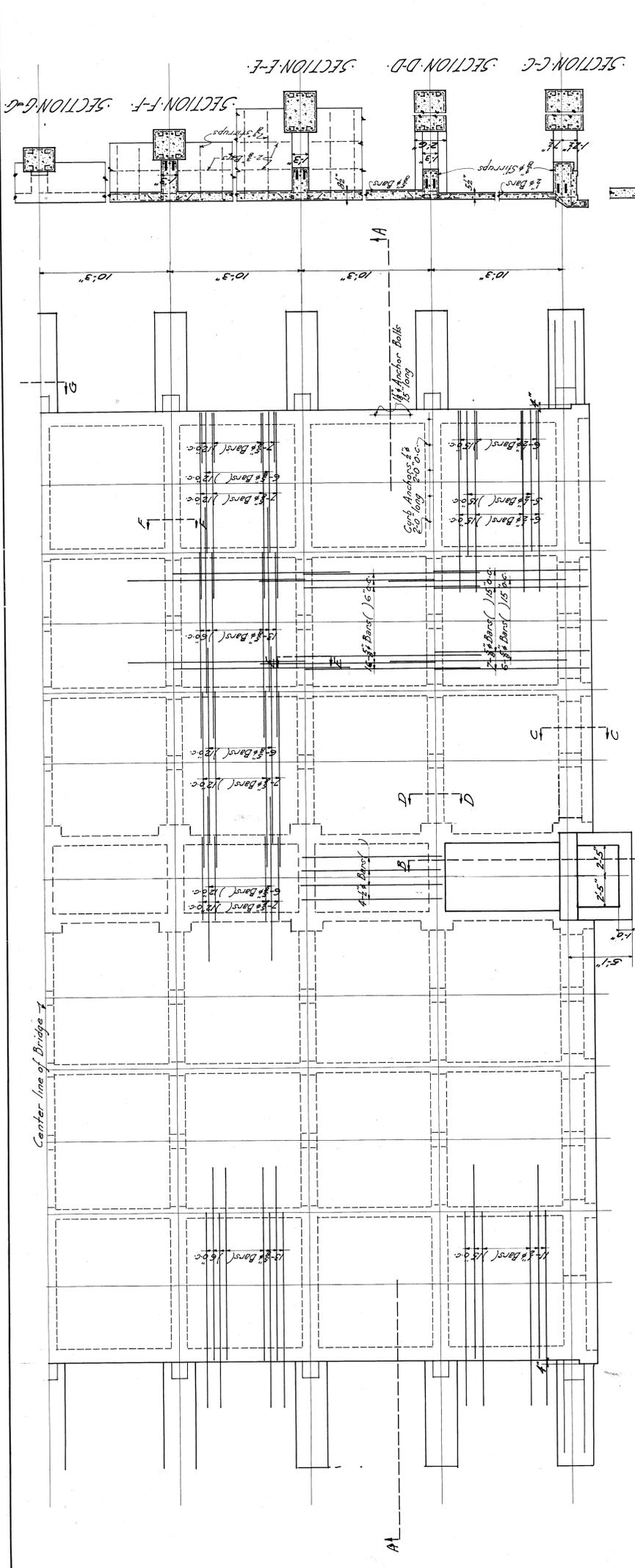
SECTION C-C SECTION D-D SECTION E-E SECTION F-F SECTION G-G



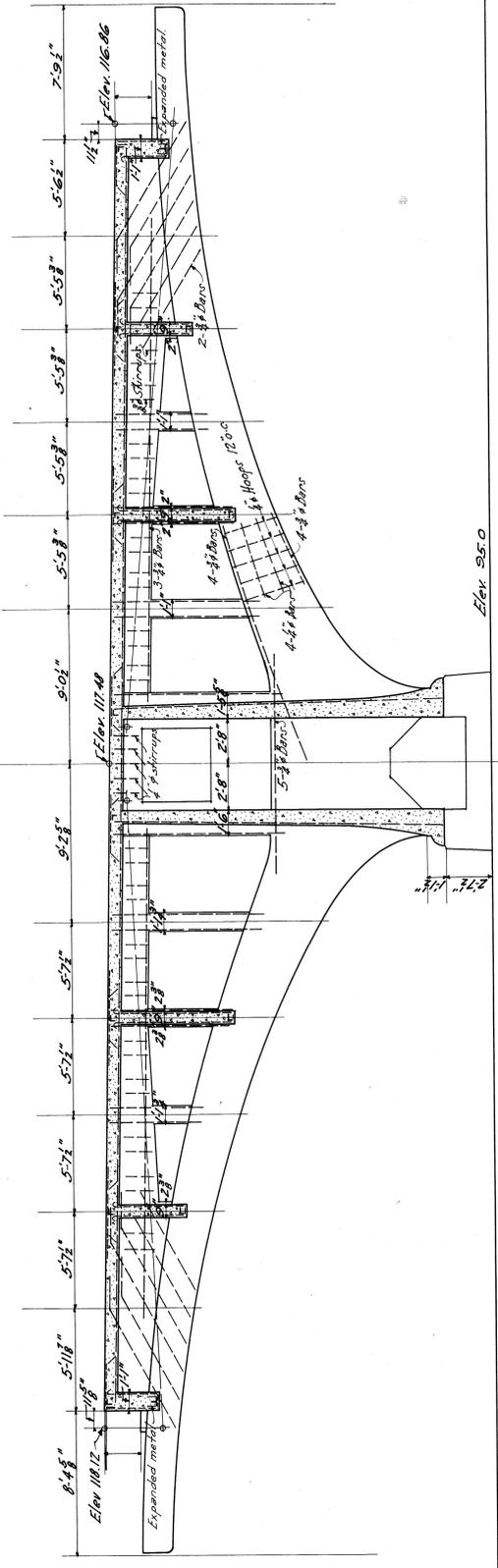
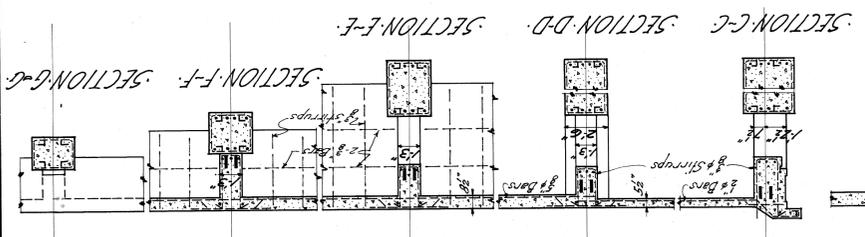
SECTION A-A.
Scale 1/4"=1'-0"

PLAN & SECTIONS PIER 14.		CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS JOSEPH A. MARTIN, COMMISSIONER		JOB NO. -210-	
Belle Isle Bridge		ESSELSTYN, MURPHY & HANFORD ENGINEERS		SHEET NO. -23-	
DRAWN BY H.B.H.		LEWIS M. GRAM, ASSOCIATE		DETROIT, MICH.	
TRACED BY H.B.H.		REVISED			

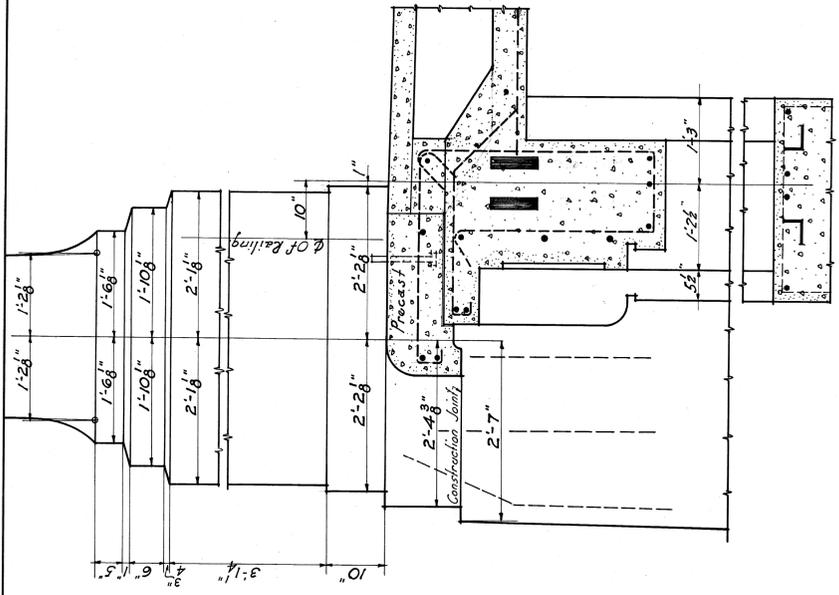
FILE BW-295



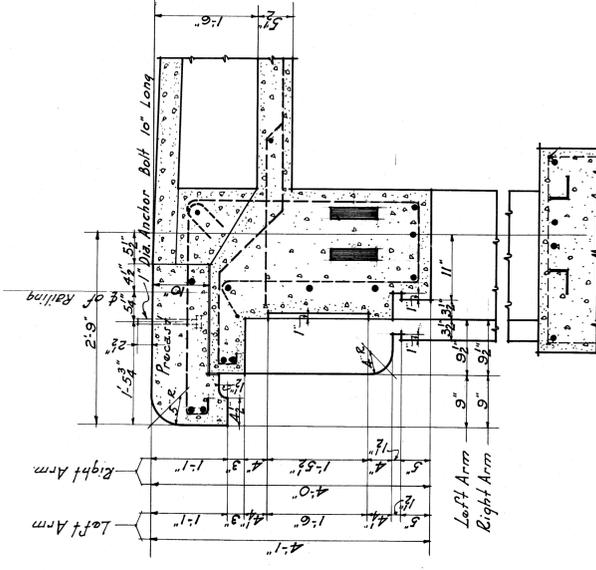
NOTE:
 Reinforcement for all Columns
 4 #8 Bars - 8 # Hoops 12 @ 12"



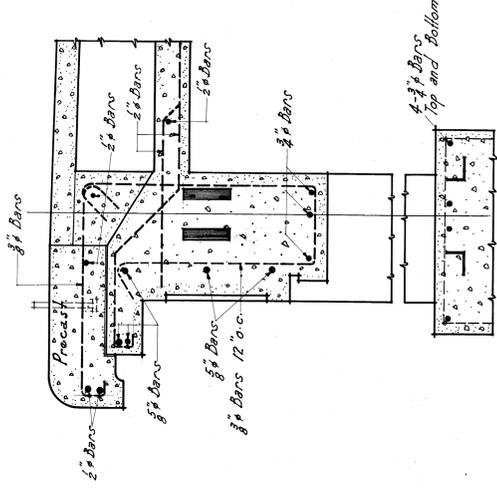
SECTION A-A.
 Scale 1/4" = 1'-0"



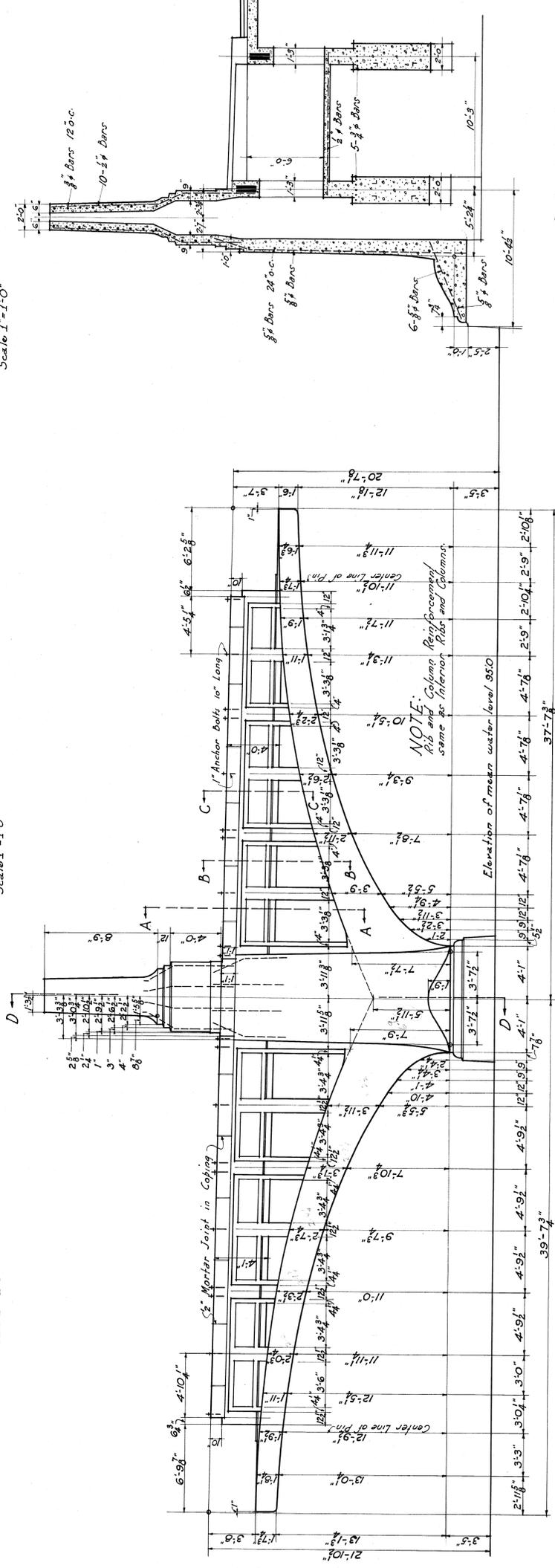
SECTION A-A
Scale 1" = 1'-0"



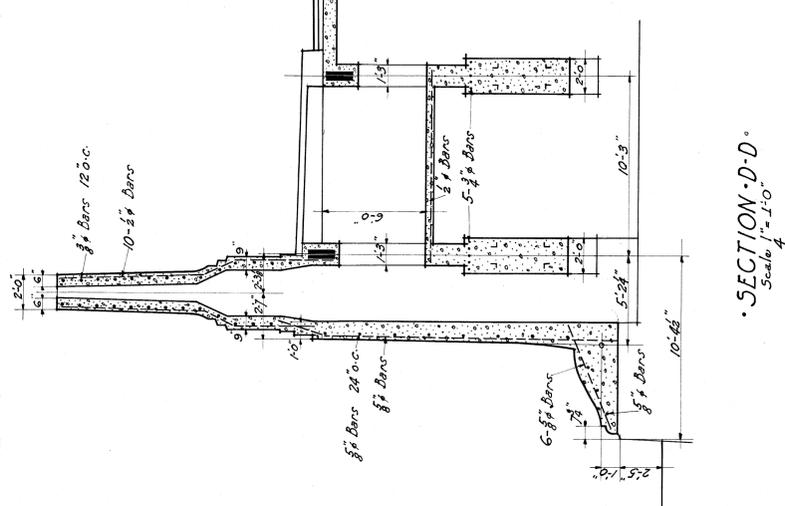
SECTION C-C
Scale 1" = 1'-0"



SECTION B-B
Scale 1" = 1'-0"



WEST ELEVATION PIER 10
Scale 1" = 1'-0"



SECTION D-D
Scale 1" = 1'-0"

DETAILS PIER 10

CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS

JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

ENGINEERS

ESSELSTYN, MURPHY & HANFORD

JOB NO.

210

ASSOCIATE

SHEET NO.

30

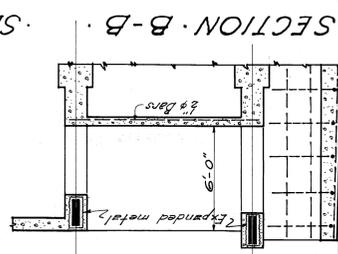
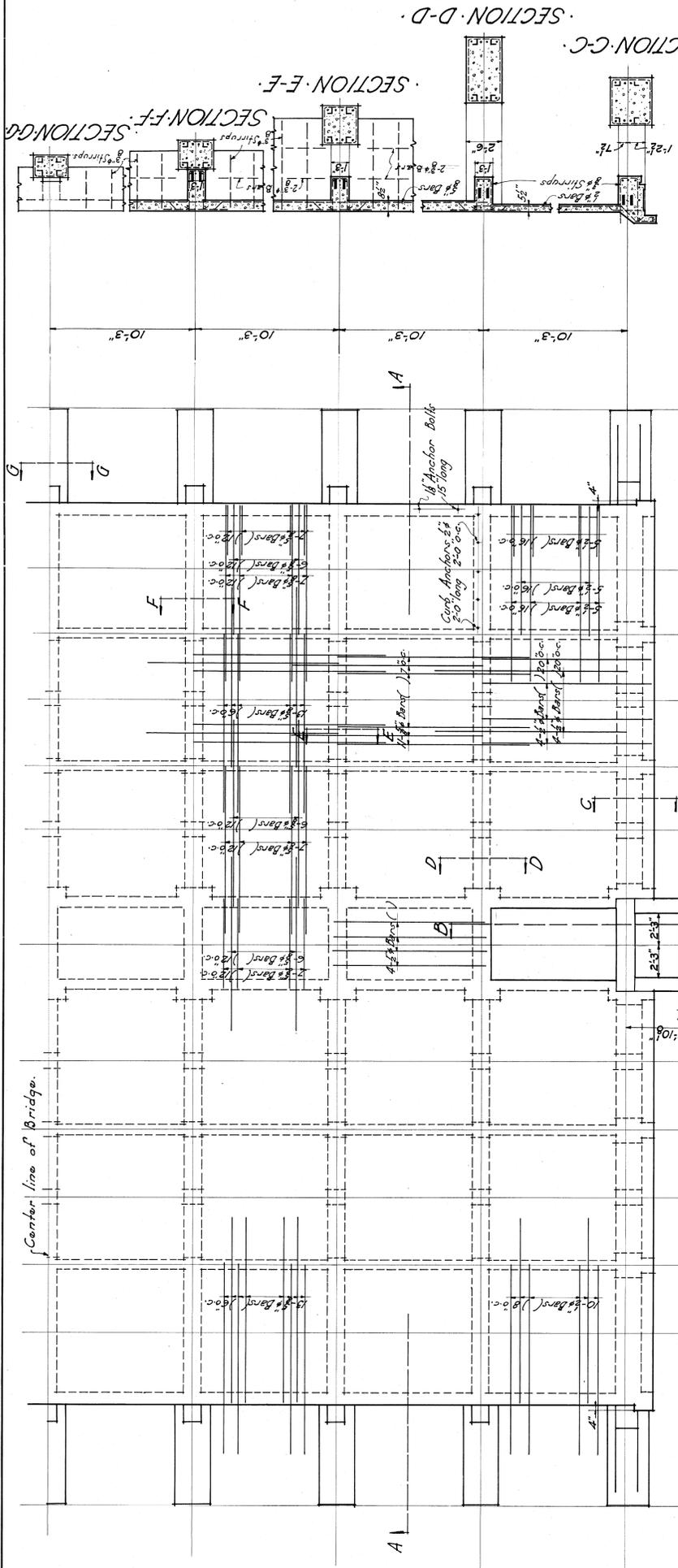
DETROIT, MICH.

DATE 9-10-20

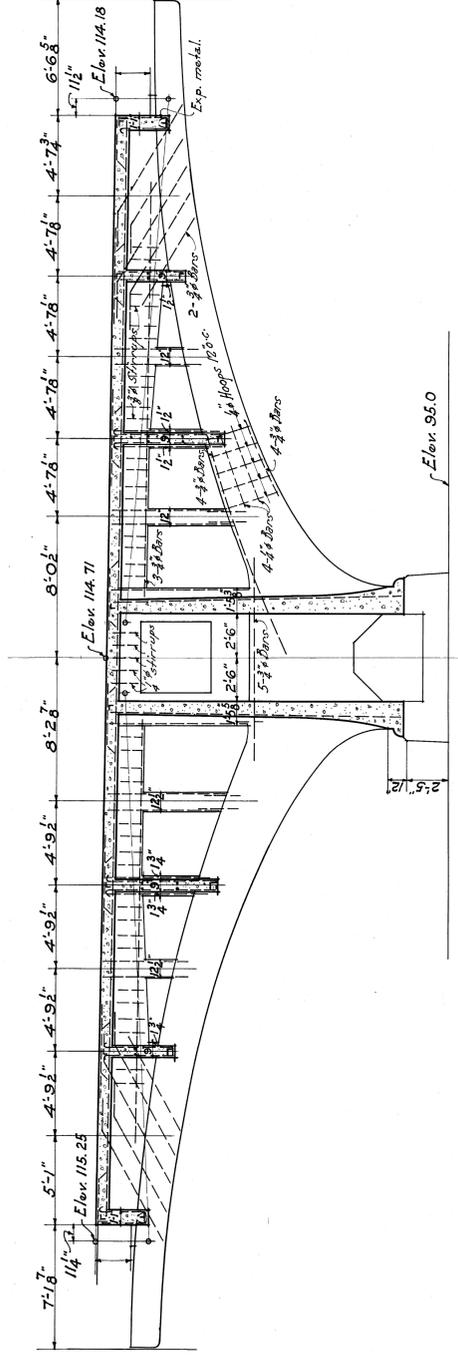
REVISION

LEWIS M. GRAM

File B Wel-298

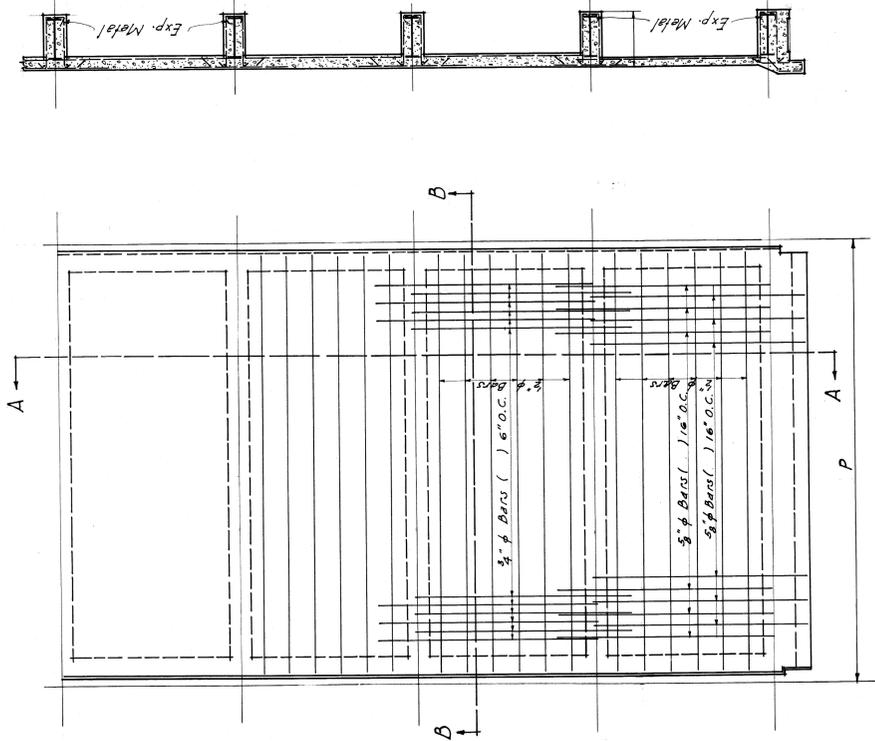


NOTE:
 Reinforcement for all Columns
 4-#8 Bars - #4 Hoops 12" o.c.

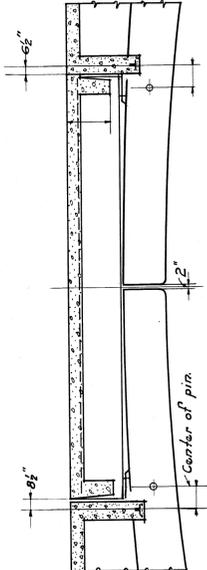


SECTION A-A
 Scale 1/4" = 1'-0"

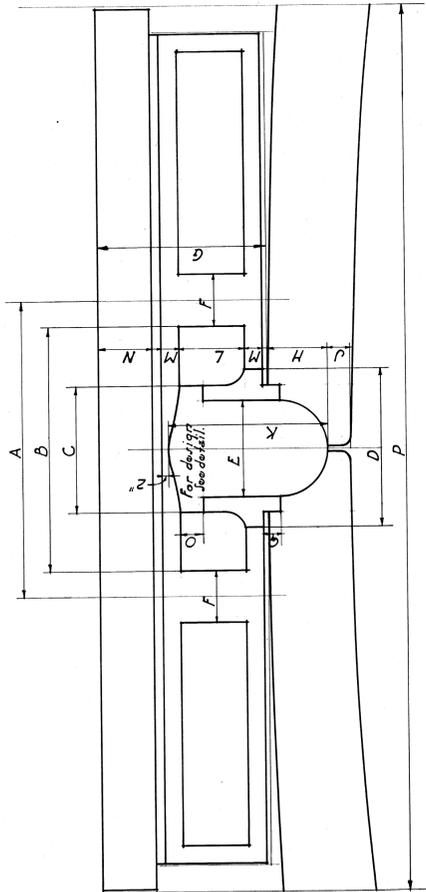
PLAN
 Scale 1/4" = 1'-0"



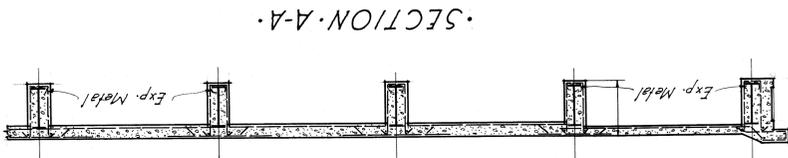
• PLAN •



• SECTION B-B •



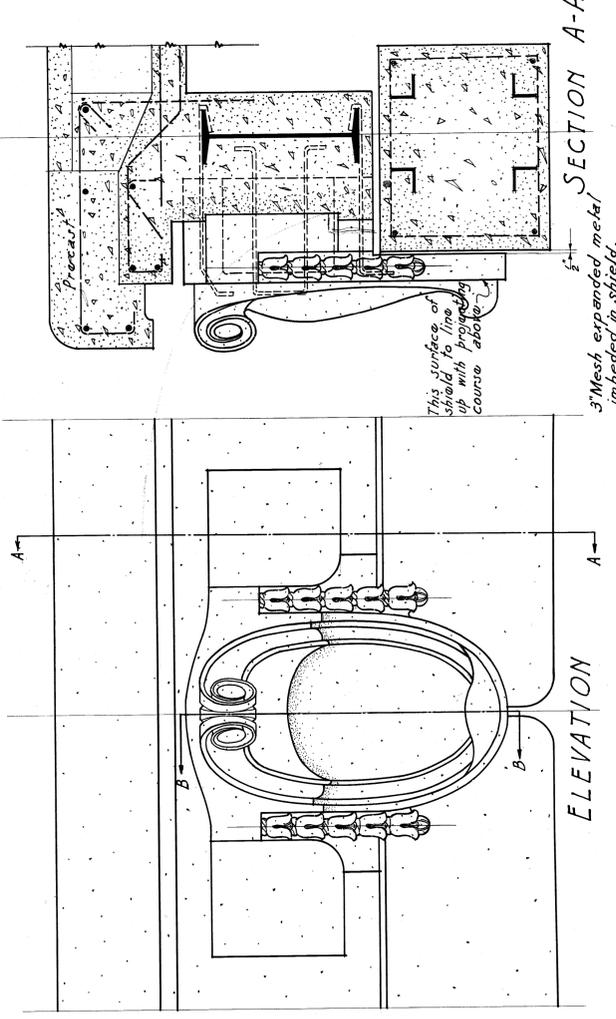
• ELEVATION •



• SECTION A-A •

SCHEDULE OF SHIELD

SPANS INC.	3-4	3-3	2-3	1-2	0-1	13-14	14-15	15-16	16-17	17-18	18-19
A	8-5 1/2	8-2 1/2	7-10 1/2	7-5 1/2	7-0 1/2	6-7 1/2	6-2 1/2	5-9	5-4	4-10 1/2	4-5 1/2
B	6-1 1/2	6-8 1/2	6-5	6-0 1/2	5-8 1/2	5-4	4-1 1/2	4-7 1/2	4-3	3-10 1/2	3-5 1/2
C	3-7	3-7	3-4 1/2	3-3 1/2	3-1 1/2	3-0	2-10 1/2	2-8 1/2	2-7 1/2	2-5 1/2	2-4
D	4-6	4-6	4-3 1/2	4-1 1/2	3-1 1/2	3-0 1/2	3-7 1/2	3-5 1/2	3-3 1/2	3-1 1/2	2-1 1/2
E	2-9	2-9	2-7	2-5 1/2	2-4	2-2 1/2	2-1	1-1 1/2	1-10	1-8 1/2	1-7
F	1-6	1-6	1-5 1/2	1-4 1/2	1-4	1-3 1/2	1-2 1/2	1-1 1/2	1-1	1-0 1/2	1-0
G	4-9	4-7	4-5	4-3	4-1 1/2	4-0	3-11	3-10	3-9	3-8	3-7
H	2-5	2-4 1/2	2-3 1/2	2-2 1/2	2-1 1/2	2-0 1/2	1-1 1/2	1-3 1/2	1-9	1-7 1/2	1-6
J	7 1/2	7 1/2	7 1/4	7 1/4	7	6 3/4	6 1/2	6 1/2	6 1/2	6 1/4	6
K	4-7 1/2	4-4 1/2	4-2 1/2	4-0 1/2	3-1 1/2	3-8 1/2	3-7 1/2	3-6	3-5	3-3 1/2	3-1
L	1-10 1/2	1-10 1/2	1-7 1/2	1-6 1/2	1-6 1/2	1-6 1/2	1-6 1/2	1-6 1/2	1-6	1-6	1-5 1/2
M	6	6	5 1/2	5 1/2	5 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4
N	1-6	1-6	1-5 1/2	1-4 1/2	1-4	1-3 1/2	1-3	1-2 1/2	1-2	1-1	1-1
O	8 1/2	8 1/2	8 1/4	8 1/4	8	7 3/4	7 1/2	7 1/2	7 1/2	7	6 3/4
P	25-3 3/4	24-6 3/4	23-7 1/2	22-3 3/4	21-0 1/2	19-5 1/2	18-6 1/2	17-3	16-0	14-8 1/2	13-3 1/2
Q	8	7 1/2	7 1/2	7 1/4	7	6 3/4	6 1/2	6 1/2	6 1/2	6	5 1/2
R	3-1 1/2	2-1 1/2	2-9 1/2	2-7 1/2	2-6	2-4 1/2	2-3 1/2	2-2 1/2	2-1 1/2	2-0 1/2	1-1 1/2



SECTION A-A

SECTION B-B OF SHIELD

• DETAIL OF SHIELD •

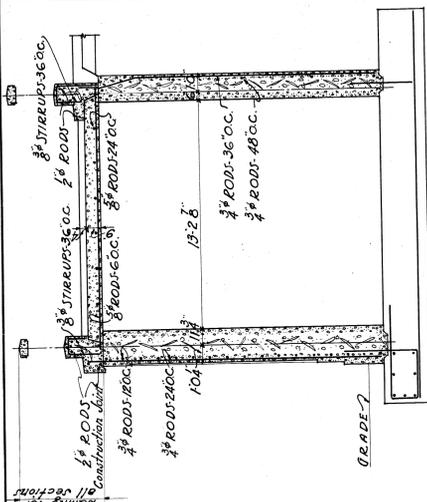
Scale 1" = 1'-0"

• DETAIL OF CENTER FLOOR UNIT •

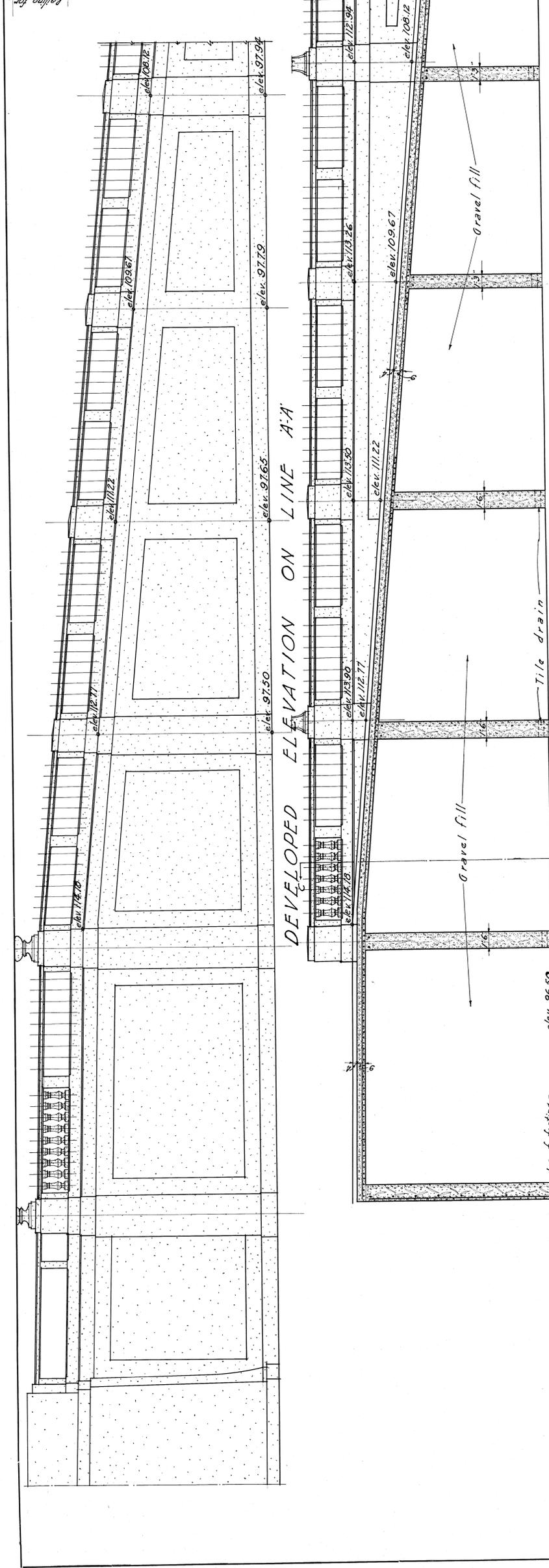
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

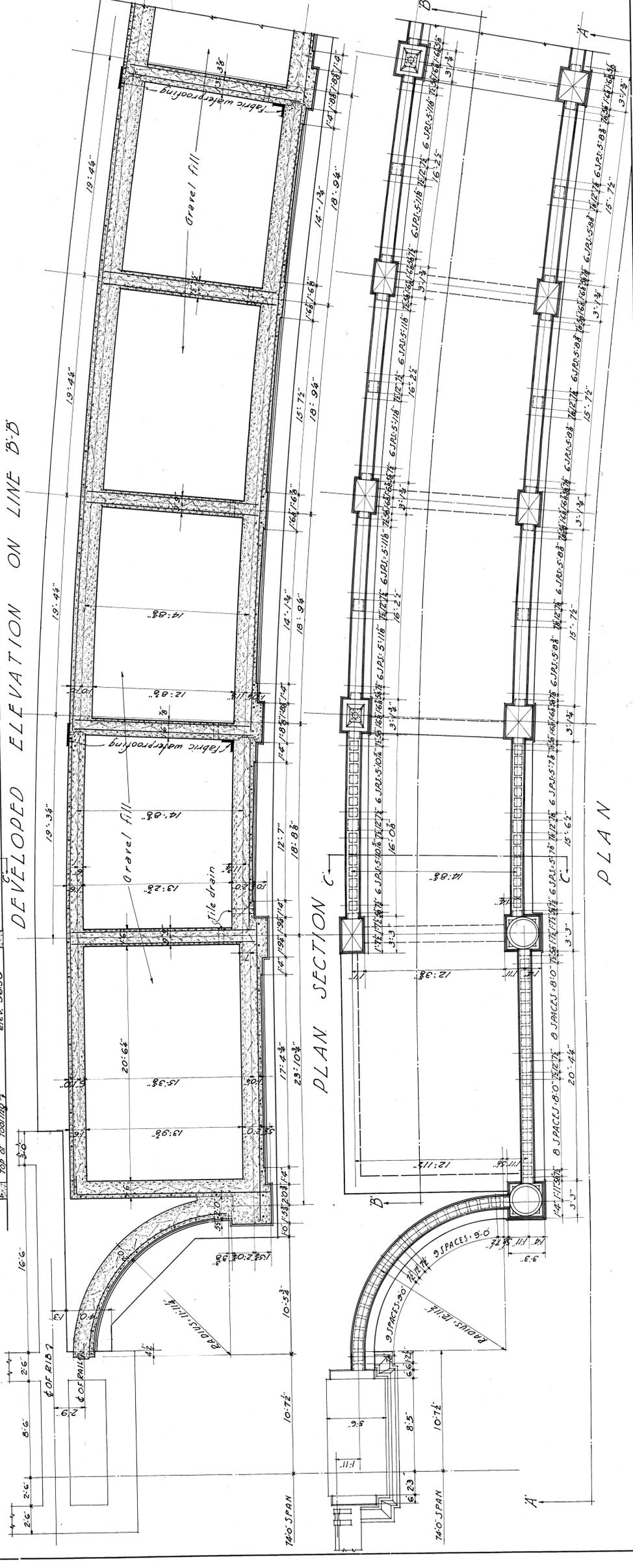
DRAWN BY: E.F. TRACED BY: L.F.	JOB NO. 210
DATE: 9/10/20	ENGINEERS: ESSELSTYN, MURPHY & HANFORD
REVISED	ASSOCIATE: LEWIS M. GRAM
	DETROIT, MICH.
	SHEET NO. 32



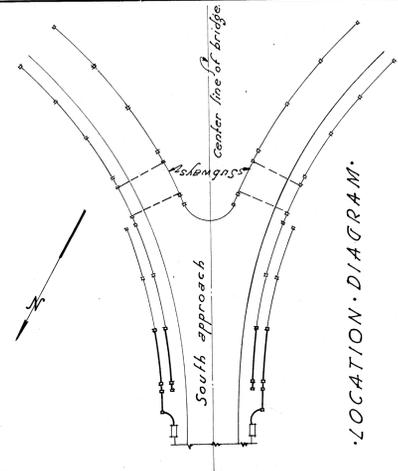
SECTION C-C



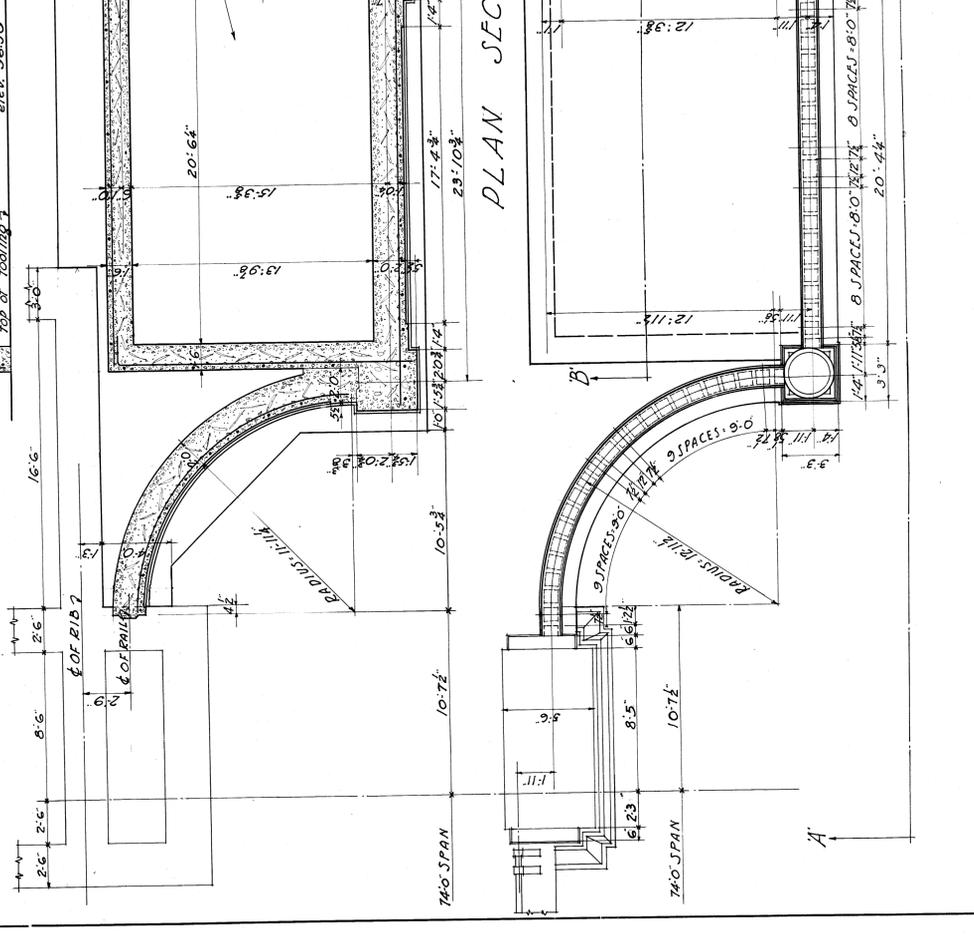
DEVELOPED ELEVATION ON LINE A-A



DEVELOPED ELEVATION ON LINE B-B



LOCATION DIAGRAM



PLAN SECTION C

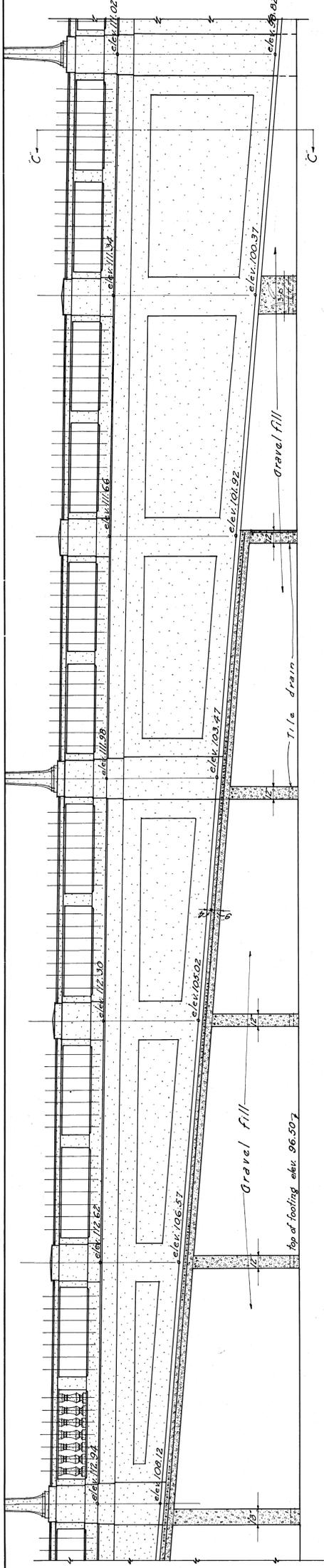
PLAN

WALL DETAILS - SOUTH APPROACH
 Scale 1/2" = 1'-0"

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

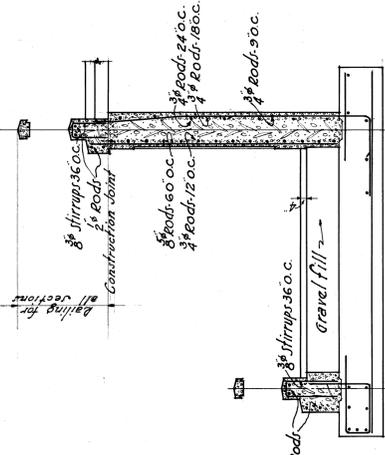
DRAWN BY M.C.C. ESSELSTYN, MURPHY & HANFORD
 TRACED BY M.L. ENGINEERS
 CH. BY DATE 9-10-20 LEWIS M. GRAM, ASSOCIATE
 REVISIONS SHEET NO. 34



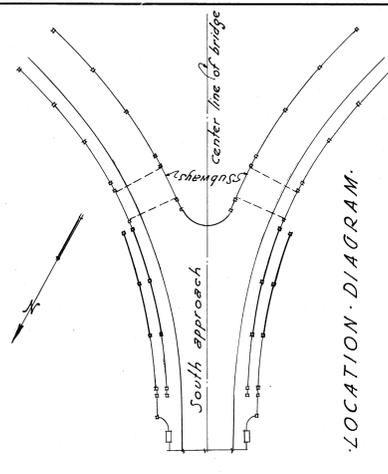
DEVELOPED SECTION ON LINE BB



ELEVATION ON LINE A-A

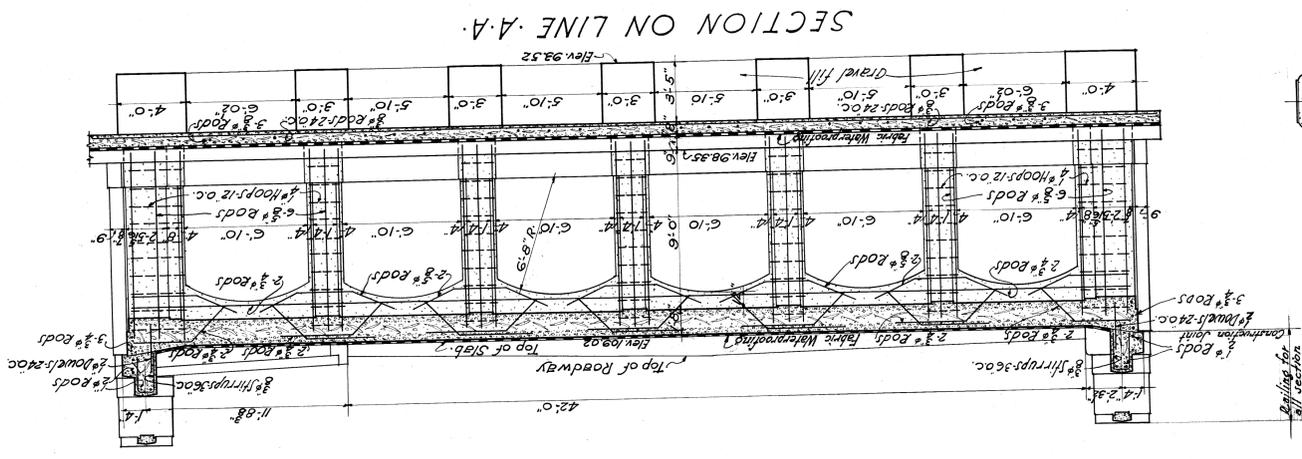
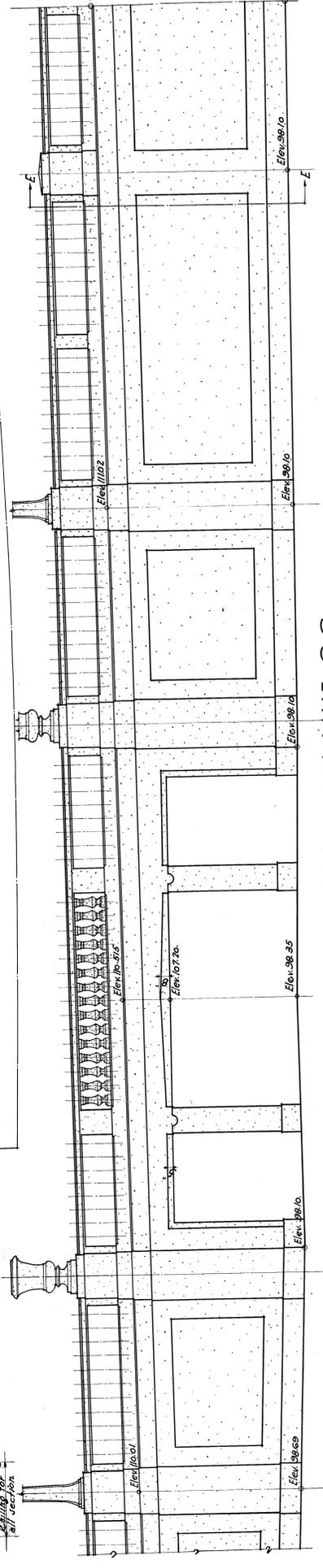
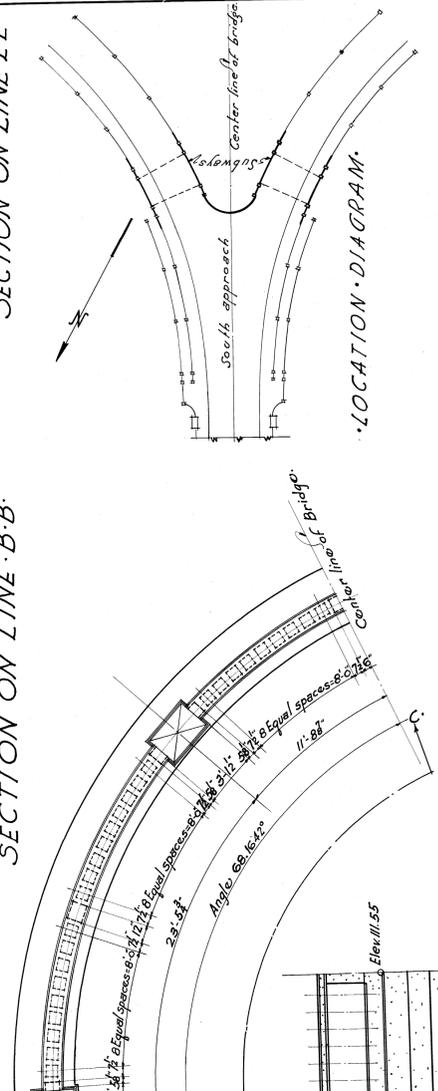
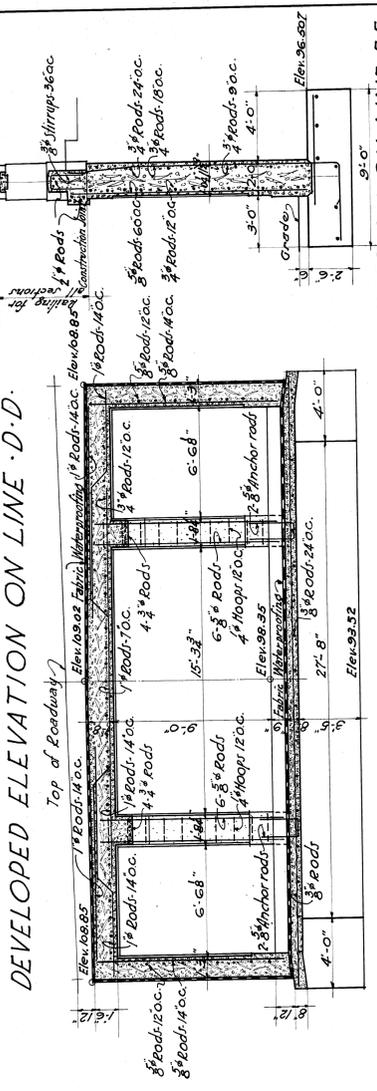
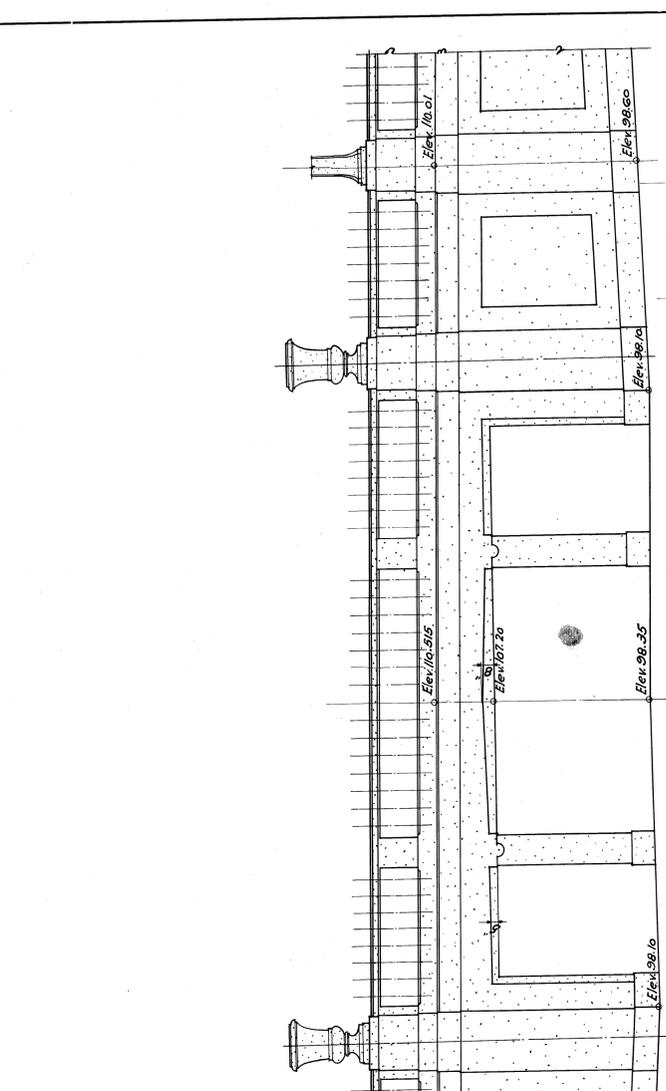
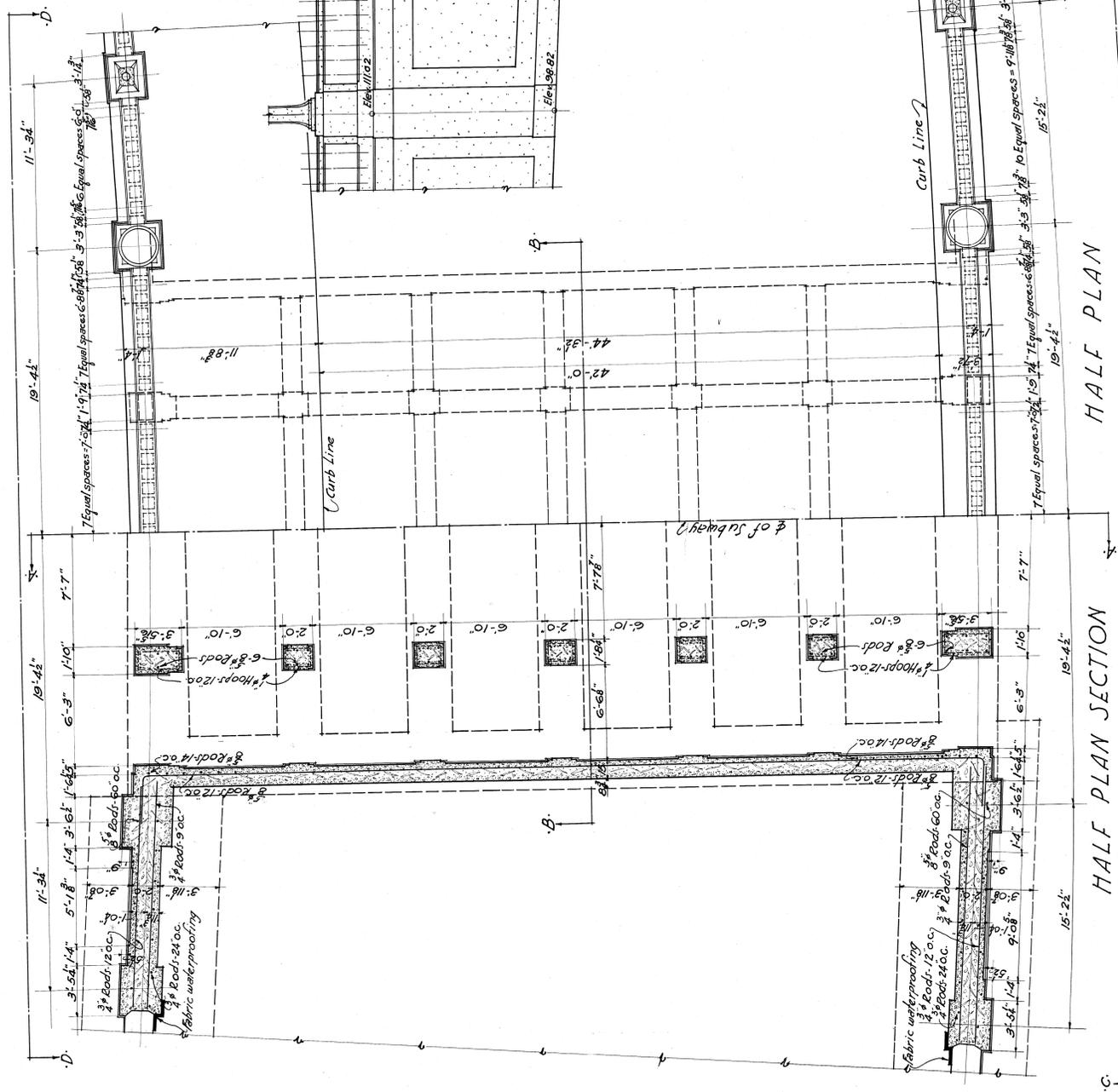


SECTION ON LINE C-C



WALL DETAILS SOUTH APPROACH
SCALE 1/2" = 1'-0"

CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS JOSEPH A. MARTIN, COMMISSIONER		BELLE ISLE BRIDGE	
DRAWN BY: M.C.K.	ESSELSTYN, MURPHY & HANFORD	JOB NO.	210
TRACED BY: M.L.	ENGINEERS	CHEK BY:	LEWIS M. GRAM, ASSOCIATE
DATE: 9-10-20	REVISOR	DATE: 9-10-20	DETROIT, MICH.
		SHEET NO.	35



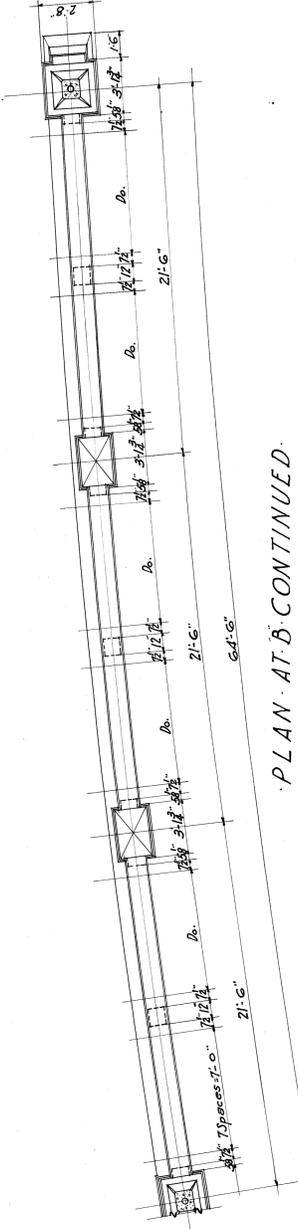
SUBWAY WALL DETAILS SOUTH APPROACH
 SCALE 1"=1'-0"

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 JOSEPH A. MARTIN, COMMISSIONER

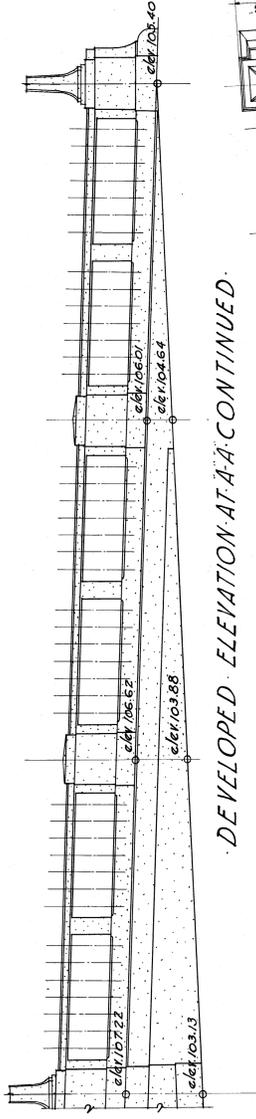
BELLE ISLE BRIDGE

DRAWN BY A.C.K. ESSELSTYN, MURPHY & HANFORD
 CHECKED BY I.M. ENGINEERS
 DATE 9-10-20 LEWIS M. GRAM, ASSOCIATE
 REVISION SHEET NO. 36

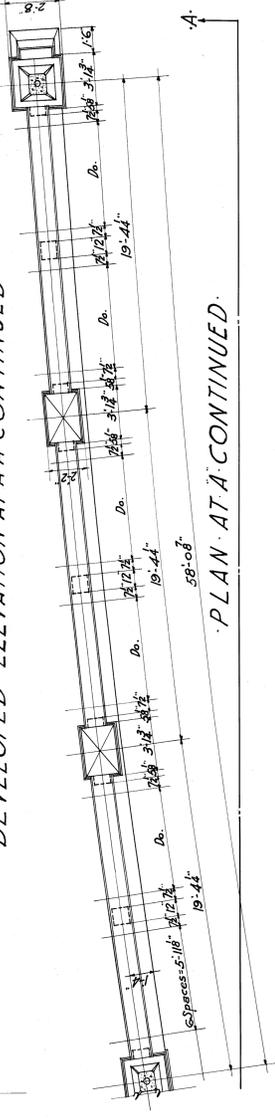
FILE BW101-304



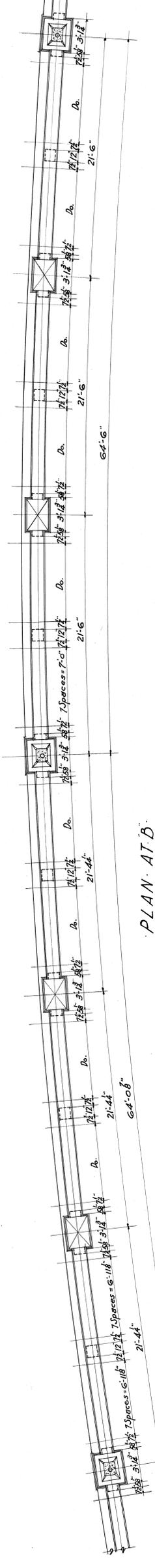
PLAN AT B CONTINUED.



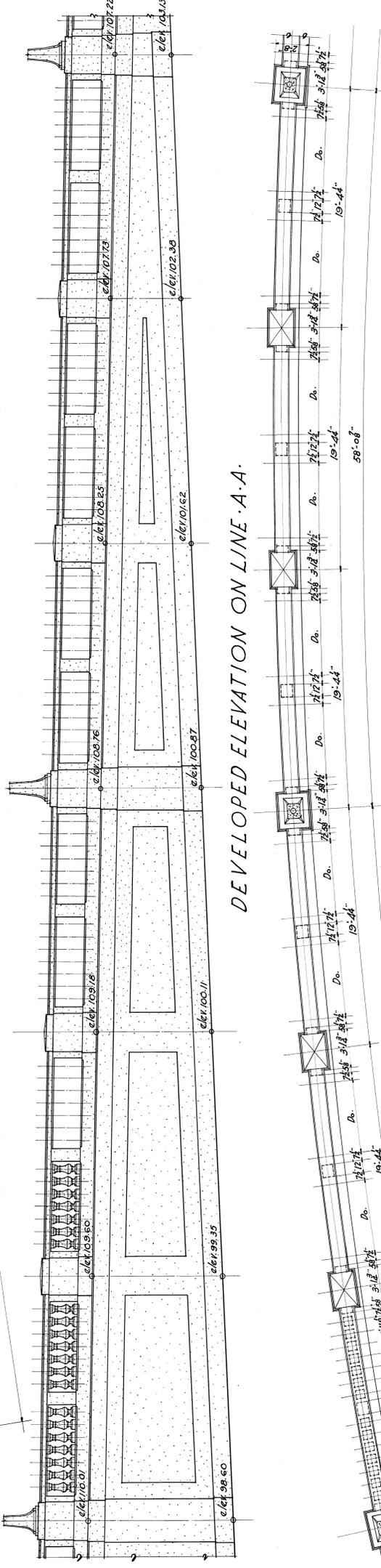
DEVELOPED ELEVATION AT A-A CONTINUED.



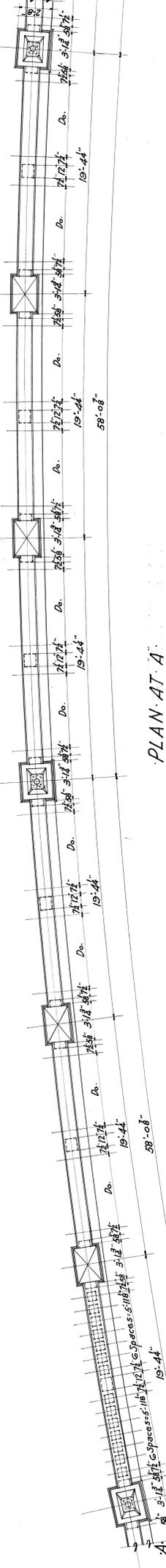
PLAN AT A CONTINUED.



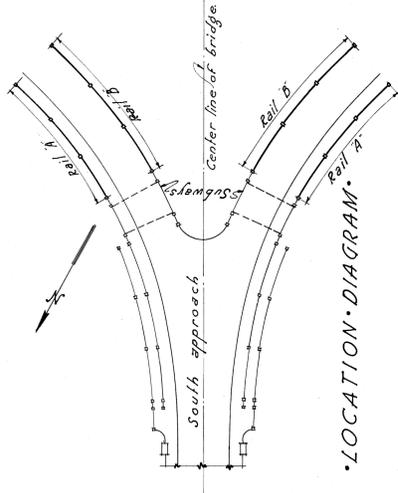
PLAN AT B.



DEVELOPED ELEVATION ON LINE A-A.

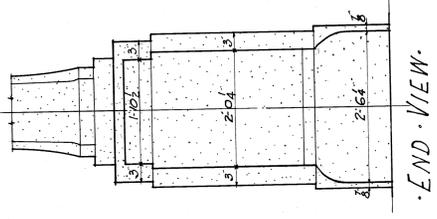


PLAN AT A.

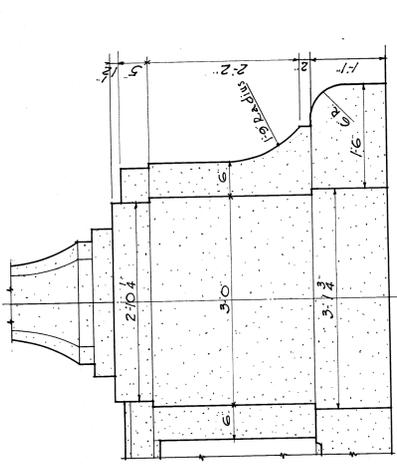


LOCATION DIAGRAM.

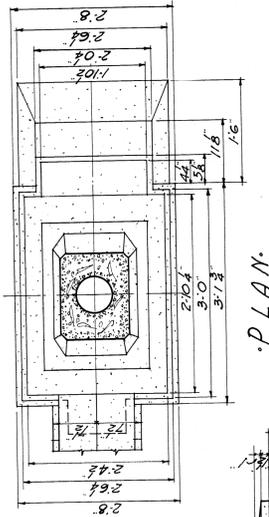
WALL DETAILS - SOUTH APPROACH. SCALE 1/4" = 1'-0"	
CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS JOSEPH A. MARTIN, COMMISSIONER	
BELLE ISLE BRIDGE	
DRAWN BY <i>AMC</i> TRACED BY <i>EM</i> CH BY	JOB NO. 210. ENGINEERS ESSELSTYN, MURPHY & HANFORD DETROIT, MICH.
DATE 9-7-20 REVISED	ASSOCIATE SHEET NO. 37.



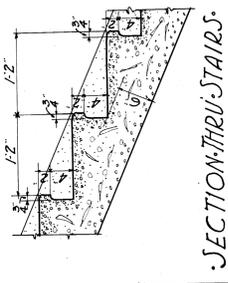
• END VIEW •



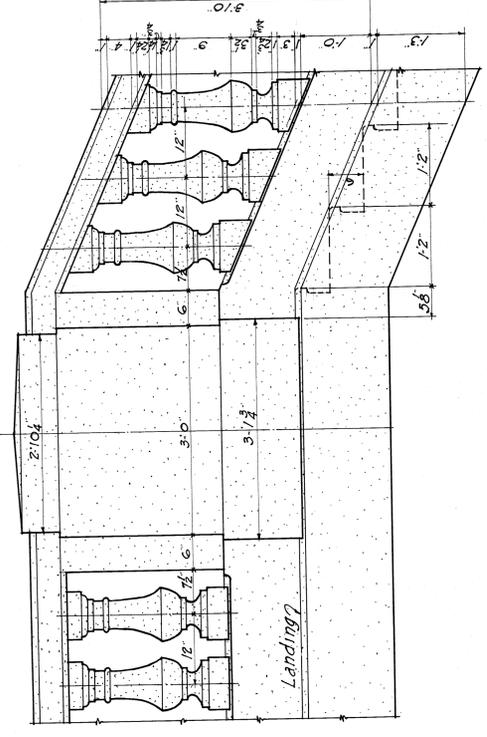
• ELEVATION OF WALL ENDING •



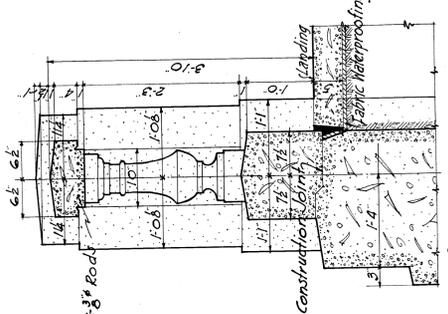
• PLAN •



• SECTION THRU STAIRS •

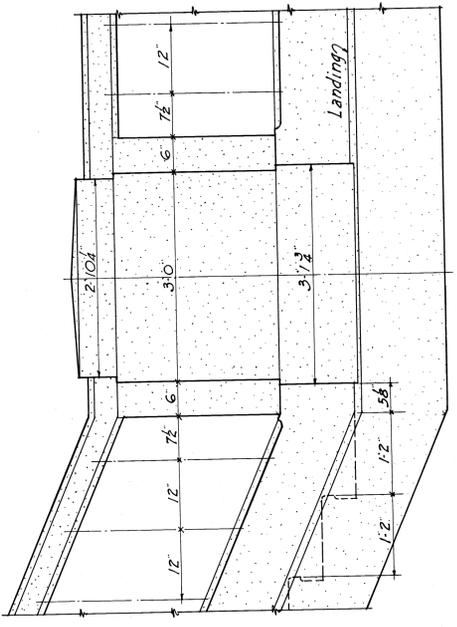


Landing

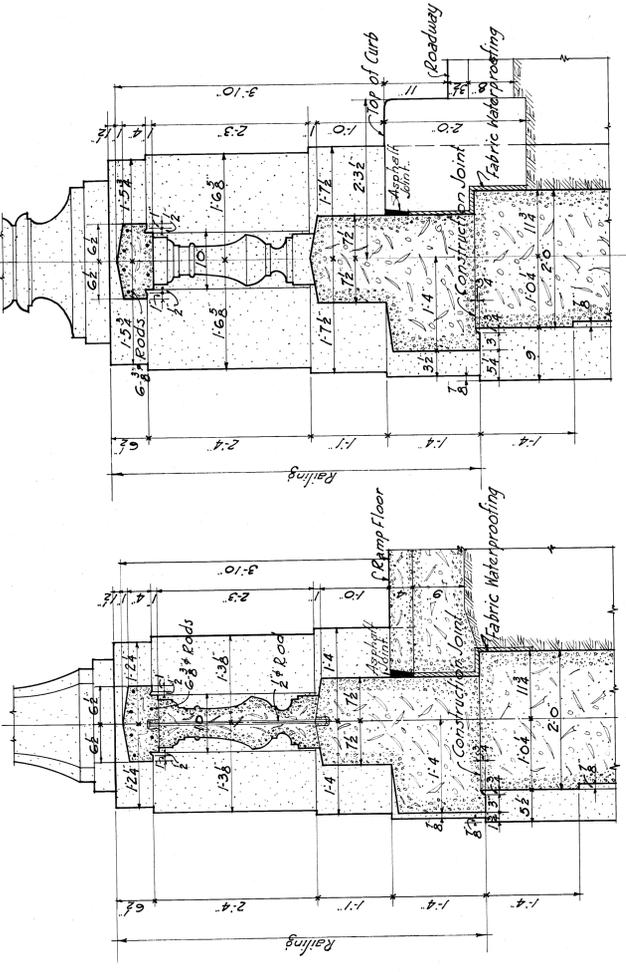


• SECTION •

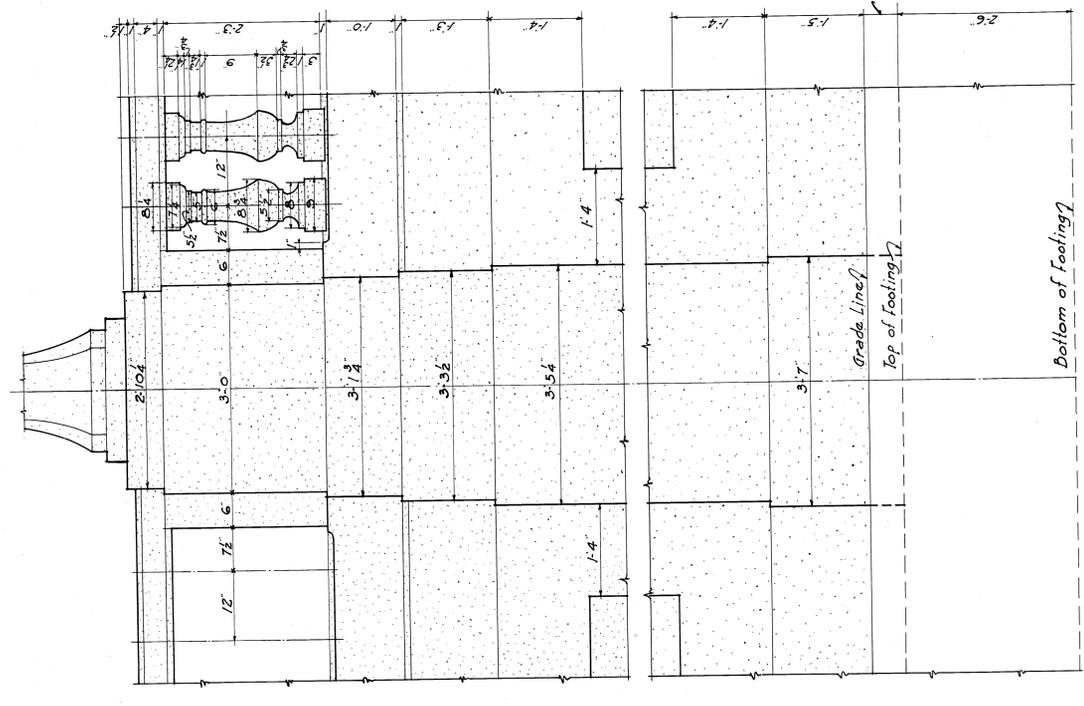
• DETAIL OF STAIRS •



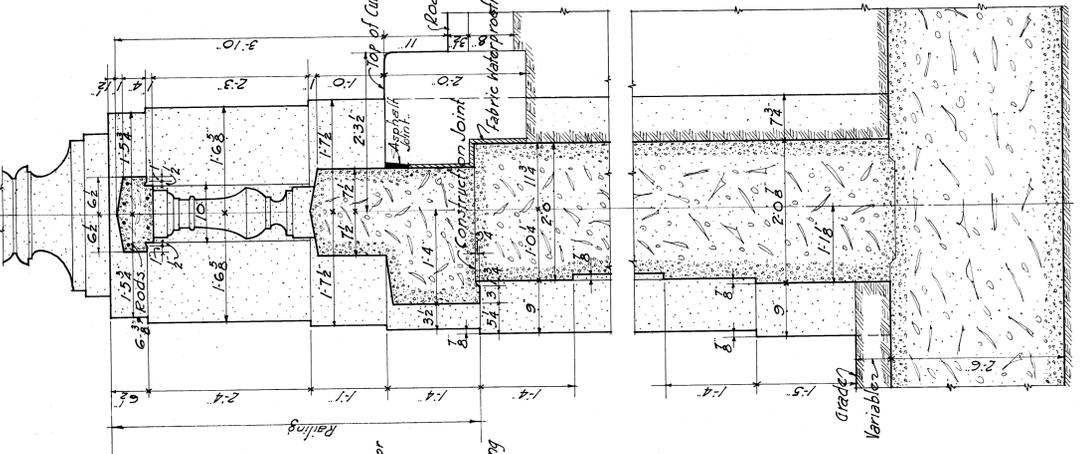
Landing



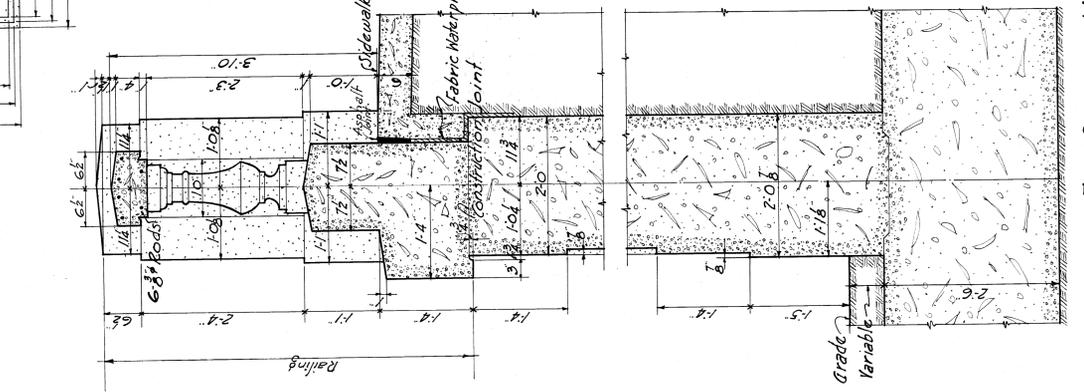
• TYPICAL WALL ELEVATION •



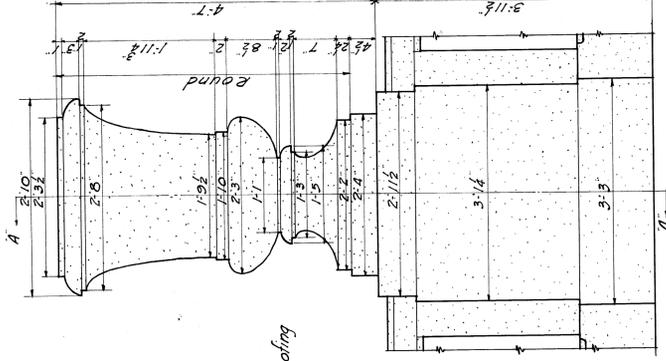
• SECTION THRU RAMP WALL •



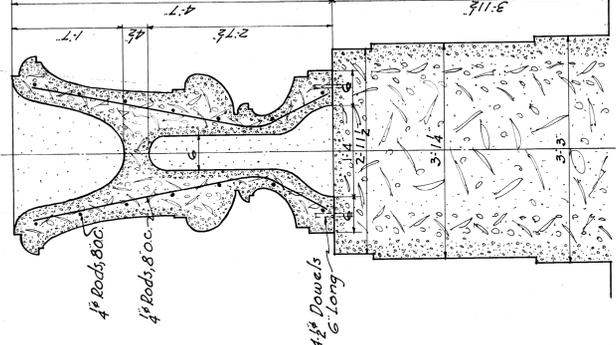
• SECTION THRU ROADWAY WALL •



• SECTION THRU SIDEWALK WALL •



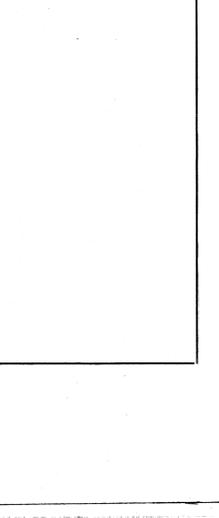
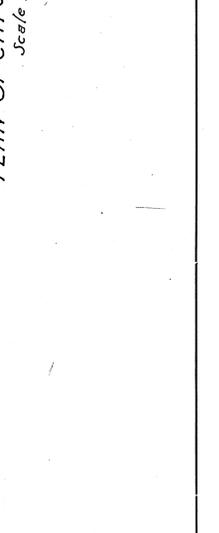
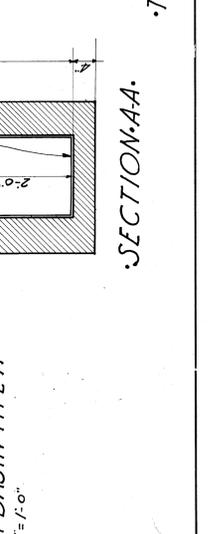
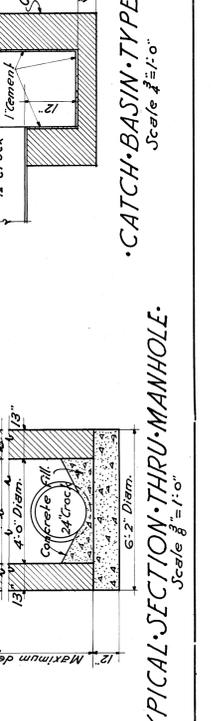
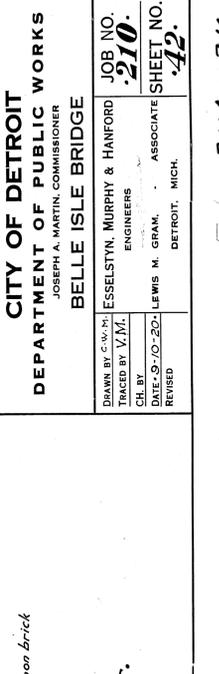
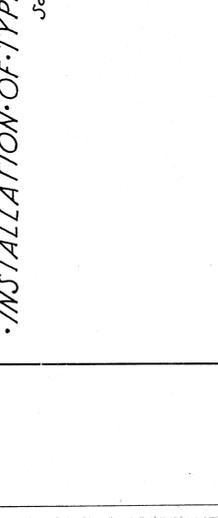
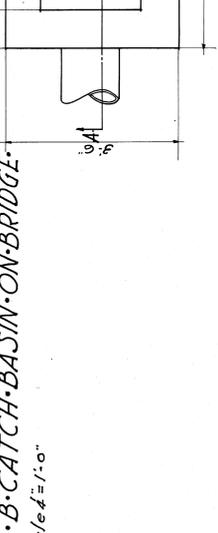
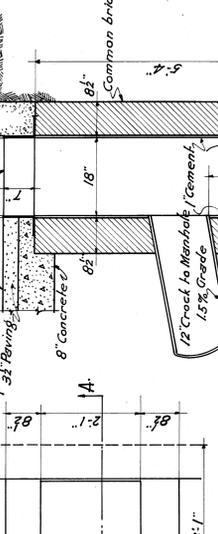
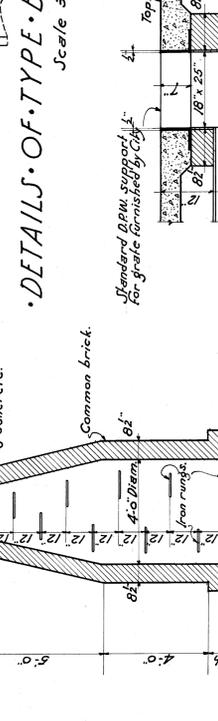
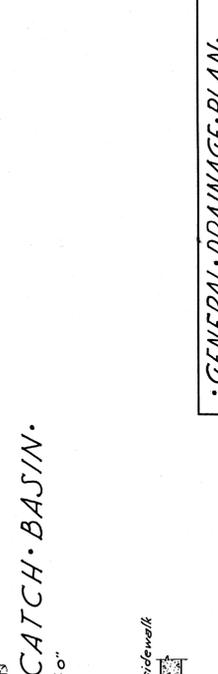
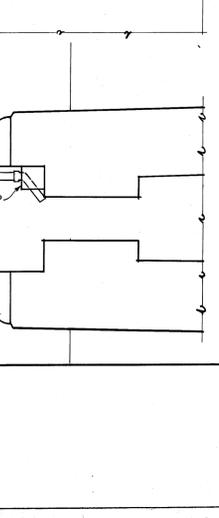
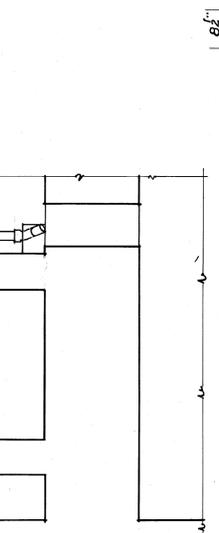
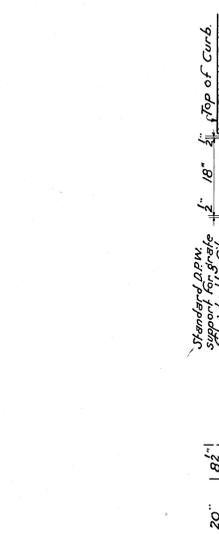
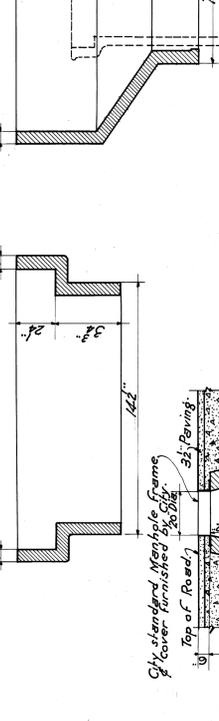
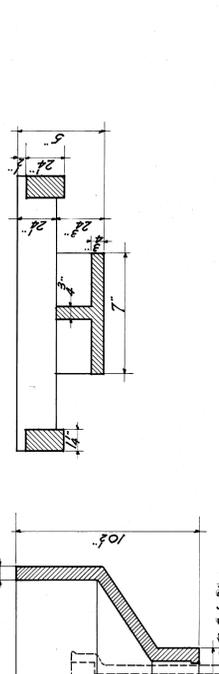
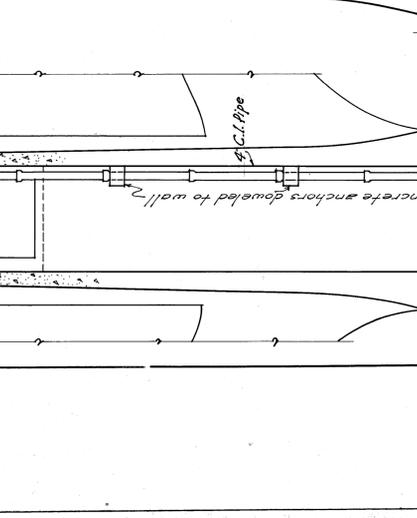
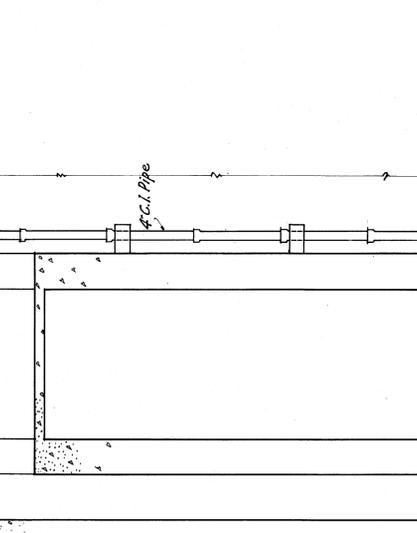
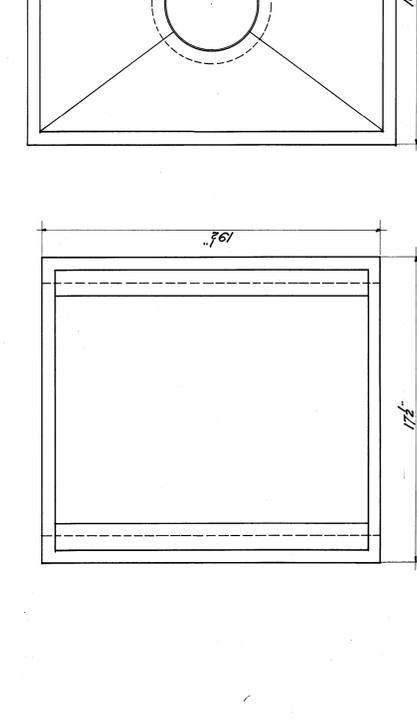
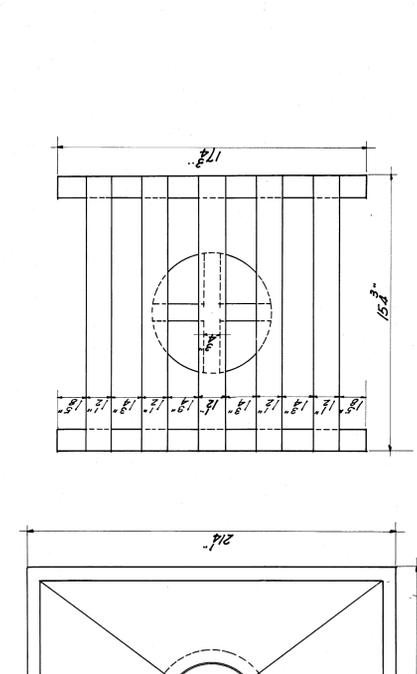
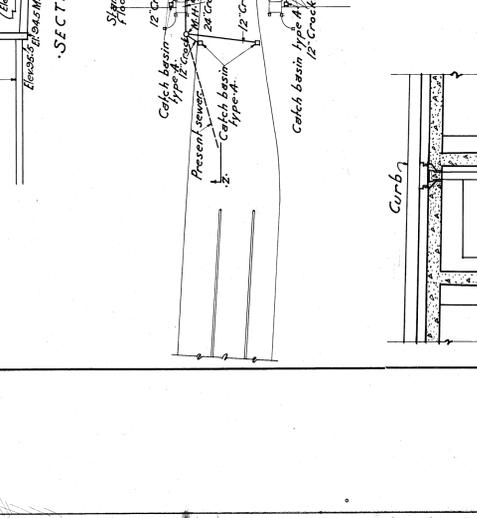
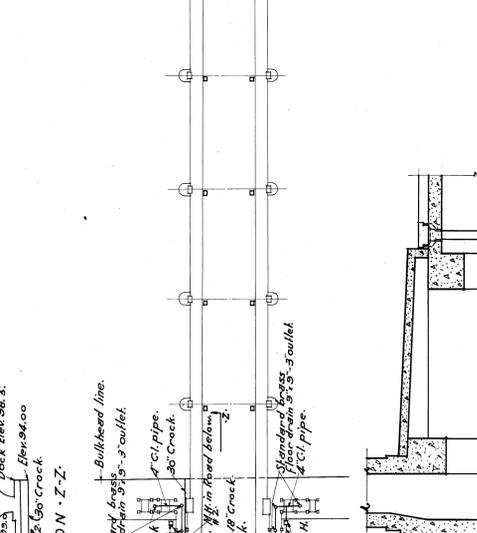
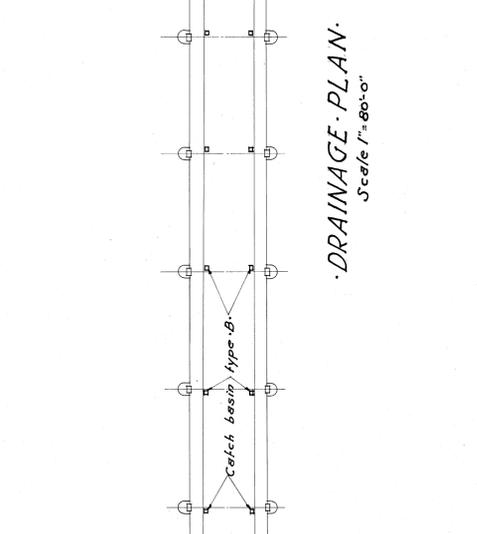
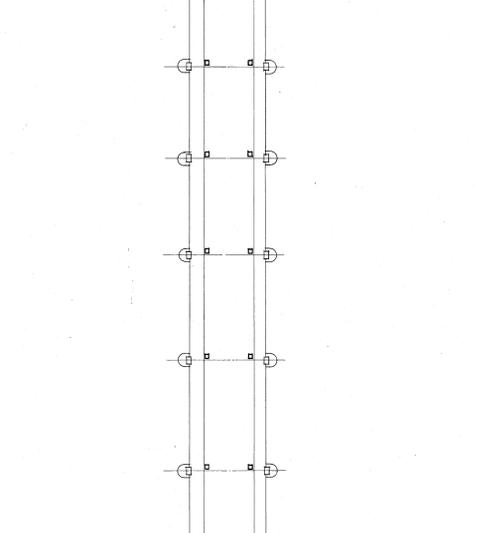
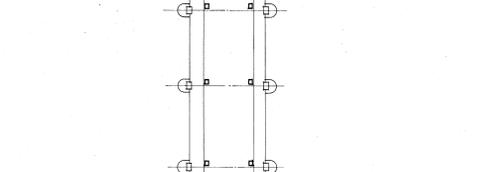
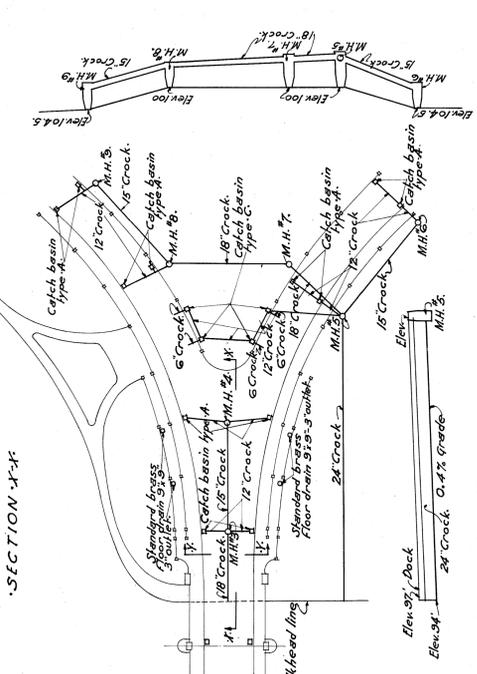
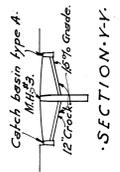
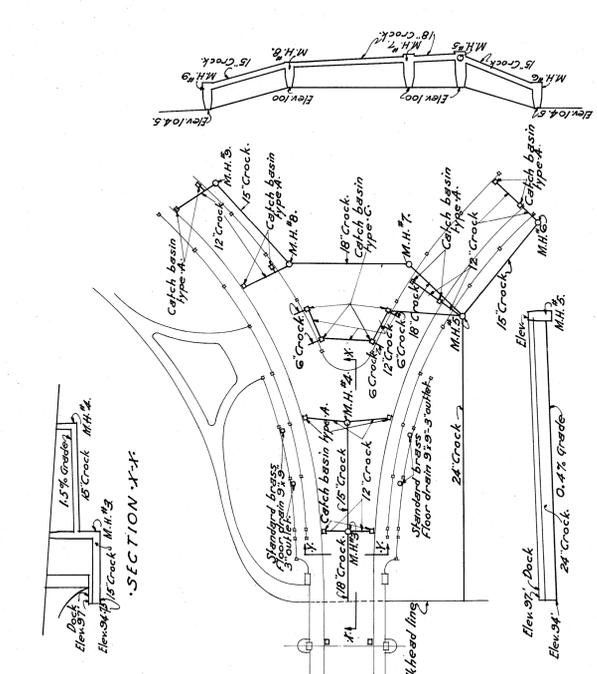
• ELEVATION OF BASE •



• SECTION A-A •

GENERAL DETAILS - RAILING ETC.

CITY OF DETROIT		JOB NO. 210	
DEPARTMENT OF PUBLIC WORKS		ESSELYN, MURPHY & HANFORD ENGINEERS	
JOSEPH A. MARTIN, COMMISSIONER		LEWIS M. GRAM, ASSOCIATE ENGINEER	
BELLE ISLE BRIDGE		REVISION DATE 9-10-20	
		DETROIT, MICH.	



• DRAINAGE PLAN •
 Scale 1" = 80'-0"

• DETAILS OF TYPE B CATCH BASIN •
 Scale 3/4" = 1'-0"

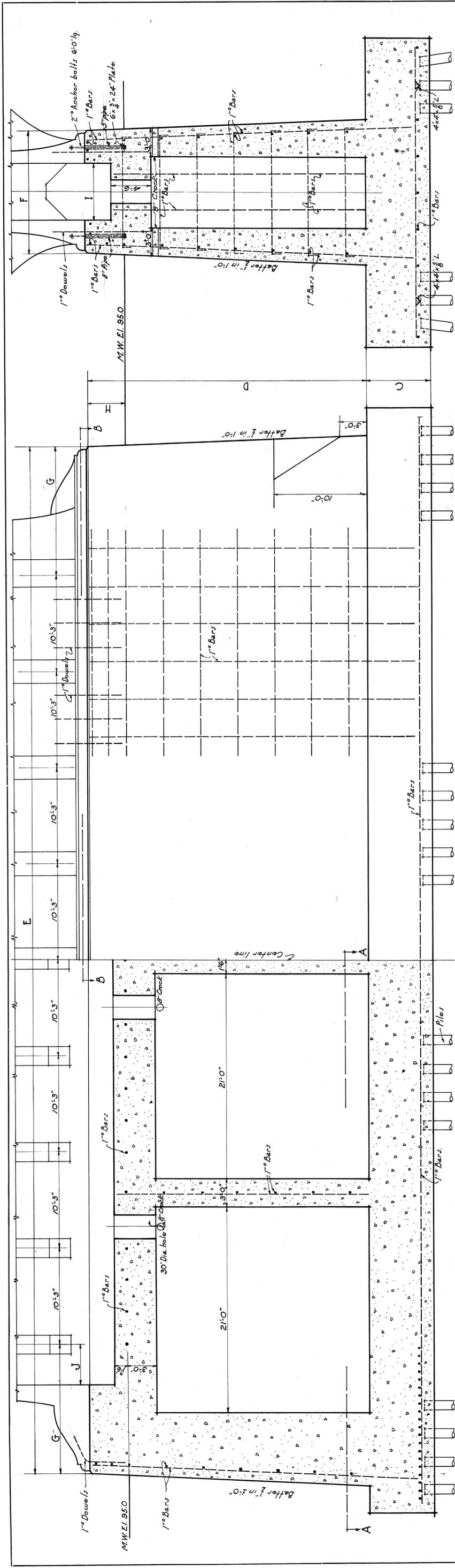
• CATCH BASIN TYPE C •
 Scale 3/4" = 1'-0"

• TYPICAL SECTION THRU MANHOLE •
 Scale 3/4" = 1'-0"

• SECTION A-A •

• PLAN OF CATCH BASIN TYPE A •
 Scale 3/4" = 1'-0"

• INSTALLATION OF TYPE B CATCH BASIN ON BRIDGE •
 Scale 1/2" = 1'-0"



• HALF SECTION THRO. PIER
Scale $\frac{1}{4}'' = 1'-0''$

• HALF ELEVATION OF PIER
Scale $\frac{1}{4}'' = 1'-0''$

• SCHEDULE FOR PIERS.

PIER No.	A	B	C	D	E	F	G	H	I	J	K	L	M	TOTAL No. PILES	REL. FORCING TRANSVERSE LONGITUDINAL
1	30'-6"	115'-0"	6'-6"	29'-0"	100'-1"	11'-4"	12'-0"	3'-0"	5'-6"	4'-8"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
2	31'-6"	116'-0"	6'-6"	29'-2"	106'-9"	11'-8"	12'-4"	3'-2"	5'-10"	4'-10"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
3	32'-6"	116'-0"	7'-0"	29'-3"	107'-1"	12'-3"	12'-1"	3'-3"	6'-0"	4'-8"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
4	33'-0"	119'-0"	7'-0"	29'-5"	108'-8"	12'-8"	12'-5"	3'-5"	6'-2"	4'-6"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
5-8	33'-0"	116'-0"	7'-0"	29'-7"	109'-4"	13'-0"	13'-8"	3'-7"	6'-2"	4'-5"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
6-7	35'-0"	116'-0"	7'-0"	30'-0"	109'-4"	13'-0"	13'-8"	4'-0"	6'-2"	4'-5"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
9	33'-0"	119'-0"	7'-0"	29'-5"	108'-8"	12'-8"	12'-5"	3'-5"	6'-2"	4'-6"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
10	32'-6"	116'-0"	7'-0"	29'-3"	107'-1"	12'-3"	12'-1"	3'-3"	6'-0"	4'-8"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
11	31'-6"	116'-0"	6'-6"	29'-2"	106'-9"	11'-8"	12'-4"	3'-2"	5'-10"	4'-10"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
12	30'-6"	113'-0"	6'-6"	29'-0"	106'-1"	11'-4"	12'-0"	3'-0"	5'-8"	4'-8"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
13	29'-0"	113'-0"	6'-0"	28'-10"	105'-9"	11'-1"	11'-0"	2'-10"	5'-6"	4'-7"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
14	27'-6"	113'-0"	5'-6"	28'-10"	105'-9"	10'-8"	11'-6"	2'-10"	5'-6"	4'-7"	3'-0"	2'-6"	2'-9"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
15	26'-0"	113'-0"	5'-3"	28'-5"	104'-7"	10'-5"	11'-3"	2'-8"	5'-4"	4'-6"	2'-9"	2'-6"	2'-6"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
16	24'-6"	110'-0"	5'-0"	28'-2"	104'-1"	10'-0"	11'-0"	2'-7"	5'-4"	4'-7"	2'-6"	2'-6"	2'-6"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
17	23'-0"	110'-0"	4'-6"	28'-5"	103'-3"	9'-9"	10'-7"	2'-5"	5'-2"	3'-10"	2'-6"	2'-6"	2'-6"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"
18	21'-6"	110'-0"	4'-3"	22'-5"	102'-5"	9'-5"	10'-4"	2'-5"	5'-0"	3'-10"	2'-6"	2'-6"	2'-6"	3'-0"	$\frac{1}{4}''$ - $\frac{1}{4}''$ 10'-0"

• TYPICAL DETAILS OF PIERS.

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
JOSEPH A. MARTIN, COMMISSIONER

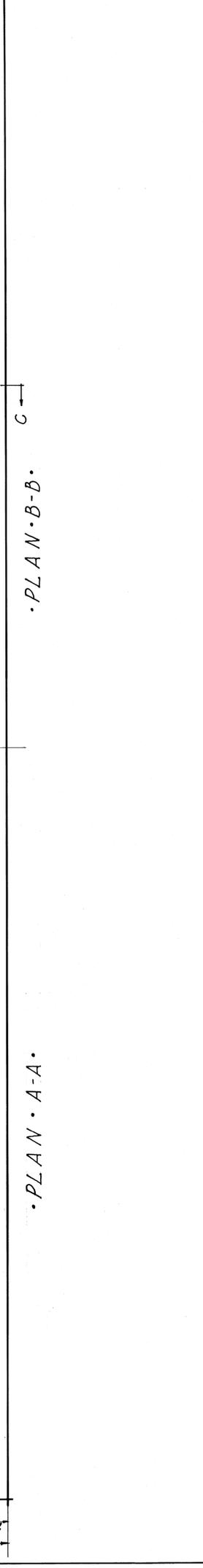
BELLE ISLE BRIDGE

ENGINEERS
ESSELSTYN, MURPHY & HANFORD
DRAWING ROOM
DRAWN BY E.F.
CHECKED BY E.F.
DATE 9-10-20
REVISIONS

ASSOCIATE
LEWIS M. GRAM
DETROIT, MICH.

JOB NO.
210

SHEET NO.
44



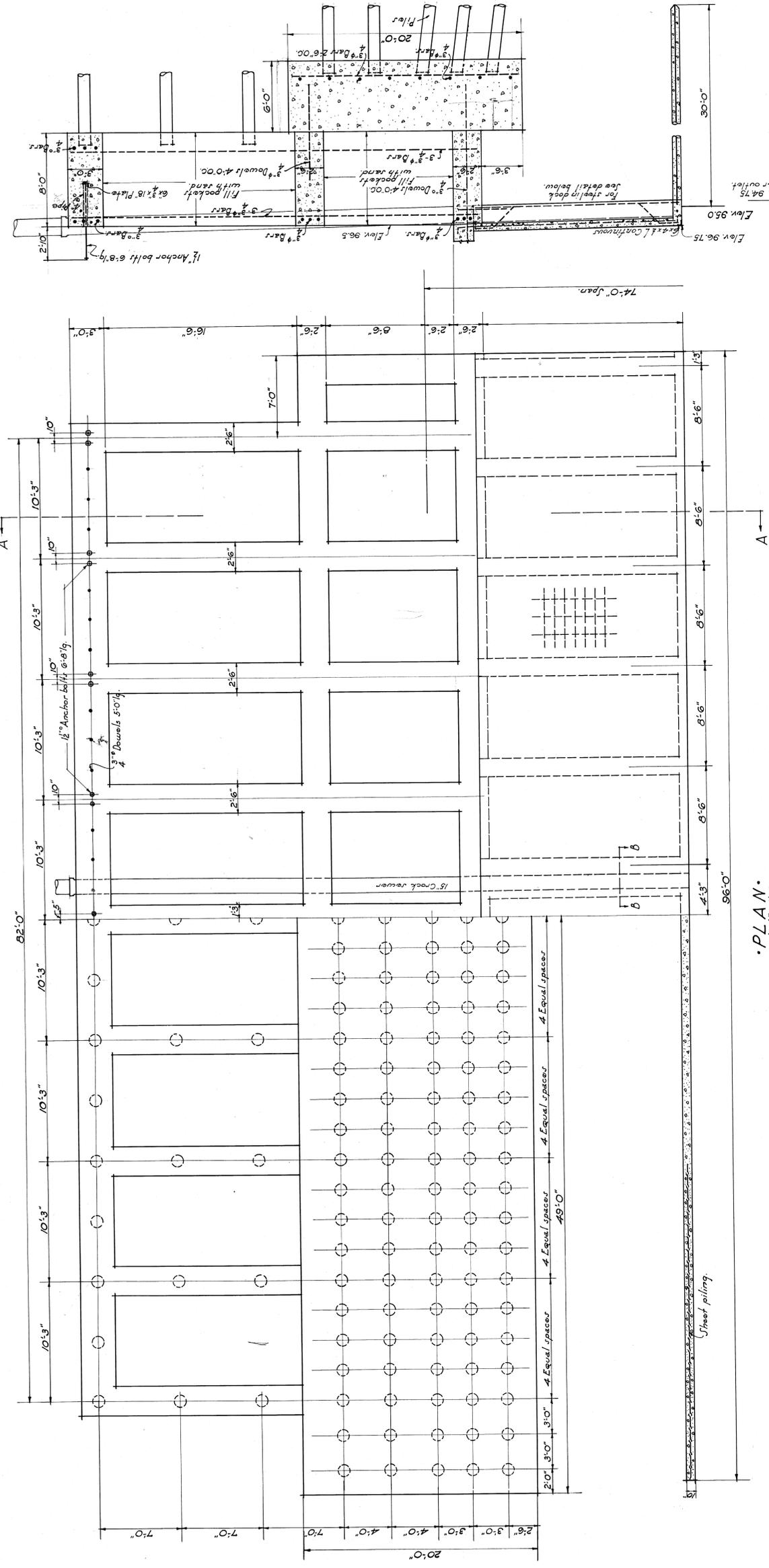
• PLAN A-A

• PLAN B-B

DOCK & FOOTING PLAN SOUTH ABUTMENT	
CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS JOSEPH A. MARTIN, COMMISSIONER	
BELLE ISLE BRIDGE	
ENGINEERS	JOB NO. 210
ASSOCIATE ENGINEERS	SHEET NO. 45
LEWIS M. GRAM	DETROIT, MICH.
DATE 9/20/20	

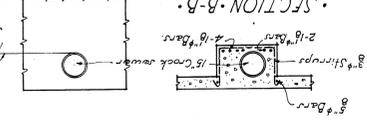
File BW29-373

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

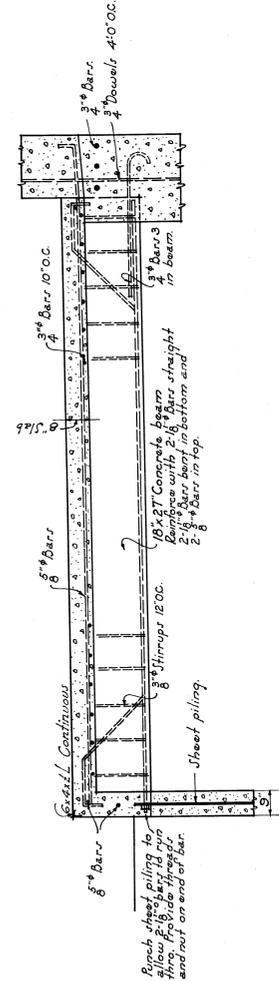


PLAN
Scale 1/2" = 1'-0"

ELEVATION



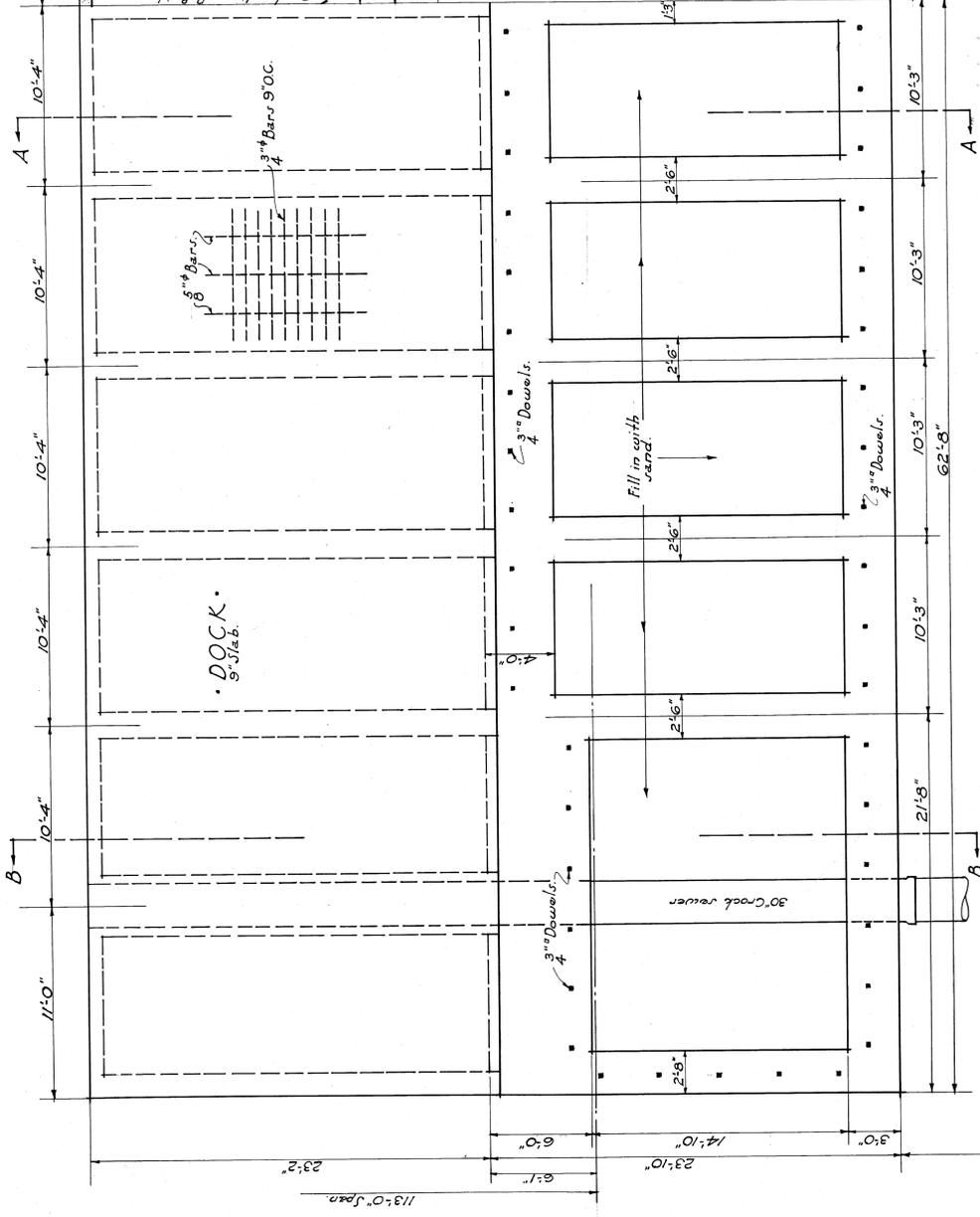
SECTION B-B



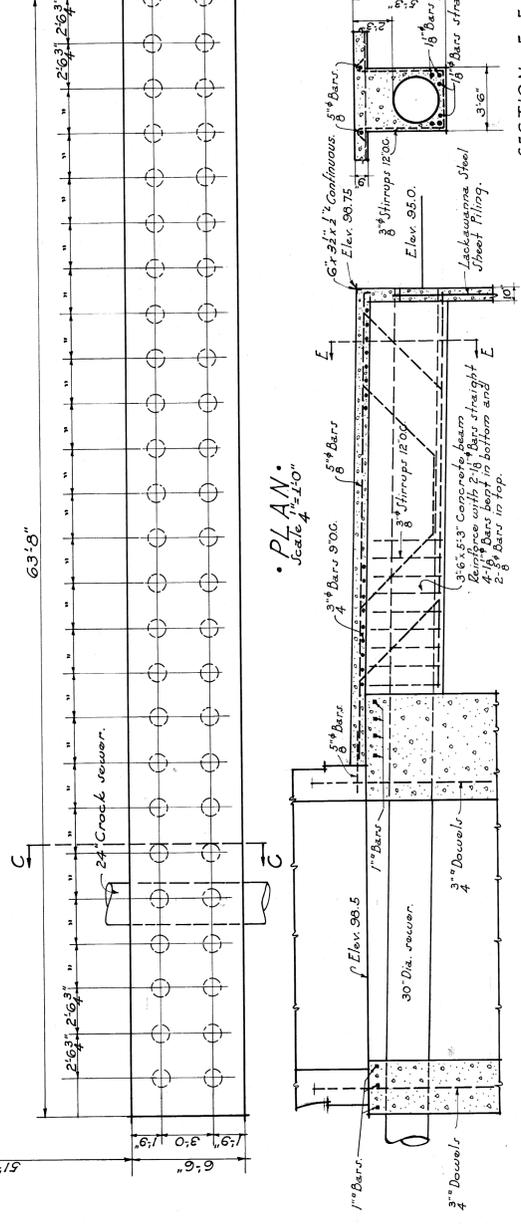
SECTION - THRO. DOCK
Scale 1/2" = 1'-0"



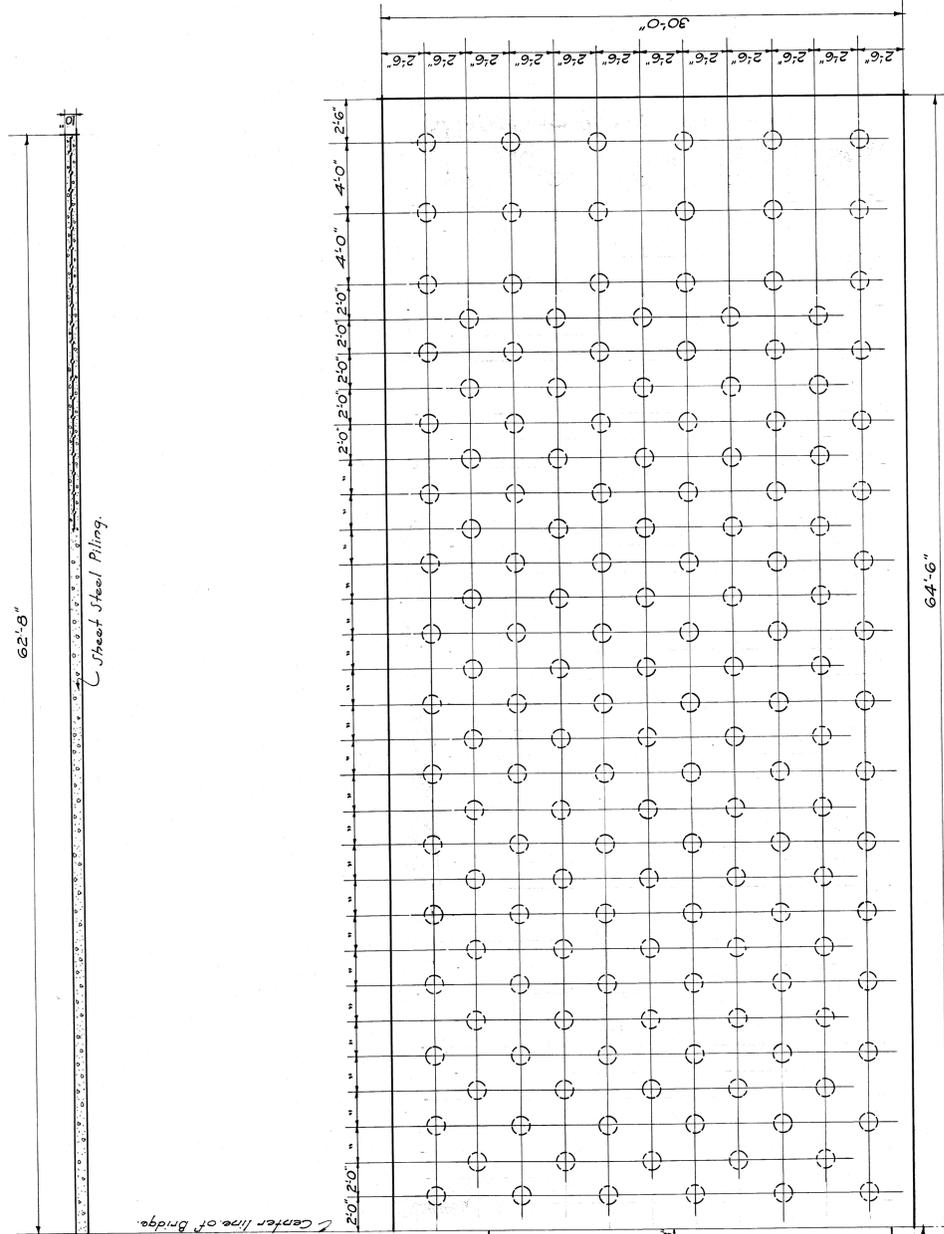
DETAIL OF SHEET PILING



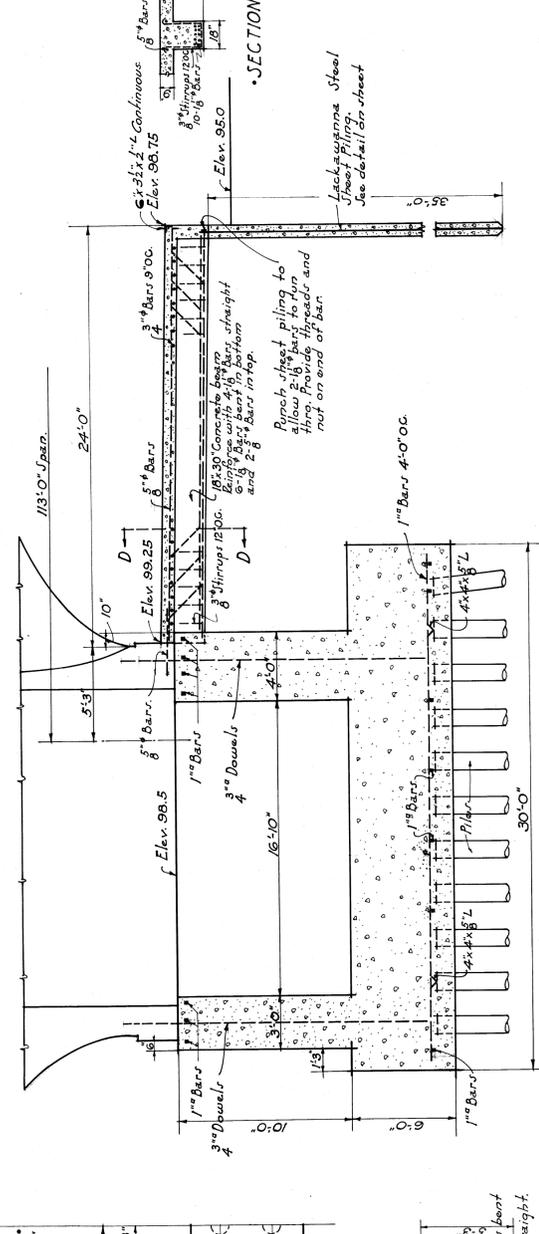
• PLAN •
Scale 1/4" = 1'-0"



• SECTION E-E •
Scale 1/4" = 1'-0"



• SECTION D-D •
Scale 1/4" = 1'-0"



• SECTION C-C •
Scale 1/4" = 1'-0"



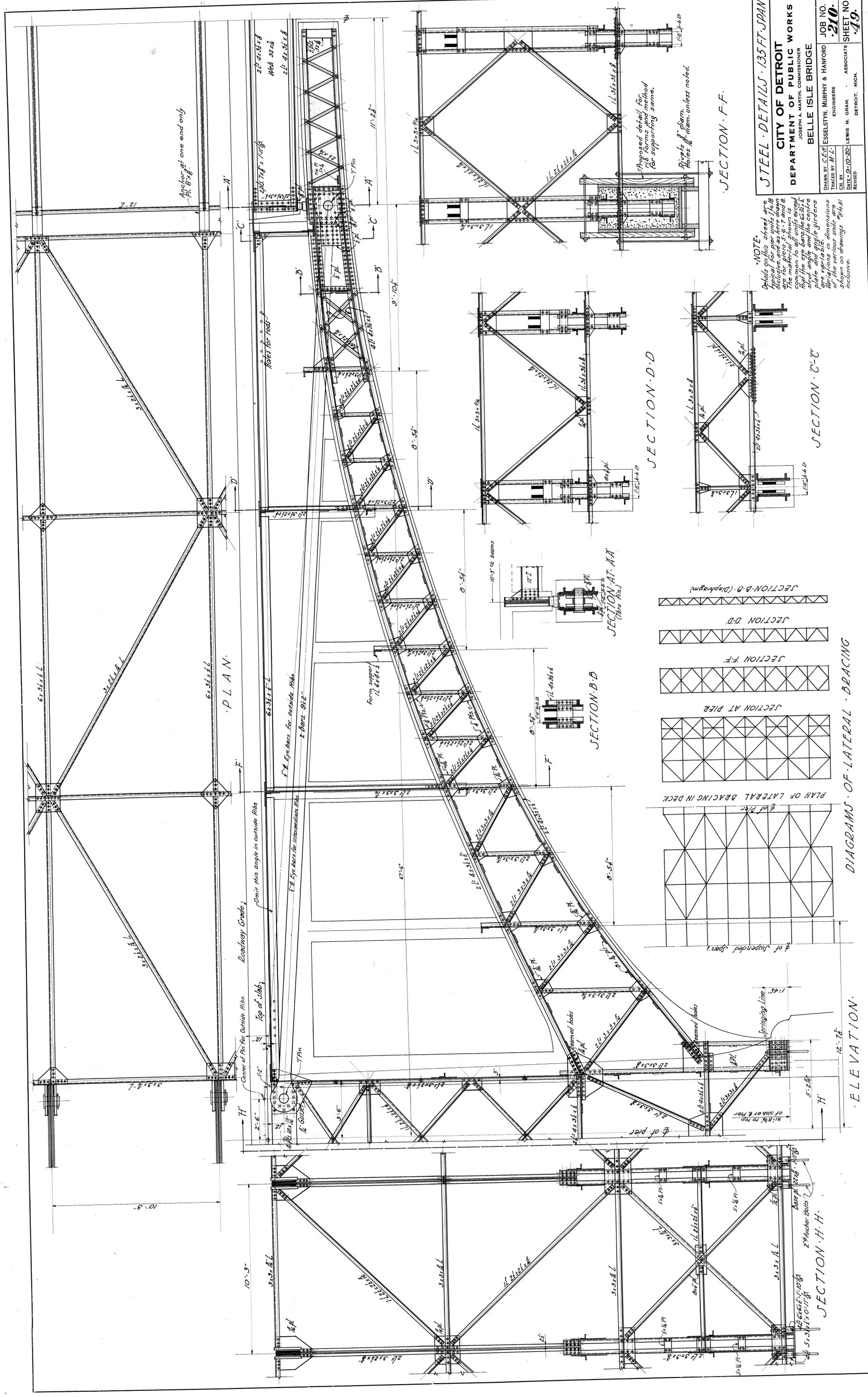
Sheet Steel Piling

PIER OF NORTH ABUTMENT FOOTING

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

DRAWN BY: E. F. ESSELSTYN, MURPHY & HANFORD ENGINEERS	JOB NO. 210
TRACED BY: E. F. ESSELSTYN, MURPHY & HANFORD ENGINEERS	SHEET NO. 46
DATE: 9-10-20	ASSOCIATE
REVISED	DETROIT, MICH.



NOTE.
 Details on this sheet are typical for pier units 1 to 8 inclusive and are common to all units except the eye bars, the center plate and angle girders. Variations in dimensions of the various units are shown on drawings 191631 inclusive.

STEEL DETAILS - 135 FT. SPAN
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
 JOSEPH A. MARTIN, COMMISSIONER
BELLE ISLE BRIDGE
 DRAWN BY C. E. J. ESSELSTYN, MURPHY & HANFORD ENGINEERS
 CHECKED BY M. L. LEWIS M. GRAM, ASSOCIATE ENGINEER
 DATE: 9-10-20
 REVISED
 JOB NO. 210
 SHEET NO. 19
 DETROIT, MICH.

DIAGRAMS OF LATERAL BRACING

ELEVATION

SECTION D-D

SECTION C-C

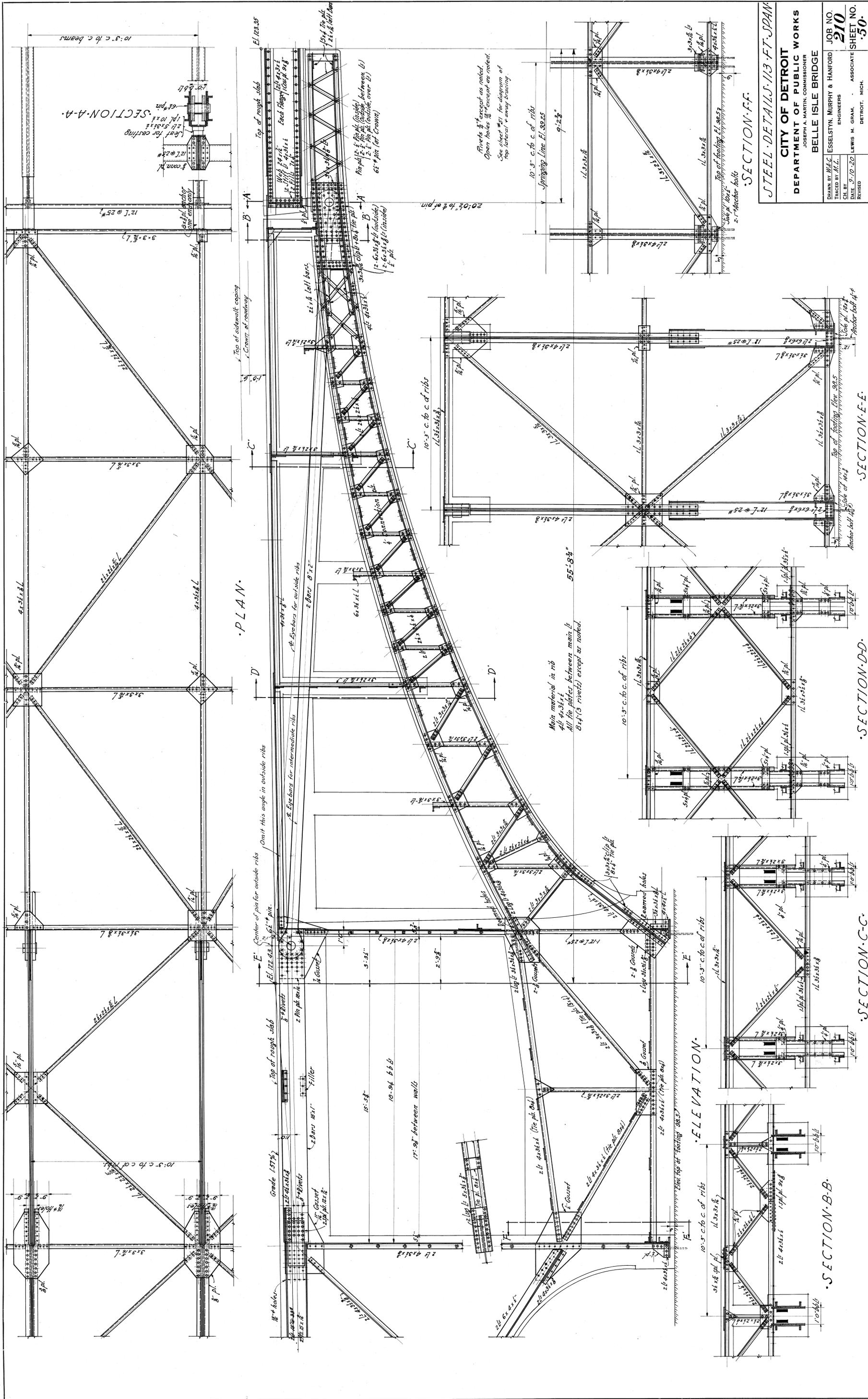
SECTION A-A

SECTION B-B

SECTION F-F

SECTION H-H

PLAN



SECTION-A-A

PLAN

SECTION-B-B

ELEVATION

SECTION-C-C

SECTION-D-D

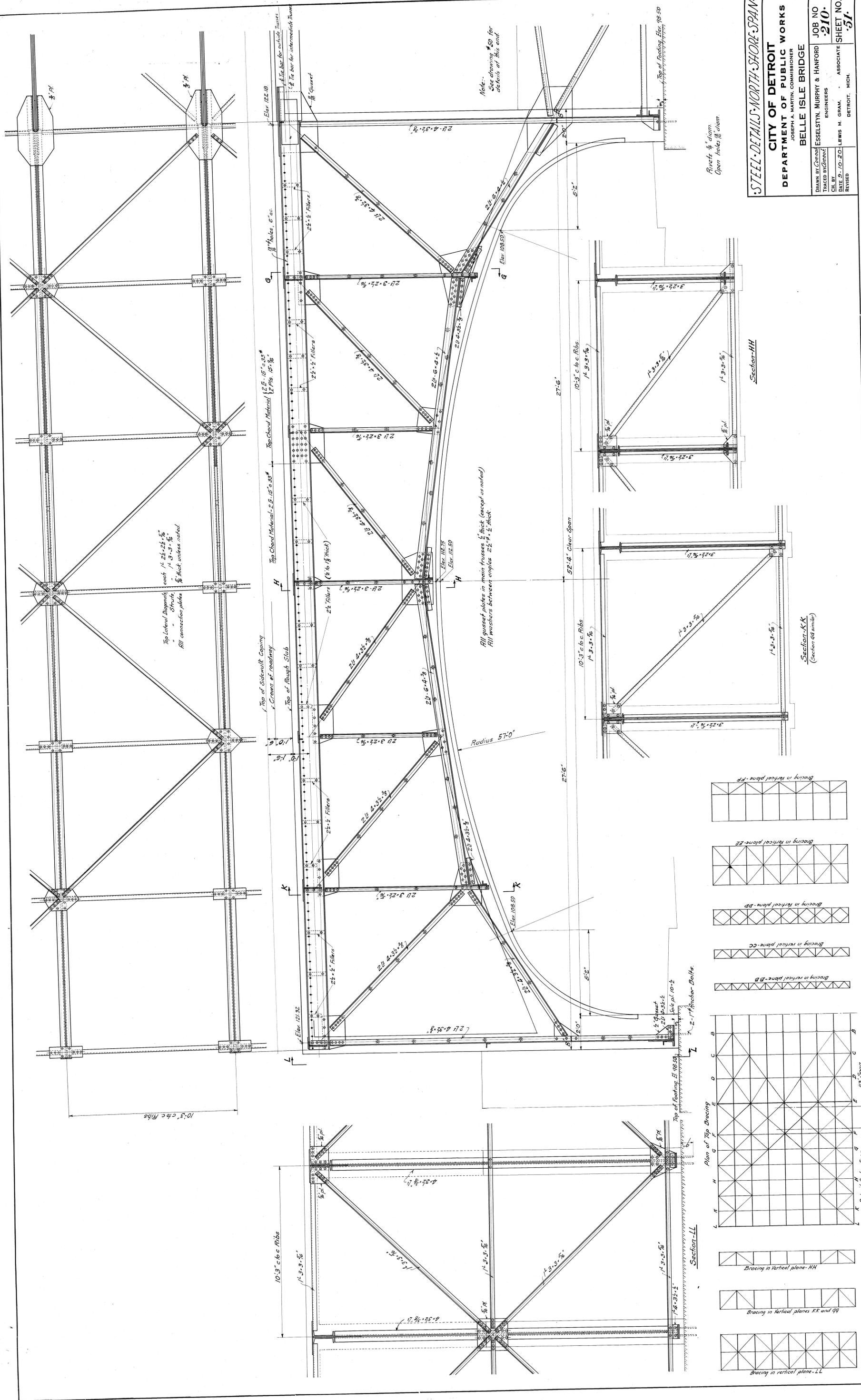
SECTION-E-E

STEEL DETAILS-113-FT SPAN

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
 JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

DESIGNED BY W.A.C. ESSELSTYN, MURPHY & HANFORD ENGINEERS
 DRAWN BY W.A.C. ESSELSTYN, MURPHY & HANFORD ENGINEERS
 CHECKED BY M.L.L. LEWIS M. GRAM, ASSOCIATE ENGINEER
 DATE 9-20-20
 SHEET NO. 50



STEEL DETAILS-NORTH SHORE SPAN.

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

ENGINEERS
 ESSELSTYN, MURPHY & HANFORD
 110 W. WABASH ST.
 DETROIT, MICH.

JOB NO. **210.**
 SHEET NO. **51.**

DATE **9-10-20**
 REVISIONS

File B/W 201-319

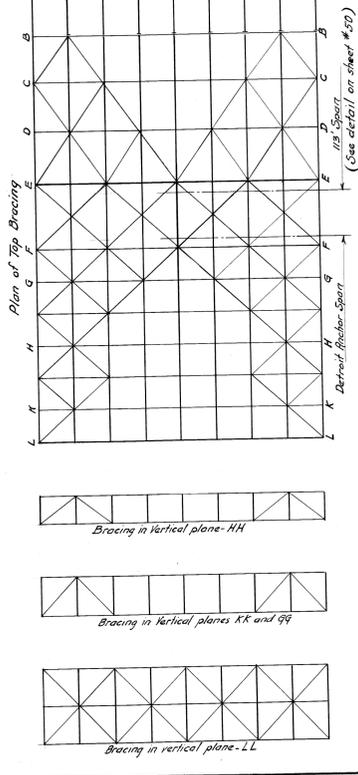
Top Lateral Diagonals
 Struts
 All connection plates
 1/2" thick unless noted

All gusset plates in main trusses 1/2" thick (except as noted)
 All washers between angles 2 1/2" thick.

Rivets 3/4" diam.
 Open holes 5/8" diam.

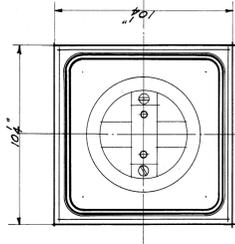
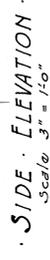
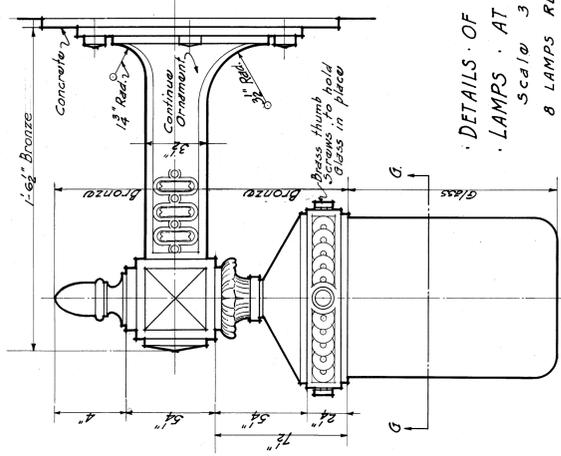
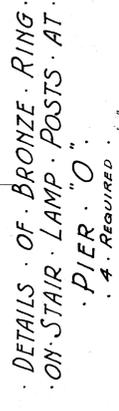
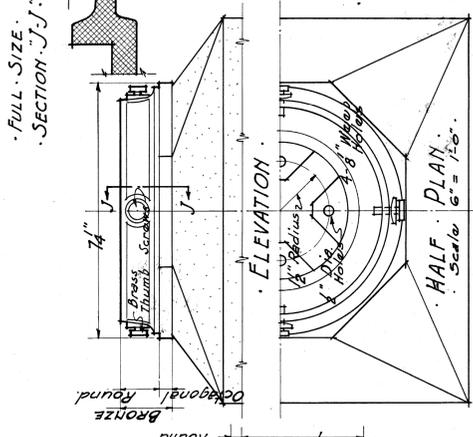
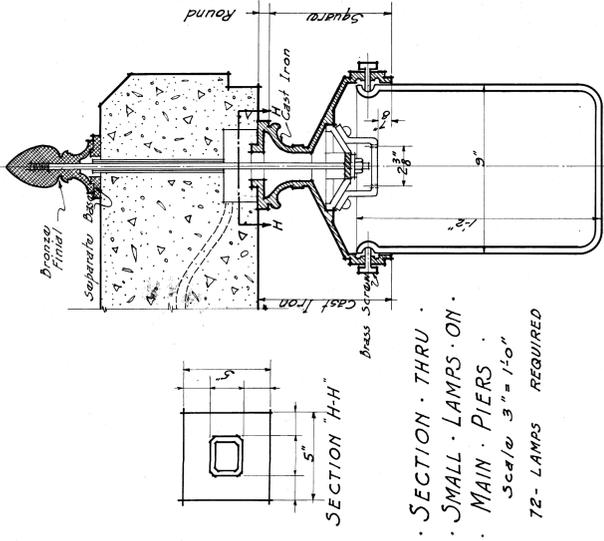
Section-III

Section-KK
 (Section GG similar)

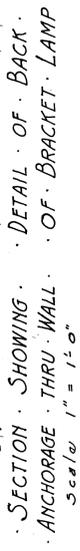


Plan of Top Bracing

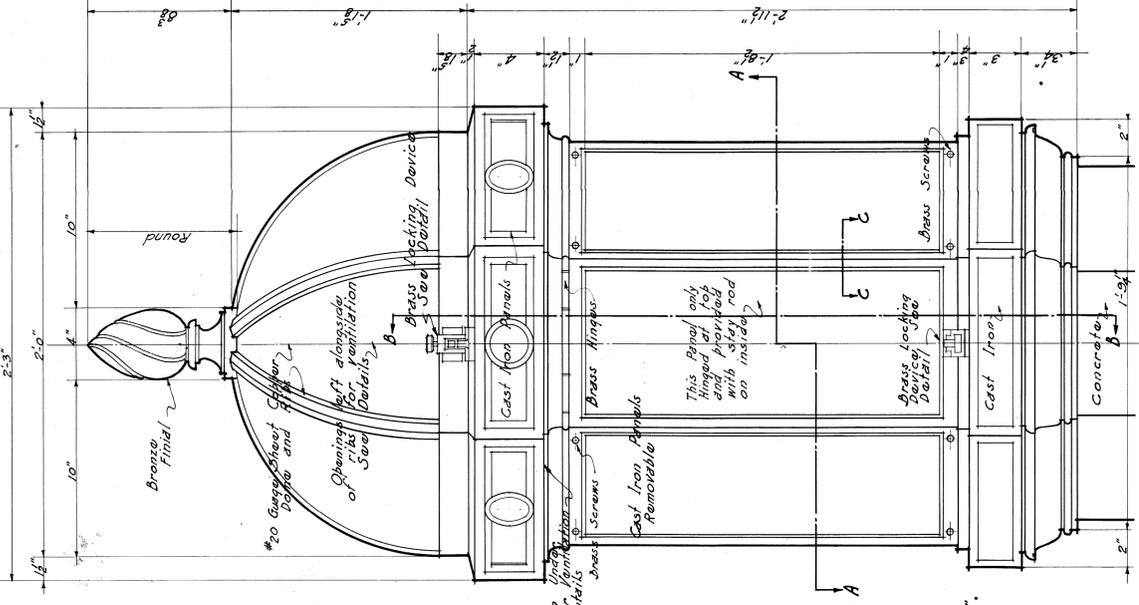
(See detail on sheet #50)



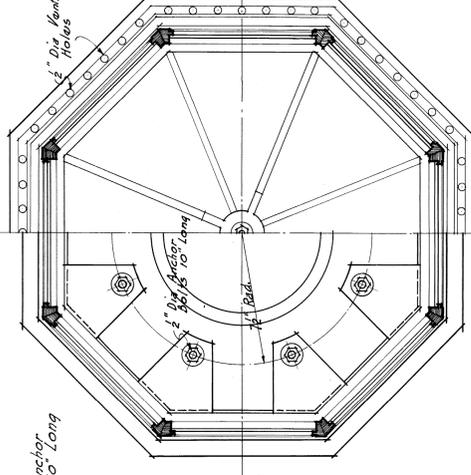
SECTION G-G



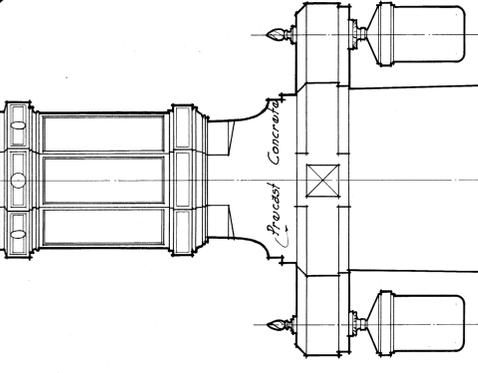
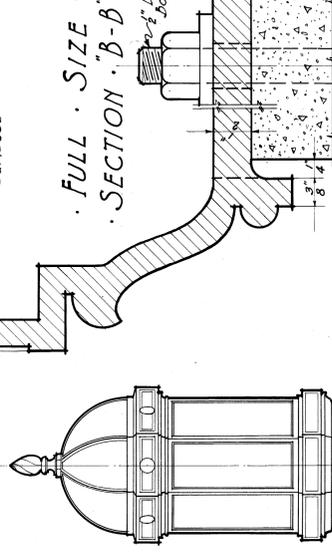
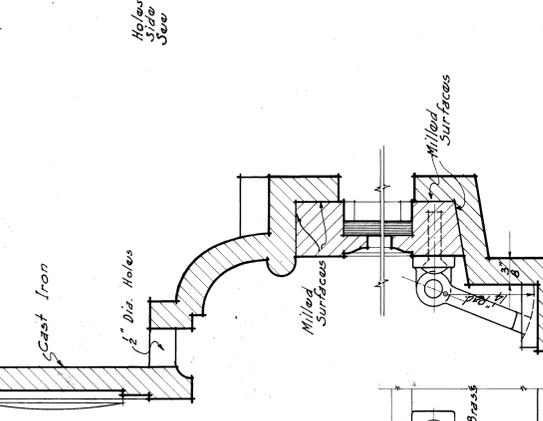
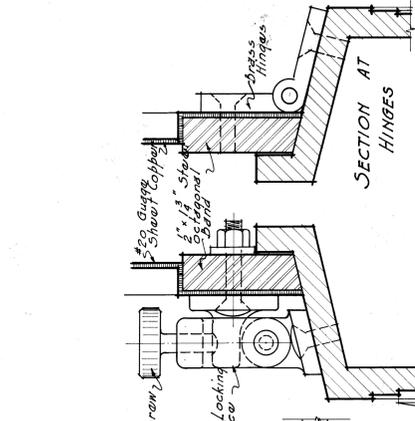
TYPICAL ELEVATION OF LAMP POST
 Scale 1" = 1'-0"



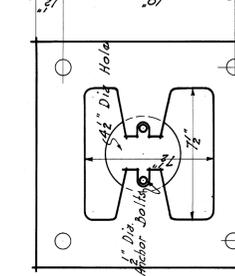
ELEVATION OF LAMP
 Scale 3" = 1'-0"



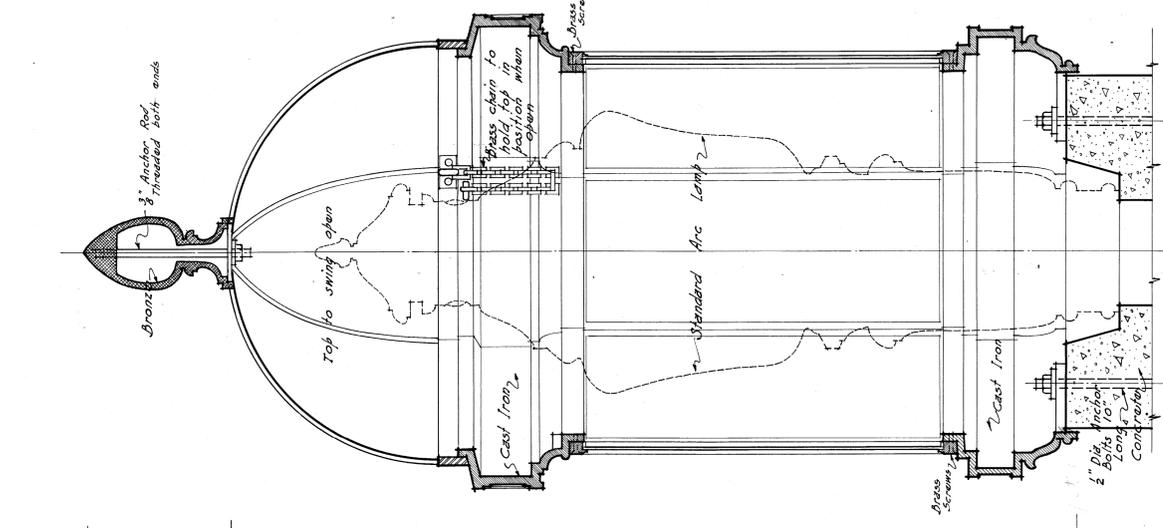
SECTION "A-A"
 Scale 3" = 1'-0"



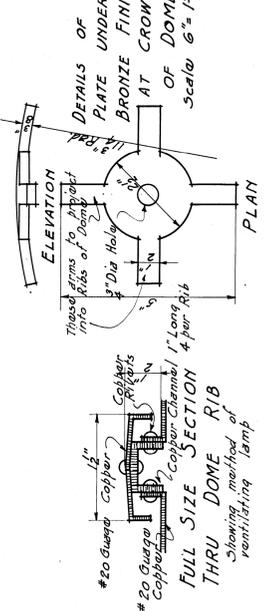
FRONT ELEVATION
 Scale 3" = 1'-0"



DETAIL OF BACK OF BRACKET LAMP

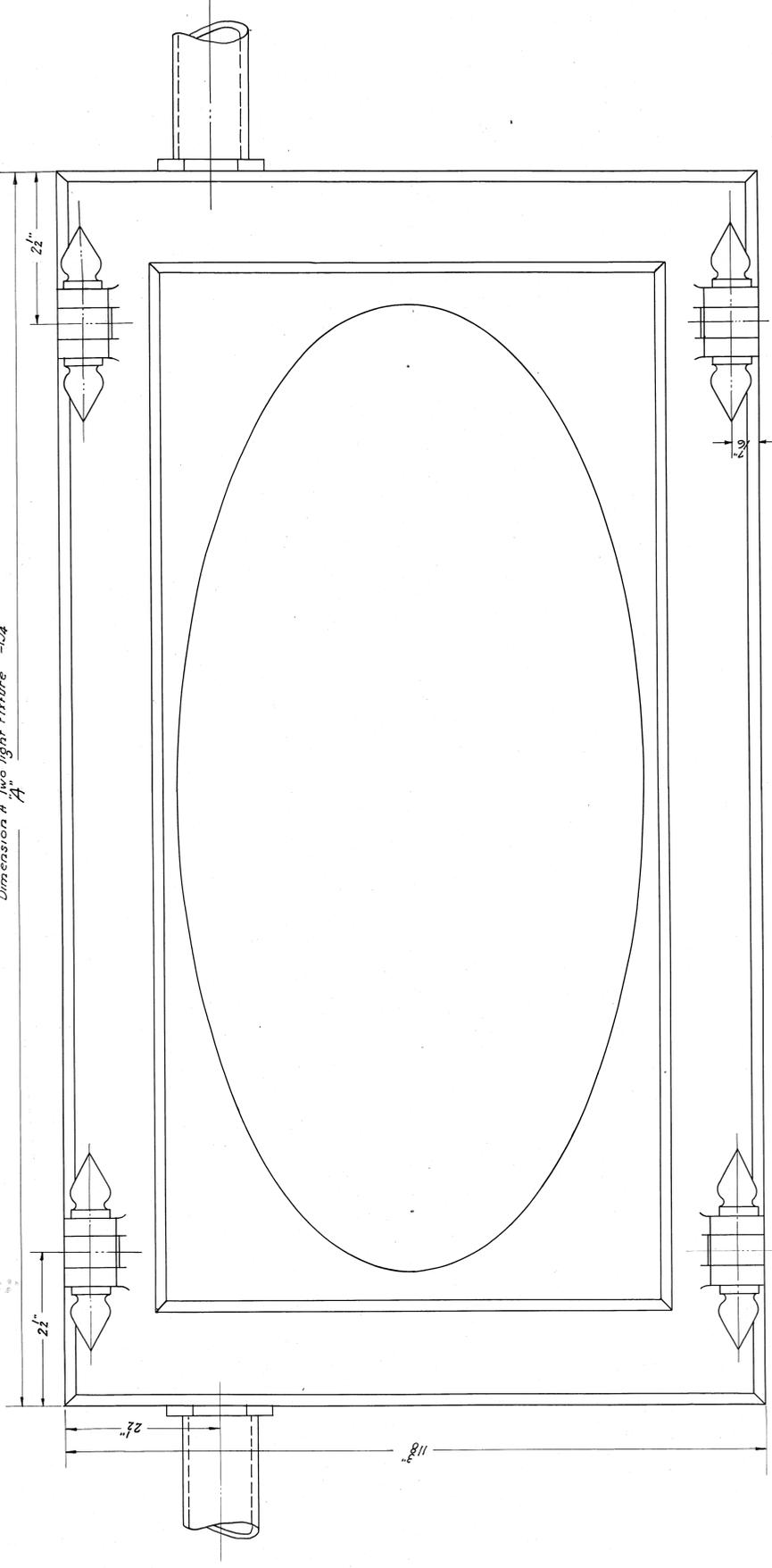


SECTION THRU LAMP SHOWING POSITION OF STANDARD ARC LIGHT
 Scale 3" = 1'-0"

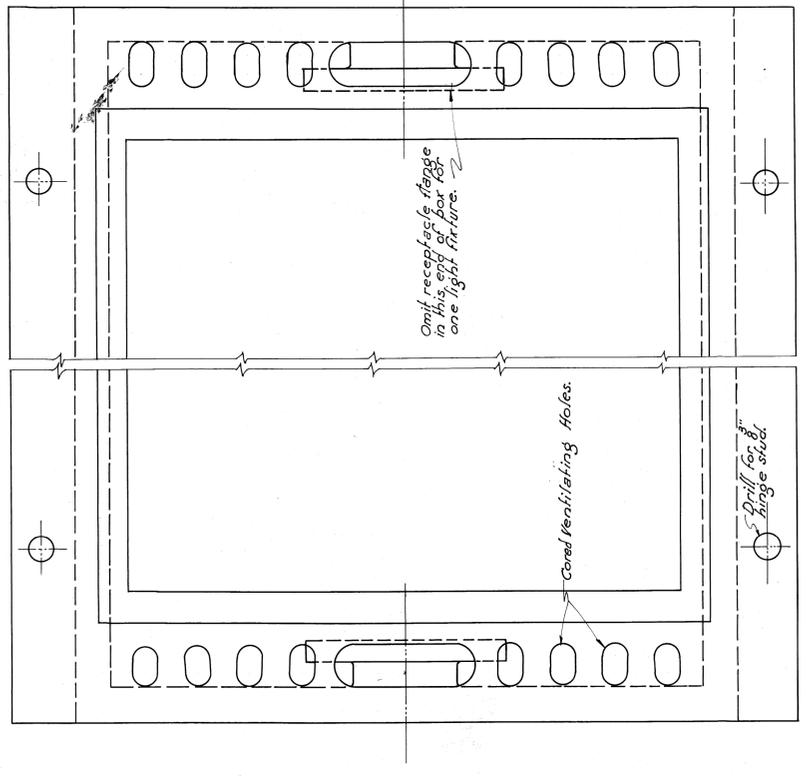


CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS JOSEPH A. MARTIN, COMMISSIONER		JOB NO. 210
BELLE ISLE BRIDGE		SHEET NO. 53
DRAWN BY P.D. TRACED BY P.D. DATE 9/10/20	ESSELSTYN, MURPHY & HANFORD ENGINEERS LEWIS M. GRAM, ASSOCIATE DETROIT, MICH.	

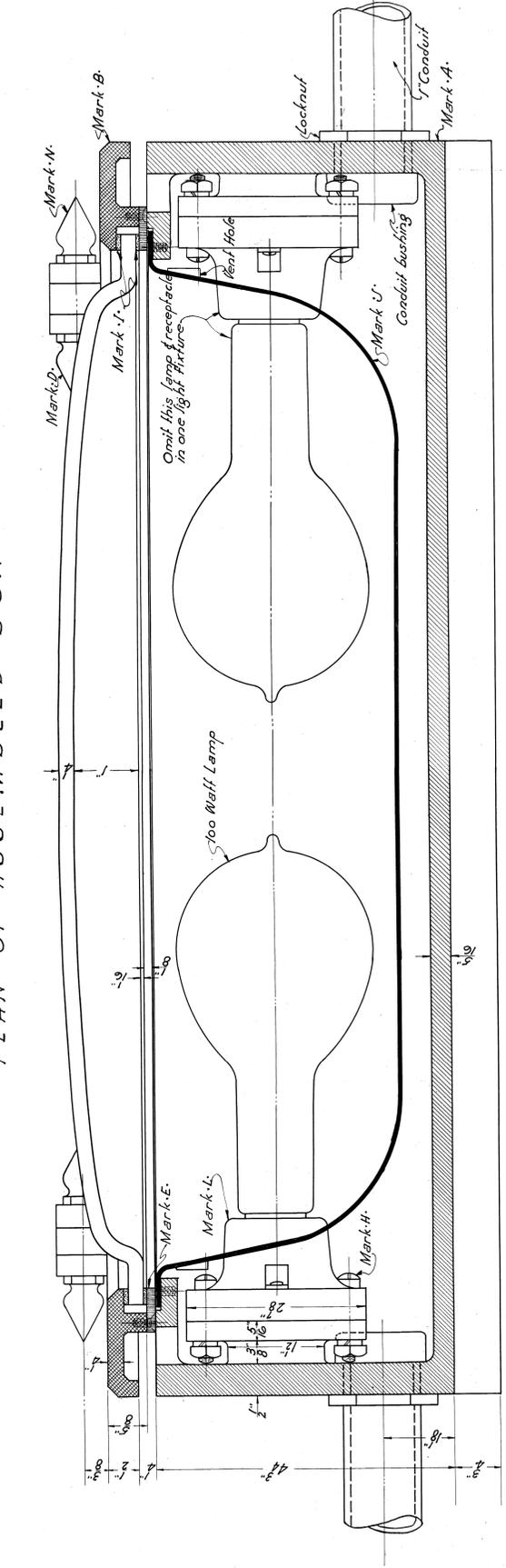
Dimension A, One light fixture = 13 1/2"
Dimension A, Two light fixtures = 13 1/2"



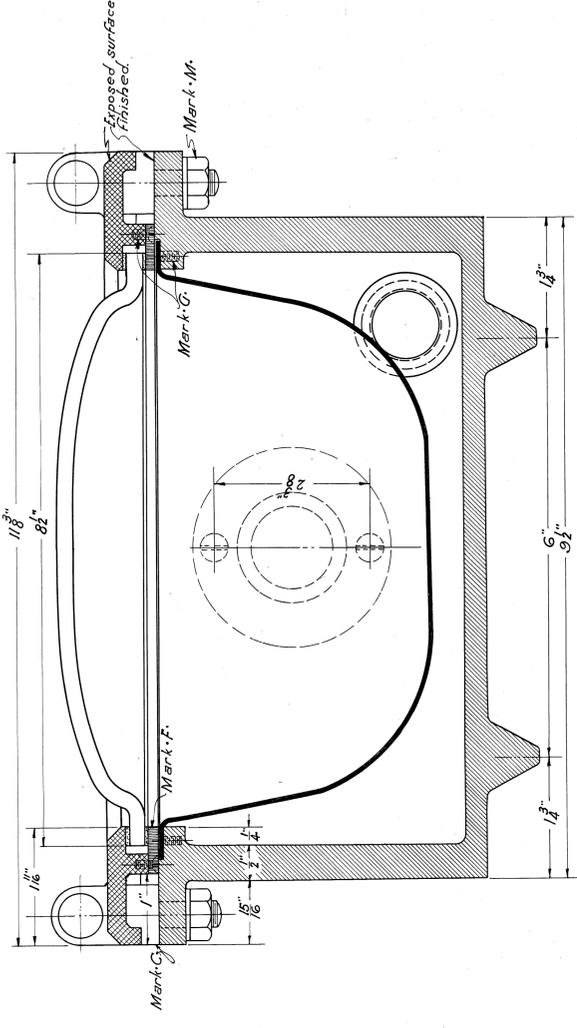
PLAN OF ASSEMBLED BOX.



PLAN OF BOX.



LONGITUDINAL SECTION.



CROSS SECTION.

DESCRIPTION	MARK	MATERIAL	SIZE	REMARKS
Electric light box	A	Cast iron		
Electric light box cover	B	Brass		To be same as used in grade separation 2 light fixtures.
Hinge slots	C	Brass		
Hinge pins	D	Brass	3/8"	
Receiving strips	E	Brass	1/2" x 1/2"	
8-32 flat head screws	F	Brass	1/2" long	With square nuts and lock washers.
Flister head screws	G	Steel	1/2" long	
1/2" x 1/2" strips	H	Steel	1/2" long	
Receptacle	I	Porcelain		Porcelain enameled
Receptacle	J	Porcelain		Material same as used in grade separation 2 light fixtures.
Receptacle	K	Glass		
8-32 nut hex	L	Brass		
Hinge pin nuts	M	Steel		

MATERIAL REQUIRED FOR ONE-ELECTRIC LIGHT BOX COMPLETE.

Scale (e-f) 1/4" = 1'-0"

DETAILS - FLUSH-TYPE LIGHTING FIXTURES

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
JOSEPH A. MARTIN, COMMISSIONER

BELLE ISLE BRIDGE

ENGINEERS
ESSELSTYN, MURPHY & HANFORD
LEWIS H. GRAM, ASSOCIATE
DETROIT, MICH.

JOB NO. **210**
SHEET NO. **34**

DATE: 10-20-20