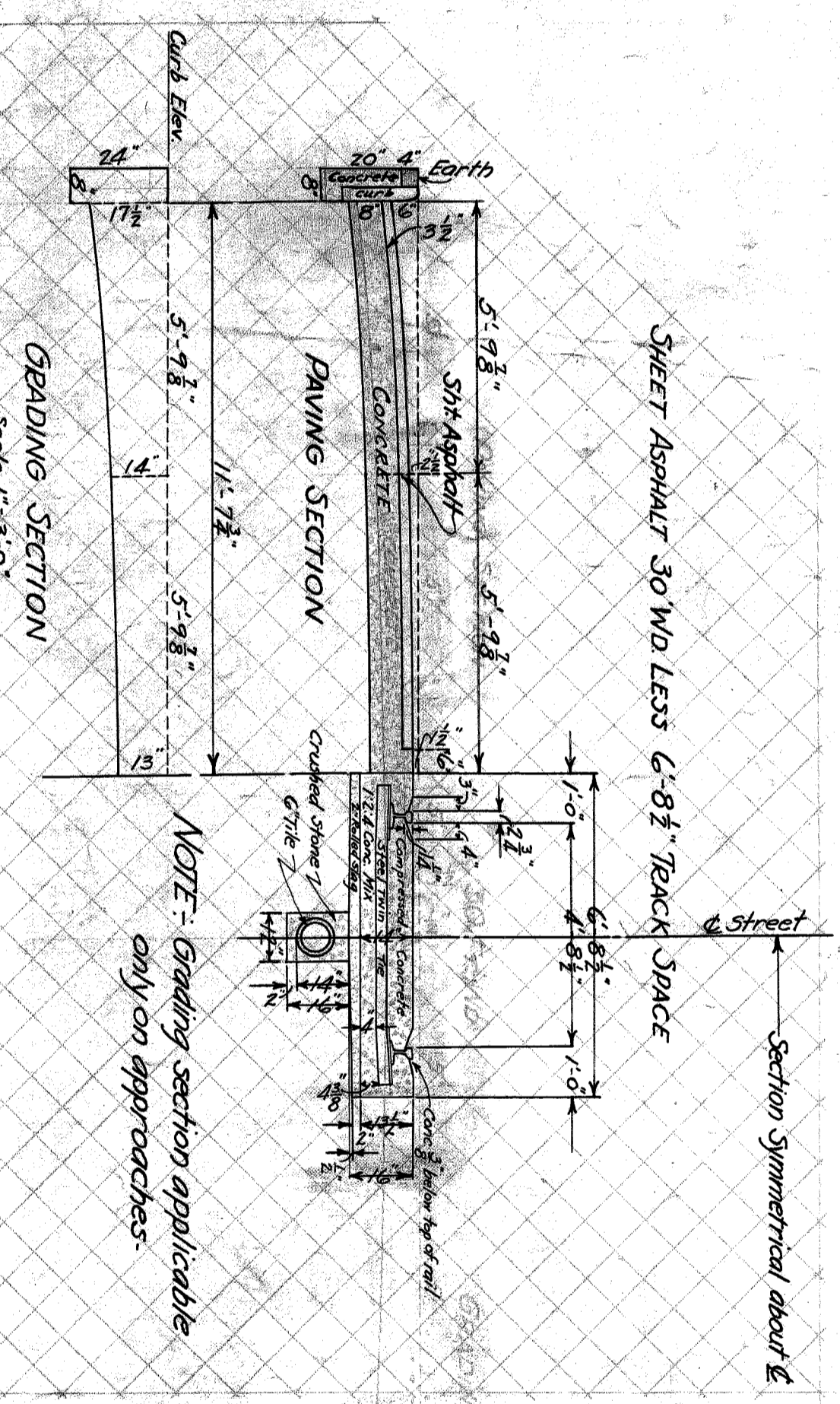
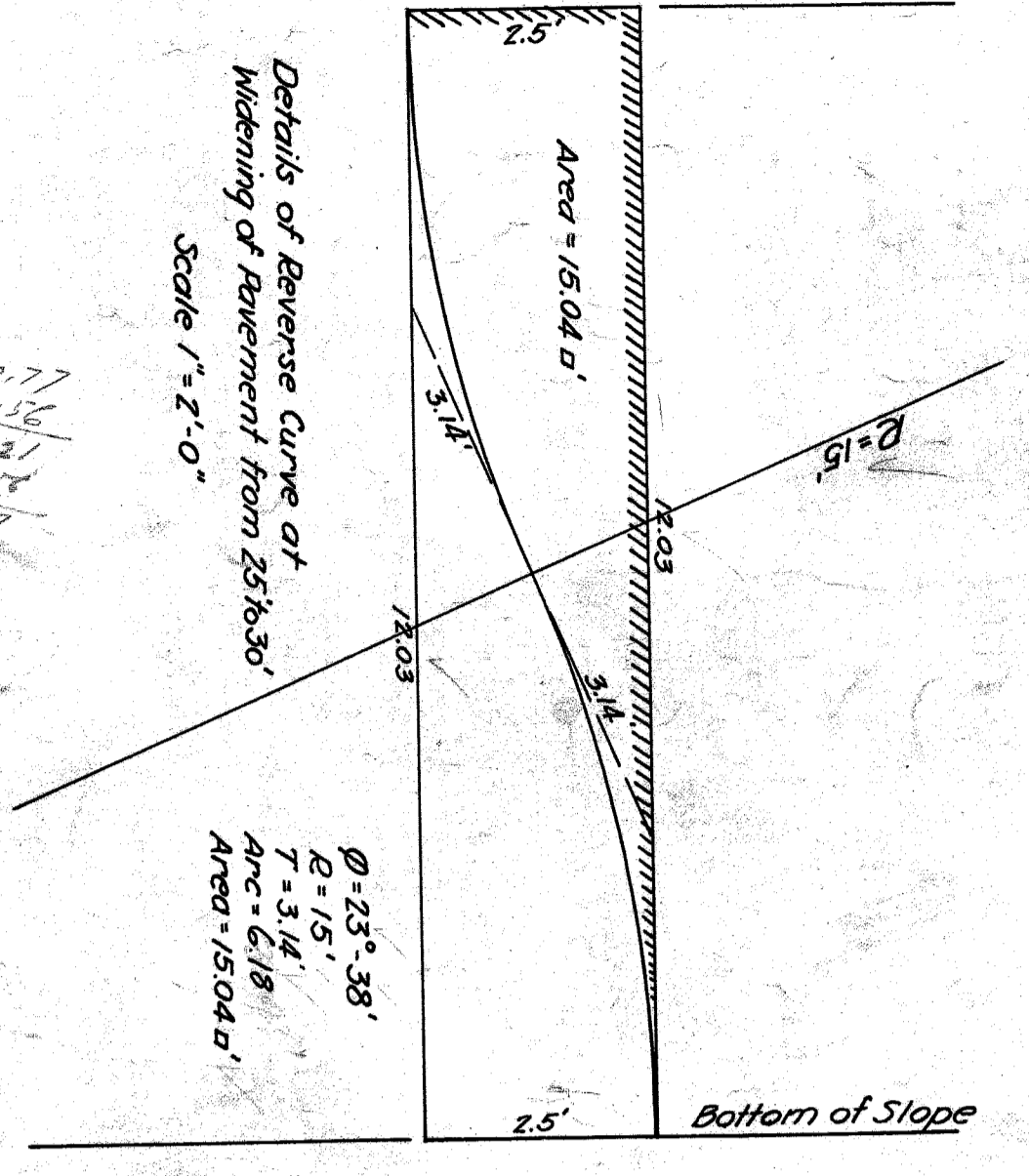
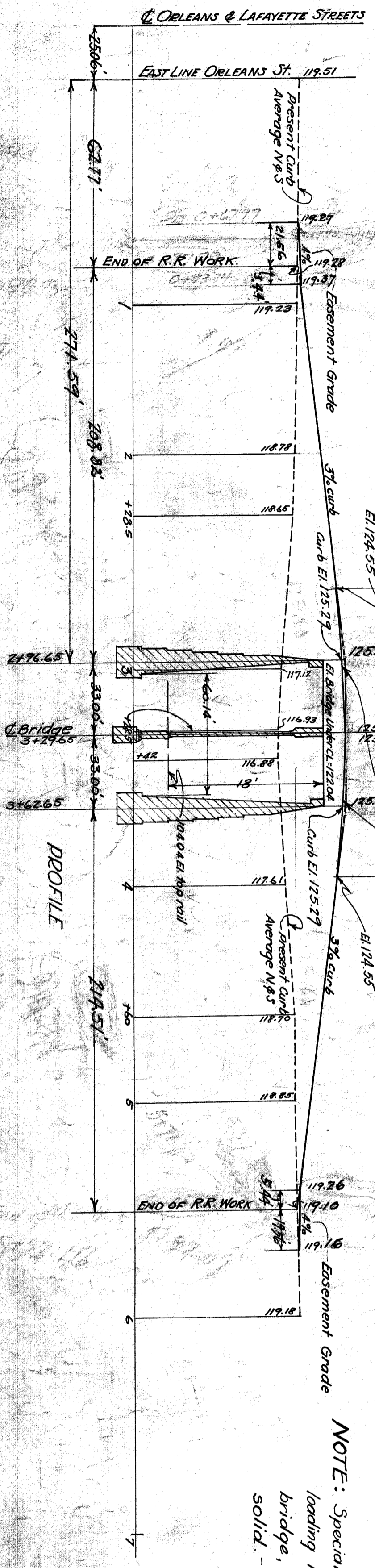


NOTE: Grading section only applicable on approaches.



D.S.R. Tracks to be abandoned - see letter from D.S.R. to Grade Separation dated 1-29-1925-

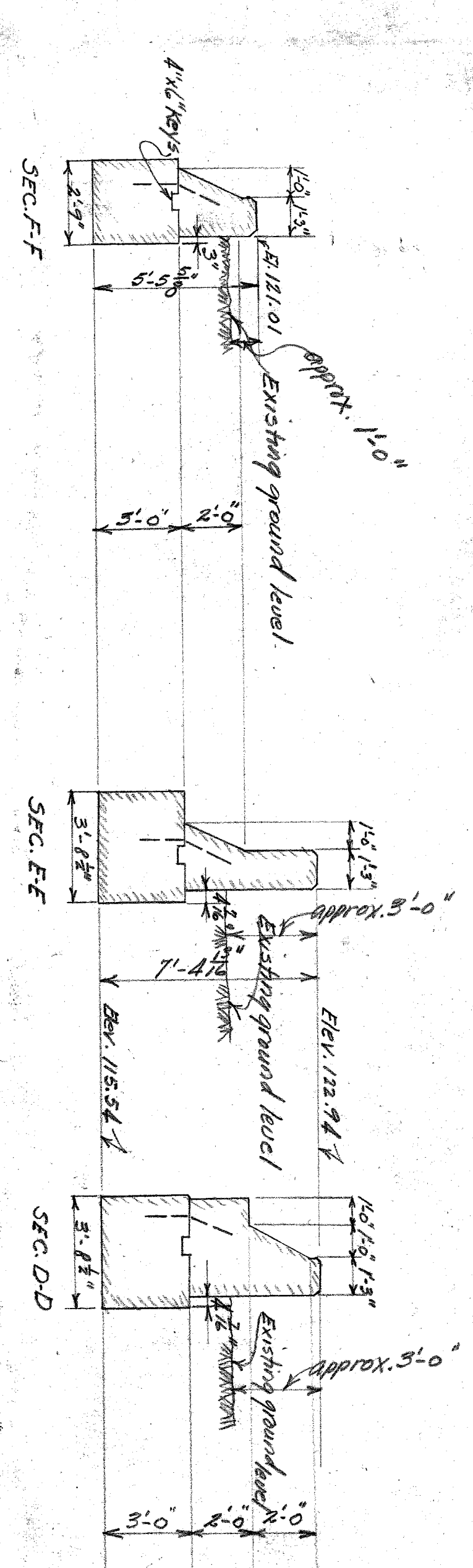
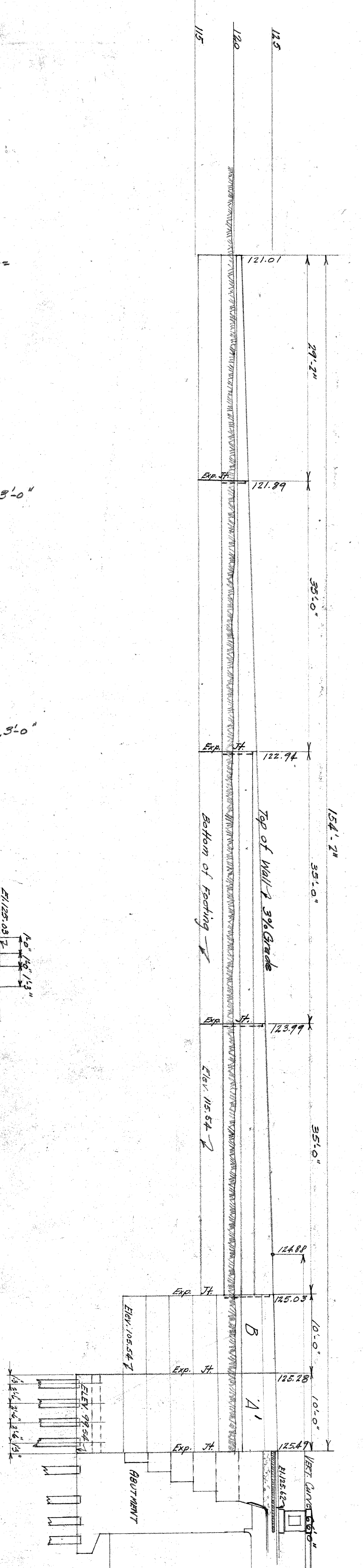
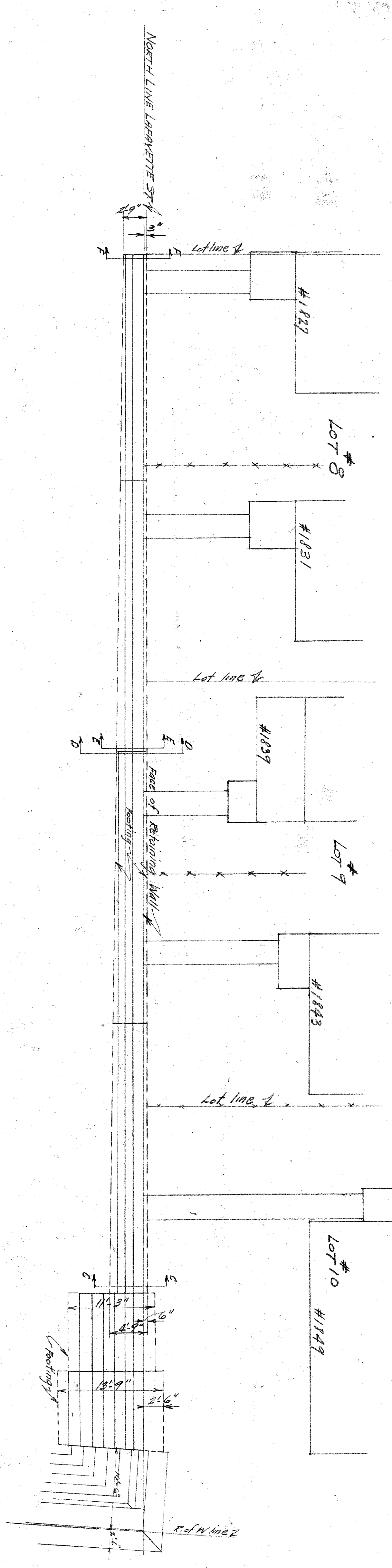
NOTE: Special beams to carry street car loading have been provided in the bridge, but are concreted in solid.



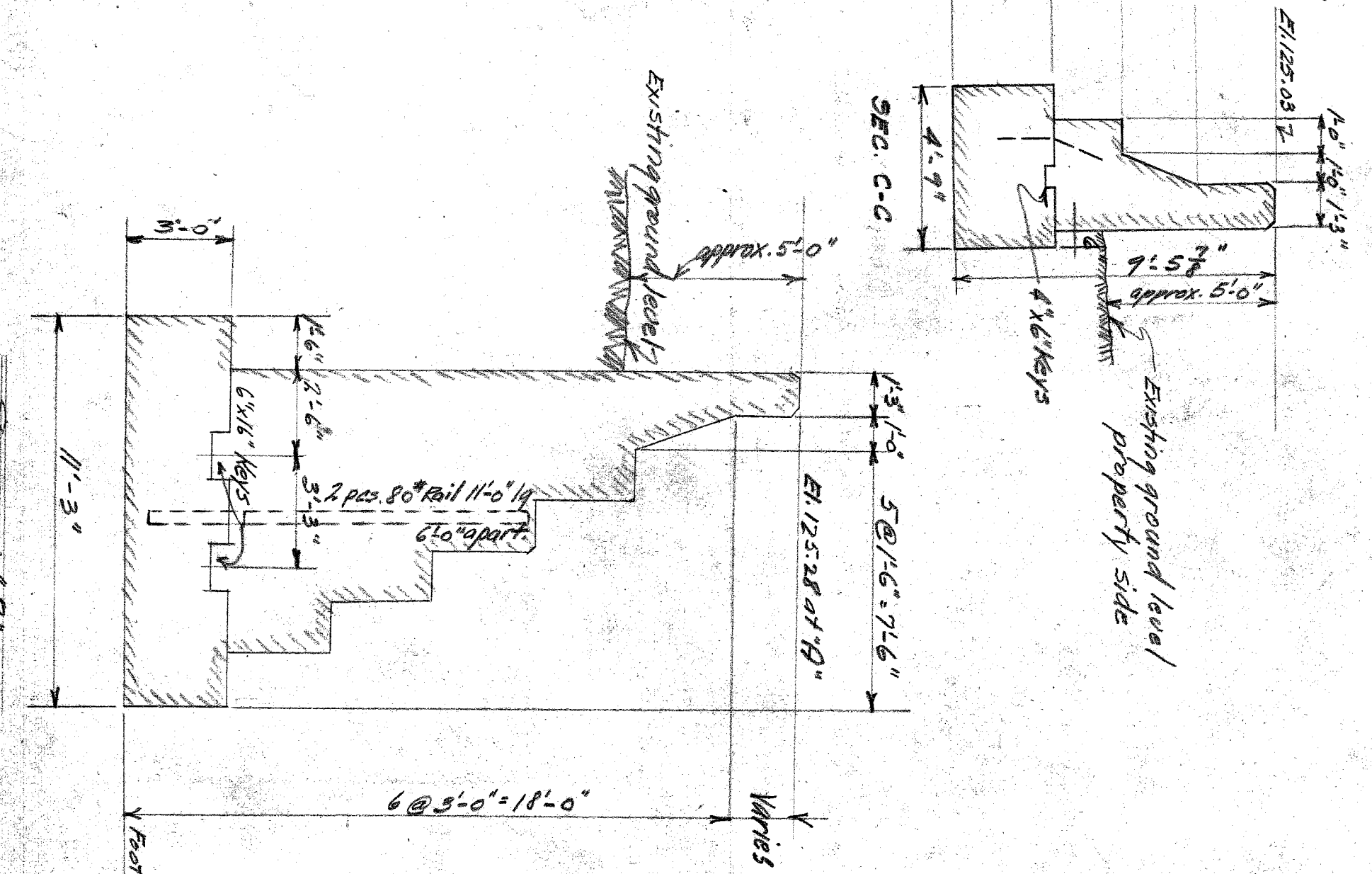
Approved: *George S. [Signature]* July 30, 1924
 Chief Engineer of the City of Detroit
 City Engineer of the City of Detroit
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEER'S OFFICE
 DEPARTMENT OF GRADE SEPARATION & BRIDGES
 DEQUINDE ST GRADE SEPARATION
 LAFAYETTE ST.

Made by AW
 Checked by R.S.
 Scales: Plan 1"=40'
 Ver. 1"=10'
 July 1923

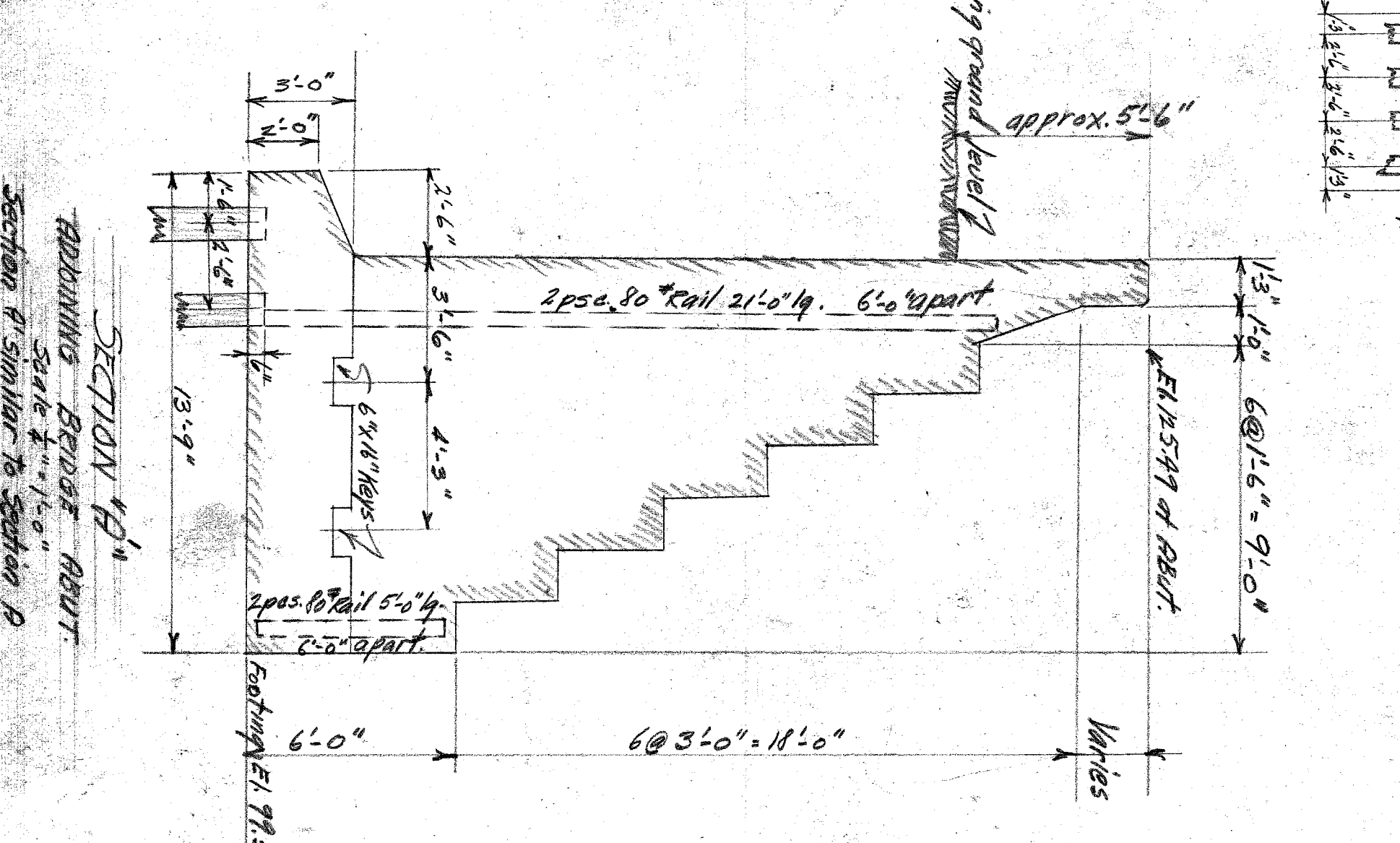
Revised as to paving & grading section 2-7-25.
 Rebased as horizontal curve 3-1-24.



PLAN ELEVATION & SECTIONS
STREET RETAINING WALLS
NORTH SIDE
WEST OF E. of W.
Profile & plan 1/4" = 1'-0"
Wall sections 1/4" = 1'-0"

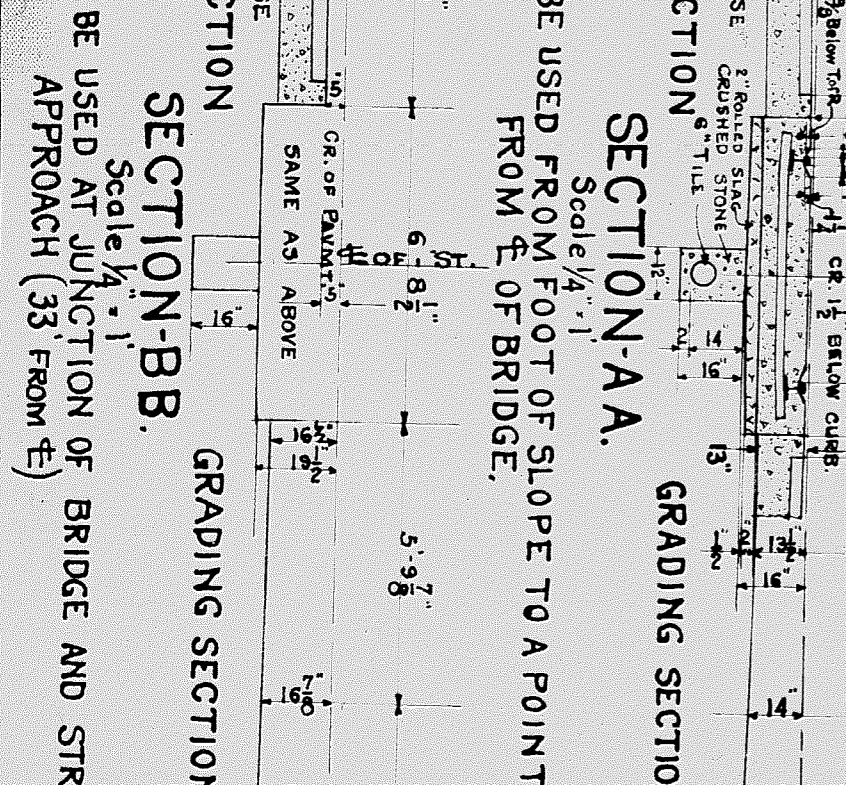
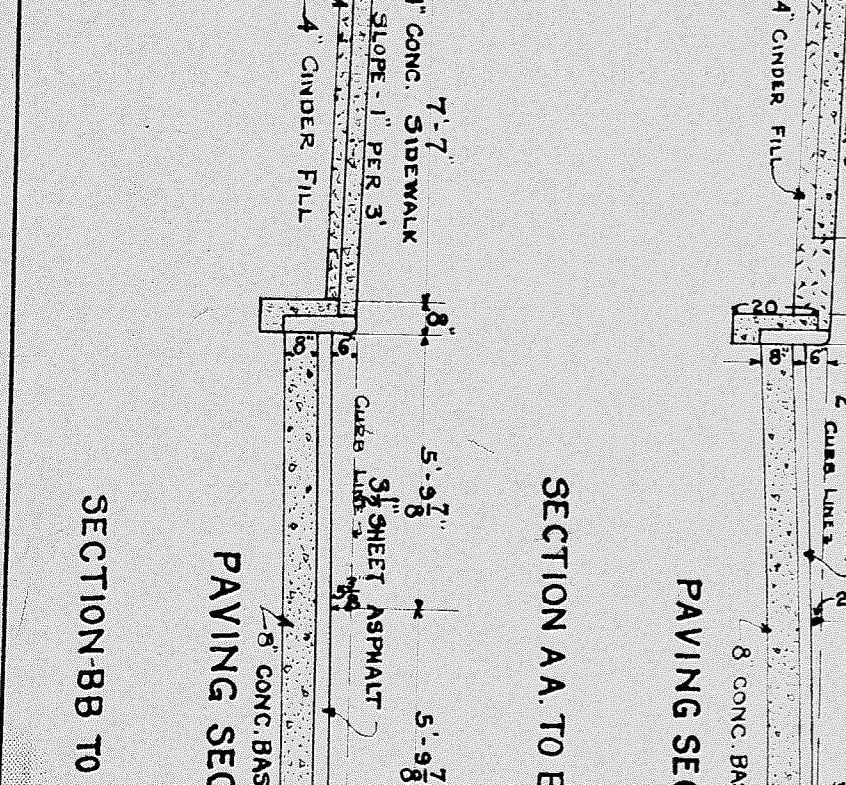
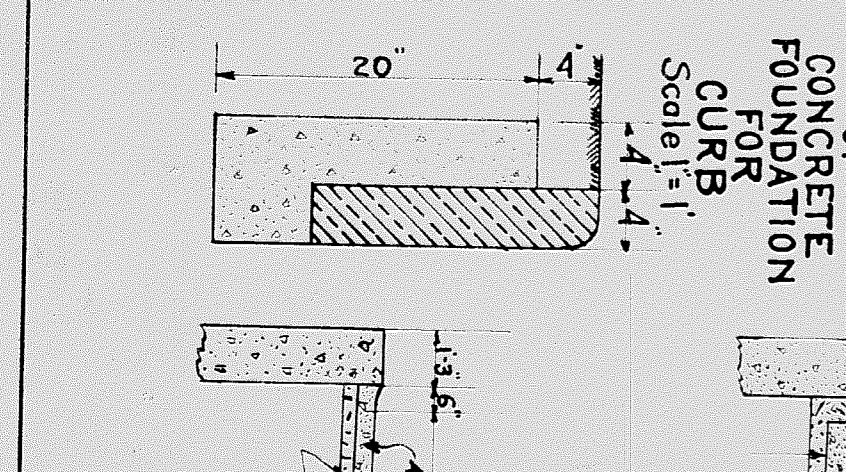
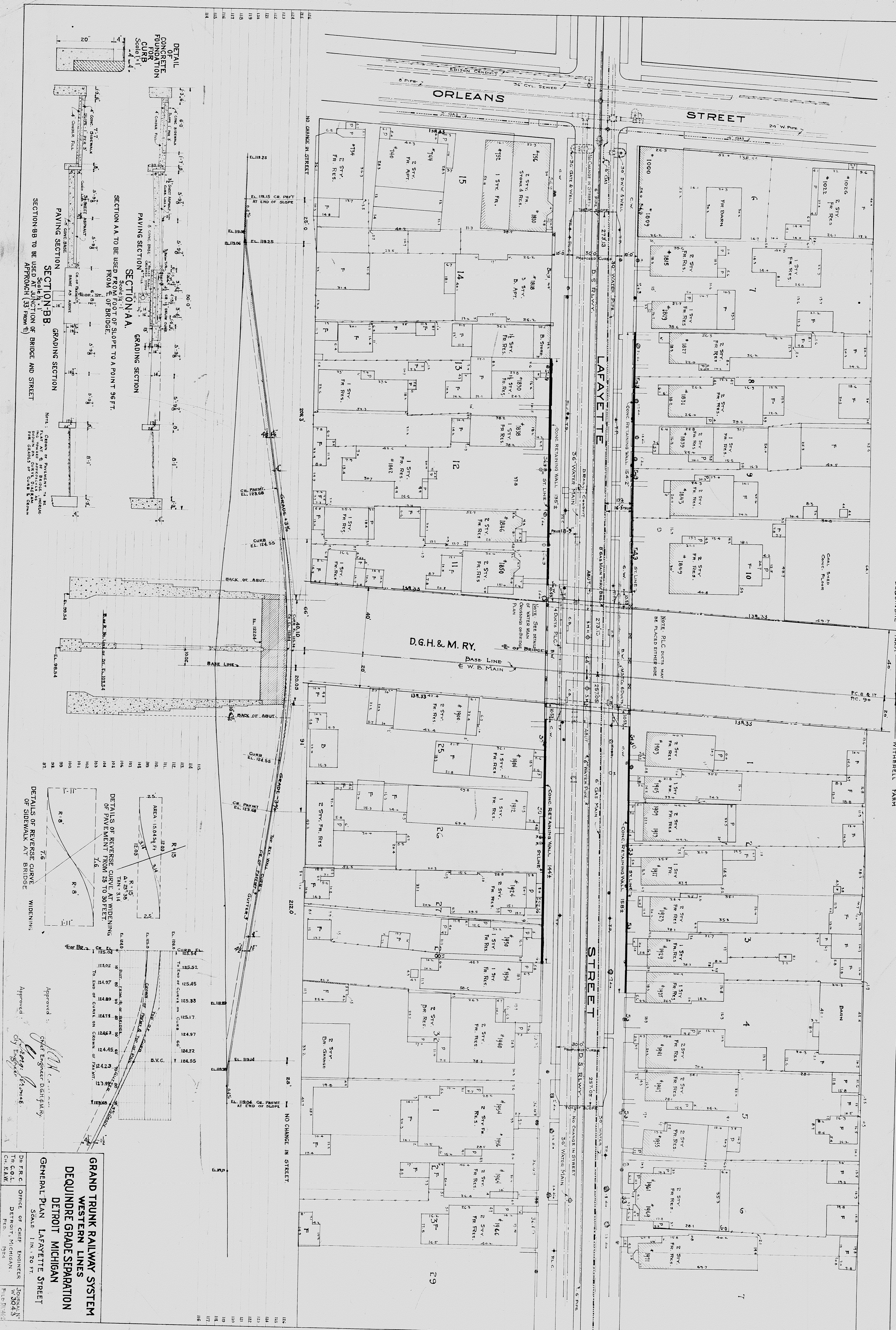


SECTION B-B
ABBREVIATING SEC. 1/4" = 1'-0"
Scale 1/4" = 1'-0"

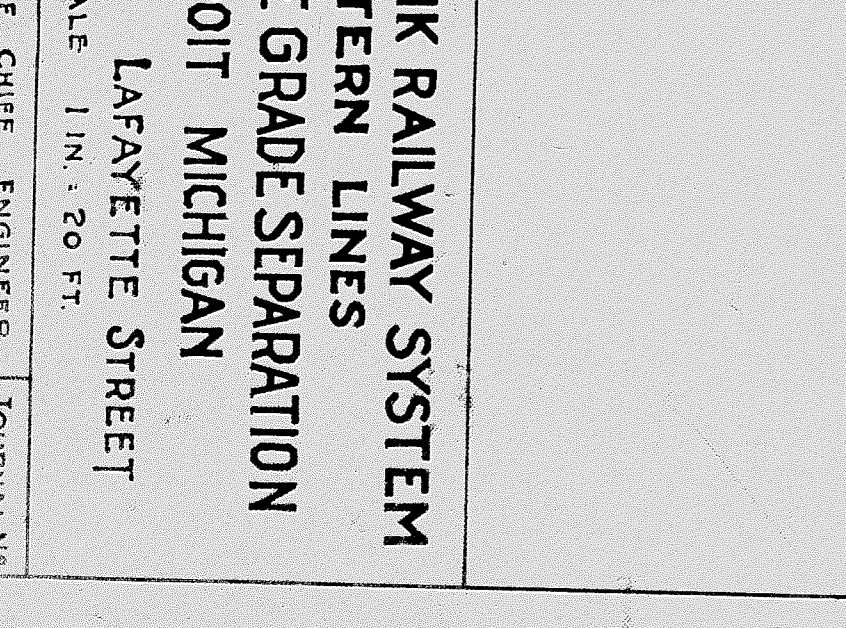
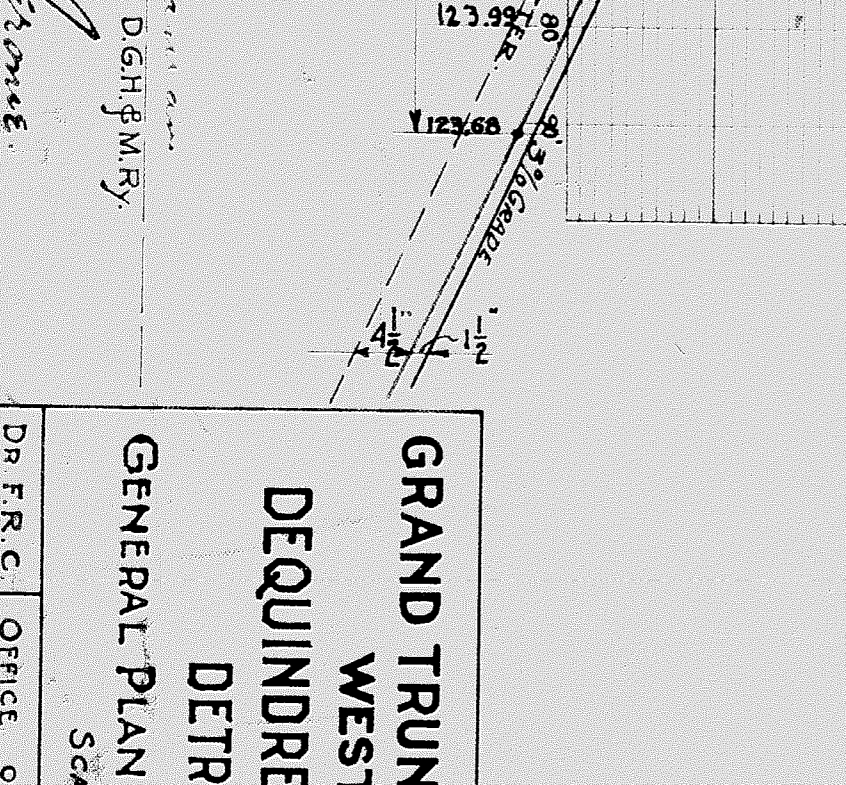
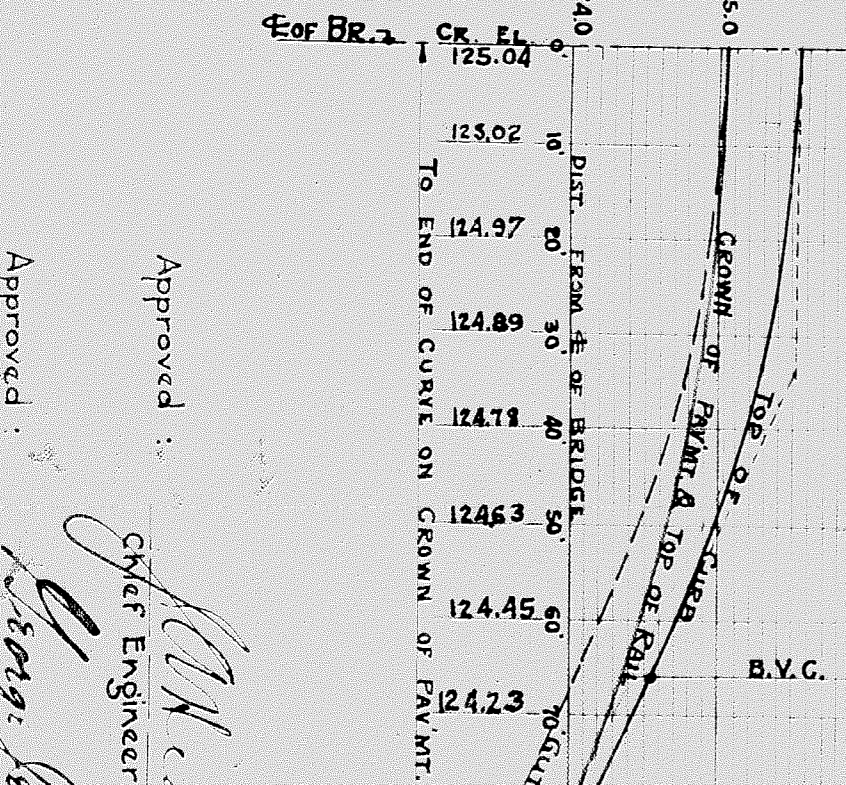
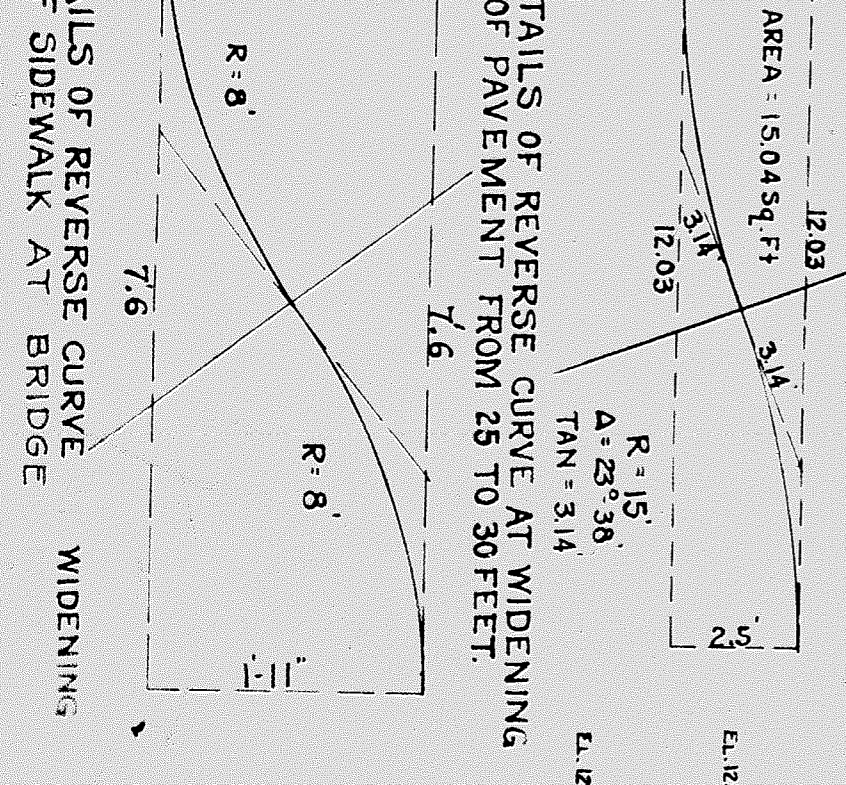
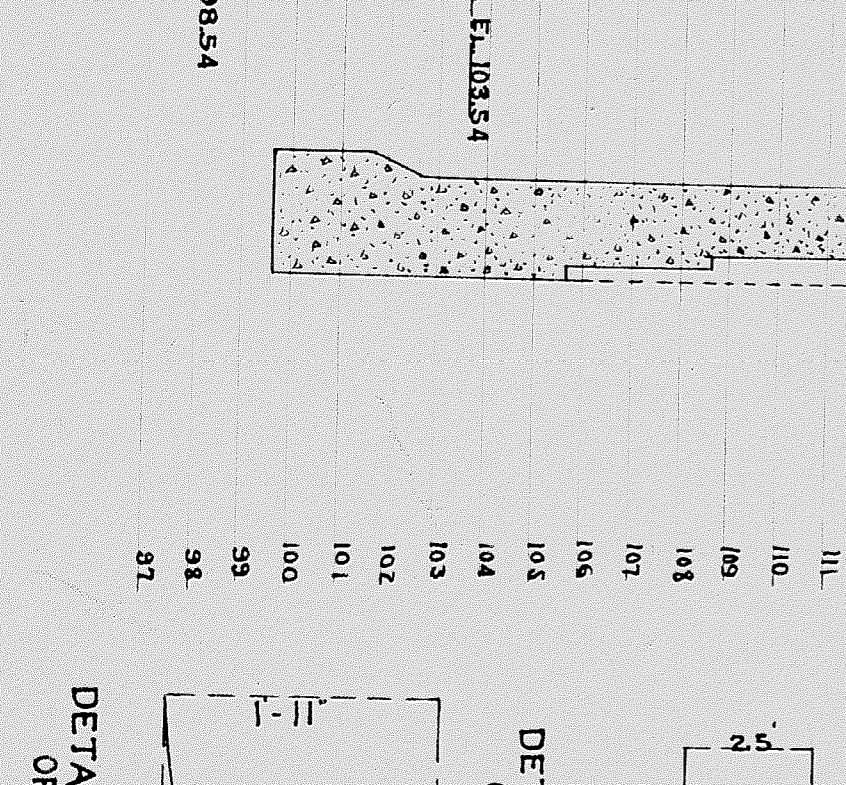
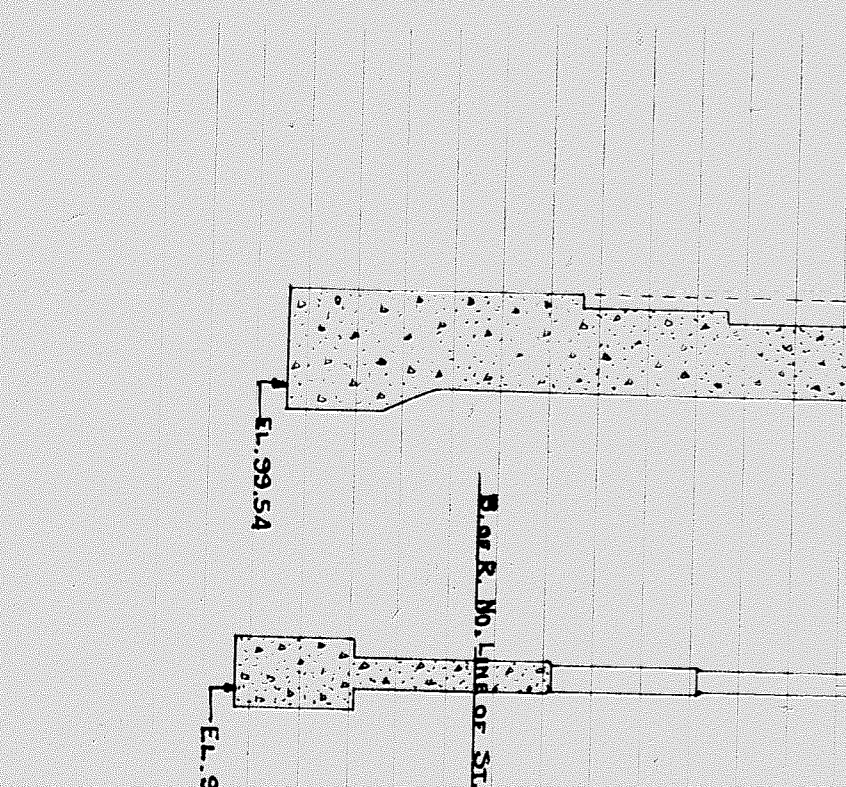


SECTION C-C
ABBREVIATING SEC. 1/4" = 1'-0"
Scale 1/4" = 1'-0"

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
DEPARTMENT OF GRADE SEPARATION & BRIDGES
DETAILS OF STREET RETAINING WALL
NORTH SIDE LAPEYRETTE AVE WEST OF RAILROAD
Scales - as noted
DEVELOPER
STEREOPHOTOGRAPHY
JUN - 1924



NOTE: CURB OF PAVEMENT TO BE PLACED ON TOP OF APPROACH AS SHOWN FOR CURB OF BRIDGE AND APPROACH.



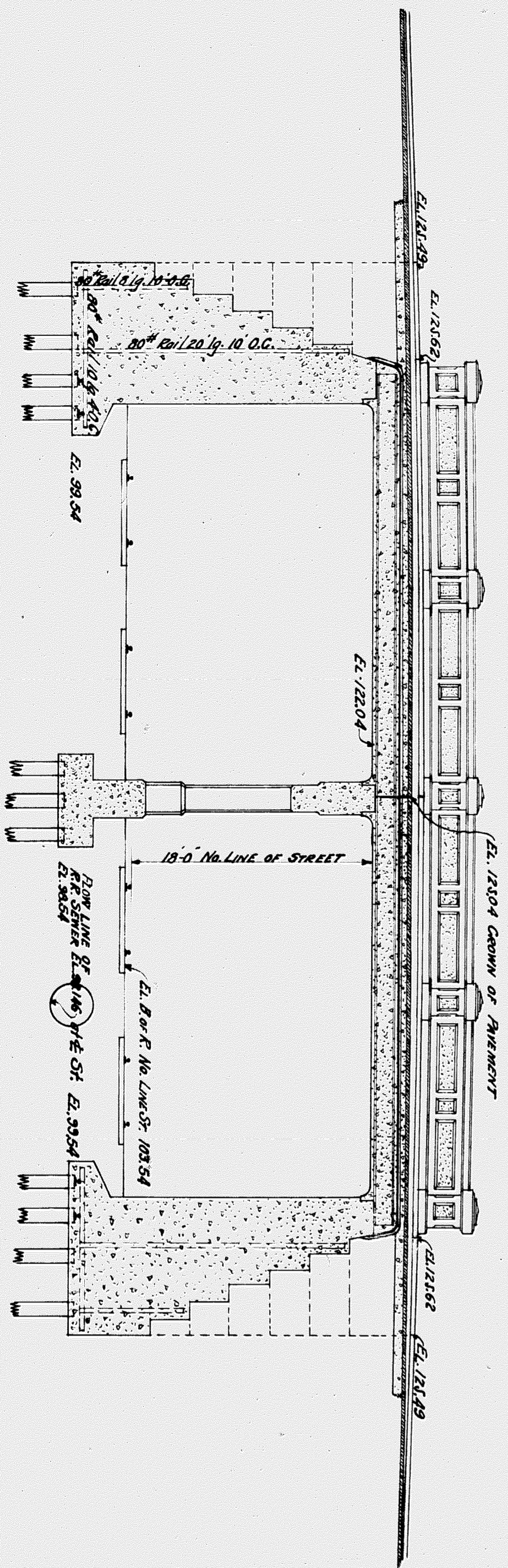
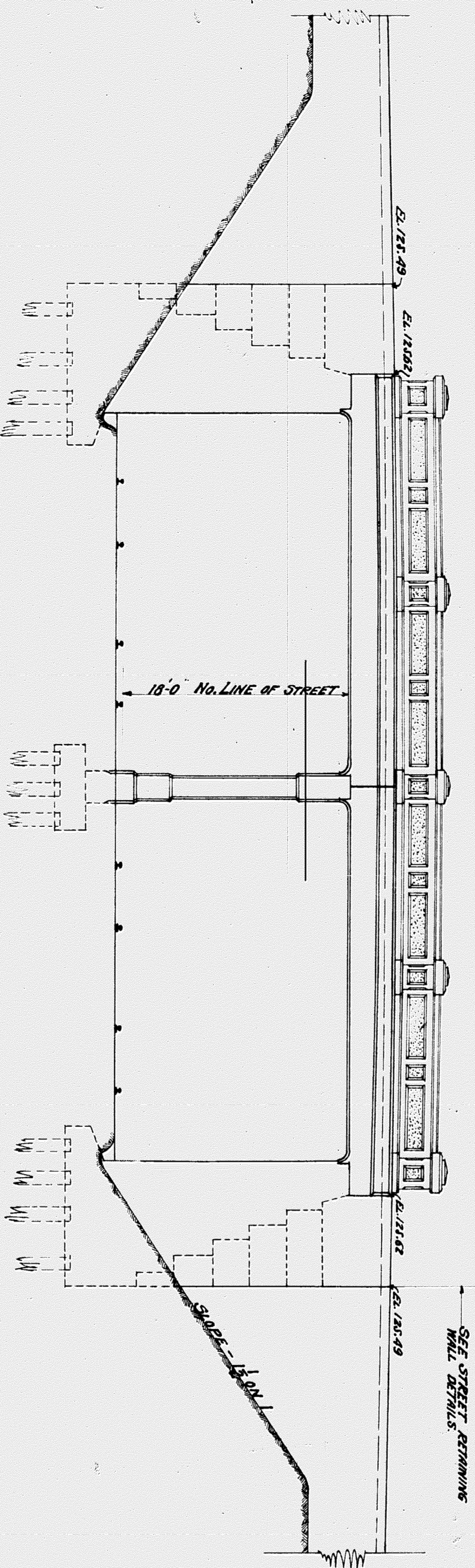
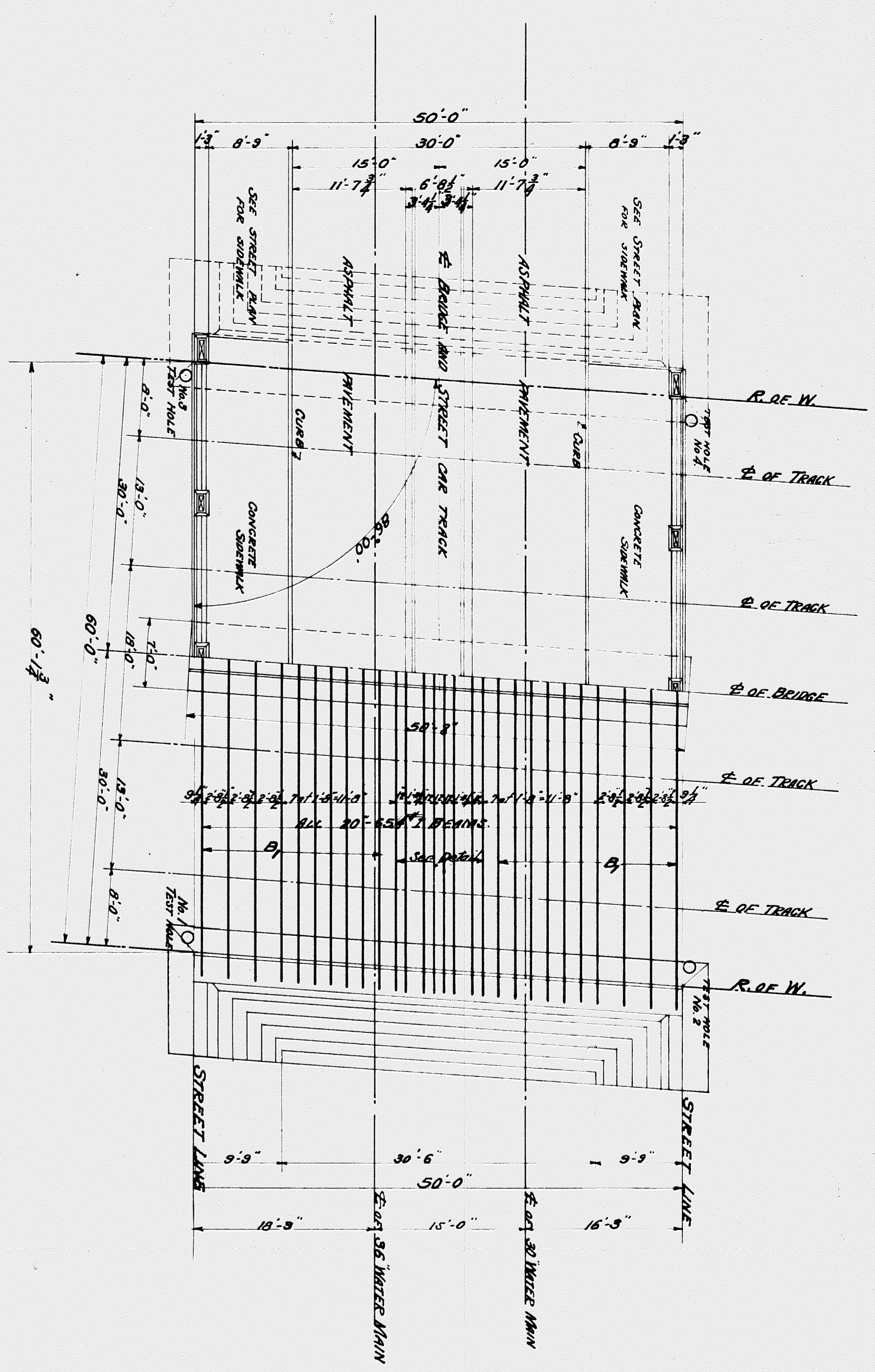
**GRAND TRUNK RAILWAY SYSTEM
WESTERN LINES
DEQUINDE GRADE SEPARATION
DETROIT MICHIGAN**

Scale 1/4" = 20 FT.

DR. F. R. C. TR. COL. CH. E. A. W.
OFFICE OF CHIEF ENGINEERS
DETROIT, MICHIGAN
FEB. 1924

Approved: *[Signature]*
Chief Engineer D.G.H. & M. Ry.

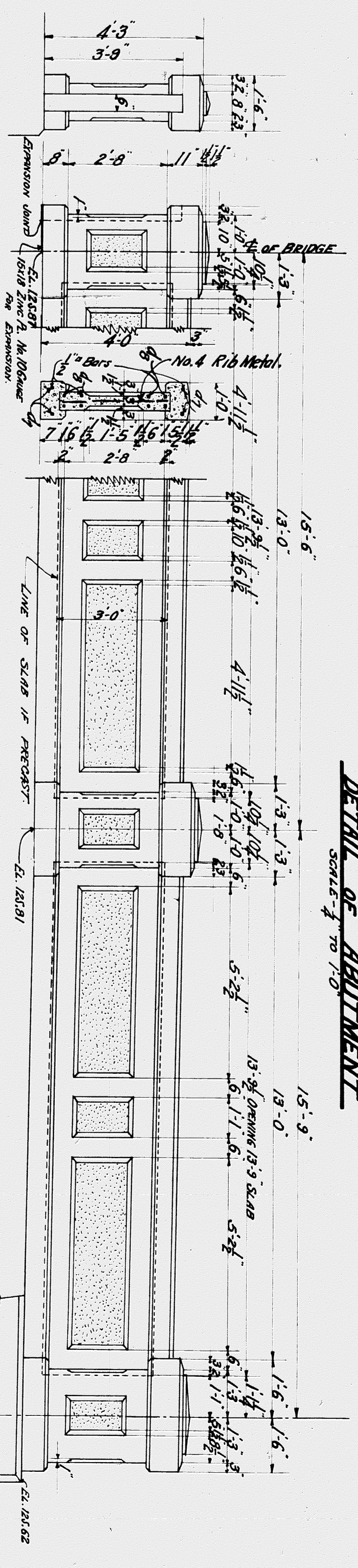
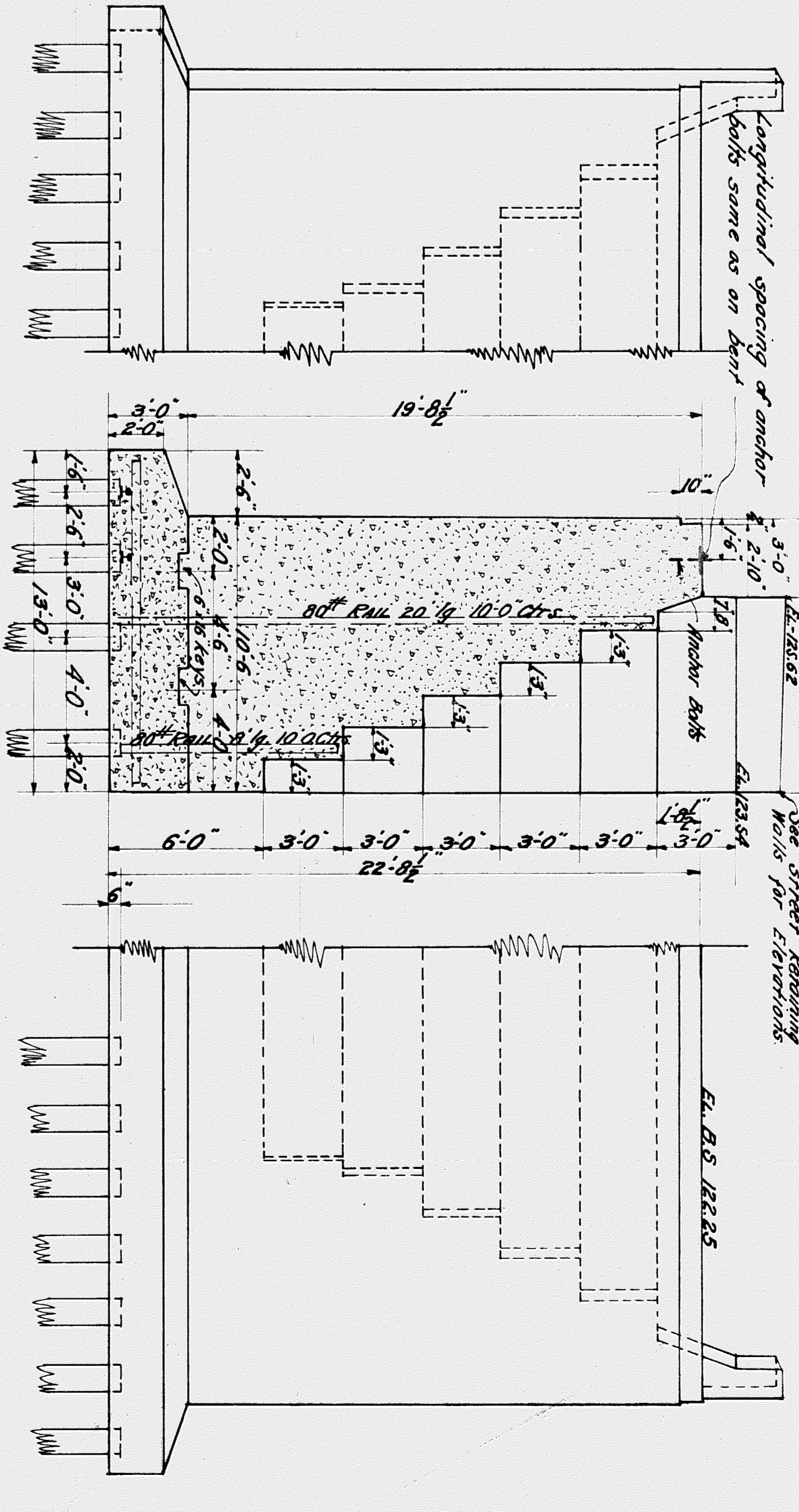
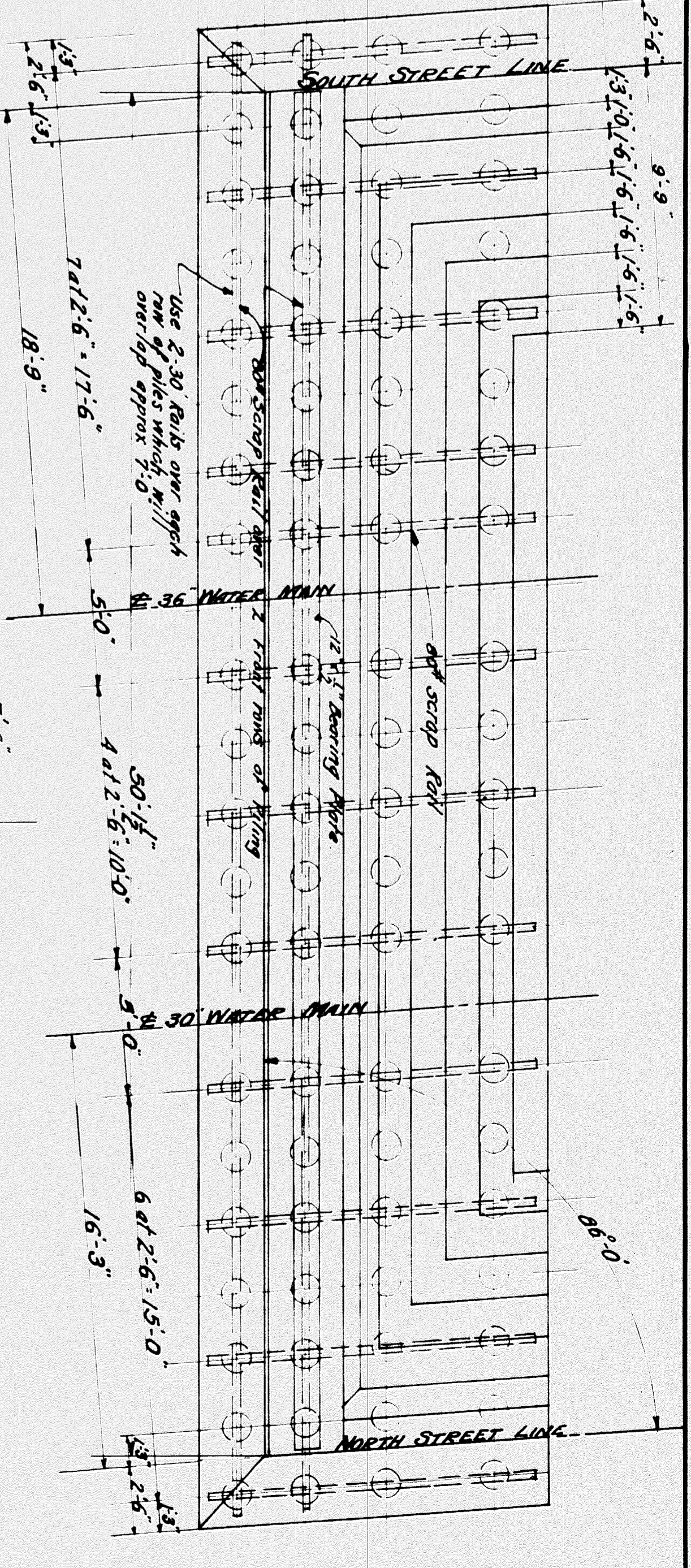
Approved: *[Signature]*
City Engineer



NOTE:
MINIMUM LENGTH PILING 50 FT.
MINIMUM CUT OFF 3 FT.

13'-0"

2'-6"	3'-0"	7'-6"
1'-6"	2'-6"	3'-0"
4'-0"	2'-0"	2'-0"
5'	12'-0"	5'



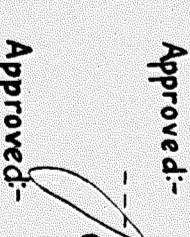

DETAIL OF RAILING
SCALE 1/2 TO 1/4

NOTE:
Disc hammer panels
both sides of railing

18'-0"	15'-0"	10'-0"	8'-0"	4'-11 1/2"
EL. 107.23	EL. 107.23	EL. 107.23	EL. 107.23	EL. 107.23
HARD RED CLAY	HARD BLUE CLAY	SOFT BLUE CLAY	VERY SOFT BLUE CLAY	TEST HOLE No. 1
10'-0"	8'-0"	15'-0"	7'-0"	
EL. 107.17	EL. 107.17	EL. 107.17	EL. 107.17	
HARD BLUE CLAY WITH SOME SAND	SOFT BLUE CLAY	VERY SOFT BLUE CLAY	TEST HOLE No. 2	
9'-0"	5'-0"	14'-0"	7'-0"	
EL. 107.17	EL. 107.17	EL. 107.17	EL. 107.17	
HARD BLUE CLAY	SOFT BLUE CLAY	VERY SOFT BLUE CLAY	TEST HOLE No. 3	
10'-0"	8'-0"	24'-0"	7'-0"	
EL. 107.30	EL. 107.30	EL. 107.30	EL. 107.30	
HARD BLUE CLAY	MEDIUM BLUE CLAY	SOFT BLUE CLAY	TEST HOLE No. 4	
10'-0"	8'-0"	12'-0"	7'-0"	
EL. 107.27	EL. 107.27	EL. 107.27	EL. 107.27	
HARD RED CLAY	HARD BLUE CLAY	SOFT BLUE CLAY	TEST HOLE No. 5	
10'-0"	8'-0"	10'-0"	7'-0"	
EL. 107.27	EL. 107.27	EL. 107.27	EL. 107.27	

WATER AT 5'-0" BELOW STAKE

SCALE - 1/4" = 1'-0"

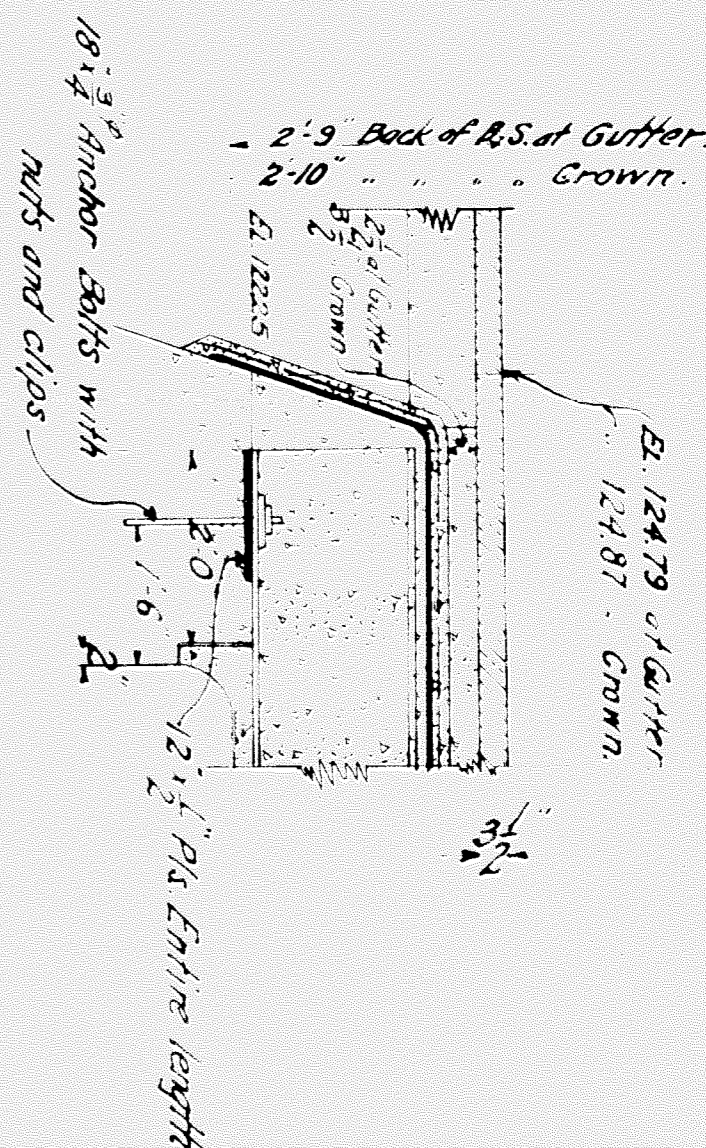
Approved: 
Chief Engineer, D.C.H. & M. Ry
City Engineer: 

GRAND TRUNK RAILWAY SYSTEM
WESTERN LINES
DEQUINDRE GRADE SEPARATION
DETROIT, MICHIGAN
BRIDGE - LAFAYETTE STREET

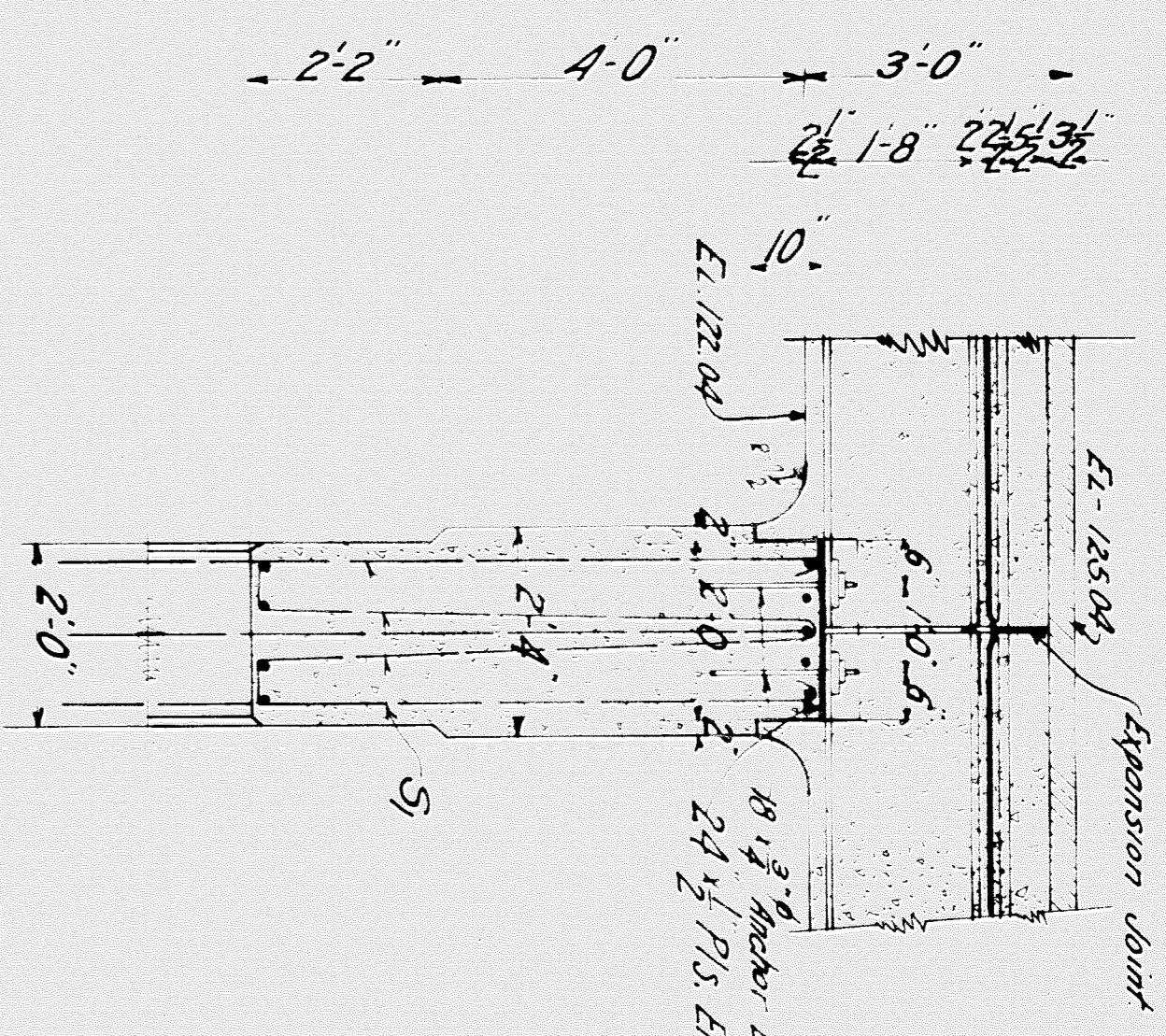
SCALE - AS SHOWN

DR.-RAW.	OFFICE OF CHIEF ENGINEER	JOURNAL NO.
TR.-E.A.W.	DETROIT, MICHIGAN	W.-3051
CH.-E.L.W.	MAR. 6, 1923	P.L.C.-3942

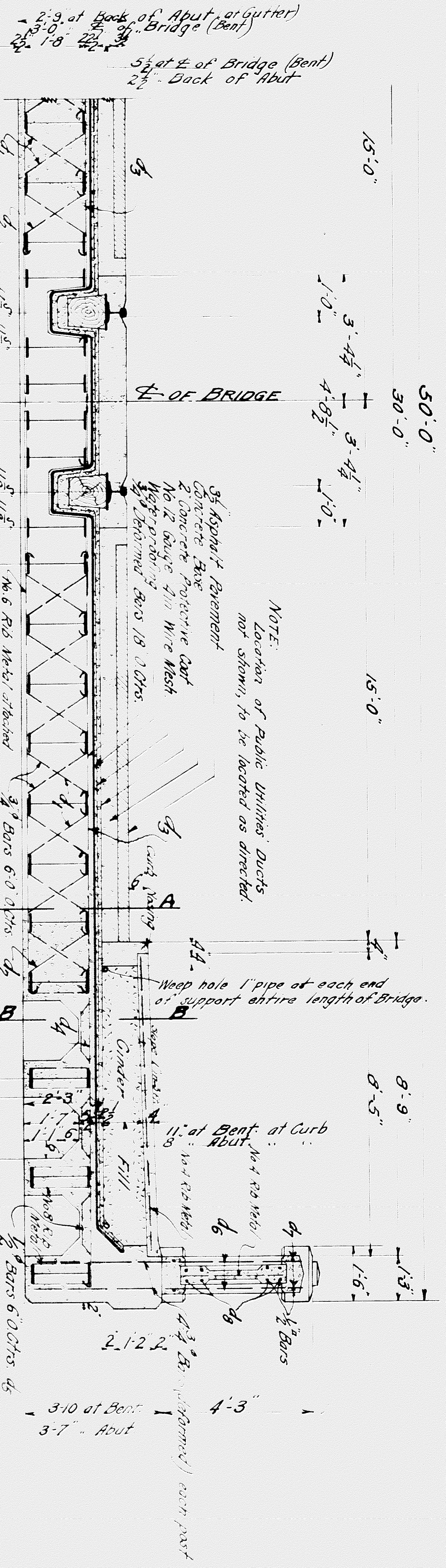
Sheet 7 of 8



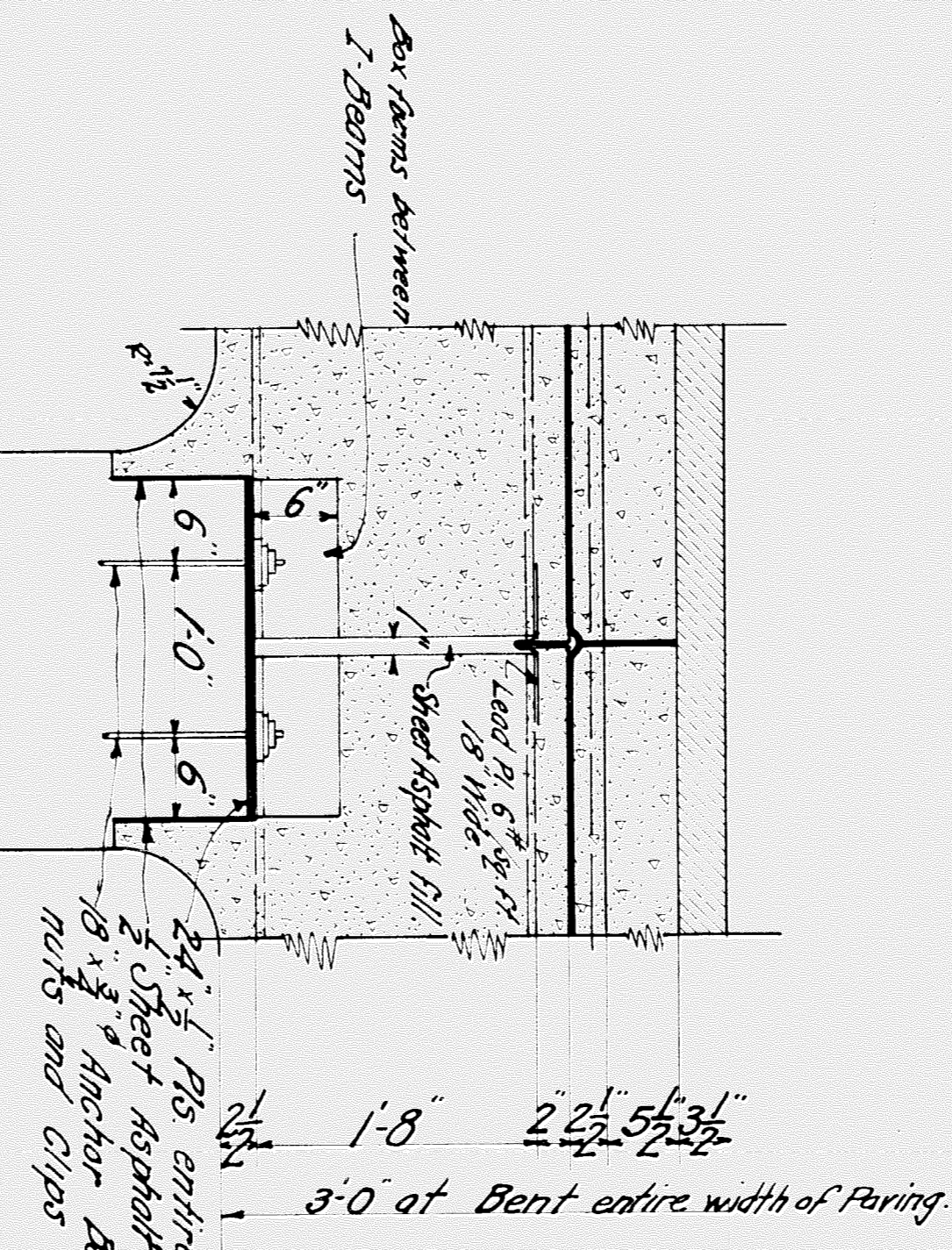
SECTION AA AT ABUTMENT



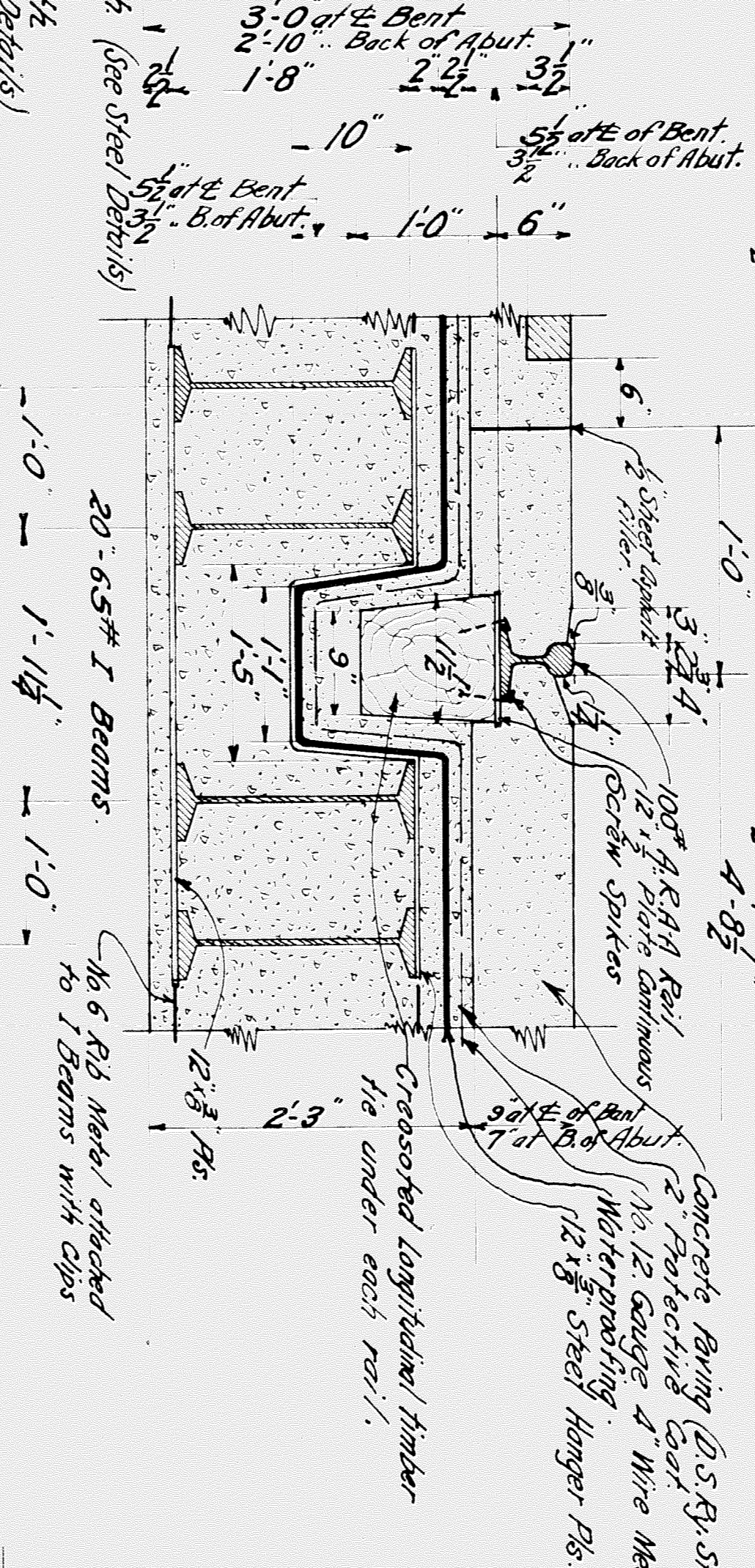
SECTION AAA AT BENT



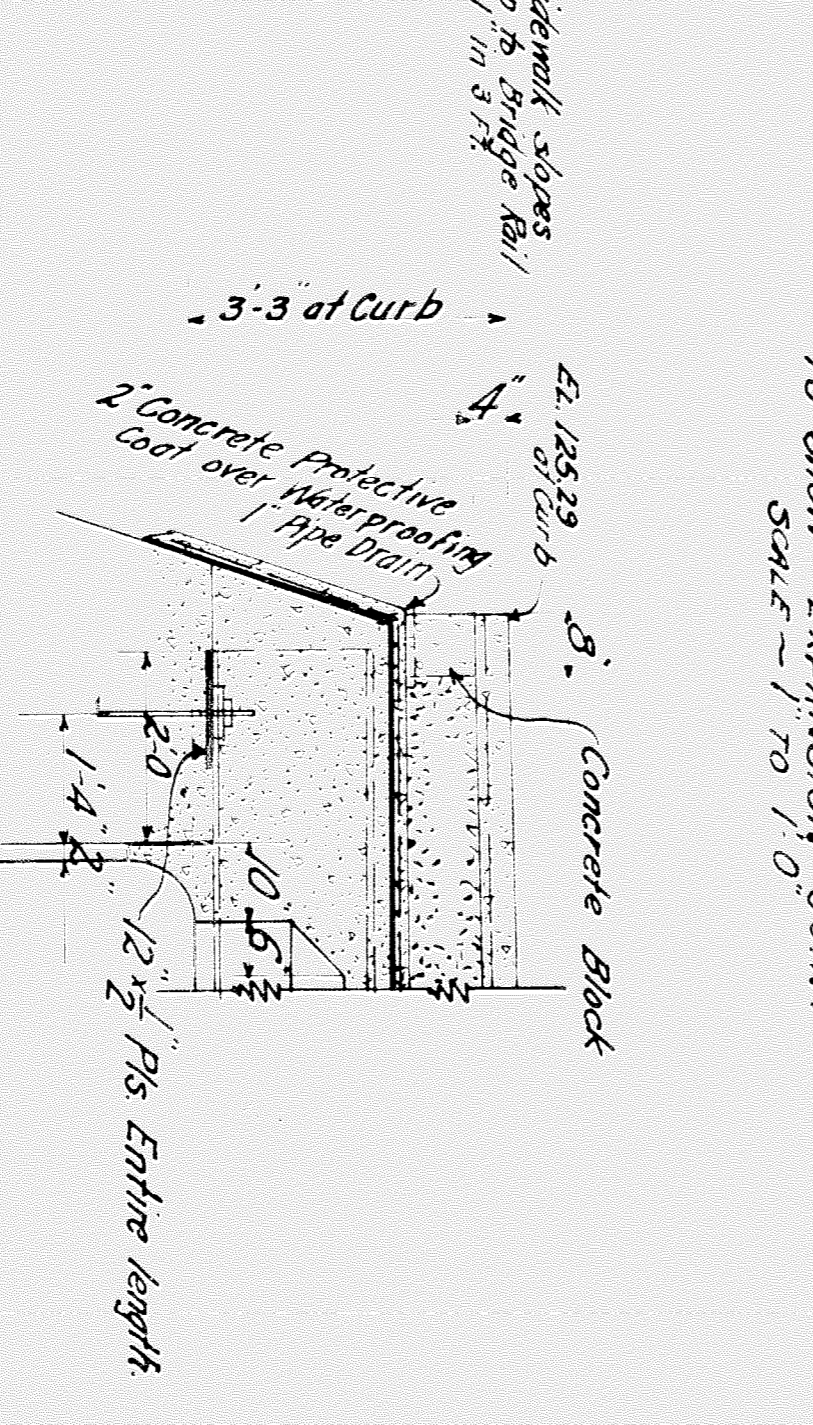
SECTION THREE DECK NORTH SIDE



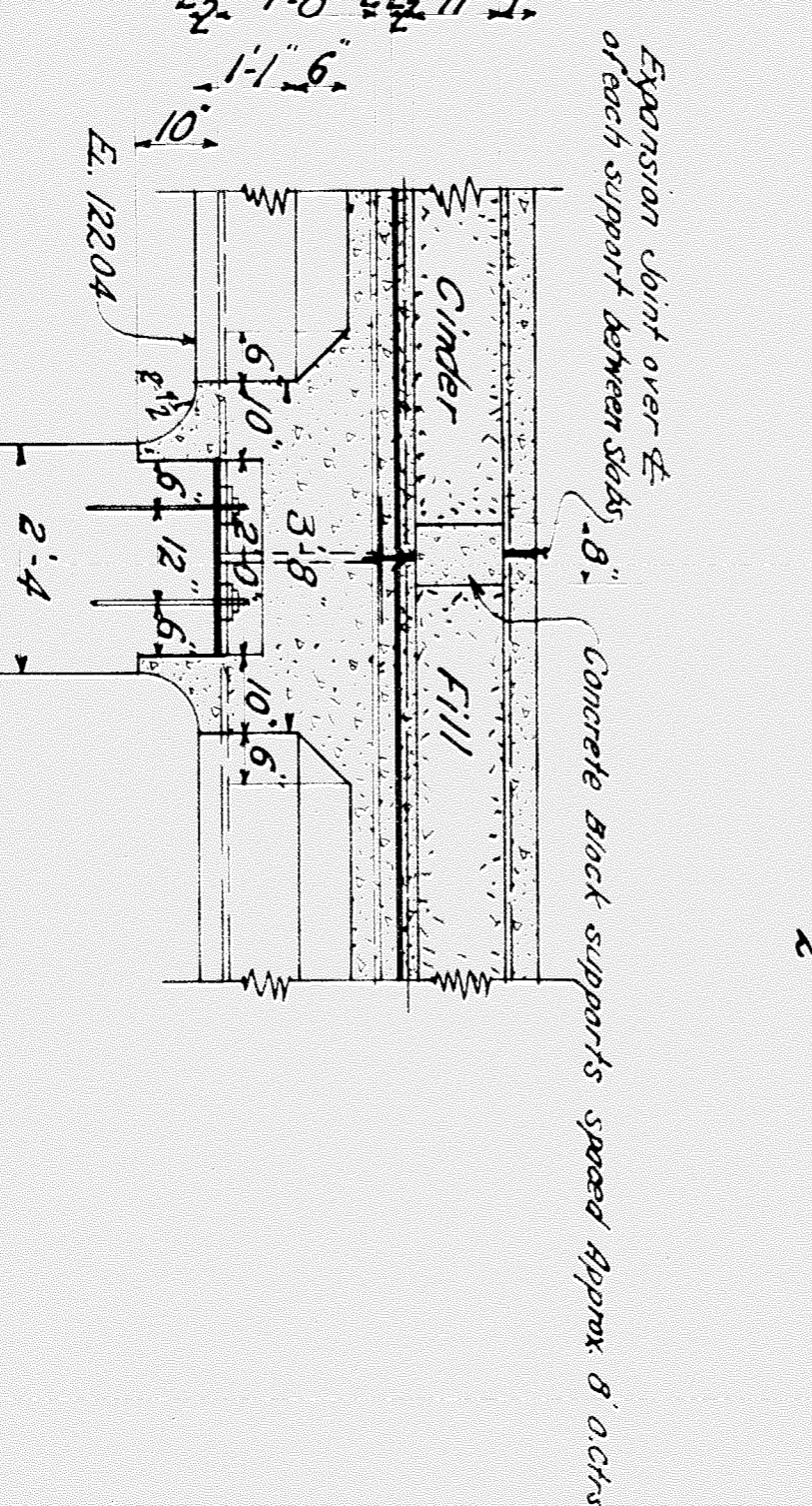
SECTION AA AT BENT ENLARGED



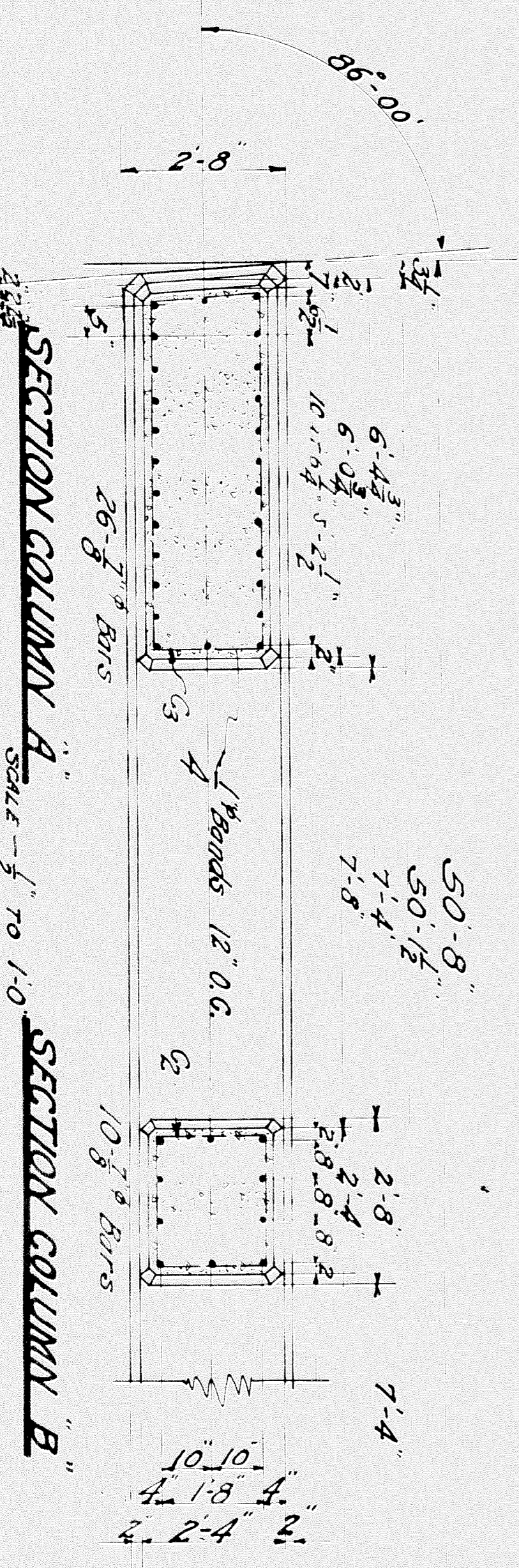
SECTION SHOWING CONSTRAINT UNDER BEIL



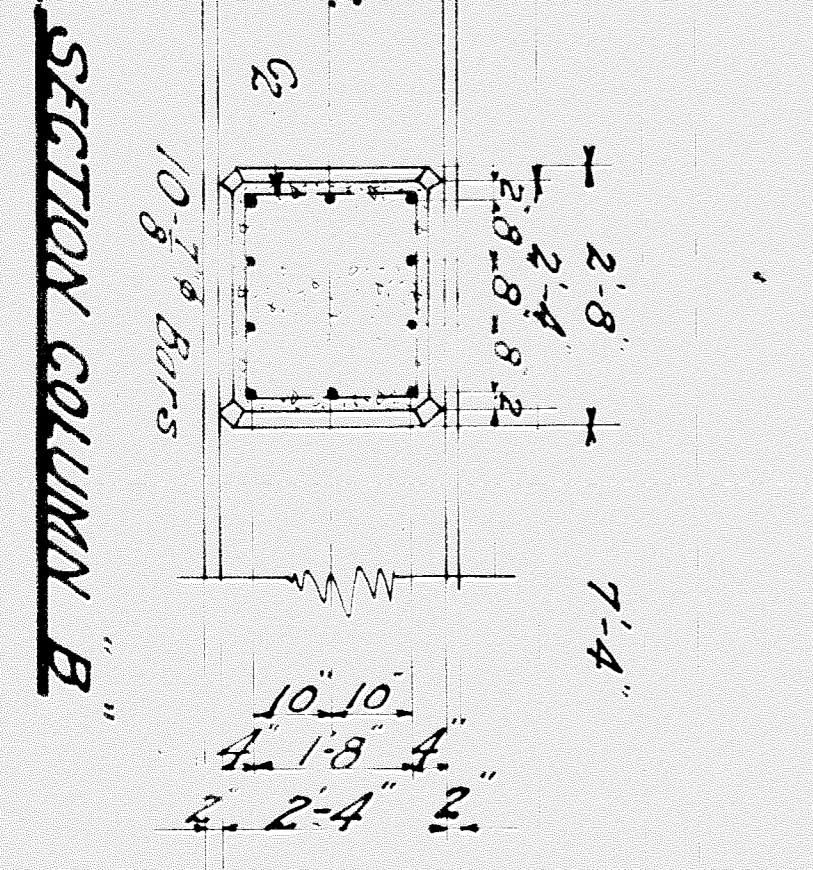
SECTION BB AT ABUTMENT



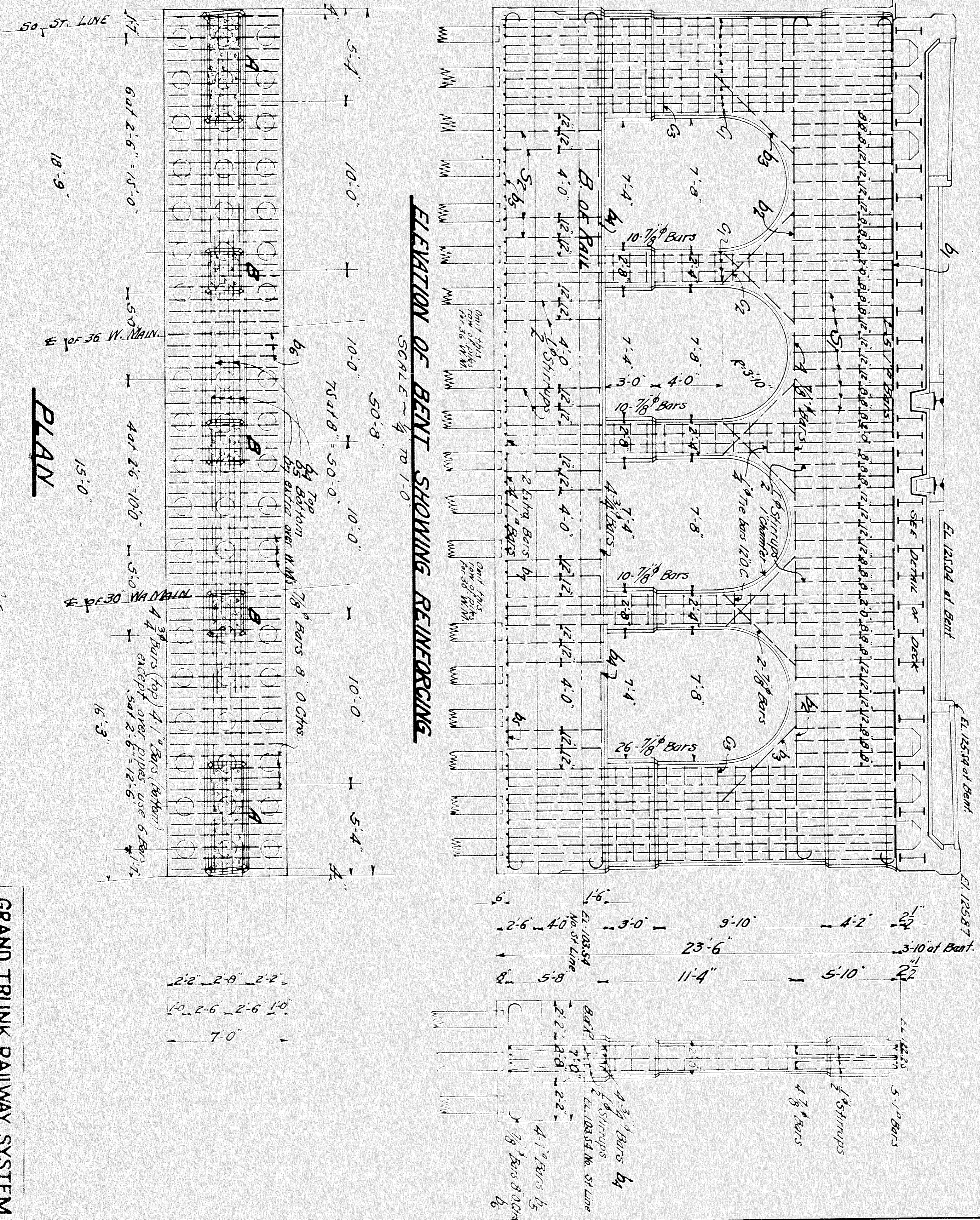
SECTION BB AT BENT



SECTION COLUMN A



SECTION COLUMN B



ELEVATION OF BENT SHOWING REINFORCING

PLAN

Approved: *[Signature]*
 Chief Engineer DGH & M Ry
 Approved: *[Signature]*
 City Engineer

GRAND TRUNK RAILWAY SYSTEM
 WESTERN LINES
 DEQUINDRE GRADE SEPARATION
 DETROIT, MICHIGAN
 BRIDGE - LAFAYETTE STREET

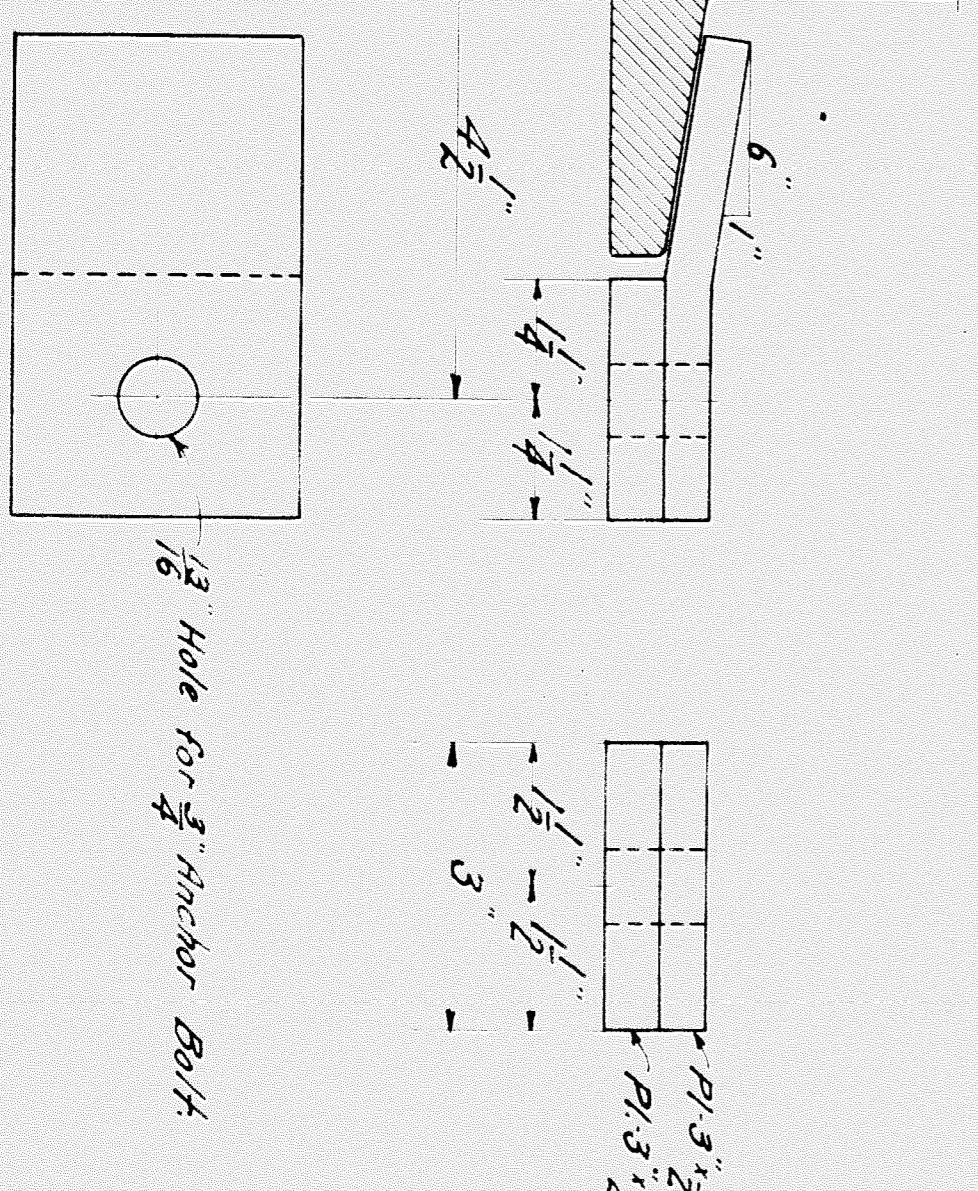
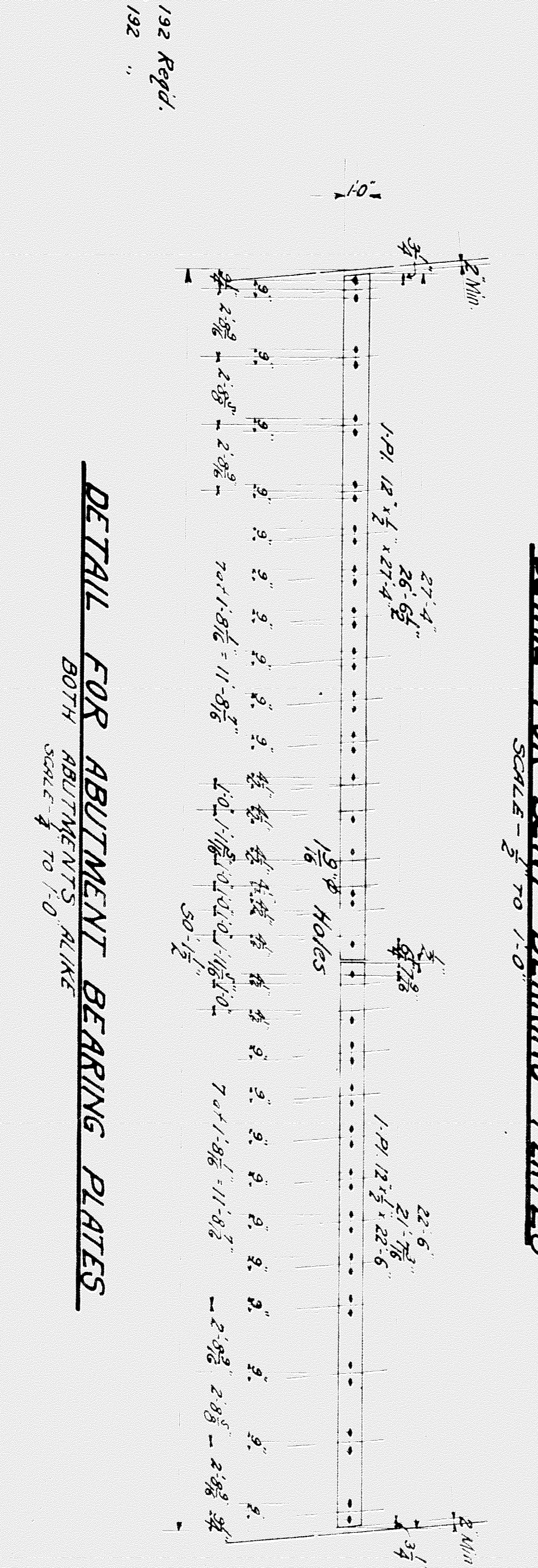
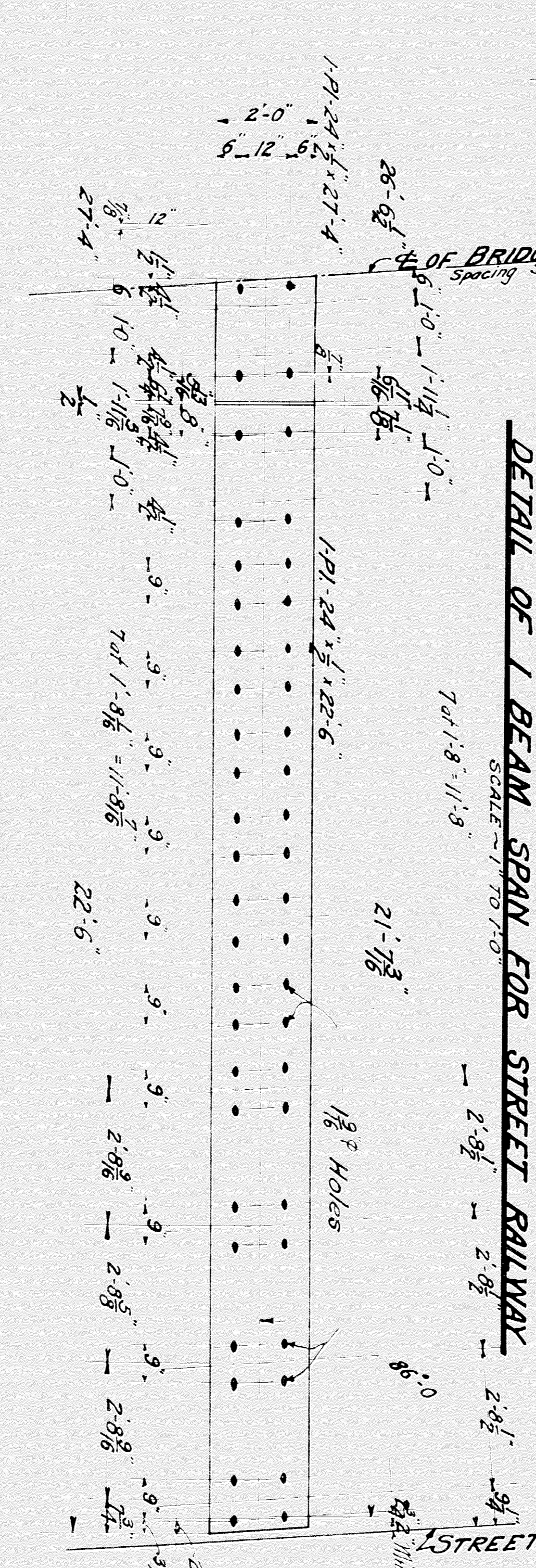
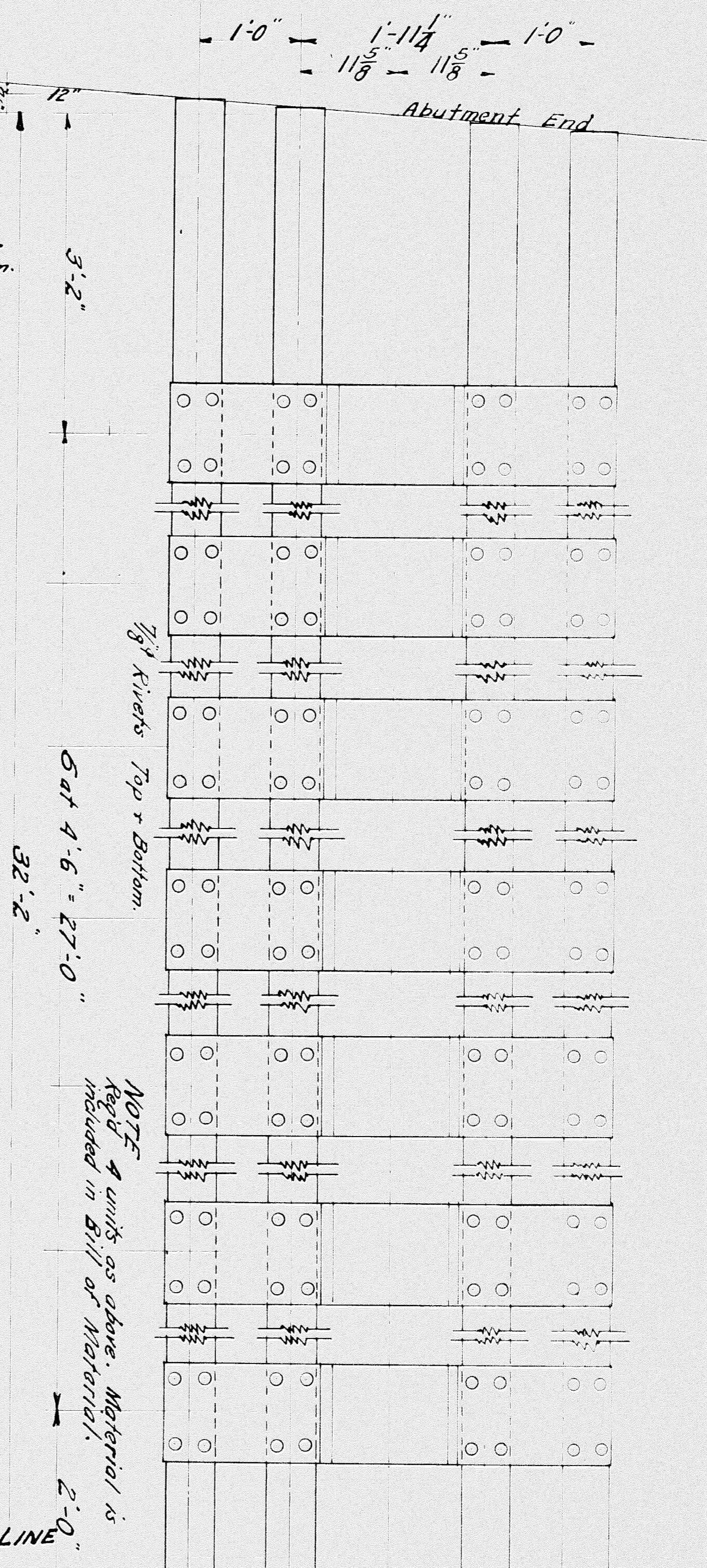
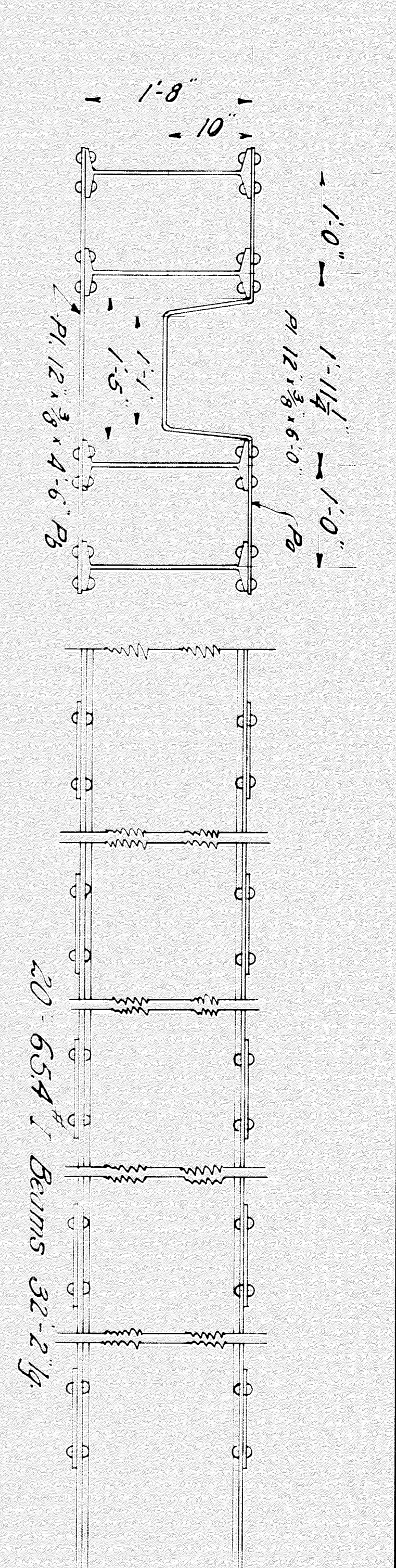
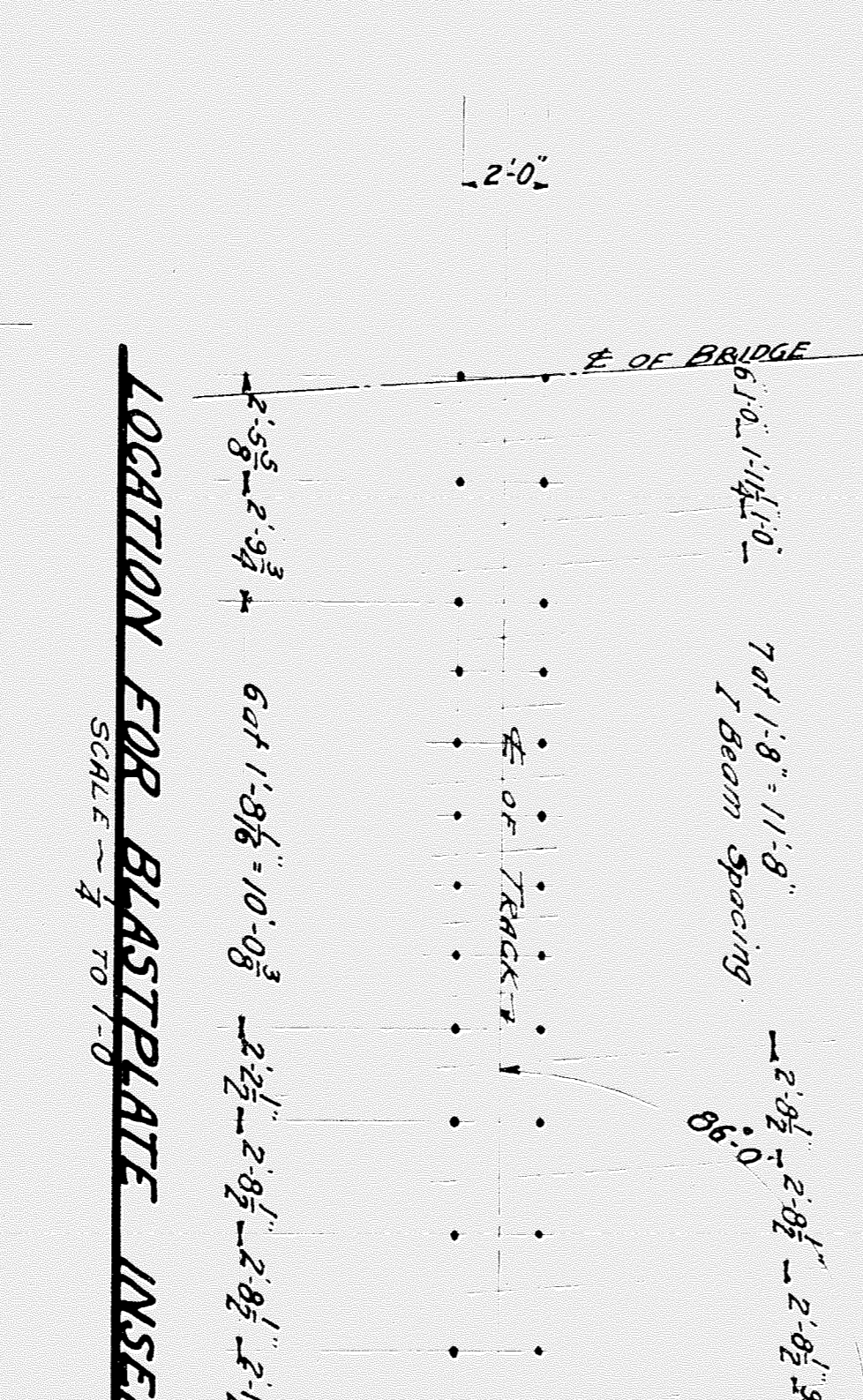
DR. RAW: OFFICE OF THE ENGINEER
 TR. RAW: DETROIT, MICHIGAN
 CH. - LAW: MAX 25124
 SCALE: AS SHOWN
 DRAWING NO. W-3052
 FILE NO. 46
 SHEET 2 OF 3

LOCATION	No	MARK	SIZE	LENGTH	BENDING DIAGRAM
DECK	144	d1	3/4"	7'-0"	
DECK	48	d2	3/4"	4'-0"	
DECK	30	d3	3/4"	12'-10"	
DECK (Sidewalk)	30	d4	3/4"	9'-4"	
DECK (Sidewalk)	266	d5	1/2"	9'-10"	
DECK (for Railing)	40	d6	3/4"	7'-0"	STRAIGHT
RAILING (Top and Bottom)	32	d7	1/2"	18'-0"	STRAIGHT
RAILING (Web)	64	d8	1/2"	13'-6"	STRAIGHT
BENT (Top)	10	b1	1"	30'-0"	
BENT (Top above sidewalk)	8	b2	7/8"	28'-0"	
BENT (over Arches)	8	b3	7/8"	14'-0"	
BENT (Underneath)	8	b4	3/4"	28'-0"	
BENT (Bottom)	8	b5	1"	30'-0"	
BENT (Bottom) ERTED OVER SIDEWALK	2	b7	1"	30'-0"	STRAIGHT
BENT (Column Top)	33	c2	1/4"	8'-6"	
BENT (Column Top)	22	c3	1/4"	23'-0"	
BENT (Upper Stringer)	36	s1	1/2"	26'-0"	
BENT (Lower Stringer)	16	s2	1/2"	25'-0"	

BILL OF FLOOR BEAMS					
LOCATION	No	MARK	SIZE	LENGTH	REMARKS
Deck (Steel Railing)	16		20'-6 5/8"	32'-2"	No DRILLING PUNCHED AS SHOWN COMPLETE KNUCLED
Deck (Steel)	40	B1	20'-6 5/8"	32'-2"	

BILL OF WIRE MESH			
LOCATION	No SHEETS	SIZE	DESCRIPTION
RAILING	8	32 x 18 G	TRUSSON RIB METAL NO 4 OR EQUIVALENT
SIDEWALK	44	32 x 18 G	TRUSSON RIB METAL NO 6
DECK (Bottom)	28	48 x 19 G	TRUSSON RIB METAL NO 6 OR EQUIVALENT
DECK (Sidewalk)	60	64 x 5-0	TRUSSON RIB METAL NO 8 OR EQUIVALENT
DECK (Protective)	890 FT	48 WIDE	NO 12 GAUGE 4 IN WIRE MESH

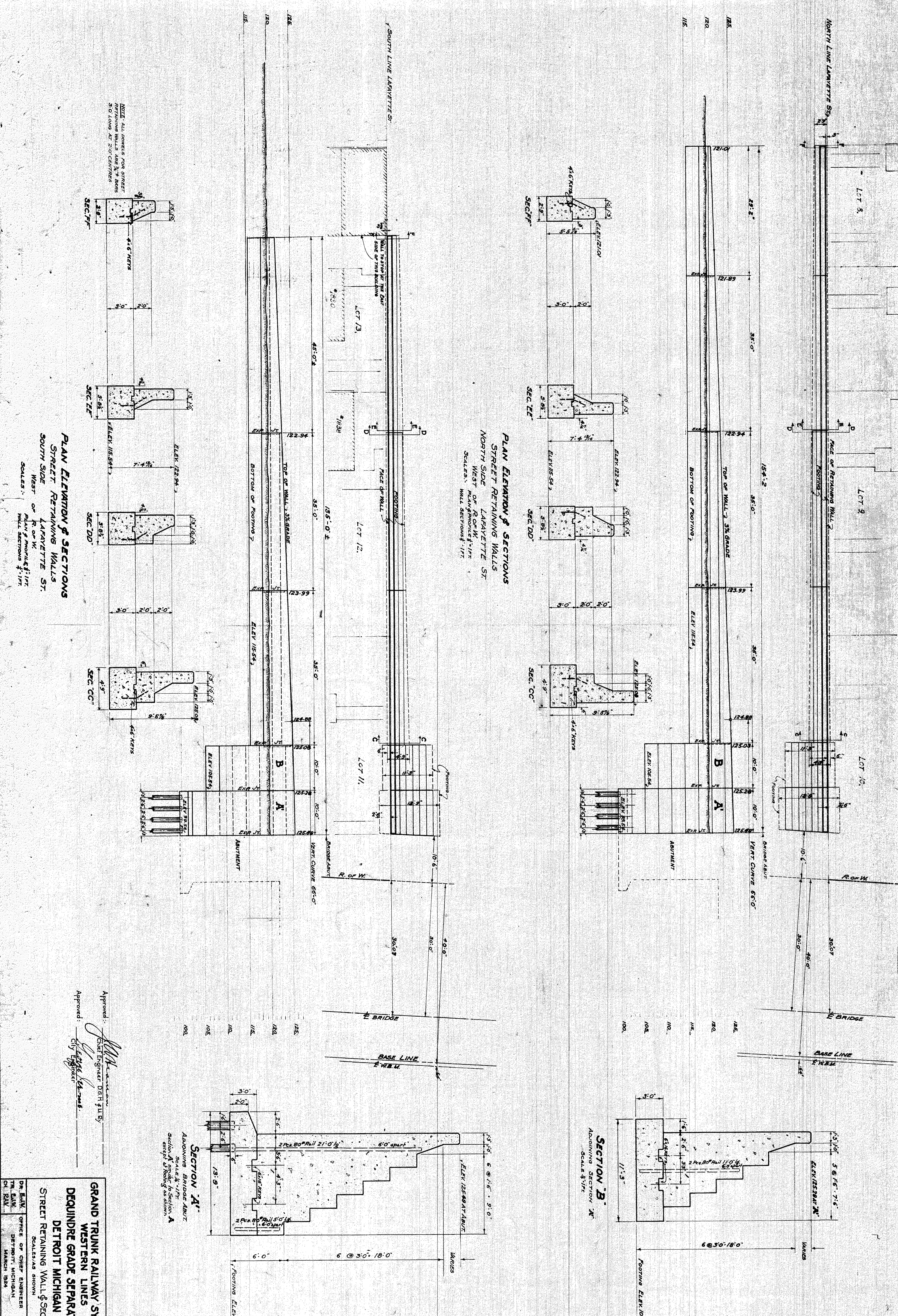
MISCELLANEOUS MATERIAL		
No.	SIZE	DESCRIPTION
BEARING PLATES	1 PL. 24 1/2" x 22'-6"	SEE DETAIL
BEARING PLATES	1 PL. 24 1/2" x 27'-4"	SEE DETAIL
BEARING PLATES	2 PL. 12 1/2" x 22'-6"	SEE DETAIL
ANCHOR BOLTS	192 3/4" x 18 1/2"	SWEDGE BOLTS WITH NUTS
CLIPS	192	SEE DETAIL
INSERTS	194 For 1/2" Bolts	SLOTTED INSERTS FOR BLAST PLATES
PLATES (Pl)	28 12' x 8' x 6'-0"	SEE DETAIL
PLATES (Pl)	28 12' x 8' x 4'-6"	SEE DETAIL



DR. RAYMOND W. DEQUINDRE
 CHIEF ENGINEER
 GRAND TRUNK RAILWAY SYSTEM
 WESTERN LINES
 DETROIT, MICHIGAN

Approved: _____
 Chief Engineer DGH & M RY.
 Approved: _____
 City Engineer

GRAND TRUNK RAILWAY SYSTEM
 WESTERN LINES
 DEQUINDRE GRADE SEPARATION
 DETROIT, MICHIGAN
 BRIDGE - LAFAYETTE STREET



**PLAN ELEVATION & SECTIONS
STREET RETAINING WALLS
NORTH SIDE
LAFAYETTE ST.
WEST PLAN PROPOSED 1/17/11
SCALE: WALL SECTIONS 1/17/11**

**PLAN ELEVATION & SECTIONS
STREET RETAINING WALLS
SOUTH SIDE
LAFAYETTE ST.
WEST PLAN PROPOSED 1/17/11
SCALE: WALL SECTIONS 1/17/11**

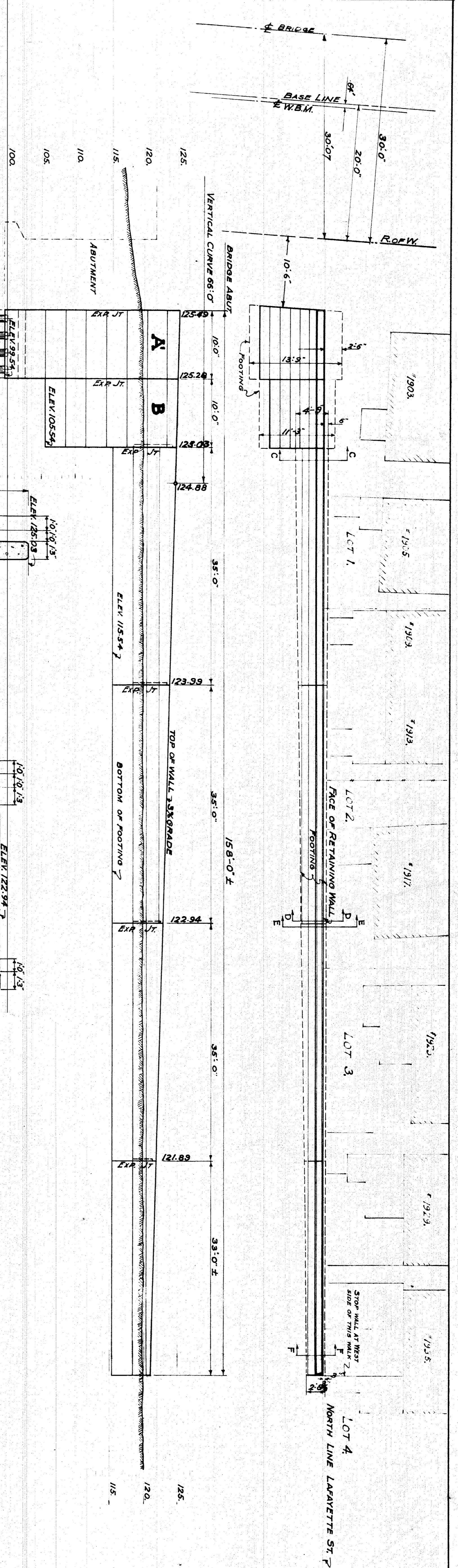
NOTE: ALL DIMENSIONS FOR STREET
RETAINING WALLS ARE IN FEET
3/8 LONG AT 20' CENTERS

Approved: *[Signature]*
Chief Engineer DEH gtlby
Approved: *[Signature]*
City Engineer

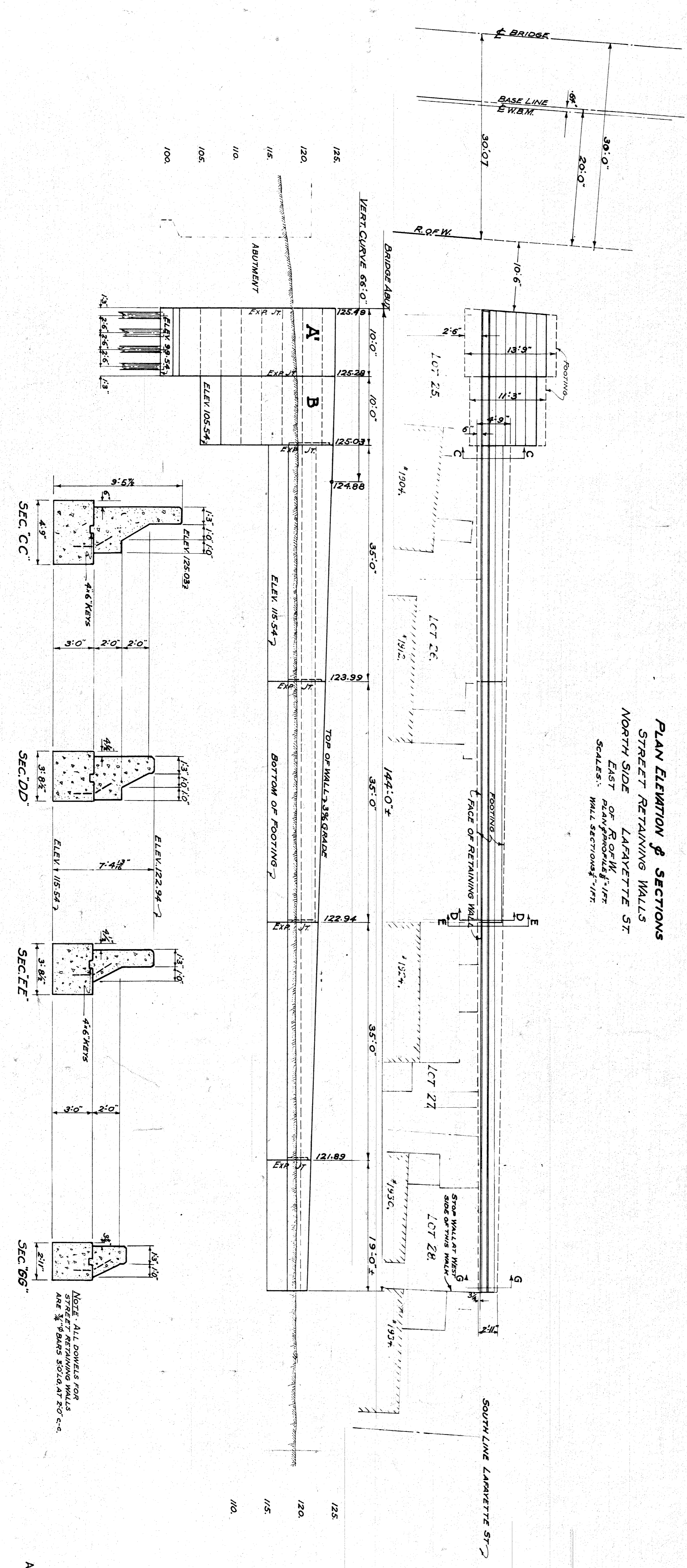
SECTION A'
ADJOINING BRIDGE ABUT
SCALE: 1/17/11
SECTION A' similar to Section A
except footing as shown

SECTION B'
ADJOINING SECTION B
SCALE: 1/17/11

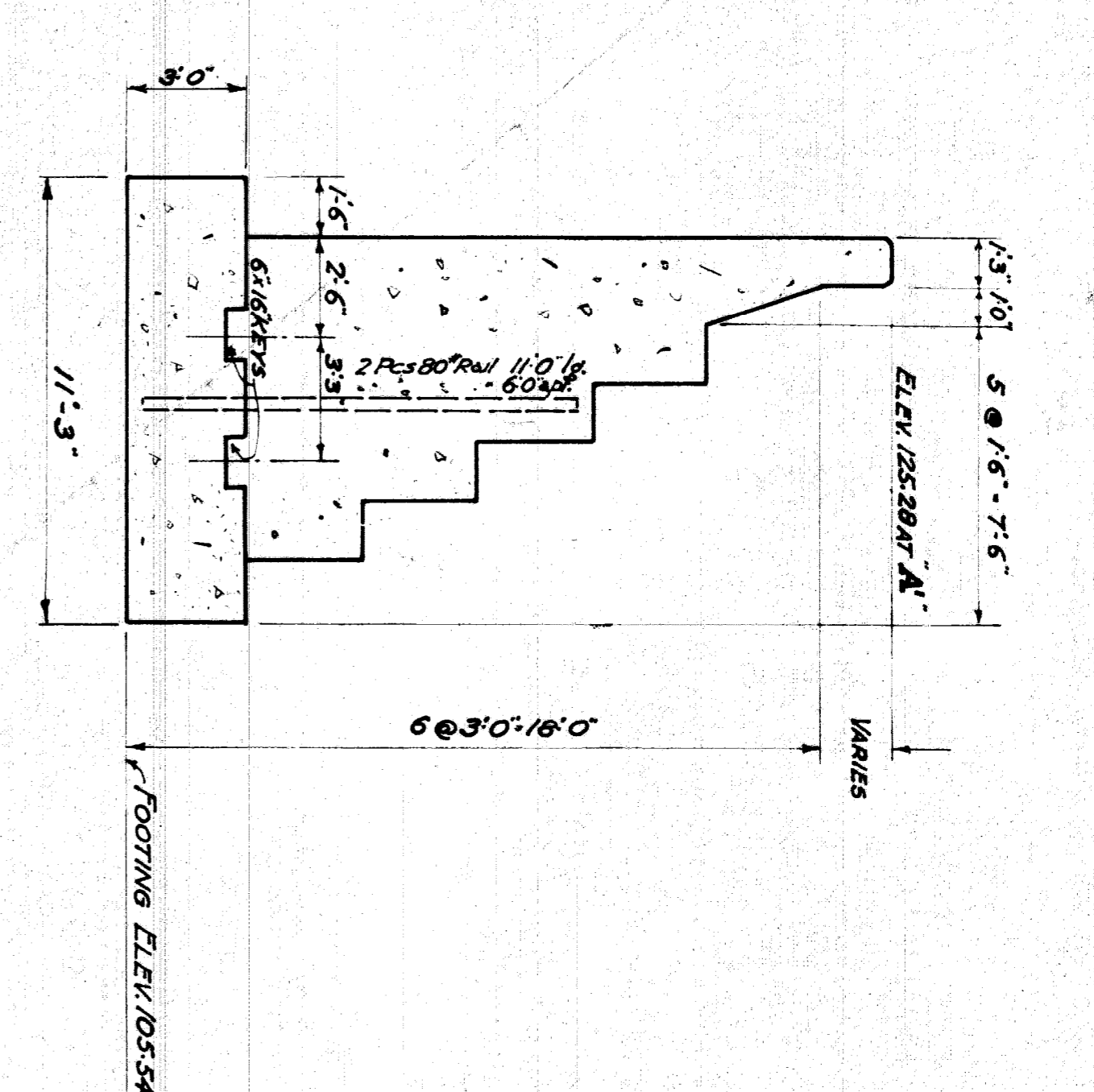
**GRAND TRUNK RAILWAY SYSTEM
WESTERN LINES
DEQUINDRE GRADE SEPARATION
DETROIT MICHIGAN**
SCALES: AS SHOWN
DR. E.A.W. OFFICE OF CHIEF ENGINEER
DETROIT, MICHIGAN
MARCH 1934
JOURNAL NO. W3048
FILED 4-6-34
SHEET 1 OF 2



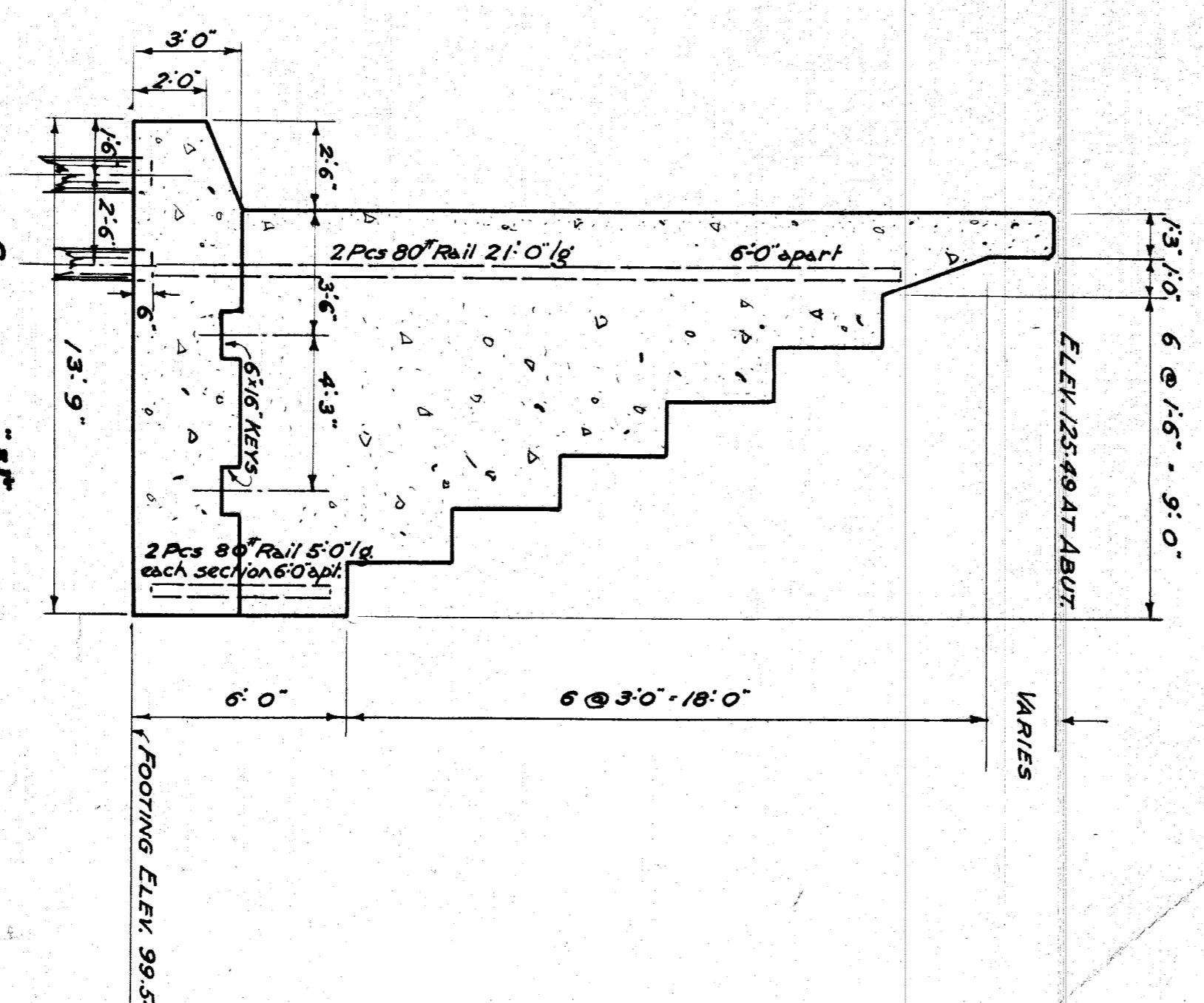
**PLAN ELEVATION & SECTIONS
STREET RETAINING WALLS
NORTH SIDE
LARAVETTE ST.
EAST
PLAN PROFILE 1/8" = 1' FT
SCALE: WALL SECTIONS 1/4" = 1' FT**



**PLAN ELEVATION & SECTIONS
STREET RETAINING WALLS
SOUTH SIDE
LARAVETTE ST.
EAST
PLAN & PROFILE 1/8" = 1' FT
SCALE: WALL SECTIONS 1/4" = 1' FT**



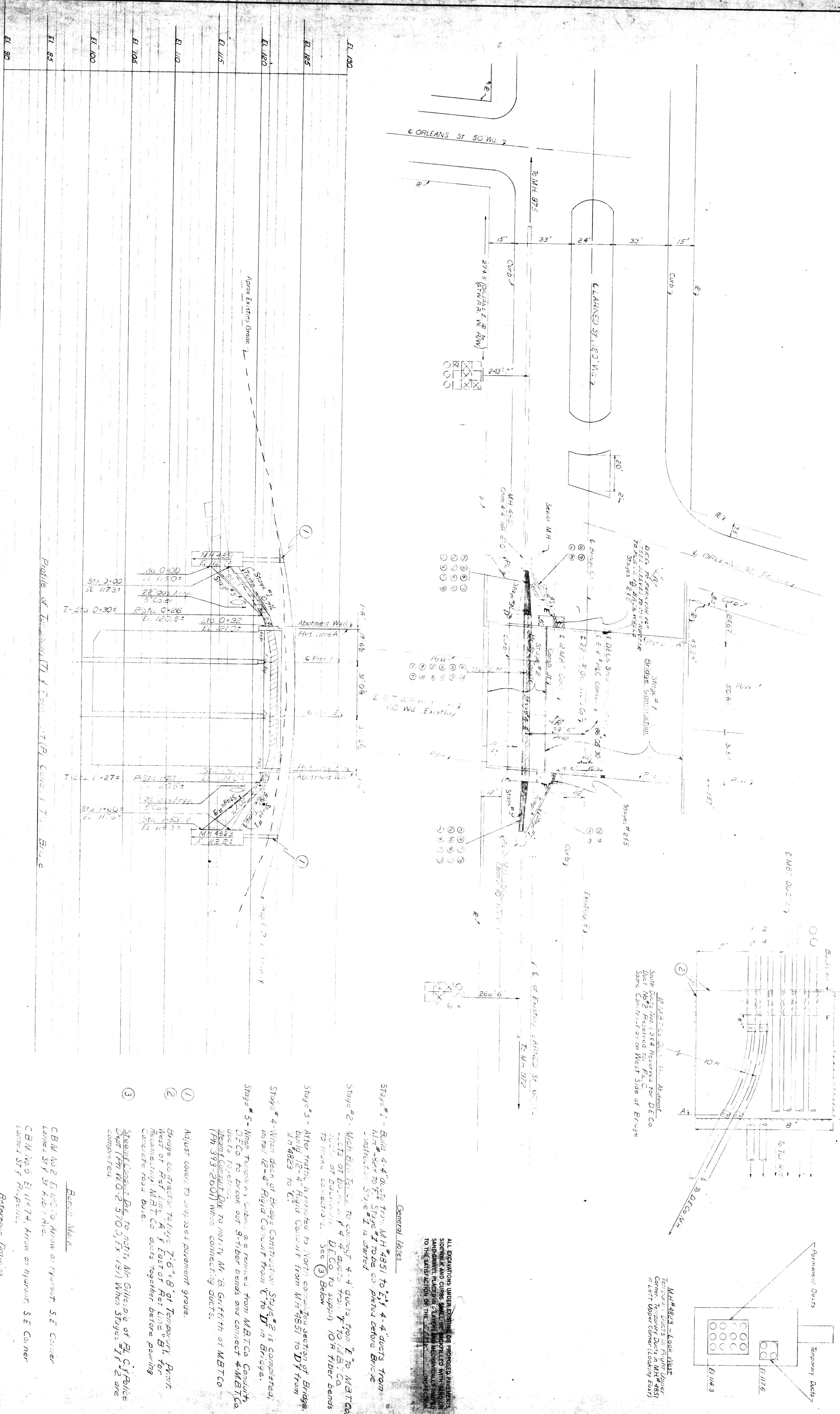
**SECTION 'B'
ADJOINING SECTION 'A'
SCALE 1/4" = 1' FT**



**SECTION 'A'
ADJOINING BRIDGE ABUT.
SCALE 1/4" = 1' FT
Section A' similar to Section A
except at footing as shown**

Approved: *[Signature]*
Chief Engineer, D.G.H. & M. B. Co.
Approved: *[Signature]*
City Engineer

**GRAND TRUNK RAILWAY SYSTEM
WESTERN LINES
DEQUINDRE GRADE SEPARATION
DETROIT MICHIGAN**
STREET RETAINING WALL & SECTIONS
SCALE AS SHOWN
DR. E.L.W. OFFICE OF CHIEF ENGINEER
7th FLOOR DETROIT, MICHIGAN
CH. R.A.W. MARCH, 1934.
JOURNAL NO. W3024
FILED 1482
SHEET 2 OF 2



Profile of Temporary (T) & Permanent (P) Concrete T.I. Bridge

Reference Drawing
For Background Details of DECO Conduit See DWG U-3-2160

General Notes

- Stage #1 - Build 4-4" ducts from M.H. #4851 to E¹ 4-4" ducts from M.H. #4851 to F¹. Stage #1 to be completed before Bridge construction. Stage #1 is started.
- Stage #2 - Mich. Bell Tel. Co. to connect 4-4" ducts from E¹ to MBT Co. ducts of Building #4. DECO to supply 10R fiber bends to make connections. See (3) Below.
- Stage #3 - After traffic is removed to North completed section of Bridge, build 12-4" rigid conduit from M.H. #4851 to D¹ from M.H. #4823 to C¹.
- Stage #4 - When deck of Bridge construction Stage #2 is completed, install 12-4" rigid conduit from C¹ to D¹ in Bridge.
- Stage #5 - When Temporary Curb, are removed from MBT Co. Conduit, DECO to break out 3-Tier bends and connect 4-MBT Co. Street Conduit Duct to north M. B. Griffith of MBT Co. (PH 393-2001) when connecting ducts.

- (1) Adjust covers to proposed pavement grade.
- (2) Bridge contractor to place 7'0" x 8' of Temporary Pmt. West of Ret. Line A & East of Ret. Line B for Reconnecting MBT Co. ducts together before pouring Concrete road base.
- (3) Street Conduit Duct to north Mr. Gillespie of P.L.C. & Police Dept. (PH WO-2-5700, FX-151) when Stages #1 & #2 are completed.

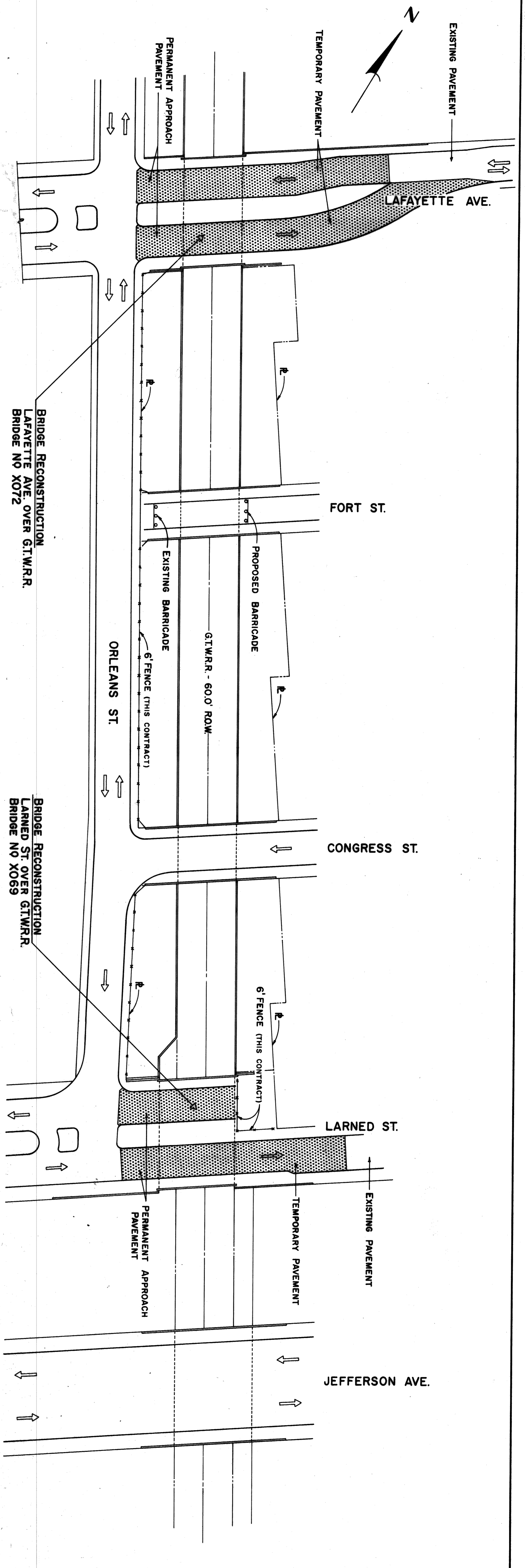
Bench Mark

CBM No. 2 El. 120.10 Arrow of Hydrant S.E. Corner
Larned St & St. Hubert Ave.

CBM No. 0 El. 119.74 Arrow of Hydrant S.E. Corner
Larned St & Michigan Ave.

REVISION		REVISION		REVISION		REVISION		REVISION		REVISION		REVISION		REVISION		REVISION		REVISION		
D	C	B	A	OTHER APPROVAL	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	

REVISION		REVISION		REVISION		REVISION		REVISION		REVISION		REVISION		REVISION		REVISION		REVISION		
D	C	B	A	OTHER APPROVAL	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	





LAFAYETTE REDEVELOPMENT PROJECT
MICH. R12
FOR
DEPARTMENT OF PUBLIC WORKS
WIDENING OF BRIDGES AT LARNED ST. AND
LAFAYETTE AVE. OVER THE GRAND TRUNK WESTERN R.R.

APPROVED:  **COMMISSIONER OF PUBLIC WORKS**

REVISIONS LOCATED BY	COORDINATES ON SHEET	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY
C.C.L./R.R.H.	A.L.E./J.C.S.H.	V.Coverl

ENGINEER OF EXPRESSIONS	CITY ENGINEER
	

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

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BRIDGE - LARNED ST.	
LAFAYETTE AVE. BRIDGE X072	
GENERAL PLAN - LAFAYETTE ST.	
BRIDGE - LAFAYETTE ST.	
BRIDGE - LAFAYETTE ST.	

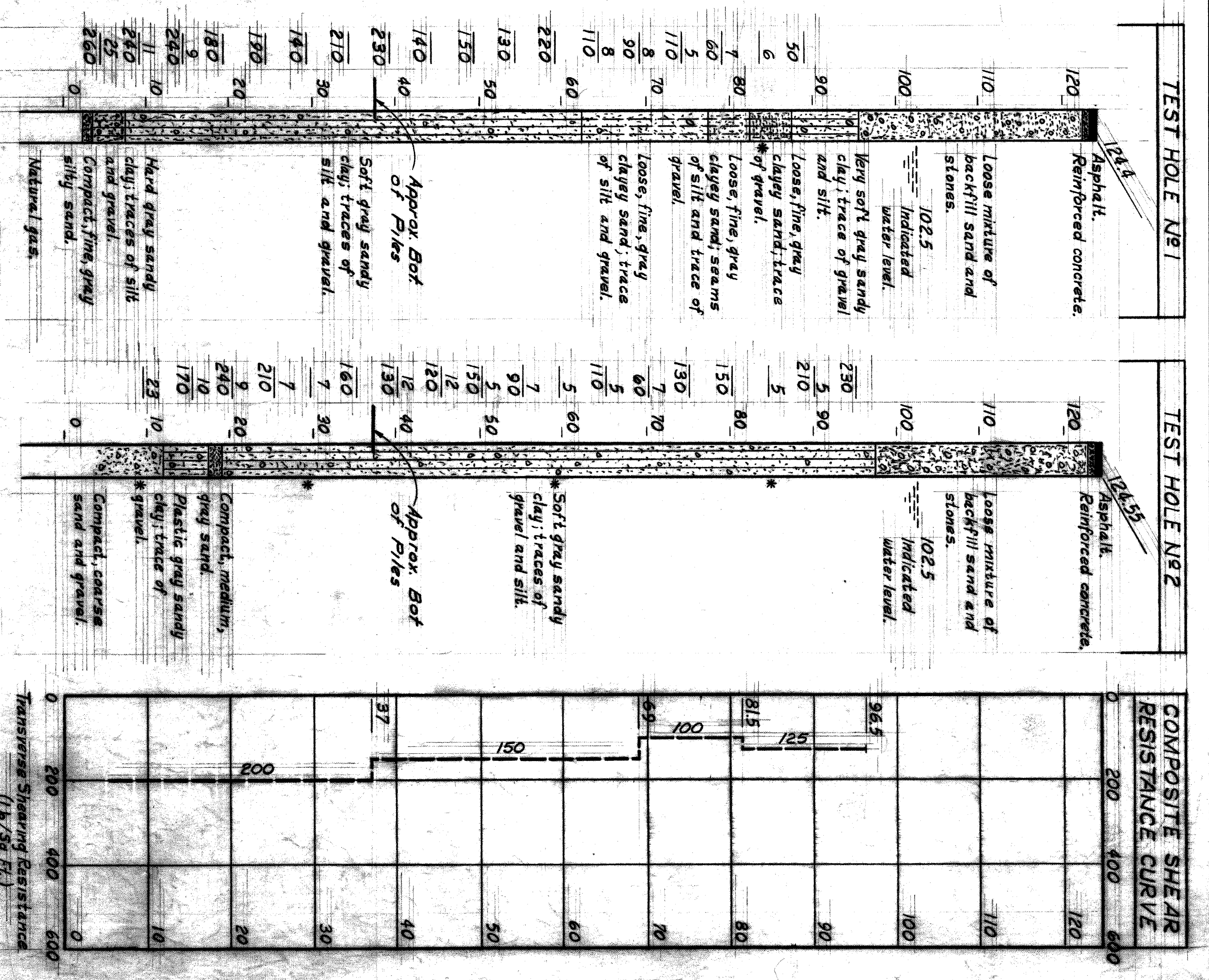
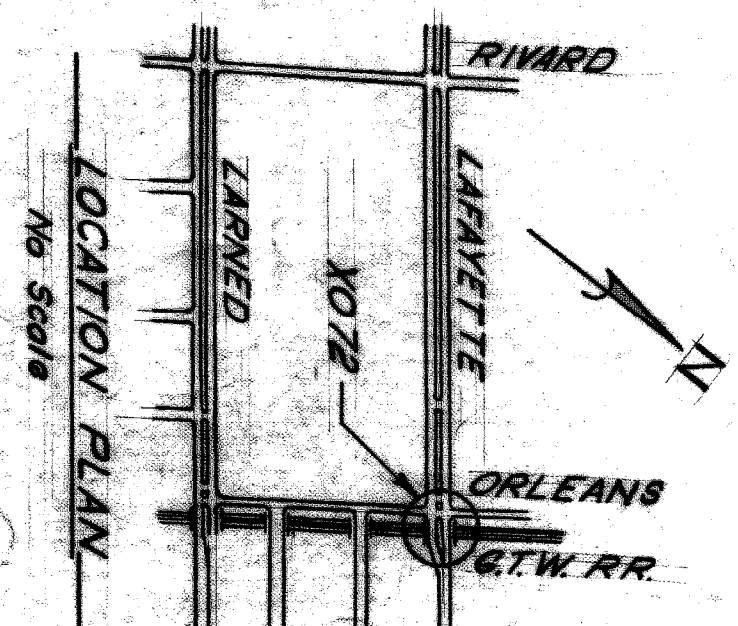
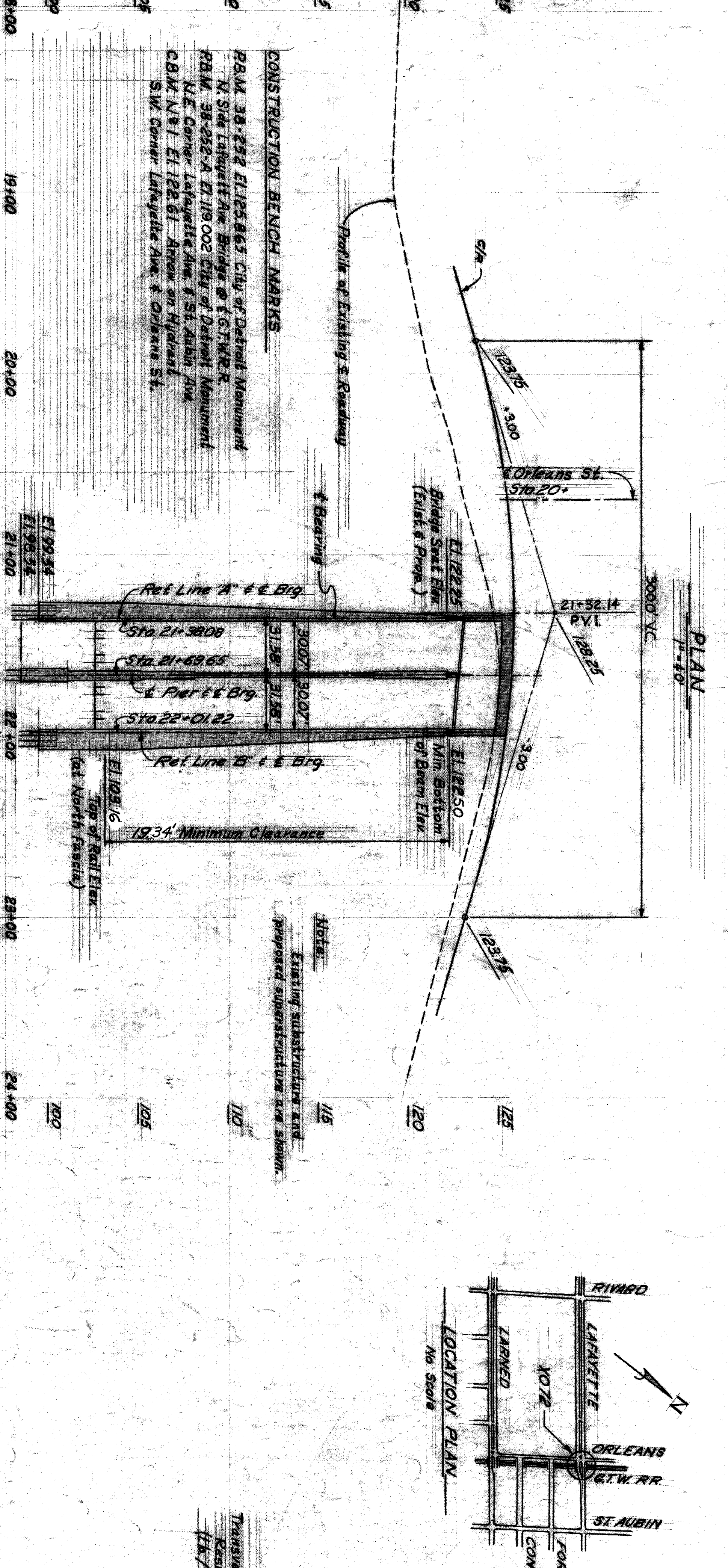
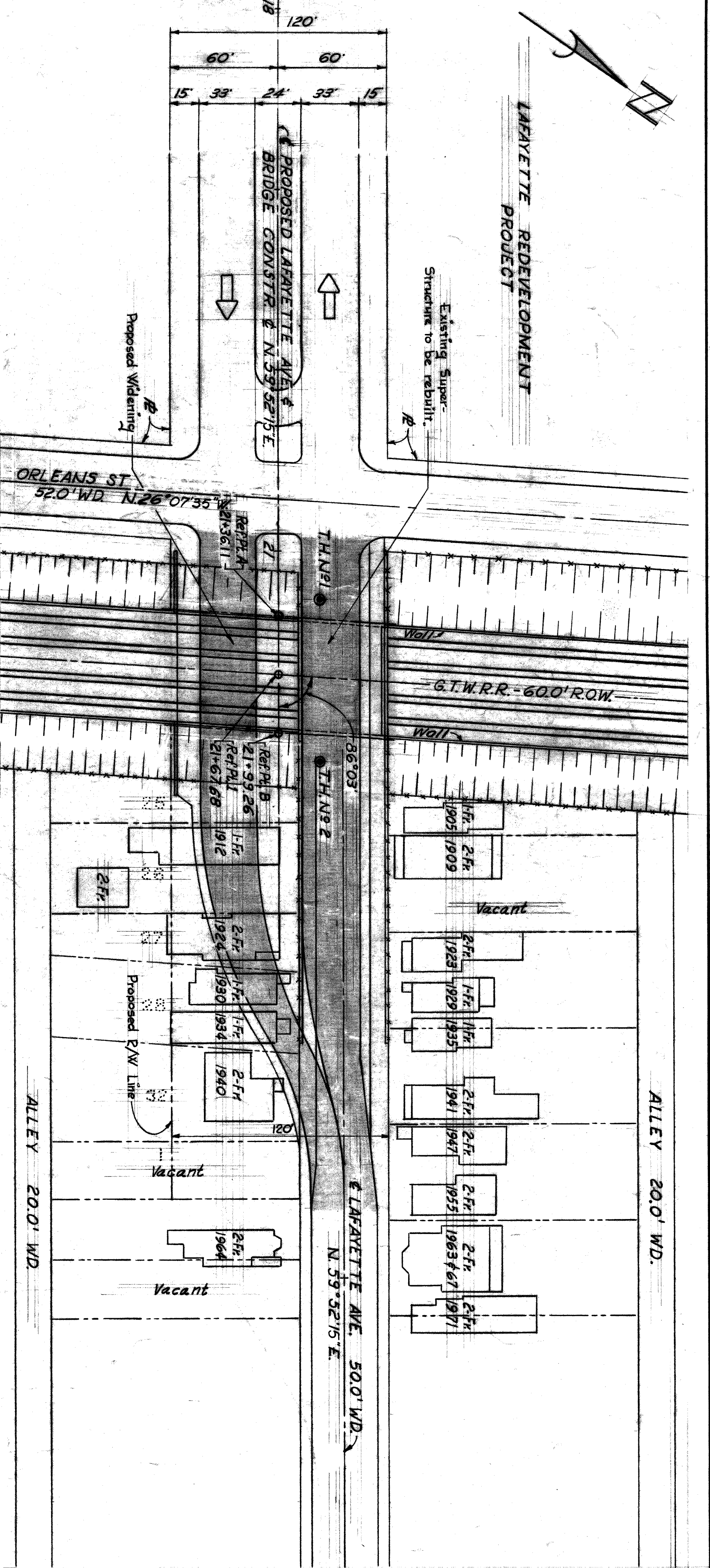
LARNED ST. BRIDGE X069 & LAFAYETTE AVE. BRIDGE X072
 OVER
GRAND TRUNK WESTERN RAILROAD

TITLE SHEET

SHEET	OF	SHEETS
1	46	

CONTRACT	NO.
PW 3988	

DRWG. No.	DATE
C-100	MAR. 1962



NOTES:

Blow Count indicates the number of blows required to drive the soil sampler one foot using a 140 lb. weight falling 30 in. Where Blow Count is not shown, sampler was either pushed or hand driven.

Transverse Shearing Resistance is determined from samples at the Consolidated Laboratory Bureau - Soil Mechanics Laboratory, Detroit, Michigan.

The spacing shown represents conditions existing at the time the field survey was made. These conditions may have been altered by the operations of others prior to the start of this work.

This set of drawings covers the construction of the Lafayette Ave. Bridge over the G.T.W.R. and all incidental work from Sta. 20+00.00 to Sta. 23+50.

Successful bidder may review a complete set of drawings of Existing Structure of Lafayette Ave from the City Engineers Office upon request.

CONSTRUCTION BENCH MARKS

P.M. 38-252 E.I. 125.865 City of Detroit Monument
 N. Side Lafayette Ave. Bridge @ G.T.W.R.
 P.M. 38-282-A E.I. 19.002 City of Detroit Monument
 N.E. Corner Lafayette Ave. & St. Aubin Ave.
 C.B.M. No. 1 E.I. 122.61 Arrow on Hydrant St.
 S.W. Corner Lafayette Ave. & Orleans St.

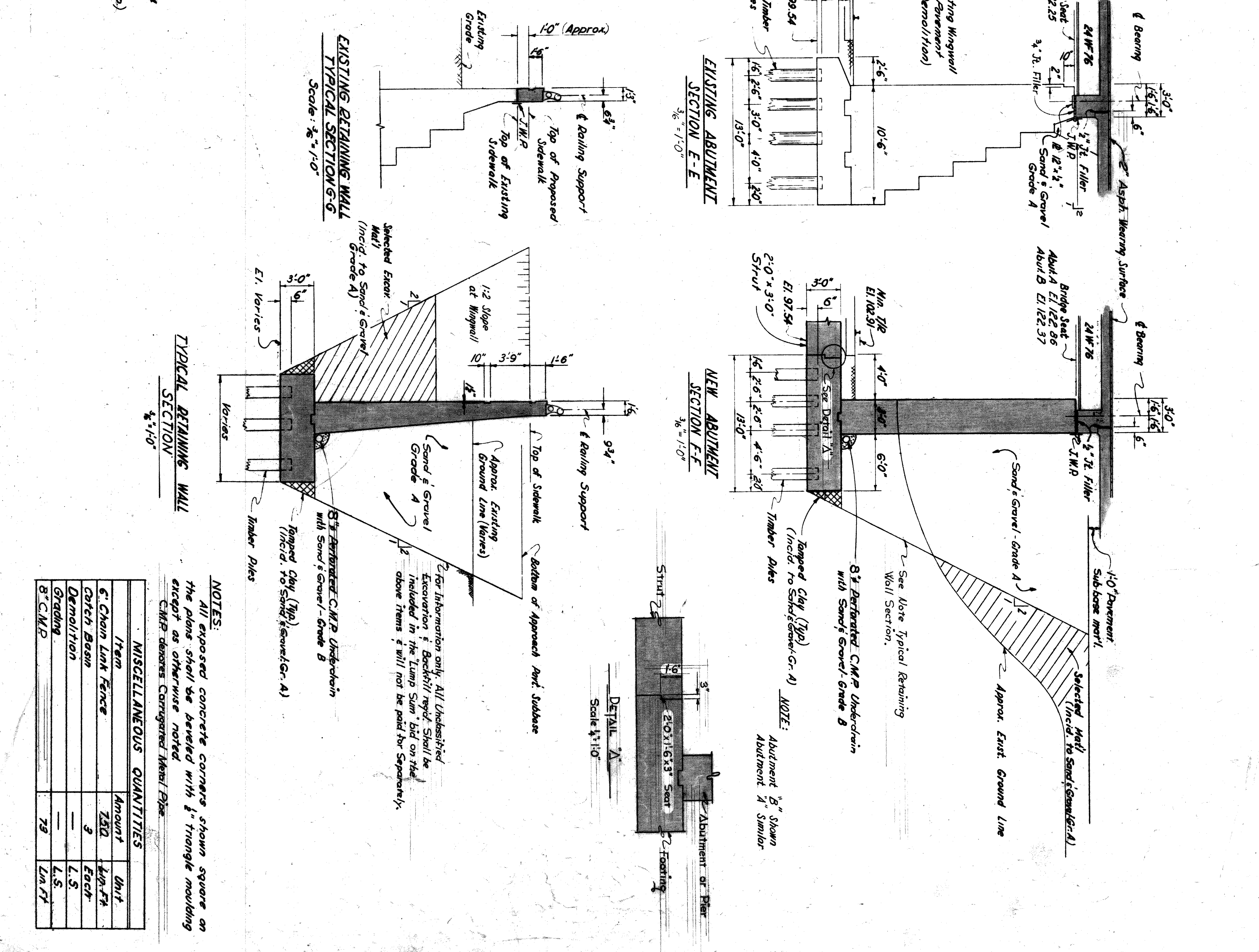
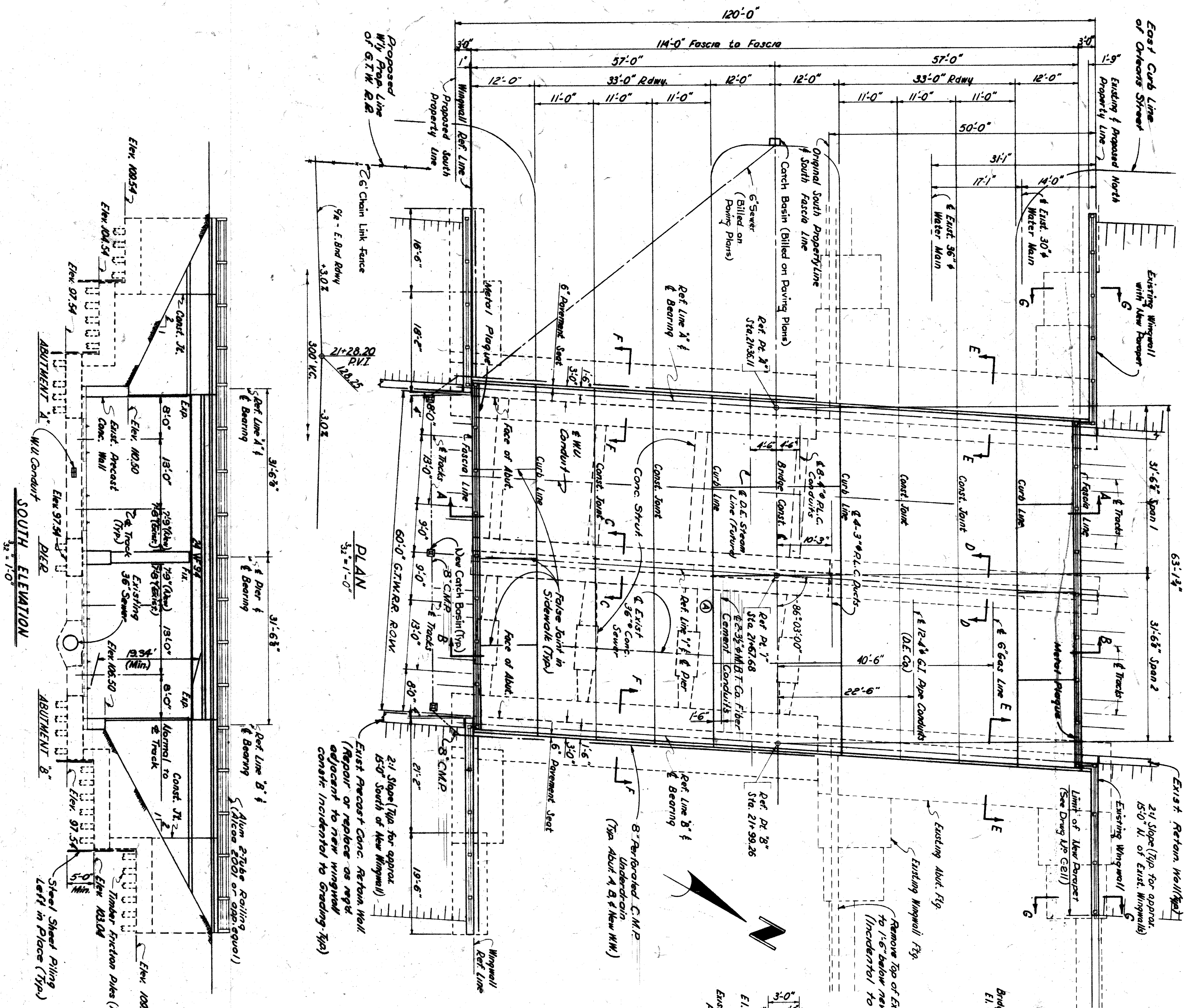
DESIGNED BY: C.C.L. / K.T.H.
 DRAWN BY: R.L.P.
 CHECKED BY: [Signature]

APPROVED BY: [Signature]

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

LAFAYETTE AVENUE BRIDGE X072
 OVER
 GRAND TRUNK WESTERN RAILROAD
 GENERAL PLAN OF SITE

SHEET 22 OF 46 SHEETS
 CONTRACT PW 3988
 DRAWING No. C201
 DATE FEB 1962



NOTES:
 All exposed concrete corners shown square on the plans shall be beveled with 1" triangle mauling except as otherwise noted.
 C.M.P. denotes Corrugated Metal Pipe.

MISCELLANEOUS QUANTITIES

Item	Amount	Unit
6" Chain Link Fence	750	Ln. Ft.
Catch Basin	2	Each
Demolition	—	L.S.
Grading	—	L.S.
8" C.M.P.	79	Ln. Ft.

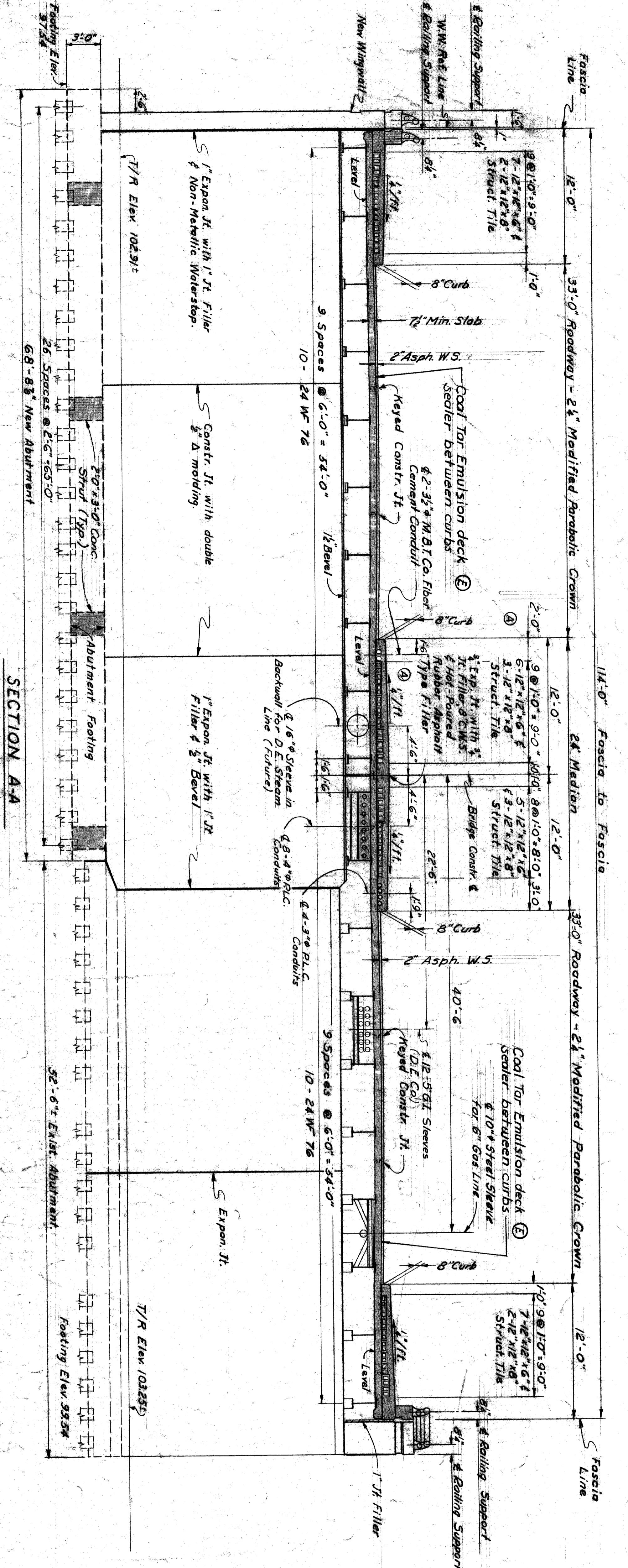
CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

LAFAYETTE AVENUE BRIDGE X072
 OVER
GRAND TRUNK WESTERN RAILROAD
 GENERAL PLAN OF STRUCTURE

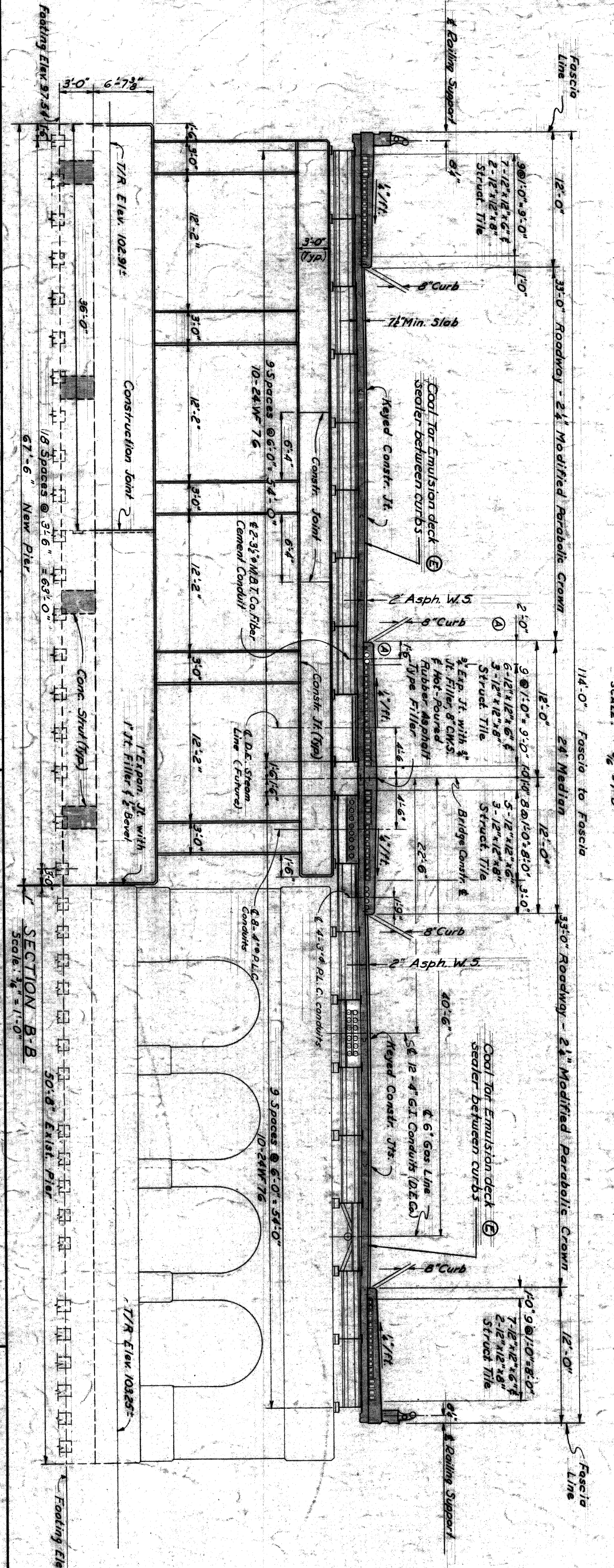
DESIGNED BY: C.C.L. / R.R.H.
 DRAWN BY: D. DUBOIS GOLD
 CHECKED BY: R. VANDEKAMP

REVISIONS LOCATED BY COORDINATES ON SHEET

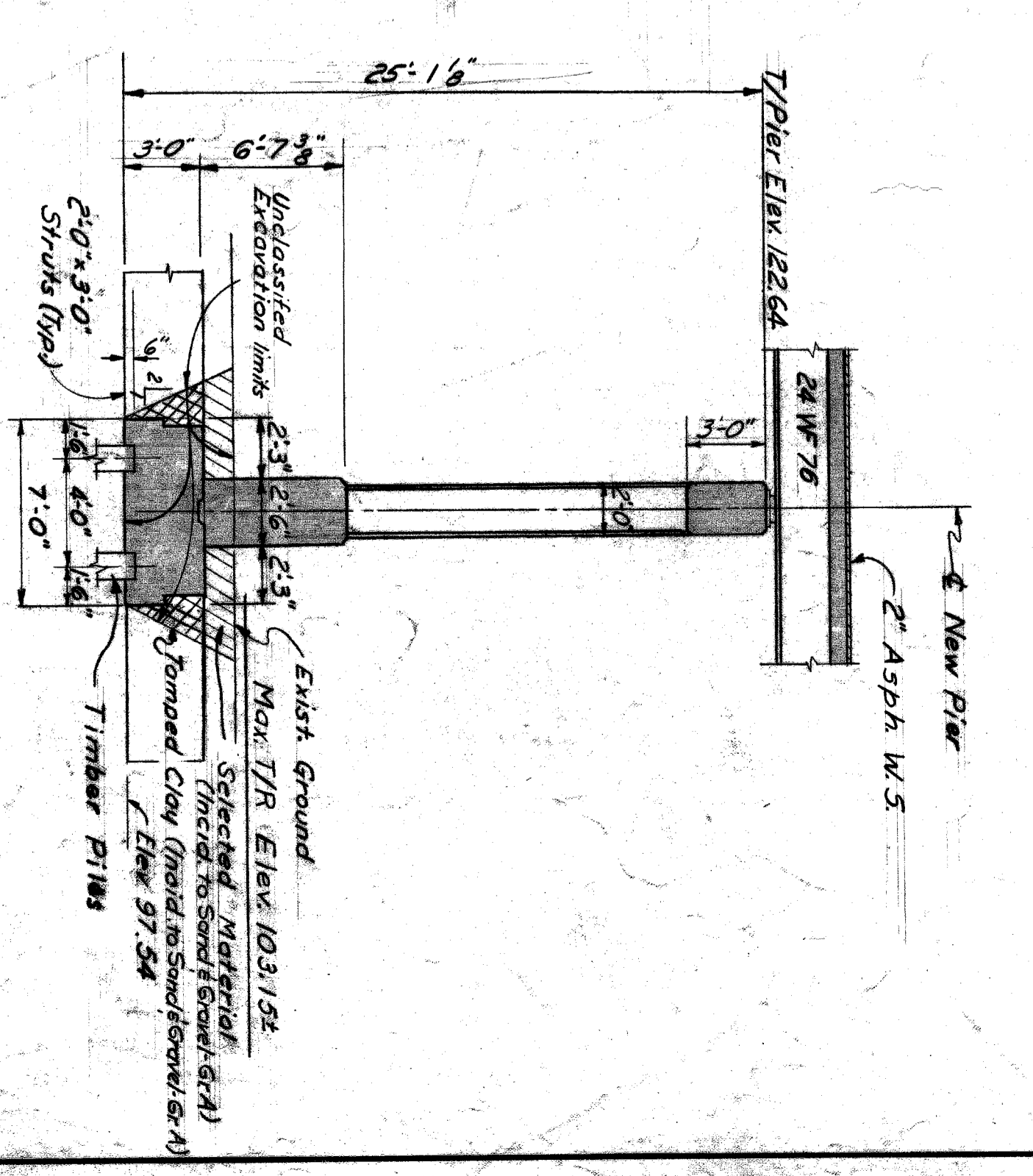
DATE: FEB 1962



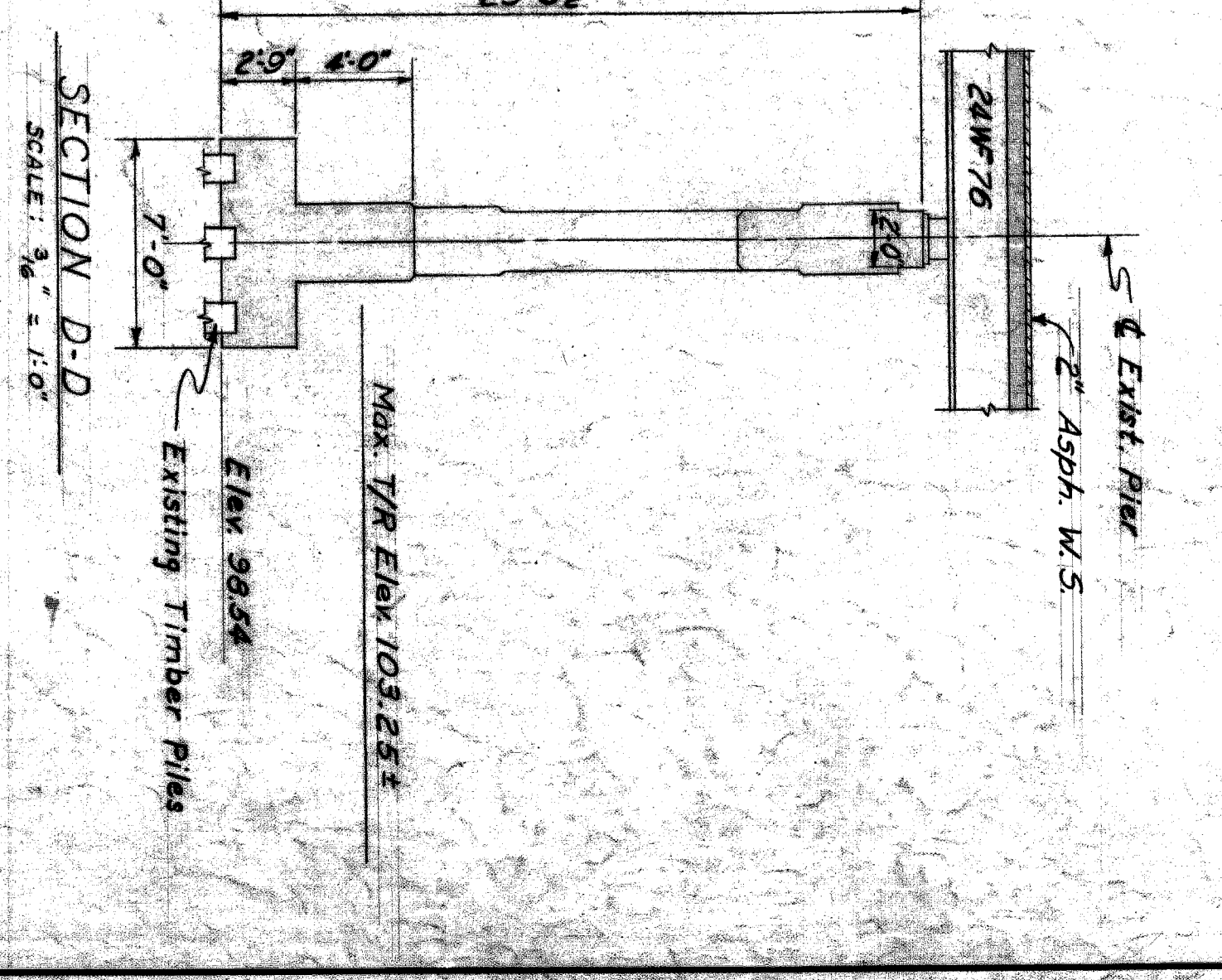
SECTION A-A
SCALE: 1/8" = 1'-0"



SECTION B-B
SCALE: 1/8" = 1'-0"



SECTION C-C
SCALE: 3/8" = 1'-0"



SECTION D-D
SCALE: 3/8" = 1'-0"

NOTE:
Dimensions of Superstructure shown in Sections A-A & B-B are normal to Bridge Cents & Substructure dimensions shown in Sections A-A & B-B are along the & Pier or Abutment Ref. Lines.

DATE	DESCRIPTION	BY	CHECKED BY
11-15-61	MA&T Co. Conduits added	W-53	R. VOMER
11-15-61	Cool Top Emulsion deck added	W-53	R. VOMER
	REVISIONS LOCATED BY CONSPIRATES ON SHEET		

DESIGNED BY C.C.L. / R.R.H.
DRAWN BY M. LEVAY
CHECKED BY R. VOMER

ENGINEER OF EXPANSION
BUREAU OF HIGHWAYS AND EXPRESSWAYS
CITY OF DETROIT

LAFAYETTE AVENUE BRIDGE X072
OVER
GRAND TRUNK WESTERN RAILROAD
GENERAL PLAN OF STRUCTURE

DRWG. NO. C-203
DATE: FEB 1962

ITEM	UNIT	QUANTITY	DATE												PLAN EXTRAS	DESCRIPTION	UNIT	QUANTITY	
			1	2	3	4	5	6	7	8	9	10	11	12				ESTIMATE	FINAL
Demolition	Lump Sum	Lump Sum																	
Unclassified Excavation	Lump Sum	Lump Sum																	
Sand & Gravel - Gr. A	Lump Sum	Lump Sum																	
Gravel	Lump Sum	Lump Sum																	
Steel Sheet Piling (Left in Place)	Sq. Ft.	590																	
Timber Piles - Finished & Driven	Ln. Ft.	16080																	
Timber Piles - Cut Off	Ea.	268																	
8" Reinforced Corrugated Metal Pipe	Ln. Ft.	227																	
Grade A(GAA) Concrete	Cu. Yds.	1205																	
Steel Reinforcement	Lbs.	136409																	
Structural Steel - Job & Erection	Lbs.	136409																	
Field Painting	Lump Sum	Lump Sum																	
Board Coat	Gals.	72																	
Asphaltic Wearing Course	Tons	54																	
Structural tile 8x12x12"	Ea.	1664																	
Structural tile 8x12x12"	Ea.	640																	
1/4" Joint filler	Sq. Ft.	315																	
1/2" Joint filler	Sq. Ft.	454																	
3/4" Joint filler	Sq. Ft.	228																	
1" Joint filler	Sq. Ft.	398																	
Hot-Poured Rubber-Asphalt type filler	Ln. Ft.	65																	
Joint Waterproofing	Sq. Ft.	927																	
Dampproofing	Sq. Ft.	4213																	
Copper	Lbs.	210																	
6" Non-Metallic Waterstop	Ln. Ft.	44																	
Aluminum Railing - 2 Tubes	Ln. Ft.	280																	
3" Fiber Conduit (P.E.C.)	Ln. Ft.	259																	
4" Fiber Conduit (P.E.C.)	Ln. Ft.	525																	
5" GI Pipe Sleeve - Placed (D.E.Co.)	Ea.	24																	
16" Steel Pipe Sleeve - Placed (D.E.Co.)	Ea.	2																	
8" Corrugated Metal Pipe	Ln. Ft.	73																	
Surface Finish	Lump Sum	Lump Sum																	
Catch Basin	Ea.	3																	
Metal Plaque	Ea.	2																	
6" Chair Link Fence	Ln. Ft.	750																	

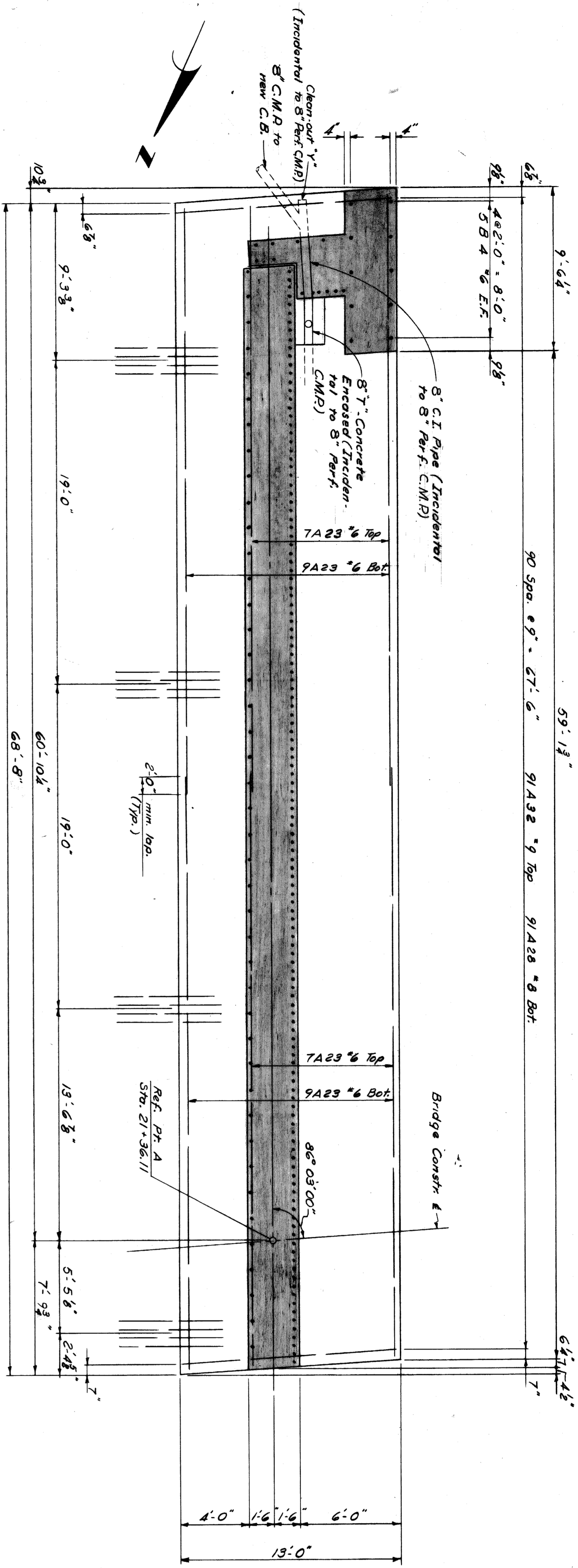
DESIGNED BY	C.C.L. / R.R.H.
DRAWN BY	ALLEN J. ERSKINE
CHECKED BY	W.C. BENTLEY
APPROVED	
DATE	

ENGINEER OF EXPRESSWAYS
Robert B. ...
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

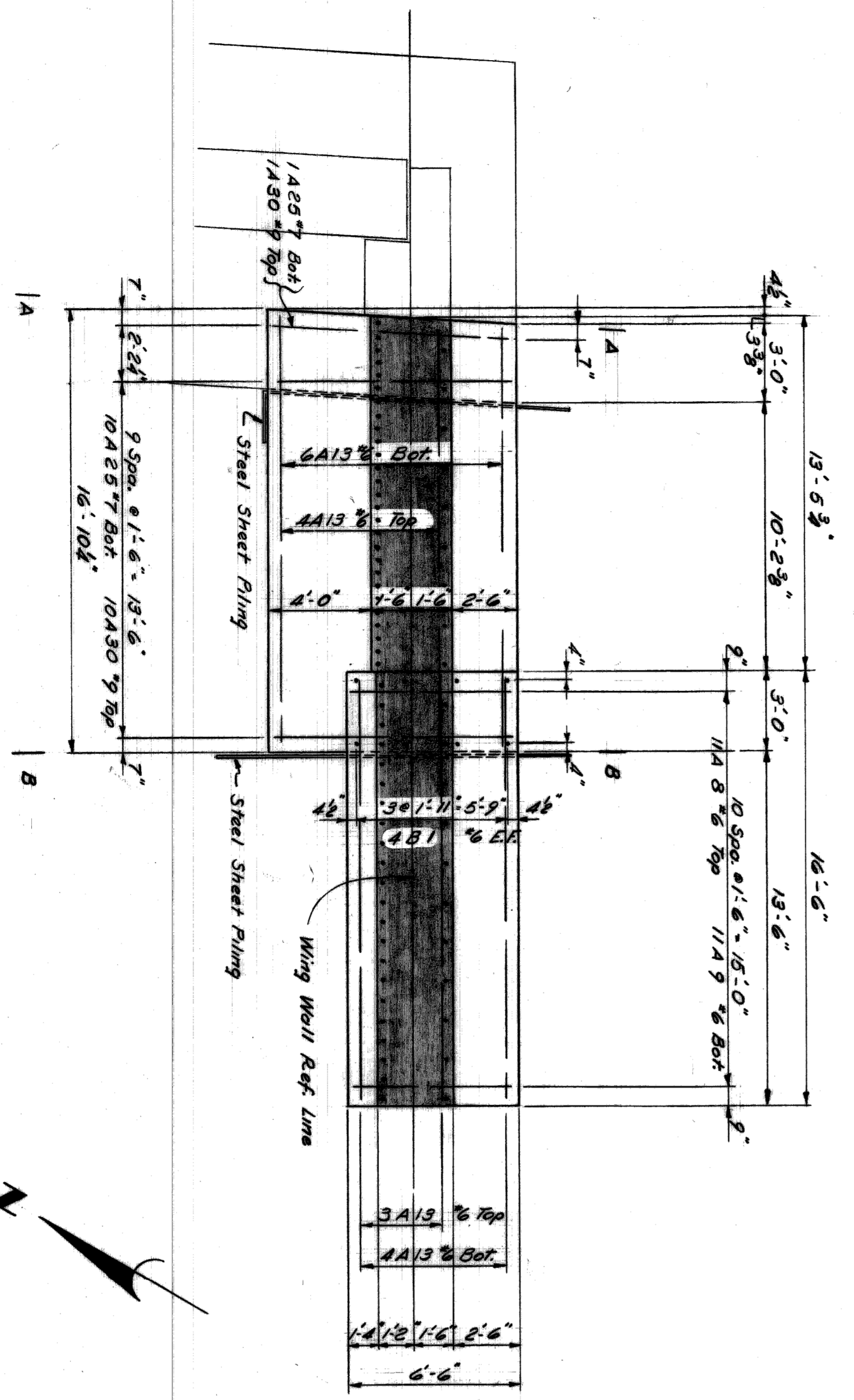
CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
 RAILROAD GRADE SEPARATION

LAFAYETTE AVENUE BRIDGE X072
 OVER
 GRAND TRUNK WESTERN RAILROAD
 BILL OF MATERIAL

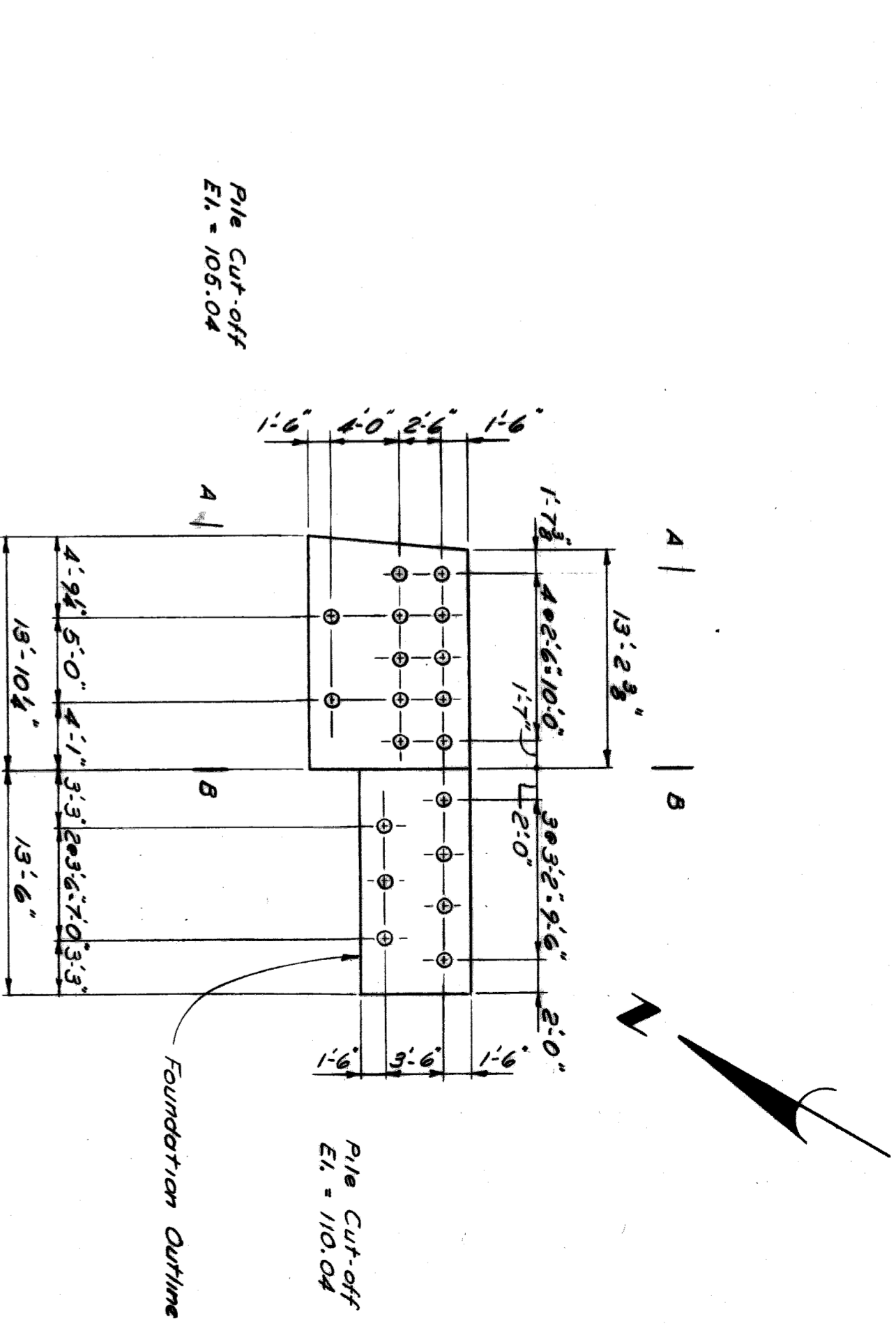
SHEET 25 OF 46 SHEETS
 CONTRACT PV 3986
 DRWG No. C204
 DATE MAR. 1962



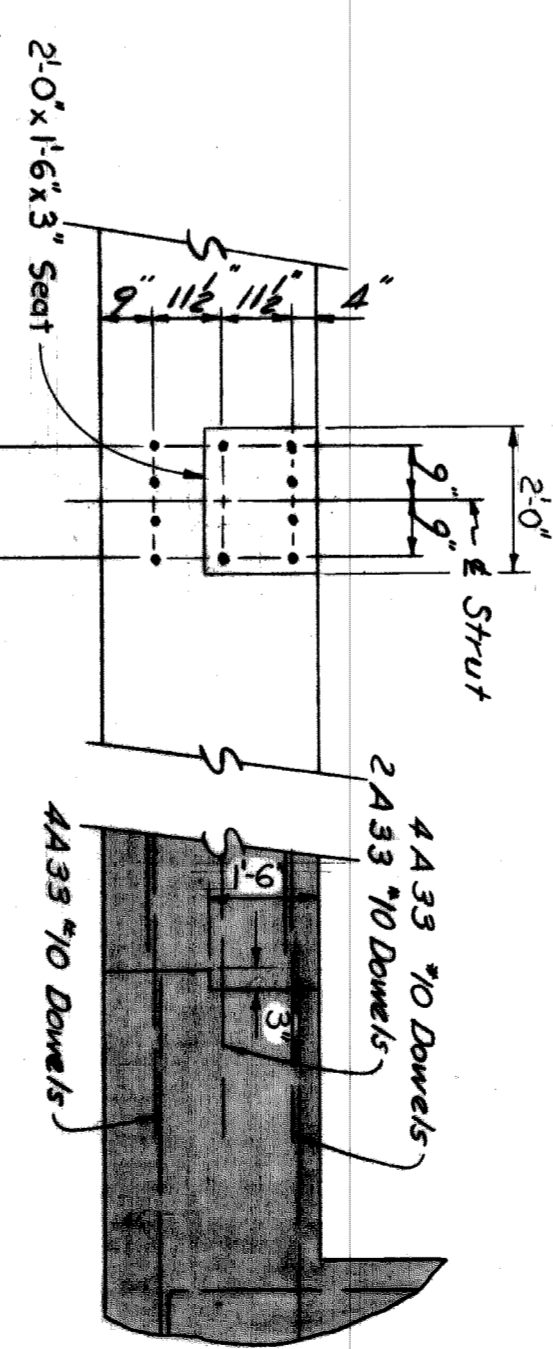
—ABUTMENT FOUNDATION PLAN—



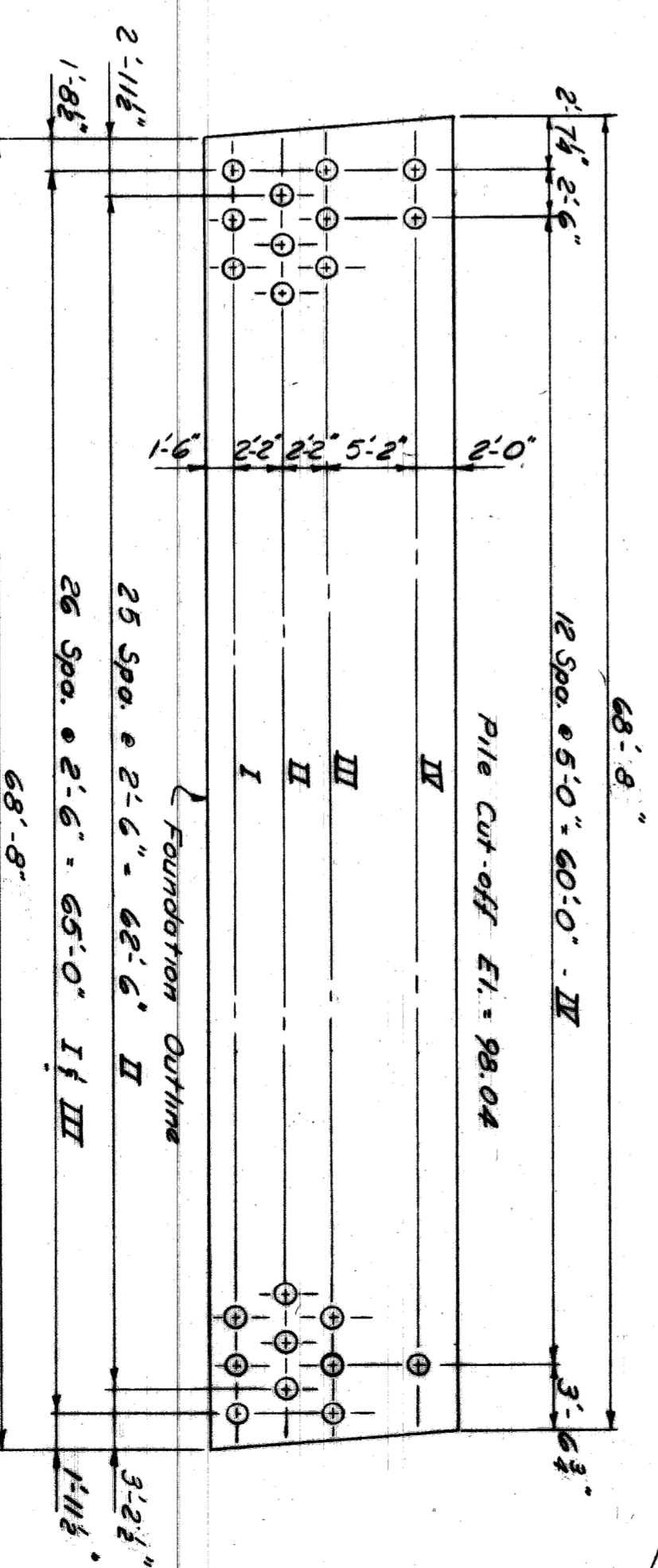
—WING WALL FOUNDATION PLAN—



—WING WALL PILING PLAN—



—STRUT DETAIL—



—ABUTMENT PILING PLAN—

NO.	DATE	DESCRIPTION	BY	CHECKED BY

REFERENCE	DESIGNED BY	ENGINEER OF EXPRESSIONS
DRAWING	C.C.L. / R.R.H.	<i>[Signature]</i>
DRAWN BY	W.G. WILSON	<i>[Signature]</i>
TRACED BY		<i>[Signature]</i>
CHECKED BY	R. JAMES	<i>[Signature]</i>

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

LAFAYETTE AVENUE BRIDGE X072
OVER
GRAND TRUNK WESTERN RAILROAD
ABUT. A DETAILS

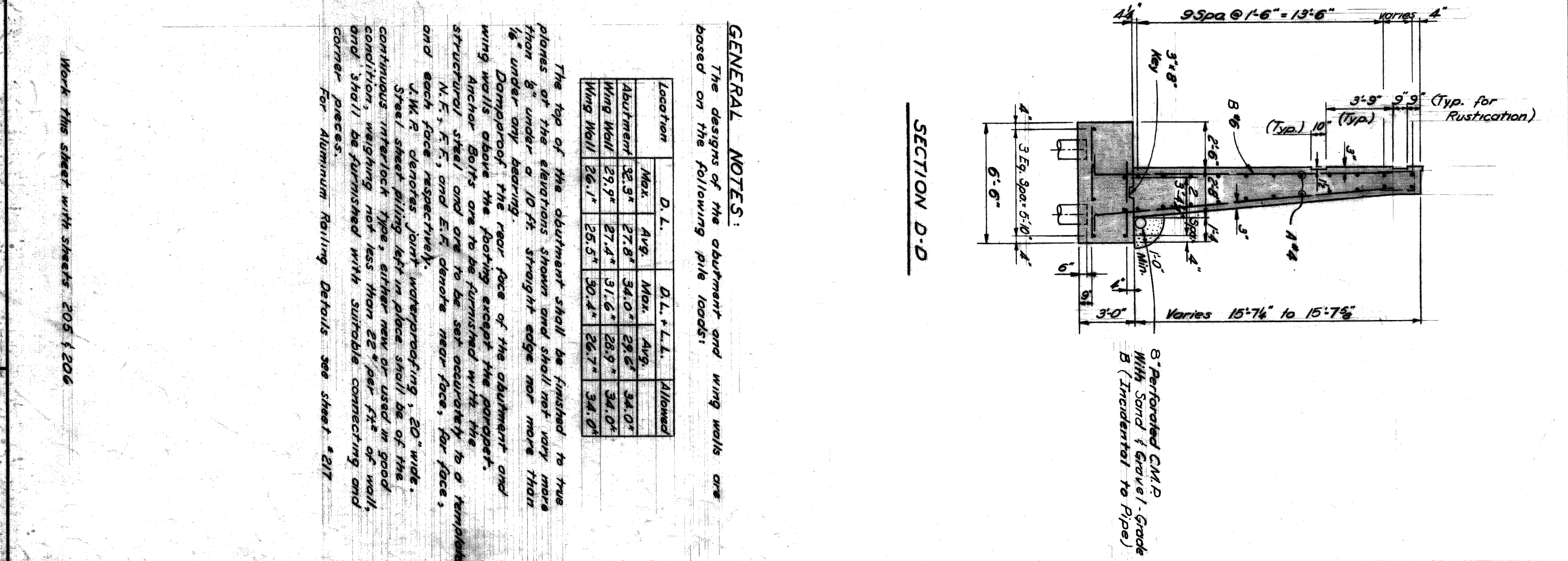
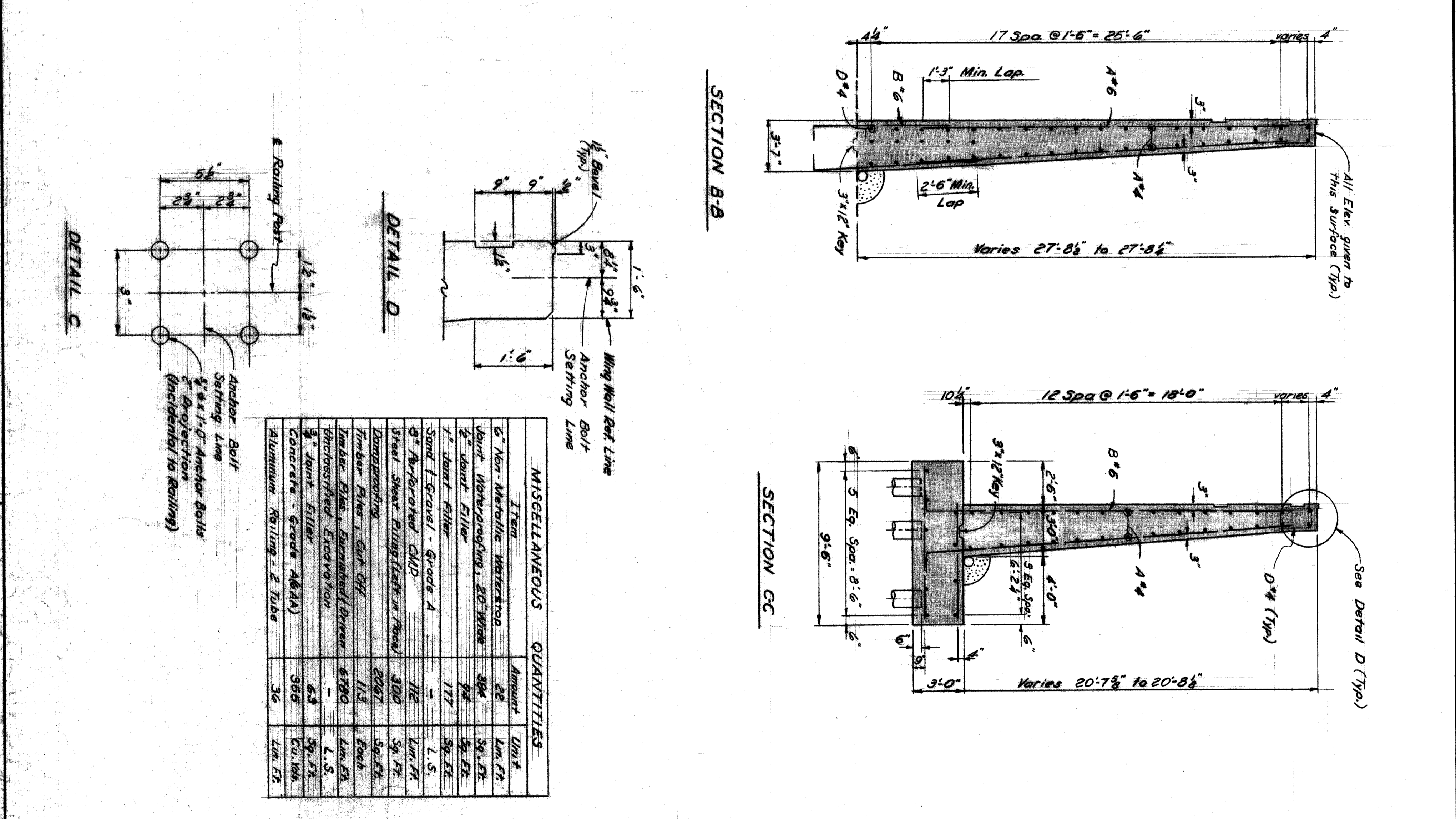
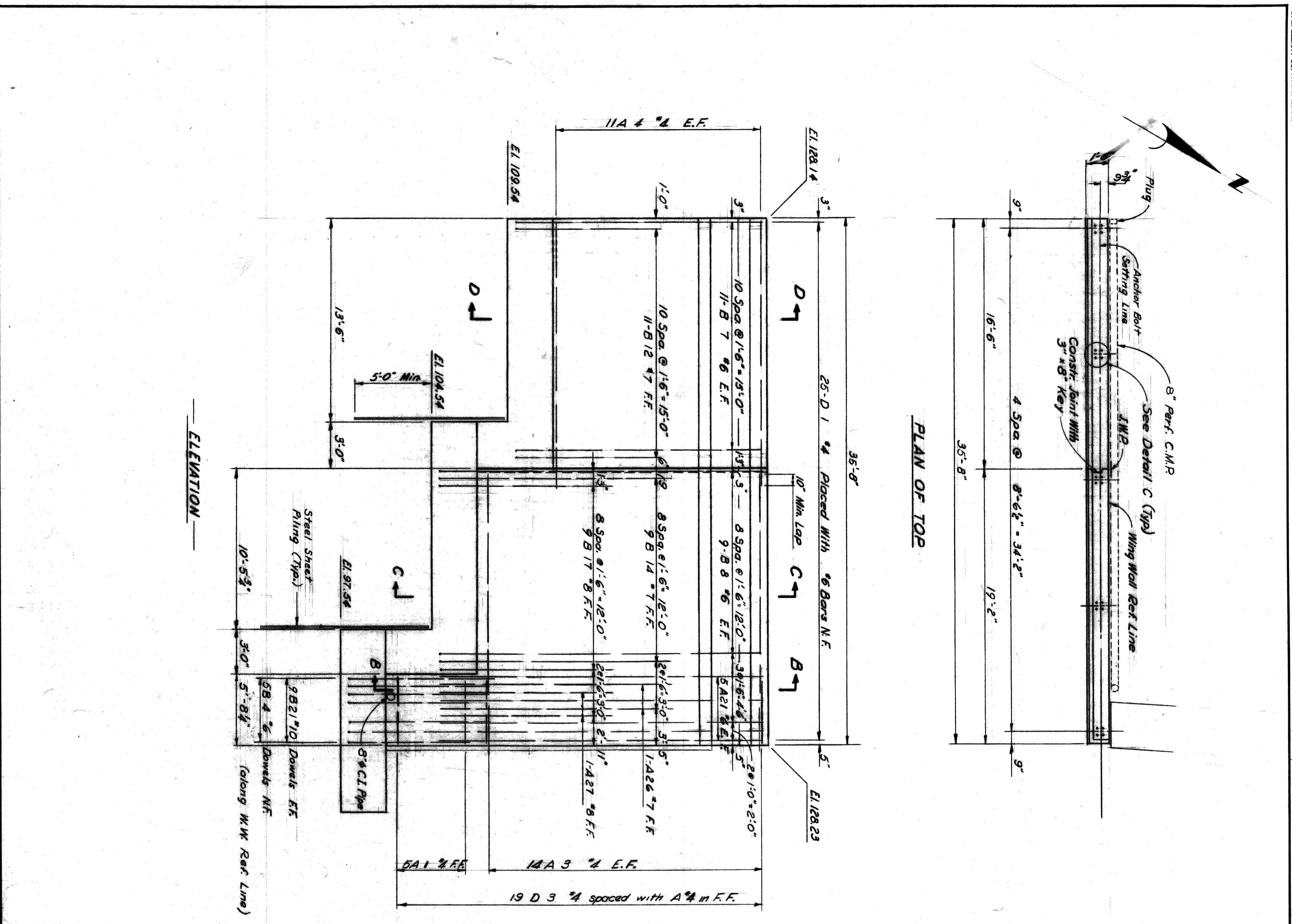
SHEET 27 OF 46 SHEETS
CONTRACT PW 3988
DRWG No. C206
DATE MAR. 1962

Work this sheet with sheets 205 & 207

DESIGNED BY	C.C.L. / R.H.H.
DRAWN BY	T. Becker
CHECKED BY	R. Conrad / W. G. ...
DATE	MAR 1962

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
 RAILROAD GRADE SEPARATION

LAFAYETTE AVENUE BRIDGE X072
 GRAND TRUNK WESTERN RAILROAD
 ABUT. A DETAILS



MISCELLANEOUS QUANTITIES		
Item	Amount	UNIT
6" Non-Metallic Waterproof	22	Lin. Ft.
Joint Waterproofing, 20' Wide	304	Sq. Ft.
1/2" Joint Filler	94	Sq. Ft.
1" Joint Filler	177	Sq. Ft.
Sand f. Gravel - Grade A	-	L.S.
9" Reinforced C.M.P.	112	Lin. Ft.
Steel Sheet Piling (Left in Place)	300	Sq. Ft.
Dampening	2067	Sq. Ft.
Timber Piles - Cut Off	113	Each
Timber Piles - Full Length	6780	Lin. Ft.
Unclassified Excavation	-	L.S.
3" Joint Filler	4.3	Sq. Ft.
Concrete - Grade A(6A)	355	Cu. Yds.
Aluminum Rolling - 2 Tube	36	Lin. Ft.

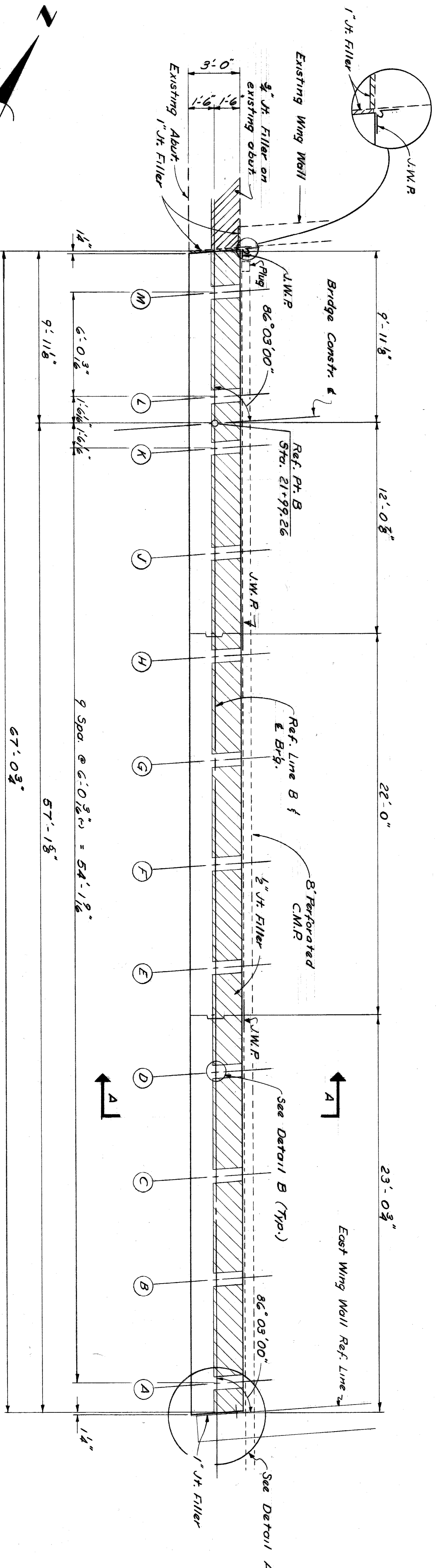
Location	D. L.		D.L. + L.L.		Allowed
	Max.	Avg.	Max.	Avg.	
Abutment	25.5'	27.8'	34.0'	28.2'	34.0'
Wing Wall	25.5'	27.4'	31.6'	28.9'	34.0'
Wing Wall	26.1'	25.5'	30.4'	26.7'	34.0'

GENERAL NOTES:
 The designs of the abutment and wing walls are based on the following pile loads:

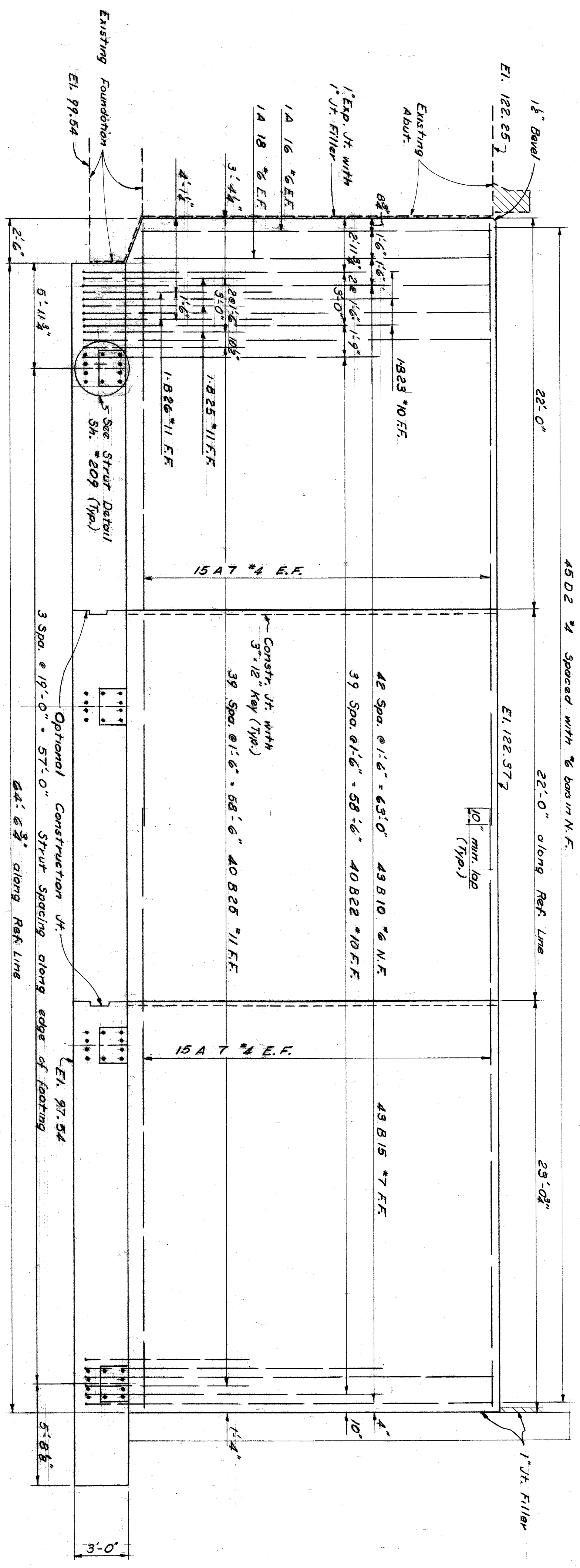
The top of the abutment shall be finished to true planes of the abutments shown and shall not vary more than 8" under a 10 ft. straight edge nor more than 1/8" under any leveling.
 Dampening of the rear face of the abutment and wing walls above the footing except the parapets.
 Anchor bolts are to be furnished with the structural steel and are to be set accurately to a template.
 N.F., F.F., and E.F. denote rear face, far face, and each face respectively.
 U.W.R. denotes joint waterproofing, 20" wide.
 Steel sheet piling left in place shall be of the continuous interlock type, either new or used in good condition, weighing not less than 22# per ft. of wall, and shall be furnished with suitable connecting and corner pieces.
 For Aluminum Rolling Details see sheet # 217

Work this sheet with sheets 205 & 206

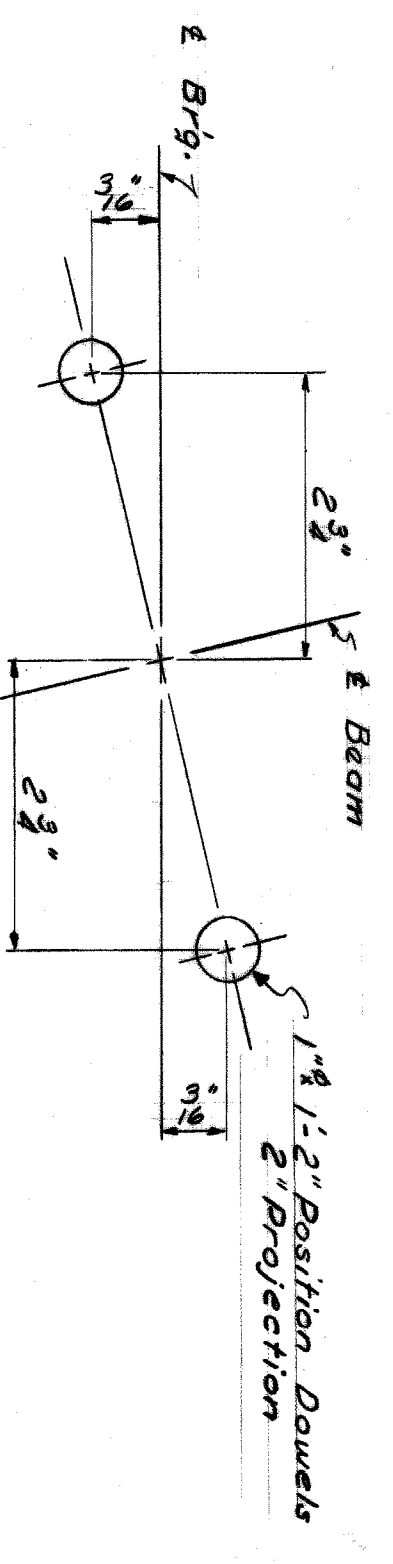
SHEET 28 OF 46 SHEETS
 CONTRACT PW/3988
 DRWG No. C207
 DATE MAR 1962



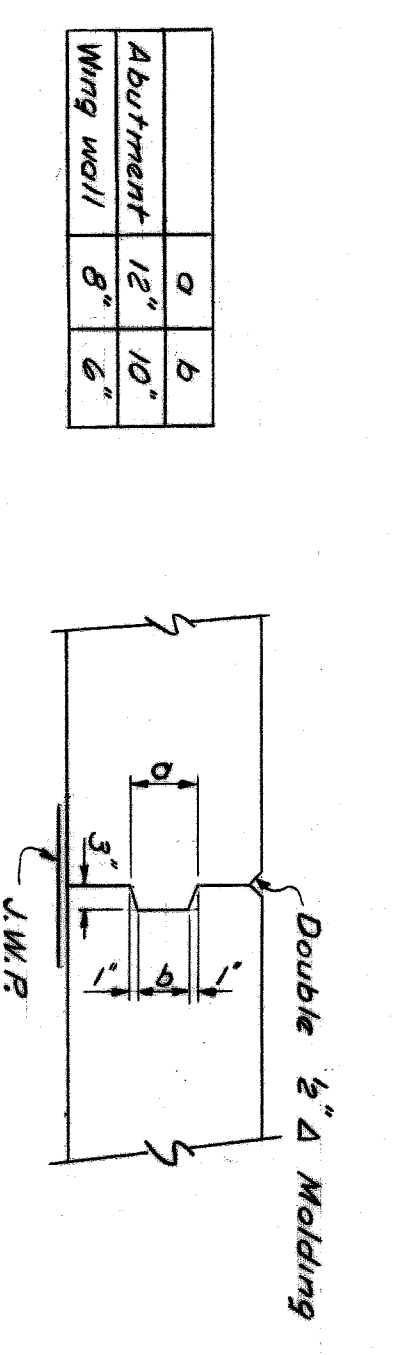
PLAN OF TOP



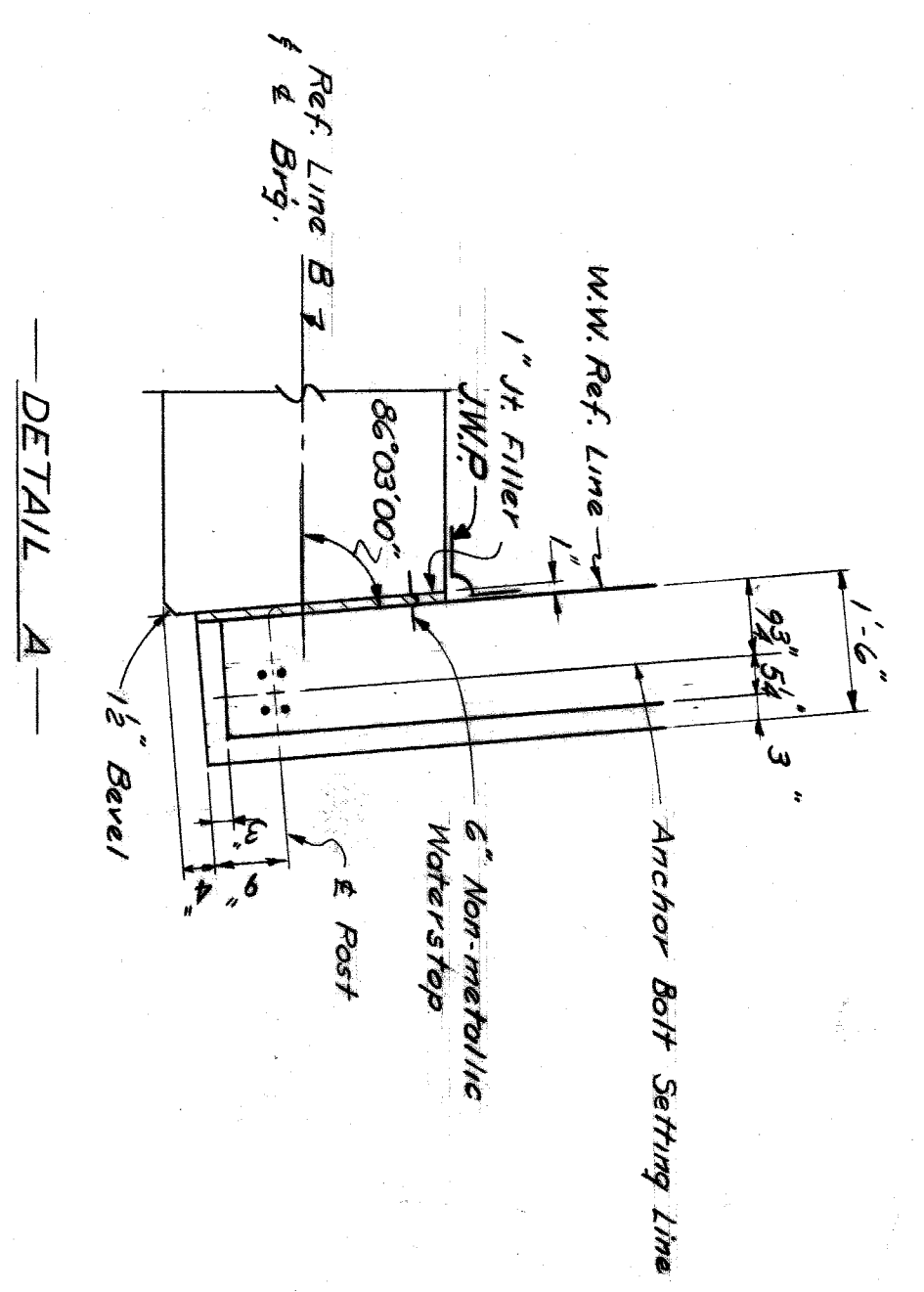
ELEVATION



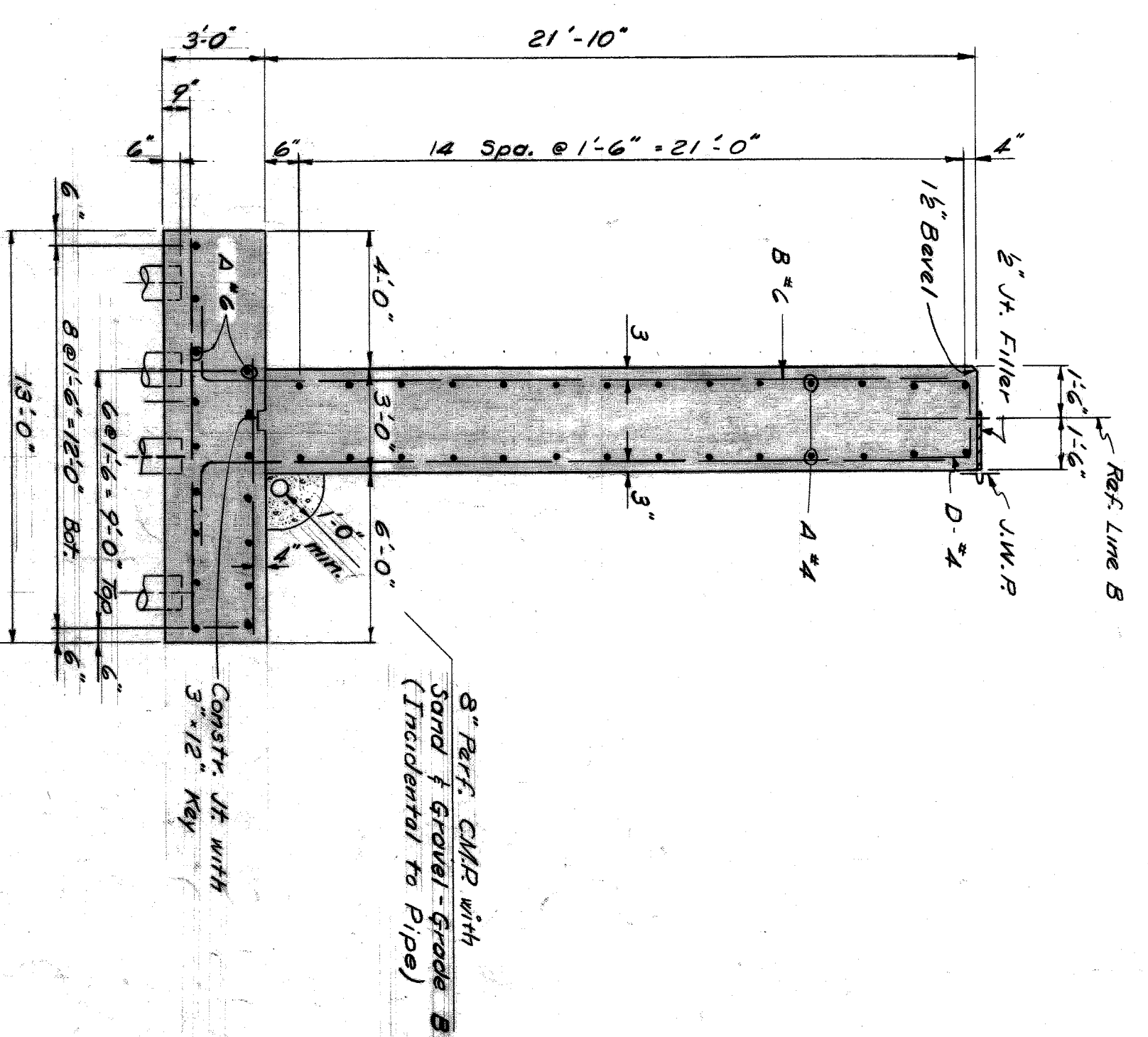
DETAIL B



VERT. CONSTR. JOINT



DETAIL A



SECTION A-A

MISCELLANEOUS	QUANTITIES
Item	Amount
6" Non-Metallic Waterstop	22 Lin. Ft.
2" Non-Metallic Waterstop	380 Lin. Ft.
2" Joint Filler	95 Sq. Ft.
1" Joint Filler	165 Sq. Ft.
Sand & Gravel - Grade A	115 L.S.
8" Perforated C.M.P.	290 Lin. Ft.
Steel Sheet Piling (Left in Place)	2095 Sq. Ft.
Dampening Cut Off	117 Each
Timber Piles, Furnished & Driven	7020 Lin. Ft.
Unclassified Excavation	63 L.S.
3" Joint Filler	358 Cu. Yds.
Concrete Grade A (64A)	41 Lin. Ft.
Aluminum Rolling - 2 Tube	

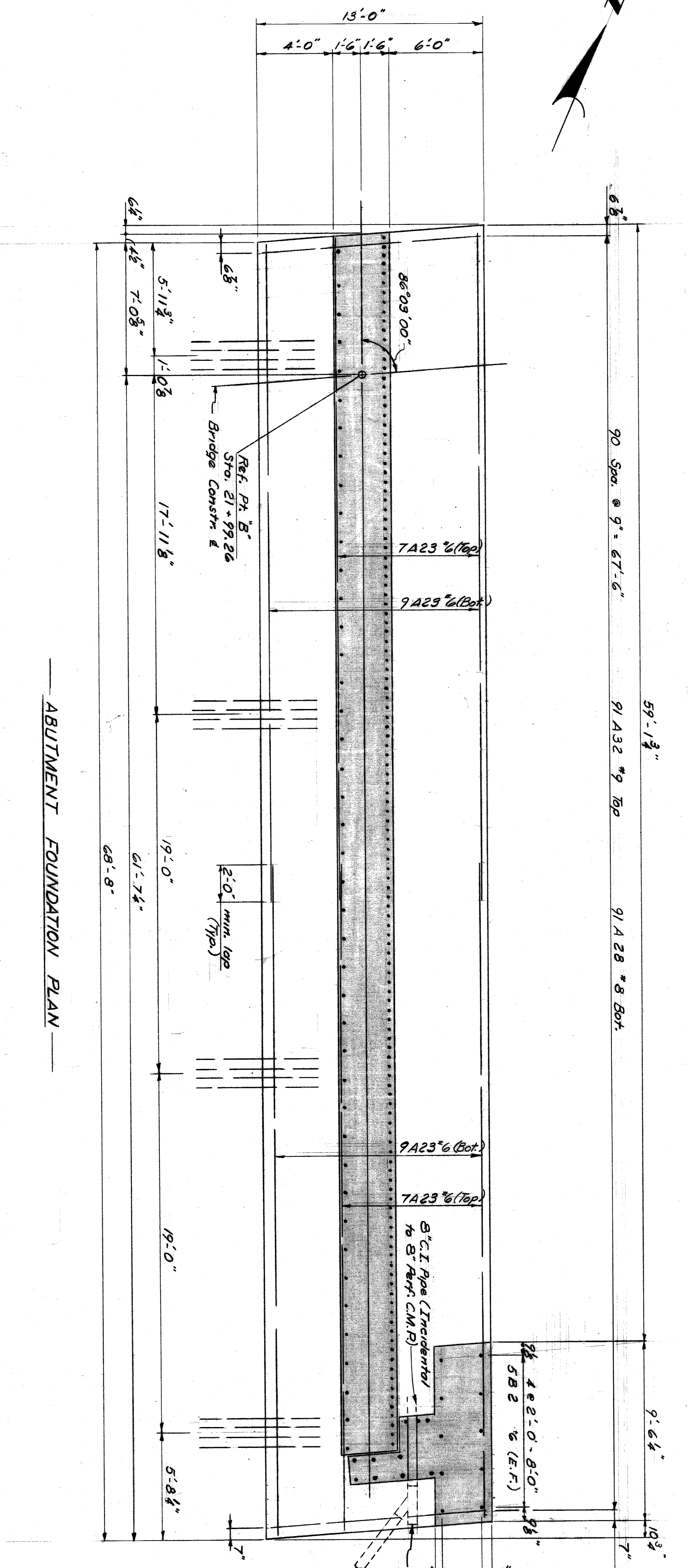
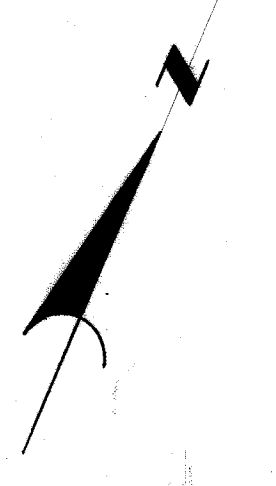
Work this sheet with sheets 209 & 210.

DESIGNED BY	CCL / R.R.H.
DRAWN BY	M. S. HAYES
CHECKED BY	RUBEN W. COVAT
ENGINEER OF RECORD	W. J. BROWN
APPROVED BY	W. J. BROWN

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

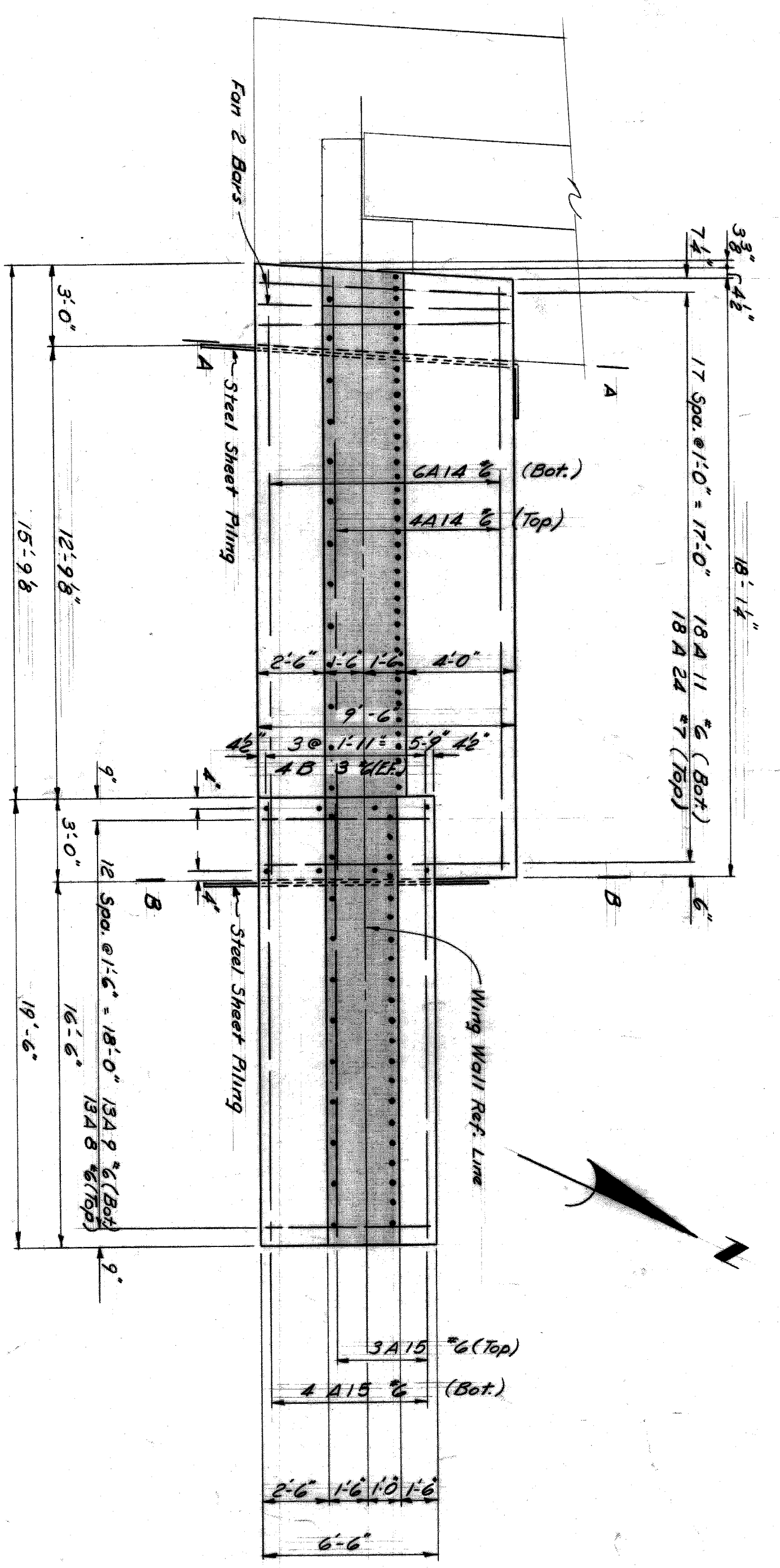
LAFAYETTE AVENUE BRIDGE X072
 GRAND TRUNK WESTERN RAILROAD
 ABUT. B DETAILS

SHEET 29 OF 46 SHEETS
 CONTRACT PW 3988
 DRWG No. C208
 DATE MAR 1962

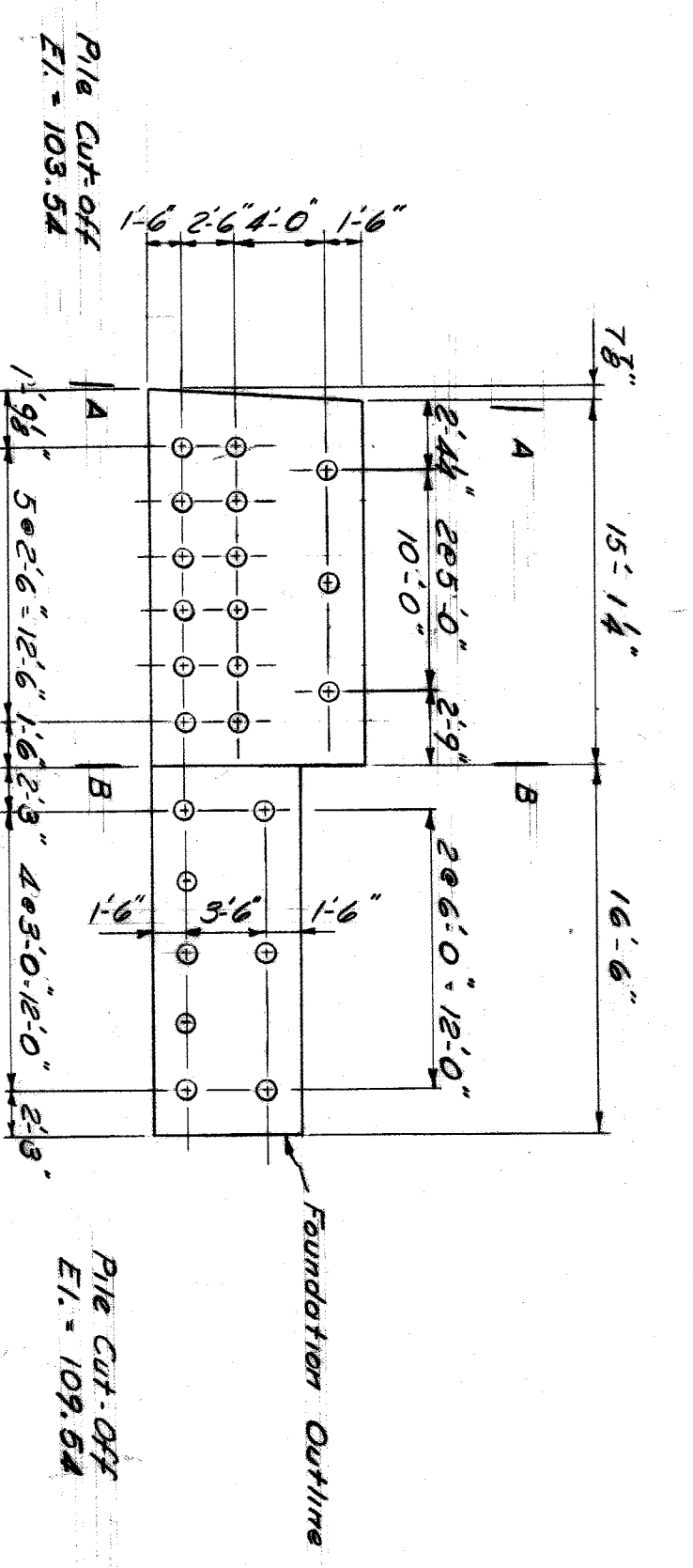


ABUTMENT FOUNDATION PLAN

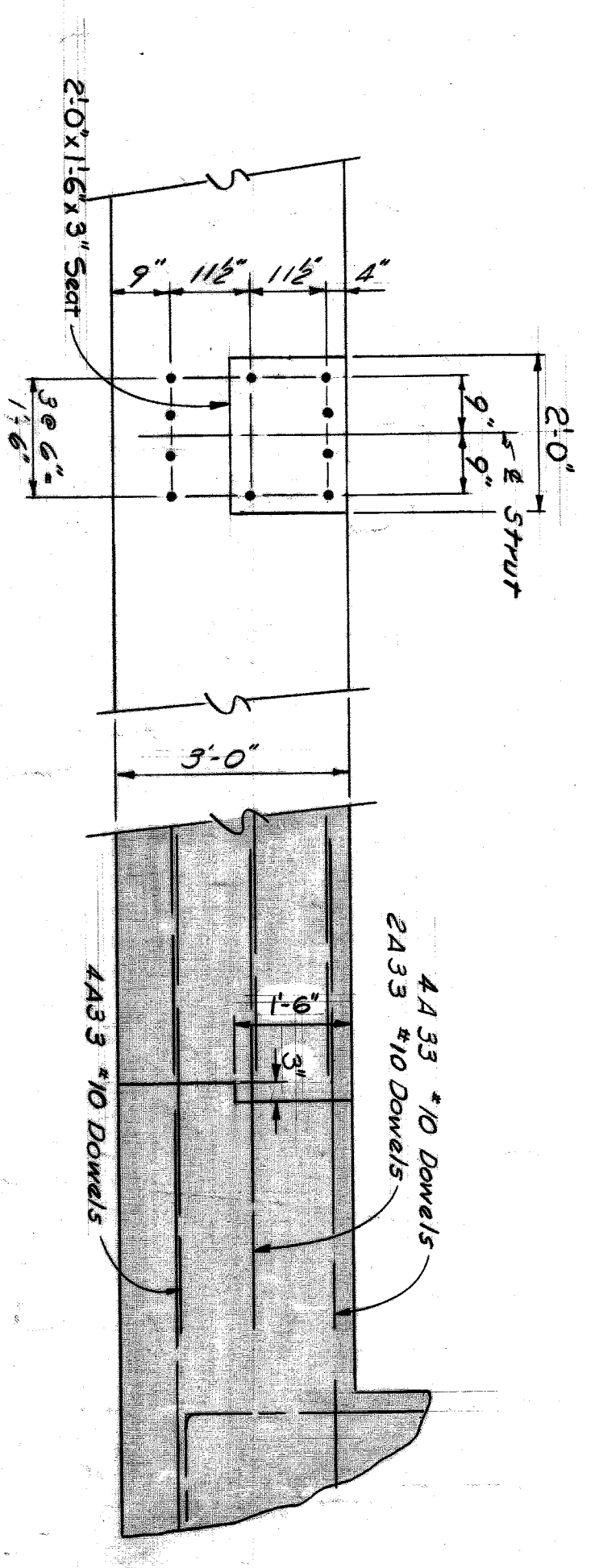
Notes:
X indicates test pile.



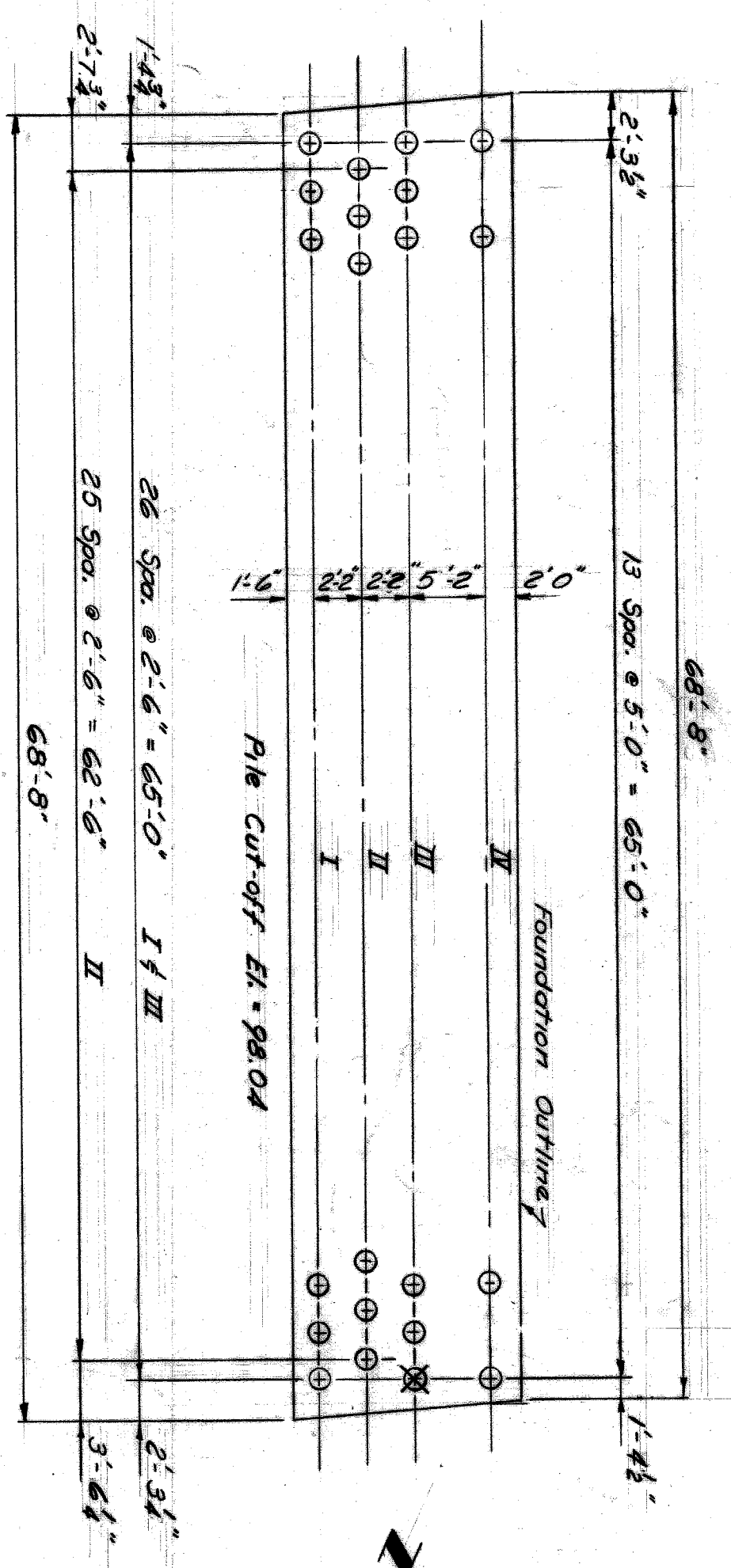
WING WALL FOUNDATION PLAN



WING WALL PILING PLAN



STRUT DETAIL



ABUTMENT PILING PLAN

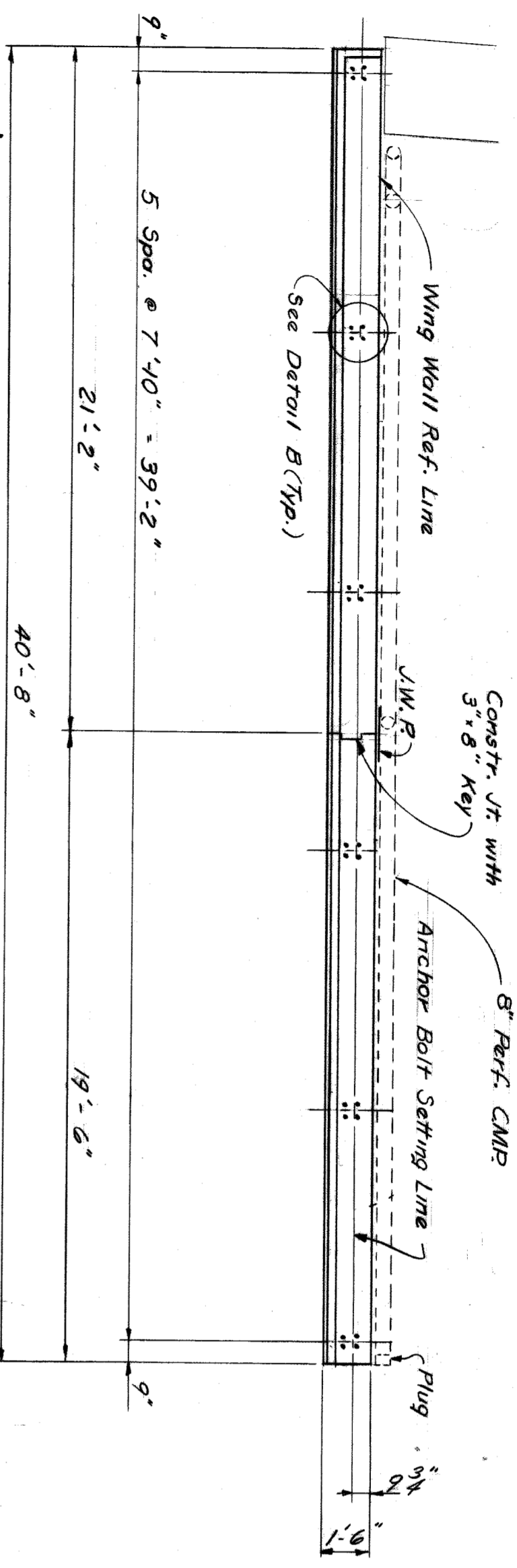
Work this sheet with sheets 208 & 210

DESIGNED BY	C.C.L./R.R.H.
DRAWN BY	A.L.C. Haggard
CHECKED BY	R. J. ...
DATE	...

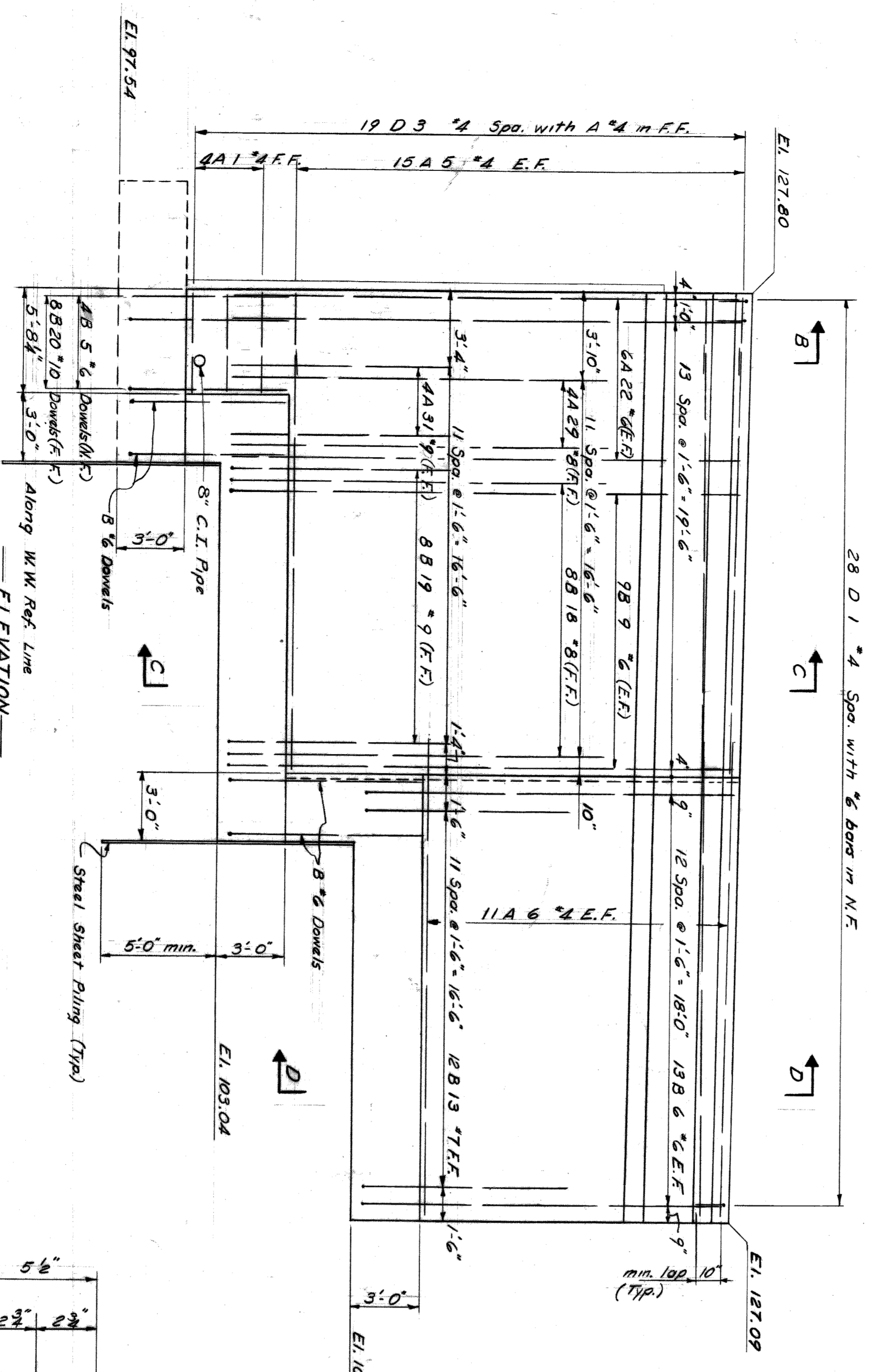
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

LAFAYETTE AVENUE BRIDGE X072
OVER
GRAND TRUNK WESTERN RAILROAD
ABUT. B DETAILS

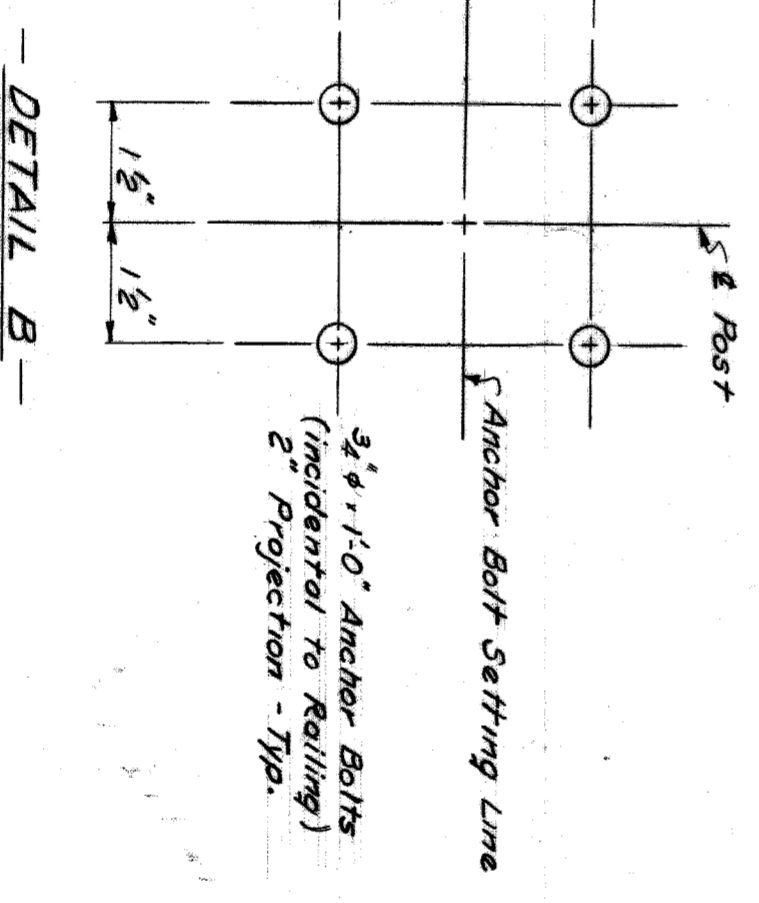
SHEET 30 OF 46 SHEETS
CONTRACT P.W. 3983
DRWG No. C209
DATE MAR. 1962



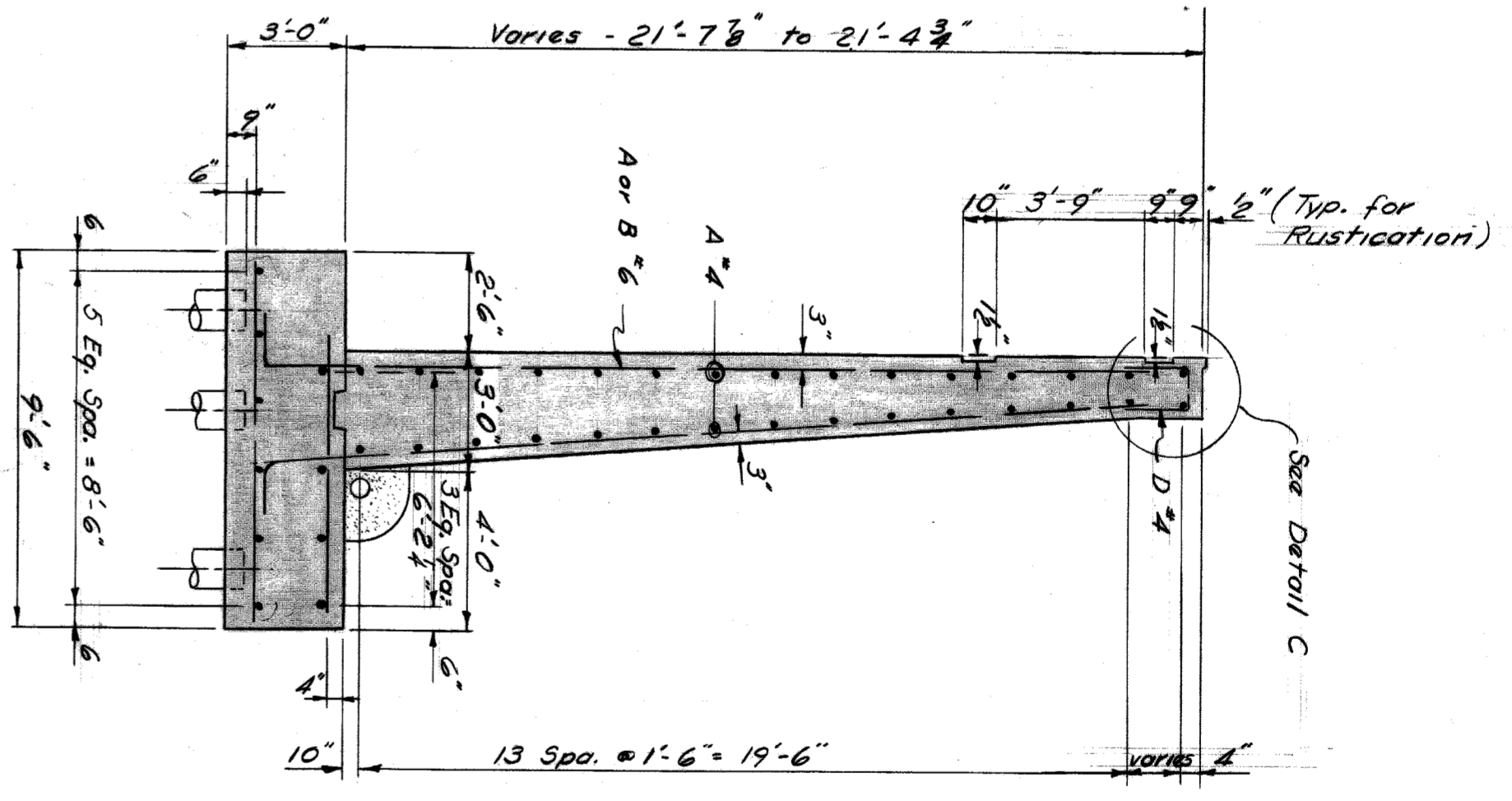
PLAN OF TOP



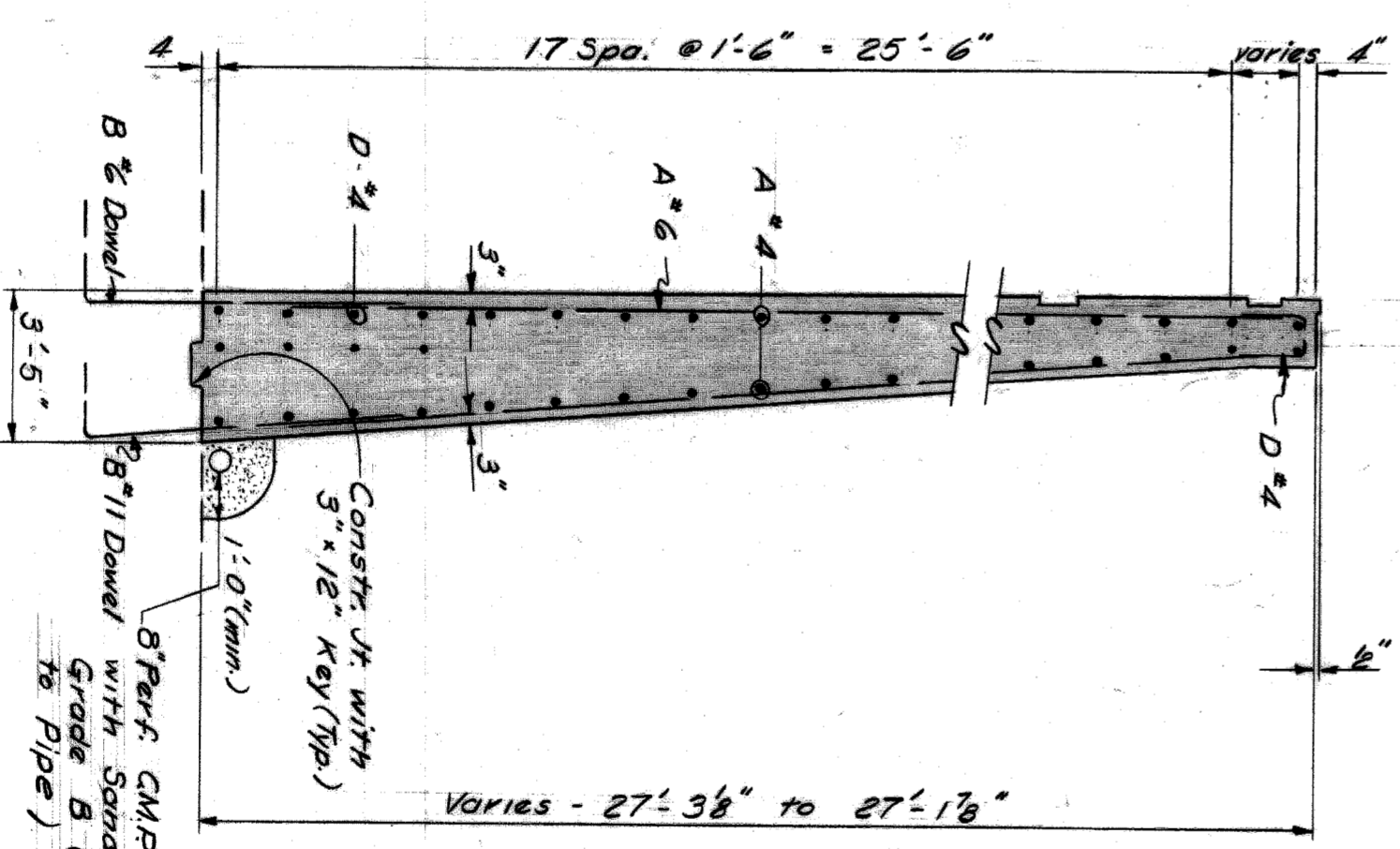
ELEVATION



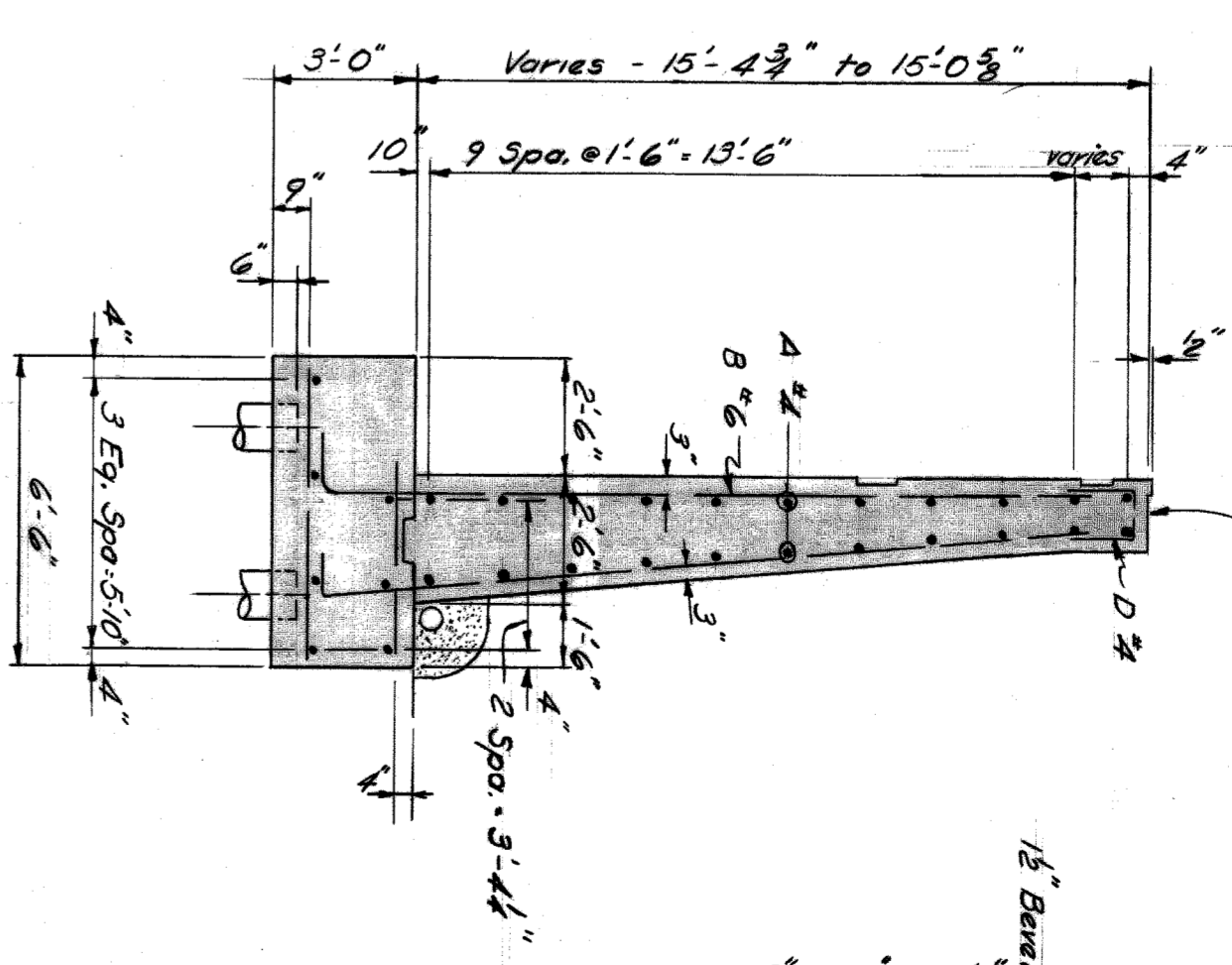
DETAIL B



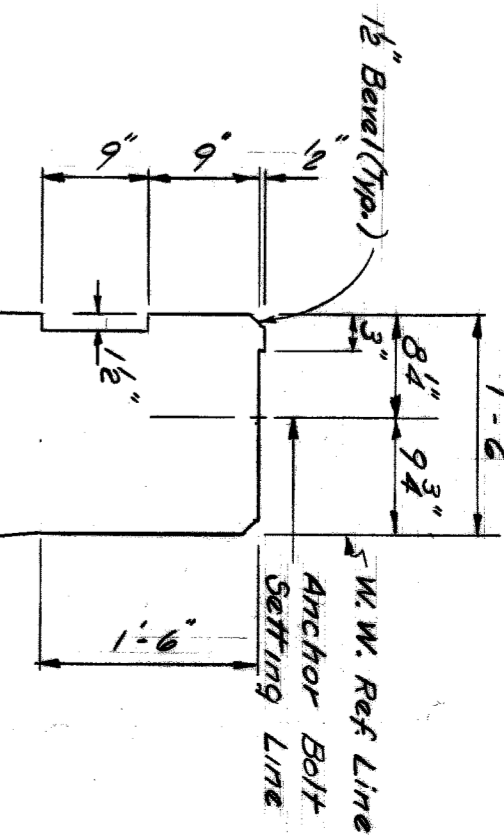
SECTION C-C



SECTION B-B



SECTION D-D



DETAIL C

GENERAL NOTES

The designs of the abutment and wing walls are based on the following pile loads:

Location	D. L.	Avg.	Max.	A.L.T.	Allowed
	31.3	29.1	35.5	29.0	34.0
	26.8	26.6	31.4	25.5	34.0
	29.9	27.2	29.8	28.5	34.0

The top of the abutment shall be finished to true planes of the abutments shown and shall not vary more than 9" under a 10' straight edge nor more than 1/16" under any bearing. Dampproof the rear face of the abutment and wing walls above the footing, except the parapets. Anchor bolts are to be furnished with the structural steel and one to be set accurately to a template. N.E., E.F., and E.F. denote near face, far face and each face respectively. J.W.P. denotes joint waterproofing. 20" wide. Steel sheet piling left in place shall be of the continuous interlock type, either new or used in good condition, weighing not less than 22 lbs. per sq. ft. of wall, and shall be furnished with suitable connecting and corner pieces. For Aluminum Rolling Details see sheet # 217.

Work this sheet with sheets 205 & 209.

REVISIONS LOCATED BY COORDINATES ON SHEET

NO.	DATE	DESCRIPTION

DESIGNED BY	CHECKED BY	DATE
C.C.L./R.H.	R. JAMES/C. JEFF	

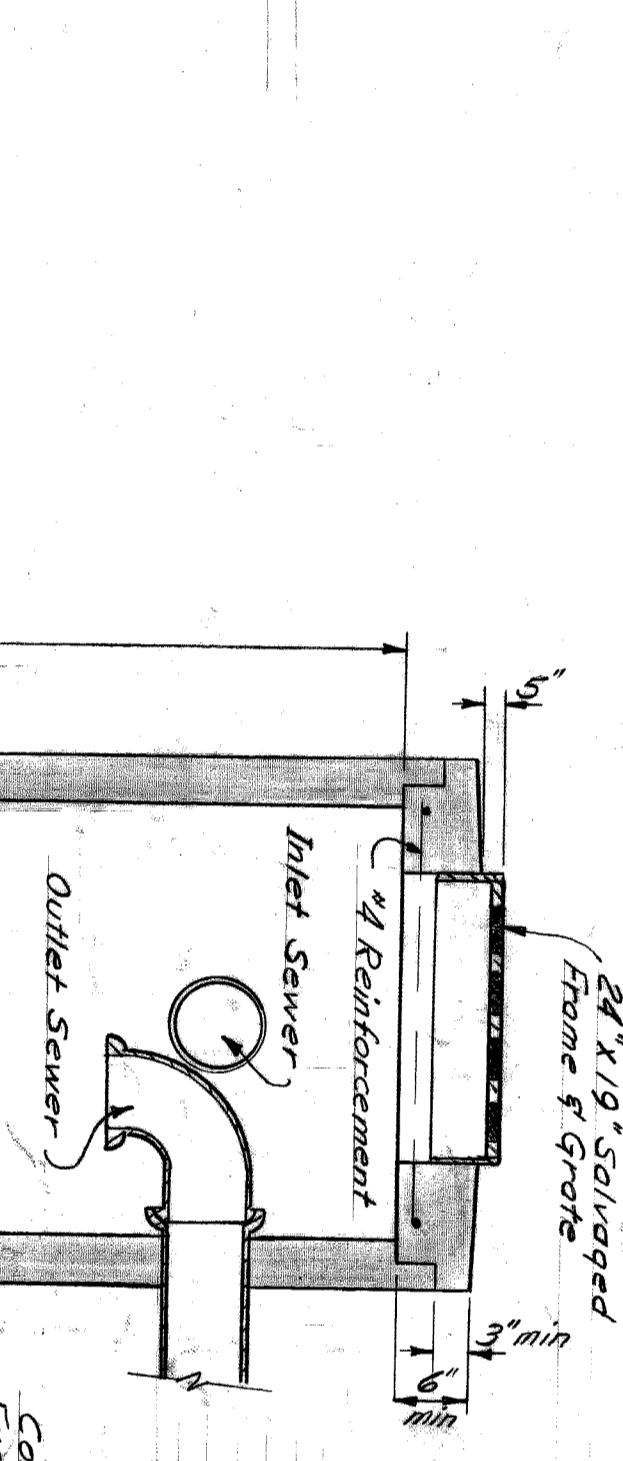
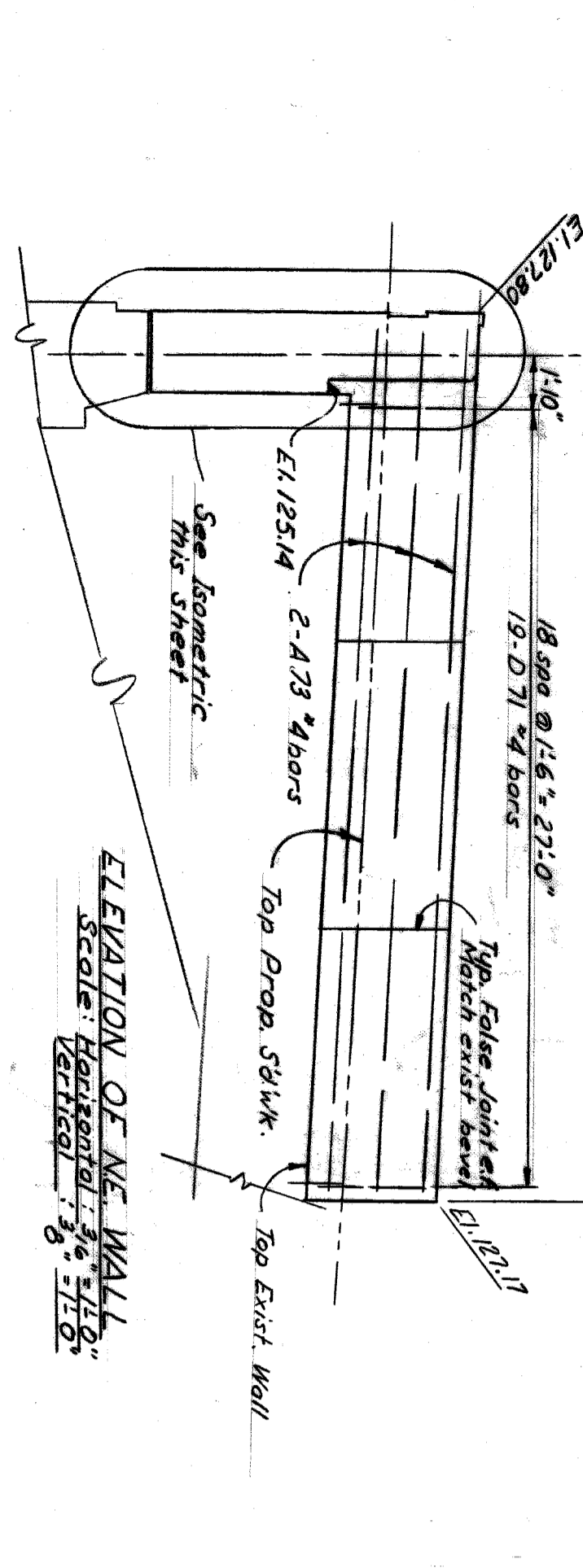
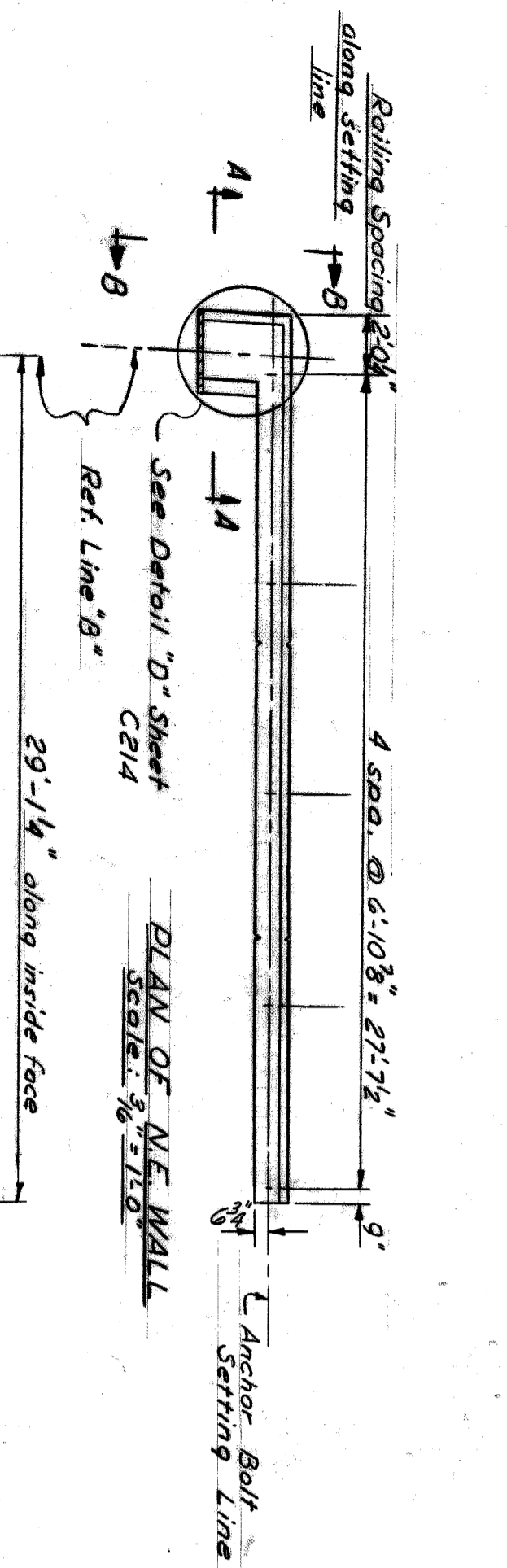
DRAWN BY	THAYED BY	DATE
W.G. MANSOUR		

APPROVED BY	DATE

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

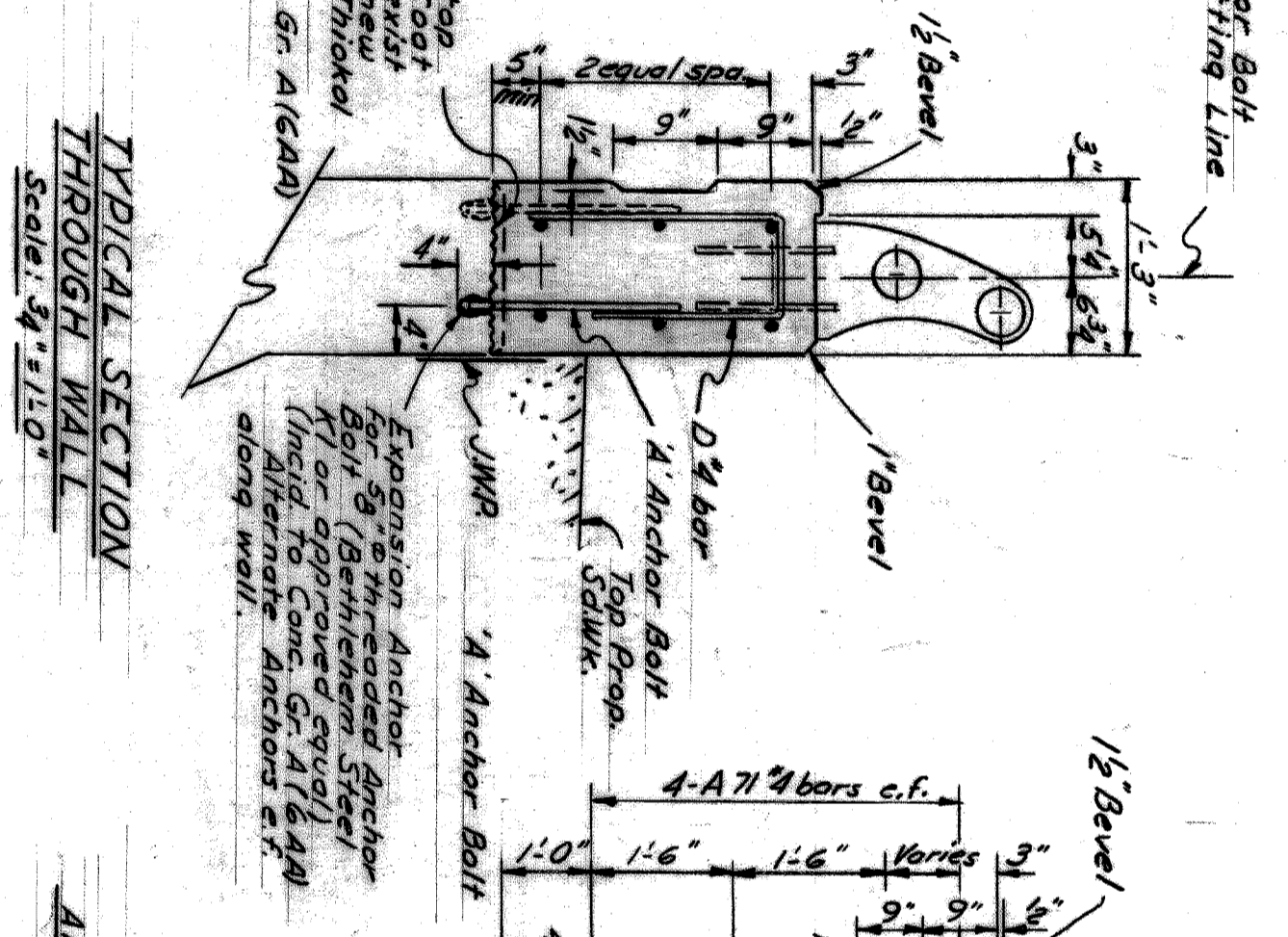
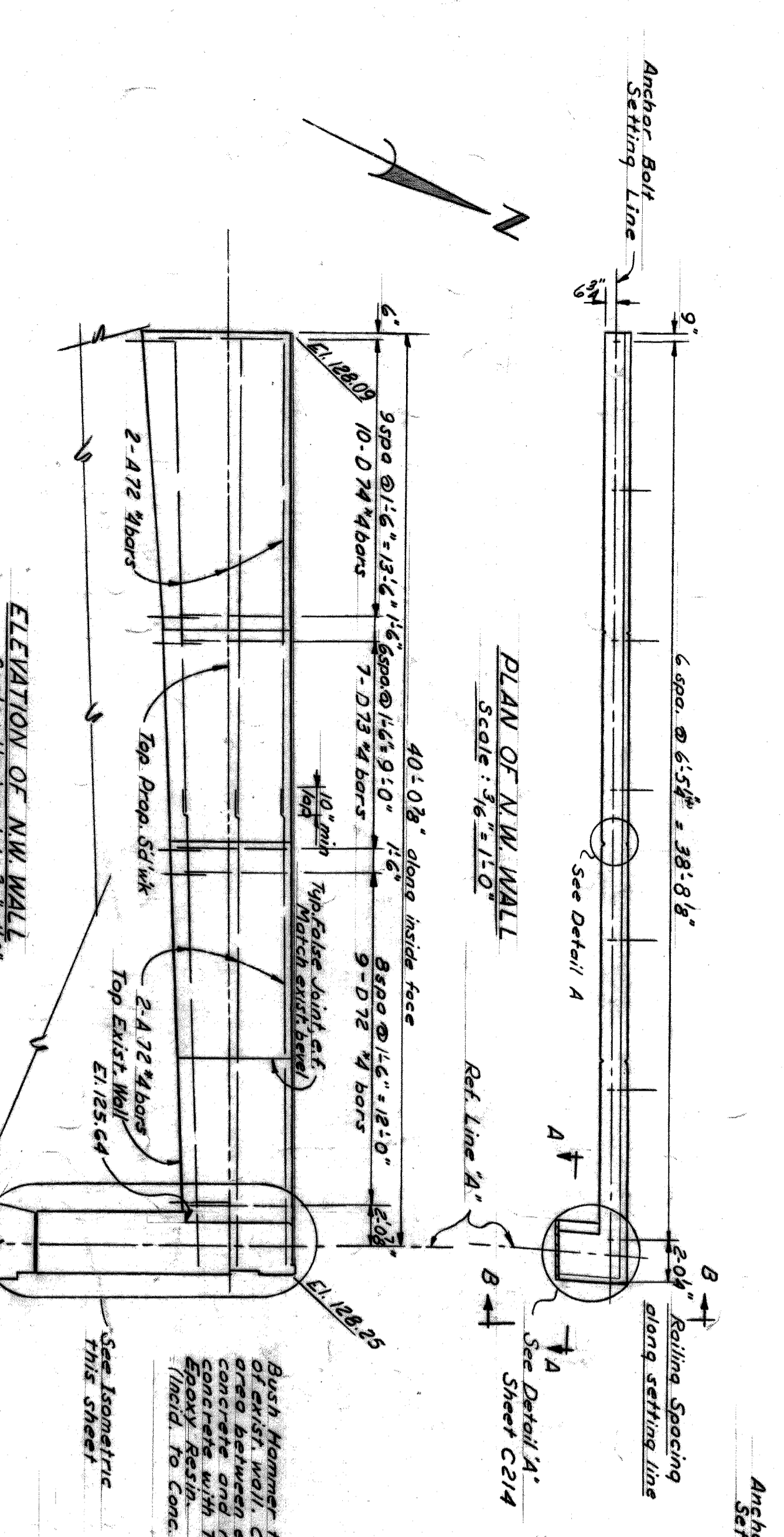
LAFAYETTE AVENUE BRIDGE X072
OVER
GRAND TRUNK WESTERN RAILROAD
ABUT. B DETAILS

SHEET 31 OF 48 SHEETS
CONTACT PW 3986
DRAWG NO. C210
DATE MAR. 1962

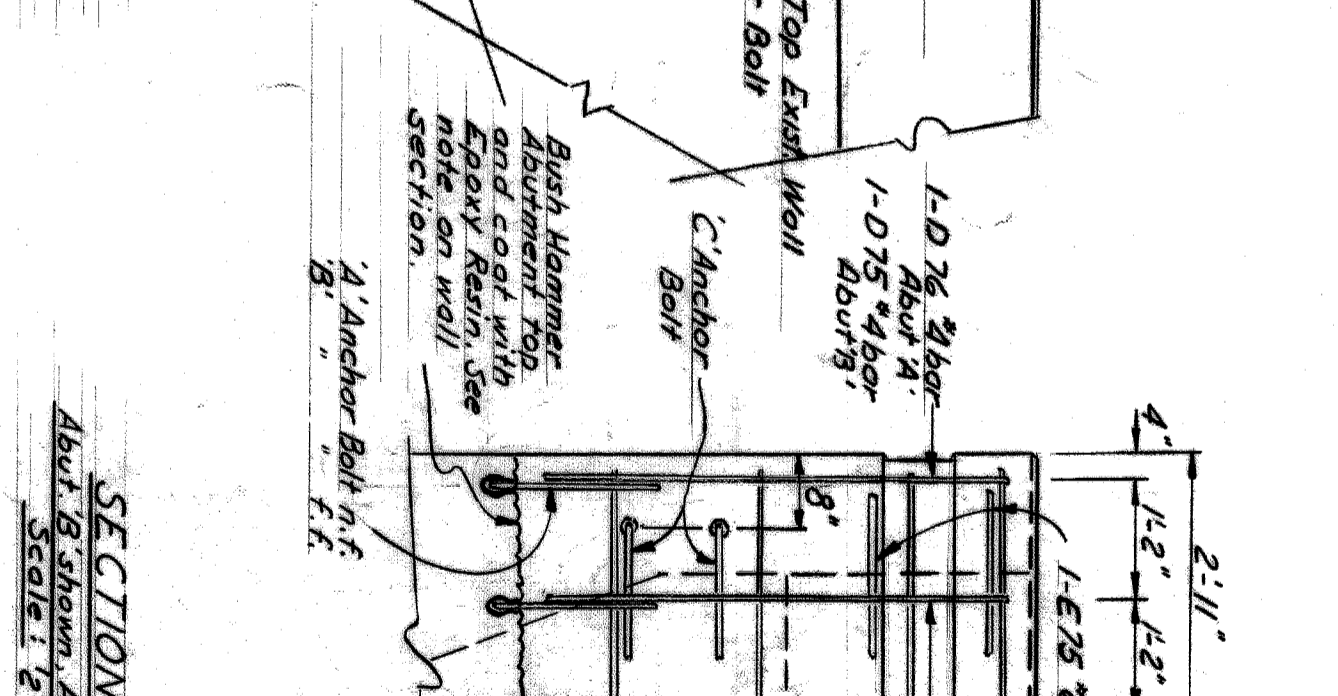


Note: Catchbasin shall use salvaged Catchbasin Frame and Grate and install in new Catchbasin. Inlet and outlet sewer pipe shall match invert elevation of pipes in abandoned Catchbasin.

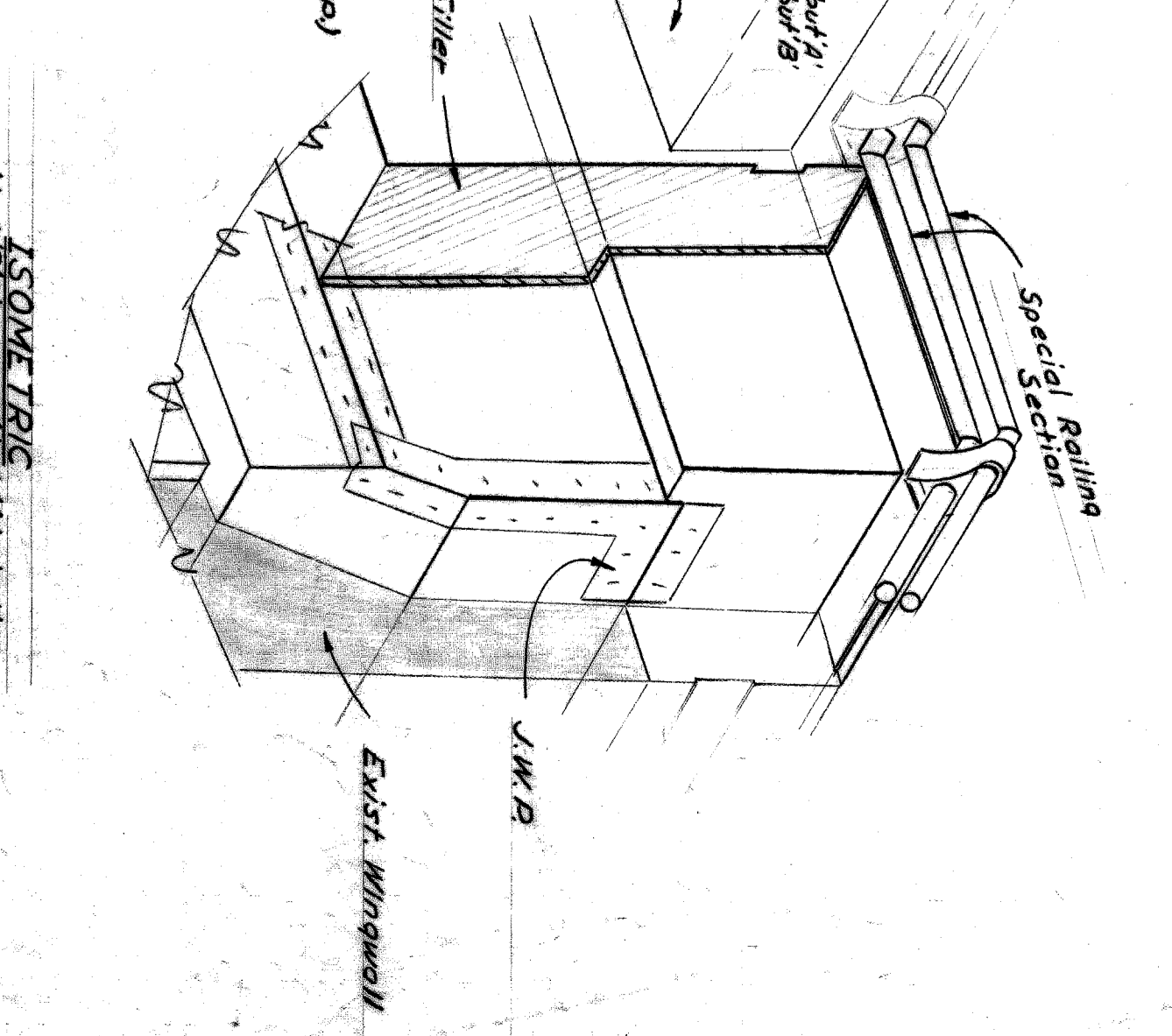
Concrete Reinforcement, Excavation and Backfill incidental to Catchbasin.



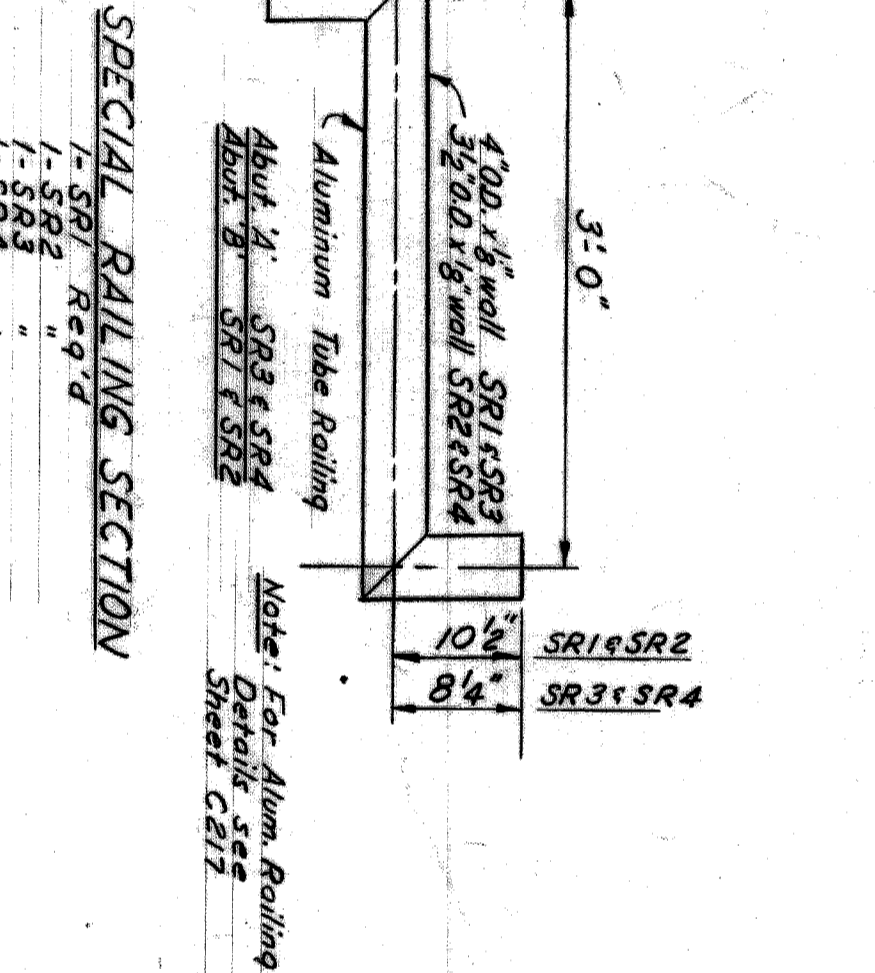
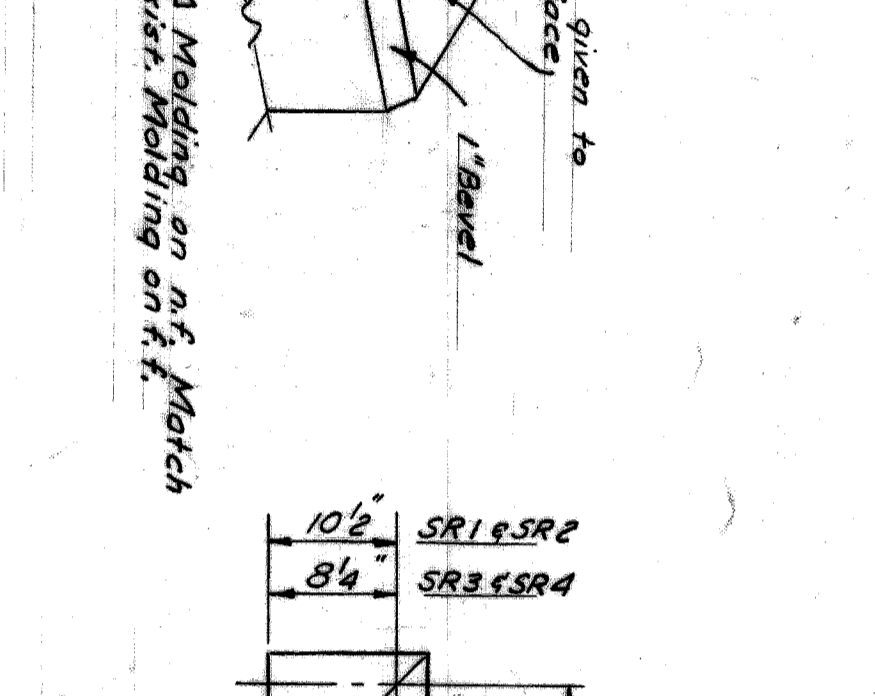
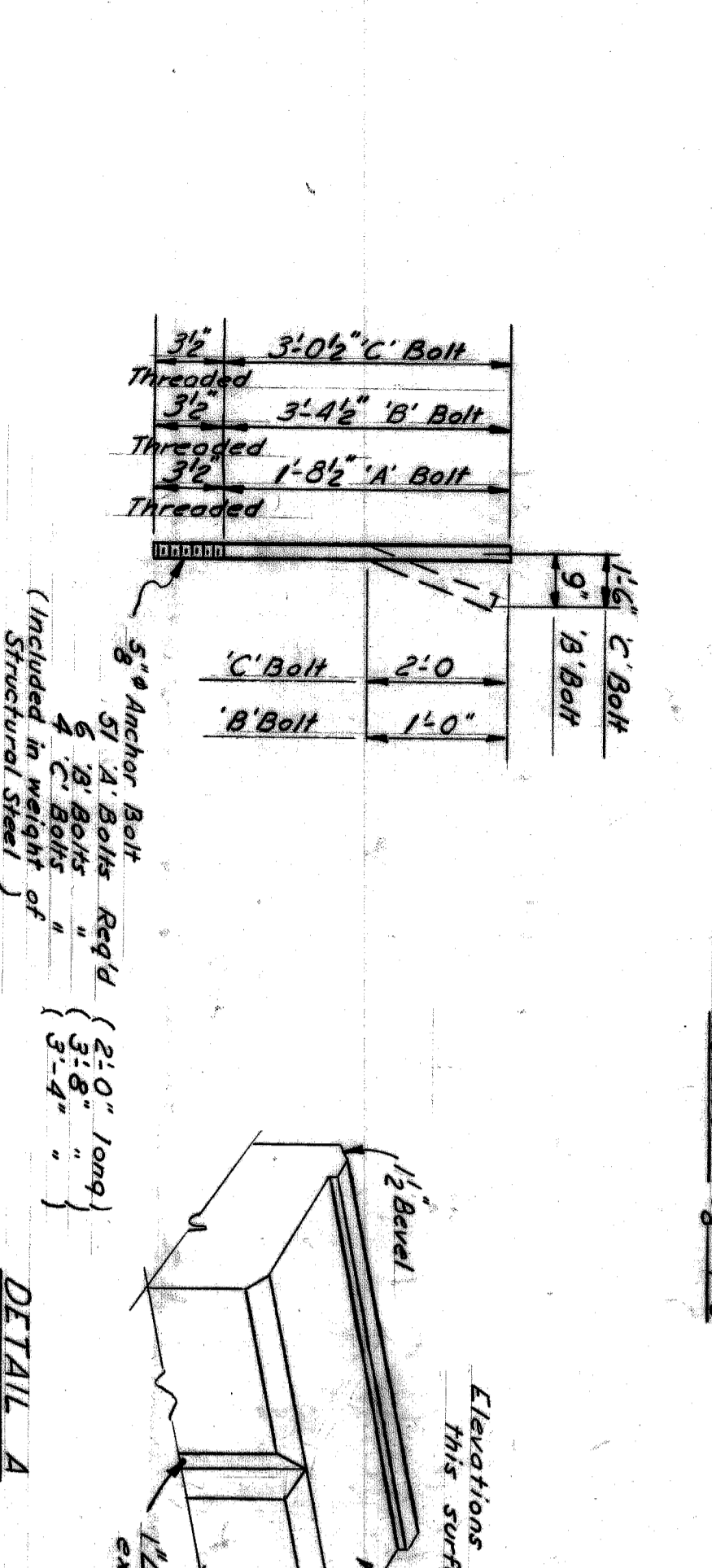
SECTION A-A About 8' shown. About A similar. Scale: 1/2"



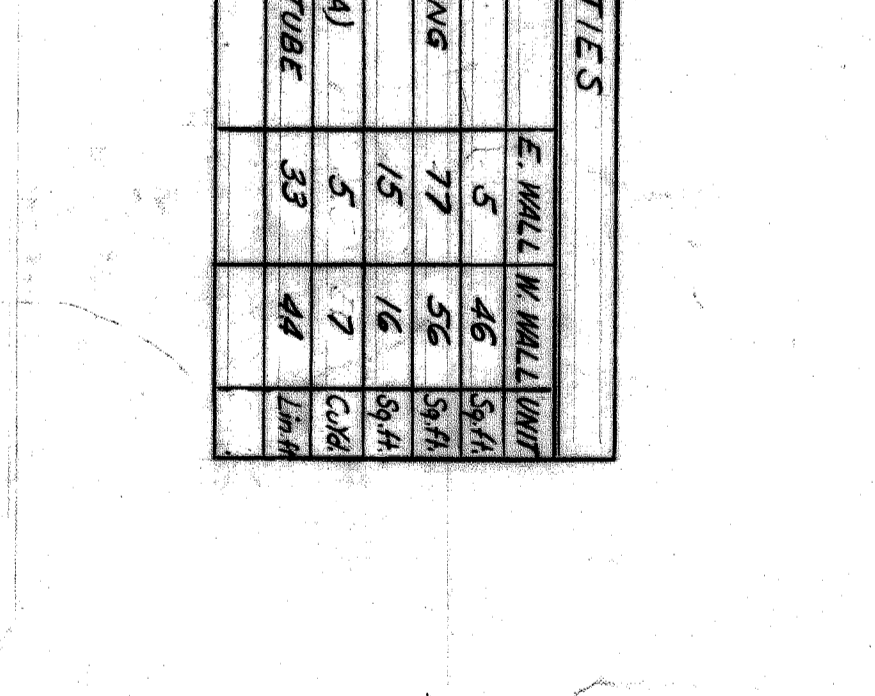
SECTION B-B About 8' shown. About B similar. Scale: 1/2"



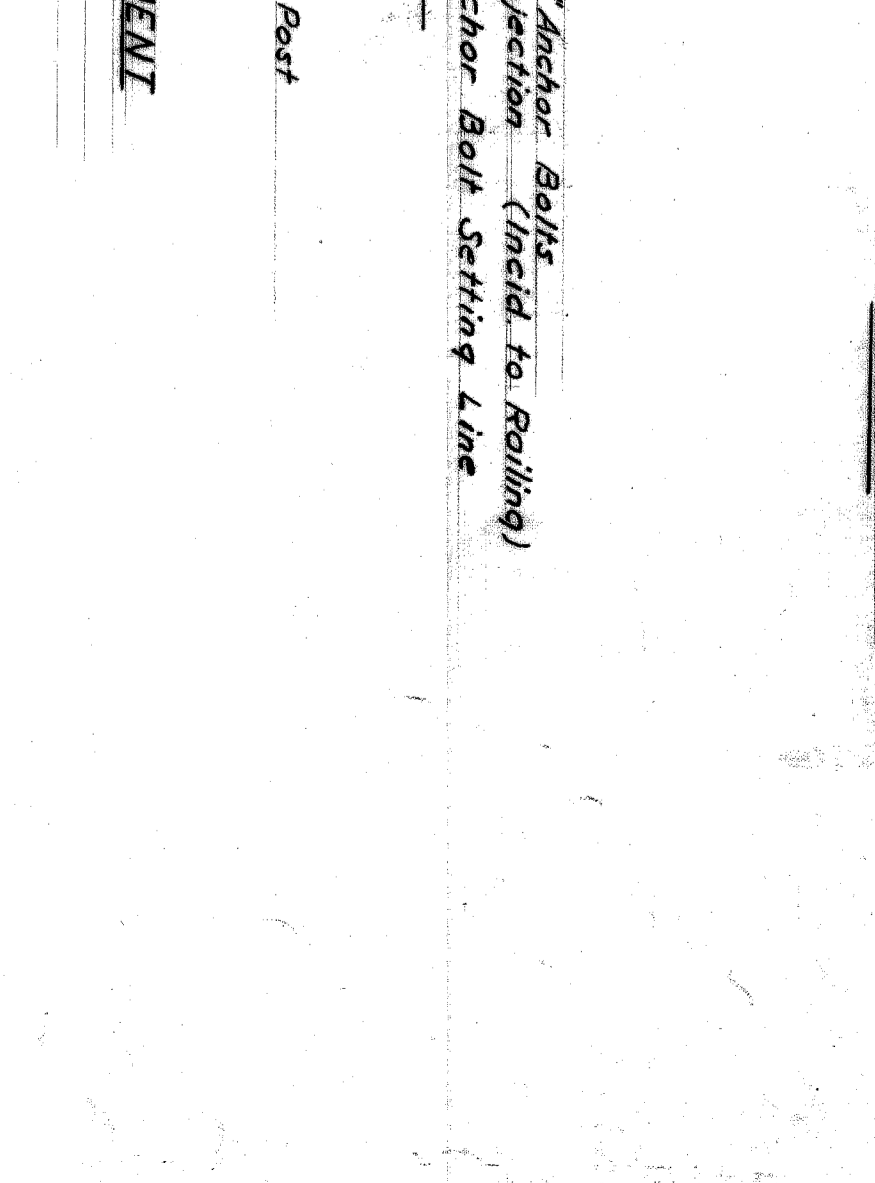
ISOMETRIC. Scale: 1/8"



SECTION A-A About 8' shown. About A similar. Scale: 1/2"



SECTION B-B About 8' shown. About B similar. Scale: 1/2"



ANCHOR BOLT ALIGNMENT DIAGRAM. Not to Scale

ITEM	QUANTITIES	E WALL W/ WINDY
DAMP PROOFING	5	46
JOINT WATERPROOFING	77	36
1" JOINT FILLER	15	16
CONCRETE GR. (GGA)	5	7
ALUMINUM RAILING - 2 TUBE	39	44
L.H.M.		

General Notes: Damp proof rear of wall up to one foot below top of sidewalk E, F, N, Y, F, represent each face, rear face, and far face respectively. J.W.P. represents Joint Waterproofing.

NO.	DESCRIPTION	DATE
1	REVISIONS LOCATED BY COORDINATOR ON SHEET	

DESIGNED BY **CCL/RRH**

DRAWN BY **R. JAMES 3/1/62**

CHECKED BY **W. G. HAYWARD 1/6**

CITY ENGINEERS OFFICE

BUREAU OF HIGHWAYS AND EXPRESSWAYS

RAILROAD GRADE SEPARATION

CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS

CITY ENGINEERS OFFICE

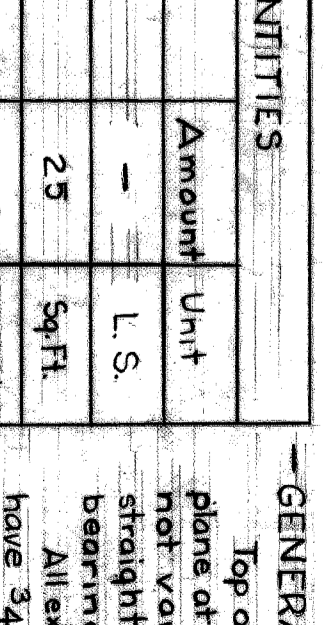
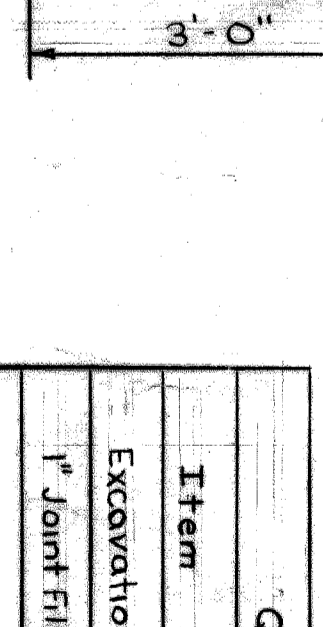
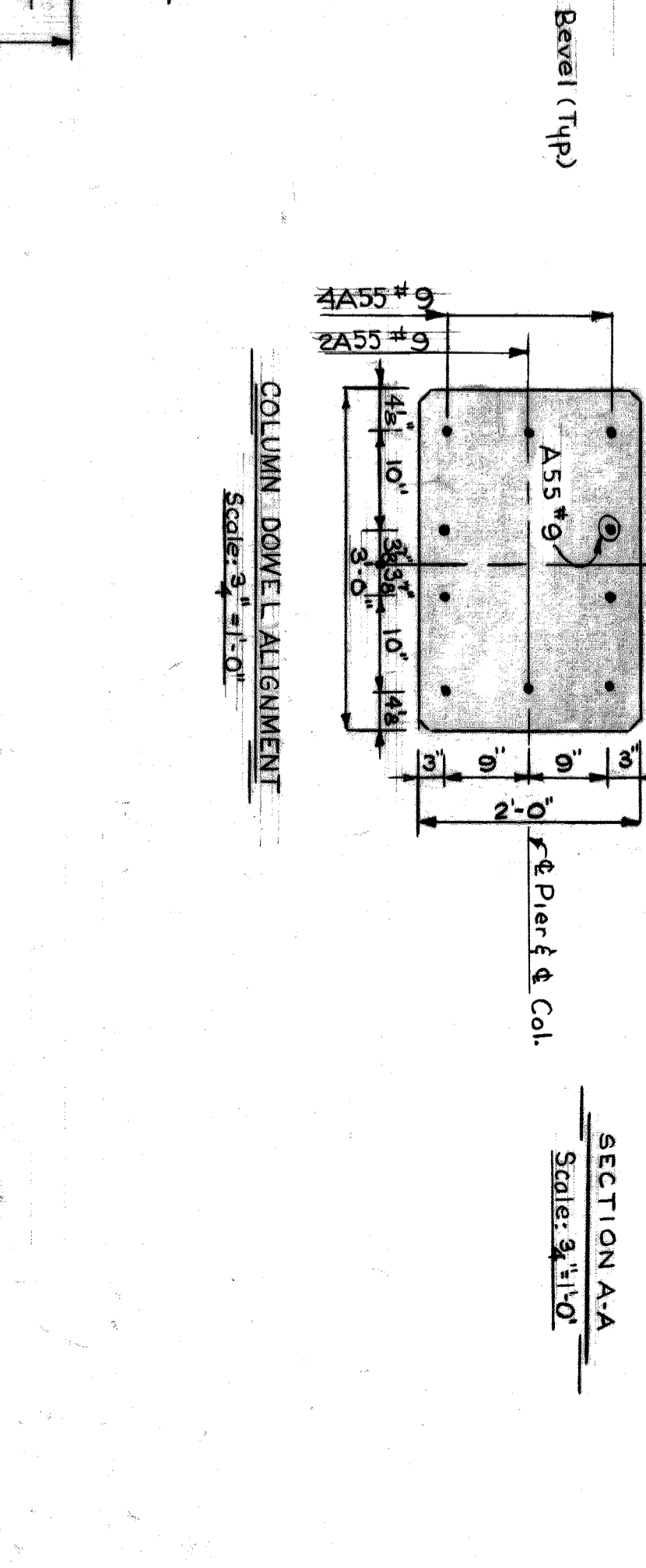
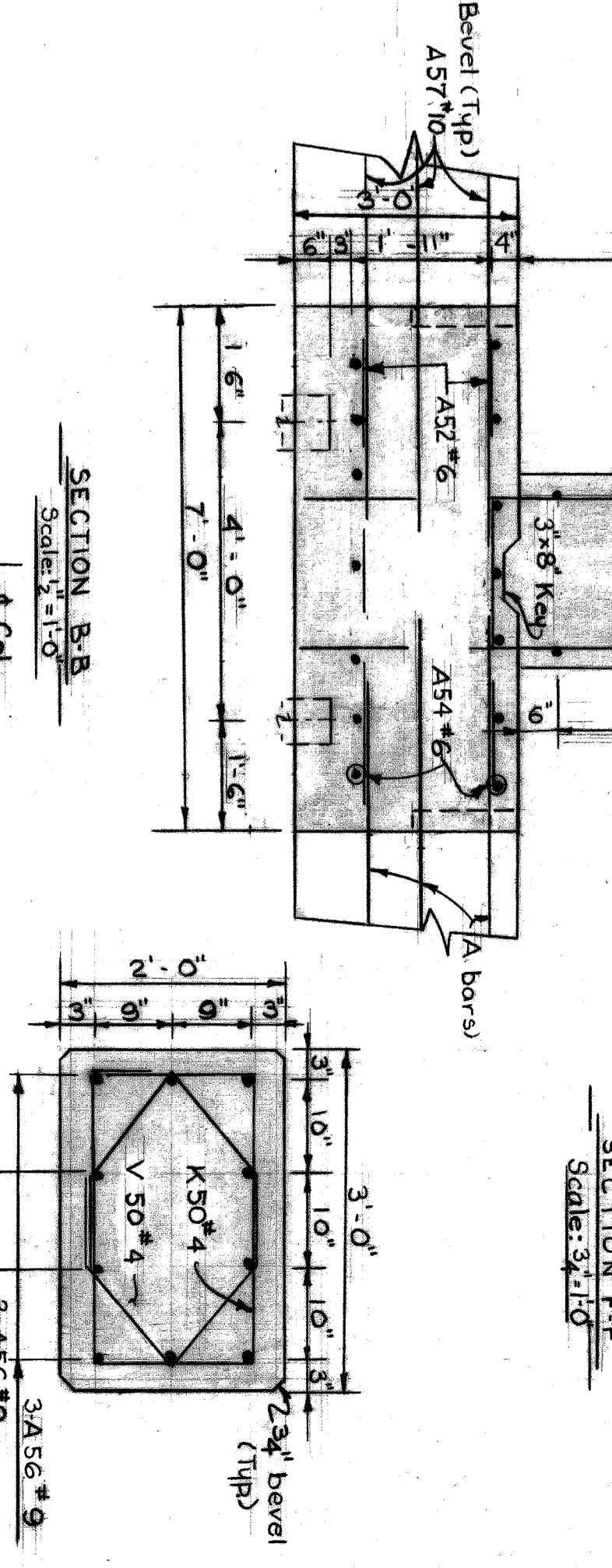
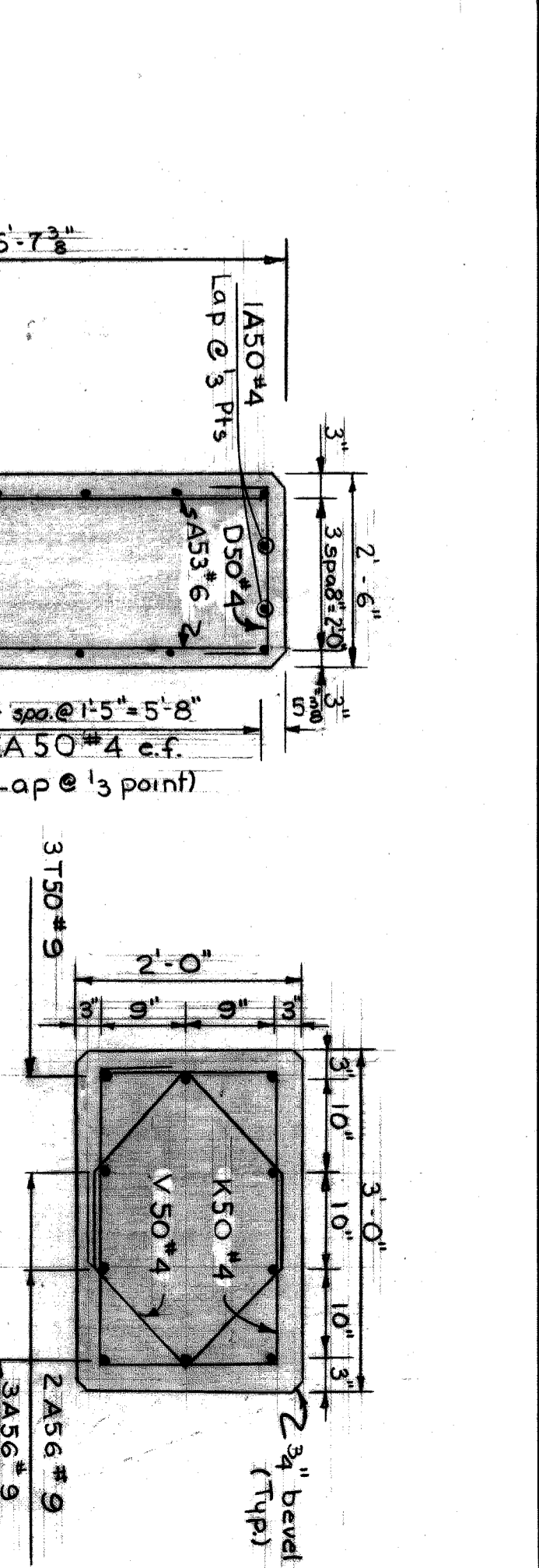
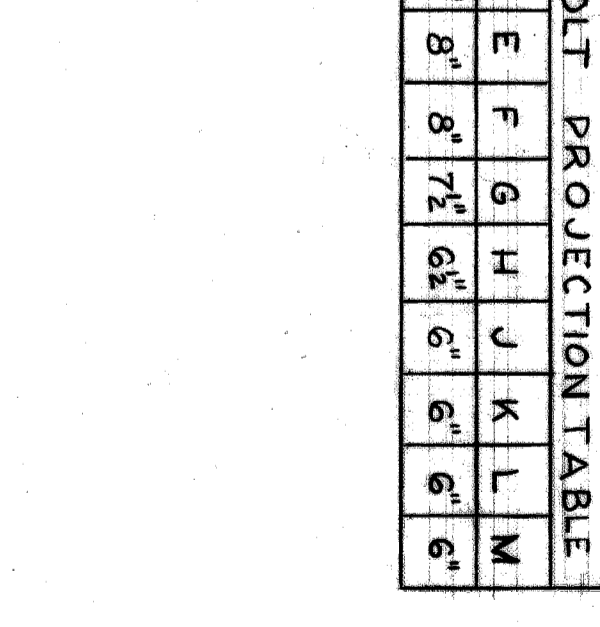
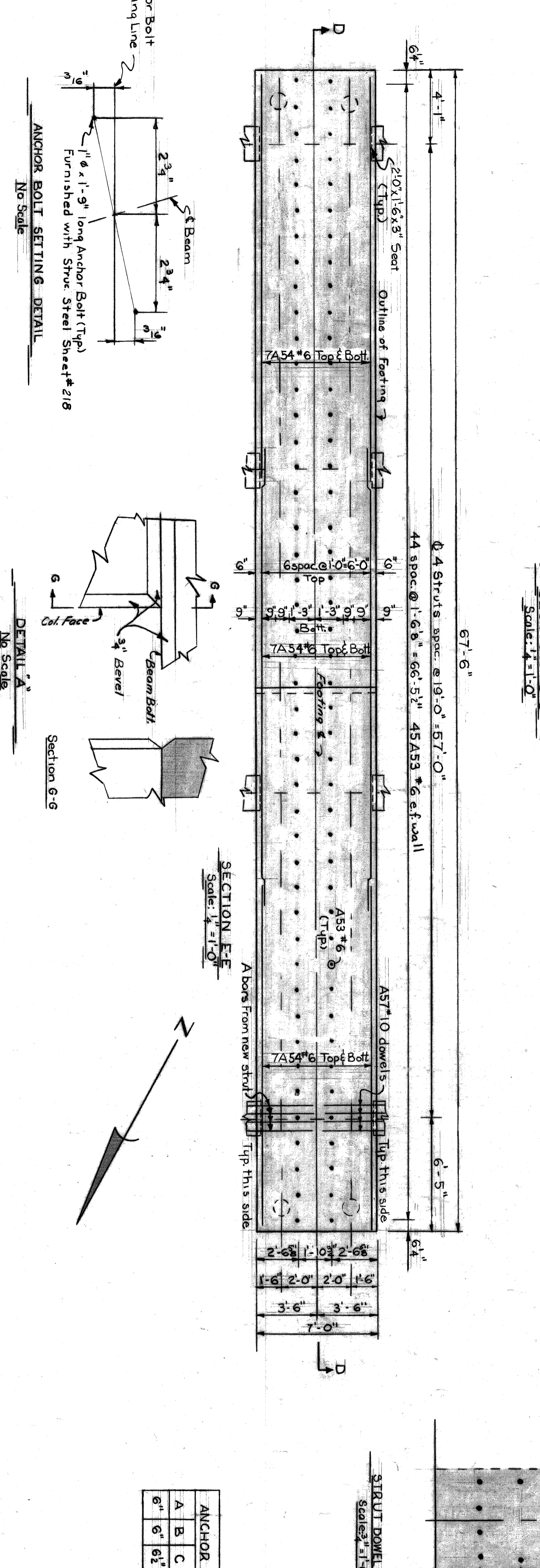
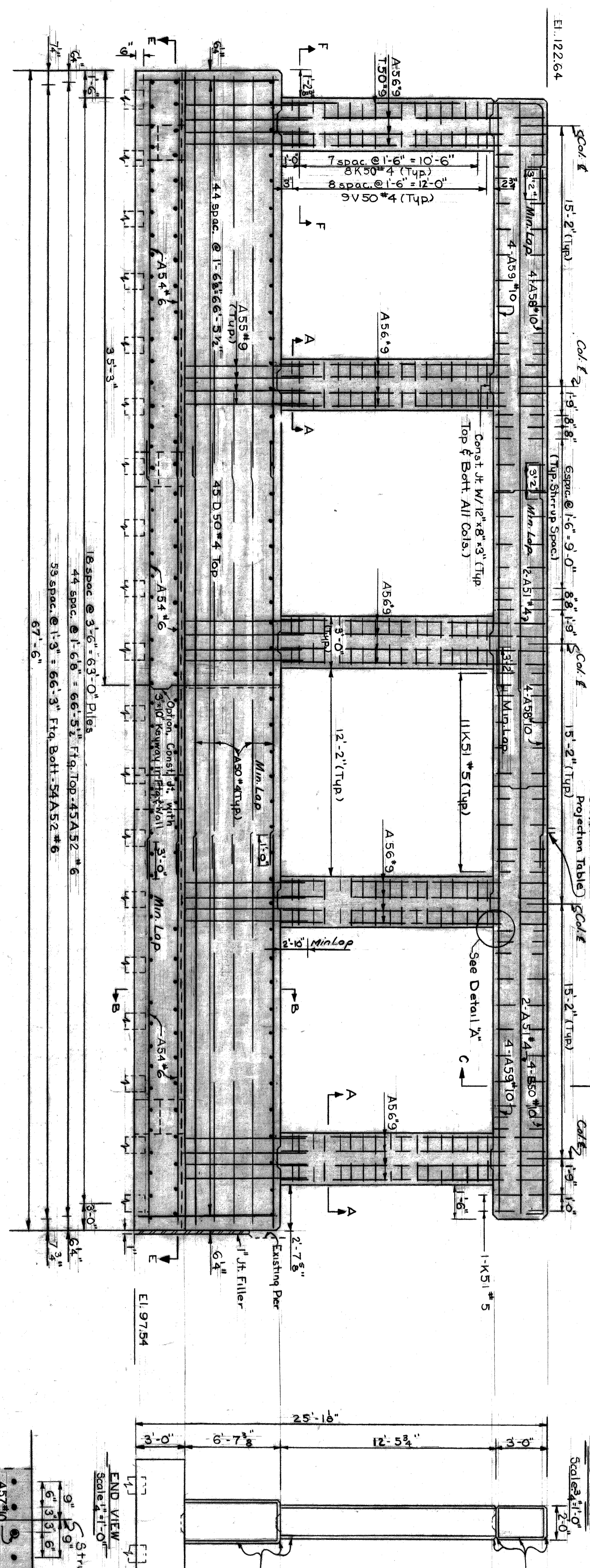
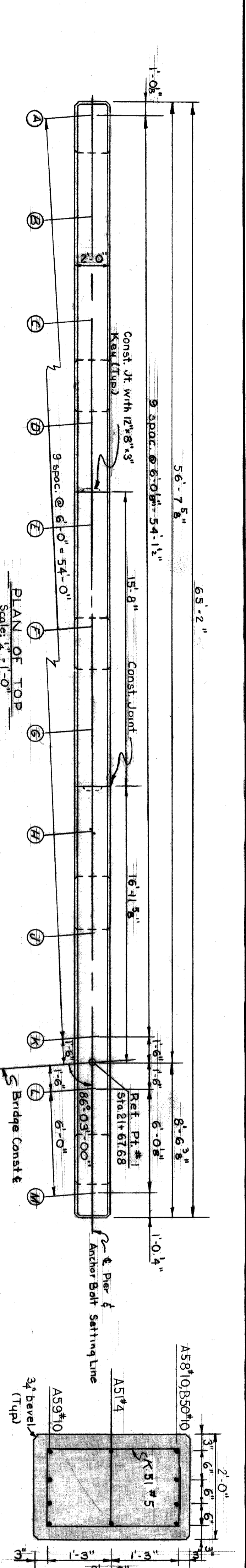
BUREAU OF HIGHWAYS AND EXPRESSWAYS

RAILROAD GRADE SEPARATION

LAFAYETTE AVENUE BRIDGE X072
OVER
GRAND TRUNK WESTERN RAILROAD

EXISTING WINGWALL DETAILS

SHEET 32 OF 46 SHEETS	CONTRACT NO. PW 3988	DATE MAR. 1962
NO.	NO.	
NO.	NO.	
NO.	NO.	



ANCHOR BOLT PROJECTION TABLE

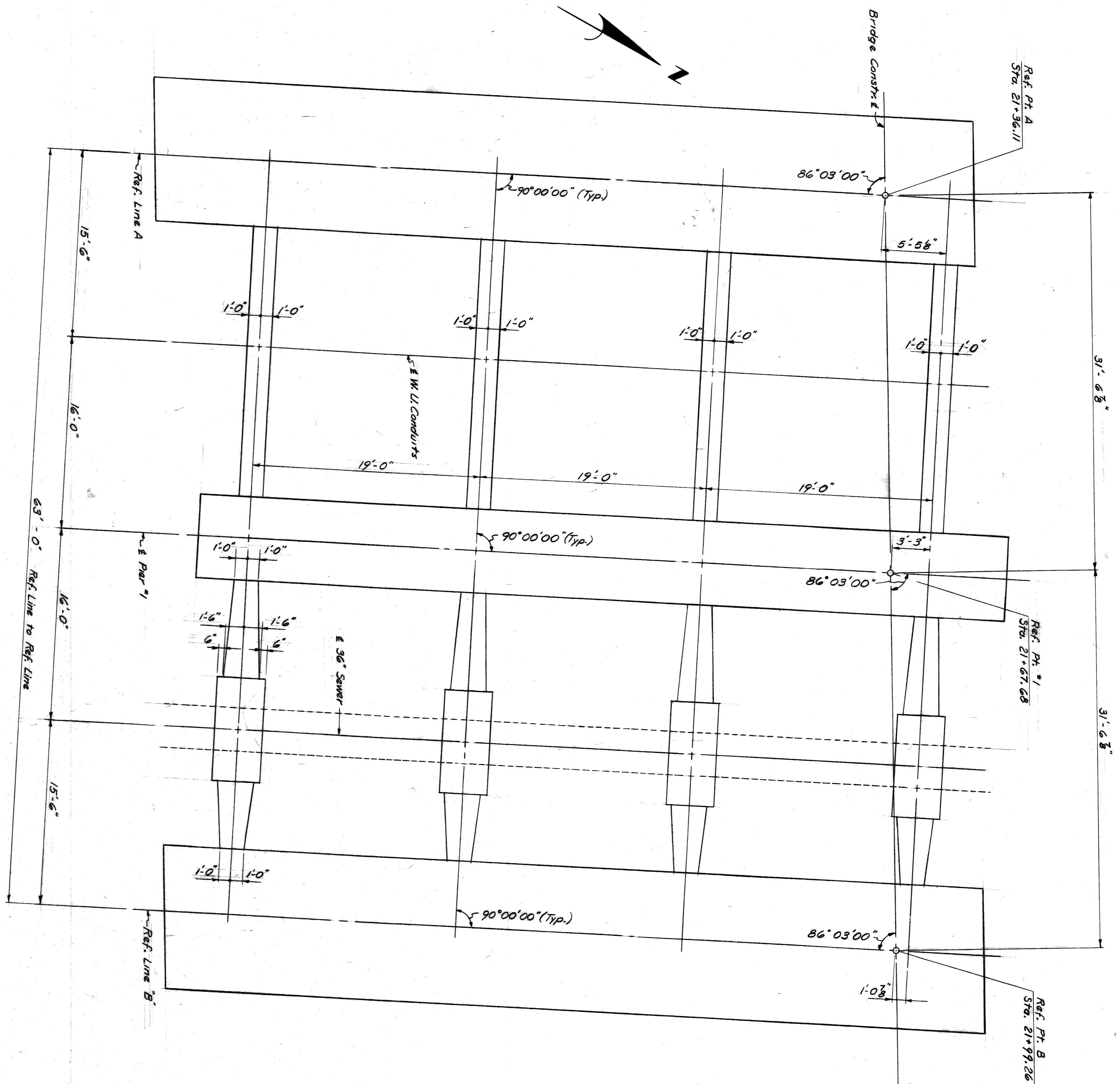
A	B	C	D	E	F	G	H	J	K	L	M
6"	6"	6 1/2"	7 1/2"	8"	8"	7 1/2"	6 1/2"	6"	6"	6"	6"

QUANTITIES

Item	Amount	Unit
Excavation	25	L.S.
1" Joint Filler	25	Sq. Ft.
Concrete Gr. (6041)	123.0	Cu. Yds.
Timber Pile Cut Off	38	Each
Timber Pile, Form & Driv.	22.80	Lin. Ft.

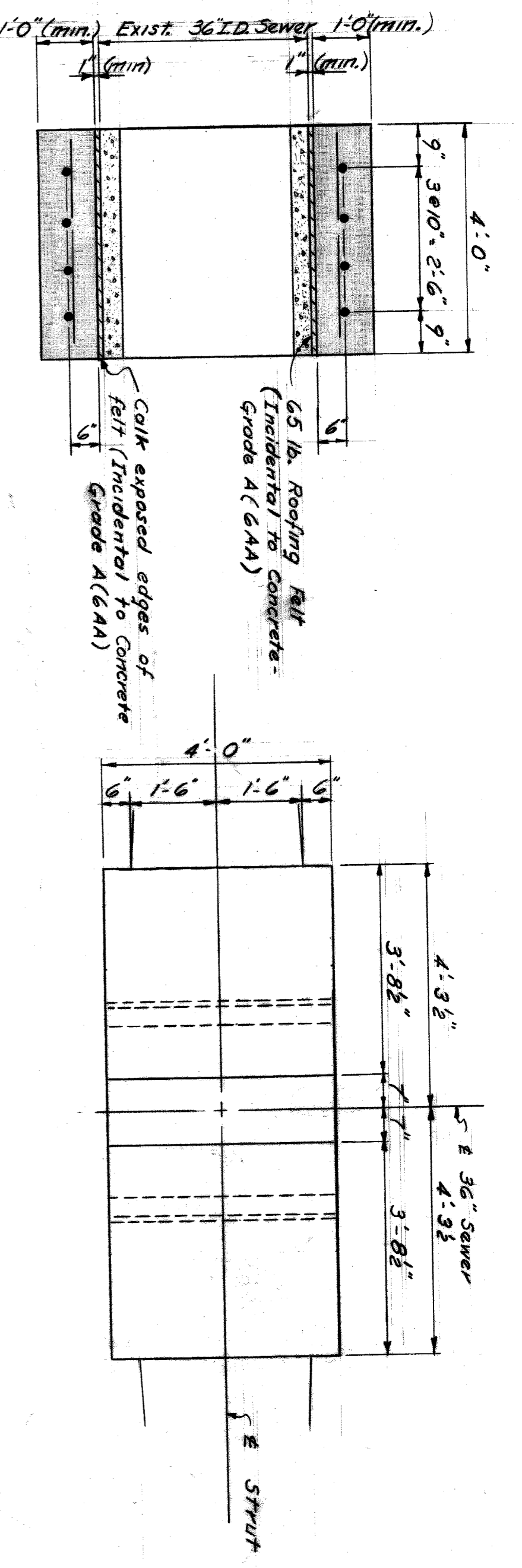
GENERAL NOTES
 Top of pier shall be finished to a true plane of the elevation shown and shall not vary more than 1/8" under a ten-foot straight edge or more than 1/4" under any bearing.
 All exposed concrete corners shall have 3/4" bevel.
 For strut layout see sheet # 213
 e.s. denotes each face.
 Anchor bolts are to be furnished with the structural steel and are to be set accurately to a template.
 The pier footing was designed with an allowable pile load of 34 kips, Max. DL. developed 269 kips, DL + LL. Max. developed 337 kips.

DESIGNED BY	CCL/RRH	CITY OF DETROIT
DRAWN BY	Mosley	DEPARTMENT OF PUBLIC WORKS
CHECKED BY	R. JAMES	CITY ENGINEERS OFFICE
DATE	MAR 1962	BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION		
LAFAYETTE AVENUE BRIDGE X072		
OVER GRAND TRUNK WESTERN RAILROAD		
PIER DETAILS		
SHEET	33 OF 46 SHEETS	
CONTRACT	PW 3388	
DRWG. NO.	C212	
DATE	MAR 1962	

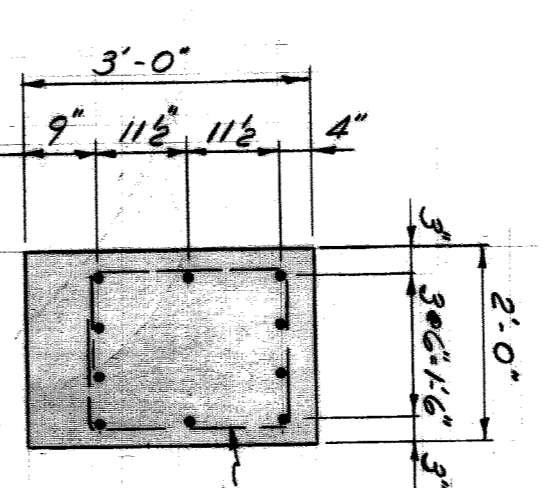


STRUT PLAN
Scale: 1/2" = 1'-0"

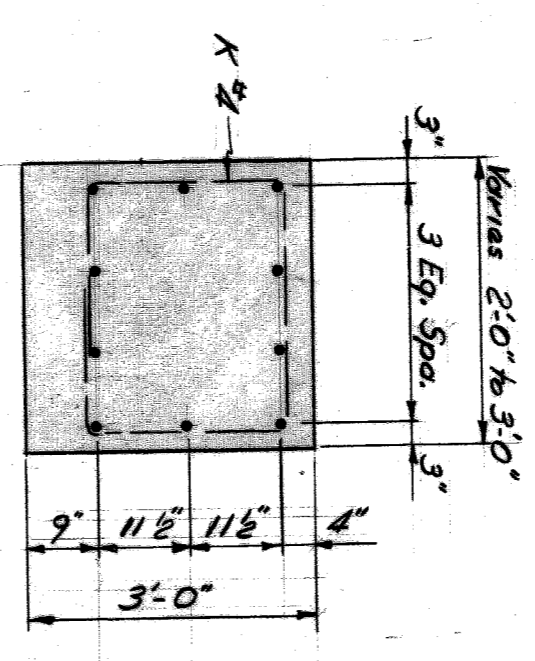
QUANTITIES		
Item	AM'T	UNIT
Concrete - Grade A (GAA)	35.0	Cu. Yds.
Unclassified Excavation	—	L.S.



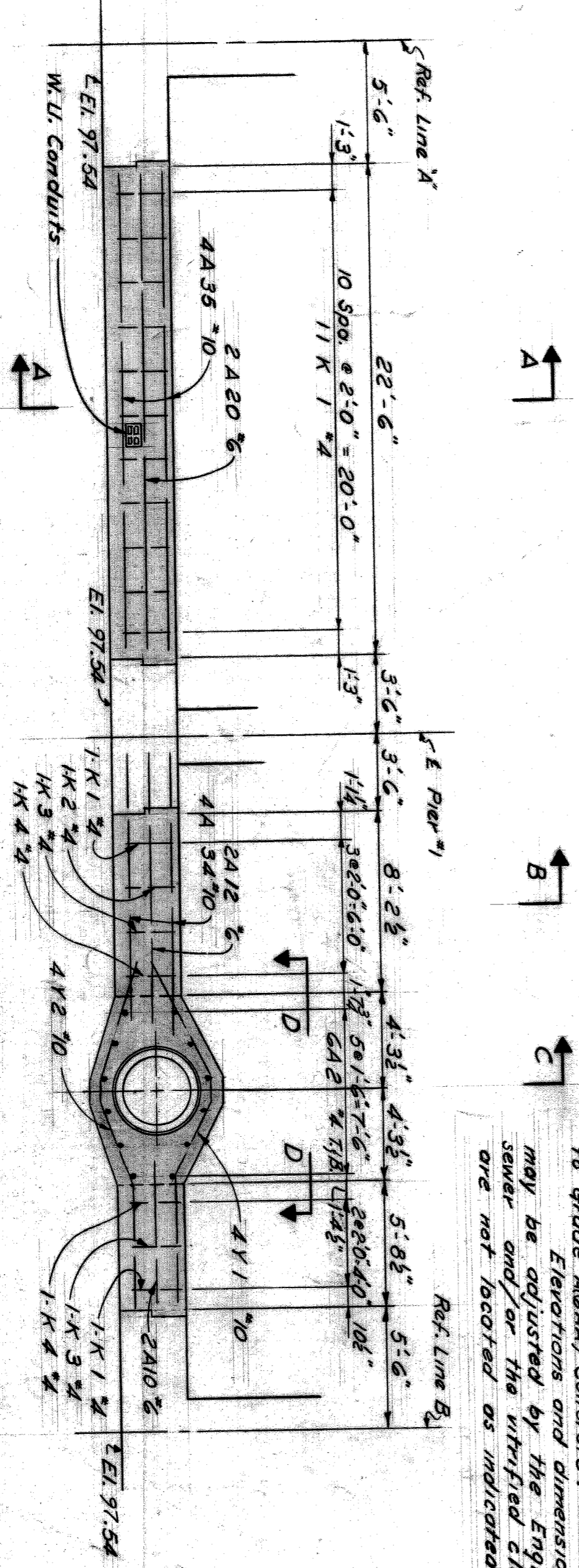
SECTION C-C
Scale: 1/2" = 1'-0"



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



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



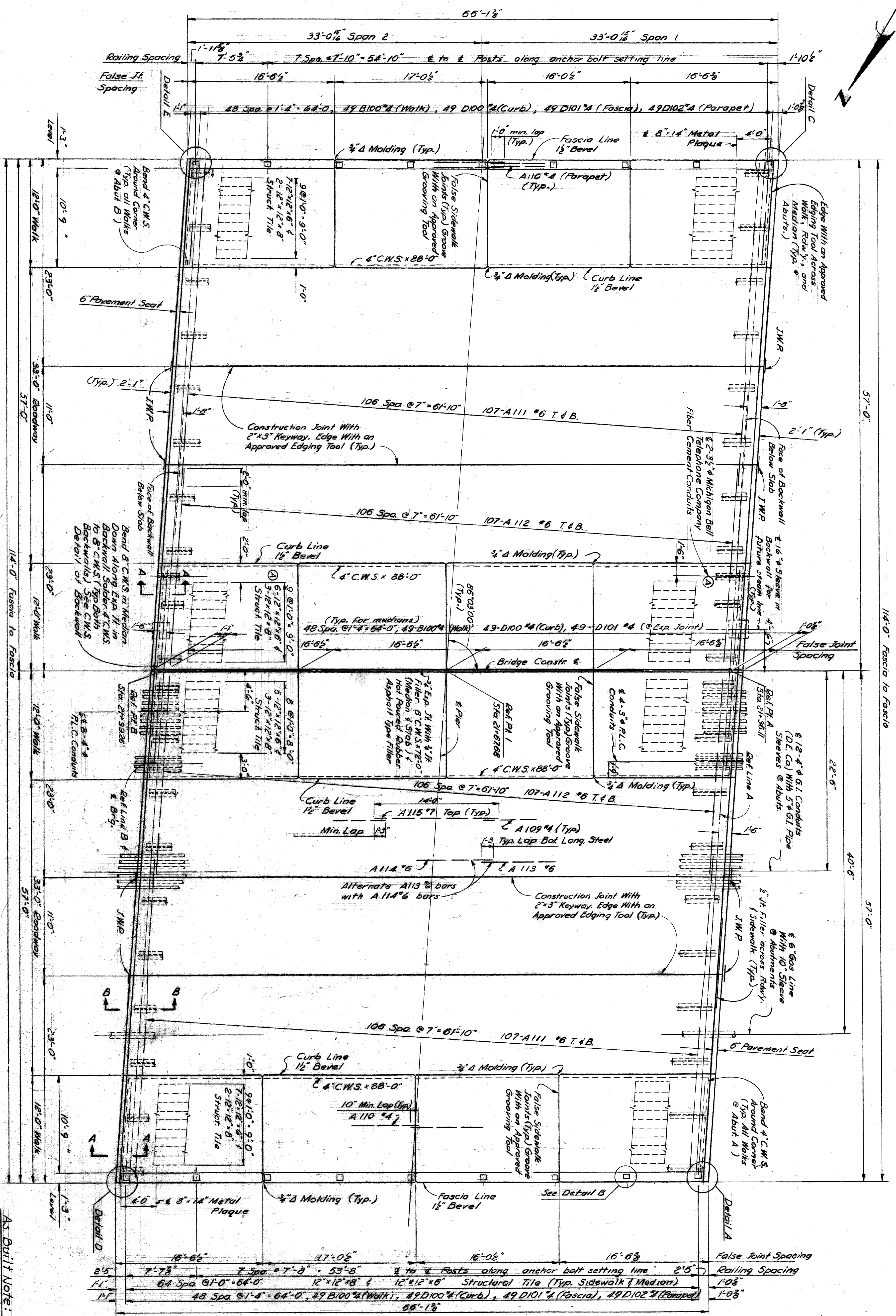
TYPICAL STRUT SECTION
Scale: 1/2" = 1'-0"

NOTE: The contractor shall be responsible for the necessary bracing and shoring of the sewer if vitrified clay duct (incidental to grade A(GAA) Concrete. Elevations and dimensions shown may be adjusted by the Engineer if the sewer and/or the vitrified clay duct are not located as indicated.

DESIGNED BY	CCL. / R.R.H.
DRAWN BY	W. G. MANSOUR 3-62
CHECKED BY	R. JAMES / G. W. W.
DATE	MAR 1962

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

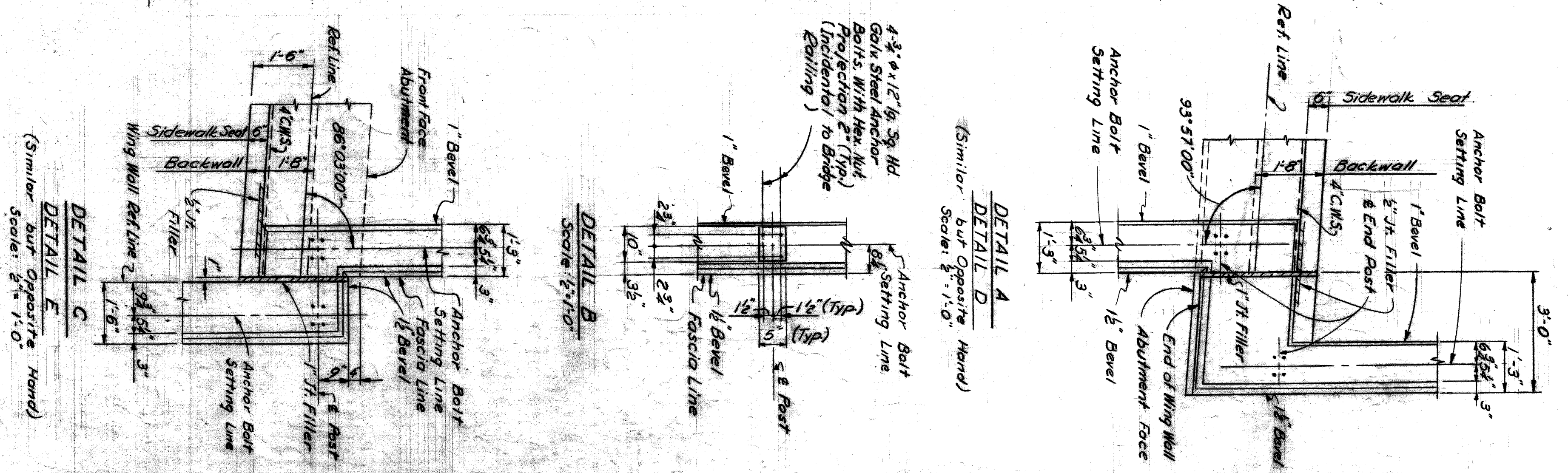
LAFAYETTE AVENUE BRIDGE X072
OVER
GRAND TRUNK WESTERN RAILROAD
STRUT PLAN



PLAN
Scale: 1/8\"/>

As Built Note:
Air Entrained Concrete used in Superstructure.

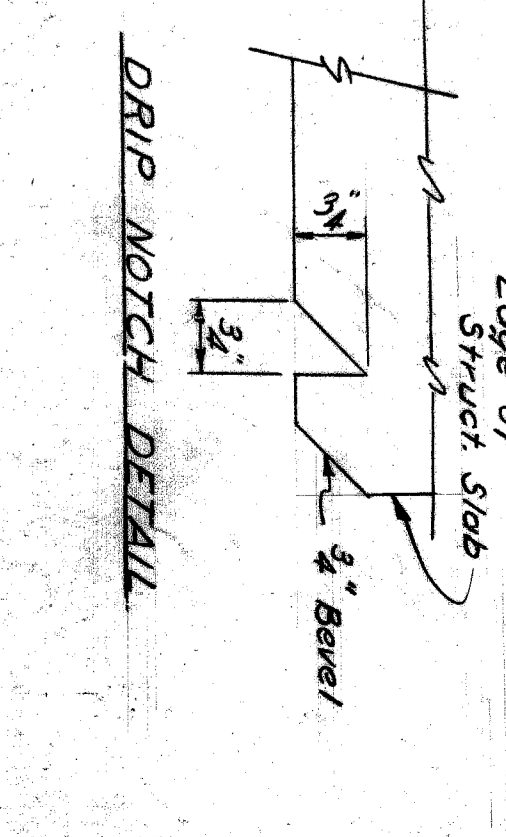
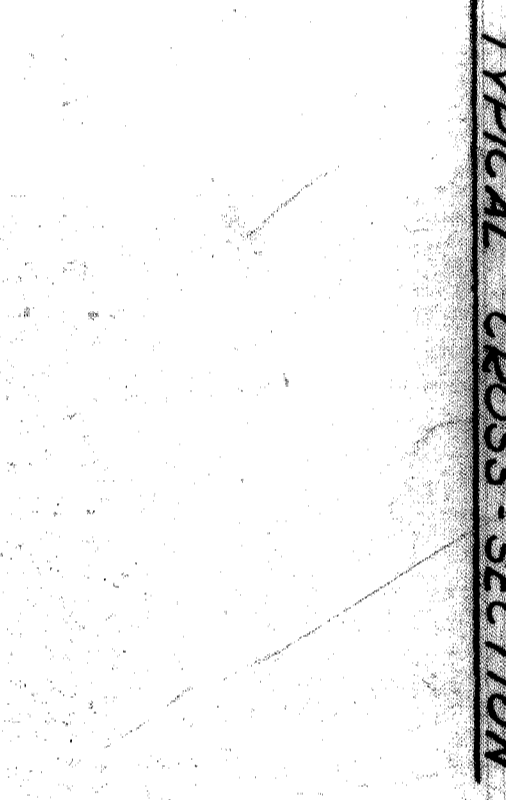
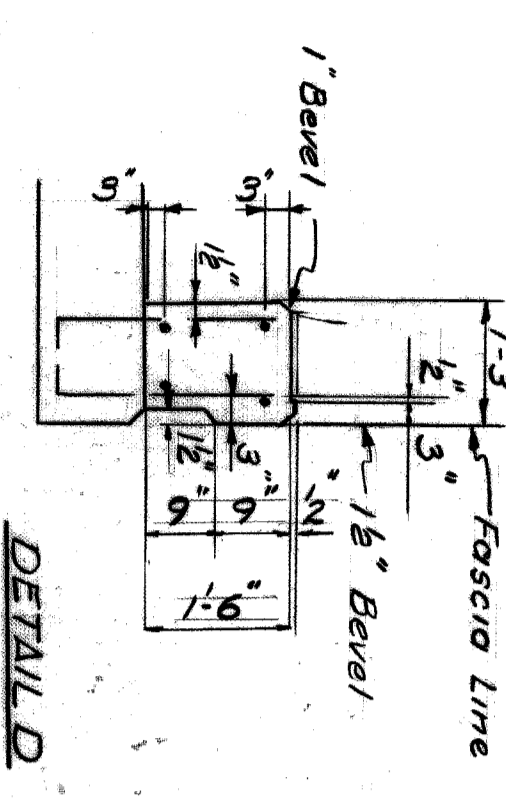
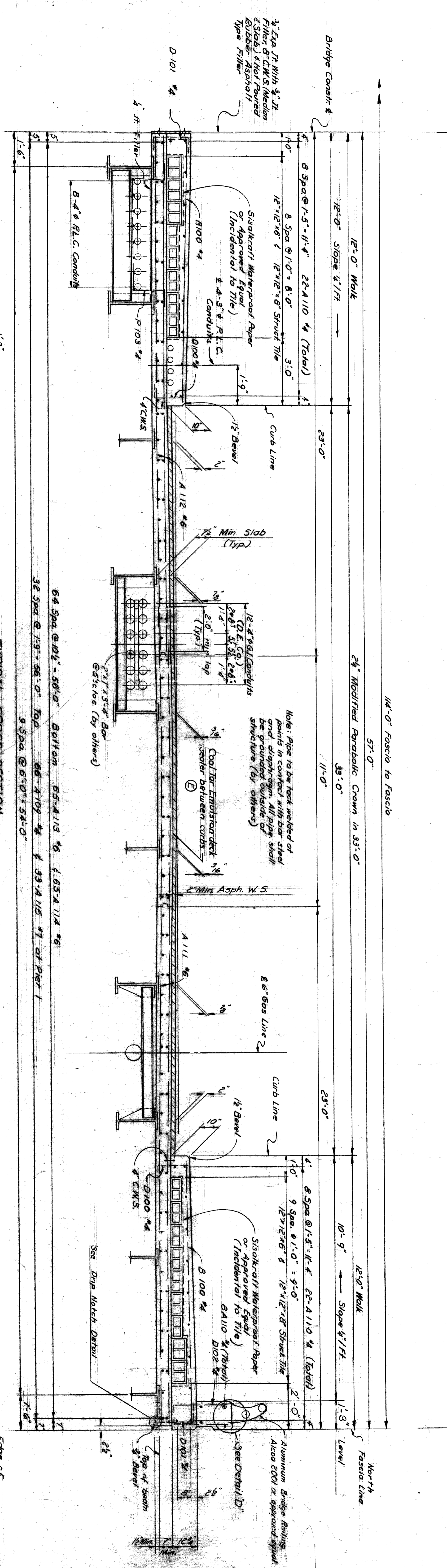
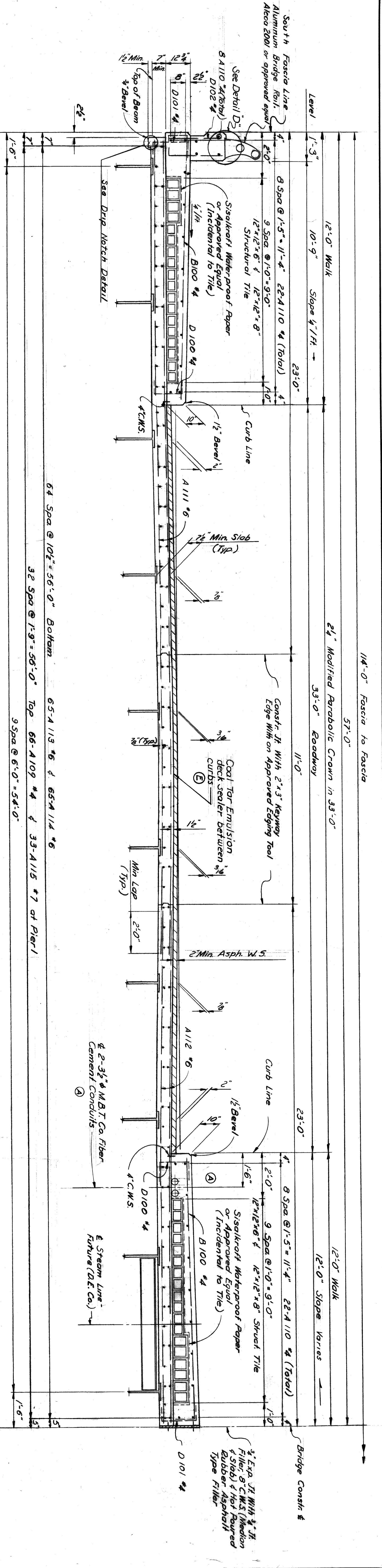
Work this sheet with sheets 215 thru 217



CONTRACT NO.	215
DESCRIPTION	RAILROAD GRADE SEPARATION
DATE	MAR 1962
DESIGNED BY	C.C.L. / R.R.H.
DRAWN BY	T.A. Becker
CHECKED BY	R. J. J. J. J.

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

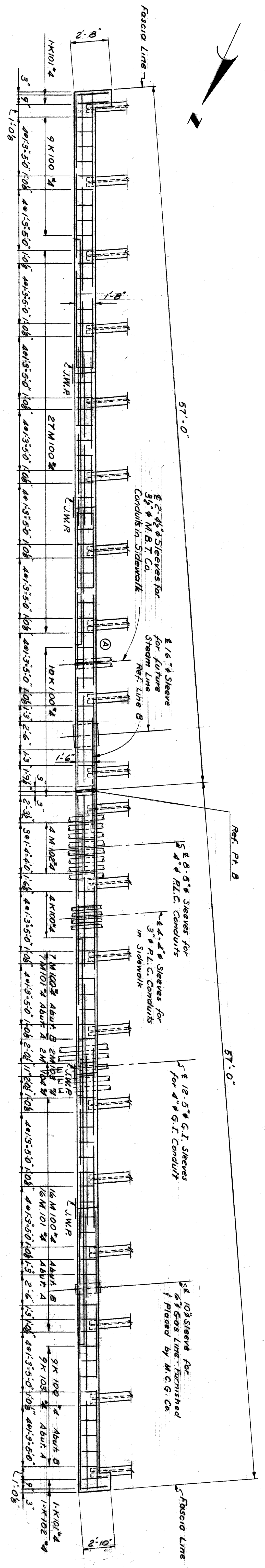
SHEET	35 OF 46 SHEETS
CONTRACT	PW 3988
NO.	
DRWG NO.	C214
DATE	MAR 1962



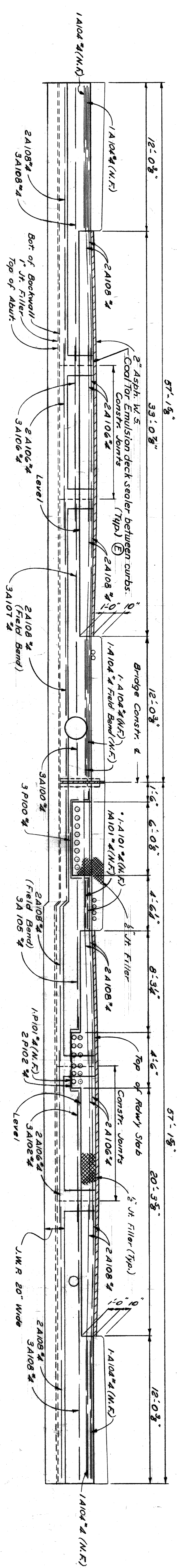
REVISIONS LOCATED BY COORDINATES ON SHEET	
NO.	DESCRIPTION
1	MBT Co. Conduits Added
2	Cool Top Emission note added
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CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

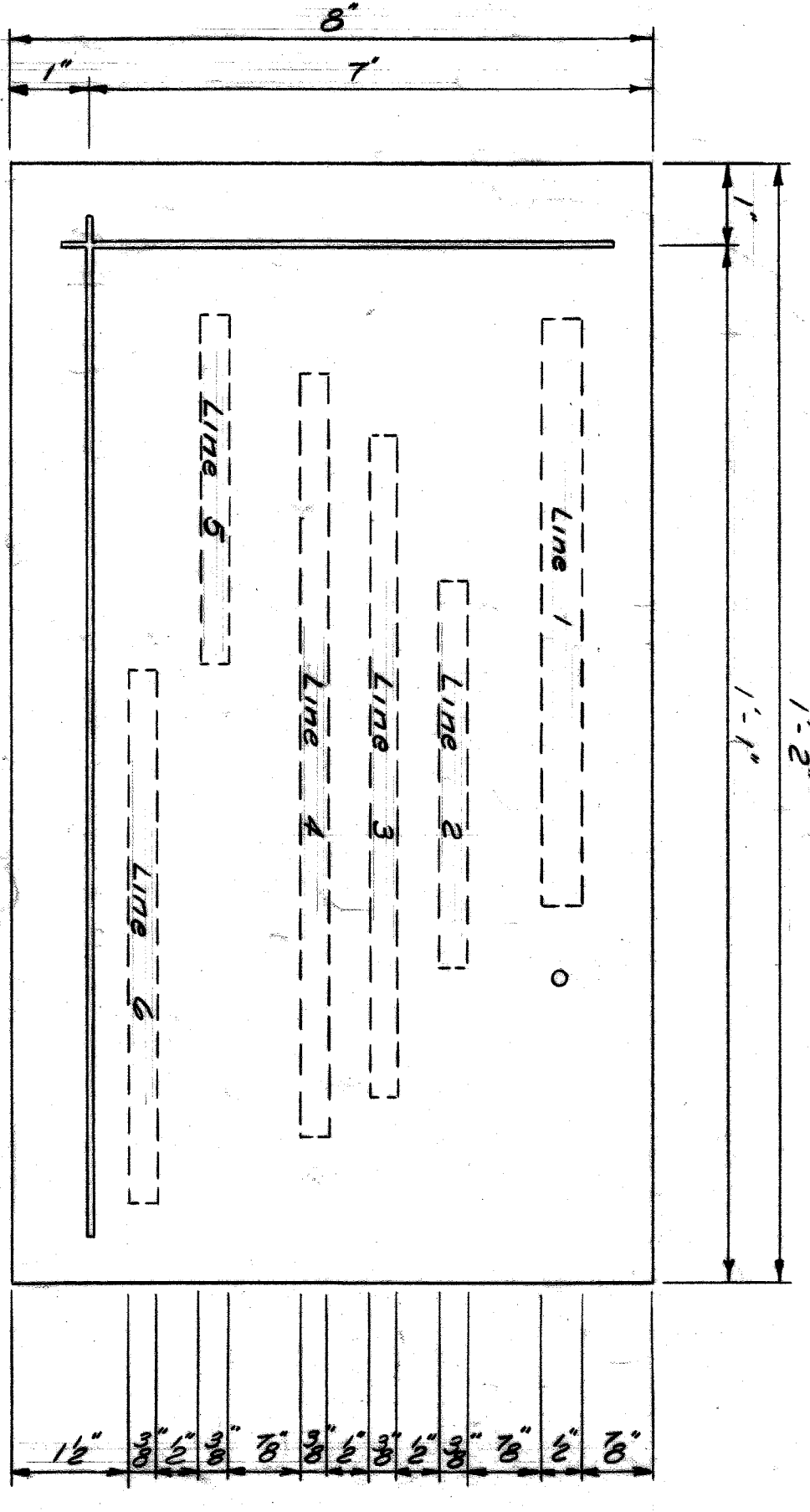
SHEET 36 OF 46 SHEETS
 CONTRACT PW 3988
 DRAWING NO. C215
 DATE MAR 1962



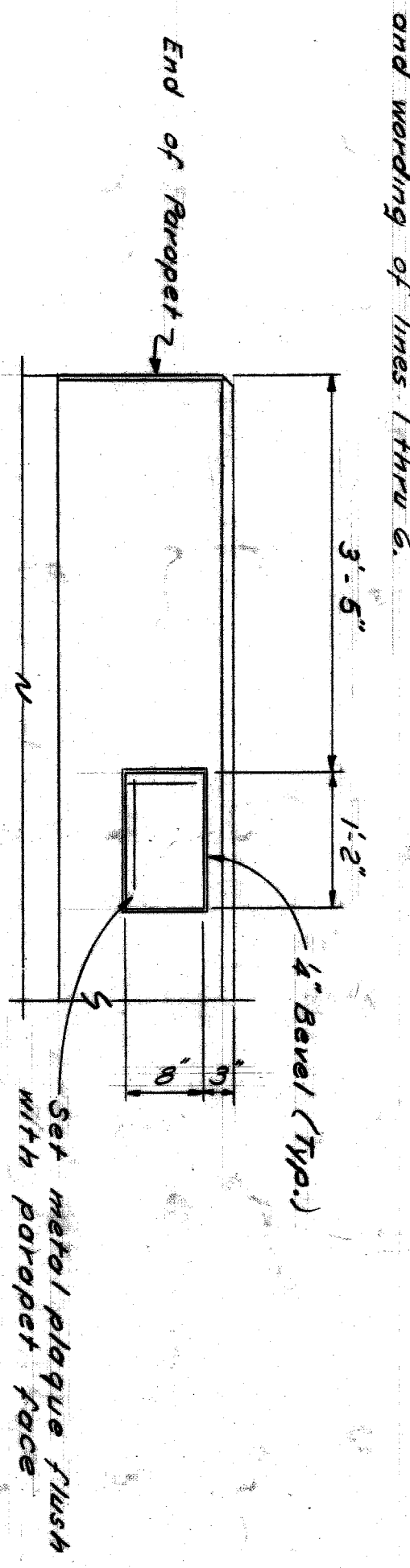
PLAN OF BACKWALL AT ABUTMENT "B"
Plan of Abutment 2' Opp. Hand



ELEVATION OF BACKWALL AT ABUTMENT "B"
Elevation of Abutment 2' Opp. Hand



METAL PLAQUE
Scale: 2" = 1'-0"
2 Reg'd.



ELEVATION OF METAL PLAQUE

QUANTITIES CHARGEABLE TO			
DETROIT EDISON CO.			
Item	Amount	Unit	
5" G. I. Pipe Sleeves, Placed	24	Each	
16" Steel Pipe Sleeves, do	2	Each	

MISCELLANEOUS QUANTITIES			
Item	Amount	Unit	
Concrete Grade (G.A.A.)	306	Ca. Yds.	①
Asphaltic Wearing Course	54	Tons	
Structural Tile 12"x12"x6"	1600	Each	
Structural Tile 12"x12"x8"	640	Each	
4" Joint Filler	315	Sq. Ft.	
3" Joint Filler	102	Sq. Ft.	
Joint Waterproofing	30	Sq. Ft.	
Bond Coat	72	Gals.	
Copper	210	Lbs.	
Aluminum Rolling 2 Tube	126	Lin. Ft.	
3" Fiber Conduit	259	Lin. Ft.	
4" Fiber Conduit	525	Lin. Ft.	
5" G. I. Pipe Sleeves, Placed	24	Each	
16" Steel Pipe Sleeves, do	2	Each	
Bridge Name Plaque	2	Each	
Hot Furred Rubber Asphalt	65	Lin. Ft.	
1/2" Joint Filler	265	Sq. Ft.	
Coal Tar Emulsion	4367	Sq. Ft.	

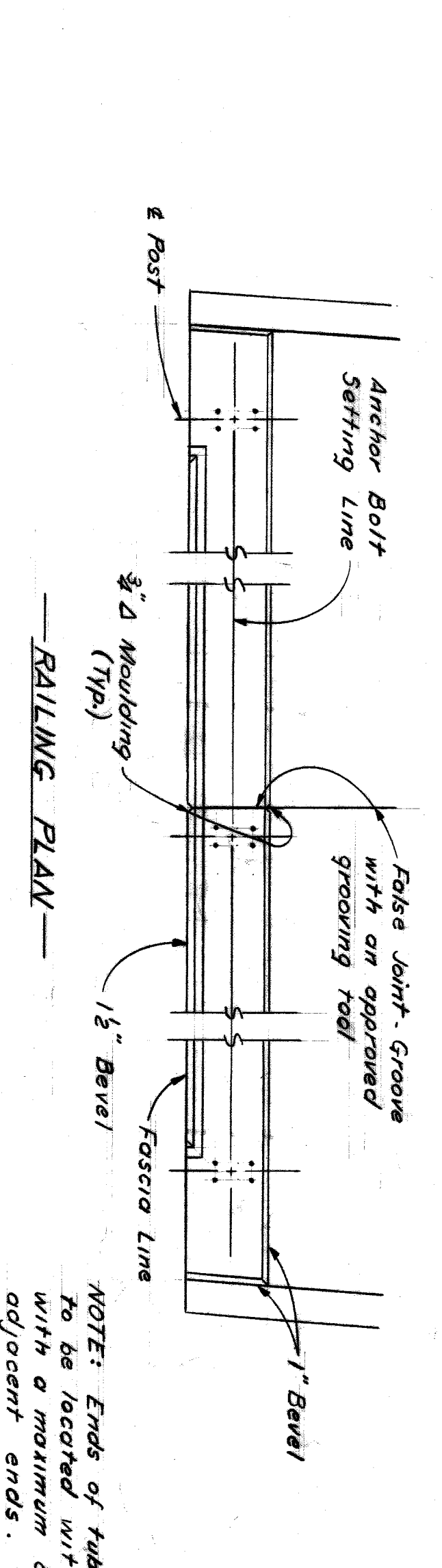
GENERAL NOTES:
 Sidewalk and median pours shall not be cast until slab concrete has attained at least 80% of its design strength as determined by the table in Section 2111.6.
 For Moulding Details see sheet C-217.
 J.W.S. denotes joint waterproofing.
 J.W.P. denotes copper water-stop.
 R.L.C. denotes rubber lighting Commission.
 M.F. denotes metal finish.
 Minimum slab thickness is 7 1/2 in. Slab thickness shall be adjusted as required if actual combuster or if combuster exists where no combuster is specified.

Work this sheet with sheets 214, 215 & 217.

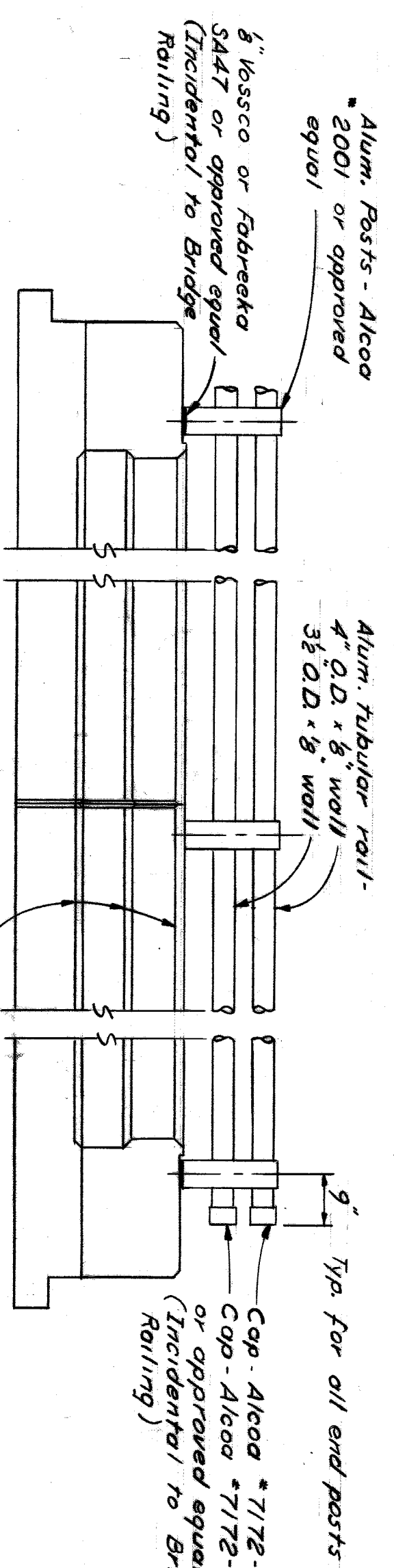
DESIGNED BY	C. C. L. / R. R. W.
DRAWN BY	W. G. Hyndus 3-42
CHECKED BY	R. James VC
DATE	MAR 1952

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
 RAILROAD GRADE SEPARATION

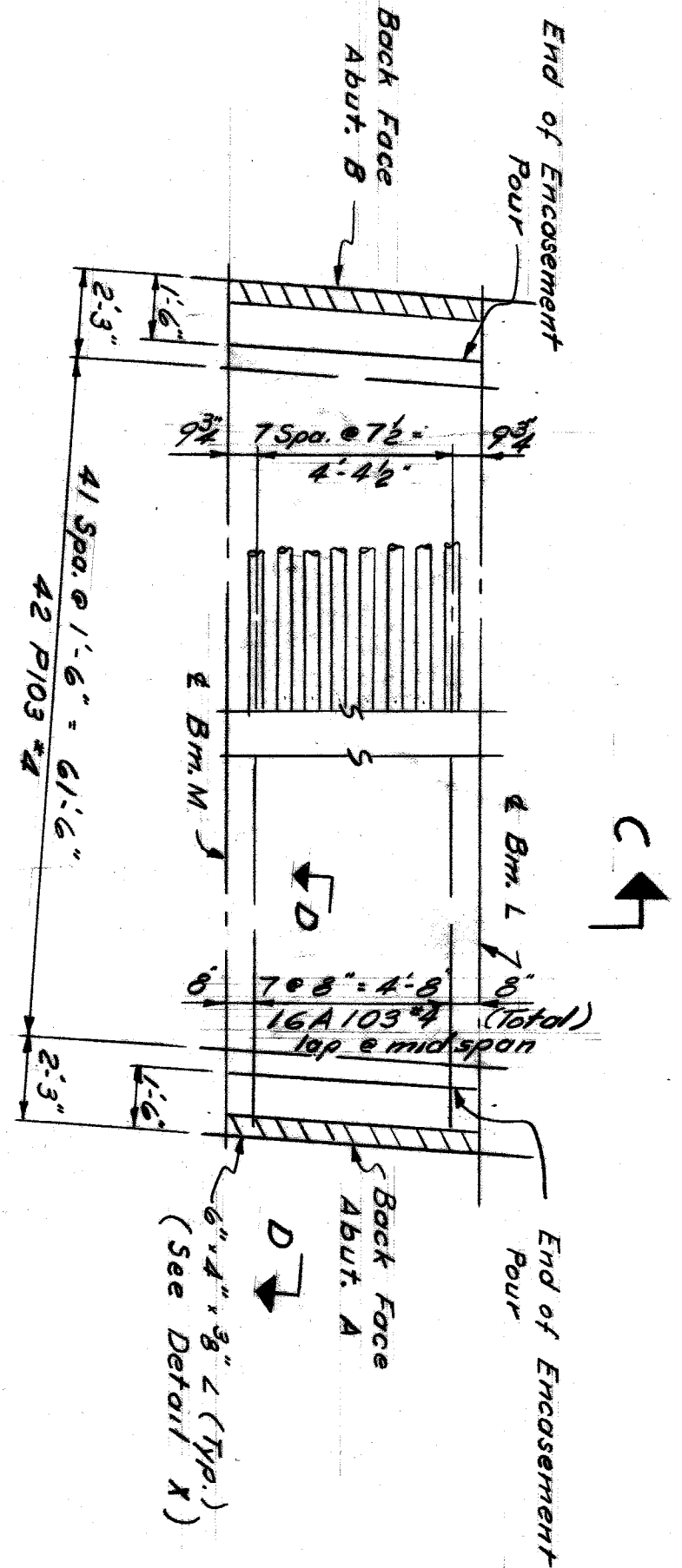
SHEET 37 OF 46 SHEETS	LAFAYETTE AVENUE BRIDGE X072
CONTRACT	OVER WESTERN RAILROAD
DRWG. No.	C216
DATE	MAR 1952



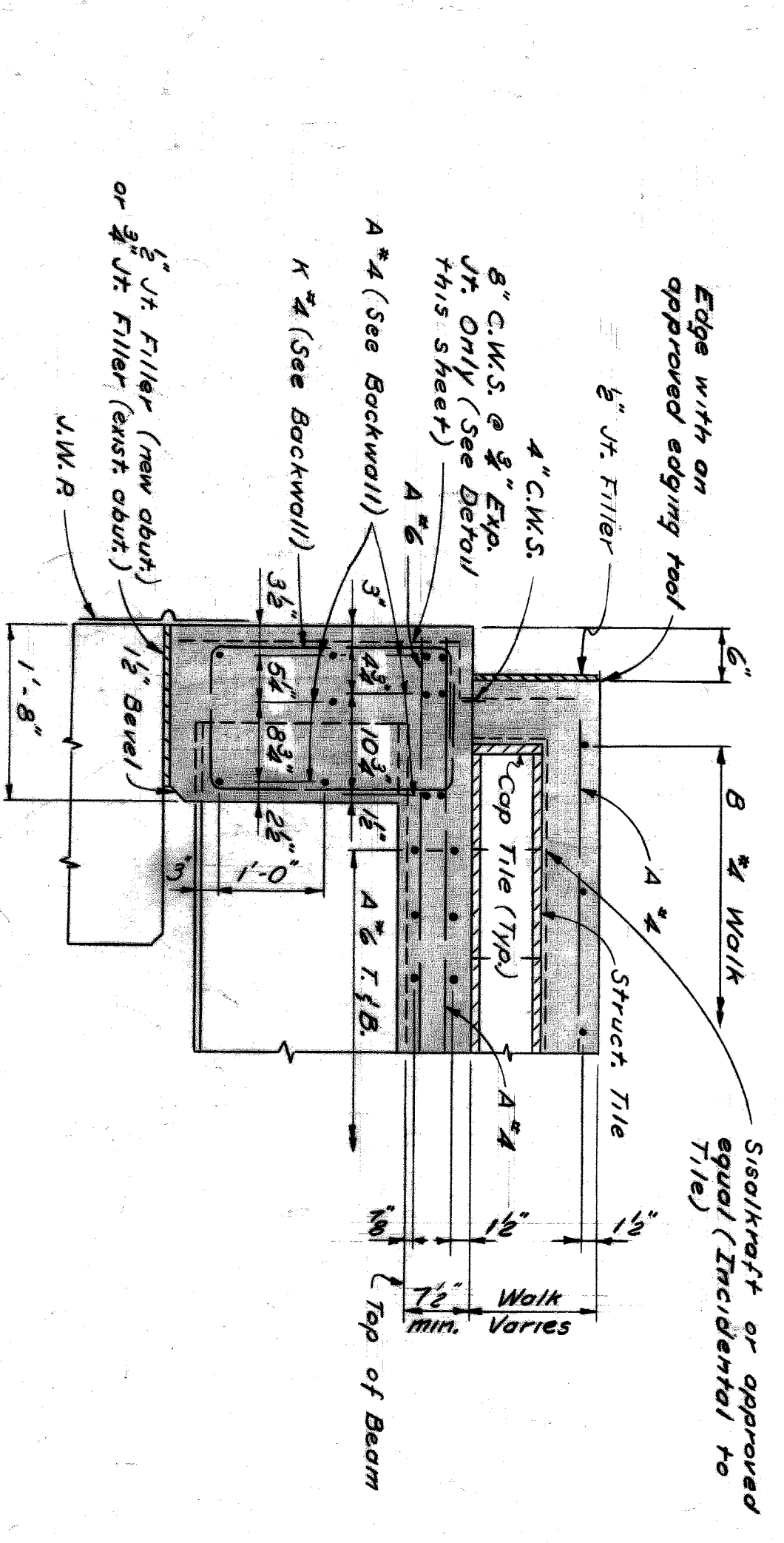
NOTE: Ends of tube sections are to be located within posts and with a maximum of 1" between adjacent ends.



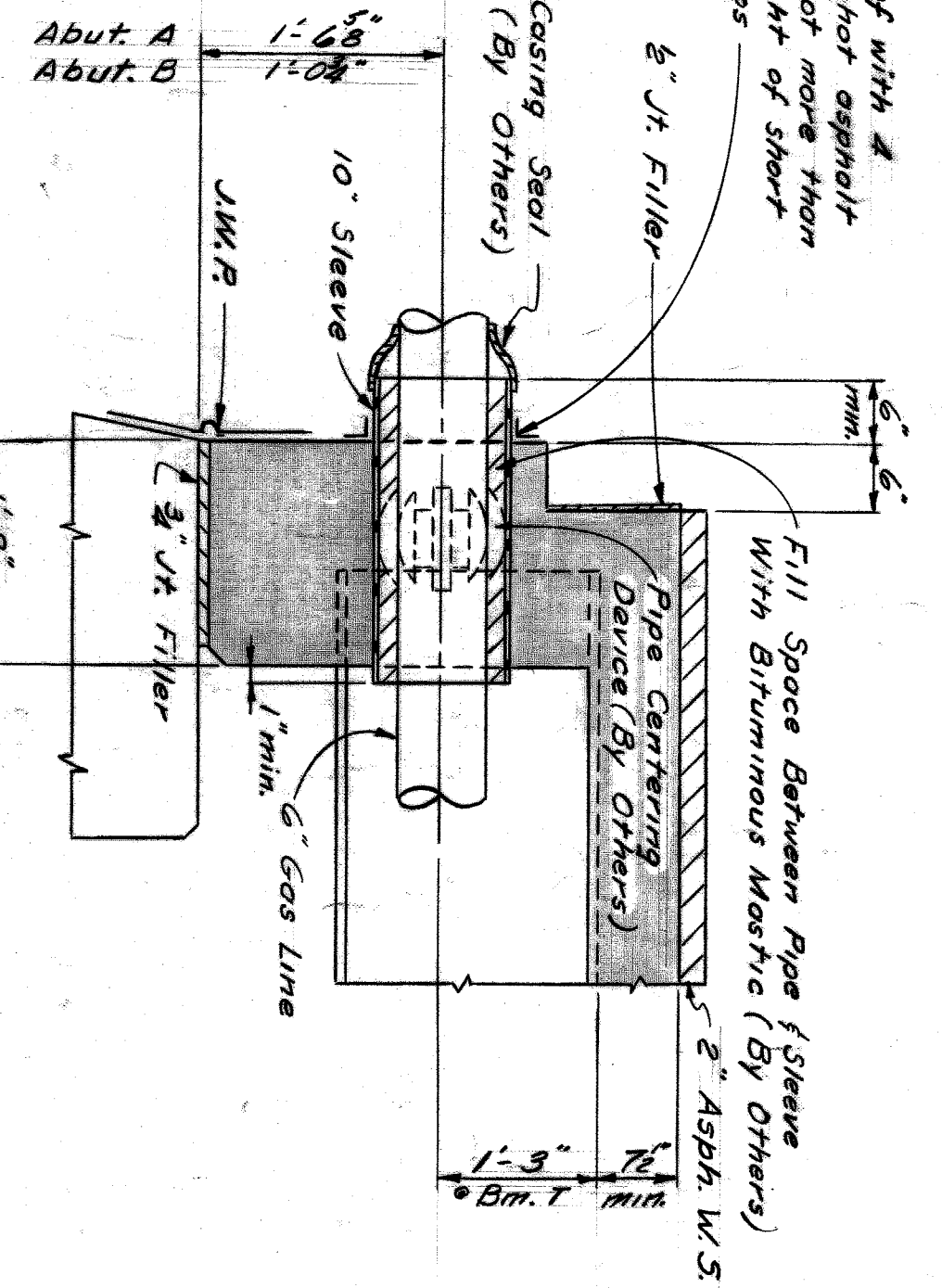
Waterproof with moppings of hot asphalt containing not more than 2.5% by weight of short fiber asbestos (Incidental to Pipe Sleeves)



PLAN OF P.L.C. CONDUIT ENCASEMENT

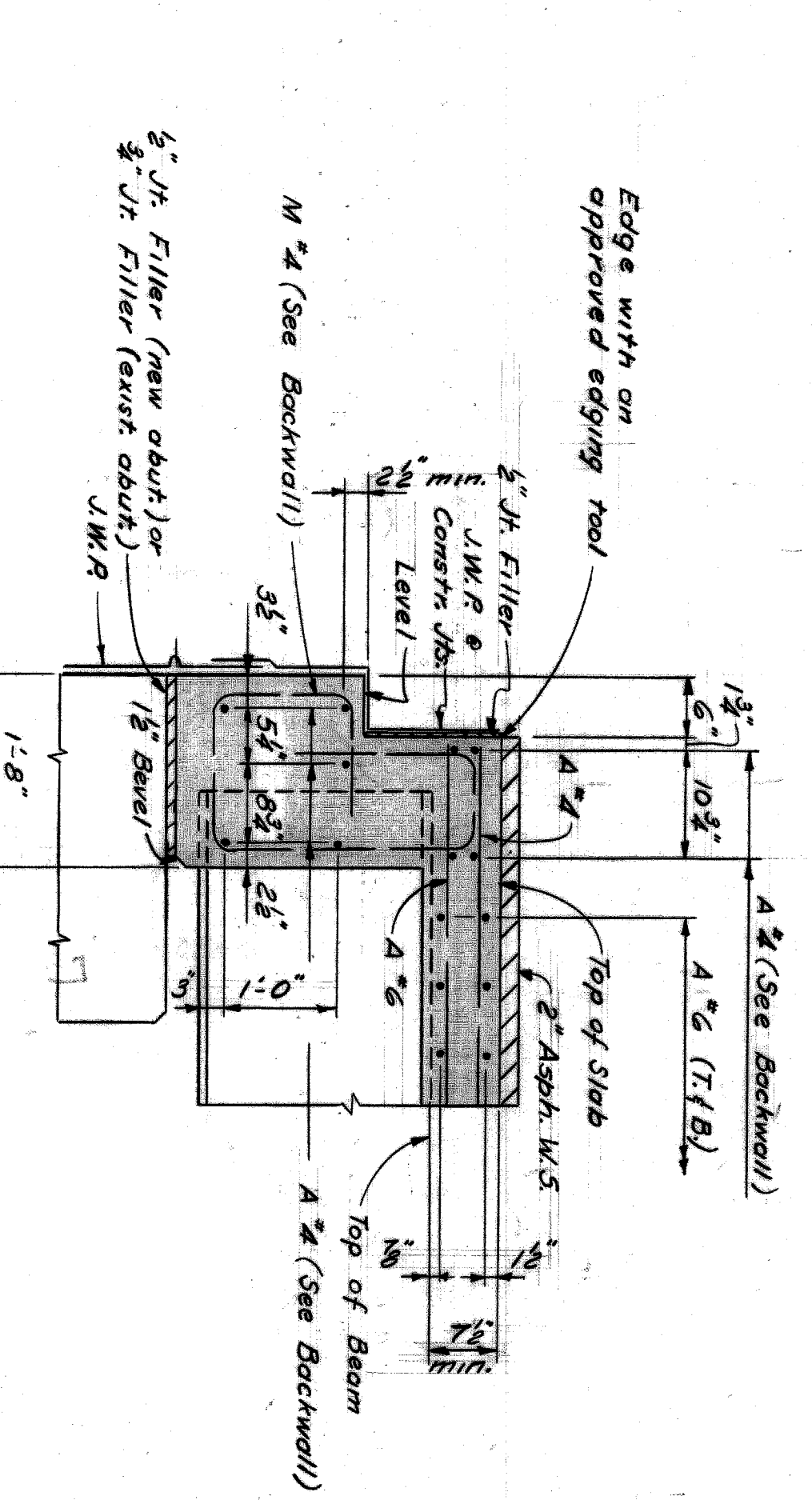


SECTION A-A

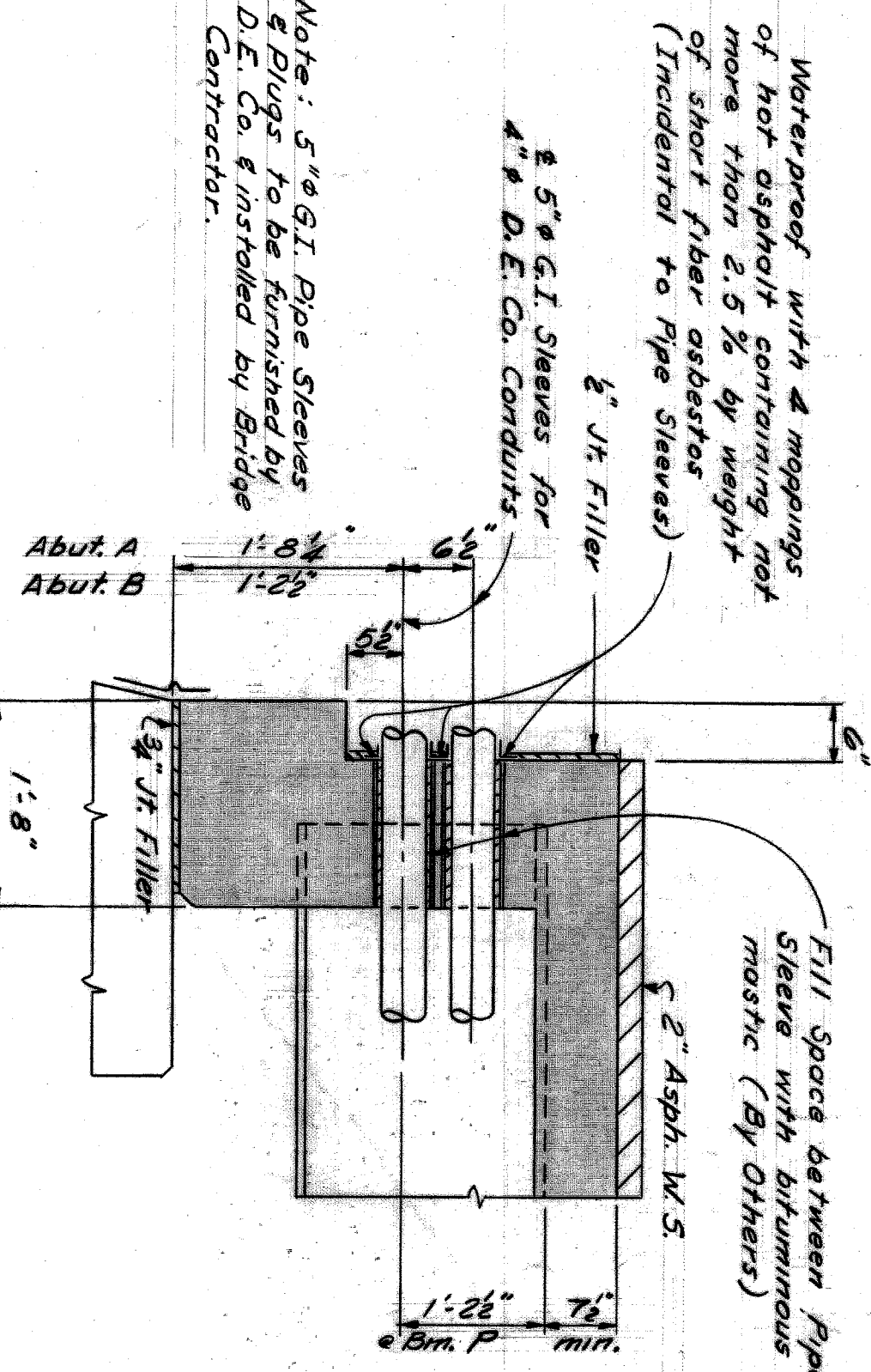


M.C.G. CO. GAS LINE DETAIL AT BACKWALL

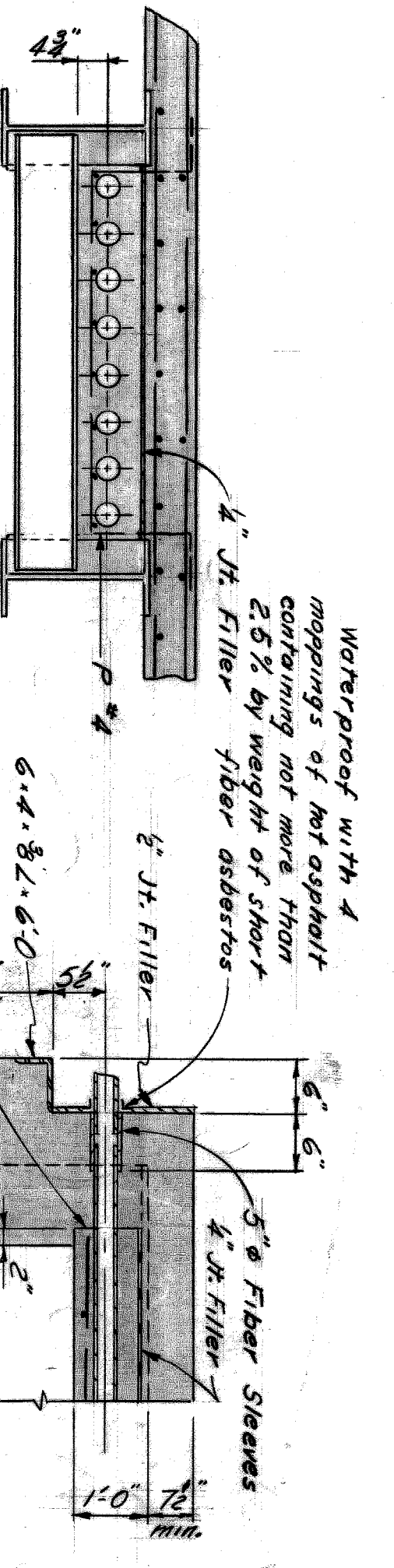
NOTE: 10" Steel Sleeves to be furnished and installed by M.C.G. Co.
5" Gas Line, Bituminous Mastic & Casing Seal be furnished & installed by M.C.G. Co.



SECTION B-B

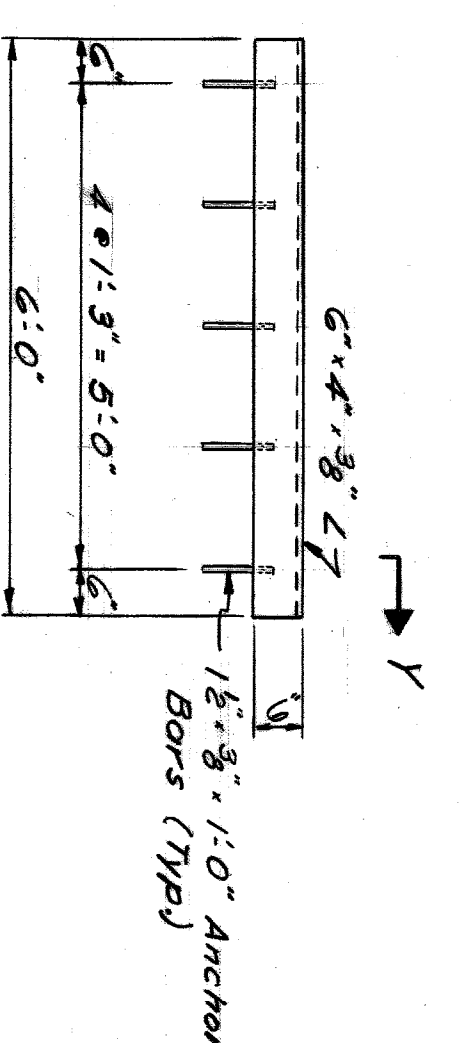


D.E. CO. CONDUIT DETAIL AT BACKWALL



SECTION C-C

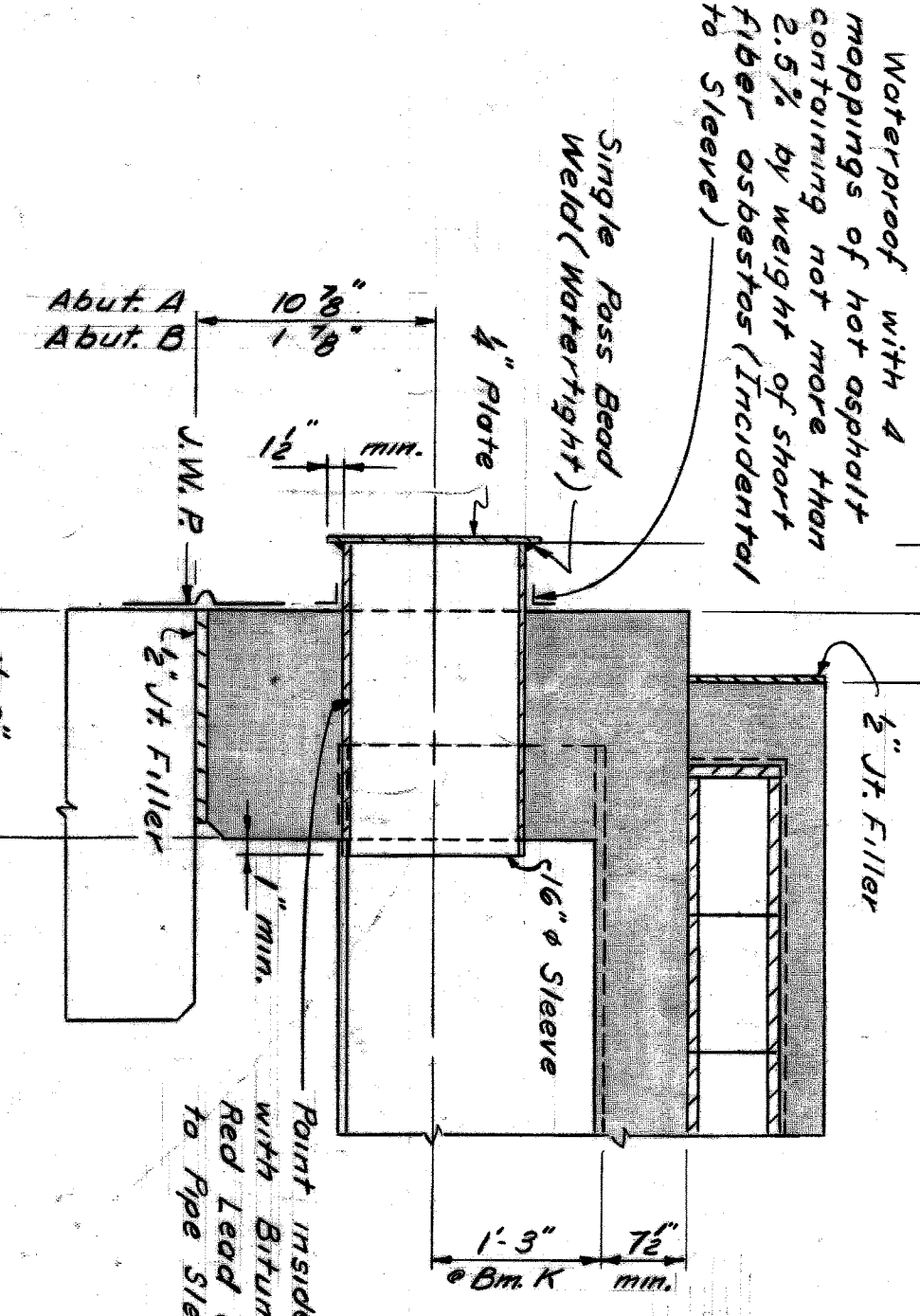
NOTE: Membrane Waterproofing, Fiber Sleeves & Damp-proofing, Incidental to 4" Fiber Conduit.



SECTION D-D

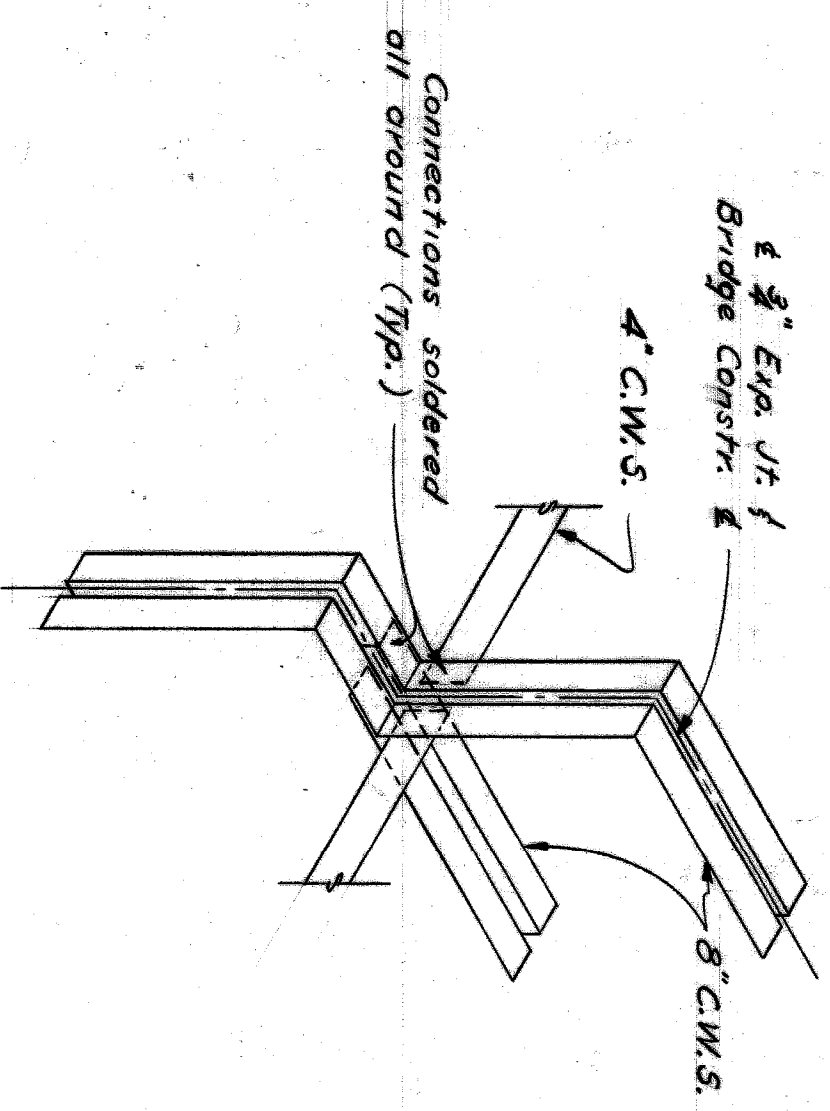


SECTION Y-Y

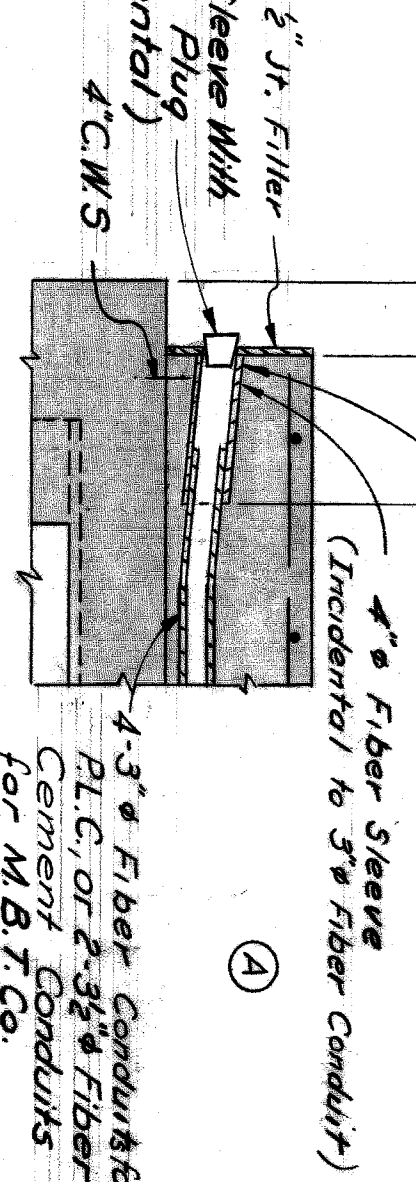


D.E. CO. STEAM LINE DETAIL AT BACKWALL

NOTE: 16" Steel Sleeves & Plugs to be furnished by D.E. Co. and installed by Bridge Contractor.

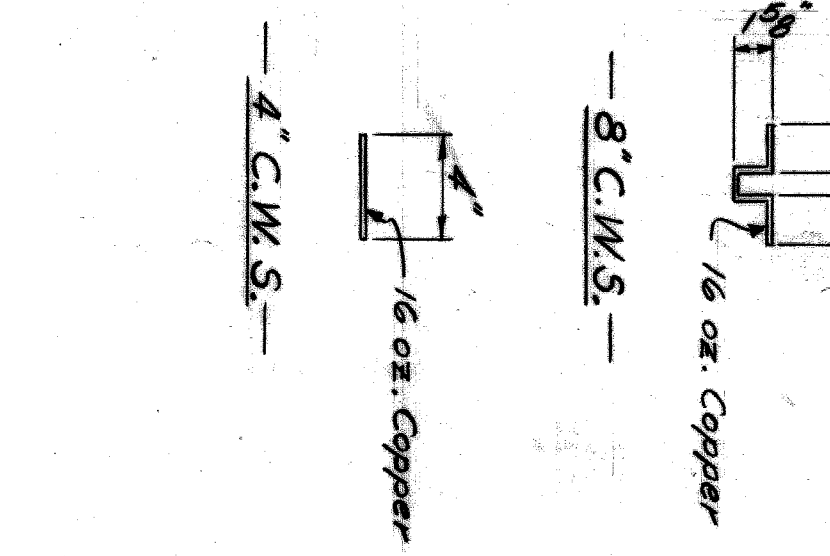


DETAIL OF C.W.S. INTERSECTION AT 3/4" EXP. JOINT

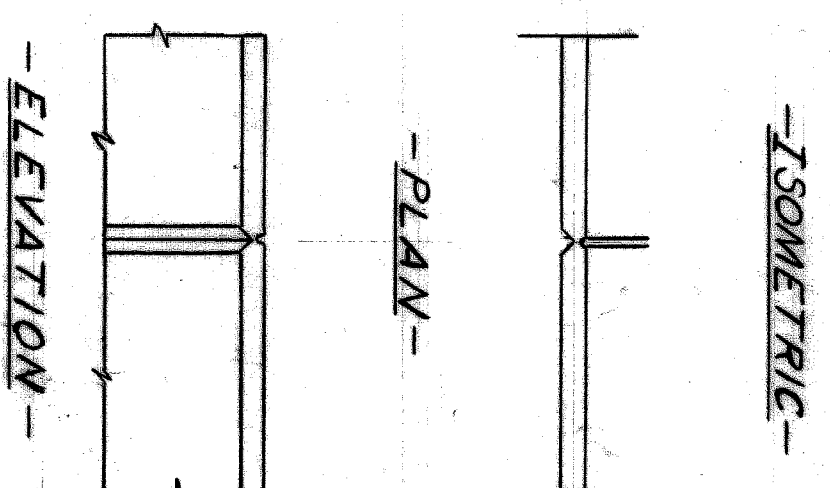


DETAIL OF P.L.C. OR M.B.T. CO. CONDUIT IN MEDIAN AT BACKWALL

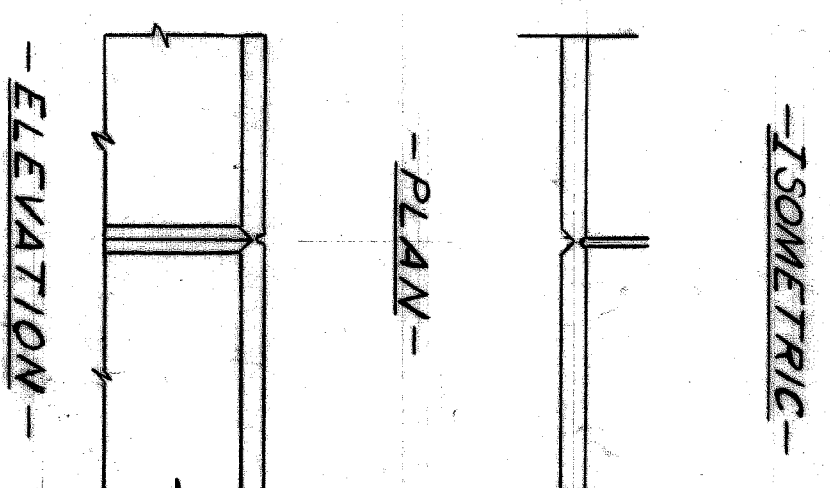
NOTE: 3 1/2" Cement Conduits and 4 1/2" Fiber Sleeves furnished and installed by M.B.T. Co.



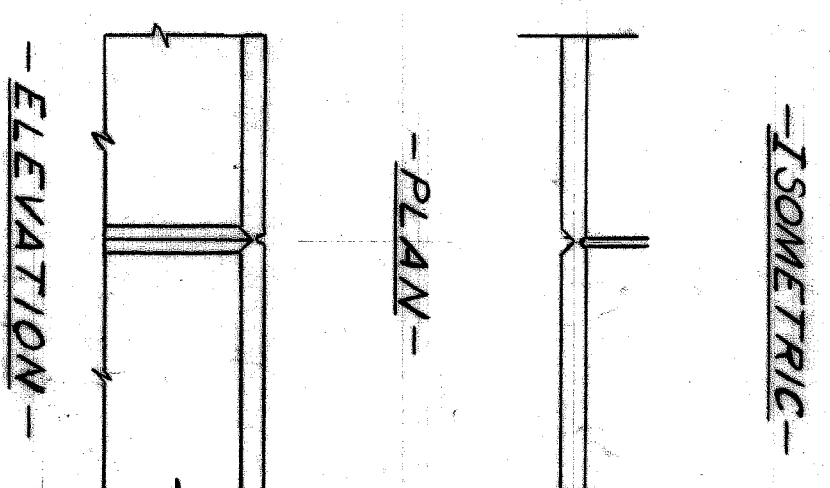
ISOMETRIC



PLAN



ELEVATION



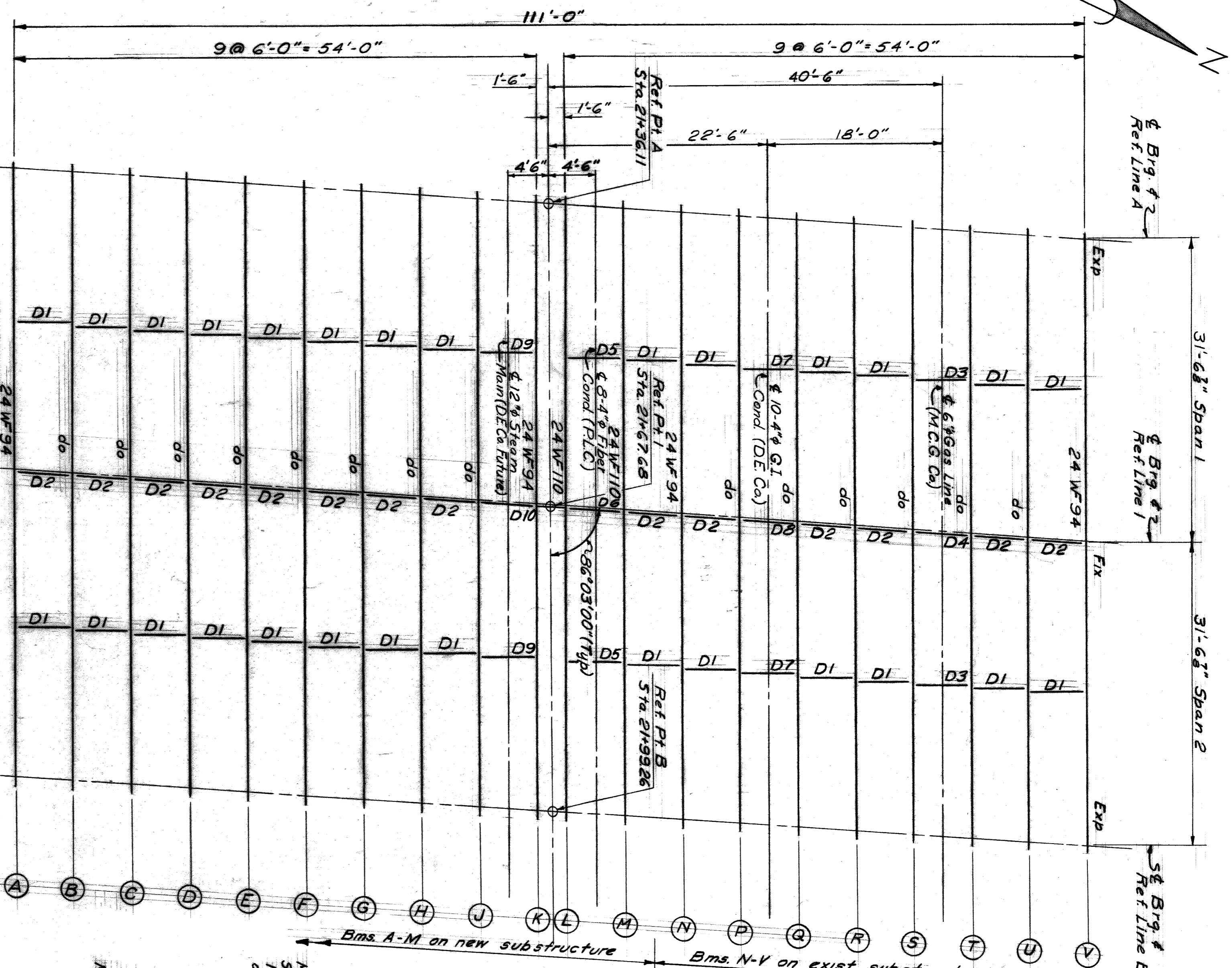
MOULDING DETAILS

DESIGNED BY	C.C.L. / R.R.H.
DRAWN BY	M.G. Hayden 3-62
CHECKED BY	[Signature]
DATE	3-62

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

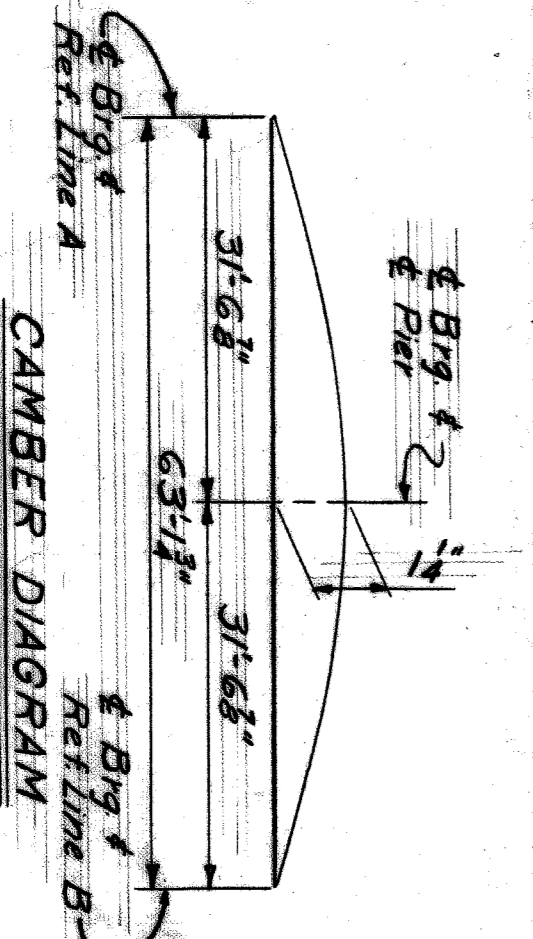
LAFAYETTE AVENUE BRIDGE X072
OVER
GRAND TRUNK WESTERN RAILROAD
SUPERSTRUCTURE DETAILS

SHEET 38 OF 46 SHEETS	
CONTRACT	PW-3988
DRWG NO.	C217
DATE	MAR. 1962



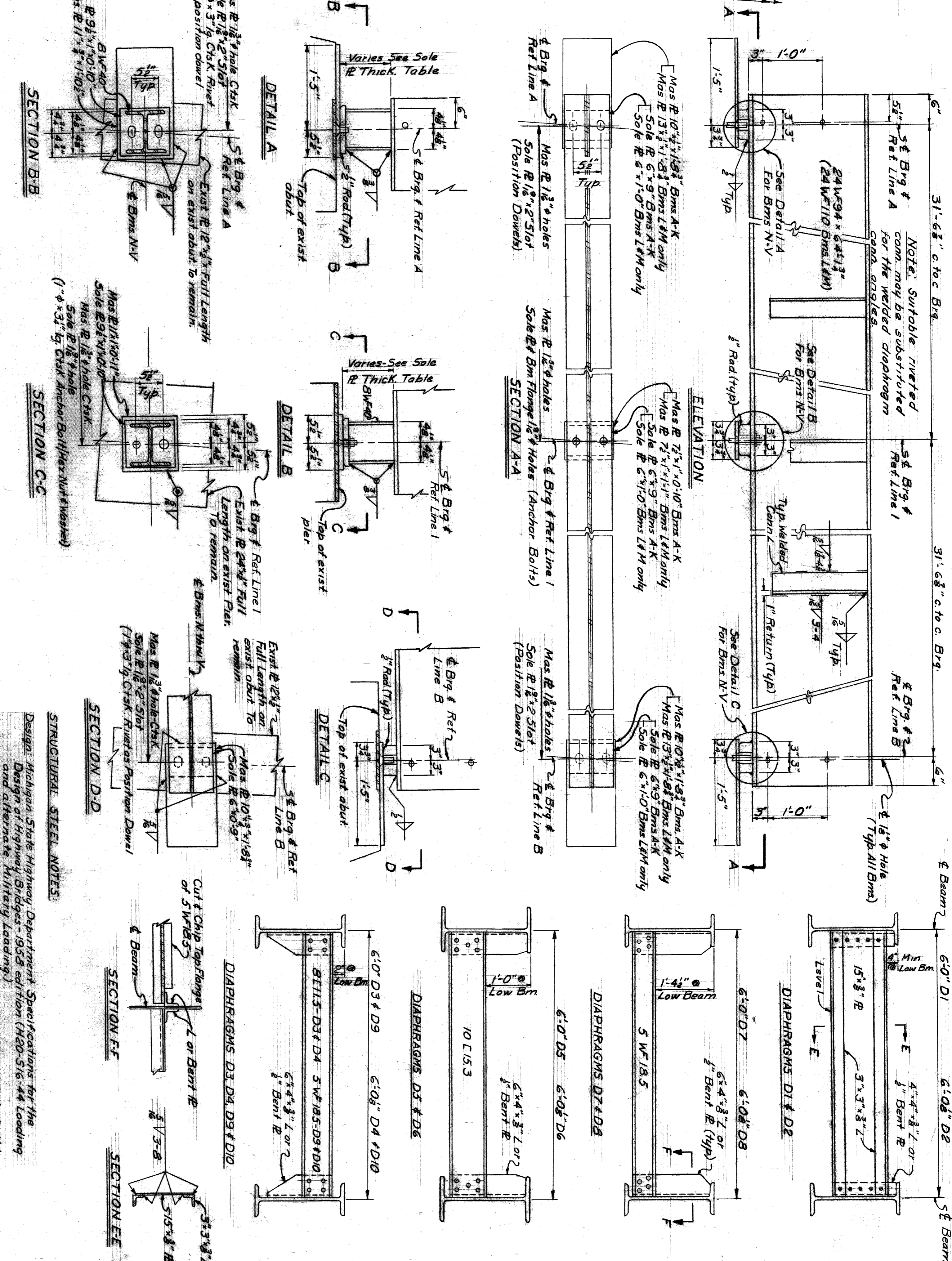
FRAMING PLAN
 All Beams shall be continuous

SOLE PLATE THICKNESS TABLE	
Beam	Thickness
A	1/4"
B	3/8"
C	3/4"
D	1"
E	1 1/8"
F	1 3/8"
G	1 1/2"
H	1 3/4"
I	2"
J	2 1/4"
K	2 3/4"
L	3"
M	3 1/4"
N	3 1/2"
O	3 3/4"
P	4"
Q	4 1/4"
R	4 1/2"
S	4 3/4"
T	5"
U	5 1/4"
V	5 1/2"

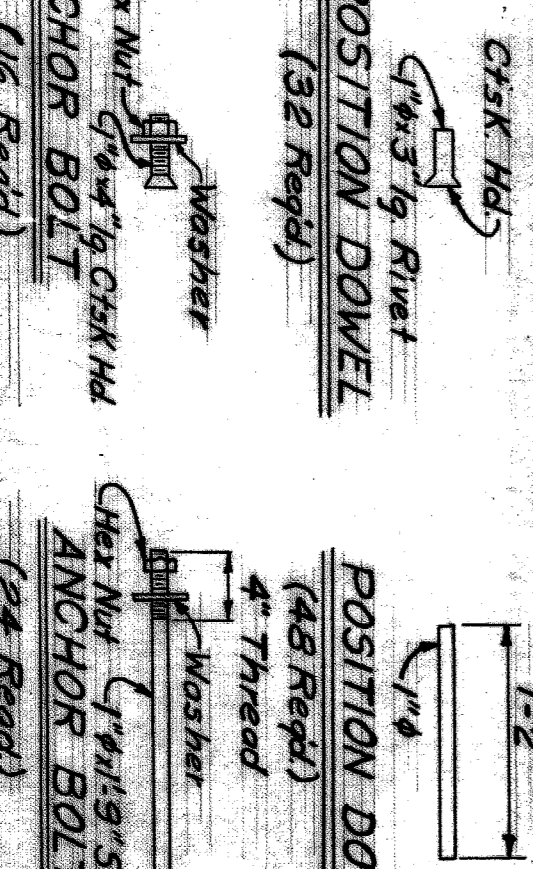


REVISIONS	NO.	DESCRIPTION	DATE

DESIGNED BY	C.C.L. / R.R.H.
DRAWN BY	W. Snyder
CHECKED BY	W. Snyder
ENGINEER OF EXPOSURE	H. Cole
STRUCTURAL ENGINEER	H. Cole
CITY ENGINEER	H. Cole



TOP STEEL ELEVATIONS @ 6' BRG	
Station	Elevation
A	242.02
B	242.03
C	242.04
D	242.05
E	242.06
F	242.07
G	242.08
H	242.09
I	242.10
J	242.11
K	242.12
L	242.13
M	242.14
N	242.15
O	242.16
P	242.17
Q	242.18
R	242.19
S	242.20
T	242.21
U	242.22
V	242.23



CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
RAILROAD GRADE SEPARATION

LAFAYETTE AVENUE BRIDGE X072
 OVER
GRAND TRUNK WESTERN RAILROAD
STRUCTURAL STEEL DETAILS

STRUCTURAL STEEL NOTES:

- Design: Michigan State Highway Department Specifications for the Design of Highway Bridges - 1958 edition (120-516-44 Loading and alternate Military Loading)
- Field Connections: Field Connections, unless otherwise noted, shall be made with high-strength bolts.
- High-Strength Bolts: 3/4"
- Open Hole: 1/8" unless otherwise noted.
- Camber: The beams shall be given a camber as shown on the Camber Diagram. Camber shall be measured with the beam lying on its side.
- Field Paint: Field Paint shall consist of one coat each of Rust-oleum #X-60 Red Primer and 470 Ready-Mixed Aluminum-10 Paint. Shop Paint in addition to the Shop Paint specified in the Specifications with the requirements for machine finished surfaces.
- Sole Plats: Sole Plats 3" or more in thickness may be built up by welding together 1/2" and welded with continuous weld for the full perimeter. Welds shall be ground flush with faces of Plats.
- Shop Connections: Shop Connections shall be welded or riveted as shown on the Plans.

NOTE: Use the existing 1" anchor bolts to reattach the existing 1" x 3" to the top of the pier and abutts.

139,200 Lbs.
Lump Sum

BAR	DIMENSIONS					SIZE	LENGTH	NO.	TOTAL
	a	b	c	d	e				
A-1	2'-6"					#4	2'-6"	9	15
A-2	3'-0"					#4	3'-0"	48	96
A-3	16'-0"					#4	16'-0"	28	299
A-4	17'-0"					#4	17'-0"	28	250
A-5	18'-0"					#4	18'-0"	30	361
A-6	20'-3"					#4	20'-3"	22	298
A-7	33'-9"					#4	33'-9"	120	2705
A-8	4'-0"					#4	4'-0"	24	144
A-9	6'-0"					#4	6'-0"	24	216
A-10	7'-3"					#4	7'-3"	8	87
A-11	9'-0"					#4	9'-0"	18	243
A-12	13'-0"					#4	13'-0"	8	156
A-13	16'-0"					#4	16'-0"	17	409
A-14	17'-9"					#4	17'-9"	10	267
A-15	19'-6"					#4	19'-6"	2	59
A-16	19'-6"					#4	20'-0"	2	60
A-17	20'-0"					#4	21'-0"	2	63
A-18	20'-6"					#4	22'-0"	8	288
A-19	21'-0"					#4	22'-6"	10	338
A-20	22'-0"					#4	23'-3"	12	419
A-21	22'-6"					#4	24'-0"	64	5364
A-22	23'-3"					#4	24'-0"	18	252
A-23	35'-0"					#4	35'-0"	64	5364
A-24	7'-0"					#4	7'-0"	11	202
A-25	9'-0"					#4	9'-0"	2	33
A-26	13'-0"					#4	13'-6"	182	6074
A-27	5'-3"					#4	5'-3"	4	163
A-28	12'-6"					#4	7'-0"	11	262
A-29	18'-3"					#4	9'-3"	182	5724
A-30	7'-0"					#4	7'-0"	80	2410
A-31	5'-0"					#4	13'-0"	32	1790
A-32	9'-3"					#4	22'-0"	32	3023
A-33	13'-0"					#4	8'-6"	8	102
B-1	7'-0"					#4	9'-0"	10	135
B-2	7'-6"					#4	9'-6"	8	114
B-3	8'-0"					#4	10'-6"	15	237
B-4	9'-0"					#4	11'-3"	4	68
B-5	9'-6"					#4	13'-0"	22	228
B-6	16'-9"					#4	18'-3"	26	713
B-7	17'-6"					#4	24'-0"	18	649
B-8	22'-6"					#4	25'-3"	43	631
B-9	23'-3"					#4	24'-0"	18	649
B-10	23'-9"					#4	28'-0"	43	679
B-11	24'-6"					#4	10'-6"	11	236
B-12	9'-3"					#4	10'-9"	12	264
B-13	9'-0"					#4	14'-6"	9	267
B-14	13'-0"					#4	25'-3"	43	2219
B-15	23'-9"					#4	26'-0"	43	2219
B-16	24'-6"					#4	9'-9"	9	234
B-17	24'-6"					#4	16'-9"	8	338
B-18	25'-3"					#4	9'-6"	8	234
B-19	25'-3"					#4	11'-3"	9	387
B-20	25'-9"					#4	12'-0"	9	465
B-21	25'-9"					#4	16'-6"	40	2840
B-22	25'-9"					#4	19'-0"	3	243
B-23	17'-6"					#4	20'-0"	3	238
B-24	18'-6"					#4	17'-9"	2	130
B-25	18'-6"					#4	17'-6"	40	3719
B-26	18'-6"					#4	17'-6"	40	3719
B-27	18'-6"					#4	17'-6"	40	3719
B-28	18'-6"					#4	17'-6"	40	3719
D-1	1'-6"					#4	4'-0"	53	142
D-2	1'-6"					#4	5'-6"	30	331
D-3	5'-3"					#4	11'-6"	38	292
K-1	2'-1"					#4	5'-2"	32	284
K-2	2'-1"					#4	5'-10"	8	64
K-3	2'-1"					#4	9'-6"	8	51
K-4	2'-1"					#4	10'-2"	8	54
X-1	5'-9"					#4	16'-0"	16	102
X-2	4'-9"					#4	18'-1"	16	102

Total Abutment & Pier Steel = 59,478 #

BAR	DIMENSIONS					SIZE	LENGTH	NO.	TOTAL
	a	b	c	d	e				
A-30	23'-0"					#4	23'-0"	36	593
A-31	34'-0"					#4	34'-0"	9	91
A-32	6'-6"					#4	6'-6"	9	967
A-33	9'-0"					#4	9'-0"	90	1217
A-34	24'-6"					#4	24'-6"	42	1546
A-35	9'-6"					#4	9'-6"	50	1615
A-36	15'-3"					#4	15'-3"	47	2437
A-37	7'-0"					#4	7'-0"	40	1205
A-38	21'-3"					#4	21'-3"	8	732
A-39	34'-0"					#4	34'-0"	8	1170
B-50	24'-6"					#4	24'-6"	4	439
D-30	0'-11"					#4	3'-9"	45	113
K-30	2'-9"					#4	9'-3"	40	232
K-31	2'-8"					#4	9'-5"	46	452
T-50	14'-3"					#4	20'-4"	3	228
V-50	0'-0"					#4	7'-7"	45	223
D-71	1'-11"					#4	4'-0"	19	51
D-72	2'-2"					#4	4'-6"	9	27
D-73	2'-6"					#4	5'-1"	7	24
D-74	2'-8"					#4	5'-11"	10	40
D-75	4'-7"					#4	3'-7"	3	20
D-76	5'-0"					#4	10'-3"	3	21
E-75	1'-0"					#4	4'-6"	4	27

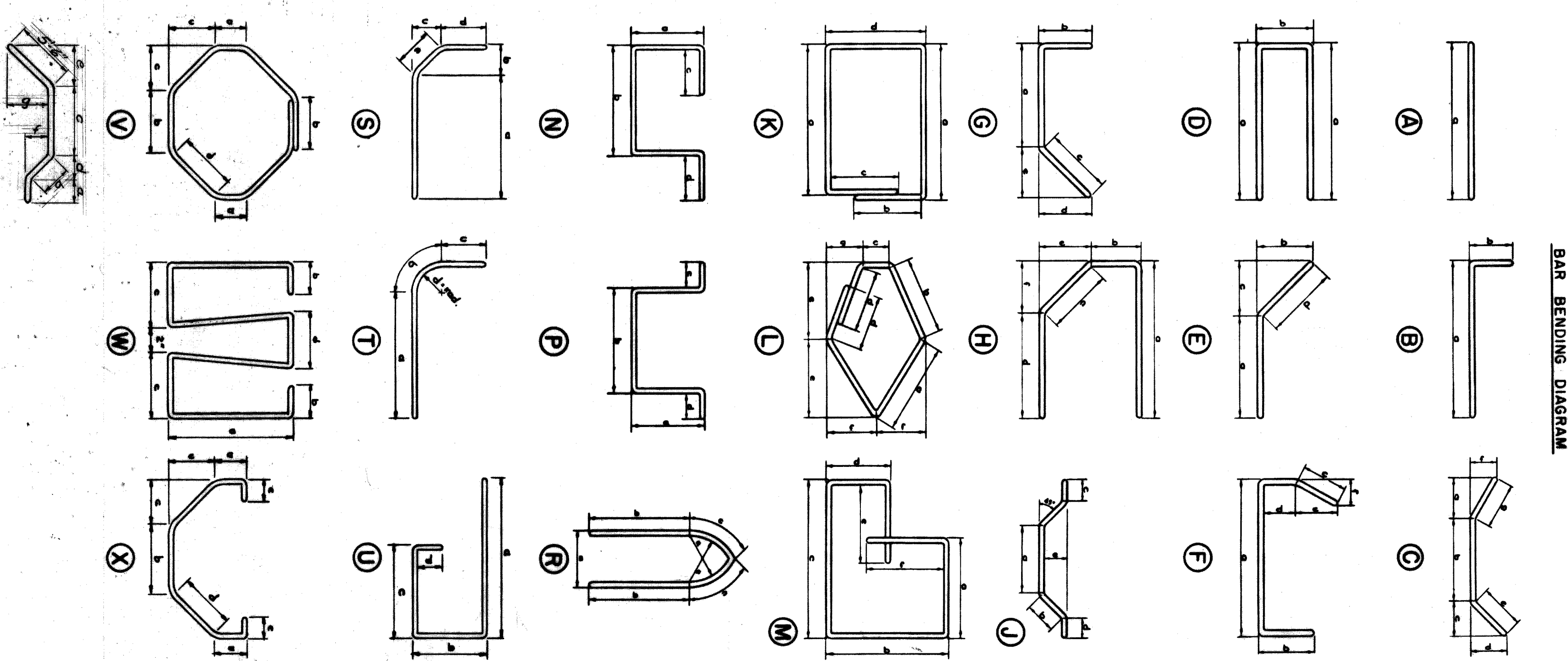
Total Pier Steel = 13,788 #

BAR	DIMENSIONS					SIZE	LENGTH	NO.	TOTAL
	a	b	c	d	e				
K-100	2'-4"					#4	7'-11"	53	291
K-101	2'-4"					#4	10'-1"	6	40
K-102	2'-4"					#4	11'-3"	2	15
K-103	2'-1"					#4	9'-1"	9	55
M-106	0'-9"					#4	8'-1"	72	416
M-107	0'-9"					#4	8'-11"	23	157
M-108	0'-9"					#4	7'-11"	8	48
M-109	0'-9"					#4	8'-3"	2	11
M-104	0'-9"					#4	9'-6"	2	13
P-100	1'-7"					#4	12'-0"	6	48
P-101	0'-9"					#4	8'-10"	2	12
P-102	2'-0"					#4	11'-4"	4	30
P-103	1'-3"					#4	9'-7"	42	269

Total Superstructure Steel = 63,163 #

Note:--
All right angle bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.
All bar numbers shown on this sheet to be prefixed X072.

Grand Total Steel Reinforcement 136,409 #



DESIGNED BY: C.C.L. / R.R.K.
DRAWN BY: W. Snyder
CHECKED BY: V. Conert

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

LAFAYETTE AVENUE BRIDGE X072
OVER
GRAND TRUNK WESTERN RAILROAD
STEEL REINFORCEMENT DETAILS

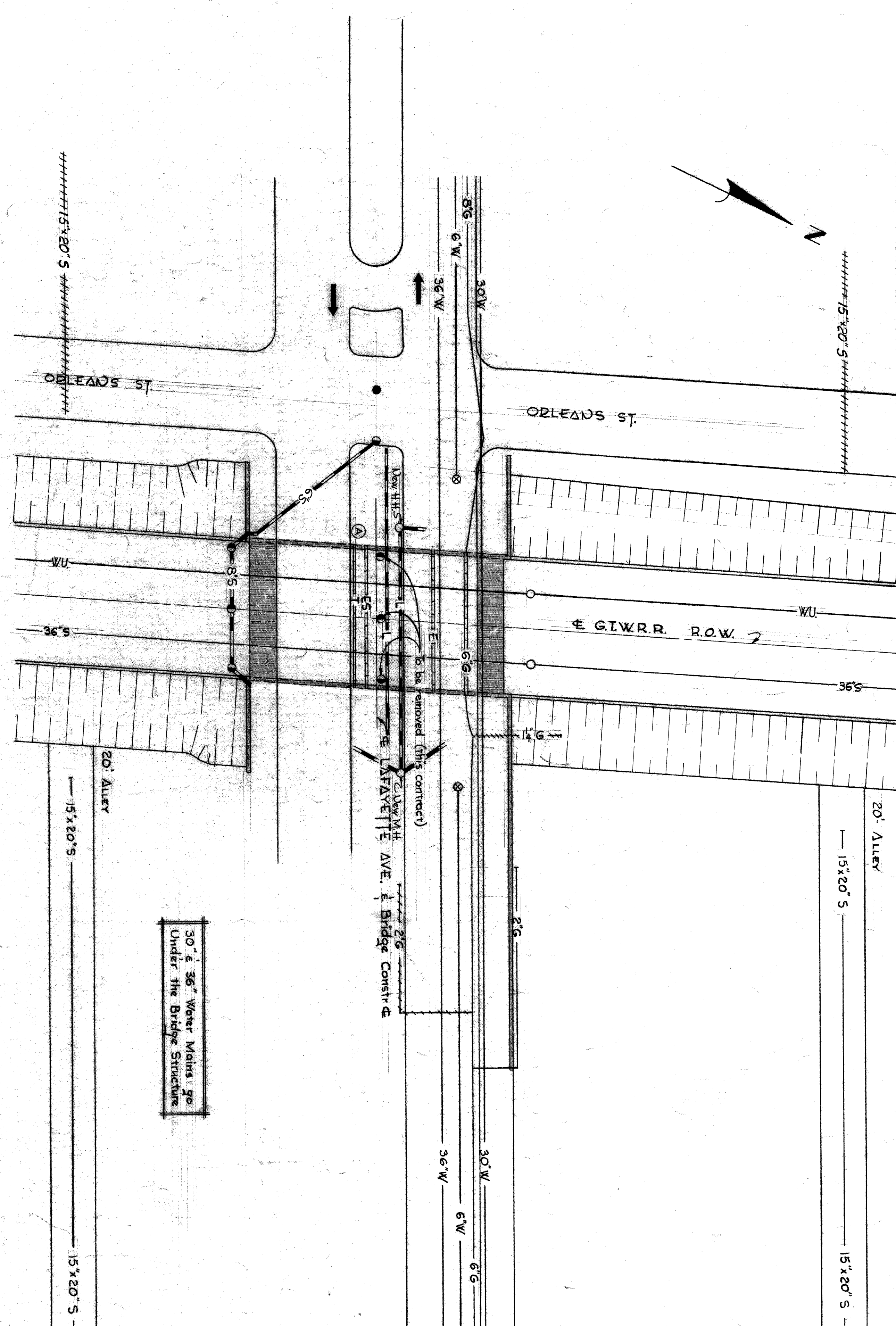
SHEET 40 OF 46 SHEETS
CONTRACT NO. PW/3888
DRWG No. C219
DATE: MAR. 1962

DESIGNATION	DATE	BY
REVISIONS LOCATED BY COORDINATES ON SHEET		
DATE	BY	

DESIGNED BY	CCL / RRH
DRAWN BY	A. GEBH
CHECKED BY	J. COVERT
ENGINEER OF SURVEYING	<i>J. A. ...</i>
ASST. CITY ENGINEER - HIGHWAYS & EXPRESSWAYS	<i>Robert B. ...</i>
CITY ENGINEER	<i>Robert F. ...</i>

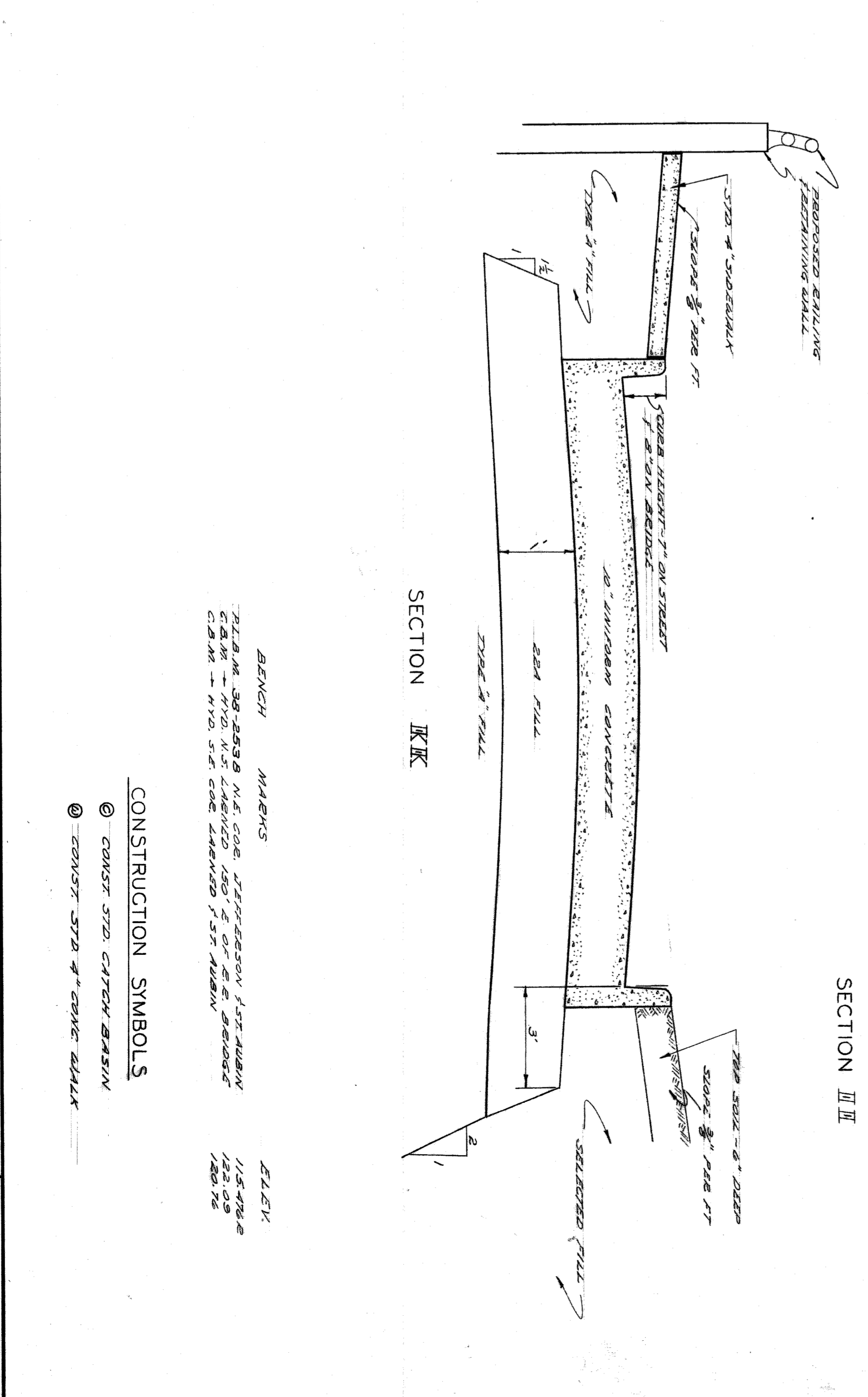
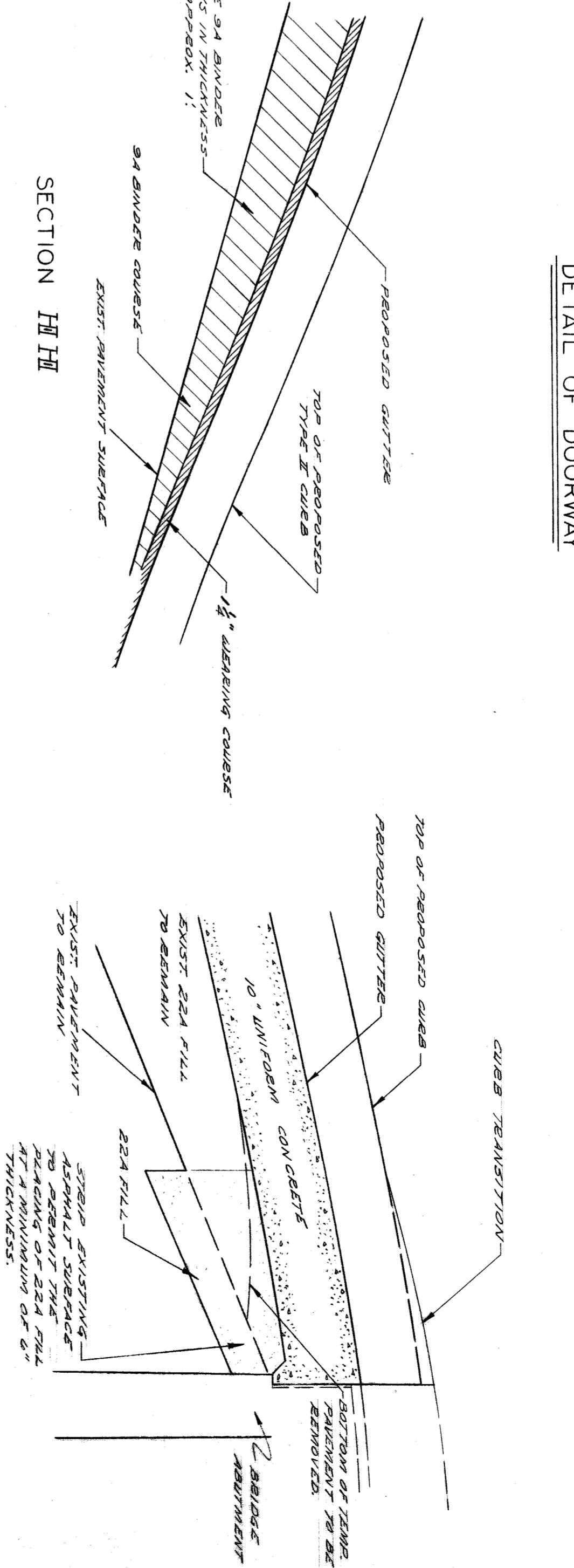
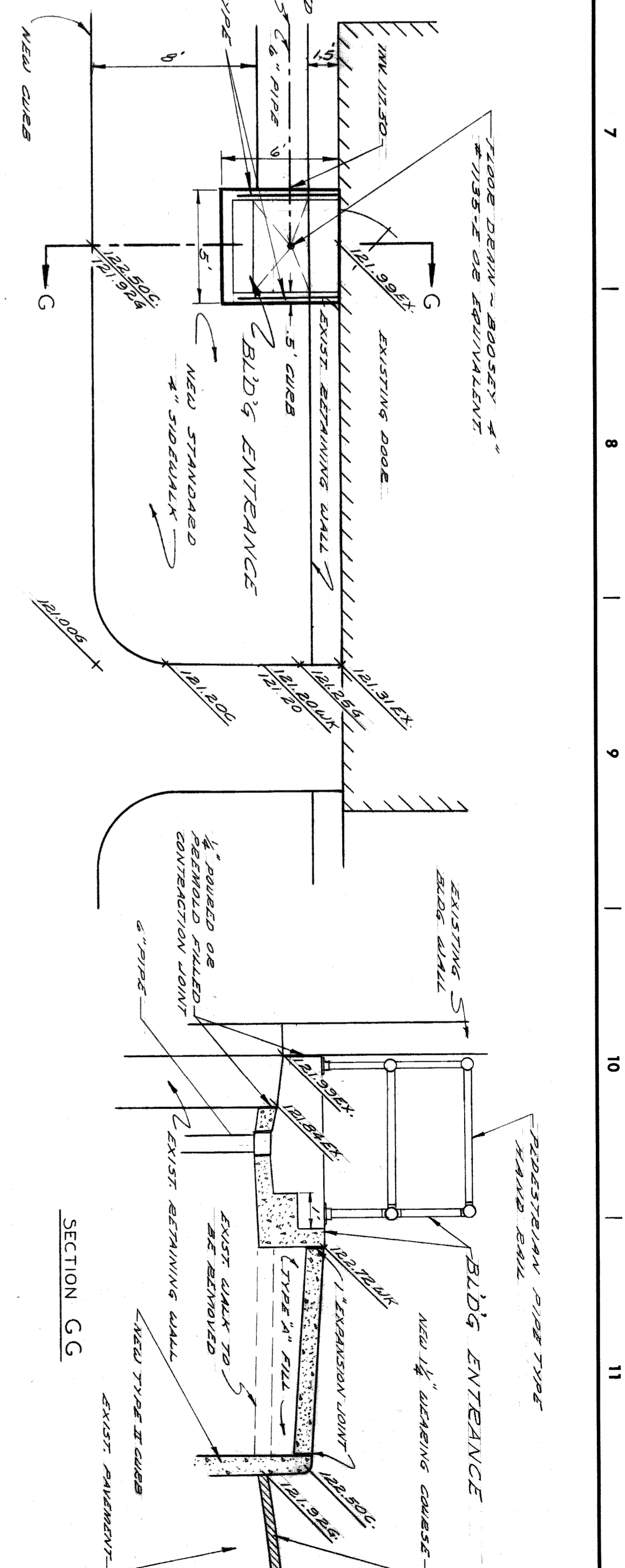
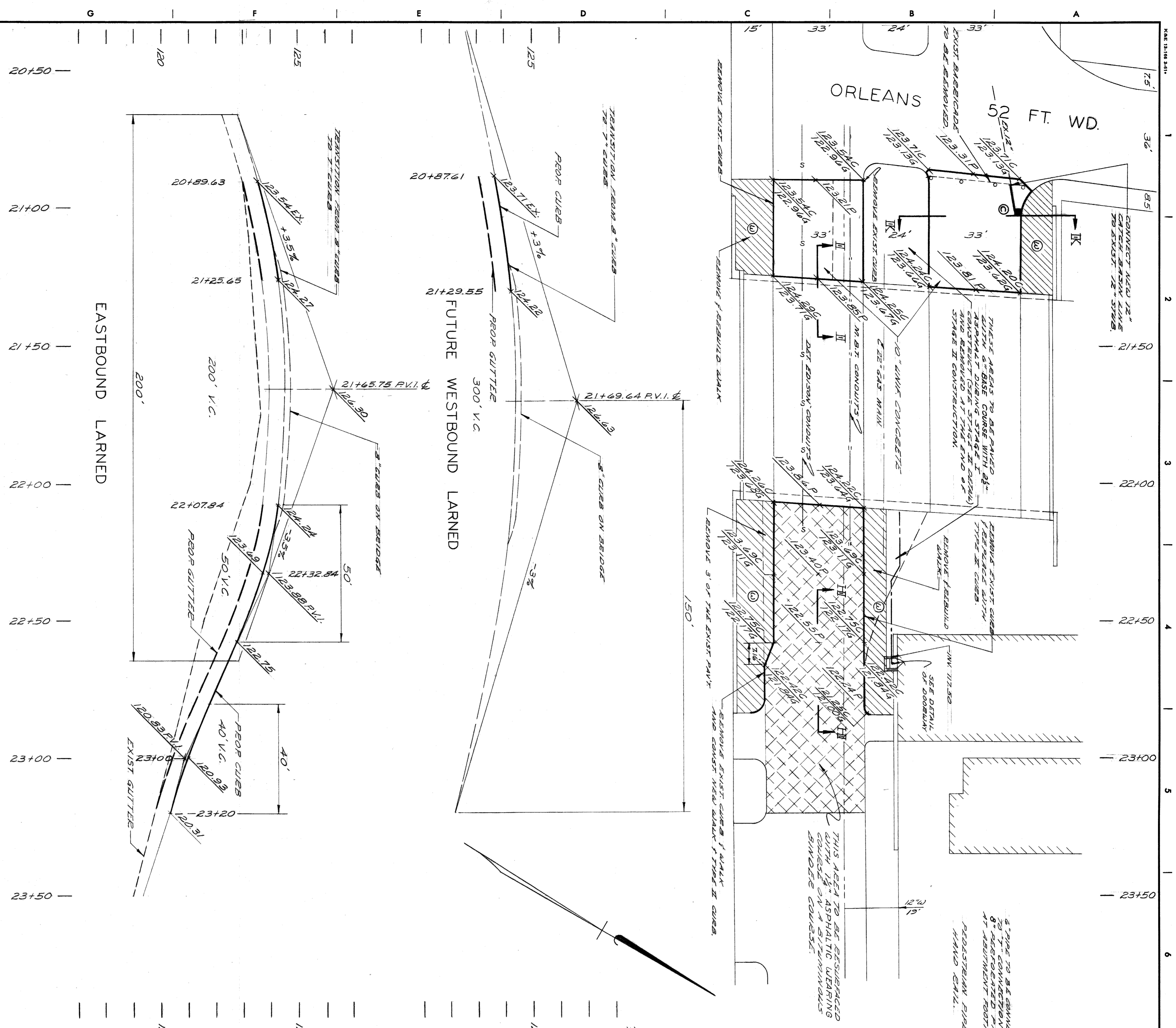
CITY OF DETROIT	SHEET 41 OF 46 SHEETS
DEPARTMENT OF PUBLIC WORKS	CONTRACT PW 3988
CITY ENGINEERS OFFICE	DRWG No. C220
BUREAU OF HIGHWAYS AND EXPRESSWAYS	DATE FEB 1962
RAILROAD GRADE SEPARATION	EXISTING UTILITIES AND PROPOSED ALTERATIONS

SITUATION PLAN
Scale: 1" = 30'



Utility	Designation
Existing	W
Deleted or Abandoned	G
New Work by Others	E-S
New Work by Contractor	S

Detroit Water Dept.	W	Existing
Mich. Coal & Gas Co.	G	Deleted or Abandoned
Detroit Edison Co.	E-S	New Work by Others
Detroit Edison Co. (Steam)	S	New Work by Contractor
Public Light & Comm.	G	Deleted or Abandoned
City of Detroit Sewers	S	New Work by Contractor
Western Union Count	W-U	Existing
Gate Well & Valve	●	Existing
P.L.C. Manhole	○	Existing
Catch Basin	○	Existing
Sewer Manhole	○	Existing
Western Union Manhole	○	Existing
Michigan Bell Telephone Co.	○	Existing

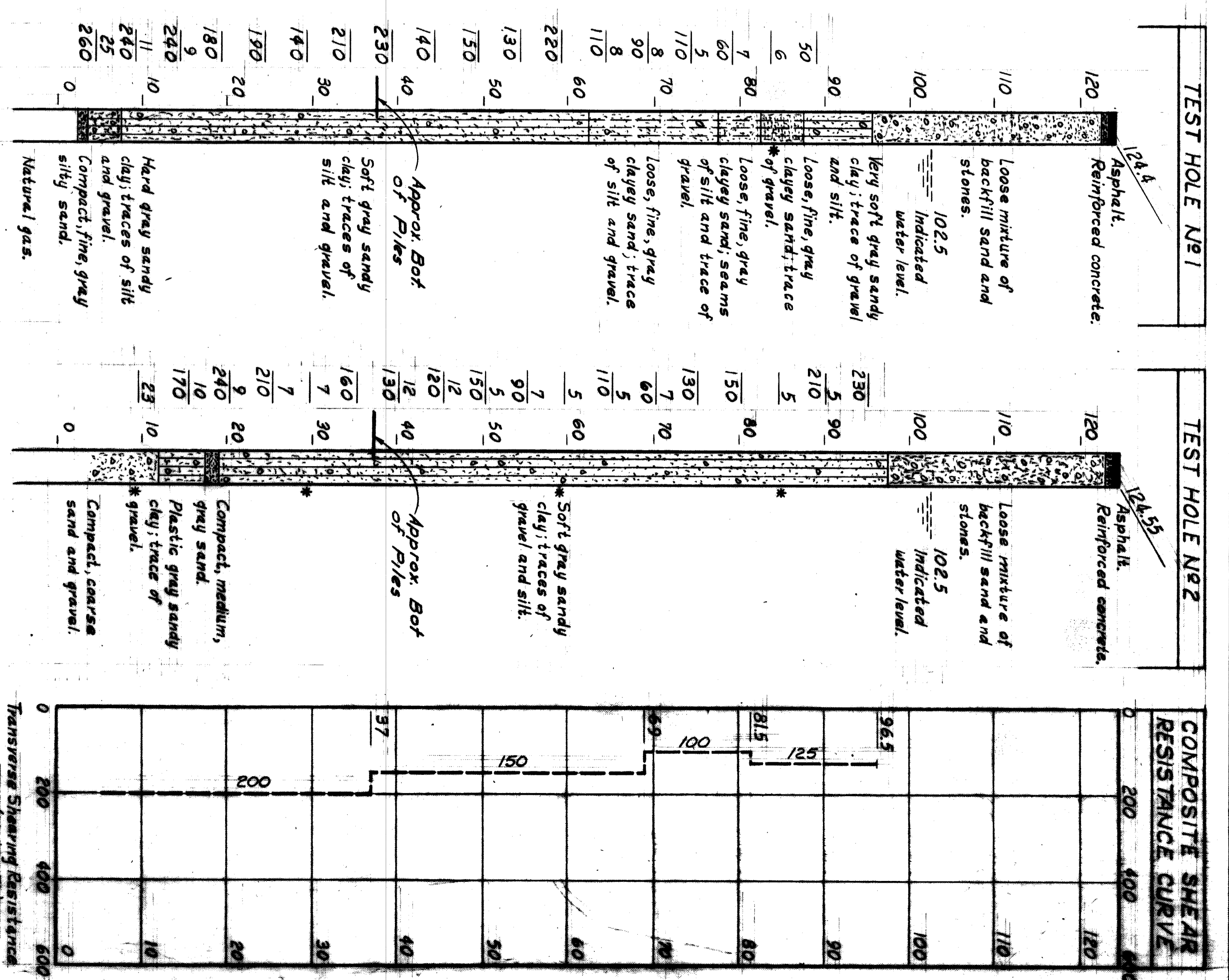
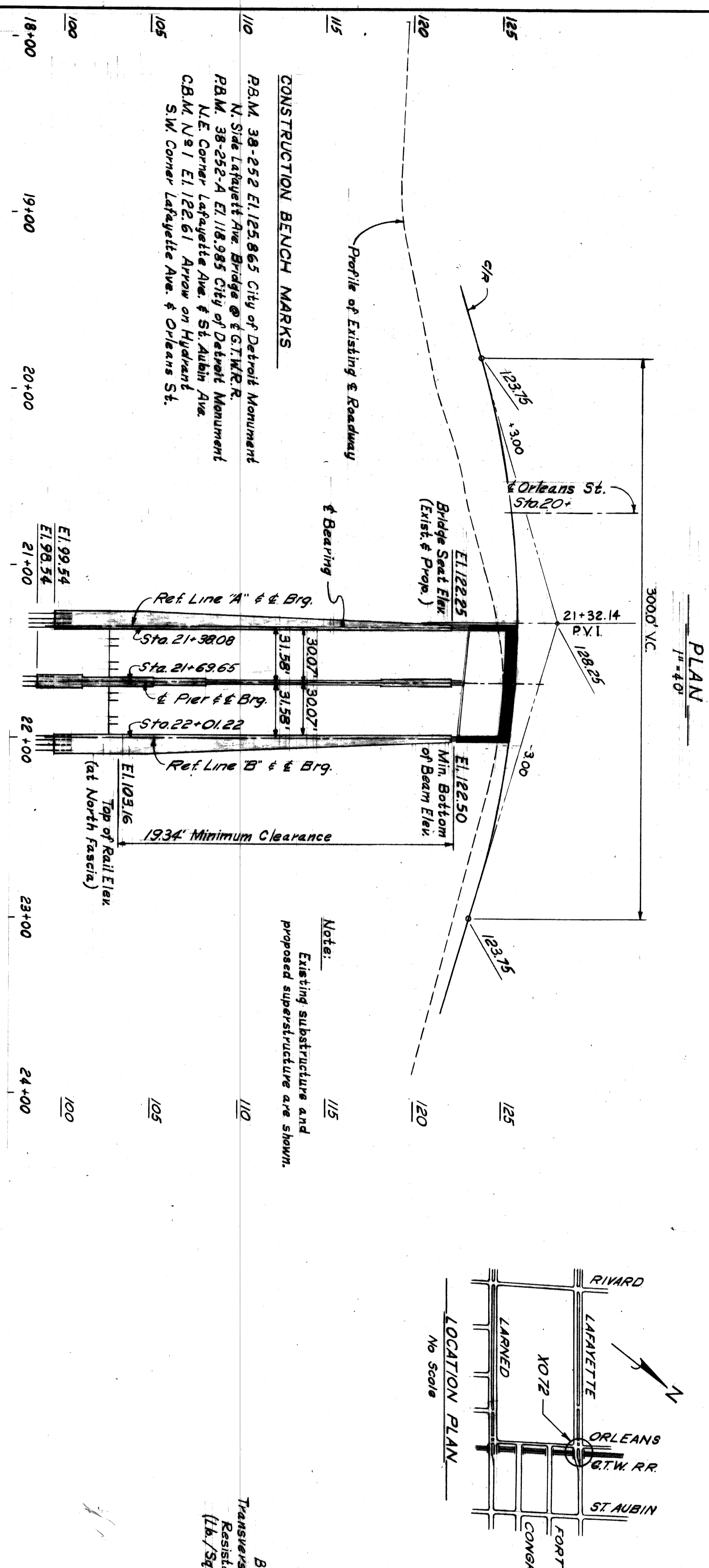
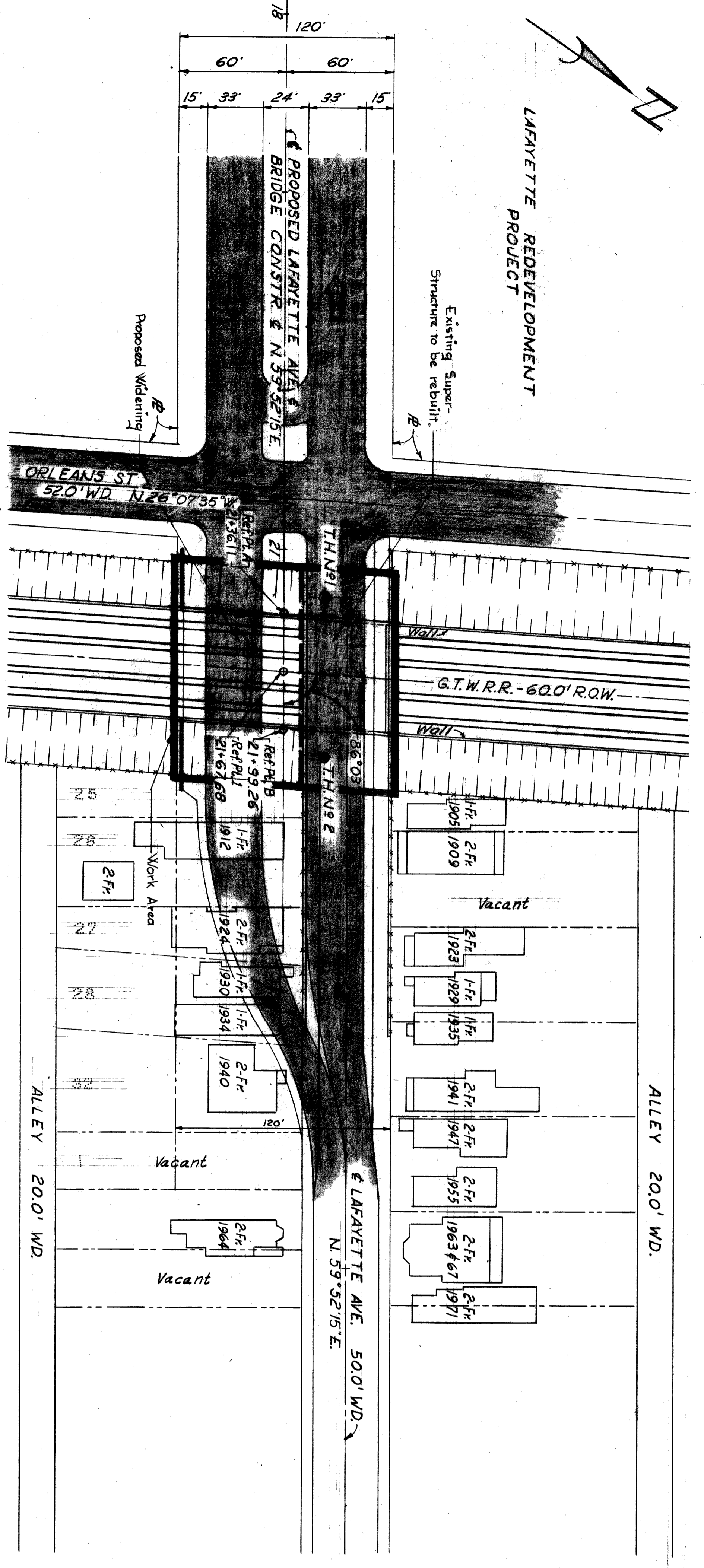


BENCH MARKS
 115.716
 123.09
 120.12

ELEV.

CONSTRUCTION SYMBOLS
 (C) CONST STD. CATCH BASIN
 (R) CONST STD. 4\"/>

DESIGNED BY E.C. WIGSTAD	APPROVED B. L. LARNED	CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS CITY ENGINEERS OFFICE BUREAU OF HIGHWAYS AND EXPRESSWAYS	LARNED ST. BRIDGE X069 & LAFAYETTE AVE. BRIDGE X072 OVER GRAND TRUNK WESTERN RAILROAD LARNED ST. PAVING
DRAWN BY E.C. WIGSTAD	CHECKED BY B. L. LARNED		
TRACED BY B. L. LARNED	CITY ENGINEER B. L. LARNED	DEPARTMENT OF PUBLIC WORKS BUREAU OF HIGHWAYS AND EXPRESSWAYS	LARNED ST. BRIDGE X069 & LAFAYETTE AVE. BRIDGE X072 OVER GRAND TRUNK WESTERN RAILROAD LARNED ST. PAVING
DESCRIPTION RAILROAD GRADE SEPARATION	DATE MAR 1962	SHEET 12 OF 46 SHEETS CONTRACT PW 3988 DRWG NO. P-301	



TEST HOLE NO. 1

Asphalt.
Reinforced concrete.

Loose mixture of backfill sand and stones.
102.5
Indicated water level.

Heavy soft gray sandy clay; trace of gravel and silt.

Loose, fine gray clayey sand; trace of gravel.

Loose, fine, gray clayey sand; seams of silt and trace of gravel.

Loose, fine, gray clayey sand; trace of silt and gravel.

Soft gray sandy clay; traces of silt and gravel.

Approx. Bot of Piles

Hard gray sandy clay; traces of silt and gravel.
Compact, fine, gray silty sand.
Natural gas.

TEST HOLE NO. 2

Asphalt.
Reinforced concrete.

Loose mixture of backfill sand and stones.
102.5
Indicated water level.

Soft gray sandy clay; traces of gravel and silt.

Compact, medium, gray sand.
Plastic gray sandy clay; trace of gravel.

Compact, coarse sand and gravel.

Approx. Bot of Piles

COMPOSITE SHEAR RESISTANCE CURVE

Transverse Shear Resistance (lb./sq. ft.)

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

LAFAYETTE AVENUE BRIDGE X072 OVER GRAND TRUNK WESTERN RAILROAD

GENERAL PLAN OF SITE

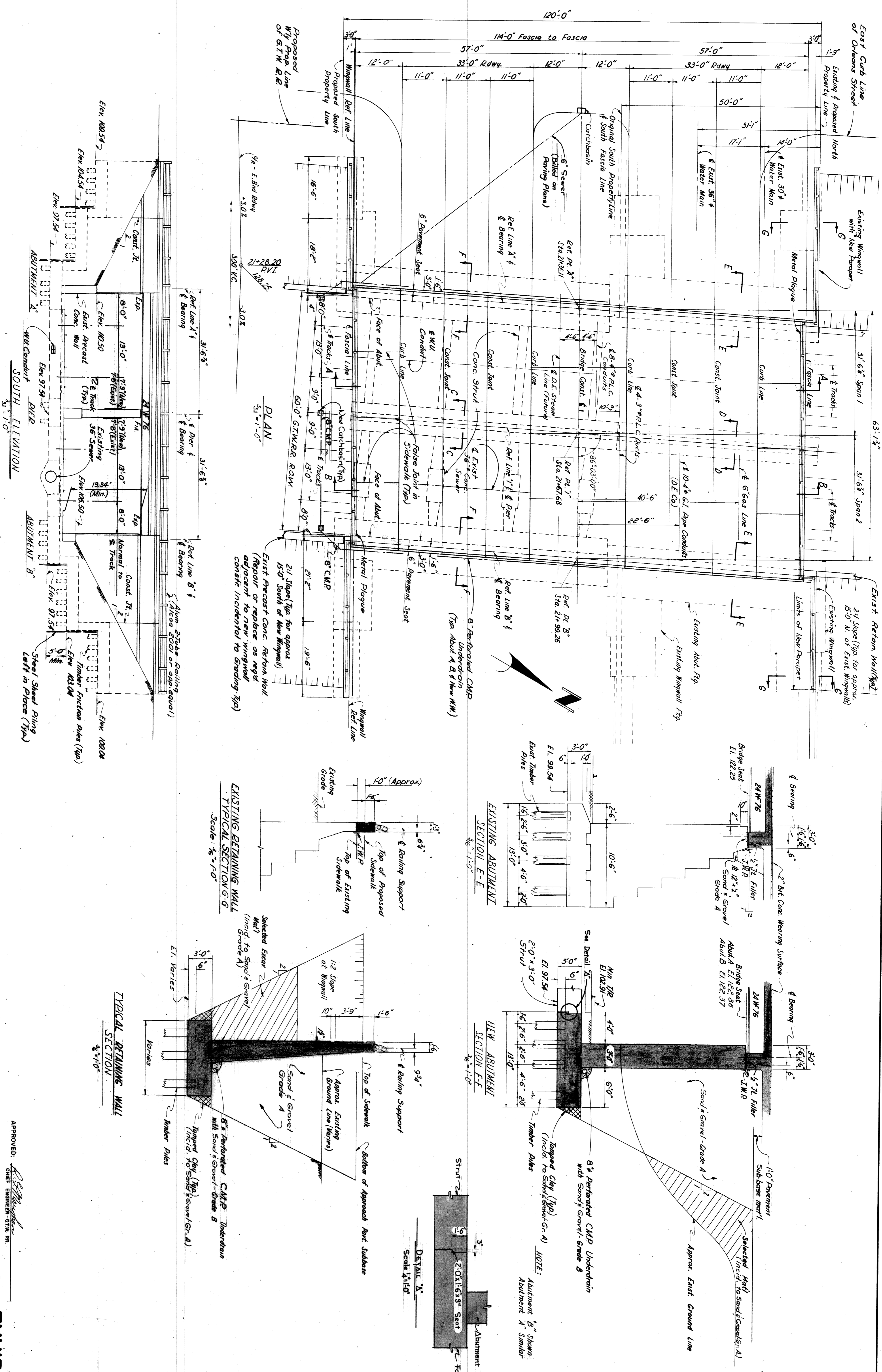
EXHIBIT D

DESIGNED BY: C.C.I./R.R.H.
DRAWN BY: R.L.F.
CHECKED BY: J. GARDNER

ENGINEER OF EXPRESSIONS: J. GARDNER
SUPERVISOR OF HIGHWAYS AND EXPRESSWAYS: J. GARDNER

APPROVED: [Signature]
CHIEF ENGINEER, G.T.W. RR.
APPROVED: [Signature]
COMMISSIONER OF PUBLIC WORKS

DATE: FEB 1962



DESIGNED BY	C.G.L./R.R.H.
DRAWN BY	D. RUBIN GOLD
CHECKED BY	R. JAMES
DATE	
REVISIONS LOCATED BY COORDINATES ON SHEET	

ENGINEER OF EXPRESSWAYS
 ASSIST. CHIEF ENGINEER - HIGHWAY & EXPRESSWAYS
 CITY ENGINEER

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

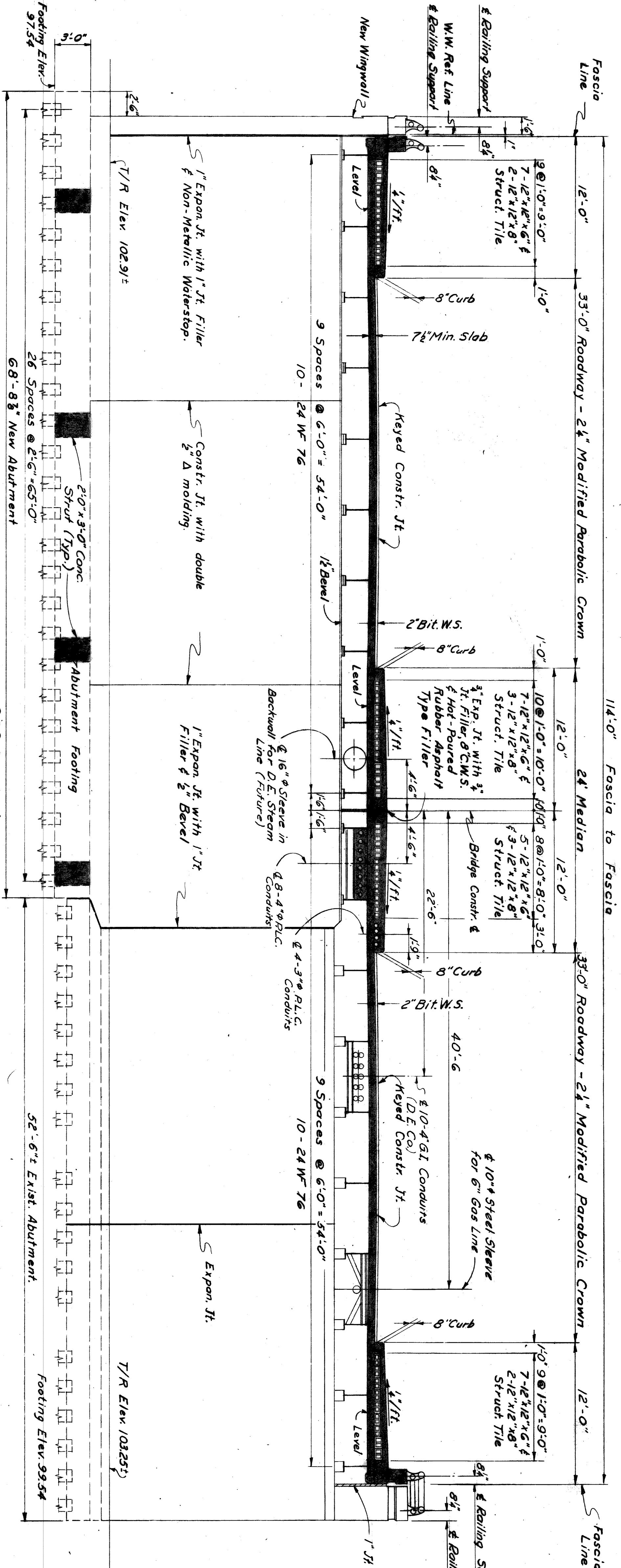
APPROVED: [Signature]
 CHIEF ENGINEER - CITY RR.

EXHIBIT E

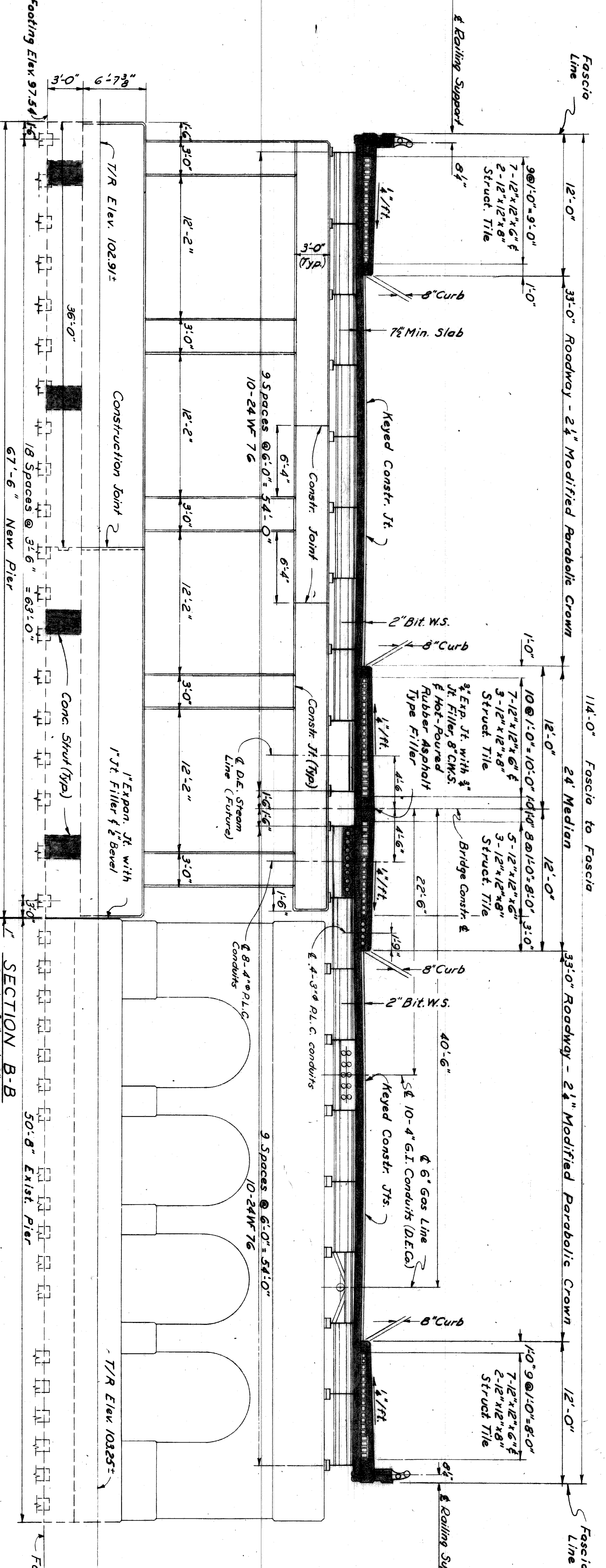
LAFAYETTE AVENUE BRIDGE X072
 OVER
GRAND TRUNK WESTERN RAILROAD

GENERAL PLAN OF STRUCTURE

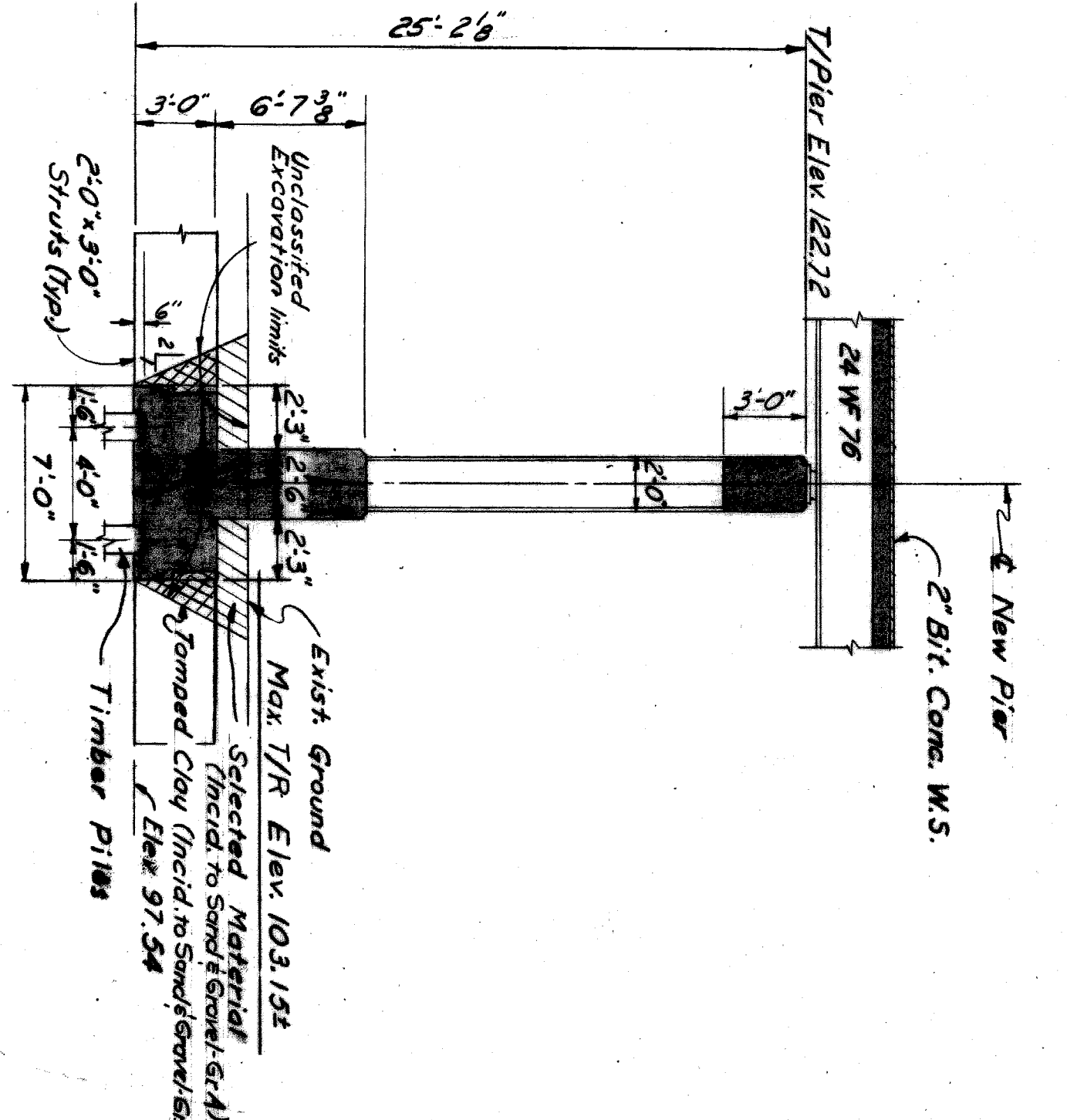
SHEET 5 OF 6 SHEETS
 CONTRACT PW 3988
 DRWG. No. C 202
 DATE FEB. 1962



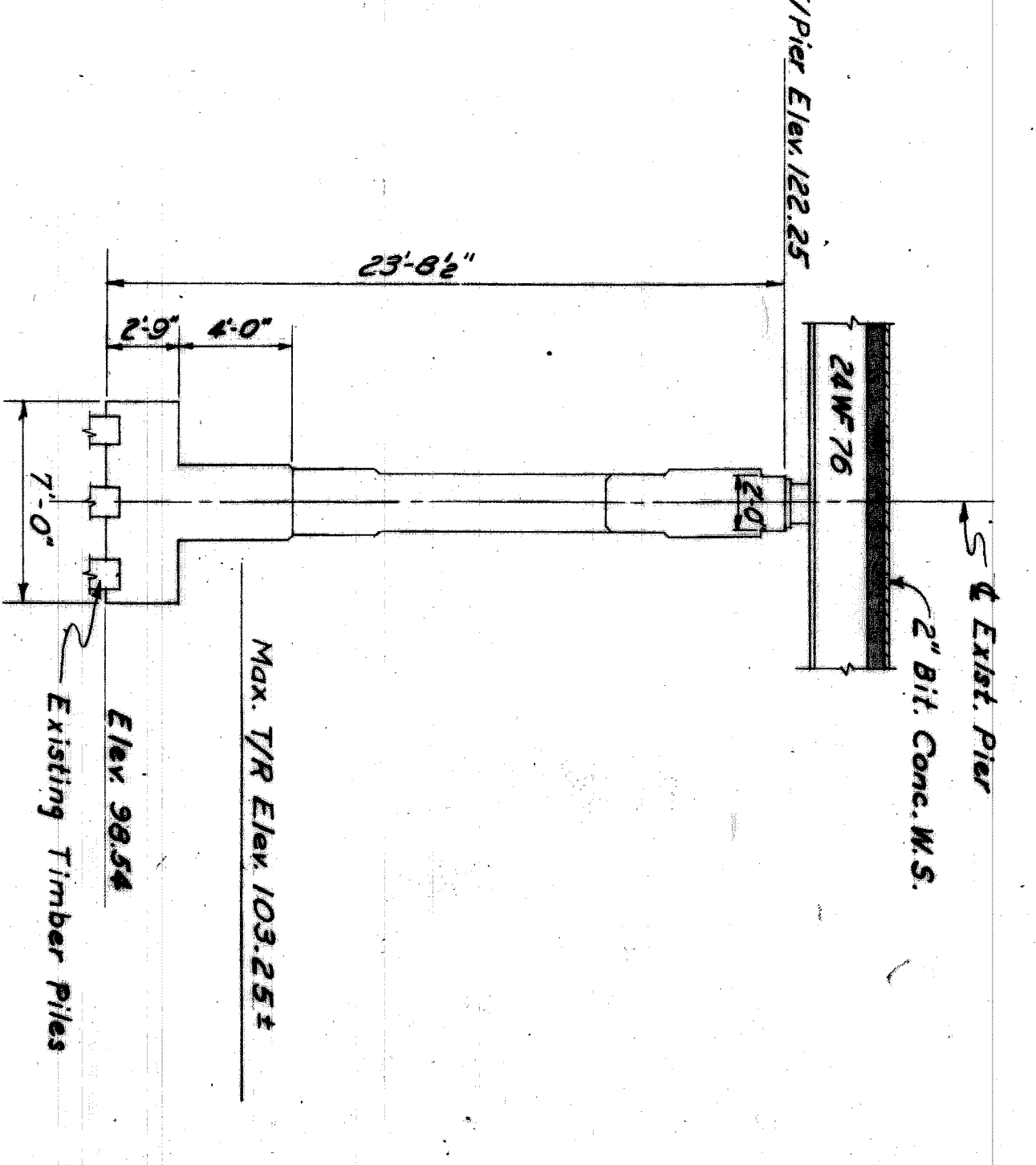
SECTION A-A
SCALE: 3/8" = 1'-0"



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



SECTION C-C
SCALE: 3/8" = 1'-0"



SECTION D-D
SCALE: 3/8" = 1'-0"

NOTE:
Dimensions of Superstructure shown in Sections A-A & B-B are normal to Bridge Construction & Substructure dimensions shown in Sections C-C & D-D are along the Pier or Abutment Ref Lines.

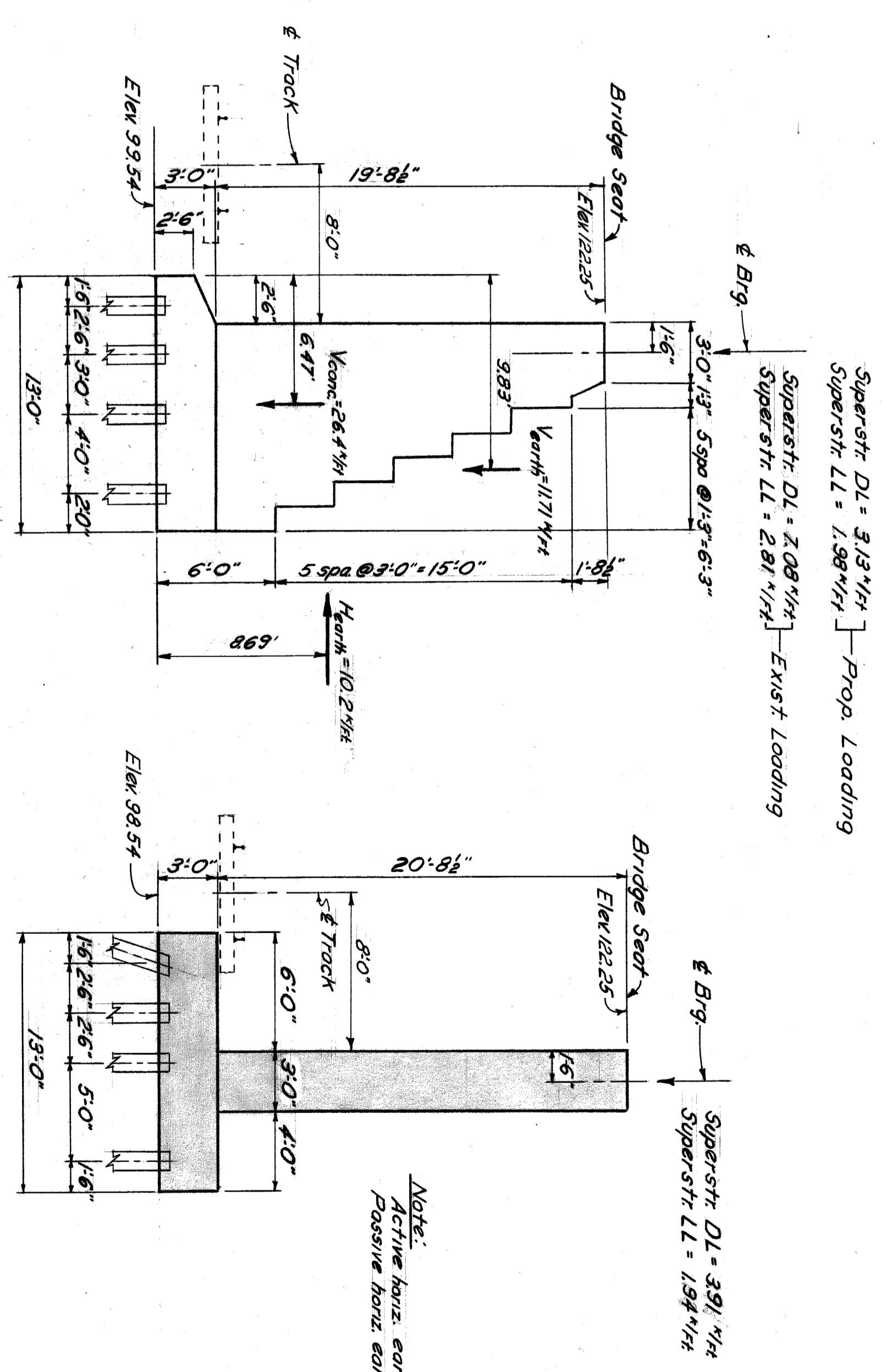
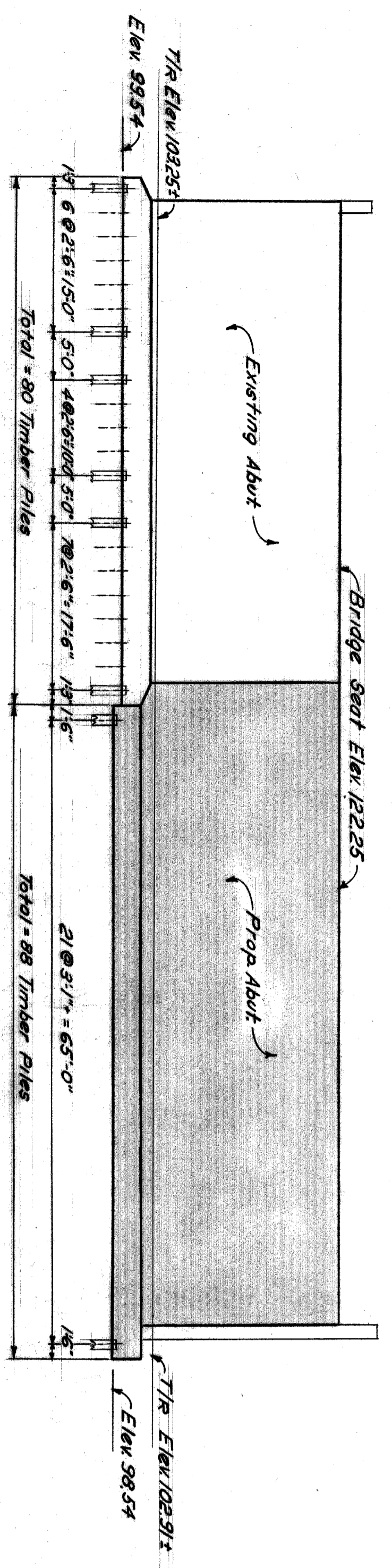
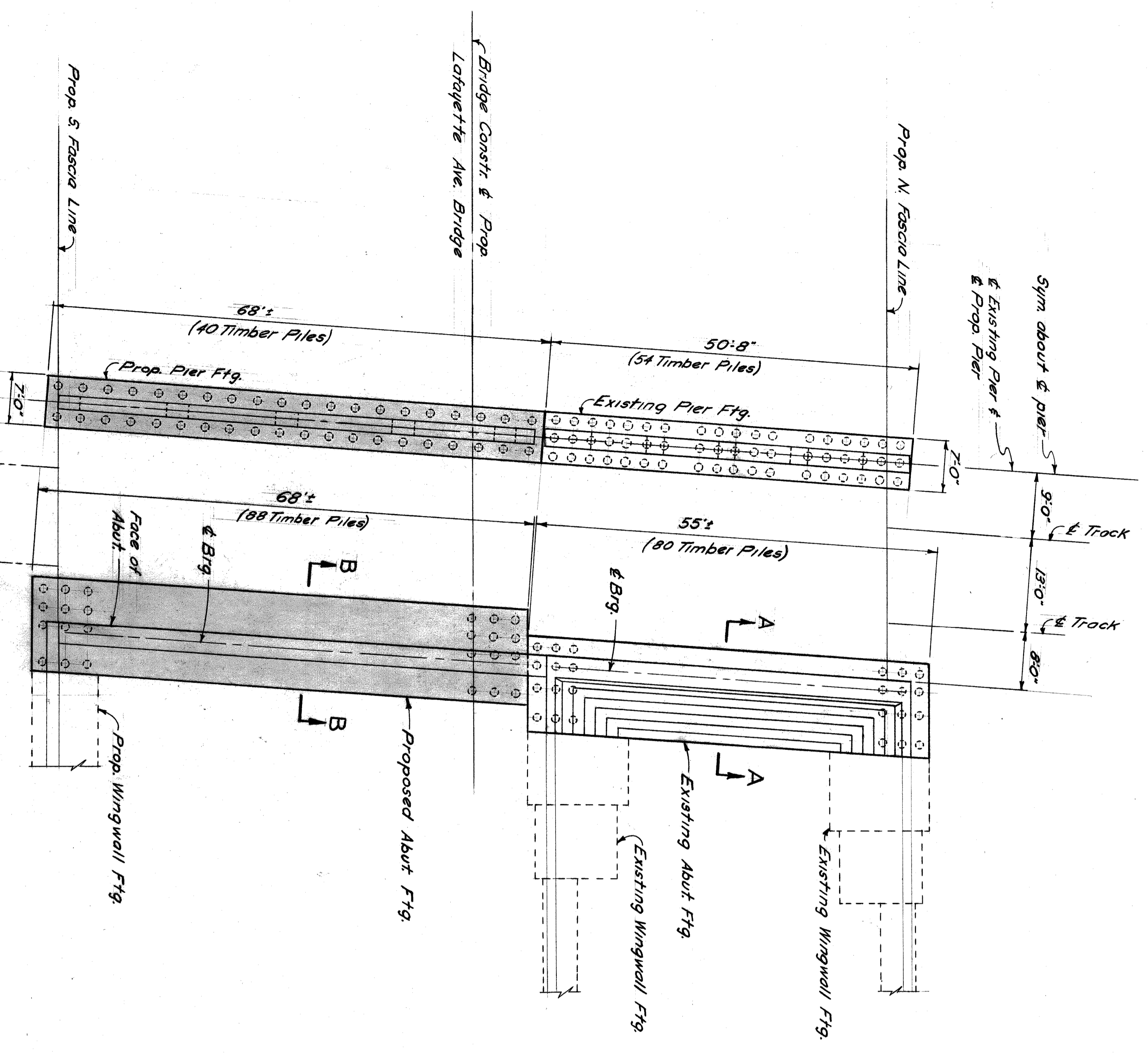
DESIGNED BY	C.C.L. / R.R.H.
DRAWN BY	M.S. LEAN
CHECKED BY	R. James / G
APPROVED BY	[Signature]
DATE	

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS AND EXPRESSWAYS
BUREAU OF HIGHWAYS AND EXPRESSWAYS
RAILROAD GRADE SEPARATION

LAFAYETTE AVENUE BRIDGE X072
OVER
GRAND TRUNK WESTERN RAILROAD
GENERAL PLAN OF STRUCTURE

APPROVED: [Signature]
COMMISSIONER OF PUBLIC WORKS

EXHIBIT F
SHEET 5 OF 6 SHEETS
CONTRACT PW 3988
DRWG. No. C 205
DATE FEB 1962



Overload Ratio on existing abut as computed from boring data. $R = 2.11$ DL $R = 2.6$ DL + LL

NOTE:
Active horiz. earth pressure = 30 lbs.
Passive horiz. earth pressure = 560 lbs.

LAFAYETTE AVE. OVER THE GTWRR

BRIDGE X072
FOUNDATION STUDY

JCover

3/2/61