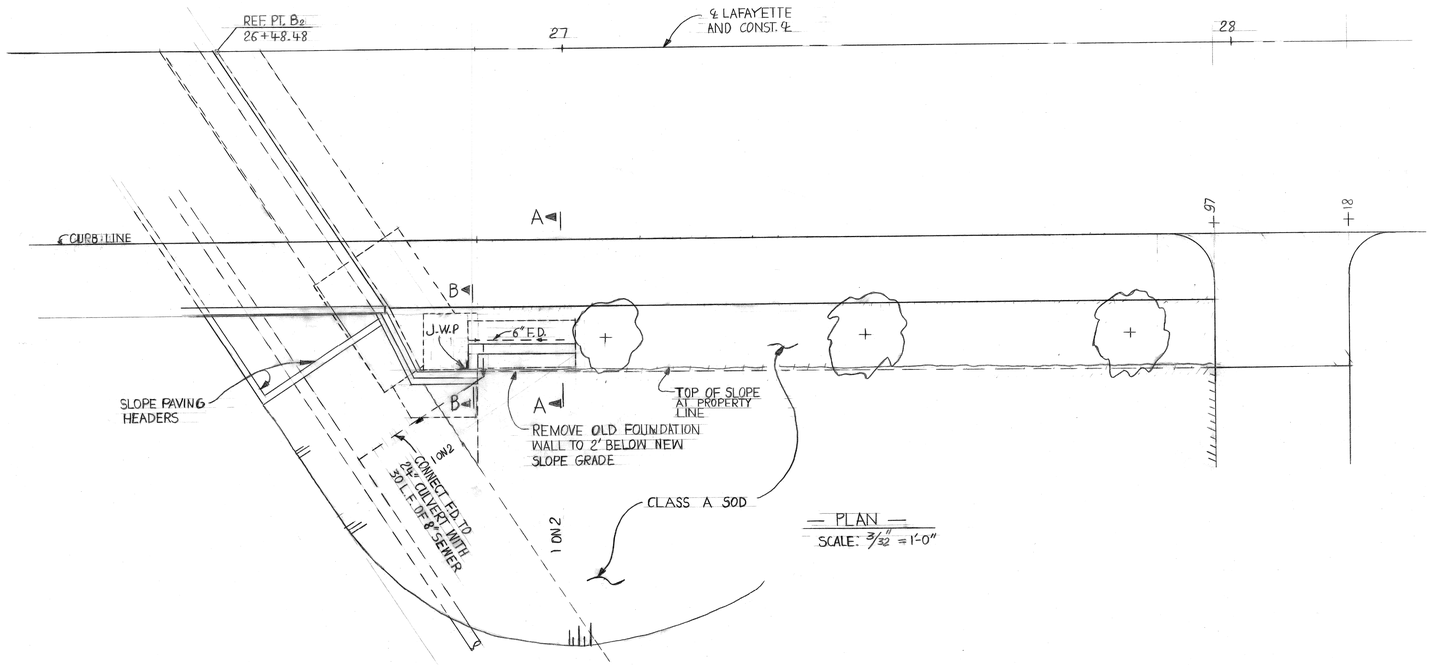
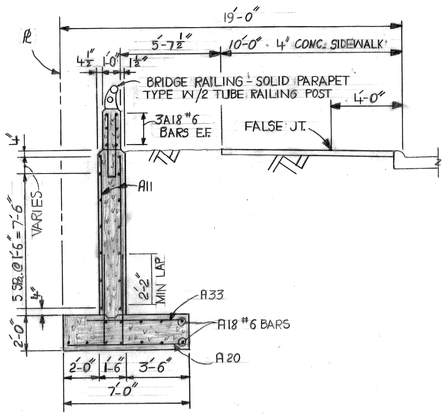
Study Drawing - 12TH & LAFAYETTE
SCALE: 3/32" = 1'-0" RAK
3-7-78
20' ALLEY
50' SSL HOWARD
S℄ 60' HOWARD (EXTENDED)
PROP. E ℄ 120' 12TH STREET
112' TO S℄ HOWARD (SET)
118' T.D. 9
40' T.D. 9
120' T.D. 8
54' T.D. 8
SET 15.0'
PROP. N ℄ 120' LAFAYETTE
N ℄ 80' LAF.
120 KV DE LINE
FACE OF PROP. ABUT.
R.P. B 12+40.367
REF. LINE B
℄ BRG
SMH
TOP OF TUNNEL TUBE 94.9±
℄ SUSP.
PROP. FTG.
TOP 101.0±
STACKS IRON
TOE OF SLOPE
40.634170
30'-5"
INV. 96.3±
TOP 102.15
TOP OF OLD FTG 81.0±
R.P. 1 11+43.626
℄ NEW PIER
8" VIT.
TRANSIT LINE
TUNNEL ℄ N 63° 58' 56" W
INV 100.1
OLD EAST GIRDER
PROP. LONG. EXP. JT.
℄ R.R. 100' ROW ℄
℄ SUSP
FACE OF OLD WALL
TOE OF SLOPE
12'-0"
33'-0"
PROP. FASCIA
REF. LINE 2
beam Q
beam P
INV 100.4
TOP DE LINE 94.5±
℄ beam A
beam N
R.P. A 10+79.645
1'-0"
FACE OF PROP. ABUT.
REF. LINE A
44'-0"
3' 12'-0"
R.P. 2
INV 101.5
R.P. 1 25+73.069
NEW FTG
OLD CENTER GIRDER
℄ BRG
R.P. A 25+23.194
FACE OF OLD WALL
Pg 137 SMH
12TH CONST. ℄
20.47'
10+00
LAFAYETTE CONST. ℄
4' 6"±
N 59° 21' 29" E
24+61.11
82.70611°
℄ 3' N℄ 80' LAFAYETTE
℄ 39.53' EWL 12TH N 23° 20' 53" W
R.P.B 26+48.480
REF. LINE B
℄ BRG
FACE OF PROP. ABUT.
8'-0"
56.65972°
12'-0"
27'-6"
27'-6"
12'-0"
19'-9"
30'-5"
10'-8"
℄ SUSP.
TOP OF OLD FTG 100.3±
℄ NEW PIER
PROP. FASCIA
FACE OF OLD WALL
30.80' COCOZZA
30.81' STACK
30'-3"
26'-6"
69'-9"
73'-6"
100' RR ROW
W LINE LOT 3
E LINE LOT 3
PROP E ℄ 120' 12TH STREET
8700
8600
8500
10900
11000
11100
11200
11300

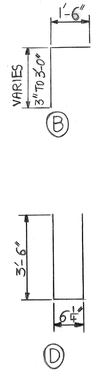
TSR 250 1-79 69399



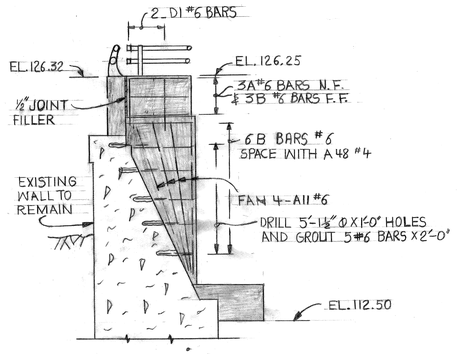
PLAN
SCALE: 3/32" = 1'-0"



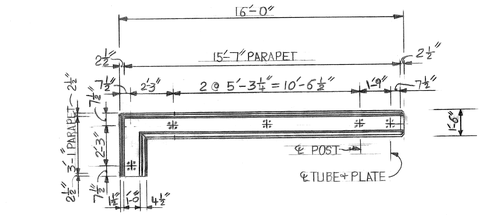
SECTION A-A
SCALE: ¼" = 1'-0"



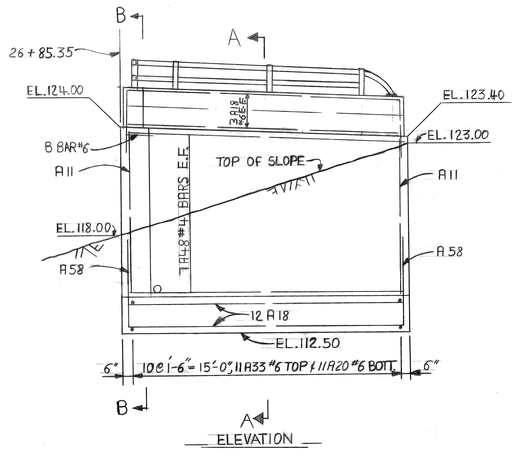
BAR	SIZE	LENGTH	NO.
A11	#6	8'-6"	24
A18	#6	15'-3"	18
A20	#6	6'-6"	11
A33	#6	5'-6"	11
A48	#4	15'-0"	14
A58	#6	5'-0"	22
D1	#6	7'-4¾"	13



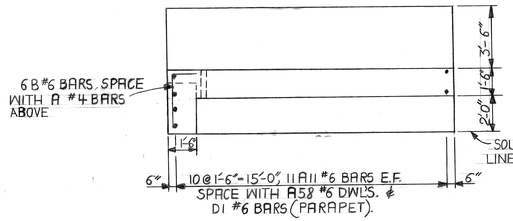
SECTION B-B
SCALE: ¼" = 1'-0"



TOP OF PLAN



ELEVATION



FOUNDATION PLAN
SCALE: ¼" = 1'-0"

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY Haiser
TRACED BY
CHECKED BY RAK

APPROVED:

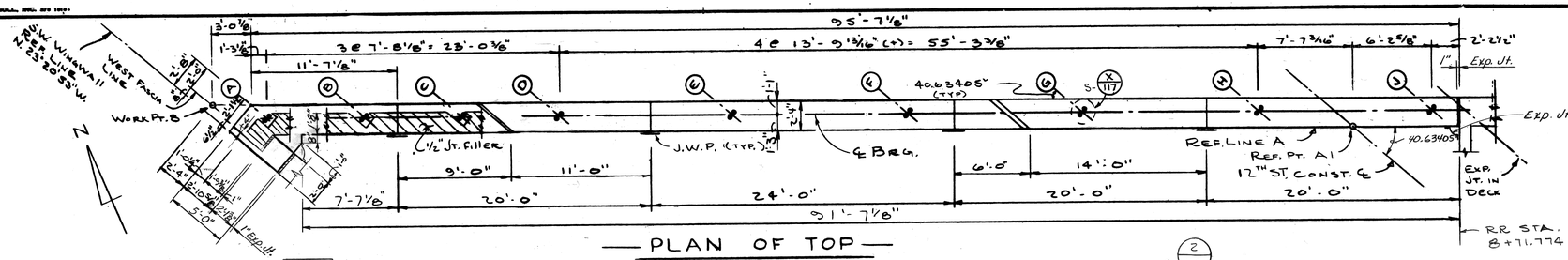
CITY OF DETROIT
CITY ENGINEERING

12TH ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL - BRM 2000 (196)

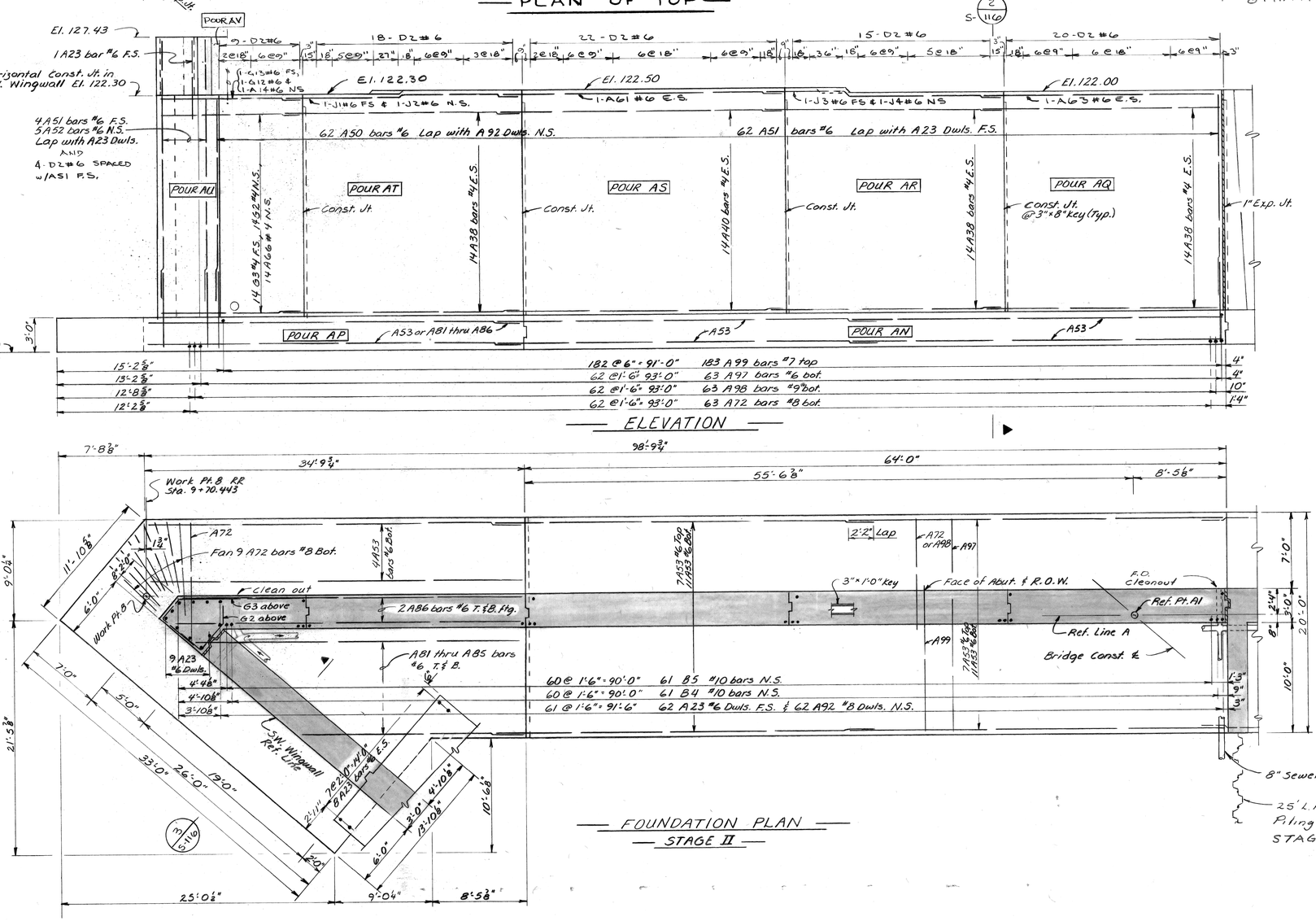
PARTIAL GENERAL PLAN OF STRUCTURE - LAFAYETTE

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
SHEET NO. S-104A
DATE 9-15-83

1 2 3 4 5 6 7 8 9 10 11

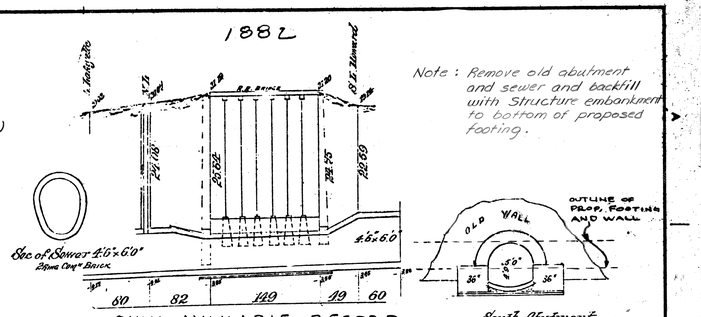


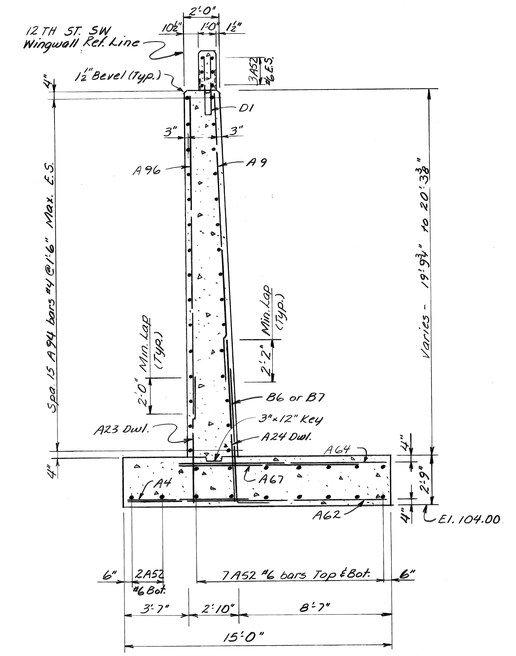
PLAN OF TOP



ELEVATION

FOUNDATION PLAN
STAGE II





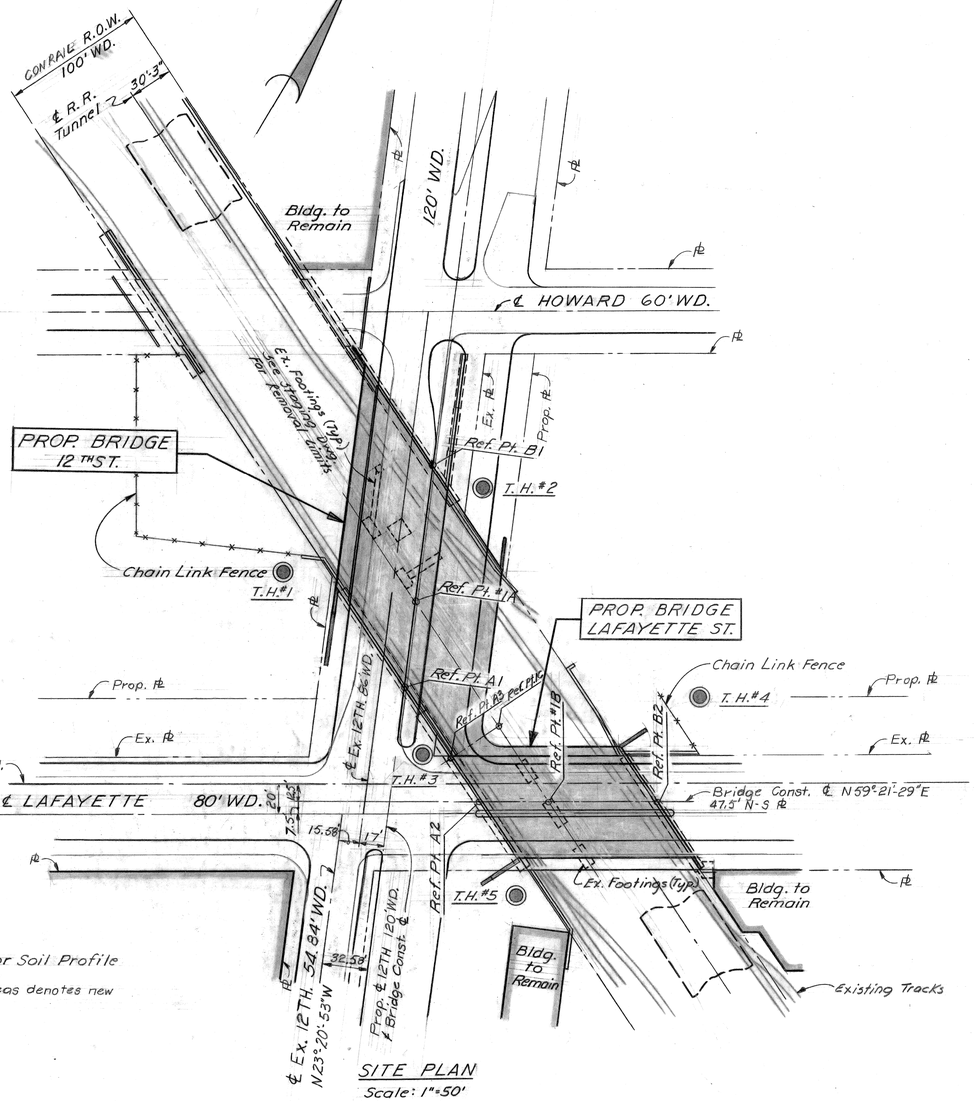
SECTION NUMBER
SHEET NUMBER
SECT. IS CUT OR SHOWN ON

KEY

Scale: ⅜"=1'-0" U.N.

REVISIONS LOCATED BY COORDINATES ON SHEET						REFERENCE DRAWINGS	DESIGNED BY	R. Kahn	APPROVED:	CITY OF DETROIT CITY ENGINEERING DIVISION - EPMD FOR MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.	12TH. ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL ABUTMENT A 12TH. ST. (WEST HALF)	SHEET OF SHEETS
COOR'D	DESCRIPTION	DR'N	CK'D	APV'D	DATE		DRAWN BY	J.M. & RAK	STRUCTURAL ENGINEER			CONTRACT NO. 07110 A
							TRACED BY	—	HEAD CIVIL ENGINEER			DRWG. NO. S-109
							CHECKED BY	J.M. RAK	CITY ENGINEER			DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

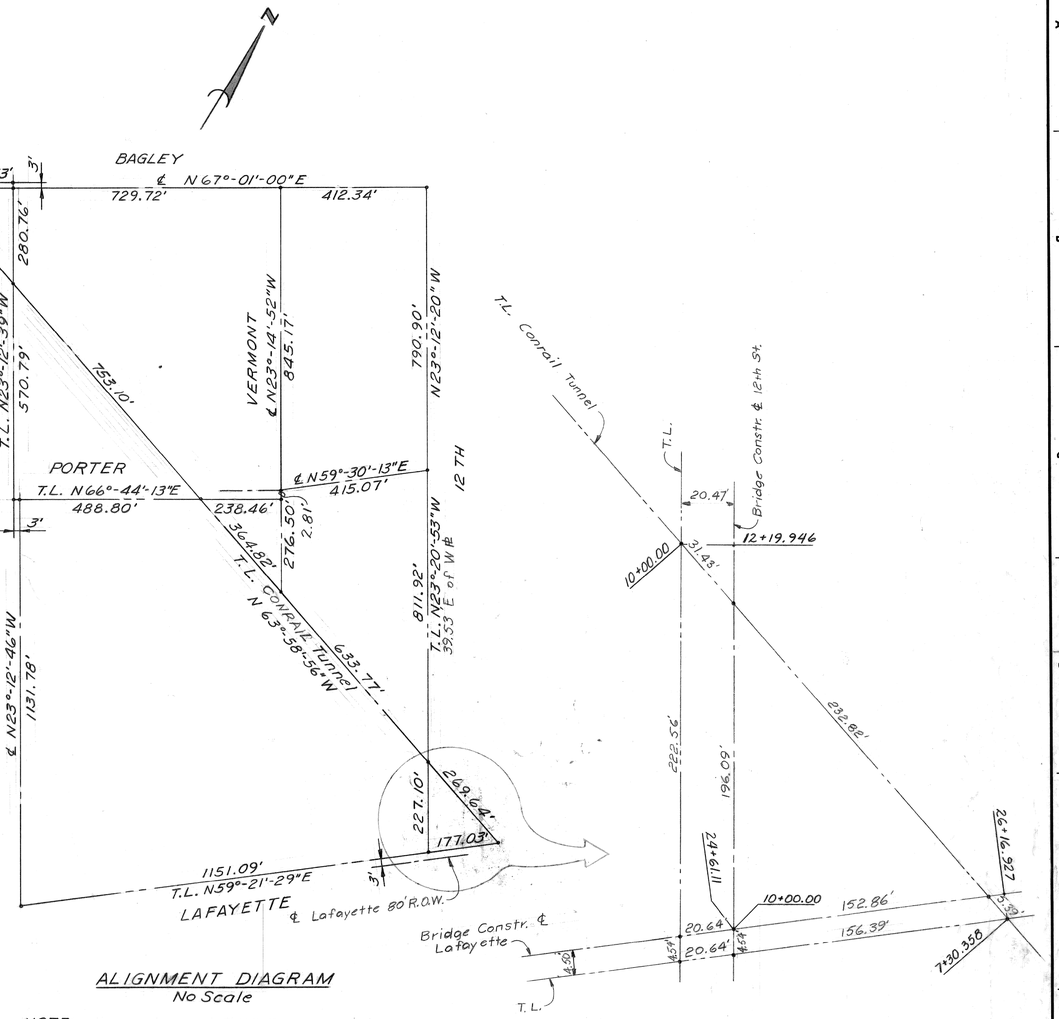


SITE PLAN
Scale: 1"=50'

Notes:

◉ Indicates Test Hole for Soil Profile

Heavy Lines & Shaded areas denotes new Bridge construction



ALIGNMENT DIAGRAM
No Scale

NOTE:
T.L. 12TH St. is 39.53' E. of W. ℄
T.L. Conrail is 3.75' N. of ℄ Tunnel & 26.50' S. of N. ℄
T.L. Lafayette is 43' N of S. ℄

The work covered by these plans includes removing portions of structures, construction of the proposed bridge and placing slope paving to the limits shown. All other work is included in the Road Plans which are a part of this contract. Topography shown hereon represents conditions existing at the time the field survey was made. However, these conditions may have been materially altered by the operations of others prior to this contract.

The information concerning train movement and the speed thereof does not represent a commitment by the Conrail railroad to continue them unchanged inasmuch as they are subject to change without notice.

Approximately 100 per cent of the cost of this structure represents a hazard to railroad operations.

RAILROAD TRAFFIC

CONRAIL EXPECTS APPROX. 1 FREIGHT MOVEMENT PER DAY AT A MAXIMUM SPEED OF 2 M.P.H. THIS DOES NOT REPRESENT A COMMITMENT ON THE PART OF CONRAIL TO CONTINUE MOVEMENTS UNCHANGED INASMUCH AS THE ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Bridge Numbers	12th Street (Rosa Parks Blvd.)	Lafayette Street
Michigan Department of Transportation	X 01 of 82-22-59	X01 of 82-22-58
City of Detroit	X0-60	X0-61
Consolidated Rail Corp.	0.75	0.74
U. S. Department of Transportation	512269 U	512268 M

AVE. DAILY TRAFFIC (ADT) - YEAR 2000
LAFAYETTE 30,000 ADT
TWELFTH ST 12,500 ADT

CODE'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY	McGuire
DRAWN BY	R.H.
TRACED BY	
CHECKED BY	J.M.

APPROVED: T. E. McGowan
STRUCT. ENG'R.
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERS DIV. E.P.&M.D.

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

GENERAL PLAN OF SITE BRM 2000 (196)

SHEET ___ OF ___ SHEETS
CONTRACT No. 07110A
DRWG No. S101
DATE NOV. 1979

BRUNING 80731• | FORM NO. 565-B14

Test Hole No. 1

El. 124.7

* N:2-2-3	120	
* N:2-2-3		
* N:12-22-10	110	Cinders, Clay, Brick & Concrete
* N:50-25/0		
Abut. A Ftg. El. 99.0 → * N:5-6-7	100	
N:5-7-12 S:821		Stiff Brown and Gray Silty Clay.
* N:3-4-5	90	
N:3-4-5 S:437		
* N:4-4-6	80	
N:3-3-4 S:322		
* N:2-3-4	70	Medium Gray Sandy Clay.
N:2-2-3 S:170		
* N:1-2-3	60	
N:3-3-3 S:157		
* N:3-3-4	50	
N:4-5-6 S:242		
* N:5-6-7	40	
N:4-7-9 S:376		
* N:6-8-11	30	
N:5-7-9 S:401		Medium Gray Silty Clay some Sand.
* N:5-6-7	20	
N:6-7-8 S:204		
* N:6-8-9	10	
* N:25-39-39		Very Compact Medium to Coarse Gray Sand.
* N:80-34/100	0	Very Hard Gray Sandy Clay some Gravel.
* N:25-100/2	-8	Refusal

Drove N.X. Casing to 30'-0" below ground surface. Water Level was 24'-7" below ground surface @ ½ hr. after completion.

Test Hole No. 2

El. 120.0

		Cinders, Bricks, Clay etc.
* N:3-3-3		
12TH-Abut. B Ftg. Elev. 109.0 → N:2-3-4 S:207	110	Medium Brown and Gray Sandy Clay with Cinder Brick Fill.
N:3-3-6 S:194		
N:3-3-5 S:214	100	
Abut. A Ftg. El. 99.0 → N:6-9-13 S:279		Stiff Brown with some Gray Silty Clay.
N:6-8-10 S:342	90	
N:3-3-4 S:402		
N:3-3-4 S:309	80	Medium Gray Silty Clay.
N:3-3-4 S:322		
N:3-4-5 S:242	70	
N:2-3-3 S:202		
N:3-4-6 S:179	60	Medium Gray Brown Silty Clay.
N:3-4-7 S:127		End of Boring
	50	

Piers 1 & 2 Ftg. El. 97.0

Drove N.X. Casing to 12'-0" below ground surface. Water Level was 19'-3" below ground surface @ ½ hr. after completion with casing in place.

Test Hole No. 3

El. 122.5

* N:5-3-3		Gravel, Cinder, Brick & Concrete.
* N:5-10-15	110	Medium Clay with Gravel, Concrete, Brick and Cinders.
		LAF.- Abut. B Ftg. Elv. 108.0
N:10-16-25 S:1324	100	Stiff Brown Sandy Clay, El. 104.0? Hard Brown Sandy Clay.
N:8-9-12 S:932		
N:6-7-9 S:780	90	Stiff Gray Sandy Clay.
N:4-5-6 S:437		
N:4-4-7 S:447	80	
N:3-4-6 S:396		Medium Gray Sandy Clay.
N:3-4-5 S:419	70	
N:3-4-5 S:229		
N:3-4-6 S:158	60	
N:2-3-3 S:172		End of Boring

Drove N.X. Casing to 17'-0" below ground surface. Water Level was 12'-3" below ground surface @ ½ hr. after completion.

Test Hole No. 4

El. 122.5

		Cinders, Brick, Sand, Concrete, Clay etc.
* N:2-6-5	110	
* N:2-2-3		
N:3-3-3 S:309	100	Brown and Gray Clay Little Cinders and Brick.
* N:3-7-10		
		Abut. A Ftg. El. 99.0
N:2-3-4 S:237	90	
* N:3-4-5		Medium Brown Gray Silty Clay.
N:2-3-4 S:326	80	
* N:3-4-5		
N:3-4-5 S:326	70	
* N:3-3-3		
N:3-3-4 S:202	60	
* N:4-5-6		
N:3-5-5 S:327	50	
* N:4-4-6		Medium Gray Silty Clay, some Sand.
N:4-4-7 S:339	40	
* N:3-4-7		
N:3-5-7 S:372	30	
* N:4-5-6		
N:4-7-9 S:350	20	
* N:4-6-7		
N:4-4-6 S:196	10	
* N:6-7-9		Stiff Gray Sandy Clay.
N:6-7-14 S:396	0	
* N:37-52/100		Very Hard Gray Sandy Clay some Gravel.
* N:51-106	-9	Refusal, Large Stone, Bolder or Bedrock

Drove N.X. Casing to 20'-0" below ground surface. Water Level was 12'-0" below ground surface @ ½ hr. after completion.

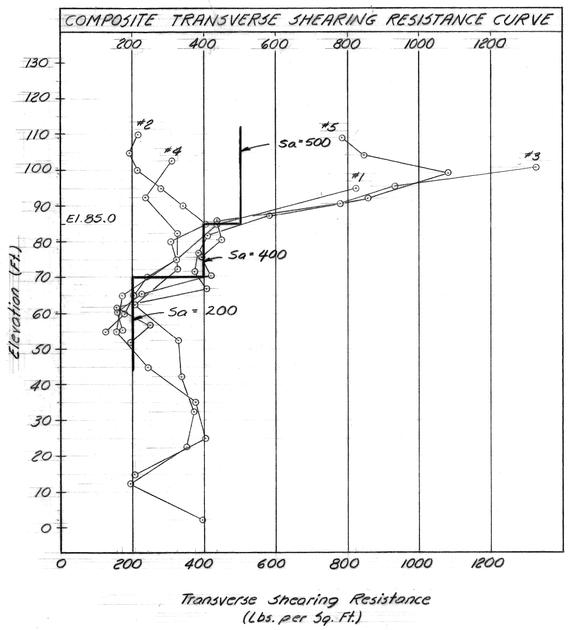
Test Hole No. 5

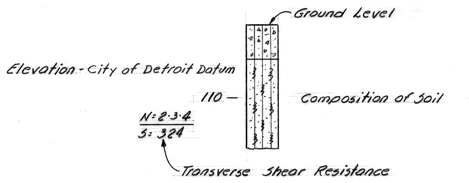
El. 119.0

* N:4-4-7		Medium Brown Sandy Clay with Brick, Cinder ect. Fill.
N:7-14-20 S:787	110	
N:7-14-24 S:847		
N:11-18-28 S:1080	100	Hard Brown Sandy Clay.
* N:14-19-20		
N:9-12-19 S:854	90	
N:5-5-8 S:580		
N:4-4-5 S:408	80	
N:3-4-5 S:385		Medium Gray Silty Clay, some Sand.
N:3-4-5 S:374	70	
N:4-4-5 S:405		
N:3-3-4 S:158	60	
N:22-3 S:249		
N:2-3-3 S:196	50	End of Boring

Drove N.X. Casing to 17'-0" below ground surface. Water Level was 12'-0" below ground surface @ ½ hr. after completion.

COMPOSITE TRANSVERSE SHEARING RESISTANCE CURVE





LEGEND

NOTES:

N = Indicates the number of blows required to drive the 2" ϕ O.D. Sampler 6" (or as noted) using a 140 lb. hammer falling 30".
S = Indicates Transverse Shearing Resistance in Lbs. per Sq. Ft., as determined by M.D.S.H. Standard Test.
* = Indicates no Sample.
All elevations are based on City of Detroit Datum.
Bottom of Pile elevation estimated Elev. +2.0
Min. Pile penetration to Elev. 50.0

Borings were taken March 5, 1973

REVISIONS LOCATED BY COORDINATES ON SHEET							REFERENCE DRAWINGS
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE		

DESIGNED BY	McGuire
DRAWN BY	A.G.
TRACED BY	
CHECKED BY	J.M.

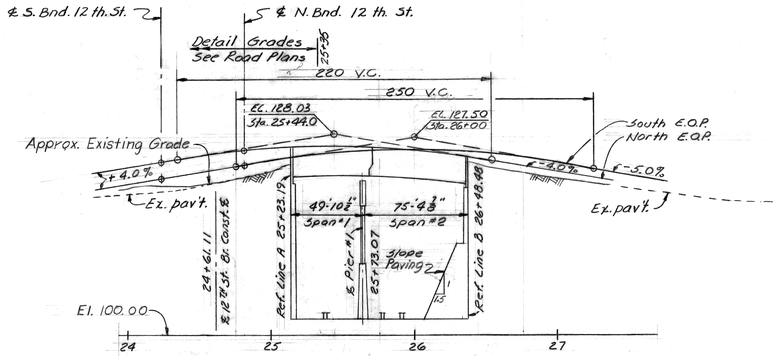
APPROVED: T.E. McGowan STRUCT. ENGR.
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - E.P.M.D.
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

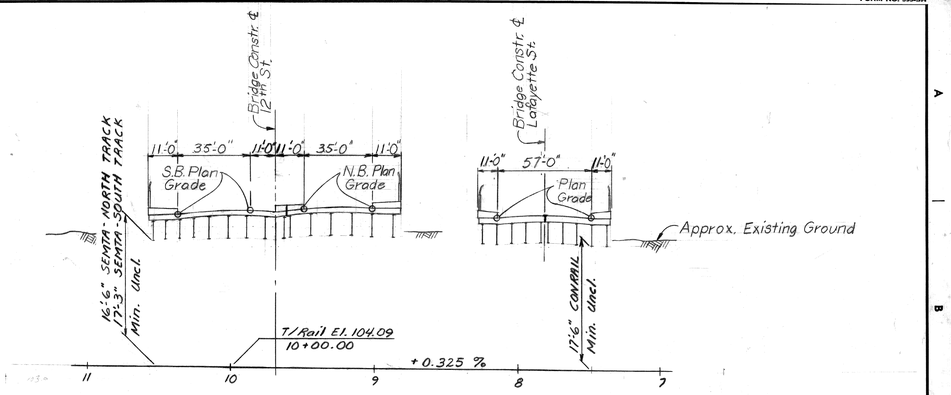
LOG OF SOIL BORINGS

SHEET ___ OF ___ SHEETS
CONTRACT No. 07110 A
DRWG No. 5102
DATE

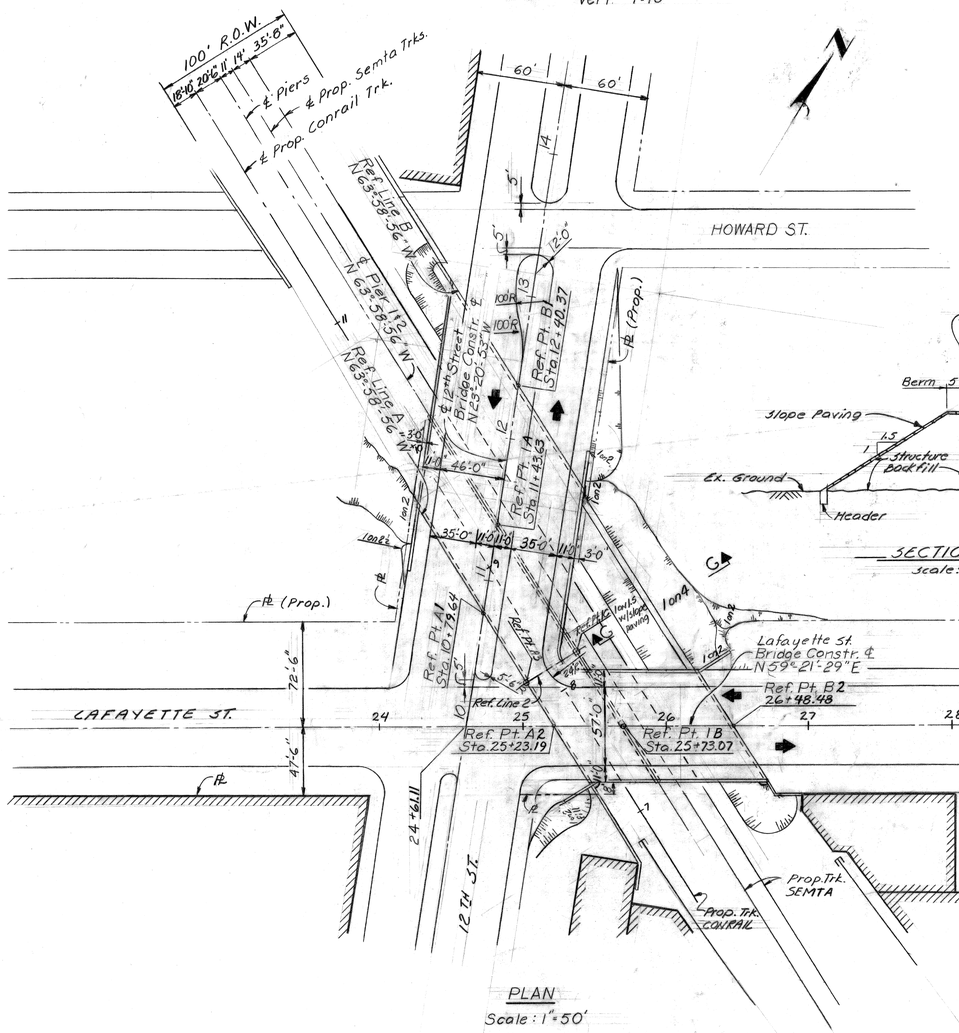


LAFAYETTE ST. PROFILE ALONG NORTH ℄ SOUTH E.O.P.

Scale: Horiz. 1"=50'
Vert. 1"=10'

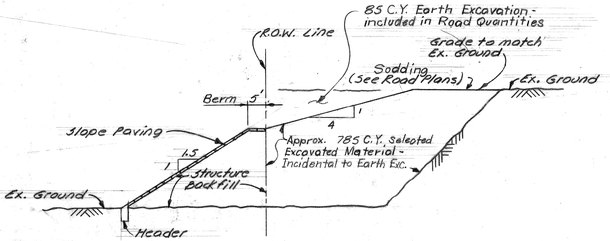


TRACK PROFILE for CONRAIL and SEMTA TRACKS



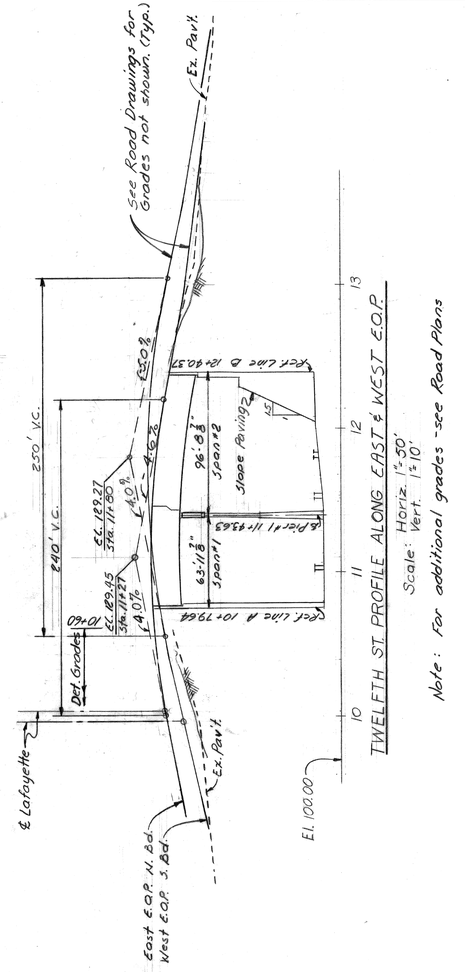
PLAN

Scale: 1"=50'



SECTION G-G

scale: 1"=20'



TWELFTH ST. PROFILE ALONG EAST ℄ WEST E.O.P.

Scale: Horiz. 1"=50'
Vert. 1"=10'

Note: For additional grades - see Road Plans

CITY OF DETROIT BENCH MARK

18-254 A 4'S of N ℄ W Jefferson, 4'W of E ℄ 15th El. 109.054

18-255 A 4'S of N ℄ Howard, 4'W of E ℄ 16th El. 111.299

28-350 6'S of S ℄ Fort, 5'W of E ℄ Tenth El. 113.13

Elevations given are referred to City of Detroit Datum, which is 479.755 ft. above sea level.

COOR'D	DESCRIPTION	DR'N	CK'D	APV'D	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

REFERENCE DRAWINGS

DESIGNED BY	McGuire
DRAWN BY	L.G.
TRACED BY	
CHECKED BY	J.M.

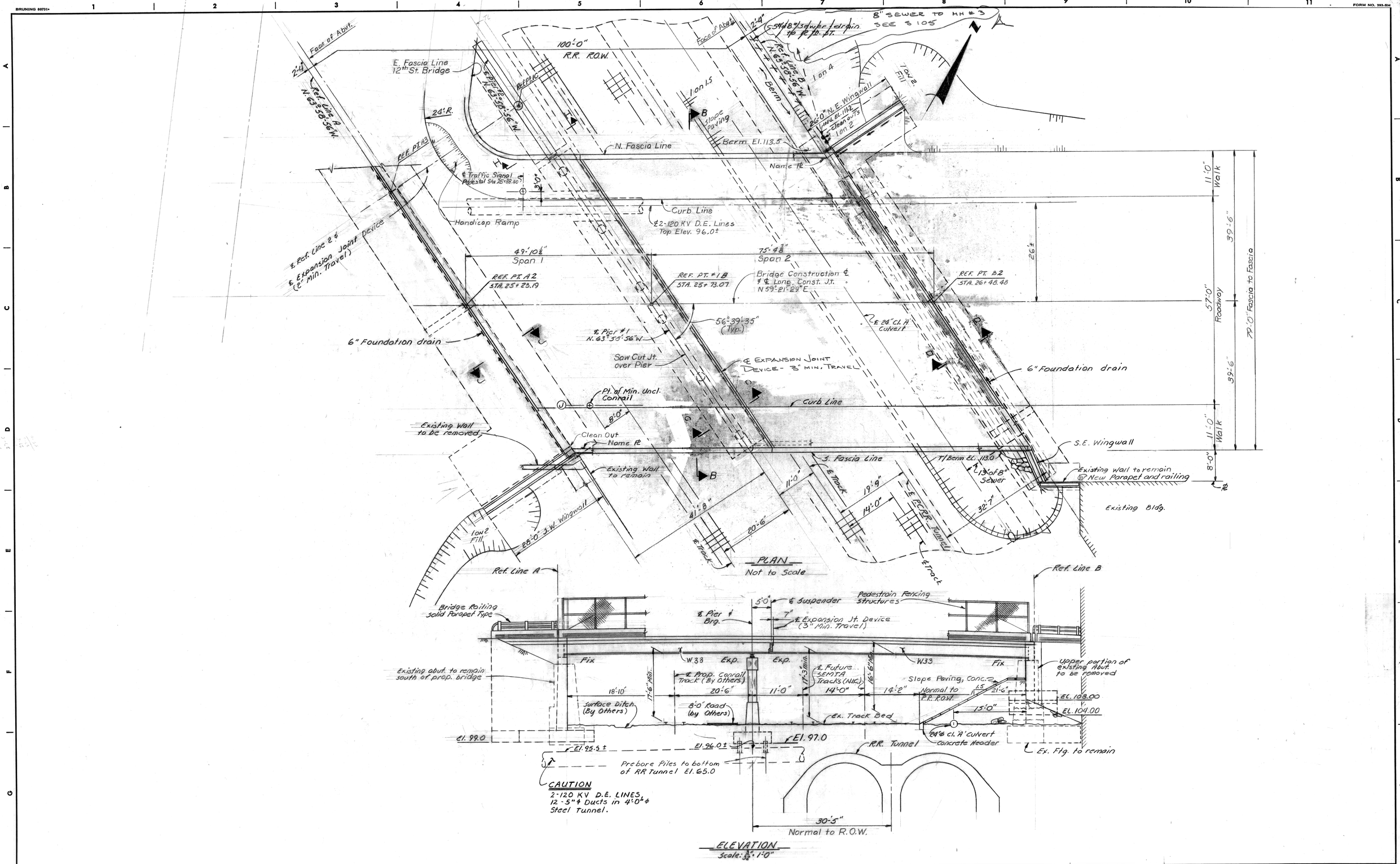
APPROVED: T.E. McGowan
STRUCT. ENG'R.
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - E.P.M.D.
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

GENERAL DRAWING — B.P.M. 2000 (196)

SHEET ___ OF ___ SHEETS
CONTRACT No. 07110 A
DRWG No. 5103
DATE NOV. 1979



A	BRIDGE DRAINAGE CHANGED	RMC				12/1/79
SCOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE	

REVISIONS LOCATED BY COORDINATES ON SHEET

REFERENCE DRAWINGS

DESIGNED BY	Mc Guire
DRAWN BY	A.G.
TRACED BY	
CHECKED BY	J.M.

APPROVED: T.E. McGowan
STRUCT. ENG'R.
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERS DIV. E.P.&M.D.

12TH ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL BRM 2000 (196)

GENERAL PLAN OF STRUCTURE - LAFAYETTE BLVD.

SHEET ___ OF ___ SHEETS
CONTRACT No. 07110A
DRWG No. S104
DATE NOV. 1979

Ex. fence
Ex. Slope
1 on 2
100'-0" CONRAIL R.O.W.
Face of Abut.
2'-4"
48'-0" S.W. Wingwall
Ref. Line A N 63°58'56"W
1 on 2½ Fill
12'-0"
11'-8"
24'-0" SEWER EASEMENT
15'-0"
20'-6"
22°30'
℄ Pier N 63°58'56"W
60°
℄ Conrail Tunnel
8'-0"
16'-0" N.W. Wingwall
1 on 1.5 Slope Paving
℄ T/Berm El. 120.50
Ref. Line D N 63°58'56"W.
W. Fascia Line
Pt. of Min. Uncl. SEMTA SOUTH TRACK
Pt. of Min. Uncl. SEMTA NORTH TRACK
Name Plate
Curb Line
℄ PROPOSED 5'-0"ϕ SEWER WITH 6" ENCASEMENT SEE DRWGS WS 1-3
℄ 4'-9"x5'-0" Sewer
℄ PLD Light Pole Sta. 11+63.06
℄ PLD Light Pole Sta. 12+76.17
6" Foundation Drain
42' of 8" Cl. 'C' Sewer, trench Detail 8 (A) 9
63'-11⅞" Span #1
96'-8⅞" Span #2
24H' of 8" cl 'C' Sewer Conn. to sewer (A)
Proposed bulkhead - see sewer drawing for details (Typ.).
38 LF 8" CLASS C SEWER TRENCH DETAIL 9
MH #3 - SEE WS 1 & 2
8" CLASS C SEWER FROM LAFAYETTE BRIDGE 174 LF TRENCH DETAIL 8 & 118 LF TRENCH DETAIL 9
114'-0" Fascia to Fascia
3'-0"
11'-0" Walk
35'-0" Roadway
11'-0" Left Turn Lane
11'-0" Median
35'-0" Roadway
11'-0" Walk
Ref. Pt. A1 Sta. 10+79.64
Ref. Pt. #1A Sta. 11+43.63
Ref. Pt. B1 Sta. 12+40.37
5'-7"
CLEANOUT
40°38'-05" (Typ.)
Bridge Constr. ℄ N 23°-20'-53" W
℄ Long. Exp. Jt.
15'-0"
6" Paint stripe (Typ.)
Saw Cut Jt. over Pier
℄ Expansion Jt. Device (3" Min. Travel)
℄ Exp. Jt. Device (2" Min. Travel)
Ref. Pt. A2
41'-0"
℄ PLD Light Pole Sta. 10+65.61
℄ PLD Light Pole Sta. 11+69.34
℄ 24' Cl. 'A' Culvert
6" Foundation drain
Ref. Line 2 N 26°01'04"E
Handicap ramp
24'R.
RAILING
11'-0"
℄ Track
℄ Trk.
14'-0"
19'-5"
℄ Conrail Tunnel
℄ Fascia Line
32'-7"
8" Cl. 'C' sewer Conn. to Ex. Sta. 1st Fd. Wall 7
Berm
1 on 4 Fill
10 on 2 Slope
30'-0"
N.E. Wingwall
Ref. Line B
6'-1"
N. Fascia Line Lafayette St. Bridge ℄ Pier & Brg.
PLAN
Scale: 3/32" = 1'-0"
Pedestrain Fencing Structures Two
Ref. Line A
5'-0"
℄ Suspender
7" ℄ Expansion Jt. Device (3" Min. Travel)
Bridge Railing Solid Parapet Type (Modified
Two Tube Railing
W33 Exp.
Exp.
3'ϕ
17'-3" min.
℄ Prop. Conrail Track (By Others)
20'-6"
11'-0"
14'-0"
14'-2"
16'-9" Min.
W36 or W33
5'-0" Berm (Typ)
Fix
Slope Paving, Concrete
EL. 115.00
EL. 109.00
21'-6"
1.5
15'-0"
2' Min.
17'-6" min.
Normal to R.O.W.
18'-10"
Surface Ditch (by others)
8'-0" Road (by others)
℄ Future SEMTA Tracks (N.I.C.)
Concrete header
24'ϕ Class 'A' culvert
R.R. Tunnel
Upper portion of exist. Abut. to be removed
el. 99.0
Elev. 97.07
Prebore piles to bottom of R.R. Tunnel Elev. 65.0
30'-5" Normal to R.O.W.
ELEVATION
Scale: 3/32" = 1'-0"

Bulkhead sewer each side of footing, remove under footing, backfill with Structure Embankment
12TH. St. Bridge Constr. ℄
el. 102.15*
el. 99.0 ℄ ABUT. A
el. 97.0 ℄ PIER #1
PREBORED 60 T PILE (TYP.) (PIER #1)
*OUTER LIMITS OF SEWER STRUCTURE AS FIELD MEAS. ON 6-21-77
9.0'*
24.8'*
NOTE: SECTION SHOWN AT PIER, ABUT. A SIMILAR EXCEPT AS NOTED.
SECTION E-E
SCALE: ⅜" = 1'-0"

A	BRIDGE DRAINAGE CHANGE	PAK			12/78
CODE	DESCRIPTION	DR'N	CK'D	APV'D	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

REFERENCE DRAWINGS

DESIGNED BY Mc Guire
DRAWN BY A.G.
TRACED BY
CHECKED BY J.M.

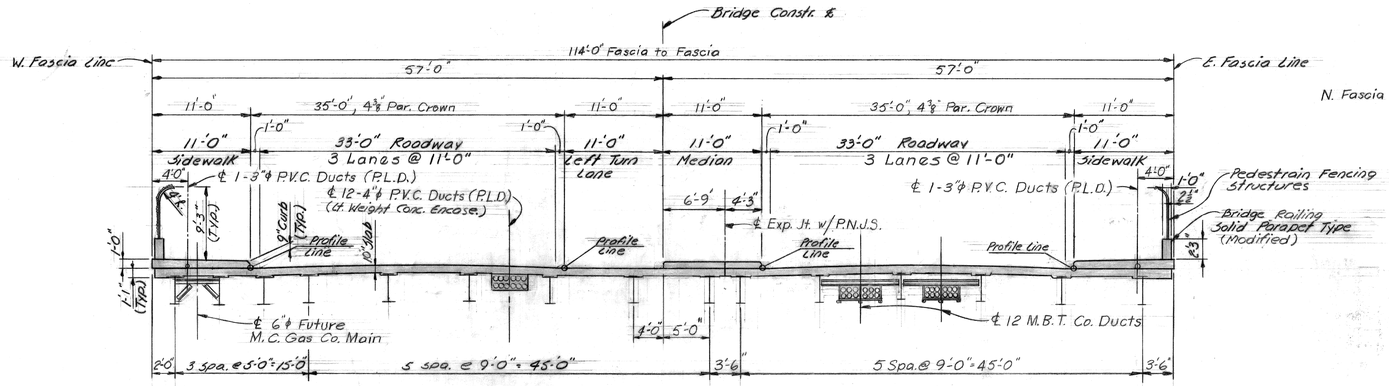
APPROVED: T. E. McGovern STRUCT. ENG'R.
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERS DIV. E.P.&M.D.
DEPARTMENT OF STATE HIGHWAYS & TRA

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

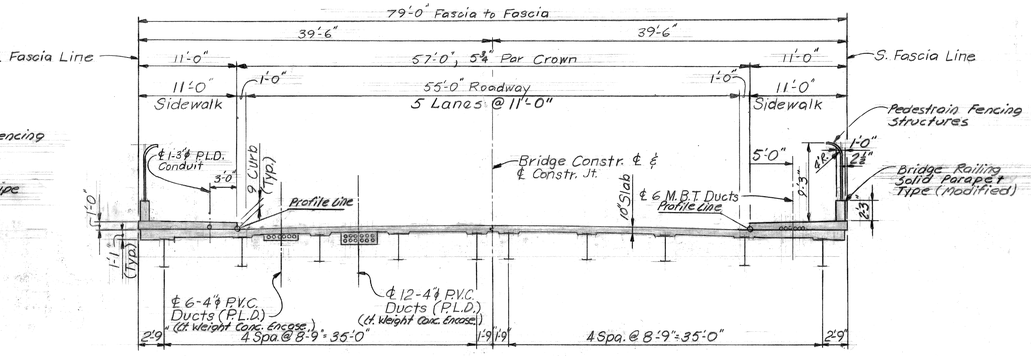
GENERAL PLAN OF STRUCTURE - 12TH ST. BRM 2000 (196)

SHEET ___ OF ___ SHEETS
CONTRACT No. 07110 A
DRWG No. S105
DATE NOV. 1979



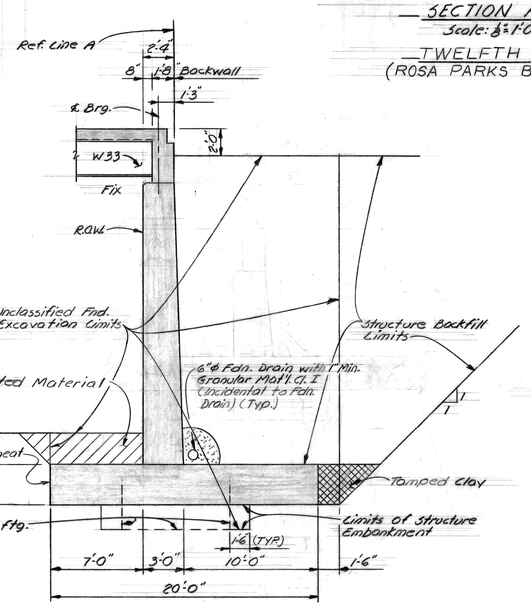
SECTION A-A
Scale: ⅛" = 1'-0"

TWELFTH ST.
(ROSA PARKS BLVD.)

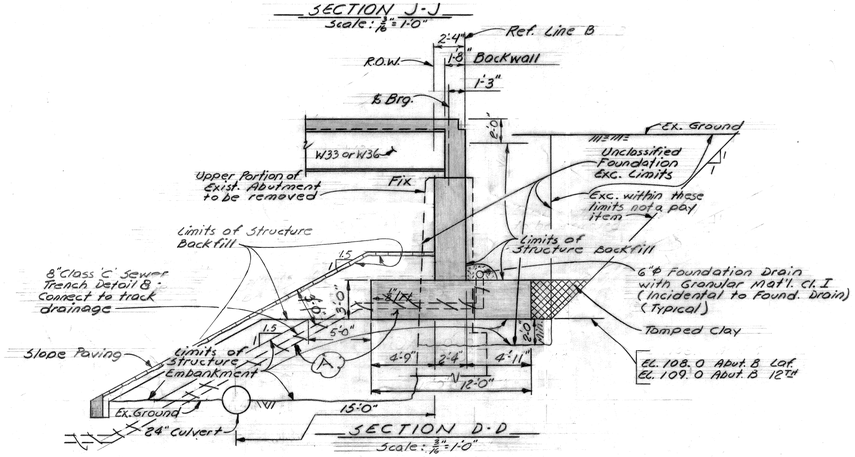


SECTION B-B
Scale: ⅛" = 1'-0"

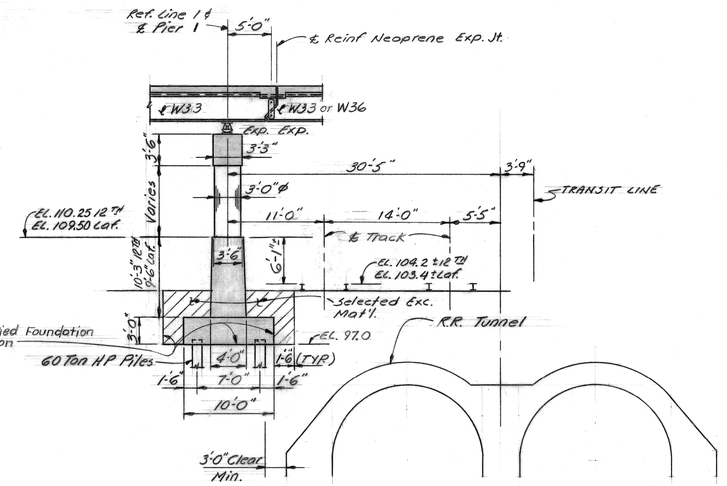
LAFAYETTE ST.



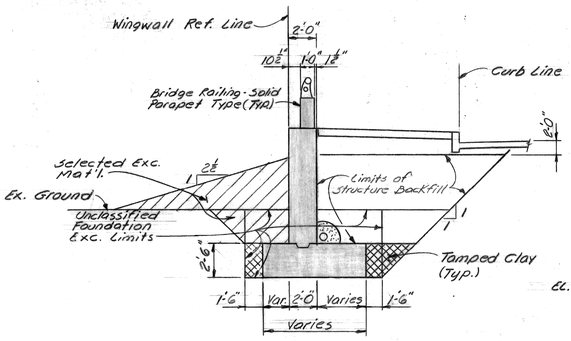
SECTION J-J
Scale: ⅛" = 1'-0"



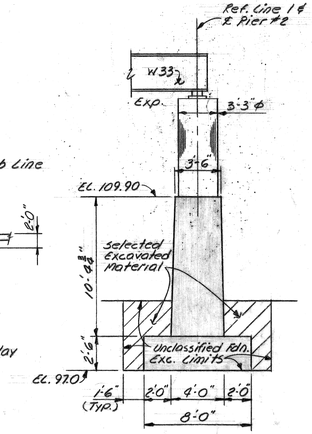
SECTION D-D
Scale: ⅜" = 1'-0"



SECTION C-C
Scale: ⅜" = 1'-0"



SECTION F-F
Scale: ⅜" = 1'-0"



SECTION H-H
Scale: ⅜" = 1'-0"

MISCELLANEOUS QUANTITIES

ITEM	Unit	12th STREET	LAFAYETTE ST.	TOTAL
Removal of Portions of Structures	Lump Sum	—	—	1
Structure Embankment (C.I.P.)	C.Y.	710	415	1,125
Structure Backfill (C.I.P.)	C.Y.	4,970	3,030	8,000
Temporary Steel Sheet Piling	S.F.	825	1,015	1,840
8 in. Class "C" Sewer Trench Det.8	L.F.	120 ~~286~~	54 67	~~340~~ 187 (A)
Slope Paving, Concrete	S.Y.	785	445	1,230
Slope Protection Headers	L.F.	316	188	504
84" Class A Culvert	L.F.	294	168	462
8" CLASS "C" SEWER-TRENCH DETAIL 9	L.F.	198	0	198 (A2)
8" SEWER TAPS	EA	2	0	2 (A)

The line separating 12th St. and Lafayette St. quantities is Ref. Line 2 extended

GENERAL NOTES:

The design of this structure is based on current AASHTO Standard Specifications for Highway Bridges (H 25-44 loading) and the M.D.S.H. Specifications for the Design of Highway Bridges - 1958 Edition. Live load plus impact deflection = 1/800 of span length and 1/300 of cantilever arm.

"Slope Paving, Precast Concrete" may be used in lieu of "Slope Paving, Concrete" at the Contractor's option. For details see Standard Drawing SPE.

Structural Light Weight Conc. will be used to encase the 12-4" ϕ PVC ducts (P.L.D.)

Tamped Clay and Selected Excavated Material are incidental to Unclassified Foundation Excavation.

Structure Embankment limits shall extend to 5' outside the toe at all abutment and wingwall footings and slope down on a 1 on 1.5 slope to existing ground. All other fill under slope paving shall be Structure Backfill.

Trackwork, 8' Access road, and surface drainage ditch by Consolidated Rail Corp.

Except where otherwise indicated on these plans or in the Proposal and Supplemental Specifications contained herein, all materials and workmanship shall be in accordance with the Michigan Dept. of State Highways and Transportation Standard Specifications for Construction 1979 Edition.

Prior to any excavating, Mr. L. Rizzo of Detroit Edison (237-9513) shall be contacted. The exact location of the 48" conduit in Lafayette Street shall be confirmed by hand digging.

REVISIONS LOCATED BY COORDINATES ON SHEET					
LETTER	DESCRIPTION	DR'N	CK'D	APV'D	DATE
A	BRIDGE DRAINAGE CHANGE	RKK			11/19

REFERENCE DRAWINGS

DESIGNED BY	McGuire
DRAWN BY	A.G.
TRACED BY	
CHECKED BY	J.M.

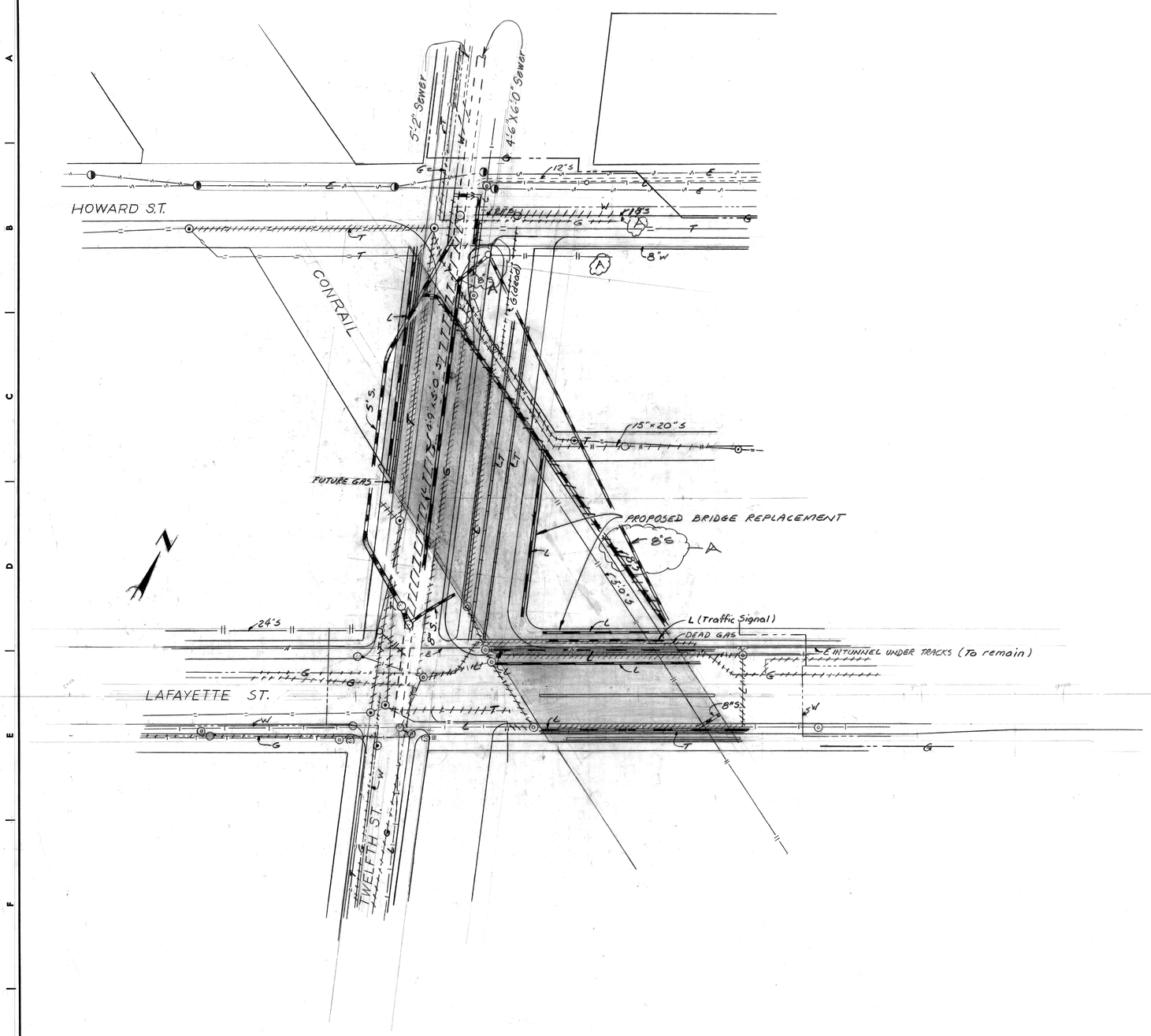
APPROVED: T. E. McLouran
STRUCT. ENG'R.
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERS DIV. EPTMD

12TH ST. (ROSA PARKS BLVD) & LAFAYETTE ST. CROSSING CONRAIL

GENERAL PLAN OF STRUCTURE

SHEET ___ OF ___ SHEETS
CONTRACT No. 07110 A
DRWG No. S106
DATE NOV 1979



SITUATION PLAN
SCALE: 1"=40'

LEGEND

Utility	Existing	TO BE REMOVED OR ABANDONED	PROPOSED BY OTHERS	PROPOSED BY CONTRACTOR
Michigan Consolidated Gas Co.	G	G		
Michigan Bell Telephone Co.	M.H. T	T	T	
Water	W	W		W
Sewer	M.H. S	S		S
Public Lighting Commission	M.H. L	X		L
Detroit Edison Co.	M.H. E			

NOTES:
The contractor shall locate all active underground utilities prior to starting work, and shall conduct his operations in such a manner as to insure that those utilities not requiring relocation will not be disturbed.
For protection of underground utilities, the contractor shall dial 800-482-7171 a minimum of 48 hours prior to excavating in the vicinity of utility lines. All "Miss Dig" participating members will thus be routinely notified. This does not relieve the contractor of the responsibility of notifying utility owners who may not be a part of the "Miss Dig" alert system.

Name and Address of Utilities	Kind of Utility
City of Detroit Public Lighting Department 9449 Grinnell Detroit, Michigan 48213	Lighting Communications
City of Detroit Detroit Water and Sewerage Department 735 Randolph Street Detroit, Michigan 48226	Water Mains
City of Detroit Detroit Water and Sewerage Department 735 Randolph Street Detroit, Michigan 48226	Sewers
City of Detroit Detroit Fire Department 250 W. Larned Detroit, Michigan 48226	Fire Call Box
City of Detroit Detroit Police Department 1300 Beaubien Detroit, Michigan 48226	Police Call Box
City of Detroit Department of Transportation 1301 E. Warren Detroit, Michigan 48207	D.O.T.
City of Detroit Department of Transportation 1301 E. Warren Detroit, Michigan 48207	Traffic
Detroit Edison Company Detroit Service Planning 6200 W. Warren, B-207 W.S.C. Detroit, Michigan 48210	Electric Power
Michigan Bell Telephone Company Right of Way - Metro. Room 1510, 660 Plaza Drive Detroit, Michigan 48226	Telephone
Michigan Consolidated Gas Company One Woodward Avenue Detroit, Michigan 48226	Gas Mains

REVISIONS LOCATED BY COORDINATES ON SHEET						REFERENCE DRAWINGS
A	BRIDGE DRAINAGE CHANGE	FMK			12/80	
LETTER	DESCRIPTION	DR'N	CK'D	APV'D	DATE	

DESIGNED BY	McGuire
DRAWN BY	L.G.
TRACED BY	
CHECKED BY	J.M.

APPROVED: T. E. McGowan
STRUCT. ENG'R.
CITY ENGINEER

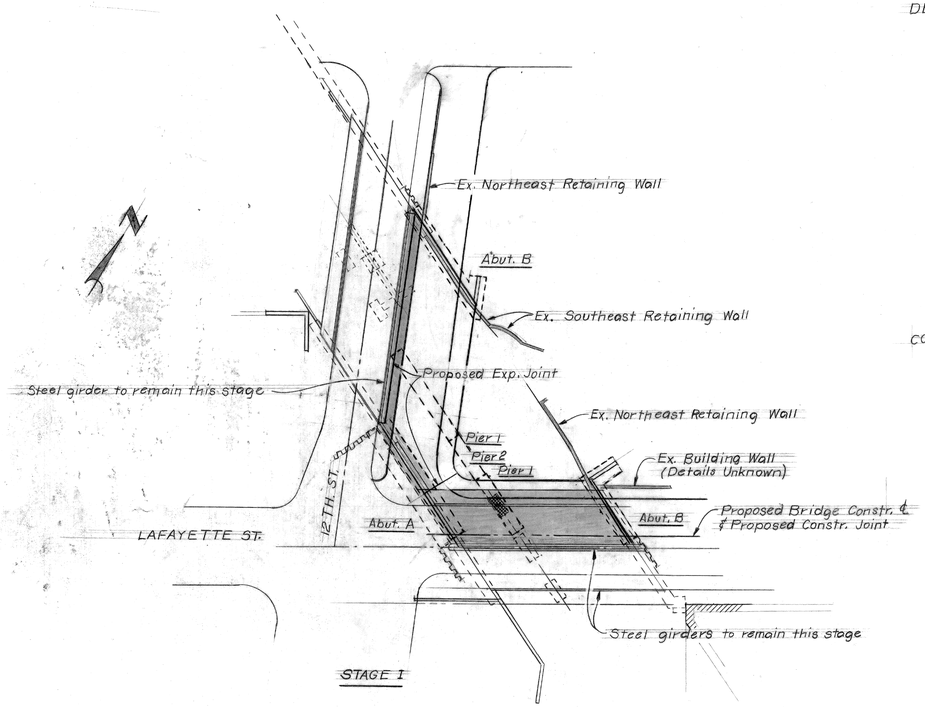
CITY OF DETROIT
CITY ENGINEERING DIVISION - E.P.M.D.
DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

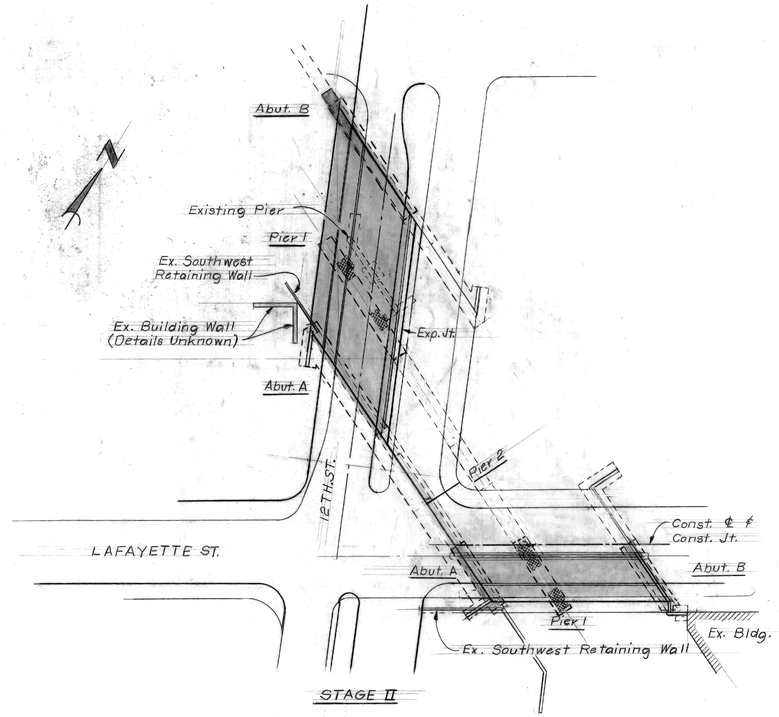
12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

EXISTING UTILITIES AND PROPOSED ALTERATIONS

SHEET ___ OF ___ SHEETS
CONTRACT NO. 07110A
DRWG NO. S107
DATE NOV 1979

R. CARROLL, INC. 378 1818





DEMOLITION- STAGE I

DEMOLITION OF THE NORTH PORTION OF THE LAFAYETTE BRIDGE SHALL NOT COMMENCE UNTIL THE EXISTING PUD COMM. CABLES ARE TEMP RELOCATED IN THE SOUTH PORTION OF THE BRIDGE (SEE ELECT. DRWGS). TIME EST. IS ABT. 2 MONTHS.

Remove the east walk from existing 12th street bridge.
Remove the north half of Lafayette St. bridge.

Remove the existing stone and concrete abutments and walls, shown shaded on 12th and Lafayette St. to 2 ft. min. below the proposed footing elevations.

Remove the Northeast retaining wall on 12th St. to 3 ft. below Plan Grade.

Remove the Southeast retaining wall on 12th St. to 3 ft. below finished Grade

Remove the Northeast retaining wall and building wall on Lafayette to 2 ft. below proposed footing elevation or 3 ft. below plan finished grade.

Remove the North half of the center pier on Lafayette St. including the northern most footing shown crosshatched. That portion of the pier necessary for support of the center girder shall remain intact.

CONSTRUCTION- STAGE I

RAILROAD TO COMPLETE TRACK WORK.

Construct the east portion of Abutment B and wingwall on 12th St. and the north portion of Abutment B and wingwall on Lafayette St.

Construct the east portion of Pier 1 on 12th St. and the north portion of Pier 1 on Lafayette St. Pier 1 on Lafayette St. will be built over and around the existing D.E. 120 K.V. line in tunnel approximately 26 ft N of the Bridge Constr. ℄.

Construct Pier 2

Construct the east portion of Abutment A on 12th St. and the adjoining north portion of Abutment A on Lafayette St.

Set the steel beams for both east portion 12th and north portion Lafayette St.

M.B.T. Co. to relocate their ducts from existing 12th St. bridge to new 12th St. bridge. Approximate time required to splice cables is 2 months.

Complete the bridge superstructure for both the east portion of 12th and the north portion of Lafayette Streets.

Drive Temporary Sheet Piling @ 4 locations. See Abutment Drawings for limits. Locate all active utilities prior to driving any sheeting.

DEMOLITION- STAGE II

After all utilities have been removed from the remaining portions of the existing bridges demolition can commence.

Remove the remaining superstructures from 12th and Lafayette Street bridges.

Remove the remaining stone and concrete abutments and walls, shown shaded, on 12th and Lafayette streets to 2 ft. min. below the proposed footing elevations or 3 ft. below plan finished grade.

Remove the pier bent and concrete base wall on 12th Street to the top of the existing steel grade beams. Remove the existing footings and that portion of the grade beams within the new footing outline, shown crosshatched, to elevation 96.5.

Remove the pier bent and concrete base wall and footings on Lafayette Street shown crosshatched.

THE WESTERLY PORTIONS OF THE FOUNDATIONS FOR THE PIER AND THE SOUTH ABUTMENT IN 12TH ST. SHALL NOT BE REMOVED OR DISTURBED UNTIL THE NEW 5'℄ ENCASED SEWER IS PLACED INTO SERVICE.

CONSTRUCTION- STAGE II

Construct the west portion of Abutments A and B and wing walls for 12th Street and the south portions of Abutments A and B and wingwalls for Lafayette St.

Construct the west portion of Pier 1 on 12th street.

BUILD THE 5'℄ ENCASED SEWER IN 12TH ST.

Construct the south portion of Pier 1 on Lafayette street.

Erect the remaining structural steel and complete the bridge superstructure for both 12th and Lafayette Streets.

Remove all temporary sheeting driven in Stage I.

GENERAL NOTES:

Areas shown shaded are to be removed - see specific demolition notes.

Stone abutments, walls, and piers that support girders shall not be removed within 2 ft. ± of the girder bearings.

Unless otherwise specified building foundations, building walls, etc shall be removed to 3 ft. below existing or proposed grades. Any walls, foundations, etc. within and below the proposed footing areas shall be removed to a minimum of 2 ft. below the bottom of footing elevation and backfilled with "Structure Embankment".

Demolition limits for the stone abutments, decks, piers, walls, etc. are shown on the existing bridge reference plans, sheets SR:1 THRU SR 12

THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE TRACK WORK TO BE DONE BY CONRAIL AND AT ALL TIMES, PROVIDE A CLEAR PATH TO ENABLE CONRAIL VEHICLES TO GET THRU THE JOBSITE.

Existing bridges will be closed to traffic until construction has been completed for Stage I. During Stage II constr. & Demo., Stage I (12th and Lafayette) will be open to traffic.

Demolition and construction notes indicate only the work required in each stage and is not intended as the required order that work is to be performed.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

REFERENCE DRAWINGS

DESIGNED BY	Mc Guire
DRAWN BY	L.G.
TRACED BY	
CHECKED BY	

APPROVED:

ENGINEER OF STREETS

HIGHWAY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - E.P.M.D.
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

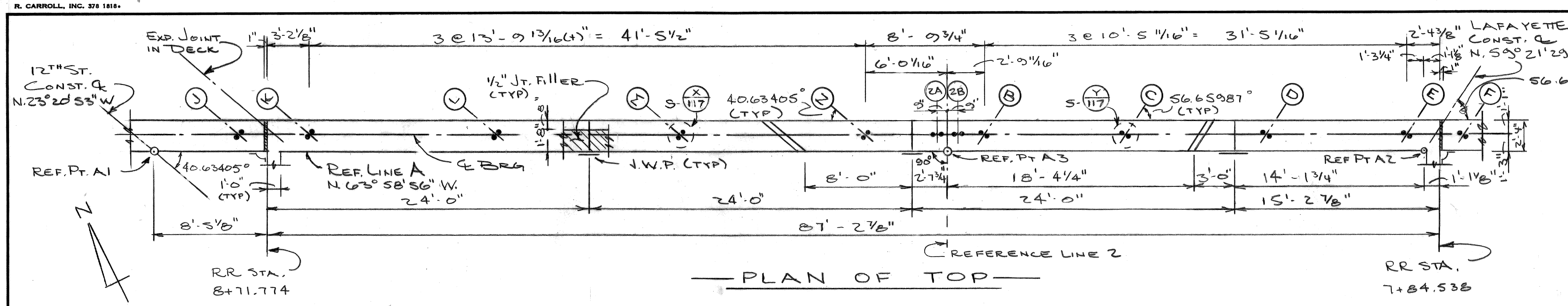
12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

STAGING DRAWING

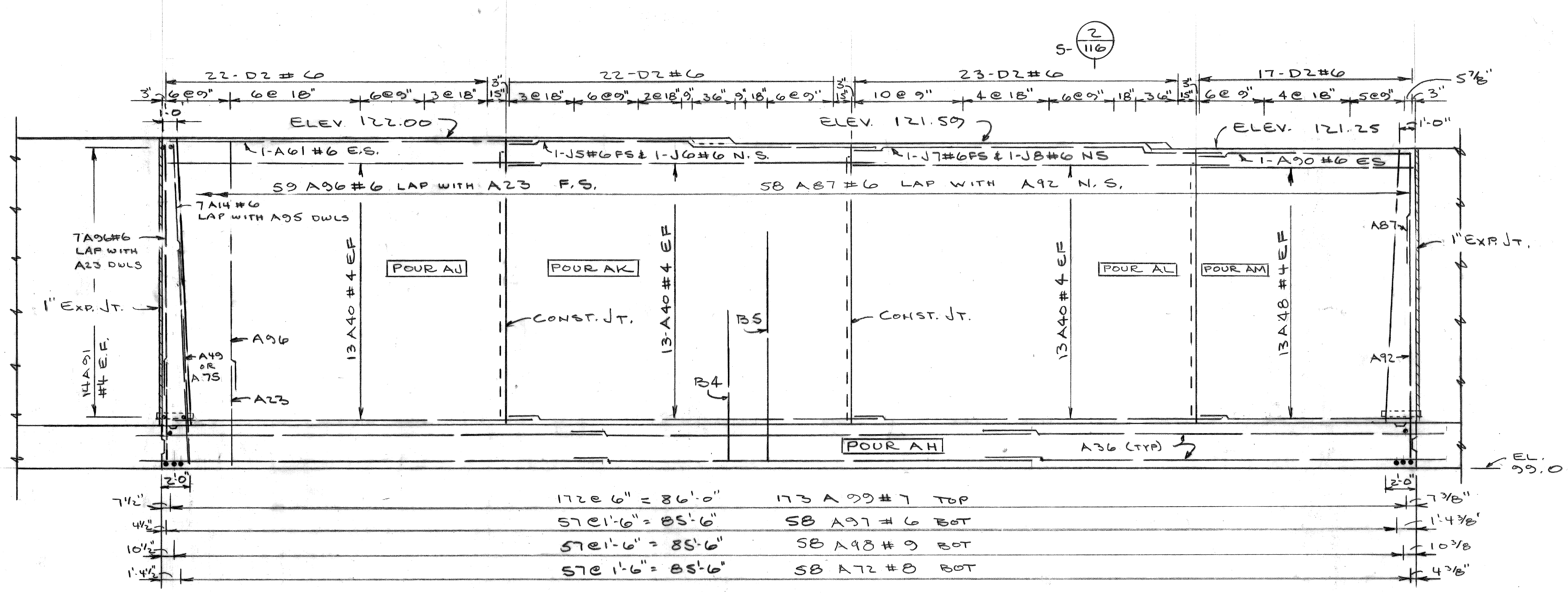
SHEET ___ OF ___ SHEETS
CONTRACT NO. 07110A
DRWG. NO. S-108
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

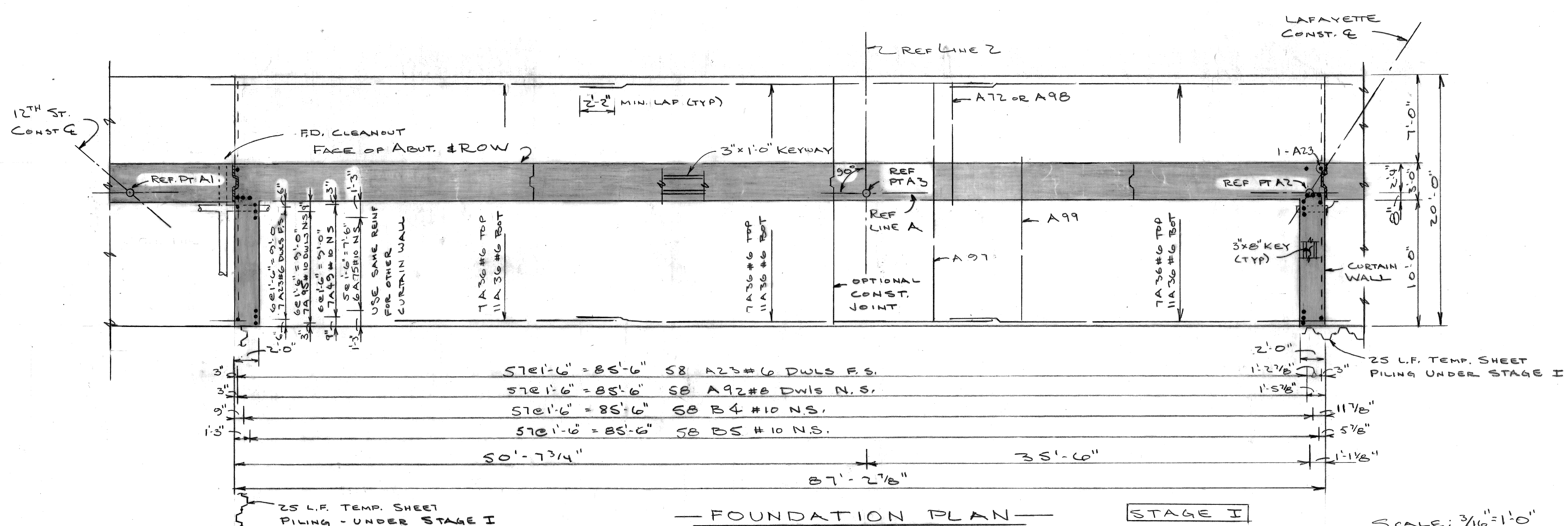
R. CARROLL, INC. 378 1818



PLAN OF TOP



ELEVATION



FOUNDATION PLAN

STAGE I

SCALE: 3/16" = 1'-0"

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

REFERENCE DRAWINGS

DESIGNED BY R. Kochen
DRAWN BY R. Kochen
TRACED BY —
CHECKED BY J. McGuire

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12TH. ST. (ROSA PARKS BLVD)
& LAFAYETTE ST. CROSSING CONRAIL

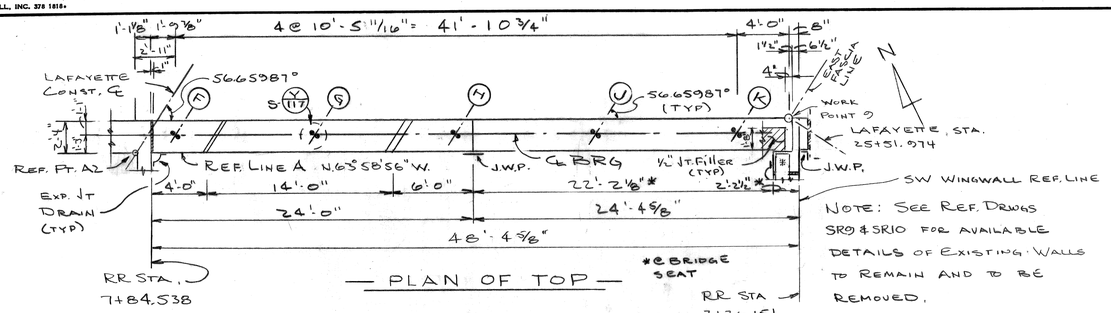
ABUTMENT A 12TH. ST. (EAST HALF)
& LAFAYETTE ST. (WEST HALF)

SHEET ___ OF ___ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-110
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

A B C D E F G

R. CARROLL, INC. 378 1818



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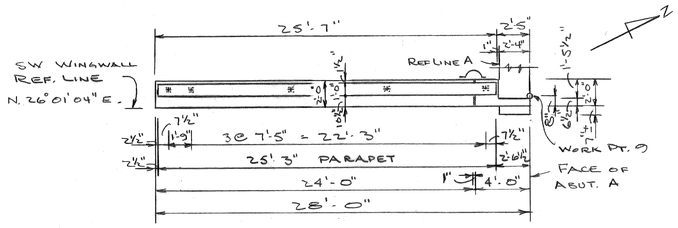
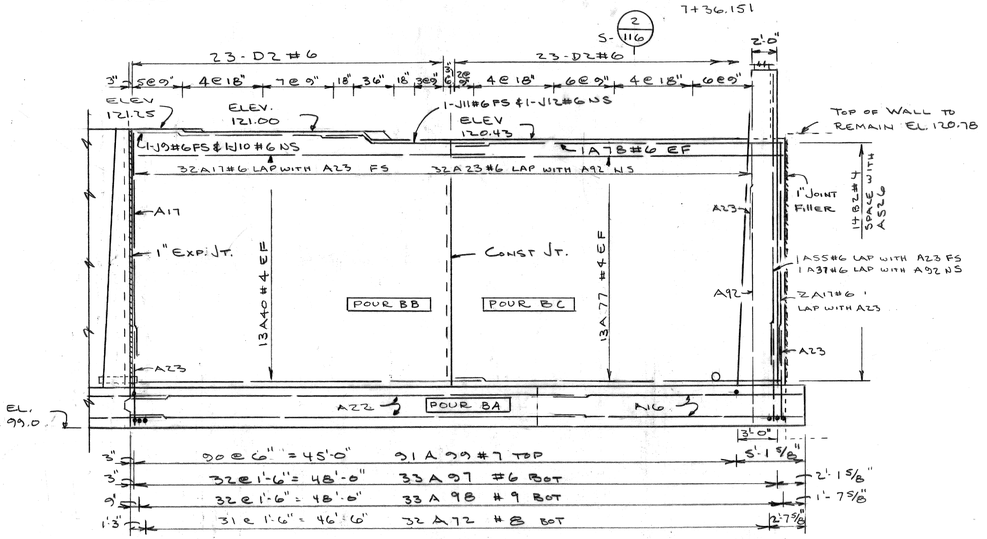


S-(4/116) — PLAN OF TOP —



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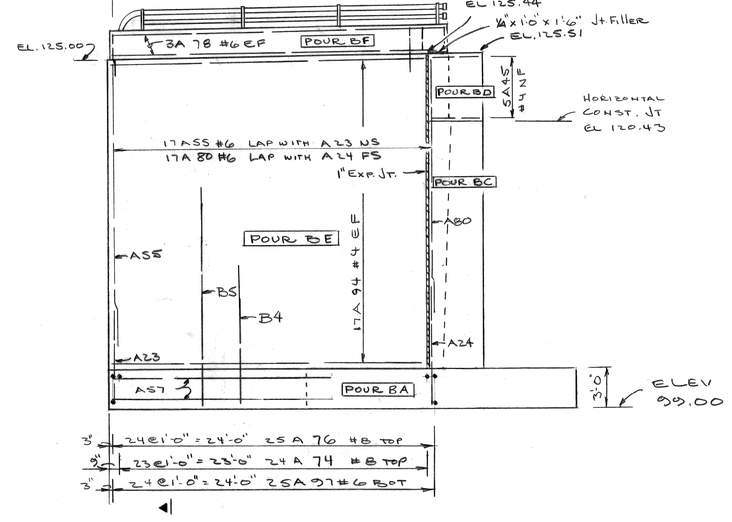

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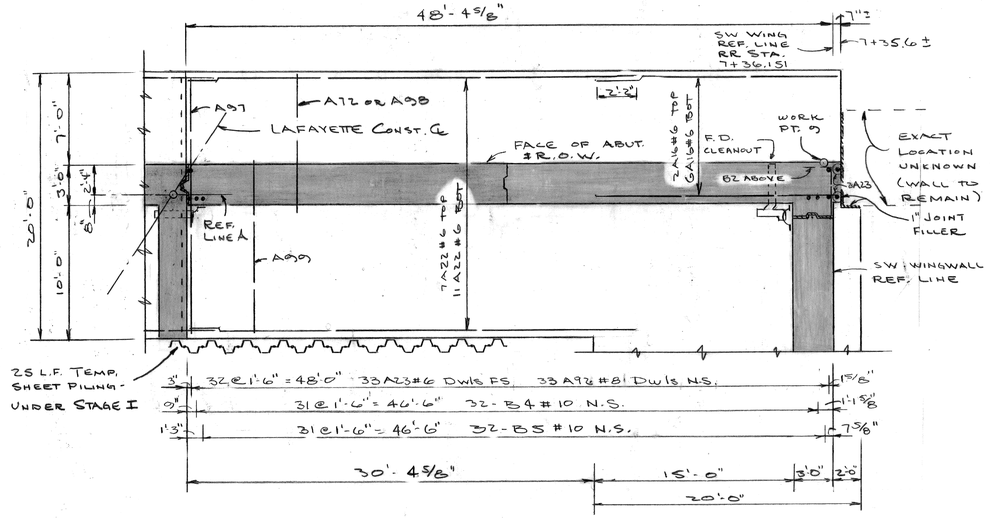
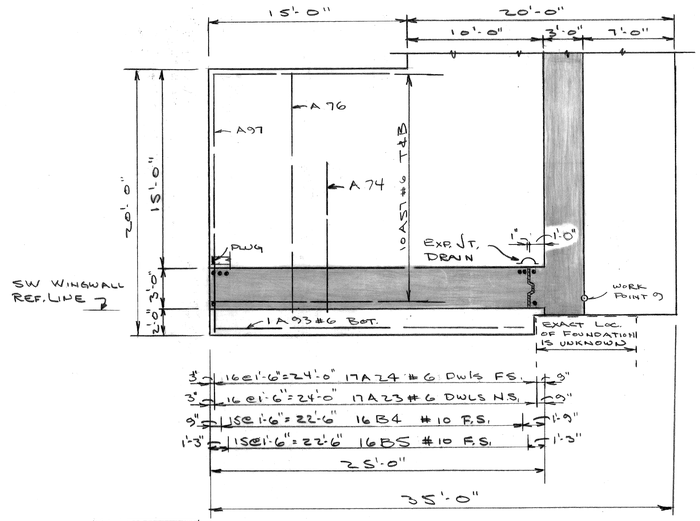


— FOUNDATION PLAN —

STAGE II



STAGE II

— FOUNDATION PLAN —
— LAFAYETTE - SW WINGWALL —

SCALE: 3/16" = 1'-0"

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY	R. Hawkins
DRAWN BY	R. Hawkins
TRACED BY	—
CHECKED BY	J. Mc Guire

APPROVED:

STRUCTURAL ENGINEER

HEAD CIVIL ENGINEER

CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

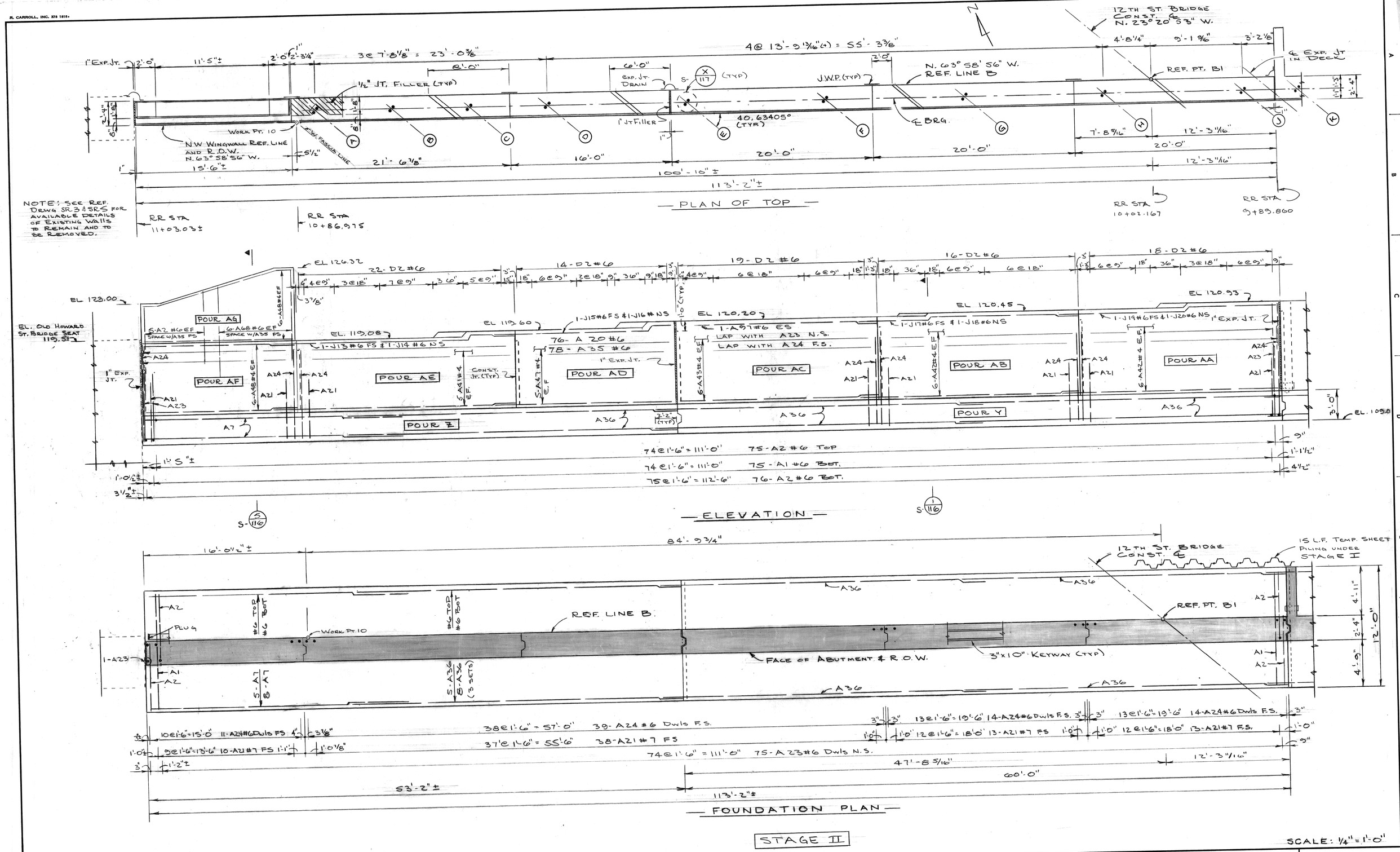
12TH. ST. (ROSA PARKS BLVD) & LAFAYETTE ST. CROSSING CONRAIL

ABUTMENT A LAFAYETTE ST. (EAST HALF) & S.W. WINGWALL

SHEET ____ OF ____ SHEETS	
CONTRACT NO.	07110A
DRWG NO.	S-111
DATE	NOV 1970

1 2 3 4 5 6 7 8 9 10 11

A B C D E F G



STAGE II

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

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE	REFERENCE DRAWINGS	
REVISIONS LOCATED BY COORDINATES ON SHEET							

DESIGNED BY R. Kaulen
DRAWN BY R. Kaulen
TRACED BY —
CHECKED BY J. McGuire

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

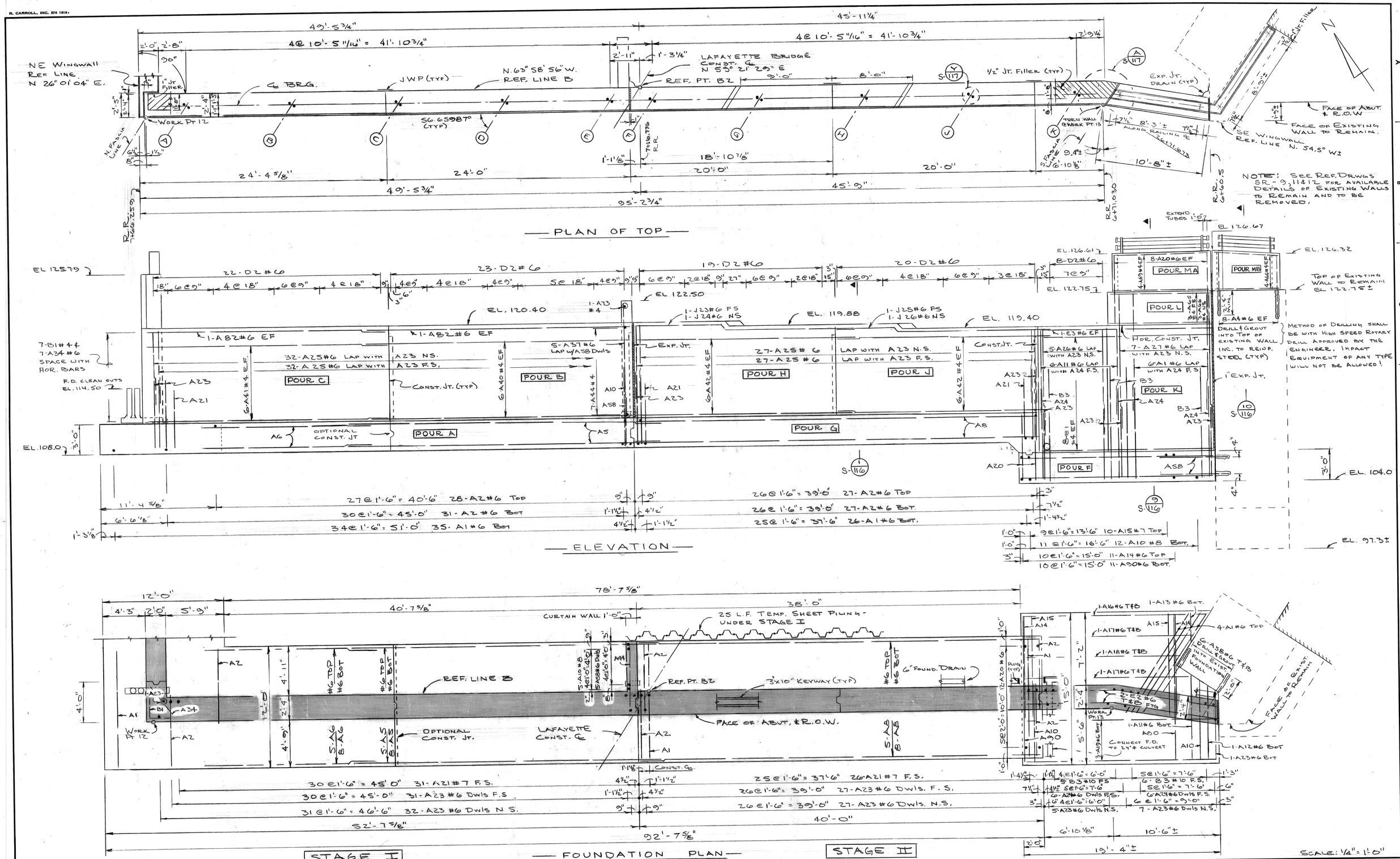
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12TH. ST. (ROSA PARKS BLVD)
& LAFAYETTE ST. CROSSING CONRAIL

ABUTMENT B 12TH ST. (WEST HALF)
& N.W. WINGWALL

SHEET ___ OF ___ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-112
DATE NOV 1979

R. CARROLL, INC. 313 1810



COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE	REFERENCE DRAWINGS	
REVISIONS LOCATED BY COORDINATES ON SHEET							

DESIGNED BY R. Karlen
DRAWN BY R. Karlen
TRACED BY —
CHECKED BY J. McGuire

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

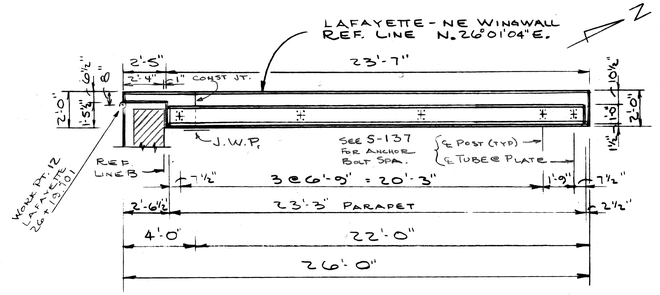
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12 TH. ST. (ROSA PARKS BLVD)
& LAFAYETTE ST. CROSSING CONRAIL

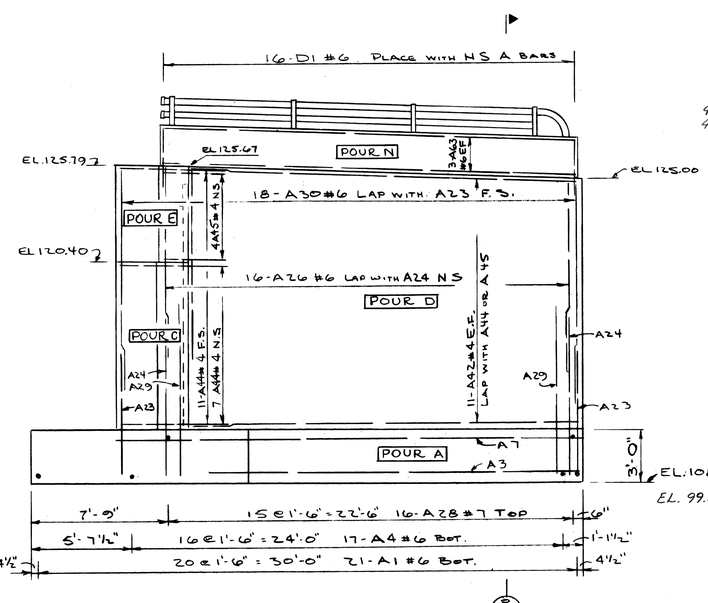
ABUTMENT B LAFAYETTE
& S.E. WINGWALL

SHEET ___ OF ___ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-114
DATE NOV 1979

R. CARROLL, INC. 313 1818

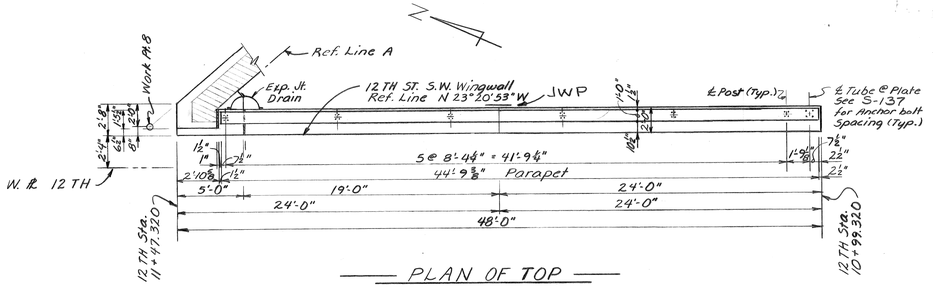


— PLAN OF TOP —



— ELEVATION —

S 8/116



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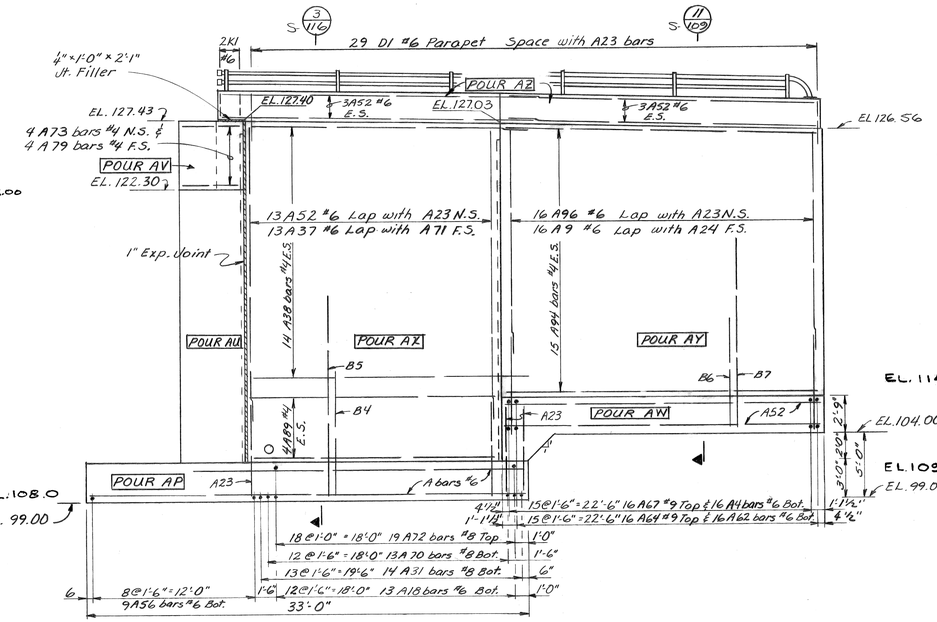
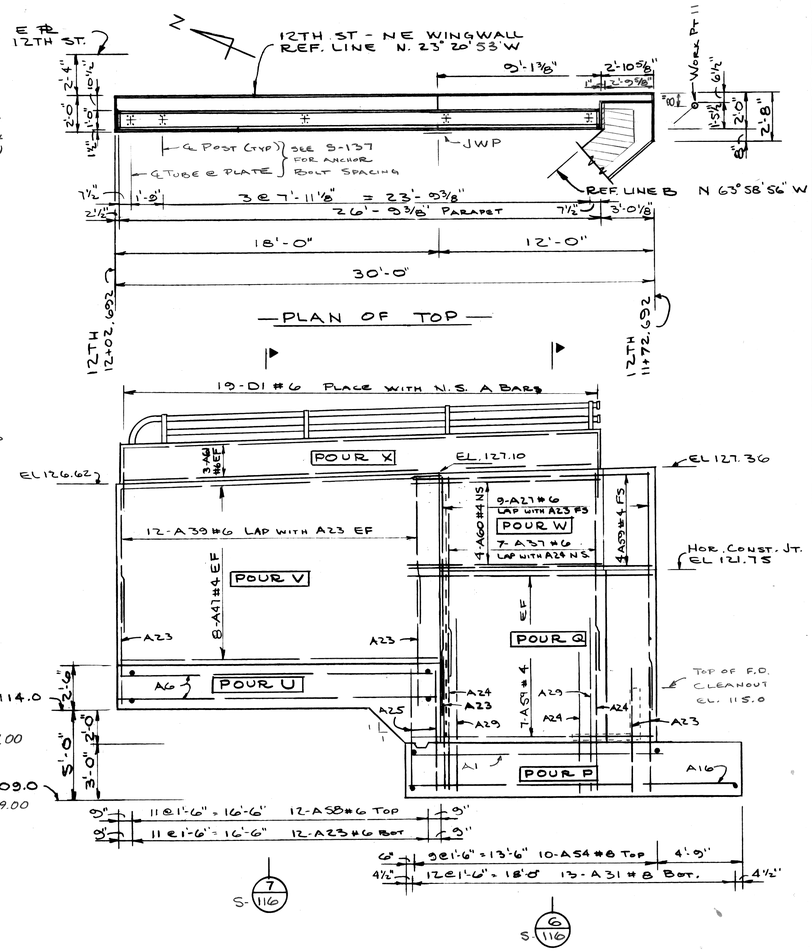


— ELEVATION —

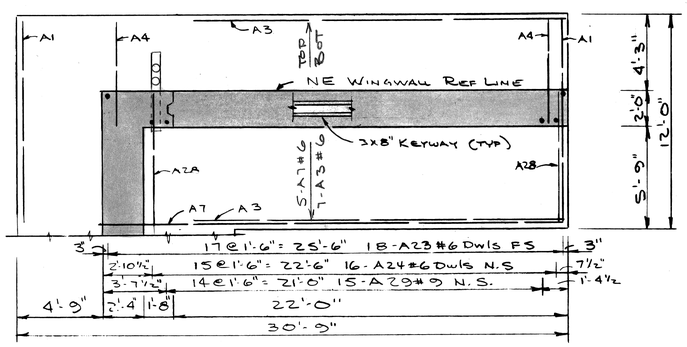


— PLAN OF TOP —

— ELEVATION —

S 7/116

S 6/116

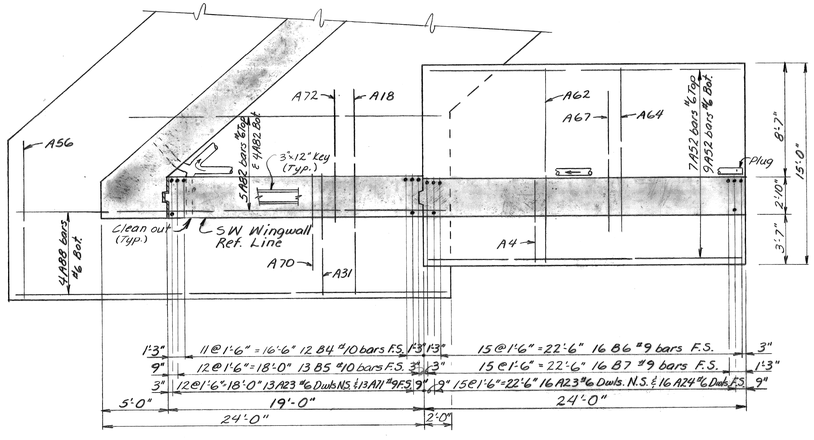


— FOUNDATION PLAN —

— LAFAYETTE - NE WINGWALL —

STAGE I

Scale: ¼" = 1'-0"

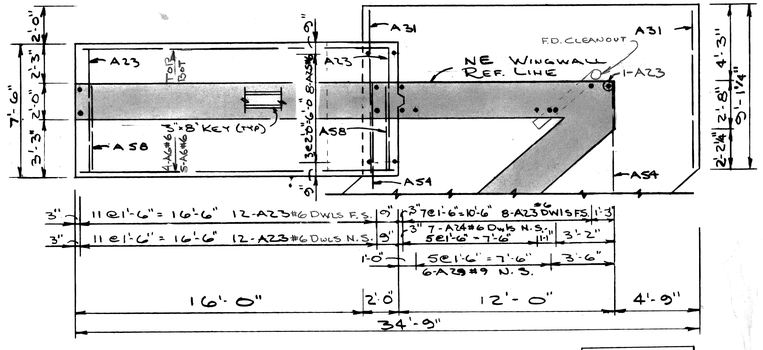


— FOUNDATION PLAN —

— 12 TH ST - SW WINGWALL —

STAGE II

Scale: ½" = 1'-0"



— FOUNDATION PLAN —

— 12 TH ST - NE WINGWALL —

STAGE I

SCALE: ¼" = 1'-0"

						REFERENCE DRAWINGS	DESIGNED BY	R. Kasher	APPROVED:
							DRAWN BY	R. Kasher	STRUCTURAL ENGINEER
							TRACED BY	—	HEAD CIVIL ENGINEER
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE		CHECKED BY	J. McGuire	CITY ENGINEER
REVISIONS LOCATED BY COORDINATES ON SHEET									

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12 TH. ST. (ROSA PARKS BLVD)
& LAFAYETTE ST. CROSSING CONRAIL

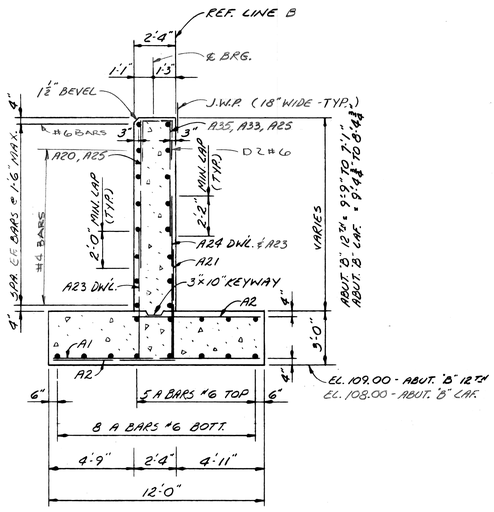
WINGWALLS - LAFAYETTE N.E.
12 TH. S.W. & 12TH. N.E.

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-115
DATE NOV 1979

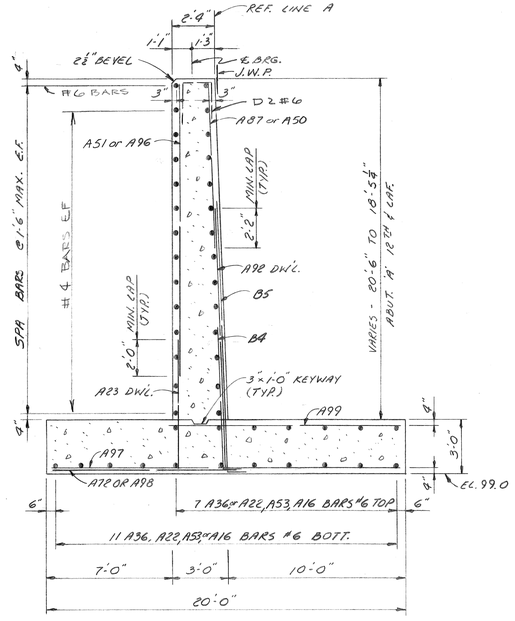
1 2 3 4 5 6 7 8 9 10 11

A B C D E F G

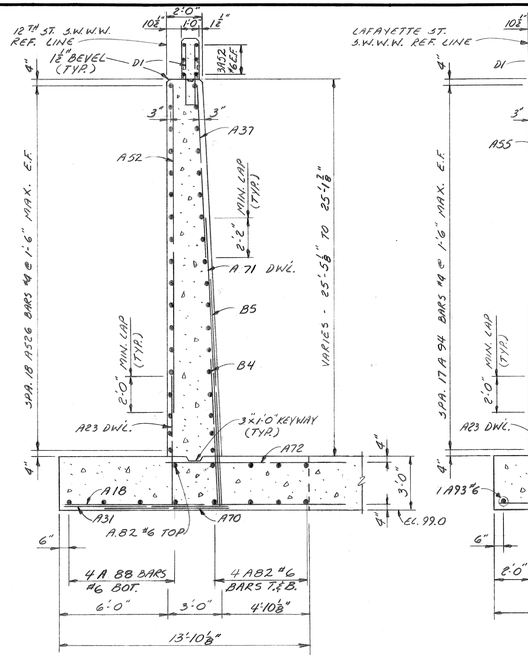
R. CARROLL, INC. 378 1818



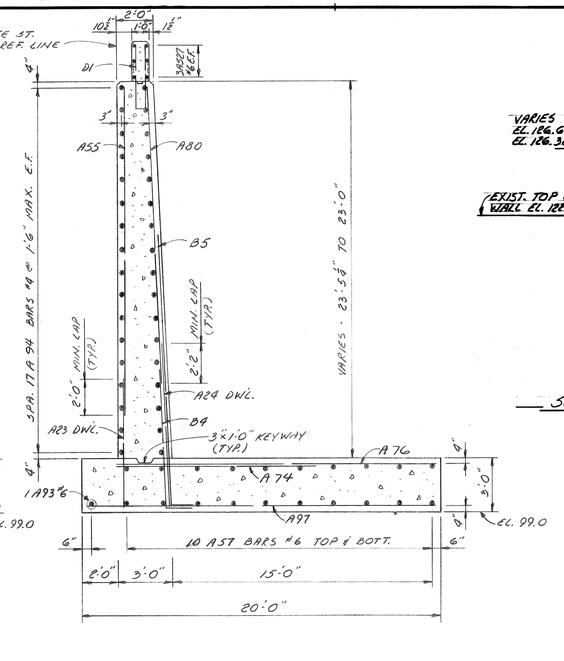
SECTION 1 S-112,113,114



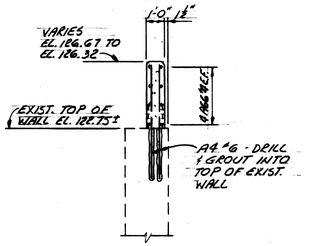
SECTION 2 S-109,110,111



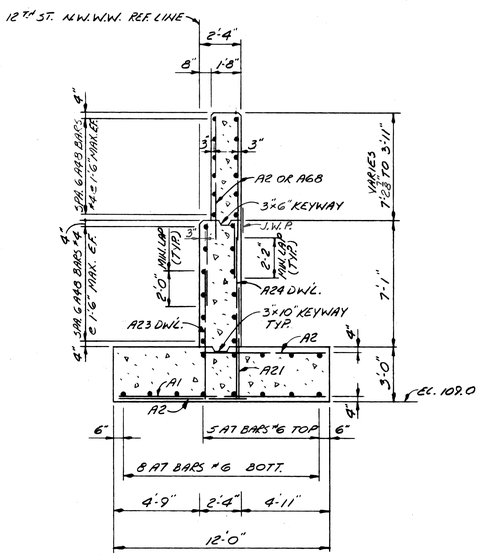
SECTION 3 S-109



SECTION 4 S-111



SECTION 10 S-114



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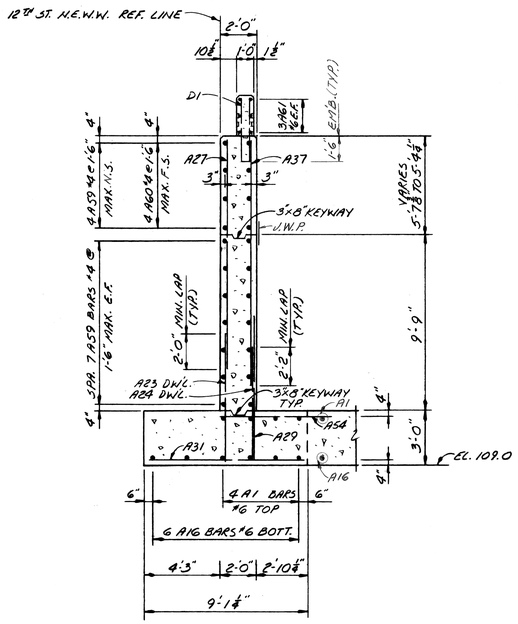
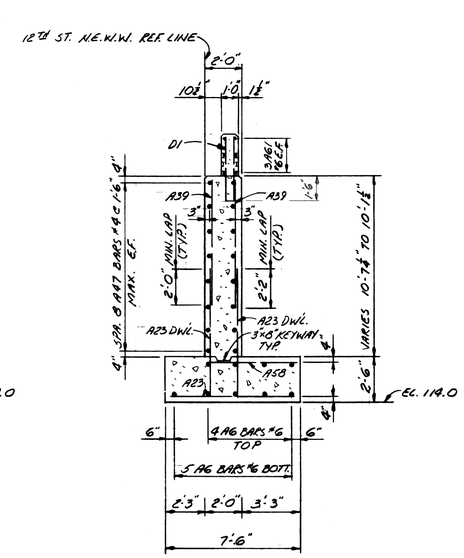
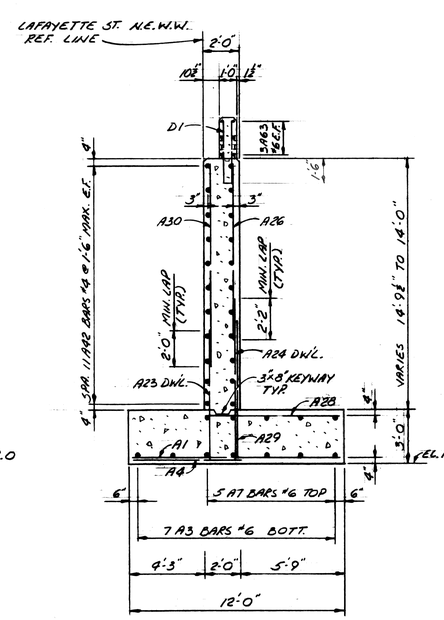


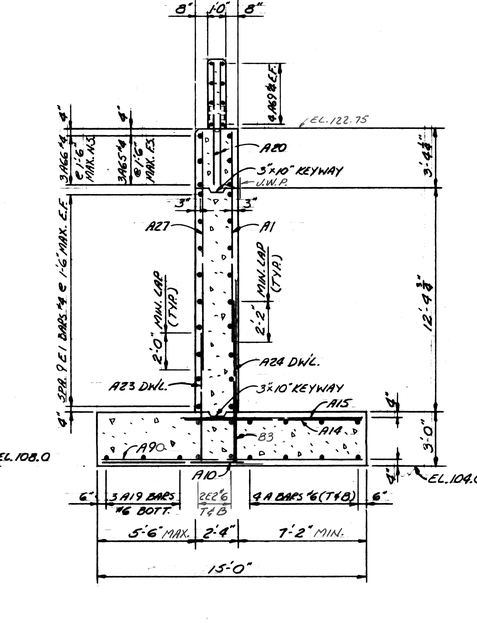
SECTION 6 S-115



SECTION 7 S-115



SECTION 8 S-115



SECTION 9 S-114

SCALE: ¼" = 1'-0"

REVISIONS LOCATED BY COORDINATES ON SHEET						
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE	REFERENCE DRAWINGS

DESIGNED BY R. Carroll
DRAWN BY A.G.
TRACED BY —
CHECKED BY J. McGuire

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

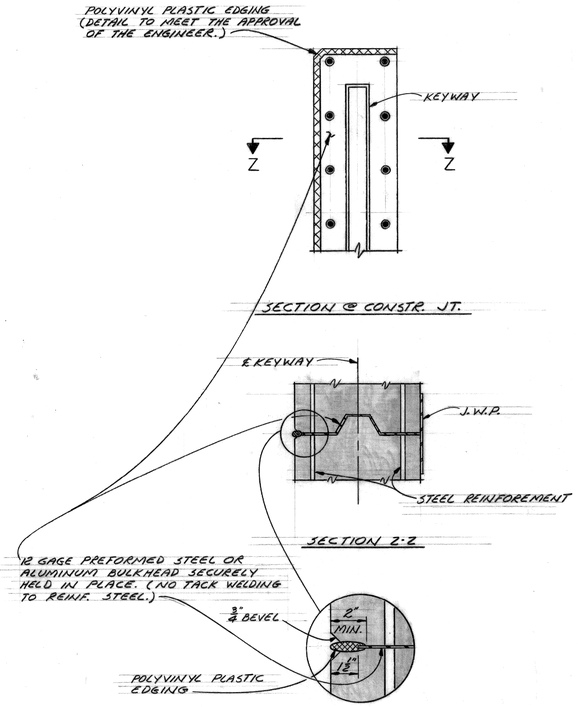
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12TH ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

ABUTMENT & WINGWALL SECTIONS

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-1160
DATE NOV 1979

R. CARROLL, INC. 378 1818



SECTION @ CONSTR. JT.

SECTION 2-2

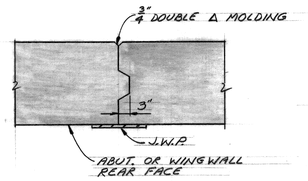
METAL BULKHEAD FOR WALL STEM CONSTRUCTION JOINT

NOTE:
THE METAL BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT AT CONTRACTOR'S EXPENSE.

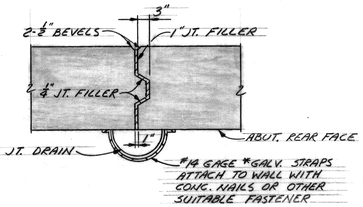
CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

CUT HOLES IN METAL BULKHEAD FOR REINFORCING STEEL.

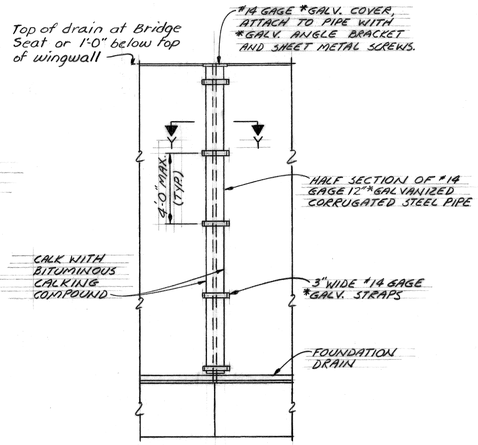
NOTE:
STOP VERTICAL KEYWAYS 1'-0" BELOW TOP OF ABUTMENTS & WINGWALLS. STOP J.W.P. 6" BELOW TOP OF WINGWALLS.



CONSTR. JOINT DETAIL

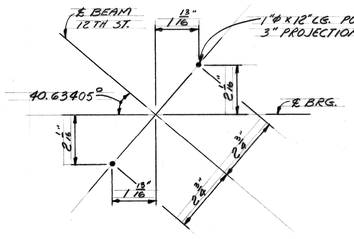


EXPANSION JOINT DETAIL AND SECTION Y-Y

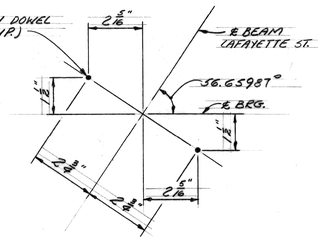


*COATING CLASS COMMERCIAL

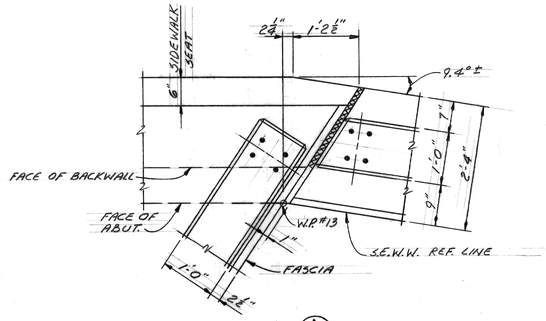
EXPANSION JOINT DRAIN



DETAIL X
SCALE: 4"=1'-0"



DETAIL Y
SCALE: 4"=1'-0"



DETAIL A (114)
SCALE: 3/4"=1'-0"

GENERAL NOTES:

J.W.P. DENOTES JOINT WATER PROOFING. (18" WIDE)
N.S. DENOTES NEAR SIDE.
F.S. DENOTES FAR SIDE.
E.S. DENOTES EACH SIDE.
FOR BEVEL AND MOLDING DETAILS SEE SHEET S-137

MAXIMUM AVERAGE FOUNDATION PRESSURE D.L. ONLY = 3500 P.S.F.
MAXIMUM FOUNDATION PRESSURE D.L. AND L.L. = 4600 P.S.F.

REMOVAL OF PORTIONS OF EXISTING SUBSTRUCTURE WITHIN THE OUTLINE OF THE FOUNDATION EXCAVATION LIMITS AND BETWEEN GROUND ELEVATION AND BOTTOM OF PROPOSED EXCAVATION IS INCLUDED IN THE QUANTITY OF UNCLASSIFIED FOUNDATION EXCAVATION. REMOVAL OF ALL OTHER PORTIONS OF THE EXISTING STRUCTURE IS INCLUDED IN THE ITEM "REMOVAL OF STRUCTURES." THE EXPOSED FACES OF THE RETAINING WALLS AND ABUTMENT WALLS SHALL HAVE SPECIAL ARCHITECTURAL TREATMENT IN ACCORDANCE WITH SECTION 5.03.06 (c) OF THE STANDARD SPECIFICATIONS.

BRIDGE RAILING IS TO BE 2 TUBE ALUMINUM RAILING ON CONCRETE PARAPET. SEE RAILING STANDARDS ON SHEET S-137

1/4", 1/2" & 1" JOINT FILLER ARE INCIDENTAL TO SUBSTRUCTURE CONCRETE.

POUR LETTERS SHALL NOT BE CONSTRUED AS A REQUIRED POUR SEQUENCE.

PARAPET CONCRETE (GRADE 35S) IS INCIDENTAL TO "BRIDGE RAILING - SOLID PARAPET TYPE." QUANTITY IS FOR INFORMATION ONLY.

6" CAST IRON PIPES AND FITTINGS SHALL BE USED FOR FOUNDATION DRAIN CLEANOUTS AND PASSAGE THROUGH WALLS. ENDS OF CLEANOUTS SHALL HAVE A THREADED BRASS PLUG. ALL INCIDENTAL TO "6 INCH FOUNDATION DRAIN." ADJUST REINFORCING STEEL SPACING AS NECESSARY. (INCID'L TO FDN. DRAIN)

ABUTMENT 'A' FOOTINGS TO BE POURED AGAINST UNDISTURBED SOIL. NO ALLOWANCE WILL BE MADE IN CONCRETE QUANTITIES DUE TO EXCAVATION OUTSIDE OF THE FOOTING NEAT LINES.

MISCELLANEOUS QUANTITIES

ITEM	UNIT	12TH ST. ABUT. A	12TH ST. ABUT. B	LAFAYETTE ST. ABUT. A	LAFAYETTE ST. ABUT. B	TOTAL
UNCLASSIFIED FOUNDATION EXCAVATION	C.Y.	2720	1360	1480	1040	6600
SUBSTRUCTURE CONCRETE	C.Y.	789.0	449.6	451.4	298.5	1989
LOW TEMP. PROTECTION - SUBSTRUCT. CONC.	C.Y.	789.0	449.6	451.4	298.5	1989
EXPANSION JOINT DRAIN	EA	2	3	2	2	9
JOINT WATERPROOFING	S.F.	432	399	181	220	1229
BRIDGE RAILING - SOLID PARAPET TYPE	L.F.	44.8	26.8	25.3	43.3	140
FOUNDATION DRAINS - 6 IN.	L.F.	189	222	107	137	655

CONCRETE QUANTITIES CU. YDS. GR.35S

POUR	LOCATION	SH. # S-	SUBSTRUC. CONC.	PARAPET CONC.
A	LAF. - ABUT. B FTG.	114	95.2	
B	LAF. - ABUT. B STEM	114	21.6	
C	LAF. ABUT. B STEM	114	20.9	
D	LAF. - NEWW WALL	115	23.4	
E	LAF. - NEWW WALL	115	0.9	
F	LAF. - SEWW FTG.	114	30.3	
G	LAF. - ABUT. B FTG.	114	54.4	
H	LAF. - ABUT. B STEM	114	15.8	
J	LAF. - ABUT. B STEM	114	14.8	
K	LAF. - SEWW WALL	114	18.5	
L	LAF. - SEWW WALL	114	2.7	
MA	LAF. - SEWW PARAPET	114	-	1.4
MB	LAF. - SEWW PARAPET	114	-	1.4
N	LAF. - NEWW PARAPET	115	-	1.9
P	12TH - ABUT. B FTG.	113	112.9	
Q	12TH - ABUT. B STEM	113	20.7	
R	12TH - ABUT. B STEM	113	16.8	
S	12TH - ABUT. B STEM	113	16.6	
T	12TH - ABUT. B STEM	113	17.5	
U	12TH - NEWW FTG.	115	14.2	
V	12TH - NEWW WALL	115	13.8	
W	12TH - NEWW WALL	115	4.0	
X	12TH - NEWW PARAPET	115	-	2.2
Y	12TH - ABUT. B FTG.	112	80.0	
Z	12TH - ABUT. B FTG.	112	70.9	
AA	12TH - ABUT. B STEM	112	15.0	
AB	12TH - ABUT. B STEM	112	18.5	
AC	12TH - ABUT. B STEM	112	19.2	
AD	12TH - ABUT. B STEM	112	10.7	
AE	12TH - ABUT. B STEM	112	13.5	
AF	12TH - NWWW WALL	112	9.5	
AG	12TH - NWWW WALL	112	5.3	
AH	12TH & LAF. - ABUT. A FTG.	110	193.9	
AJ	12TH - ABUT. A STEM	110	58.9	
AK	12TH - ABUT. A STEM	110	46.9	
AL	LAF. - ABUT. A STEM	110	46.9	
AM	LAF. - ABUT. A STEM	110	40.0	
AN	12TH - ABUT. A FTG.	109	142.2	
AP	12TH - ABUT. A FTG.	109	95.3	
AQ	12TH - ABUT. A STEM	109	39.5	
AR	12TH - ABUT. A STEM	109	39.7	
AS	12TH - ABUT. A STEM	109	48.6	
AT	12TH - ABUT. A STEM	109	40.3	
AU	12TH - ABUT. A STEM	109	30.4	
AV	12TH - ABUT. A STEM	115	1.1	
AW	12TH - S.W.W.W. FTG.	115	40.0	
AX	12TH - S.W.W.W. STEM	115	44.2	
AY	12TH - S.W.W.W. STEM	115	44.2	
AZ	12TH - S.W.W.W. PARAPET	115		3.7
BA	LAF. - ABUT. A FTG	111	143.6	
BB	LAF. - ABUT. A STEM	111	44.8	
BC	LAF. - ABUT. A STEM	111	47.8	
BD	LAF. - ABUT. A STEM	111	0.9	
BE	LAF. - S.W.W.W. STEM	111	51.7	
BF	LAF. - S.W.W.W. PARAPET	111		2.1
TOTALS GRADE 35S			1988.5	12.7

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY R. Scarber
DRAWN BY A.G.
TRACED BY —
CHECKED BY J.M. McGuire

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

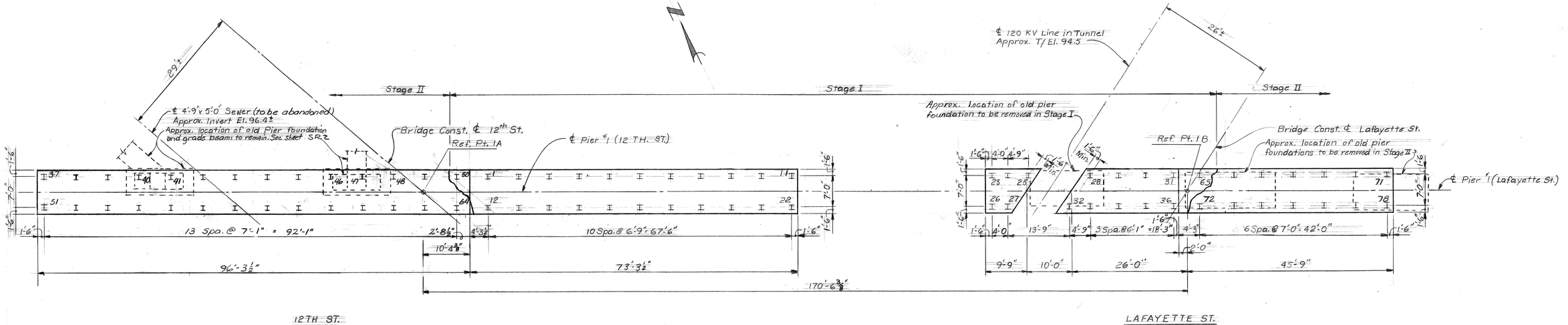
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12 TH ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

ABUTMENT DETAILS

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-117
DATE NOV 1979

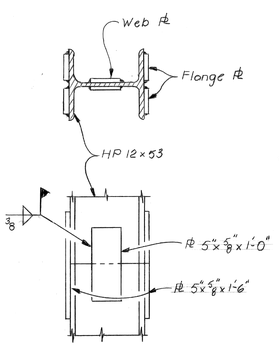
R. CARROLL, INC. 378 1818



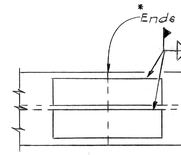
12TH ST.

LAFAYETTE ST.

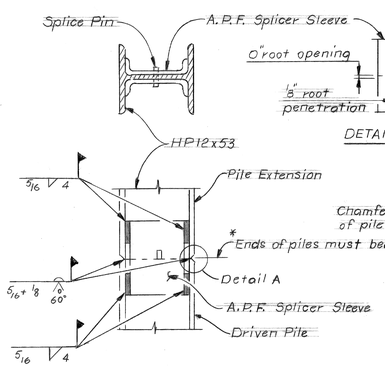
PILING PLAN
Scale: 3/32 = 1'-0"



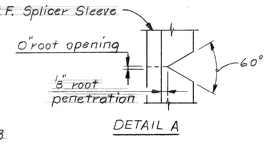
SPLICE DETAILS



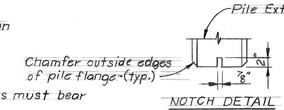
*Note:
Set upper splice section in place with upper splice ℞s attached, tap several times with the hammer to improve bearing contact, then complete welding of ℞s to the lower section.



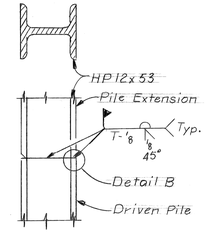
ALTERNATE SPLICE DETAILS
(A. P. F. Associated Pipe & Fitting Co.



DETAIL A

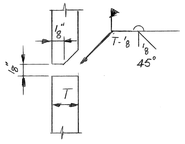


NOTCH DETAIL

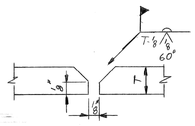


BUTT WELD SPLICE DETAIL

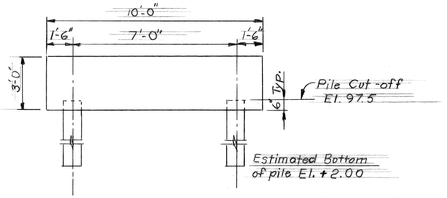
Note:
Use detail B when welding piles in place.
Use detail C for welding when pile is in horizontal position



DETAIL B



DETAIL C



TYPICAL FOOTING SECTION
PILE CUT-OFF DETAILS

PILE QUANTITIES

ITEM	UNIT	AMOUNT 12TH	AMOUNT LAFAYETTE	AMOUNT TOTAL
Length of each pile furnished and driven (estimated)	Lin. Ft.	95.5	95.5	—
Steel Piles Furnished & Driven (12")	Each	50	28	78
	Lin. Ft.	4775	2674	7449
Splices, Steel Piles (12")	Each	120	67	187
Rock Drilling	L.F.	24	3	27

GENERAL NOTES

All piles shall be driven to a minimum bearing capacity of 60 tons AS DETERMINED BY ART. S.02.07 OF STD. SPECS.

Steel H piles shall be HP 12x53

Piles shall be driven in accordance with M.D. O.T. Standard Specifications

Prebore all piles to Elev. 65.0. Voids around piles shall be backfilled by sluicing and/or jetting sand as required. Preboring and backfilling are incidental to piles. Preboring through rock or old concrete foundations will be paid for under "Rock Drilling".

The location of the D.E. Tunnel in Lafayette St. shall be verified in the field prior to driving piles.

Piles 50 and 65 shall be driven during Stage I in addition to piles 1 thru 36. Pile 65 shall be drilled through the old pier foundation. See Ref. Dwg. SR-11

Under Stage II, piles 40, 41, and 46 thru 48 shall be drilled through that portion of the old foundation to remain in place. Piles 41 and 47 may be adjusted laterally along the pile line, to avoid the 3'-6" x 4'-3" pier to remain in place. See Ref. Dwg. SR-2

TEST PILES WILL NOT BE REQUIRED ON THIS PROJECT.

REVISIONS LOCATED BY COORDINATES ON SHEET							REFERENCE DRAWINGS
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE		

DESIGNED BY J. Mc Guire
DRAWN BY L.G.
TRACED BY
CHECKED BY JM RAK

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

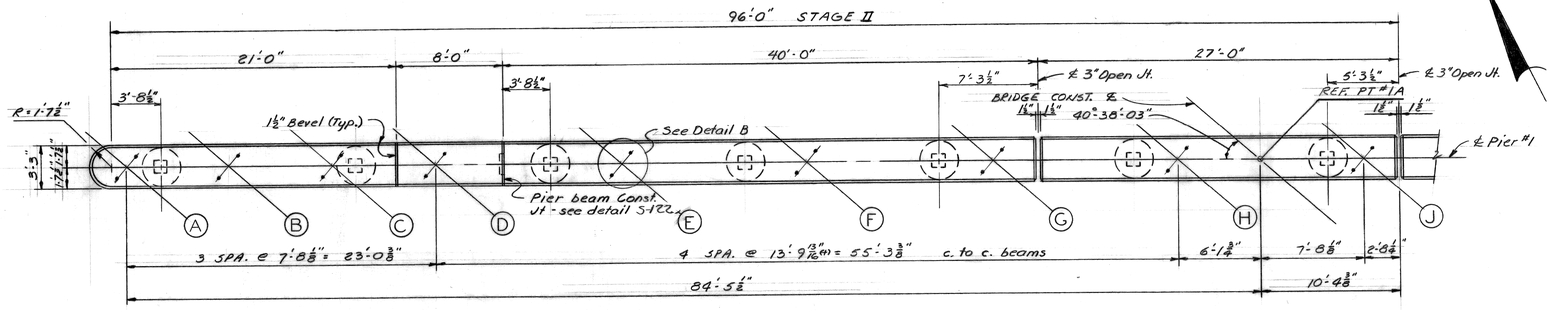
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANS.

12TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

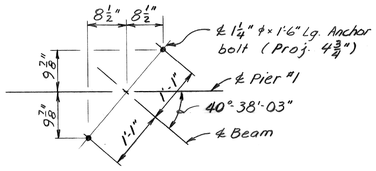
PILING PLAN

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-118
DATE NOV 1979

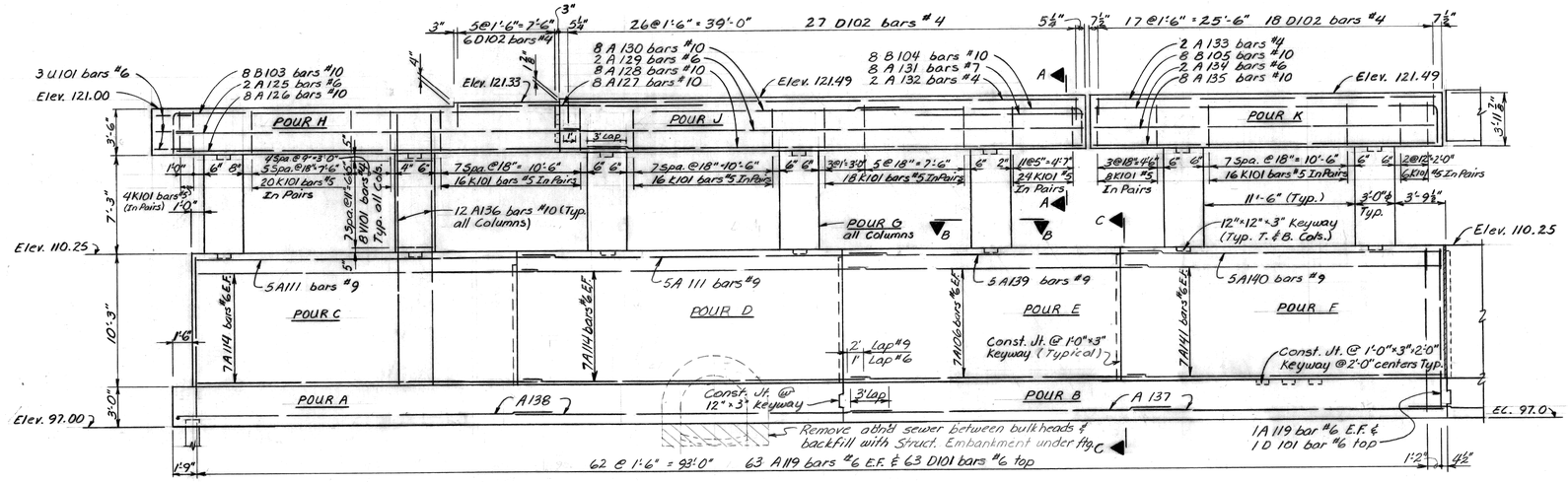
R. CARROLL, INC. 328 1818



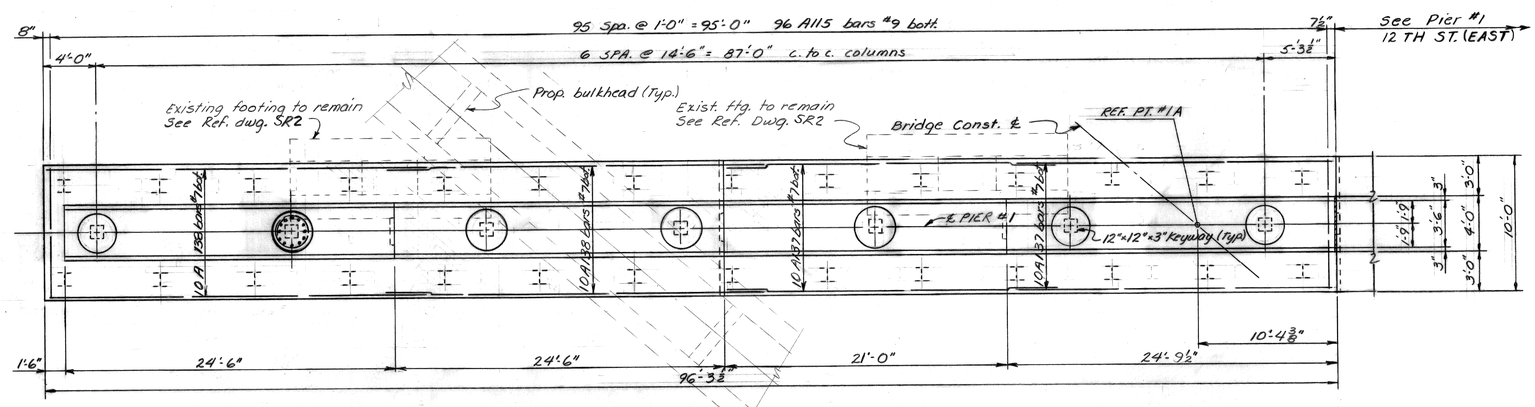
PLAN OF TOP



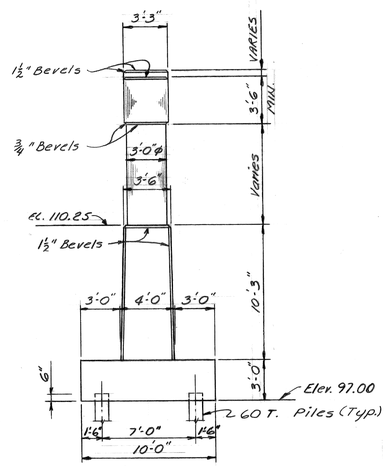
DETAIL B
Scale: ¾"=1'-0"



ELEVATION



12 TH ST. (WEST HALF)
PLAN OF FOOTING



END VIEW

Note: For quantities, notes, sections, etc., see sht. S-122
Scale: 3/16"=1'-0" U.N.

REVISIONS LOCATED BY COORDINATES ON SHEET						REFERENCE DRAWINGS
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE	

DESIGNED BY	Mc Guire
DRAWN BY	AG JM
TRACED BY	
CHECKED BY	

APPROVED:

STRUCTURAL ENGINEER

HEAD CIVIC ENGINEER

CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANS.

12 TH. ST. (ROSA PARKS BLVD)
& LAFAYETTE ST. CROSSING CONRAIL

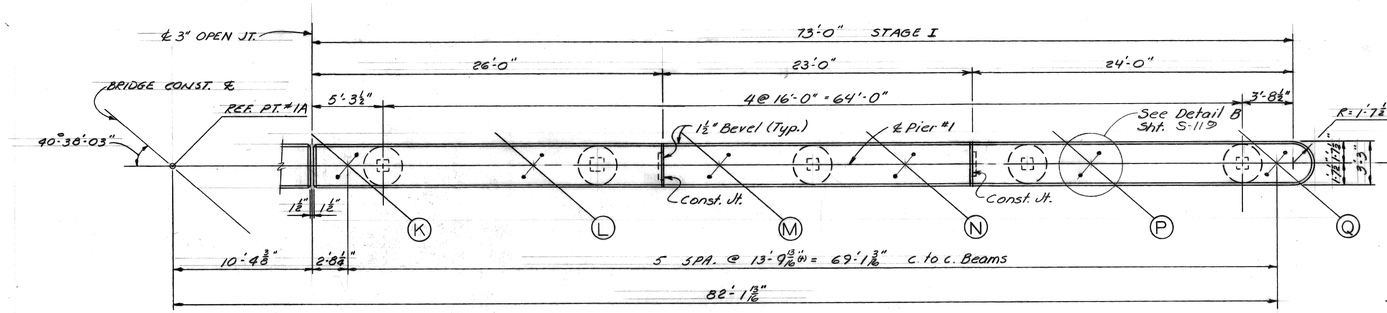
PIER DETAILS 12TH. ST. (WEST HALF)

SHEET ____ OF ____ SHEETS	
CONTRACT NO.	07110A
DRWG NO.	S-119
DATE	NOV 1979

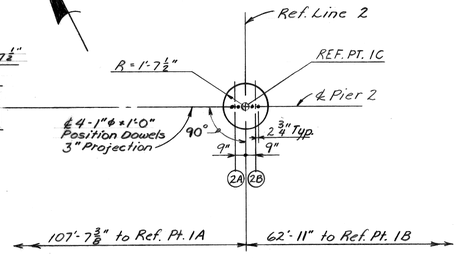
1 2 3 4 5 6 7 8 9 10 11

A B C D E F G

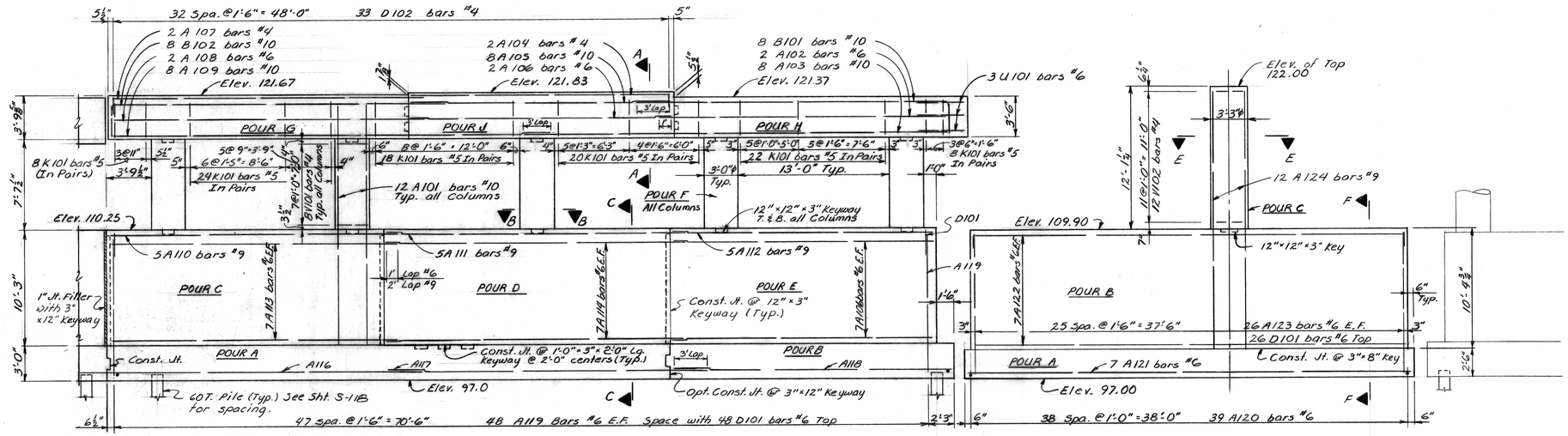
R. CARROLL, INC. 378 1818



PLAN OF TOP



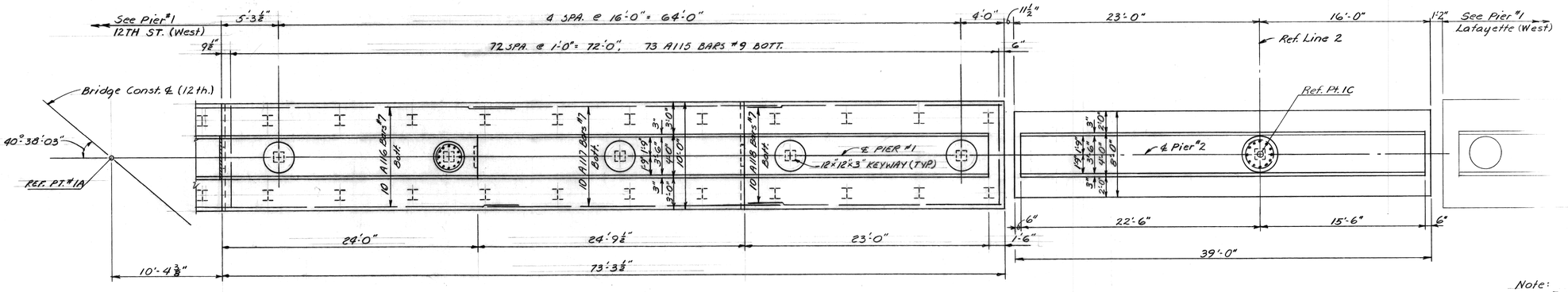
PLAN OF TOP



ELEVATION

ELEVATION

END VIEW - PIER 2



12TH ST. (EAST HALF) PLAN OF FOOTING

PIER 2 PLAN OF FOOTING

Note:
For quantities, notes, sections, etc., see sht. S-122
Scale: 3/16" = 1'-0"

								REFERENCE DRAWINGS	DESIGNED BY	Mc Guire	APPROVED:
									DRAWN BY	A.G. J.M.	STRUCTURAL ENGINEER
									TRACED BY		HEAD CIVIL ENGINEER
									CHECKED BY		CITY ENGINEER
COOR'D	DESCRIPTION		DR'N	CK'D	AP'VD	DATE					

REVISIONS LOCATED BY COORDINATES ON SHEET

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANS.

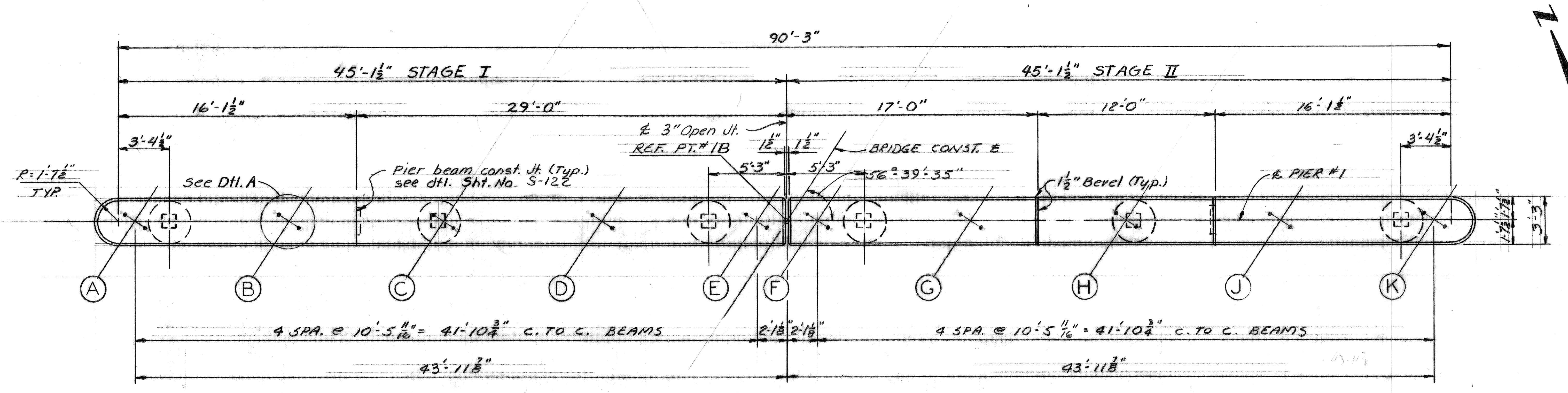
12TH. ST. (ROSA PARKS BLVD) & LAFAYETTE ST. CROSSING CONRAIL

PIER DETAILS - 12TH. ST. (EAST HALF) & PIER 2

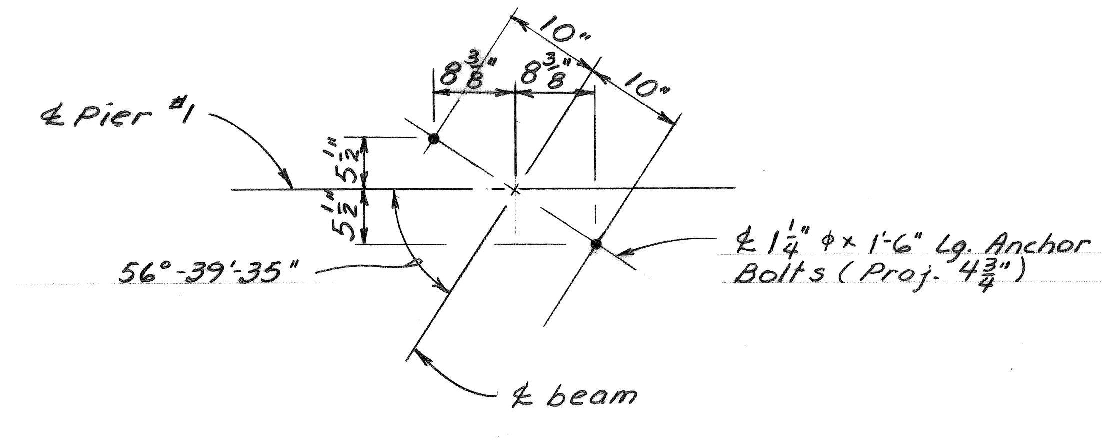
SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG NO. S-120
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

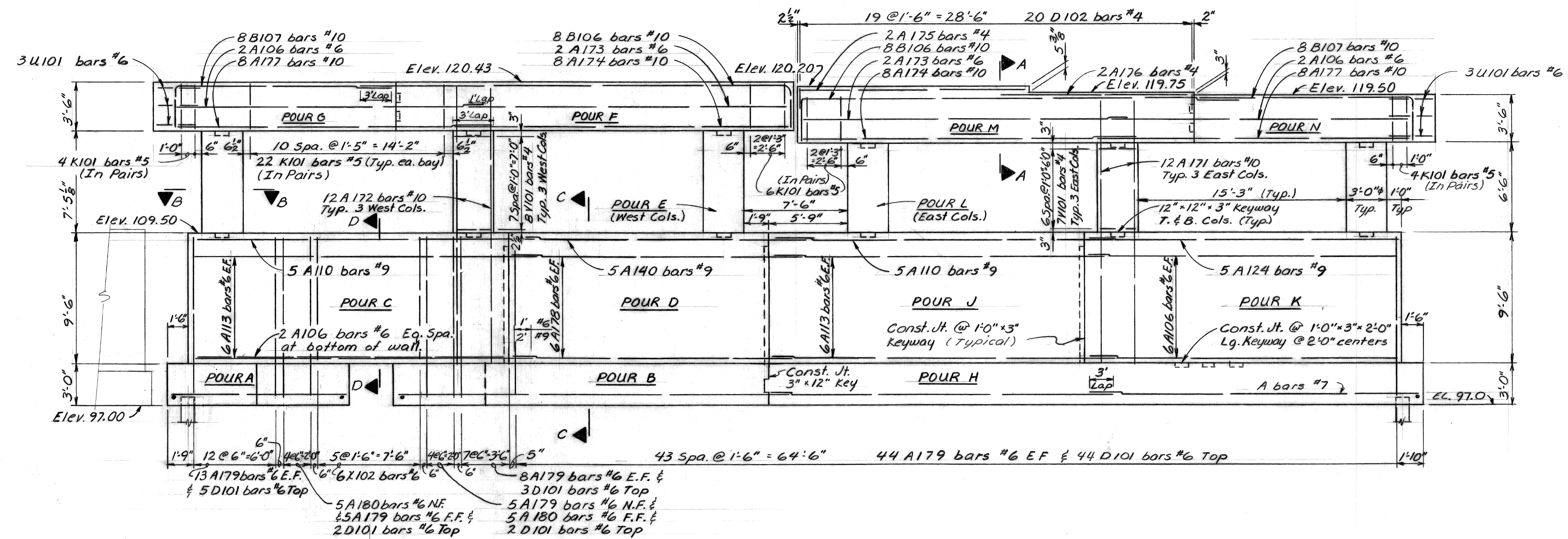
R. CARROLL, INC. 378 1818•



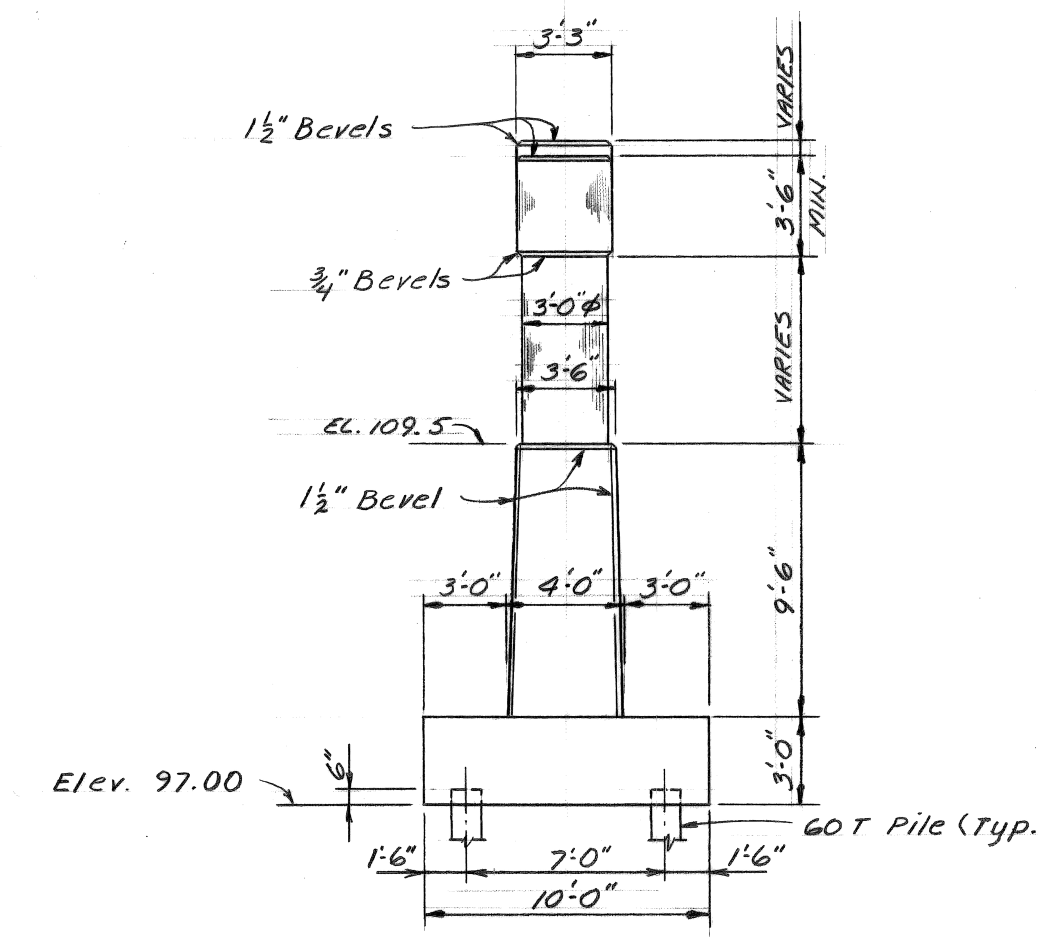
PLAN OF TOP



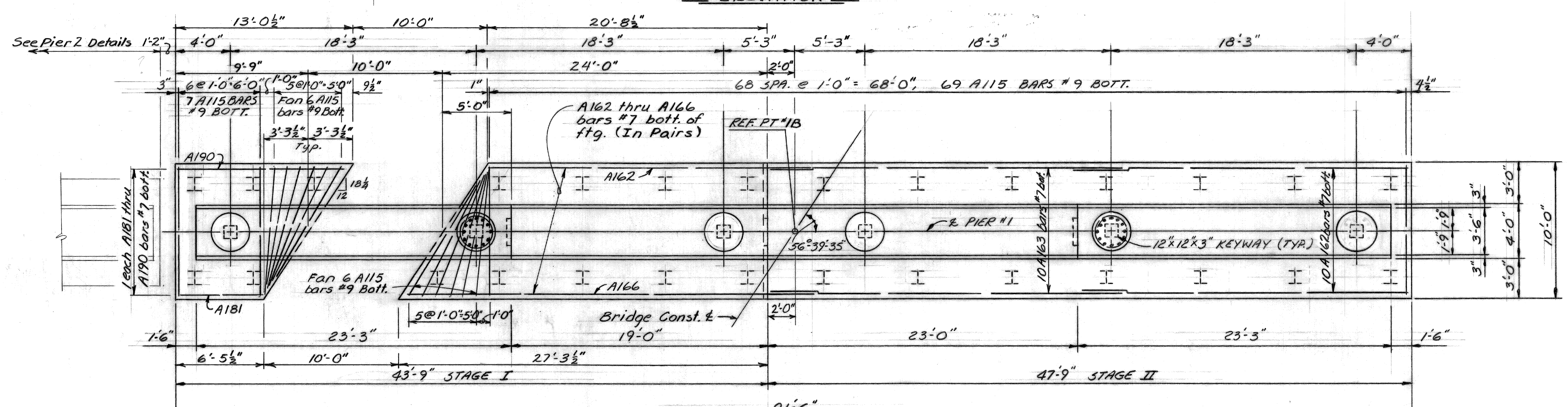
DETAIL A
Scale: ¾"=1'-0"



ELEVATION



END VIEW



LAFAYETTE
PLAN OF FOOTING

Note:
For quantities, notes, sections, etc. see S-122
Scale: 3/16" = 1'-0" U.N.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY	McGuire
DRAWN BY	AG JM
TRACED BY	
CHECKED BY	R [signature]

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANS.

12 TH. ST. (ROSA PARKS BLVD)
& LAFAYETTE ST. CROSSING CONRAIL

PIER DETAILS LAFAYETTE ST.

SHEET ___ OF ___ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-121
DATE NOV 1979

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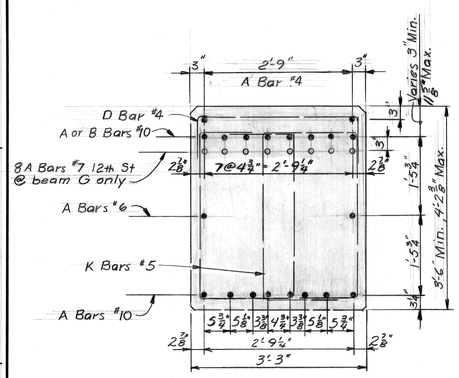
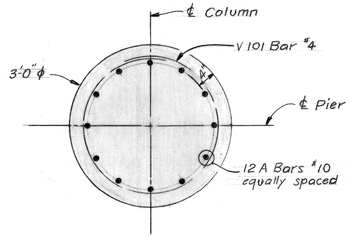
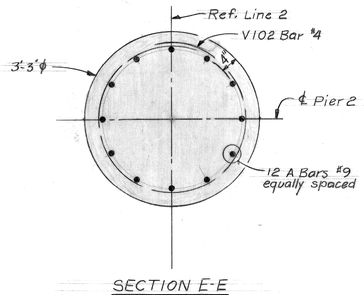


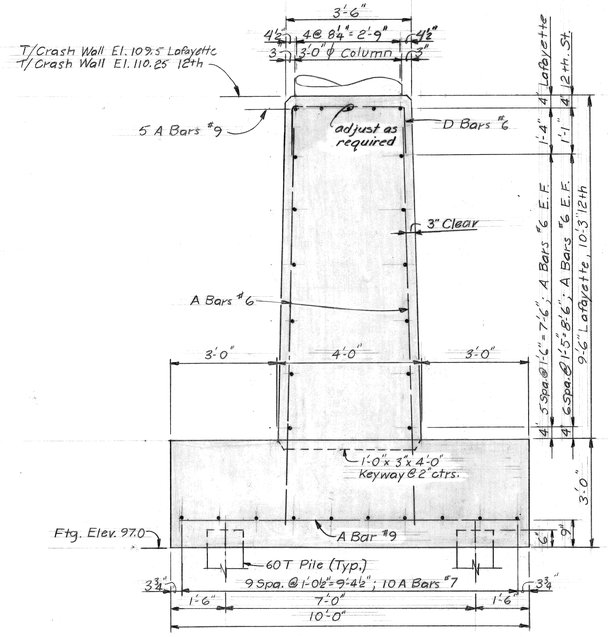
SECTION A-A
Scale: 3/4"=1'-0"



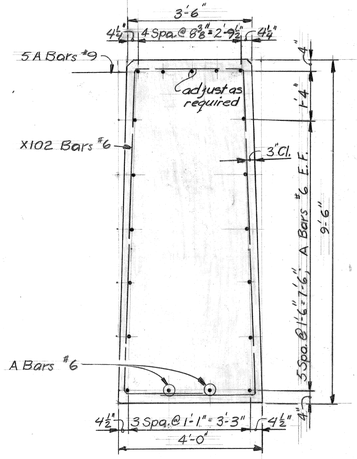
SECTION B-B
Scale: 3/4"=1'-0"



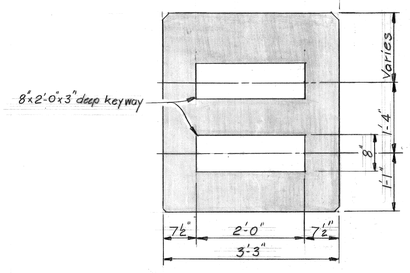
SECTION E-E
Scale: 3/4"=1'-0"



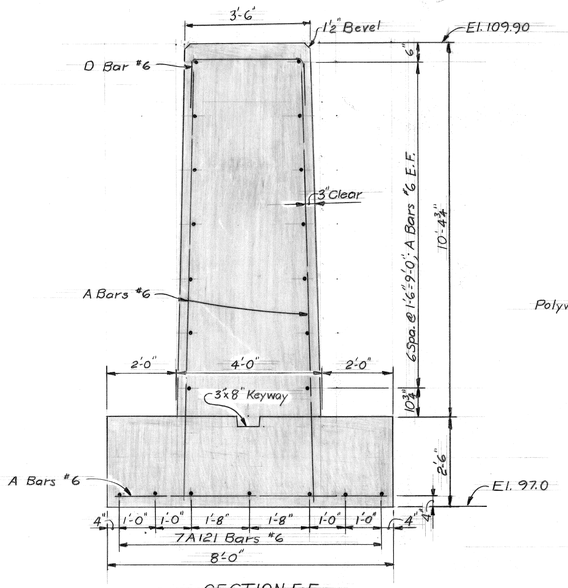
SECTION C-C
Scale: 1/2"=1'-0"



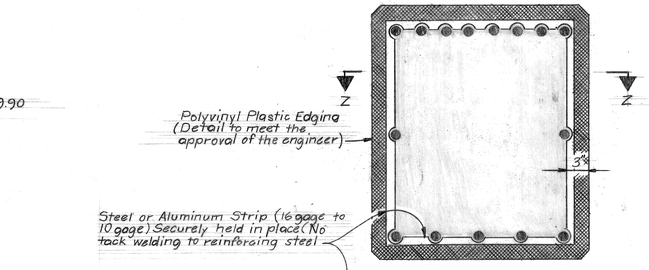
SECTION D-D
Scale: 1/2"=1'-0"



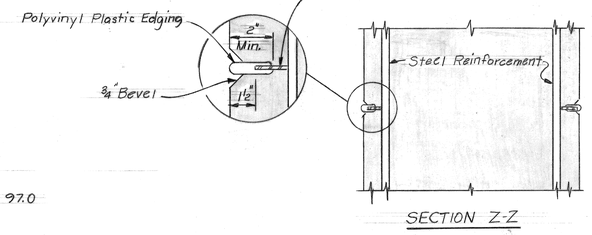
CONST. JOINT DETAIL
PIER BEAM
Scale: 3/4"=1'-0"



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



SECTION THRU PIER CAP



SECTION Z-Z

PARTIAL METAL BULKHEAD FOR PIER CAP
CONSTRUCTION JOINT

Notes:

Partial Metal Bulkhead may be used as alternate construction joint at contractors expense.

Care is to be used in casting concrete around bulkhead to prevent dislocation or misalignment of the bulkhead.

Notch Metal Strip to fit around reinforcing steel.

CONCRETE QUANTITIES GRADE 35S Cu. Yds.

Pour	12TH STREET		LAFAYETTE ST.		Pier 2
	Pier 1 (West)	Pier 1 (East)	Pier 1 (West)	Pier 1 (East)	
A	56.1	54.2	10.8	—	28.9
B	50.9	27.2	26.7	—	54.9
C	34.9	34.2	30.7	—	3.7
D	34.9	35.3	25.1	—	—
E	29.9	32.7	5.8	—	—
F	35.3	10.0	12.2	—	—
G	13.3	11.8	7.3	—	—
H	13.1	10.6	—	53.1	—
J	19.2	11.0	—	30.3	—
K	12.8	—	—	30.7	—
L	—	—	—	5.1	—
M	—	—	—	13.9	—
N	—	—	—	7.3	—
Total	300.4	227.0	118.6	140.4	87.5

GRAND TOTAL GRADE 35S = 873.9 Cu. Yds.

Note: The line separating 12th St. and Lafayette St. quantities is Reference Line 2

MISCELLANEOUS QUANTITIES

Item	Unit	12TH ST.	LAFAYETTE ST.	Total
Unclassified Foundation Exc.	C.Y.	580	285	865
Low Temperature Prot. Sub Str.	C.Y.	578.8	295.1	874
SUBSTRUCTURE CONC.	C.Y.	578.8	295.1	874

GENERAL NOTES

N.F., F.F., and E.F. denotes near face, far face and each face respectively

For bevel and molding details see sht. S-137

For H Pile spacing and details, etc. see sht. S-118

Maximum average foundation pressure D.L. only = 3500lbs/sq.ft.
Maximum foundation pressure D.L. and L.L. = 5000lbs/sq.ft. Pier #2 only.

Removal of portions of existing substructure and sewer within the foundation excavation limits and between ground elevation and bottom of proposed excavation is included in the quantity of Unclassified Foundation Excavation. Removal of all other portions of the existing structure is included in the item "Removal of Portions of Structures."

Adjust reinforcing steel to miss anchor bolts. Drilling holes for anchor bolts will not be permitted.

REVISIONS LOCATED BY COORDINATES ON SHEET							REFERENCE DRAWINGS
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE		

DESIGNED BY	McGuire
DRAWN BY	L.G.
TRACED BY	—
CHECKED BY	

APPROVED:

STRUCTURAL ENGINEER

HEAD CIVIL ENGINEER

CITY ENGINEER

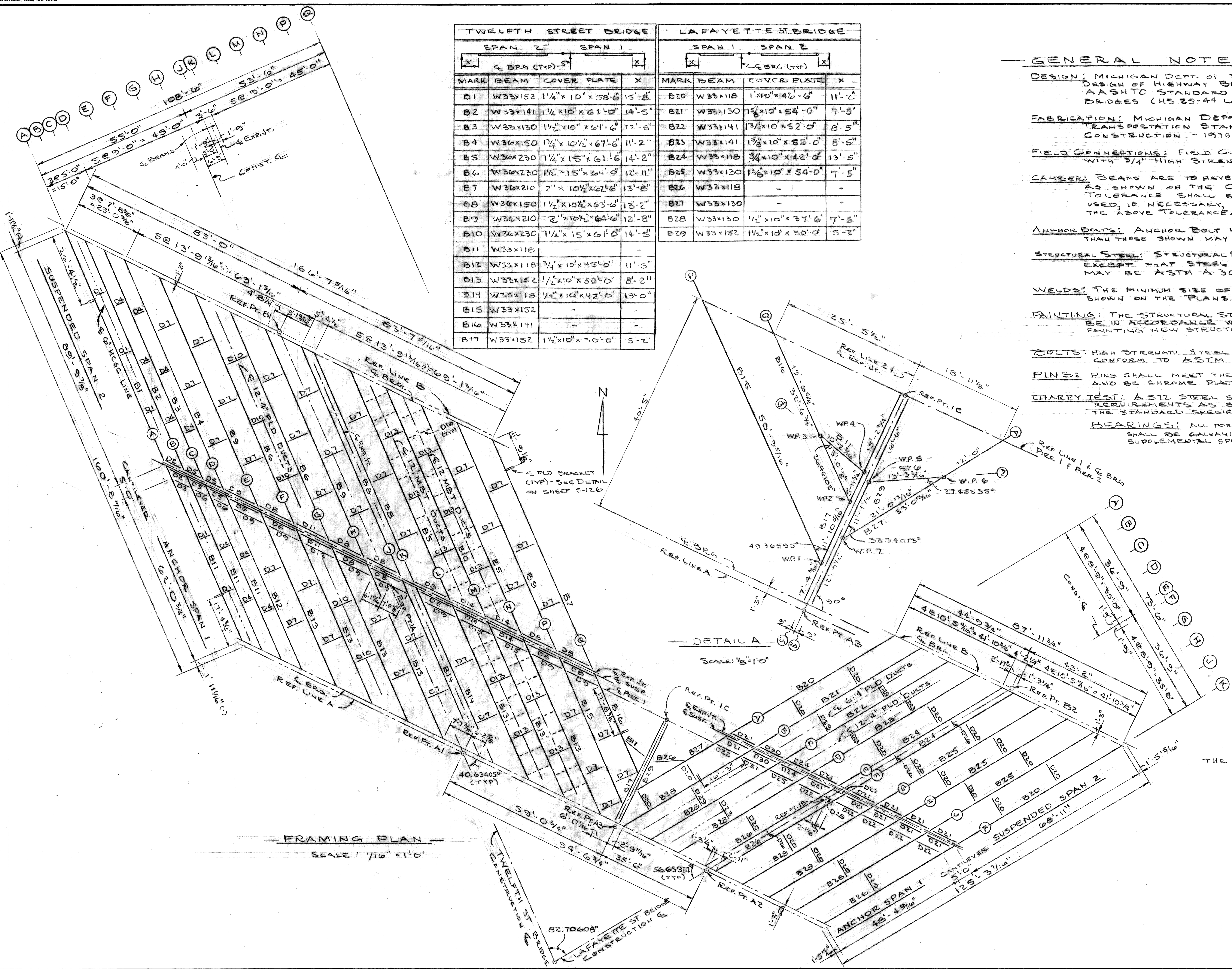
CITY OF DETROIT
CITY ENGINEERING DIVISION - E.P.M.D.
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

12TH ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

PIER DETAILS

SHEET ___ OF ___ SHEETS
CONTRACT No. 07110A
DRWG No. S122
DATE NOV 1970

R. CARROLL, INC. 378 1818•



— FRAMING PLAN —
SCALE: 1/16" = 1'-0"

— DETAIL A —
SCALE: 1/8" = 1'-0"

TWELFTH STREET BRIDGE			
SPAN 2 — SPAN 1 (℄ BRG (TYP))			
MARK	BEAM	COVER PLATE	X
B1	W33x152	1 1/4" x 10" x 58'-6"	15'-8"
B2	W33x141	1 1/4" x 10" x 61'-0"	14'-5"
B3	W33x130	1 1/2" x 10" x 64'-6"	12'-8"
B4	W36x150	1 3/4" x 10 1/2" x 67'-6"	11'-2"
B5	W36x230	1 1/4" x 15" x 61'-6"	14'-2"
B6	W36x230	1 1/2" x 15" x 64'-0"	12'-11"
B7	W36x210	2" x 10 1/2" x 62'-6"	13'-8"
B8	W36x150	1 1/2" x 10 1/2" x 63'-6"	13'-2"
B9	W36x210	2" x 10 1/2" x 64'-6"	12'-8"
B10	W36x230	1 1/4" x 15" x 61'-0"	14'-5"
B11	W33x118	-	-
B12	W33x118	3/4" x 10" x 45'-0"	11'-5"
B13	W33x152	1/2" x 10" x 50'-0"	8'-2"
B14	W33x118	1/2" x 10" x 42'-0"	13'-0"
B15	W33x152	-	-
B16	W33x141	-	-
B17	W33x152	1 1/2" x 10" x 30'-0"	5'-2"

LAFAYETTE ST. BRIDGE			
SPAN 1 — SPAN 2 (℄ BRG (TYP))			
MARK	BEAM	COVER PLATE	X
B20	W33x118	1" x 10" x 46'-6"	11'-2"
B21	W33x130	1 5/8" x 10" x 54'-0"	7'-5"
B22	W33x141	1 3/4" x 10" x 52'-0"	8'-5"
B23	W33x141	1 5/8" x 10" x 52'-0"	8'-5"
B24	W33x118	3/4" x 10" x 42'-0"	13'-5"
B25	W33x130	1 3/8" x 10" x 54'-0"	7'-5"
B26	W33x118	-	-
B27	W33x130	-	-
B28	W33x130	1/2" x 10" x 37'-6"	7'-6"
B29	W33x152	1 1/2" x 10" x 30'-0"	5-2"

GENERAL NOTES:

DESIGN: MICHIGAN DEPT. OF STATE HIGHWAYS SPECIFICATIONS FOR DESIGN OF HIGHWAY BRIDGES - 1958 EDITION AND CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (HS 25-44 LOADING). LL DEFL. LIMITS - L/800 & L/300 (CANT)

FABRICATION: MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION - 1979 EDITION.

FIELD CONNECTIONS: FIELD CONNECTIONS SHALL BE BOLTED WITH 3/4" HIGH STRENGTH BOLTS (EXCEPT AS NOTED).

CAMBER: BEAMS ARE TO HAVE A PARABOLIC CAMBER WITH ORDINATES AS SHOWN ON THE CAMBER DIAGRAM. ALLOWABLE CAMBER TOLERANCE SHALL BE ± 1/4" (AT CENTER). HEATING IS TO BE USED, IF NECESSARY, TO ASSURE CAMBER PERMANENCY WITHIN THE ABOVE TOLERANCE.

ANCHOR BOLTS: ANCHOR BOLT LENGTHS SHOWN ARE MINIMUM. BOLTS LONGER THAN THOSE SHOWN MAY BE FURNISHED AT NO ADDITIONAL COST.

STRUCTURAL STEEL: STRUCTURAL STEEL SHALL CONFORM TO ASTM A-572 (GRADE 50) EXCEPT THAT STEEL FOR GALVANIZED PORTIONS OF BEARINGS MAY BE ASTM A-36.

WELDS: THE MINIMUM SIZE OF WELDS IS TO BE 1/4" UNLESS OTHERWISE SHOWN ON THE PLANS. WELDING OF STUDS IS INCIDENTAL TO "SHEAR DEVELOPERS".

PAINTING: THE STRUCTURAL STEEL SHALL BE PAINTED. PAINTING SHALL BE IN ACCORDANCE WITH THE SUPPLEMENTAL SPECIFICATION FOR PAINTING NEW STRUCTURAL STEEL.

BOLTS: HIGH STRENGTH STEEL BOLTS, NUTS, AND WASHERS SHALL CONFORM TO ASTM A325, TYPE 1.

PINS: PINS SHALL MEET THE REQUIREMENTS OF ASTM A668, CLASS F AND BE CHROME PLATED WITH A MINIMUM THICKNESS OF 3 MILS (.003 IN.)

CHARPY TEST: A572 STEEL SHALL MEET THE CHARPY V-NOTCH IMPACT REQUIREMENTS AS SHOWN FOR A588 IN ARTICLE 8.06.04 OF THE STANDARD SPECIFICATIONS (15 FT-LBS @ 40° F)

BEARINGS: ALL PORTIONS OF BEARINGS NOT WELDED TO THE BEAMS SHALL BE GALVANIZED AND TOP COATED IN CONFORMANCE WITH THE SUPPLEMENTAL SPECIFICATION FOR PAINTING NEW STRUCTURAL STEEL.

PAY ITEMS		
QUANTITY	UNIT	AMOUNT
STRUCTURAL STEEL, FURN. & FAB. (A572 ROLLED)	LBS.	755,500
STRUCTURAL STEEL, ERECTION (A572 ROLLED)	LBS.	755,500
SHEAR DEVELOPERS	L.S.	1
FIELD PAINTING	L.S.	1
BUSHINGS	EA	100

THE QUANTITY FOR STRUCTURAL STEEL INCLUDES:

	12 TH	LAF
STRUCTURAL STEEL	533,581	221,441
LEAD	319	158
	533,900 #	221,600 #

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY [signature]
DRAWN BY [signature]
TRACED BY —
CHECKED BY J. McGuire

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

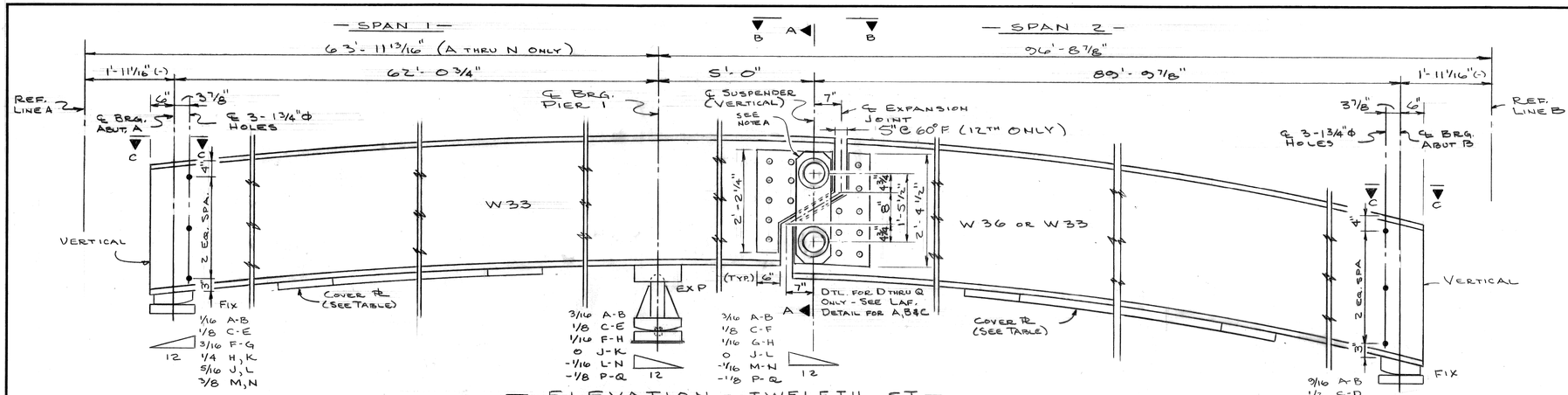
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12 TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

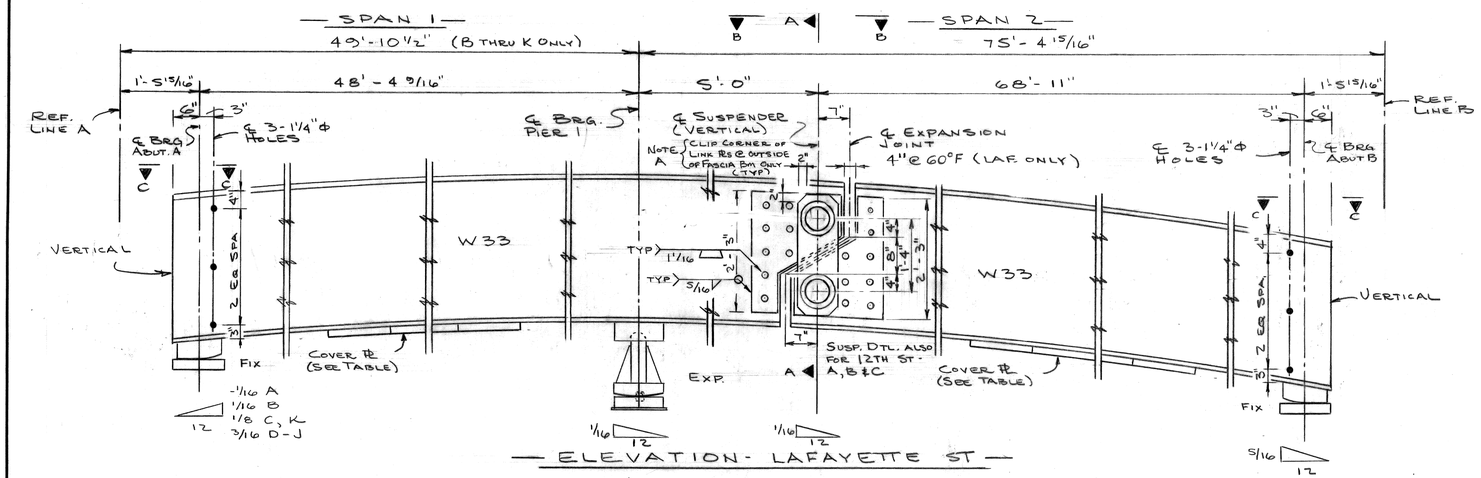
STRUCTURAL STEEL FRAMING PLAN AND DETAILS

SHEET ___ OF ___ SHEETS
CONTRACT NO. 07110 A
DRWG NO. S-123
DATE NOV 1979

R. CARROLL, INC. 378 1818



— ELEVATION - TWELFTH ST —



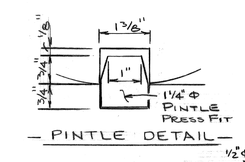
— ELEVATION - LAFAYETTE ST —

— SOLE PLATE TABLES —

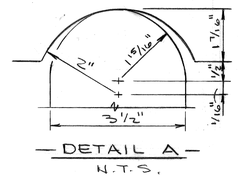
TWELFTH ST.	ABUT A	PIER	ABUT B
A	3 1/4"	3 1/4"	2"
B	2 3/4"	4 1/8"	5 1/2"
C	2 5/8"	5 1/2"	3 1/8"
D	2 1/4"	4 3/8"	4 5/8"
E	3 3/8"	5"	2 1/4"
F	2 3/4"	6"	5 3/4"
G	5 3/4"	4 1/2"	3 1/2"
H	3"	3 1/4"	3 7/8"
J	2 3/4"	5"	2 3/4"
K	2 7/8"	3 3/4"	4 7/8"
L	3 1/2"	6"	1 3/4"
M	2 1/2"	5"	4 7/8"
N	4 3/8"	3 3/4"	4 1/4"
P	-	5 5/8"	2 7/8"
Q	-	3 3/4"	4 1/2"
2A	3	1 1/2	—

LAFAYETTE ST	ABUT A	PIER	ABUT B
A	-	5 1/2"	5 1/2"
B	2 5/8"	5 3/8"	3 3/8"
C	1 1/2"	5 7/8"	3 7/8"
D	4 1/8"	5 3/8"	3 5/8"
E	3 1/4"	4 1/4"	2 7/8"
F	2 3/8"	6"	2 1/4"
G	2 3/8	3 1/4"	5 7/8"
H	6"	5 1/8"	2 1/2"
J	1 1/2"	3 5/8"	4 1/8"
K	2 3/8"	3 3/8"	2 1/8"
2B	2 5/8	1 1/2	—

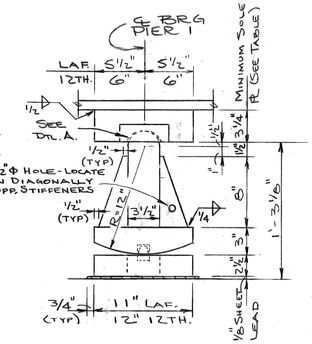
SOLE PLATE THICKNESS GIVEN ℄ ℄ BRG. BEVEL THE SOLE PLATES AS SHOWN ON BEAM ELEVATIONS ONLY WHEN SLOPE EXCEEDS 1/8"/12".

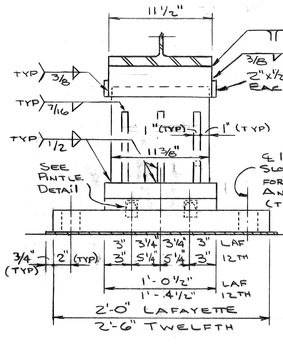


— PINTLE DETAIL —

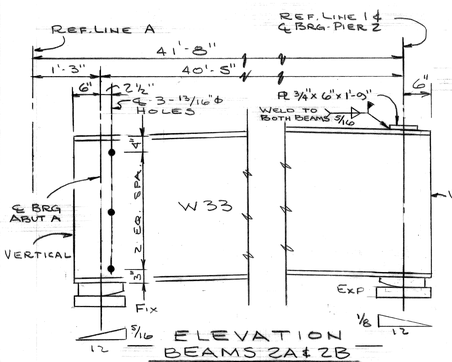


— DETAIL A —
N.T.S.

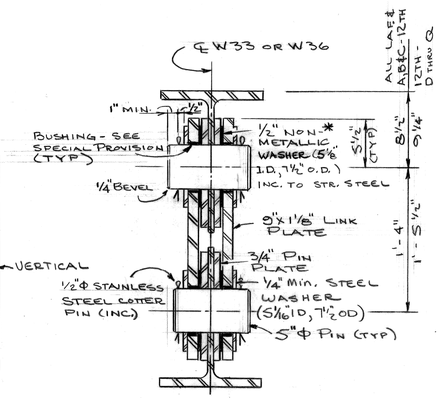




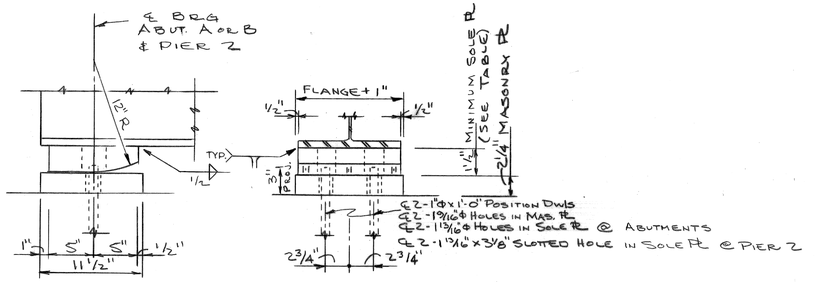
— BEARING DETAILS AT PIER 1 —



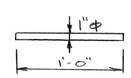
ELEVATION BEAMS 2A & 2B



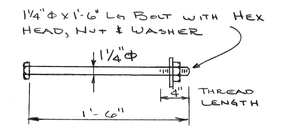
— SECTION A-A —



— BEARING DETAIL AT ABUTMENTS & PIER 2 —



— POSITION DOWEL DETAIL —



— ANCHOR BOLT DETAIL —

REVISIONS LOCATED BY COORDINATES ON SHEET							REFERENCE DRAWINGS
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE		

DESIGNED BY R. Kaufman
DRAWN BY R. Kaufman
TRACED BY —
CHECKED BY J. McGuire

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

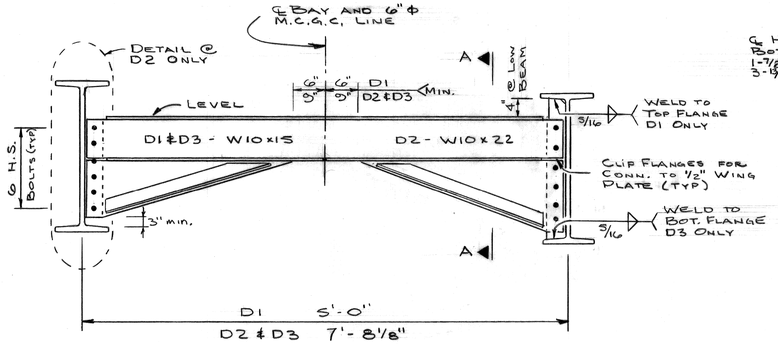
12 TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

STRUCTURAL STEEL - ELEVATIONS, BEARINGS & DETAILS

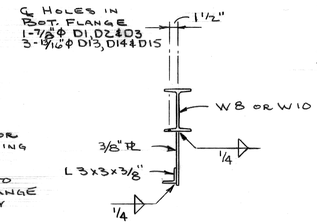
SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-124
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

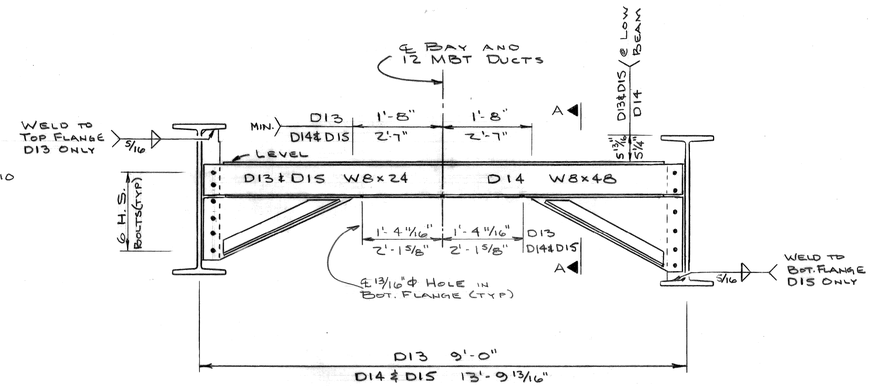
R. CARROLL, INC. 378 1818



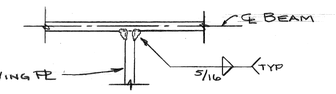
— D1, D2 & D3 —



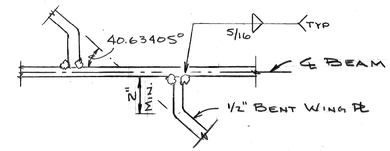
— SECTION A-A —



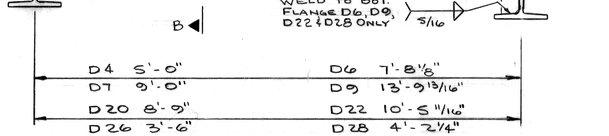
— D13, D14 & D15 —



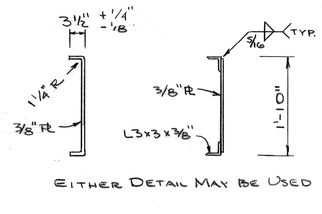
— D1, D4, D7, D10, D13, D16 —
D20, D23, D26 & D29



— D2, D3, D5, D6, D8
D9, D11, D12, D14 & D15 —

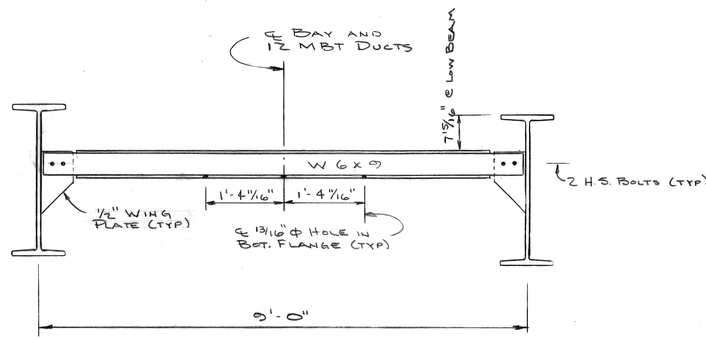


— D4, D6, D7, D9, D20, D22, D26 & D28 —



EITHER DETAIL MAY BE USED

— SECTION B-B —



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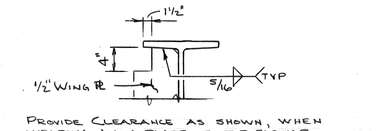
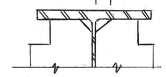


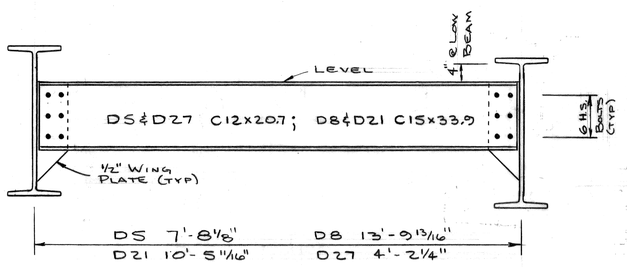
PROVIDE CLEARANCE AS SHOWN, WHEN WELDING WING PLATE TO TOP FLANGE, FOR THE USE OF SAFETY WALKERS

— D1, D4, D7, D10, D13, D20, D23, D26 & D29 —

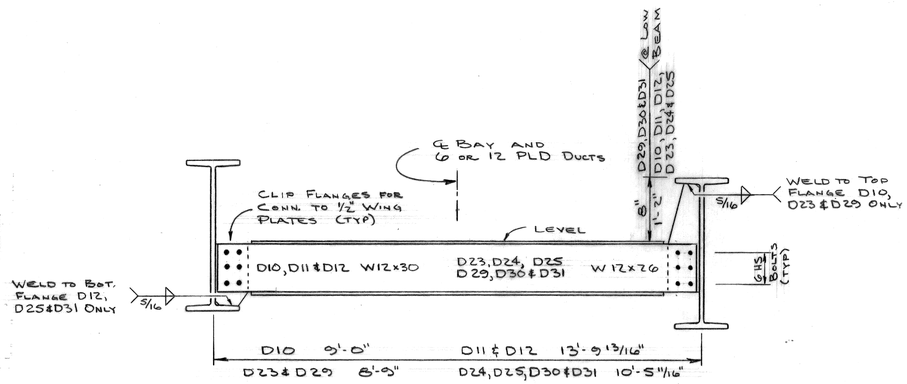


— CLIP DETAIL —

— CONNECTION DETAILS FOR 1/2" WING PLATES TO BEAMS —



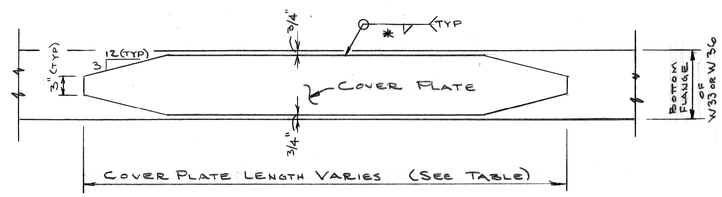
— D5, D8, D21 & D27 —



— D10, D11, D12, D23, D24, D25, D29, D30, D31 —

— D21, D22, D24, D25, D27, D28, D30 & D31 —

* 5/16 EXCEPT
3/8 FOR B4, B7, B9, B21, B22, B23
1/4 FOR B12, B14, B24

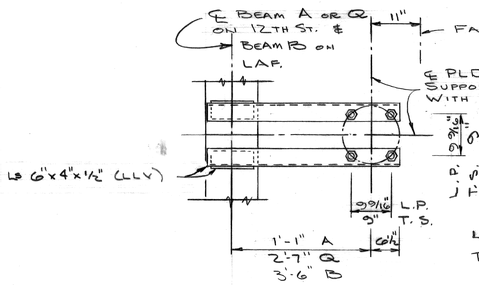


— COVER PLATE DETAILS —

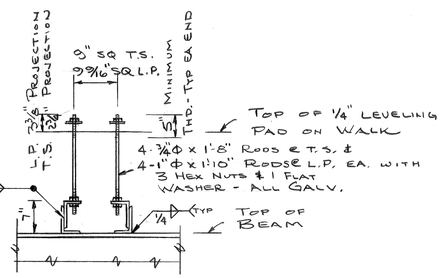
								REFERENCE DRAWINGS	DESIGNED BY		APPROVED:	CITY OF DETROIT CITY ENGINEERING DIVISION - EPMD FOR MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.	12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL	SHEET ___ OF ___ SHEETS
									DRAWN BY		STRUCTURAL ENGINEER		CONTRACT NO. 07110A
									TRACED BY	—	HEAD CIVIL ENGINEER	STRUCTURAL STEEL - DIAPHRAGMS & DETAILS	DRWG NO. S-125
COOR'D	DESCRIPTION		DR'N	CK'D	AP'VD	DATE			CHECKED BY		CITY ENGINEER		DATE NOV 1979
REVISIONS LOCATED BY COORDINATES ON SHEET													

1 2 3 4 5 6 7 8 9 10 11

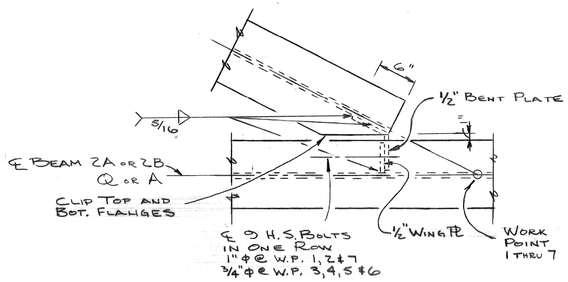
R. CARROLL, INC. 378 1818.



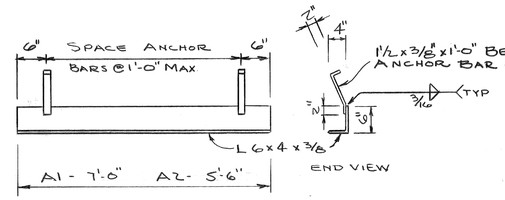
— PLAN —



— END VIEW —

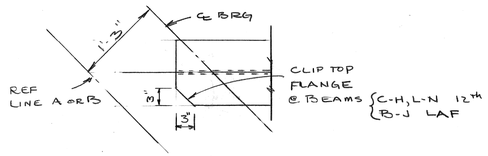


— PLAN - BEAM TO BEAM CONN. —

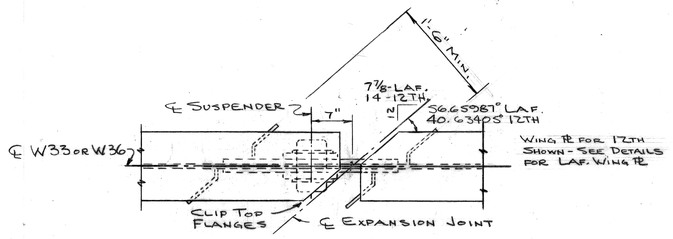


— LEDGE ANGLE A —

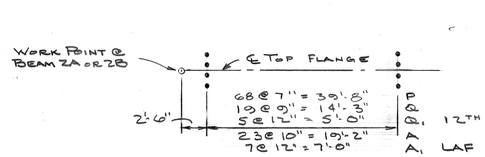
PLD ANCHOR SUPPORT DETAILS

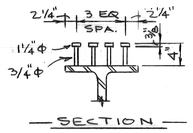


— VIEW C-C —

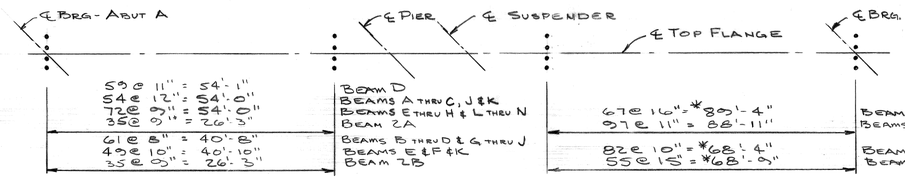


— VIEW B-B —



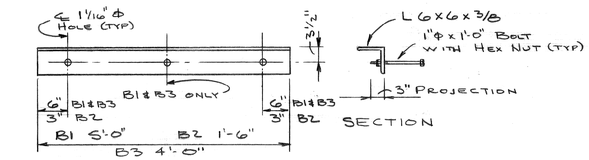


— SECTION —



— STUD SHEAR DEVELOPERS —

* ADJ LAST ROW AT SUSP. AS REQ.



— LEDGE ANGLE B —

LEDGE ANGLE DETAILS

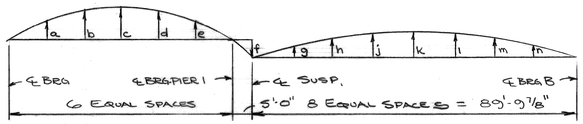
(SEE BACKWALL ELEVATIONS FOR LOCATIONS)

TOP OF STEEL ELEVATIONS

		A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	2A
TWELFTH																	
SPAN 1	℄ BRG OR W.P.	125.50	125.46	125.45	125.61	125.76	125.71	125.46	125.23	125.16	125.17	125.27	125.19	124.93	124.99	125.15	124.82
	MID-PT.	125.68	125.68	125.70	125.90	126.11	126.15	125.96	125.77	125.80	125.84	126.01	126.02	125.86	125.56	125.44	125.16
	℄ BRG-PIER	125.27	125.34	125.46	125.69	125.96	126.04	125.92	125.81	125.91	125.98	126.22	126.30	126.19	125.89	125.72	125.10
SPAN 2	℄ SUSP	125.16	125.24	125.38	125.62	125.89	125.97	125.86	125.78	125.87	125.95	126.22	126.30	126.20	125.93	125.80	
	MID-PT.	124.52	124.69	124.82	125.08	125.43	125.62	125.60	125.58	125.89	125.98	126.30	126.47	126.47	126.28	126.34	
	℄ BRG-B	122.23	122.50	122.81	123.16	123.62	123.86	123.92	124.00	124.33	124.51	124.97	125.25	125.33	125.22	125.37	

		A	B	C	D	E	F	G	H	J	K	ZB
LAFAYETTE												
SPAN 1	℄ BRG OR W.P.	125.06	124.75	124.66	124.54	124.45	124.37	124.14	123.86	123.50	123.55	124.19
	MID-PT.	124.98	124.89	124.95	124.90	124.77	124.69	124.47	124.17	123.79	123.82	125.14
	℄ BRG-PIER	124.91	124.90	124.94	124.90	124.78	124.70	124.40	124.20	123.82	123.78	125.10
SPAN 2	℄ SUSP.	124.88	124.88	124.90	124.86	124.76	124.67	124.46	124.18	123.80	123.74	
	MID-PT.	124.81	124.68	124.75	124.70	124.57	124.50	124.31	124.02	123.69	123.63	
	℄ BRG B	123.78	123.63	123.69	123.67	123.57	123.51	123.32	123.03	122.69	122.50	

STEEL ELEVATIONS ARE GIVEN FOR THE CASE OF THE STRUCTURAL STEEL ERECTED BUT WITH NO OTHER LOADS APPLIED.



TWELFTH ST. BEAM CAMBERS

	a	b	c	d	e	f	g	h	j	k	l	m	n
A	2	3¼	3⅝	3¼	2	1⅛	4½	7¾	9¾	10⅜	9¾	7¼	4½
B	2	3⅛	3½	3⅛	2	1⅛	4½	7⅝	9⅞	10¼	9⅞	7⅝	4½
C	1¾	2¾	3⅛	2¾	1¾	1	4	6⅞	8⅝	9¼	8⅝	6⅞	4
D	1¾	2¾	3⅛	2¾	1¾	1	3¾	6½	8⅛	8⅝	8⅛	6½	3¾
E	1¾	2¾	3⅛	2¾	1¾	1	3¾	6⅜	8	8½	8	6⅜	3¾
F	1⅛	3	3⅜	3	1⅛	1⅛	3⅞	6⅝	8¼	8¾	8¼	6⅝	3⅞
G	1⅞	3	3⅜	3	1⅞	1⅛	3⅜	6⅝	8¼	8¾	8¼	6⅝	3⅞
H	1¾	2¾	3⅛	2¾	1¾	1	3¾	6½	8⅛	8⅝	8⅛	6½	3¾
J	2	3⅛	3½	3⅛	2	1⅛	4¼	7¼	9⅛	9¾	9⅛	7¼	4¼
K	1⅞	3	3⅜	3	1⅞	1⅛	4⅛	7	8¾	9⅜	8¾	7	4⅛
L	1¾	2⅞	3¼	2⅞	1¾	1	3⅞	6⅝	8¼	8¾	8¼	6⅝	3⅞
M	2	3⅛	3½	3⅛	2	1⅛	3¾	6½	8⅛	8⅝	8⅛	6½	3¾
N	2	3¼	3⅝	3¼	2	1⅛	3¾	6½	8⅛	8⅝	8⅛	6½	3¾
P	⅞	1⅜	1½	1⅜	⅞	⅝	3⅛	6¾	8⅜	9	8⅜	6¾	3⅛
Q	MILL CAMBER UP						4⅛	7⅛	9¼	9⅞	9¼	7⅛	4⅜
2A	1⅜	2⅛	2⅜	2⅛	1⅜								
Q_1	MILL CAMBER UP												

DEFL. BEAM	c	k
	⅛	1
	⅛	1
	⅛	1
	⅛	⅞
	⅛	⅞
	⅛	⅞
	⅛	⅞
	⅛	⅞
	⅛	⅞
	⅛	⅞
	⅛	⅞
	⅛	⅞
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	0	⅛
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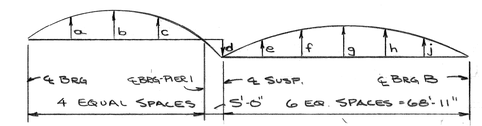
	0	



LAFAYETTE ST. BEAM CAMBERS

	a	b	c	d	e	f	g	h	j
A	HILL CAMBER DOWN				3⅜	5½	6⅛	5½	3⅜
B	5/8	7/8	5/8	3/8	2⅞	4⅝	5¼	4⅝	2⅛
C	1⅜	1⅞	1⅜	¾	3	4¾	5⅜	4¾	3
D	1¼	2¼	1¼	⅞	2⅞	4½	5⅛	4½	2⅞
E	1⅛	1⅞	1⅛	¾	2¾	4⅜	4⅞	4⅜	2¾
F	1⅜	1⅞	1⅜	¾	2¾	4⅜	4⅛	4⅜	2¾
G	1⅜	1⅞	1⅜	¾	2¾	4½	5	4½	2¾
H	1¼	1⅝	1¼	⅝	2¾	4½	5	4½	2¾
J	1¼	1⅝	1¼	⅝	3	4¾	5⅜	4¾	3
K	1⅜	1⅞	1⅜	¾	3⅛	5½	6⅛	5½	3⅜
2B	1¾	2⅜	1¾						
A_1	HILL CAMB. UP								

DEFL. BEAM	b	g
	0	⅜
	0	⅜
	0	⅜
	0	⅜
	0	⅜
	0	⅜
	0	⅜
	0	⅜
	0	⅜
	0	⅜
	0	
	0	

BEAM DEFLECTION IS WITH ALL STRUCTURAL STEEL ERECTED AND NO OTHER LOADS APPLIED.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

REFERENCE DRAWINGS

DESIGNED BY — R. Kaufman
DRAWN BY — R. Kaufman
TRACED BY —
CHECKED BY — J. McGuire

APPROVED:

= STRUCTURAL ENGINEER

= HEAD CIVIL ENGINEER

= CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

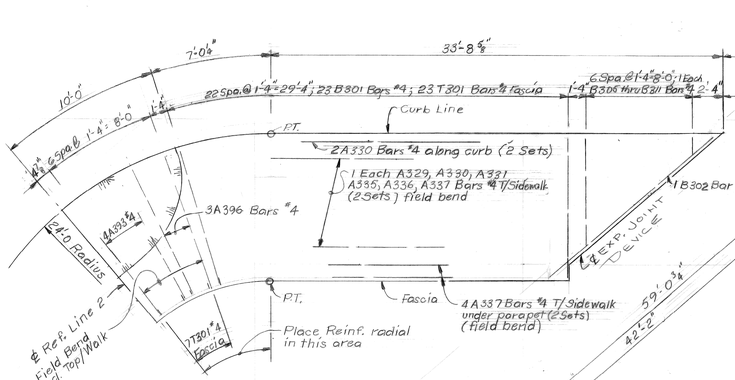
12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

STRUCTURAL STEEL DETAILS

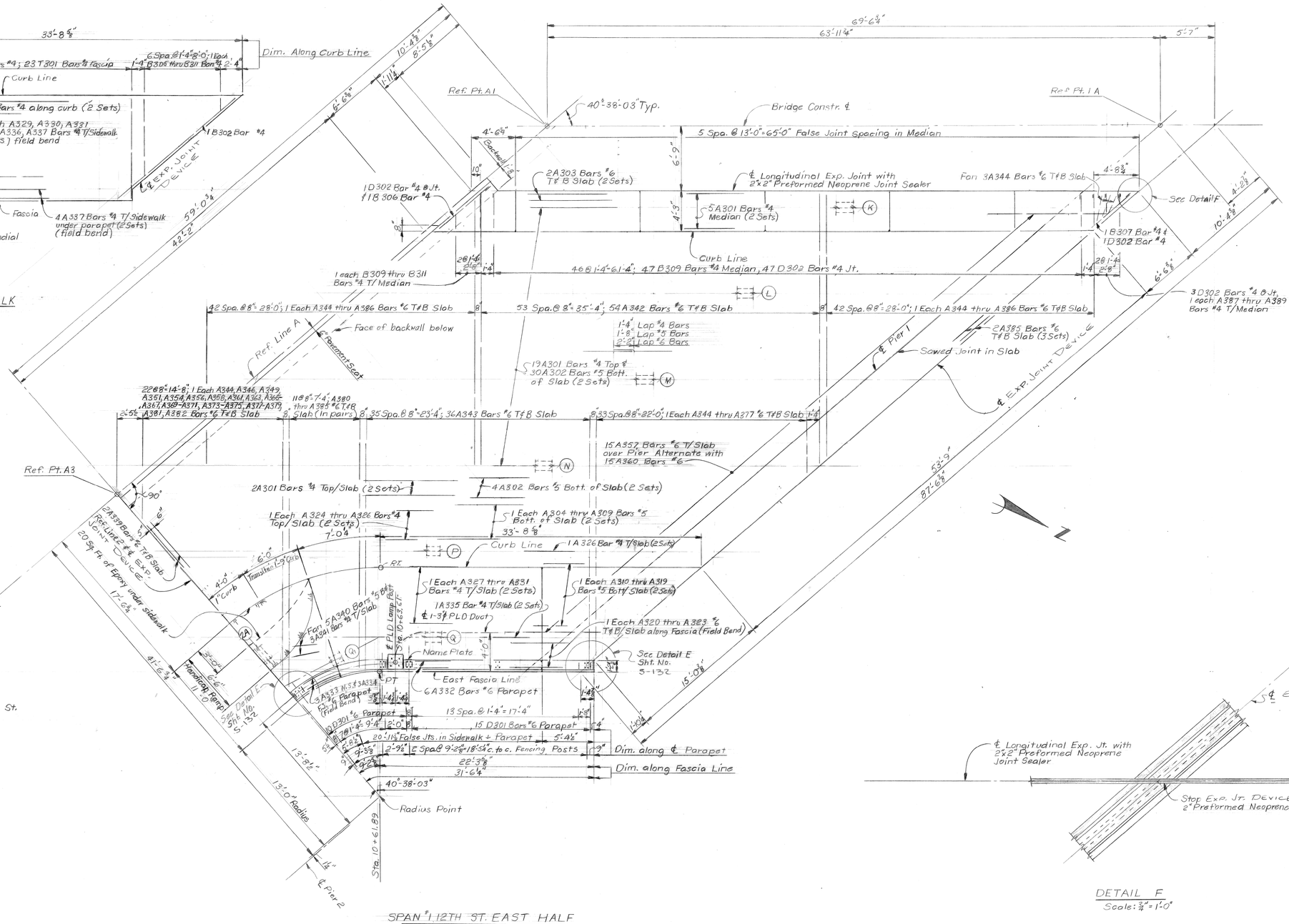
SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-126
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

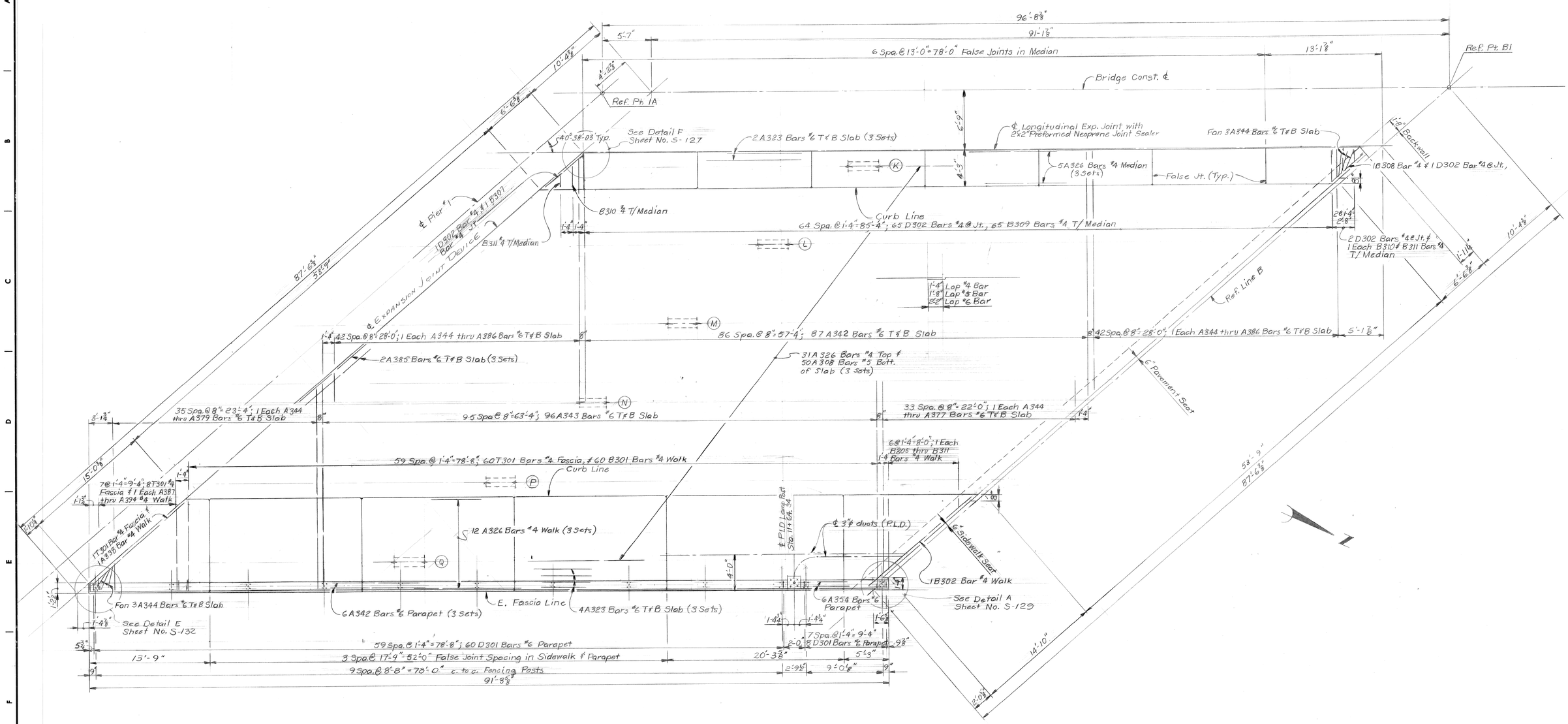
B. K. ELLIOTT CO. 70215-M2 200 1-80



PLAN - SOUTH WALK
Scale: ¾"=1'-0"


69'-6¾"
63'-11¾"
5'-7"
10'-4⅞"
8'-5⅝"
1'-11¾"
Ref. Pt. A1
40°-38'-03" Typ.
Bridge Constr. ℄
Ref. Pt. 1A
5 Spa. @ 13'-0" = 65'-0" False Joint Spacing in Median
4'-6¾"
Coolwall 1'-8"
10"
6'-1"
4'-3"
1 D302 Bar #4 @ Jt. 118 306 Bar #4
2A303 Bars #6 T&B Slab (2 Sets)
℄ Longitudinal Exp. Joint with 2"x2" Preformed Neoprene Joint Sealer
Fan 3A344 Bars #6 T&B Slab
4'-8¾"
See Detail F
4'-2⅞"
10'-4⅞"
5A301 Bars #4 Median (2 Sets)
1 B307 Bar #4 @ 1 D302 Bar #4
Curb Line
46 @ 1'-4" = 61'-4"; 47 B309 Bars #4 Median, 47 D302 Bars #4 Jt.
1 each B309 thru B311 Bars #4 T/Median
42 Spa. @ 8" = 28'-0"; 1 Each A344 thru A386 Bars #6 T&B Slab
53 Spa. @ 8" = 35'-4"; 54 A342 Bars #6 T&B Slab
42 Spa. @ 8" = 28'-0"; 1 Each A344 thru A386 Bars #6 T&B Slab
3 D302 Bars #4 @ Jt. 1 each A387 thru A389 Bars #4 T/Median
Face of backwall below
Ref. Line A
"Pavement Seat"
1'-4" Lap #4 Bars
1'-8" Lap #5 Bars
2'-2" Lap #6 Bars
2A385 Bars #6 T&B Slab (3 Sets)
19 A301 Bars #4 Top ℄ 30 A302 Bars #5 Bott. of Slab (2 Sets)
Sawed Joint in Slab
℄ Pier 1
℄ EXP. JOINT DEVICE
226 @ 14'-8"; 1 Each A344, A346, A349, A351, A354, A356, A358, A360, A361, A365, A367, A369, A371, A373, A375, A377, A379, A381, A382 Bars #6 T&B Slab
118 @ 7'-4"; A380 thru A385 #6 T&B
8" Slab (In pairs)
8" 35 Spa. @ 8" = 23'-4"; 36 A343 Bars #6 T&B Slab
8" 33 Spa. @ 8" = 22'-0"; 1 Each A344 thru A377 #6 T&B Slab
1'-4"
15 A357 Bars #6 T/Slab over Pier Alternate with 15 A360 Bars #6
Ref. Pt. A3
90°
2A301 Bars ¾ Top/Slab (2 Sets)
4 A302 Bars #5 Bott. of Slab (2 Sets)
1 Each A324 thru A326 Bars #4 Top/Slab (2 Sets)
7'-0¼"
1 Each A304 thru A309 Bars #5 Bott. of Slab (2 Sets)
33'-8⅝"
Curb Line
1 A326 Bar #4 T/Slab (2 Sets)
RP
1 Each A327 thru A331 Bars #4 T/Slab (2 Sets)
1 Each A310 thru A319 Bars #5 Bott. Slab (2 Sets)
1 A335 Bar #4 T/Slab (2 Sets)
℄ 1-3" PLD Duct
1 Each A320 thru A323 #6 T&B Slab along Fascia (Field Bend)
Name Plate
See Detail E Sht. No. S-1132
East Fascia Line
6 A332 Bars #6 Parapet
PT
3 A333 N.S. ℄ A334 For 3 A391 Bars #4 Parapet (Field Bend)
13 Spa. @ 1'-4" = 17'-4"
15 D301 Bars #6 Parapet
20'-11⅛" False Jts. in Sidewalk & Parapet
5'-4½"
2'-9½" ℄ Spa @ 9'-2⅝" = 18'-5¼" c. to c. Fencing Posts
Dim. along ℄ Parapet
22'-3⅞"
Dim. along Fascia Line
31'-6¼"
40°-38'-03"
Radius Point
Sta. 10+61.89
℄ Pier 2
20 Sq. Ft. of Epoxy under sidewalk
17'-6¾"
41'-6¾"
13'-9½"
13'-0" Radius
Handicap Ramp
11'-0"
See Detail E Sht. No. S-1132
See Lafayette St. Span #1 for Continuation
53'-9"
87'-6¾"
15'-0⅝"
1'-4"
1'-4"
2'-8"
1'-4"
1'-4"
1'-4

R. K. ELLIOTT CO. 70215-M2 200 1-60



SPAN #2 12TH ST. EAST HALF
Scale 3/16" = 1'-0"
STAGE I

REVISIONS LOCATED BY COORDINATES ON SHEET						
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REFERENCE DRAWINGS

DESIGNED BY	McGuire
DRAWN BY	L.G.
TRACED BY	
CHECKED BY	

APPROVED:

STRUCTURAL ENGINEER

HEAD CIVIL ENGINEER

CITY ENGINEER

CITY OF DETROIT

CITY ENGINEERING DIVISION E.P.M.D.

FOR

MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANSPORTATION

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

SUPERSTRUCTURE DETAILS - 12TH ST.

SHEET ___ OF ___ SHEETS

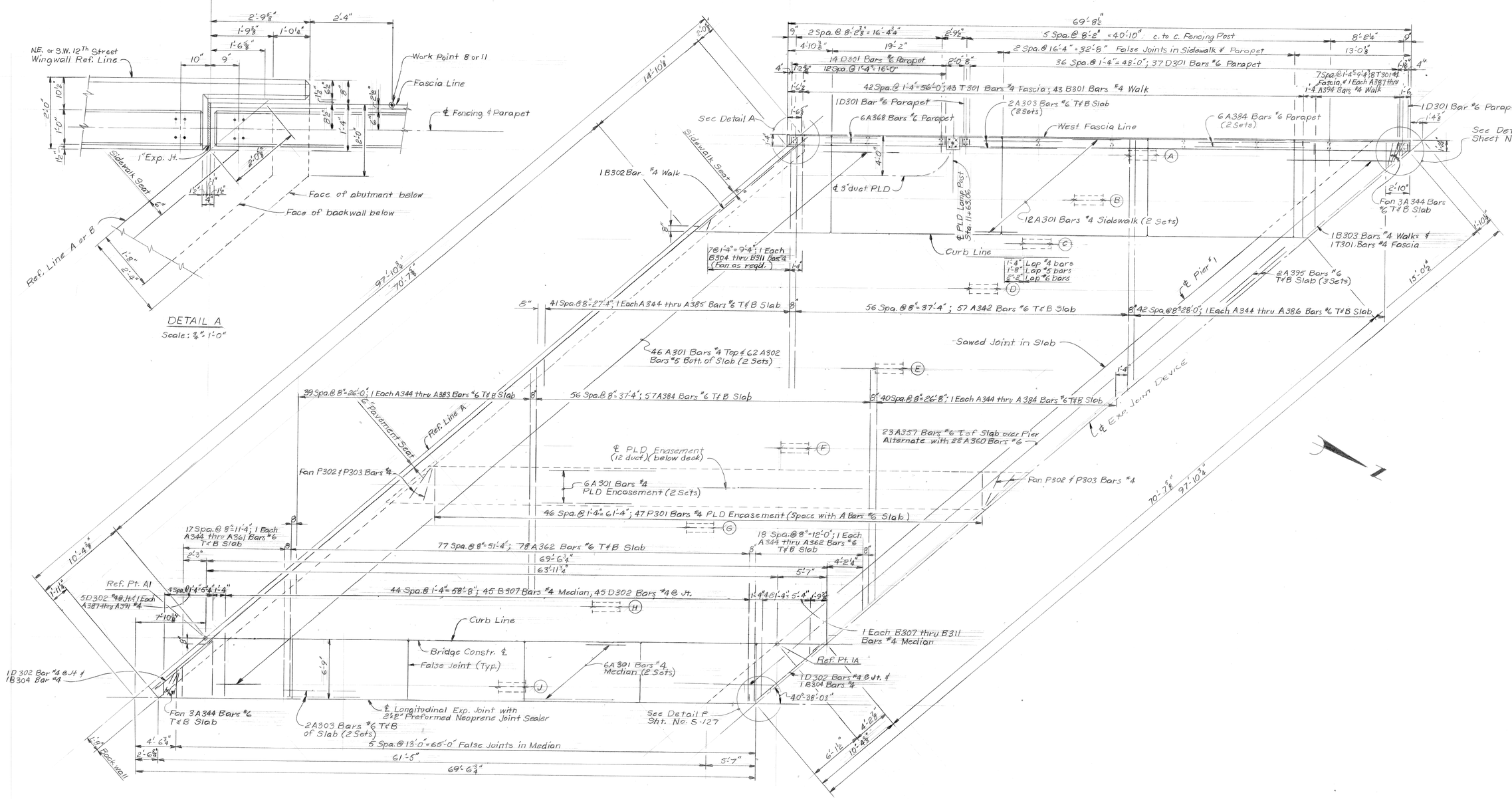
CONTRACT No. 07110A

DRWG No. S128

DATE NOV 1979

R. K. ELLIOTT CO.
70215-M2 200 1-60

DETAIL A
Scale: ⅜" = 1'-0"



SPAN #1 12TH. ST. WEST HALF
Scale: 3/16" = 1'-0"
STAGE II

REVISIONS LOCATED BY COORDINATES ON SHEET						REFERENCE DRAWINGS
COOR'D	DESCRIPTION	DR'N	CK'D	APV'D	DATE	

DESIGNED BY	McGuire
DRAWN BY	L.G.
TRACED BY	
CHECKED BY	

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

CITY OF DETROIT

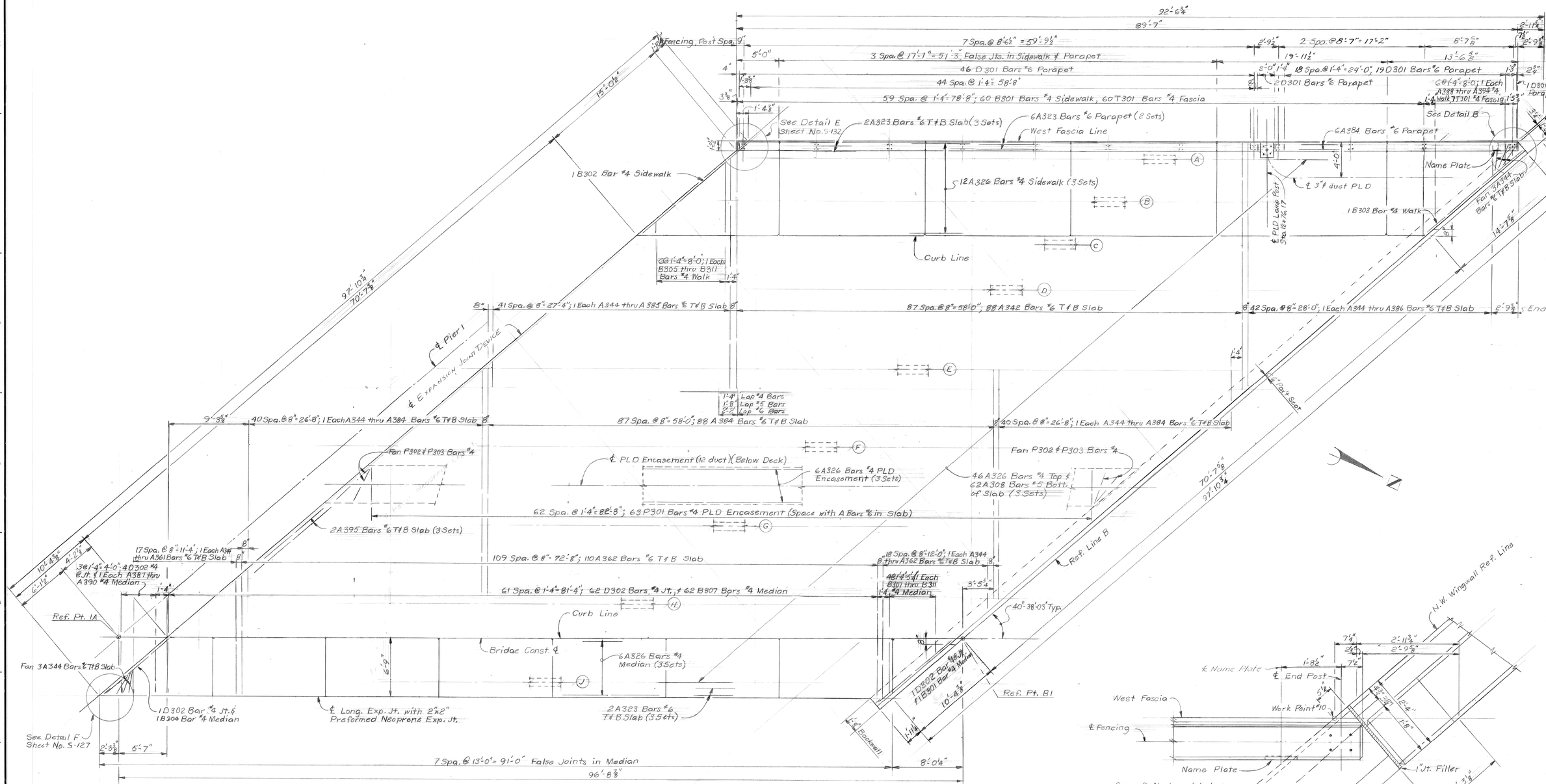
CITY ENGINEERING DIVISION E.P.M.D.
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANSPORTATION

12TH ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

SUPERSTRUCTURE DETAILS - 12TH ST.

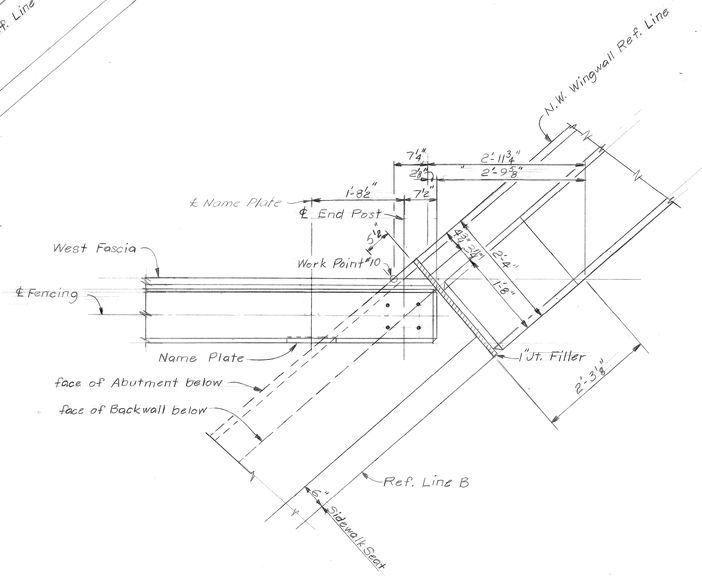
SHEET ___ OF ___ SHEETS
CONTRACT No. 07110A
DRWG No. S 129
DATE Nov 1979

B. K. ELLIOTT CO. 70215-M2 200 1-80



SPAN #2 12TH ST. WEST HALF
Scale: 3/16" = 1'-0"

STAGE II



DETAIL B
Scale: ¾" = 1'-0"

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY	Mc Guire
DRAWN BY	L.G.
TRACED BY	
CHECKED BY	

APPROVED:

STRUCTURAL ENGINEER

HEAD CIVIL ENGINEER

CITY ENGINEER

CITY OF DETROIT

CITY ENGINEERING DIVISION E.P.M.D.

FOR

MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANSPORTATION

12TH ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

SUPERSTRUCTURE DETAILS - 12TH ST.

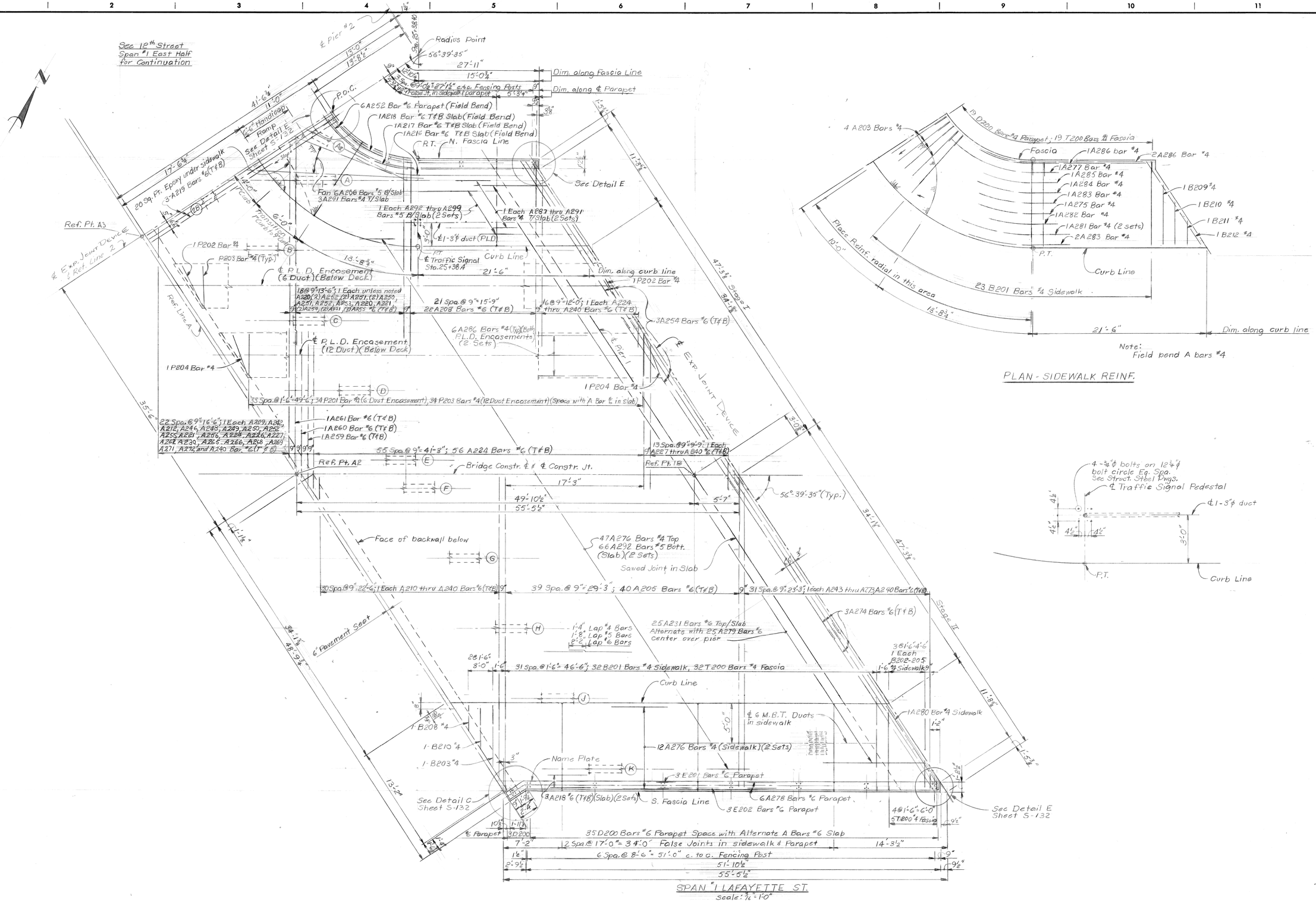
SHEET ___ OF ___ SHEETS

CONTRACT No. 07110A

DRWG No. S 130

DATE Nov 1979

B. K. ELLIOTT CO. 70215-ME 200 1-80



SPAN "I LAFAYETTE ST.
Scale: ¾" = 1'-0"

Note:
Field bend A bars #4

PLAN - SIDEWALK REINF.

										REFERENCE DRAWINGS	
										DESIGNED BY	McGuire
										DRAWN BY	L.G.
										TRACED BY	
										CHECKED BY	
COOR'D	DESCRIPTION			DR'N	CK'D	AP'VD	DATE				
REVISIONS LOCATED BY COORDINATES ON SHEET											

APPROVED:

STRUCTURAL ENGINEER

HEAD CIVIL ENGINEER

CITY ENGINEER

CITY OF DETROIT

CITY ENGINEERING DIVISION E.P.M.D.

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

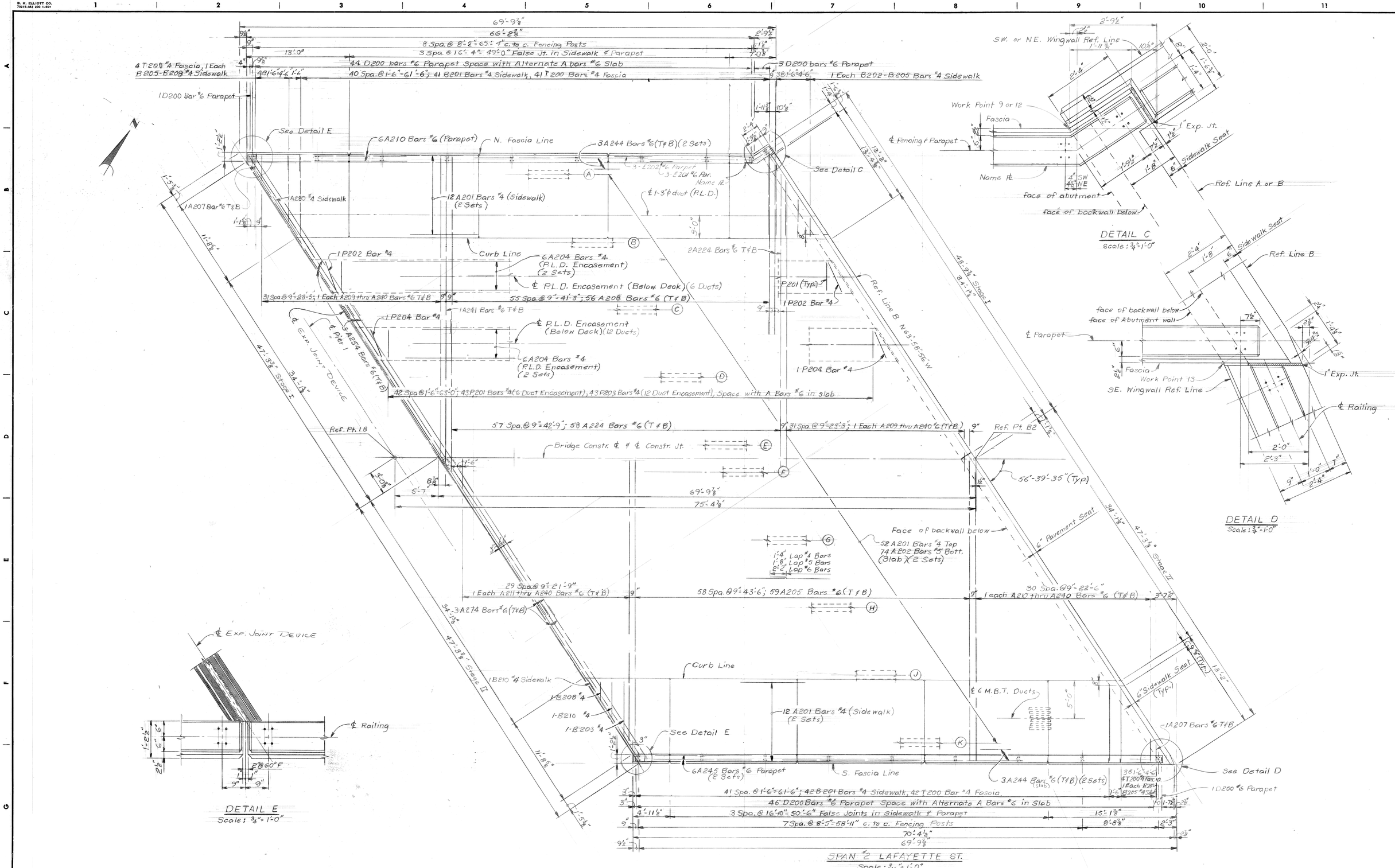
SUPERSTRUCTURE DETAILS - LAFAYETTE ST.

SHEET ___ OF ___ SHEETS

CONTRACT NO. 07110A

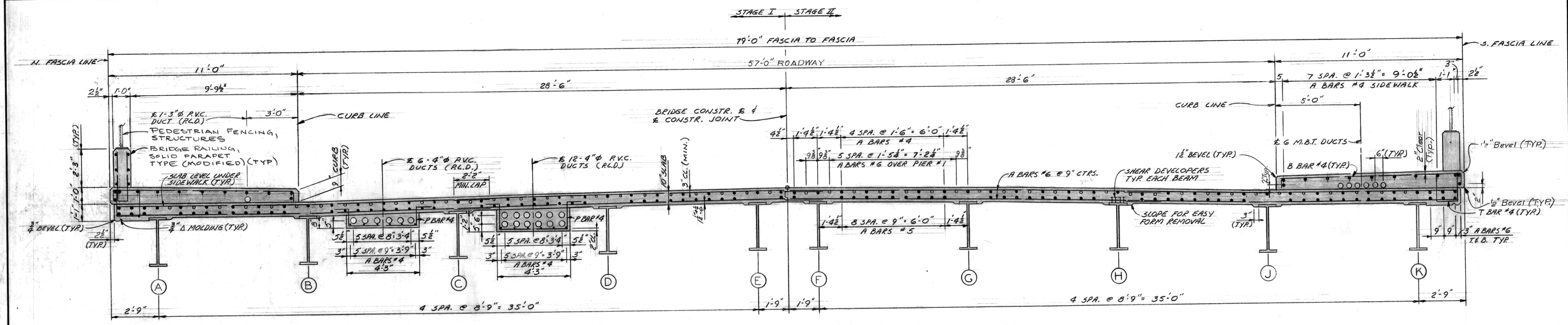
DRWG NO. S131

DATE NOV 1979

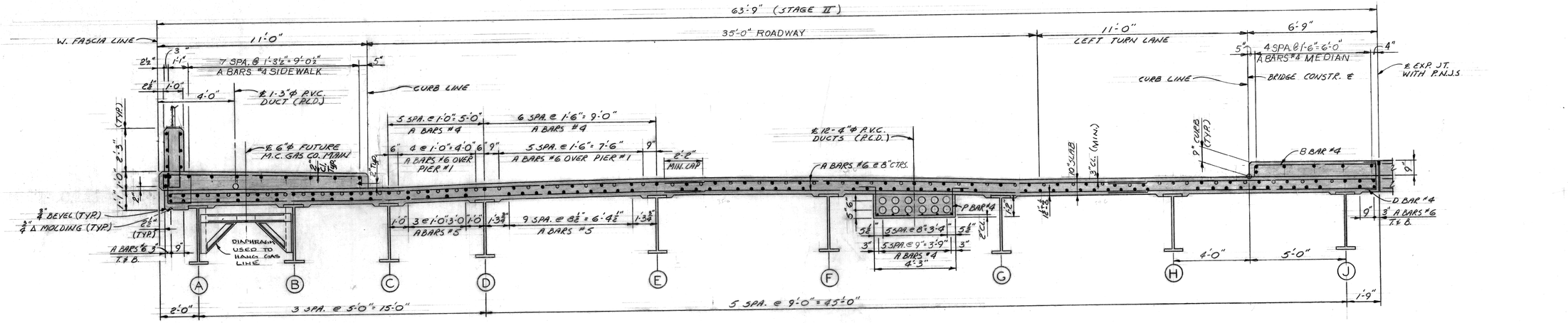


REFERENCE DRAWINGS	DESIGNED BY	McGuire	APPROVED:	CITY OF DETROIT	12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL
	DRAWN BY	L.G.	STRUCTURAL ENGINEER	CITY ENGINEERING DIVISION E.P.M.D.	SHEET ___ OF ___ SHEETS
	TRACED BY		HEAD CIVIL ENGINEER	FOR	CONTRACT No. 07110A
	CHECKED BY	[signature]	CITY ENGINEER	MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANSPORTATION	DRWG No. S 132
COOR'D / DESCRIPTION / DR'N / CK'D / AP'VD / DATE					SUPERSTRUCTURE DETAILS - LAFAYETTE ST.
REVISIONS LOCATED BY COORDINATES ON SHEET					DATE NOV. 1979

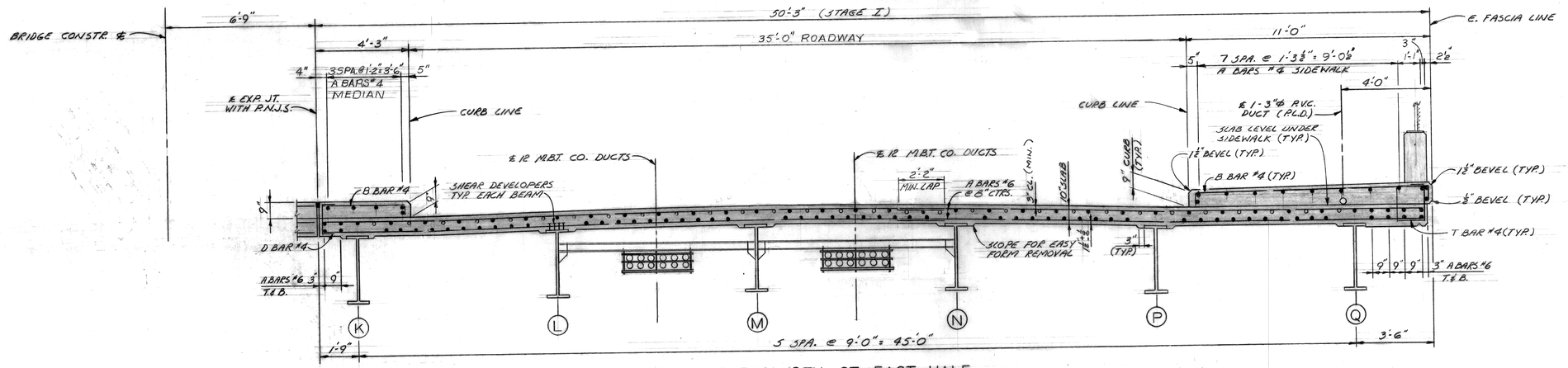
R. CARROLL, INC. 378 1818



CROSS SECTION LAFAYETTE ST.



CROSS SECTION 12TH. ST.-WEST HALF



SCALE : ⅜" = 1'-0"

CROSS SECTION 12TH. ST.-EAST HALF

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY: M. Guire
DRAWN BY: A.G.
TRACED BY:
CHECKED BY:

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

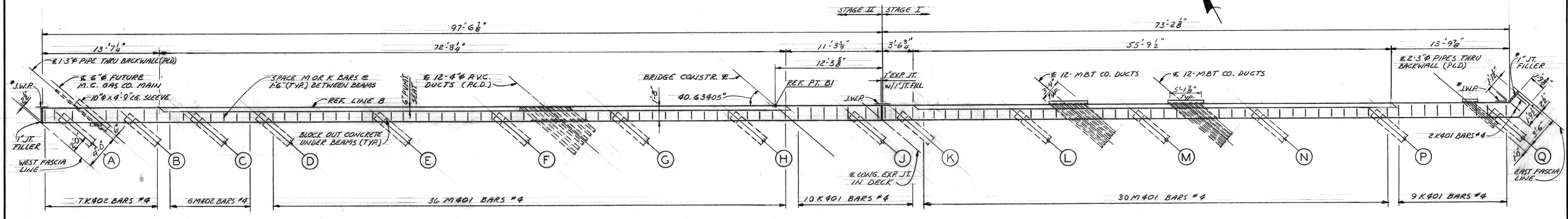
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12TH. ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

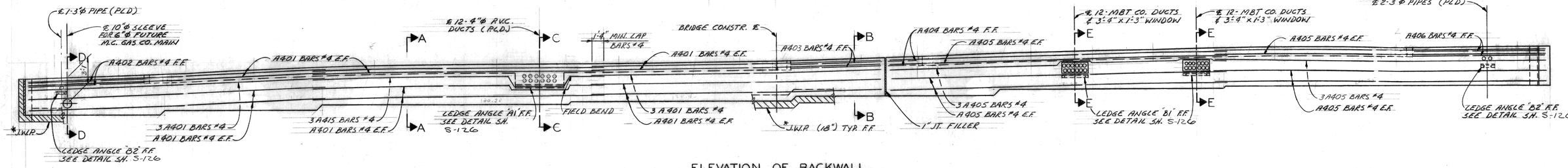
CROSS SECTIONS - 12TH. ST. & LAFAYETTE ST.

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-133
DATE NOV 1979

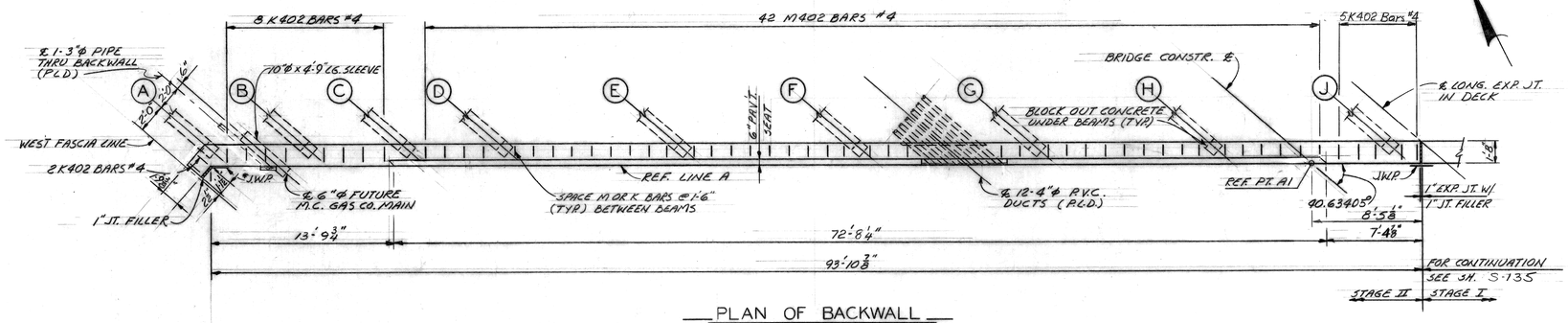
R. CARROLL, INC. 378 1818.



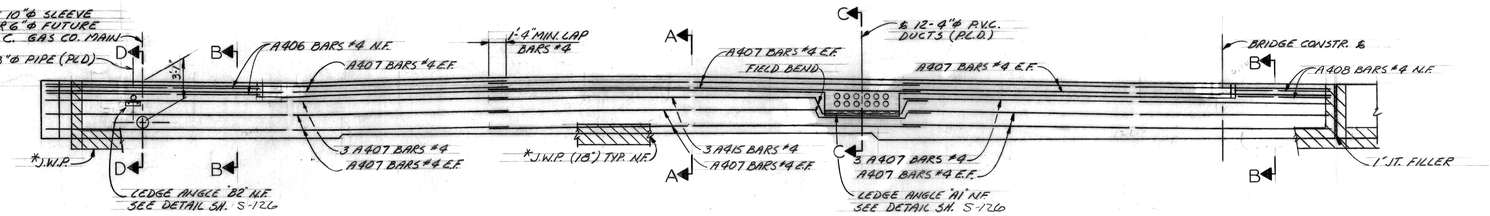
PLAN OF BACKWALL



ELEVATION OF BACKWALL
ABUTMENT B 12TH ST.



PLAN OF BACKWALL



ELEVATION OF BACKWALL
ABUTMENT A 12TH ST. (WEST HALF)

NOTE: FOR ELEVATIONS AT TOP OF BACKWALL, SEE SCREED ELEVATIONS SHEET S-13B
* DENOTES ITEMS THAT ARE INCLUDED IN ABUTMENT QUANTITIES.

SCALE: 3/16" = 1'-0"

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY: Mc Guire
DRAWN BY: A.G.
TRACED BY:
CHECKED BY:

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

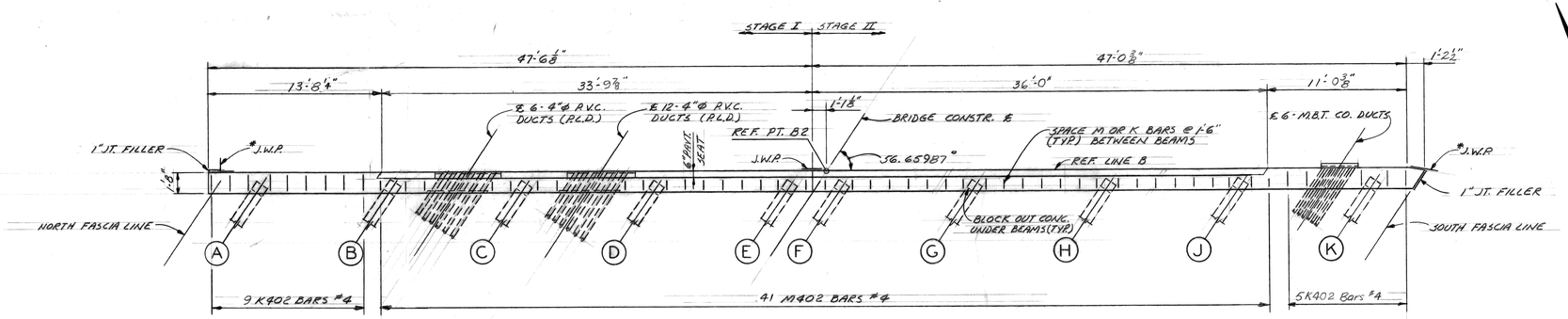
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

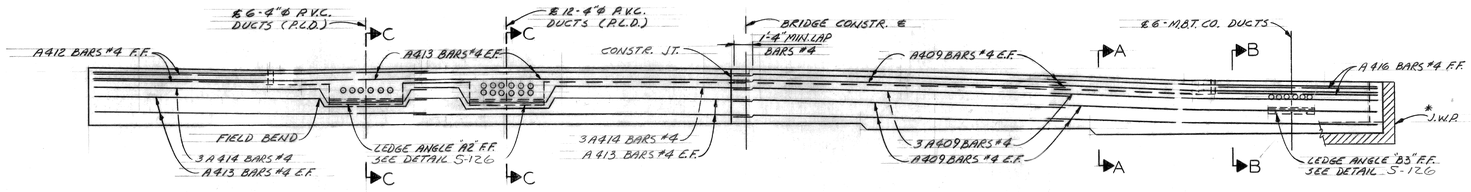
SUPERSTUCTURE DETAILS - BACKWALLS - 12TH

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG NO. S-134
DATE Nov 1979

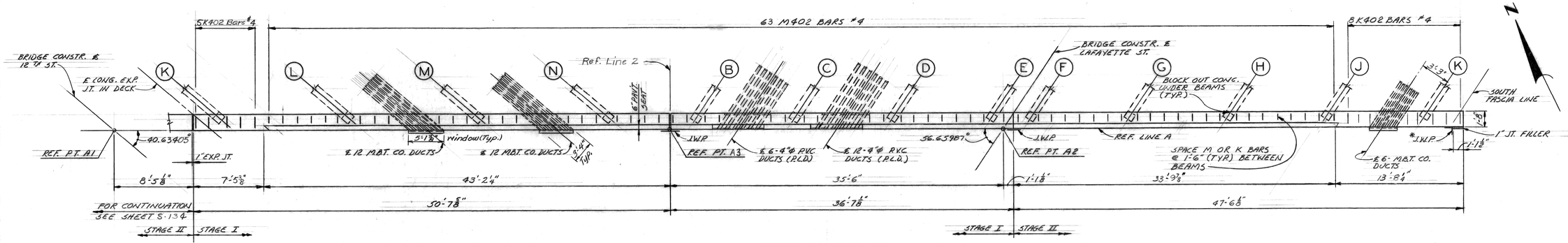
K&E 17 0153 12-78 8714±



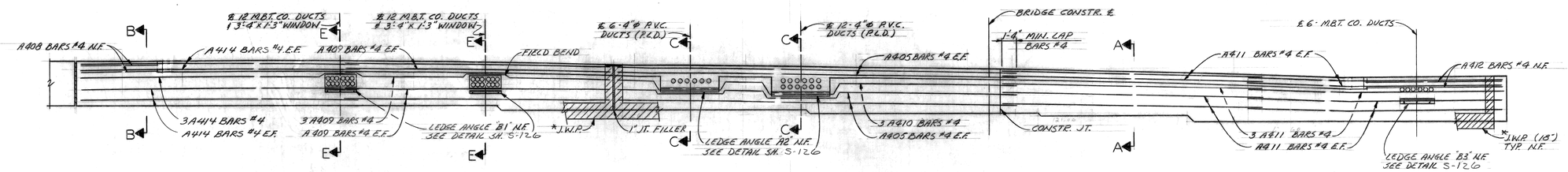
PLAN OF BACKWALL



ELEVATION OF BACKWALL
ABUTMENT B LAFAYETTE ST.



PLAN OF BACKWALL



ELEVATION OF BACKWALL
ABUT. A 12TH ST. (EAST HALF) & LAFAYETTE ST.

NOTE: FOR ELEVATIONS AT TOP OF BACKWALL, SEE SCREED ELEVATIONS, SHEET #62.
* DENOTES ITEMS THAT ARE INCLUDED IN ABUTMENT QUANTITIES.

SCALE 3/16" = 1'-0"

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY Mc Guire
DRAWN BY A.G.
TRACED BY
CHECKED BY

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

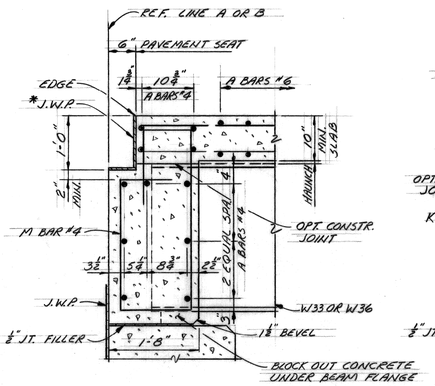
CITY OF DETROIT
CITY ENGINEERS DIVISION E P M D
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

SUPERSTRUCTURE DETAILS-BACKWALLS

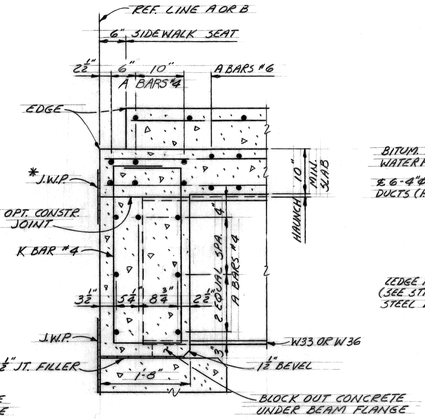
SHEET ___ OF ___ SHEETS
CONTRACT No. 07110A
DRWG No. S135
DATE Nov 1979

R. CARROLL, INC. 378 1818.

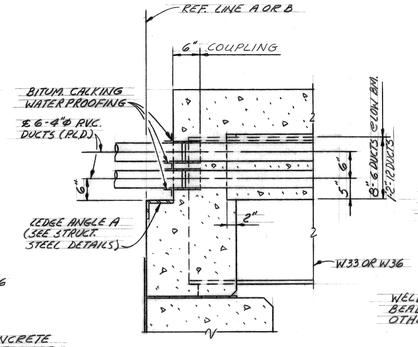


*J.W.P. AT OPTIONAL CONSTR. JOINTS IS INCIDENTAL TO CONCRETE 45 D.

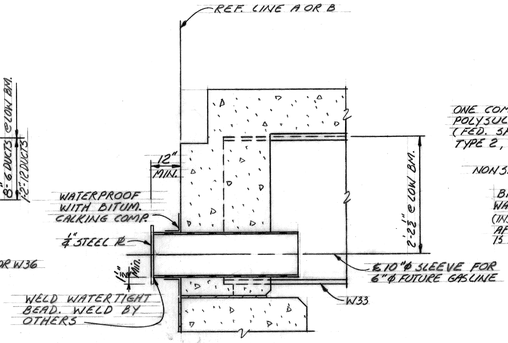
SECTION A-A



SECTION B-B

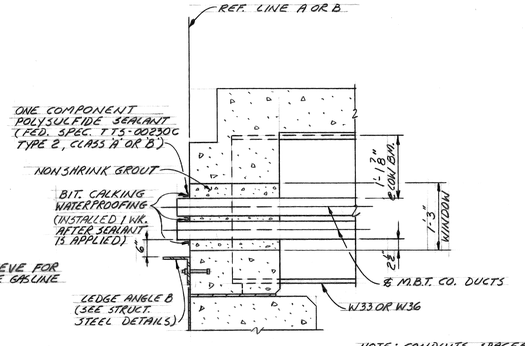


SECTION C-C



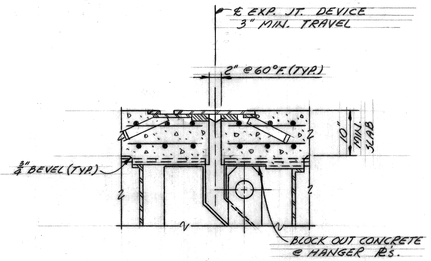
SLEEVE TO BE FURNISHED AS SHOWN BY MICH. CON. GAS. CO. AND INSTALLED BY CONTRACTOR. WATERPROOFING INCIDENTAL TO 10" Ø PIPE SLEEVE - PLACED.

SECTION D-D

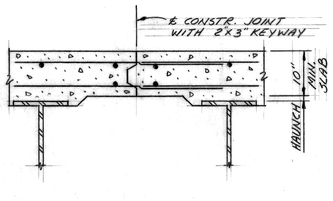


NOTE: CONDUITS, SPACERS, SEALANT AND GROUT FURNISHED AND INSTALLED BY M.B.T. CO.

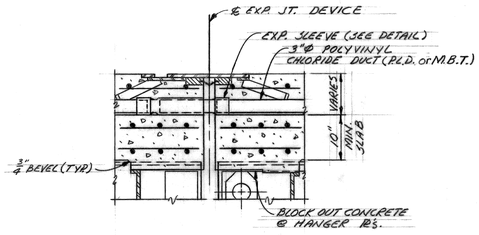
SECTION E-E



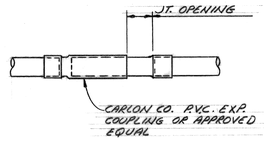
SECTION THRU SLAB AT EXP. JT.



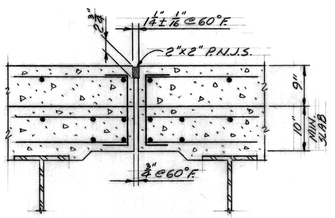
SECTION THRU SLAB AT LONG. CONST. JT.



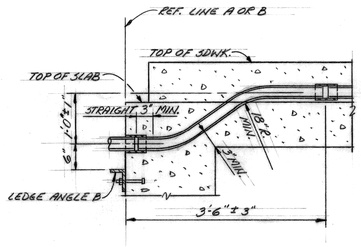
M.B.T. & P.L.D. CONDUIT DETAIL AT EXP. JT.



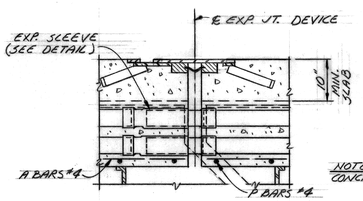
EXPANSION SLEEVE DETAIL



SECTION THRU MEDIAN AT LONG. EXP. JT.



P.L.D & M.B.T. CONDUIT DETAIL AT BACKWALL



NOTE: BLOCK OUT CONCRETE @ HANGER RODS.

P.L.D. CONDUITS AT EXP. JT.

GENERAL NOTES:

J.W.P. DENOTES JOINT WATERPROOFING.
P.L.D. DENOTES PUBLIC LIGHTING DEPARTMENT.
T DENOTES TOP OF SLAB. B OR BOT. DENOTES BOTTOM OF SLAB.
N.F. DENOTES NEAR FACE.
F.F. DENOTES FAR FACE.
E.F. DENOTES EACH FACE.
EDGE OR GROOVE DENOTE EDGING OR GROOVING WITH AN APPROVED TOOL.

THE TOP MAT OF DECK REINFORCEMENT AND ALL THE MEDIAN AND SIDEWALK REINFORCEMENT SHALL BE EPOXY COATED IN ACCORDANCE WITH THE SUPPLEMENTAL SPECIFICATIONS.

IF THE OPTIONAL CONSTRUCTION JOINT IN THE BACKWALL IS USED, CAST THE LOWER PORTION OF THE BACKWALL PRIOR TO PLACING DECK REINFORCEMENT.

THE CONTRACTOR IS TO PROVIDE A SAWED JOINT 1/8 INCH DEEP X 1/8 INCH WIDE (MIN.) IN THE TOP OF THE SLAB OVER AND PARALLEL TO THE CENTERLINE OF THE PIERS. THE JOINT IS TO BE SAWED BEFORE CASTING OF SIDEWALKS AND MEDIANS AND IS TO BE FILLED WITH HOT POURED JOINT SEALANT. SAWING OF JOINT AND SEALANT ARE INCIDENTAL TO SUPERSTRUCTURE CONCRETE.

PROTECTIVE TREATMENT FOR BRIDGE DECKS IS TO BE APPLIED TO ALL SUPERSTRUCTURE CONCRETE SURFACES BETWEEN INSIDE FACES OF PARAPETS.

SIDEWALKS AND MEDIAN POURS SHALL NOT BE CAST UNTIL SLAB CONCRETE HAS ATTAINED AT LEAST 50% OF ITS DESIGN STRENGTH AS DETERMINED BY TABLE 7.01-4 OF THE STANDARD SPECIFICATIONS.

THE PARAPET SHALL BE GIVEN A RUBBED SURFACE FINISH ON THE VERTICAL AND TOP CONCRETE SURFACE

THE P.L.D. ENCASEMENT SHALL BE WITH STRUCTURAL LIGHTWEIGHT CONCRETE

CONCRETE QUANTITIES GRADE 45 D (C.Y.)

POUR LOCATION	12TH ST.		LAFAYETTE ST.	
	STG. I	STG. II	STG. I	STG. II
SLAB - SPAN 1	112.6	162.5	76.8	81.0
SLAB - SPAN 2	166.8	210.3	99.1	99.2
MEDIAN - SPAN 1	8.1	12.8	-	-
MEDIAN - SPAN 2	10.6	16.9	-	-
SIDEWALK - SPAN 1	14.0	24.5	12.5	18.2
SIDEWALK - SPAN 2	31.8	32.0	24.4	22.9
SUBTOTAL	343.9	459.0	212.8	221.3
TOTAL	802.9		434.1	
GRAND TOTAL GR. 45 D =	1237.0			

* PARAPET CONCRETE GRADE 35 S = 23.0 C.Y. 12TH ST. 18.9 C.Y. LAFAYETTE ST. AND IS INCIDENTAL TO BRIDGE FENCING - SOLID PARAPET TYPE.

MISCELLANEOUS QUANTITIES

ITEM	UNIT	12TH ST.	LAFAYETTE ST.	TOTAL
FORM, FINISH & CURE SUPERSTR. CONC.	LUMP SUM	L.S.	L.S.	L.S.
LOW TEMP. PROTECTION - SUPERSTR. CONC.	CU. YDS.	825.1	462.9	1288.0
PROTECTIVE TREATMENT FOR BRIDGE DECKS	SQ. FT.	17510	9475	26985
2" PREFORMED NEOPRENE JOINT SEAL	LIN. FT.	160	0	160
EPOXY BONDING AGENT	SQ. FT.	20	20	40
10 INCH PIPE SLEEVE - PLACED	EACH	2	0	2
3 INCH CONDUIT	LIN. FT.	188	0	188
4 INCH CONDUIT	LIN. FT.	1910	2234	4144
PEDESTRAIN FENCING, STRUCTURES	SQ. FT.	2210	1767	3977
JOINT WATERPROOFING	SQ. FT.	14	7	21
BRIDGE RAILING SOLID PARAPET TYPE (MOD.)	LIN. FT.	276.4	220.9	497.3
STRUCTURAL LIGHTWEIGHT CONCRETE	CU. YDS.	22.2	28.8	51.0

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY: Mc Guire
DRAWN BY: A.G.
TRACED BY:
CHECKED BY: R. Hawkins

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

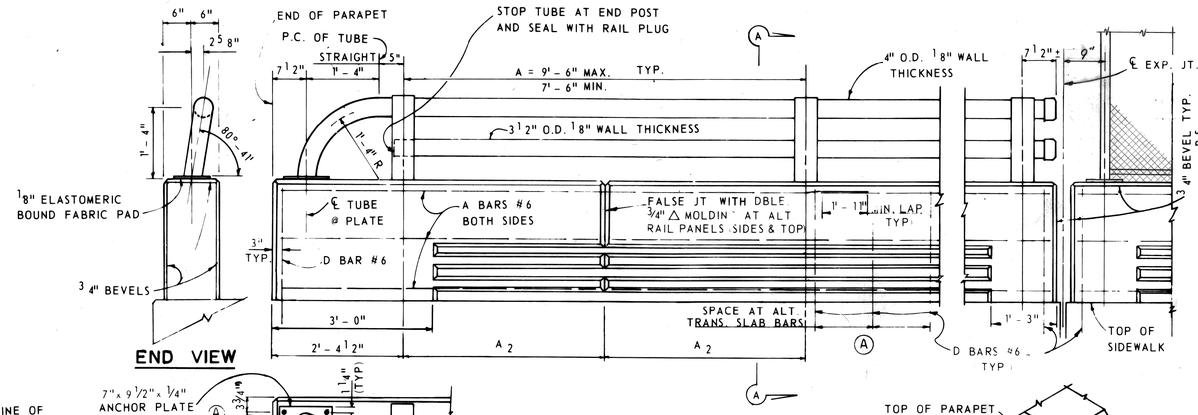
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

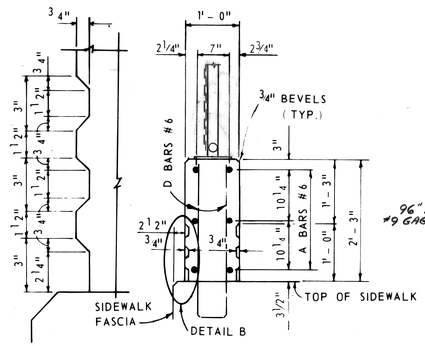
12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

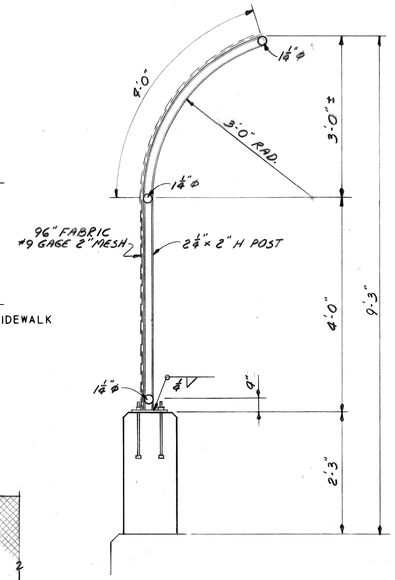
SUPERSTRUCTURE DETAILS

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG. NO. S-136
DATE NOV 1979

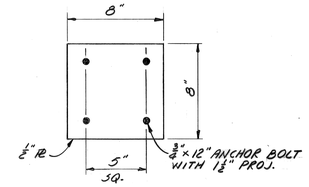
R. CARROLL, INC. 378 1818



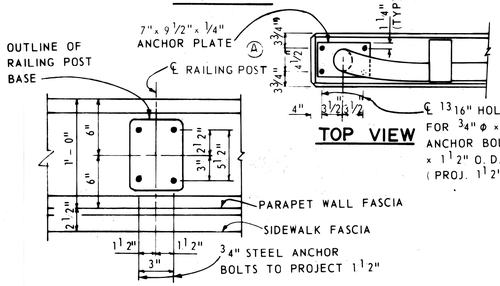




NOTE: AT EXP. JTS. SET POST 18" APART, EXTEND FABRIC ACROSS JT. LEAVING 1" ± SLACK. USE EXP. SLEEVES ON 1 1/2" ø TUBES. OMIT TUBES @ LIGHT POSTS.

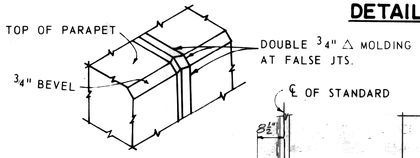


BASE PLATE DETAIL



TOP VIEW

ANCHOR BOLT SETTING PLAN



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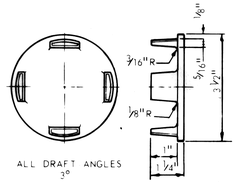
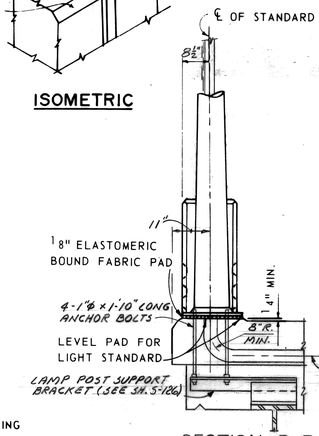
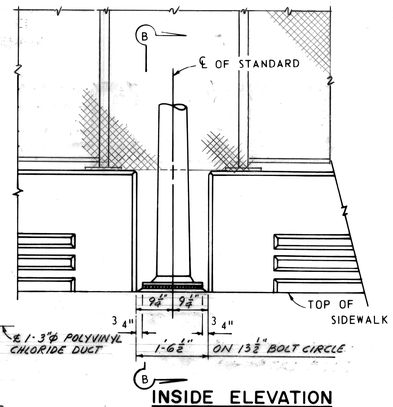


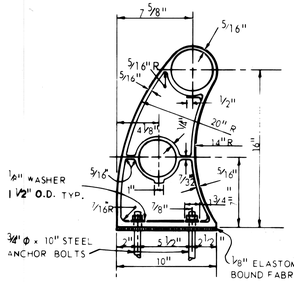
RAIL PLUG DETAIL

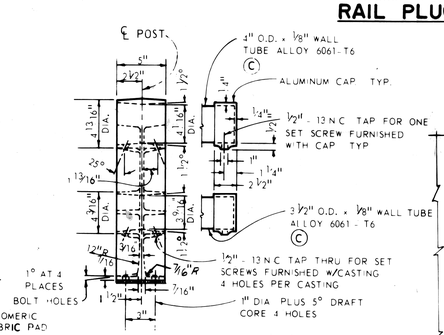


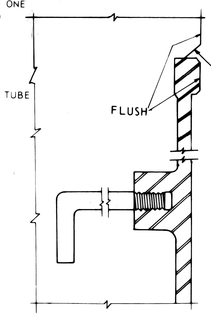
SECTION B-B



INSIDE ELEVATION







DETAIL A

2 TUBE RAILING POST

NOTES

Ⓔ Ⓒ Ⓕ ALUMINUM ALLOY FOR POSTS IS TO BE ALUMINUM ASSOCIATION ALLOY A444-T4 OR A356-T6.

TOLERANCES ACROSS PARTING LINES : 1/64" + 0.002" FOR EACH INCH OF DIMENSION OVER 1" WITHIN THE MOLD : 1/64" + 0.001" FOR EACH INCH OF DIMENSION OVER 1"

BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED STEEL. A.S.T.M. A 153.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF A.S.T.M. A 307 GRADE A REGULAR SQUARE HEADS AND HEXAGONAL NUTS.

NUTS FOR ANCHOR BOLTS ARE TO BE TAPPED 0.015" OVERSIZE FROM CLASS 2B TOLERANCE PRIOR TO GALVANIZING.

BOLT THREADS ARE NOT TO BE SUBJECTED TO USE OF A FINISHING TOOL OR WIRE BRUSH AFTER GALVANIZING.

ENDS OF TUBE SECTIONS ARE TO BE LOCATED WITHIN POSTS, AND WITH A MAXIMUM OF 1" BETWEEN ADJACENT ENDS.

"BRIDGE RAILING SOLID PARAPET TYPE", WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAL FOOT, WHICH PRICE INCLUDES PAYMENT IN FULL FOR ALL WORK AND MATERIAL ABOVE TOP OF SIDEWALK EXCEPT STEEL REINFORCEMENT WHICH WILL BE PAID FOR SEPARATELY. LENGTH OF RAILING IS MEASURED FROM END TO END OF WALL WITH NO DEDUCTION FOR EXPANSION JOINTS.

Ⓓ ALL VERTICAL AND TOP CONCRETE SURFACES ARE TO BE GIVEN A RUBBED SURFACE FINISH.

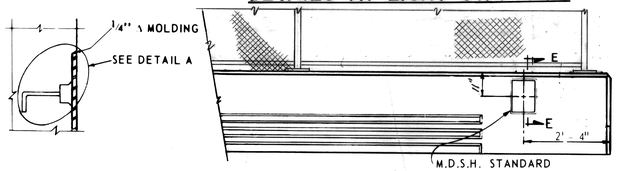
ALUMINUM POSTS SHALL BE SET PERPENDICULAR TO THE TOP OF PARAPET.

Ⓒ THE ANCHOR PLATE SHALL BE ALUMINUM ALLOY 6061-T6.

THE RAILING TUBE IS TO BE WELDED TO THE ANCHOR PLATE.

Ⓐ ADJUST THE SPACING OF THE REINFORCING STEEL AS REQUIRED TO PERMIT PLACING OF ANCHOR BOLTS.

BRIDGE RAILING — SOLID PARAPET TYPE



SECTION E-E

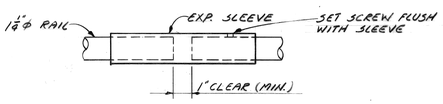
DETAILS AT LIGHT STANDARD

LOCATION OF NAME PLATE AND GUARD RAIL ANCHORAGE

SET NAME PLATE FLUSH WITH FACE OF CONCRETE AND FRAMED WITH A 1/4" △ MOLDING TO FORM A REVEAL AROUND THE PLATE.

PLACE NAME PLATE ON INSIDE FACE OF RIGHT HAND PARAPET AT APPROACH END OF BRIDGE.

SEE DRWG. S-198 FOR NAME PLATE DETAILS.



EXP. SLEEVE DETAIL

PEDESTRIAN FENCING, STRUCTURES

NOTES

THE CHAIN LINK FENCE AND FRAMING SHALL CONFORM TO THE M.D.S.H. SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1979 EDITION.

DIMENSIONS ARE HORIZONTAL ALONG ℄ FENCING POSTS.

THE POSTS SHALL BE 2 1/2" x 2" STEEL H POSTS WEIGHING 4.1 LBS. PER FT. GALVANIZED. NOMINAL 1 1/2" ø PIPE SHALL BE 1 1/2" OUTSIDE DIAMETER STEEL PIPE OR TUBING WEIGHING 2.27 LBS. PER FT. GALVANIZED.

POSTS AND TUBING SHALL BE FURNISHED WITH THE MANUFACTURERS STANDARD CONNECTIONS AND ITS MINIMUM WEIGHT SHALL BE WITHIN 5% OF THAT SPECIFIED. POSTS AND TUBING SHALL BE BENT IN THE SHOP AS SHOWN ON THE PLANS.

ALL FENCE FABRIC SHALL BE #9 GAGE 2" MESH.

ROUND POSTS HAVING AN OUTSIDE DIAMETER OF 2.875" AND WEIGHT OF 5.79 LBS. PER FT. MAY BE USED AT THE TENSIONING POSTS.

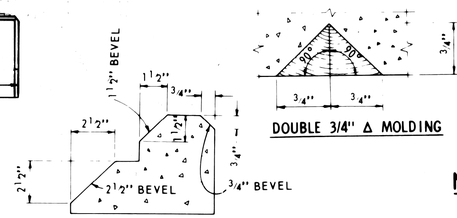
ALL COMPONENTS ARE TO BE GALVANIZED AFTER FABRICATION. BOLTS, NUTS AND WASHERS ARE TO BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. DESIGNATION, A 153.

ALL FABRIC FOR CHAIN LINK FENCE SHALL BE FURNISHED WITH KNUCKLING OF BOTH SELVAGES.

PROVIDE 3/4" x 1/4" TENSION BARS WITH TENSION BAR BANDS @ 1'-2" MAX. AT ALL FABRIC TERMINATIONS.

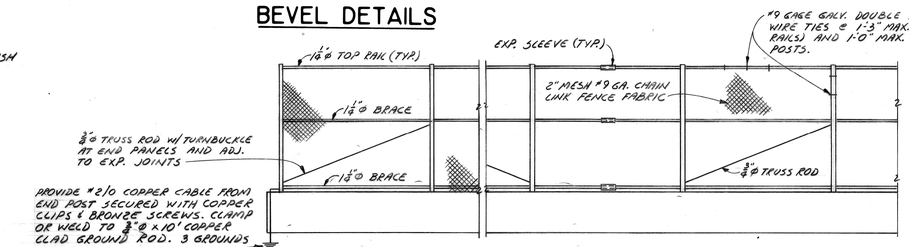
"PEDESTRAIN FENCING, STRUCTURES" WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT WHICH INCLUDES PAYMENT IN FULL FOR ALL WORK AND MATERIALS NECESSARY TO CONSTRUCT THE FENCING AS DETAILED ABOVE AND BELOW.

"BRIDGE RAILING SOLID PARAPET TYPE (MODIFIED)" WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAL FOOT WHICH INCLUDES PAYMENT IN FULL FOR ALL WORK AND MATERIALS, EXCEPT REINFORCING STEEL, NECESSARY TO CONSTRUCT THE BRIDGE PARAPET (WITHOUT ALUMINUM RAILING). LENGTH OF RAILING IS MEASURED FROM END TO END OF WALL WITH NO DEDUCTIONS FOR EXPANSION JOINTS.



MOLDING DETAILS

BEVEL DETAILS



ELEVATION - BRIDGE FENCING

REVISIONS LOCATED BY COORDINATES ON SHEET	COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE	REFERENCE DRAWINGS

		APPROVED:
DESIGNED BY	Mc Guire	STRUCTURAL ENGINEER
DRAWN BY	A.G.	HEAD CIVIL ENGINEER
TRACED BY	—	CITY ENGINEER
CHECKED BY		

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12TH ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

BRIDGE RAILING, MOLDING AND BEVEL DETAILS

SHEET ___ OF ___ SHEETS	
CONTRACT NO.	07110A
DRWG. NO.	S-137
DATE	Nov 1979

TSR 250 1-79 69399*

12TH ST. (ROSA PARKS BLVD.) GRADE SEPARATION OVER CONRAIL

BRIDGE NUMBERS
CITY OF DETROIT X0-60
MICHIGAN DEPT. OF TRANS. X-01 OF 82-22-59
U.S. DEPT. OF TRANSPORTATION 512269U
CONSOLIDATED RAIL CORP. 0.75

STATE OF MICHIGAN CONTRACT 07110A
FEDERAL AID URBAN PROJECT MG 2000(001)

DESIGNED BY
CITY ENGINEERING DIVISION - D.P.W.

CONTRACTOR
(CONTRACTOR'S NAME)

1981*

LAFAYETTE STREET GRADE SEPARATION OVER CONRAIL

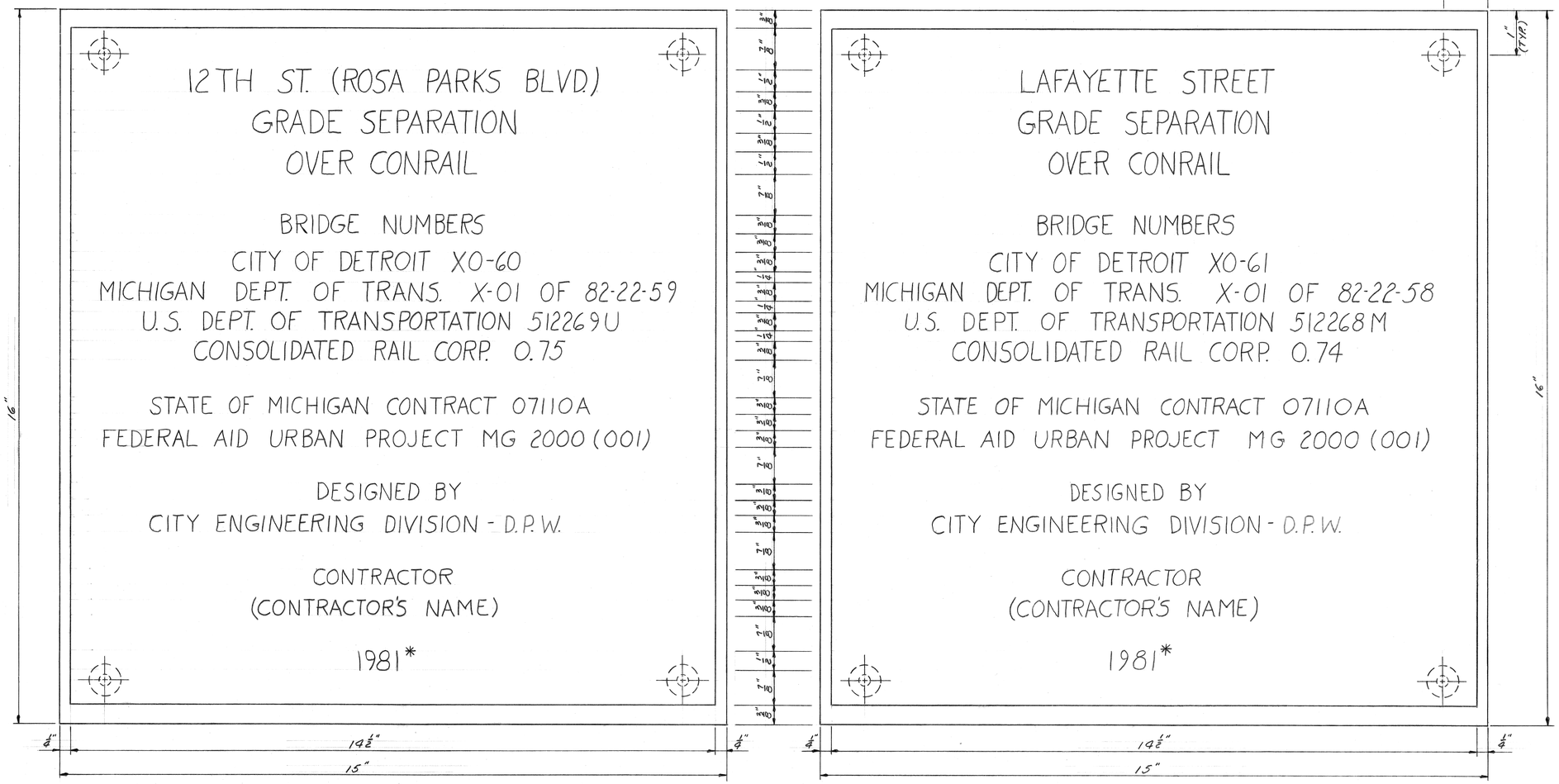
BRIDGE NUMBERS
CITY OF DETROIT X0-61
MICHIGAN DEPT. OF TRANS. X-01 OF 82-22-58
U.S. DEPT. OF TRANSPORTATION 512268M
CONSOLIDATED RAIL CORP. 0.74

STATE OF MICHIGAN CONTRACT 07110A
FEDERAL AID URBAN PROJECT MG 2000(001)

DESIGNED BY
CITY ENGINEERING DIVISION - D.P.W.

CONTRACTOR
(CONTRACTOR'S NAME)

1981*

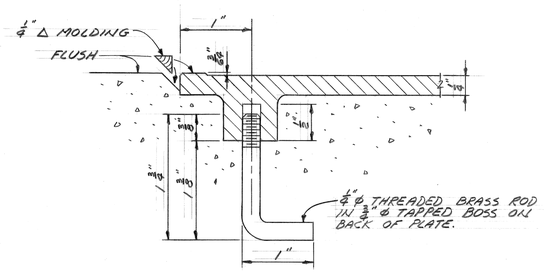


(2 REQUIRED)

(2 REQUIRED)

*OR YEAR SUPERSTRUCTURE IS COMPLETED

NAME PLATES
¾ SCALE



ANCHORAGE DETAIL
FULL SCALE

NOTES:

SET NAME PLATE FLUSH WITH FACE OF CONCRETE AND FRAME WITH ¼" Δ MOLDING TO FORM A REVEAL AROUND THE PLATE.

SEE THE SPECIAL PROVISION IN THE PROPOSAL FOR ADDITIONAL DETAILS.

QUANTITY	UNIT	NUMBER
NAME PLATE	EACH	4

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY R. Fisher
DRAWN BY A.G.
TRACED BY
CHECKED BY

APPROVED:

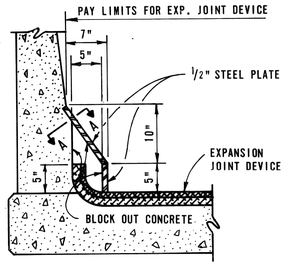
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

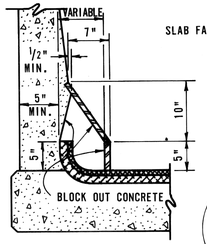
NAME PLATE DETAILS

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG. NO. S-138
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

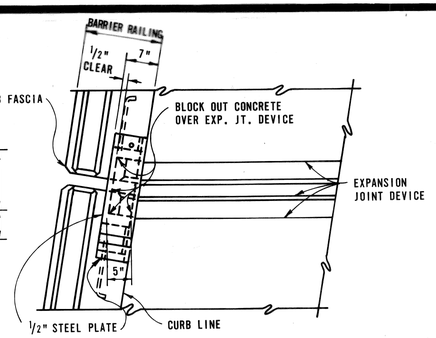


90° CROSSING

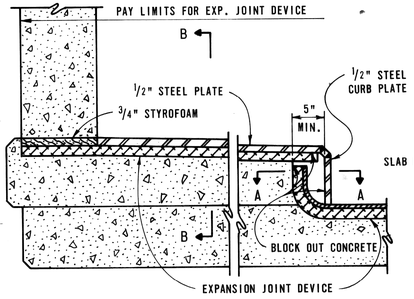


SKEWED CROSSING

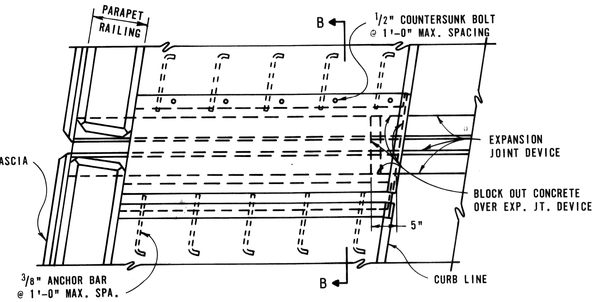
ELEVATION AT BARRIER RAILING



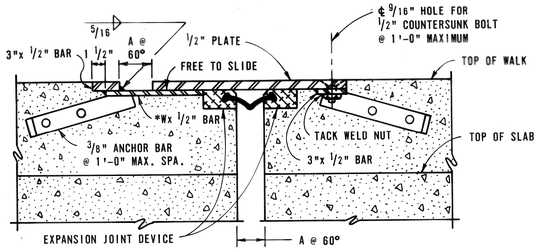
PLAN AT BARRIER RAILING



ELEVATION AT PARAPET RAILING
(APPLICABLE TO SIDEWALKS AND BRUSH BLOCKS)



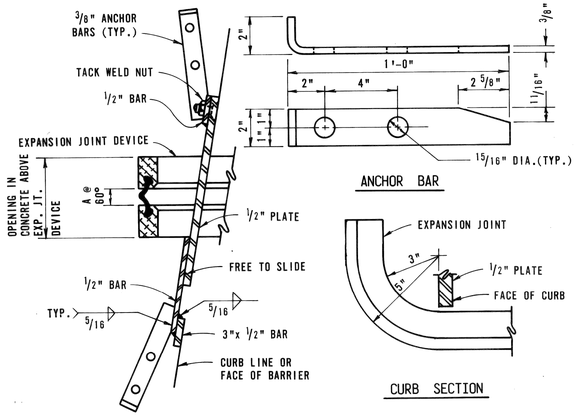
PLAN AT PARAPET RAILING
(SIDEWALK SHOWN, BRUSH BLOCK SIMILAR)



SECTION B - B

$$A = \frac{\text{TOTAL TRAVEL}}{2} + 1/2"$$

$$*W = 2A + 1\ 1/2"$$



SECTION A - A

ANCHOR BAR

CURB SECTION

NOTES:

JOINT TYPES

THE EXPANSION JOINT DEVICE SHALL BE OF A TYPE THAT INCLUDES A CONTINUOUS NEOPRENE SEAL ACROSS THE DECK. UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR HAS THE OPTION OF USING ANY OF THE DEVICES LISTED BELOW:

DEVICE	MANUFACTURER
ACME STRIP SEAL	ACME HIGHWAY PRODUCTS
ALU - STRIP	WATSON BOWMAN, INC.
ONFLEX	STRUCTURAL ACCESSORIES, INC.
PRO - SPAN	FEL - PRO INC.
UNIDAM	ROYSTON LABORATORIES, INC.
WABO - MAURER STRIP SEAL	WATSON BOWMAN, INC.
FEL-SPAN C.S.	FEL-PRO INC.

THE MODEL OF THE JOINT TYPE SELECTED SHALL BE SUITABLE TO ACCOMODATE THE TOTAL MOVEMENT NOTED ON THE PLANS.

COMPLETE WORKING DRAWINGS OF ALL DETAILS OF FABRICATION OF THE EXPANSION JOINT DEVICE SHALL BE SUBMITTED FOR REVIEW IN ACCORDANCE WITH STANDARD SPECIFICATION 1.05.02.

FABRICATION AND INSTALLATION

THE EXPANSION JOINT SHALL BE BENT IN THE SHOP TO CONFORM TO THE CONTOUR OF THE ROADWAY SLAB. IT SHALL BE INSTALLED IN ACCORANCE WITH MANUFACTURER'S RECOMMENDATIONS SUBJECT TO NOTES HEREIN AND THE APPROVAL OF THE ENGINEER.

WHERE THE DEVICE IS TO BE INSTALLED ON CAST CONCRETE, THE SURFACE LAITANCE SHALL BE REMOVED BY SANDBLASTING AND ANY VOIDS FILLED WITH EPOXY MORTAR PRIOR TO BEDDING.

WHERE THE SEALING GLAND IS LOCKED INTO A METAL EXTRUSION, A LUBRICANT-ADHESIVE CONFORMING TO STANDARD SPECIFICATION 8.16.04 - d-2 SHALL BE REQUIRED BETWEEN THE SEAL AND METAL EXTRUSION.

A SEALANT SHALL BE USED BETWEEN THE SEAT AND THE ANCHORED PORTION OF THE SEALING GLAND, AND ALSO BETWEEN THE SEAT AND HOLD DOWN DEVICE. THE SEALANT SHALL CONFORM TO FEDERAL SPECIFICATION MMMG-650b GRADE B, TT-S-00230C TYPE II, OR SHALL BE AN APPROVED EQUAL.

THE VOID FORMED BETWEEN THE VERTICAL EDGE OF THE HOLD DOWN DEVICE AND THE BLOCK OUT SHALL BE FILLED WITH A SEALANT IF LESS THAN ½ INCH IN WIDTH OR WITH AN EPOXY MORTAR IF GREATER THAN ½ INCH. THE SEALANT SHALL CONFORM TO FEDERAL SPECIFICATION TT-S-00230C TYPE II OR SHALL BE AN APPROVED FLEXIBLE EPOXY.

ALL BOLT CAVITIES IN THE HOLD DOWN DEVICES SHALL BE FILLED WITH AN EPOXY MORTAR IF THE CAVITIES ARE CONTINUOUS OR WITH AN APPROVED FLEXIBLE EPOXY IF THEY ARE NOT CONTINUOUS.

THE AREA OF THE HOLD DOWN DEVICE AND SEALING GLAND WHICH WILL BE IN CONTACT WITH A SEALANT SHALL BE CLEANED WITH TOLUENE OR OTHER APPROVED SOLVENT.

ALL SURFACES IN CONTACT WITH THE EPOXY MORTAR SHALL BE LIGHTLY SAND BLASTED AND PRIMED WITH THE BINDER PRIOR TO PLACING THE MORTAR.

THE EPOXY MORTAR SHALL CONFORM TO STANDARD SPECIFICATION 4.50.20.

THE PRO-SPAN DEVICE MUST INCORPORATE A CAST-IN-PLACE METAL SEAT.

DETAILS AT CURBS OR BARRIERS

THE DETAILS ON THIS SHEET SHOW AN APPROVED MEANS OF TERMINATING THE EXPANSION JOINT DEVICE AT CURBS OR BARRIERS. VARIATIONS OR ALTERNATIVE SCHEMES WILL BE CONSIDERED AND MAY BE USED IF APPROVED BY THE ENGINEER.

MATERIALS

THE COST OF ALL MATERIALS AND LABOR REQUIRED FOR PROPER INSTALLATION OF THE EXPANSION JOINT AND THE TERMINAL ASSEMBLIES AT THE CURBS, SIDEWALKS, OR BARRIERS IS INCLUDED IN THE PAYMENT FOR THE EXPANSION JOINT DEVICE.

MISCELLANEOUS QUANTITY		
ITEM	UNIT	AMOUNT
EXPANSION JOINT DEVICE 2" MIN. TRAVEL	LINEAL FEET	27
EXP. JOINT DEVICE, 3" MIN. TRAVEL	L. F.	266

STATE OF MICHIGAN
DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

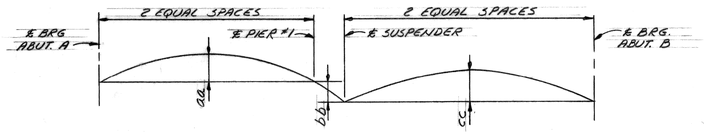
EXPANSION JOINT DETAILS

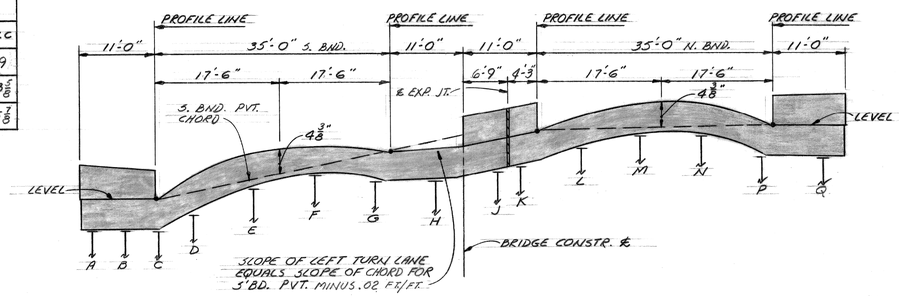
SQUAD BOSS	L.O.C.	1-2-79
DRAWN BY	J.L.R.	1-2-79
TRACED BY		
CHECKED BY	L.O.C.	1-2-79
SHEET		OF
CONTRACT 07110A S-139		

R. CARROLL, INC. 378 1818

CAMBER ORDINATES (IN INCHES)

BEAM		A			B			C			D			E			F			G			H			J			K			L			M			N			P			Q		
CAMBER		aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc
CORD CASE	I	3 1/2	1 3/8	9 29/32	3 3/8	1 5/8	9 1/4	3	1	8 1/4	3	1	7 3/8	3	1	7 3/8	3 1/4	1 1/8	7 3/8	3 1/4	1 1/8	7 3/8	3	1	7 3/8	3 3/8	1 1/8	8 3/8	3 1/4	1 1/8	8 1/2	3 3/8	1	7 3/8	3 3/8	1 5/8	7 3/4	3 1/2	1 5/8	7 3/4	1 1/2	0 5/8	8 5/8	0	0	9
	II	3 29/32	1 5/8	9	3 1/4	1 5/8	8 3/8	2 7/8	1	7 1/4	2 7/8	1	7 1/4	2 3/4	1	7 1/8	2 3/4	1	6 7/8	2 7/8	1	6 7/8	2 3/4	1	7 1/4	3 1/4	1 1/8	8 3/8	3 3/8	1	8	2 7/8	1	7 1/4	3 3/8	1 5/8	7 5/8	3 1/4	1 5/8	7 3/8	1 3/8	0 5/8	8 1/8	0	0	8 1/8
	III	2 5/8	1	6 5/8	2 5/8	1	5 3/4	2	3/4	4 3/4	2	3/4	4 5/8	1 7/8	3/4	4 1/4	2	3/4	4 5/8	2	7/8	4 5/8	1 7/8	3/4	4 3/8	2 3/8	1	5 5/8	2 1/4	3/8	5 1/4	2	7/8	4 5/8	2 1/4	3/4	4 3/8	2 3/8	1	4 1/4	1	1/2	4 5/8	0	0	5 1/8





SECTION OF SLAB
NO SCALE

NOTE: TOP OF SLAB ELEVATIONS (CASE II) ON PROFILE LINES OR CURB LINES ARE NORMAL TO THE NEAREST BEAM EXCEPT FOR THOSE AT THE BEARINGS & SUSPENDER.

CAMBER DIAGRAM
FOR LOADING CASES SHOWN IN TABLE

ELEVATION PLACEMENT DETAIL

BOTTOM OF SLAB AND SCREED ELEVATIONS - 12TH ST.

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

COOR'D	DESCRIPTION	DR'N	CH'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY R. Carroll
DRAWN BY A. G.
TRACED BY
CHECKED BY J. McGuire

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

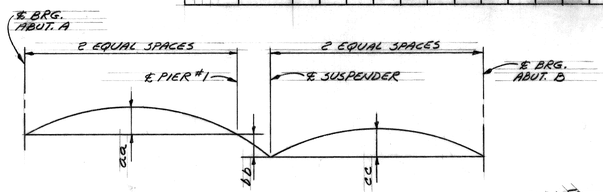
SUPERSTRUCTURE DETAILS
ELEVATIONS & SCREEDS - 12TH ST.

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-140
DATE NOV 1979

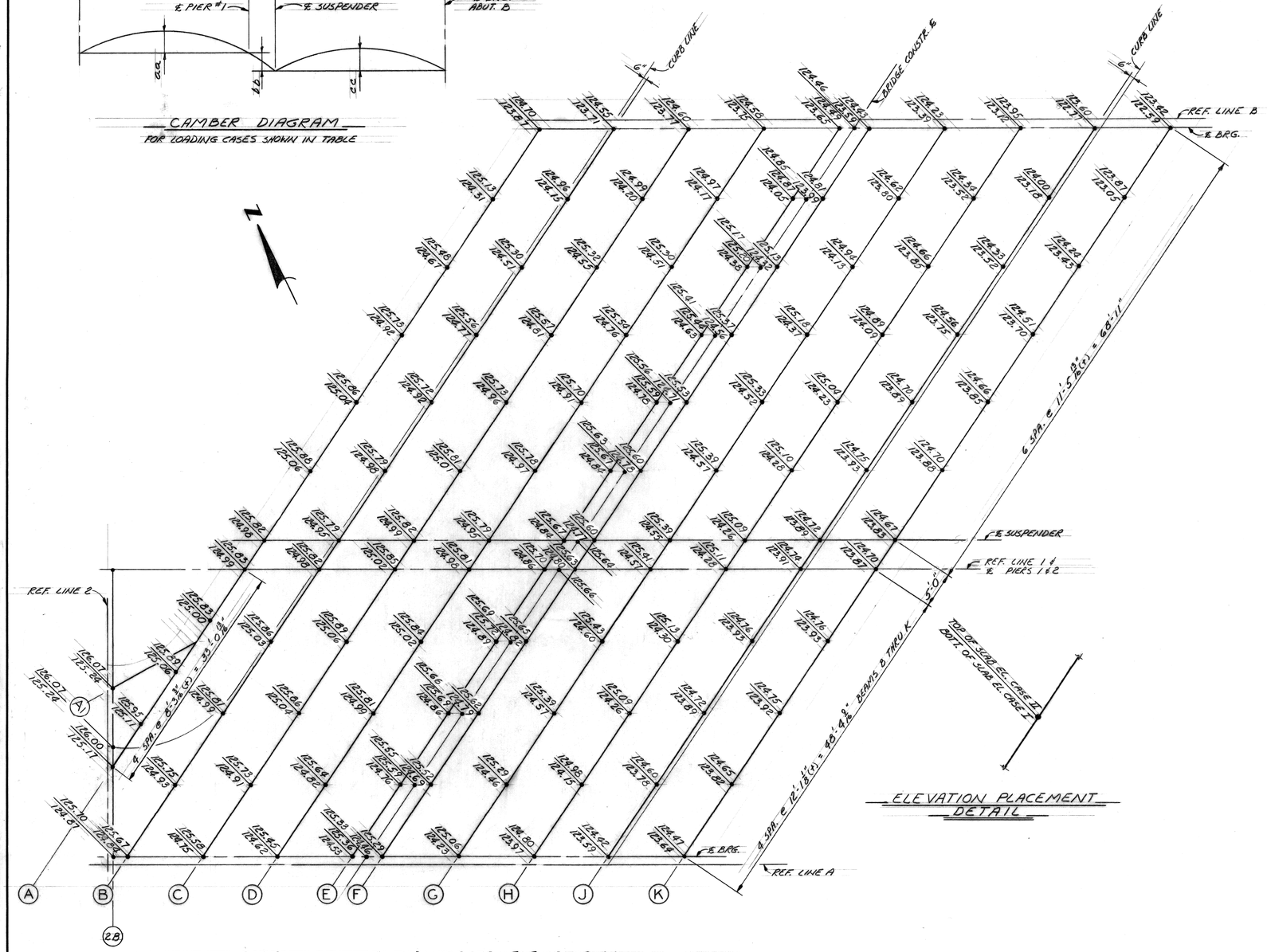
R. CARROLL, INC. 376 1818•

CAMBER ORDINATES (IN INCHES)

BEAM		A			B			C			D			E			F			G			H			J			K		
CAMBER		aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc	aa	bb	cc
LOAD CASE	I	0	0	5 3/8	0 7/16	0 3/8	5 5/16	1 3/8	0 3/8	5	2 3/8	0 7/16	4 15/16	1 3/8	0 3/8	4 7/8	1 3/8	0 3/8	4 7/8	1 3/8	0 3/8	4 7/8	1 3/8	0 3/8	4 7/8	1 3/8	0 3/8	5	1 3/8	0 3/8	5 3/8
	II	0	0	5 1/2	0 3/8	0 3/8	4 15/16	1 3/8	0 3/8	4 5/8	2	0 3/8	4 5/8	1 3/8	0 3/8	4 5/8	1 3/8	0 3/8	4 5/8	1 3/8	0 3/8	4 5/8	1 3/8	0 3/8	4 5/8	1 3/8	0 3/8	4 5/8	1 3/8	0 3/8	5 1/2
	III	0	0	3 1/2	0 1/16	0 1/4	2 3/16	1 1/4	0 3/16	2 1/2	1 7/8	0 5/16	2 1/4	1 1/4	0 5/16	2 1/16	1 1/8	0 5/16	2 1/16	1 1/8	0 5/16	2 1/16	1 1/8	0 5/16	2 1/16	1 1/8	0 5/16	2 1/16	1 1/8	0 5/16	3 0/16

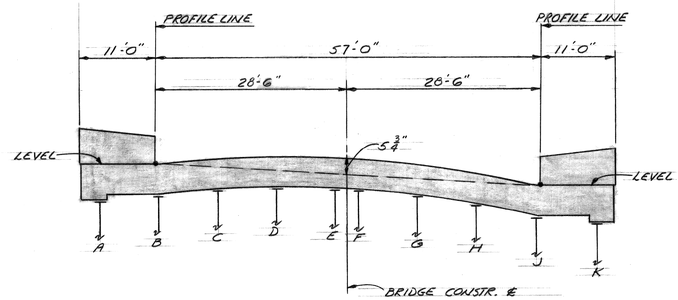


CAMBER DIAGRAM
FOR LOADING CASES SHOWN IN TABLE

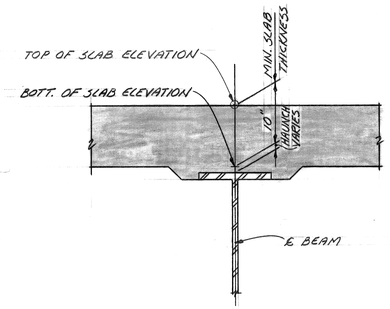


ELEVATION PLACEMENT DETAIL

BOTTOM OF SLAB AND SCREED ELEVATIONS
LAFAYETTE ST.
SCALE: 1" = 1'-0"



SECTION OF SLAB
NO SCALE



TYPICAL SECTION AT EACH BEAM

NOTES:

POUR SUSPENDED SPANS BEFORE POURING ANCHOR SPANS.

SCREEDS AFFECTED BY LOADS IN OTHER SPANS SHALL BE SET TO ELEVATIONS SHOWN BEFORE POURING ANY CONCRETE.

ELEVATIONS AND CAMBERS SHOWN INCLUDE ALLOWANCES FOR DEFLECTIONS DUE TO WEIGHT OF STRUCTURAL STEEL, WEIGHT OF FORMS, STEEL REINFORCEMENT, SLAB CONCRETE, SIDEWALK, RAILING AND UTILITIES.
THE LOADING CASES ARE AS FOLLOWS:

CASE I - ALL STRUCTURAL STEEL ERECTED AND NO OTHER LOAD APPLIED.

CASE II - FORMS, STEEL REINFORCEMENT AND UTILITIES IN PLACE ON STRUCTURAL STEEL AND NO OTHER LOAD APPLIED.

CASE III - STEEL REINFORCEMENT, UTILITIES, AND SLAB CONCRETE (WITH FORMS REMOVED) IN PLACE ON STRUCTURAL STEEL AND NO OTHER LOAD APPLIED.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY A. G.
TRACED BY
CHECKED BY

APPROVED:
STRUCTURAL ENGINEER
HEAD CIVIL ENGINEER
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
FOR
MICHIGAN DEPT. OF STATE HIGHWAYS & TRANS.

12TH ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

SUPERSTRUCTURE DETAILS
ELEVATIONS & SCREEDS - LAFAYETTE ST.

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110A
DRWG NO. S-141
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

BRUNING 80731-

FORM NO. 393-SH

12TH & LAFAYETTE ABUTMENTS & WINGWALLS

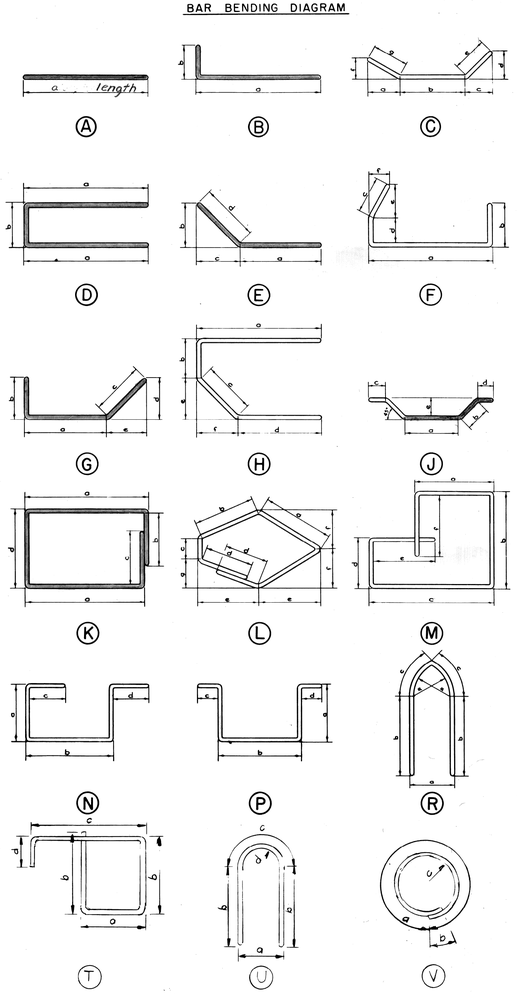
BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A1								#6	11'-6"	218	3766
A2								#6	7'-0"	365	3838
A3								#6	20'-6"	7	216
A4								#6	6'-0"	49	442
A5								#6	30'-0"	13	586
A6								#6	17'-0"	22	562
A7								#6	25'-9"	18	696
A8								#6	39'-9"	26	1552
A9								#6	15'-9"	23	544
A10								#8	8'-0"	22	470
A11								#6	8'-6"	15	192
A12								#6	7'-6"	1	11
A13								#6	3'-0"	1	5
A14								#6	10'-0"	26	391
A15								#7	10'-0"	10	204
A16								#6	18'-0"	17	460
A17								#6	16'-6"	36	892
A18								#6	15'-3"	15	344
A19								#6	18'-9"	3	84
A20								#6	6'-6"	104	1015
A21								#7	6'-9"	180	2483
A22								#6	33'-0"	18	892
A23								#6	7'-0"	575	6046
A24								#6	9'-0"	197	2663
A25								#6	7'-8"	190	2069
A26								#6	10'-6"	21	331
A27								#6	13'-3"	16	318
A28								#7	8'-0"	16	262
A29								#9	9'-9"	21	696
A30								#6	12'-3"	18	331
A31								#8	9'-0"	27	649
A32								#6	28'-0"	13	547
A33								#6	5'-6"	51	421
A34								#6	3'-6"	14	74
A35								#6	4'-6"	78	527
A36								#6	32'-0"	93	4470
A37								#6	11'-0"	26	430
A38								#4	21'-6"	112	1609
A39								#6	8'-0"	24	288
A40								#4	25'-6"	144	2453
A41								#4	24'-0"	22	353
A42								#4	21'-9"	94	1336
A43								#4	19'-9"	24	317
A44								#4	6'-0"	32	128
A45								#4	3'-6"	9	21
A46								#4	17'-0"	12	1356
A47								#4	17'-9"	26	308
A48								#4	15'-0"	50	501
A49								#10	10'-6"	14	633
A50								#6	8'-0"	62	745
A51								#6	18'-3"	66	1809
A52								#6	23'-3"	47	1641
A53								#6	34'-3"	40	2058
A54								#8	6'-0"	10	160
A55								#6	21'-0"	19	599
A56								#6	12'-0	9	162
A57								#6	17'-0"	20	511
A58								#6	5'-0"	34	255
A59								#4	13'-6"	18	162
A60								#4	10'-6"	4	28
A61								#6	26'-3"	10	394
A62								#6	14'-6"	16	348
A63								#6	22'-9"	10	342
A64								#9	12'-3"	16	666
A65								#4	8'-6"	3	17
A66								#4	9'-9"	25	163
A67								#9	10'-0"	16	544
A68								#6	8'-9"	17	223
A69								#4	8'-9"	8	47
A70								#8	7'-0"	13	243
A71								#9	19'-0"	13	840
A72								#8	10'-0"	181	4833
A73								#4	4'-6"	5	15
A74								#8	11'-1"	24	710
A75								#10	6'-0"	12	310
A76								#8	18'-0"	25	1202
A77								#4	24'-9"	26	430
A78								#6	24'-9"	8	297

12TH & LAFAYETTE ABUTMENTS & WINGWALLS

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A79								#4	1'-6"	4	4
A80								#6	19'-0"	17	485
A81								#6	21'-0"	2	63
A82								#6	23'-6"	15	529
A83								#6	26'-0"	2	78
A84								#6	28'-6"	2	86
A85								#6	31'-0"	2	93
A86								#6	33'-0"	4	198
A87								#6	7'-9"	58	675
A88								#6	32'-6"	4	195
A89								#4	18'-6"	8	99
A90								#6	14'-6"	14	305
A91								#4	12'-6"	28	234
A92								#8	17'-1"	153	6979
A93								#6	23'-9"	1	36
A94								#4	23'-6"	64	1005
A95								#10	15'-0"	14	904
A96								#6	17'-6"	89	2339
A97								#6	19'-6"	181	5301
A98								#9	10'-0"	154	5236
A99								#7	13'-0"	447	11878
B1	2'-0"	2'-0"						#4	4'-0"	7	19
B2	2'-0"	3'-6"						#4	5'-6"	14	51
B3	1'-24"	11'-9"						#10	12'-10"	11	607
B4	1'-24"	9'-4"						#10	10'-5"	179	8023
B5	1'-24"	15'-2"						#10	16'-3"	180	12586
B6	78"	8'-3"						#9	8'-9"	16	476
B7	78"	14'-0"						#9	14'-6"	16	789
D1	3'-6"	64"						#6	7'-4 3/4"	80	889
D2	3'-0 7/4"	1'-8"						#6	7'-8"	469	5401
E1	7'-0"	1'-7 1/2"	9'-10 1/2"	10'-0"				#4	17'-0"	16	182
E2	9'-0"	1'-7 1/2"	9'-10 1/2"	10'-0"				#6	19'-0"	4	114
E3	7'-0"	1'-7 1/2"	9'-10 1/2"	10'-0"				#6	17'-0"	2	51
G1	2'-5 1/2"	2'-0"	2'-0"	1'-6 1/8"	1'-3 3/8"			#4	6'-5"	7	30
G2	2'-9"	2'-0"	2'-0"	1'-3 3/8"	1'-6 1/8"			#4	6'-8 1/2"	14	63
G3	2'-5 1/2"	4'-6"	11'-3"	8'-6 1/2"	7'-4"			#4	18'-2"	14	170
G12	2'-9"	3'-0"	2'-0"	1'-3 3/8"	1'-6 1/8"			#6	7'-8 1/4"	1	12
G13	2'-5 1/2"	4'-6"	11'-3"	8'-6 1/2"	7'-4"			#6	18'-1 3/4"	1	27
G14	2'-5 1/2"	4'-6"	17'-0"	12'-11"	11'-1"			#6	23'-10 3/4"	1	36
K1	1'-11"	4"	4"	6 1/4"				#6	4'-10 3/8"	4	29

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
J1	13'-0"	3 3/8"		9'-0"	2 3/8"			#6	22'-3 3/8"	1	33
J2	11'-0"	3 3/8"		11'-0"	2 3/8"			#6	22'-3 3/8"	1	33
J3	16'-0"	8 1/2"		5'-6"	6"			#6	22'-2 1/2"	1	33
J4	14'-0"	8 1/2"		7'-6"	6"			#6	22'-2 1/2"	1	33
J5	13'-0"	7 1/8"		12'-6"	5"			#6	26'-1 1/8"	1	39
J6	15'-0"	7 1/8"		10'-6"	5"			#6	26'-1 1/8"	1	39
J7	21'-6"	5 5/8"		4'-0"	4"			#6	25'-11 5/8"	1	39
J8	20'-6"	5 5/8"		5'-0"	4"			#6	25'-11 5/8"	1	39
J9	4'-0"	4 1/4"		12'-0"	3"			#6	17'-1 1/4"	1	26
J10	3'-9"	4 1/4"		13'-0"	3"			#6	17'-1 1/4"	1	26
J11	4'-0"	9 7/8"		7'-0"	7"			#6	11'-9 3/8"	1	18
J12	2'-6"	9 7/8"		8'-6"	7"			#6	11'-9 3/8"	1	18
J13	16'-0"	8 3/8"		7'-0"	6 1/4"			#6	23'-8 3/8"	1	36
J14	18'-0"	8 3/8"		5'-0"	6 1/4"			#6	23'-8 3/8"	1	36
J15	12'-6"	10 1/4"		4'-9"	7 1/4"			#6	18'-1 1/4"	1	27
J16	14'-6"	10 1/4"		2'-9"	7 1/4"			#6	18'-1 1/4"	1	27
J17	4'-6"	4 1/4"		17'-0"	3"			#6	21'-10 1/4"	1	33
J18	6'-6"	4 1/4"		15'-0"	3"			#6	21'-10 1/4"	1	33
J19	10'-0"	8 1/8		11'-3"	5 3/4"			#6	21'-11 1/8	1	33
J20	12'-0"	8 1/8		9'-3"	5 3/4"			#6	21'-11 1/8	1	33
J21	10'-0"	11 3/8		9'-0	8"			#6	19'-11 3/8	1	30
J22	12'-0"	11 3/8"		7'-0"	8"			#6	19'-11 3/8	1	30
J23	10'-0"	9"		11'-0"	6 1/4"			#6	21'-0"	1	33
J24	9'-0"	9"		12'-0"	6 1/4"			#6	21'-0"	1	33
J25	7'-0"	8 1/8"		14'-0"	5 3/4"			#6	21'-8 1/8	1	33
J26	6'-0"	8 1/8		15'-0"	5 3/4			#6	21'-8 1/8	1	33

BAR BENDING DIAGRAM



NOTE: All bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.

Tolerances in cutting and bending bars are as established in Manual of Standard Practice of the Concrete Reinforcing Steel Institute and Detailing Manual of the American Concrete Institute.

Total Steel Reinforcement this Sheet 134,419 #

REFERENCE DRAWINGS	DESIGNED BY	McGuire
	DRAWN BY	J.M
	TRACED BY	
	CHECKED BY	

APPROVED:

Structural Engineer

Head Civil Engineer

CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION E.P.M.D.

12TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

STEEL REINFORCEMENT DETAILS

SHEET ___ OF ___ SHEETS
CONTRACT NO. 07110A
DRWG NO. S 142
DATE NOV 1979

COORD	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

BRUNING 80731-

FORM NO. 393-SH

12TH ST. & LAFAYETTE ST. PIER

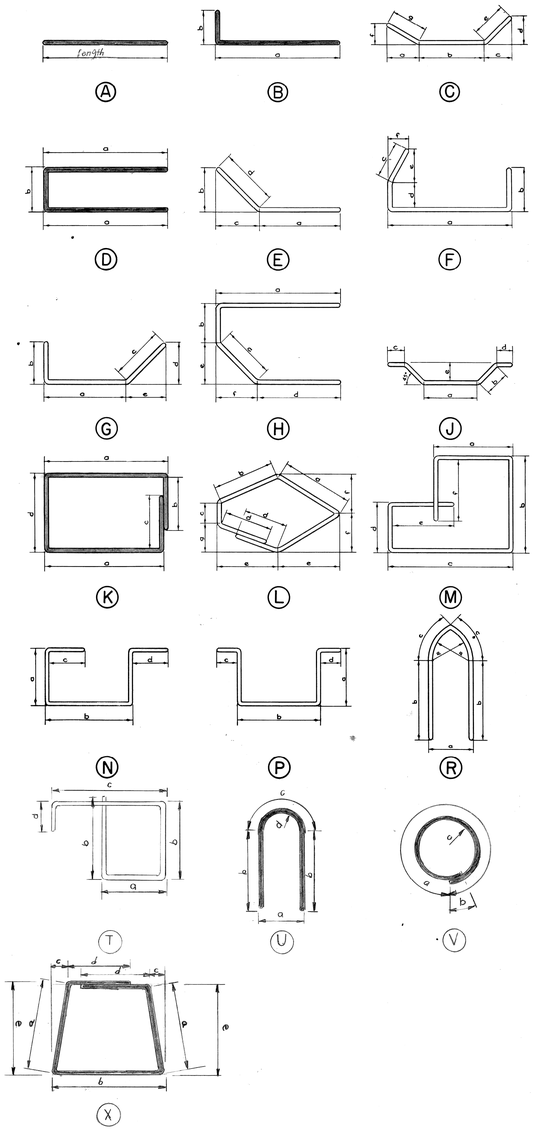
BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A101								#10	21'-0"	60	5422
A102								#6	25'-3"	2	76
A103								#10	38'-9"	8	1334
A104								#4	22'-6"	2	30
A105								#10	22'-6"	8	775
A106								#6	22'-6"	48	1622
A107								#4	27'-0"	2	36
A108								#6	27'-0"	2	81
A109								#10	38'-6"	8	1325
A110								#9	26'-0"	15	1326
A111								#9	26'-9"	15	1364
A112								#9	22'-6"	5	383
A113								#6	25'-0"	38	1427
A114								#6	25'-9"	42	1624
A115								#9	9'-6"	257	8301
A116								#7	30'-6"	10	623
A117								#7	27'-9"	10	567
A118								#7	24'-0"	10	491
A119								#6	12'-9"	224	4290
A120								#6	7'-6"	39	439
A121								#6	38'-6"	7	405
A122								#6	37'-6"	14	789
A123								#6	12'-3"	52	957
A124								#9	22'-3"	17	12.86
A125								#6	30'-3"	2	91
A126								#10	34'-3"	8	1179
A127								#10	18'-0"	8	620
A128								#10	39'-6"	8	1360
A129								#6	39'-6"	2	119
A130								#10	19'-0"	8	654
A131								#7	12'-0"	8	196
A132								#4	39'-6"	2	53
A133								#4	26'-3"	2	35
A134								#6	26'-3"	2	79
A135								#10	26'-3"	8	904
A136								#10	20'-8"	84	7470
A137								#7	24'-6"	20	1002
A138								#7	28'-3"	20	1155
A139								#9	23'-3"	5	395
A140								#9	24'-6"	5	417
A141								#6	24'-6"	14	515
A162								#7	24'-9"	12	607
A163								#7	26'-0"	12	638
A164								#7	27'-2"	2	111
A165								#7	28'-5"	2	116
A166								#7	29'-8"	2	121
A171								#10	19'-2"	36	2969
A172								#10	20'-1"	36	3111
A173								#6	23'-9"	4	143
A174								#10	24'-9"	16	1704
A175								#4	16'-4"	2	22
A176								#4	13'-0"	2	17
A177								#10	23'-2"	16	1575
A178								#6	20'-6"	12	369

12TH ST. & LAFAYETTE ST. PIER

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A179								#6	11'-6"	140	2418
A180								#6	9'-0"	10	135
A181								#7	6'-0"	1	12
A182								#7	6'-9"	1	14
A183								#7	7'-5"	1	15
A184								#7	8'-2"	1	17
A185								#7	8'-11"	1	18
A186								#7	9'-7"	1	20
A187								#7	10'-4"	1	21
A188								#7	11'-0"	1	22
A189								#7	11'-9"	1	24
A190								#7	12'-6"	1	26
B101	27'-3"	3'-0"						#10	30'-2"	8	1038
B102	29'-0"	3'-0"						#10	31'-11"	8	1099
B103	25'-9"	3'-0"						#10	28'-8"	8	987
B104	17'-0"	3'-0"						#10	19'-11"	8	686
B105	26'-3"	3'-0"						#10	29'-2"	8	1004
B106	31'-10"	3'-0"						#10	34'-9"	16	2392
B107	16'-0"	3'-0"						#10	18'-11"	16	1302
D101	2'-3"	3'-0"						#6	7'-9½"	194	2149
D102	1'-6"	2'-10½"						#4	5'-9½"	104	402
K101	3'-2"	1'-5"	1'-4⅞"	1'-9⅛"				#5	10'-10"	336	3797
U101	3'-0"	2'-0"	4'-8½"	1'-5¼"				#6	8'-8½	12	157
V101	7'-11"	1'-4"	1'-2⅜"					#4	9'-3"	141	871
V102	8'-8½"	1'-4½"	1'-4⅞"					#4	10'-1"	12	81
X102	9'-0½"	3'-5⅜"	2¾"	2'-1⅛"	9'-0½"			#6	25'-7½"	6	231

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.

BAR BENDING DIAGRAM



Note :—
All right angle bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.

Total Steel Reinforcement 81,678 # this sheet

REVISIONS LOCATED BY COORDINATES ON SHEET							REFERENCE DRAWINGS
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE		

DESIGNED BY McGuire
DRAWN BY J.M.
TRACED BY
CHECKED BY R. Kershaw

APPROVED:

CITY ENGINEER

CITY OF DETROIT

CITY ENGINEERING DIVISION E.P.M.D.

FOR

MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANS.

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. OVERPASS

STEEL REINFORCEMENT DETAILS

SHEET ___ OF ___ SHEETS

CONTRACT No. 07110A

DRWG No. S143

DATE NOV 1970

BRUNING 80731-

FORM NO. 393-SH

LAFAYETTE DECK (PLAIN)

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A202								#5	35'-9"	148	5519
A204								#4	35'-6"	24	569
A205								#6	38'-9"	99	5762
A206								#5	22'-3"	6	139
A207								#6	2'-0"	2	6
A208								#6	23'-0"	78	2695
A209								#6	39'-0"	3	176
A210								#6	37'-6"	10	563
A211								#6	36'-4"	5	273
A212								#6	35'-3"	6	318
A213								#6	34'-1"	5	256
A214								#6	32'-11"	5	247
A215								#6	31'-9"	5	238
A216								#6	30'-7"	6	276
A217								#6	29'-6"	6	266
A218								#6	28'-4"	12	511
A219								#6	27'-2"	8	326
A220								#6	26'-0"	7	273
A221								#6	24'-10"	9	336
A222								#6	23'-9"	5	178
A223								#6	22'-7"	5	170
A224								#6	21'-5"	123	3957
A225								#6	20'-3"	6	182
A226								#6	19'-1"	7	201
A227								#6	18'-0"	8	216
A228								#6	16'-10"	7	177
A229								#6	15'-8"	7	165
A230								#6	14'-6"	8	174
A231								#6	13'-4"	7	140
A232								#6	12'-3"	7	129
A233								#6	11'-1"	7	117
A234								#6	9'-11"	7	104
A235								#6	8'-9"	7	92
A236								#6	7'-7"	7	80
A237								#6	6'-6"	7	68
A238								#6	5'-4"	7	56
A239								#6	4'-2"	7	44
A240								#6	3'-0"	9	41
A241								#6	39'-9"	1	60
A242								#6	37'-3"	1	56
A243								#6	37'-6"	1	56
A244								#6	36'-4"	13	709
A245								#6	35'-3"	25	1324
A246								#6	34'-1"	2	102
A247								#6	32'-11"	1	49
A248								#6	31'-9"	2	95
A249								#6	30'-8"	2	92
A250								#6	29'-6"	4	177
A251								#6	28'-4"	4	170
A252								#6	27'-3"	11	450
A253								#6	26'-1"	2	78
A254								#6	25'-0"	15	563
A255								#6	23'-10"	5	179
A256								#6	22'-8"	2	68
A257								#6	21'-6"	1	32
A258								#6	20'-4"	1	31
A259								#6	19'-3"	2	58
A260								#6	18'-1"	2	54
A261								#6	17'-0"	2	51
A262								#6	15'-10"	2	48
A263								#6	14'-8"	1	22
A264								#6	13'-6"	1	20
A265								#6	12'-5"	2	37
A266								#6	11'-3"	2	34
A267								#6	10'-1"	1	15
A268								#6	9'-0"	2	27
A269								#6	7'-10"	2	24
A270								#6	6'-8"	1	10
A271								#6	5'-6"	2	17
A272								#6	4'-5"	2	13
A273								#6	3'-3"	1	5
A274								#6	24'-0"	12	433
A278								#6	23'-0"	6	207
A286								#4	27'-6"	24	441
A292								#5	28'-0"	134	3913
A293								#5	27'-3"	2	57
A294								#5	26'-6"	2	55
A295								#5	25'-6"	2	53

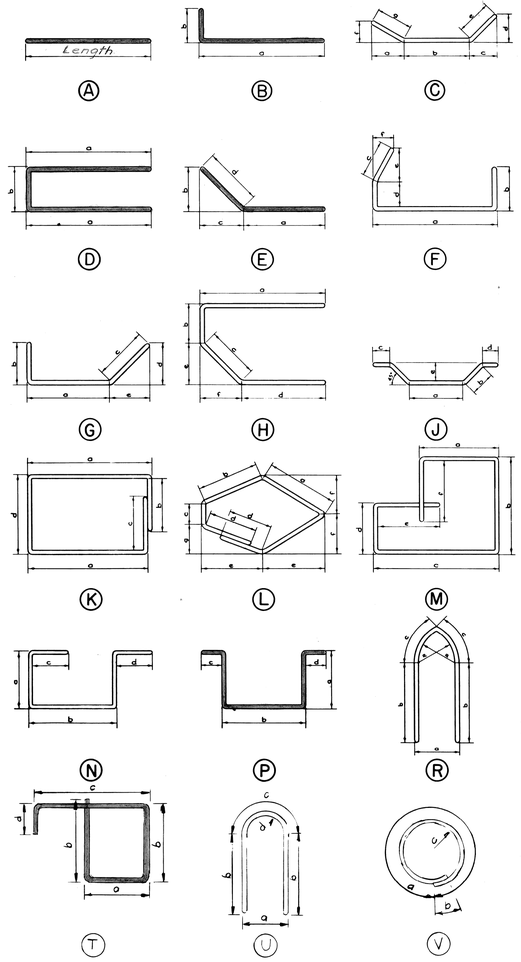
LAFAYETTE DECK (PLAIN)

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A296								#5	24'-9"	2	52
A297								#5	24'-0"	2	50
A298								#5	23'-0"	2	48
A299								#5	22'-0"	2	46
D200	3'-0"	64"						#6	6'-5"	152	1465
E201	30'-8"	1'-2½"	1'-9⅜"	2'-2"				#6	32'-10"	6	296
E 202	30'-8"	1'-1¼"	1'-8"	2'-0"				#6	32'-8"	6	294
P201	7"	3'-10⅛"	6"	6"				#4	5'-11½"	77	306
P202	7"	4'-4"	6"	6"				#4	6'-5"	4	17
P203	1'-4"	3'-10⅛"	6"	6"				#4	7'-6½"	77	384
P204	1'-4"	4'-4"	6"	6"				#4	7'-11"	4	21
T200	1'-2½"	1'-6⅝"	1'-5½"	8¼"				#4	6'-3¼"	147	616
										TOTAL =	38520#

LAFAYETTE DECK (EPOXY COATED)

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A259								#6	19'-3"	2	58
A260								#6	18'-1"	2	54
A261								#6	17'-0"	2	51
A262								#6	15'-10"	2	48
A263								#6	14'-8"	1	22
A264								#6	13'-6"	1	20
A265								#6	12'-5"	2	37
A266								#6	11'-3"	2	34
A267								#6	10'-1	1	15
A268								#6	9'-0"	2	27
A269								#6	7'-10"	2	24
A270								#6	6'-8	1	10
A271								#6	5'-6"	2	17
A272								#6	4'-5"	2	13
A273								#6	3'-3"	1	5
A274								#6	24'-0"	12	433
A275								#4	37'-3"	1	25
A276								#4	28'-3"	118	2227
A277								#4	28'-6"	1	19
A279								#6	10'-9"	25	404
A280								#4	11'-0"	2	15
A281								#4	22'-6"	2	30
A282								#4	40'-0"	1	27
A283								#4	35'-0"	3	70
A284								#4	33'-0"	1	22
A285								#4	30'-6"	1	20
A286								#4	27'-6"	3	55
A287								#4	27'-0"	2	36
A288								#4	25'-3"	2	34
A289								#4	23'-6"	2	31
A290								#4	21'-6"	2	29
A291								#4	19'-9"	5	66
B201	10'-3½"	6½"						#4	10'-9½"	138	995
B202	9'-3"	6½"						#4	9'-9"	3	20
B203	7'-0"	6½"						#4	7'-6"	5	25
B204	4'-9"	6½"						#4	5'-8"	3	11
B205	2'-6"	6½"						#4	3'-0"	4	8
B206	8'-9"	6½"						#4	9'-3"	1	6
B207	6'-0"	6½"						#4	6'-6"	1	4
B208	3'-3"	6½"						#4	3'-9"	3	8
B209	7'-6"	6½"						#4	8'-0"	1	5
B210	5'-9"	6½"						#4	5'-9"	4	15
B211	3'-0"	6½"						#4	3'-6"	1	2
B212	12'-0	6½"						#4	12'-6"	1	8
										TOTAL =	30462#

BAR BENDING DIAGRAM



NOTE: All bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.

Tolerances in cutting and bending bars are as established in Manual of Standard Practice of the Concrete Reinforcing Steel Institute and Detailing Manual of the American Concrete Institute.

Total Steel Reinforcement (Plain) this sheet 38,520 #

Total Steel Reinforcement (Epoxy Coated) this sheet 30,462 #

REFERENCE DRAWINGS

COOR'D	DESCRIPTION	DR'N	CK'D	AP.V'D	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

DESIGNED BY Mc Guire
DRAWN BY L.G.
TRACED BY
CHECKED BY

APPROVED:

Structural Engineer

Head Civil Engineer

CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION E.P.M.D.
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANSPORTATION

12TH. ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

STEEL REINFORCEMENT DETAILS

SHEET ___ OF ___ SHEETS
CONTRACT No. 07110 A
DRWG No. 5144
DATE NOV 1970

BRUNING 80731-

FORM NO. 393-SH

12TH ST. DECK (PLAIN)

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A301								#4	34'-9"	12	279
A302								#5	36'-0"	192	7009
A303								#6	35'-3"	12	635
A304								#5	34'-0"	2	71
A305								#5	33'-4"	2	70
A306								#5	32'-7"	2	68
A307								#5	31'-11"	2	67
A308								#5	31'-8"	338	11017
A309								#5	30'-6"	2	64
A310								#5	27'-11"	2	58
A311								#5	27'-3"	2	57
A312								#5	26'-6"	2	55
A313								#5	25'-9"	2	54
A314								#5	25'-1"	2	52
A315								#5	24'-4"	2	51
A316								#5	23'-0"	2	48
A317								#5	22'-11"	2	48
A318								#5	22'-2"	2	46
A319								#5	21'-5"	2	45
A320								#6	34'-6"	1	52
A321								#6	33'-0"	1	50
A322								#6	31'-9"	1	48
A323								#6	31'-3"	43	2018
A326								#4	30'-6"	18	367
A332								#6	19'-3"	6	173
A333								#6	9'-9"	3	44
A334								#6	10'-3"	3	46
A339								#6	27'-4"	2	82
A340								#5	9'-0"	5	47
A342								#6	28'-0"	304	12785
A343								#6	23'-8"	132	4692
A344								#6	3'-4"	41	205
A345								#6	3'-11"	19	112
A346								#6	4'-6"	20	135
A347								#6	5'-1"	19	145
A348								#6	5'-8"	19	162
A349								#6	6'-3"	20	188
A350								#6	6'-9"	19	193
A351								#6	7'-4"	20	220
A352								#6	7'-11"	19	226
A353								#6	8'-5"	19	240
A354								#6	9'-1"	26	355
A355								#6	9'-8"	19	276
A356								#6	10'-3"	20	308
A357								#6	10'-9"	19	307
A358								#6	11'-4"	20	340
A359								#6	11'-11"	19	340
A360								#6	12'-6"	19	357
A361								#6	13'-1"	20	393
A362								#6	13'-8"	205	4208
A363								#6	14'-3"	16	342
A364								#6	14'-10"	15	334
A365								#6	15'-4"	16	368
A366								#6	15'-11"	16	383
A367								#6	16'-6"	16	397
A368								#6	17'-1"	21	539
A369								#6	17'-8"	16	425
A370								#6	18'-3"	16	439
A371								#6	18'-10"	16	453
A372								#6	19'-4"	15	436
A373								#6	19'-11"	16	479
A374								#6	20'-6"	16	493
A375								#6	21'-1"	16	507
A376								#6	21'-8"	15	488
A377								#6	22'-3"	16	535
A378								#6	22'-9"	14	478
A379								#6	23'-4"	14	491
A380								#6	23'-11"	14	503
A381								#6	24'-6"	15	552
A382								#6	25'-1"	15	565
A383								#6	25'-8"	14	540
A384								#6	26'-3"	176	6939
A385								#6	26'-10"	22	887
A386								#6	27'-4"	6	246
A395								#6	33'-9"	12	608

12TH ST. DECK (EPOXY COATED)

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
D301	3'-0"	6 1/4"						#6	6'-4 3/4"	214	2056
P301	1'-4"	3'-10 1/2"	6"	6"				#4	7'-5 1/2"	110	548
P302	1'-4"	4'-4 1/2"	6"	6"				#4	7'-11 1/2"	4	21
P303	1'-4"	4'-10 1/2"	6"	6"				#4	8'-5 1/2"	4	23
									TOTAL =		6998 #
A301								#3	34'-9"	180	4178
A303								#6	35'-3"	12	635
A320								#6	34'-6"	1	52
A321								#6	33'-0"	1	50
A322								#6	31'-9"	1	48
A323								#6	31'-3"	31	1455
A324								#4	33'-6"	2	45
A325								#4	32'-0"	2	43
A326								#4	30'-6"	340	6927
A327								#4	27'-6"	2	37
A328								#4	26'-0"	2	35
A329								#4	24'-6"	4	65
A330								#4	23'-0"	8	123
A331								#4	21'-6"	4	57
A335								#4	20'-3"	4	54
A336								#4	19'-0"	2	25
A337								#4	17'-9"	10	119
A338								#4	14'-6"	1	10
A339								#6	27'-4"	2	82
A341								#4	9'-0"	3	18
A342								#6	28'-0"	286	12028
A343								#6	23'-8"	132	4692
A344								#6	3'-4"	41	205
A345								#6	3'-11"	19	112
A346								#6	4'-6"	20	135
A347								#6	5'-1"	19	145
A348								#6	5'-8"	19	162
A349								#6	6'-3"	20	188
A350								#6	6'-9"	19	193
A351								#6	7'-4"	20	220
A352								#6	7'-11"	19	226
A353								#6	8'-5"	19	240
A354								#6	9'-1"	20	273
A355								#6	9'-8"	19	276
A356								#6	10'-3"	20	308
A357								#6	10'-9"	57	920
A358								#6	11'-4"	20	340
A359								#6	11'-11"	19	340
A360								#6	12'-6"	56	1051
A361								#6	13'-1"	20	393
A362								#6	13'-8"	205	4208
A363								#6	14'-3"	16	342
A364								#6	14'-10"	15	334
A365								#6	15'-4"	16	368
A366								#6	15'-11"	16	383
A367								#6	16'-6"	16	397
A368								#6	17'-1"	15	385
A369								#6	17'-8"	16	425
A370								#6	18'-3"	16	439
A371								#6	18'-10"	16	453
A372								#6	19'-4"	15	436
A373								#6	19'-11"	16	479
A374								#6	20'-6"	16	493
A375								#6	21'-1"	16	507
A376								#6	21'-8"	15	488
A377								#6	22'-3"	16	535
A378								#6	22'-9"	14	478
A379								#6	23'-4"	14	491
A380								#6	23'-11"	14	503
A381								#6	24'-6"	15	552
A382								#6	25'-1"	15	565
A383								#6	25'-8"	14	540
A384								#6	26'-3"	158	6230
A385								#6	26'-10"	22	887

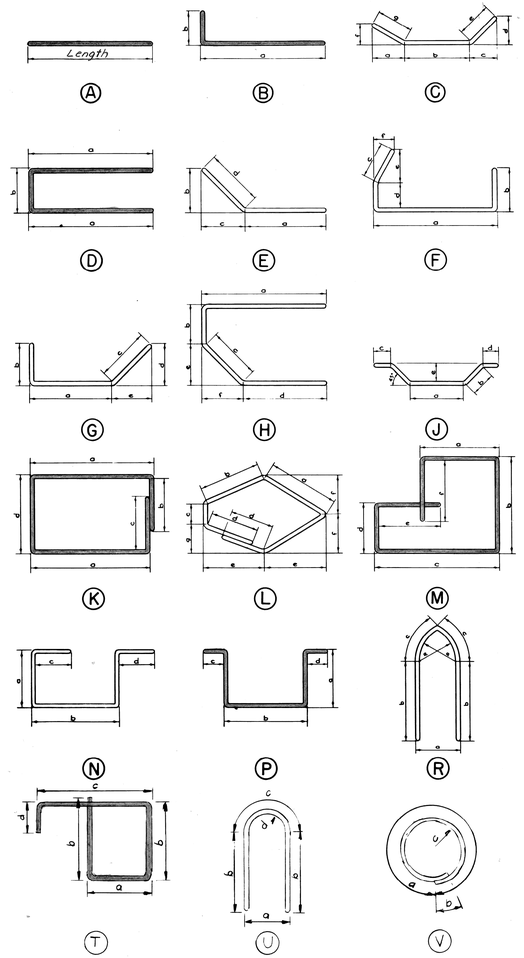
12TH ST. & LAFAYETTE BACKWALL (PLAIN)

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A386								#6	27'-4"	6	246
A387								#4	1'-5"	5	5
A388								#4	2'-6"	6	10
A389								#4	3'-7"	6	14
A390								#4	4'-8"	5	16
A391								#4	5'-9"	4	15
A392								#4	6'-10"	3	14
A393								#4	7'-11"	7	37
A394								#4	9'-0"	3	18
A395								#6	33'-9"	12	608
A396								#4	10'-6"	3	21
B301	10'-4"	6 1/2"						#4	10'-10"	187	1353
B302	15'-6"	6 1/2"						#4	16'-0"	4	43
B303	14'-9"	6 1/2"						#4	15'-3"	2	20
B304	8'-9"	6 1/2"						#4	9'-3"	4	25
B305	7'-9"	6 1/2"						#4	8'-3"	4	22
B306	6'-9"	6 1/2"						#4	7'-3"	5	24
B307	5'-9"	6 1/2"						#4	6'-3"	115	480
B308	4'-9"	6 1/2"						#4	5'-3"	7	25
B309	3'-9"	6 1/2"						#4	4'-3"	119	338
B310	2'-9"	6 1/2"						#4	3'-3"	9	20
B311	1'-9"	6 1/2"						#4	2'-3"	9	14
D302	1'-0"	1'-3"						#4	3'-2"	241	510
T301	1'-2 1/2"	1'-6 1/2"	1'-5 1/2"	8 1/2"				#4	6'-3"	218	910
									TOTAL =		6221 #
A401								#4	33'-3"	24	533
A402								#4	13'-3"	1	9
A403								#4	10'-6"	1	7
A404								#4	3'-3"	1	2
A405								#4	38'-3"	24	613
A406								#4	14'-6"	2	19
A407								#4	33'-0"	24	529
A408								#4	7'-0"	2	9
A409								#4	25'-0"	27	451
A410								#4	40'-0"	3	80
A411								#4	24'-3"	18	292
A412								#4	13'-0"	2	17
A413								#4	25'-3"	12	202
A414								#4	26'-3"	15	263
A415								#4	34'-3"	6	137
A416								#4	11'-9"	1	8

12TH ST. & LAFAYETTE BACKWALL (EPOXY COATED)

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
K401	3'-7"	1'-0"	1'-0"	1'-3 1/8"				#4	10'-4 1/2"	21	146
K402	3'-4"	1'-0"	1'-0"	1'-3 1/2"				#4	9'-10 1/2"	49	323
MA01	10'-4"	3'-7"	1'-3 1/2"	2'-7"	11 1/2"	1'-6 1/2"		#4	10'-8 1/4"	66	471
MA02	10'-4"	3'-4"	1'-3 1/2"	2'-4"	11 1/2"	1'-6 1/2"		#4	10'-2 1/4"	152	1034
									TOTAL =		5145 #
A401								#4	33'-3"	6	133
A402								#4	13'-3"	1	9
A403								#4	10'-6"	1	7
A404								#4	3'-3"	1	2
A405								#4	38'-3"	6	153
A406								#4	14'-6"	2	19
A407								#4	33'-0"	6	133
A408								#4	7'-0"	2	9
A409								#4	25'-0"	6	100
A411								#4	24'-3"	4	65
A412								#4	13'-0"	2	17
A413								#4	25'-3"	4	67
A414								#4	26'-3"	2	35
A416								#4	11'-9"	1	8
									TOTAL =		757 #

BAR BENDING DIAGRAM



NOTE: All bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.

Tolerances in cutting and bending bars are as established in Manual of Standard Practice of the Concrete Reinforcing Steel Institute and Detailing Manual of the American Concrete Institute.

Total Steel Reinforcement (Plain) this sheet 75,128 #

Total Steel Reinforcement (Epoxy Coated) this sheet 62,968 #

COOR'D	DESCRIPTION	DR'N	CK'D	APV'D	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY: McGuire
DRAWN BY: L.G.
TRACED BY:
CHECKED BY:

APPROVED:

Structural Engineer

Head Civil Engineer

CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION E.P.M.D.
FOR
MICHIGAN DEPARTMENT OF STATE HIGHWAYS & TRANSPORTATION

12TH ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

STEEL REINFORCEMENT DETAILS

SHEET ___ OF ___ SHEETS
CONTRACT No. 07110A
DRWG No. S145
DATE NOV 1979

QUANTITY SHEET – E

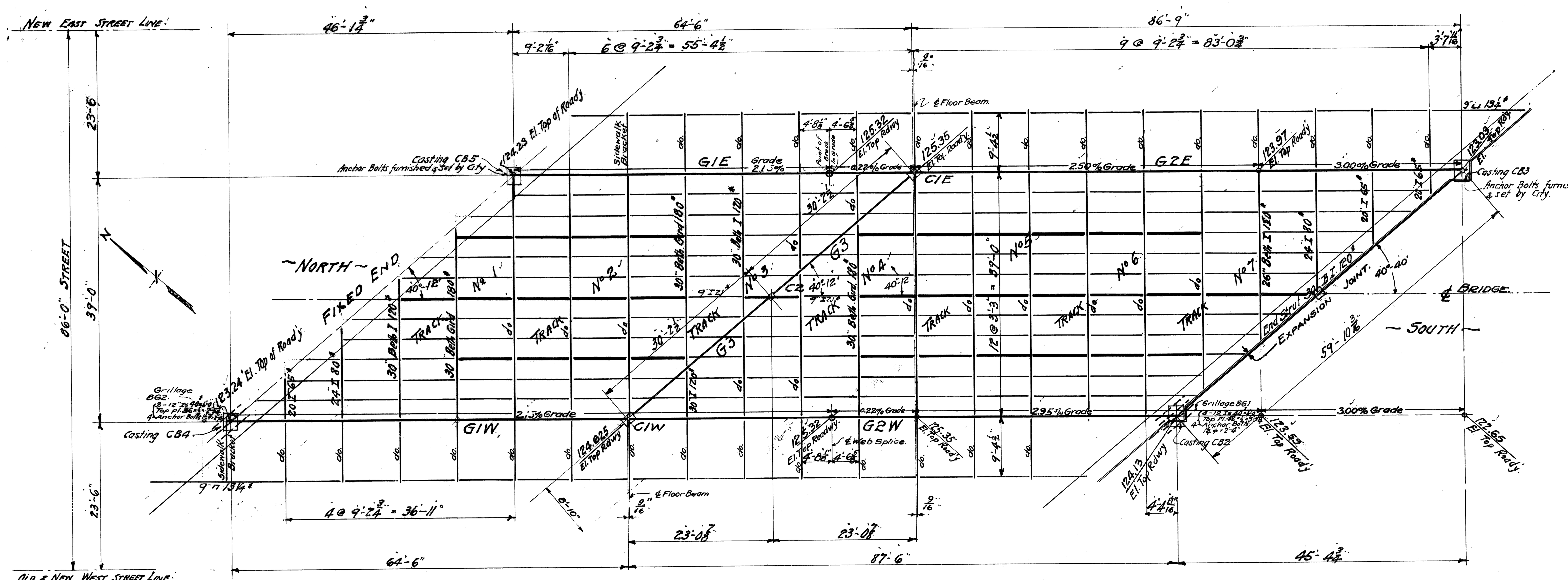
BRIDGE ITEMS	AS PER PLANS														AS CONSTRUCTED	
	SHEET NO'S.		S-106	S-117	S-118	S-122	S-123	S-136	S-138	S-139	S-142	S-143	S-144	S-145	SHEET NO'S.	
	TOTALS	UNITS	General Plan of Structure	Abutment Details	Piling Plan	Pier Details	Structural Steel Framing Plan and Details	Superstructure Details	NAME PLATE DETAILS	EXPANSION JOINT DEVICE	Steel Reinforcement Details	"	"	"	TOTALS	UNITS
STRUCTURE EMBANKMENT (CIP)	1125	CY	1125													
UNCLASSIFIED FOUNDATION EXCAVATION	7465	CY		6600	-	865										
STRUCTURE BACKFILL (CIP)	8000	CY	8000													
ROCK DRILLING	27	L.F.			27											
TEMPORARY STEEL SHEET PILING	1840	S F	1840													
STEEL PILES, FURNISHED & DRIVEN (12")	7449	L. F.			7449											
SPLICES, STEEL PILES (12")	187	EA			187											
STRUCTURAL LIGHTWEIGHT CONCRETE	51	CY						51								
SUBSTRUCTURE CONCRETE	2863	CY		1989		874										
SUPERSTRUCTURE CONCRETE	1237	CY						1237								
STEEL REINFORCEMENT	329,745	LBS									134419	81678	38520	75128		
STEEL REINFORCEMENT, EPOXY COATED	93430	LBS											30462	62968		
LOW TEMPERATURE PROTECTION, SUBSTR. CONC.	2863	CY		1989		874										
LOW TEMPERATURE PROTECTION, SUPERSTR. CONC.	1288	CY						1288								
PROTECTIVE TREATMENT FOR BRIDGE DECKS	26985	SF						26985								
2" PREFORMED NEOPRENE JOINT SEAL	160	LF						160								
EXPANSION JOINT DEVICE, 2" MIN. TRAVEL	27	LF								27						
EXPANSION JOINT DEVICE, 3" MIN TRAVEL	266	LF								266						
EPOXY BONDING AGENT	40	SF						40								
10" PIPE SLEEVE, PLACED	2	EA						2								
EXPANSION JOINT DRAIN	9	EA		9												
3" CONDUIT	188	LF						188								
4" CONDUIT	4144	LF						4144								
NAME PLATES	4	EA							4							
FIELD PAINTING	1	L.S.					1									
STRUCTURAL STEEL FURN. & FAB. (AS72 ROLLED)	755500	LBS					754500									
STRUCTURAL STEEL ERECTION (AS72 ROLLED)	755500	LBS					754500									
BUSHINGS	100	EA					100									
JOINT WATERPROOFING	1250	SF		1229				21								
BRIDGE RAILING - SOLID PARAPET TYPE	140	LF		140												
BRIDGE RAILING - SOLID PARAPET TYPE (MOD.)	497	LF						497								
24" CLASS A CULVERT	462	LF	462													
8" CLASS A SEWER (TRENCH DETAIL B)	340	LF	340													
SLOPE PAVING, CONCRETE	1230	SY	1230													
SLOPE PROTECTION HEADERS	504	LF	504													
FOUNDATION DRAINS 6"	655	LF		655												
PEDESTRIAN FENCING, STRUCTURES	3977	SF						3977								
REMOVAL OF PORTIONS OF STRUCTURES	1	L.S.	1													
FORM, FINISH & CURE SUPERSTRUCTURE CONCRETE	1	L.S.						1								
SHEAR DEVELOPERS	1	LS					1									

PLAN ESTIMATE BY R. Hanlon DATE JUNE 1981 CHECKED BY _____ DATE _____ DATE _____ DATA COMPLETED _____ PROJ. ENG DATE _____ HISTORY CHECKED ENTERED ON PLANS BY _____ DATE _____

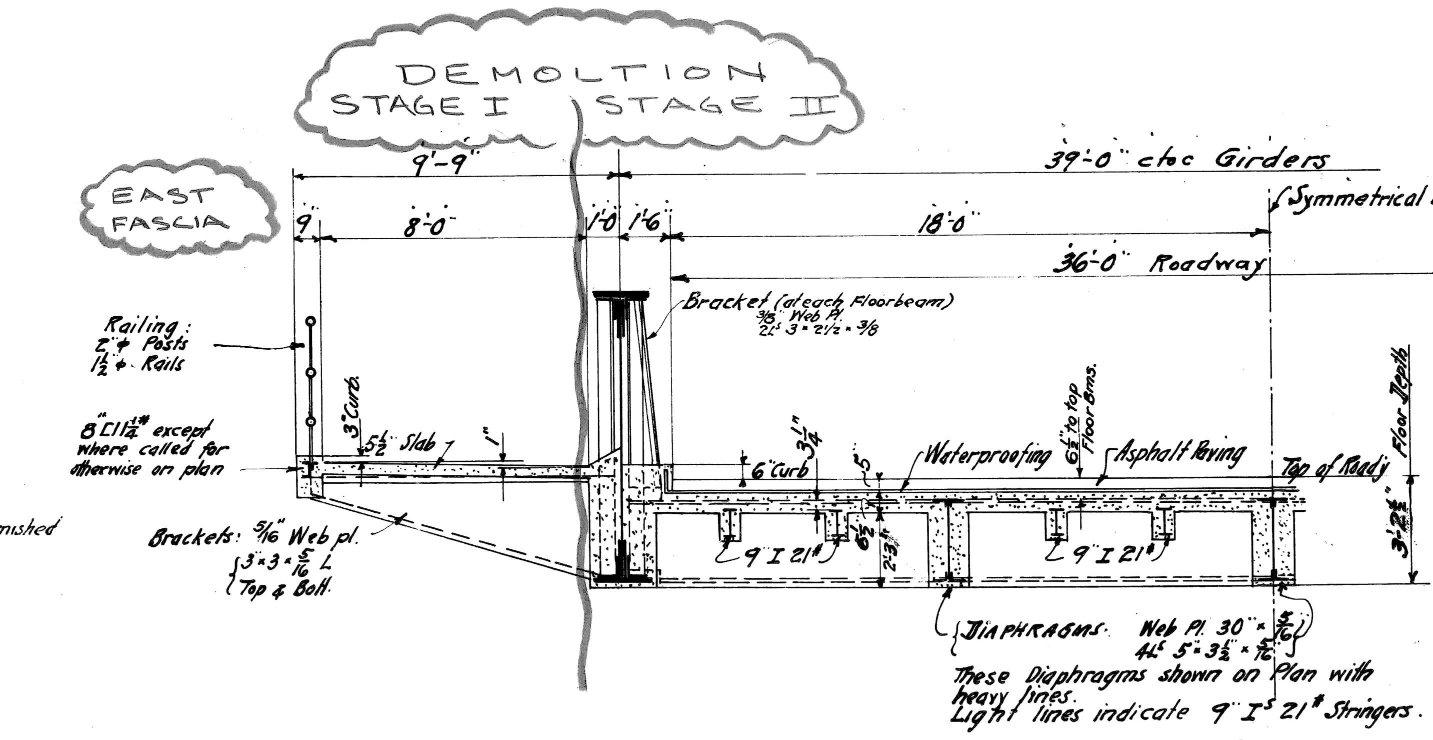
S-146 SHEET NO.

CONTRACT NO. 07110A

R. CARROLL, INC. 378 1818



PLAN
3/32" = 1'-0"

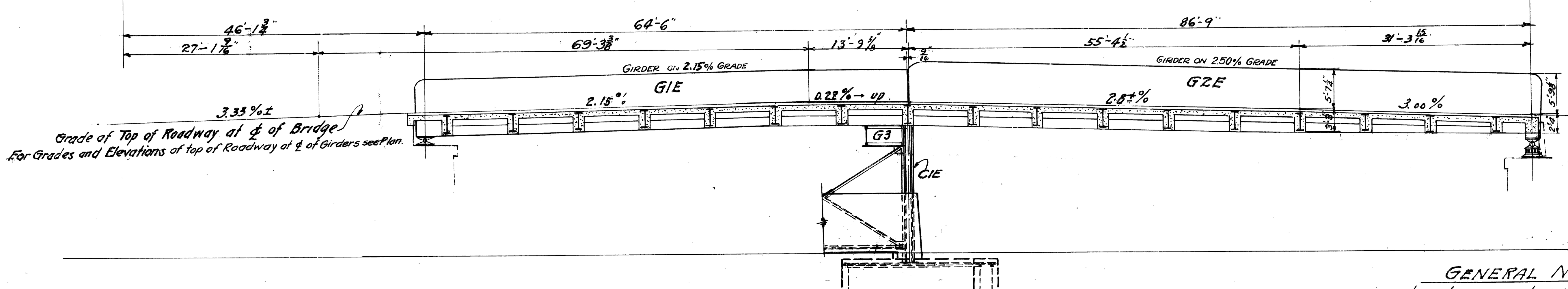


HALF CROSS-SECTION, DECK
Scale: 1/4" = 1'-0"

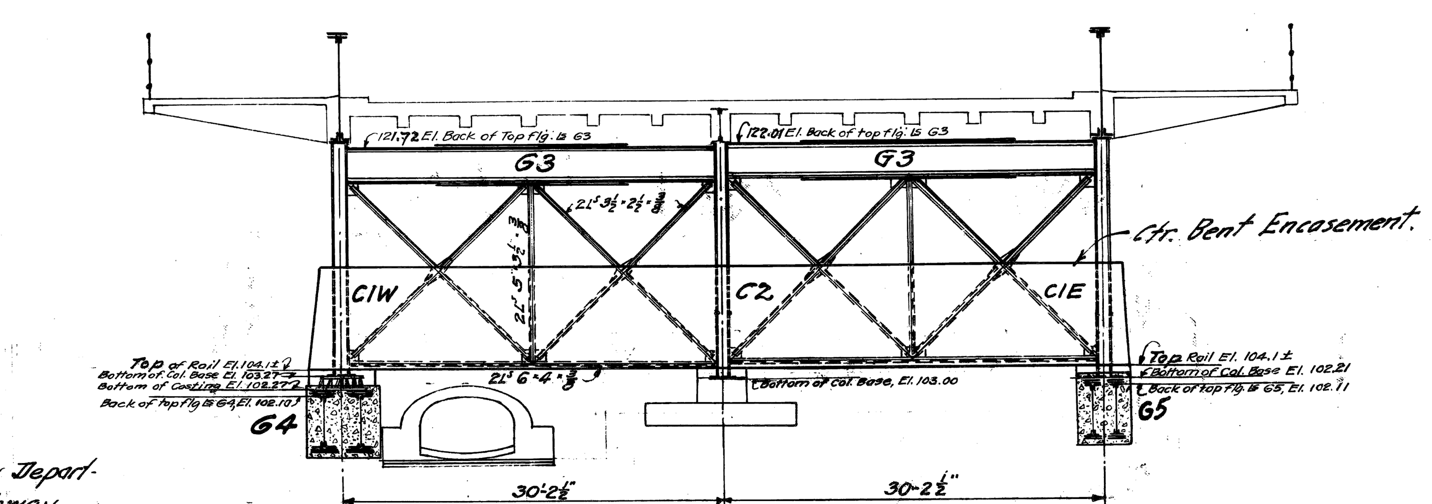
TABLE OF OVERHEAD TRACK CLEARANCES.

Track No	Elevation Bott. Girder West	Elevation Bott. Girder East	Elevation Top of Rail West	Elevation Top of Rail East	Clearance Under West Gird.	Clearance Under East Gird.
1	120.37	121.08	104.64	104.37	15.73 (15.35)	16.71 (15.46)
2	120.79	121.49	104.24	104.17	16.55 (16.58)	17.32 (16.52)
3	121.23	121.94	104.12	103.94	17.11 (17.10)	18.00 (17.14)
4	121.66	121.76	104.22	104.04	17.44 (17.17)	17.72 (17.25
5	122.06	121.28	104.21	104.00	17.85 (17.08)	17.28 (17.17)
6	121.55	120.93	104.20	104.04	17.35 (16.85)	16.89 (16.92)
7	121.06	120.81	104.13	104.01	16.93 (16.56)	16.80 (16.75)

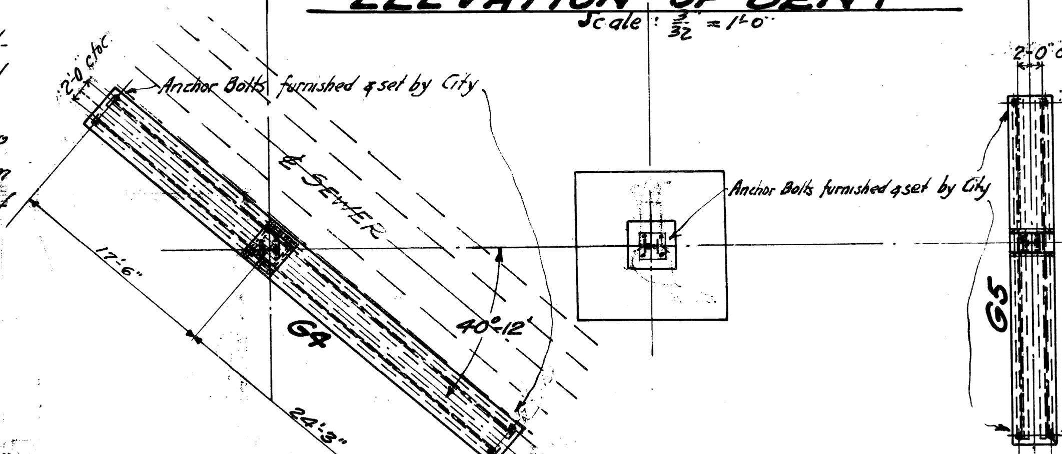
NOTE: Figures in paranthesis ( ) denote clearance under existing Trusses.



LONGITUDINAL SECTION
Scale 3/32" = 1'-0"



ELEVATION OF BENT
Scale: 3/32" = 1'-0"



FOUNDATION PLAN OF BENT
Scale 3/32" = 1'-0"

GIRDER SCHEDULE

Mark	Span	End Shear	Max. Mom.	Eff. Depth	Material in Each Flange: Angles	Cover Pls.	Length	Web Pl.	Gross Area Top Flg.	Net Area Bott. Flg.
G1E G1W	64'-6"	376000#	4,650000 in#	7.22'	2-8×6×5/8 L^s	18"×1/2"; 18"×5/8; 18×3/8"	Full length Top 56'-? Bott.; 46'-9" T.&B.; 36'-9" T.&B.	87×7/16	45.55□"	39.60□"
G2E G2W	86'-9" 87'-6"	493000#	10,840000 in#	8.13'	2-8×8×3/4 L^s; 2-Side Pls. 14×3/4	1-21×1/2 G2E; 1-21×1/2 G2W; 2-21×1/2 G2E; 2-21×1/2 G2W	Full length-Top 65'-0 Bottom.; Full length Top 65'-9" Bottom.; 55'-0" Top & Bott. 45'-0" " "; 55'-9" " " 45'-9" " "	102×1/2	83.88□"	73.86□"
G3	30'-2 1/2"	84000#	716000 in#	2.82'	2-6×4×5/8	1-10×5/8	20'-0" Top & Bottom	36×3/8	20.62□"	16.64□"
G4	41'-3"	464,000	8,280,000 in#	4.5'	4 L^s 8×8×3/4"	4-19×3/4"; 4-19×3/4"; 4-19×3/4"	30'-3", 21'-0", 15'-0" Top & Bott.	2-54×7/16"	126.5□"	111.30□"
G5	27'-0"	470,000	5,344,000 in#	4.45'	4 L^s 8×6×5/8"	4-19×5/8"; 4-19×5/8"	10'-9", 19'-0" Top & Bott.	2-54×7/16	85.68□"	74.48□"

COLUMN SCHEDULE

Mark	Max. Unsupp. Length	Maxim. Total Load	Loading for Max. Eccentricity G1	G2	G3	Total	Column Section	Sketch	Area
C1	15.3'	865000#	200000#	478000#	34000#	712000#	1-15" I 70#; 2-15" [^s 50#; 2-12"×3/4 Pls.; 4-5"×3/4" "	Axis x-x parallel to G3	83.01□"
C2	15.3'	170000#					1-12"×1/2" Pl.; 4-5"×3 1/2×1/2 L^s	1'-0 1/4"	22.00□"

PAINTING:
As per Specifications and Notes on Design Drawings. Steel in contact with concrete shall not be painted at all.-

GENERAL NOTES.

LIVE LOAD AND IMPACT.
As per Michigan State Highway Department Specifications for Highway Bridges, 1920 Edition, except:

Floorbeams and Girders:
Four Lines of 18 Ton Trucks on Roadway. The diaphragms were assumed to distribute the floorbeam loads by considering them continuous over two spans on either side of the floorbeam in question. An impact allowance of 18 1/2 % was added to the moment and shear on the floorbeams. No impact, however, was added on the Girders for a roadway loaded with four lines of trucks.

Stringers and Slab:
18 Ton Truck - 25% Impact.

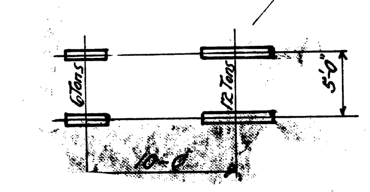
Side walk: 100 #/□' - No Impact.

Columns: Four Lines of Trucks on roadway and 100 #/□' on sidewalks Impact: 25% on roadway only.

Foundations under Bent:
Same as for Columns except no impact.

MATERIALS, WORKMANSHIP AND DETAILS:
As per Specifications and Design Drawings, Sheets 1 to 5.

UNIT STRESSES.
Tension 16000 #/□" net sect.
Compr. 16000-70 l/r gross "
Shear 10000 #/□" gross "
Shop Rivets: 12000 #/□" shear 24000 #/□" bearing
Field " 10000 " " 20000 " "
Bearing on Masonry: 500 #/□"



18 TON TRUCK
Axles of two trucks following each other 15 ft apart. Wheels of two trucks side by side 4 ft apart.

XO 60

REFERENCE DRAWINGS	
DESIGNED BY	
DRAWN BY	
TRACED BY	
CHECKED BY	RAK

COOR'D | DESCRIPTION | DR'N | CK'D | AP'VD | DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

APPROVED:

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

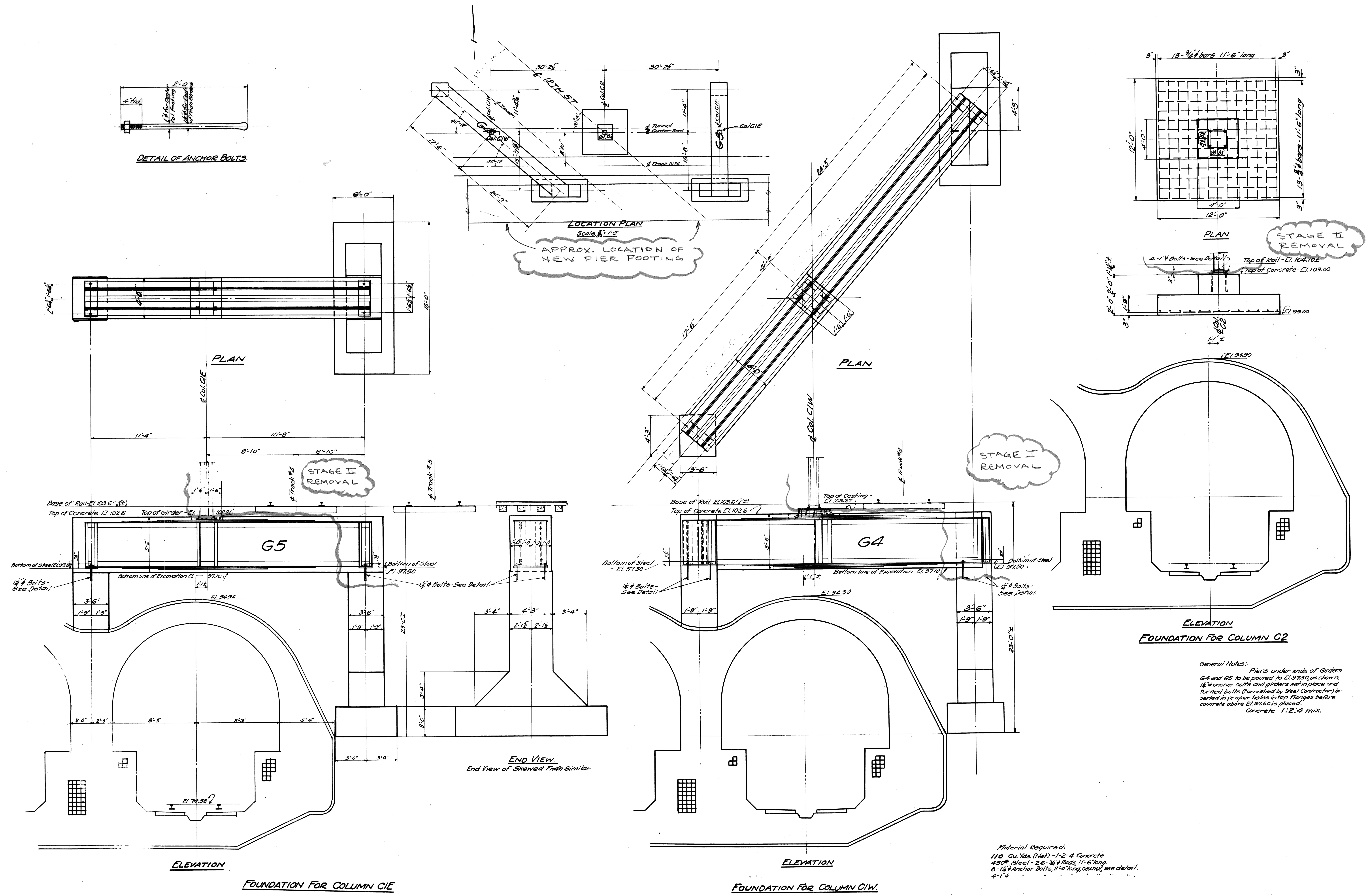
12TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

REFERENCE DRAWING OLD TWELFTH ST. BRIDGE
GENERAL PLAN - SUPERSTRUCTURE

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG NO. SR-1
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

R. CARROLL, INC. 378 1818•



General Notes:-
Piers under ends of Girders G4 and G5 to be poured to El. 97.50, as shown, 1¼"ϕ anchor bolts and girders set in place and turned bolts (furnished by Steel Contractor) inserted in proper holes in top flanges before concrete above El. 97.50 is placed.
Concrete 1:2:4 mix.

Material Required.
110 Cu. Yds. (Net) - 1-2-4 Concrete
450# Steel - 26-¾"ϕ Rods, 11'-6" long.
8-1¼"ϕ Anchor Bolts, 2'-0" long, hexnut, see detail.
4-1"ϕ " " " " " " " .

XO 60

						REFERENCE DRAWINGS	
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE		
REVISIONS LOCATED BY COORDINATES ON SHEET							

DESIGNED BY
DRAWN BY
TRACED BY
CHECKED BY RAK

APPROVED:

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

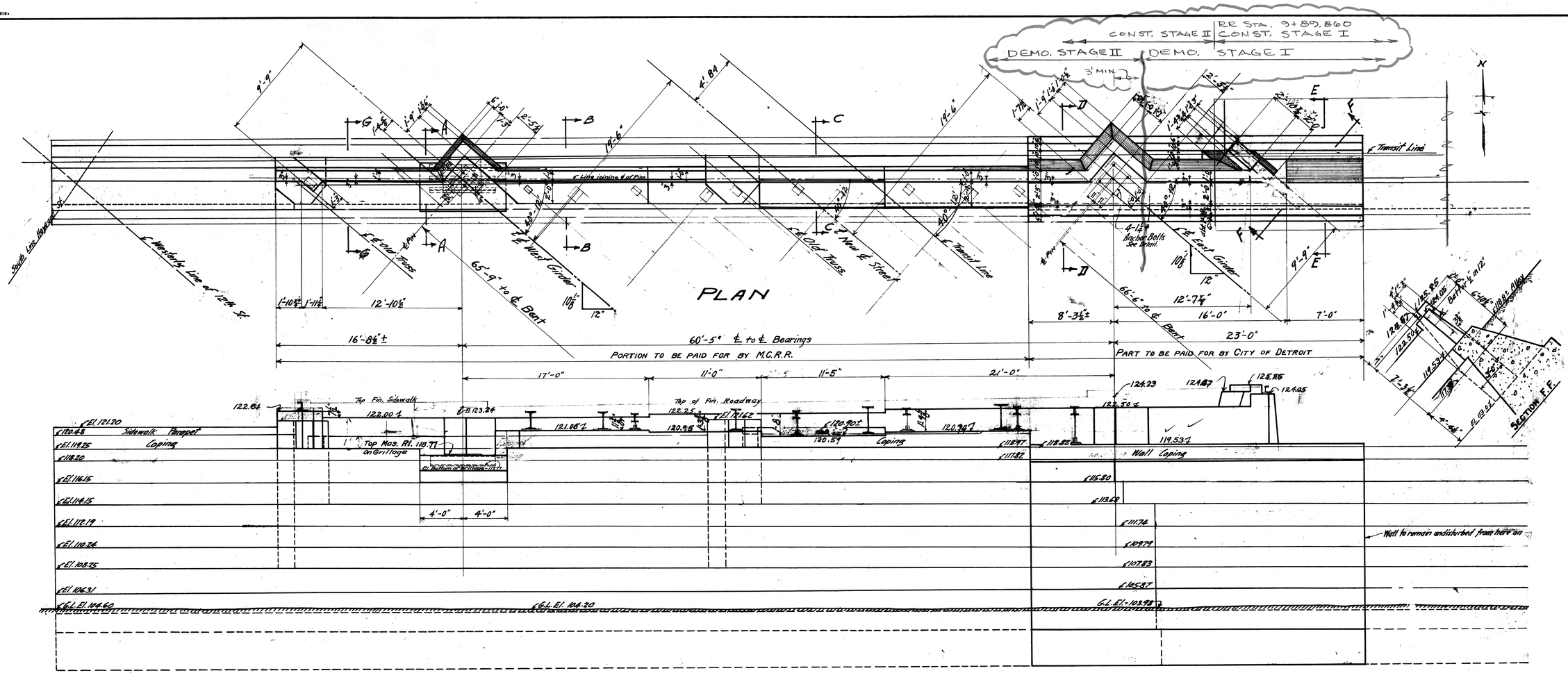
12 TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

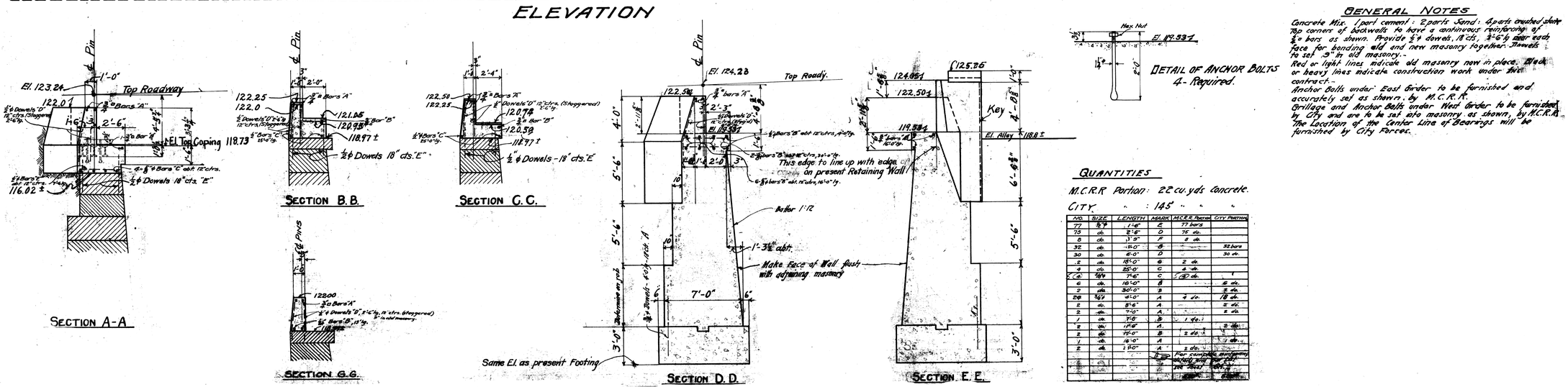
REFERENCE DRAWING OLD TWELFTH ST. BRIDGE
CONCRETE DETAILS - FOUNDATION CENTER BENT

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG NO. SR-2
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

R. CARROLL, INC. 378 1818





GENERAL NOTES

Concrete Mix. 1 part cement : 2 parts Sand : 4 parts crushed stone
Top corners of backwalls to have a continuous reinforcing of ¾"ø bars as shown. Provide ¾"ø dowels, 18 cts, 2'-6" ℄ apart each face for bonding wing and new masonry together. Dowels to set 3" in old masonry.-
Red or light lines indicate old masonry now in place. Black or heavy lines indicate construction work under this contract.-
Anchor Bolts under East Girder to be furnished and accurately set as shown, by M.C.R.R.
Grillage and Anchor Bolts under West Girder to be furnished by City and are to be set into masonry as shown, by M.C.R.R.
The Location of the center Line of Bearings will be furnished by City Forces.

QUANTITIES

M.C.R.R Portion: 22 cu. yds. Concrete.
CITY " : 145 " " "

NO.	SIZE	LENGTH	MARK	M.C.R.R. Items	CITY PORTION
77	¾"	1'-6"	E	77 bars	
75	ctr.	2'-8"	D	75 ctr.	
6	ctr.	1'-3"	F	6 ctr.	
32	ctr.	4'-0"	B		32 bars
30	ctr.	6'-0"	D		30 ctr.
2	ctr.	18'-0"	G	2 ctr.	
4	ctr.	25'-0"	C	4 ctr.	
2 ℄	½"	7'-6"	C	2 ctr.	1
6	ctr.	16'-0"	B		6 ctr.
2	ctr.	30'-0"	B		2 ctr.
58	½"	4'-0"	A	4 ctr.	18 ctr.
2	ctr.	8'-6"	A		2 ctr.
2	ctr.	7'-0"	A		2 ctr.
1	ctr.	7'-6"	B	1 ctr.	
2	ctr.	15'-0"	A		2 ctr.
2	ctr.	14'-0"	B	2 ctr.	
1	ctr.	16'-0"	A		1 ctr.
2	ctr.	1'-0"	A	2 ctr.	
				For complete anchorage details see Plan Sheet	

XO 60

												REFERENCE DRAWINGS	DESIGNED BY		APPROVED:
													DRAWN BY		
													TRACED BY		
COOR'D	DESCRIPTION			DR'N	CK'D	AP'VD	DATE						CHECKED BY	RMK	
REVISIONS LOCATED BY COORDINATES ON SHEET															

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

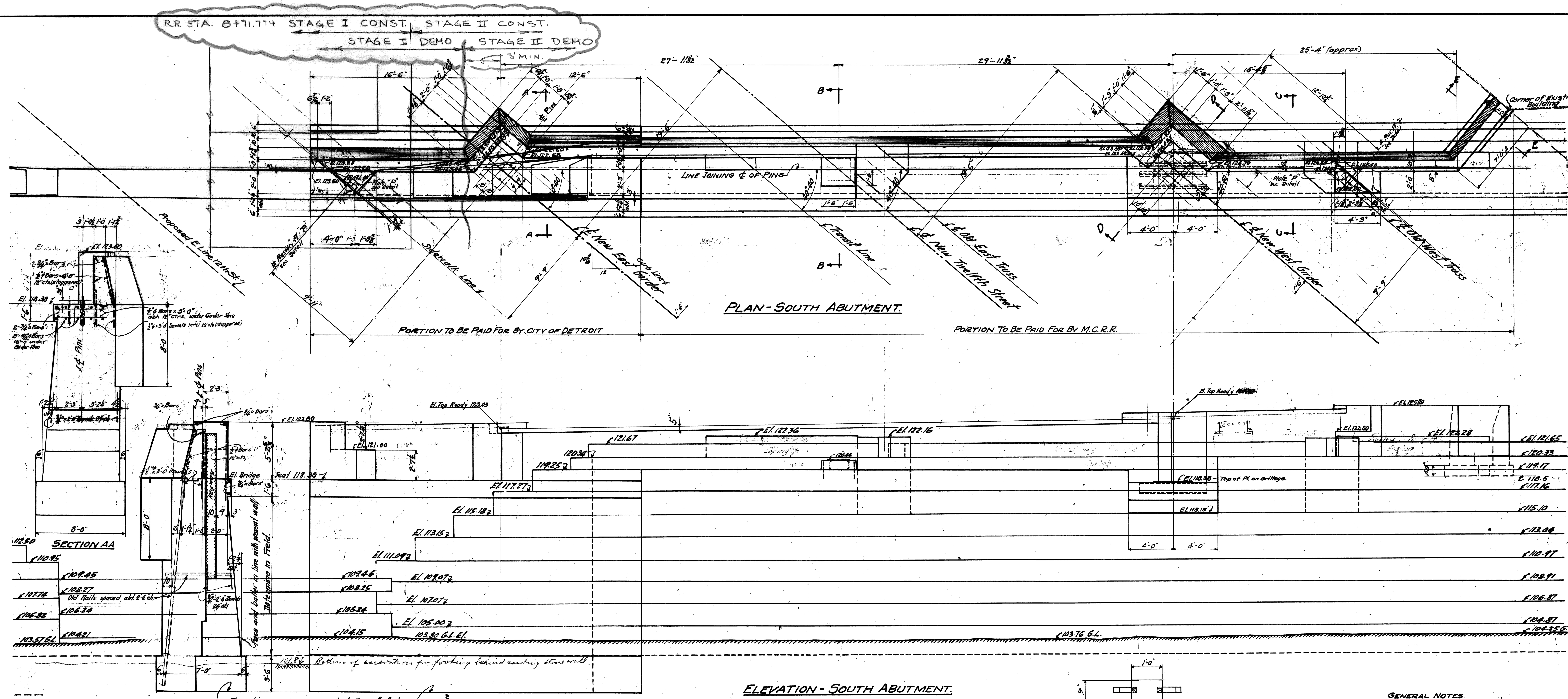
12TH ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

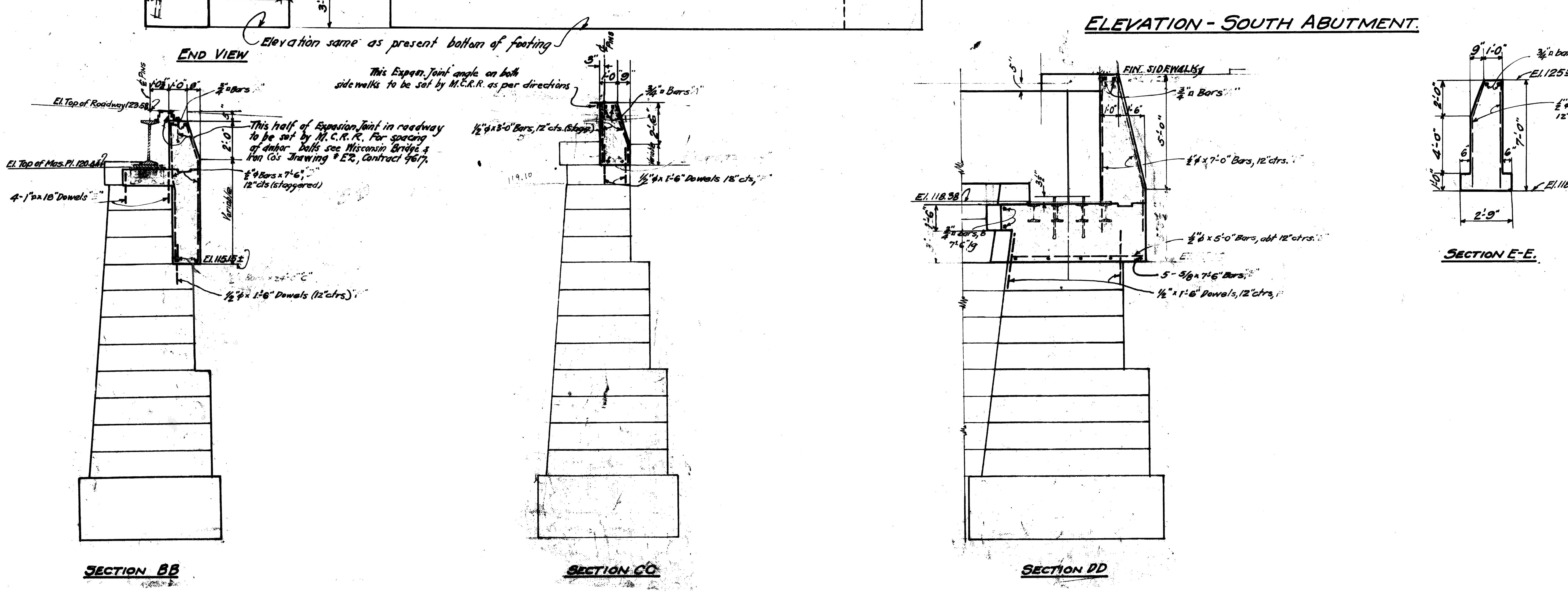
REFERENCE DRAWING OLD TWELFTH ST. BRIDGE
CONCRETE DETAILS FOR NORTH ABUTMENT

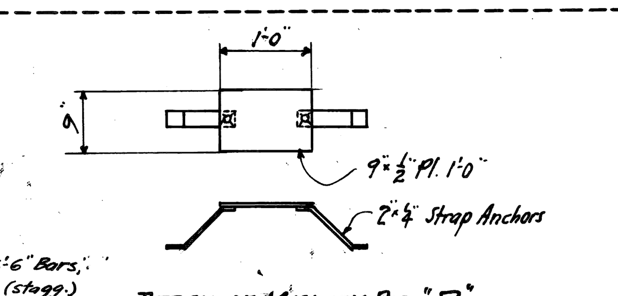
SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG NO. SR-3
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

R. CARROLL, INC. 378 1818







DETAIL OF MASONRY PLS. "P"
(2- Required)

QUANTITIES.

M.C.R.R. PORTION - 41 cu. yds. concrete.
City " 142 " "

No.	SIZE	LENGTH	MARK	M.C.R.R. Portion	City Portion

For complete Reinforcing details and bar lists see sheet 7A

GENERAL NOTES.

Concrete Mix, 1 part cement, 2 parts sand, 4 parts crushed stone.

Top corners of Backwalls to have a continuous reinforcing of 3/4"□ bars as shown. Provide 1/2" dowels, 18" ctrs, 1'-6" lg. near each face for bonding old and new walls together. Dowels to set 9" in old masonry.

Red or light lines indicate old masonry now in place. Black or heavy lines indicate construction work under this contract.

Anchor Bolts under East Girder to be furnished and accurately set as shown by M.C.R.R.

Grillage and Anchor Bolts under West Girder to be furnished by City and are to be set into Masonry as shown by M.C.R.R.

The location of the center line of Bearings will be furnished by City Forces.

~~The Half of Expansion Joints resting on backwall for both sidewalks and roadway are to be set by M.C.R.R. as per notes in Sect. B-B & CC this sheet.~~

~~M.C.R.R. to furnish and set 1/2" thick masonry plates unde sidewalk channels as per Plan & Detail.~~

XO 60

						REFERENCE DRAWINGS	DESIGNED BY		APPROVED:
							DRAWN BY		
							TRACED BY		
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE		CHECKED BY	RAK	

REVISIONS LOCATED BY COORDINATES ON SHEET

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

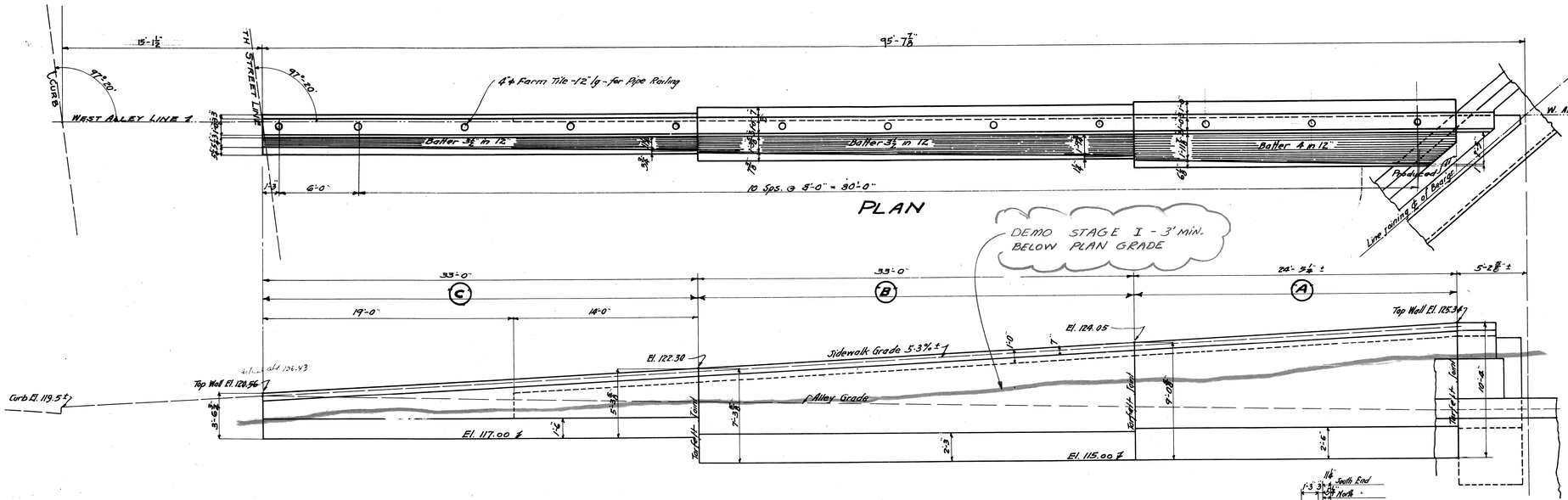
12TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

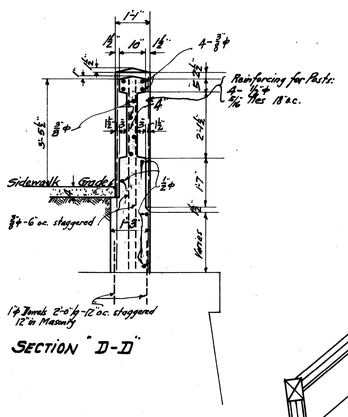
REFERENCE DRAWING OLD TWELFTH ST. BRIDGE
CONCRETE DETAILS FOR SOUTH ABUTMENT

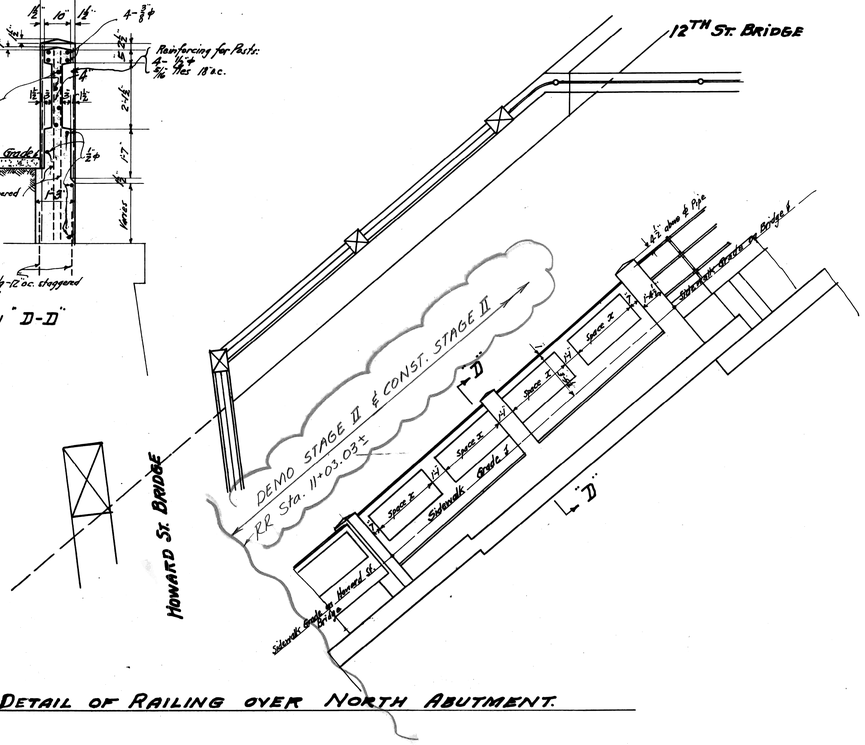
SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG NO. SR 4
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

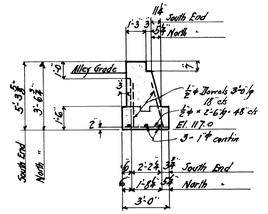
R. CARROLL, INC. 376 1818



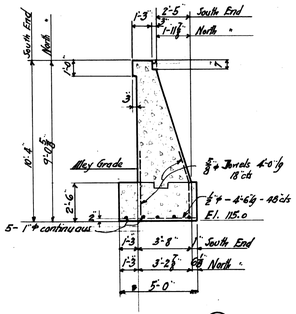




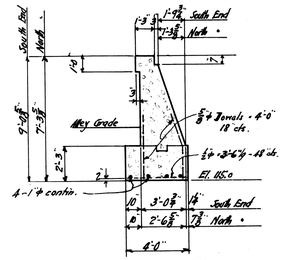
DETAIL OF RAILING OVER NORTH ABUTMENT.



SECTION (C)



SECTION (A)



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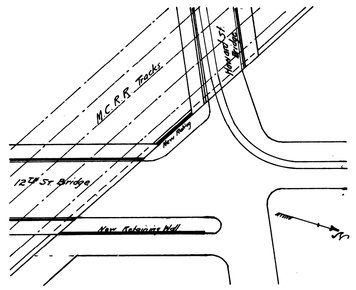

LOCATION PLAN

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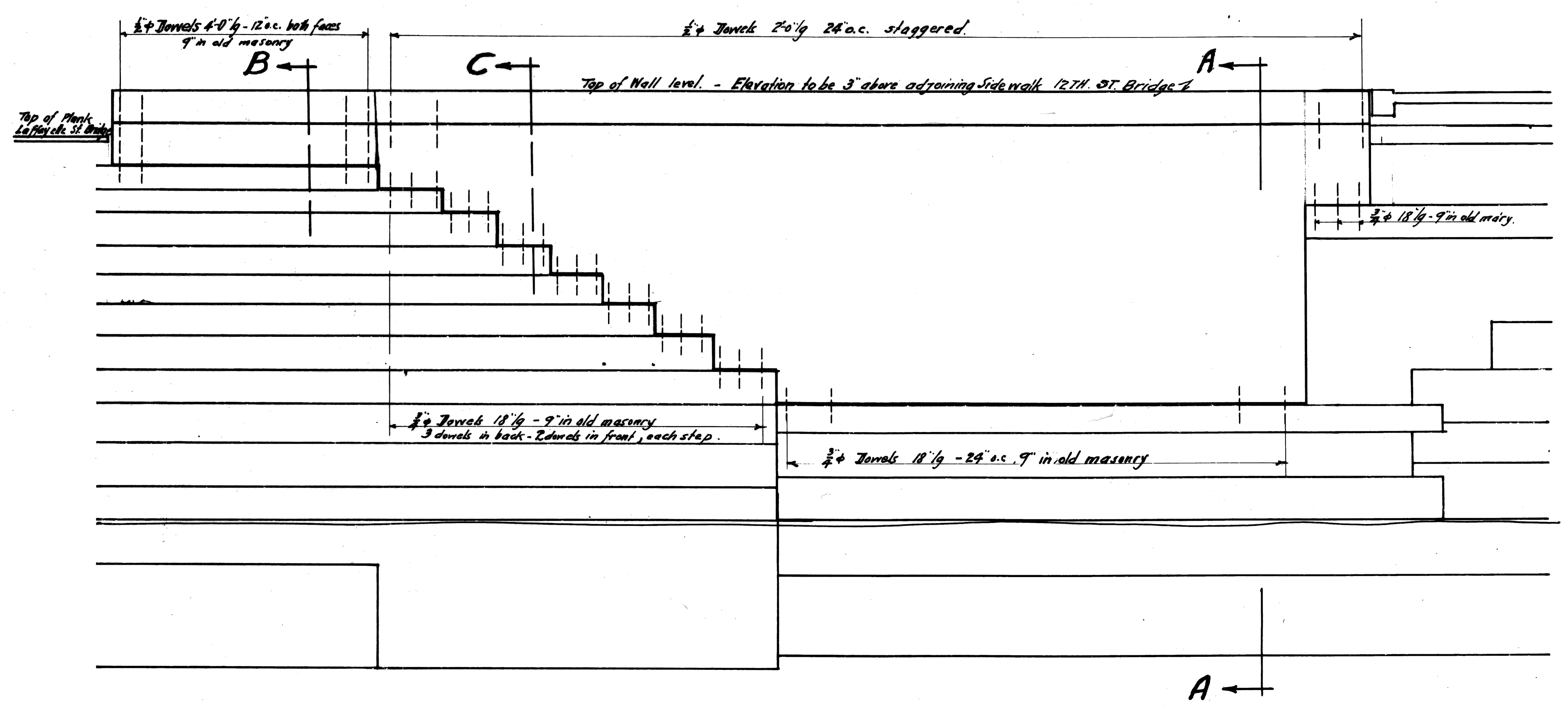
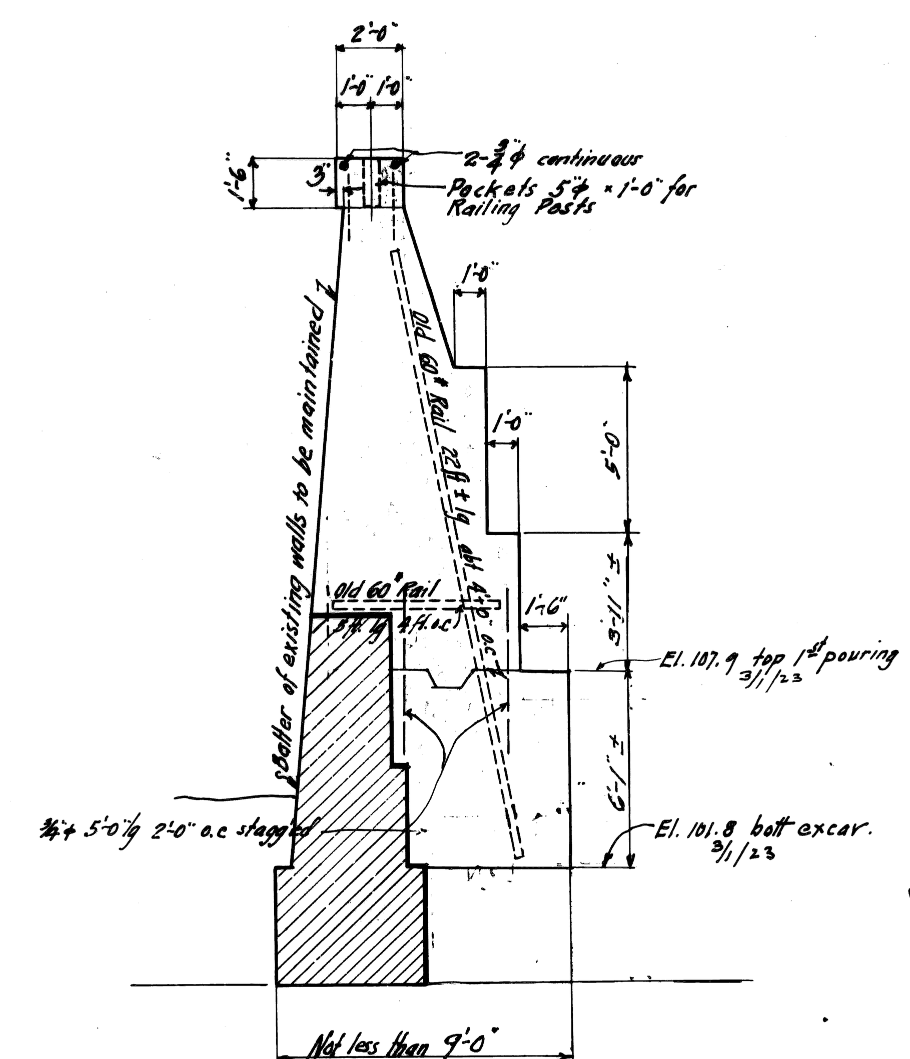
| | | |

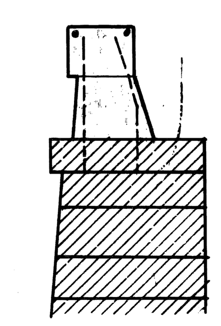
R. CARROLL, INC. 378 1818



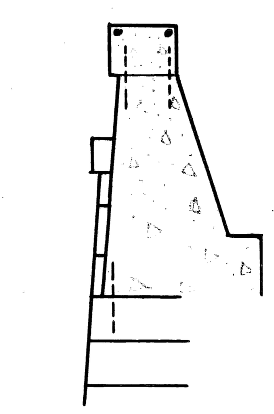
ELEVATION



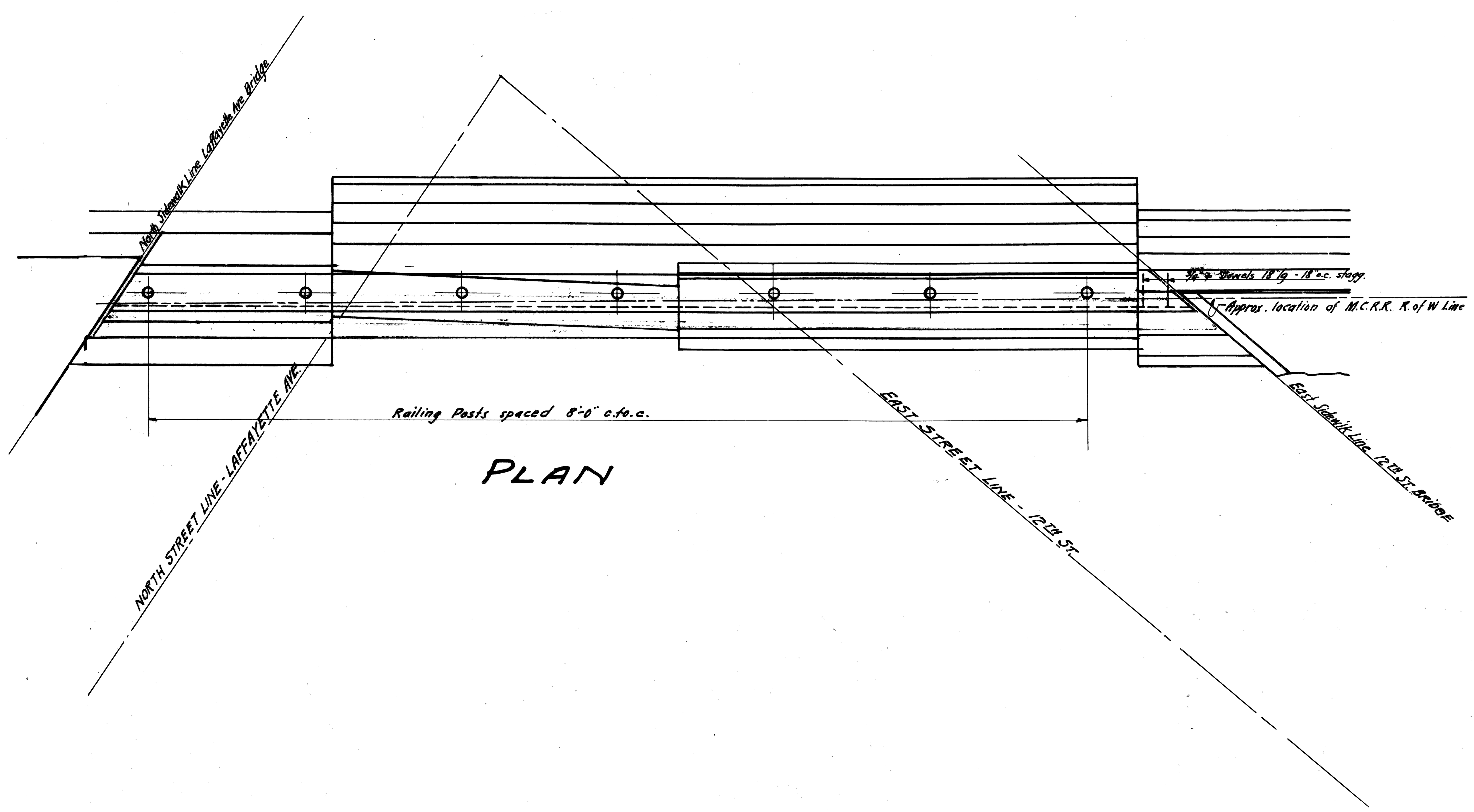
TYPICAL SECTION A-A.



SECT. B-B.



SECT. C-C.



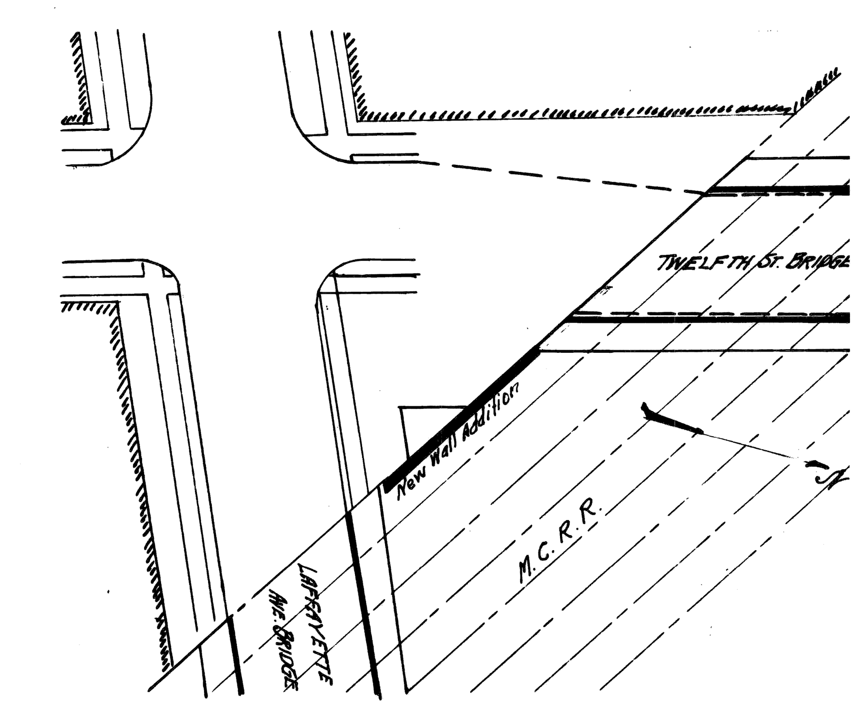
PLAN

Mode of Procedure:

Excavate behind existing retaining wall from east end of 12th Street Bridge abutment to north end of Lafayette Avenue Bridge abutment in order to disclose the condition and dimensions of this wall as there is no data available from which to obtain this information.

The section of the new wall shall be as shown on "Typical Section A-A" except where intercepted by existing masonry as indicated in section B-B and C-C.

After the actual conditions are disclosed the Engineer will give further information as to the details of construction, etc. The face of the new wall shall follow closely the existing wall both in batter and alignment.



~ Location Plan. ~

DEMO STAGE I

XO 60

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

REFERENCE DRAWINGS

DESIGNED BY

DRAWN BY

TRACED BY

CHECKED BY RAK

APPROVED:

CITY OF DETROIT

CITY ENGINEERING DIVISION - EPMD

12TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

REFERENCE DRAWING OLD TWELFTH ST. BRIDGE
DETAILS OF RETAINING WALLS AT SOUTH END OF BRIDGE

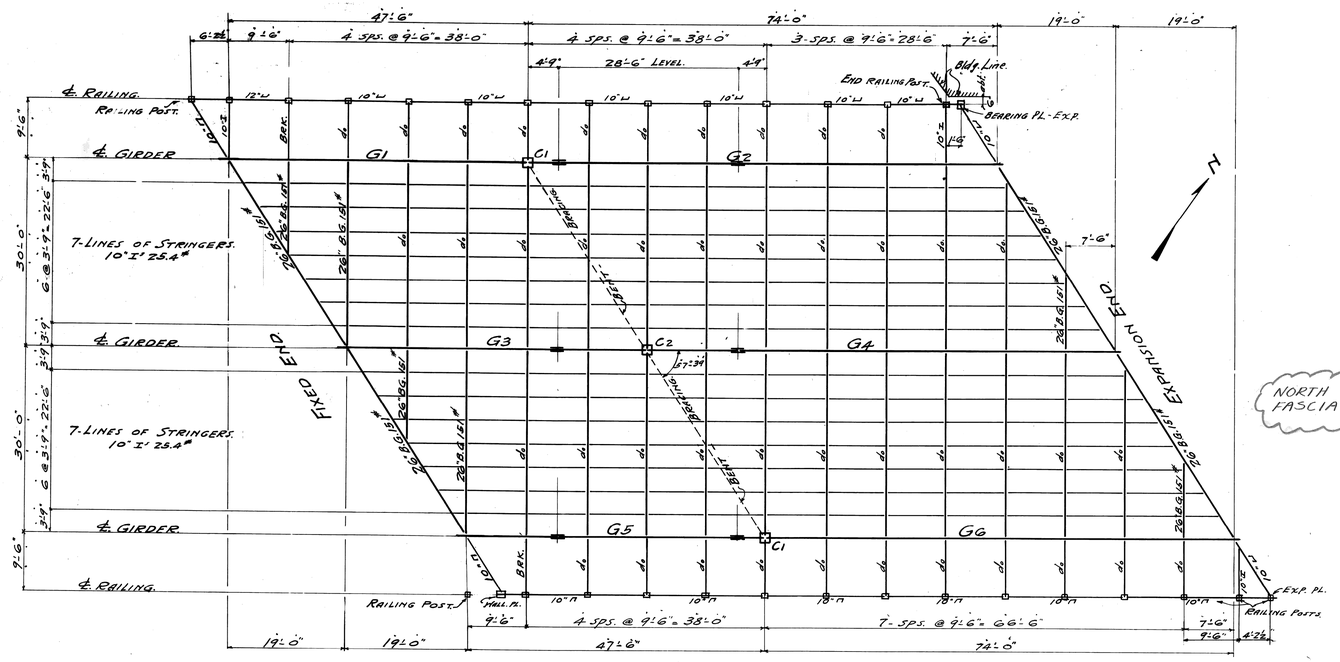
SHEET ____ OF ____ SHEETS

CONTRACT NO. 07110 A

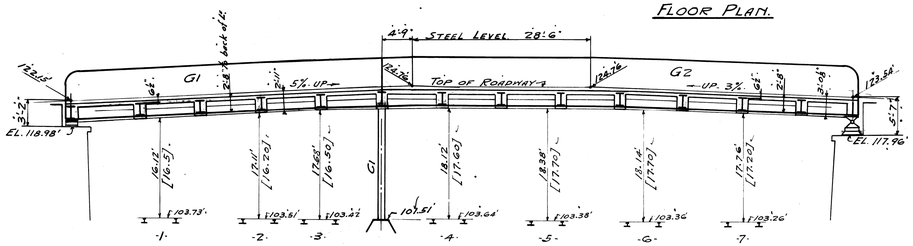
DRWG NO. SR-6

DATE NOV 1979

R. CARROLL, INC. 378 1818.

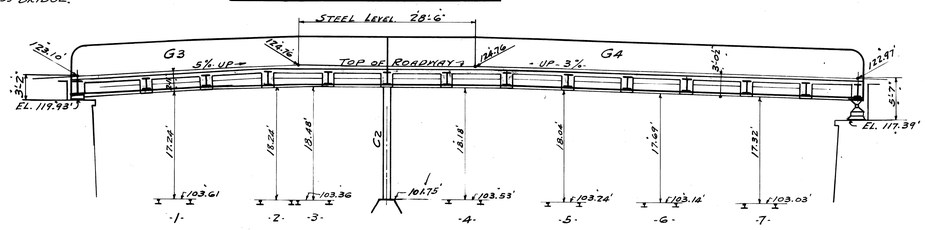


FLOOR PLAN.

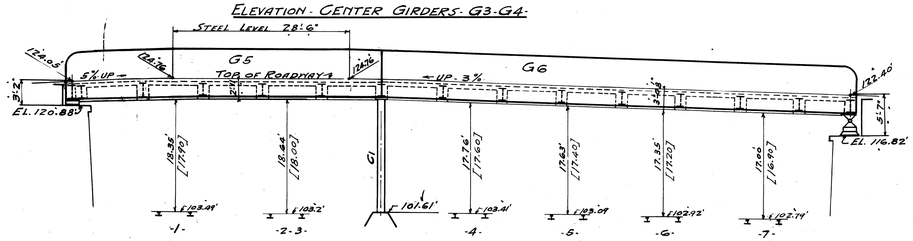


NOTE:
RED FIGURES IN BRACKETS DENOTE CLEARANCES UNDER OLD TRUSS BRIDGE.

ELEVATION - NORTH GIRDERS - G1 - G2



ELEVATION - CENTER GIRDERS - G3 - G4



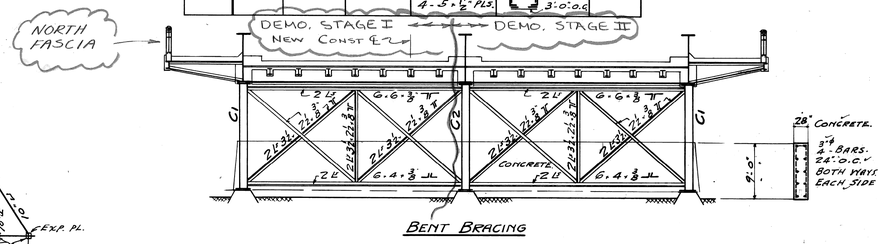
ELEVATION - SOUTH GIRDERS - G5 - G6

MARK	SPAN	END SHEAR	MAX. MOM.	MATERIAL EACH FLANGE: ANGLES	SIDE PLS.	TOP COVERS	BOTT. COVERS	WEB PL.	GROSS AREA EACH FLG.	NET AREA.
G1 G5	47'-6"	260,000#	3,160,000"#	2-8.8.½	——	1-21.½-F.L.	1-21.½.33'.	90.½	31.60"	28.10"
G2 G6	74'-0"	400,000	7,500,000"#	2-8.8.¾	2-14.¾	1-21.½-F.L. 1-21.½.42'. 1-21.½.31'.	1-21.½.51'. 1-21.½.42'. 1-21.½.31'.	90.½	77.50	66.50
G3	47'-6"	310,000	3800,000"#	2-8.8.¾	——	1-21.½-F.L.	1-21.½.32'.	90.½	38.98	34.48
G4	74'-0"	500,000	9350,000"#	2-8.8.⅞	2-14.⅞	1-21.⅝-F.L. 1-21.⅝.46'. 1-21.⅝.33'.	1-21.⅝.55'. 1-21.⅝.46'. 1-21.⅝.33'.	90.½	95.88	81.88

NOTE:
ALL INT. STIFFENERS G. 3½.⅜ CRIMPED OVER FLG. ANGLES EXCEPT AT FLOOR BM. AND BRACKET CONN.
END STIFFENERS. SPECIAL SEE OTHER PLANS.
COVER PLATES SYMMETRICAL ABOUT CEN. LINE OF GIRDER

COLUMNS

MARK	UNSUP. LENGTH.	MAX. TOTAL LOAD	BENDING.	SECTION	SKETCH	AREA.
C1	17'-6"	665,000#	1,150,000"#	2-15"I"50# 1-15H 70# 2-12-½ PLS.	TIE PLS. 12-⅜ 3'-0" O.C.	62.00"
C2	17'-6"	815,000#	1,620,000"#	2-15"I"50# 1-12H 70# 2-12-¾ PLS. 4-5-½ PLS.	TIE PLS. 12-⅜ 3'-0" O.C.	78.00"



BENT BRACING

GENERAL NOTES:

LIVE LOAD AND IMPACT: AS PER MICHIGAN STATE HIGHWAY DEPARTMENT SPECIFICATIONS FOR HIGHWAY BRIDGES - 1920 EDITION. TWO LINES OF 18-TON TRUCKS AND ONE OF AUTOS - EACH ROADWAY.

EQUIVALENT UNIFORM LOAD - ROADWAY - 150#/L.L. - 250#/D.L. - TOTAL = 400#/L. SIDEWALK - 100#/L.L. - 100#/D.L. + BRACKET CON. COVER, RAILING, CONCRETE FACIA GIRDER AND 16"⌀ GAS MAIN.

IMPACT - 25% ADDED FOR FLOOR BEAMS AND STRINGERS. NO IMPACT FOR GIRDERS OR COLUMN LOADS.

UNIT STRESSES - STEEL - TENSION - 16000#/SQ.IN. NET SEC. COMP. - 16000 - 70 L/R GROSS. SHEAR - 10000#/SQ.IN. GROSS.

CONCRETE - fs - 16000#/SQ.IN. fc. = 600#/SQ.IN.

RIVETS - ⅞"⌀

SHOP RIVETS - 12000# SHEAR - BEARING - 24000#
FIELD RIVETS - 10000# SHEAR - BEARING - 20000#.
BEARING ON MASONRY = 500#/SQ.FT.
BEARING ON SOIL = 5000#/SQ.FT.

PAINT NOTE:
THAT PORTION OF STEEL COVERED WITH CONCRETE "NOT TO BE PAINTED."
SHOP PAINT - 1-COAT OF RED LEAD.
FIELD PAINT - 2-COATS WHITE LEAD IN OIL - COLOR TO BE DETERMINED BY ENGINEER.
STEEL DRAWINGS - 1-2-6-7
CONCRETE DO -3-4-5-

APPROVED: Gay 21 1926
Perry L. Fellows CITY ENGINEER.

XO 61

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY
TRACED BY
CHECKED BY RAK

APPROVED:

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

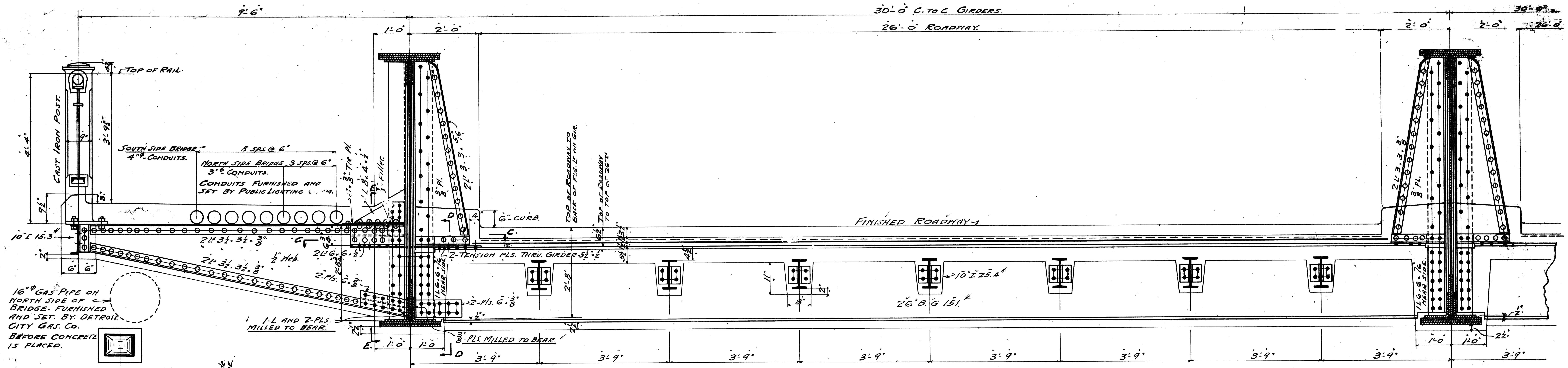
12TH. ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

REFERENCE DRAWING OLD LAFAYETTE BRIDGE
GENERAL PLAN - STRUCTURAL STEEL

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG NO. SR-7
DATE NOV 1979

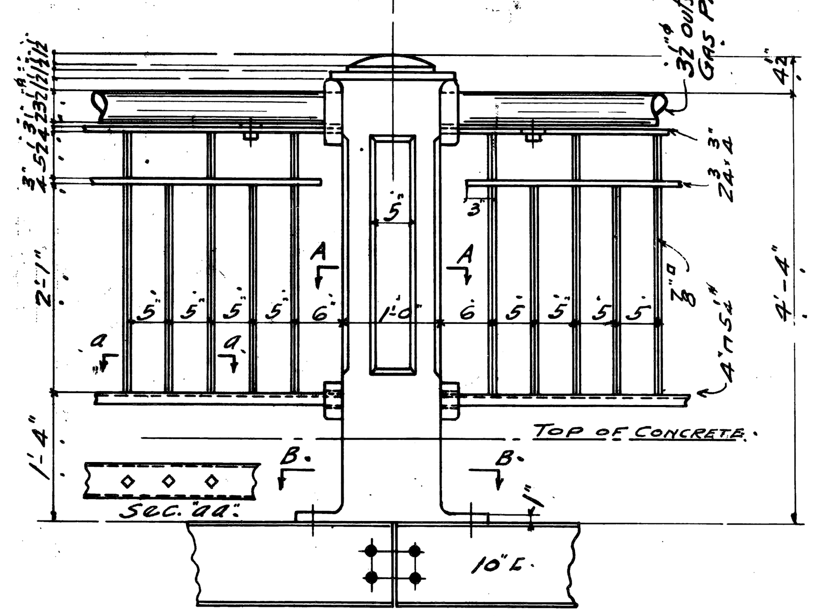
1 2 3 4 5 6 7 8 9 10 11

R. CARROLL, INC. 378 1818.



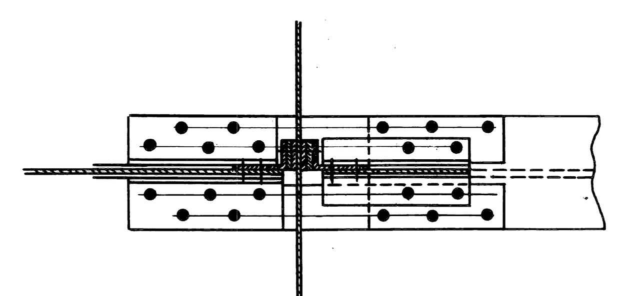
TYPICAL CROSS SECTION OF FLOOR.

3/4" = 1'-0"

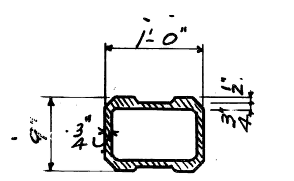


ELEVATION OF RAILING & POST.

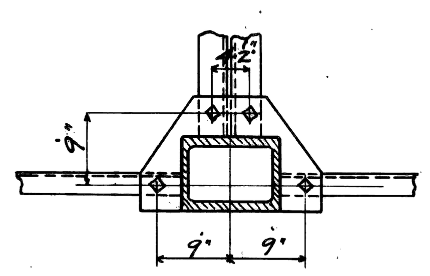
3/4" = 1'-0"



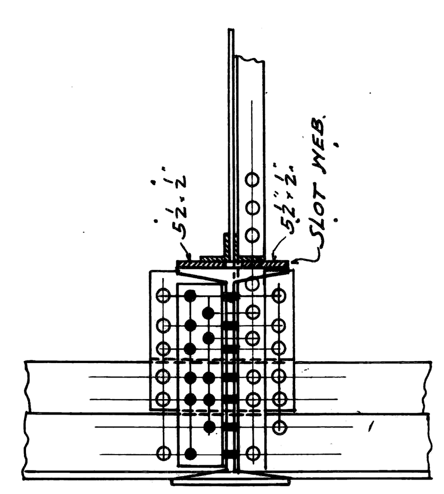
SECTION-"CC"



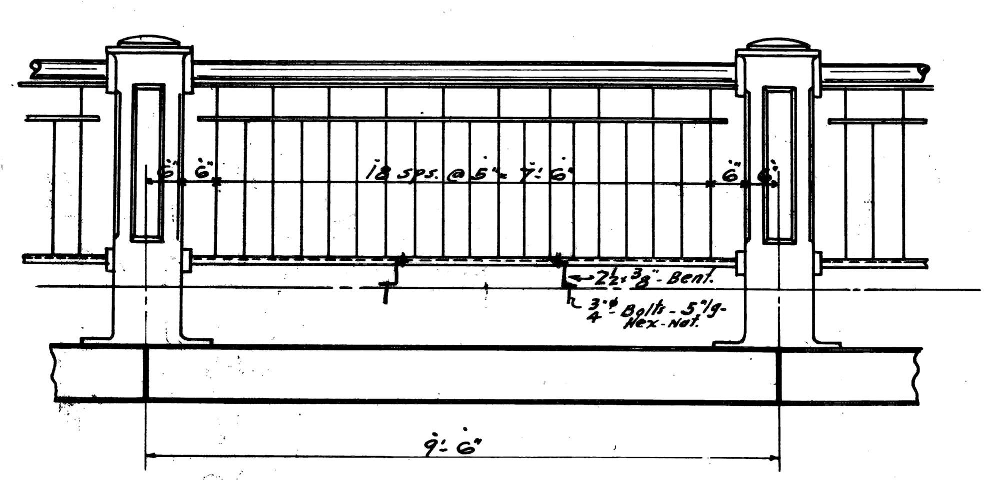
SECTION-"AA"



SECTION-"BB"

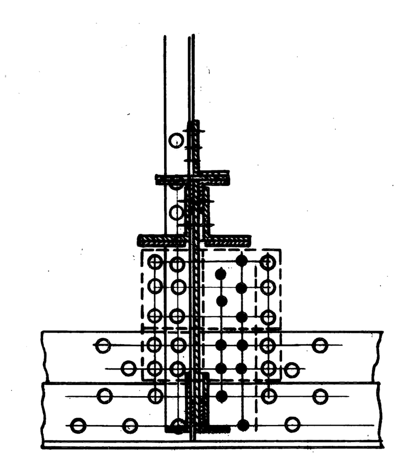


SECTION-"DD"

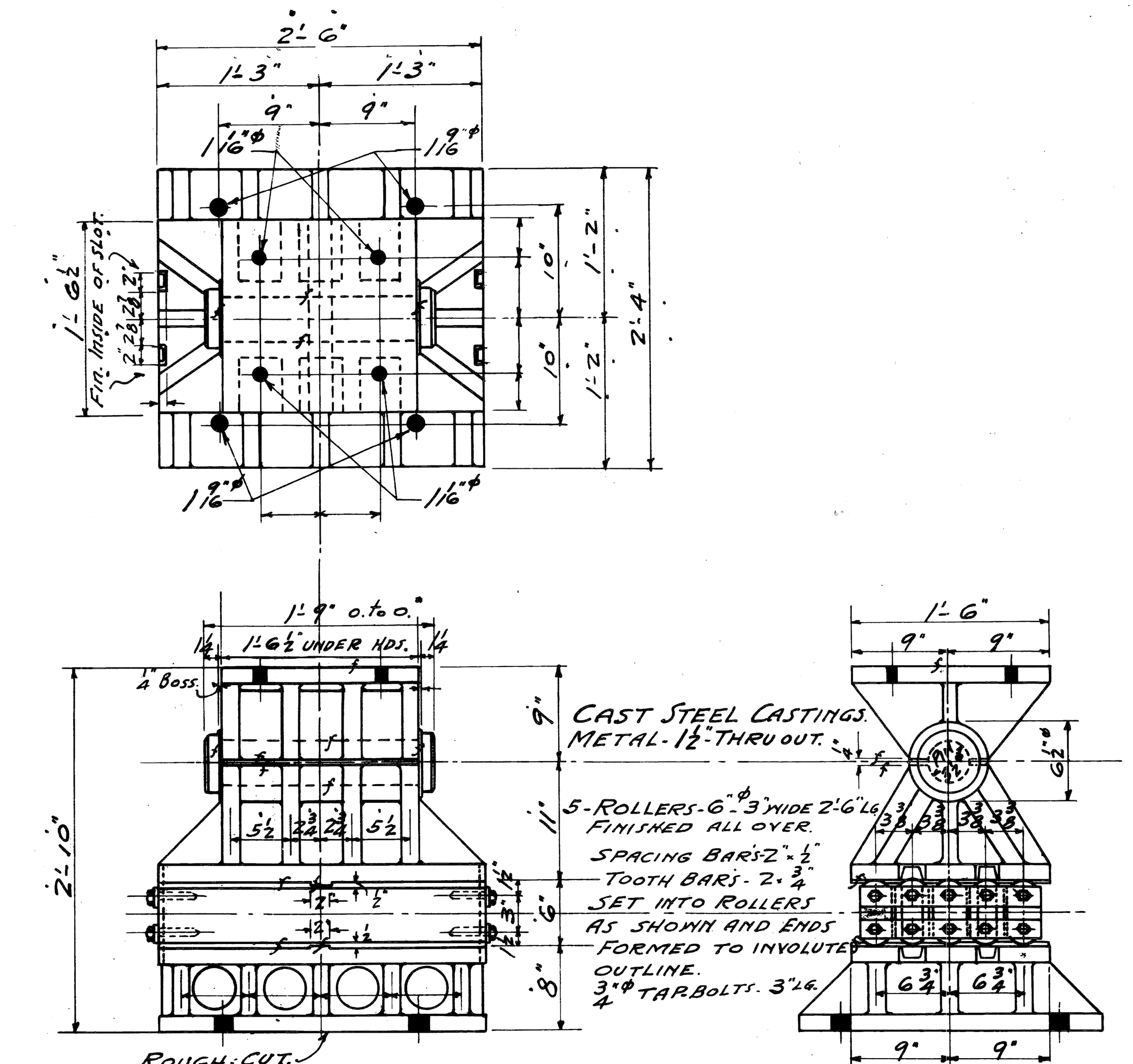


TYPICAL RAILING PANEL.

1/2" = 1'-0"

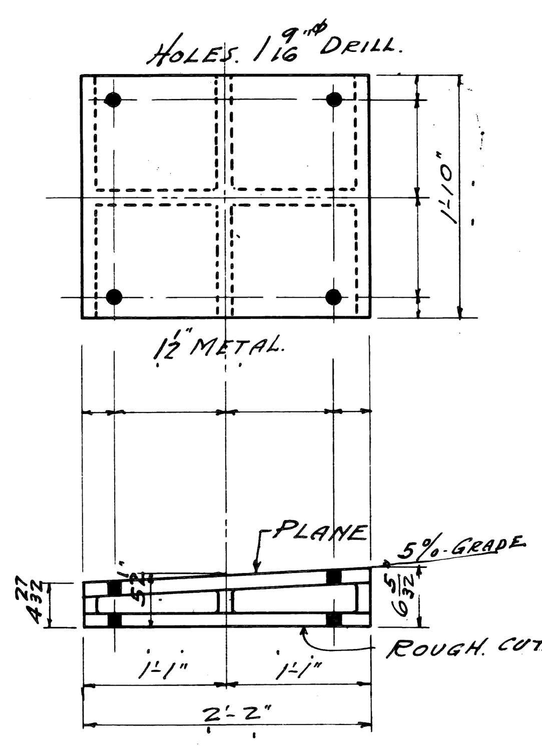


SECTION-"EE"



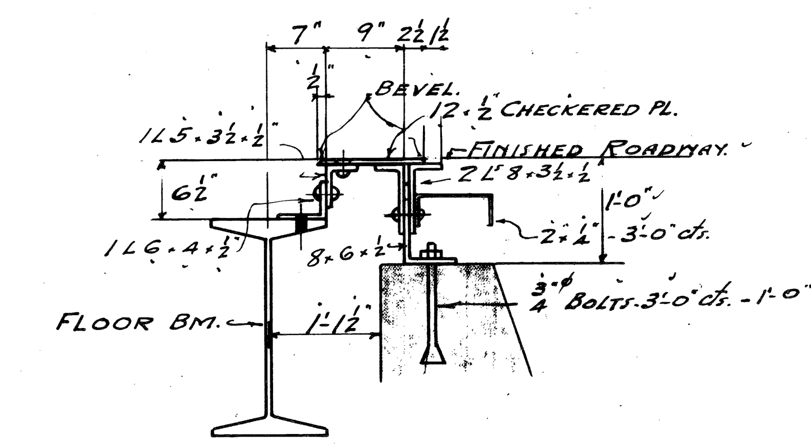
3-SETS OF BEARINGS FOR EXPANSION END OF BRIDGE.

1" = 1'-0"

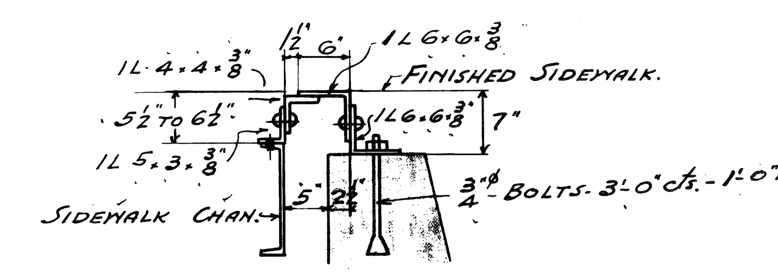


3-CAST STEEL CASTINGS FOR FIXED END OF BRIDGE.

1" = 1'-0"



ROADWAY EXPANSION JOINT.



SIDEWALK EXPANSION JOINT.

3/4" = 1'-0"

NOTE:
For General Notes See Sheet #1.

Approved Apr 21 1926.
Perry A. Fellows City Engineer.

XO 61

REVISIONS LOCATED BY COORDINATES ON SHEET					
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY
TRACED BY
CHECKED BY RAK

APPROVED:

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

12 TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

REFERENCE DRAWING OLD LAFAYETTE BRIDGE
STRUCTURAL STEEL DETAILS

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG. NO. SR-8
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

R. CARROLL, INC. 378 1818.

XO 61

REFERENCE DRAWINGS	DESIGNED BY		APPROVED:
	DRAWN BY		
	TRACED BY		
	CHECKED BY	RAK	

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

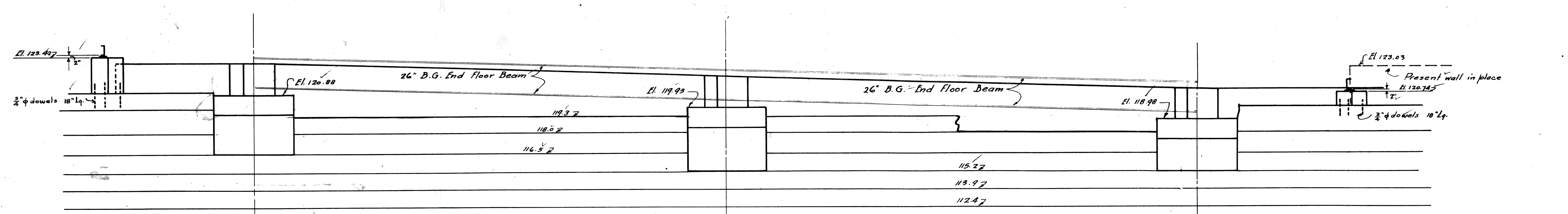
12TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

REFERENCE DRAWING OLD LAFAYETTE BRIDGE
EAST & WEST ABUTMENTS AND WINGWALLS

SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG NO. SR-9
DATE NOV 1979

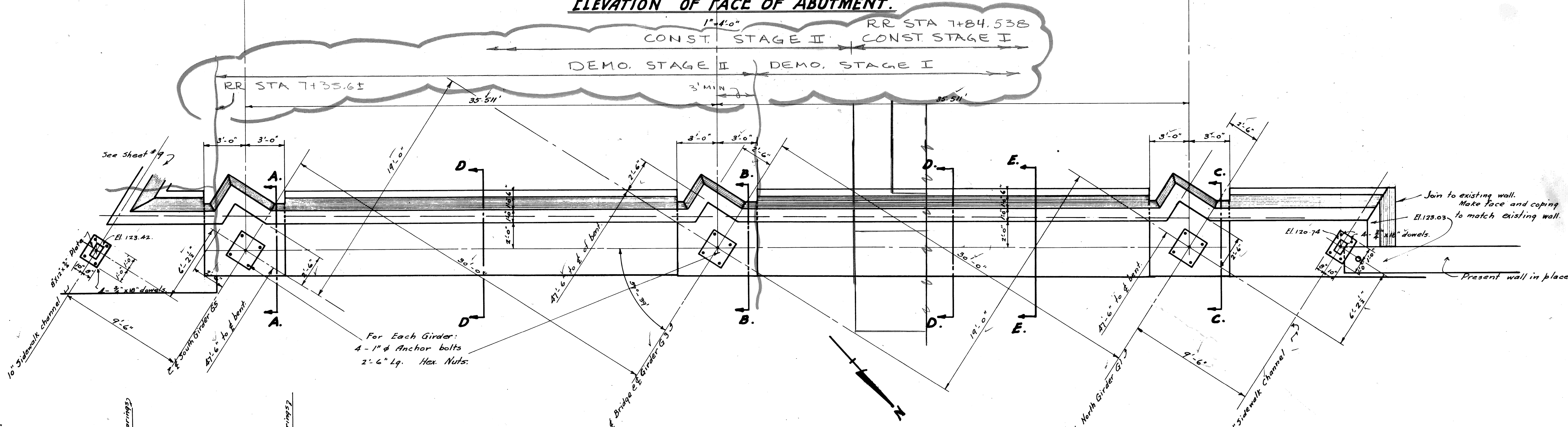
1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11

R. CARROLL, INC. 378 1818



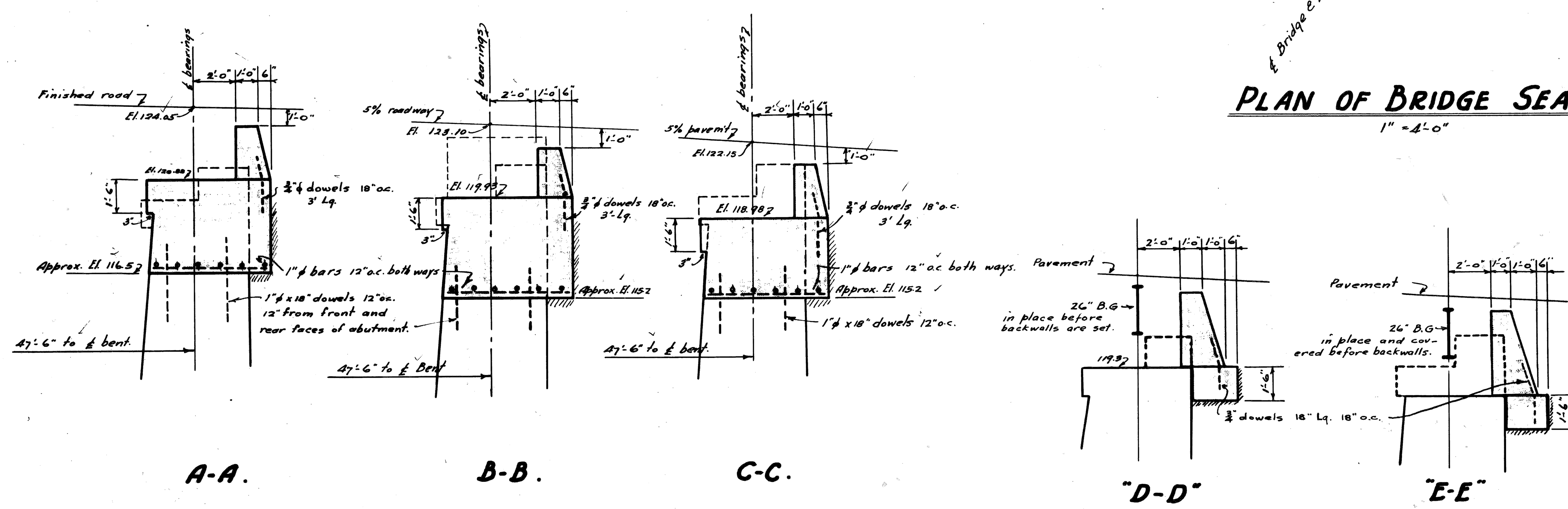
ELEVATION OF FACE OF ABUTMENT.

1" = 4'-0"



PLAN OF BRIDGE SEATS.

1" = 4'-0"



BRIDGE SEAT SECTIONS

THIS SHEET SUPERSEDES SHEET 4.

NOTE:

General notes see sheet #1.
All concrete mix 1:2:4.
Back of walls to have two brush coats asphaltic waterproofing.

Backwalls set parallel to ℄ of Girder bearings after 26" I beams are in place.

Approved: __________________ 1926.

__________________ City Engineer.

XO 61

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY
TRACED BY
CHECKED BY RAK

APPROVED:

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

12TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

REFERENCE DRAWING OLD LAFAYETTE BRIDGE
CHANGES TO WEST ABUTMENT

SHEET ___ OF ___ SHEETS
CONTRACT NO. 07110A
DRWG NO. SR-10
DATE NOV 1979

R. CARROLL, INC. 378 1818•

General Notes See Sheet #1.
All Concrete mix 1:2:4
Backs of walls to have two brush coats asphaltic waterproofing.
Backwalls set parallel to end floor beams after beams are in place.

THIS SHEET SUPERSEDES SHEET 5.

Approved: ______ 1926 ______ City Engineer
Scale 1" = 4'-0"
Dr. by H.T.J.
Ck'd by - H.W.

X061

REFERENCE DRAWINGS	DESIGNED BY	
	DRAWN BY	
	TRACED BY	
	CHECKED BY	RAK

COOR'D | DESCRIPTION | DR'N | CK'D | AP'VD | DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

APPROVED:

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

12 TH. ST. (ROSA PARKS BLVD.)
& LAFAYETTE ST. CROSSING CONRAIL

REFERENCE DRAWING OLD LAFAYETTE BRIDGE
CHANGES TO EAST ABUTMENT - CENTER BENT FOOTING

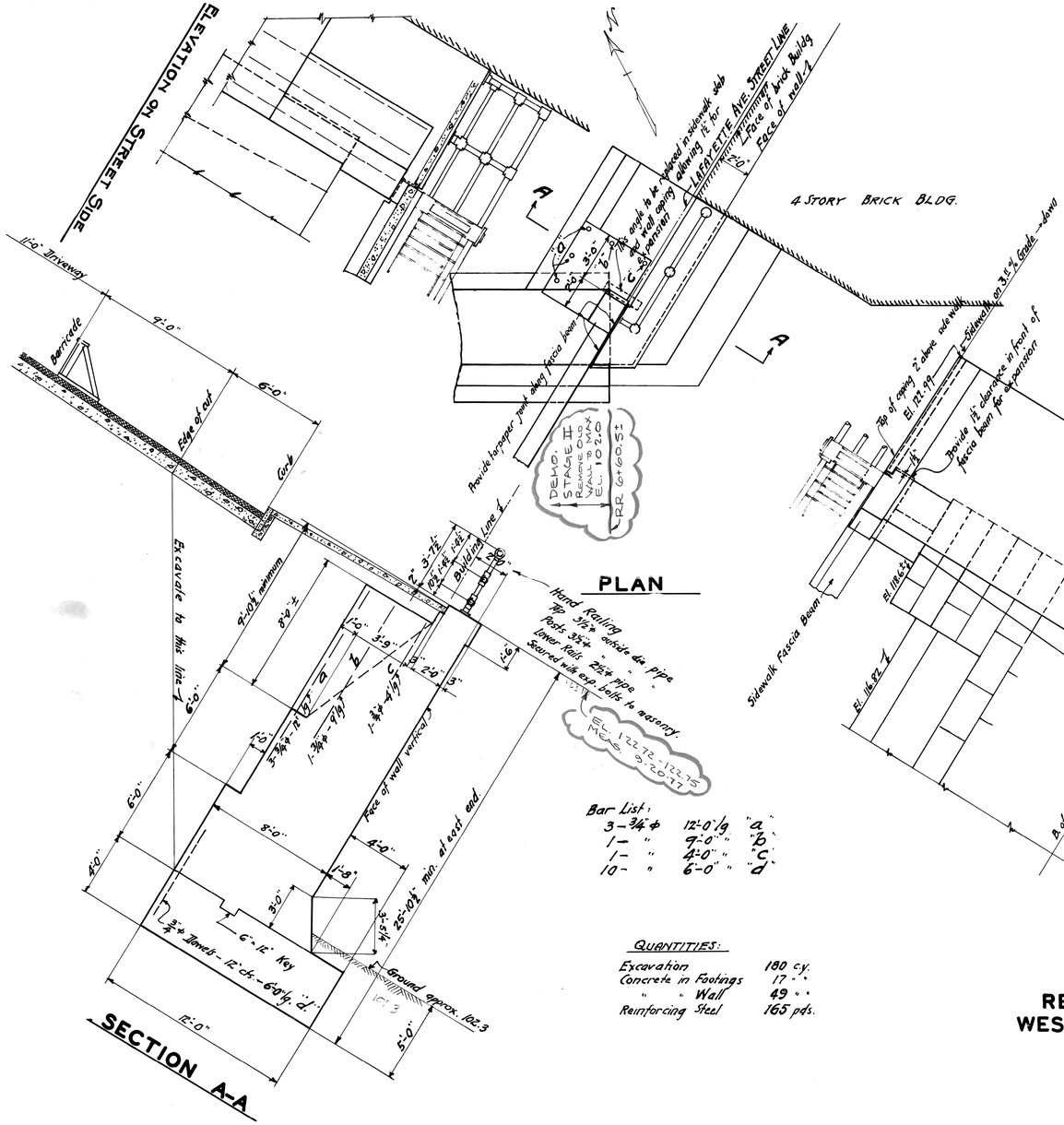
SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG NO. SR-11
DATE NOV 1979

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11

R. CARROLL, INC. 378 1818.

GENERAL NOTES

All concrete mix 1:2:3
Remove all loose rock from stone abutment inside of forms before pouring concrete.
Support P.L.C. ducts in sidewalk area.



PLAN

SECTION A-A

Bar List:

3 - ¾"ø	12'-0" lg	"a"
1 - "	9'-0" "	"b"
1 - "	4'-0" "	"c"
10 - "	6'-0" "	"d"

QUANTITIES:

Excavation	180 c.y.
Concrete in Footings	17 " "
" " Wall	49 " "
Reinforcing Steel	165 pds.

CITY OF DETROIT

DEPT. OF PUBLIC WORKS - OFFICE OF CITY ENGR.
DIVISION OF GRADE SEPARATIONS & BRIDGES

RETAINING WALL AT S.E. CORNER WEST LAFAYETTE BLD. BRIDGE - M.C.R.R. (MAIN LINE)

SCALE: ¼" = 1'-0" FEB. 17, 1932.

DRAWN BY: R.S.

File X061-17

XO 61

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY
TRACED BY
CHECKED BY RMK

APPROVED:

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD

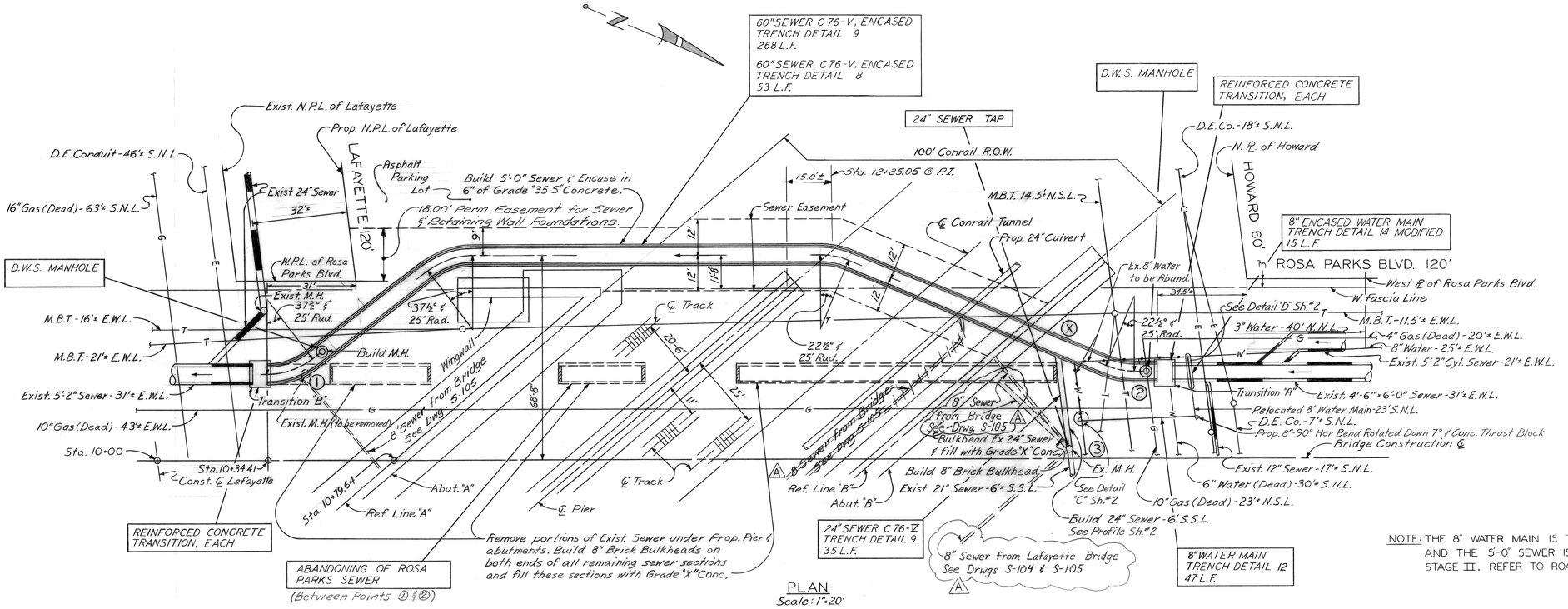
12 TH. ST. (ROSA PARKS BLVD.) & LAFAYETTE ST. CROSSING CONRAIL

REFERENCE DRAWING OLD LAFAYETTE BRIDGE RETAINING WALL AT S.E. CORNER

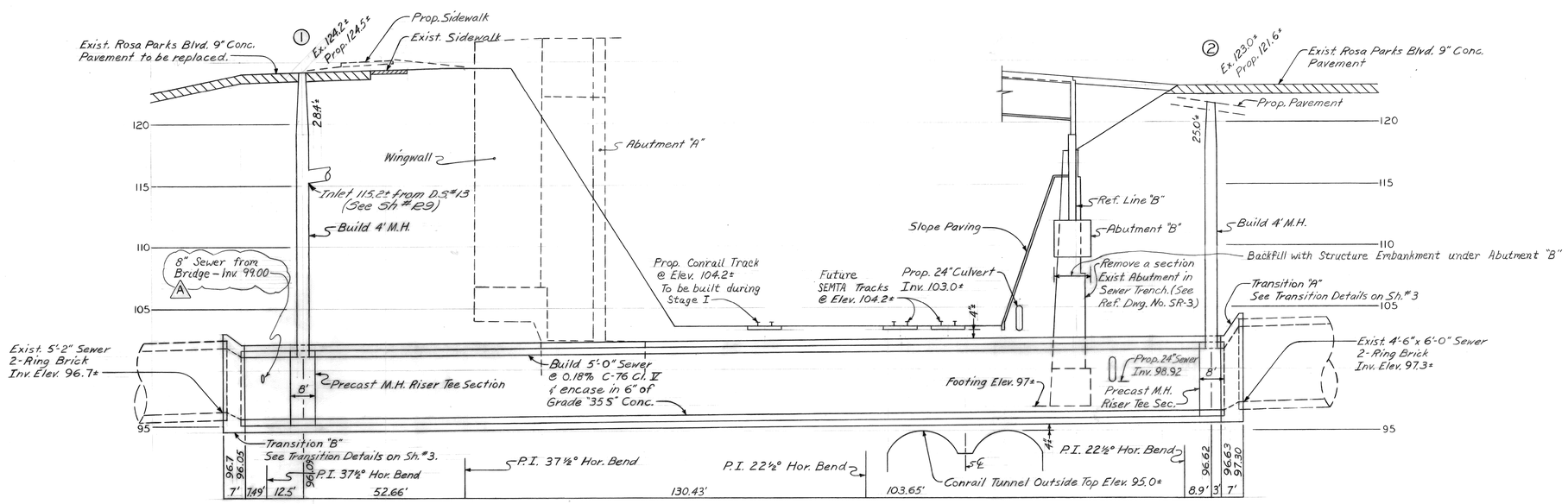
SHEET ____ OF ____ SHEETS
CONTRACT NO. 07110 A
DRWG NO. SR-12
DATE NOV 1979

1 2 3 4 5 6 7 8 9 10 11

TSR 2052 01 9-78 68420



NOTE: THE 8" WATER MAIN IS TO BE RELOCATED DURING STAGE IB AND THE 5'-0" SEWER IS TO BE CONSTRUCTED DURING STAGE II. REFER TO ROAD PLANS FOR STAGING SEQUENCE.



NOTE:
PAY ITEMS & QUANTITIES FOR SEWER & WATER FROM THESE SHEETS, WS-1 THROUGH WS-3, ARE TABULATED ON THE ROAD QUANTITY SHEET, R22.

STATE OF MICHIGAN — D. G. SHOE — ENGINEER NO. 12415 — REGISTERED PROFESSIONAL ENGINEER

REVISIONS	DESCRIPTION	CHK'D	APRVD.	DATE
A	Bridge Drainage Details	J.M.H.		12-2-81

DESIGNED BY M Rubien
DRAWN BY William Baker Jr. 10/24/79
CHECKED BY
ENGINEER - WASTEWATER SYSTEM

APPROVED
HEAD ENGINEER
DIVISION ENGINEER

ROSA PARKS BLVD. - LAFAYETTE AVE. RECONSTRUCTION
SEWER ALTERATIONS PLAN AND PROFILE

SCALE: AS SHOWN
DATE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SECTION MAP	TOWN	RANGE	SECTION	PORTION CODE	WORK ORDER NO.
					S-135-79-1

M.D.P.H. /D.N.R. PERMIT NO.
FED. REF. NO.
CONTRACT NO.
~~FILE~~ SHEET NO. WS 1 of 3
D- 7904326-1