STATE OF MICHIGAN
DEPARTMENT OF STATE HIGHWAYS

✦

PLANS OF PROPOSED BRIDGES

MICHIGAN PROJECT I-UI-96-4(103)221

CONTROL SECTION BIU 82122

JOB NUMBER 01253 A & (01255A)

BRIGHTON – DETROIT ROAD

WAYNE COUNTY

CITY OF DETROIT

GENERAL NOTES

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED THEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF STATE HIGHWAYS STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1970 EDITION.

THE DESIGN OF THESE STRUCTURES IS BASED ON THE MICHIGAN DEPARTMENT OF STATE HIGHWAYS SPECIFICATIONS FOR THE DESIGN OF HIGHWAY BRIDGES, 1958 EDITION AND CURRENT AASHO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES HS 20-44 LOADING. LIVE LOAD PLUS IMPACT DEFLECTION EQUALS 1/1000 OF SPAN LENGTH AND 1/350 OF CANTILEVER ARM.

THE CHARACTER OF ALL MATERIALS AND THE EXTENT THEREOF AS SHOWN BY BORINGS HAS BEEN OBTAINED BY METHODS AND FROM SOURCES BELIEVED TO BE RELIABLE. THE EXACTNESS OF THIS INFORMATION IS, HOWEVER, IN NO CASE GUARANTEED.

ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE BEVELED WITH 1/2" TRIANGULAR MOLDINGS EXCEPT AS OTHERWISE NOTED.

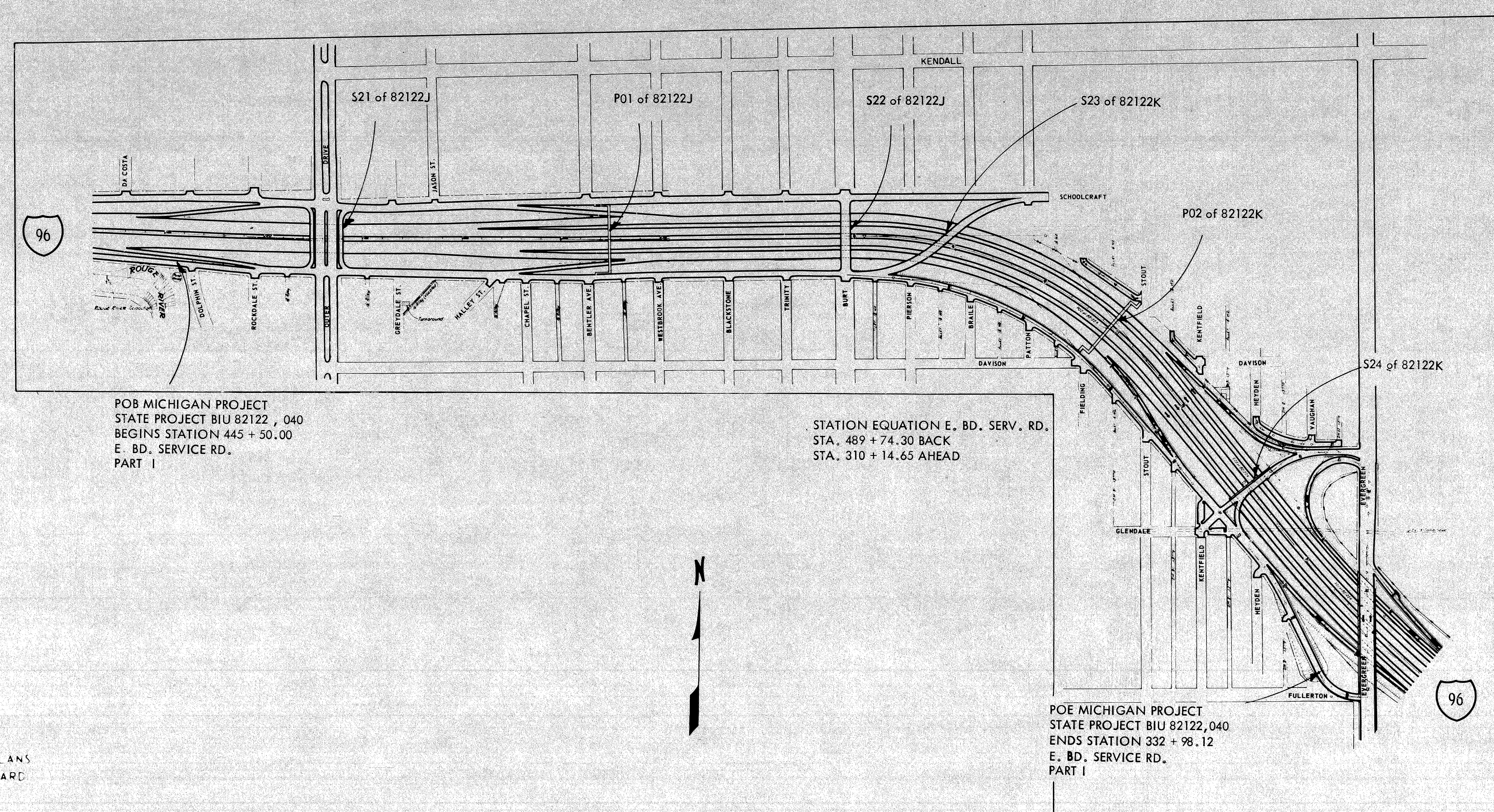
THE STATIONING AS SHOWN ON THESE PLANS FOR THE INTERSECTION OF THE CENTERLINE OF BRIDGE AND ROADWAY CENTERLINE IS BELIEVED TO BE CORRECT. IT SHALL, HOWEVER, BE CHECKED AT THE TIME OF STARTING CONSTRUCTION AND IF THE STATIONING SHOWN ON THE PLANS IS INCORRECT, IT SHALL BE REPORTED TO THE DESIGN OFFICE AT LANSING AND THE STRUCTURE SHALL BE STAKED OUT USING THE ACTUAL INTERSECTION OF THE CENTERLINE OF BRIDGE AND ROADWAY CENTERLINE AS THE CONTROL POINT.

THE GRADES AND STRESSES OF THE STRUCTURAL MATERIALS USED IN THESE STRUCTURES ARE AS FOLLOWS:

CONCRETE: GRADE A .... $f_c' = 3{,}000$ psi

STEEL REINFORCEMENT .... $f_s = 20{,}000$ psi

STRUCTURAL STEEL: A588 .... $f_s = 27{,}000$ psi



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

APPROVED [illegible]
HEAD CIVIL ENGINEER

APPROVED R. R. Hicks
ASSISTANT CITY ENGINEER

APPROVED alfred. Berarducci
COMMISSIONER OF PUBLIC WORKS

NOTE

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON THE PLANS THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED

STANDARD PLANS TO BE PRINTED

SHEET NO	TITLE
R16B	Bridge Railing, Drain Casting, Bar Chair, Molding &
	Bevel Details.
SP2L	Standard Slope Paving Details.

STANDARD PLANS NOT TO BE PRINTED

SHEET NO	TITLE

ITEM NO

CONTRACT FOR **STRUCTURES**

APPROVALS

CHECKED ______ ENGINEER – DESIGN SECTION III ______ DATE

RECOMMENDED FOR APPROVAL ______ ENGINEER OF DESIGN ______ DATE

RECOMMENDED FOR APPROVAL ______ TRAFFIC DIVISION ______ DATE

RECOMMENDED FOR APPROVAL ______ CONSTRUCTION DIVISION ______ DATE

RECOMMENDED FOR APPROVAL ______ CHIEF – BUREAU OF ENGINEERING ______ DATE

DEPARTMENT OF STATE HIGHWAYS
HENRIK E. STAFSETH – STATE HIGHWAY DIRECTOR

APPROVED BY ______ DEPUTY STATE HIGHWAY DIRECTOR ______ DATE

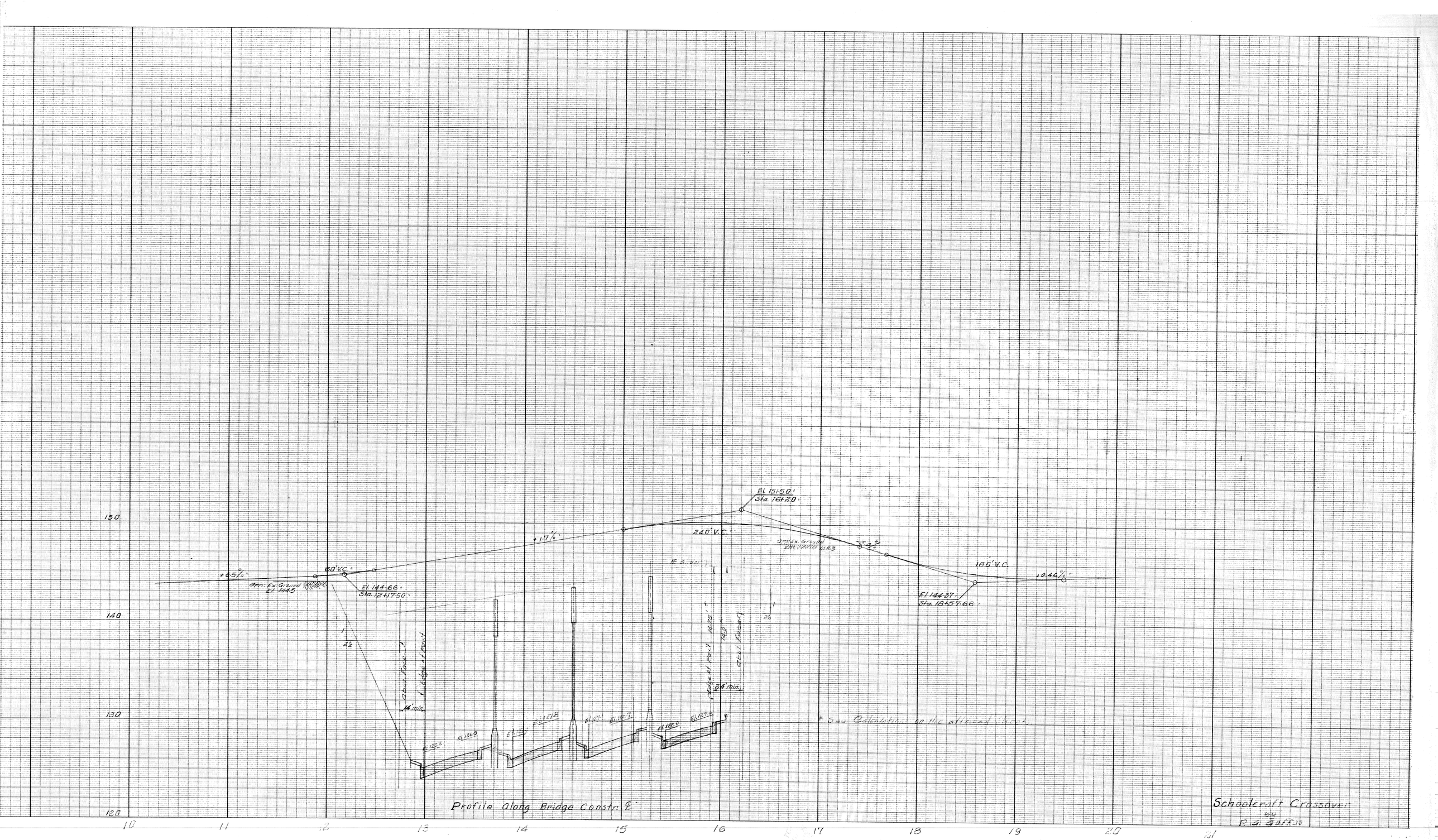
PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF
PUBLIC WORKS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED BUREAU OF PUBLIC ROADS

CONTROL SECTION	JOB NUMBER	FEDERAL PROJECT	SHEET NO.
BIU 82122			1

CONTROL SECTION – JOB NUMBER

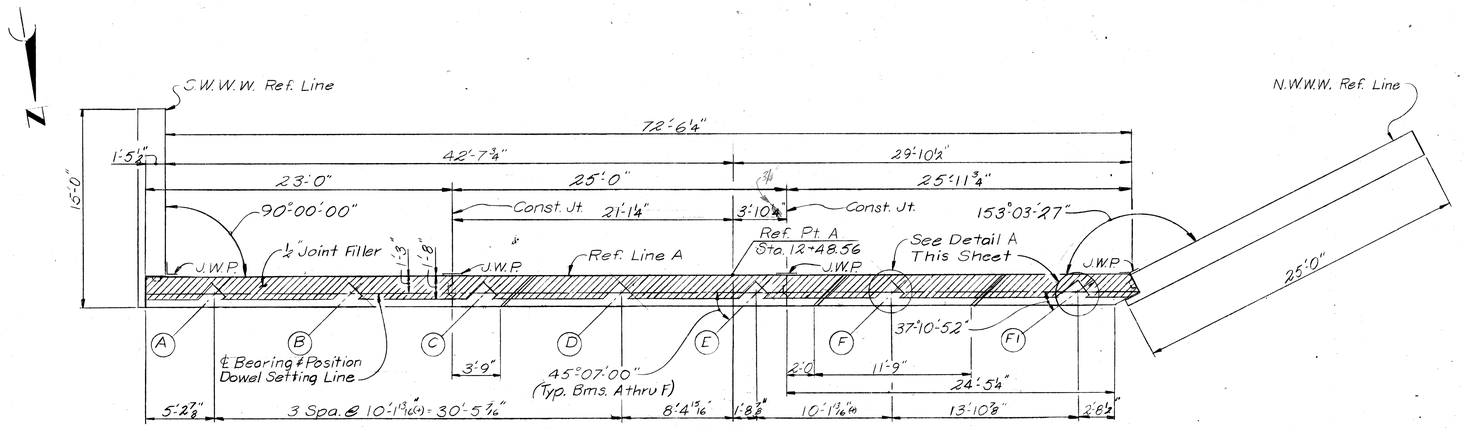
BIU 82122 – 01253 A & (01255 A)



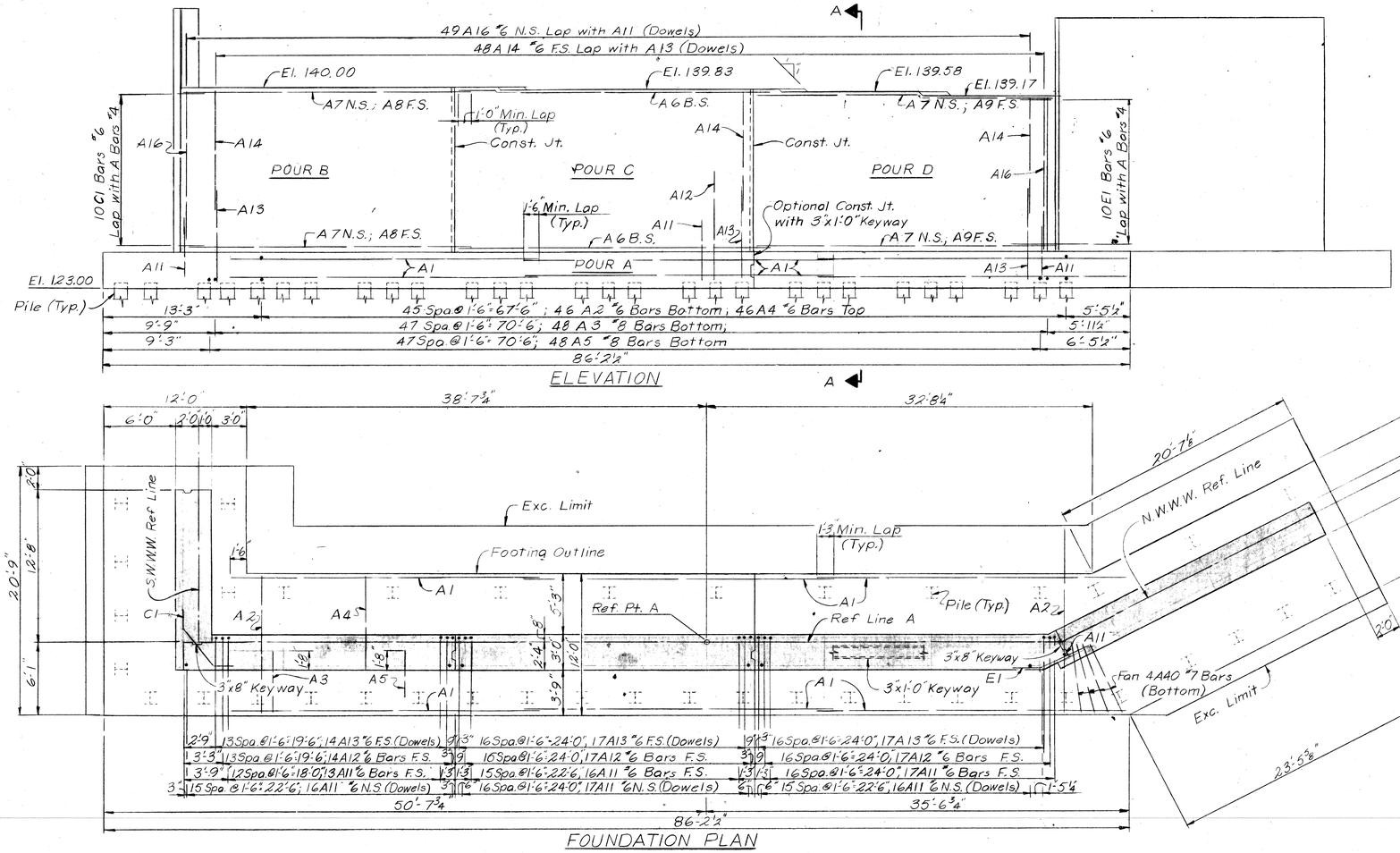
Profile Along Bridge Constr. ℄

Schoolcraft Crossover

by R. B. Goff

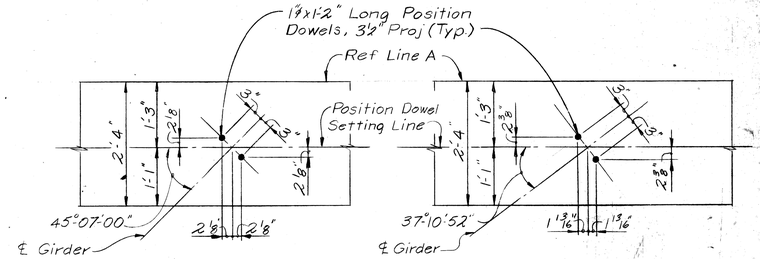


PLAN OF TOP ABUTMENT A



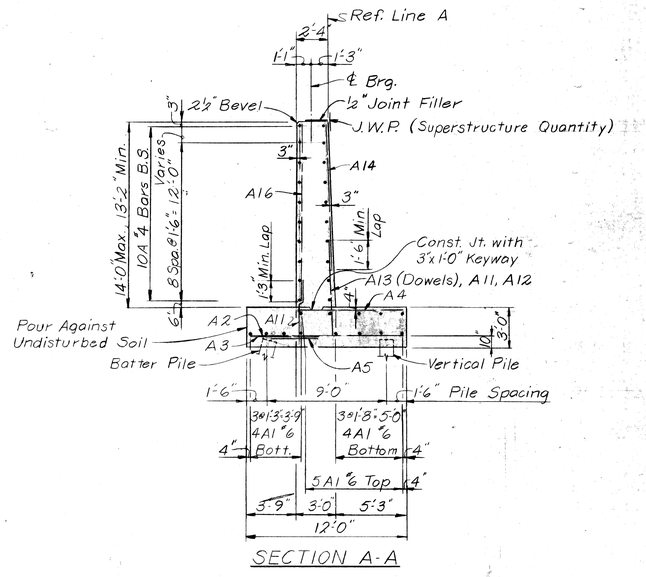
ELEVATION

FOUNDATION PLAN



GIRDERS A thru F GIRDER F1

DETAIL A



SECTION A-A

Work sheets 10 thru 14 together

Record of Additional Corrections Sent to M.D.S.H. 10-23-70

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

ABUTMENT A DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

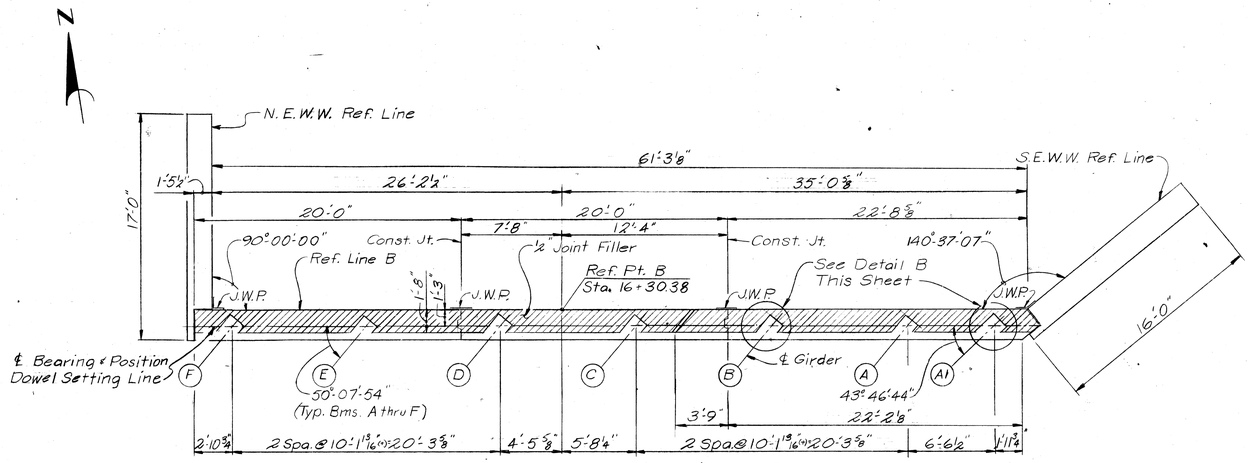
CITY OF DETROIT

SQUAD BOSS	Sturm	9-70
DRAWN BY	C.G.	7-70
TRACED BY	–	–
CHECKED BY	COMLY	9-70

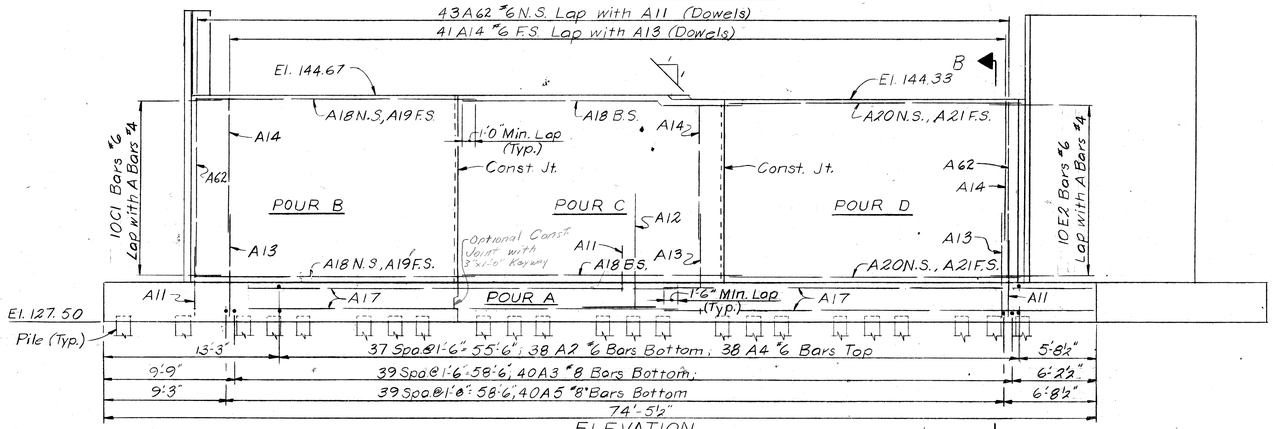
SHEET 10 OF 31

S23 OF 82122K

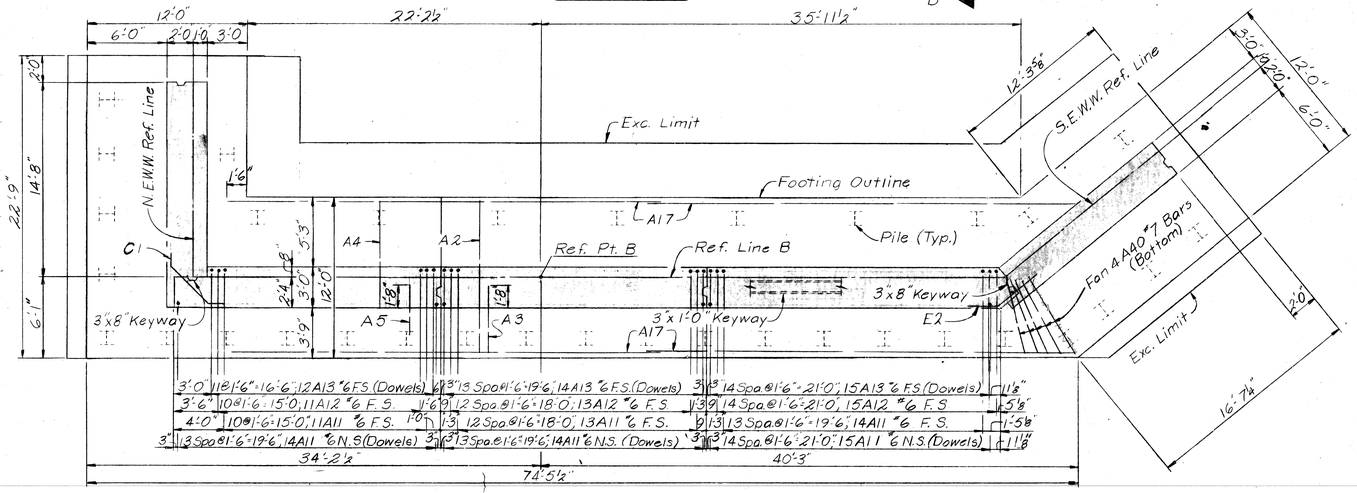
01253A



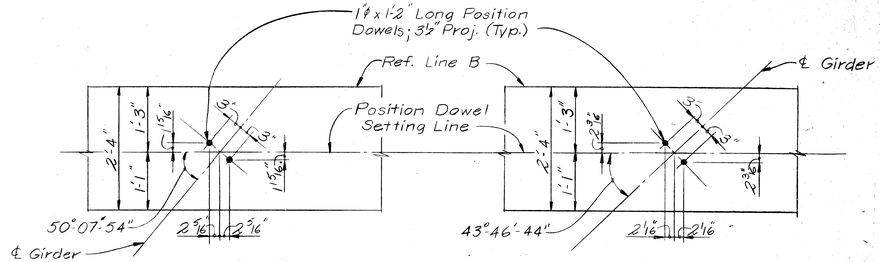
PLAN OF TOP ABUTMENT B



ELEVATION



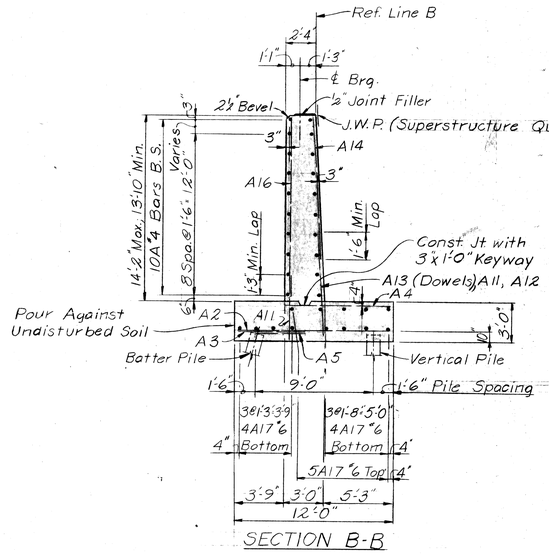
FOUNDATION PLAN



GIRDERS A thru F

GIRDER A1

DETAIL B



SECTION B-B

Work sheets 10 thru 14 together

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

ABUTMENT B DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990 (19)

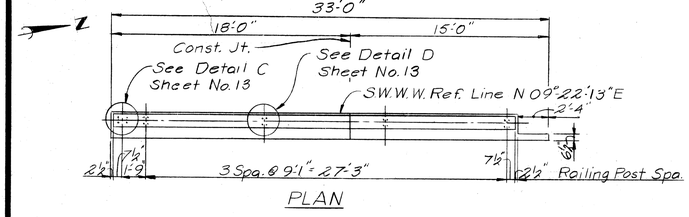
CITY OF DETROIT

SQUAD BOSS	STURM	9-70
DRAWN BY	L. G.	7-70
TRACED BY	-	-
CHECKED BY	CONLY	9-70

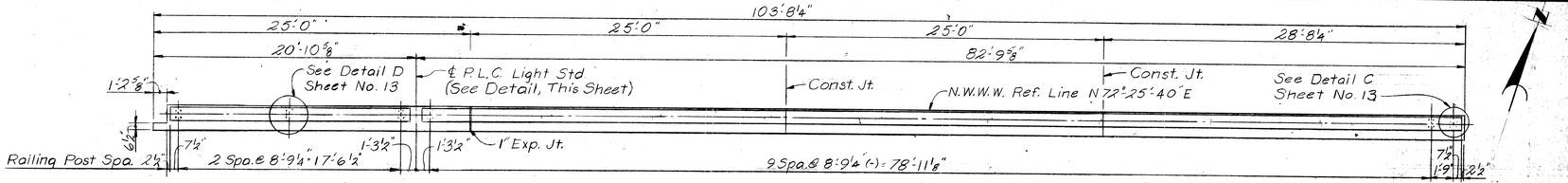
SHEET 11 OF 31

S23 OF 82122K

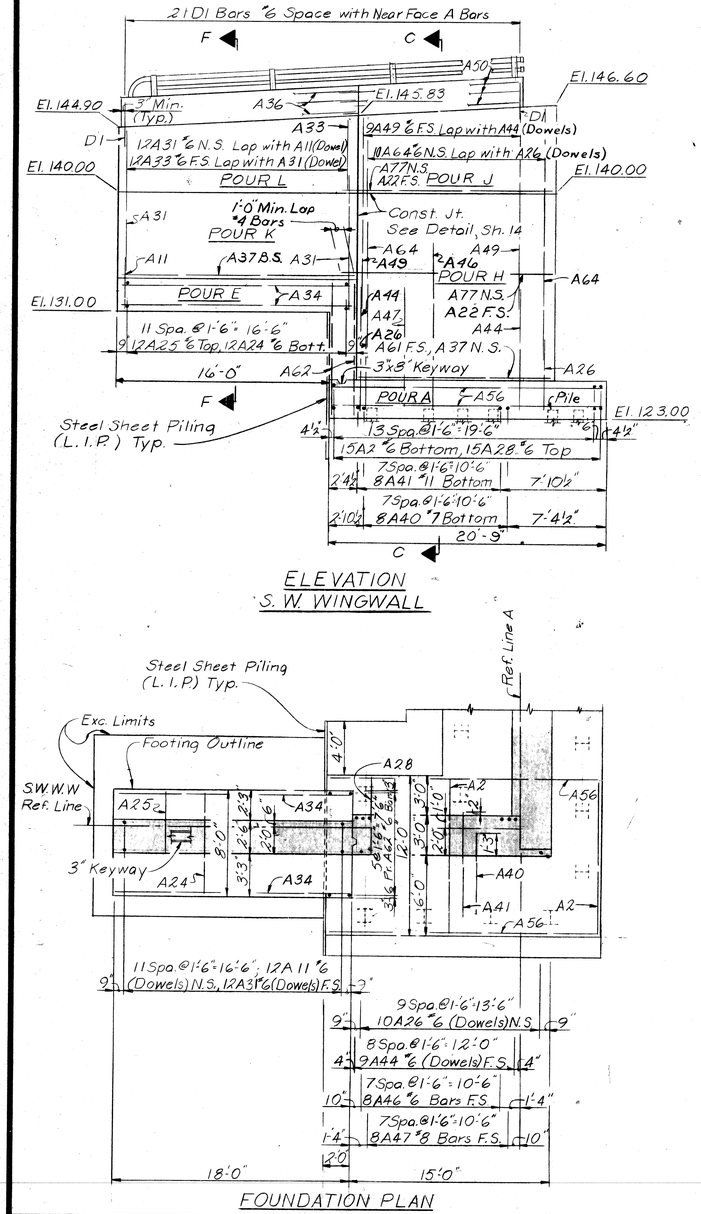
01253A.



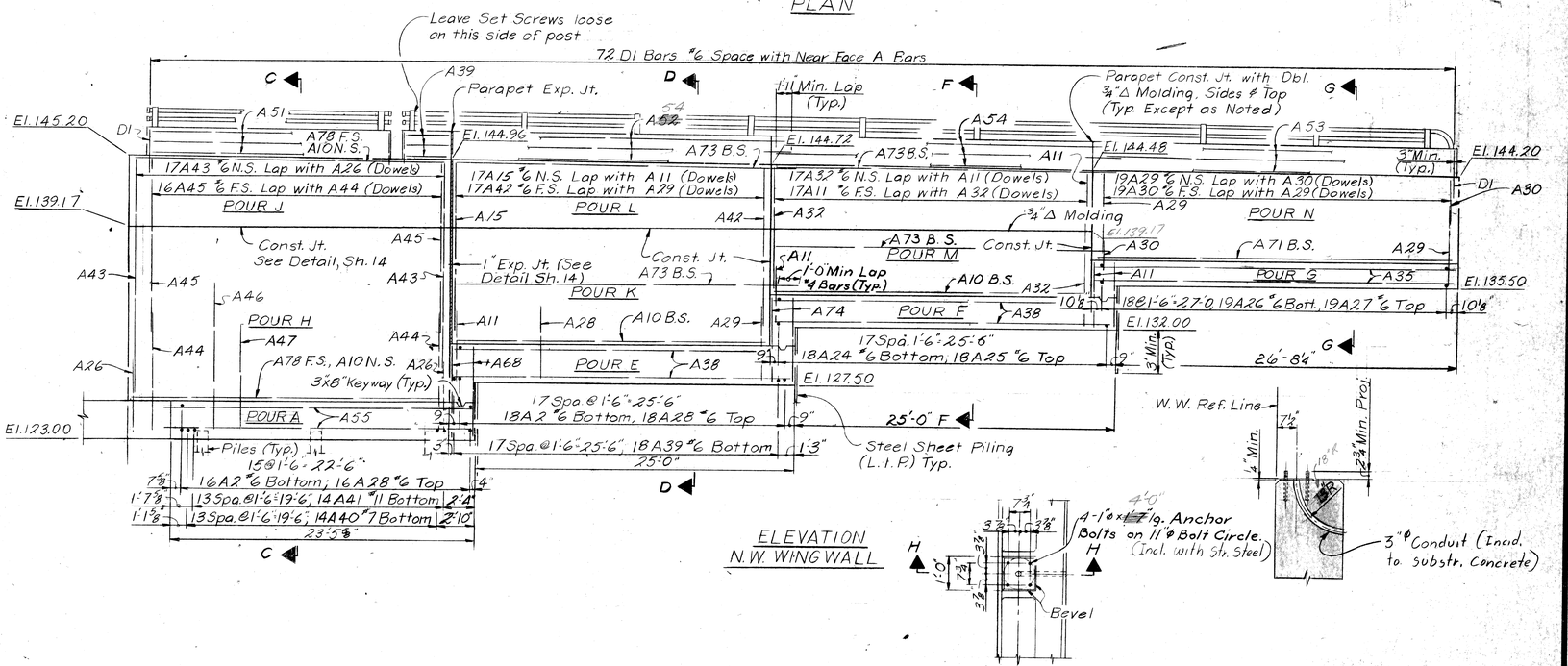
PLAN



PLAN



ELEVATION
S. W. WINGWALL



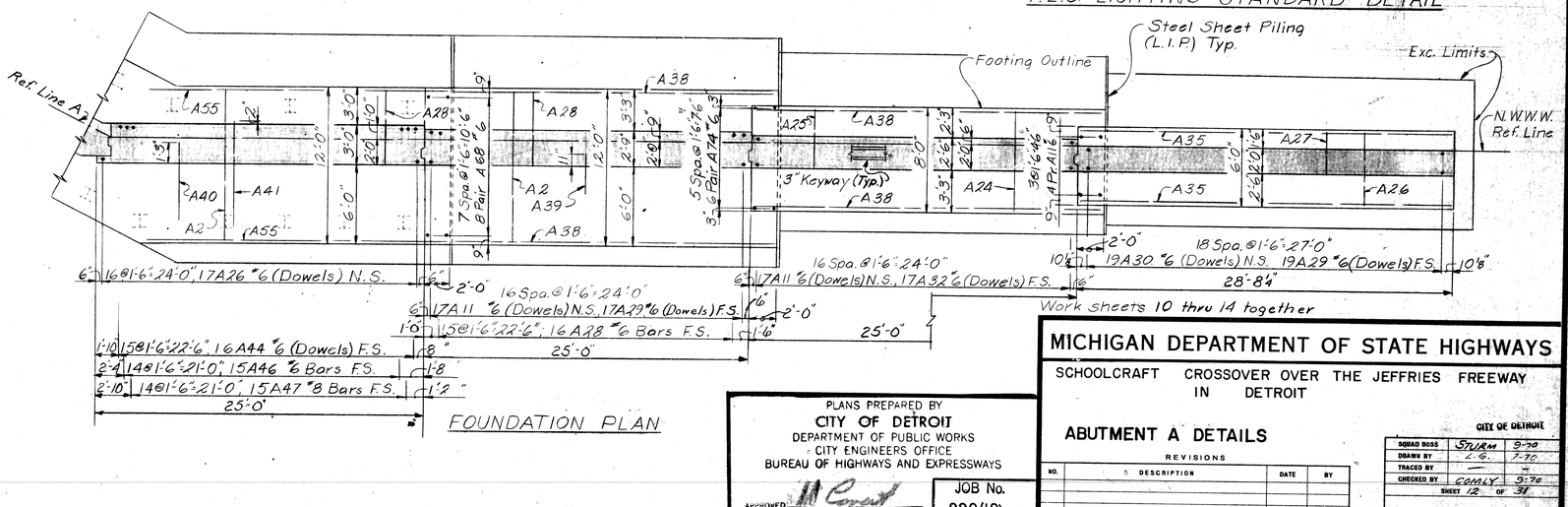
ELEVATION
N.W. WING WALL

PLAN

SECTION H-H

P.L.C. LIGHTING STANDARD DETAIL

FOUNDATION PLAN



FOUNDATION PLAN

Work sheets 10 thru 14 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

ABUTMENT A DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

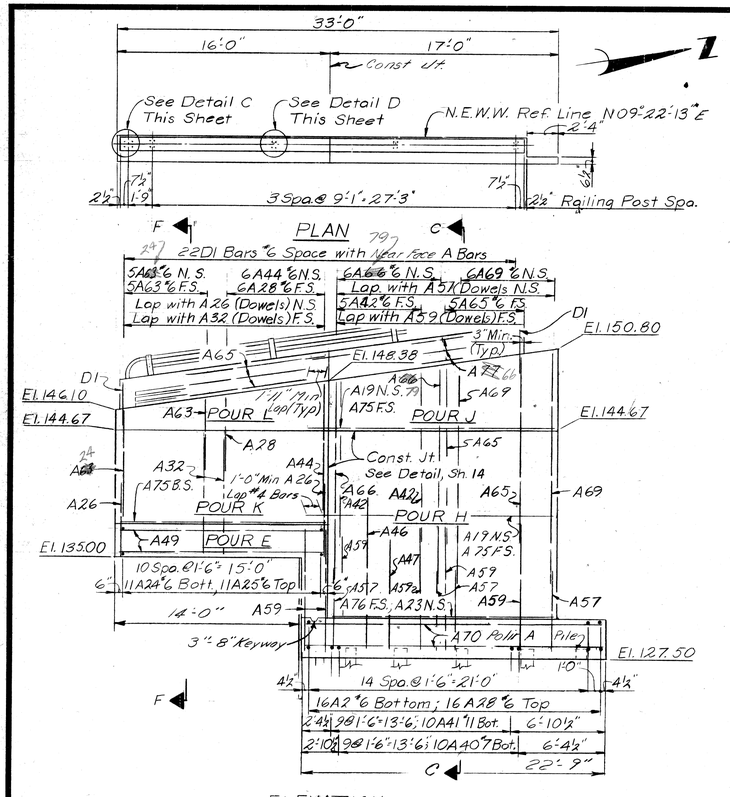
CITY OF DETROIT

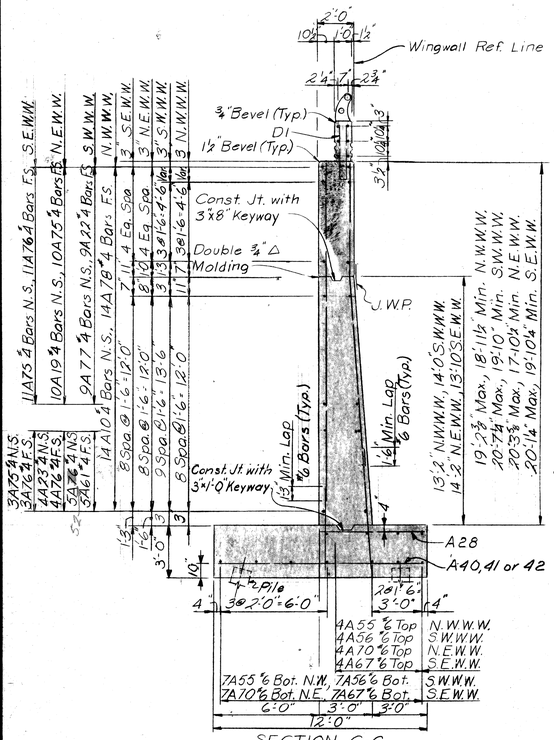
SQUAD BOSS	STURM	5-70
DRAWN BY	L.G.	7-70
TRACED BY	—	—
CHECKED BY	COMLY	9-70

SHEET 12 OF 31

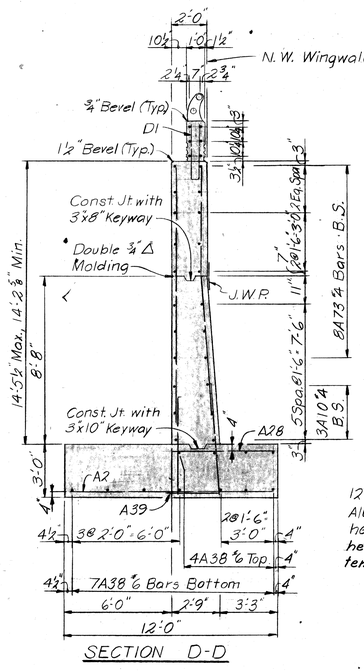
S23 OF 82122K

01253A

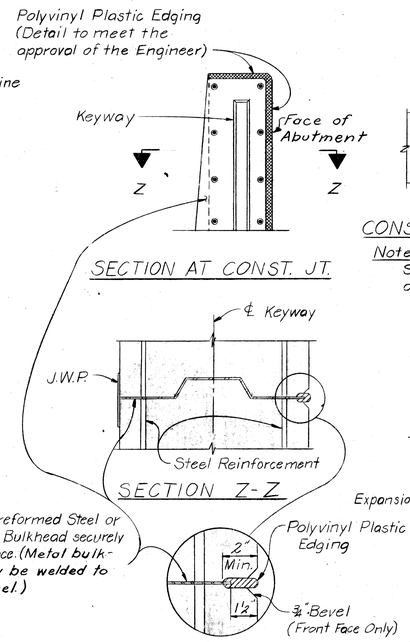

33'-0"
16'-0"
17'-0"
Const Jt.
See Detail C This Sheet
See Detail D This Sheet
N.E.W.W. Ref. Line N09°22'13"E
2'-4"
7½"
1:9
3 Spa.@ 9'-1"-27'-3"
2½" Railing Post Spa.
PLAN
22 D1 Bars #6 Space with Near Face A Bars
5A63 #6 N.S.
5A63 #6 F.S.
Lap with A26 (Dowels) N.S.
Lap with A32 (Dowels) F.S.
6A44 #6 N.S.
6A28 #6 F.S.
6A66 #6 N.S.
Lap with A51 (Dowels) N.S.
5A42 #6 F.S.
Lap with A59 (Dowels) F.S.
6A69 #6 N.S.
5A65 #6 F.S.
D1
El. 150.80
3" Min. (Typ)
El. 148.38
El. 146.10
El. 144.67
A63 POUR L
A19 N.S. A75 F.S.
POUR J
A28
A32
A75 B.S.
1'-0" Min A26 Lap #6 Bars
POUR K
A49 POUR E
El. 135.00
10 Spa.@ 1'-6" = 15'-0"
11A24 #6 Bott., 11A25 #6 Top
14'-0"
A59
A76 F.S., A23 N.S.
A70 Pair A Piles
3" x 8" Keyway
El. 127.50
14 Spa.@ 1'-6" = 21'-0"
16A2 #6 Bottom; 16A28 #6 Top
2'-4½"
98 1'-6"-13'-6"; 10A41 #11 Bot.
6'-10½"
2'-10½"
98 1'-6"-13'-6"; 10A40 #7 Bot.
6'-4½"
22'-7"
ELEVATION
N. E. WING-WALL
51'-2⅛"
16'-0"
15'-0"
20'-2⅛"
Const. Jt.
See Detail D This Sheet
S.E.W.W. Ref. Line N 59°-59'-20"E
See Detail C This Sheet
1'-2⅛"
1" Exp Jt
5 Spa. @ 9'-3⅜" = A6'-6¼"
PLAN
34 D1 Bars #6 Space with Near Face A Bars
45 Leave set Screws Loose on this side of post
A67
A66
Parapet Const. Jt with Dbl. ¾" Δ Molding, Sides & Top (Typ.) Except as Noted
A48
D1
El. 150.60
3" Min. (Typ)
Parapet Exp Jt
El. 150.35
El. 150.12
El. 149.80
11A64 #6 N.S. Lap with A26 (Dowels)
A64
A26
POUR J
A24
10A16 #6 N.S. Lap with A11 (Dowels)
10A62 #5 F.S. Lap with A44 (Dowels)
POUR L
14A4 #6 N.S. Lap with A11 (Dowels)
14A26 #6 F.S. Lap with A44 (Dowels)
El. 144.33
A65
A73 N.S., A76 F.S.
A77 B.S.
A62
¾" Δ Molding (Omit Horiz. Const. Jt. this Pour)
El. 144.33
10A65 #6 F.S.
Lap with A44 (Dowels)
A65
1'-0" Min Lap #4 Bar
Const. Jt. See Detail Sh 14
A4
POUR M
A72 B.S.
A4
1" Exp Jt
A46 (See Detail POUR H Sh. 14)
A16
A77 B.S.
A63
POUR K
A11
A77 B.S.
A4
A57 POUR F
A48
El. 138.00
4" 138'-1'-6"-19'-6"; 14A57 #6 Bott. 14A58 #6 Top 4'-6"
3" x 8" keyway (Typ.)
A44
A47
A66 POUR E
El. 133.50
3½" 116'-1'-6"-6", 12A59 #6 Bot, 12A28 #6 Top 3'-6"
A26
A75 N.S., A76 F.S.
A26 1'-0"
106'-1'-6"-15'-0", 11A60 #6 Bott.
1'-0"
3 Min. (Typ)
18'-2⅝"
El. 127.50
Pile
Pour A
A67
A24
E
9 Spa.@ 1'-6"-13'-6"
Steel Sheet Piling (L.I.P.) Typ
15'-0"
2'-7½"
10A2 #6 Bottom; 10A28 #6 Top
9½"
1'-3½"
8 @ 1'-6"-12'-0" 9A41 #11 Bot.
2'-10"
16'-7½"
ELEVATION
S.E. WINGWALL
Wingwall Ref. Line
Anchor Bolt Setting Line
℄ Railing Post
¾" Bevel (Typ.)
1'-0"
6"
2'-0"
10½"
2½"
(4) ¾" x 10" Long Anchor Bolts (1½" Proj. Typ.)
3½"
7½"
2½"
DETAIL C
Wingwall Ref. Line
℄ Railing Post
¾" Bevel (Typ.)
Anchor Bolt Setting Line
1½"
(4) ¾" x 10" Long Anchor Bolts (1½" Proj. Typ.)
DETAIL D
Ref. Line B
Steel Sheet Piling (L. I. P.) (Typ.)
Exc. Limit
Footing Outline
N.E.W.W Ref. Line
A49
A70
A2
A28
A25
A24
A40
A41
3" Keyway
5'-0"
6'-0"
12'-0"
3'-0"
2'-0"
1'-3"
10 @ 1'-6"-15'-0", 11A26 #6 (Dowels) N.S.
11A32 #6 (Dowels) F.S.
6"
2'-0"
16'-0"
3" 81'-6"-16'-6", 12A57 #6 (Dowels) N.S. 3"
10" 98 1'-6"-13'-6", 10A59 #6 (Dowels) F.S. 6'-4"
4" 98 1'-6"-13'-6", 10A46 #6 Bars F.S. 10"
1'-4" 88 1'-6"-12'-0", 9A47 #8 Bars F.S. 1'-4"
17'-0"
FOUNDATION PLAN
Ref. Line B
Steel Sheet Piling (L. I. P.) (Typ)
Footing Outline
Exc. Limit
S.E.W.W Ref. Line
A67
A28
A66
A59
A40
A41
A2
A60
A57
A48
6 Spa @ 1'-6"-9'-0"
7 Pair A24 #6
3 Pr. A57 #6
2'-0"
12'-0"
10'-0"
6'-0"
3'-3"
2'-6"
3" Keyway (Typ)
13 Spa.@ 1'-6" = 19'-6"
4" 14A11 #6 (Dowels) N.S, 14A4 #6 (Dowels) F.S. 4'-8"
98 1'-6"-13'-6", 10A11 #6 N.S. (Dowels)
10A63 #6 (Dowels) F.S.
6"
1'-0"
20'-2⅝"
98 1'-6"-13'-6", 10A4 #6 Bars F.S. 6"
6" 109 1'-6"-15'-0", 11A26 #6 (Dowels) N.S. 6"
15'-0"
3" 98 1'-6"-13'-6", 10A44 #6 (Dowels) F.S. 1'-0⅝"
2" 98 1'-6"-13'-6", 10A46 #6 Bars F.S. 1'-6⅝"
1'-3" 88 1'-6"-12'-0", 9A47 #8 Bars F.S. 1'-6⅝"
16'-0"
FOUNDATION PLAN
Work sheets 10 thru 14 together
PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS
APPROVED
STRUCTURAL ENGINEER
JOB No.
990 (19)
MICHIGAN DEPARTMENT OF STATE HIGHWAYS
SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY
IN DETROIT
ABUTMENT B DETAILS
REVISIONS
NO. | DESCRIPTION | DATE | BY
CITY OF DETROIT
SQUAD BOSS STURM 9-70
DRAWN BY L. G. 7-70
TRACED BY
CHECKED BY CONLEY 9-70
SHEET 13 OF 31
S23 OF 82122K
01253A



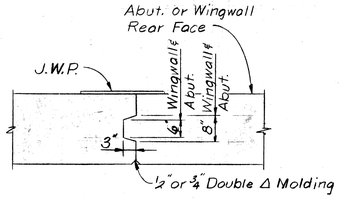
SECTION C-C



SECTION D-D



SECTION AT CONST. JT.



CONSTRUCTION JOINT DETAIL

Note:
Stop vertical keyways 1'-0" below top of Wingwalls and Abut.

SECTION Z-Z

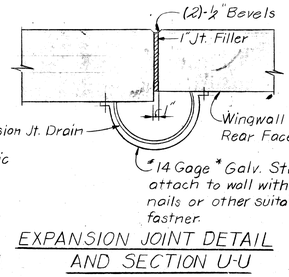
12 Gage Preformed Steel or Aluminum Bulkhead securely held in place. (Metal bulkhead may be welded to temp. steel.)

Polyvinyl Plastic Edging

2" Min.

¾"Bevel (Front Face Only)

METAL BULKHEAD FOR ABUTMENT CONSTRUCTION JOINT



14 Gage * Galv. Straps attach to wall with conc. nails or other suitable fastner.

EXPANSION JOINT DETAIL AND SECTION U-U

CONCRETE QUANTITIES (Cu. Yds.)					
Pour	Location	Abutment A		Abutment B	
		A(6A)	A(6AA)	A(6A)	A(6AA)
A	Footing	154.1	—	128.7	—
B	Abut. Wall	—	31.3	—	27.5
C	Abut. Wall	—	34.2	—	27.8
D	Abut. Wall	—	36.4	—	32.9
E	Footing (S.W.W.W. ℄ S.E.W.W.)	16.3	—	14.8	—
E	Footing (N.W.W.W. ℄ N.E.W.W.)	37.3	—	14.5	—
F	Footing (N.W.W.W. ℄ S.E.W.W.)	20.9	—	10.9	—
G	Footing (N.W.W.W.)	13.2	—	—	—
H	Wingwall (S.W.W.W. ℄ S.E.W.W.)	—	17.1	—	19.3
H	Wingwall (N.W.W.W. ℄ N.E.W.W.)	—	29.3	—	19.1
J	Wingwall (S.W.W.W. ℄ S.E.W.W.)	—	6.1	—	6.9
J	Wingwall (N.W.W.W. ℄ N.E.W.W.)	—	10.5	—	5.4
K	Wingwall (S.W.W.W. ℄ S.E.W.W.)	—	9.8	—	11.7
K	Wingwall (N.W.W.W. ℄ N.E.W.W.)	—	19.1	—	9.5
L	Wingwall (S.W.W.W. ℄ S.E.W.W.)	—	7.2	—	6.6
L	Wingwall (N.W.WW ℄ N.E.W.W.)	—	10.5	—	3.1
M	Wingwall (N.W.W.W. ℄ S.E.W.W.)	—	19.8	—	15.3
N	Wingwall (N.W.W.W.)	—	14.5	—	—
	Total	241.8	245.8	168.9	185.1
Grade A(6A) Concrete Substructure		410.7 Cu. Yds.			
Grade A(6AA) Concrete Substructure		430.9 Cu. Yds.			

Parapet Concrete = 17.2 Cu. Yds. Grade A6AA
Part of Bridge Railing-Solid Parapet Type and not a pay item.

MISCELLANEOUS QUANTITIES				
Item	Unit	Amount		
		Abut. A	Abut. B	Total
Unclassified Excavation	Cu. Yds.	1270	690	1960
Steel Sheet Piling (L.I.P.)	Sq. Ft.	379	427	806
Clear Protective Coating for Substr. Conc.	Sq. Ft.	115	97	212
Low Temp. Protection-Substr. Conc.	Cu. Yds.	487.7	354.9	842.6
½" Joint Filler	Sq. Ft.	112	94	206
1" Joint Filler	Sq. Ft.	34	35	69
Joint Waterproofing	Sq. Ft.	232	192	424
Expansion Joint Drain	Lin. Ft.	14	—	14
Foundation Drains*	Lin. Ft.	240	161	401

*Foundation Drains shall be perforated pipe, sloped ⅛ in/ft. min. continuous over the length of Abutment and Wingwall Footings, and placed as shown on the General Plan of Structure.

GENERAL NOTES:

J.W.P. denotes Joint Waterproofing; N.S. denotes Near Side; F.S. denotes Far Side; B.S. denotes Both Sides.

For bevel and molding details, see Standard sheet R16.

Adjust the spacing of the reinforcing steel as required to permit placing of position dowels.

For pile quantities, pile layout, and notes pertaining to piles, see sheet 9.

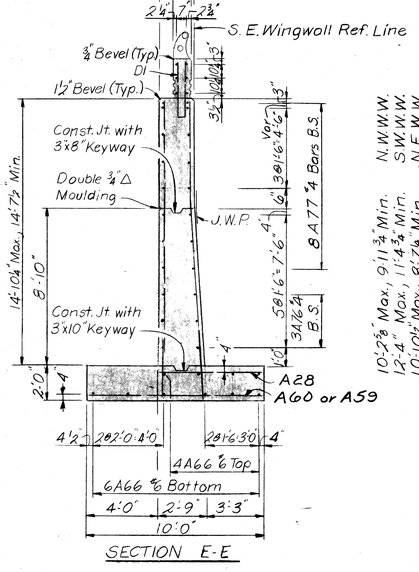
Footing concrete quantities are computed on the basis of an outline 3¼" outside of the footing outline where the concrete is poured against Steel Sheet Piling Left in Place. No additional allowance will be made in concrete or excavation quantities regardless of the steel sheet piling used.

Steel sheet piling left in place shall be of the continuous interlock type, either new or used, in good condition, weighing not less than 22 pounds per square foot of wall, and shall be furnished with suitable connecting and corner pieces. Ladle analysis and mill reports are not required for steel used in Sheet Piling.

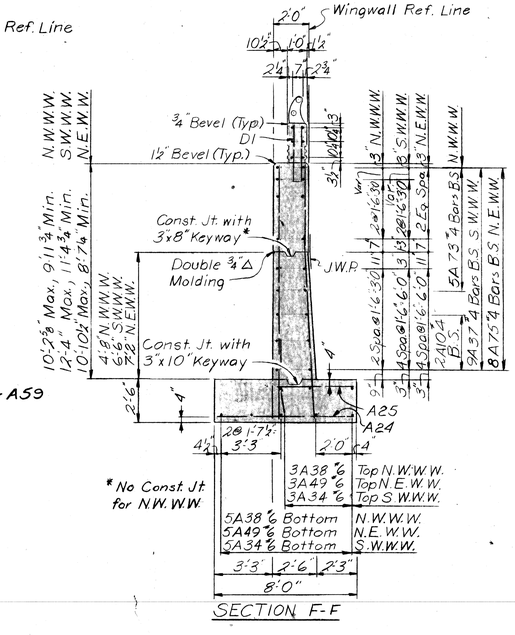
Steel Sheet Piling left in place shall be driven to its final penetration before adjacent concrete is poured. If it is necessary to lower the top of sheeting after the concrete has been poured, the excess shall be removed by cutting.

Footings are to be poured ~~against~~ undisturbed soil where indicated. No allowance will be made in concrete quantities due to excavation outside of the footing neat lines.

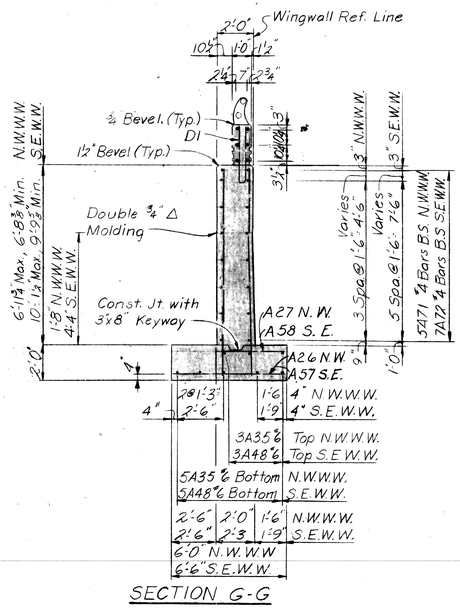
The bridge seat and the front face of Pours B, C and D shall be given an application of Clear Protective Coating for Substructure Concrete.



SECTION E-E



SECTION F-F



SECTION G-G

* - Coating Class - Commercial

EXPANSION JOINT DRAIN

Work sheets 10 thru 14 together.

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

ABUTMENT DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS	STURM	9-70
DRAWN BY	L.G.	7-70
TRACED BY	—	—
CHECKED BY	CAMLY	9-70

SHEET 14 OF 31

S23 OF 82122 K

01253A

ABUTMENTS

BAR	a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D	TOTAL WT.	
A1								#6	26'-0"	39	1523	
A2								#6	11'-6"	159	2746	
A3								#8	5'-3"	88	1234	
A4								#6	8'-0"	~~113~~	~~1358~~	1466
A5								#8	3'-9"	88	881	
A6								#4	28'-3"	20	351	
A7								#4	24'-3"	~~10~~ 20	~~162~~	324
A8								#4	21'-9"	10	145	
A9								#4	25'-3"	10	169	
A10								#4	24'-6"	34	556	
A11								#6	5'-0"	~~230~~ 231	~~1727~~	2035
A12								#6	8'-9"	87	1143	
A13								#6	7'-9"	89	1036	
A14								#6	~~10'-3"~~ 9'-9"	89	~~1303~~	1370
A15								#6	~~4'-0"~~ 4'-11"	~~41~~ 27	~~246~~	338
A16								#6	~~12'-6"~~ 12'-5"	~~94~~ 101	~~1765~~	1965
A17								#6	~~32'-3"~~ 32'-2"	26	~~1259~~	1265
A18								#4	21'-0"	30	421	
A19								#4	19'-6"	20	261	
A20								#4	~~22'-3"~~ 22'-2"	10	~~149~~	145
A21								#4	22'-0"	10	147	
A22								#4	~~13'-6"~~ 13'-5"	~~267~~ 267	~~234~~	83
A23								#4	16'-6"	4	44	
A24								#6	7'-6"	~~55~~ 60	~~620~~	676
A25								#6	4'-6"	41	277	
A26								#6	5'-6"	~~65~~ 82	~~537~~	619
A27								#5	3'-3"	19	93	
A28								#6	5'-9"	109	941	
A29								#6	~~6'-3"~~ 6'-2"	55	~~516~~	537
A30								#6	3'-6"	38	200	
A31								#6	10'-9"	24	388	
A32								#6	8'-9"	45	591	
A33								#6	5'-0"	12	90	
A34								#6	17'-6"	8	210	
A35								#6	28'-3"	8	339	
A36								#6	17'-3"	6	155	
A37								#11	~~17'-0"~~ 17'-1"	~~29~~ 29	~~329~~	210
A38								#6	26'-6"	19	756	
A39								#6	3'-0"	~~78~~ 81	~~81~~	108
A40								#7	6'-0"	~~62~~ 63	~~638~~	613
A41								#11	7'-9"	~~40~~ 41	~~1647~~	1688
A42								#6	~~12'-9"~~ 12'-8"	22	421	438
A43								#6	17'-3"	17	453	
A44								#6	9'-3"	~~534~~ 541	~~764~~	570
A45								#6	14'-0"	~~267~~ 272	~~547~~	463
A46								#6	11'-9"	43	759	
A47								#8	8'-3"	41	903	
A48								#10	19'-6"	14	410	
A49								#6	15'-6"	17	396	
A50								#6	14'-3"	6	128	
A51								#6	18'-3"	6	164	
A52								#4 #6	~~31'-3"~~ 31'-2"	~~6~~ 8	~~282~~	77
A53								#6	28'-0"	6	252	
A54								#6	27'-0"	~~5~~ 12	~~243~~	487
A55								#6	23'-0"	11	380	
A56								#6	20'-3"	11	335	
A57								#6	6'-0"	36	324	
A58								#6	3'-9"	14	79	
A59								#6	9'-6"	34	485	
A60								#6	2'-9"	11	45	
A61								#4	12'-0"	5	40	
A62								#6	10'-0"	22	330	
A63								#6	4'-5"	15	107	
A64								#6	18'-9"	21	591	
A65								#6	15'-0"	21	473	
A66								#6	16'-6"	~~22~~ 14	~~545~~	397
A67								#6	16'-0"	11	264	
A68								#6	7'-0"	16	168	
A69								#6	18'-0"	6	162	
A70								#6	22'-3"	11	368	
A71								#4	28'-3"	10	189	
A72								#4	19'-6"	14	182	
A73								#4	26'-0"	26	452	
A74								#6	6'-6"	12	117	
A75								#4	15'-6"	~~27~~ 22	~~280~~	331
A76								#4	14'-0"	18	168	
A77								#4	16'-0"	~~40~~ 17	~~428~~	182

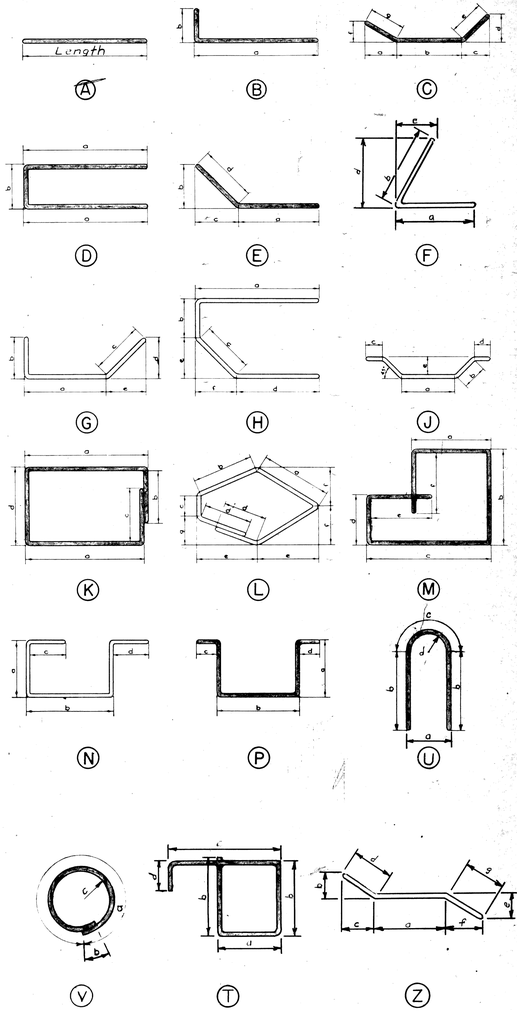
PIERS

BAR	a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D	TOTAL WT.
A178								#4	23'-3"	14	217
A179								#6	12'-0"	12	306
C1	1'-0¾"	4'-0"	1'-0¾"	1'-0¾"	1'-6"	1'-0¾"	1'-6"	#6	7'-0"	20	210
	2'-9⅝"	6¼"						#6	6'-0"	149	1343
D1	~~0'-6⅝"~~	~~1'-2¼"~~						~~#4~~	~~2'-3"~~	~~146~~	~~218~~
		2'-0⅝"	1'-0"								
E1	4'-9"	~~1'-0"~~ 1'-0⅛"	~~2'-0⅛"~~	2'-3"				#6	7'-0"	10	105
E2	3'-9"	~~1'-6⅛"~~ 1'-6⅜"	~~1'-8⅜"~~	2'-3"				#6	6'-0"	10	90
		1'-8⅜"	1'-5⅜"					ABUTMENT TOTAL =		~~40,342~~ 42129	Lbs.
A101								#6	10'-0"	222	3334
A102								#6	28'-3"	96	4073
A103								#6	27'-9"	24	1000
A104								#6	26'-0"	24	937
A105								#5	27'-9"	21	608
A106								#5	26'-0"	21	569
A107								#6	1'-6"	12	27
A108								#9	7'-9"	144	3794
A109								#9	10'-9"	48	1754
A110								#9	12'-6"	48	2040
A111								#9	11'-9"	48	1918
A112								#9	17'-3"	27	1584
A113								#9	20'-0"	54	3672
A114								#6	31'-0"	30	1397
A115								#6	12'-9"	60	1149
A116								#7	31'-0"	24	1521
A117								#7	12'-9"	48	1251
A118								#6	32'-0"	6	288
A119								#6	15'-6"	6	140
D101	4'-5⅝"	3'-2"						#5	12'-0"	210	2628
D102	2'-7⅛"	4'-10¾"						#4	10'-0"	12	80
D103	2'-9"	3'-1¼"						#5	8'-6"	54	479
D104	1'-6⅝"	2'-9¾"						#4	5'-9"	93	357
E101	5'-6"	1'-1⅝"	1'-7¾"	2'-0"				#5	7'-6"	210	1643
K101	3'-2"	1'-6"	1'-7"	1'-11"				#4	11'-3"	360	2705
V101	7'-10⅝"	1'-1⅜"	1'-2⅝"					#4	9'-0"	96	1577
								PIER TOTAL =			39,525 Lbs.

SUPERSTRUCTURE

BAR	a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D	TOTAL WT.
A201								#6	22'-0"	1912	63180
A202								#6	1'-3"	2	5
A203								#6	2'-3"	2	7
A204								#6	2'-9"	2	8
A205								#6	3'-3"	2	10
A206								#6	3'-9"	2	11
A207								#6	4'-3"	2	13
A208								#6	4'-9"	2	14
A209								#6	5'-3"	32	252
A210								#6	5'-9"	2	17
A211								#6	6'-3"	2	19
A212								#6	6'-9"	2	20
A213								#6	7'-3"	2	22
A214								#6	7'-9"	2	23
A215								#6	8'-3"	44	545
A216								#6	8'-9"	2	26
A217								#6	9'-3"	2	28
A218								#6	9'-9"	2	29
A219								#6	10'-3"	2	31
A220								#6	10'-9"	2	32
A221								#6	11'-3"	2	34
A222								#6	11'-10"	2	35
A223								#6	12'-4"	2	37
A224								#6	12'-10"	2	39
A225								#6	13'-4"	2	40
A226								#6	13'-10"	2	42
A227								#6	14'-4"	2	43
A228								#6	14'-10"	2	45
A229								#6	15'-4"	2	46
A230								#6	15'-11"	2	48
A231								#6	16'-5"	2	49
A232								#6	16'-11"	2	51
A233								#6	17'-5"	2	52
A234								#6	17'-11"	2	54
A235								#6	18'-6"	2	56
A236								#6	19'-0"	2	57
A237								#6	19'-6"	2	59
A238								#6	20'-0"	2	60
A239								#6	20'-6"	2	62
A240								#6	21'-0"	2	63
A241								#6	21'-6"	2	65
A242								#6	1'-9"	2	5
A243								#6	2'-4"	2	7
A244								#6	2'-10"	2	9
A245								#6	3'-5"	2	11
A246								#6	4'-0"	2	12
A247								#6	4'-7"	2	14
A248								#6	5'-1"	2	15
A249								#6	5'-8"	2	17
A250								#6	6'-3"	2	19
A251								#6	6'-10"	2	21
A252								#6	7'-4"	2	22
A253								#6	7'-11"	2	24
A254								#6	8'-6"	2	26
A255								#6	9'-1"	2	27
A256								#6	9'-7"	2	29
A257								#6	10'-2"	2	31
A258								#6	10'-9"	2	32
A259								#6	11'-4"	2	34
A260								#6	11'-11"	2	36
A261								#6	12'-5"	2	37
A262								#6	13'-0"	2	39
A263								#6	13'-7"	2	41
A264								#6	14'-2"	2	43
A265								#6	14'-8"	2	44
A266								#6	15'-3"	2	46
A267								#6	15'-10"	2	48

BAR BENDING DIAGRAM



Work Sheets 30 & 31 Together

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
BUREAU OF EXPRESSWAYS AND EXPRESSWAYS
APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

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

Tolerances in cutting and bending bars are as established in Manual of Standard Practices of the Concrete Reinforcing Steel Institute and Detailing Manual of the American Concrete Institute 216078
Grand Total Steel Reinforcement ~~214,291~~ Lbs.

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

STEEL REINFORCEMENT DETAILS

CITY OF DETROIT

REVISIONS			
NO	DESCRIPTION	DATE	BY

SQUAD BOSS	5-70
DRAWN BY	M.S. 9-70
TRACED BY	
CHECKED BY	NC 9-70
SHEET	30 OF 31

S23 OF 82122K

01253A

SUPERSTRUCTURE

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A268								#6	16'-4"	2	49
A269								#6	16'-11"	2	51
A270								#6	17'-6"	2	53
A271								#6	18'-1"	2	54
A272								#6	18'-8"	2	56
A273								#6	19'-2"	2	58
A274								#6	19'-9"	2	59
A275								#6	20'-4"	2	61
A276								#6	20'-10"	2	63
A277								#6	21'-5"	2	64
A278								#6	2'-3"	4	14
A279								#6	2'-11"	4	18
A280								#6	3'-7"	4	22
A281								#6	4'-4"	4	26
A282								#6	5'-0"	4	30
A283								#6	5'-8"	4	34
A284								#6	6'-4"	4	38
A285								#6	7'-0"	4	42
A286								#6	7'-9"	4	47
A287								#6	8'-5"	4	51
A288								#6	9'-1"	4	55
A289								#6	9'-9"	4	59
A290								#6	10'-6"	4	63
A291								#6	11'-2"	4	67
A292								#6	11'-10"	4	71
A293								#6	12'-6"	4	75
A294								#6	13'-2"	4	79
A295								#6	13'-10"	4	83
A296								#6	14'-7"	4	88
A297								#6	15'-3"	4	92
A298								#6	15'-11"	4	96
A299								#6	16'-7"	4	100
A300								#6	17'-3"	4	104
A301								#6	17'-11"	4	108
A302								#6	18'-7"	4	112
A303								#6	19'-3"	4	116
A304								#6	20'-0"	4	120
A305								#6	20'-8"	4	124
A306								#6	21'-4"	2	64
A307								#6	1'-3"	6	11
A308								#6	2'-0"	10	30
A309								#6	2'-10"	16	68
A310								#6	3'-7"	16	86
A311								#6	4'-5"	16	106
A312								#6	5'-3"	16	126
A313								#6	6'-0"	16	144
A314								#6	6'-10"	16	164
A315								#6	7'-7"	16	182
A316								#6	8'-5"	16	202
A317								#6	9'-3"	16	222
A318								#6	10'-0"	16	240
A319								#6	10'-10"	18	293
A320								#6	11'-7"	16	278
A321								#6	12'-5"	16	298
A322								#6	13'-3"	16	318
A323								#6	14'-0"	16	336
A324								#6	14'-10"	16	356
A325								#6	15'-7"	16	374
A326								#6	16'-5"	16	395
A327								#6	17'-3"	16	415
A328								#6	18'-0"	16	433
A329								#6	18'-10"	16	453
A330								#6	19'-7"	16	471
A331								#6	20'-5"	16	491
A332								#6	21'-3"	12	383
A333								#6	1'-3"	2	4
A334								#6	2'-0"	2	6
A335								#6	2'-9"	4	17
A336								#6	3'-6"	4	21
A337								#6	4'-4"	4	26
A338								#6	5'-1"	4	31
A339								#6	5'-10"	4	35
A340								#6	6'-7"	4	40
A341								#6	7'-5"	4	45
A342								#6	8'-2"	4	49
A343								#6	8'-11"	4	54
A344								#6	9'-8"	4	58
A345								#6	10'-5"	4	63

SUPERSTRUCTURE

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A346								#6	11'-3"	4	68
A347								#6	12'-0"	4	72
A348								#6	12'-9"	4	77
A349								#6	13'-6"	4	81
A350								#6	14'-4"	4	86
A351								#6	15'-1"	4	91
A352								#6	15'-10"	4	95
A353								#6	16'-7"	4	100
A354								#6	17'-5"	4	105
A355								#6	18'-2"	4	109
A356								#6	18'-11"	4	114
A357								#6	19'-8"	4	118
A358								#6	20'-5"	4	123
A359								#6	21'-3"	2	64
A360								#6	1'-4"	2	4
A361								#6	2'-1"	4	12
A362								#6	2'-9"	4	17
A363								#6	3'-5"	4	21
A364								#6	4'-1"	4	25
A365								#6	4'-10"	4	29
A366								#6	5'-6"	4	33
A367								#6	6'-2"	4	37
A368								#6	6'-10"	4	41
A369								#6	7'-6"	4	45
A370								#6	8'-3"	4	50
A371								#6	8'-11"	4	54
A372								#6	9'-8"	4	58
A373								#6	10'-4"	4	62
A374								#6	11'-0"	4	66
A375								#6	11'-8"	4	70
A376								#6	12'-4"	4	74
A377								#6	13'-1"	4	79
A378								#6	13'-9"	4	83
A379								#6	14'-5"	4	87
A380								#6	15'-1"	4	91
A381								#6	15'-10"	4	95
A382								#6	16'-6"	4	99
A383								#6	17'-2"	4	103
A384								#6	17'-10"	4	107
A385								#6	18'-6"	4	111
A386								#6	19'-3"	4	116
A387								#6	19'-11"	4	120
A388								#6	20'-8"	4	124
A389								#6	21'-4"	4	128
A390								#4	2'-0"	1	1
A391								#4	8'-0"	1	5
A392								#4	14'-0"	1	9
A393								#4	20'-0"	2	27
A394								#4	26'-0"	1	17
A395								#4	34'-0"	1	23
A396								#4	24'-0"	2	32
A397								#4	30'-0"	9	180
A398								#4	38'-0"	108	2741
A399								#5	2'-0"	1	2
A400								#5	5'-0"	1	5
A401								#5	8'-0"	1	8
A402								#5	11'-0"	2	23
A403								#5	14'-0"	1	15
A404								#5	17'-0"	1	18
A405								#5	20'-0"	2	42
A406								#5	22'-0"	1	23
A407								#5	26'-0"	1	27
A408								#5	29'-0"	1	30
A409								#5	34'-0"	1	35
A410								#5	40'-0"	1	42
A411								#5	24'-0"	2	50
A412								#5	26'-0"	2	54
A413								#5	30'-0"	8	250
A414								#5	35'-0"	2	73
A415								#5	38'-0"	144	5707
A416								#4	36'-0"	1	24
A417								#5	36'-0"	6	225
A418								#6	28'-0"	54	2271
A419								#4	39'-0"	39	1016
A420								#4	32'-0"	16	342
A421								#4	1'-6"	1	1
A422								#4	2'-5"	1	2
A423								#4	3'-5"	1	3

SUPERSTRUCTURE

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A424								#4	4'-4"	1	3
A425								#4	5'-4"	1	4
A426								#4	6'-3"	1	4
A427								#4	7'-2"	1	5
A428								#4	8'-2"	1	5
A429								#4	9'-1"	1	6
A430								#4	10'-1"	1	7
A431								#4	11'-0"	2	15
A432								#6	32'-0"	34	1634
A433								#5	29'-3"	141	4302
A434								#4	28'-9"	159	3054
A435								#6	29'-3"	48	2109
A436								#5	28'-3"	141	4155
A437								#4	28'-3"	159	3001
A438								#6	28'-6"	18	771
A439								#4	31'-3"	127	2651
A440								#5	31'-3"	148	4824
A441								#4	32'-6"	1	22
A442								#4	33'-6"	1	22
A443								#4	35'-0"	1	23
A444								#4	36'-0"	1	24
A445								#4	37'-0"	19	470
A446								#5	32'-6"	1	34
A447								#5	33'-6"	1	35
A448								#5	35'-0"	1	37
A449								#5	36'-0"	1	38
A450								#5	37'-0"	1	39
A451								#4	33'-0"	39	860
A452								#4	27'-6"	6	110
A453								#4	19'-6"	3	39
A454								#4	3'-6"	2	5
A455								#4	31'-6"	18	379
A456								#4	13'-3"	2	18
A457								#4	22'-3"	4	59
A458								#4	21'-0"	4	56
B201	10'-9½"	9"						#4	11'-6"	271	2082
B202	19'-6½"	9"						#4	20'-3"	1	14
B203	13'-0½"	9"						#4	13'-9"	1	9
B204	1'-6½"	9"						#4	2'-6"	6	9
B205	3'-0½"	9"						#4	3'-9"	6	15
B206	4'-6½"	9"						#4	5'-3"	6	21
B207	6'-0½"	9"						#4	6'-9"	6	27
B208	7'-6½"	9"						#4	8'-3"	6	33
B209	9'-0½"	9"						#4	9'-9"	6	39
B210	13'-6½"	9"						#4	14'-3"	5	48
B211	15'-6½"	9"						#4	16'-3"	1	11
B212	4'-6½"	9"						#4	5'-3"	1	4
B213	5'-9½"	9"						#4	6'-6"	1	4
B214	6'-9½"	9"						#4	7'-6"	1	5
B215	8'-0½"	9"						#4	8'-9"	1	6
B216	9'-3½"	9"						#4	10'-0"	1	7
B217	10'-6½"	9"						#4	11'-3"	1	8
D201	6⅞"	1'-2¼"						#4	2'-3"	302	454
D202	5⅝"	1'-4⅜"						#4	2'-3"	297	446
D203	2'-11⅛"	6¼"						#6	6'-3"	600	5633
E201	37'-3"	1'-9"	1'-9"	2'-6"				#6	39'-9"	12	716
E202	31'-6"	6"	2'-5"	2'-6"				#6	33'-6"	6	302
E203	29'-0"	6"	2'-2"	2'-3"				#6	31'-3"	6	282
K201	4'-4"	1'-0¾"	1'-0¾"	1'-3½"				#4	12'-0"	21	168
M201	10'4"	4'-4"	1'-3½"	3'-5"	11¾"	1'-6"		#4	12'-3"	57	466
M202	1'-2"	4'-4"	1'-10"	3'-1"	1'-5½"	1'-6"		#4	13'-3"	1	9
M203	1'-1¼"	4'-4"	1'-8¼"	3'-1"	1'-2"	1'-6"		#4	12'-9"	1	9
P201	1'-0"	1'-2"	11½"	11½"				#4	5'-0"	290	969
P202	6"	3'-0"	1'-0½"	1'-0½"				#4	5'-6"	2	7
P203	1'-0"	1'-5"	11½"	11½"				#4	5'-3"	6	21
T201	1'-2½"	1'-5"	1'-5½"	7"				#4	5'-11"	304	1202
T202	8½"	1'-5"	11½"	7"				#4	4'-11"	1	3

SUPERSTRUCTURE TOTAL = 134,434 Lbs.

NOTE:
For bar bending diagram and bar notes see sheet 30

Work Sheets 30 & 31 Together

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF EXPRESSWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

STEEL REINFORCEMENT DETAILS

CITY OF DETROIT

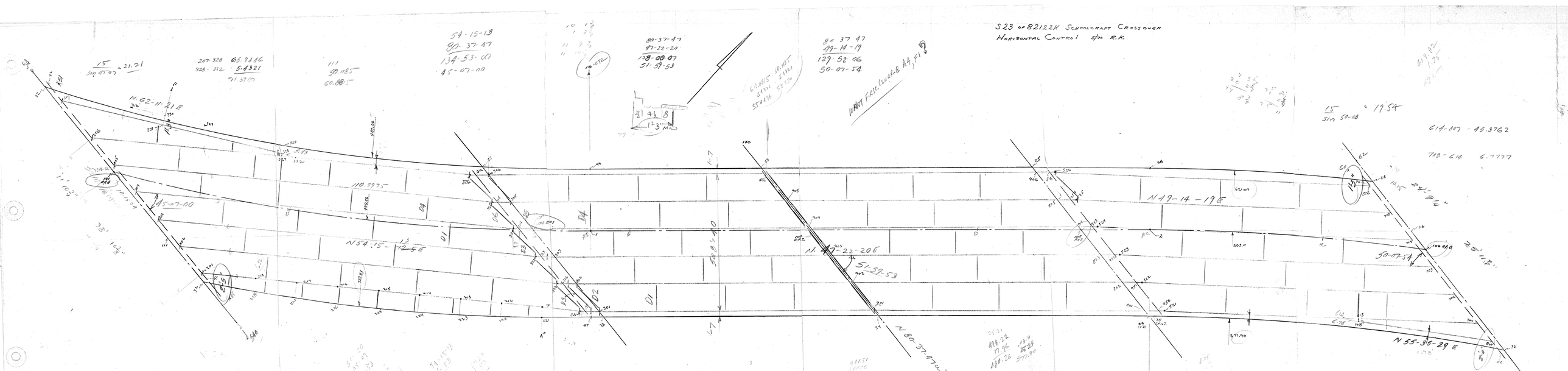
REVISIONS NO	DESCRIPTION	DATE	BY

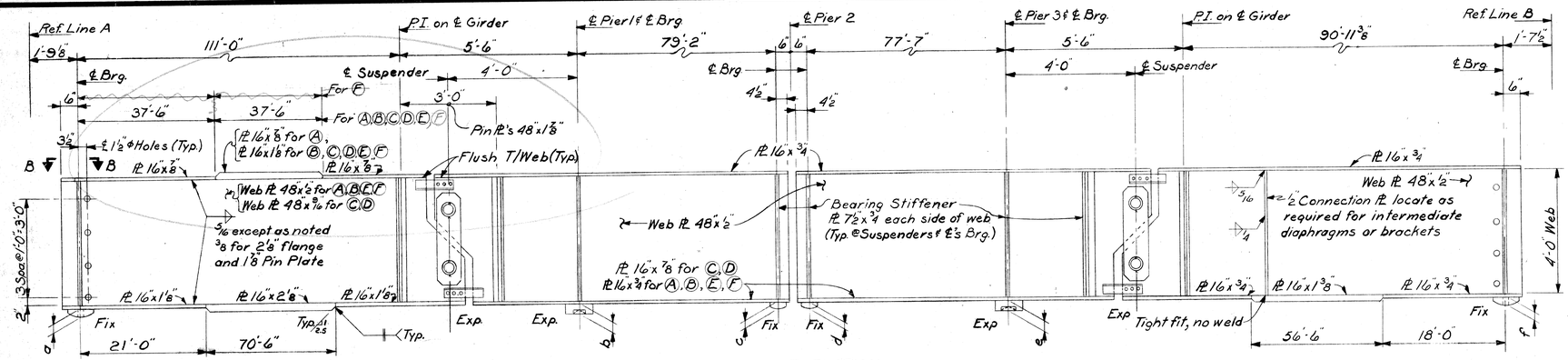
SQUAD BOSS	SPIRA 9-70
DRAWN BY	J.J. 9-70
TRACED BY	
CHECKED BY	T.M.S. 10-70
SHEET	31 OF 31

S23 OF 82122K

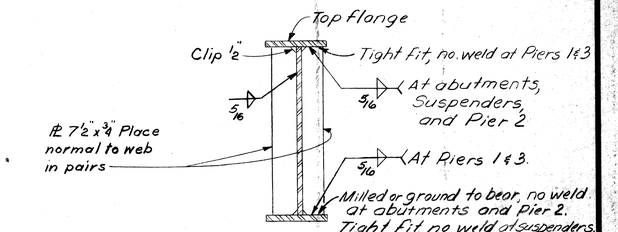
01253A

S23 of 82122K Schoolcraft Crossover
Horizontal Control 1/20 R.K.

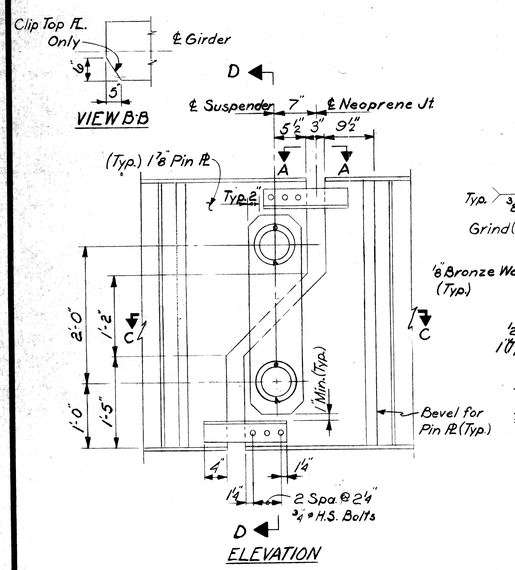


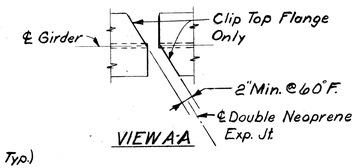


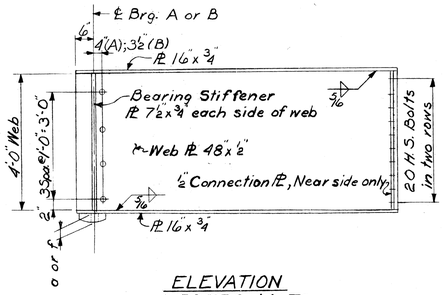
ELEVATION
GIRDERS A thru F



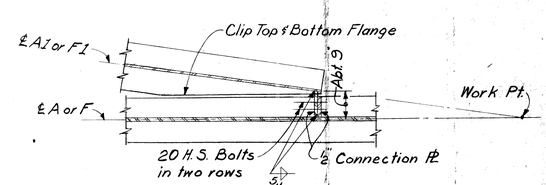
BEARING STIFFENER DETAILS



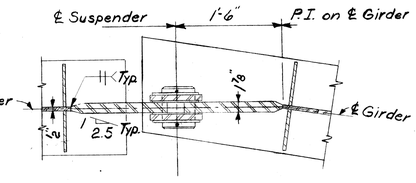




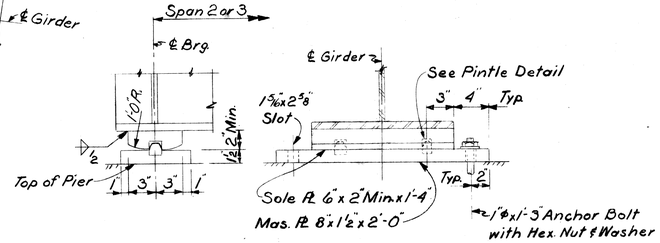
ELEVATION
GIRDERS A1 & F1



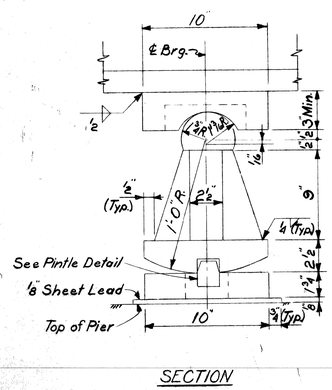
GIRDER CONNECTION DETAILS

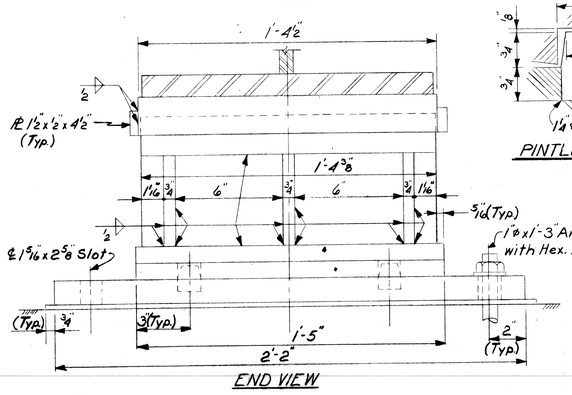


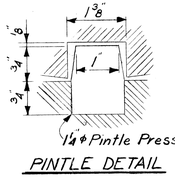
SUSPENDER DETAILS



PIER 2 BEARING DETAILS

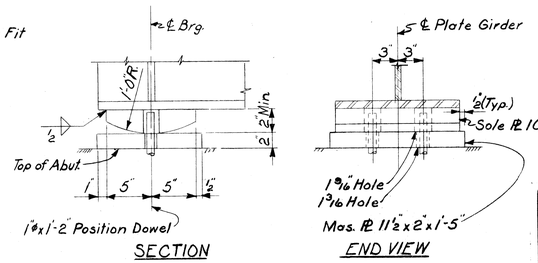






PINTLE DETAIL

PIER 1 or 3 BEARING DETAILS



ABUTMENT BEARING DETAILS

SOLE PLATE THICKNESS
(inches)

Beam \ Dimn.	a	b	c	d	e	f
F1	2¾	—	—	—	—	—
F	2¾	3¼	2½	2½	3¼	2½
E	2½	3	2¼	2¼	3½	3¼
D	4	5	4¼	4¼	5¼	3½
C	3	5½	4¾	4¾	5¼	2½
B	3¾	3	2	2	3	4½
A	5¼	4¼	3¼	3¼	3½	3¼
A1	—	—	—	—	—	2½

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Revisions 12/9/70 GJB CJB

Work sheets 17 thru 19 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT.

STRUCTURAL STEEL DETAILS

CITY OF DETROIT

SQUAD BOSS	STURM	9-70
DRAWN BY	I.H.S.	7-70
TRACED BY	WARREN	7-70
CHECKED BY	KARGE	9-70

SHEET 18 OF 31

REVISIONS

NO.	DESCRIPTION	DATE	BY

S23 of 82122K

R. CARROLL INC. 57119 97

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

APPROVED _____ STRUCTURAL ENGINEER

JOB NO. PW 390(1a)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
TESTING AND RESEARCH DIVISION
TESTING LABORATORY SECTION
SOILS LABORATORY ANN ARBOR, MICHIGAN
SOIL MECHANICS ANALYSIS
PROJECT 523 of 82122K
PROPOSED SCHOOLCRAFT CROSSOVER CROSSING I-96 (JEFFRIES FWY)
DETROIT, MICHIGAN

STATE	FEDERAL PROJECT	SHEET NO.
		3 of 3

523 OF 82122K

0152SA

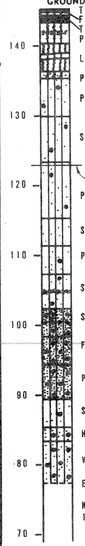
LOG OF SOIL PROFILE

BORING NO. 8 HYDRAULIC WASH BORING

LOCATION STA. 683+00, 25' Rt OF SEWER CONSTRUCTION CENTERLINE

CITY OF DETROIT

GROUND SURFACE ELEVATION (FT): 145.3



TOPSOIL
FIRM BROWN AND GRAY MOTTLED SILTY CLAY
TOPSOIL
PLASTIC BROWN AND GRAY MOTTLED SILTY CLAY, SILT PARTINGS
LOOSE BROWN MOTTLED SILT, LENSES OF PLASTIC BROWN AND GRAY MOTTLED CLAY
PLASTIC BROWN AND GRAY MOTTLED CLAY, SLIGHT TRACE OF SILTY SAND
PLASTIC GRAY LAMINATED CLAY, TRACE OF SAND, OCCASIONAL PEBBLE
SOFT GRAY CLAY, OCCASIONAL SLIGHT TRACE OF SAND, OCCASIONAL PEBBLE
Abut. A Fig. El. 123.00
PLASTIC GRAY CLAY, TRACE OF SAND, OCCASIONAL PEBBLE
SOFT GRAY CLAY, OCCASIONAL SLIGHT TRACE OF SAND
PLASTIC GRAY CLAY, TRACE OF SAND, OCCASIONAL PEBBLE
SOFT GRAY CLAY, TRACE OF SAND, OCCASIONAL PEBBLE, LENS OF FINE GRAVEL AT 40.5 ft
SOFT GRAY PEBBLY SANDY CLAY, LENSES OF FINE GRAVEL
FIRM GRAY SANDY CLAY; HEAVY TRACE OF FINE GRAVEL, PEBBLY
PLASTIC GRAY SANDY CLAY, HEAVY TRACE OF FINE GRAVEL, PEBBLY
STIFF GRAY CLAY, TRACE OF SAND, OCCASIONAL PEBBLE
HARD GRAY CLAY, HEAVY TRACE OF SAND, FINE GRAVEL AND PEBBLE
VERY HARD GRAY CLAY, HEAVY TRACE OF SAND, FINE GRAVEL, PEBBLY
END OF BORING

NOTE:
1.375" I.D. x 1.750" O.D. THIN WALL SAMPLER.

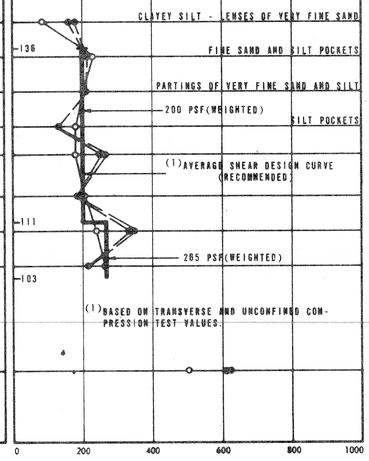
SOIL SAMPLE

SA. NO.	ELEV. IN FEET	FIELD DATA: PENETRATION NO. OF BLOWS	FIELD DATA: PENETRATION DRIVE IN INCHES	FIELD DATA: CONSISTENCY	LABORATORY DATA: CONSISTENCY	LABORATORY DATA: MOISTURE PER CENT DRY WT.	LABORATORY DATA: DRY WT. LB PER CU FT
1	139.8	LEVERED		SILT	--	28.0	98.0
2	134.8	LEVERED		PLASTIC	SOFT	27.6	97.3
3	129.8	LEVERED		SOFT	SOFT	28.3	96.1
4	124.8	LEVERED		SOFT	SOFT	27.4 20.6	95.5 108.8
5	120.8	LEVERED		PLASTIC	SOFT	21.0	105.5
6	114.8	LEVERED		SOFT	SOFT	23.0	103.0
7	109.8	LEVERED		PLASTIC	SOFT TO PLASTIC	24.1	101.1
8	104.8	LEVERED		SOFT	SOFT	28.2	97.3
	101.3	LEVERED		--	NO	SAMPLE	
	95.3	8-10	6-6	--	NO	SAMPLE	
9	89.8	LEVERED		FIRM	FIRM	14.5	119.8
	85.3	22	6	--	NO	SAMPLE	
	81.3	15	3	--	NO	SAMPLE	

SHEARING RESISTANCE

ONE-HALF COMPRESSIVE STRENGTH IN LB PER SQ FT (BASED ON ORIGINAL CROSS-SECTION OF TEST SPECIMEN)
0 800 1600 2400 3200 4000

TRANSVERSE SHEARING RESISTANCE IN LB PER SQ FT
0 200 400 600 800 1000



BORING DATA

NUMBER 8 HYDRAULIC WASH BORING

DATE OF BORING MARCH, 1969

LOCATION STA. 683+00, 25' Rt OF SEWER CONSTRUCTION CENTERLINE

MADE BY ROBERT GREEN, BORING CHIEF

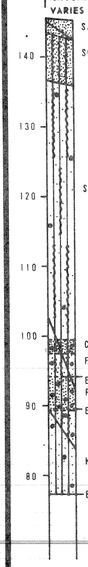
PENETRATION NOTE: NUMBER OF BLOWS REQUIRED TO DRIVE SAMPLER DISTANCE GIVEN, USING 140 - LB WEIGHT FALLING 30 IN.

GENERAL NOTE: FIELD CONSISTENCY DETERMINED BY INSPECTION OF SAMPLES AND SUBSTANTIATED BY RESISTANCE TO PIPE CASING AND JET ROD. BELOW DEPTH OF SAMPLING, CONSISTENCY DETERMINED BY SOIL RESISTANCE TO JET ROD.

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
TESTING AND RESEARCH DIVISION
TESTING LABORATORY SECTION
SOILS LABORATORY ANN ARBOR, MICHIGAN
SOIL MECHANICS ANALYSIS
PROJECT 82122J
I-96 JEFFRIES FREEWAY (SEWER)
DETROIT, MICHIGAN

TEST HOLE NO.8

COMPOSITE SOIL PROFILE



BORING NOS: J239 THROUGH J242 and 8 (SEWER BORING)

GROUND SURFACE ELEV. (FT) VARIES FROM: 145.8 to 145.3 (CITY OF DETROIT)

SAND FILL AND TOPSOIL

SOFT TO FIRM GRAY AND BROWN MOTTLED SILTY SANDY CLAY, TRACE OF PEBBLES (B-8 - SILT WITH LENS OF CLAY FROM ELEV. 140.3 to 136.3)

SOFT TO PLASTIC GRAY SILTY CLAY, TRACE OF SAND AND FINE GRAVEL, OCCASIONAL PEBBLE

COMPACT GRAY SILTY FINE SAND, FINE AND MEDIUM GRAVEL

FIRM GRAY SILTY CLAY, TRACE OF SAND AND FINE GRAVEL, OCCASIONAL PEBBLE

END OF BORINGS J239 and J241

PLASTIC GRAY SANDY CLAY, HEAVY TRACE OF FINE GRAVEL, PEBBLY (BORING 8)

END OF BORING J240

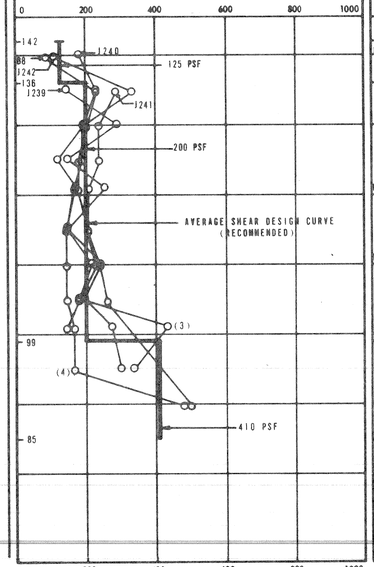
HARD TO VERY HARD GRAY CLAY, HEAVY TRACE OF SAND, TRACE OF FINE GRAVEL AND PEBBLES (BORING 8 - STIFF CLAY FROM ELEV. 89.3 to 85.3 ft).

END OF BORINGS 8 and J242

THE ABOVE COMPOSITE SOIL PROFILE IS INTENDED ONLY TO PRESENT AVERAGE CONDITIONS THROUGHOUT THE GROUP OF BORINGS REPRESENTED. SEE INDIVIDUAL BORING CHARTS FOR DETAILS.

TRANSVERSE SHEARING RESISTANCE

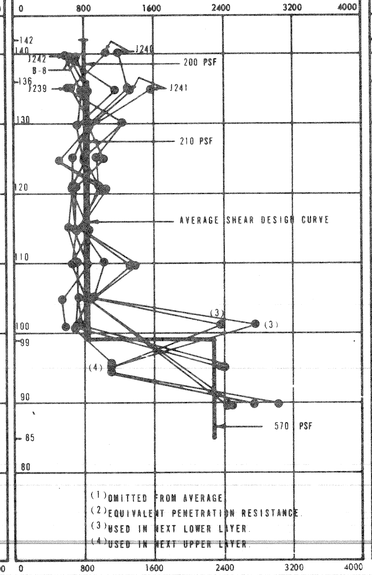
TRANSVERSE SHEARING RESISTANCE (S_c) IN LB PER SQ FT
0 200 400 600 800 1000



COMPRESSION SHEARING RESISTANCE

COMPRESSION SHEARING RESISTANCE ($S_{uc}/4$) IN LB PER SQ FT
0 200 400 600 800 1000

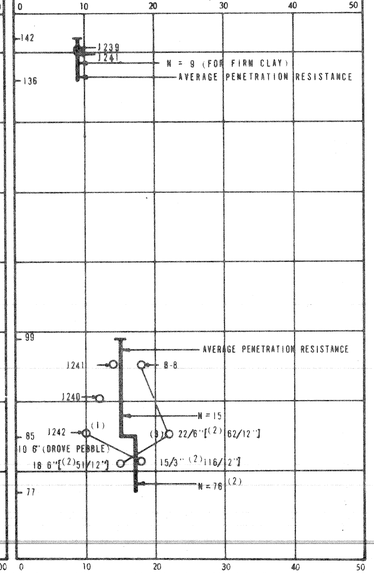
ONE-HALF COMPRESSIVE STRENGTH (S_{uc}) IN LB PER SQ FT
0 800 1600 2400 3200 4000



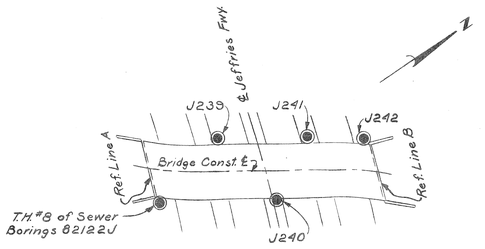
(1) OMITTED FROM AVERAGE.
(2) EQUIVALENT PENETRATION RESISTANCE.
(3) USED IN NEXT LOWER LAYER.
(4) USED IN NEXT UPPER LAYER.

ASTM MODIFIED PENETRATION RESISTANCE

PENETRATION RESISTANCE (N) = BLOWS PER FOOT (USING A 140-LB WEIGHT FALLING 30 IN.)
0 10 20 30 40 50



COMPOSITE SUBSOIL ANALYSIS OF BORINGS J239 THROUGH J242 AND 8 (SEWER BORING - 82122J)



SOIL BORING LOCATION

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990(19)

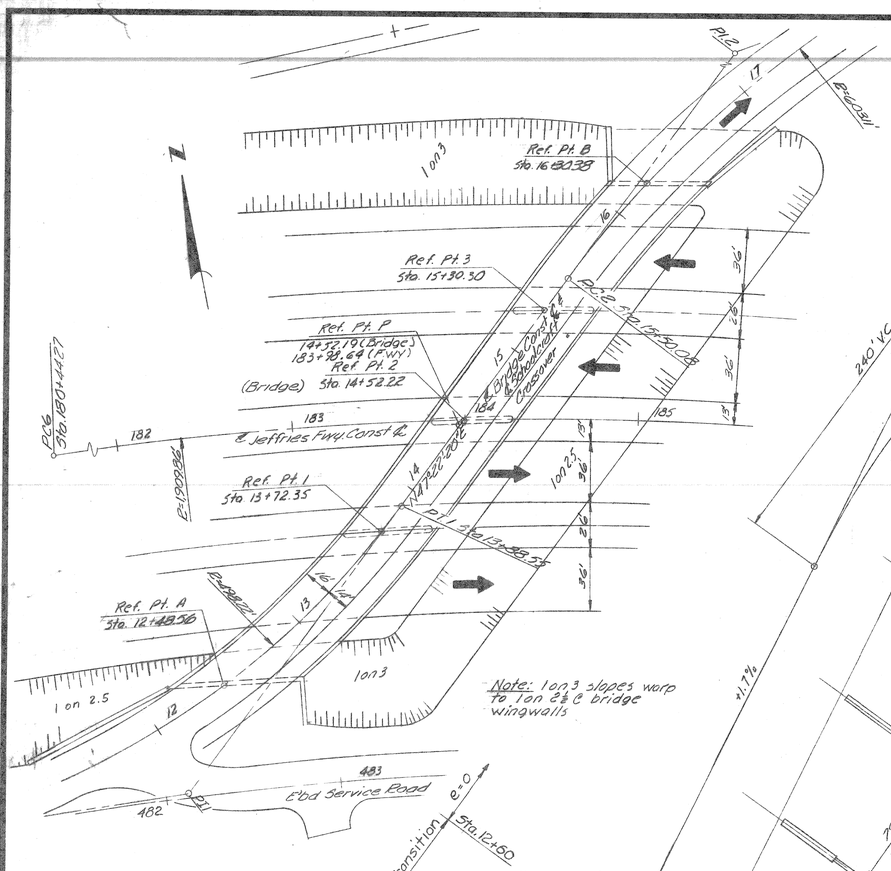
MICHIGAN DEPARTMENT OF STATE HIGHWAYS
TESTING AND RESEARCH DIVISION
TESTING LABORATORY SECTION
SOILS LABORATORY ANN ARBOR, MICHIGAN
SOIL MECHANICS ANALYSIS
PROJECT S23 of 82122K
PROPOSED SCHOOLCRAFT CROSSOVER CROSSING I-96 (JEFFRIES FWY.)
DETROIT, MICHIGAN

COMPOSITE SUBSOIL ANALYSIS OF BORINGS J-239, J-240, J-241, J-242 & NO.8 DETROIT, MICHIGAN

S23 OF 82122K

FEDERAL PROJECT | SHEET NO. 4 of 31

01253A



CURVE DATA

Curve #1 Schoolcraft Crossover	Curve #2 Schoolcraft Crossover	Curve #6 Jeffries Fwy. Const ℄
Δ = 44°41'01" Lt.	Δ = 39°11'46" Rt.	Δ = 51°13'51" Rt.
D = 11°30'00"	D = 9°30'00"	D = 3°00'00"
R = 498.22'	R = 603.11'	R = 1,909.86
T = 204.76'	T = 214.73'	T = 915.68
L = 388.55'	L = 412.59	L = 1,707.69
E = 40.44'	E = 37.09	E = 208.17
PC = 10+00.00	PC = 15+50.08	PC = 180+44.13
PI = 12+04.76	PI = 17+64.81	PI = 189+59.81
PT = 13+88.55	PT = 19+62.67	PT = 218+06.40

ALIGNMENT DIAGRAM
No Scale

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990(19)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

CITY OF DETROIT

SQUAD BOSS	Lochar	8-69
DRAWN BY	A.G.	8-69
TRACED BY		
CHECKED BY	W.A.L.	8-69

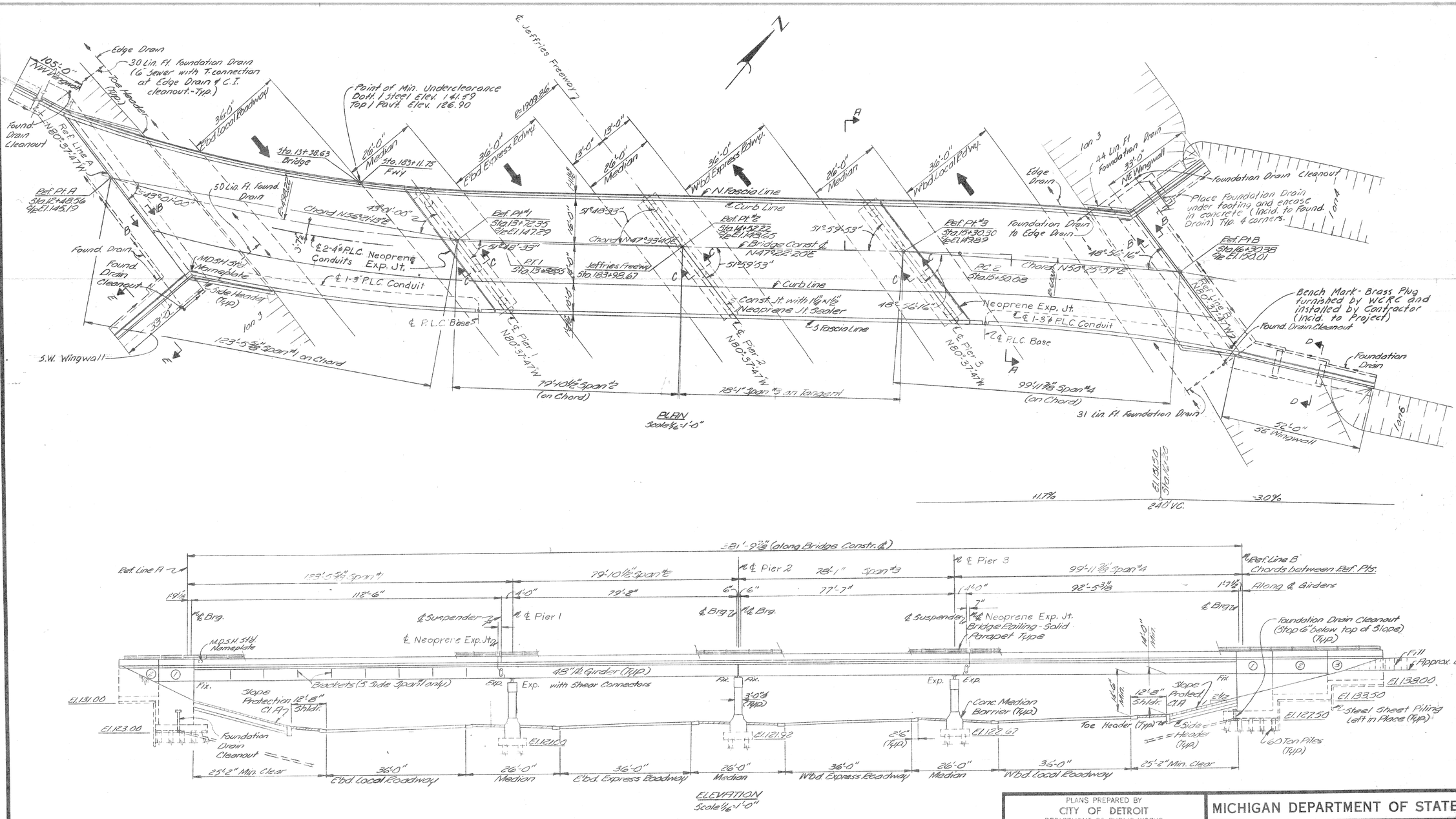
SHEET 5 OF 21

APPROVED _____ DESIGN SUPERVISING ENGINEER 7-25-70

APPROVED _____ ENGINEER – DESIGN SECTION

S23 of 82122 K

01253A



PLAN
Scale 1/16"=1'-0"

ELEVATION
Scale 1/16"=1'-0"

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (19)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF STRUCTURE

CITY OF DETROIT

SQUAD BOSS	Locher	8/69
DRAWN BY	Hartz	8/69
TRACED BY		
CHECKED BY	W A L	8/69

SHEET 6 OF 31

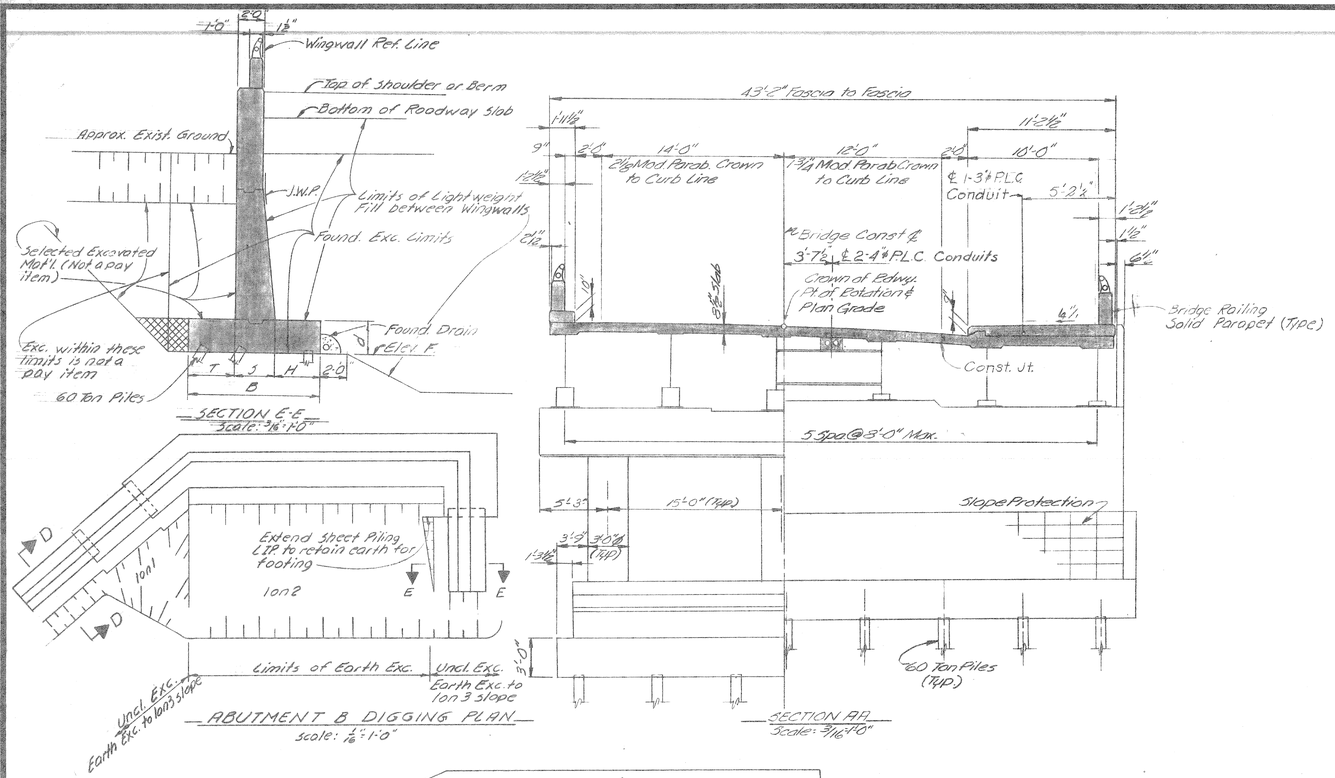
APPROVED _____ DESIGN SUPERVISING ENGINEER 9-25-70

APPROVED _____ ENGINEER - DESIGN SECTION I

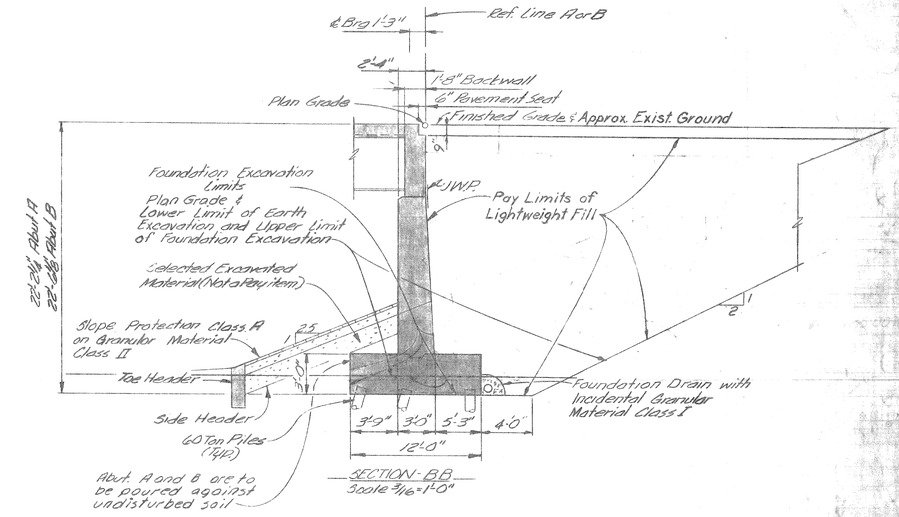
S23 of 82122K

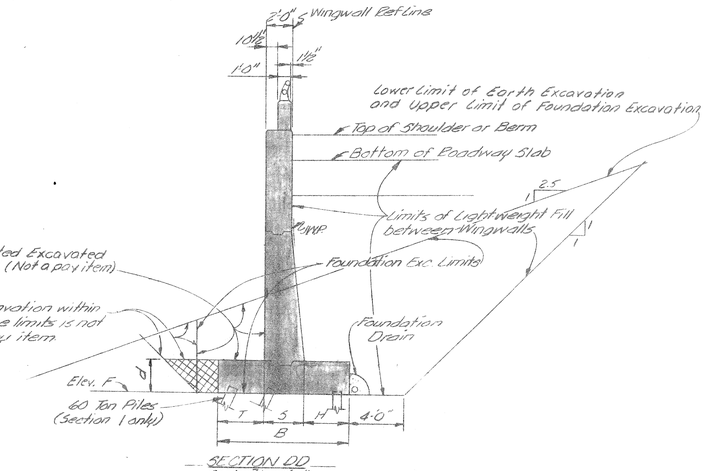
01253A

523



WINGWALL DIMENSIONS							
	Sec.	T	S	H	B	d	Elev. F
NW	1	6'-0"	3'-0"	3'-0"	12'-0"	3'-0"	123.00
	2	6'-0"	2'-3"	3'-3"	12'-0"	3'-3"	122.50
	3	3'-3"	2'-6"	2'-3"	8'-0"	2'-6"	130.00
	4	2'-6"	2'-0"	1'-6"	6'-0"	2'-0"	136.50
NE SW	1	6'-0"	3'-0"	3'-0"	12'-0"	3'-0"	123.00
	2	3'-3"	2'-6"	2'-3"	8'-0"	2'-6"	131.00
	1	6'-0"	3'-0"	3'-0"	12'0"	3'-0"	127.50
	2	3'-3"	2'-6"	2'-3"	8'-0"	2'-6"	135.00
SE	1	6'-0"	3'-0"	3'-0"	12'-0"	3'-0"	127.50
	2	4'-0"	2'-9"	3'-3"	10'-6"	3'-0"	133.50
	3	2'-6"	2'-3"	1'-9"	6'-6"	2'-0"	138.00





MISCELLANEOUS QUANTITIES		
Item	Unit	Amount
Lightweight Fill	Cu. Yds.	3800
6" Foundation Drains	Lin. Ft.	155
Slope Protection Class A	Sq. Yds.	220
Slope Protection - Header	Lin. Ft.	234

GENERAL NOTES:

The design of this structure is based on the MDSH Specifications for the Design of Highway Bridges, 1969 edition and current AASHO Standard Specifications for Highway Bridges H 520-44 loading.

Live load plus impact deflection equals 1/1000 of span length and 1/300 of cantilever arm.

The top of roadway slab and tops of curbs & sidewalks are parallel to the vertical curve and tangents except as modified by superelevation transitions.

This structure is partly on horizontal curves. The fascia lines, curb lines and longitudinal construction joints are parallel to the curves and tangents.

For details of Slope Protection, see Standard Sheet SP2.

Granular Material Class II is billed on Road Plans.

QUANTITIES BILLED IN ROAD PLANS		
Item	Unit	Amount
Earth Excavation *	Cu. Yds.	74,000
Granular Material Class II	Cu. Yds.	63

NOTE:

Toe edge of Abutment shall be poured neat.

* The limits of this quantity are from Freeway Station 181+25 to Station 185+02.

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

APPROVED H Const
STRUCTURAL ENGINEER

JOB No. PW 990(19)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF STRUCTURE

SQUAD BOSS	Lacher	8-69
DRAWN BY	Hart	8-69
TRACED BY		
CHECKED BY	W.A.L.	8-69

SHEET 7 OF 27

APPROVED R. E. Montgomery 9-25-70
DESIGN SUPERVISING ENGINEER

APPROVED
ENGINEER - DESIGN SECTION 1

S23 of 82122K

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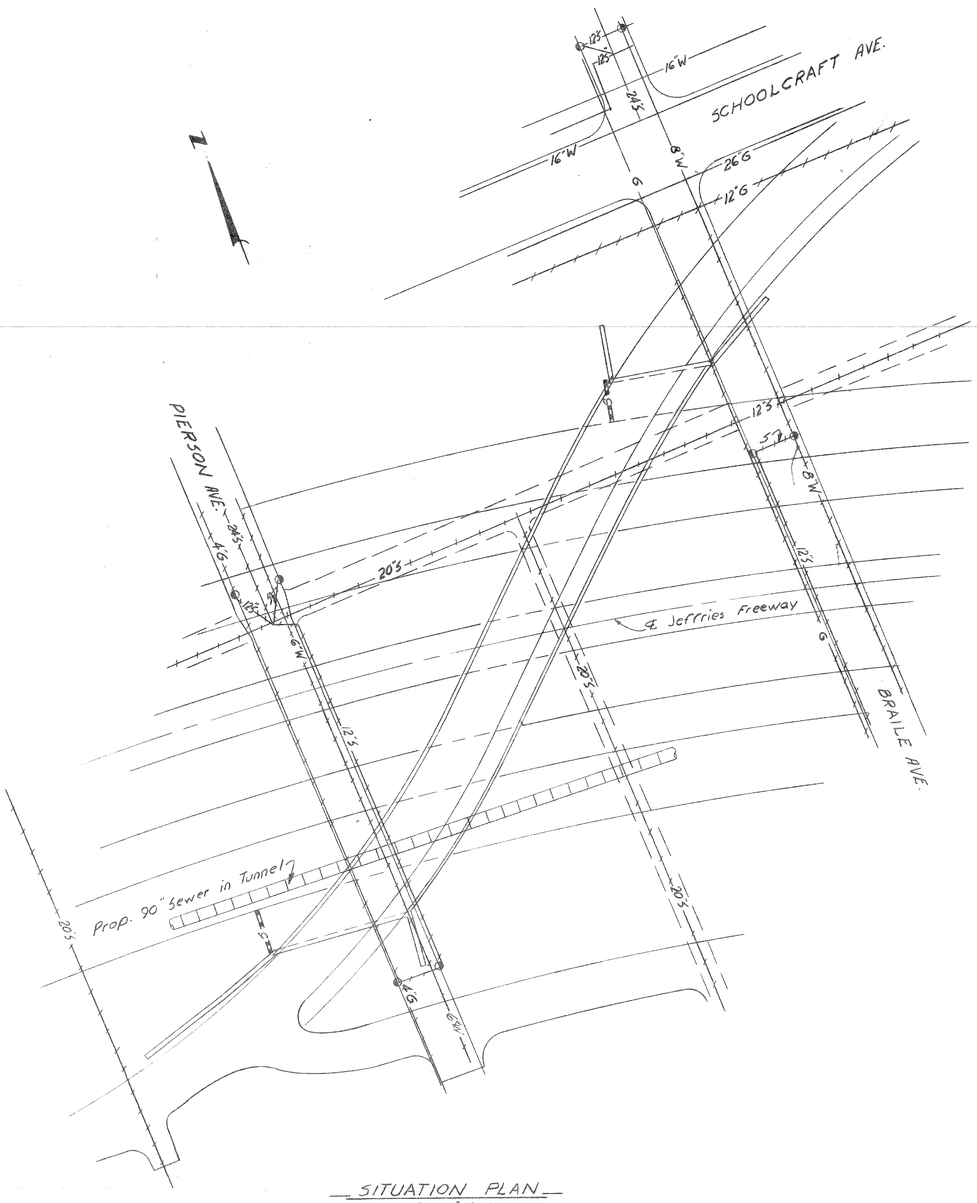


SITUATION PLAN
Scale: 1"=40'

LEGEND

UTILITY	Existing	Abandoned or Deleted	New Work by Others	New Work by Contractor
Michigan Consolidated Gas	G	G		
Water	W	W		
Sewers	S	S	S	S

Note
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.

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No.
PW990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

EXISTING UTILITIES & PROPOSED ALTERATIONS

CITY OF DETROIT

SQUAD BOSS	Locher	8-69
DRAWN BY	A.B.	4-69
TRACED BY		
CHECKED BY	DJR	8-69

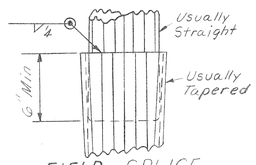
SHEET 8 OF 31

REVISIONS

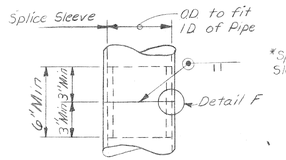
NO.	DESCRIPTION	DATE	BY

S23 of 82122K

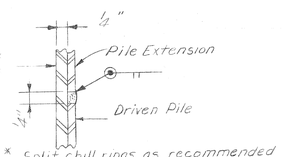
01253A



FIELD SPLICE
(For Fluted Pipe Pile Shells)



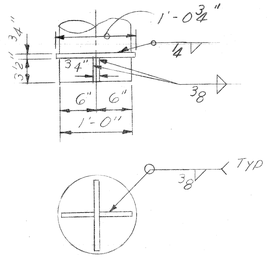
STEEL PIPE
SPLICE DETAILS
(For Spiral Welded and Seamless Pipe Shells)



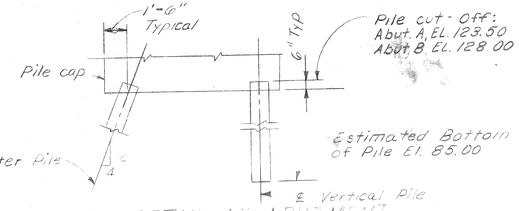
* Split chill rings as recommended by the manufacturer may be subsititted for splice sleeves at the option of the Contractor

DETAIL F

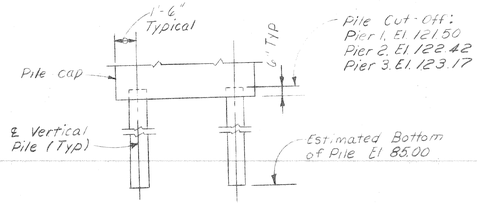
CAST-IN-PLACE PILE SPLICE DETAILS



C.I.P. PILE
POINT DETAILS



TYPICAL DETAIL AT ABUTMENT



TYPICAL DETAIL AT PIER

NOTES:

Estimated length of each vertical pile-furnished and driven = 40 Ft.
Estimated length of each batter pile-furnished and driven = 45 Ft.

GENERAL NOTES:

All Piles shall be driven to a minimum bearing capacity of 60 Tons.

Either Steel H Piles or Cast-in-Place Concrete Piles may be used at the option of the Contractor.

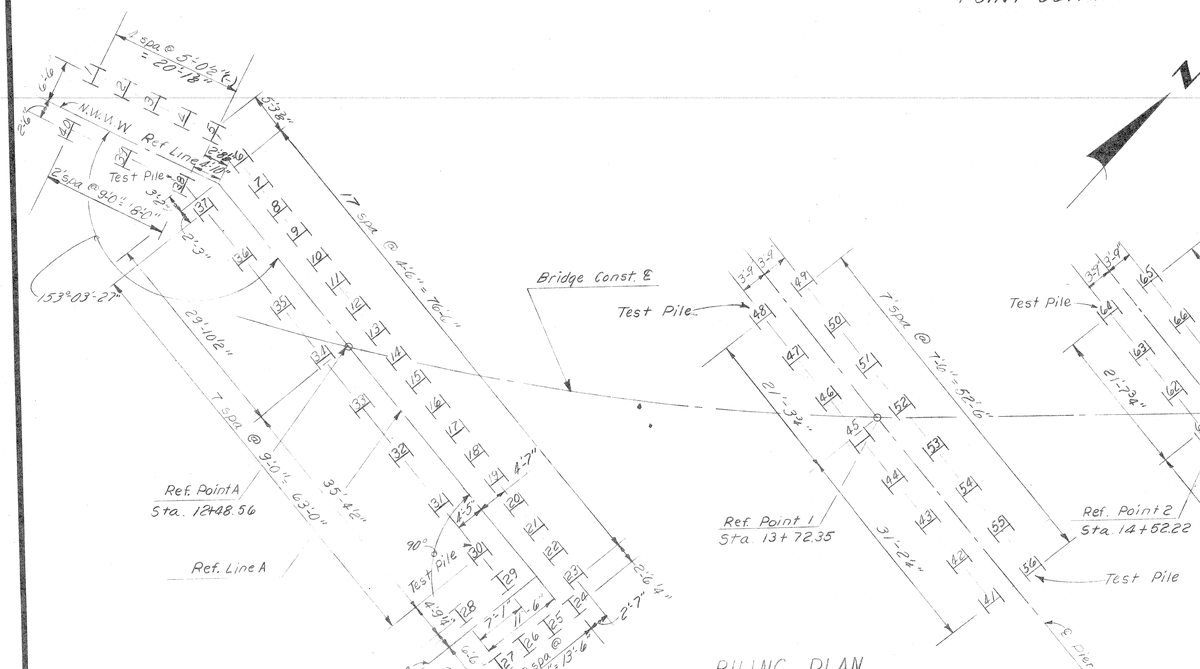
Steel H Piles shall be 12" H Sections weighing 53 pounds per foot.

Pile shells for Cast-In-Place Concrete Piles driven without a removable core shall be a minimum of # 3 U.S. Standard Gauge (0.230" nominal thickness), 12" O.D., and may be steel pipe of seamless or spiral welded type or fluted pipe as manufactured by the Union Metal Manufacturing Company or approved equal.

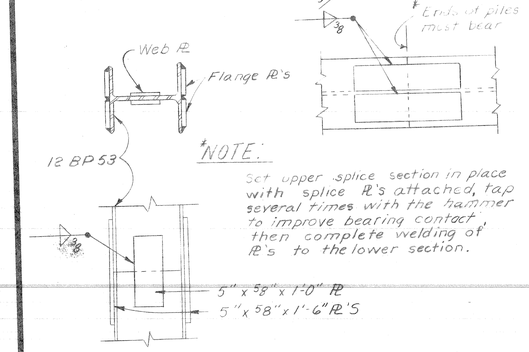
Butt welded splices for steel H Piles as described in the Standard Specifications will be permitted as an alternate for the splices shown.

Splices for test piles are incidental to the test piles.

Piles 1 thru 27 and 99 thru 122 shall be battered.

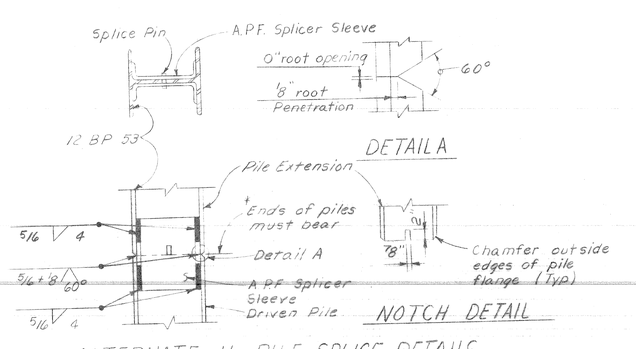


PILING PLAN



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

H-PILE SPLICE DETAILS



DETAIL A

NOTCH DETAIL

ALTERNATE H-PILE SPLICE DETAILS
(A.P.F. = Associated pipe & Fitting Company)

QUANTITIES

ITEM	UNIT	AMOUNT					
		Abut. A	Pier 1	Pier 2	Pier 3	Abut. B	Total
60 Ton Piles – Furnished & Driven	Lin. Ft.	1755	660	660	660	1500	5235
Splices - 60 Ton Piles	Each	41	14	14	14	35	118
Test Piles - 60 Ton Piles	Each	2	2	2	2	2	10
Furnishing Equip. for Driving piles	Lump Sum	—	—	—	—	—	Lump Sum

PLANS PREPARED BY
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CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT
FOUNDATION PILING DETAILS

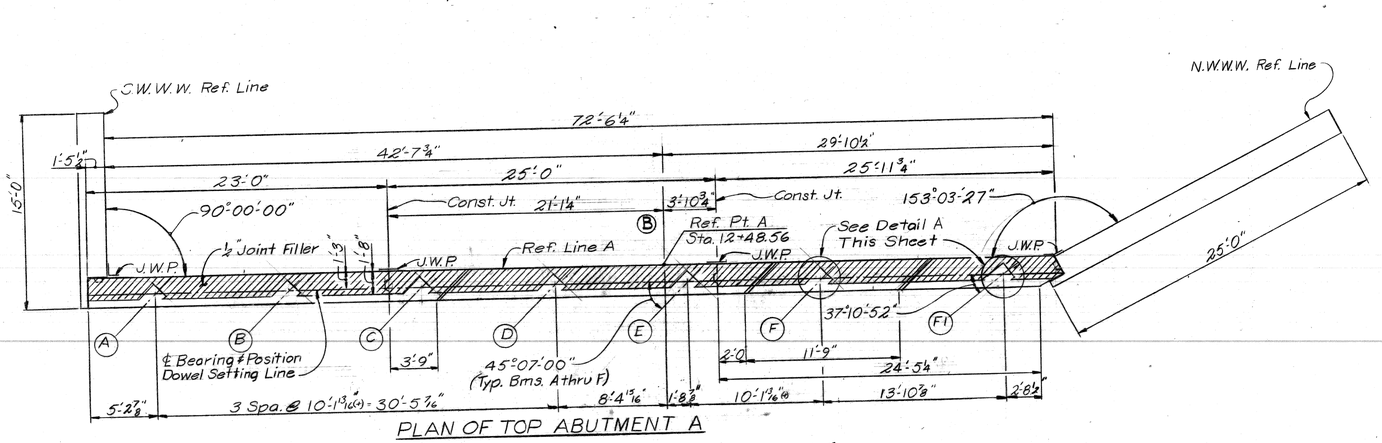
REVISIONS

NO.	DESCRIPTION	DATE	BY

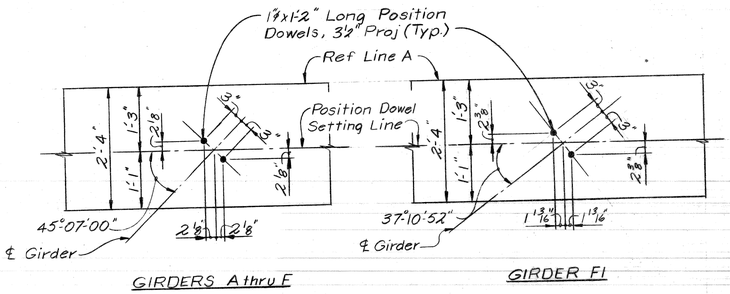
SQUAD BOSS: Shiew 9-70
DRAWN BY: K.PARKS 7-70
TRACED BY: M.SAXTON 6-70
CHECKED BY: COMLY 8-70
SHEET 9 OF 31

S23 of 82122K

01253A

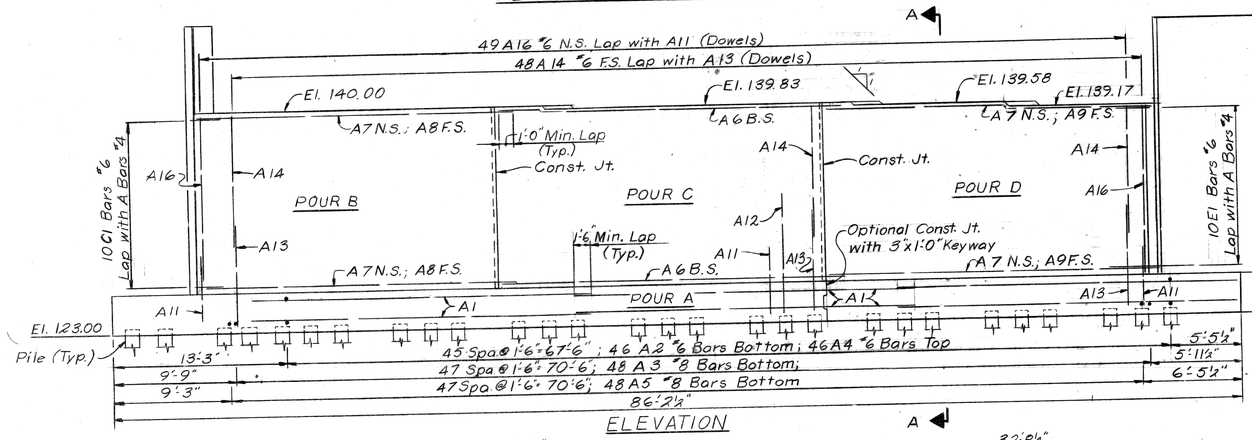


PLAN OF TOP ABUTMENT A

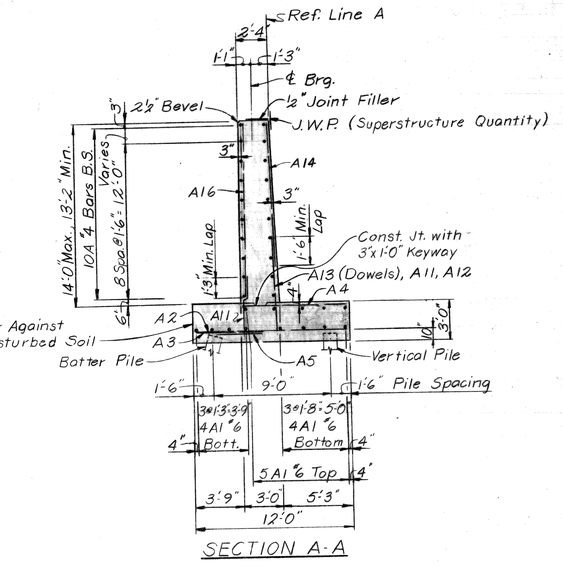


GIRDERS A thru F GIRDER F1

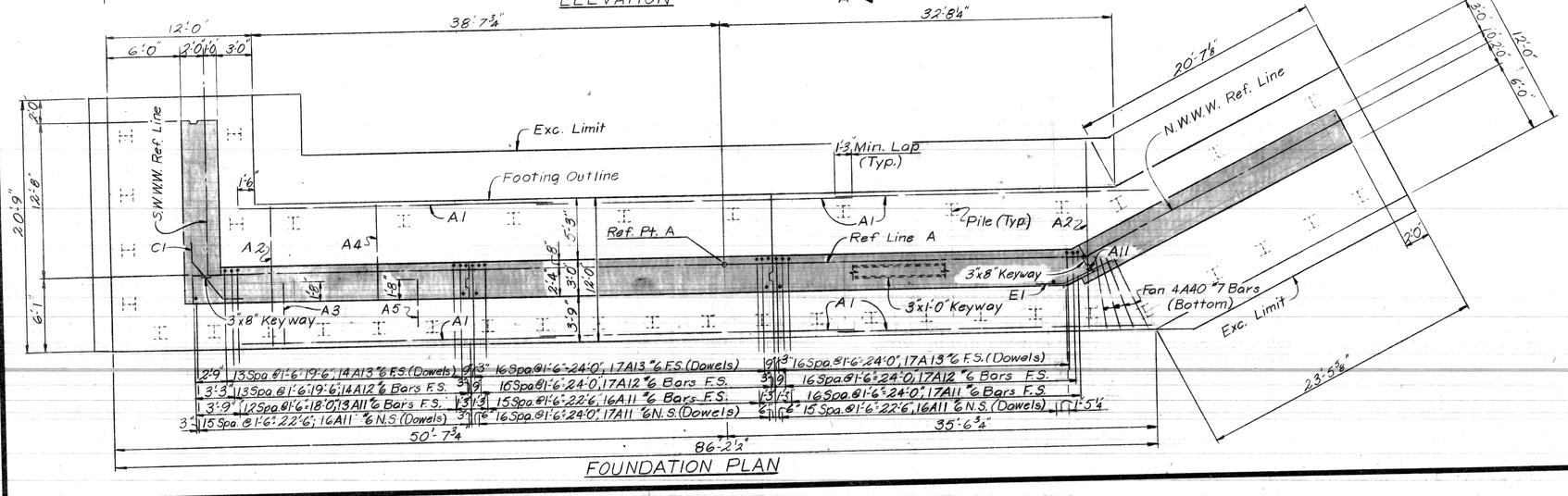
DETAIL A



ELEVATION



SECTION A-A



FOUNDATION PLAN

Work sheets 10 thru 14 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990 (19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

ABUTMENT A DETAILS

CITY OF DETROIT

SQUAD BOSS	STURM	9-70
DRAWN BY	E.G.	7-70
TRACED BY	-	-
CHECKED BY	COMLY	9-70

SHEET 13 OF 31

REVISIONS

NO.	DESCRIPTION	DATE	BY
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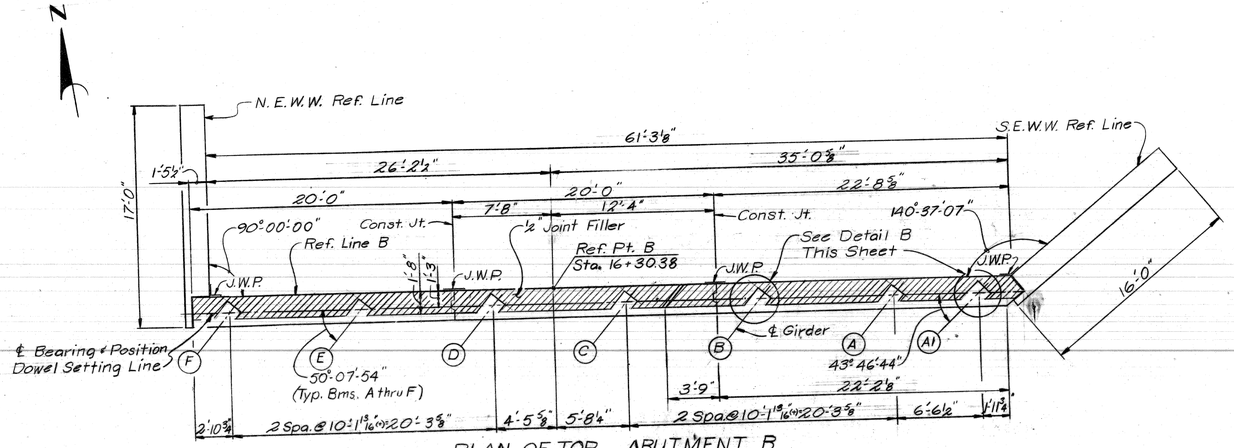
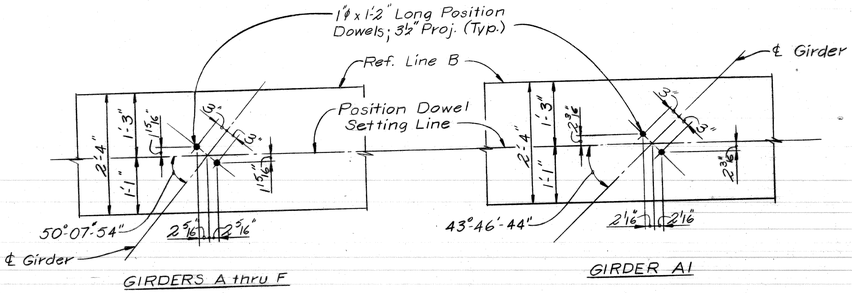
S23 OF 82122K

01253A



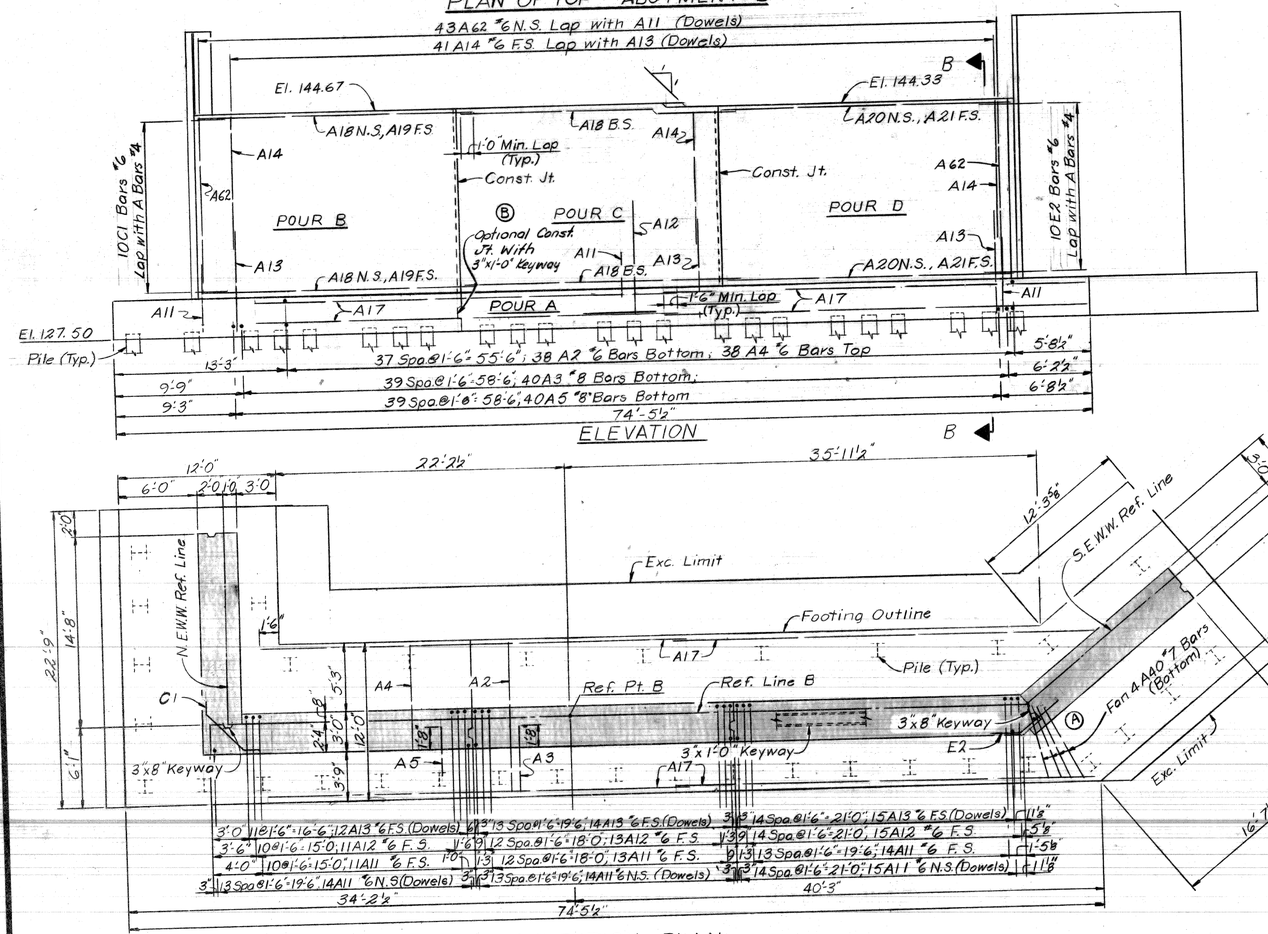
PLAN OF TOP ABUTMENT B



GIRDERS A thru F

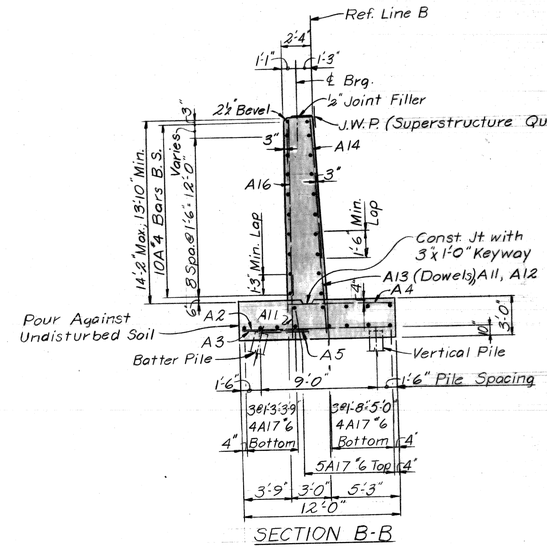
GIRDER A1

DETAIL B



ELEVATION

FOUNDATION PLAN



SECTION B-B

Work sheets 10 thru 14 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990 (19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

ABUTMENT B DETAILS

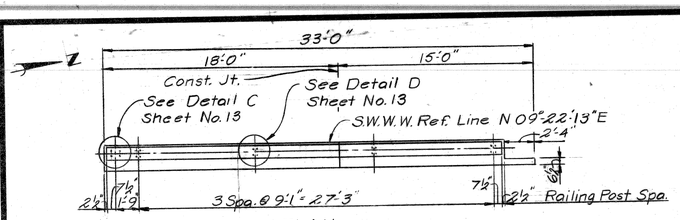
REVISIONS			
NO.	DESCRIPTION	DATE	BY
B	Show opt. const. Jt., Delete ⓑ A40 Bar	1-4-71	AFB

CITY OF DETROIT

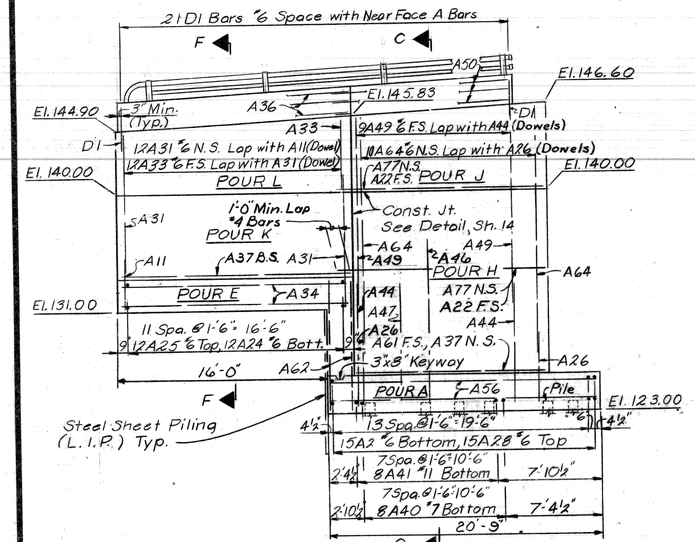
SQUAD BOSS	STURM	9-70
DRAWN BY	L.G.	7-70
TRACED BY	"	"
CHECKED BY	CONLEY	9-70
SHEET 11 OF 31		

S23 OF 82122K

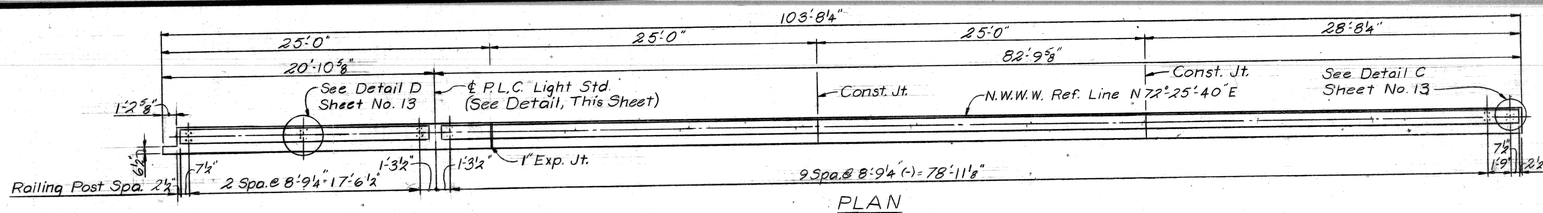
01253A



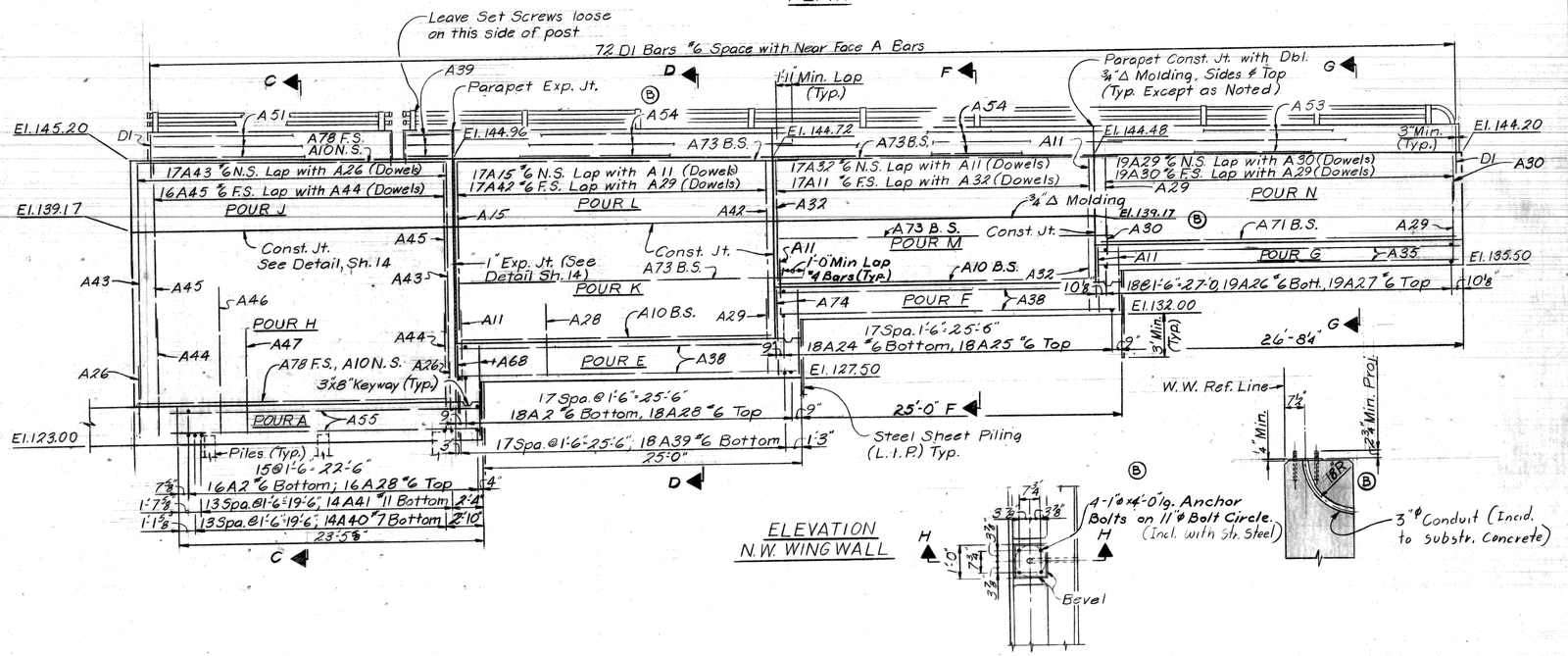
PLAN



ELEVATION
S. W WINGWALL



PLAN

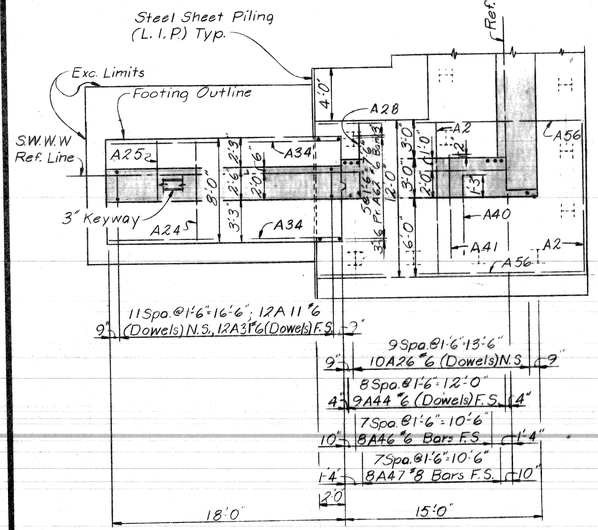


ELEVATION
N.W. WING WALL

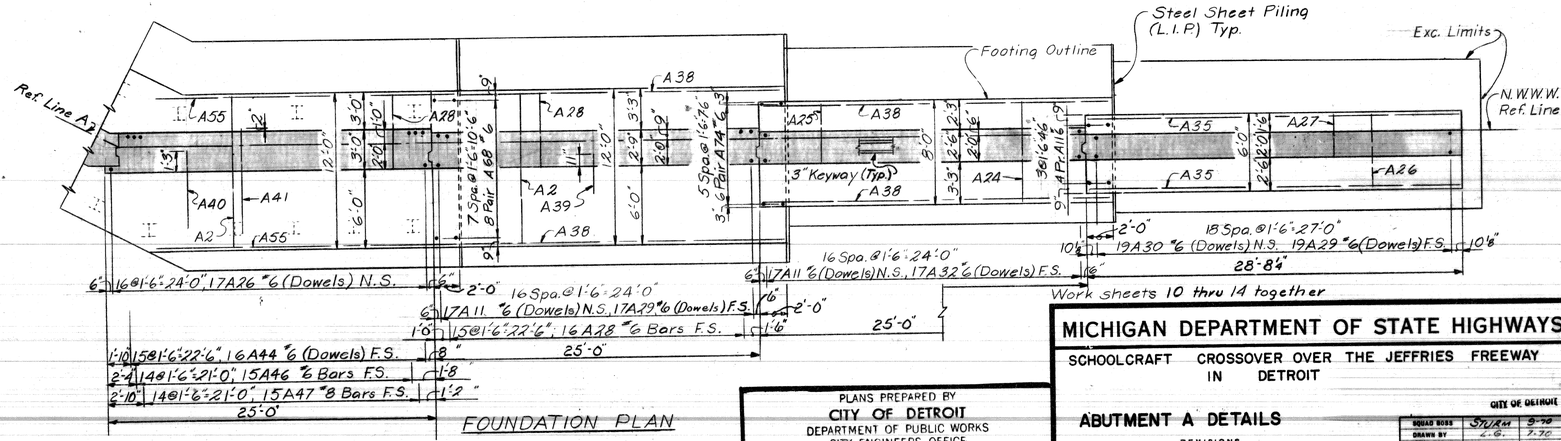
PLAN

SECTION H-H

P.L.C. LIGHTING STANDARD DETAIL



FOUNDATION PLAN



FOUNDATION PLAN

Work Sheets 10 thru 14 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

ABUTMENT A DETAILS

CITY OF DETROIT

SQUAD BOSS	STURM 5-70
DRAWN BY	L.G. 7-70
TRACED BY	—
CHECKED BY	COMLY 5-70

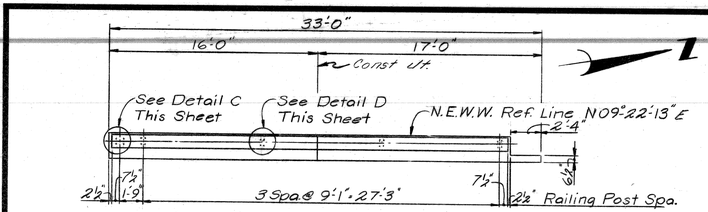
SHEET 12 OF 31

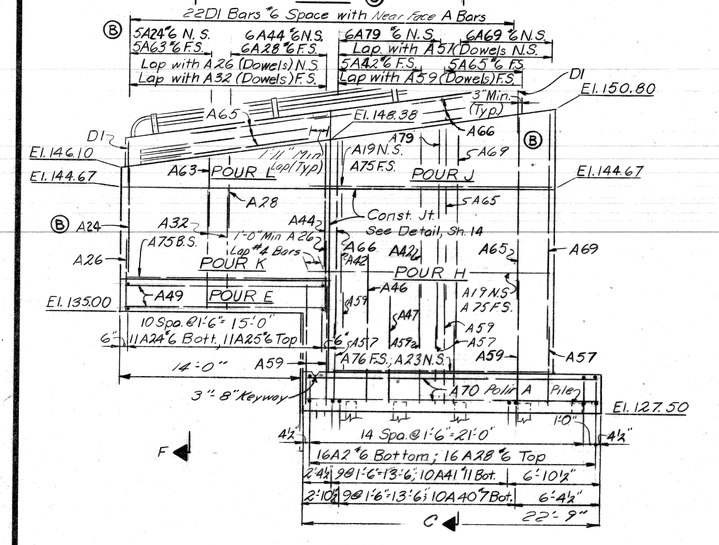
REVISIONS

NO.	DESCRIPTION	DATE	BY
8	Misc corrections	1-4-71	AEB

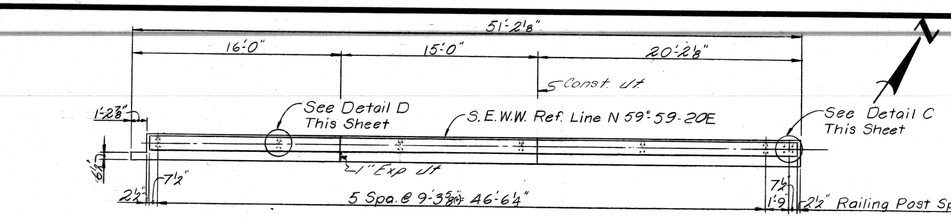
S23 OF 82122K

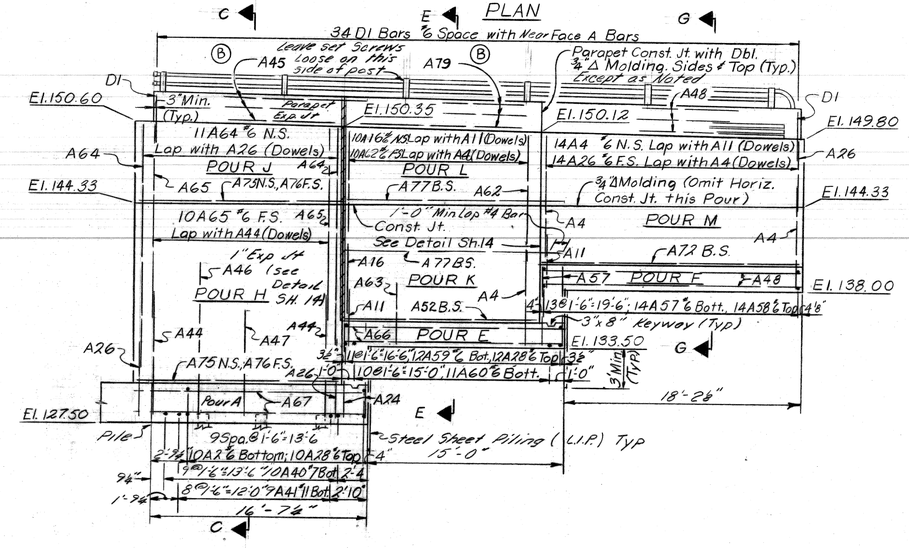
01253A



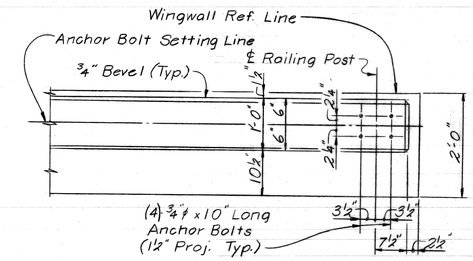


ELEVATION
N. E. WING-WALL
(B)

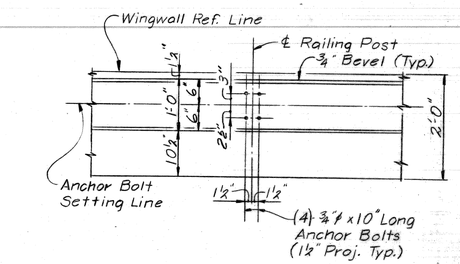




ELEVATION
S.E. WINGWALL
(B)



DETAIL C



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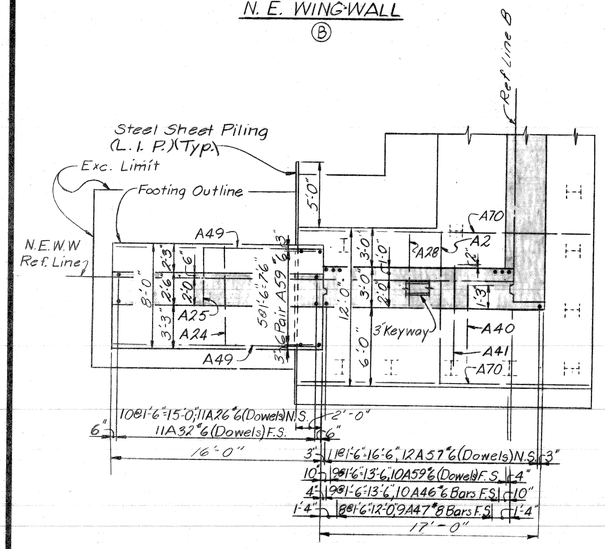
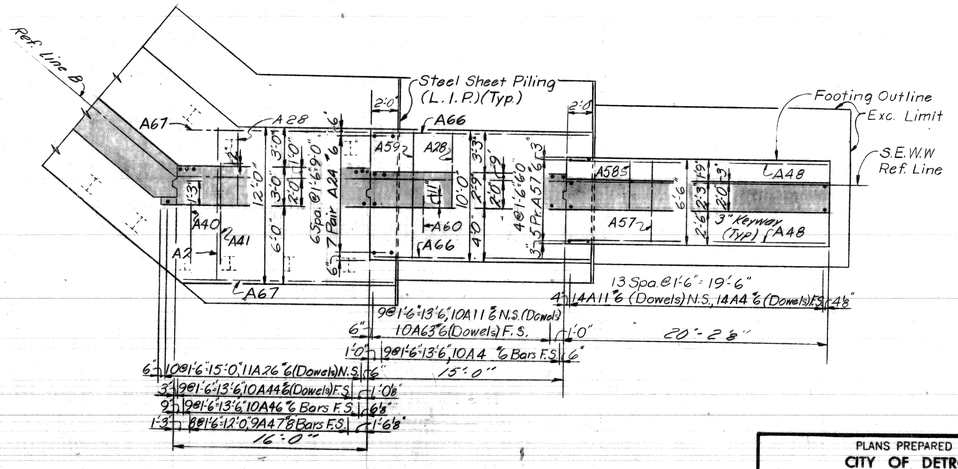


FOUNDATION PLAN



FOUNDATION PLAN

Work sheets 10 thru 14 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990 (19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

ABUTMENT B DETAILS

CITY OF DETROIT

SQUAD BOSS	STURM 9-70
DRAWN BY	L.G. 7-70
TRACED BY	
CHECKED BY	COMLY 9-70

SHEET 13 OF 31

REVISIONS

NO.	DESCRIPTION	DATE	BY
B	Misc. Re-Bar corrections	1-4-71	AFB

S23 OF 82122K

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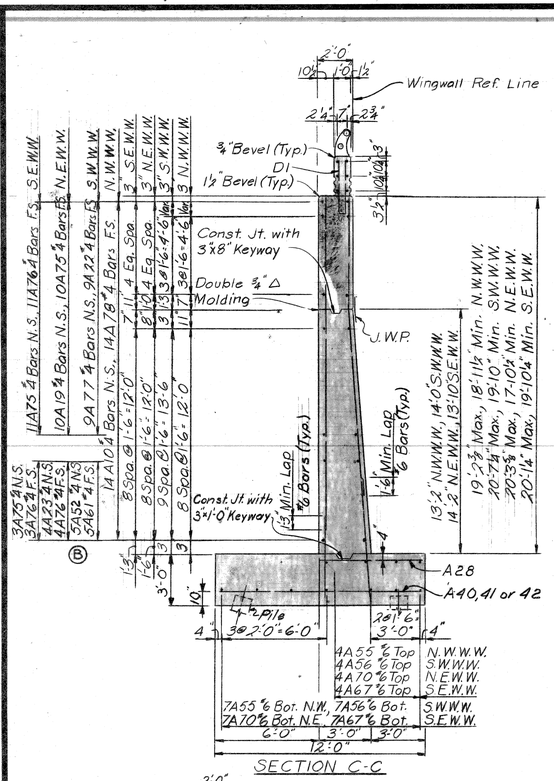

CONCRETE QUANTITIES (Cu. Yds.)

Pour	Location	Abutment A		Abutment B	
		A(6A)	A(6AA)	A(6A)	A(6AA)
A	Footing	154.1	—	128.7	—
B	Abut. Wall	—	31.3	—	27.5
C	Abut. Wall	—	34.2	—	27.8
D	Abut. Wall	—	36.4	—	32.9
E	Footing (S.W.W.W. & S.E.W.W.)	16.3	—	14.8	—
E	Footing (N.W.W.W. & N.E.W.W.)	37.3	—	14.5	—
F	Footing (N.W.W.W. & S.E.W.W.)	20.9	—	10.9	—
G	Footing (N.W.W.W.)	13.2	—	—	—
H	Wingwall (S.W.W.W. & S.E.W.W.)	—	17.1	—	19.3
H	Wingwall (N.W.W.W. & N.E.W.W.)	—	29.3	—	19.1
J	Wingwall (S.W.W.W. & S.E.W.W.)	—	6.1	—	6.9
J	Wingwall (N.W.W.W. & N.E.W.W.)	—	10.5	—	5.4
K	Wingwall (S.W.W.W. & S.E.W.W.)	—	9.8	—	11.7
K	Wingwall (N.W.W.W. & N.E.W.W.)	—	19.1	—	9.5
L	Wingwall (S.W.W.W. & S.E.W.W.)	—	7.2	—	6.6
L	Wingwall (N.W.W.W. & N.E.W.W.)	—	10.5	—	3.1
M	Wingwall (N.W.W.W. & S.E.W.W.)	—	19.8	—	15.3
N	Wingwall (N.W.W.W.)	—	14.5	—	—
	Total	241.8	245.8	168.9	185.1
Grade A(6A) Concrete Substructure		410.7 Cu. Yds.			
Grade A(6AA) Concrete Substructure		430.9 Cu. Yds.			

Parapet Concrete = 17.2 Cu Yds. Grade A6AA
Part of Bridge Railing-Solid Parapet Type and not a pay item.

MISCELLANEOUS QUANTITIES

Item	Unit	Amount		
		Abut. A	Abut. B	Total
Unclassified Excavation	Cu. Yds.	1270	690	1960
Steel Sheet Piling (L.I.P.)	Sq. Ft.	379	427	806
Clear Protective Coating for Substr. Conc.	Sq. Ft.	115	97	212
(A) Bridge Railing - Solid Parapet Type	Ln. Ft	131	80	211
½" Joint Filler	Sq. Ft.	112	94	206
1" Joint Filler	Sq. Ft	34	35	69
Joint Waterproofing	Sq. Ft.	232	192	424
Expansion Joint Drain	Lin. Ft.	14	—	14
Foundation Drains*	Lin. Ft.	240	161	401

*Foundation Drains shall be perforated pipe, sloped ⅛ in/ft. min. continuous over the length of Abutment and Wingwall Footings, and placed as shown on the General Plan of Structure.

GENERAL NOTES:

J.W.P. denotes Joint Waterproofing; N.S. denotes Near Side; F.S. denotes Far Side, B.S. denotes Both Sides.

For bevel and molding details, see Standard sheet R16.

Adjust the spacing of the reinforcing steel as required to permit placing of position dowels.

For pile quantities, pile layout, and notes pertaining to piles, see Sheet 9.

Footing concrete quantities are computed on the basis of an outline 3¼" outside of the footing outline where the concrete is poured against Steel Sheet Piling Left in Place. No additional allowance will be made in concrete or excavation quantities regardless of the steel sheet piling used.

Steel sheet piling left in place shall be of the continuous interlock type, either new or used, in good condition, weighing not less than 22 pounds per square foot of wall, and shall be furnished with suitable connecting and corner pieces. Ladle analysis and mill reports are not required for steel used in Sheet Piling.

Steel Sheet Piling left in place shall be driven to its final penetration before adjacent concrete is poured. If it is necessary to lower the top of sheeting after the concrete has been poured, the excess shall be removed by cutting.

Footings are to be poured against undisturbed soil **where indicated.** No allowance **will be made in concrete quantities due to excavation outside of the footing** neat lines.

The bridge seat and the front face of Pours B, C and D shall be given an application of Clear Protective Coating for Substructure Concrete.

Work sheets 10 thru 14 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

ABUTMENT DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY
B	Corr. Re-Bar - Sec. GG	1-4-71	AFB
A	Added Railing quantity	12-7-70	AFB

CITY OF DETROIT

SQUAD BOSS	STURM	9-70
DRAWN BY	L.G.	7-70
TRACED BY	—	—
CHECKED BY	COMBY	9-70

SHEET 14 OF 31

S23 OF 82122 K

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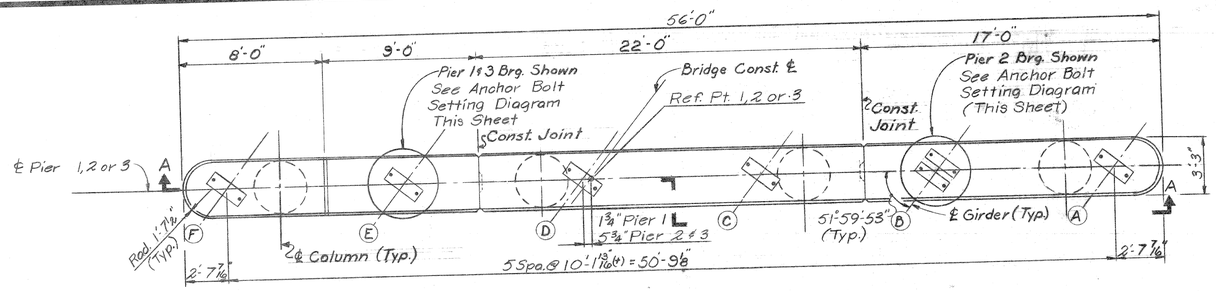
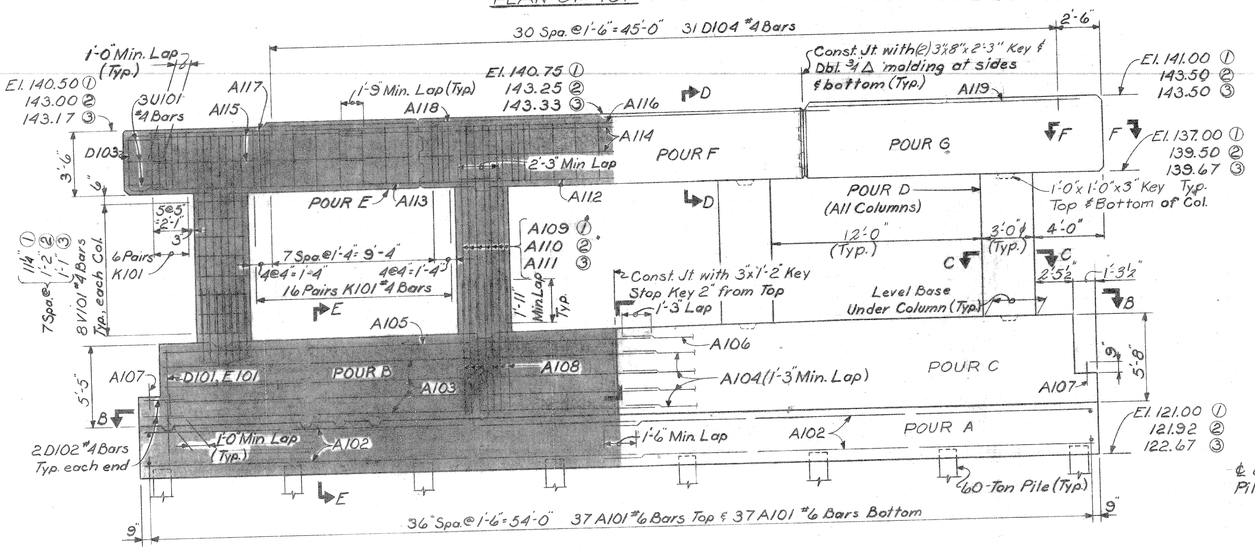
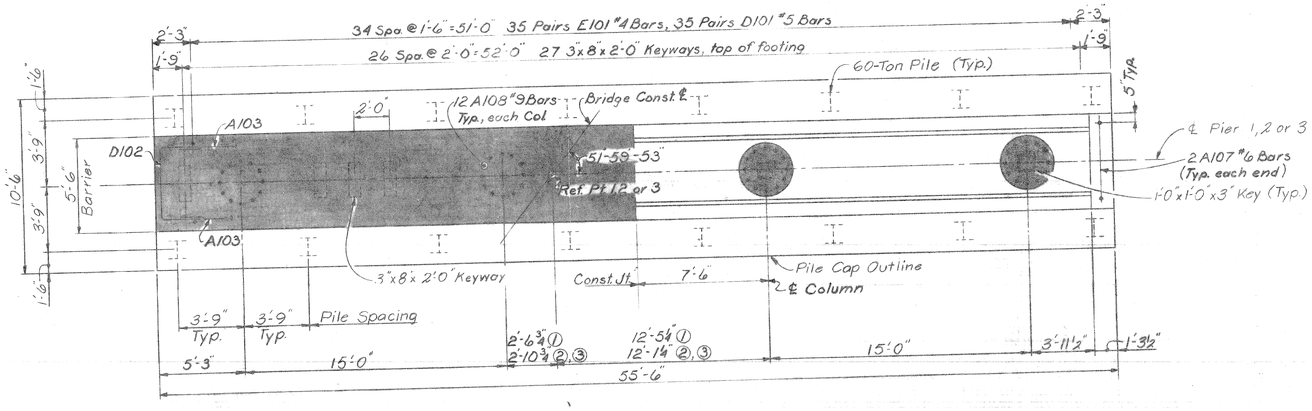


PLAN OF TOP



SECTION A-A



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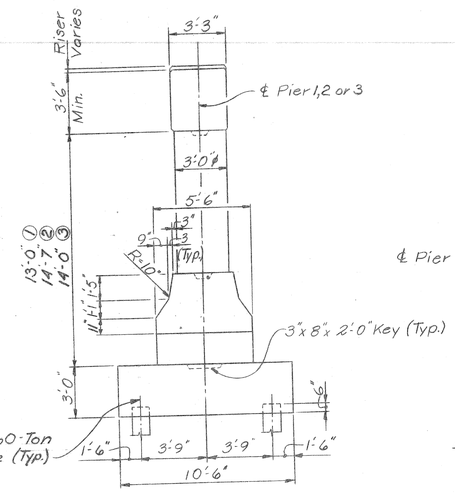

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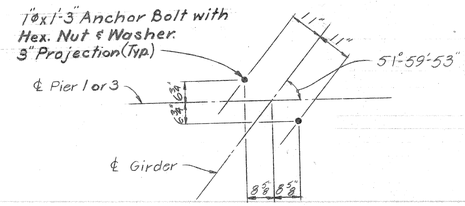
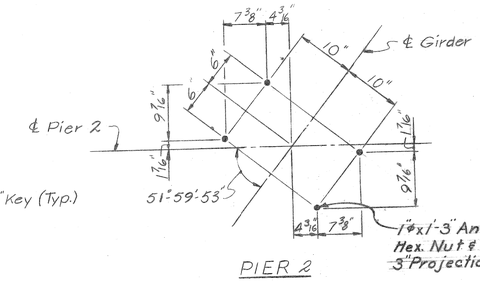


PIER 1 or 3



PIER 2

ANCHOR BOLT SETTING DIAGRAMS

Work sheets 15 & 16 together

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

CITY OF DETROIT

PIER DETAILS

SQUAD BOSS	STURM	9-70
DRAWN BY	ZIPS	8-70
TRACED BY	WARREN	8-70
CHECKED BY	COMLY	9-70

SHEET 15 OF 31

REVISIONS

NO.	DESCRIPTION	DATE	BY

PLANS PREPARED BY
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CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED H Carl STRUCTURAL ENGINEER

JOB No. 990(19)

S23 OF 82122K

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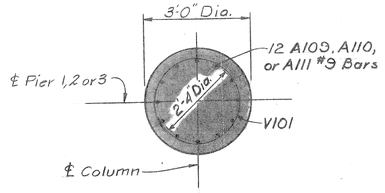
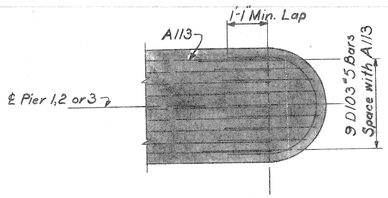
S-23 PIER



SECTION C-C



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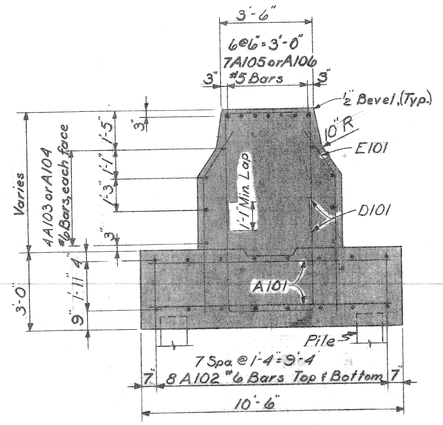
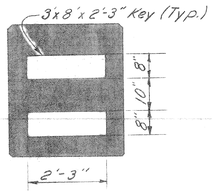


SECTION E-E



CONSTRUCTION JOINT DETAIL

MISCELLANEOUS QUANTITES

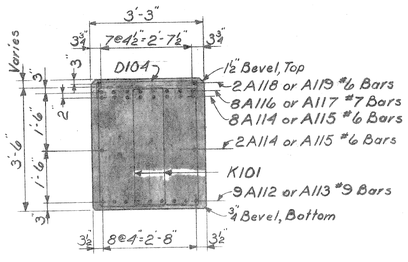
ITEM	UNIT	Pier 1	Pier 2	Pier 3	TOTAL
Unclassified Excavation	Cu. Yds.	175	175	175	525
Clear Protective Coating for Substructure Concrete	Sq. Ft.	1902	1962	1929	5793
Low Temperature Protection-Substructure	Cu. Yds.	152.2	153.9	152.6	458.7
Protective Sealant Coating for Substructure Concrete	Sq. Ft.	——	180	——	180

CONCRETE QUANTITES (Cu. Yds.)

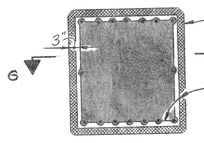
Pour	Location	Pier 1 A(6A)	Pier 1 A(6AA)	Pier 2 A(6A)	Pier 2 A(6AA)	Pier 3 A(6A)	Pier 3 A(6AA)
A	Footing	64.8	—	64.8	—	64.8	—
B	Barrier	—	26.8	—	26.8	—	26.8
C	Barrier	—	27.5	—	27.5	—	27.5
D	Columns	—	7.8	—	9.5	—	8.9
E	Cap	—	7.3	—	7.3	—	7.2
F	Cap	—	10.0	—	10.0	—	9.7
G	Cap	—	8.0	—	8.0	—	7.7
TOTALS		64.8	87.4	64.8	89.1	64.8	87.8

Total Concrete Grade A(6A) - Substructure 194.4 Cu. Yds.

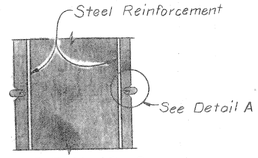
Total Concrete Grade A(6AA) - Substructure 264.3 Cu. Yds.



SECTION D-D



SECTION THRU PIER CAP



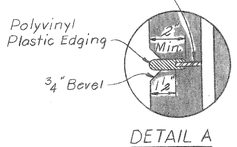
SECTION G-G

Notes:

Partial 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.

Notch metal strip to fit around reinforcing steel.



DETAIL A

PARTIAL METAL BULKHEAD FOR PIER CAP CONSTRUCTION JOINT

Notes:

For bevel and molding details, see standard sheet R16.

Adjust the spacing of the reinforcing steel as required to permit placing of anchor bolts.

For Pile quantites, pile layout and notes pertaining to piles, see sheet 9.

Clear protective coating for substructure concrete is to be applied to the complete area of the pier concrete above footings.

Drilling holes for anchor bolts will not be permitted.

The top of Pier 2 shall be given an application of protective Sealant coating for concrete prior to placing masonry plates.

Ⓧ Denotes Pier Number

Work sheets 15 & 16 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990'(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

PIER DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS	STURM	9-70
DRAWN BY	IAS	8-70
TRACED BY	WARREN	8-70
CHECKED BY	COMLY	9-70

SHEET 16 OF 31

S23 OF 82122K

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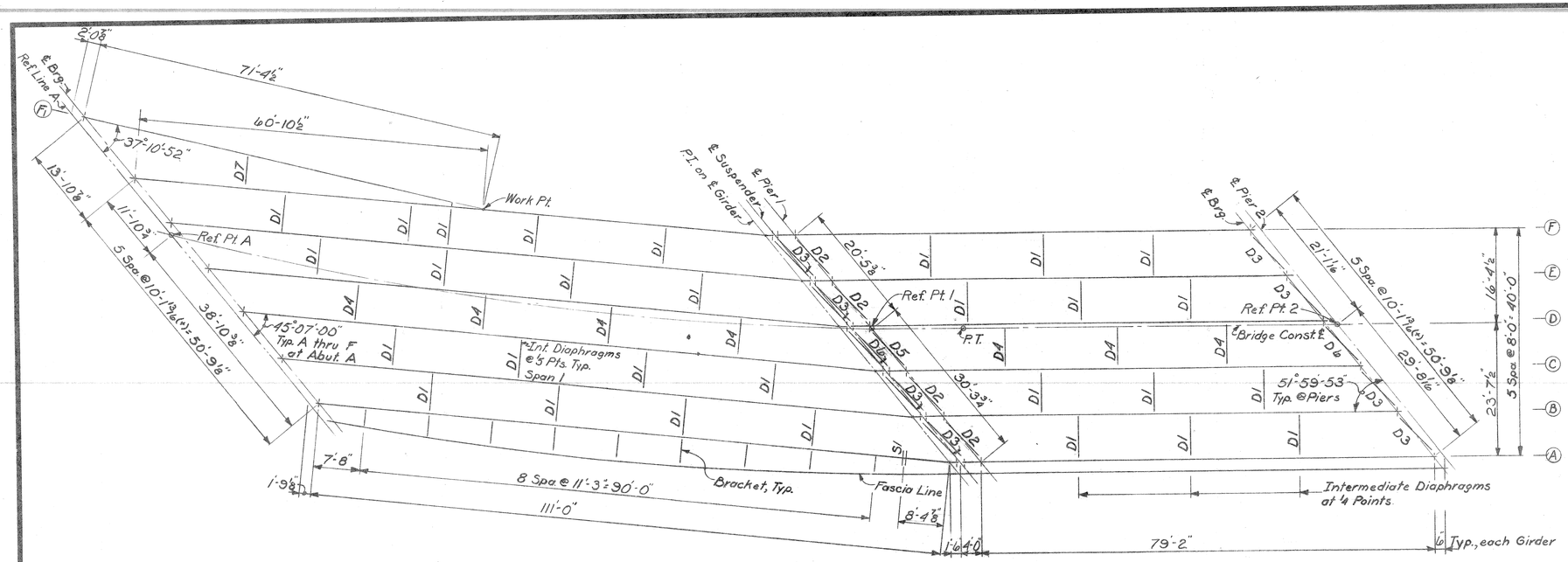
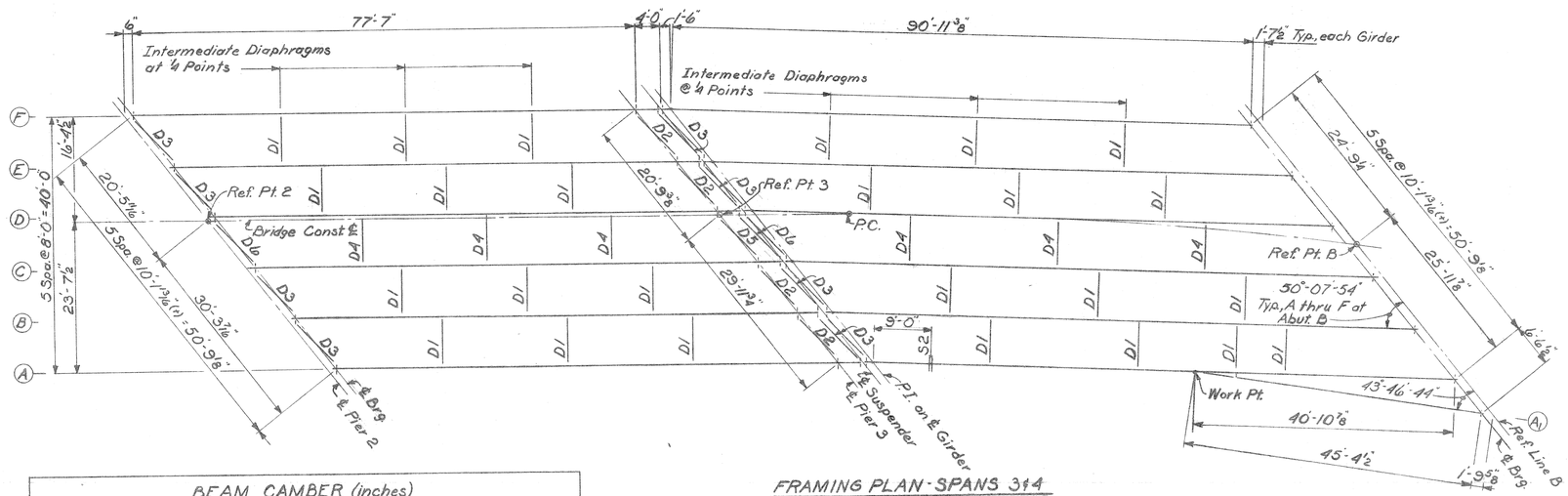


FRAMING PLAN - SPANS 1 & 2

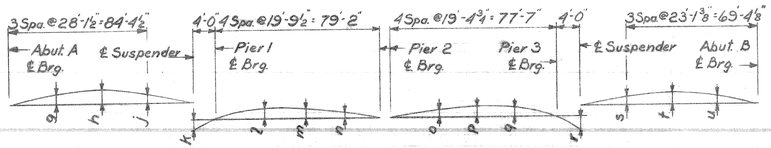


FRAMING PLAN - SPANS 3 & 4

BEAM CAMBER (inches)

Beam \ Dimn.	g	h	j	k	l	m	n	o	p	q	r	s	t	u
F1	—	1/2	—	—	—	—	—	—	—	—	—	—	—	—
F	3 5/8	4 7/8	3 1/2	1/8	7/8	1 1/4	1	1	1 3/8	1 1/8	3/8	3 7/8	5 3/8	3 7/8
E	3	4 1/4	3	1/4	1 1/8	1 5/8	1 1/4	1 3/8	1 7/8	1 5/8	1/2	4 1/8	5 5/8	4 1/8
D	3 5/8	4 7/8	3 1/2	1/4	1 1/8	1 5/8	1 1/4	1 3/8	2 1/8	1 3/4	1/2	4 1/8	5 5/8	4 1/8
C	3 3/4	5 1/4	3 3/4	1/4	1 1/8	1 5/8	1 1/4	1 1/2	2 3/8	1 7/8	1/2	4	5 3/8	4
B	3 7/8	4 7/8	3 3/8	1/4	1 1/8	1 5/8	1 1/4	1 5/8	2 5/8	2	1/2	4	5 3/8	3 3/4
A	3 7/8	5 3/8	3 7/8	1/8	7/8	1 1/4	7/8	1 5/8	2 1/2	1 3/8	1/2	4 1/8	5 1/2	4
A1	—	1/2	—	—	—	—	—	—	—	—	—	—	—	—

NOTE:
The mid span dead load deflection of the girders alone is 1" Span 1; ¼ Span 2; ¼ Span 3; ½ Span 4.



GIRDERS A thru F

GIRDERS A1 & F1

CAMBER DETAILS

GENERAL NOTES

Design: Michigan Department of State Highways Specifications for Design of Highway Bridges - 1958 edition and current AASHO Standard Specifications for Highway Bridges. (HS20 Loading)

Fabrication: Michigan Department of State Highways Standard Specifications for Highway Construction - 1970 edition.

Shop connections shall be welded as shown on the plans.

Field connections shall be bolted with ⅞ø high-strength bolts or ⅞ø high-strength pin bolts.

The Girders are to have a camber, as shown on the camber diagram. This camber is to be measured with the girder lying on its side. Heating is to be used, if necessary, to assure camber permanancy within the tolerance specified in AWS Specifications. The dead load deflection of the girders alone is as shown in the camber details.

The top and bottom edges of the web plates are to be cut simultaneously, to a parabolic camber to minimize distortion.

A shop splice will be permitted in flange plates over 50 feet in length. This splice must be located at a minimum distance of 10 feet from the center of the plate.

Sole plates 3" or more in thickness may be build up by welding together plates not less than 1"ø in thickness. Edges must be beveled 45° and welded with a continuous weld for the full perimeter. Welds shall be ground flush with faces of plates.

Steel in anchor bolts may be ASTM A-307.

Magnetic particle inspection of welds is required and shall consist of 100% inspection of not less than one fabricated section selected at random for each ten sections or fractions thereof.

Steel for pins shall be ASTM A-588

Position Dowels and Anchor Bolts (including nuts and washers) shall be galvanized in accordance with ASTM Designation A153.

All steel material used for bearings, with exception of portion welded to beams, shall be galvanized in accordance with ASTM Designation A123. Galvanizing shall be applied after fabrication of bearing. Mill scale and foreign material shall be removed prior to galvanizing.

Bronze for washers shall be ASTM B100 or ASTM B22.

The web plates may be spliced at the option of the fabricator.

Anchor Bolt length shown on the plans is minimum. Bolts longer than these shown may be furnished at no additional cost.

Structural Steel shall conform to ASTM A-588.

Structural Steel shall not be painted.

The Quantity Structural Steel includes:

Structural Steel - Furnishing & Fabricating (A-588 Plate)*	530,200 Lbs.
Structural Steel - Erection (A-588 Plate)	530,200 Lbs.
Shear Developers	Lump Sum

*Includes weight of P.L.G. brackets and consists of:

A 588 Steel	529,970 Lbs.
Bronze	30 Lbs.
Sheet Lead	200 Lbs.

Work sheets 17 thru 19 together.

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
SCHOOLCRAFT CROSSOVER OVER
THE JEFFRIES FREEWAY IN DETROIT

STRUCTURAL STEEL DETAILS

CITY OF DETROIT

SQUAD BOSS	STURM	9-70
DRAWN BY	I.N.S.	7-70
TRACED BY	WARREN	7-70
CHECKED BY	J.A.K.	9-70

SHEET 17 OF 31

REVISIONS

NO.	DESCRIPTION	DATE	BY

S23 of 82122K

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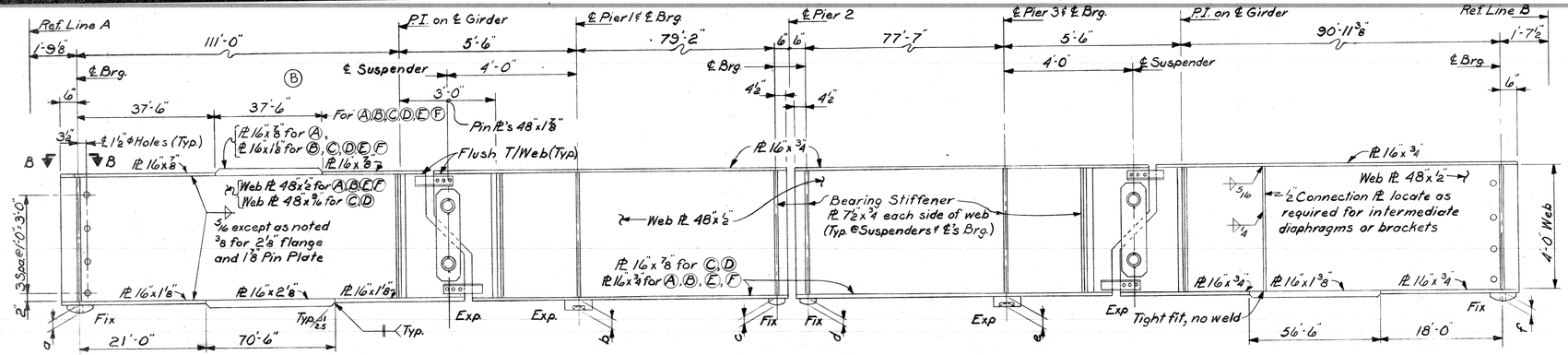
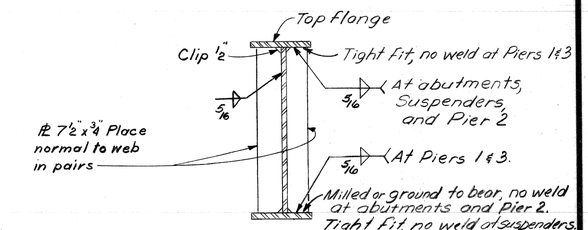
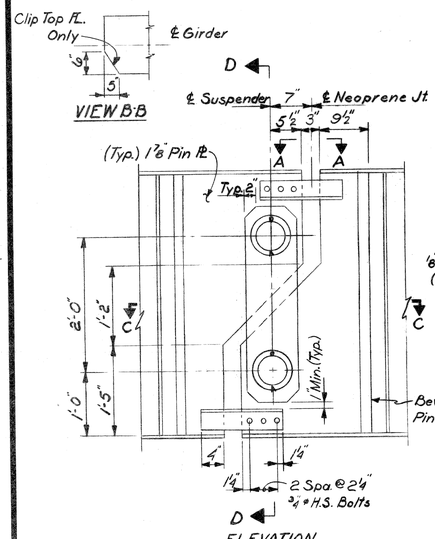
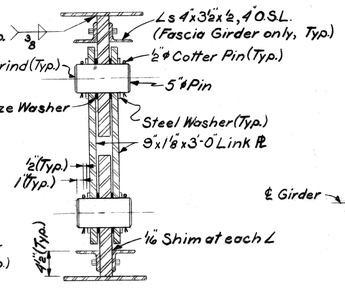


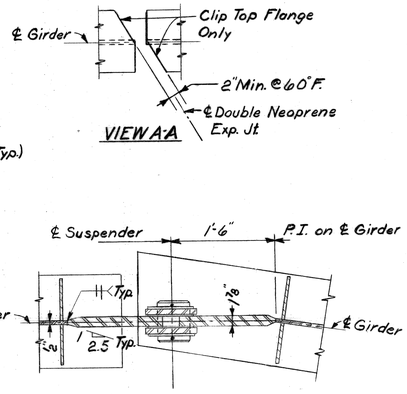
ELEVATION
GIRDERS A thru F

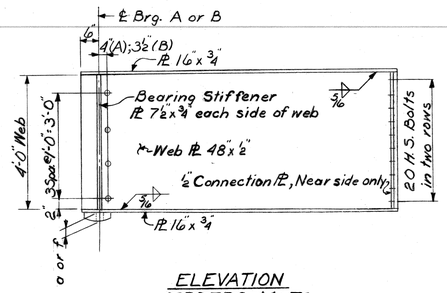


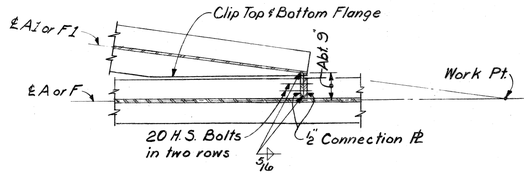
BEARING STIFFENER
DETAILS



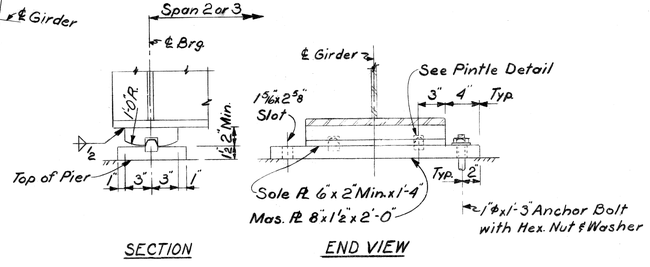








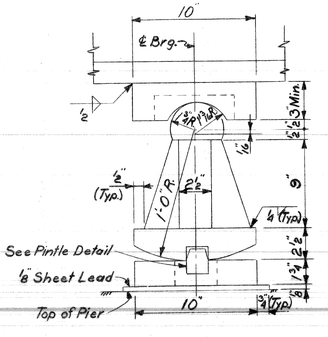
GIRDER CONNECTION
DETAILS

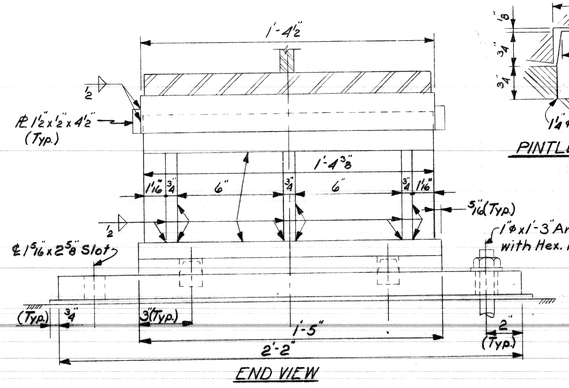


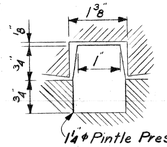
PIER 2 BEARING DETAILS

SOLE PLATE THICKNESS (inches)						
Beam \ Dimn.	a	b	c	d	e	f
F1	2 3/4	—	—	—	—	—
F	2 3/4	3 1/4	2 1/2	2 1/2	3 1/4	2 1/2
E	2 1/2	3	2 1/4	2 1/4	3 1/2	3 1/4
D	4	5	4 1/4	4 1/4	5 1/4	3 1/2
C	3	5 1/2	4 3/4	4 3/4	5 1/4	2 1/2
B	3 3/4	3	2	2	3	4 1/2
A	5 1/4	4 1/4	3 1/4	3 1/4	3 1/2	3 1/4
A1	—	—	—	—	—	2 1/2

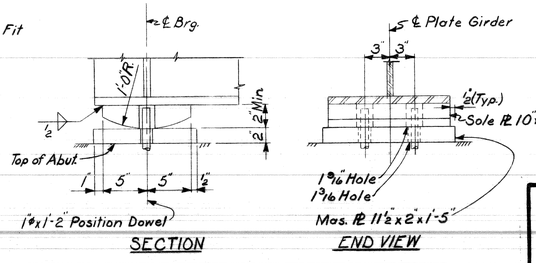
SUSPENDER DETAILS







PIER 1 or 3 BEARING DETAILS



ABUTMENT BEARING DETAILS

Work sheets 17 thru 19 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

STRUCTURAL STEEL DETAILS

CITY OF DETROIT

SQUAD BOSS	STUEM	9-70
DRAWN BY	I.H.S.	7-70
TRACED BY	WARREN	7-70
CHECKED BY	KARAS	9-70

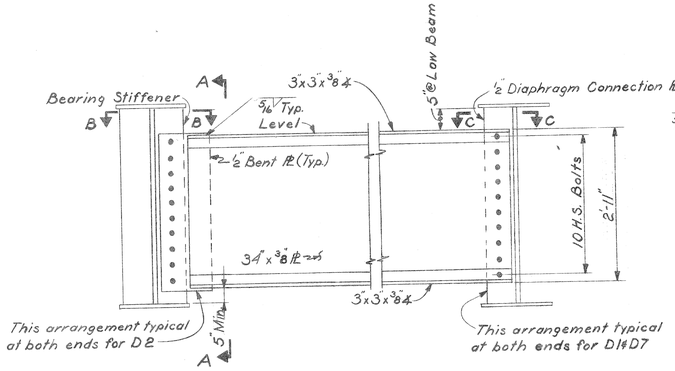
SHEET 18 OF 31

REVISIONS

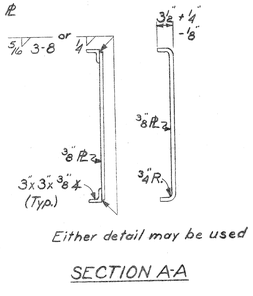
NO.	DESCRIPTION	DATE	BY
B	Corr Flange Pl. Detail Span 1	1-4-71	AFB

S23 of 82122K

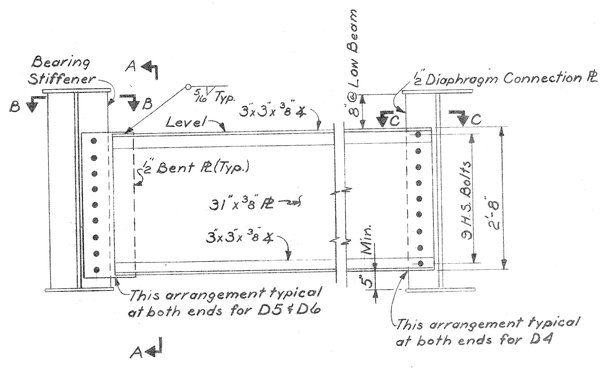
01253A



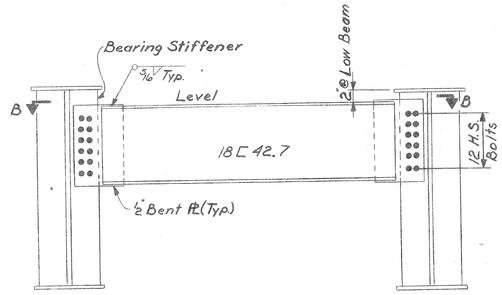
D1, D2 & D7



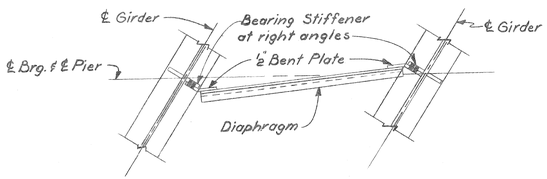
SECTION A-A



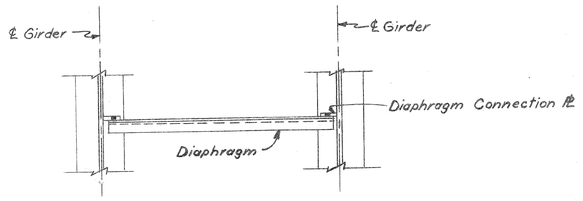
D4, D5 & D6



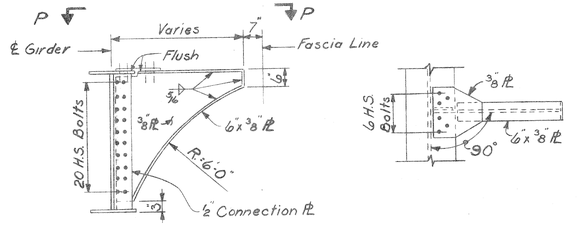
D3



SECTION B-B
(For D2, D3, D5 & D6)

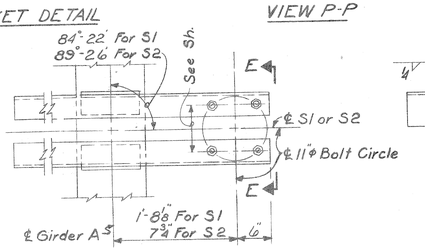


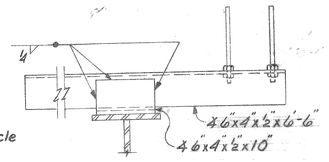
SECTION C-C
(For D1, D4 & D7)



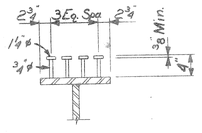
BRACKET DETAIL

VIEW P-P

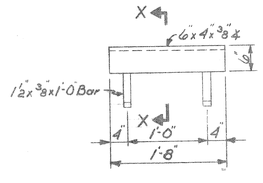




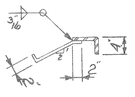
ELEVATION



SECTION M-M

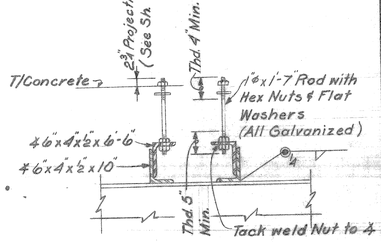


LEDGE ANGLE DETAIL

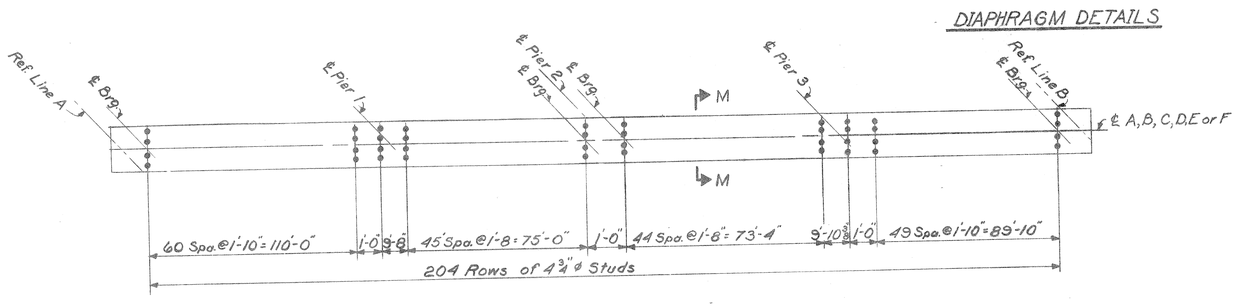


SECTION X-X

S1 or S2
P.L.C. ANCHOR DETAILS



VIEW E-E



DIAPHRAGM DETAILS

STUD SHEAR DEVELOPERS

Work sheets 17 thru 19 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No.
990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

STRUCTURAL STEEL DETAILS

CITY OF DETROIT

SQUAD BOSS	Sapp	5-70
DRAWN BY	J.H.S.	7-70
TRACED BY	NARREN	7-70
CHECKED BY	KAISER	9-70

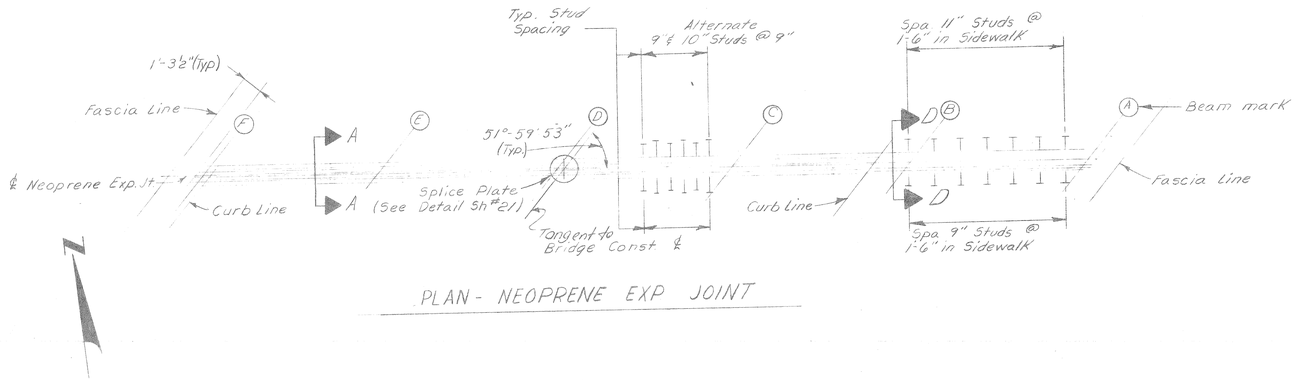
SHEET 19 OF 31

REVISIONS

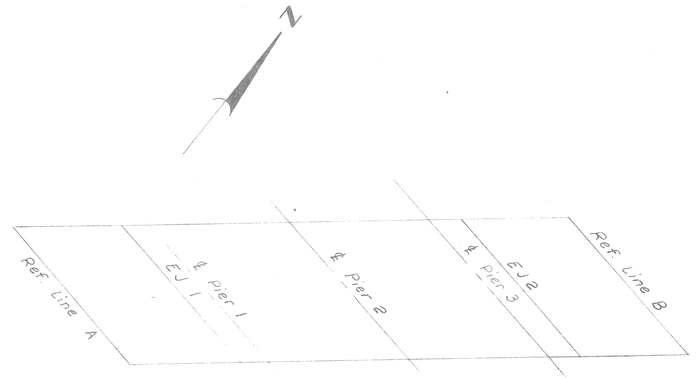
NO.	DESCRIPTION	DATE	BY

S23 of 82122K

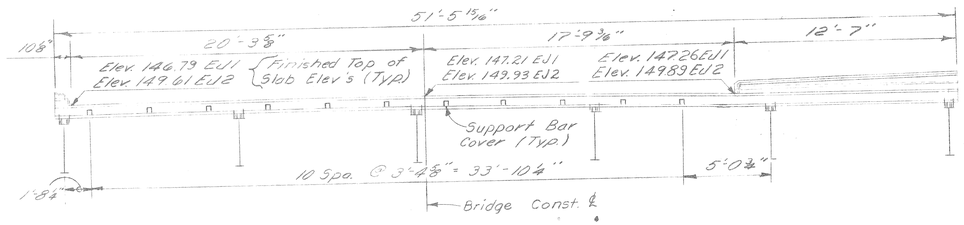
01253A



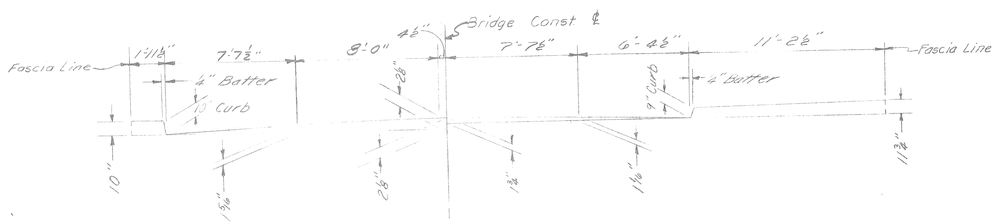
PLAN - NEOPRENE EXP JOINT



LOCATION PLAN



ELEVATION @ ℄ JOINT



CROWN TEMPLATE
(Normal to Bridge Const ℄)

NOTES The Neoprene Expansion Joint shall be prefabricated and assembled in the shop.

The Neoprene Expansion Joint shall be bent in the shop to conform with the contour of the top of roadway slab.

The steel in the expansion joint is included in the quantity "Double Neoprene Expansion Joint" - Lin. Ft.

For details of sealer, see Supplemental Specifications.

Studs are to be attached as shown by welding according to the manufacturer's recommendations.

QUANTITY
Double Neoprene Expansion Joint 103 Lin. Ft.

Work Sheets 20 & 21 together.

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990 (19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT
DOUBLE NEOPRENE EXPANSION
JOINT DETAILS

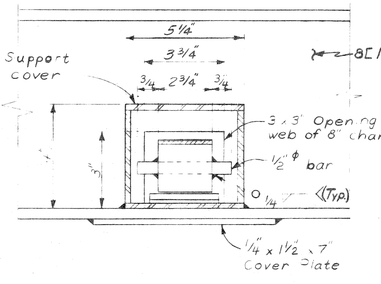
REVISIONS

NO.	DESCRIPTION	DATE	BY

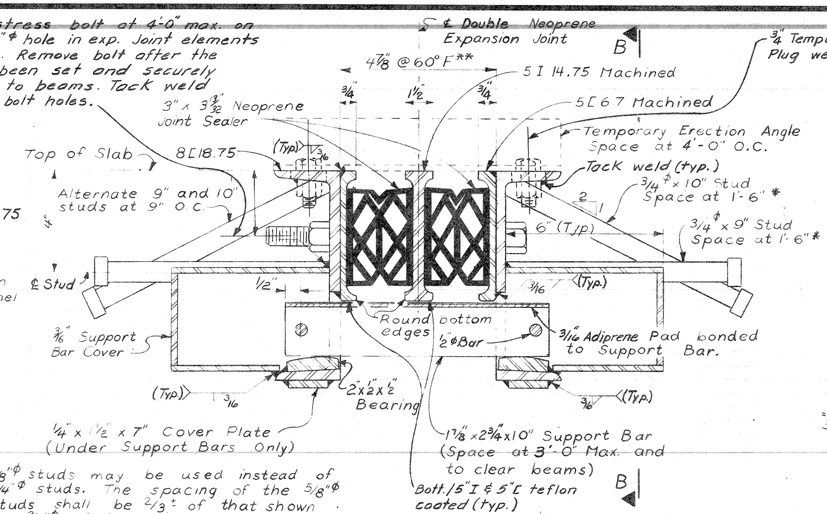
SQUAD BOSS	STURM	9-70
DRAWN BY	COMLY	9-70
TRACED BY	M.S.	8-70
CHECKED BY	Z.H.S.	11-70
SHEET 20 OF 31		

S23 OF 82122K

01253A



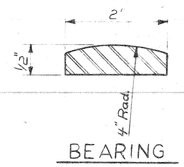
SECTION B-B



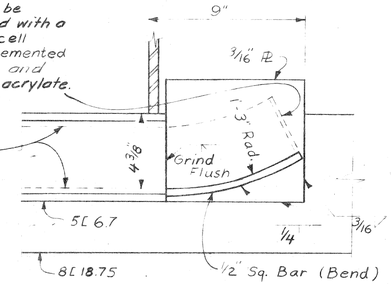
SECTION A-A

* 5/8" ϕ studs may be used instead of 3/4" ϕ studs. The spacing of the 5/8" ϕ studs shall be 2/3 ± of that shown for 3/4" ϕ studs.

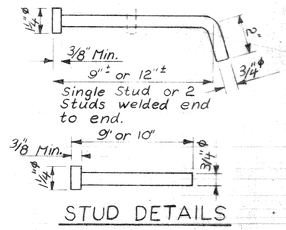
** Adjust 1/16" for each 10° of beam temperature deviation from 60°F for each 70' of slab length. (Slab length measured at right angles to joint.)



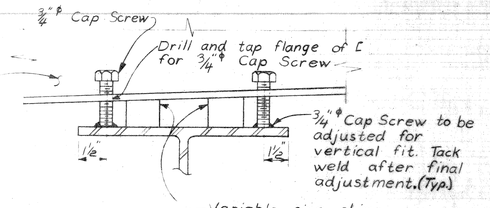
BEARING



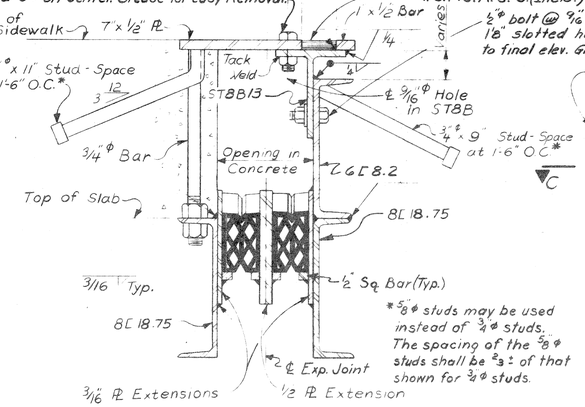
SECTION F-F



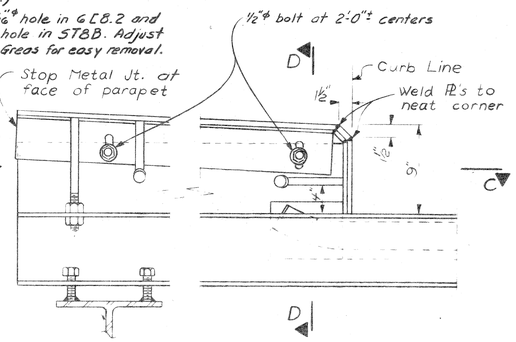
STUD DETAILS



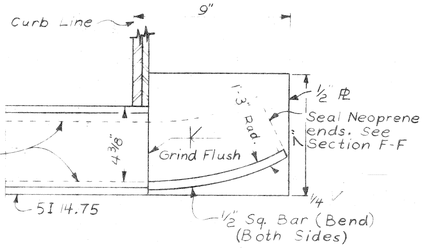
ATTACHMENT TO BEAM



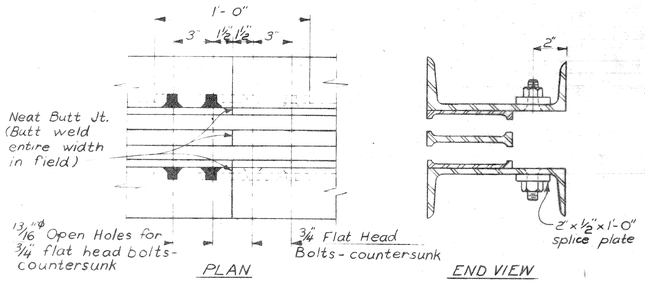
SECTION D-D



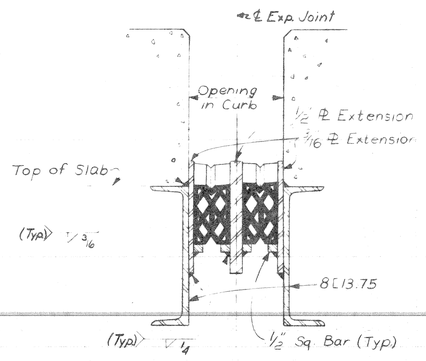
ELEVATION AT SIDEWALK



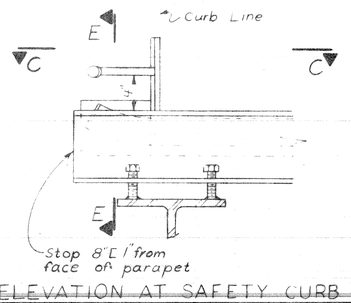
SECTION G-G



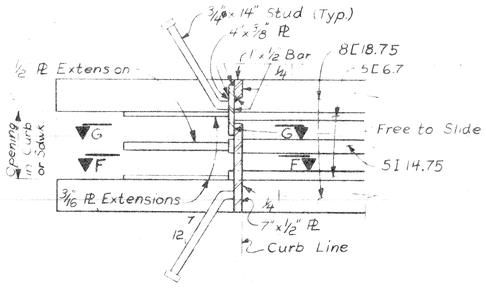
SPLICE DETAILS



SECTION E-E



ELEVATION AT SAFETY CURB



SECTION C-C

Work Sheets 20 & 21 Together

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
ENGINEERS OFFICE
BUREAU OF STREETS, WALKS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No.

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

DOUBLE NEOPRENE EXPANSION JOINT DETAILS

CITY OF DETROIT

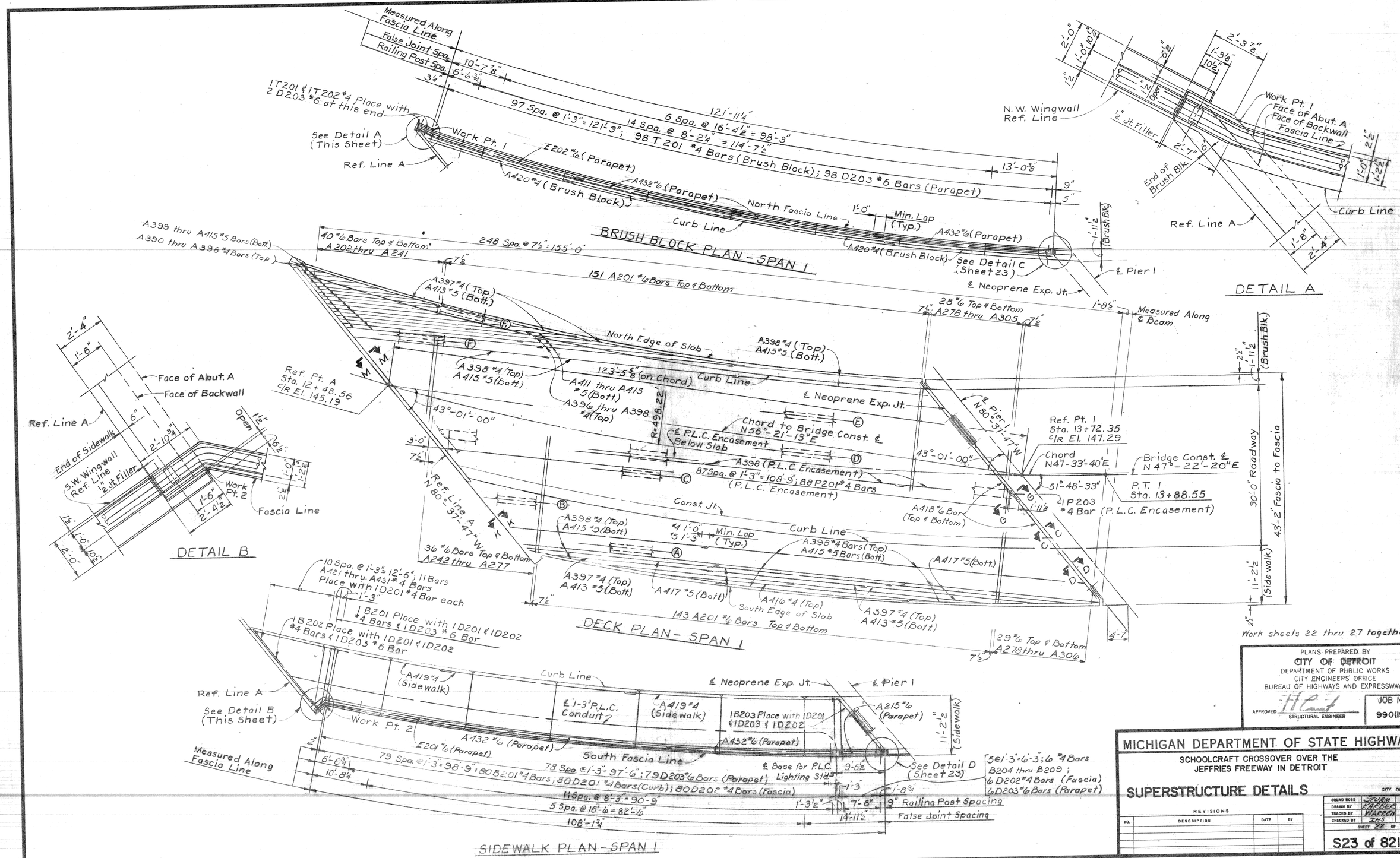
REVISIONS

NO	DESCRIPTION	DATE	BY

ROAD ROSS	Strauss	8-70
DRAWN BY	VanNorthwick	9-16-70
TRACED BY	-	-
CHECKED BY	[illegible]	6-70
SHEET 21 OF 31		

S23 of 82122J

01253A



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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

SUPERSTRUCTURE DETAILS

CITY OF DETROIT

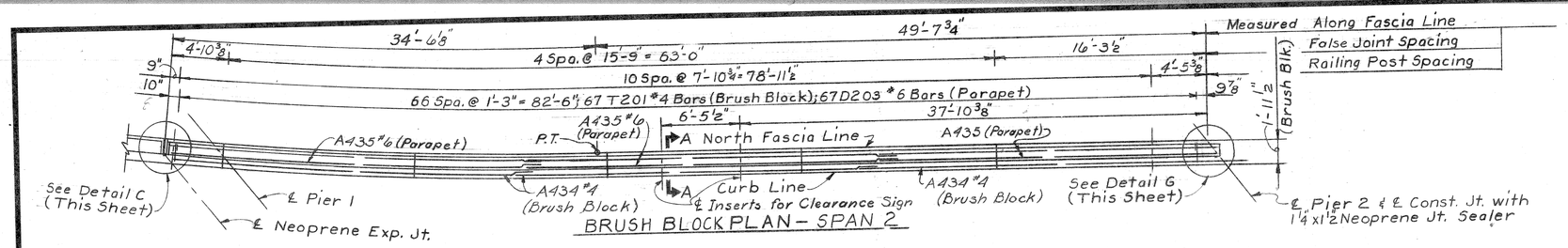
SQUAD BOSS	STURM	9-70
DRAWN BY	CARRERA	9-70
TRACED BY	WARREN	9/70
CHECKED BY	JMS	9-70
SHEET	22 OF 31	

REVISIONS

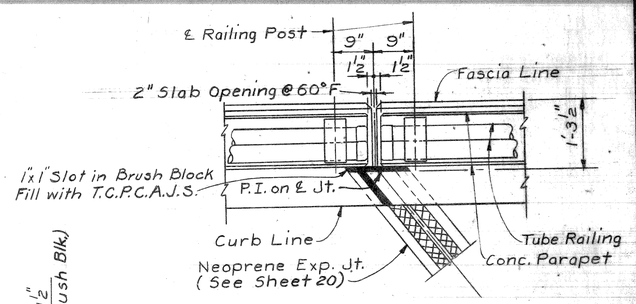
NO.	DESCRIPTION	DATE	BY

S23 of 82122K

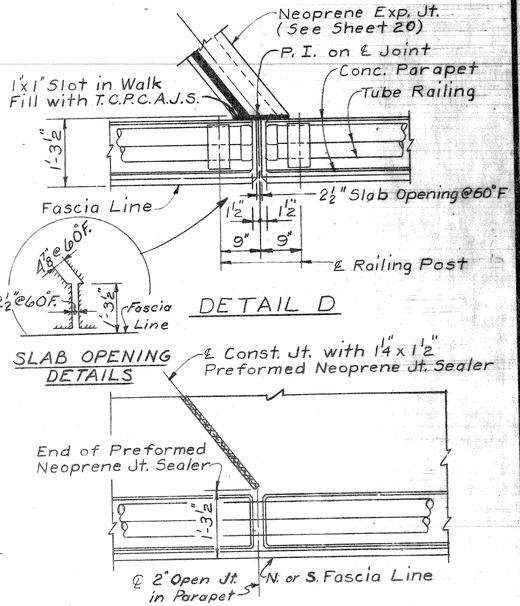
01253A



BRUSH BLOCK PLAN – SPAN 2



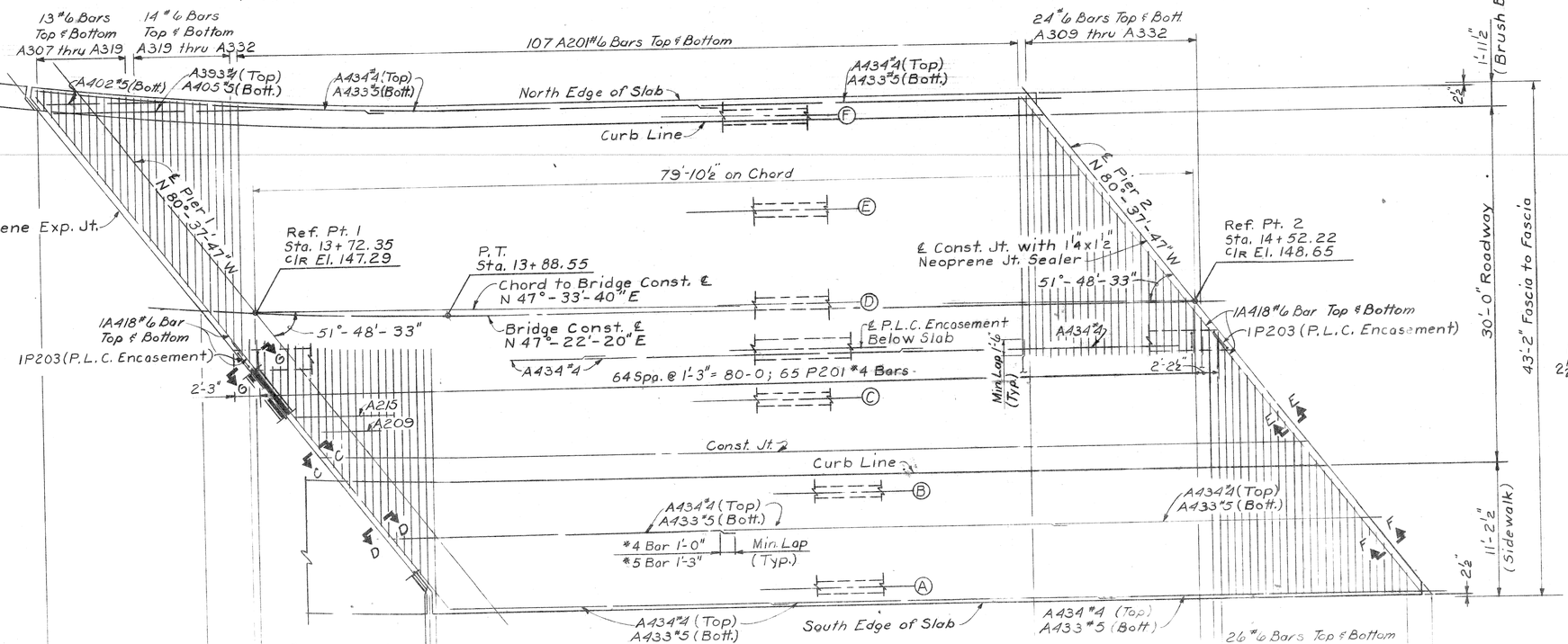
DETAIL C



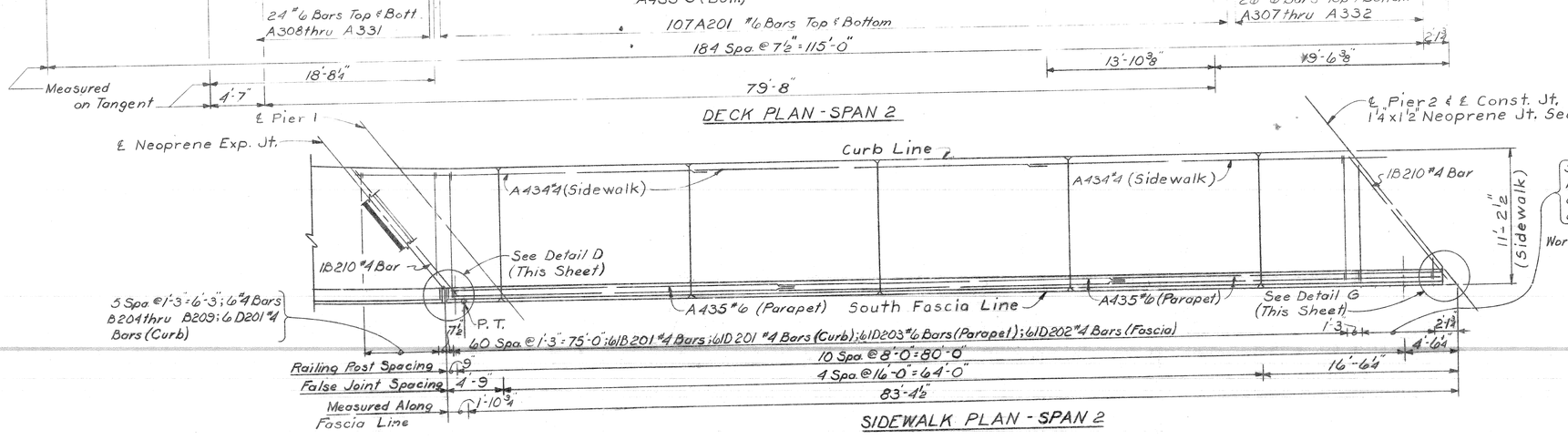
DETAIL D

SLAB OPENING DETAILS

DETAIL G



DECK PLAN - SPAN 2



SIDEWALK PLAN - SPAN 2

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APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

SUPERSTRUCTURE DETAILS

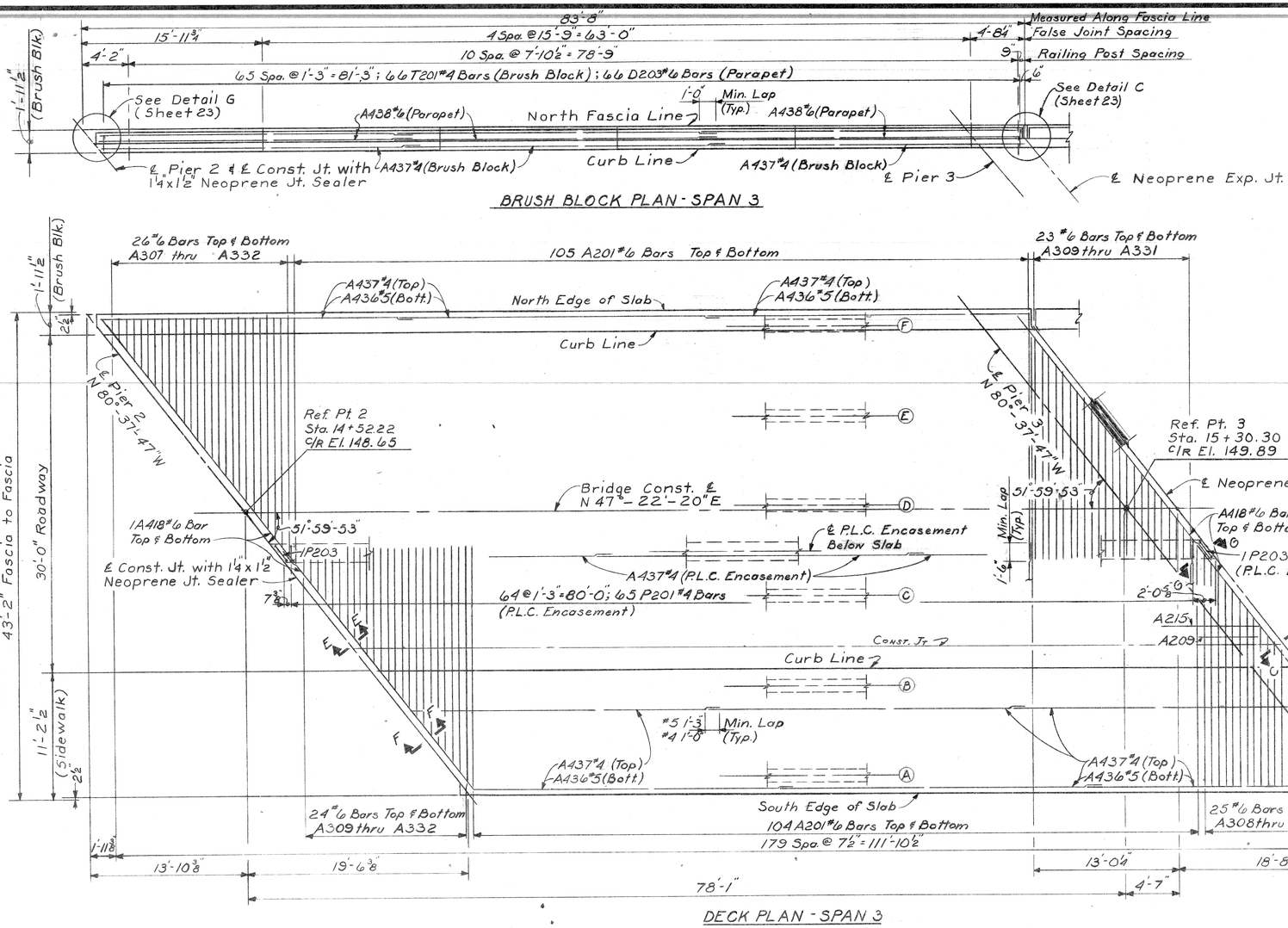
REVISIONS

NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	STUEM	3-70
DRAWN BY	KARRER	9-70
TRACED BY	WARREN	9-70
CHECKED BY	JHS	9-70
SHEET 23 OF 31		

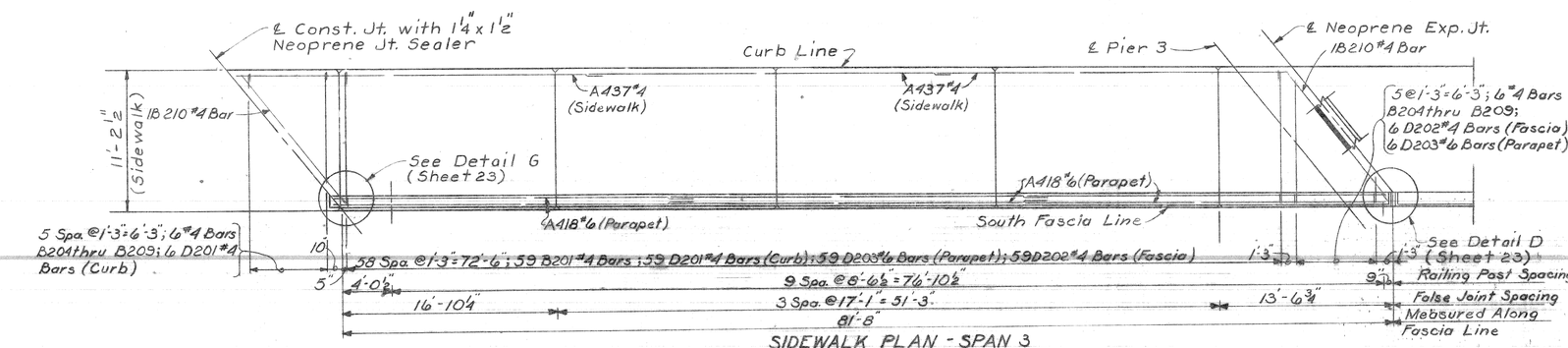
S23 of 82122K

01253A



BRUSH BLOCK PLAN - SPAN 3

DECK PLAN - SPAN 3



SIDEWALK PLAN - SPAN 3

MISCELLANEOUS QUANTITIES		
Item	Unit	Amount
Water-Reducing Retarding Admixture	Gal.	70
Low Temp. Protection Superstructure Concrete	Cu. Yds.	666.7
Protective Treatment for Bridge Decks	Sq. Ft.	15,401
1¼" Preformed Neoprene Joint Sealer	Lin. Ft.	53.
Two-Component Polyurethane Cold-Applied Joint Sealer	Lin. Ft.	31
Joint Waterproofing	Sq. Ft.	205
Bridge Railing - Solid Parapet Type	Lin. Ft.	756.4
3" Conduits	Lin. Ft.	198
4" Conduits	Lin. Ft.	748

CONCRETE QUANTITES (Cu. Yds.)						
Pour	Location	Grade	Span 1	Span 2	Span 3	Span 4
A	P.L.C. Encasement	*	5.9	4.4	4.4	4.8
B	Deck Slab	A(6AA)	112.3	69.5	67.3	90.5
C	Deck Slab	A(6AA)	49.1	30.3	29.4	39.5
D	Sidewalk	A(6AA)	41.3	30.3	29.7	34.7
E	Brush Block	A(6AA)	7.5	5.1	5.0	5.7
Total Structural Lightweight Concrete						19.5
Total Concrete Grade A(6AA) - Superstructure						647.2

NOTE:

Parapet Concrete = 61.0 Cu. Yds. A(6AA) Part of Bridge Railing - Solid Parapet Type and not a pay item.

* Pour A, P.L.C. Encasement shall be Structural Lightweight Concrete. See Supplemental Specifications.

GENERAL NOTES:

J.W.P. denotes Joint Waterproofing

T.C.P.C.A.J.S. denotes Two-Component Polyurethane Cold-Applied Joint Sealer.

Bridge railing is to be aluminum tubular railing on solid concrete parapet. For details of bevels, molding, and Bridge Railing see St'd. Sheet R16.

Edge or Groove denotes edging or grooving with an approved tool.

Alphabetical designation of pours is not to be construed as a pour sequence.

Sidewalk pours shall not be cast until slab concrete has attained at least 50% of its design strength as determined by Table 7.01-5 of the Standard Specifications.

The contractor is to provide a sawed joint ½" deep by ⅛" wide (min.) in the top of slab over and parallel to the centerline of piers. The joint is to be sawed before casting of sidewalks and is to be filled with T.C.P.C.A.J.S. (incidental).

Protective Treatment for Bridge Decks is to be applied to all superstructure concrete surfaces between inside faces of parapets. For Name Plate location and mounting details see St'd. Sheet R16 & General Plan of Structure.

Pour Suspended Spans before Anchor Spans.

Work sheets 22 thru 27 together

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APPROVED: STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

SUPERSTRUCTURE DETAILS

CITY OF DETROIT

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	SHAH	9-70
DRAWN BY	WARNER	9-70
TRACED BY	WARREN	9/70
CHECKED BY	JMS	9-70

SHEET 22 OF 31

S23 of 82122K

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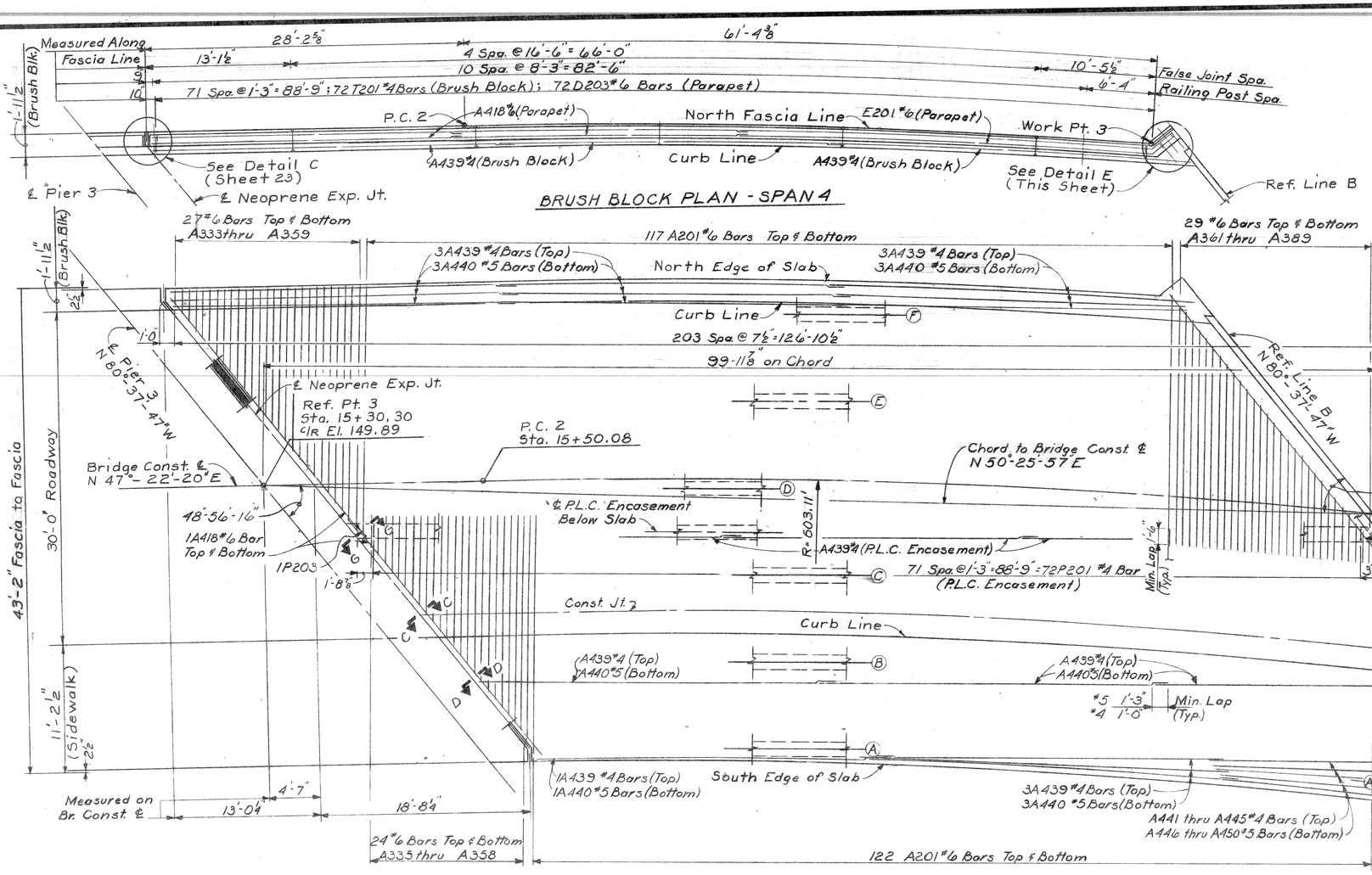


Work Sheets 22 thru 27 together

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

SUPERSTRUCTURE DETAILS

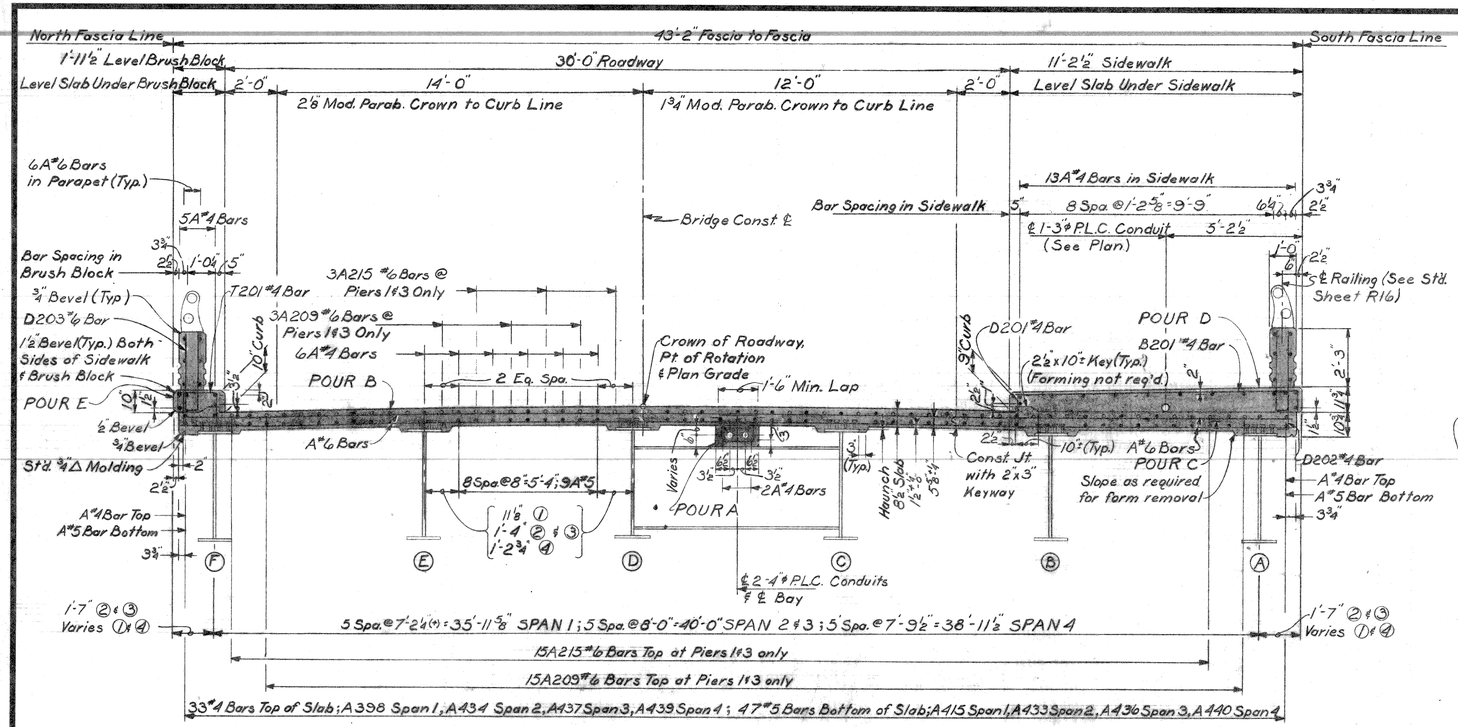
CITY OF DETROIT

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	STURM	3-70
DRAWN BY	KRAMER	3-70
TRACED BY	WACKEN	3/70
CHECKED BY	THS	3-70
SHEET	25 OF	31

S23 of 82122K

01253A

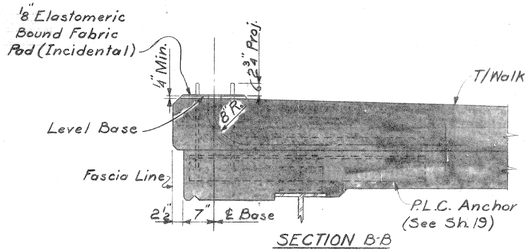


TYPICAL CROSS SECTION

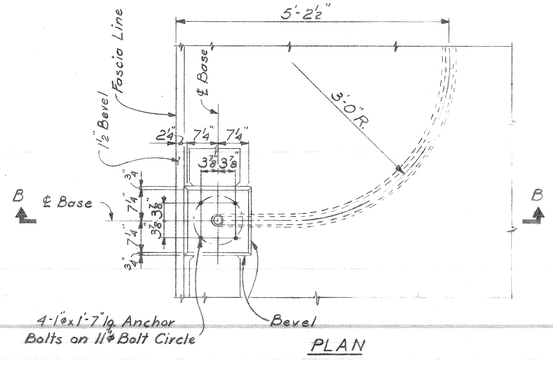
SECTION G-G

PL.C. CONDUITS BELOW SLAB AT NEOPRENE EXP. JOINT

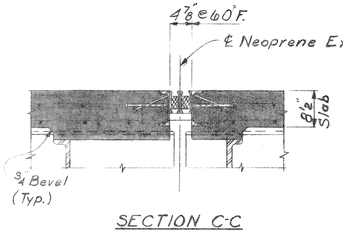
Note:
Fiber Sleeves, Copper Slip Joints, G.I. Pipe, & pipe couplings are incidental to conduits.



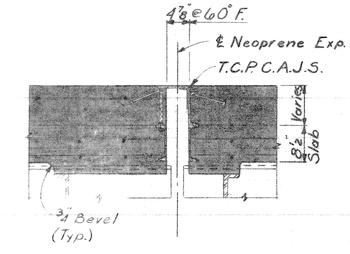
SECTION B-B



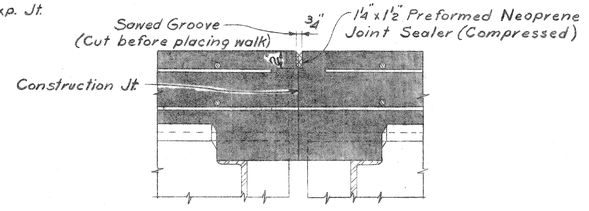
PLAN



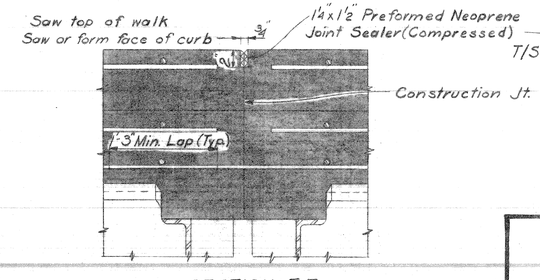
SECTION C-C



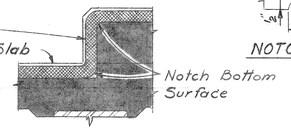
SECTION D-D



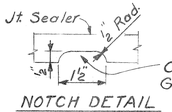
SECTION E-E



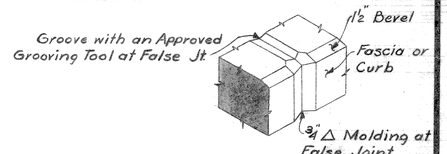
SECTION F-F



SECTION H-H



NOTCH DETAIL



ISOMETRIC OF FALSE JOINT

DETAILS OF BASE FOR P.L.C. LIGHT STANDARD

Work Sheets 22 thru 27 together

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APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

SUPERSTRUCTURE DETAILS

CITY OF DETROIT

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	STARR	3-70
DRAWN BY	KRAMER	3-70
TRACED BY	WARREN	3-70
CHECKED BY	EMS	3-70
SHEET	26 OF 31	

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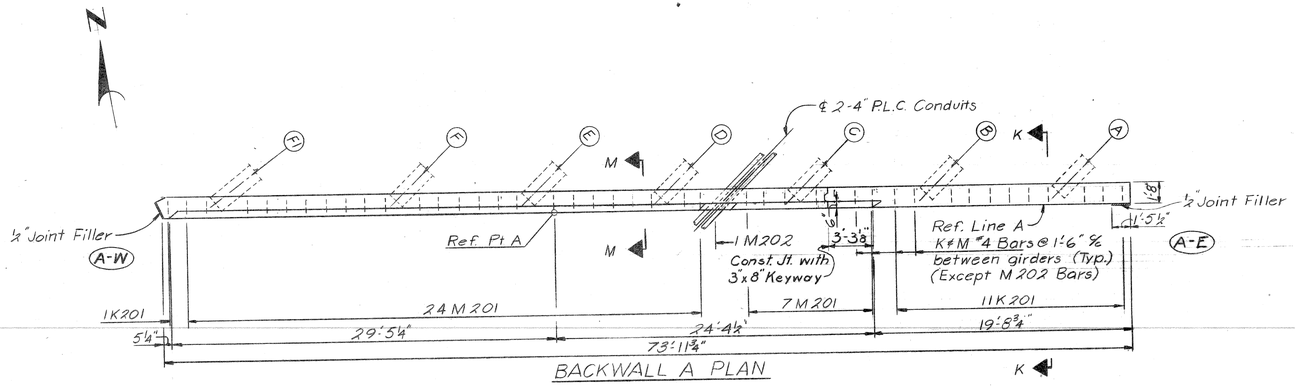
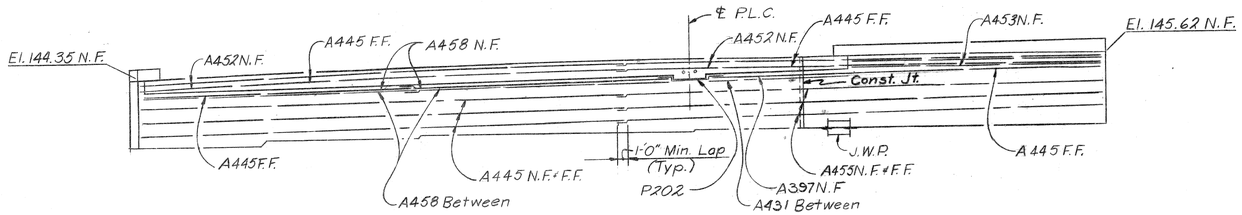
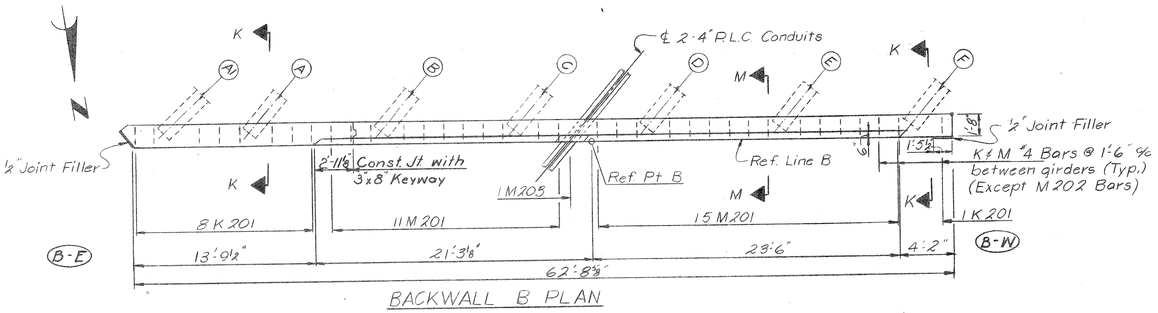


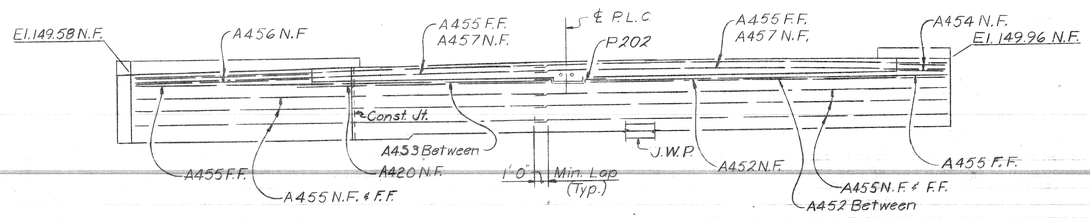
BACKWALL A PLAN



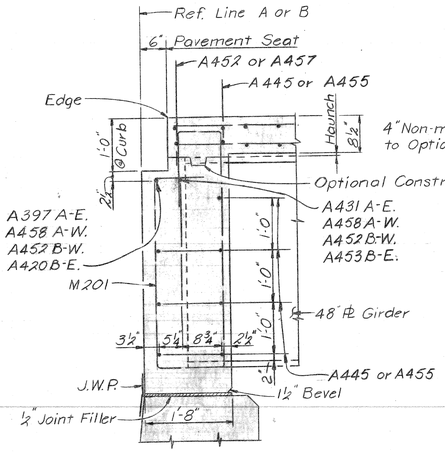
ELEVATION



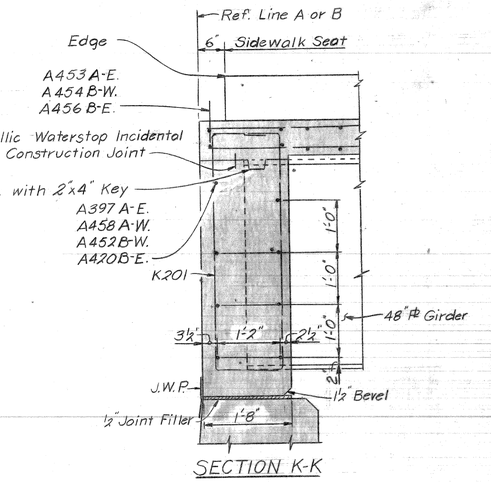
BACKWALL B PLAN



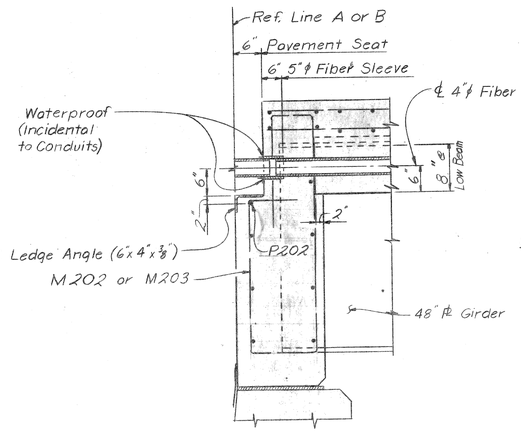
ELEVATION



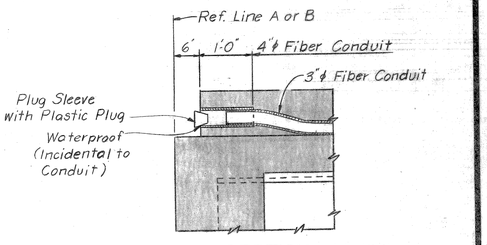
SECTION M-M



SECTION K-K

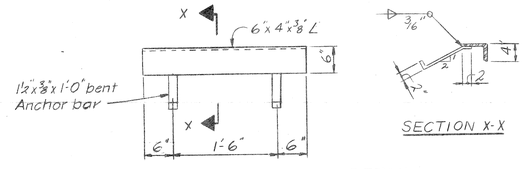


SECTION
P.L.C. BELOW SLAB



SECTION
P.L.C. IN SIDEWALK

Note:
Fiber Sleeves & Plastic Plugs are incidental to Conduits



LEDGE ANGLE DETAIL

SECTION X-X

Note:
Weight of P.L.C. Anchor Bolts and Anchor and P.L.C. Ledge Angle is included in Structural Steel Weight

Work Sheets 22 thru 27 together

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APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990 (19)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

SUPERSTRUCTURE DETAILS

REVISIONS			
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT		
SQUAD BOSS	SPURR	9-70
DRAWN BY	KARKER	9-70
TRACED BY	L.B.	9-70
CHECKED BY	JWS	9-70

SHEET 27 OF 31

S23 OF 82122 K

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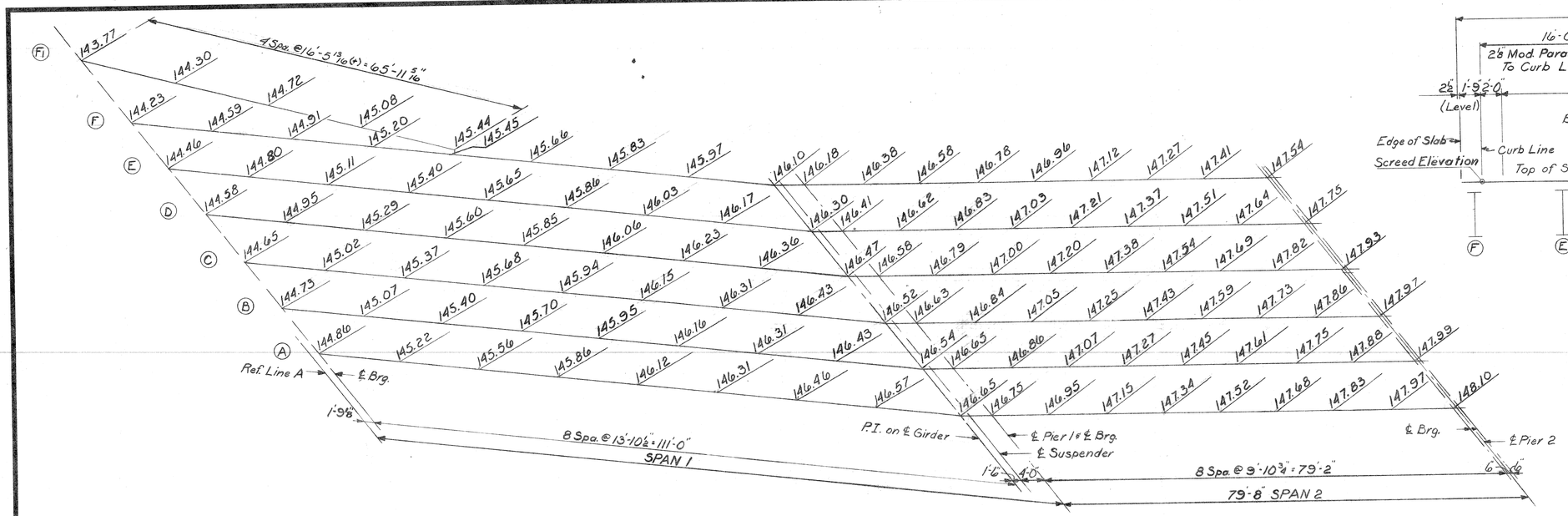
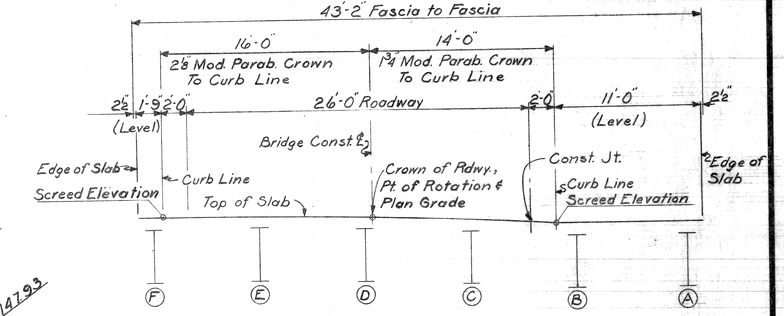
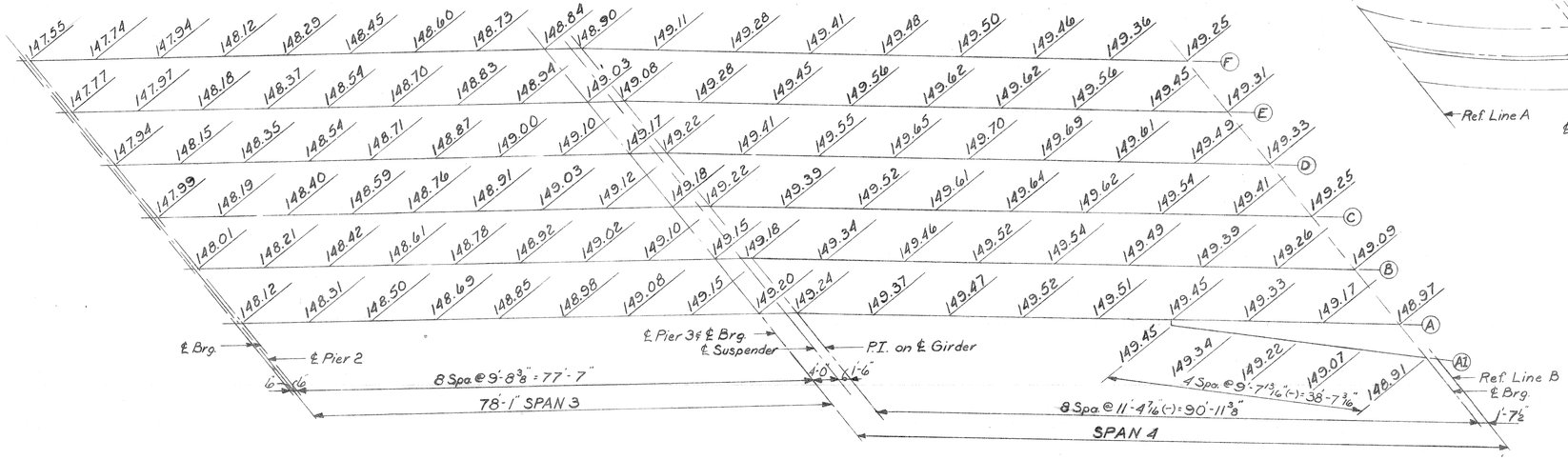


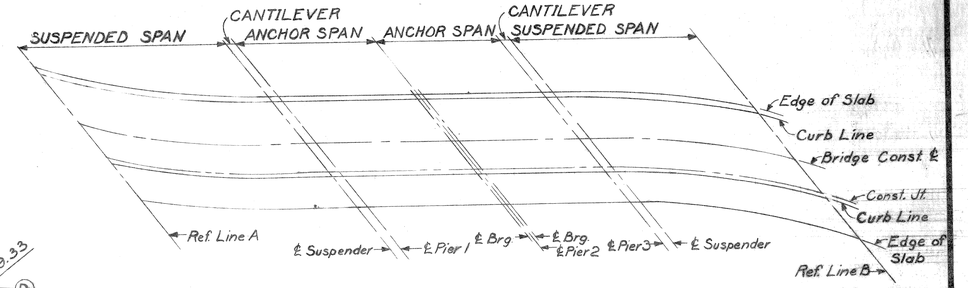
BOTTOM OF SLAB ELEVATIONS
(For Loading Case I)



SCREED TEMPLATE



BOTTOM OF SLAB ELEVATIONS
(For Loading Case I)



PLAN OF SLAB

Work sheets 28-29 together.

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

SUPERSTRUCTURE DETAILS

CITY OF DETROIT

SQUAD BOSS	STURM	9-70
DRAWN BY	LARSEN	9-70
TRACED BY	WARREN	9-70
CHECKED BY	V.S.	9-70
SHEET 28 OF 31		

REVISIONS

NO.	DESCRIPTION	DATE	BY

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

S23 OF 82122K

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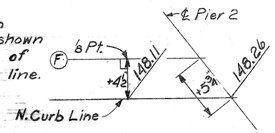
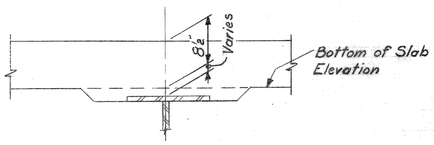
NOTES:

Screed elevations are given on the curb lines at points normal to the eighth points or quarter points of the beam as shown for load case I; or at the intersection of abut bearings or pier ℄'s with the curb line.

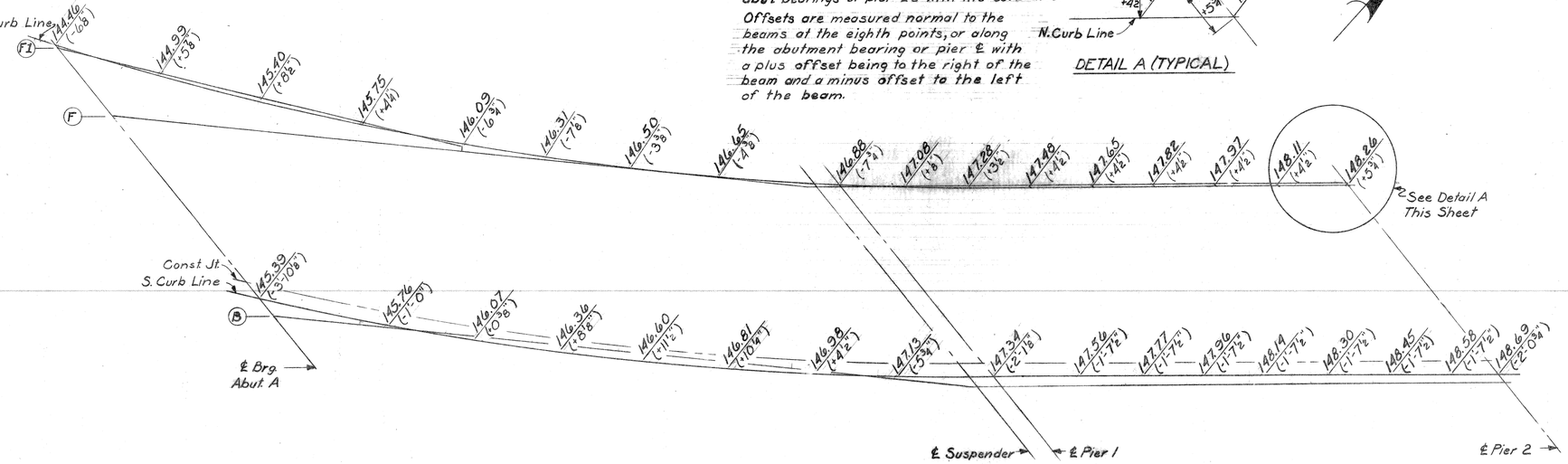
Offsets are measured normal to the beams at the eighth points, or along the abutment bearing or pier ℄ with a plus offset being to the right of the beam and a minus offset to the left of the beam.



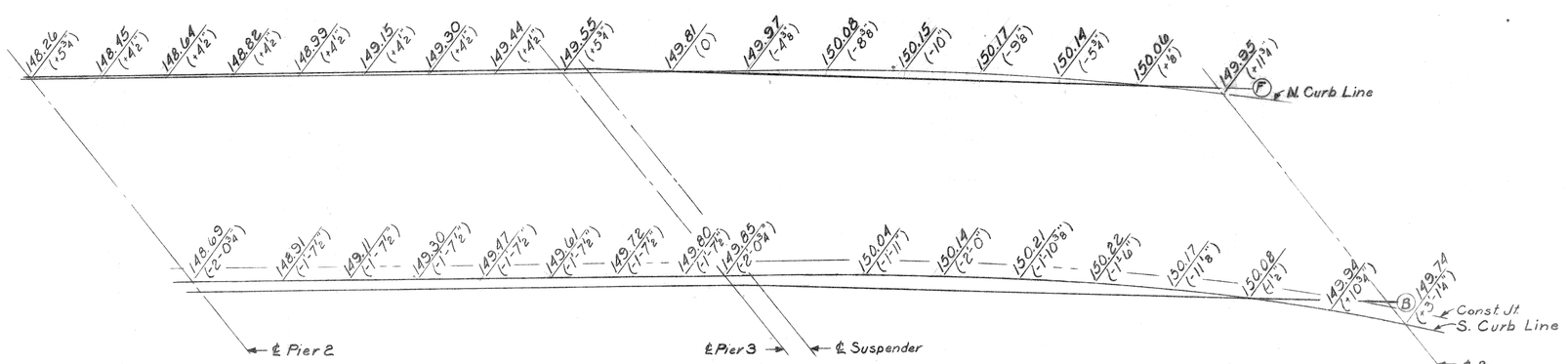
DETAIL A (TYPICAL)



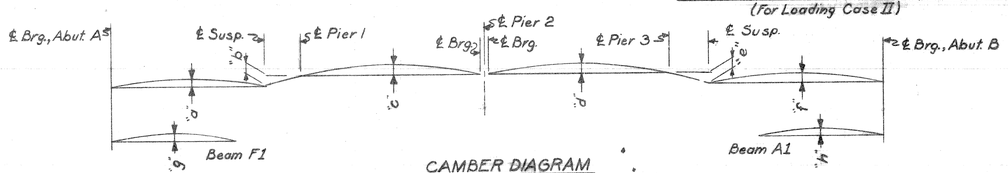
TYPICAL SECTION AT EACH GIRDER



SCREED ELEVTIONS FOR SPANS 1 & 2
(For Loading Case II)



SCREED ELEVATIONS FOR SPANS 3 & 4
(For Loading Case II)



CAMBER DIAGRAM
(For Loading Cases Shown in Table)

CAMBER ORDINATES (inches)

Camber Dim'n		g	h	a						b						c						d						e						f					
Beam		F1	A1	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
Loading Case	I	1⅜	½	4⅜	3¾	4¼	3⅜	3¼	3½	⅛	¼	¼	¼	¼	⅛	1	1½	1½	1½	1½	1⅛	2⅜	2⅜	2⅜	1⅞	1¾	1¼	½	½	½	⅜	⅜	¼	4⅞	4⅞	4⅞	5⅜	5⅜	4⅞
	II	¼	½	3¾	3¼	3½	3⅜	2¾	3	⅛	⅛	⅛	⅛	⅛	⅛	⅜	¼	⅛	⅛	¼	1	2¼	2¼	1⅞	1⅝	1½	1⅛	½	½	½	⅜	⅜	¼	4⅞	4½	4⅜	4⅝	4¾	4½
	III	1	½	⅜	1	¼	⅞	⅜	⅜	0	0	0	0	0	0	⅜	¼	¼	¼	¼	⅜	1⅛	1⅛	1	¾	⅝	½	⅝	⅝	⅜	¼	¼	¼	3⅜	2⅞	2¾	3	3⅜	3

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. 990(19)

GENERAL NOTES:

Use transverse strike-off finishing machine in placing slab concrete.

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 the weight of the structural steel, weight of the forms, steel reinforcement, P.L.C. encasement, slab concrete, sidewalk and railing.

Loading Cases are as follows:

CASE I - All structural steel erected and no other load applied.

CASE II - Forms, steel reinforcement and P.L.C. encasement in place on structural steel and no other load applied.

CASE III - Steel reinforcement, P.L.C. encasement and slab concrete in place on structural steel and no other load applied.

Work sheets 28-29 together.

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

SUPERSTRUCTURE DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS	Sriram	9-70
DRAWN BY	Vineet	9-70
TRACED BY	WARREN	9-70
CHECKED BY	MC	9-70

SHEET 29 OF 31

S23 OF 82122K

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ABUTMENTS

BAR	a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.	
A1								#6	26'-0"	39	1523	
A2								#6	11'-6"	159	2746	
A3								#8	5'-3"	88	1234	
A4								#6	8'-0"	122	1466	B
A5								#8	3'-9"	88	881	
A6								#4	26'-3"	20	351	
A7								#4	24'-3"	20	324	B
A8								#4	21'-9"	10	145	
A9								#4	25'-3"	10	169	
A10								#4	24'-6"	34	556	
A11								#6	5'-0"	271	2035	B
A12								#6	8'-9"	87	1143	
A13								#6	7'-9"	89	1036	
A14								#6	10'-3"	89	1370	B
A15								#6	13'-3"	17	338	B
A16								#6	12'-9"	102	1953	B
A17								#6	32'-6"	26	1269	B
A18								#4	21'-0"	30	421	
A19								#4	19'-6"	20	261	
A20								#4	21'-9"	10	145	S
A21								#4	22'-0"	10	147	
A22								#4	13'-9"	9	83	B
A23								#4	16'-6"	4	44	
A24								#6	7'-6"	60	676	S
A25								#6	4'-6"	41	277	
A26								#6	5'-6"	82	677	B
A27								#6	3'-3"	19	93	
A28								#6	5'-9"	109	941	
A29								#6	6'-6"	55	537	B
A30								#6	3'-6"	38	200	
A31								#6	10'-9"	24	388	
A32								#6	8'-9"	45	591	
A33								#6	5'-0"	12	90	
A34								#6	17'-6"	8	210	
A35								#6	28'-3"	8	339	
A36								#6	17'-3"	6	155	
A37								#4	17'-6"	18	210	S
A38								#6	26'-6"	19	756	
A39								#6	3'-0"	24	108	S
A40								#7	6'-0"	50	613	S
A41								#11	7'-9"	41	1688	B
A42								#6	13'-3"	22	438	B
A43								#6	17'-9"	17	453	
A44								#6	9'-3"	41	570	S
A45								#6	14'-0"	22	463	S
A46								#6	11'-9"	43	759	
A47								#8	8'-3"	41	903	
A48								#6	19'-6"	14	410	
A49								#6	15'-6"	17	396	
A50								#6	14'-3"	6	128	
A51								#6	18'-3"	6	164	
A52								#4	14'-6"	8	77	B
A53								#6	28'-0"	6	252	
A54								#6	27'-0"	12	487	B
A55								#6	23'-0"	11	380	
A56								#6	20'-3"	11	335	
A57								#6	6'-0"	36	324	
A58								#6	3'-9"	14	79	
A59								#6	9'-6"	34	485	
A60								#6	2'-9"	11	45	
A61								#4	12'-0"	5	40	
A62								#6	10'-0"	22	330	
A63								#6	4'-9"	15	107	
A64								#6	18'-9"	21	591	
A65								#6	15'-0"	21	473	
A66								#6	16'-6"	16	397	B
A67								#6	16'-0"	11	264	
A68								#6	7'-0"	16	168	
A69								#6	18'-0"	6	162	
A70								#6	22'-3"	11	368	
A71								#4	28'-3"	10	189	
A72								#4	19'-6"	14	182	
A73								#4	26'-0"	26	452	
A74								#6	6'-6"	12	117	
A75								#4	15'-6"	32	331	B
A76								#4	14'-0"	18	168	
A77								#4	16'-0"	17	182	B

ABUTMENTS

BAR	a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.	
A78								#4	23'-3"	14	217	
A79								#6	17'-0"	12	306	S
C1	1'-0¾"	4'-0"	1'-0¾"	1'-0¾"	1'-6"	1'-0¾"	1'-6"	#6	7'-0"	20	210	
D1	2'-9⅜"	6¼"						#6	6'-0"	149	1,343	B
E1	4'-9"	2'-0⅛"	1'-0"	2'-3"				#6	7'-0"	10	105	B
E2	3'-9"	1'-8⅞"	1'-5⅛"	2'-3"				#6	6'-0"	10	90	B
								ABUTMENT TOTAL = 42,129 Lbs.				B

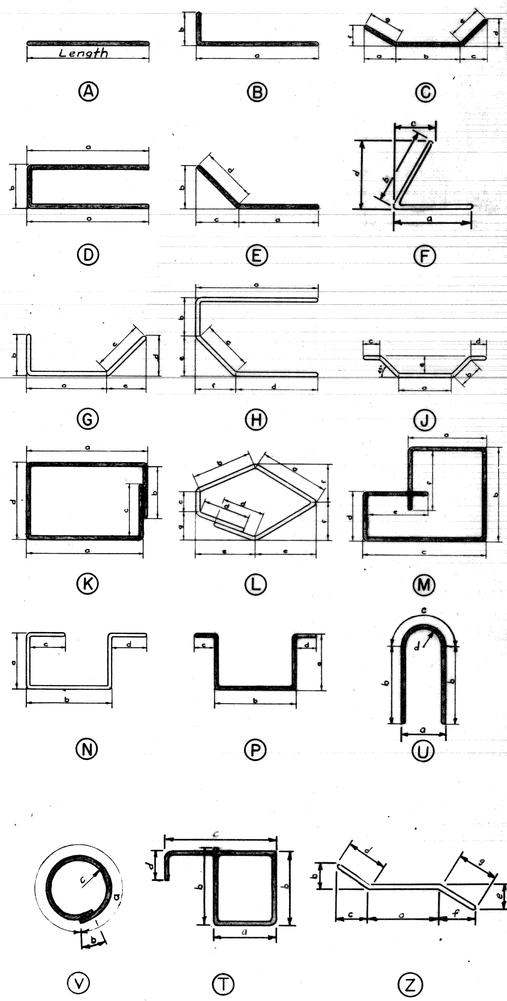
PIERS

BAR	a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.	
A101								#6	10'-0"	222	3334	
A102								#6	28'-3"	96	4073	
A103								#6	27'-9"	24	1000	
A104								#6	26'-0"	24	937	
A105								#5	27'-9"	21	608	
A106								#5	26'-0"	21	569	
A107								#6	1'-6"	12	27	
A108								#9	7'-9"	144	3794	
A109								#9	10'-9"	48	1754	
A110								#9	12'-6"	48	2040	
A111								#9	11'-9"	48	1918	
A112								#9	17'-3"	27	1584	
A113								#9	20'-0"	54	3672	
A114								#6	31'-0"	30	1397	
A115								#6	12'-9"	60	1149	
A116								#7	31'-0"	24	1521	
A117								#7	12'-9"	48	1251	
A118								#6	32'-0"	6	288	
A119								#6	15'-6"	6	140	
D101	4'-5⅝"	3'-2"						#5	12'-0"	210	2628	
D102	2'-7⅞"	4'-10¾"						#4	10'-0"	12	80	
D103	2'-9"	3'-1¼"						#5	8'-6"	54	479	
D104	1'-6⅛"	2'-9¾"						#4	5'-9"	93	357	
E101	5'-6"	1'-1⅝"	1'-7¾"	2'-0"				#5	7'-6"	210	1643	
K101	3'-2"	1'-6"	1'-7"	1'-11"				#4	11'-3"	360	2705	
V101	7'-10⅝"	1'-1⅜"	1'-2⅞"					#4	9'-0"	96	577	
								PIER TOTAL = 39,525 Lbs.				

SUPERSTRUCTURE

BAR	a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A201								#6	22'-0"	1912	63180
A202								#6	1'-9"	2	5
A203								#6	2'-3"	2	7
A204								#6	2'-9"	2	8
A205								#6	3'-3"	2	10
A206								#6	3'-9"	2	11
A207								#6	4'-3"	2	13
A208								#6	4'-9"	2	14
A209								#6	5'-3"	32	252
A210								#6	5'-9"	2	17
A211								#6	6'-3"	2	19
A212								#6	6'-9"	2	20
A213								#6	7'-3"	2	22
A214								#6	7'-9"	2	23
A215								#6	8'-3"	44	545
A216								#6	8'-9"	2	26
A217								#6	9'-3"	2	28
A218								#6	9'-9"	2	29
A219								#6	10'-3"	2	31
A220								#6	10'-9"	2	32
A221								#6	11'-3"	2	34
A222								#6	11'-10"	2	36
A223								#6	12'-4"	2	37
A224								#6	12'-10"	2	39
A225								#6	13'-4"	2	40
A226								#6	13'-10"	2	42
A227								#6	14'-4"	2	43
A228								#6	14'-10"	2	45
A229								#6	15'-4"	2	46
A230								#6	15'-11"	2	48
A231								#6	16'-5"	2	49
A232								#6	16'-11"	2	51
A233								#6	17'-5"	2	52
A234								#6	17'-11"	2	54
A235								#6	18'-6"	2	56
A236								#6	19'-0"	2	57
A237								#6	19'-6"	2	59
A238								#6	20'-0"	2	60
A239								#6	20'-6"	2	62
A240								#6	21'-0"	2	63
A241								#6	21'-6"	2	65
A242								#6	1'-9"	2	5
A243								#6	2'-4"	2	7
A244								#6	2'-10"	2	9
A245								#6	3'-5"	2	11
A246								#6	4'-0"	2	12
A247								#6	4'-7"	2	14
A248								#6	5'-1"	2	15
A249								#6	5'-8"	2	17
A250								#6	6'-3"	2	19
A251								#6	6'-10"	2	21
A252								#6	7'-4"	2	22
A253								#6	7'-11"	2	24
A254								#6	8'-6"	2	26
A255								#6	9'-1"	2	27
A256								#6	9'-7"	2	29
A257								#6	10'-2"	2	31
A258								#6	10'-9"	2	32
A259								#6	11'-4"	2	34
A260								#6	11'-11"	2	36
A261								#6	12'-5"	2	37
A262								#6	13'-0"	2	39
A263								#6	13'-7"	2	41
A264								#6	14'-2"	2	43
A265								#6	14'-8"	2	44
A266								#6	15'-3"	2	46
A267								#6	15'-10"	2	48

BAR BENDING DIAGRAM



Work Sheets 30 & 31 Together

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF EXPRESSWAYS AND EXPRESSWAYS

APPROVED: H Cant
STRUCTURAL ENGINEER

JOB No. 990(19)

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

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

Grand Total Steel Reinforcement 216,078 Lbs. (B)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

STEEL REINFORCEMENT DETAILS

REVISIONS			
NO	DESCRIPTION	DATE	BY
B	Misc Re Bar Corrections	1-4-71	AFB

CITY OF DETROIT

SQUAD BOSS	Sneed 9-70
DRAWN BY	M.S. Eddy 9-70
TRACED BY	— —
CHECKED BY	NC 9-70
SHEET	30 OF 31

S23 OF 82122K

01253A

	BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
SUPERSTRUCTURE	A268								#6	16'-4"	2	49
	A269								#6	16'-11"	2	51
	A270								#6	17'-6"	2	53
	A271								#6	18'-1"	2	54
	A272								#6	18'-8"	2	56
	A273								#6	19'-2"	2	58
	A274								#6	19'-9"	2	59
	A275								#6	20'-4"	2	61
	A276								#6	20'-10"	2	63
	A277								#6	21'-5"	2	64
	A278								#6	2'-3"	4	14
	A279								#6	2'-11"	4	18
	A280								#6	3'-7"	4	22
	A281								#6	4'-4"	4	26
	A282								#6	5'-0"	4	30
	A283								#6	5'-8"	4	34
	A284								#6	6'-4"	4	38
	A285								#6	7'-0"	4	42
	A286								#6	7'-9"	4	47
	A287								#6	8'-5"	4	51
	A288								#6	9'-1"	4	55
	A289								#6	9'-9"	4	59
	A290								#6	10'-6"	4	63
	A291								#6	11'-2"	4	67
	A292								#6	11'-10"	4	71
	A293								#6	12'-6"	4	75
	A294								#6	13'-2"	4	79
	A295								#6	13'-10"	4	83
	A296								#6	14'-7"	4	88
	A297								#6	15'-3"	4	92
	A298								#6	15'-11"	4	96
	A299								#6	16'-7"	4	100
	A300								#6	17'-3"	4	104
	A301								#6	17'-11"	4	108
	A302								#6	18'-7"	4	112
	A303								#6	19'-3"	4	116
	A304								#6	20'-0"	4	120
	A305								#6	20'-8"	4	124
	A306								#6	21'-4"	2	64
	A307								#6	1'-3"	6	11
	A308								#6	2'-0"	10	30
	A309								#6	2'-10"	16	68
	A310								#6	3'-7"	16	86
	A311								#6	4'-5"	16	106
	A312								#6	5'-3"	16	126
	A313								#6	6'-0"	16	144
	A314								#6	6'-10"	16	164
	A315								#6	7'-7"	16	182
	A316								#6	8'-5"	16	202
	A317								#6	9'-3"	16	222
	A318								#6	10'-0"	16	240
	A319								#6	10'-10"	18	293
	A320								#6	11'-7"	16	278
	A321								#6	12'-5"	16	298
	A322								#6	13'-3"	16	318
	A323								#6	14'-0"	16	336
	A324								#6	14'-10"	16	356
	A325								#6	15'-7"	16	374
	A326								#6	16'-5"	16	395
	A327								#6	17'-3"	16	415
	A328								#6	18'-0"	16	433
	A329								#6	18'-10"	16	453
	A330								#6	19'-7"	16	471
	A331								#6	20'-5"	16	491
	A332								#6	21'-3"	12	383
	A333								#6	1'-3"	2	4
	A334								#6	2'-0"	2	6
	A335								#6	2'-9"	4	17
	A336								#6	3'-6"	4	21
	A337								#6	4'-4"	4	26
	A338								#6	5'-1"	4	31
	A339								#6	5'-10"	4	35
	A340								#6	6'-7"	4	40
	A341								#6	7'-5"	4	45
	A342								#6	8'-2"	4	49
	A343								#6	8'-11"	4	54
	A344								#6	9'-8"	4	58
	A345								#6	10'-5"	4	63

	BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
SUPERSTRUCTURE	A346								#6	11'-3"	4	68
	A347								#6	12'-0"	4	72
	A348								#6	12'-9"	4	77
	A349								#6	13'-6"	4	81
	A350								#6	14'-4"	4	86
	A351								#6	15'-1"	4	91
	A352								#6	15'-10"	4	95
	A353								#6	16'-7"	4	100
	A354								#6	17'-5"	4	105
	A355								#6	18'-2"	4	109
	A356								#6	18'-11"	4	114
	A357								#6	19'-8"	4	118
	A358								#6	20'-5"	4	123
	A359								#6	21'-3"	2	64
	A360								#6	1'-4"	2	4
	A361								#6	2'-1"	4	12
	A362								#6	2'-9"	4	17
	A363								#6	3'-5"	4	21
	A364								#6	4'-1"	4	25
	A365								#6	4'-10"	4	29
	A366								#6	5'-6"	4	33
	A367								#6	6'-2"	4	37
	A368								#6	6'-10"	4	41
	A369								#6	7'-6"	4	45
	A370								#6	8'-3"	4	50
	A371								#6	8'-11"	4	54
	A372								#6	9'-8"	4	58
	A373								#6	10'-4"	4	62
	A374								#6	11'-0"	4	66
	A375								#6	11'-8"	4	70
	A376								#6	12'-4"	4	74
	A377								#6	13'-1"	4	79
	A378								#6	13'-9"	4	83
	A379								#6	14'-5"	4	87
	A380								#6	15'-1"	4	91
	A381								#6	15'-10"	4	95
	A382								#6	16'-6"	4	99
	A383								#6	17'-2"	4	103
	A384								#6	17'-10"	4	107
	A385								#6	18'-6"	4	111
	A386								#6	19'-3"	4	116
	A387								#6	19'-11"	4	120
	A388								#6	20'-8"	4	124
	A389								#6	21'-4"	4	128
	A390								#4	2'-0"	1	1
	A391								#4	8'-0"	1	5
	A392								#4	14'-0"	1	9
	A393								#4	20'-0"	2	27
	A394								#4	26'-0"	1	17
	A395								#4	34'-0"	1	23
	A396								#4	24'-0"	2	32
	A397								#4	30'-0"	9	180
	A398								#4	38'-0"	108	2741
	A399								#5	2'-0"	1	2
	A400								#5	5'-0"	1	5
	A401								#5	8'-0"	1	8
	A402								#5	11'-0"	2	23
	A403								#5	14'-0"	1	15
	A404								#5	17'-0"	1	18
	A405								#5	20'-0"	2	42
	A406								#5	22'-0"	1	23
	A407								#5	25'-0"	1	27
	A408								#5	29'-0"	1	30
	A409								#5	34'-0"	1	35
	A410								#5	40'-0"	1	42
	A411								#5	24'-0"	2	50
	A412								#5	26'-0"	2	54
	A413								#5	30'-0"	8	250
	A414								#5	35'-0"	2	73
	A415								#5	36'-0"	144	5707
	A416								#4	36'-0"	1	24
	A417								#5	36'-0"	6	225
	A418								#6	28'-0"	54	2271
	A419								#4	39'-0"	39	1016
	A420								#4	32'-0"	16	342
	A421								#4	1'-6"	1	1
	A422								#4	2'-5"	1	2
	A423								#4	3'-5"	1	2

	BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
SUPERSTRUCTURE	A424								#4	4'-4"	1	3
	A425								#4	5'-4"	1	4
	A426								#4	6'-3"	1	4
	A427								#4	7'-2"	1	5
	A428								#4	8'-2"	1	5
	A429								#4	9'-1"	1	6
	A430								#4	10'-1"	1	7
	A431								#4	11'-0"	2	15
	A432								#6	32'-0"	34	1634
	A433								#5	29'-3"	141	4302
	A434								#4	28'-9"	159	3054
	A435								#6	29'-3"	48	2109
	A436								#5	28'-3"	141	4155
	A437								#4	28'-3"	159	3001
	A438								#6	28'-6"	18	771
	A439								#4	31'-3"	127	2651
	A440								#5	31'-3"	148	4824
	A441								#4	32'-6"	1	22
	A442								#4	33'-6"	1	22
	A443								#4	35'-0"	1	23
	A444								#4	36'-0"	1	24
	A445								#4	37'-0"	19	470
	A446								#5	32'-6"	1	34
	A447								#5	33'-6"	1	35
	A448								#5	35'-0"	1	37
	A449								#5	36'-0"	1	38
	A450								#5	37'-0"	1	39
	A451								#4	33'-0"	39	860
	A452								#4	27'-6"	6	110
	A453								#4	19'-6"	3	39
	A454								#4	3'-6"	2	5
	A455								#4	31'-6"	18	379
	A456								#4	13'-3"	2	18
	A457								#4	22'-3"	4	59
	A458								#4	21'-0"	4	56
	B201	10'-9½"	9"						#4	11'-6"	271	2082
	B202	19'-6½"	9"						#4	20'-3"	1	14
	B203	13'-0½"	9"						#4	13'-9"	1	9
	B204	1'-6½"	9"						#4	2'-6"	6	9
	B205	3'-0½"	9"						#4	3'-9"	6	15
	B206	4'-6½"	9"						#4	5'-3"	6	21
	B207	6'-0½"	9"						#4	6'-9"	6	27
	B208	7'-6½"	9"						#4	8'-3"	6	33
	B209	9'-0½"	9"						#4	9'-9"	6	39
	B210	13'-6½"	9"						#4	14'-3"	5	48
	B211	15'-6½"	9"						#4	16'-3"	1	11
	B212	4'-6½"	9"						#4	5'-3"	1	4
	B213	5'-9½"	9"						#4	6'-6"	1	4
	B214	6'-9½"	9"						#4	7'-6"	1	5
	B215	8'-0½"	9"						#4	8'-9"	1	6
	B216	9'-3½"	9"						#4	10'-0"	1	7
	B217	10'-6½"	9"						#4	11'-3"	1	8
	D201	6⅞"	1'-2¼"						#4	2'-3"	302	454
	D202	5⅝"	1'-4¾"						#4	2'-3"	297	446
	D203	2'-11⅛"	6'4"						#6	6'-3"	600	5633
	E201	37'-3"	1'-9"	1'-9"	2'-6"				#6	39'-9"	12	716
	E202	31'-6"	6"	2'-5"	2'-6"				#6	33'-6"	6	302
	E203	29'-0"	6"	2'-2"	2'-3"				#6	31'-3"	6	282
	K201	4'-4"	1'-0¾"	1'-0¾"	1'-3½"				#4	12'-0"	21	168
	M201	10¼"	4'-4"	1'-3½"	3'-5"	1'-1¾"	1'-6"		#4	12'-3"	57	466
	M202	1'-2"	4'-4"	1'-10"	3'-1"	1'-5½"	1'-6"		#4	13'-3"	1	9
	M203	1'-1¼"	4'-4"	1'-8¼"	3'-1"	1'-2"	1'-6"		#4	12'-9"	1	9
	P201	1'-0"	1'-2"	11½"	11½"				#4	5'-0"	290	969
	P202	6"	3'-0"	1'-0½"	1'-0½"				#4	5'-6"	2	7
	P203	1'-0"	1'-5"	11½"	11½"				#4	5'-3"	6	21
	T201	1'-2½"	1'-5"	1'-5½"	7"				#4	5'-11"	304	1202
	T202	8½"	1'-5"	11½"	7"				#4	4'-11"	1	3
						SUPERSTRUCTURE TOTAL = 134,424 Lbs.						

GENERAL NOTES

WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL SUPPLEMENTAL SPECIFICATIONS CONTAINED THEREIN, ALL MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR CONSTRUCTION

DESIGN OF THESE STRUCTURES IS BASED ON THE MICHIGAN DEPARTMENT OF HIGHWAYS SPECIFICATIONS FOR THE DESIGN OF HIGHWAY BRIDGES 1953 AND CURRENT AASHO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES

[illegible] OF LOADING: LIVE LOAD PLUS IMPACT DEFLECTION OF SPAN LENGTH AND [illegible] OF CANTILEVER ARM

[illegible] CHARACTER OF ALL MATERIALS AND THE EXTENT THEREOF AS SHOWN BY [illegible] HAVE BEEN OBTAINED BY METHOD AND FROM SOURCES BELIEVED TO BE [illegible] THE EXACTNESS OF THIS INFORMATION IS, HOWEVER, IN NO CASE [illegible]

[illegible] EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE [illegible] 3/4" TRIANGULAR MOLDING, EXCEPT AS OTHERWISE NOTED.

[illegible] AS SHOWN ON THESE PLANS FOR THE INTERSECTION OF THE [illegible] BRIDGE AND ROADWAY CENTERLINE IS BELIEVED TO BE CORRECT [illegible] CONTRACTOR SHALL CHECK AT THE TIME OF STARTING CONSTRUCTION AND [illegible] AS SHOWN ON THE PLANS IS INCORRECT, IT SHALL BE REPORTED [illegible] DESIGN OFFICE AT LANSING AND THE STRUCTURE SHALL BE STAKED OUT [illegible] ACTUAL INTERSECTION OF THE CENTERLINE OF BRIDGE AND ROADWAY [illegible] AT THE CONTROL POINT.

[illegible] AND TESTING OF THE STRUCTURAL MATERIALS USED IN THE [illegible] IN ACCORDANCE WITH [illegible]

[illegible] 3 000 psi

[illegible] 20 000 psi

[illegible] 27 000 psi

NOTE:
For bar bending diagram and bar notes see sheet 30

Work Sheets 30 & 31 Together

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED [signature] STRUCTURAL ENGINEER

JOB No. 990(19)

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED [illegible]
APPROVED [illegible]
APPROVED [illegible]

STRUCTURES

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

STEEL REINFORCEMENT DETAILS

CITY OF DETROIT

NO.	REVISIONS DESCRIPTION	DATE	BY

SQUAD BOSS Spurm 9-70
DRAWN BY J.J. 9-70
TRACED BY
CHECKED BY T.H.S. 10-70
SHEET 31 OF 31

S23 OF 82122K

01253A

MASTER

OUTER DRIVE BRIDGE
S21 of 82122J

SHEET NO	DESCRIPTION
2	GENERAL PLAN OF SITE
3	LOG OF SOIL BORINGS
4	GENERAL DRAWING
5-6	GENERAL PLAN OF STRUCTURE
7	EXISTING UTILITIES AND PROPOSED ALTERATIONS
8-12	ABUTMENT DETAILS
13-14	PIER DETAILS
15	FOUNDATION PILING DETAILS
16-18	STRUCTURAL STEEL DETAILS
19	EXPANSION JOINT DETAILS
20-27	SUPERSTRUCTURE DETAILS
28	STEEL REINFORCEMENT DETAILS

BENTLER AVE PEDESTRIAN BRIDGE
P01 of 82122J

SHEET NO	DESCRIPTION
2	GENERAL PLAN OF SITE
3	GENERAL DRAWING
4-5	GENERAL PLAN OF STRUCTURE
6	EXISTING UTILITIES AND PROPOSED ALTERATIONS
7-9	ABUTMENT AND RAMP DETAILS
10	PIER AND RAMP DETAILS
11-12	PIER DETAILS
13-14	STRUCTURAL STEEL DETAILS
14A	EXPANSION JOINT DETAILS
15-16	SUPERSTRUCTURE DETAILS
17	FENCING DETAILS
18	STEEL REINFORCEMENT DETAILS

BURT ROAD BRIDGE
S22 of 82122J

SHEET NO	DESCRIPTION
2	GENERAL PLAN OF SITE
3	LOG OF SOIL BORINGS
4	GENERAL DRAWING
5	GENERAL PLAN OF STRUCTURE
6	EXISTING UTILITIES AND PROPOSED ALTERATIONS
7	STAGE CONSTRUCTION DETAILS
8	FOUNDATION PILING DETAILS
9-12	ABUTMENT DETAILS
13-14	PIER DETAILS
15-17	STRUCTURAL STEEL DETAILS
18-19	EXPANSION JOINT DETAILS
20-25	SUPERSTRUCTURE DETAILS
26	STEEL REINFORCEMENT DETAILS

SCHOOLCRAFT CROSSOVER BRIDGE
S23 of 82122K

SHEET NO	DESCRIPTION
2	GENERAL PLAN OF SITE
3-4	LOG OF SOIL BORINGS
5	GENERAL DRAWING
6-7	GENERAL PLAN OF STRUCTURE
8	EXISTING UTILITIES AND PROPOSED ALTERATIONS
9	FOUNDATION PILING DETAILS
10-14	ABUTMENT DETAILS
15-16	PIER DETAILS
17-19	STRUCTURAL STEEL DETAILS
20-21	EXPANSION JOINT DETAILS
22-30	SUPERSTRUCTURE DETAILS
31	STEEL REINFORCEMENT DETAILS

STOUT AVE PEDESTRIAN BRIDGE
P02 of 82122K

SHEET NO	DESCRIPTION
2	GENERAL PLAN OF SITE
3	LOG OF SOIL BORINGS
4	GENERAL DRAWING
5-6	GENERAL PLAN OF STRUCTURE
7	EXISTING UTILITIES AND PROPOSED ALTERATIONS
8-11	ABUTMENT AND RAMP DETAILS
12-13	PIER DETAILS
14-16	STRUCTURAL STEEL DETAILS
17-18	SUPERSTRUCTURE DETAILS
19	EXPANSION JOINT DETAILS
20-21	FENCING DETAILS
22	STEEL REINFORCEMENT DETAILS

GLENDALE AVE BRIDGE
S24 of 82122K

SHEET NO	DESCRIPTION
2	GENERAL PLAN OF SITE
3-5	LOG OF SOIL BORING
6	GENERAL DRAWING
7-8	GENERAL PLAN OF STRUCTURE
9	EXISTING UTILITIES AND PROPOSED ALTERATIONS
10-11	FOUNDATION PILING DETAILS
12-17	ABUTMENT DETAILS
18-19	PIER DETAILS
20-22	STRUCTURAL STEEL DETAILS
23	EXPANSION JOINT DETAILS
24-31	SUPERSTRUCTURE DETAILS
32-33	STEEL REINFORCEMENT DETAILS

SHEET NO	DESCRIPTION
1	TITLE SHEET
1A	INDEX SHEET
1B,C	QUANTITY SHEET
R16B	BRIDGE RAILING, DRAIN CASTING, BAR CHAIR, MOLDING AND BEVEL DETAILS
SP2L	STANDARD SLOPE PAVING DETAILS

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No.
PW 990 (19)
PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

JEFFRIES FREEWAY IN DETROIT

INDEX SHEET

REVISIONS

NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	STURM	8-70
DRAWN BY	—	—
TRACED BY	M.S.	8-70
CHECKED BY	I.N.S.	8-70

SHEET 1A OF

S21, P01, S22 OF 82122J
S23, P02, S24 OF 82122K

ITEM	CODE NO	UNIT	CONTR. QUANT.	FINAL QUANT.	UNIT PRICE	FINAL COST	P01 of 82122J CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST	P02 of 82122K CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST	CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST	CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST
UNCLASSIFIED EXCAVATION	6020	C.YD.	2403				608				1795											
CAST IN PLACE CONCRETE PILES-FURNISHED AND DRIVEN (12IN)	6045	L.FT.	915								915											
TEST PILES - CAST IN PLACE CONC. PILES (12IN)	6047	EACH	2								2											
SPLICES - STEEL SHEELS (12IN)	6048	EACH	20								20											
PILE POINTS - CAST IN PLACE CONC. PILES (12IN)	6049	EACH	17								17											
FURNISHING EQUIPMENT FOR DRIVING PILES	6100	SUM	SUM								LUMPSUM											
STEEL SHEET PILING - 6100	6098	S.FT	341								341											
CONCRETE GRADE A (CIP) - SUBSTRUCTURE	6171	C.YD	227.6				101.9				125.7											
CONCRETE GRADE A (CIP) - SUPERSTRUCTURE	6171	C.YD	427.5				177.9				236.6											
WEAR PROTECTIVE COATING FOR SUBSTRUCTURE CONCRETE		S.FT	3664				1637				2027											
PROTECTIVE SEALANT COATING FOR SUBSTRUCTURE CONCRETE	6176	S.FT	106.6				28.6				78											
CONCRETE GRADE A (AA) - SUPERSTRUCTURE	6160	C.YD.	149.2				81.4				67.8											
WATER REDUCING RETARDING ADMIXTURE	6163	GAL.	32				12				10											
PROTECTIVE TREATMENT FOR BRIDGE WORKS	6164	S.FT	3				[illegible]				2580											
LOW TEMPERATURE PROTECTION - SUBSTRUCTURE CONCRETE	6166	C.YD	577.6				274.8				304.8											
LOW TEMPERATURE PROTECTION - SUPERSTRUCTURE CONCRETE	6167	C.YD.	209.4				81.4				128											
STEEL REINFORCEMENT	6160	LBS.	594674				372.25				222.49											
STRUCTURAL STEEL - FURNISHING AND FABRICATING (A-588 ROLLED)	6173	LBS.	192200				109500				82700											
STRUCTURAL STEEL - ERECTION (A-588 ROLLED)	6200	LBS.	92200				109500				[illegible]											
SHEAR DEVELOPERS (P01)		LUMP	SUM				LUMPSUM															
SHEAR DEVELOPERS (P02)		LUMP	SUM								LUMPSUM											
1/2 IN. JOINT FILLER	6272	S.FT.	4								4											
3/4 IN. JOINT FILLER	6274	S.FT.	12				2															
1/4 IN PREFORMED NEOPRENE JOINT SEALER	6310	L.FT	20				10				10											
2 IN. PREFORMED NEOPRENE JOINT SEALER	6312	L.FT.	37				17				20											
22 3/4 IN REINFORCED NEOPRENE EXPANSION JOINT SEAL		L.FT	40				20				20											
JOINT WATERPROOFING	6332	S.FT.	403				14				287											
6 IN DUCTILE METAL PIPE		L.FT	10				10															
6 IN. GALVANIZED STEEL PIPE		L.FT.	8								8											
SLOPE PROTECTION - CLASS A	6412	S.YD	40								40											
SLOPE PROTECTION HEADERS	6460	L.FT	82								82											
FOUNDATION DRAINS	6467	L.FT.	332				152				180											
CHAIN LINK FENCE AND FRAMING		LFT	1116.8				324.8				272											
CHAIN LINK FENCE - BRIDGE		L.FT	662.7				404.7				258											
ELECTRICAL GROUNDING SYSTEM (P01)		LUMP	SUM				LUMPSUM															
ELECTRICAL GROUNDING SYSTEM (P02)		LUMP	SUM								LUMPSUM											
6 IN SEWER		L.FT	401				232				167											
TOTAL																						

PLAN EXTRAS

DATE	DESCRIPTION	UNIT	QUANTITY ESTIMATE	QUANTITY FINAL

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No.
PW 990 (19)
PW 990 (20)

MICHIGAN STATE HIGHWAY DEPARTMENT

QUANTITY SHEET

I-UI-96-4(103)221

CITY OF DETROIT

SQUAD BOSS	STURM	9-70
DRAWN BY	MSUCH	9-70
TRACED BY	—	—
CHECKED BY	THIS	9-70

SHEET 1C OF

BIU 82122, 040

P01 OF 82122J
P02 OF 82122K

MASTER

ITEM	CODE NO	UNIT	CONTR. QUANT.	FINAL QUANT.	UNIT PRICE	FINAL COST	S-21 of 82122J CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST	S-22 of 82122J CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST	S-23 of 82122K CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST	S-24 of 82122K CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST
LIGHTWEIGHT FILL (C.I.P.)	144	C.YD.									8700				3800				3550			
UNCLASSIFIED EXCAVATION	6020	C.YD					7600				616				2485				3560			
60 TON PILES - FURNISHED AND DRIVEN	6042	L.FT.									6850				5235							
SPLICES - 60 TON PILES	6043	EACH									198				118							
TEST PILES - 60 TON PILES	6044	EACH									10				10							
CAST IN PLACE CONCRETE PILES - FURNISHED AND DRIVEN (12 IN.)	6045	L. FT.					2480												5700			
TEST PILES - CAST IN PLACE CONCRETE PILES (12 IN.)	6047	EACH					2												10			
SPLICES - STEEL SHELLS (12 IN)	6048	EACH					62												114			
PILE POINTS - CAST IN PLACE CONCRETE PILES (12 IN.)	6049	EACH					64															
FURNISHING EQUIPMENT FOR DRIVING PILES (S21)		LUMP	SUM				LUMP SUM															
FURNISHING EQUIPMENT FOR DRIVING PILES (S22)		LUMP	SUM								LUMP SUM				LUMP SUM							
FURNISHING EQUIPMENT FOR DRIVING PILES (S23)		LUMP	SUM																LUMP SUM			
FURNISHING EQUIPMENT FOR DRIVING PILES (S24)		LUMP	SUM																			
TEMPORARY STEEL SHEET PILING	6073	S.FT.									2925				806				850			
STEEL SHEET PILING, L.I.P.	6074	S.FT.													19.5							
STRUCTURAL LIGHTWEIGHT CONCRETE		C.YD.									883.1				606.7				417.5			
CONCRETE GRADE A (6A) - SUBSTRUCTURE	6090	C.YD.					1432				6202				6963				474.5			
CONCRETE GRADE A (6AA) - SUBSTRUCTURE	6091	C.YD.									8388				6006				6620			
CLEAR PROTECTIVE COATING FOR SUBSTRUCTURE CONCRETE		S.FT.					7866												162			
PROTECTIVE SEALANT COATING FOR SUBSTRUCTURE CONCRETE	6096	S.FT.																	5393			
CONCRETE GRADES A(6AA) - SUPERSTRUCTURE	6100	C.YD.					1639				7218				647.3				77			
WATER REDUCING RETARDING ADMIXTURE	6103	GAL					206				75				73				13470			
PROTECTIVE TREATMENT FOR BRIDGE DECKS	6104	S.FT					60215				19200				15230				892			
LOW TEMPERATURE PROTECTION - SUBSTRUCTURE CONCRETE	6106	C.YD					963.2				1103.3				1303				5393			
LOW TEMPERATURE PROTECTION - SUPERSTRUCTURE CONCRETE	6107	C.YD.					1639				751				668.8				0			
STEEL REINFORCEMENT	6160	LBS.					914188				222851				214826				0			
STRUCTURE STEEL - FURNISHING AND FABRICATING (A-588 ROLLED)	6199	LBS.									426800				586000				0			
STRUCTURE STEEL - ERECTION (A-588 ROLLED)	6200	LBS.									426800				526000				0			
STRUCTURE STEEL - FURNISHING AND FABRICATING (A-588 PLATE)	6202	LBS.					1205600															
STRUCTURE STEEL - ERECTION (A-588 PLATE)	6203	LBS					1205600															
SHEAR DEVELOPERS (S21)		LUMP	SUM				LUMP SUM															
SHEAR DEVELOPERS (S22)		LUMP	SUM								LUMP SUM											
SHEAR DEVELOPERS (S23)		LUMP	SUM												LUMP SUM							
SHEAR DEVELOPERS (S24)		LUMP	SUM																LUMP SUM			
STRUCTURAL TILE - 4x12 x 12	6260	EACH					6												713			
1/4 IN. JOINT FILLER	6290	S.FT.					586				216				206				8			
1/2 IN. JOINT FILLER	6292	S.FT.					64				182				188				266			
1 IN. JOINT FILLER	6296	S.FT.					100								54				33			
2 IN. JOINT FILLER	6302	S.FT.									69											
1/4 IN. PREFORMED NEOPRENE JOINT SEALER	6310	L.FT					230												98			
2 IN. PREFORMED NEOPRENE JOINT SEALER	6312	L.FT.																	43			
4 IN. PREFORMED NEOPRENE JOINT SEALER	6316	L.FT.									136				103							
DOUBLE NEOPRENE EXPANSION JOINT		L.FT					167.3															
22 3/4 IN. REINFORCED NEOPRENE EXPANSION JOINT SEAL		L.FT.					810				373				630				535			
JOINT WATERPROOFING	6332	S.FT.																				
HOT POURED RUBBER ASPHALT TYPE FILLER	6338	L. FT									46											
TWO COMPONENT POLYURETHANE COLD APPLIED JOINT SEALER	6340	L.FT.									590				758.4				736.8			
BRIDGE RAILING - SOLID PARAPET TYPE	6381	L.FT.					563.1				69				14				14.3			
EXPANSION JOINT DRAIN	6410	L.FT.					9.7				130				169				113			
3 IN. CONDUITS	6416	L.FT.					328				1652				586				1011			
4 IN. CONDUITS	6417	L.FT					922				220				220				65			
SLOPE PROTECTION - CLASS A	6662	S.YD					1160				200				232				199			
SLOPE PROTECTION HEADERS	6666	L.FT.					475				418				492				425			
FOUNDATION DRAINS	6967	L.FT.					580															
TOTAL																						

PLAN EXTRAS

DATE	DESCRIPTION	UNIT	QUANTITY ESTIMATE	QUANTITY FINAL

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

APPROVED J J Card STRUCTURAL ENGINEER

JOB No.
PW 990 (19)
PW 990 (20)

MICHIGAN STATE HIGHWAY DEPARTMENT

QUANTITY SHEET

I-UI-96-4(103)221

CITY OF DETROIT		
SQUAD LEADER	SHUKM	9-70
DRAWN BY	Sweeck	9-70
TRACED BY	—	—
CHECKED BY	IHS	9-70
SHEET 16 OF		

BIU 82122, 040

S21, S22 OF 82122J
S23, S24 OF 82122K

MKS7.2

Curve Data - E. Bd Schoolcraft Crossover Curve #1

Δ = 44°-41'-01" Lt.
D: 11°-30'-00"
R: 498.22'
T: 204.76'
L = 388.55'
E: 40.44'
PC = 10+00.00
PI = 12+04.76
PT = 13+88.55

Curve Data - E. Bd. Schoolcraft Crossover Curve #2

Δ = 39°-11'-46"
D: 9°-30'-00"
R: 603.11'
T: 214.73' 74
L: 412.59'
E: 37.09' 07
PC = 15+50.08
PI: 17+64.81 82
PT: 19+62.67

Station	Adjusting CB Covers	Adjusting MH Covers	12" Sewer Traps	CB@M 8' deep or less	CB3 M&I 8'-14' deep	MH IA 8'-14' deep	12" C1 A Sewer (Comp.) Trench Detail 9	18" C1 B Sewer Trench Detail 8
18+50 Lt.	1		1		1		8	
18+95				1			62	
17+60		1						
Alley						2		48
Totals								

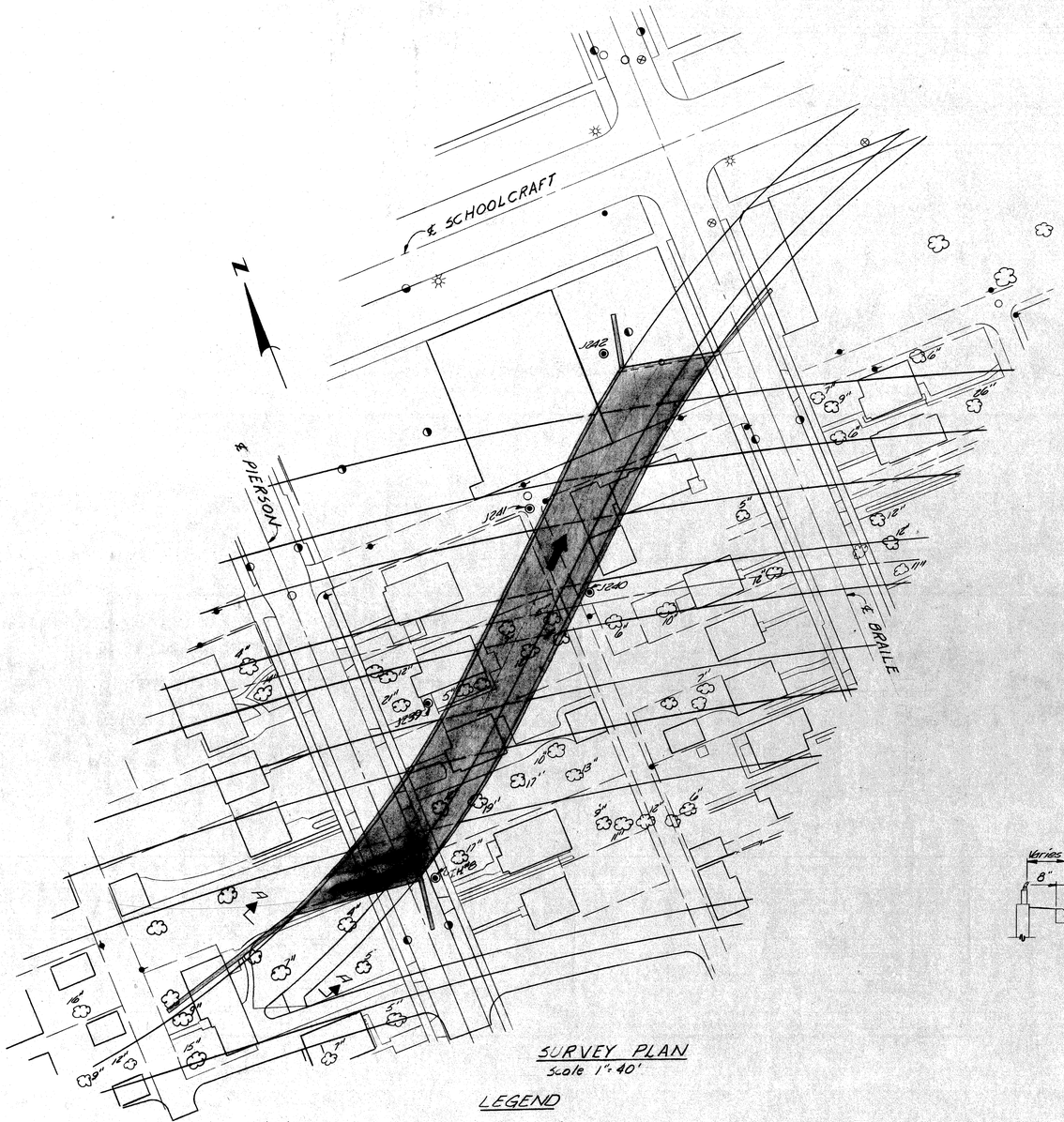
B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	82122	Wayne	Detroit	68	

AUTH.	DATE	REVISION
		FINAL R. O. W.

OPERATION	BY	DATE
PRELIMINARY R.O.W. CHECKED		
FINAL DESIGN		
FINAL DESIGN CHECKED		
TRACED		
FINAL R.O.W. CHECK		
QUANTITIES		
QUANTITIES CHECKED		
SQUAD	Goetsch	

OPERATION	BY	DATE
SURVEYED		
PLAN PLOTTED		
PLAN CHECKED		
PROFILE PLOTTED		
PROFILE CHECKED		
PRELIMINARY GRADE		
GRADE INSPECTION		
FEDERAL INSPECTION		

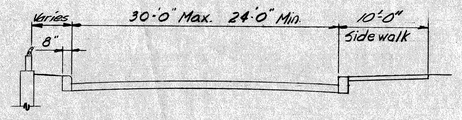
FILE NO. USE NO. 350 STENCIL 82122 J



SURVEY PLAN
Scale 1"=40'

LEGEND

(12") Tree (Size)
—x—x— Fence
Sewer Manhole
Water Gatewell & Valve
P.L.C. Lightpole
Sewer Inlet or Catch Basin
Test Hole for Soil Profile



SECTION A-A

NOTES

The Topography shown represents conditions existing at the time the field survey was made. These conditions may have been altered by the operations of others before this work is started.

Bench Marks are referenced to the City of Detroit Datum.

The work covered by these plans includes construction of the proposed bridge S23 and placing slope protection and lightweight fill to the limits shown.

All other work is included in the Road Plans which are a part of this contract.

Removal of fences and buildings is not a part of this contract.

LETTING DATE 8-1-70

PRELIMINARY PLAN "A" DATE 8-4-69

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (19)

REVISIONS			
NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF SITE

Design Supervising Engineer

APPROVED _____ SUPERVISOR – DESIGN

APPROVED _____ ENGINEER – DESIGN SECTION 1

CITY OF DETROIT

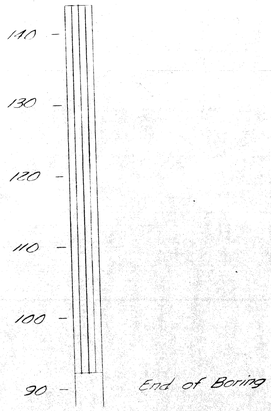
SQUAD BOSS	Locher	8-69
DRAWN BY	LEH/AG	8-69
TRACED BY		
CHECKED BY	DJR	8-69

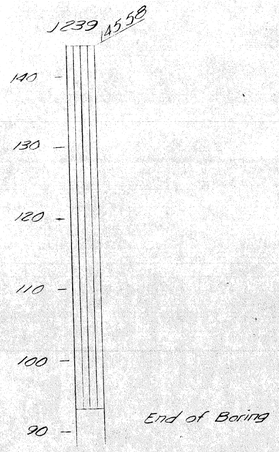
SHEET 1 OF 6

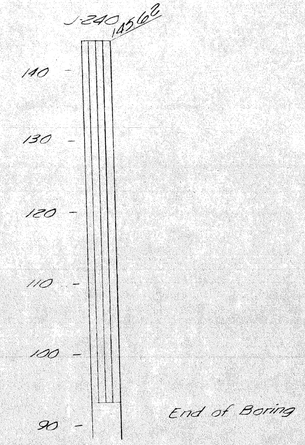
S23 of 82122K

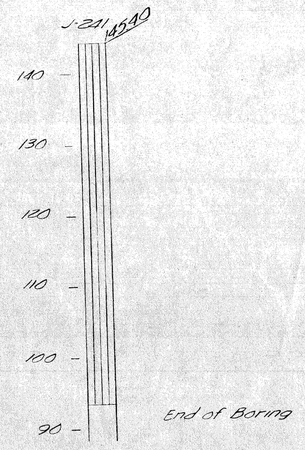
S23

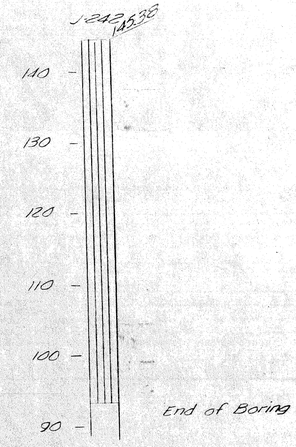
LOG OF SOIL BORING

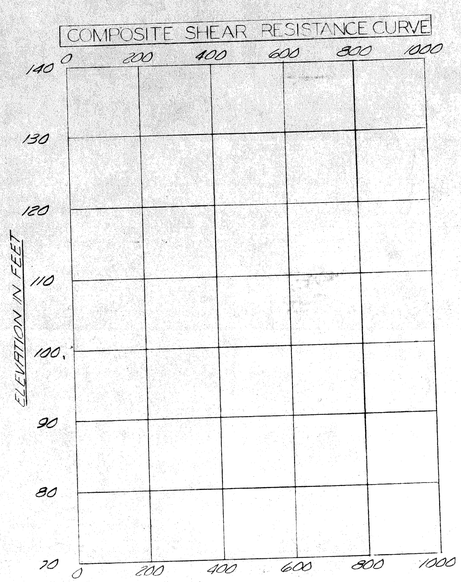


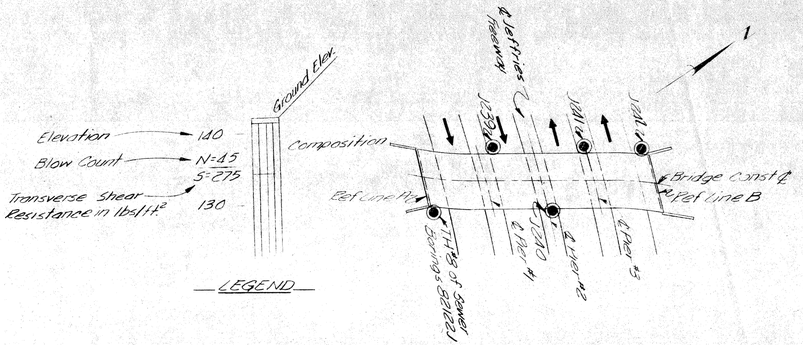












NOTES:
N- indicates the number of blow counts required to drive the sampler 6" (or as noted) using a 140 lb hammer falling 30". Where blow count is not shown, sampler was leveraed, pushed or hand driven.
S Indicates Transverse Shearing Resistance in lbs per Sq Ft as determined by M.D.S.H. Standard Test.

"A" elevations are based on City of Detroit Datum

PRELIMINARY PLAN "A"

DATE 8-4-69

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No.

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

LOG OF BORINGS

SQUAD BOSS	Locher	8-69
DRAWN BY	Hart	8-69
TRACED BY		
CHECKED BY	DJR	8-69
SHEET 2 OF 6		

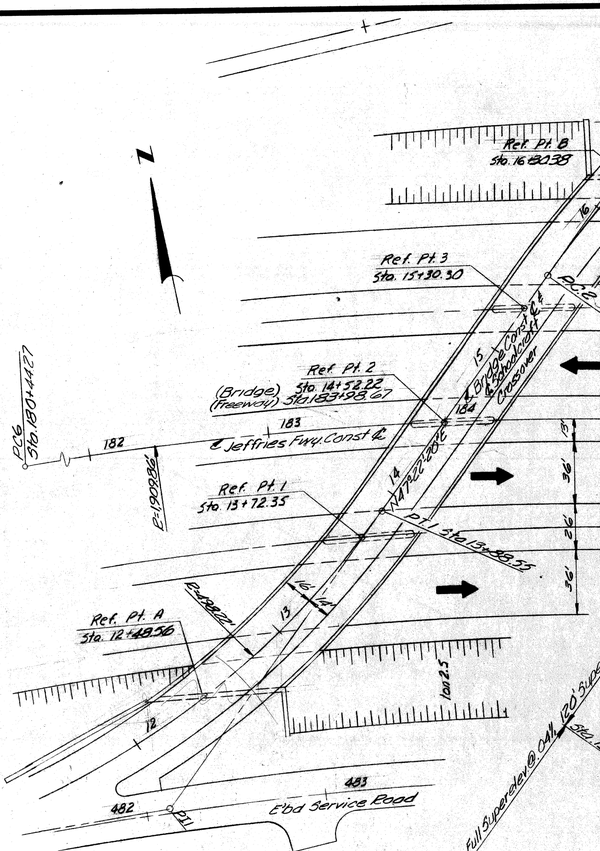
APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ Engineer - Design Section 1 ASST. ENGINEER OF DESIGN

S23 of 82122K

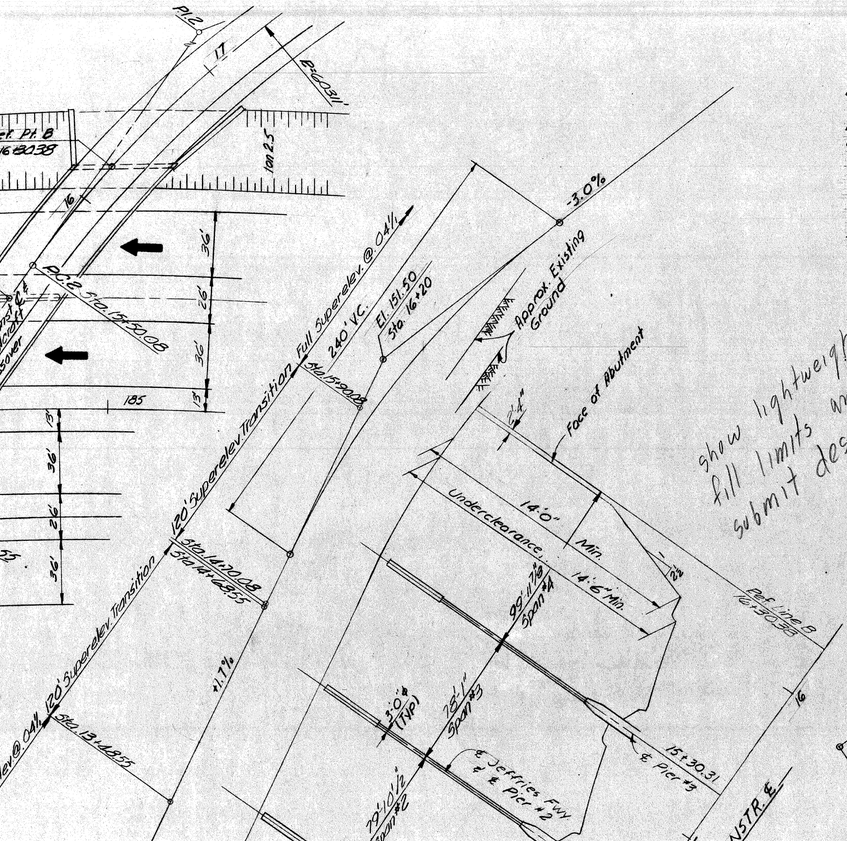
CURVE DATA

Curve #1 Schoolcraft Crossover	Curve #2 Schoolcraft Crossover	Curve #6 Jeffries Fwy. Const. ℄
Δ = 44°-41'-01" Lt.	Δ = 39°-11'-46" Rt.	Δ = 51°-13'-51" Rt.
D = 11°-30'-00"	D = 9°-30'-00"	D = 3°-00'-00"
R = 498.22'	R = 603.11'	R = 1,909.86
T = 204.76'	T = 214.73'	T = 915.68
L = 388.55'	L = 412.59'	L = 1,707.69
E = 40.44'	E = 37.09	E = 208.17
PC = 10+00.00	PC = 15+50.08	PC = 180+44.27
PI = 12+04.76	PI = 17+64.81	PI = 189+59.95
PT = 13+88.55	PT = 19+62.67	PT = 218+06.55



PLAN
Scale: 1"=40'

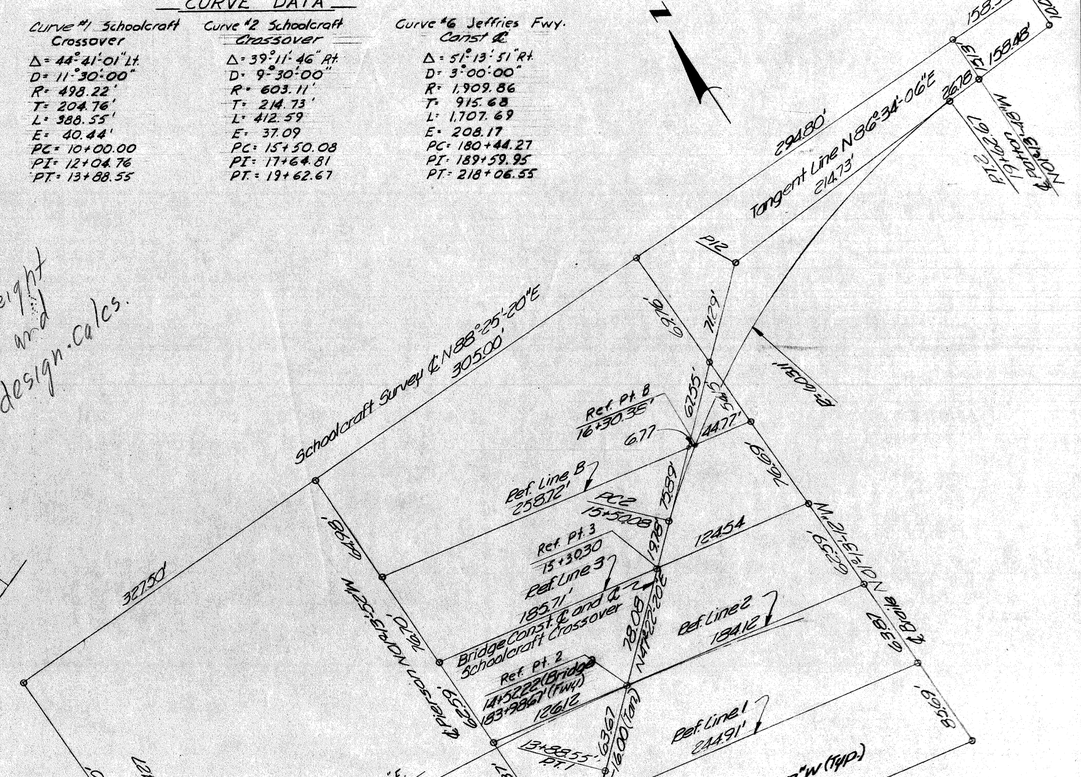
PROFILE ALONG FREEWAY
Scale: Horiz. 1"=40', Vert. 1"=4'



show lightweight fill limits and submit design calcs.

TRAFFIC COUNT
Estimated Traffic 1990
ADT denotes Average Daily Traffic
DHV. denotes Design Hourly Volume

CONSTRUCTION BENCH MARKS
BM 25 4'S. of N. Property Line Schoolcraft and 4'W of E Property Line of Burt Elev 144.89
BM 26 Tip of Arrow on Hydrant NE corner of Pierson and Schoolcraft. Elev. 147.89
BM 27 4'S of N. Property Line Braile Elev. 145.04
BM 28 Tip of Arrow on Hydrant N.E corner of Patton and Schoolcraft. Elev. 148.31



ALIGNMENT DIAGRAM
No Scale

PRELIMINARY PLAN "D"

DATE 8-4-69

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990(19)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

CITY OF DETROIT

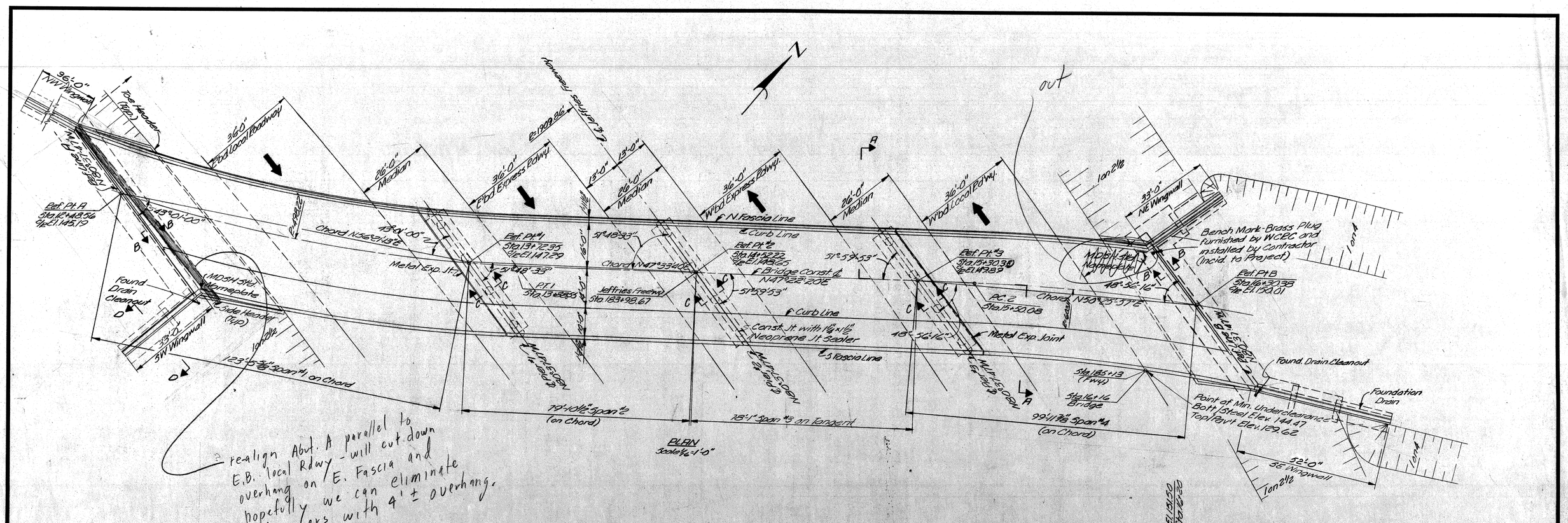
SQUAD BOSS	Locher	8-69
DRAWN BY	A.G.	8-69
TRACED BY		
CHECKED BY	W.A.L.	8-69

SHEET 3 OF 12

APPROVED _____ SUPERVISOR - DESIGN

APPROVED _____ ENGINEER - DESIGN SECTION 1

S23 of 82122 K



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

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (19)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF STRUCTURE

CITY OF DETROIT

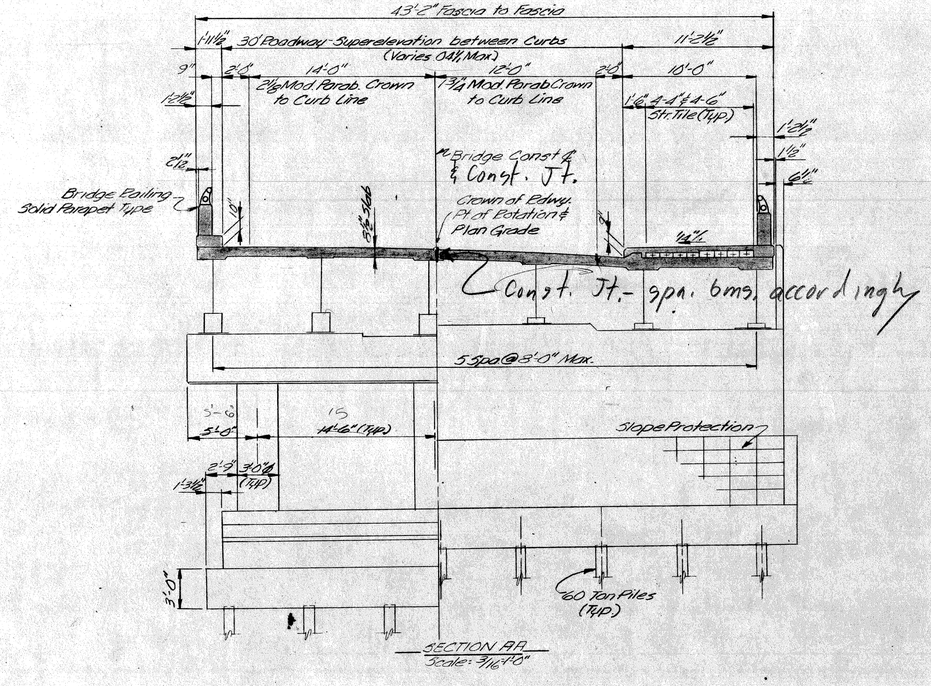
SQUAD BOSS	Locher	8/69
DRAWN BY	Hartle	8/69
TRACED BY		
CHECKED BY	W A L	8/69

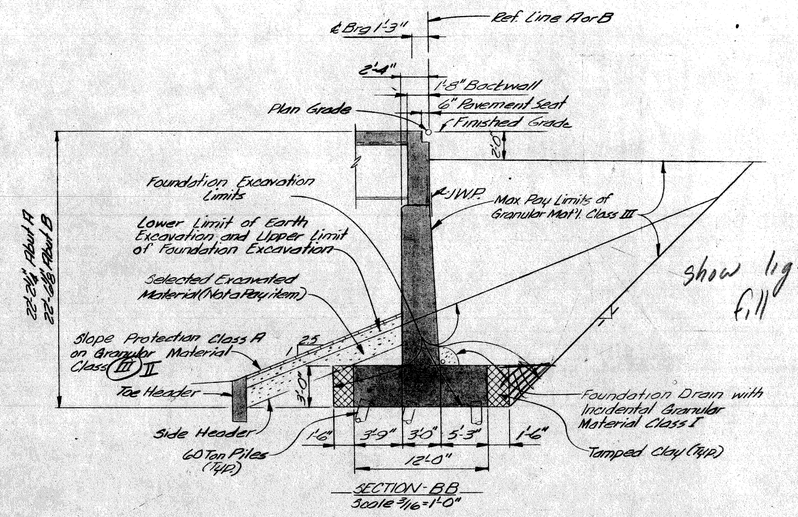
SHEET 1 OF 6

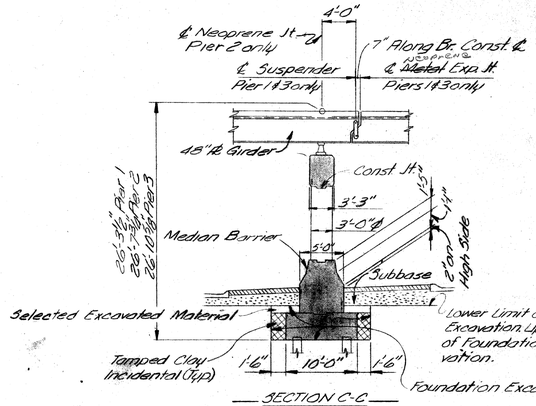
APPROVED _____ SUPERVISOR - DESIGN

APPROVED _____ ENGINEER - DESIGN SECTION I

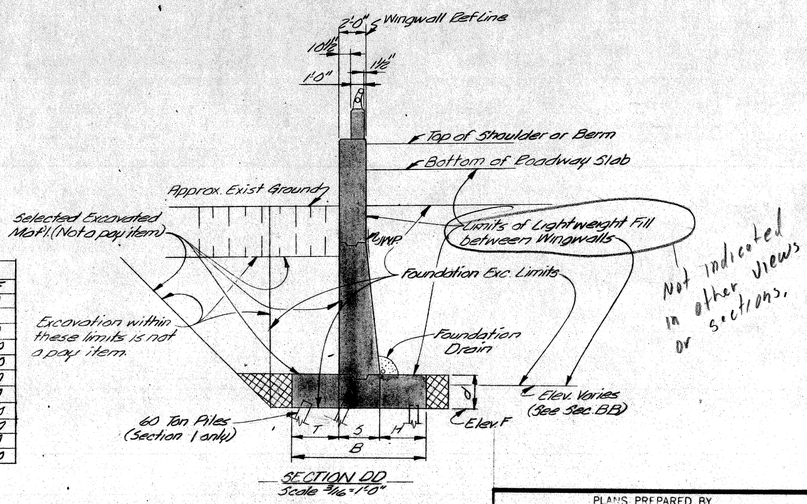
S23 of 82122K







WINGWALL DIMENSIONS							
	Sec	T	S	H	B	d	Elev F
NW	1	6'-0"	3'-0"	3'-0"	12'-0"	3'-0"	133.00
	2	6'-0"	2'-9"	3'-3"	12'-0"	3'-0"	127.50
	3	3'-3"	2'-6"	2'-3"	8'-0"	2'-6"	132.00
	4	2'-6"	2'-0"	1'-6"	6'-0"	2'-0"	136.50
SW	1	6'-0"	3'-0"	3'-0"	12'-0"	3'-0"	123.00
	2	3'-3"	2'-6"	2'-3"	8'-0"	2'-6"	131.00
NE	1	6'-0"	3'-0"	3'-0"	12'-0"	3'-0"	127.50
	2	3'-3"	2'-6"	2'-3"	8'-0"	2'-6"	135.00
SE	1	6'-0"	3'-0"	3'-0"	12'-0"	3'-0"	127.50
	2	3'-6"	2'-9"	2'-9"	9'-0"	3'-0"	133.50
	3	2'-6"	2'-3"	1'-9"	6'-6"	2'-0"	138.00



MISCELLANEOUS QUANTITIES		
Item	Unit	Amount
Lightweight Fill	Cu Yds.	
Foundation Drains	Lin Ft.	
Slope Protection Class A	Sq Yds.	
Slope Protection - Header	Lin Ft	
Steel Sheet Piling Left in Place	Sq Ft	

GENERAL NOTES:

The design of this structure is based on the MDSH Specifications for the Design of Highway Bridges, 1959 edition and current AASHO Standard Specifications for Highway Bridges H S20-44 loading

Live load plus impact deflection equals 1/1000 of span length and 1/250 of cantilever arm.

The top of roadway slab and tops of curbs & sidewalks are parallel to the vertical curve and tangents except as modified by superelevation transitions

This structure is partly on horizontal curves. The fascia lines, curb lines and longitudinal construction joints are parallel to the curves and tangents

For details of Slope Protection, see Standard Sheet SP2.

Granular Material Class III II is billed on Road Plans

Need quantities listed for earth excavation and granular II - Correlate method of showing with other squads

PRELIMINARY PLAN "A" DATE 8-1-69

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No.

REVISIONS

NO.	DESCRIPTION	DATE	BY

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ ASST. ENGINEER OF DESIGN

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

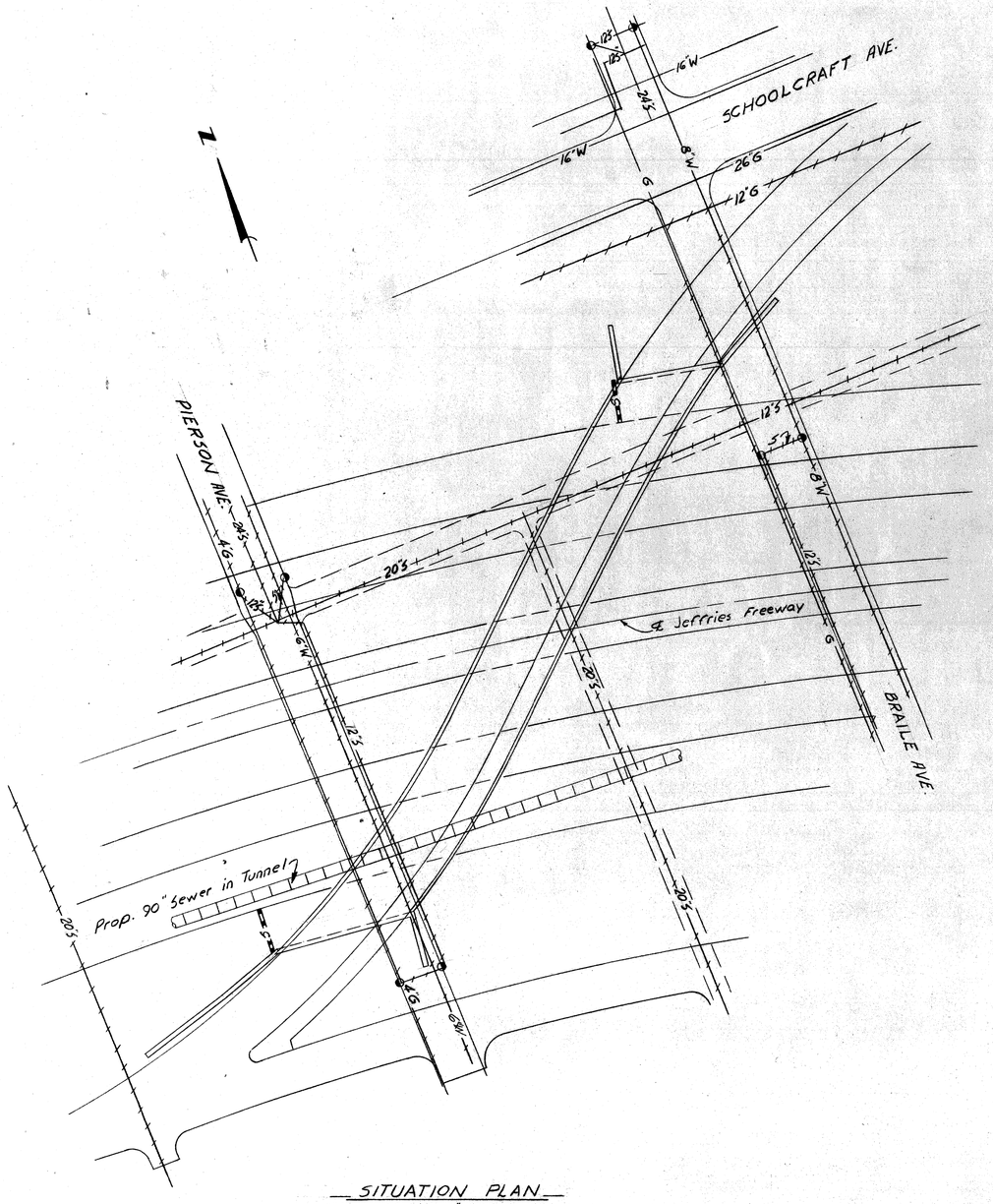
SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF STRUCTURE

SQUAD BOSS	Locher	8-69
DRAWN BY	Hart	8-69
TRACED BY	W.A.L.	8-69
CHECKED BY		

SHEET 5 OF 6

S23 of 82122K



SITUATION PLAN
Scale: 1"=40'

LEGEND

UTILITY	Existing	Abandoned or Deleted	New Work by Others	New Work by Contractor
Michigan Consolidated Gas	G	G		
Water	W	W		
Sewers	S	S	S	S

Note
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.

PRELIMINARY PLAN "A" DATE 8-4-69

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

APPROVED _____ STRUCTURAL ENGINEER

JOB No.

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

EXITING UTILITIES & PROPOSED ALTERATIONS

CITY OF DETROIT

REVISIONS			
NO.	DESCRIPTION	DATE	BY

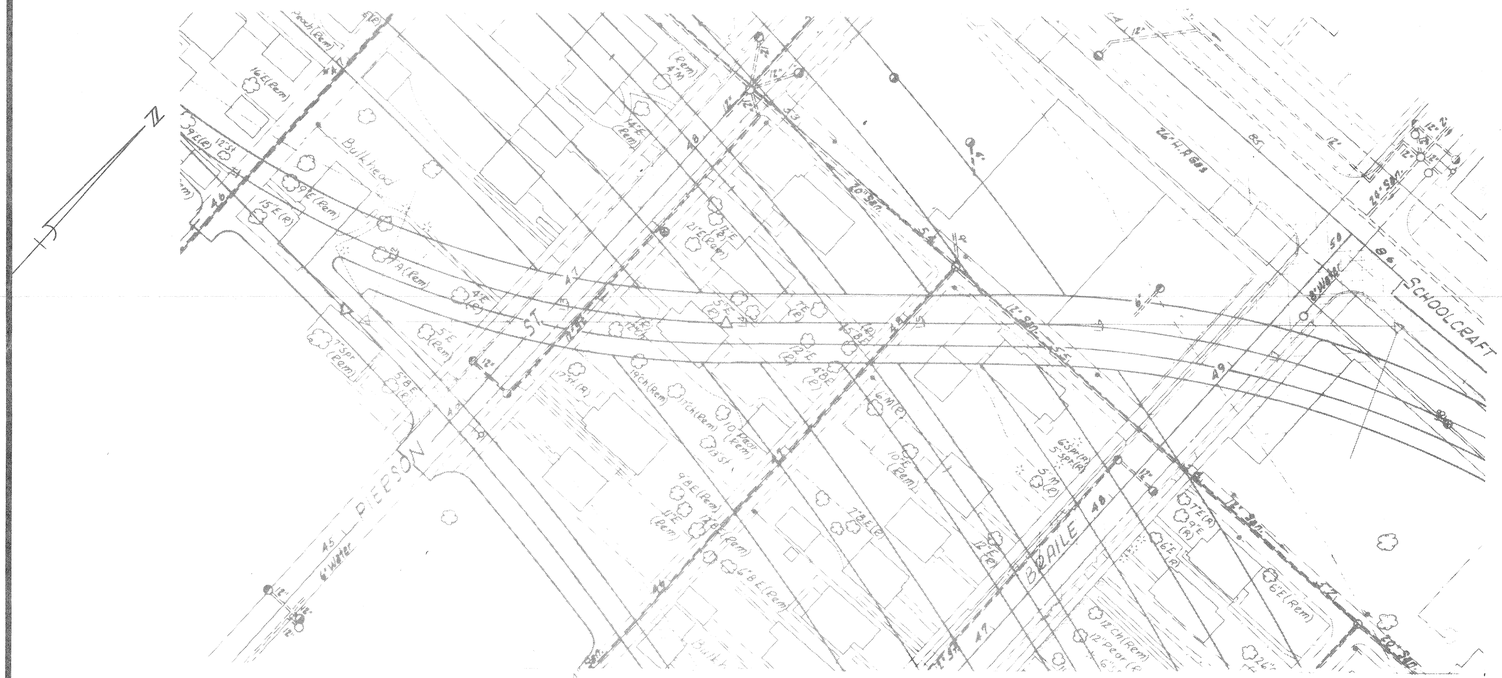
SQUAD BOSS	Locher	8-69
DRAWN BY	A.G.	4-69
TRACED BY		
CHECKED BY	D.J.R.	8-69
SHEET 6 OF 6		

S23 of 82122K

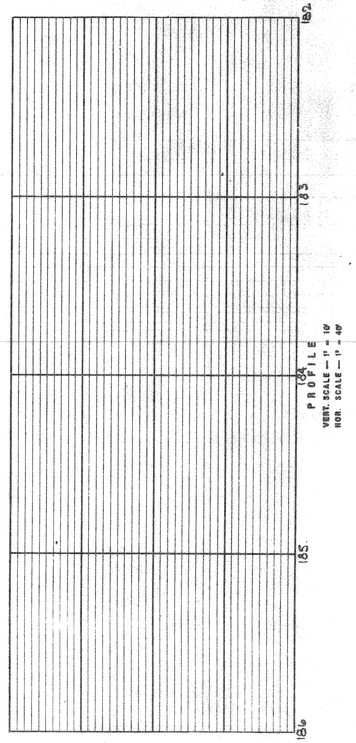
BENCH MARKS	
B.M. #23 Elev. 144.89 4' S. of N. Property Line Schoolcraft & 4' W. of E. Property Line of Burt.	B.M. #27 Elev. 145.04 4' S. of N. Property Line Braile.
B.M. #26 Elev. 147.89 Tip of Arrow on Hydrant N.E. Cor. of Pierson & Schoolcraft.	B.M. #28 Elev. 148.31 Tip of Arrow on Hydrant N.E. Cor. of Patton & Schoolcraft

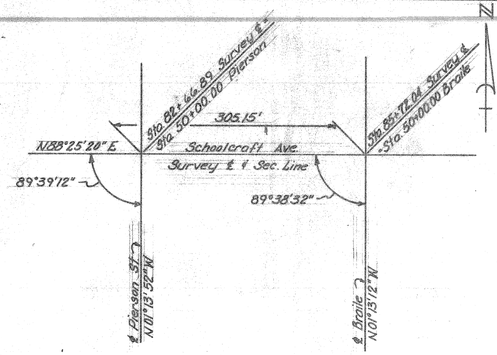
UTILITIES

Sewers - City of Detroit
Power - Detroit Edison Co.
Telephone - Mich. Bell Telephone Co.
Gas - Mich. Consolidated Gas Co.

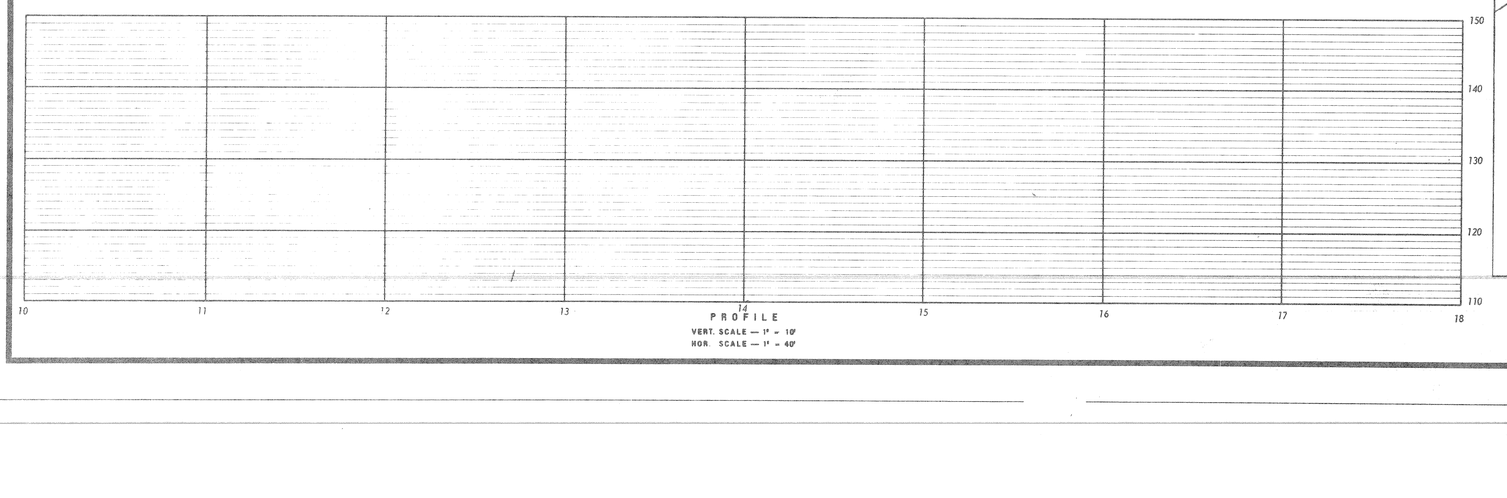


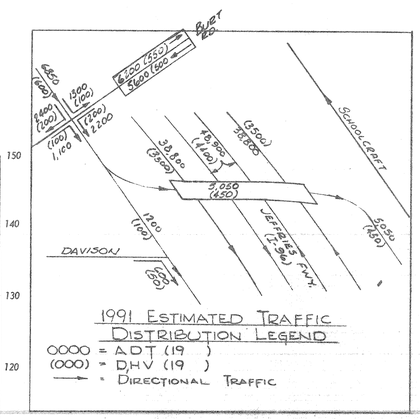
SITUATION PLAN
Scale: 1" = 40'





ALIGNMENT DIAGRAM





REVISIONS			
NO.	DESCRIPTION	DATE	BY

Plan Date:

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
SCHOOLCRAFT CROSSOVER OVER I-96 IN DETROIT

GENERAL PLAN OF SITE

APPROVED _____ ASS'T. DESIGN SUPERVISING ENGINEER

APPROVED _____ DESIGN SUPERVISING ENGINEER

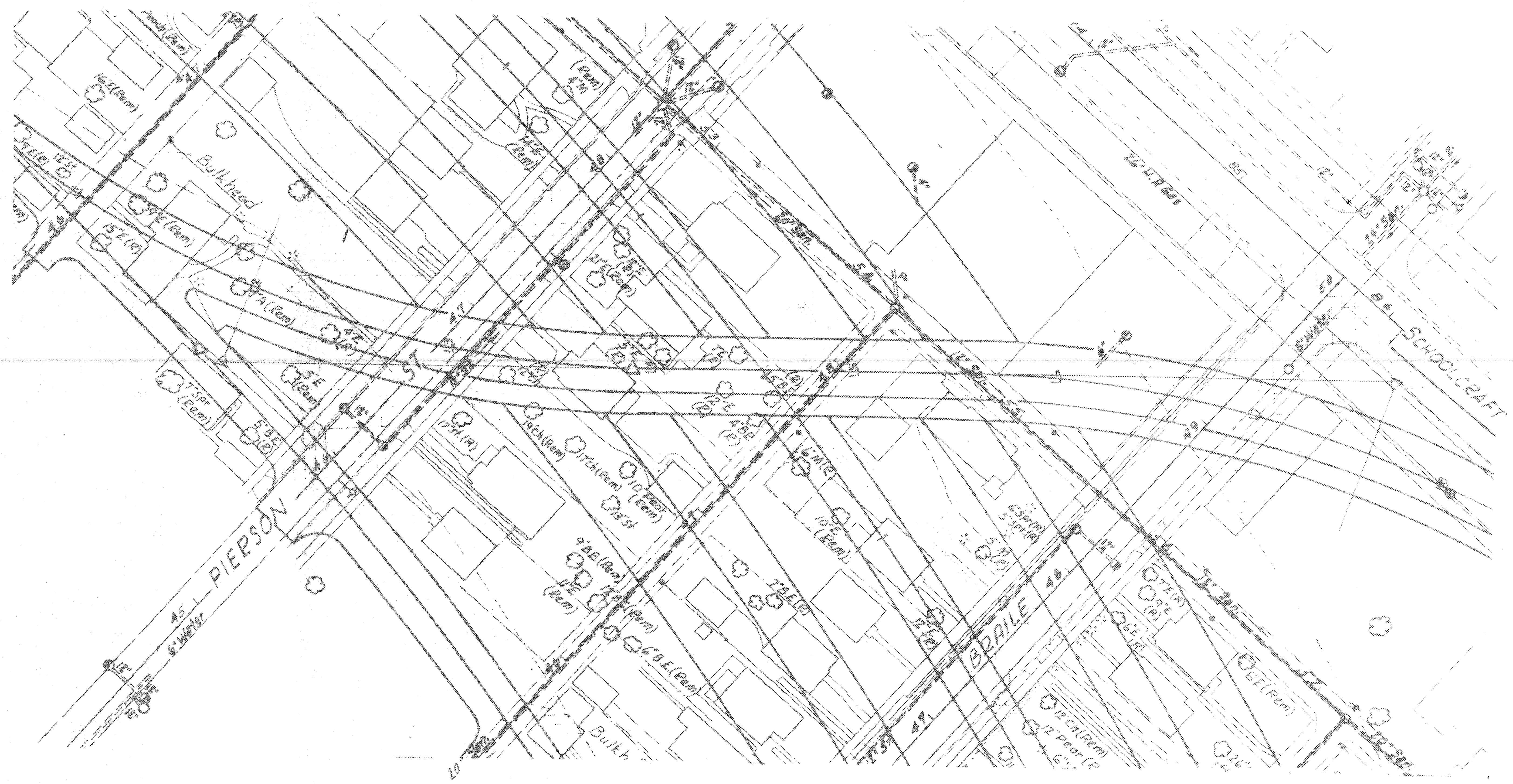
SQUAD BOSS	MILNE	
DRAWN BY		
TRACED BY	J. Cohan	10-21-63
CHECKED BY		
SHEET	OF	

S23 of 82122K

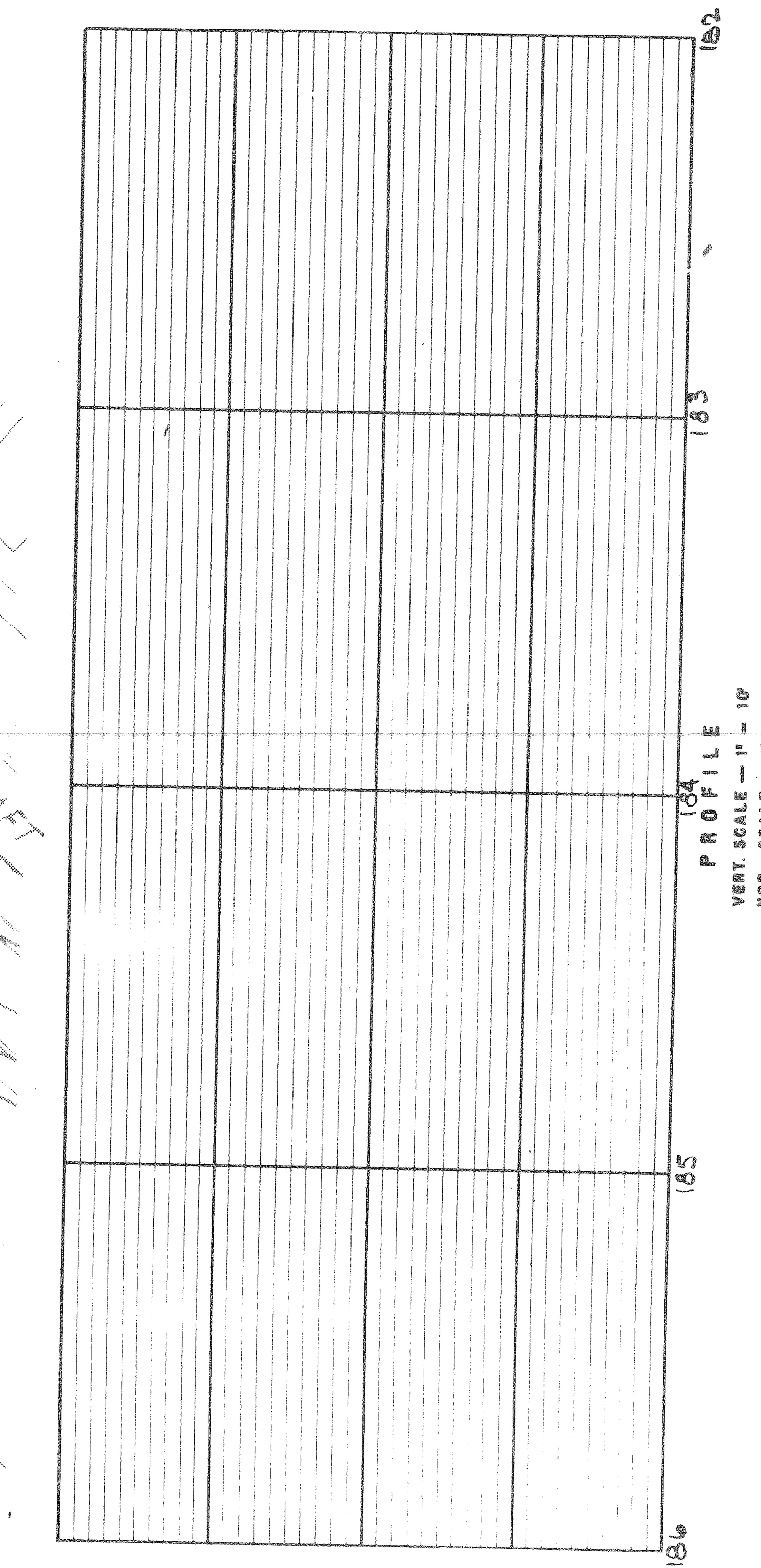
BENCH MARKS	
B.M. #25 Elev. 144.89 4' S. of N. Property Line Schoolcraft & 4' W. of E. Property Line of Burt.	B.M. #27 Elev. 145.04 4' S. of N. Property Line Braile.
B.M. #26 Elev. 147.89 Tip of Arrow on Hydrant N.E. Cor. of Pierson & Schoolcraft.	B.M. #28 Elev. 148.31 Tip of Arrow on Hydrant N.E. Cor. of Patton & Schoolcraft.

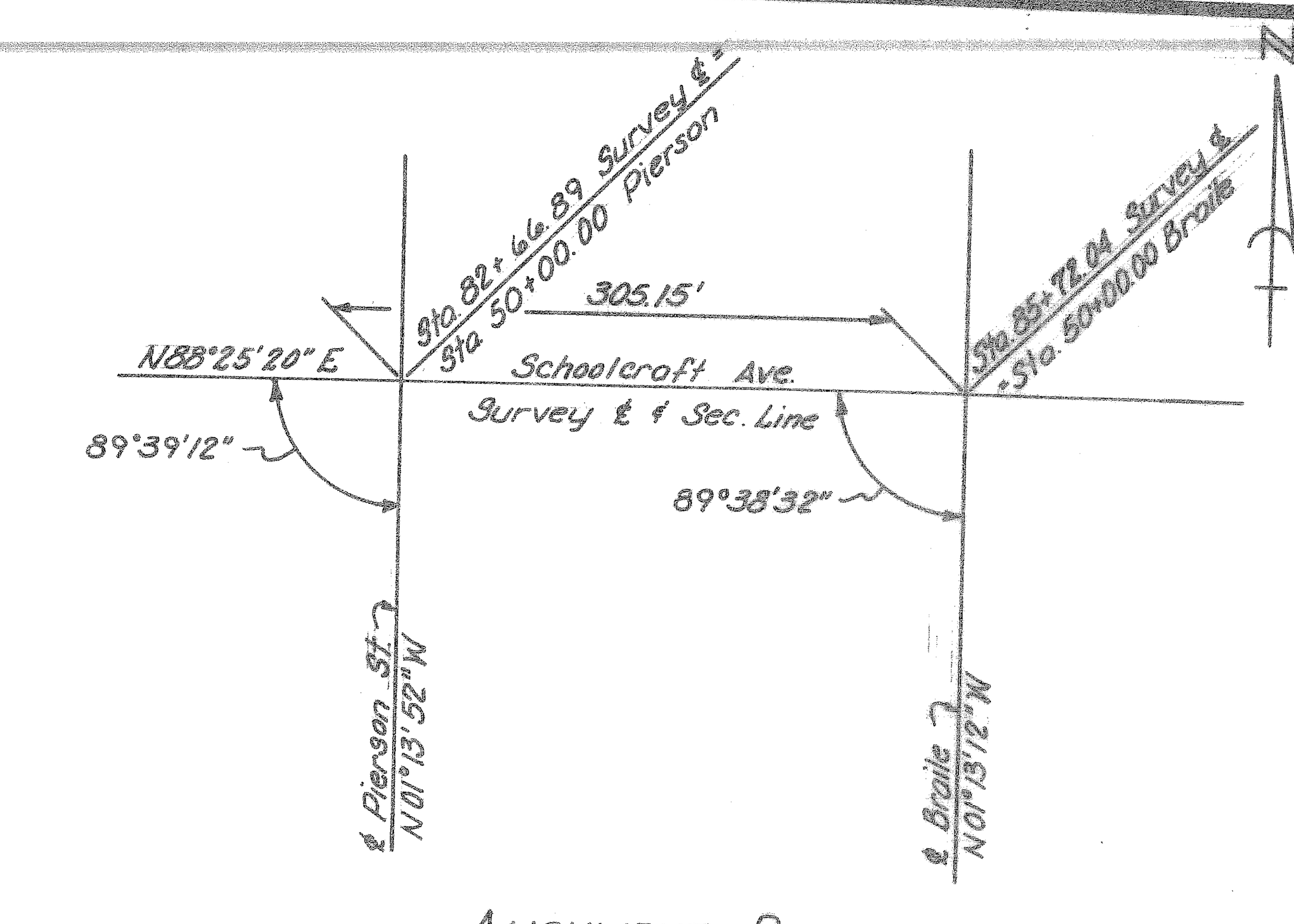
UTILITIES

Sewers - City of Detroit
Power - Detroit Edison Co.
Telephone - Mich. Bell Telephone Co.
Gas - Mich. Consolidated Gas Co.

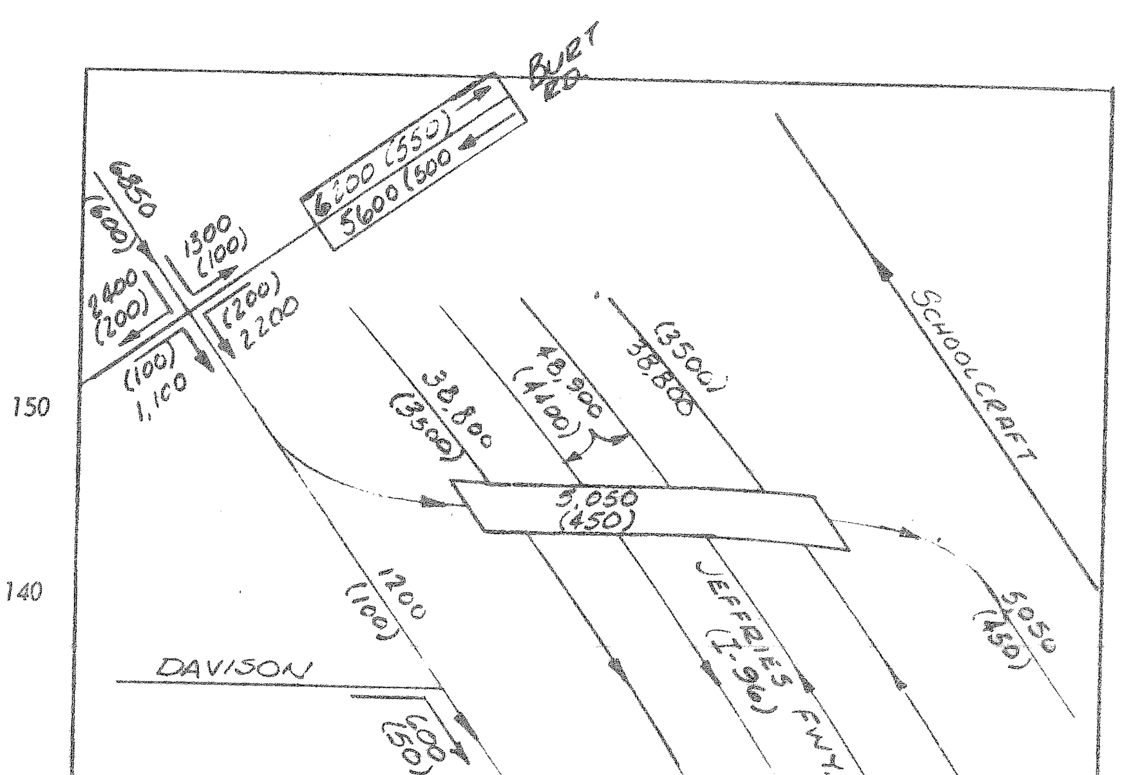


SITUATION PLAN
Scale: 1" = 40'

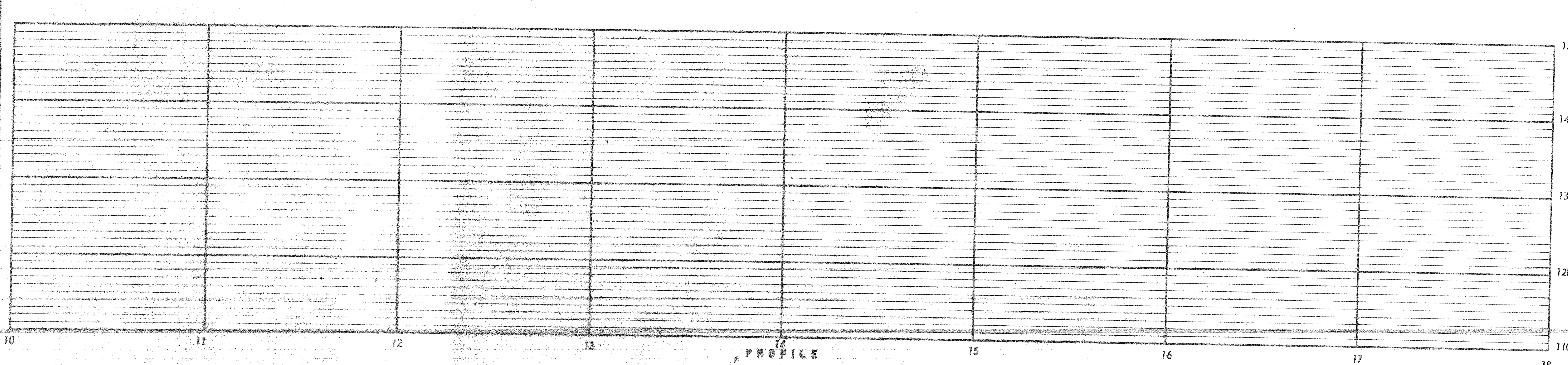




ALIGNMENT DIAGRAM



1991 ESTIMATED TRAFFIC DISTRIBUTION LEGEND
0000 = ADT (19)
(000) = DHV (19)
⟶ = DIRECTIONAL TRAFFIC



REVISIONS			
NO.	DESCRIPTION	DATE	BY

Plan Date:

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
SCHOOLCRAFT CROSSOVER OVER I-96 IN DETROIT

GENERAL PLAN OF SITE

APPROVED ______ ASS'T DESIGN SUPERVISING ENGINEER
APPROVED ______ DESIGN SUPERVISING ENGINEER

SQUAD BOSS	MILNE	
DRAWN BY		
TRACED BY	J. Cohen	10-21-65
CHECKED BY		
SHEET	OF	

S23 of 82122K

TRINITY — BURT RD. — PIERSON

B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	City	SHEET NO.	TOTAL SHEETS
I-96	82122 J	Wayne	Detroit		

B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY		SHEET NO.	TOTAL SHEETS

AUTH.	DATE	REVISION
		FINAL R. O. W.

OPERATION	BY	DATE
PRELIMINARY R. O. W. CHECKED		
FINAL DESIGN		
FINAL DESIGN CHECKED		
FINAL R. O. W. CHECK		
QUANTITIES		
QUANTITIES CHECKED	Kaufman	1960
SIGNED		

OPERATION	BY	DATE
SURVEYED		
PLAN PLOTTED		
PLAN CHECKED		
PROFILE PLOTTED	D. Decke	7-66
PROFILE CHECKED		
PRELIMINARY GRADE		
GRADE INSPECTION		
FEDERAL INSPECTION		

N

16" Water — 12" — 2" Gas — 6'-9" Cyl. — 75 Survey ℄ — 76 — N88°36'-17"E — 77 — 78 SCHOOLCRAFT RD. — 79 — 80 — 81 — 82 — 83 — 84 — 85

12" Gas — 26" H.P. Gas — 24" San — 15" San — 12" Gas — 6'-0" Cyl. — 16" Water — 16" Water — 26" H.P. Gas — 12" Gas

Sta. 76+44.32 Survey ℄ = Sta. 50+00.00 TRINITY

Sta. 78+39.89 Survey ℄ = Sta. 60+00.00 BURT RD.

For Pierson & Patton Rds. see Sht. 7

Ex. Ground Profile Sta. 0+00 BLVD

Ex. Ground Profile Sta. 0+00 Service Rd.

Ex. Ground Profile ℄

Ex. FL. El. 139.87 (12"E)

Ex. FL. El. 139.39 (12")

Ex. FL. El.

Ex. FL. El. 139.26 (12"NE)

6'-9" Cyl.

Ex. FL. El. 121.40 (24"N)

6'-0" Cyl.

Ex. FL. El. 137.12 (12"NL)

Ex. FL. El. 139.12 (12")

Ex. FL. El. 138.60 (12"N)

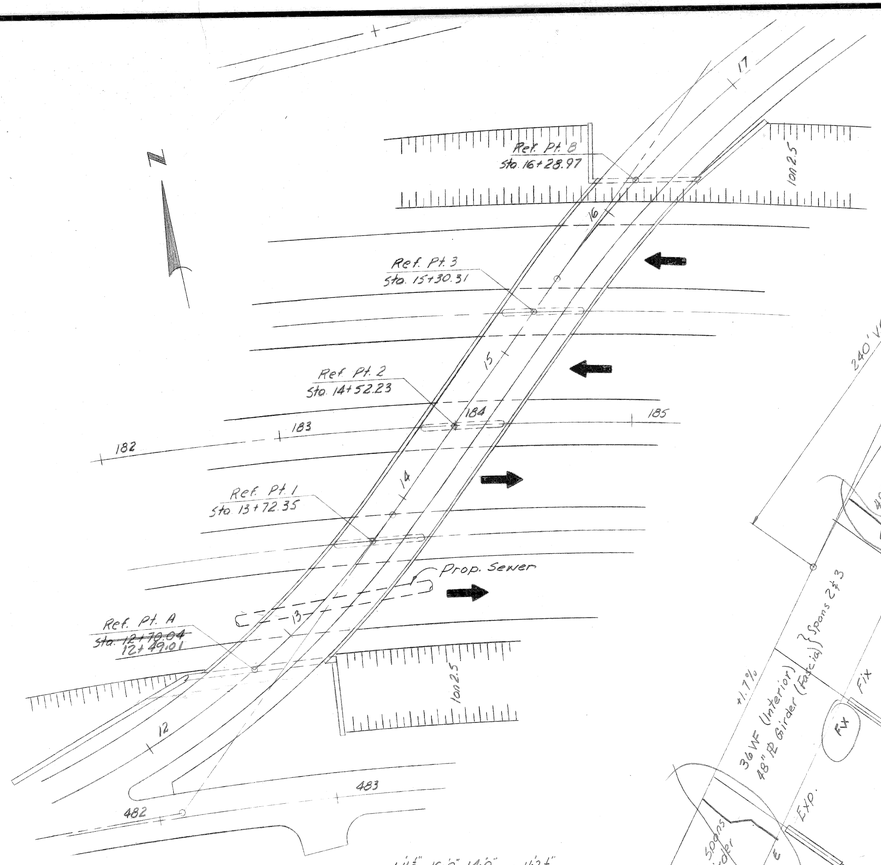
Ex. FL. El. 138.60 (12"N)

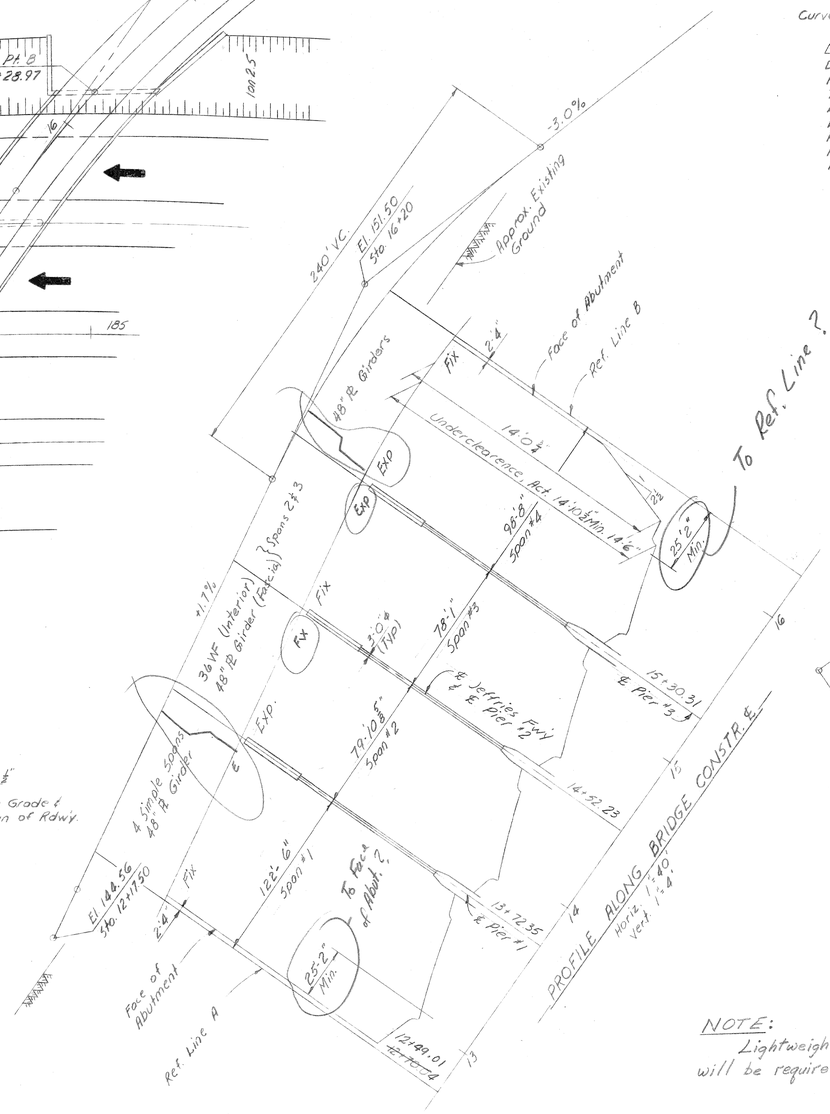
West Bound Service Road

165 — 160 — 155 — 150 — 145 — 140

75 — 76 — 77 — 78 — 79 — 80 — 81 — 82 — 83 — 84 — 85

FILE NO. USE NO. 350 STENCIL	STATE PROJECT	FEDERAL PROJECT	SHEET NO.
	82122 J		

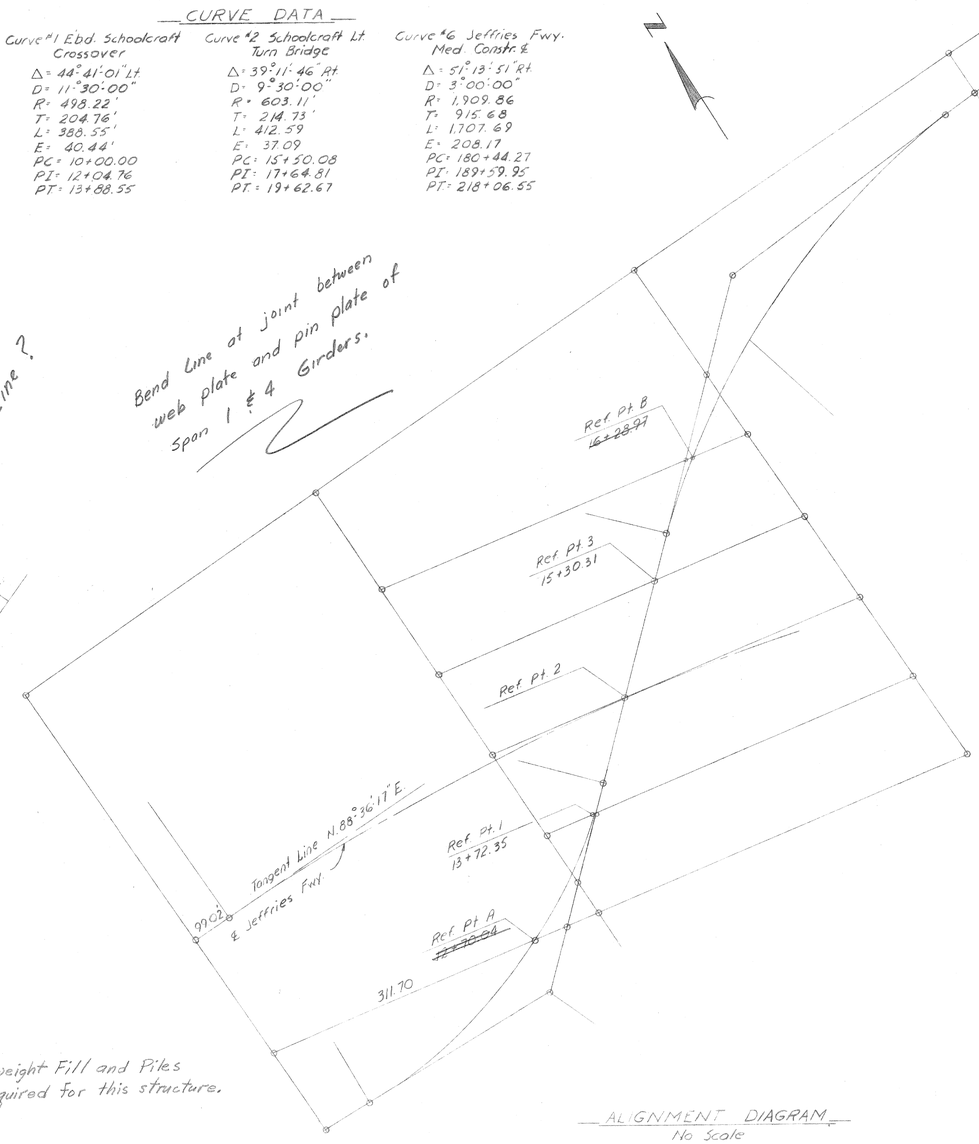




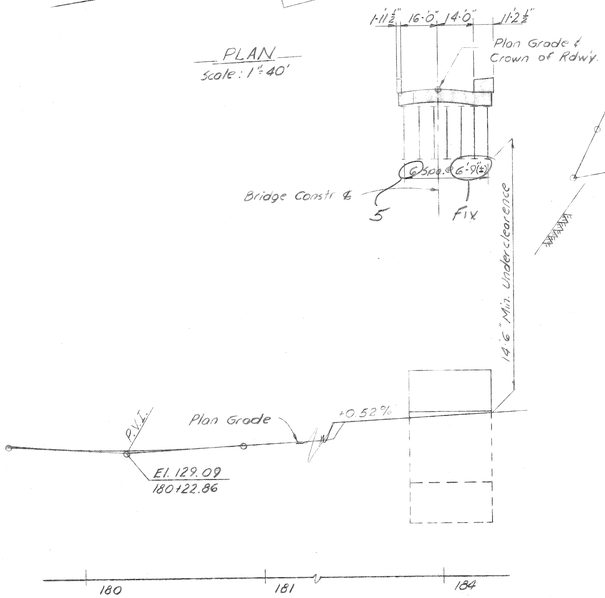
CURVE DATA

Curve #1 Ebd. Schoolcraft Crossover	Curve #2 Schoolcraft Lt. Turn Bridge	Curve #6 Jeffries Fwy. Med. Constr. ℄
Δ = 44°41'01" Lt.	Δ = 39°11'46" Rt.	Δ = 51°13'51" Rt.
D = 11°30'00"	D = 9°30'00"	D = 3°00'00"
R = 498.22'	R = 603.11'	R = 1,909.86
T = 204.76'	T = 214.73'	T = 915.68
L = 388.55'	L = 412.59	L = 1,707.69
E = 40.44'	E = 37.09	E = 208.17
PC = 10+00.00	PC = 15+50.08	PC = 180+44.27
PI = 12+04.76	PI = 17+64.81	PI = 189+59.95
PT = 13+88.55	PT = 19+62.67	PT = 218+06.55

Bend Line at joint between web plate and pin plate of span 1 & 4 Girders.



ALIGNMENT DIAGRAM
No Scale



PLAN
Scale: 1"=40'

PROFILE ALONG FREEWAY
Scale: Horiz. 1"=40', Vert. 1"=4'

NOTE:
Lightweight Fill and Piles will be required for this structure.

STUDY "A"

4-30-69

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

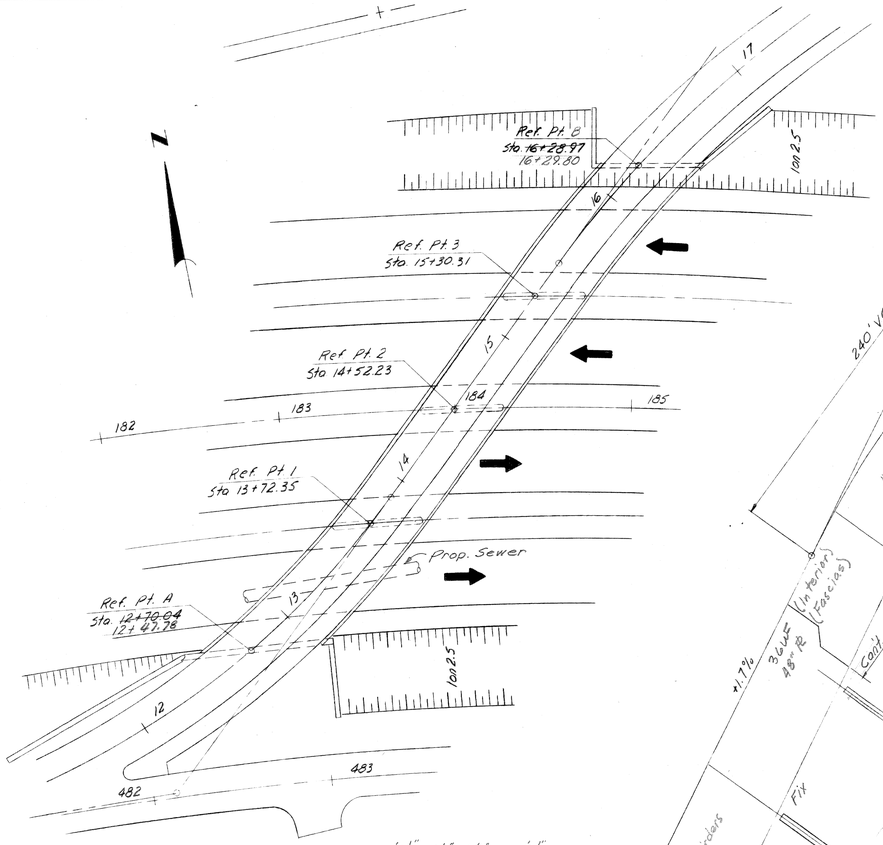
SQUAD BOSS		
DRAWN BY	A.G.	4-69
TRACED BY		
CHECKED BY	W.A.L.	4-69

SHEET OF

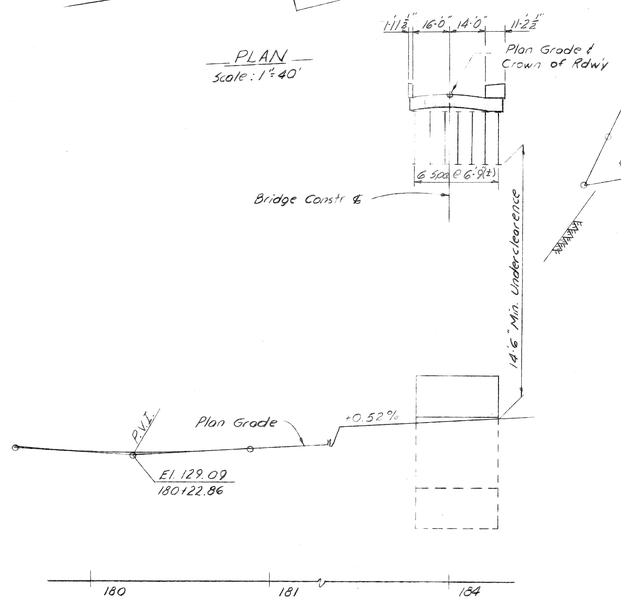
S23 of 82122K

APPROVED _____ DESIGN SUPERVISING ENGINEER

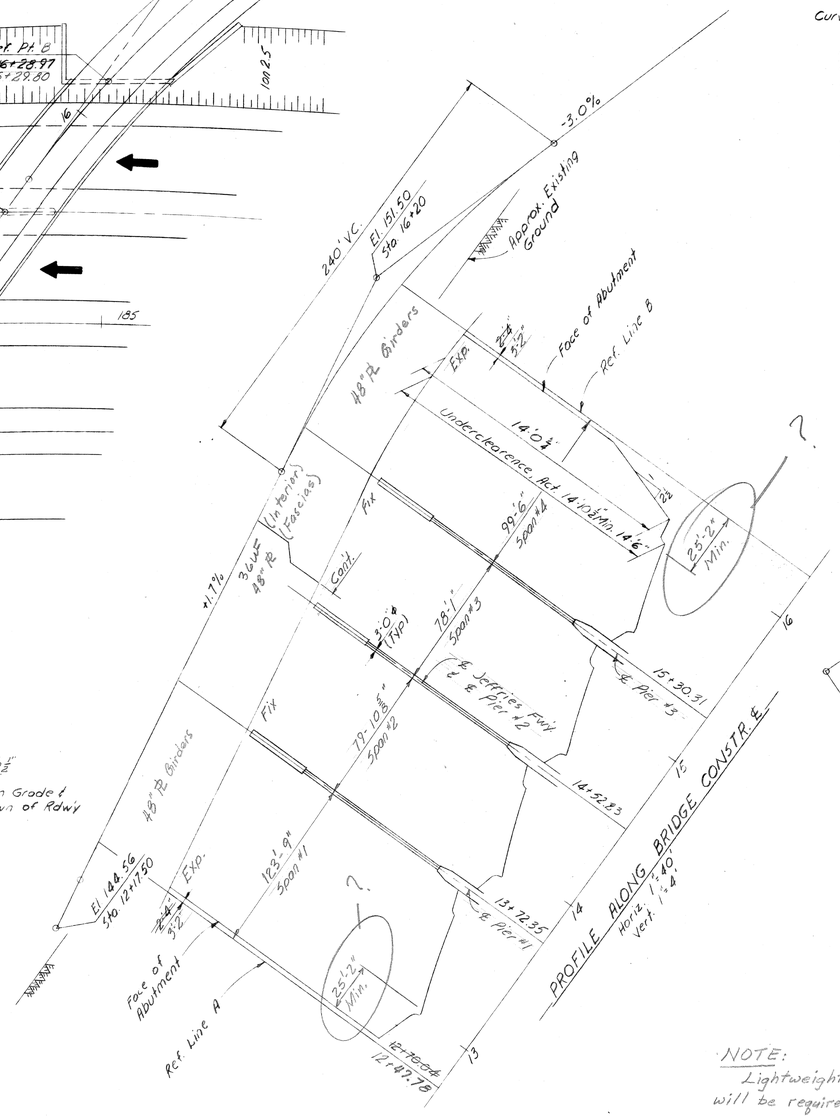
APPROVED _____ ASST. ENGINEER OF DESIGN



PLAN
Scale: 1"=40'

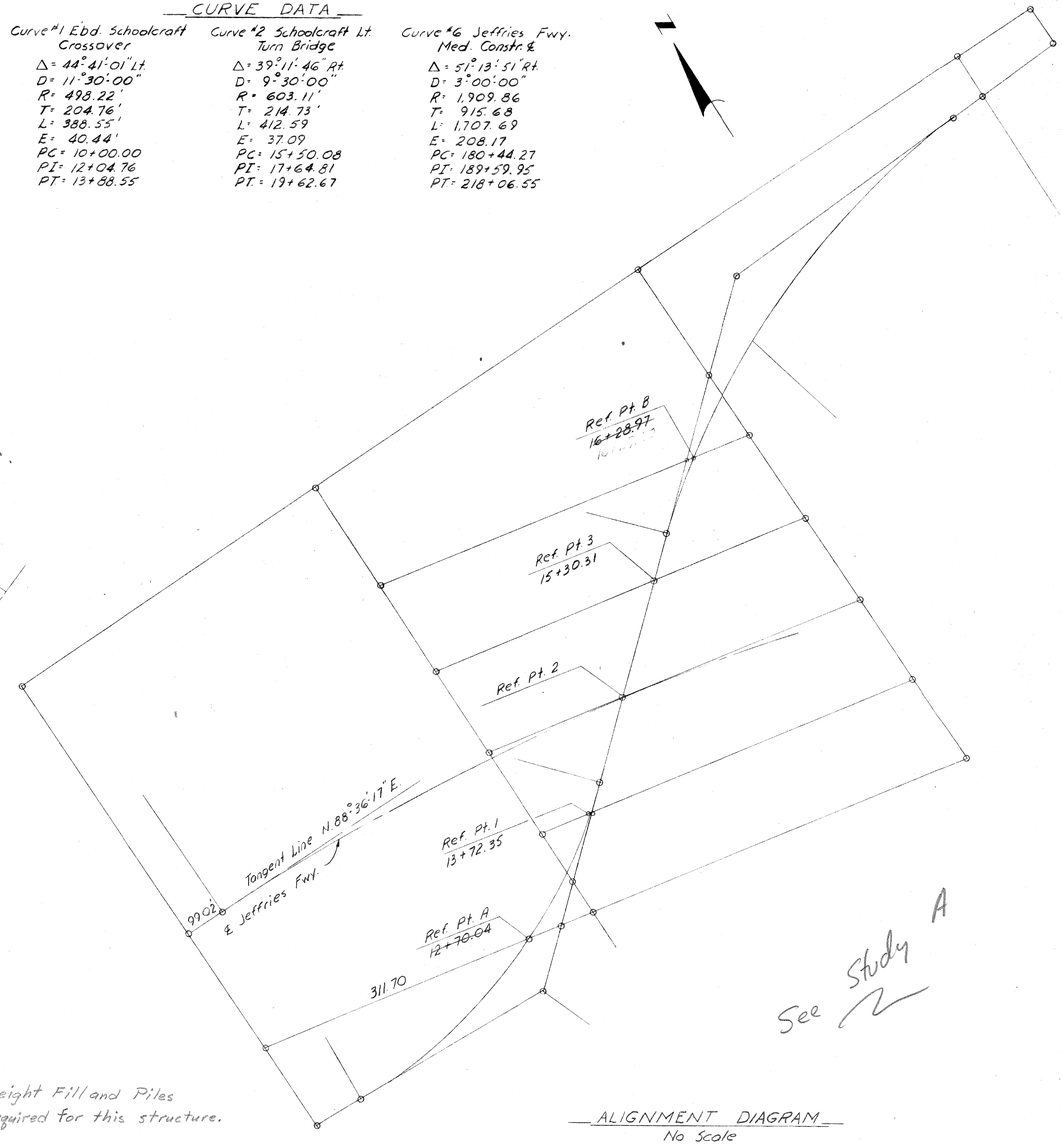


PROFILE ALONG FREEWAY
Scale: Horiz. 1"=40', Vert. 1"=4'



CURVE DATA

Curve #1 Ebd. Schoolcraft Crossover	Curve #2 Schoolcraft Lt. Turn Bridge	Curve #6 Jeffries Fwy. Med. Constr ℄
Δ = 44°41'01" Lt	Δ = 39°11'46" Rt	Δ = 51°13'51" Rt
D = 11°30'00"	D = 9°30'00"	D = 3°00'00"
R = 498.22'	R = 603.11'	R = 1,909.86
T = 204.76'	T = 214.73'	T = 915.68
L = 388.55'	L = 412.59	L = 1,707.69
E = 40.44'	E = 37.09	E = 208.17
PC = 10+00.00	PC = 15+50.08	PC = 180+44.27
PI = 12+04.76	PI = 17+64.81	PT = 189+59.95
PT = 13+88.55	PT = 19+62.67	PT = 218+06.55



ALIGNMENT DIAGRAM
No Scale

See Study A

NOTE:
Lightweight Fill and Piles will be required for this structure.

STUDY "B"

4-3069

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SCHOOLCRAFT CROSSOVER OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

REVISIONS			
NO.	DESCRIPTION	DATE	BY

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ ASS'T. ENGINEER OF DESIGN

SQUAD BOSS		
DRAWN BY	A.G.	4-69
TRACED BY		
CHECKED BY	W.A.L.	4-69

SHEET OF

S23 of 82122K