

**MICHIGAN STATE HIGHWAY DEPARTMENT**  
**CHARLES M. ZIEGLER**  
 STATE HIGHWAY COMMISSIONER  
 EDEL FORD EXPRESSWAY CROSSING WEST GRAND BLVD IN THE CITY OF DETROIT

**GENERAL PLAN OF STRUCTURE**

HAZLET & ERDAL - CONSULTING ENGINEERS FILE NO. 719

APPROVED: [Signature] 11-24-51  
 DRAWN BY: CRW 2-13-50  
 TRACED BY: [Signature]  
 CHECKED BY: A.H.E. 8-16-50  
 SHEET 4 OF 180

APPROVED: [Signature] 11-24-51  
 ENGINEER OF BRIDGE DESIGN

APPROVED: [Signature] 11-24-51  
 BRIDGE ENGINEER

NO. DESCRIPTION DATE BY  
 [Table with 4 columns and multiple rows of revision entries]

REVISIONS  
 [Table with 4 columns and multiple rows of revision entries]

7-18-50 R.R.K.

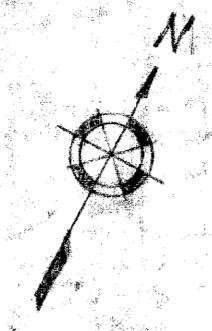
REVISIONS  
 [Table with 4 columns and multiple rows of revision entries]

7-18-50 R.R.K.

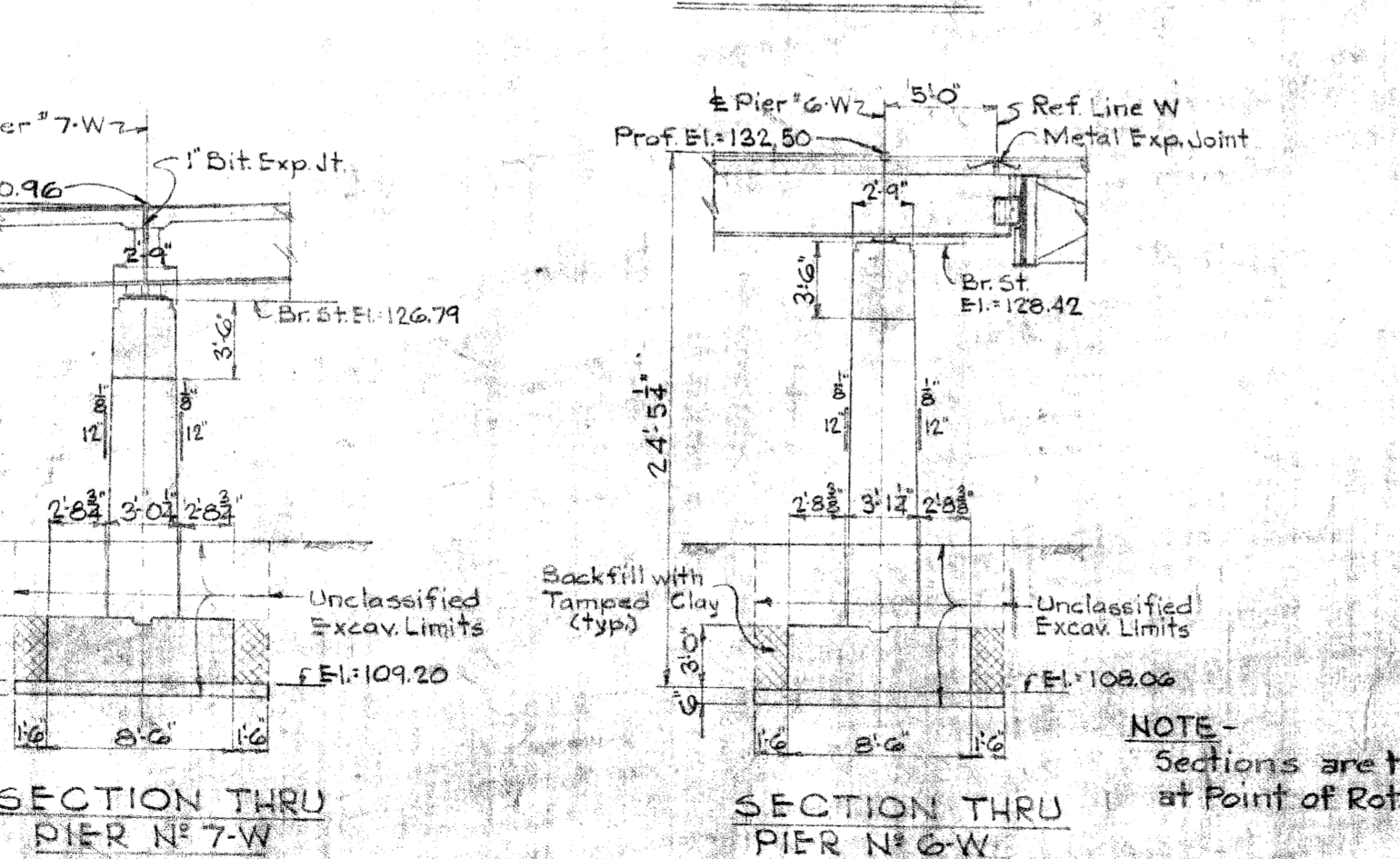
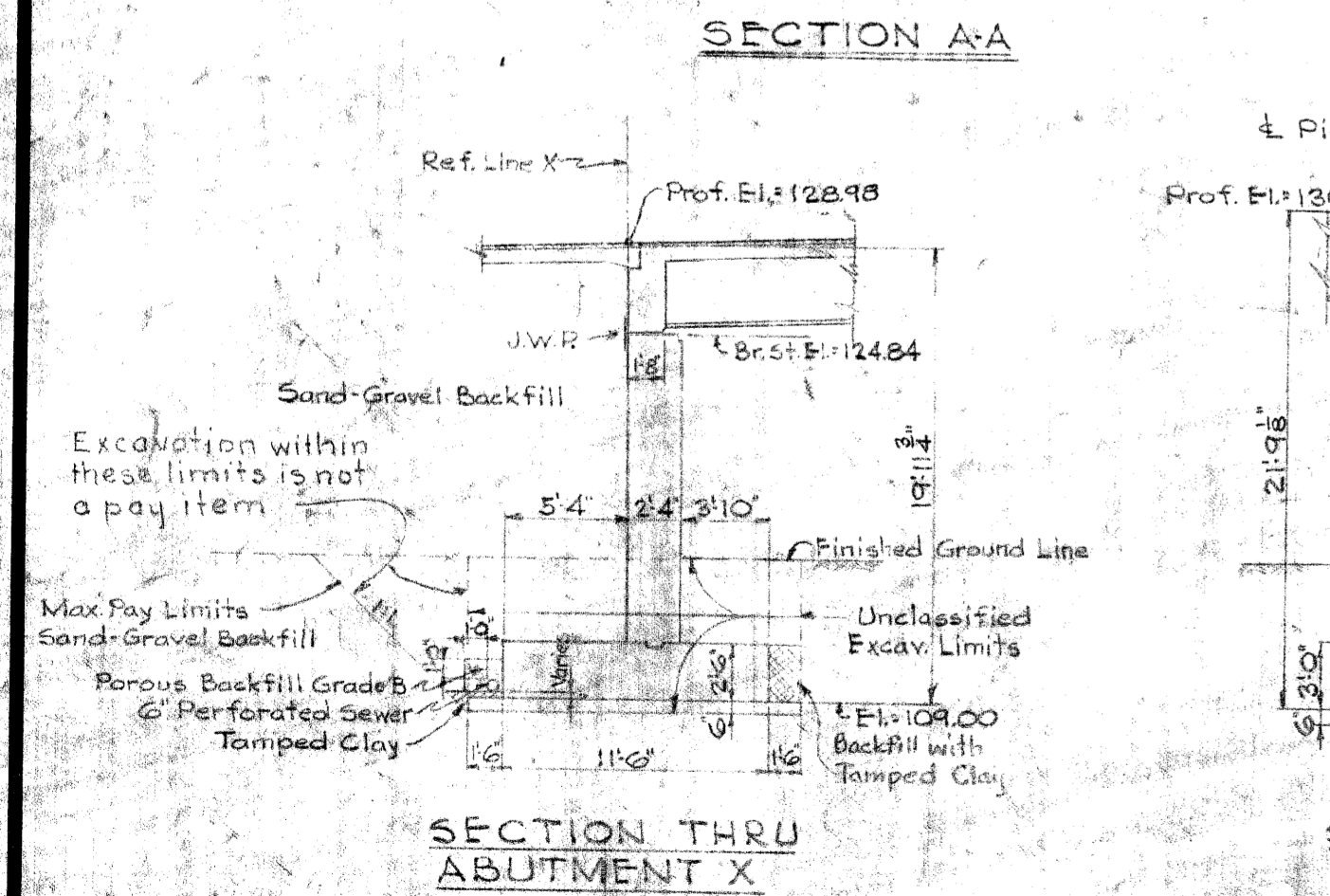
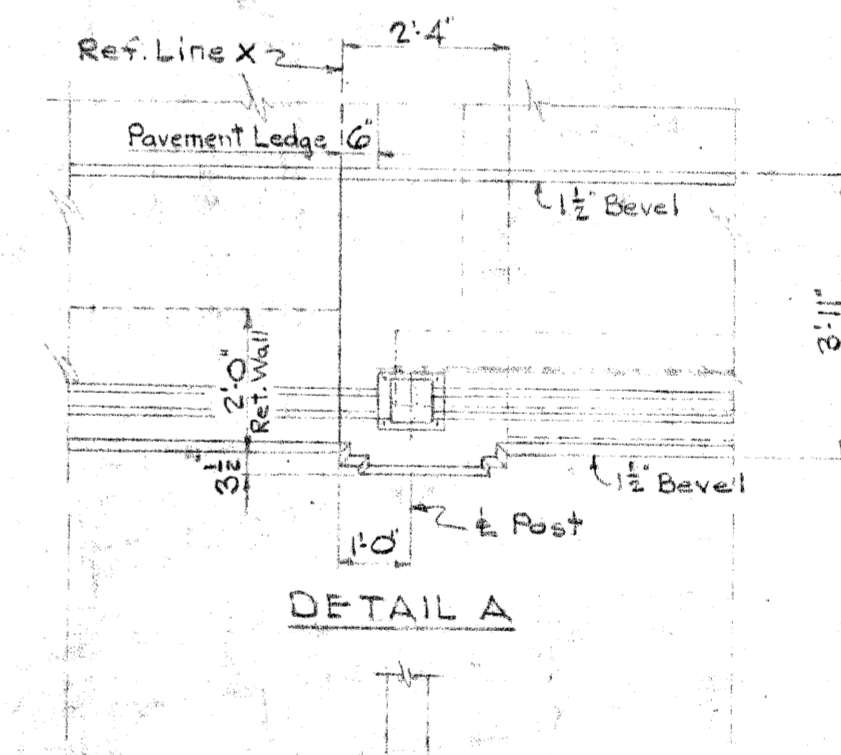
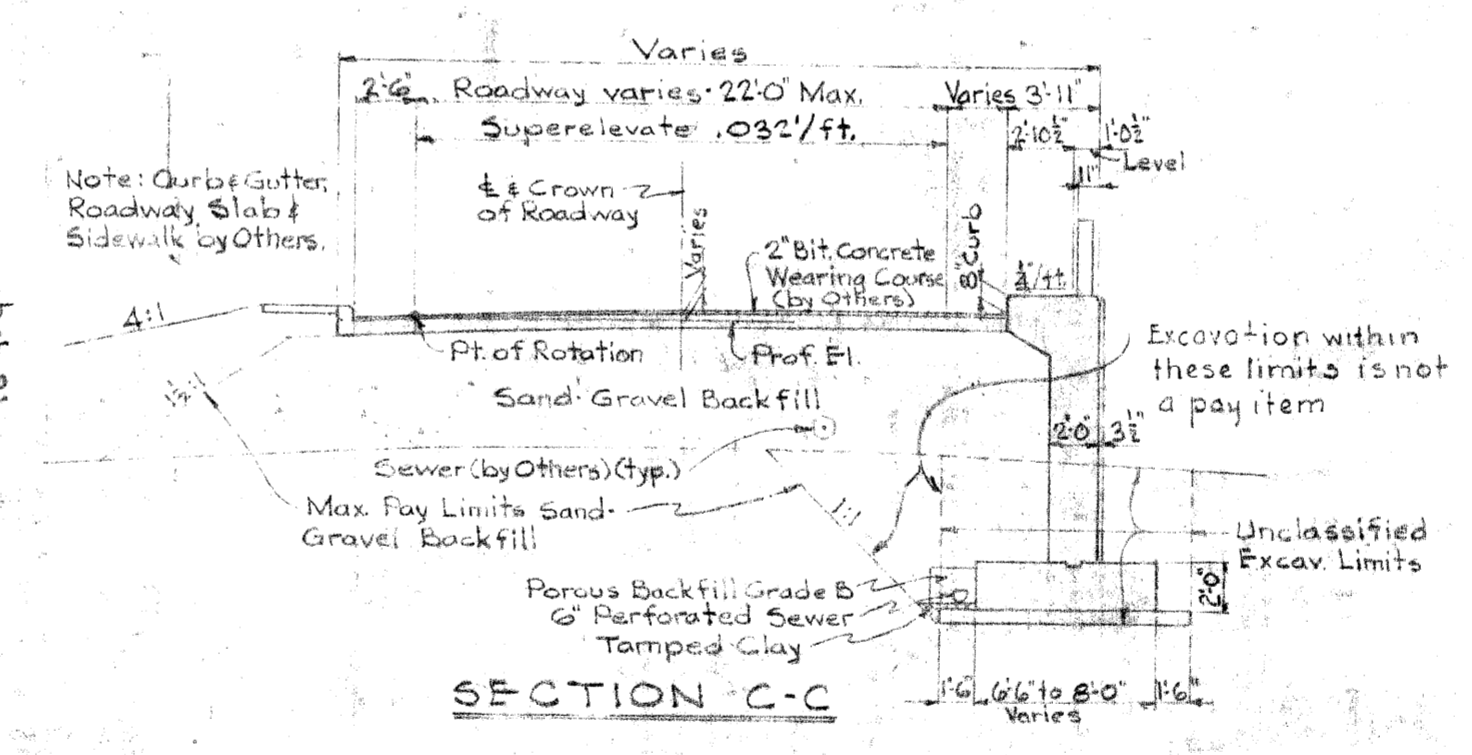
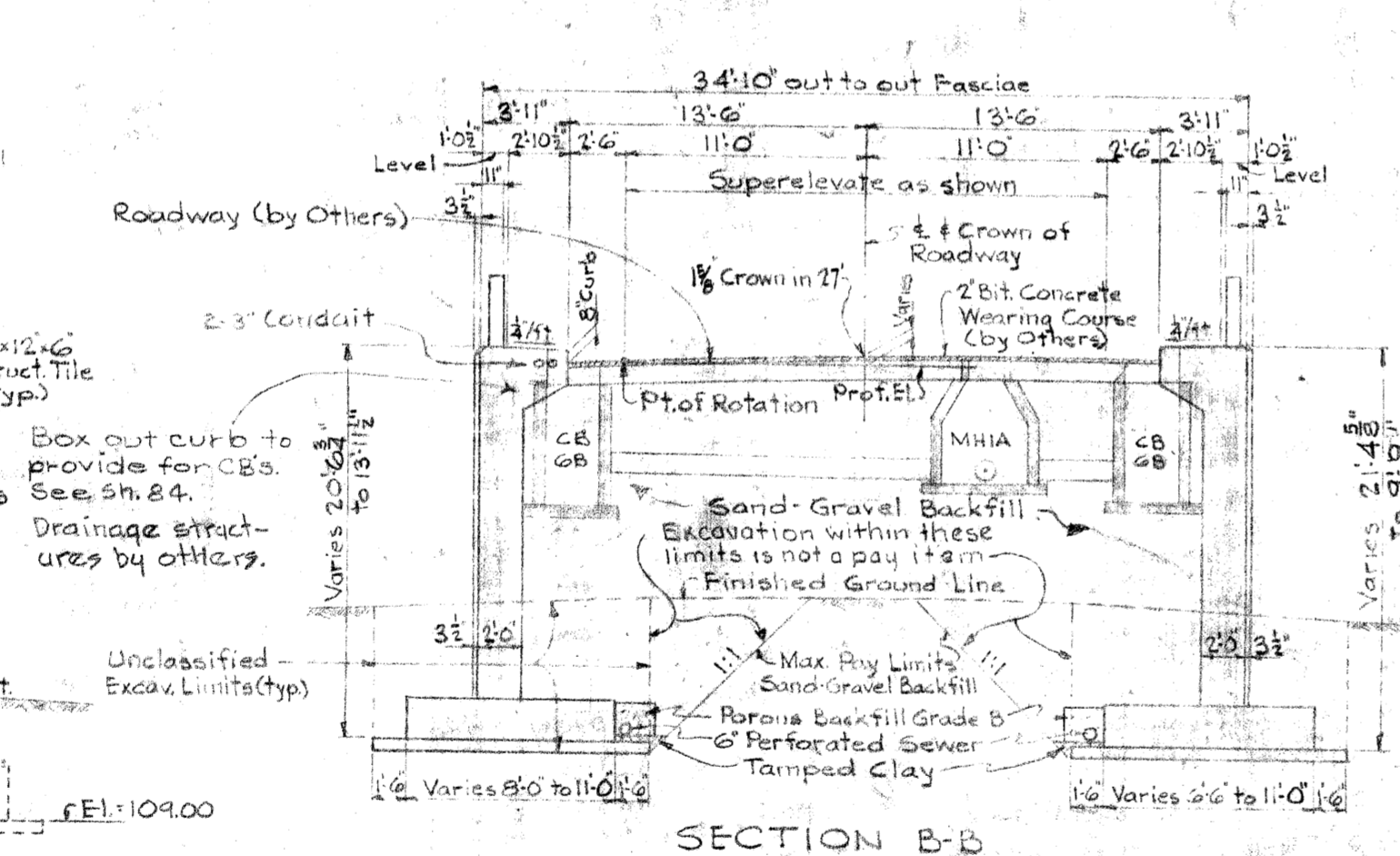
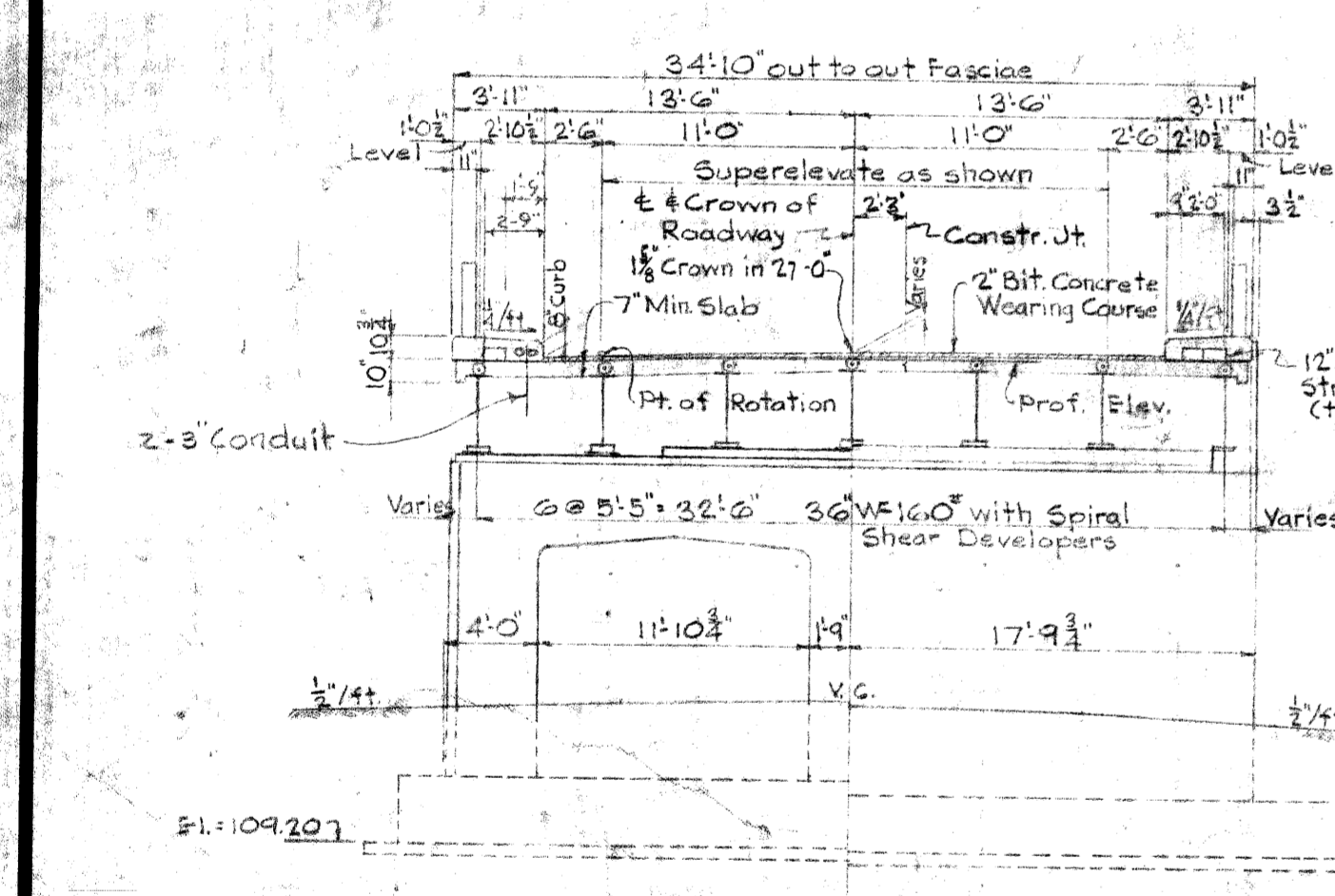
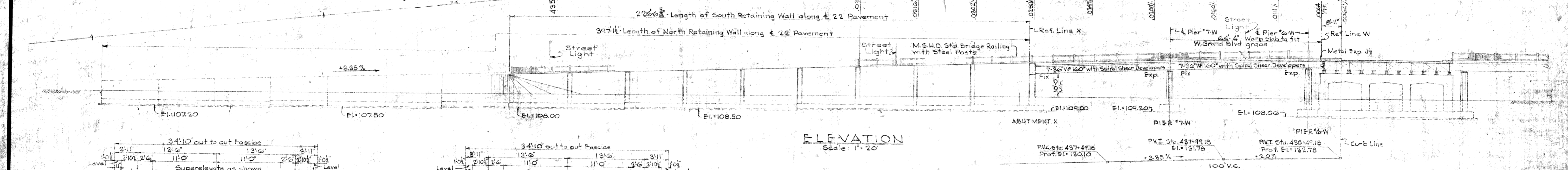
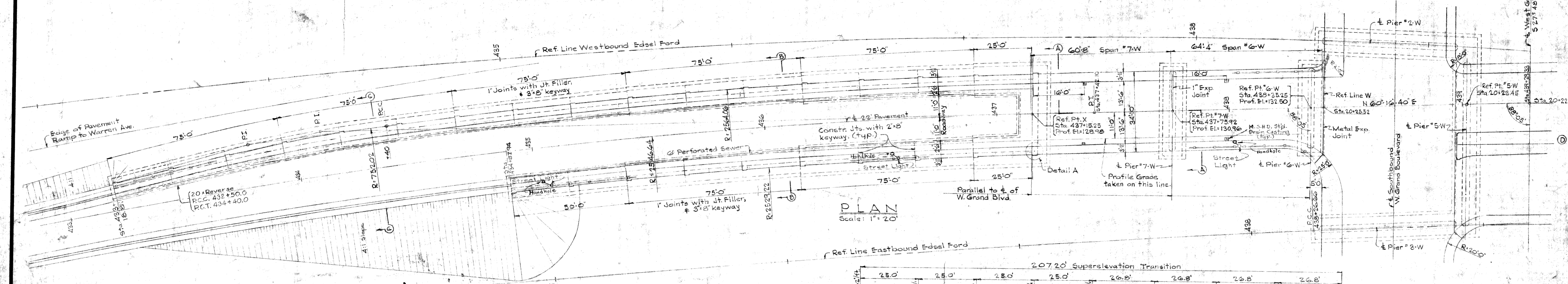
REVISIONS  
 [Table with 4 columns and multiple rows of revision entries]

7-18-50 R.R.K.





Note: Build Ramp Structure and Retaining Walls to horizontal curve as shown.



NOTE: Sections are taken at Point of Rotation.

Note: Work this sheet with sheets # 4 & 5.

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 EDELS FORD EXPRESSWAY CROSSING WEST  
 GRAND BLVD. IN THE CITY OF DETROIT

**GENERAL PLAN OF STRUCTURE-WEST RAMP**  
 HAZLET & ERDAL-CONSULTING ENGINEERS FILE NO. 710

APPROVED *[Signature]* 11-28-51  
 CHIEF BRIDGE DRAFTSMAN

APPROVED *[Signature]* 11-27-51  
 ENGINEER OF BRIDGE DESIGN

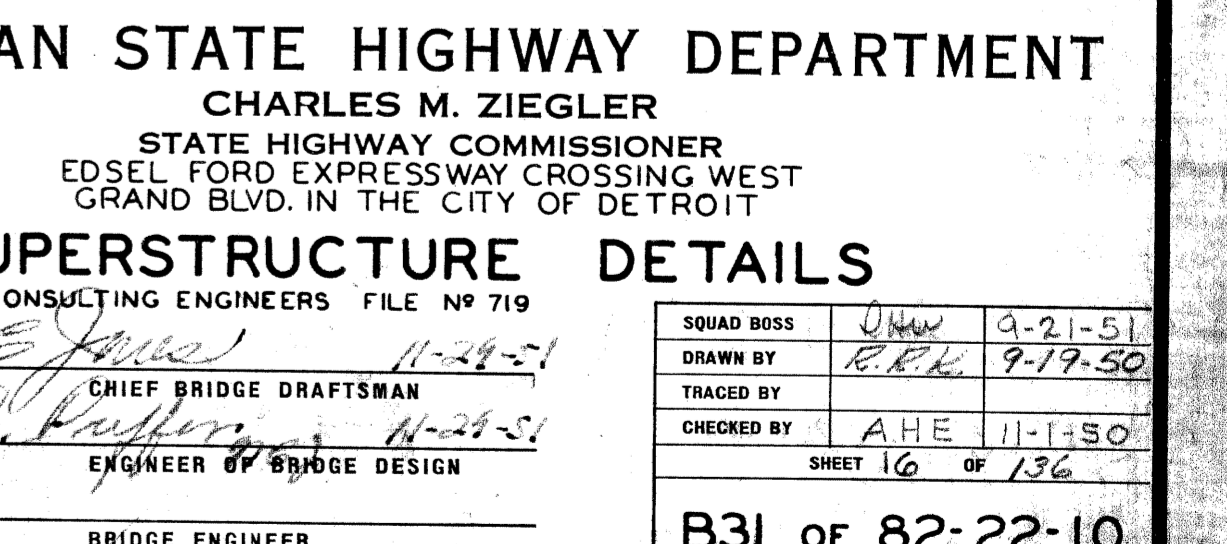
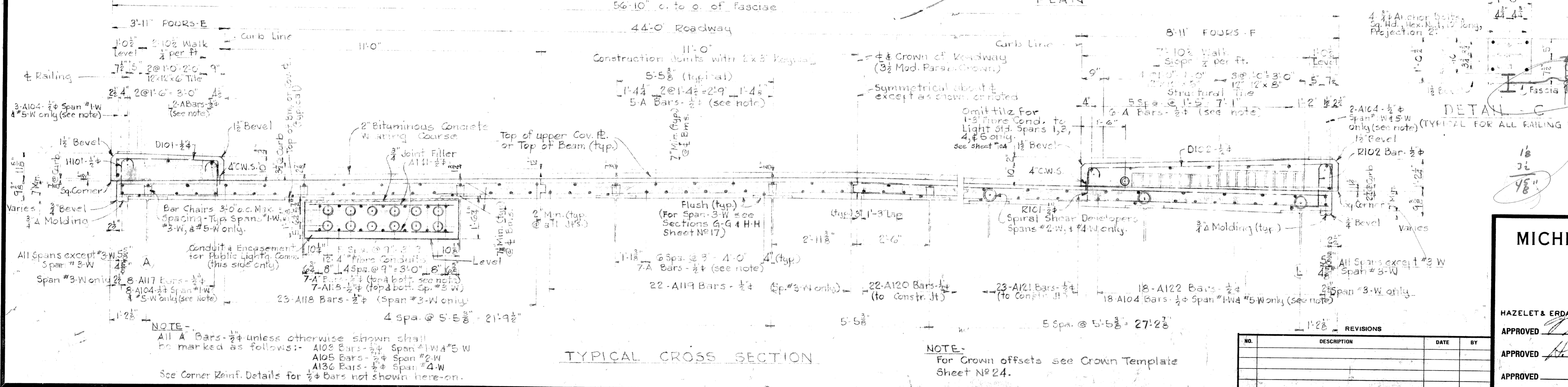
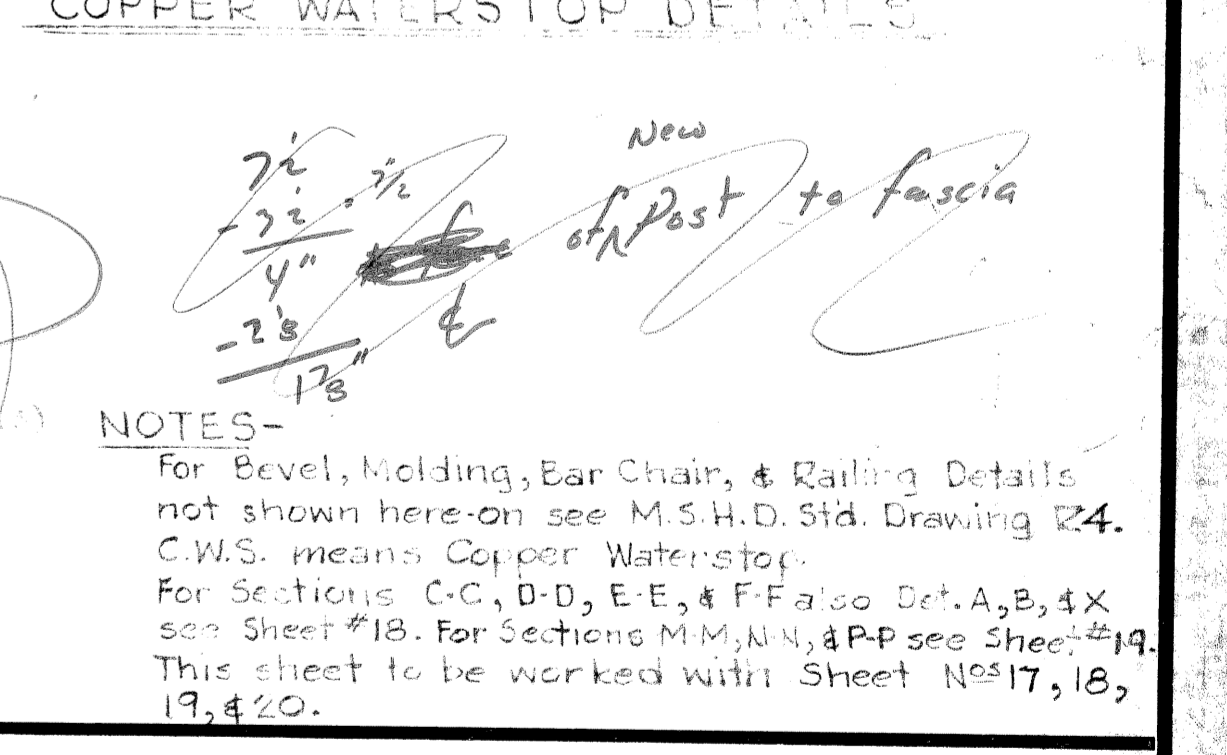
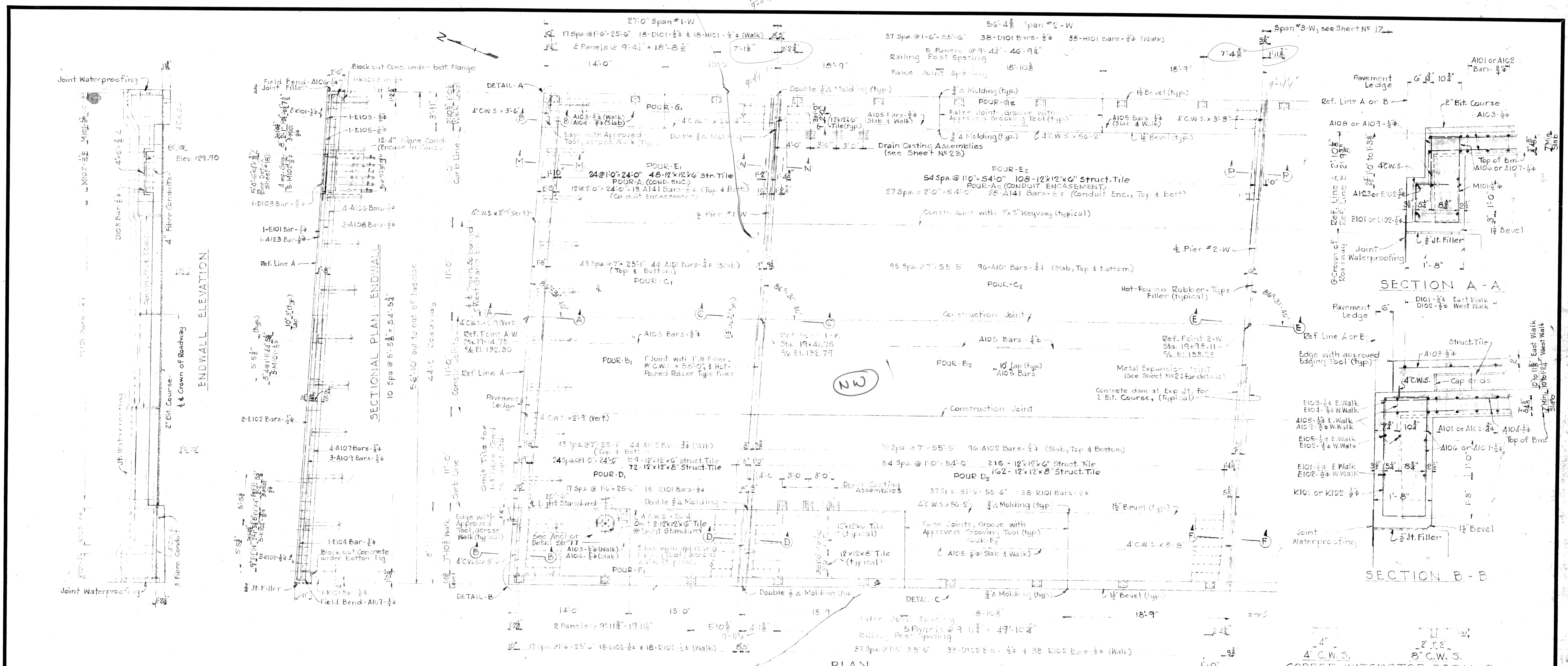
APPROVED *[Signature]* 1-29-51  
 BRIDGE ENGINEER

REVISIONS

NO.	DESCRIPTION	DATE	BY
1	Revised Channelization Island	1-23-51	C.O.B.

DATE: 11-28-51  
 SHEET 51 OF 130  
 B31 OF 82-22-10





**NOTE -**  
 All A Bars - #4 unless otherwise shown shall be marked as follows:  
 A102 Bars - #4 Span #1-W & E-W  
 A105 Bars - #4 Span #2-W  
 A136 Bars - #4 Span #4-W  
 See Corner Joint Details for #3 Bars not shown here-on.

**NOTE -**  
 For Crown offsets see Crown Template Sheet No. 24.

NO.	DESCRIPTION	DATE	BY

**MICHIGAN STATE HIGHWAY DEPARTMENT**  
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 EDEL FORD EXPRESSWAY CROSSING WEST  
 GRAND BLVD. IN THE CITY OF DETROIT

**SUPERSTRUCTURE DETAILS**

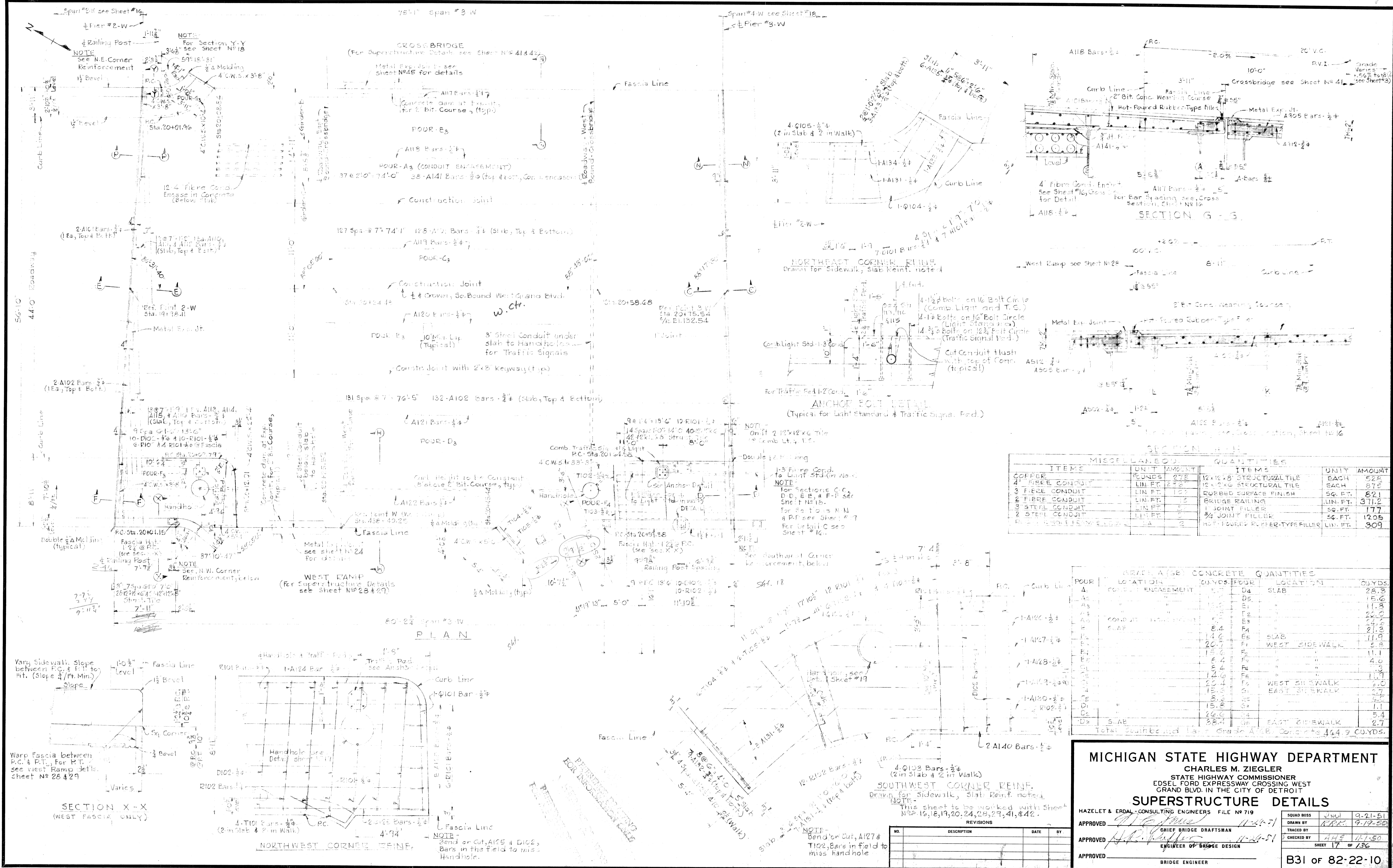
HAZELET & ERDAL - CONSULTING ENGINEERS FILE NO. 719

APPROVED: *[Signature]* CHIEF BRIDGE DRAFTSMAN  
 APPROVED: *[Signature]* ENGINEER OF BRIDGE DESIGN  
 APPROVED: \_\_\_\_\_ BRIDGE ENGINEER

SQUAD BOSS	J.W.W.	9-21-51
DRAWN BY	E.R.K.	9-17-50
CHECKED BY	A.H.E.	11-1-50
SHEET 16 OF 136		

**B31 OF 82-22-10**





MISCELLANEOUS QUANTITIES

ITEMS	UNIT	AMOUNT	ITEMS	UNIT	AMOUNT
COOPER	ROUNDS	278	12"x12" STRUCTURAL TILE	EACH	528
4" FIBRE CONDUIT	LIN. FT.	278	12"x24" STRUCTURAL TILE	EACH	876
3" FIBRE CONDUIT	LIN. FT.	127	RUBBER SURFACE FINISH	SQ. FT.	821
2" FIBRE CONDUIT	LIN. FT.	73	BRIDGE RAILING	LIN. FT.	371.2
3" STEEL CONDUIT	LIN. FT.	37	1/2 JOINT FILLER	SQ. FT.	177
2" STEEL CONDUIT	LIN. FT.	3	3/4 JOINT FILLER	SQ. FT.	1205
1" STEEL CONDUIT	LIN. FT.	2	HOT-POURED RUBBER-TYPE FILLER	LIN. FT.	309

GRADE A (56) CONCRETE QUANTITIES

POUR	LOCATION	CONCRETE	FOUR	LOCATION	CONCRETE
A1	CONCRETE ENCASEMENT	5.7	D4	SLAB	28.3
A2		1.5	D5		15.6
A3		1.5	E1		11.8
A4		1.5	F2		20.0
A5	CONCRETE ENCASEMENT	7.7	E3		24.7
A6	SLAB	8.4	F4	SLAB	21.3
F1		14.6	F5		11.9
F2		20.4	F6	WEST SIDEWALK	5.8
F3		15.6	F7		11.1
F4		8.4	F8		4.0
F5		8.4	F9		3.9
F6		12.6	F10	WEST SIDEWALK	11.7
F7		20.4	G1	WEST SIDEWALK	2.0
F8		15.6	G2	EAST SIDEWALK	2.7
F9		6.6	G3		2.5
D1		15.8	G4		1.1
D2		26.6	G5		5.4
D3	SLAB	38.4	G6	EAST SIDEWALK	2.7
Total Southbound Lane			Total Grade A (56) Concrete		464.9

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**SUPERSTRUCTURE DETAILS**

HAZELET & ERDAL - CONSULTING ENGINEERS FILE NO. 719

APPROVED: *[Signature]* CHIEF BRIDGE DESIGNER 11-24-51  
 APPROVED: *[Signature]* ENGINEER OF BRIDGE DESIGN 11-24-51  
 APPROVED: BRIDGE ENGINEER

REVISIONS

NO.	DESCRIPTION	DATE	BY

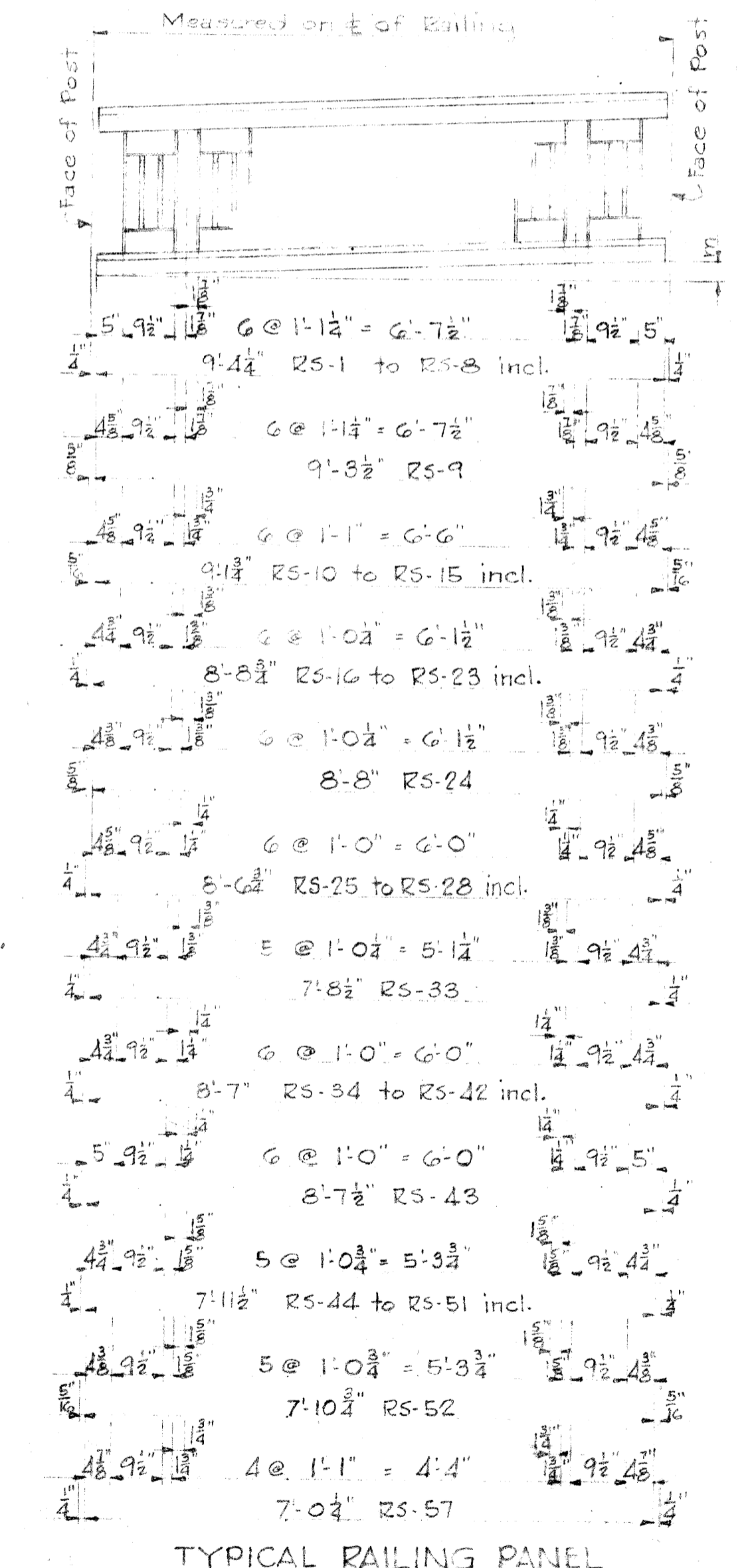
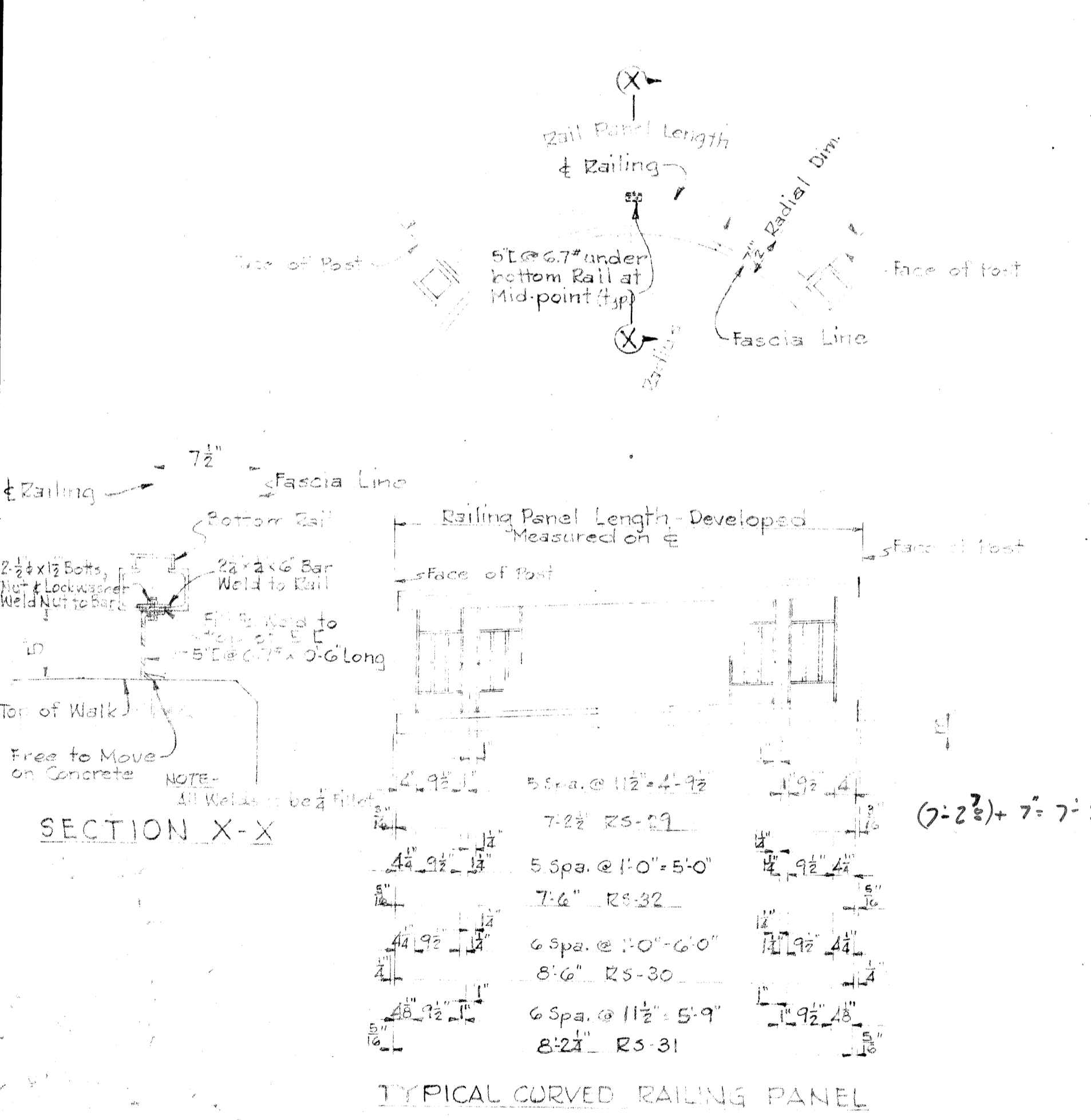
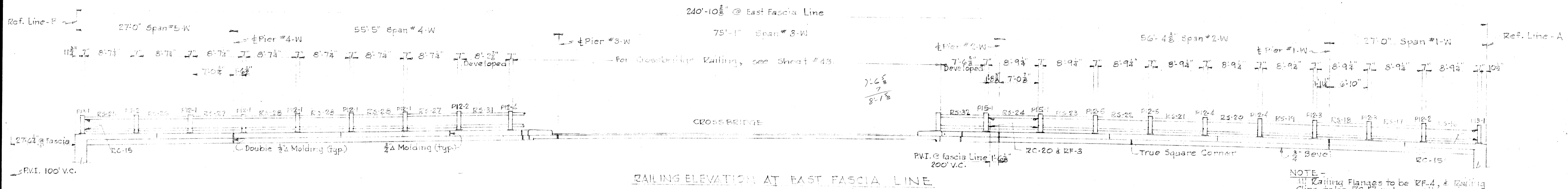
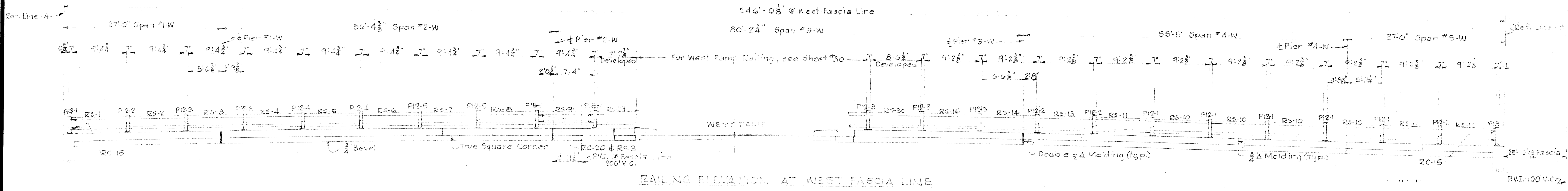
SQUAD BOSS: J.M.W. 9-21-51  
 DRAWN BY: A.H.E. 9-19-50  
 CHECKED BY: A.H.E. 11-1-50  
 SHEET 17 OF 136

**B31 of 82-22-10**

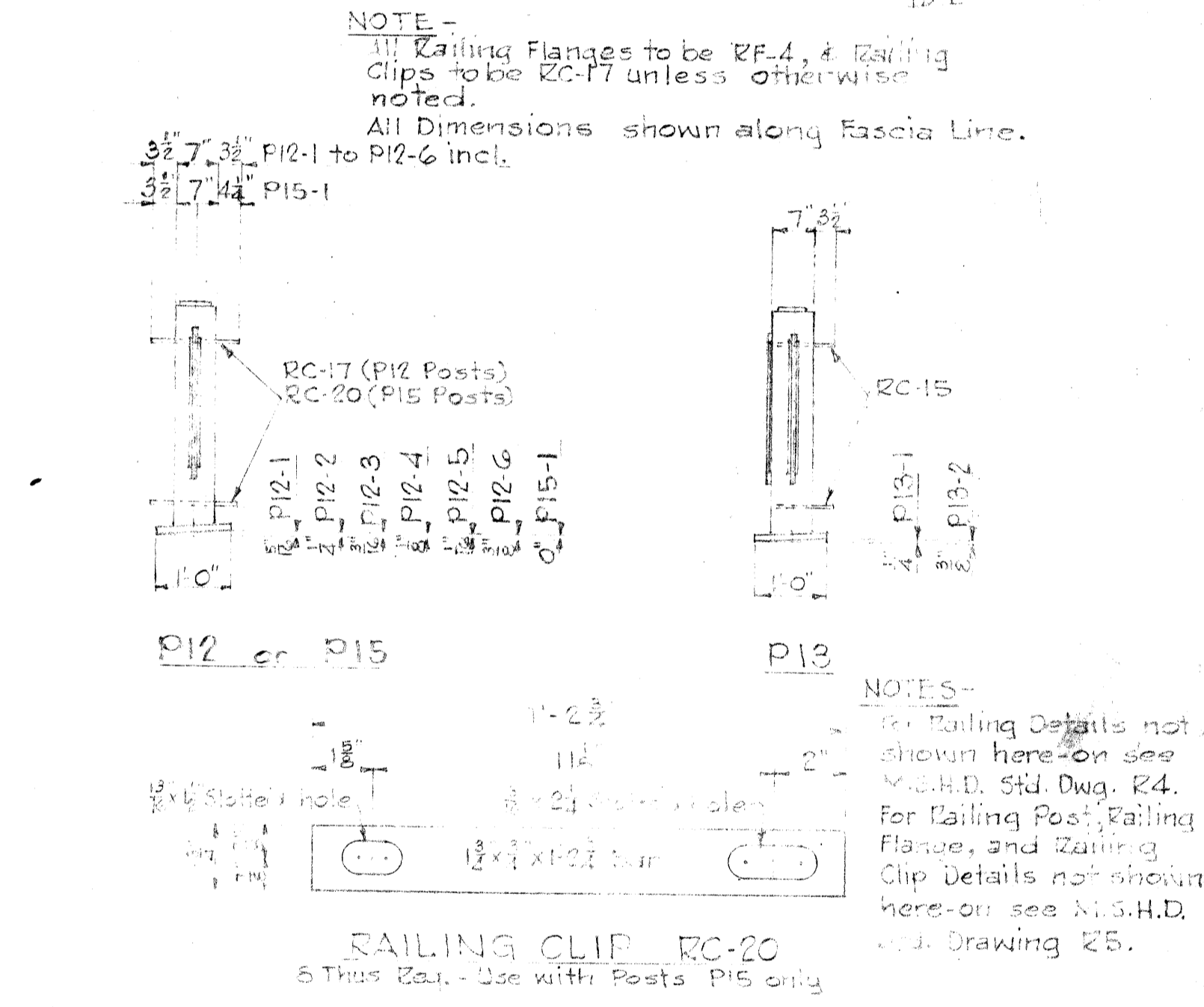








BILL OF RAILING MATERIAL									
MARK	QTY	WT	RAI.	DESCRIPTION	MARK	QTY	WT	RAI.	DESCRIPTION
RS-1	1	2 1/2		RAILING SECTION	P12-1	19			RAILING POST
RS-2	1	2 1/2		"	P12-2	9			"
RS-3	1	1 1/2		"	P12-3	8			"
RS-4	1	1 1/2		"	P12-4	6			"
RS-5	1	1 1/2		"	P12-5	4			"
RS-6	1	1 1/2		"	P12-6	8 1/2			"
RS-7	1	1 1/2		"	P15-1	4			"
RS-8	1	1 1/2		"	P16-1	3			"
RS-9	1	1 1/2		"	P16-2	3			"
RS-10	4	2 1/2		"	P13-2	2			RAILING POST
RS-11	2	2 1/2		"					
RS-12	1	2 1/2		"					
RS-13	1	2 1/2		"					
RS-14	1	2 1/2		"					
RS-15	1	2 1/2		"					
RS-16	1	2 1/2		"	RF-3	8			RAILING FLANGE
RS-17	1	2 1/2		"	RF-4	5 1/2			"
RS-18	1	2 1/2		"	RF-5	12			RAILING FLANGE
RS-19	1	2 1/2		"					
RS-20	1	2 1/2		"					
RS-21	1	2 1/2		"					
RS-22	1	2 1/2		"					
RS-23	1	2 1/2		"					
RS-24	1	2 1/2		"					
RS-25	1	2 1/2		"					
RS-26	1	2 1/2		"					
RS-27	2	2 1/2		"					
RS-28	3	2 1/2		"					
RS-29	1	2 1/2		"					
RS-30	1	2 1/2		"					
RS-31	3	2 1/2		"					
RS-32	3	2 1/2		"					
RS-33	6 1/2	3 1/2		"					
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RS-54	2	3 1/2		"					
RS-55	1	3 1/2		"					
RS-56	1	3 1/2		"					
RS-57	12	2 1/2		RAILING SECTION					



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 GRAND BLVD. IN THE CITY OF DETROIT

**RAILING DETAILS**

HAZELT & ERDAL - CONSULTING ENGINEERS FILE NO. 719  
 APPROVED *[Signature]* 11-29-51  
 CHIEF BRIDGE DRAFTSMAN  
 APPROVED *[Signature]* 11-29-51  
 ENGINEER IN CHARGE DESIGN

BRIDGE ENGINEER

NO.	DESCRIPTION	DATE	BY

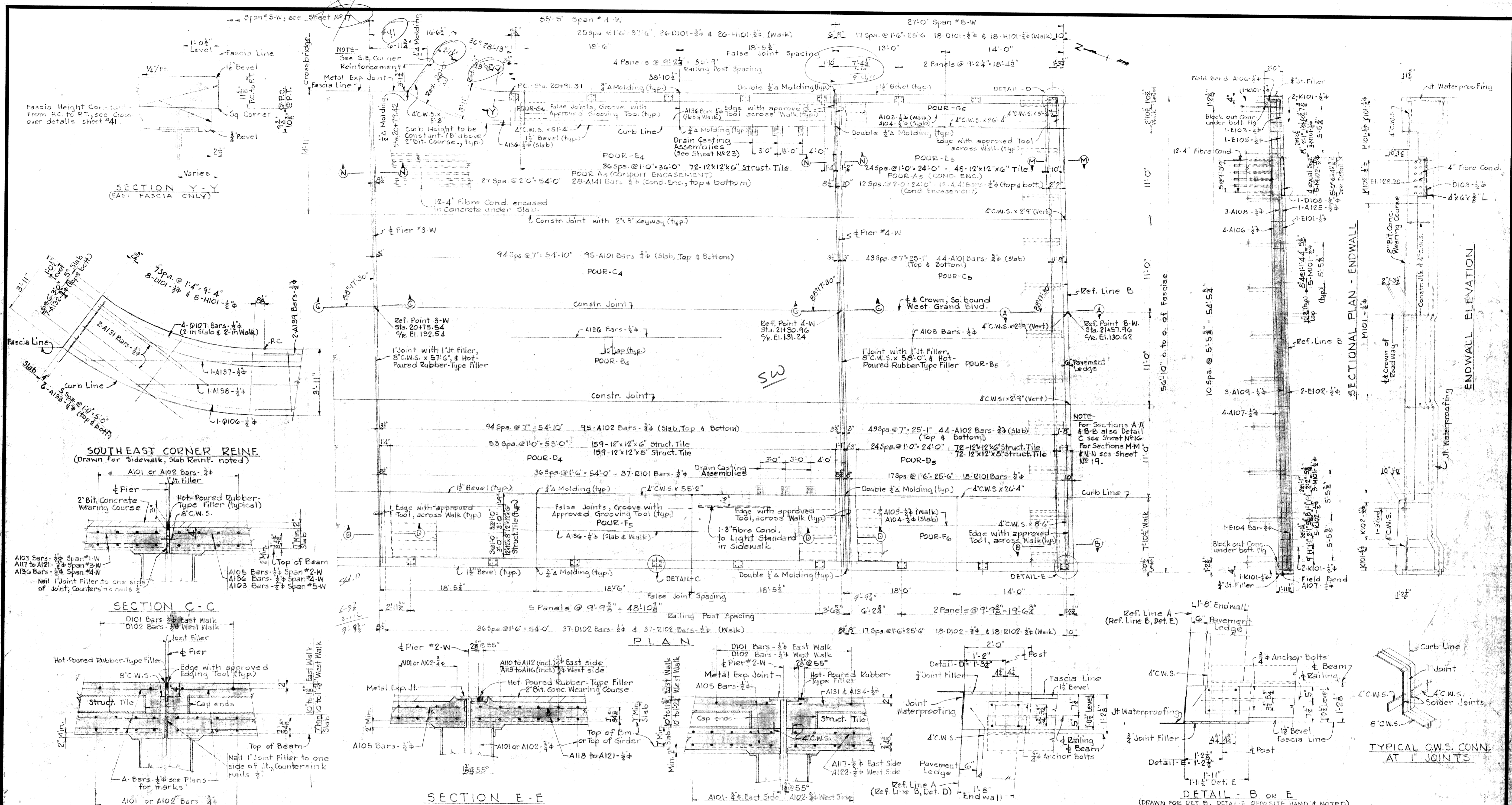
REVISIONS

9-21-51  
 9-6-51  
 4-20-51  
 1-16

SHEET 20 OF 136

B31 of 82-22-10  
 513 of 82023





**MICHIGAN STATE HIGHWAY DEPARTMENT**  
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 STATE HIGHWAY COMMISSIONER  
 EDSEL FORD EXPRESSWAY CROSSING WEST  
 GRAND BLVD. IN THE CITY OF DETROIT

**SUPERSTRUCTURE DETAILS**  
 HAZELET & ERDAL - CONSULTING ENGINEERS FILE NO 710

APPROVED: *[Signature]* 11-29-51  
 CHIEF BRIDGE DRAFTSMAN

APPROVED: *[Signature]* 11-24-51  
 BRIDGE ENGINEER

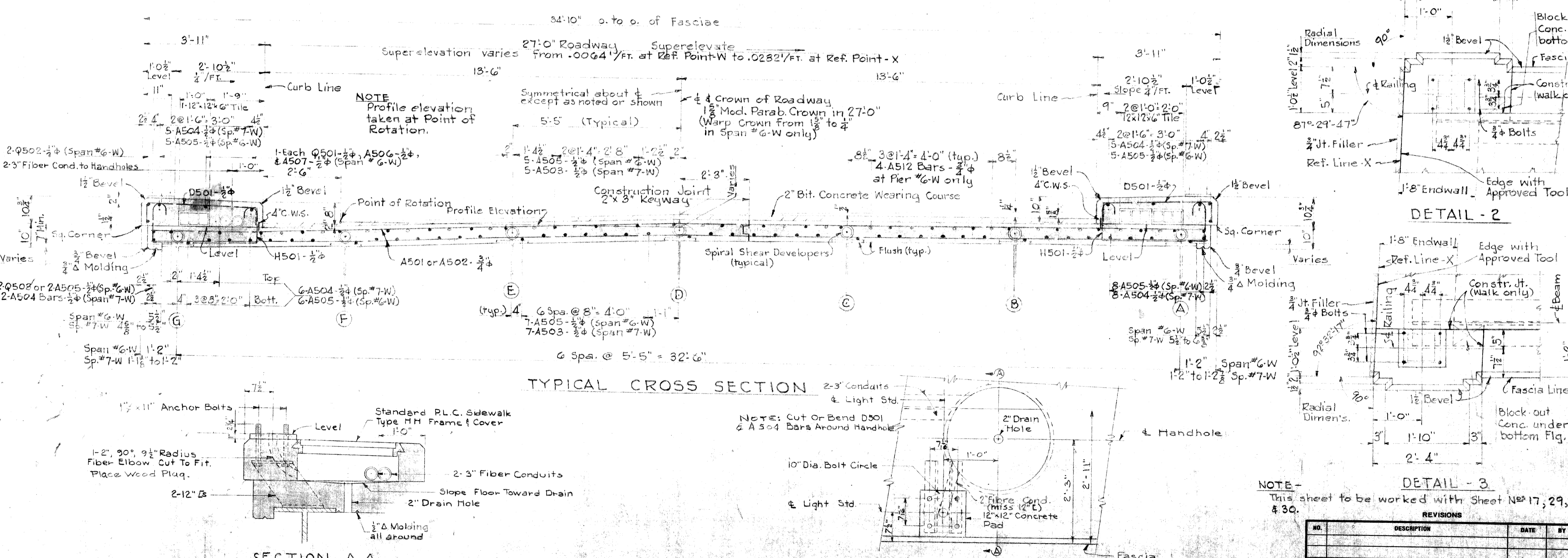
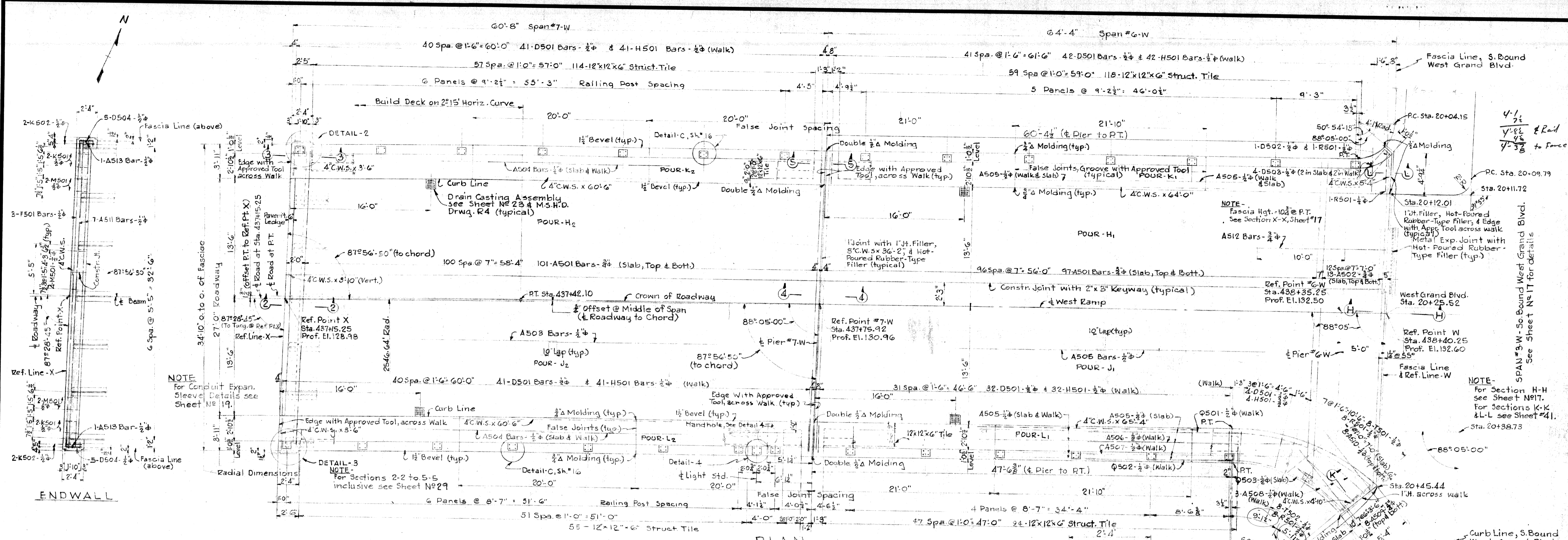
NO.	DESCRIPTION	DATE	BY

REVISIONS

NOTE - This sheet to be worked with sheet Nos. 16, 17, 19, 20, & 41.

SQUAD BOSS: *[Signature]* 9-21-51  
 DRAWN BY: *[Signature]* 9-17-50  
 CHECKED BY: *[Signature]* 11-1-50  
 SHEET 18 OF 136  
 B31 OF 82-22-10





MISCELLANEOUS QUANTITIES		GRADE A(GB) CONCRETE	
ITEMS	UNIT	AMOUNT	POUR LOCATION
12x12x6 STRUCT. TILE	EA	381	H1 SLAB
RUBBED SURFACE FINISH	SQ. FT.	518	H2
BRIDGE RAILING	LIN. FT.	247.1	J1
JOINT FILLER	SQ. FT.	48	J2 SLAB
COPPER	POUNDS	115	K1 SIDEWALK
HOT-POURED RUBBER-TYPE FILLER	LIN. FT.	80	K2
3" FIBER CONDUIT	LIN. FT.	110	L1
R.L.C. HANDHOLE FRAMES & COVS	EACH	1	L2 SIDEWALK
			Total, West Ramp Conc. 145.0 Cu.Yds.

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 EDESL FORD EXPRESSWAY CROSSING WEST  
 GRAND BLVD. IN THE CITY OF DETROIT

**SUPERSTRUCTURE DETAILS - WEST RAMP**

HAZELET & ERDAL - CONSULTING ENGINEERS FILE NO 719

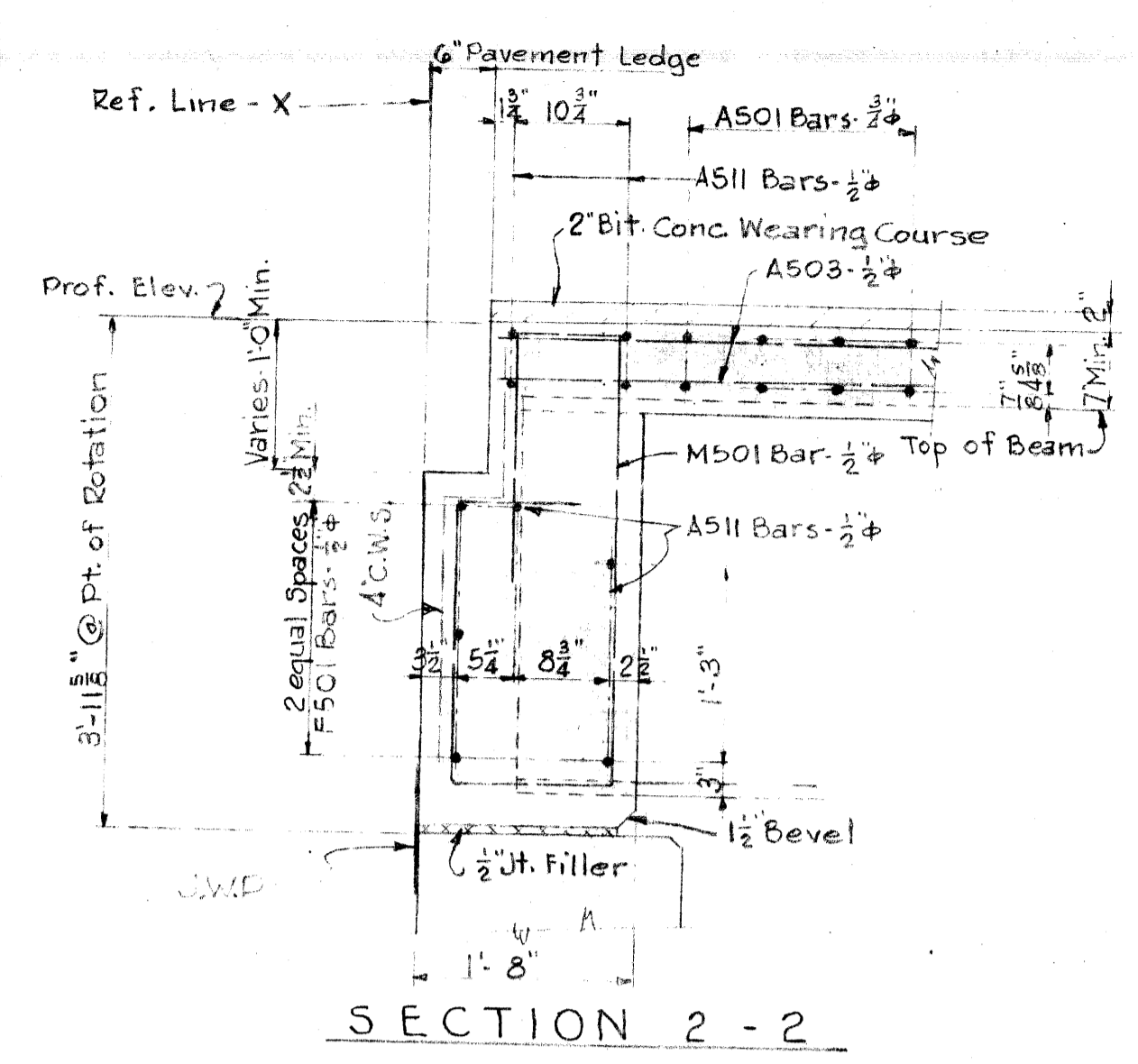
APPROVED	<i>[Signature]</i>	11-24-51
DRAWN BY	R.R.E.	9-21-51
TRACED BY		9-19-51
APPROVED	<i>[Signature]</i>	11-24-51
CHECKED BY	A.H.E.	11-2-51
APPROVED	<i>[Signature]</i>	

SHEET 28 OF 136  
 BRIDGE ENGINEER  
 B31 of 82-22-10

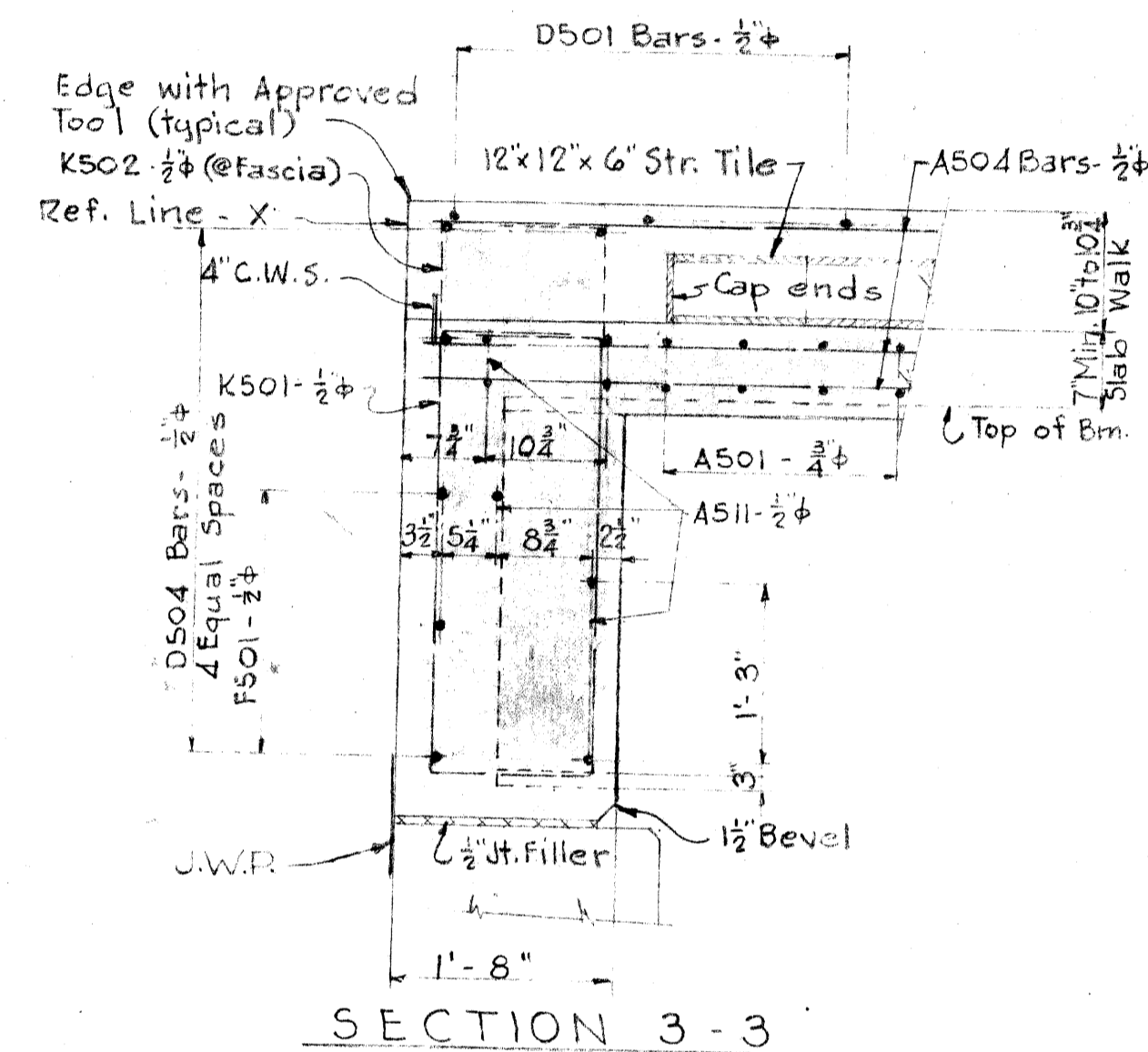
NOTE - This sheet to be worked with Sheet Nos 17, 29, & 30.

REVISIONS			
NO.	DESCRIPTION	DATE	BY

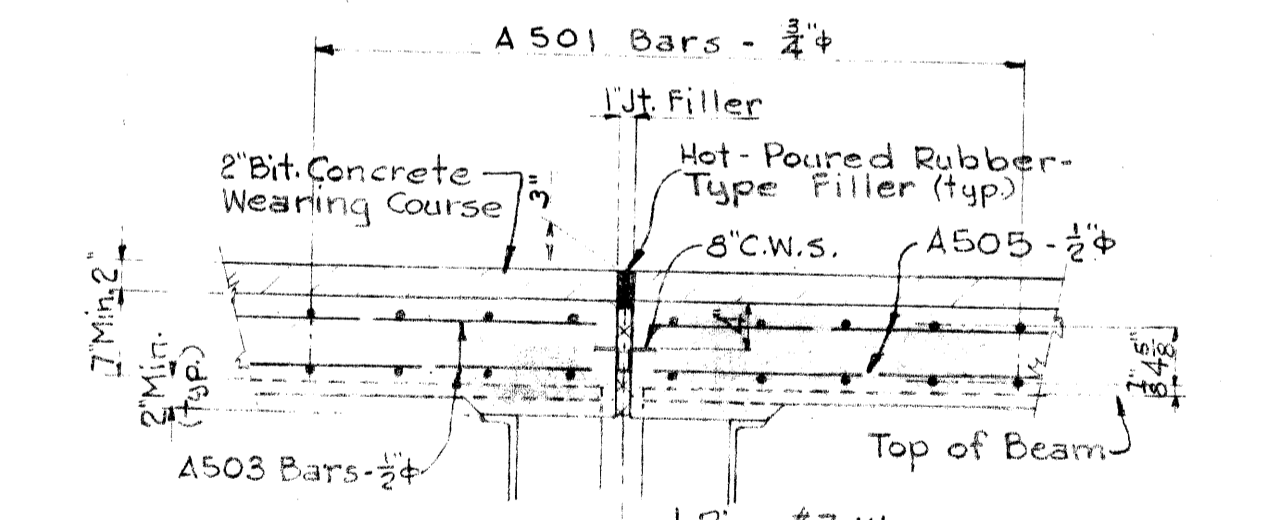




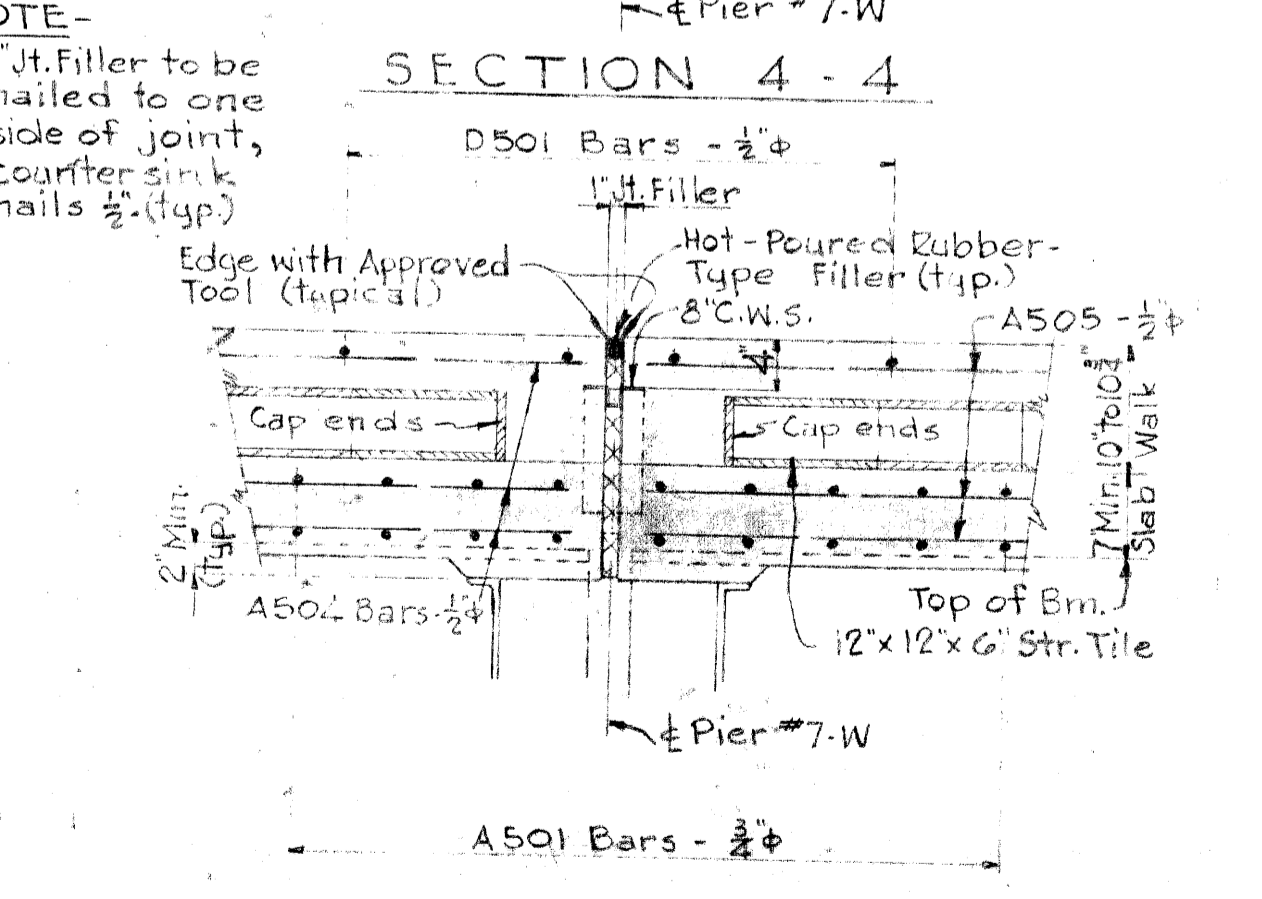
SECTION 2-2



SECTION 3-3

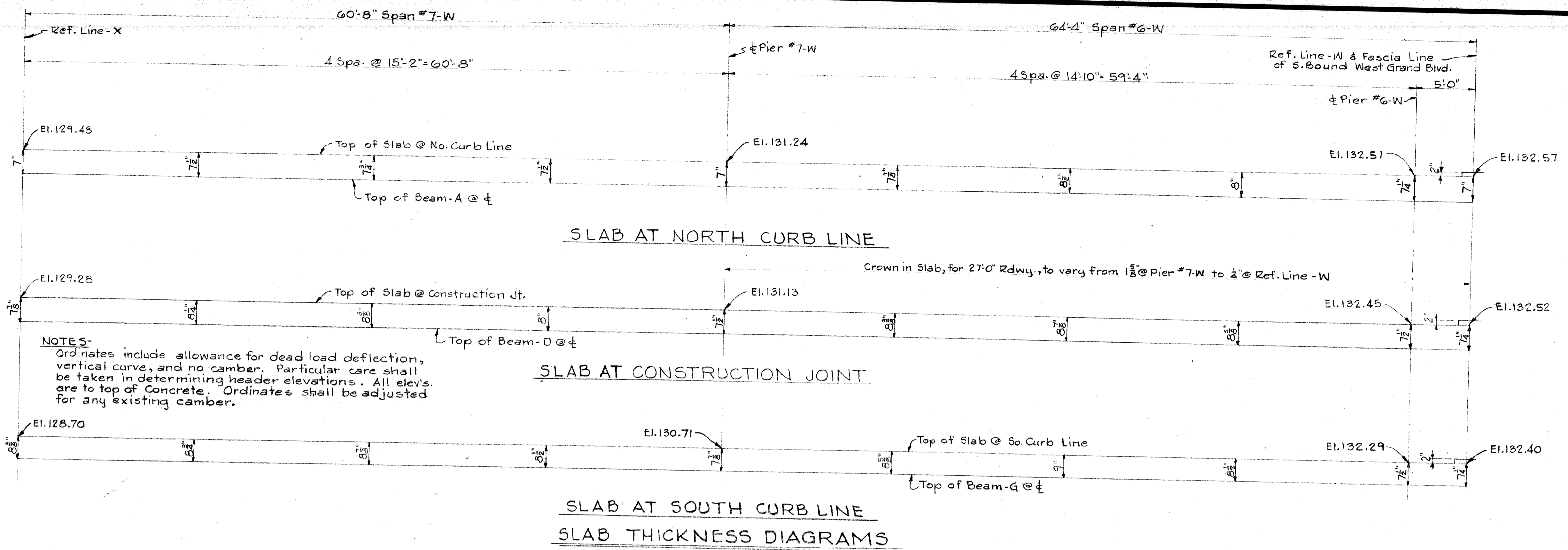


SECTION 4-4

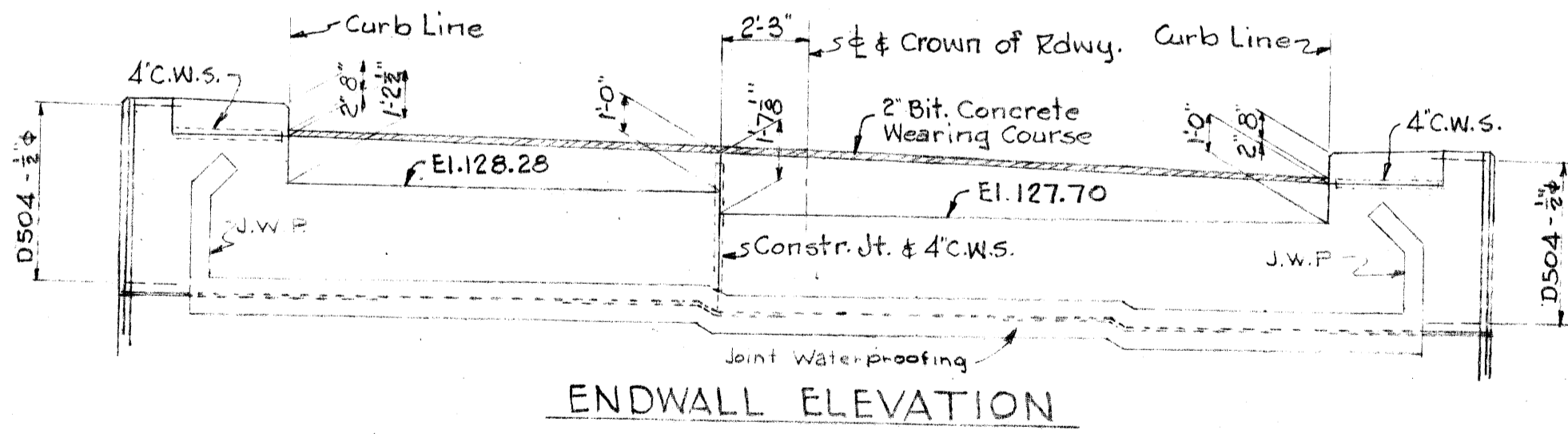


SECTION 5-5

NOTE-  
1/2" Jt. Filler to be nailed to one side of joint, counter sink nails 1/2" (typ)



NOTES-  
Ordinates include allowance for dead load deflection, vertical curve, and no camber. Particular care shall be taken in determining header elevations. All elevs. are to top of concrete. Ordinates shall be adjusted for any existing camber.



ENDWALL ELEVATION

NOTE-  
This sheet to be worked with Sheet No 28.

**MICHIGAN STATE HIGHWAY DEPARTMENT**  
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 EDESEL FORD EXPRESSWAY CROSSING WEST  
 GRAND BLVD. IN THE CITY OF DETROIT

**SUPERSTRUCTURE DETAILS - WEST RAMP**  
 HAZELT & ERDAL - CONSULTING ENGINEERS FILE NO 719

APPROVED *[Signature]* 11-24-51  
 CHIEF BRIDGE DRAFTSMAN

APPROVED *[Signature]* 11-24-51  
 ENGINEER OF BRIDGE DESIGN

APPROVED \_\_\_\_\_  
 BRIDGE ENGINEER

NO.	DESCRIPTION	DATE	BY

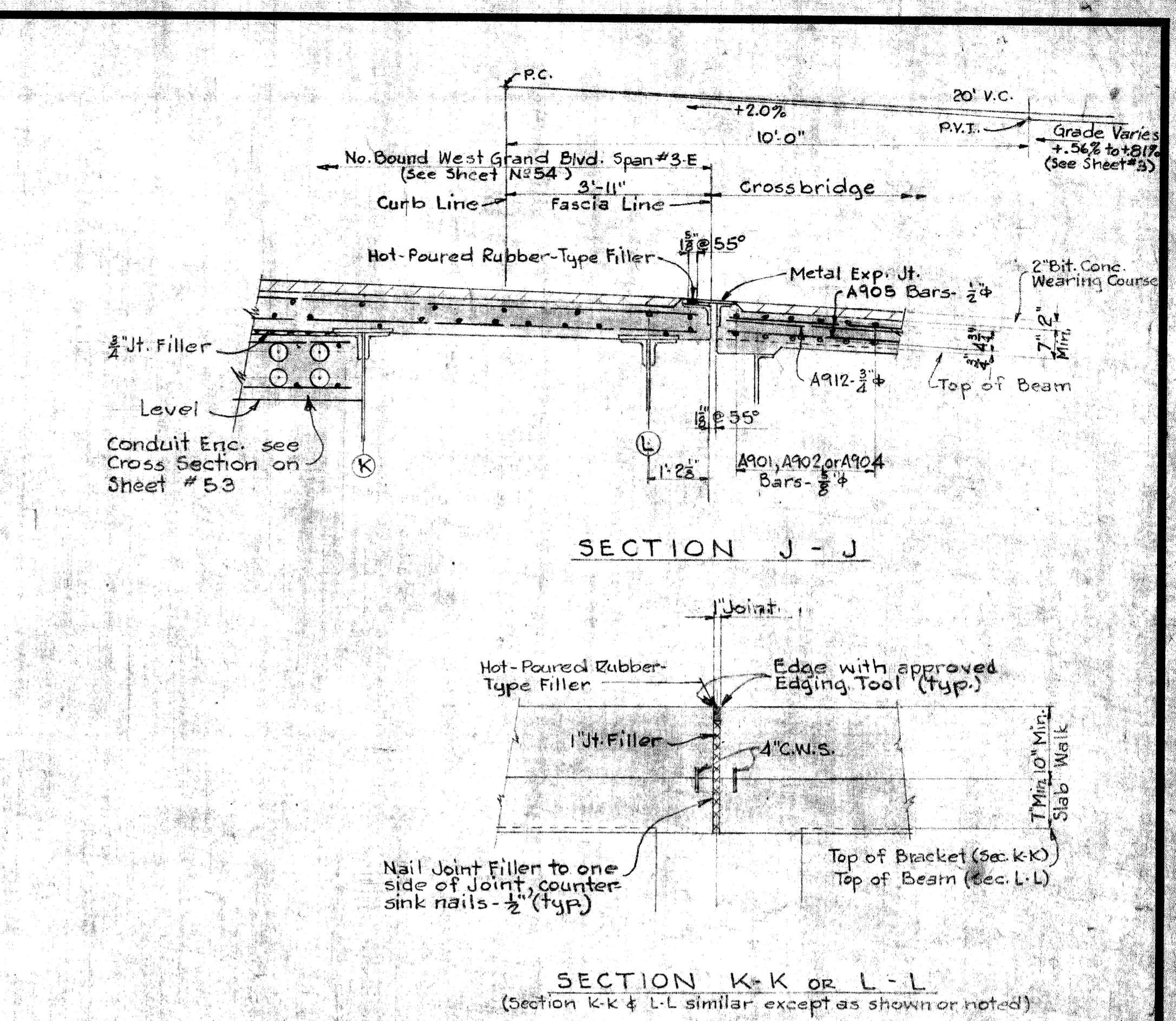
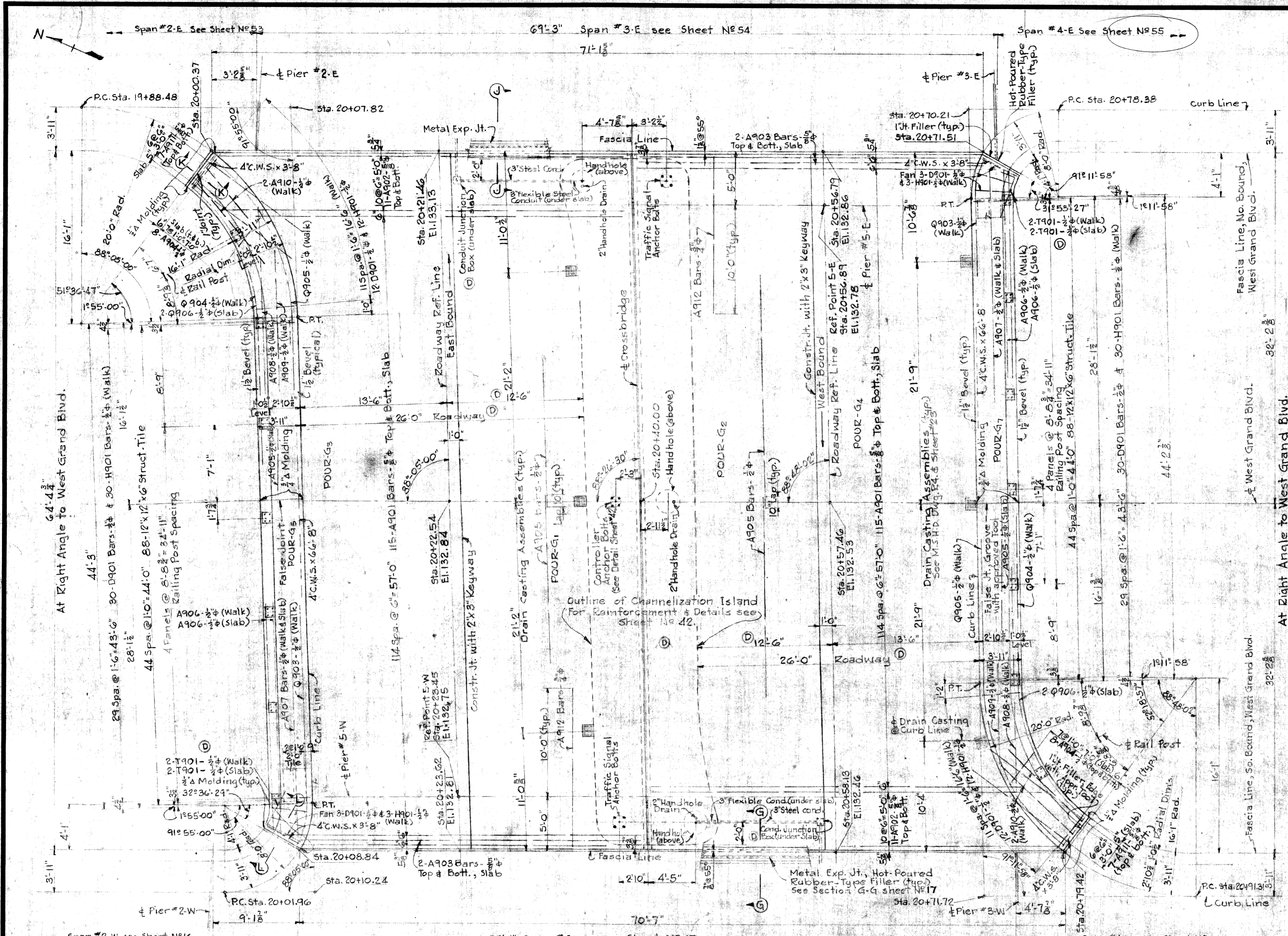
SQUAD BOSS	DATE

SHEET 29 OF 136  
 B31 of 82-22-10



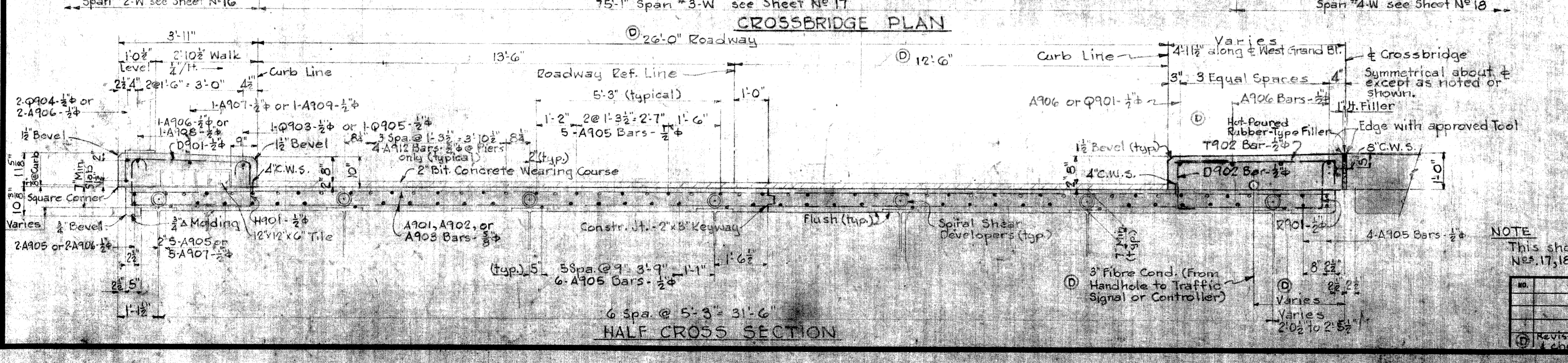






2.14  
6.58  
8.72

MISCELLANEOUS QUANTITIES			GRADE A (68) CONCRETE		
ITEMS	UNIT	AMOUNT	FOUR	LOCATION	CUB.YDS.
12"x12"x6" STRUCT. TILE	EACH	176	G1	SLAB	26.6
3" STEEL CONDUIT	LIN. FT.	25	G2	"	26.6
BRIDGE ZAILING	LIN. FT.	106.1	G3	"	30.5
T JOINT FILLER	SQ. FT.	56	G4	SLAB	30.7
COPPER	POUNDS	142	G4	SIDEWALK	6.9
HOT-POURED RUBBER-TYPE FILLER	LIN. FT.	64	G6	ISLAND	11.3
ROBBER SURFACE FINISH	SQ. FT.	249	G7	SIDEWALK	6.9
P.L.C. HANDHOLE FRAME & COVER	EACH	3	G6	ISLAND	11.3
3" FIBRE CONDUIT	LIN. FT.	70			
2" FIBRE CONDUIT	LIN. FT.	20			
JUNCTION BOX	EACH	2			
			Total Crossbridge Conc. 151.0 Cu. Yds.		



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**SUPERSTRUCTURE DETAILS - CROSSBRIDGE**

HAZLET & ERDAL - CONSULTING ENGINEERS FILE NO. 710

APPROVED: *[Signature]* 11-24-51  
 CHIEF BRIDGE DRAFTSMAN

APPROVED: *[Signature]* 11-25-51  
 ENGINEER IN CHARGE DESIGN

APPROVED: \_\_\_\_\_  
 BRIDGE ENGINEER

REVISIONS:

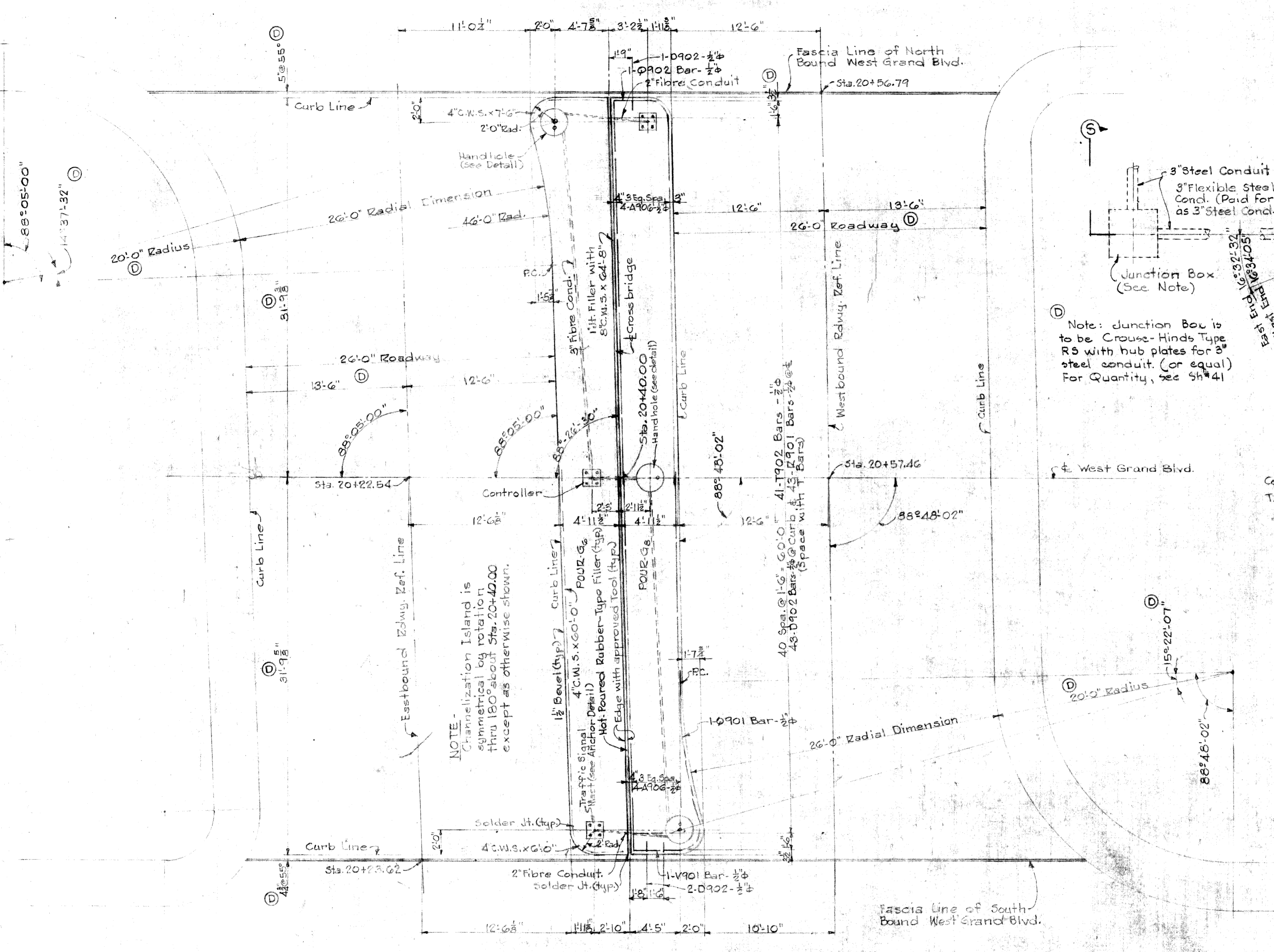
NO.	DESCRIPTION	DATE	BY
1	Revised Channelization Island & Channelization	11-18-51	E.R.K.

NOTE: This sheet to be worked with Sheet Nos. 17, 18, 42, 43, 53, 54, 155.

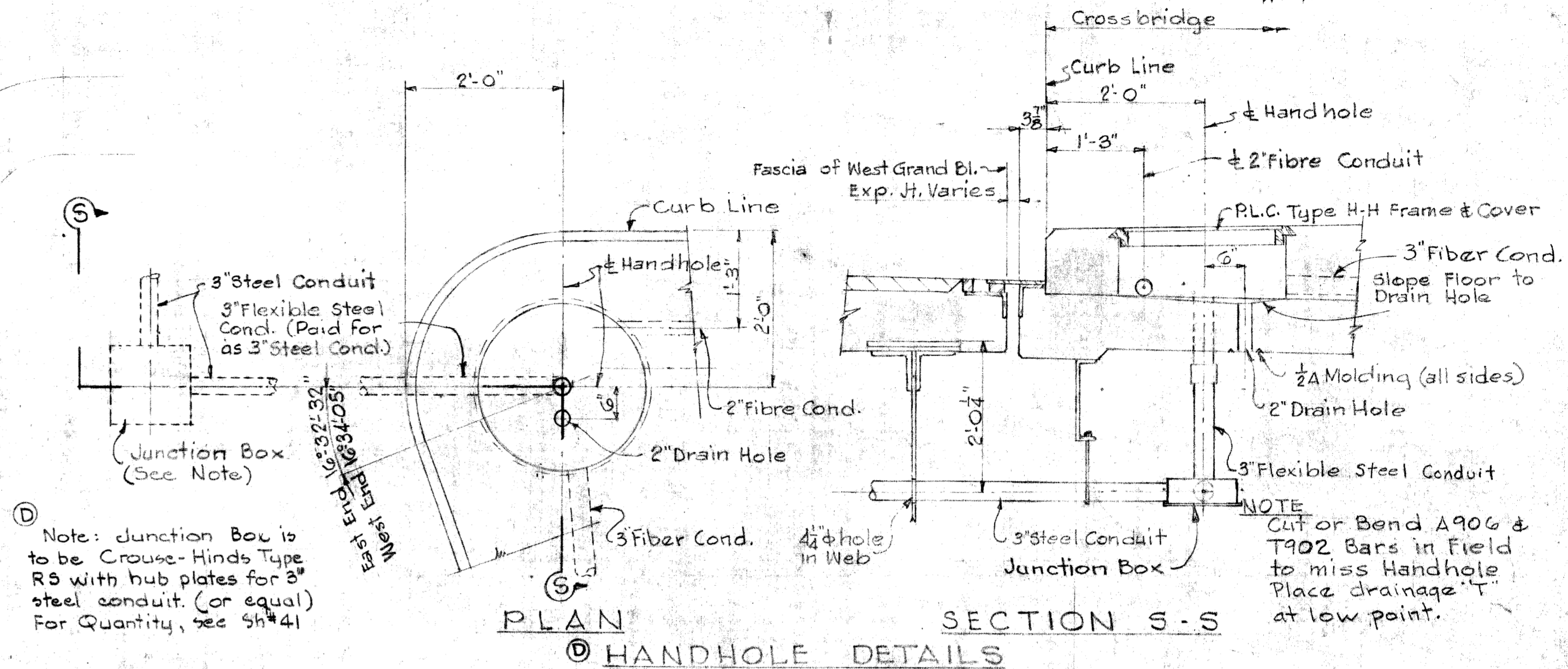
SHED BOX: Dwy 10-21-51  
 DRAWN BY: R.P.K. 9-19-50  
 CHECKED BY: A.H.Z. 10-20-50  
 SHEET 41 OF 136

B32 or 82-22-10

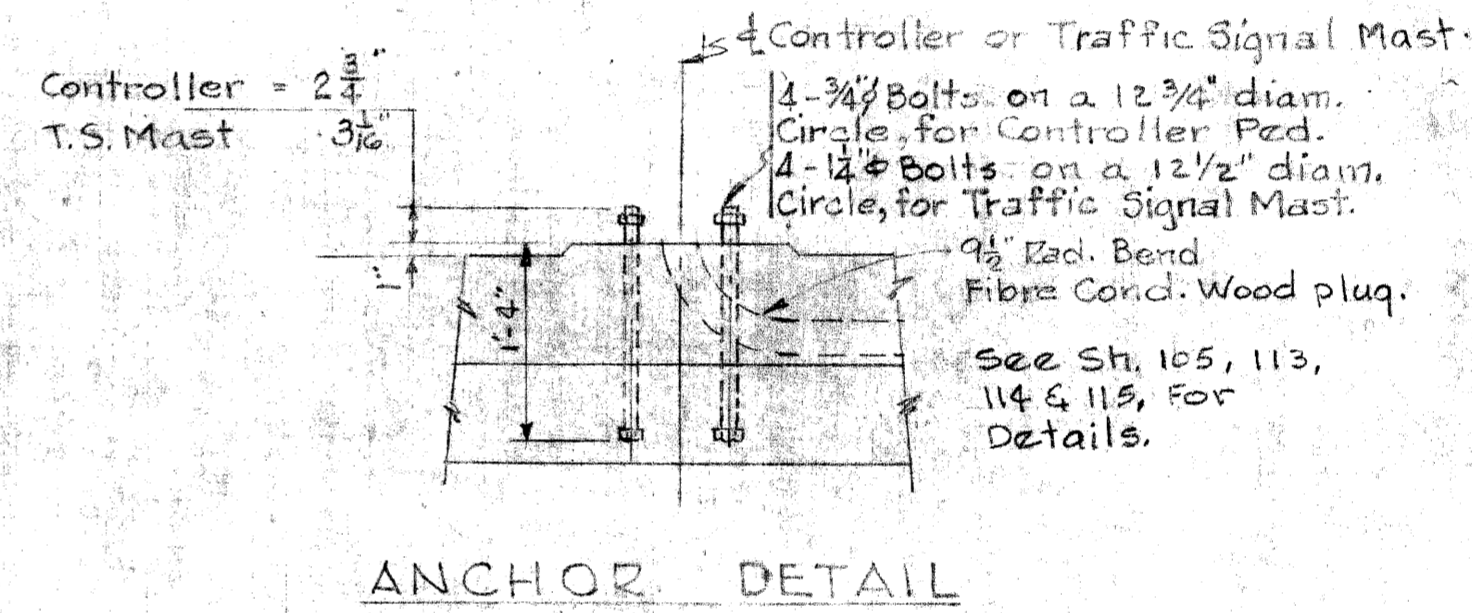




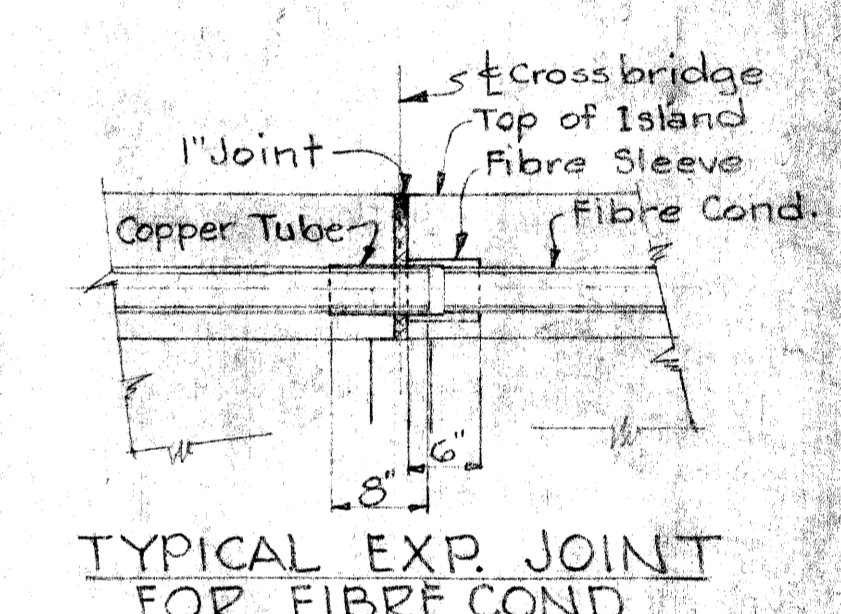
CHANNELIZATION ISLAND PLAN



HANDHOLE DETAILS



ANCHOR DETAIL



TYPICAL EXP. JOINT FOR FIBRE COND.

Note: This Sheet to be worked with Sheets No 41 & 43.

**MICHIGAN STATE HIGHWAY DEPARTMENT**  
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 EDEL FORD EXPRESSWAY CROSSING WEST  
 GRAND BLVD. IN THE CITY OF DETROIT

**CHANNELIZATION ISLAND - CROSSBRIDGE**

HAZELT & EBBE CONSULTING ENGINEERS FILE NO. 719  
 APPROVED: *[Signature]* 11-28-51  
 ENGINEER OF BRIDGE DESIGN

APPROVED: *[Signature]* 11-28-51  
 BRIDGE DRAFTSMAN

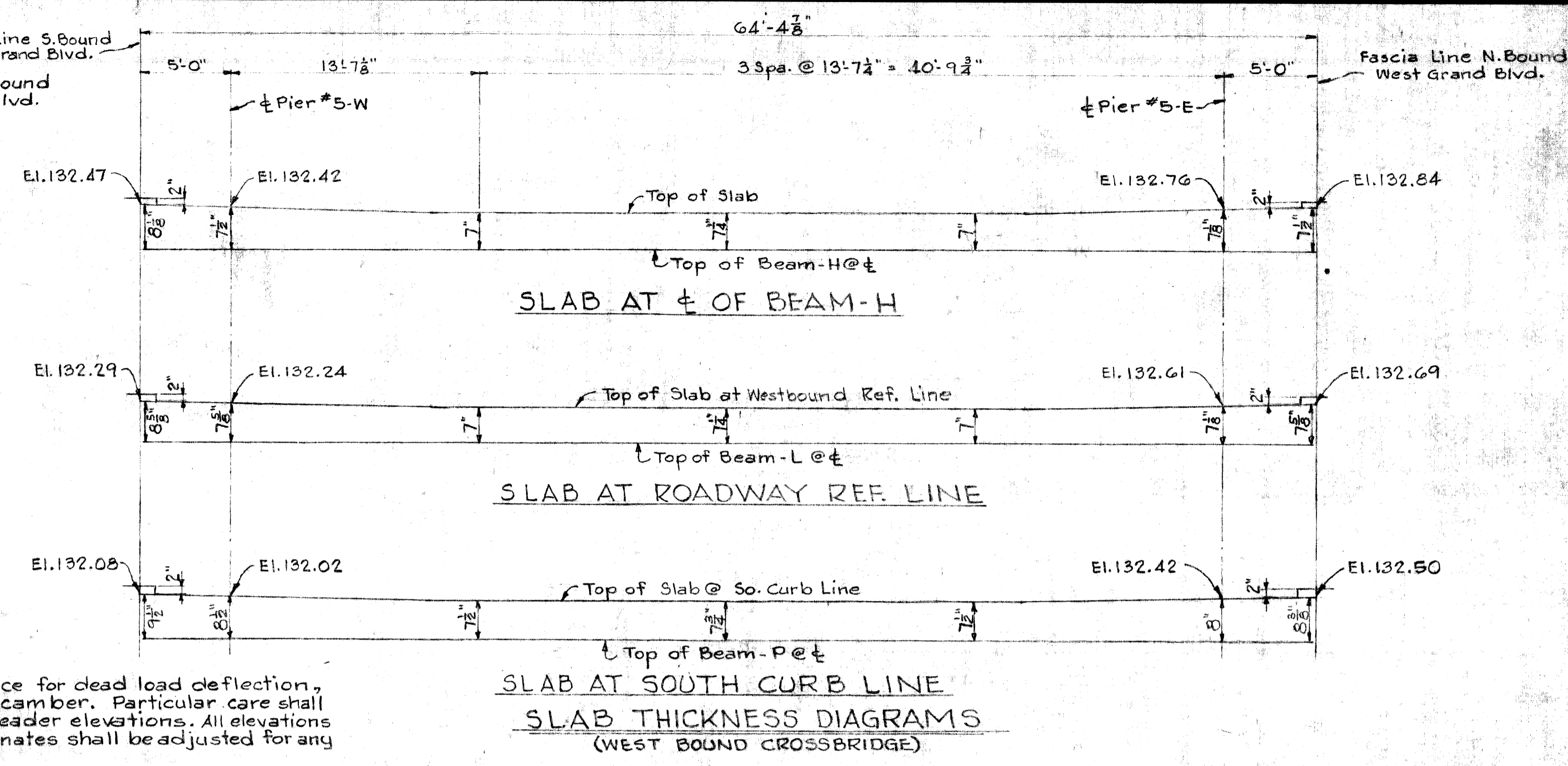
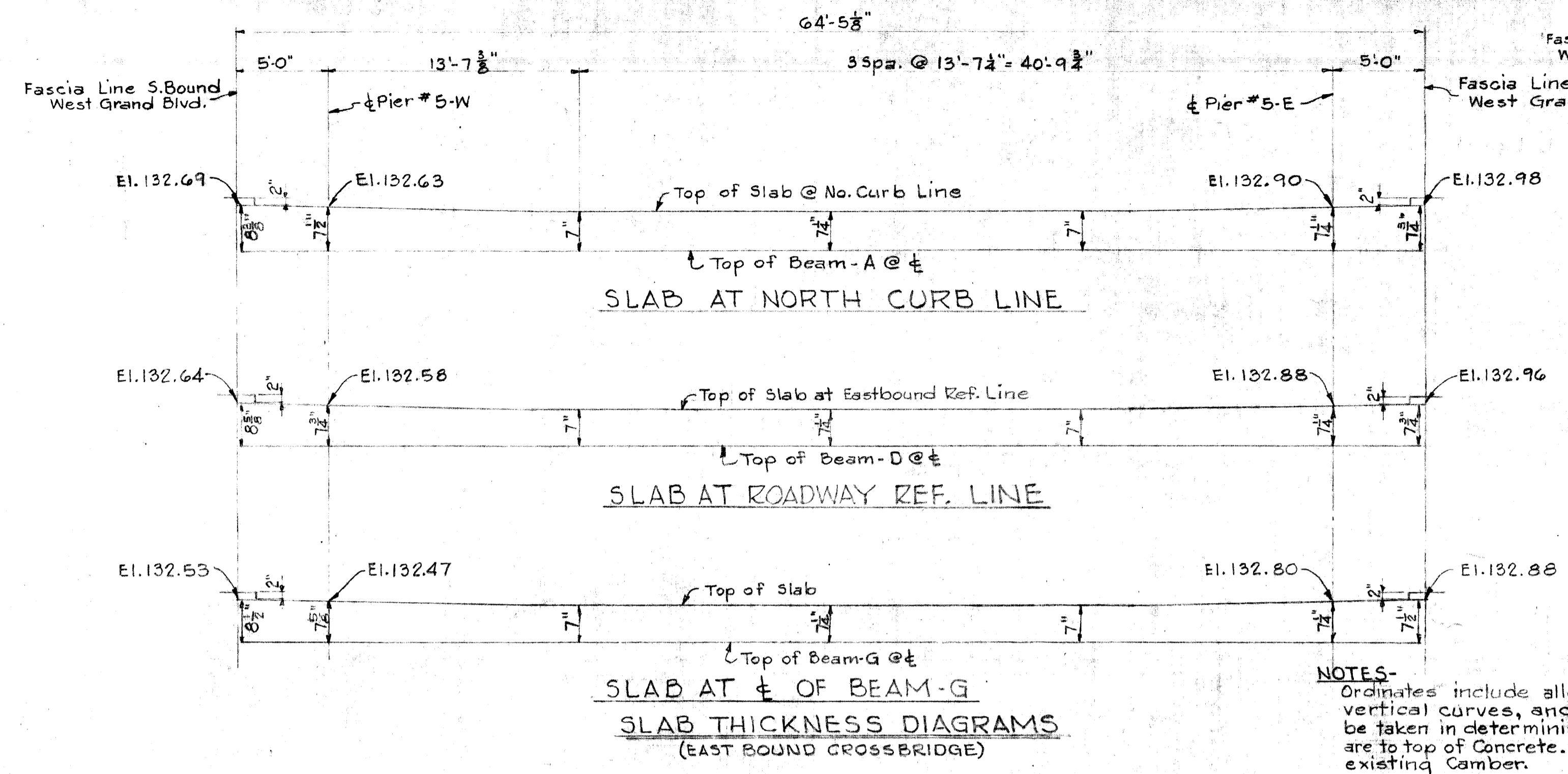
APPROVED: *[Signature]*  
 BRIDGE ENGINEER

NO.	DESCRIPTION	DATE	BY
1	Revised Channelization Island & 41 & 43	7-6-52	R.R.K.

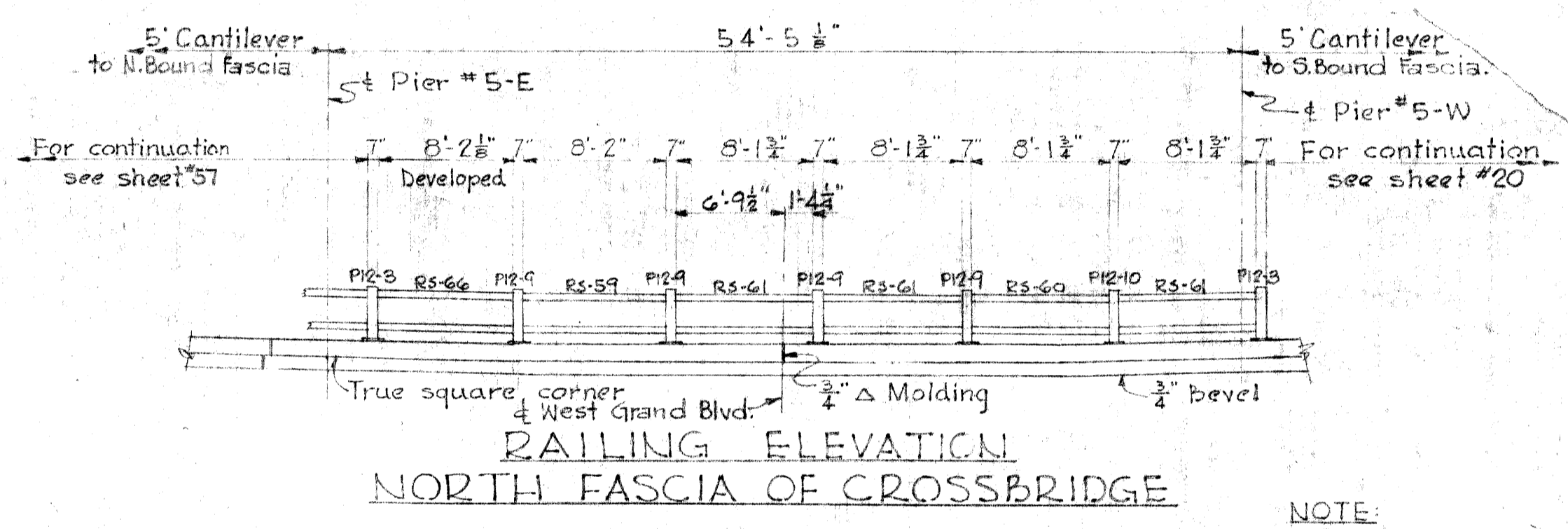
SQUAD BRG	DATE
207	9-21-51
207	9-14-51
J.H.C.	9-21-51

SHEET 42 OF 43  
 B32 OF 82-22-10

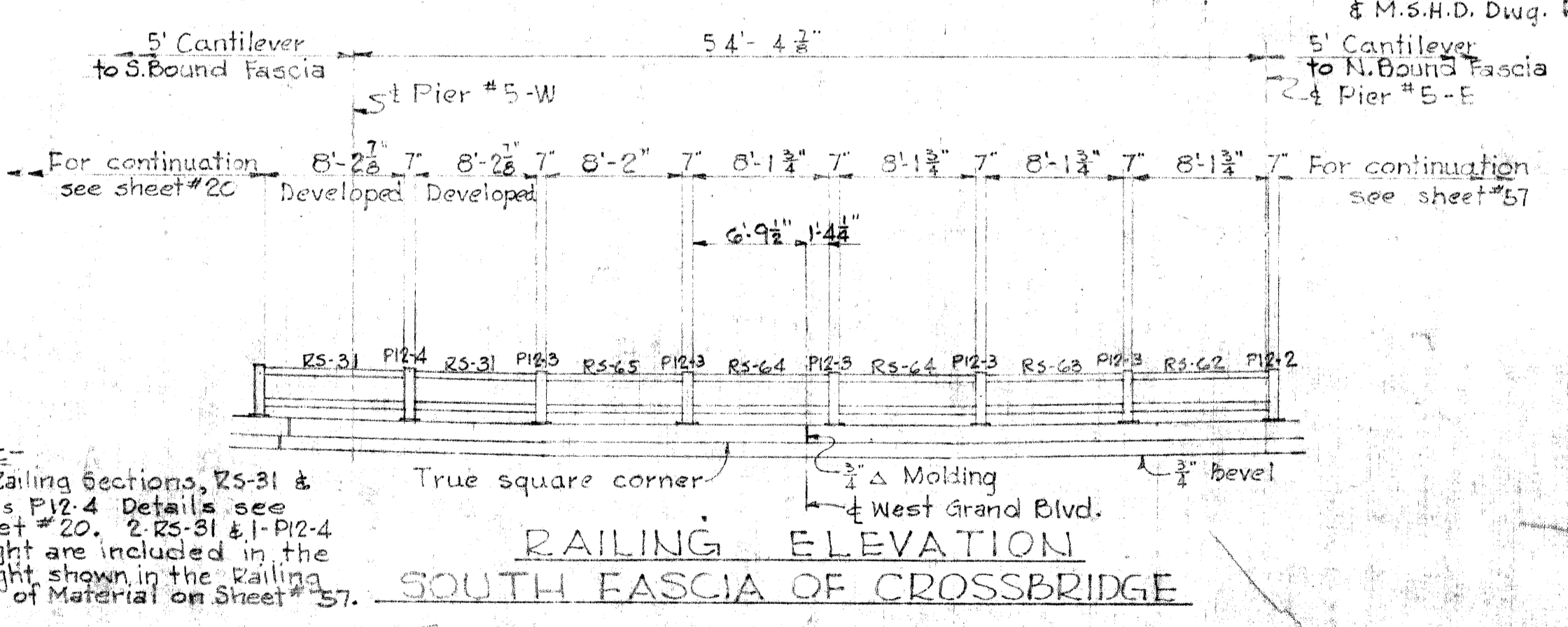




**NOTES-**  
 Ordinates include allowance for dead load deflection, vertical curves, and no camber. Particular care shall be taken in determining header elevations. All elevations are to top of concrete. Ordinates shall be adjusted for any existing camber.



**NOTE:**  
 All Railing Flanges to be RF-4, Railing Clips to be RC-17 unless otherwise noted. All Dimensions shown along Fascia Line. For Railing Details see Sheet #57 & M.S.H.D. Dwg. R4, For Post Details see Sheet #57 & M.S.H.D. Dwg. R5.



**NOTE-**  
 For Railing sections, RS-31 & Posts P12-4 Details see Sheet #20, 2, RS-31 & P12-4 weight are included in the weight shown in the Railing Bill of Material on Sheet #57.

**NOTE-**  
 This sheet to be worked with Sheet No 41, & 57

**MICHIGAN STATE HIGHWAY DEPARTMENT**  
 CHARLES M. ZIEGLER  
 STATE HIGHWAY COMMISSIONER  
 EDEL FORD EXPRESSWAY CROSSING WEST GRAND BLVD. IN THE CITY OF DETROIT

**RAILING & SLAB DETAILS - CROSSBRIDGE**

HAZELT & ERDAL CONSULTING ENGINEERS FILE NO 719

APPROVED *[Signature]* 11-24-51  
 CHIEF BRIDGE DRAFTSMAN

APPROVED *[Signature]* 11-24-51  
 ENGINEER OF DESIGN

APPROVED \_\_\_\_\_  
 BRIDGE ENGINEER

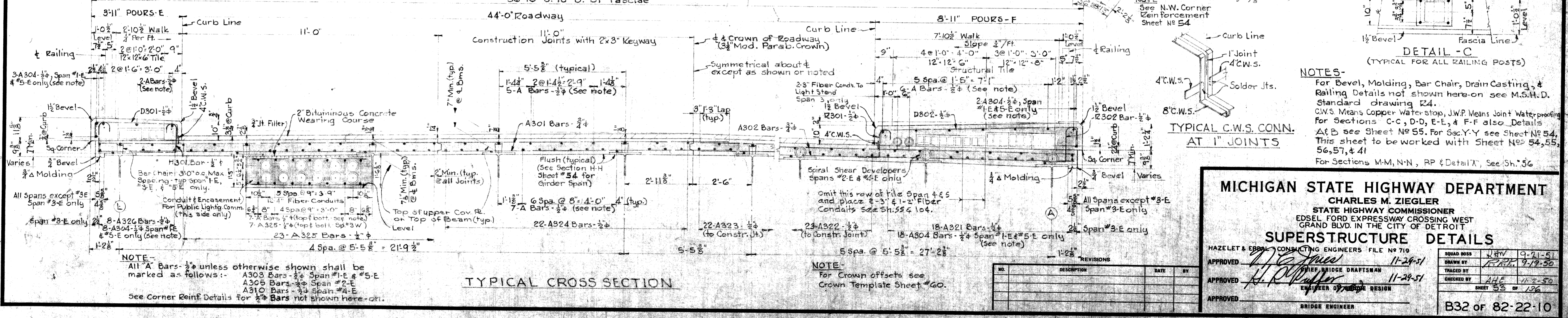
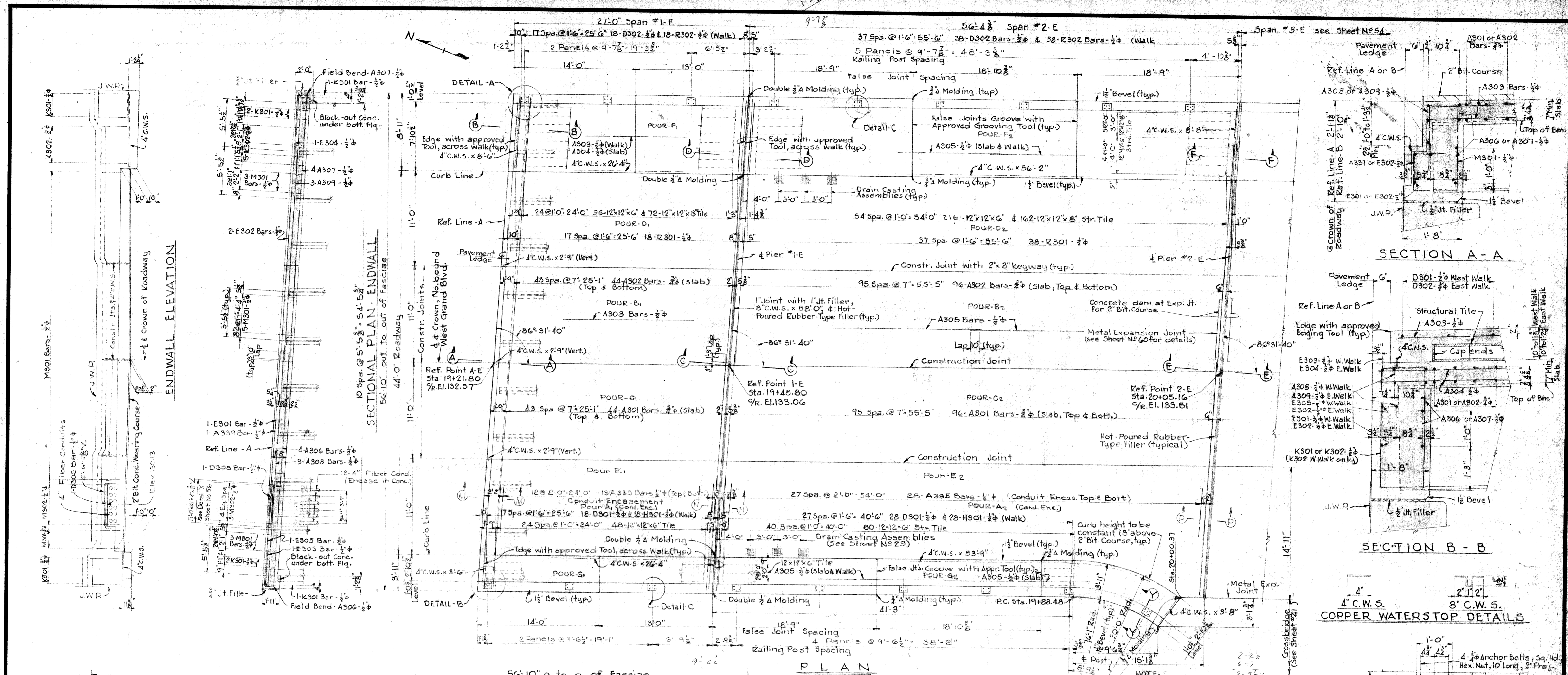
NO.	DESCRIPTION	DATE	BY

REVISIONS

QUAD NO. 24  
 DRAWN BY B.R.K. 10/13/50  
 CHECKED BY A.H.E. 11-2-51  
 SHEET 43 OF 136

B32 of 82-22-10





**MICHIGAN STATE HIGHWAY DEPARTMENT**  
CHARLES M. ZIEGLER  
STATE HIGHWAY COMMISSIONER  
EDEL FORD EXPRESSWAY CROSSING WEST GRAND BLVD. IN THE CITY OF DETROIT

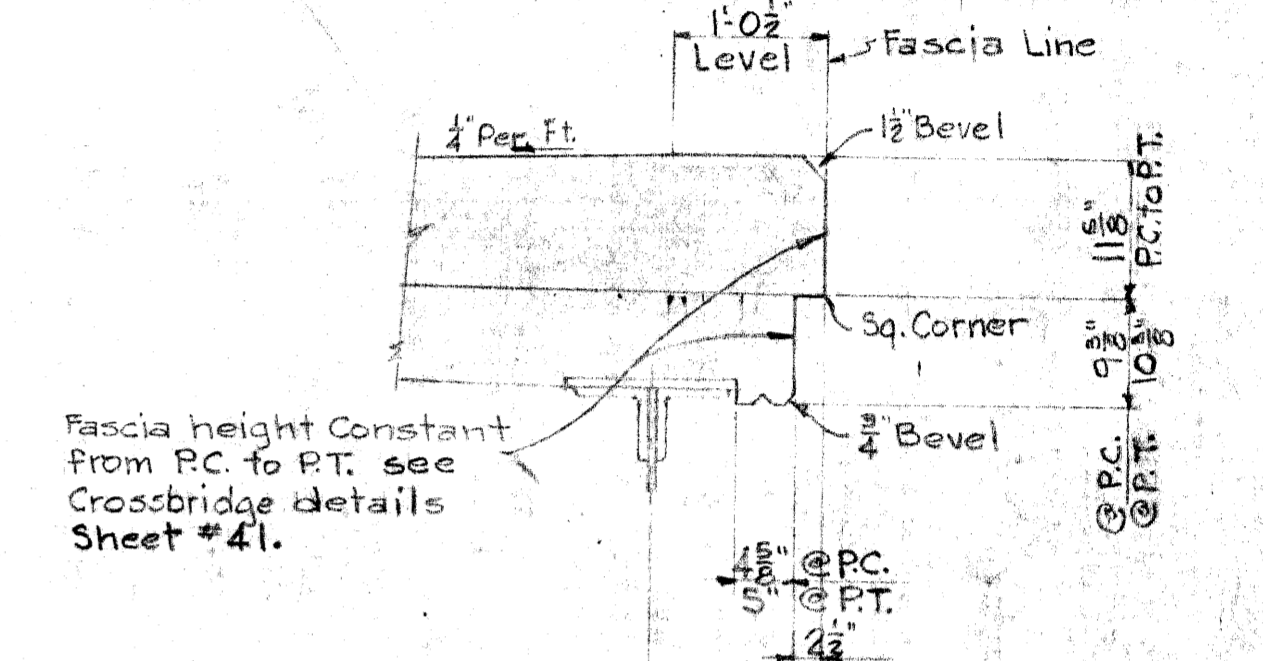
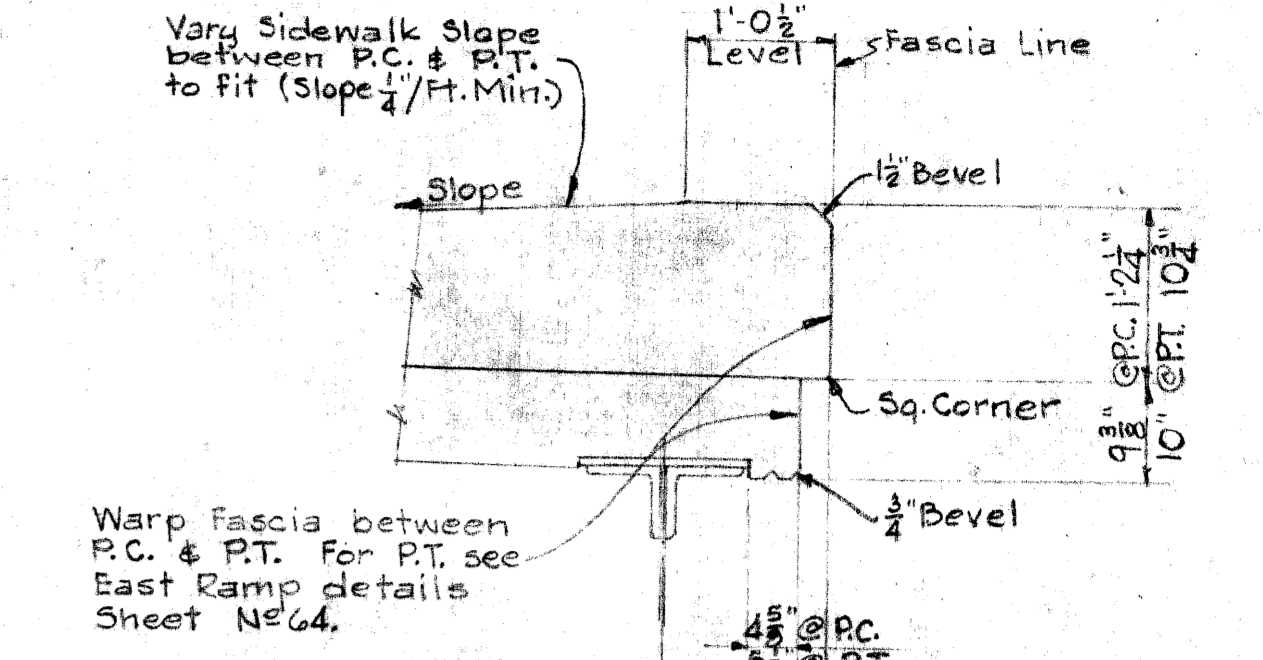
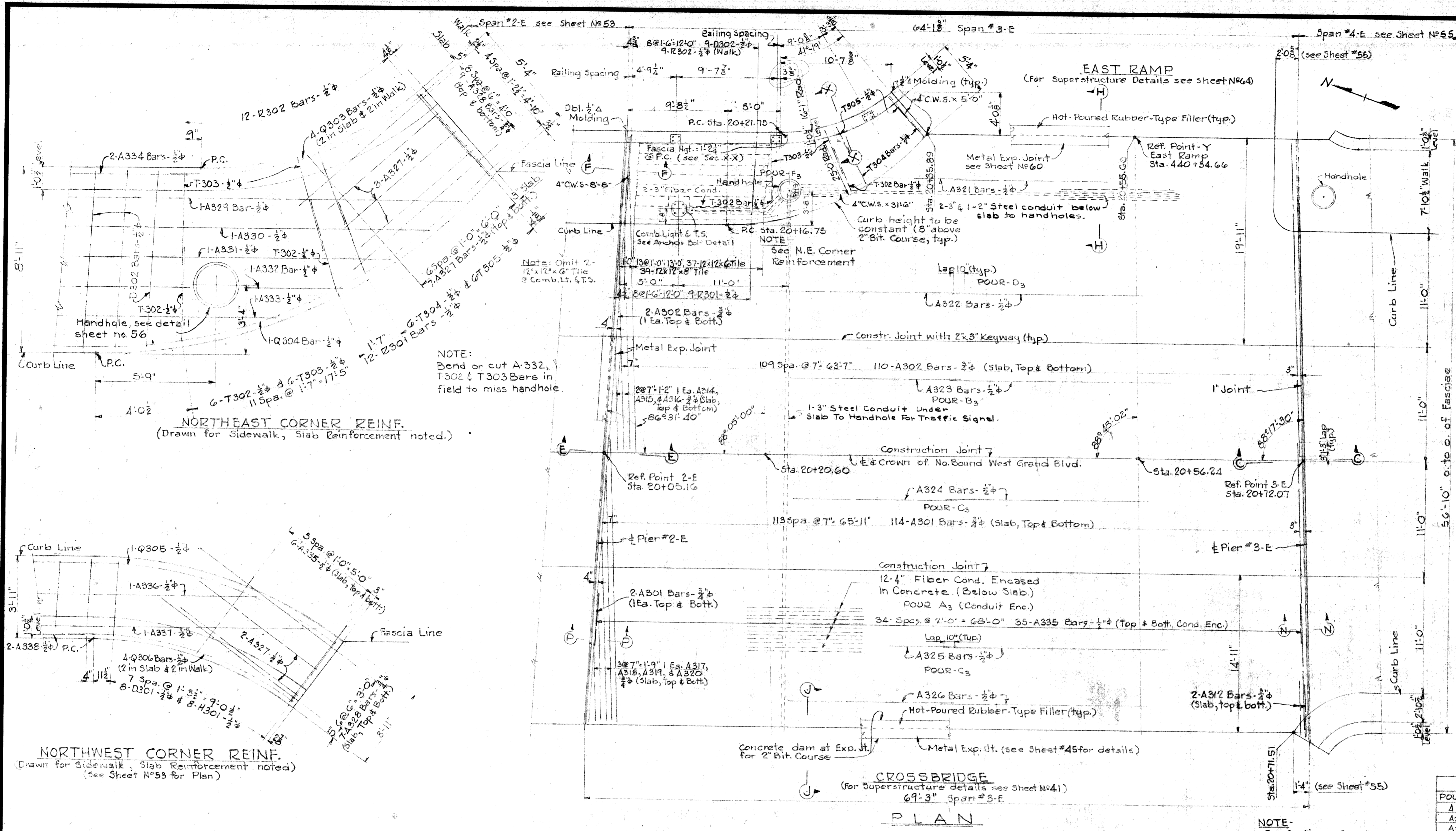
**SUPERSTRUCTURE DETAILS**  
HAZELT & EBBEL CONSULTING ENGINEERS FILE NO 719

APPROVED: [Signature] 11-24-51  
DRAWN BY: [Signature] 9-19-50  
CHECKED BY: [Signature] 11-24-51  
ENGINEER OF PUBLIC DESIGN

BRIDGE ENGINEER

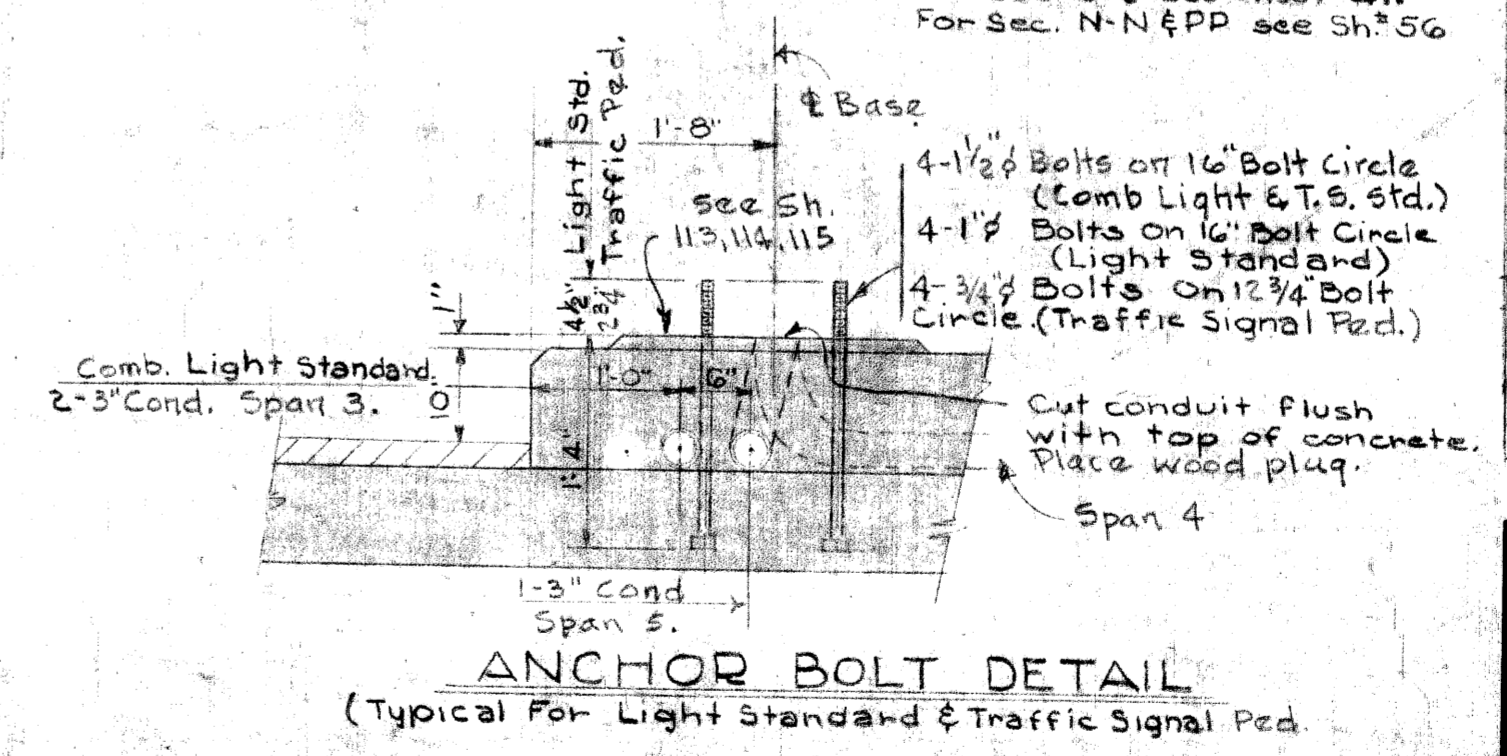
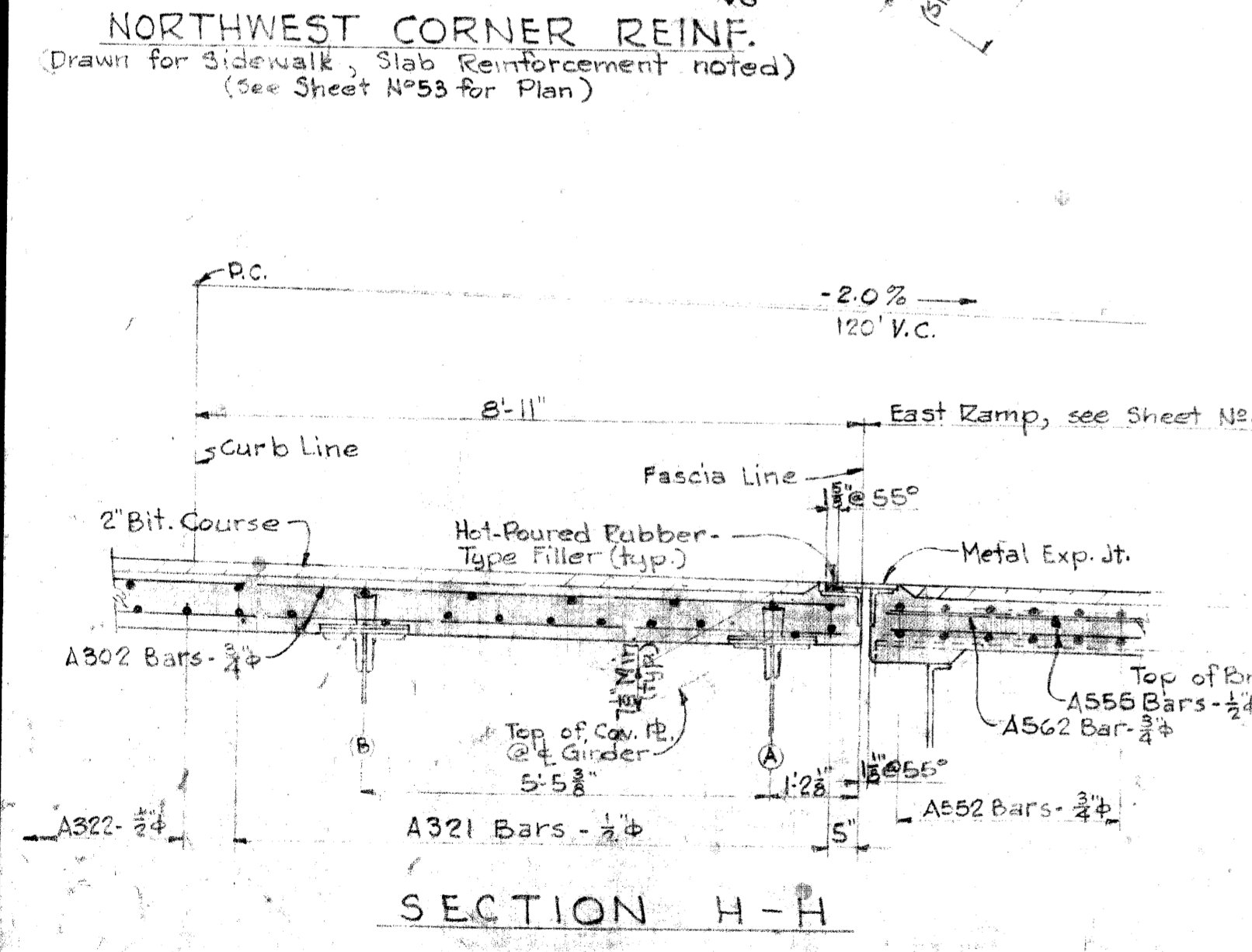
SHEET 53 OF 136  
B32 of 82-22-10





MISCELLANEOUS QUANTITIES		
ITEM	UNIT	AMOUNT
RUBBED SURFACE FINISH	SQ. FT.	771
BRIDGE RAILING	LIN. FT.	368.5
1" JOINT FILLER	SQ. FT.	164
1/2" JOINT FILLER	SQ. FT.	19
COPPER	POUNDS	262
HOT-POURED RUBBER-TYPE FILLER	LIN. FT.	309
12x12x6 STRUCTURAL TILE	EACH	833
12x12x6 STRUCTURAL TILE	EACH	495
P.C. HANDHOLE FRAMES & COVERS	EACH	2
2" FIBER CONDUIT	LIN. FT.	2783
3" FIBER CONDUIT	LIN. FT.	195
2" FIBER CONDUIT	LIN. FT.	80
3" STEEL CONDUIT	LIN. FT.	170
2" STEEL CONDUIT	LIN. FT.	55
3/4" JOINT FILLER	SQ. FT.	1180

GRADE A (G6) CONCRETE QUANTITIES					
POUR	LOCATION	CU.YDS.	POUR	LOCATION	CU.YDS.
A1	CONDUIT ENCASEMENT	5.6	D1	SLAB	26.2
A2	"	11.7	D2	"	15.5
A3	"	14.5	E1	"	11.7
A4	"	11.6	E2	"	20.2
A5	CONDUIT ENCASEMENT	5.6	E3	"	24.0
B1	SLAB	8.5	E4	"	19.6
B2	"	14.6	F1	SLAB	11.6
B3	"	17.5	F1	EAST SIDEWALK	5.5
B4	"	14.3	F2	"	11.1
B5	"	8.3	F3	"	6.6
C1	"	8.5	F4	"	12.5
C2	"	14.6	F5	EAST SIDEWALK	6.0
C3	"	17.6	G1	WEST SIDEWALK	2.7
C4	"	14.9	G2	"	5.5
C5	"	8.3	G3	"	5.6
D1	"	15.7	G4	WEST SIDEWALK	2.7
D2	"	26.7			
D3	SLAB	31.3		Total N Bound Lane Concrete	436.5 CU.YD.



NOTE:  
This sheet to be worked with Sheet N65 53, 55, 56, 57, 41, & 64.

NO.	DESCRIPTION	DATE	BY

**MICHIGAN STATE HIGHWAY DEPARTMENT**  
CHARLES M. ZIEGLER  
STATE HIGHWAY COMMISSIONER  
EDEL FORD EXPRESSWAY CROSSING WEST GRAND BLVD. IN THE CITY OF DETROIT

**SUPERSTRUCTURE DETAILS**

HAZELT & EDLAL CONSULTING ENGINEERS FILE NO. 719

APPROVED: *[Signature]* 11-24-51  
CHIEF BRIDGE DRAFTSMAN

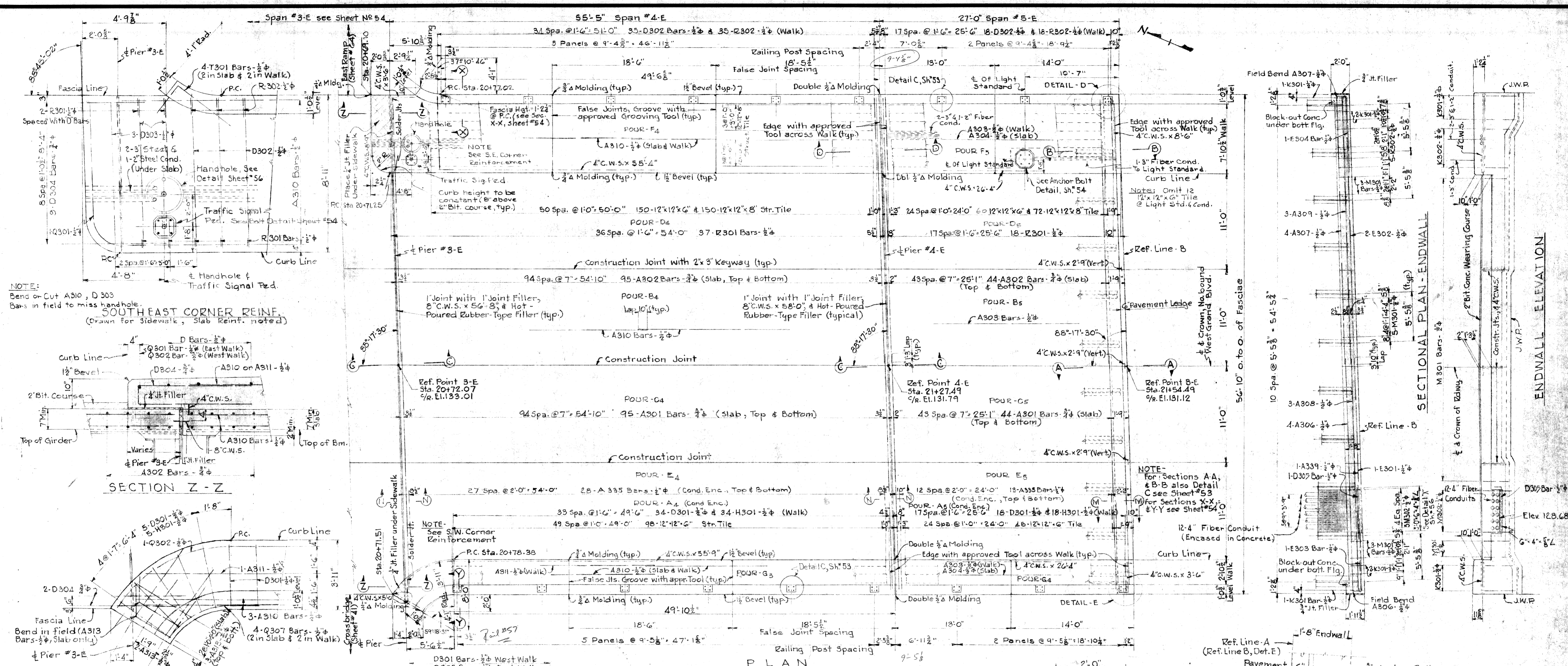
APPROVED: *[Signature]* 11-29-51  
BRIDGE DESIGN

APPROVED: \_\_\_\_\_  
BRIDGE ENGINEER

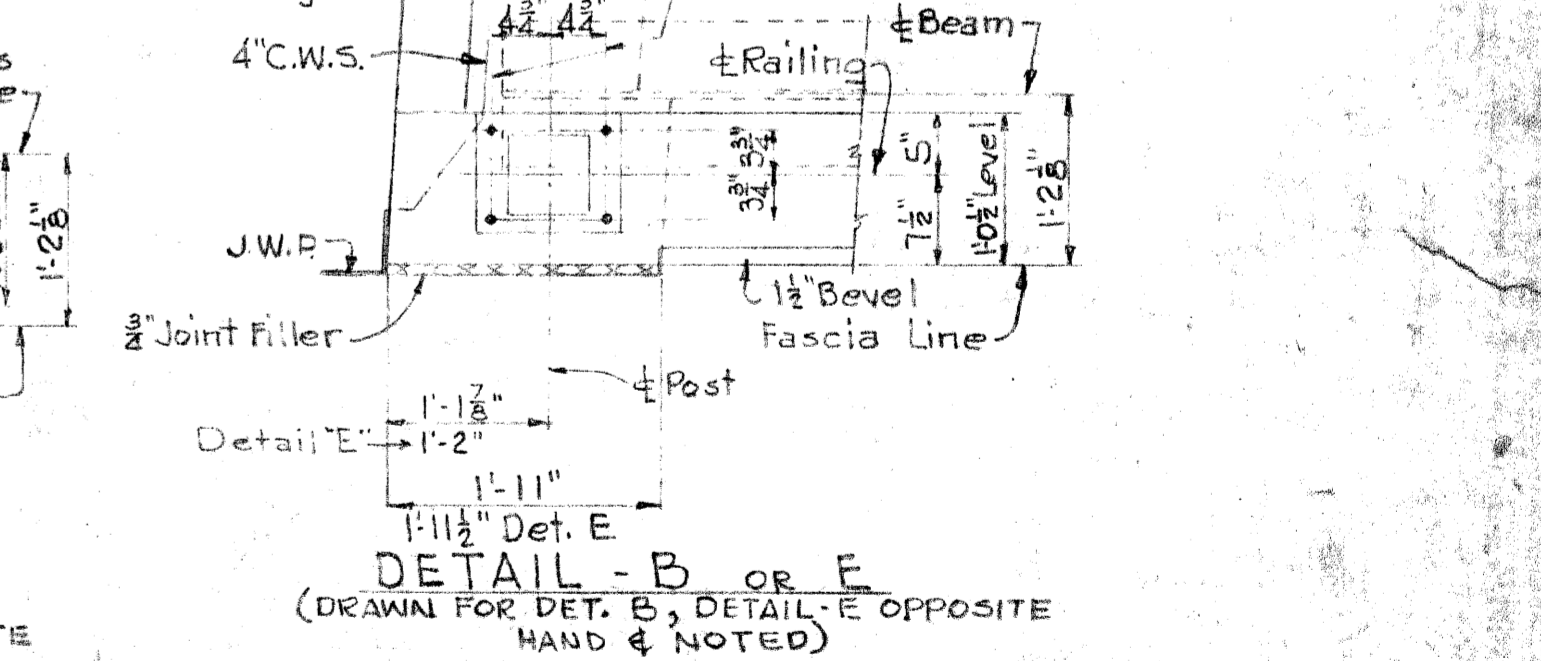
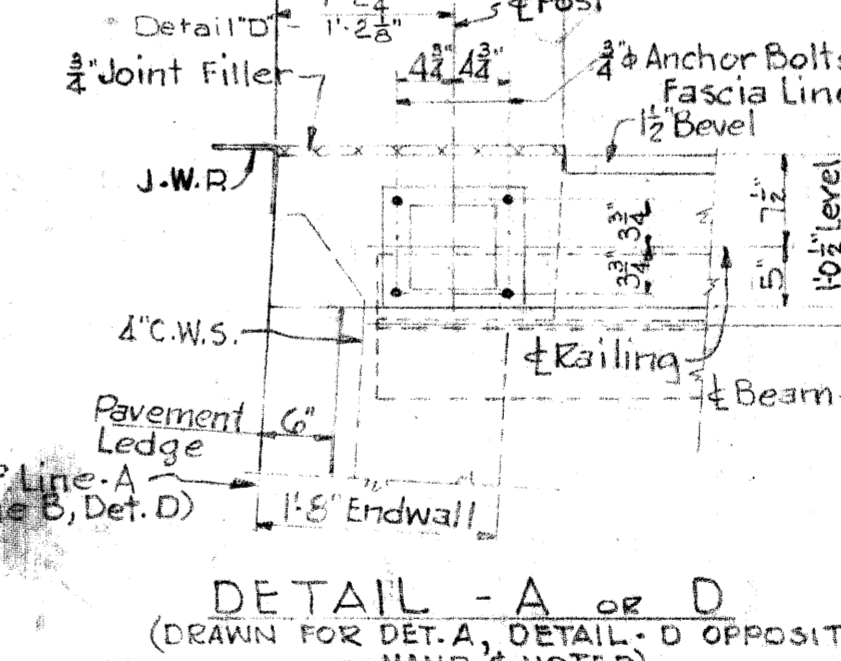
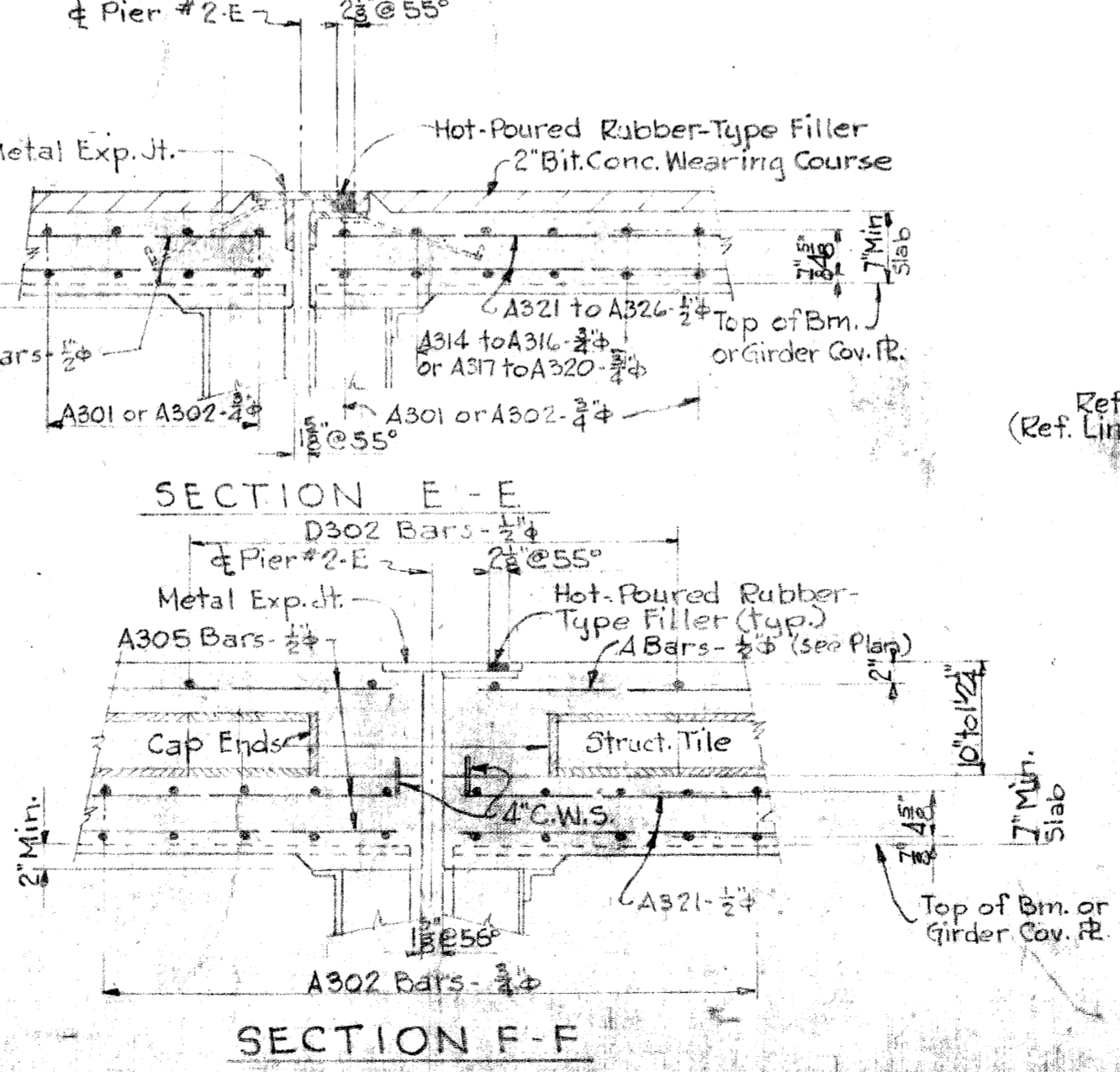
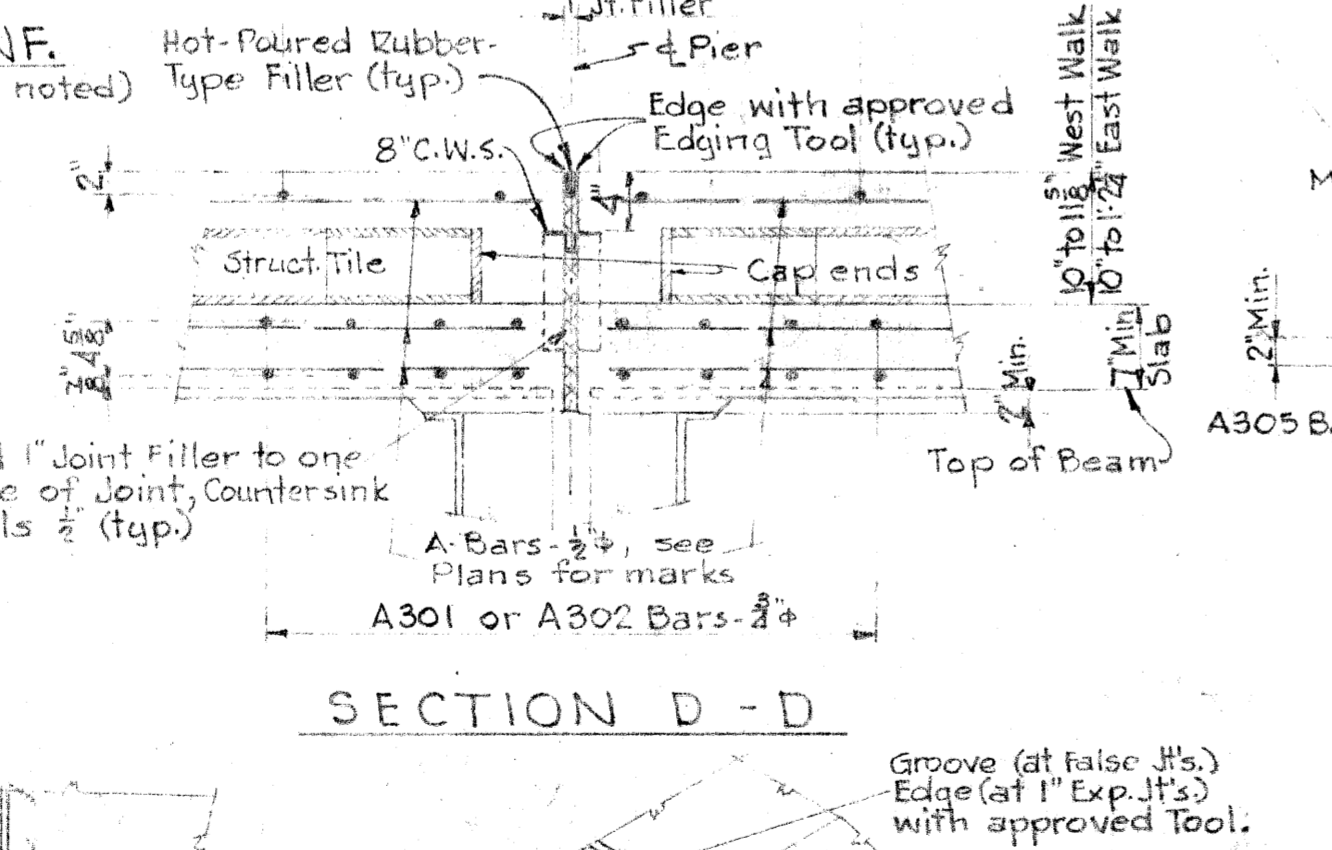
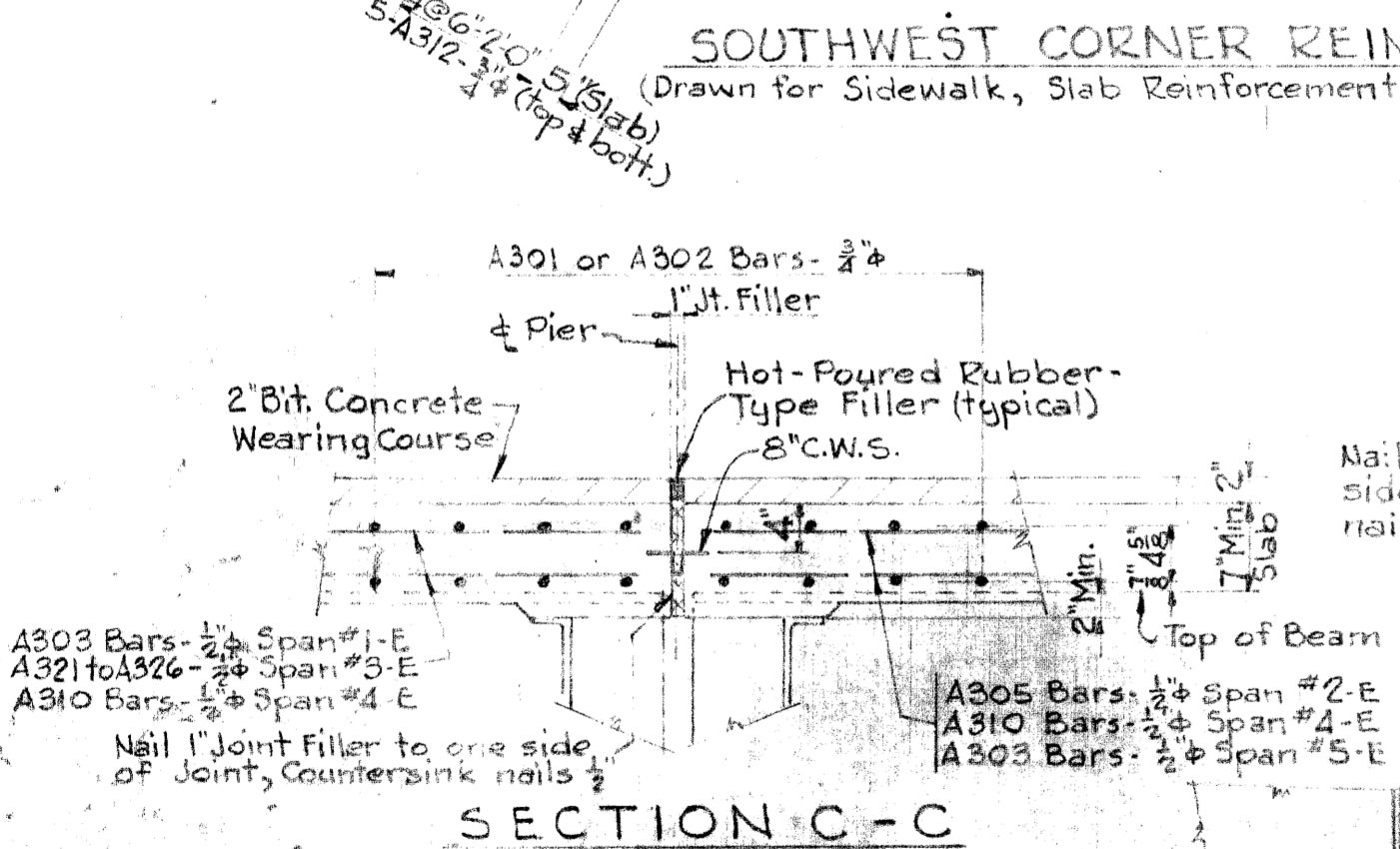
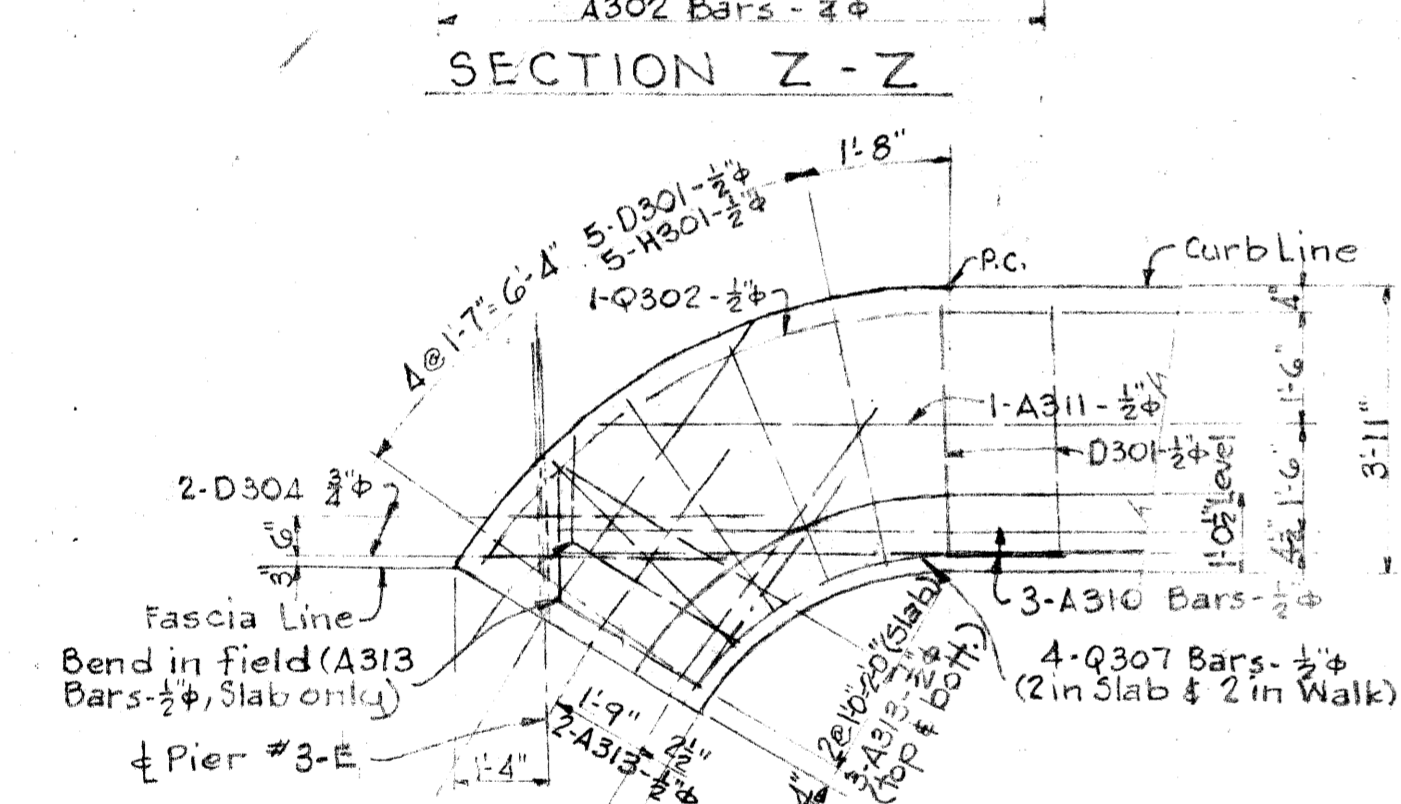
SQUAD BOSS	DRY	10-21-51
DRAWN BY	W.H.K.	9-19-50
TRACED BY		
CHECKED BY	ANF	11-2-50

SHEET 54 of 136  
B32 of 82-22-10





NOTE:  
 Bend or Cut A310, D303 Bars in field to miss handhole.  
**SOUTHEAST CORNER REINF.**  
 (Drawn for Sidewalk, Slab Reinf. noted)



NOTE:  
 This Sheet to be worked with Sheet Nos. 53, 54, 56, 57, 41, & 64.

NO.	DESCRIPTION	DATE	BY

**MICHIGAN STATE HIGHWAY DEPARTMENT**  
**CHARLES M. ZIEGLER**  
 STATE HIGHWAY COMMISSIONER  
 EDESL FORD EXPRESSWAY CROSSING WEST  
 GRAND BLVD. IN THE CITY OF DETROIT

**SUPERSTRUCTURE DETAILS**

HAZELT & EDRA - CONSULTING ENGINEERS FILE NO. 719  
 APPROVED: *[Signature]* 11-29-51  
 APPROVED: *[Signature]* 11-29-51  
 APPROVED: \_\_\_\_\_  
 BRIDGE ENGINEER

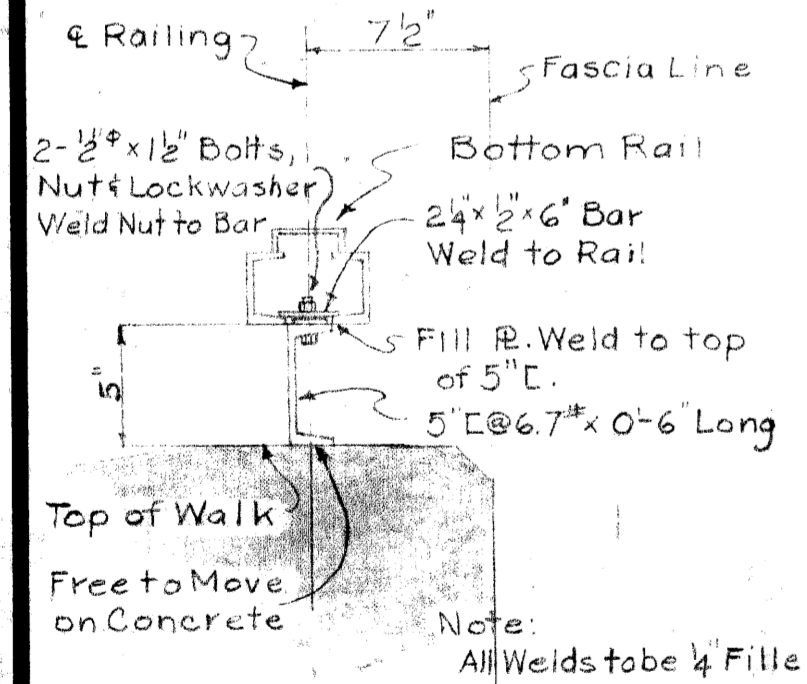
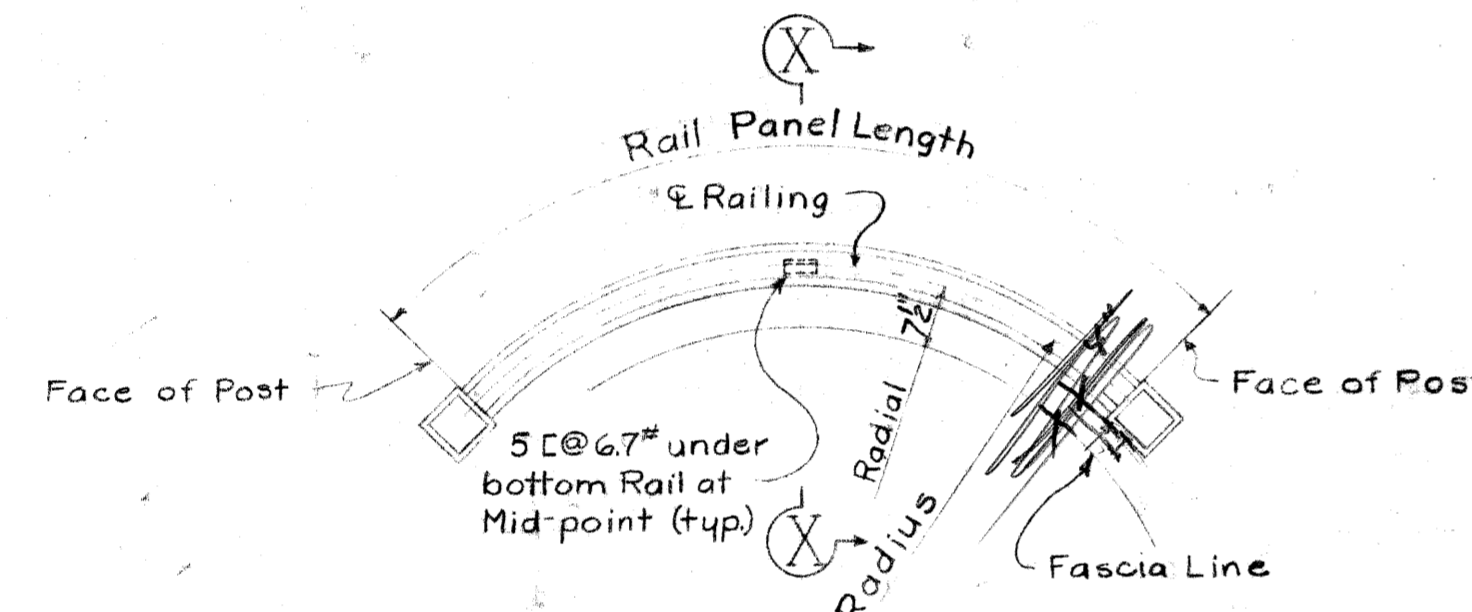
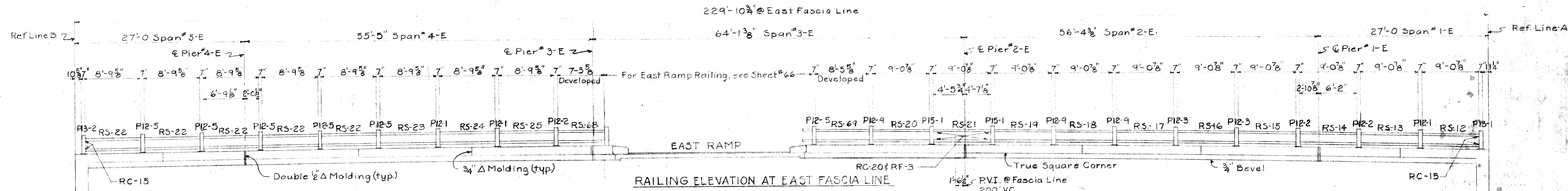
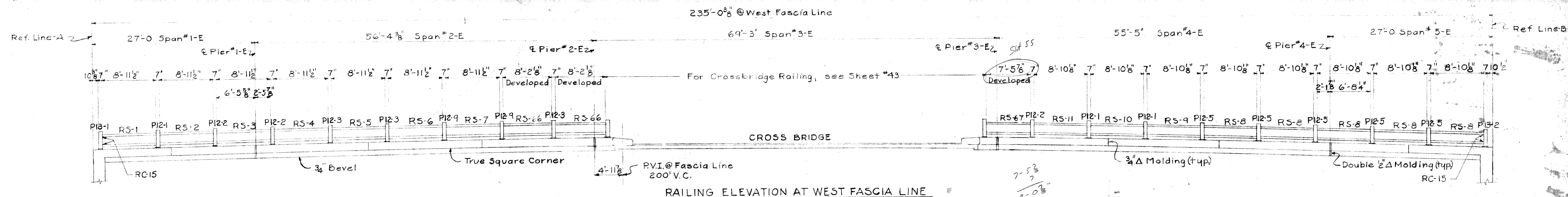
REVISIONS

NO.	DESCRIPTION	DATE	BY

SQUAD BOSS: *[Signature]* 9-21-51  
 DRAWN BY: *[Signature]* 9-19-50  
 TRACED BY: *[Signature]*  
 CHECKED BY: *[Signature]* 11-2-50  
 SHEET 55 OF 136

**B32 of 82-22-10**





Typical Curved Railing Panel

Face of Post	Face of Post
44 9/16	44 9/16
50 1-14 = 5-6 4	18 9/16
8-12 RS-66	5 1/16
50 11 3/4 = 4-10 3/4	18 9/16
7-5 4 RS-67	5 1/16
44 9/16	44 9/16
50 11 1/2 = 4-9 1/2	18 9/16
7-3 RS-68	5 1/16
44 9/16	44 9/16
60 11 3/4 = 5-10 1/2	18 9/16
8-5 RS-69	5 1/16

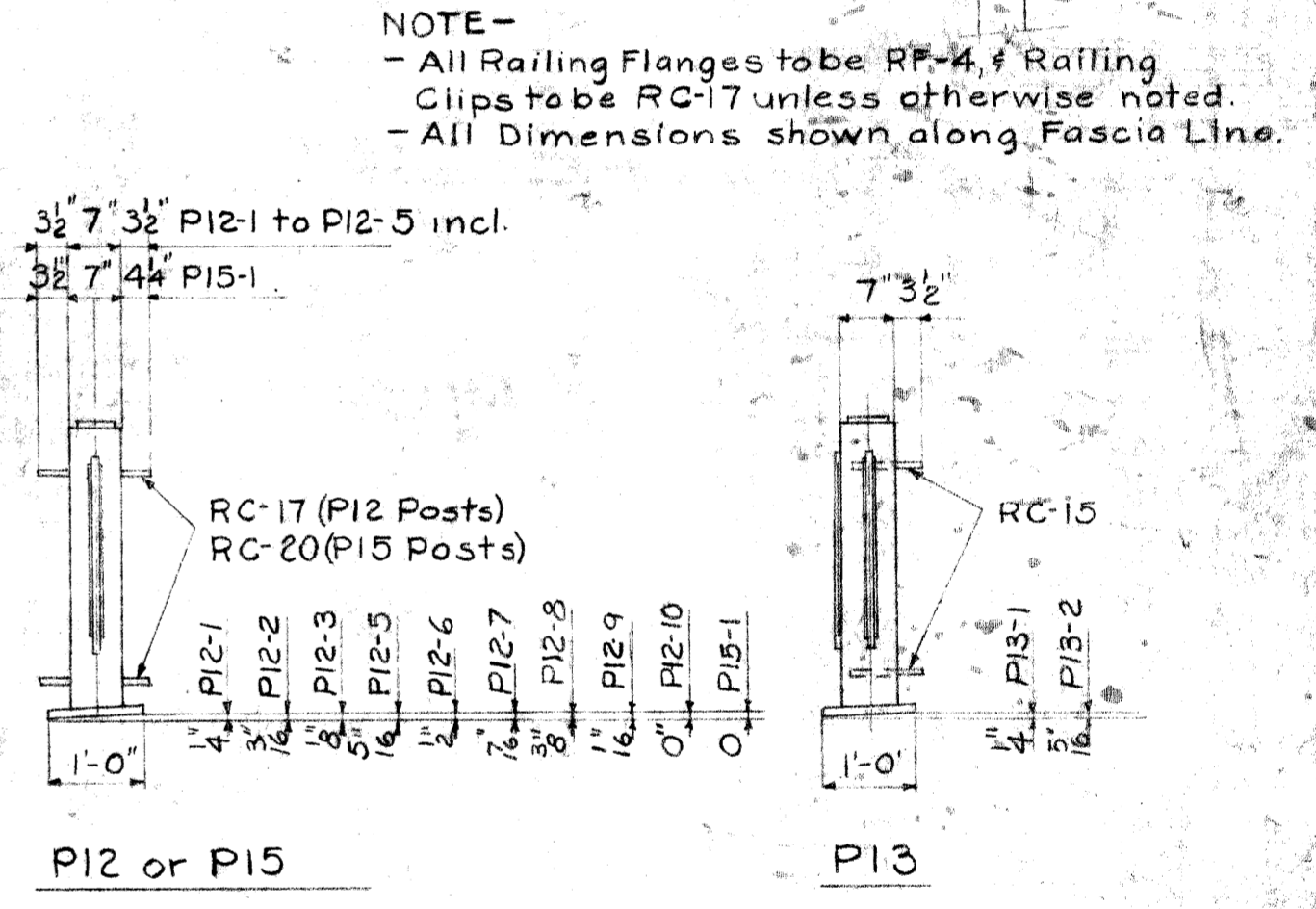
Measured on @ of Railing

Face of Post	Face of Post
44 9/16	44 9/16
6 @ 1'-0 3/4 = 6'-4 1/2	18 9/16
9'-0 4 RS-12 to RS-20 INCL.	5 1/16
44 9/16	44 9/16
6 @ 1'-0 2 = 6'-3"	18 9/16
8-9 RS-8 to RS-11 INCL.	5 1/16
44 9/16	44 9/16
6 @ 1'-0 4 = 6'-1 1/2	18 9/16
8-9 RS-22 to RS-25 INCL.	5 1/16
5 1/16	5 1/16
6 @ 1'-0 = 6'-0	18 9/16
8-7 1/2 RS-27	5 1/16
44 9/16	44 9/16
6 @ 1'-0 = 6'-0	18 9/16
8-7 1/4 RS-28, 29, 32 to 36 INCL.	5 1/16
44 9/16	44 9/16
6 @ 1'-0 3/4 = 6'-4 1/2	18 9/16
8-11 RS-1 to RS-7 INCL.	5 1/16
44 9/16	44 9/16
6 @ 1'-0 = 6'-0	18 9/16
8-5 3/4 RS-48	5 1/16
44 9/16	44 9/16
6 @ 11 3/4 = 5-10 1/2	18 9/16
8-5 RS-49 to RS-58 INCL.	5 1/16
44 9/16	44 9/16
50 1-14 = 5-6 4	18 9/16
8-14 RS-60 to 64 INCL.	5 1/16
44 9/16	44 9/16
50 10 4 = 5-14	18 9/16
7-8 1/2 RS-37 to 41 INCL.	5 1/16
44 9/16	44 9/16
4 @ 1-14 = 4-5	18 9/16
7-0 4 RS-40	5 1/16
44 9/16	44 9/16
6 @ 1-0 3/4 = 6'-4 1/2	18 9/16
8-11 1/4 RS-21	5 1/16

Typical Railing Panel

BILL OF RAILING MATERIAL

MARK	Nº REQ.	M	DESCRIPTION	MARK	Nº REQ.	M	RAD.	DESCRIPTION
RS-1	1	2 1/4	RAILING SECTION	RS-62	1	1 1/4		RAILING SECTION
RS-2	1	2	"	RS-63	1	3/8		"
RS-3	1	1 3/4	"	RS-64	2	3/4		"
RS-4	1	1 1/2	"	RS-65	1	3/4		"
RS-5	1	1 1/4	"	RS-66	3	3/4	16'-8 1/2	"
RS-6	1	1	"	RS-67	1	3/8	4'-8 1/2	"
RS-7	1	3/4	"	RS-68	1	3/8	4'-8 1/2	"
RS-8	5	2 1/2	"	RS-69	3	2 1/8	16'-8 1/2	"
RS-9	1	2 1/2	"					
RS-10	1	2 1/4	"					
RS-11	1	2 1/4	"					
RS-12	1	2 1/8	"					
RS-13	1	1 1/2	"					
RS-14	1	1 1/2	"					
RS-15	1	1 1/2	"					
RS-16	1	1 1/2	"					
RS-17	1	1 1/2	"					
RS-18	1	1 1/2	"	P12-1	6			RAILING POST
RS-19	1	1 1/2	"	P12-2	7			"
RS-20	1	1 1/2	"	P12-3	12			"
RS-21	1	1 1/2	"	P12-5	22			"
RS-22	5	2 1/2	"	P12-6	68			"
RS-23	1	2 1/2	"	P12-7	12			"
RS-24	1	2 1/4	"	P12-9	9			"
RS-25	1	2	"	P12-10	1			"
RS-26	1	1 1/2	"	P13-1	4			"
RS-27	1	2 3/8	"	P13-2	2			"
RS-28	1	2 3/4	"	P15-1	* 2			"
RS-29	1	3	"	P16-1	* 2			"
RS-30	1	3	"	P16-2	* 2			"
RS-31	ON SHEET 20			P16-3	* 1			"
RS-32	1	3 1/8	"	P16-4	* 1			"
RS-33	1	3 1/8	"					
RS-34	1	3 1/8	"					
RS-35	2	3 1/8	"	RF-3	4			RAILING FLANGE
RS-36	1	4	"	RF-4	612			"
RS-37	4	3 1/2	"	RF-5	12			"
RS-38	2	3 1/2	"					
RS-39	2	3 1/2	"					
RS-40	12	3 3/4	"	BOLTS	616			3/4" x 2 1/4" HEX. HD.
RS-41	56	3 3/4	"	BOLTS	12			3/4" x 2" HEX. HD.
RS-42	2	2 1/4	"					
RS-43	2	2 3/8	"					
RS-44	1	2 3/4	"	WASHERS	616			3/4" LOCKWASHERS
RS-45	2	3	"					
RS-46	2	3 3/8	"					
RS-47	1	2 3/8	"	ANCHORS	640			3/4" x 10" Sq Hd., Hex Nut
RS-48	1	2 3/8	"					
RS-49	1	2 3/8	"					
RS-50	1	2 3/8	"					
RS-51	1	2 3/4	"					
RS-52	1	3	"					
RS-53	1	3 1/8	"					
RS-54	1	3 1/4	"					
RS-55	1	3 1/2	"					
RS-56	1	3 1/2	"					
RS-57	1	3 1/2	"					
RS-58	1	3 1/2	"					
RS-59	1	3 1/2	"					
RS-60	1	3 1/2	"					
RS-61	3	3 1/2	"					



NOTE -  
 - All Railing Flanges to be RF-4. Railing Clips to be RC-17 unless otherwise noted.  
 - All Dimensions shown along Fascia Line.

NOTES -  
 For Railing Details not shown hereon see M.S.H.D. 5th Dwg. R-4 For Railing Post, Railing Flange, and Railing Clip Details not shown hereon see M.S.H.D. 5th Drawing R5

\* P15 Posts are similar to Standard Post P14 except as shown hereon.  
 † P16 Posts are similar to Standard Post P12 except as shown on Sheet N2 66.

APPROX. RAILING WEIGHT = 80,500#  
 Railing is not included in Structural Steel

REVISIONS

NO.	DESCRIPTION	DATE	BY

**MICHIGAN STATE HIGHWAY DEPARTMENT**  
 CHARLES M. ZIEGLER  
 STATE HIGHWAY COMMISSIONER  
 EDELS FORD EXPRESSWAY CROSSING WEST  
 GRAND BLVD. IN THE CITY OF DETROIT

**RAILING DETAILS**

HAZELET & ERDAL - CONSULTING ENGINEERS FILE N2 719  
 APPROVED *[Signature]* 11-29-51  
 CHIEF BRIDGE DRAFTSMAN  
 APPROVED *[Signature]* 11-24-51  
 ENGINEER OF BRIDGE DESIGN

APPROVED \_\_\_\_\_  
 BRIDGE ENGINEER

SQUAD BOSS \_\_\_\_\_  
 DRAWN BY W.H.C. 9-20-51  
 CHECKED BY \_\_\_\_\_  
 SHEET 57 OF 136

B32 OF 82-22-10