STATE OF MICHIGAN
DEPARTMENT OF STATE HIGHWAYS

PLANS OF PROPOSED BRIDGES

MICHIGAN PROJECT I-96-4(58)232
STATE PROJECT BI 82023-013
JEFFRIES FREEWAY

WAYNE COUNTY
CITY OF DETROIT

PROJECT BI 82023-013

PART 2 SII, S13 & S14 of 82023A
PART 3 S15 of 82023A
PART 4 P04 of 82023A

NOTE:

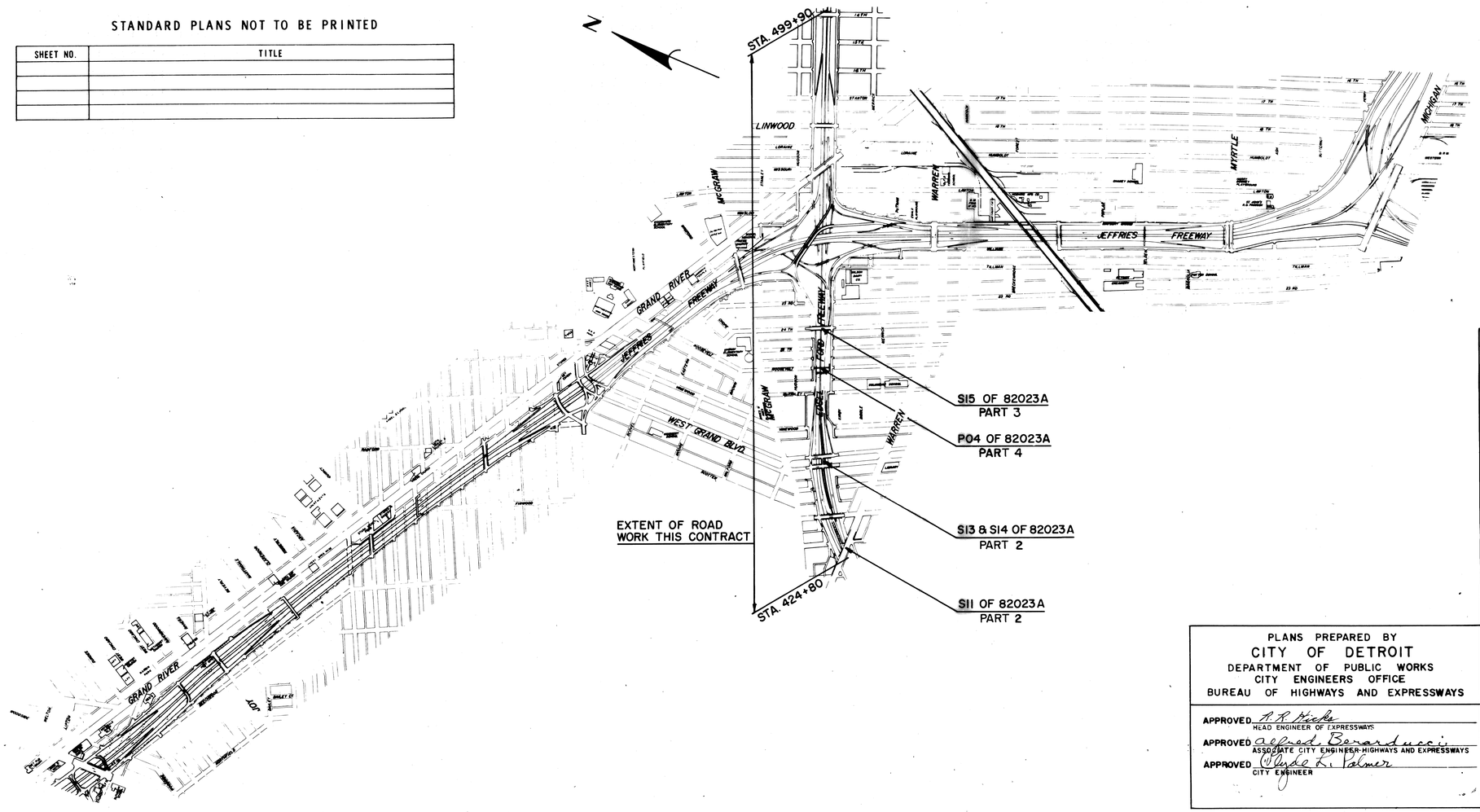
Where the following items are called for on the Plans, they are to be constructed according to the Standard Plan given below opposite each item, unless otherwise indicated.

STANDARD PLANS TO BE PRINTED

SHEET NO.	TITLE
DRII & DRI2	Bridge Railing, Drain Casting, Bar Chair, Molding and Bevel Details
SP2H	Standard Slope Paving Details

STANDARD PLANS NOT TO BE PRINTED

SHEET NO.	TITLE



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 Road and Bridge Construction, 1965 Edition.

The design of these structures is based on the Michigan Department of State Highways' Specifications for the design of Highway Bridges, 1958 Edition HS20-44 Loading. Live load plus impact deflection = 1/1000 of span length or 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. Boring samples are on file in the Design Office at Lansing and are available for inspection.

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 as the control point.

The contractor shall contact all Utility Companies regarding their facilities prior to starting work.

The following items shown in these plans are to be constructed with the road work: Bridge approach curb and gutter, catch basins, inlets, culverts, sewers, C.M.P. Temporary detours, Earth excavation and any other items not listed in the bill of materials.

The existing structures shall be checked at the time of starting construction to see that its relationship to the proposed work is as shown on these Plans and any differences requiring changes in the new work shall be reported to the Design Office.

ITEM NO. 988 PROJECT 82023-013

CONTRACT FOR REVISIONS TO: WARREN AVE. BRIDGE-SII, WEST GRAND BLVD. BRIDGES-S13 & S14, ROOSEVELT ST. PEDESTRIAN BRIDGE-P04 AND 24TH ST. BRIDGE-S15

DIVISION APPROVAL

CHECKED Gordon J. Fellows (ENGINEER OF DESIGN) 11-22-66 (DATE)
RECOMMENDED FOR APPROVAL A.H. Hooker (TRAFFIC ENGINEER) 11-28-66 (DATE)
RECOMMENDED FOR APPROVAL N.C. Jones (ENGINEER OF BRIDGE AND ROAD DESIGN) 11/23/66 (DATE)

OFFICES OF DESIGN & CONSTRUCTION

APPROVED R.J. Degnan (CONSTRUCTION ENGINEER) 11/23/66 (DATE)
APPROVED D.P. McCarthy (CHIEF OF DESIGN AND TRAFFIC) 11/28/66 (DATE)

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

APPROVED A.R. Hicks (HEAD ENGINEER OF EXPRESSWAYS)
APPROVED Alfred Berarducci (ASSOCIATE CITY ENGINEER-HIGHWAYS AND EXPRESSWAYS)
APPROVED Clyde L. Palmer (CITY ENGINEER)

DEPARTMENT OF STATE HIGHWAYS
HOWARD E. HILL - STATE HIGHWAY DIRECTOR

APPROVED BY John B. Mayers (DEPUTY DIRECTOR OF ENGINEERING) 11/23/66 (DATE)

PLANS PREPARED BY CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED [redacted]
FOR THE DIVISION ENGINEER DATE

82023-013 SII, S13, S14, S15 & P04 OF 82023A	STATE PROJECT NO.	FEDERAL PROJECT	SHEET NO.
	82023-013		1

STATE PROJECT NO. 82023-013

(TITLE SHEET TYPE 3)

REVISIONS TO WARREN AVE. BRIDGE
S11 of 82023A

SHEET No.	DESCRIPTION
2	REMOVAL PLAN
3	SIDEWALK & STRUCTURAL STEEL DETAILS
4	RAILING & MISCELLANEOUS DETAILS
5-15	EXISTING BRIDGE DETAILS

REVISIONS TO WEST GRAND BLVD. BRIDGE
S13 & S14 of 82023A

SHEET No.	DESCRIPTION
2	REMOVAL PLAN
3	SIDEWALK & STRUCTURAL STEEL DETAILS
4	RAILING & MISCELLANEOUS DETAILS
5-17	EXISTING BRIDGE DETAILS

REVISIONS TO 24TH ST. BRIDGE
S15 of 82023A

SHEET No.	DESCRIPTION
2	GENERAL PLAN OF SITE
3	GENERAL DRAWING
4-5	GENERAL PLAN OF STRUCTURE
6	CONSTRUCTION SEQUENCE DETAILS
7	ABUTMENT A DETAILS
8-9	ABUTMENT B DETAILS
10	ABUTMENT & WINGWALL DETAILS
11-12	PIER DETAILS
13-17	SUPERSTRUCTURE DETAILS
18	METAL EXPANSION JOINT
19-21	STRUCTURAL STEEL DETAILS
22	STEEL REINFORCEMENT DETAILS
23	EXISTING UTILITIES AND PROPOSED ALTERATIONS
24-25	RETAINING WALL A DETAILS
26	RETAINING WALL B DETAILS
27	RETAINING WALL DETAILS
28	RETAINING WALL STEEL REINFORCEMENT DETAILS
29-45	EXISTING BRIDGE DETAILS

REVISIONS TO ROOSEVELT ST. PEDESTRIAN BRIDGE
P04 of 82023A

SHEET No.	DESCRIPTION
2	GENERAL PLAN OF SITE
3	GENERAL DRAWING
4	GENERAL PLAN OF STRUCTURE
5	CONSTRUCTION SEQUENCE DETAILS
6	ABUTMENT DETAILS
7	PIER DETAILS
8	SUPERSTRUCTURE DETAILS
9	METAL EXPANSION JOINT & RAILING DETAILS
10	STRUCTURAL STEEL DETAILS
11	STEEL REINFORCEMENT DETAILS
12-24	EXISTING BRIDGE DETAILS

MISCELLANEOUS SHEETS

SHEET No.	DESCRIPTION
1	TITLE SHEET
1A	INDEX SHEET
1B-1D	QUANTITY SHEETS

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

APPROVED C. C. Lederer
STRUCTURAL ENGINEER

JOB No. 990(16)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

THE JEFFRIES FREEWAY IN DETROIT

INDEX SHEET

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS	Sturm	1-66
DRAWN BY	A. Geesh	Sept. 66
TRACED BY	-	-
CHECKED BY	Sturm	2-66

SHEET 1A OF

S11, S13, S14, S15 & P04 OF 82023A

Neoprene

ITEM	CODE NO.	UNIT	CONTR. QUANT.	FINAL QUANT.	UNIT PRICE	FINAL COST	S11 CONTR. QUANT.	S11 REMARKS (AUTH. NOS.)	S11 FINAL QUANT.	S11 FINAL COST	S13 & S14 CONTR. QUAN	S13 & S14 REMARKS (AUTH. NOS.)	S13 & S14 FINAL QUANT.	S13 & S14 FINAL COST	CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST	CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST
Removing Portions of Existing Structures (S11)	6010	Lump Sum	Lump Sum				Lump Sum															
Removing Portions of Existing Structures (S13-S14)	6010	Lump Sum	Lump Sum								Lump Sum											
Grade A (AA) Concrete Superstructure	6180	Cu. Yds.	31.7				19.9				11.8											
Steel Reinforcement	6245	Lbs.	1868				1178				690											
Structural Tile - 4x12x12	6325	Each	59				59															
Structural Tile - 6x12x12	6330	Each	601				410				191											
Structural Tile - 8x12x12	6335	Each	325				171				154											
½" Joint Filler	6345	Sq. Ft.	15				15															
1½x1½ Preformed Neoprene Joint Sealer	6369	Lin. Ft.	20				20															
2x2 Preformed Neoprene Joint Sealer	6372	Lin. Ft.	10								10											
Bridge Railing - Salvaged & Re-erected	6415	Lin. Ft.	128.0				73.2				55.8											
3" Fiber Conduit	6445	Lin. Ft.	18								18											
Epoxy Band Coat	6393	Gals.	10				7				3											
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(16)

MICHIGAN STATE HIGHWAY DEPARTMENT

THE JEFFRIES FREEWAY IN DETROIT

QUANTITY SHEET

CITY OF DETROIT

SQUAD BOSS	STUEM	10-66
DRAWN BY	A. J. G.	9-66
TRACED BY	—	—
CHECKED BY	WAL	10-66

SHEET 16 OF

S11, S13 & S14, of 82023 A 82023-013 PART 2

Master

ITEM	CODE NO.	UNIT	CONTR. QUANT.	FINAL QUANT.	UNIT PRICE	FINAL COST	S15 CONTR. QUANT.	S15 REMARKS (AUTH. NOS.)	S15 FINAL QUANT.	S15 FINAL COST	WALL A CONTR. QUAN	WALL A REMARKS (AUTH. NOS.)	WALL A FINAL QUANT.	WALL A FINAL COST	WALL B CONTR. QUANT.	WALL B REMARKS (AUTH. NOS.)	WALL B FINAL QUANT.	WALL B FINAL COST	CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST
Removing Portions of Existing Struc.	6010	L. Sum	L. Sum				L. Sum															
Unclassified Excavation	6040	Cu Yds	3233				1647				712				874							
Steel Sheet Piling Left in Place	6135	Sq. ft.	1042				810				232											
Temporary Steel Sheet Piling	6140	Sq. ft.	7215				3785				1210				2220							
Grade A Concrete - Struts	6155	Cu Yds	1430				143.0				—				—							
Grade A (6A) Concrete - Substructure	6170	Cu Yds	849.1				494.2				164.7				190.2							
Grade A (6AA) Concrete - Substructure	6175	Cu Yds	681.4				384.1				136.8				160.5							
Protective Sealant Coating for Struc. Conc	6177	Sq. ft	900				900															
Grade A (6AA) Concrete - Superstructure	6180	Cu Yds	3781				378.1															
Grade XX Concrete	6188	Cu Yds	27.5				27.5															
Water Reducing - Retarding Admixture	6189	Gals.	40				40															
Low Temperature Protection - Substruc.	6231	Cu Yds	1436				825				280				331							
Steel Reinforcement	6245	Lbs.	238,206				136606				17275				24325							
Struc. Steel Furnishing & Fabricating	6250	Lbs	329000				329000															
Structural Steel Erection	6260	Lbs.	329000				329000															
Shear Developers	6265	L. Sum	L. Sum				L. Sum															
Structural Tile - 4 x 12 x 12	6325	Each	1405				1405															
Structural Tile - 6 x 12 x 12	6330	Each	1524				1524															
¼" Joint Filler	6340	Sq ft	36								22				14							
½" Joint Filler	6345	Sq ft	163				163															
¾" Joint Filler	6350	Sq ft	67				67															
1" Joint Filler	6355	Sq ft	111								67				42							
2½ x 2¾ Preformed Neoprene Jt. Sealer	6373	Lin ft	54				54															
Hot Poured Rubber Asphalt Type Filler	6375	Lin ft	52				52															
Joint Waterproofing	6390	Sq ft	301				301															
Non-Metallic Waterstop	6401	Sq ft	231				123				51				57							
Field Painting	6420	L. Sum	L. Sum				L. Sum															
Bridge Railing - Parapet Type	6421	Lin ft	788.3				524.3				168.0				96.0							
Bridge Manholes	6437	Each	4				4															
3" Fiber Conduit	6445	Lin. ft.	214				214															
4" Fiber Conduit	6450	Lin. ft.	2376				2376															
Sand Gravel Material (C.I.P.)	6492	Cu Yds.	2390				1300				500				590							
6" Foundation Drains	6484	Lin. ft.	606				342				168				96							
Ladder Rungs	6750	Each	68				68															
Epoxy Bond Coat	6393	Gals.	3				3															
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(16)

MICHIGAN STATE HIGHWAY DEPARTMENT

THE JEFFRIES FREEWAY IN DETROIT

QUANTITY SHEET

CITY OF DETROIT

SQUAD BOSS	Struem	10-66
DRAWN BY	A.J.G.	9-66
TRACED BY	—	—
CHECKED BY	WAL	10-66

SHEET 1C OF

S15 & WALLS A & B of 82023A 82023-013 PART 3

Master

ITEM	CODE NO.	UNIT	CONTR. QUANT.	FINAL QUANT.	UNIT PRICE	FINAL COST	P04 CONTR. QUANT.	REMARKS (AUTH. NOS.)	FINAL QUANT.	FINAL COST
6" Concrete Sidewalk	3102	Sq. Ft.	647				647			
Removing Portions of Exs't. Structures	6010	L. Sum	Lump Sum				Lump Sum			
Unclassified Excavation	6040	Cu. Yds.	349				349			
Grade A (6A) Concrete Substructure	6170	Cu. Yds.	78.8				78.8			
Grade A (6AA) Concrete Substructure	6175	Cu. Yds.	77.9				77.9			
Protective Sealant Coating for Struc. Conc.	6177	Sq. Ft.	533				533			
Grade A (6AA) Concrete Superstructure	6180	Cu. Yds.	23.6				23.6			
Grade X Concrete	6187	Cu. Yds.	1.3				1.3			
Water Reducing - Retarding Admixture	6189	Gals.	3				3			
Low Temperature Protection Substructure	6231	Cu. Yds.	144				144			
Steel Reinforcement	6245	Lbs.	18637				18637			
Structural Steel Furnishing & Fabricating	6250	Lbs.	28300				28300			
Structural Steel Erection	6260	Lbs.	28300				28300			
½" Joint Filler	6345	Sq. Ft.	90				90			
2" Joint Filler	6370	Sq. Ft.	7				7			
2½" x 2¾" Preformed Neoprene Joint Sealer	6373	Lin. Ft.	24				24			
Joint Waterproofing	6390	Sq. Ft.	40				40			
Galv. St. Br. Railling Fabrication & Erection	6414	Lin. Ft.	69.5				69.5			
Bridge Railling - Salvaged & Re-erected	6415	Lin. Ft.	98.0				98.0			
Field Painting	6420	L. Sum	Lump Sum				Lump Sum			
Slope Protection, Class A	6487	Sq. Yds.	102				102			
Sand Gravel Material (C.I.P.)	6492	Cu. Yds.	152				152			
6" Foundation Drains	6184	Lin. Ft.	129				129			
Ladder Rungs	6750	Each	14				14			
TOTAL										

CONTR. QUAN	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

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.
P W 990(16)

MICHIGAN STATE HIGHWAY DEPARTMENT

QUANTITY SHEET

CITY OF DETROIT

SQUAD BOSS	SPIEGEL	11-66
DRAWN BY	AJG	11-66
TRACED BY	—	—
CHECKED BY	SPIEGEL	11-66

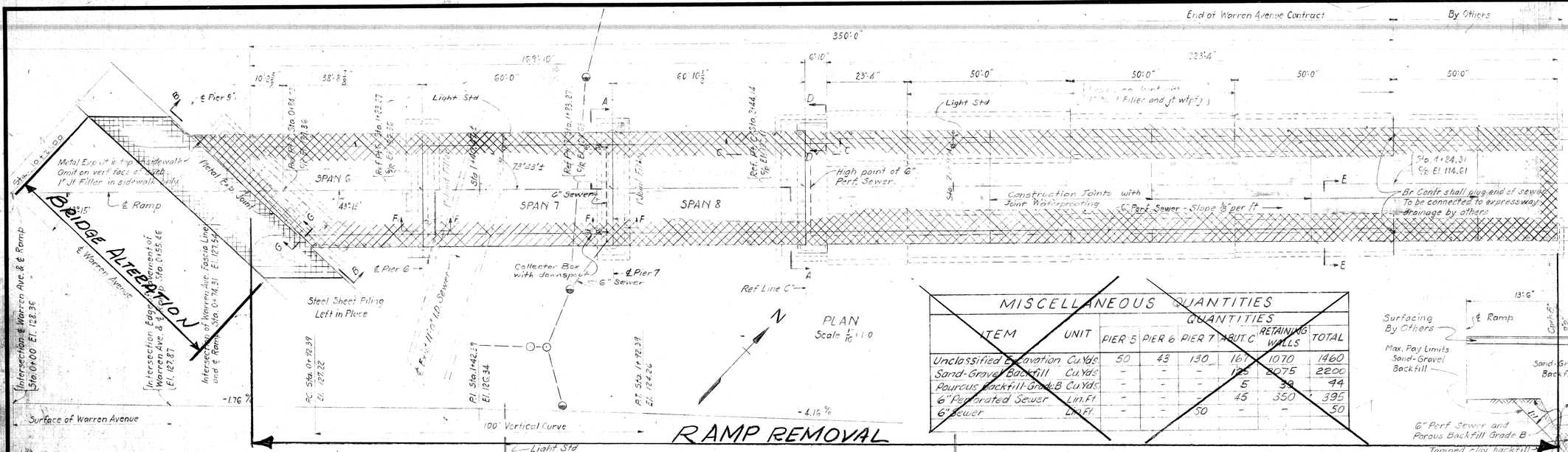
SHEET 10 OF

P04 of 82023A 82023-013 PART 4

REMOVAL & ALTERATION - EXISTING STRUCTURE

Removal, Existing Structure Shown

Alteration, Existing Structure Shown



MISCELLANEOUS QUANTITIES

ITEM	UNIT	QUANTITIES					
		PIER 5	PIER 6	PIER 7	ABUT C	RETAINING WALLS	TOTAL
Unclassified Excavation	Cu.Yds	50	43	130	167	1070	1460
Sand-Gravel Backfill	Cu.Yds	-	-	-	125	2075	2200
Pourous Backfill Grade B	Cu.Yds	-	-	-	5	39	44
6" Perforated Sewer	Lin.Ft.	-	-	-	45	350	395
6" Sewer	Lin.Ft.	-	-	50	-	-	50

MISCELLANEOUS QUANTITY

Removing Portions of Existing Structures —— Lump Sum

COPY

EXISTING BRIDGE DETAILS

(REVISED FOR CONSTRUCTION)

CONTRACT 82023-013

PLANS PREPARED BY

CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS

CITY ENGINEERS OFFICE

BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED C. C. Adams STRUCTURAL ENGINEER

JOB No. PW 990 (16)

MICHIGAN STATE HIGHWAY DEPARTMENT

JEFFRIES FREEWAY

REVISIONS TO WARREN AVE. BRIDGE

CROSSING THE FORD FREEWAY IN DETROIT

REMOVAL PLAN

CITY OF DETROIT

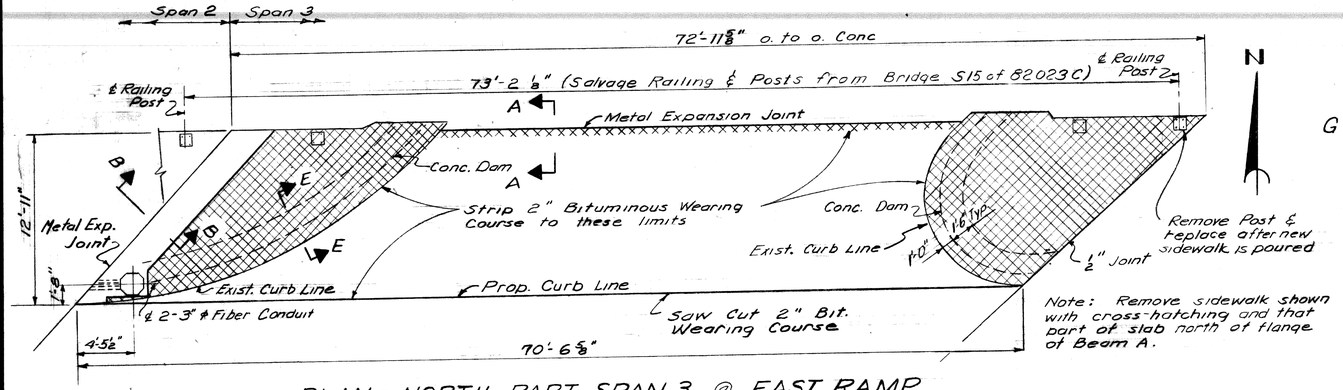
SQUAD BOSS	STUEM	7-66
DRAWN BY	NAL	7-66
TRACED BY	-	
CHECKED BY	STUEM	7-66
SHEET	2 OF 13	

REVISIONS

NO.	DESCRIPTION	DATE	BY

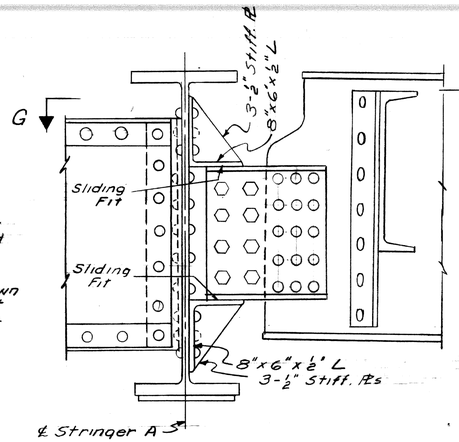
SII of 82023 A

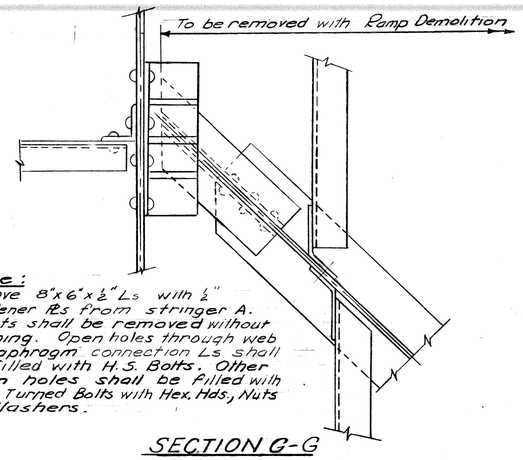
03



Note: Remove sidewalk shown with cross-hatching and that part of slab north of flange of Beam A.

PLAN - NORTH PART SPAN 3 @ EAST RAMP

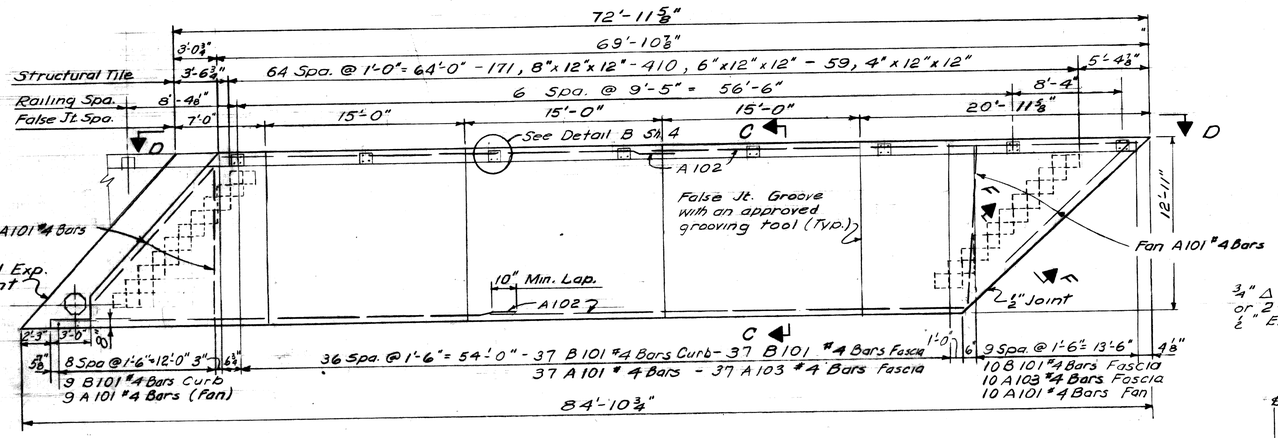




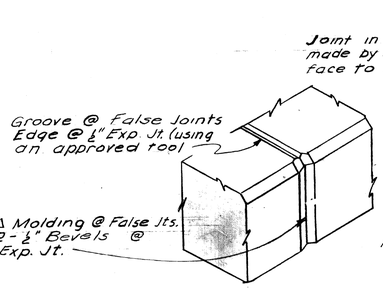
Note: Remove 8"x6"x½" Ls with ½" Stiffener Pls from stringer A. Rivets shall be removed without burning. Open holes through web & diaphragm connection Ls shall be filled with H.S. Bolts. Other open holes shall be filled with ¾" ϕ Turned Bolts with Hex. Hds, Nuts & Washers.

SECTION G-G

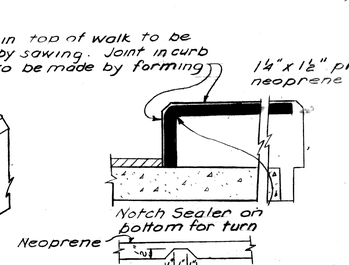
STRUCTURAL STEEL DETAIL - STRINGER A CONNECTION TO RAMP



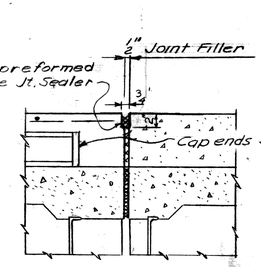
PLAN - PROPOSED SIDEWALK



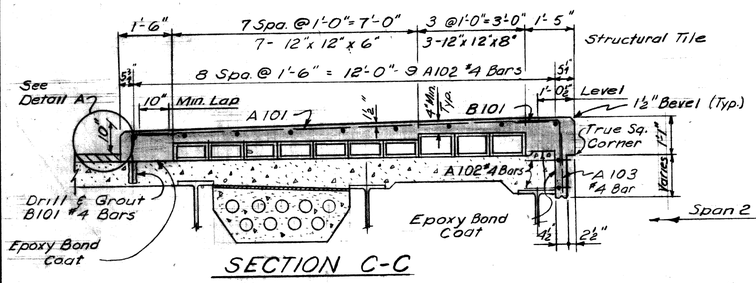
MOLDING DETAIL



TYPICAL NOTCH DETAIL A

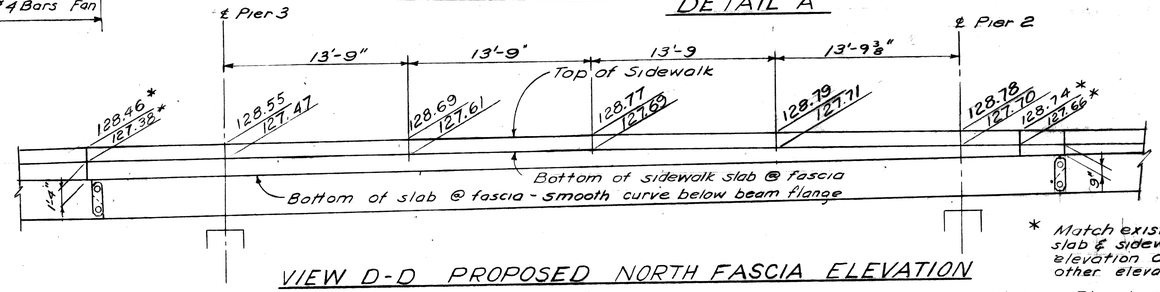


SECTION F-F



Note: The entire area of contact between the new sidewalk Conc. and the existing Conc. shall be given an application of Epoxy Bond Coat

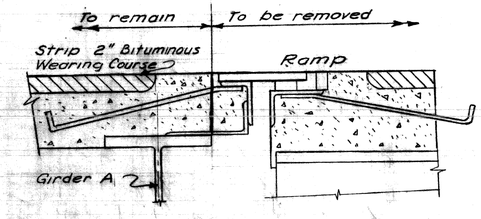
SECTION C-C



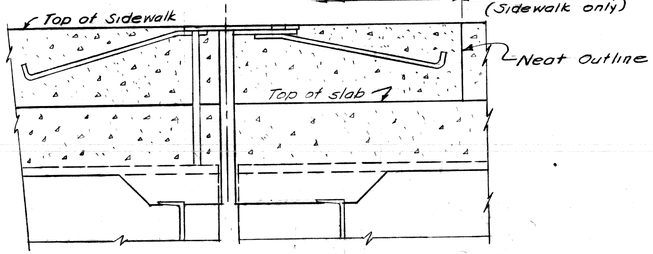
VIEW D-D PROPOSED NORTH FASCIA ELEVATION

* Match existing adjacent slab & sidewalk, if actual elevation differ, adjust other elevations accordingly.

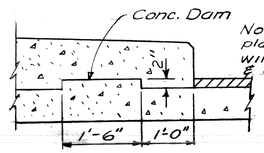
Note: Elevations shown are for screeds at fascia line, prior to pouring any concrete.



SECTION A-A



SECTION B-B



Note: Where structural tile are placed on Conc. Dam a 4" tile will be substituted for a 6" tile & a 6" tile substituted for an 8" tile.

SECTION EE

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(16)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

JEFFRIES FREEWAY
REVISIONS TO WARREN AVE. BRIDGE
CROSSING THE FORD FREEWAY IN DETROIT

SIDEWALK & STRUCTURAL STEEL DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS	STUEM	9-66
DRAWN BY	WAL	9-66
TRACED BY	–	
CHECKED BY	K.V.H.	9-66

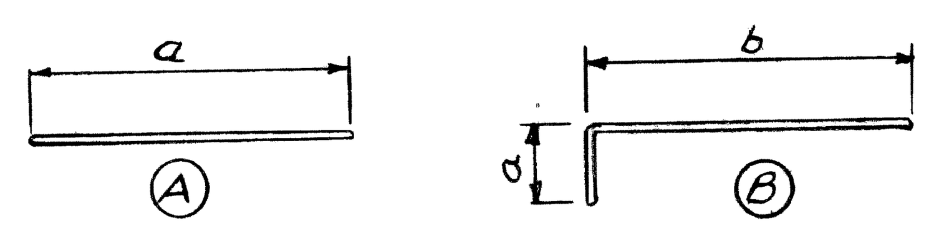
SHEET 8 OF 15

S11 of 82023A

STEEL REINFORCEMENT DETAILS

Mark	a	b	Size	Length	No. Req'd.	Total Weight
A101	12'-3"	–	#4	12'-3"	56	458
A102	35'-9"	–	#4	35'-9"	22	525
A103	1'-9"	–	#4	1'-9"	47	55
B101	1'-2"	1'-1½	#4	2'-3"	93	140

Total Steel Reinforcement 1178 Lbs.

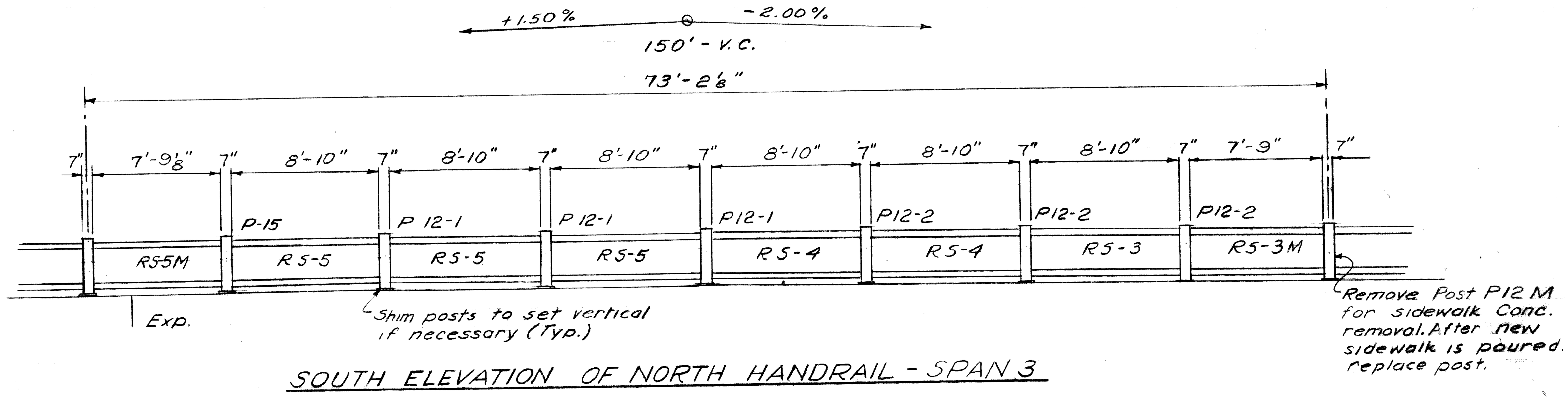


BAR DIAGRAM

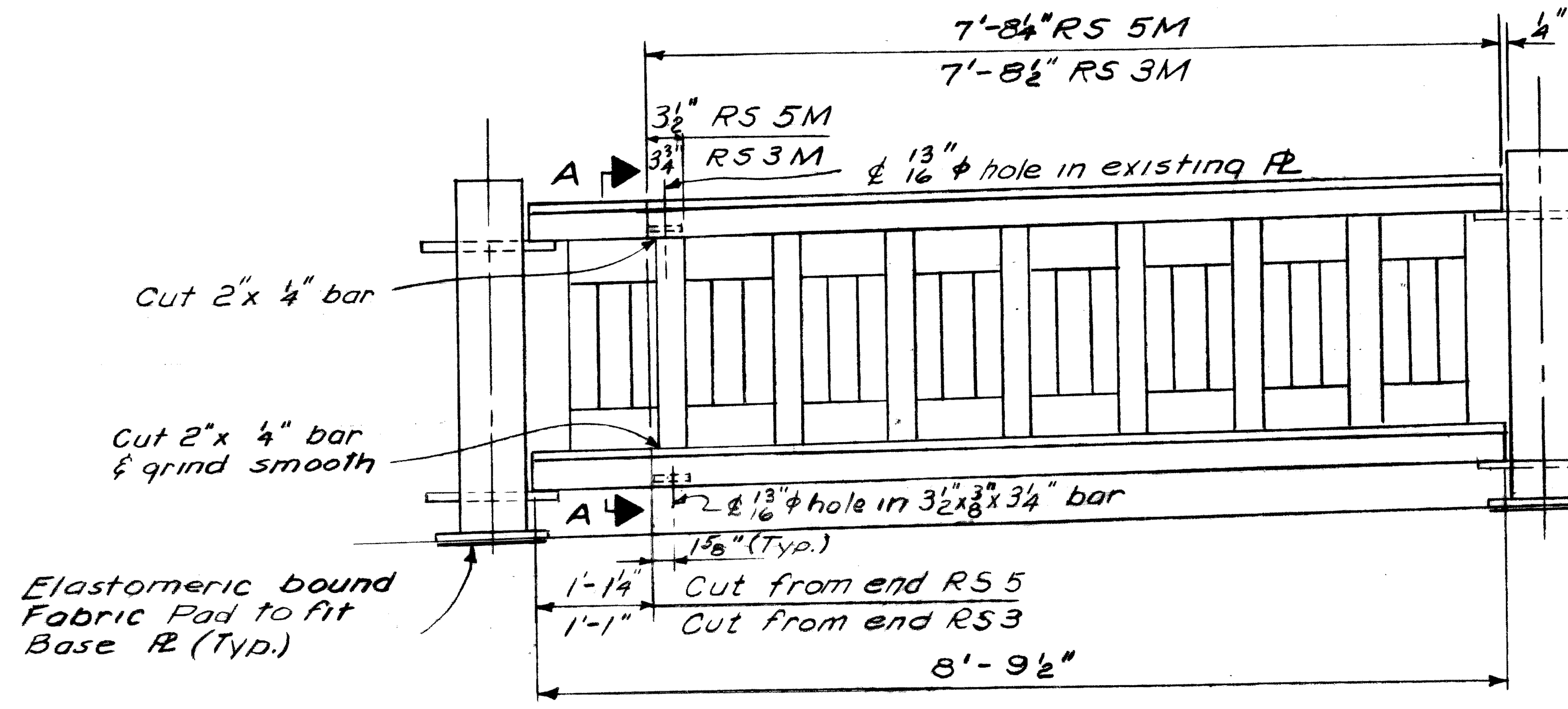
Note: Right angle bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.

CONCRETE QUANTITY Gr. A(6AA) 19.9 Cu. Yds.

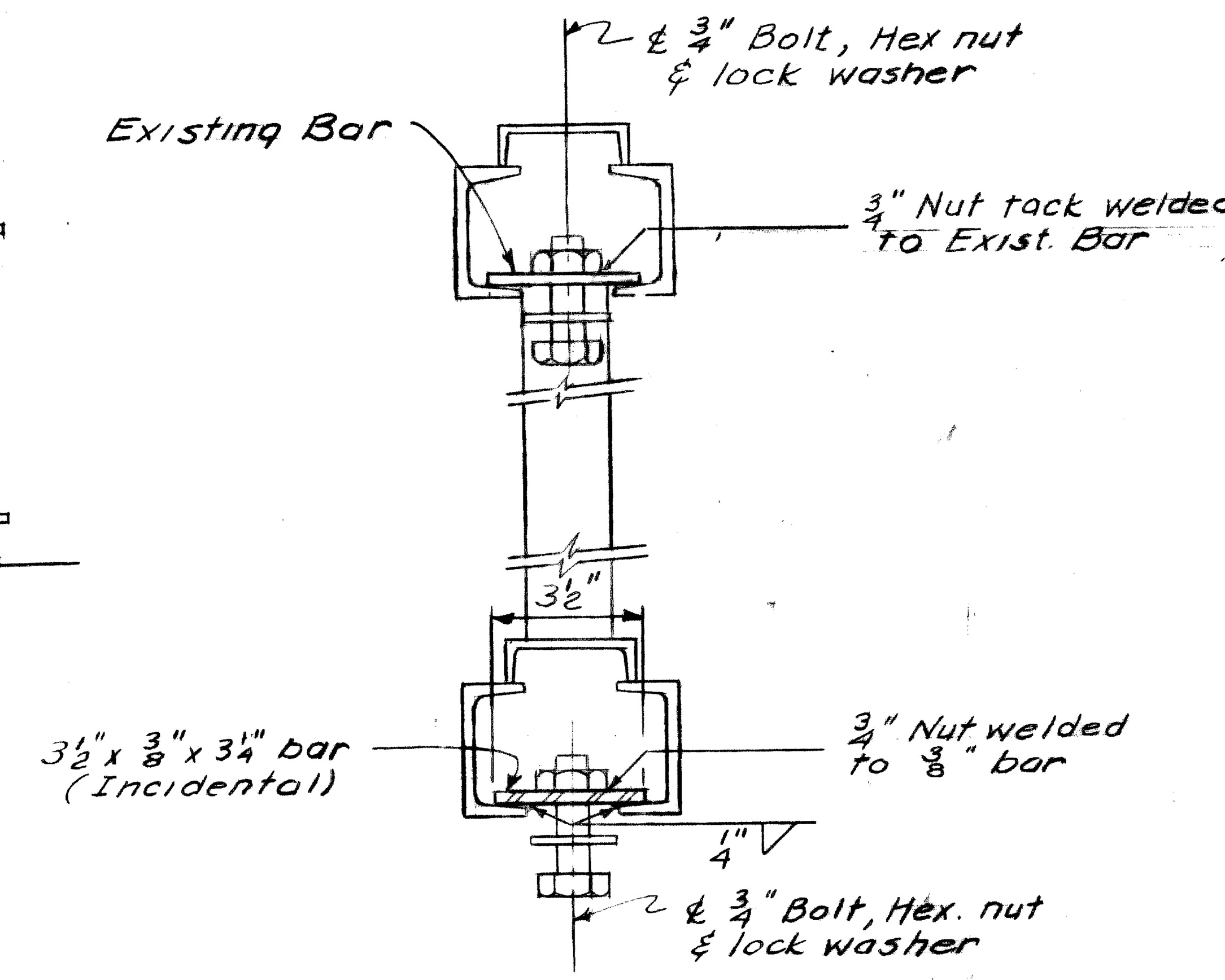
MISCELLANEOUS QUANTITIES		
Item	Amount	Unit
Structural Tiles 8" x 12" x 12"	171	each
Structural Tiles 6" x 12" x 12"	410	each
Structural Tiles 4" x 12" x 12"	59	each
½" Joint Filler	15	Sq. Ft.
1¼" x 1½" Preformed Neoprene Jt. Sealer	20	Lin. Ft.
Br. Railing Salvaged, & Reerected	73.2	Lin Ft.
Epoxy Bond Coat	7	Gals.



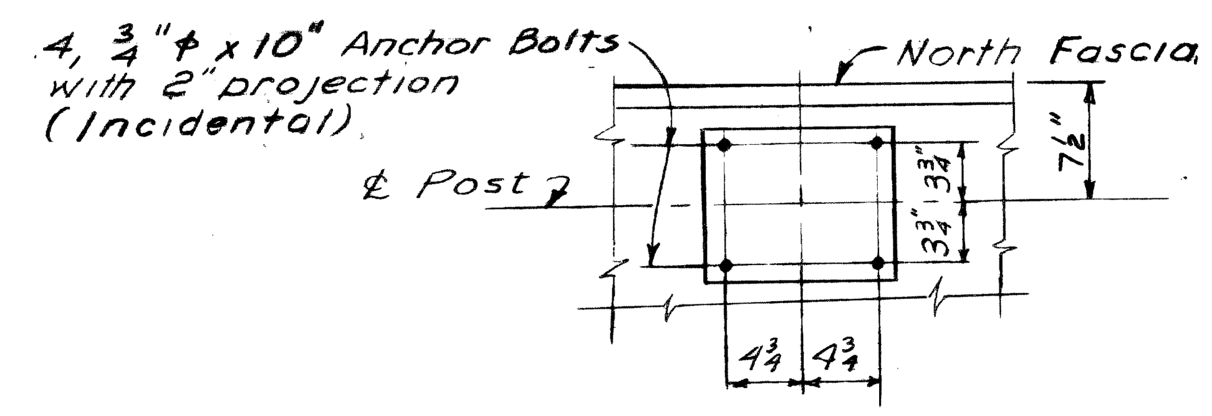
SOUTH ELEVATION OF NORTH HANDRAIL - SPAN 3



RAILING SECTIONS



SECTION A-A



DETAIL B

Notes:

Railing Post P-15 shall be turned so that long slot in Railing clip shall be turned toward expansion Jt.

Railing Post & Sections shall be salvaged from Bridge S15 of 82023A and are designated as shown on Sh. 11 of S15 of Bridge Plans.

Anchor Bolts are to be cadmium plated & furnished with Hex nuts & washers.

All materials necessary for Bridge Railing are incidental to Bridge Railing Salvaged & Reerected.

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

APPROVED [signature] STRUCTURAL ENGINEER

JOB No. PW 990(16)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

JEFFRIES FREEWAY
REVISIONS TO WARREN AVE. BRIDGE
CROSSING THE FORD FREEWAY IN DETROIT

RAILING & MISCELLANEOUS DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS	STURM	9-66
DRAWN BY	W.A.L.	9-66
TRACED BY	–	
CHECKED BY	K.V.H.	9-66
SHEET	4 OF 15	

S11 of 82023A

S11

MISCELLANEOUS QUANTITIES

ITEM	UNIT	QUANTITIES PIER 5	PIER 6	PIER 7	ABUT. C	RETAINING WALLS	TOTAL
Unclassified Excavation	Cu.Yds.	50	43	130	167	1070	1460
Sand-Gravel Backfill	Cu.Yds	-	-	-	125	2075	2200
Pourous Backfill-Grade B	Cu.Yds.	-	-	-	5	39	44
6" Perforated Sewer	Lin.Ft.	-	-	-	45	350	395
6" Sewer	Lin.Ft.	-	-	50	-	-	50

Note: The top of roadway slab, tops of curbs and railings are parallel to the vertical curve.

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S11 of 82023A Sh. 5 of 15

REVISIONS

NO.	DESCRIPTION	DATE	BY
(A)	Misc. Checking Revisions	8-1-51	CHS

MICHIGAN STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
WARREN AVE. IN THE CITY OF DETROIT
GENERAL PLAN OF STRUCTURE
HAZELET & ERDAL-CONSULTING ENGINEERS-FILE NO. 228

APPROVED — CHIEF BRIDGE DRAFTSMAN 6-7-51
APPROVED — ENGINEER OF BRIDGE DESIGN 6-7-51
APPROVED — BRIDGE ENGINEER 8-13-51

W&H
JAS

B29 OF 82-22-10

5 of 15

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S11 of 82023A Sh. 6 of 15

REVISIONS

NO.	DESCRIPTION	DATE	BY
(A)	Misc. Checking Revisions	6-1-51	C.H.S.

MICHIGAN STATE HIGHWAY DEPARTMENT

CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER

EDSEL FORD EXPRESSWAY CROSSING
WARREN AVE. IN THE CITY OF DETROIT

SUPERSTRUCTURE - SPAN 3 - NORTH HALF

HAZELET & ERDAL-CONSULTING ENGINEERS-FILE NO. 228

APPROVED [signature] 6-7-51 CHIEF BRIDGE DRAFTSMAN

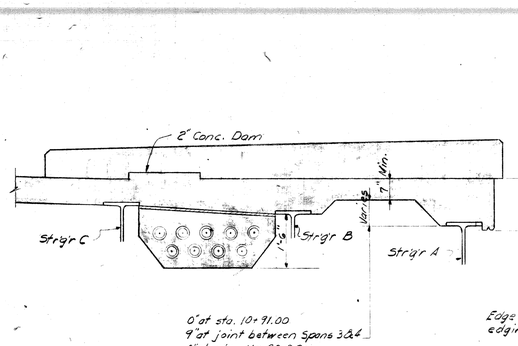
APPROVED [signature] 6-7-51 ENGINEER OF BRIDGE DESIGN

APPROVED [signature] 8-10-51 BRIDGE ENGINEER

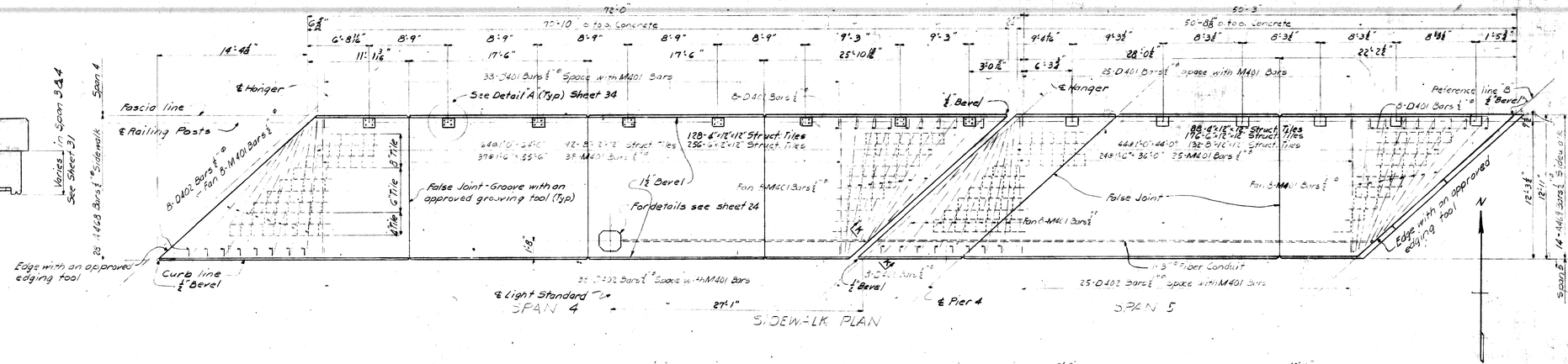
SQUAD BOSS	
DRAWN BY	J.S.J.
TRACED BY	
CHECKED BY	P.L.D. 11-24-50
SHEET	

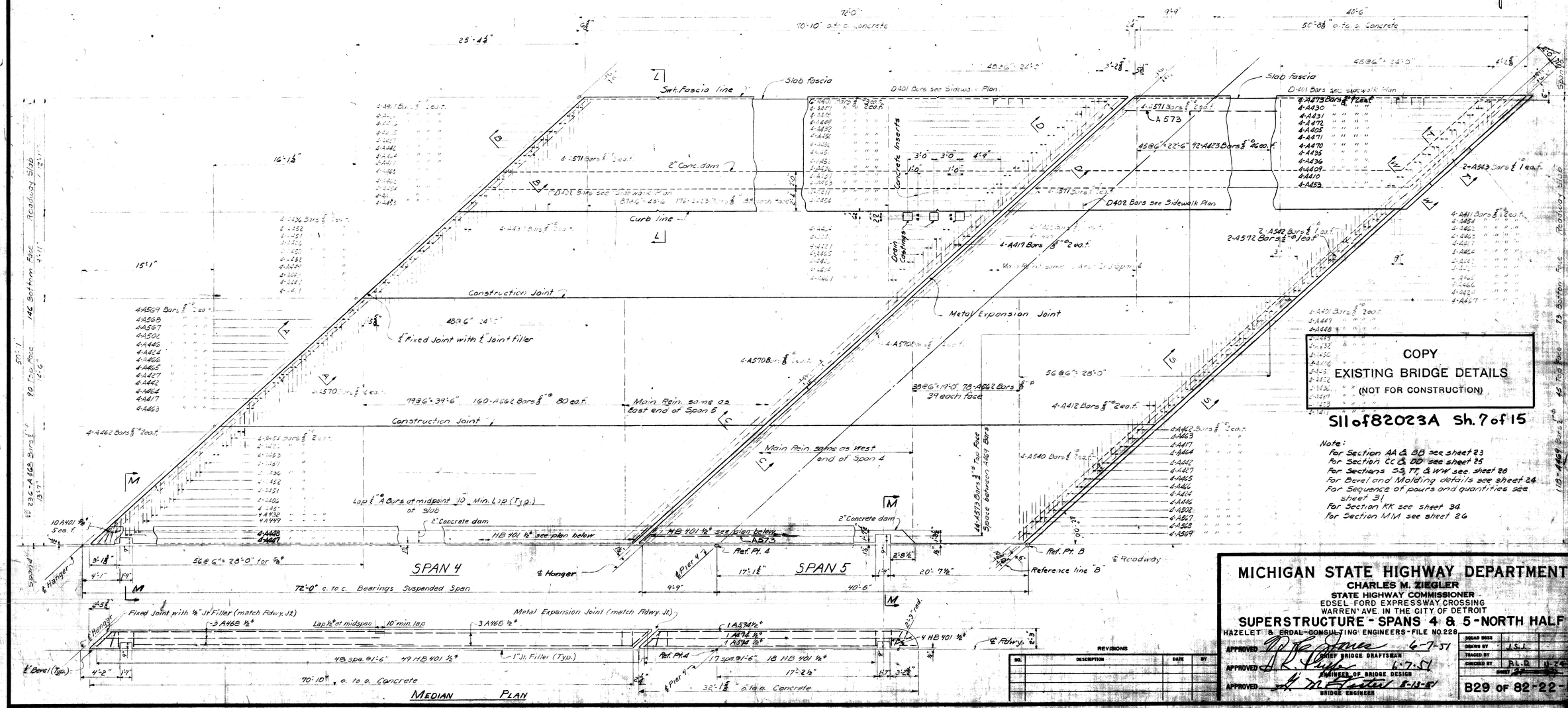
B29 OF 82-22-10

6 of 15



SECTION - LL





COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S11 of 82023A Sh. 7 of 15

Note:
For Section AA & BB see sheet 23
For Section CC & DD see sheet 25
For Sections SS, TT, & WW see sheet 28
For Bevel and Molding details see sheet 24
For Sequence of pours and quantities see sheet 31
For Section KK see sheet 34
For Section MM see sheet 26

MICHIGAN STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
WARREN AVE. IN THE CITY OF DETROIT
SUPERSTRUCTURE - SPANS 4 & 5 - NORTH HALF
HAZELET & ERDAL - CONSULTING ENGINEERS - FILE NO. 226

APPROVED	CHIEF BRIDGE DRAFTSMAN	6-7-51
APPROVED	ENGINEER OF BRIDGE DESIGN	6-7-51
APPROVED	BRIDGE ENGINEER	8-13-51

SQUAD BOSS		
DRAWN BY	J.S.J.	
TRACED BY		
CHECKED BY	R.L.D.	11-22-50
SHEET	2	

REVISIONS

NO.	DESCRIPTION	DATE	BY

B29 OF 82-22-10

CONCRETE QUANTITIES GRADE A (6B)

POUR	LOCATION	QUANTITIES (CU. YDS.) SPAN 1	SPAN 2	SPAN 3	SPAN 4	SPAN 5	SPAN 6	SPAN 7	SPAN 8
As	Roadway Slab	18.3	21.8	25.3	25.3	21.9			
Bs	" "	32.1	37.3	34.2	41.4	38.4			
Cs	" "	19.3	22.6	24.5	26.3	23.6			
Ds	Sidewalk Slab	13.4	17.3	17.1	20.9	15.5			
An	Roadway Slab	18.4	22.0	26.4	25.3	21.8			
Bn	" "	31.3	39.1	47.3	43.3	36.5			
Cn	" "	19.3	23.4	28.9	26.3	22.4			
Dn	Sidewalk Slab	13.4	17.3	11.1(a)	20.9	15.5			
Es	Median	2.1	2.8	3.0	3.3	1.5			
En	"	2.1	2.8	3.0	3.3	1.5			
X	Cond Encase (b)	6.1	8.5	8.1	10.1	7.0			
Y	" " (b)	5.6	7.8	9.5	9.4	6.5			
A	Roadway Slab						20.0	30.3	31.1
B	" "						30.5	36.1	37.0
C	Sidewalk Slab						6.0	6.0	6.4
D	" "						3.0	5.6	5.6
	Total	181.9	222.7	238.3	255.8	212.1	59.5	73.0	80.1

a) Sidewalk slab near Pier 2 is 5.7 cu. yds. and slab near Pier 3 is 5.4 cu. yds.
b) Pours X and Y shall be poured before roadway slabs are poured.

MISCELLANEOUS QUANTITIES

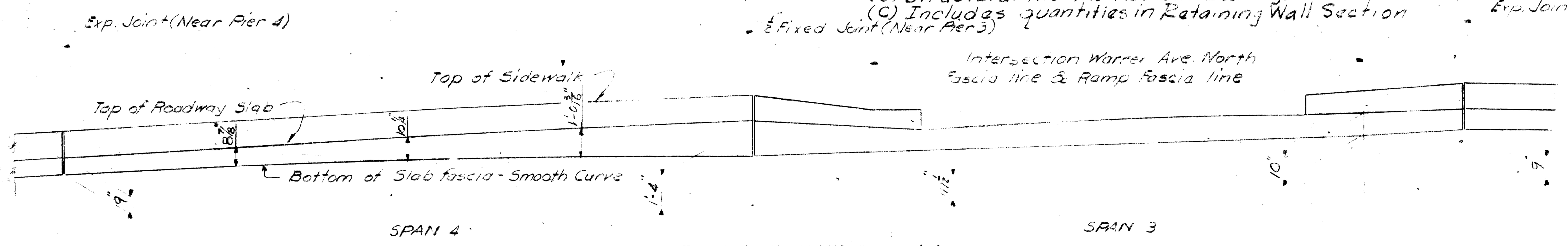
ITEM	UNIT	QUANTITIES SPAN 1	SPAN 2	SPAN 3	SPAN 4	SPAN 5	SPAN 6	SPAN 7	SPAN 8	TOTAL
Rubbed Surface Finish	Sq. Ft.	252	373	[illegible]	[illegible]	[illegible]	251	307	311	2591
Struct. Tile (4x12x12) (e)	Each	130	216	92	256	176	172	180	168	1390
Struct. Tile (6x12x12)(e)	Each	312	432	134	512	352				1792
Struct. Tile (8x12x12)(e)	Each	209	324	138	384	264				1344
2"Φ Fiber Conduit (d)	Lin Ft.							2		2
3"Φ Fiber Conduit (d)	Lin Ft.	177	225	67	59	[illegible]		74	122	[illegible]
4"Φ Fiber Conduit	Lin Ft.	482	347	862	393	566				2650
Spec. Handhole Fr. & Cover (d)	Each				1					1
Bridge Railing (C)	Lin Ft.									1203
½" Joint Filler	Sq Ft.									310
1" Joint Filler	Sq. Ft.									2380
Hot-poured Rubber-type Filler	Lin Ft.									750
Bituminous Bond Coat	Gals.	52.2	70.0	86.0	84.5	[illegible]	22.2	27.0	27.1	430
Bit. Conc. Wearing Course	Tons	38.2	51.4	62.9	61.8	44.7	16.2	19.8	20.0	315
Drain Casting Assemblies	Each									14
Concrete Inserts	Each		8	4	4			8		24
Joint Waterproofing	Sq. Ft.	275				295			85	655
1½" Galv. Iron Pipe	Lin. Ft.				78	19				97
P.L.C. Handhole Frame & Cover	Each							1		1

(d) For additional quantities in Retaining Wall see sheet 21.
(e) Structural tile shall be load bearing.
(C) Includes quantities in Retaining Wall Section

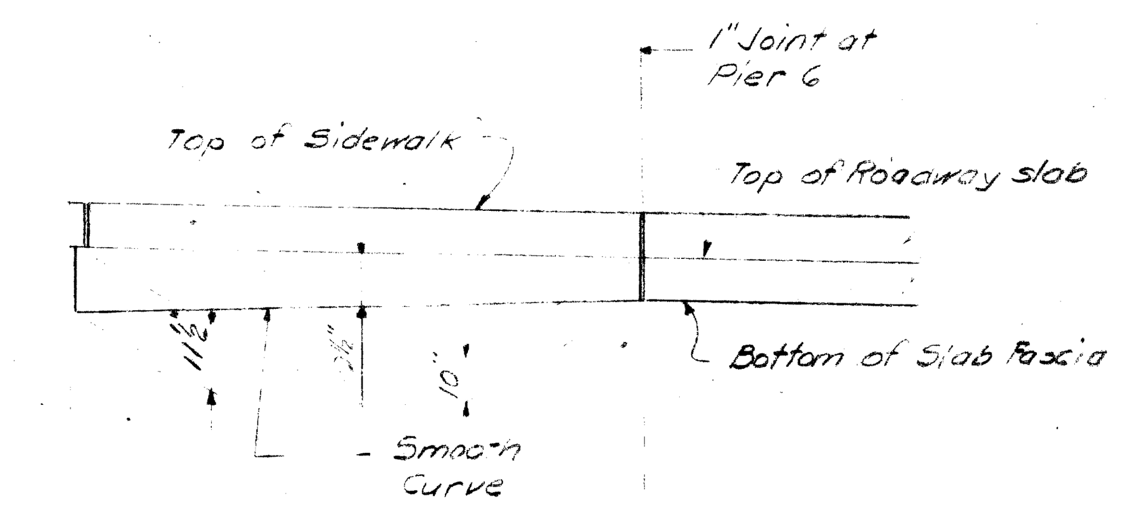
QUANTITIES to be charged to Detroit Edison Company

ITEM	UNIT	TOTAL
Cement	Bbls.	57
Conc. Encase. (b) Pour X	Cu. Yds.	39.8
Reinf. Steel	Lbs.	5572
Structural Steel	Lbs.	2836
1" Joint Filler	Sq. Ft.	1060
Spiral Shear Developers	Lbs.	305

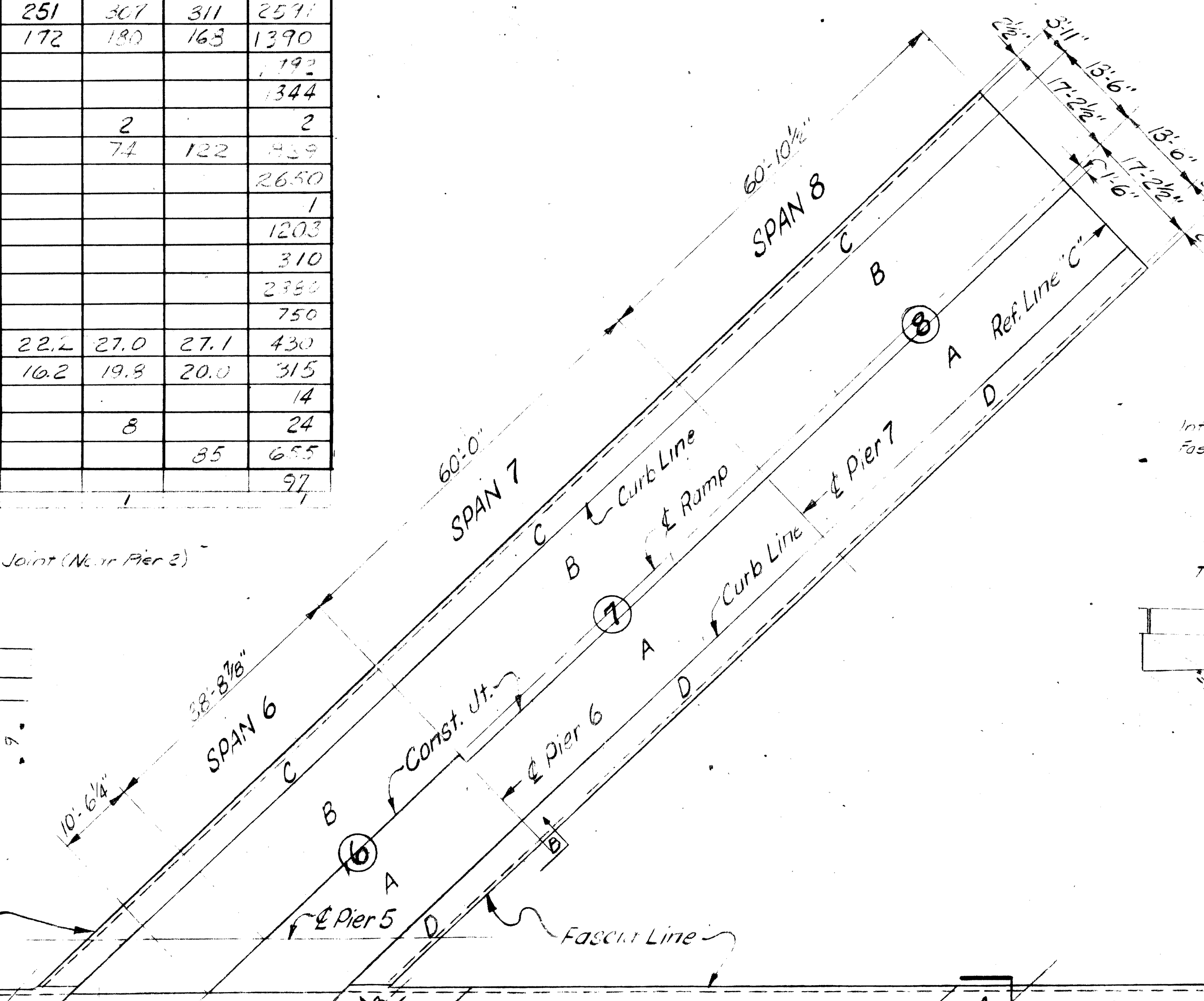
Note: Quantities shown above are included in General Contract Quantities.

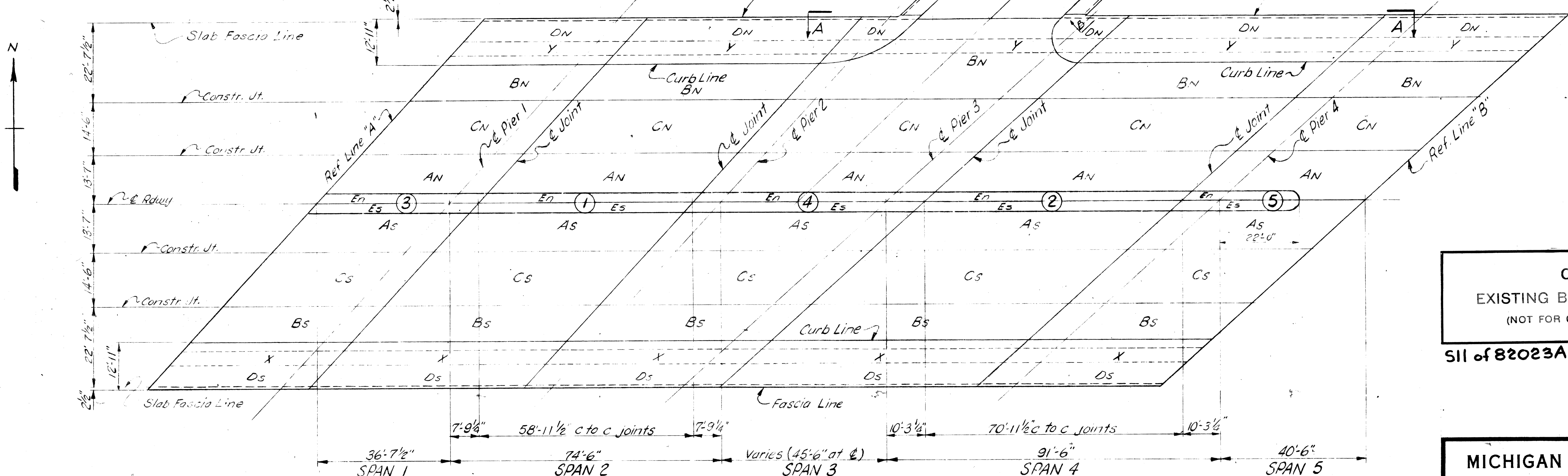


FASCIA ELEVATION - AA
Scale - Vert: 1" = 4'-0" Hor: 1" = 10'-0"



FASCIA ELEVATION - BB
Scale - Vert: 1" = 4'-0" Hor: 1" = 10'-0"





POUR DIAGRAM

Note: Numbers marked thus: ①, indicate sequence of pours for roadway slabs. For elevations to set screeds see Screed Setting Diagram on Sheet 30.

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S11 of 82023A Sh. 8 of 15

REVISIONS

NO.	DESCRIPTION	DATE	BY
1	Rev. Quantities Charged to D.E.Co.	10-1-51	JAS

MICHIGAN STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
WARREN AVE. IN THE CITY OF DETROIT
SUPERSTRUCTURE - MISC. DETAILS
HAZELET & ERDAL - CONSULTING ENGINEERS - FILE NO. 228

APPROVED 6-7-51 CHIEF BRIDGE DRAFTSMAN
APPROVED 6-7-51 ENGINEER OF BRIDGE DESIGN
APPROVED 8-13-51 BRIDGE ENGINEER

DRAWN BY B.W.
CHECKED BY R.L.K. 1-11-51

B29 OF 82-22-10

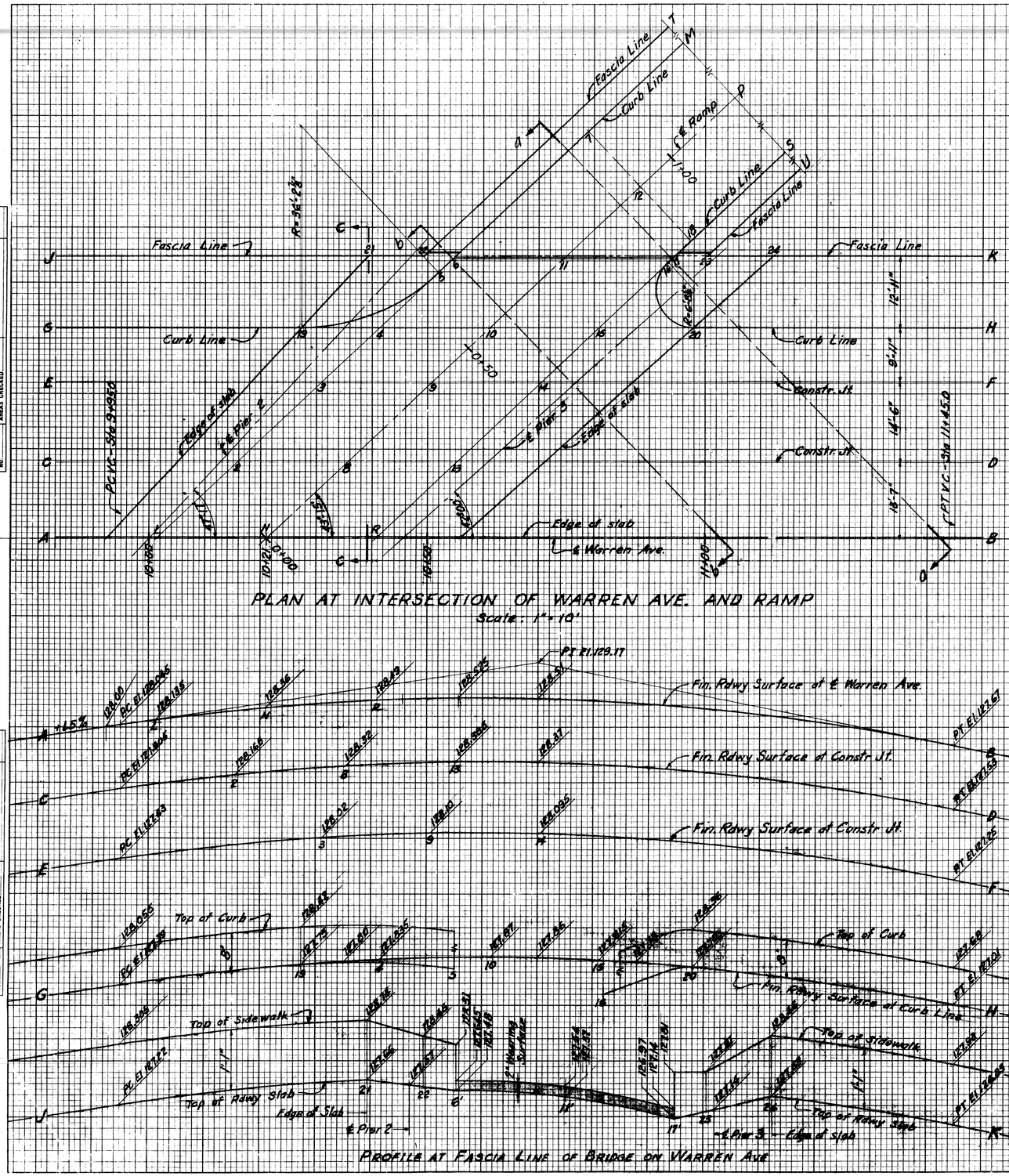
8 of 15

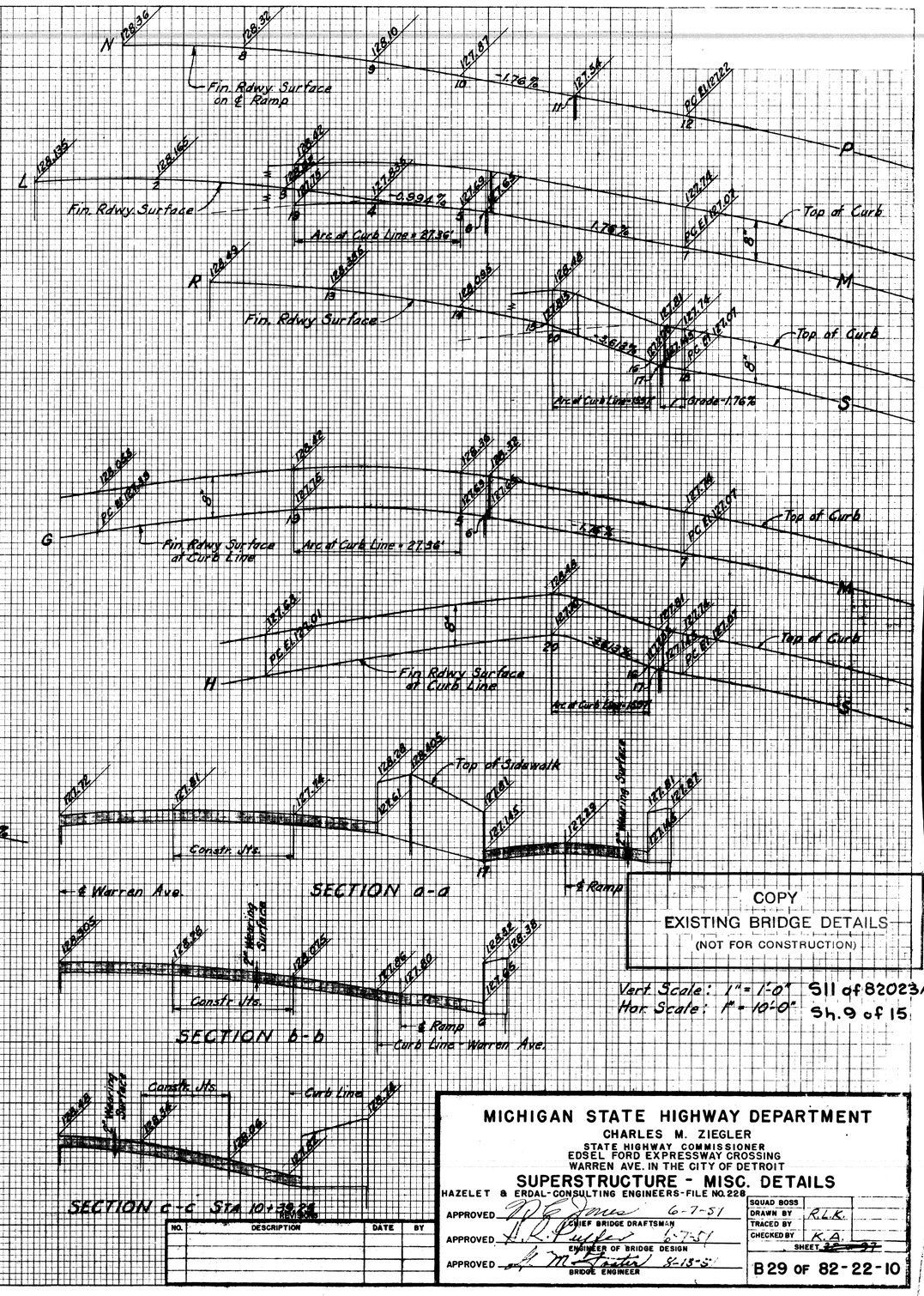
FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

DATE	BY

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

DATE	BY





COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

Vert Scale: 1"=1'-0"
Hor Scale: 1"=10'-0"

S11 of 82023A
Sh. 9 of 15

NO.	DESCRIPTION	DATE	BY

REVISIONS

MICHIGAN STATE HIGHWAY DEPARTMENT

CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
WARREN AVE. IN THE CITY OF DETROIT

SUPERSTRUCTURE - MISC. DETAILS

HAZELET & ERDAL-CONSULTING ENGINEERS-FILE NO. 229

APPROVED R. G. Jones 6-7-51
CHIEF BRIDGE DRAFTSMAN

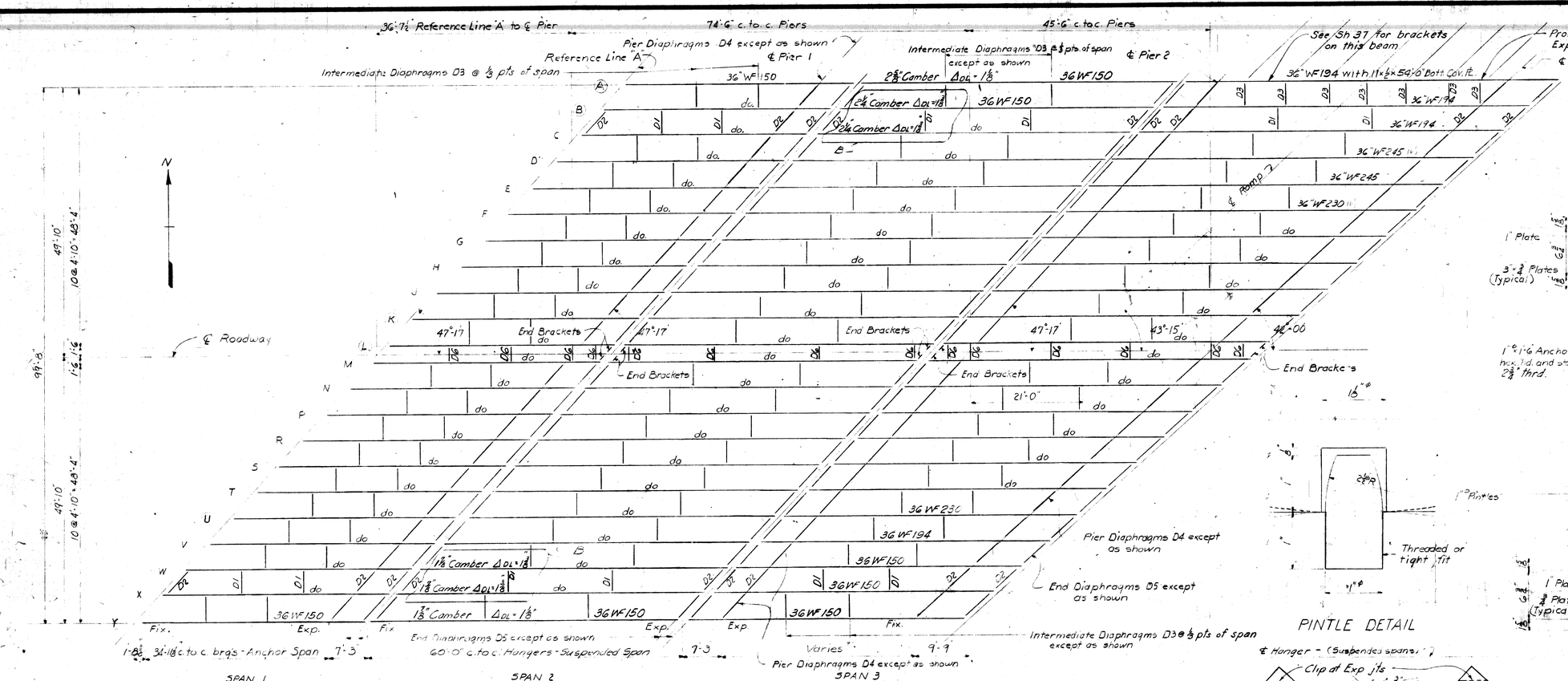
APPROVED H. R. Pfeffer 6-7-51
ENGINEER OF BRIDGE DESIGN

APPROVED C. M. Ziegler 8-15-51
BRIDGE ENGINEER

SQUAD BOSS	
DRAWN BY	R.L.K.
TRACED BY	
CHECKED BY	K.A.
SHEET 22 — 37	

B29 OF 82-22-10

9 of 15 C3



TOTAL ESTIMATED STRUCTURAL STEEL

Structural Steel	1,552,290	Lbs. S.B.
Wrought Iron	3,950	Lbs.
Total	1,556,240	Lbs. S.B.

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

Work this sheet with Sheets 36 & 39

S11 of 82023A Sh. 10 of 15

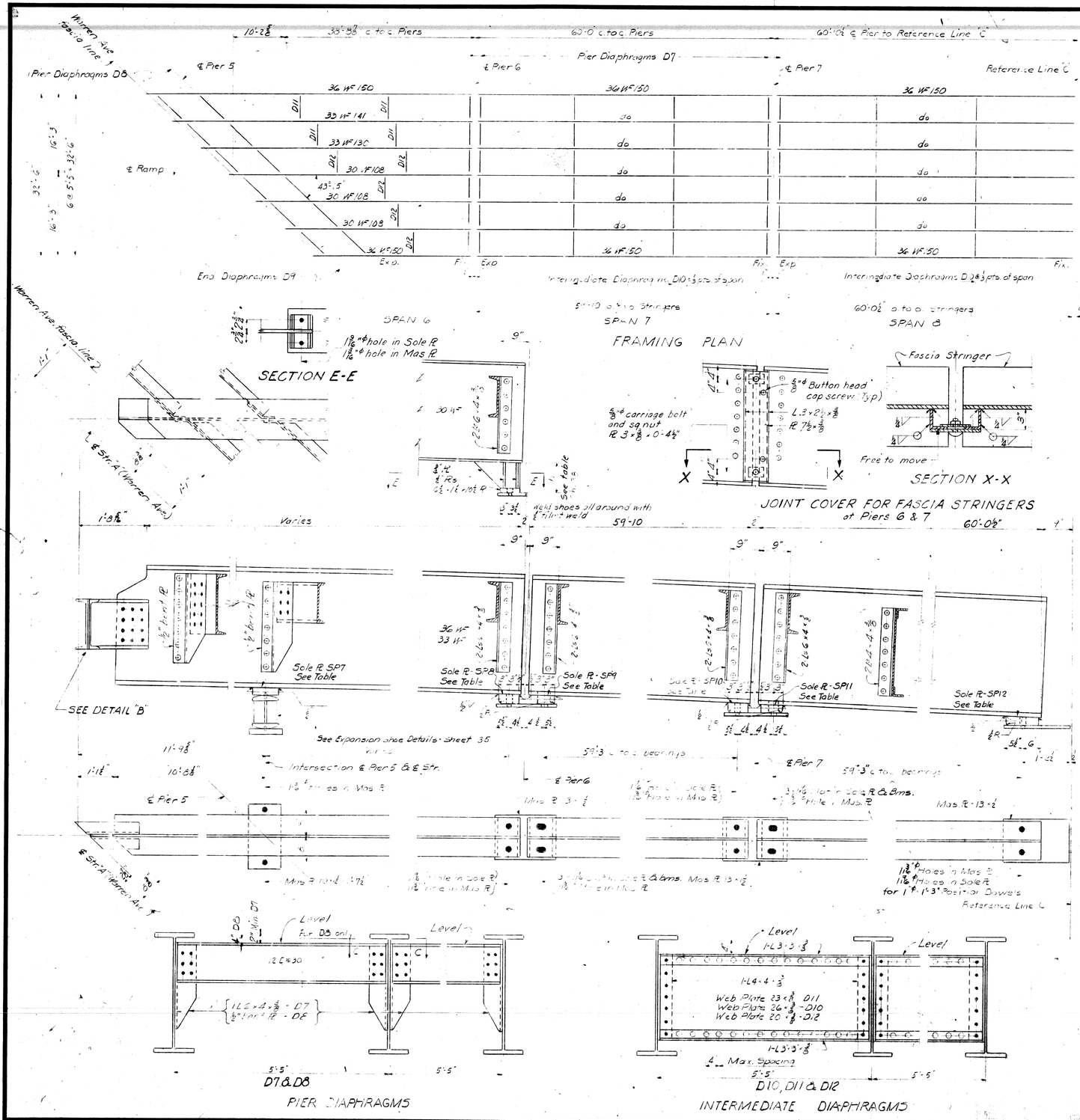
MICHIGAN STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
WARREN AVE IN THE CITY OF DETROIT
STRUCTURAL STEEL - SPANS 1, 2 AND 3
HAZELET & ERDAL - CONSULTING ENGINEERS - FILE NO. 228

REVISIONS			
NO.	DESCRIPTION	DATE	BY
B	Camber & Defl. Sp. 2 - Add Weight	10-1-51	J.S.J.

APPROVED D. E. Jones 6-7-51
CHIEF BRIDGE DRAFTSMAN
APPROVED D. L. Luther 6-7-51
ENGINEER OF BRIDGE DESIGN
APPROVED A. M. Hazelet 6-13-51
BRIDGE ENGINEER

SQUAD BOSS	
DRAWN BY	J. S. J.
TRACED BY	
CHECKED BY	P. L. D.

B29 OF 82-22-15



COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

511 of 82023A Sh 11 of 15

REVISIONS			
NO.	DESCRIPTION	DATE	BY
B	Weld Symbol added	10-1-51	J.S.J.

MICHIGAN STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
WARREN AVE. IN THE CITY OF DETROIT
STRUCTURAL STEEL - SPANS 6, 7 & 8 - RAMP
HAZELET & ERDAL - CONSULTING ENGINEERS - FILE NO. 228

APPROVED _____ CHIEF BRIDGE DRAFTSMAN 6-7-51
APPROVED _____ ENGINEER OF BRIDGE DESIGN 6-7-51
APPROVED _____ BRIDGE ENGINEER 8-13-51

SQUAD BOSS		
DRAWN BY	J.S.J.	
TRACED BY		
CHECKED BY	R.L.D.	11-24-51
SHEET		

B29 OF 82-22-10

11 of 15

MICHIGAN STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
WARREN AVE. IN THE CITY OF DETROIT

STRUCTURAL STEEL - MISC. DETAILS

HAZELET & ERDAL - CONSULTING ENGINEERS - FILE NO. 228

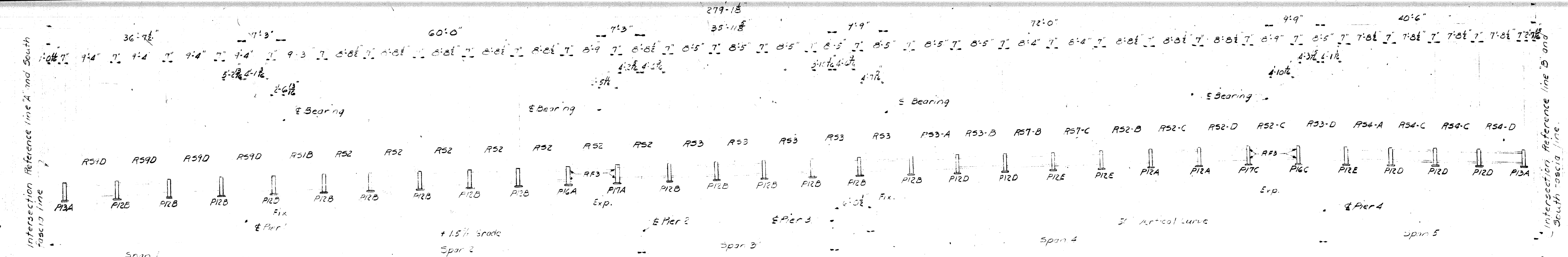
APPROVED 6-7-51 CHIEF BRIDGE DRAFTSMAN
APPROVED 6-7-51 ENGINEER OF BRIDGE DESIGN
APPROVED 8-13-51 BRIDGE ENGINEER

DRAWN BY J.S.J.
CHECKED BY J.A.S. 11-1-50

REVISIONS			
NO.	DESCRIPTION	DATE	BY
(A)	Misc Checking Revisions	8-1-51	C.W.S.

B29 OF 82-22-10

12 of 15



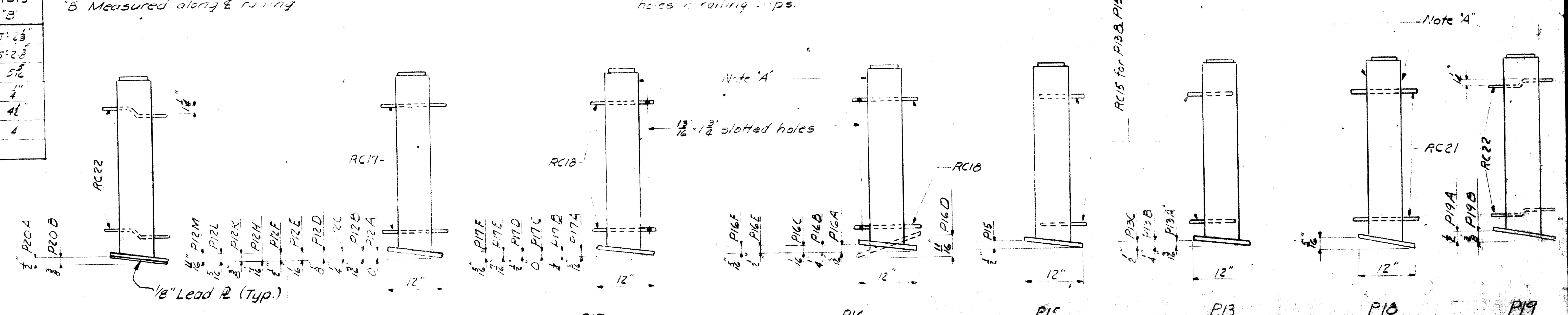
SOUTH ELEVATION OF SOUTH HANDRAIL - WARREN AVE.

SOUTH ELEVATION OF NORTH HANDRAIL - WARREN AVE.

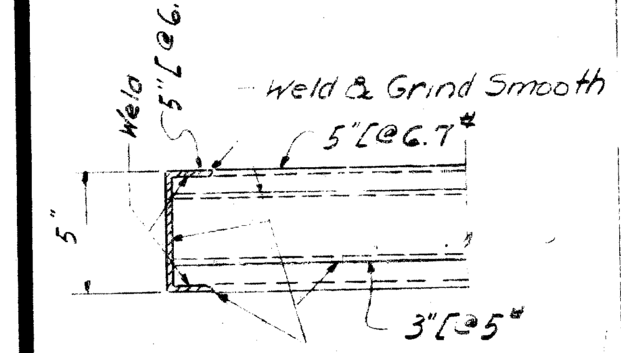
	DIMENSIONS OF RAILING SECTIONS	RS1	RS2	RS3	RS4	RS5	RS6	RS7	RS8	RS9	RS10	RS11	RS12 "B"	RS13 "B"
a	Net length of railing	9'-2½"	8'-8	8'-4½"	7'-8"	7'-10½"	8'-1½"	8'-3½"	7'-10	9'-3½"	8'-7½"	9'-1½"	2'-10¼"	5'-2⅜"
f	Face to face of Posts	9'-3"	8'-8½	8'-5"	7'-3½"	7'-11"	8'-2	8'-4"	7'-10½"	9'-4"	8'-8"	9'-2"	2'-10½"	5'-2⅝"
c	End of railing to first panel	4⅛"	4⅜"	5"	4½"	4½"	5"	4½"	4"	4⅝"	4⅛"	4½"	5 5/16"	5 5/16
d	Clearance to post *	¼"	¼"	¼"	¼"	¼"	¼"	¼"	¼"	¼	¼	¼"	¼	¼"
x	c. to c. bars between panels	3¾"	2¾"	4"	2¾"	3¼"	3½"	4"	3¼"	3¾"	2¾"	3½"	4⅝"	4½"
	No. panels per section	8	8	7	7	7	7	7	7	8	8	8	2	4

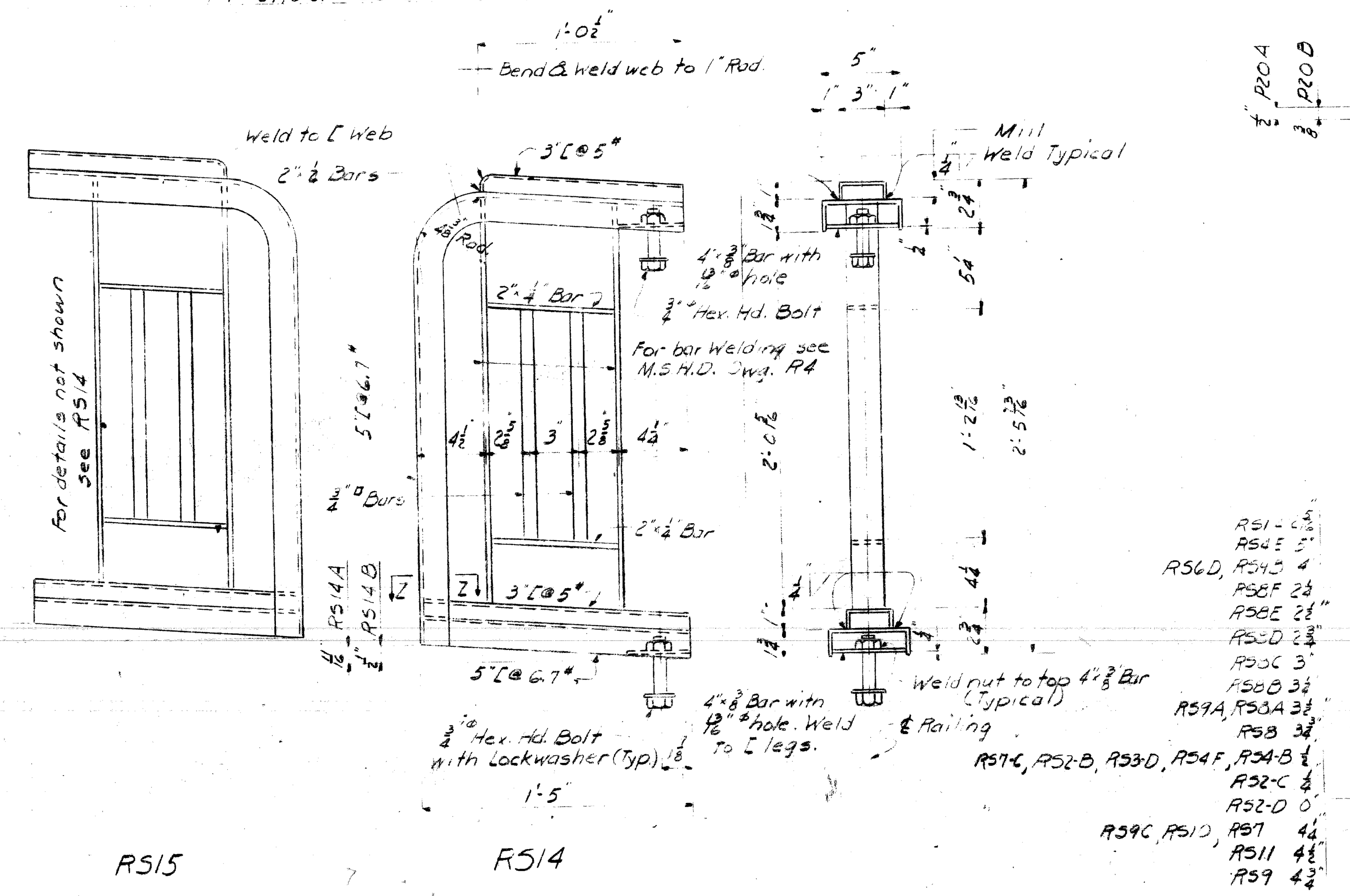
* Except at expansion joints
"B" Measured along ℄ railing

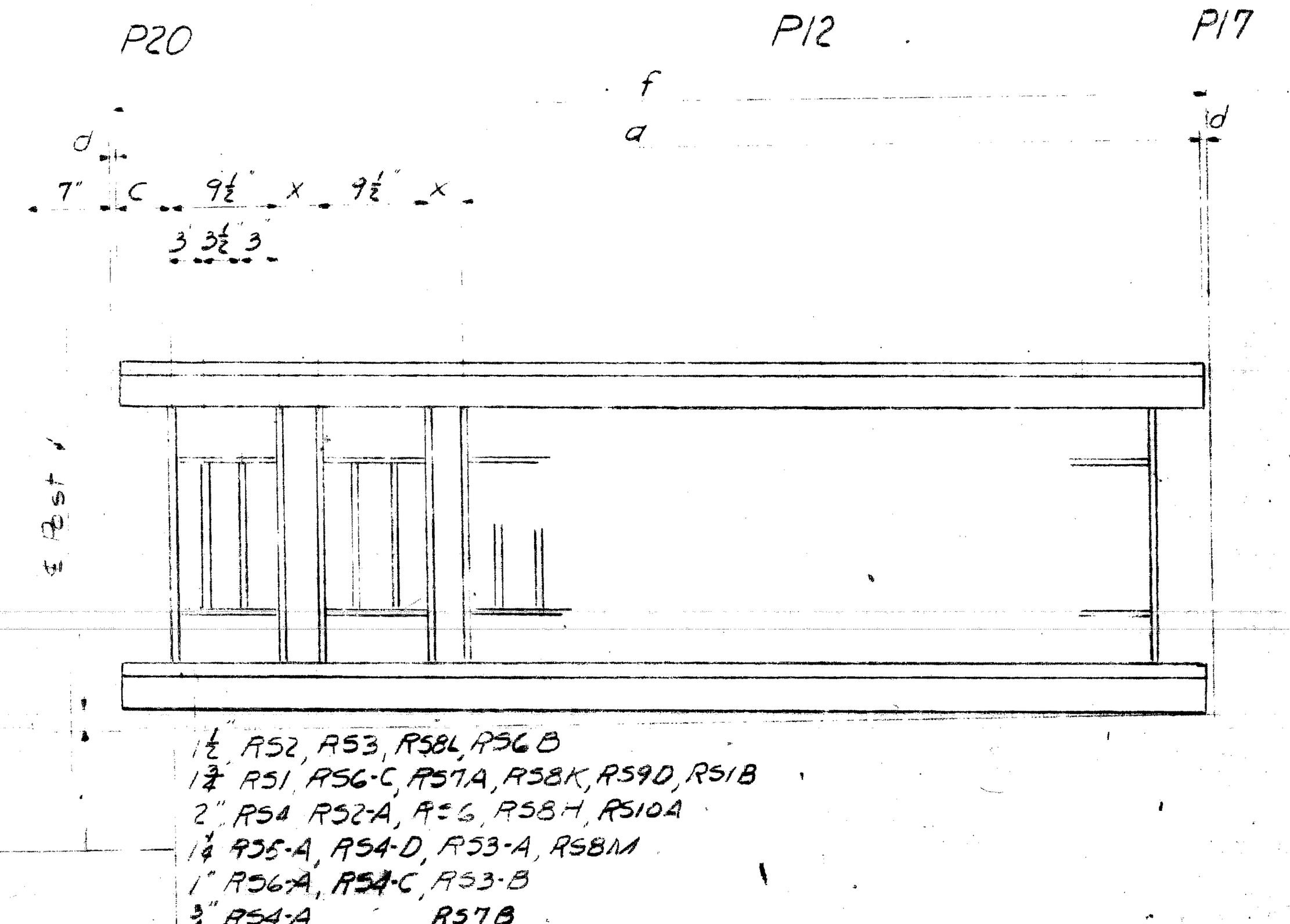
Note 'A'
Provide tapped holes for RF3 on side of post with 9/16" x 1⅛" slotted holes in railing clips.



RAILING POSTS







Work this sheet together with sheet 42

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S11 of 82023A Sh. 13 of 15

MICHIGAN STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
WARREN AVE. IN THE CITY OF DETROIT
BRIDGE RAILING - SPANS 1 THRU 5
HAZELET & ERDAL - CONSULTING ENGINEERS - FILE NO. 228

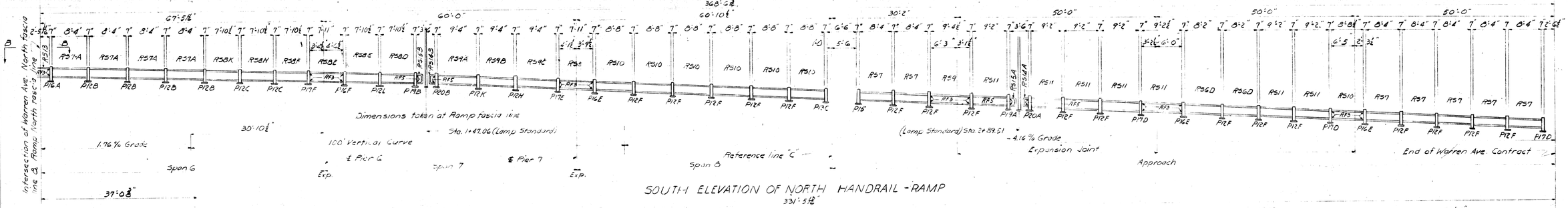
REVISIONS			
NO.	DESCRIPTION	DATE	BY

APPROVED [signature] 6-7-51 CHIEF BRIDGE DRAFTSMAN
APPROVED [signature] 6-7-51 ENGINEER OF BRIDGE DESIGN
APPROVED [signature] 8-13-51 BRIDGE ENGINEER

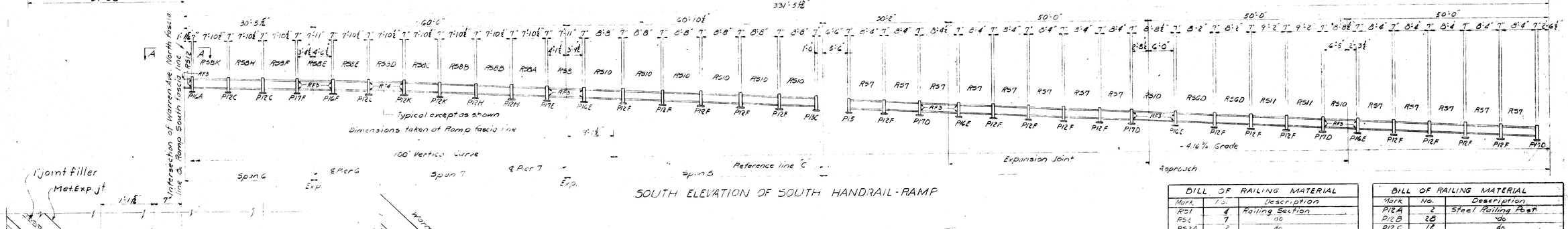
DRAWN BY J.S.J.
CHECKED BY R.L.D. 11-27-50

B29 OF 82-22-10

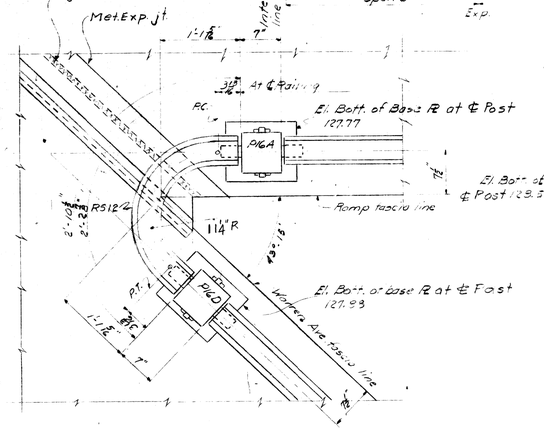
13 of 15 C3



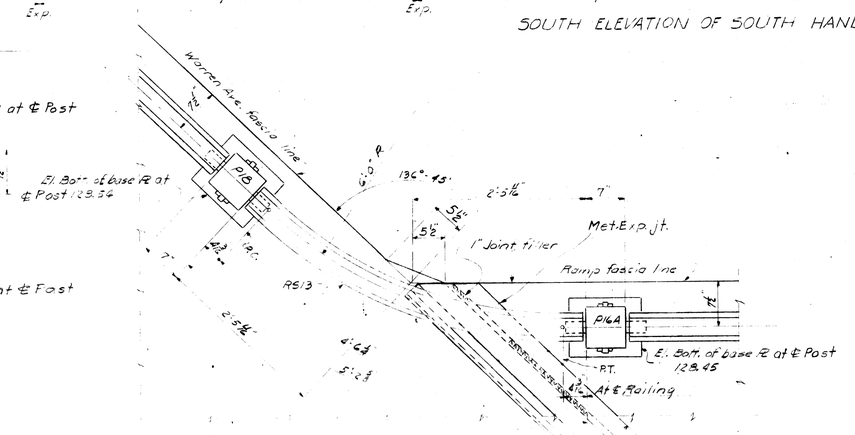
SOUTH ELEVATION OF NORTH HANDRAIL - RAMP



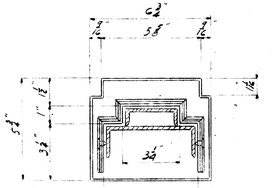
SOUTH ELEVATION OF SOUTH HANDRAIL - RAMP



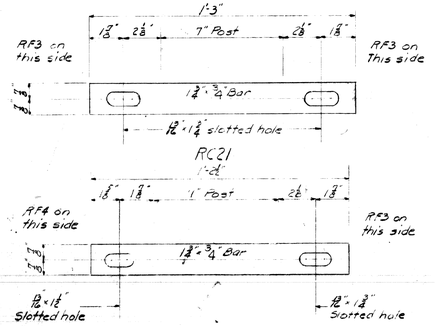
VIEW-AA

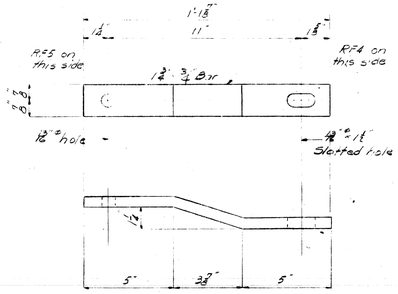


VIEW-BB



RAILING FLANGE RF-5





BILL OF MISC. RAILING MATERIAL.		
No.	Description	Size
556	Anch. Bolts	¾"x0'-10" lg. hex hd & nut
536	Mach. Bolts	⅞"x0'-2½" lg. hex hd. & nut
536	Lock Washers	for ¾" bolts
139	Lead Rs.	10"x1'-8"x1'-0"

Note: The above material is furnished under the item "Bridge Railing"

Notes

For details not shown see Michigan State Highway Department drawings Bridge Standard RF and "Steel Railing Posts RS"

Posts must set with faces vertical.

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

Work this sheet together with sheet A1
S11 of 82023A Sh. 14 of 15

BILL OF RAILING MATERIAL		
Mark	No.	Description
RS1	4	Railing Section
RS2	7	do
RS2A	2	do
RS2B	1	do
RS2C	2	do
RS2D	1	do
RS3	5	do
RS3A	1	do
RS3B	1	do
RS4F	1	do
RS3D	1	do
RS4	4	do
RS4A	2	do
RS4B	1	do
RS4C	2	do
RS4D	1	do
RS4E	1	do
RS5A	1	do
RS6	3	do
RS6A	1	do
RS6B	1	do
RS6C	1	do
RS7	20	do
RS7A	4	do
RS8	2	do
RS8A	1	do
RS8B	2	do
RS8C	1	do
RS8D	2	do
RS8E	4	do
RS8F	2	do
RS8H	2	do
RS8K	2	do
RS9	1	do
RS9A	1	do
RS9B	1	do
RS9C	1	do
RS10	15	do
RS11	9	do
RS12	1	do
RS13	1	do
RS14A	1	do
RS15A	1	do
RS14B	1	do
RS15B	1	do
RS7A	1	do
RS6D	4	do

BILL OF RAILING MATERIAL		
Mark	No.	Description
P12A	2	Steel Railing Post
P12B	28	do
P12C	12	do
P12D	8	do
P12E	6	do
P12F	34	do
P12H	3	do
P12K	3	do
P12L	2	do
P13A	3	do
P13B	1	do
P16A	3	do
P16B	1	do
P16C	2	do
P16D	1	do
P16E	7	do
P16F	2	do
P17A	1	do
P17B	1	do
P17C	1	do
P17D	7	do
P17E	2	do
P17F	2	do
P18	1	do
P15	2	do
P19A	1	do
P19B	1	do
P20A	1	do
P20B	1	do
P13C	2	do
RC15	20	Railing Clip
RC17	198	do
RC18	56	do
RC21	2	do
RC22	8	do
RF3	64	Railing Flange
RF4	460	do
RF5	8	do
RS8L	2	Railing Section
RS8M	1	do
RS9D	4	do
RS9B	1	do
RS7B	1	do
RS7C	1	do
RS10A	2	do
PIRM	1	Steel Railing Post

Estimated Weight of Railing = 79,460# (Not included in Structural Steel)

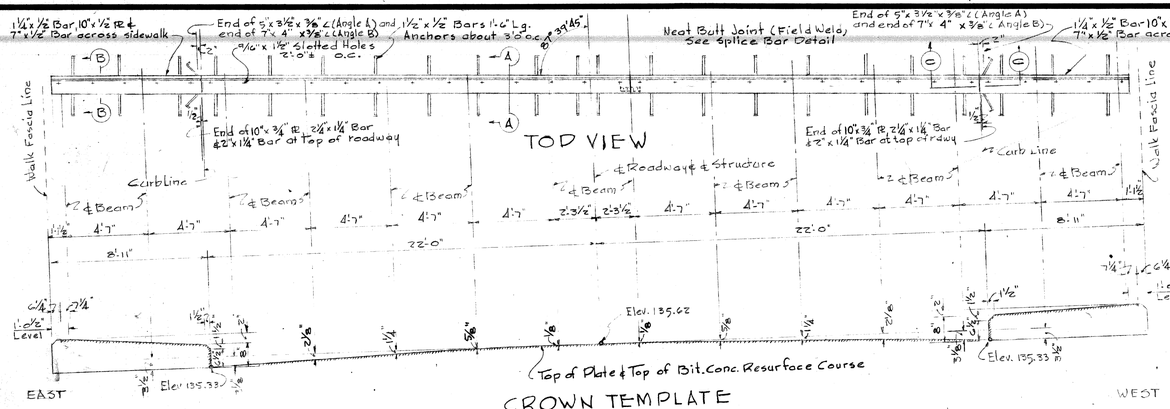
REVISIONS			
NO.	DESCRIPTION	DATE	BY

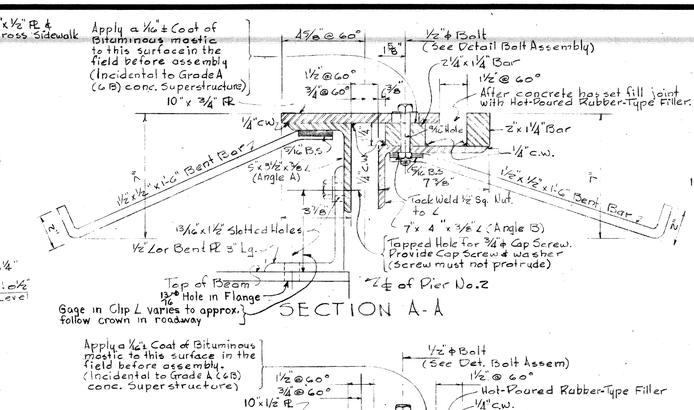
MICHIGAN STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
WARREN AVE. IN THE CITY OF DETROIT
BRIDGE RAILING - RAMP
HAZELET & ERDAL - CONSULTING ENGINEERS - FILE NO. 228

APPROVED [signature] 6-7-51 CHIEF BRIDGE DRAFTSMAN
APPROVED [signature] 6-7-51 ENGINEER OF BRIDGE DESIGN
APPROVED [signature] 8-15-51 BRIDGE ENGINEER

SQUAD BOSS		
DRAWN BY	J. S. J.	
TRACED BY		
CHECKED BY	P. L. D.	11-24-50
SHEET		

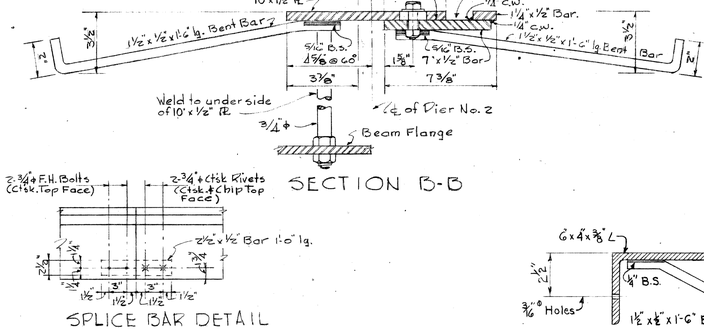
B29 OF 82-22-10

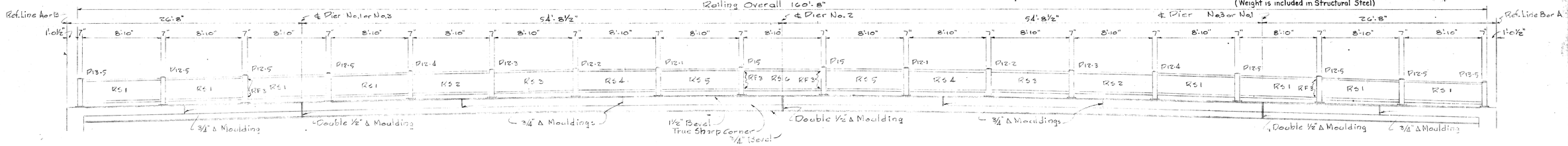


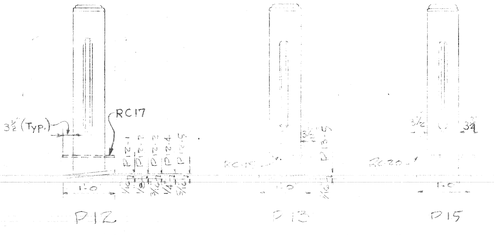


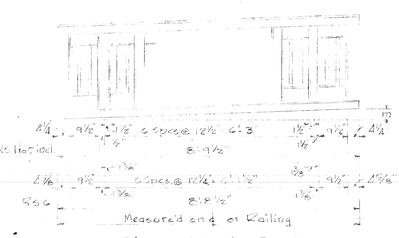
METAL FLOOR JOINT AT PIER No. 2

ONE REQUIRED, WEIGHT IS INCLUDED IN STRUCTURAL STEEL



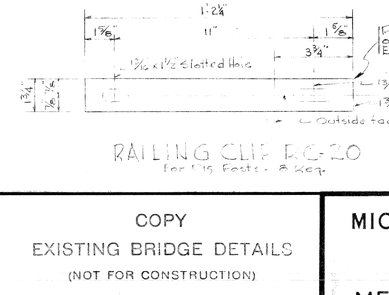






BILL OF RAILING MATERIAL

MARK	NO. REQ.	℄	DESCRIPTION
RS 1	16	2½"	RAILING SECTION
RS 2	4	2"	" "
RS 3	4	1½"	" "
RS 4	4	1"	" "
RS 5	4	½"	" "
RS 6	2	0"	" "
P12-1	4		RAILING POST
P12-2	4		" "
P12-3	4		" "
P12-4	4		" "
P12-5	12		" "
P13-5	4		" "
P15	4		" "
RF 3	16		RAILING FLANGE
RF 4	120		" "
Anchor Bolts	142		¾"x10" Sq. Hd. Nut.
Bolts	136		¾"x1½" Hex Head.
Washers	136		½" Cut Washer



NOTES:

For Railing Details not shown see Michigan State Highway Dept. Std. Dwg. No. R-1-A.

For Post Details see Michigan State Highway Dept. Std. Dwg. No. R-5.

All Railing Posts are to be set vertical.

Approx. Total Weight of Railing Metal = 20,500 Lbs. (Not included in Structural Steel)

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

511 of 82023A Sh. 15 of 15

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
24TH STREET IN THE CITY OF DETROIT

METAL FLOOR JOINT & RAILING DETAILS

HAZELET & ERDAL CONSULTING ENGINEERS FILE No. 528

APPROVED _____ CHIEF BRIDGE DRAFTSMAN 5-6-52

APPROVED _____ ACT. ENGINEER OF BRIDGE DESIGN 5-7-52

APPROVED _____ ACT. BRIDGE ENGINEER

SQUAD BOSS			
DRAWN BY			
TRACED BY			
CHECKED BY			
SHEET			

B48 OF 82-22-10

15 of 15

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

P.L.C. ALTERATIONS

BRIDGE ALTERATION

RAMP REMOVAL

PLAN
Scale 1" = 20'-0"
Parallel ℄ W. Grand Blvd.

ELEVATION
Scale 1" = 20'-0"

SECTION A - A
Scale 3/8" = 1'-0"

SECTION THRU PIER Nº 6-E
Scale 3/8" = 1'-0"

SECTION THRU PIER Nº 7-E
Scale 3/8" = 1'-0"

SECTION B-B or D-D
(Drawn for Section B-B, Sec. D-D similar except as noted)
Scale 3/8" = 1'-0"

SECTION THRU ABUTMENT-Z
Scale 3/8" = 1'-0"

SECTION E-E
Scale 3/8" = 1'-0"

NOTE- Sections are taken at Point of Rotation.

NOTE- Work this Sheet with Sheet Nº 2 & 5.

Remove Conc. to 1'-0" below finished grade. Elevations are approximate.

REMOVAL & ALTERATION - EXISTING STRUCTURE

Removal, Existing Structure Shown

Alterations, Existing Structure Shown

Note:
F.S. denotes Far Side
N.S. denotes Near Side

MISCELLANEOUS QUANTITY

Removing Portions of Existing Structures Lump Sum

COPY
EXISTING BRIDGE DETAILS
(REVISED FOR CONSTRUCTION)
CONTRACT 82023-013

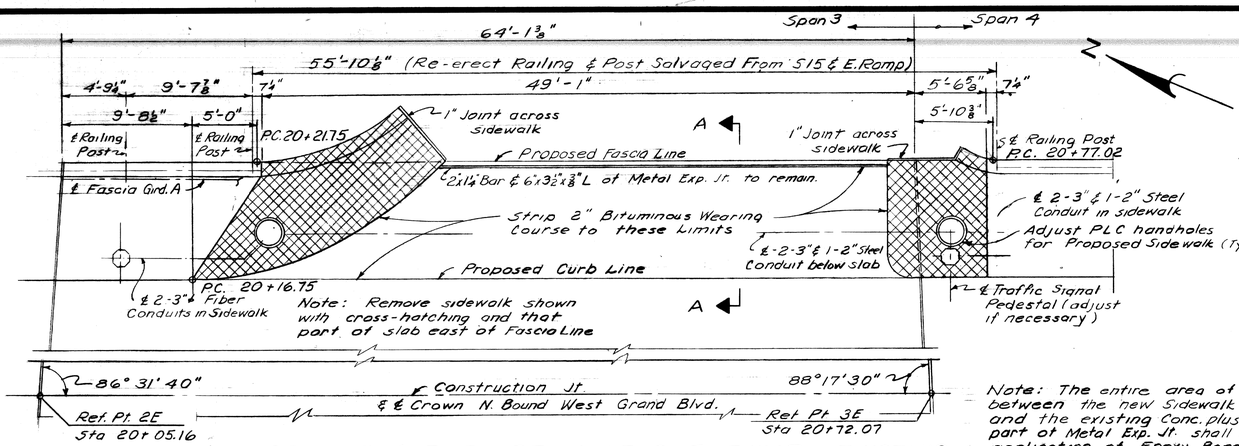
PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS
APPROVED _____ STRUCTURAL ENGINEER
JOB No. PW 990(16)

MICHIGAN STATE HIGHWAY DEPARTMENT
JEFFRIES FREEWAY
REVSIONS TO WEST GRAND BLVD. BRIDGE
CROSSING THE FORD FREEWAY IN DETROIT
REMOVAL PLAN

REVISIONS			
NO.	DESCRIPTION	DATE	BY

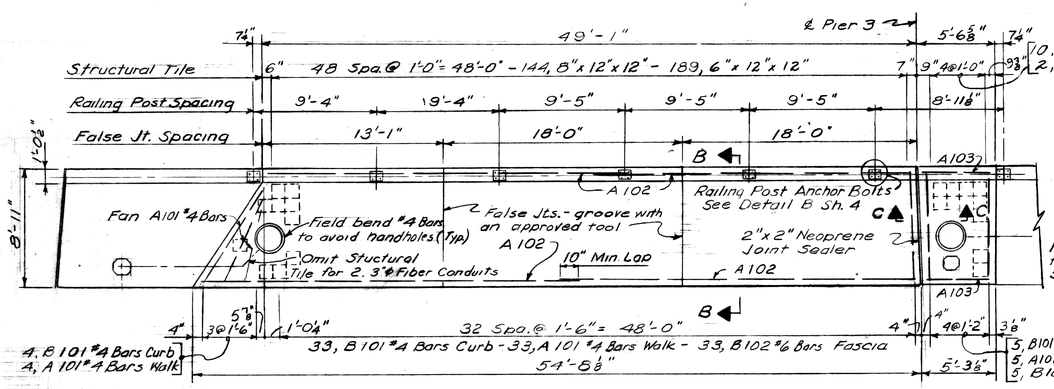
SQUAD BOSS	STURM	966
DRAWN BY	WAL	966
TRACED BY	-	-
CHECKED BY	STURM	966
SHEET	2 OF 17	

S13/14 of 82023 A



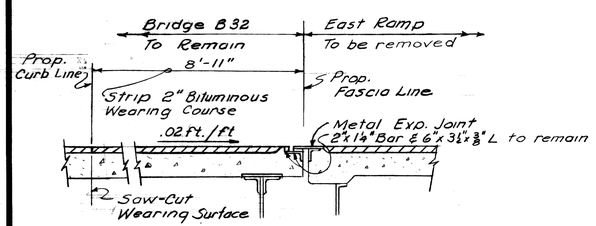
PLAN - SPAN 3E & PART SPAN 4E @ E. RAMP - EXISTING

Note: The entire area of contact between the new Sidewalk concrete and the existing Conc. plus the remaining part of Metal Exp. Jt. shall be given an application of Epoxy Bond Coat.

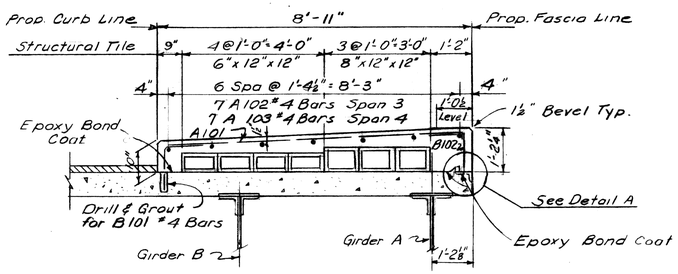


Note: Omit Structural Tiles for PLC handhole, Traffic Signal & 2-3" & 1-2" Fiber Cond.

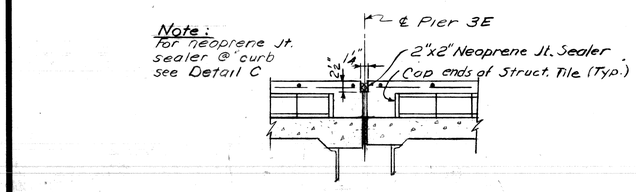
PLAN - PROPOSED SIDEWALK



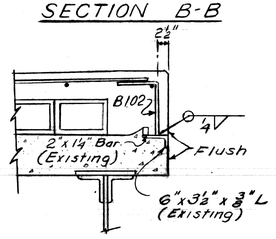
SECTION A-A



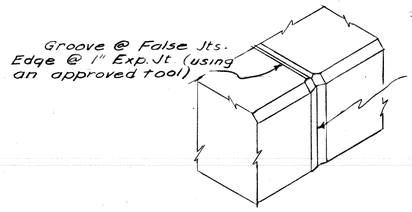
SECTION B-B



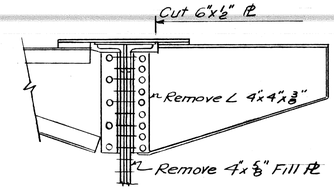
SECTION C-C



DETAIL A

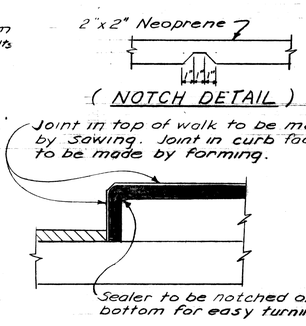


MOLDING DETAIL
(At Fascia or Curb)



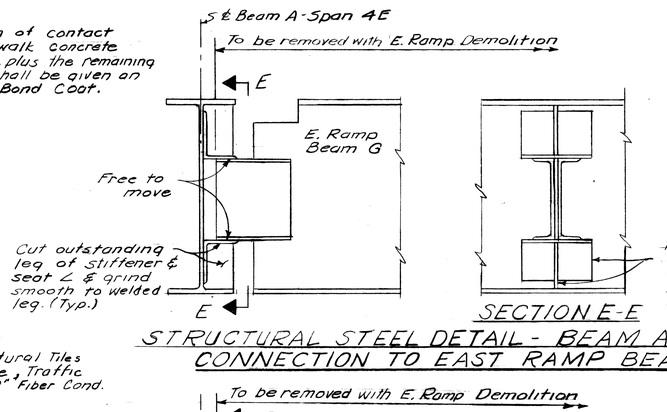
Note: Remove rivets without burning. Use ⅞" ϕ H.S. Bolts through open holes in flange L, & diaphragm connection L. Use ⅞" ϕ turned bolts Hex. nut & washer through other open holes.

STRUCTURAL STEEL DETAIL - BRACKET



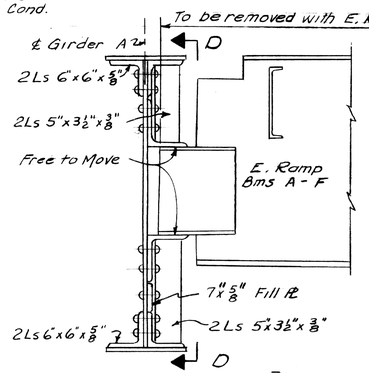
(NOTCH DETAIL)

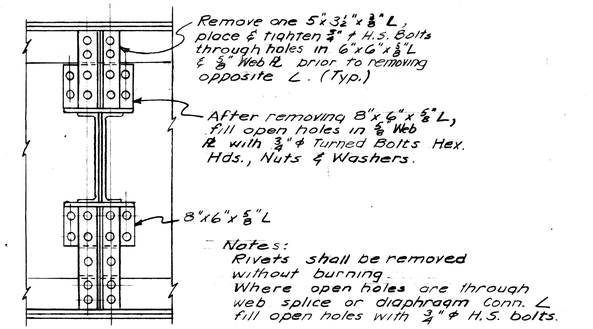
DETAIL C



SECTION E-E

STRUCTURAL STEEL DETAIL - BEAM A CONNECTION TO EAST RAMP BEAM G





SECTION D-D

STRUCTURAL STEEL DETAIL - GIRDER A CONNECTION TO EAST RAMP - BEAMS A THRU F

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

APPROVED: C. C. Ludeus
STRUCTURAL ENGINEER

JOB No.
PW 990(16)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

JEFFRIES FREEWAY
REVISIONS TO WEST GRAND BLVD. BRIDGE
CROSSING THE FORD FREEWAY IN DETROIT

SIDEWALK & STRUCTURAL STEEL DETAILS

CITY OF DETROIT

REVISIONS

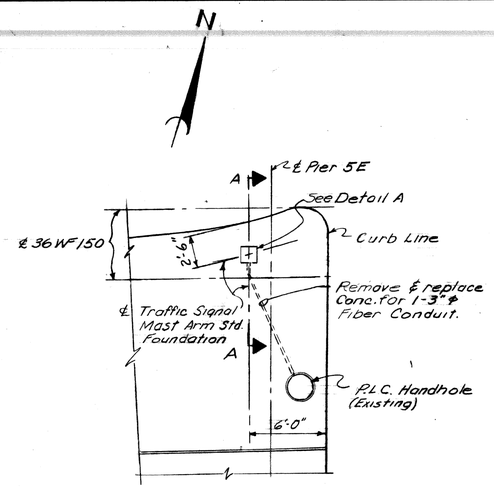
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	STUEM	9-66
DRAWN BY	WAL	9-66
TRACED BY	—	—
CHECKED BY	STUEM	9-66

SHEET 3 OF 17

S 13/14 of 82023A

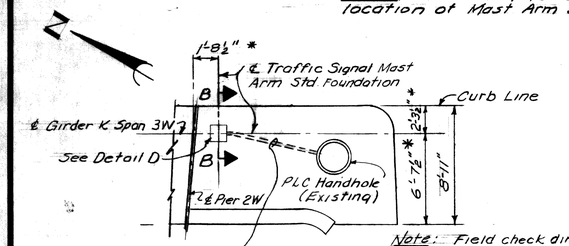
BLVD



PLAN

(TRAFFIC SIGNAL MAST ARM STD. FDN. ON CROSSBRIDGE MEDIAN)

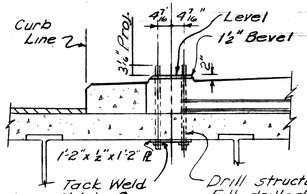
Note: See Sh. 4 for general location of Mast Arm Std.



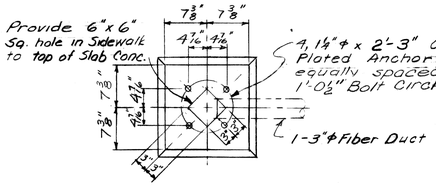
PLAN

(TRAFFIC SIGNAL MAST ARM STD. FDN. ON N.W. CORNER S'BD. W. GRAND BLVD @ W. RAMP)

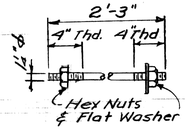
Note: Field check dimensions marked thus * to insure proper positioning of holes drilled in ℄ Girder E. Avoid drilling through rivets



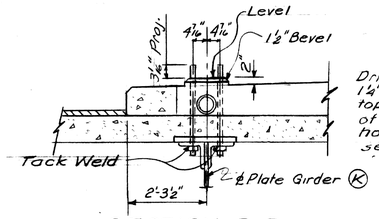
SECTION A-A



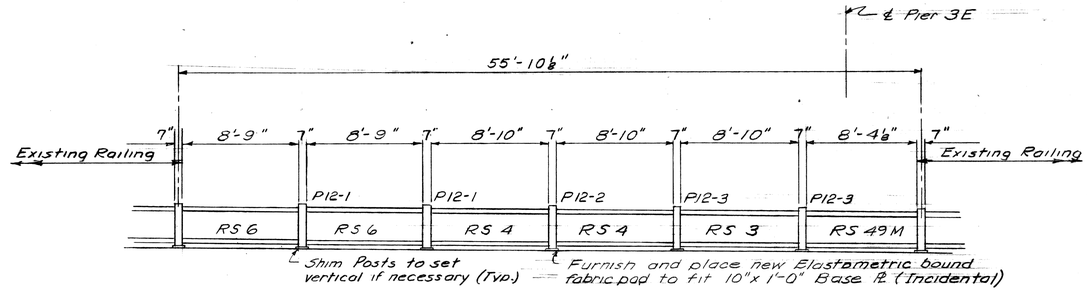
DETAIL D



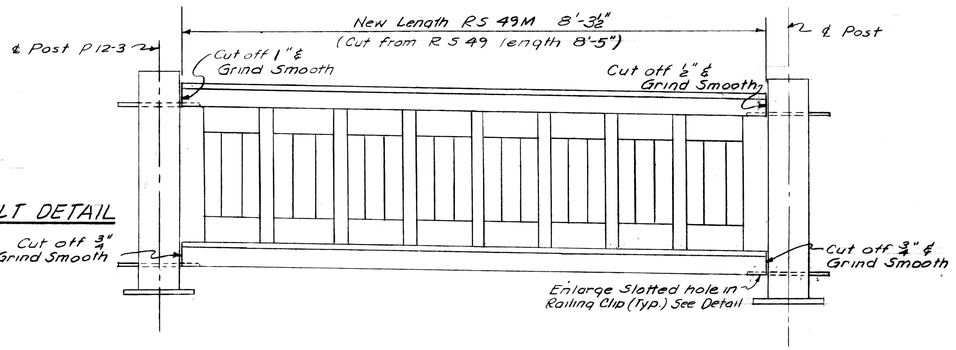
PLC ANCHOR BOLT DETAIL



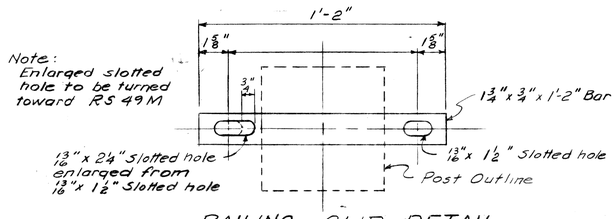
SECTION B-B



WEST ELEVATION OF EAST HANDRAIL SPAN 3E

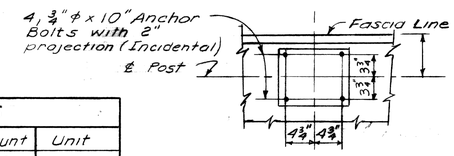


RAILING SECTION RS 49M



Note: Enlarged slotted hole to be turned toward RS 49M

RAILING CLIP DETAIL



DETAIL B

Notes:
Railing Posts & Section shall be salvaged from Bridge S15 of 82023A, except Railing Section RS 49M shall be salvaged from S14 of 82023 (RS 49).

Anchor Bolts are to be cadmium plated & furnished with Hex nuts & Washers

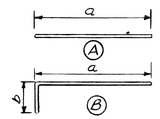
All materials necessary to Bridge Railing are incidental to Bridge Railing Salvaged & Reerected.

All materials necessary to Traffic Signal Mast Arm Std. Fdn. are incidental to 3" ϕ Fiber Conduit.

STEEL REINFORCEMENT DETAILS

Mark	a	b	Size	Length	No. Req'd.	Total Weight
A101	8'-3"	–	#4	8'-3"	42	231
A102	27'-9"	–	#4	27'-9"	14	260
A103	4'-9"	–	#4	4'-9"	7	22
B101	1'-1"	1'-2"	#4	2'-3"	42	63
B102	10⅜"	1'-1⅞"	#6	2'-0"	38	114

Total Steel Reinforcement 690 Lbs



BAR DIAGRAM

Note: 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 S-13

CONCRETE QUANTITY Gr. A(6AA) 118 Cu. Yds.

MISCELLANEOUS QUANTITIES

Item	Amount	Unit
Structural Tiles 8" x 12" x 12"	154	each
Structural Tiles 6" x 12" x 12"	191	each
2" x 2" Preformed Neoprene Jt. Sealer	10	Lin. Ft.
Bridge Railing Salvaged & Reerected	55.8	Lin. Ft.
Epoxy Bond Coat	3	Gals.
3" Fiber Conduit	18	Lin. Ft.

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

APPROVED C. O. Sederer
STRUCTURAL ENGINEER

JOB No. PW 990(16)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

JEFFRIES FREEWAY
REVISIONS TO WEST GRAND BLVD. BRIDGE CROSSING THE FORD FREEWAY IN DETROIT

RAILING & MISCELLANEOUS DETAILS

REVISIONS

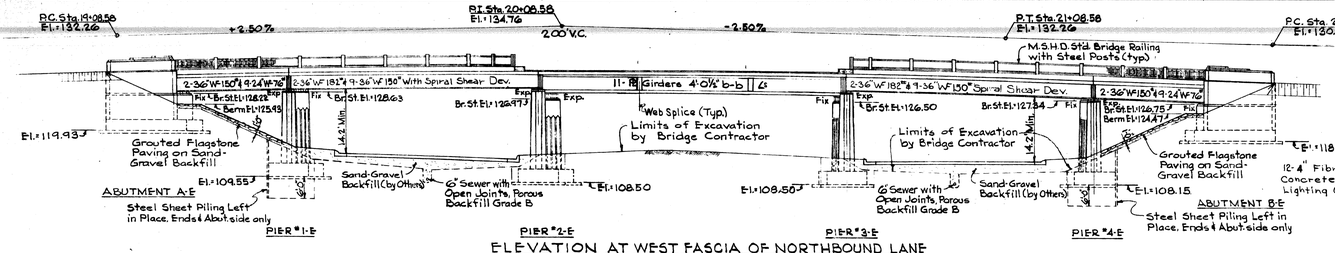
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

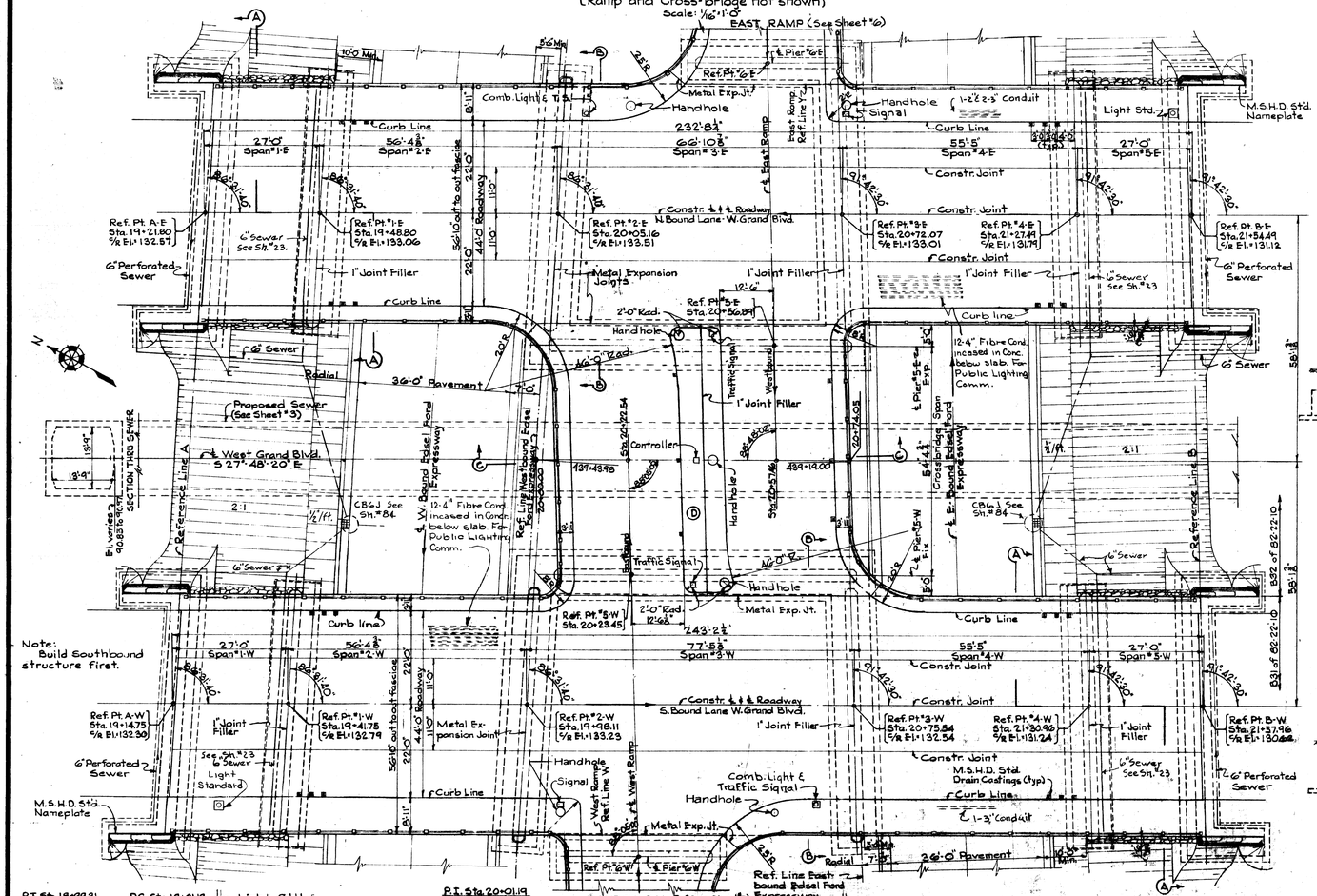
SQUAD BOSS	STURM	9-66
DRAWN BY	WAL	9-66
TRACED BY	–	–
CHECKED BY	STURM	9-66

SHEET 4 OF 17

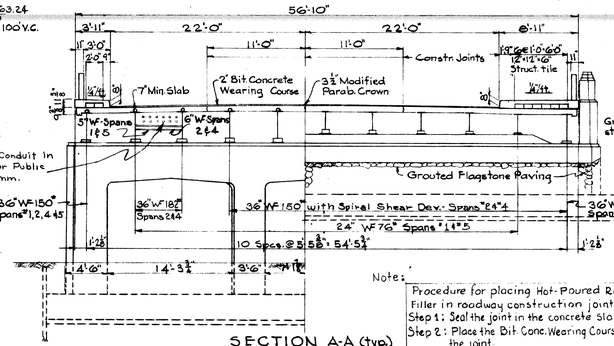
S 13 / 14 of 82023A



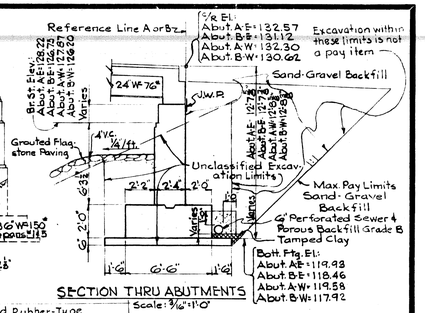
ELEVATION AT WEST FASCIA OF NORTHBOUND LANE
(Ramp and Cross-bridge not shown)
Scale: 1/16" = 1'-0"



ELEVATION AT WEST FASCIA OF SOUTHBOUND LANE
(Ramp and Cross-bridge not shown).
Scale: 1/16" = 1'-0"

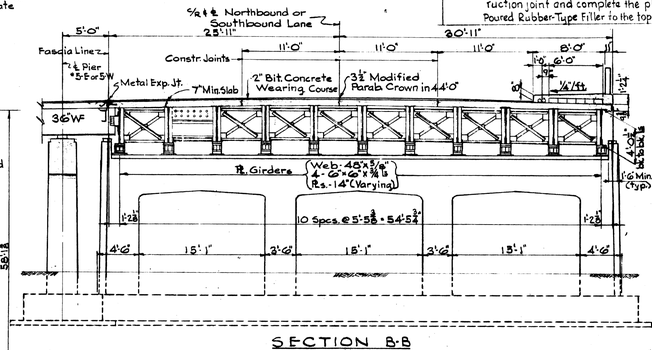


SECTION A-A (typ)
Scale: 1/16" = 1'-0"

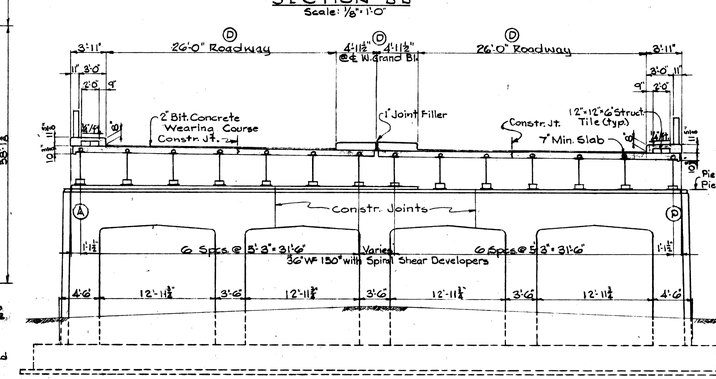


SECTION THRU ABUTMENTS
Scale: 3/16" = 1'-0"

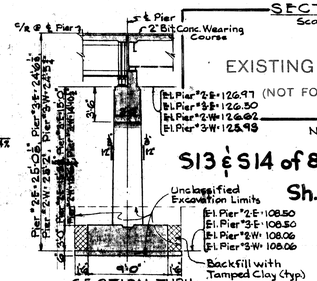
Note:
Procedure for placing Hot-Poured Rubber-Type Filler in roadway construction joints.
Step 1: Seal the joint in the concrete Slab only
Step 2: Place the Bit. Conc. Wearing Course continuous across the joint
Step 3: Cut out the Bit. Conc. Wearing Course over the construction joint and complete the placing of the Hot-Poured Rubber-Type Filler to the top of the roadway surface



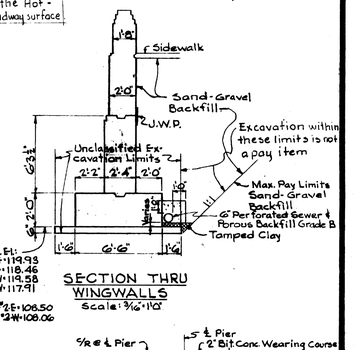
SECTION B-B
Scale: 1/16" = 1'-0"



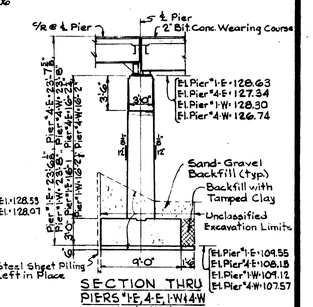
SECTION C-C
Scale: 1/16" = 1'-0"



SECTION THRU PIERS "2-E, 3-E, 2-W & 3-W
Scale: 1/16" = 1'-0"



SECTION THRU WINGWALLS
Scale: 3/16" = 1'-0"



SECTION THRU PIERS "1-E, 4-E, 1-W & 4-W
Scale: 1/16" = 1'-0"

El. Pier "5-E 108.50
El. Pier "5-W 108.06

Note: The design of the substructure units is based on a max. allowable foundation pressure under DL only of 3200% for Abutments and 2440% for Piers based on an "E" value of 1.0. The maximum average allowable foundation pressure under LL & DL is 4550% for Abutments and 3410% for Piers based on an "E" value of 1.5.

COPY
EXISTING BRIDGE DETAILS (NOT FOR CONSTRUCTION)

Note: Work this sheet with Sheets "5 & "6.

MISC. QUANTITY
6" Sewer (for connecting downspouts to drainage system) 600 Lin. Ft.

S13 & S14 of 82023A
Sh. 5 of 17

REVISIONS

NO.	DESCRIPTION	DATE	BY
(D)	Revised Channelization Island	7-18-52	R.R.K.

MICHIGAN STATE HIGHWAY DEPARTMENT

CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING WEST
GRAND BLVD. IN THE CITY OF DETROIT

GENERAL PLAN OF STRUCTURE

HAZELET & ERDAL - CONSULTING ENGINEERS FILE № 719

APPROVED _____ CHIEF BRIDGE DRAFTSMAN 11-26-51

APPROVED _____ ENGINEER OF BRIDGE DESIGN 11-29-51

APPROVED _____ BRIDGE ENGINEER 11-29-51

SQUAD BOSS	QWW	9-21-51
DRAWN BY	CPW	6-16-50
TRACED BY		
CHECKED BY	AHE	6-16-50
SHEET		

B31&B32 of 8222-10

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

PLAN
Scale 1" = 20'-0"
Parallel to ℄ W. Grand Blvd.

ELEVATION
Scale 1" = 20'-0"

SECTION A - A
Scale 3/8" = 1'-0"

SECTION B - B or D - D
(Drawn for Section B-B, Sec. D-D similar except as noted)
Scale 3/8" = 1'-0"

SECTION THRU PIER Nº 6-E
Scale 3/8" = 1'-0"

SECTION THRU PIER Nº 7-E
Scale 3/8" = 1'-0"

SECTION THRU ABUTMENT-Z
Scale 3/8" = 1'-0"

SECTION E - E
Scale 3/8" = 1'-0"

NOTE- Sections are taken at Point of Rotation.

NOTE- Work this Sheet with Sheet Nº 4 & 5.

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 & S14 of 82023A Sh. 6 of 17

REVISIONS

NO.	DESCRIPTION	DATE	BY
D	Revised Channelization Island	7-7-52	C.D.B.

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

GENERAL PLAN OF STRUCTURE-EAST RAMP

HAZELET & ERDAL - CONSULTING ENGINEERS FILE Nº 719

APPROVED _____ CHIEF BRIDGE DRAFTSMAN 11-29-51

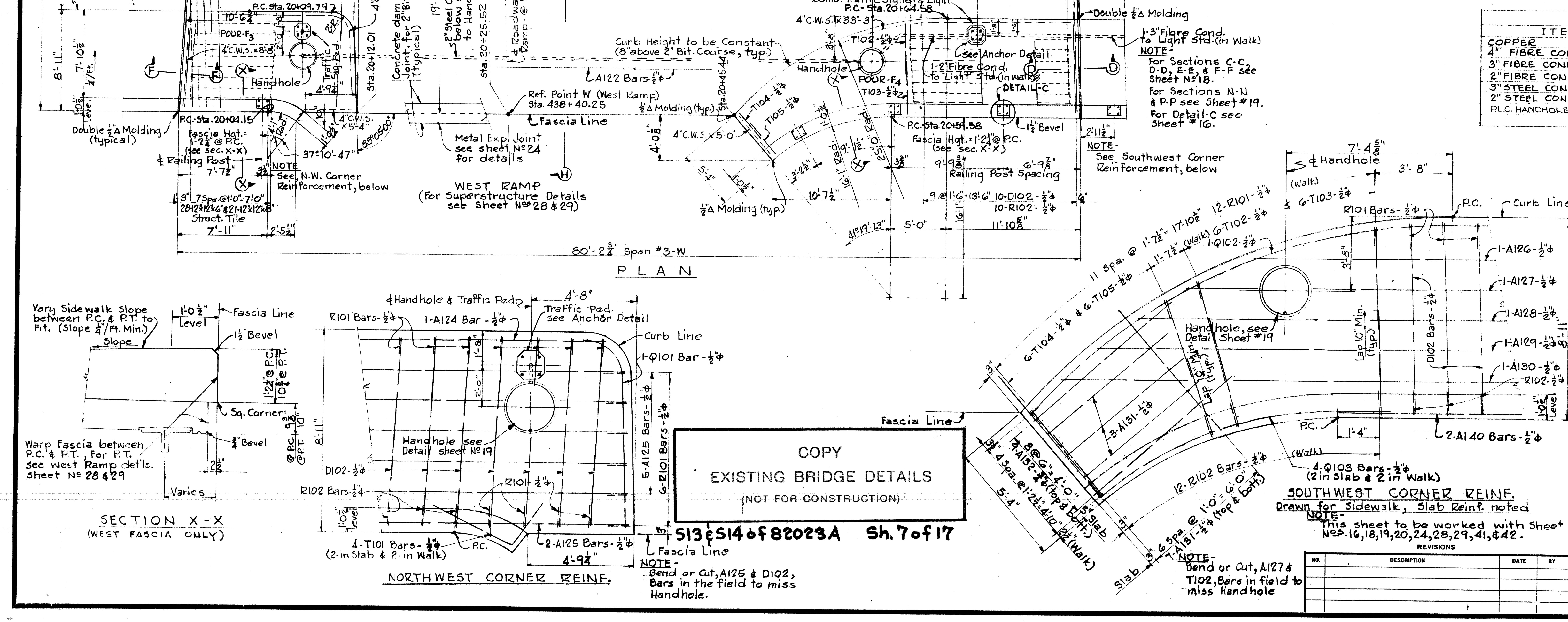
APPROVED _____ ENGINEER OF BRIDGE DESIGN 11-29-51

APPROVED _____ BRIDGE ENGINEER 11-29-51

SQUAD BOSS	W.W.	9-21-51
DRAWN BY	M.A.R.	6-16-50
TRACED BY		
CHECKED BY	A.H.E.	6-15-50

SHEET 6 OF 17

B32 OF 82-22-10



COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 & S14 of 82023A Sh. 7 of 17

MISCELLANEOUS QUANTITIES

ITEMS	UNIT	AMOUNT	ITEMS	UNIT	AMOUNT
COPPER	POUNDS	273	12"x12"x8" STRUCTURAL TILE	EACH	528
4" FIBRE CONDUIT	LIN. FT.	2867	12"x12"x6" STRUCTURAL TILE	EACH	875
3" FIBRE CONDUIT	LIN. FT.	102	RUBBED SURFACE FINISH	SQ. FT.	821
2" FIBRE CONDUIT	LIN. FT.	15	BRIDGE RAILING	LIN. FT.	371.2
3" STEEL CONDUIT	LIN. FT.	52	1" JOINT FILLER	SQ. FT.	177
2" STEEL CONDUIT	LIN. FT.	51	¾" JOINT FILLER	SQ. FT.	1205
P.L.C. HANDHOLE FRAMES & COV'S	EA	2	HOT-POURED RUBBER-TYPE FILLER	LIN. FT.	309

GRADE A (6B) CONCRETE QUANTITIES

POUR	LOCATION	CU. YDS.	POUR	LOCATION	CU. YDS.
A_1	CONDUIT ENCASEMENT	5.7	D_4	SLAB	28.3
A_2	" "	12.0	D_5	"	15.6
A_3	" "	16.6	E_1	"	11.8
A_4	" "	11.8	E_2	"	20.0
A_5	CONDUIT ENCASEMENT	5.7	E_3	"	24.6
B_1	SLAB	8.4	E_4	"	21.3
B_2	"	14.6	E_5	SLAB	11.9
B_3	"	20.7	F_1	WEST SIDEWALK	5.8
B_4	"	15.6	F_2	" "	11.1
B_5	"	8.4	F_3	" "	4.0
C_1	"	8.4	F_4	" "	7.3
C_2	"	14.6	F_5	" "	11.9
C_3	"	20.4	F_6	WEST SIDEWALK	6.0
C_4	"	15.6	G_1	EAST SIDEWALK	2.7
C_5	"	8.6	G_2	" "	5.5
D_1	"	15.8	G_3	" "	1.1
D_2	"	26.6	G_4	" "	5.4
D_3	SLAB	38.4	G_5	EAST SIDEWALK	2.7

Total Southbound Lane Grade A (6B) Concrete 464.9 CU. YDS.

NO.	DESCRIPTION	DATE	BY

REVISIONS

MICHIGAN STATE HIGHWAY DEPARTMENT

CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING WEST
GRAND BLVD. IN THE CITY OF DETROIT

SUPERSTRUCTURE DETAILS

HAZELET & ERDAL - CONSULTING ENGINEERS FILE No 719

APPROVED W. C. Jones 11-29-51
CHIEF BRIDGE DRAFTSMAN

APPROVED H. R. Puffer 11-29-51
ENGINEER OF BRIDGE DESIGN

APPROVED
BRIDGE ENGINEER

SQUAD BOSS	LHW	9-21-51
DRAWN BY	R.R.K.	9-19-50
TRACED BY		
CHECKED BY	AHE	11-1-50
SHEET		

B31 OF 82-22-10

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 & S14 of 82023A Sh. 8 of 17

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

REVISIONS			
NO.	DESCRIPTION	DATE	BY

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

SUPERSTRUCTURE DETAILS

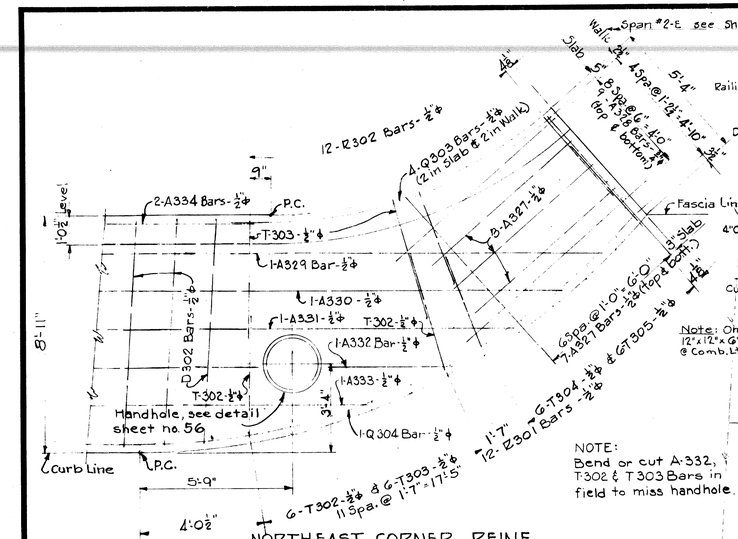
HAZELET & ERDAL - CONSULTING ENGINEERS FILE Nº 719

APPROVED 11-24-51 CHIEF BRIDGE DRAFTSMAN
APPROVED 11-24-51 ENGINEER OF BRIDGE DESIGN
APPROVED BRIDGE ENGINEER

SQUAD BOSS		9-21-51
DRAWN BY	R.K.	9-19-50
TRACED BY		
CHECKED BY	AHE	11-1-50

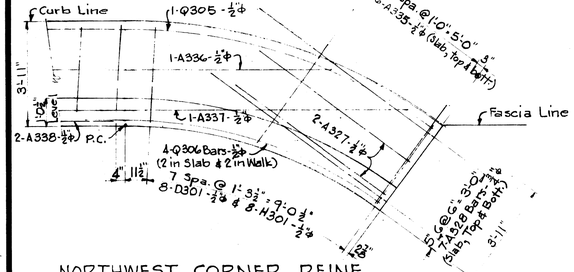
B31 OF 82-22-10

8 of 17

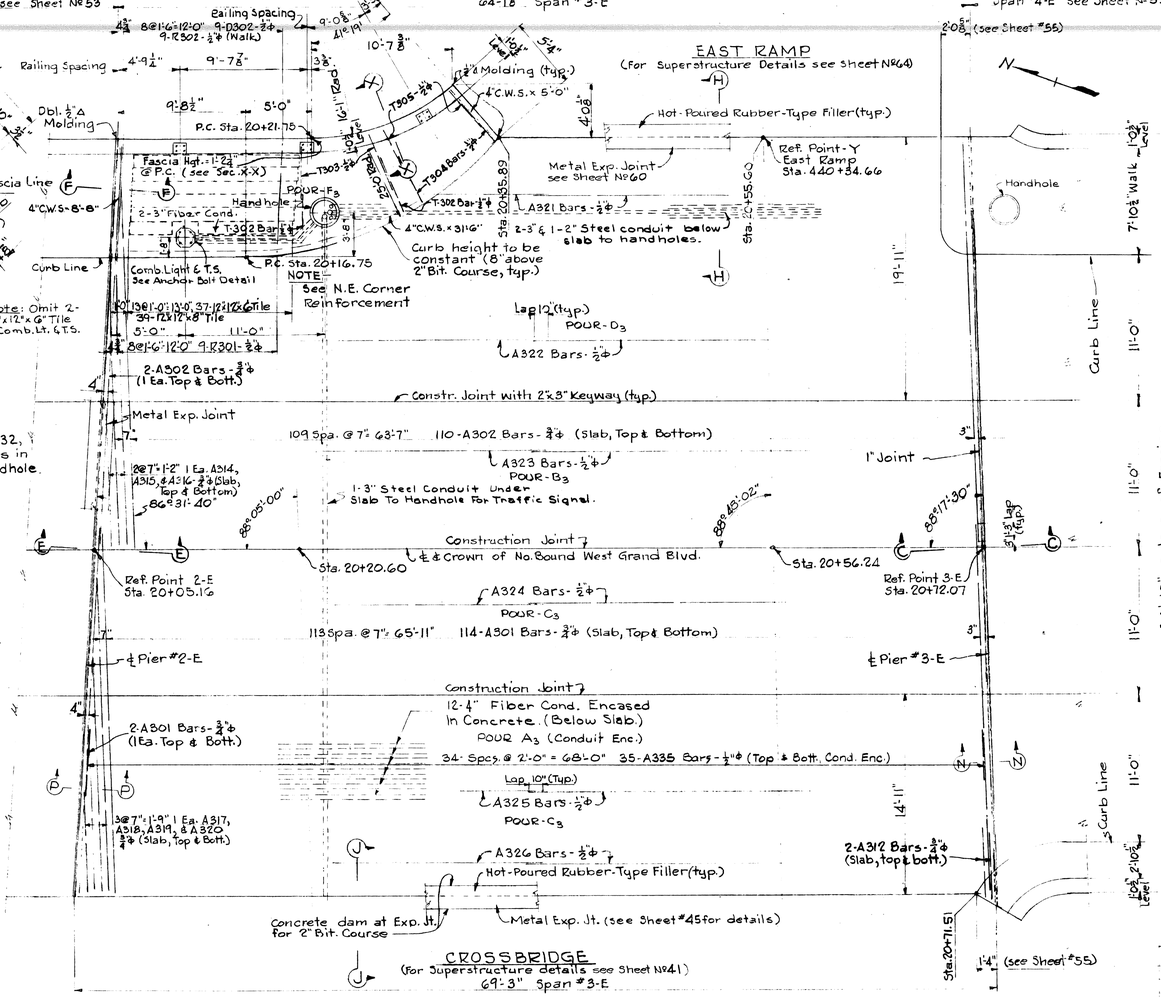


NORTHEAST CORNER REINF.
(Drawn for Sidewalk, Slab Reinforcement noted.)

NOTE:
Bend or cut A-332, T302 & T303 Bars in field to miss handhole.

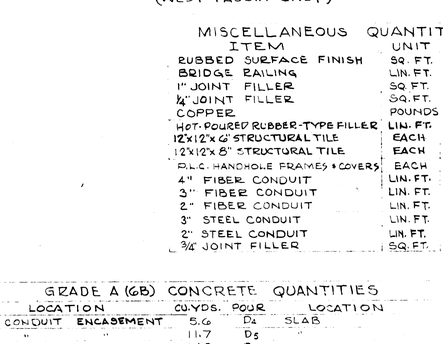


NORTHWEST CORNER REINF.
(Drawn for Sidewalk, Slab Reinforcement noted)
(See Sheet No 53 for Plan)



PLAN

NOTE-
For Sections C-C, E-E, & F-F, see Sheet #55.
For Sec. J-J see Sheet #41.
For Sec. N-N & PP see Sh. #56

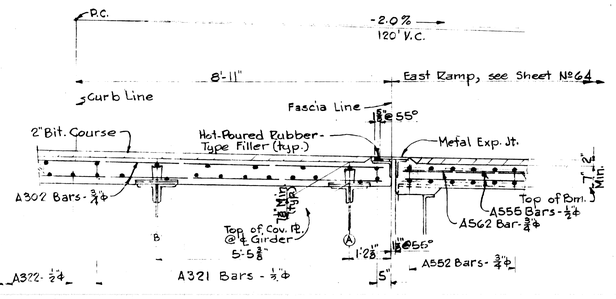


MISCELLANEOUS QUANTITIES

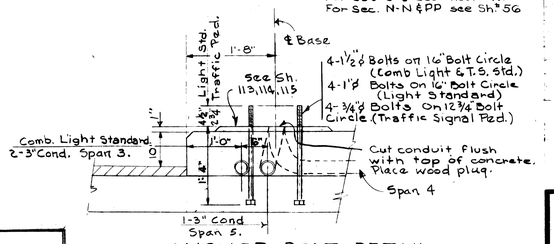
ITEM	UNIT	AMOUNT
RUBBED SURFACE FINISH	SQ. FT.	771
BRIDGE RAILING	LIN. FT.	368.5
1" JOINT FILLER	SQ. FT.	164
¼" JOINT FILLER	SQ. FT.	19
COPPER	POUNDS	262
HOT-POURED RUBBER-TYPE FILLER	LIN. FT.	309
12"x12"x6" STRUCTURAL TILE	EACH	833
12"x12"x8" STRUCTURAL TILE	EACH	495
R.I.C. HANDHOLE FRAMES & COVERS	EACH	2
4" 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
¾" JOINT FILLER	SQ. FT.	1180

GRADE A (GB) CONCRETE QUANTITIES

POUR	LOCATION	CU.YDS.	POUR	LOCATION	CU.YDS.
A1	CONDUIT ENCASEMENT	5.6	D4	SLAB	26.2
A2	" "	11.7	D5	"	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	E5	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	" "	12.8
C2	"	14.6	F5	EAST SIDEWALK	6.0
C3	"	17.6	G1	WEST SIDEWALK	2.7
C4	"	14.3	G2	" "	5.5
C5	"	8.3	G3	" "	5.6
D1	"	15.7	G4	WEST SIDEWALK	2.7
D2	"	26.7	Total N. Bound Lane Concrete 436.5 Cu Yds		
D3	SLAB	31.3			



SECTION H-H



ANCHOR BOLT DETAIL
(Typical For Light Standard & Traffic Signal Ped.

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

REVISIONS

NO.	DESCRIPTION	DATE	BY

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 & S14 of 82023A Sh. 9 of 17

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

SUPERSTRUCTURE DETAILS

HAZELET & ERDAL — CONSULTING ENGINEERS FILE No 719

APPROVED _____ CHIEF BRIDGE DRAFTSMAN 11-24-51

APPROVED _____ ENGINEER OF BRIDGE DESIGN 11-24-51

APPROVED _____ BRIDGE ENGINEER

SQUAD BOSS	JHV	9-21-51
DRAWN BY	E.T.K.	9-19-50
TRACED BY		
CHECKED BY	AHE	11-2-50

SHEET B32 of 82-22-10

9 of 17

Span #3-E see Sheet No 54

55'-5" Span #4-E

27'-0" Span #5-E

N

SOUTHEAST CORNER REINF.
(Drawn for Sidewalk, Slab Reint. noted)

NOTE:
Bend or Cut A310, D303 Bars in field to miss handhole.

SECTION Z-Z

SOUTHWEST CORNER REINF.
(Drawn for Sidewalk, Slab Reinforcement noted)

SECTION C-C

MOLDING DETAILS

SECTION D-D

PLAN

SECTION E-E

SECTION F-F

ELEVATION

ISOMETRIC
(AT FASCIA OR CURB LINE)

SECTIONAL PLAN - ENDWALL

ENDWALL ELEVATION

DETAIL - A or D
(DRAWN FOR DET. A, DETAIL - D OPPOSITE HAND & NOTED)

DETAIL - B or E
(DRAWN FOR DET. B, DETAIL - E OPPOSITE HAND & NOTED)

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

NOTE-
For Sections A-A, & B-B also Detail C see Sheet #53
For Sections X-X, & Y-Y see Sheet #54

REVISIONS

NO.	DESCRIPTION	DATE	BY

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 & S14 of 82023A Sh. 10 of 17

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

SUPERSTRUCTURE DETAILS

HAZELET & ERDAL - CONSULTING ENGINEERS FILE No 719

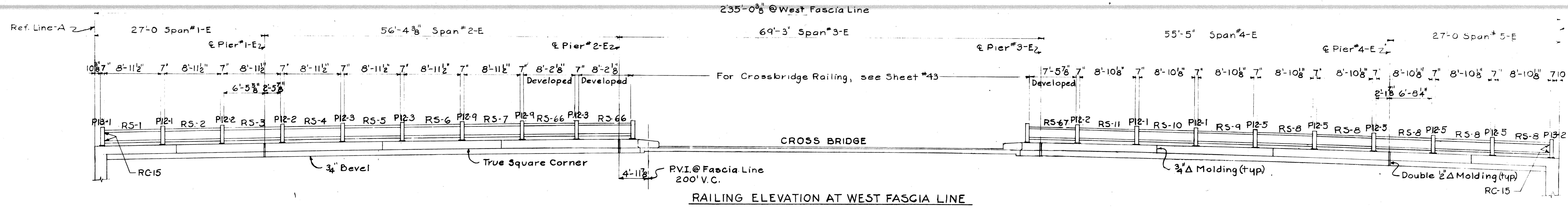
APPROVED _____ 11-26-51
CHIEF BRIDGE DRAFTSMAN

APPROVED _____ 11-24-51
ENGINEER OF BRIDGE DESIGN

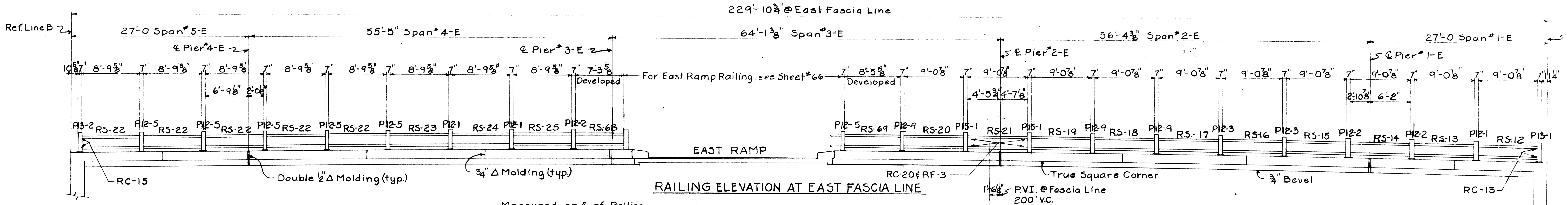
APPROVED _____
BRIDGE ENGINEER

SQUAD BOSS	DAH	9-21-51
DRAWN BY	RRK	9-19-50
TRACED BY		
CHECKED BY	AHE	11-2-50
SHEET		B32

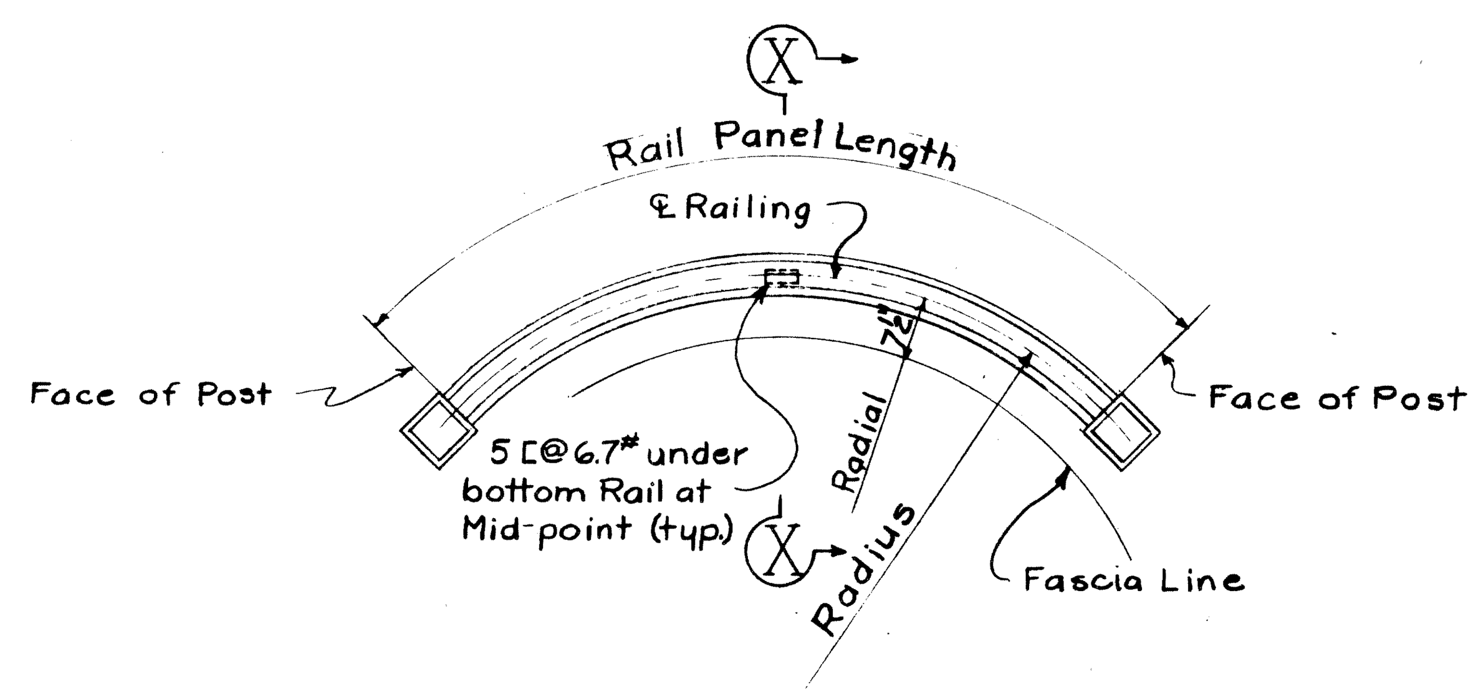
B32 OF 82-22-10

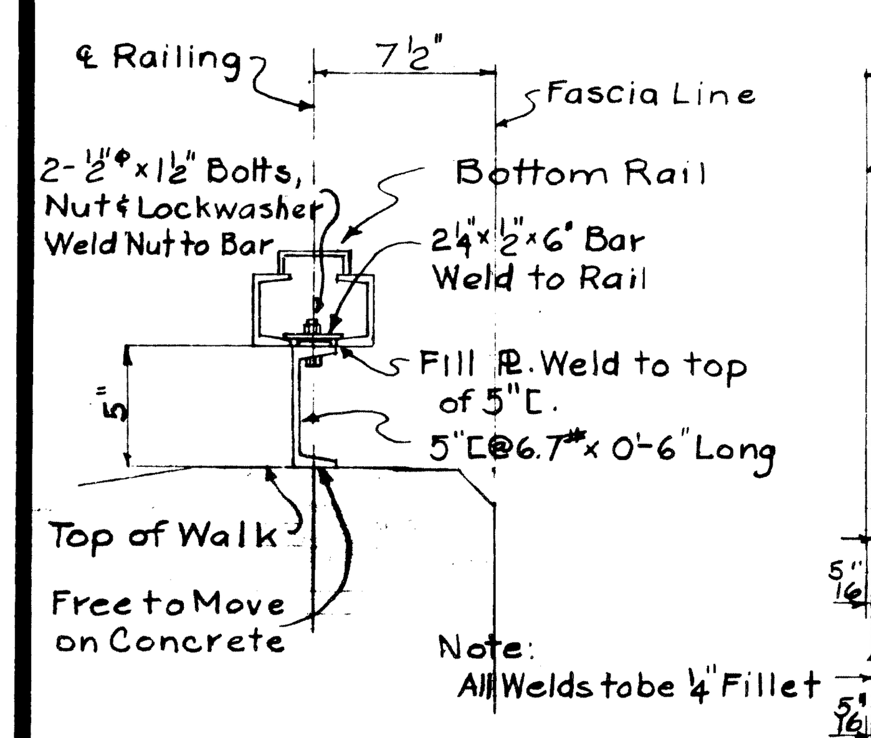


RAILING ELEVATION AT WEST FASCIA LINE

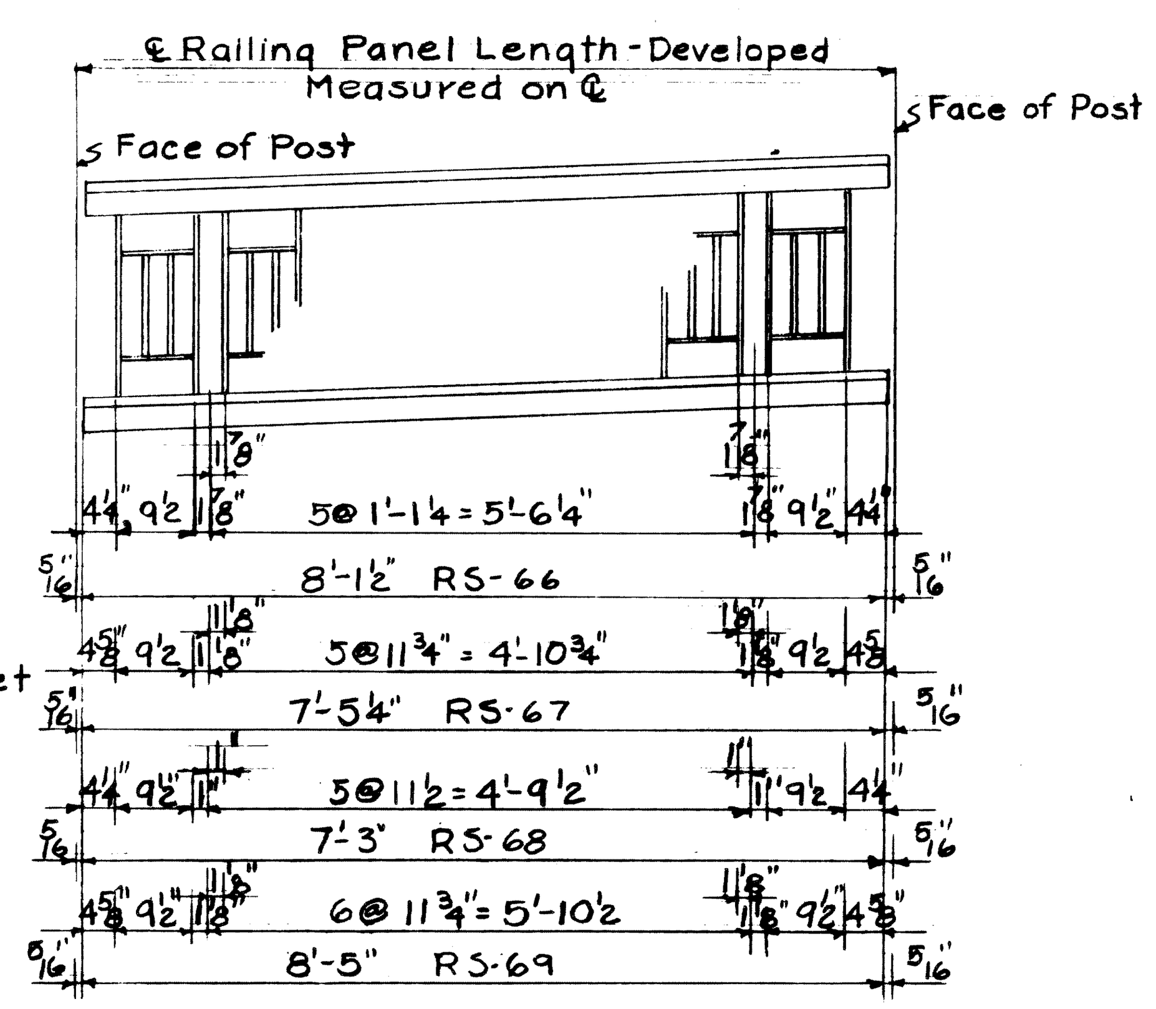


RAILING ELEVATION AT EAST FASCIA LINE

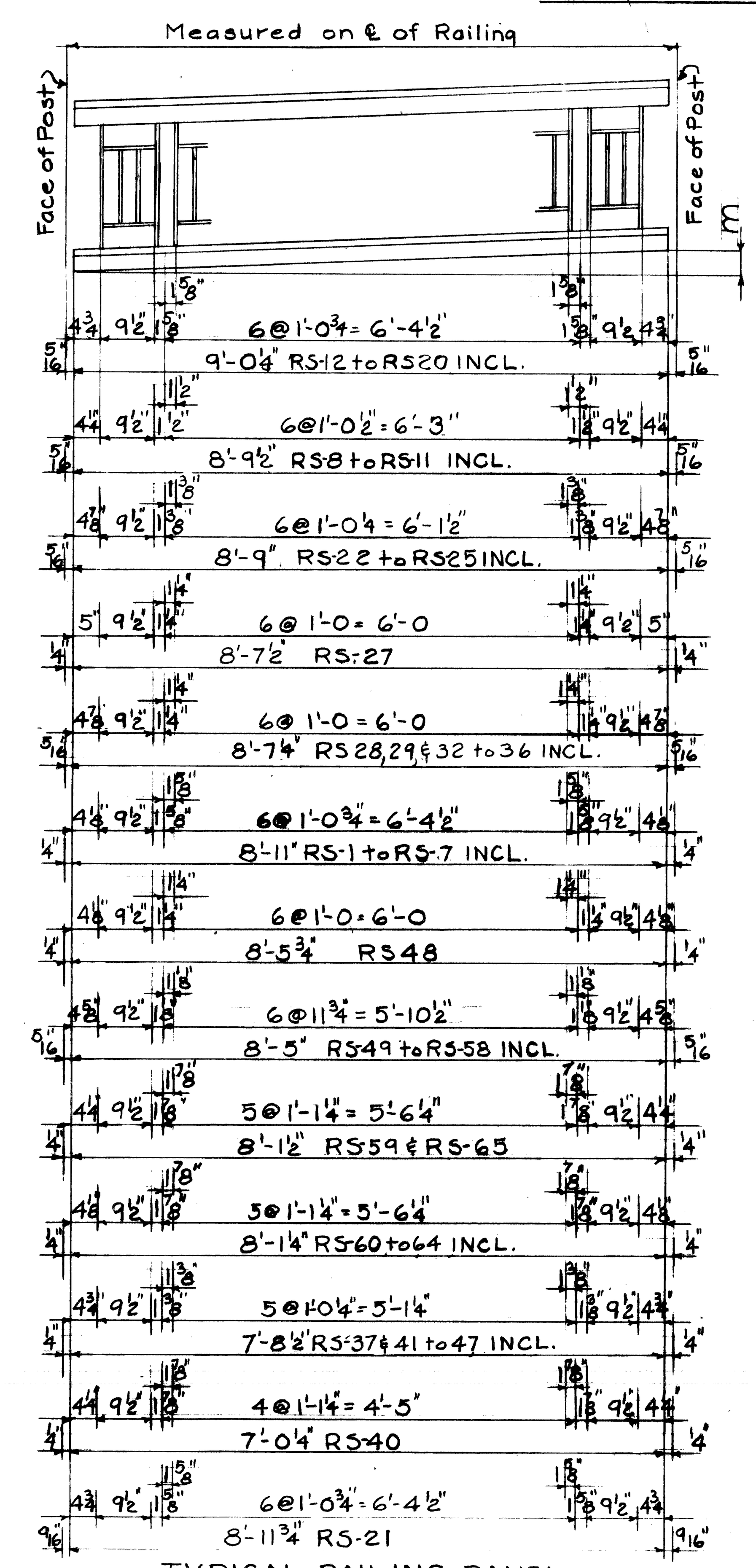




SECTION X-X



TYPICAL CURVED RAILING PANEL



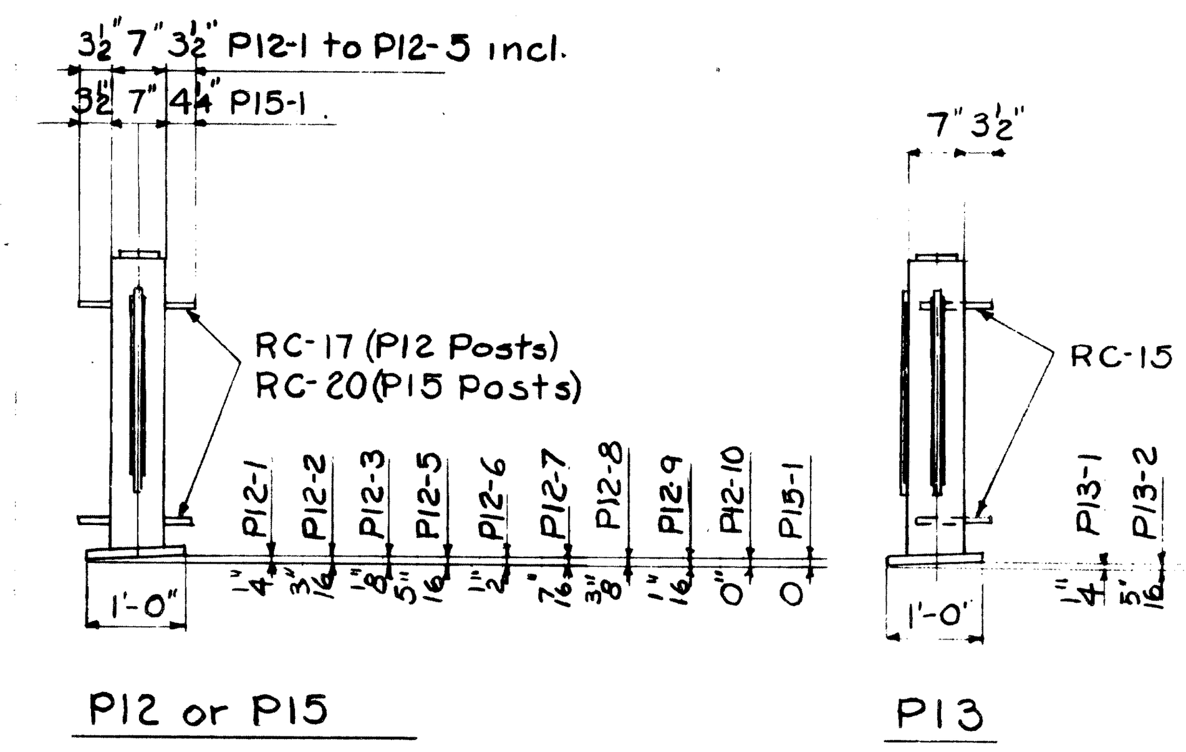
TYPICAL RAILING PANEL

BILL OF RAILING MATERIAL

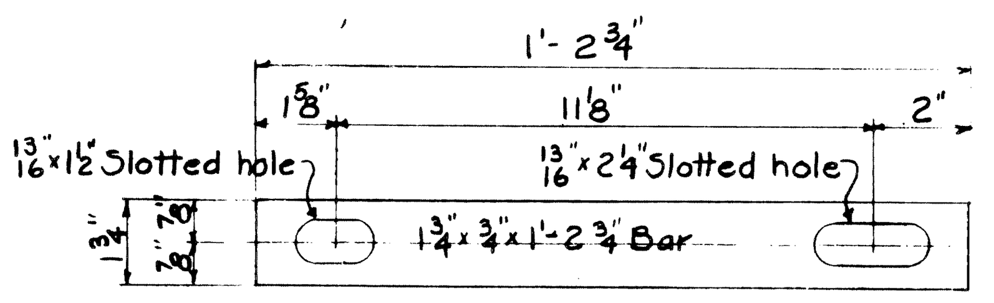
MARK	Nº REQ.	m	DESCRIPTION	MARK	Nº REQ.	m	RAD.	DESCRIPTION
RS-1	1	2¼"	RAILING SECTION	RS62	1	1¼"		RAILING SECTION
RS-2	1	2"	" "	RS63	1	⅞"		" "
RS-3	1	1¾"	" "	RS64	2	¾"		" "
RS-4	1	1½"	" "	RS65	1	¾"		" "
RS-5	1	1¼"	" "	RS66	3	¾"	16'-8½"	" "
RS-6	1	1"	" "	RS67	1	⅞"	4'-8½"	" "
RS-7	1	¾"	" "	RS68	1	3⅜"	4'-8½"	" "
RS-8	5	2⅝"	" "	RS69	3	2⅞"	16'-8½"	" "
RS-9	1	2½"	" "					
RS-10	1	2¼"	" "					
RS-11	1	2"	" "					
RS-12	1	2⅛"	" "					
RS-13	1	1⅞"	" "					
RS-14	1	1⅝"	" "					
RS-15	1	1⅜"	" "					
RS-16	1	1⅛"	" "					
RS-17	1	⅞"	" "	P12-1	8			RAILING POST
RS-18	1	⅝"	" "	P12-2	7			" "
RS-19	1	⅜"	" "	P12-3	12			" "
RS-20	1	¼"	" "	P12-5	22			" "
RS-21	1	⅛"	" "	P12-6	68			" "
RS-22	5	2⅝"	" "	P12-7	12			" "
RS-23	1	2½"	" "	P12-8	7			" "
RS-24	1	2¼"	" "	P12-9	9			" "
RS-25	1	2"	" "	P12-10	1			" "
RS-26	1	½"	" "	P13-1	4			" "
RS-27	1	2⅝"	" "	P13-2	2			" "
RS-28	1	2¾"	" "	P15-1	* 2			" "
RS-29	1	3"	" "	P16-1	† 2			" "
RS-30	1	½"	" "	P16-2	† 2			" "
RS-31	ON SHEET #20		" "	P16-3	† 1			" "
RS-32	1	3⅛"	" "	P16-4	† 1			" "
RS-33	1	3⅜"	" "					
RS-34	1	3½"	" "					
RS-35	2	3¾"	" "	RF-3	4			RAILING FLANGE
RS-36	1	4"	" "	RF-4	612			
RS-37	4	3⅝"	" "	RF-5	12			
RS-38	2	⅝"	" "					
RS-39	2	⅝"	" "					
RS-40	12	3⅜"	" "	BOLTS	616			¾"φ x 2¼" HEX. HD.
RS-41	56	3¾"	" "	BOLTS	12			¾"φ x 2" HEX. HD.
RS-42	2	2"	" "					
RS-43	2	2⅜"	" "					
RS-44	1	2¾"	" "	WASHERS	616			¾" LOCKWASHERS
RS-45	2	3"	" "					
RS-46	2	3⅜"	" "					
RS-47	1	2⅝"	" "	ANCHORS	640			¾" x 10" Sq Hd, Hex. Nut.
RS-48	1	2⅜"	" "					
RS-49	1	2½"	" "					
RS-50	1	2⅝"	" "					
RS-51	1	2¾"	" "					
RS-52	1	3"	" "					
RS-53	1	3⅛"	" "					
RS-54	1	3¼"	" "					
RS-55	1	3⅜"	" "					
RS-56	1	3⅝"	" "					
RS-57	1	3¾"	" "					
RS-58	1	3⅞"	" "					
RS-59	1	½"	" "					
RS-60	1	⅜"	" "					
RS-61	3	½"	" "					

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

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



P12 or P15 — P13



RAILING CLIP RC-20

4 Thus Req. - Use with Posts P15 only.

NOTES –
For Railing Details not shown hereon see M.S.H.D. Std. Dwg. R4.
For Railing Post, Railing Flange, and Railing Clip Details not shown hereon see M.S.H.D. Std 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 Nº 66.

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 & S14 of 82023A Sh. 11 of 17

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

RAILING DETAILS

HAZELET & ERDAL - CONSULTING ENGINEERS — FILE Nº 719

APPROVED [signature] 11-29-51 — CHIEF BRIDGE DRAFTSMAN

APPROVED [signature] 11-29-51 — ENGINEER OF BRIDGE DESIGN

APPROVED ______ — BRIDGE ENGINEER

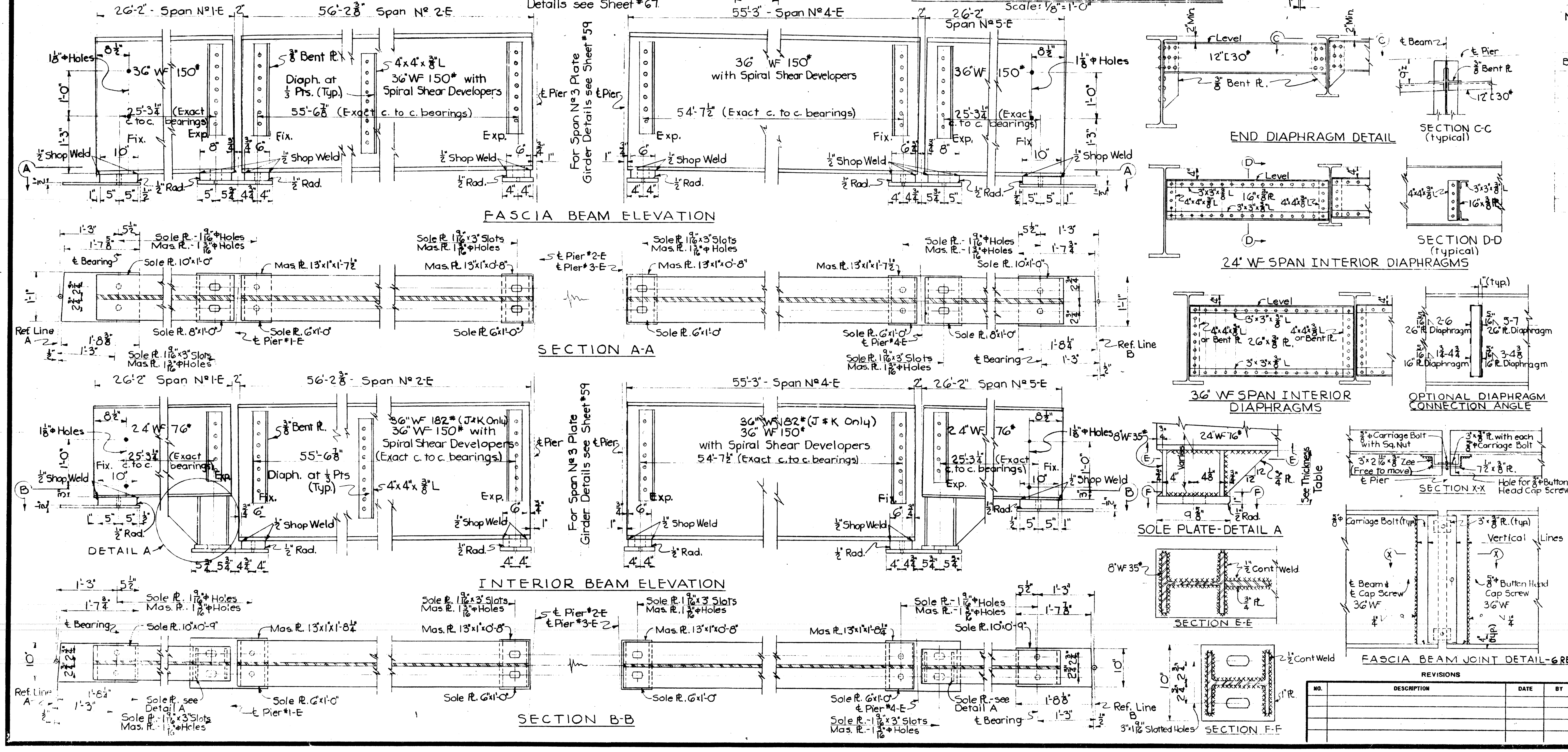
SQUAD BOSS	RHW	
DRAWN BY	W.H.C.	9-20-51
TRACED BY		
CHECKED BY		

SHEET [redacted]

B32 OF 82-22-10

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 & S14 of 82023A Sh. 12 of 17



Note: Sole Plate thicknesses are measured at ℄ Bearing. Bevel Sole Plates so that Bearing Surface is Horizontal on Masonary Plates.

SOLE PLATE THICKNESS TABLE - WF BEAM SPANS

BEAM	SPAN Nº 1-E ABUT A-E	SPAN Nº 1-E PIER 1-E	SPAN Nº 2-E PIER 1-E	SPAN Nº 2-E PIER 2-E	SPAN Nº 4-E PIER 3-E	SPAN Nº 4-E PIER 4-E	SPAN Nº 5-E PIER 4-E	SPAN Nº 5-E ABUT. B-E
A	2"	2"	2⅛"	2"	2"	2¼"	2"	2"
B	3¼"	1'-3¼"	3⅜"	3¼"	3¼"	3½"	1'-3¼"	2"
C	4½"	1'-4⅝"	4¾"	4¾"	4⅝"	4⅞"	1'-4⅝"	3⅜"
D	2½"	1'-2¾"	2⅞"	2⅝"	2¾"	2⅞"	1'-2⅝"	4⅜"
E	3½"	1'-3⅝"	3⅞"	3⅝"	3¾"	3¾"	1'-3½"	2¼"
F	4"	1'-4¼"	4⅜"	4¼"	4⅜"	4⅜"	1'-4⅛"	2¾"
G	3⅞"	1'-4⅛"	4¼"	4¼"	4¼"	4¼"	1'-4"	2¾"
H	3⅛"	1'-3½"	3⅝"	3½"	3⅝"	3⅝"	1'-3⅜"	2"
J	2"	1'-2⅜"	2"	2"	2"	2"	1'-2¼"	3⅛"
K	3⅞"	1'-3⅝"	3¾"	4⅛"	3⅞"	4"	1'-3⅝"	2"
L	2½"	2¾"	2⅞"	3¼"	3"	3⅛"	2¾"	2¾"

STRUCTURAL STEEL NOTES

Fabrication: Michigan State Highway Department's Standard Specifications for Road & Bridge Construction - 1950 Edition.

Design: Michigan State Highway Department's Standard Specifications for the Design of Highway Bridges - 1936 Edition (H20-S16-44 Loading). LL+Inp. $\Delta = \frac{SPAN}{1000}$ & $\frac{CANTILEVER}{350}$.

Shop Connections: All shop connections shall be riveted unless otherwise shown or noted. Shop welding may, however, be substituted for shop riveting for diaphragm connections.

Rivets: Plate Girder Span - ¾"Φ Rolled Beam Spans - ¾"Φ

Field Connections: Field connections unless otherwise noted shall be riveted or bolted with turned bolts.

Turned Bolts: Turned bolts 13/16"Φ with ¾" thread. The length from head to shoulder shall be ⅛" more than the required grip.

Open Holes: Open holes shall be 13/16"Φ unless otherwise noted. Open holes for turned bolts shall be 27/32"Φ and shall be sub-punched or sub drilled 11/16"Φ and reamed to a steel template.

Shop Paint: In addition to the Shop Paint Provisions of the Standard Specifications the top surface of masonry plates shall be coated in accordance with the requirements for machine finished surfaces. Top surface of beams with Spirals shall be given one coat of boiled linseed oil only.

Sole Plates: Sole Plates 3" or more in thickness may be built up by welding together plates not less than 1½" in thickness. Edges shall be beveled ¼" and welded with a continuous weld for the full perimeter. Welds shall be ground flush with faces of plate.

Welding: All welding shall be in accordance with American Welding Society Specifications.

Camber: No camber required in Spans # 1-E & # 5-E. Camber Rolled Beam Span # 2-E 1⅞" @ ℄. Camber Rolled Beam Span # 4-E 1½" @ ℄. See Sheet # 59 for Girder Camber.

B32 only { Total Estimated Structural Steel Wt. = 852,200#
Field Painting = Lump Sum
Total Wt. Spiral Shear Developers = 4710# }

Note: Work this sheet with sheets # 23, 44, 59 & 67.

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

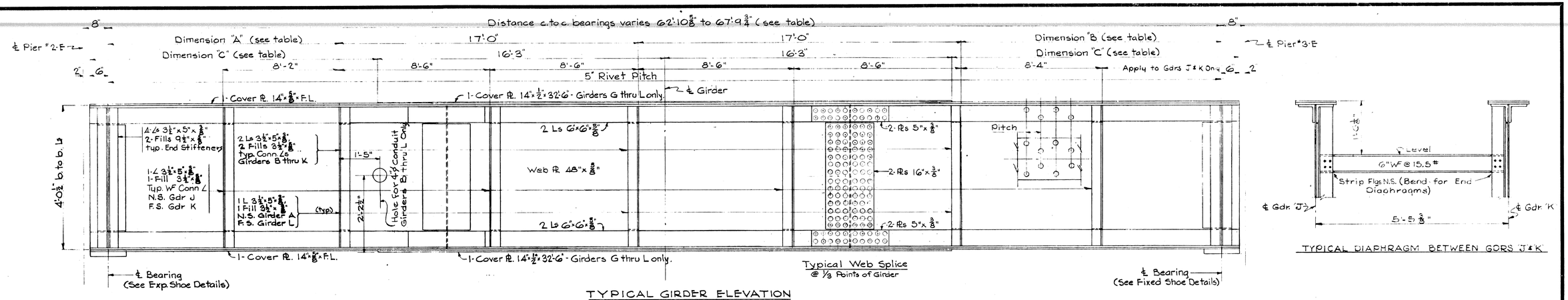
STRUCTURAL STEEL DETAILS

HAZELET & ERDAL - CONSULTING ENGINEERS FILE Nº 719

APPROVED [signature] 11-29-51 CHIEF BRIDGE DRAFTSMAN
APPROVED [signature] 11-29-51 ENGINEER OF BRIDGE DESIGN
APPROVED ____ BRIDGE ENGINEER

SQUAD BOSS	RHV	9-21-51
DRAWN BY	C.L.C.	8-17-50
TRACED BY		
CHECKED BY	AHE	11-2-50

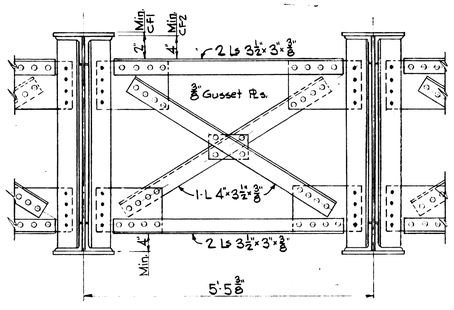
B32 OF 82-22-10



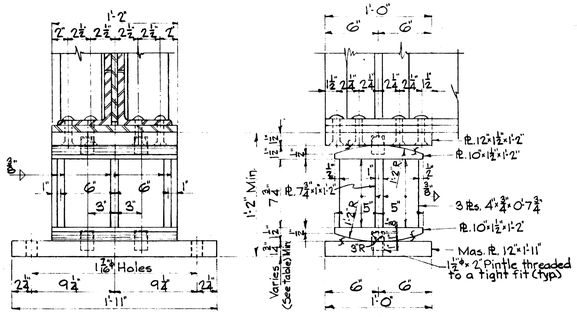
TYPICAL GIRDER ELEVATION

TYPICAL DIAPHRAGM BETWEEN GDRS J & K

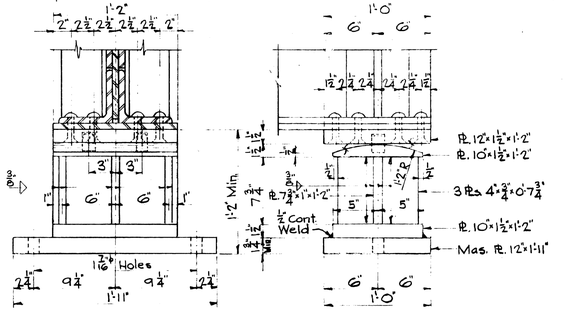
GIRDER	DISTANCE C. TO C. BRGS.	LENGTH OF GIRDER	DIMENSIONS "A"	"B"	"C"	MASONRY & THICKNESS PIER #2-E	PIER #3-E
A	62'-10 5/8"	63'-10 5/8"	13'-7 1/8"	15'-3 1/2"	15'-8 5/16"	1 3/4"	1 3/4"
B	63'-4 1/2"	64'-4 1/2"	13'-11 1/8"	15'-5 3/8"	15'-11 1/4"	3 1/16"	3 1/16"
C	63'-10 1/4"	64'-10 1/2"	14'-3 1/8"	15'-7 1/8"	16'-2 1/4"	4 1/2"	4 1/2"
D	64'-4 3/8"	65'-4 3/8"	14'-7 1/8"	15'-9 1/2"	16'-5 3/16"	1 3/4"	1 3/4"
E	64'-10 1/4"	65'-10 1/4"	14'-11 1/8"	15'-11 1/8"	16'-8 1/16"	2 3/4"	2 3/4"
F	65'-4 1/4"	66'-4 1/4"	15'-3"	16'-1 1/4"	16'-11 1/16"	3 3/8"	3 3/8"
G	65'-10 1/8"	66'-10 1/8"	15'-7"	16'-3 1/8"	17'-2 1/16"	2 1/16"	2 3/4"
H	66'-4"	67'-4"	15'-11"	16'-5"	17'-5"	2 1/4"	2 1/16"
J	66'-10"	67'-10"	16'-2 1/8"	16'-7 1/8"	17'-8"	5"	4 7/16"
K	67'-3 7/8"	68'-3 7/8"	16'-6 7/8"	16'-9"	17'-10 3/16"	4"	3 5/8"
L	67'-9 3/4"	68'-9 3/4"	16'-10 7/8"	16'-10 7/8"	18'-1 7/8"	2 5/8"	2 1/4"



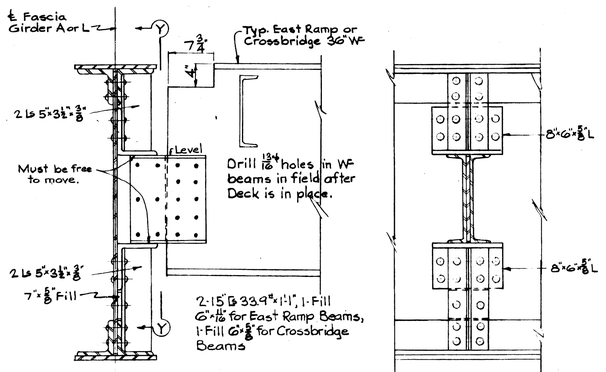
TYPICAL CROSS FRAME
CF-2 As shown
CF-1 Gusset Pls Bent to Skew.



EXPANSION SHOE AT PIER #2-E

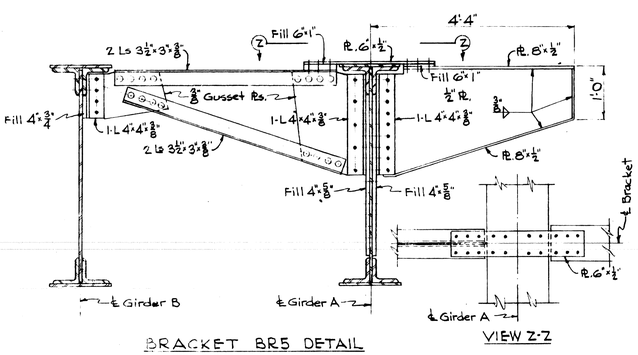


FIXED SHOE AT PIER #3-E



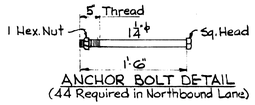
DETAIL X

SECTION Y-Y



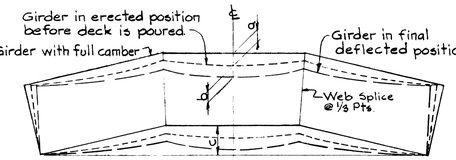
BRACKET BR5 DETAIL

VIEW Z-Z



ANCHOR BOLT DETAIL
(44 Required in Northbound Lane)

PIER BEARING DETAILS

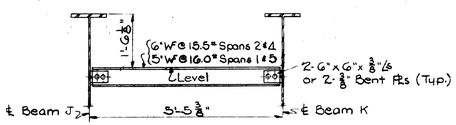


a. Dead Load deflection due to weight of girder & cross bracing.
b. Dead Load deflection due to weight of slab and 2" bit. concrete wearing course
c. Total Camber of girder

DEFLECTION DIAGRAM - SPAN #3-E

GIRDER	a		b		c
	℄	1/3 Pts.	℄	1/3 Pts.	
A	.10"	.09"	.36"	.31"	1.72"
B	.11	.10	.39	.34	1.78
C	.12	.10	.31	.27	1.73
D	.13	.11	.32	.28	1.77
E	.14	.12	.32	.28	1.80
F	.14	.12	.34	.30	1.84
G	.12	.10	.30	.26	1.80
H	.13	.11	.30	.26	1.84
J	.13	.11	.52	.45	2.05
K	.13	.11	.53	.46	2.08
L	.09	.08	.24	.21	1.82

GIRDER	MOMENTS & REACTIONS MOMENTS DL	LL	Imp.	Total	MAX. REACTIONS DL	LL	Imp.	Total	DLA @ ℄
A	549'K	519'K	121'K	1189'K	28.6K	46.6K	11.7K	86.9K	0.45"
B	603	580	129	1312	33.6	47.7	11.7	93.0	0.50
C	521	527	137	1185	32.6	45.2	11.7	89.5	0.43
D	539	557	145	1241	33.4	45.3	11.7	90.4	0.45
E	547	568	153	1288	33.7	45.5	11.8	91.0	0.46
F	555	618	161	1334	40.0	45.6	11.8	97.4	0.48
G	564	654	170	1388	34.2	45.5	11.8	91.5	0.42
H	572	690	179	1441	34.5	45.5	11.8	91.8	0.43
J	864	726	189	1779	51.6	45.5	11.8	108.9	0.65
K	866	761	198	1825	51.5	46.5	12.1	110.1	0.66
L	423	797	207	1427	25.0	48.4	12.6	86.0	0.33



TYPICAL DIAPHRAGM BETWEEN BMS J & K
SPANS #1, 2, 4, & 5.

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 & S14 of 82023A Sh. 13 of 17

Note: Work this sheet with Sheets # 44, 58 & 67

REVISIONS

NO.	DESCRIPTION	DATE	BY

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

STRUCTURAL STEEL DETAILS

HAZELET & ERDAL CONSULTING ENGINEERS FILE No 719

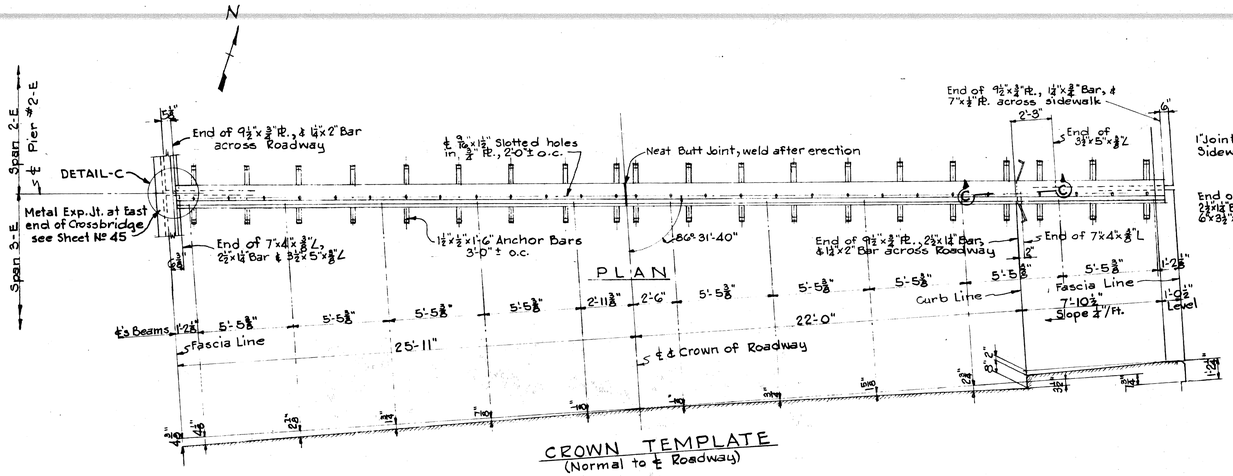
APPROVED _____ CHIEF BRIDGE DRAFTSMAN 11-29-51

APPROVED _____ ENGINEER OF BRIDGE DESIGN 11-29-51

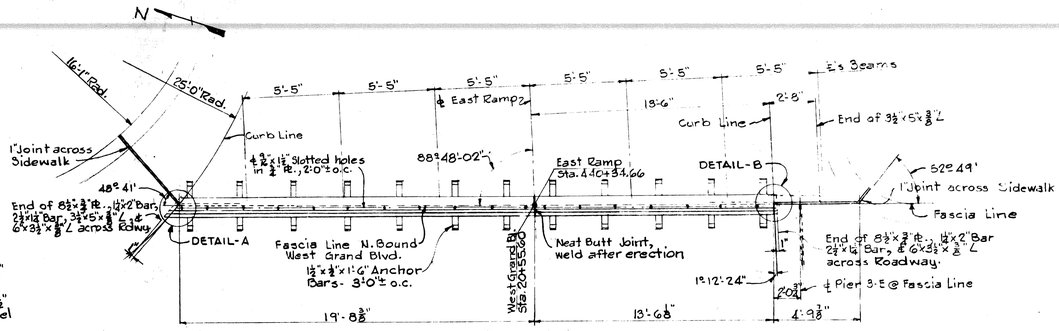
APPROVED _____ BRIDGE ENGINEER

SQUAD BOSS		9-21-51
DRAWN BY	CPW	8-17-50
TRACED BY		
CHECKED BY	AHE	11-51
SHEET		

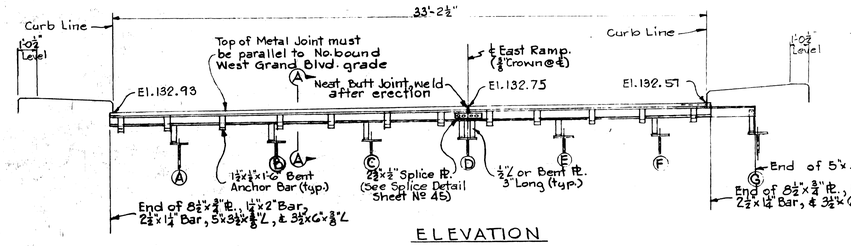
B32 OF 82-22-10



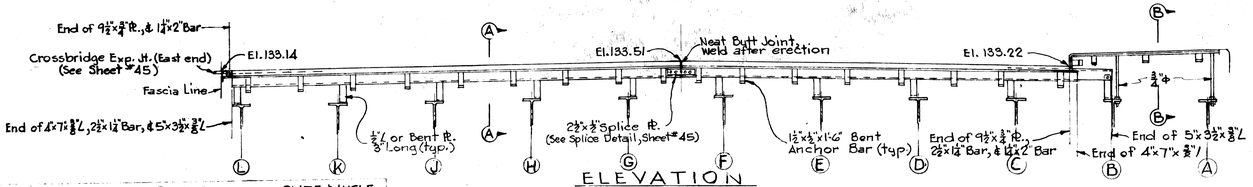
CROWN TEMPLATE
(Normal to ℄ Roadway)



PLAN

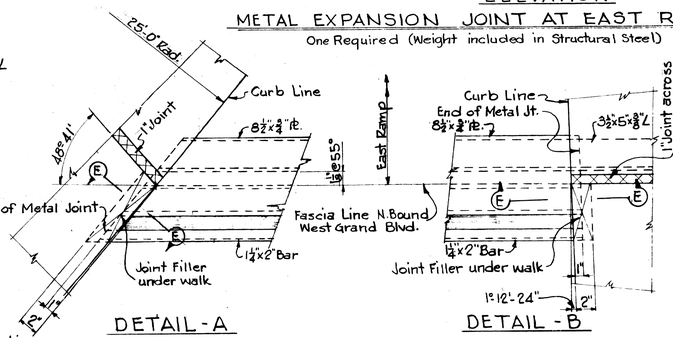


ELEVATION
METAL EXPANSION JOINT AT EAST RAMP
One Required (Weight included in Structural Steel)



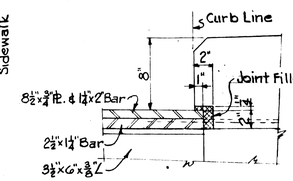
ELEVATION
METAL EXPANSION JOINT AT PIER № 2-E
One Required (Weight included in Structural Steel)

EXPANSION JOINT	DIMENSIONS A	B	C	D	E	F	G	PLATE & ANGLE H	J
PIER № 2-E	3"	1⅜"	2⅛"	2⅜"	2½"	⅜"	1⅜"	9½"x⅜" Pl.	7"x4"x⅜" L
EAST RAMP	2"	1¼"	1⅜"	1⅜"	1½"	⅜"	1⅜"	8½"x⅜" Pl.	6"x3½"x⅜" L

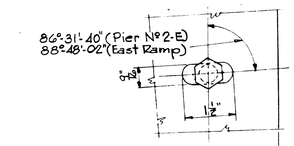


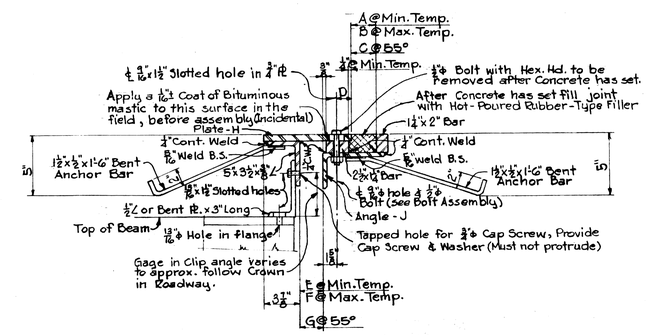
DETAIL-A

DETAIL-B

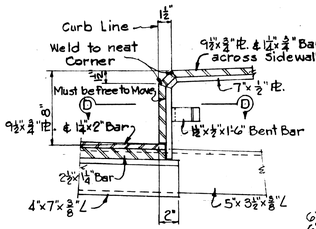


SECTION E-E

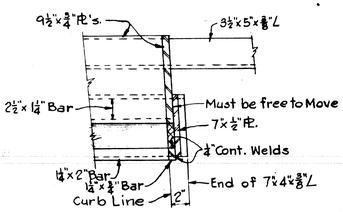




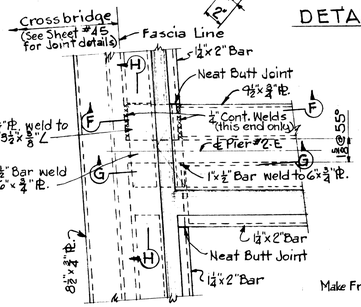
SECTION A-A



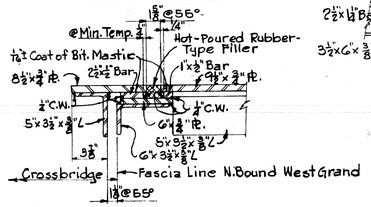
SECTION C-C



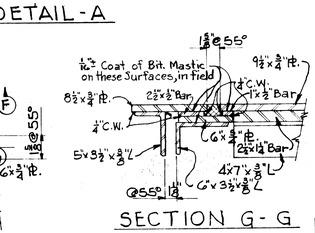
SECTION D-D



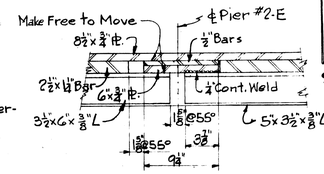
DETAIL-C



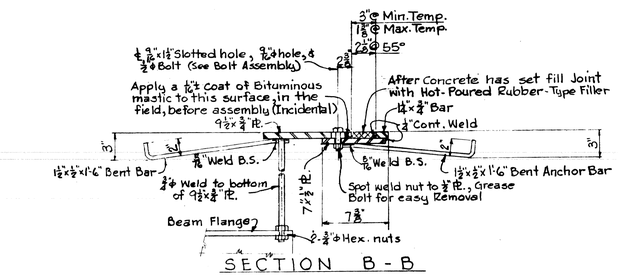
SECTION F-F



SECTION G-G



SECTION H-H



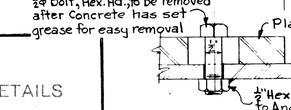
SECTION B-B

REVISIONS

NO.	DESCRIPTION	DATE	BY

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 & S14 of 82023A Sh. 14 of 17



BOLT ASSEMBLY-DETAIL

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

METAL FLOOR JOINT DETAILS

HAZELET & ERDAL, CONSULTING ENGINEERS FILE № 719

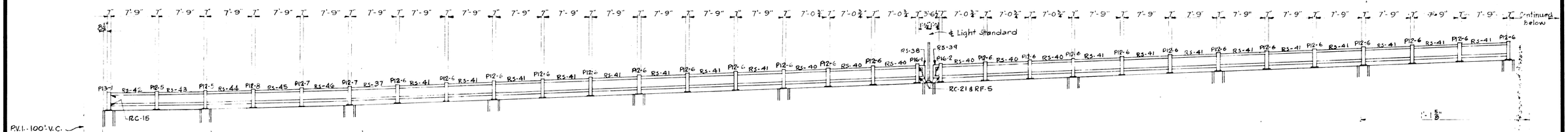
APPROVED _____ CHIEF BRIDGE DRAFTSMAN 11-29-57

APPROVED _____ ENGINEER OF BRIDGE DESIGN 11-29-57

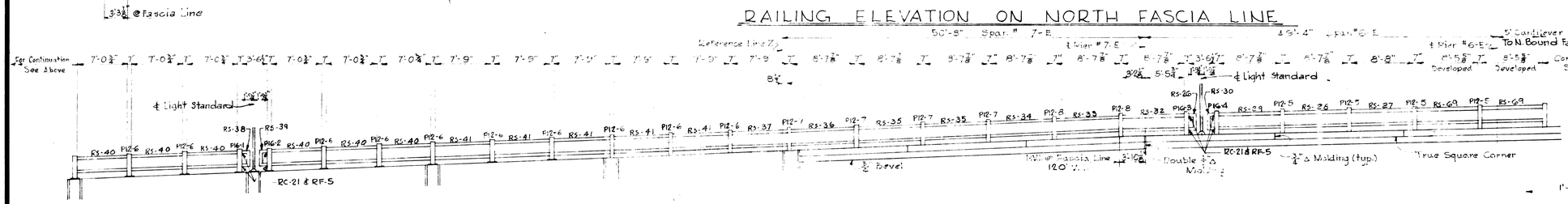
APPROVED _____ BRIDGE ENGINEER

SQUAD BOSS	JAN	9-21-57
DRAWN BY	RPR	10-16-57
TRACED BY		
CHECKED BY	AHE	11-21-57
SHEET		

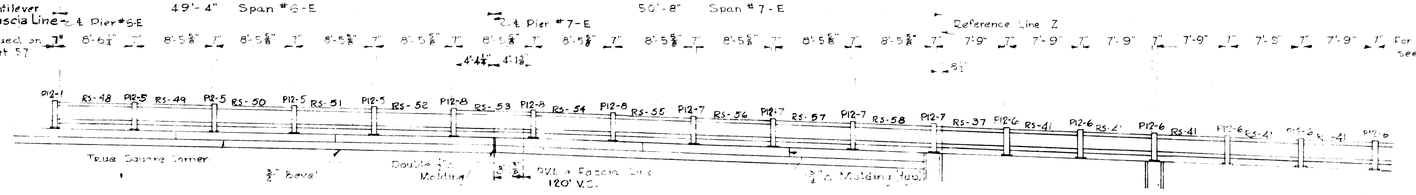
B32 OF 82-22-10



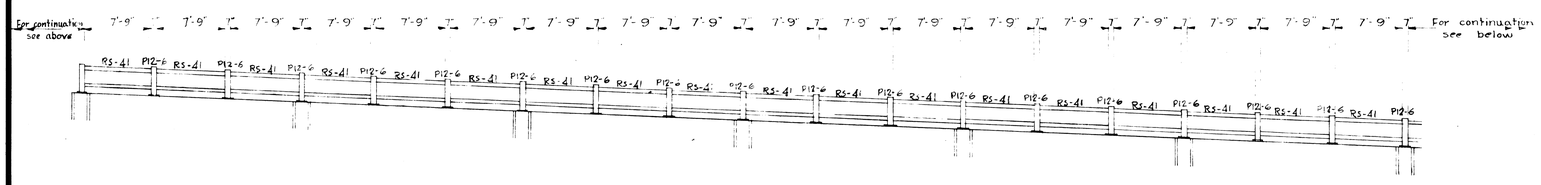
RAILING ELEVATION ON NORTH FASCIA LINE



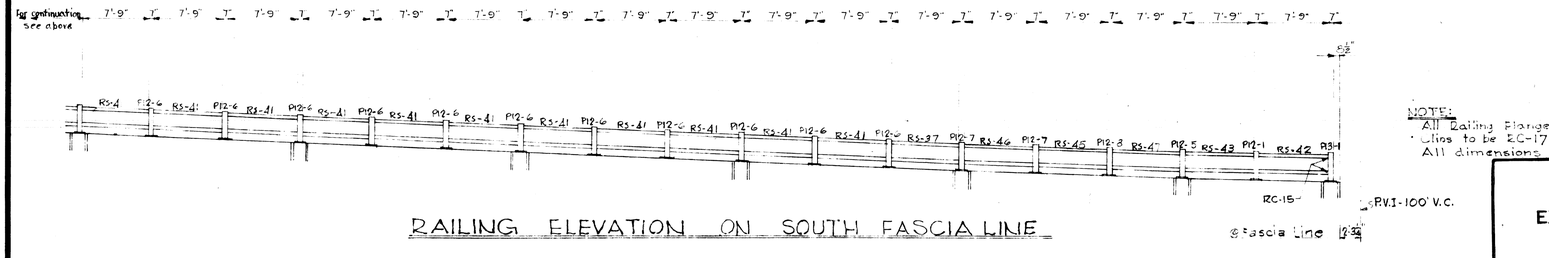
RAILING ELEVATION ON NORTH FASCIA LINE



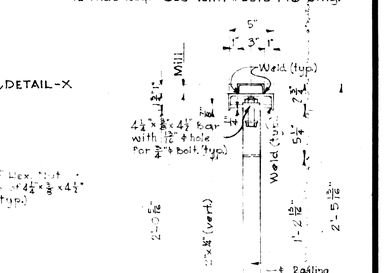
RAILING ELEVATION ON SOUTH FASCIA LINE



RAILING ELEVATION ON SOUTH FASCIA LINE



RAILING ELEVATION ON SOUTH FASCIA LINE



NOTE:
All exposed welds to be ground smooth.

NOTES:
For Railing details not shown here-on see Sheet 57 or M.S.H.D. std'd. drawing R 4.
For Railing Post, Railing Flange, and Railing Clip details not shown here-on see Sheet 57 or M.S.H.D. std'd. drawing R 5.

NOTE:
All Railing Flanges to be RF-4, and all Railing Clips to be RC-17 unless otherwise noted.
All dimensions shown along fascia line.

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

MICHIGAN STATE HIGHWAY DEPARTMENT

CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING WEST
GRAND BLVD. IN THE CITY OF DETROIT

RAILING DETAILS - EAST RAMP

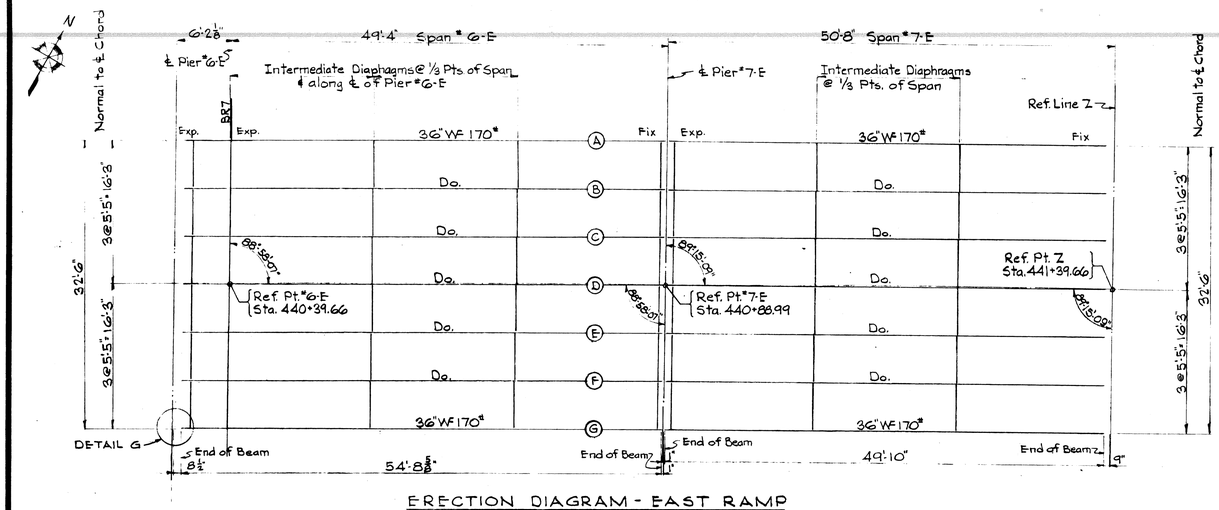
HAZELET & ERDAL - CONSULTING ENGINEERS FILE NO. 719

SQUAD BOSS	RDH	9-21-51
DRAWN BY	J.R.K.	9-12-51
TRACED BY		
CHECKED BY	J.H.C.	9-26-51

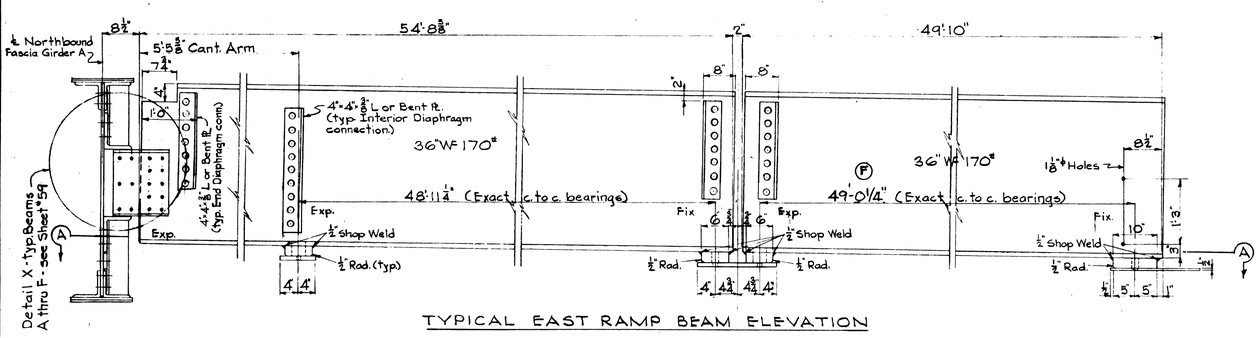
APPROVED _____ CHIEF BRIDGE DRAFTSMAN
APPROVED _____ ENGINEER OF BRIDGE DESIGN
APPROVED _____ BRIDGE ENGINEER

SHEET B32 of 82-22-10

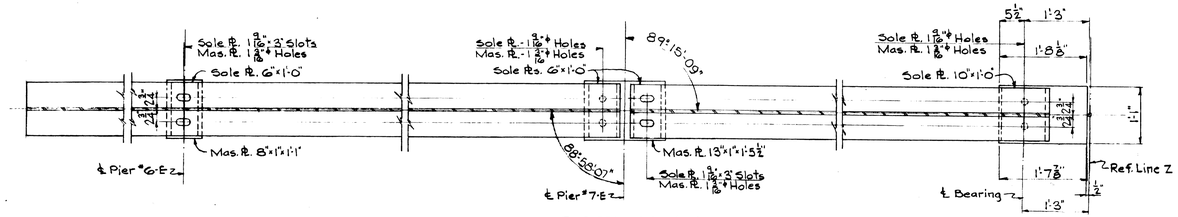
S13 & S14 of 82023A Sh. 15 of 17



ERECTION DIAGRAM - EAST RAMP
Scale: ⅛"=1'-0"



TYPICAL EAST RAMP BEAM ELEVATION



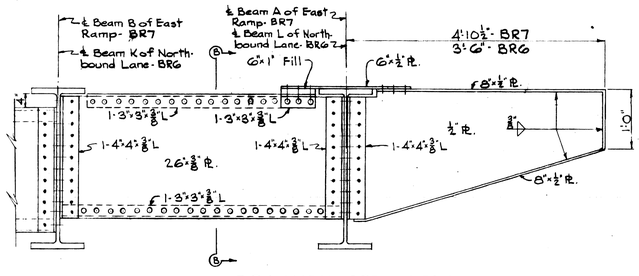
SECTION A-A

Ⓔ

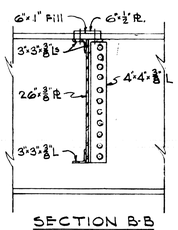
SOLE PL. THICKNESS TABLE - EAST RAMP

BEAM	SPAN "6-E		SPAN "7-E	
	PIER "6-E	PIER "7-E	PIER "7-E	ABUT. Z
A	3⅛"	2¼"	2"	2"
B	3"	2⅜"	2⅛"	2⅛"
C	2½"	2⅞"	2⅛"	2⅛"
D	2"	2⅜"	2"	2⅛"
E	3¾"	4⅞"	4½"	4½"
F	2⅞"	3⅜"	3¼"	3⅛"
G	2"	2¼"	2"	2"

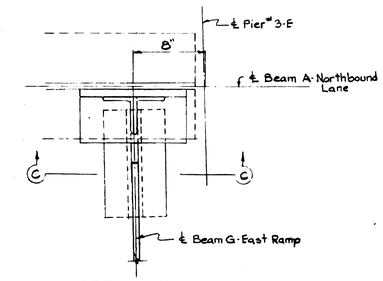
Note: Sole Pl. thicknesses are measured on ℄ Bearing. Bevel Sole Pls. to make bearing surfaces horizontal.



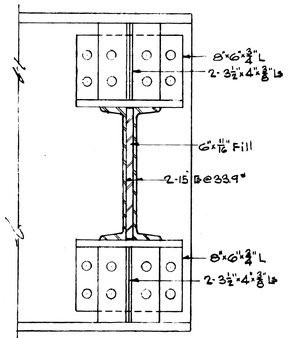
BRACKET BR7 DETAIL
BRACKET BR6 Similar except as noted



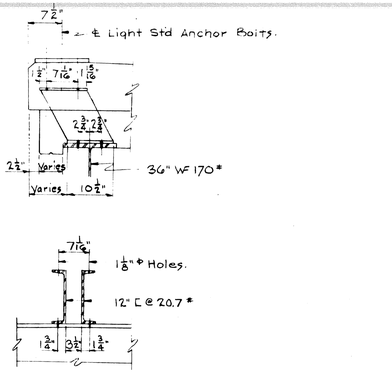
SECTION B-B



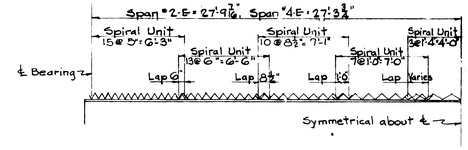
DETAIL G



SECTION C-C



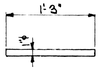
LIGHT STANDARD BRACKET DETAIL



SPIRAL SHEAR DEVELOPER DETAILS
NORTHBOUND LANE - SPANS "2-E & "4-E

Note: For Spiral Shear Developer notes and typical details see Sheet "44.

Note:
For typical Interior Diaphragm, End Diaphragm and Fascia Joint Details see Sheet № 58.



POSITION DOWEL DETAIL
56 Reqd. - East Ramp
176 Reqd. - Northbound Lane

Note: Work this sheet with Sheets "44, 58, 59 & 64.

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 & S14 of 82023A Sh. 16 of 17

REVISIONS

NO.	DESCRIPTION	DATE	BY
E	Corrected Sole Pl. thick. - Pier 6-E	8-25-52	F.J.C.
F	Corrected Dim. C. to C. bearings	9-20-52	F.J.C.

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

STRUCTURAL STEEL DETAILS - EAST RAMP

HAZELET & ERDAL - CONSULTING ENGINEERS FILE № 719

SQUAD BOSS		ADW	9-21-51
DRAWN BY		CPW	10-15-52
TRACED BY			
CHECKED BY		AHE	11-2-52
SHEET			

APPROVED _____ 11-4-52
DISTRICT BRIDGE DRAFTSMAN

APPROVED _____ 11-29-52
ENGINEER OF BRIDGE DESIGN

APPROVED _____
BRIDGE ENGINEER

B32 OF 82-22-10

16 of 17

METAL FLOOR JOINT AT PIER No. 2

ONE REQUIRED, WEIGHT IS INCLUDED IN STRUCTURAL STEEL

DETAIL OF CONDUIT LEDGE ANGLE (2 Required)
(Weight is included in Structural Steel)

RAILING ELEVATION

(ALL RAILING FLANGES TO BE RF-4 EXCEPT AS NOTED)

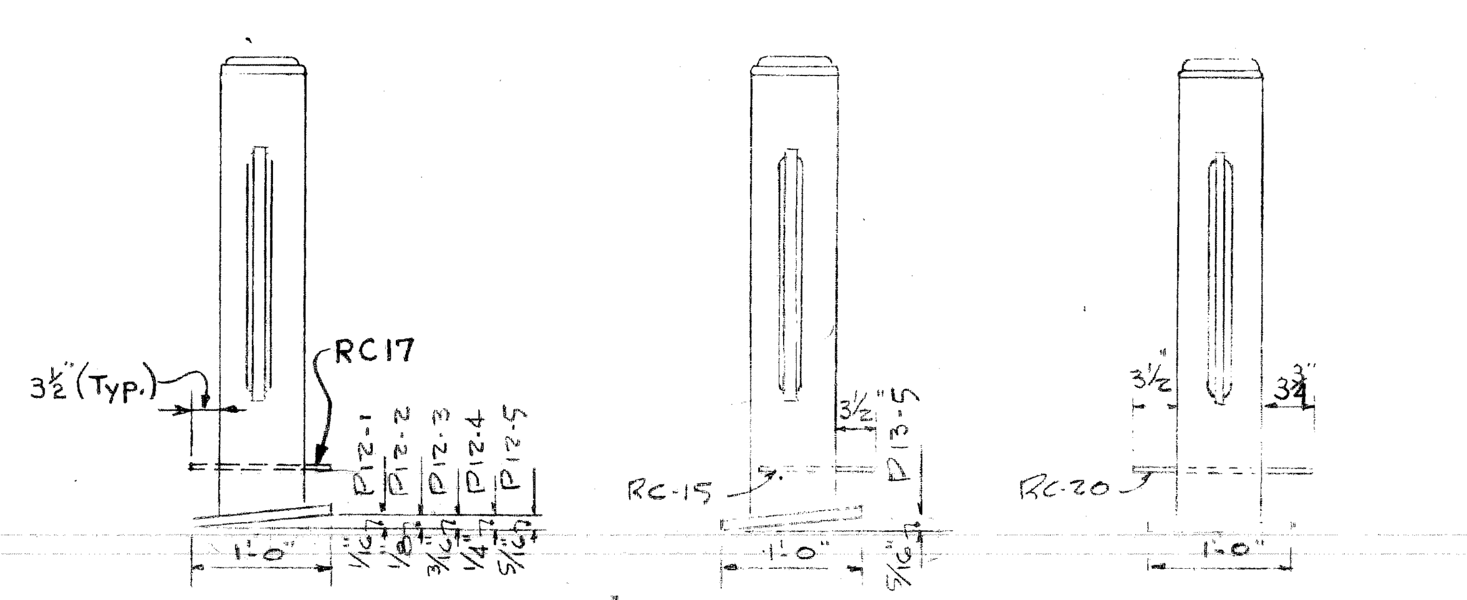
NOTES:

For Railing Details not shown see Michigan State Highway Dept. Std. Dwg. No. R4.

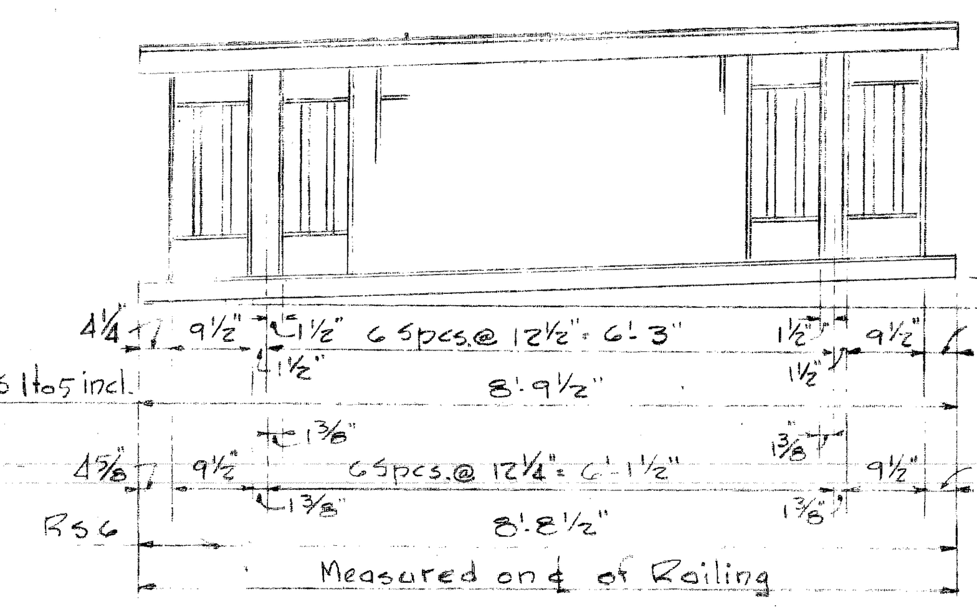
For Post Details see Michigan State Highway Dept. Std. Dwg. No. R5.

All Railing Posts are to be set vertical.

Approx. Total Weight of Railing Material = 20,500 Lbs. (Not included in Structural Steel)



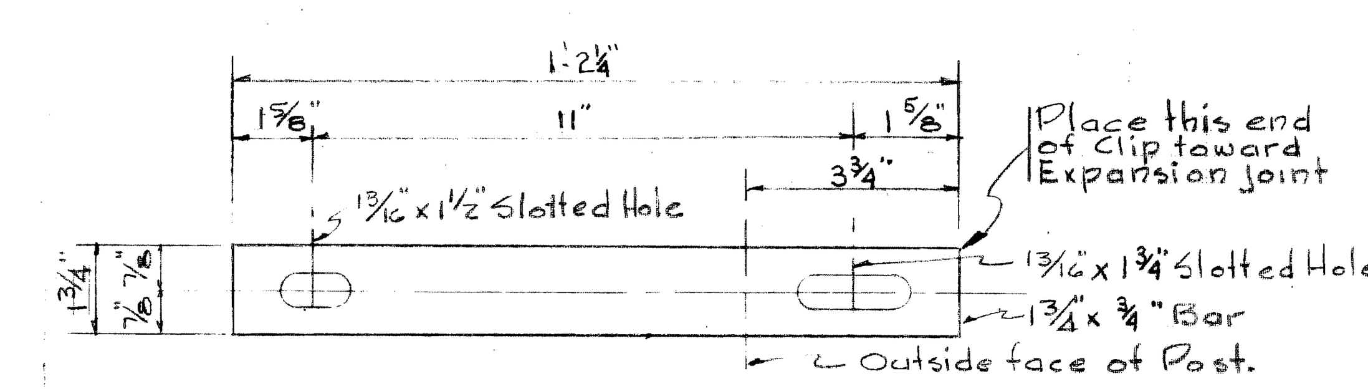
RAILING POSTS



RAILING SECTION

BILL OF RAILING MATERIAL

MARK	NO REQ	m	DESCRIPTION
RS1	16	2½"	RAILING SECTION
RS2	4	2"	" "
RS3	4	1½"	" "
RS4	4	1"	" "
RS5	4	½"	" "
RS6	2	0"	" "
P12-1	4		RAILING POST
P12-2	4		" "
P12-3	4		" "
P12-4	4		" "
P12-5	12		" "
P13-5	4		" "
P15	4		" "
RF3	16		RAILING FLANGE
RF4	120		" "
Anchor Blts	144		3/4"ϕ x 10" lg. Sq. Hd. Hex Nut.
Bolts	136		3/4"ϕ x 2¼" lg. Hex. Head.
Washers	136		3/4" Lock Washer.



RAILING CLIP RC-20
For P15 Posts - 8 Req.

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)

S13 + S14 of 82023A Sh. 17 of 17

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
EDSEL FORD EXPRESSWAY CROSSING
24TH STREET IN THE CITY OF DETROIT

METAL FLOOR JOINT & RAILING DETAILS

HAZELET & ERDAL CONSULTING ENGINEERS FILE No. 528

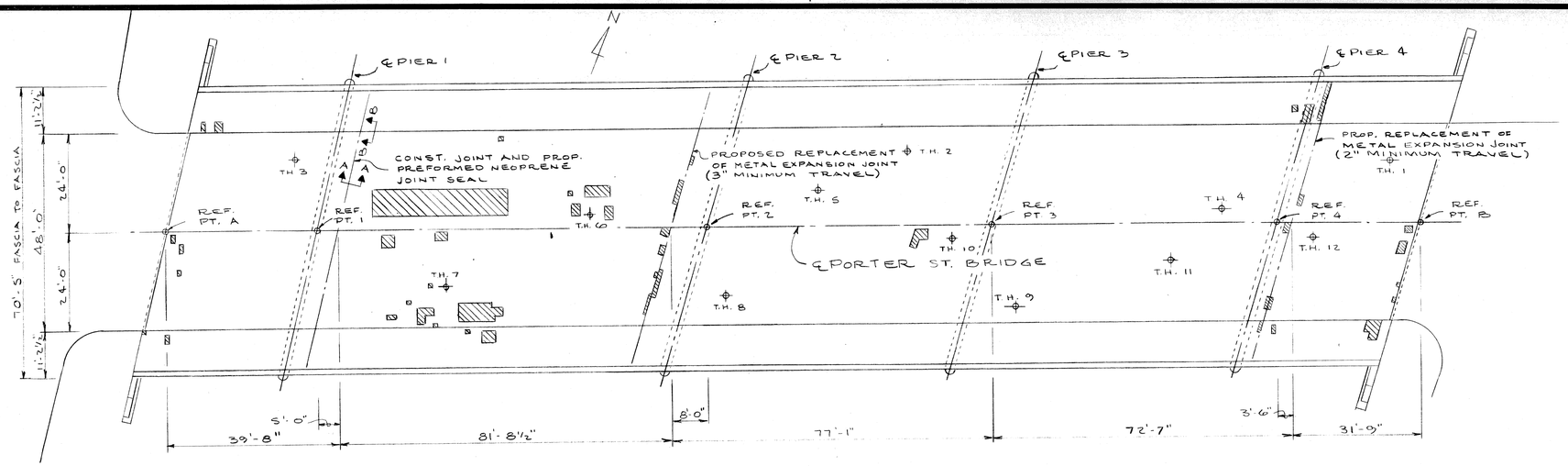
APPROVED [signature] 5-6-52
CHIEF BRIDGE DRAFTSMAN

APPROVED [signature] 5-7-52
ACT. ENGINEER OF BRIDGE DESIGN

APPROVED
ACT. BRIDGE ENGINEER

SQUAD BOSS	L.G.H.	3-25-52
DRAWN BY	J.C.D.	8-14-51
TRACED BY		
CHECKED BY	M.W.E.	9-13-51
SHEET		

B48 OF 82-22-10



▨ INDICATES SPALLED AND PATCHED AREAS AS DETERMINED BY FIELD INSPECTION AND/OR DELAMINATED AREAS AS DETERMINED BY A DELAMINATION DETECTOR

— PLAN —

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

NOTES

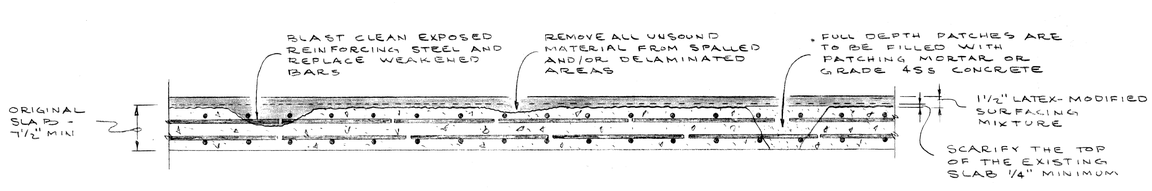
THE VOLUME OF LATEX-MODIFIED SURFACING MIXTURE IS BASED ON THE OVERLAY, APPROACH WEDGES AND AN ESTIMATED QUANTITY TO FILL CHIPPED AREAS AND TO MAKE GRADE ADJUSTMENTS AS DETERMINED BY THE ENGINEER.

HAND CHIPPING MAY BE DONE BY SCARIFYING AT THE CONTRACTORS OPTION.

CARE SHALL BE TAKEN SO THAT REMOVAL MATERIAL DOES NOT FALL FROM THE STRUCTURE.

SAW CUT A JOINT 1/4" x 1½" DEEP IN OVERLAY OVER PIER CENTERLINES AND FILL THE JOINT WITH HOT POURED JOINT SEALER (INC.)

ALL NEW REINFORCING STEEL SHALL BE EPOXY COATED.

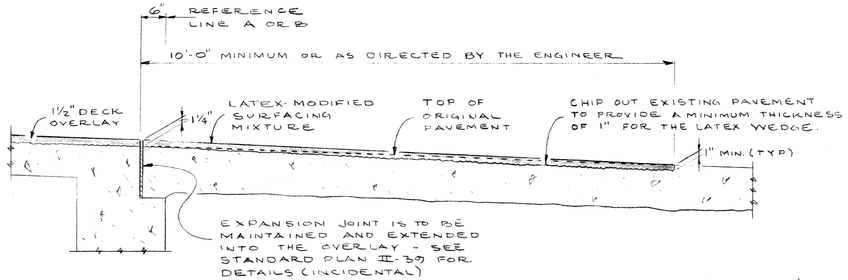


— PARTIAL DECK SECTION —

SCALE: 1" = 1'-0"

TEST HOLE DATA			
TEST HOLE	DEPTH TO STEEL	CHLORIDE CONTENT AT STEEL LBS/CY	
		ABOVE	BELOW
1	2¾"	2.08	0.81
2	3¼"	0.64	0.33
3	2¼"	1.60	0.81
4	3"	1.27	0.64
5	2¾"	1.60	0.48
6	1¾"	2.08	2.08
7	2¼"	1.93	1.12
8	2¾"	1.75	0.33
9	3½"	0.48	0.81
10	2¼"	2.08	1.75
11	3½"	1.75	4.34
12	2¾"	0.81	0.48

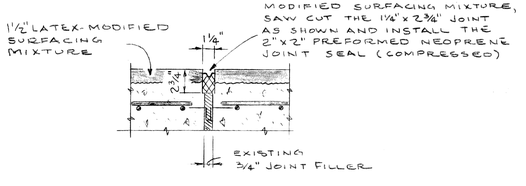
QUANTITIES		
ITEM	UNIT	AMOUNT
PREFORMED NEOPRENE JOINT SEAL, 2"	L.F.	70
SCARIFYING	S.Y.	1610
HAND CHIPPING	S.Y.	157
STEEL REINFORCEMENT, EPOXY COATED	LBS	1500
FULL DEPTH PATCHES	C.Y.	2
PATCHING MORTAR OR CONCRETE	C.Y.	4
LATEX-MODIFIED SURFACING MIXTURE	C.Y.	70
CONSTRUCTING BRIDGE DECK SURFACE	S.Y.	1717



— APPROACH WEDGE DETAIL —

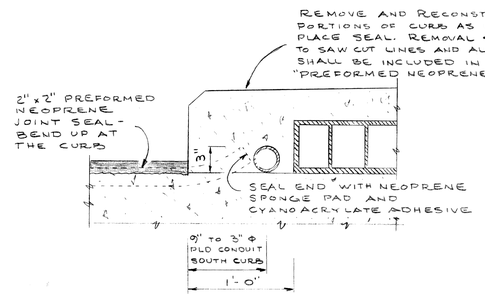
SCALE: ¾" = 1'-0"

FORMING, FINISHING AND CURING OF THE LATEX WEDGE WILL BE PAID FOR AS "CONSTRUCTING BRIDGE DECK SURFACE".



— SECTION A —

SCALE: 1½" = 1'-0"



— SECTION B —

SCALE: 1½" = 1'-0"

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

T. E. McGowan
CHIEF OF BRIDGES

79-22-26 J

MICHIGAN DEPARTMENT OF TRANSPORTATION

PORTER STREET OVER I-75

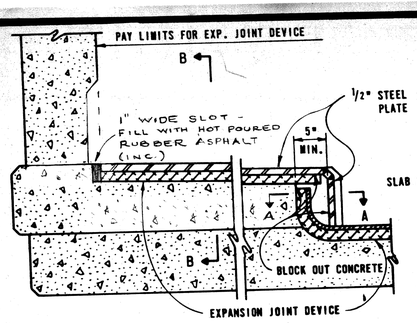
DECK RESURFACING DETAILS

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	AFREIBERG	9-1-81
DRAWN BY	RMC	9-1-81
TRACED BY		
CHECKED BY	OE	9-1-81

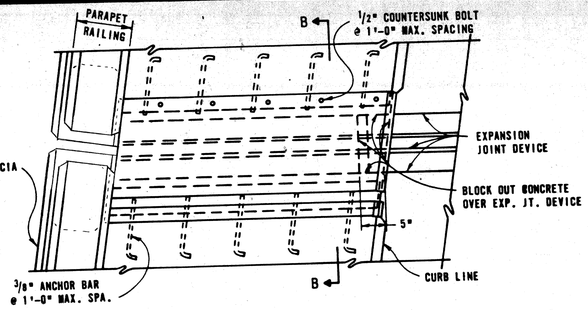
SHEET S 15 OF 82194

PAM = 71720



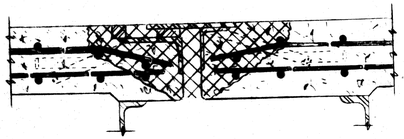
ELEVATION AT PARAPET RAILING

(APPLICABLE TO SIDEWALKS AND BRUSH BLOCKS)



PLAN AT PARAPET RAILING

(SIDEWALK SHOWN, BRUSH BLOCK SIMILAR)



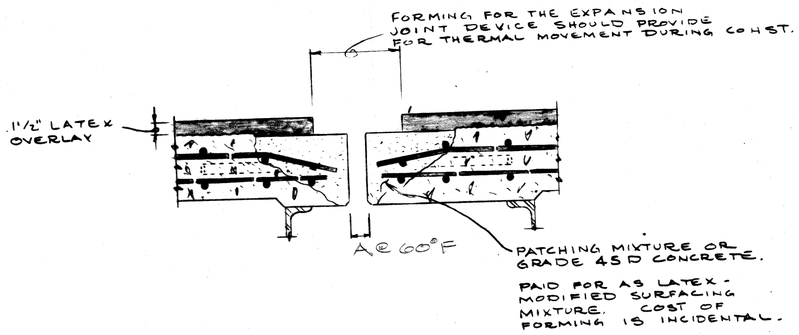
REMOVE THE EXISTING METAL EXPANSION JOINT.

CONCRETE REMOVAL AND HAND CHIPPING WITHIN 12" OF THE JOINT ARE INCIDENTAL TO "REMOVAL OF METAL EXPANSION JOINT."

EXISTING TRANSVERSE REINFORCEMENT SHALL BE REPLACED WITH AND PAID FOR AS "STEEL REINF., EPOXY COATED".

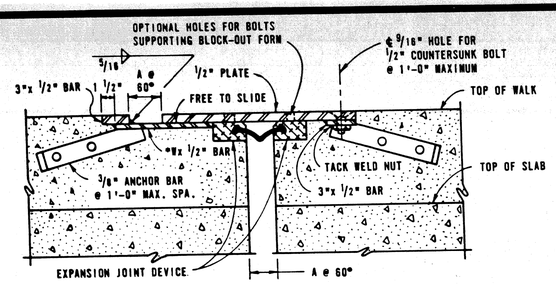
THE EXISTING ANCHOR BARS MAY BE CUT TO FACILITATE REMOVAL.

SECTION AT EXISTING METAL EXPANSION JOINT



PAID FOR AS LATEX-MODIFIED SURFACING MIXTURE. COST OF FORMING IS INCIDENTAL.

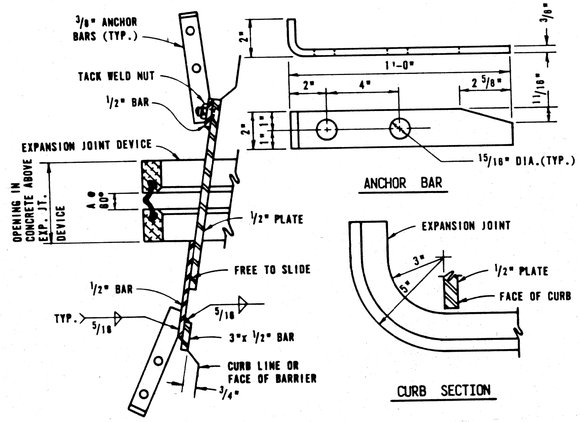
SECTION AT PROPOSED EXPANSION JOINT DEVICE



SECTION B-B

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

*W = 2A + 1 1/2"



SECTION A-A

ANCHOR BAR

CURB SECTION

NOTES:

JOINT TYPES

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

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

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

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

FABRICATION AND INSTALLATION

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

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

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

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

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

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

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

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

THE EPOXY MORTAR USED TO REPAIR THE SEAT AND TO FILL THE BOLT CHANNEL IN CONJUNCTION WITH THE INSTALLATION OF THE BRIDGE EXPANSION JOINT SYSTEMS SHALL BE MIXED AND PLACED AS SPECIFIED IN SUBSECTION 4.50.19-a OF THE 1979 STANDARD SPECIFICATIONS, USING AN EPOXY BINDER MEETING THE REQUIREMENTS SPECIFIED IN SUBSECTION 8.16.05 OF THE 1979 STANDARD SPECIFICATIONS.

THE PRO-SPAN, ACME TROJAN AND TITAN DEVICES MUST INCORPORATE A CAST-IN-PLACE METAL SEAT.

THE PROJECT ENGINEER SHALL NOTIFY THE TESTING AND RESEARCH DIVISION AS TO THE DATE THE DEVICE WILL BE INSTALLED.

DETAILS AT CURBS OR BARRIERS

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

MATERIALS

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

MISCELLANEOUS QUANTITY		
ITEM	UNIT	AMOUNT
EXPANSION JOINT DEVICE 2" MIN. TRAVEL	LINEAL FEET	71
EXPANSION JT. DEV. 3" MIN. TRAV.	LIN. FT.	71
REMOVAL OF METAL EXP. JOINT	L.S.	1

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE

APPROVED T.E. McGowan
STRUCTURAL ENGINEER

JOB No. 79-22-26J

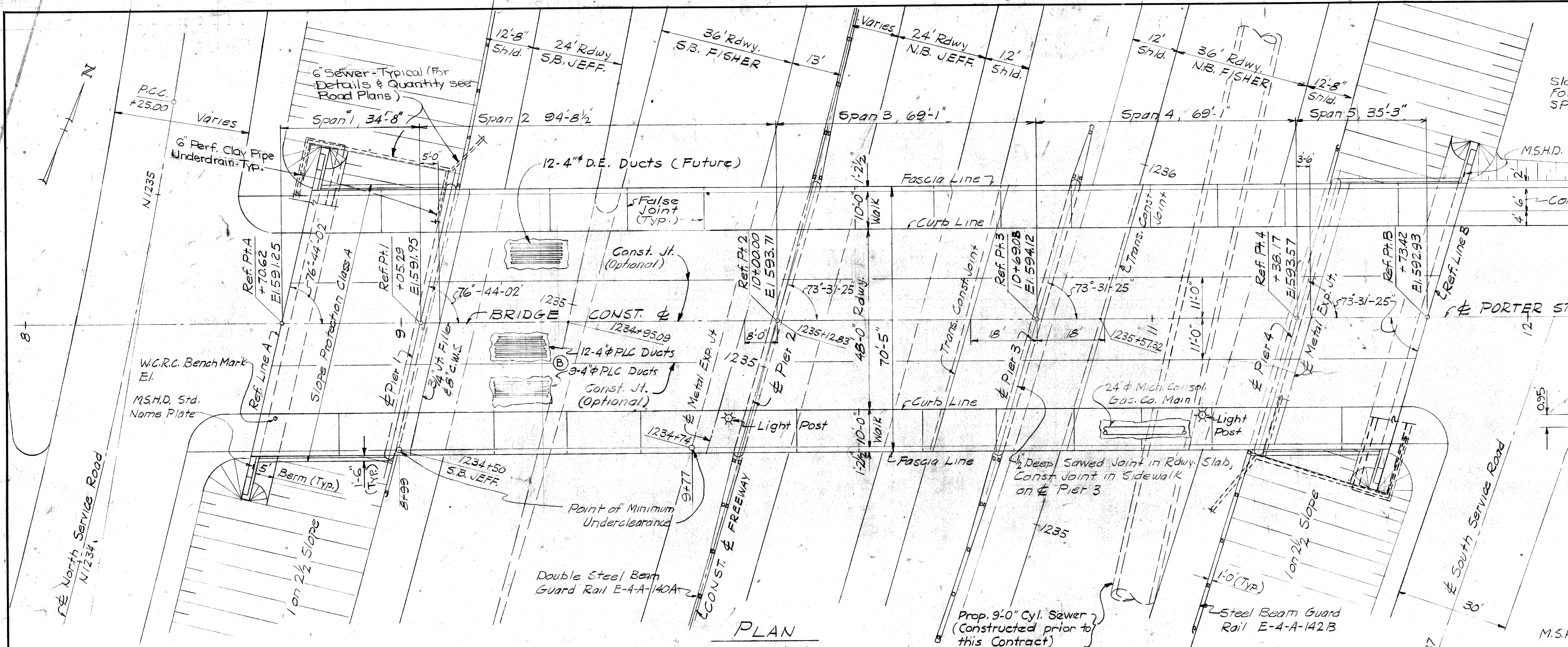
STATE OF MICHIGAN
DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

EXPANSION JOINT DETAILS

PORTER ST. OVER I-75

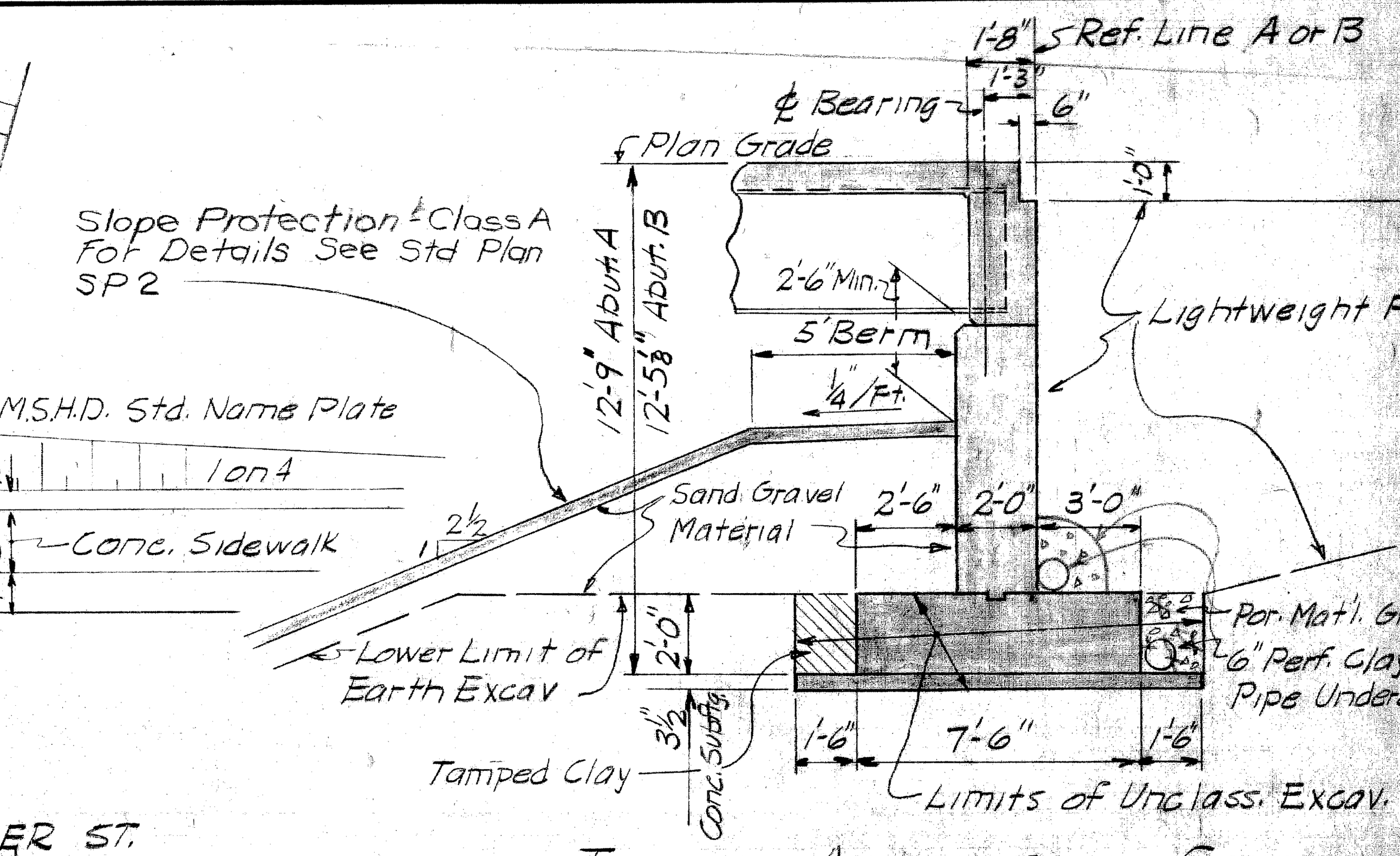
SQUAD BOSS	L.O.C.	6-18-81
DRAWN BY	J.L.R.	6-18-81
TRACED BY		
CHECKED BY	L.O.C.	6-18-81
SHEET	OF	
S15 OF 82194		

EJ-3-F (6-18-81)



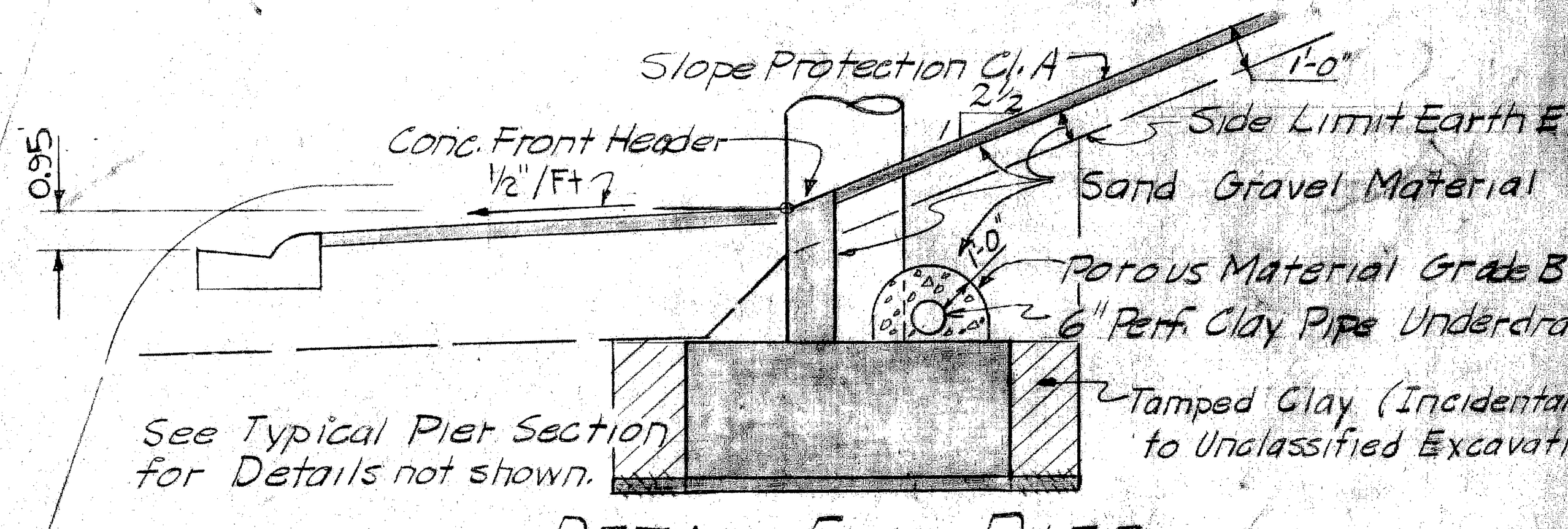
PLAN

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



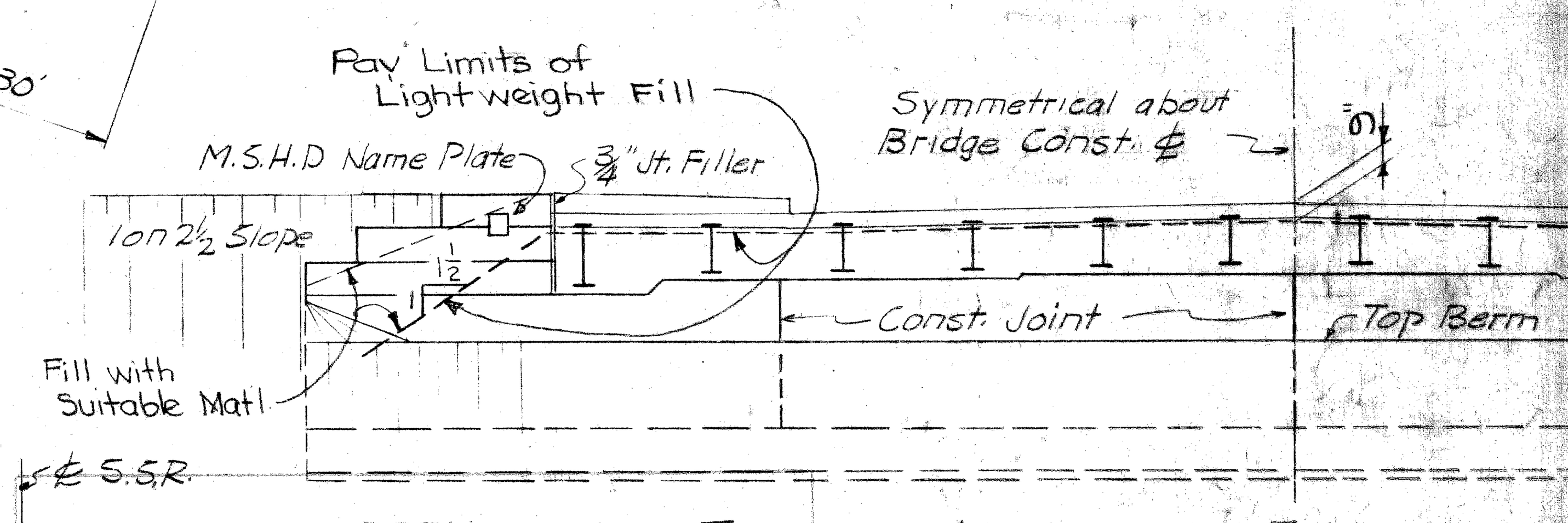
TYPICAL ABUTMENT SECTION

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



DETAIL END PIER

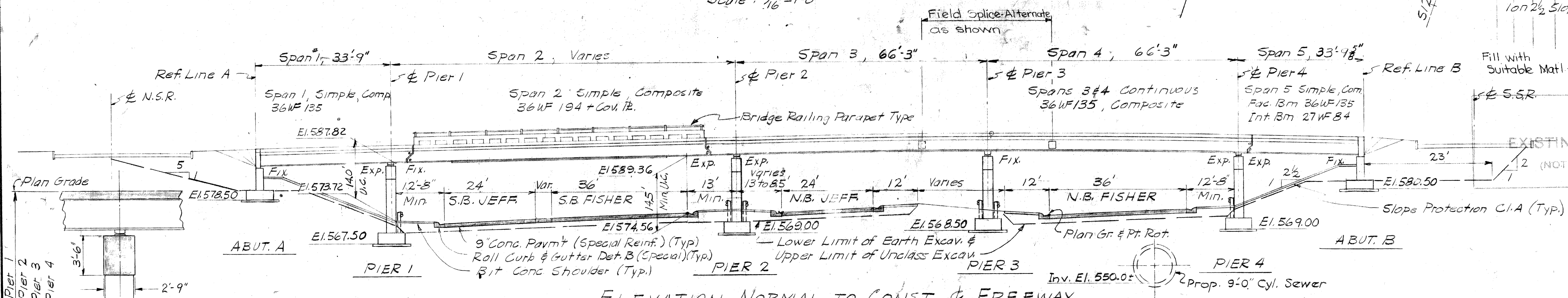
Scale: 1/4" = 1'-0"



TYPICAL ABUTMENT ELEVATION

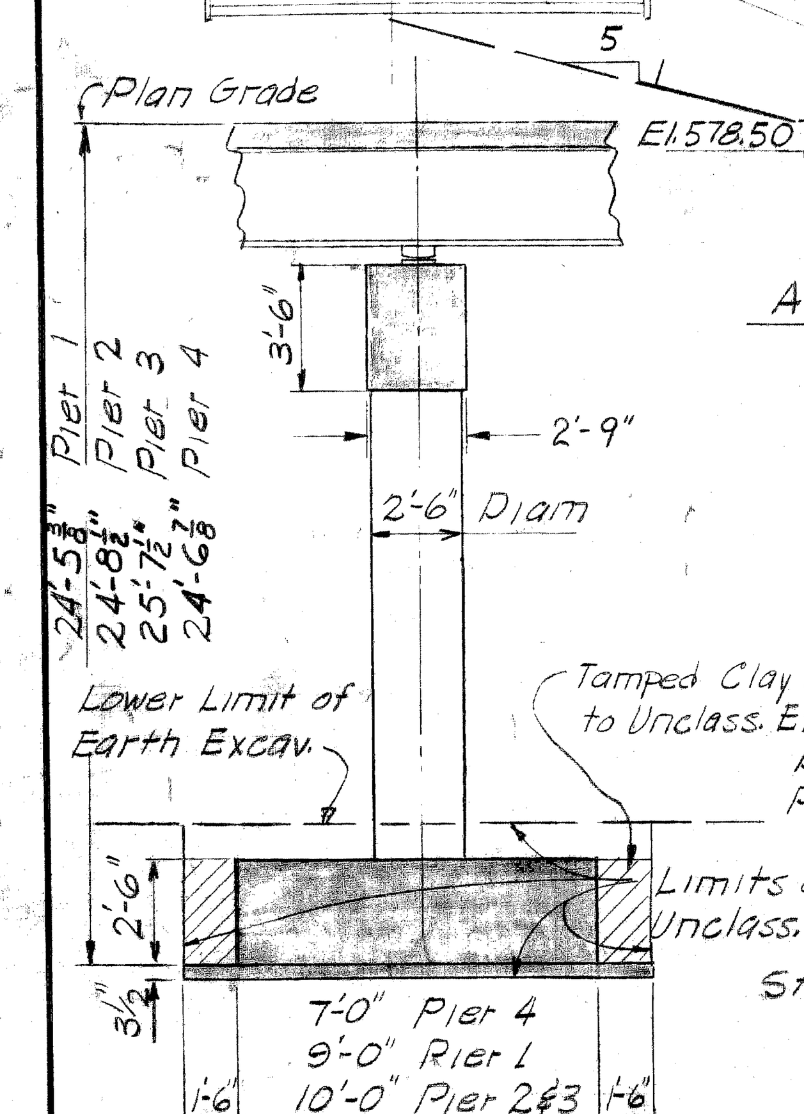
Scale: 1/8" = 1'-0"

COPY
EXISTING BRIDGE DETAILS
(NOT FOR CONSTRUCTION)



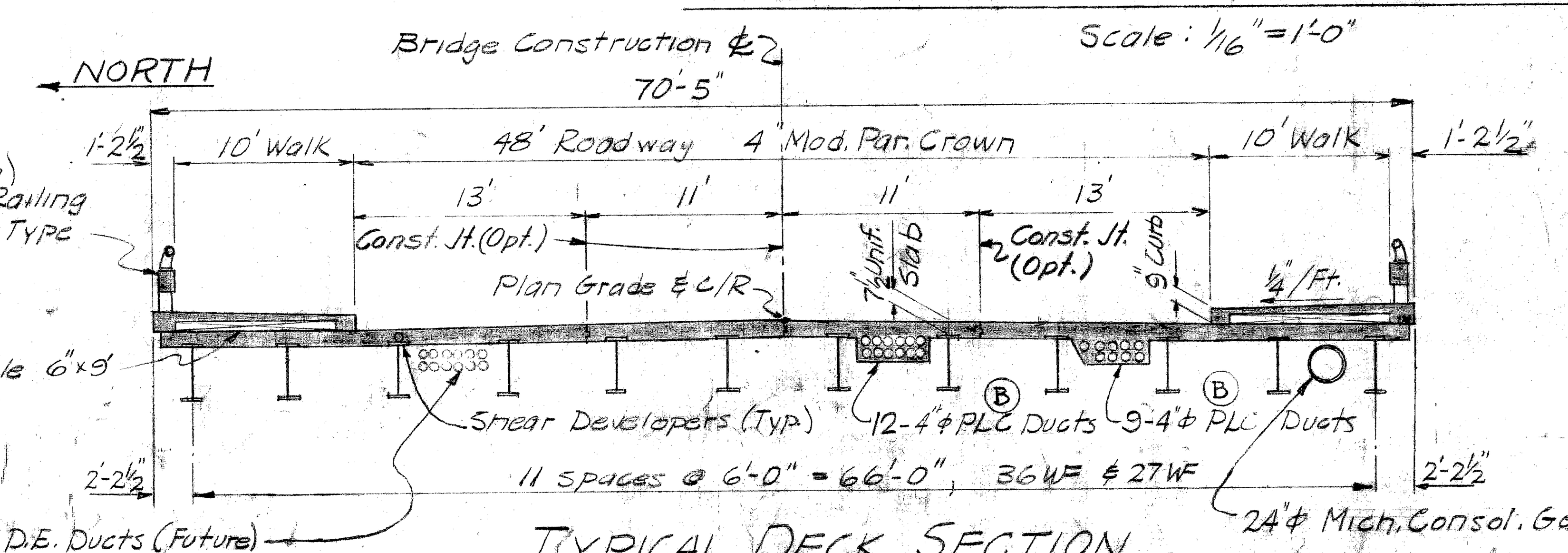
ELEVATION NORMAL TO CONST. ℄ FREEWAY

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



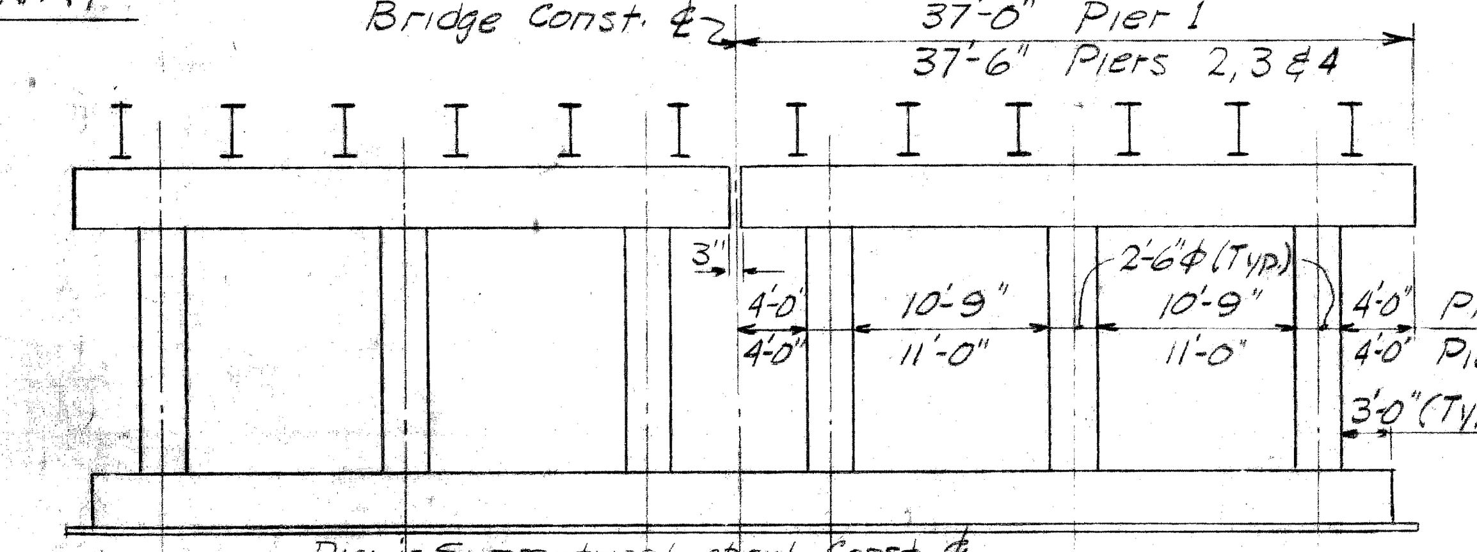
TYPICAL PIER SECT.

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



TYPICAL DECK SECTION

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



TYPICAL PIER ELEVATION

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

MISCELLANEOUS QUANTITIES		
Slope Protection Class A	595	Sq. Yd.
6" Perforated Clay Pipe Underdrain	336	Lin. Ft.
Lightweight Fill, Compacted in Place	1550	Cu. Yd.
Sand Gravel Material, Compacted in Place	383	Cu. Yd.
Porous Material Grade B, Compacted in Place	40	Cu. Yd.
Field Office - Bridge	1	Each

GENERAL NOTES

The design of this structure is based on M.S.H.D. Specifications for the Design of Highway Bridges, 1958 Edition, H 20-S16-44 Loading. Live Load plus impact deflection equals 1/1000 of span length and 1/350 of cantilever arm.

The top of roadway slab, curbs and sidewalk are parallel to the vertical curve.

Grouted Riprap as Slope Protection - Class A is not to be used on this project.

REVISIONS	
(B) Rev. P.L.C. Ducts.	B.C. 12-13-65 L.S.

A) Bent Corr. 4-15-65 LTM
2) Elevations Rev. 3-18-65 LTM & B.C.

		DATE
SQUAD LEADER	McElwee	
DRAWN BY	O.T. VOYLES	7-14-64
CHECKED BY	B. Chmielinski	7-27-64
CORRECT	M. Jozacki	

ENGINEER OF DESIGN, STRUCTURES AND EXPRESSWAYS

PLANS PREPARED BY THE BOARD OF
WAYNE COUNTY ROAD COMMISSIONERS
PHILIP J. NEUDECK — WILLIAM E. KREGER — AL BARBOUR

APPROVED — ENGINEER OF STRUCTURES AND EXPRESSWAYS — APPROVED — COUNTY HIGHWAY ENGINEER

MICHIGAN STATE HIGHWAY DEPARTMENT

APPROVED — DESIGN ENGINEER — APPROVED — ENGINEER OF DESIGN CONSULTANTS

I-75 FISHER FREEWAY
UNDER PORTER STREET
GENERAL PLAN OF STRUCTURE

ISSUE NO.	DATE
3	12-16-65
COUNTY JOB	SHEET NO.
1326	307
STATE PROJECT	
S15 OF 82194K	

B. K. ELLIOTT CO.