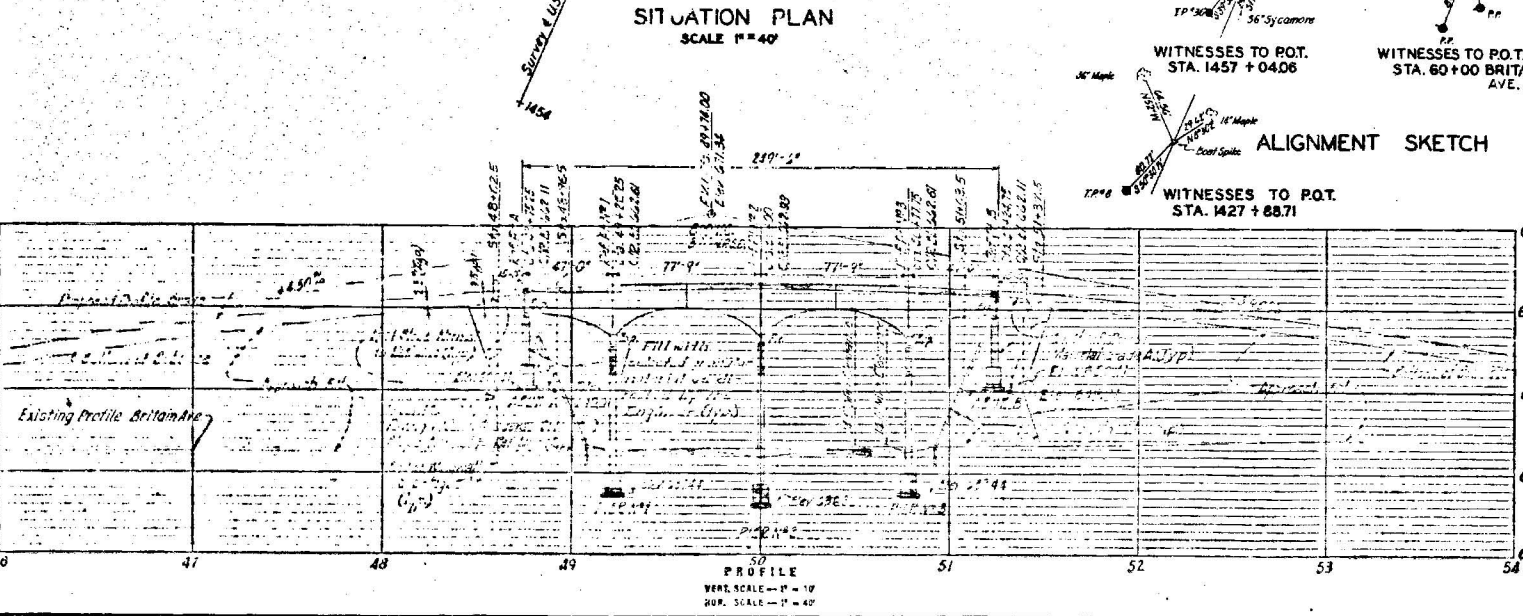
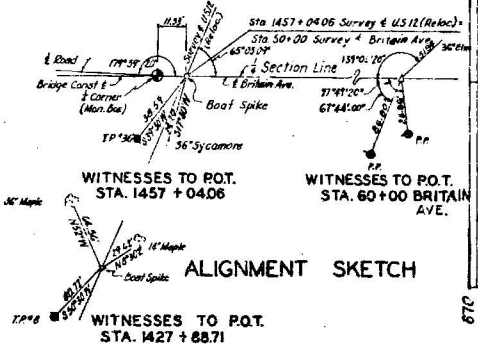
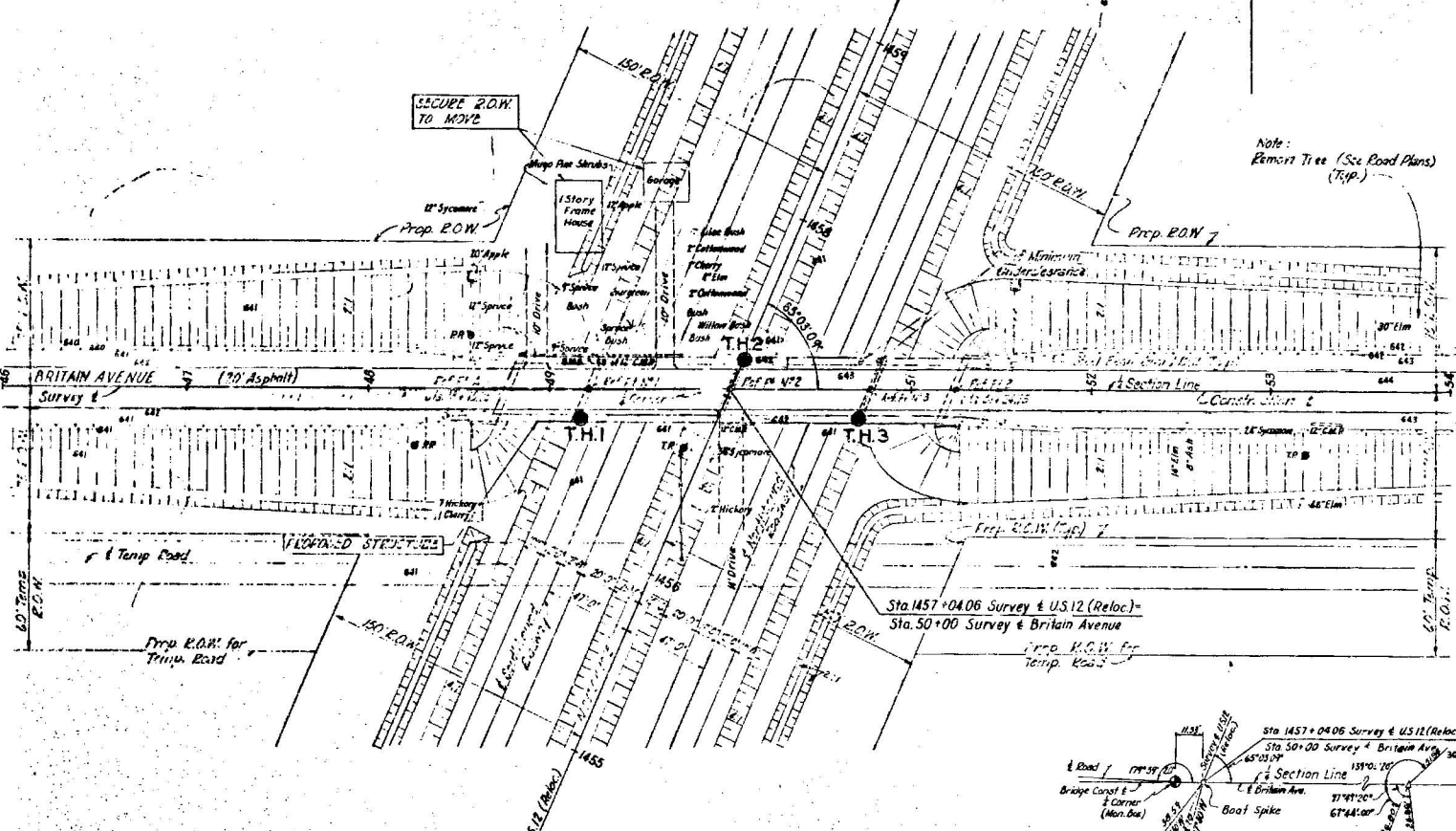
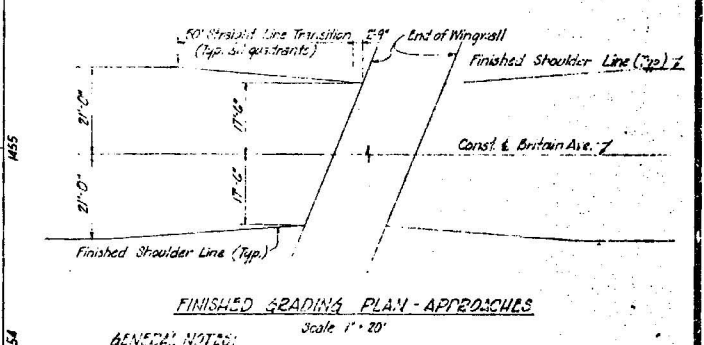
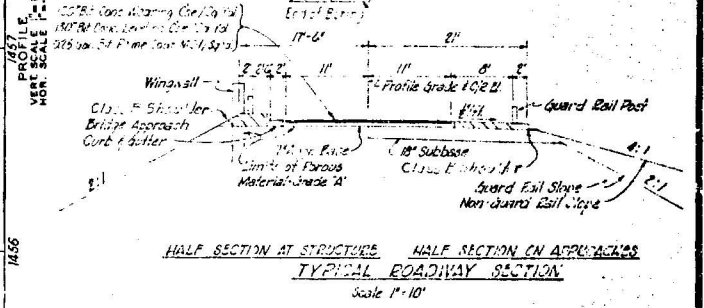


BENCH MARKS	
B.M. #52	EL. 642.91
Tag # PK Nail in roof of 36" Elm, 215' right of Sta. 1451+20.	
B.M. #53	EL. 644.41
Tag # BK Nail in roof of 48" Elm on Sa. side of Britain Ave., 294' right of Sta. 1451+92.	
UTILITIES	
Michigan Bell Tel. Co. telephone line approximately 30' right of Britain Ave. carrying 18 wires.	
Indiana & Michigan Electric Co. power line approximately 30' right of Britain Ave. carrying 2 wires (7200 Volts)	



LOG OF BORINGS

BOTT. OF PLY. ABOUT	LOG OF BORINGS		
	T.H.1	T.H.2	T.H.3
EL. 630.41	630.00 Sand fill	630.00 Sand fill	630.00 Sand fill
EL. 631.44	631.00 Yellow silty sand	631.00 Yellow silty sand	631.00 Yellow silty sand
	632.00 Yellow silty sand	632.00 Yellow silty sand	632.00 Yellow silty sand
	633.00 Yellow silty sand	633.00 Yellow silty sand	633.00 Yellow silty sand
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	669.00 Yellow silty sand	669.00 Yellow silty sand	669.00 Yellow silty sand
	670.00 Yellow silty sand	670.00 Yellow silty sand	670.00 Yellow silty sand



GENERAL NOTES:
The Bridge Work includes construction of the Proposed Structure, Grouted Flagstone Paving, Grade A Conc. Headers and placing Ferrous Material Grade A. For Temporary Road Details see Bridge, Detail Drawing. Traffic over Britain Ave. will be routed over the Temporary Road during construction of the proposed Structure.

CONTROL SECTION 1016 UN

MICHIGAN STATE HIGHWAY DEPARTMENT

U.S. 12 (RELOC.) CROSSING BRITAIN AVE. 2.0 MI. E. OF THE E. LIMITS OF BENTON HARBOR

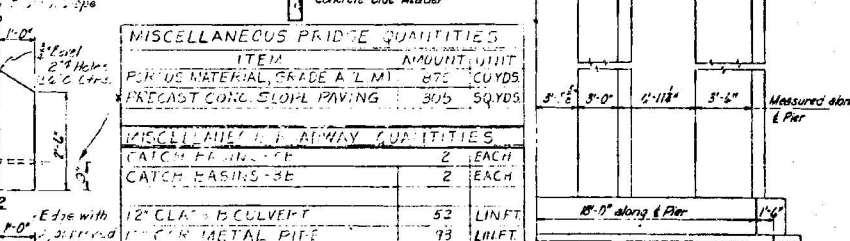
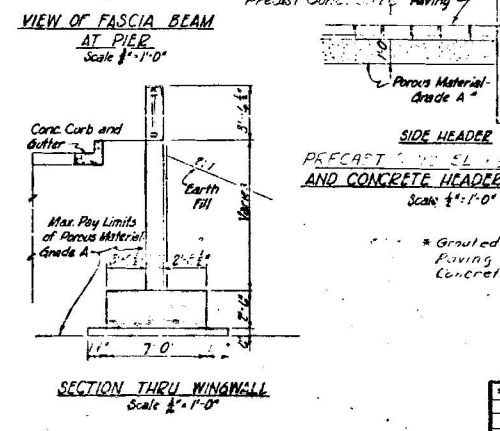
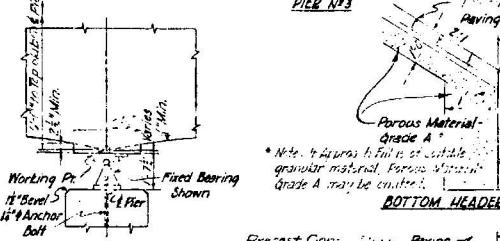
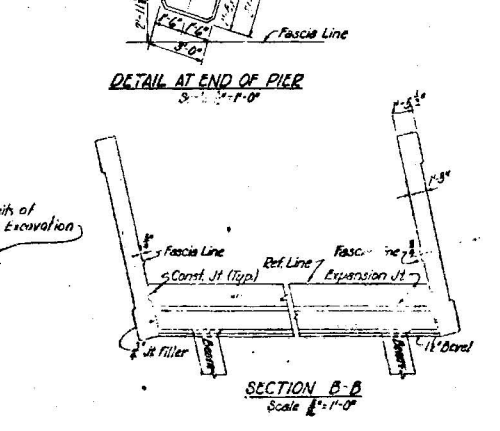
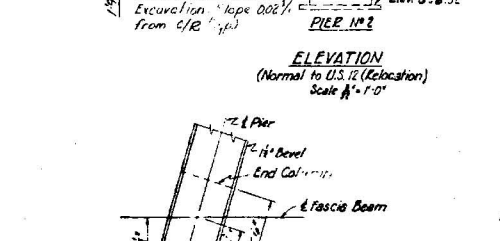
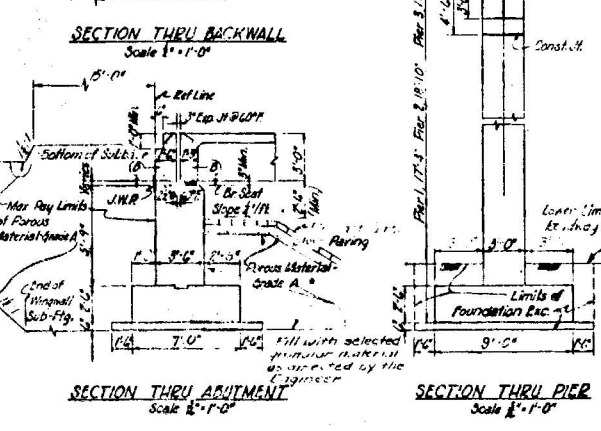
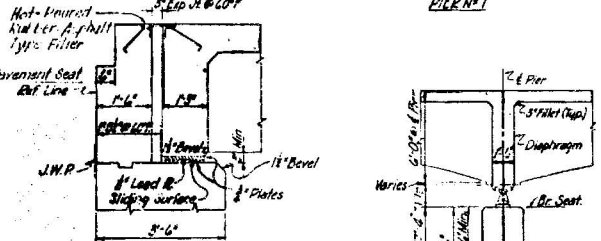
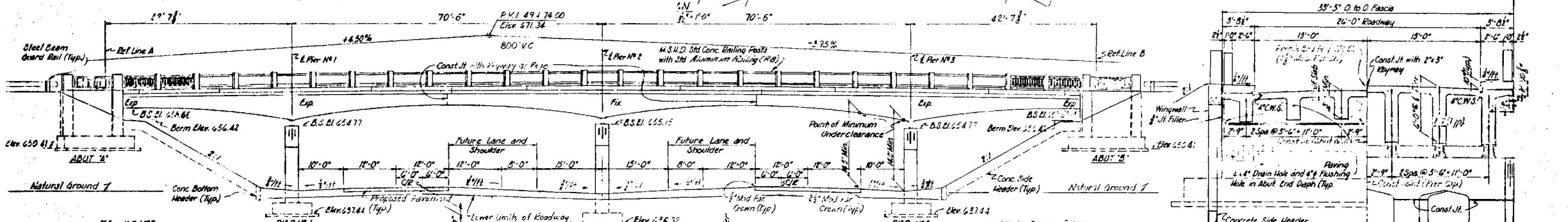
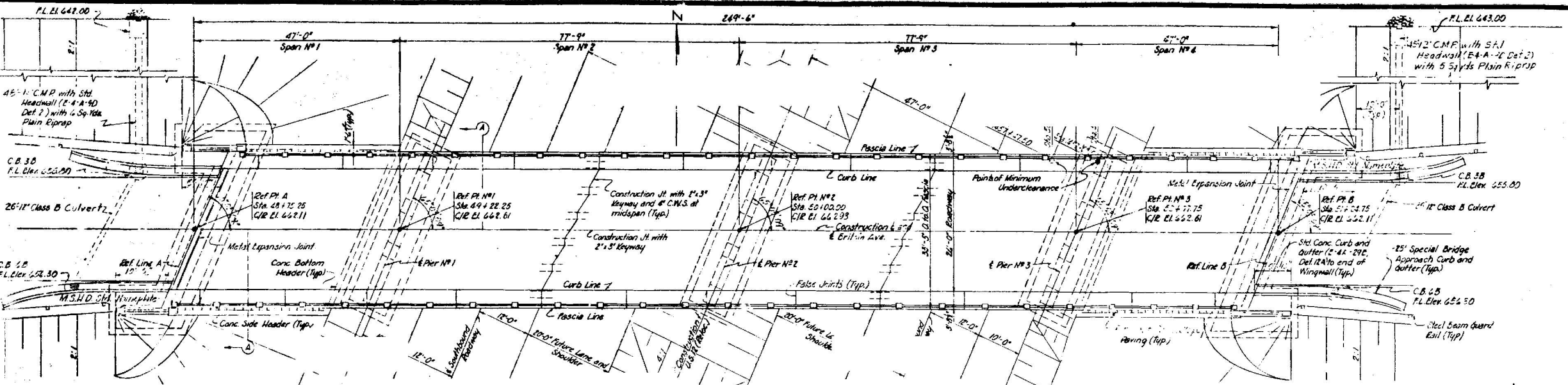
GENERAL PLAN OF SITE

MAZELT & ZEDAL CONSULTING ENGINEERS FILE # 794-R

APPROVED: *J. V. Danvers*
COORDINATING ENGINEER

APPROVED: _____
ENGINEER OF DESIGN - CONSULTANTS

SHEET 11-2-6



MISCELLANEOUS PIER QUANTITIES		
ITEM	AMOUNT	UNIT
POREUS MATERIAL GRADE A L.M.	875	CUYDS
PRECAST CONC. SLOPE PAVING	305	SQYDS

MISCELLANEOUS ABUTMENT QUANTITIES		
ITEM	AMOUNT	UNIT
CATCH BASINS - 2\"/>		
CATCH BASINS - 3\"/>		

MISCELLANEOUS PAVING AND CONCRETE HEADER DETAILS		
ITEM	AMOUNT	UNIT
12\"/>		
1\"/>		
3\"/>		
STEEL REINFORCEMENT BARS	52	LBS
PLAIN RIBRIP	10	SQYD
STL CONC. CURB & GUTTER	10	LINFT

GENERAL NOTES:
 1. Piers No. 1 & No. 3 are to be constructed & back filled prior to construction of the Abutments.
 2. Top of curb on side of Curb are parallel to vertical.

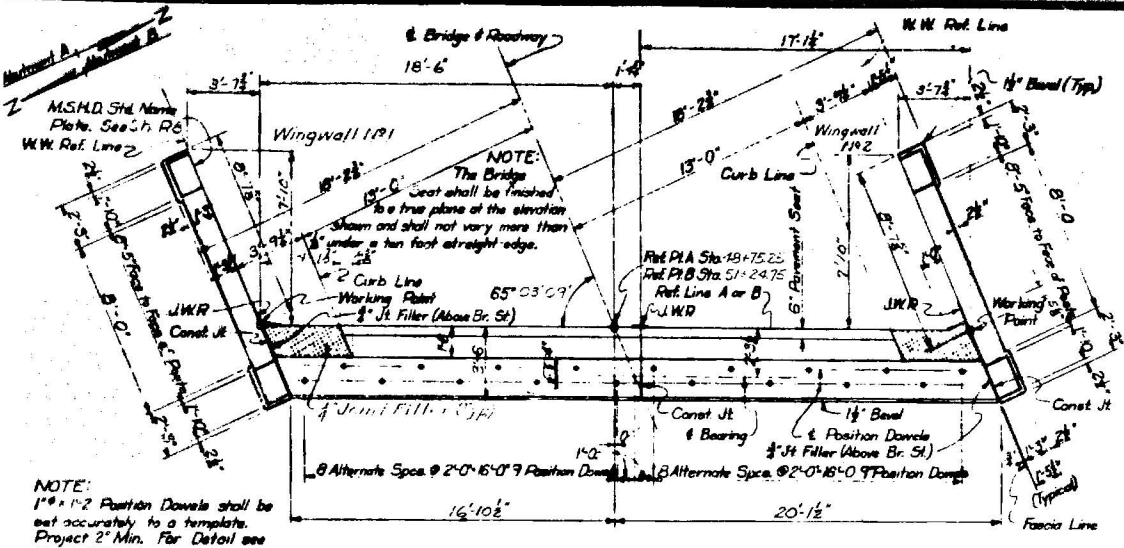
MICHIGAN STATE HIGHWAY DEPARTMENT

US12 (RELOC.) CROSSING BRITAIN AVE. 2.0 MILE OF THE E. LIMITS OF BENTON HARBOR
GENERAL PLAN OF STRUCTURE
 HAZELT & ERDAL - CONSULTING ENGINEERS - FILE NO. 794-R

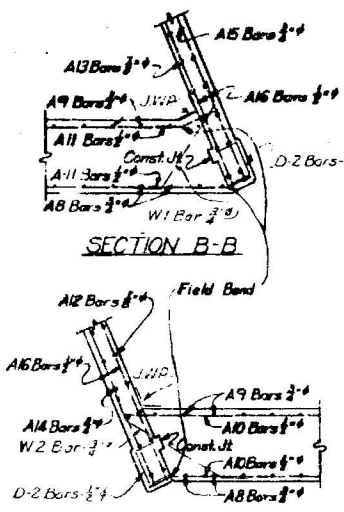
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APPROVED:	DATE:
APPROVED:	DATE:

ENGINEER OF DESIGN - CONSULTANTS

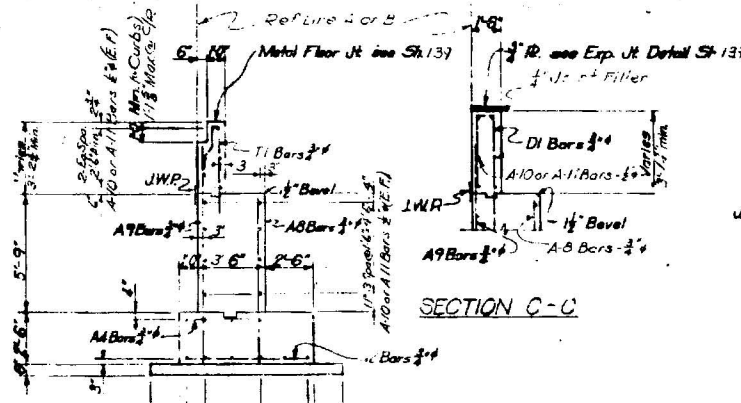
506 of 11016 RW



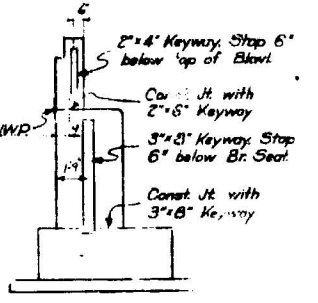
PLAN OF TOP



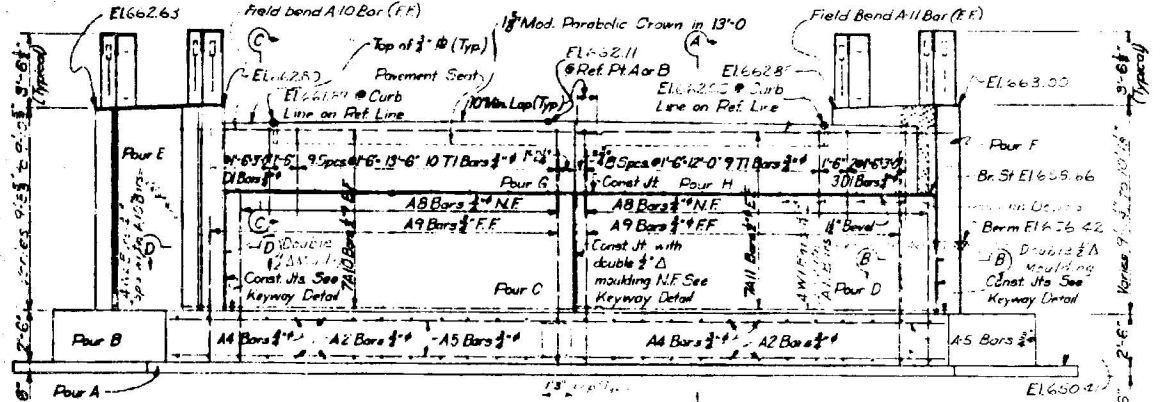
SECTION D-D



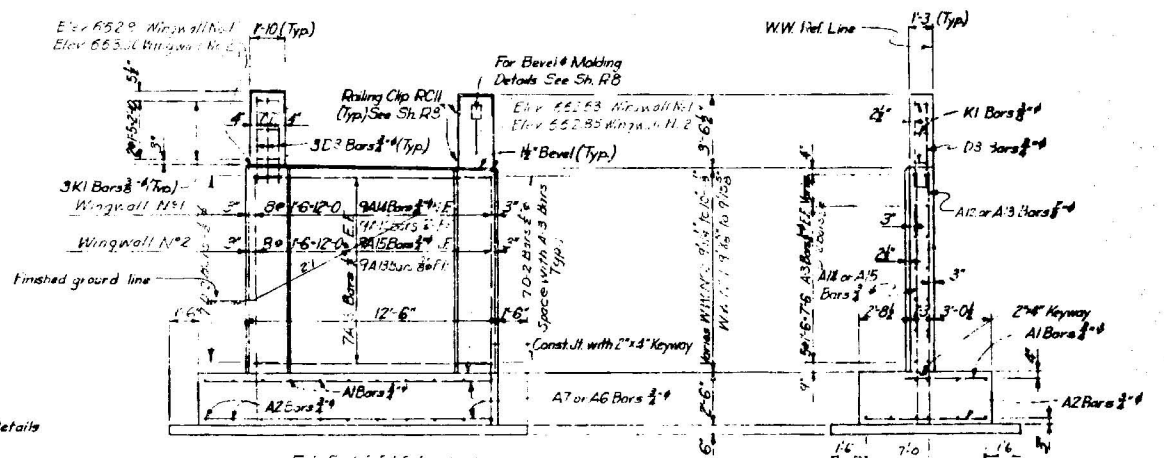
SECTION A-A



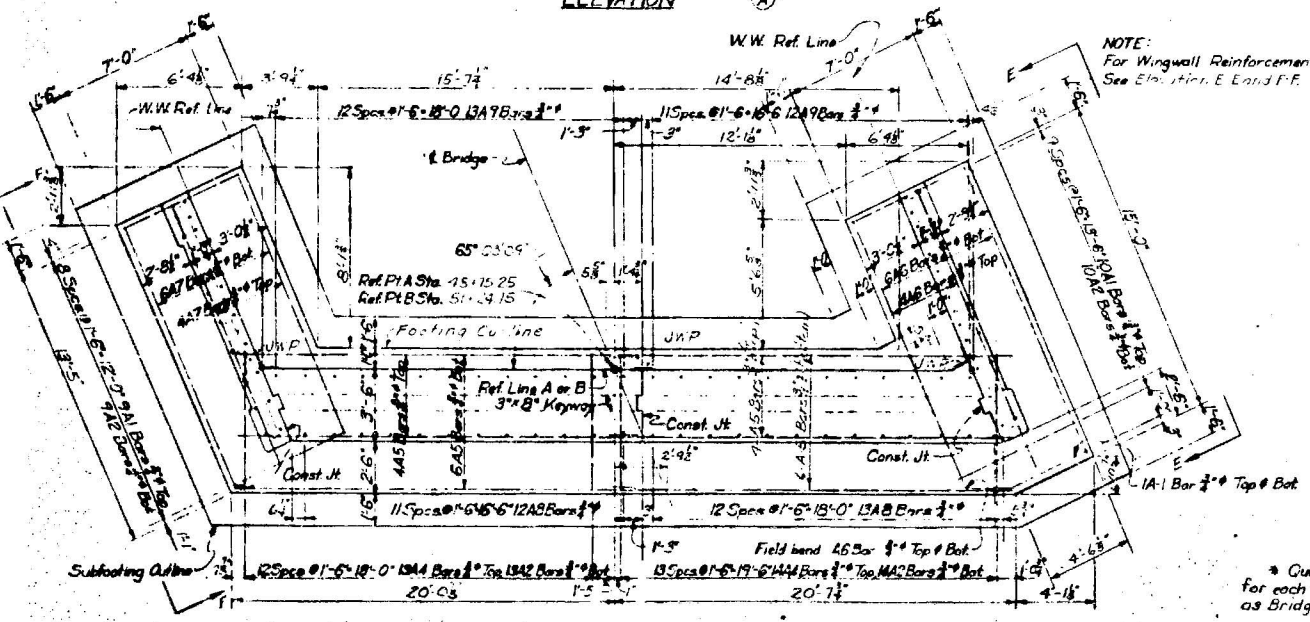
KEYWAY DETAIL



ELEVATION



SECTION THRU WINGWALL



PLAN OF FOOTING

* Quantity shown does not include 0.3 cy conc. for each Railing Post. Railing Post to be paid for as Bridge Railing, Fabrication, and Erection with the exception of Reinforcement and Cement.

POUR	LOCATION	SPACE A (24' x 10')	SPACE B (20' x 7')
A	SUBFOOTING	11.7	
B	FOOTING	32.7	
C	ABUTMENT WALL		14.4
D	ABUTMENT WALL		13.7
E	WINGWALL *		6.0
F	WINGWALL *		6.1
G	BACKWALL		3.3
H	BACKWALL		3.1
TOTAL ABUT A		53.6	44.5
TOTAL ABUT B		50.6	47.3

ITEM	UNITS	AMOUNT
JOINT FILLER	SQ. FT.	20
JOINT FILLER	SQ. FT.	32
JOINT WATERPROOFING	SQ. FT.	208
ALUMINUM BRIDGE RAILING FAB & ERECT	LIN. FT.	48.4

NOTES:
 Abutments are identical except as noted.
 The Backwall (Pours G&H) is to be cast after superstructure is complete to top of roadway & before sidewalk is cast.
 For Bevel Molding and Railing Post Details see M.S.H.D. Standard Sheet R-8.
 N.F. - Near Face F.F. - For Face E.F. - Each Face
 For Railing Details see S-138
 This design is based on:
 Maximum Foundation Pressure (DL only) = 2300 lbs. per sq. ft.
 Maximum Average Foundation Pressure (DL + LL) = 1950 lbs. per sq. ft.
 Minimum Foundation Pressure (DL + LL) = 310 lbs. per sq. ft.

MICHIGAN STATE HIGHWAY DEPARTMENT

U.S. 12 (RELOC) CROSSING BRITAIN AVE, 2.0 MI. E. OF THE E. LIMITS OF BENTON HARBOR

ABUTMENT DETAILS.

HAZLET & ERDAL - CONSULTING ENGINEERS - FILE NO 794-R

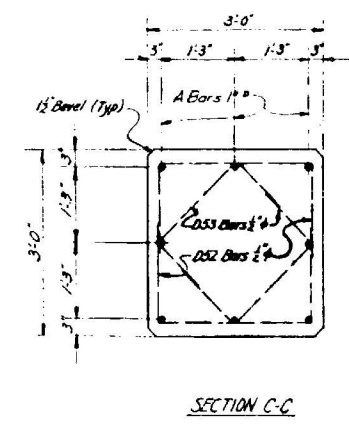
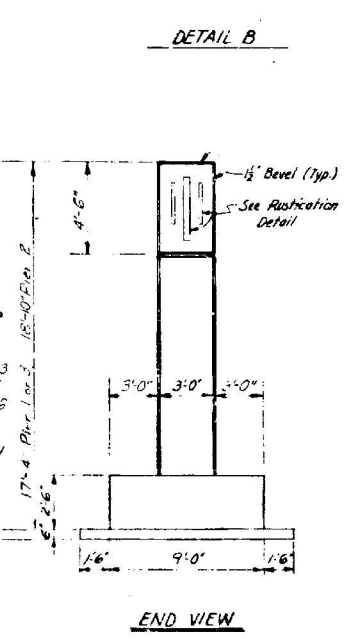
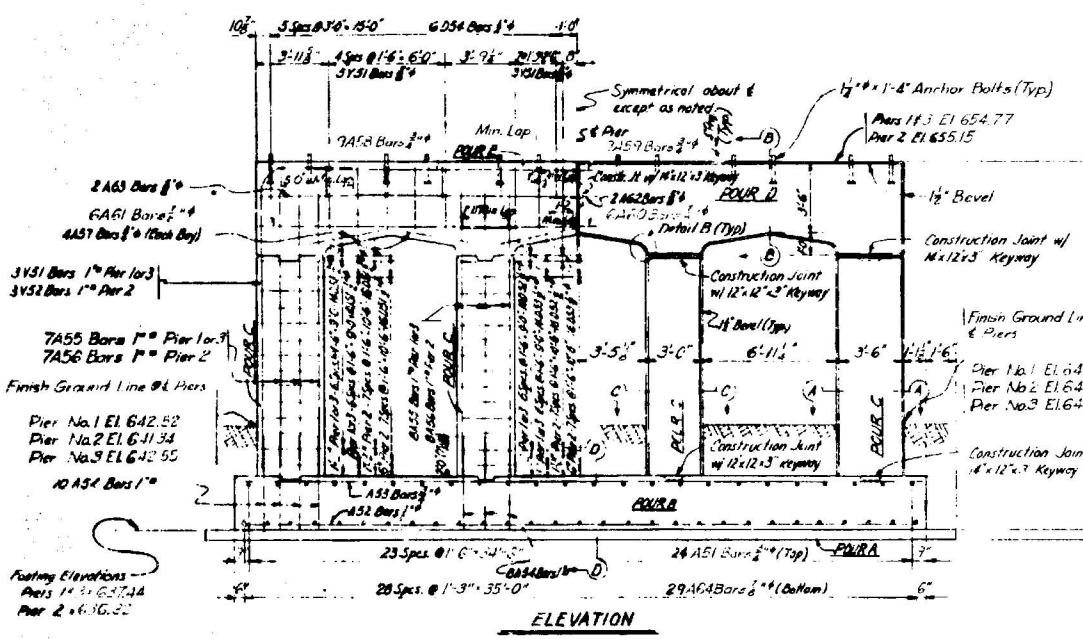
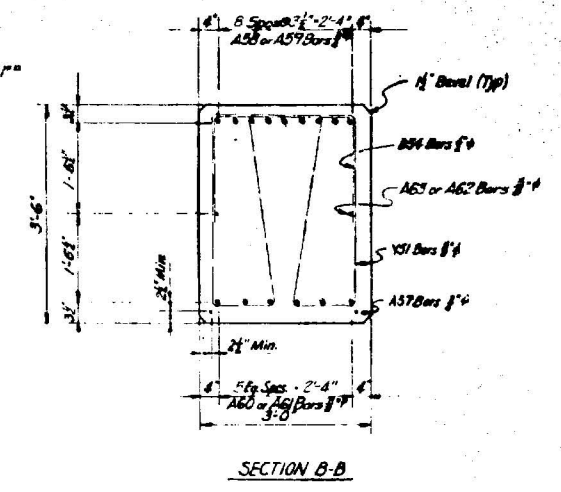
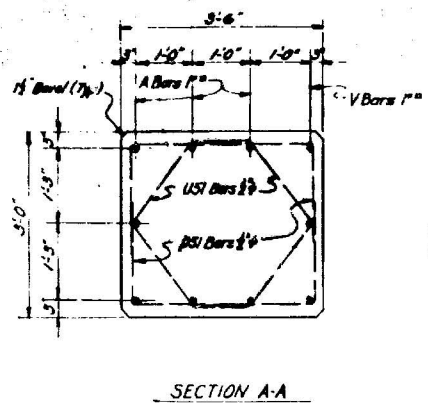
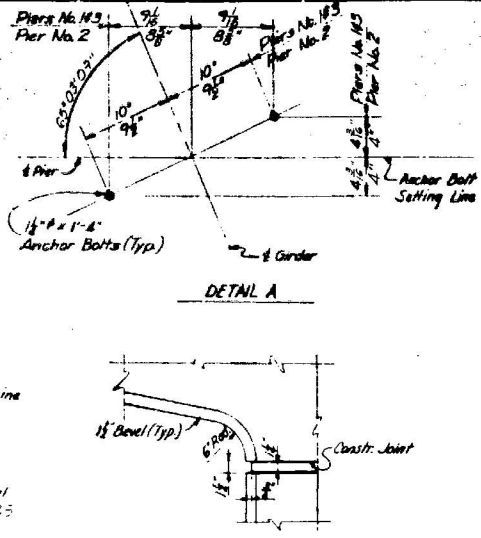
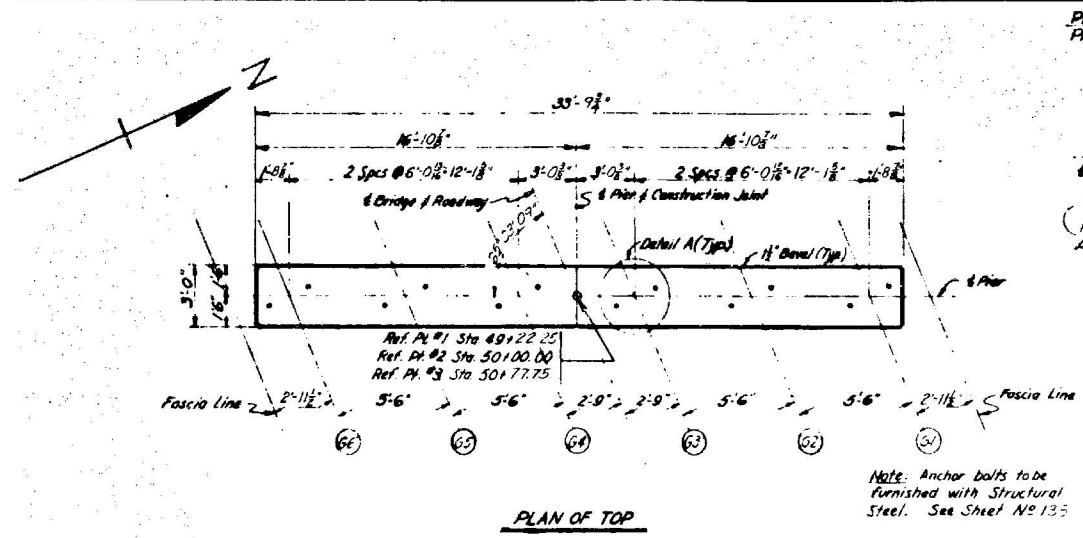
APPROVED: _____ DATE: _____

APPROVED: _____ DATE: _____

APPROVED: _____ DATE: _____

B6 of 11-2-6

S06 of 11016 RN

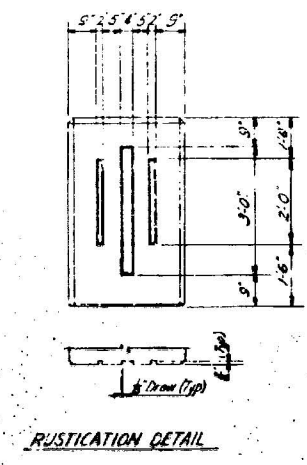
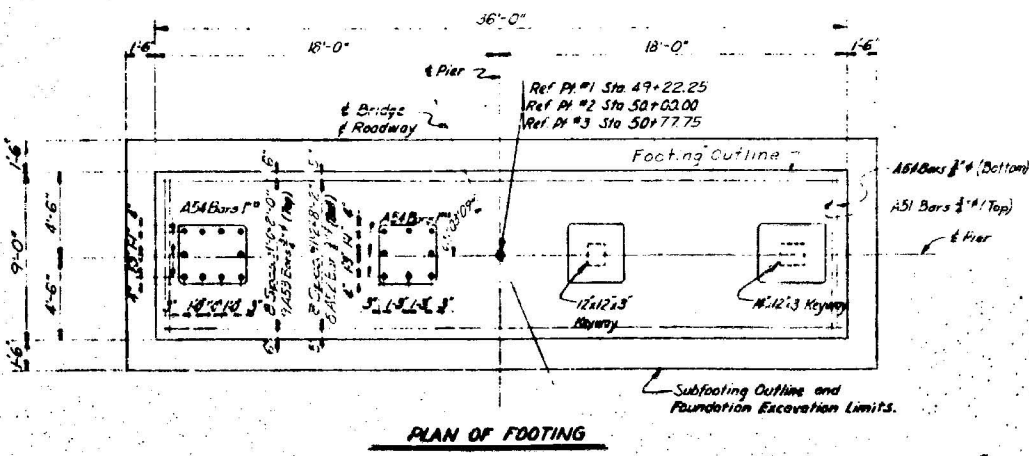


FOUR	LOCATION	CONCRETE QUANTITIES			
		FOUR A	FOUR B	FOUR C	FOUR D
A	SUBFOOTING				
B	FOOTING	19	19	17	
C	COLUMNS			50	172
D	BEAM			77	77
E	BEAM			77	77
PIER TOTALS		19	19	174	174
TOTAL		1158		724	

NOTES

All Piers similar except as shown or noted.
Anchor bolts are to be set accurately to a template.
For bevel and mending details see M.S.M.D. Standard Drawing R-8.
The top of piers shall be finished to a true plan at the elevations shown and shall not vary more than 1/8" under a ten foot straight edge or more than 1/4" under any bearing.
This design is based on:
Maximum Foundation Pressure (D.L. Only) = 4,200 lbs. per sq. ft.
Maximum Average Foundation Pressure (D.L. + L.L.) = 4,200 lbs. per sq. ft.
Maximum Foundation Pressure (D.L. + L.L.) = 4,200 lbs. per sq. ft.

ITEM	MISCELLANEOUS QUANTITIES		
	UNIT	PIER 1	PIER 2
UNCLASSIFIED EXPANSION	CU YD	670	670



NO.	DESCRIPTION	DATE	BY

MICHIGAN STATE HIGHWAY DEPARTMENT

US12 RELOC. CROSSING BRITAIN AVE. 2.0MI. E. OF THE E. LIMITS OF BENTON HARBOR

PIER DETAILS

HAZLET & ERDAL - CONSULTING ENGINEERS - FILE 704-R

APPROVED: _____

DESIGNED BY: _____

TRACED BY: _____

CHECKED BY: _____

DATE: 11-15-57

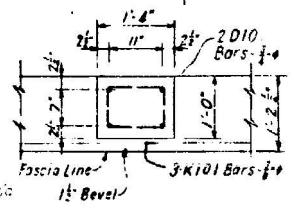
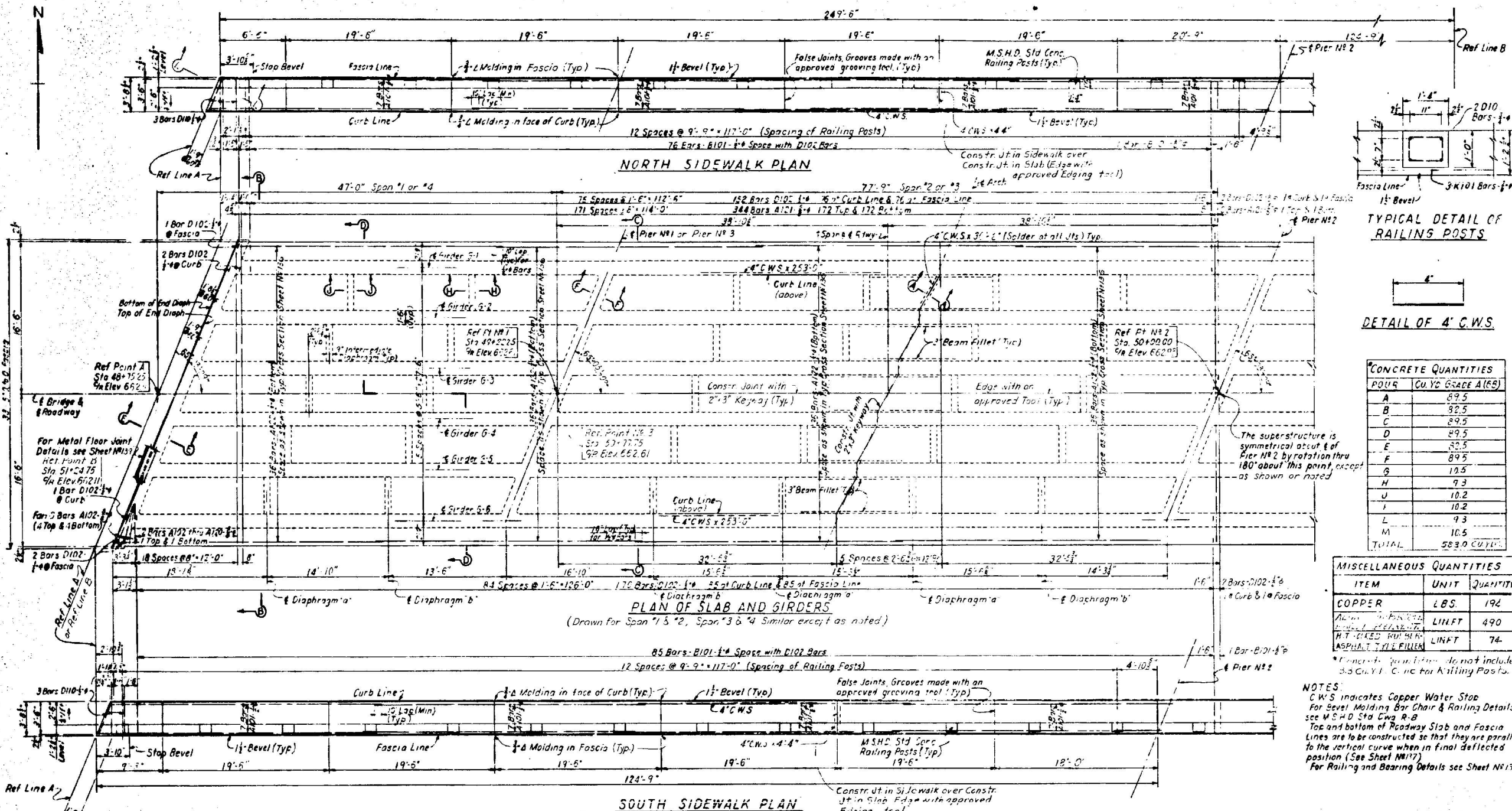
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DATE: 11-15-57

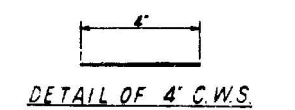
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B6 of 11-2-6

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TYPICAL DETAIL OF RAILING POSTS

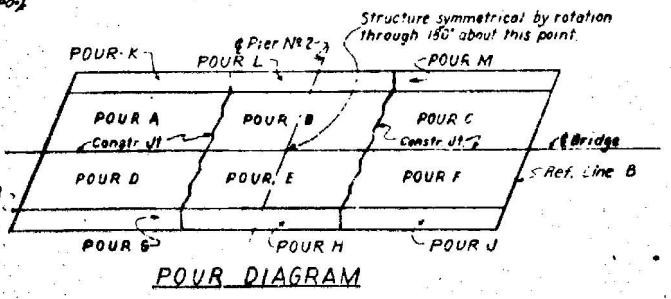


DETAIL OF 4' C.W.S.

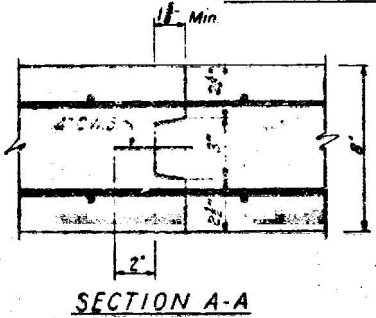
CONCRETE QUANTITIES	
POUR	CU. YD. GRADE A (85)
A	89.5
B	92.5
C	89.5
D	89.5
E	82.5
F	89.5
G	10.5
H	9.3
J	10.2
I	10.2
L	9.3
M	10.5
TOTAL	583.0 CU. YD.

MISCELLANEOUS QUANTITIES		
ITEM	UNIT	QUANTITY
COPPER	LBS.	192
ALUM. PLATE	LINFT	490
H.T. CURED PUTTY	LINFT	74
ASPHALT TILE FILLER		

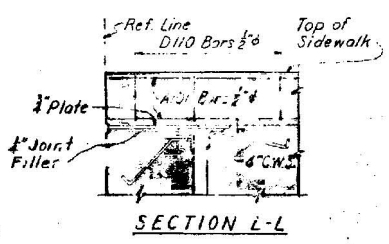
NOTES:
 C.W.S. indicates Copper Water Stop
 For Bevel Molding Bar Chair & Railing Details see M.S.H.D. Std. Cwg. R-B
 Top and bottom of Roadway Slab and Fascia Lines are to be constructed so that they are parallel to the vertical curve when in final deflected position (See Sheet NR17)
 For Railing and Bearing Details see Sheet NR13B
 *Concrete quantities do not include 3.3 Cu. Yd. C.C. for Railing Posts.



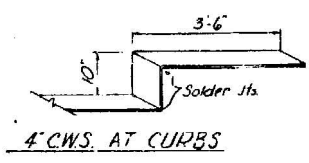
POUR DIAGRAM



SECTION A-A



SECTION L-L



4' C.W.S. AT CURBS

Work this Sheet with Sheets NR135, 136 & 137

MICHIGAN STATE HIGHWAY DEPARTMENT
 US12 (RELOC) CROSSING BRITAIN AVE. 20 MI. E. OF THE E. LIMITS OF BENTON HARBOR
SUPERSTRUCTURE DETAILS
 HAZLET & ERDAL - CONSULTING ENGINEERS - FILE NO. 784-R

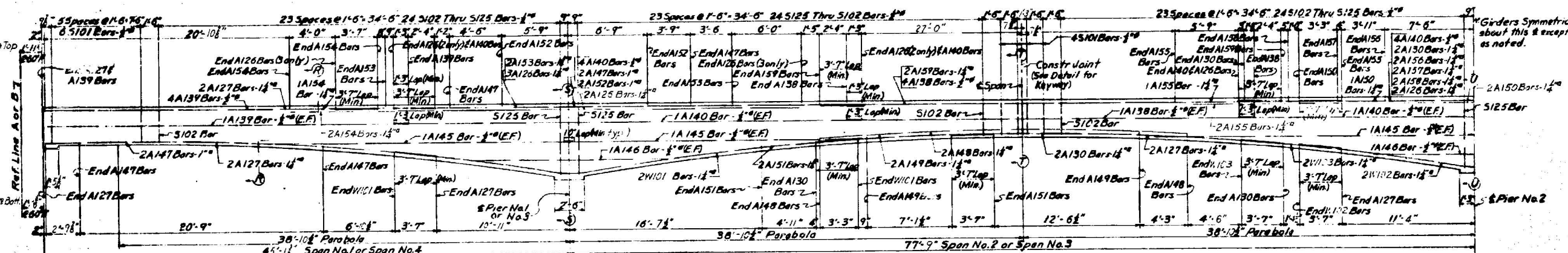
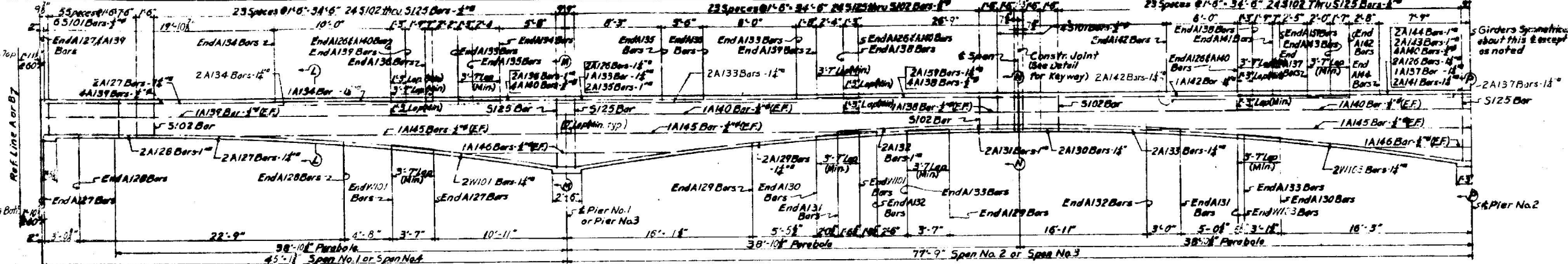
APPROVED	DATE	BY

REVISIONS

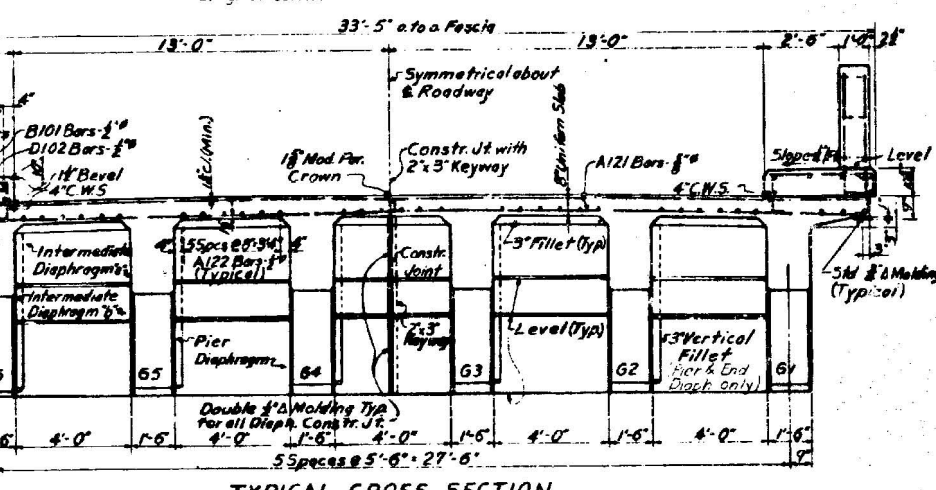
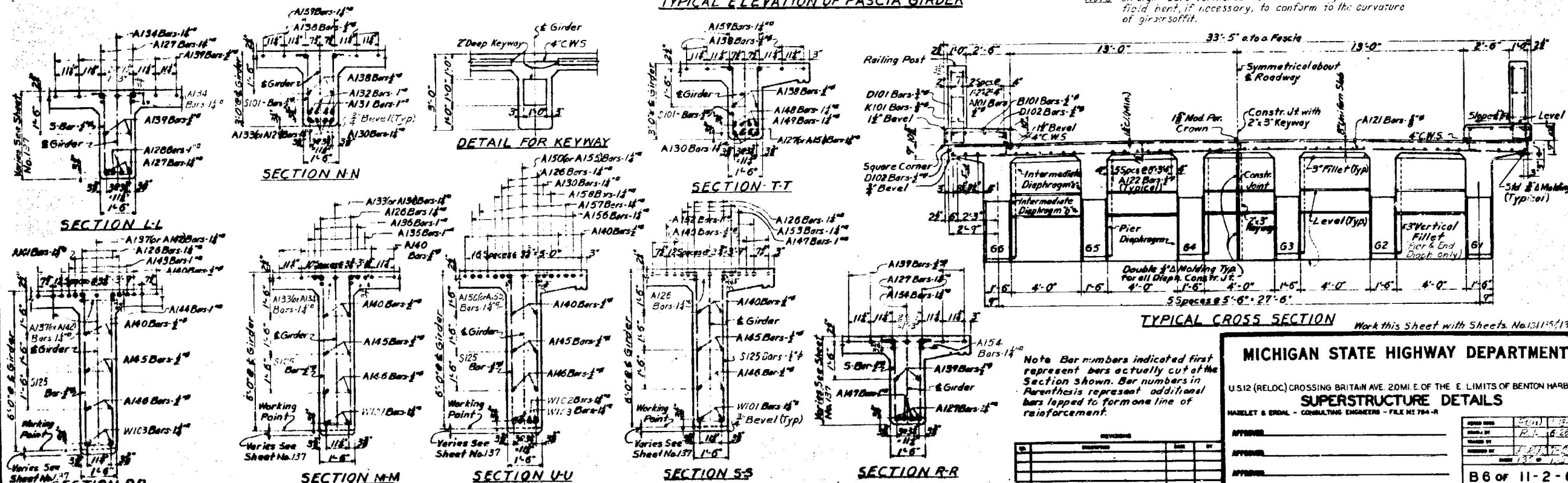
NO.	DESCRIPTION	DATE	BY

APPROVED: **LEE**
 DATE: 11-2-6

S06 of 11016 RN



NOTE - Straight Bars furnished for bottom of girders shall be filed bent, if necessary, to conform to the curvature of girder soffit.



MICHIGAN STATE HIGHWAY DEPARTMENT

U.S.12 (RELOC.) CROSSING BRITAIN AVE. 20MI. E. OF THE E. LIMITS OF BENTON HARBOR

SUPERSTRUCTURE DETAILS

DATE: 11-2-6

BY: [Signature]

APPROVED: [Signature]

APPROVED: [Signature]

APPROVED: [Signature]

B6 of 11-2-6

506 of 11016 RN