

**RECORD DRAWINGS**  
**WORK AS CONSTRUCTED**

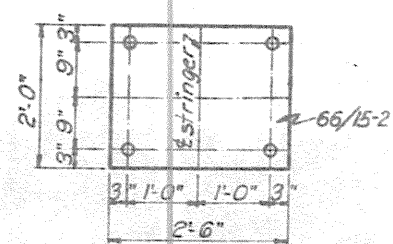
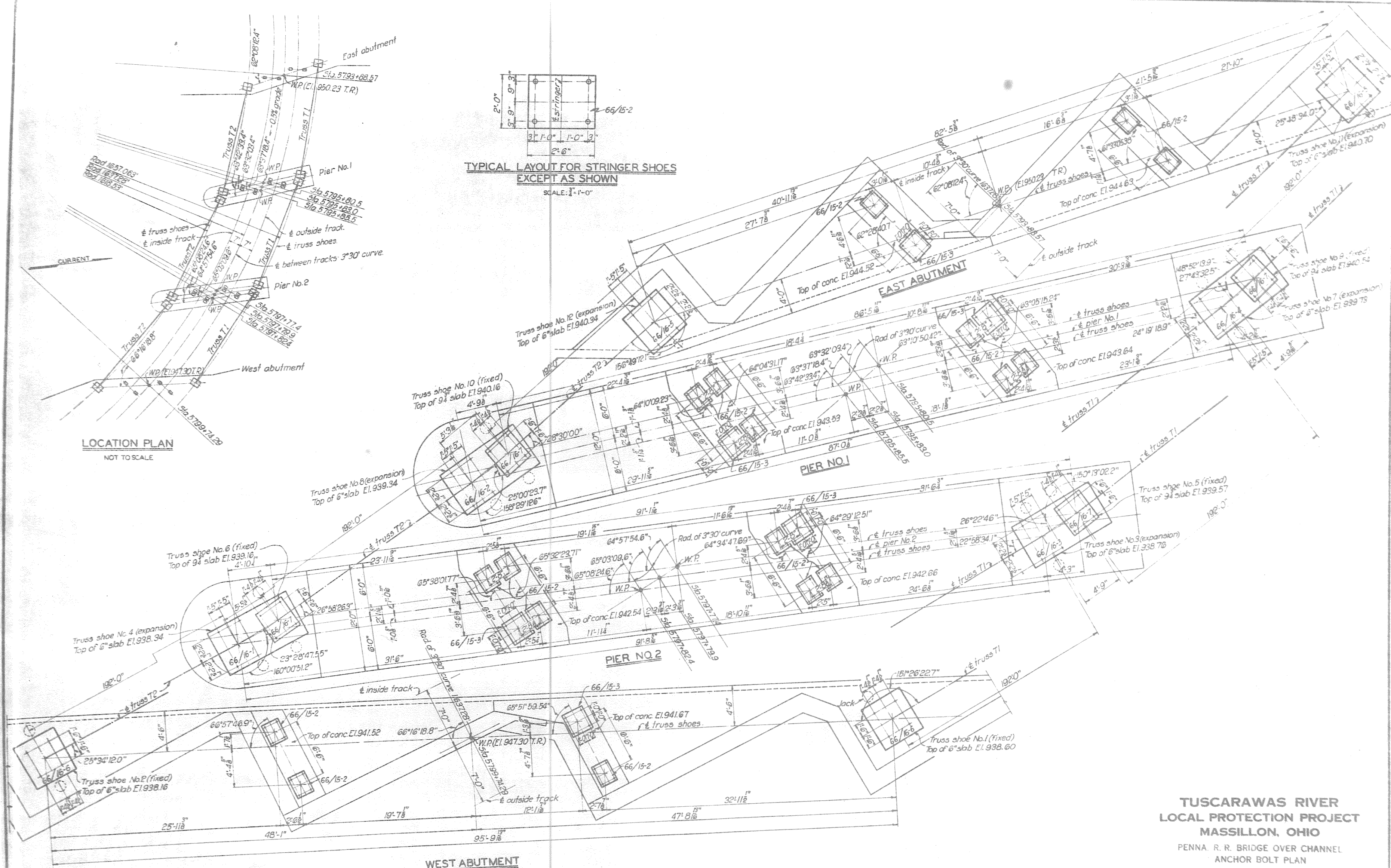
**MASSILLON, OHIO**  
**CONSTRUCTION OF LOCAL PROTECTION PROJECT**  
**PENNA. RR. BRIDGE SUPERSTRUCTURE**  
CONTRACT NO. W-516-ENG-1793 (TERMINATED)  
CONTRACT NO. W-46-022-ENG-667

**CORPS OF ENGINEERS**

**U. S. ARMY**

**HUNTINGTON DISTRICT**

#4  
3



LOCATION PLAN  
NOT TO SCALE

**TUSCARAWAS RIVER  
LOCAL PROTECTION PROJECT  
MASSILLON, OHIO**

PENNA. R. R. BRIDGE OVER CHANNEL  
ANCHOR BOLT PLAN

10 13 SHEETS SHEET NO. 12 SCALE: 1/4" = 1'-0"

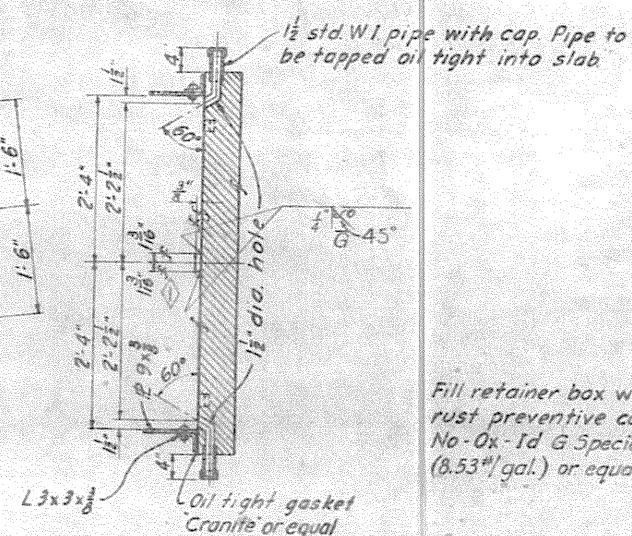
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., JAN. 1946

SUBMITTED BY: *[Signature]* APPROVED BY: *[Signature]*  
DRAWN BY: A. W. S. CHECKED BY: H. E. C. FILE NO. 0271-PMPB-66/17  
TRANSMITTED WITH LETTER

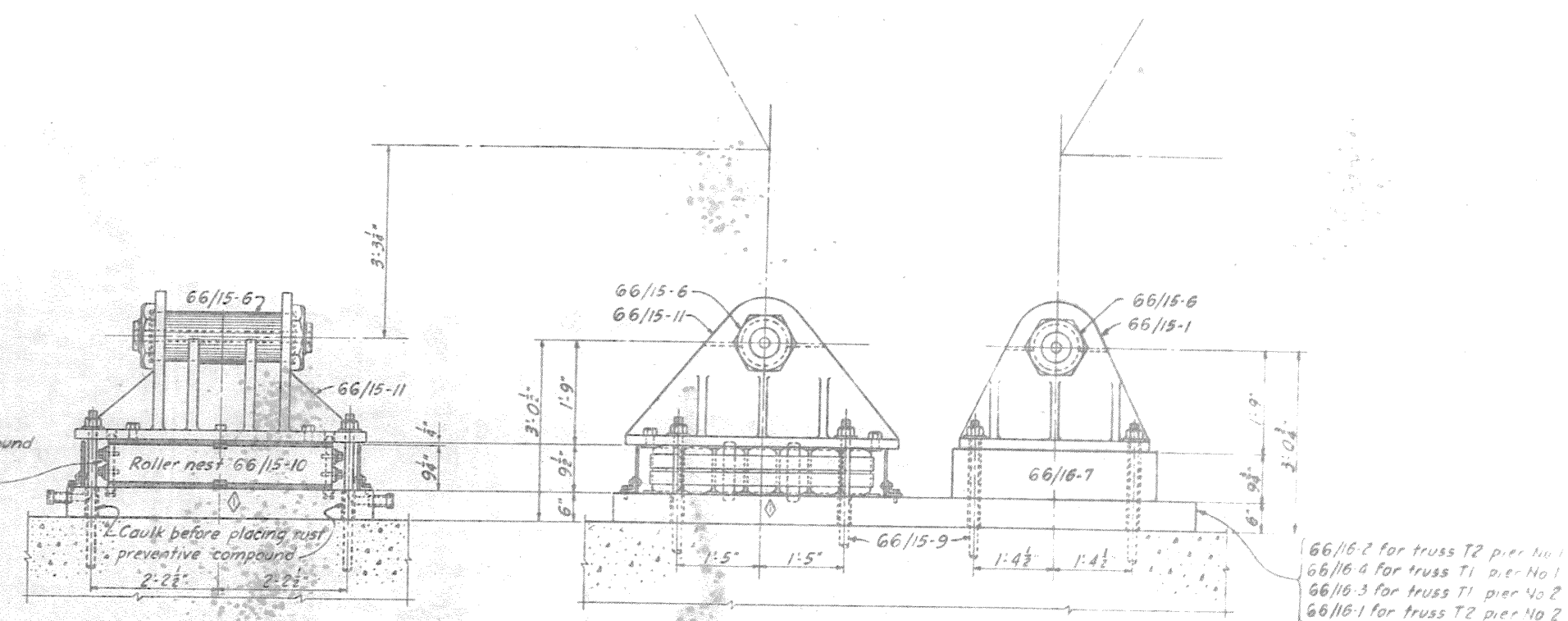
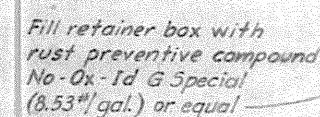
BY	DATE	CHARACTER

WORK AS CONSTRUCTED.





SECTION A-A

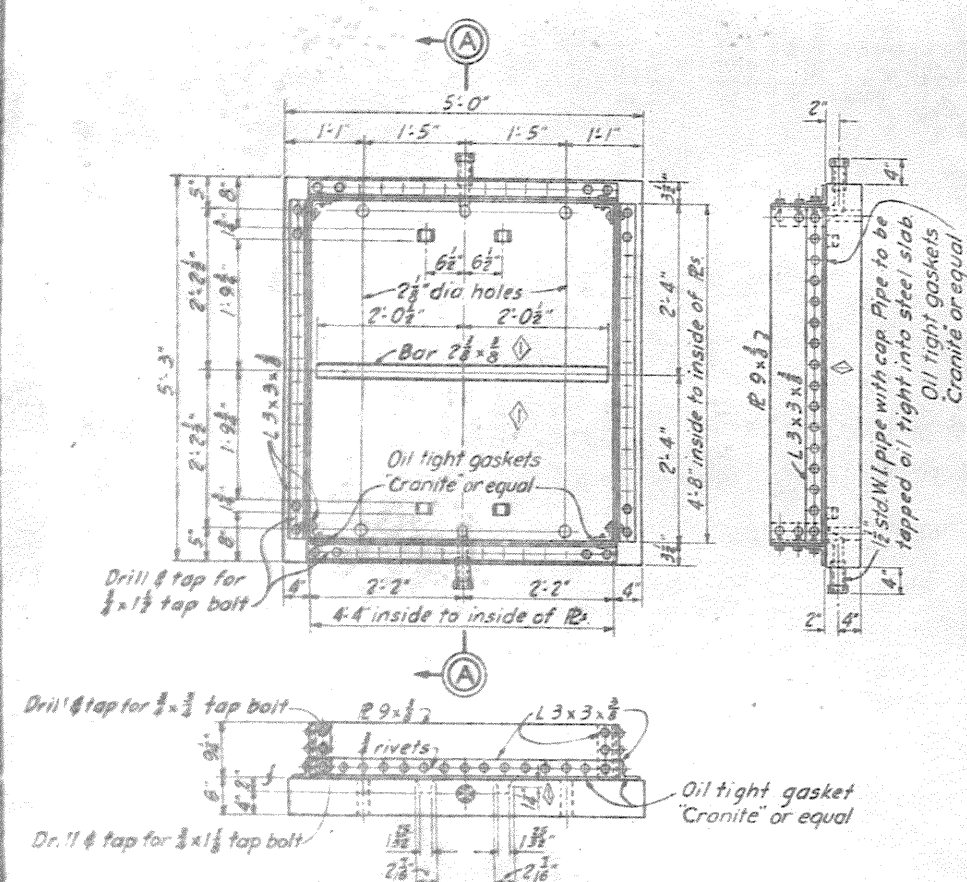


## ASSEMBLY

BEARING SLAB, ROLLER NEST AND CASTINGS SHOWN

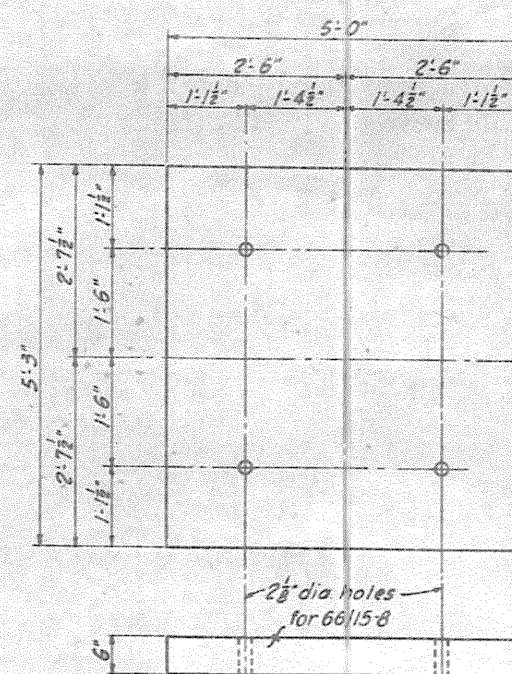
BEARING SLAB

STRUCTURAL STEEL				
MARK	66/16-1	MAKE	I	WT. 13,280 LBS.
MARK	66/16-2	MAKE	I	WT. 13,280 LBS.
MARK	66/16-3	MAKE	I	WT. 13,280 LBS.
MARK	66/16-4	MAKE	I	WT. 13,280 LBS.



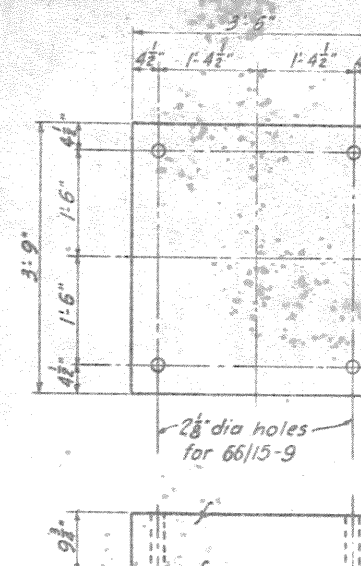
BEARING SLAB

STRUCT. STEEL MARK 66/16-5  
MAKE 2 WT. 6890 LBS.



BEARING SLAB

STRUCT. STEEL	MARK 66/16-6
MAKE 2	WT. 6400 LBS



BEARING SLAB

STRUCT. STEEL MARK 68/16-7  
MAKE 4 WT. 5190 LBS.

Materials stored at Bridge Site (See Specifications)

12 - 1 1/2" std. black steel pipe caps (For Marks 66/16-1 to 5 incl.)  
360 - 3/4 x 1 1/2" tap bolts (For Marks 66/16-1 to 5 incl.)  
48 - 3/4 x 3/4" tap bolts (For Marks 66/16-1 to 5 incl.)  
24 - 3/4 x 1 1/2" tap bolts (For Marks 66/16-1 to 5 incl.)  
54 - 3/4 x 1 1/2" tap bolts c/wk. slotted heads (For Marks 66/16-1 to 5 incl.)

**TUSCARAWAS RIVER  
LOCAL PROTECTION PROJECT  
MASSILLON, OHIO**

PENNA. R. R. BRIDGE OVER CHANNEL  
BEARING ASSEMBLY & DETAILS

IN 3 SHEETS      SHEET NO. 11      SCALE: 1" = 1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. JAN. 1946

SUBMITTED: Joe Cook APPROVED: Wm. Cook

姓名: 王明 性别: 男 年龄: 25 职业: 教师  
 联系电话: 13800138000 电子邮箱: wangming@163.com  
 联系地址: 北京市朝阳区

TRACED BY A. S. 78 AUG 20 1967  
 CHECKED BY H. U. B. FILE NO 027-PMPB-66/16

## WORK AS CONSTRUCTED



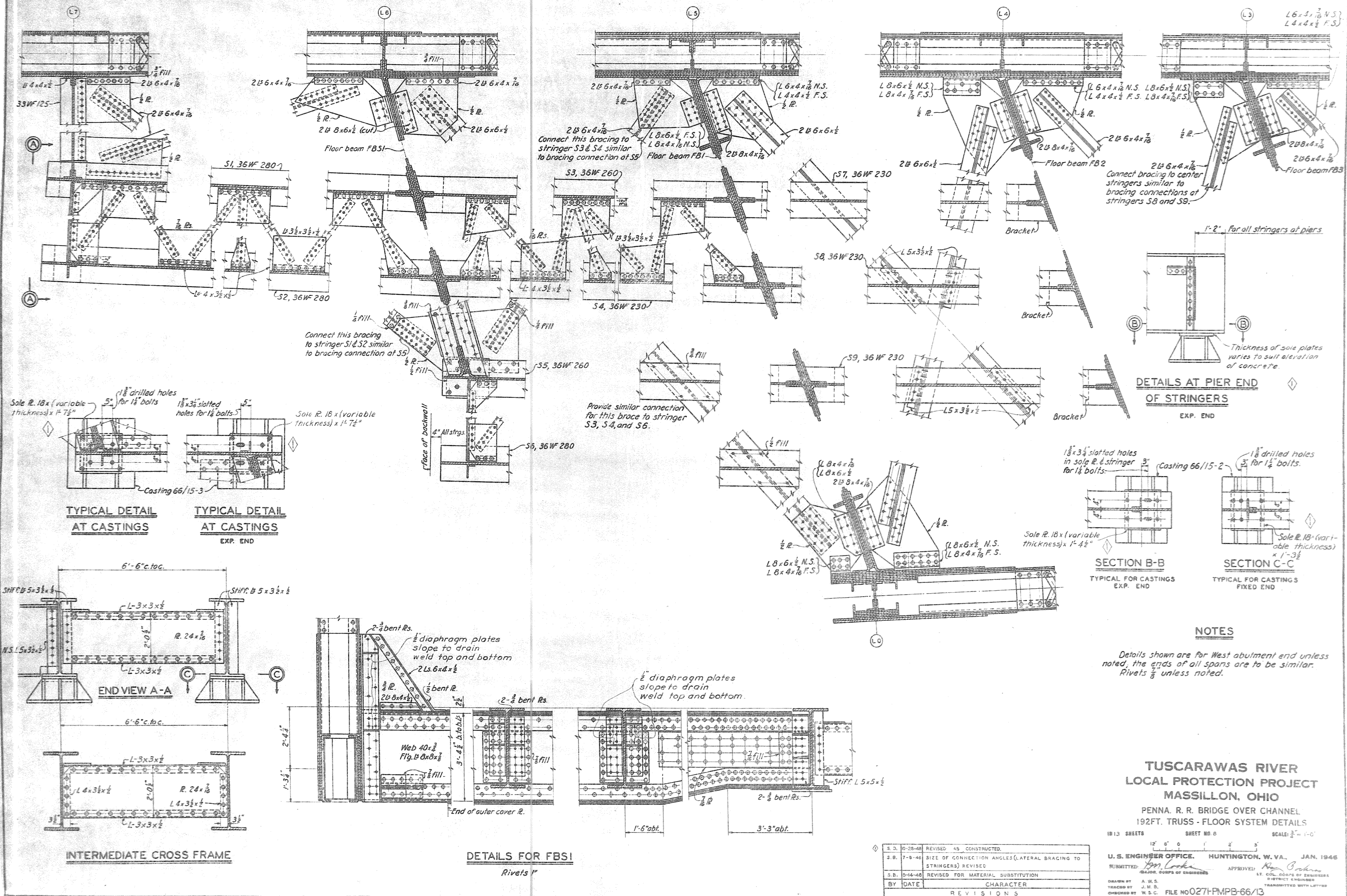




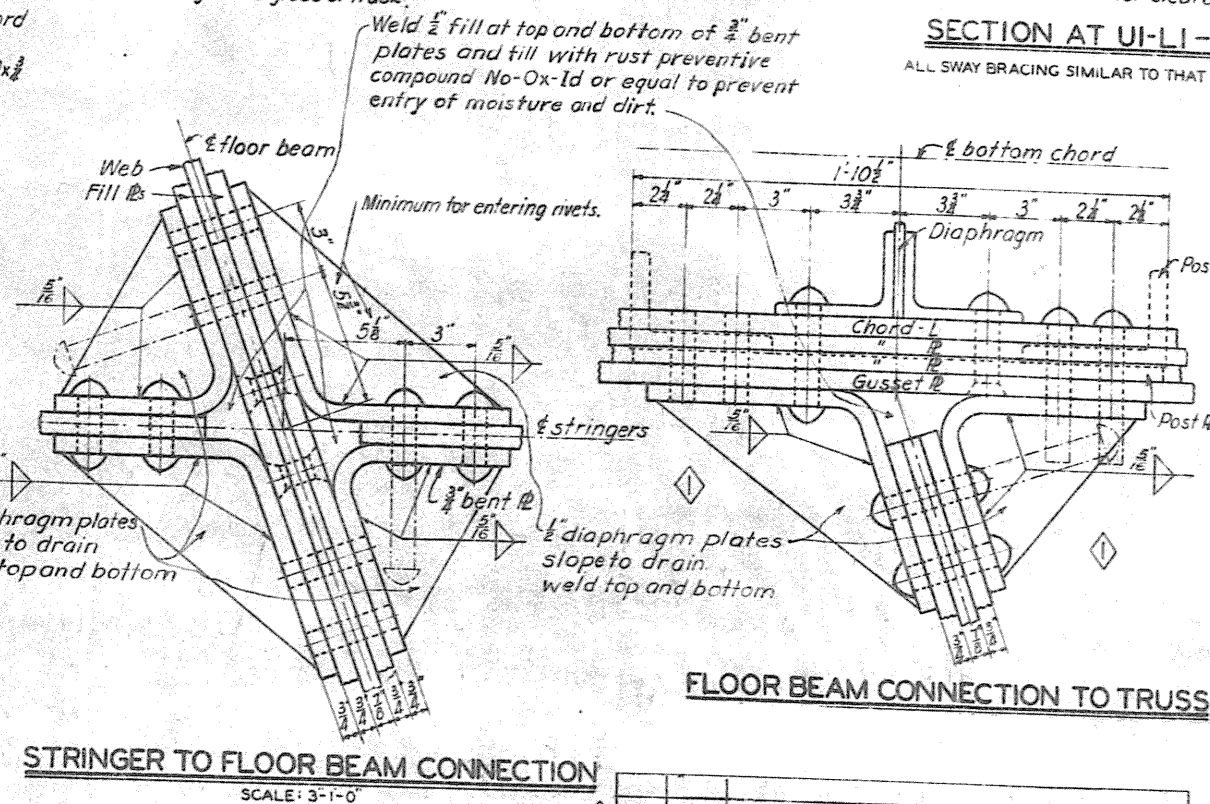
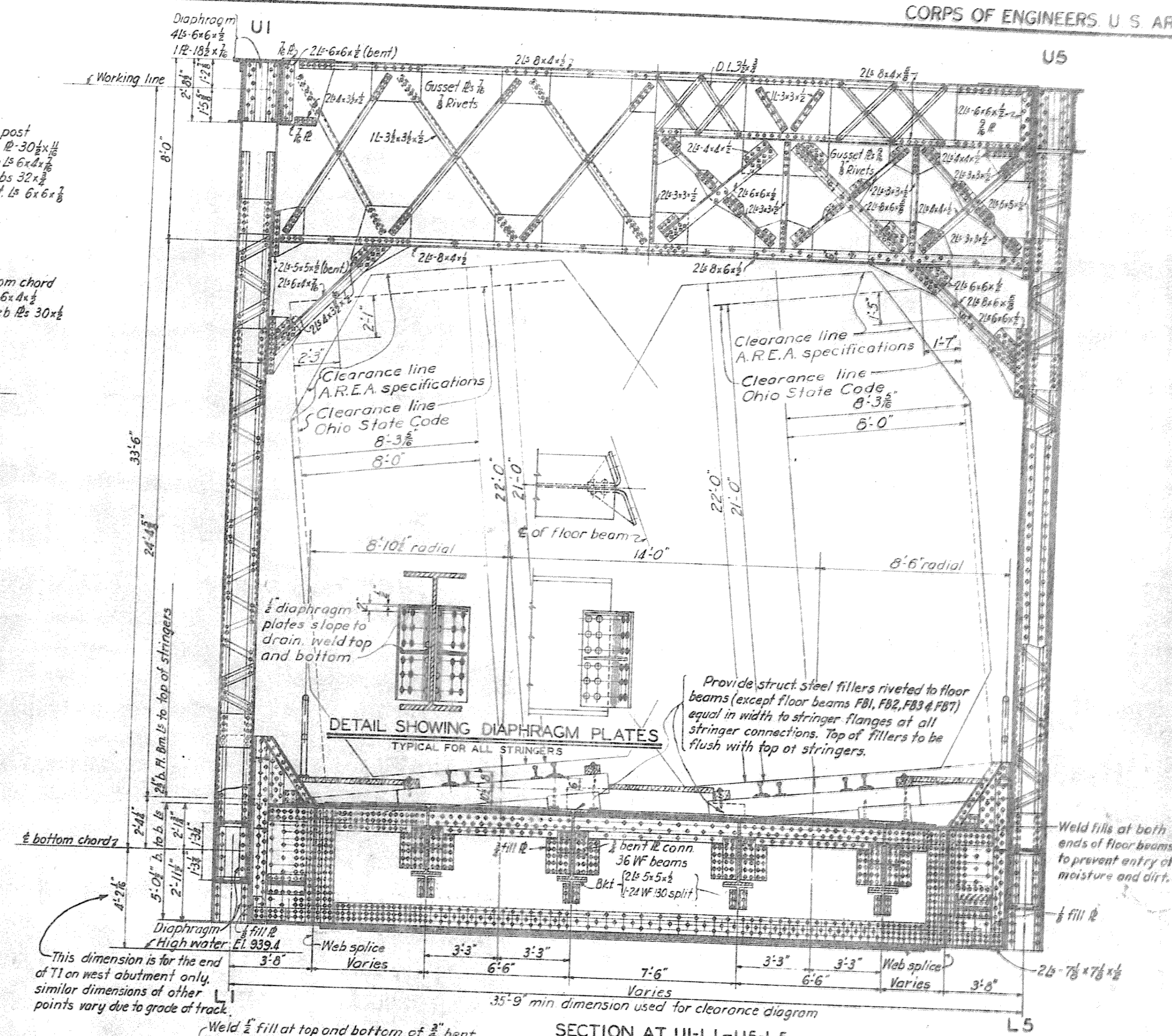
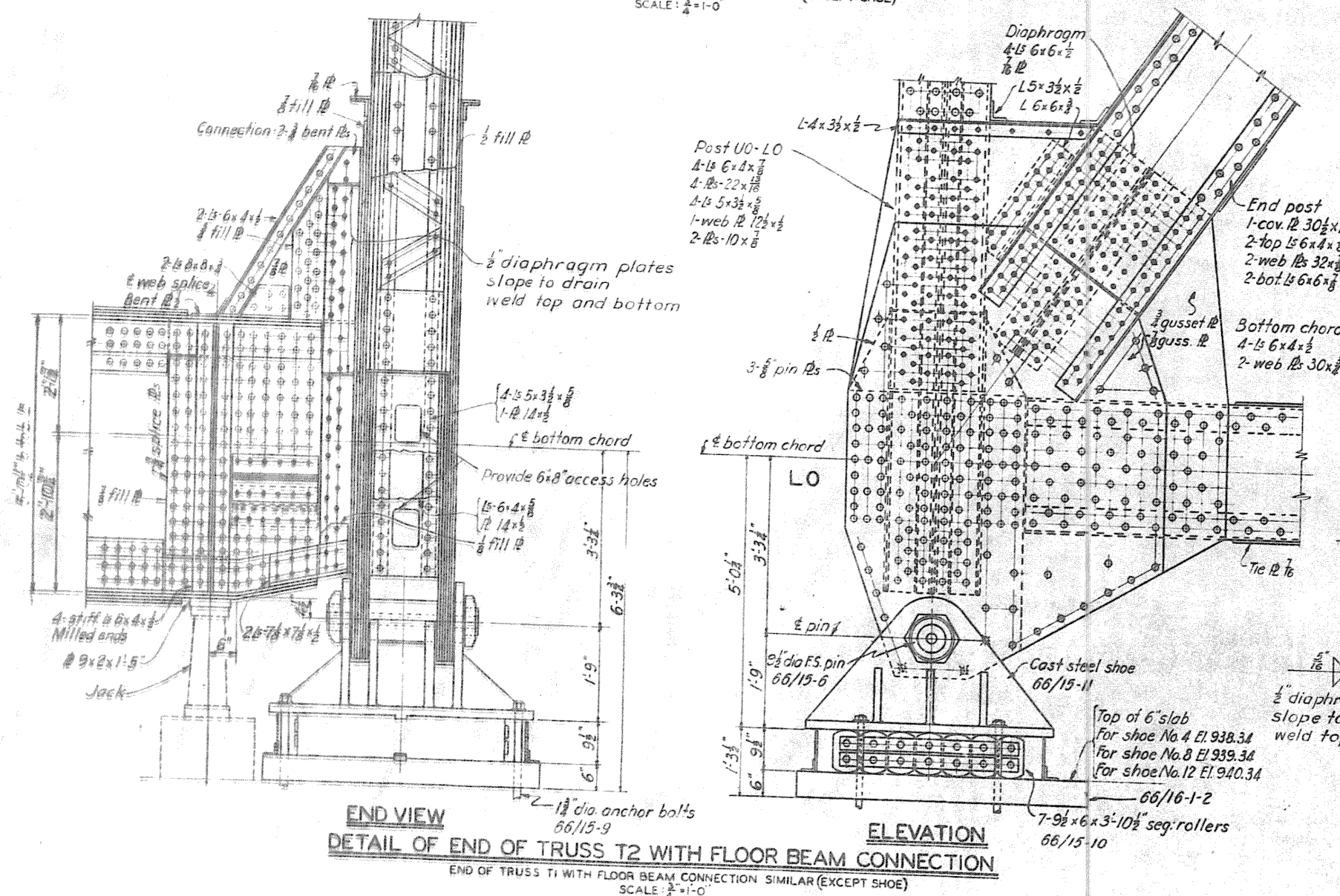
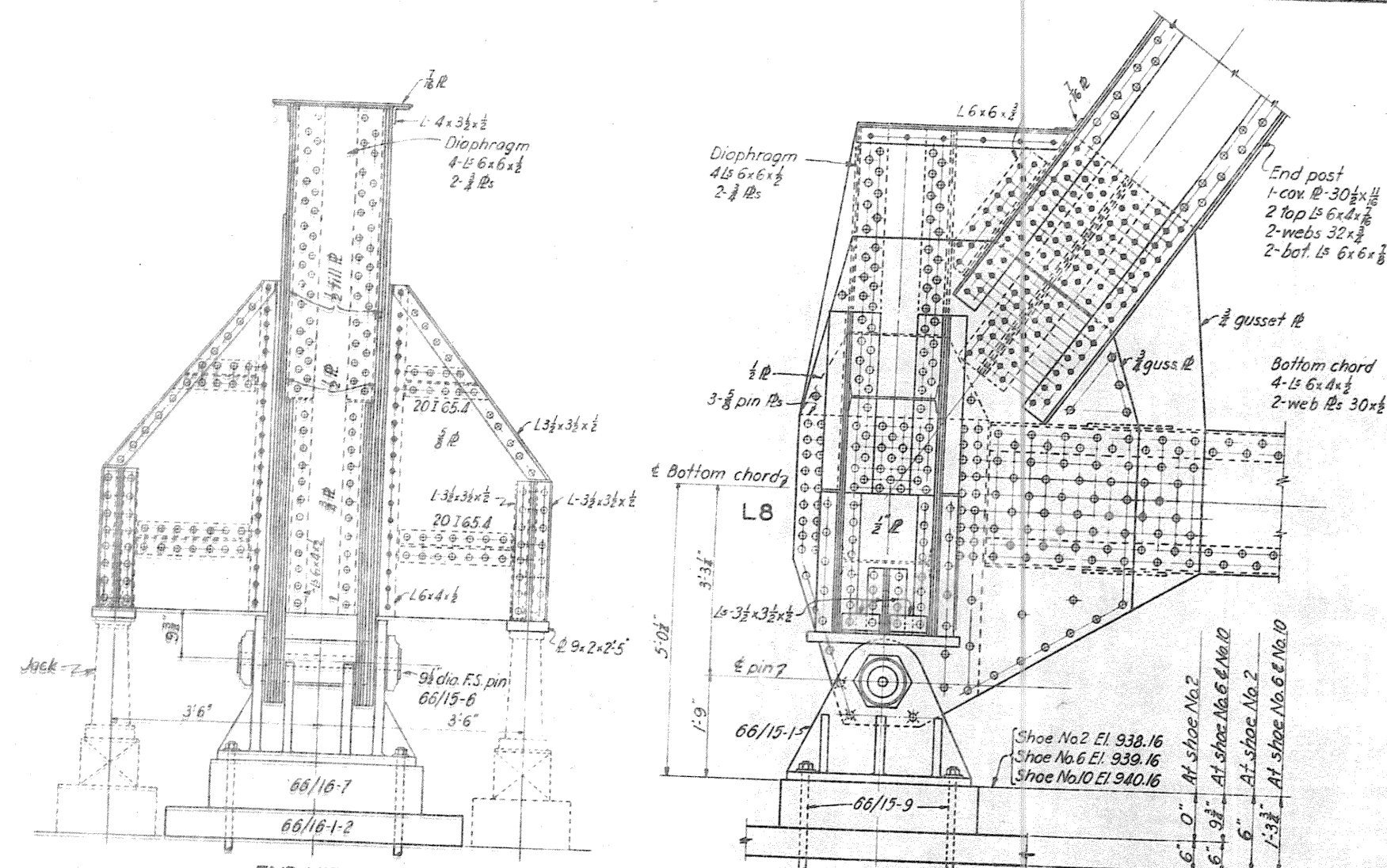


13 SECTS SHEET NO 9 SCALE: 1/4" = 1'-0"

WORK AS CONSTRUCTED







FLOOR BEAM CONNECTION TO TRUSS

## NOTES

Trusses and beams to be structural steel.  
For size of sections making up the  
floor beams see Dwg. No. 66/10

**TUSCARAWAS RIVER  
LOCAL PROTECTION PROJECT  
MASSILLON, OHIO**  
PENNA. R. R. BRIDGE OVER CHANNEL  
192 FT. TRUSS - DETAILS

IN 13 SHEETS  
SHEET NO. 7  
SCALE: 3/4" = 1'-0"

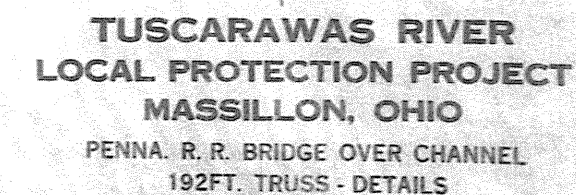
U. S. ENGINEER OFFICE  
HUNTINGTON, W. VA.  
JAN. 1946

SUBMITTED BY: [Signature]  
DRAWN BY: A. W. S.  
CHECKED BY: W. S. C.  
FILE NO. 0271-PMPB-66/12

NO.	DATE	REVISIONS
1	10-29-45	AS USED AS CONSTRUCTED
2	5-14-46	REVISED FOR MATERIAL SUBSTITUTION
3	3-12-46	REVISED U1-L1 FOR ADDENDUM NO. 2
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		

WORK AS CONSTRUCTED





IN 13 SHEETS SHEET NO. 3 SCALE: 1"=1'-0"

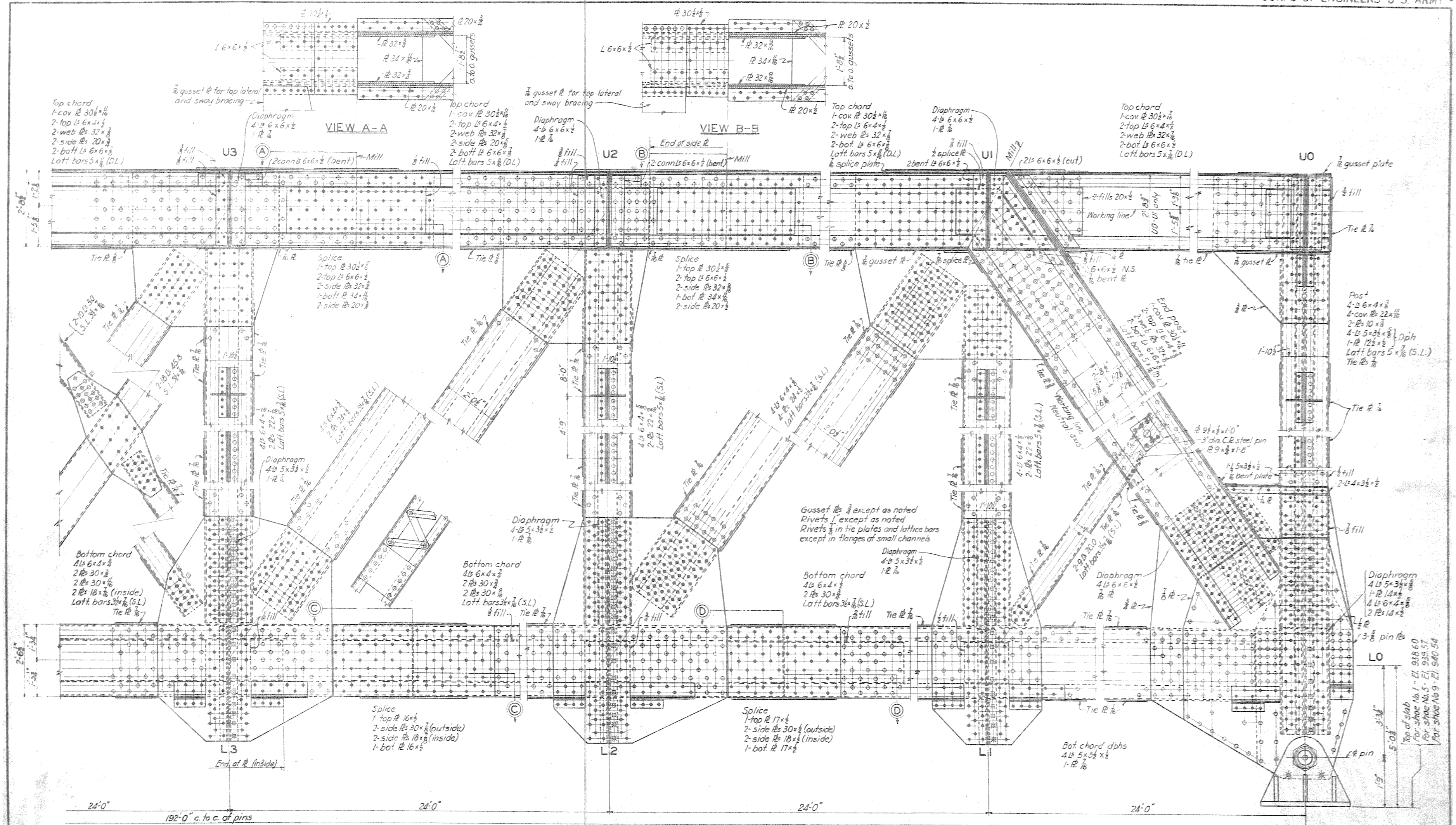
U. S. ENGINEER'S OFFICE HUNTINGTON, W. VA. JAN. 1946

SUBMITTED: *John C. Cook* APPROVED: *John C. Cook*  
MAJOR, CORPS OF ENGINEERS LT. COL, CORPS OF ENGINEERS  
DISTRICT ENGINEER

TRANSD BY S. B. TRANSMITTED WITH LETTER  
CHECKED BY A. J. M.  
ENGINEER BY W. S. C. FILE NO 0271-PMPB-66-41

WORK AS CONSTRUCTED





**TUSCARAWAS RIVER  
LOCAL PROTECTION PROJECT  
MASSILLON, OHIO  
PENNA. R.R. BRIDGE OVER CHANNEL  
192FT. TRUSS - DETAILS**

192 SHEETS SHEET NO. 6 SCALE:  $\frac{1}{4}" = 1'-0"$

U.S. ENGINEER OFFICE HUNTINGTON, W. VA. JAN. 1946

SUBMITTED: *[Signature]* APPROVED: *[Signature]*

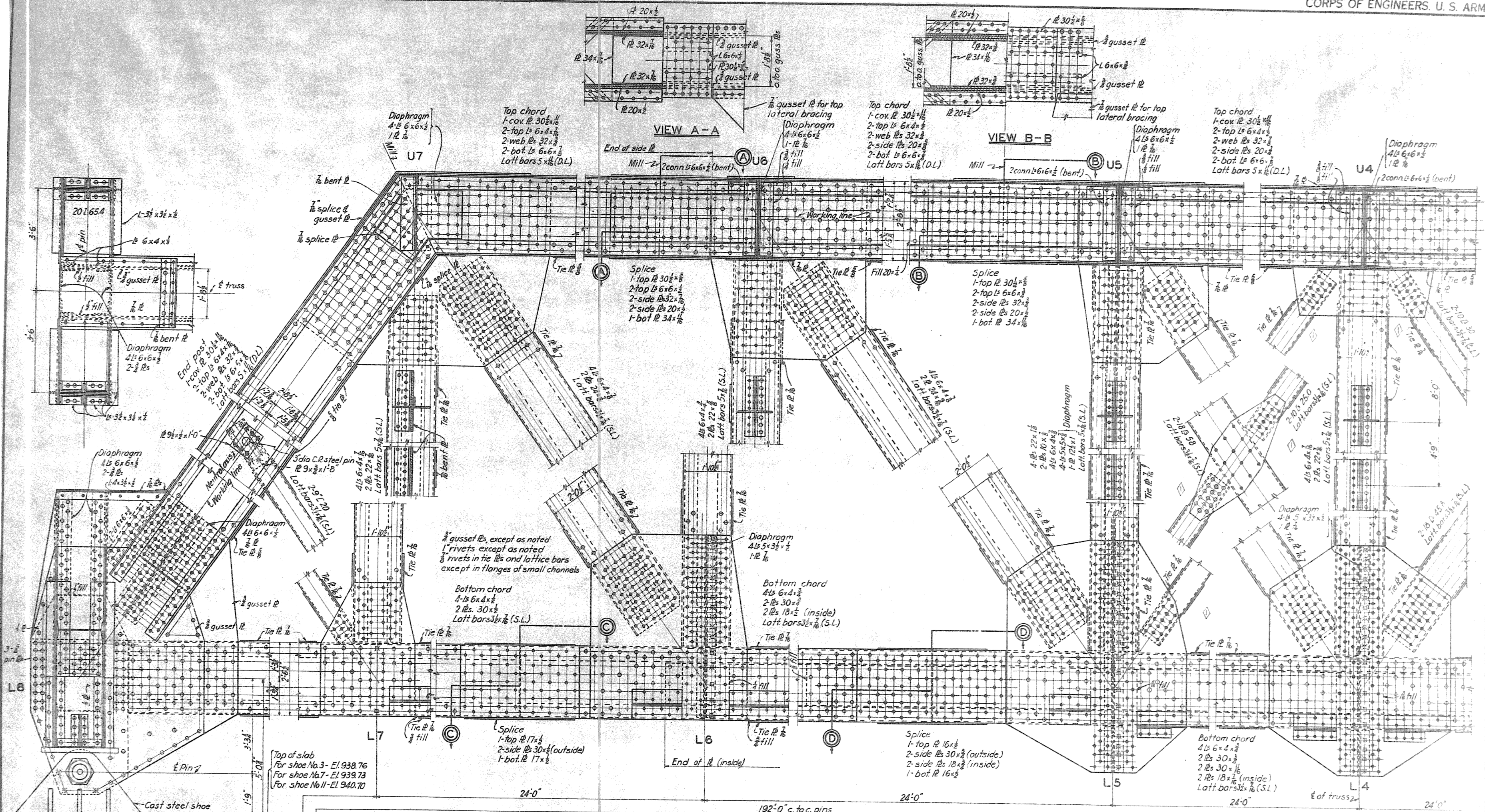
MAJOR, CORPS OF ENGINEERS DISTRICT ENGINEER

DRAWN BY: A.B. CHECKED BY: A.S.M. FILE NO. 0271-PMPB-66/11

NO.	DATE	REVISIONS
1	10-28-46	REVISED AS CONSTRUCTED
2	7-8-46	LACING BARS IN TOP CHORD AND END POSTS REVISED
3	5-14-46	REVISED FOR MATERIAL SUBSTITUTION
4	5-12-46	REVISED U-1 FOR ADDENDUM NO. 2

WORK AS CONSTRUCTED





UPSTREAM ELEVATION OF TRUSS T1  
 DOWNSTREAM ELEVATION OF TRUSS T2 (EXCEPT SHOES)

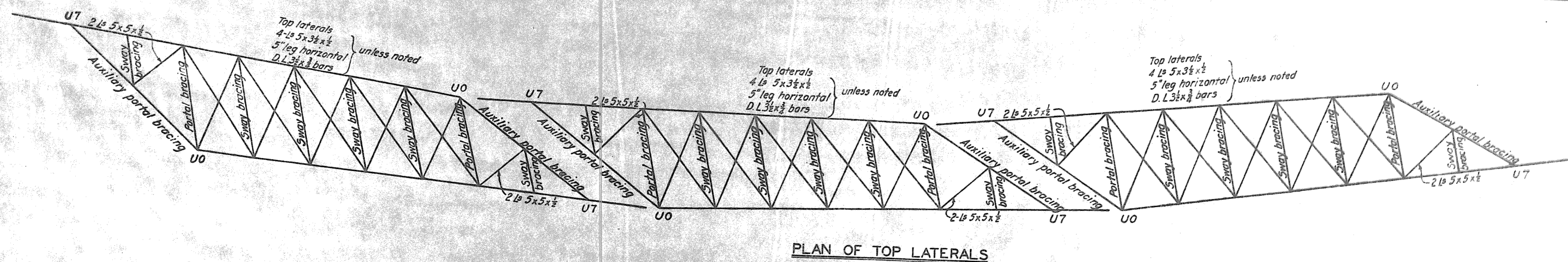
**TUSCARAWAS RIVER  
 LOCAL PROTECTION PROJECT  
 MASSILLON, OHIO  
 PENNA. R. R. BRIDGE OVER CHANNEL  
 192FT. TRUSS - DETAILS**

NO.	DATE	REVISIONS
S.B.	7-29-46	REVISED AS CONSTRUCTED.
S.B.	7-8-46	LACING BARS IN TOP CHORD AND END POSTS REVISED
S.B.	5-20-46	MEMBER U5-L5-REVISED FOR MATERIAL SUBSTITUTION
S.B.	5-14-46	REVISED FOR MATERIAL SUBSTITUTION
H.U.B.	3-12-46	REVISED U7-L7 FOR ADDENDUM NO.2
BY	DATE	CHARACTER

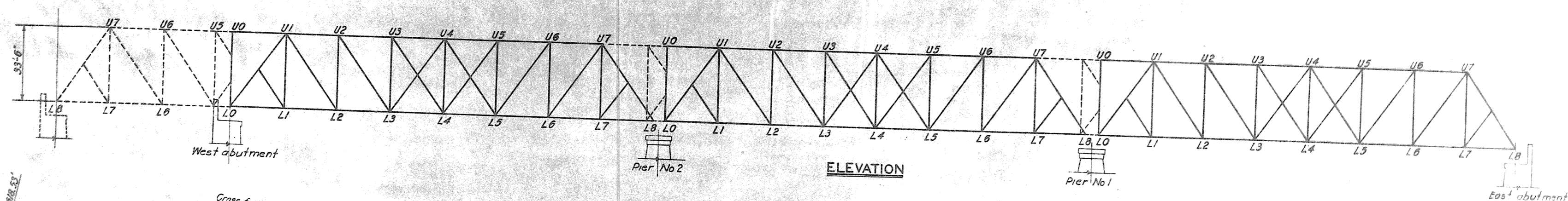
IN 13 SHEETS SHEET NO. 5 SCALE:  $\frac{1}{4}'' = 1'-0''$   
 U.S. ENGINEER OFFICE, HUNTINGTON, W. VA. JAN. 1946  
 SUBMITTED: *J.M. Larkin* APPROVED: *H.W. Vothman*  
 MAJOR, CORPS OF ENGINEERS LT COL, CORPS OF ENGINEERS  
 DISTRICT ENGINEER  
 DRAWN BY: S.B. CHECKED BY: A.J.K. FILE NO. 0271-PMB-66/10  
 TRANSMITTED WITH LETTERS

WORK AS CONSTRUCTED

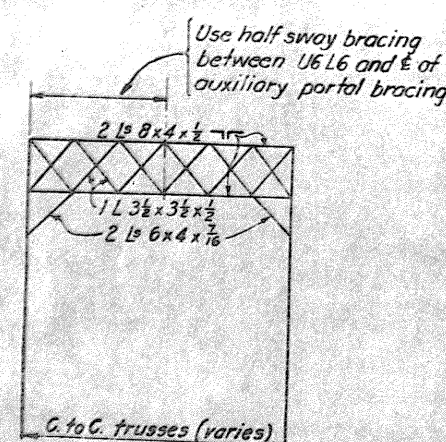
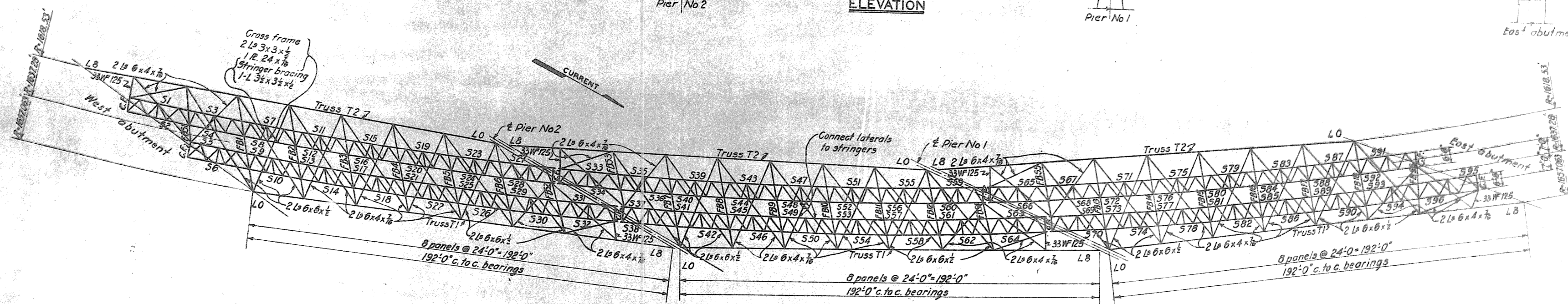




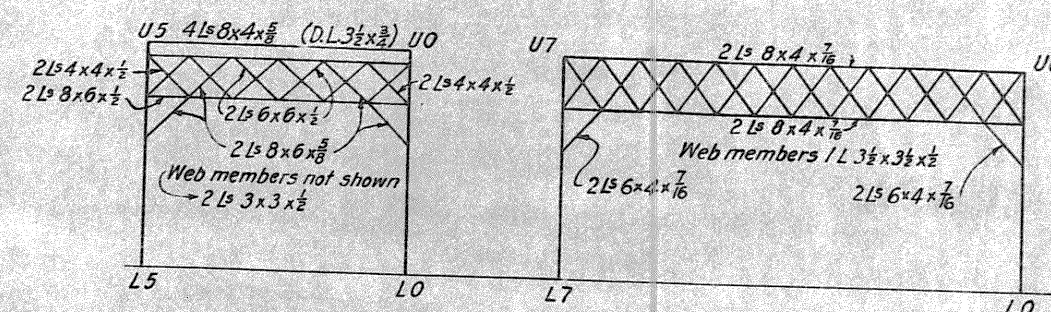
PLAN OF TOP LATERALS



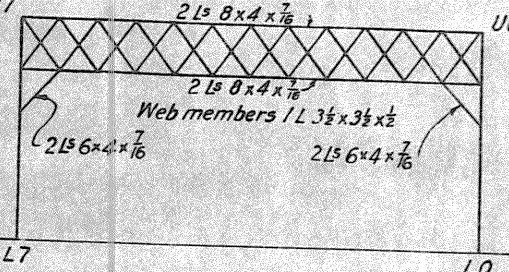
ELEVATION



SWAY BRACING  
SCALE: 1" = 15'-0"



**PORTAL BRACING**  
SCALE: 1"=15'-0"



**AUXILIARY PORTAL BRACING**  
SCALE: 1" = 15'-0"

**TUSCARAWAS RIVER  
LOCAL PROTECTION PROJECT  
MASSILLON, OHIO**

PENNA. R. R. BRIDGE OVER CHANNEL  
192FT. TRUSS SPANS - DESIGN

IN 13 SHEETS      SHEET NO. 4      SCALE: 1/2"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., JAN. 1966

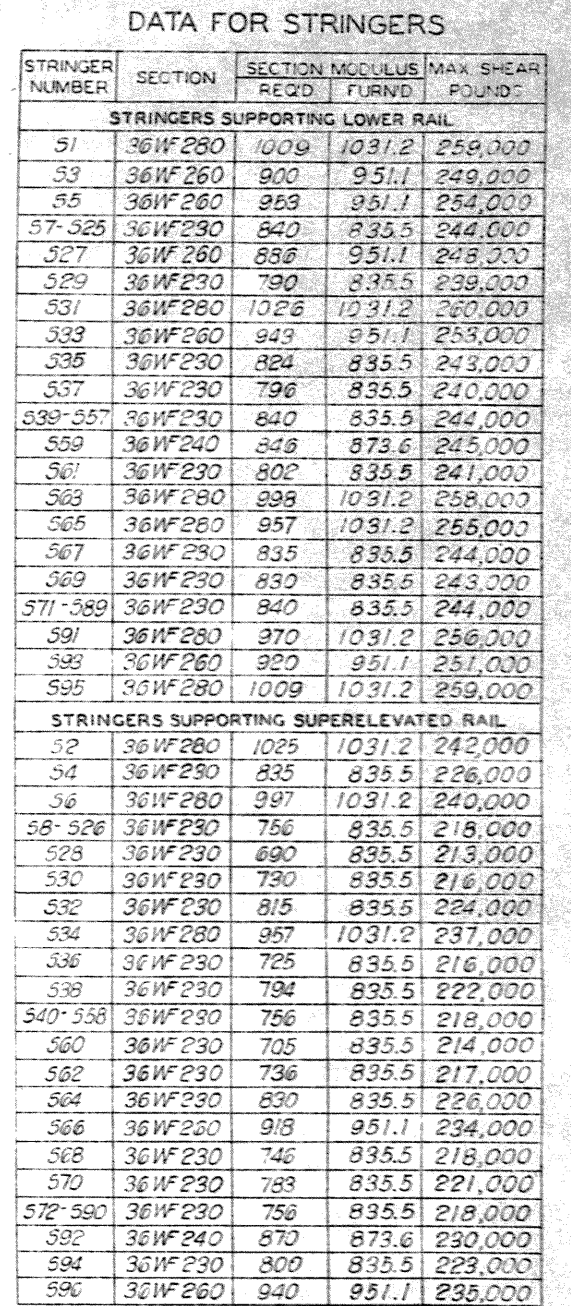
SUBMITTED: Jim Cook APPROVED: Ken Cook

[illegible]

DRAWN BY A. W. S.  
TRACED BY M. C.

WORK AS CONSTRUCTED •

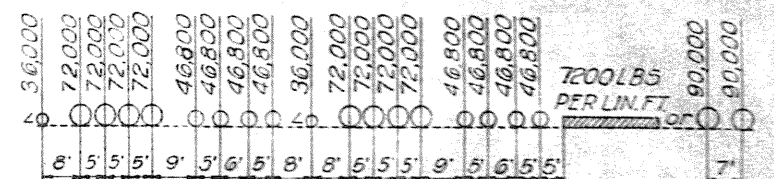




Rivets 1" dia., stringer connections to floor beams.

### DATA FOR SHORT FLOOR BEAMS

MAX. SHEAR  
 $D = 26,000$   
 $L = 153,000$   
 $I = 151,000$   
 $Total = 330,000$   
 @  $11,000 \text{ "}^2 = 30.0 \text{ "}$  reqd. { Shear lbs. added  
 Web  $40 \times \frac{3}{4} = 30 \text{ "}$  gross. eff. of shallow end.  
 Rivet pitch at end =  $3 \text{ "}$  - 2 rows  
                                   at center =  $6 \text{ "}$  - 2 rows  
TYPICAL SECTION (1" Ribs)  
 Structural steel  
 $4 \text{ I}^s 8 \times 8 \times \frac{7}{8}$   
 Web fl.  $40 \times \frac{3}{4}$   
 Cover plates as given in table below



LOCOMOTIVE LOADING - COOPER'S E72

## NOTES

Superstructure designed in accordance with A.R.E.A. Specifications for Steel Railway Bridges, dated 1936.

Centrifugal force is based on a superlevation of 6 inches and is added to the impact. If the effect of centrifugal is to decrease the stress in any member, it is neglected.

All stresses given in kips unless otherwise noted.

Rivets 1" dia. in main members except lacing. All other rivets to be 5/8" dia. unless otherwise noted.

All material to be of structural steel.

For allowable unit stresses for structural steel see A.R.E.A. Specifications for Steel Railway Bridges, dated 1936.

**TUSCARAWAS RIVER  
LOCAL PROTECTION PROJECT  
MASSILLON, OHIO**

PENNA. R. R. BRIDGE OVER CHANNEL  
192FT. TRUSS SPANS - DESIGN

IN 13 SHEETS      SHEET NO. 3      SCALE:  $\frac{1}{8}'' = 1'-0''$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. JAN. 1946

SUBMITTED: *[Signature]* MAJOR, CORPS OF ENGINEERS  
APPROVED: *[Signature]* LT. COL. CORPS OF ENGINEERS  
DISTRICT ENGINEER  
DRAWN BY J.M.-J.H.  
TRANSMITTED BY AIR MAIL

WORK AS CONSTRUCTED

FLOOR BM. NO.	MAX. SHEAR IN LBS.	SECT. MOD. REQ'D.	COV. PL. S. EA. FLANGE	COV. PL. LENGTH	SECT. MOD. FURNISHED	FLOOR BM. NO.	MAX. SHEAR IN LBS.	SECT. MOD. REQ'D.	COV. PL. S. EA. FLANGE	COV. PL. LENGTH	SECT. MOD. FURNISHED
F81	D= 53,000 L= 280,000 T= 230,000 T= 53,000	5334	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	5334	F810 F F811	D= 50,000 L= 278,000 T= 239,000 T= 567,000	4585	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	4585
F82 F F83	D= 53,000 L= 273,000 T= 227,000 T= 553,000	5124	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	5125	F812	D= 48,000 L= 267,000 T= 237,000 T= 552,000	4080	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	4100
F84 F F85	D= 53,000 L= 278,000 T= 236,000 T= 567,000	4767	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	4780	F813	D= 50,000 L= 269,000 T= 227,000 T= 546,000	4913	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	4920
F86	D= 48,000 L= 268,000 T= 234,000 T= 550,000	4205	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	4240	F814 F F815	D= 53,000 L= 277,000 T= 237,000 T= 567,000	4777	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	4780
F87	D= 51,000 L= 269,000 T= 225,000 T= 545,000	5016	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	5040	F816 F F817	D= 49,000 L= 278,000 T= 241,000 T= 568,000	4471	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	4510
F88 F F89	D= 53,000 L= 271,000 T= 227,000 T= 551,000	4965	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	4985	F818	D= 49,000 L= 274,000 T= 244,000 T= 567,000	4147	1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$ 1R 20x $\frac{3}{8}$	24'-0" Full length	4170

FLOOR BM NO	MAX SHEAR IN LBS	SECT. MOD. REQD.	COV. PLS. EA. FLANGE	COV. PL. LENGTH	SECT. MOD. FURNISHED
FB51	D = 26,000 L = 153,000 I = 151,000 T = 230,000	1981	1R 18 x $\frac{3}{4}$ 1R 18 x $\frac{7}{8}$	Full length	1988
FB52	D = 23,000 L = 142,000 I = 129,000 T = 224,000	1557	1R 18 x $\frac{1}{2}$ 1R 18 x $\frac{1}{2}$	Full length	1588
FB53	D = 25,000 L = 148,000 I = 146,000 T = 219,000	1899	1R 18 x $\frac{3}{4}$ 1R 18 x $\frac{3}{4}$	Full length	1905
FB54	D = 21,000 L = 143,000 I = 130,000 T = 204,000	1507	1R 18 x $\frac{7}{16}$ 1R 18 x $\frac{1}{2}$	Full length	1545
FB55	D = 23,000 L = 149,000 I = 149,000 T = 222,000	1847	1R 18 x $\frac{11}{16}$ 1R 18 x $\frac{3}{4}$	Full length	1860
FB56	D = 22,000 L = 148,000 I = 136,000 T = 206,000	1527	1R 18 x $\frac{7}{16}$ 1R 18 x $\frac{1}{2}$	Full length	1545

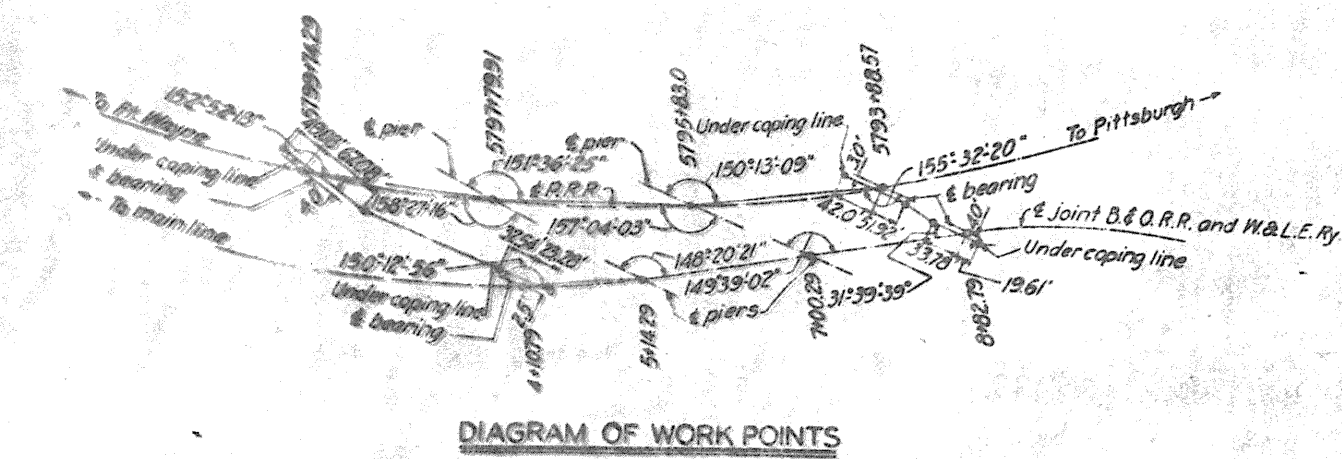
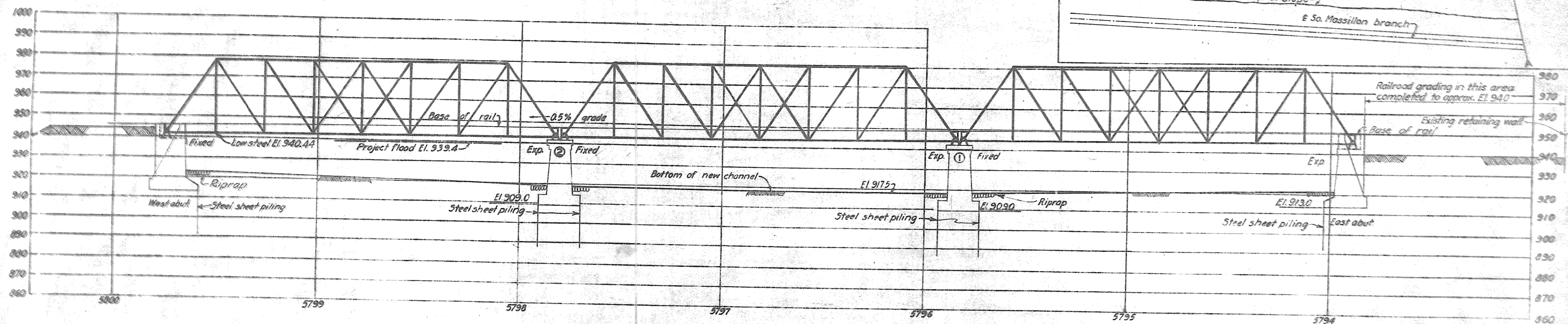
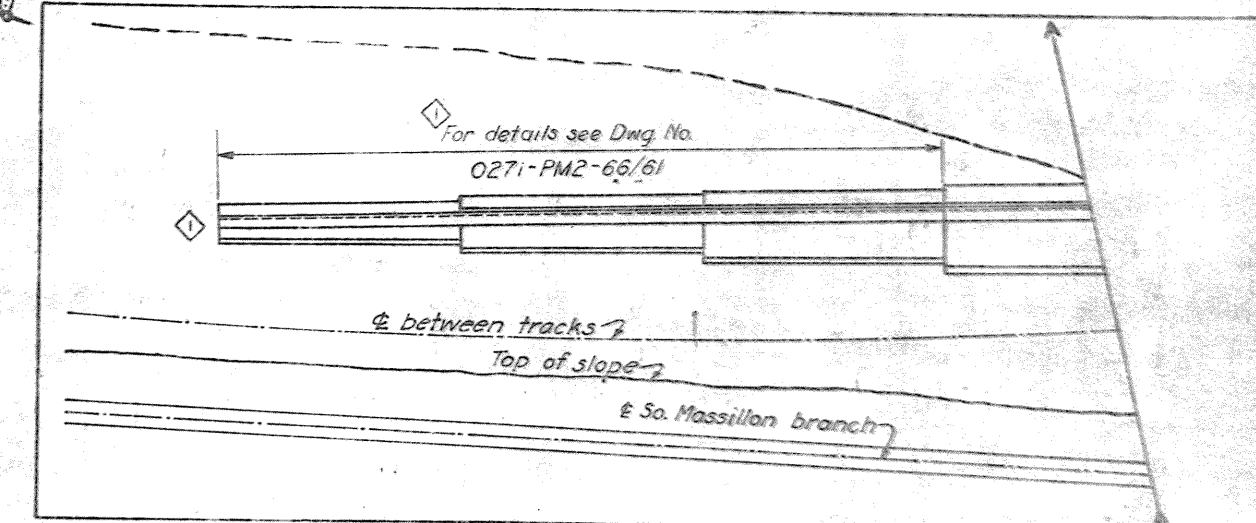
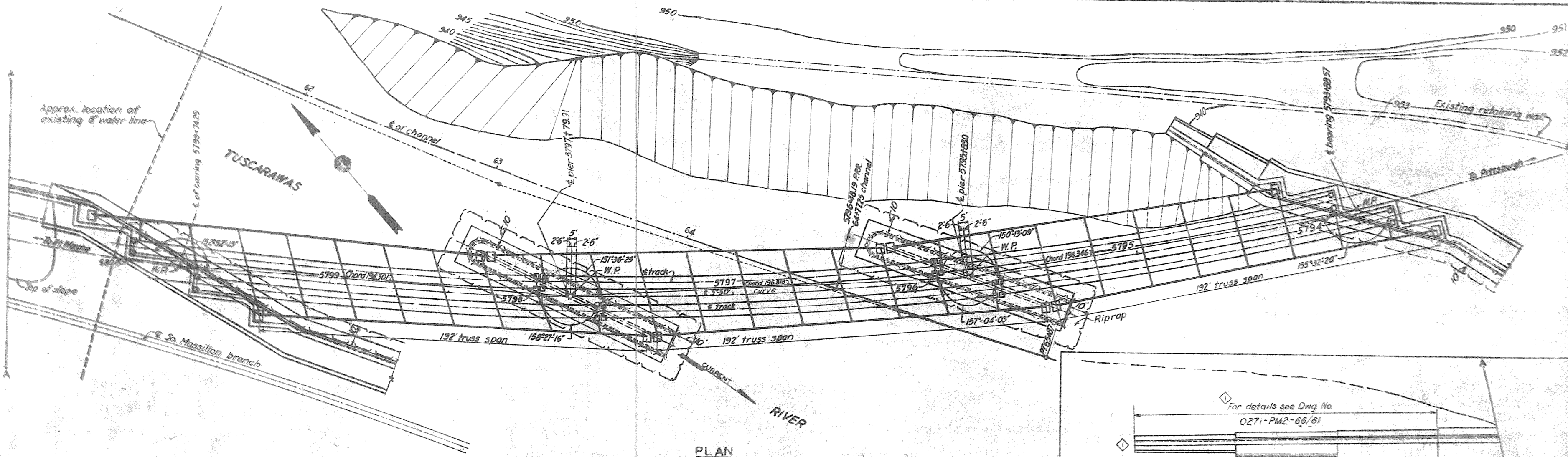
S.B.	7-8-46	LACING BARS IN TOP CHORD AND END POSTS REVISED
S.B.	5-20-46	MEMBER U5-L5-REVISED FOR MATERIAL SUBSTITUTION
S.B.	5-14-46	REVISED FOR MATERIAL SUBSTITUTION
H.U.B.	3-12-46	REVISED U-I-LI FOR ADDENDUM NO.2
BY	DATE	CHARACTER
R E V I S I O N S		

IN 13 SHEETS      SHEET NO. 3      SCALE:  $\frac{1}{8}'' = 1'-0''$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. JAN. 1946

SUBMITTED: *[Signature]* MAJOR, CORPS OF ENGINEERS  
APPROVED: *[Signature]* LT. COL. CORPS OF ENGINEERS  
DISTRICT ENGINEER  
DRAWN BY J.M.-J.H.  
TRANSMITTED BY AIR MAIL





PROFILE

DIAGRAM OF WORK POINTS

**TUSCARAWAS RIVER  
LOCAL PROTECTION PROJECT  
MASSILLON, OHIO  
PENNA. R. R. BRIDGE OVER CHANNEL  
GENERAL PLAN & PROFILE**

IN 13 SHEETS SHEET NO. 2 SCALE 1" = 20'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. JAN. 1946

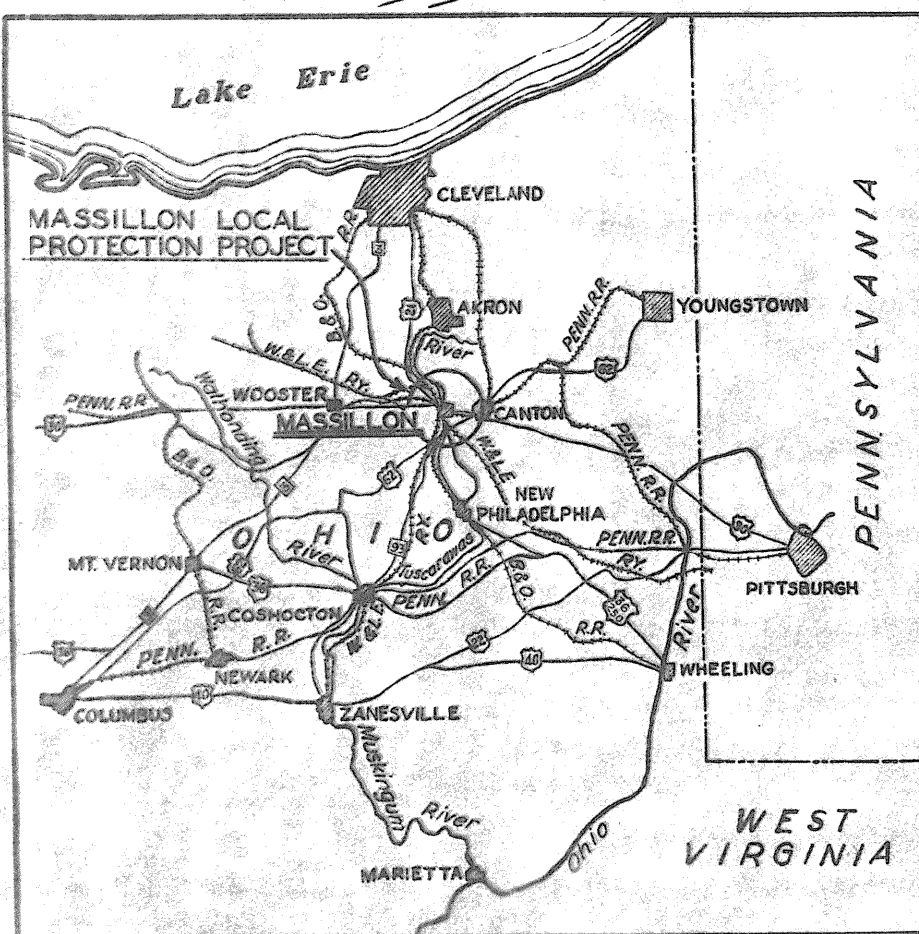
SUBMITTED: *[Signature]* APPROVED: *[Signature]*  
MAJOR, CORPS OF ENGINEERS DISTRICT ENGINEER

DRAWN BY: A. W. M. CHECKED BY: D. S. J. FILE NO. 0271-PMPB-66/1

NO.	DATE	REVISIONS
1	5-19-46	REVISED AS CONSTRUCTED
2		CHARACTER
3		REVISIONS

WORK AS CONSTRUCTED





VICINITY MAP

0 10 20 30 40 50 60

SCALE IN MILES

# INDEX

SHEET NO.	FILE NO.	DESCRIPTION
		PENNA.R.R. BRIDGE OVER CHANNEL
1	0271-PMPB-10/1	Index and Site Map
2	0271-PMPB-66/1	General Plan and Profile
3	66/8	192ft. Truss Spans- Design
4	66/9	192ft. Truss Spans- Design
5	66/10	192ft. Truss - Details.
6	66/11	192ft. Truss - Details
7	66/12	192ft. Truss - Details
8	66/13	192ft. Truss- Floor System Details
9	66/14	192 ft. Truss - Top Lateral Details
10	66/15	Castings
11	66/16	Bearing Assembly and Details
12	66/17	Anchor Bolt Plan
13	66/18	Tie Plan
	◇ 0271-PN/2-66/62	Walkway Extension

WORK UNDER CONSTRUCTION OR PROPOSED

EXISTING RAILROAD-NO CHANGE  
RAILROAD RELOCATIONS  
RAILROADS TO BE ABANDONED  
CHANNEL LINES  
LEVEE  
EXISTING CHANNEL  
PUMPING STATION

**TUSCARAWAS RIVER  
LOCAL PROTECTION PROJECT  
MASSILLON, OHIO**

PENNA. R. R. BRIDGE OVER CHANNEL  
INDEX AND SITE MAP

IN 13 SHEETS      SHEET NO. 1      SCALE: 1" = 400'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., JAN. 1946

SUBMITTED: *Jan. 1964* APPROVED: *H. C. Barker*

MAJOR, CORPS OF ENGINEERS LT COL. CORPS OF ENGINEERS  
DISTRICT ENGINEER

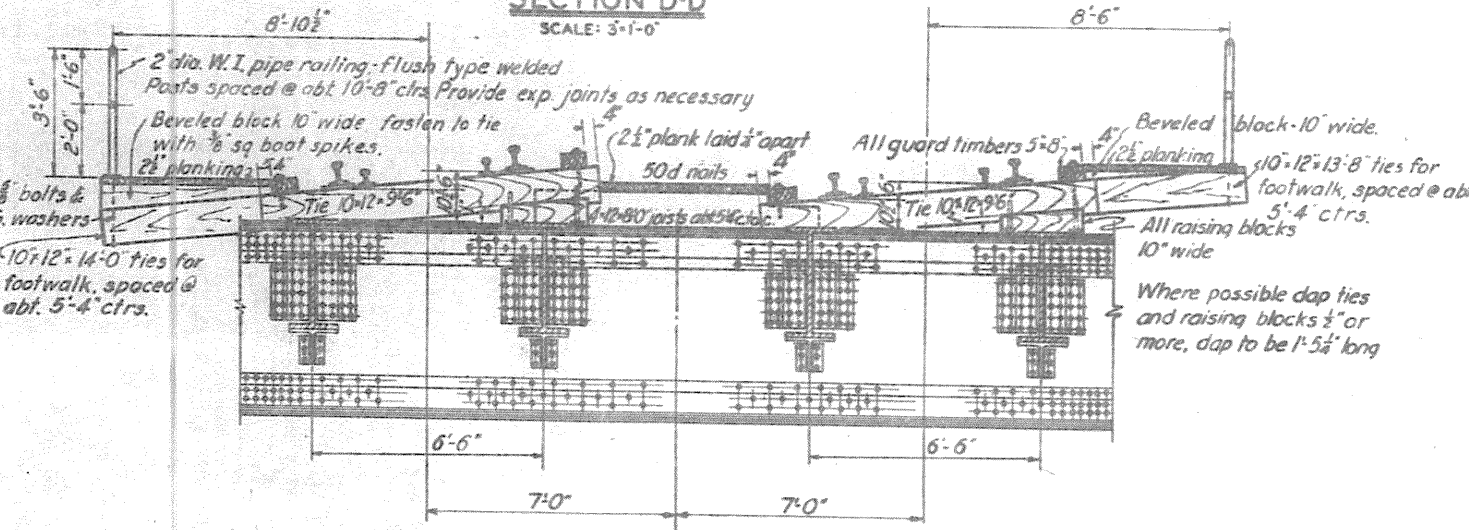
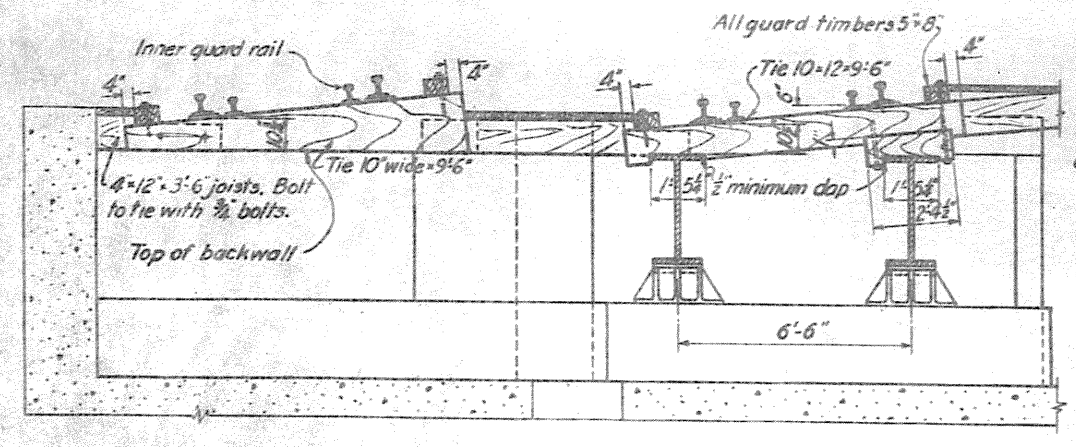
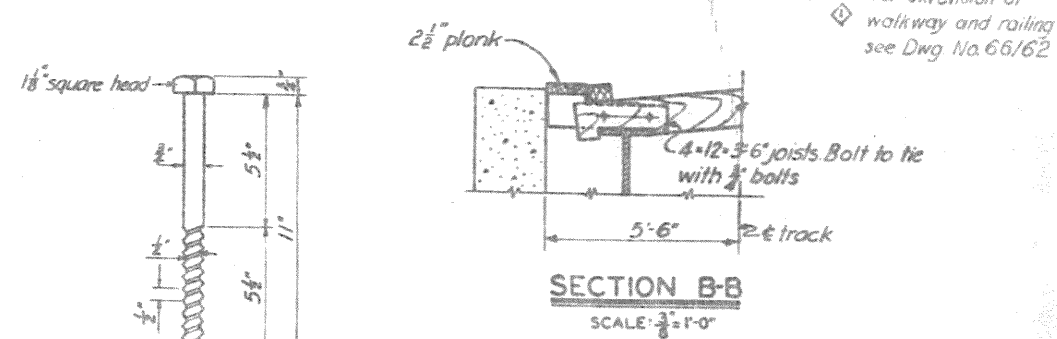
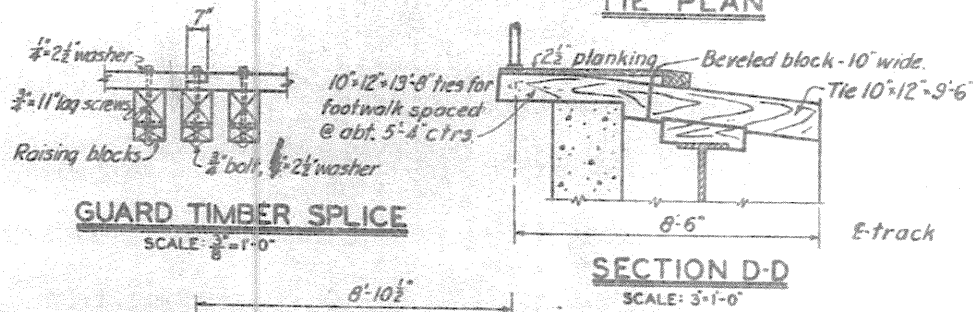
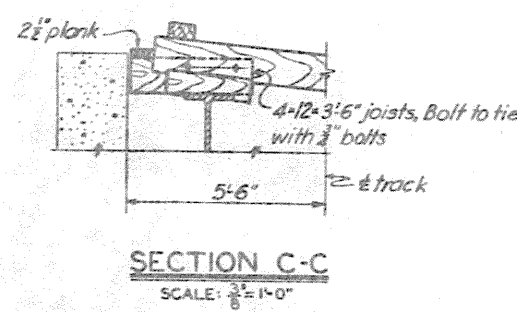
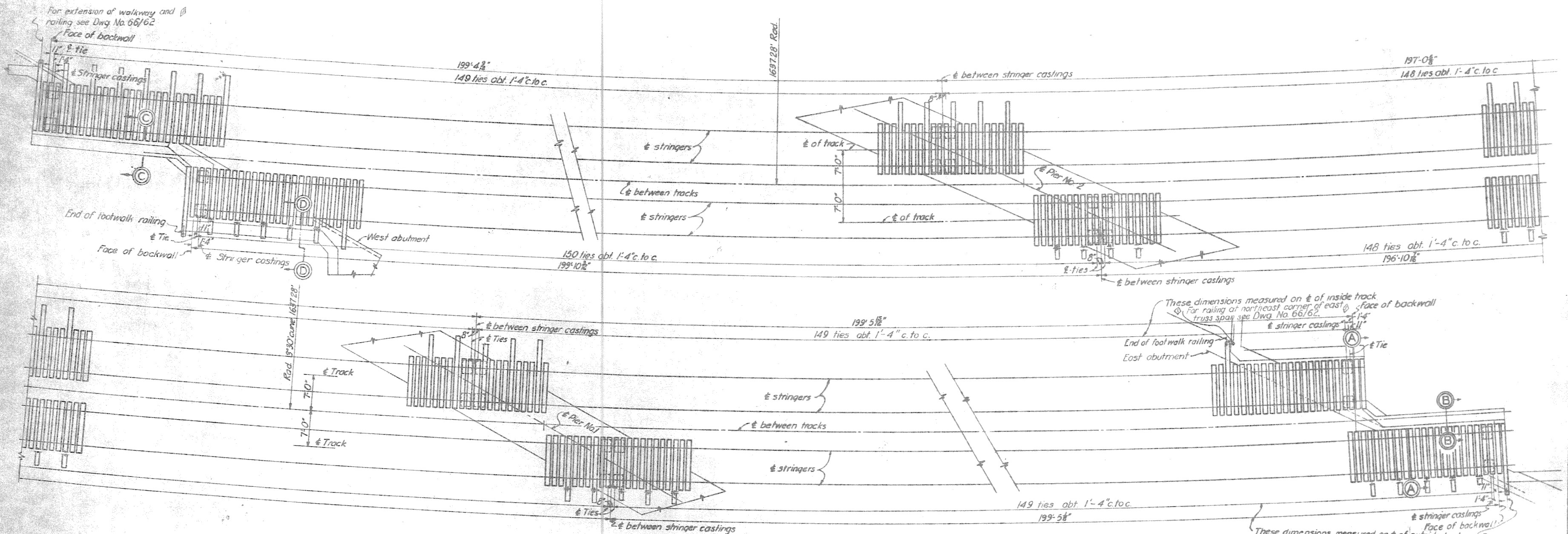
DRAWN BY A.W.M. TRANSMITTED WITH LETTER  
 REPRODUCED BY B.A.E.

FILE NO. 0271-PMPB-10/1

## WORK AS CONSTRUCTED

WORK AS CONSTRUCTED

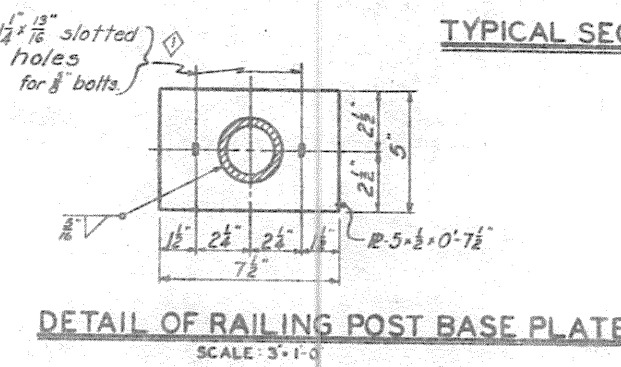




**NOTES**

Fasten guard timbers to ties with 3/4" x 11" lag screws, staggered 2" except at splices and outside ends of guard timbers where a 3/4" bolt through tie or tie and raising block shall be used, with a 3/4" x 2 1/2" washer under head and nut, and head of lag screws. Holes in ties for lag screws shall be bored 3/4" dia. Lag screws shall not be driven but must be screwed into position. Raising blocks to be fastened to ties with 4" x 2" square boat spikes, to extend into tie not less than 4".

**SECTION A-A**  
SHOWING TYPICAL DETAILS AT BACKWALLS  
AND STRINGERS BETWEEN FLOOR BEAMS  
SCALE: 3/8" = 1'-0"



**TYPICAL SECTION THRU TRACKS AT FLOOR BEAMS**  
SCALE: 3/8" = 1'-0"

**TUSCARAWAS RIVER  
LOCAL PROTECTION PROJECT  
MASSILLON, OHIO  
PENNA. R. R. BRIDGE OVER CHANNEL  
TIE PLAN**

IN 13 SHEETS SHEET NO. 13 SCALE: 3/8" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., JAN. 1946

SUBMITTED BY *J. M. L.* APPROVED BY *H. R. L.*

MAJOR, CORPS OF ENGINEERS DISTRICT ENGINEER

LT. COL. CORPS OF ENGINEERS

DRAWN BY H.L.M. TRANSMITTED WITH LETTER

CHECKED BY H.L.B. FILE NO. 0271-PMPB-66/18

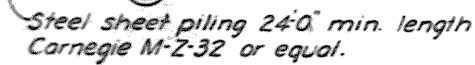
NO.	DATE	REVISIONS
1	10-28-45	REVISED AS CONSTRUCTED
2		CHARACTER
3		REVISIONS

WORK AS CONSTRUCTED









## PLAN



Chamfer all exposed edges 1/2" unless otherwise noted.  
For groove detail see Dwg. No. 66/61.  
For drain detail see Dwg. No. 66/61.  
For reinforcing steel, see Dwg. No. 66/5.  
For layout of anchor bolts, see Dwg. No. 66/17.  
For details of water stop see Dwg. No. 66/61.  
For detail of key in expansion joint, see Dwg. No. 66/61.

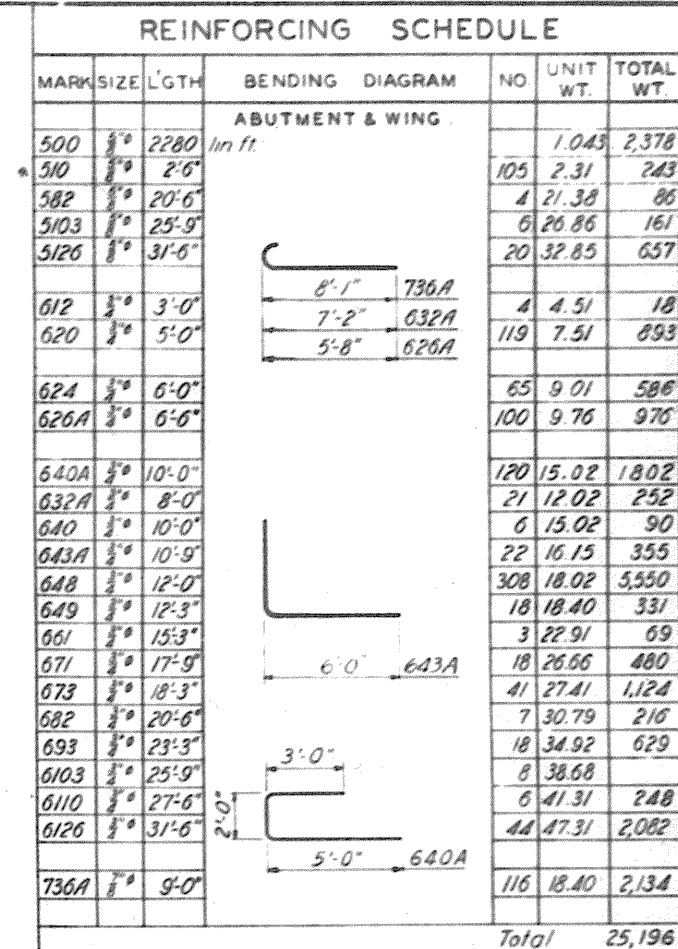
IN SHEETS SHEET NO. 10-1-0

SUBMITTED *Am. Cook* RECOMMENDED FOR APPROVAL *Ray. Voshon* APPROVED *9th Dec 1960*  
ENGINEER TECHNICAL ASSISTANT COLONEL, CORPS OF ENGINEERS

ORIGIN BY J.E.H.  
TRACED BY J.E.M.F.  
CHECKED BY E.H. FILE NO 027i-PM2-66/4

WORK AS CONSTRUCTED SUBMITTED FOR PURPOSE OF INFORMATION ONLY

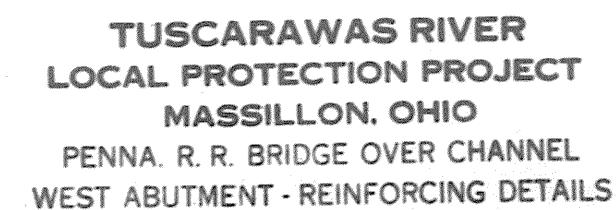




\* See drain detail, Dwg. No. 66/61



Place all reinforcing steel 4" min. from surfaces  
unless otherwise noted.  
For masonry details, see Dwg. No. 66/4



IN SHEETS SHEET NO. SCALE:  $\frac{1}{8}'' = 1'-0''$

120 4 8 2 4 20 ADD: 10.47

WINSTON-SALEM DISTRICT, CORPS OF ENGINEERS WAR DEPT

SUBMITTED      RECOMMENDED FOR APPROVAL      APPROVED

**ENGINEER                      TECHNICAL ASSISTANT                      COLONEL, CORPS OF ENGINEERS**

TRANSMITTED WITH LETTER

FILE NO 027i-PM2-66/5 DATED

MITTED FOR PURPOSE OF INFORMATION ON

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