

RECORD DRAWINGS
WORK AS CONSTRUCTED

MASSILLON, OHIO
CONSTRUCTION OF LOCAL PROTECTION PROJECT
SECTION 1

CORPS OF ENGINEERS

U. S. ARMY

HUNTINGTON DISTRICT

#6

I N D E X

SHEET NO.	FILE NO.	DESCRIPTION	SHEET NO.	FILE NO.	DESCRIPTION	SHEET NO.	FILE NO.	DESCRIPTION
	027i-PM-0/1	Index			PENNA. R. R. BRIDGE OVER B. & O.-W. & L.E. RY.			B. & O. R. R. ENGINE TERMINAL
	10/1	Site Map	027i-PM-66/27		Plan and Elevation	027i-PM-66/48		General Layout
*	10/2	Plan of Foundation Explorations	66/28		Timber Bents	66/49		Sand House
*	10/3	Test Borings	66/29		Timber Bents	66/50		Office and Shop
	16/2	General Plan	66/29A		Beam Span for B & O Tail Track	66/51		Location of 6-IN. Water Line
	16/3	General Plan	66/29B		Pile Splice Details	66/52		B. & O. R. R. Miscellaneous Details
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	16/5	General Plan	66/29D		Details			ROADBED & TRACK DETAILS
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	16/8	Typical Railroad Sections	66/31		60 Foot Girder - Details	66/55		Crossing Frog Details
	16/9	Grading Distribution	66/31A		60 Foot Girder - Details	66/56		Crossing Frog Details
	16/10	Payment Lines for Excavation and Embankment	66/31B		60 Foot Girder - Details			
	20/11	Pipe Culverts and Details	66/31C		60 Foot Girder - Details			W. & L.E. RY. FREIGHT TERMINAL
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027i-PM-66/1		General Plan and Profile	66/32B		77 Foot Girder - Details			
66/2		East Abutment - Masonry Details	66/32C		77 Foot Girder - Details			WALNUT ROAD BRIDGE
66/2A		East Abutment - Masonry Details	66/32D		77 Foot Girder - Details	027i-PM-68/36		General Plan and Profile
66/3A		East Abutment - Reinforcing Details	66/33		Castings	68/37		Abutments
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66/4A		West Abutment - Reinforcing & Masonry Details	66/34A		Anchor Bolt and Tie Plan	68/39		Plan and Elevation
66/5		West Abutment - Reinforcing Details				68/40		Design and Erection Data
66/6		Piers			PENNA. R. R. EXIST. BRIDGE OVER B. & O. R. R.	68/41		Typical Sections and Details
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66/20		Design and Details	027i-PM-66/35		General Plan and Profile			PUBLIC UTILITIES, SEWER & GATE WELL DETAILS
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			66/37		West Abutment - Reinforcing Details	82/22		Location Plan
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66/23.1		Plan and Elevation	66/40		180 Foot Truss - Design Data	82/26		Sewer and Water Line Changes - McKinley Ave. and Walnut and Cherry Rds.
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* SUBMITTED FOR INFORMATION PURPOSES ONLY

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
INDEX

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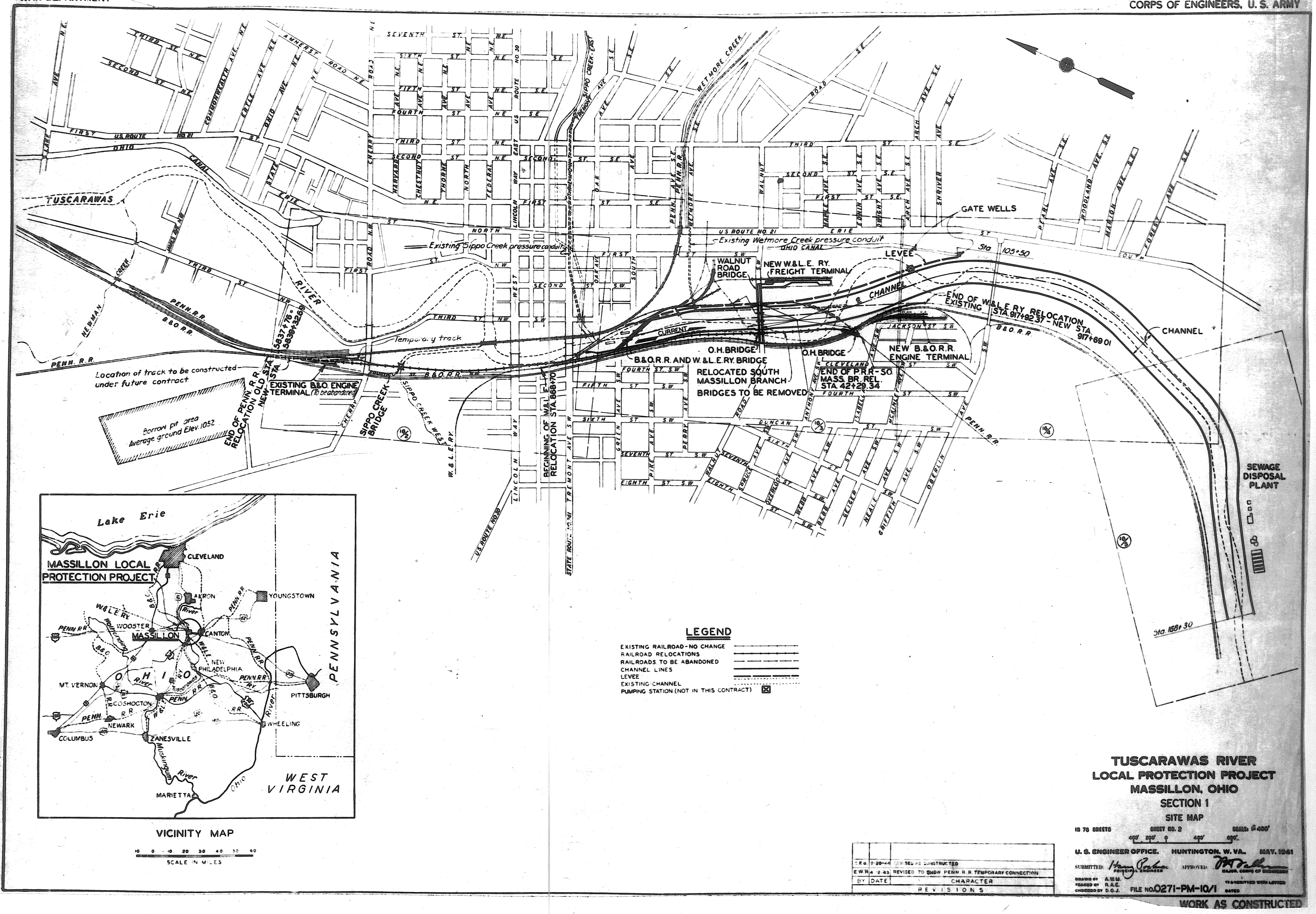
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., FEB. 1945

SUBMITTED: *M. Cook* APPROVED: *H. P. Cook*
LT. COLONEL, CORPS OF ENGINEERS LT. COLONEL, CORPS OF ENGINEERS
DISTRICT ENGINEER

DRAWN BY: L.L.L. CHECKED BY: S.F.B. FILE NO. 027i-PM-0/1

BY	DATE	CHARACTER
		REVISIONS

WORK AS CONSTRUCTED



**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
SITE MAP**

10 0 10 20 30 40 50 60
SCALE IN MILES

VICINITY MAP

LEGEND

EXISTING RAILROAD—NO CHANGE
RAILROAD RELOCATIONS
RAILROADS TO BE ABANDONED
CHANNEL LINES
LEVEE
EXISTING CHANNEL
PUMPING STATION (NOT IN THIS CONTRACT)

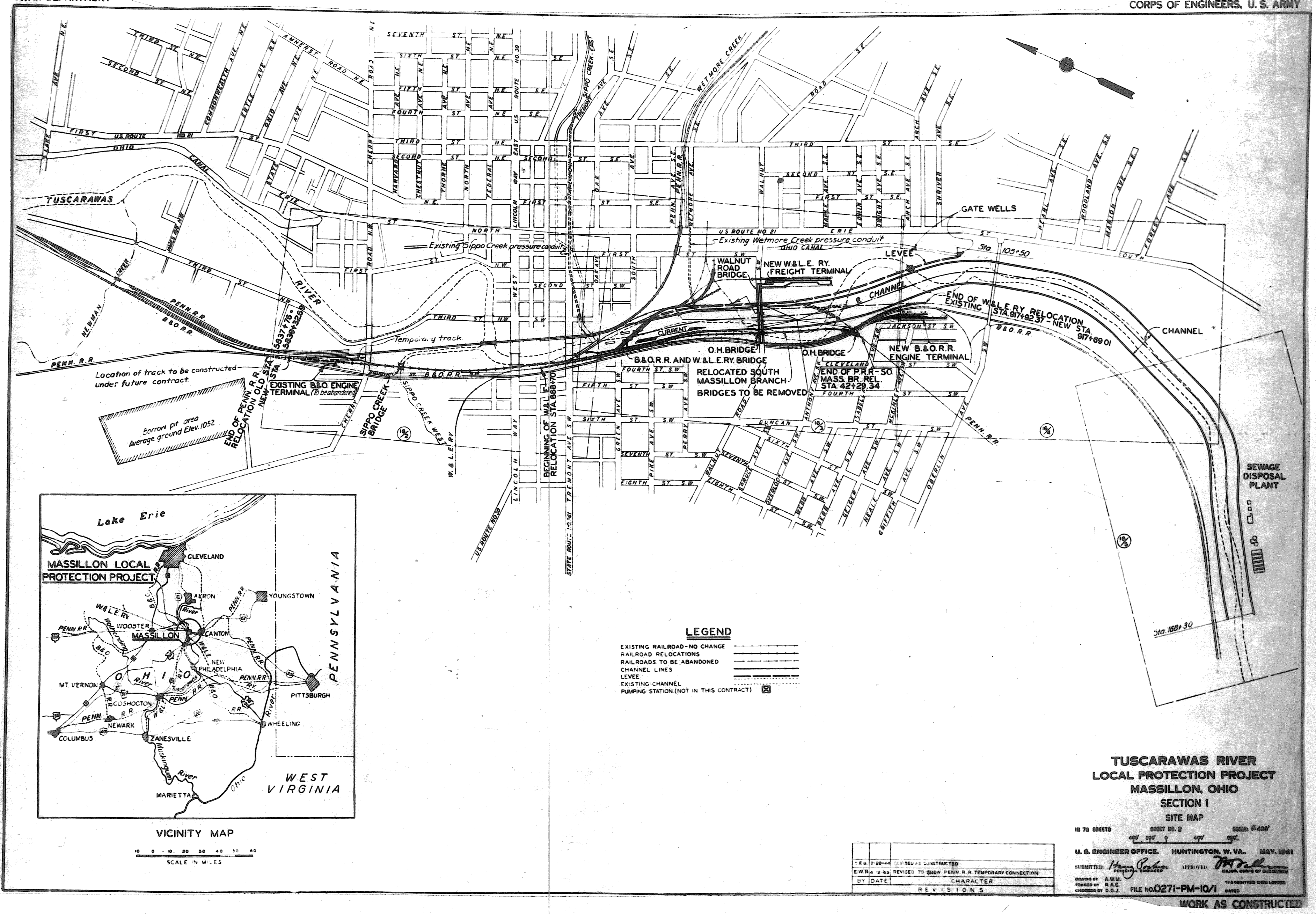
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
SITE MAP**

10 70 SHEETS
SHEET NO. 2
SCALE: 6"=100'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941

SUBMITTED: *Harry P. ...* APPROVED: *W. D. ...*
DESIGNED BY: A. H. M. CHECKED BY: R. A. E. FILE NO. 0271-PM-10/1
DRAWN BY: D. C. J. TRANSMITTED WITH LETTERS DATED

WORK AS CONSTRUCTED



**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION I
SITE MAP**

LEGEND

- EXISTING RAILROAD—NO CHANGE
- RAILROAD RELOCATIONS
- RAILROADS TO BE ABANDONED
- CHANNEL LINES
- LEVEE
- EXISTING CHANNEL
- PUMPING STATION (NOT IN THIS CONTRACT)

VICINITY MAP

SCALE IN MILES

TUSCARAWAS RIVER LOCAL PROTECTION PROJECT MASSILLON, OHIO SECTION I SITE MAP

U.S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1961

SUBMITTED BY: [Signature] APPROVED BY: [Signature]

DRAWN BY: A.W.M. CHECKED BY: D.C.J.

FILE NO. 0271-PM-10/1

WORK AS CONSTRUCTED

[illegible]

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION I
SITE MAP**

LEGEND

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VICINITY MAP

SCALE IN MILES

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U.S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1961

SUBMITTED BY: [Signature] APPROVED BY: [Signature]

DRAWN BY: A.W.M. CHECKED BY: D.C.J.

FILE NO. 0271-PM-10/1

WORK AS CONSTRUCTED

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
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**TUSCARAWAS RIVER
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MASSILLON, OHIO
SECTION 1
SITE MAP**

10 70 SHEETS
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SCALE: 6"=400'

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SUBMITTED: *Harry P. ...* APPROVED: *W. D. ...*
DESIGNED BY: A. H. M. CHECKED BY: D. G. J. FILE NO. 0271-PM-10/1

WORK AS CONSTRUCTED

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U.S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941

SUBMITTED: *Harry P. ...* APPROVED: *W. D. ...*
DESIGNED BY: A.E.M. CHECKED BY: D.C.J. FILE NO. 0271-PM-10/1

NO.	DATE	REVISIONS
1	2-20-41	REVISED TO SHOW P.E. CONSTRUCTION
2	4-2-41	REVISED TO SHOW P.E. TEMPORARY CONNECTION

WORK AS CONSTRUCTED

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
SITE MAP**

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SCALE IN MILES

VICINITY MAP

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MASSILLON, OHIO
SECTION 1
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10 70 SHEETS
SHEET NO. 2
SCALE: 6"=400'

U.S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941

SUBMITTED: *Harry P. ...* APPROVED: *W. D. ...*
DESIGNED BY: A.E.M. CHECKED BY: D.C.J. FILE NO. 0271-PM-10/1

REVISIONS

WORK AS CONSTRUCTED

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
SITE MAP**

LEGEND

- EXISTING RAILROAD—NO CHANGE
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VICINITY MAP

SCALE IN MILES

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
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U.S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY 1941

SUBMITTED: *Harry P. ...* APPROVED: *W. D. ...*

DESIGNED BY: A.E.M. CHECKED BY: D.C.J. FILE NO. 0271-PM-10/1

WORK AS CONSTRUCTED

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
SITE MAP**

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SCALE IN MILES

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LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
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U.S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY 1941

SUBMITTED: *Harry P. ...* APPROVED: *W. D. ...*

DESIGNED BY: A.E.M. CHECKED BY: D.C.J. FILE NO. 0271-PM-10/1

WORK AS CONSTRUCTED

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
SITE MAP**

10 70 SHEETS SHEET NO. 2 SCALE: 6"=100'

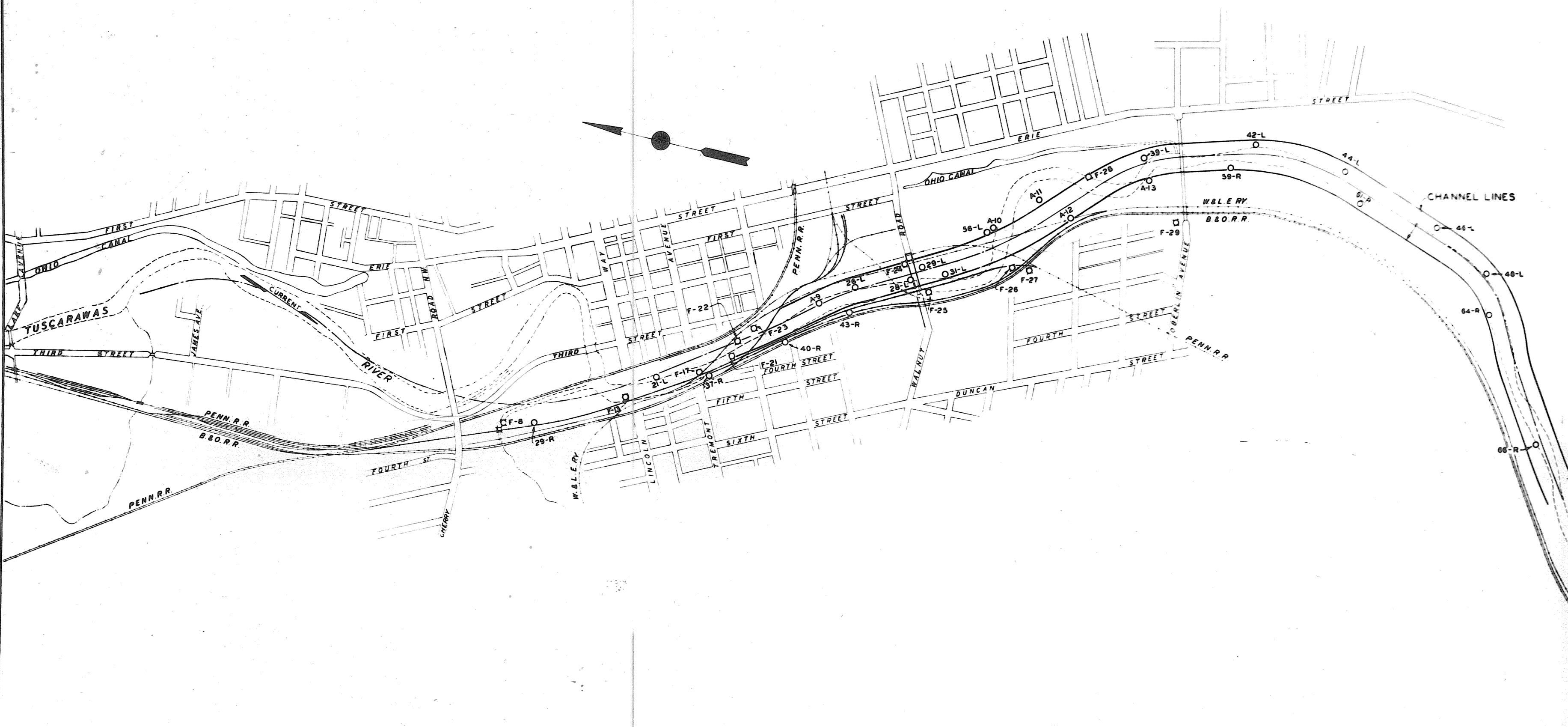
U.S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941

SUBMITTED: *Harry P. ...* APPROVED: *W. D. ...*

DESIGNED BY: A.E.M. CHECKED BY: D.C.J. FILE NO. 0271-PM-10/1

NO.	DATE	REVISIONS
1	2-20-41	REVISED TO SHOW P.E. CONSTRUCTION
2	4-2-41	REVISED TO SHOW P.E. TEMPORARY CONNECTION

WORK AS CONSTRUCTED



LEGEND
DRILLED HOLES
AUGER HOLES

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

PLAN OF FOUNDATION EXPLORATIONS

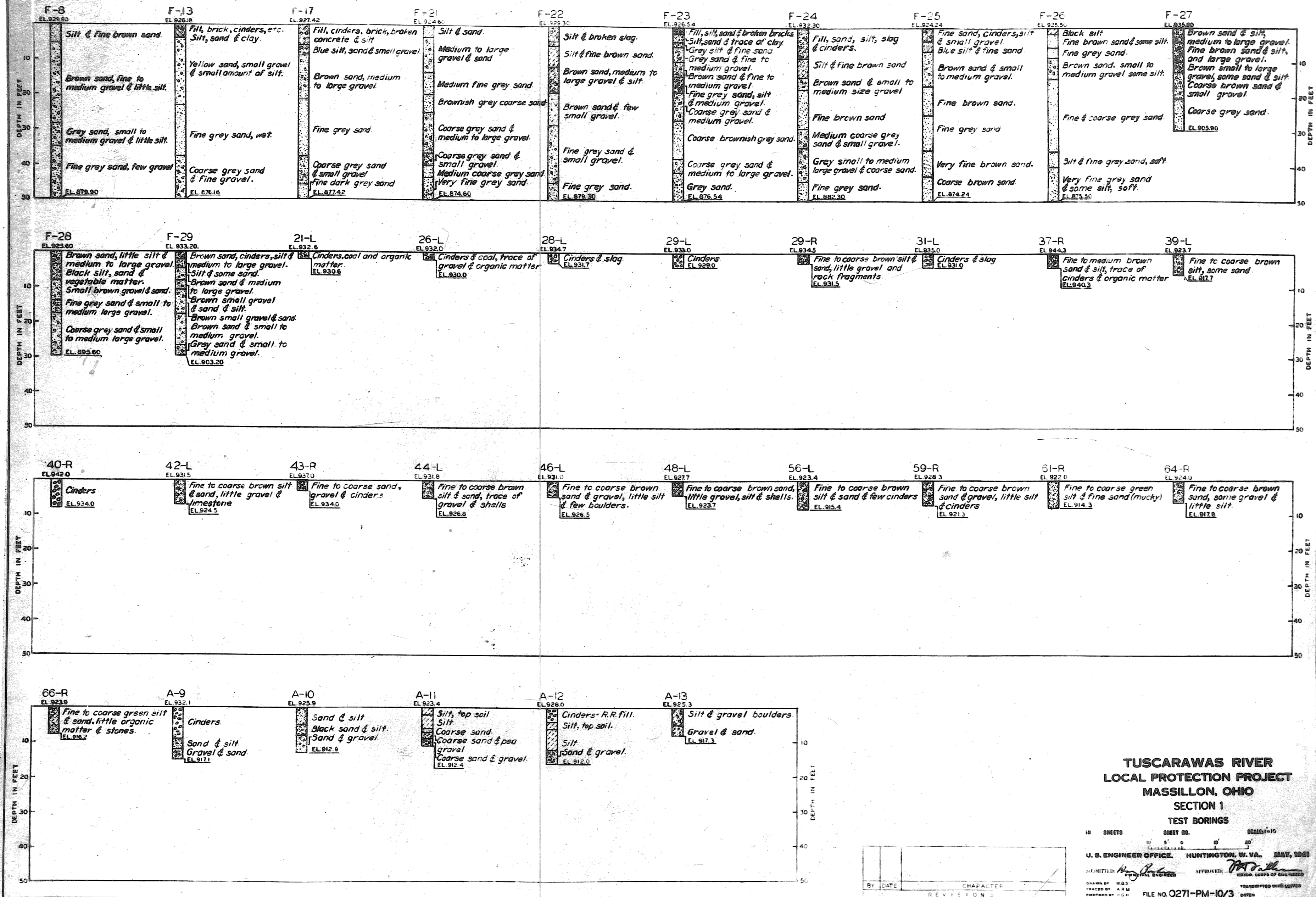
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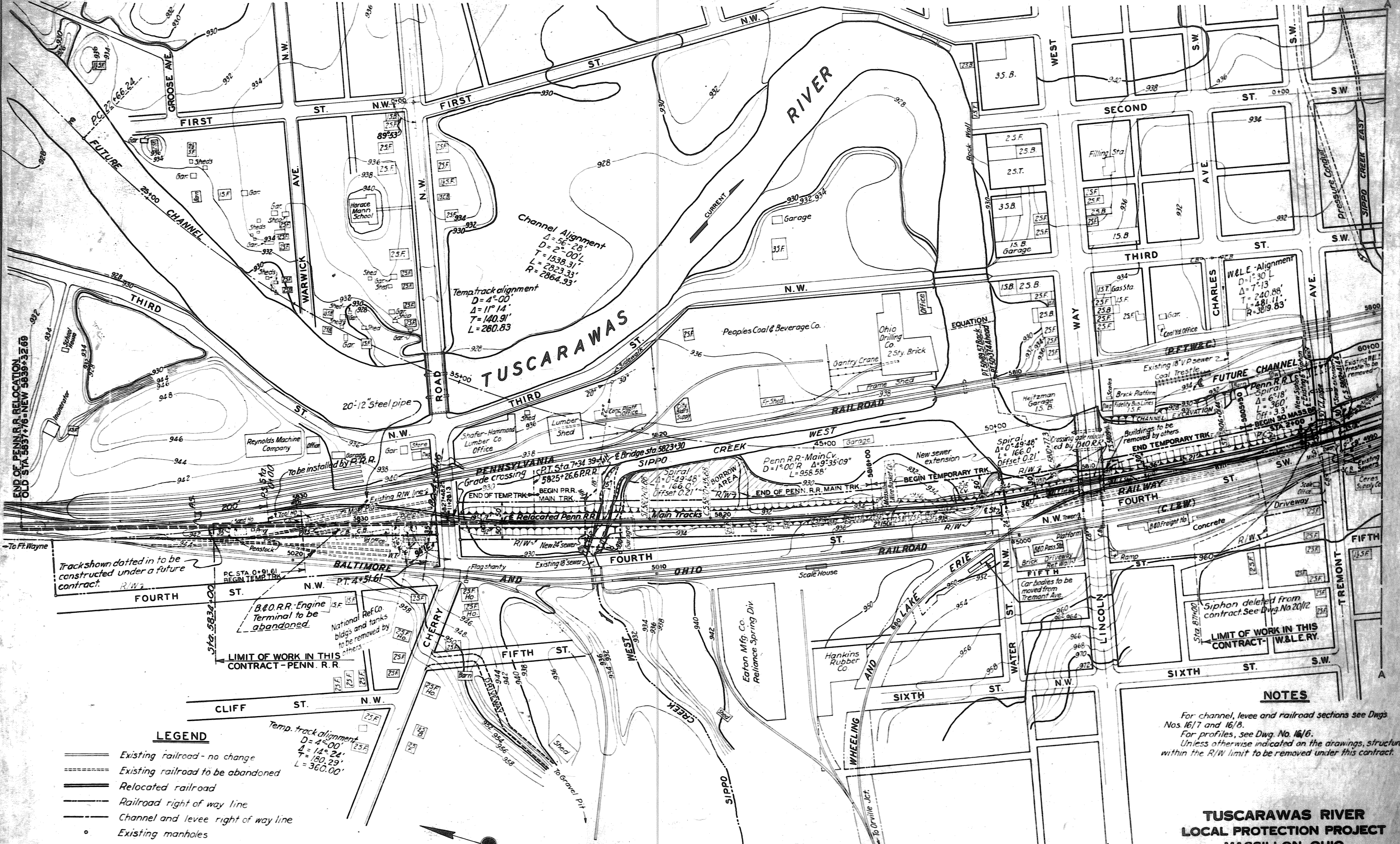
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED APPROVED
PRINCIPAL ENGINEER MAJOR, CORPS OF ENGINEERS

DRAWN BY W. B. S. TRACED BY R. A. E. CHECKED BY H. G. H. FILE NO. 0271-PM-10/2 TRANSMITTED WITH LETTER

SUBMITTED FOR INFORMATION PURPOSES ONLY





- LEGEND**
- Existing railroad - no change
 - Existing railroad to be abandoned
 - Relocated railroad
 - Railroad right of way line
 - Channel and levee right of way line
 - Existing manholes
 - New manholes
 - Existing sewers
 - Relocated sewers
 - Limits of riprap

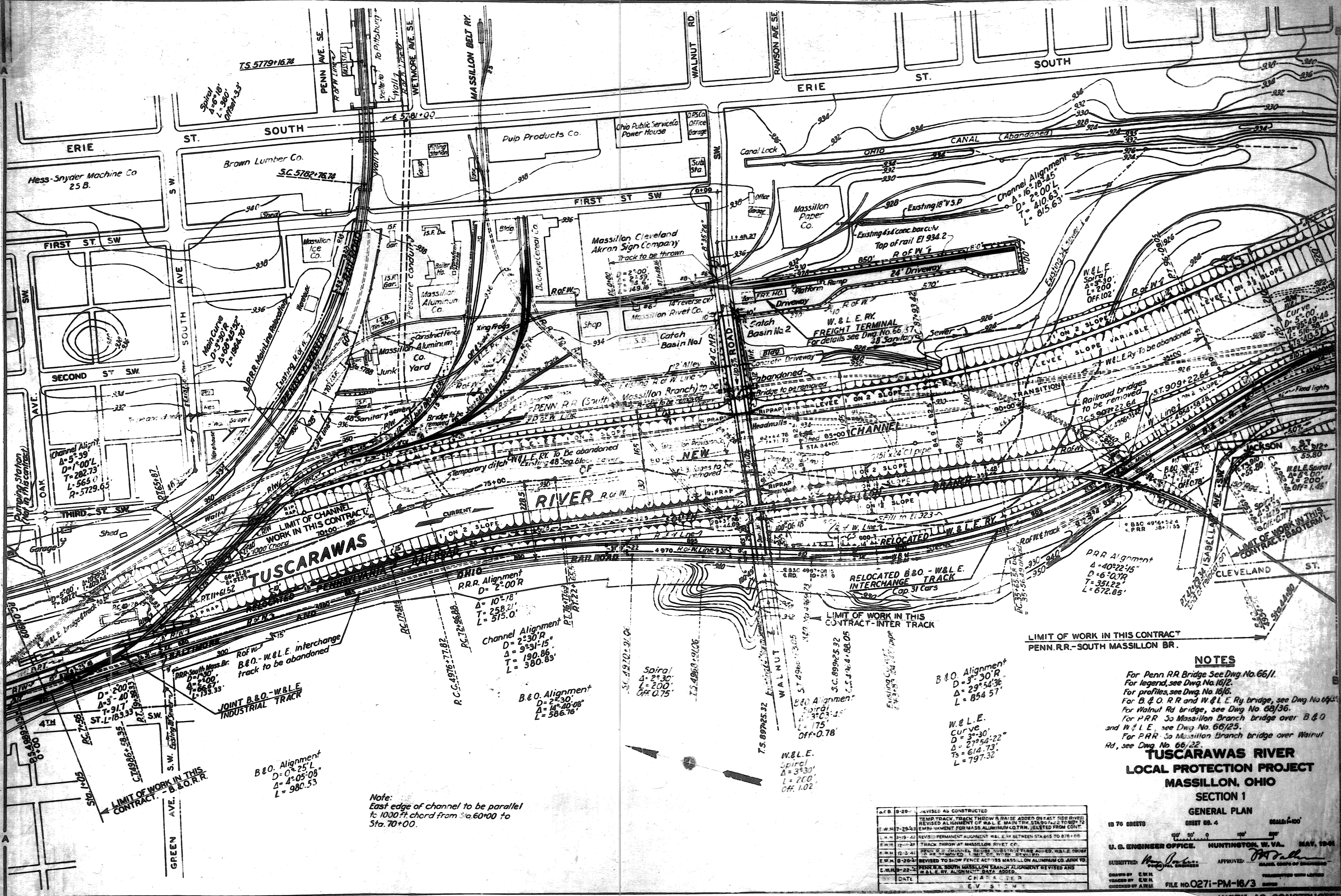
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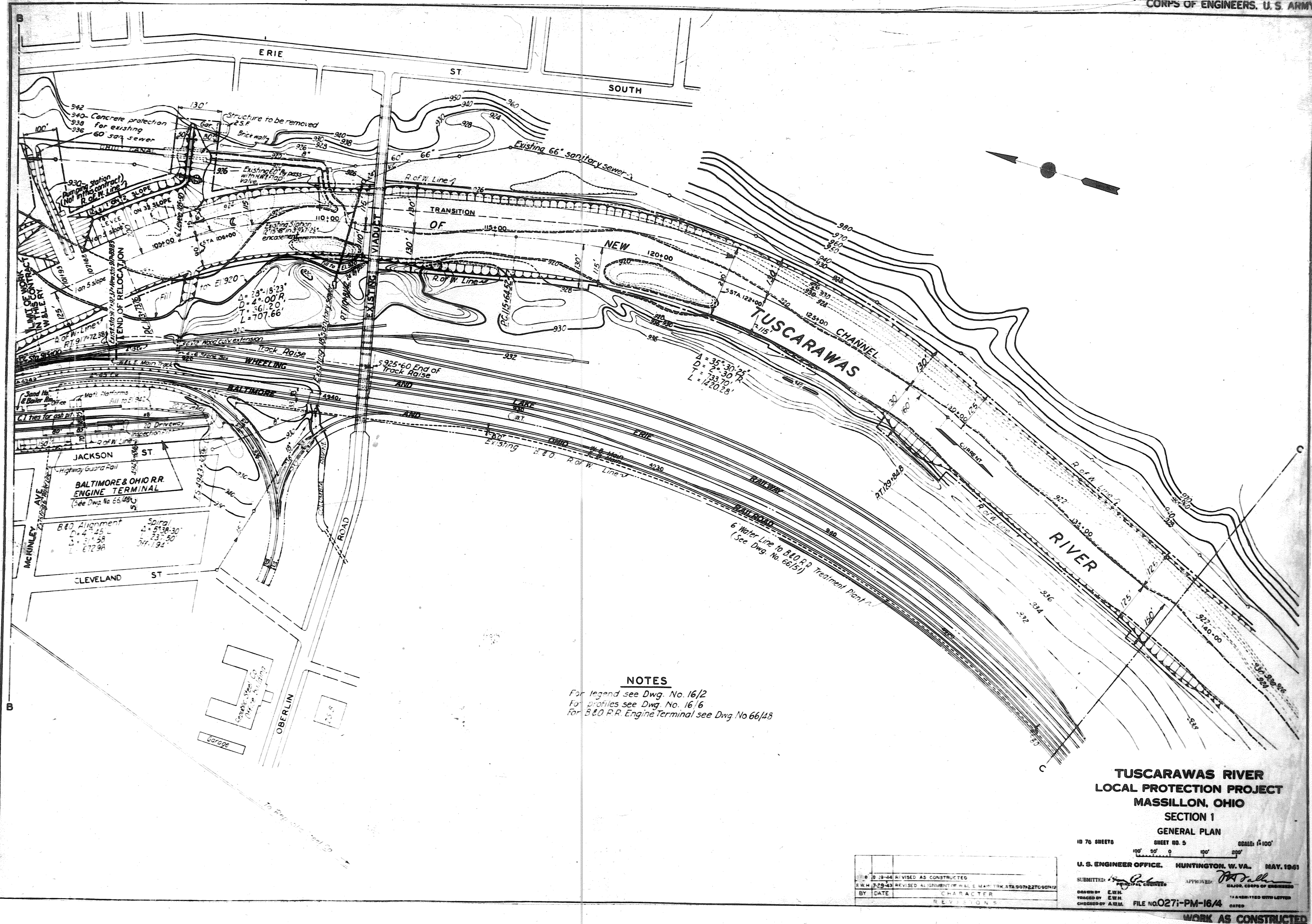
For channel, levee and railroad sections see Dwg. Nos. 16/7 and 16/8.
For profiles, see Dwg. No. 16/6.
Unless otherwise indicated on the drawings, structures within the R/W limit to be removed under this contract.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
GENERAL PLAN**

S.F.B.	9-29-44	REVISED AS CONSTRUCTED
E.W.H.	7-28-40	PENN. R.R. TEMP. CONN. SHOWN BORROW AREA, ADDED, CHANNEL EX. SHOWN, SYPHON AT TREMONT ARE DELETED FROM CONTRACT, LAST THREE SECTIONS OF PENN. R.R. BRIDGE DELETED, 20' OF 12" STEEL PIPE ADDED.
E.W.H.	3-19-42	REVISED PERMANENT ALIGNMENT W&L.E.R. BETWEEN STAS. 865 TO 870.
E.W.H.	12-3-41	EXISTING W&L.E. TRESTLE SHOWN TO BE REMOVED AND BRIDGE ADJUTMENT ADDED.
BY	DATE	CHARACTER
		REVISIONS

1763
18 76 SHEETS SHEET NO. 3 SCALE: 1"=100'
U.S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1944
SUBMITTED: *Wm. B. ...* APPROVED: *W. B. ...*
DRAWN BY: E.W.H. CHECKED BY: E.W.H. FILE NO. 0271-PM-16/2
REPRODUCED WITH ADJUSTED DATES
WORK AS CONSTRUCTED





NOTES

For legend see Dwg. No. 16/2
 For profiles see Dwg. No. 16/6
 For B&O R.R. Engine Terminal see Dwg. No. 66/48

TUSCARAWAS RIVER LOCAL PROTECTION PROJECT MASSILLON, OHIO

SECTION 1

GENERAL PLAN

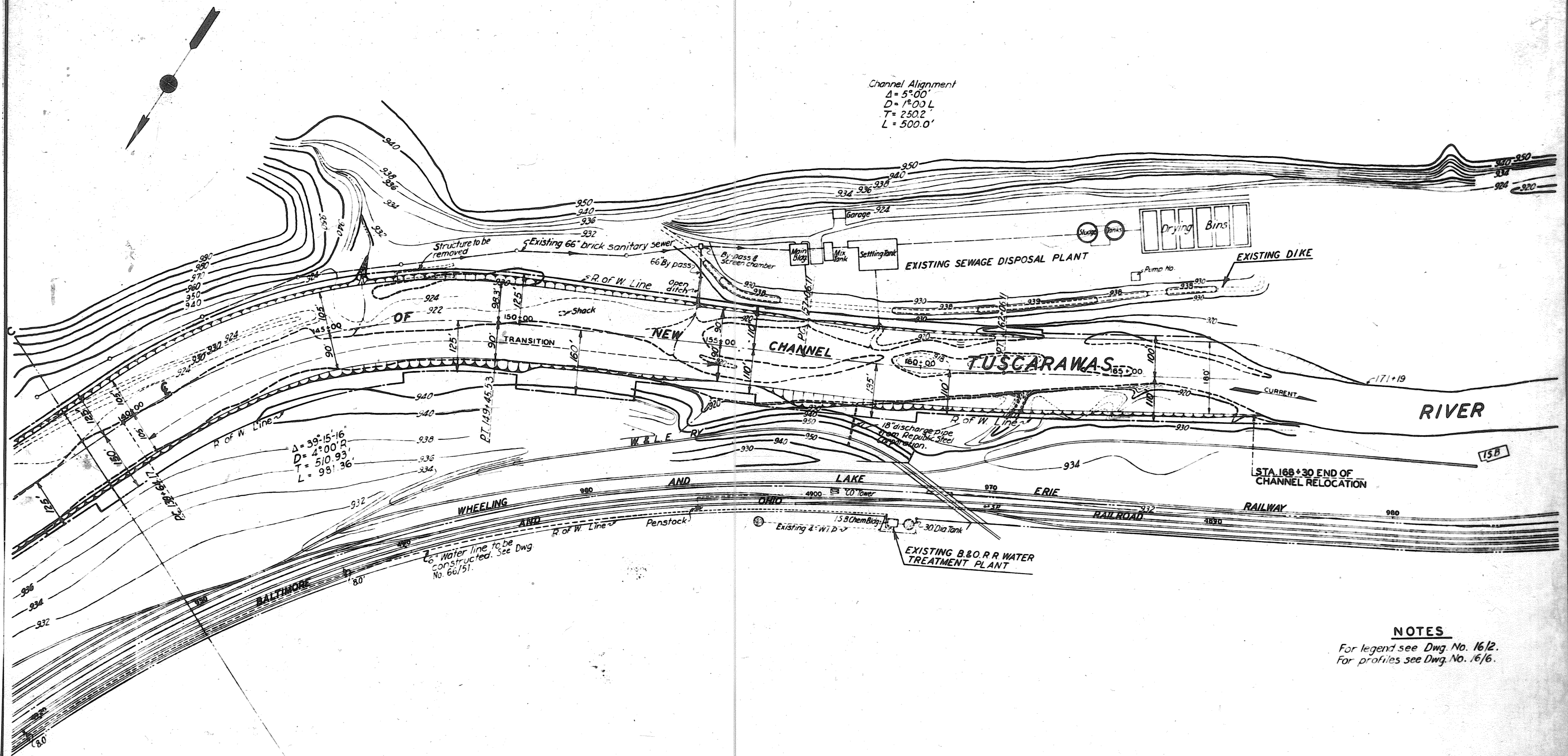
10 76 SHEETS SHEET NO. 5 SCALE: 1"=100'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1961

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

DRAWN BY: E.W.H. CHECKED BY: E.W.H. FILE NO. 0271-PM-16/4
 1"=100' (SEE LETTER)

WORK AS CONSTRUCTED



NOTES

For legend see Dwg. No. 16/2.
For profiles see Dwg. No. 16/6.

TUSCARAWAS RIVER LOCAL PROTECTION PROJECT MASSILLON, OHIO SECTION 1

GENERAL PLAN

10 76 OBJECTS
SHEET NO. 6
SCALE: 1" = 100'

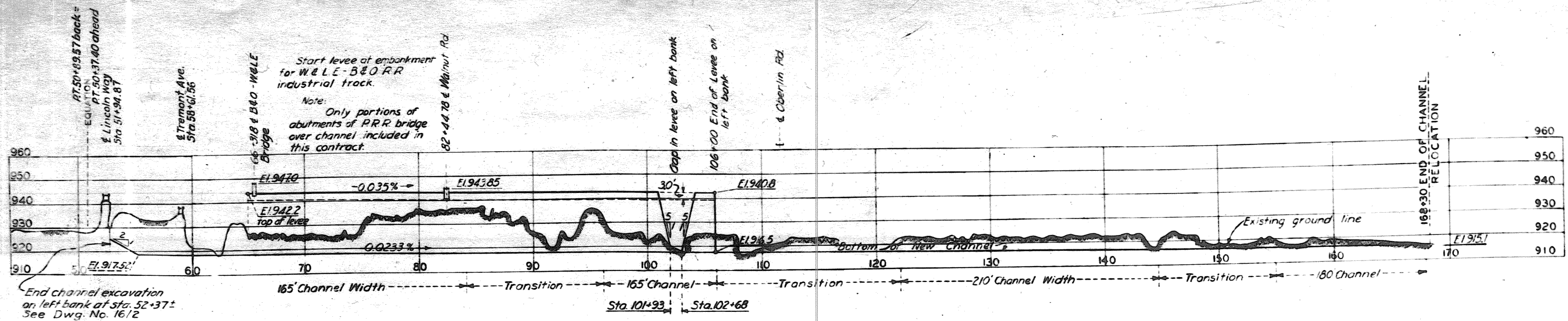
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED *W. J. B.* APPROVED *W. J. B.*
PRINCIPAL ENGINEER
CHIEF, CORPS OF ENGINEERS

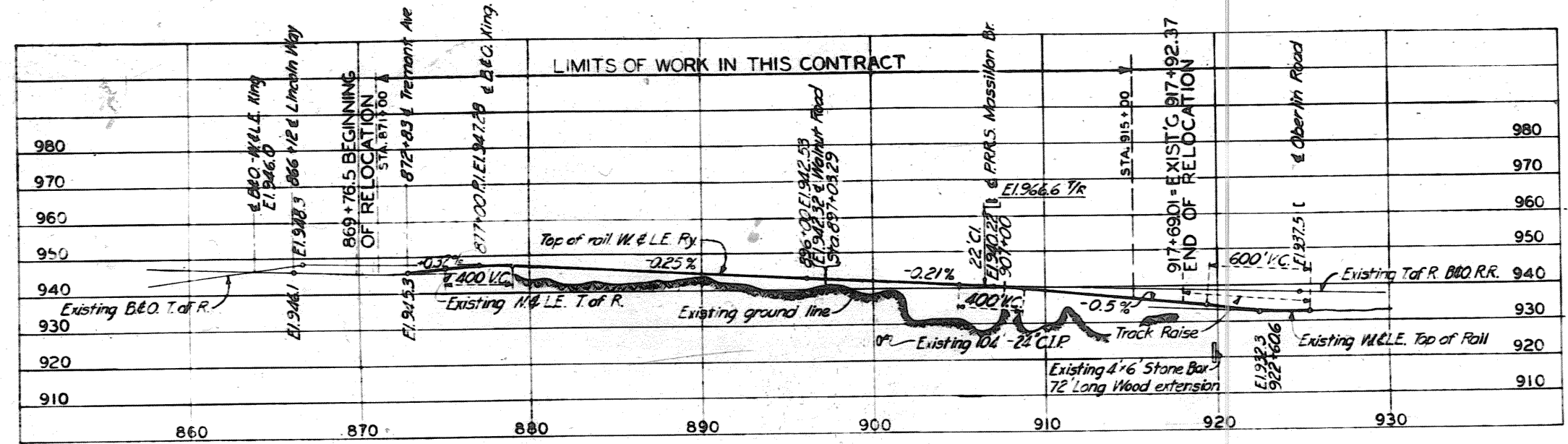
DRAWN BY E. W. H.
CHECKED BY E. W. H.
ORDERED BY A. W. M.
FILE NO. 0271-PM-16/5
DATE

NO.	DATE	CHARACTER	REVISIONS
1	5-27-41	CHANGED CHANNEL LINE	

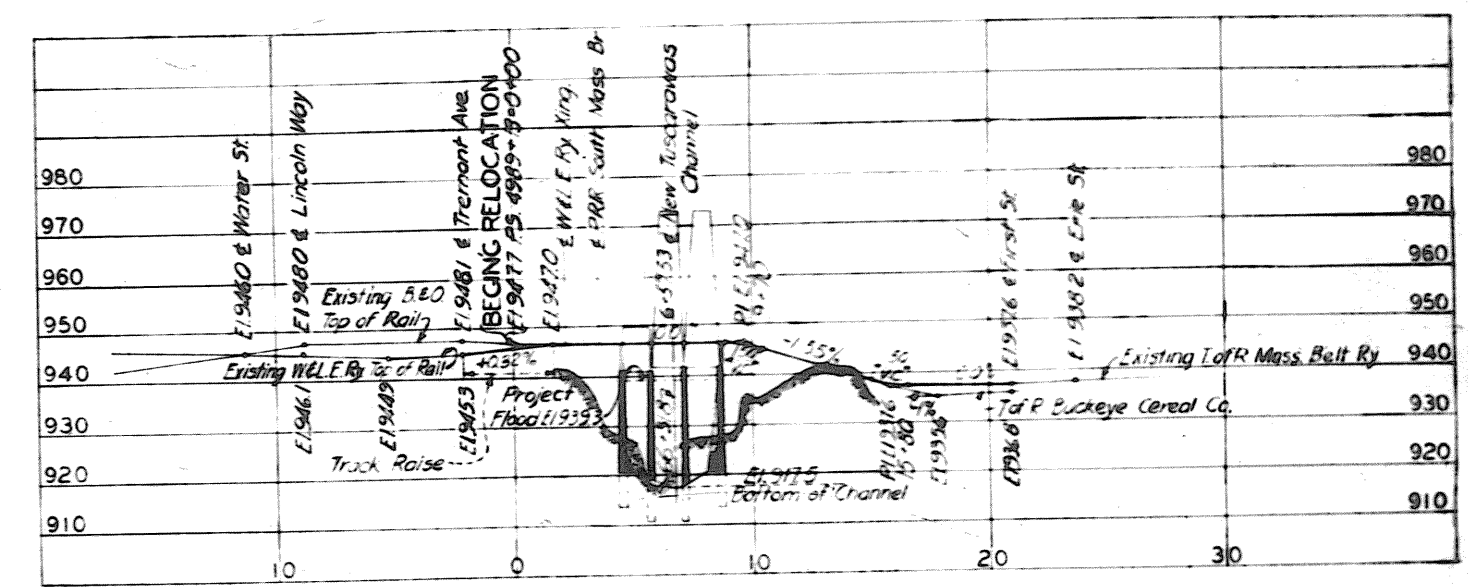
WORK AS CONSTRUCTED



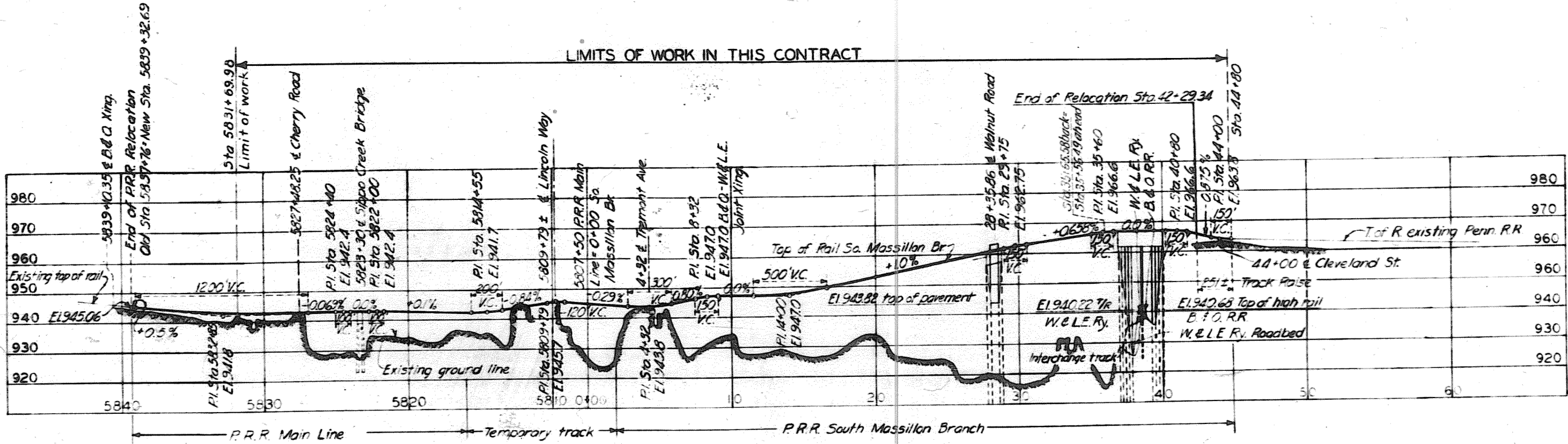
PROFILE ON C OF NEW CHANNEL



PROFILE ON C OF W & L E RY.



PROFILE ON C OF B & O - W & L E JOINT TRACK



PROFILE ON C PENN. R.R. SOUTH MASSILLON BRANCH

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION I

PROFILES

10 76 005070 SHEET NO. 7 GRADE 1:2500
400' 200' 0' 400' 600'

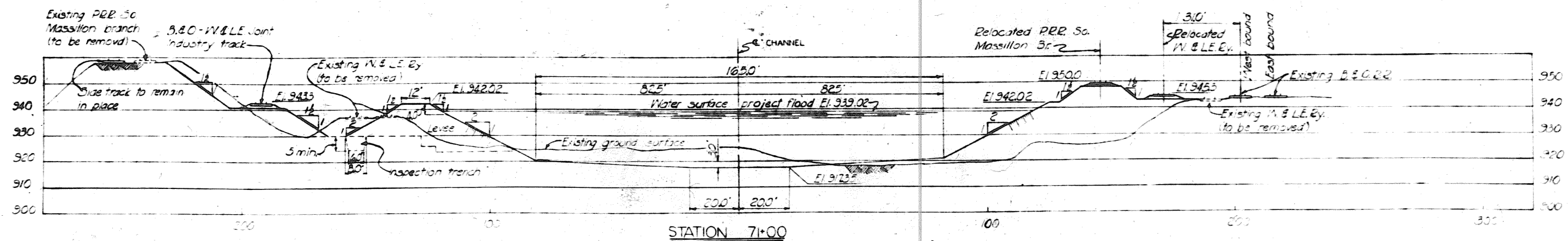
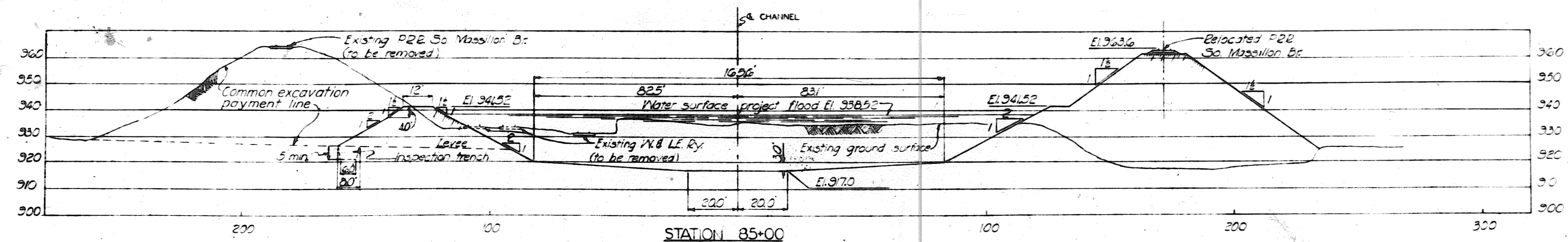
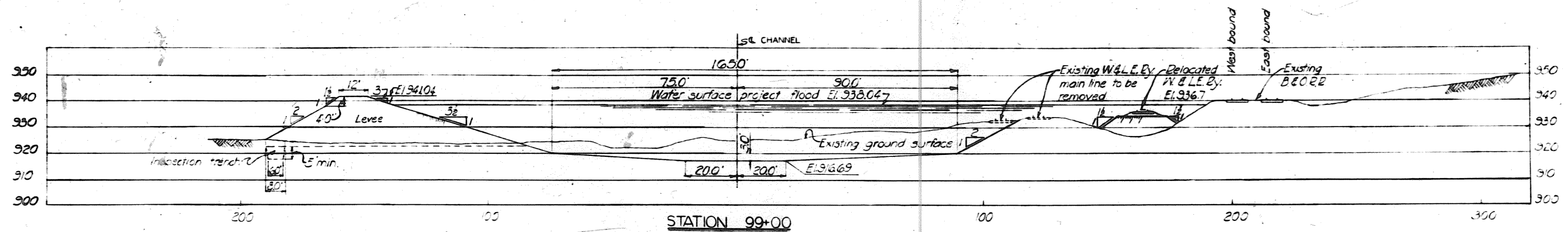
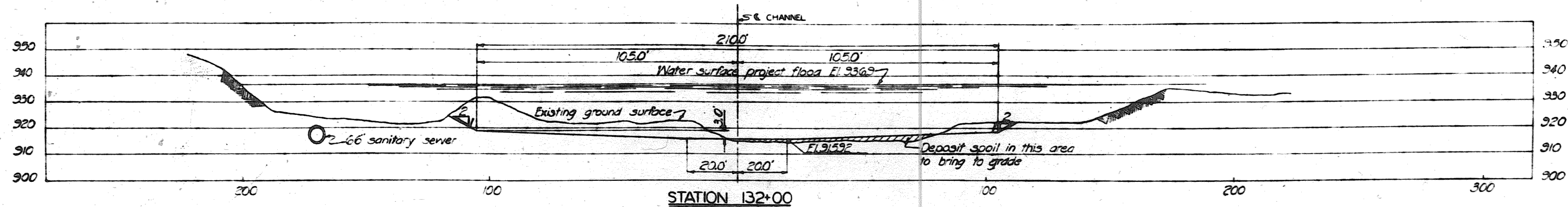
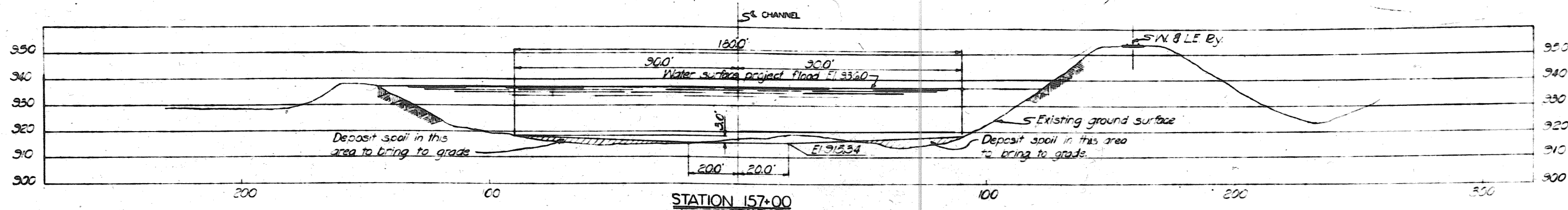
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1921

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
CHIEF OF ENGINEERS

DESIGNED BY: E. W. H. TRACED BY: S. S. H. CHECKED BY: A. M. M. FILE NO. 0271-PM-16/6 DATED

S.F.B.	1921	REVISOR	AS CONSTRUCTED
E.W.H.	1921	LIMIT OF WORK UNDER SECTION I	REVISOR
E.W.H.	1921	REVISOR	PROFILE ON PENN. R.R. SOUTH MASSILLON BR.
E.W.H.	1921	REVISOR	CHARACTER
E.W.H.	1921	REVISOR	ADJUSTMENTS

WORK AS CONSTRUCTED



NOTES

Sections looking downstream
 Payment lines not shown, see Div. No. 16/10

TUSCARAWAS RIVER LOCAL PROTECTION PROJECT MASSILLON, OHIO

SECTION 1

TYPICAL CHANNEL & LEVEE SECTIONS

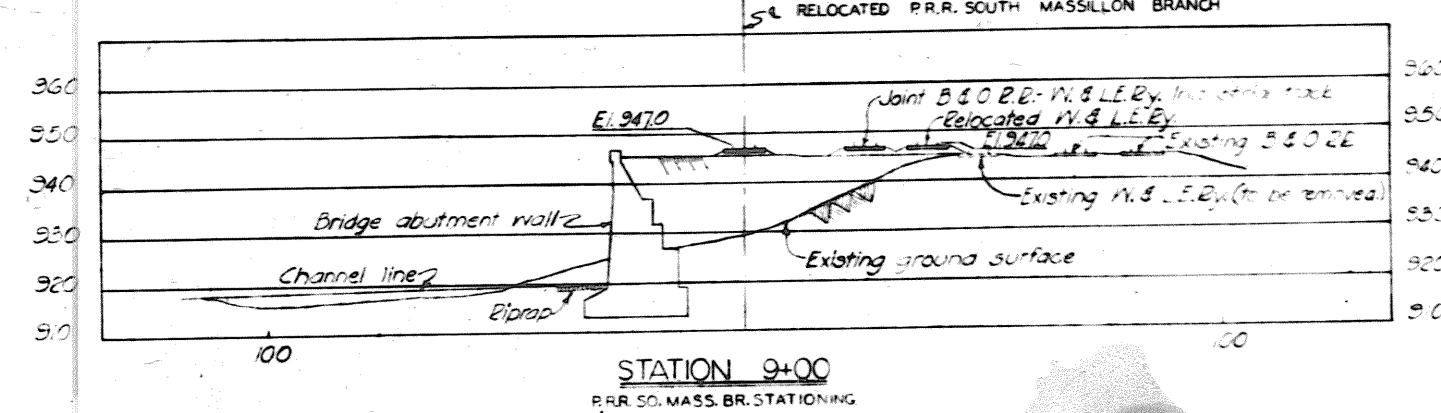
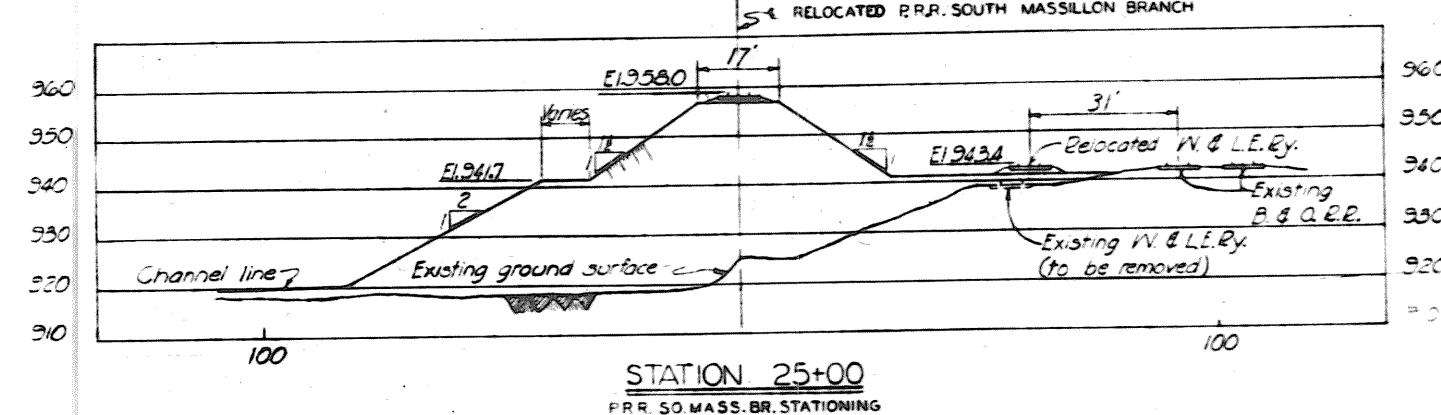
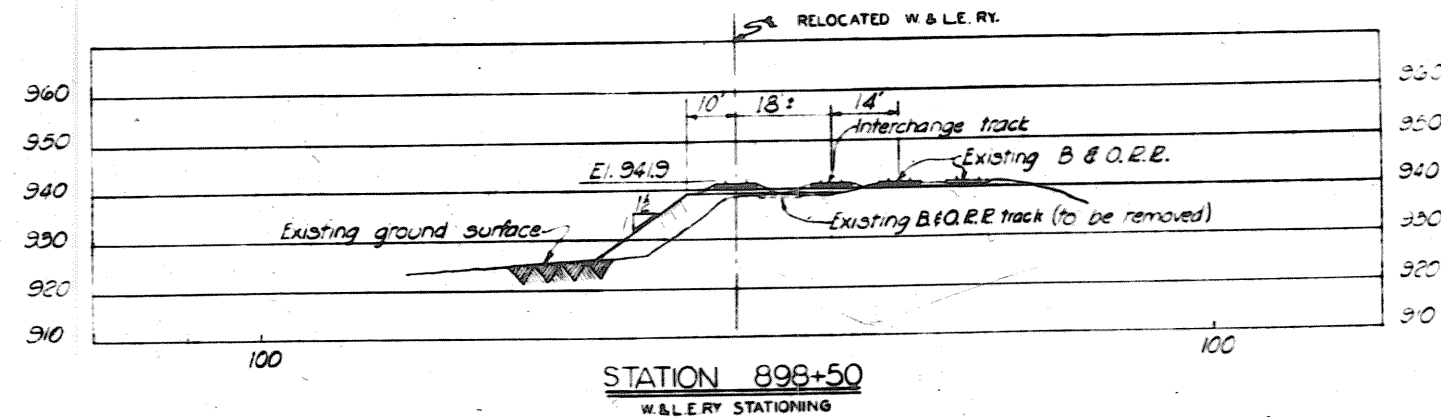
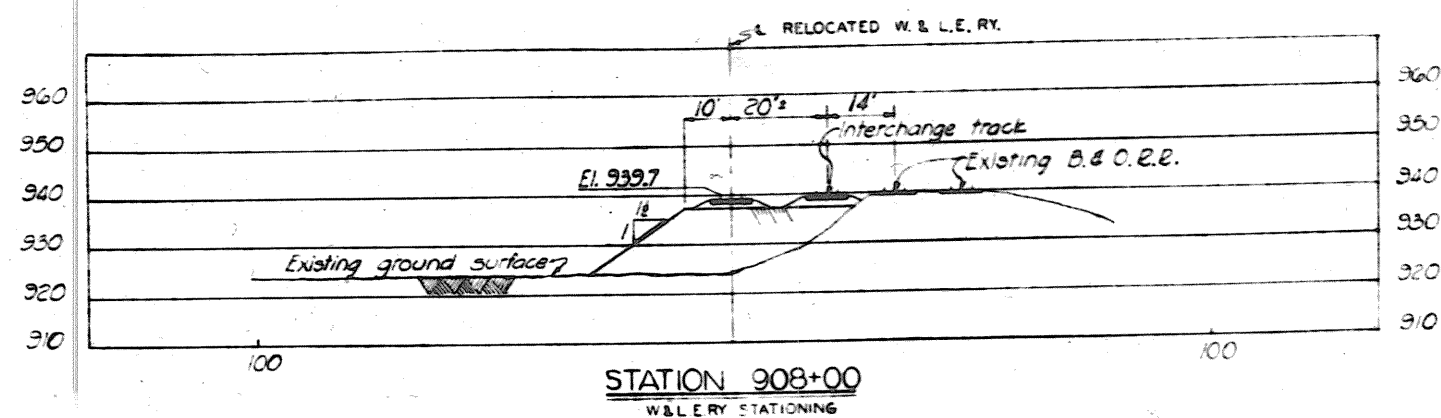
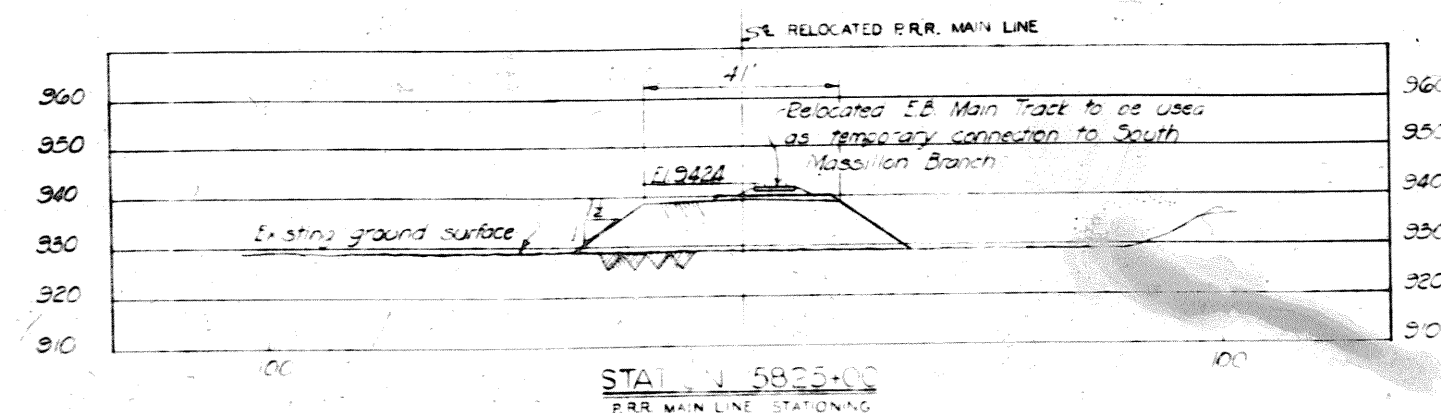
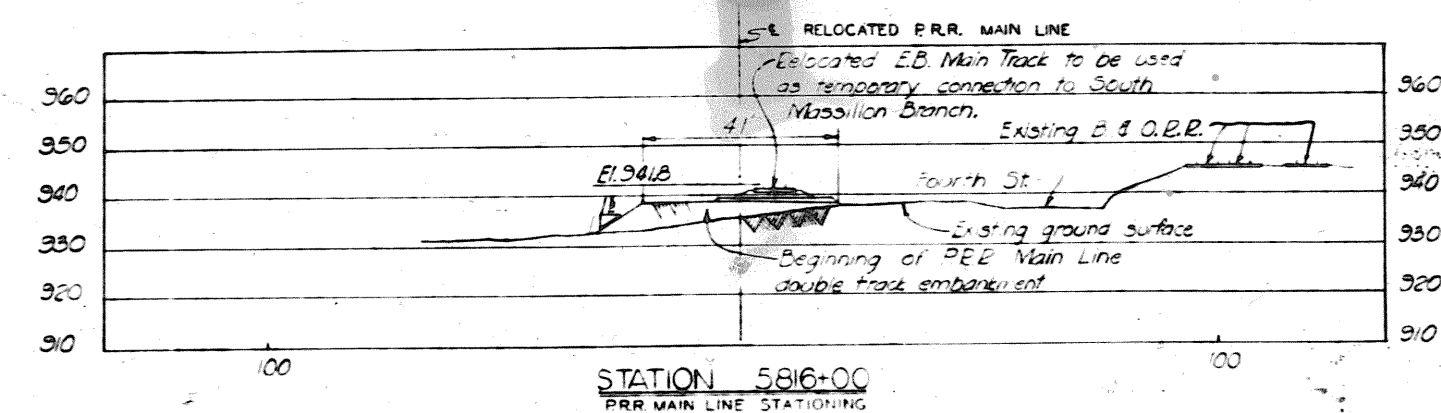
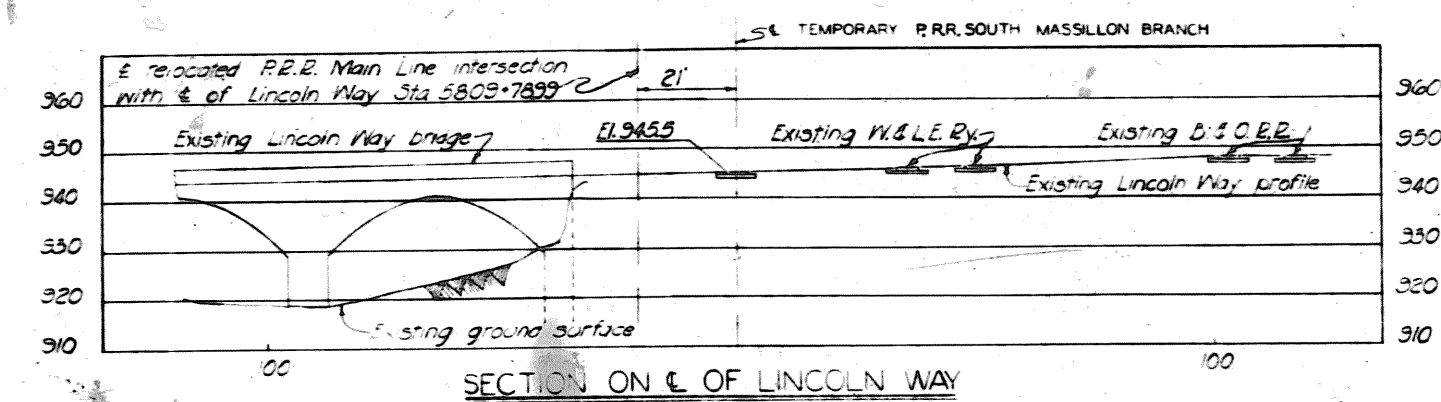
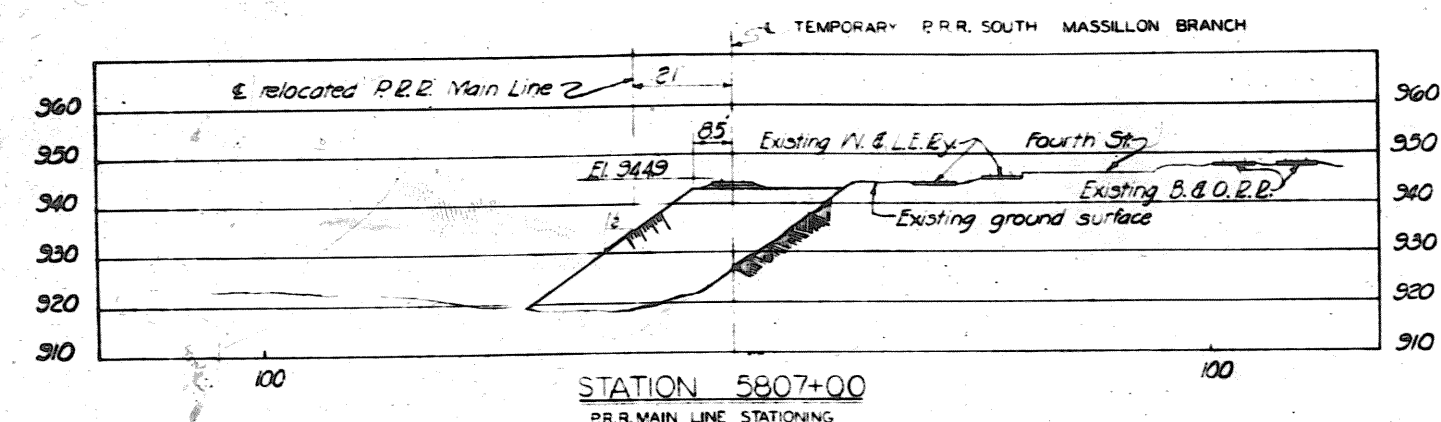
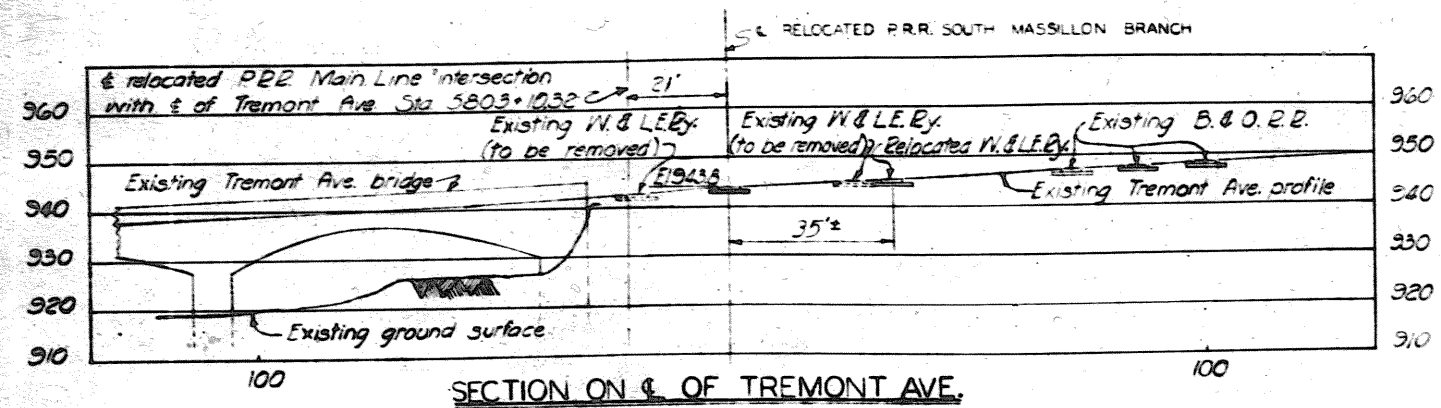
10 TO 60 FEET SHEET NO. 0 SCALE: 1"=20'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED: *W. J. Hall* APPROVED: *W. J. Hall*
 PERMANENT ENGINEER CHIEF, CORPS OF ENGINEERS

DRAWN BY: W. J. B. TRACED BY: A. H. H. CHECKED BY: D. E. J. FILE NO. 0271-PM-16/7 DATED: MAY, 1941

WORK AS CONSTRUCTED



NOTES

Payment lines not shown, see Div. No. 16/10

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1

TYPICAL RAILROAD SECTIONS

10 70 80000 SHEET NO. 9 SCALE: 1"=200'

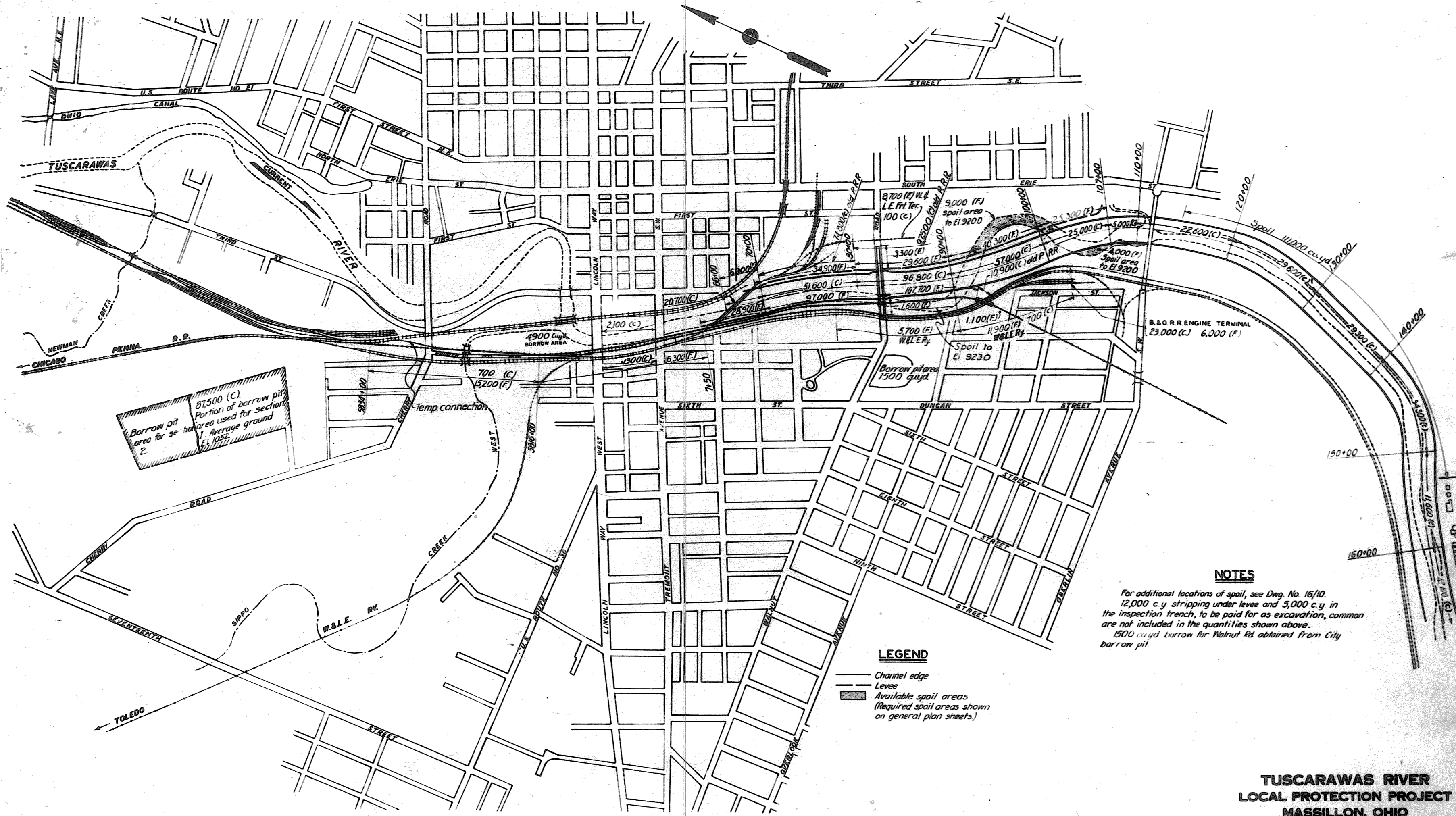
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA.

SUBMITTED: [Signature] APPROVED: [Signature]

DESIGNED BY: A. W. B. CHECKED BY: D. G. J. FILE NO. 0271-PM-16/8

REVISION	DATE	CHARACTER
1	7-29-43	ADDITIONAL RAILROAD EMBANKMENT ADDED
2		
3		
4		
5		
6		
7		
8		
9		
10		

WORK AS CONSTRUCTED



87,500 (C)
Portion of borrow pit
area used for section
1. Average ground
EL. 1052

LEGEND

- Channel edge
- Levee
- Available spoil areas
(Required spoil areas shown
on general plan sheets.)

NOTES

For additional locations of spoil, see Dwg. No. 16/10.
12,000 c.y. stripping under levee and 5,000 c.y. in
the inspection trench, to be paid for as excavation, common
are not included in the quantities shown above.
1500 cu yd borrow for Walnut Rd obtained from City
borrow pit.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

GRADING DISTRIBUTION

18 76 SHEETS SHEET 68.10 SCALE 1"=400'

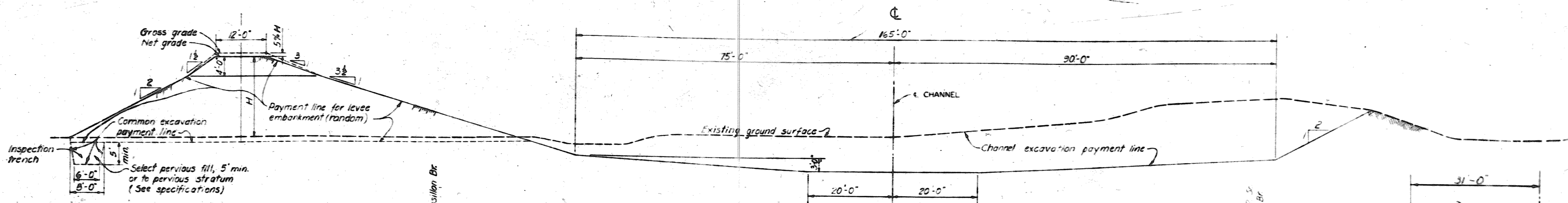
U.S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1961

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

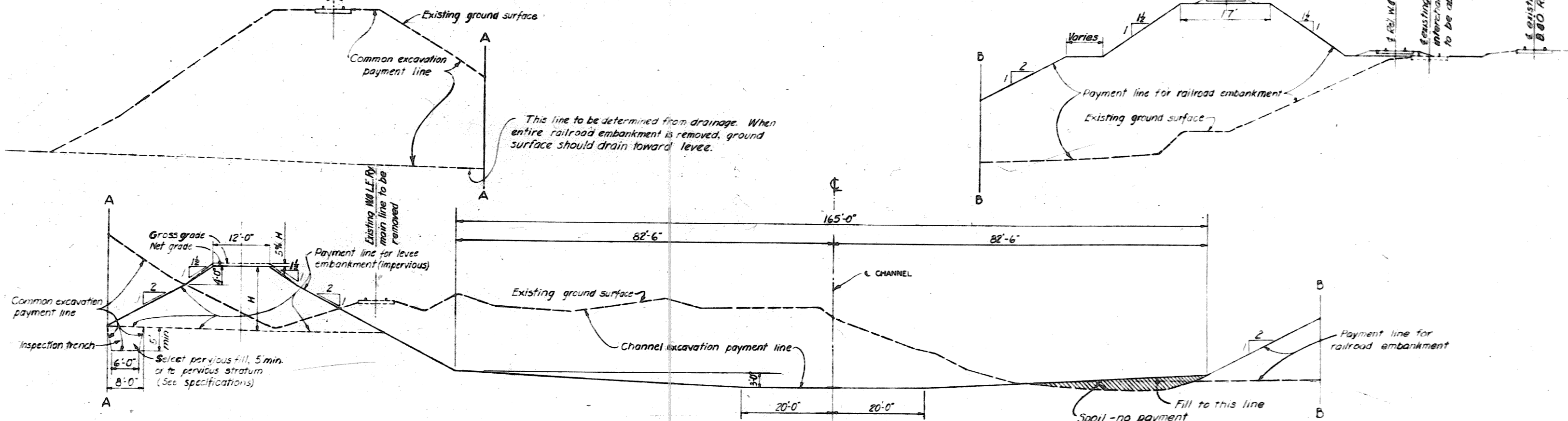
DRAWN BY: U.S. TRACED BY: D.R.J. CHECKED BY: D.G.J. FILE NO. 0271-PM-16/9

BY	DATE	REVISIONS

WORK AS CONSTRUCTED



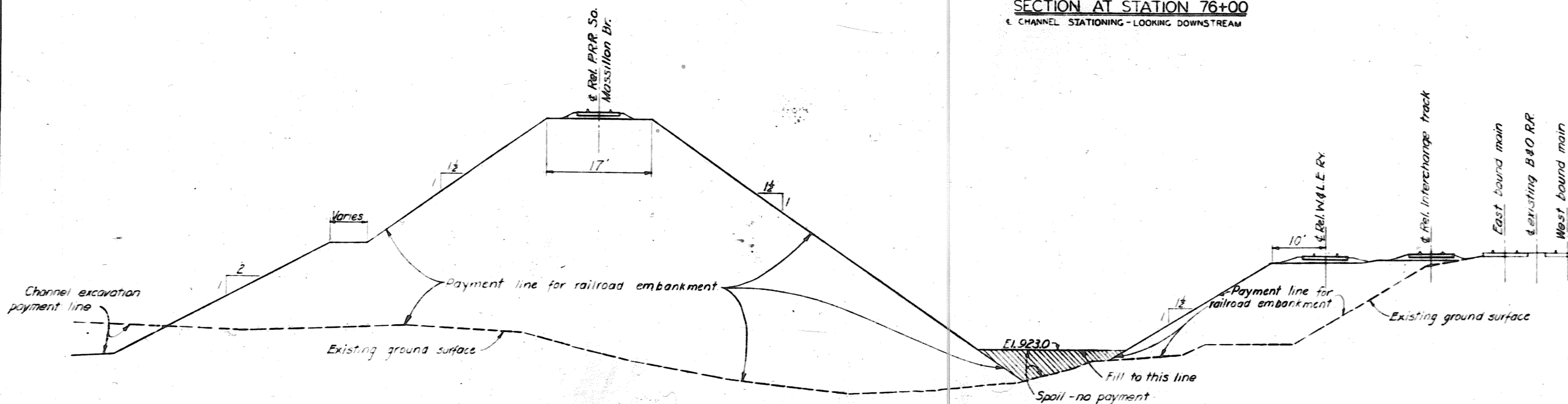
SECTION AT STATION 98+00
CHANNEL STATIONING - LOOKING DOWNSTREAM



SECTION AT STATION 76+00
CHANNEL STATIONING - LOOKING DOWNSTREAM

NOTES

For spoil areas, see Div. No. 16/9



SECTION AT STATION 35+00
PRR SOUTH MASSILLON BRANCH STATIONING
LOOKING TOWARD END OF RELOCATION

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1

PAYMENT LINES FOR EXCAVATION & EMBANKMENT

10 75 SHEETS SHEET NO. 11 SCALE: 1"=10'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941

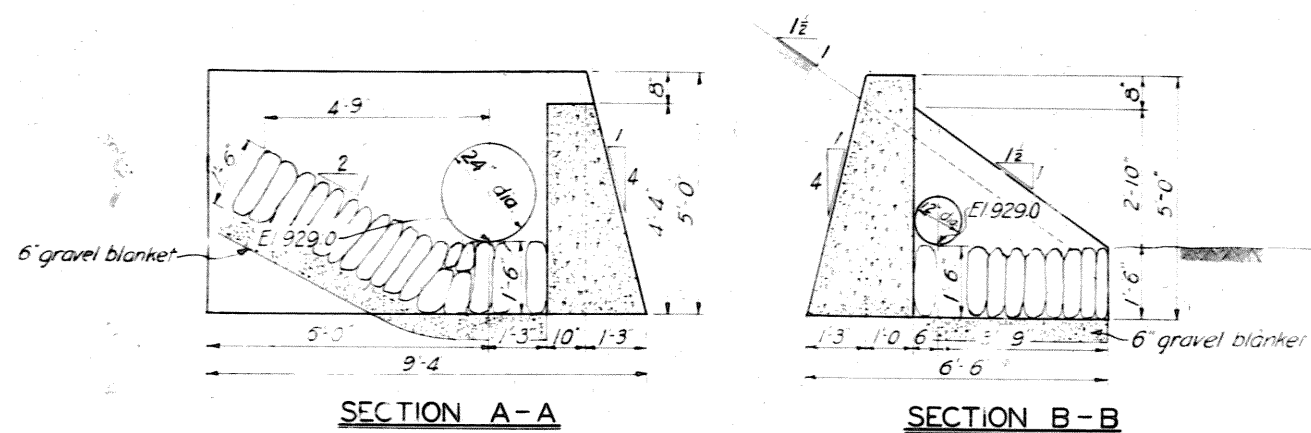
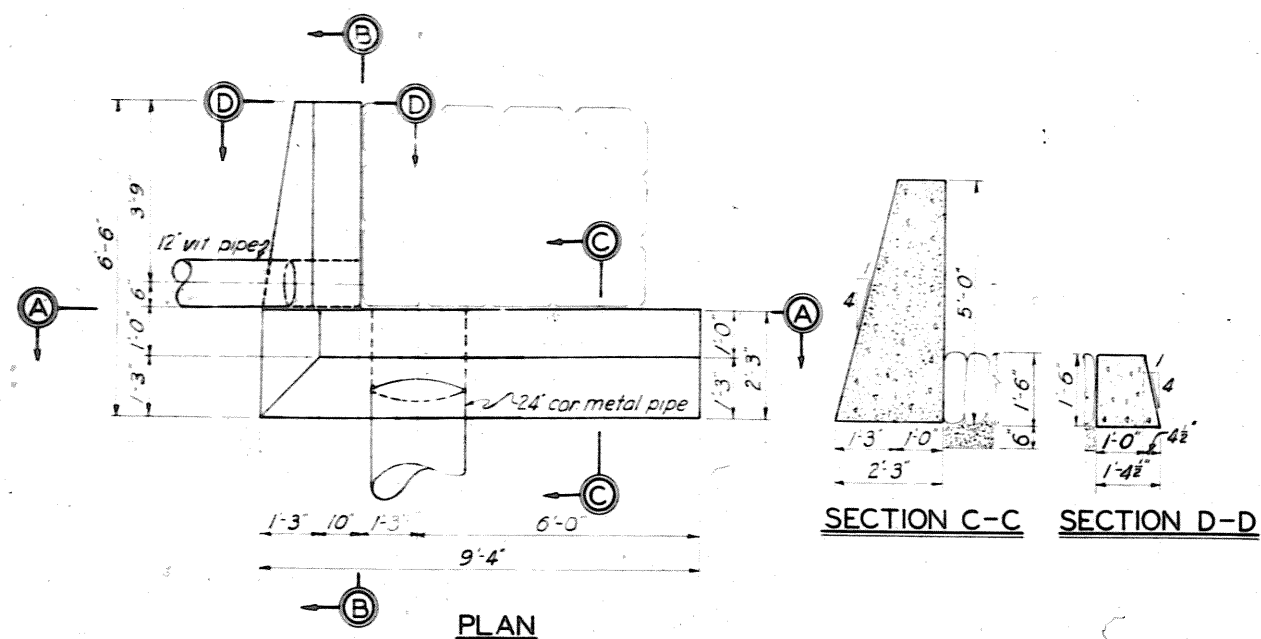
SUBMITTED BY: [Signature] APPROVED BY: [Signature]

DRAWN BY: [Signature] CHECKED BY: [Signature]

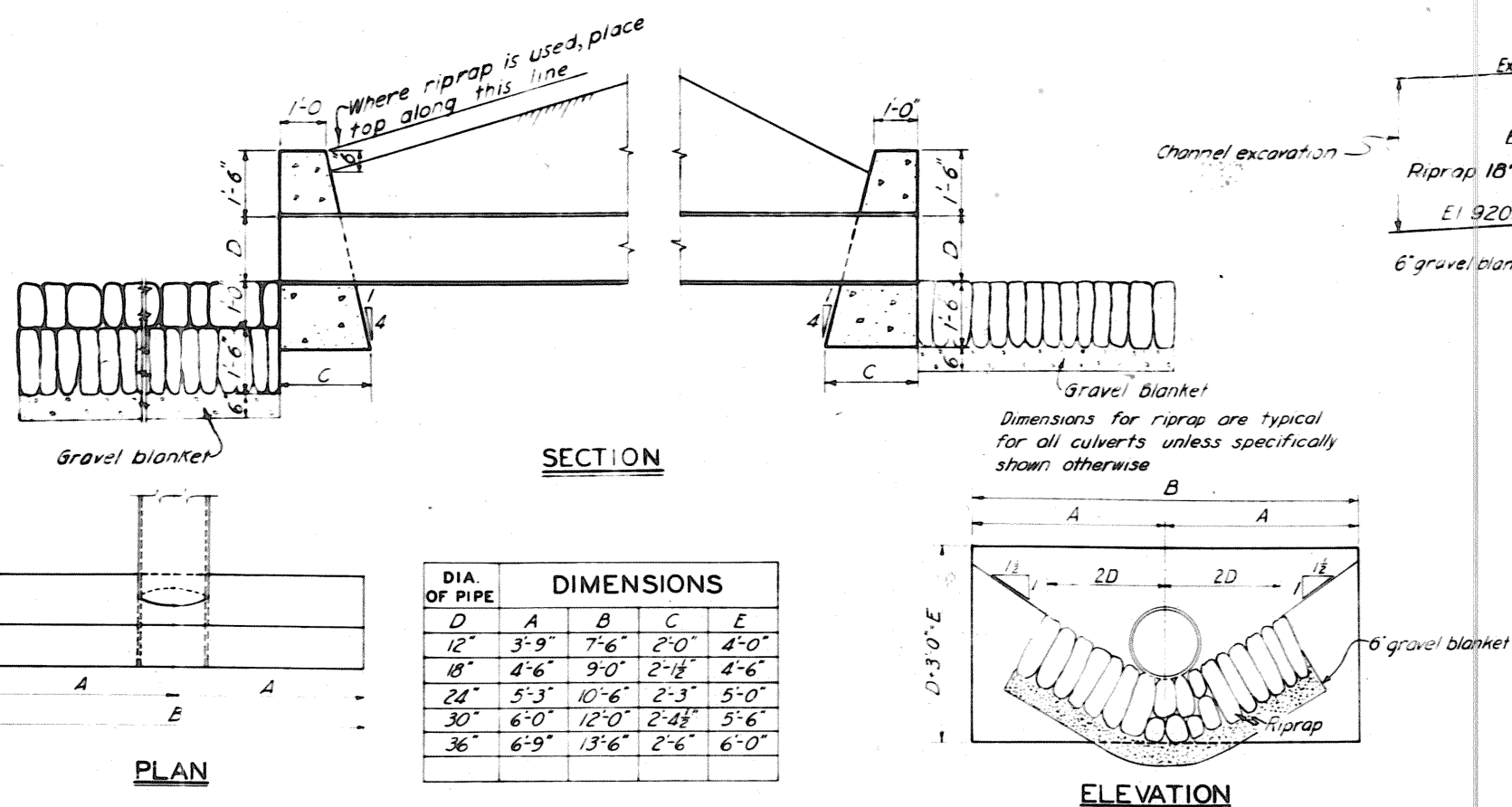
FILE NO. Q271-PM-16/10

BY	DATE	CHARACTER

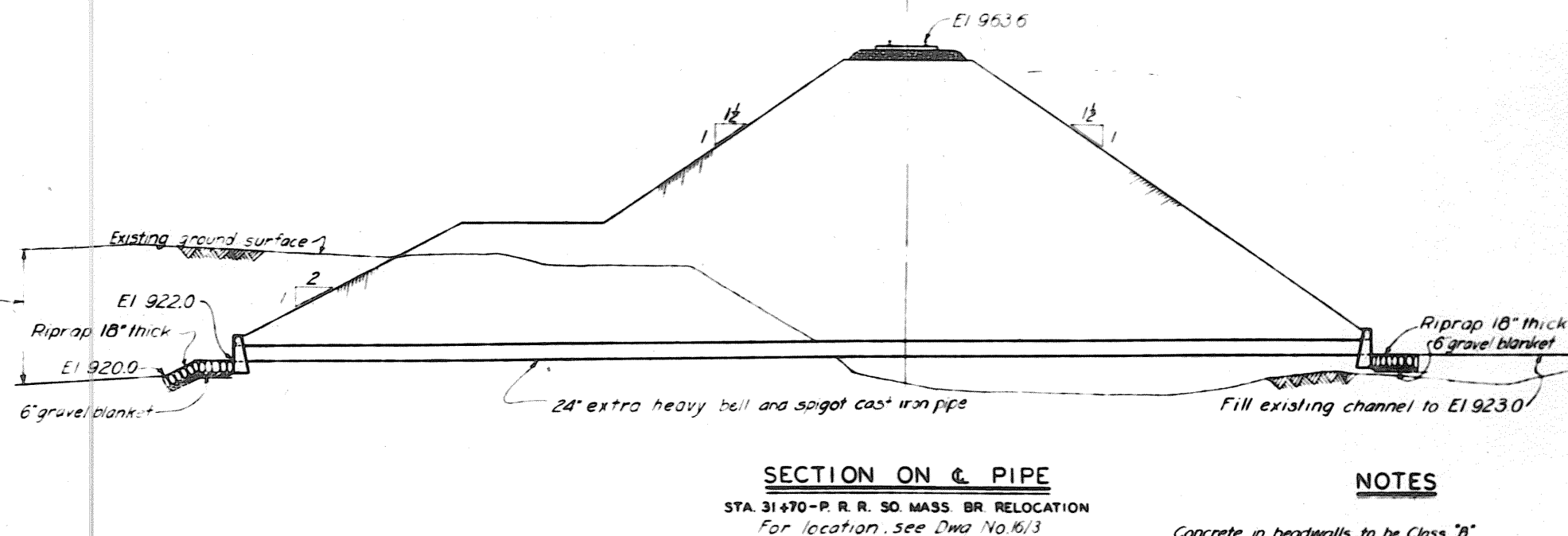
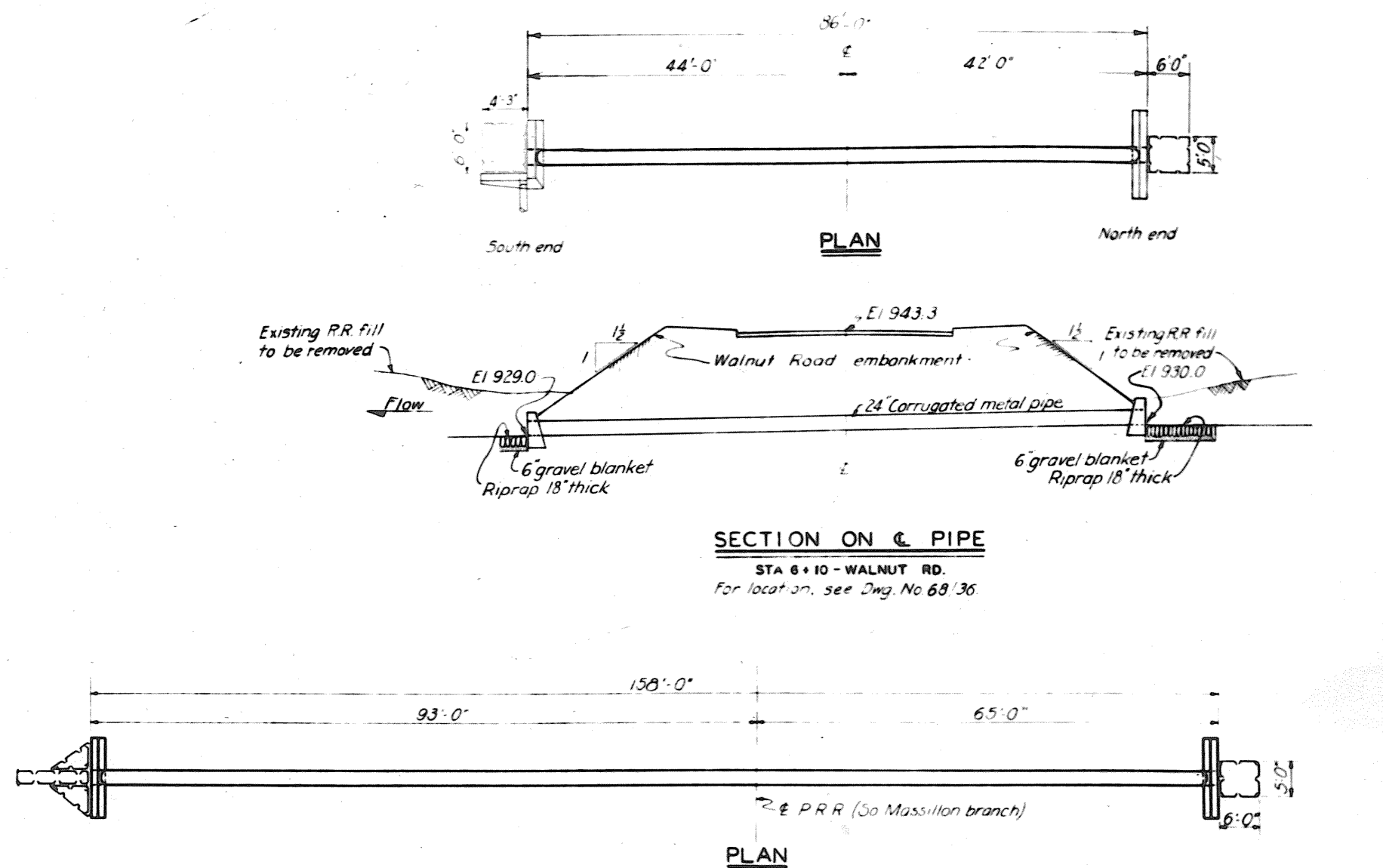
WORK AS CONSTRUCTED



DETAILS OF HEADWALL
STA. 6+10 - WALNUT ROAD



TYPICAL CULVERT HEADWALL DETAILS



NOTES

Concrete in headwalls to be Class "B"
Fill and backfill for a distance of 2' around pipe to be select material free from boulders or large rock

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

PIPE CULVERTS & DETAILS

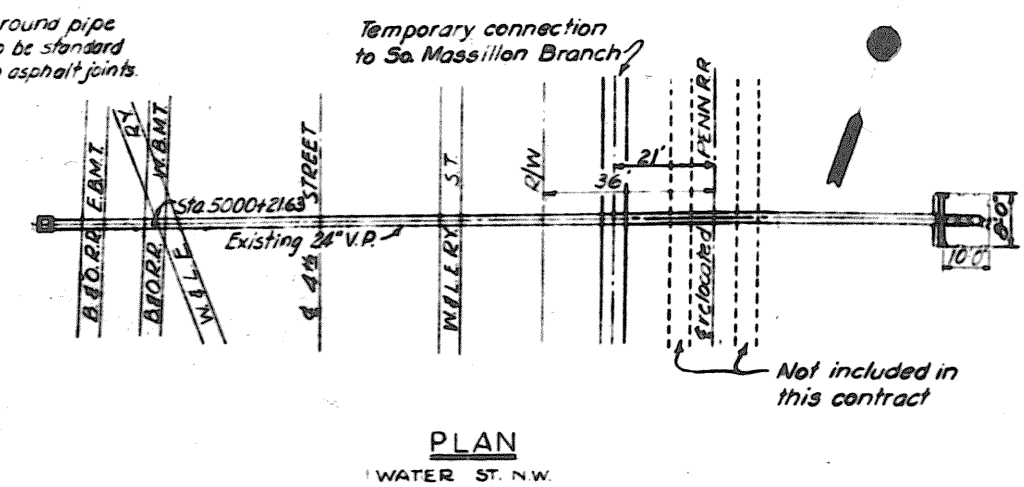
IN 76 SHEETS SHEET NO. 12 SCALE: 1"=10'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

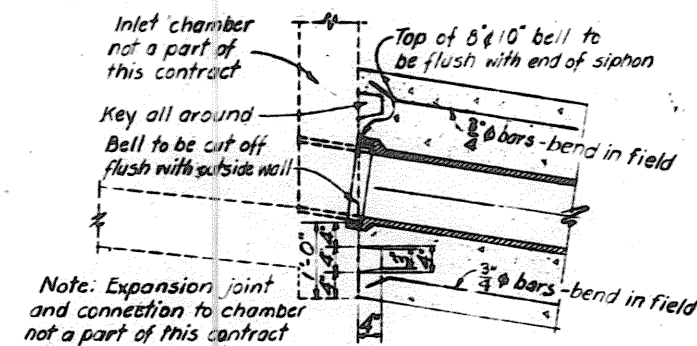
SUBMITTED: *W. J. B.* PRINCIPAL ENGINEER APPROVED: *W. J. B.* MAJOR, CORPS OF ENGINEERS

DRAWN BY: H.G.H. TRACED BY: R.C.H. CHECKED BY: D.G.J. FILE NO. 0271-PM-20/11 DATED: MAY 1941

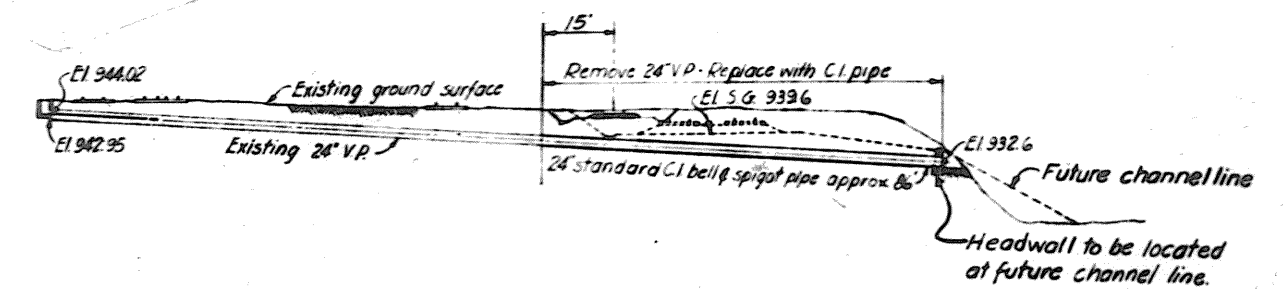
3.F.B. 9-29-44	REVISION AS CONS. RUPTED
4.J.B. 12-20-42	DETAILS OF HEADWALL ADDED
BY DATE	CHARACTER
REVISIONS	



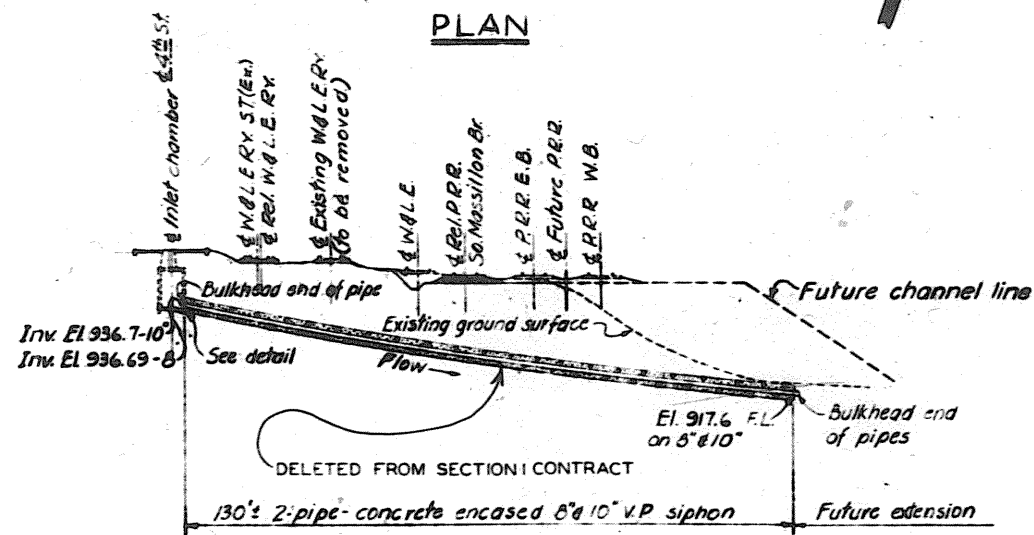
PLAN
1 WATER ST. N.W.



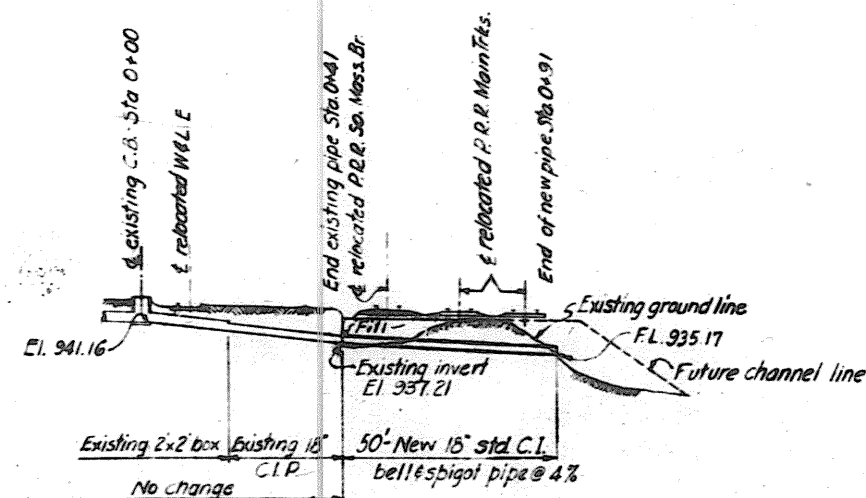
DELETED FROM SECTION I CONTRACT



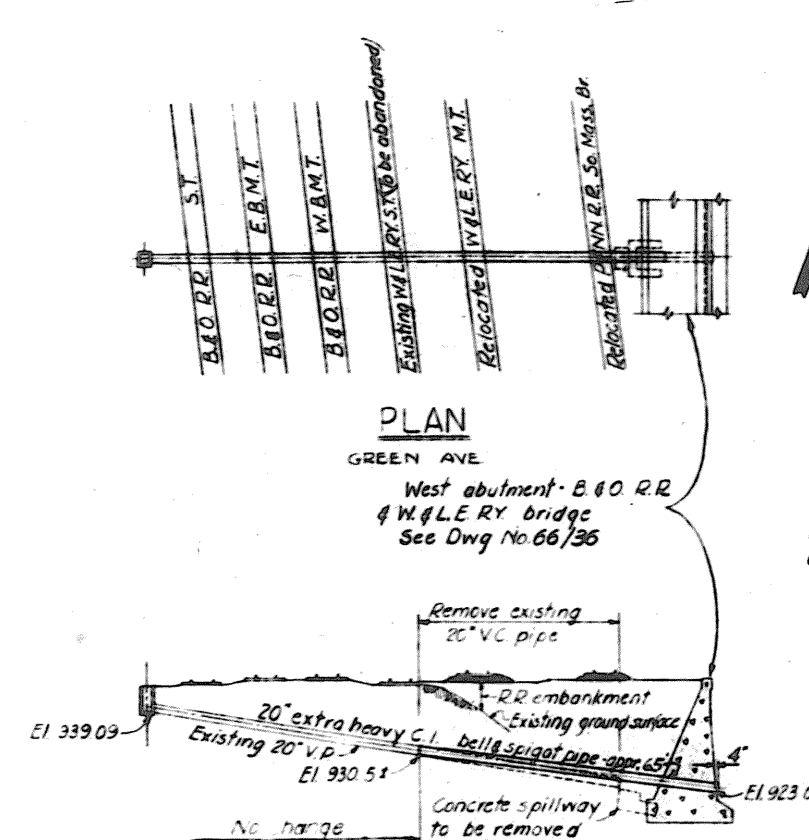
SECTION ON 4 PIPE



SECTION ON & TREMONT AVE SIPHON



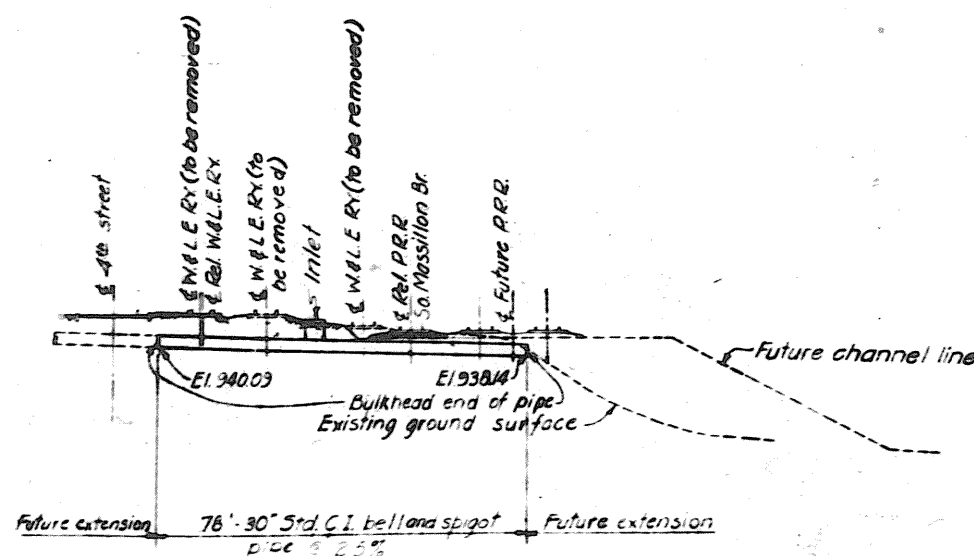
SECTION ON & 18" C.I. PIPE
SO SIDE TREMONT AVE



SECTION ON 4 PIPE

NOTES

For general plans, see Dwgs. Nos. 16/2 and 16/3.
Concrete in headwalls to be Class "B."



SECTION ON & 30" C.I. PIPE
NORTH SIDE OF TREMONT AVE

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

SECTION 1

SEWERS UNDER RAILROADS

10 75 SHEETS

SHEET NO. 13

SCALE: 1"=20'

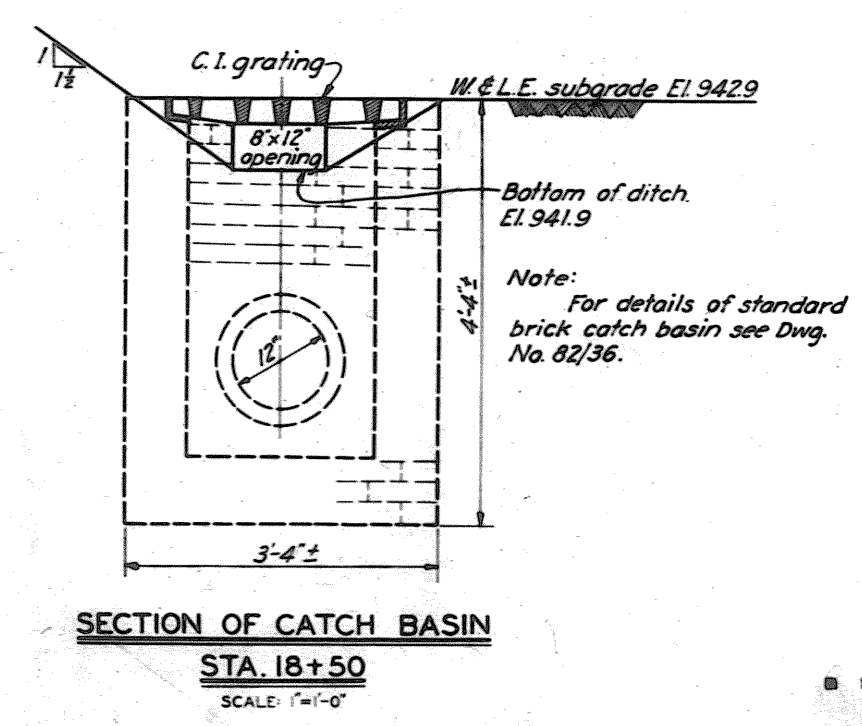
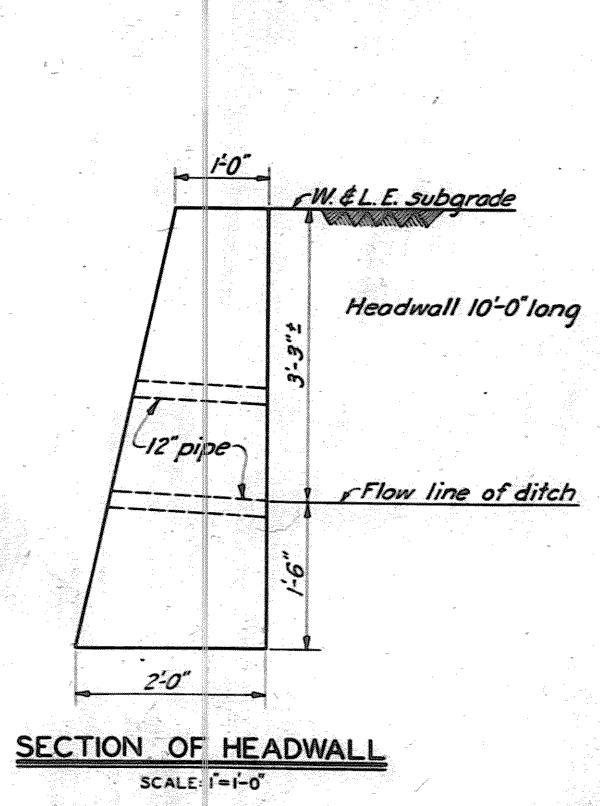
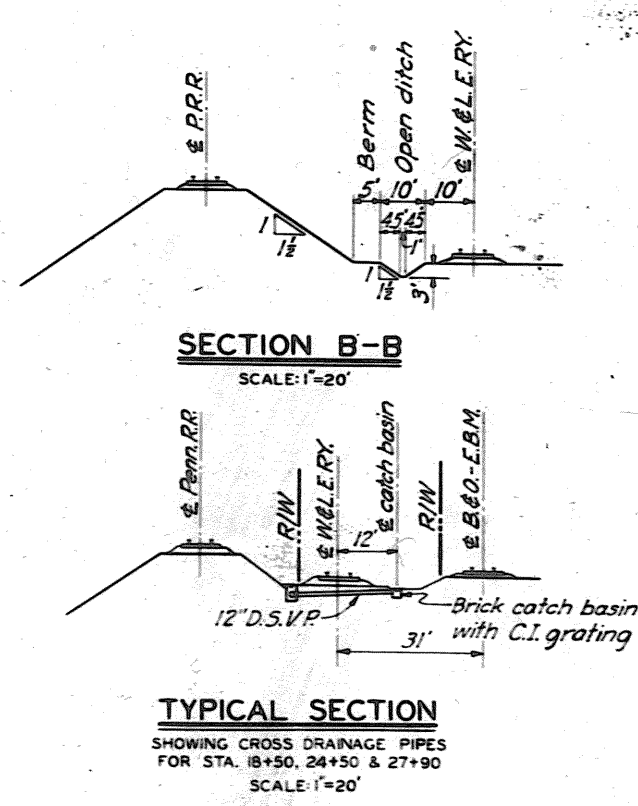
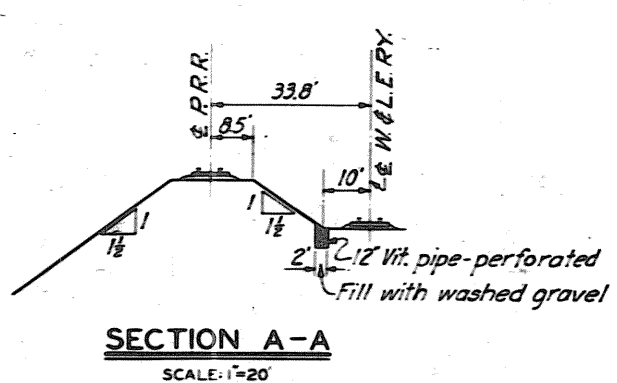
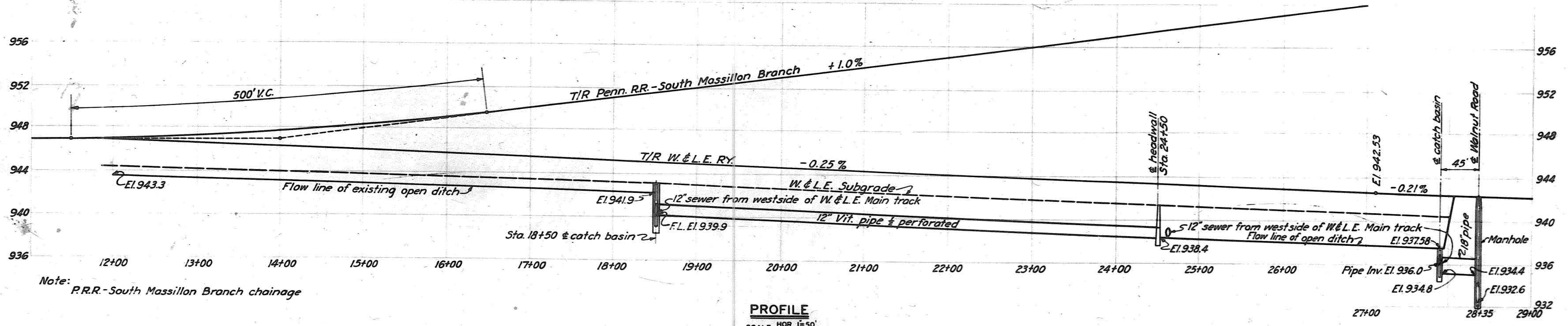
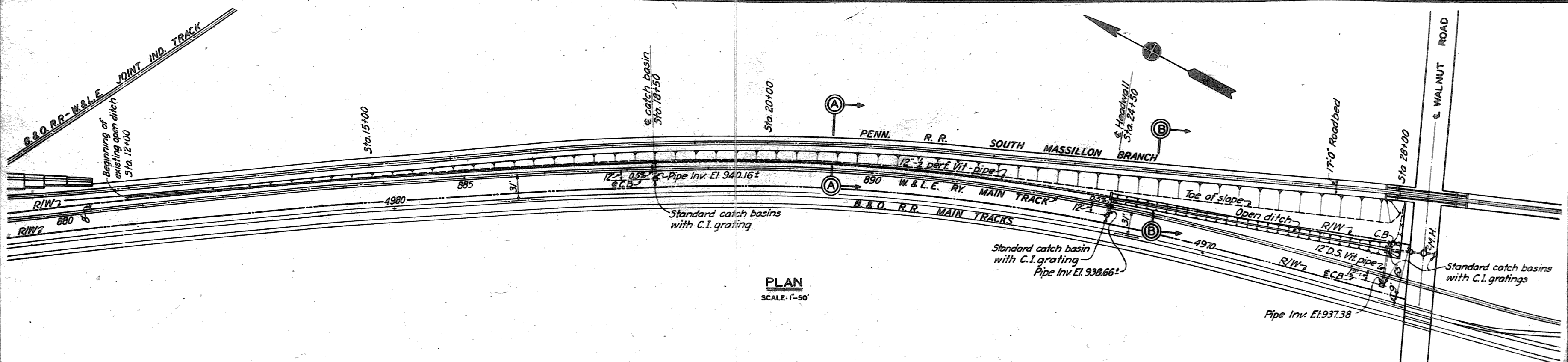
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY, 1941

SUBMITTED: *Wm. C. Baker*
PRINCIPAL ENGINEER

APPROVED: *W. C. Baker*
MAJOR, CORPS OF ENGINEERS

DRAWN BY RLE. TRACED BY RLE. FILE NO. 0271-PM-2012 TRANSMITTED WITH LETTER DATED

WORK AS CONSTRUCTED

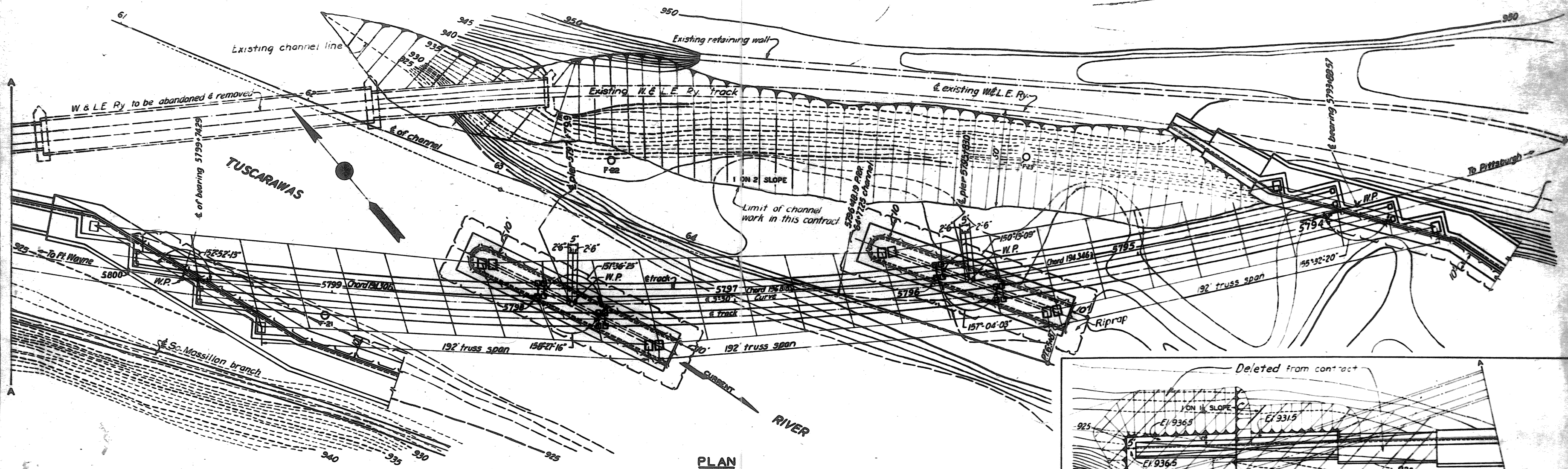


**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
DRAIN FOR P. R. R. & W. & L. E. RY. TRACKS**

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., OCT. 1949
SUBMITTED BY: [Signature] AP. REVIEWED BY: [Signature]
DESIGNED BY: [Signature] CHECKED BY: [Signature]
FILE NO. 0271-PM-20/14

BY	DATE	REVISIONS

WORK AS CONSTRUCTED



Note:
Superstructure not a part of
this contract.

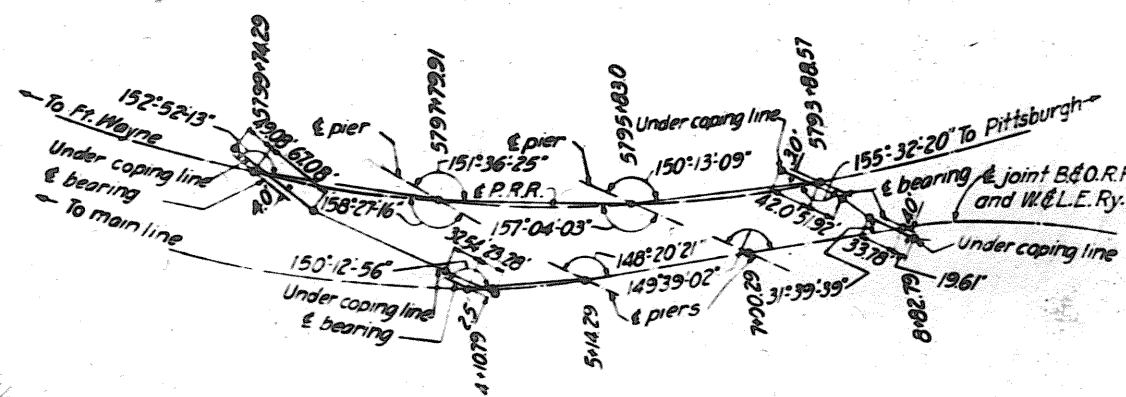
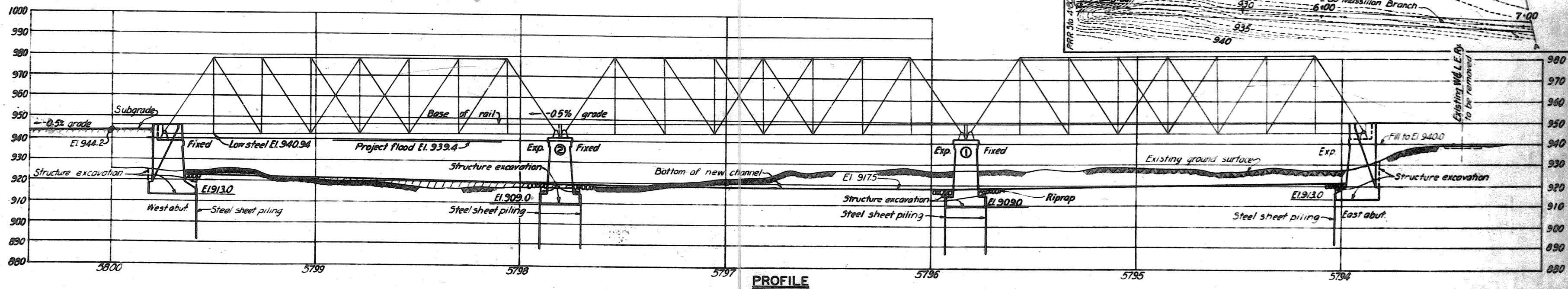
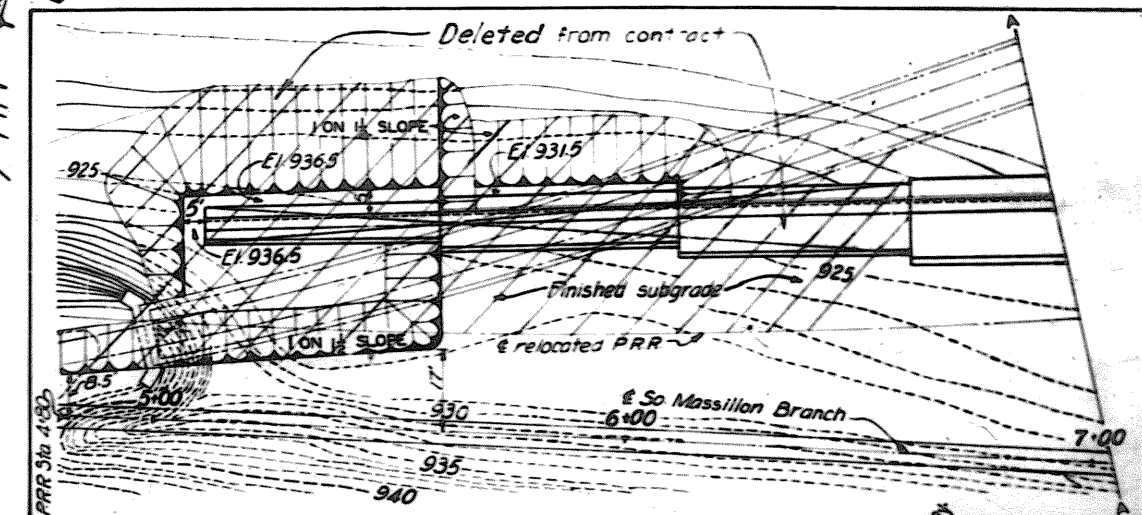


DIAGRAM OF WORK POINTS

NOTES

For general plan, see Dwg. No. 16/3
For log of borings F-21, F-22 & F-23,
see Dwg. No. 10/3.

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

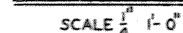
10 SHEETS SHEET NO. 10 SCALE: 1"=20'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. DEC. 1941

SUBMITTED BY: [Signature] APPROVED BY: [Signature]
DRAWN BY: A.M. CHECKED BY: D.G.J.
TRANSMITTED WITH LETTER DATED

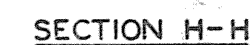
NO.	DATE	REVISIONS
1	9-20-44	REVISED AS CONSTRUCTED
2	9-20-44	CHANNEL REVISED AT W&L.E. BRIDGE AND
3	9-20-44	LAST THREE 50' SPANS DELETED FROM CONTRACT.

WORK AS CONSTRUCTED



NOTES

Chamfer all exposed edges $\frac{1}{2}$ " unless otherwise noted.
For groove detail see Dwg.No. 66/6
For location plan, see Dwg.No. 66/1
Anchor bolts not placed in this contract.
All concrete class B.



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

SECTION 1
PENNA. R. R. BRIDGE OVER CHANNEL
EAST ABUTMENT

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

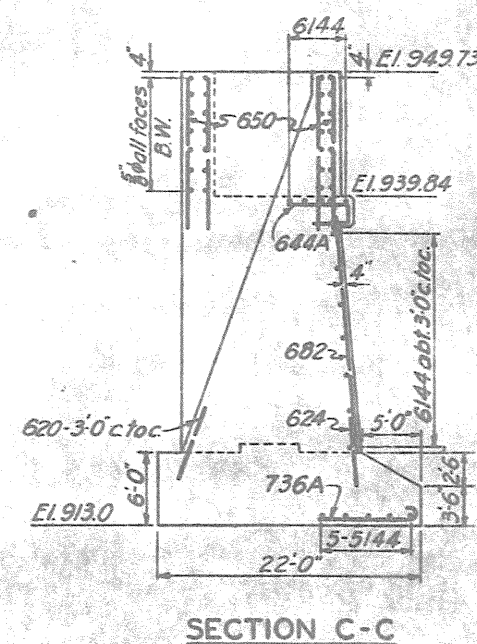
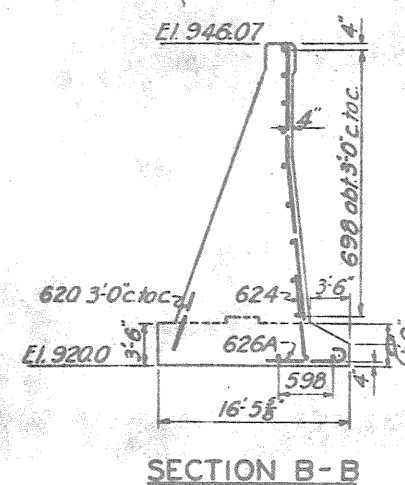
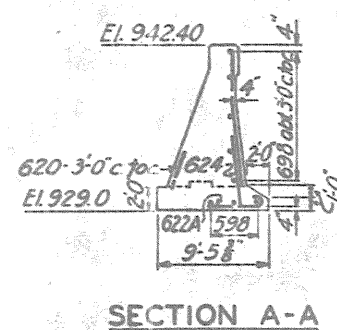
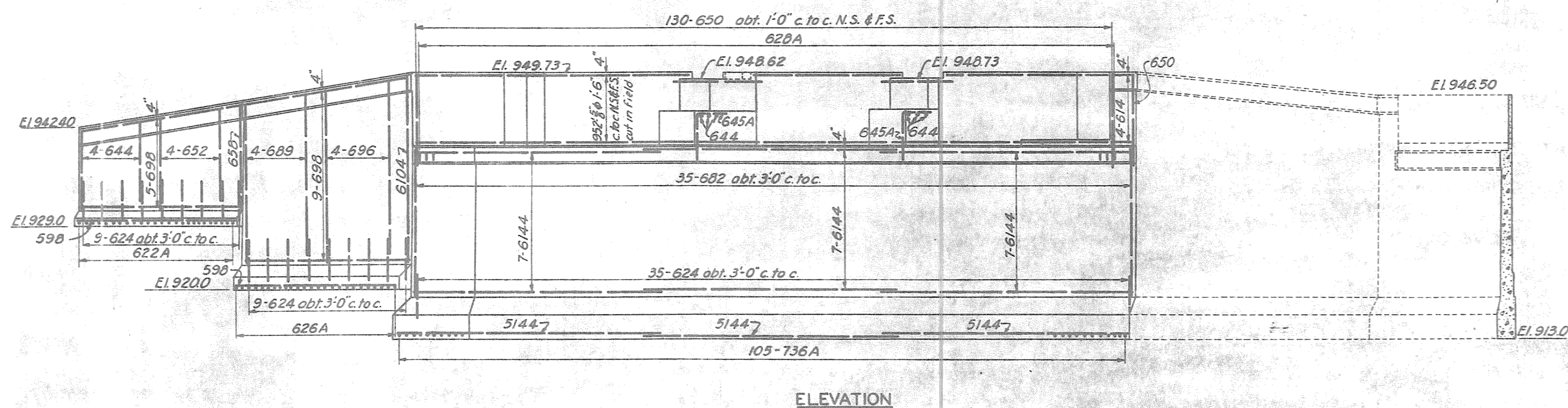
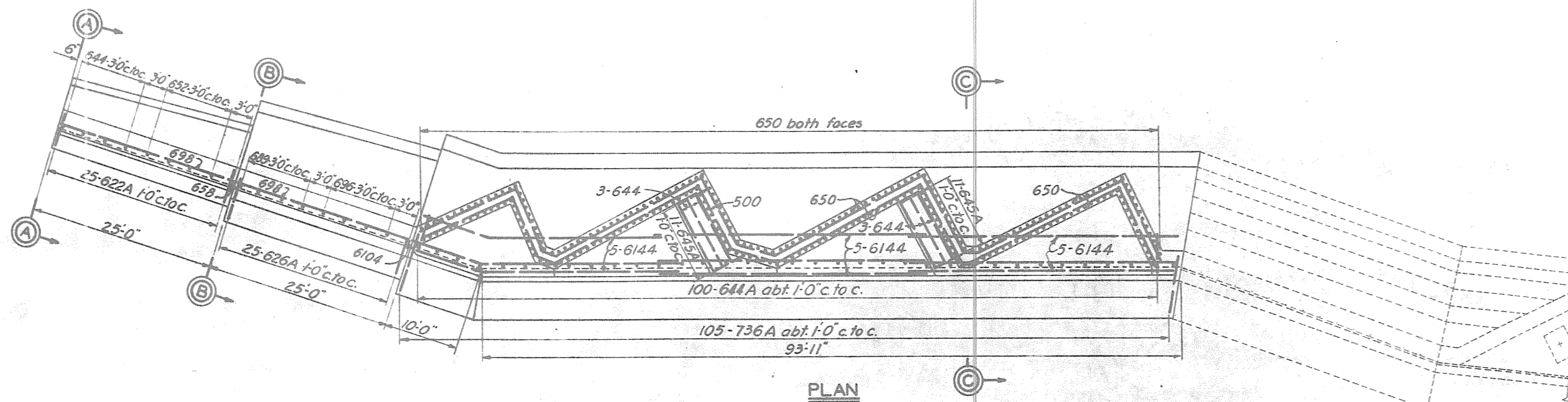
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., DEC. 1944

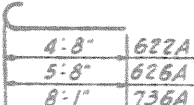

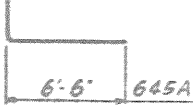
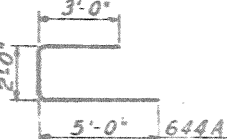
SUBMITTED: Wm. G. Gibson APPROVED: W. A. Felt

DRAWN BY J.E.H. PRINCIPAL ENGINEER MAJOR, CORPS OF ENGINEERS
 TRANSMITTED WITH LETTER

TRACED BY E.B.H.
CHECKED BY D.G.J. FILE NO 0271-PM-66/2A DATED

WORK AS CONSTRUCTED THIS DRAWING SUPPLEMENTS DWG. NO. 66/2



REINFORCING SCHEDULE							
MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.	
* 510	3/8"	2'-6"	ABUTMENT & WING	60	2.31	134	
500	3/8"	19'-0"				1043	1986
598	3/8"	24'-6"				625.55	153
5144	3/8"	36'-0"				1537.55	563
614	3/8"	3'-6"		4	5.26	21	
620	3/8"	5'-0"			53	7.51	398
622A	3/8"	5'-6"			25	8.26	207
624	3/8"	6'-0"			53	9.01	478
626A	3/8"	6'-6"		25	9.76	244	
644A	3/8"	11'-0"			100	16.52	1652
644	3/8"	11'-0"			10	16.52	165
645A	3/8"	11'-3"			22	16.90	372
650	3/8"	12'-6"			261	18.78	4902
652	3/8"	13'-0"			4	19.53	78
658	3/8"	14'-6"			1	21.78	22
682	3/8"	20'-6"		35	30.79	1078	
689	3/8"	22'-3"			4	33.42	134
696	3/8"	24'-0"			4	36.05	144
698	3/8"	24'-6"			14	36.80	515
6104	3/8"	26'-0"		1	39.05	39	
6144	3/8"	36'-0"		36	54.08	1947	
736A	3/8"	9'-0"		105	18.40	1932	
					Total 17,164		

* See drain detail, Dwg. No. 66/38

NOTES

Place all reinforcing steel 4" min. from surface unless otherwise noted.
For masonry details, see Dwg. No. 66/2A

TUSCARAWAS RIVER LOCAL PROTECTION PROJECT MASSILLON, OHIO

SECTION 1

PENNA. R. R. BRIDGE OVER CHANNEL EAST ABUTMENT - REINFORCING DETAILS

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

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. DEC. 1944

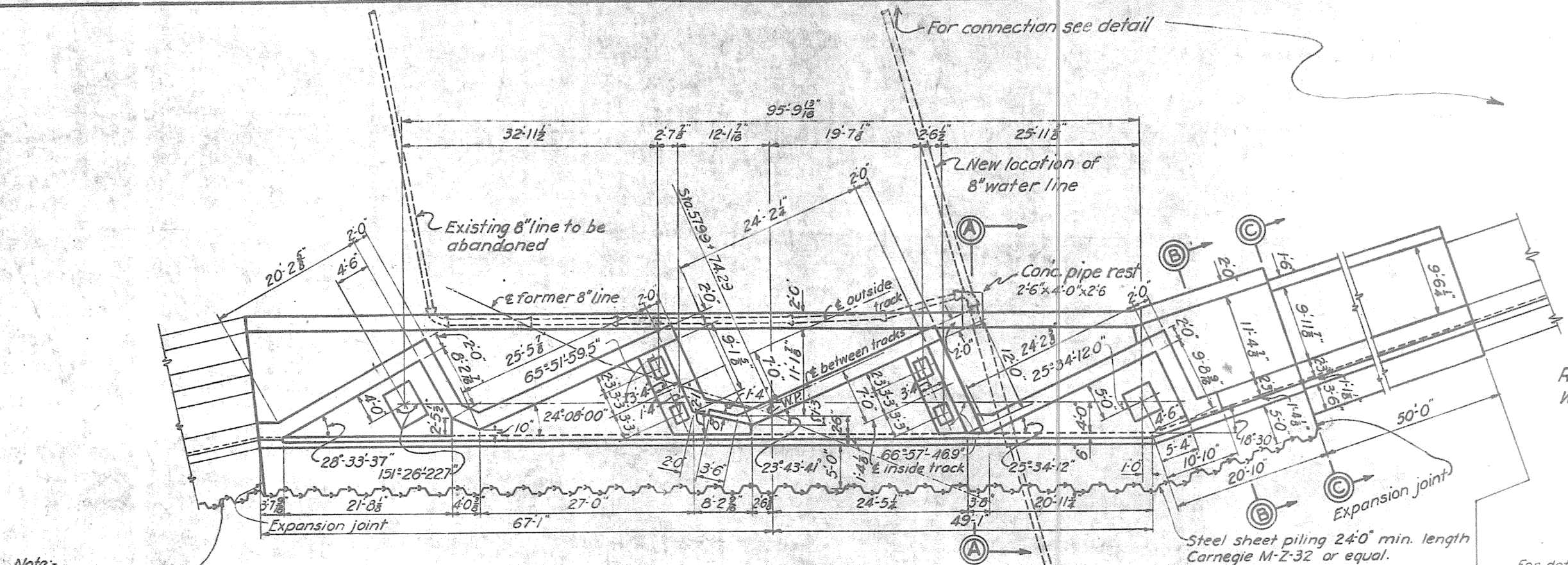
SUBMITTED BY J. C. J. APPROVED BY J. C. J. MAJOR, CORPS OF ENGINEERS

DRAWN BY L. D. J. TRANSMITTED WITH LETTER

CHECKED BY D. G. J. FILE NO. 0271-PM-66/3A

BY	DATE	CHARACTER
		REVISIONS

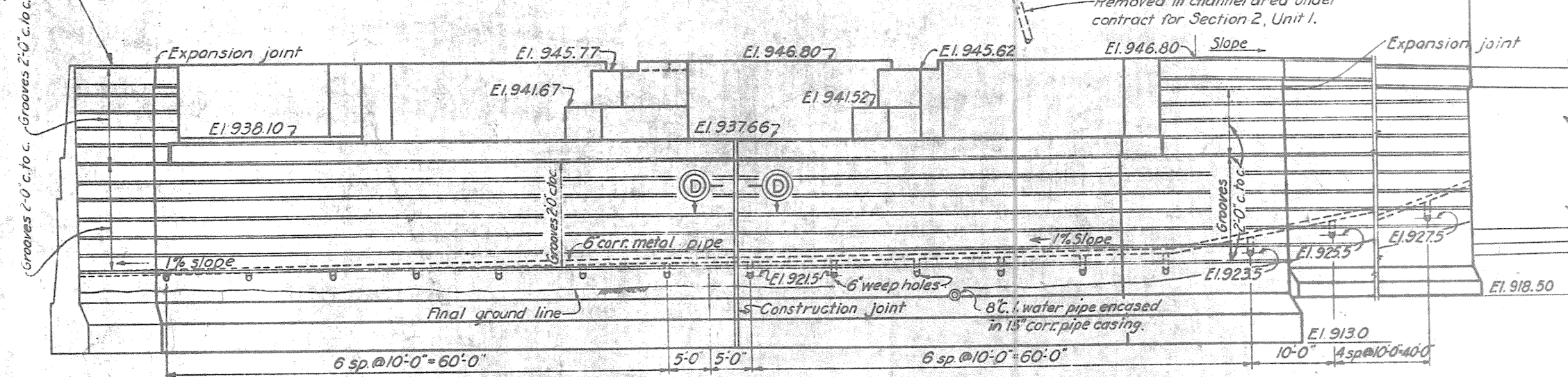
WORK AS CONSTRUCTED THIS DRAWING SUPPLEMENTS DWG. NO. 66/2



Note:-
For wall section
see Dwg. No. 66/36

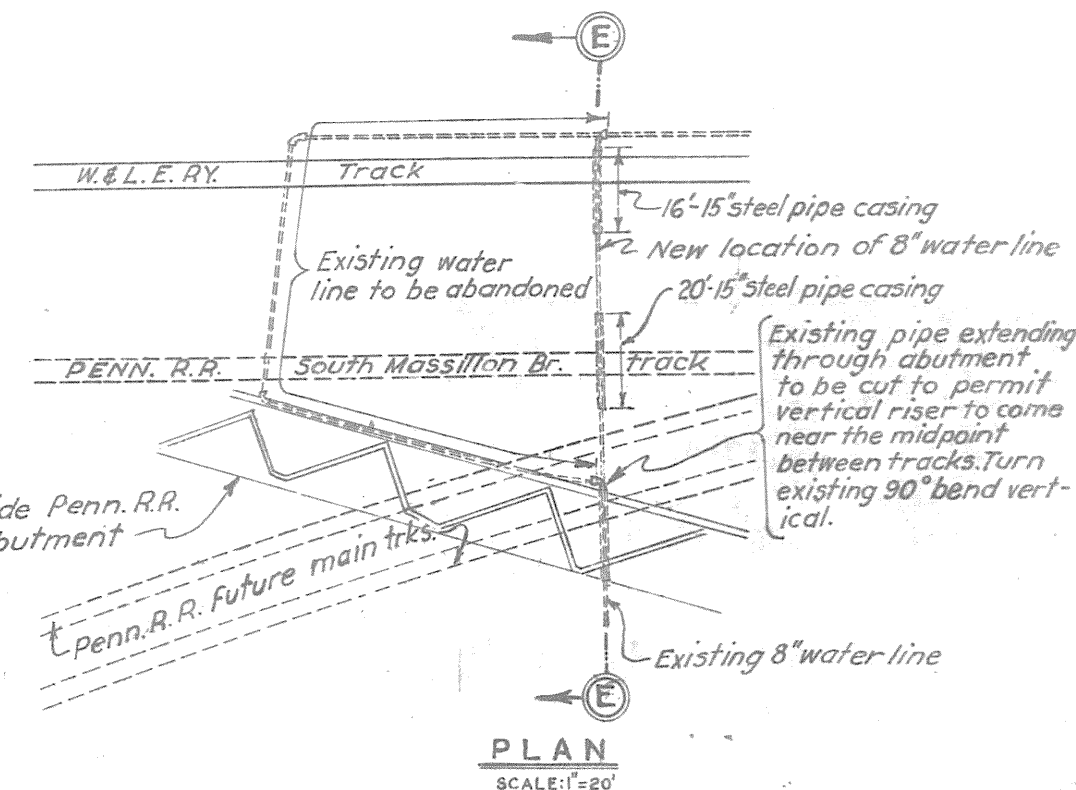
PLAN

For details see Dwg. No.
0271-PM2-66/61

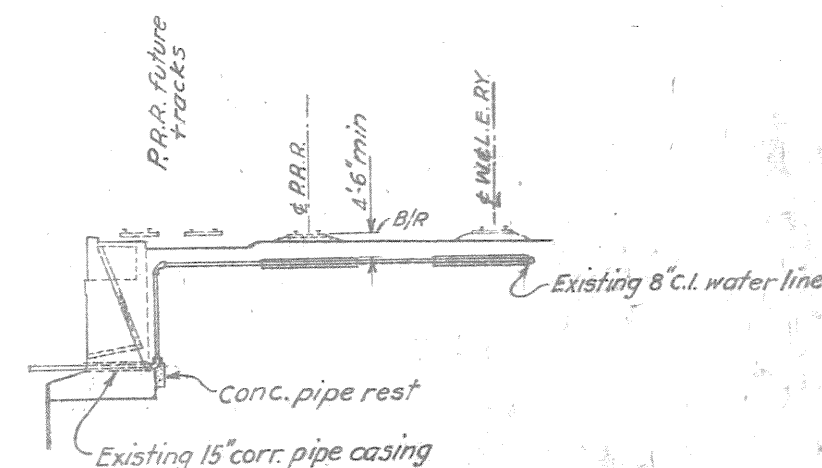


ELEVATION

Note:
All 8" water lines abandoned and plugged
under contract for Section 2, Unit 1.



PLAN
SCALE: 1"=20'



SECTION E-E

RELOCATION OF WATER LINE

NOTES

Chamfer all exposed edges 1/2" unless otherwise noted.
For groove detail see Dwg. No. 66/39.
For drain detail see Dwg. No. 66/38.
For reinforcing steel, see Dwg. No. 66/5.
For location plan, see Dwg. No. 66/35.
For details of water stop see Dwg. No. 66/2.
For detail of key in expansion joint, see Dwg. No. 66/2.
All concrete to be Class "B".
Anchor bolt holes not to be placed in this abutment.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO

SECTION 1

PENNA. R. R. BRIDGE OVER CHANNEL
WEST ABUTMENT

IN 76 SHEETS

SHEET NO. 15

SCALE: 1"=20'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

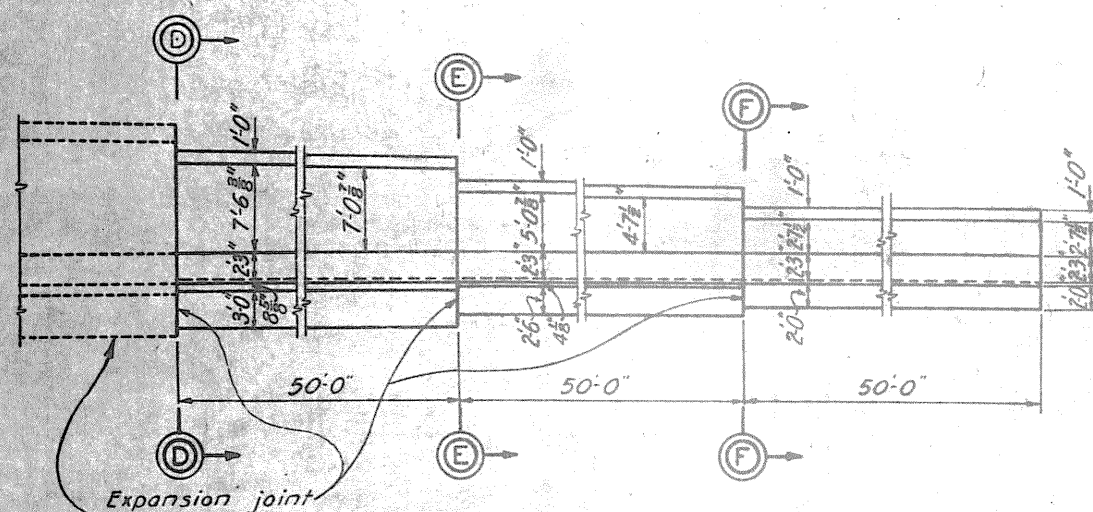
SUBMITTED: *[Signature]* APPROVED: *[Signature]*

TRACED BY: J.E.M. FILE NO. 0271-PM-66/4

CHECKED BY: E.K. DATED

S.B. 5-19-49	REVISED AS CONSTRUCTED (ALL 8" WATER LINES ABANDONED AND PLUGGED UNDER CONTRACT FOR SECTION 2, UNIT 1, AND REFERENCE NOTE FOR WALL.)
S.B. 6-3-42	REVISED TO SHOW NEW LOCATION OF 8" WATER LINE IN NEW CASING.
E.W.H. 3-17-42	REVISED TO SHOW 8" C.I. WATER LINE ENCASED IN 15" STEEL CASING.
J.W.D. 12-2-41	LAYOUT OF ANCHOR BOLT HOLES REMOVED.
BY DATE	CHARACTER
REVISIONS	

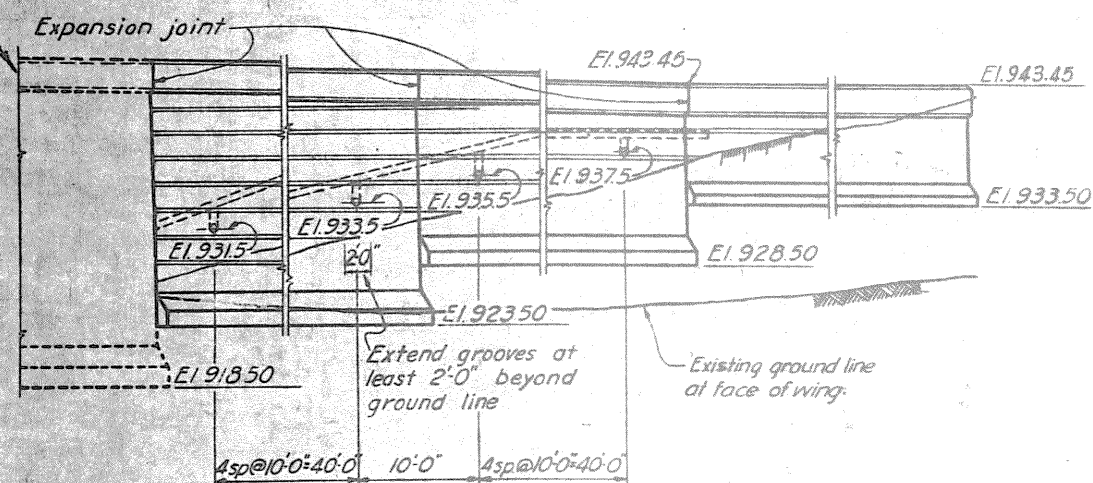
WORK AS CONSTRUCTED



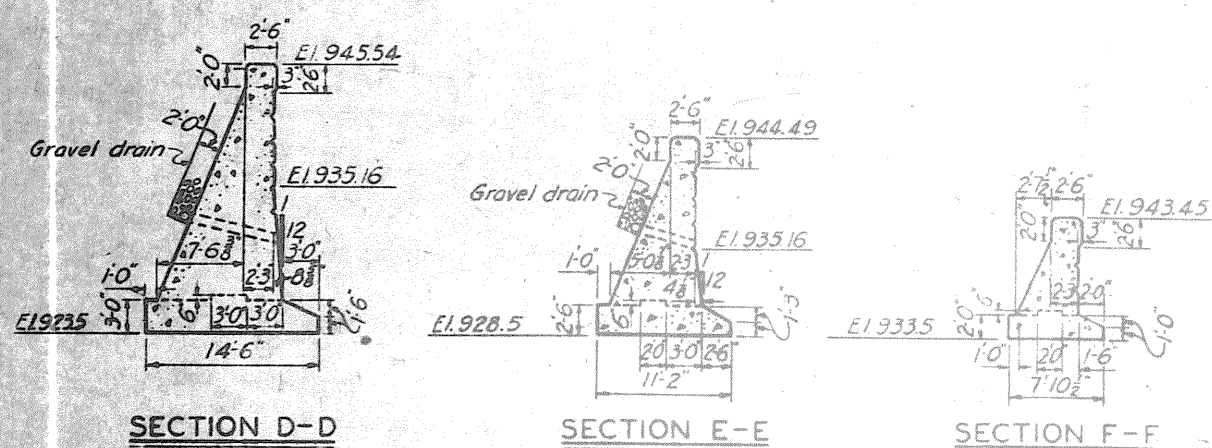
Expansion joint

For this abutment see Dwg. No 66/4

PLAN



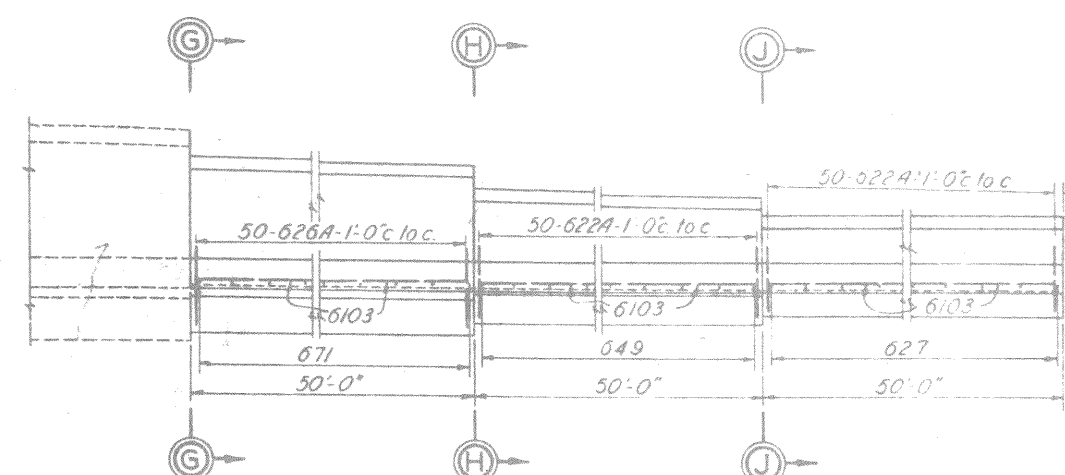
ELEVATION



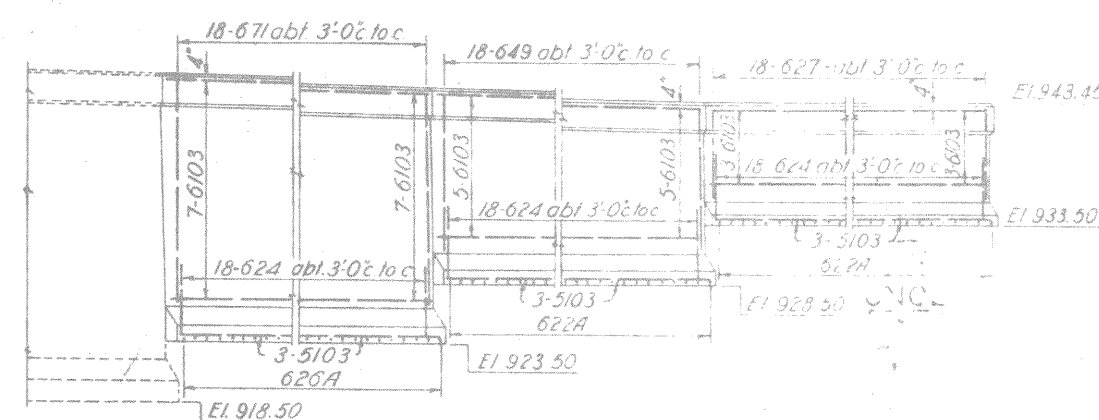
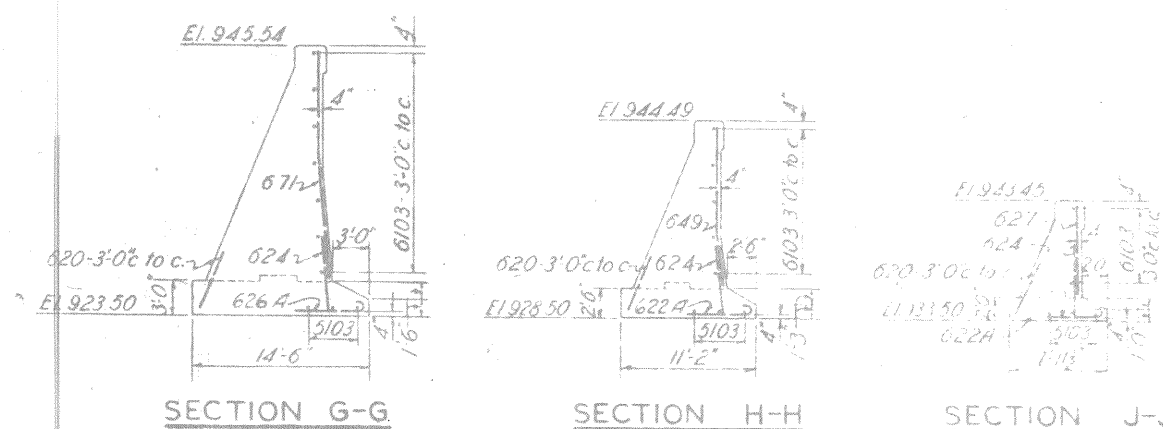
SECTION D-D

SECTION E-E

SECTION F-F



PLAN

ELEVATION

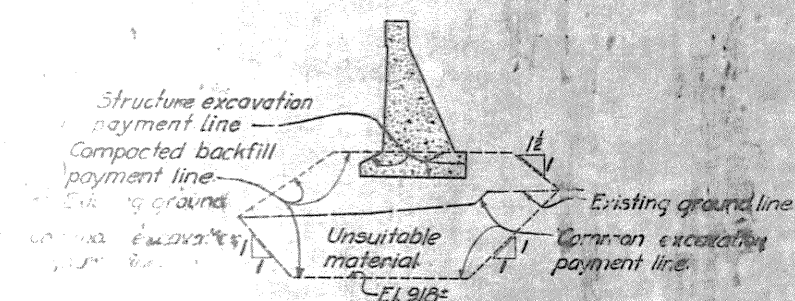
SECTION G-G.

SECTION H-H

SECTION J-J

MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
* 510	$\frac{5}{8}$ "	2'-6"		35	2.31	81
5103	$\frac{5}{8}$ "	25'-9"		18	26.86	483
620	$\frac{5}{8}$ "	5'-0"		54	7.51	406
622A	$\frac{5}{8}$ "	5'-6"		100	8.26	826
624	$\frac{5}{8}$ "	6'-0"		54	9.01	487
626A	$\frac{5}{8}$ "	6'-6"		50	9.76	488
627	$\frac{5}{8}$ "	5'-9"		18	10.14	183
649	$\frac{5}{8}$ "	12'-3"		18	18.40	331
671	$\frac{5}{8}$ "	17'-9"		18	26.66	480
6103	$\frac{5}{8}$ "	25'-9"		30	38.68	1160
				Total		4,925

* See drain detail, Dwg. No. 66/38



TYPICAL SECTION SHOWING REMOVAL OF
UNSUITABLE MATERIAL AND BACKFILL
FOR 3 END MONOLITHS OF NORTH WING

NOTES

Chamfer all exposed edges $1\frac{1}{2}$ " unless otherwise noted.
Place all reinforcing steel 4" minimum from surface
unless otherwise noted.

For groove detail, see Dwg. No. 66/6.

For drain detail see, Dwg.No. 66/38

Anchor bolts not placed in this contract

For details of water stop, see Dwg. No. 66/2A

For details of vertical construction joint, see Dwg. No. 66/2A

All concrete to be Class "B".

For detail of key in expansion joint, see Dwg. No. 66/2A

WORK AS CONSTRUCTED

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

PENNA. R. R. BRIDGE OVER CHANNEL
WEST ABUTMENT - MASONRY & REINFORCING DETAILS

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

12' 0" 4' 8' 12' 16' 20'

U.S. ENGINEER OFFICE, HUNTINGTON, W. VA., DEC. 1941

U.S. ENGINEER OFFICE, HUNTINGTON, W. VA., DEC. 1941

SUBMITTED: [Signature] APPROVED: [Signature]

DRAWN BY: J. L. C. APPROVED: [Signature]
 PRINCIPAL ENGINEER MAJOR, CORPS OF ENGINEERS
 TRANSMITTED WITH LETTER

TRACED BY W. A. E. TRANSMITTED WITH LETTER
CHECKED BY E. K. FILE NO 027i-PM-66/4A DATED 11/1/66

THIS DRAWING SUPPLEMENTS DWG. NO. 68

REINFORCING SCHEDULE

MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
ABUTMENT & WING						
500	3/8"	2280	1m ft.		1.043	2,378
510	3/8"	2'-6"		105	2.31	243
582	3/8"	20'-6"		4	21.38	86
5103	3/8"	25'-9"		6	26.86	161
5126	3/8"	31'-6"		20	32.85	657
612	3/8"	3'-0"	8'-1"	4	4.51	18
620	3/8"	5'-0"		65	7.51	488
624	3/8"	6'-0"	7'-2"	65	9.01	586
626A	3/8"	6'-6"		50	9.76	488
640A	3/8"	10'-0"	5'-8"	120	15.02	1,802
632A	3/8"	8'-0"		21	12.02	252
640	3/8"	10'-0"		6	15.02	90
643A	3/8"	10'-9"		22	16.15	355
648	3/8"	12'-0"		308	18.02	5,550
661	3/8"	15'-3"	6'-0"	3	22.91	69
673	3/8"	18'-3"	3'-0"	41	27.41	1,124
682	3/8"	20'-6"		7	30.79	216
693	3/8"	23'-3"		18	34.92	629
6103	3/8"	25'-9"	5'-0"	18	38.68	696
6110	3/8"	27'-6"		6	41.31	248
6126	3/8"	31'-6"		44	47.31	2,082
736A	3/8"	9'-0"		116	18.40	2,134
Total						20,352

* See drain detail, Dwg. No. 66/38.

NOTES

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

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1

PENNA. R. R. BRIDGE OVER CHANNEL
WEST ABUTMENT - REINFORCING DETAILS

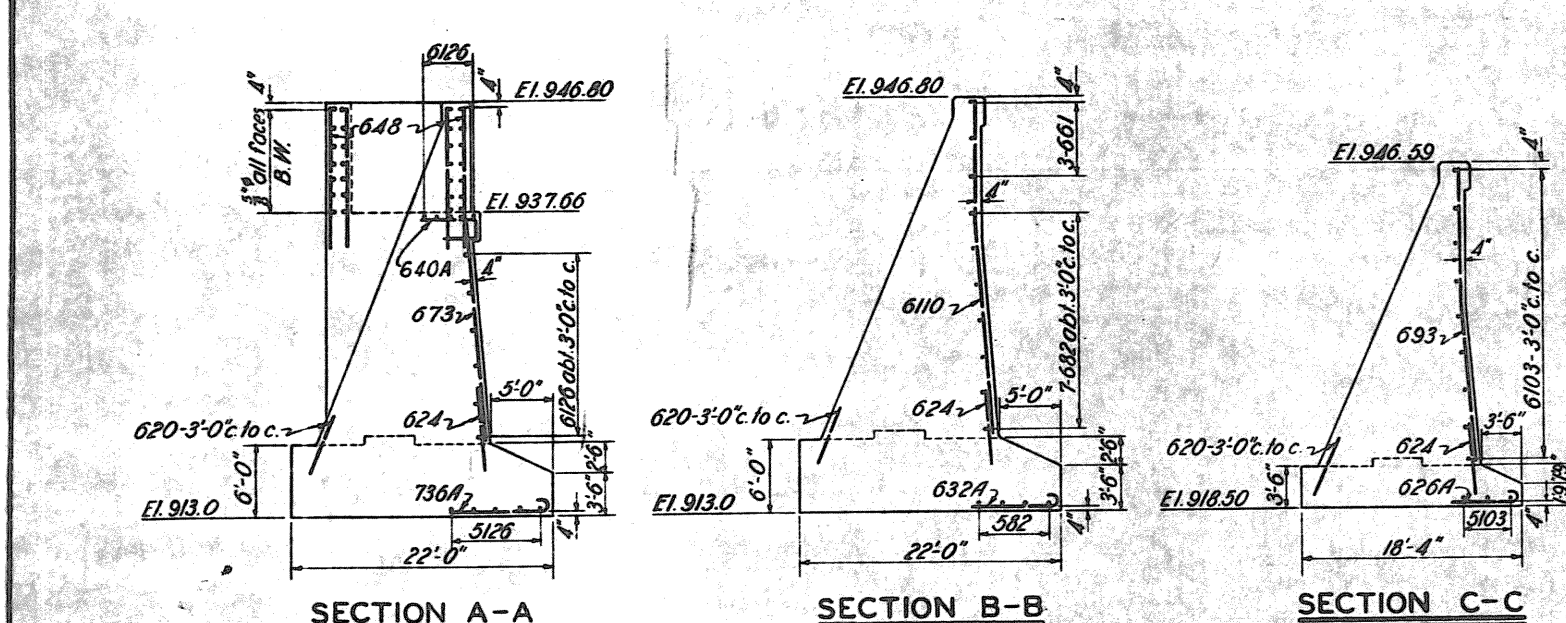
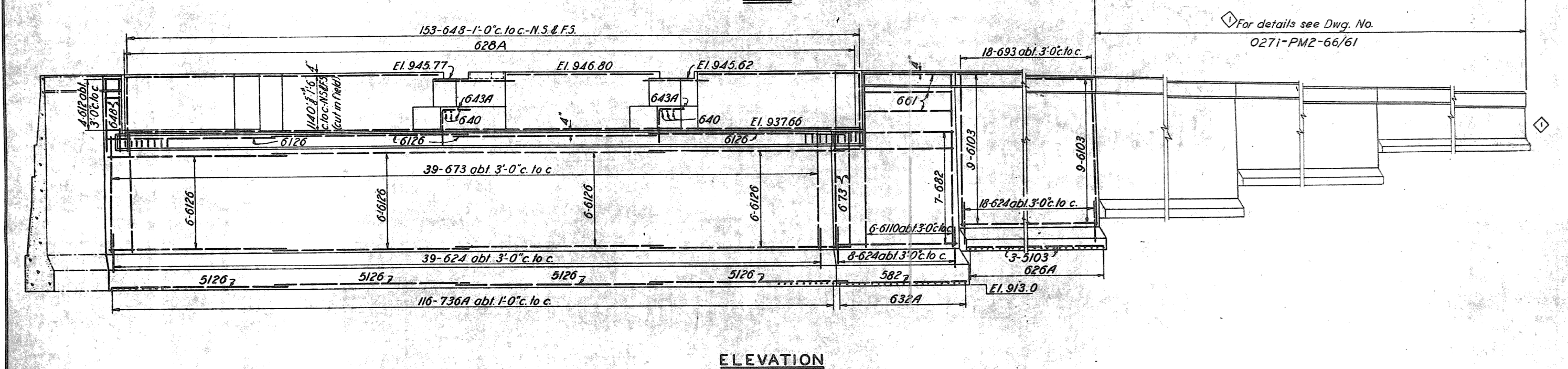
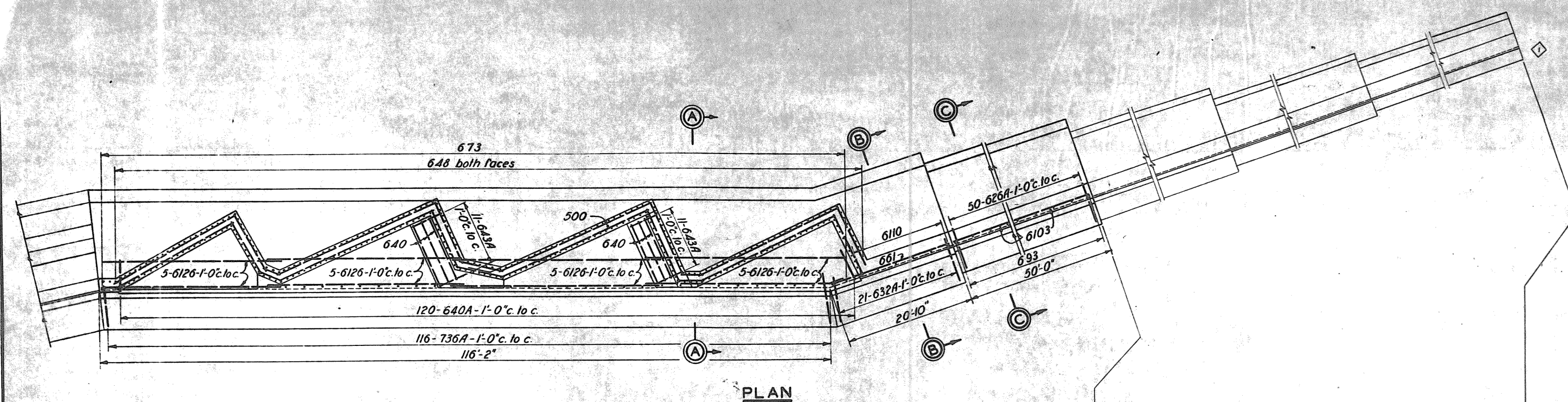
IN 76 SHEETS SHEET NO. 16 SCALE: 3/8"=1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

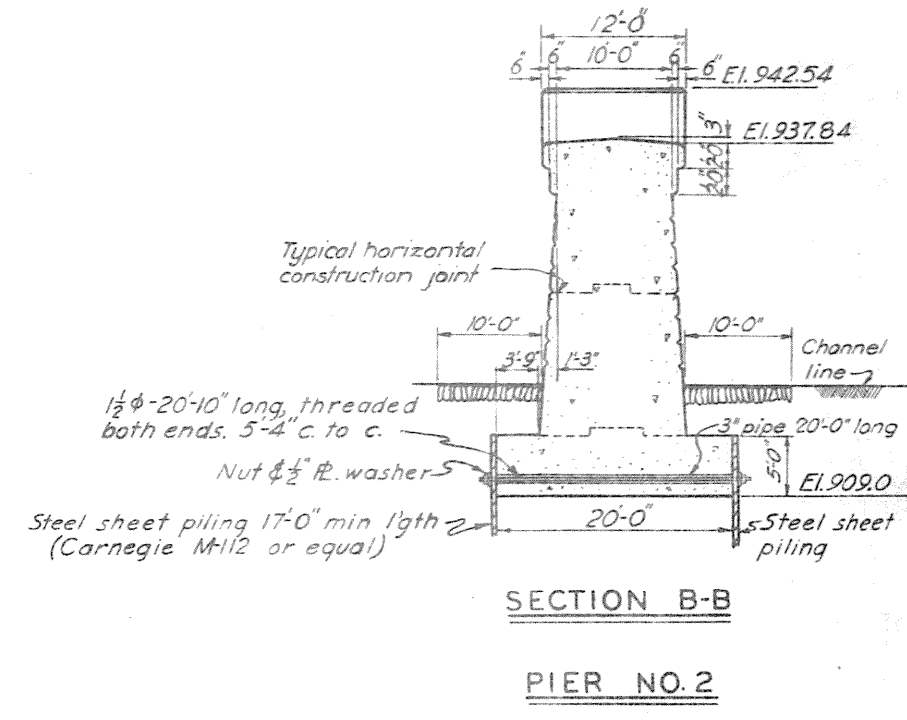
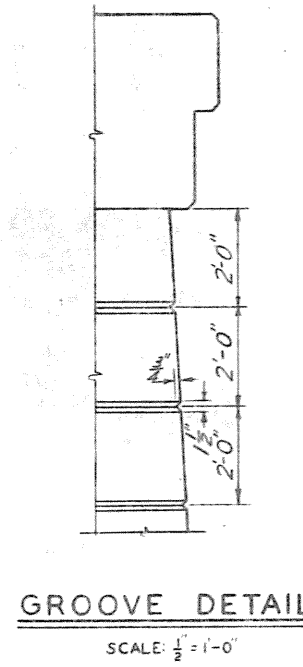
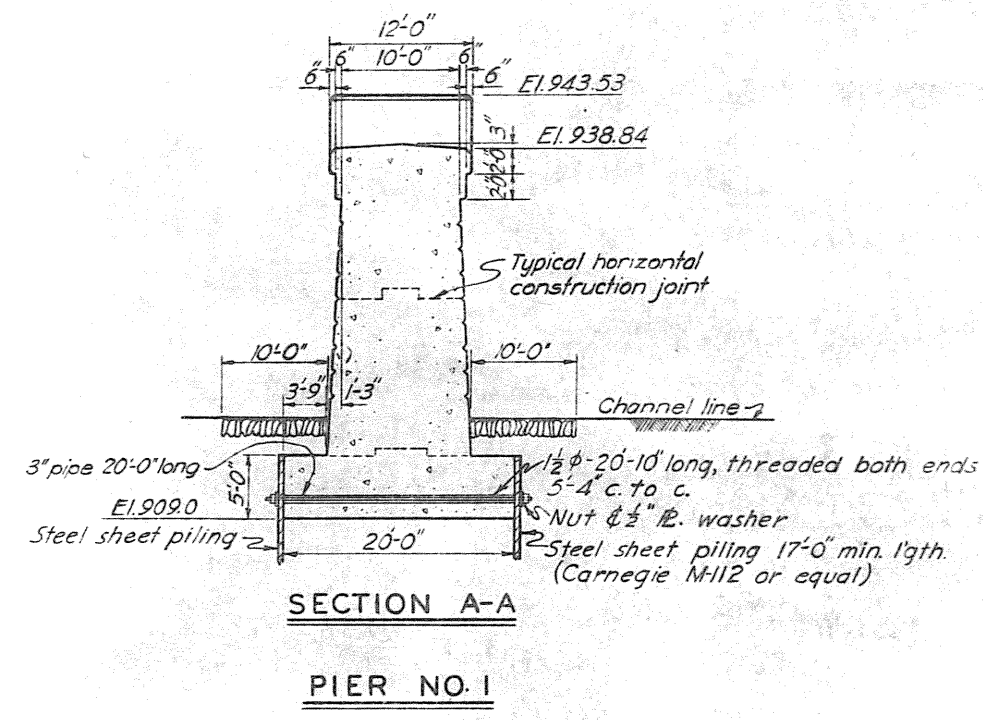
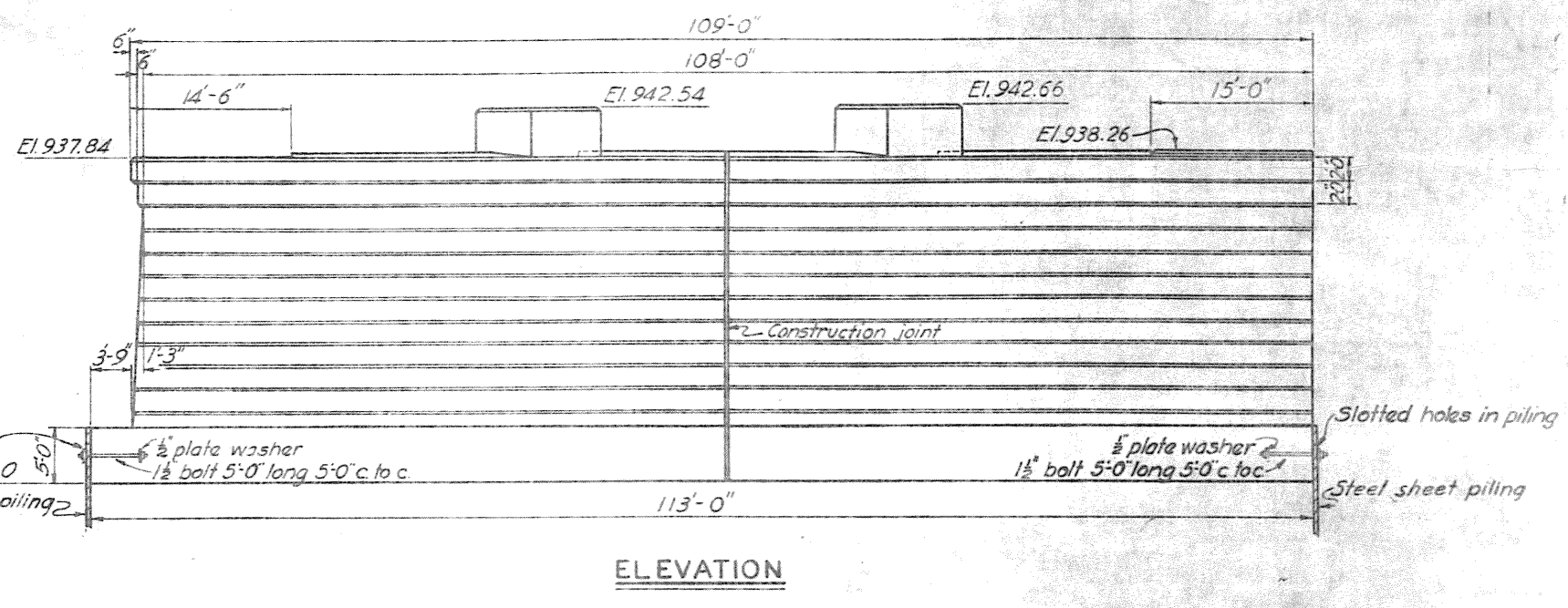
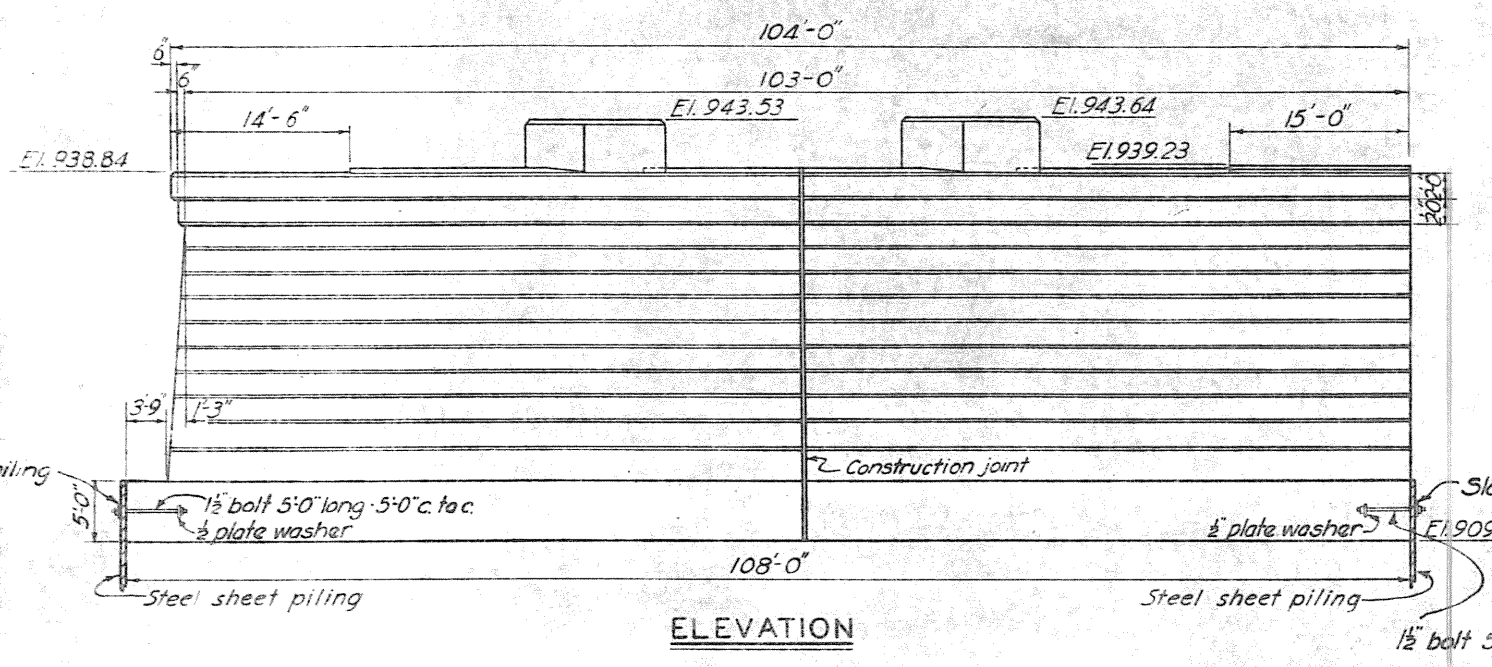
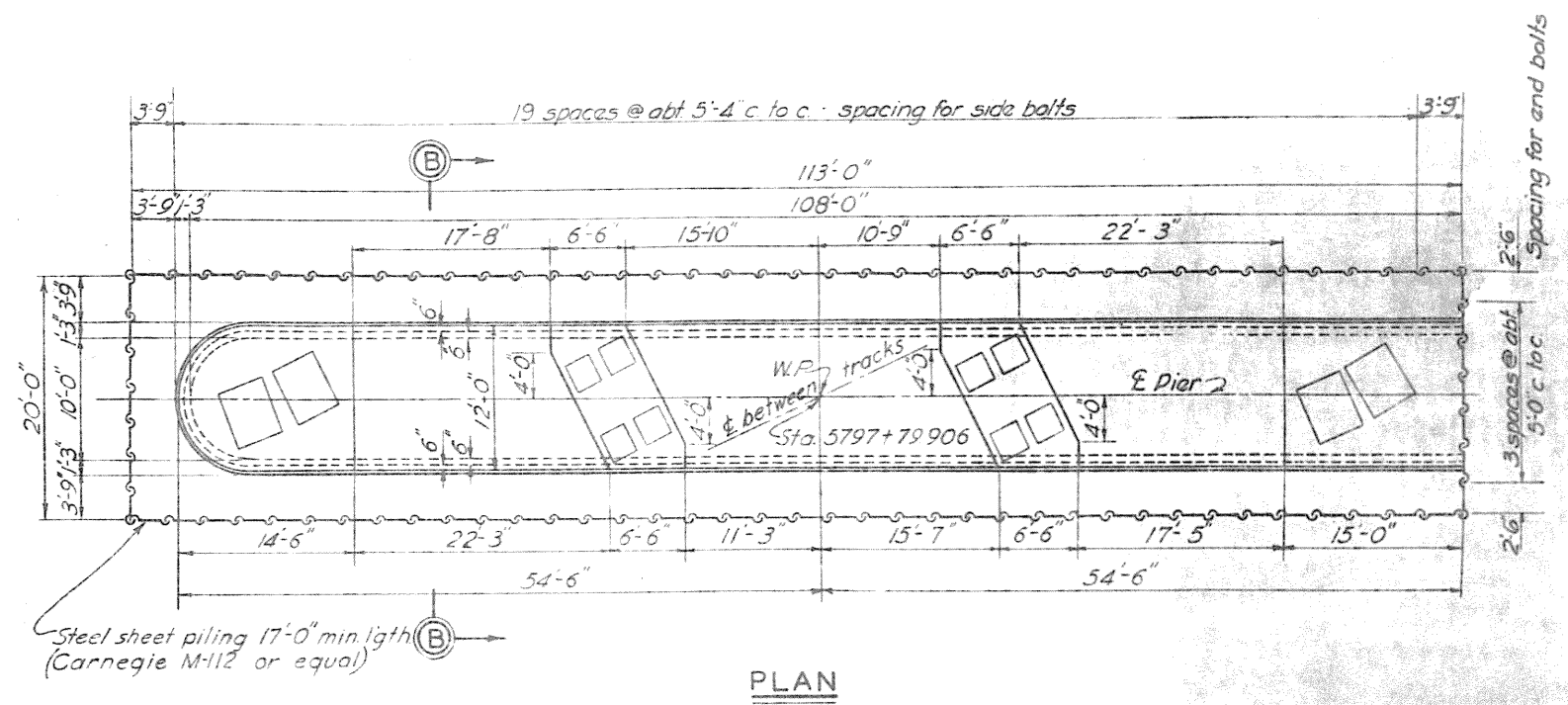
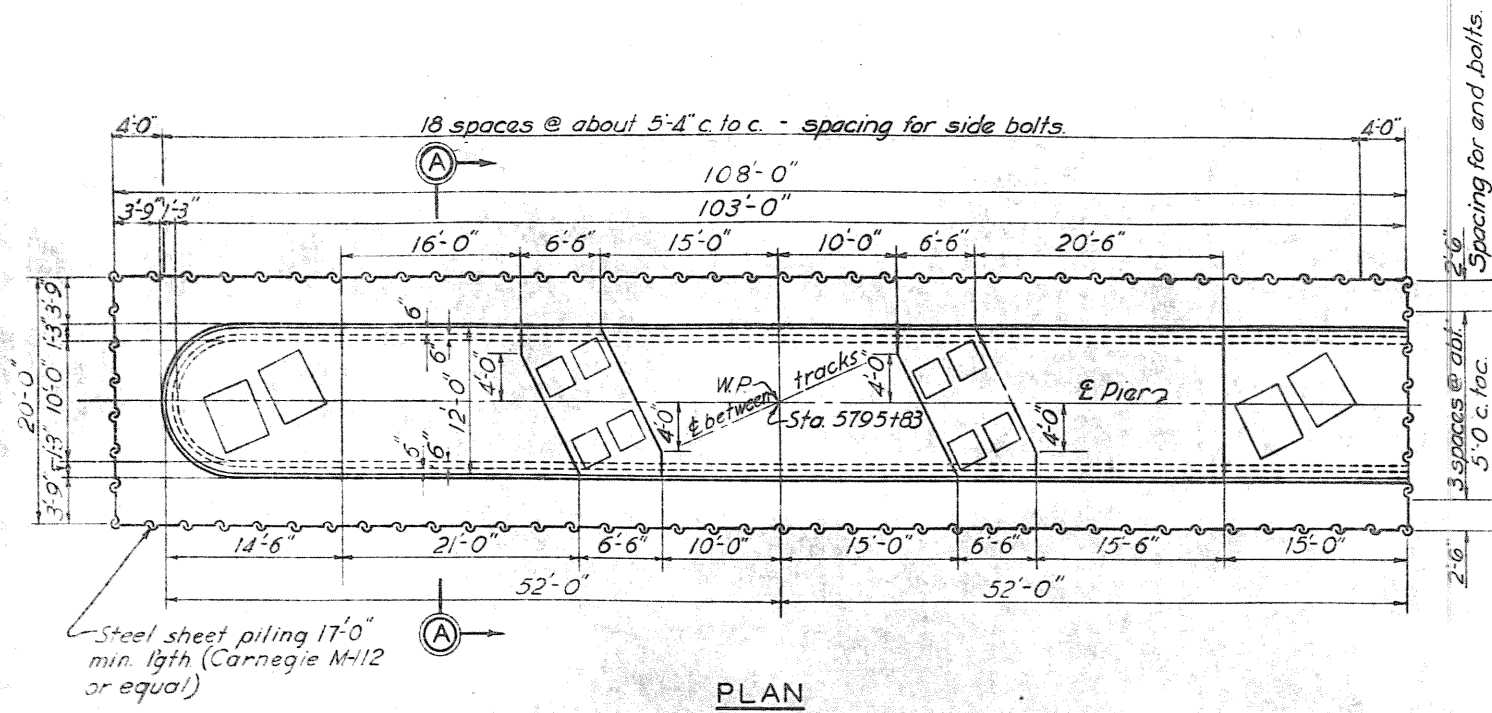
SUBMITTED: *W. J. Palmer* MINOR ENGINEER APPROVED: *W. J. Palmer* MAJOR, CORPS OF ENGINEERS

DRAWN BY: L.D.C. TRACED BY: R.A.E. CHECKED BY: E.K. FILE NO. 0271-PM-66/5

WORK AS CONSTRUCTED



BY	DATE	REVISIONS
		REVISED AS CONSTRUCTED
		CHARACTER



NOTES

Chamfer all exposed edges 1/2" unless otherwise noted.
For reinforcing details, see Dwg. No. 66/7
For location plan, see Dwg. No. 66/1
Anchor bolts not placed in this contract.
For details of vert. constr. joint see Dwg. No. 66/4
All concrete to be Class B.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
PENNA. R. R. BRIDGE OVER CHANNEL
PIERS

BY	DATE	CHARACTER

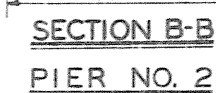
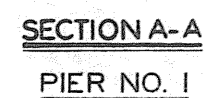
IN SHEETS SHEET NO. SCALE 1" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. DEC. 1941

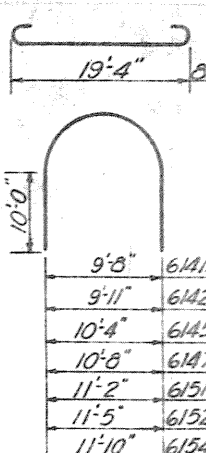
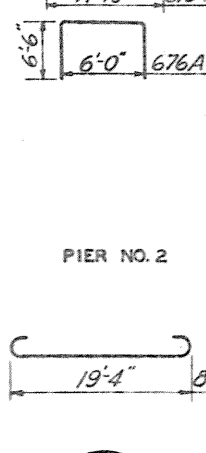
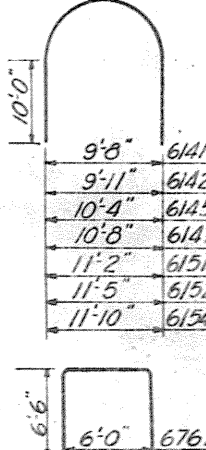
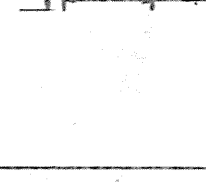
SUBMITTED BY: J. E. H. APPROVED: J. E. H.

TRANSMITTED WITH LETTER

CHECKED BY: G. G. J. FILE NO. 0271-PM-66/6 DATED



REINFORCING SCHEDULE

MARK	SIZE	L'GTH	BENDING DIAGRAM		NO	UNIT WT	TOTAL WT		
PIER NO. 1									
620	$\frac{3}{8}$ " ϕ	5'-0"			71	751	533		
646	$\frac{3}{8}$ " ϕ	11'-6"			112	1727	1921		
662	$\frac{3}{8}$ " ϕ	15'-6"			10	2328	233		
676A	$\frac{3}{8}$ " ϕ	19'-0"			22	2854	628		
698	$\frac{3}{8}$ " ϕ	24'-6"			71	3680	2613		
6127	$\frac{3}{8}$ " ϕ	31'-9"			84	4769	4004		
6141A	$\frac{3}{8}$ " ϕ	35'-3"			1	5294	53		
6142A	$\frac{3}{8}$ " ϕ	35'-6"			1	5332	53		
6145A	$\frac{3}{8}$ " ϕ	36'-3"			2	5446	109		
6147A	$\frac{3}{8}$ " ϕ	36'-9"			1	5520	55		
6150	$\frac{3}{8}$ " ϕ	37'-6"			60	5633	3350		
6151A	$\frac{3}{8}$ " ϕ	37'-9"			2	5671	113		
6152A	$\frac{3}{8}$ " ϕ	38'-0"			1	5708	57		
6154A	$\frac{3}{8}$ " ϕ	38'-6"			1	5783	58		
835A	1" ϕ	21'-3"			108	56.74	6128		
638	$\frac{3}{4}$ " ϕ	9'-6"			8	14.27	114		
					Total 20,057				
PIER NO. 2									
620	$\frac{3}{8}$ " ϕ	5'-0"			75	751	563		
646	$\frac{3}{8}$ " ϕ	11'-6"			117	1727	2021		
662	$\frac{3}{8}$ " ϕ	15'-6"			10	2328	233		
694	$\frac{3}{8}$ " ϕ	23'-6"			75	3530	2648		
6134	$\frac{3}{8}$ " ϕ	33'-6"			84	5032	4227		
6141A	$\frac{3}{8}$ " ϕ	35'-3"			1	5294	53		
6142A	$\frac{3}{8}$ " ϕ	35'-6"			1	5332	53		
6145A	$\frac{3}{8}$ " ϕ	36'-3"			2	5446	109		
676A	$\frac{3}{8}$ " ϕ	19'-0"			22	2854	628		
6147A	$\frac{3}{8}$ " ϕ	36'-9"			1	5520	55		
6151A	$\frac{3}{8}$ " ϕ	37'-9"			2	5671	113		
6152A	$\frac{3}{8}$ " ϕ	38'-0"			1	5708	57		
6154A	$\frac{3}{8}$ " ϕ	38'-6"			1	5783	58		
6156	$\frac{3}{4}$ " ϕ	39'-0"			60	5858	3515		
835A	1" ϕ	21'-3"	113	56.74	6412				
638	$\frac{3}{4}$ " ϕ	9'-6"	8	14.27	114				
			Total 20,057						

NOTES

Place all reinforcing steel 4" min. from surface
unless otherwise noted.
Form masonry details see Dwg. No. 66/6

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

SECTION 1-
PENNA. R. R. BRIDGE OVER CHANNEL
PIERS - REINFORCING DETAILS

IN SHEETS SHEET NO. SCALE: $\frac{1}{2}'' = 1' - 0''$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., DEC. 1944

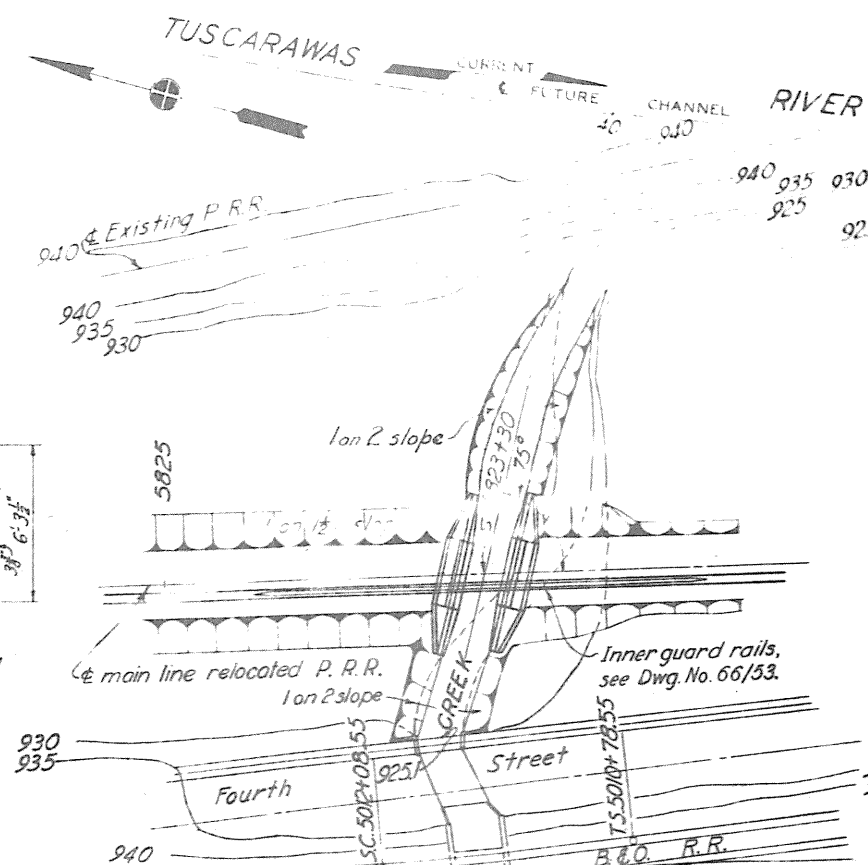
SUBMITTED: Wain Gubins APPROVED: W. J. Walker

SUBMITTED BY: L. D. S. PRINCIPAL ENGINEER MAJOR, CORPS OF ENGINEERS
 DRAWN BY: L. D. S.

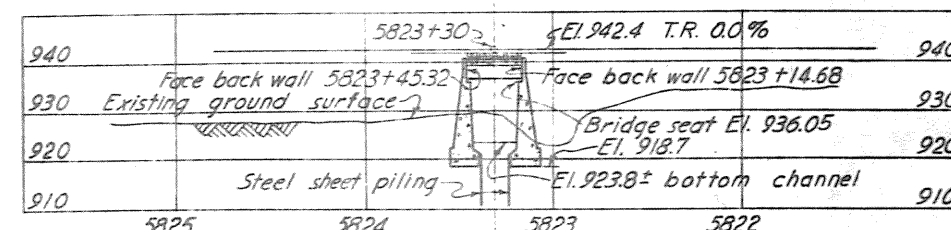
TRACED BY L.D.H. FILE NO 0271-PM-66/7
CHECKED BY D.G.J. DATED

SEARCHED BY SP-10 JAL/ROBERTA PM 09/7 DATED

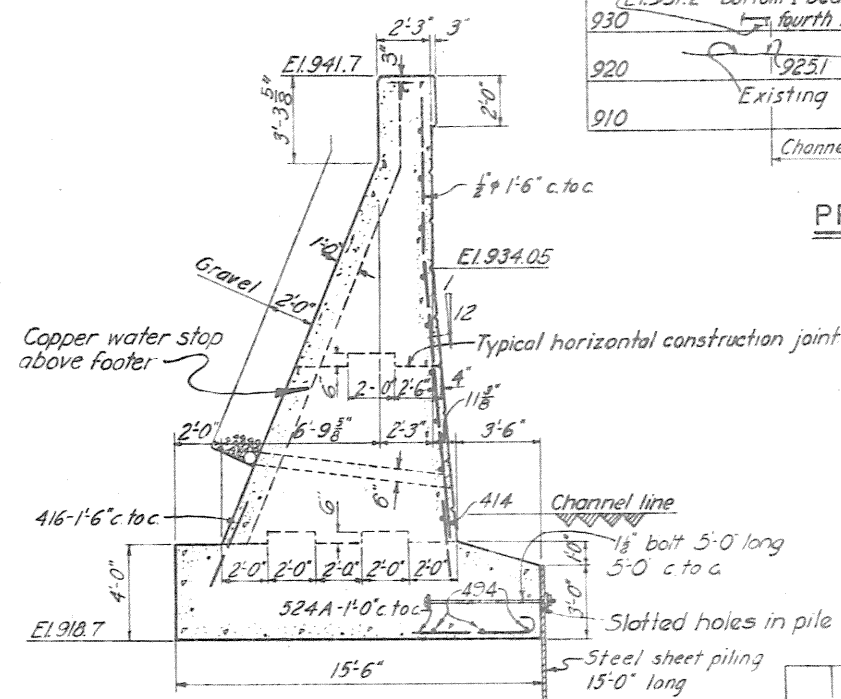
WORK AS CONSTRUCTED



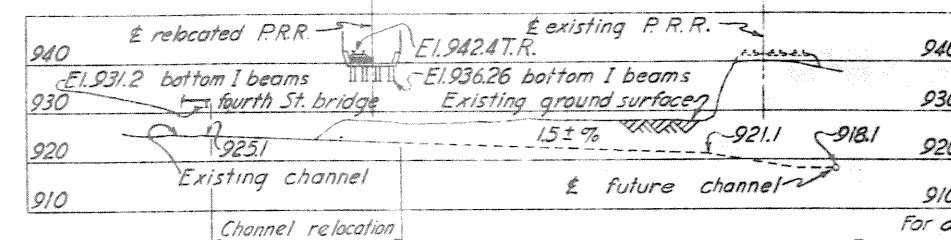
LOCATION PLAN



Reinforcing steel is for two abutments.



GROOVE DETAIL



NOTES

For details of key in expansion joints see
Dwg. No. 66/2.
Chamfer all exposed edges $1\frac{1}{2}$ " unless otherwise
noted.
Place all reinforcing steel 4" minimum from
surfaces unless otherwise noted
For steel details, see Dwg. No. 66/20
For general plan, see Dwg. No. 16/2.
For details of water stop see Dwg. No. 66/2
All concrete to be Class 'B'.

SECTION 1
PENNA. R. R. BRIDGE OVER SIPPO CREEK
ABUTMENTS

IN 76 SHEETS SHEET NO.17 SCALE: $\frac{1}{4}'' = 1' - 0''$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., MAY, 1941

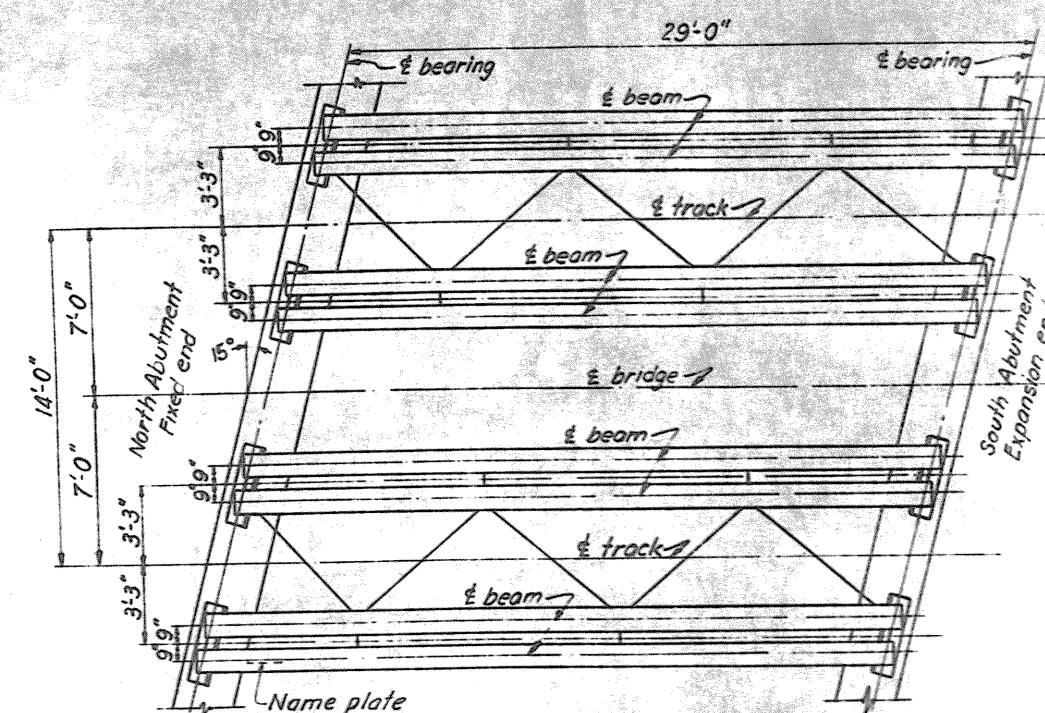
10. B. 1. *Handwritten signature*

SUBMITTED: *Wm. Perkins* PRINCIPAL ENGINEER APPROVED: *W. J. Baker* MAJOR, CORPS OF ENGINEERS

DRAWN BY R.M.C. TRANSMITTED WITH LETTER

FILE NO 027i-PM-66/19 DATED

WORK AS CONSTRUCTE



SCALE: $\frac{1}{4}'' = 1'-0''$



SECTION A-A



STRUCTURAL STEEL MARK 66/20-1
MAKE 24 WT. 7.7 LBS.
SCALE: 3"=1'-0"

<u>SHEAR</u>	<u>MOMENT</u>
D.L. = 37,000 #	D.L. = 270,000 #
L.L. = 111,000 #	L.L. = 698,000 #
<u>I. = 108,000 #</u>	<u>I. = 678,000 #</u>
Total = 256,000 #	Total = 1,646,000 #
Section Mod. required = $\frac{1,646,000 \times 12}{18000} = 1097"3$	
Section Mod. furnished = $2-36 \text{ WF } 170 = 2 \times 579.1 = 1158.2"3$	

[illegible]

LOCOMOTIVE LOADING USED-COOPERS E-72

Axle loads shown

H.U.B.	11-1-44	REVISED AS CONSTRUCTED
BY	DATE	CHARACTER
		REVISIONS

SECTION 1

PENNA. R. R. BRIDGE OVER SIPPO CREEK
DESIGN & DETAILS

111 76 SHEETS SHEET NO. 18 SCALE: $\frac{3}{4}'' = 1' - 0''$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA.. MAY, 1941

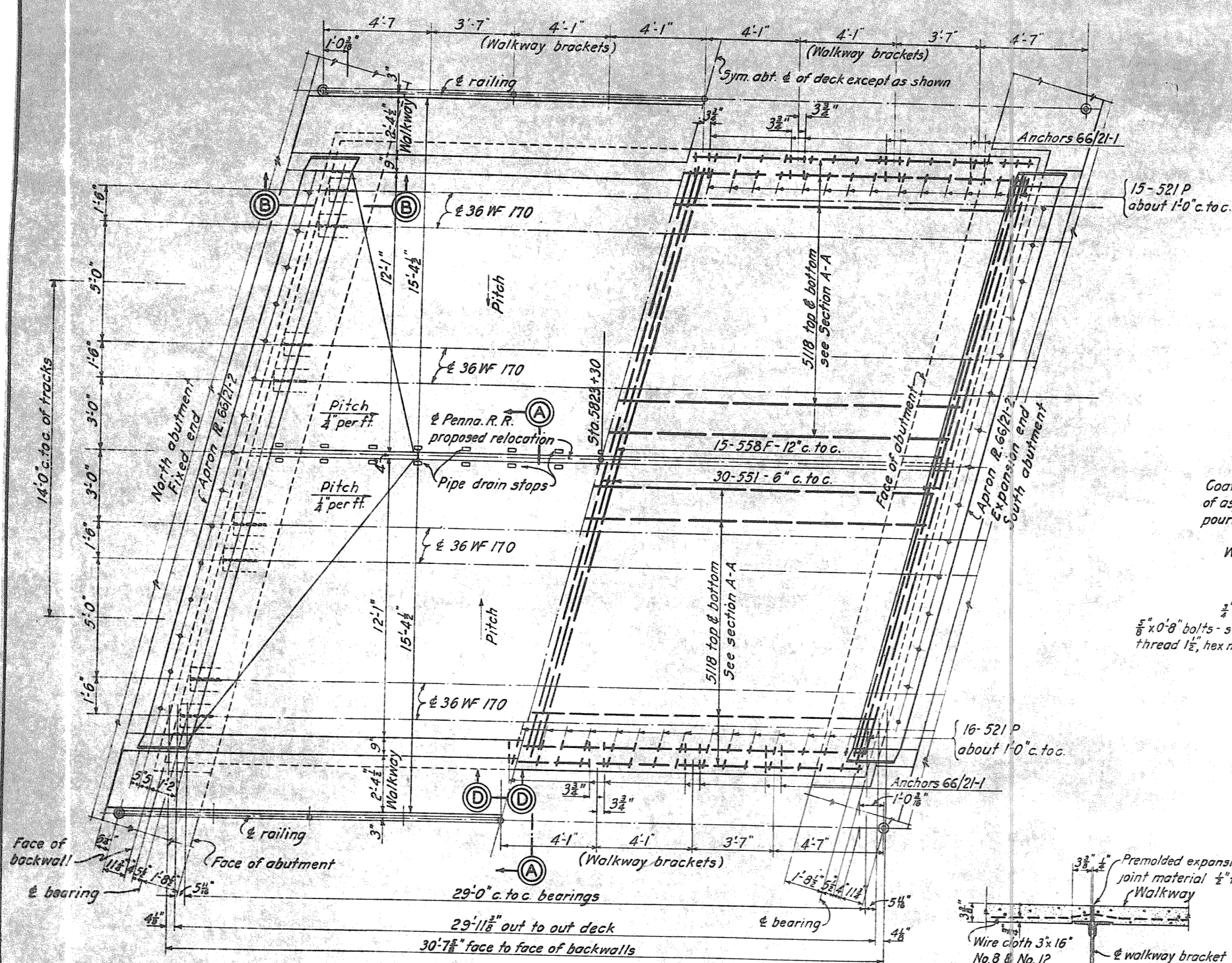
SUBMITTED: *Wm. Barker* PRINCIPAL ENGINEER APPROVED: *J. A. Walker* MAJOR, CORPS OF ENGINEERS

DRAWN BY C.D.H.
TRACED BY C.D.H.
CHECKED BY K.U.B.

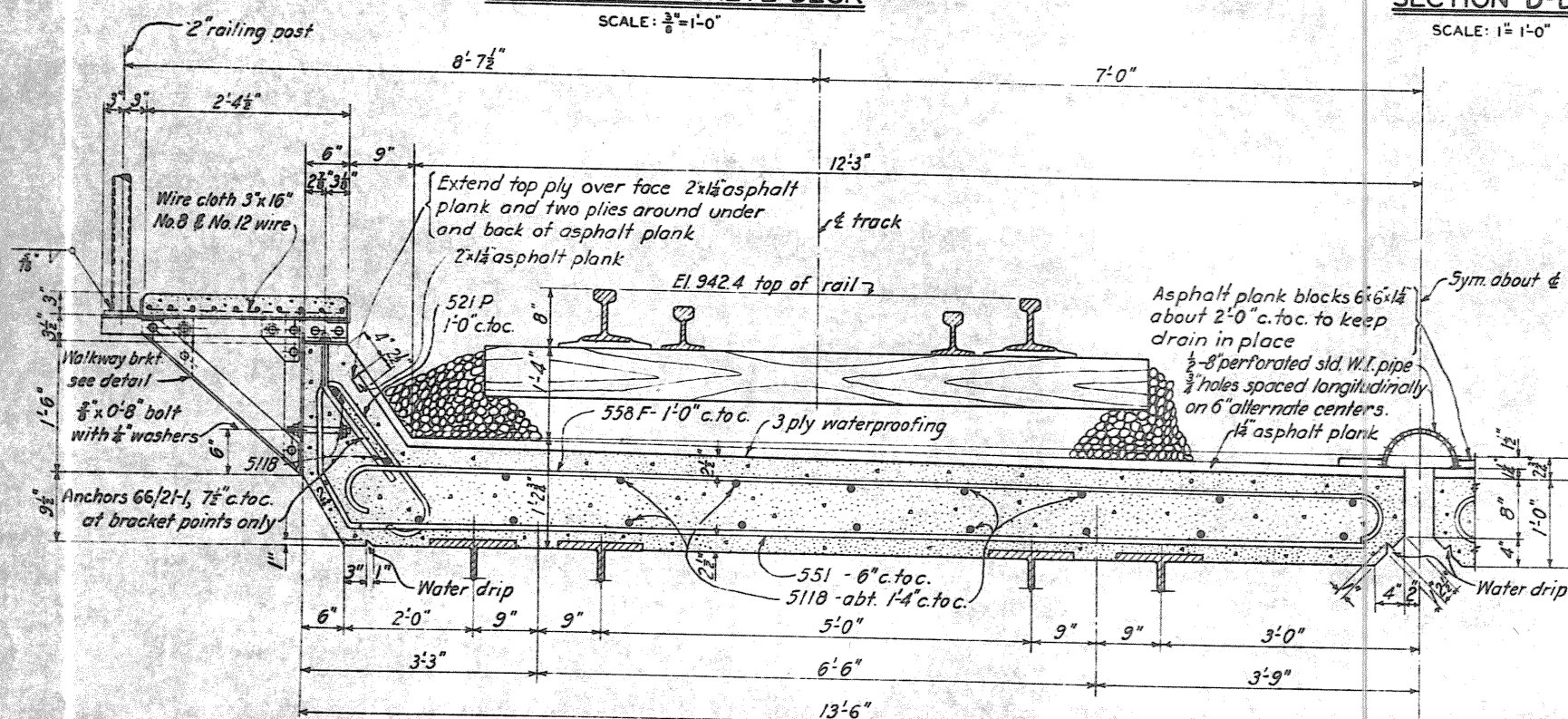
FILE NO. 0271-PM-66/20 DATED

* A VERIFIED WITH LETTER

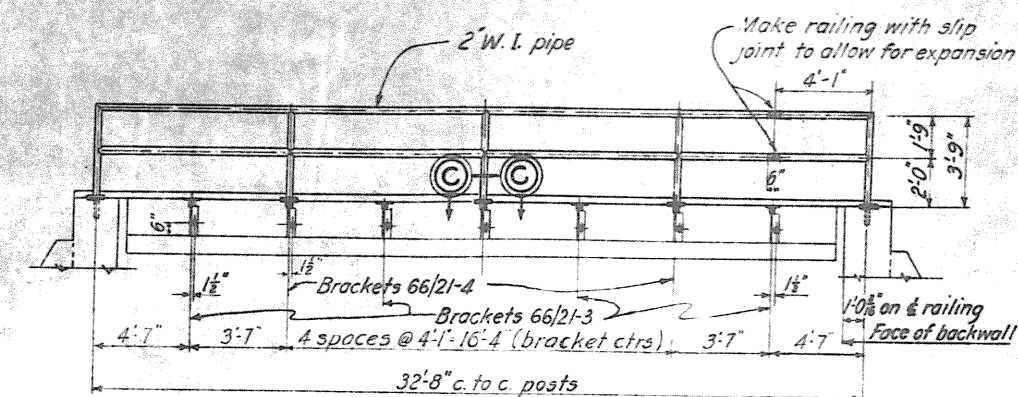
WORK AS CONSTRUCTED



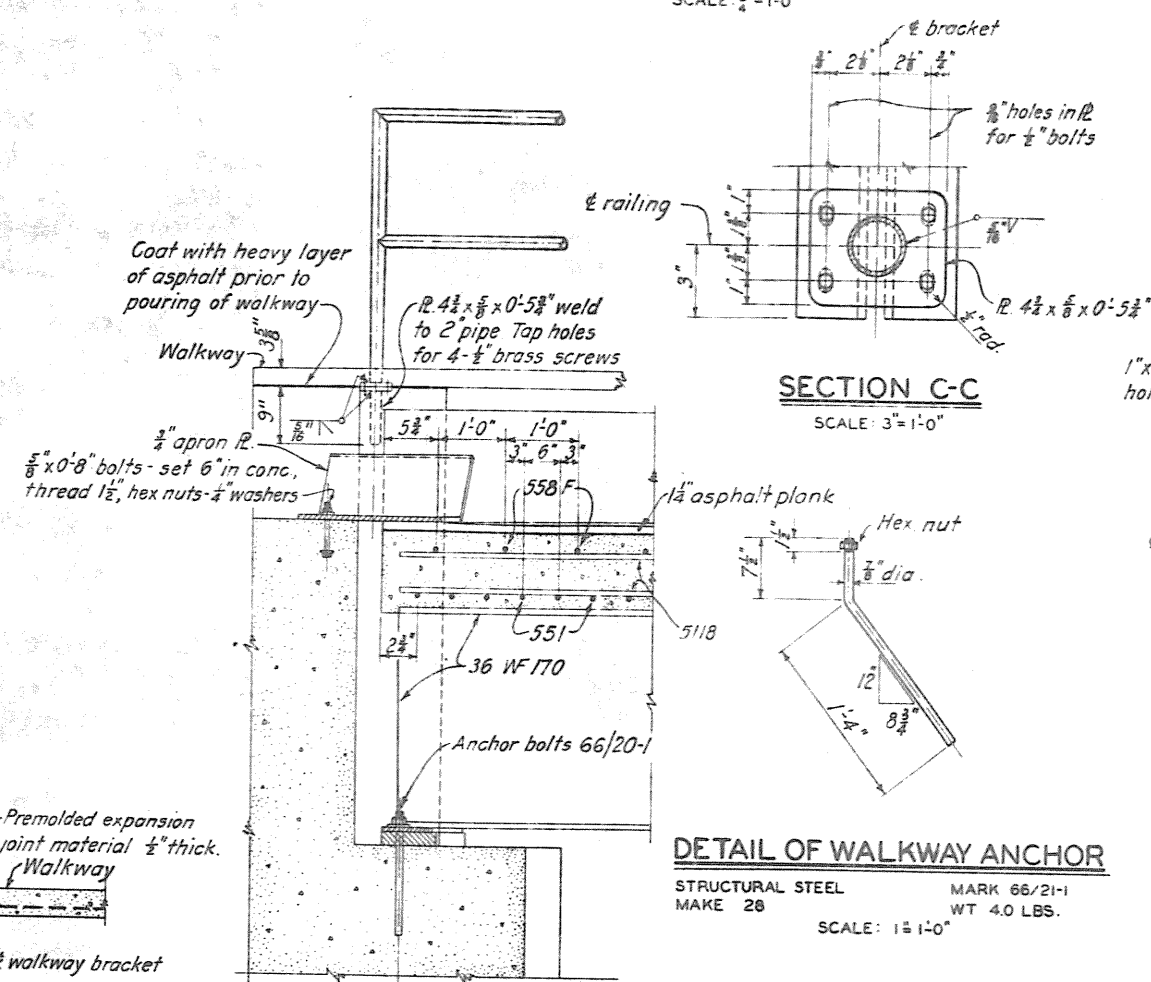
PLAN OF CONCRETE DECK



SECTION A-A
SCALE: 1"=1'-0"

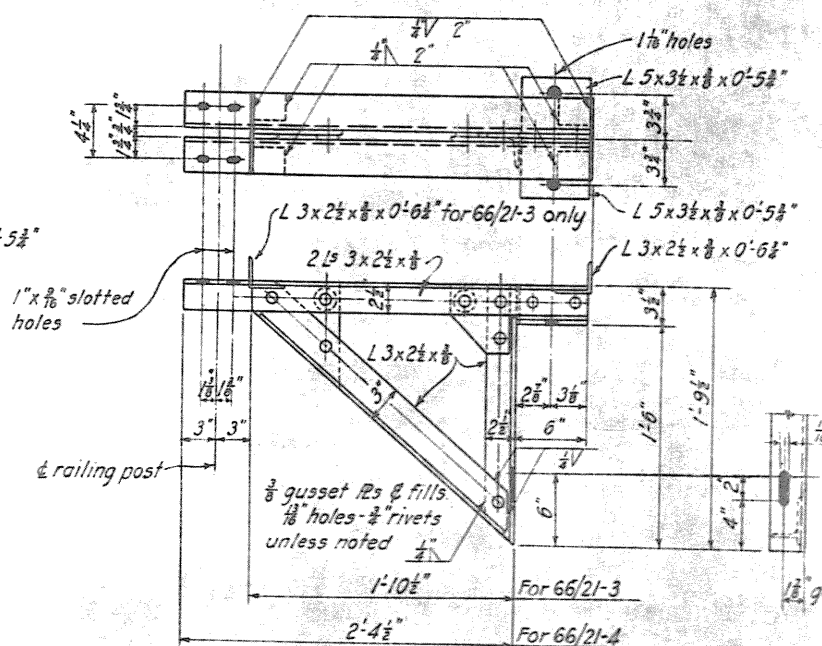


ELEVATION OF HANDRAILING



SECTION C-C
SCALE: 3" = 1'-0"

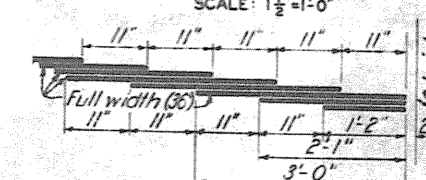
DETAIL OF WALKWAY ANCHOR



WALKWAY BRACKET

STRUCTURAL STEEL

MARK 66/21-3	MAKE 8	WT. 64 LBS.
MARK 66/21-4	MAKE 6	WT. 90 LBS.



3-Layers of fabric (shown by heavy lines)
4-Moppings of bitumen
1-Coat of primer on surfaces to be water proofed

DETAIL OF 3 PLY WATERPROOFING

NOTES

For steel layout & details, see Dwg. No.66/20
For masonry details, see Dwg. No.66/19
Handrail to be flush type - welded.
All concrete in bridge superstructure to be Class "A"

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

SECTION 1

PENNA. R. R. BRIDGE OVER SIPPO CREEK
CONCRETE DECK DETAILS

IN 76 SHEETS SHEET NO. 19 SCALE: $\frac{5}{8} = 1'-0"$

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED: *Wm. Parker* PRINCIPAL ENGINEER APPROVED: *J. H. Walker* MAJOR, CORPS OF ENGINEERS

DRAWN BY W.F.H.
TRACED BY V.S.V.
CHECKED BY H.U.B.

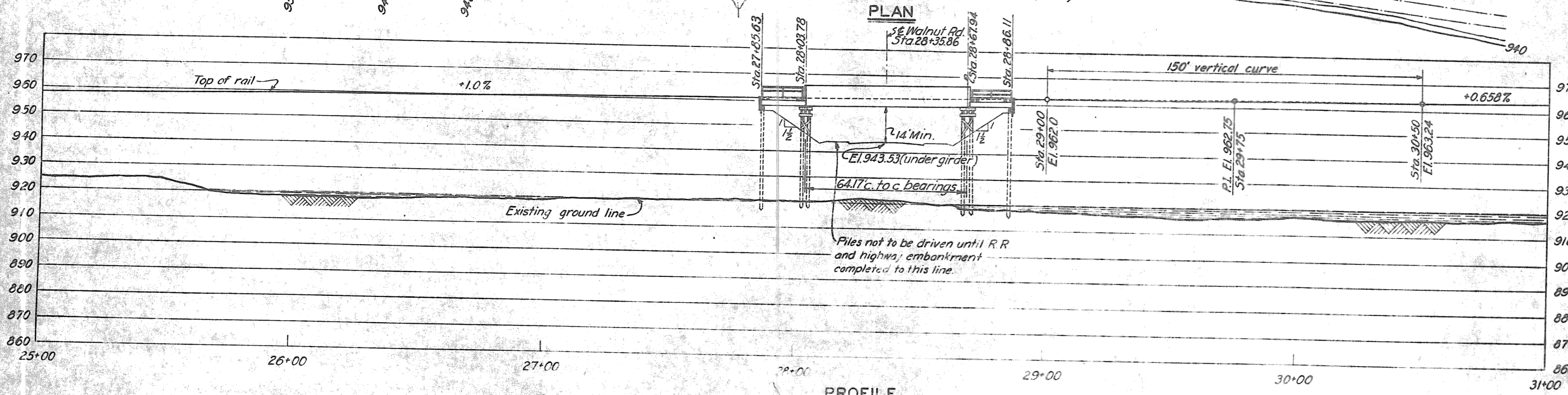
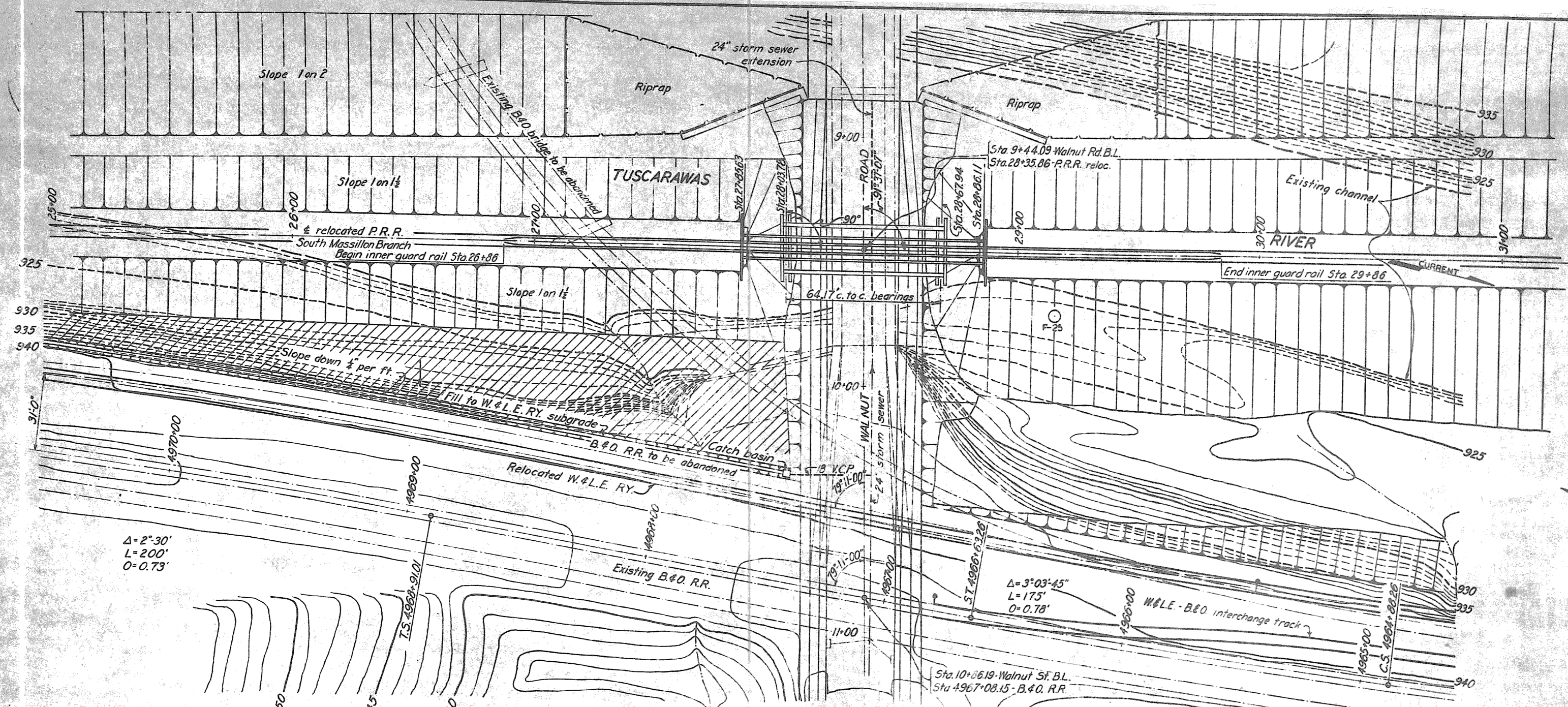
FILE NO. 0271-PM-66/21

MAJOR, CORPS OF ENGINEERS

TRANSMITTED WITH LETTER

DATED

WORK AS CONSTRUCTED



NOTES

For log of boring F-25 see Dwg. No. 10/3.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
PENNA. R. R. BRIDGE OVER WALNUT ROAD
GENERAL PLAN & PROFILE

IN 76 SHEETS SHEET NO. 20 SCALE: 1"=20'

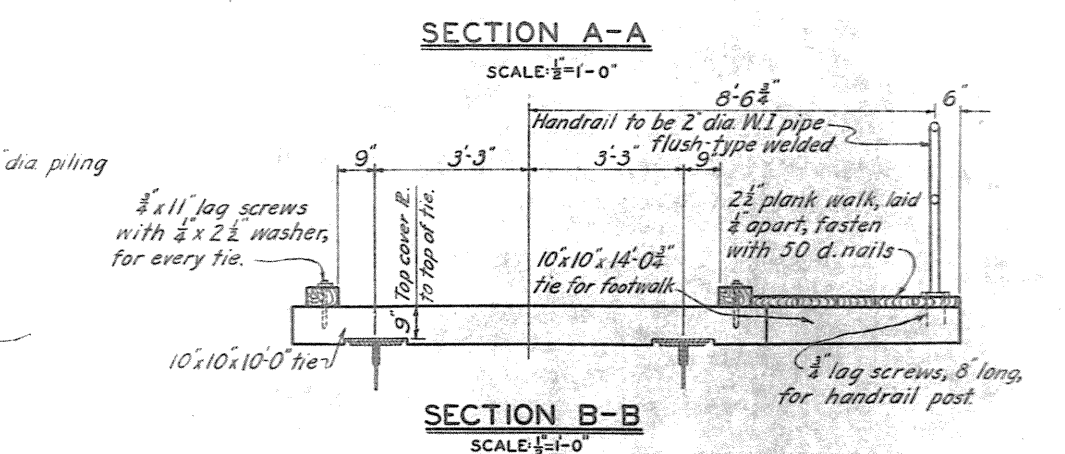
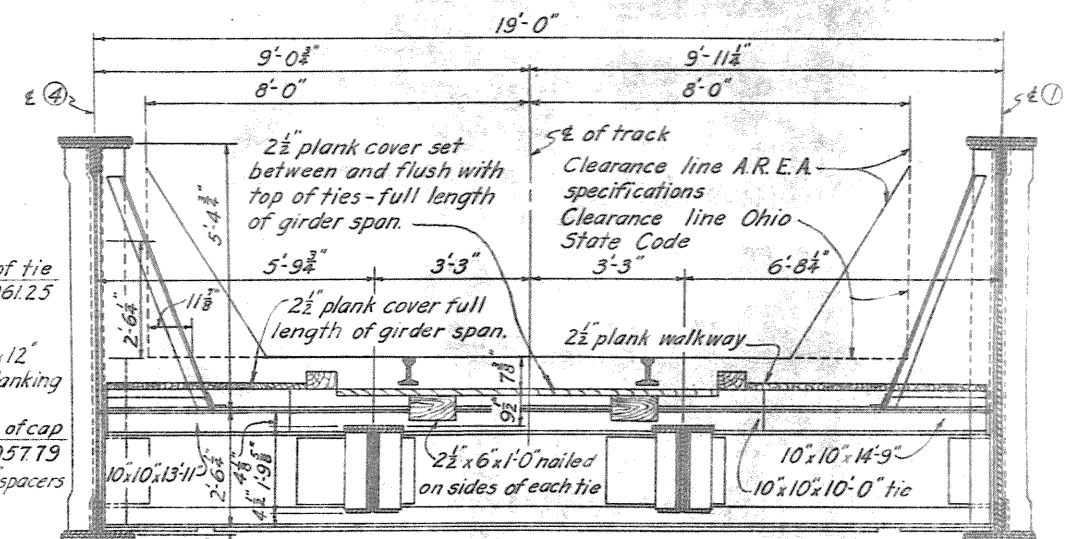
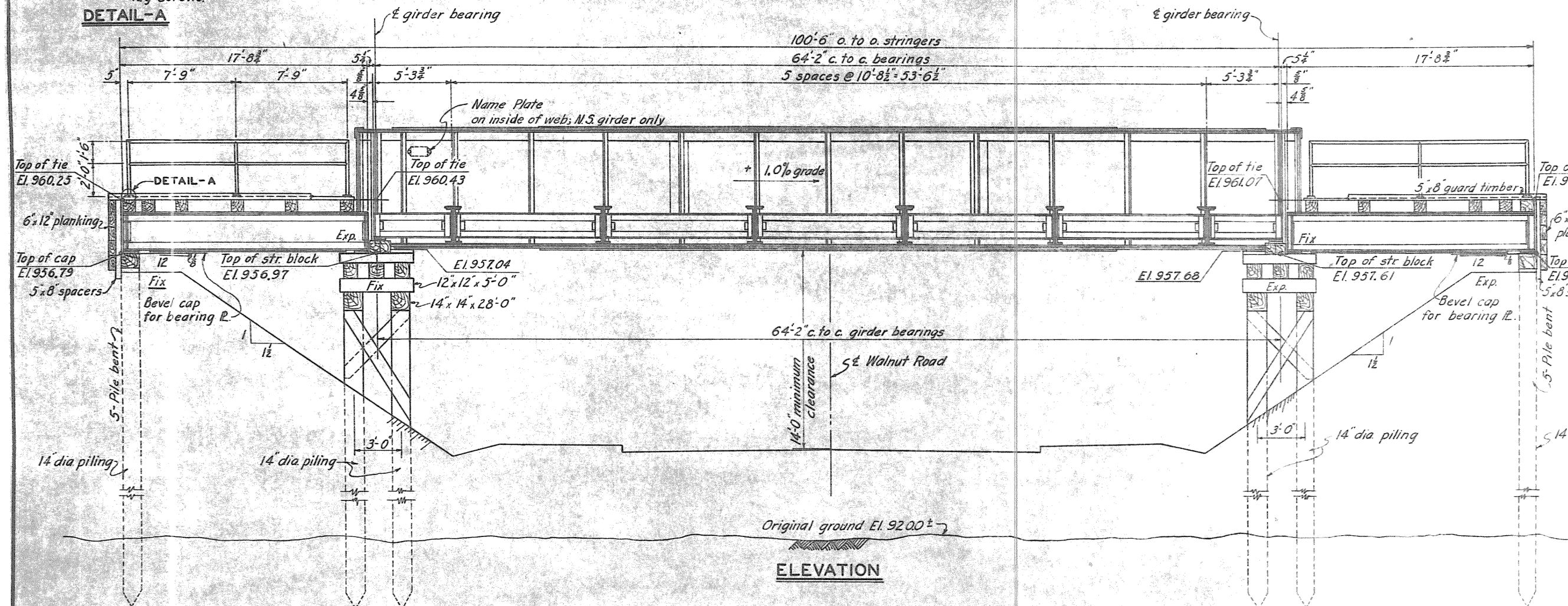
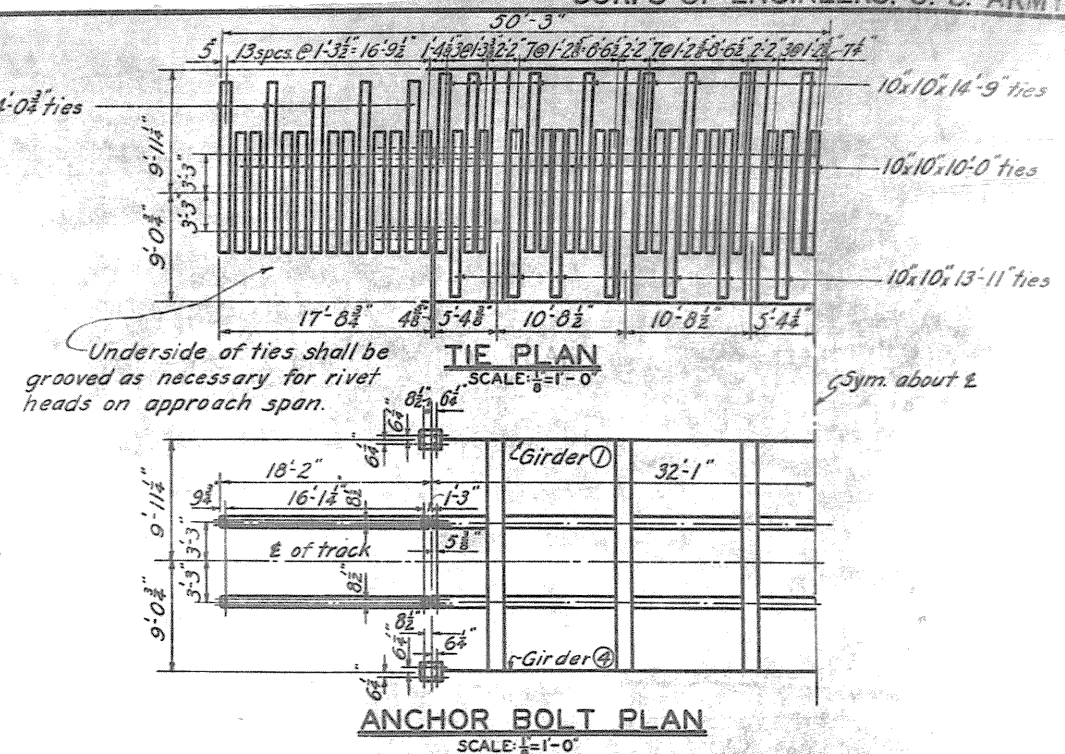
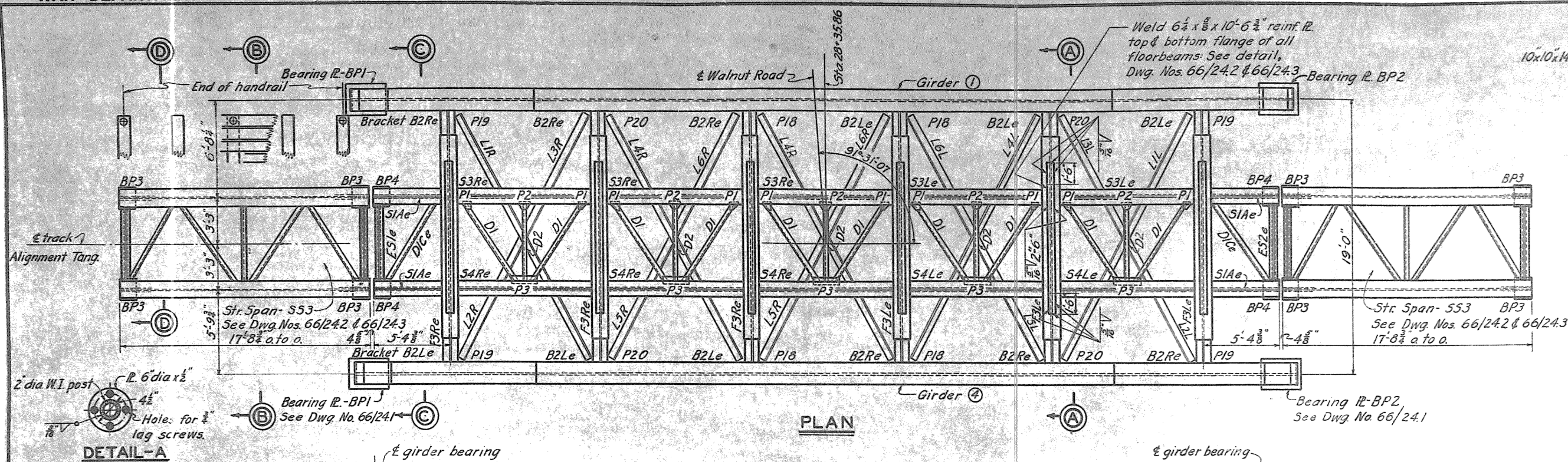
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

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

DRAWN BY: A.W.M. TRACED BY: C.C.B. CHECKED BY: D.G.J. TRANSMITTED WITH LETTER
FILE NO. 0271-PM-66/22 DATED

REVISIONS
1. REV. STATIONS ON BRIDGE & INTERSECTION ANGLE WITH WALNUT RD.
2. REVISED PLAN AND ELEVATION OF BRIDGE
3. REVISED ELEVATIONS & CLEARANCE
4. CHARACTER

WORK AS CONSTRUCTED



NOTES

- Guard rails to be equipped with rail braces on every third tie.
- Minimum pile penetration to be 20 feet and each pile to be driven to develop a bearing capacity of at least 20 tons.
- Standard Ogee washers shall be used under bolt heads and nuts bearing on timber.
- For details of inner guard rail, see Dwg. No. 66/53.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO

SECTION 1

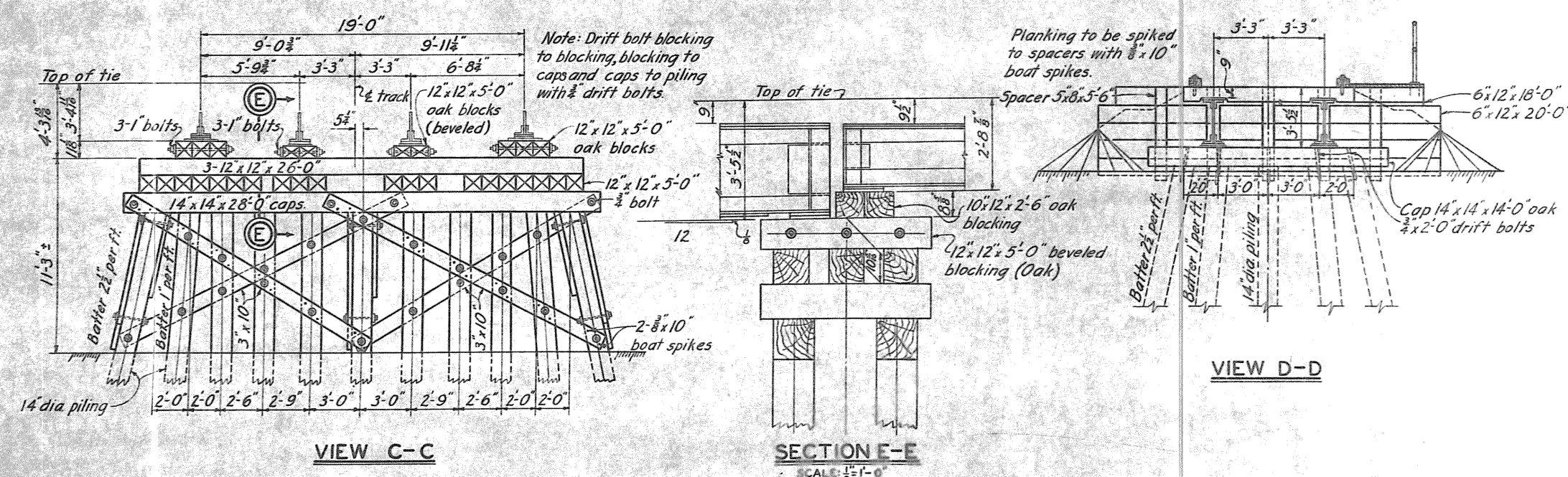
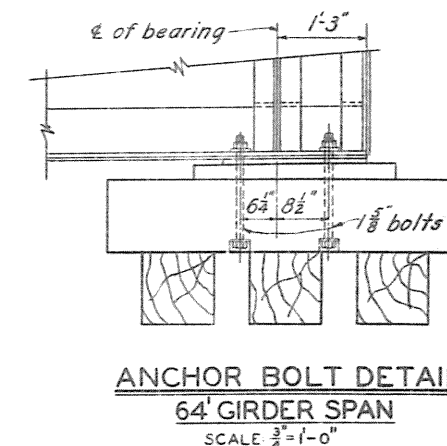
PENNA. R. R. BRIDGE OVER WALNUT ROAD
PLAN & ELEVATION

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

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., AUG. 1942

SUBMITTED: *W. J. Jones* APPROVED: *M. D. Higgins*
MAJOR, CORPS OF ENGINEERS COL, CORPS OF ENGINEERS

DRAWN BY A.W.S. TRANSMITTED WITH LETTER
CHECKED BY A.L.P. FILE NO. 0271-PM-66/231 DATED

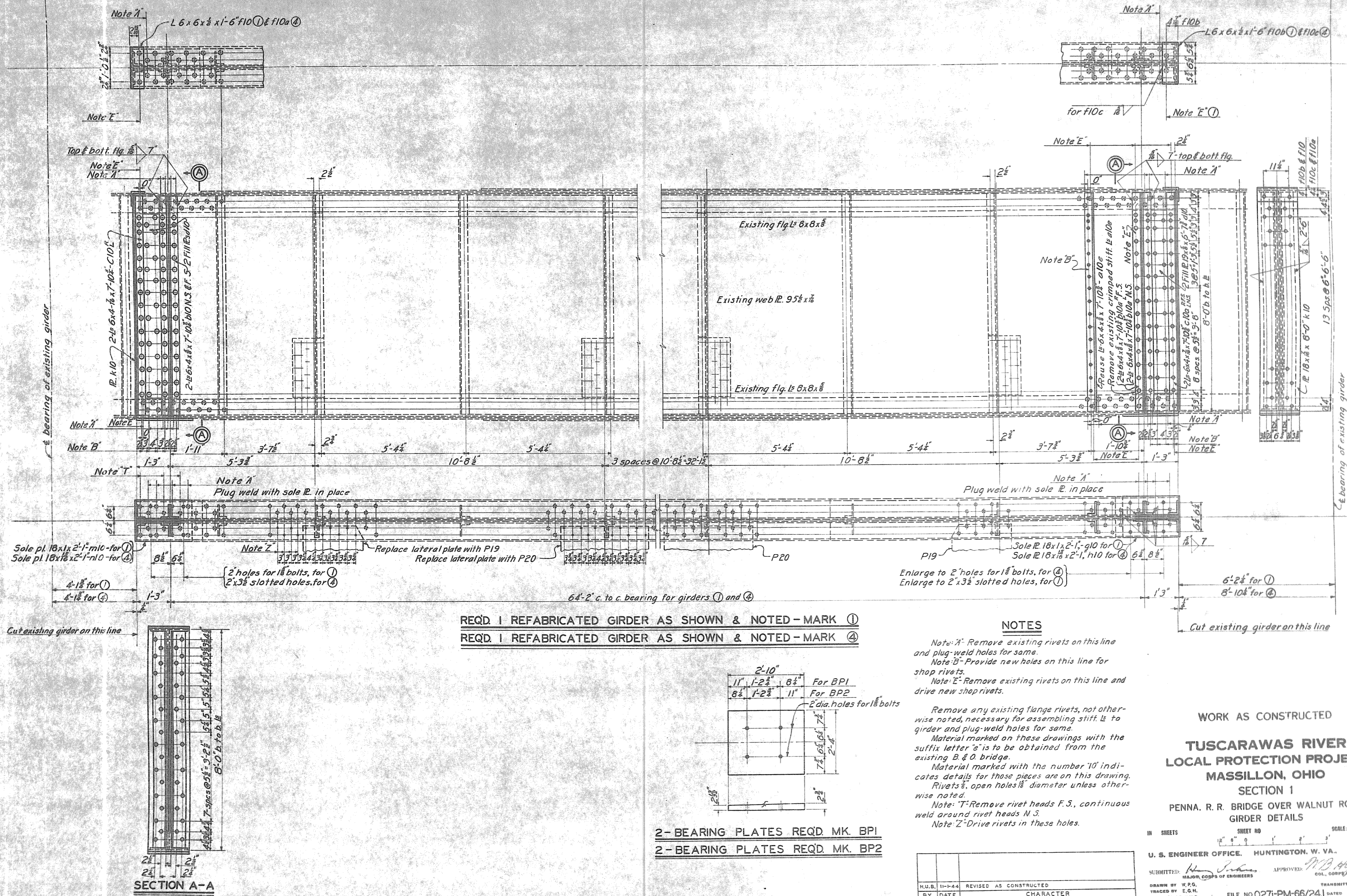


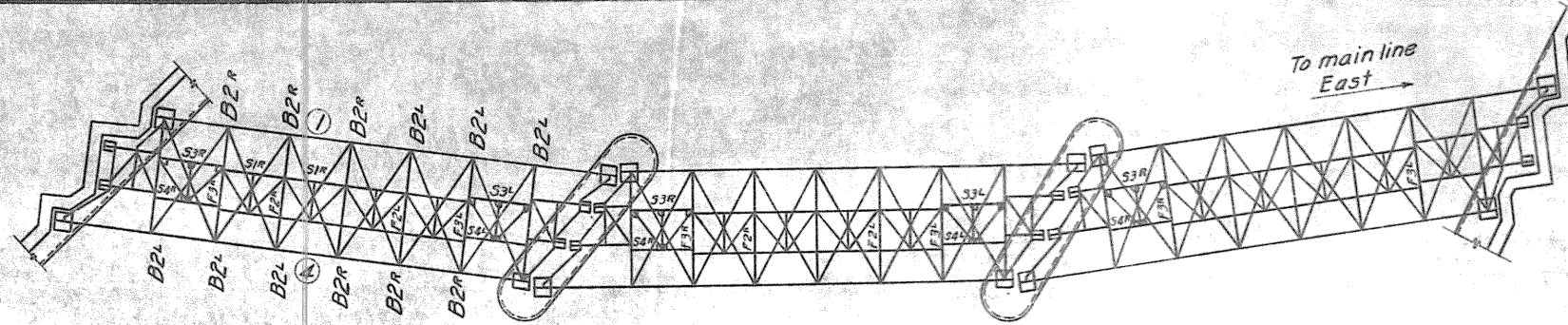
VIEW D-D

H.U.B. 11-44	REVISED AS CONSTRUCTED
H.U.B. 5-43	REVISED FOR CHANGE ORDER, MODIFICATION NO. 20
BY DATE	CHARACTER
REVISIONS	

WORK AS CONSTRUCTED

THIS DRAWING SUPERSEDES DWG. NO. 66/23





MATERIAL LIST						REMARKS
	NO. OF EXISTING PCS USED	MARK OF EXISTING MATERIAL	NO. OF REPAIR PCS REQ'D	MARK OF REPAIR MATERIAL		
GIRDER	1	①	1	①	For details, see Dwg No. 66/24.1	
GIRDER	1	②	1	②	See details on this Dwg	
FL BEAMS	6	F3R/L	6	F3R/L	Use with span 5.53	
FL BEAMS	4	F2R/L				
STRINGER	3	S3R	3	S3Re	No refabrication required.	
DO	2	S3L	2	S3Le		
DO	3	S4R	3	S4Re		
DO	2	S4L	2	S4Le		
DO	2	S1R	4	S1Re	See details on this Dwg	
STRUT	1	E51	1	E51e	See details on this Dwg	
DO	1	E52	1	E52e	Use with stringer S1e	
DO	2	E53	2	E53e	See details on this Dwg	
DO	2	E54	2	E54e	Use with span 5.53	
FL DM BRKT.	12	B2R/L	12	B2R/L	No refabrication req'd	

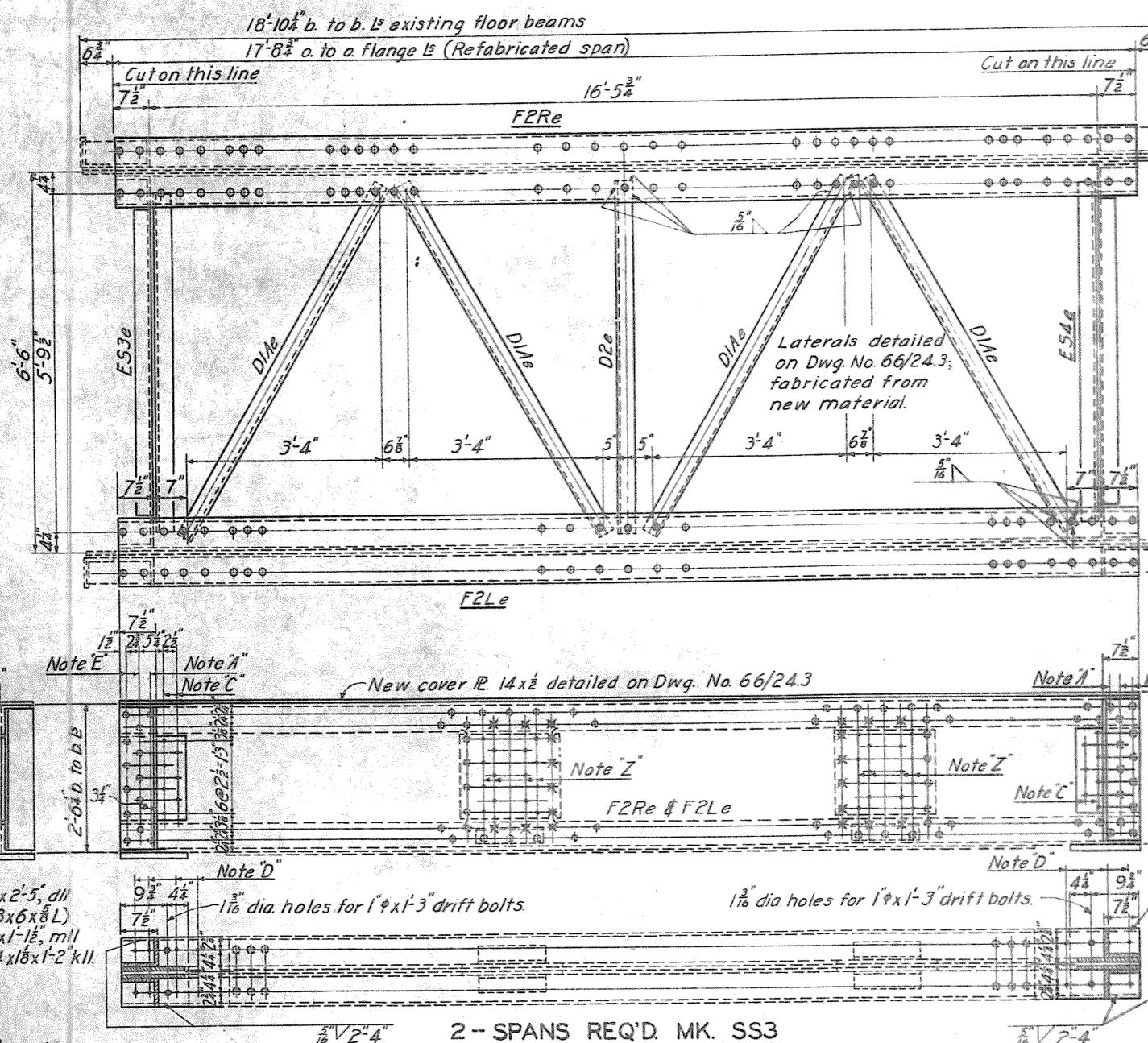
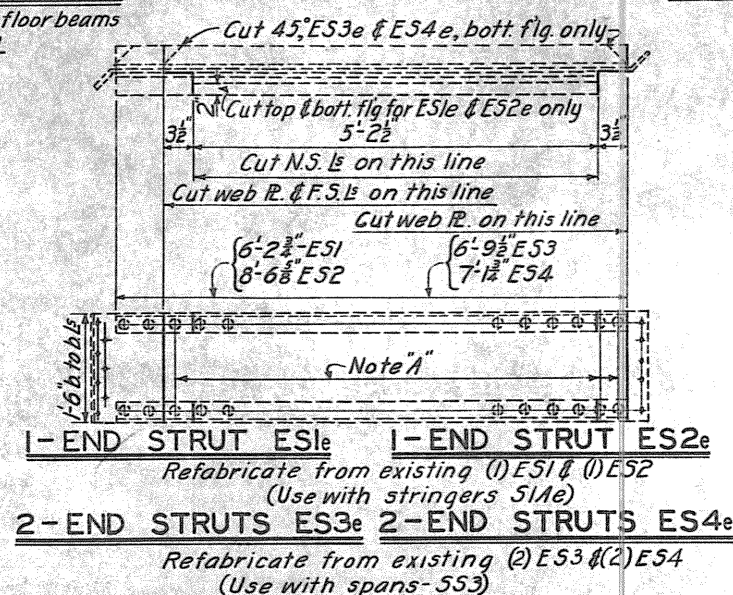


Diagram of a bearing plate for stringers. The plate is 1'-2" wide and 3'-0" long. It has two 1/8" diameter holes spaced 1'-0" apart. The plate is labeled "E. 14 x 5/8 x 1'-4"."

REQUIRED 8 BEARING PLATES MARK BP3

(Use with spans -553)



Refabricate from (2) existing stringers S1R
For detail of cover IP. see DWG. No. 66/24.3

Note: "A" Remove existing rivets on this line and plug weld holes for same.
Note: "C" Provide new holes on this line for field connection.
Note: "D" Plug weld existing holes on this line.
Note: "E" Remove existing rivets on this line and drive new rivets.
Note: "Y" Drive rivets in these holes after stringers are in place.
Material marked on these drawings with the suffix letter "e" is to be obtained from the existing B & O bridge.
Details for material marked with the number "11" are shown on this drawing.
Rivets $\frac{5}{8}$ " ϕ , open holes $\frac{1}{8}$ " dia. unless otherwise noted.
Note: "Z" Drive rivets in these holes.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

IN SHEETS SHEET NO SCALE: $\frac{3}{4}'' = 1'-0''$

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., AUG. 1942

SUBMITTED: W. B. B. B. MAJOR, CORPS OF ENGINEERS
APPROVED: W. B. B. B. COL. CORPS OF ENGINEERS

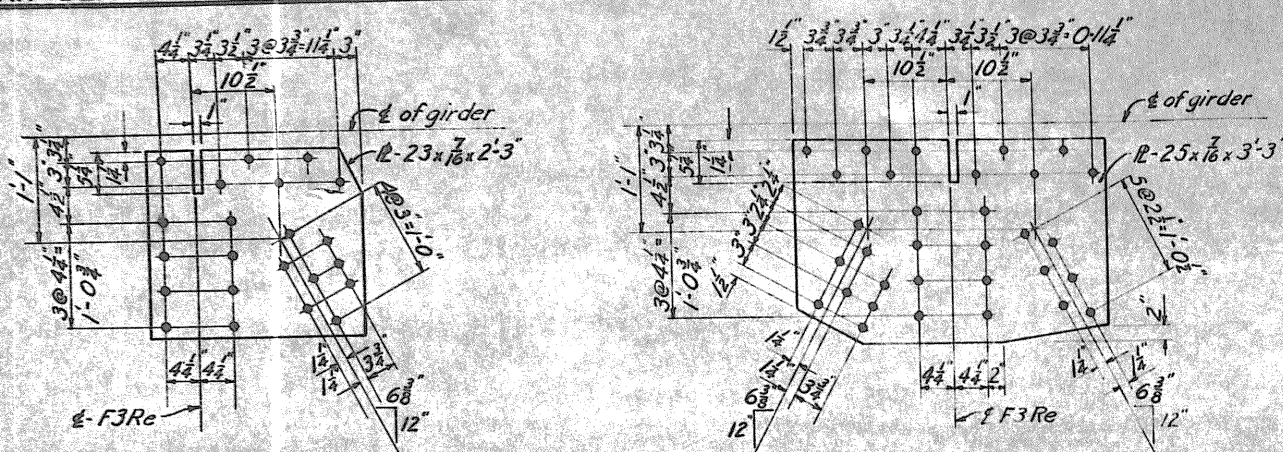
DRAWN BY N.W.D.-W.A.E. F. 1000 1. 1000 1. 1000

TRACED BY E.G.H.
CHECKED BY H.U.B.

FILE NO. 0271-PM-66/24.2 DATED

NO. 66/241 SUPERSEDE DWG NO. 66/2

THIS DWG. & DWG. NO. 66/24.1 SUPERSEDE DWG. NO. 66/2

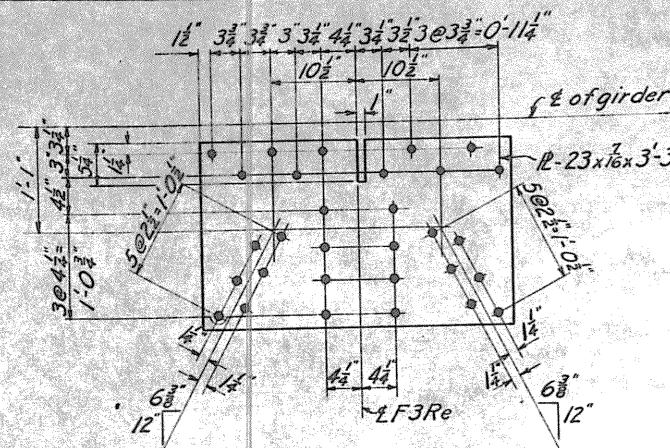


LATERAL PLATE-P19

4-REQUIRED

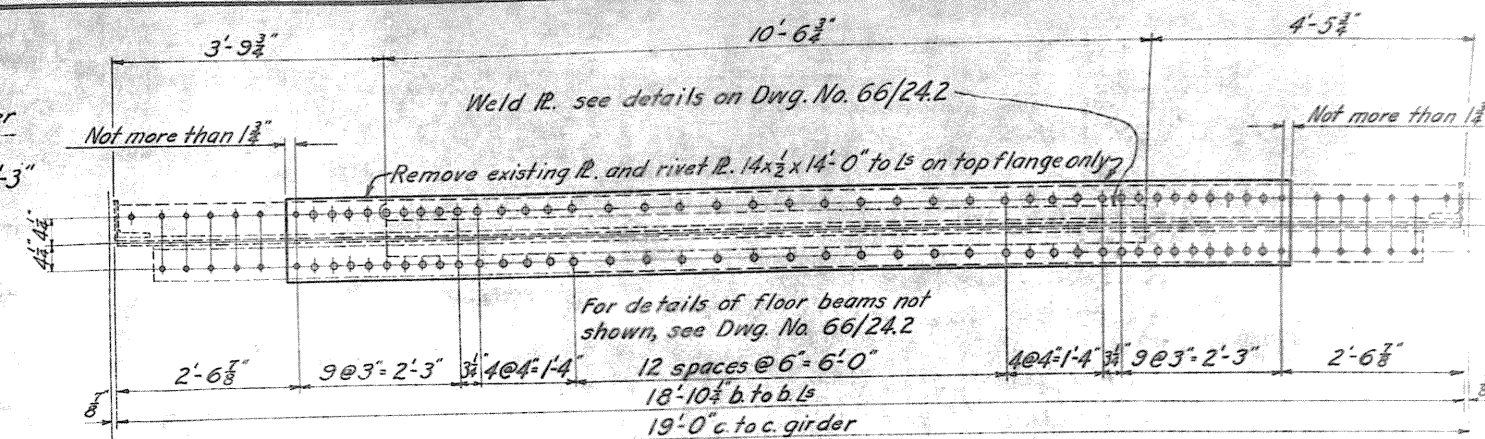
LATERAL PLATE-P20

4-REQUIRED



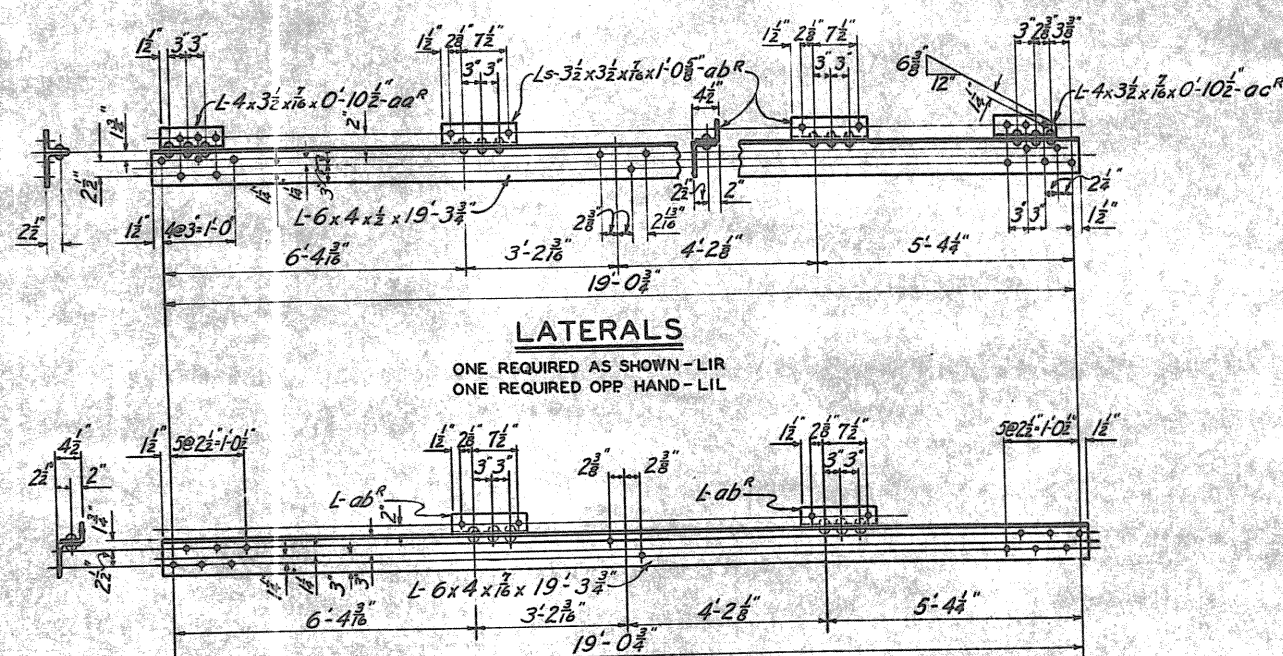
LATERAL PLATE-P18

4-REQUIRED

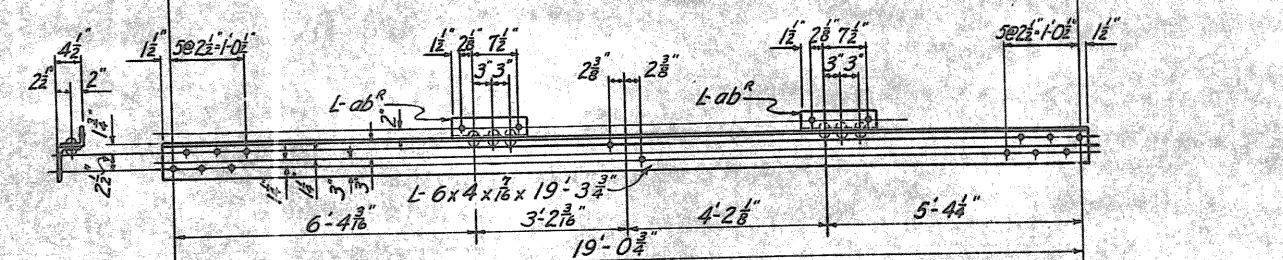


TOP FLANGE OF FLOOR BEAMS F3Re & F3Le

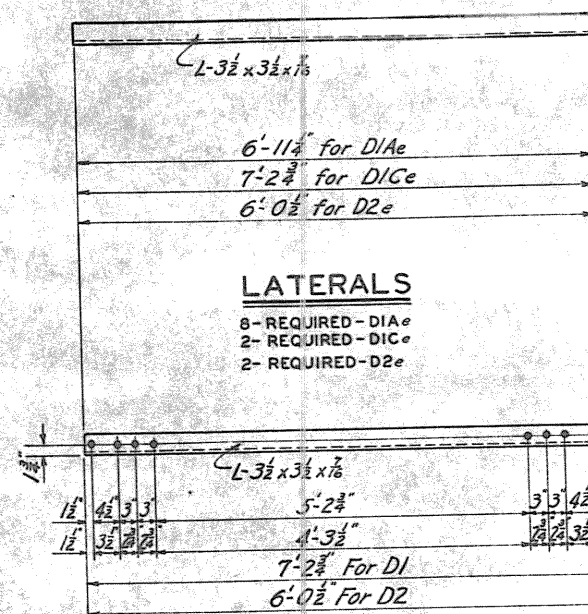
6-PLATES REQUIRED



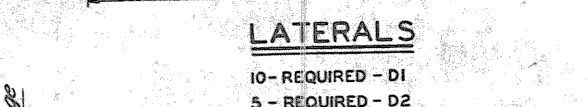
LATERALS

ONE REQUIRED AS SHOWN - L1R
ONE REQUIRED OPP HAND - L1L

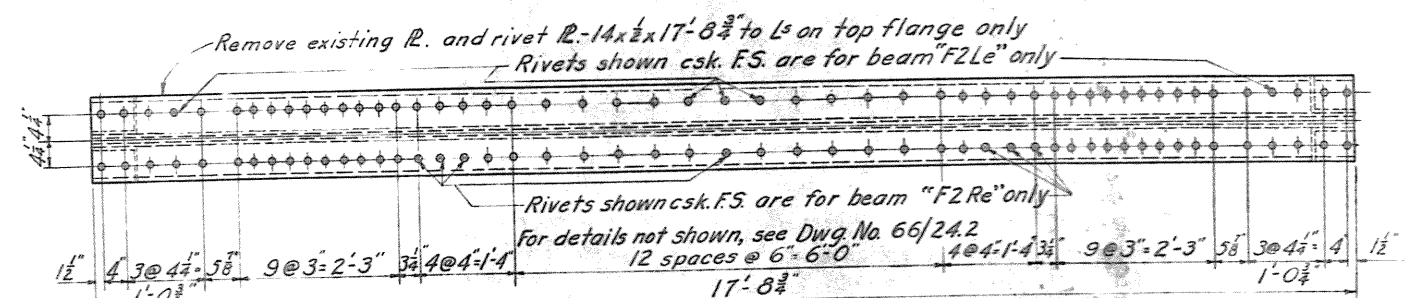
LATERALS

2-REQUIRED AS SHOWN - L4R
ONE REQUIRED OPP HAND - L4L

LATERALS

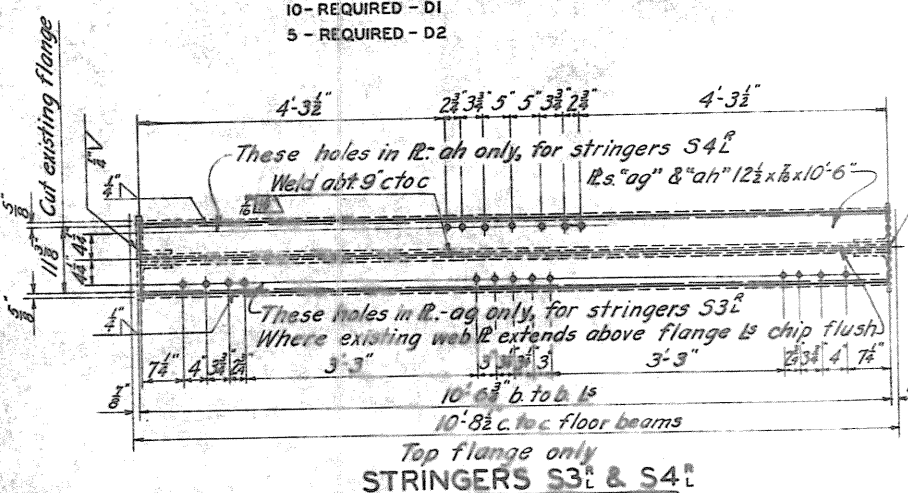
8-REQUIRED - D1Ae
2-REQUIRED - D1Ce
2-REQUIRED - D2e

LATERALS

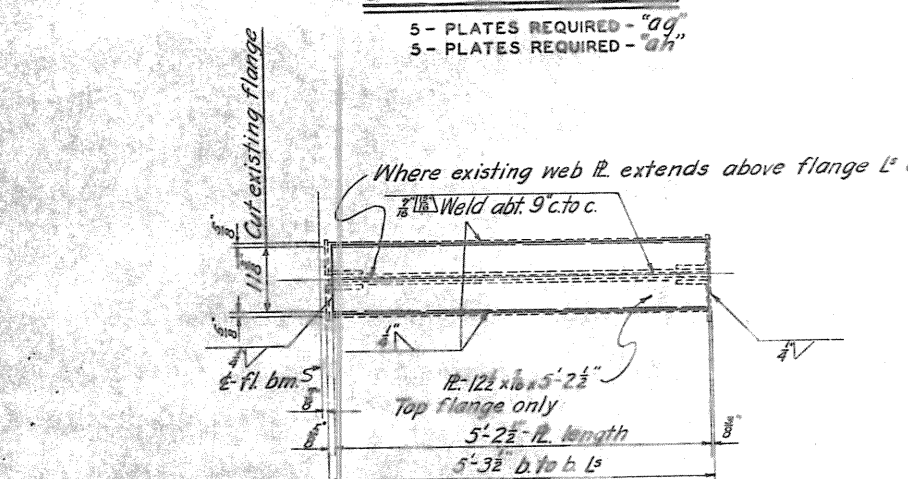
10-REQUIRED - D1
5-REQUIRED - D2

TOP FLANGE OF BEAMS FOR APPROACH SPANS SS3

4-PLATES REQUIRED



STRINGERS S3L & S4L

5-PLATES REQUIRED - "ag"
5-PLATES REQUIRED - "ah"

STRINGERS S3L & S4L

4-PLATES REQUIRED

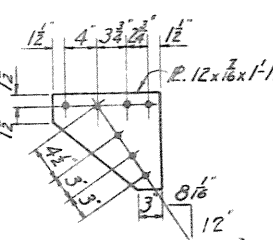


PLATE-P1

10-REQUIRED

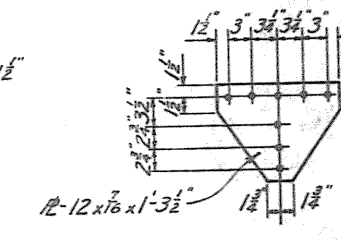


PLATE-P2

5-REQUIRED

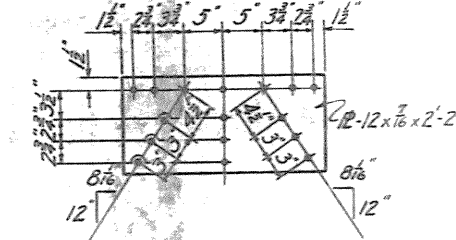


PLATE-P3

5-REQUIRED

NOTES

Rivets 3, open holes 15

WORK AS CONSTRUCTED

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO

SECTION 1

PENNA. R. R. BRIDGE OVER WALNUT ROAD

DETAILS

SHEET NO. 12 1/2 1 2 3 SCALE: 3/4"=1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., APRIL 1943

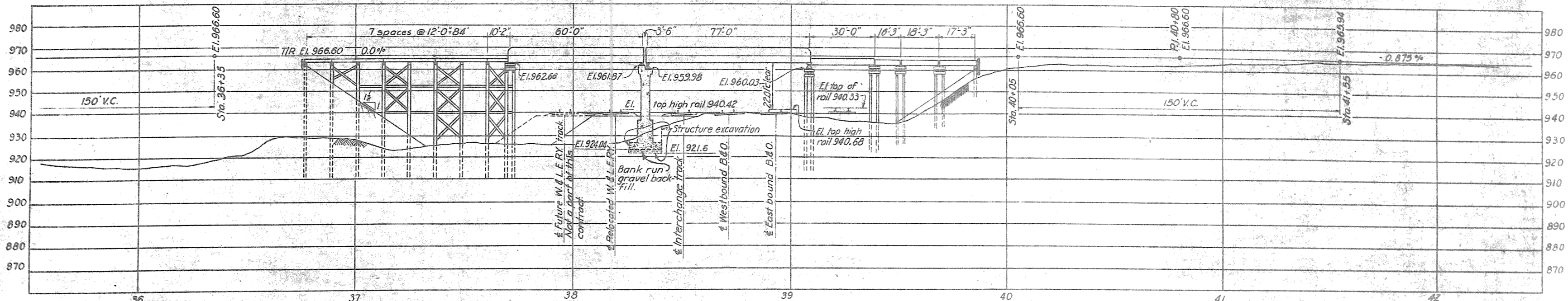
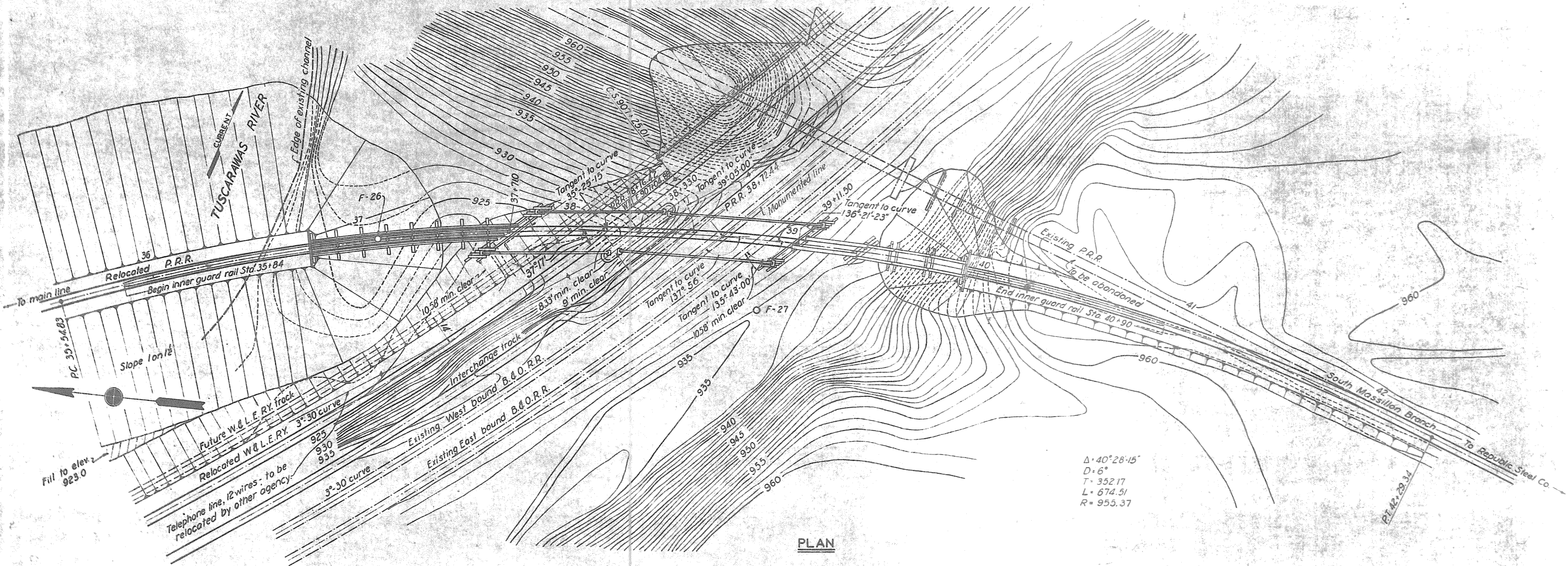
SUBMITTED BY J. M. C. HIGGINS, MAJOR, CORPS OF ENGINEERS

APPROVED BY M. B. HIGGINS, COL. CORPS OF ENGINEERS, DISTRICT ENGINEER

DRAWN BY W. R. G. TRACED BY A. L. R. CHECKED BY S. B. TRANSMITTED WITH LETTER

FILE NO. 0271-PM-66/243 DATED

BY	DATE	CHARACTER
		REVISIONS



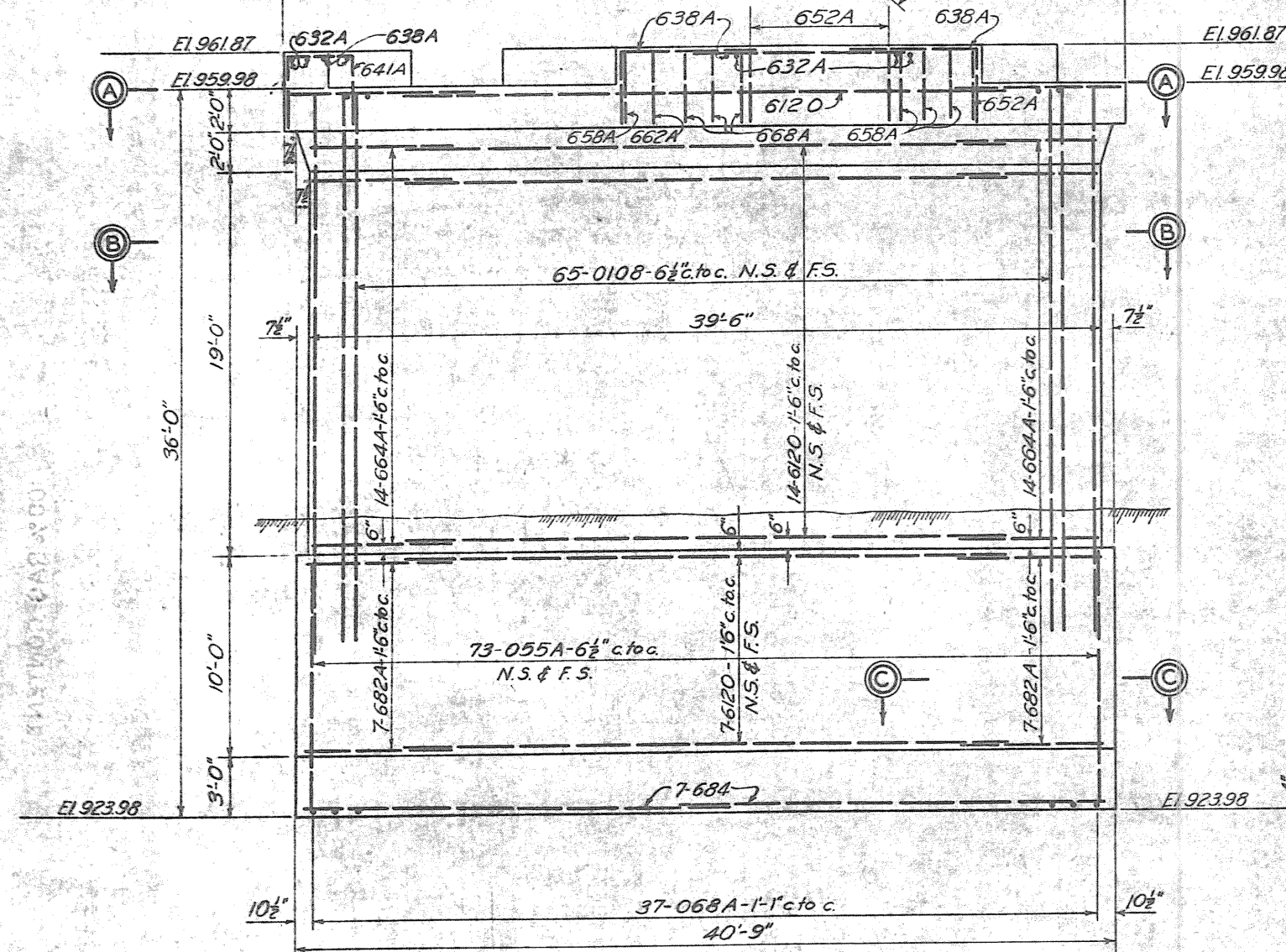
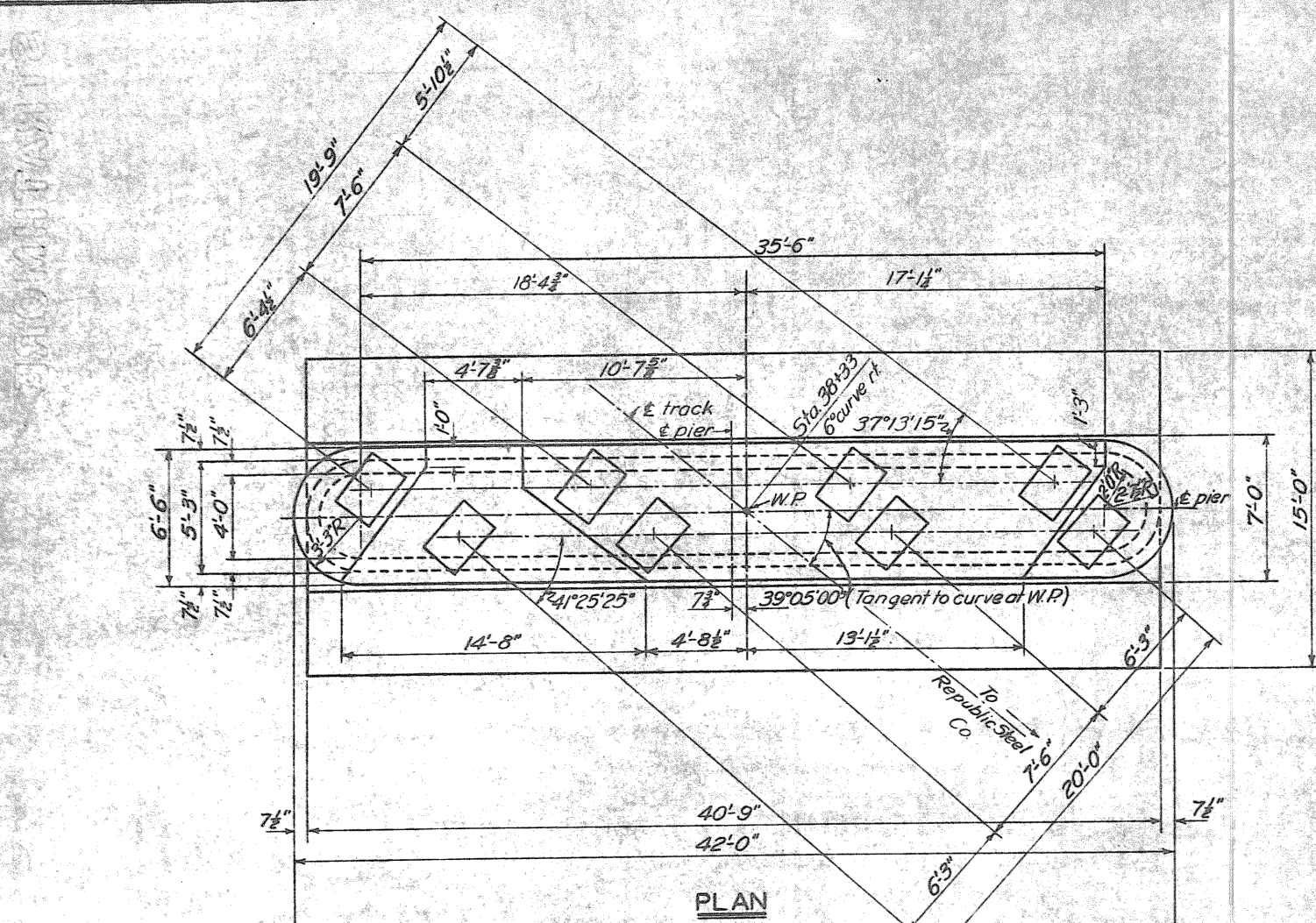
NOTES
For log of borings F-26 & F-27 see Dwg. No. 1013

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
GENERAL PLAN & PROFILE

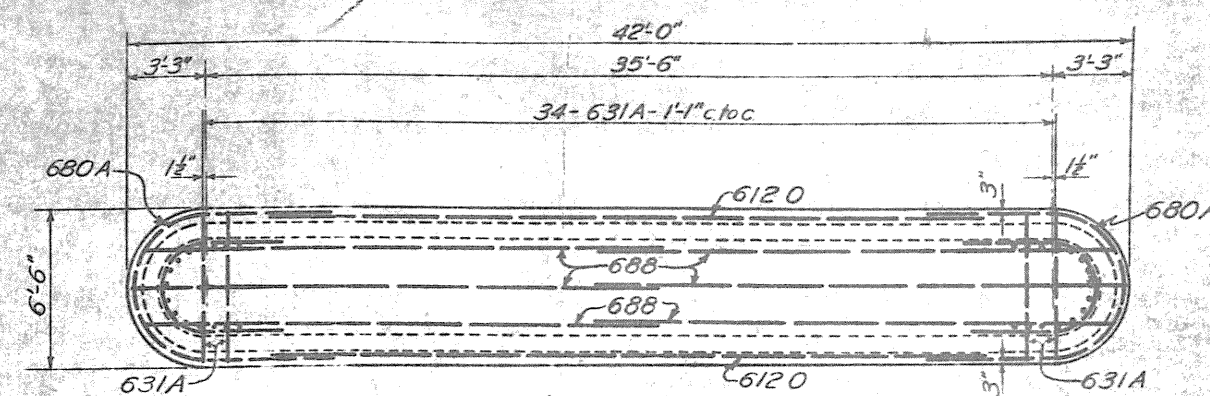
H.U.B.	11-1-44	REVISED AS CONSTRUCTED
A.R.N.	8-5-42	REVISED SOUTH APPROACH
E.W.H.	12-3-41	STRUCTURE EXCAVATION AND GRAVEL BACKFILL ADDED
E.W.H.	12-1-41	ADDED DATA ON INTERSECTION OF R.R. WITH W. & L. E.
A.R.N.	10-18-41	REVISED ELEVATION & CLEARANCES
BY	DATE	CHARACTER
REVISIONS		

18 76 SHEETS
SHEET NO. 23
SCALE: HOR. 1" = 20'
VERT. 1" = 20'
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941
SUBMITTED: *[Signature]* APPROVED: *[Signature]*
PRINCIPAL ENGINEER MAJOR, CORPS OF ENGINEERS
DRAWN BY: W.B.S.
CHECKED BY: M.C.
TRANSMITTED WITH LETTER
FILE NO. 0271-PM-66/25
GATED

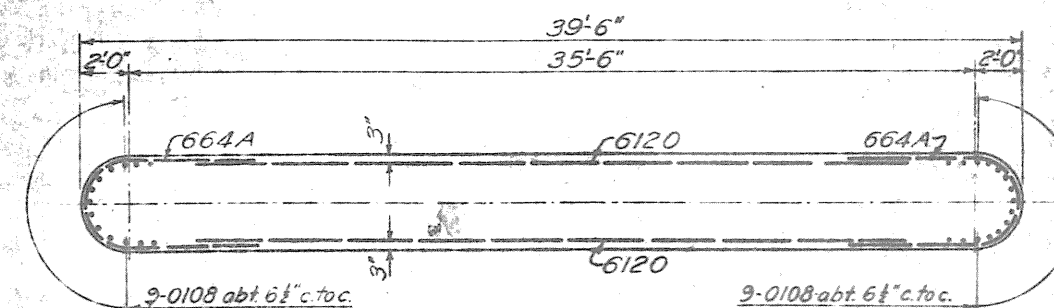
WORK AS CONSTRUCTED



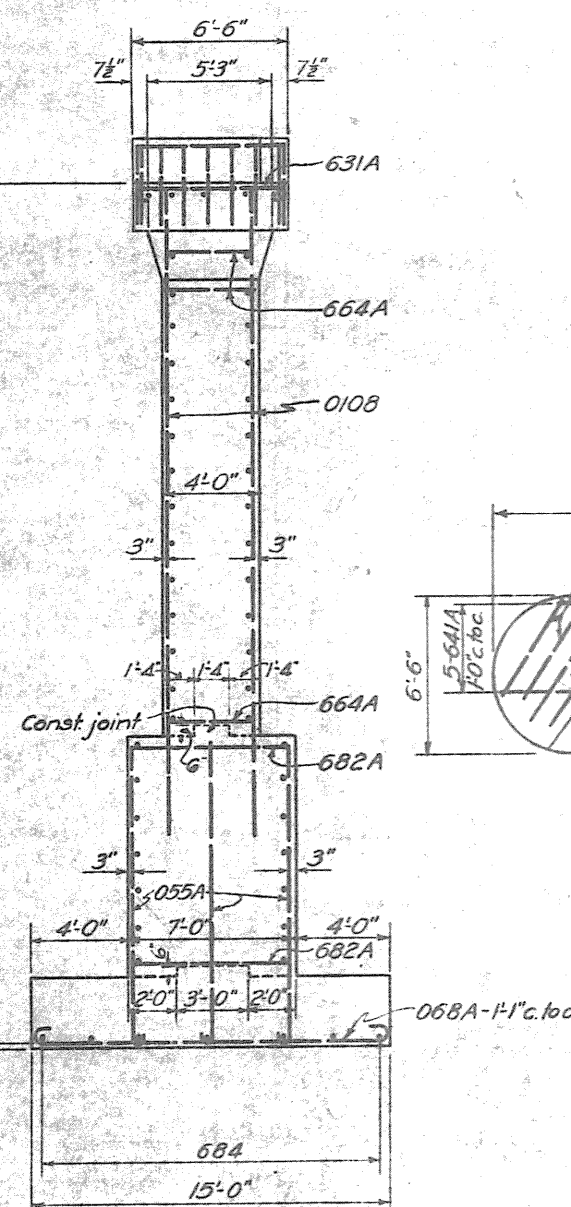
ELEVATION



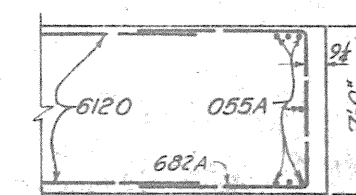
SECTION A-A



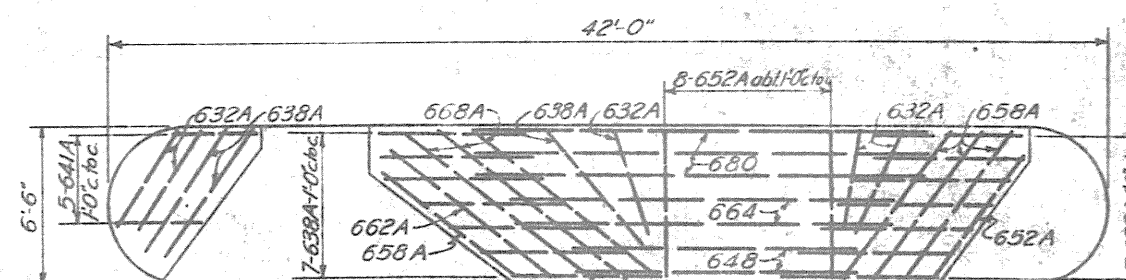
SECTION B-B



END VIEW



SECTION C-C



PLAN OF TOP

REINFORCING SCHEDULE

MARK	SIZE	LGTH	BENDING	DIAGRAM	NO.	UNIT WT.	TOTAL WT.
631A	3"ø	7'-0"			34	116.4	396
632A	3"ø	8'-0"			5	120.2	60
638A	3"ø	9'-6"			17	142.7	243
641A	3"ø	10'-3"			5	15.40	77
648	3"ø	12'-0"			2	18.02	36
652A	3"ø	13'-0"			9	19.53	176
658A	3"ø	14'-6"			4	21.78	87
662A	3"ø	15'-8"			1	23.28	23
664	3"ø	16'-0"			2	24.03	48
664A	3"ø	16'-0"			28	24.03	673
668A	3"ø	17'-0"			3	25.53	77
680	3"ø	20'-0"			3	30.04	90
680A	3"ø	20'-0"			2	30.04	60
682A	3"ø	20'-8"			18	30.79	431
684	3"ø	21'-0"			14	31.54	442
688	3"ø	22'-0"			6	33.04	198
6120	3"ø	30'-0"			44	45.06	1,983
055A	14"ø	13'-9"			148	73.05	10,811
068A	14"ø	17'-0"			37	90.32	3,342
010B	14"ø	27'-0"			148	43.45	21,231
TOTAL						40,486	

NOTES

Chamfer all exposed edges $1\frac{1}{2}"$ unless otherwise noted
For location plan, see Dwg. No. 66/25.
For anchor bolt plan, see Dwg. No. 66/34.
All concrete to be Class "B".
For details and spacing of grooves, see Dwg. No. 66/39.

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

SECTION 1

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.

IN 76 SHEETS SHEET NO. 24 SCALE: $\frac{1}{2}'' = 1'-0''$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., MAY. 1941

4 B. 1. 7/7. 11

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

DRAWN BY RMC.
TRACED BY ESH.

CHICKEN GYER. FILE NO 0271-PM-00/20 DATED

WORK AS CONSTRUCTION

WORK AS CONSTRUCTED

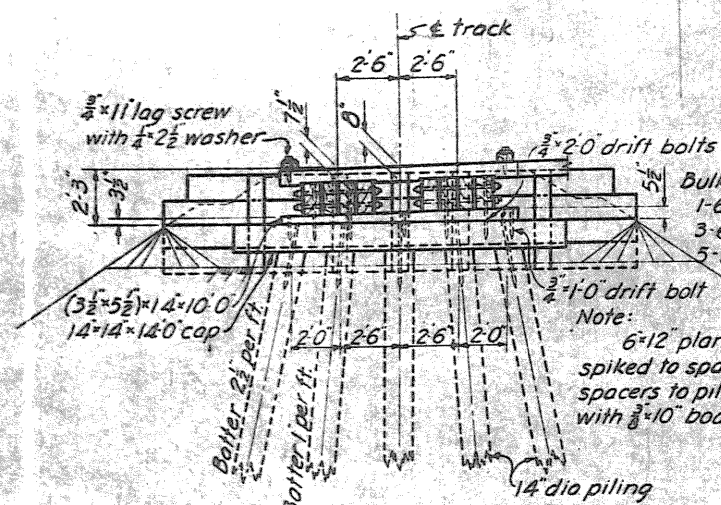


IN 76 SHEETS SHEET NO. 25 SCALE: $\frac{1}{8}'' = 1'-0''$

TRACED BY H.S.M.
CHECKED BY H.U.S. FILE NO 0271-PM-66/27 DATED

H.U.B.	11-1-44	REVISED AS CONSTRUCTED
H.U.B.	5-1-42	REVISED FOR CHANGE ORDER, MODIFICATION NO.20
A.R.N.	6-15-42	REV. SOUTH APPROACH & ADDED CLEARANCE DIAG. FOR B.S.O. TAIL TRAIL
A.R.N.	10-18-41	REVISED ELEVATIONS & ADDED CLEARANCE DIAGRAMS
BY	DATE	CHARACTER
R E V I S I O N S		

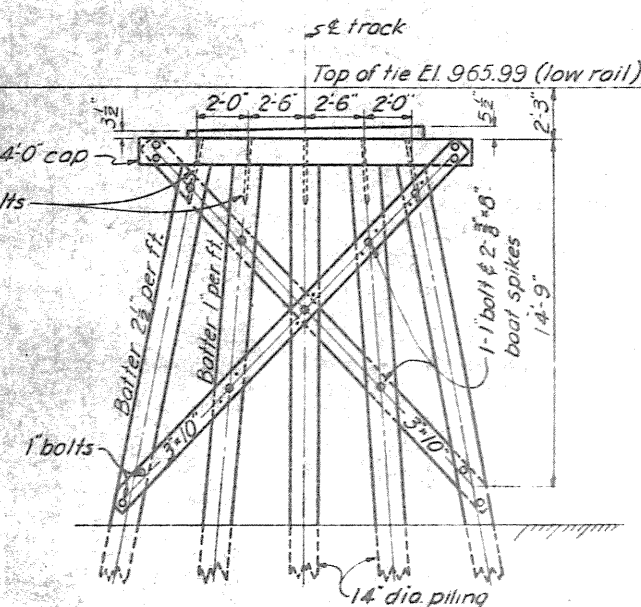
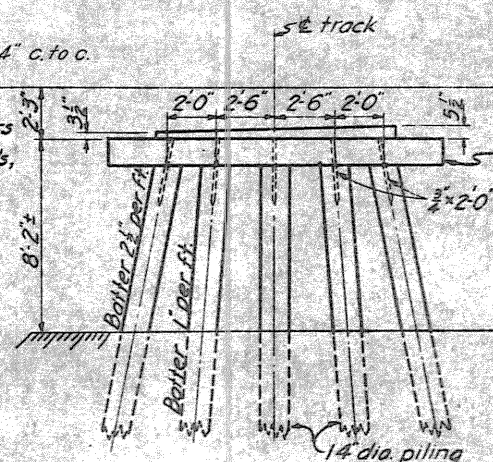
WORK AS CONSTRUCTED



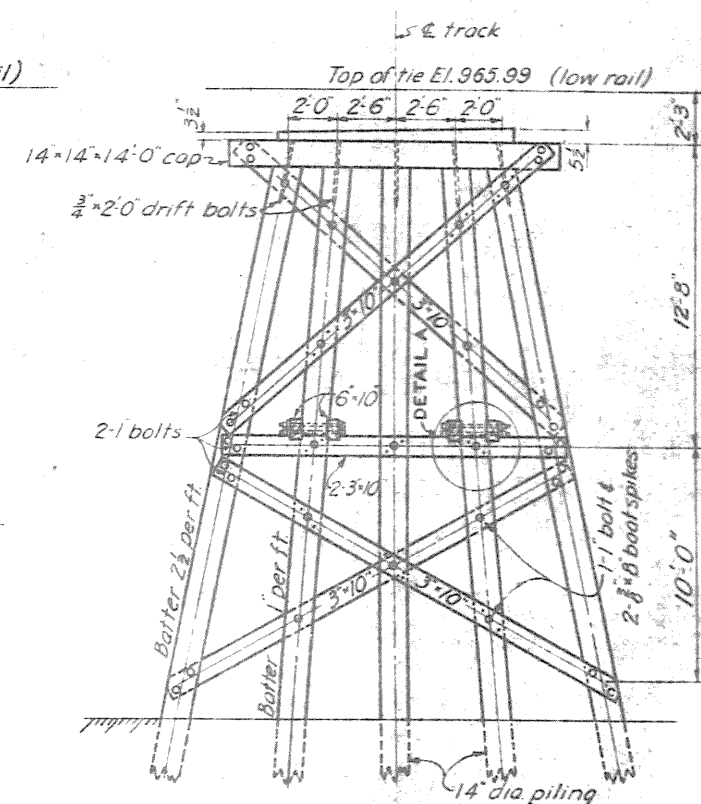
BENT NO. 1

END VIEW BENT NO. 1

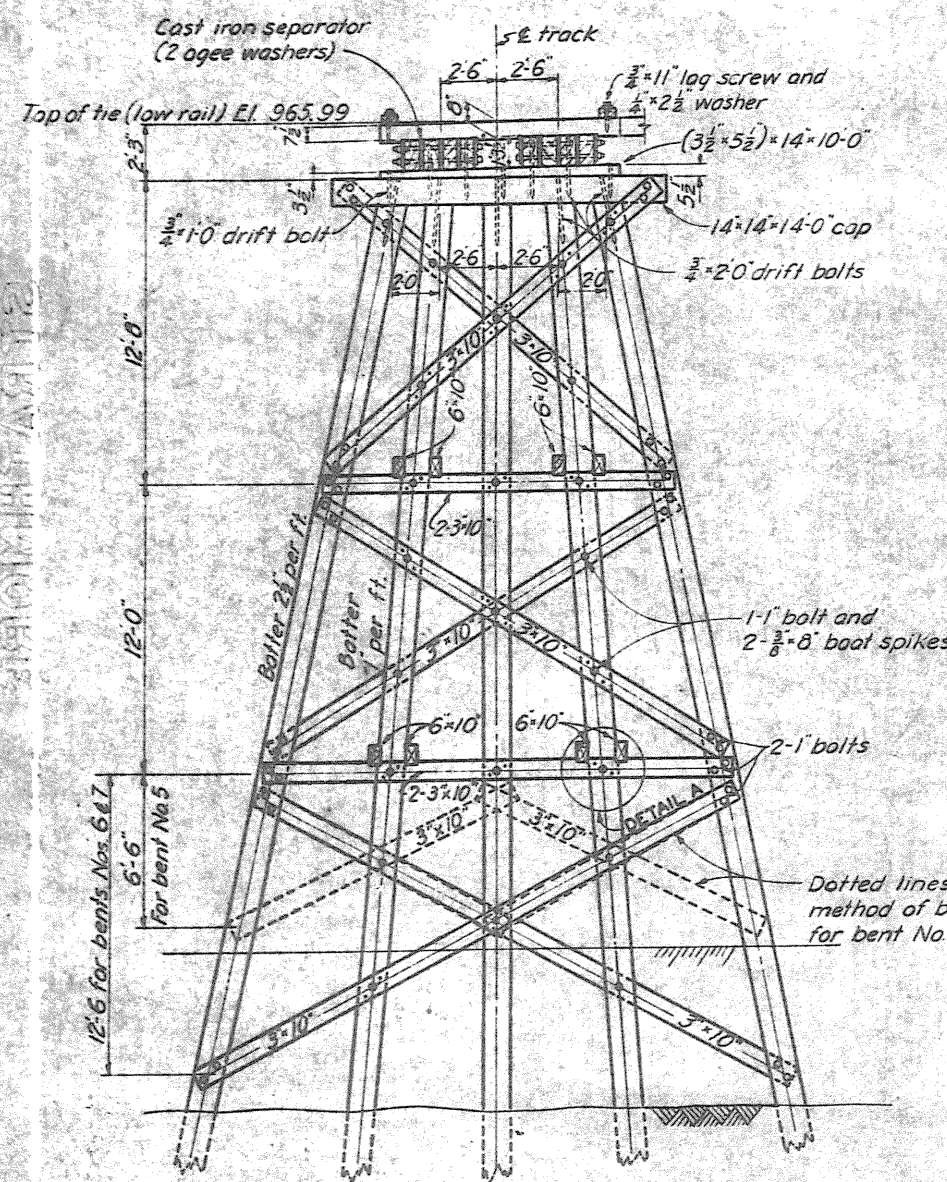
BENT NO. 2



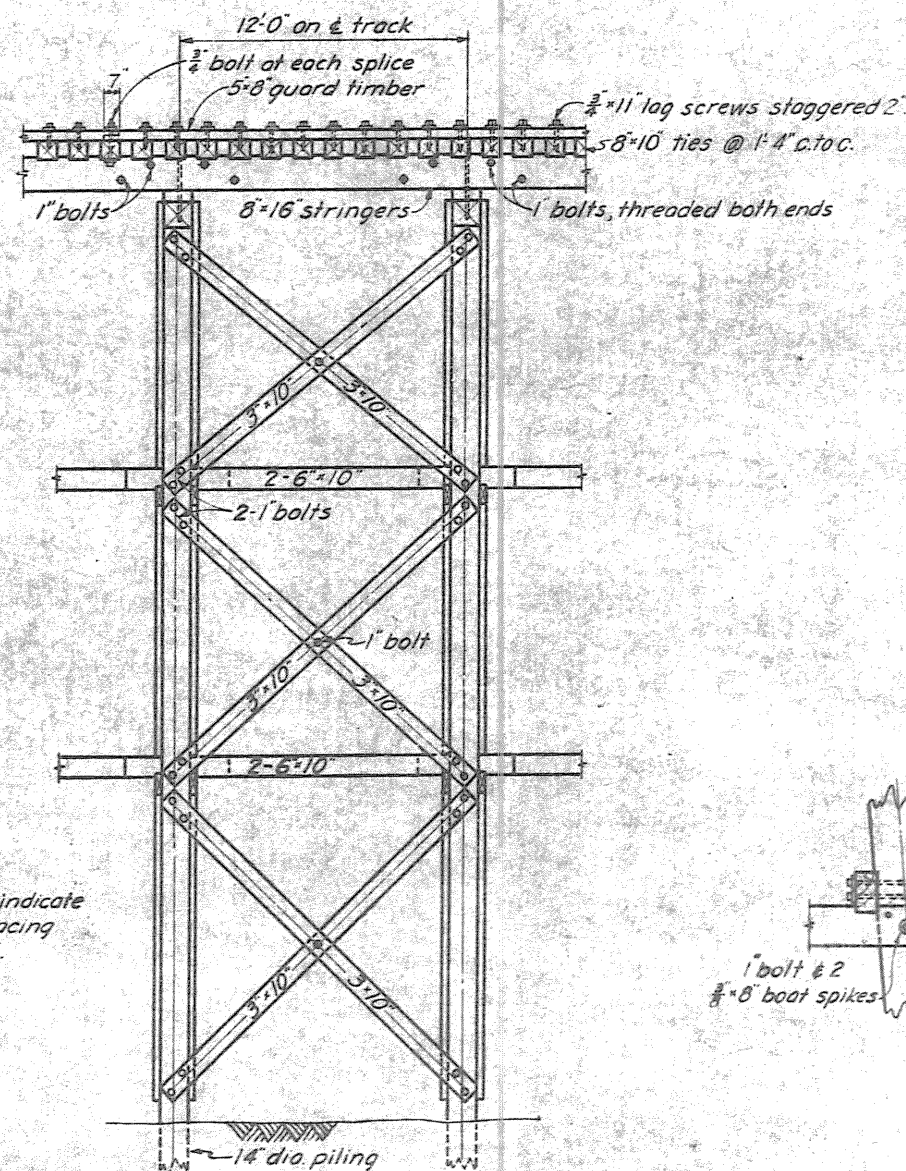
BENT NO. 3



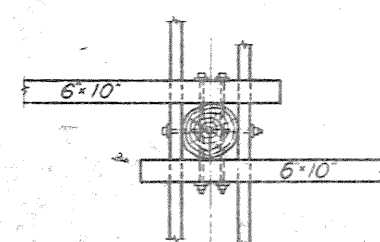
BENT NO. 4



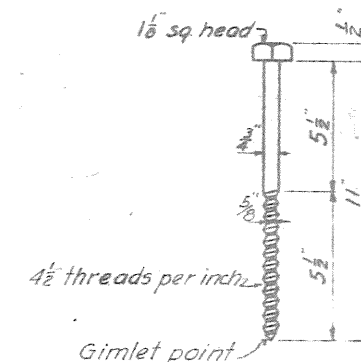
BENTS NO'S 5-6 & 7



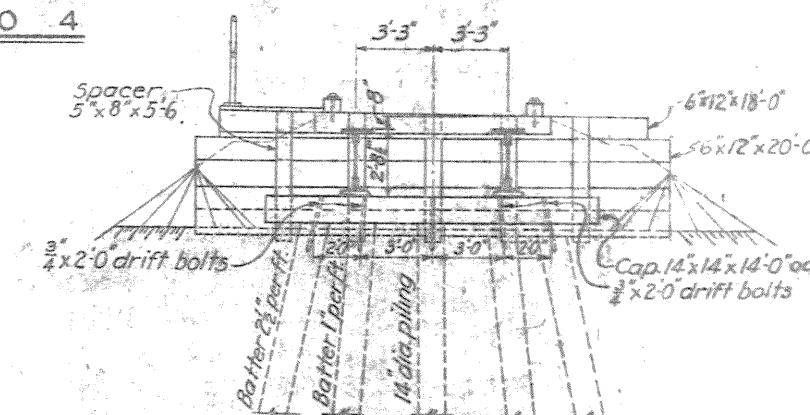
ELEVATION



DETAIL A
SCALE 1/2" = 1'-0"



LAG SCREW
SCALE 3/4" = 1'-0"



BENT NO. 19

NOTES

Minimum pile penetration to be 20 feet and each pile to be driven to develop a bearing capacity of at least 20 tons.
Standard Ogee washers shall be used under bolt heads and nuts bearing on timber except as noted.
Holes in ties for lag screw shall be bored 1/2" dia.
Super-elevation shall be 1".

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
TIMBER BENTS

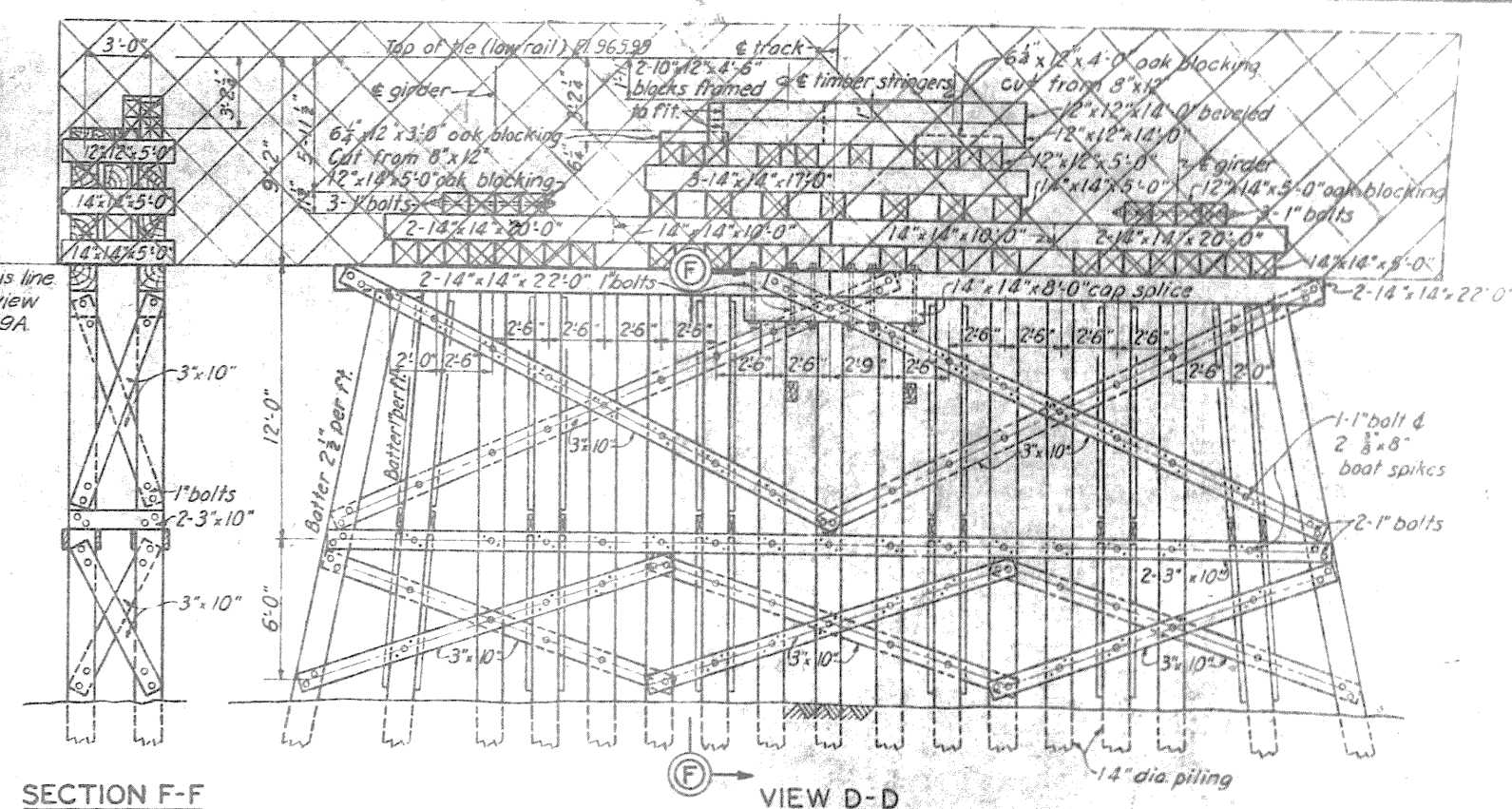
IN 76 SHEETS SHEET NO. 26 SCALE: 1/2" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

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

DRAWN BY: S.B. TRACED BY: J.E.M. CHECKED BY: H.B.B. FILE NO: 027i-PM-66/28 DATED

HUB 11-1-44	REVISED AS CONSTRUCTED
HUB 5-1-43	REVISED BENT NO. 19.
A.R.N. 6-15-42	REMOVED BENTS NOS 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

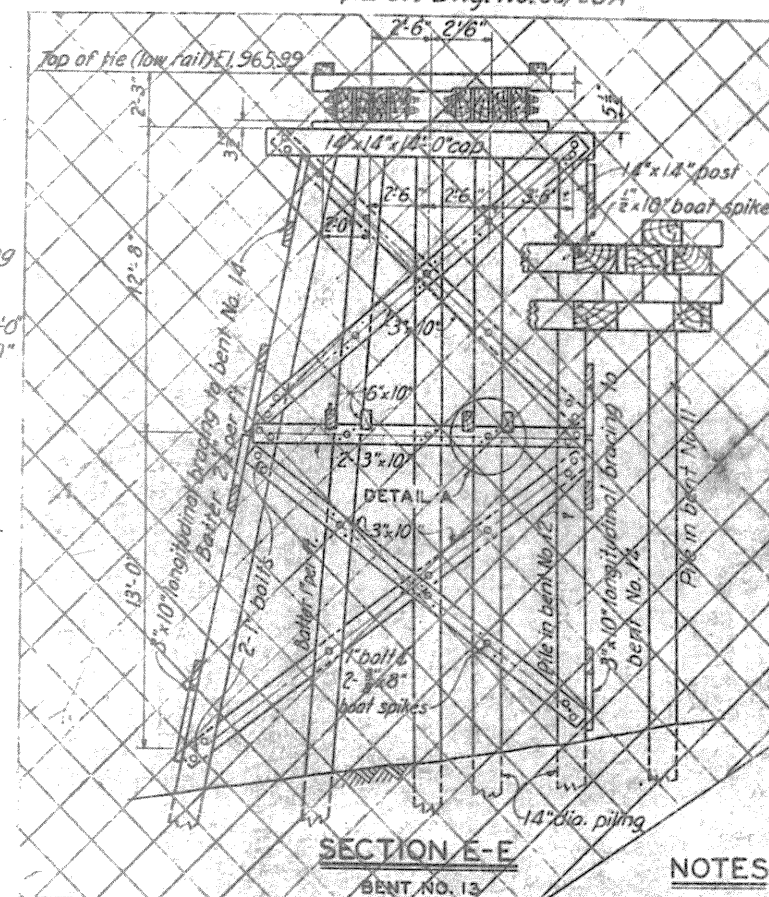


SECTION F-F

VIEW D-D

BENT NO. 12 NEAR SIDE
BENT NO. 11 FAR SIDE

For location of bents Nos. 11 & 12 see Dwg. No. 66/29A



~~SECTION E-E~~

NOTES

Minimum pile penetration to be 20' and each pile to be driven to develop a bearing capacity of at least 20 tons. Drift bolt stringers to blocking, blocking to blocking, blocking to caps and caps to piling with $\frac{3}{4}$ drift bolts. Standard Ogee washers shall be used under bolt heads and nuts bearing on timber. For detail A, see Dwg. No. 66/28.

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

SECTION 1

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
TIMBER BENTS

IN 76 SHEETS

SHEET NO. 2

SCALE: $\frac{1}{2}$ in. = 0.5"

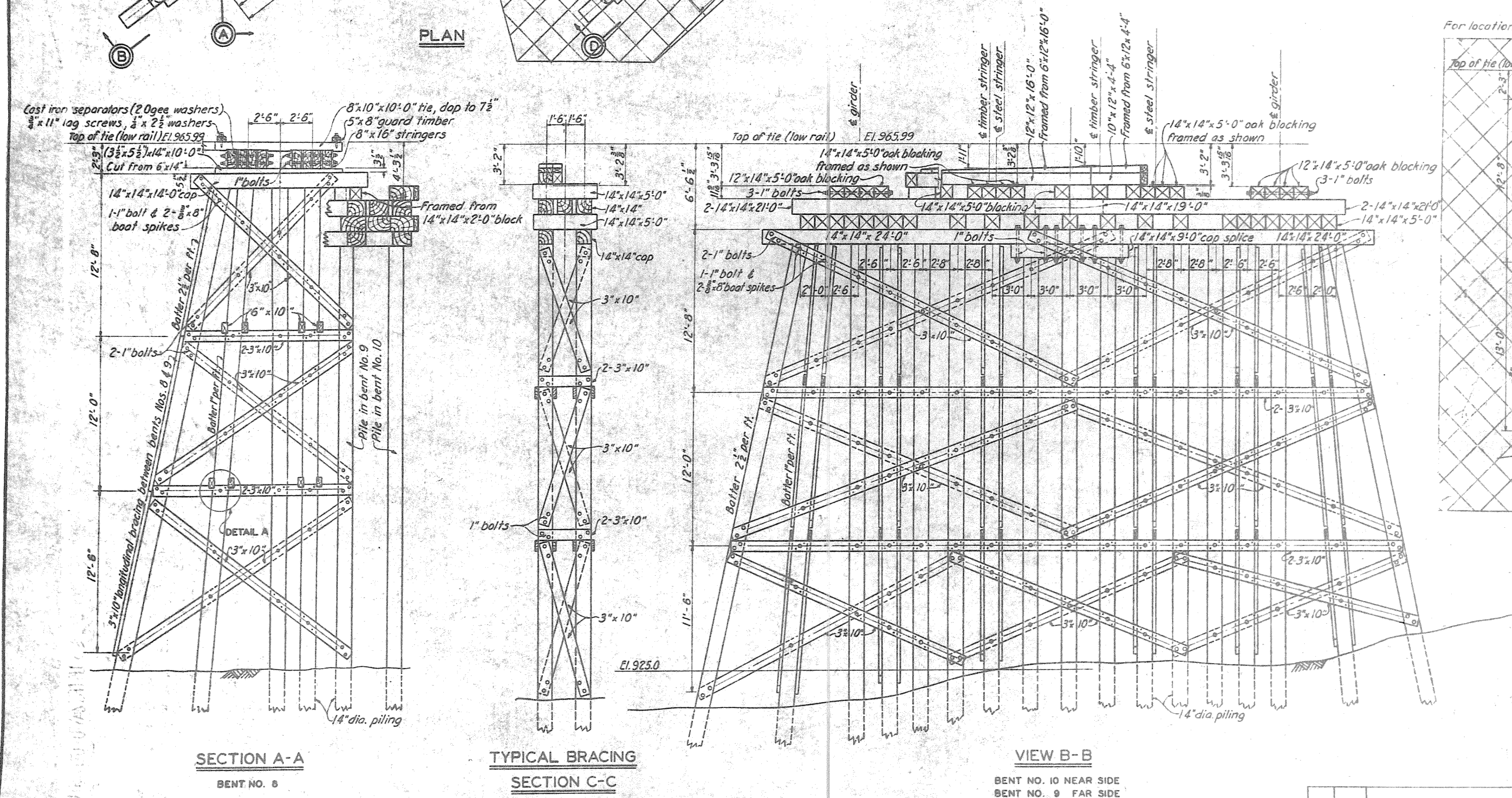
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED: 12/31/01 W. J. Allen

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

FILE NO 0271-PM-66/29

FILE NO 0271-FBI-00729 DATED



SECTION A-A

BENT NO. 8

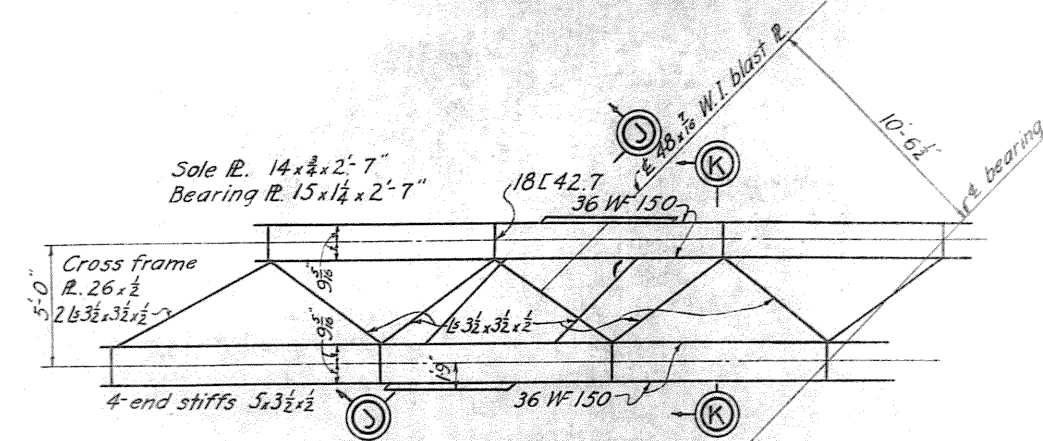
TYPICAL BRACING

SECTION C-C

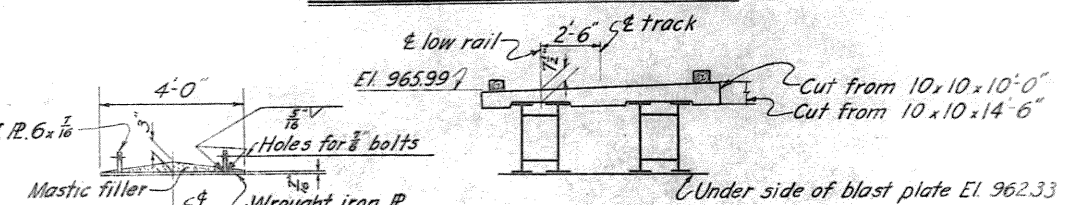
VIEW B-B

BENT NO. 10 NEAR SIDE
BENT NO. 9 FAR SIDE

A.R.N.	6-15-42	REVISED	BENTS NOS 11/2&13 - SEE DWG. NO.66/29A
A.R.N.	10-18-41	REVISED	ELEVATIONS & TIES
BY	DATE	CHARACTER	
REVISIONS			



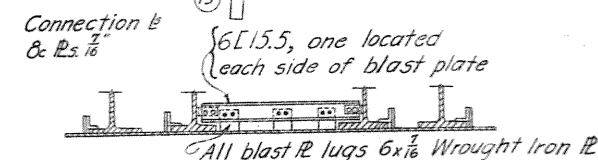
BLAST PLATE LOCATION



SECTION K-K

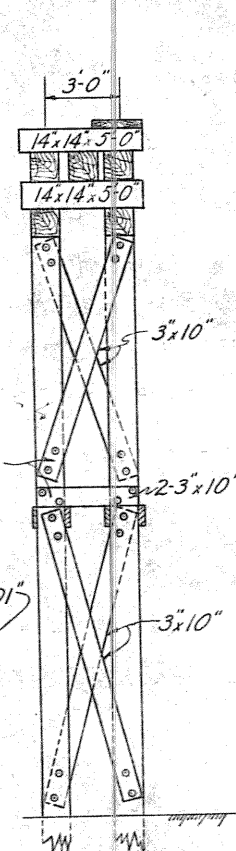
BLAST PLATE

SCALE: $\frac{3}{8}'' = 1'-0$

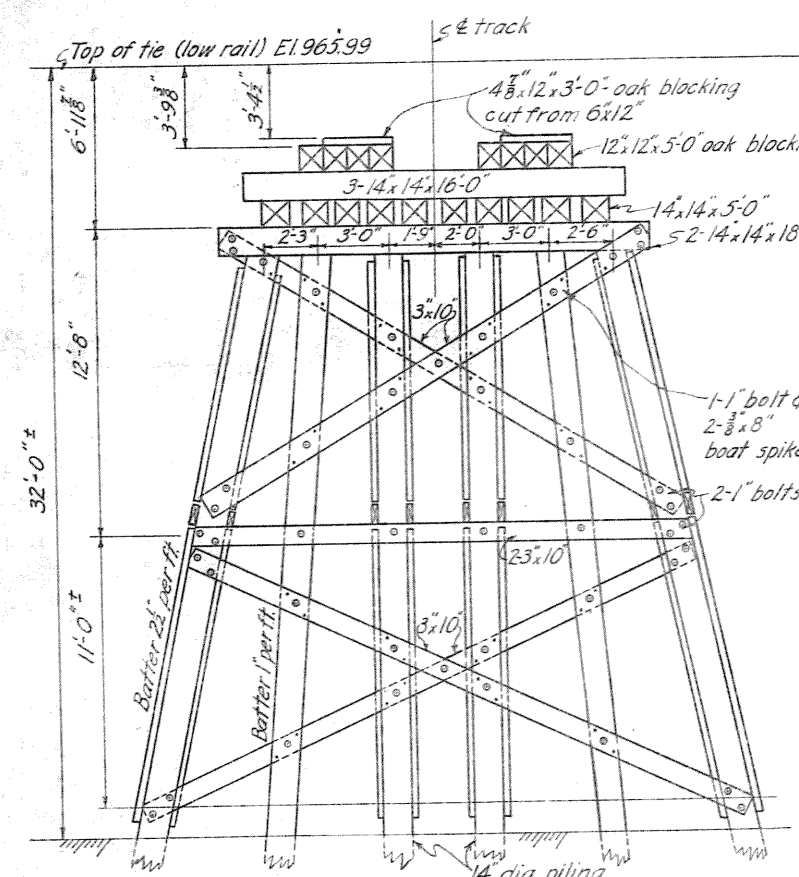


SECTION J-J

SCALE: $\frac{3}{8}'' = 1' - 0$

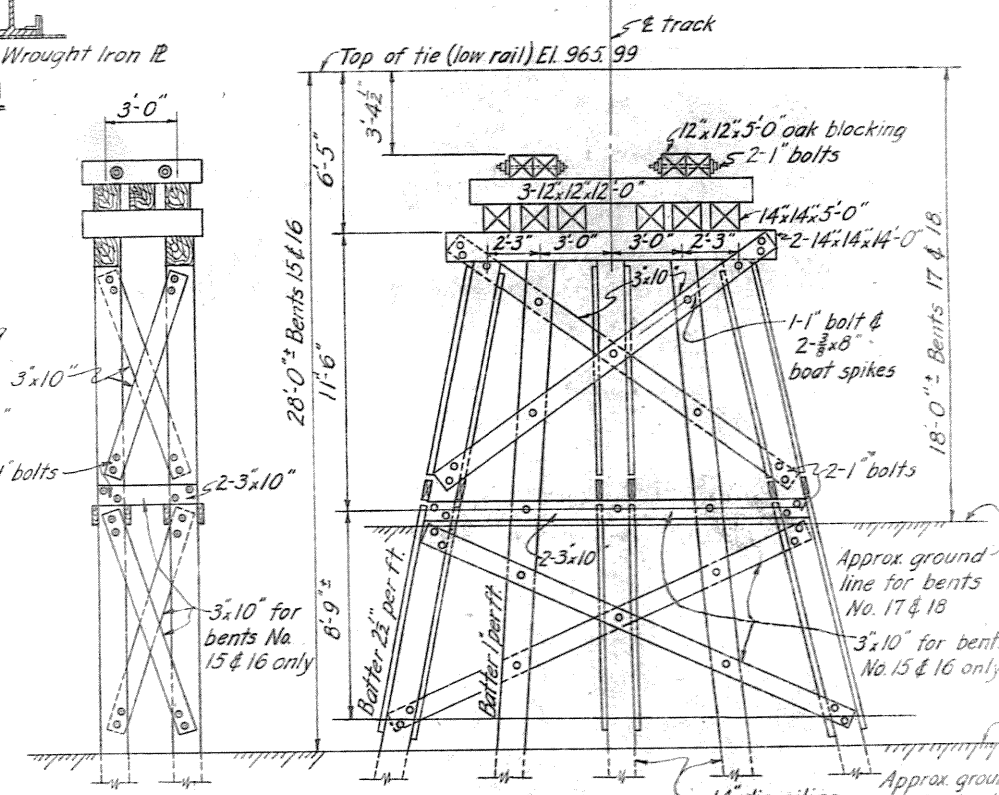


SECTION N-N



VIEW M-M

BENT NO. 14 NEAR SIDE
BENT NO. 13 FAR SIDE



BENTS 15 & 16 AS SHOWN & NOTED

BENTS 17 & 18 AS SHOWN & NOTED

NOTES

Minimum pile penetration to be 20' and each pile to be driven to develop a bearing capacity of at least 20 tons. Drift bolt blocking to blocking, blocking to caps and caps to piling, with $\frac{3}{4}$ " drift bolts.

Standard Ogee washers shall be used under bolt heads and nuts bearing on timber. For detail "A," see Dwg. No. 66/28.

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

SECTION 1

P. R. R. BRIDGE OVER B. & O. R.R. - W. & L. E. RY.
BEAM SPAN FOR B.&O. TAIL TRACK

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

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., AUG. 1942

APPROVED: *W.B. Higgins*

MAJOR, CORPS OF ENGINEERS

FILE NO 0271-PM-66/29A DATED

THIS DWG SUPPLEMENTS DWG NO 66

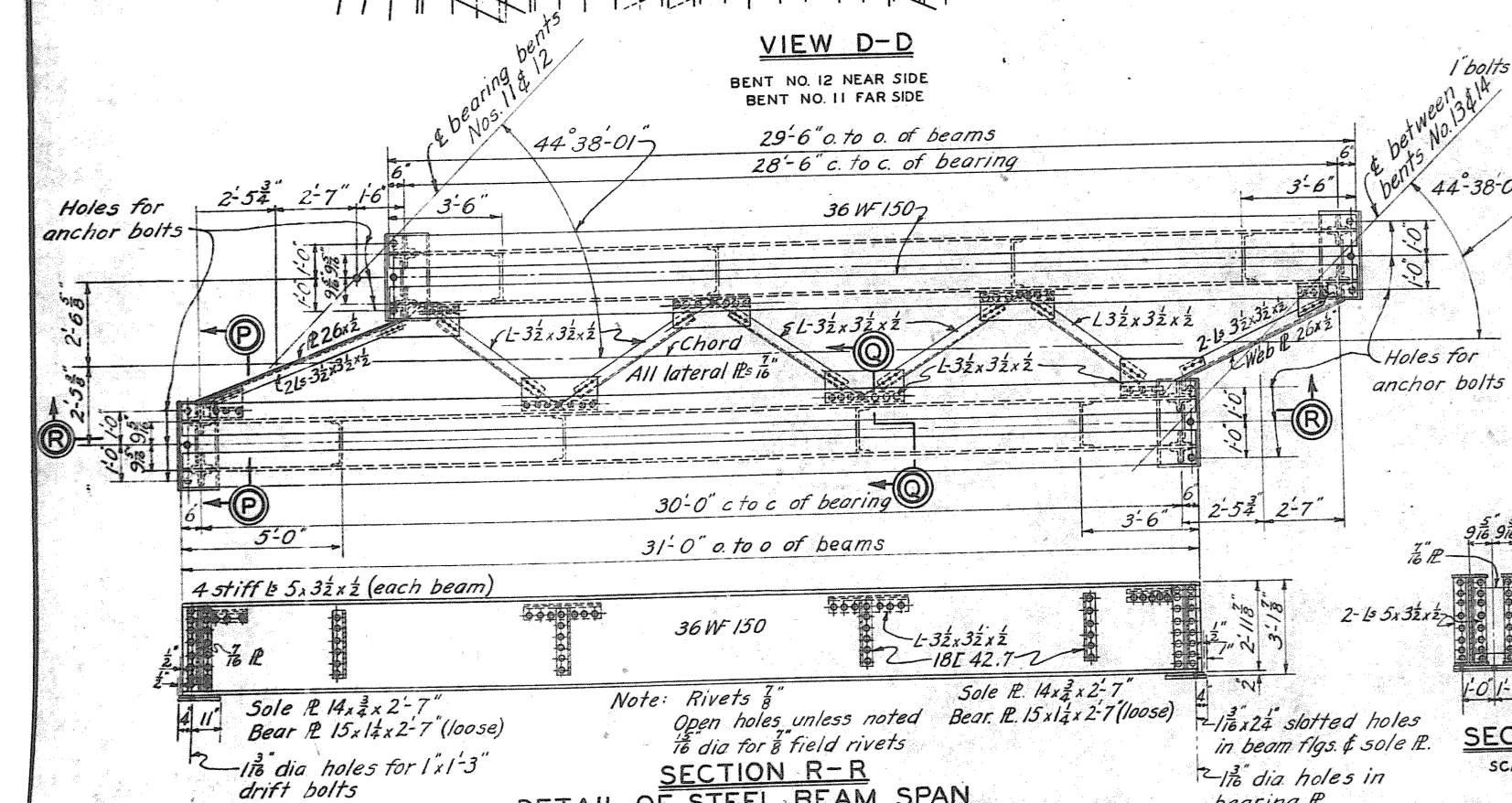
NOTES CONTINUED

Design-A-R-E-A Specifications for Steel Railway
Bridges dated 1938 except locomotive loading and
impact which are shown on Dwg. No. 66/30.
Workmanship-A-R-E-A Specifications for Steel
Railway Bridges dated 1938.
Material-A-R-E-A Specifications for Steel
Railway Bridges dated 1940.

H.U.B.	11-1-44	REVISED AS CONSTRUCTED
H.U.B.	5-1-43	REVISED BENTS 13 TO 18 INCLUSIVE
BY	DATE	CHARACTER
REVISIONS		

WORK AS CONSTRUCTED

THIS DWG. SUPPLEMENTS DWG. NO. 66/20

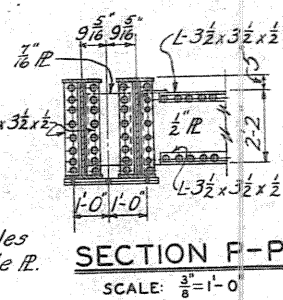


SECTION 11.00
DETAIL OF STEEL BEAM SPAN

SCALE: $\frac{3''}{8} = 1'-0''$

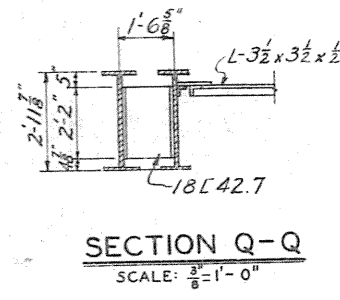
Note: Rivets $\frac{7}{8}$ "
Open holes unless noted
 $\frac{15}{16}$ " dia for $\frac{7}{8}$ " field rivets

$1\frac{3}{8} \times 24$ slotted holes
 in beam flgs. & sole PL
 $1\frac{3}{8}$ " dia. holes in
 bearing PL



SECTION F-P

SCALE: $\frac{3^n}{n} = 1 - 0$

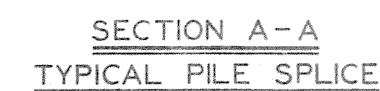


SECTION Q-Q

SCALE: $\frac{3''}{8} = 1' - 0''$



BENTS NO. 9 & 10

BENTS NO. 11 & 12

SCALE: $\frac{3}{4} = (1 - 0)^{1/3}$

Standard Ogee washers shall be used under bolt heads and nuts bearing on timber.

Sway bracing shall be properly framed over splice timber, and securely bolted to piles.

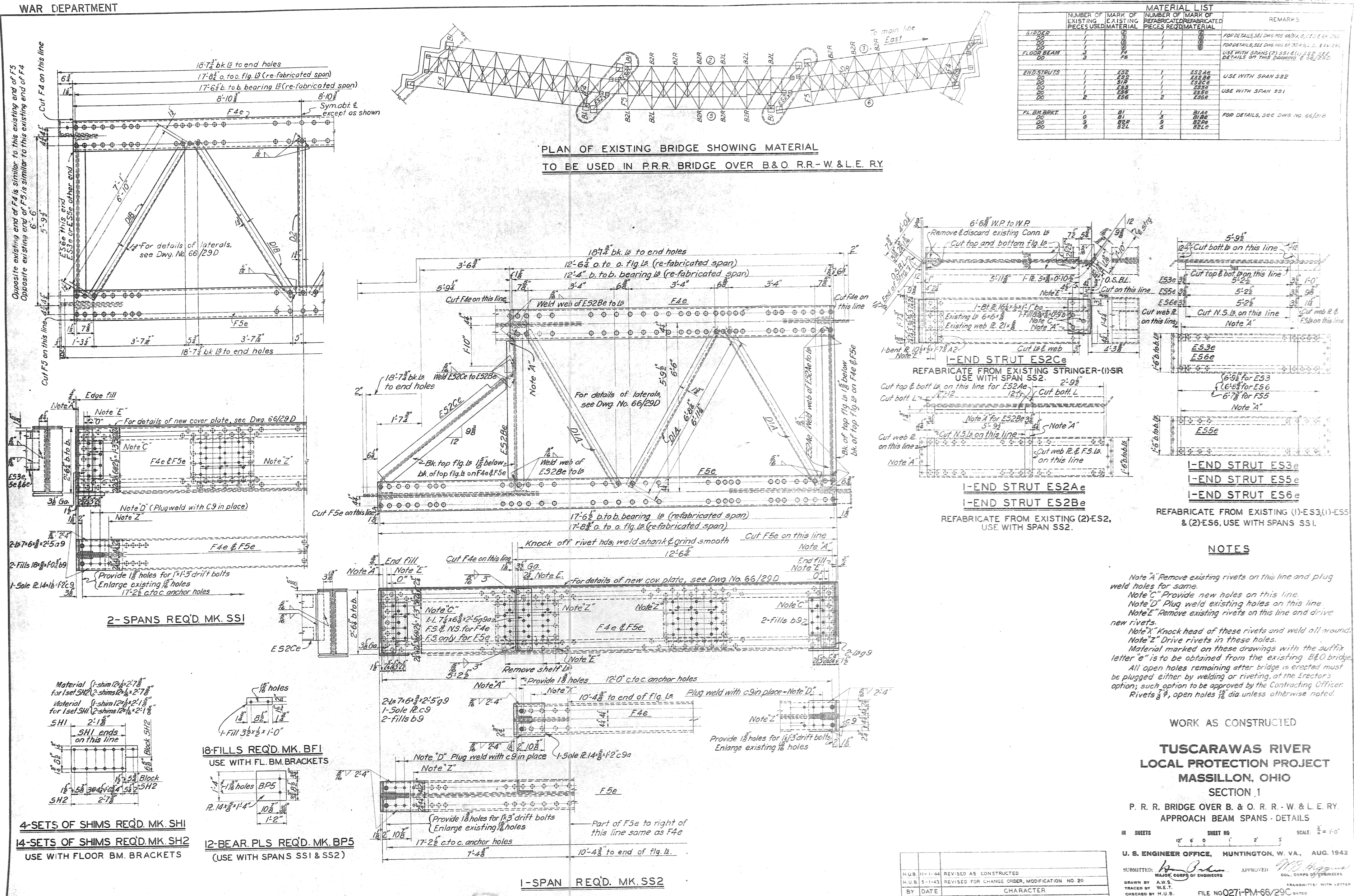
For details of timber bents, see Dwg's. Nos. 66/28 & 66/29.

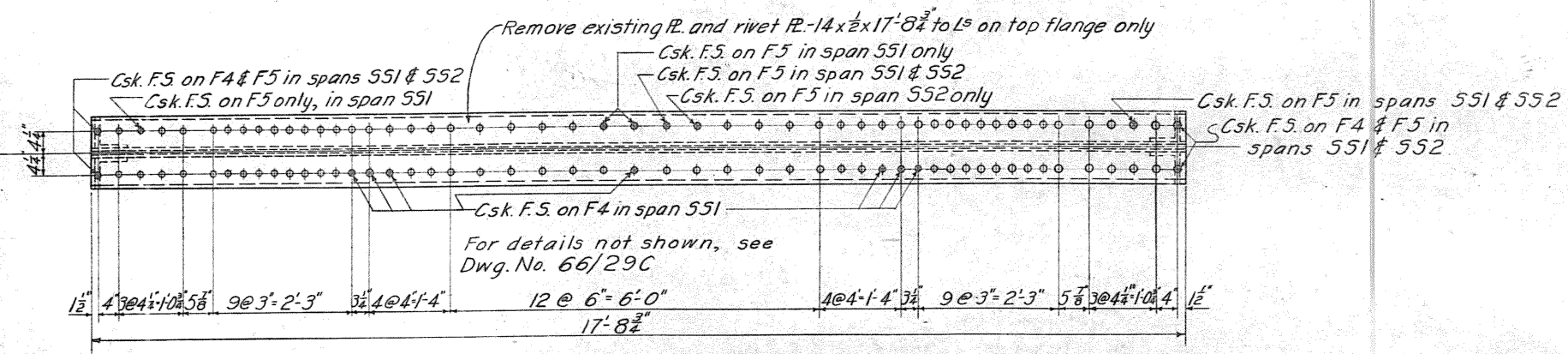
THIS DWG. SUPPLEMENTS DWGS. NOS. 66/28 & 29

BY	DATE	CHARACTER
		REVISIONS

MATERIAL LIST		REMARKS	
NUMBER OF EXISTING PIECES USED	MARK OF EXISTING MATERIAL	NUMBER OF REFABRICATED REPAIR MATERIAL	MARK OF REPAIR MATERIAL
GIRDER			
DO	1	1	1
DO	1	1	1
FLOOR BEAM	3	3	3
DO	3	3	3
END STRUTS			
DO	1	1	1
DO	1	1	1
DO	1	1	1
DO	1	1	1
DO	2	2	2
FL. BM. BRKT			
DO	1	1	1
DO	9	9	9
DO	5	5	5

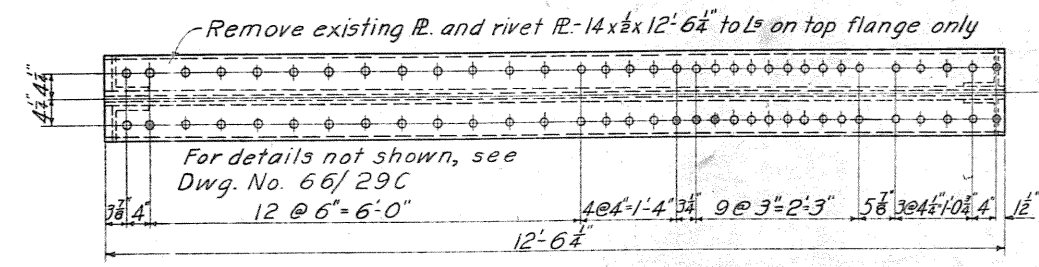
PLAN OF EXISTING BRIDGE SHOWING MATERIAL
TO BE USED IN P.R.R. BRIDGE OVER B.O. R.R. - W. & L. E. RY.





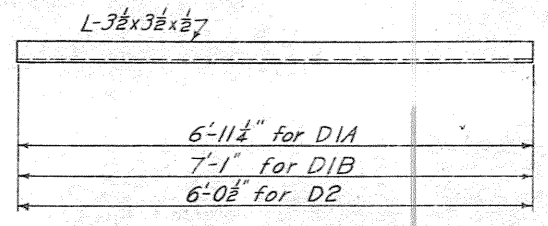
TOP FLANGE OF BEAMS FOR APPROACH SPANS SSI & SS2

5-PLATES REQUIRED



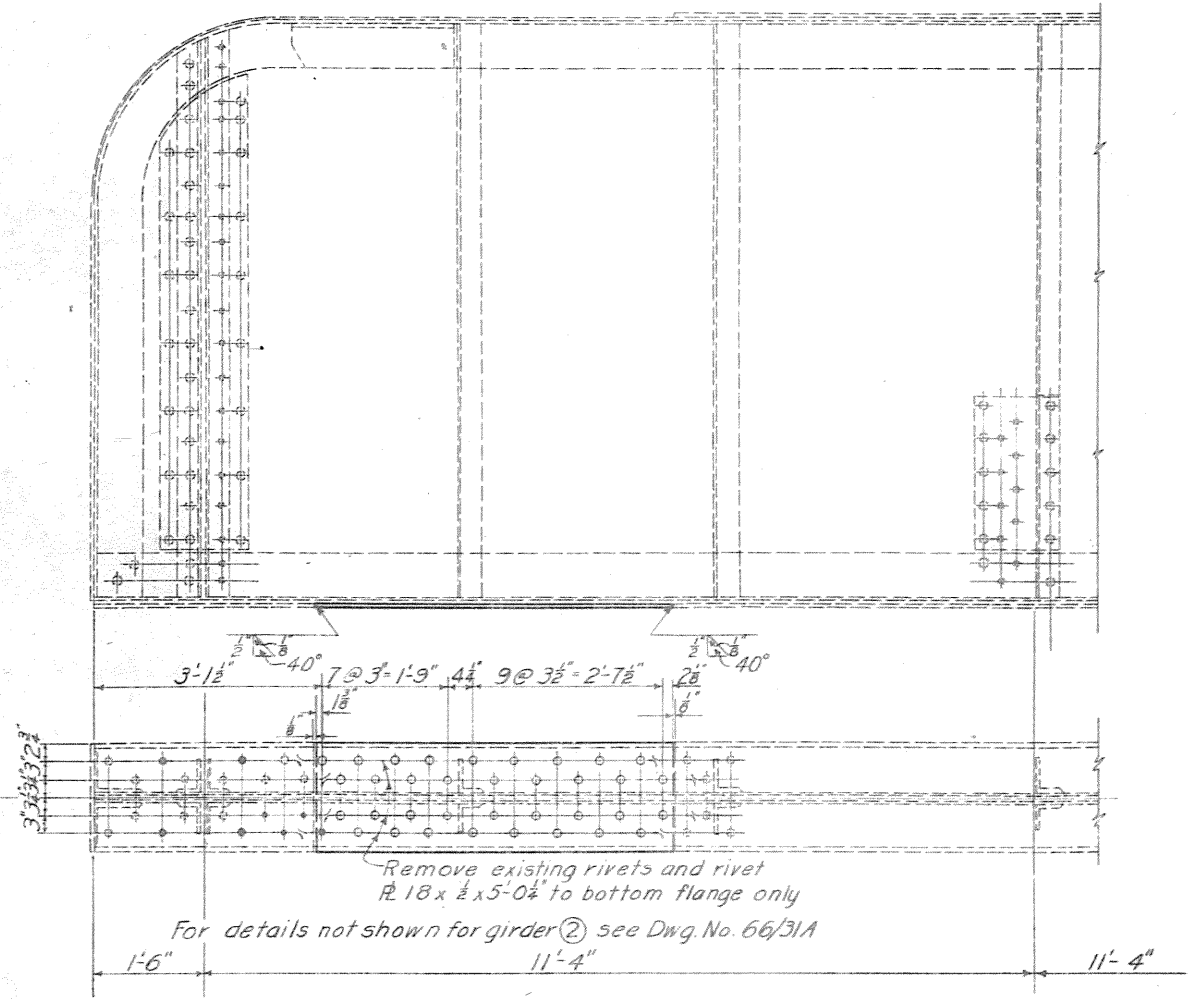
TOP FLANGE OF BEAM FOR APPROACH SPAN SS2

ONE PLATE REQUIRED



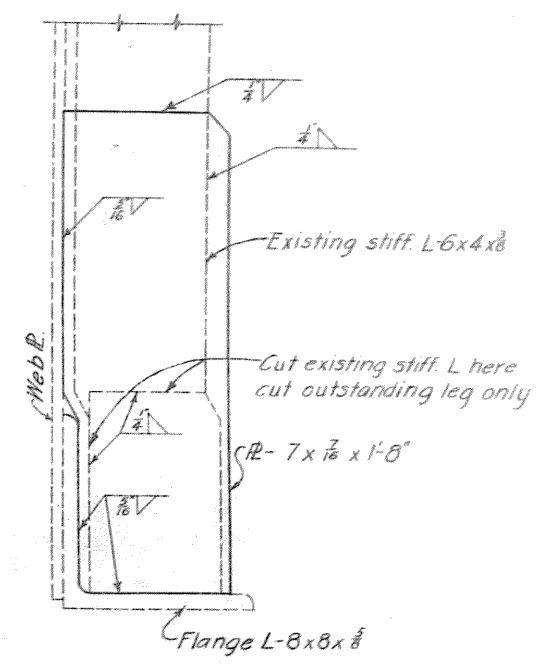
LATERALS

3-REQUIRED 'DIA' IN SPAN SS2
8-REQUIRED 'DIB' IN SPAN SS1
2-REQUIRED 'D2' IN SPAN SSI



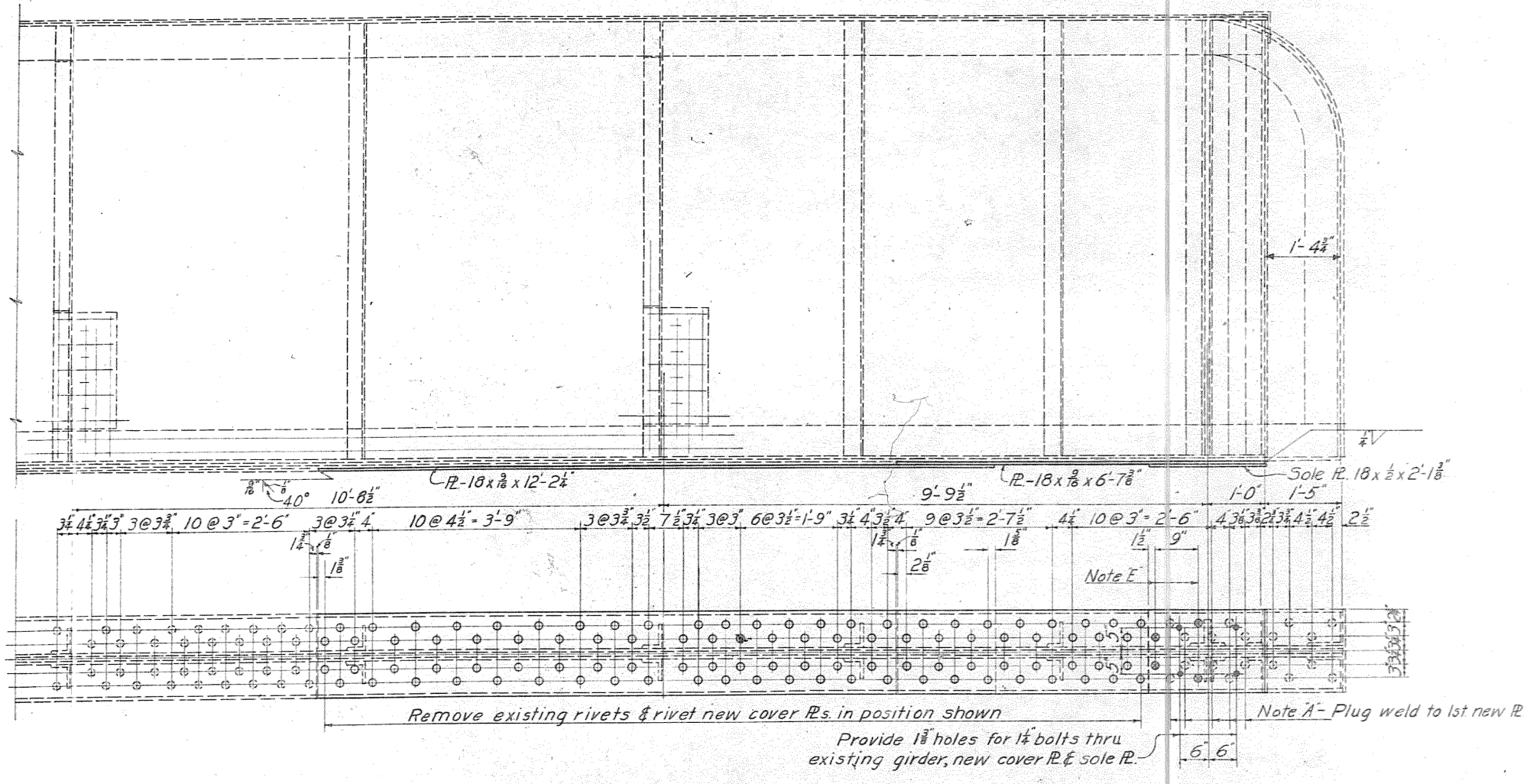
GIRDER 2

ONE PLATE REQUIRED



DETAIL OF REINFORCEMENT EXISTING STIFFENER L3

24-PLATES REQUIRED



GIRDER 6

FOR ADDITIONAL DETAILS OF GIRDER 6 SEE DWG. NO. 66/3201

NOTES

Rivets 5/8", open holes 1 1/8"
Note A- Remove existing rivets on this line and plug weld holes for same.
Note E- Remove existing rivets on this line and drive new shop rivets.

WORK AS CONSTRUCTED

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.

DETAILS

10 SHEETS SHEET NO. 12 SCALE 3/4"=1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., APRIL 1943

SUBMITTED: Jm. Lock MAJOR, CORPS OF ENGINEERS APPROVED: M.B. Higgins COL. CORPS OF ENGINEERS DISTRICT ENGINEER

DRAWN BY W.P.O. TRACED BY E.G.H. CHECKED BY H.B. TRANSMITTED WITH LETTER FILE NO. 0271-PM-66/29D DATED

BY	DATE	CHARACTER
		REVISIONS



77'-0" SPAN

GIRDER (Refabricated)

MAX. REACTION

<u>MAX. SHEARS</u>	<u>MAX. REACTION</u>
D.L = 50,000#	D.L = 52,000#
L.L = 168,000#	L.L = 224,000#
I. = 106,000#	I. = 145,000#
Total = 324,000#	Total = 421,000#

$324,000 \div 9,000 = 36.0''$ gross req'd.
 Web $295\frac{1}{2} \times \frac{7}{16} = 41.78''$ gross effective
 Bearing @ $24,000''^{200} = 17.54''$ req'd.
 End stiff's $4 \text{ L } 6 \times 4 \times \frac{7}{8} = 19.76''$
 Intermediate stiff's $2 \text{ L } 6 \times 4 \times \frac{7}{8}$ crimped

MAX. MOMENTS

$$D.L. = 958,000' \text{ } ^\circ$$
$$LL = 3,670,000' \text{ } ^\circ$$
$$\begin{array}{r} I = 2,385,000' \\ \hline \text{total} = 7,013,000' \end{array}$$

total = 7,013,000.00

$$\text{Section modulus req'd} = \frac{7,013,000 \times 12}{18,000} = 4,675 \text{ in}^3$$

Section modulus furnished = 4700 in³

FLOOR BEAMS

<u>SECTION</u> <u>FURNISHED</u>	<u>SECT. MOD.</u> <u>REQD</u>	<u>SECT. MOD.</u> <u>FURNISHED</u>	<u>MAX.</u> <u>SHEAR</u>	<u>MAX.</u> <u>MOMENT</u>
33W220 2 cov. lbs 7x1/2	774 ^{#3}	836 ^{#3}	191,000 [#]	1,161,000 ^{1#}

STRINGERS

<u>SECTION</u>	<u>SECT.MOD.</u>	<u>SECT.MOD.</u>	<u>MAX.</u>	<u>MAX.</u>
<u>FURNISHED</u>	<u>REQ'D</u>	<u>FURNISHED</u>	<u>SHEAR</u>	<u>MOMENT</u>
24WF20	295 ⁺³	299.1 ⁺³	149,000#	442,000#
24WF74	100 ⁺³	170.4 ⁺³	95,000#	149,000#
24WF112	237 ⁺³	248.6 ⁺³	139,000#	355,000#

LOADING USED-TYPICAL LOCOMOTIVE-PENNSYLVANIA R.R. STANDARD

Axle loads shown

$$\text{Impact allowance} = KL \quad K = \frac{300}{300+S} \times \frac{L}{L+D}$$

In which S = Loaded length of track in feet

L = Maximum live load stress

$D = \text{Dead load stress}$

$$\text{Total stress} = D + L + KL$$
[illegible]

Floor system designed in accordance with A.R.E.A. Specifications For Steel Railway Bridges dated 1938, except locomotive loading and impact which are as shown.

For girder spans-assembled, see Dwg. No. 66/30A.
For details of refabricated 60' girders, see
Dwg's No's. 66/31, A, B, C, D & 66/79D.

Dwg's. Nos. 66/31 A, B, C, D & 66/29D
For details of refabricated 77 girders, see
Dwg's. Nos. 66/32 A, B, C, D, E & 66/29D

EWG 8.100.00/02 A, B, C, D 14 00/00

SECTION 1

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
GIRDER SPANS - DESIGN DATA

IN 76 SHEETS SHEET NO. 20 SCALE: 1/8" = 1'-0"

12" 0' 2' 4' 6' 8' 10' 12' 14'

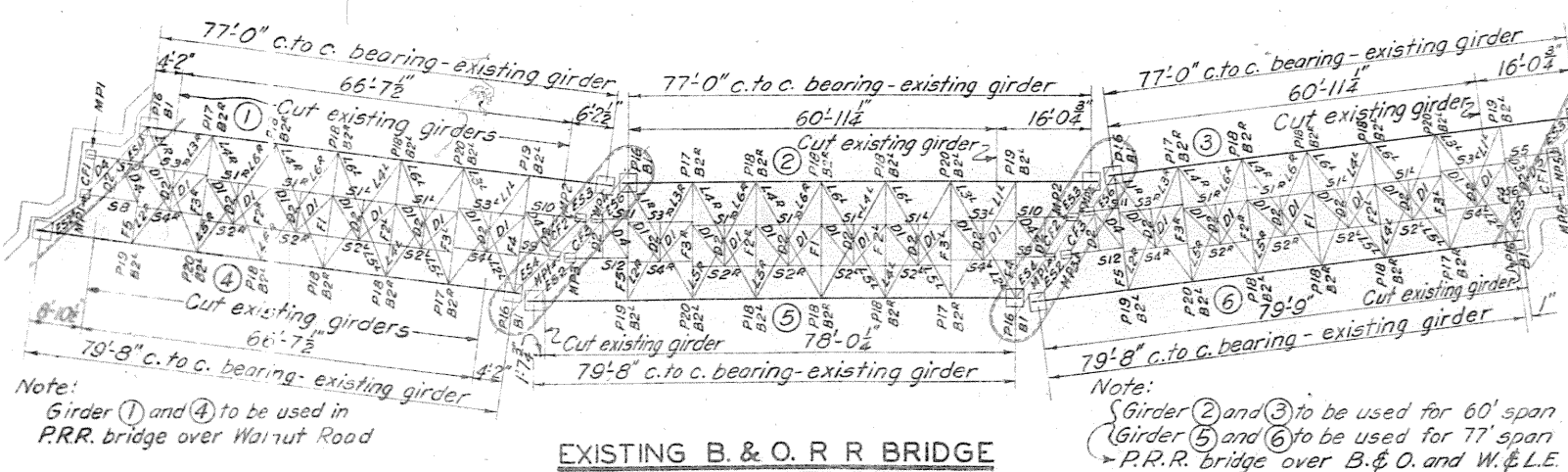
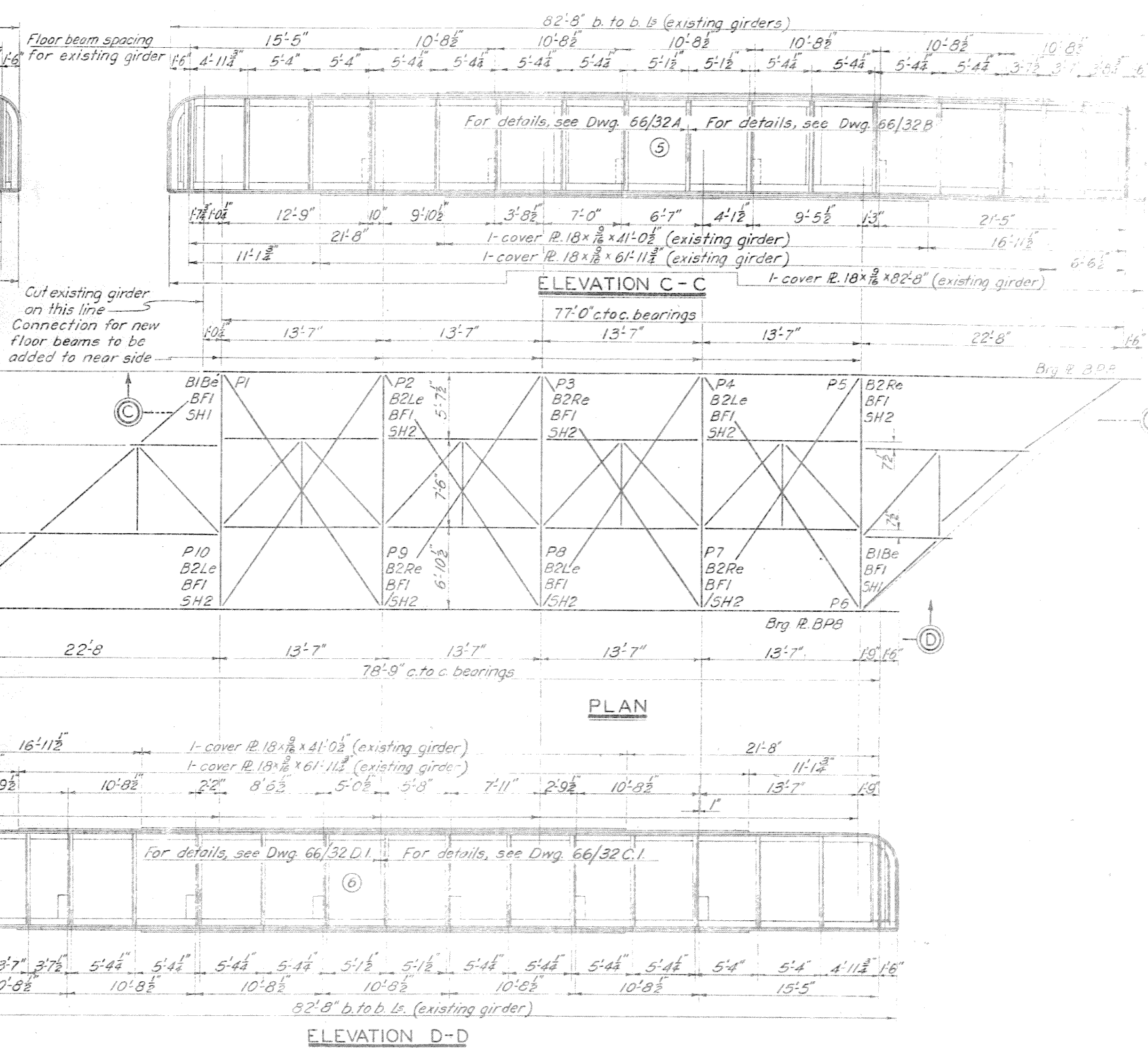
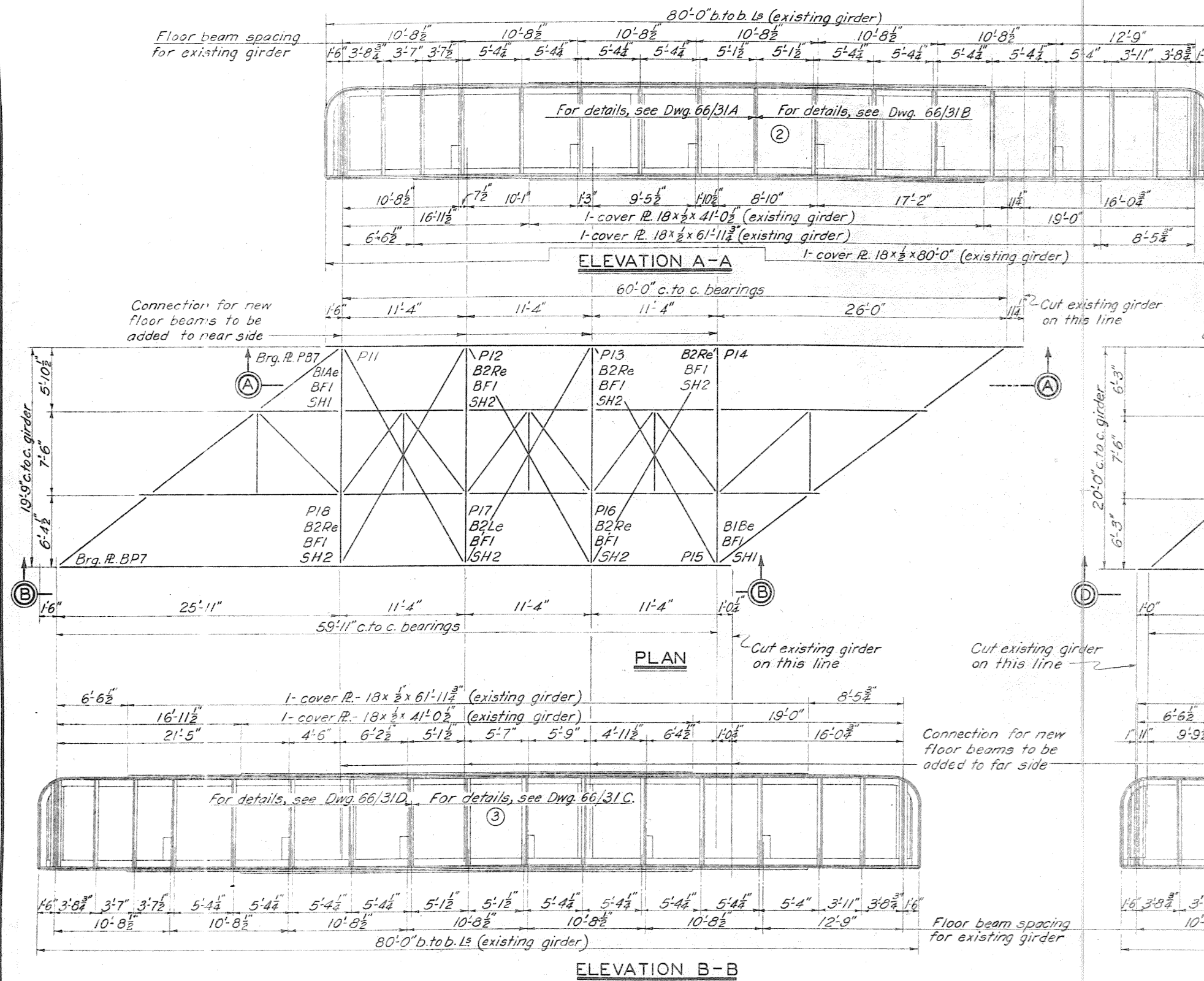
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED: *Wm. Parker* APPROVED: *W. J. Walker*

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
PRINCIPAL ENGINEER MAJOR, CORPS OF ENGINEERS
DRAWN BY A.W.S. TRANSMITTED WITH LETTER

TRACED BY H.S.M.-A.S. FILE NO 0271-PM-66/30 TRANSMITTED WITH LETTER
CHECKED BY A.R.N. DATED

WORK AS CONSTRUCTED



LIST OF EXISTING MATERIAL & DISPOSITION OF SAME											
MARK OF EXISTING MATERIAL	NO. OF EXISTING PIECES	NO. OF PCS USED ON ROAD	NO. OF PCS USED ON WALKWAY	NO. OF PCS USED ON OVERPASS	NO. OF PCS USED ON UNDERPASS	NO. OF PCS USED ON OTHER	NO. OF PCS REMAINING	MARK OF EXISTING MATERIAL	NO. OF EXISTING PIECES	NO. OF PCS USED ON ROAD	NO. OF PCS USED ON WALKWAY
L23	3	1	2	0	0	0	2	P12	2	0	0
L24	3	1	2	0	0	0	2	P13	2	0	0
F1	3	0	0	3	0	0	3	P14	2	0	0
F2	3	2	0	1	0	0	0	P15	2	0	0
F2	3	2	0	1	0	0	0	P16	6	0	0
F3	3	3	0	0	0	0	0	P17	6	0	0
F3	3	3	0	0	0	0	0	P18	18	0	18
F4	3	0	3	0	0	0	3	P19	6	0	0
F5	3	0	3	0	0	0	3	P20	6	0	0
S12	6	2	1	3	0	0	0	ES1	1	1	0
S12	6	0	0	6	0	0	0	ES2	3	1	2
S2	6	0	0	6	0	0	0	ES3	3	2	1
S2	6	0	0	6	0	0	0	ES4	2	2	0
S3	3	3	0	0	0	0	0	ES5	1	0	1
S3	3	2	0	1	0	0	0	ES6	2	0	2
S4	3	3	0	0	0	0	0	CF1	2	0	0
S4	3	2	0	1	0	0	0	CF2	2	0	0
S5	1	0	0	1	0	0	0	CF3	2	0	0
S6	1	0	0	1	0	0	0	LI1	3	0	0
S7	1	0	0	1	0	0	0	LI2	3	0	0
P11	5	0	0	5	0	0	0				

WORK AS CONSTRUCTED

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO

SECTION 1

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.

GIRDER SPANS - ASSEMBLY

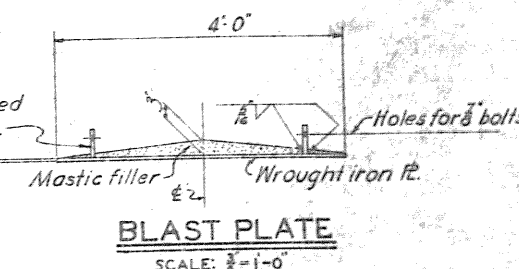
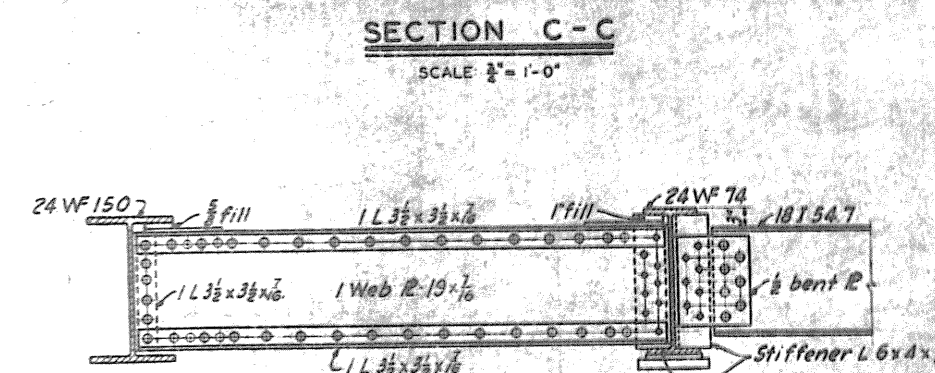
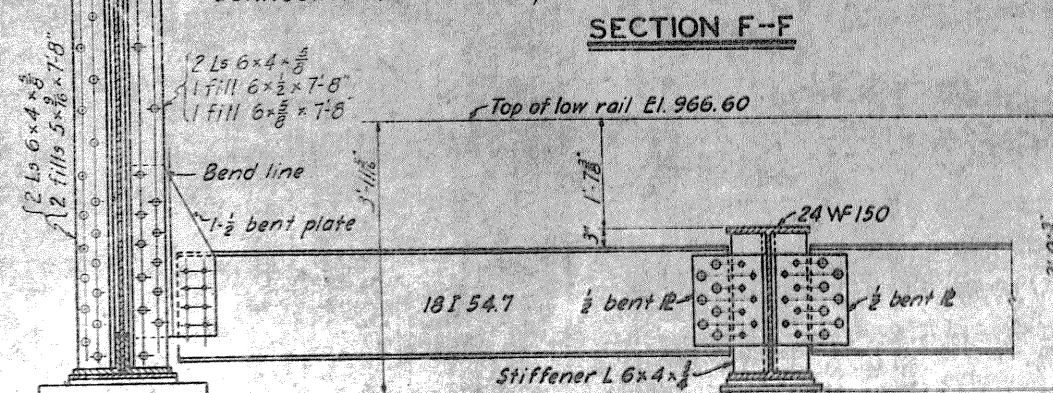
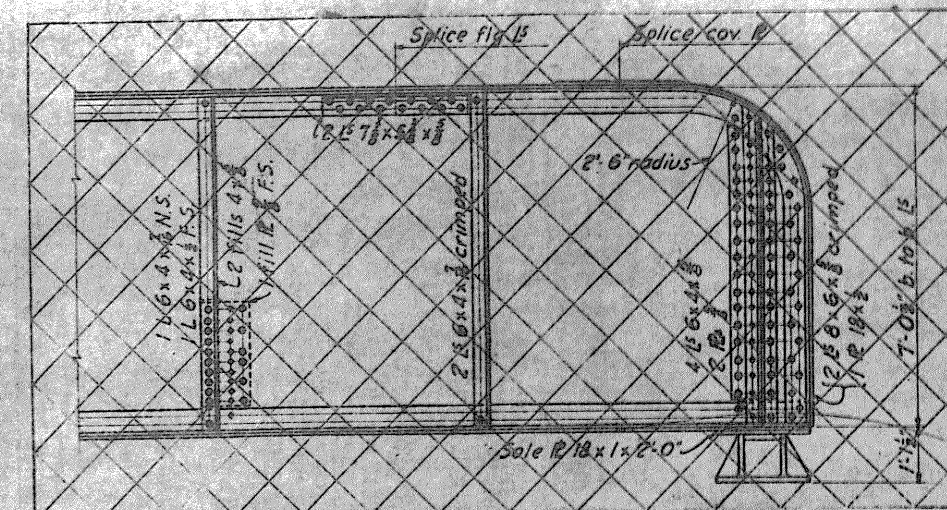
SHEETS
SHEET NO. 18'-0" 2' 4' 6' 8' 10' 12' 14'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., AUG. 1942

SUBMITTED BY: [Signature] APPROVED BY: [Signature]
MAJOR, CORPS OF ENGINEERS COL, CORPS OF ENGINEERS

DRAWN BY: W.P.G. TRACED BY: W.E.T. CHECKED BY: A.W.S.-HUB. FILE NO. 0271-PM-66/30A

THIS DWG. SUPPLEMENTS DWG. NO. 66/30



**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
60 FT. GIRDER SPAN - DETAILS

IN 76 SHEETS SHEET NO. 20 SCALE: 1"=10'

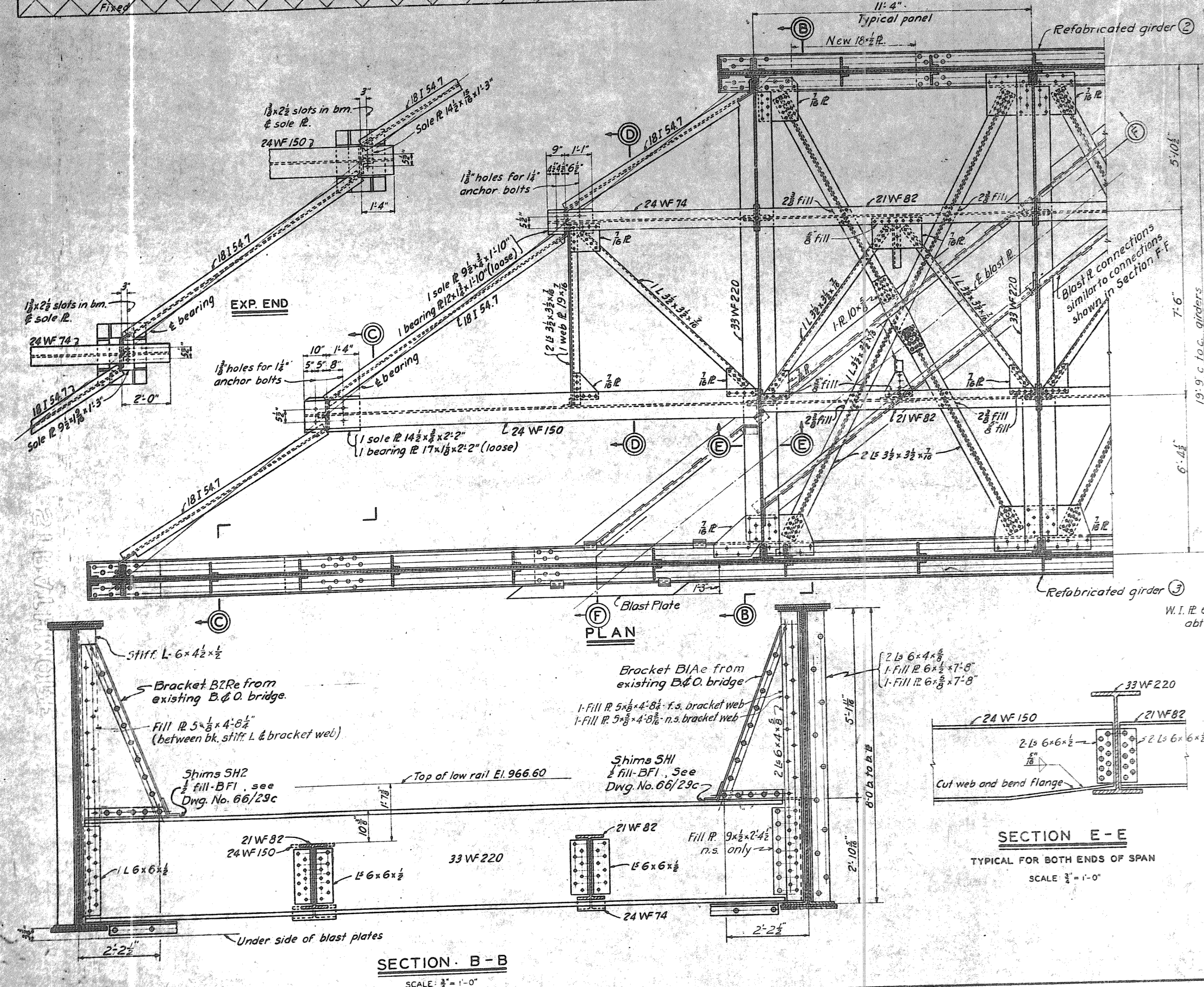
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY, 1941

SUBMITTED: *[Signature]* ORIGINAL ENGINEER APPROVED: *[Signature]* MAJOR, CORP OF ENGINEERS

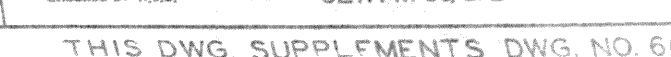
DRAWN BY A.J.M. TRANSMITTED WITH LETTER
TRACED BY N.W.D.-A.B. FILE No 0271-PM-66/31 DATED

CHECKED BY H.O.B. FILE NO. 67-1087-1

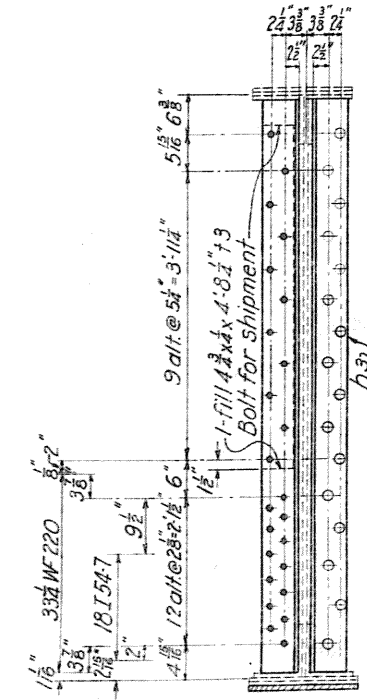
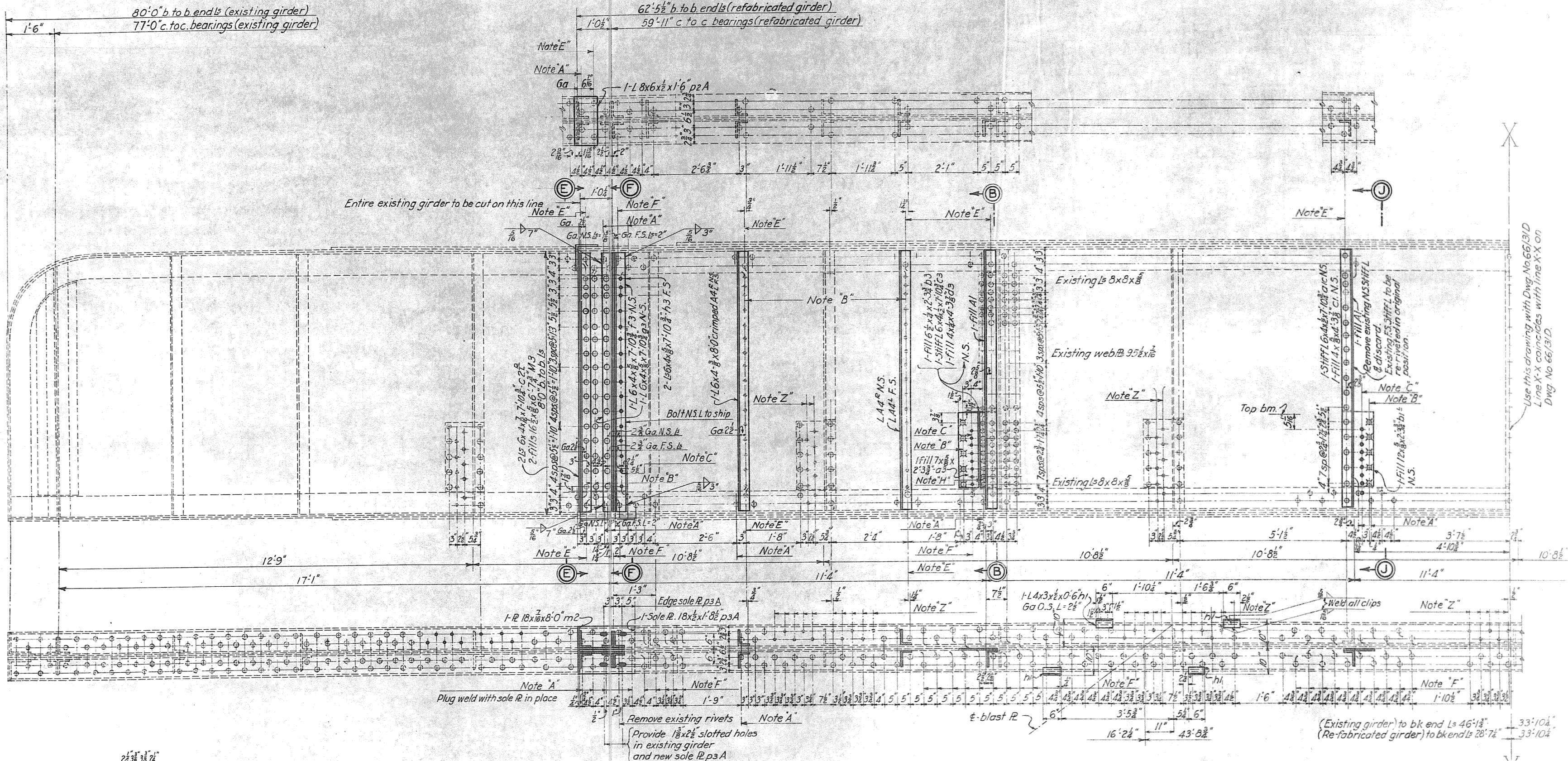
WORK AS CONSTRUCTED





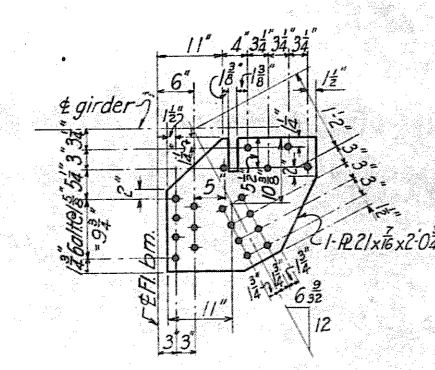


THIS DWG. SUPPLEMENTS DWG. NO. 66/3



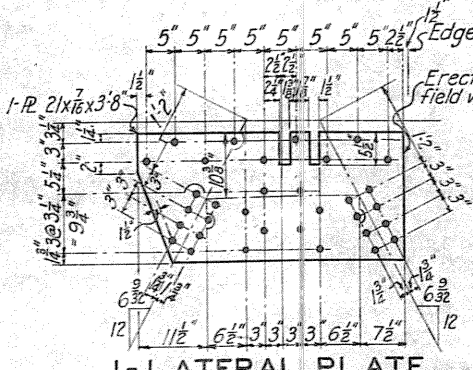
SECTION F-F

For details of existing floor beam bracket B/B, see Dwg. No. 66/31B.

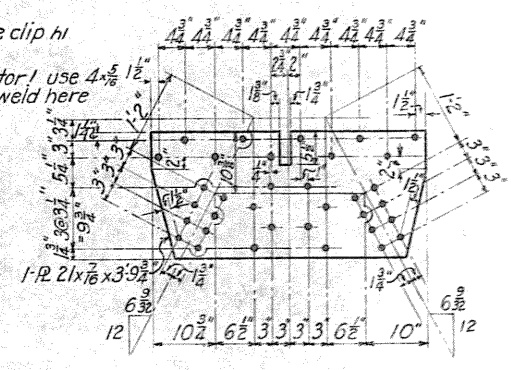


I-LATERAL PLATE REQ'D. MK. P15

Lateral plates may be shop or field riveted to girder at option of contractor.



I-LATERAL PLATE REQ'D. MK. P16



I-LATERAL PLATE REQ'D. MK. P17

I-GIRDER REQUIRED MK. ③

NOTES CONTINUED

Note F - Remove existing rivets on this line and leave holes open for field connection.
Note H - Knock off rivet heads on splice plate and plug-weld rivet shank through hole in fill.
Note M - Drive countersunk rivets in these holes.
Note W - Knock off rivet heads on underside of sole plate, weld shank and grind smooth.
Note Z - Drive rivets in these holes.
Remove any existing flange rivets not otherwise shown, necessary for assembling stiffeners to girder, and plug-weld holes for same.
Material marked on these drawings with the suffix letter 'e' is to be obtained from the existing B.O. Bridge.
All open holes remaining after bridge is erected must be plugged either by welding or riveting at the Erectors option; such option to be approved by the Contracting Officer.
Rivets $\frac{3}{4}$ open holes $\frac{1}{2}$ unless otherwise noted.
Section B-B same as Section B-B on Dwg. No. 66/31A.
Section E-E same as Section E-E on Dwg. No. 66/31B.
Section J-J opposite hand to Section B-B on Dwg. No. 66/31A.

NOTES

Note A - Remove existing rivets on this line and plug weld holes for same.
Note B - Provide new holes on this line line for shop rivets.
Note C - Provide new holes on this line for field connection.
Note D - Plug-weld existing holes on this line.
Note E - Remove existing rivets on this line and drive new shop rivets.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO

SECTION 1

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.

60 FT. GIRDER-DETAILS

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

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., AUG. 1942

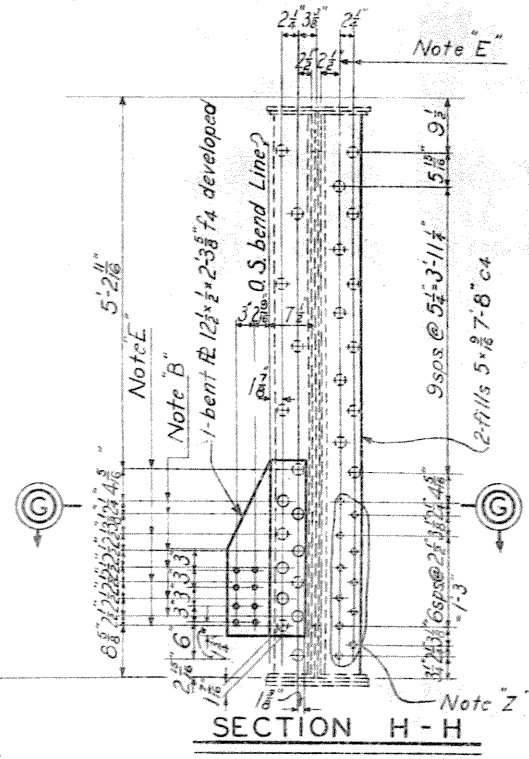
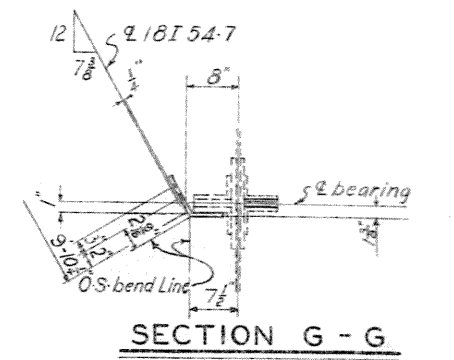
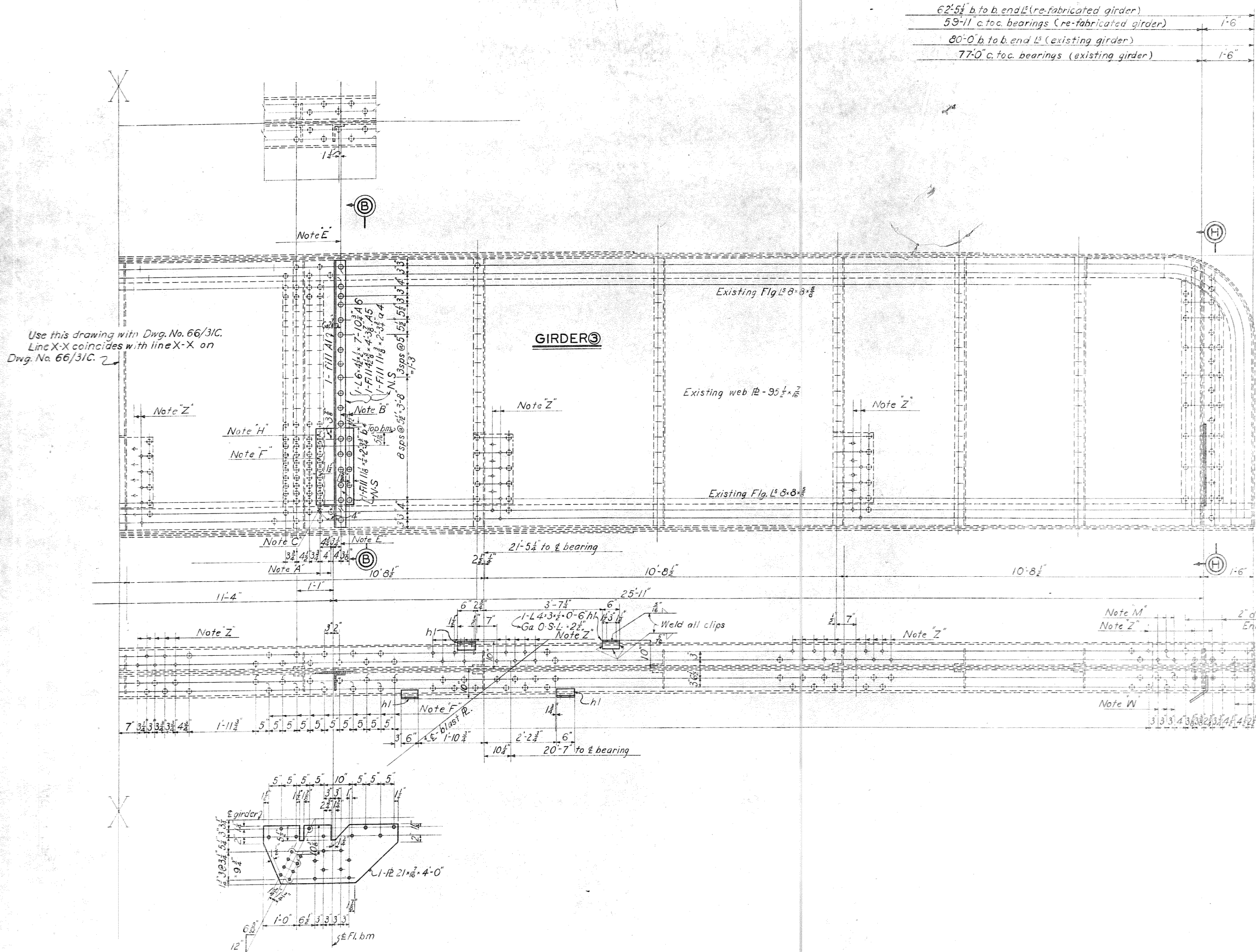
SUBMITTED BY: [Signature] APPROVED BY: [Signature]
MAJOR CORPS OF ENGINEERS COL. CORPS OF ENGINEERS

DRAWN BY: A.W.S. TRACED BY: E.W.H. CHECKED BY: H.U.B. TRANSMITTED WITH LETTER

FILE NO. 0271-PM-66/31C DATED

WORK AS CONSTRUCTED

THIS DWG. SUPPLEMENTS DWG. NO. 66/31D



NOTES
For notes, see Dwg. No. 66/31C.

I-LATERAL PLATE REQD. MK. P18
Lateral plates may be shop or field riveted to girder at option of contractor

WORK AS CONSTRUCTED

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO

SECTION 1
P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
60 FT. GIRDER-DETAILS

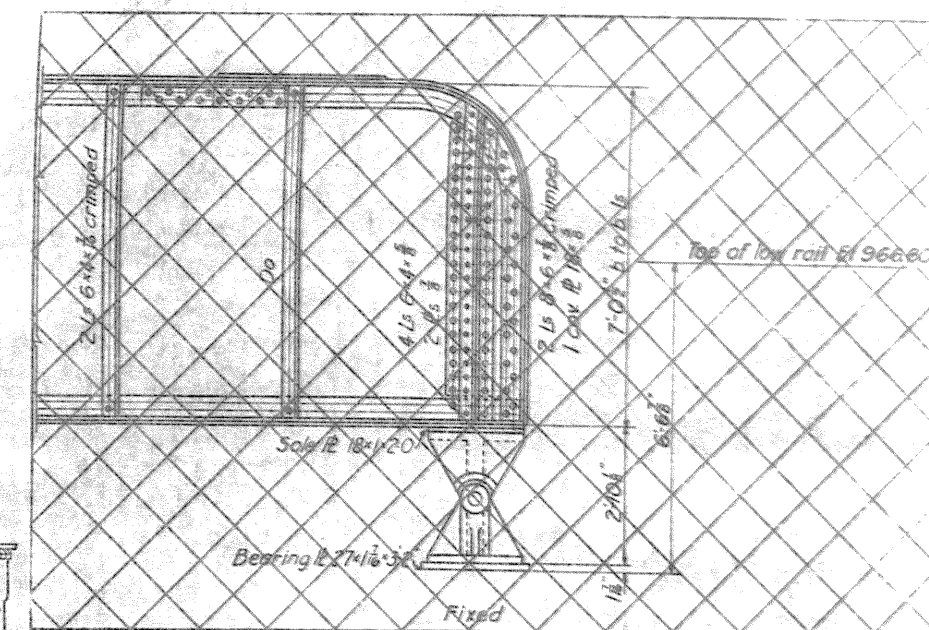
IN SHEETS SHEET NO. 1 SCALE: 3/4" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. AUG. 1942

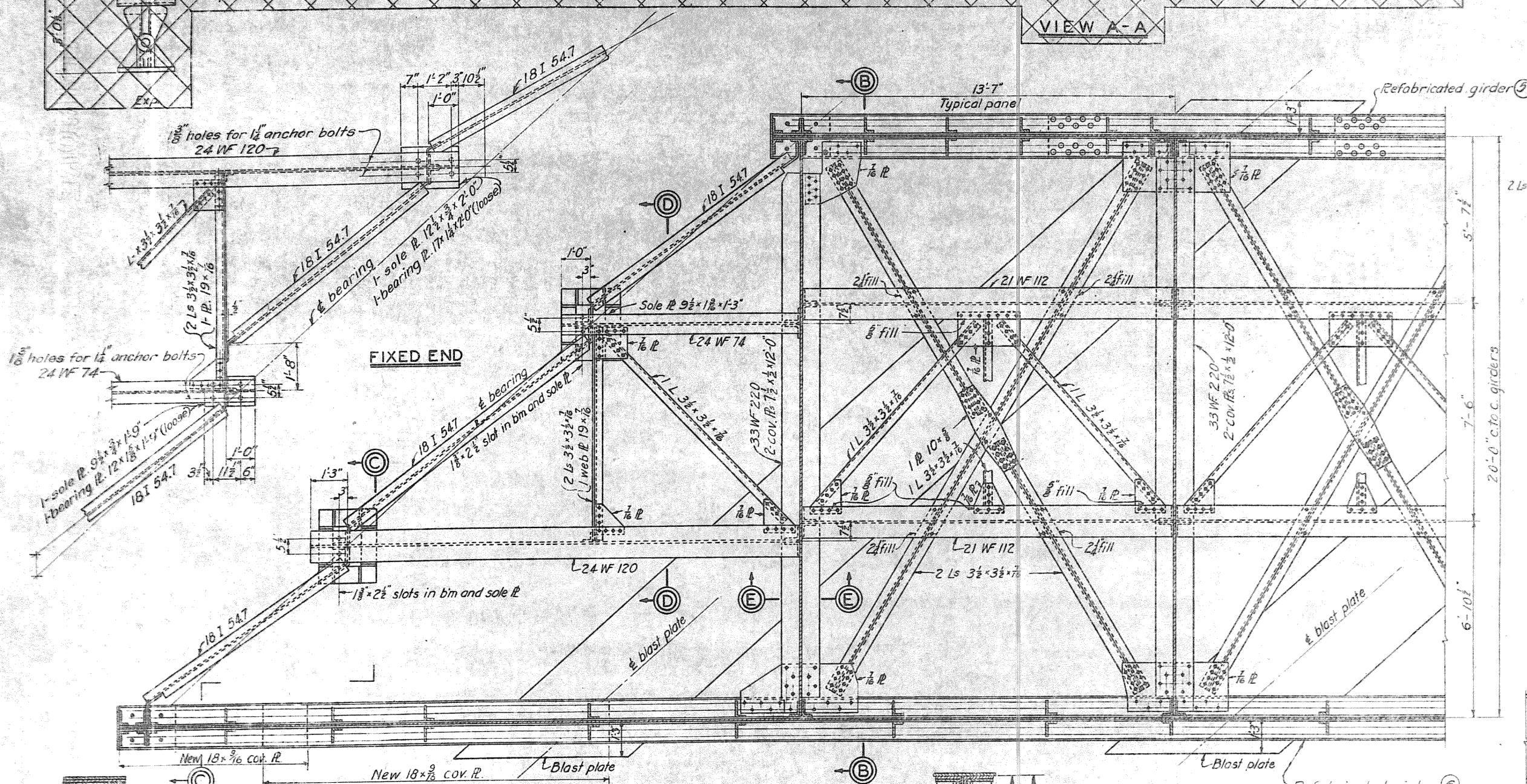
SUBMITTED: [Signature] APPROVED: [Signature]
MAJOR, CORPS OF ENGINEERS MAJOR, CORPS OF ENGINEERS

DRAWN BY A.W.S. TRACED BY A.E.H. CHECKED BY H.U.B. FILE NO. 0271-PM-66/31D DATED

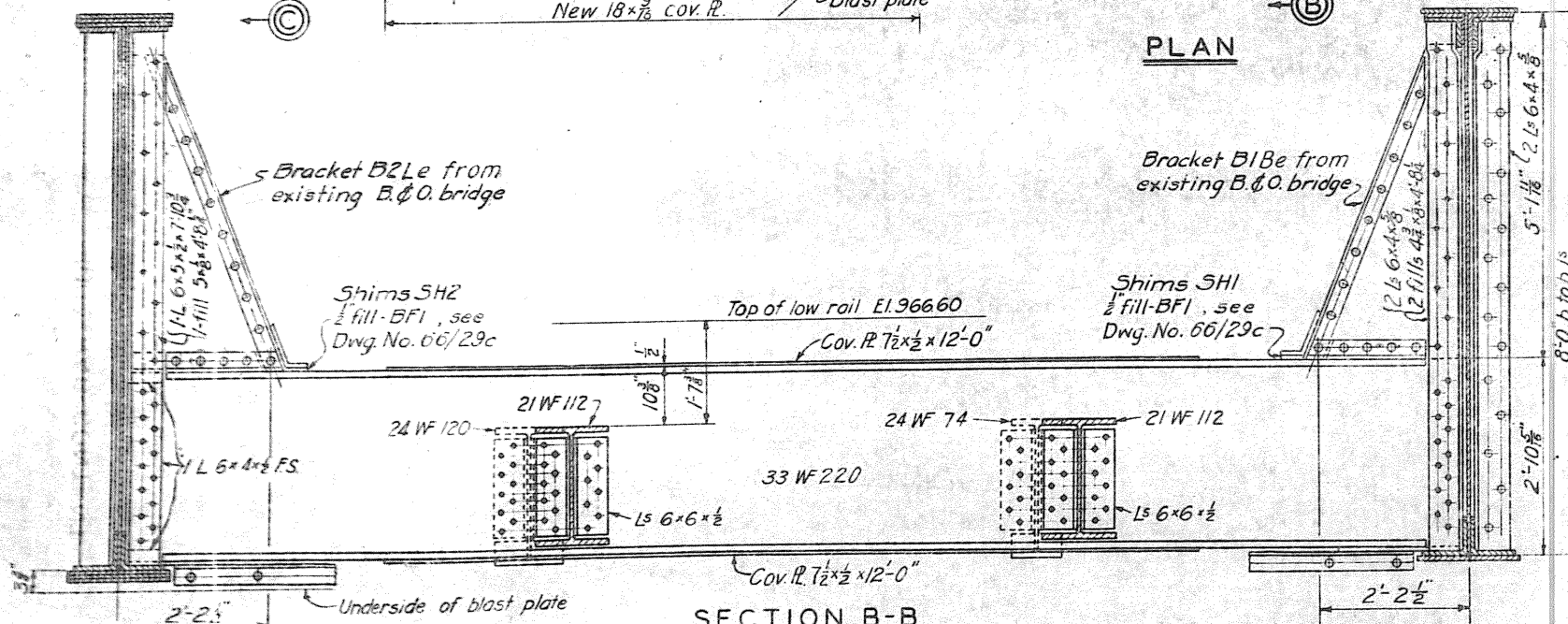
H.U.B. 11-1-44	REVISED AS CONSTRUCTED
BY DATE	CHARACTER
REVISIONS	



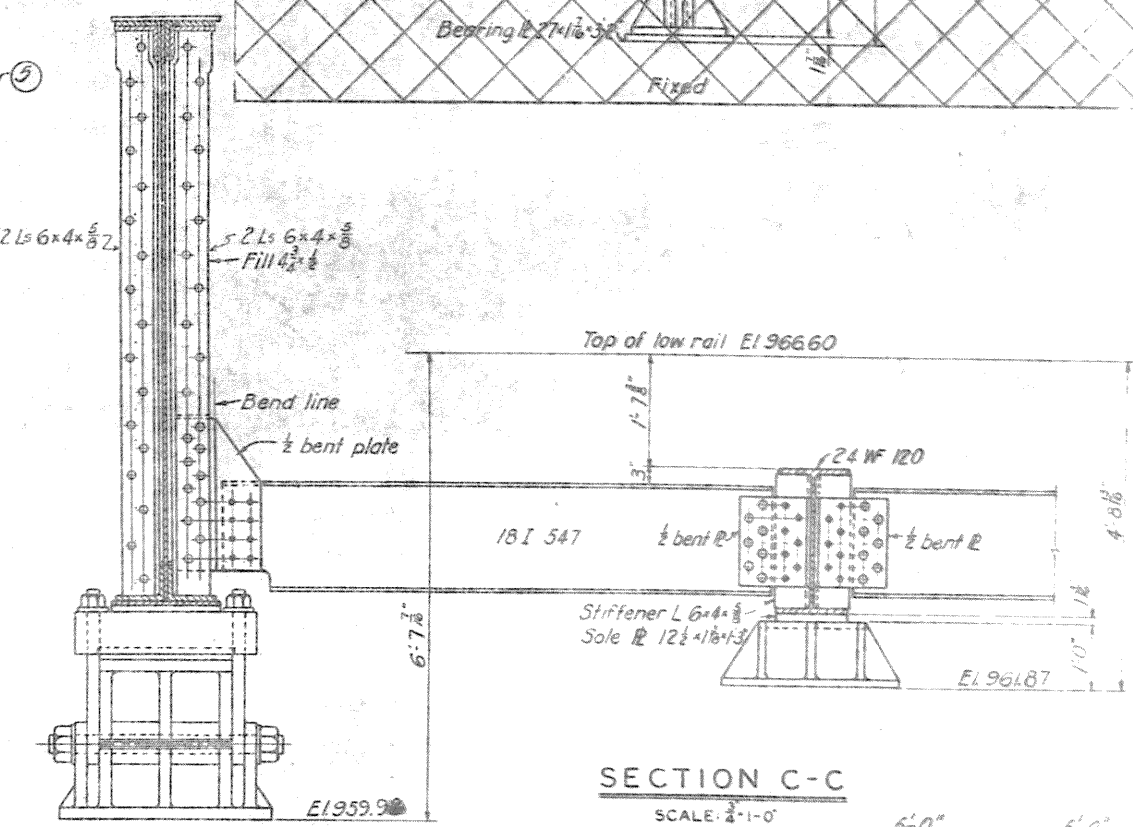
~~VIEW A-A~~



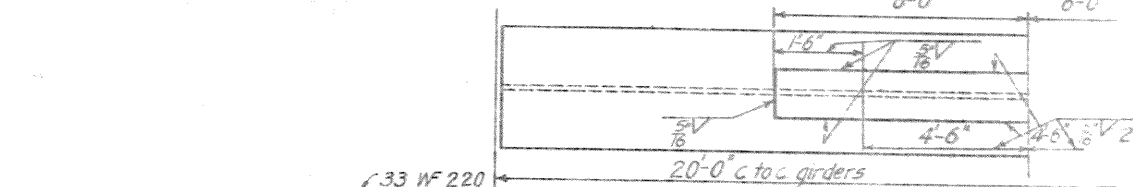
PLAN



SECTION B-B
SCALE: $\frac{3}{4}'' = 1'-0''$



SECTION C-C



PLAN
FLOOR BEAMS

NOTES

Design - A.R.E.A. Specifications For Steel Railway Bridges dated 1938 except locomotive loading and impact which are shown on Dwg. No. 66/31.
Workmanship - A.R.E.A. Specifications For Steel Railway Bridges dated 1938.
Material - A.R.E.A. Specifications For Steel Railway Bridges dated 1940.
Blast plates are to be provided for each track under span, and securely fastened to bridge.
For details of blast plates and typical blast plate connections see Dwg. No. 66/31.
All rivets $\frac{3}{4}$ "

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

SECTION 1

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
77 FT. GIRDER SPAN - DETAILS

IN 76 SHEETS SHEET NO. 30 SCALE: $\frac{1}{2}'' = 1'-0''$

	12	6	0	1	2	3	4
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U.S. ENGINEER OFFICE HUNTINGTON, W. VA. 10

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. M

SUBMITTED: *Way Johnson* APPROVED: *OK Faller*

Principal Engineer

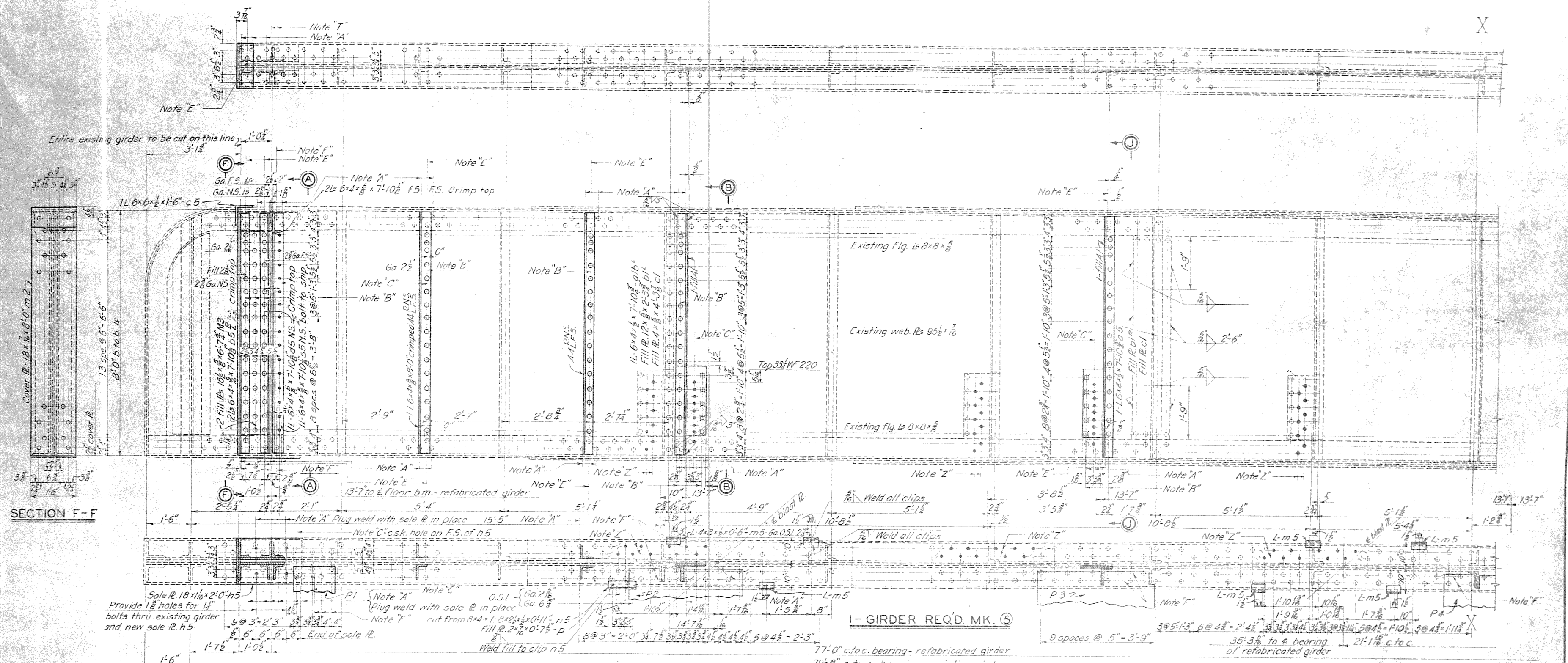
FILE NO 0375-PM-66/32

CHECKED BY H.U.B. FILE NO 0277-FBI-0035 DATED

WORK AS CONS

H.U.B. 11-1-44	REVISED AS CONSTRUCTED
A.R.N. 16-15-42	REVISED GIRDERS & FLOORBEAM BRACKETS.
A.R.N. 1-30-42	REVISED FOR MATERIAL SUBSTITUTION.
A.R.N. 12-23-41	REVISED FLOOR BEAMS
A.R.N. 10-18-41	REVISED SECTIONS 9-B & C-C. REMOVED DETAIL OF BLAST PLATE
BY DATE	CHARACTER
R E V I S I O N S	

WORK AS CONSTRAINING



NOTES CONTINUED

Note "F" - Remove existing rivets on this line and leave holes open for field connections.
Note "T" - Remove existing rivet heads F.S. Continuous weld around rivet heads N.S.
Note "Z" - Drive rivets in these holes. Remove any existing flange rivets, not otherwise noted, necessary for assembling stiff Ls to girder and plug-weld holes for same.
Material marked on these drawings with the suffix letter "e" is to be obtained from the existing B and O. bridge.
All open holes remaining after bridge is erected must be plugged either by welding or riveting at the Erectors option; such option to be approved by the Contracting Officer.
Rivets $\frac{3}{4}$ " open holes $\frac{1}{8}$ " diameter unless otherwise noted.
Use this drawing with Dwg. No. 66/32 B.
Line X-X coincides with line X-X on Dwg. No. 66/32 B.

NOTES

Note "A" - Remove existing rivets on this line and plug-weld holes for same.
Note "B" - Provide new holes on this line for shop rivets.
Note "C" - Provide new holes on this line for field connections.
Note "D" - Plug-weld existing holes on this line.
Note "E" - Remove existing rivets on this line and drive new shop rivets.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO

SECTION 1

P. R. R. BRIDGE OVER B. & O. R.R. - W. & L.E. RY.

77 FT. GIRDER-DETAILS

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

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., AUG. 1942

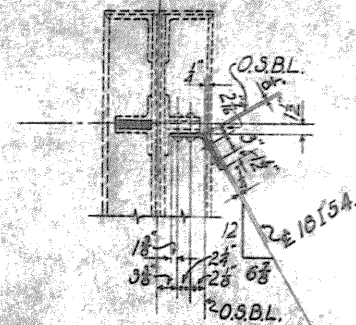
SUBMITTED BY: [Signature] APPROVED BY: [Signature]
MAJOR, CORPS OF ENGINEERS COL., CORPS OF ENGINEERS

DRAWN BY: W.P.G. TRANSMITTER WITH LETTER
TRACED BY: W.E.T. CHECKED BY: A.W.S.-H.B. FILE NO. 0271-PM-66/32A DATED

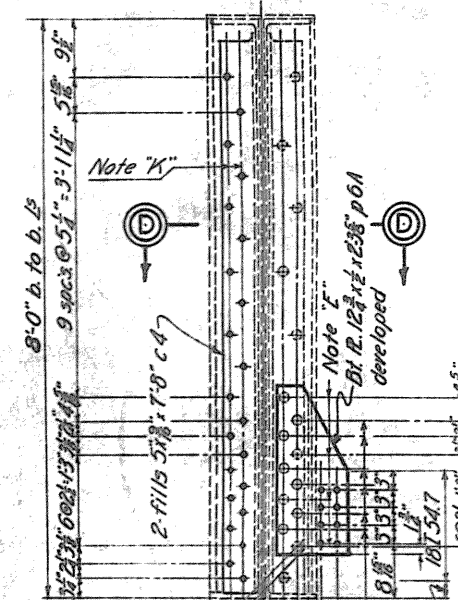
HUB	II-4-4	REVISED AS CONSTRUCTED
BY	DATE	CHARACTER
REVISIONS		

WORK AS CONSTRUCTED

THIS DWG. SUPPLEMENTS DWG. NO. 66/32



SECTION D-D



SECTION C-C

Remove existing sole plate and replace with new plate V6.

Note "A"
Plug weld with sole
R V6 in place

Note "D"
Plug-weld with sole PL V6 in place.
Provide $1\frac{3}{8}$ " holes for $1\frac{1}{4}$ " bolts thru
existing girder and new sole PL V6
Note "E"

NOTES

Note "Z" - Drive new shop rivets thru existing holes. Remove any existing flange rivets not otherwise noted, necessary for assembling stiff ~~2~~ to girder and plug weld holes for same.

Material on these drawings marked with the suffix letter 'e' is to be obtained from the existing B. & O. bridge.

All open holes remaining after bridge is erected must be plugged either by welding or riveting at the Erector's option; such option to be approved by the Contracting Officer.

Rivets $\frac{7}{8}$ " open holes $\frac{15}{16}$ " diameter unless otherwise noted.

Use this drawing with Dwg. No. 66/32A.
Line X-X coincides with line X-X on Dwg. No. 66/32A.

Note A-Remove existing rivets on this line and plug-weld holes for same.
Note B-Provide new holes on this line for shop rivets.
Note C-Provide new holes on this line for field connections.
Note D-Plug-weld existing holes on this line.
Note E-Remove existing rivets on this line and drive new shop rivets.

Note "F"-Remove existing rivets on this line and leave holes open for field connections.
Note "T"-Remove existing rivet heads F.S., continuous weld around rivet heads N.S.

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

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.

77 FT. GIRDER-DETAILS

IN SHEETS SHEET NO SCALE: $\frac{3}{4}'' = 1'-0''$

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., AUG. 1942

SUBMITTED: *Wm. Parker* MAJOR, CORPS OF ENGINEERS
APPROVED: *W.B. Higgins* COL., CORPS OF ENGINEERS

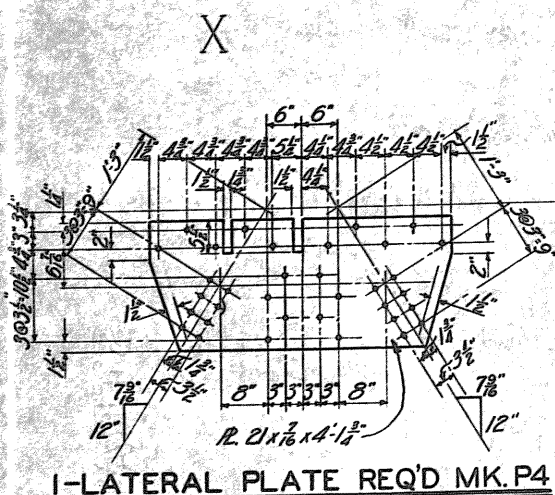
DRAWN BY W.P.G. TRANSMITTED WITH LETTER

TRACED BY L.C.L.
CHECKED BY A.W.S.-HUB. FILE NO. 0271-PM-66/32B DATED

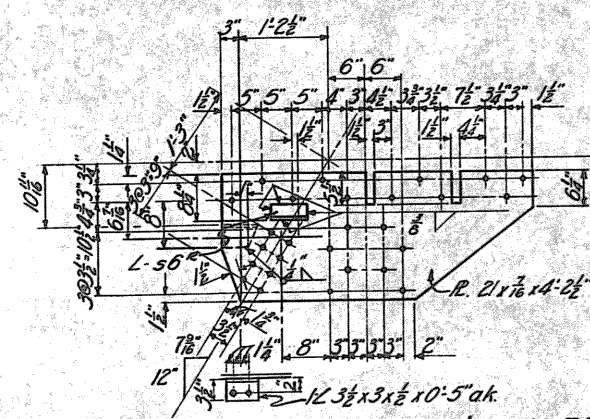
H.U.B	11-1-44	REVISED AS CONSTRUCTED
BY	DATE	CHARACTER
REVISIONS		

WORK AS CONSTRUCTED

THIS DWG. SUPPLEMENTS DWG.NO. 66/3

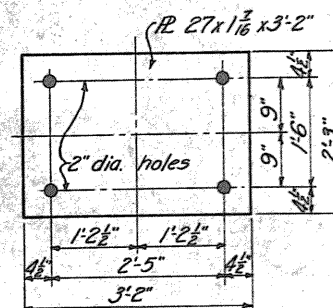


1-LATERAL PLATE REQ'D MK.P4

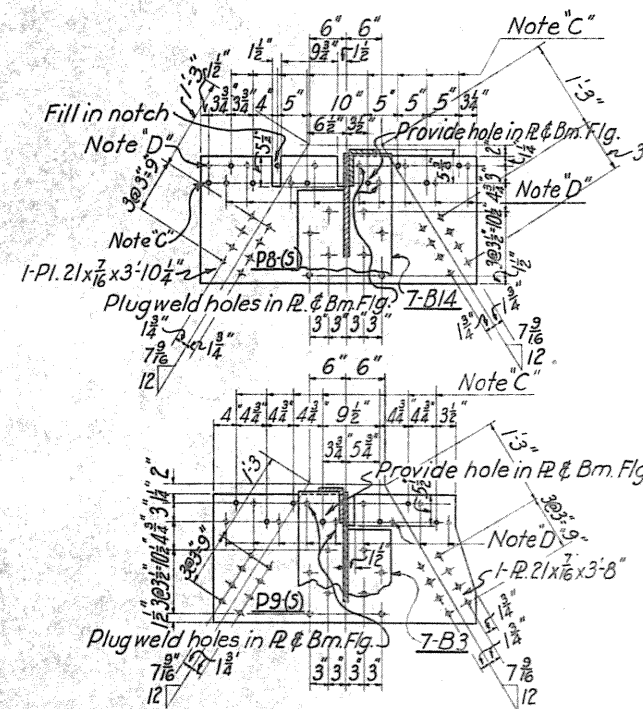
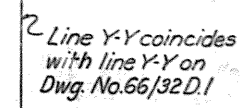


1-LATERAL PLATE REQ'D MK.P5

Lateral plates may be shop or field riveted to girder at option of contractor.



2-BEARING PLATES REQ'D MK. BP8

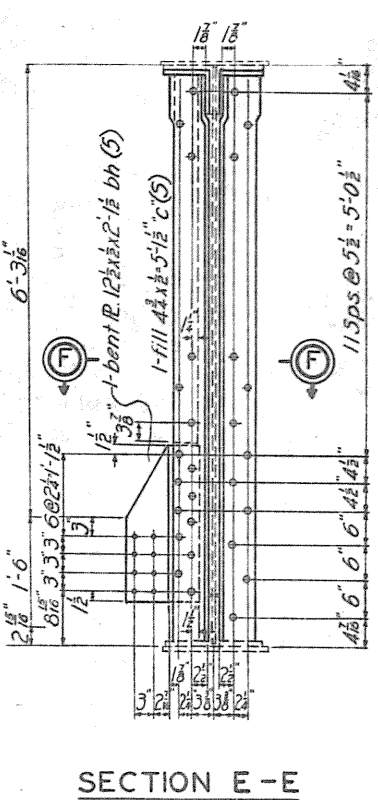


FOR
LATERAL PLATES P6-(S) P7-(S) P8-(S)&P9-(S)
FORT PITT CONT.C-7988 FLOOR BEAMS 7B3 -
7B14-7B17 FORT PITT CONTRACT C-7730

Note "A" - Remove existing rivets on this line and plug weld holes for same.
 Note "B" - Provide new holes on this line for rivets
 Note "C" - Provide new holes on this line for field connections.
 Note "D" - Plug weld existing holes on this line.
 Note "E" - Remove existing rivets on this line and drive new rivets.

TRACED BY N. J. B-E. W. H.
CHECKED BY S. B. FILE NO. 027i-PM-66/32C.1 DATED

THIS DWG. SUPPLEMENTS DWG.NO.66/32 & SUPERSEDES DWG.NO.66/32C



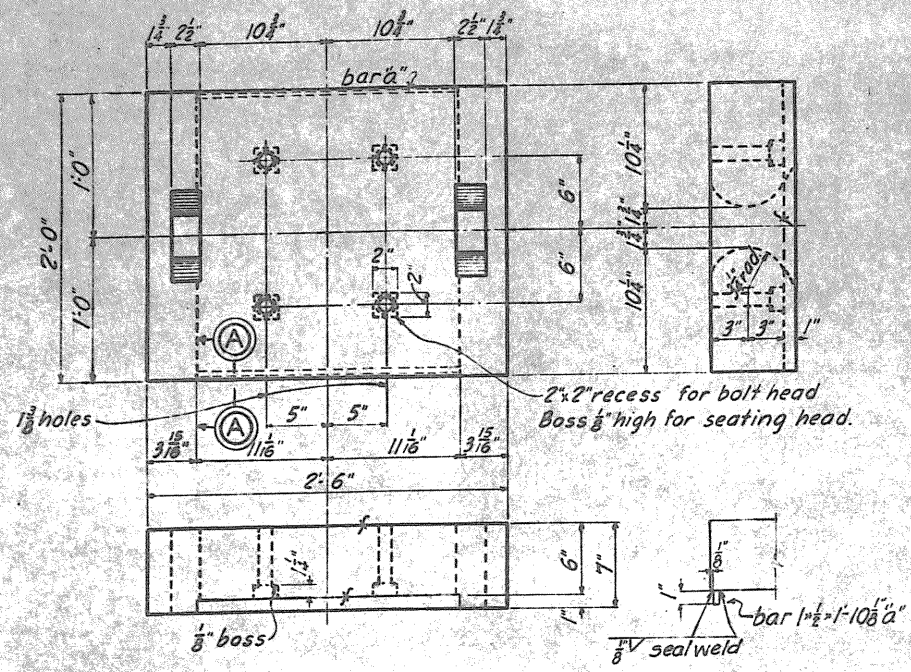
For general notes, see Dwg. No. 66/32 C.1

DRAWN BY A. W. S.
TRACED BY E. G. H.
CHECKED BY S. B.

DISTRICT ENGINEER
TRANSMITTED WITH LETTER

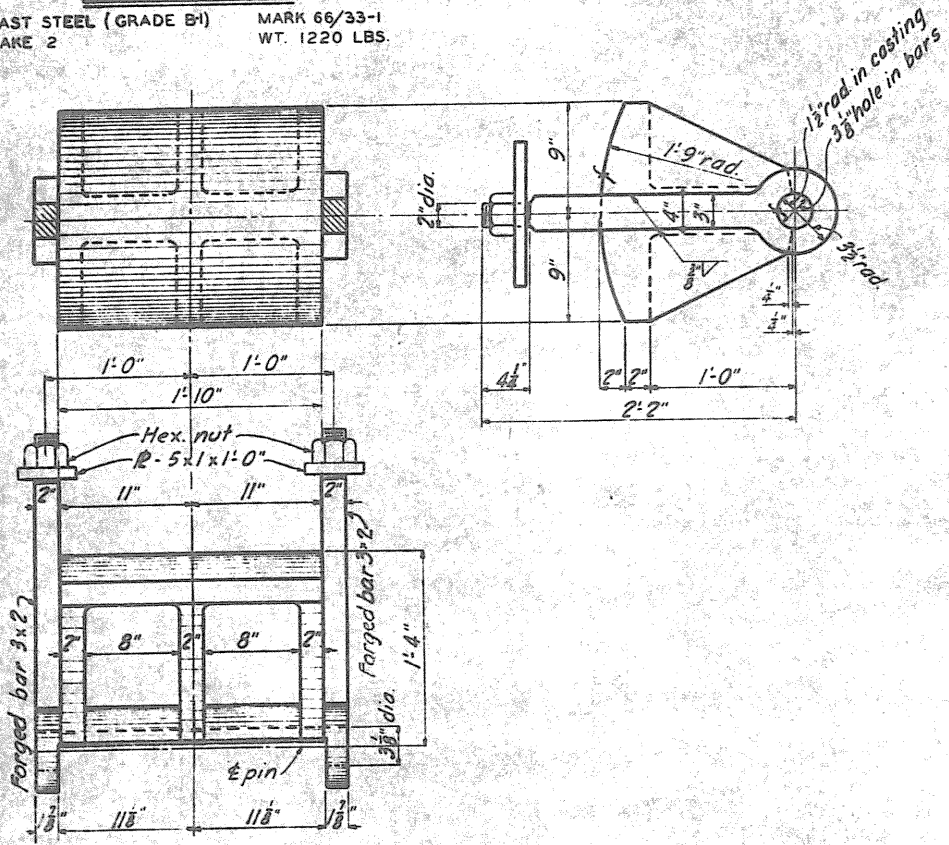
FILE NO. 027-PM-66/32D DATED

H.U.B.	II-I-44	REVISED AS CONSTRUCTED
BY	DATE	CHARACTER
		REVISIONS

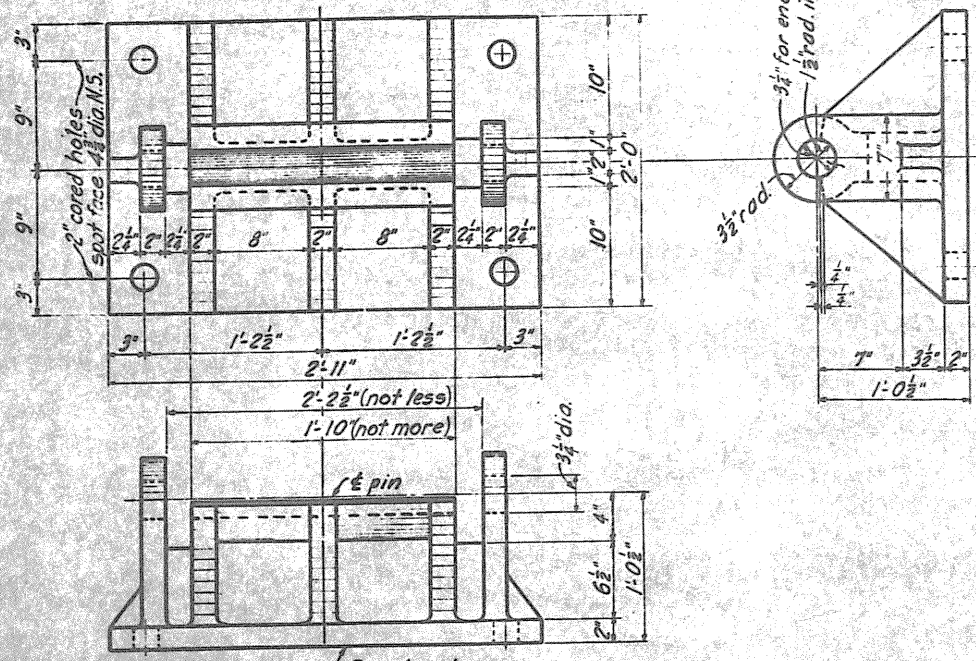


UPPER SHOE
CAST STEEL (GRADE B-1) MARK 66/33-1
MAKE 2 WT. 1220 LBS.

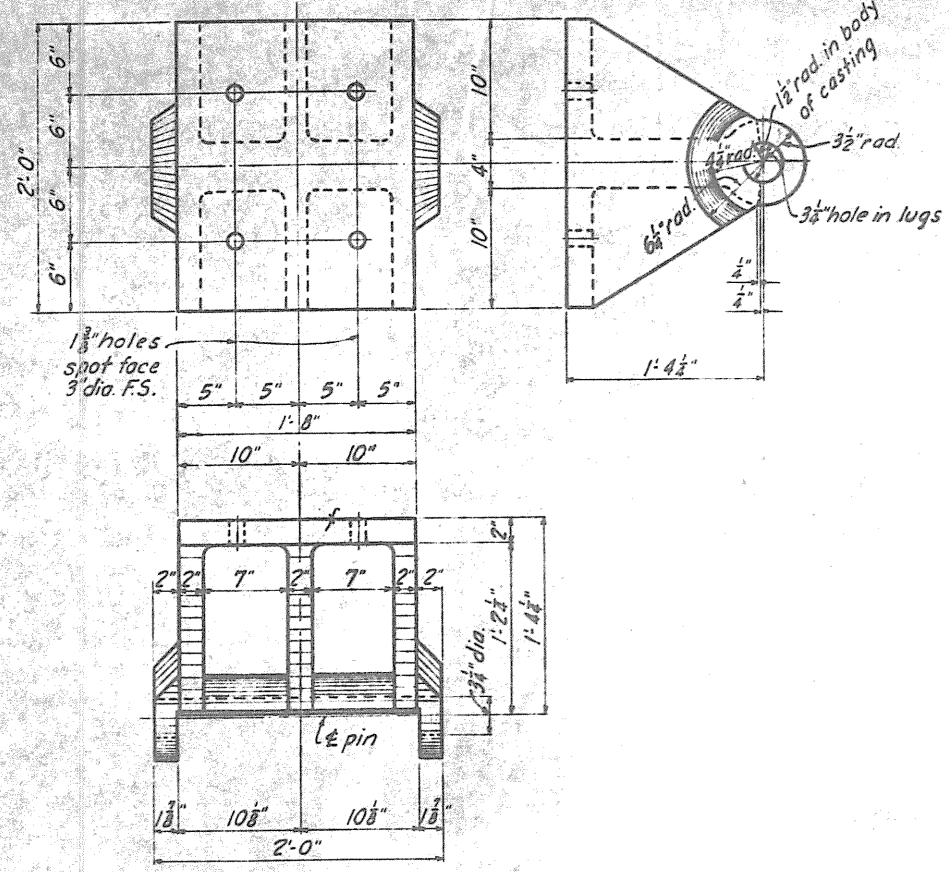
SECTION-A-A



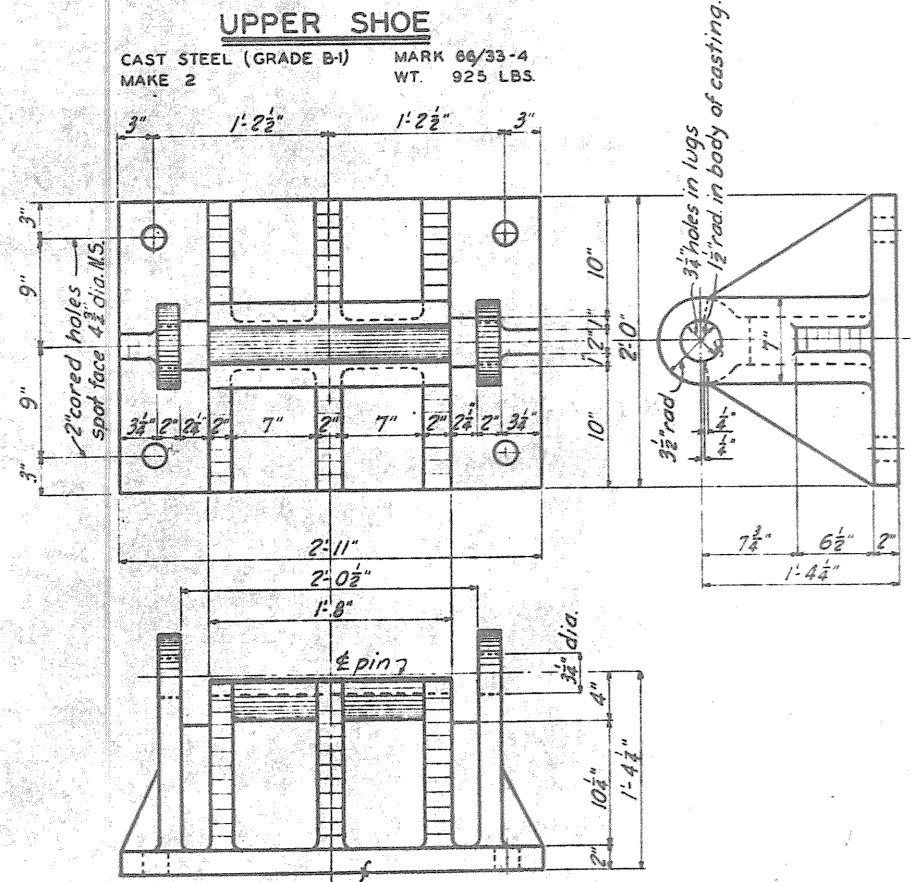
ROCKER
CAST STEEL (GRADE B-1) WITH FORGED STEEL
MARK 66/33-2 CAST STEEL WT. 855 LBS.
MAKE 2 FORGED STEEL WT. 142 LBS.



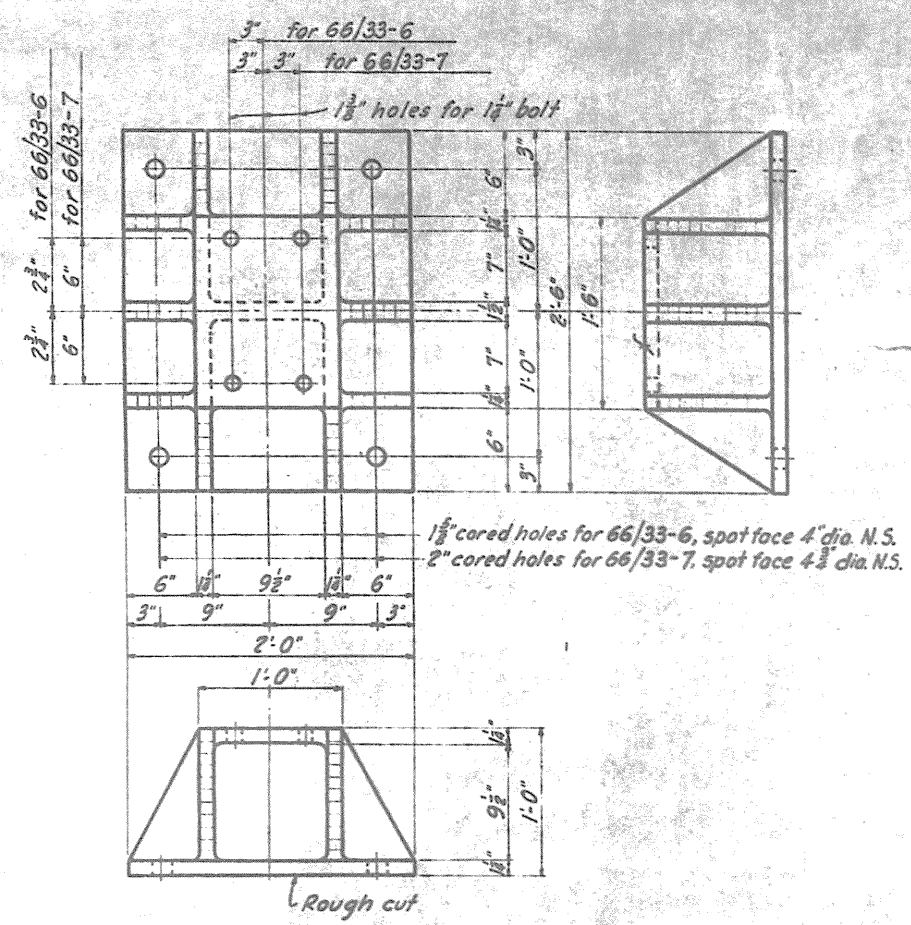
EXPANSION SHOE
CAST STEEL (GRADE B-1) MARK 66/33-3
MAKE 2 WT. 1070 LBS.



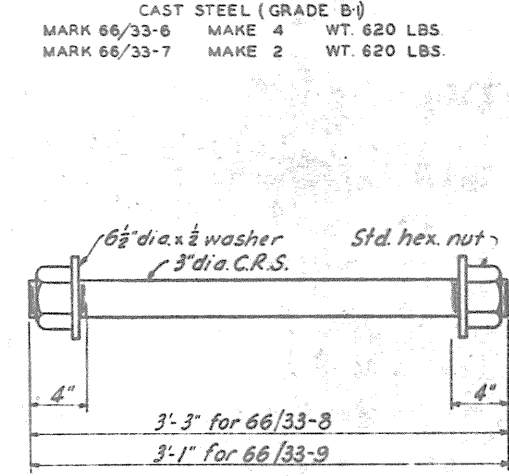
UPPER SHOE
CAST STEEL (GRADE B-1) MARK 66/33-4
MAKE 2 WT. 925 LBS.



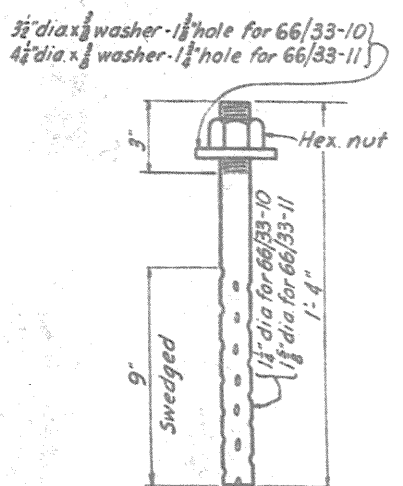
FIXED SHOE
CAST STEEL (GRADE B-1) MARK 66/33-5
MAKE 2 WT. 1260 LBS.



PEDESTAL CASTING
CAST STEEL (GRADE B-1)
MARK 66/33-6 MAKE 4 WT. 620 LBS.
MARK 66/33-7 MAKE 2 WT. 620 LBS.



PINS
COLD ROLLED STEEL
MARK 66/33-8 MAKE 2 WT. 102 LBS.
MARK 66/33-9 MAKE 2 WT. 98 LBS.



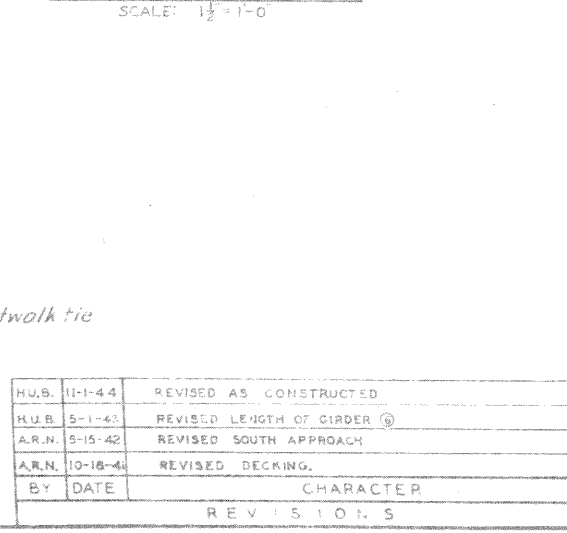
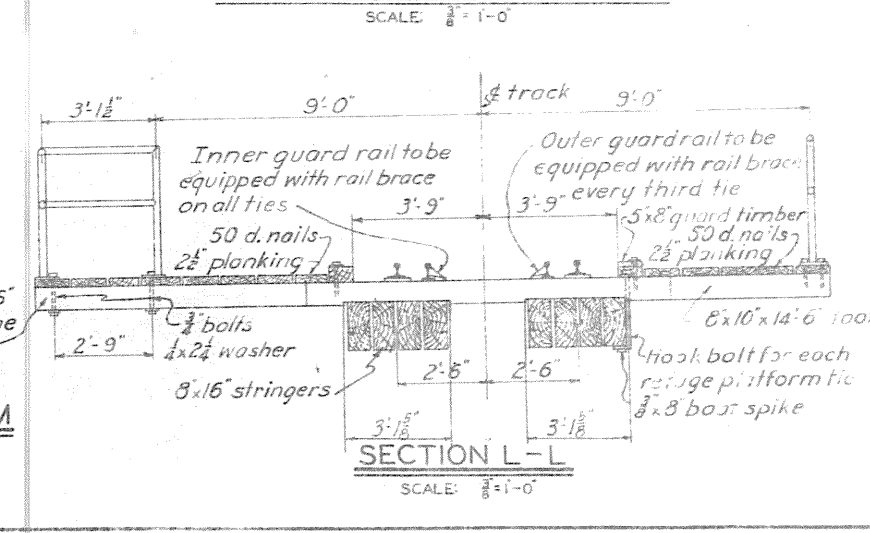
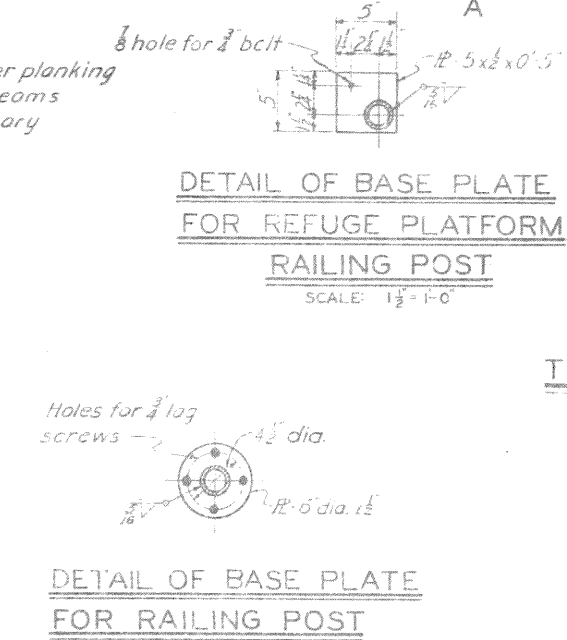
ANCHOR BOLT
STRUCT. STEEL
MARK 66/33-10 MAKE 16 WT. 7.5 LBS.
MARK 66/33-11 MAKE 16 WT. 12.5 LBS.
SCALE: 3"=1'-0"

NOTES
All fillets on castings 1/4" radius

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
CASTINGS

IN 76 SHEETS SHEET NO. 31 SCALE: 1 1/2"=1'-0"
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941
SUBMITTED: [Signature] APPROVED: [Signature]
DRAWN BY: H.S.M. TRANSMITTED WITH LETTER
CHECKED BY: H.S.M. FILE NO. 0271-PM-66/33 DATED

H.U.B.	11-44	REVISED AS CONSTRUCTED
BY	DATE	CHARACTER
		REVISIONS



ANCHOR BOLT DETAIL
TYPICAL FOR TIMBER PIERS
60 & 77' GRIDER SPANS
SCALE: $\frac{1}{2}'' = 1'-0''$

NOTES

Super-elevation shall be 1 inch.
Ties to be dapped over all stringers a minimum of 3
and no more than 1 1/2".
A refuge platform shall be constructed at each
end of steel spans as indicated.
For details of inner guard rail see Dwg No 66/53

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

**P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY
ANCHOR BOLT & TIE PLAN**

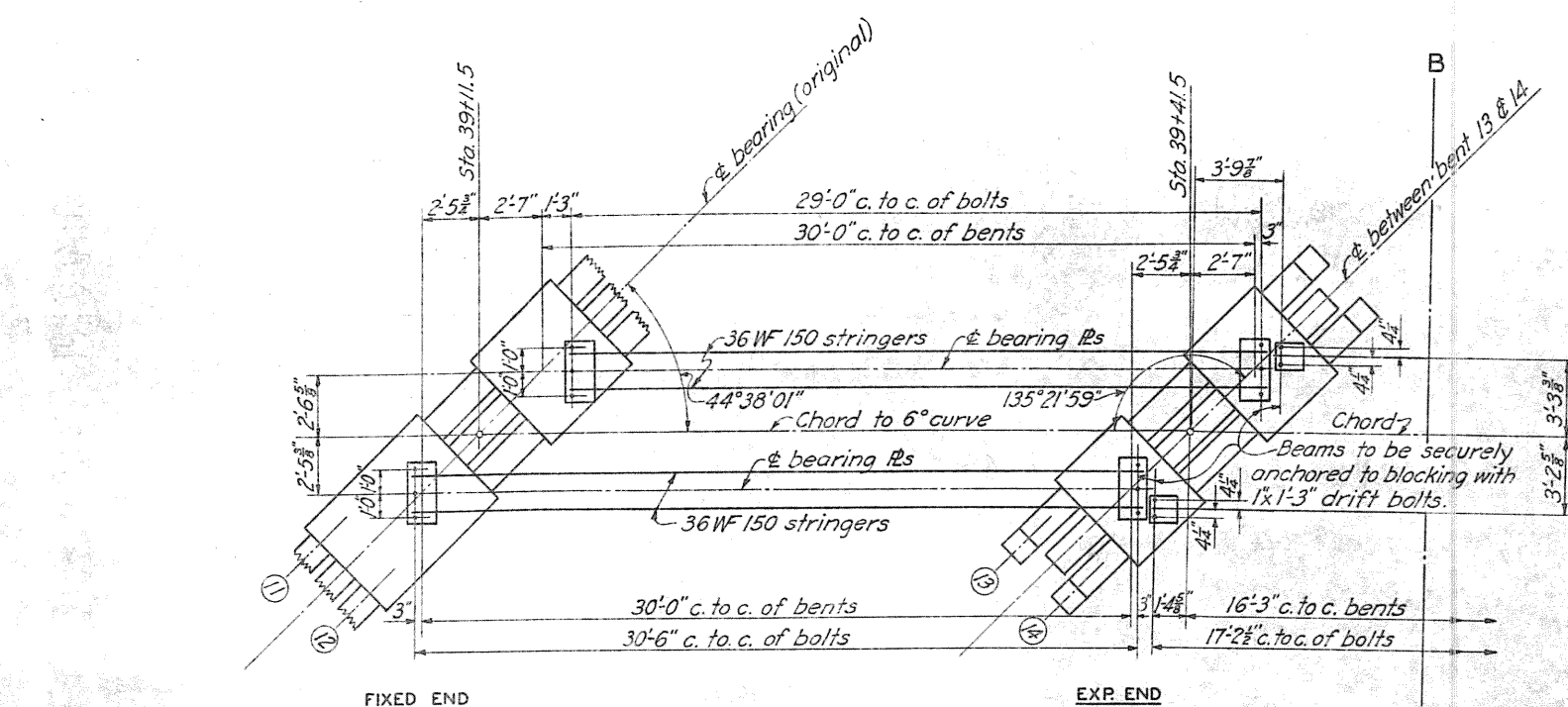
11-76 SHEETS SHEET NO. 32 SCALE: $\frac{1}{8}'' = 1'-0''$

12' 0' 2' 4' 6' 8' 10' 12' 4'

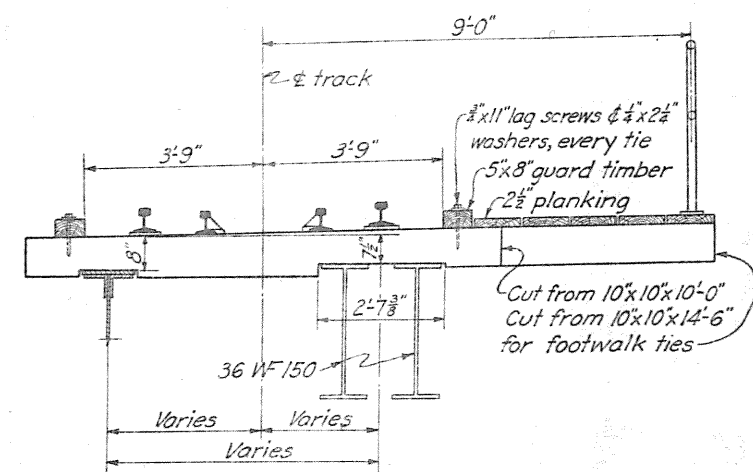
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1966

SUBMITTED: *Wm. C. Parker* PRINCIPAL ENGINEER APPROVED: *W. J. Talbot* MAJOR, CORPS OF ENGINEERS

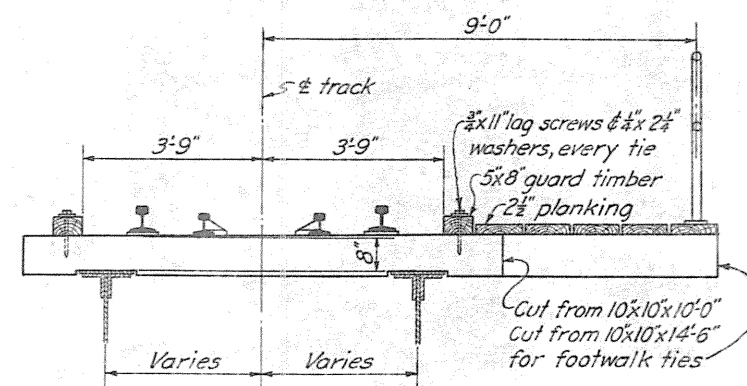
DRAWN BY: S.D.
CHECKED BY: H.S.M.
TRANSMITTED WITH LETTER
FILE NO. 0271-PM-66/34 DATED



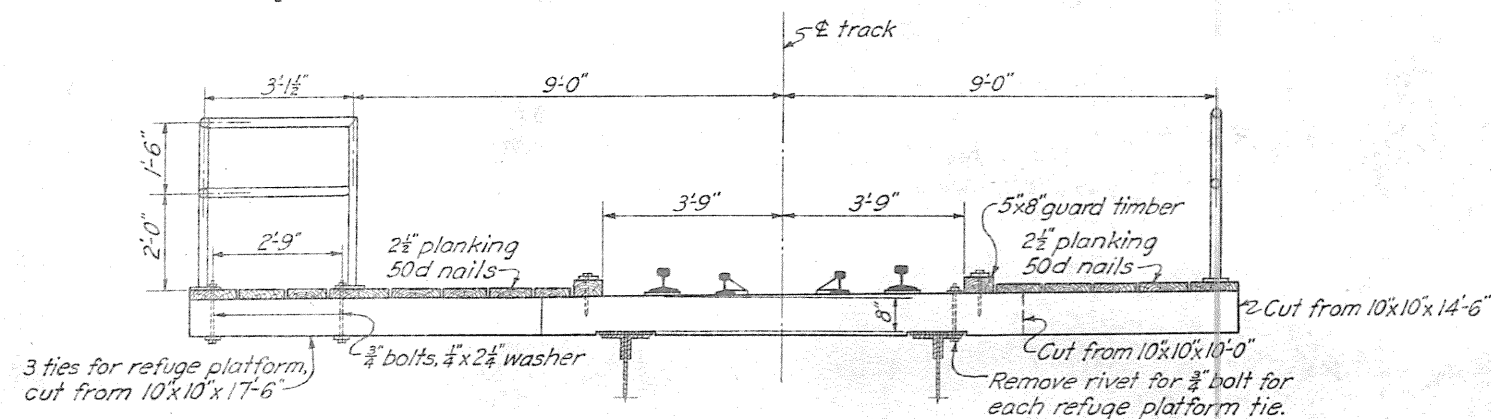
ANCHOR BOLT PLAN
SOUTH APPROACH



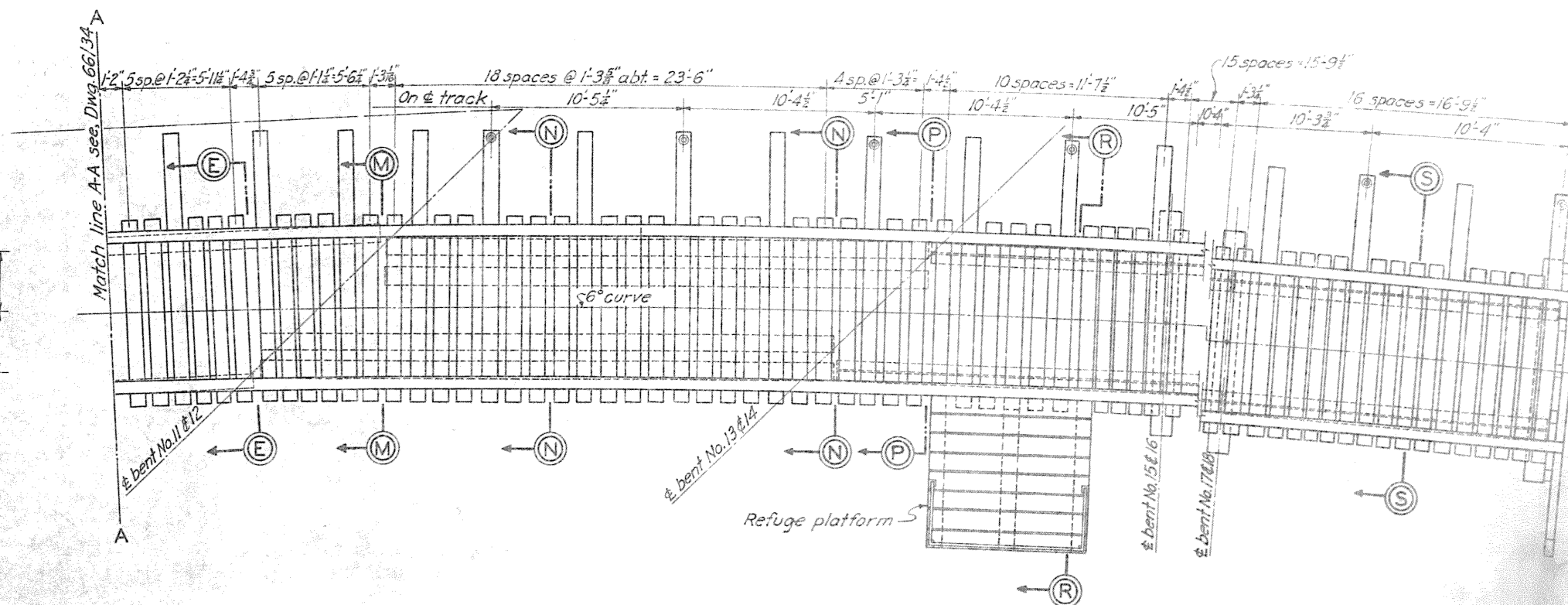
SECTION P-P
SCALE: 1/2" = 1'-0"



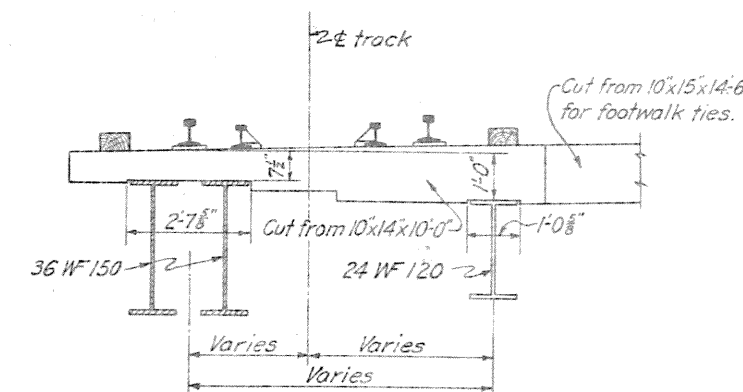
SECTION S-S
SCALE: 1/2" = 1'-0"



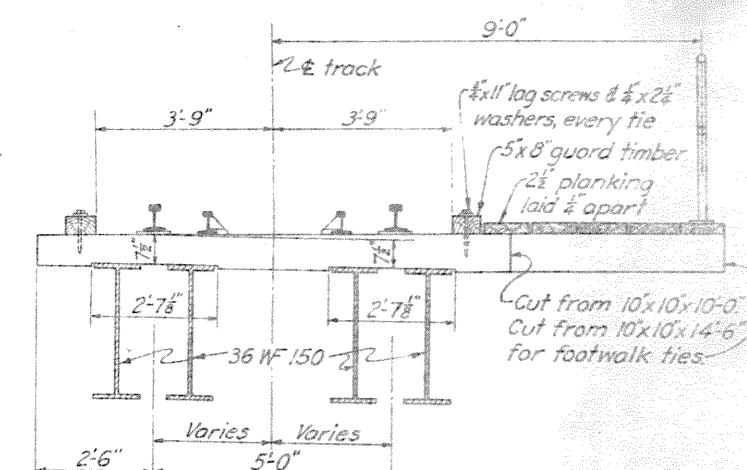
SECTION R-R
SCALE: 1/2" = 1'-0"



TIE PLAN



SECTION M-M
SCALE: 1/2" = 1'-0"



SECTION N-N
SCALE: 1/2" = 1'-0"

NOTES

- Super-elevation shall be 1 inch.
- Ties to be dapped over all stringers a minimum of 1/2" and not more than 1 1/2".
- Underside of ties shall be grooved as necessary for rivet heads on approach spans.
- For Section E-E, see Dwg. No. 66/34.
- For details of inner guard rail, see Dwg. No. 66/53.
- For endview of refuge platform and details of railing, see Dwg. No. 66/34.

WORK AS CONSTRUCTED

TUSCARAWAS RIVER LOCAL PROTECTION PROJECT MASSILLON, OHIO

SECTION 1

P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
ANCHOR BOLT & TIE PLAN

IN SHEETS SHEET NO. SCALE: 1/2" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., AUG. 1942

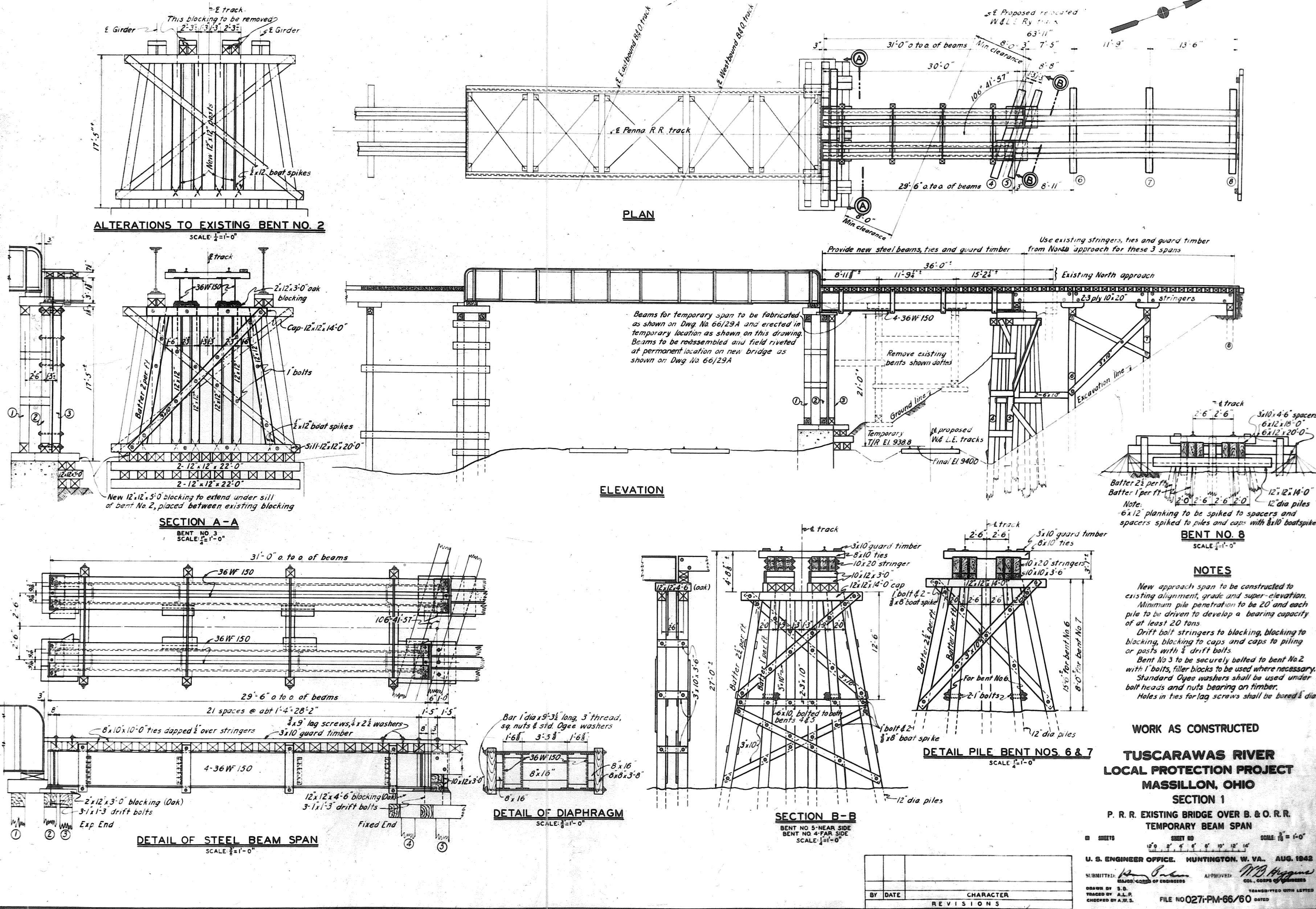
SUBMITTED: [Signature] APPROVED: [Signature]

MAJOR, CORPS OF ENGINEERS COL., CORPS OF ENGINEERS

TRANSMITTED WITH LETTER

FILE NO. 0271-PM-66/34A DATED

H.U.B. 11-1-44	REVISED AS CONSTRUCTED
H.U.B. 5-1-43	REVISED SECTIONS N-N, P-P, R-R & S-S.
BY DATE	CHARACTER
CHECKED BY H.U.B.	REVISIONS





IN 76 SHEETS SHEET NO. 33 SCALE: 1" = 20'

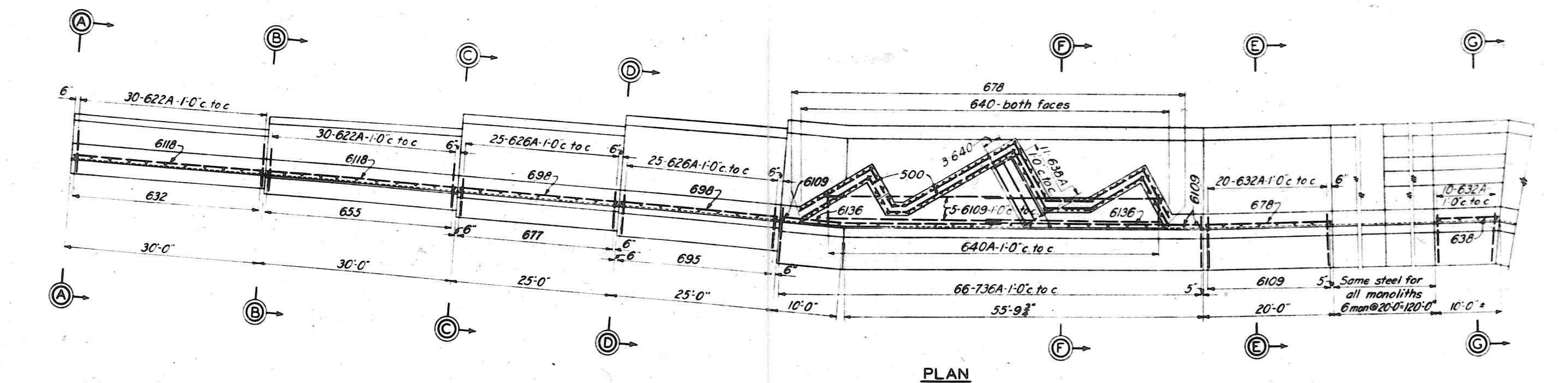
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY, 1961

SUBMITTED: Way Parker APPROVED: PA Faller

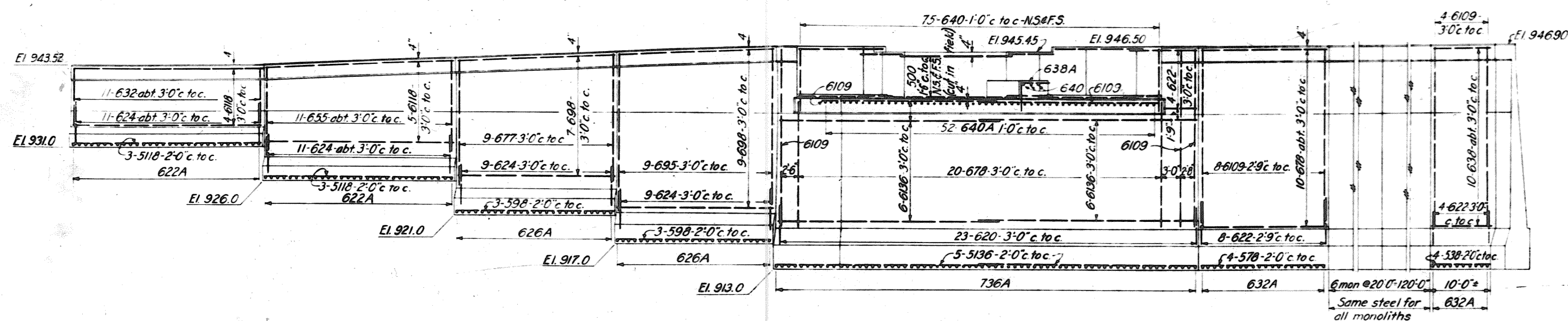
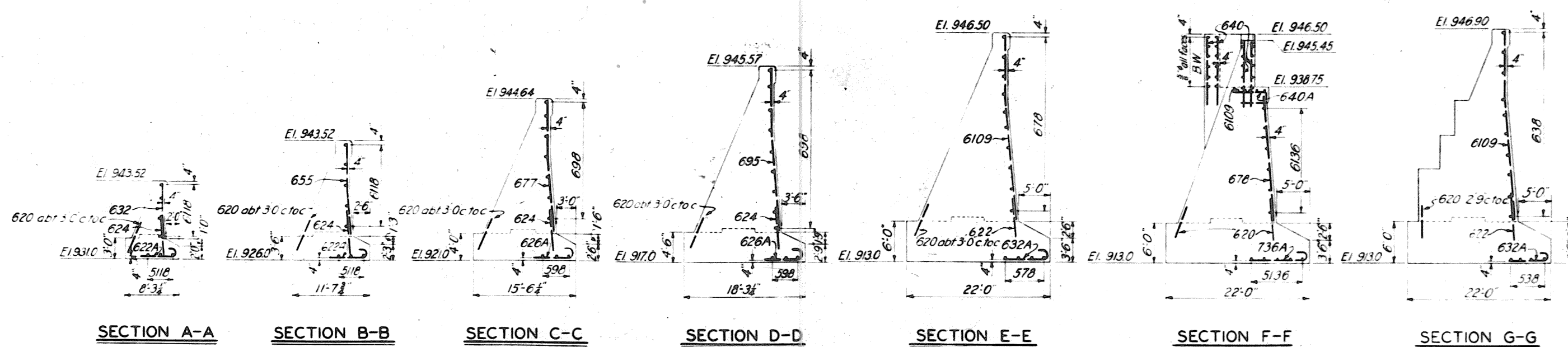
DRAWN BY: AWM
 REASON: 001
 TRANSMITTED WITH LETTER

FILE NO 027i-PM-66/35 DATED

WORK AS CONSTRUCTED



PLAN

ELEVATION

REINFORCING SCHEDULE

[illegible]

* See drain detail, Dwg. No. 66/38

NOTES

Place all reinforcing steel 4" minimum from face unless otherwise noted.
For masonry detail see Dwg. No. 66/36.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

**B. & O. R. R. & W. & L. E. RY. BRIDGE
WEST ABUTMENT - REINFORCING DETAILS**

IN 76 SHEETS SHEET NO. 35 SCALE: $\frac{1}{4}'' = 1'-0''$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY, 1941

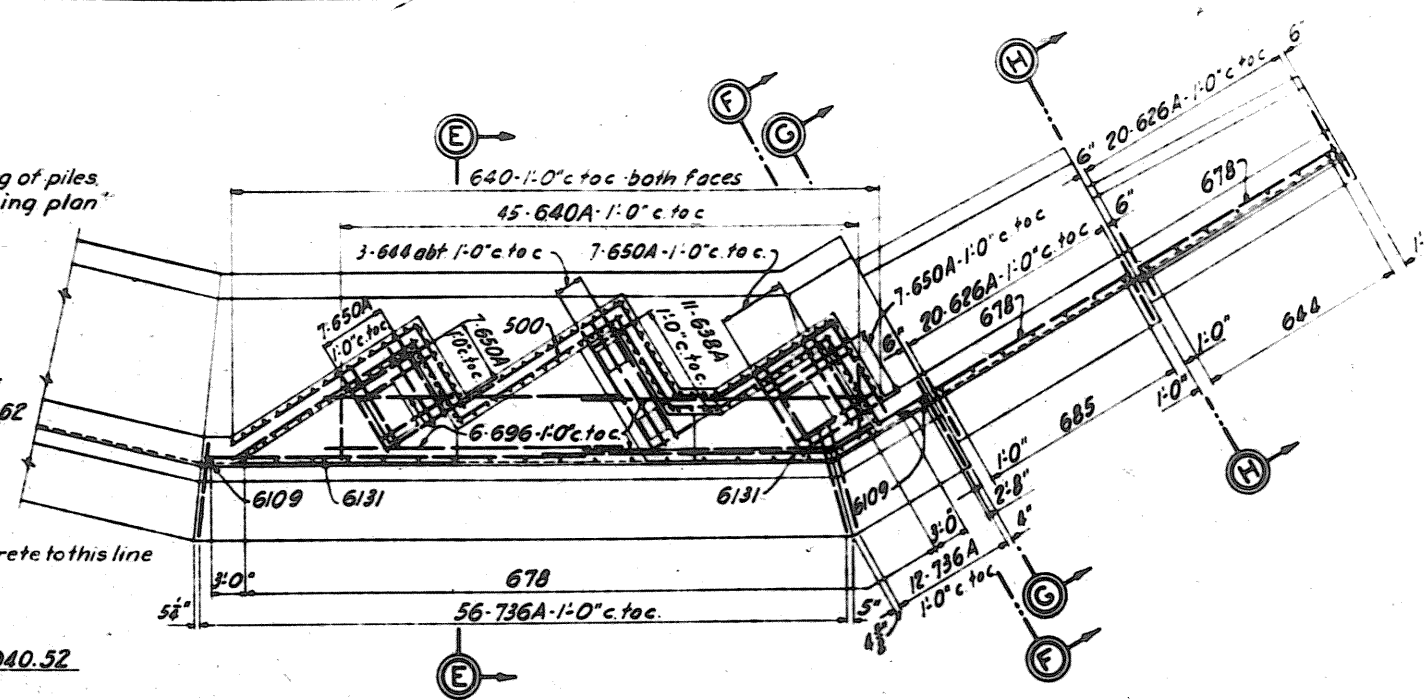
SUBMITTED: *[Signature]* PRINCIPAL ENGINEER APPROVED: *[Signature]* MAJED, CDR70 OF ENGINEER


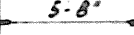



ORIGIN BY JEM

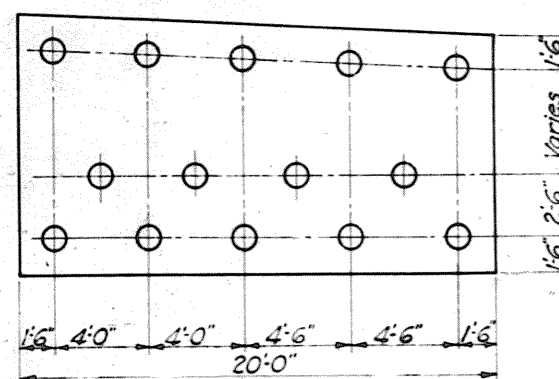
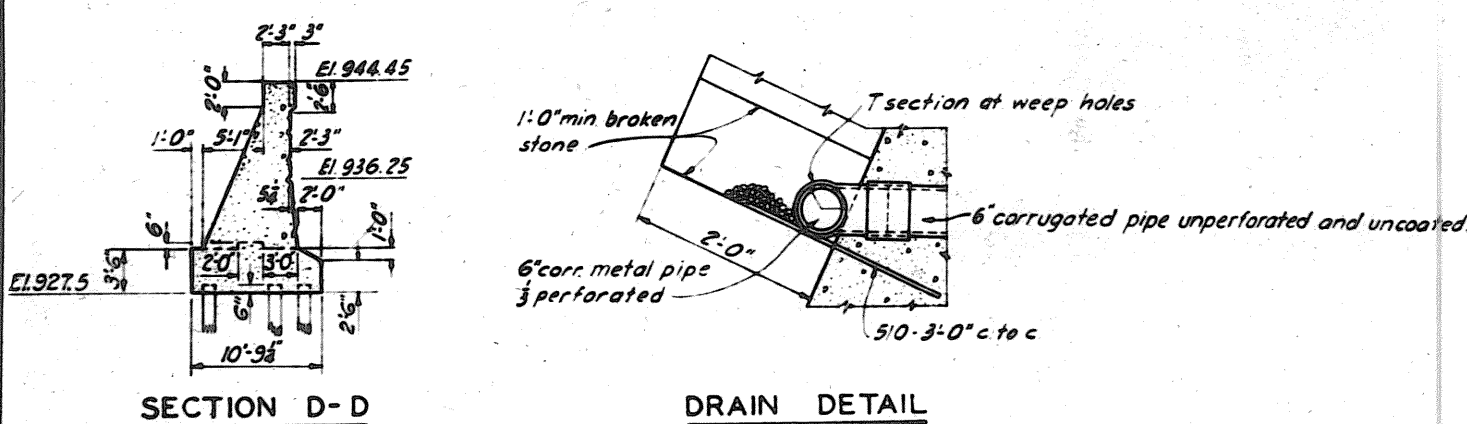
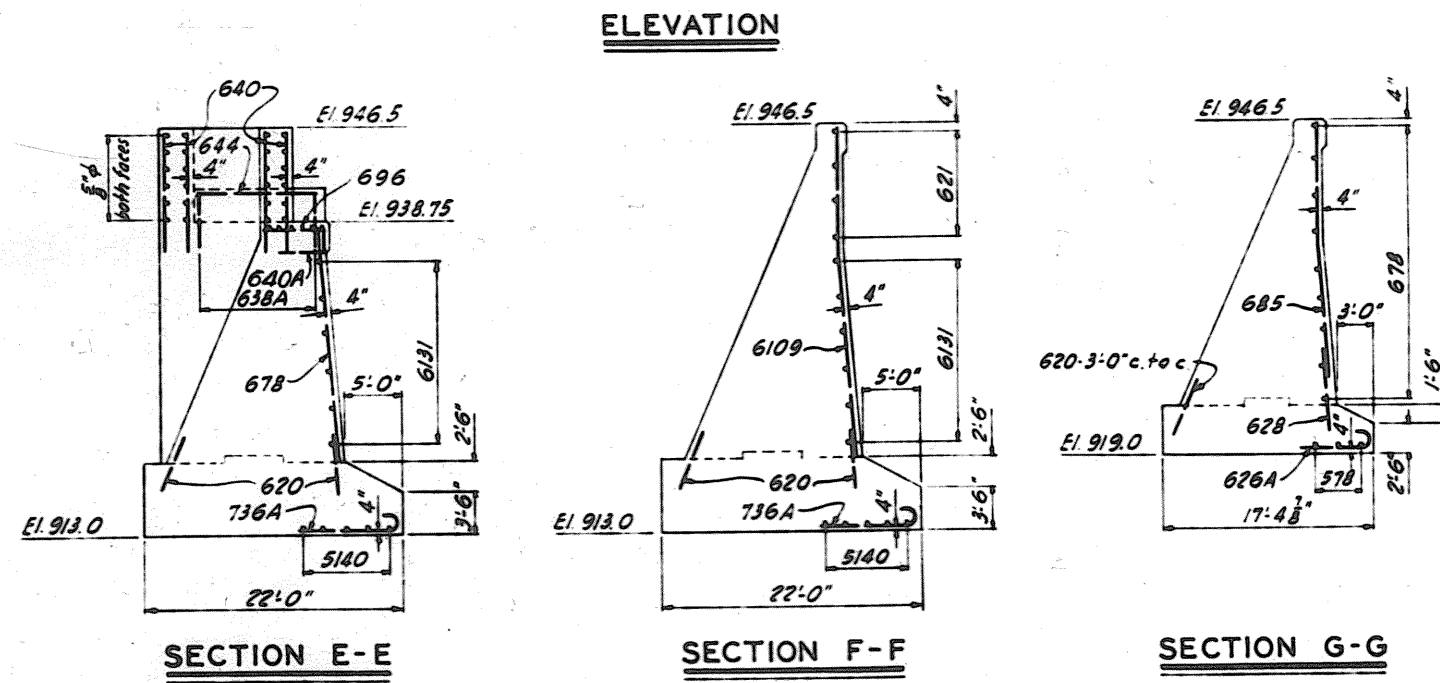
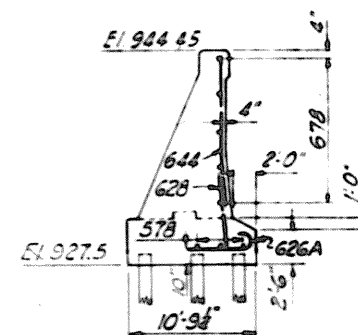
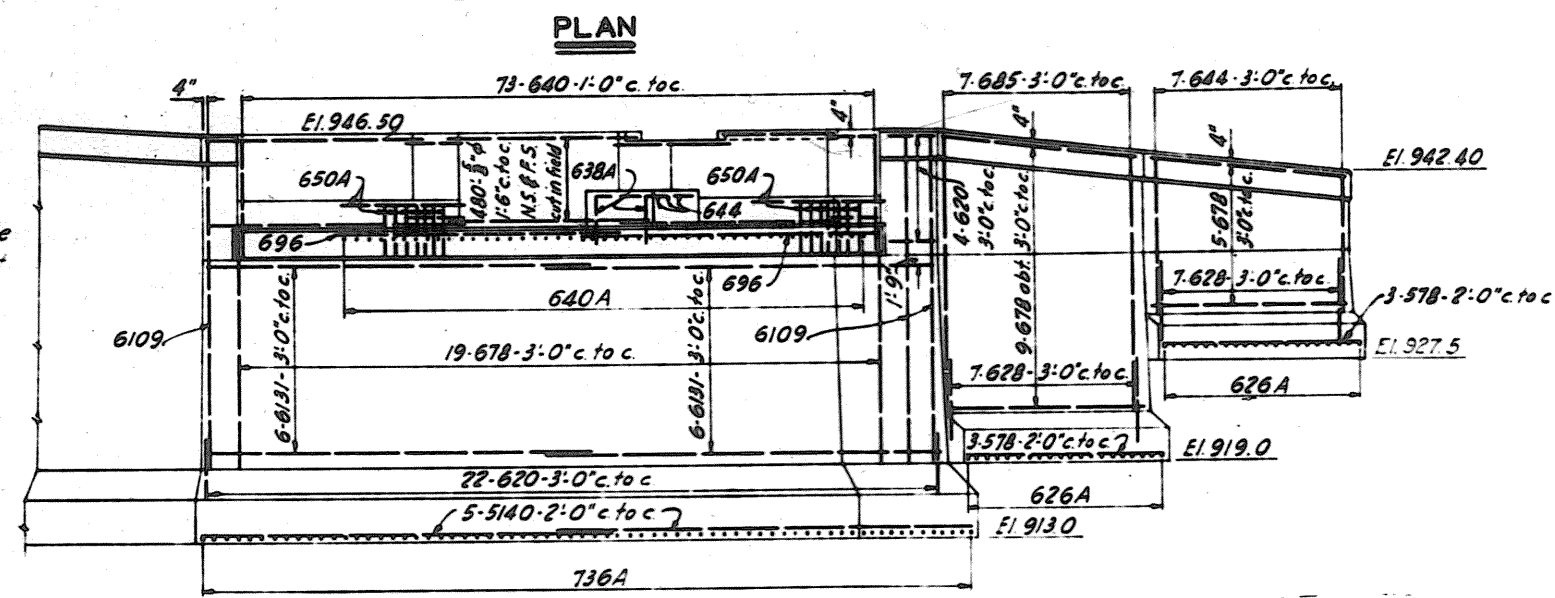
FILE NO 027i-PM-66/37

FILE NO 027i-PM-66/37

WORK AS CONSTRUCTED



REINFORCING SCHEDULE				NO	UNIT WT	TOTAL WT.
MARK	SIZE	LGTH	BENDING DIAGRAM			
500	1" ϕ	9'6"			1 043	1001
50	1" ϕ	2'-6"		33	2.61	86
578	1" ϕ	19'-6"		6	20.34	122
540	1" ϕ	35'-0"		10	36.51	365
6384	1" ϕ	9'-6"		11	14.27	157
620	1" ϕ	5'-0"		62	7.51	466
640A	1" ϕ	10'-0"		45	15.02	676
626A	1" ϕ	6'-6"		40	9.76	390
628	1" ϕ	7'-0"		14	10.51	147
640	1" ϕ	10'-0"		146	15.02	2193
644	1" ϕ	11'-0"		10	16.52	165
678	1" ϕ	19'-6"		33	29.29	967
685	1" ϕ	21'-3"		7	31.92	223
696	1" ϕ	24'-0"		6	36.05	216
6109	1" ϕ	27'-3"		3	40.93	123
6131	1" ϕ	32'-9"		12	49.19	590
650A	1" ϕ	12'-6"		28	18.78	526
736A	1" ϕ	9'-0"		68	18.60	1251
				Total		9668



For groove detail see Dwg. No. 66/39
Chamfer all exposed edges 1/2" unless otherwise
noted
Place all reinforcing steel 4" minimum from
surface unless otherwise noted.
For location plan, see Dwg. No. 66/35
For details of water stop see Dwg. No. 66/12.
All concrete to be Class B
For detail of key in expansion joint, see Dwg. No. 66/36.
Bearing piles to be driven to 20 ton bearing capacity

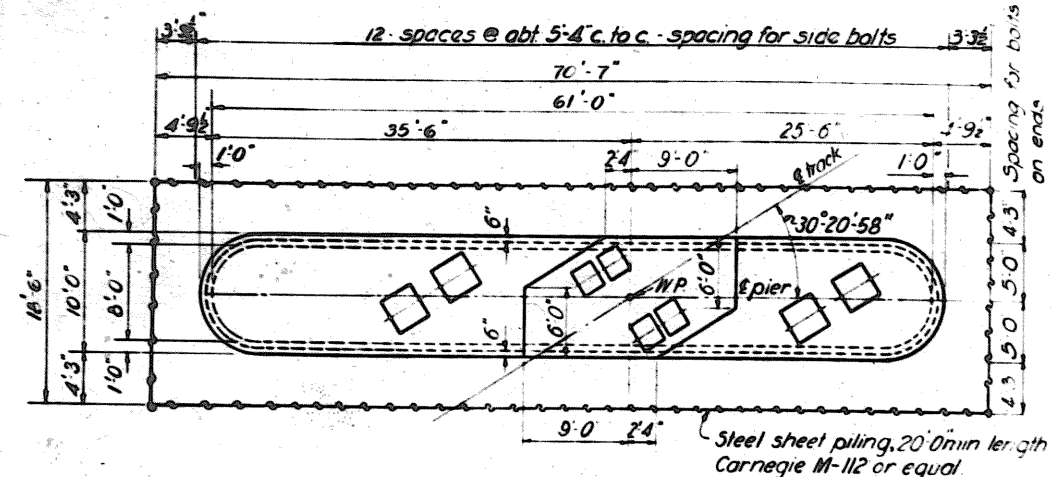
SHEET NO.36

DRAWN BY J.E.H. TRANSMITTED WITH LETTER

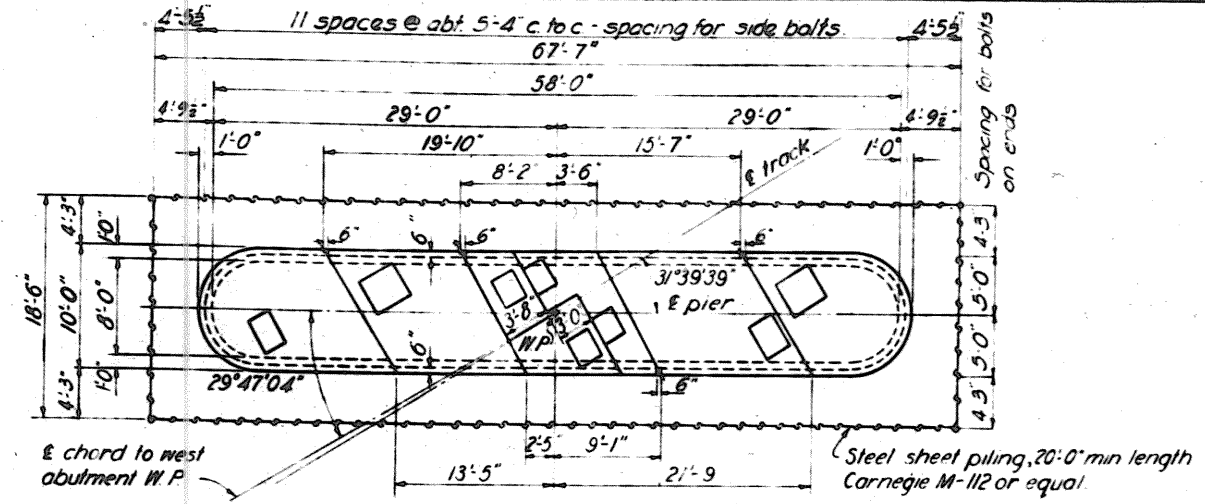
FORWARDED BY A.D.
CHECKED BY E.R. FILE NO 027i-PM-66/38 DATED

WORK AS CONSTRUCTED

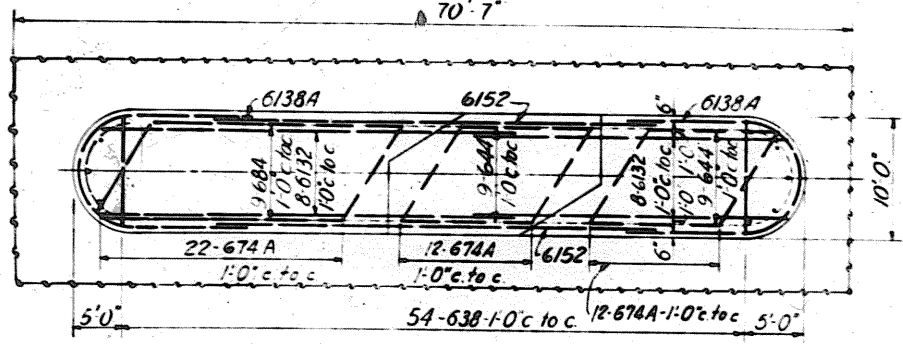
S.F.B.	9-29-44	REVISED AS CONSTRUCTED
H.U.B.	5-26-43	REVISED PLAN OF ABUTMENT & ADDED SECTION J-J
W.W.W.	9-12-42	ADDED PILES TO END MONGLITH OF WING
BY	DATE	CHARACTER
		REVISIONS



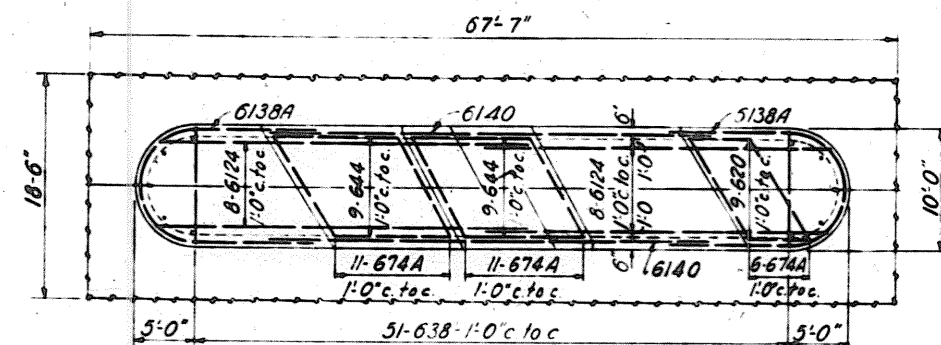
PIER NO. 1
PLAN



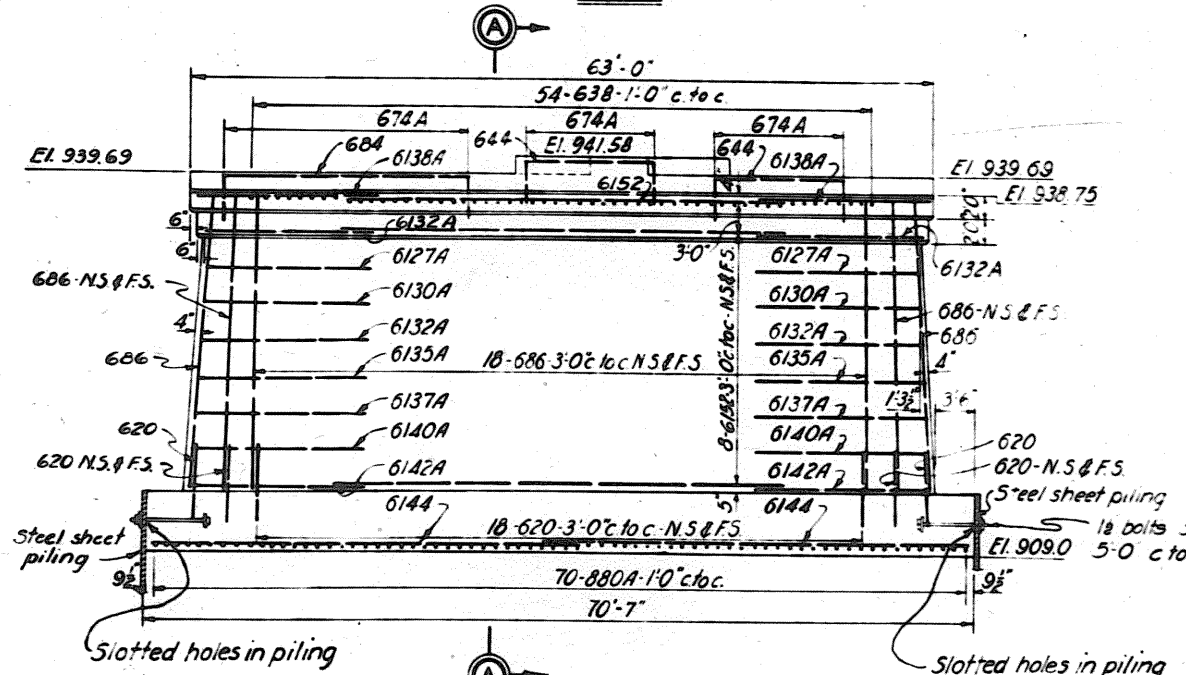
PIER NO. 2
PLAN



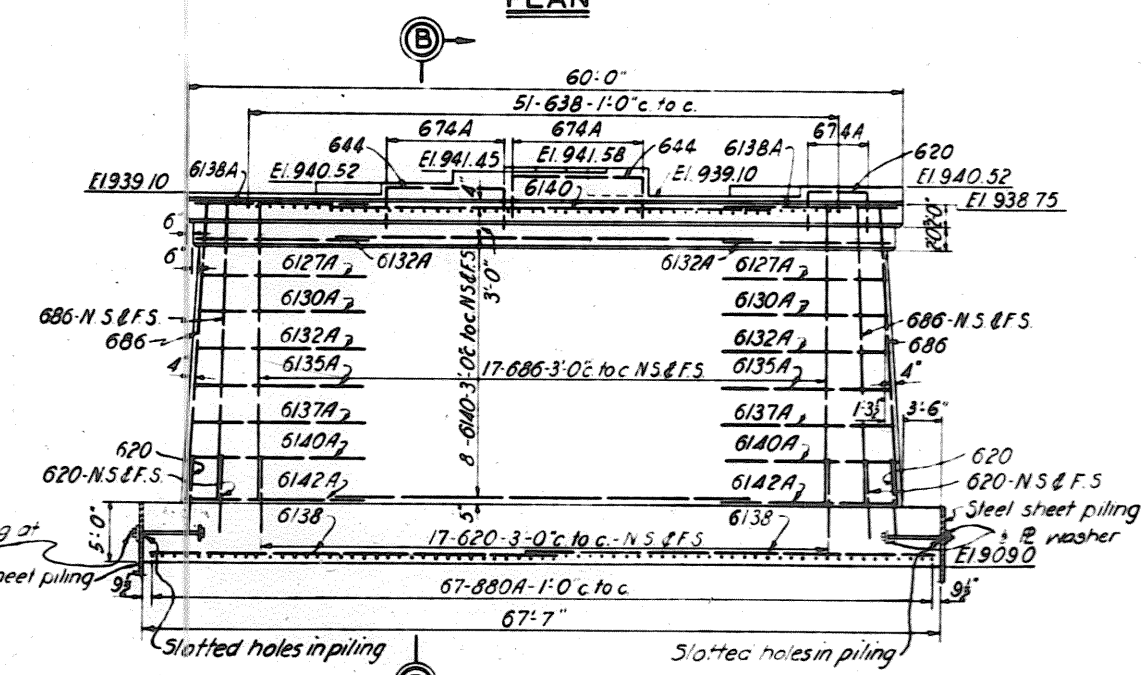
PIER NO. 1
PLAN



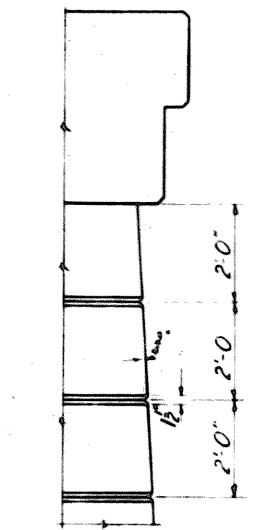
PIER NO. 2
PLAN



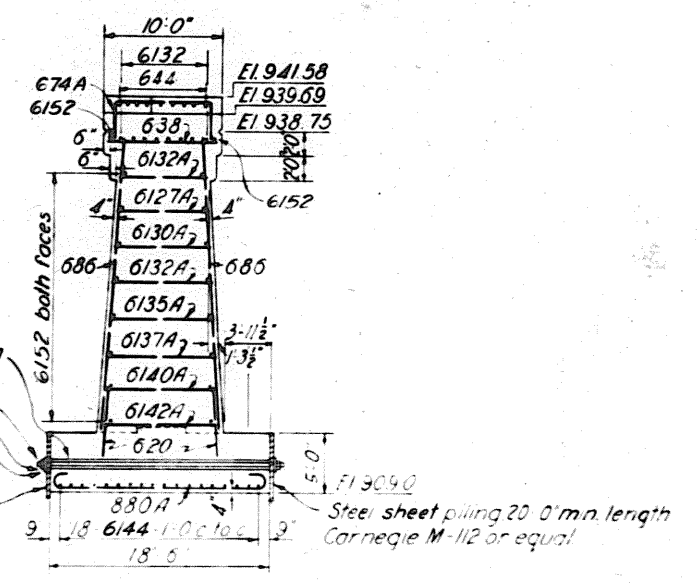
PIER NO. 1
ELEVATION



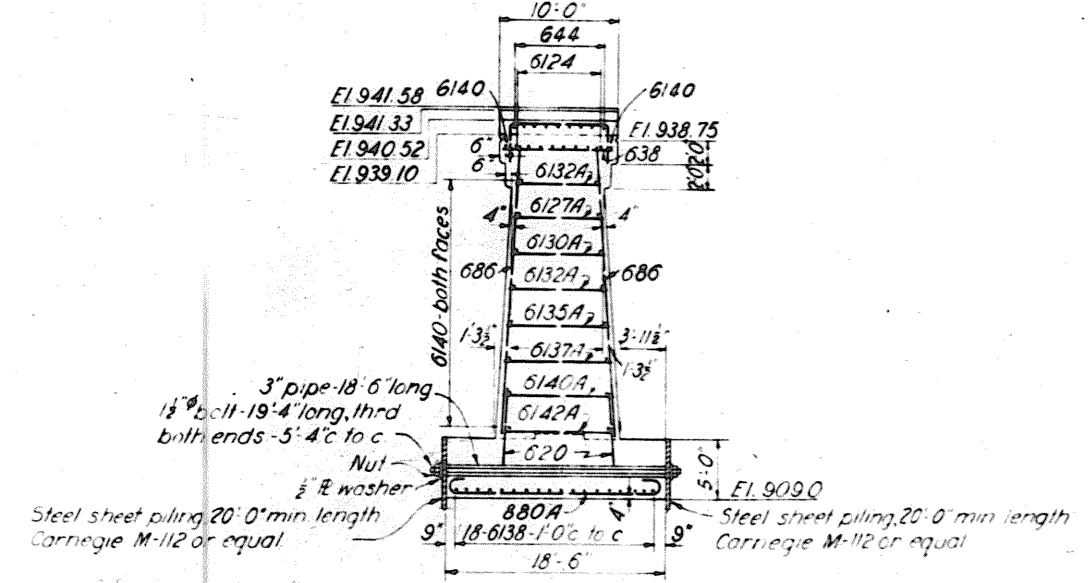
PIER NO. 2
ELEVATION



GROOVE DETAIL
SCALE 1/2" = 1'-0"



SECTION A-A



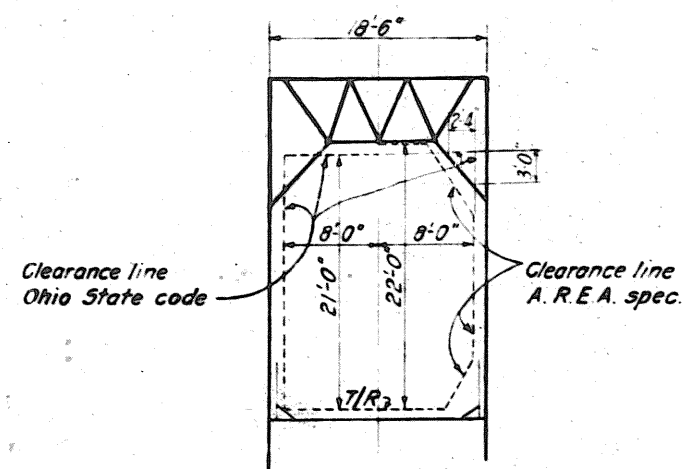
SECTION B-B

REINFORCING SCHEDULE						
PIER NO. 1						
MARK	SIZE	LGTH	BENDING DIAGRAM	NO	UNIT WT.	TOTAL WT.
620	3"0	5'0"		42	751	315
638	3"0	9'-6"		54	1427	771
644	3"0	11'-0"		18	1652	297
686	3"0	21'-6"		42	3229	1356
6132	3"0	33'-0"		16	4957	793
6144	3"0	36'-0"		18	5408	973
6127A	3"0	31'-9"		2	4769	95
6130A	3"0	32'-6"		2	4882	98
6132A	3"0	33'-0"		4	4957	198
6135A	3"0	33'-9"		2	5069	101
6137A	3"0	34'-3"		2	5144	103
6138A	3"0	34'-6"		2	5182	104
6140A	3"0	35'-0"		2	5257	105
6142A	3"0	35'-6"		2	5332	107
674A	3"0	8'-6"		46	2779	1278
880A	1"0	20'-0"		70	5340	3730
6152	3"0	36'-0"		18	5708	1027
604	3"0	21'-0"		9	3154	284

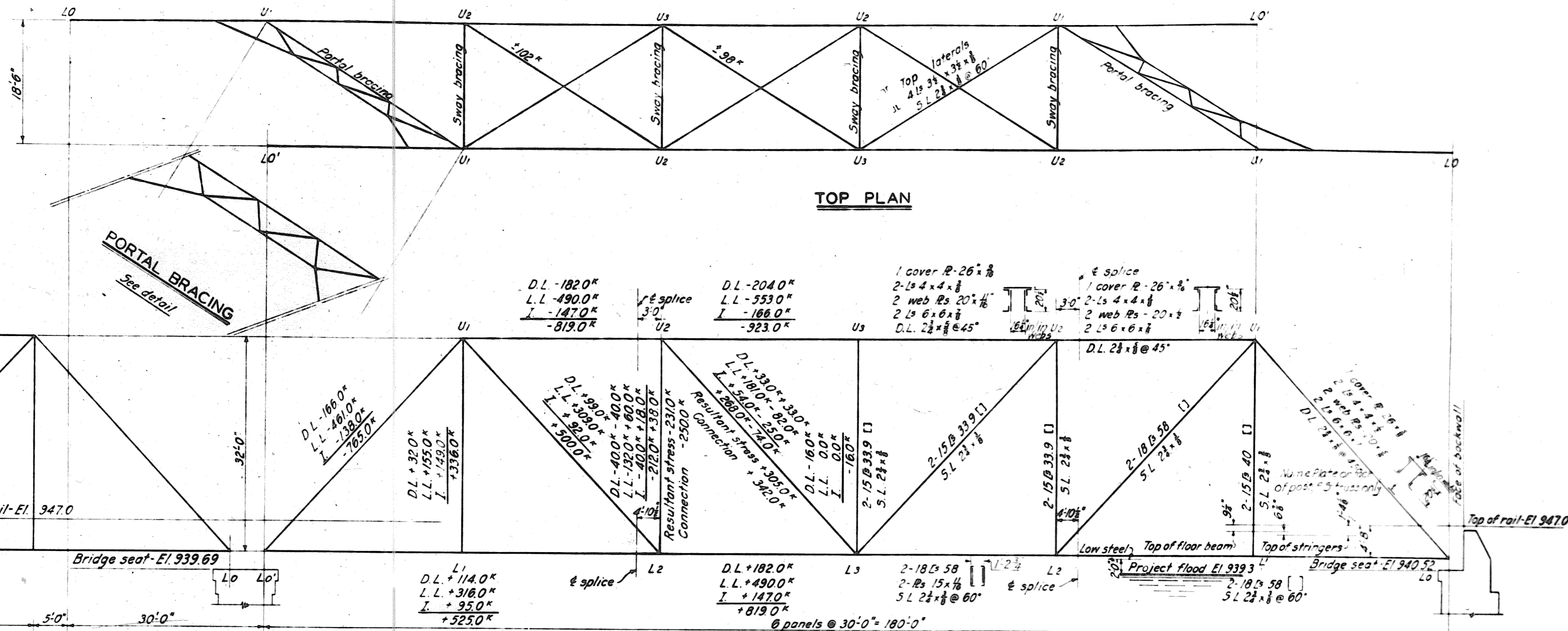
PIER NO. 2						
620	3"	5'-0"		49	751	368
638	3"	9'-6"		51	1427	728
644	3"	11'-0"		18	1652	297
686	3"	21'-6"		40	3229	1,292
6124	3"	31'-0"		16	4656	745
6127A	3"	31'-9"		2	4769	85
6130A	3"	32'-6"		2	4882	98
6132A	3"	33'-0"		4	4957	198
6135A	3"	33'-9"		2	5069	101
6137A	3"	34'-3"		2	5144	103
6138	3"	34'-6"		36	5182	1,866
6138A	3"	34'-6"		2	5182	104
6140	3"	35'-0"		18	5257	946
6140A	3"	35'-0"	2	5257	105	
6142A	3"	35'-6"	2	5332	107	
674A	3"	8'-6"	28	2779	778	
880A	1"	20'-0"	67	5340	3,578	
				Total	11,509	

NOTES
Chamfer all exposed edges 1/8" unless otherwise noted.
Place all reinforcing steel 4" minimum from face unless otherwise noted.
For location plan, see Dwg No 66/95.
For anchor bolt layout, see Dwg No 66/146.

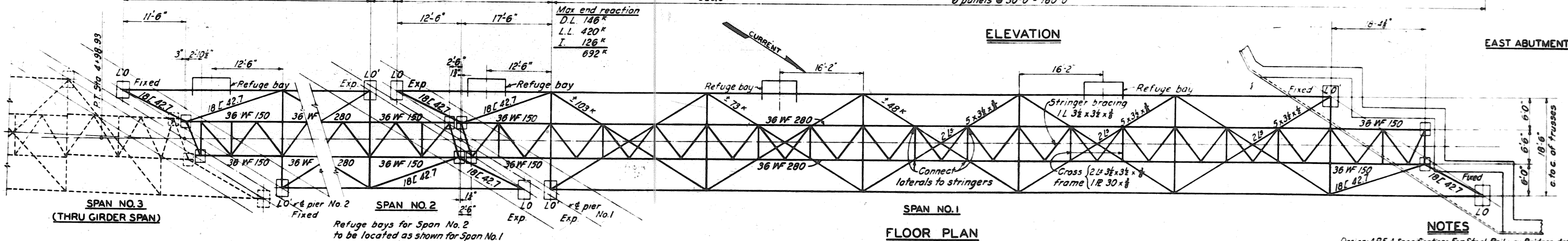
TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
B. & O. R. R. & W. & L. E. RY. BRIDGE
PIERS



END VIEW



TOP PLAN



ELEVATION

EAST ABUTMENT

NOTES

Design-A.R.E.A. Specifications For Steel Railway Bridges, dated 1938
Workmanship-A.R.E.A. Specifications For Steel Railway
Bridges, dated 1938
Material-A.R.E.A. Specifications For Steel Railway
Bridges, dated 1940
For truss details, see Dwg. Nos. 66/42 & 43.
For anchor bolt and tie plan, see Dwg. No. 66/46.
For castings, see Dwg. No. 66/45.
For inner guard rail, see Dwg. No. 66/54.
For miscellaneous details, see Dwg. No. 66/46.
Rivets, $\frac{1}{2}$ " dia in truss members and floor beam con-
nections to truss, $\frac{3}{4}$ " dia in floor system and lateral bracing.
For masonry details, see Dwg. Nos. 66/38 & 39.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

B. & O. R. R. & W. & L. E. RY. BRIDGE
180FT. TRUSS - DESIGN DATA

IN 76 SHEETS SHEET NO. 38 SCALE: $\frac{1}{8}$ " = 1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY. 1941

SUBMITTED: Wm Barber APPROVED: W.A. Faller

DRAWN BY W.E.H. TRANSMITTED WITH LETTER

FILE NO 0271-PM-66/40 DATED

WORK AS CONSTRUCTED

DATA FOR
INTERIOR FLOOR BEAMS

MAX. SHEARS
D.L. = 19,800 "³
L.L. = 155,000 "³
I. = 148,500 "
Total = 323,300 "³
@ 11,000 " = 29.4 " required
Web 54 x $\frac{5}{16}$ = 30.4 " gross effective
Rivet pitch at end = 24 "
Rivet pitch at center = 44 "
MAX. MOMENTS
D.L. = 113,000 "
L.L. = 930,000 "
I. = 891,000 "
Total = 1,934,000 "
Section Mod. req'd $\frac{1,934,000 \times 12}{18,000} = 1,290$ -3
Section Mod furnished = 1,350 +3
Rivets 1" dia. floorbeam connection.

DATA FOR
END FLOOR BEAMS

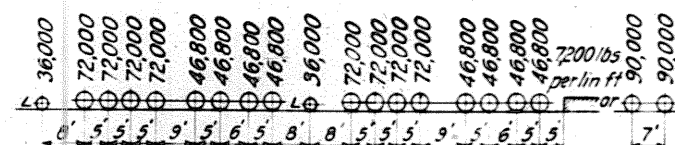
MAX. SHEARS
 $D.L. = 17,000^{\text{b}}$
 $L.L. = 134,000^{\text{b}}$
 $I. = 126,000^{\text{b}}$
 Total = $277,000^{\text{b}}$
 $@ 11,000^{\text{b}} = 25.2^{\circ}$ required
 Web $54 \times \frac{1}{2} = 27^{\circ}$ gross effective
 Rivet pitch at end = 24°
 Rivet pitch at center = 44°

MAX. MOMENTS
 $D.L. = 95,000^{\text{b}}$
 $L.L. = 806,000^{\text{b}}$
 $I. = 759,000^{\text{b}}$
 Total = $1,660,000^{\text{b}}$

Section Mod reqd. $\frac{1,660,000 \times 12}{18,000} = 1107^{\text{b}}$
 Section Mod furnished = 1140^{b}
 Rivets 1" dia. floor beam connection

DATA FOR STRINGERS

<u>STRINGER</u>	<u>SECT. MOD.</u> <u>REQD</u>	<u>SECT. MOD.</u> <u>FURNISHED</u>	<u>MAX.</u> <u>SHEAR</u>
36 WF 150	425 ³	502.9 ³	172,000 [#]
36 WF 280	1033 ³	1031 ³	238,000 [#]



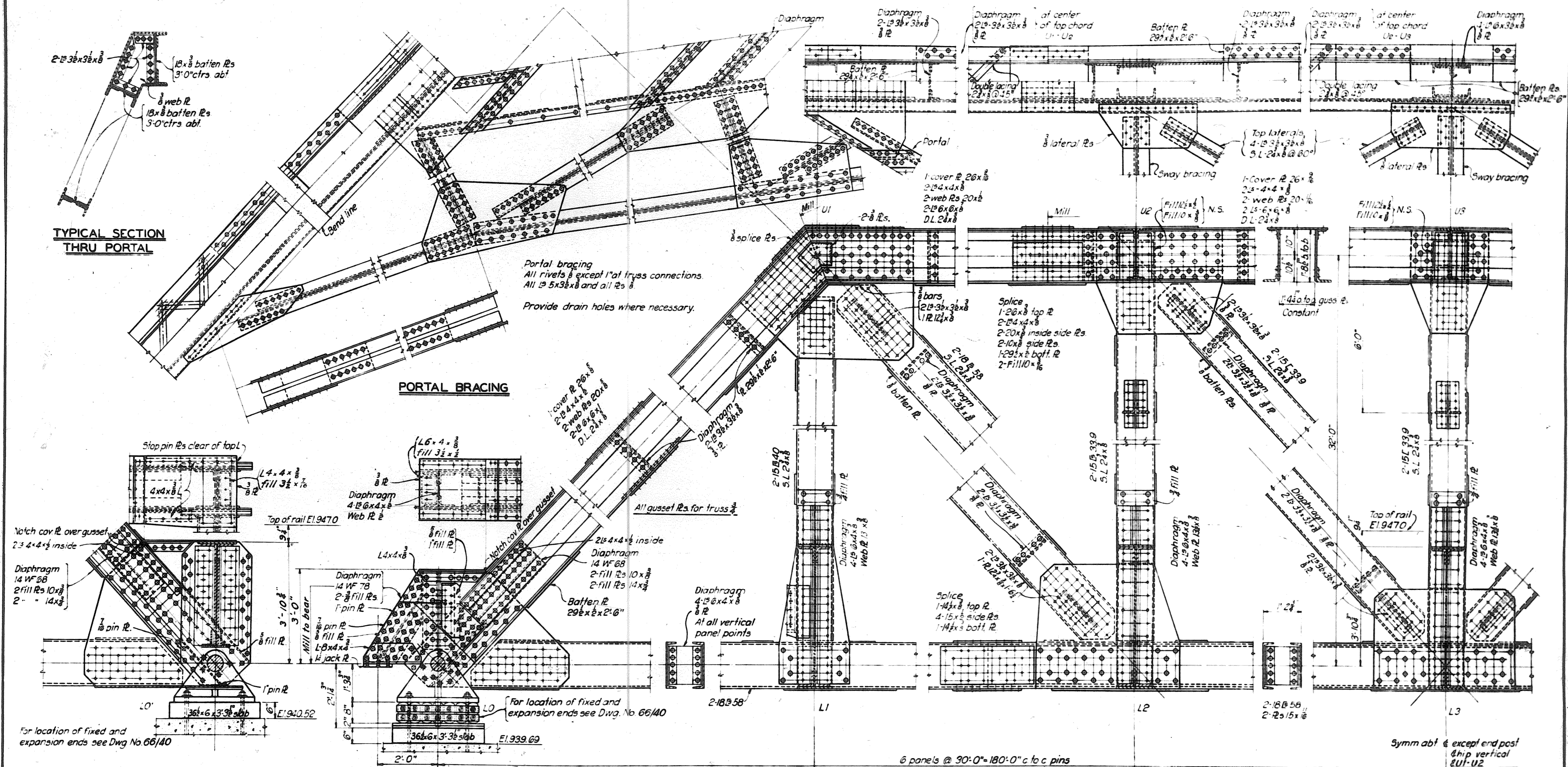
LOCOMOTIVE LOADING USED-COOPERS E-72

Axle loads shown

HUB.	1-1-44	REVISED AS	CONSTRUCTED
BY	DATE	CHARACTER	
		REVISIONS	



H.U.B.	11-1-44	REVISED AS CONSTRUCTED
A.R.N.	3-19-42	REVISED BACKWALL ON WEST ABUTMENT
A.R.N.	12-1-41	REVISED ELEVATIONS SECTION A-A
BY	DATE	CHARACTER
R E V I S I O N S		



**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

**B. & O. R. R. & W. & L. E. RY. BRIDGE
180FT. TRUSS - DETAILS**

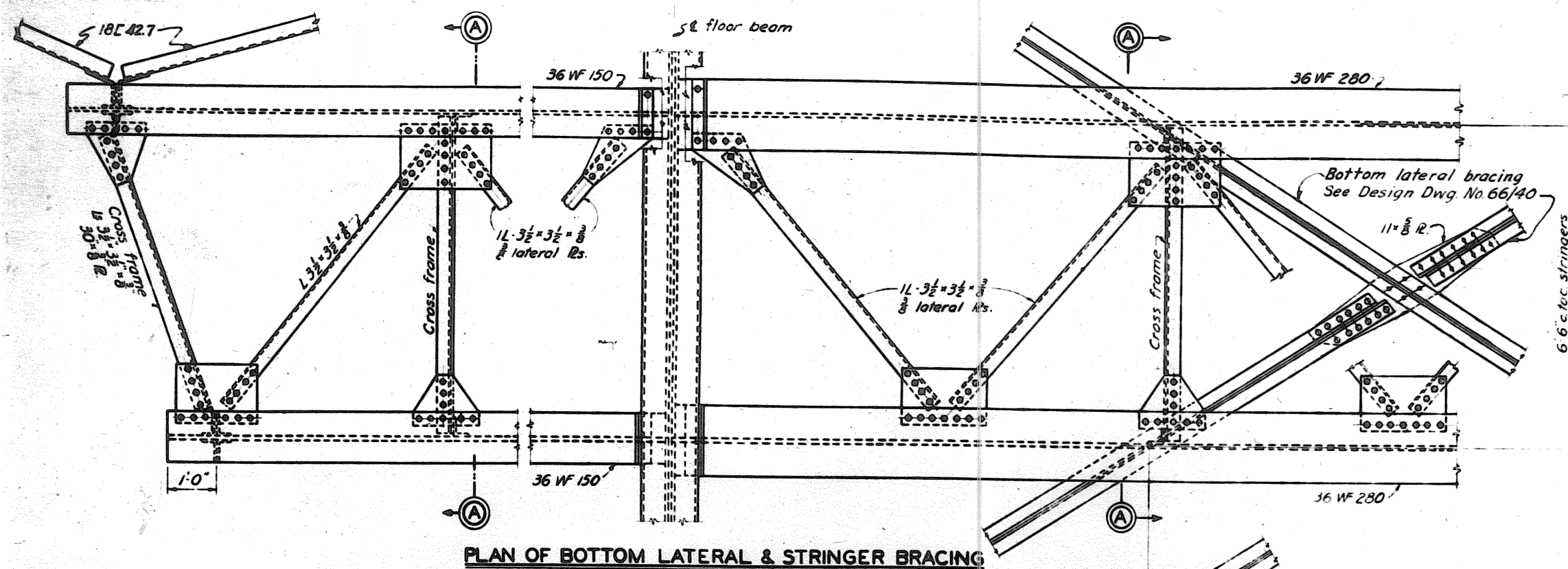
18 75 SHEETS
SHEET 80-40
SCALE 1/2" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941

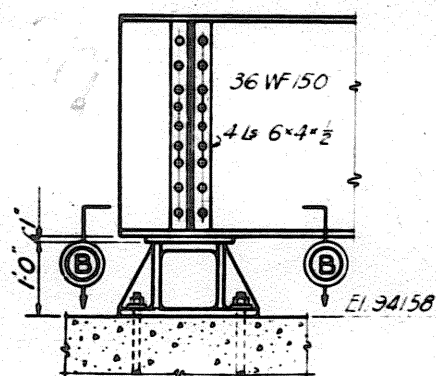
SUBMITTED: *W. C. B.* APPROVED: *J. H. R.*
PRINCIPAL ENGINEER MAJOR, CORPS OF ENGINEERS

DRAWN BY: W.F.A.
CHECKED BY: H.E.C.
TRACED BY: H.E.C.
FILE NO 027i-PM-66/42

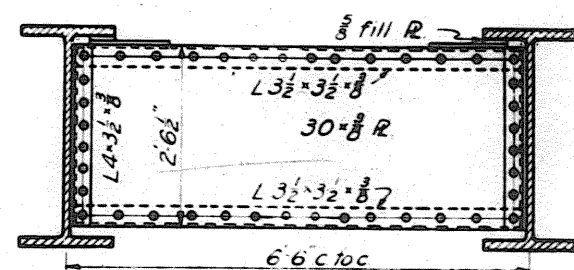
NO.	DATE	REVISIONS
1	11-1-44	REVISED AS CONSTRUCTED
2		
3		
4		
5		
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20		



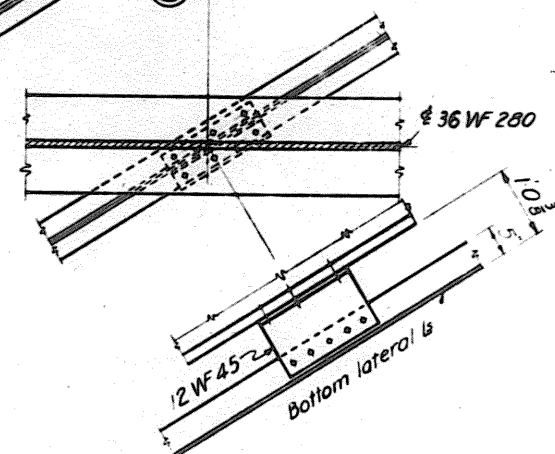
PLAN OF BOTTOM LATERAL & STRINGER BRACING



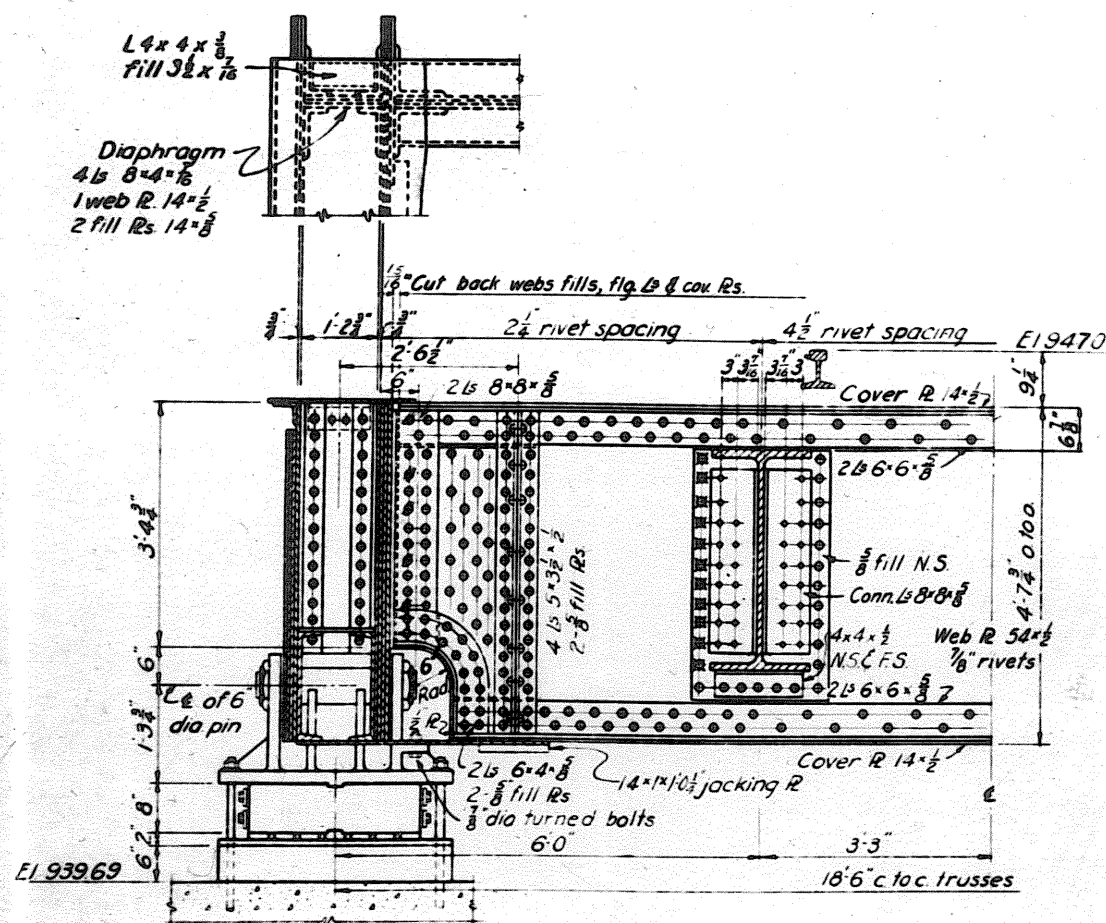
TYPICAL ELEVATION OF END STRINGERS



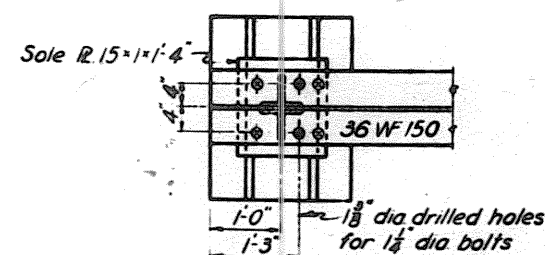
SECTION A-A



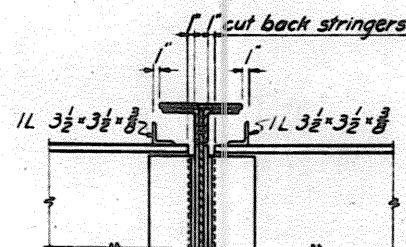
DETAIL OF LATERAL BRACING CONNECTION TO FLOOR STRINGERS



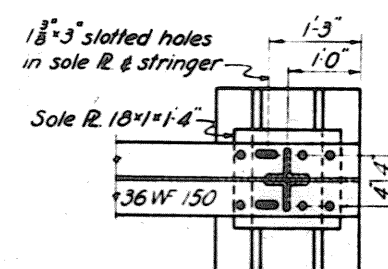
HALF ELEVATION OF
END FLOOR BEAM



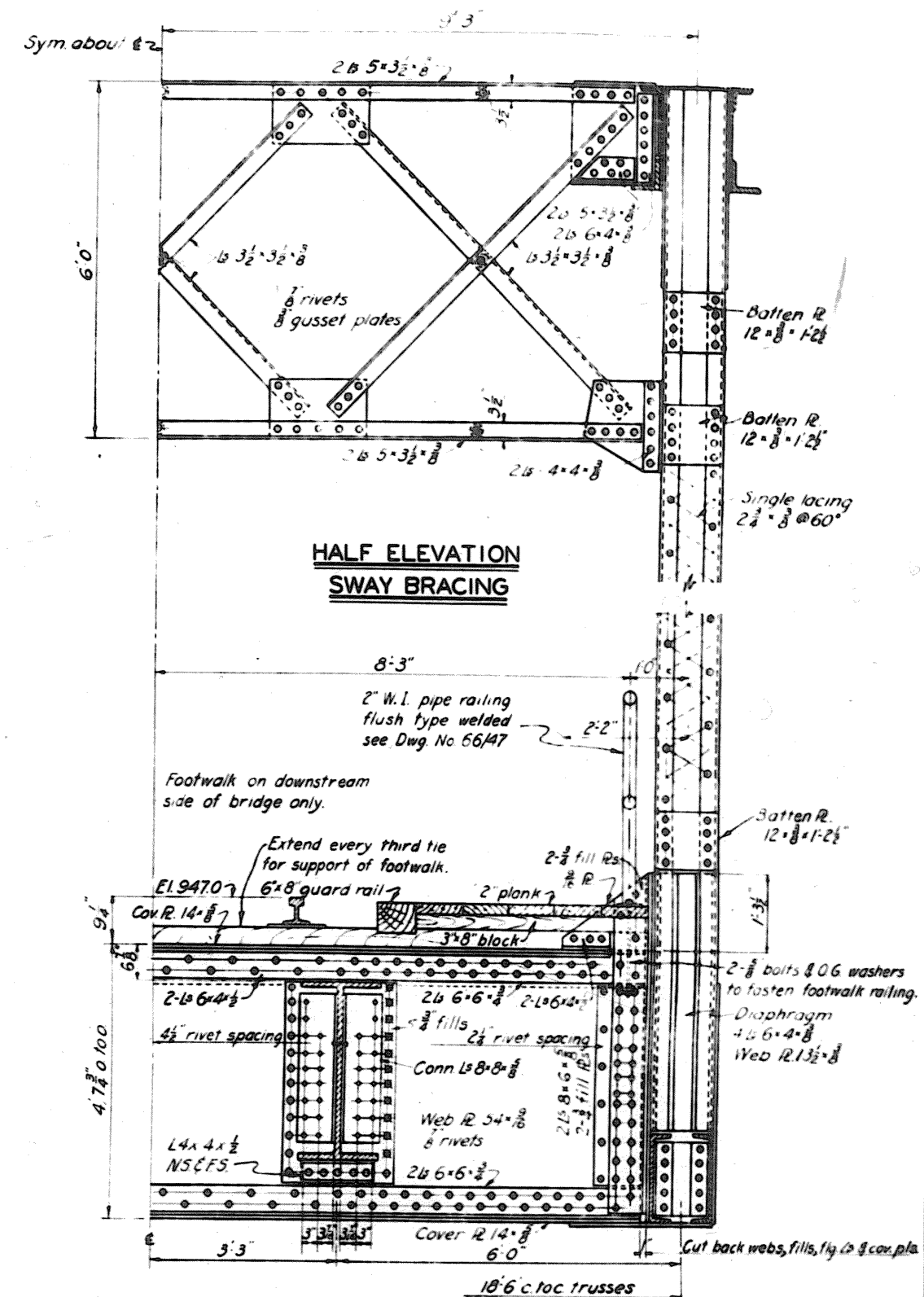
SECTION B-B
FIXED END



TIE STOP
TYPICAL FOR ALL FLOOR BEAMS



EXPANSION END OF STRINGERS



HALF ELEVATION OF
INTERMEDIATE FLOOR BEAM

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

SECTION 1

B. & O. R. R. & W. & L. E. RY. BRIDGE
180FT. TRUSS - DETAILS

IN 76 SHEETS SHEET NO. 41 SCALE: $\frac{1}{2}'' = 1'-0''$

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

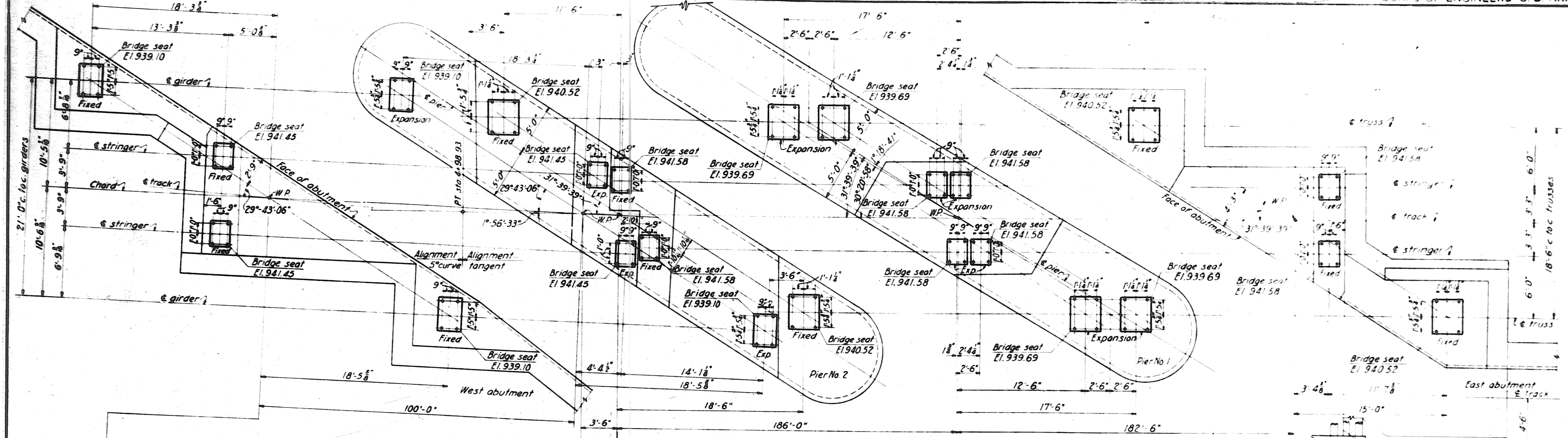
SUBMITTED: Wayne Perkins
PRINCIPAL ENGINEER

APPROVED: Pat Walker
MAJOR CORROSION ENGINEER

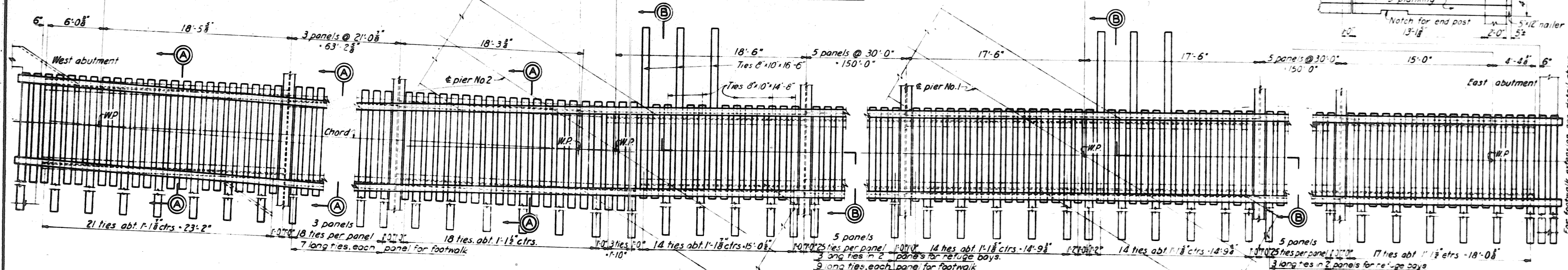
DRAWN BY WFM
TRACED BY JEMML
CHECKED BY K.M.B. FILE NO 027i-PM-66/43

FILE NO 027i-PM-66/43

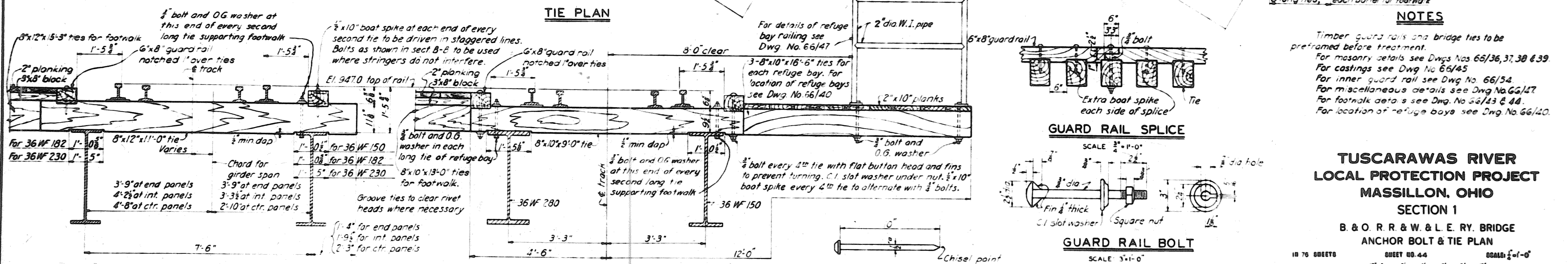
WORK AS CONSTRUCTED



ANCHOR BOLT PLAN



TIE PLAN



SECTION A-A

SECTION B-B

BOAT SPIKE

GUARD RAIL SPLICE

GUARD RAIL BOLT

NOTES

Timber guard rails and bridge ties to be preformed before treatment.
For masonry details see Dwg. Nos 66/36, 37, 38 & 39.
For castings see Dwg. No 66/45.
For inner guard rail see Dwg. No. 66/54.
For miscellaneous details see Dwg. No 66/47.
For footwalk details see Dwg. No 66/43 & 44.
For location of refuge bays see Dwg. No 66/40.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION I

B. & O. R.R. & W. & L. E. RY. BRIDGE
ANCHOR BOLT & TIE PLAN

10 76 SHEETS SHEET NO. 44 SCALE 1/2"=1'-0"

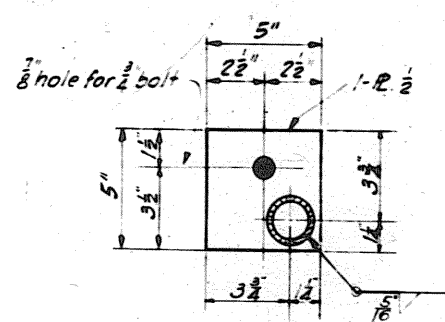
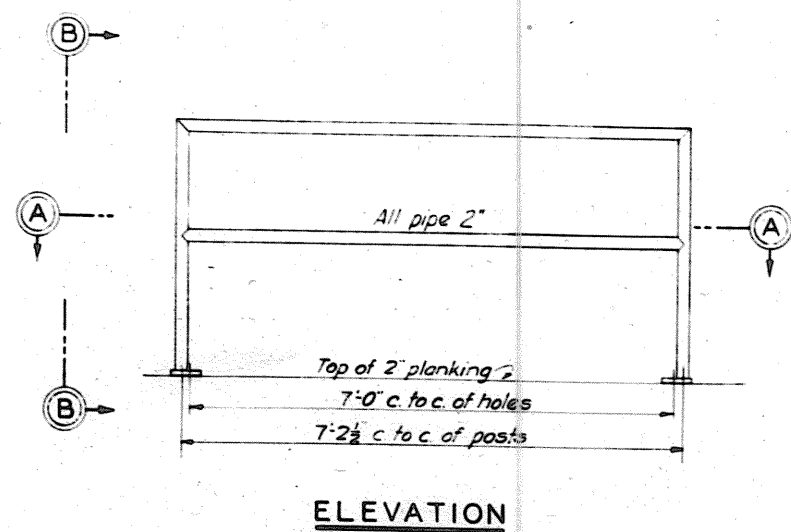
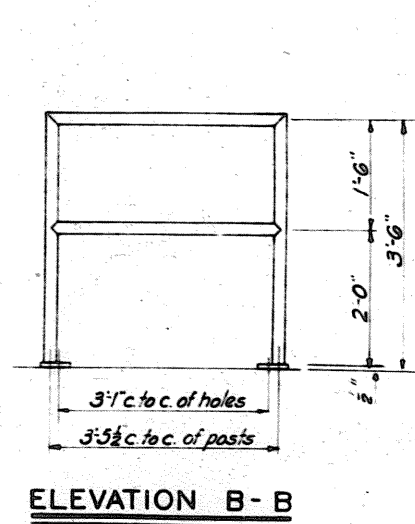
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY, 1941

SUBMITTED BY: J. F. R. REVISOR: J. F. R. APPROVED: J. F. R.

BY DATE CHARACTER REVISIONS

FILE NO 0271-PM-66/46

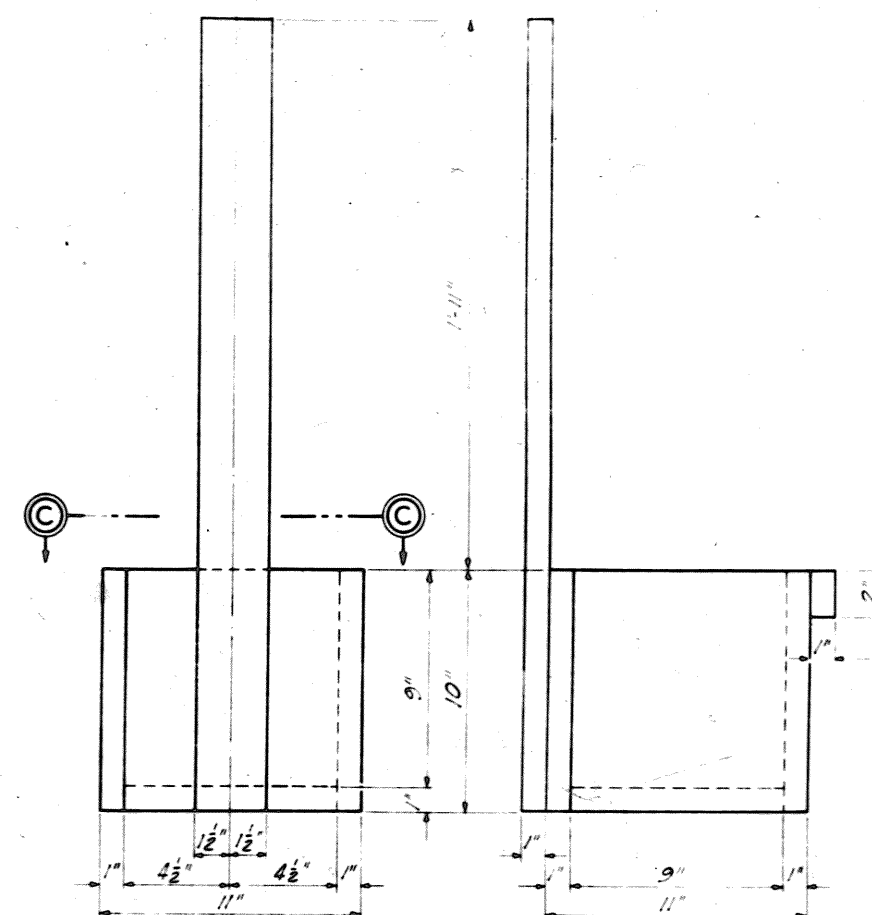
WORK AS CONSTRUCTED



SCALE: 3"=1'-0"

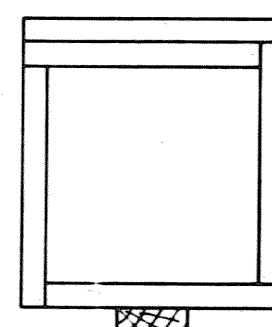
REFUGE BAY RAILING
2" W.I. PIPE

SECTION A-A



WOODEN FIRE BARREL COVER

SCALE: 1 1/2"=1'-0"

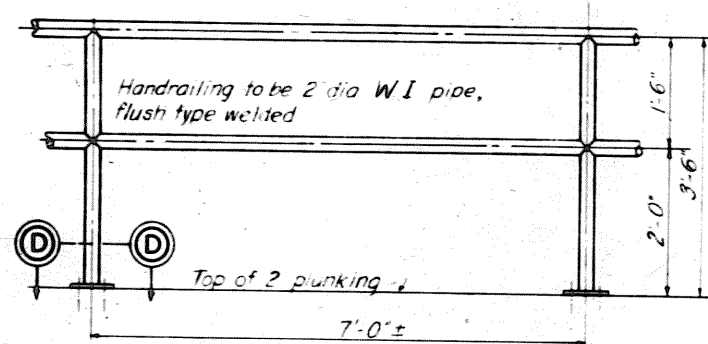


FIRE BUCKET
TO BE SUBMERGED IN BARREL
SCALE: 3"=1'-0"

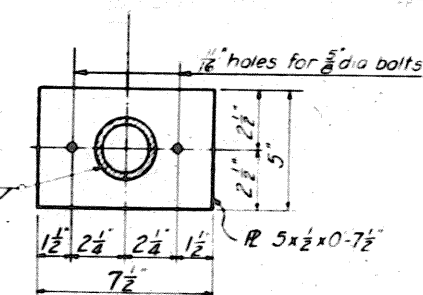
VIEW C-C

NOTES

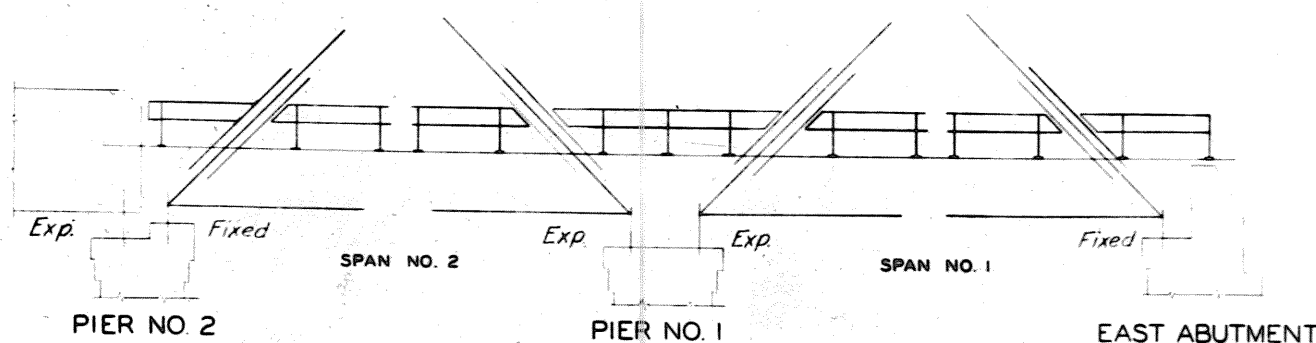
Fire barrel to be standard 50 gal (Wine Barrel) new and with clear white oak staves and head. The word "FIRE" to be stenciled in white letters 6" high on barrel.
Fire bucket and fire barrel cover to be made of cypress lumber and assembled with brass screws in a workmanlike manner.
Fire barrels with covers and fire buckets with fire barrels filled with water ready for use, shall be placed on each refuge bay immediately after deck of bridge is placed.



TYPICAL FOOTWALK RAILING PANEL



SECTION D-D
SCALE: 3"=1'-0"



FOOTWALK RAILING
SCALE: 1/8"=1'-0"

FIRE

TYPICAL LETTERS FOR STENCILING FIRE BARREL
SCALE: 3"=1'-0"

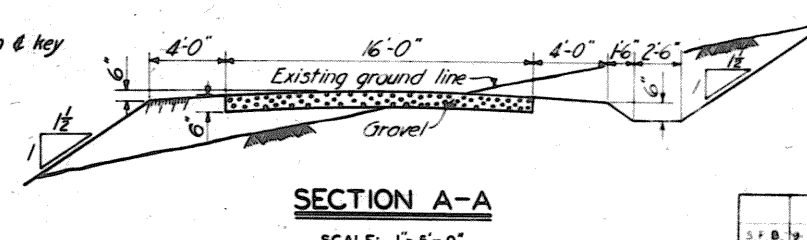
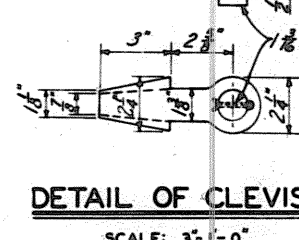
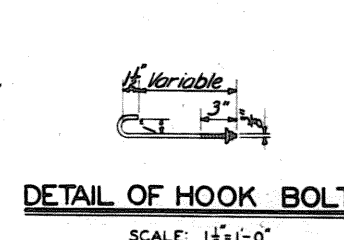
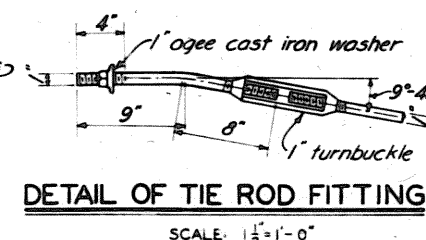
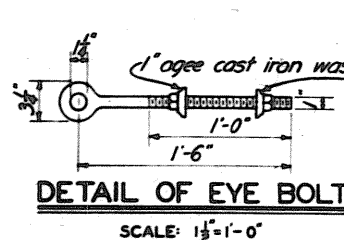
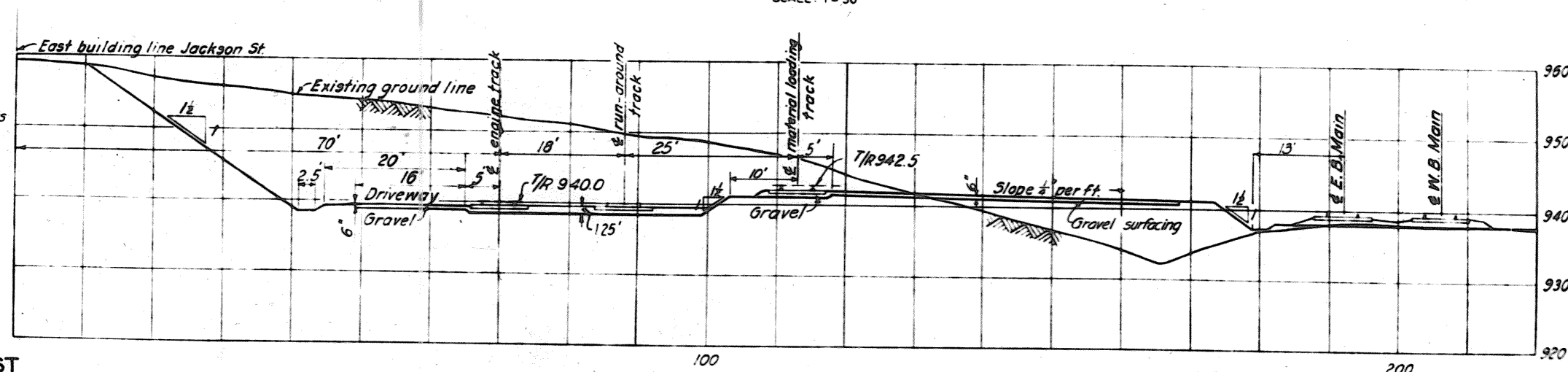
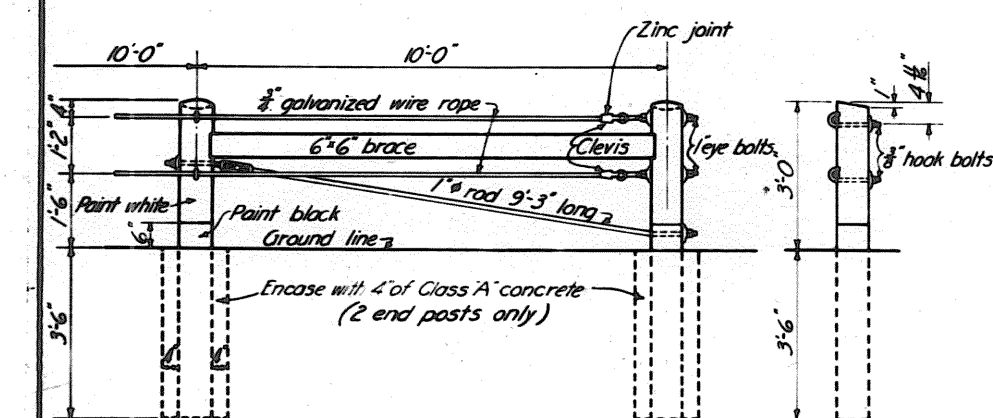
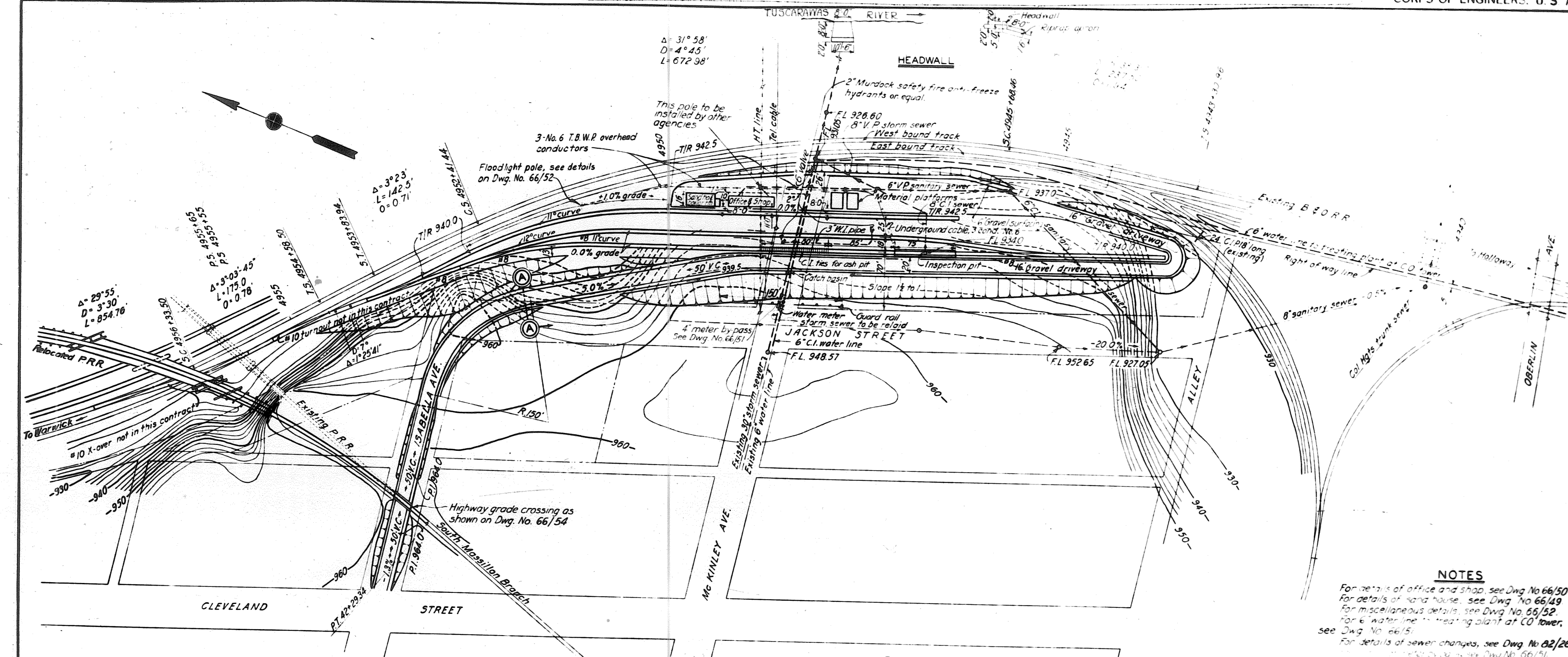
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

B. & O. R. R. & W. & L. E. RY. BRIDGE
MISCELLANEOUS DETAILS

1076 SHEETS SHEET NO. 45 SCALE: 1/4"=1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY, 1941
SUBMITTED: [Signature] PRINCIPAL ENGINEER APPROVED: [Signature] MAJOR, CORPS OF ENGINEERS
DRAWN BY: C.D.M. TRACED BY: A.S. CHECKED BY: H.U.B. FILE NO: 0271-PM-66/47
TRANSMITTED WITH LETTER DATED

HUB 11-1-44	REVISED AS CONSTRUCTED
BY DATE	CHARACTER
REVISIONS	



**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
B. & O. R. R. ENGINE TERMINAL
GENERAL LAYOUT**

1076 SHEETS SHEET NO. 46 SCALE: AS SHOWN

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

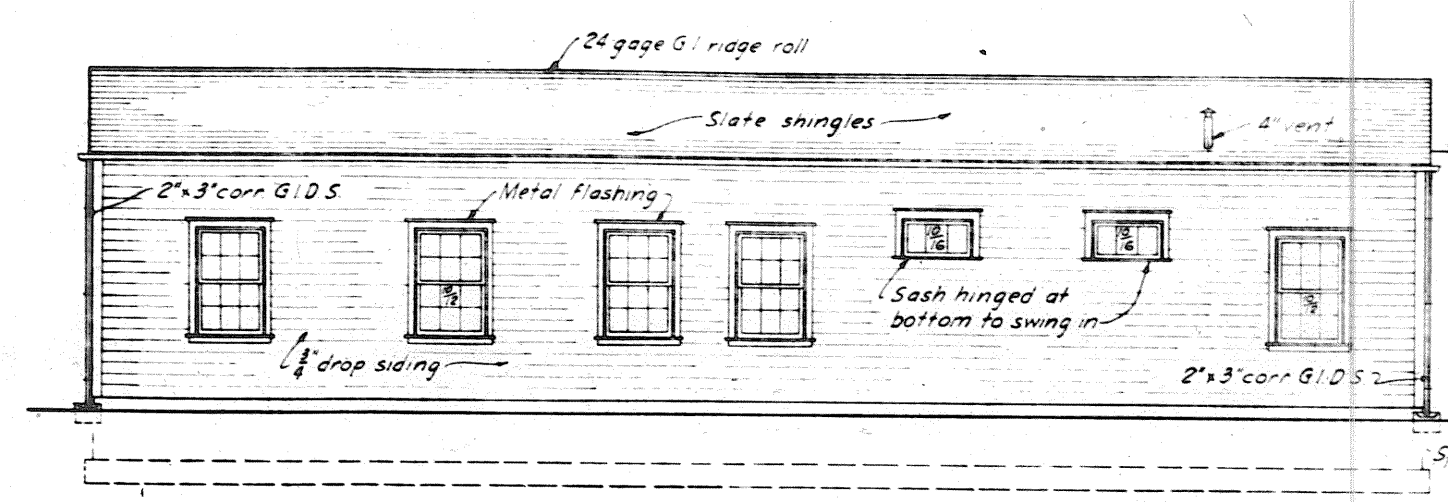
SUBMITTED: *W. J. P. Baker* APPROVED: *W. J. P. Baker*
PRINCIPAL ENGINEER MAJOR, CORPS OF ENGINEERS

DESIGNED BY: A. W. M. TRANSMITTED WITH LETTERS
FORWARDED BY: V. S. V. DATED
CHECKED BY: D. G. J. FILE NO. 027i-PM-66/48

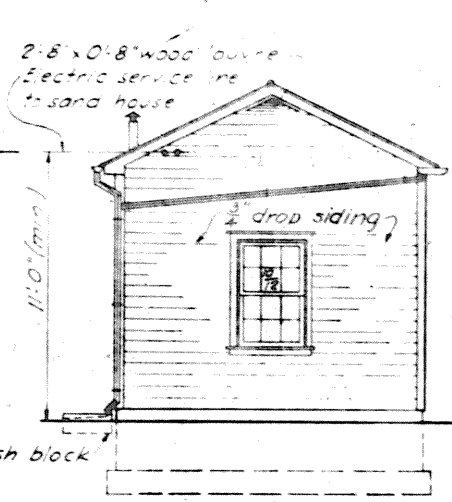
BY	DATE	CHARACTER
W. J. P. Baker	5-29-41	AS CONSTRUCTED
W. J. P. Baker	11-25-41	ADDED 4" BY-PASS
W. J. P. Baker	9-26-41	ADDED 6" VALVE
W. J. P. Baker	9-26-41	ADDED 6" VALVE
W. J. P. Baker	9-26-41	ADDED 6" VALVE
W. J. P. Baker	9-26-41	ADDED 6" VALVE
W. J. P. Baker	9-26-41	ADDED 6" VALVE
W. J. P. Baker	9-26-41	ADDED 6" VALVE
W. J. P. Baker	9-26-41	ADDED 6" VALVE
W. J. P. Baker	9-26-41	ADDED 6" VALVE

WORK AS CONSTRUCTED

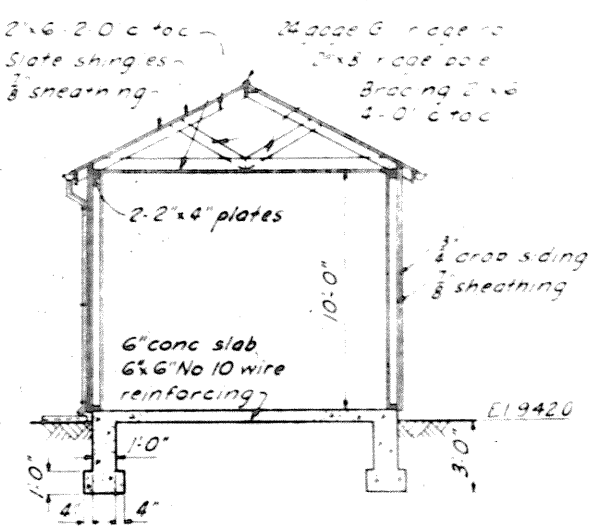
DOOR SCHEDULE



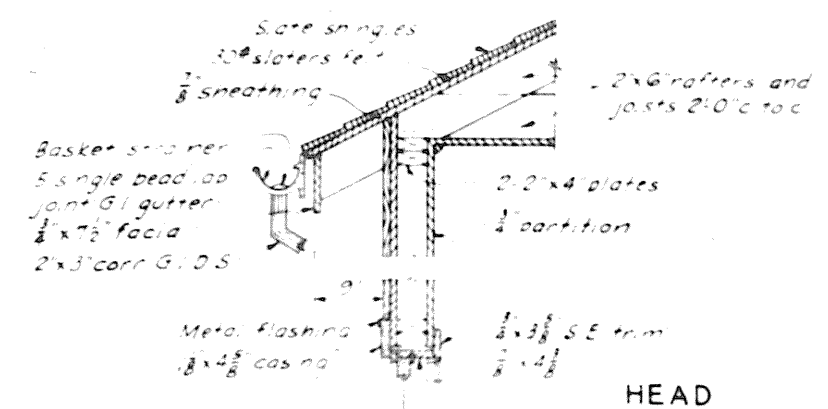
REAR ELEVATION



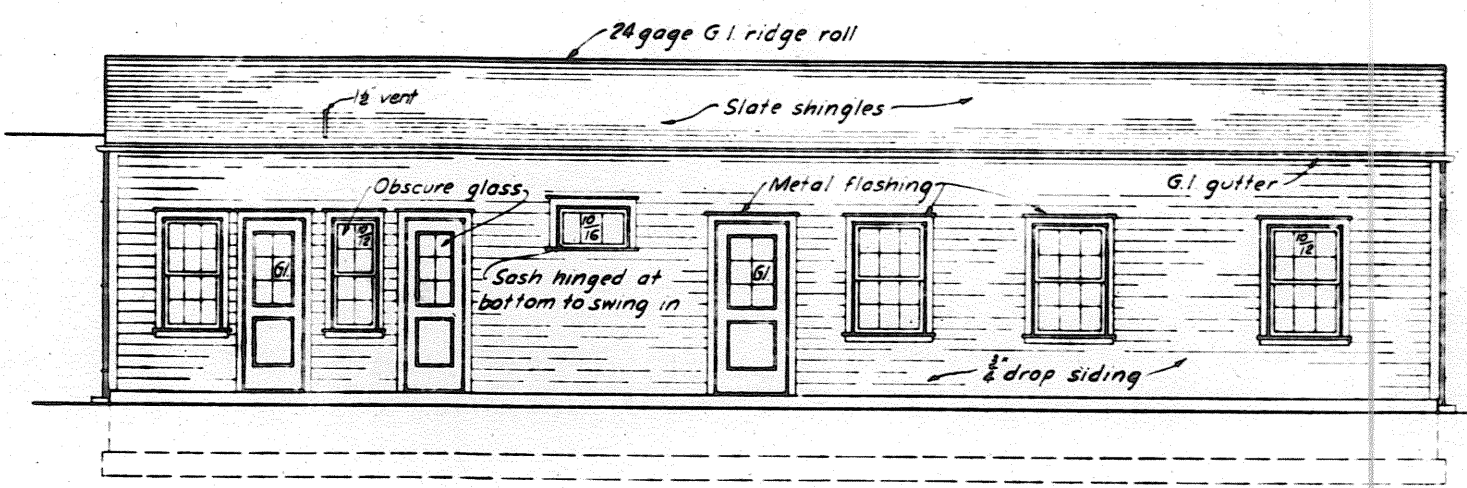
END ELEVATION



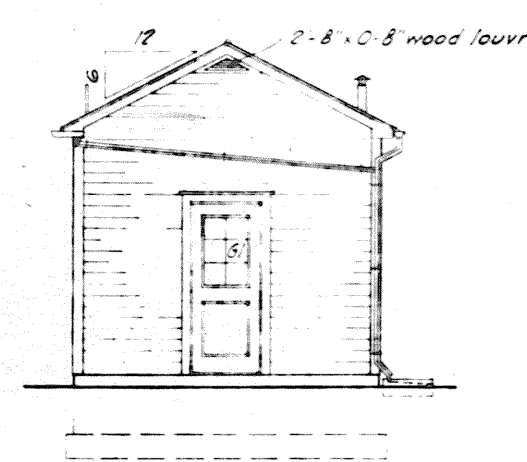
TYPICAL SECTION



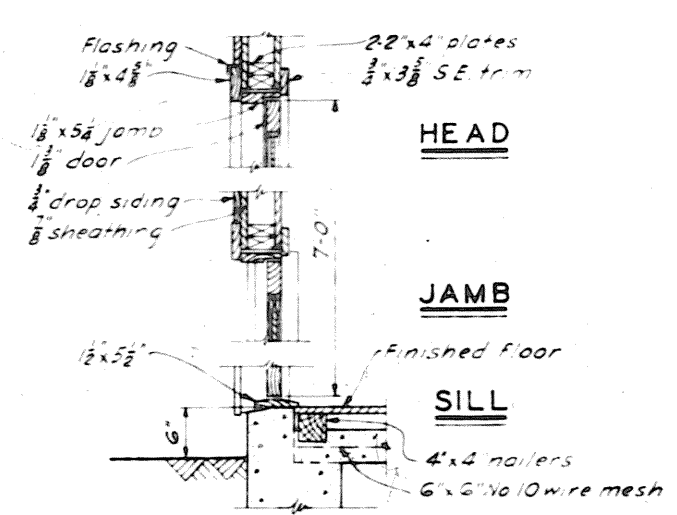
HEAD



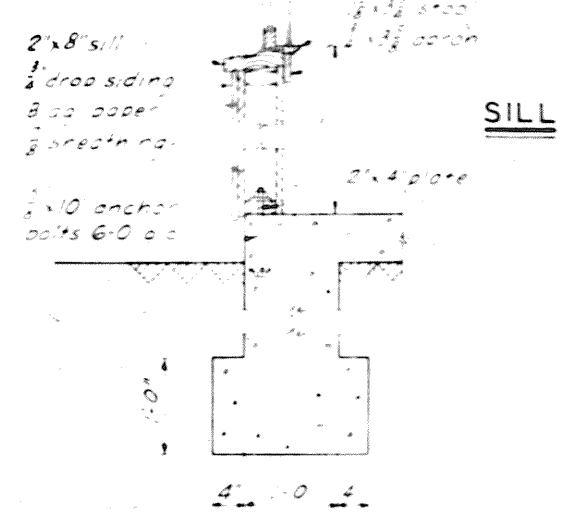
FRONT ELEVATION



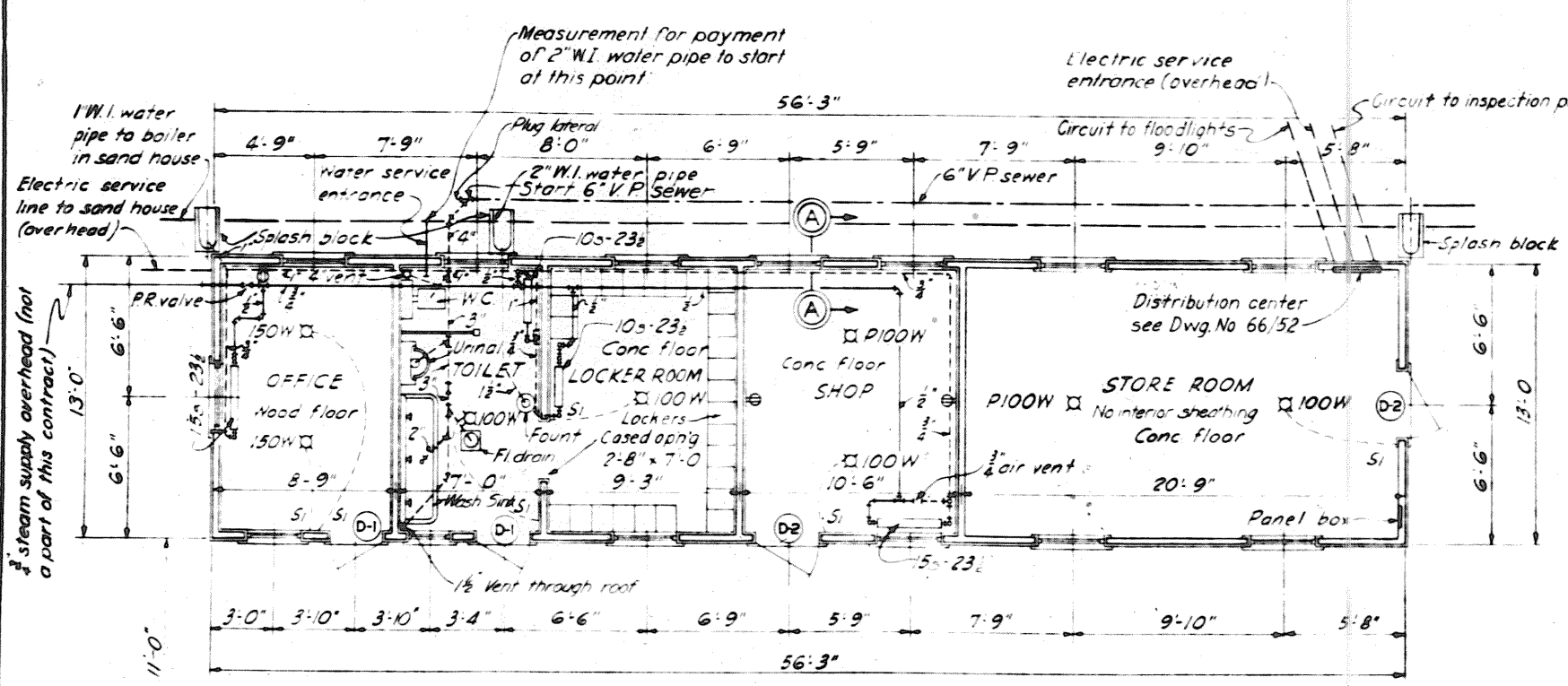
END ELEVATION



DOOR DETAILS

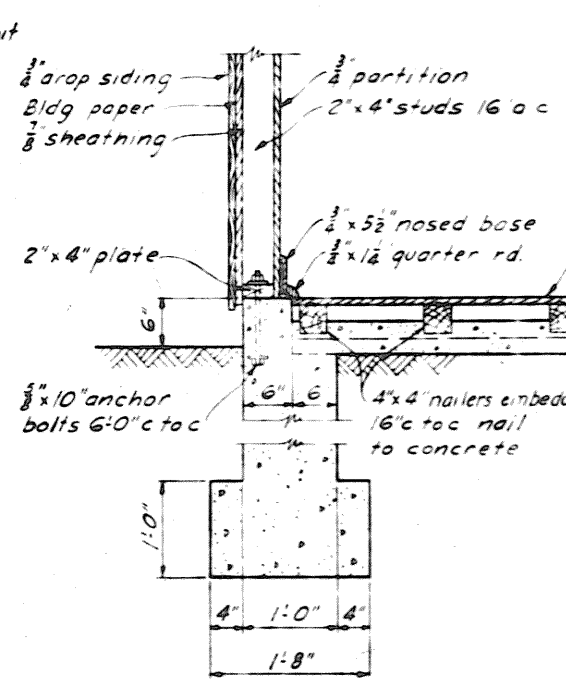


SECTION A-A

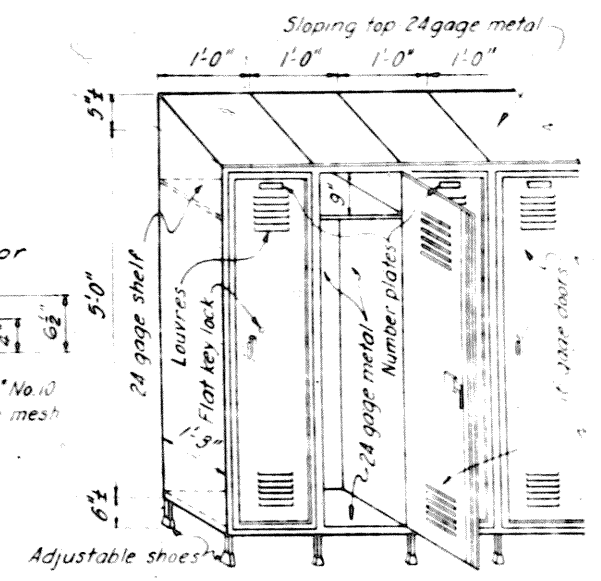


FLOOR PLAN

- LEGEND
- Ceiling outlet
 - Single pole switch
 - ⊕ Convenience outlet



DETAIL OF OFFICE FLOOR



STEEL LOCKERS

NOTES

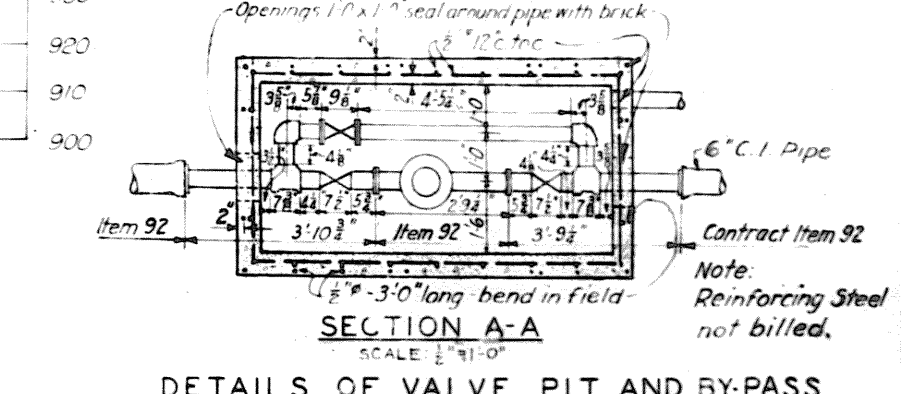
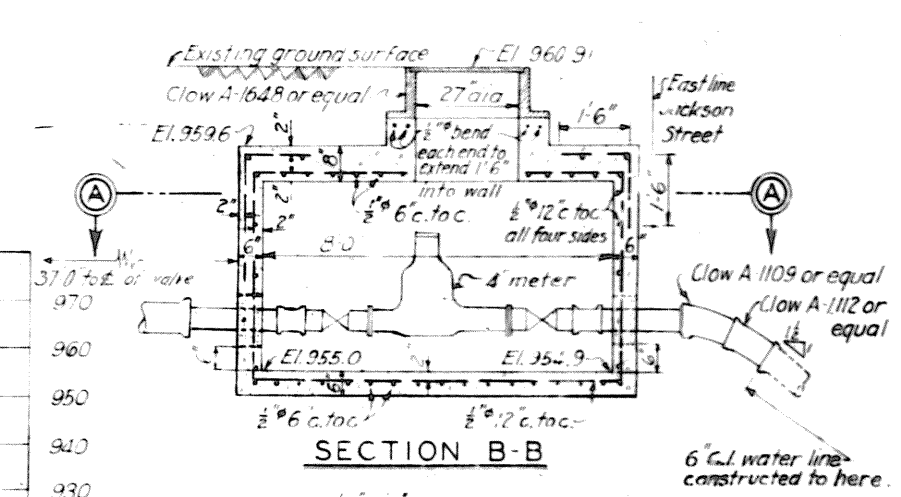
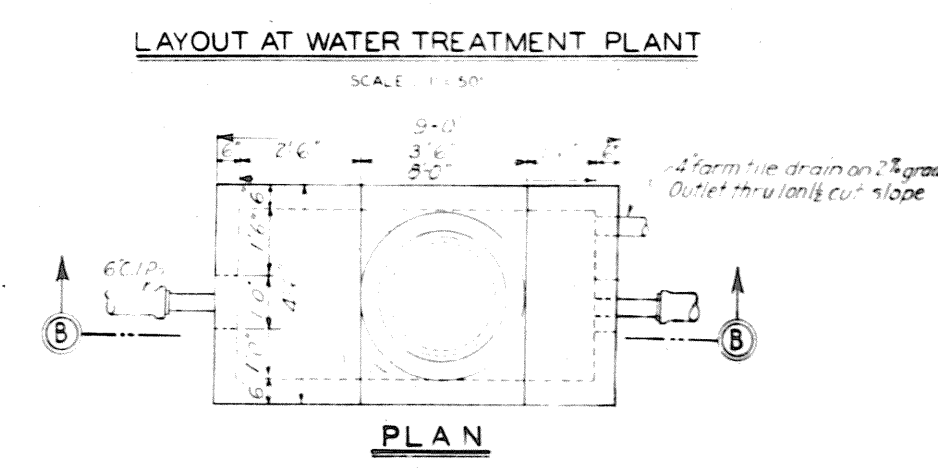
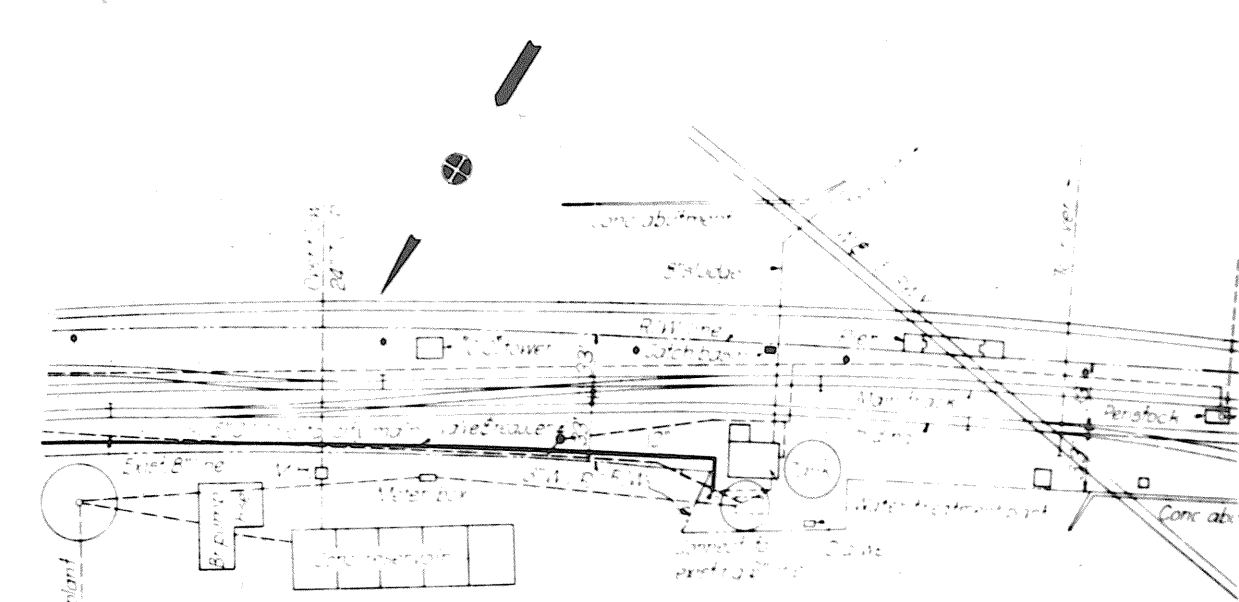
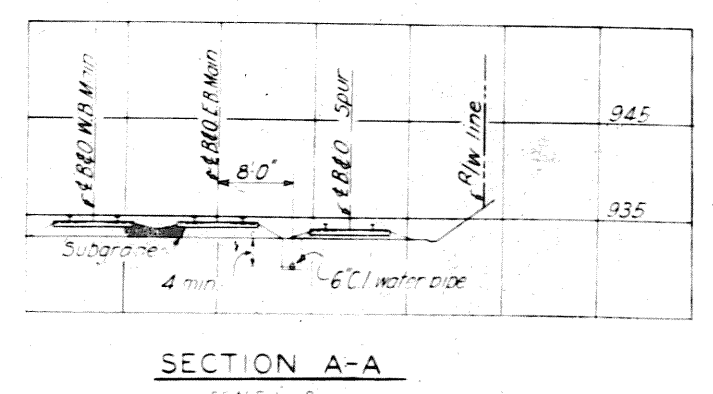
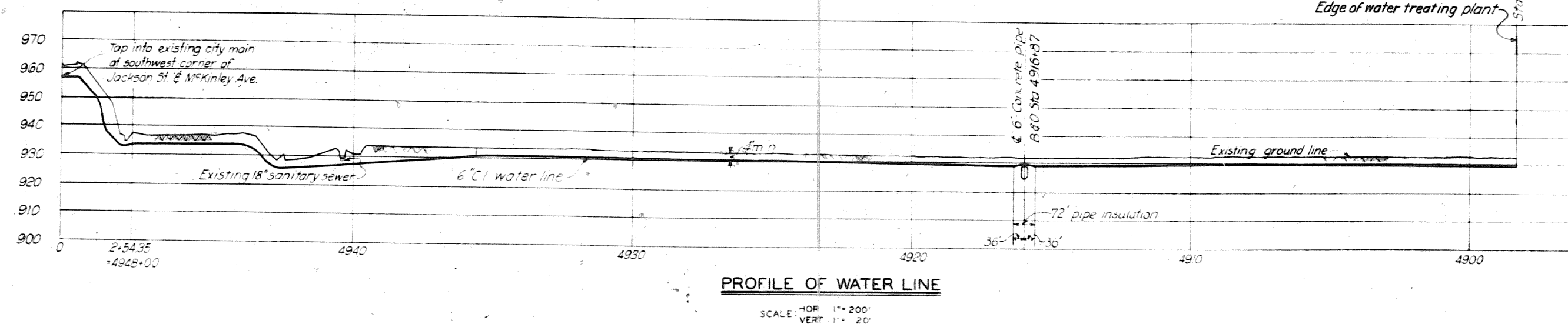
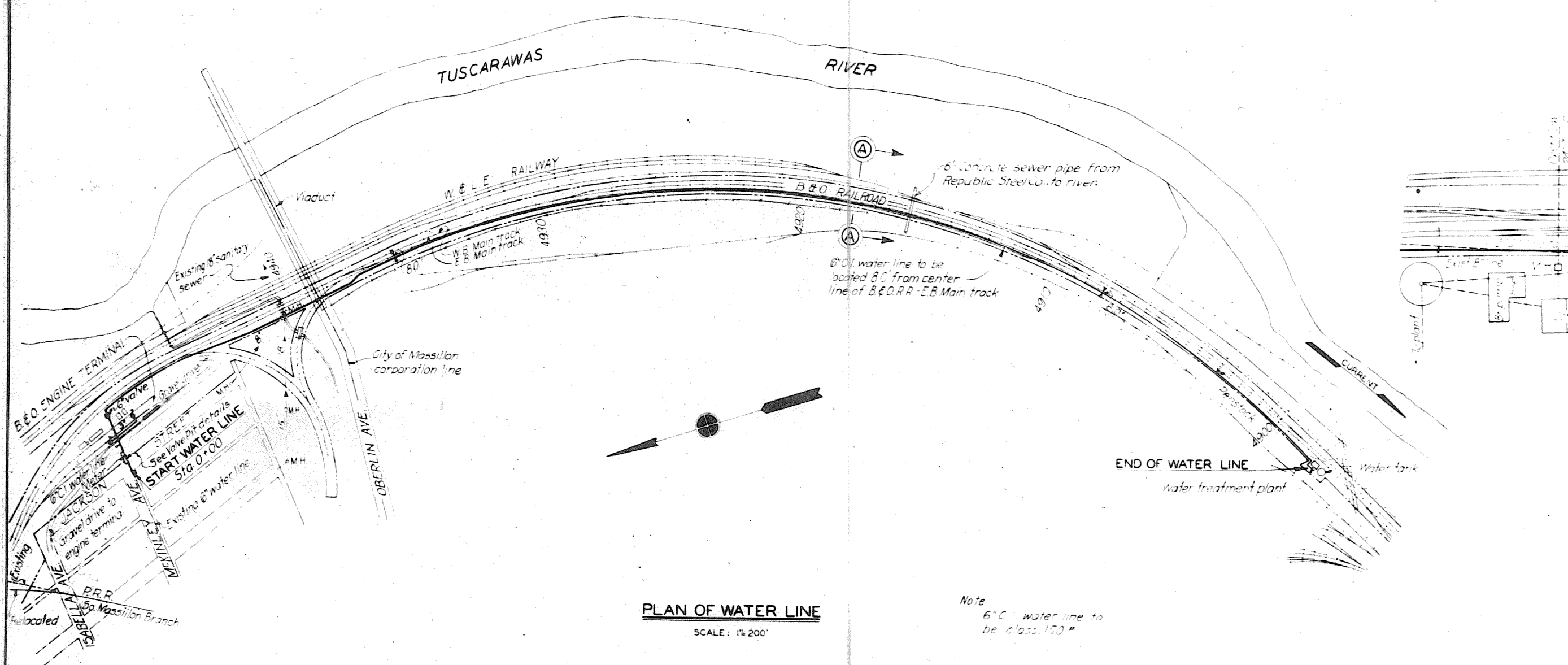
Pitch gutters 1/2 per foot
For splash block details see Dwg No 66/49
Lockers to be included in this contract.
Concrete to be Class A
Electrical and plumbing fixtures to be furnished by others and installed by the contractor

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1

B. & O. R. R. ENGINE TERMINAL
OFFICE & SHOP

1070 SHEETS SHEET NO. 40 SCALE: 1/4\"/>
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY, 1941
SUBMITTED: [Signature] PRINCIPAL ENGINEER APPROVED: [Signature] MAJOR, CORPS OF ENGINEERS
DRAWN BY: J.T.C. TRACED BY: A.S. CHECKED BY: R.H.H. FILE NO. 0271-PM-66/50 DATED
TRANSMITTED WITH LETTERS

WORK AS CONSTRUCTED



NOTES
For general plan, see Dwg. Nos. 16/4 and 16/5.
For engine terminal layout, see Dwg. No. 66/48.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
B. & O. R. R. ENGINE TERMINAL
LOCATION OF 6-IN. WATER LINE**

10 76 SHEETS SHEET NO. 49 SCALE AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY, 1941

SUBMITTED: *W. J. Jackson* PRINCIPAL ENGINEER APPROVED: *W. J. Jackson* MAJOR, CORPS OF ENGINEERS

DRAWN BY: H. G. H. TRACED BY: H. G. H. CHECKED BY: D. G. J.

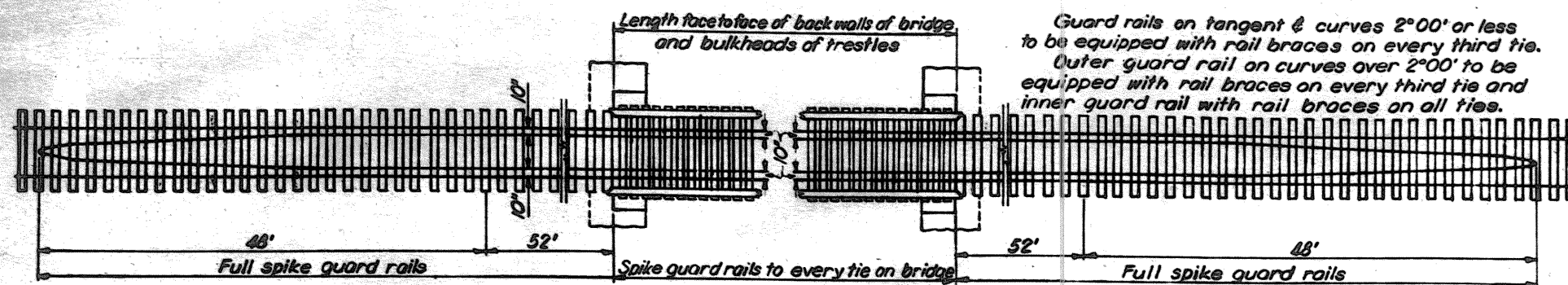
REVISIONS

NO.	DATE	REVISIONS
1	9-29-44	REVISED AS CONSTRUCTED
2	11-25-41	ADDED 4" BY-PASS VALVES AND PIT DETAILS
3	9-20-41	ADDED 6" VALVE
4	8-30-41	ADDED 6" CONCRETE PIPE & PIPE INSULATION

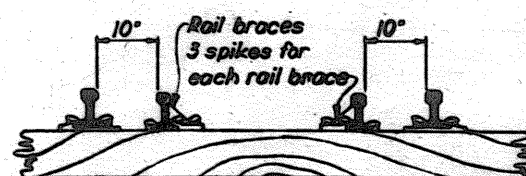
TRANSMITTED WITH LETTERS DATED

FILE NO. 0271-PM-66/51

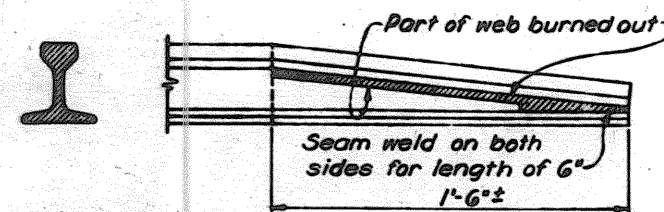
WORK AS CONSTRUCTED



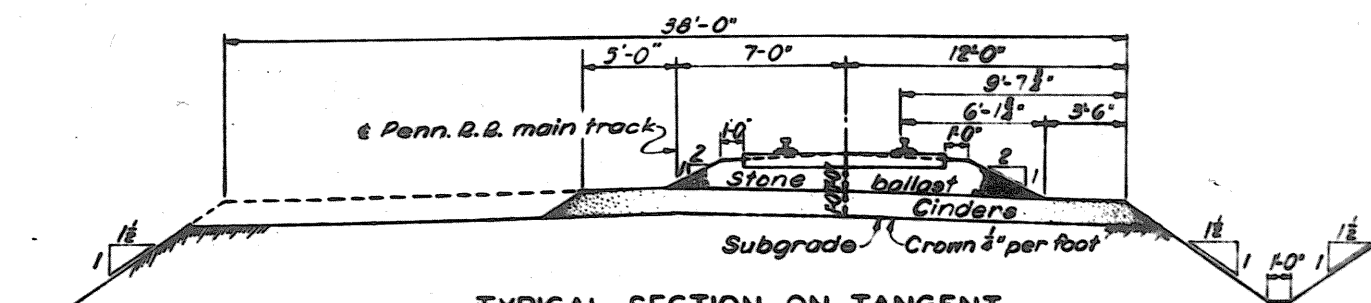
PLAN
NOT TO SCALE



SECTION
SCALE: $\frac{1}{4}" = 1'-0"$

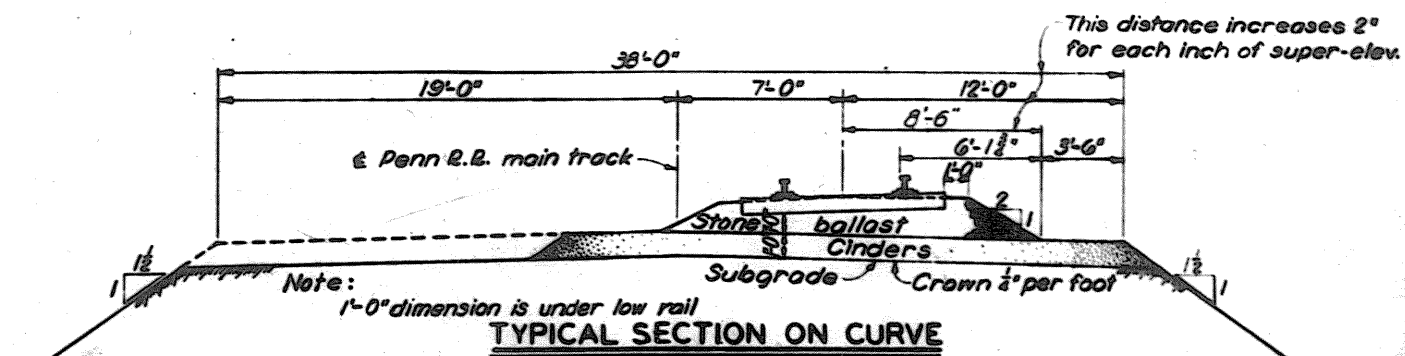


DETAIL OF END OF GUARD RAIL



TYPICAL SECTION ON TANGENT

SCALE: $\frac{1}{4}'' = 1'-0''$

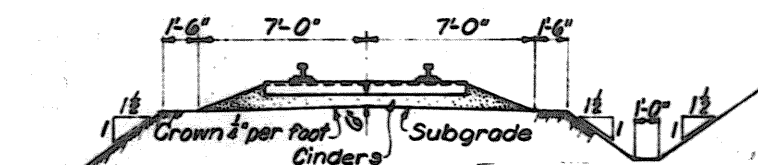


TYPICAL SECTION ON CURVE

SCALE: $\frac{1}{4}$ " = 1'-0"

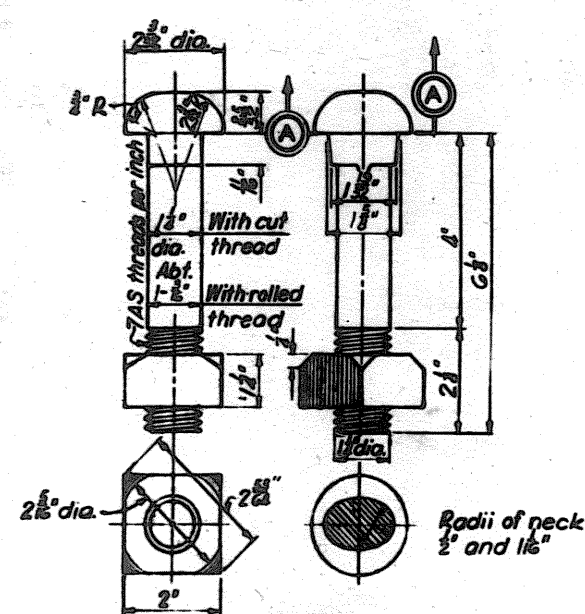
ROADBED SECTIONS FROM STA. 5834+00 TO STA. 5816+00

DEG. OF CURVE	SUPER ELEVATION	
	MAIN LINE	SO. MASS. BR.
1°	2"	
6°		1"



ROADBED SECTION FOR TEMPORARY TRACK
AND SOUTH MASSILLON BRANCH

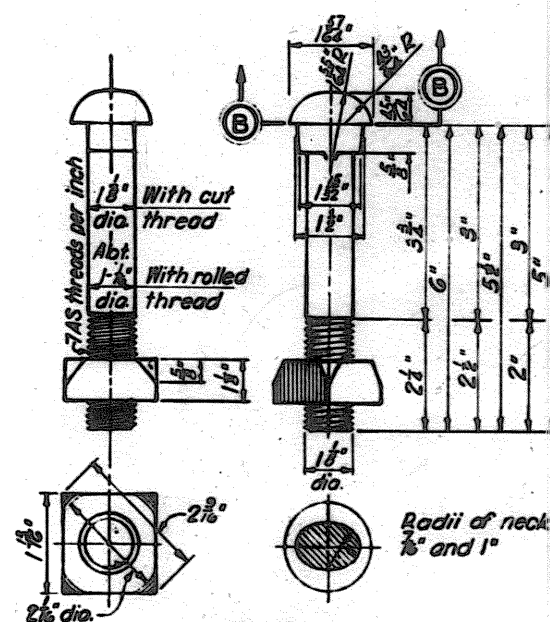
SCALE: $\frac{1}{4}'' = 1'-0''$



SECTION A-A

TRACK BOLT FOR 130 LB.
P.S. RAIL SECTION

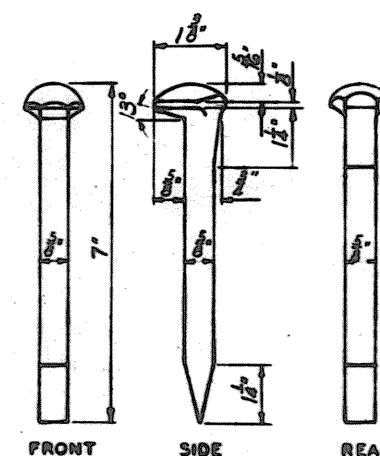
SCALE: 6"=1'-0"



SECTION B-B

TRACK BOLT FOR 131 LB.
R.E. RAIL SECTION

SCALE: 6"=1'-0"

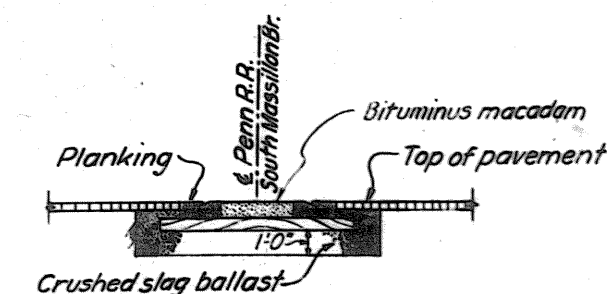


TRACK SPIKE

SCALE 0"=1'-0"



PLAC



**TYPICAL SECTION FOR TEMPORARY
TRACK CROSSING AT LINCOLN WAY
AND TREMONT AVE.**

SCALE: $\frac{1}{4}" = 1'-0"$

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

SECTION 1

P. R. R. DETAILS & ROADBED SECTIONS

IN 26 SHEETS SHEET NO. 51 SCALE: AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA. MAY, 1941

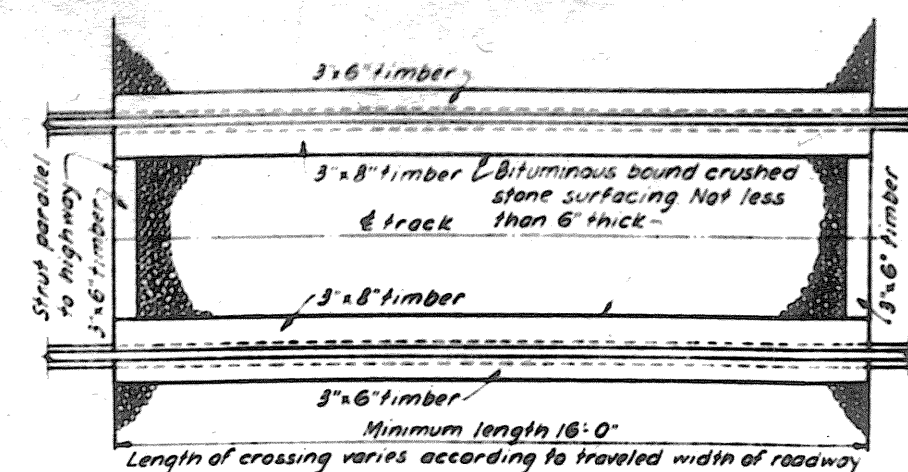
SUBMITTED: Wm. Oakes APPROVED: W. J. Oakes

ORIGIN OF CEM-ARM TRANSMITTED WITH LETTER

TRACED BY H.M.
CHECKED BY D.G.J. FILE NO. 027i-PM-66/53 DATED

WORK IS CONSTRUCT

WORK AS CONSTRUCTED



The image contains two technical drawings of a track bed cross-section.

CROSS SECTION: This drawing shows a cross-section of the track bed. It includes labels for "Crushed stone", "Ballast", "8" boat spikes", "Tie", "8" boat spikes", "Crushed stone", "Strut", and "Ballast". Dimensions are given as 18", 4", 8", and 6". A scale of $\frac{1}{8}" = 1'-0"$ is indicated.

DETAIL: This drawing is a detail view of the track bed. It includes labels for "Crushed stone", "Cleat", and "Ballast". A scale of $1" = 1'-0"$ is indicated.

NO. 8 TURNOUT			
BILL OF TIES			
NO.OF TIES	SIZE	NO.OF TIES	SIZE
6	7'x9'8'-6"	2	7'x9'12'-6"
6	7'x9'9'-0"	2	7'x9'13'-0"
5	7'x9'9'-6"	3	7'x9'13'-6"
4	7'x9'10'-0"	2	7'x9'14'-0"
3	7'x9'10'-6"	2	7'x9'14'-6"
3	7'x9'11'-0"	2	7'x9'15'-0"
3	7'x9'11'-6"	3	7'x9'15'-6"
3	7'x9'12'-0"	3	7'x9'16'-0"
Total No. of ties = 52 = 3/53 F & M.			

Diagram illustrating the layout of a siding and main track tangent. The siding is 10'-0" long, with a 2'-6" section on the left and a 2'-4 1/2" section on the right. The main track is 14'-0" long, with a 2'-4 1/2" section on the left and a 6'-1 1/2" section on the right. The tracks are separated by a 1'-0" gap. The diagram includes dimensions for the siding and main track, and a scale of 1/2" = 1'-0".

[illegible]

The diagram illustrates the cross-section of a single-track railway curve. Key dimensions and labels include:

- Top Dimensions:** A total width of 20'-0" is shown at the top. Below it, a series of segment widths are specified: 1'-6", 6'-1 1/2", 2'-4 1/2", 2'-4 1/2", 6'-4 1/2", 10'-0", 6'-4 1/2", 2'-4 1/2", 1'-6", and 1'-0".
- Track Profile:** The track bed is shown with a central section labeled "Ballast" and a sloped section on the right labeled "1 1/2".
- Labels:** The text "SINGLE TRACK CURVE" is prominently displayed in the center, with "SCALE: 1/2" = 1'-0"" below it.

SINGLE TRACK CURVE
SCALE: $\frac{1}{4}" = 1'-0"$

SUPER-ELEVATION	
MAIN TRACKS	INDUSTRIAL TRK
2"	1"

NO. 10 TURNOUT			
BILL OF TIES			
NO. OF TIES	SIZE	NO. OF TIES	SIZE
6	7 1/2" x 8' 6"	3	7 1/2" x 12' 6"
6	7 1/2" x 9' 0"	3	7 1/2" x 13' 0"
6	7 1/2" x 9' 6"	2	7 1/2" x 13' 6"
4	7 1/2" x 10' 0"	3	7 1/2" x 14' 0"
4	7 1/2" x 10' 6"	3	7 1/2" x 14' 6"
4	7 1/2" x 11' 0"	2	7 1/2" x 15' 0"
4	7 1/2" x 11' 6"	3	7 1/2" x 15' 6"
2	7 1/2" x 12' 0"	4	7 1/2" x 16' 0"

Total No. of ties = 59 = 3662 E.B.M.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
W. & L. E. RY. DETAILS
& ROADBED SECTIONS**

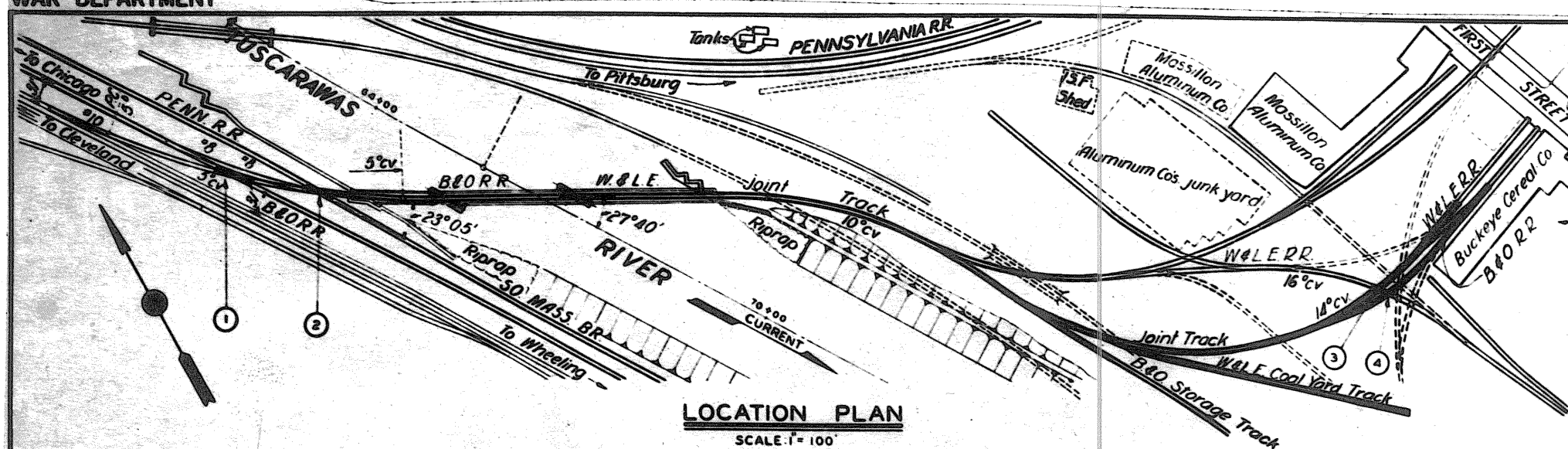
IN 70 ANGERS SHEET NO. 52 SCALE AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY, 1961

SUBMITTED: *Ray Johnson* APPROVED: *W. A. Walker*
CIVIL ENGINEER MAJOR, CORPS OF ENGINEERS

DESIGN BY: U.S.S. TRANSMITTED WITH LETTER
TRACED BY: A.S. FILE NO. 0271-PM-66/54 DATED

WORK AS CONSTRUCTED



LOCATION PLAN
SCALE: 1" = 100'

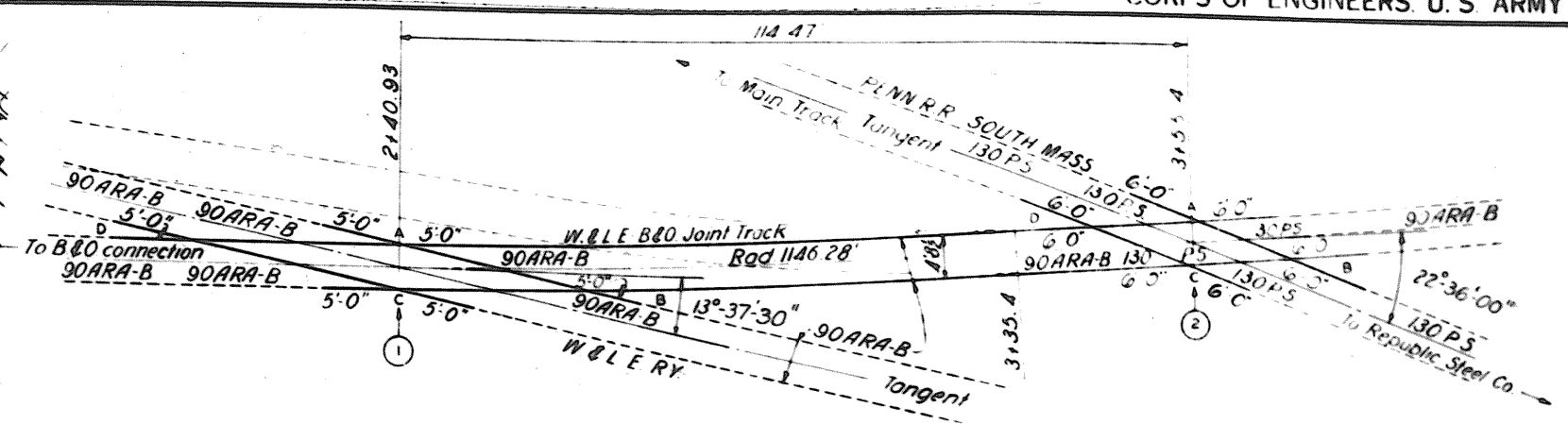
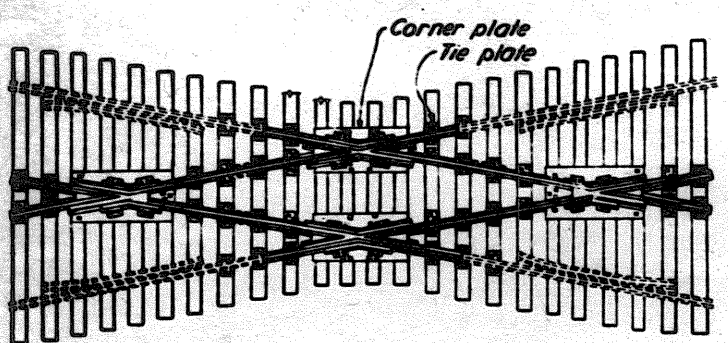
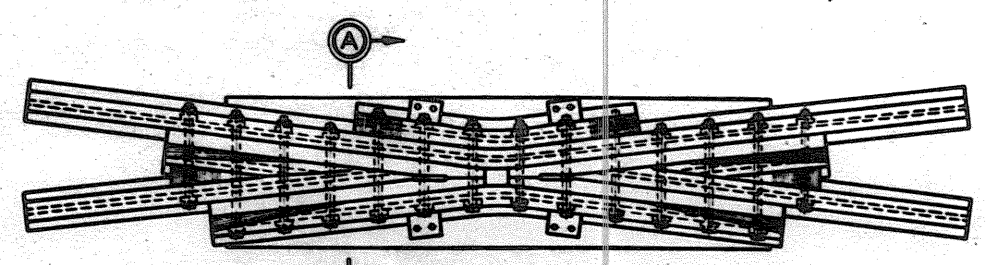


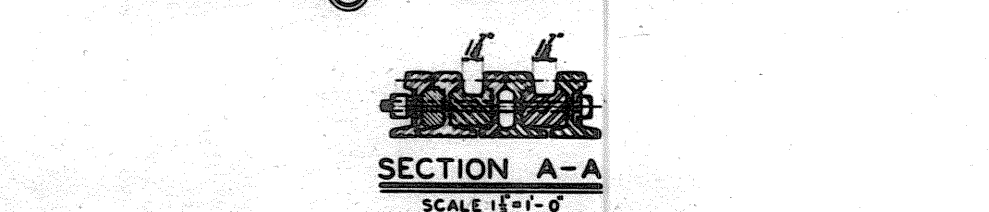
DIAGRAM OF CROSSINGS NO. 1 AND NO. 2



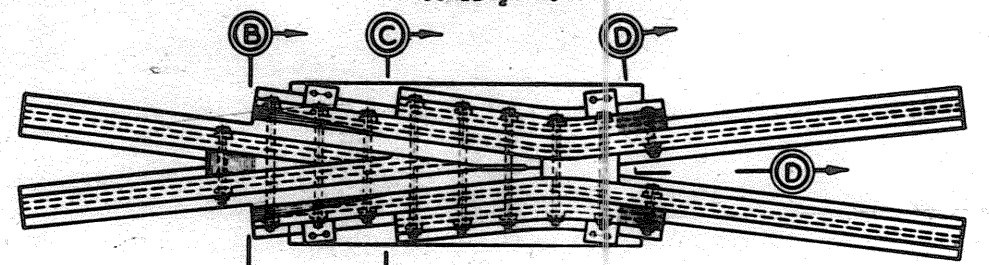
A.R.E.A. STYLE B
FOR CROSSINGS NOS. 1 & 2



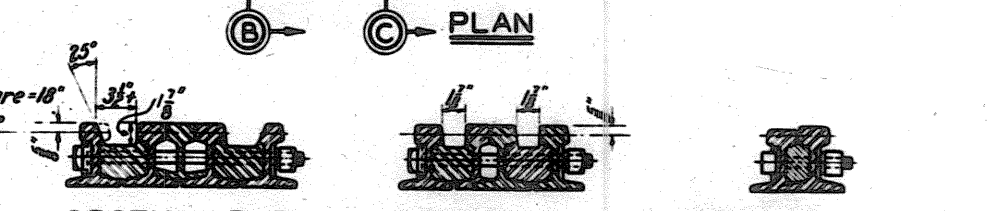
PLAN



SECTION A-A
SCALE: 1 1/2" = 1'-0"



PLAN

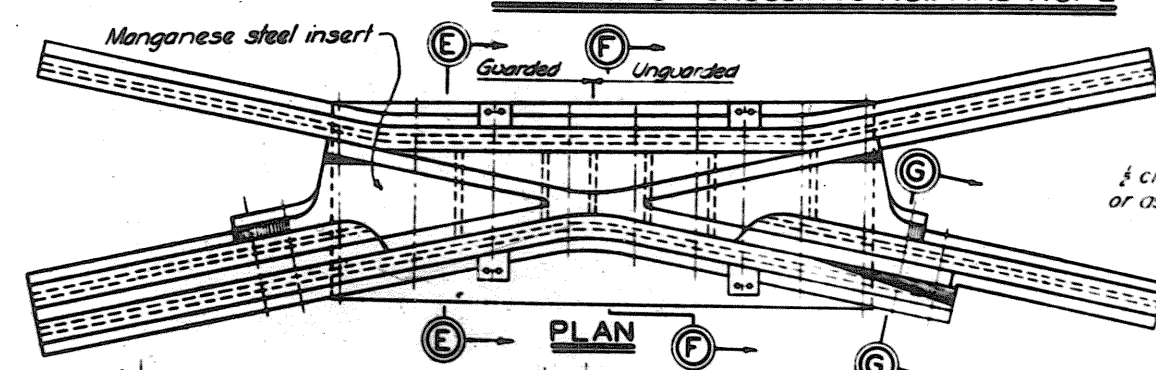


SECTION B-B
SCALE: 1 1/2" = 1'-0"

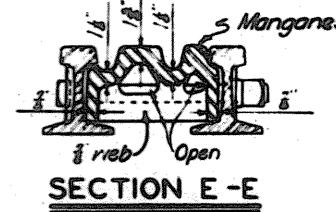
SECTION C-C
SCALE: 1 1/2" = 1'-0"

SECTION D-D
SCALE: 1 1/2" = 1'-0"

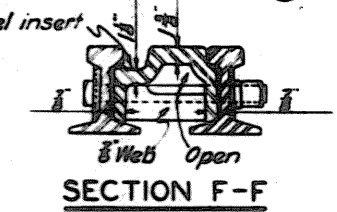
DETAILS OF CROSSING NO. 1



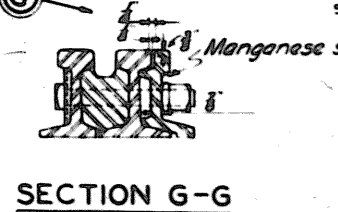
PLAN



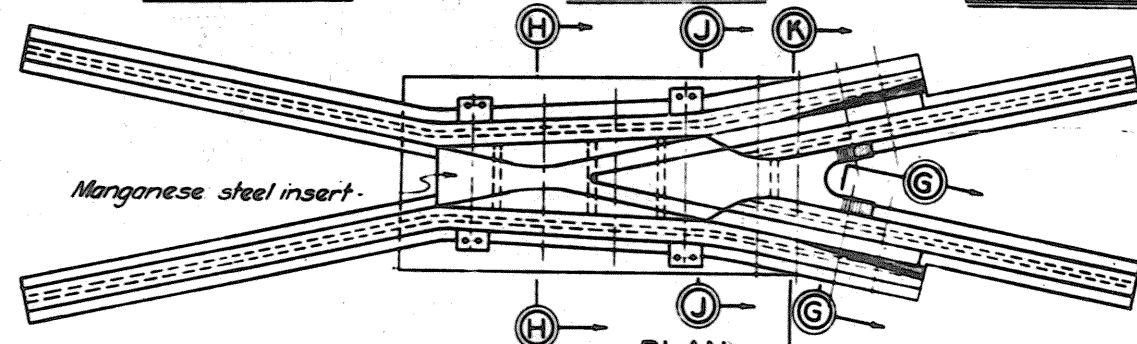
SECTION E-E



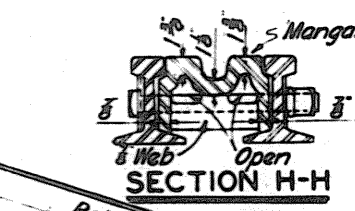
SECTION F-F



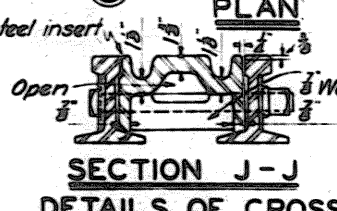
SECTION G-G



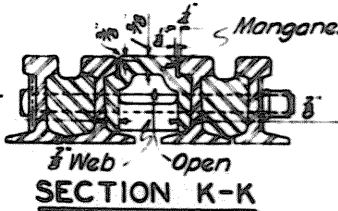
PLAN



SECTION H-H



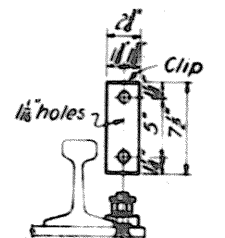
SECTION J-J



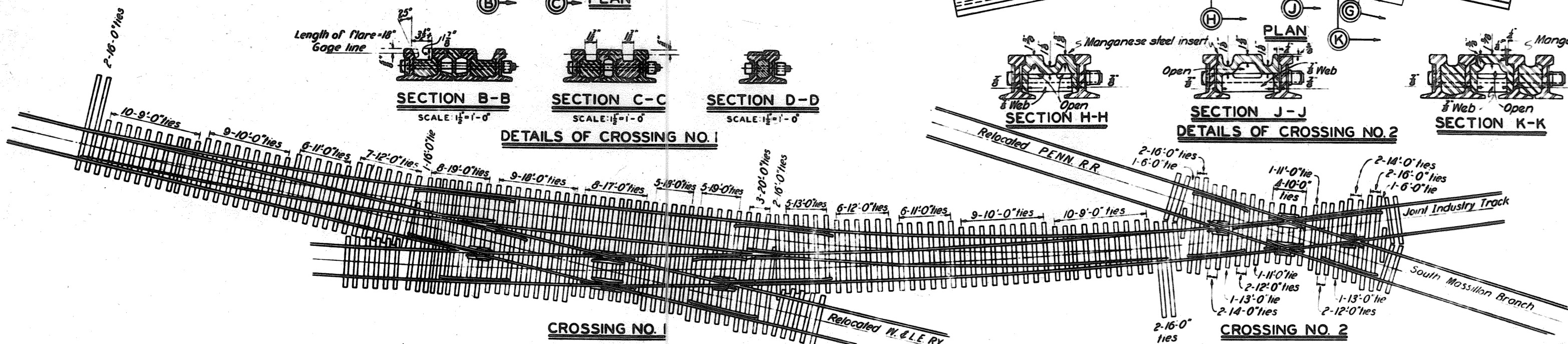
SECTION K-K

DETAILS OF CROSSING NO. 2

SPECIAL TIE PLATE
SCALE: 1 1/2" = 1'-0"



CLIP WITH COUNTERSUNK
HEAD BOLTS
SCALE: 1 1/2" = 1'-0"



CROSSING NO. 1

CROSSING NO. 2

DETAIL OF JOINT INDUSTRY TRACK CROSSING W&LE RY AND PENN. R.R.
SCALE: 1 1/2" = 1'-0"

NO. 1 CROSSING & TURNOUTS					
BILL OF TIES					
NO.	SIZE	NO.	SIZE	NO.	SIZE
20	7x9x9'-0"	5	7x9x13'-0"	14	7x9x19'-0"
18	7x9x10'-0"	7	7x9x16'-0"	3	7x9x20'-0"
12	7x9x11'-0"	8	7x9x17'-0"		
13	7x9x12'-0"	13	7x9x18'-0"		
113 pieces, 7,985 F B M					

NO. 2 CROSSING					
BILL OF TIES					
NO.	SIZE	NO.	SIZE	NO.	SIZE
2	7x9x6'-0"	2	7x9x13'-0"		
4	7x9x10'-0"	4	7x9x14'-0"		
2	7x9x11'-0"	4	7x9x16'-0"		
4	7x9x12'-0"				
22 pieces 1477 F B M					

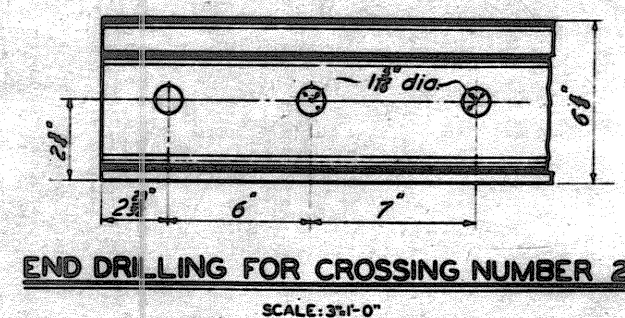
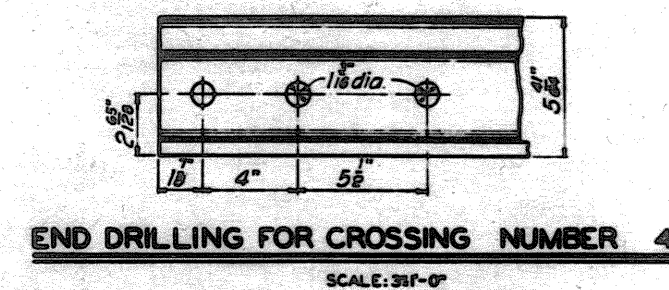
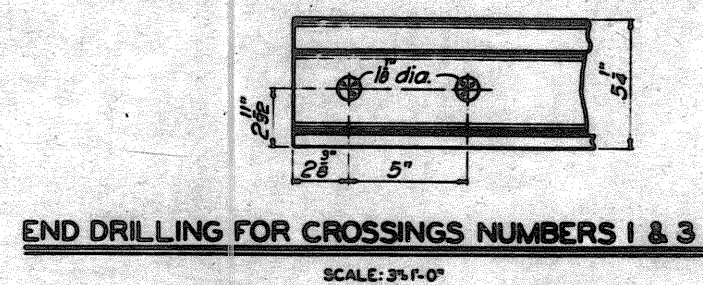
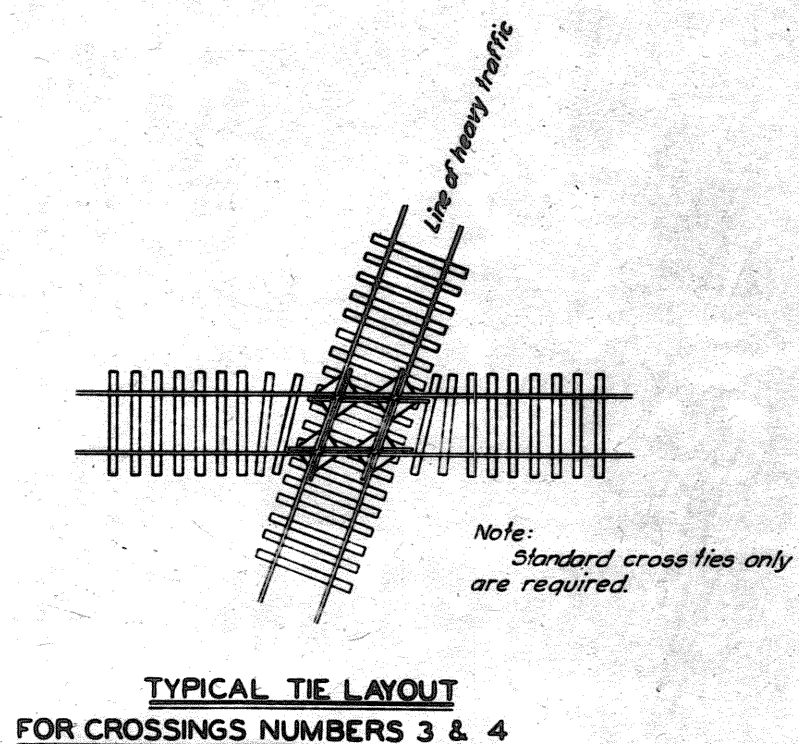
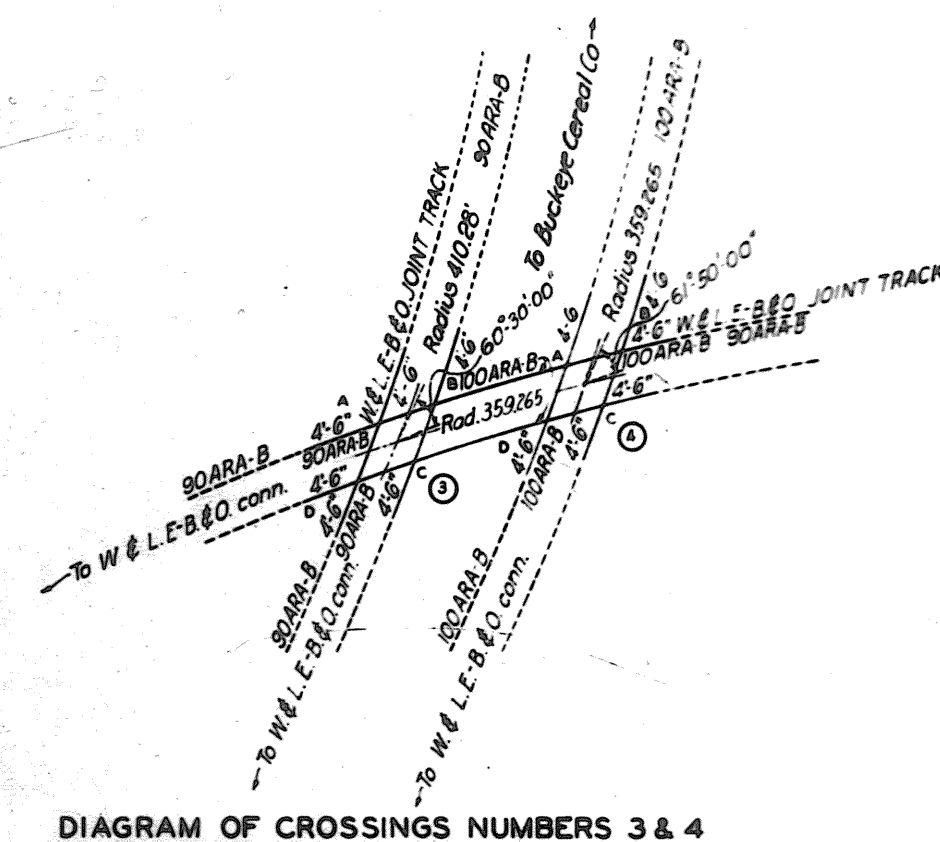
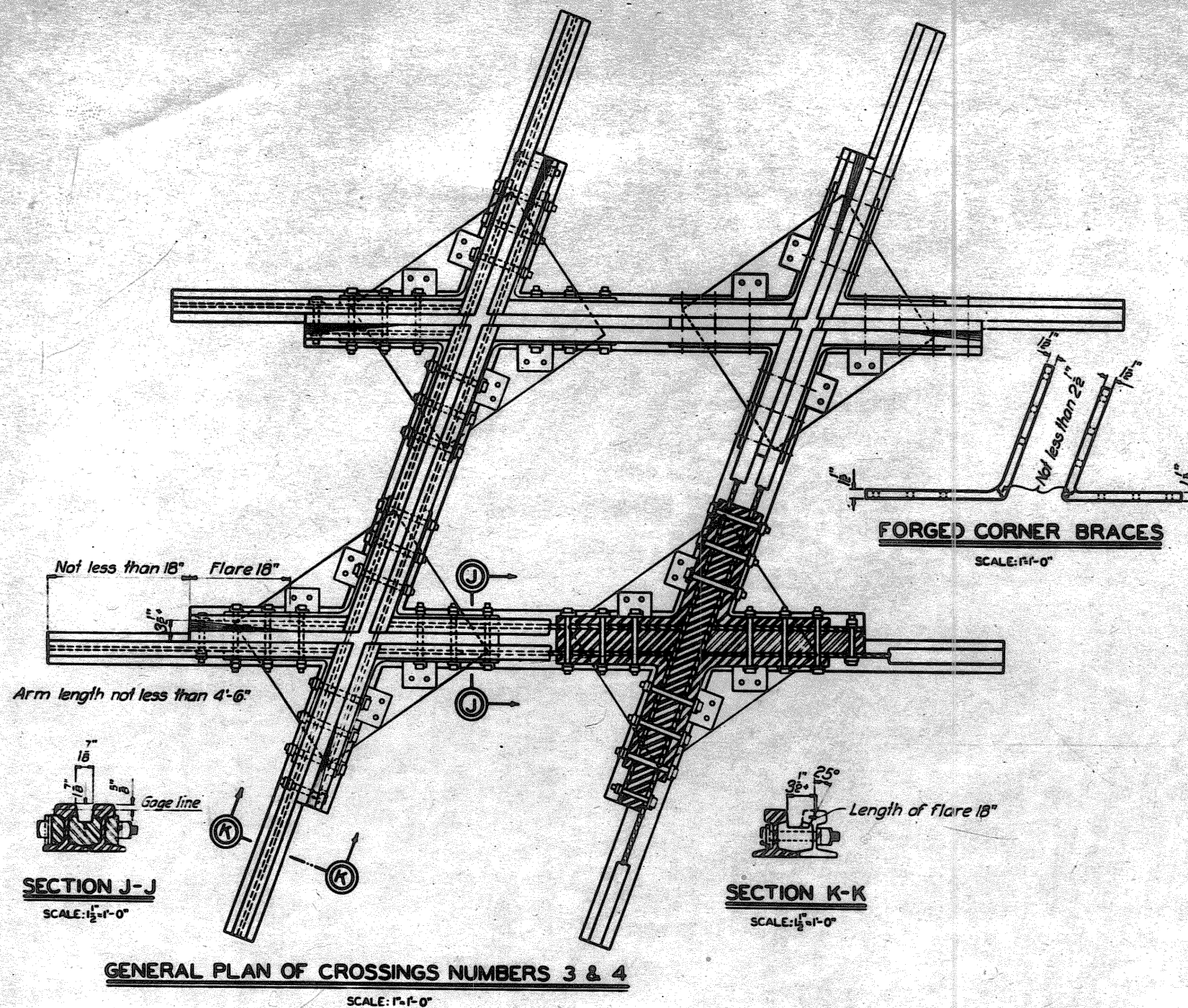
TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
CROSSING FROG DETAILS

1076 SHEETS SHEET NO. 53 SCALE: 1" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED BY: [Signature] APPROVED BY: [Signature] MAJOR, CORPS OF ENGINEERS

DRAWN BY: E. W. E. A. W. L. TRACED BY: R. A. E. CHECKED BY: D. G. J. FILE NO. 0271-PM-66/55 DATED



**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

CROSSING FROG DETAILS

IN 76 SHEETS

SHEET NO. 54

SCALE: AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., MAY. 1941

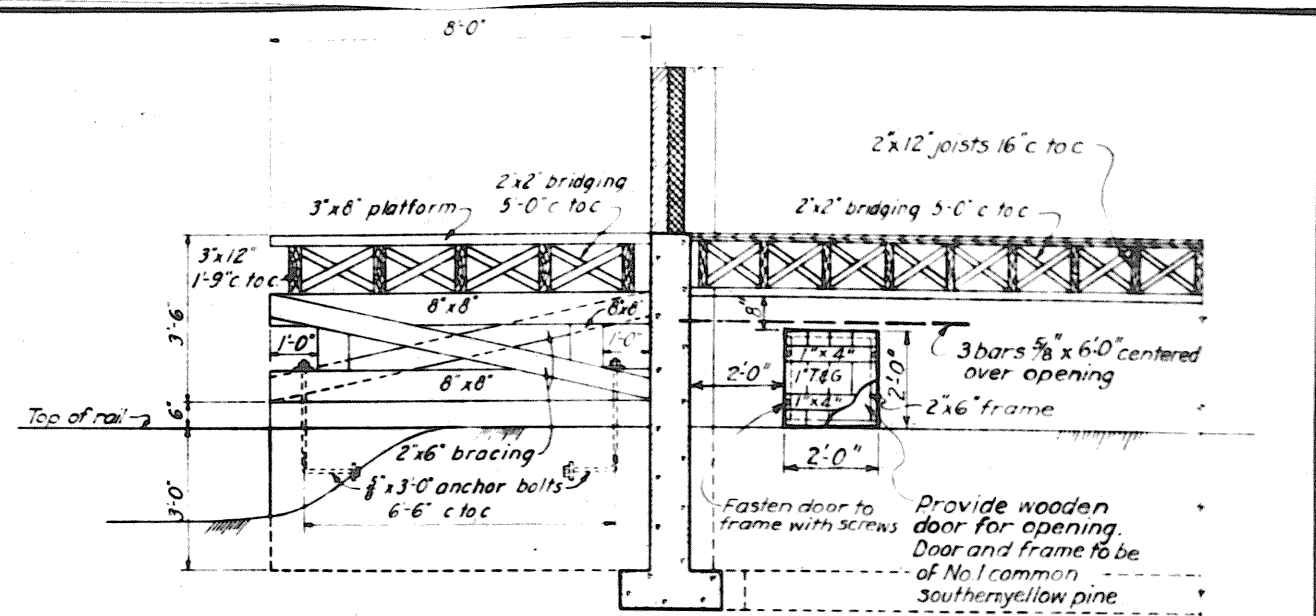
SUBMITTED: Wm. Cochran APPROVED: RT Walker

DRAWN BY A.W.M.

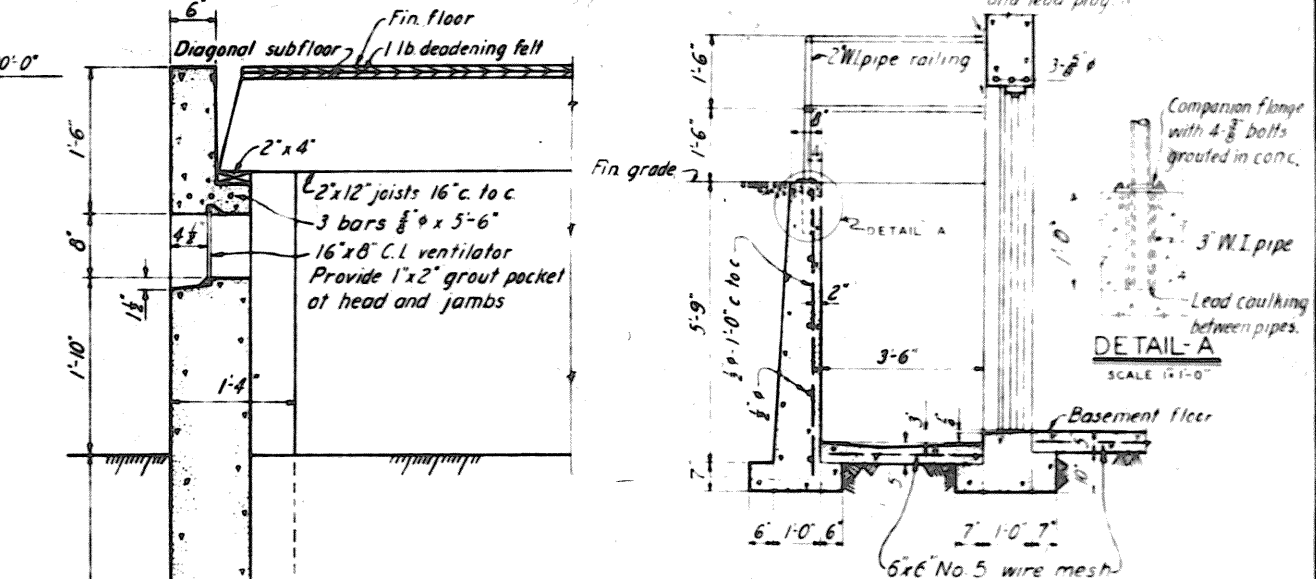
TRACED BY H.E.C. FILE NO. 027i-PM-66/56 DATED

FILE NO. 0271-PM-66/56

WORK AS CONSTRUCTED



SECTION F-F

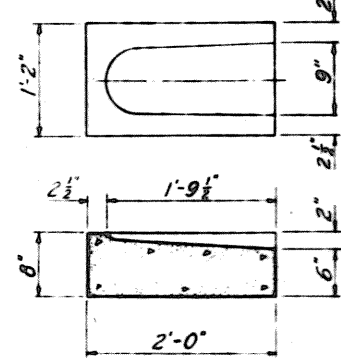


SECTION H-H

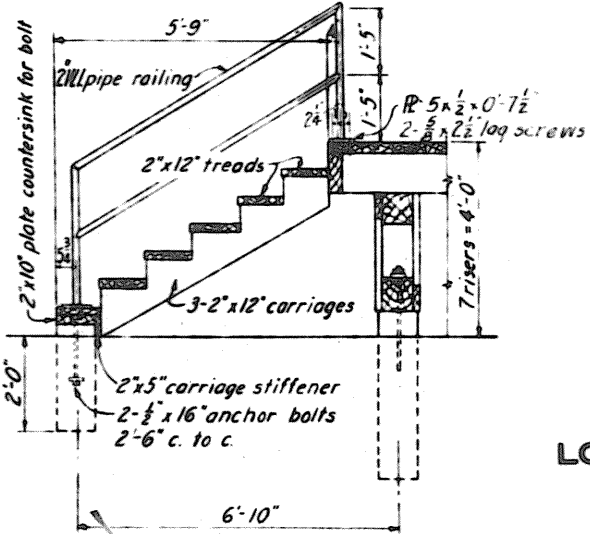
SCALE: $\frac{1}{2}'' = 1'-0''$

NOTES

Payment for plumbing, wiring and connections in item
W. & L. E. Ry Freight House and Platform.
Heating plant, lighting and plumbing fixtures to
be moved from old freight house.
All concrete to be Class 'A'.



SPLASH BLOCK



SECTION E-E

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

SECTION 1

W. & L. E. RY. FREIGHT TERMINAL FOUNDATION PLAN

IN 76 SHEETS

SHEET NO.55

SCALE: $\frac{1}{2}'' = 1'-0''$

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., MAY, 1941

SUBMITTED:  Alan Gordon

GRAIN BY JTC

TRACED BY WEC

CHECKED BY C.M.T.

APPROVED *W. H. Faller*
MAJOR CORP. OF ENGINEERS

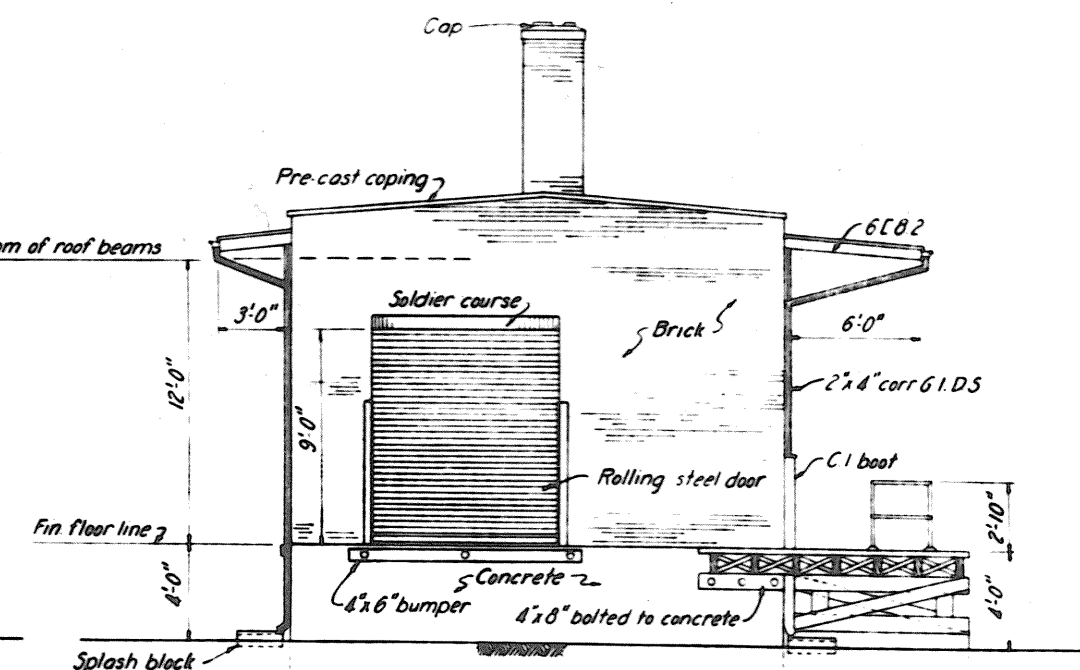
CHIEF ENGINEER

TRANSMITTED WITH LETTER
FILE NO 027i-PM-66457

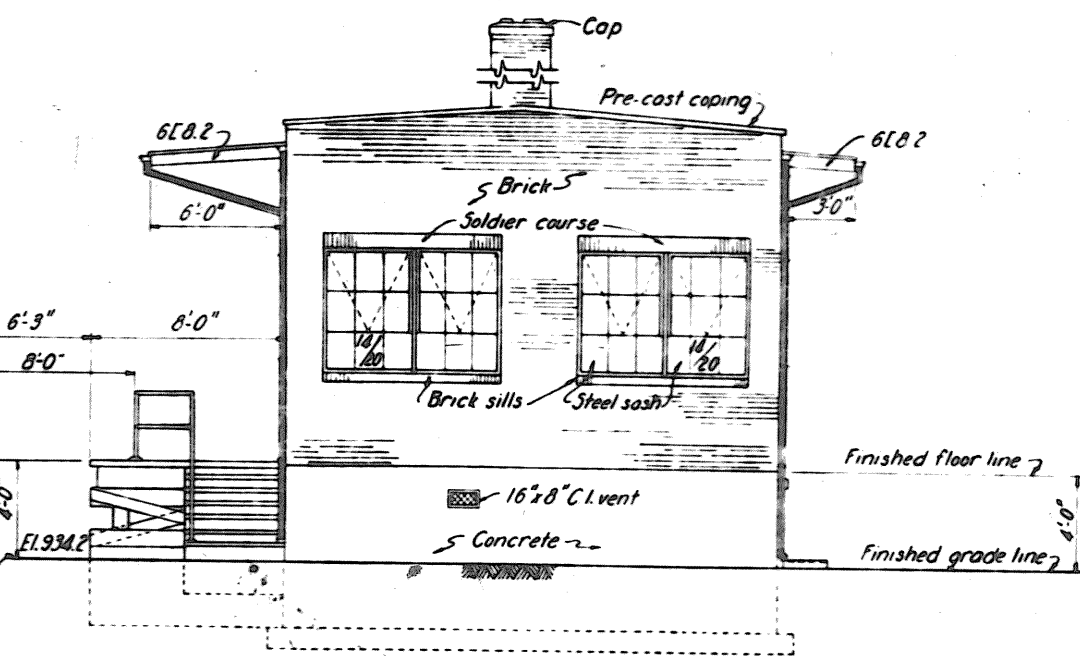
FILE NO 0271 FMI 00/37 PAGES

WORK AS CONSTRUCTED

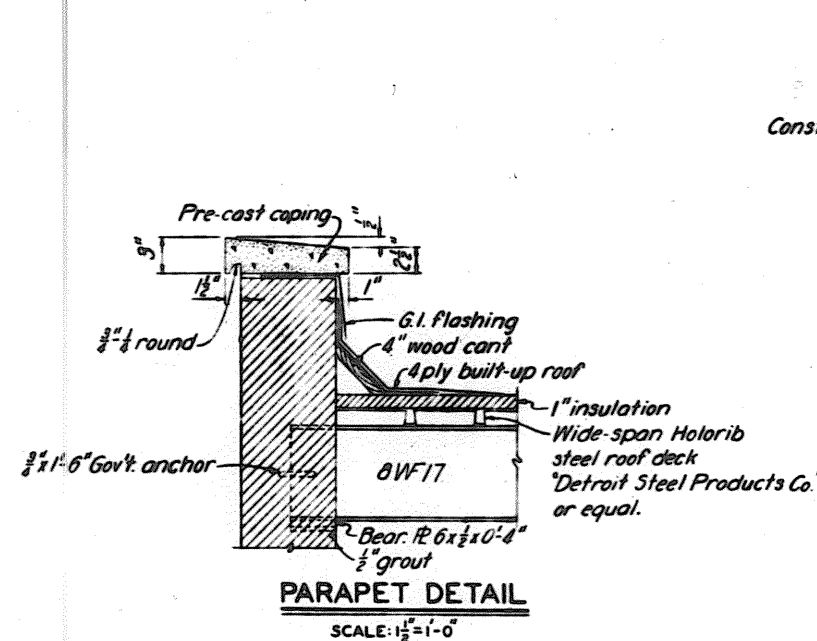
WORK AS CONSTRUCTED



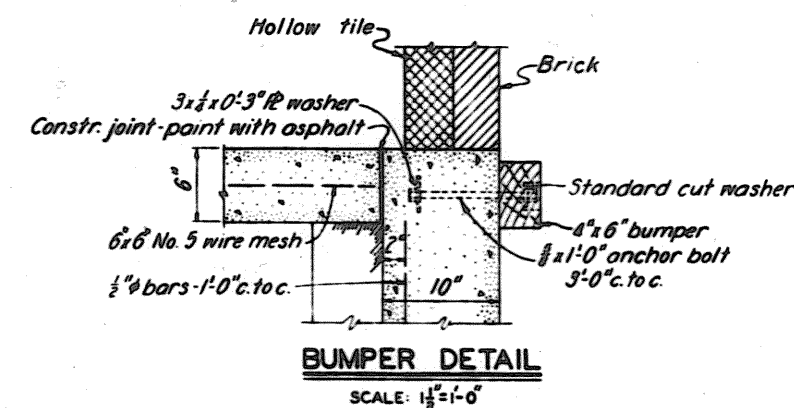
SOUTH ELEVATION



WALNUT RD. ELEVATION



PARAPET DETAIL
SCALE: $1\frac{1}{2}" = 1'-0"$



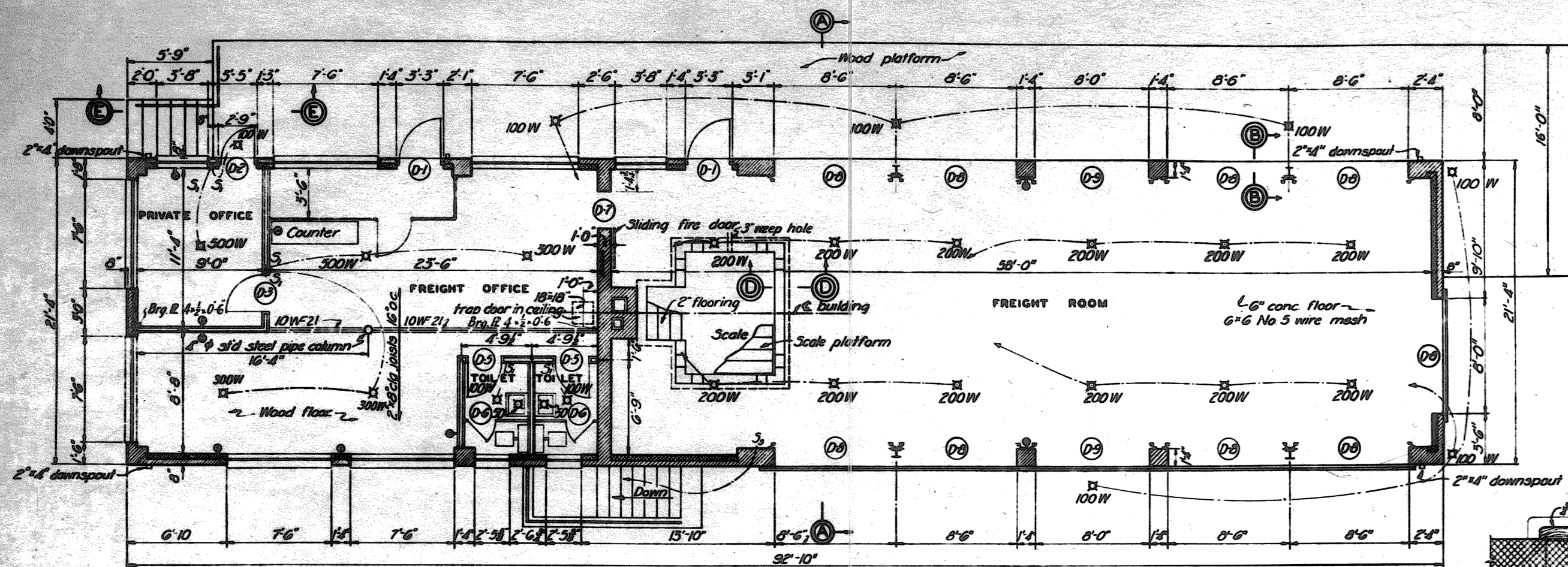
BUMPER DETAIL
SCALE: $1\frac{1}{2}'' = 1'-0''$

All concrete to be Class "A"

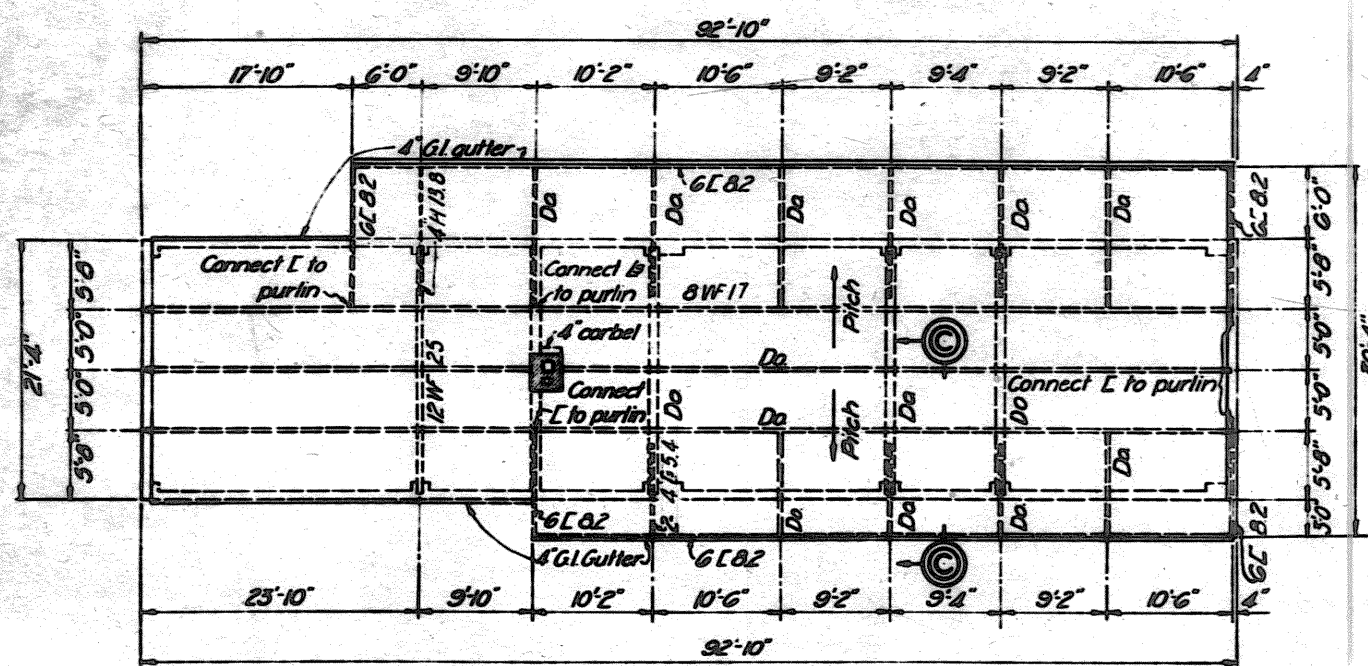
10 76 SHEETS SHEET NO. 56 SCALE: $\frac{1}{2}'' = 1'-0''$

TRACED BY H.A.E. TRANSMITTED WITH LETTER
CHECKED BY C.M.T. FILE NO 027i-PM-66/58 DATED

WORK AS CONSTRUCTED

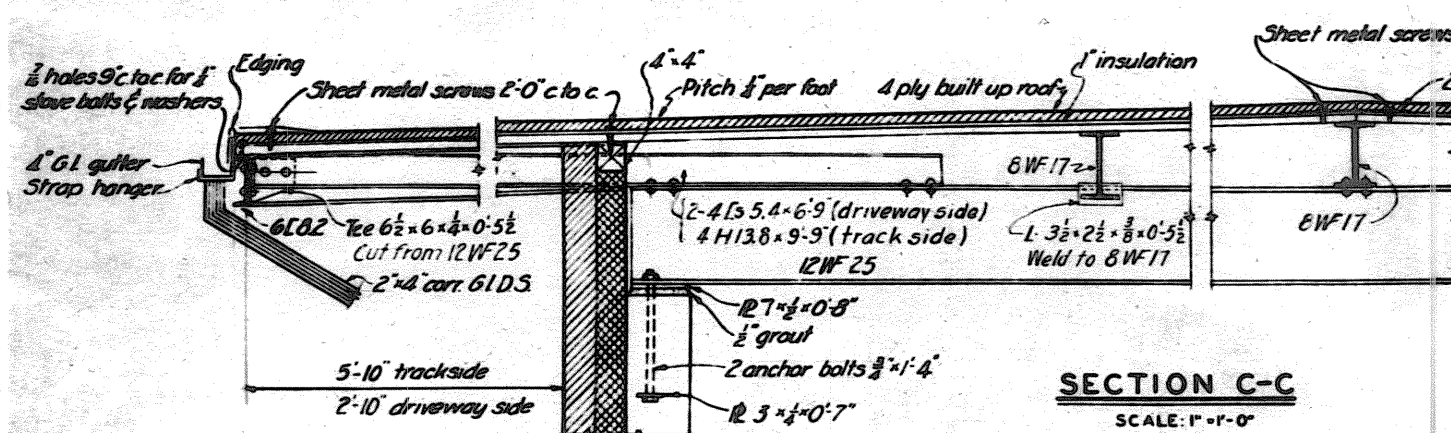


FLOOR PLAN



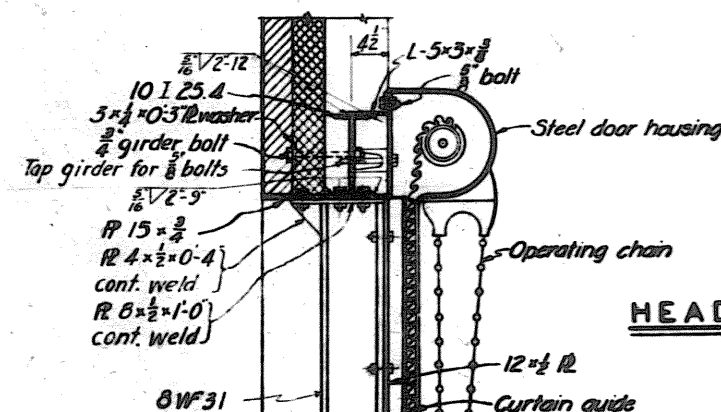
ROOF FRAMING PLAN

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



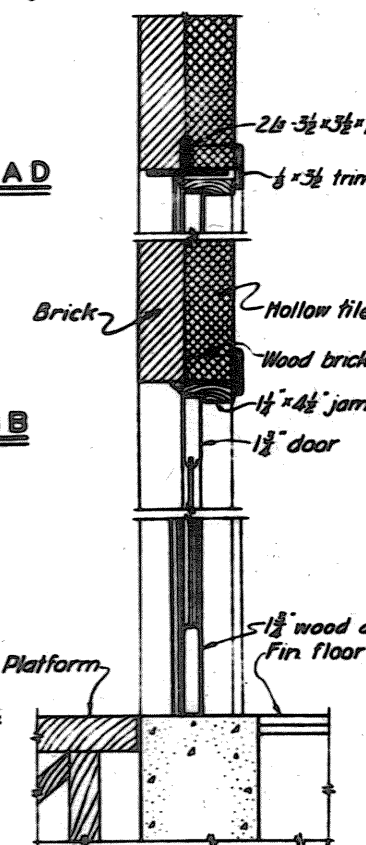
SECTION C-C

SCALE: 1" = 1'-0"



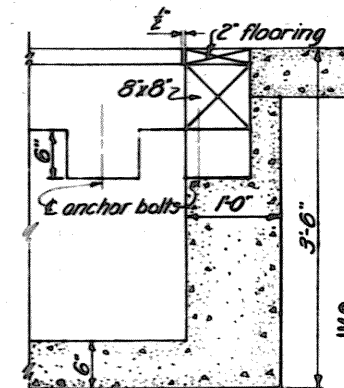
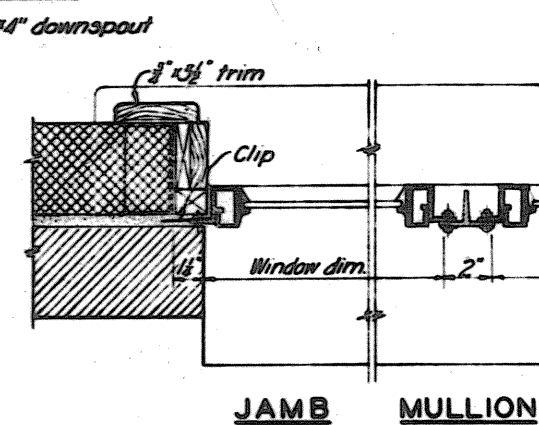
SECTION B-B

SCALE: 1" = 1'-0"



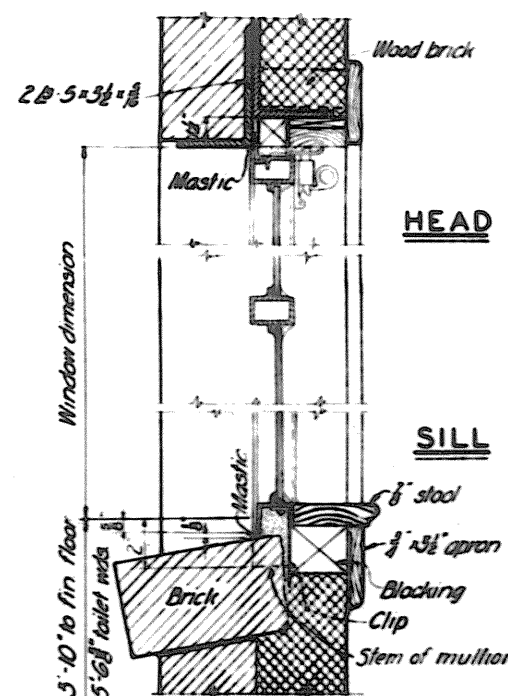
DOOR DETAILS

SCALE: 1/2" = 1'-0"



SECTION D-D

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



STEEL WINDOW DETAILS

SCALE: 3/4" = 1'-0"

LEGEND

- Ceiling outlet
- S Single pole switch
- S₃ Three pole switch
- ⊙ Convenience outlet

NOTES

For section A-A, see Dwg. No. 66/58.

TUSCARAWAS RIVER LOCAL PROTECTION PROJECT MASSILLON, OHIO SECTION 1

W. & L. E. RY. FREIGHT TERMINAL
FLOOR & ROOF PLANS & DETAILS

10 76 SHEETS

SHEET NO. 57

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

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1961

SUBMITTED: *W. J. Ry*APPROVED: *W. J. Ry*

DRAWN BY: J. T. C.

CHECKED BY: C. M. T.

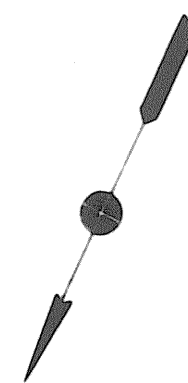
FILE NO. 0271-PM-66/59

TRANSMITTED WITH LETTER

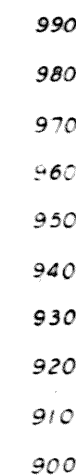
DATE: MAY, 1961

NO.	DATE	REVISIONS
1	9-29-66	REVISED AS CONSTRUCTED
2	10-29-61	SWITCH BOX LOCATION CHANGED AND WIRING IN FREIGHT ROOM REVISED
3		CHARACTER

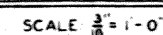
WORK AS CONSTRUCTED



PLAN



HOR. SCALE: 1" = 50'
VERT. SCALE: 1" = 20'



For details of headwall, see Dwg. No. 20/11
For details of catch basins and manhole,
see Dwg. No. 82/36.

10 76 SHEETS SHEET NO. 50 SCALE: 1"=50'

DRAWN BY W.D.S. TRANSMITTED WITH LETTER
 TRACED BY W.D.S.
 CHECKED BY D.G.I. FILE NO 027i-PM-68/36 DATED

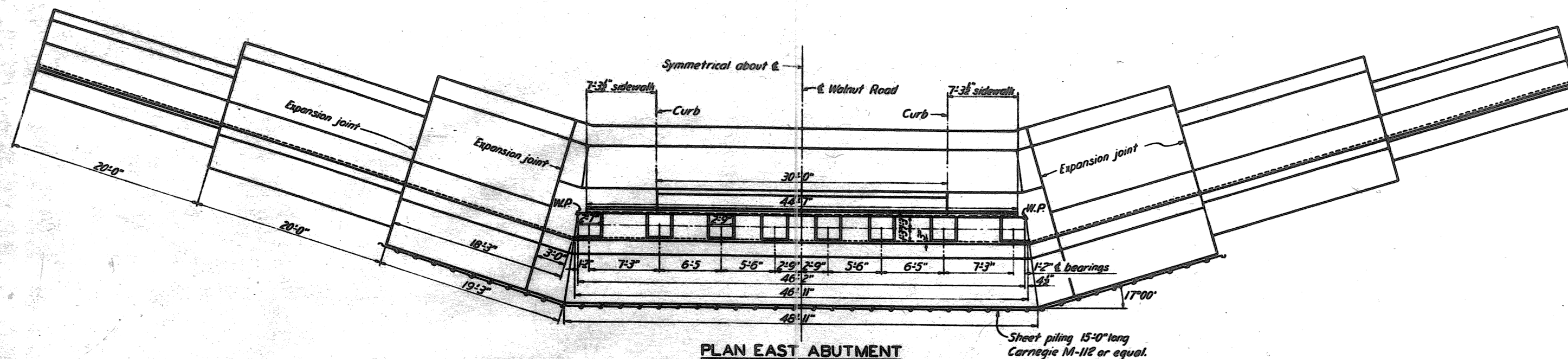
S.F.B.	5-17-44	REMOVED GINDER BASE FROM SIDEWALKS.
E.W.H.	6-15-42	REVISED GRADE UNDER P.R.R. SOUTH MASSILLON BR TO MAKE 14' C/L.
N.J.B.	2-20-42	ADDED PLAN AND PROFILE OF STORM SEWER.
BY	DATE	CHARACTER
REVISIONS		

WORK AS CONSTRUCTED

REINFORCING SCHEDULE

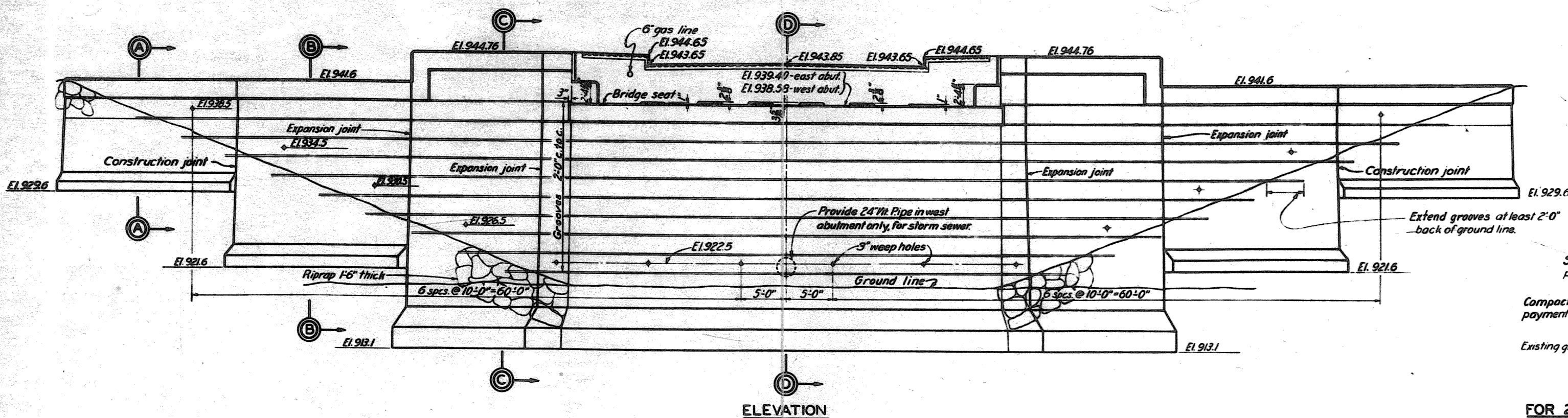
MARK	SIZE	LGTH	BENDING DIAGRAMS	NO.	UNIT WT.	TOTAL WT.
414	1"	3'-6"		56	2.34	131
417B	1"	4'-3"		80	2.84	227
478	1"	19'-6"		20	13.03	261
517	1"	4'-3"	3'-6" 417B	126	4.43	559
524B	1"	6'-0"	5'-3" 524B	80	6.26	501
559	1"	14'-9"	8'-0" 836B	16	15.38	247
5110	1"	27'-6"		8	28.68	229
624	3/8"	6'-0"		118	9.01	1063
836B	1"	9'-0"		174	24.03	4181
				Total 7498		

Note: Reinforcing bars for two abutments.

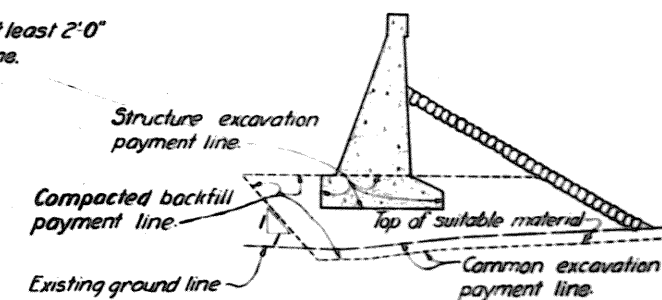


PLAN EAST ABUTMENT

WEST ABUTMENT SAME EXCEPT FOR ELEVATIONS NOTED



ELEVATION



TYPICAL SECTION SHOWING
COMPACTED BACKFILL
FOR 2 END MONOLITHS OF NORTH WING

NOTES

Chamfer all exposed edges 1" unless otherwise indicated.

Concrete to be Class 'B'.

SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

GROOVE DETAIL

SCALE: 3"=1'-0"

EXPANSION PLATE DETAIL

SCALE: 1"=1'-0"

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
WALNUT ROAD BRIDGE
ABUTMENTS**

10 70 00000 SHEET NO. 50 SCALE: 1"=1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941

SUBMITTED: [Signature] APPROVED: [Signature]
MAJOR, CORPS OF ENGINEERS

DRAWN BY: J.E.H. TRACED BY: N.W.D. CHECKED BY: E.H. TRANSMITTED WITH LETTER
FILE NO. 0271-PM-68/37 DATED

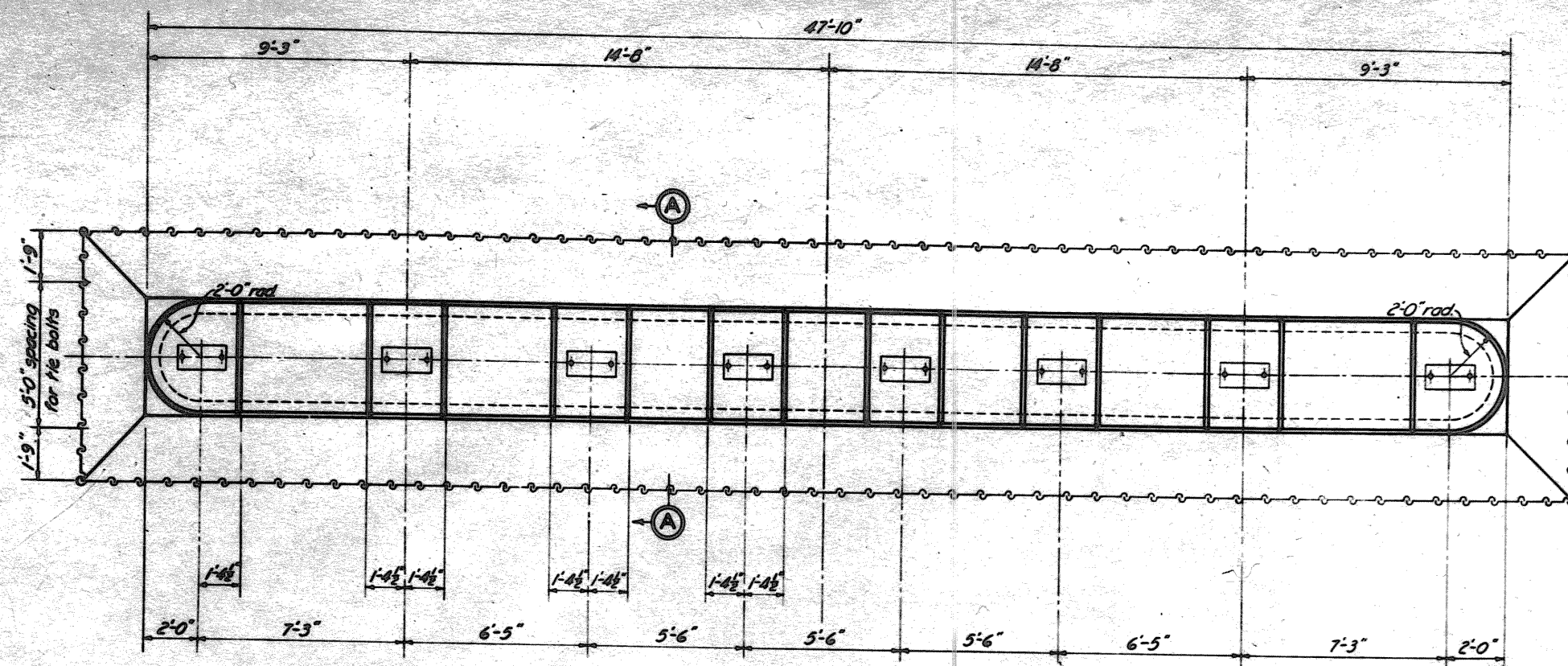
S.F.B. 9-29-44	REVISED AS CONSTRUCTED
N.J.B. 6-16-42	TYPICAL SECTION SHOWING COMPACTED BACKFILL ADDED.
BY DATE	CHARACTER
REVISIONS	

WORK AS CONSTRUCTED

REINFORCING SCHEDULE

MARK	SIZE	LGTH	BENDING DIAGRAM	NO	UNIT WT.	TOTAL WT.
620	3/8"	5'-0"		54	7.51	406
634A	3/8"	8'-6"		23	12.77	294
664A	3/8"	16'-0"		6	24.03	144
665A	3/8"	16'-3"		4	24.41	98
667A	3/8"	16'-9"		6	25.16	151
668A	3/8"	17'-0"		4	25.53	102
670A	3/8"	17'-6"		2	26.29	53
680	3/8"	20'-0"		44	30.04	1322
684	3/8"	21'-0"		54	31.54	1703
6100	3/8"	25'-0"		2	37.55	75
Total					4348	

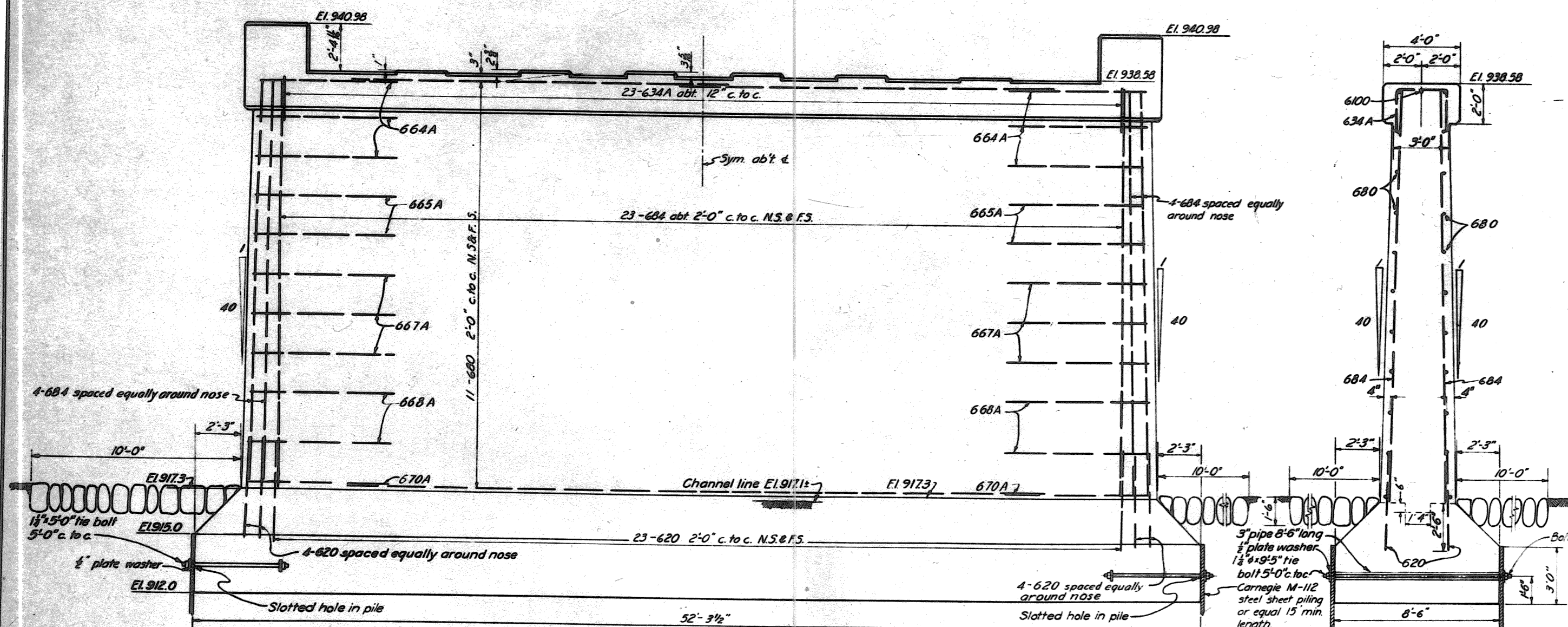
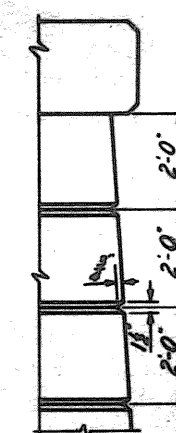
Note: Quantities shown are for one pier.



PLAN

GROOVE DETAIL

SCALE 1/2" = 1'-0"



ELEVATION

SECTION A-A

NOTES

Chamfer all exposed edges 1", unless otherwise noted.
All concrete to be Class B.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO

SECTION 1

WALNUT ROAD BRIDGE
PIERS

18 75 SHEETS

SHEET NO. 60

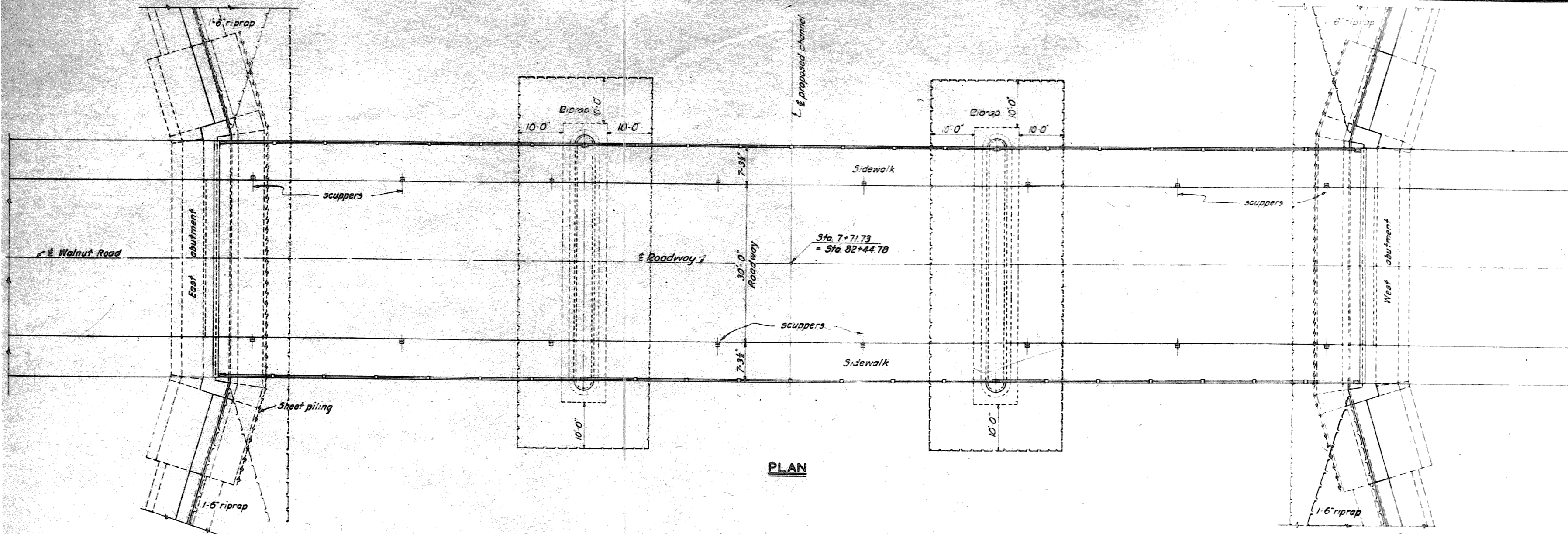
SCALE: 1/2" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1961

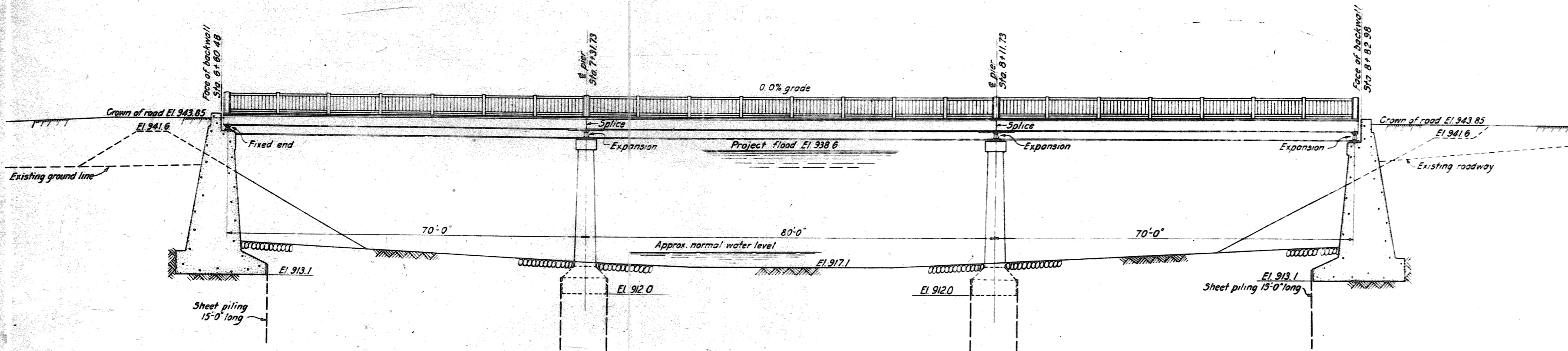
SUBMITTED: [Signature] APPROVED: [Signature]
[Signature] MAJOR, CORPS OF ENGINEERS

DRAWN BY J.E.M. TRACED BY S.S.H. CHECKED BY D.G.J. FILE NO O271-PM-68/38
DATE

WORK AS CONSTRUCTED



PLAN



UPSTREAM ELEVATION

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

**WALNUT ROAD BRIDGE
PLAN & ELEVATION**

10 70 SHEETS SHEET NO. 01 SCALE: 1"=10'

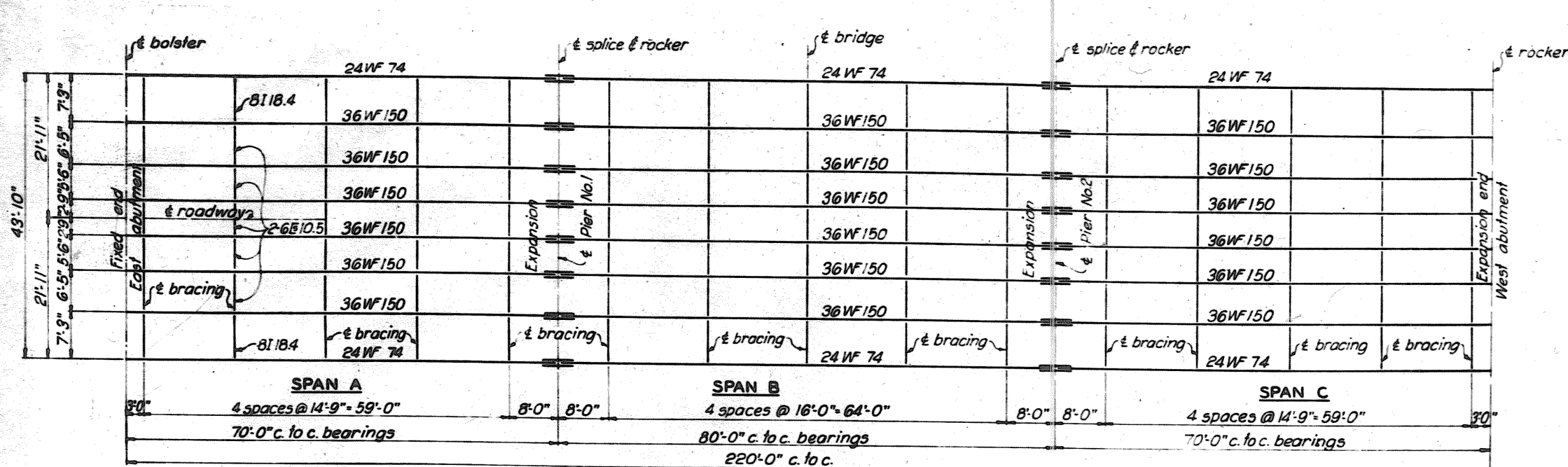
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941

SUBMITTED: *Wm. G. Baker* PRINCIPAL ENGINEER APPROVED: *W. G. Baker* MAJOR, CORPS OF ENGINEERS

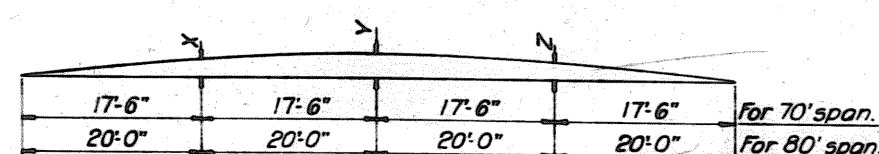
DRAWN BY: H. S. M. CHECKED BY: V. S. V. FILE NO. 0271-PM-68/39

BY	DATE	CHARACTER

WORK AS CONSTRUCTED



SUPERSTRUCTURE LAYOUT

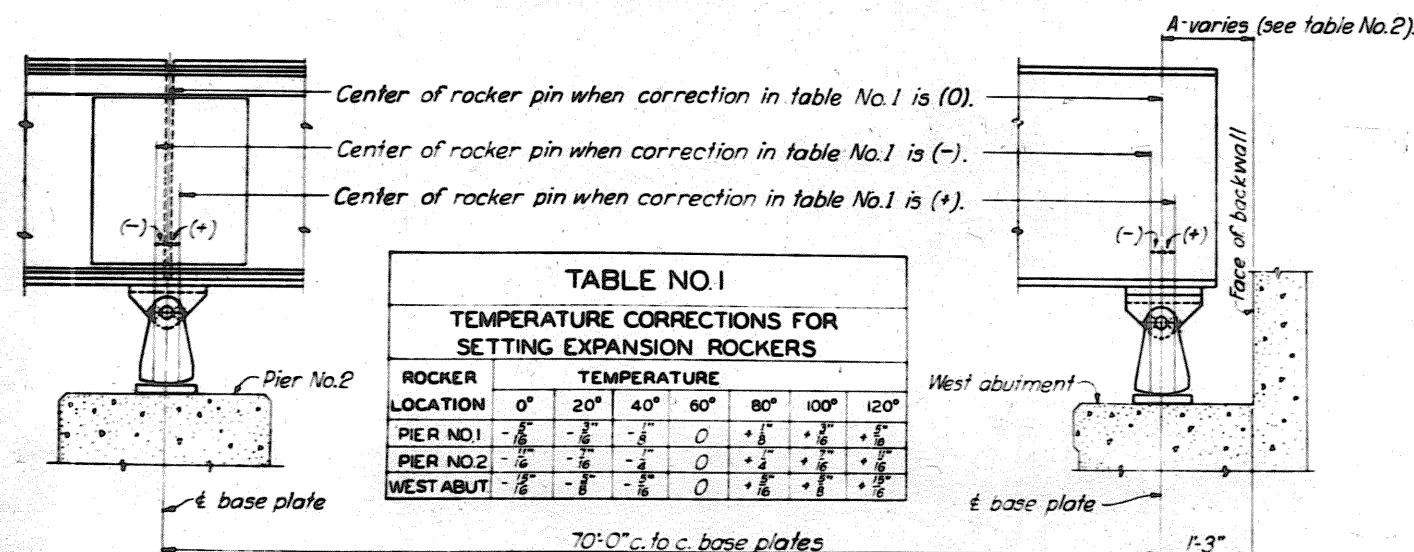


CAMBER DIAGRAM

NOT TO SCALE

TABLE OF MOMENTS									
LOADS	MOMENTS IN FOOT POUNDS								
	POSITIVE MOMENTS IN SPANS A & C			NEGATIVE MOMENTS OVER PIERS NOS. 1 & 2			POSITIVE MOMENTS IN SPAN B		
	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM
DEAD LOAD	229,000	220,000	97,000	215,000	201,000	81,000	213,000	207,000	94,200
LIVE LOAD	415,000	278,000		449,000	303,000		386,000	260,000	
IMPACT	105,000	71,000		82,000	55,000		94,000	63,000	
SIDEWALK L.L.		99,000	103,500		129,000	134,000		93,000	96,800
TOTAL	749,000	668,000	200,500	746,000	688,000	215,000	693,000	623,000	191,000

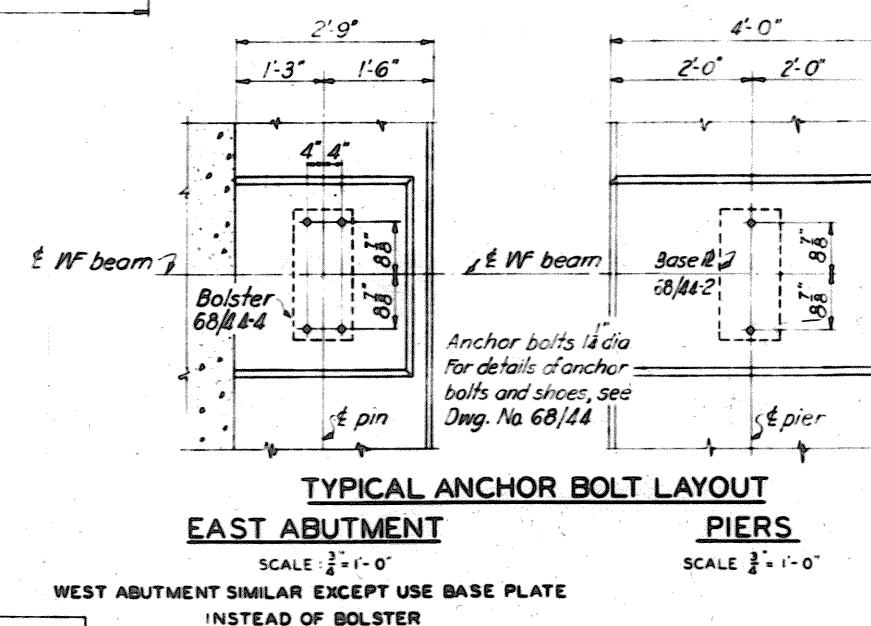
TABLE OF REACTIONS						
LOADS	REACTIONS IN POUNDS					
	ABUTMENTS			PIERS NOS. 1 & 2		
	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM
DEAD LOAD	15,470	14,800	6,440	42,950	40,850	17,450
LIVE LOAD	31,900	20,100		36,000	22,800	
IMPACT	8,100	5,100		9,100	5,900	
SIDEWALK L.L.		6,050	6,330		17,700	18,500
TOTAL	55,470	46,050	12,770	88,050	87,250	35,950



ROCKER SETTING

SCALE: $\frac{1}{2}$ = 1'-0"

TABLE NO. 2						
DISTANCE "A" FOR ROCKER ON WEST ABUTMENT						
TEMPERATURE						
0°	20°	40°	60°	80°	100°	120°
1'-3 1/8"	1'-3 3/8"	1'-3 1/2"	1'-3 1/2"	1'-2 1/2"	1'-2 3/8"	1'-2 1/2"



TYPICAL ANCHOR BOLT LAYOUT

EAST ABUTMENT

PIERS

SCALE: $\frac{1}{2}$ = 1'-0"SCALE: $\frac{1}{2}$ = 1'-0"

WEST ABUTMENT SIMILAR EXCEPT USE BASE PLATE INSTEAD OF BOLSTER

DESIGN DATA

Dead Load = Actual weight plus 10% for future asphalt surface.

Live Load = H20-33 loading (See Ohio State Highway Specifications, 1933.)

Truck wheel loading or traffic lane loading used, whichever gives greater stress. More than one span loaded when it causes maximum stress. Minimum clearance between trucks equals 30 feet. Not more than one truck per span used.

Impact = $\frac{L}{100} \times$ live load; where L = loaded length of span in feet.

$M_e = \frac{1}{2} M_l$ = Bending moment in interior beams due to lateral distribution of wheel loads; where M_l = bending moment due to one line of wheels and s-beam spacing in feet.

Unit Stresses

Tension

Axial tension, net section ----- 18,000

Bending on extreme fiber ----- 20,000

Compression in flanges ----- 18,000

but not to exceed ----- 18,000

where L = length in inches of the unsupported flange.

b = flange width, in inches

Shear

Girder webs, gross section ----- 12,000

Pins and shop driven rivets ----- 13,500

Power driven field rivets and turned bolts ----- 12,000

Bearing

Pins and shop driven rivets in double shear ----- 27,000

Shop driven rivets in single shear and power driven field rivets ----- 24,000

and turned bolts in double shear ----- 24,000

Power driven field rivets and turned bolts in single shear ----- 20,000

TUSCARAWAS RIVER LOCAL PROTECTION PROJECT MASSILLON, OHIO

SECTION 1

WALNUT ROAD BRIDGE DESIGN & ERECTION DATA

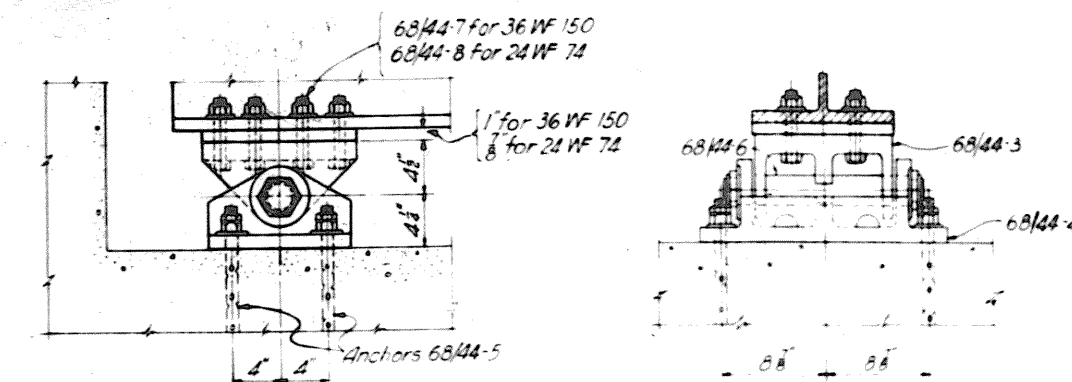
ID 76 00070 QUERY 00.02 SCALE: $\frac{1}{2}$ = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941

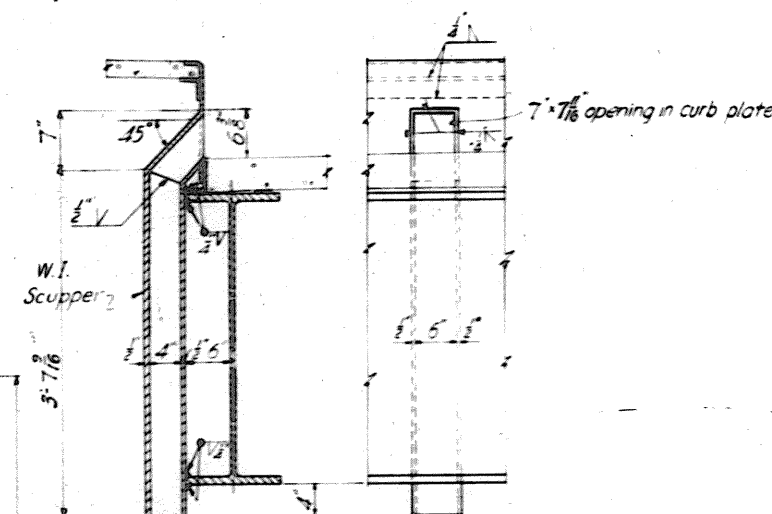
SUBMITTED BY: [Signature] APPROVED BY: [Signature]
DRAWN BY: S.D. TRACED BY: H.E.C. CHECKED BY: A.R.N. FILE NO: 0271-PM-68/40 DATED:

BY	DATE	CHARACTER
		REVISIONS

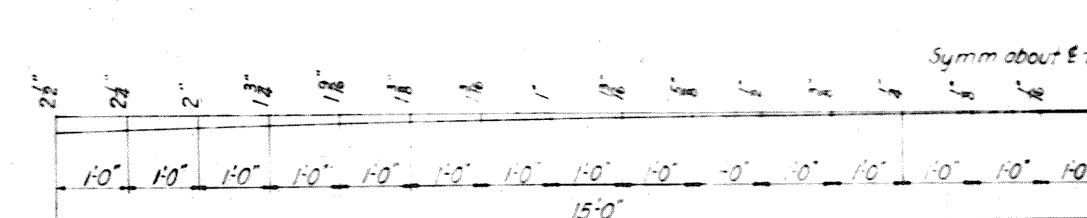
WORK AS CONSTRUCTED



STRUCTURAL STEEL PLAN



TYPICAL CROSS SECTION
SCALE: $\frac{3}{4}'' = 1' - 0''$



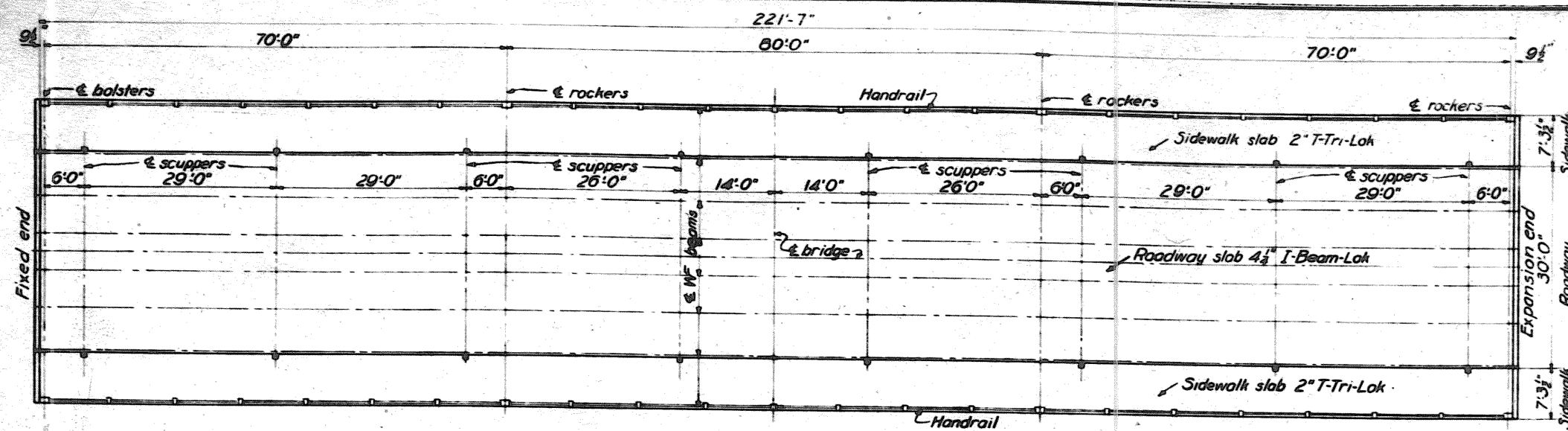
CROSS SECTION AT EAST ABUTMENT
SCALE: $\frac{3}{8}'' = 1'-0''$

IN 76 SHEETS SHEET NO.63 SCALE: 1/32"=1'-0"

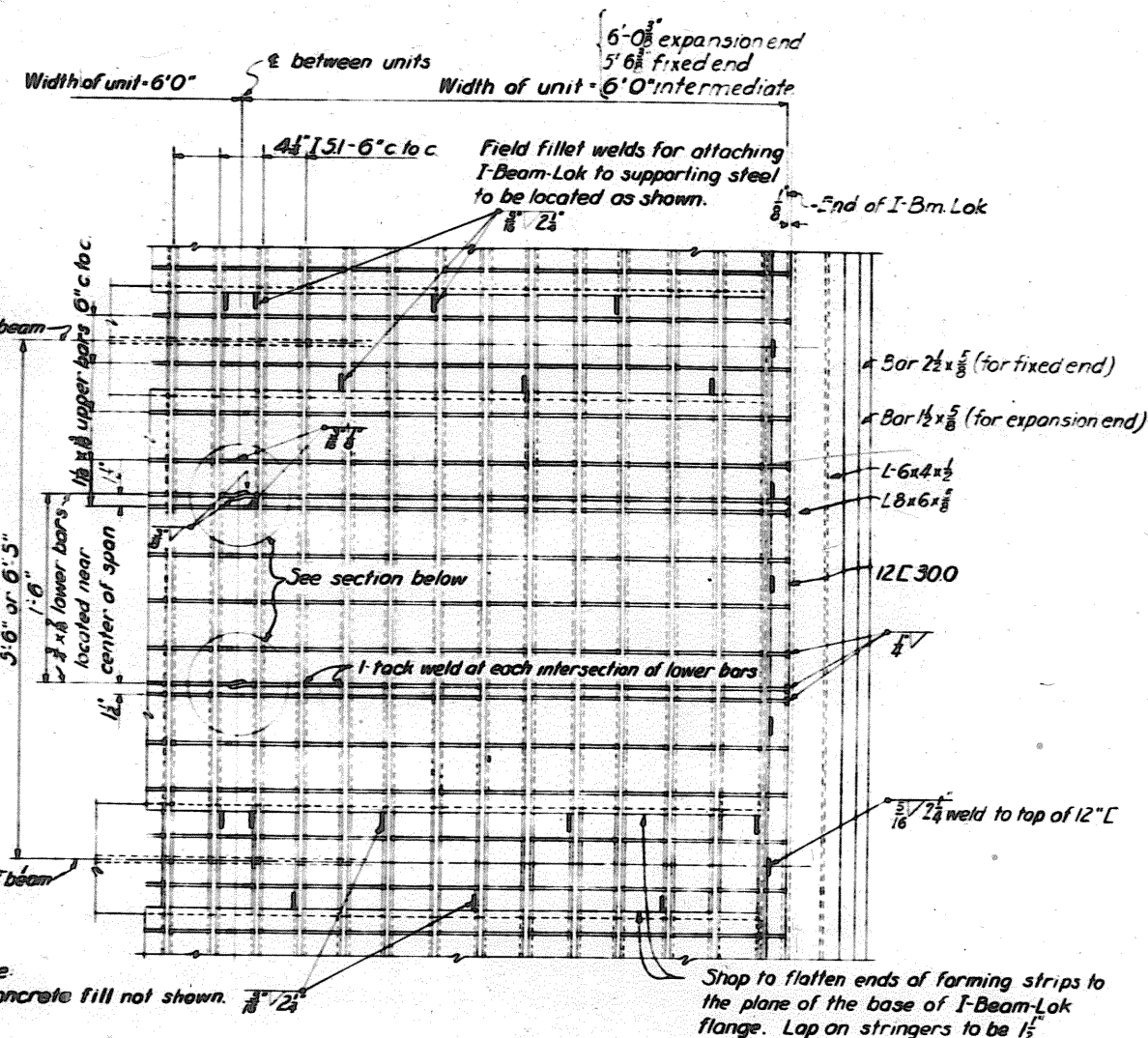
SUBMITTED *Ram Porras* APPROVED *OT Falkner*

DRAWN BY A.W.S.
 TRACED BY A.F.
 CHECKED BY H.U.D.
 FILE NO 0271-PM-68/41
 TRANSMITTED WITH LETTER
 DATED

... WORK AS CONSTRUCTED

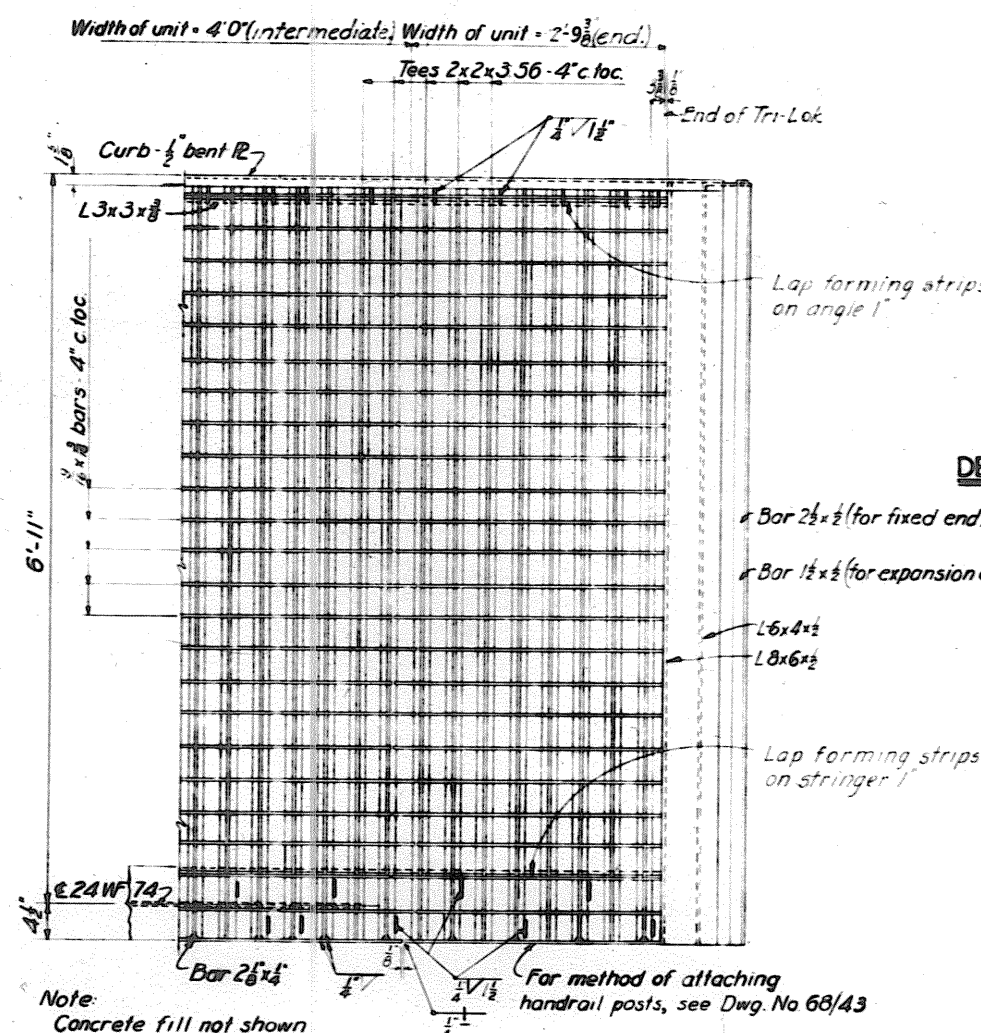


SUPERSTRUCTURE PLAN



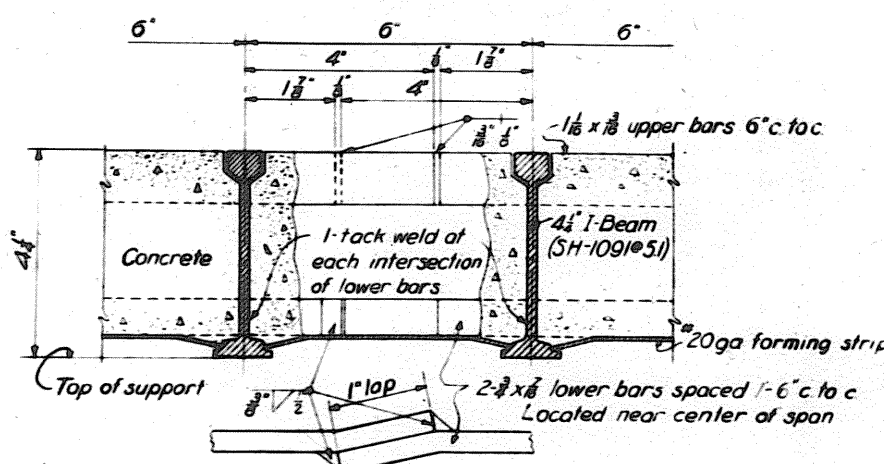
ROADWAY PLAN

SCALE: 1" = 1'-0"



SIDEWALK PLAN

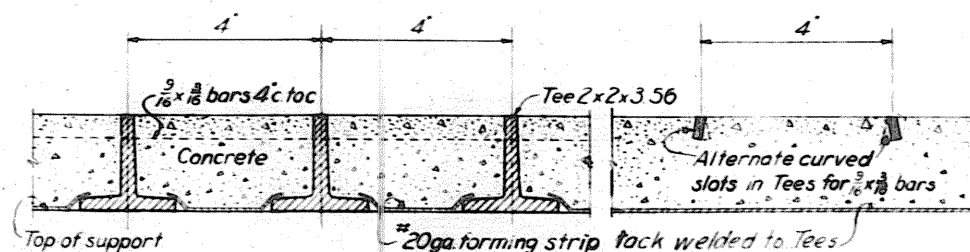
SCALE: 1" = 1'-0"



SECTION

SCALE: 6" = 1'-0"

DETAILS OF ROADWAY SLAB



CROSS SECTION

SCALE: 6" = 1'-0"

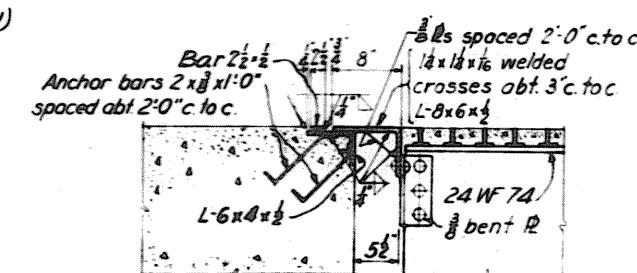
DETAILS OF SIDEWALK SLAB

LONGITUDINAL SECTION

SCALE: 6" = 1'-0"

DETAILS OF SIDEWALK EXPANSION JOINT

SCALE: 1" = 1'-0"



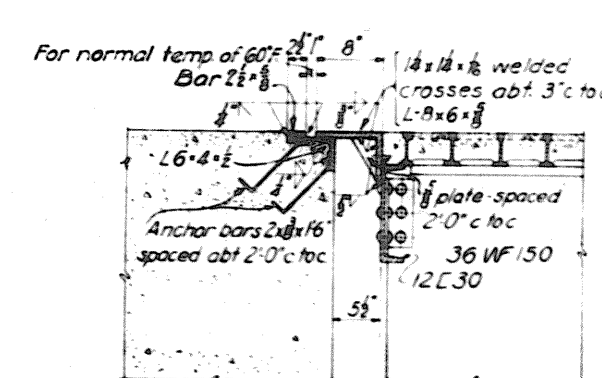
DETAILS OF SIDEWALK JOINT - FIXED END

SCALE: 1" = 1'-0"

SECTION A-A

DETAILS OF ROADWAY EXPANSION JOINT

SCALE: 1" = 1'-0"



DETAILS OF ROADWAY JOINT - FIXED END

SCALE: 1" = 1'-0"

NOTES

Expansion and fixed joints to be bent to match roadway. Concrete for road surfacing and sidewalks to be Class "A". Rivets 1/2".

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

SECTION I

**WALNUT ROAD BRIDGE
FLOOR PLAN & DETAILS**

19 76 SHEETS SHEET NO. 64 SCALE: 1/8" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

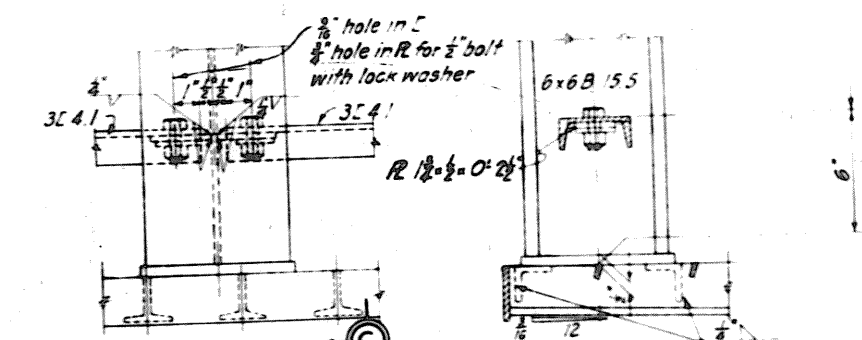
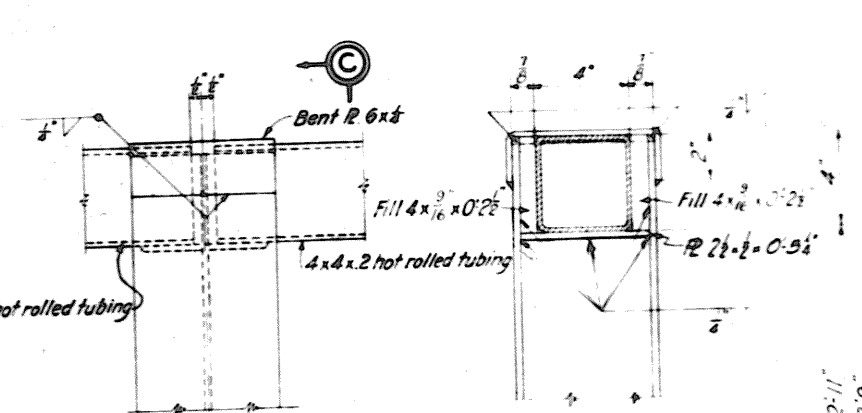
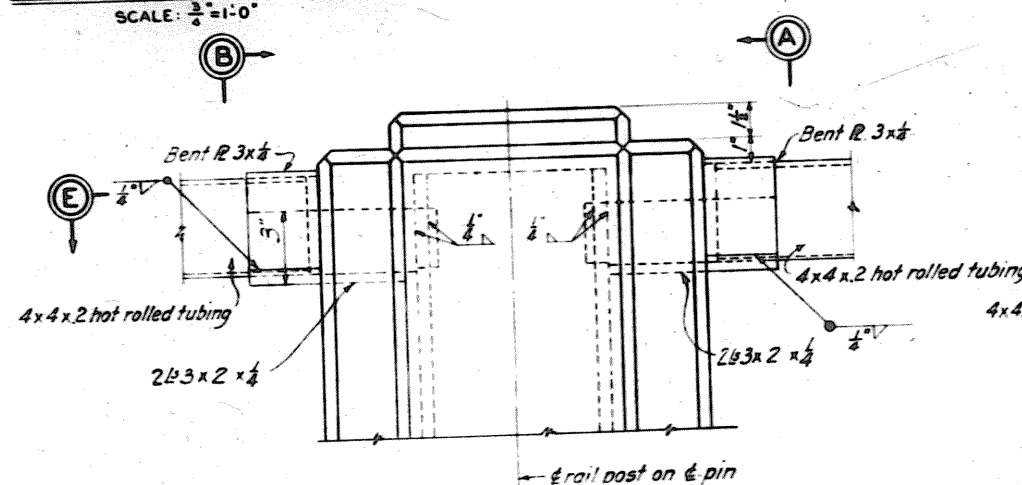
SUBMITTED BY *Harry Parker* APPROVED BY *W. T. Walker*
MAJOR, CORPS OF ENGINEERS

DRAWN BY H.S.M. CHECKED BY R.C.H. TRANSMITTED WITH LETTER
FILE NO. 0271-PM-68/42 DATED

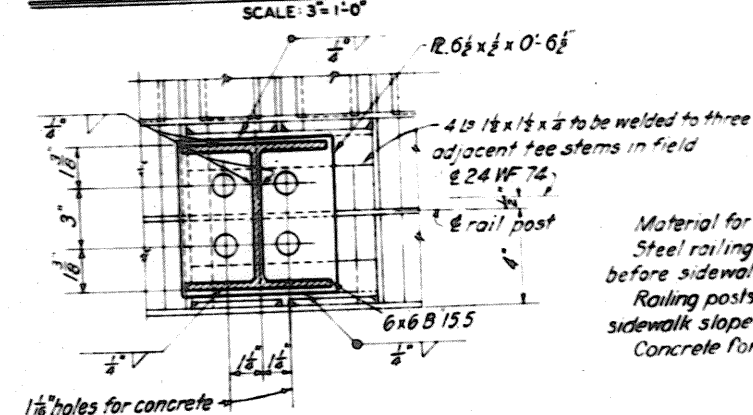
NO.	DATE	REVISIONS
1		REVISED AS CONSTRUCTED
2		CHARACTER
3		REVISIONS

WORK AS CONSTRUCTED

SCALE: $\frac{3}{4}" = 1'-0"$

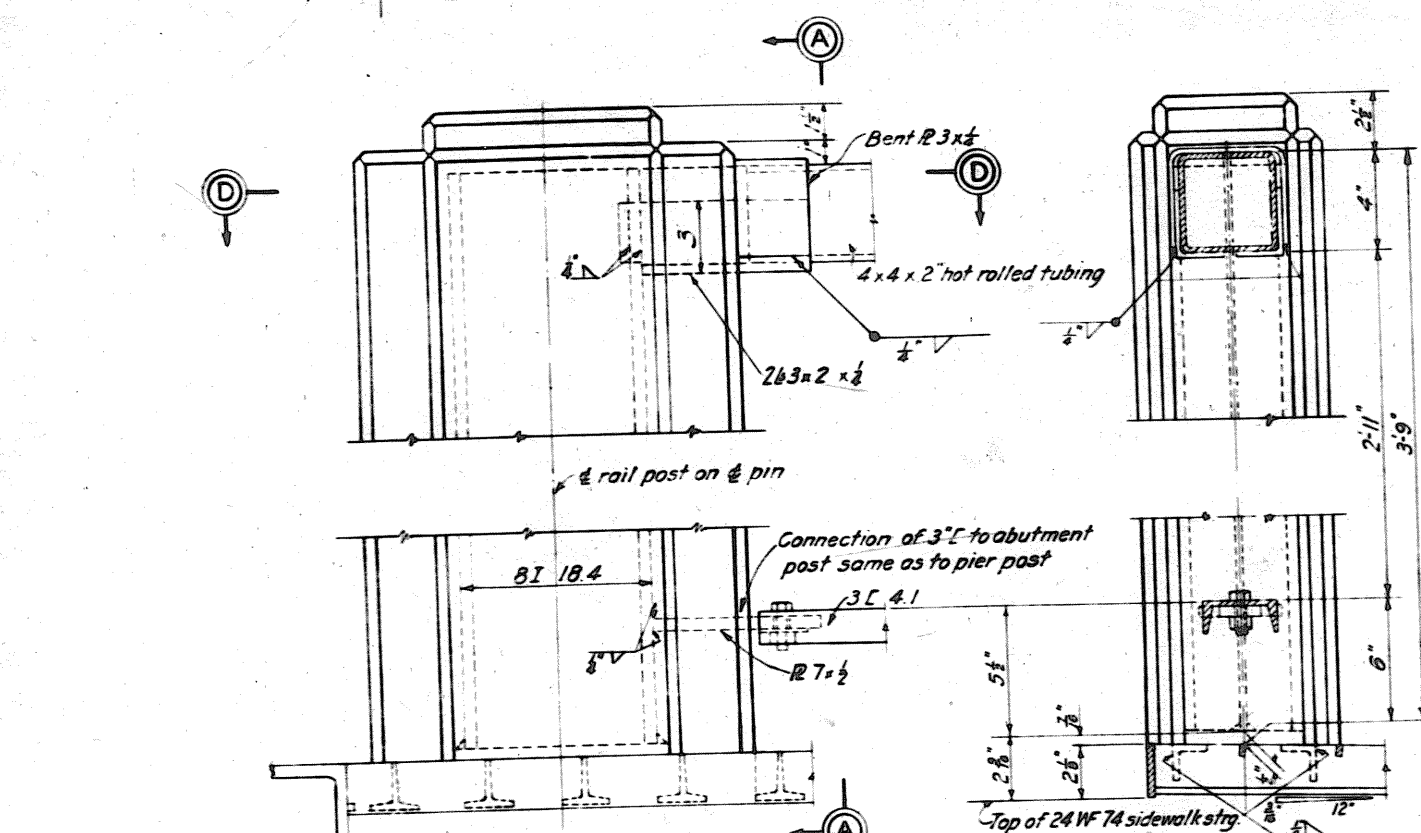


DETAILS AT INTERMEDIATE RAIL POST SECTION C-C

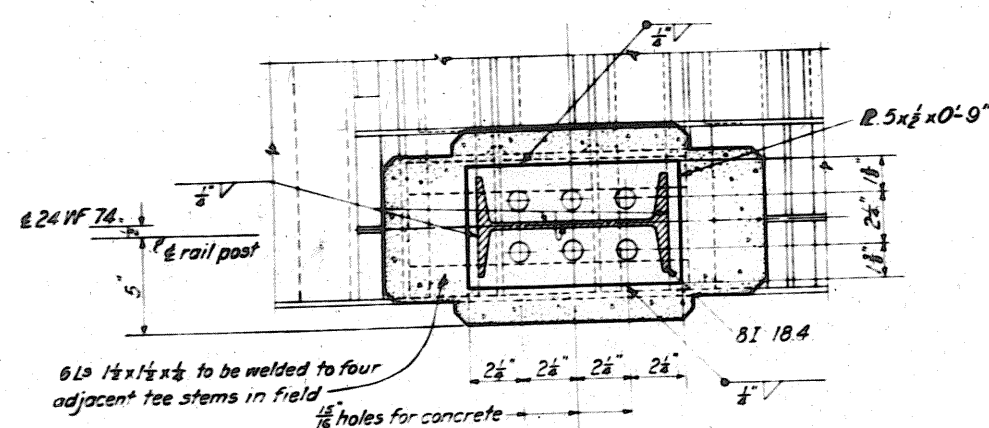


BASE DETAIL OF INTERMEDIATE RAIL POST

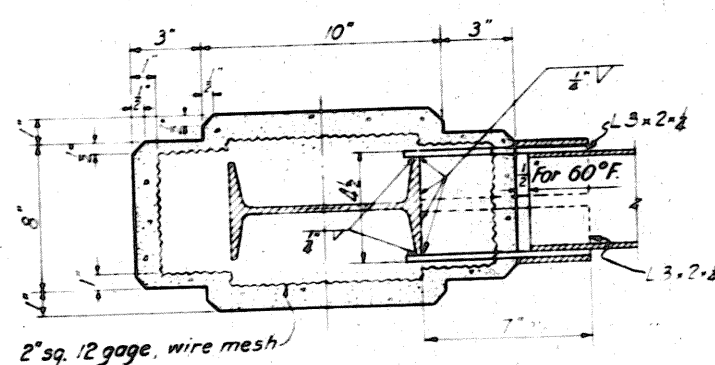
Material for railing to be structural steel
Steel railing posts are to be welded in place
before sidewalk slab is poured.
Railing posts to be beveled to take core of
sidewalk slope.
Concrete for railing posts to be Class "A"



DETAILS AT ABUTMENT RAIL POST
SCALE: 3" = 1'-0"

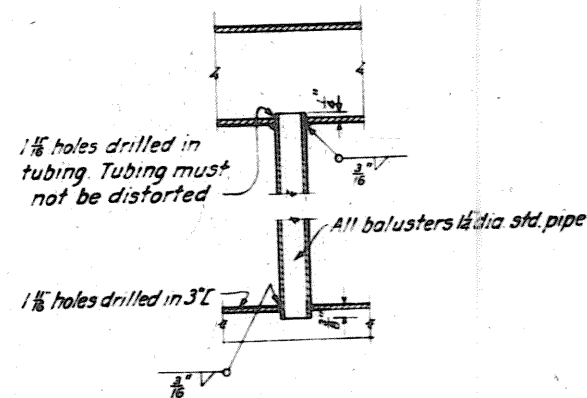


BASE DETAIL OF ABUTMENT RAIL POST
SCALE: 3"=1'-0"

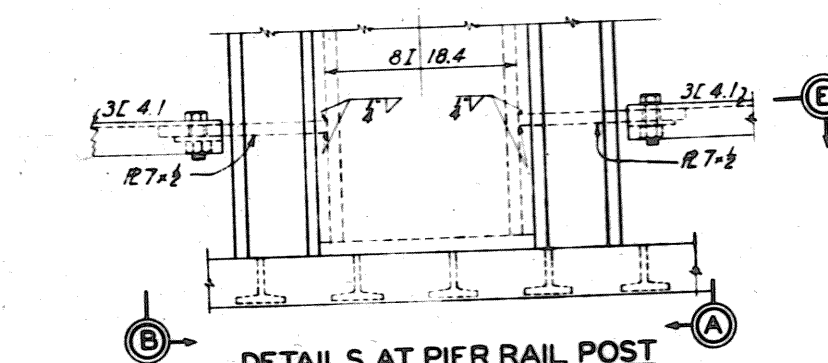


SECTION D-D

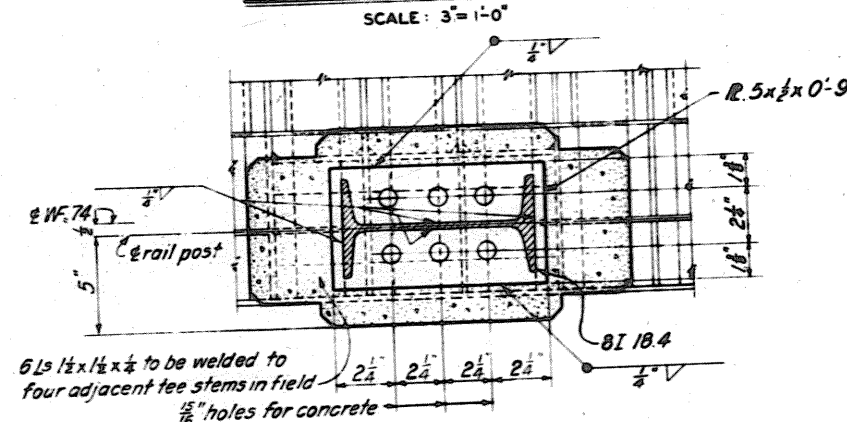
SECTION A-A AS SHOWN
SECTION B-B OPP. HAND



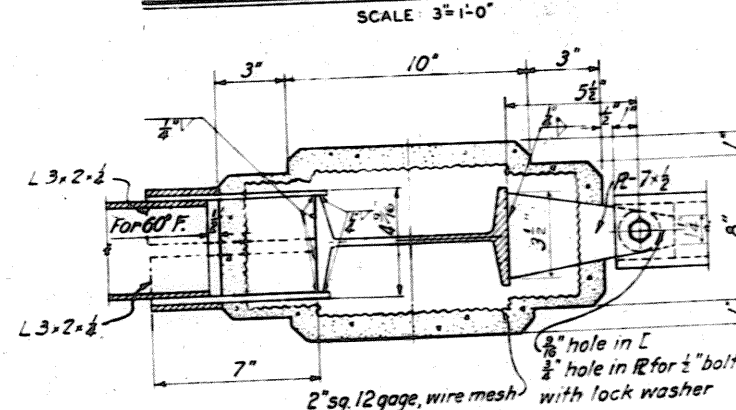
DETAIL OF BALUSTERS



DETAILS AT PIER RAIL POST



BASE DETAIL OF PIER RAIL POST



SECTION E-E

HUB	11-14-44	REVISED AS	CONSTRUCTED
BY	DATE		CHARACTER
			REVISIONS

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1
WALNUT ROAD BRIDGE
RAILING DETAILS**

IN 75 SHEETS

SHEET NO. 65

SCALE: 3"=1'-0"

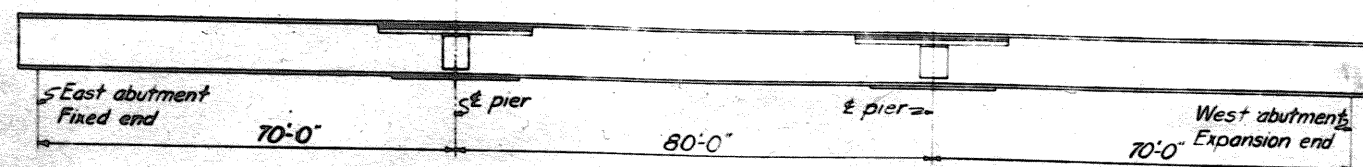
A horizontal graphic scale bar with tick marks at 0, 3, 6, 9, and 12 feet. The text '0', '3'', '6'', '9'', and '12'' is placed above the corresponding tick marks.

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY, 19

SUBMITTED *Wm. G. Gorman* PRINCIPAL ENGINEER APPROVED *J. A. Faller* MAJOR, CORPS OF ENGINEERS

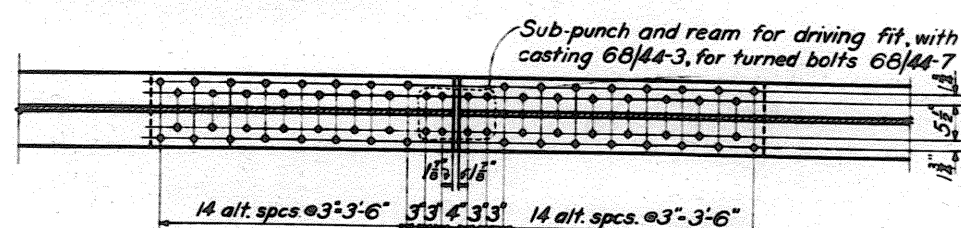
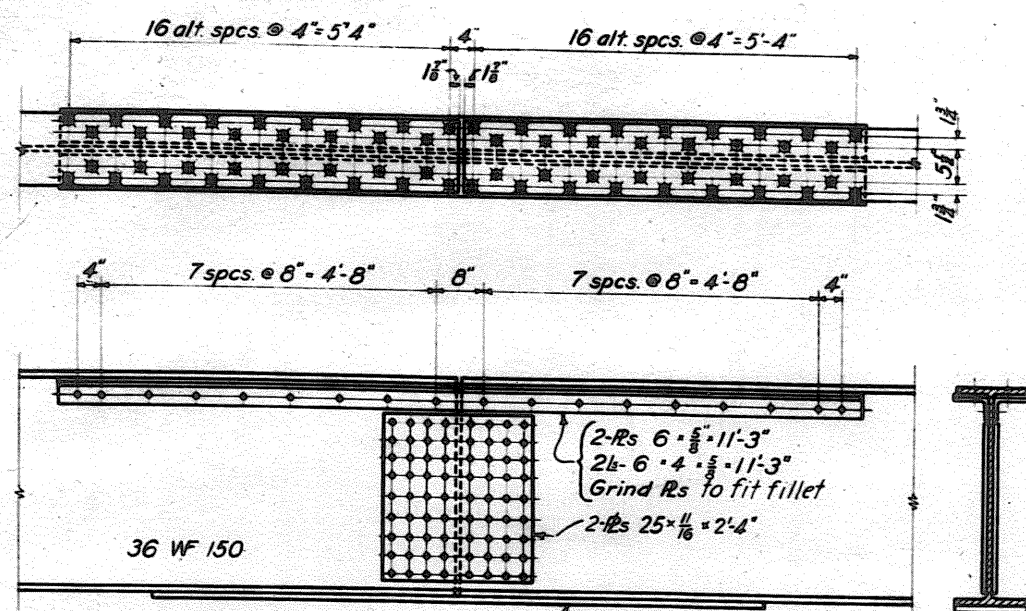
DRAWN BY: AWD
 TRACED BY: J.S.
 FILE NO: 0271-PM-68/43
 TRANSMITTED WITH LETTER
 DATED:

WORK AS CONSTRUCT



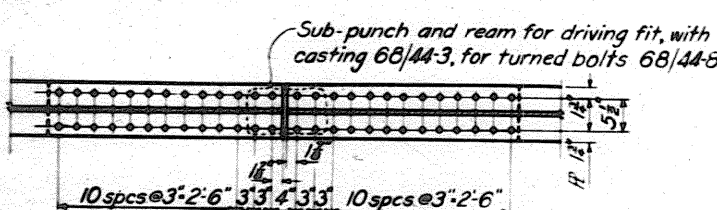
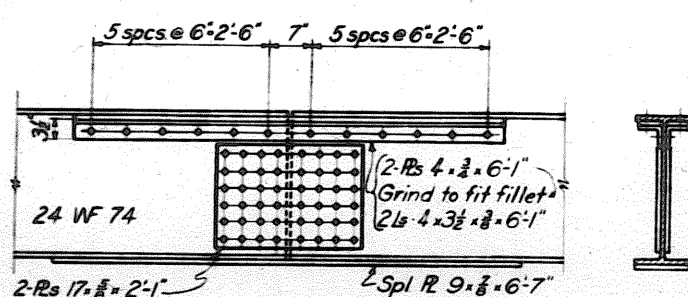
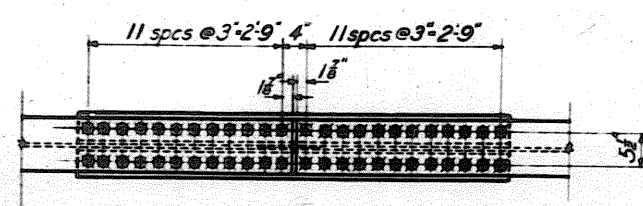
SPLICE DIAGRAM

NOT TO SCALE



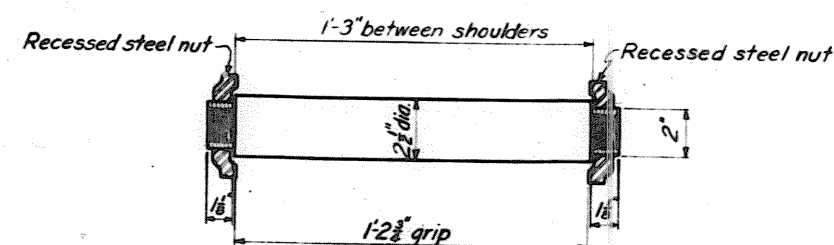
SPLICE FOR ROADWAY STRINGERS

SCALE: $\frac{3}{4}'' = 1'-0''$



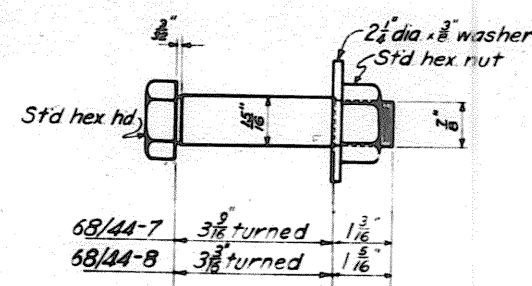
SPLICE FOR SIDEWALK STRINGERS

SCALE: $\frac{3}{4}'' = 1' - 0''$



DETAIL OF PIN

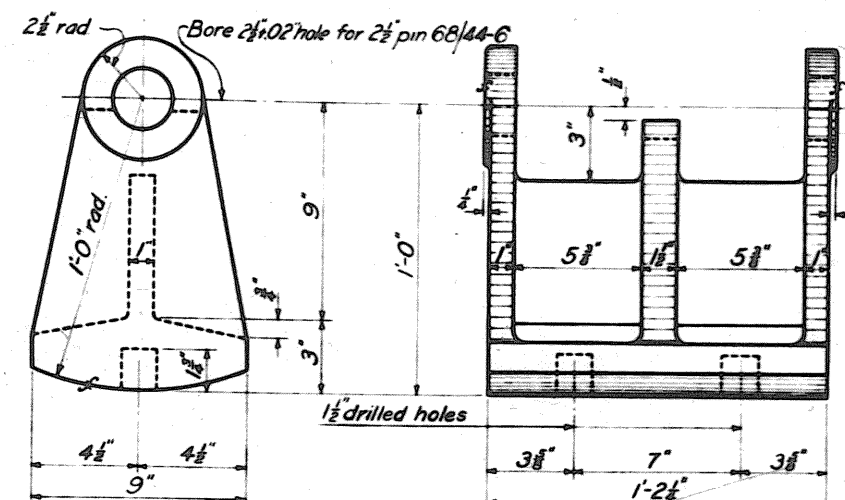
COLD ROLLED STEEL WITH RECESSED STEEL NUT
MARK 68/44-6 COLD ROLLED STEEL WT. 26.9 LBS.
MAKE 32 RECESSED STEEL NUTS WT. 4.0 LBS.



DETAIL OF TURNED BOLT

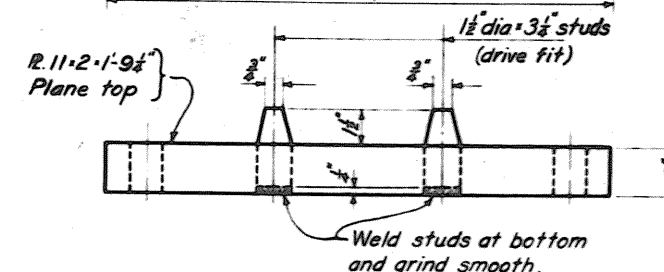
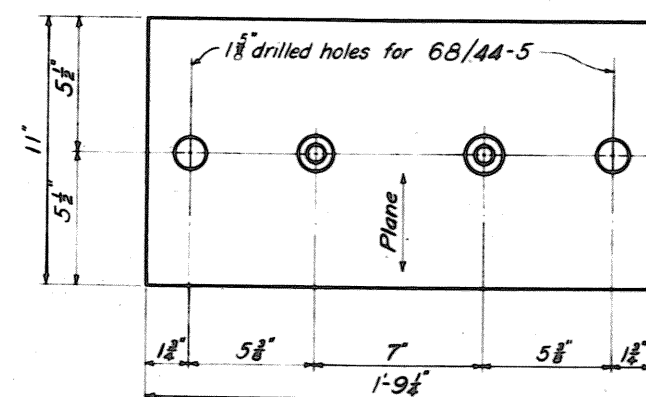
STRUCTURAL STEEL			
MARK	68/44-7	MAKE	192 WT 1.80 LBS
MARK	68/44-8	MAKE	64 WT 1.72 LBS

SCALE 6"=1'-0"



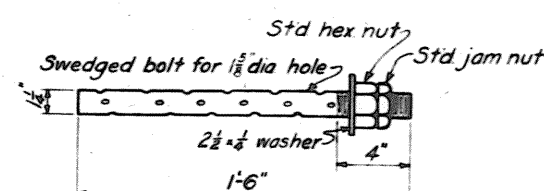
DETAIL OF ROCKER

CAST STEEL CLASS 2 MARK 68/44-
MAKE 24 WT 1730 LBS



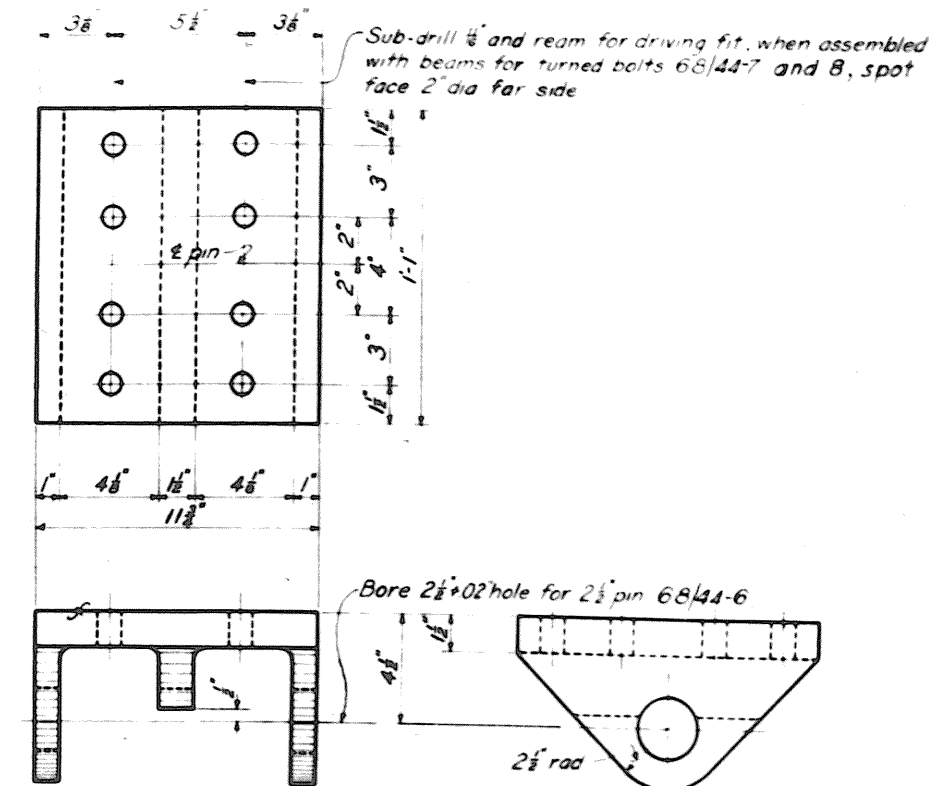
DETAIL OF BASE PLATE

STRUCTURAL STEEL	MARK 68/44-2
MAKE 24	WT. 131.0 LBS



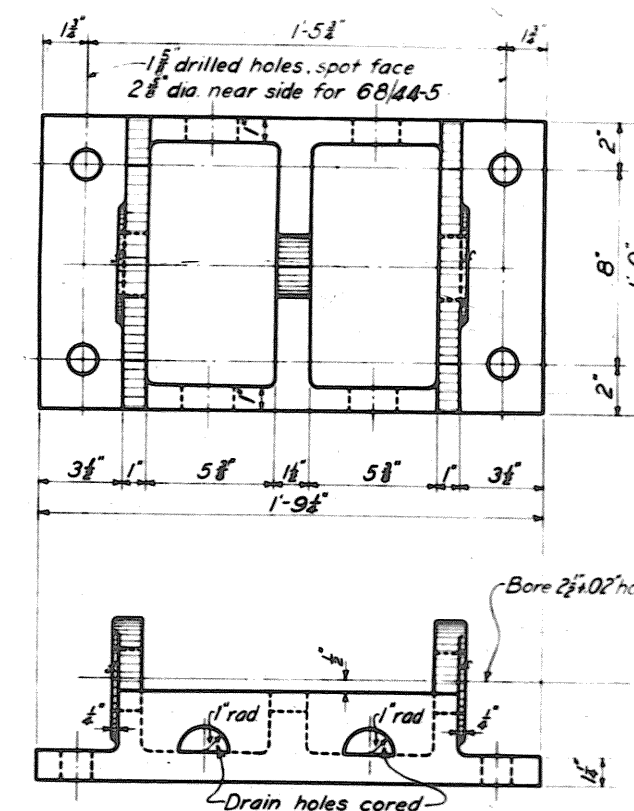
DETAIL OF ANCHOR BOLT

STRUCTURAL STEEL	MARK 68/44-5
MAKE 80	WT. 7.8 LBS.



DETAIL OF UPPER SHOE

CAST STEEL CLASS 2	MARK 68/44-3
MAKE 32	WT 950 LBS.



DETAIL OF BOLSTER

CAST STEEL CLASS 2 MARK 68/44-4
MAKE 8 WT. 1450 LBS.

NOTES

$\frac{7}{8}$ " rivets for girder splices
Casting fillets are $\frac{3}{4}$ " rad. unless noted

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

SECTION 1

WALNUT ROAD BRIDGE CASTINGS & SPLICES

IN 76 SHEETS

SHEET NO. 60

SCALE: 3"=1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., MAY. 1941

SUBMITTED *Way Barber* APPROVED *PA Faller*
PRINCIPAL ENGINEER MAJOR, 20076 OF ENGINEER

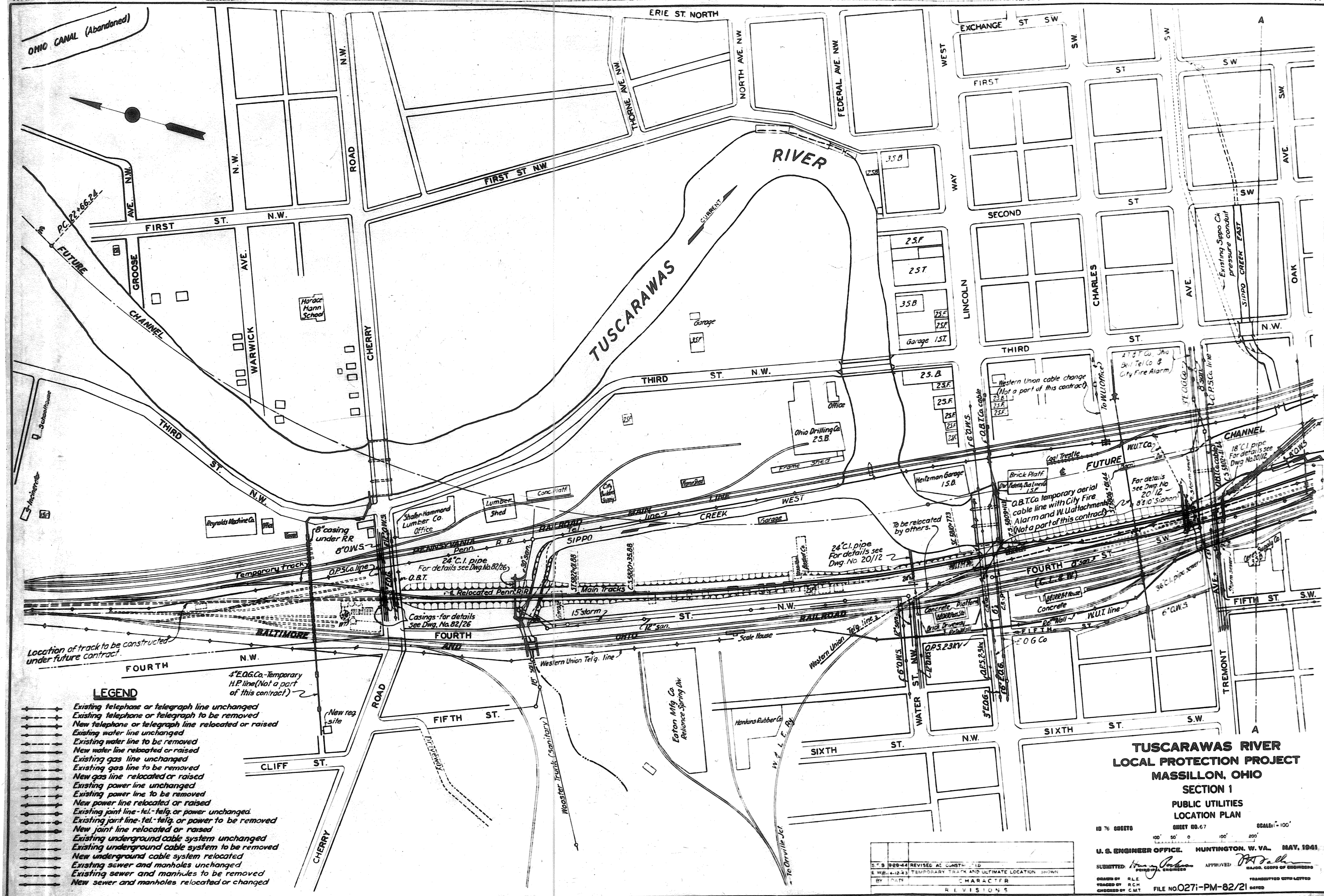
DRAWN BY A.W. S.
 TRACED BY C.C. B.
 CHECKED BY H.B.

FILE NO. 027i-PM-6844

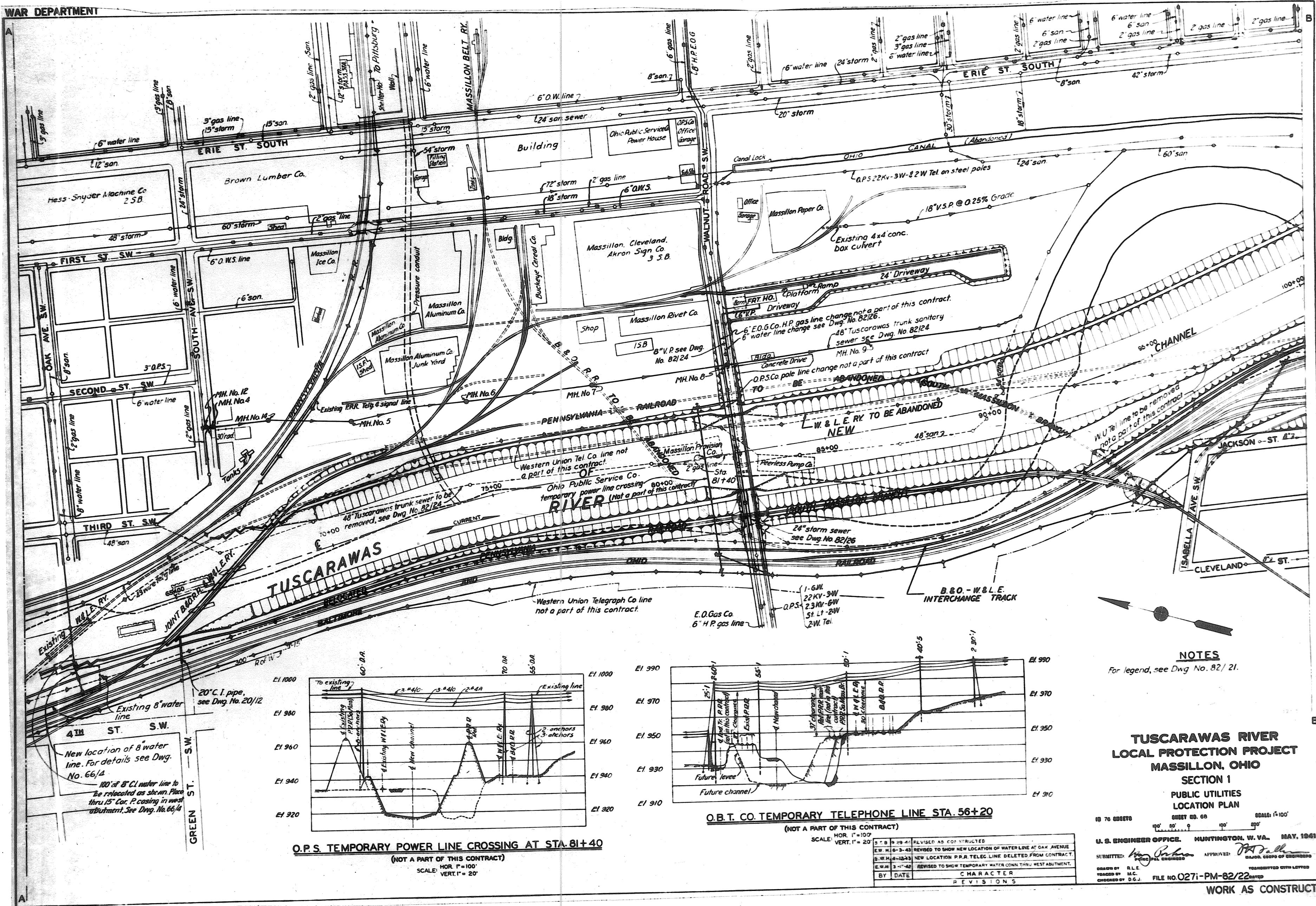
TRANSMITTED WITH LETTER

FILE NO. 027i-PM-68/44

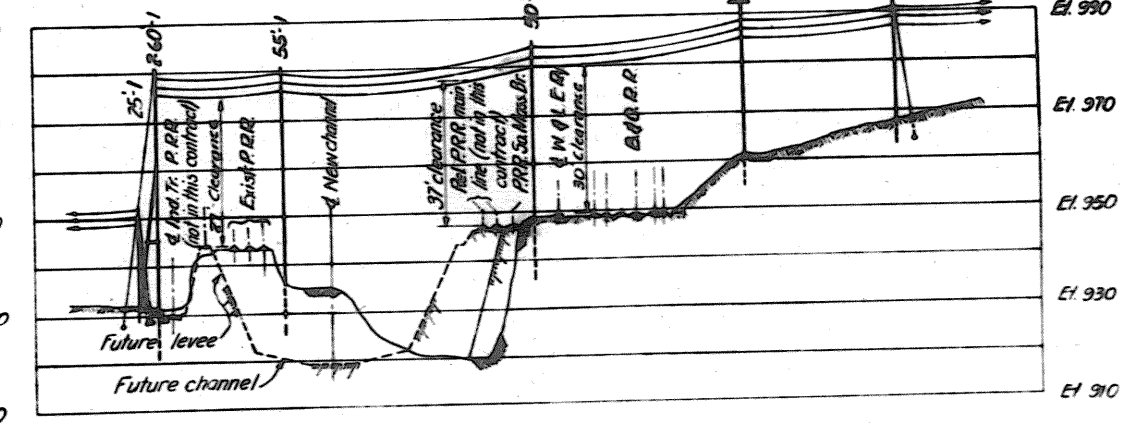
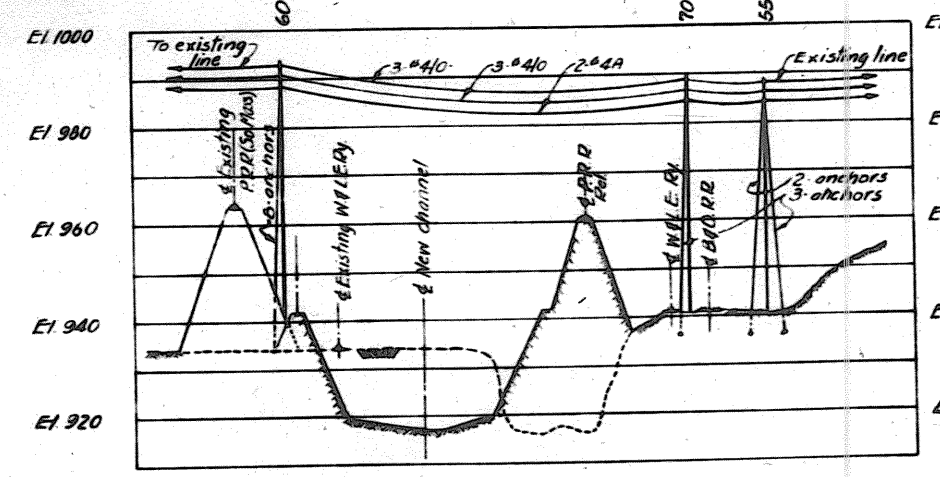
WORK AS CONSTRUCTED



WORK AS CONSTRUCTED



TUSCARAWAS RIVER



NOTES
For legend, see Dwg. No. 82/21.

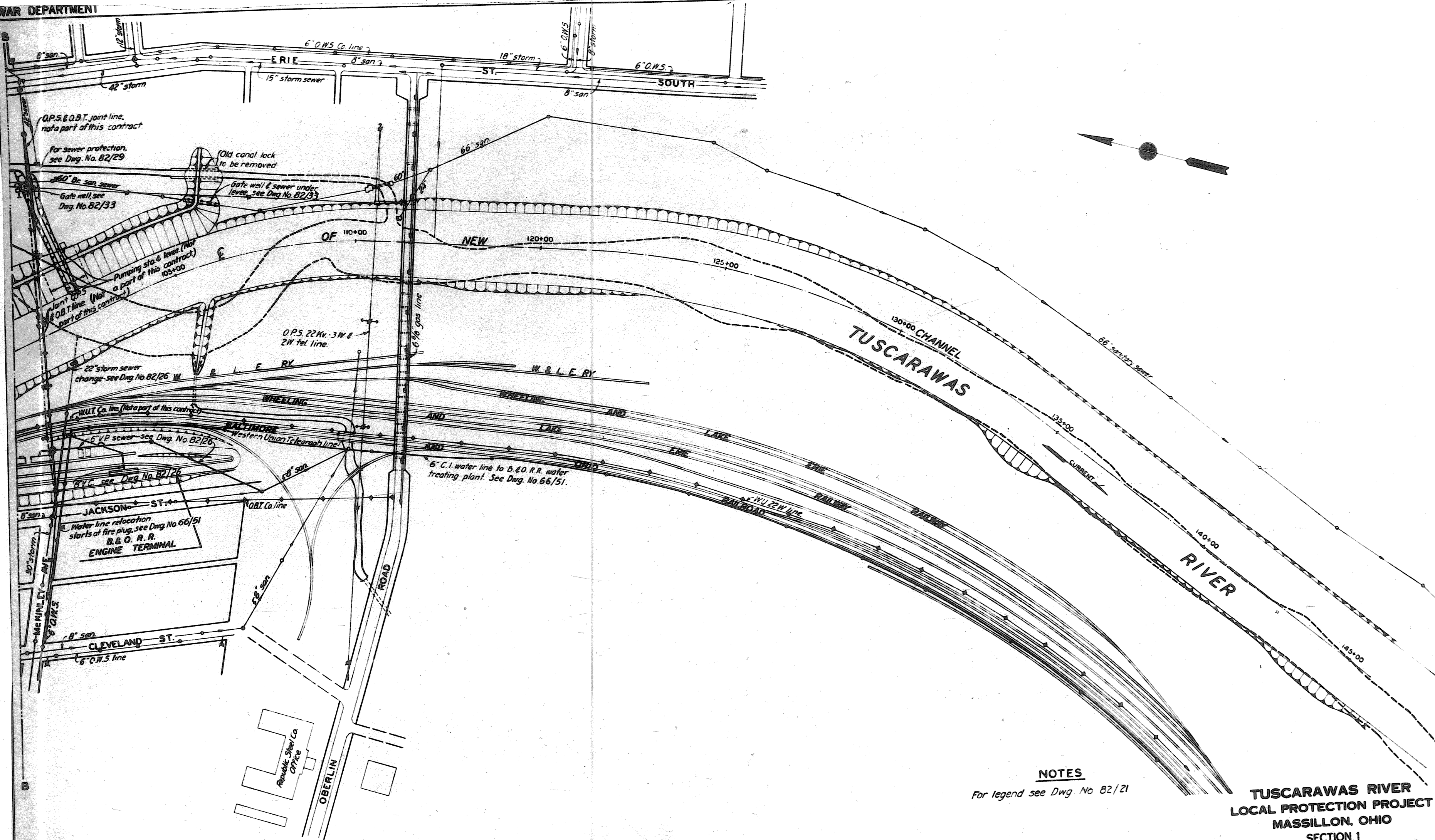
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION I**

**PUBLIC UTILITIES
LOCATION PLAN**

10 76 000070 SHEET NO. 60 SCALE: 1"=100'
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1941
SUBMITTED: *[Signature]* APPROVED: *[Signature]*
DRAWN BY: R.L.E. CHECKED BY: M.C. FILE NO. 0271-PM-82/22
WORK AS CONSTRUCTED

BY	DATE	CHARACTER	REVISIONS
1	5-29-41	REVISED AS CONSTRUCTED	
2	6-3-41	REVISED TO SHOW NEW LOCATION OF WATER LINE AT OAK AVENUE	
3	4-18-43	NEW LOCATION P.R.R. TELEGRAPH LINE DELETED FROM CONTRACT	
4	3-11-42	REVISED TO SHOW TEMPORARY WATER CONN. THRU WEST ABUTMENT	

WAR DEPARTMENT

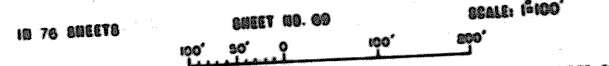


NOTES

For legend see Dwg. No 82/21

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

PUBLIC UTILITIES
LOCATION PLAN



U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. MAY, 1944

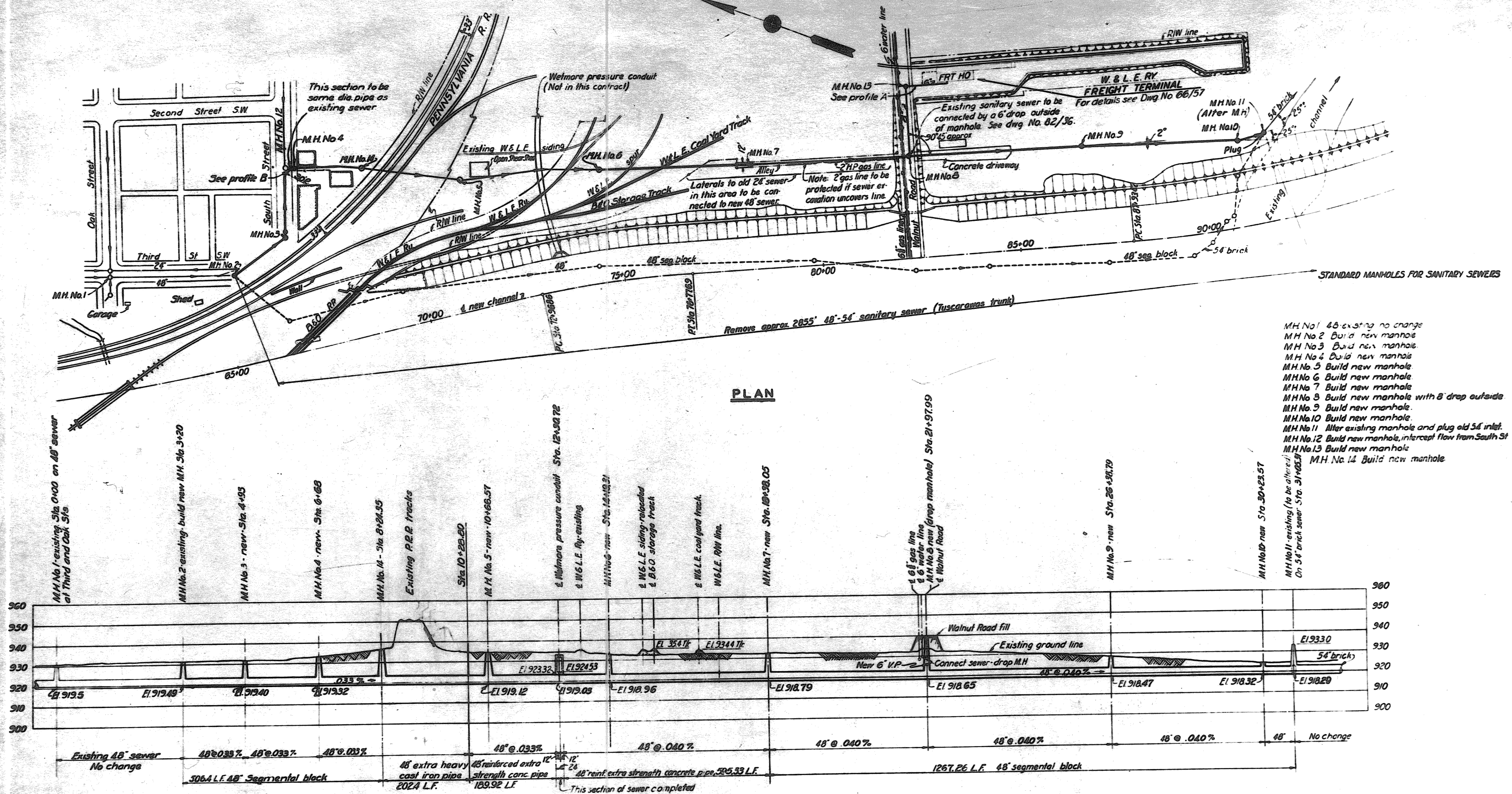
SUBMITTED: *[Signature]* APPROVED: *[Signature]*
PRINCIPAL ENGINEER MAJOR, CORPS OF ENGINEERS

5 F B 9-29-44	REVISED AS CONSTRUCTED
BY DATE	CHARACTER REVISIONS

DRAWN BY R.L.E.
TRACED BY E.W.H.
CHECKED BY C.M.T.

FILE NO 0271-PM-82/23 DATED

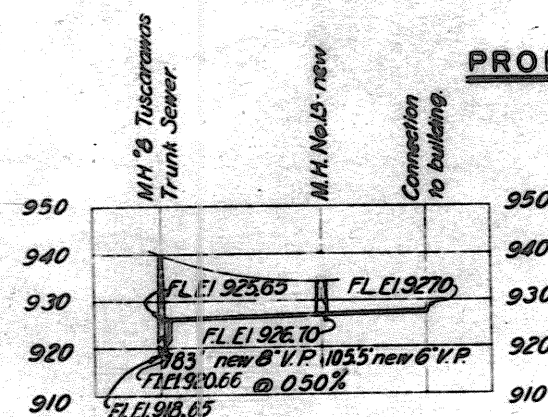
WORK AS CONSTRUCTED



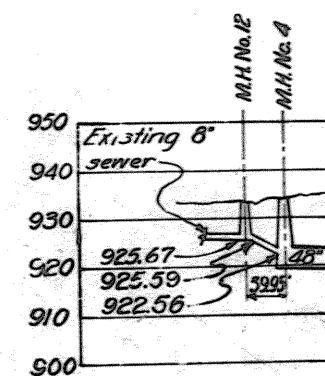
M.H. No. 1 48" existing no change
 M.H. No. 2 Build new manhole
 M.H. No. 3 Build new manhole
 M.H. No. 4 Build new manhole
 M.H. No. 5 Build new manhole
 M.H. No. 6 Build new manhole
 M.H. No. 7 Build new manhole
 M.H. No. 8 Build new manhole with 8' drop outside
 M.H. No. 9 Build new manhole
 M.H. No. 10 Build new manhole
 M.H. No. 11 Alter existing manhole and plug old 54" inlet
 M.H. No. 12 Build new manhole, intercept flow from South St
 M.H. No. 13 Build new manhole
 M.H. No. 14 Build new manhole

NOTES

For general plan, see Dwg. No. 10/4
 For general utility plan, see Dwg. No. 82/22
 For details of manholes, see Dwg. No. 82/36
 Invert elevations of M.H. No. 1 & M.H. No. 11 to be checked and any necessary adjustment to grade made prior to initiation of sewer construction



PROFILE A



PROFILE B

TUSCARAWAS RIVER LOCAL PROTECTION PROJECT MASSILLON, OHIO SECTION 1

SEWER CHANGES TUSCARAWAS TRUNK SANITARY SEWER

18 76 SHEETS

DESIGN NO. 70

SCALE: HORIZ. 1"=100'

VERT. 1"=20'

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

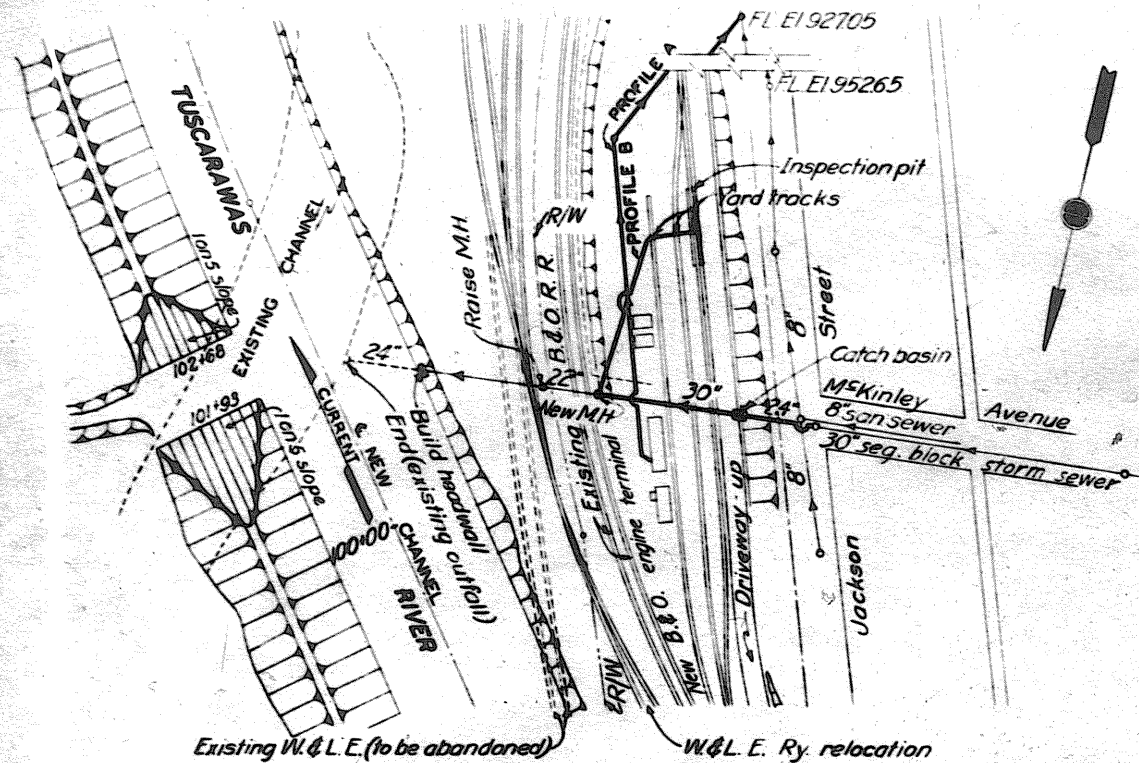
SUBMITTED: *[Signature]* APPROVED: *[Signature]*

DESIGNED BY: R.L.E. CHECKED BY: H.C. TRANSMITTED WITH LETTER

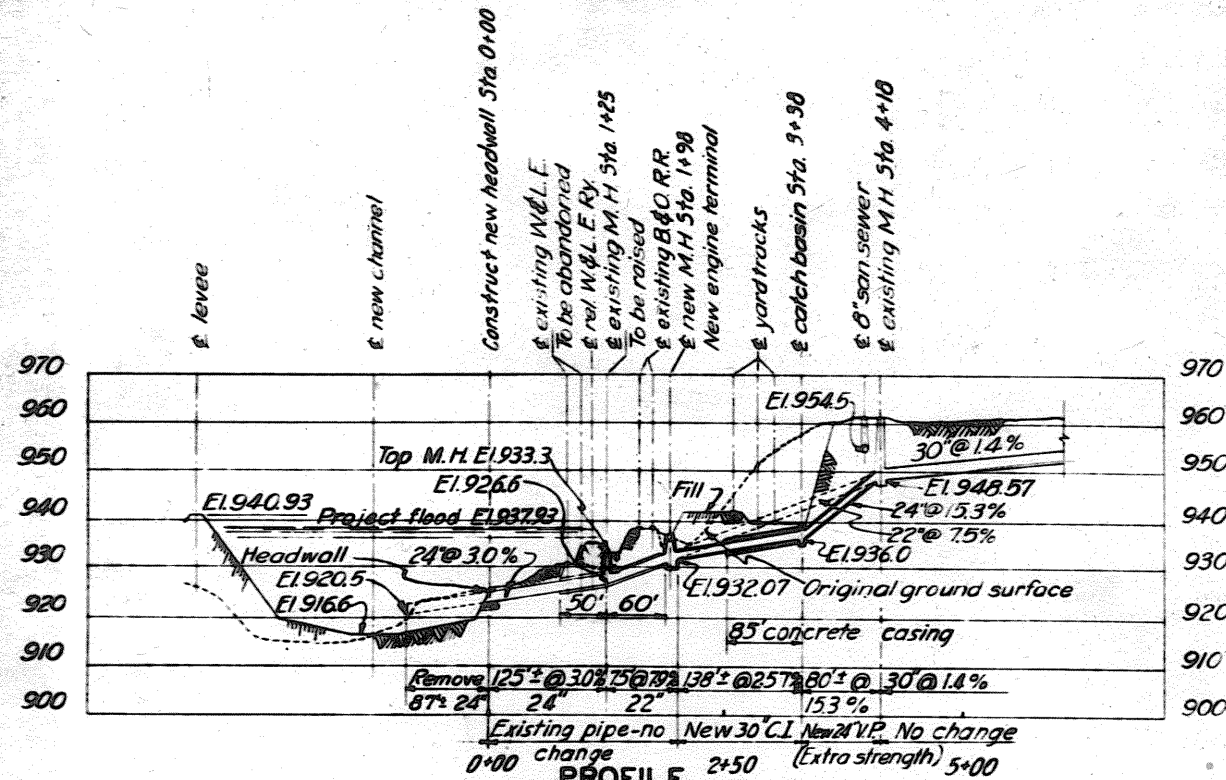
FILE NO. 0271-PM-82/24

REVISIONS

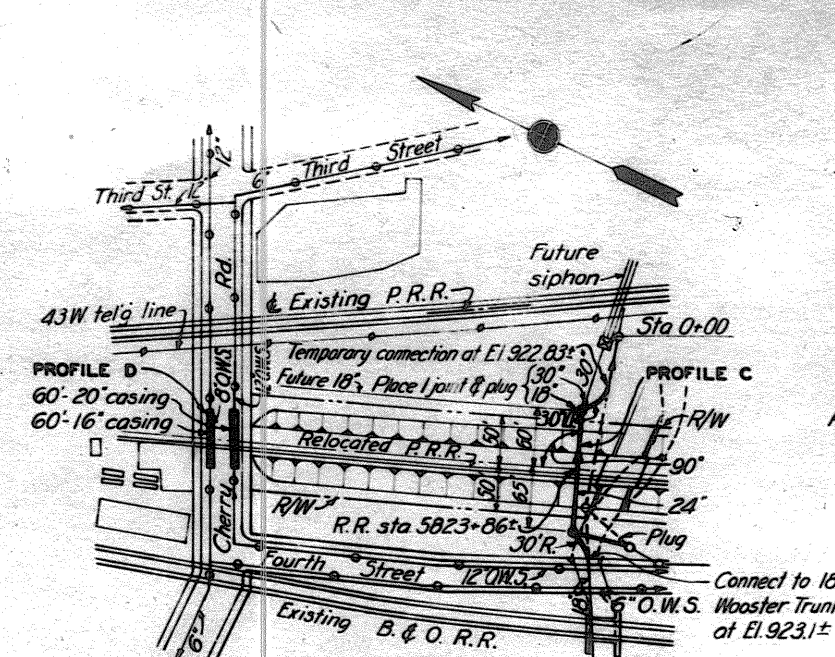
WORK AS CONSTRUCTED



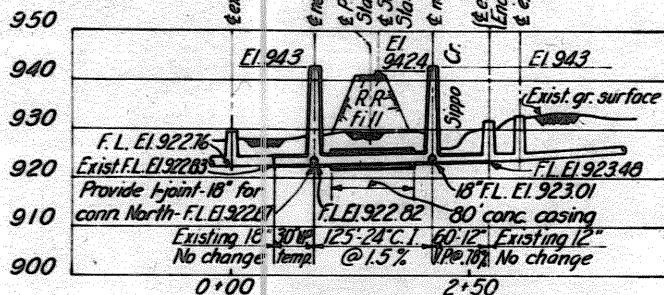
PLAN



MCKINLEY AVE. STORM SEWER CHANGES

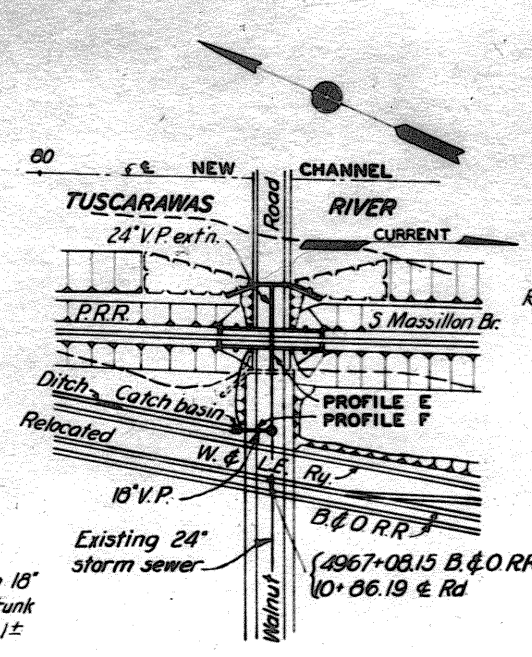


PLAN

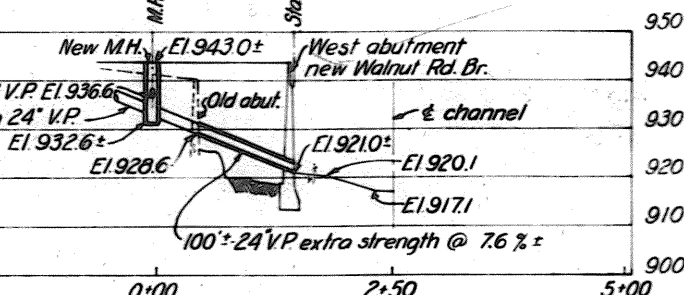


PROFILE C

SEWER & O.W.S. CHANGES UNDER REL. P.R.R.

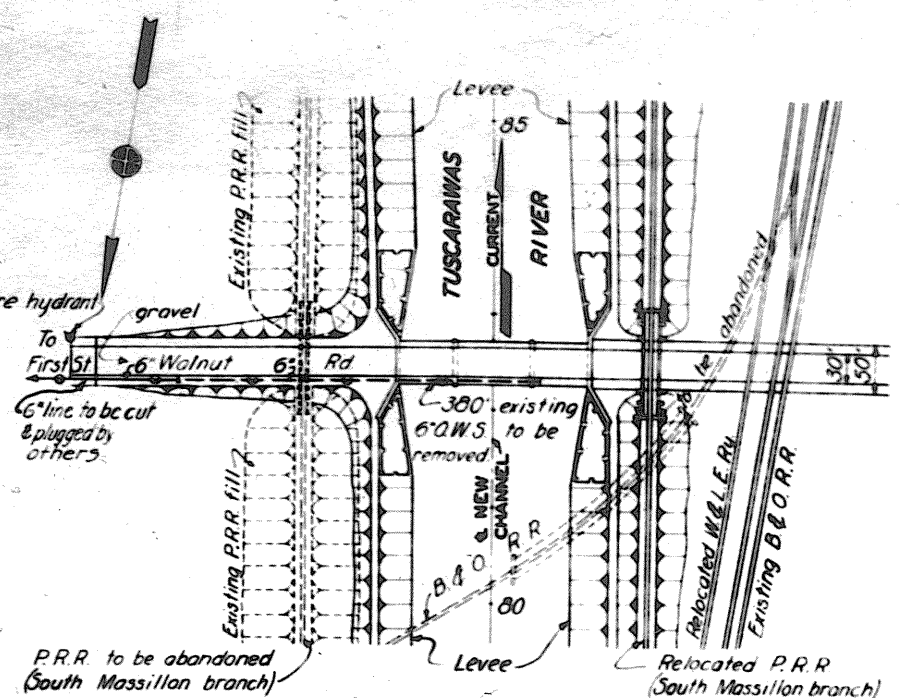


PLAN

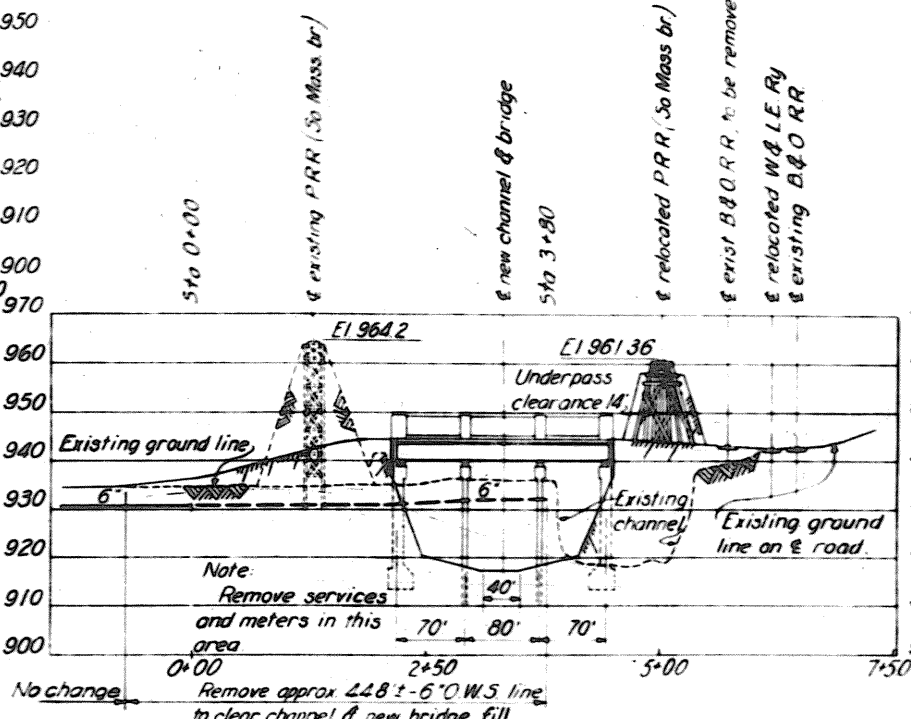


PROFILE E

WALNUT RD. SEWER CHANGES



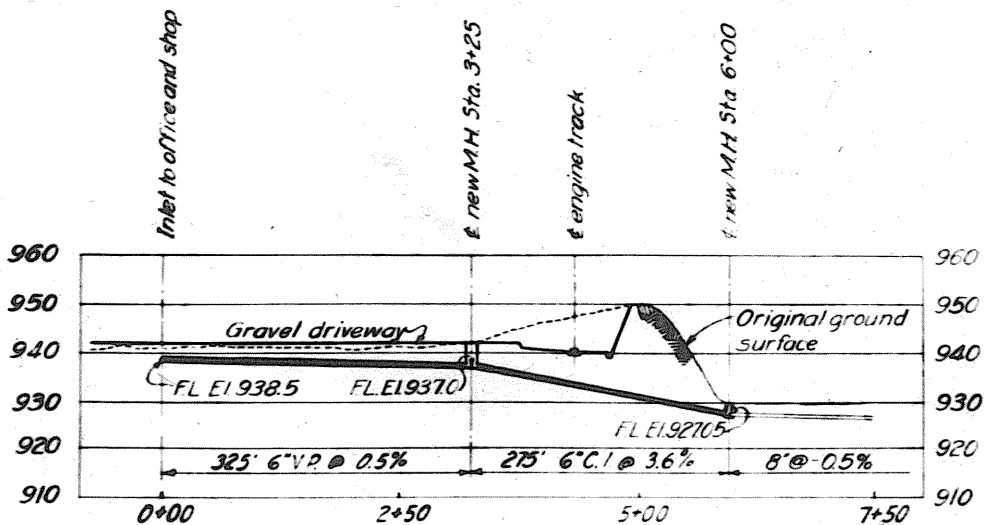
PLAN



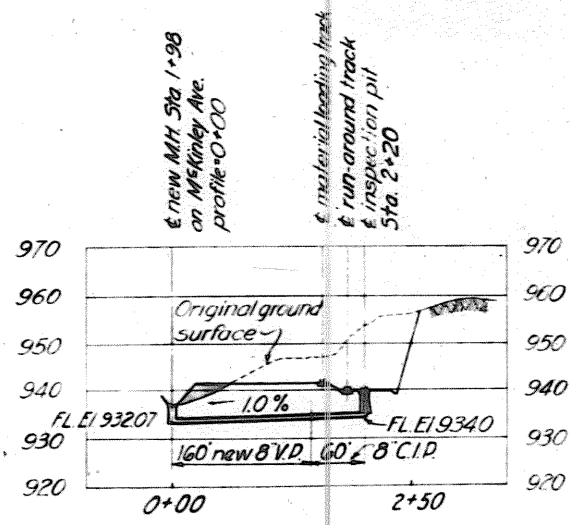
WALNUT RD. O.W.S. CHANGES

NOTES

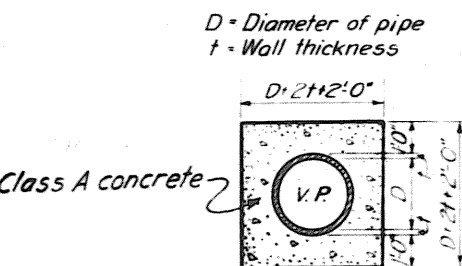
For general plans, see Dwg. Nos. 16/2 & 16/3.
For general utility plans, see Dwg. Nos. 82/21 & 82/22.
For details of headwalls, see Dwg. No. 20/11.
For details of manholes and catch basins, see Dwg. No. 82/36.



PROFILE A



PROFILE B



DETAIL OF CONCRETE CASING

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1

SEWER & WATER LINE CHANGES
MC KINLEY AVE. & WALNUT & CHERRY ROADS

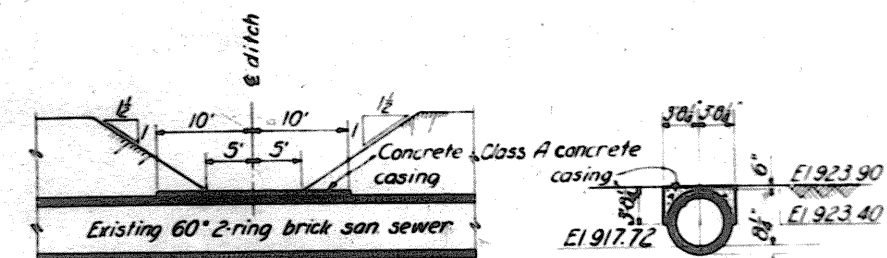
18 75 SHEETS SHEET NO. 71 SCALE: HOR. 1\"/>

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED: [Signature] APPROVED: [Signature] MAJOR, CORPS OF ENGINEERS

DESIGNED BY: R. L. TRACED BY: E. B. H. CHECKED BY: C. M. T. FILE NO. 0271-PM-82/26 DATED: [Date]

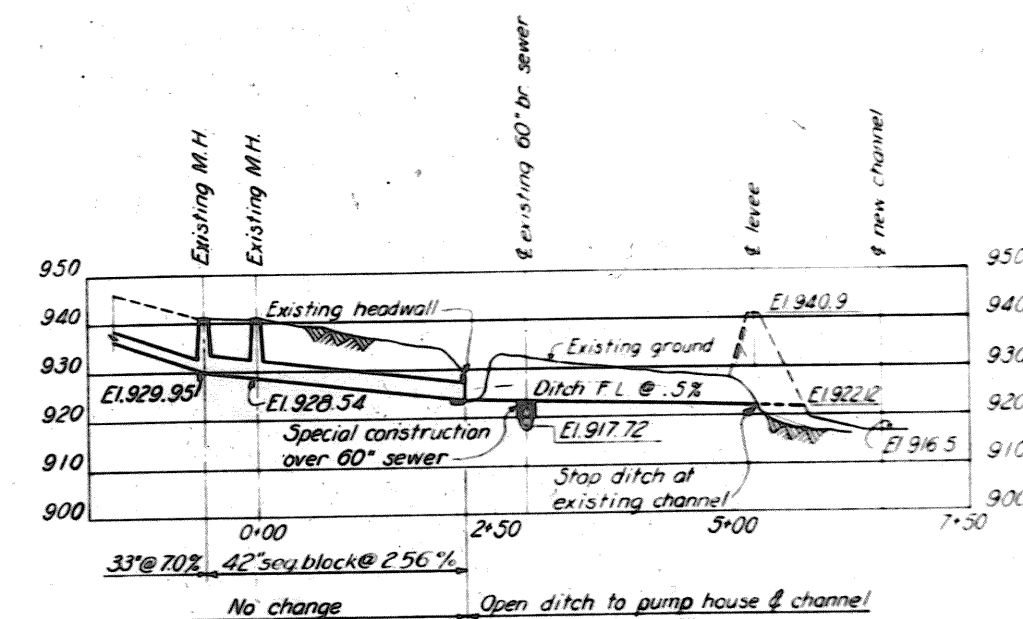
WORK AS CONSTRUCTED



SECTION ON E DITCH

DETAIL OF CONCRETE PROTECTION ON
60" SANITARY SEWER AT DRAINAGE DITCH

SCALE: 1" = 10'



PROFILE
DRAINAGE DITCH

SCALES: HOR. 1" = 100
VERT. 1" = 20

NOTES

For general plan, see Dwg. No. 16/4
For general utility plan, see Dwg. No. 82/23
For details of gate wells, see Dwg. No. 82/33
For details of 5x5 culvert, see Dwg. No. 82/33
For details of seep rings, see Dwg. No. 82/34

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

SEWER CHANGES ARCH AVENUE

IN 70 806678

CHARTER 00. 72

GRAB: AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. MAY. 1941

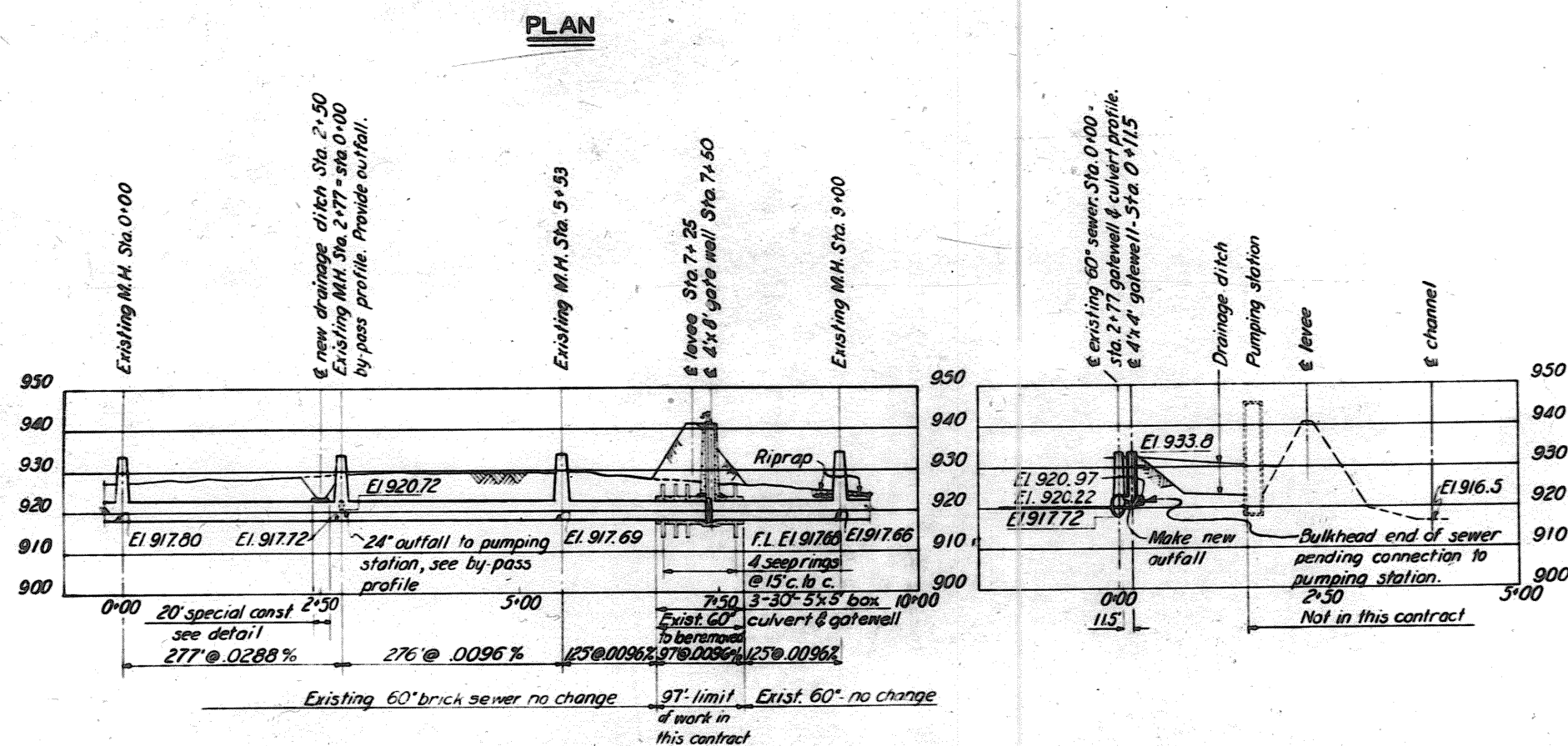
SUBMITTED: *Ken Perkins* APPROVED: *W. J. Walker*
MAJ. COFS OF 250-4222

DRAWN BY R.L.E.
 TRACED BY R.C.H.
 CHECKED BY D.C.J.

TRANSMITTED WITH LETTER
 FILE NO. 0271-PM-82/29 CATED

FILE NO. Q27i-PM-82/29 DATE

WORK AS CONSTRUCTED



PROFILE

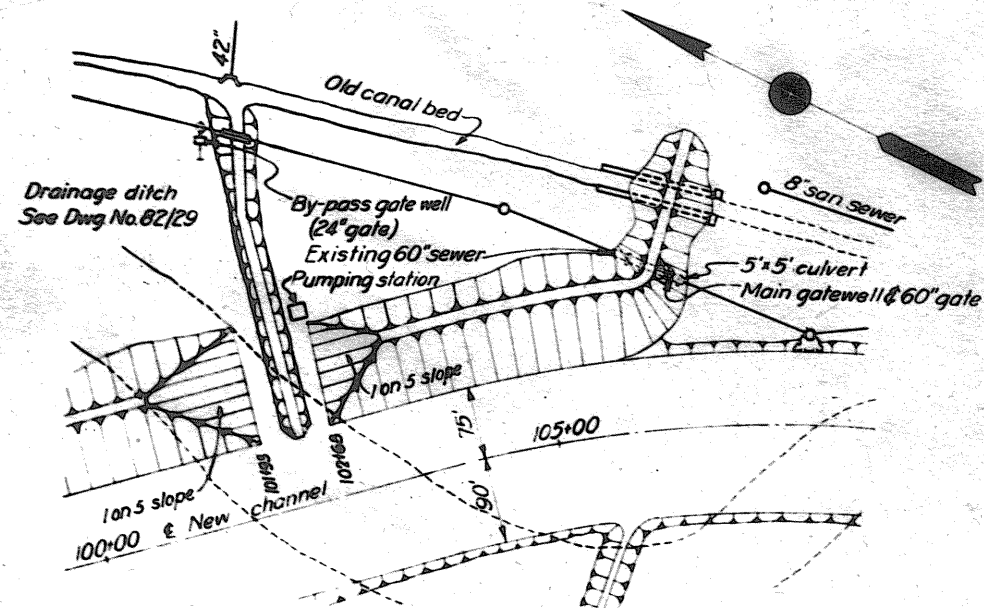
GATEWELL & CULVERT IN EXISTING 60" SANITARY SEWER

SCALES HOR 1" = 100'
 VERT 1" = 20'

PROFILE
24" BY-PASS TO PUMPING STATION

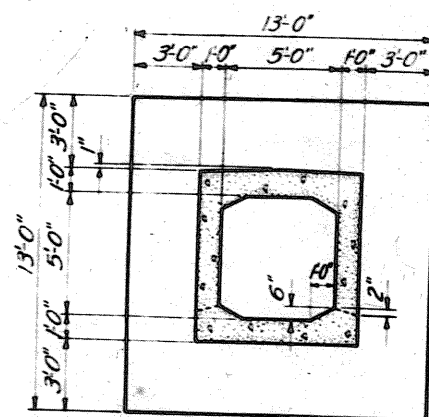
SCALES HOR. P = 100'
 VERT 1" = 20'

S.F.B.	9-29-44	REVISED AS CONSTRUCTED	
BY	DATE	CHARACTER	
		REVISIONS	

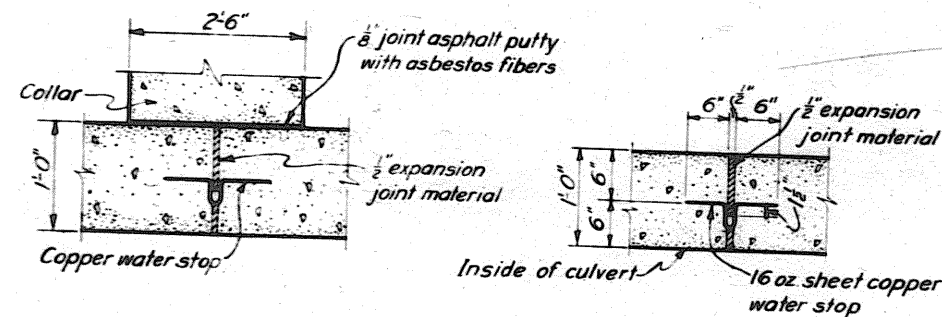


LOCATION PLAN

SCALE 1" = 100'



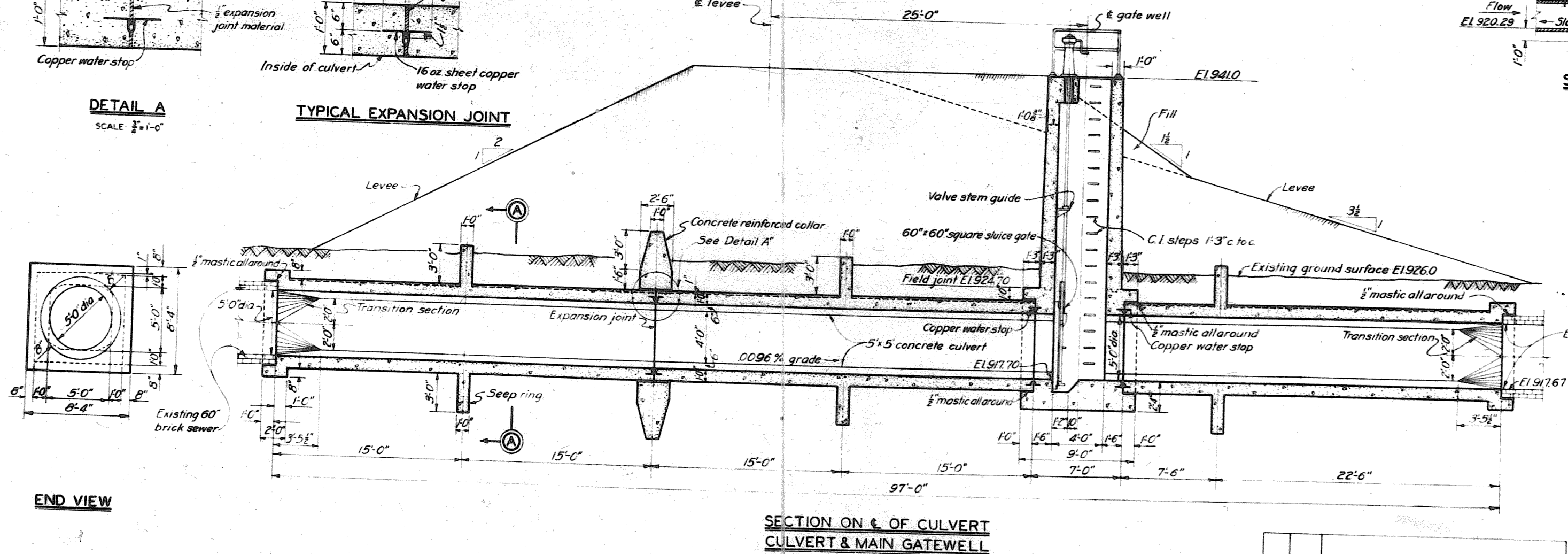
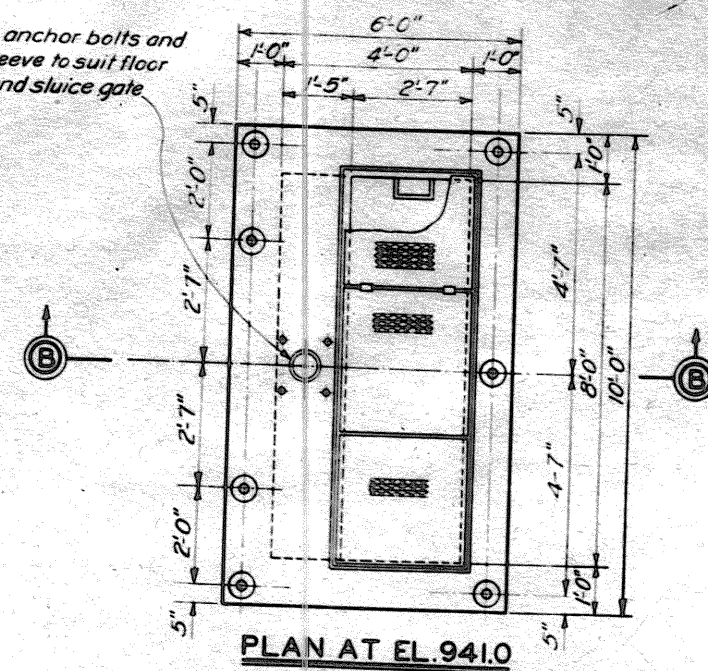
SECTION A-A



DETAIL A

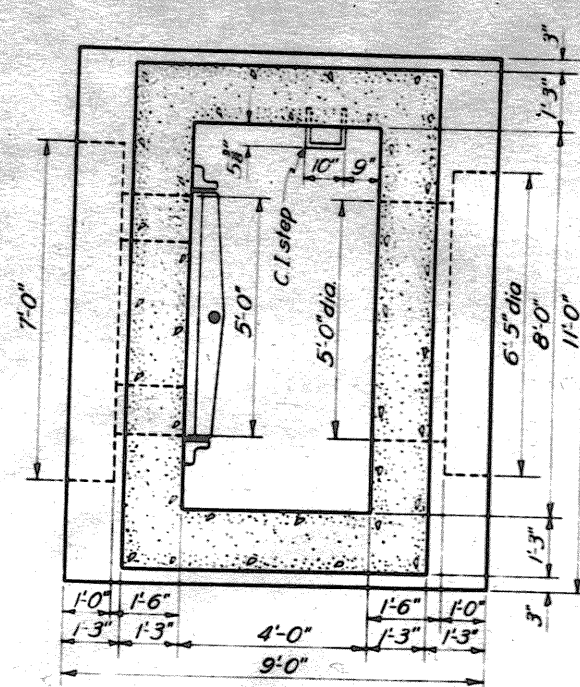
SCALE 3/4" = 1'-0"

TYPICAL EXPANSION JOINT

SECTION ON & OF CULVERT
CULVERT & MAIN GATEWELLLocate anchor bolts and
pipe sleeve to suit floor
stand and sluice gate

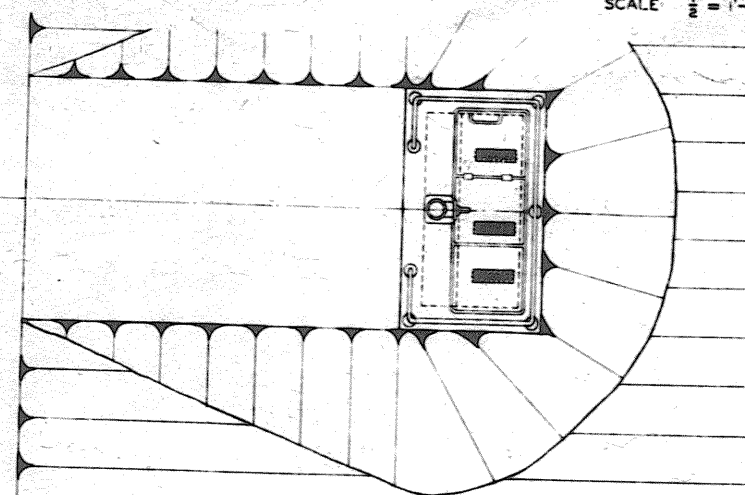
PLAN AT EL. 941.0

SCALE 1/2" = 1'-0"

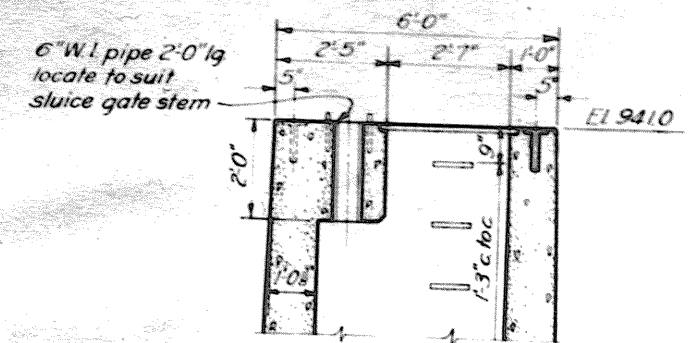


PLAN AT EL. 924.7

SCALE 1/2" = 1'-0"

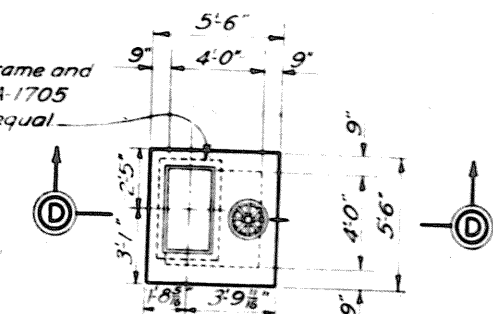


PLAN

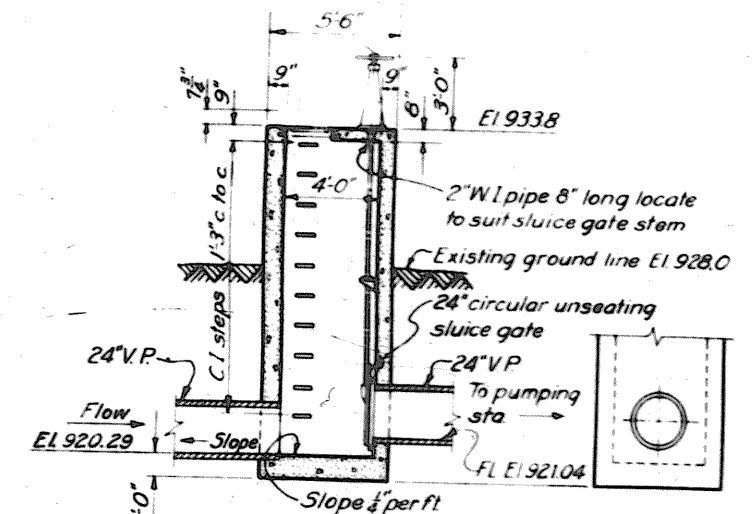


SECTION B-B

SCALE 1/2" = 1'-0"

Manhole frame and
cover Clow A-1705
size No 8 or equal

PLAN



SECTION D-D

END VIEW

BY-PASS GATEWELL

NOTES

For reinforcing details, see Dwg No. 82/34
All concrete to be Class ATUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1

GATE WELLS - MASONRY DETAILS

10 75 SHEETS

SHEET NO. 73

SCALE: 1/2" = 1'-0"

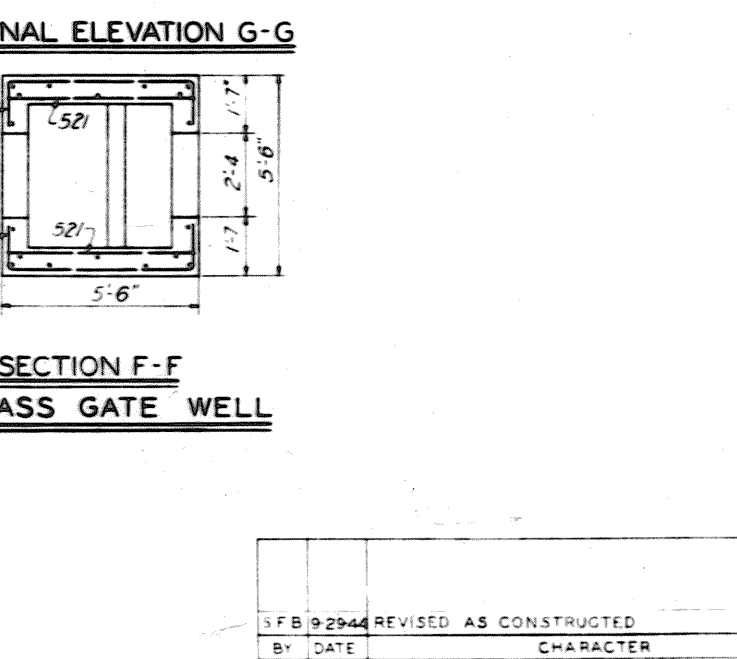
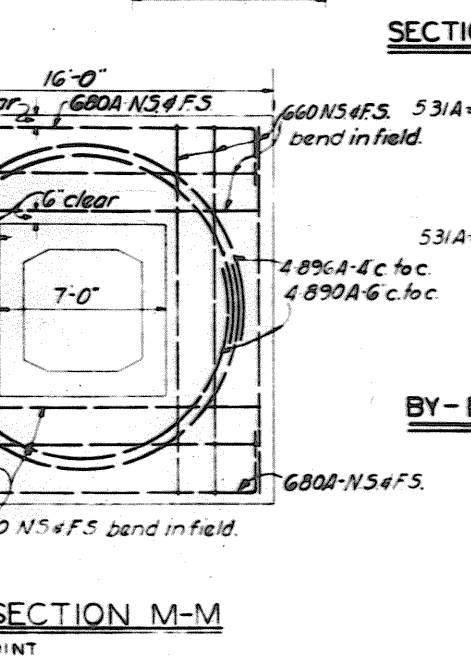
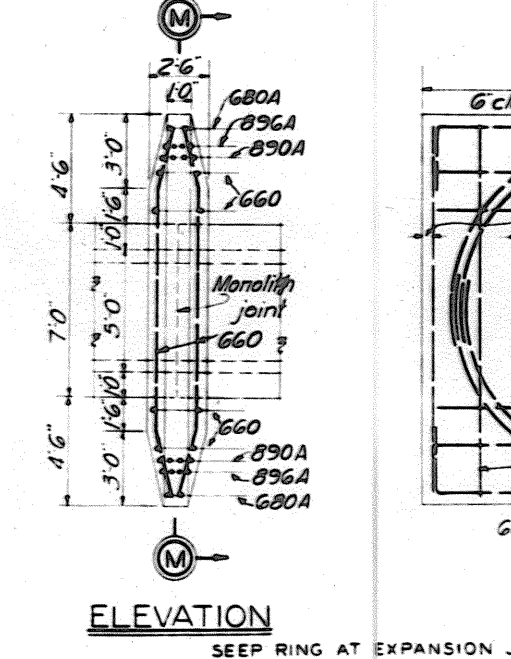
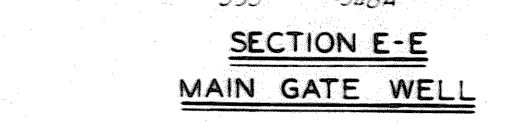
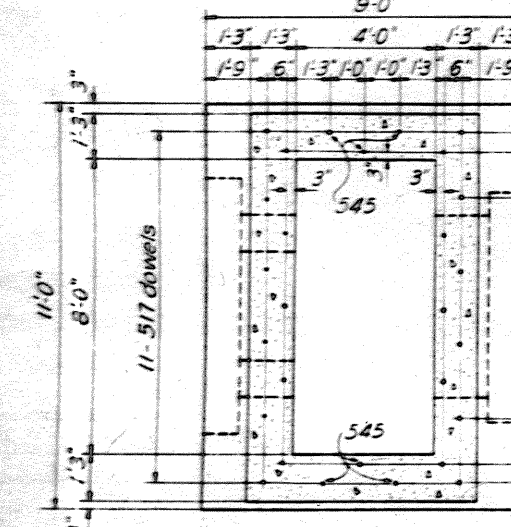
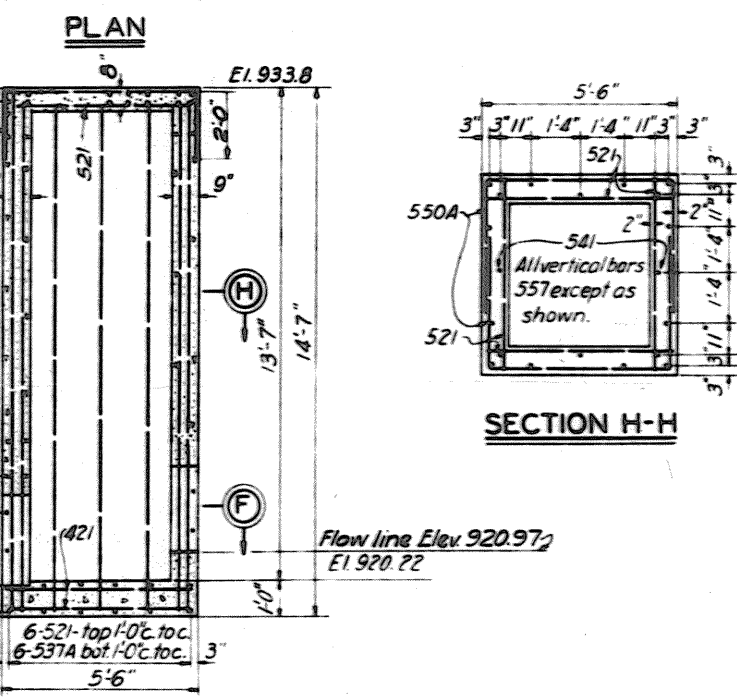
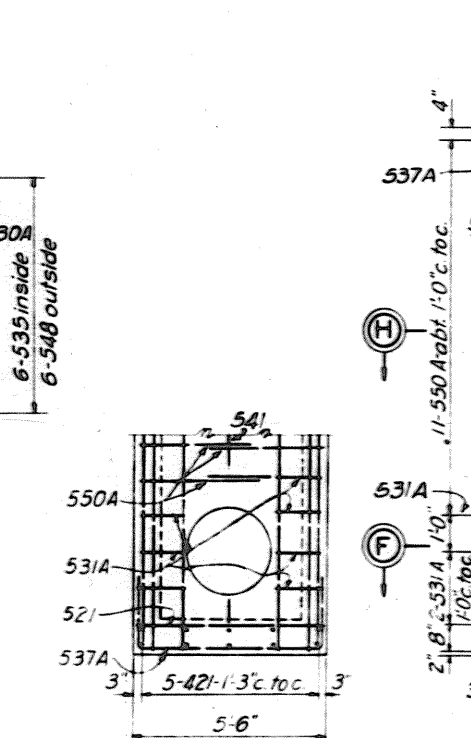
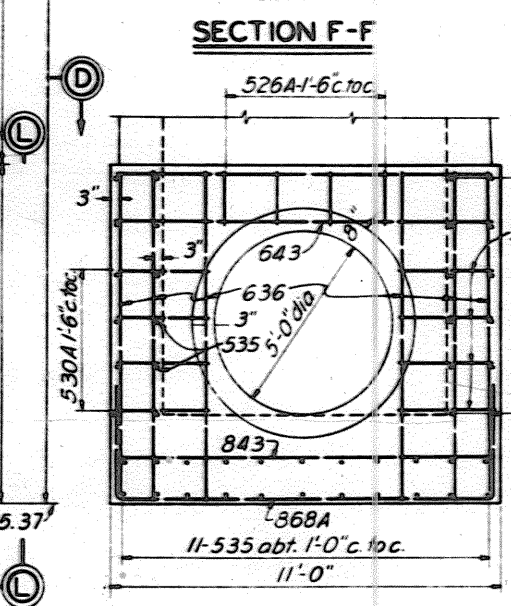
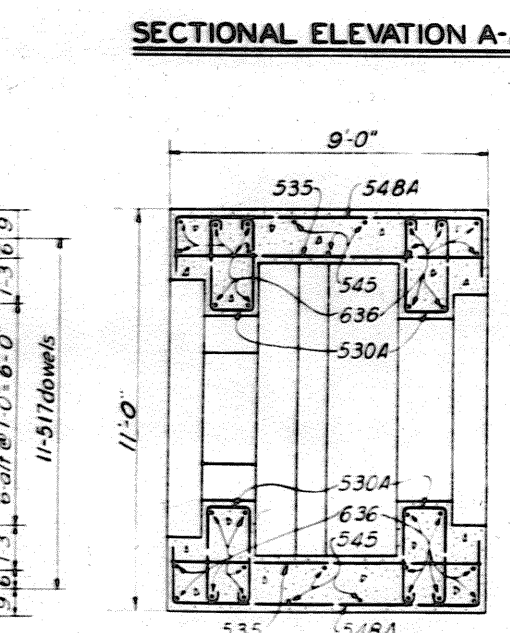
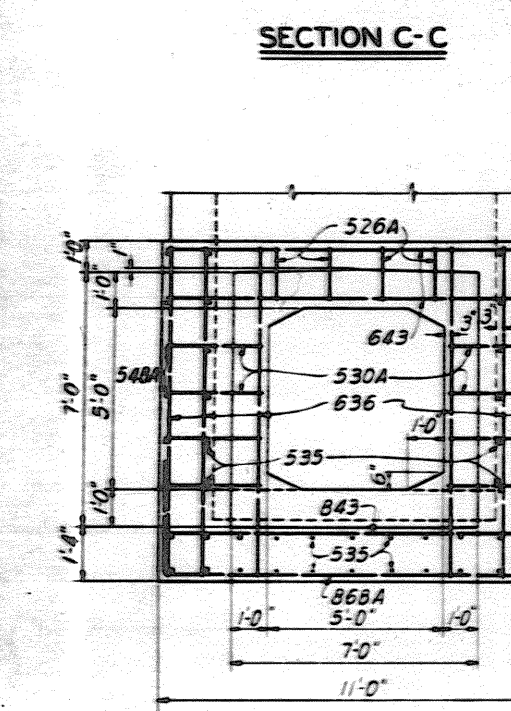
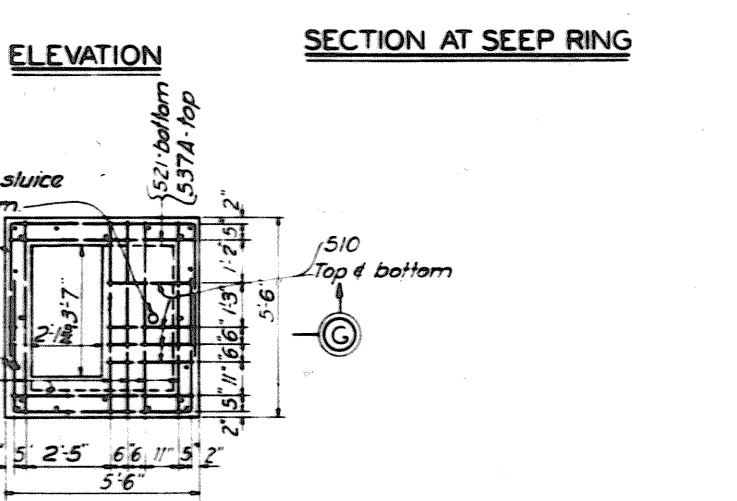
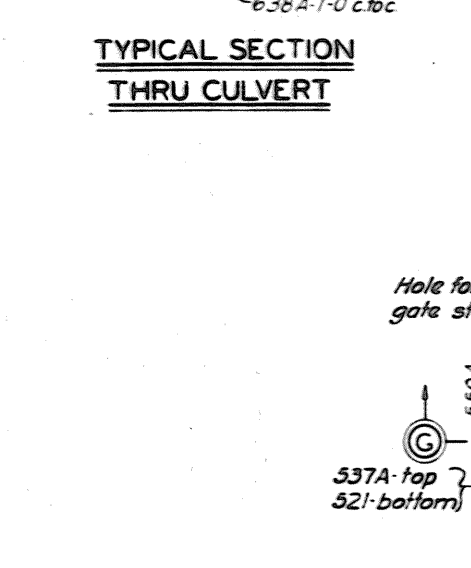
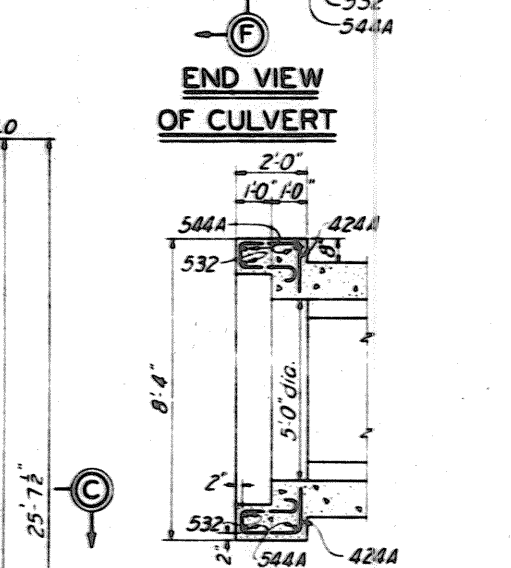
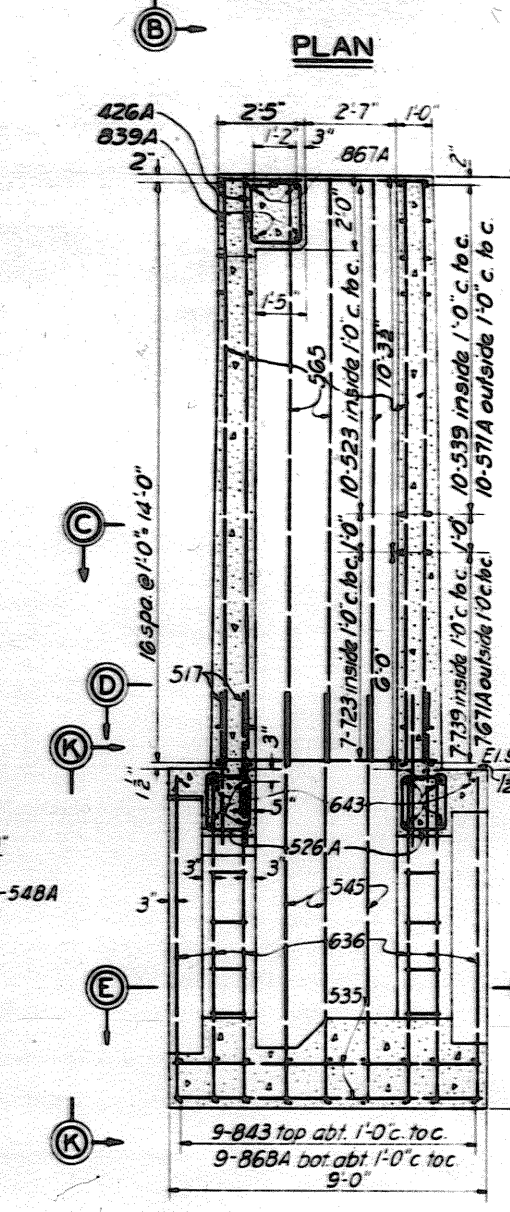
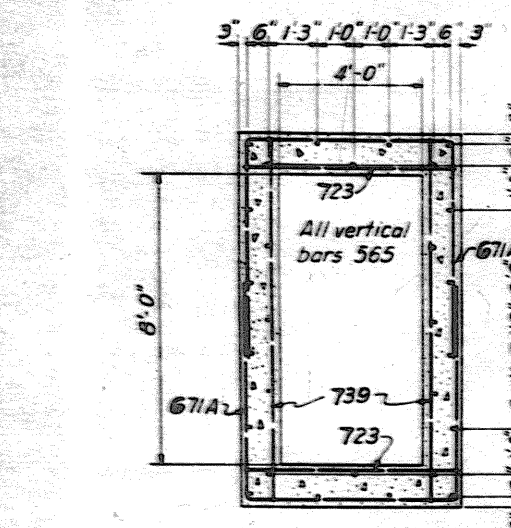
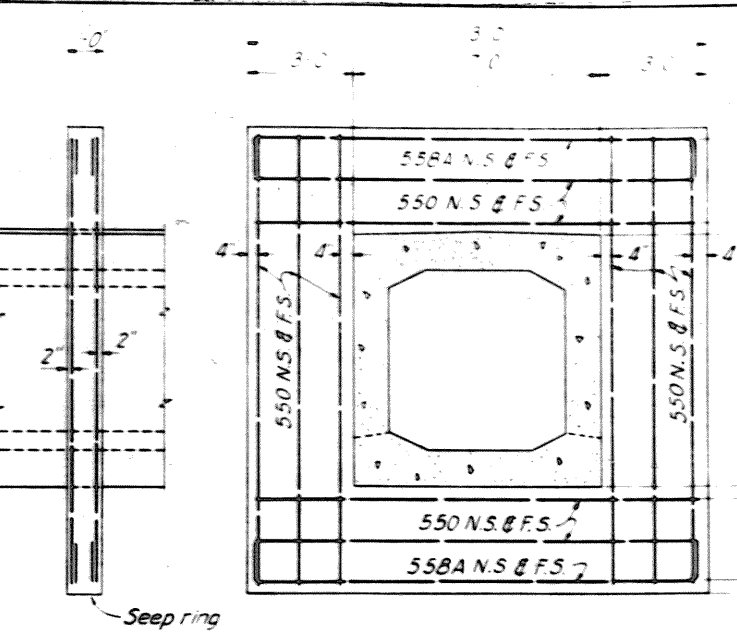
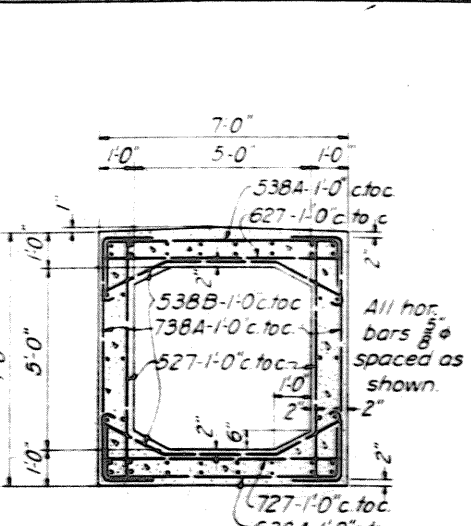
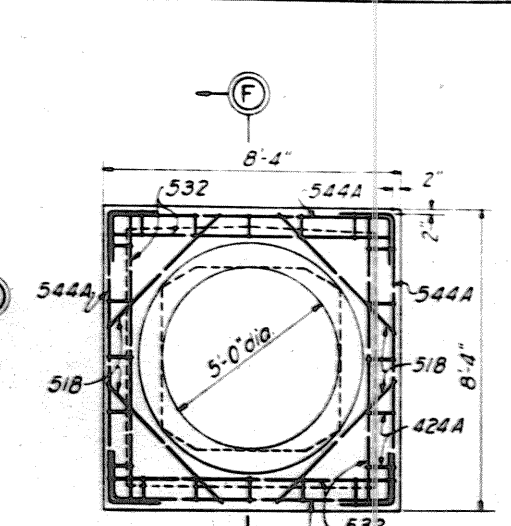
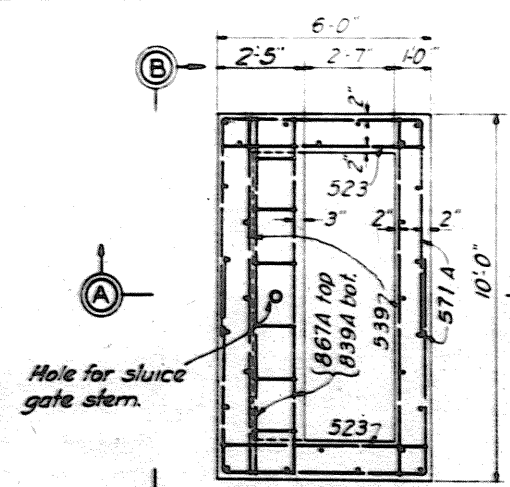
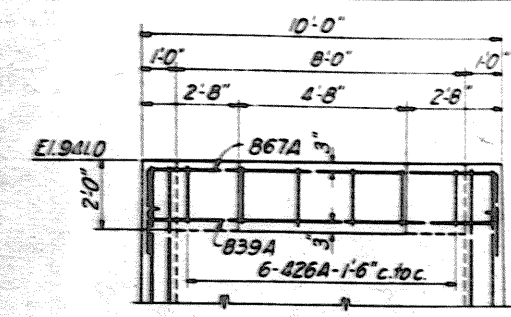
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED: [Signature] APPROVED: [Signature]

DRAWN BY: R.M.C. CHECKED BY: D.G.J. FILE NO. 0271-PM-82/33

REVISIONS

MAJOR CORPS OF ENGINEERS



REINFORCING SCHEDULE

MARK	SIZE	LENGTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
424A	2"	6'-0"	CULVERT	40	4.71	160
518	2"	4'-6"		8	4.69	38
527	2"	6'-9"		180	7.04	1267
532	2"	8'-0"		8	8.34	68
538A	2"	9'-6"		90	9.91	892
538B	2"	9'-6"		80	9.91	794
544A	2"	11'-0"		6	11.47	69
550	2"	12'-6"		60	3.04	182
553A	2"	14'-6"		12	15.12	181
518	2"	29'-6"		132	30.77	4062
627	2"	6'-9"		90	10.14	913
638A	2"	9'-6"		90	14.27	1284
727	2"	6'-9"		90	3.80	1242
738A	2"	9'-6"		180	19.42	3496
660	2"	15'-0"		20	22.53	451
680A	2"	20'-0"		4	30.04	120
890A	2"	22'-6"		8	60.08	480
896	2"	24'-0"		8	64.08	512
426A	2"	6'-6"	MAIN GATE WELL	6	4.34	26
517	2"	4'-3"		22	4.43	97
523	2"	5'-9"		20	6.00	120
526A	2"	6'-6"		8	6.78	54
530A	2"	7'-6"		16	7.82	125
535	2"	8'-9"		34	9.13	310
539	2"	9'-9"		20	10.17	203
545	2"	11'-3"		6	11.73	70
548A	2"	12'-0"		12	12.52	150
565	2"	16'-3"		28	16.95	475
571A	2"	17'-9"		20	18.51	370
636	2"	9'-0"		28	13.52	379
643	2"	10'-9"		10	16.15	162
671A	2"	17'-9"		14	26.65	373
839A	2"	9'-9"		2	26.03	52
843	2"	10'-9"		9	28.70	258
867A	2"	16'-9"		2	44.72	89
868A	2"	17'-0"		9	45.39	409
723	2"	5'-9"		14	11.75	165
739	2"	9'-9"		14	19.93	279
421	2"	5'-3"	BY-PASS GATE WELL	10	3.51	35
510	2"	2'-6"		8	2.61	21
521	2"	5'-3"		57	5.48	312
531A	2"	7'-9"		6	8.08	48
537A	2"	9'-3"		13	9.65	125
541	2"	10'-3"		2	10.69	21
550A	2"	12'-6"		20	13.04	261
557	2"	14'-3"		18	14.86	267
					Total	23,170

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

GATE WELLS - REINFORCING DETAILS

10 76 SHEETS SHEET NO. 74 SCALE: 3/8" = 1'-0"

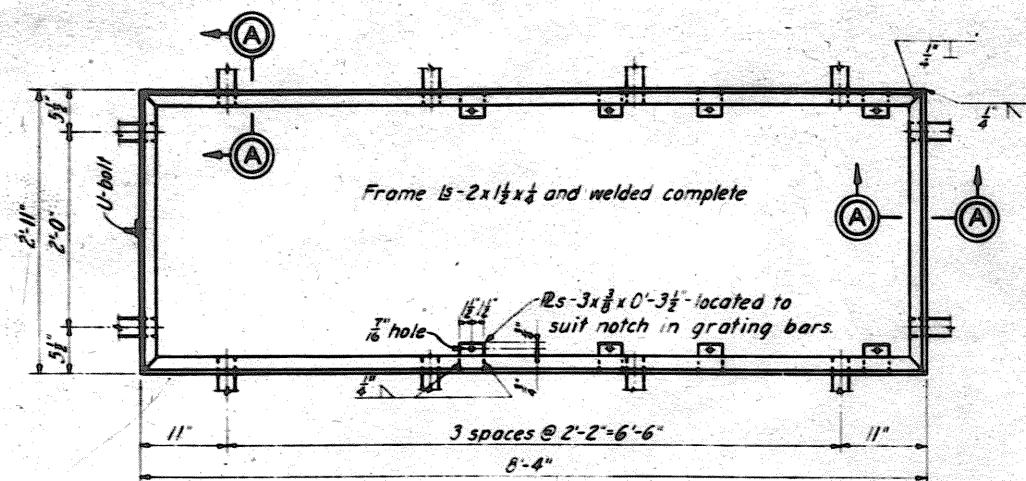
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED: *Wm. J. O'Brien* APPROVED: *Wm. J. O'Brien*

DRAWN BY: R.M.C. CHECKED BY: E.A. FILE NO. 0271-PM-82/34

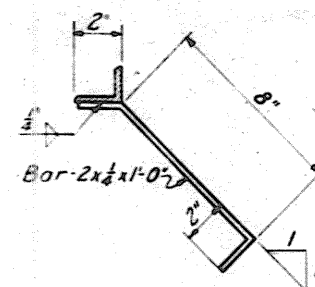
REVISIONS

WORK AS CONSTRUCTED



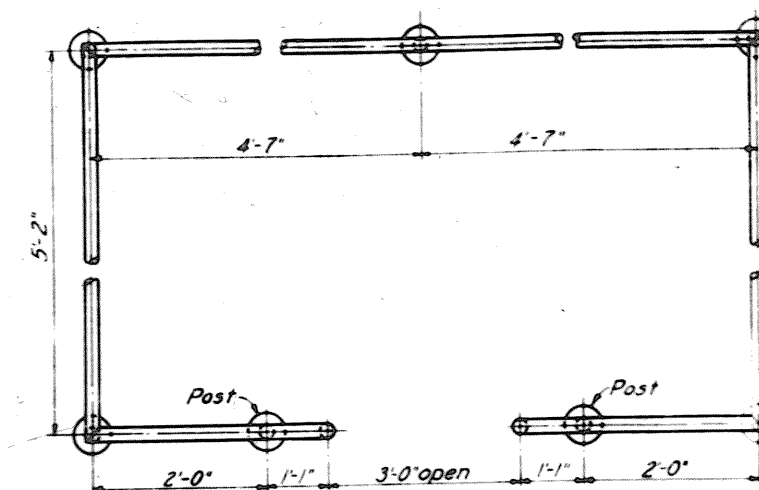
FRAME

STRUCT. STEEL MARK 82/35-1
MAKE 1 WT. 92 LBS.



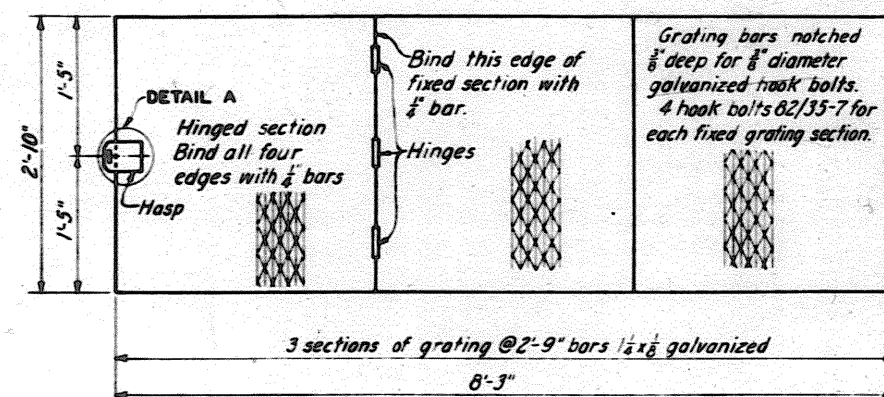
SECTION A-A

SCALE: 3/4"=1'-0"



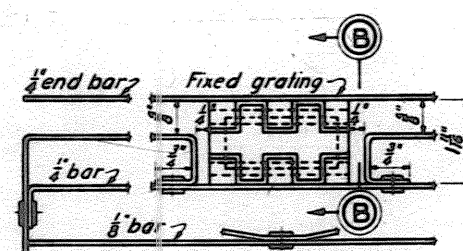
HANDRAILING

W 1 PIPE MARK 82/35-3 MAKE 1



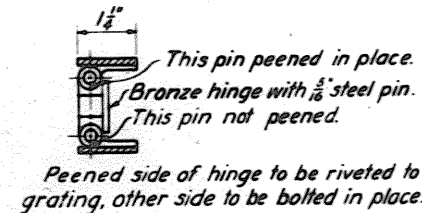
GRATING

STRUCT. STEEL MARK 82/35-2
MAKE 1 23.4 SQ.FT.

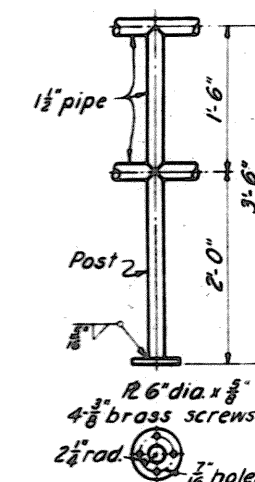


GRATING HINGE

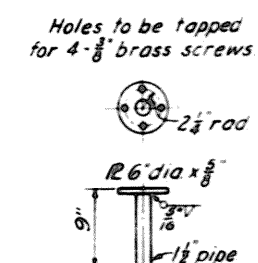
3 REQUIRED
SCALE: 6/8"=1'-0"



SECTION B-B

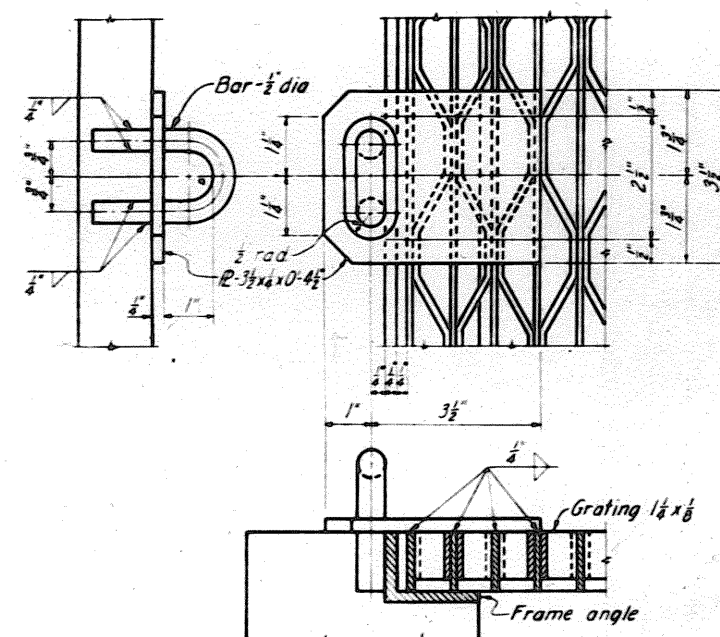


TYPICAL POST



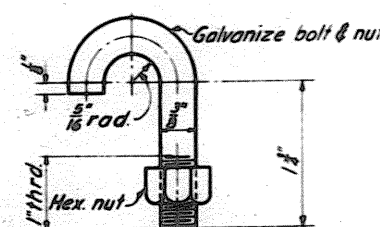
RAIL POST ANCHOR

W 1 PIPE MARK 82/35-5 MAKE 1



DETAIL A

SCALE: 6/8"=1'-0"



HOOK BOLT

STRUCT. STEEL MARK 82/35-4
MAKE 8 WT. 0.13 LBS.
SCALE: FULL SIZE

NOTES

Handrailing to be flush type-welded.
For masonry details, see Dwg No 82/33

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SECTION 1**

GATE WELLS - METAL DETAILS

10 76 SHEETS SHEET NO. 75 SCALE: 1/4"=1'-0"

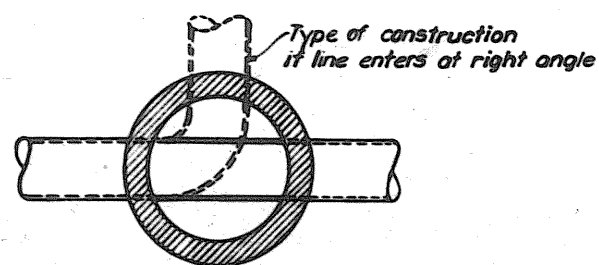
U.S. ENGINEER OFFICE HUNTINGTON, W. VA. MAY, 1941

SUBMITTED BY: [Signature] APPROVED BY: [Signature] MAJOR, CORPS OF ENGINEERS

DRAWN BY: A.J.S. CHECKED BY: A.R.N. FILE NO. 0271-PM-82/35 DATED

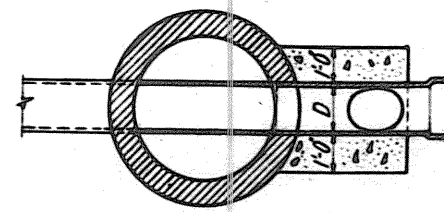
BY	DATE	CHARACTER

WORK AS CONSTRUCTED



SECTIONAL PLAN

MANHOLE DEPTH	WALL THICKNESS
From 0 to 16 feet	8 1/2 inches
From 16 to 22 feet	13 inches
Over 22 feet	18 inches



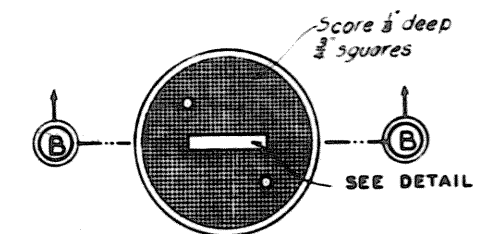
SECTIONAL PLAN

SAN. SEWER

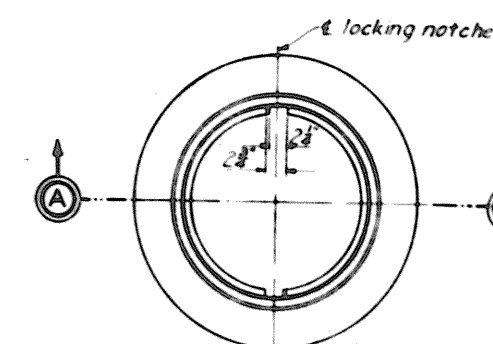
STM. SEWER

Name to indicate type of sewer

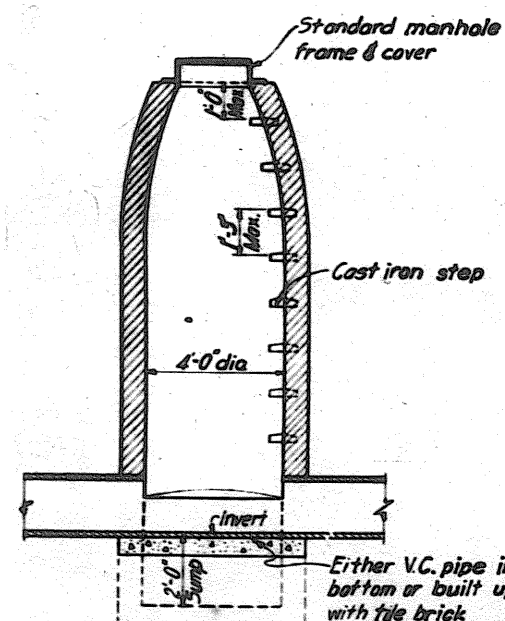
DETAIL A



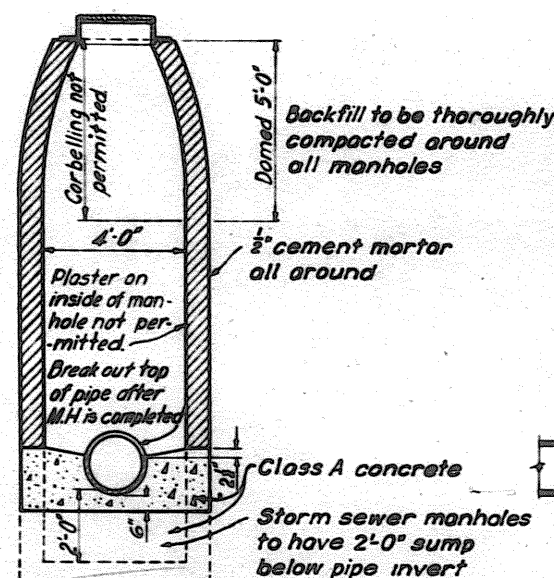
PLAN



PLAN

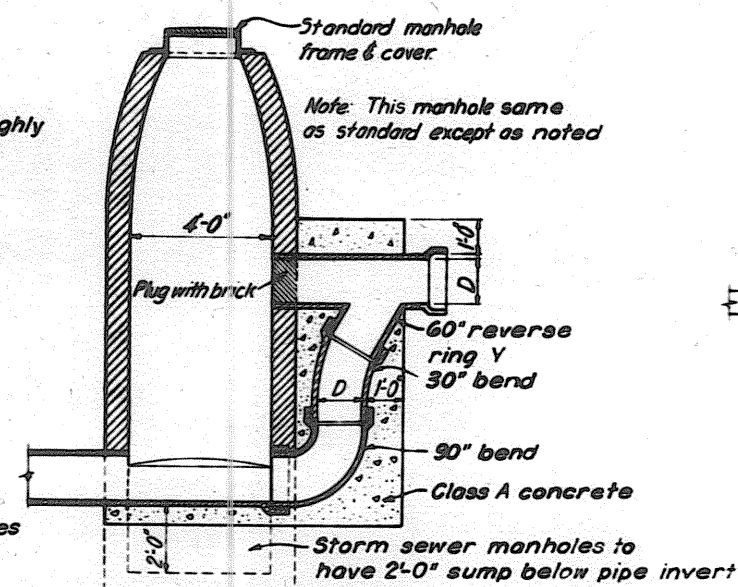


TYPICAL MANHOLE

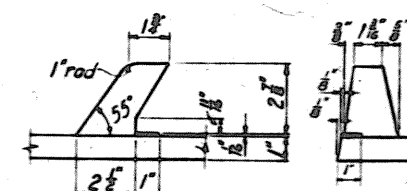


STORM AND SANITARY SEWER MANHOLES

SCALE: 3/8" = 1'-0"

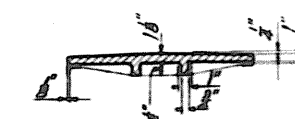


DROP MANHOLE

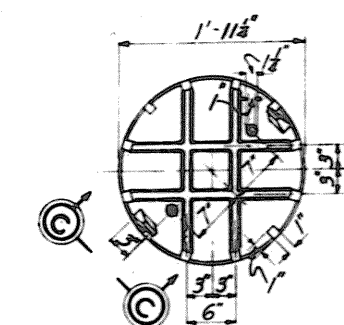


ELEVATION C-C

SIDE



SECTION B-B



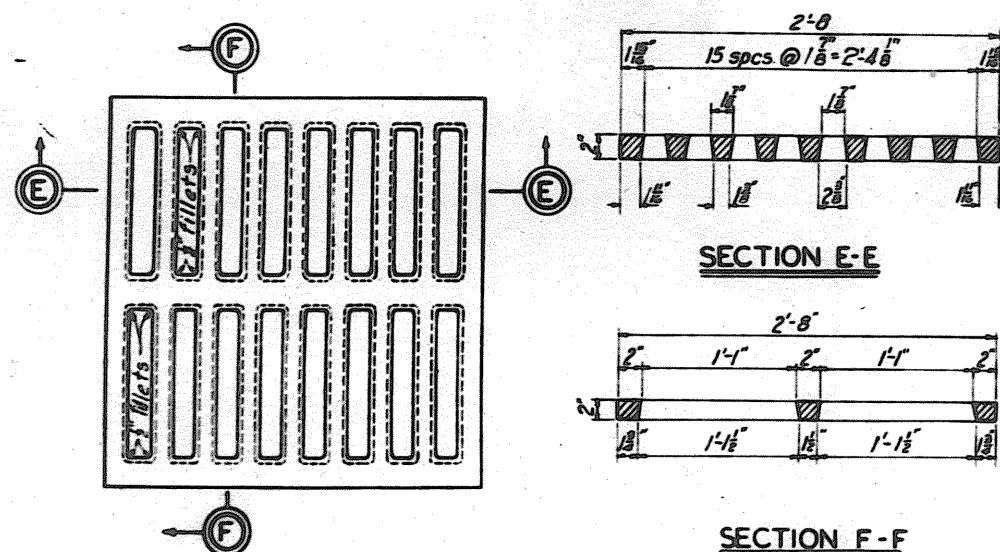
SECTION A-A

FRAME

CAST IRON
SCALE: 1" = 1'-0"
NO REQD. 4 - NEW
13 - RECLAIMED & SALVAGED

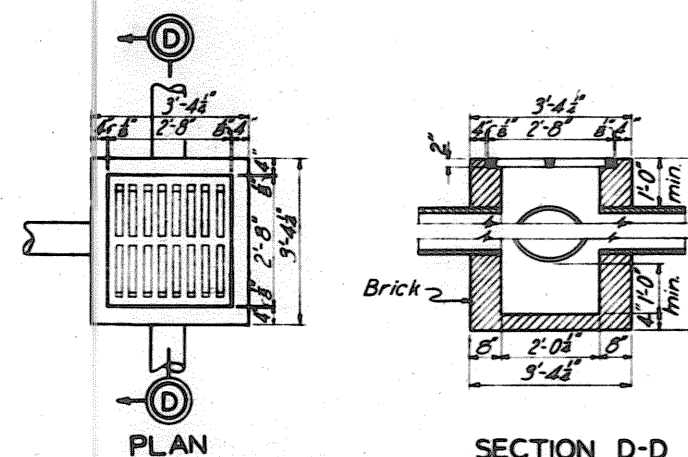
COVER

CAST IRON
SCALE: 1" = 1'-0"



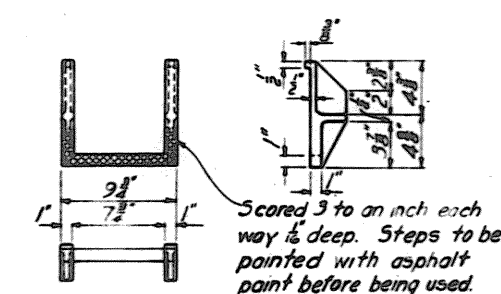
INLET GRATING

SCALE: 1/2" = 1'-0"
CAST IRON
NO REQD. 2 - NEW



DETAILS OF CATCH BASIN

SCALE: 3/8" = 1'-0"



DETAIL CAST IRON STEP

SCALE: 1/2" = 1'-0"
NO REQD. - 131

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO

SECTION 1

MISCELLANEOUS SEWER DETAILS

1076 SHEETS

SHEET NO. 70

SCALE: AS SHOWN

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., MAY, 1941

SUBMITTED: *W. J. Jones* APPROVED: *W. J. Jones*

DRAWN BY: R. L. E. TRACED BY: A. F. CHECKED BY: A. W. FILE NO. 027i-PM-82/36 DATED

TRANSMITTED WITH LETTER

BY	DATE	CHARACTER
		REVISIONS

WORK AS CONSTRUCTED