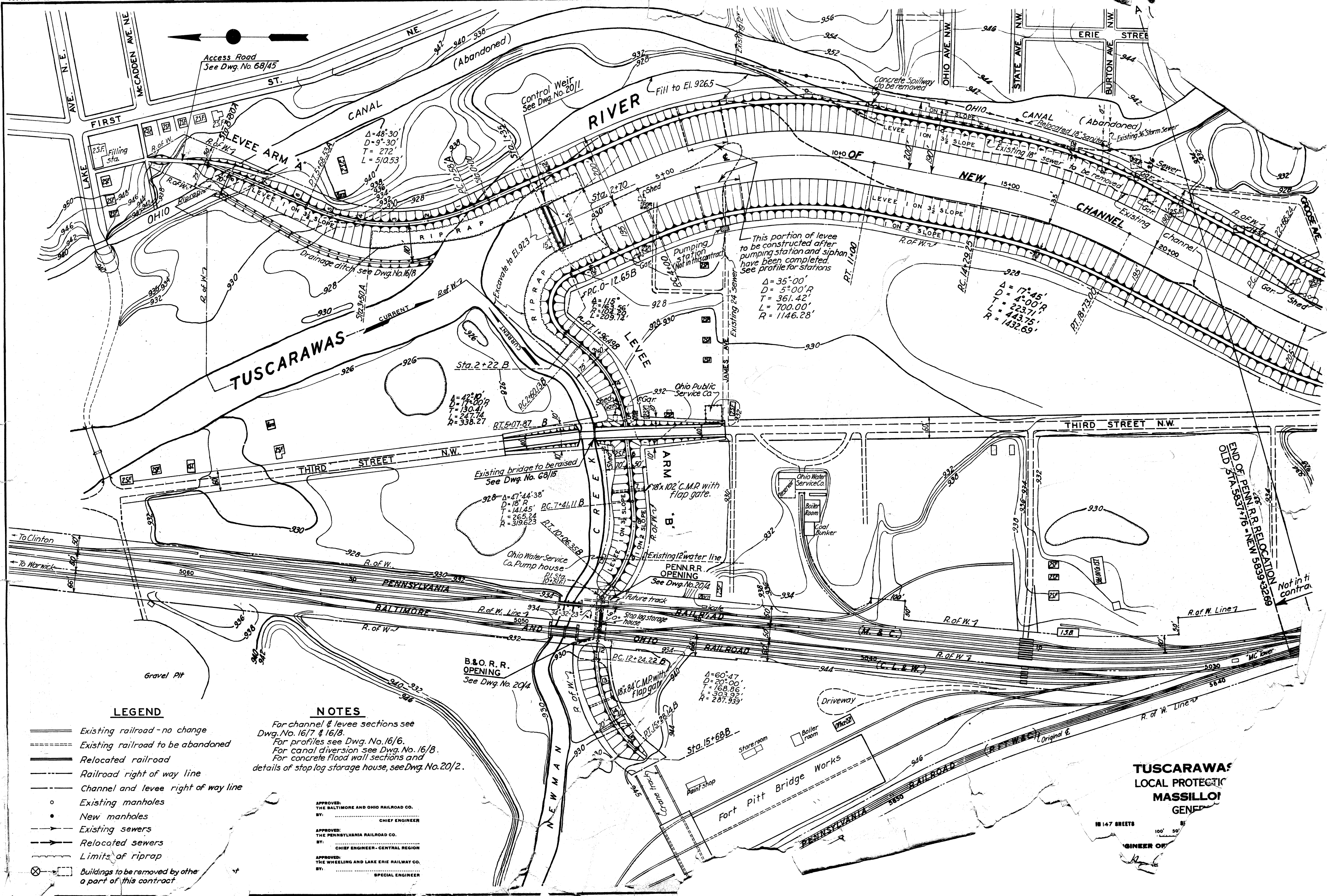
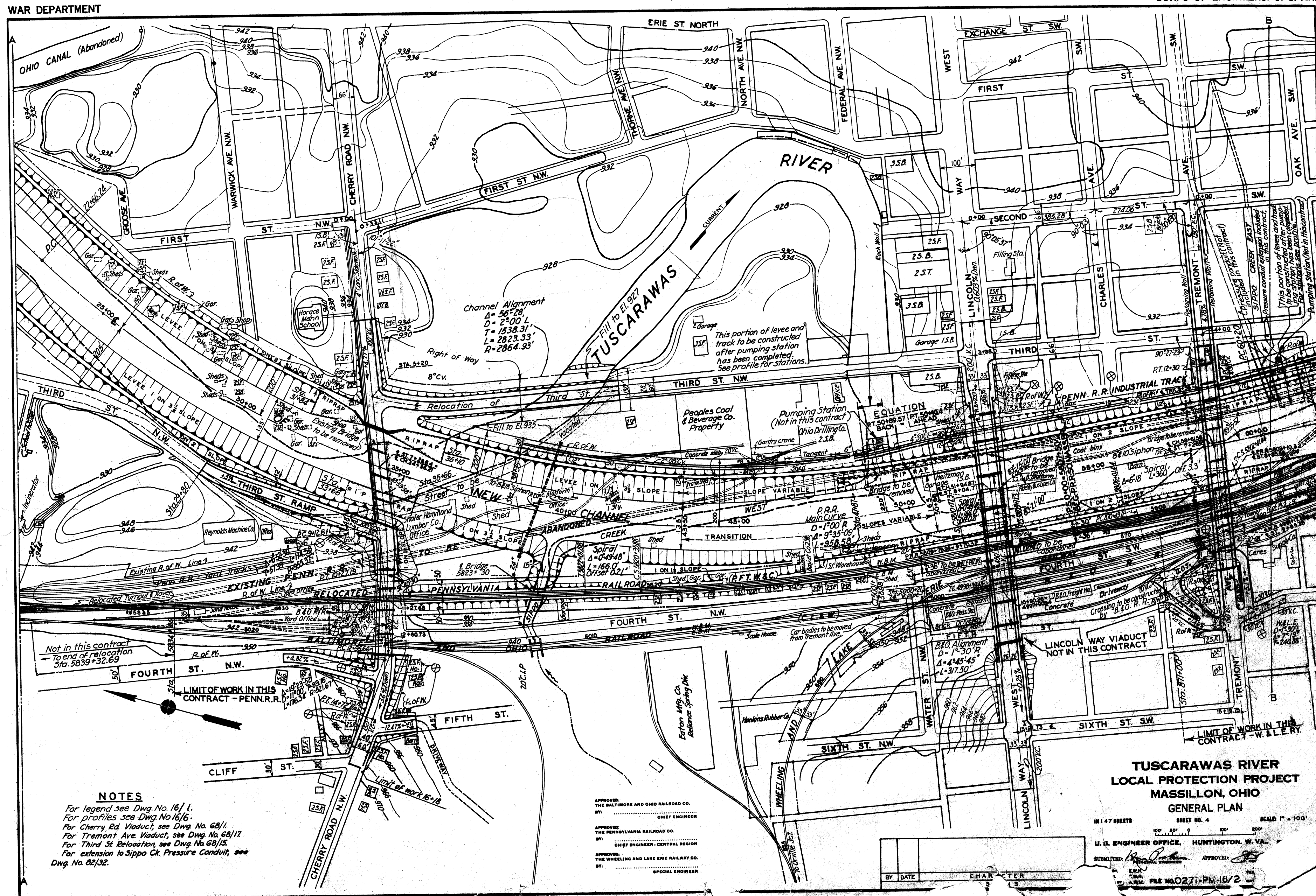
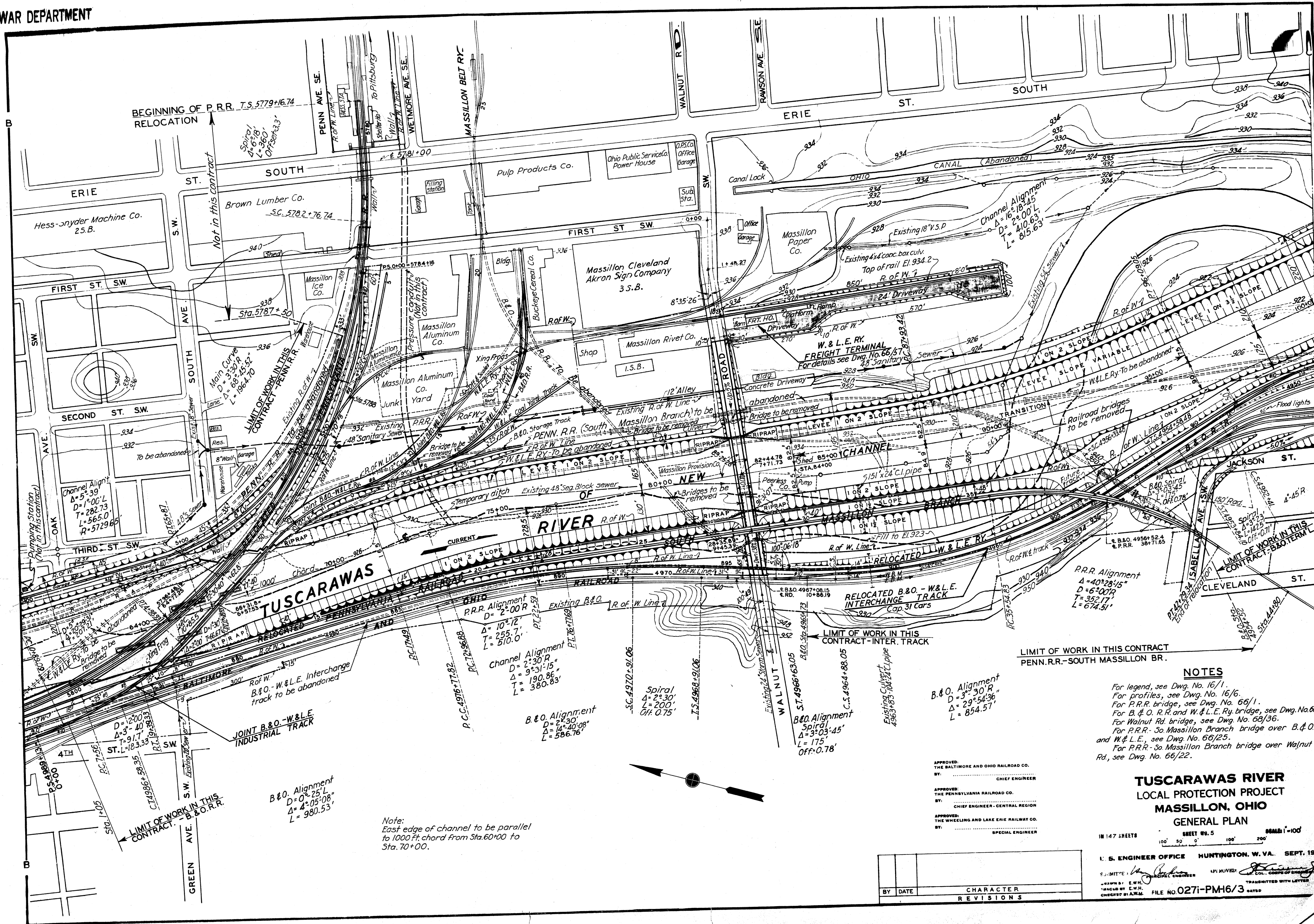
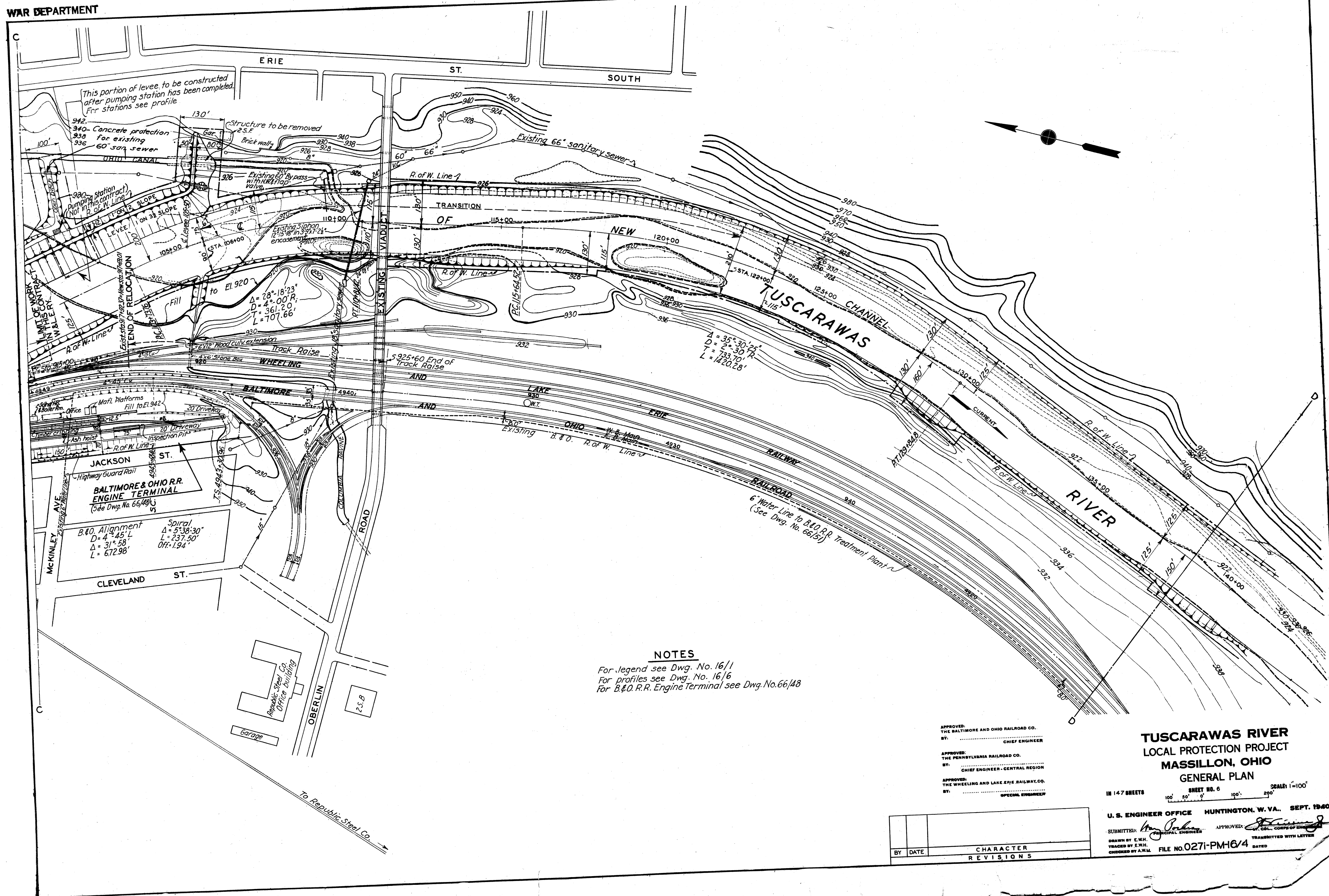
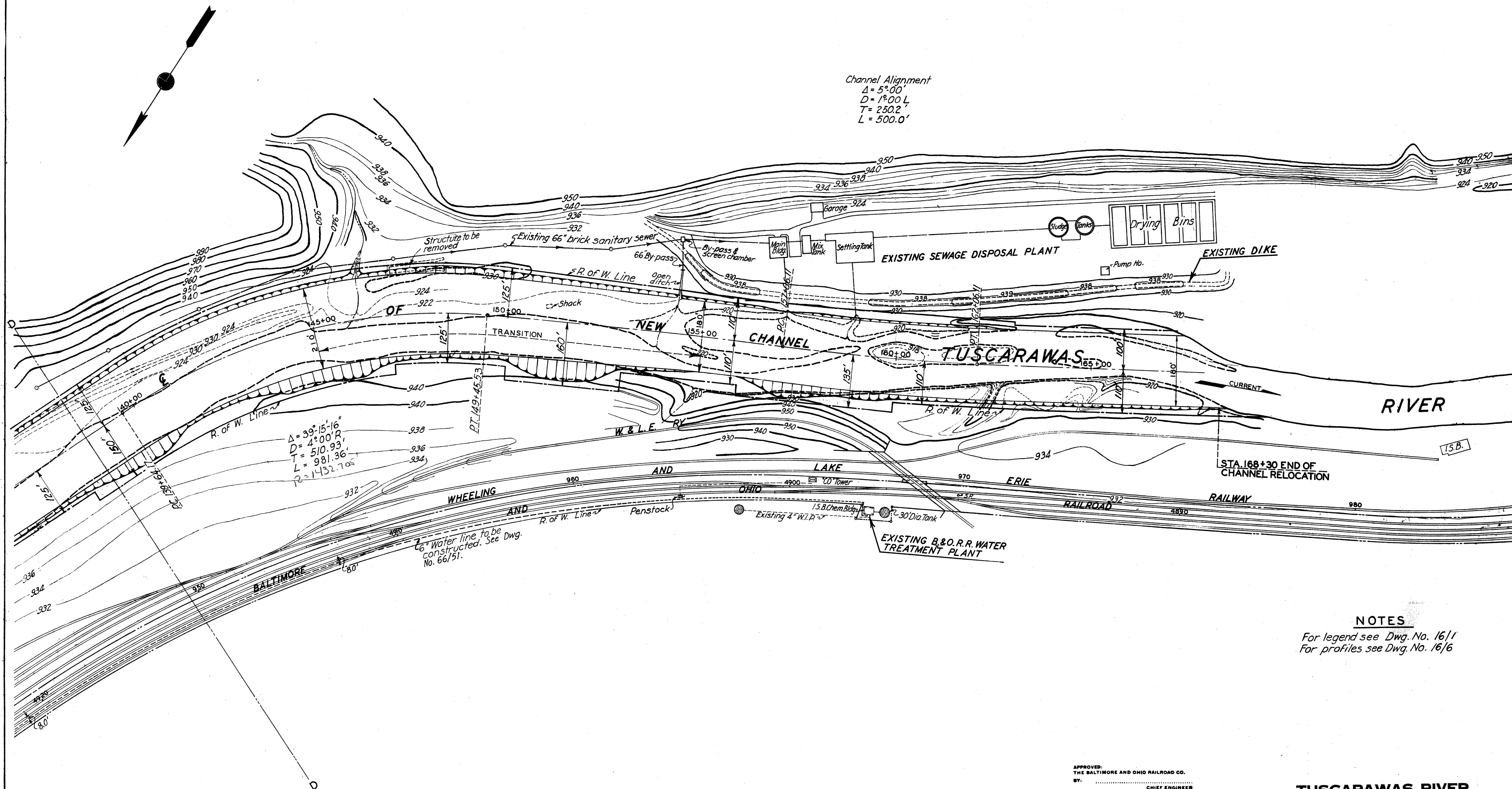












NOTES

For legend see Dwg. No. 16/1
For profiles see Dwg. No. 16/6

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY: CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: SPECIAL ENGINEER

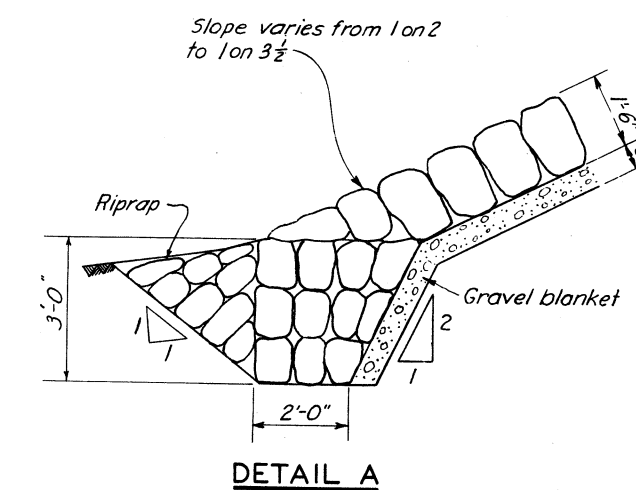
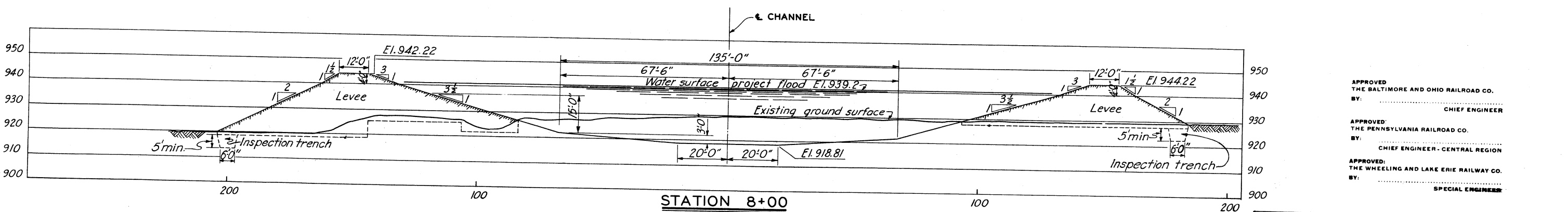
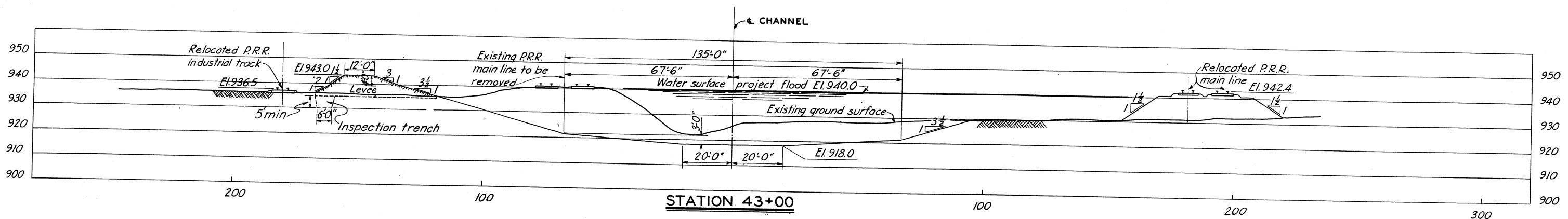
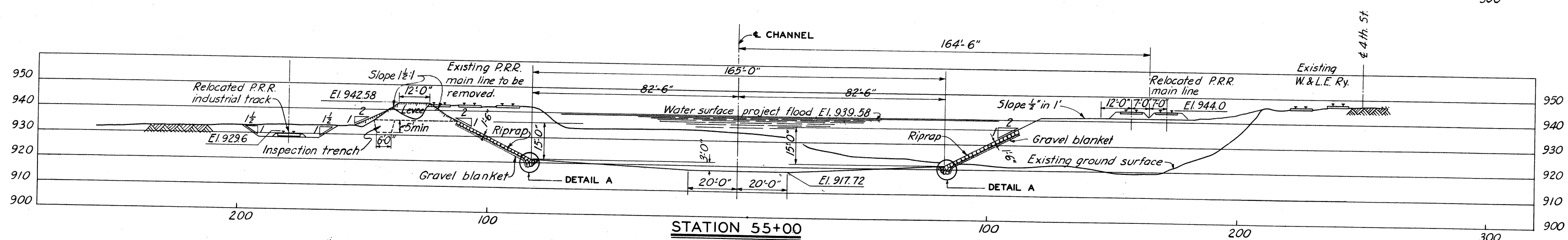
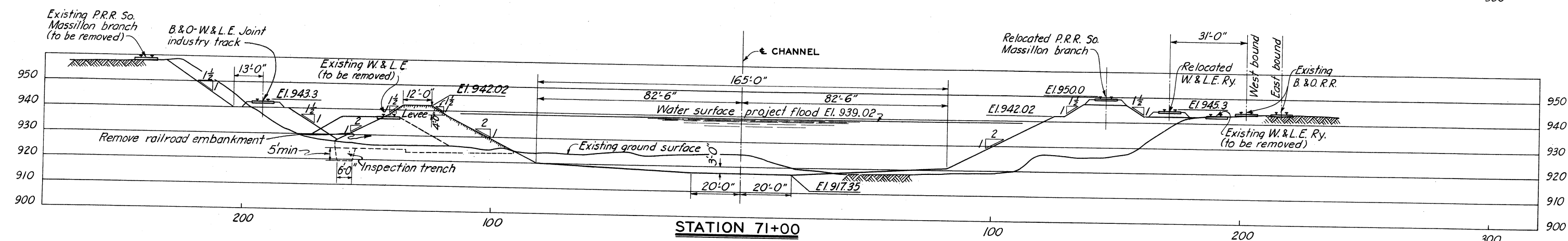
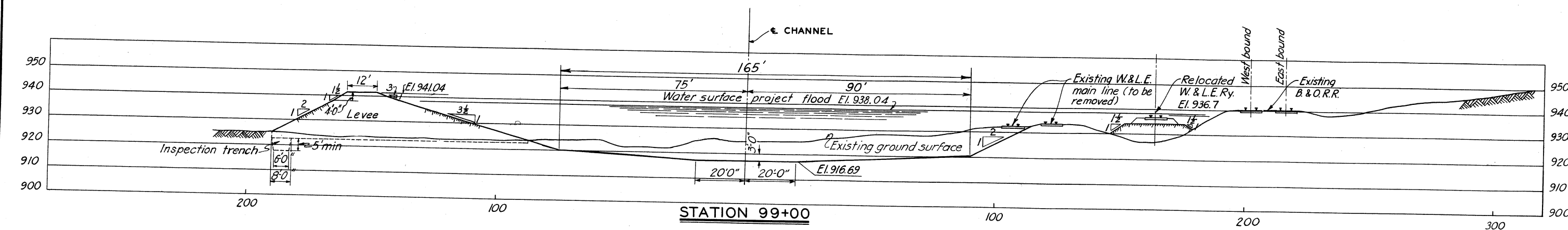
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
GENERAL PLAN**

IN 147 SHEETS SHEET NO. 7 SCALE: 1"=100'

U. S. ENGINEER OFFICE HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: [Signature] APPROVED: [Signature]
DRAWN BY: E.W.H. TRANSMITTED WITH LETTER
CHECKED BY: A.W.M. FILE NO. 0271-PMH6/5 DATED

BY	DATE	CHARACTER
		REVISIONS



NOTES

Sections looking down stream.
Payment lines not shown, see Dwg. No. 16/10.

APPROVED
THE BALTIMORE AND OHIO RAILROAD CO.
BY: _____
CHIEF ENGINEER

APPROVED
THE PENNSYLVANIA RAILROAD CO.
BY: _____
CHIEF ENGINEER - CENTRAL REGION

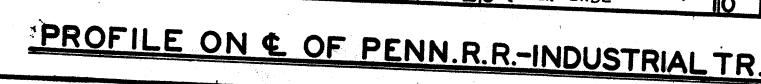
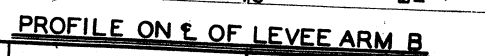
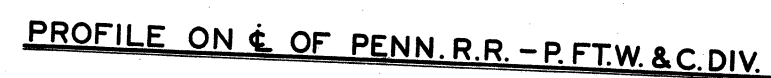
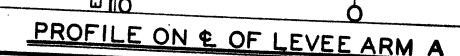
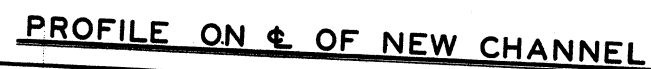
APPROVED
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: _____
SPECIAL ENGINEER

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TYPICAL CHANNEL & LEVEE SECTIONS**

1147 SHEETS SHEET NO. 9 SCALE: 1" = 20'-0"

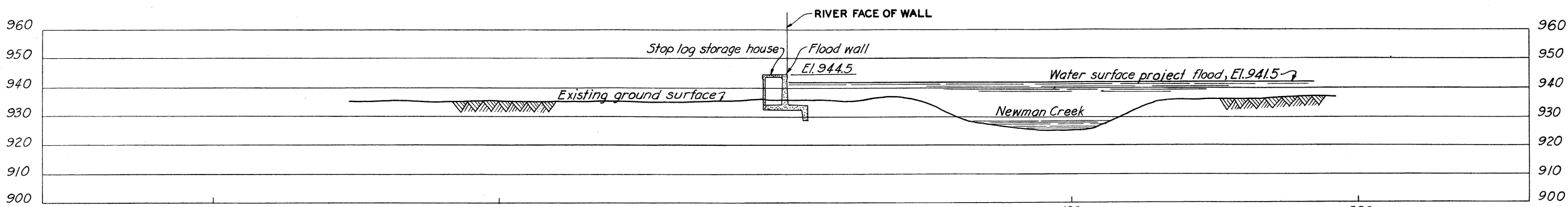
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED BY: _____ APPROVED: _____
DRAWN BY: W. B. S. TRANSMITTED WITH LETTER
CHECKED BY: A. R. K. FILE NO. 0271-PM-16/7
DATED: _____



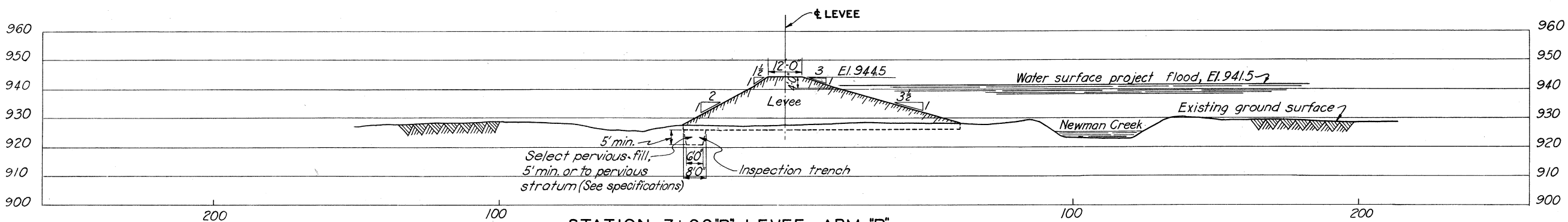
SUBMITTED: 7/1/54 W. H. H. H.
PRINCIPAL ENGINEER
DRAWN BY E.W.H.
APPROVED: W. H. H. H.
LT. COL., CORPS OF ENGINEERS

BY	DATE	CHARACTER
		REVISIONS



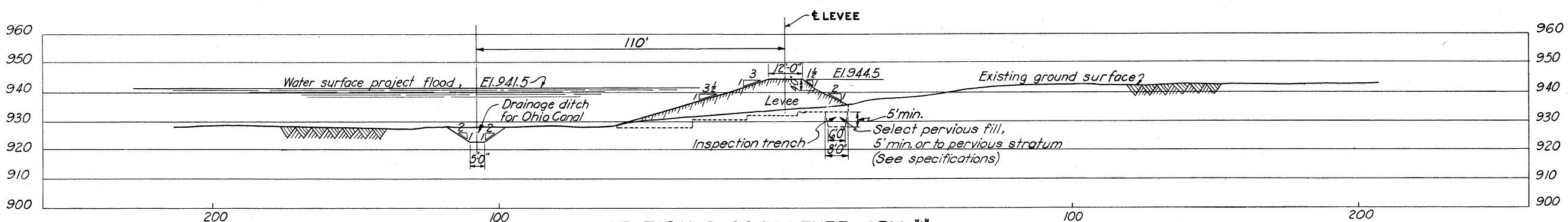
STATION 11+00 NEWMAN CREEK LEVEE ARM

LOOKING UPSTREAM



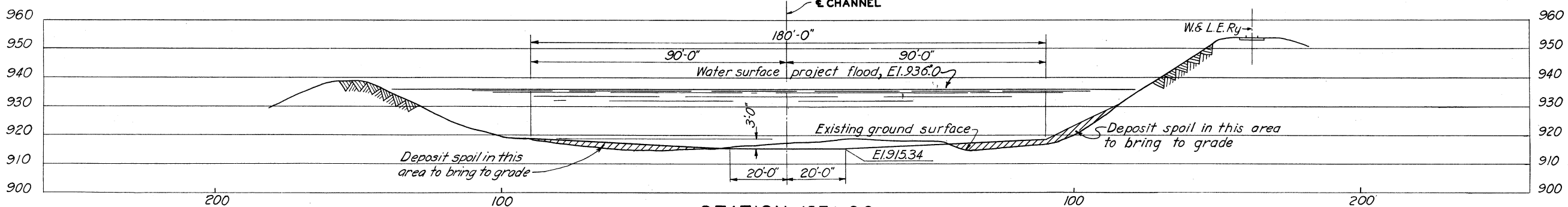
STATION 7+00" LEVEE ARM "B"

LOOKING UPSTREAM

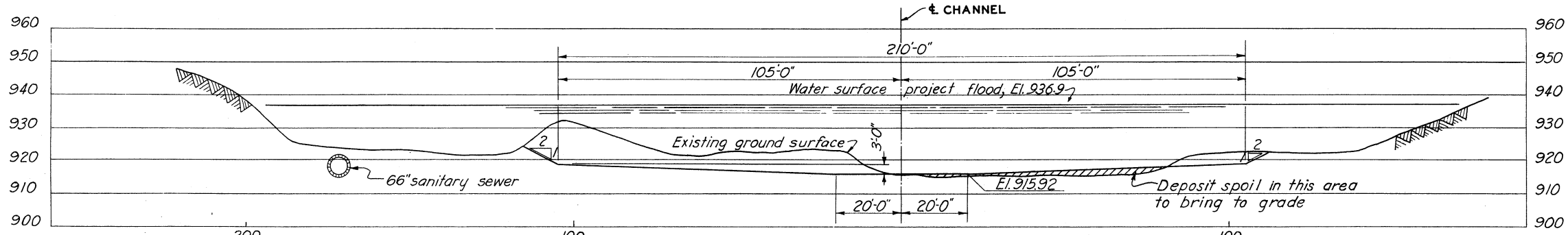


STATION 5+00 "A" LEVEE ARM "A"

LOOKING UPSTREAM



STATION 157+00



STATION 132+00

NOTES

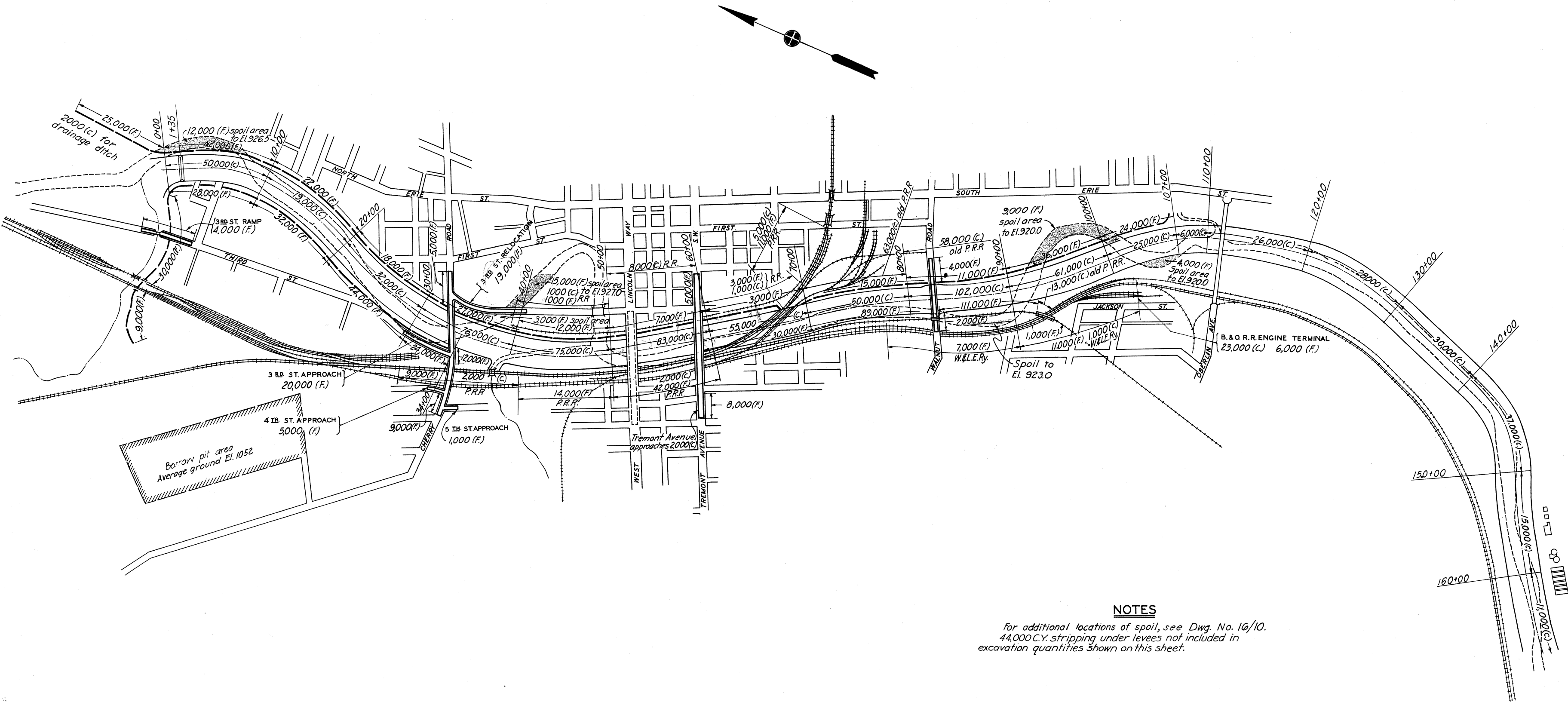
Section looking downstream unless otherwise noted
Payment lines not shown. see Dwg. No. 16/10

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TYPICAL CHANNEL & LEVEE SECTIONS

IN 147 SHEETS SHEET NO. 10 SCALE: 1"=20'

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940
SUBMITTED BY: [Signature] APPROVED BY: [Signature]
DRAWN BY: W. B. S. TRANSMITTED WITH LETTER
CHECKED BY: E. H. FILE NO. 0271-PM-16/8 DATED:

BY	DATE	CHARACTER
		REVISIONS



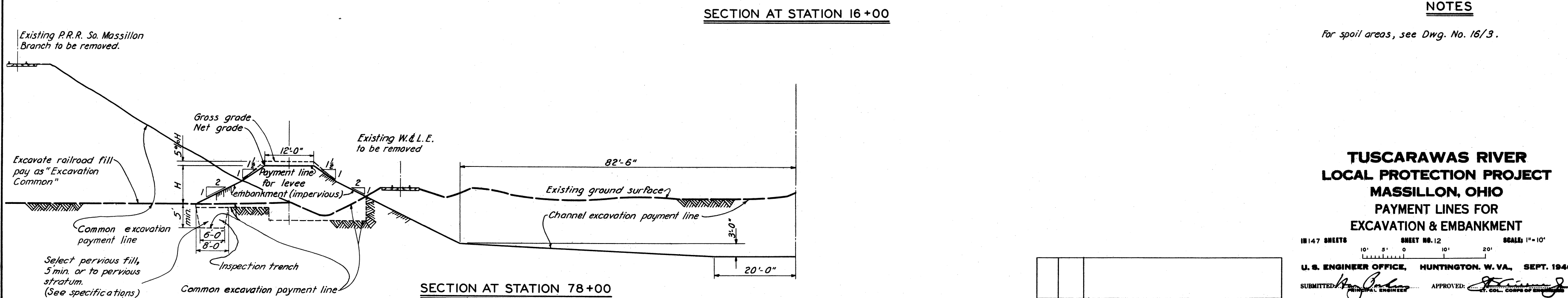
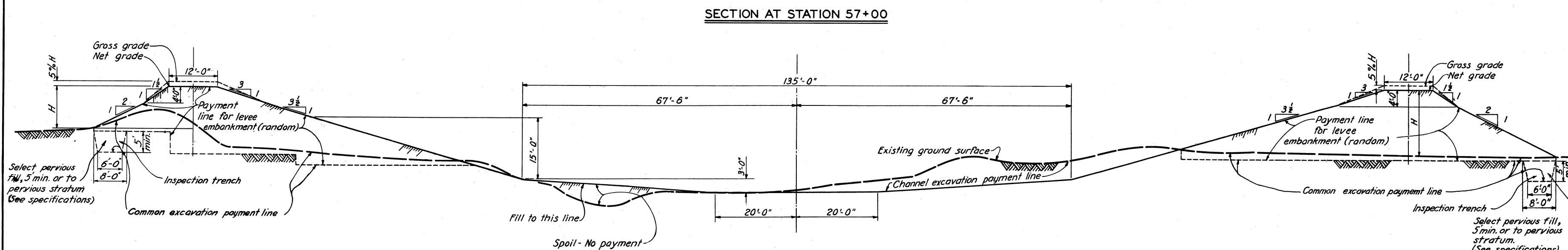
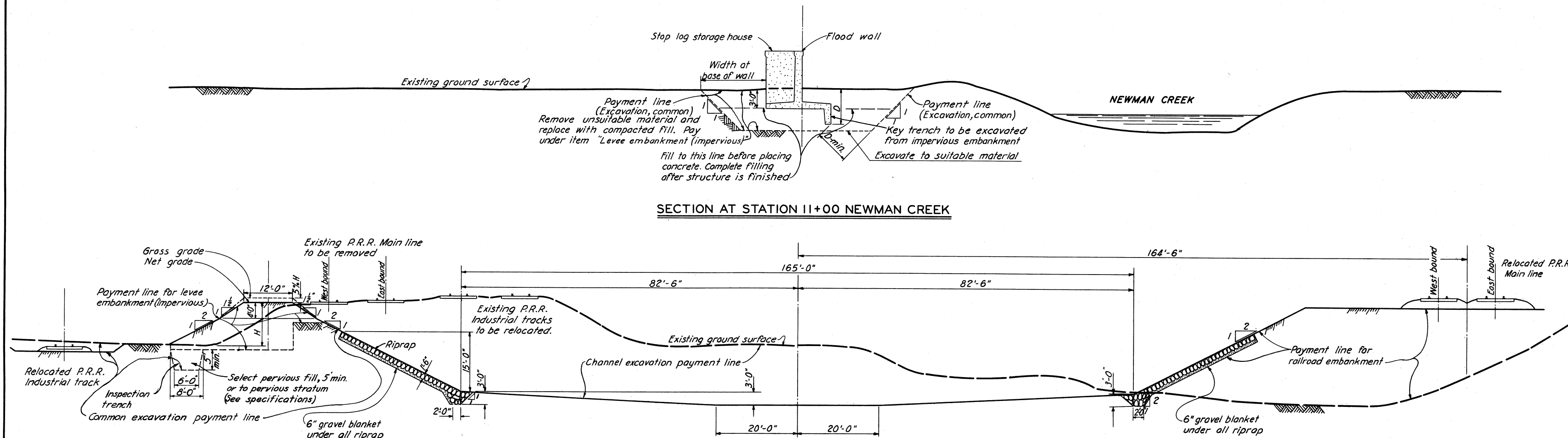
LEGEND
— Channel edge
— Levee
Available spoil areas
(Required spoil areas shown
on general plan sheets.)

NOTES
For additional locations of spoil, see Dwg. No. 16/10.
44,000 C.Y. stripping under levees not included in
excavation quantities shown on this sheet.

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

IN 147 SHEETS SHEET NO. 11 SCALE 1"=400'
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940
SUBMITTED: [Signature] APPROVED: [Signature]
DRAWN BY: W.B.S. TRANSMITTED WITH LETTER
CHECKED BY: D.G.J. FILE NO. 027-PM-16/9 DATED

BY	DATE	CHARACTER
R E V I S I O N S		



NOTES

For spoil areas, see Dwg. No. 16/3.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PAYMENT LINES FOR
EXCAVATION & EMBANKMENT**

18147 SHEETS SHEET NO. 12 SCALE: 1"=10'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

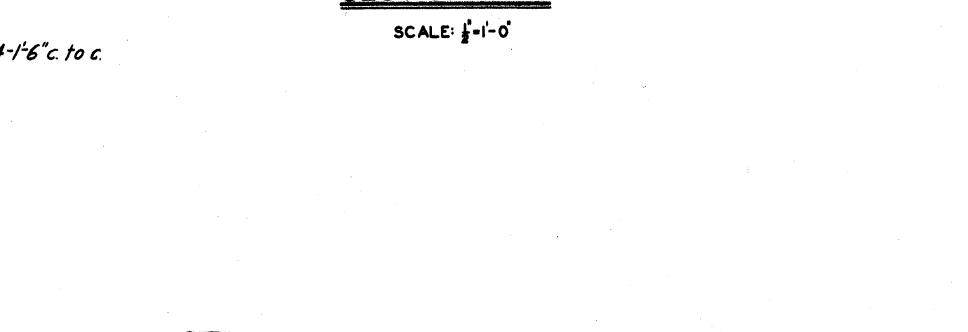
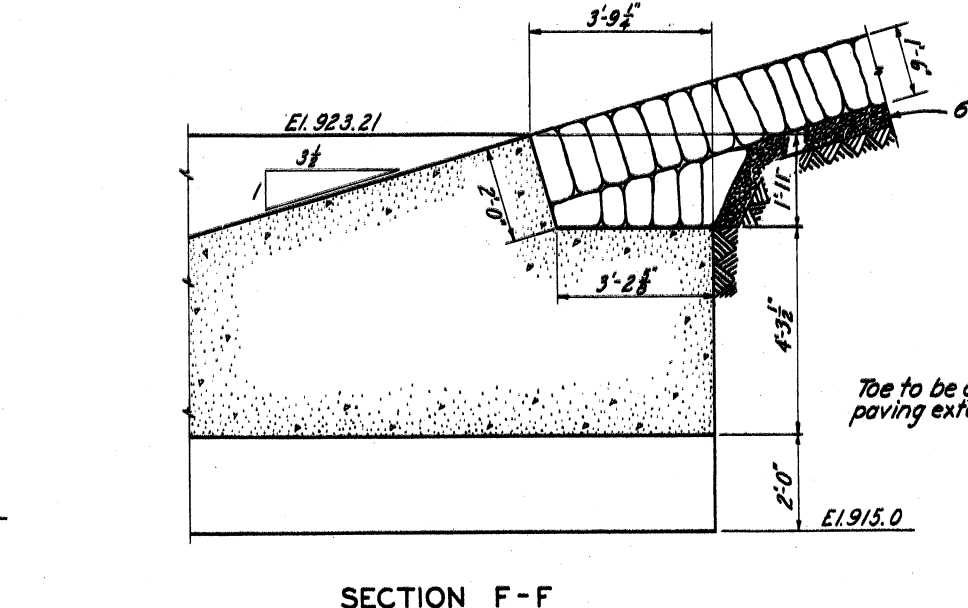
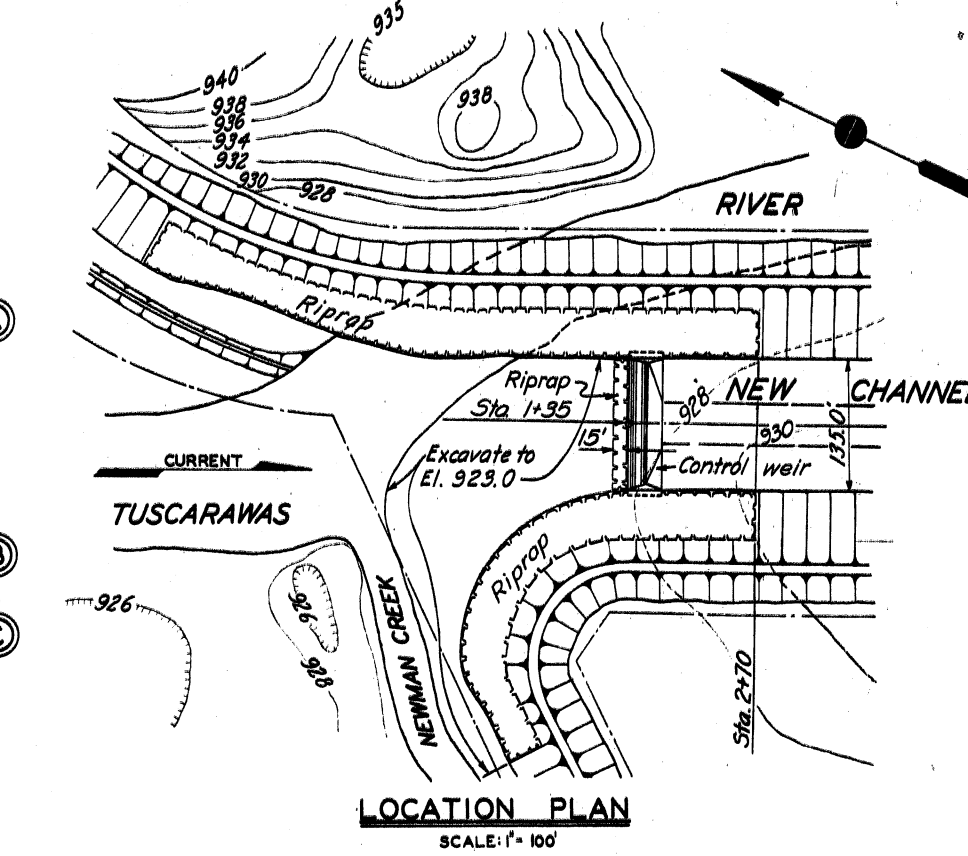
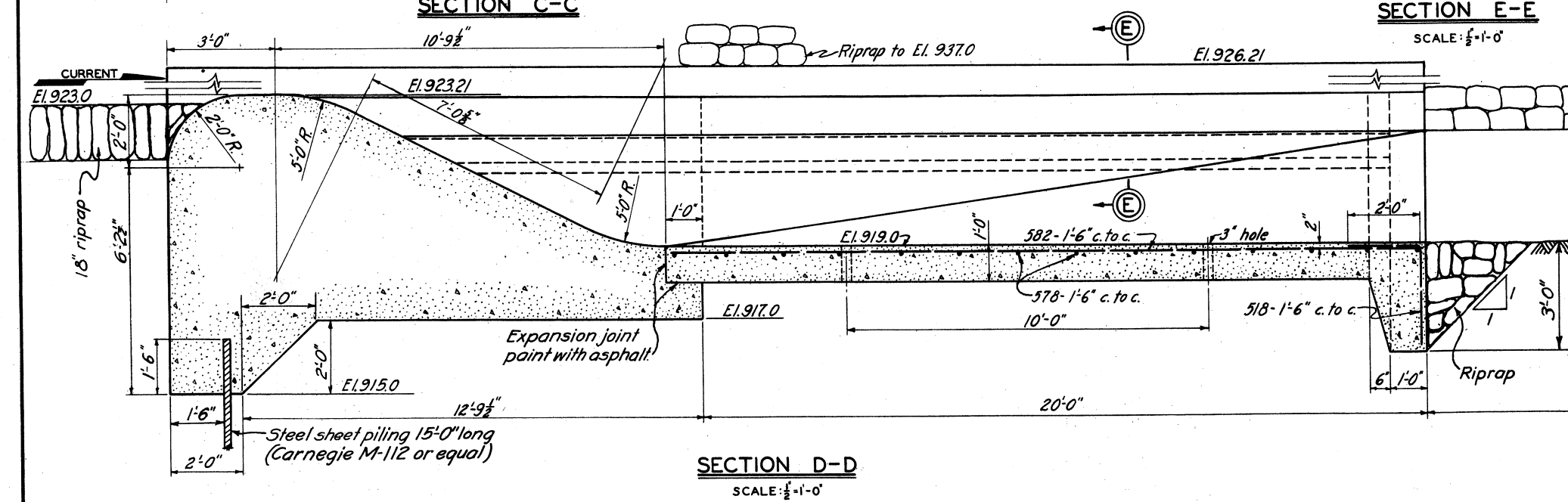
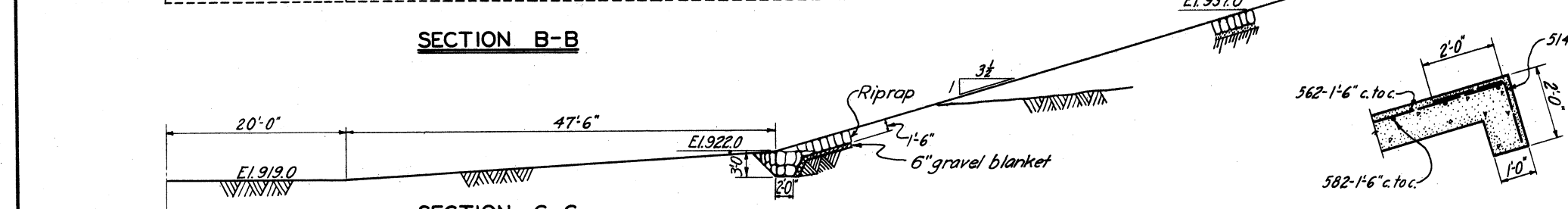
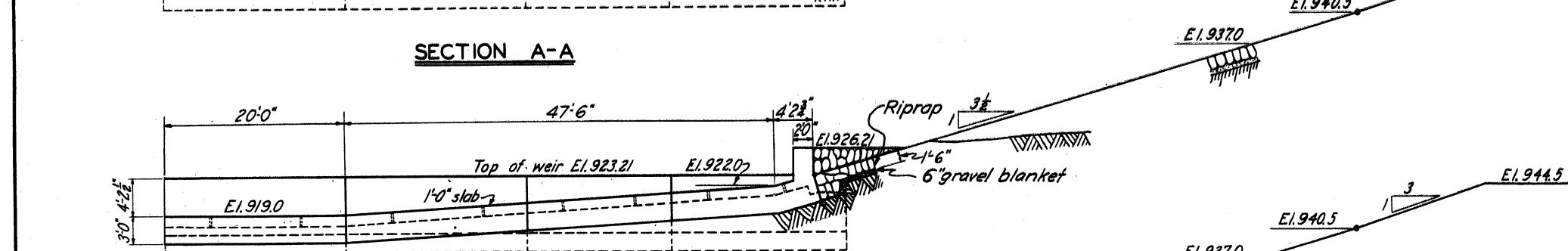
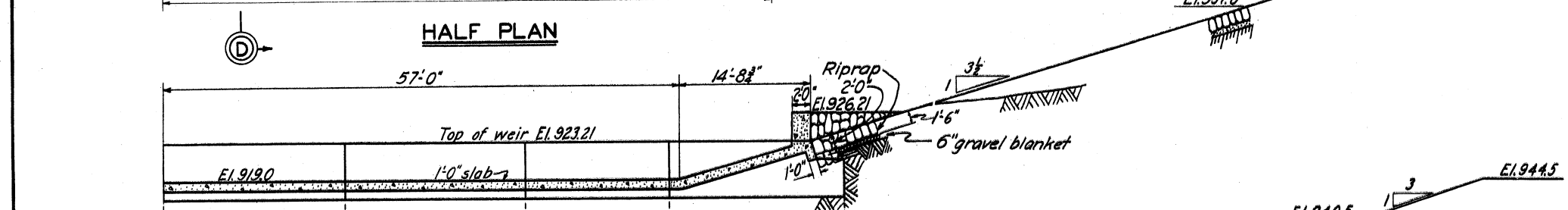
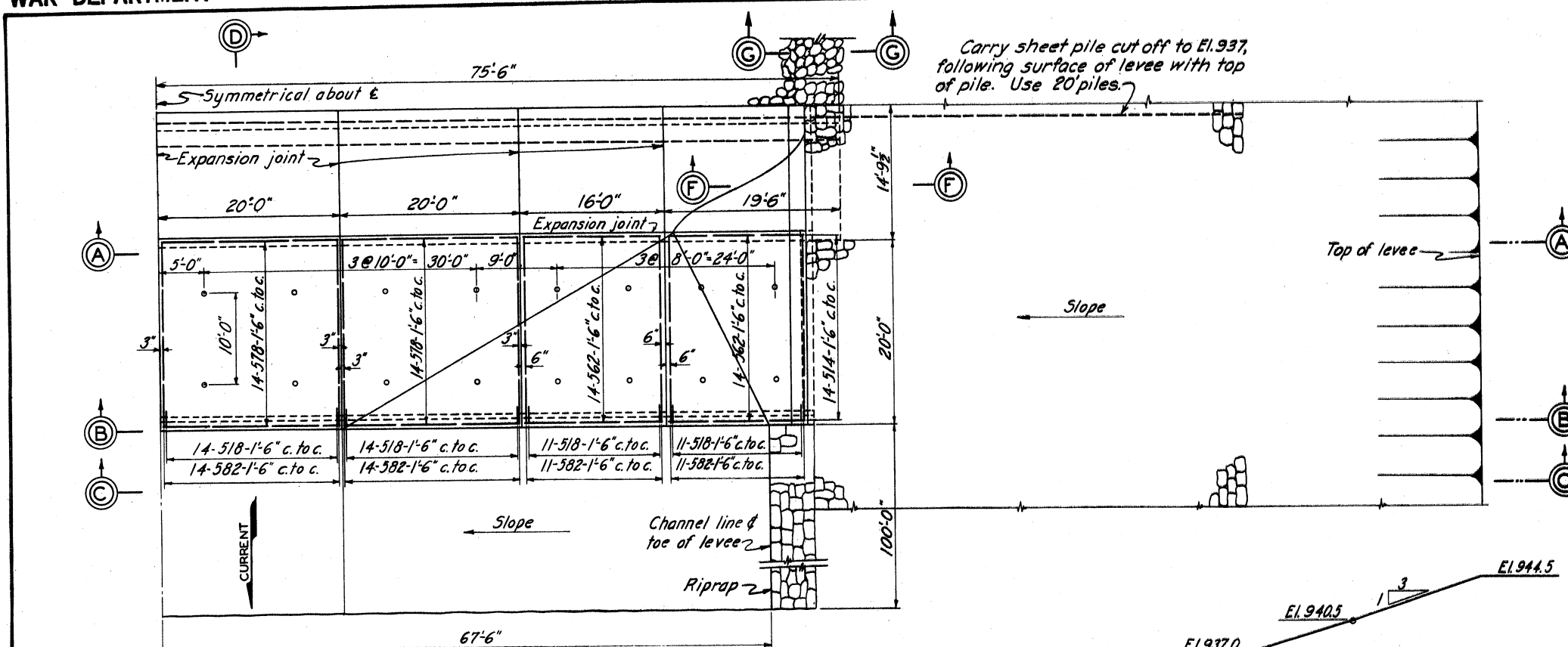
SUBMITTED BY: J. M. B. APPROVED: J. M. B.

DRAWN BY: W. B. C. TRANSMITTED WITH LETTER

CHECKED BY: D. G. J. FILE NO. 0271-PM-16/10 DATED:

BY	DATE	CHARACTER
		REVISIONS

REINFORCING SCHEDULE					
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	TOTAL WT.
514	3/4"	3'-6"		28	3.65
518	3/4"	4'-6"		100	4.69
578	3/4"	19'-6"		56	20.34
582	3/4"	20'-6"		100	21.38
562	3/4"	15'-6"		56	16.17
				Total	4.754



NOTES
All steel to be bent in field to suit conditions.
For general plan, see Dwg. No. 1912.
All concrete to be Class "B".

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

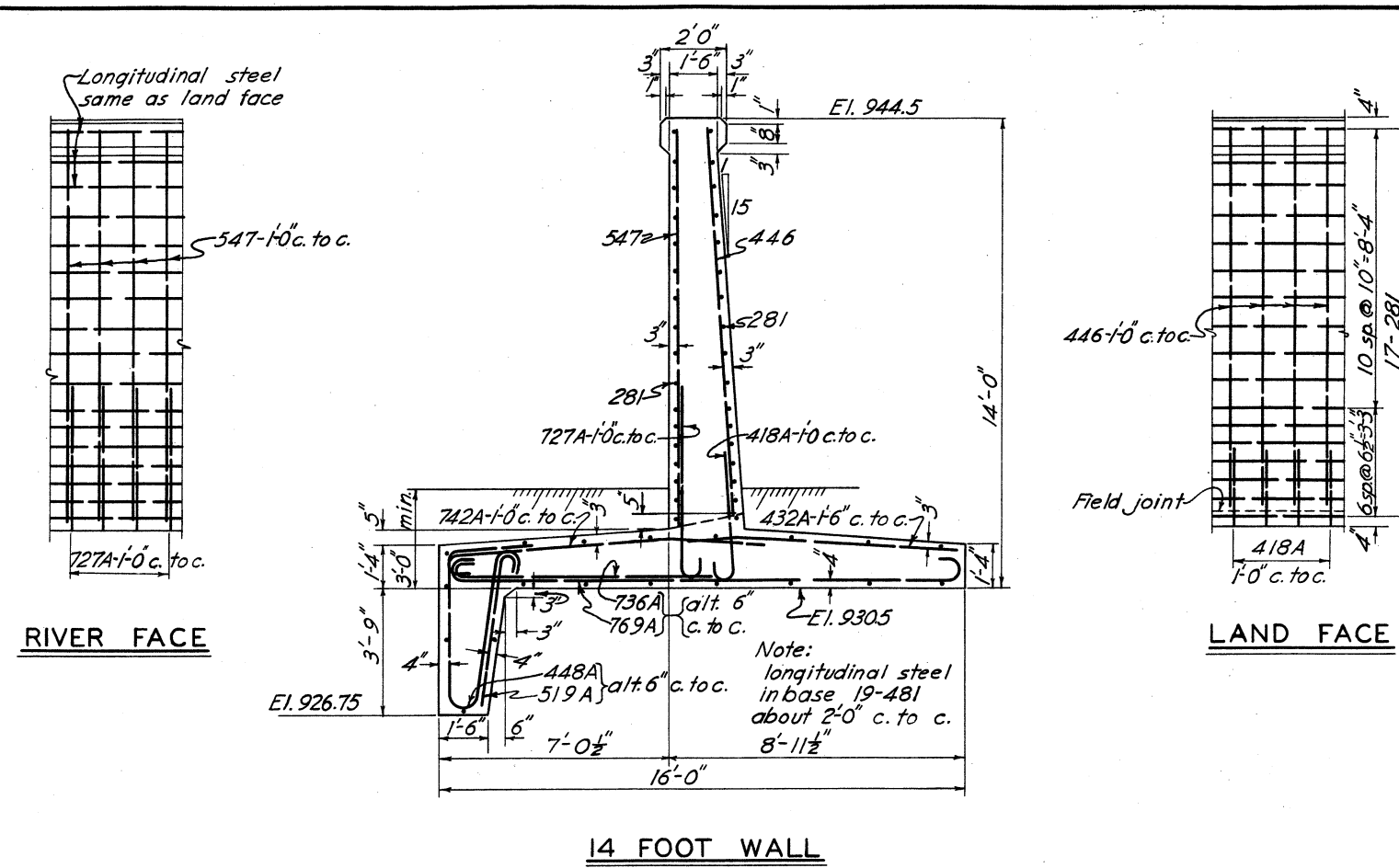
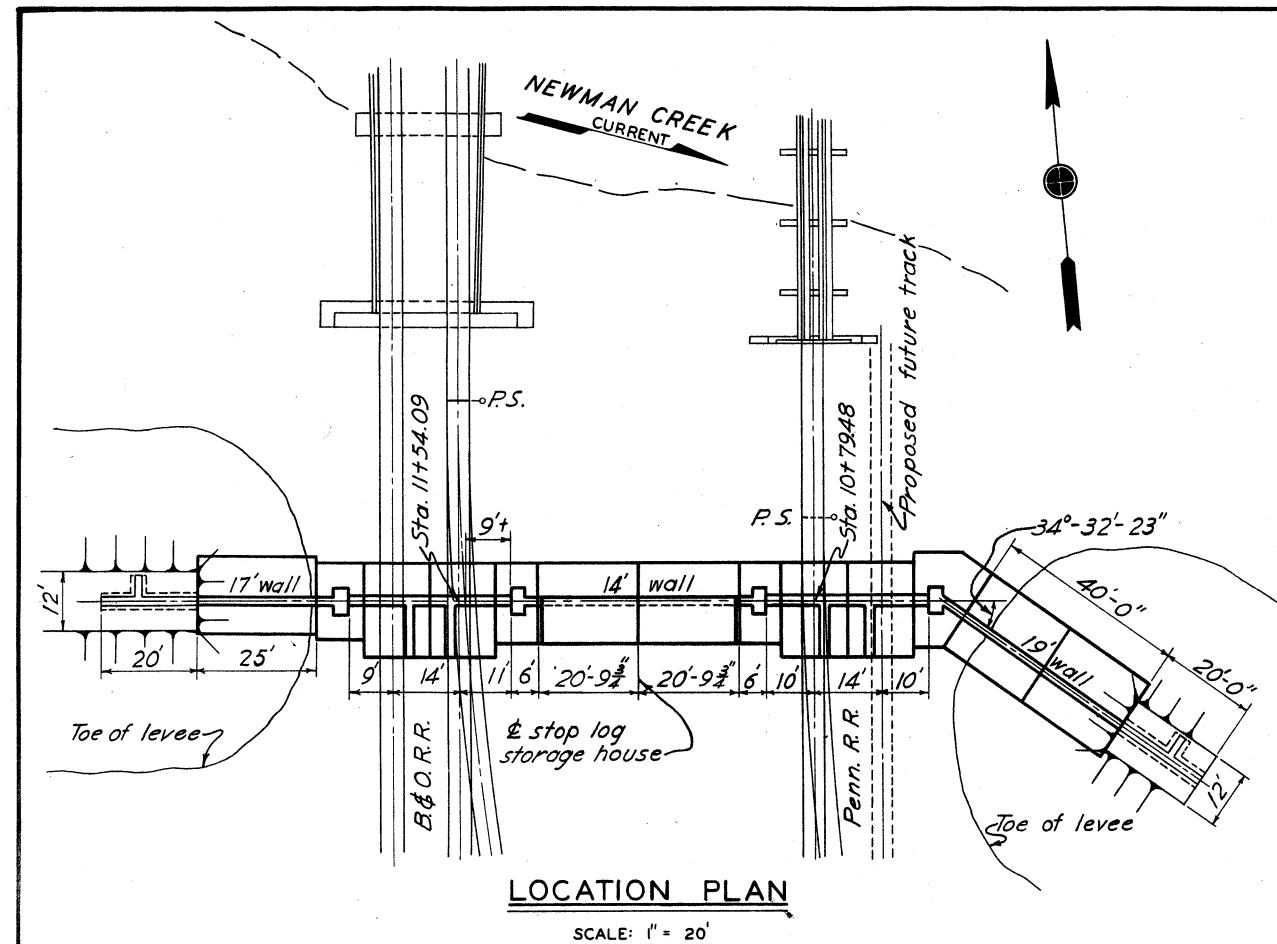
147 SHEETS SHEET NO. 13 SCALE: 1/8"=1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

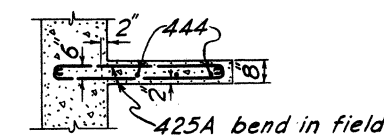
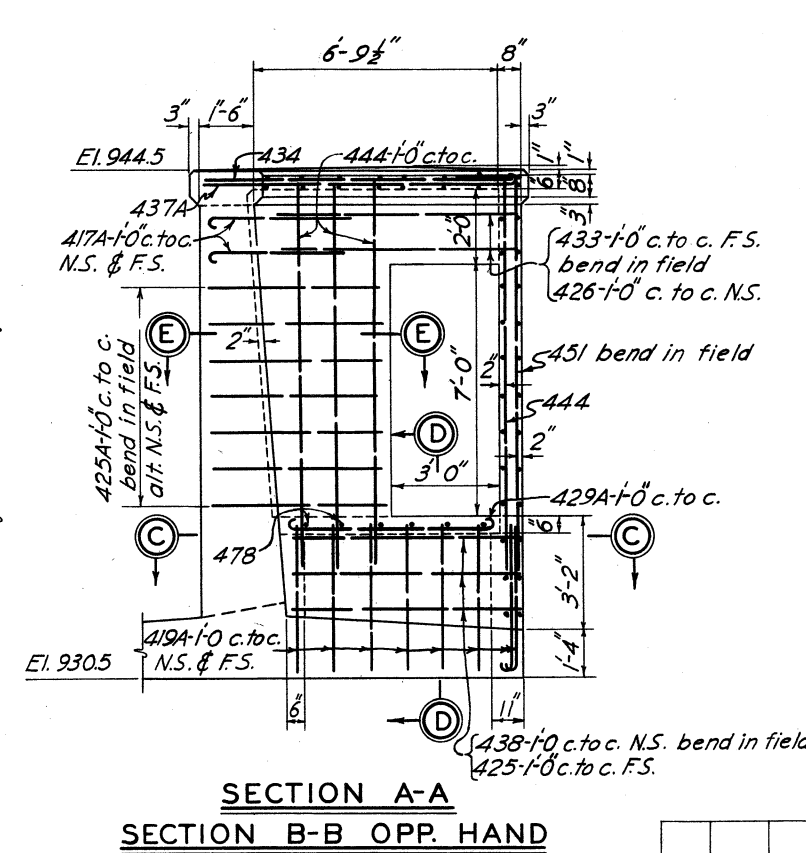
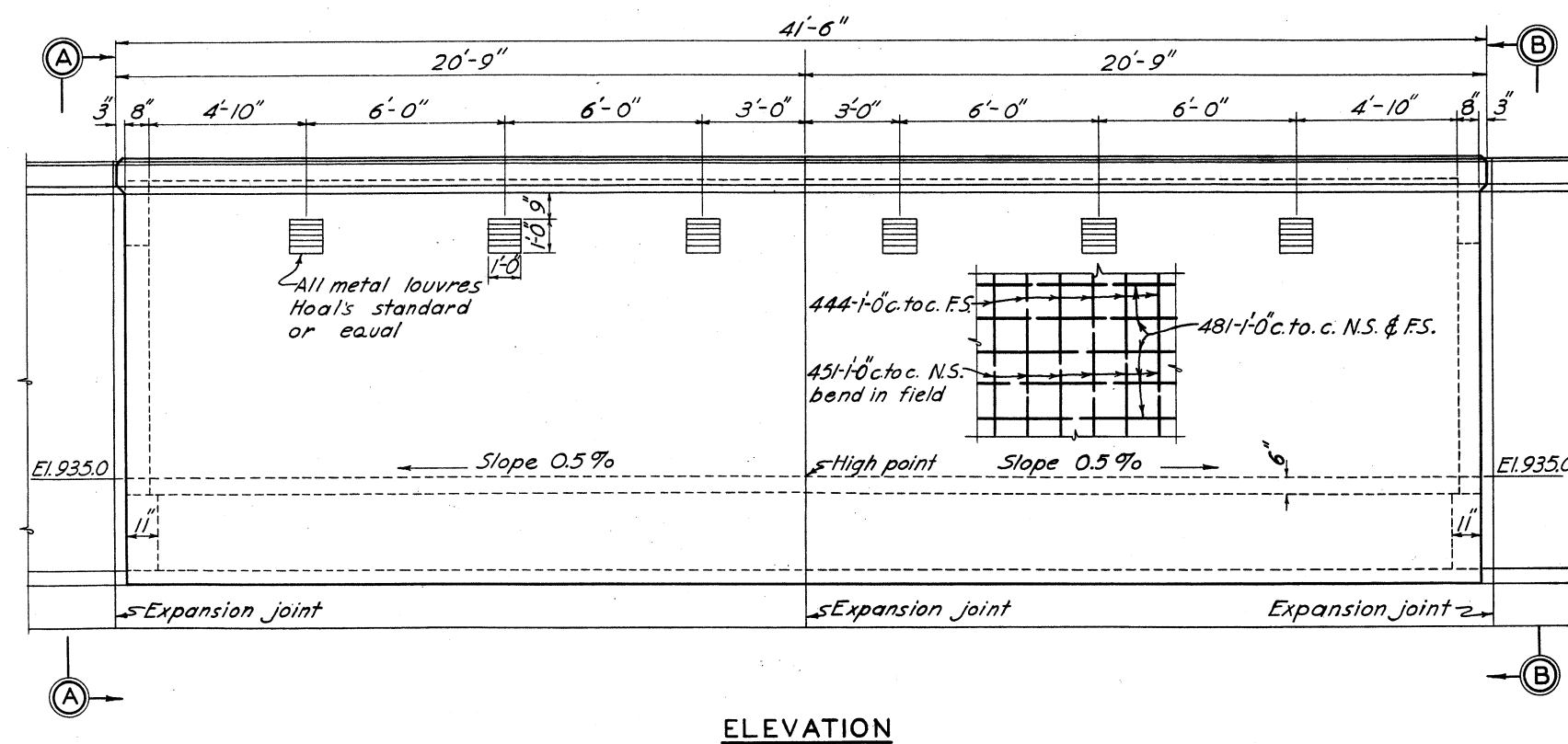
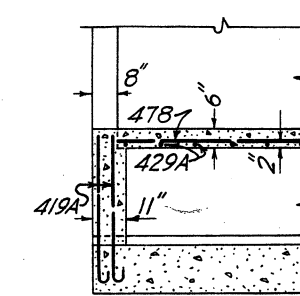
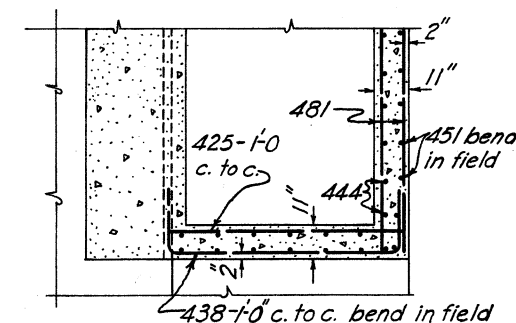
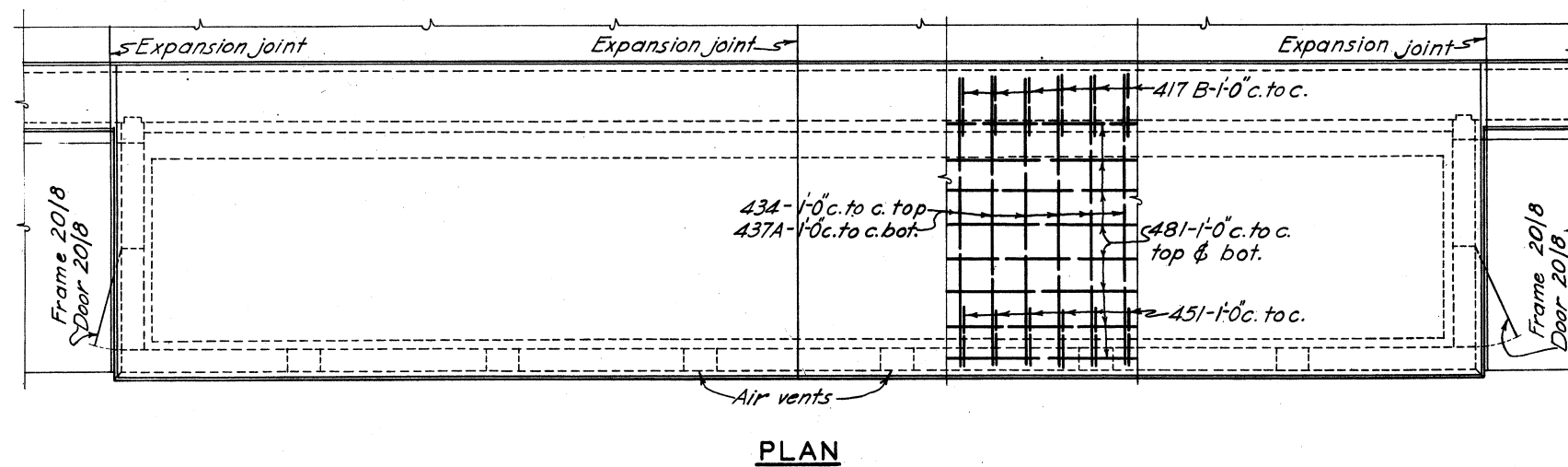
SUBMITTED BY: [Signature] APPROVED BY: [Signature]

DRAWN BY: E.M. TRACED BY: W.E.C. CHECKED BY: E.K.

FILE NO 0271-PM-20/1



REINFORCING SCHEDULE						
14-FOOT WALL						
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO	UNIT WT.	TOTAL WT.
281	#4	20'-3"		68	17.21	1170
418A	#4	4'-6"		42	3.01	126
432A	#4	8'-0"		28	5.34	150
446	#4	11'-6"		42	7.68	323
448A	#4	12'-0"		42	8.02	337
481	#4	20'-3"		38	13.53	514
519A	#4	4'-9"		42	4.95	208
547	#4	11'-9"		42	12.26	515
769A	#4	6'-9"		42	13.80	580
736A	#4	9'-0"		42	18.40	773
742A	#4	10'-6"		42	21.46	901
769A	#4	17'-3"		42	35.26	1481
					Total 7078	

[illegible]

NOTES

Chamfer all exposed edges 1" unless otherwise noted
For structural steel details, see Dwg. No. 20/B
For details of water stops, see Dwg. No. 20/3.
All concrete in the flood wall to be Class "B".
All concrete in stop log storage house to be Class A.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TYPICAL WALL SECTION
& STOP LOG STORAGE HOUSE**

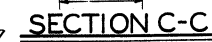
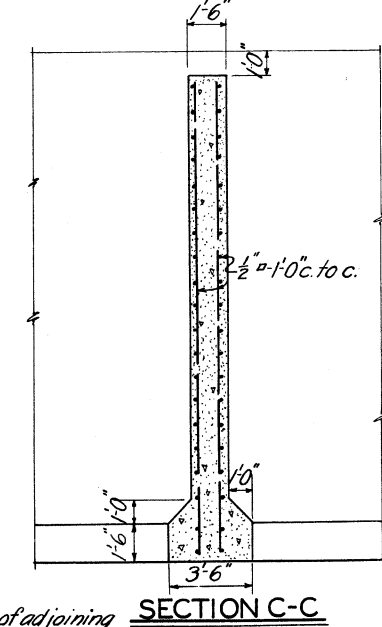
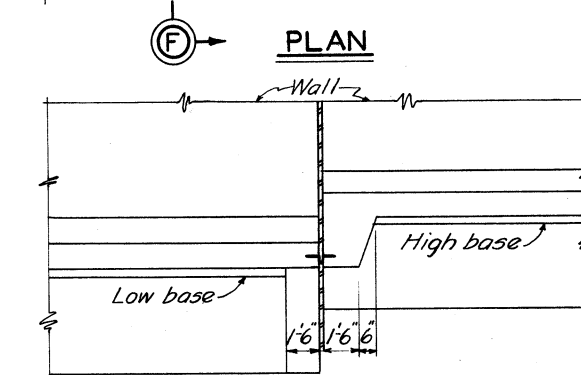
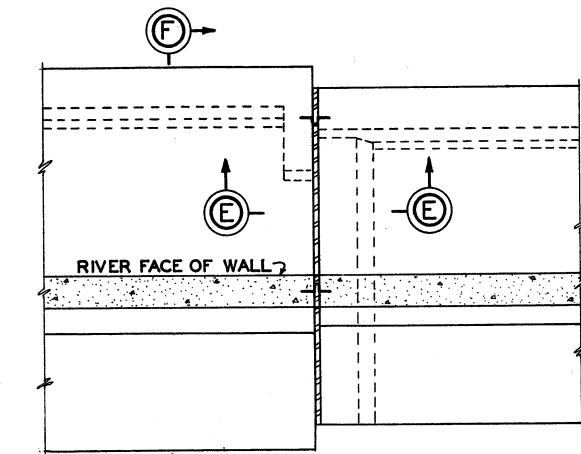
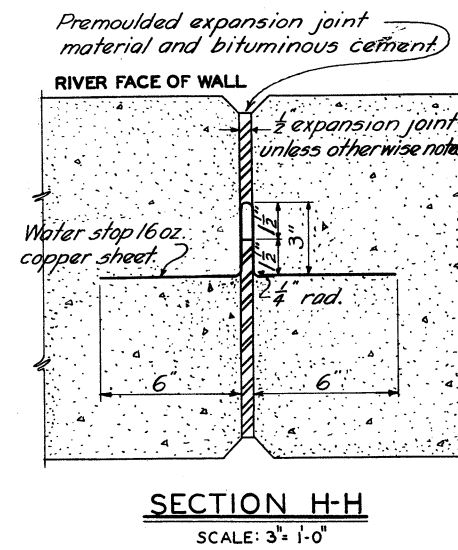
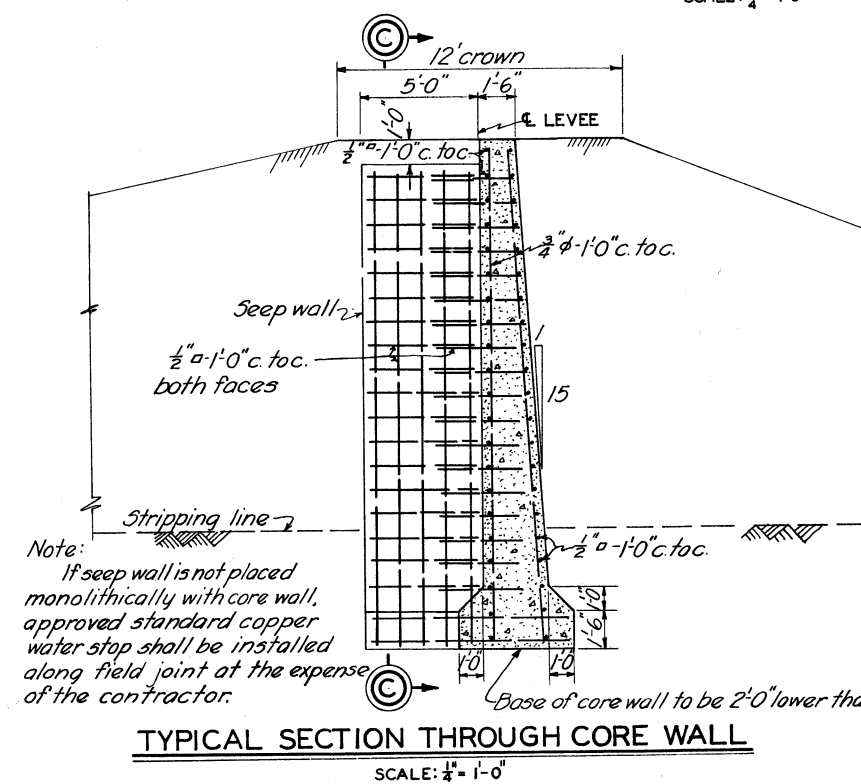
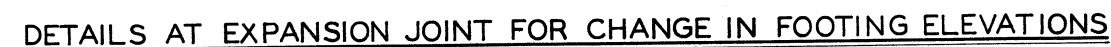
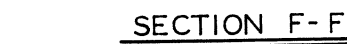
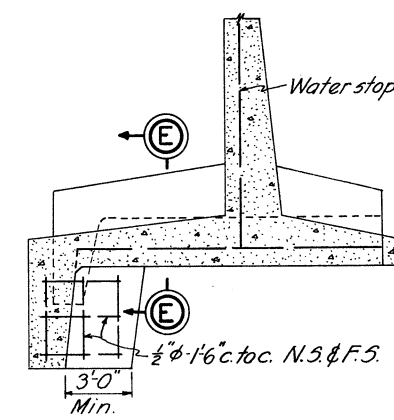
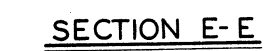
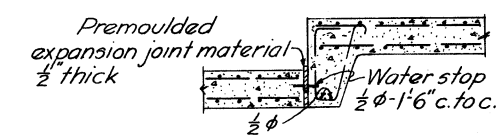
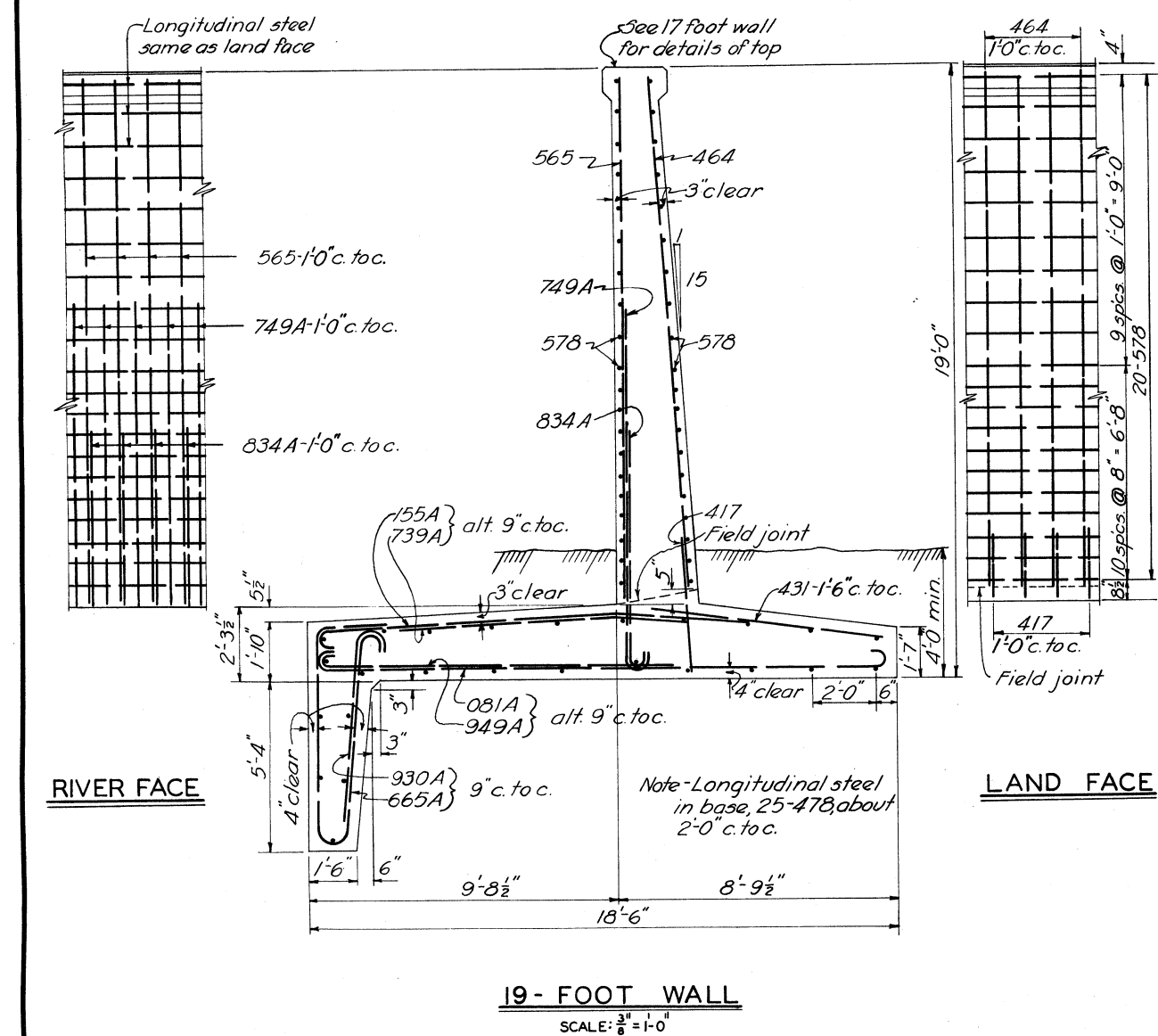
IN 147 SHEETS SHEET NO. 14 SCALE: $\frac{5}{8} = 1-0$

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

SUBMITTED: *[Signature]*..... APPROVED: *[Signature]*
 PRINCIPAL ENGINEER LT. COL. CORPS OF ENGINEERS

DRAWN BY R.M.C. TRANSMITTED WITH
 TRACED BY A.R.M.
 CHECKED BY E.M. FILE NO. 027i-PM-20/2 DATED

BY	DATE	CHARACTER
		REVISIONS

[illegible][illegible][illegible]

21-FOOT CORE WALL					
2/4	1/2" α	3'-6"	36	2.98	107
2/9	1/2" α	4'-9"	36	4.04	145
2/34	1/2" α	8'-6"	4	7.23	29
2/78	1/2" α	19'-6"	52	6.58	862
682	1/2" α	20'-6"	40	30.79	1,232
			Total		2,375

Note-
Steel shown in reinforcing schedule for the 19 foot wall
is for one 20 foot monolith. Two required.
All concrete to be Class "B."

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TYPICAL WALL SECTIONS
& MISCELLANEOUS WALL DETAILS**

IN 147 SHEETS

SHEET NO. 15

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

1 2 3 4 5 6

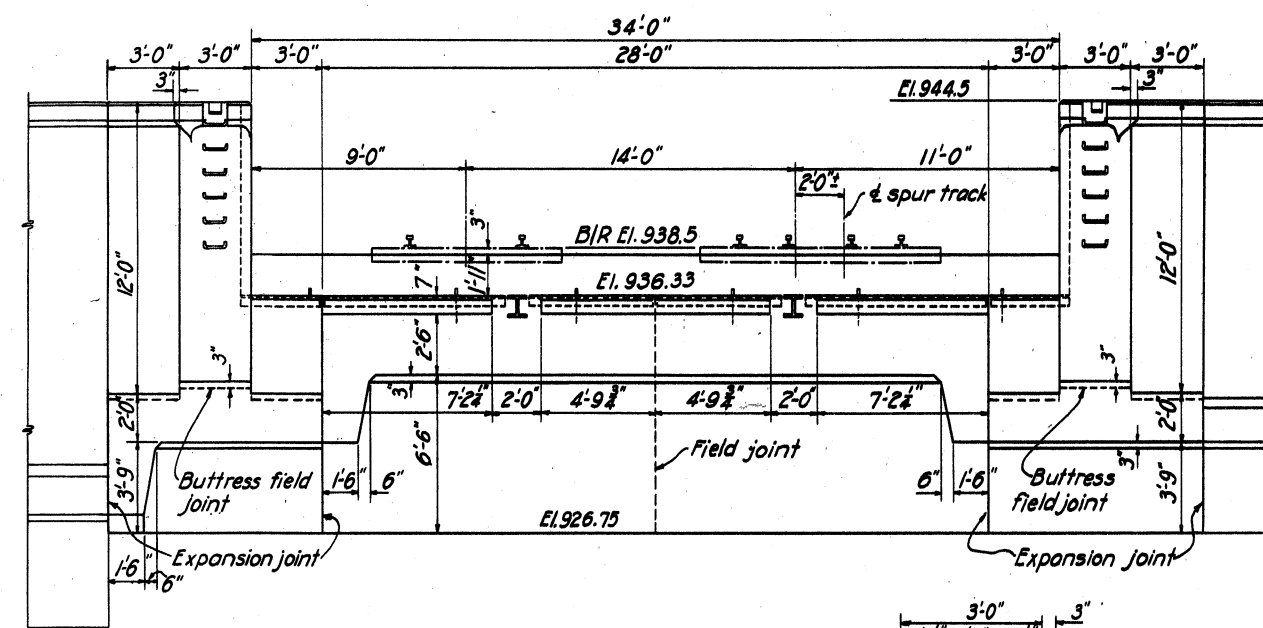
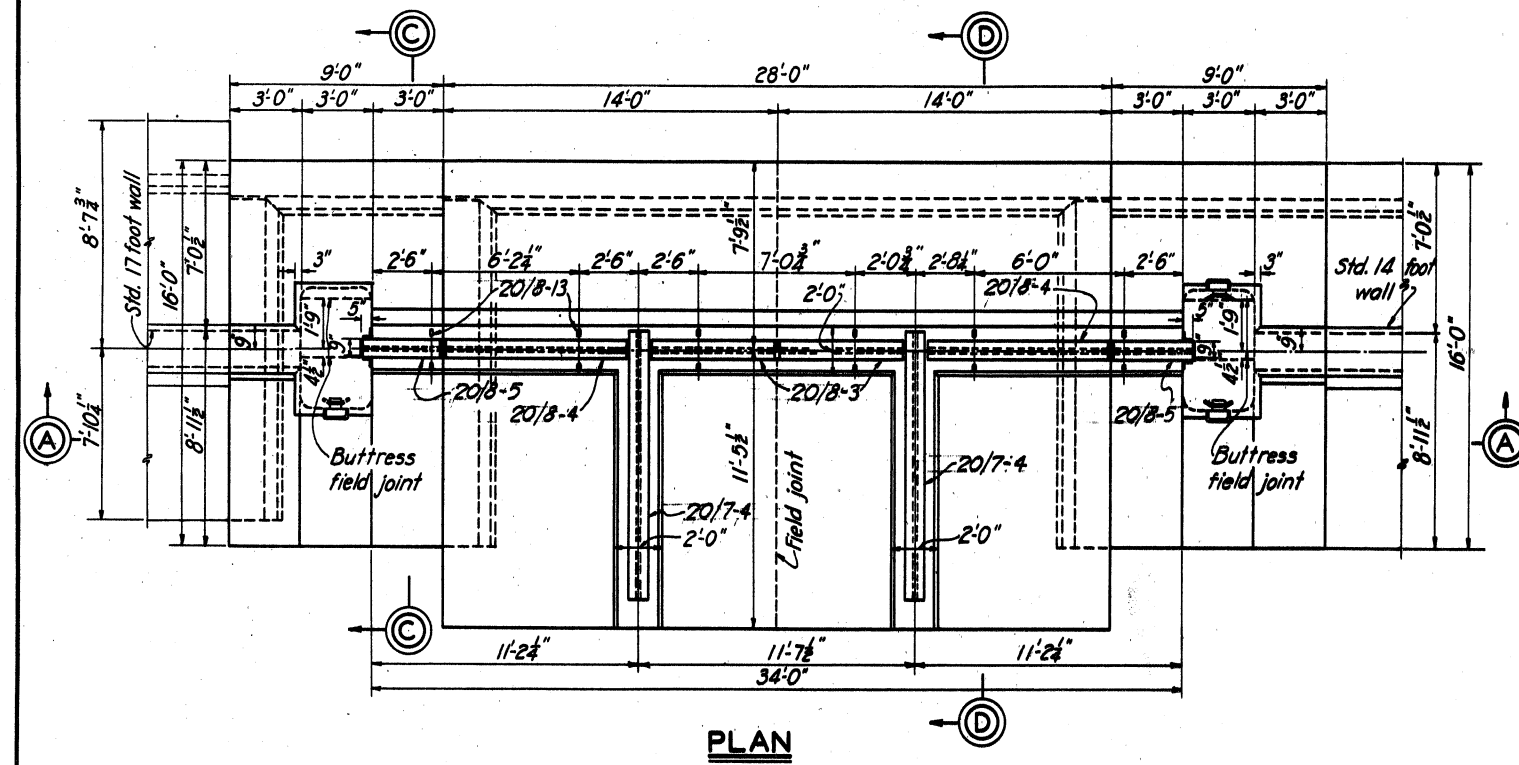
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: *Wm. C. Brown* APPROVED: *Wm. C. Brown*
MUNICIPAL ENGINEER CHIEF, COL. CORPS OF ENGINEERS

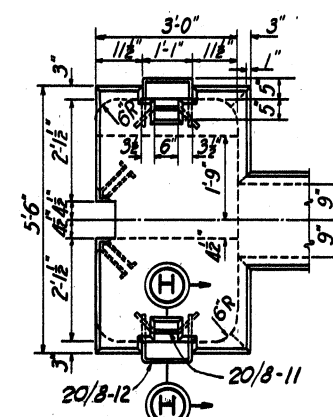
DRAWN BY L.D.C.
TRACED BY L.D.M.
CHECKED BY R.M.G.

TRANSMITTED WITH LETTER
DATED

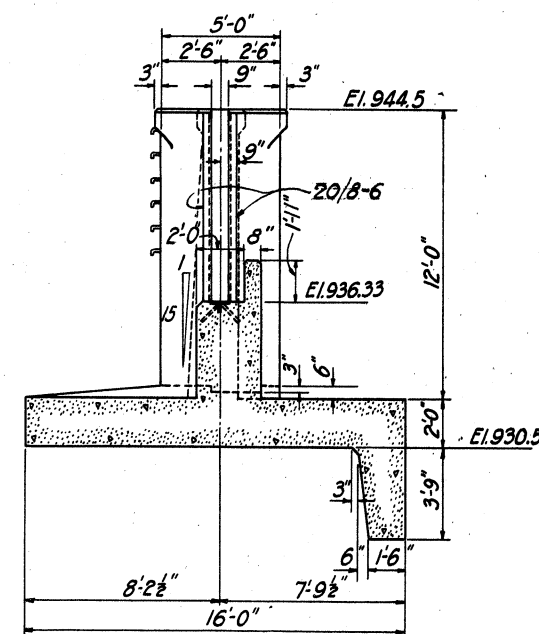
FILE NO. 0271-PM-20/3



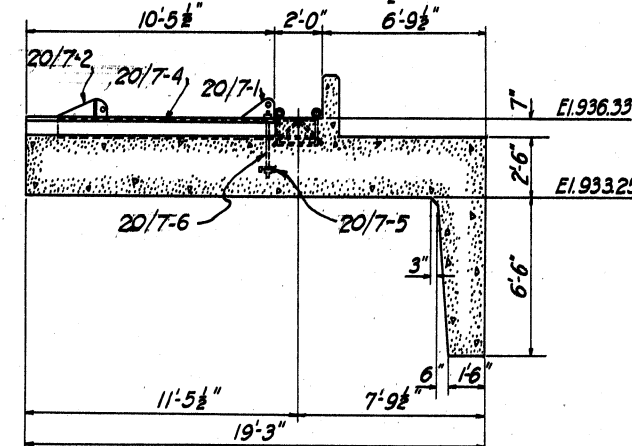
SECTION A-A
B.&O.R.R. OPENING



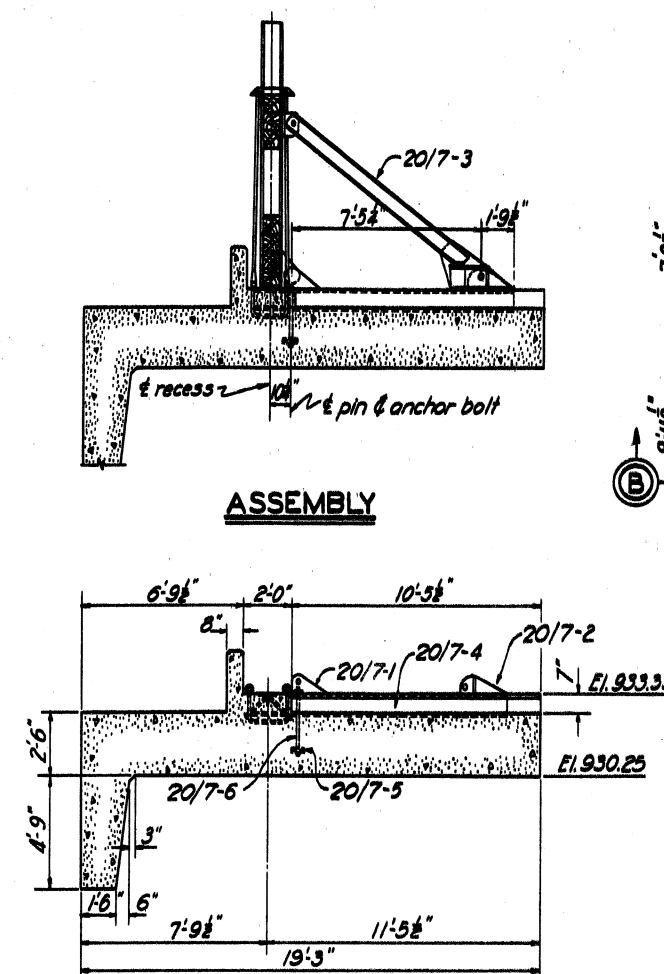
PLAN OF BUTTRESS



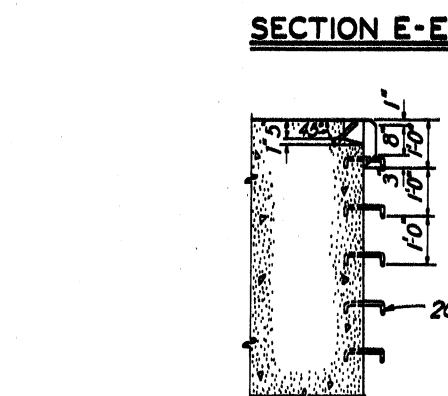
SECTION C-C



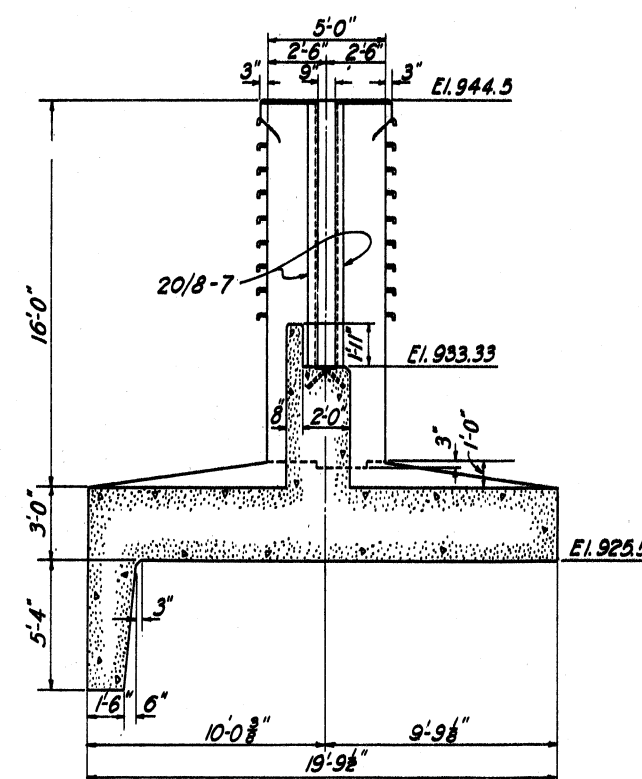
SECTION D-D



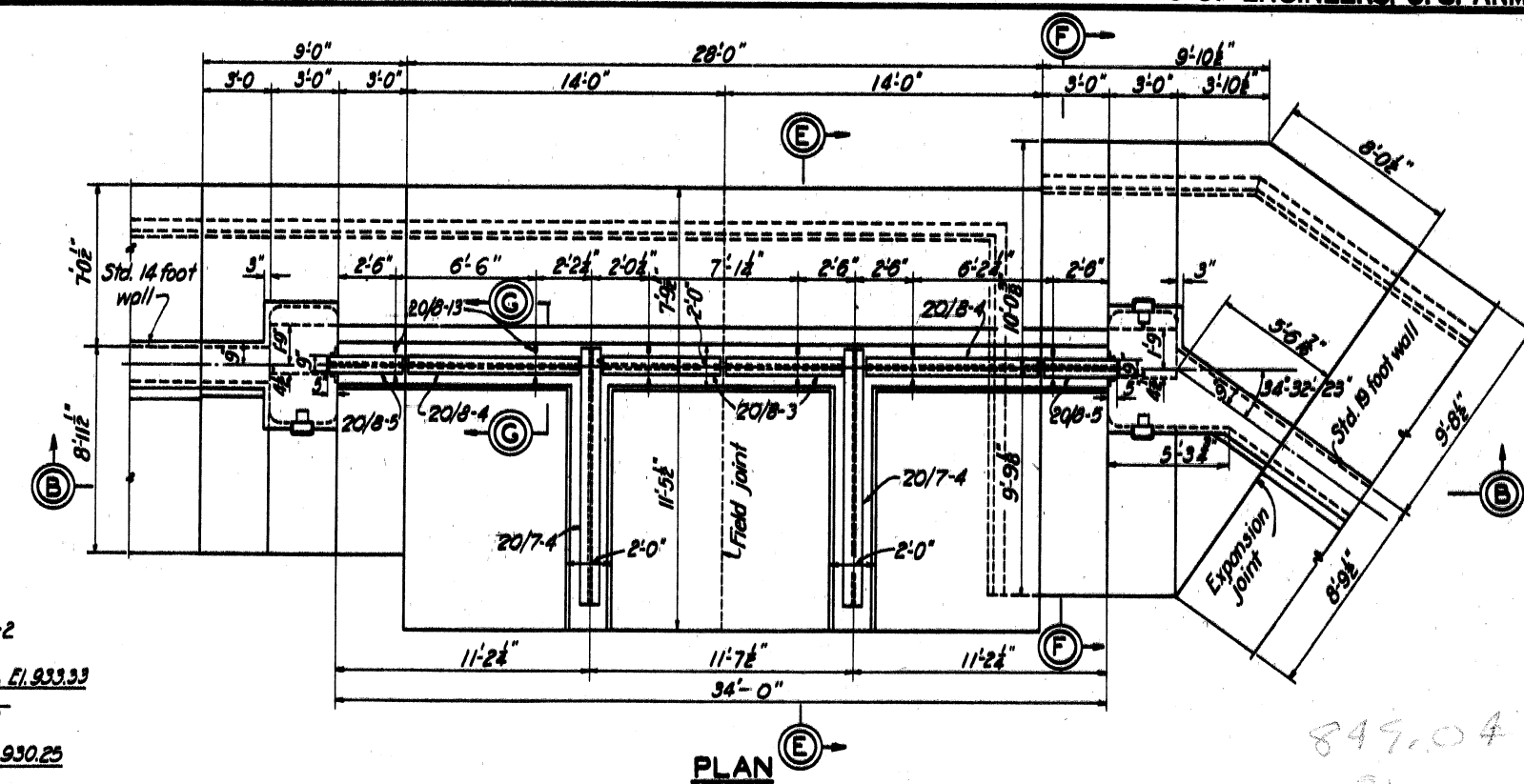
ASSEMBLY



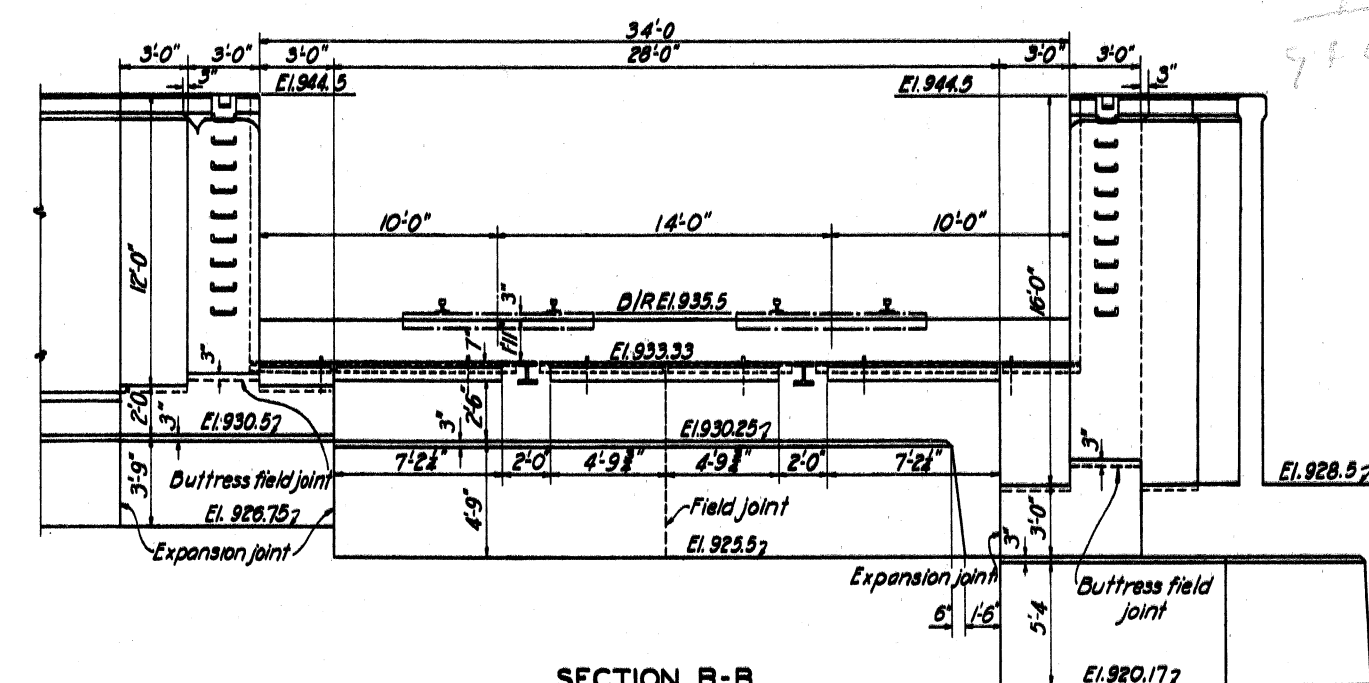
SECTION H-H
SCALE: $\frac{1}{8}" = 1'-0"$



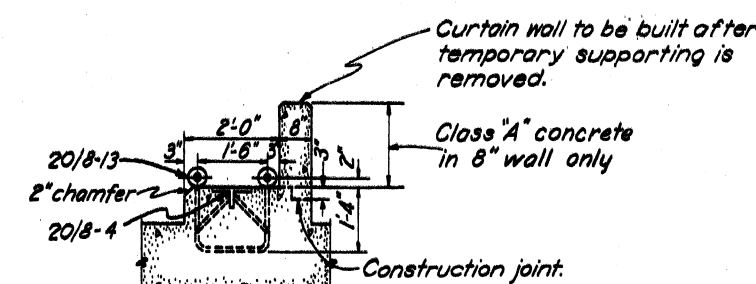
SECTION F-F



PLAN



SECTION B-B
P. R. R. OPENING



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

NOTES

Chamfer all exposed edges 1" unless otherwise noted.
For reinforcing steel, see Dwg. Nos. 20/5 & 20/6.
For steel details, see Dwg. Nos. 20/7 & 20/8.
All concrete in gate structures to be Class "B" except
as noted.

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
B. & O. R. R. & PENNA. R. R. OPENINGS
MASONRY DETAILS**

IN 147 SHEETS

SHEET NO. 18

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

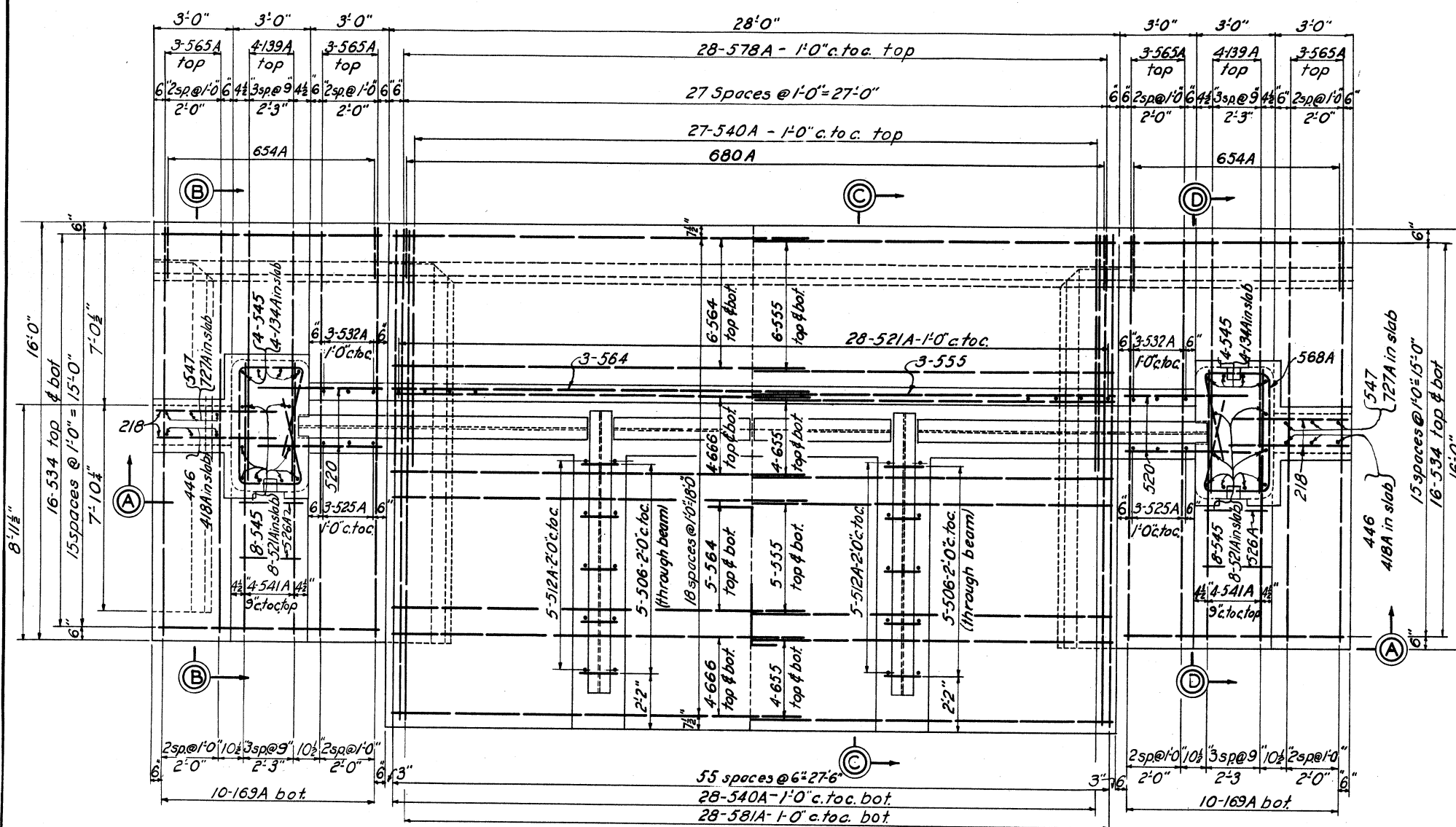
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

SUBMITTED: [Signature] APPROVED: [Signature]

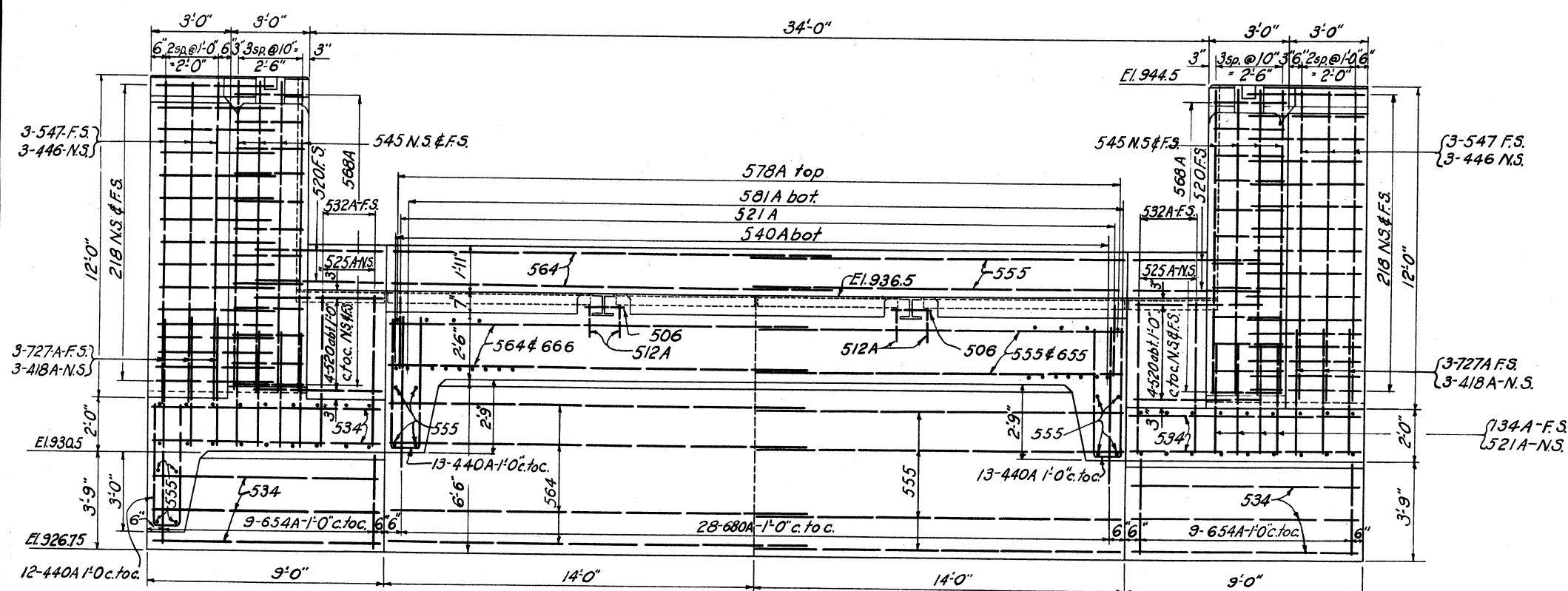
PRINCIPAL ENGINEER
LT. COL. CORPS OF ENGINEERS
DRAWN BY P. R. C.
TRANSMITTED WITH LETTER

TRACED BY M. C. FILE NO. 0271-PM-20/4 DATED
CHECKED BY E. K.

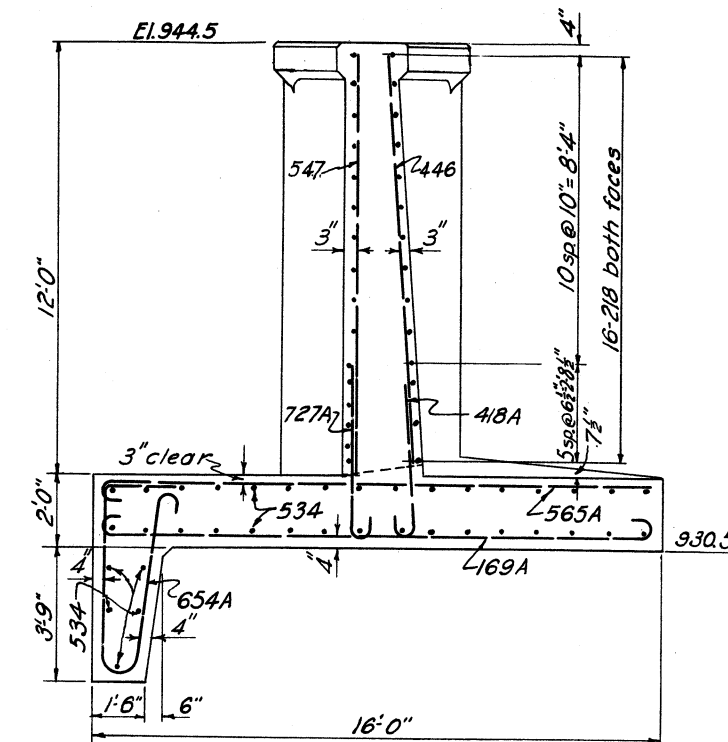
BY	DATE	CHARACTER
		REVISIONS



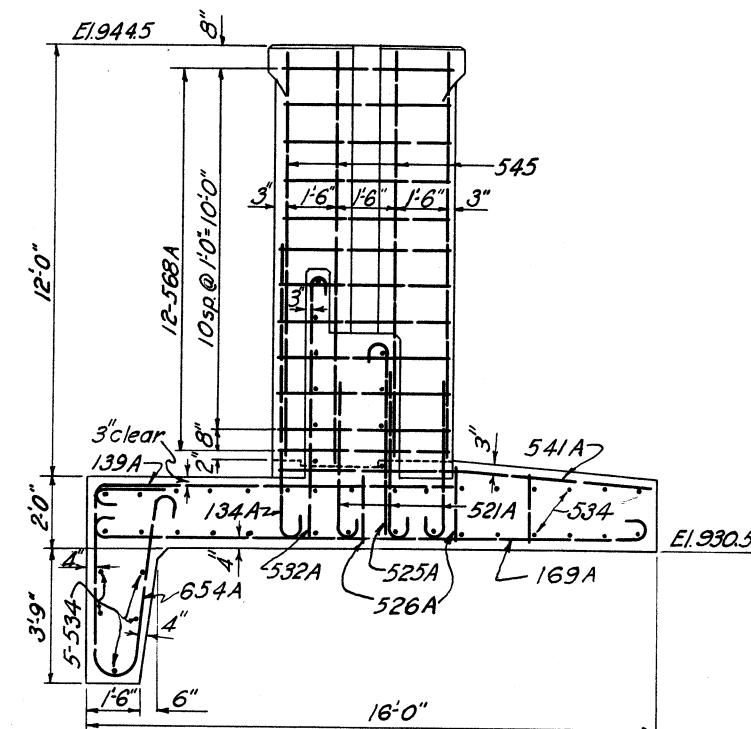
PLAN



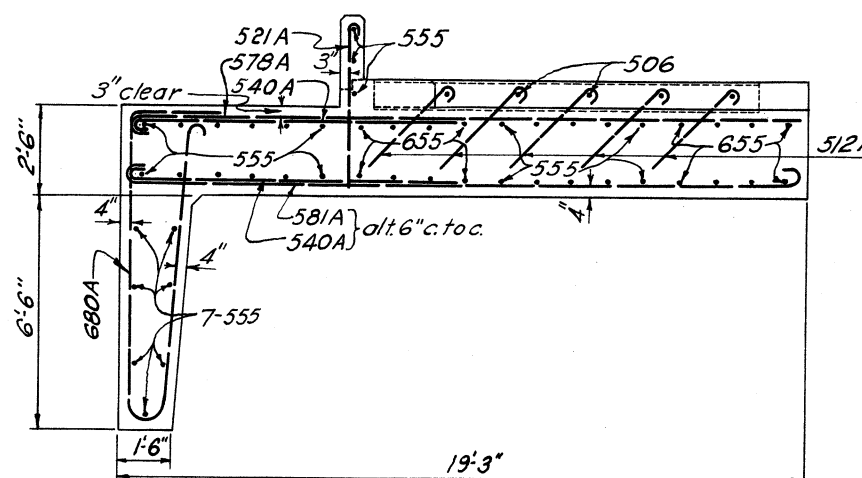
SECTION A-A



SECTION B-B



SECTION D-D



SECTION C-C

REINFORCING SCHEDULE

MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	UNIT WGT.	TOTAL WGT.
218	1/2"	4'-6"		64	3.83	245
418A	1/2"	4'-6"		6	3.01	18
446	1/2"	11'-6"		6	7.68	46
440A	1/2"	10'-0"		38	6.68	254
506	1/2"	1'-6"		10	1.56	16
512A	1/2"	3'-0"		20	3.13	63
520	1/2"	5'-0"		20	3.22	104
521A	1/2"	5'-3"		44	3.48	241
525A	1/2"	6'-3"		6	6.32	39
526A	1/2"	6'-6"		6	6.78	41
534	1/2"	8'-6"		74	8.87	656
540A	1/2"	10'-0"		55	10.43	574
541A	1/2"	10'-3"		8	10.69	86
542	1/2"	10'-6"		28	10.95	307
545	1/2"	11'-3"		24	11.73	281
547	1/2"	11'-9"		6	12.26	74
555	1/2"	13'-9"		44	14.34	631
564	1/2"	16'-0"		32	16.69	534
565A	1/2"	16'-3"		12	16.95	203
578A	1/2"	19'-6"		28	20.34	570
581A	1/2"	20'-3"		28	21.12	591
588A	1/2"	17'-0"		24	17.73	426
532A	1/2"	8'-0"		6	8.34	50
654A	1/2"	13'-6"		18	20.28	365
655	1/2"	13'-9"		16	20.65	330
666	1/2"	16'-6"		16	24.78	398
680A	1/2"	20'-0"		28	30.04	841
727A	1/2"	6'-9"		6	13.80	83
134A	1/2"	8'-6"		8	28.90	231
139A	1/2"	9'-9"		8	33.15	265
169A	1/2"	17'-3"		20	58.65	1173
Total						9736

NOTES

For masonry details, see Dwg. No. 20/4

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
B. & O. R.R. OPENING
REINFORCING DETAILS**

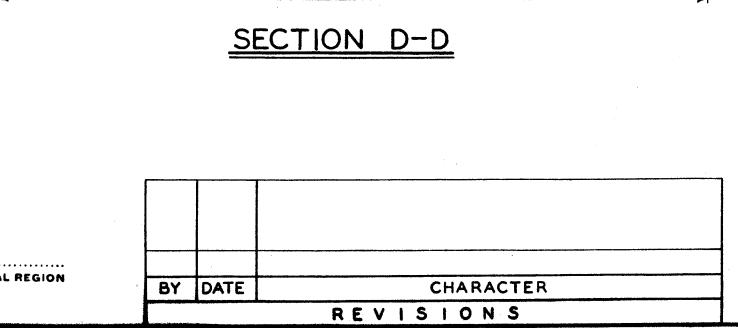
IN 147 SHEETS SHEET NO. 17 SCALE: 3/8" = 1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: [Signature] APPROVED: [Signature]

DRAWN BY: F. R. [Signature] TRANSMITTED WITH LETTER
CHECKED BY: E. K. [Signature] FILE NO. 027i-PM-20/5 DATEDAPPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY: [Signature] CHIEF ENGINEER

BY	DATE	CHARACTER
		REVISIONS



6A

9255

1"

NOTES

For masonry details, see Dwg. No. 20/4

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PENNA. R. R. OPENING
REINFORCING DETAILS

IN 147 SHEETS

SHEET NO. 18

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

1" 0' 0' 2' 4' 6'

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

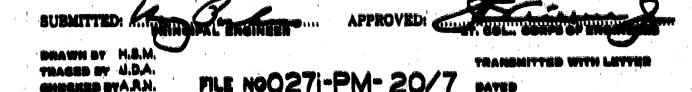
SUBMITTED: *Wm. B. ...* ENGINEER

APPROVED: *J. ...*
T. COL. CORPS OF ENGINEERS

DRAWN BY R. M. C.
TRACED BY C. C. B.
CHECKED BY E. K.

FILE NO. 027i-PM-20/6

TRANSMITTED WITH LETTER
DATED

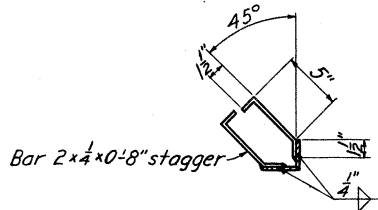


BY	DATE	CHARACTER
		REVISIONS

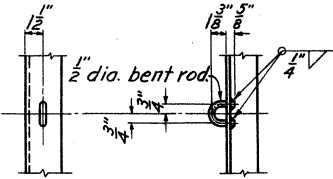
STOP LOGS

MARK	LOCATION	SIZE	LGTH.	NO	F.B.M.
20/8-9	B. & O. R.R.	6x8	10'-6"	54	2268
20/8-10	Penna. R.R.	6x8	10'-6"	72	3024

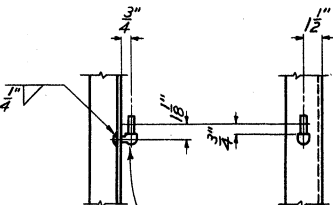
All stop logs to be commercial size timber.



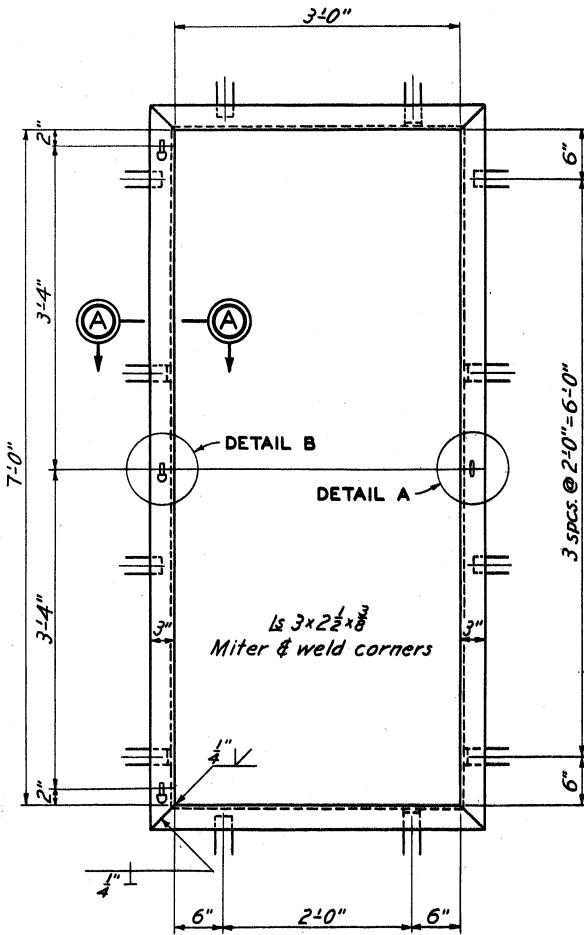
SECTION A-A
SCALE: 1 1/2" = 1'-0"



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

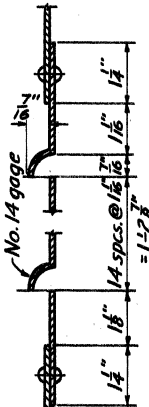


DETAIL B
SCALE: 1 1/2" = 1'-0"

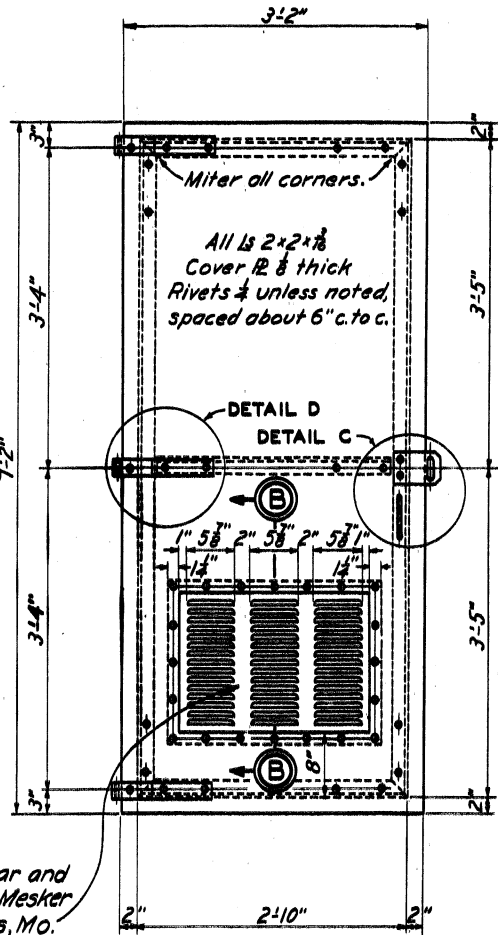


DOOR FRAME

STRUCTURAL STEEL
MARK 20/8-1R MAKE 1 WT. 152.0 LBS.
MARK 20/8-1L MAKE 1 WT. 152.0 LBS.

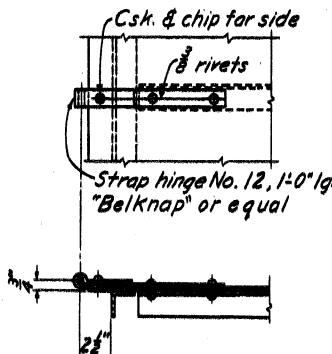


SECTION B-B
SCALE: 6" = 1'-0"

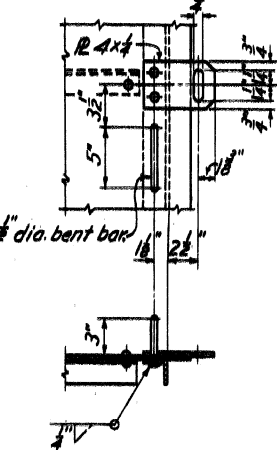


DOOR

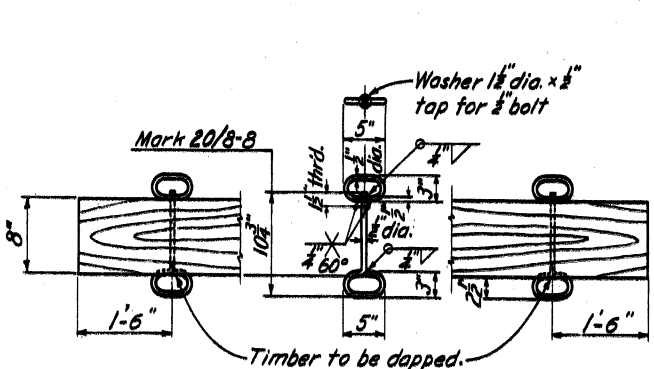
STRUCTURAL STEEL
MARK 20/8-2R MAKE 1 WT. 178.0 LBS.
MARK 20/8-2L MAKE 1 WT. 178.0 LBS.



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

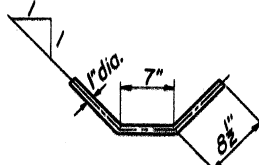


DETAIL C
SCALE: 1 1/2" = 1'-0"



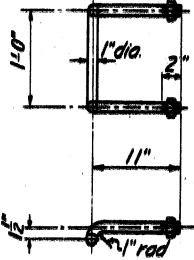
TYPICAL STOP LOG HAND HOLD

STRUCTURAL STEEL MARK 20/8-8
MAKE 252 WT. 1.9 LBS.



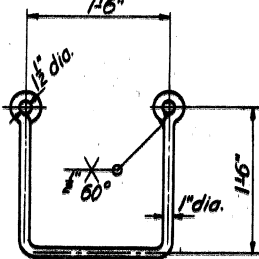
LADDER RUNG

STRUCTURAL STEEL MARK 20/8-11
MAKE 3 WT. 5.3 LBS.



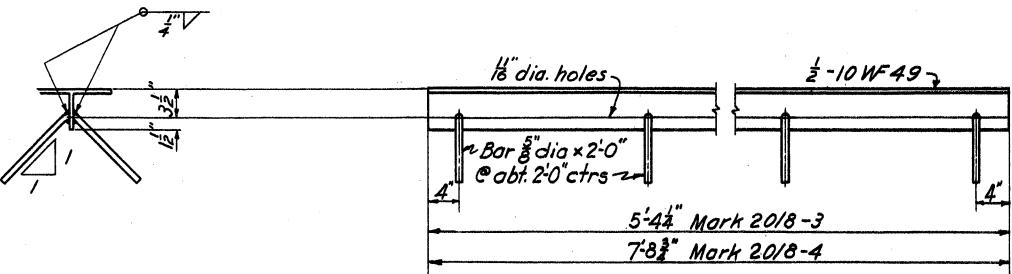
LADDER RUNG

STRUCTURAL STEEL MARK 20/8-12
MAKE 43 WT. 6.6 LBS.



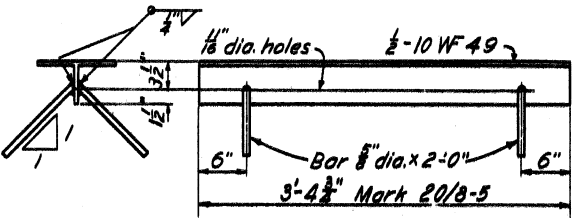
CLAMP BOLT

WROUGHT IRON MARK 20/8-13
MAKE 12 WT. 15.0 LBS.



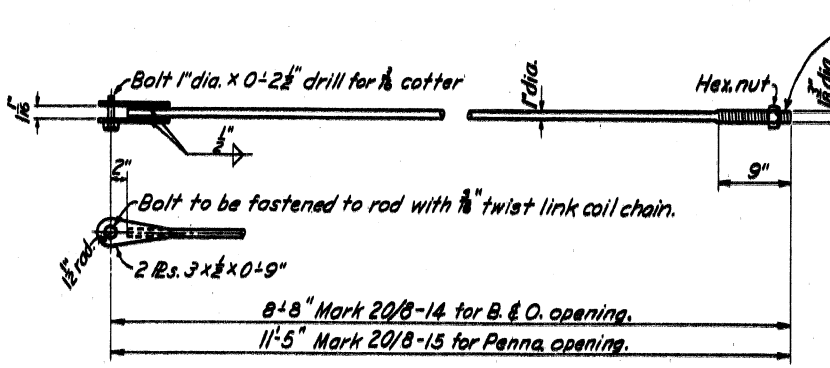
SILL BEAM

STRUCTURAL STEEL
MARK 20/8-3 MAKE 4 WT. 137.0 LBS.
MARK 20/8-4 MAKE 4 WT. 197.0 LBS.



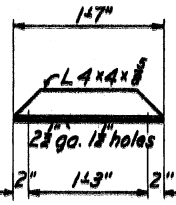
SILL BEAM

STRUCTURAL STEEL MARK 20/8-5
MAKE 4 WT. 88.0 LBS.



CLAMP ROD

STRUCTURAL STEEL
MARK 20/8-14 MAKE 12 WT. 29.0 LBS.
MARK 20/8-15 MAKE 12 WT. 36.0 LBS.



CLAMP

STRUCT. STEEL MARK 20/8-16
MAKE 12 WT. 23.0 LBS.

NOTES

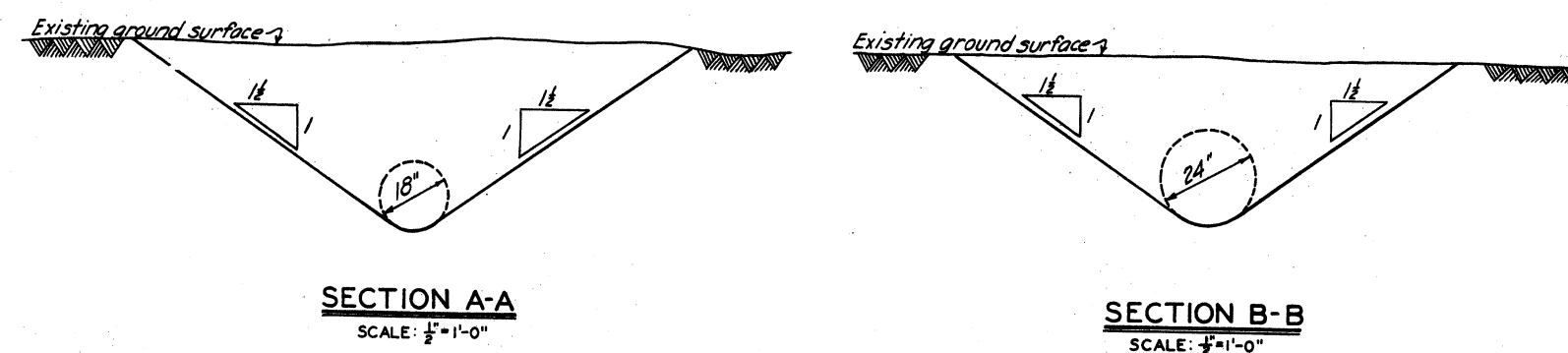
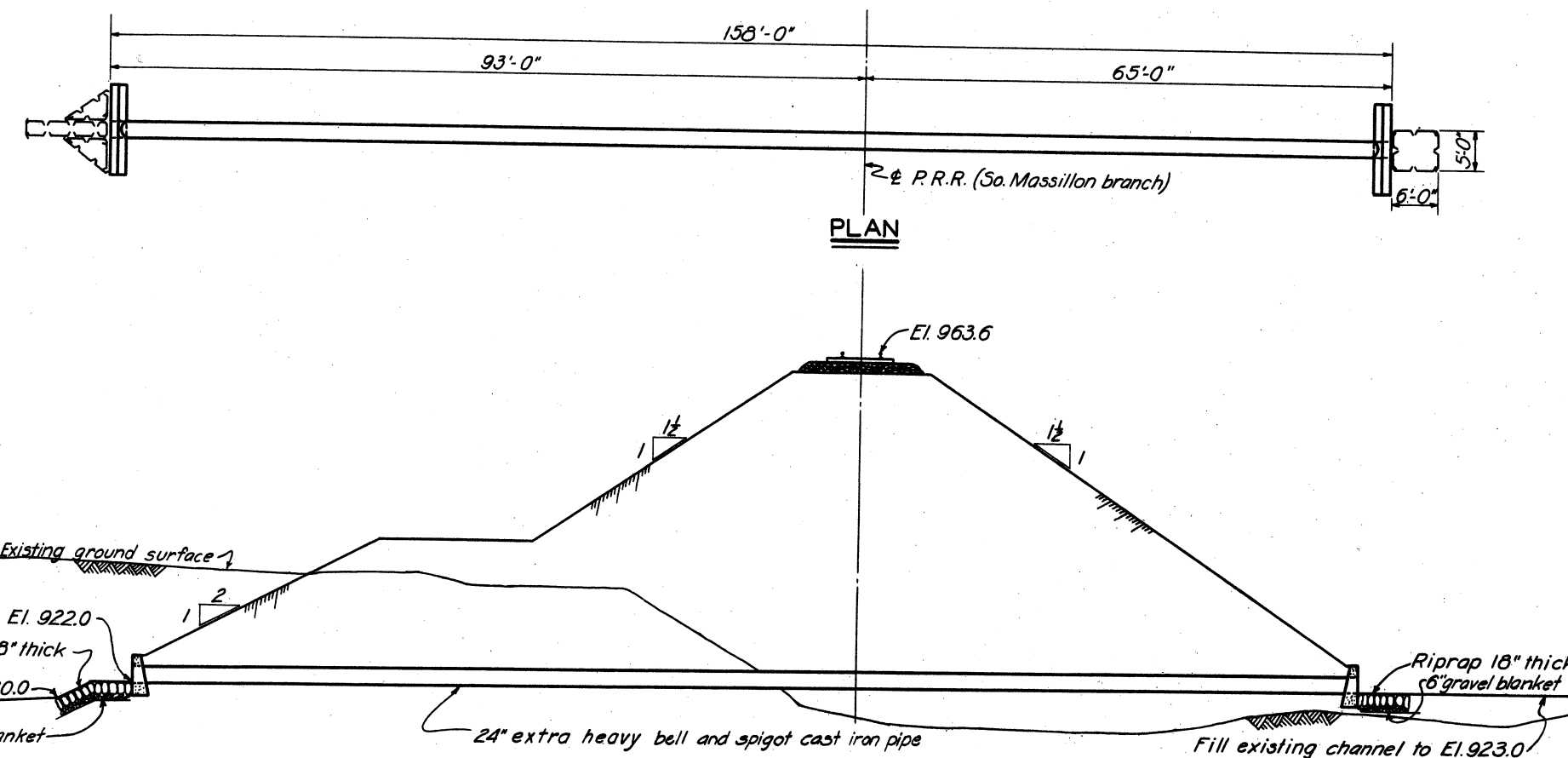
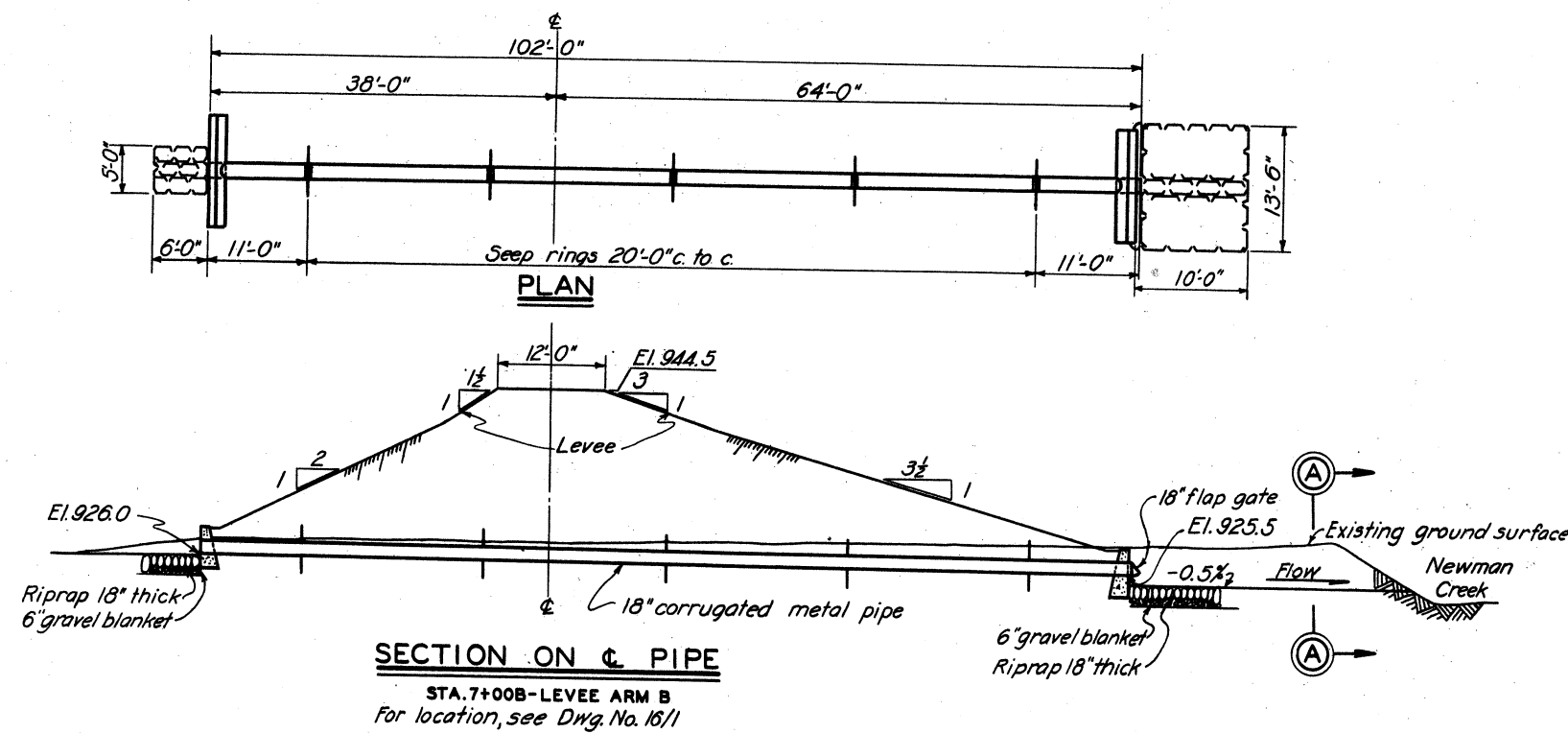
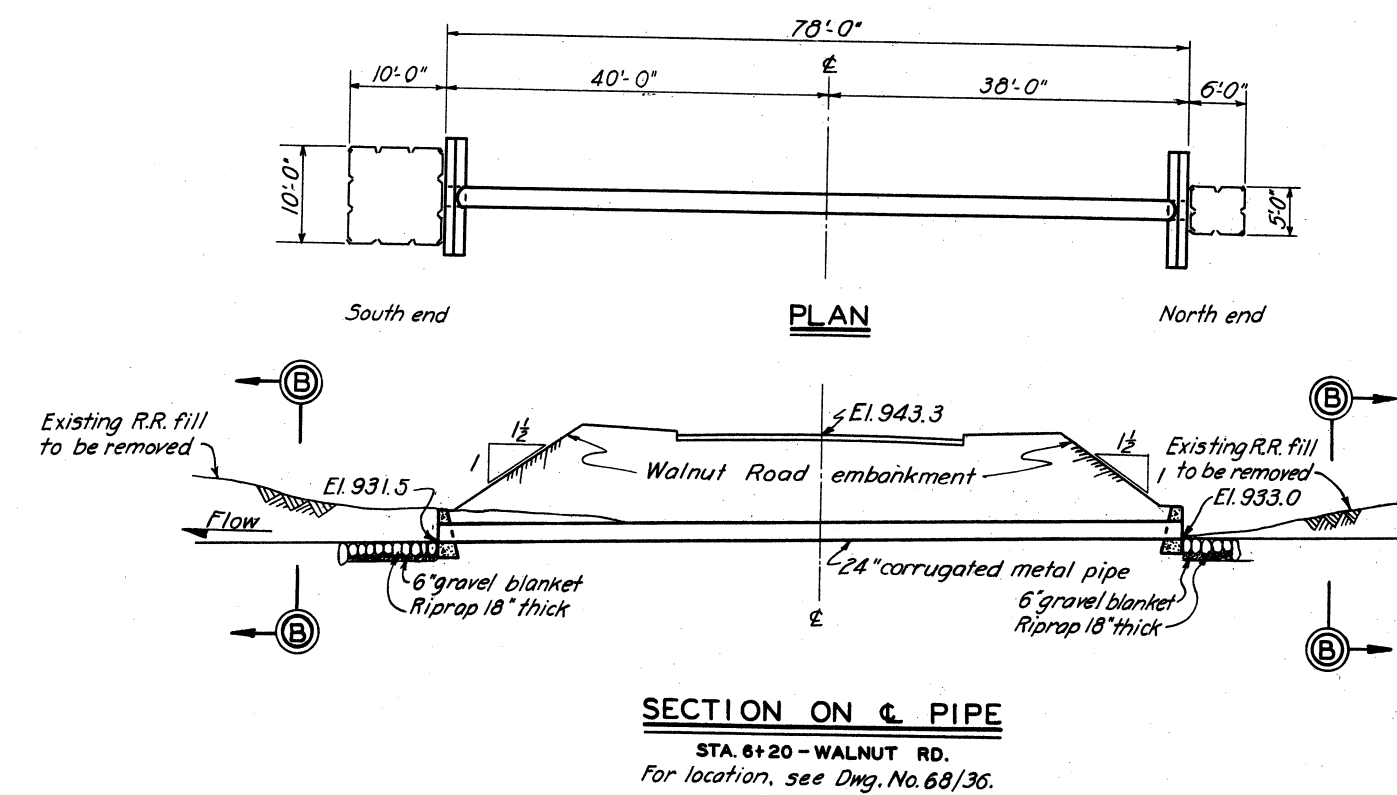
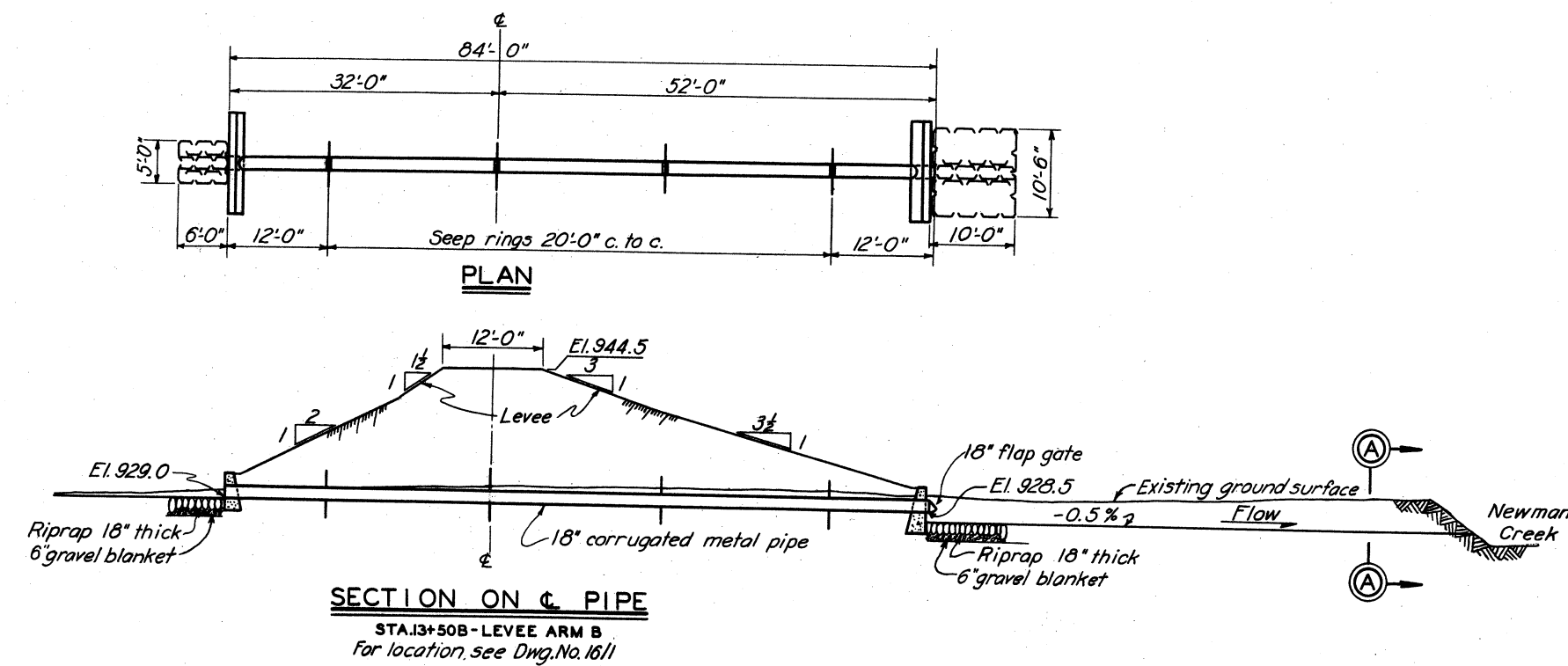
For stop log storage house, see Dwg. No. 20/2
For assembly, see Dwg. No. 20/4.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
B. & O. R. R. & PENNA. R. R. OPENINGS
MISCELLANEOUS DETAILS

IN 147 SHEETS SHEET NO. 20 SCALE: 1" = 1'-0"
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. SEPT. 1940
SUBMITTED BY: [Signature] APPROVED BY: [Signature]
DRAWN BY: H.S.M. TRANSMITTED WITH LETTER
CHECKED BY: H.W.D. FILE NO. 0271-PM-20/8 DATED

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY: [Signature] CHIEF ENGINEER
APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY: [Signature] CHIEF ENGINEER - CENTRAL REGION

BY	DATE	CHARACTER
		REVISIONS



NOTES

For details of seep rings and headwalls, see Dwg. No. 20/13.

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

18/47 SHEETS

SHEET NO. 21

SCALE: 1"=10'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: H. G. H. ENGINEER APPROVED: J. C. H. COL. 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

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION

BY	DATE	CHARACTER
		REVISIONS



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

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY:
SPECIAL ENGINEER

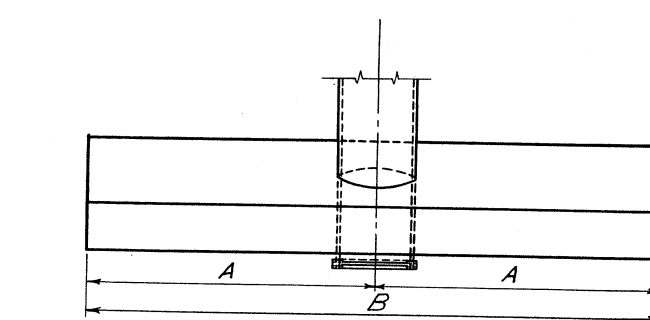
IN 147 SHEETS SHEET NO. 22 SCALE: 1" = 10'

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

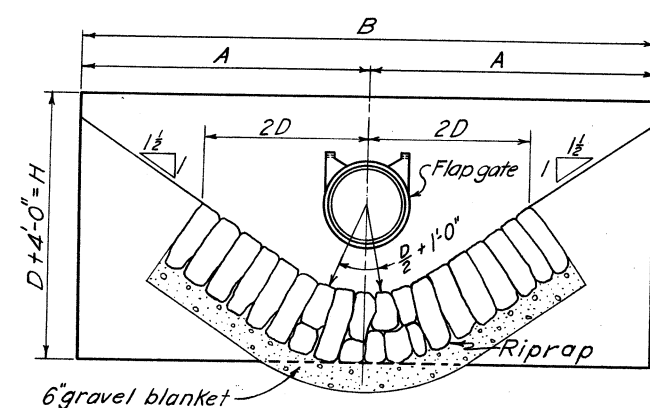
SUBMITTED: *[Signature]* APPROVED: *[Signature]*
PRINCIPAL ENGINEER CT. COL. CORPS OF ENGINEERS

DRAWN BY A.W.M. TRANSMITTED WITH LETTER
TRACED BY R.A.E.
CHECKED BY D.C.J. FILE NO. 0271-PM-20/12 DATED

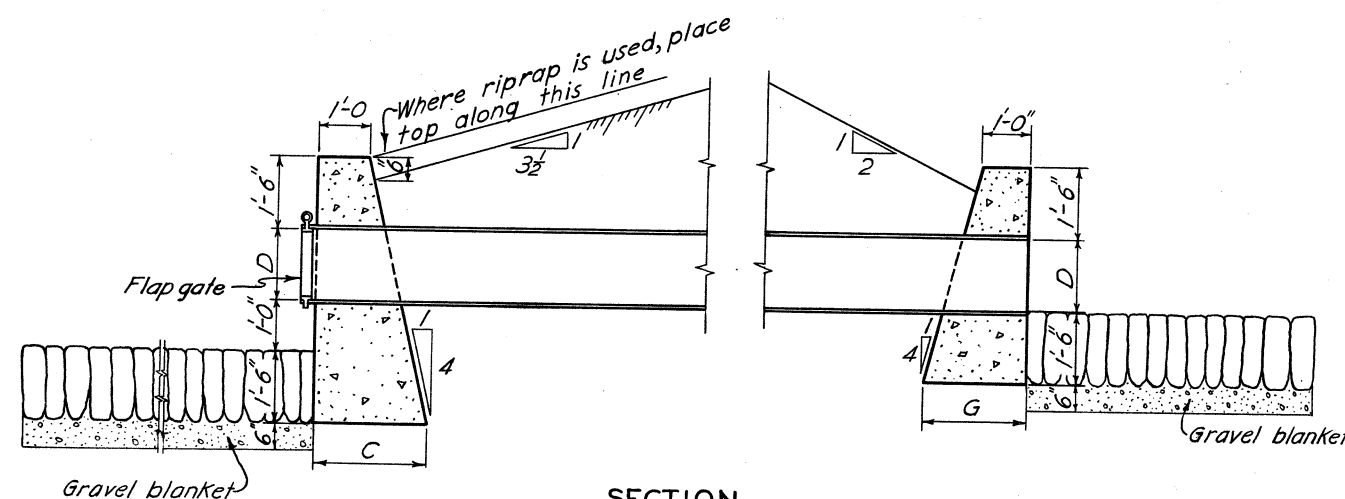
BY	DATE	CHARACTER
		REVISIONS



PLAN

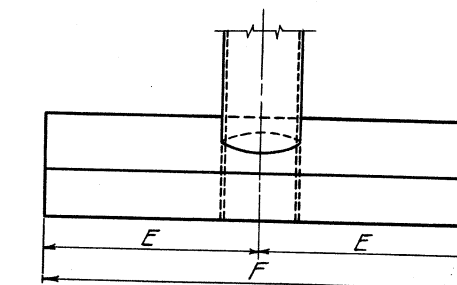
ELEVATION

HEADWALL WITH FLAP GATE

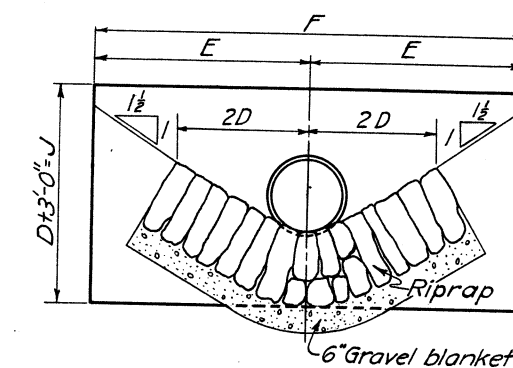


SECTION

DIA. OF PIPE		DIMENSIONS							
D	A	B	C	H	E	F	G	J	
12"	5'-3"	10'-0"	2'-3"	5'-0"	3'-0"	7'-6"	2'-0"	4'-0"	
18"	6'-0"	12'-6"	2'-4½"	5'-6"	4'-6"	9'-0"	2'-1½"	4'-6"	
24"	6'-6"	13'-6"	2'-6"	6'-0"	5'-3"	10'-6"	2'-3"	5'-0"	
30"	7'-6"	15'-0"	2'-7½"	6'-6"	6'-0"	12'-0"	2'-4½"	5'-6"	
36"	8'-3"	16'-6"	2'-9"	7'-0"	6'-9"	13'-6"	2'-6"	6'-0"	

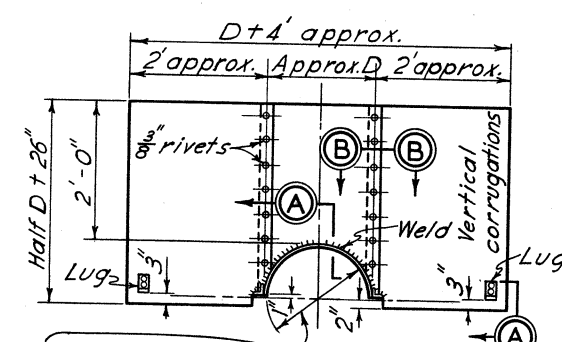


PLAN

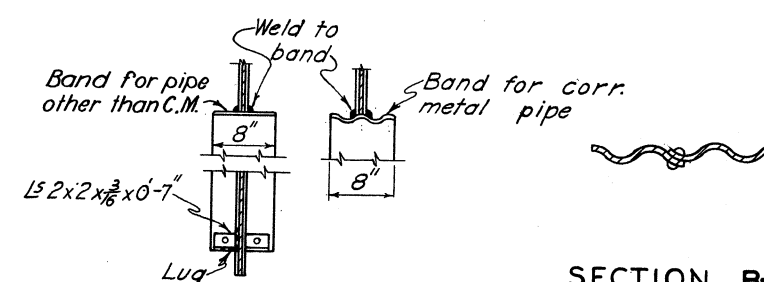
ELEVATION

HEADWALL WITHOUT FLAP GATE

NOTE
Concrete in headwalls to be Class "B."



Band diameter to suit pipe furnished.
Diaphragm #14 gage galvanized corrugated
sheet metal fully coated with asphalt.
One half of diaphragm shown, other half identical.
Seep rings not to be placed at pipe joints.

ELEVATION

SECTION B-B

SECTION A-A

DETAIL OF METAL SEEP RING

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY:
SPECIAL ENGINEER

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PIPE CULVERT DETAILS**

IN 147 SHEETS **SHEET NO. 23** **SCALE:** NONE

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

SUBMITTED: [Signature]
PRINCIPAL ENGINEER

APPROVED: [Signature]
CY. COL. CORPS OF ENGINEERS

DRAWN BY L.D.C.
TRACED BY A.R.M.
CHECKED BYD. G.J.

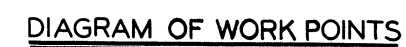
FILE NO.027i-PM-2013

TRANSMITTED WITH LETTER
DATE

BY	DATE	CHARACTER
REVISIONS		



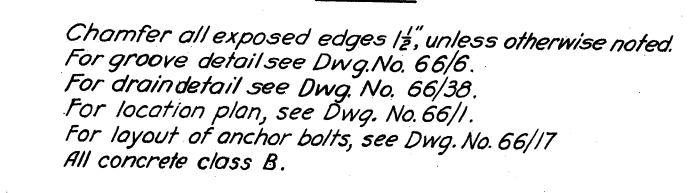
For general plan, see Dwg. No. 16/3
For log of borings F-21, F-22 & F-23,
see Dwg. No. 10/3.



IN 147 SHEETS SHEET NO. 24 SCALE: 1" = 20'

SUBMITTED: *[Signature]* PRINCIPAL ENGINEER APPROVED: *[Signature]* LT. COL. CORPS OF ENGINEERS

DRAWN BY A. W. M. TRACED BY D. R. J. CHECKED BY D. G. J. FILE NO. 027i-PM-66/1 TRANSMITTED WITH LETTER DATED



**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PENNA. R. R. BRIDGE OVER CHANNEL
EAST ABUTMENT**

IN 147 SHEETS SHEET NO. 25 SCALE: $\frac{1}{4}'' = 1'-0''$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: *Roy Baker* APPROVED: *[Signature]*
PRINCIPAL ENGINEER LT. COL. CORPS OF ENGINEERS

DRAWN BY J. E. H.
TRACED BY E. B. H.
CHECKED BY F. R. G. FILE NO 027i-PM-66/2

TRANSMITTED WITH LETTER
DATED

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

BY	DATE	CHARACTER
		REVISIONS

REINFORCING SCHEDULE

MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.	
ABUTMENT & WING							
510	#8	2'-6"		60	2.31	134	
500	#8	19'-0"		1043	1.986		
598	#8	24'-6"		6	25.55	153	
5144	#8	36'-0"		15	37.55	563	
614	#8	3'-6"		4	5.26	21	
620	#8	5'-0"		53	7.51	398	
622A	#8	5'-6"		25	8.26	207	
624	#8	6'-0"		53	9.01	478	
626A	#8	6'-6"		25	9.76	244	
644A	#8	11'-0"		100	16.52	1652	
644	#8	11'-0"		10	16.52	165	
645A	#8	11'-3"		22	16.90	372	
650	#8	12'-6"		261	18.78	4902	
652	#8	13'-0"		4	19.53	78	
658	#8	14'-6"		1	21.78	22	
682	#8	20'-6"		35	30.79	1078	
689	#8	22'-3"		4	33.42	134	
696	#8	24'-0"		4	36.05	144	
698	#8	24'-6"		14	36.80	515	
6104	#8	26'-0"		1	39.05	39	
6144	#8	36'-0"		36	54.08	1947	
736A	#8	9'-0"		105	18.40	1932	
				Total	17,164		
WALL SECTION							
510	#8	2'-6"		13	2.31	30	
5144	#8	36'-0"		4	37.55	150	
620	#8	5'-0"		13	7.51	98	
624	#8	6'-0"		13	9.01	117	
632A	#8	8'-0"		36	12.02	433	
640	#8	10'-0"		4	15.02	60	
644	#8	11'-0"		4	16.52	66	
648	#8	12'-0"		5	18.02	90	
682	#8	20'-6"		13	30.79	400	
6144	#8	36'-0"		11	54.08	595	
				Total	2039		

* 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. 66/2.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PENNA. R. R. BRIDGE OVER CHANNEL
EAST ABUTMENT - REINFORCING DETAILS**

IN 147 SHEETS SHEET NO. 26 SCALE: 1/8" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

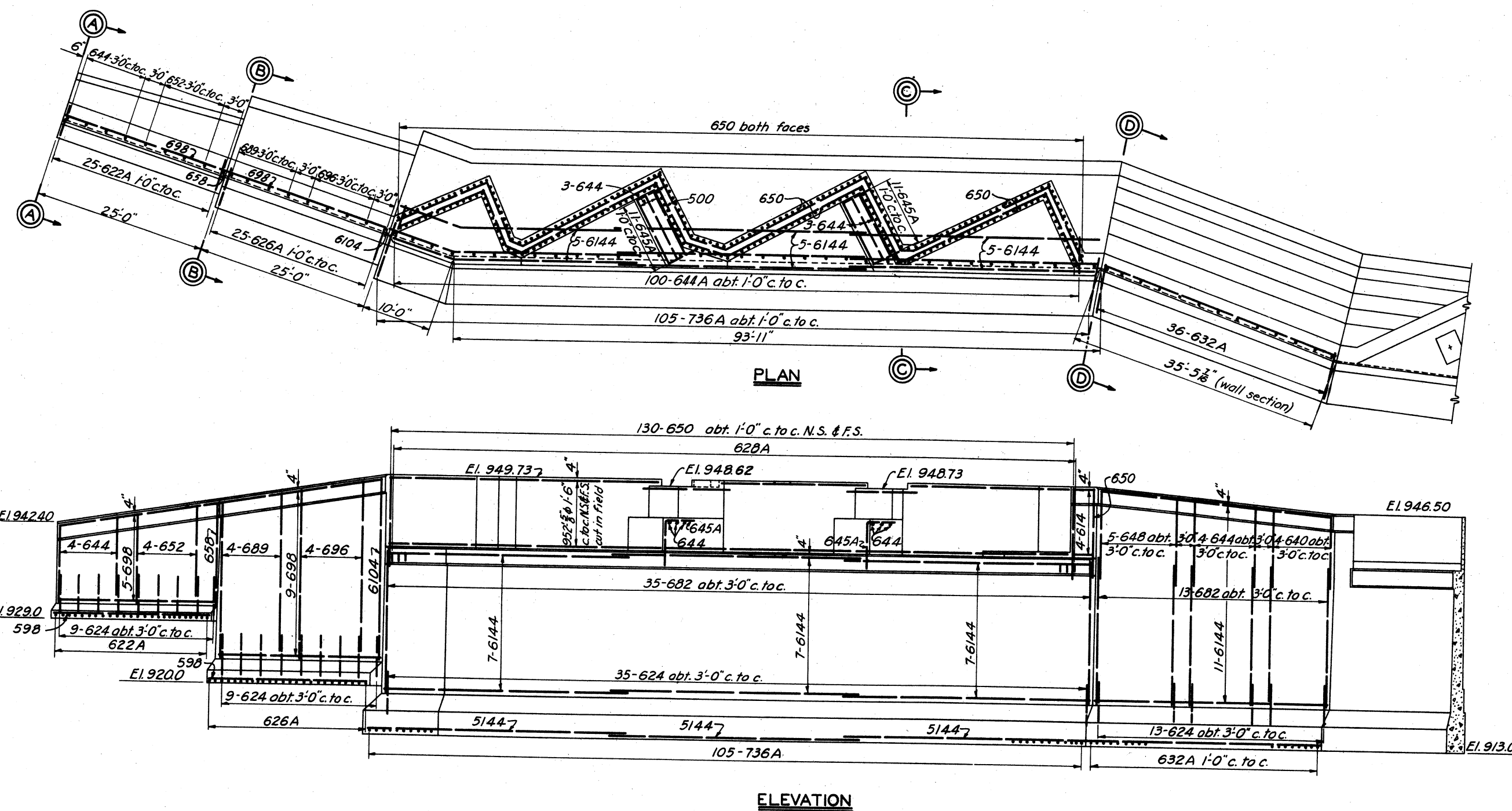
SUBMITTED: [Signature] APPROVED: [Signature]

DRAWN BY: L. D. C. TRANSMITTER WITH LETTER

CHECKED BY: F. R. G. FILE NO. 027i-PM-66/3 DATED

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
CHIEF ENGINEER - CENTRAL REGION

BY	DATE	CHARACTER
		REVISIONS

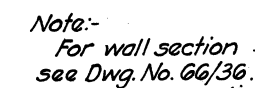


SECTION A-A

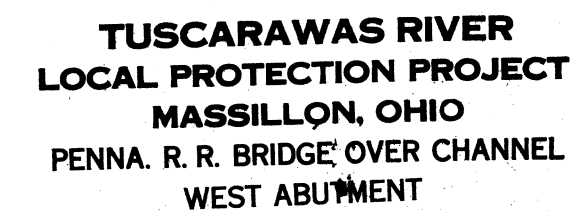
SECTION B-B

SECTION C-C

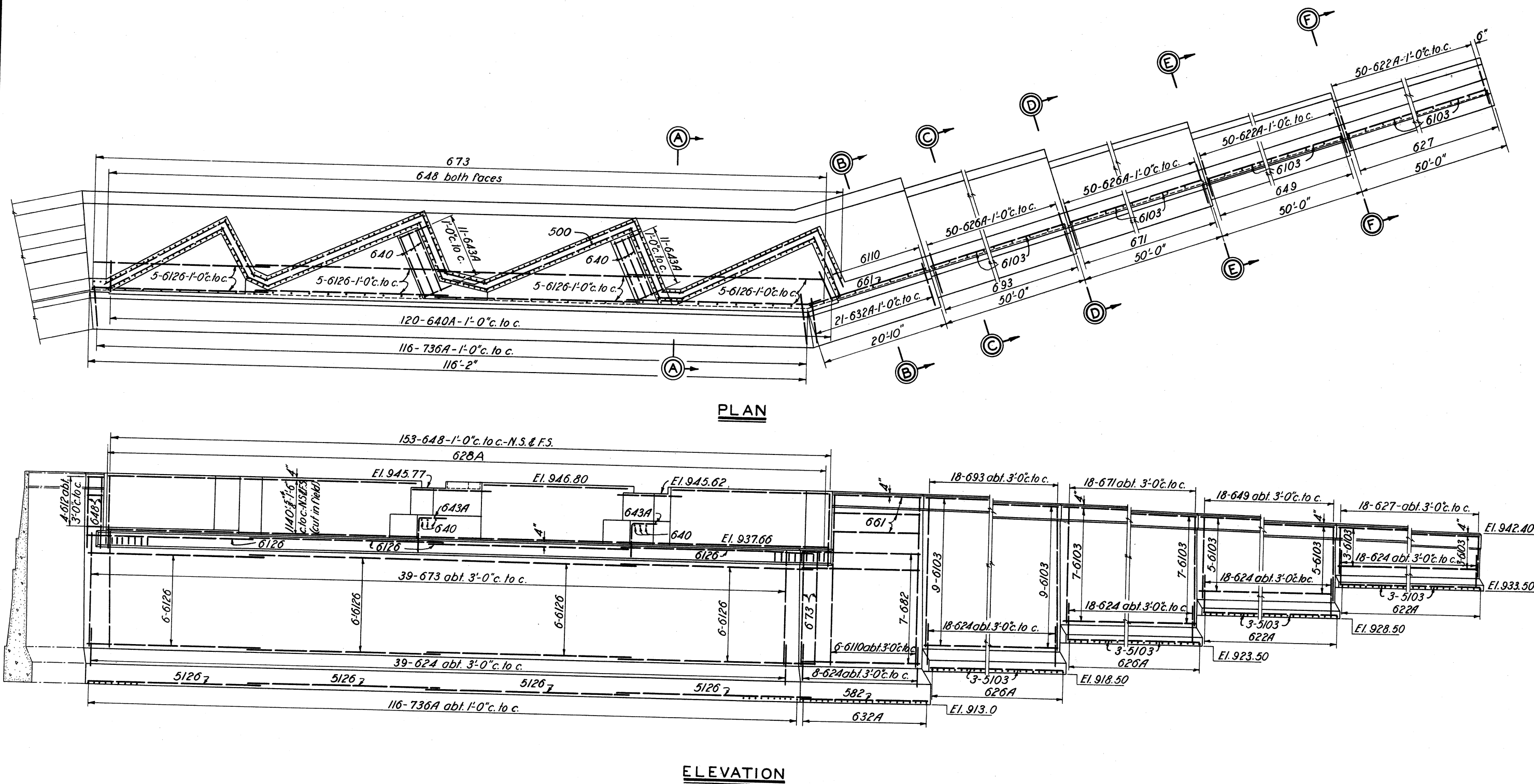
SECTION D-D



Chamfer all exposed edges 1/2" unless otherwise noted.
For groove detail see Dwg.No. 66/6.
For drain detail see Dwg.No. 66/38.
For reinforcing steel, see Dwg. No. 66/5.
For layout of anchor bolts, see Dwg. No. 66/17.
For details of water stop see Dwg. No.66/2.
For details of vertical construction joint see Dwg. No. 66/2
All concrete to be Class 'B'
For detail of key in expansion joint, see Dwg.No.66/2.



APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY _____
CHIEF ENGINEER - CENTRAL REGION

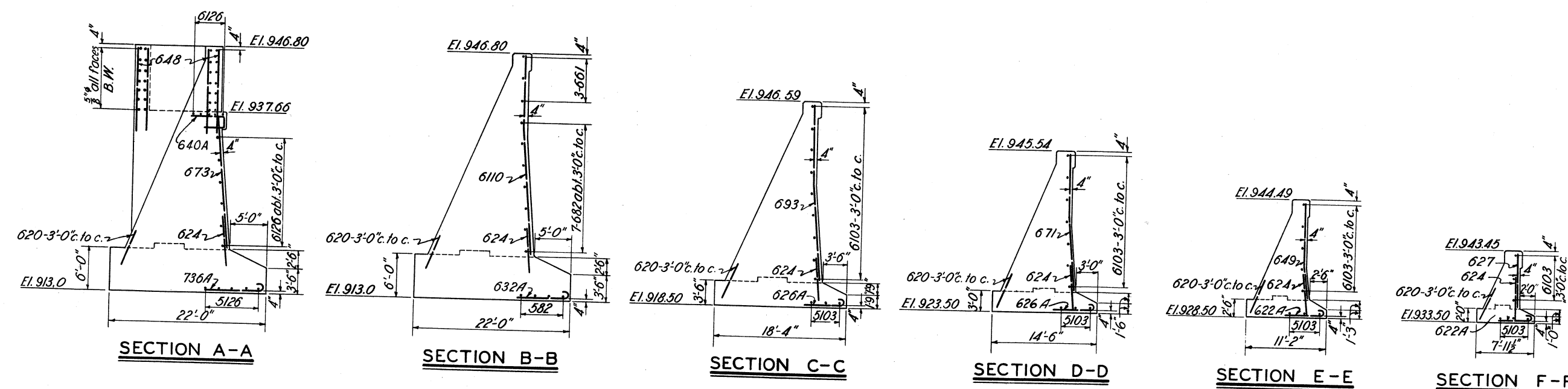


REINFORCING SCHEDULE					
MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	TOTAL WT.
ABUTMENT & WING					
500	3/8"	2280	1 in. ft.	105	2.378
510	3/8"	2'-6"		105	2.31
582	3/8"	20'-6"		4	21.38
5103	3/8"	25'-9"		24	26.86
5126	3/8"	31'-6"		20	32.85
612	3/8"	3'-0"	8'-1"	4	4.51
620	3/8"	5'-0"	7'-2"	119	7.51
622A	3/8"	5'-6"	5'-8"	100	8.26
624	3/8"	6'-0"	4'-8"	119	9.01
626A	3/8"	6'-6"		100	9.76
627	3/8"	6'-9"		18	10.14
640A	3/8"	10'-0"		120	15.02
632A	3/8"	8'-0"		21	12.02
640	3/8"	10'-0"		5	15.02
643A	3/8"	10'-9"		22	16.15
648	3/8"	12'-0"		308	18.02
649	3/8"	12'-3"		18	18.40
661	3/8"	15'-3"		3	22.91
671	3/8"	17'-9"		18	26.66
673	3/8"	18'-3"		41	27.41
682	3/8"	20'-6"		7	30.79
693	3/8"	23'-3"		18	34.92
6103	3/8"	25'-9"		48	38.68
6110	3/8"	27'-6"		6	41.31
6126	3/8"	31'-6"		44	47.31
736A	3/8"	9'-0"		116	18.40
Total				25,196	

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

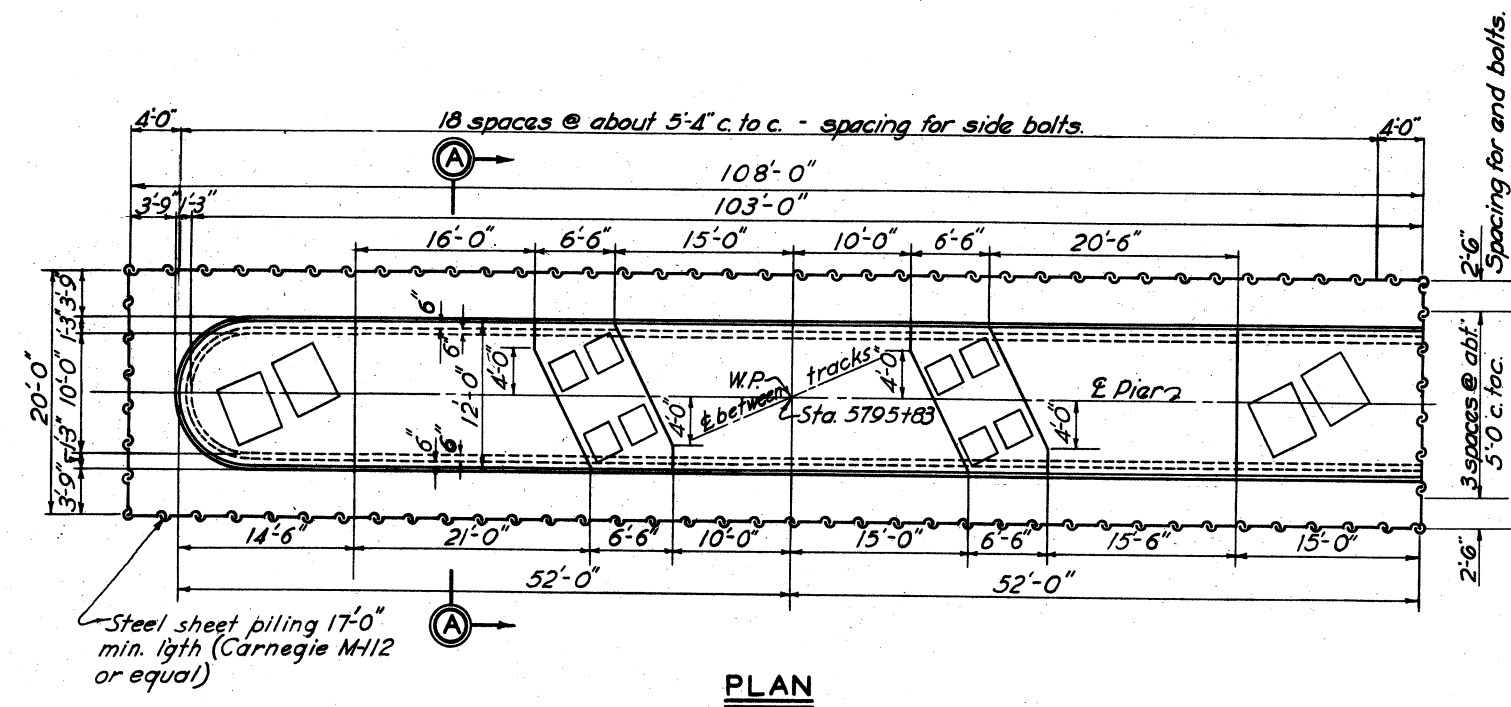
IN 147 SHEETS SHEET NO. 28 SCALE: 1/4" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

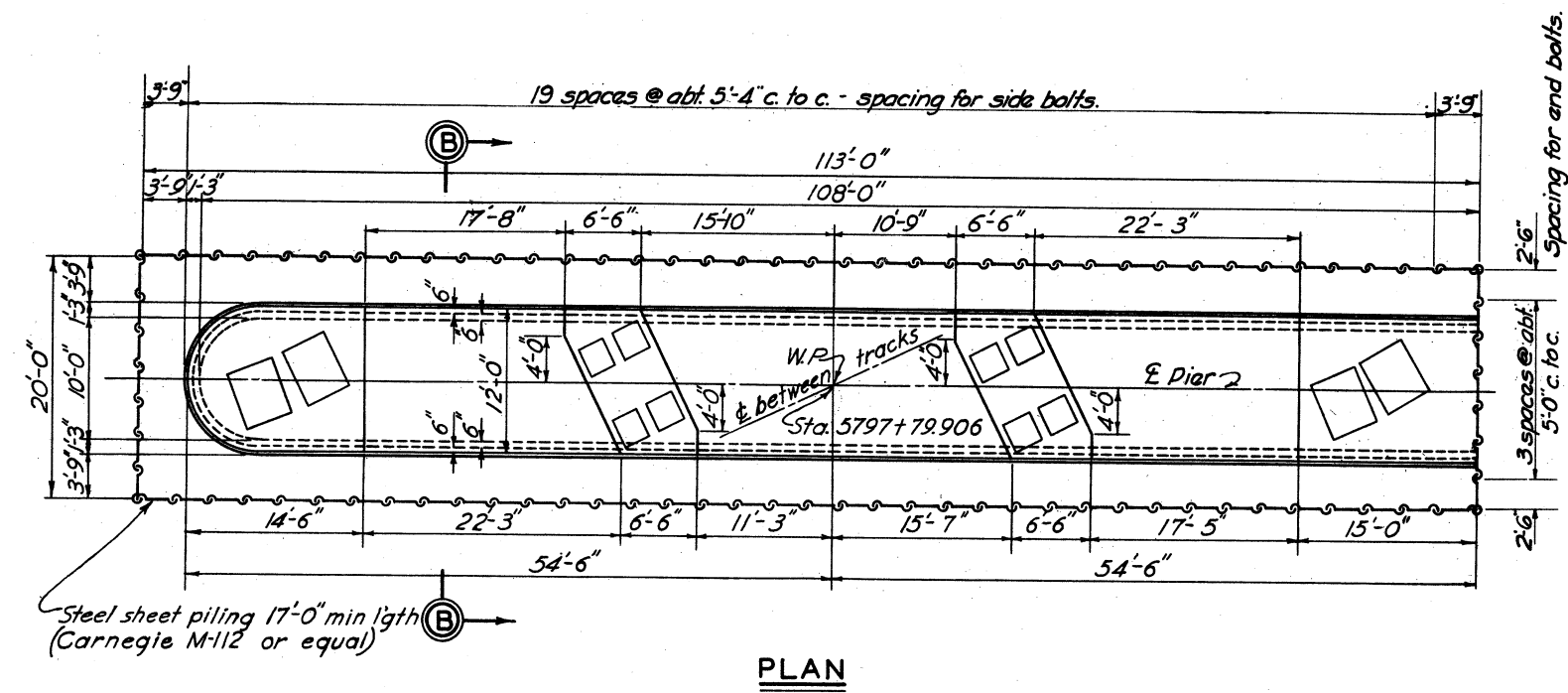
SUBMITTED BY: [Signature] APPROVED BY: [Signature]

DRAWN BY: L. D. E. TRANSMITTED WITH LETTER
CHECKED BY: E. K. FILE NO. 027i-PM-66/5

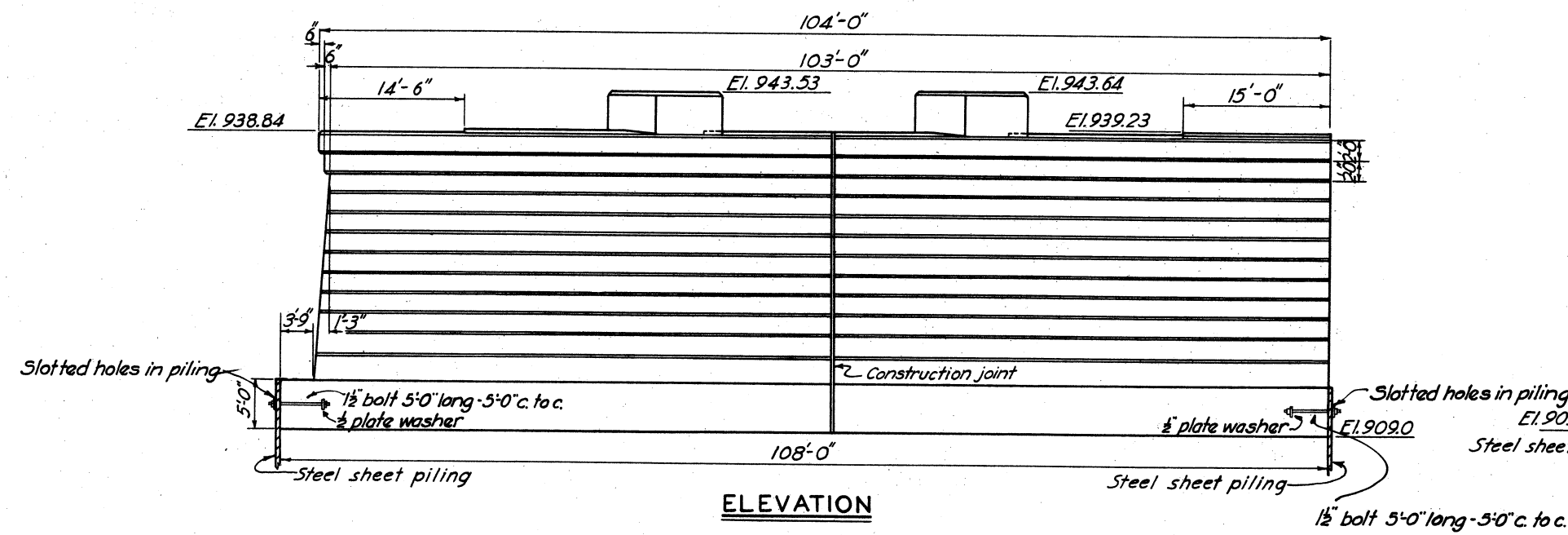
BY	DATE	CHARACTER
		REVISIONS



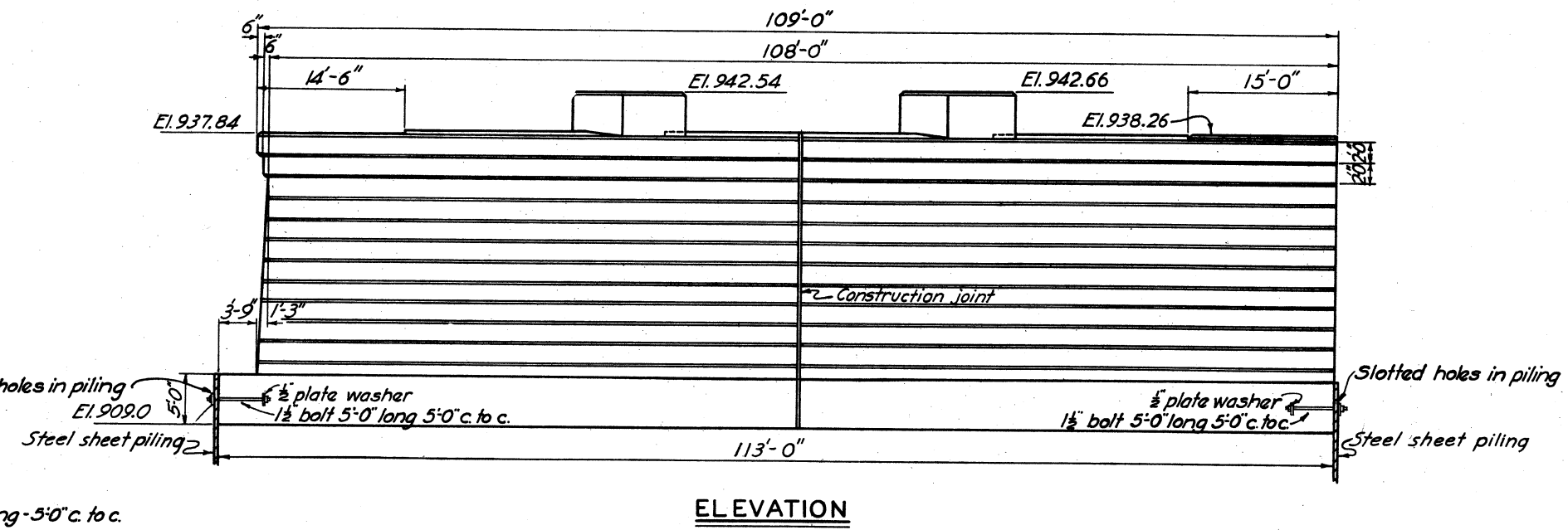
PLAN



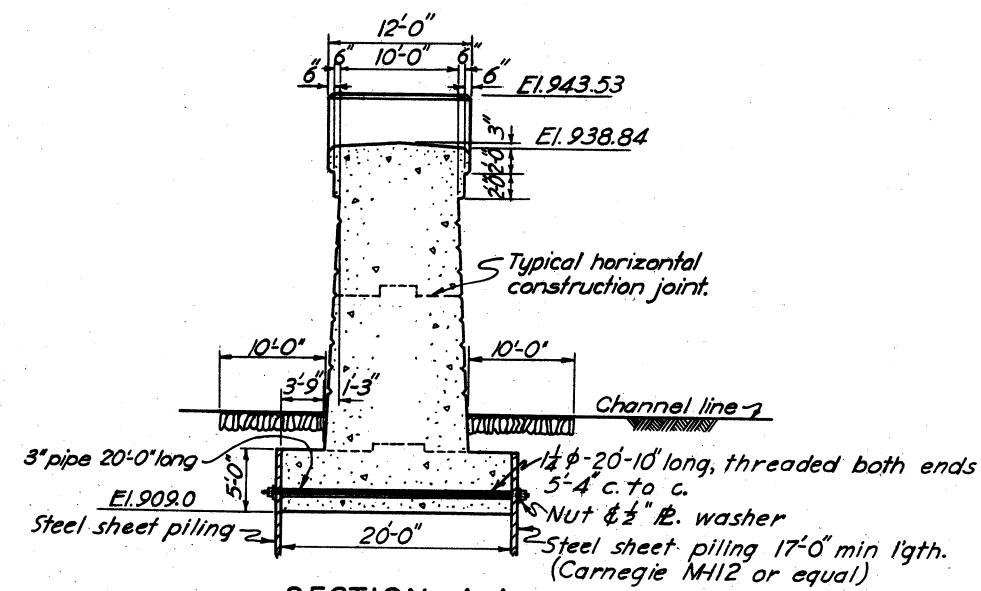
PLAN



ELEVATION

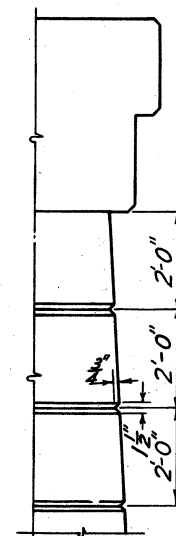


ELEVATION



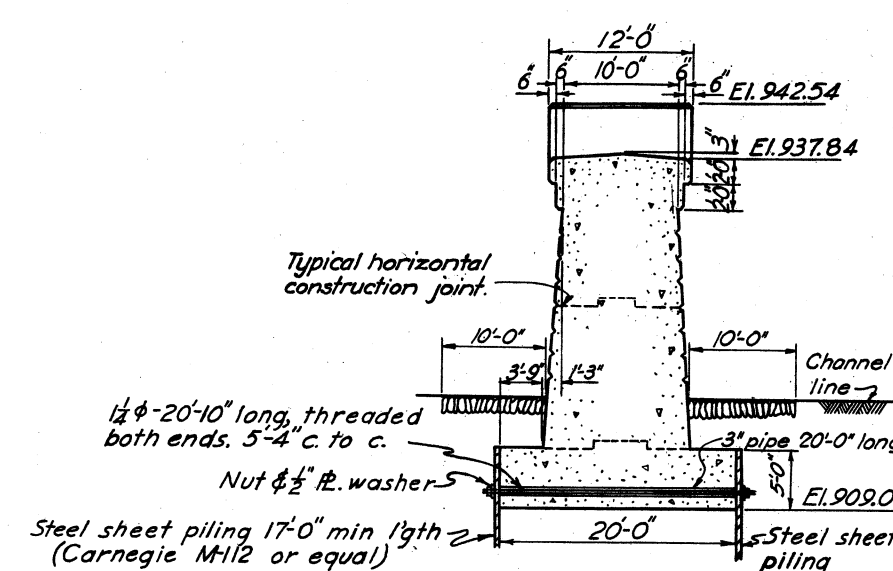
SECTION A-A

PIER NO. 1



GROOVE DETAIL

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



SECTION B-B

PIER NO. 2

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
 For layout of anchor bolts, see Dwg. No. 66/17
 For details of vert. constr. joint, see Dwg. No. 66/2
 All concrete to be Class B.

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

IN 147 SHEETS

SHEET NO. 29 SCALE: 1/8" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

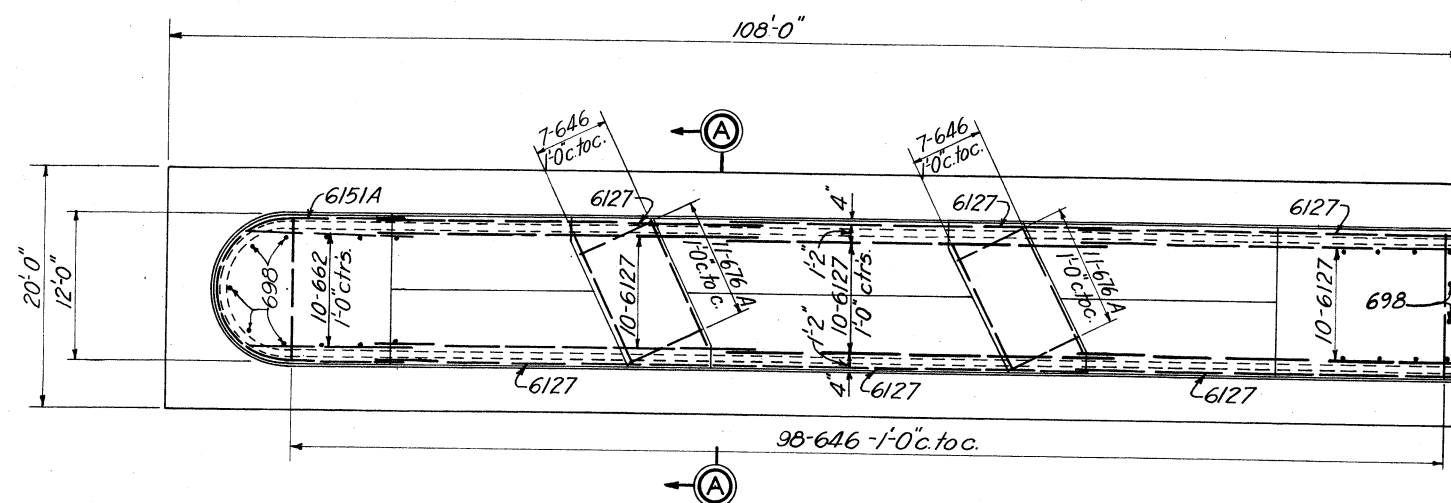
SUBMITTED BY: J.E.W. APPROVED BY: J.E.W.

DRAWN BY: J.E.W. TRANSMITTED WITH LETTER

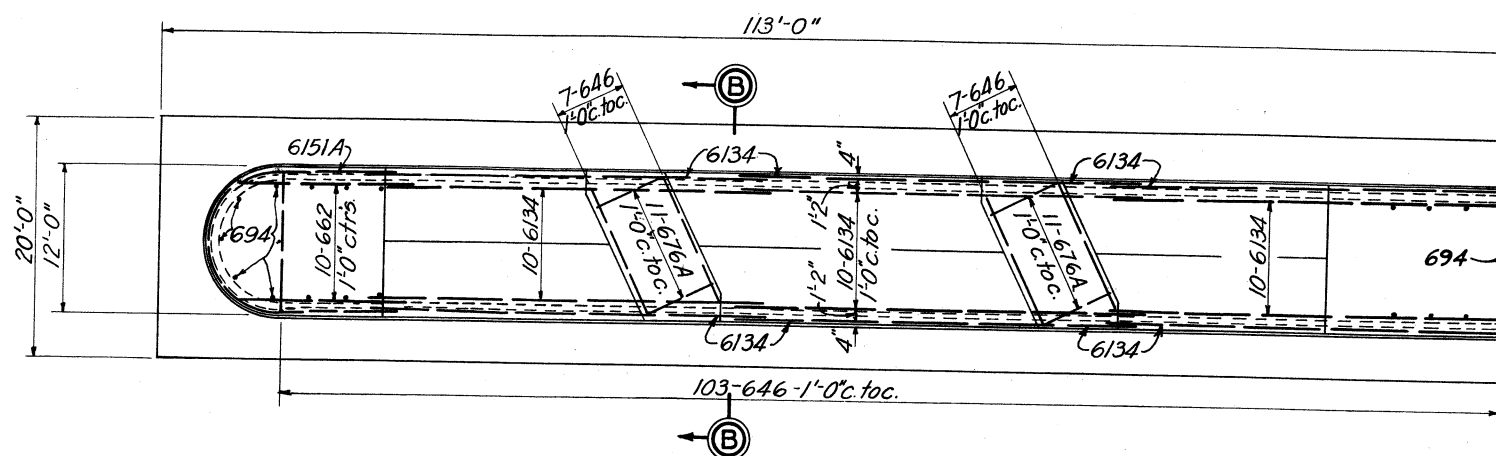
CHECKED BY: E.K. FILE NO. 0271-PM-66/6 DATED

APPROVED:
 THE PENNSYLVANIA RAILROAD CO.
 BY: CHIEF ENGINEER - CENTRAL REGION

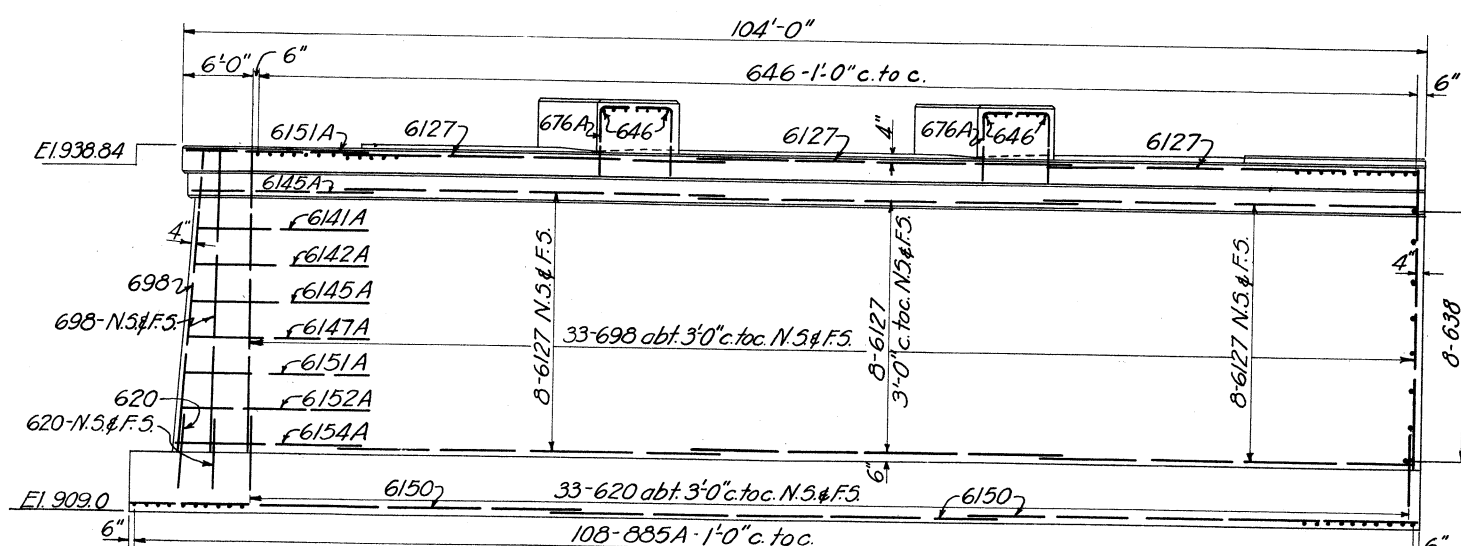
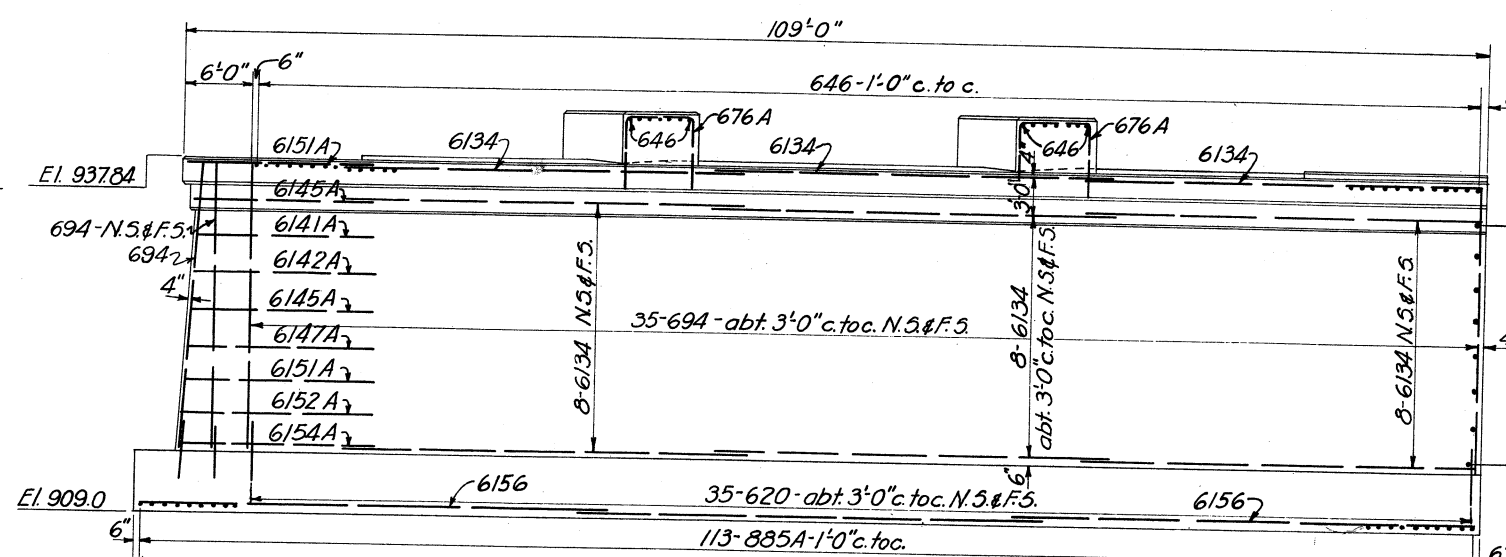
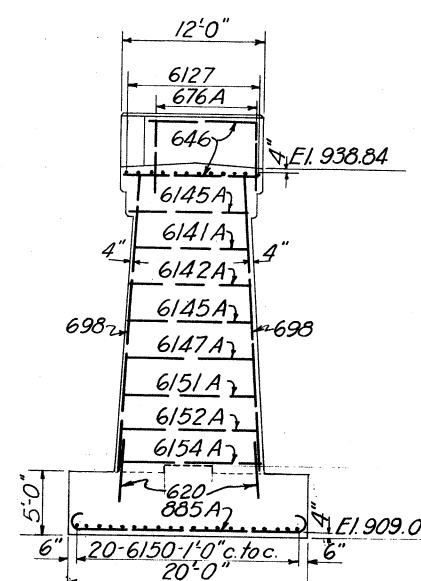
BY	DATE	CHARACTER
		REVISIONS



PLAN

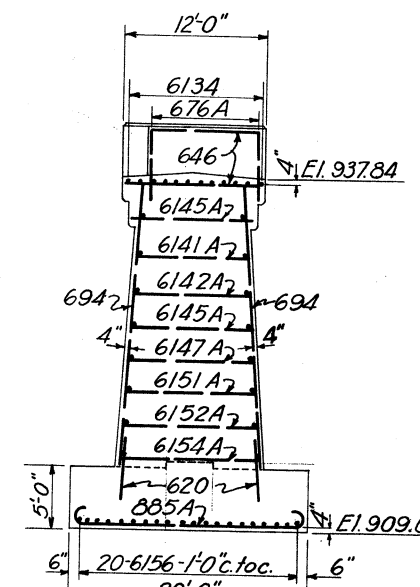


PLAN

ELEVATIONELEVATION

SECTION A-A

PIER NO. 1



SECTION B-B

PIER NO. 2

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

BY	DATE	CHARACTER
REVISIONS		

REINFORCING SCHEDULE

MARK	SIZE	L'GTH	BENDING DIAGRAM		NO.	UNIT WT.	TOTAL WT.			
PIER NO. 1										
620	$\frac{3}{8}$ "	5'-0"			71	751	533			
646	$\frac{3}{8}$ "	11'-6"			112	1727	1934			
662	$\frac{3}{8}$ "	15'-6"			10	23.28	233			
676A	$\frac{3}{8}$ "	19'-0"			22	28.54	628			
698	$\frac{3}{8}$ "	24'-6"			71	36.80	2613			
6127	$\frac{3}{8}$ "	31'-9"			84	47.69	4006			
6141A	$\frac{3}{8}$ "	35'-3"			1	52.94	53			
6142A	$\frac{3}{8}$ "	35'-6"			1	53.32	53			
6145A	$\frac{3}{8}$ "	36'-3"			2	54.46	109			
6147A	$\frac{3}{8}$ "	36'-9"			1	55.20	55			
6150	$\frac{3}{8}$ "	37'-6"			60	56.33	3350			
6151A	$\frac{3}{8}$ "	37'-9"			2	56.71	103			
6152A	$\frac{3}{8}$ "	38'-0"			1	57.08	57			
6154A	$\frac{3}{8}$ "	38'-6"			1	57.83	58			
885A	1"	21'-3"			108	56.74	6128			
638	$\frac{3}{8}$ "	9'-6"			8	14.27	114			
					Total					
					20,057					
PIER NO. 2										
620	$\frac{3}{8}$ "	5'-0"			75	751	563			
646	$\frac{3}{8}$ "	11'-6"			117	1727	2021			
662	$\frac{3}{8}$ "	15'-6"			10	23.28	233			
694	$\frac{3}{8}$ "	23'-6"			75	35.30	2648			
6134	$\frac{3}{8}$ "	33'-6"			84	50.32	4227			
6141A	$\frac{3}{8}$ "	35'-3"			1	52.94	53			
6142A	$\frac{3}{8}$ "	35'-6"			1	53.32	53			
6145A	$\frac{3}{8}$ "	36'-3"			2	54.46	109			
6147A	$\frac{3}{8}$ "	36'-9"			22	28.54	628			
6151A	$\frac{3}{8}$ "	37'-9"			1	55.20	55			
6152A	$\frac{3}{8}$ "	38'-0"			2	56.71	103			
6154A	$\frac{3}{8}$ "	38'-6"			1	57.08	57			
6156	$\frac{3}{8}$ "	39'-0"			1	57.83	58			
6158	$\frac{3}{8}$ "	39'-6"			60	58.58	3515			
885A	1"	21'-3"			113	56.74	6412			
638	$\frac{3}{8}$ "	9'-6"			8	14.27	114			
					Total					
					20,049					

NOTES

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

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PENNA. R. R. BRIDGE OVER CHANNEL
PIERS - REINFORCING DETAILS**

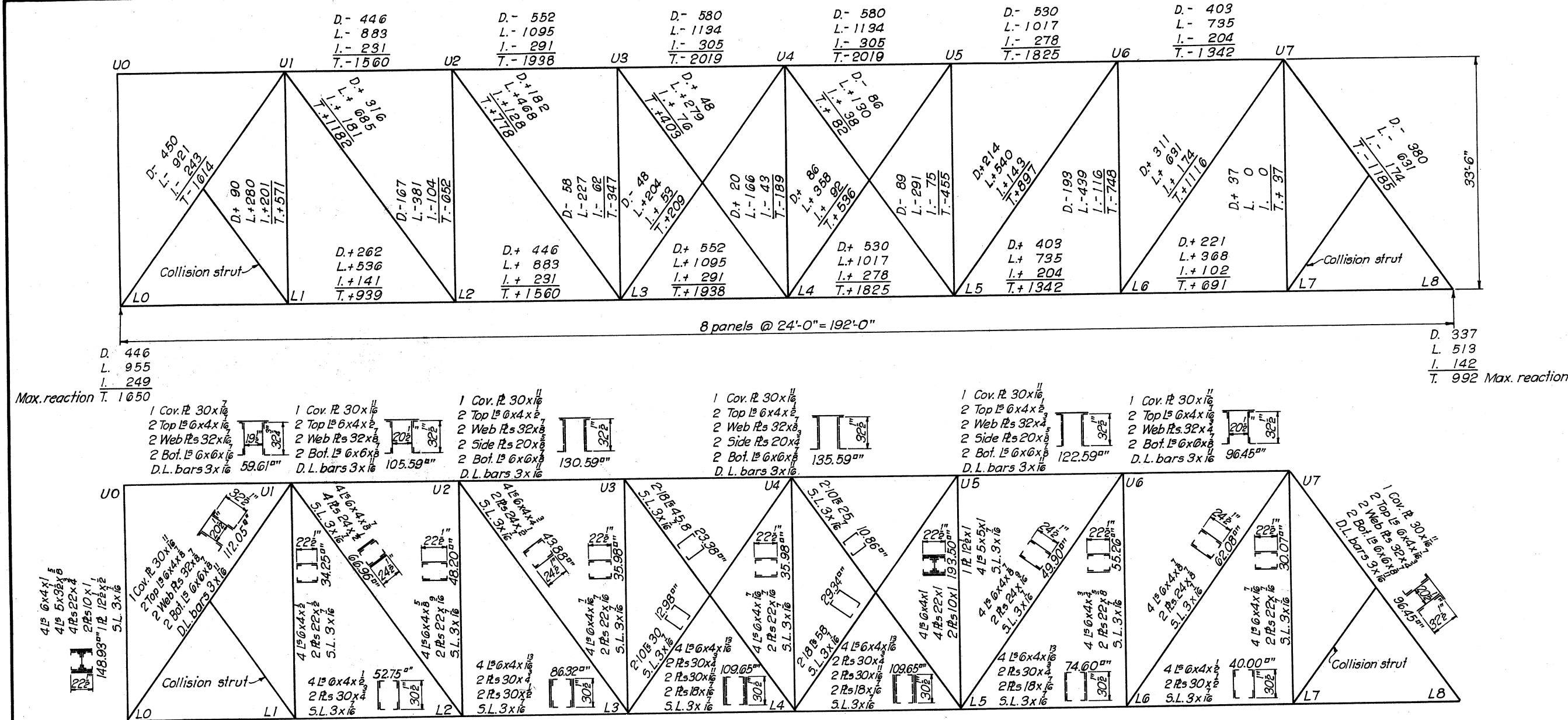
IN 147 SHEETS SHEET NO. 30 SCALE: $\frac{1}{4}'' = 1'-0''$

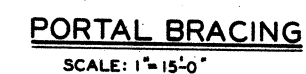
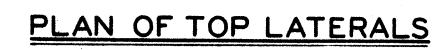
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED: Ray Perkins APPROVED: [Signature]

TRANSMITTED WITH LETTER

CHECKED BY E. K. FILE NO. 027j-PM-66/7 DATED





APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

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

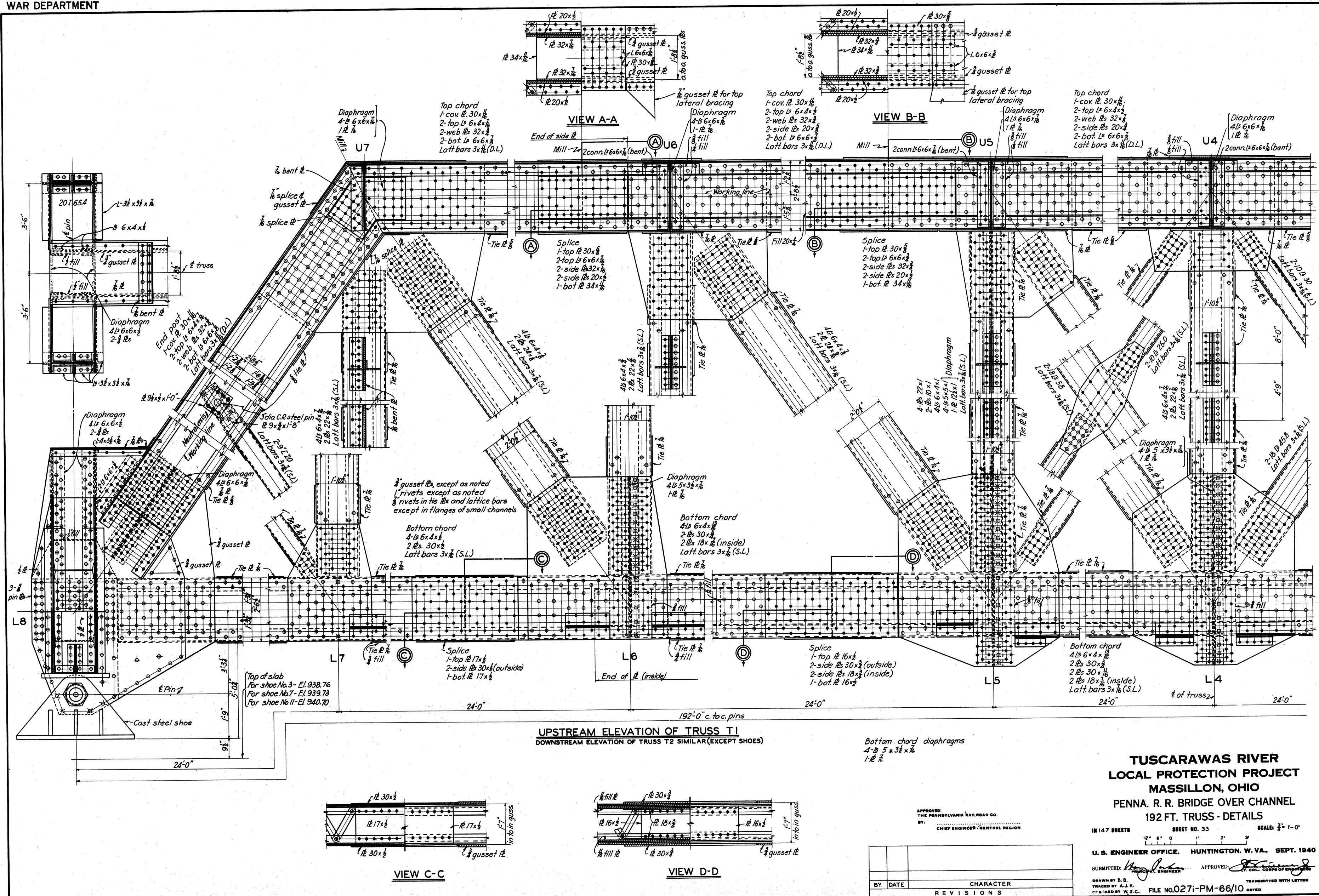
IN 147 SHEETS SHEET NO. 32 SCALE: 1"=20'

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

SUBMITTED: *[Signature]* **PRINCIPAL ENGINEER** APPROVED: *[Signature]* **ET. COL. CORPS OF ENGINEERS**

DRAWN BY A.W.S.
TRACED BY M.G.
CHECKED BY W.S.C. FILE No. 027i-PM-66/9

TRANSMITTED WITH LETTER
DATED

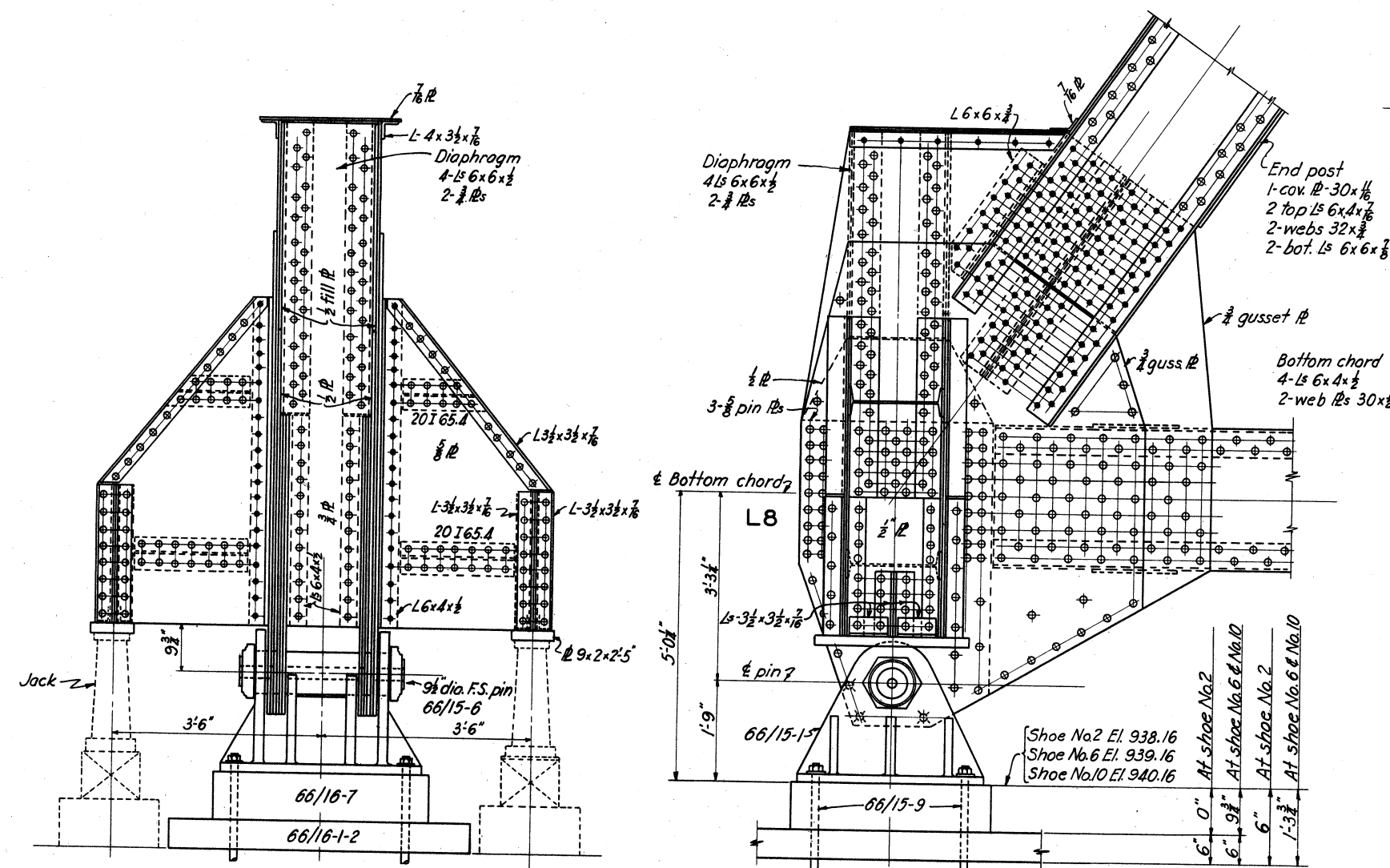




VIEW D-D

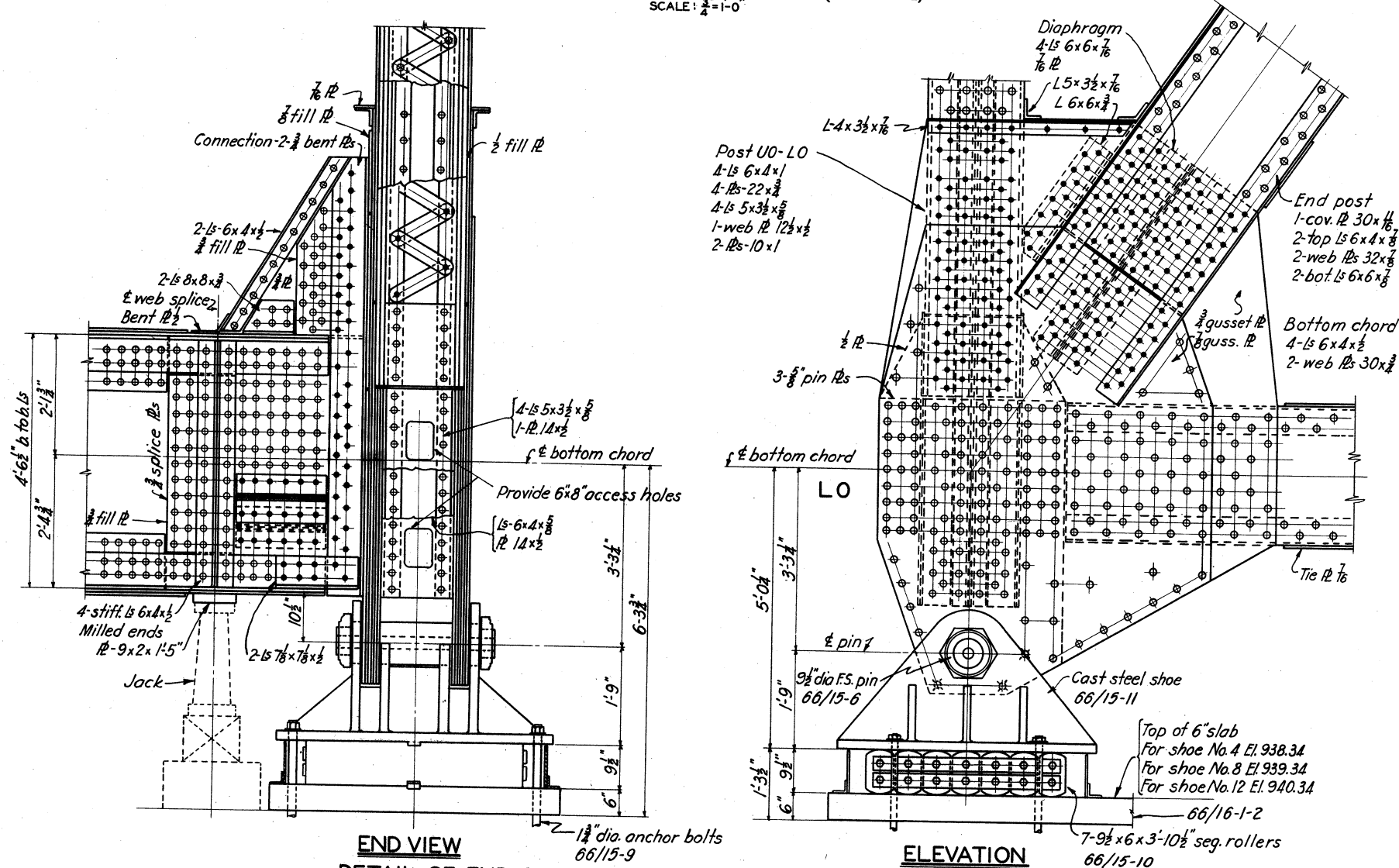


BY	DATE	CHARACTER
		R E V I S I O N S



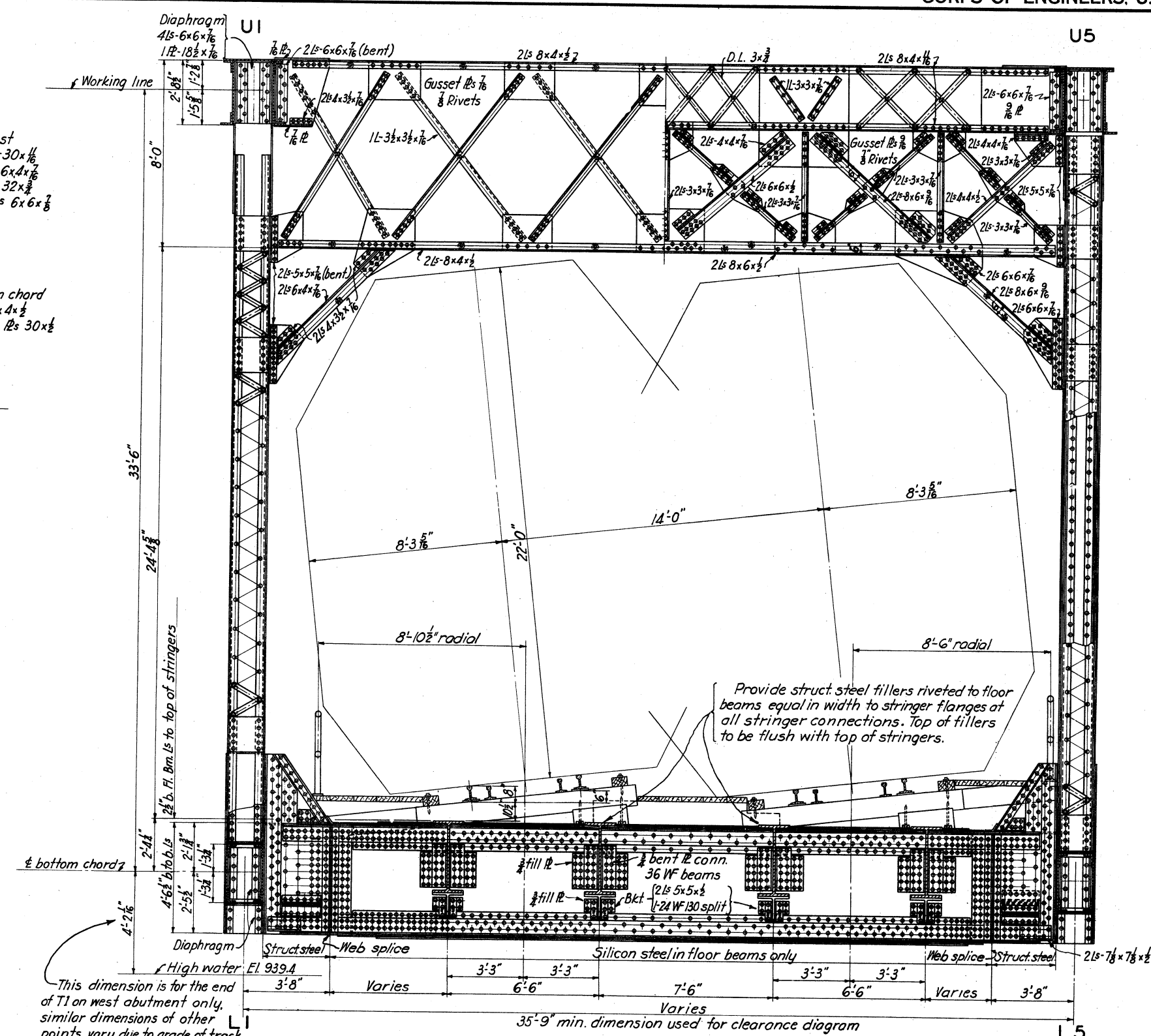
END VIEW
ELEVATION
DETAIL OF END OF TRUSS T2 WITH JACKING BRACKETS

END OF TRUSS T1 WITH JACKING BRACKETS SIMILAR (EXCEPT SHOE)
SCALE: $\frac{1}{2}$ " = 1'-0"



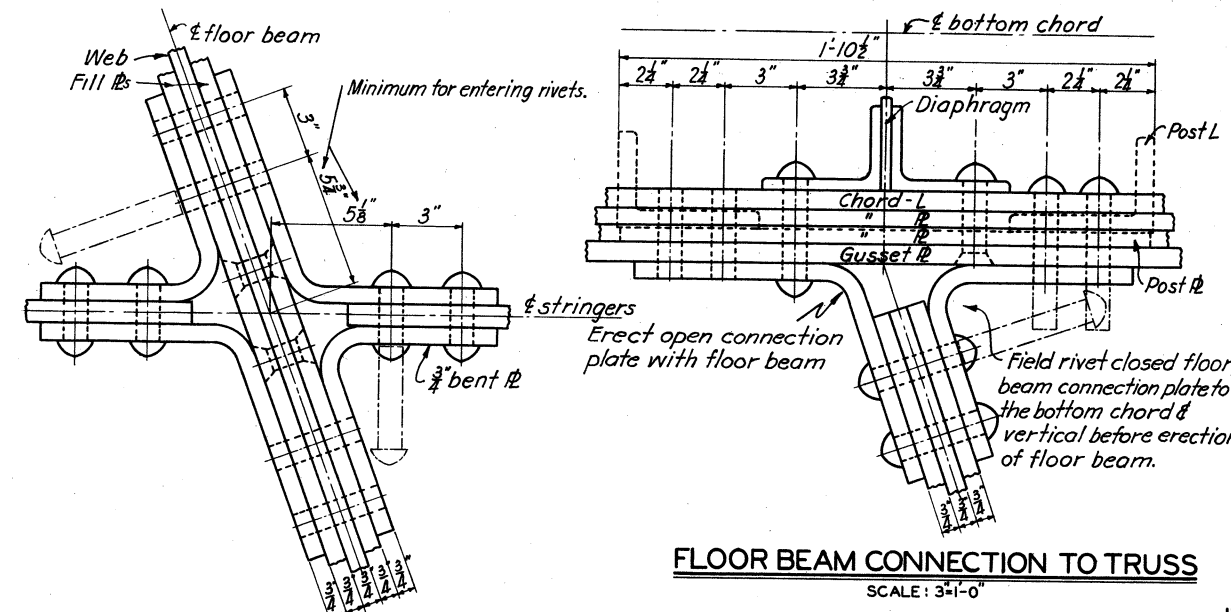
END VIEW
ELEVATION
DETAIL OF END OF TRUSS T2 WITH FLOOR BEAM CONNECTION

END OF TRUSS T1 WITH FLOOR BEAM CONNECTION SIMILAR (EXCEPT SHOE)
SCALE: $\frac{1}{2}$ " = 1'-0"

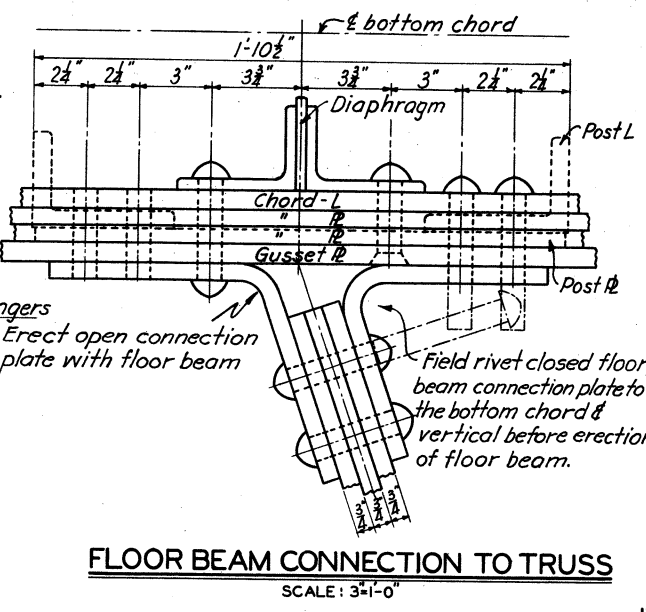


SECTION AT U1-L1-U5-L5

ALL SWAY BRACING SIMILAR TO THAT SHOWN AT U1-L1



STRINGER TO FLOOR BEAM CONNECTION
SCALE: $\frac{1}{2}$ " = 1'-0"



FLOOR BEAM CONNECTION TO TRUSS
SCALE: $\frac{1}{2}$ " = 1'-0"

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY
CHIEF ENGINEER - CENTRAL REGION

NOTES

Trusses and beams to be structural steel except as noted.
Clearance diagram indicated above is in accordance with A.R.E.A. specifications.
For sizes of sections making up the floor beams see Dwg. No. 66/8

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

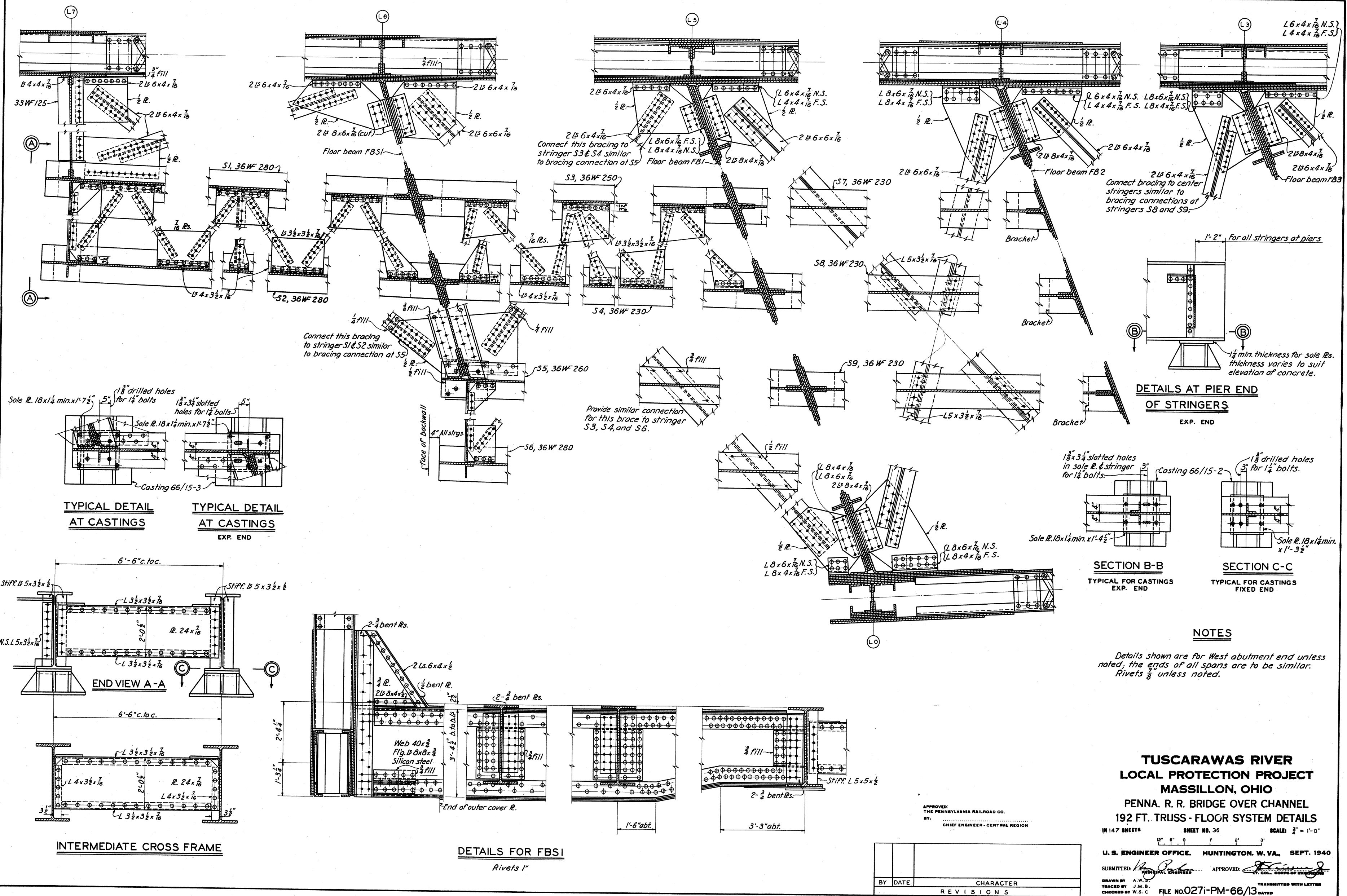
IN 147 SHEETS SHEET NO. 35 SCALE: $\frac{3}{8}$ " = 1'-0"

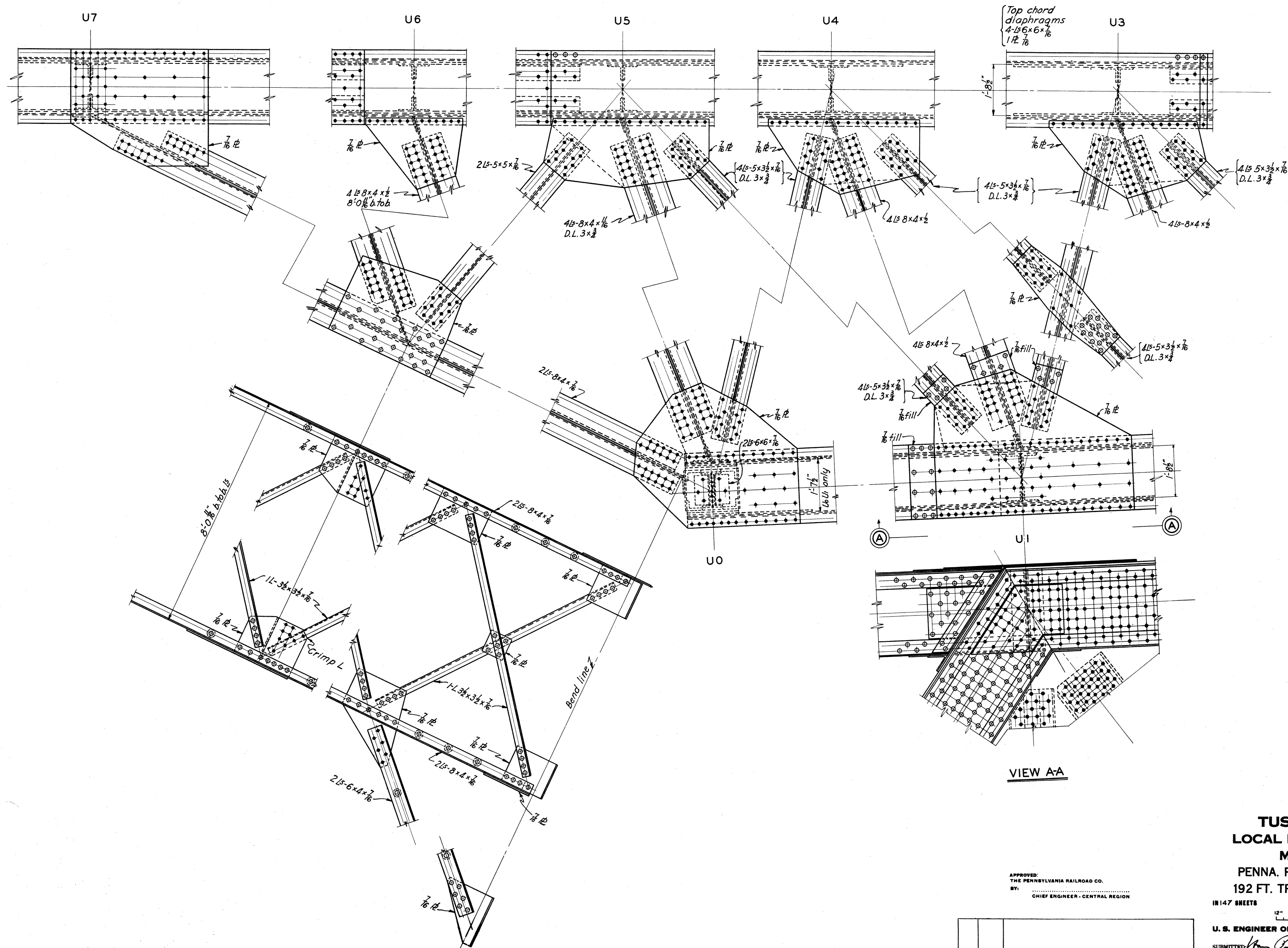
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: [Signature] APPROVED: [Signature]

DRAWN BY: A.W.S. TRACED BY: A.J.M. CHECKED BY: W.S.C. FILE NO. 0271-PM-66/12 TRANSMITTED WITH LETTER DATED: [Signature]

BY	DATE	CHARACTER
		REVISIONS





VIEW A-A

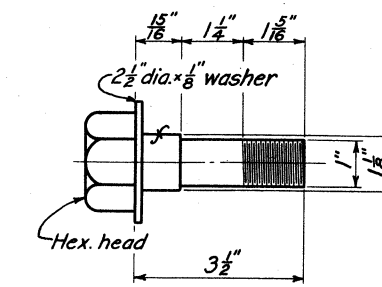
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PENNA. R. R. BRIDGE OVER CHANNEL
192 FT. TRUSS - TOP LATERAL DETAILS**

IN 147 SHEETS SHEET NO. 37 SCALE: $\frac{3}{4}" = 1' - 0"$

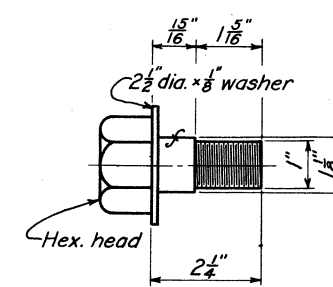
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

SUBMITTED: W. P. ... APPROVED: ...
PRINCIPAL ENGINEER COL. COMMANDER

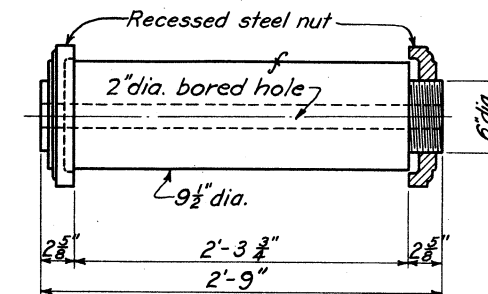
DRAWN BY A.J.M. TRANSMITTED WITH LETTER
 TRACED BY A.J.M.
 CHECKED BY W.S.C. FILE NO. 027i-PM-66/14 DATED



TAP BOLT
 STRUCT. STEEL MARK 66/15-4
 MAKE 48 WT. 1.64 LBS
 SCALE: 6"=1'-0"

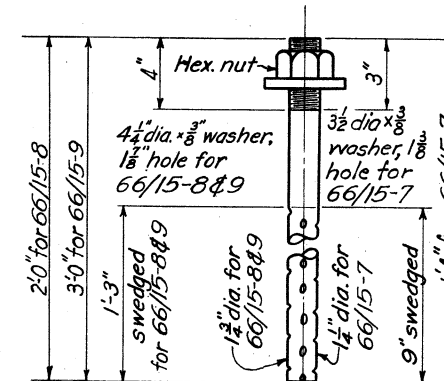


TAP BOLT
STRUCT. STEEL MARK 66/15-5
MAKE 120 WT. 1.33 LBS
SCALE: 6"=1'-0"

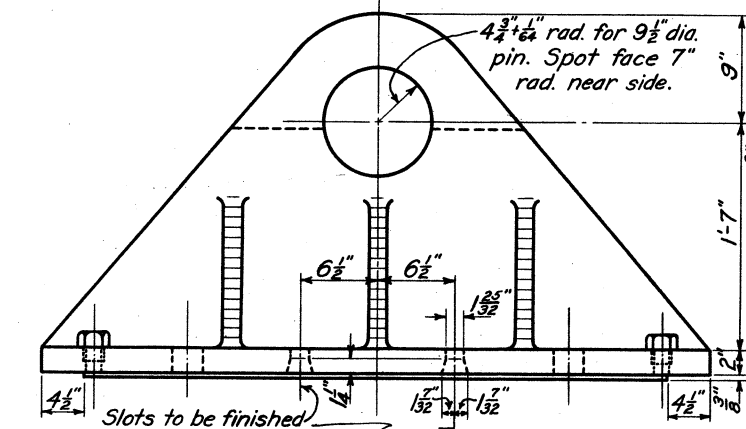
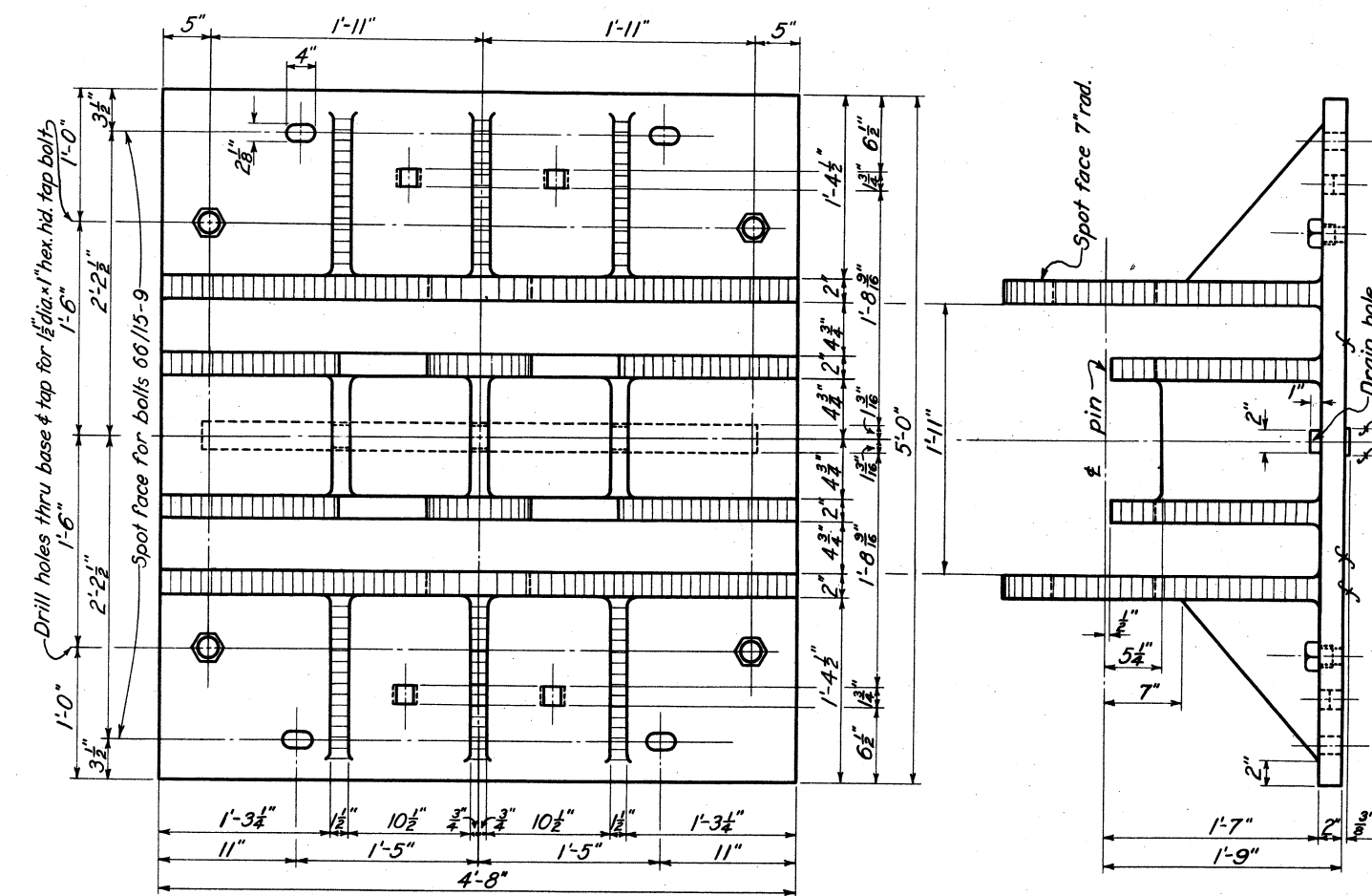


PIN

FORGED STEEL WITH RECESSED STEEL NUT			
MARK 66/15-6	FORGED STEEL	WT. 570	LBS
MAKE 12	STEEL NUTS	WT. 64	LBS



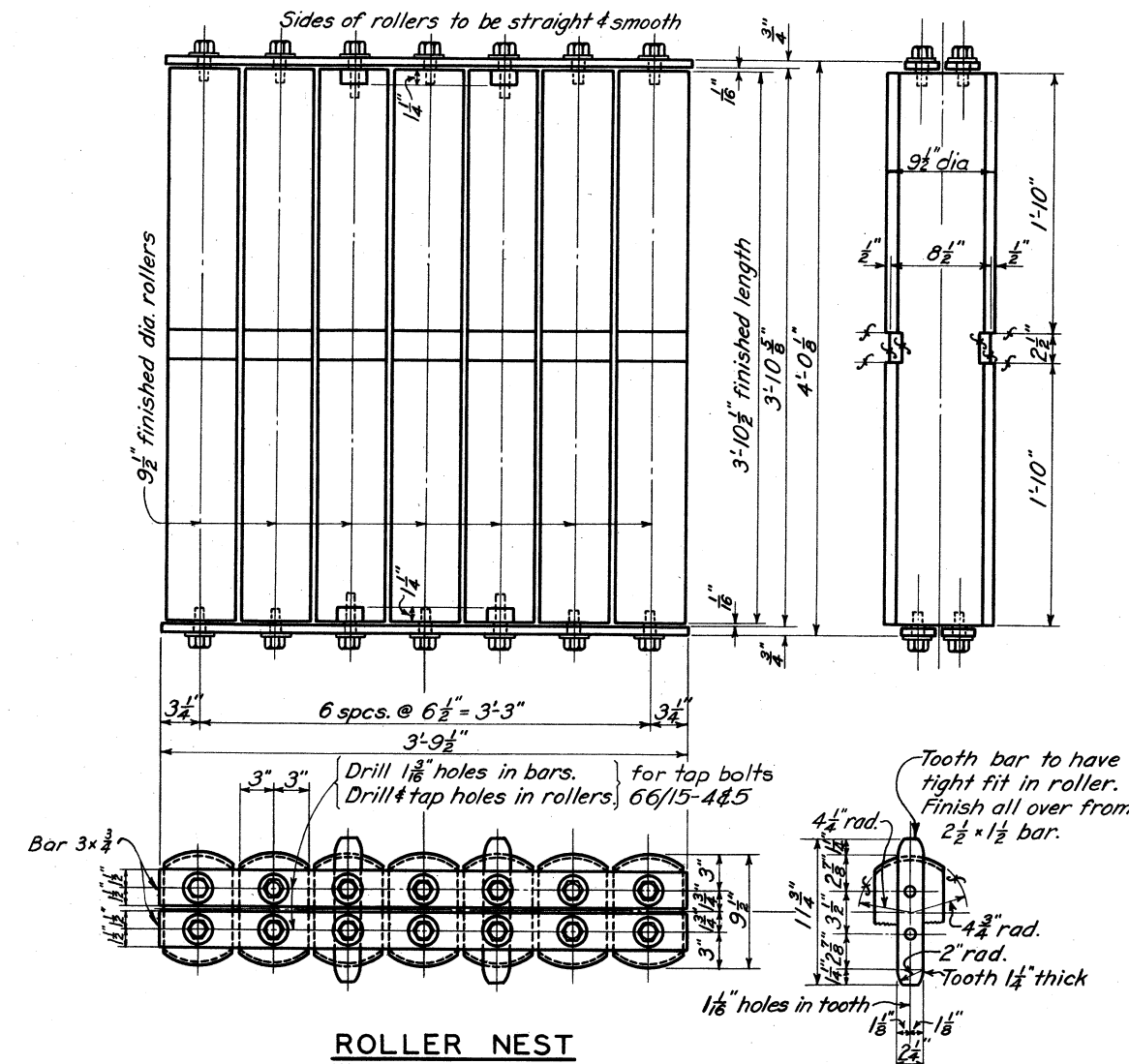
<u>ANCHOR BOLT</u>				
<u>STRUCTURAL STEEL</u>				
MARK 66/15-7	MAKE 96	WT. 7.5	LBS.	
MARK 66/15-8	MAKE 8	WT. 20.8	LBS.	
MARK 66/15-9	MAKE 40	WT. 29.0	LBS.	



ROLLER CASTING
CAST STEEL (GRADE B-1) MARK 66/15-11
MAKE 6 WT. 4070 LBS.

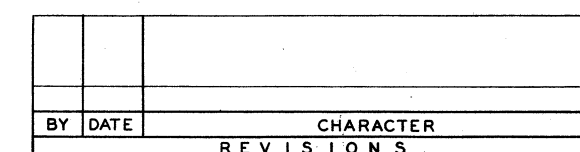
NOTES

All fillets on castings $\frac{3}{4}$ " radius.



ROLLER NEST

FORGED STEEL ROLLERS WITH STRUCTURAL STEEL BARS
MARK 66/15-10 FORGED STEEL WT. 4820 LBS.
MAKE 6 STRUCTURAL STEEL WT. 144 LBS.

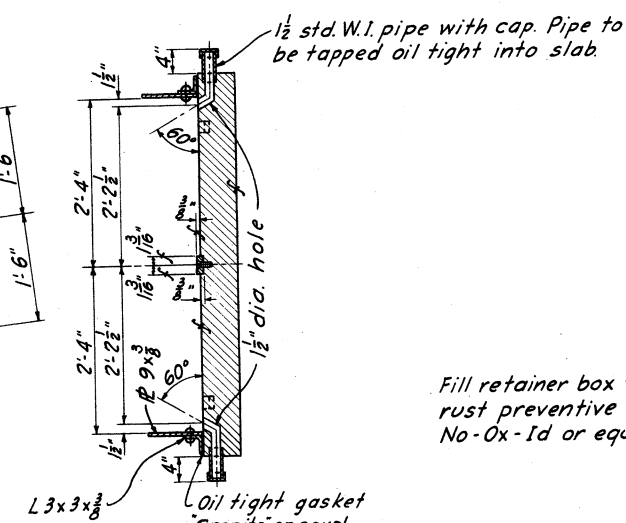


**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PENNA. R. R. BRIDGE OVER CHANNEL
CASTINGS**

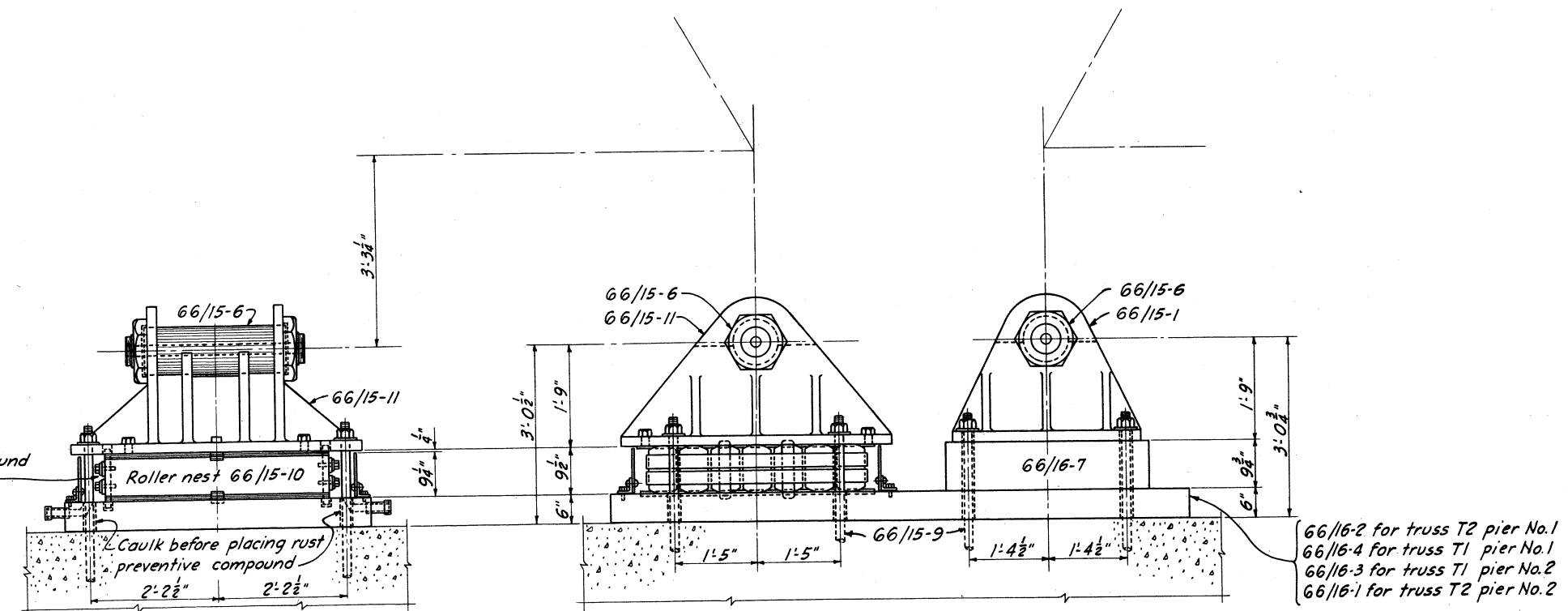
IN 147 SHEETS SHEET NO. 38 SCALE: $1\frac{1}{2}" = 1'-0"$

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: *Ray Parker* APPROVED: *St. Col.*
 PRINCIPAL ENGINEER LT. COL. CORPS OF ENGINEERS
 DRAWN BY H.S.M. TRANSMITTED WITH LETTER
 TRACED BY C.C.B.
 CHECKED BY H.U.B. FILE NO. 027i-PM-66/15 DATED

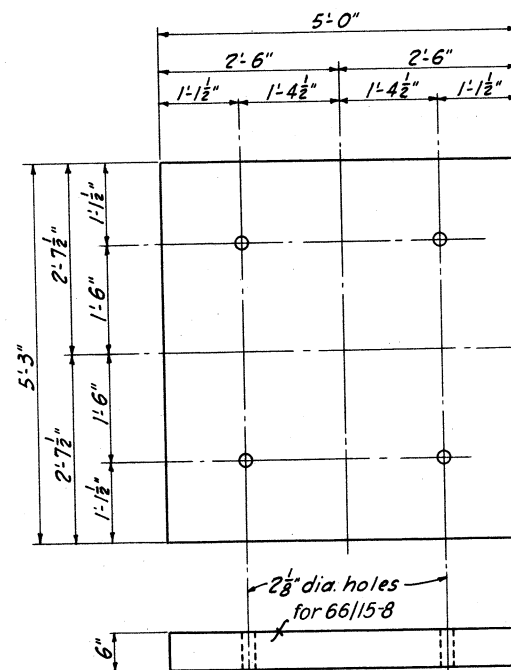


Fill retainer box with
rust preventive compound
No-Ox-Id or equal.

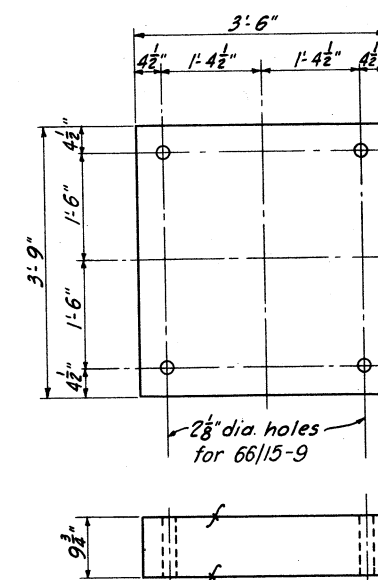


BEARING SLAB, ROLLER NEST AND CASTINGS SHOWN

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



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



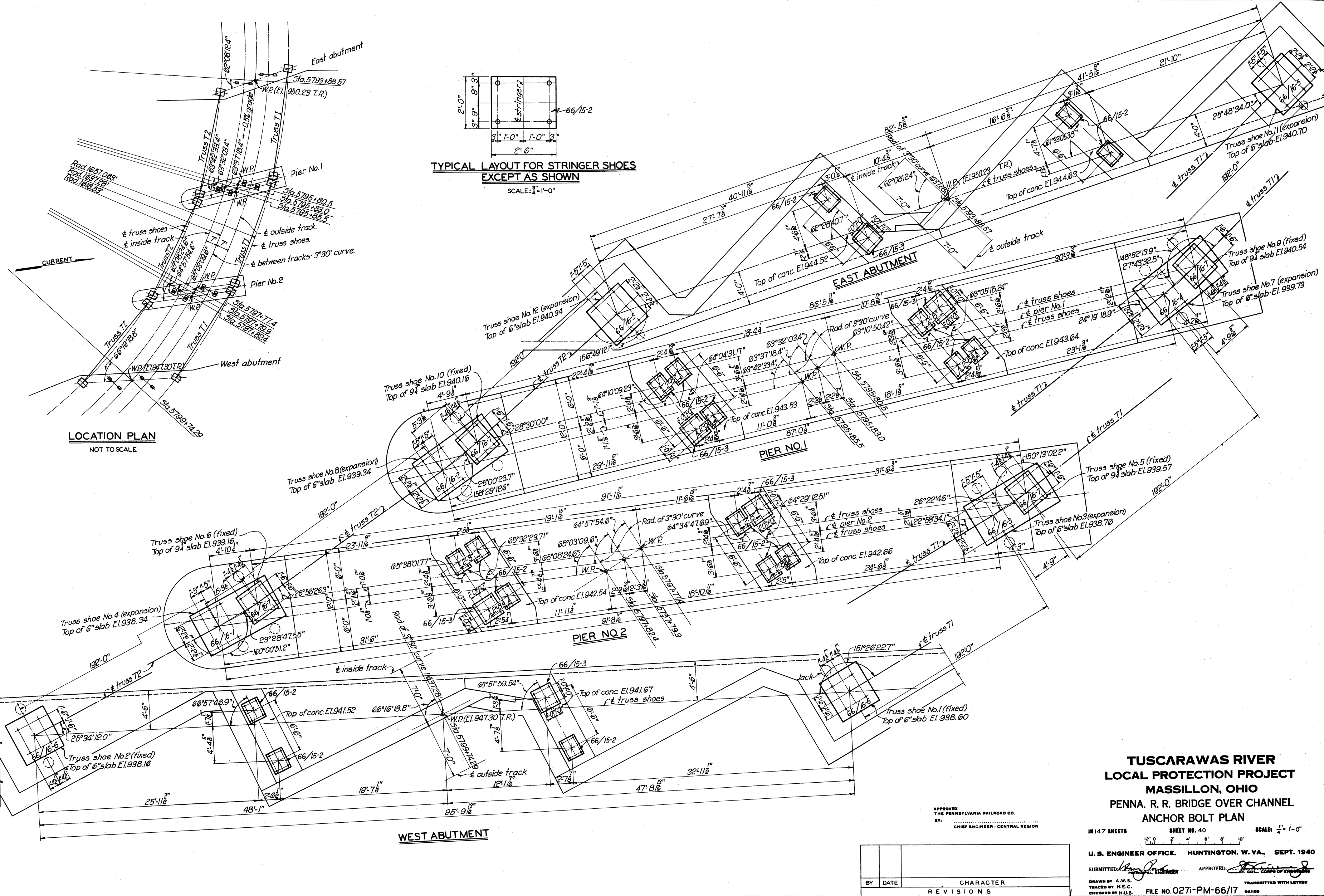
STRUCT. STEEL	MARK 66/16-7
MAKE 4	WT. 5190 LBS.

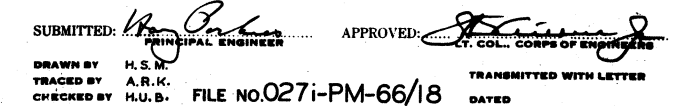
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PENNA. R. R. BRIDGE OVER CHANNEL.
BEARING ASSEMBLY & DETAILS**

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
 SPECIAL ENGINEER ST. COL. CORPS OF ENGINEERS

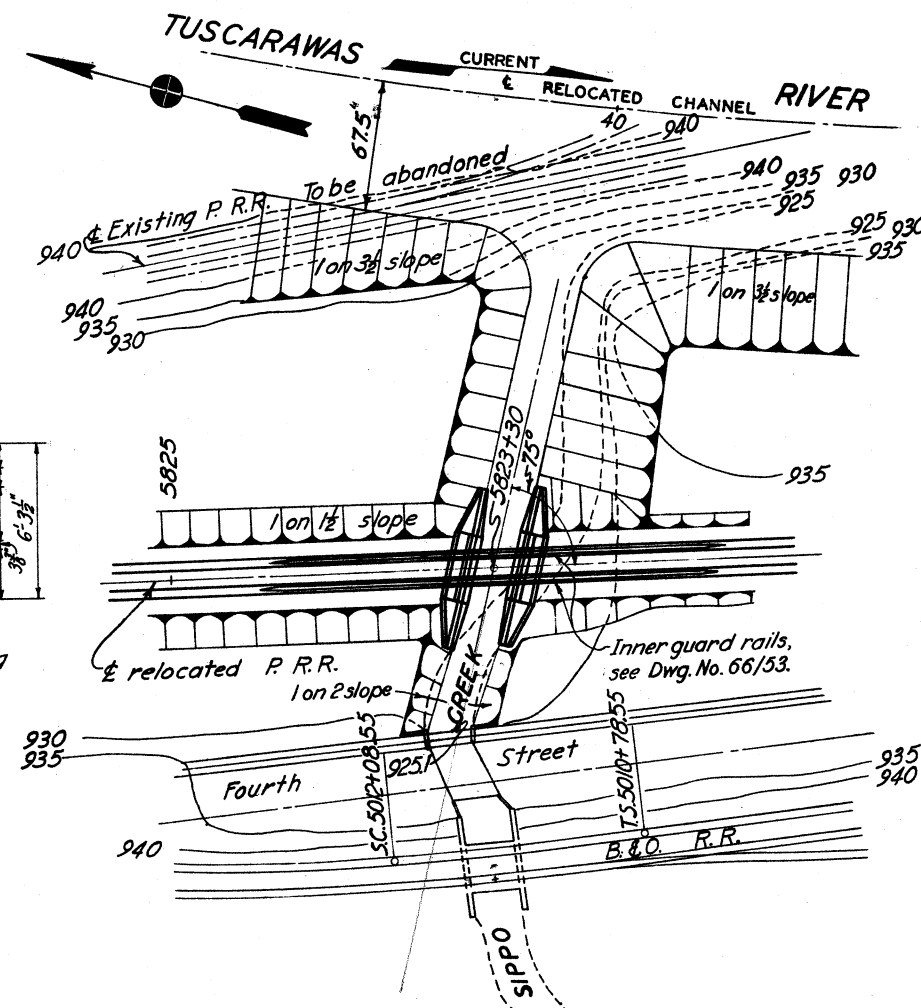
DRAWN BY S. B. TRANSMITTED WITH LETTER
 TRACED BY A. S.
 CHECKED BY H.U.S. FILE NO. 0271-PM-66/16 DATED

BY	DATE	CHARACTER
REVISIONS		



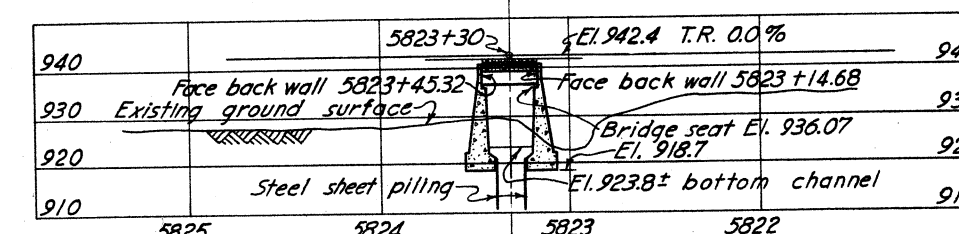


BY	DATE	CHARACTER
REVISIONS		

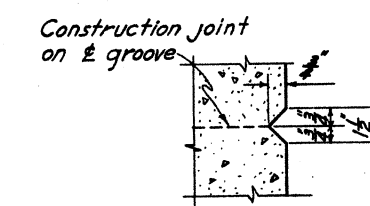


PLAN

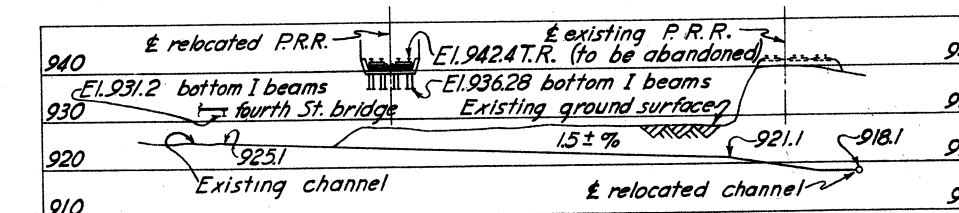
LOCATION PLAN



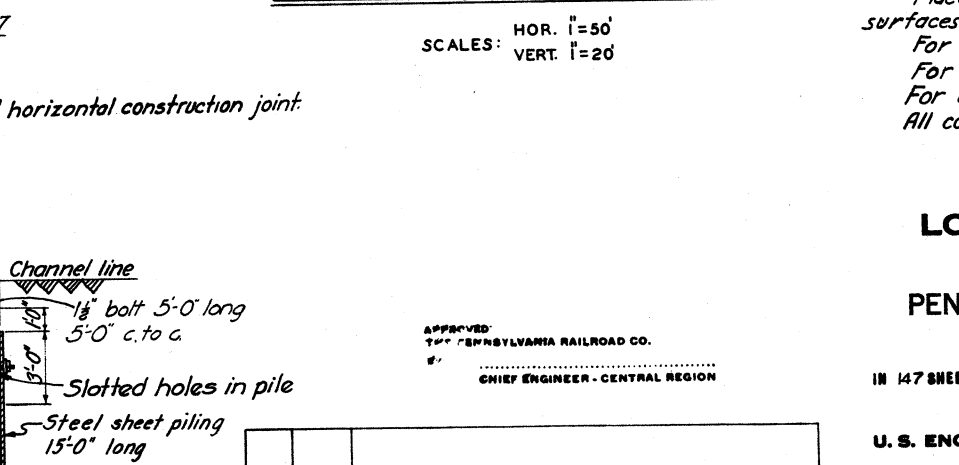
PROFILE ON £ P.R.R.



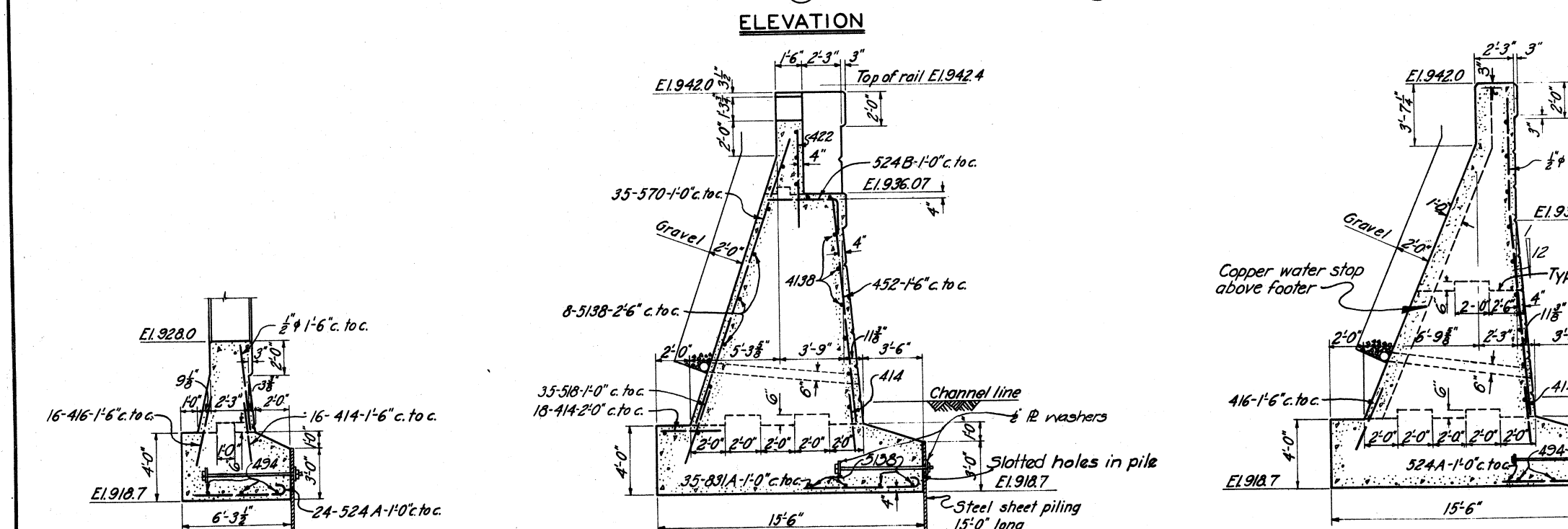
GROOVE DETAIL



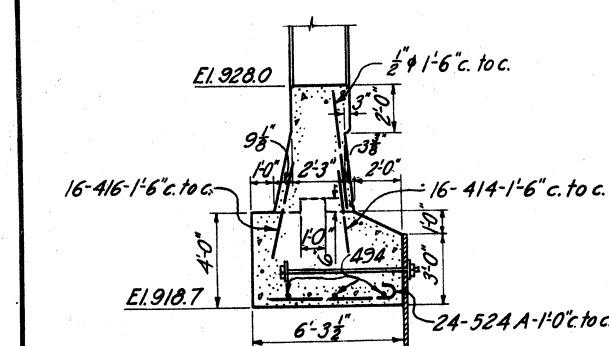
PROFILE ON & SIPPO CREEK



SECTION C-C



SECTION B-B



SECTION A-A

[illegible]

Reinforcing steel is for two abutments.

NOTES

For details of key in expansion joints see
Dwg. No. 66/2.
Chamfer all exposed edges 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. 10/3
For details of water stop see Dwg. No. 66/2
All concrete to be Class "B".

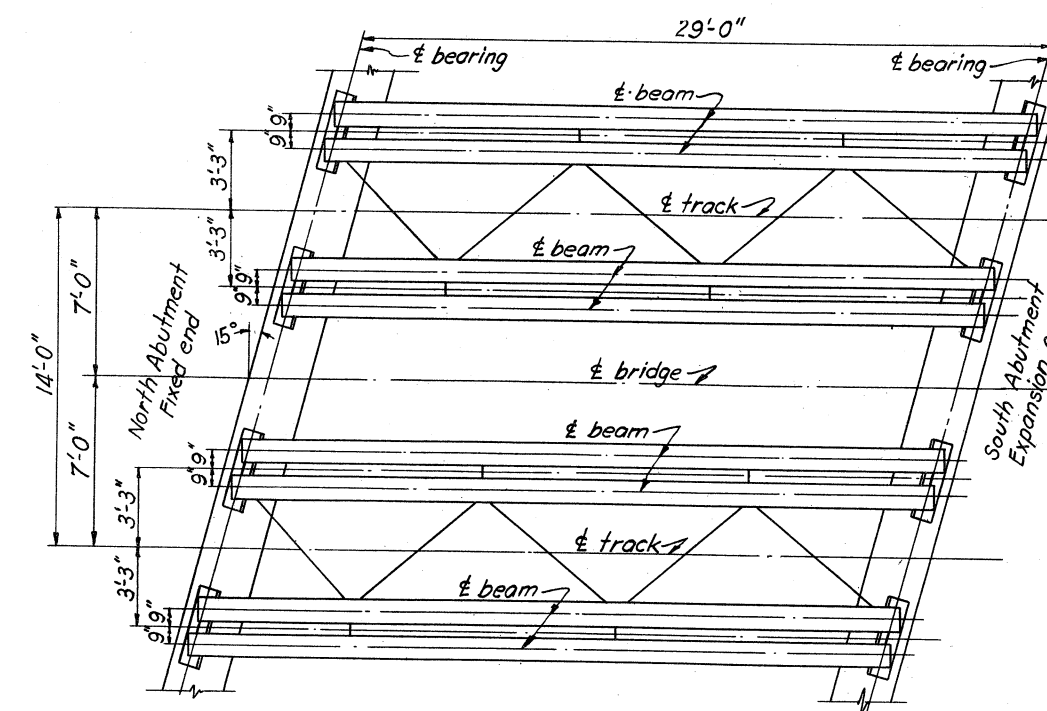
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PENNA. R. R. BRIDGE OVER SIPPO CREEK
ABUTMENTS**

IN 147 SHEETS SHEET NO. 42 SCALE: $\frac{1}{4}'' = 1'-0''$

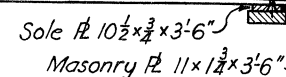
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
 PRINCIPAL ENGINEER ST. COL. CORPS OF ENGINEERS

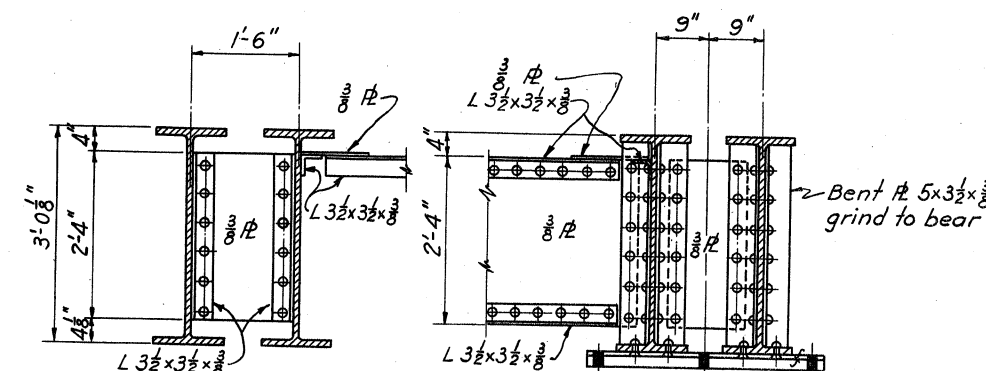
DRAWN BY R.M.C. TRANSMITTED WITH LETTER
 TRACED BY W.E.C.
 CHECKED BY F.K. FILE NO 0271-PM-66/19 DATED



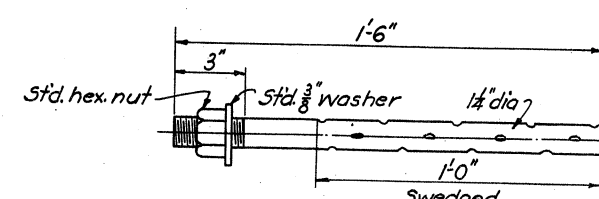
SCALE: $\frac{1}{4}'' = 1'-0''$



SECTION C-C



SECTION A-A



ANCHOR BOLT

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

DESIGN DATA

<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 = $\frac{1646,000 \times 12}{18000} = 1097^{+3}$	
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

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

BY	DATE	CHARACTER
		REVISIONS

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PENNA. R. R. BRIDGE OVER SIPPO CREEK
DESIGN & DETAILS**

IN 147 SHEETS SHEET NO. 43 SCALE: $\frac{3}{4}" = 1' - 0"$

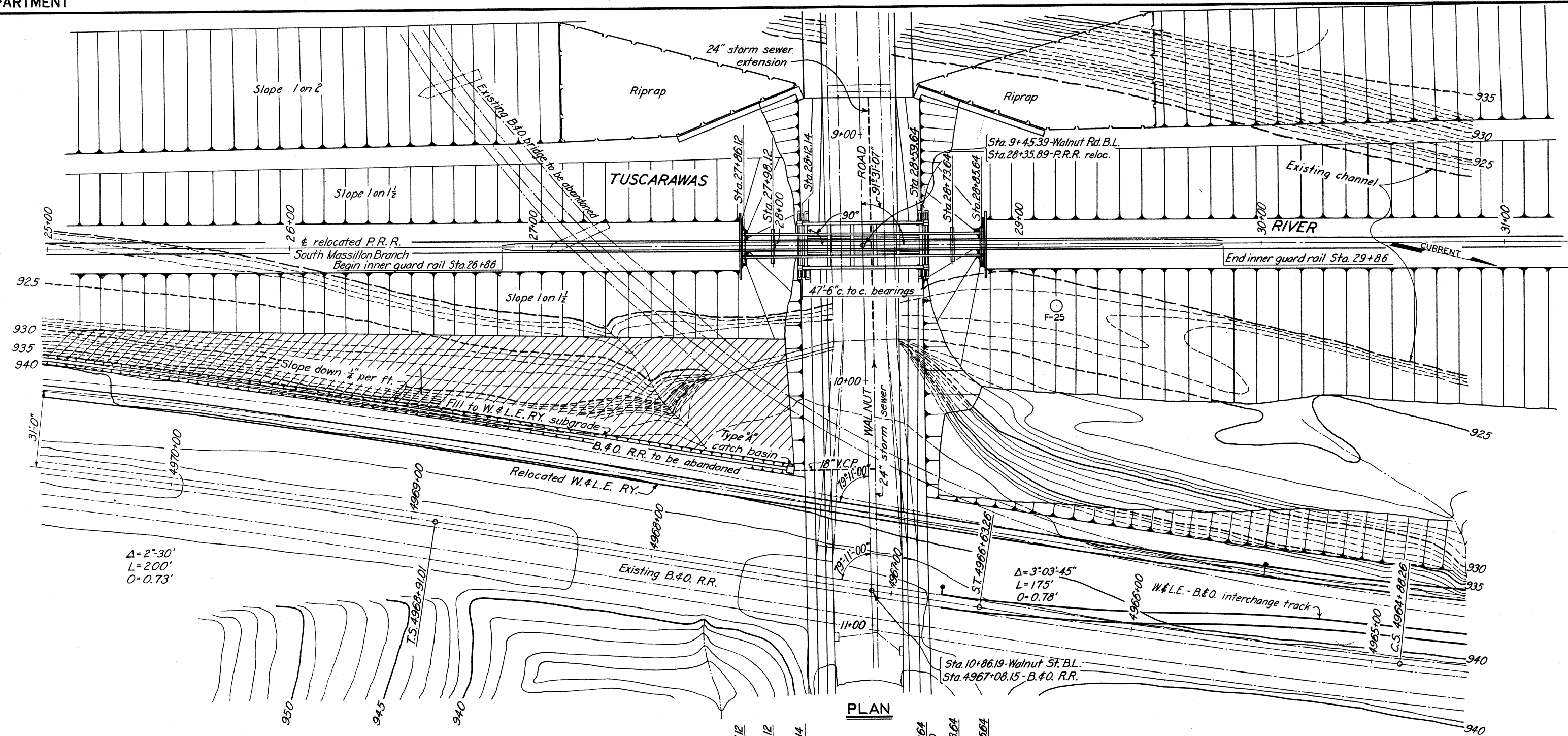
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA. SEPT. 1940

SUBMITTED: Wm. Corliss APPROVED: J. E. ...

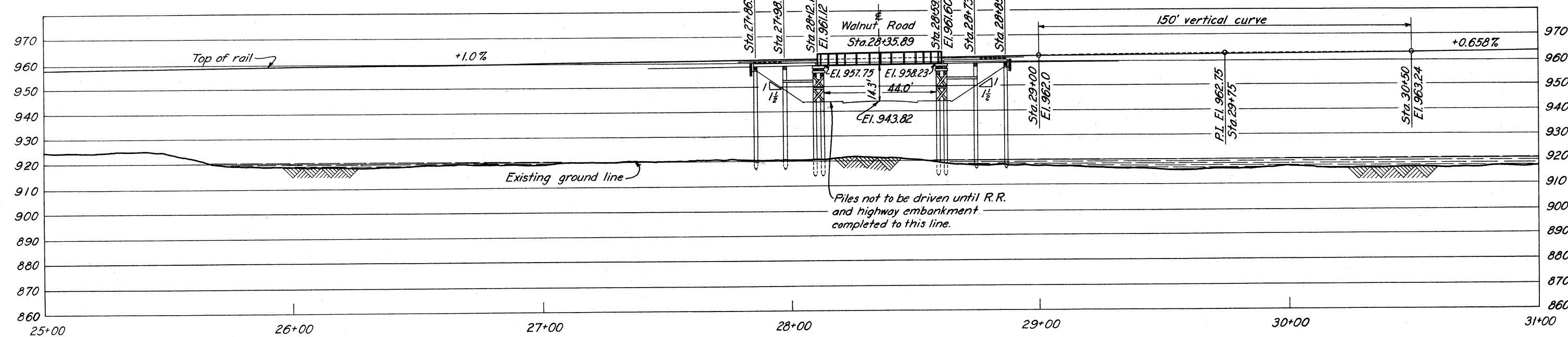
DRAWN BY C. D. H.
 TRACED BY C. D. H.
 CHECKED BY H. U. B.

FILE NO. 027i-PM-66/20

TRANSMITTED WITH LETTER
 DATED



PLAN



PROFILE

NOTES

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

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

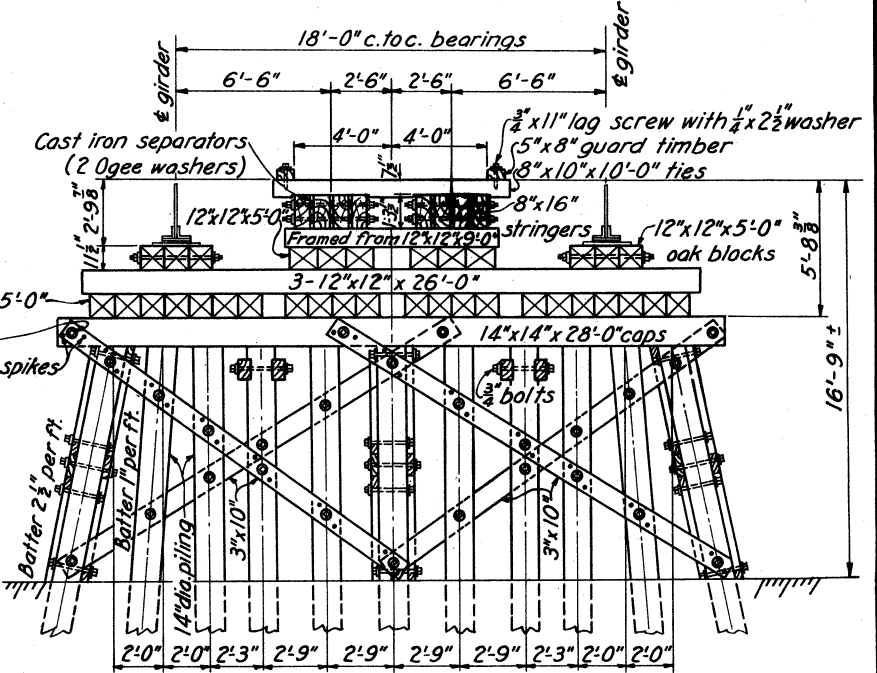
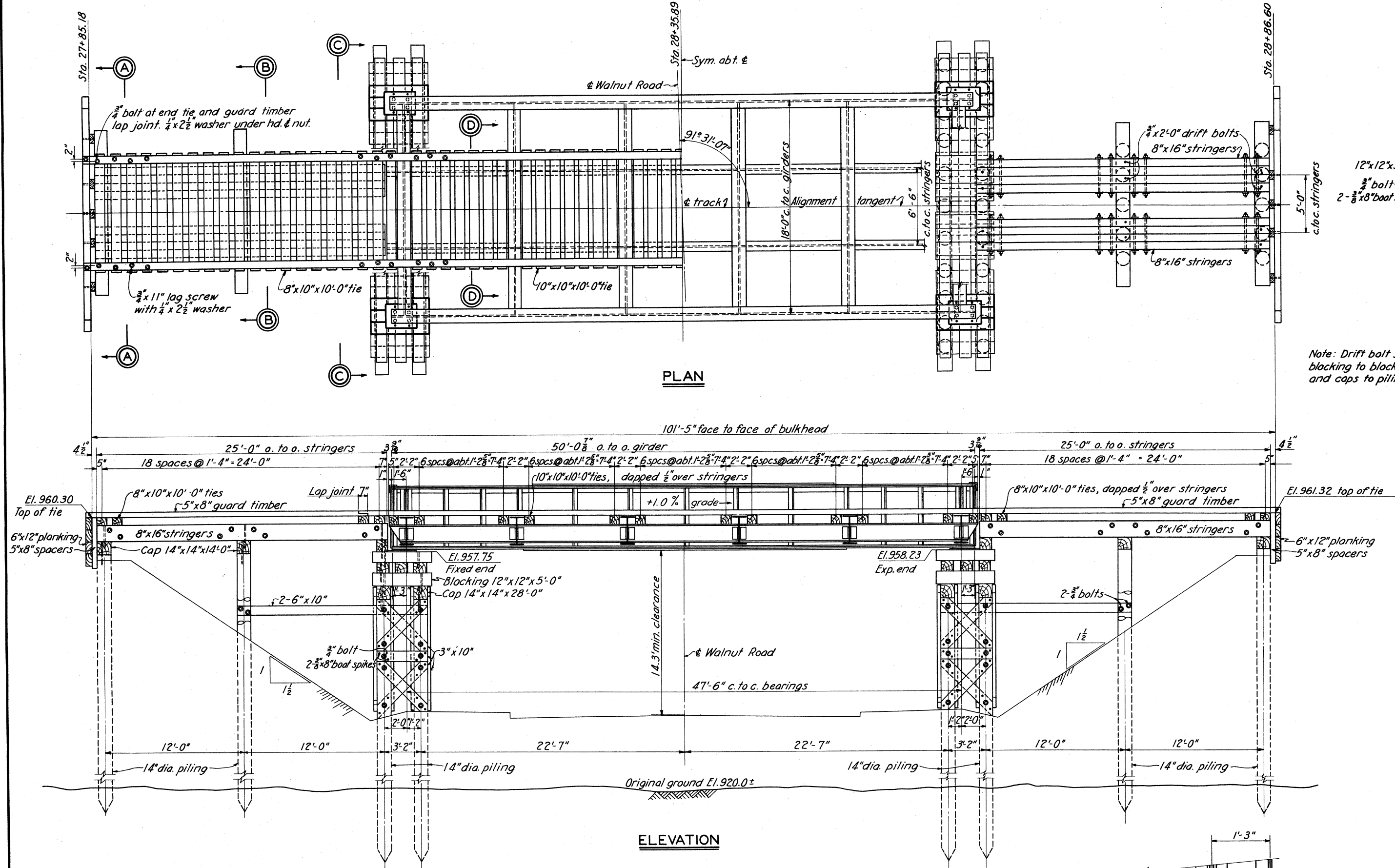
APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION

IN 147 SHEETS SHEET NO. 45 SCALE: 1" = 20'

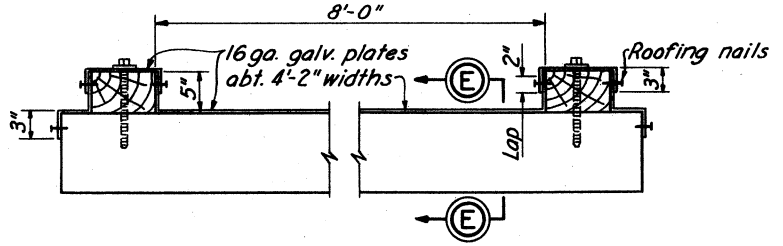
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
DRAWN BY: A. W. M. TRANSMITTED WITH LETTERS
CHECKED BY: C. C. B. FILE NO. 027i-PM-66/22 DATED

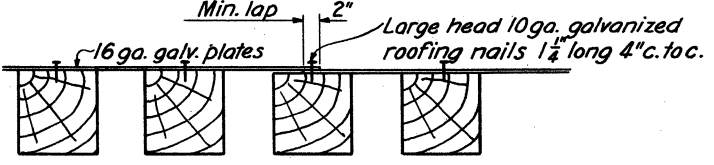
BY	DATE	CHARACTER
		REVISIONS



Note: Drift bolt stringers to blocking, blocking to blocking, blocking to caps and caps to piling with 3/4" drift bolts.



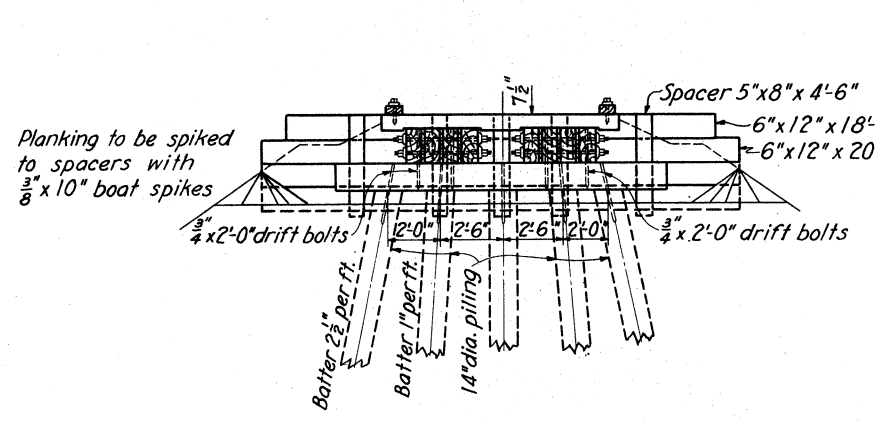
SCALE: 1"=1'-0"



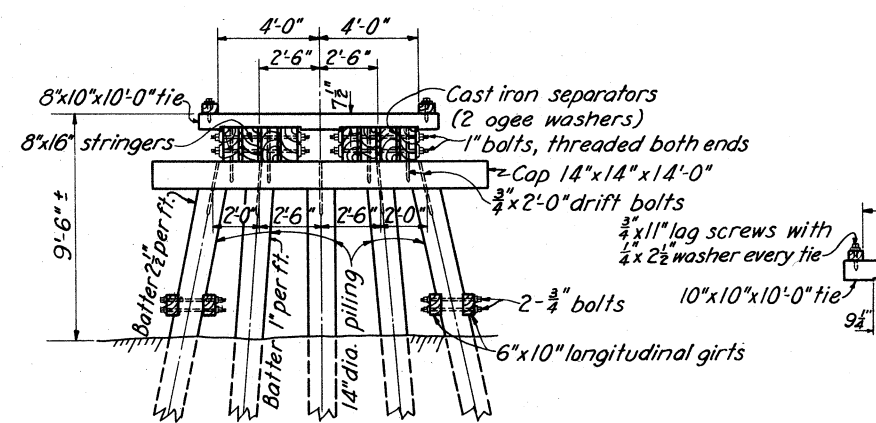
SCALE: 1"=1'-0"

NOTES

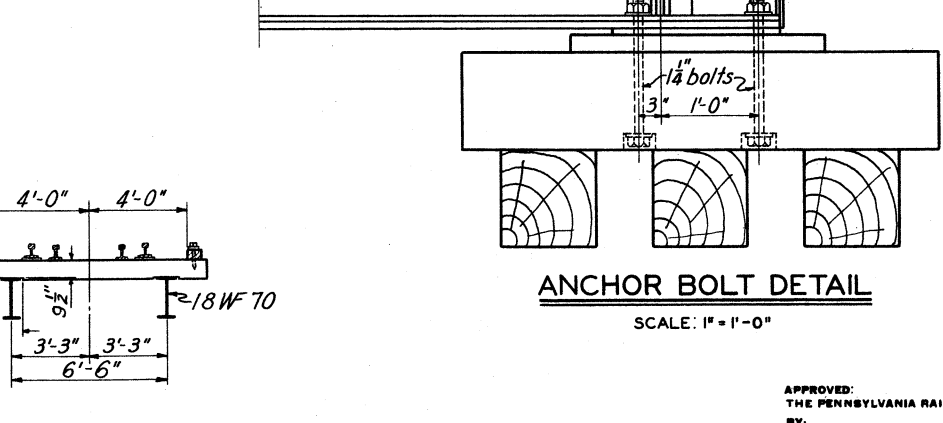
Minimum pile penetration to be 20 feet and each pile to be driven to develop a bearing capacity of at least 20 tons.
Standard Ogee washers shall be used under bolt heads and nuts bearing on timber.
For details of steel girder span, see Dwg. No. 66/24.
16 gage galvanized metal deck full length of bridge.



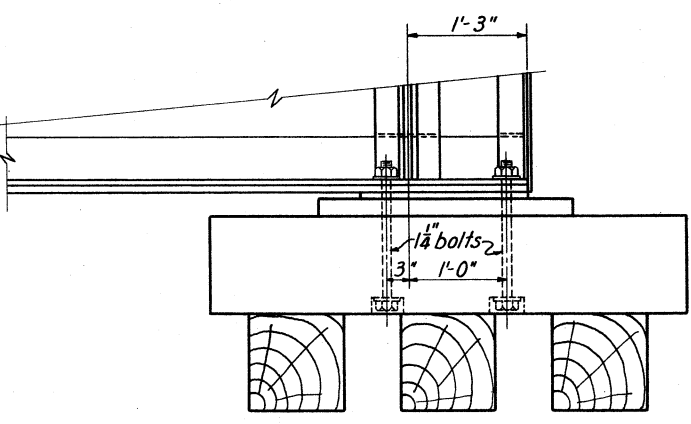
SECTION A-A



SECTION B-B



SECTION D-D



SCALE: 1"=1'-0"

APPROVED: THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION

BY	DATE	CHARACTER

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

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

IN 147 SHEETS SHEET NO. 46 SCALE: 1/4"=1'-0"

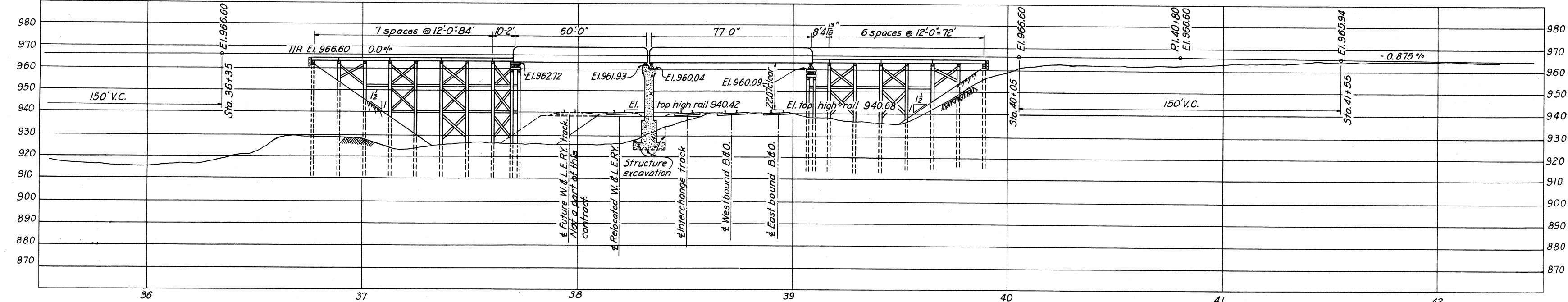
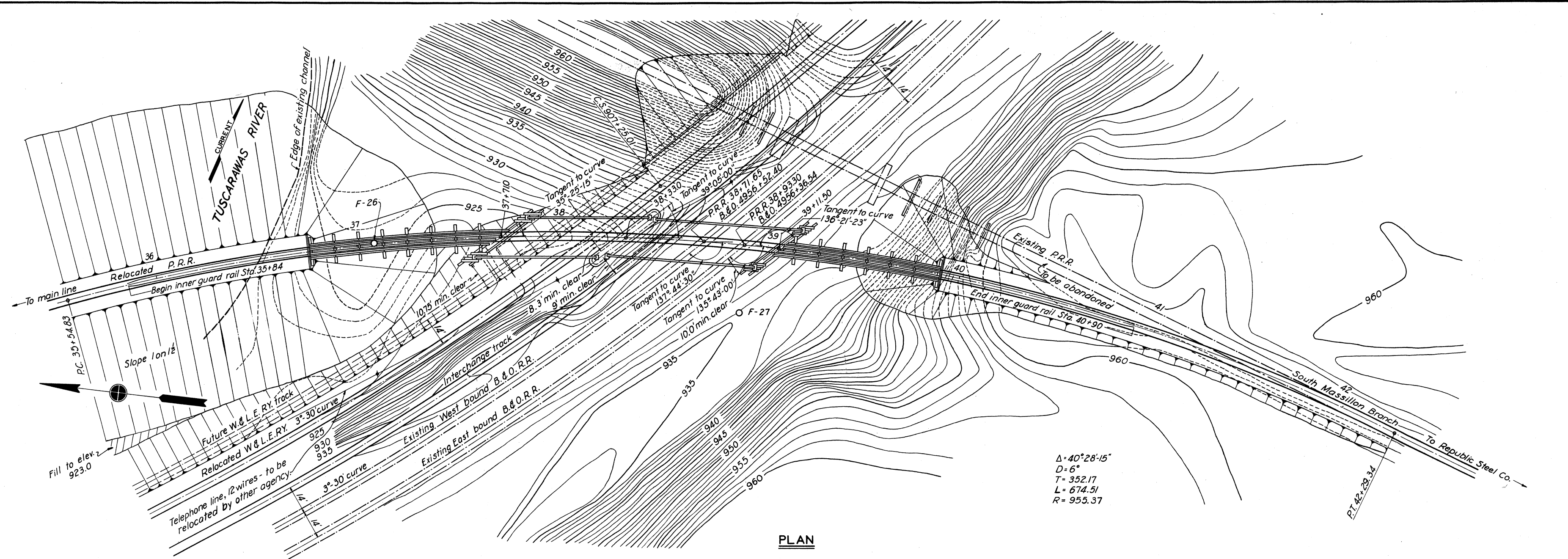
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED: [Signature] APPROVED: [Signature]
TRANSMITTED WITH LETTER

DRAWN BY: S.B. CHECKED BY: J.M.S. FILE NO. 0271-PM-66/23 DATED

DRAWN BY A. J. M. TRANSMITTED WITH LETTER
 TRACED BY D. R. J.
 CHECKED BY HUB-ARN FILE No. 027i-PM-66/24 DATED

BY	DATE	CHARACTER
		REVISIONS



NOTES

For log of borings F-26 & F-27 see Dwg. No. 10/3

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY: _____ CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY: _____ CHIEF ENGINEER - CENTRAL REGION

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: _____ SPECIAL ENGINEER

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

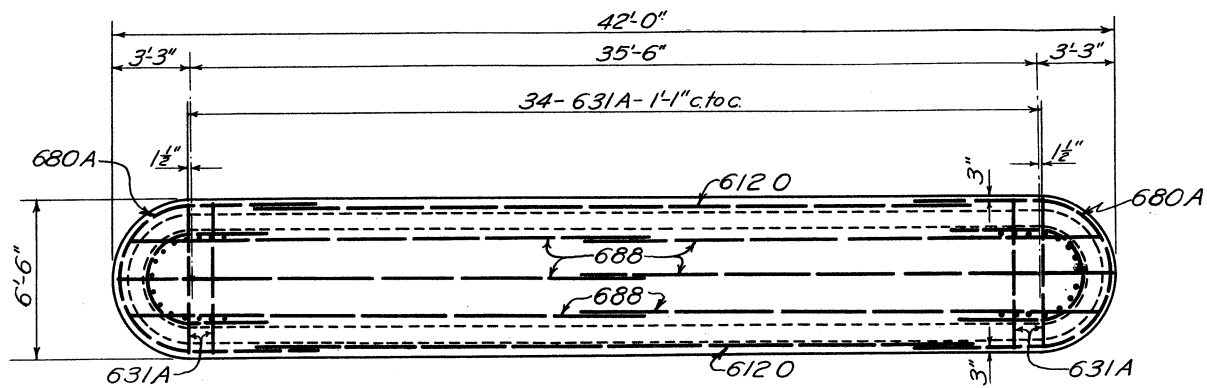
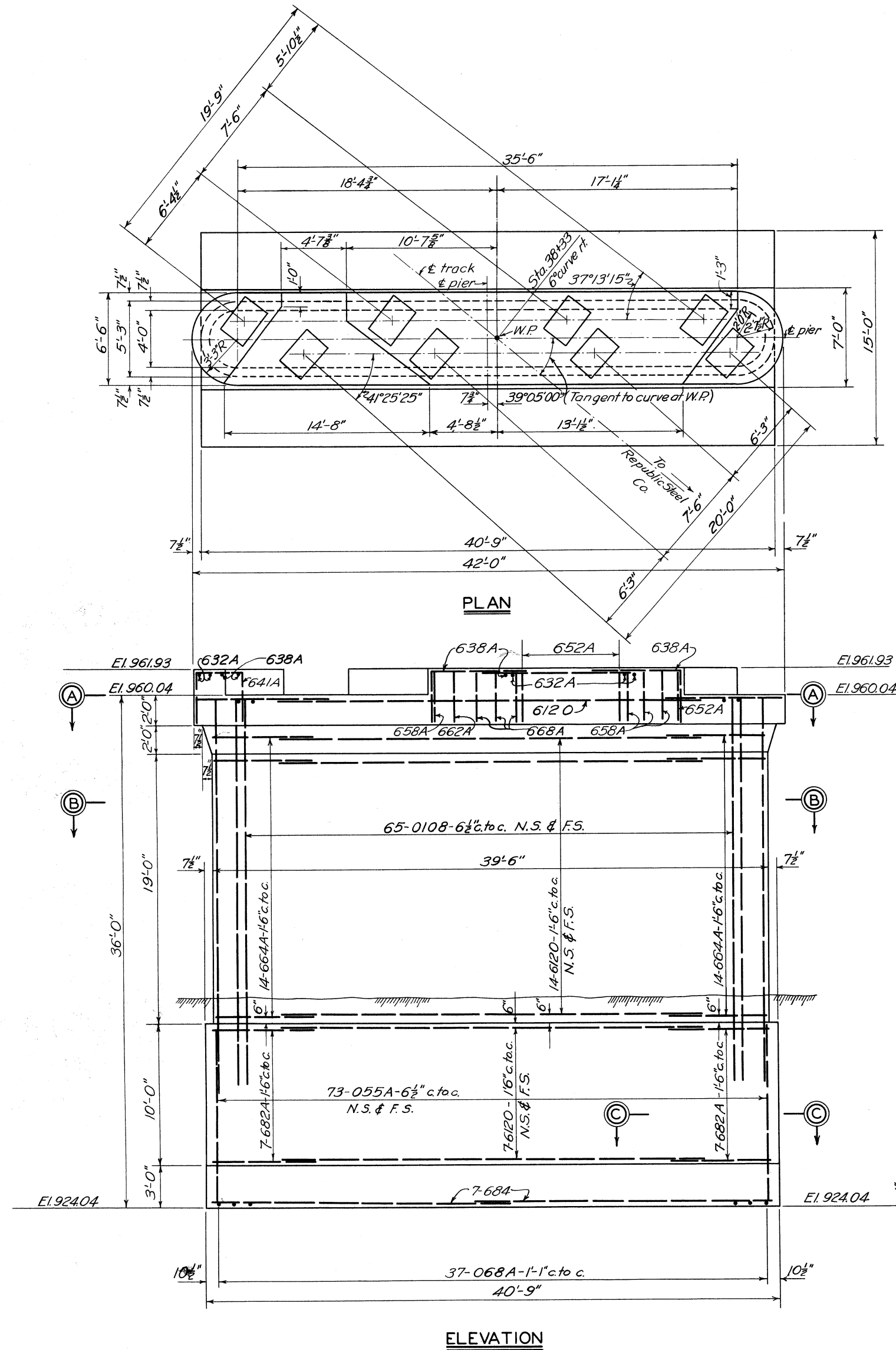
11/47 SHEETS SHEET NO. 48 SCALE: HOR. 1"=20' VERT. 1"=20'

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

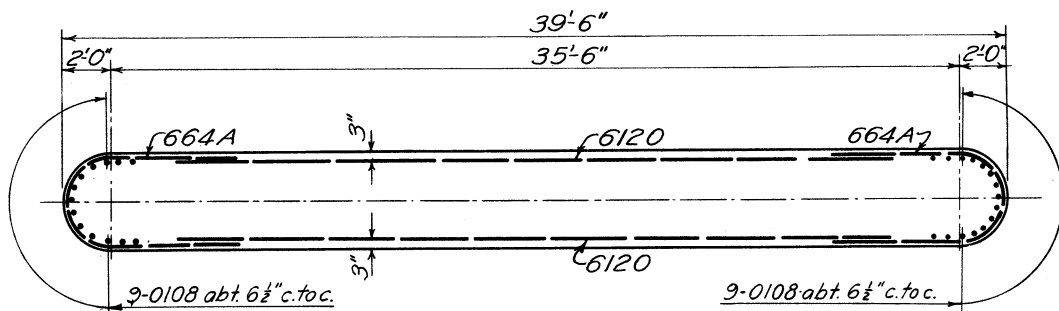
SUBMITTED: _____ APPROVED: _____
DRAWN BY: W. B. S. TRANSMITTED WITH LETTER
CHECKED BY: D. G. J. FILE NO. 0271-PM-66/25 DATED

BY	DATE	CHARACTER
		REVISIONS

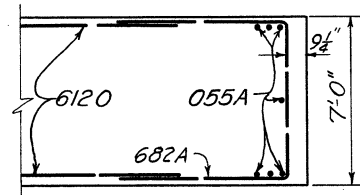
REINFORCING SCHEDULE						
MARK	SIZE	LGTH.	BENDING	DIAGRAM	NO.	TOTAL WT.
631A	3/4"	7'-9"			34	1164
632A	3/4"	8'-0"			5	1202
638A	3/4"	9'-6"			17	1427
641A	3/4"	10'-3"			5	1540
648	3/4"	12'-0"			2	1802
652A	3/4"	13'-0"			9	1953
658A	3/4"	14'-6"			4	2178
662A	3/4"	15'-6"			1	2328
664	3/4"	16'-0"			2	2403
664A	3/4"	16'-0"			28	2403
668A	3/4"	17'-0"			3	2553
680	3/4"	20'-0"			3	3004
680A	3/4"	20'-0"			2	3004
682A	3/4"	20'-6"			14	3079
684	3/4"	21'-0"			14	3154
688	3/4"	22'-0"			6	3304
6120	3/4"	30'-0"			44	4506
055A	1 1/4"	13'-9"			148	7305
068A	1 1/4"	17'-0"			37	9032
0108	1 1/4"	27'-0"			148	14345
TOTAL					40484	



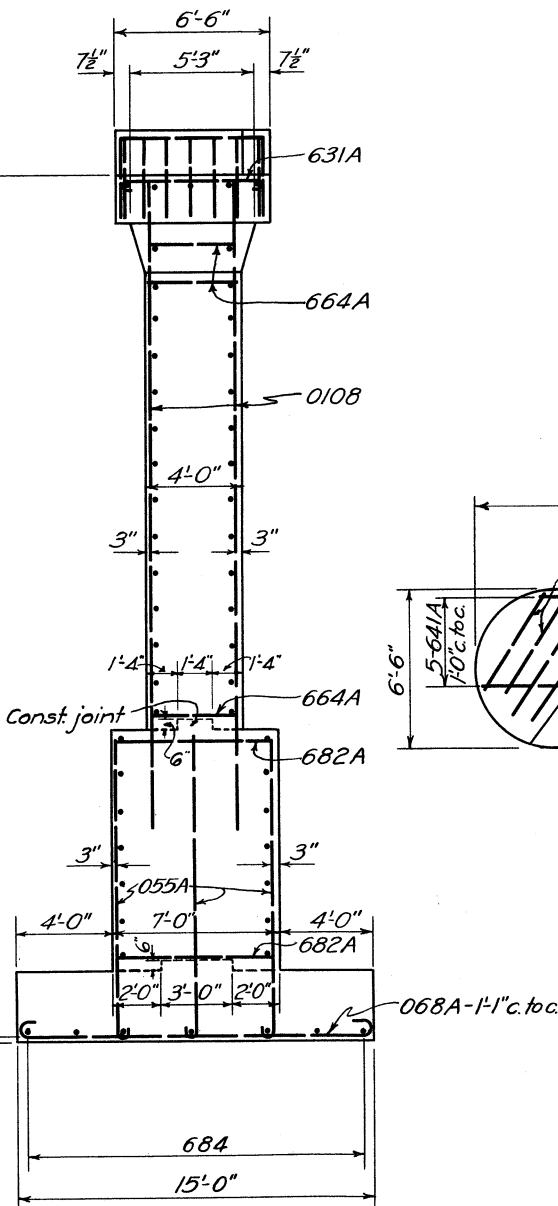
SECTION A-A



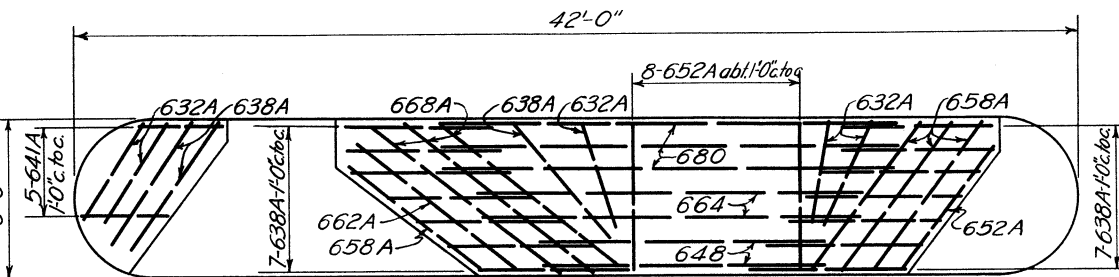
SECTION B-B



SECTION C-C



END VIEW



PLAN OF TOP

NOTES

Chamfer all exposed edges 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. 66/61.

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

IN 147 SHEETS SHEET NO. 49 SCALE: 1/4" = 1'-0"
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940
SUBMITTED: [Signature] APPROVED: [Signature]
DRAWN BY: R. H. H. TRANSMITTED WITH LETTERS
TRACED BY: E. S. H.
CHECKED BY: E. K. FILE NO. 0271-PM-66/26 DATED

BY	DATE	CHARACTER
		REVISIONS



APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY:
SPECIAL ENGINEER

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E.
PLAN & ELEVATION**

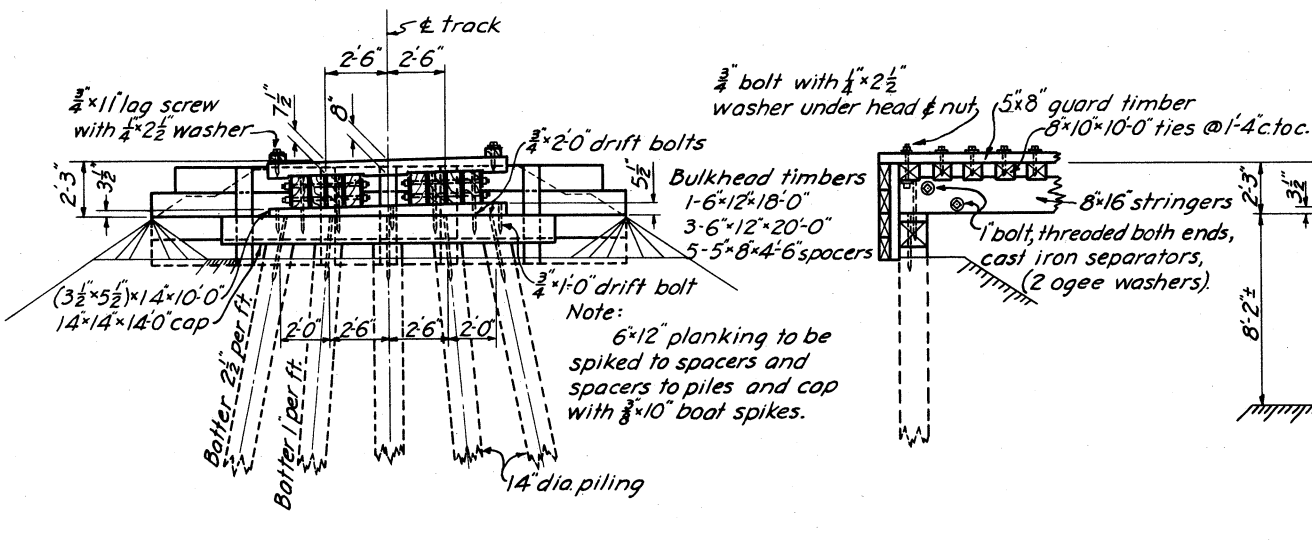
IN 147 SHEETS SHEET NO. 50 SCALE: $\frac{1}{4}" = 1'-0"$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: *W. J. Jordan*..... APPROVED: *[Signature]*.....
PRINCIPAL ENGINEER ST. COL. CORPS OF ENGINEERS

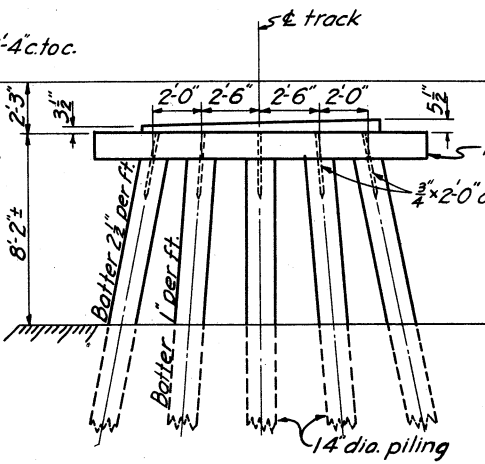
DRAWN BY S.B. TRANSMITTED WITH LETTER
TRACED BY H.S.M.
CHECKED BY H.U.B. FILE NO. 0271-PM-66/27 DATED

BY	DATE	CHARACTER
REVISIONS		

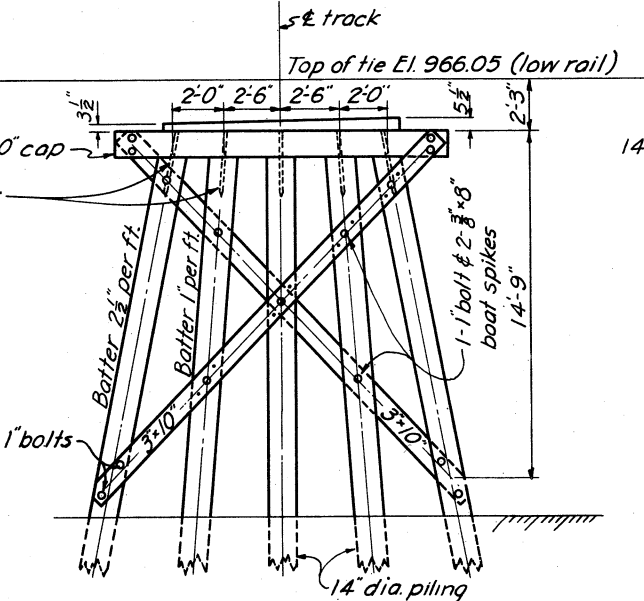


BENTS NO'S. 1 & 19

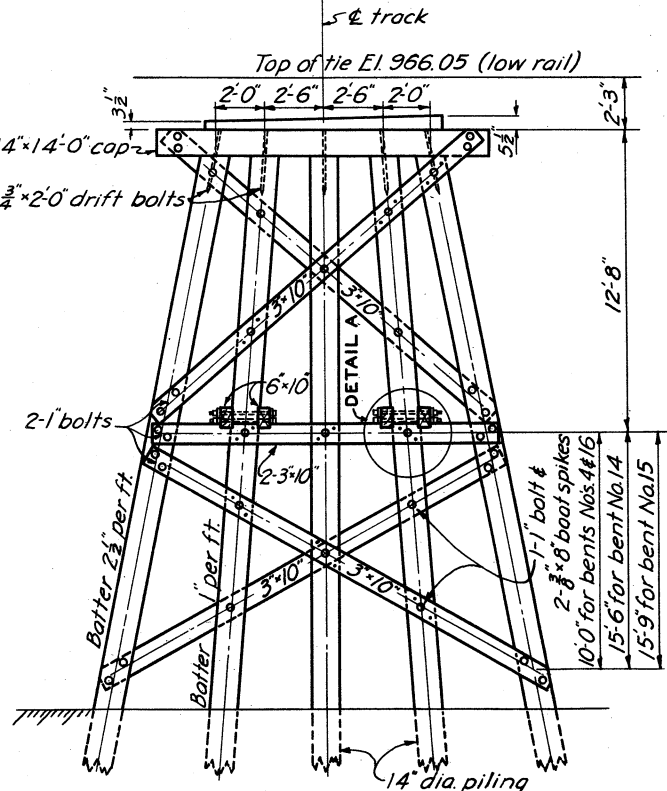
END VIEW BENTS NO'S. 1 & 19



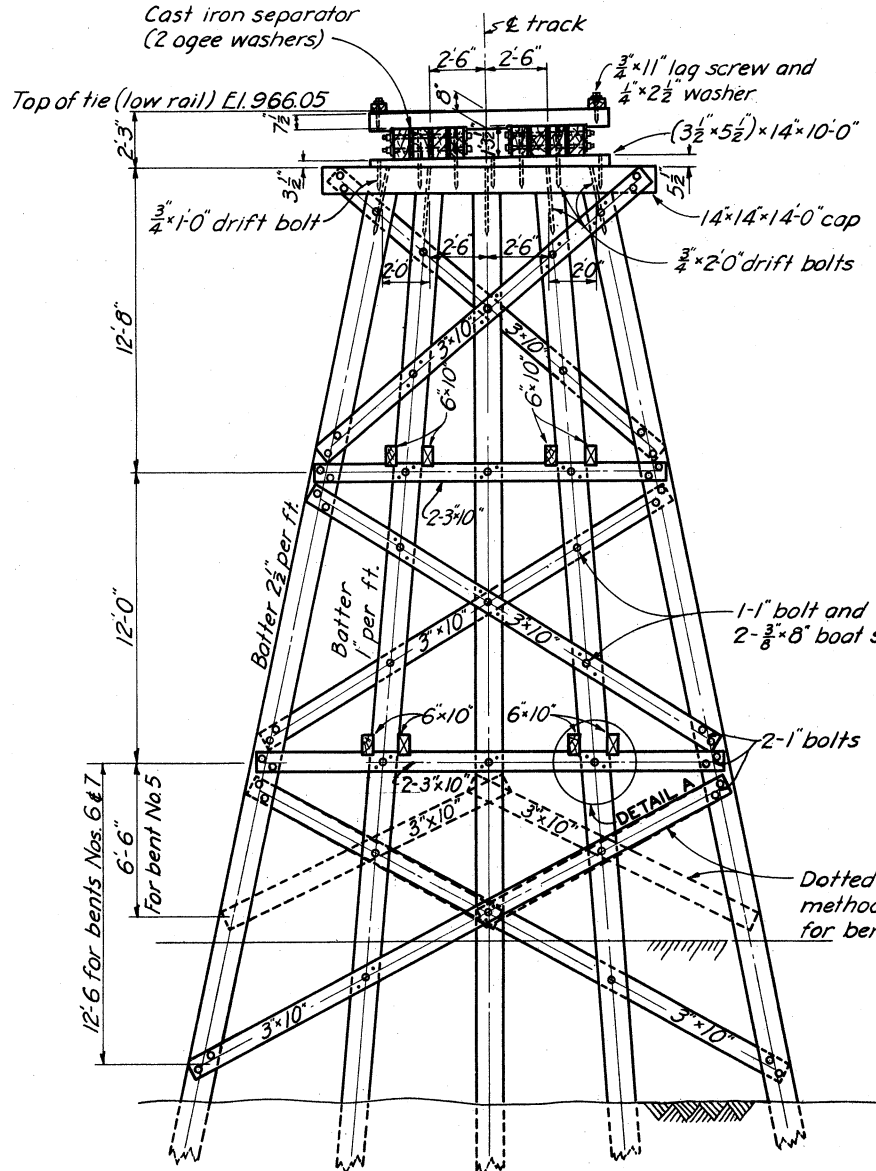
BENTS NO'S. 2 & 18



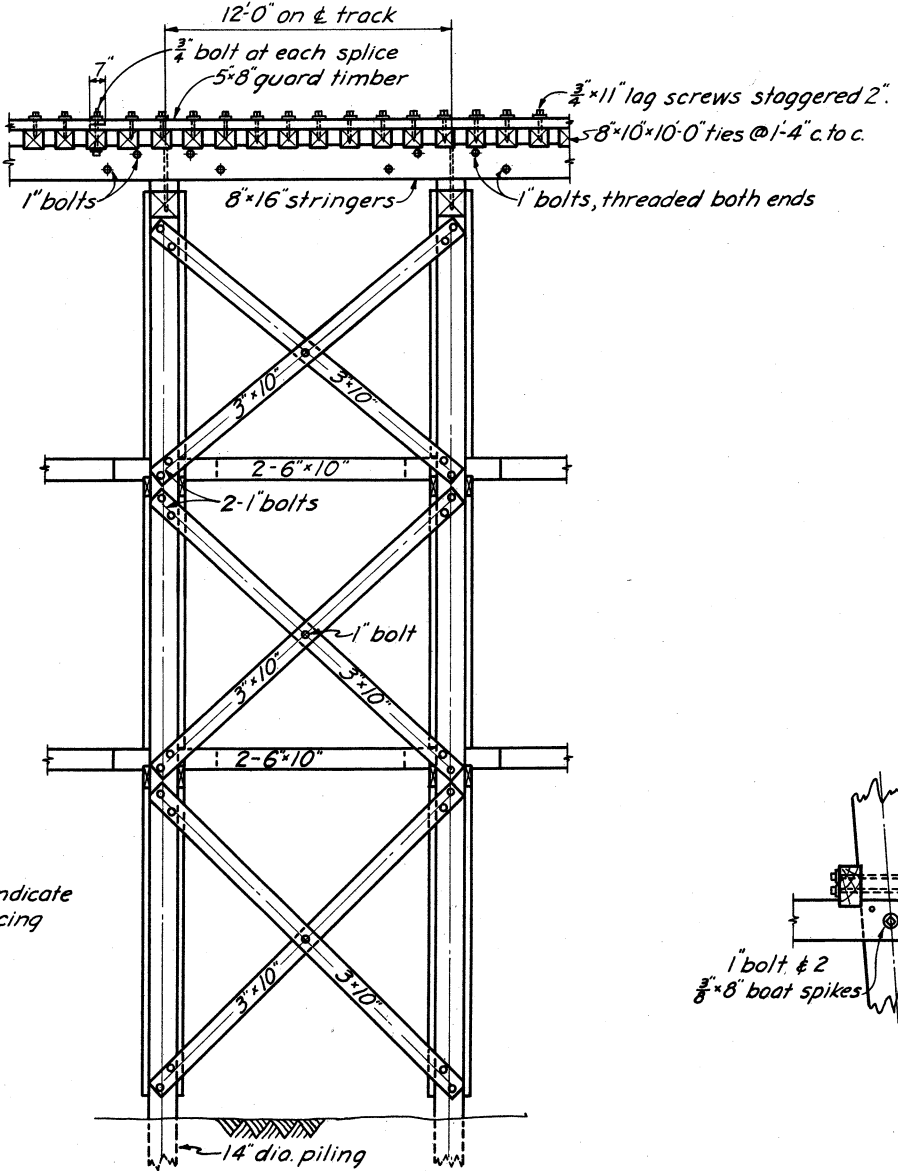
BENTS NO'S. 3 & 17



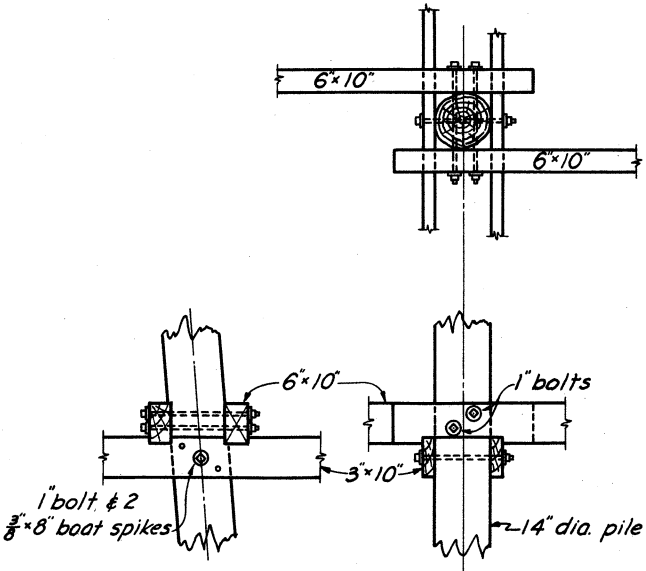
BENTS NO'S. 4-14-15 & 16



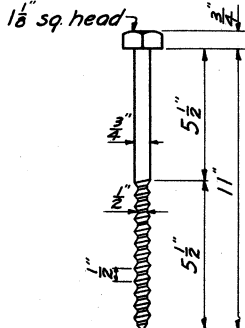
BENTS NO'S. 5-6 & 7



ELEVATION



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



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

NOTES

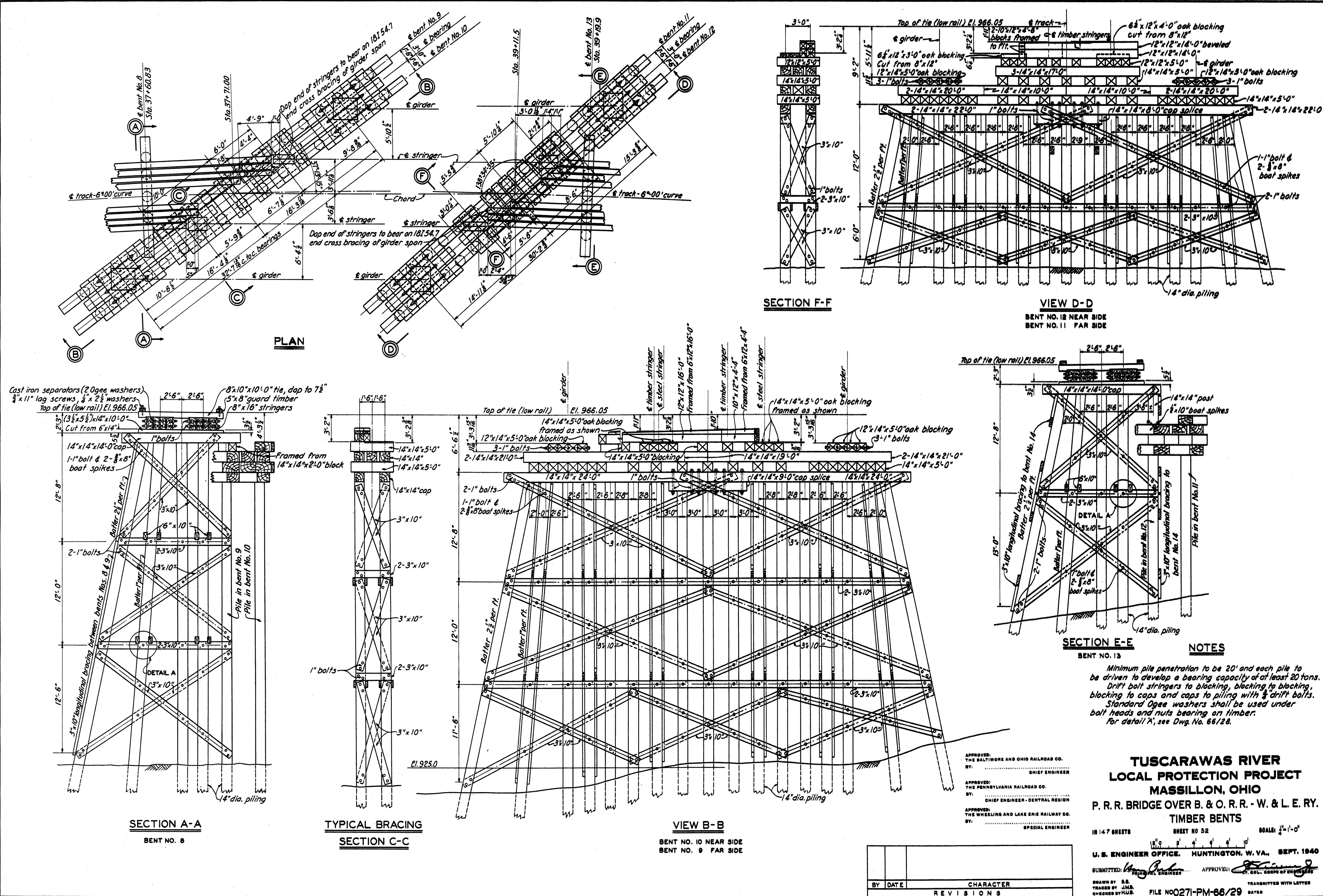
Minimum pile penetration to be 20 feet and each pile to be driven to develop a bearing capacity of at least 20 tons.
Standard Ogee washers shall be used under bolt heads and nuts bearing on timber except as noted.
Holes in ties for lag screw shall be bored 3/4" dia.
Super-elevation shall be 1".

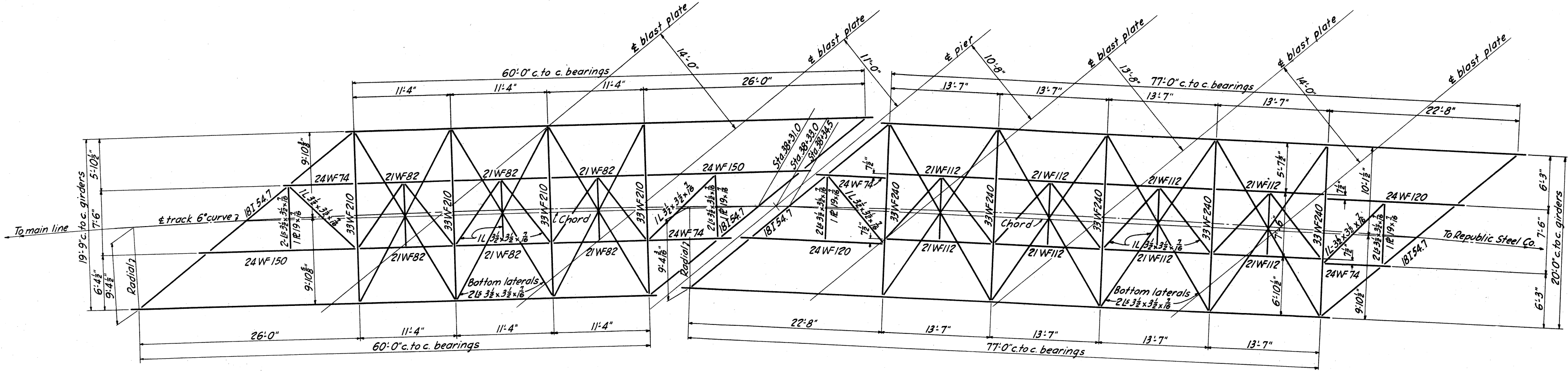
APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY: _____ CHIEF ENGINEER
APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY: _____ CHIEF ENGINEER - CENTRAL REGION
APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: _____ SPECIAL ENGINEER

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

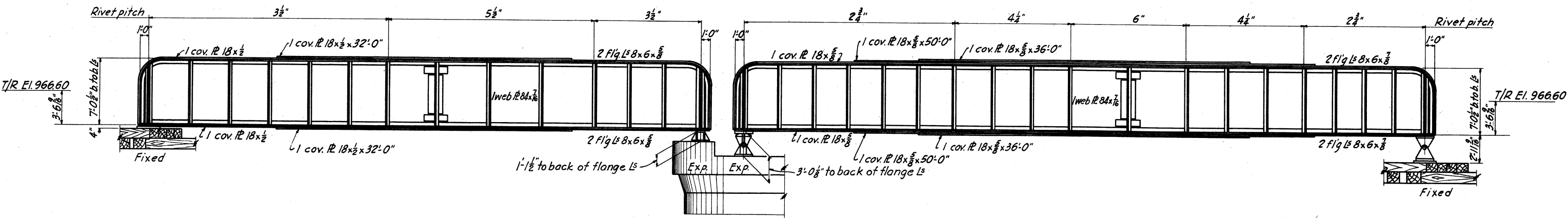
IN 147 SHEETS SHEET NO. 51 SCALE: 1/4" = 1'-0"
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940
SUBMITTED: _____ APPROVED: _____
DRAWN BY: S.B. TRACED BY: J.E.M.L. CHECKED BY: H.U.B. FILE NO. Q271-PM-66/28
TRANSMITTED WITH LETTER DATED _____

BY	DATE	CHARACTER
		REVISIONS

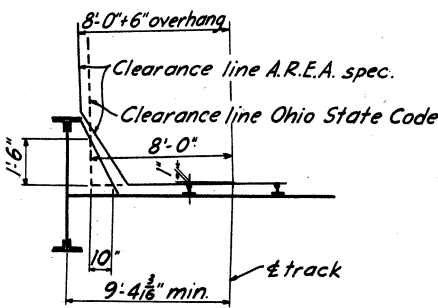




PLAN



ELEVATION



CLEARANCE DIAGRAM

DESIGN DATA

60'-0" SPAN

GIRDER

MAX. SHEARS	MAX. REACTION
DL = 38,000*	DL = 38,000*
LL = 134,000*	LL = 188,000*
I = 91,000*	I = 130,000*
Total = 261,000*	Total = 356,000*

261,000 + 11,000 = 237" gross req'd.
Web R 84 x 1/2 = 36.75" gross effective
Bearing @ 27,000* = 13.20" req'd.
End stiff's 4 L 6 x 4 x 1/2 = 13.24"
Intermediate stiff's 2 L 6 x 4 x 1/2 crimped.

MAX. MOMENTS

DL = 800,000*
LL = 2,321,000*
I = 1,432,000*
Total = 4,553,000*

Section modulus req'd = $\frac{4,553,000 \times 12}{18,000}$ = 3,035"³
Section modulus furnished = 3,070"³

77'-0" SPAN

GIRDER

MAX. SHEARS	MAX. REACTION
DL = 52,000*	DL = 52,000*
LL = 168,000*	LL = 224,000*
I = 106,000*	I = 145,000*
Total = 324,000*	Total = 421,000*

324,000 + 11,000 = 2945" gross req'd.
Web R 84 x 1/2 = 36.75" gross effective
Bearing @ 27,000* = 15.59" req'd.
End stiff's 4 L 6 x 4 x 1/2 = 19.76"
Intermediate stiff's 2 L 6 x 4 x 1/2 crimped.

MAX. MOMENTS

DL = 958,000*
LL = 3,670,000*
I = 2,385,000*
Total = 7,013,000*

Section modulus req'd = $\frac{7,013,000 \times 12}{18,000}$ = 4,675"³
Section modulus furnished = 4,720"³

FLOOR BEAMS

SECTION FURNISHED	SECT. MOD. REQ'D	SECT. MOD. FURNISHED	MAX. SHEAR	MAX. MOMENT
33WF210	691"³	704.4"³	176,000*	1,037,000*

STRINGERS

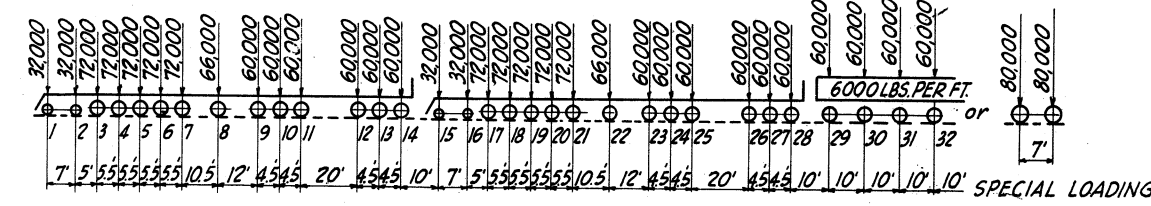
SECTION FURNISHED	SECT. MOD. REQ'D	SECT. MOD. FURNISHED	MAX. SHEAR	MAX. MOMENT
24WF150	376"³	385.5"³	164,000*	564,000*
24WF74	112"³	170.4"³	98,000*	168,000*
21WF82	167"³	168.0"³	116,000*	250,000*

FLOOR BEAMS

SECTION FURNISHED	SECT. MOD. REQ'D	SECT. MOD. FURNISHED	MAX. SHEAR	MAX. MOMENT
33WF240	774"³	811.1"³	191,000*	1,161,000*

STRINGERS

SECTION FURNISHED	SECT. MOD. REQ'D	SECT. MOD. FURNISHED	MAX. SHEAR	MAX. MOMENT
24WF120	295"³	299.1"³	149,000*	442,000*
24WF74	100"³	170.4"³	95,000*	149,000*
21WF112	237"³	249.6"³	139,000*	355,000*



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

Impact allowance = KL
In which S = Loaded length of track in feet
L = Maximum live load stress
D = Dead load stress
Total stress = D + L + KL

NOTES

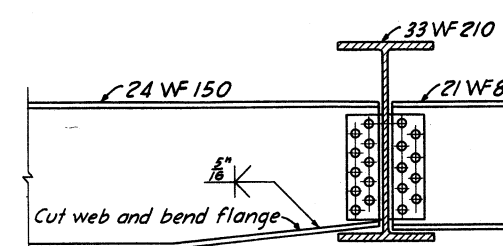
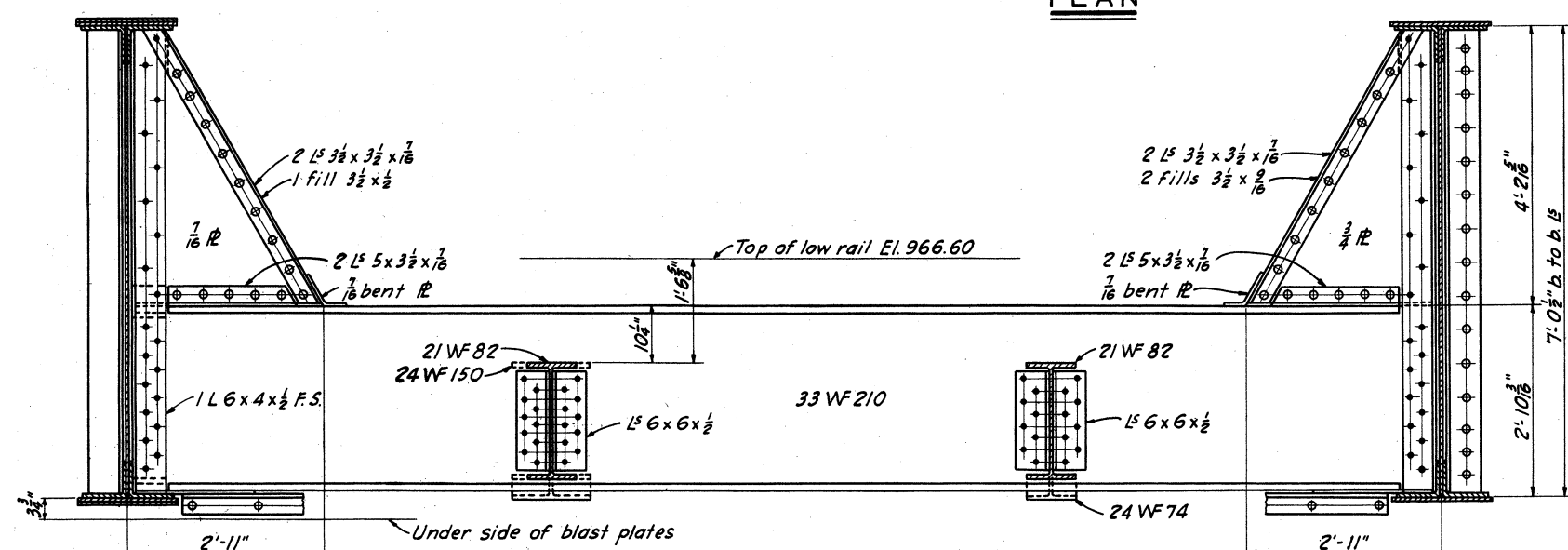
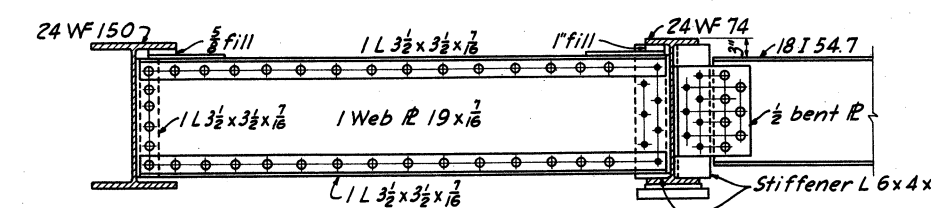
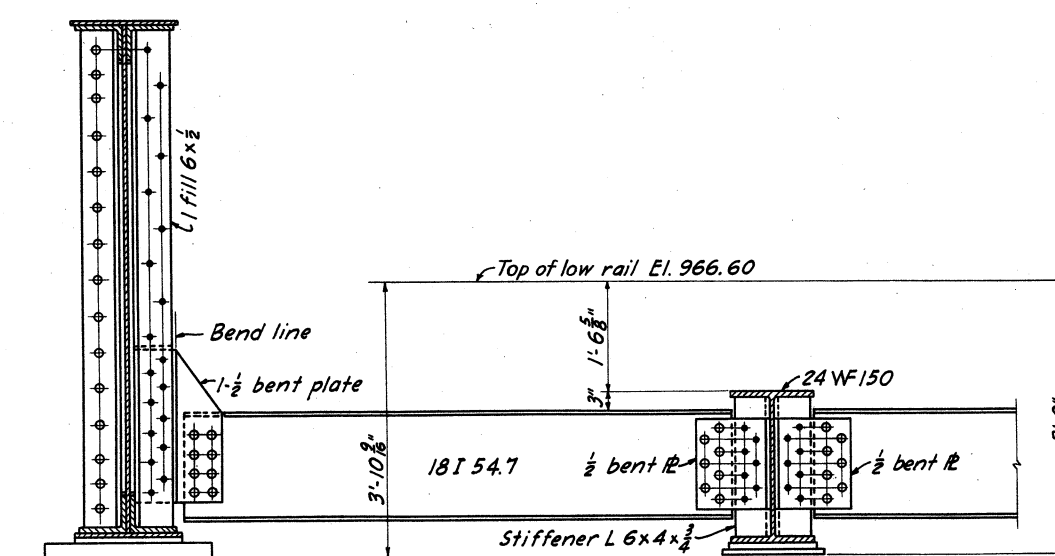
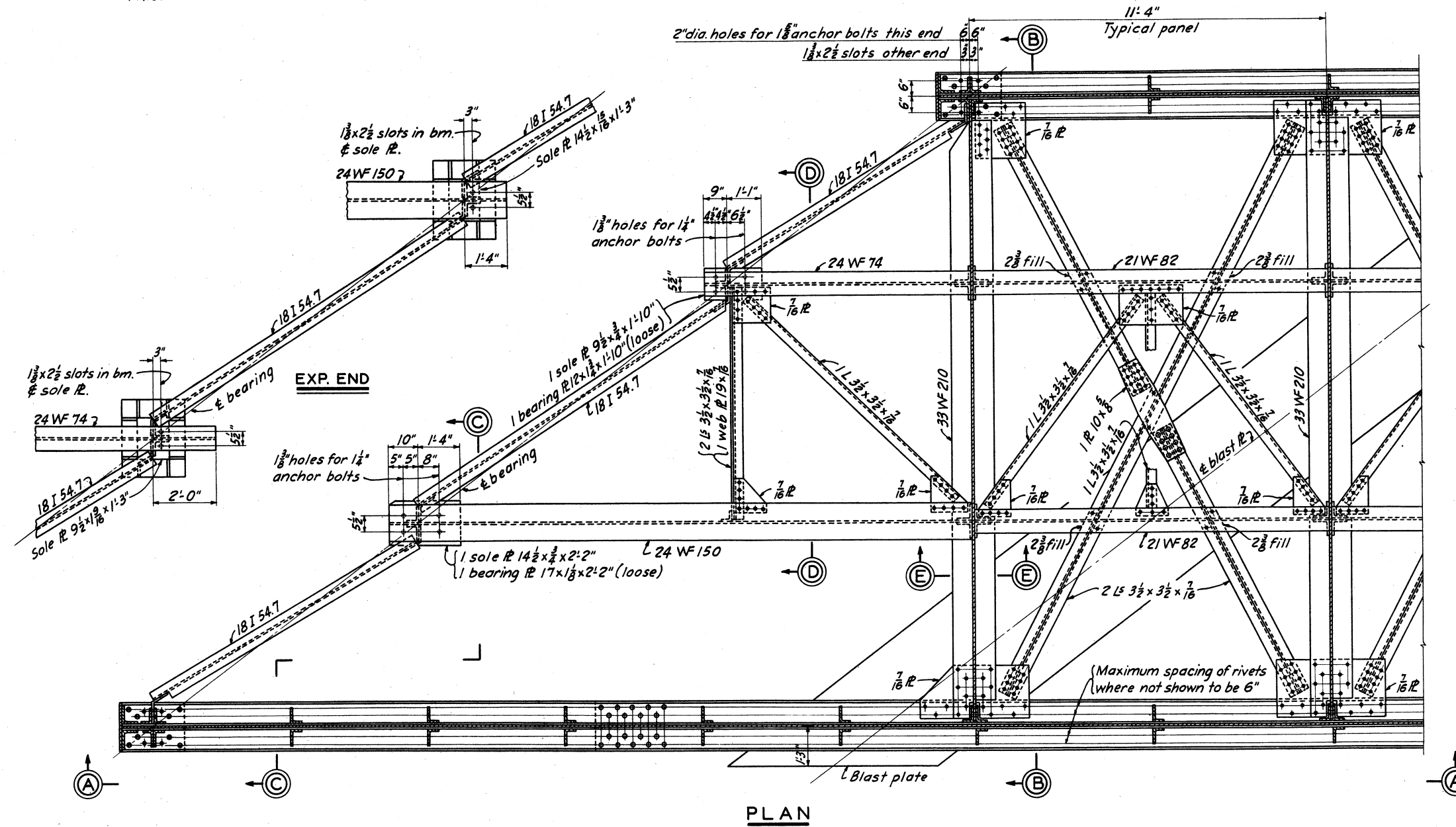
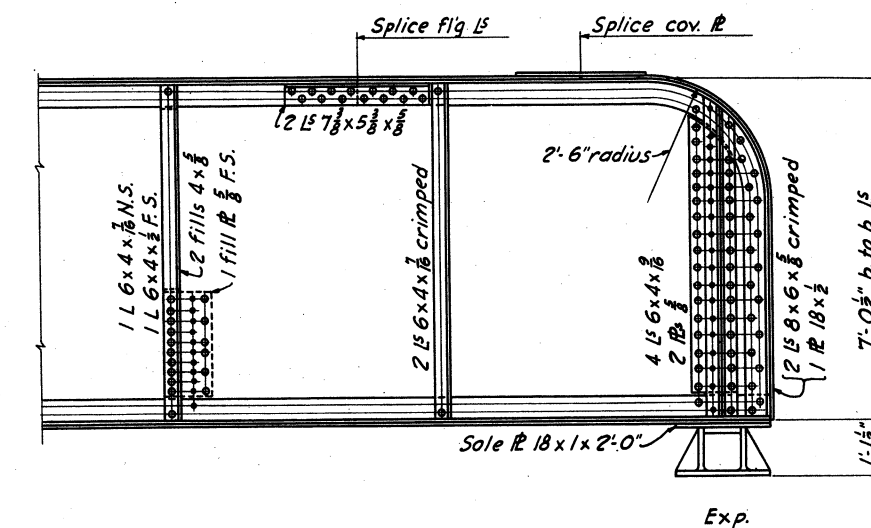
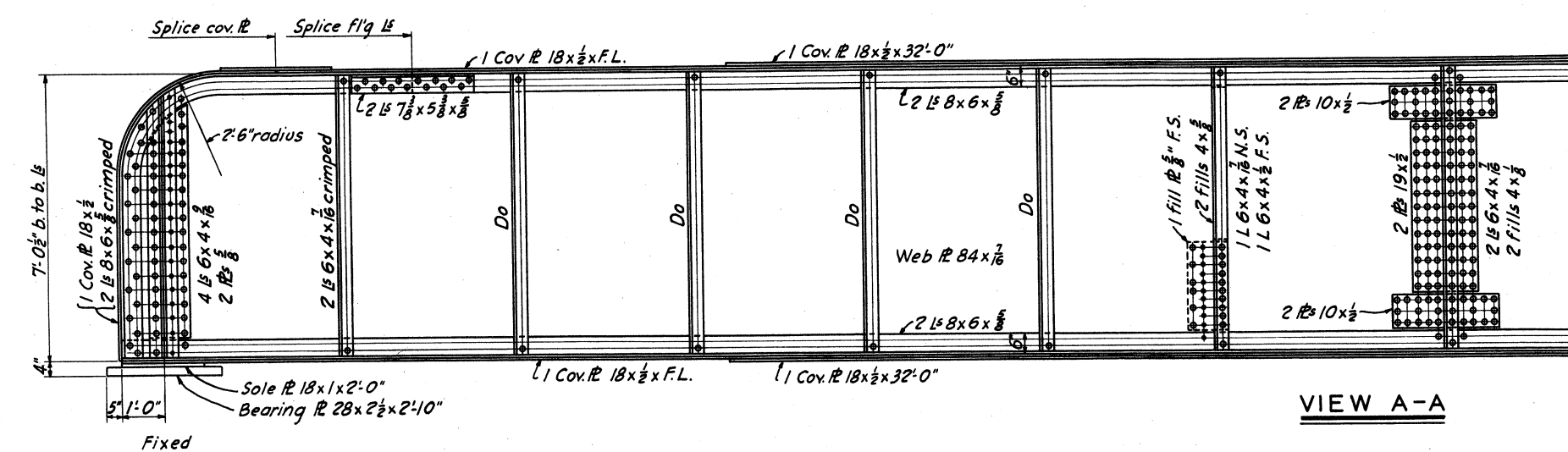
Superstructure designed in accordance with A.R.E.A. Specifications For Steel Railway Bridges dated 1938, except locomotive loading and impact which are as shown.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
GIRDER SPANS - DESIGN DATA

IN 147 SHEETS SHEET NO. 53 SCALE: 1/8" = 1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940
SUBMITTED: [Signature] APPROVED: [Signature]
DRAWN BY: A.W.S. TRACED BY: H.S.M.A.S. CHECKED BY: A.R.N.
FILE NO 027i-PM-66/30 DATED

BY	DATE	CHARACTER
		REVISIONS



NOTES

Design - A.R.E.A. Specifications For Steel Railway Bridges dated 1938 except locomotive loading and impact which are shown on Dwg. No. 66/30.
Workmanship - A.R.E.A. Specifications For Steel Railway Bridges dated 1938.
Material - A.R.E.A. Specifications For Steel Railway Bridges dated 1940.
For details of castings see Dwg. No. 66/33.
Blast plates are to be provided for each track, under span, and securely fastened to bridge.
For blast plates see Dwg. No. 66/32.
All rivets $\frac{3}{4}$ ".

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY: CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: SPECIAL ENGINEER

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT

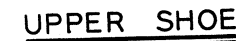
MASSILLON, OHIO
P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
60FT. GIRDER - DETAILS

18 147 SHEETS SHEET NO. 54 SCALE: $\frac{1}{2}$ " = 1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
BY: A.J.M. TRANSMITTED WITH LETTER
CHECKED BY: U.S. FILE NO. 0271-PM-66/31 DATED

BY	DATE	CHARACTER
		REVISIONS

[illegible]

EXPANSION SHOE

Technical drawing of a mechanical part, showing multiple views and dimensions.

Top View:

- Overall width: 2'-0"
- Overall height: 6" + 6" + 6" + 6" = 24"
- Four 1 3/8" holes in a 3" dia. face.
- Dimensions: 5" (between holes), 1'-8" (between hole groups), 10" (between hole groups), 10" (between hole groups).

Front View:

- Overall width: 2'-0"
- Overall height: 10 3/8" + 1 1/8" = 11 7/8"
- Dimensions: 7" (between holes), 2" (between holes), 2" (between holes), 2" (between holes).
- Note: 1/2 pin

Side View:

- Overall width: 1'-4 1/2"
- Overall height: 10" + 4" + 10" = 24"
- Dimensions: 1 1/2" (between holes), 1'-2 1/4" (between hole groups), 1'-4 1/2" (between hole groups).
- Note: 1/2 rad in body of casting
- Note: 3/4" hole in lugs

UPPER SHOE

CAST STEEL (GRADE B4) MARK 66/33-4
 MAKE 2 WT. 925 LBS.

3" 1'-2 1/2" 1'-2 1/2" 3"

3" 9" 9" 9" 3"

2 cored holes
 spot face 4 3/8" dia. M.S.

3 1/2" 2 1/2" 7" 2" 7" 2" 2 1/2" 3 1/2"

2" 11" 2" 0 3/4" 1" 8"

10 1/2" 1" 4 1/2" 4"

3/8" dia.

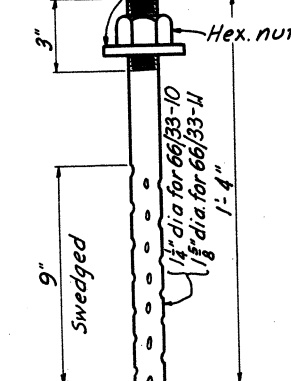
10 1/2" 1" 4 1/2" 4"

2" 10 1/2" 1" 4 1/2" 4"

7 1/2" 6 3/4" 1" 4 1/2"

3/8" holes in lugs
 1/8" rad in body of casting.

$3\frac{1}{2}" \text{dia.} \times \frac{3}{8}" \text{washer} - 1\frac{3}{8}" \text{hole for 66/33-10}$
 $4\frac{1}{4}" \text{dia.} \times \frac{3}{8}" \text{washer} - 1\frac{3}{4}" \text{hole for 66/33-11}$



NOTES

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.

BY:
CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.

BY:
CHIEF ENGINEER - CENTRAL REGION

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.

BY:
SPECIAL ENGINEER

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

IN 147 SHEETS SHEET NO. 56 SCALE: $1\frac{1}{2}'' = 1'-0''$

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

U. S. ENGINEER

SUBMITTED:  PRINCIPAL ENGINEER

APPROVED:  LT. COL., CORPS OF ENGINEERS

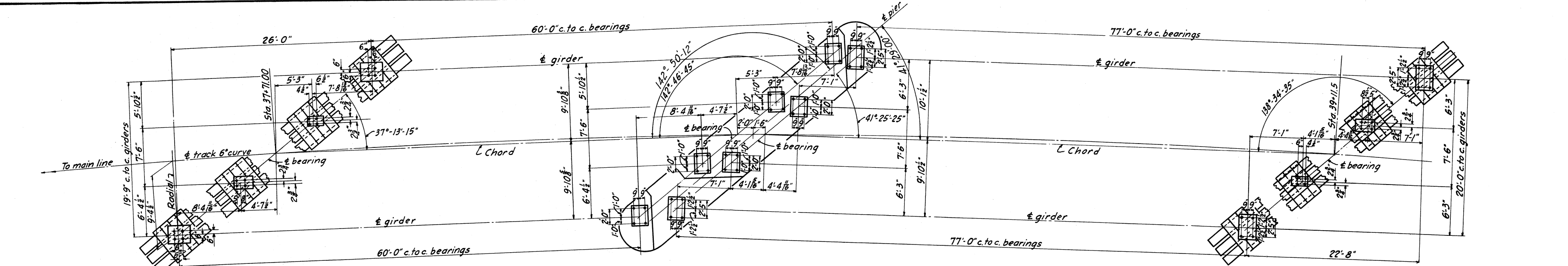
DRAWN BY H.S.M.
TRACED BY H.S.M.
CHECKED BY H.U.B.

TRANSMITTED WITH LETTER

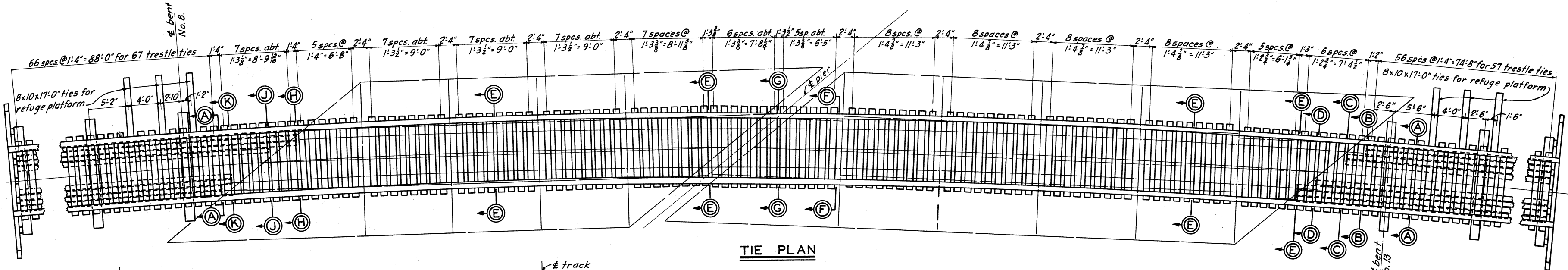
FILE NO 027i-PM-66/33

DATED

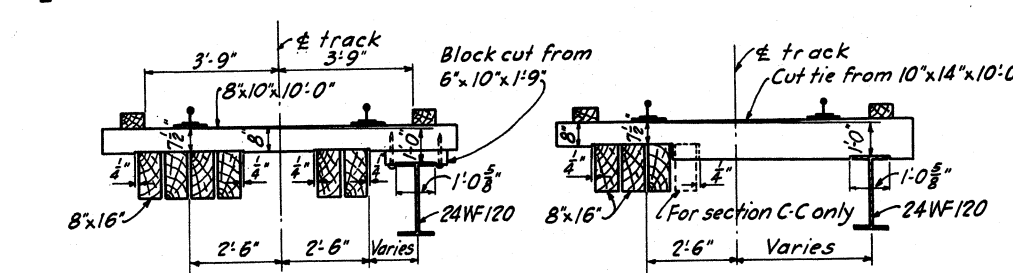
BY	DATE	CHARACTER
		REVISIONS



ANCHOR BOLT PLAN

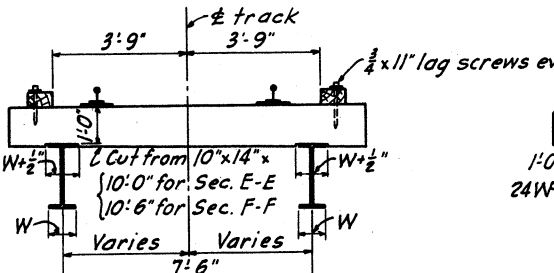


TIE PLAN



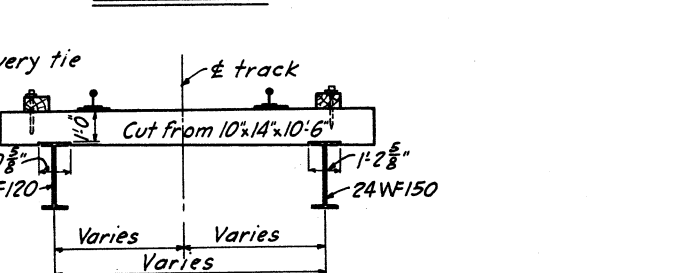
SECTION B-B
SCALE: 3/8" = 1'-0"

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

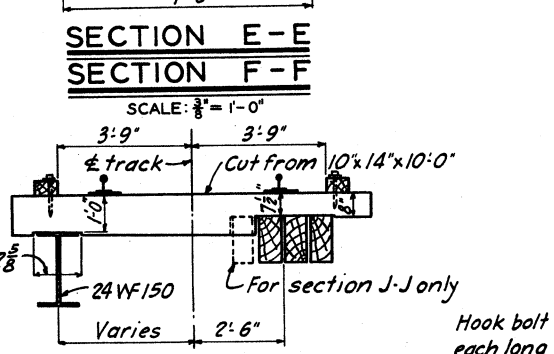


SECTION E-E
SCALE: 3/8" = 1'-0"

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

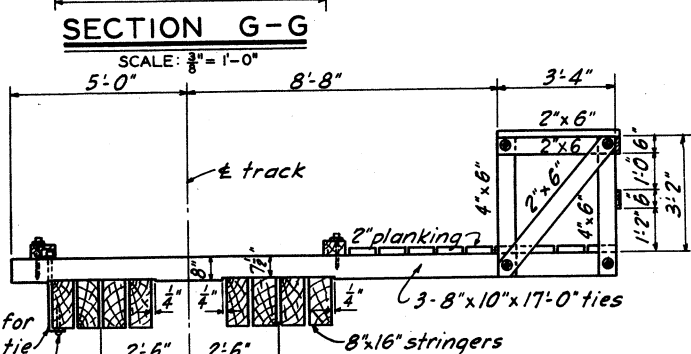


SECTION G-G
SCALE: 3/8" = 1'-0"



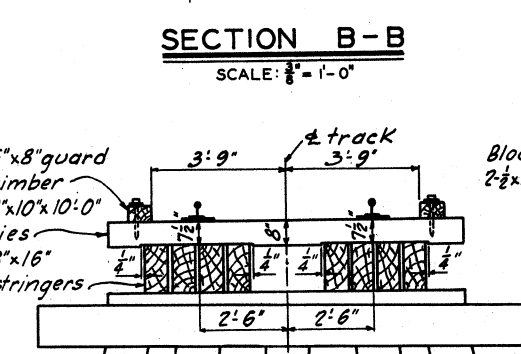
SECTION H-H
SCALE: 3/8" = 1'-0"

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

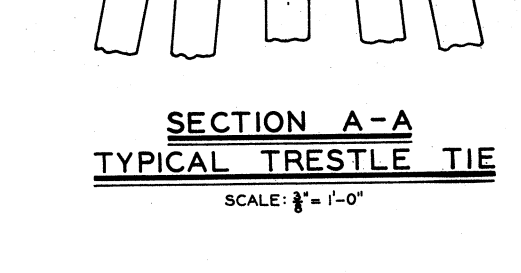


ELEVATION

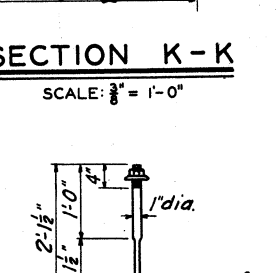
REFUGE PLATFORM
SCALE: 3/8" = 1'-0"



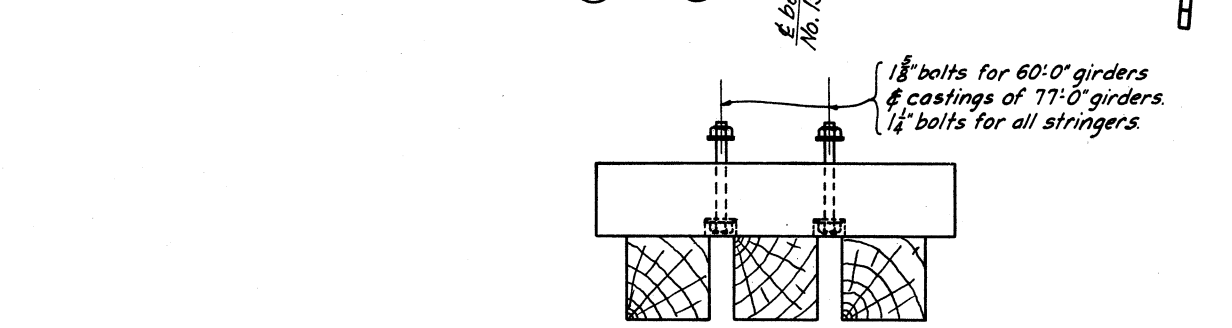
SECTION A-A
TYPICAL TRESTLE TIE
SCALE: 3/8" = 1'-0"



GUARD TIMBER SPLICE
SCALE: 3/8" = 1'-0"



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



ANCHOR BOLT DETAIL
TYPICAL FOR TIMBER PIERS
SCALE: 3/8" = 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".
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

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY: CHIEF ENGINEER

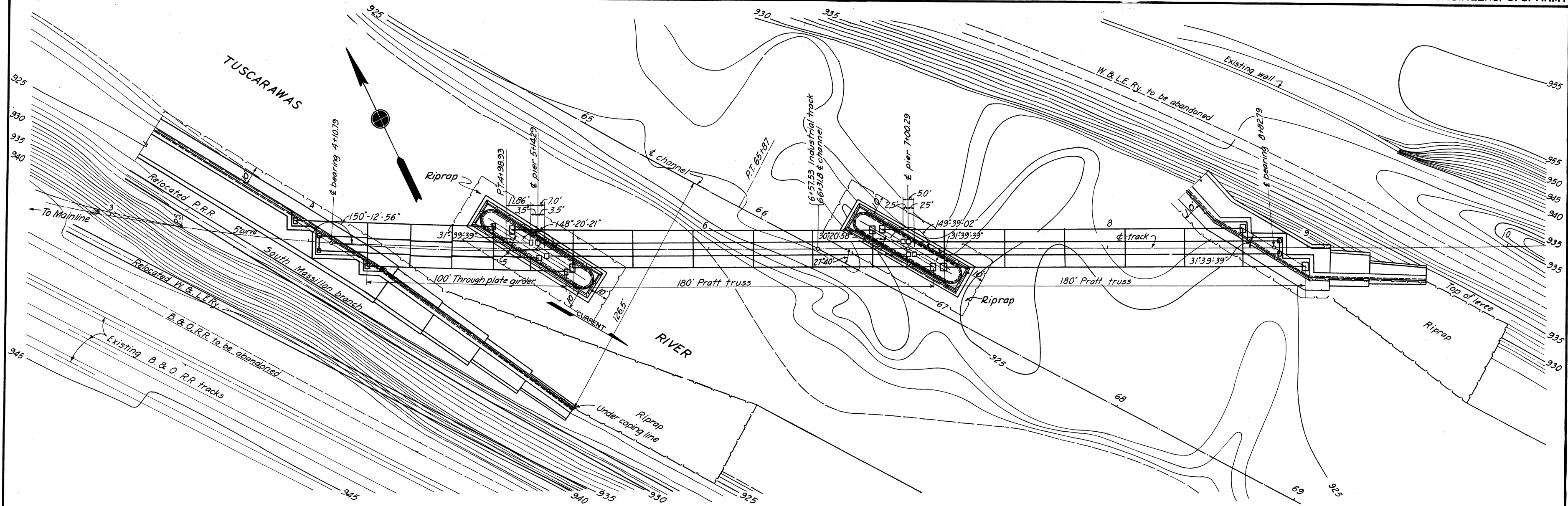
APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: SPECIAL ENGINEER

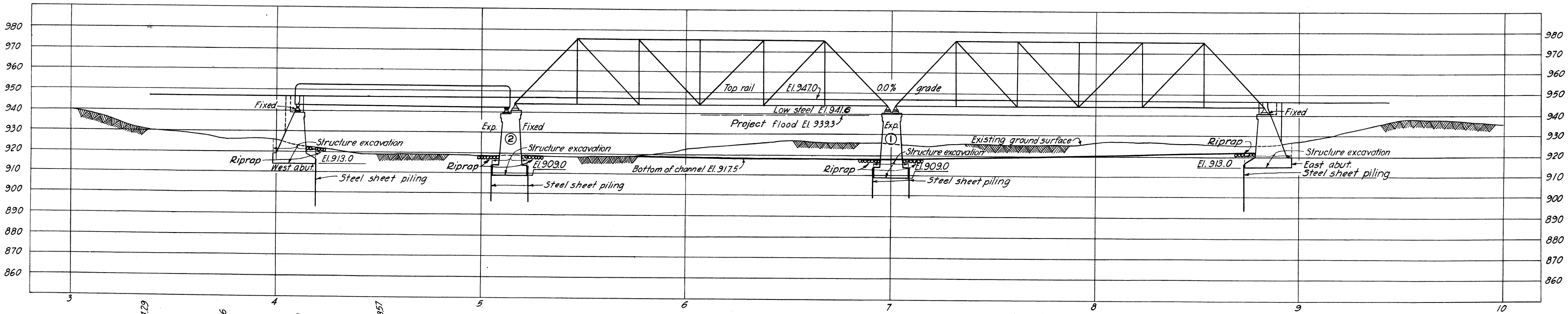
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
P. R. R. BRIDGE OVER B. & O. R. R. - W. & L. E. RY.
ANCHOR BOLT & TIE PLAN**

IN 147 SHEETS SHEET NO. 57 SCALE: 3/8" = 1'-0"
U.S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940
SUBMITTED: [Signature] APPROVED: [Signature]
DRAWN BY: S.D. TRACED BY: H.S.M. CHECKED BY: H.J.B. TRANSMITTED WITH LETTER
FILE NO. 0271-PM-66/34 DATED

BY	DATE	CHARACTER



PLAN



PROFILE

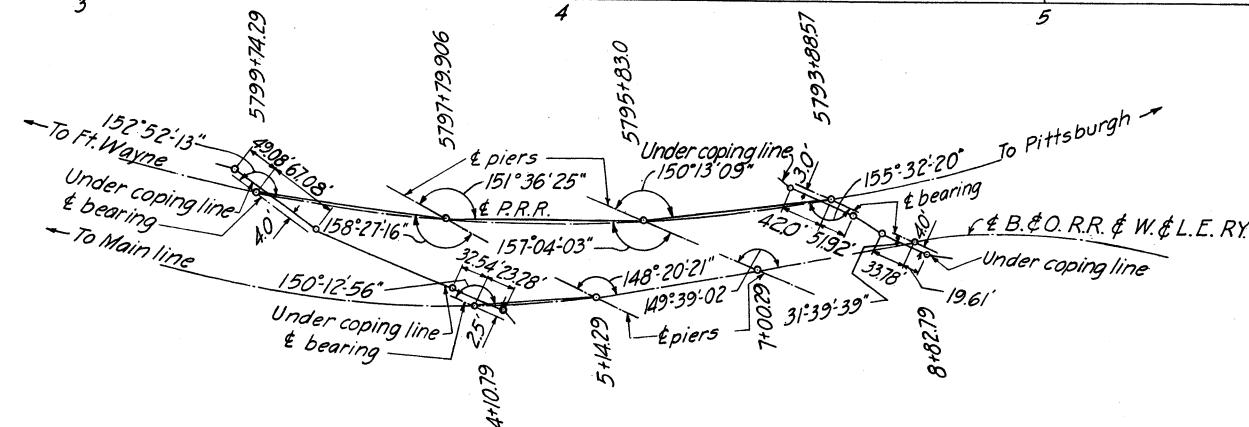


DIAGRAM OF WORK POINTS

Note:
For location of core holes, see Dwg. No. 66/1.
For log of core borings F-21, F-22 & F-23, see Dwg. No. 10/3.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
B. & O. R. R. & W. & L. E. RY. BRIDGE
GENERAL PLAN & PROFILE**

IN 147 SHEETS SHEET NO. 58 SCALE: 1" = 20'

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940
SUBMITTED BY: [Signature] APPROVED BY: [Signature]
DRAWN BY: A. W. M. TRANSMITTED WITH LETTER
CHECKED BY: D. G. J. FILE NO. 0271-PM-66/35 JAYED

BY	DATE	CHARACTER
		REVISIONS



Chamfer all exposed edges $\frac{1}{4}$ " unless otherwise noted.
For reinforcing steel see Dwg. No. 66/37.
For groove detail see Dwg. No. 66/39.
For location plan see Dwg. No. 66/35.
For drain detail see Dwg. No. 66/38.
For details of water stop see Dwg. No. 66/2.
All concrete to be Class "B".

B. & O. R. R. & W. & L. E. RY. BRIDGE
WEST ABUTMENT

IN 147 SHEETS **SHEET NO. 59** **SCALE:** $\frac{1}{8}'' = 1'-0''$

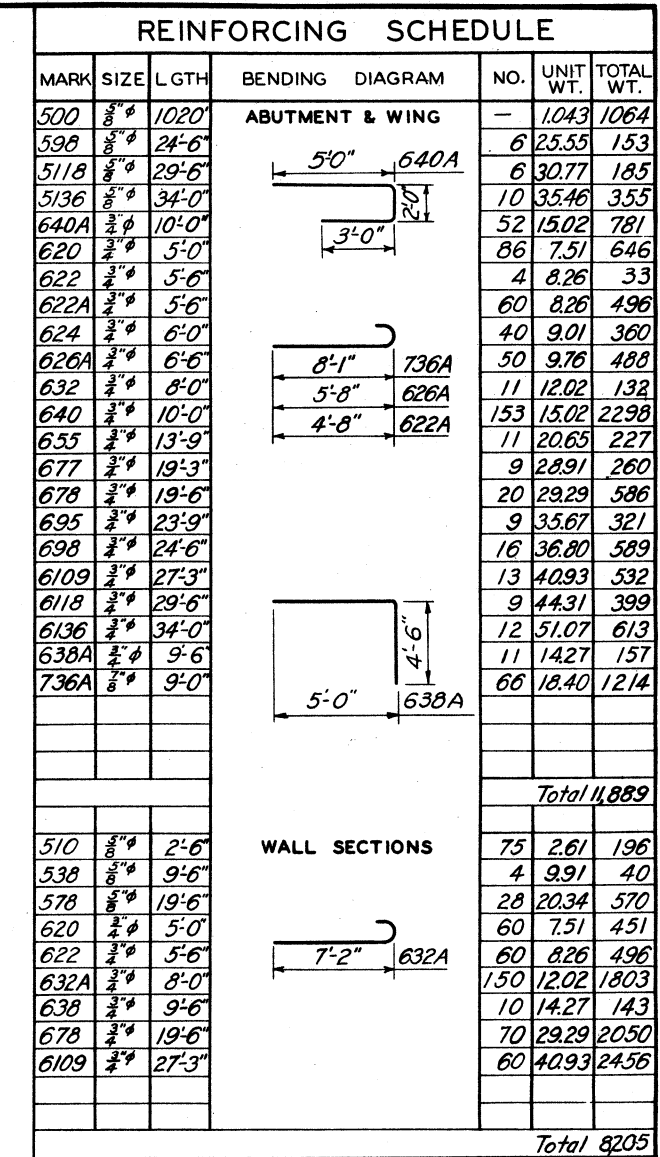
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

14. P. 1. ... 8. 1. 8

SUBMITTED: [Signature] APPROVED: [Signature]
PRINCIPAL ENGINEER LT. COL. CORPS OF ENGINEERS

DRAWN BY J.E.H. TRANSMITTED WITH LETTER
TRACED BY R.C.H. FILE NO 0237-PM 66/36

CHECKED BY E. K. FILE NO 0271-PM-66/38 DATED



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

IN 147 SHEETS SHEET NO. 60 SCALE: $\frac{1}{8}'' = 1'-0''$

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

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED: *[Signature]*
PRINCIPAL ENGINEER

APPROVED: *[Signature]*
CHIEF OF DIVISION
U. S. COL. CORPS OF ENGINEERS

DRAWN BY: J. E. H.
TRACED BY: C. G. B.
CHECKED BY: E. K.

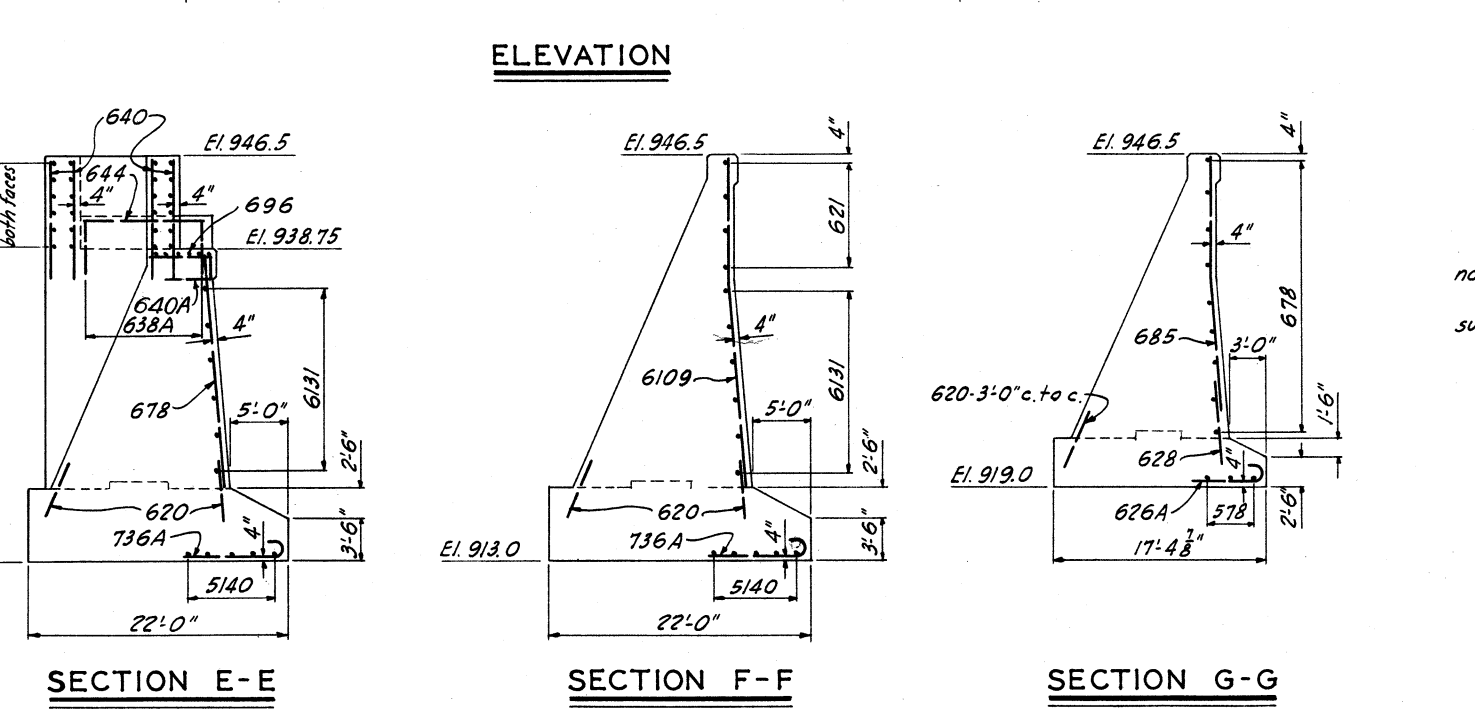
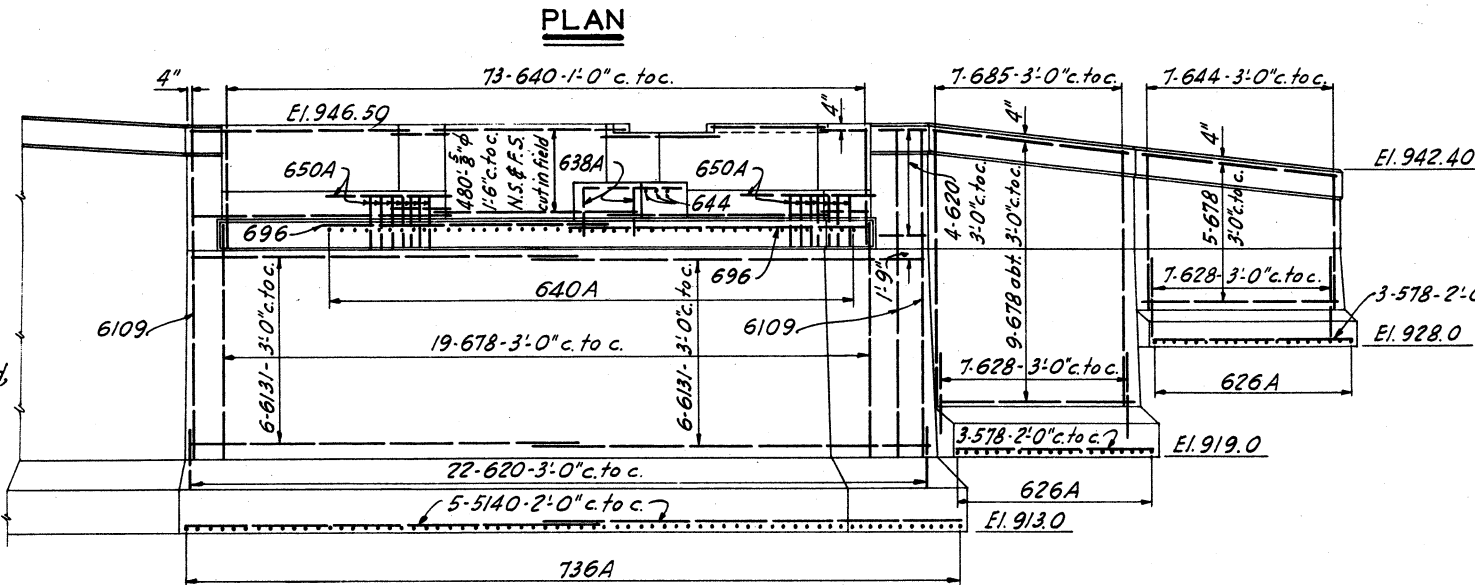
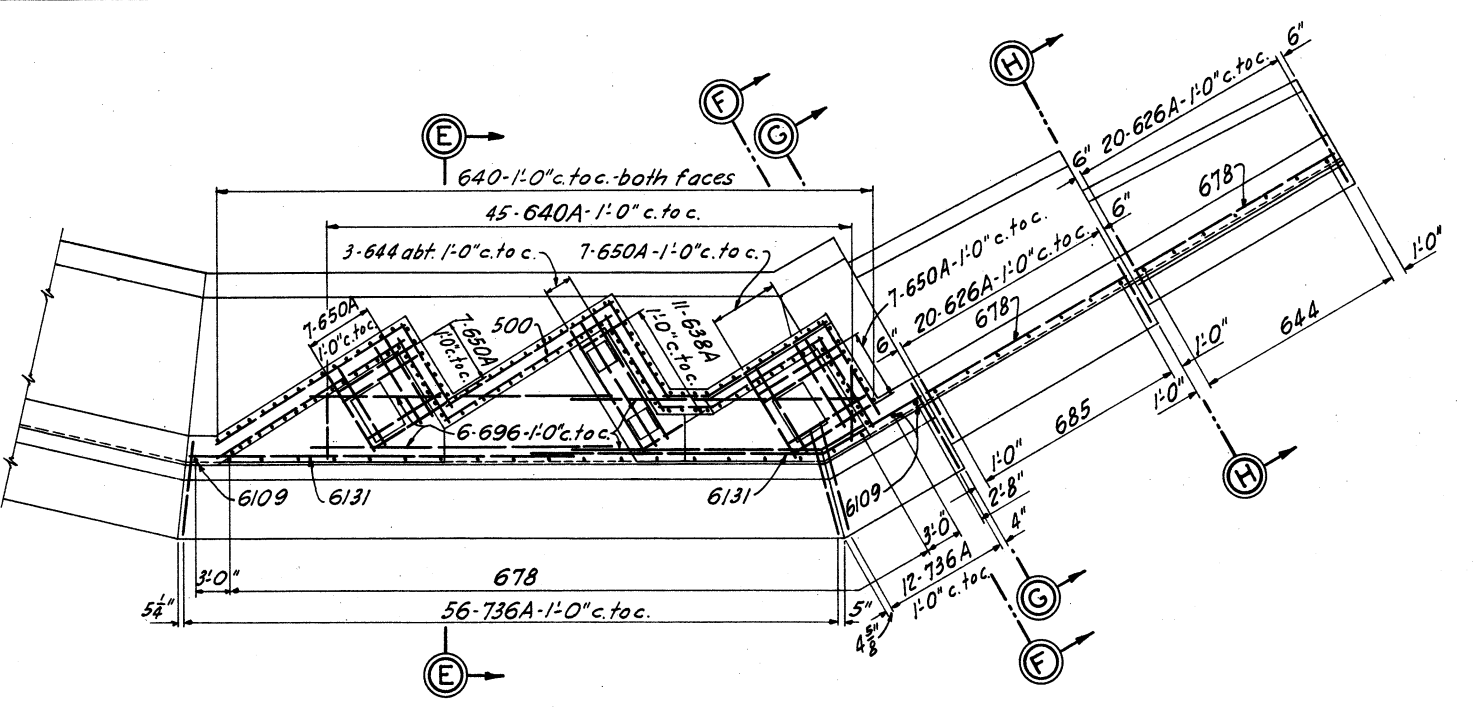
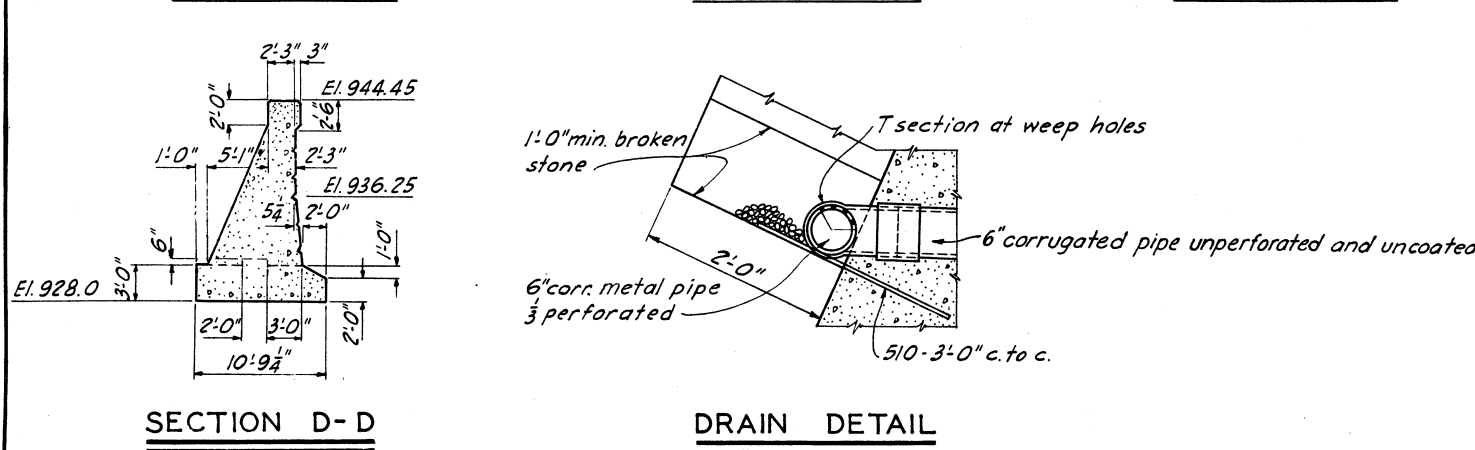
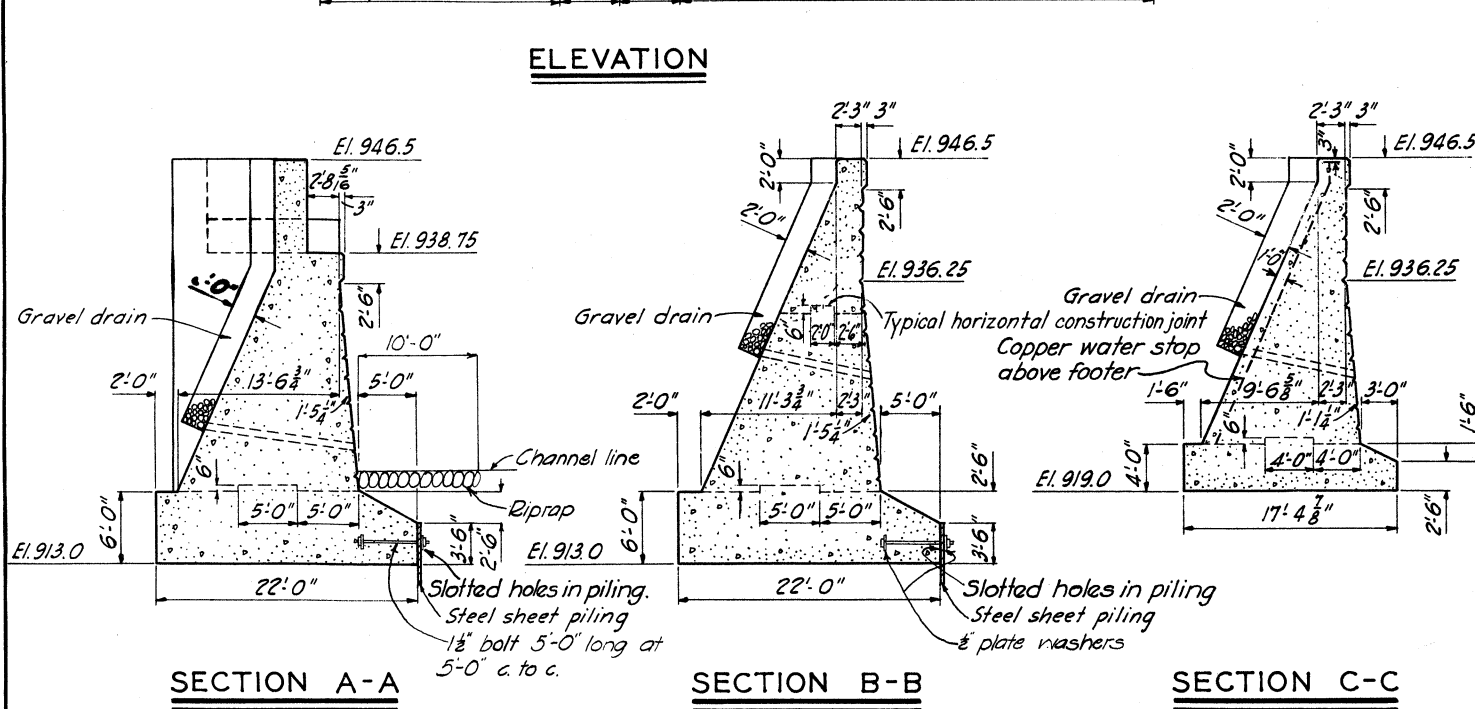
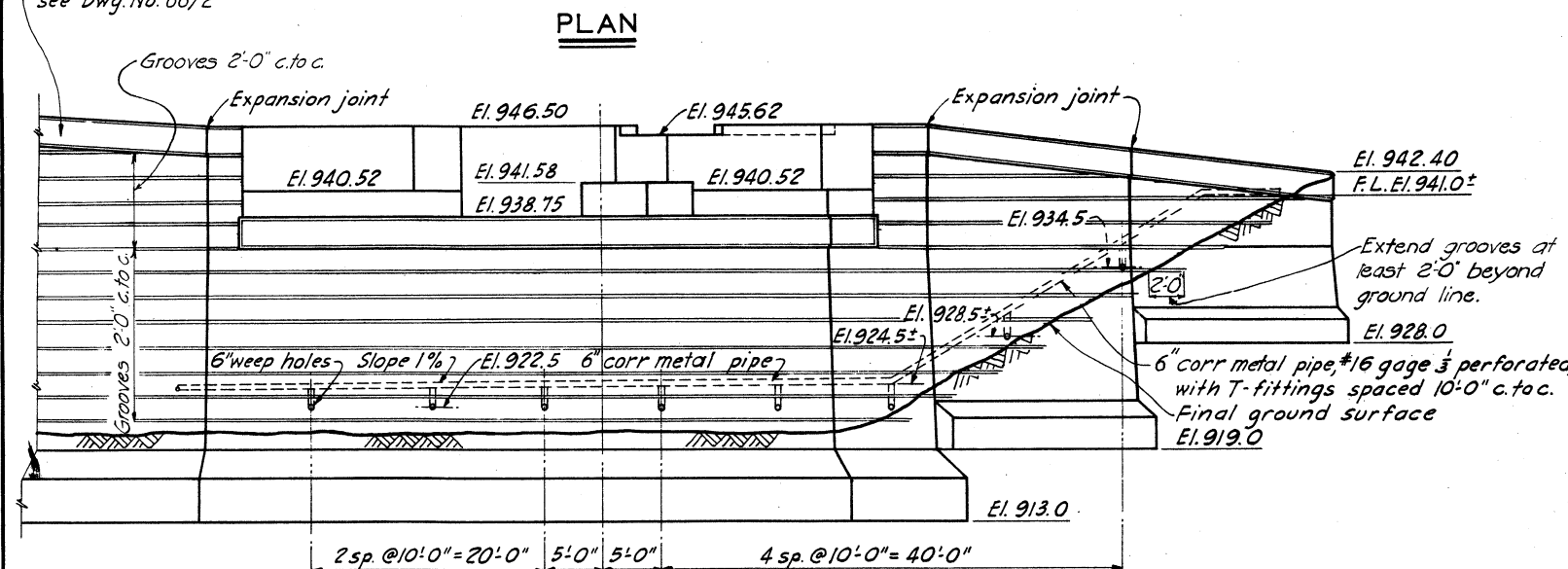
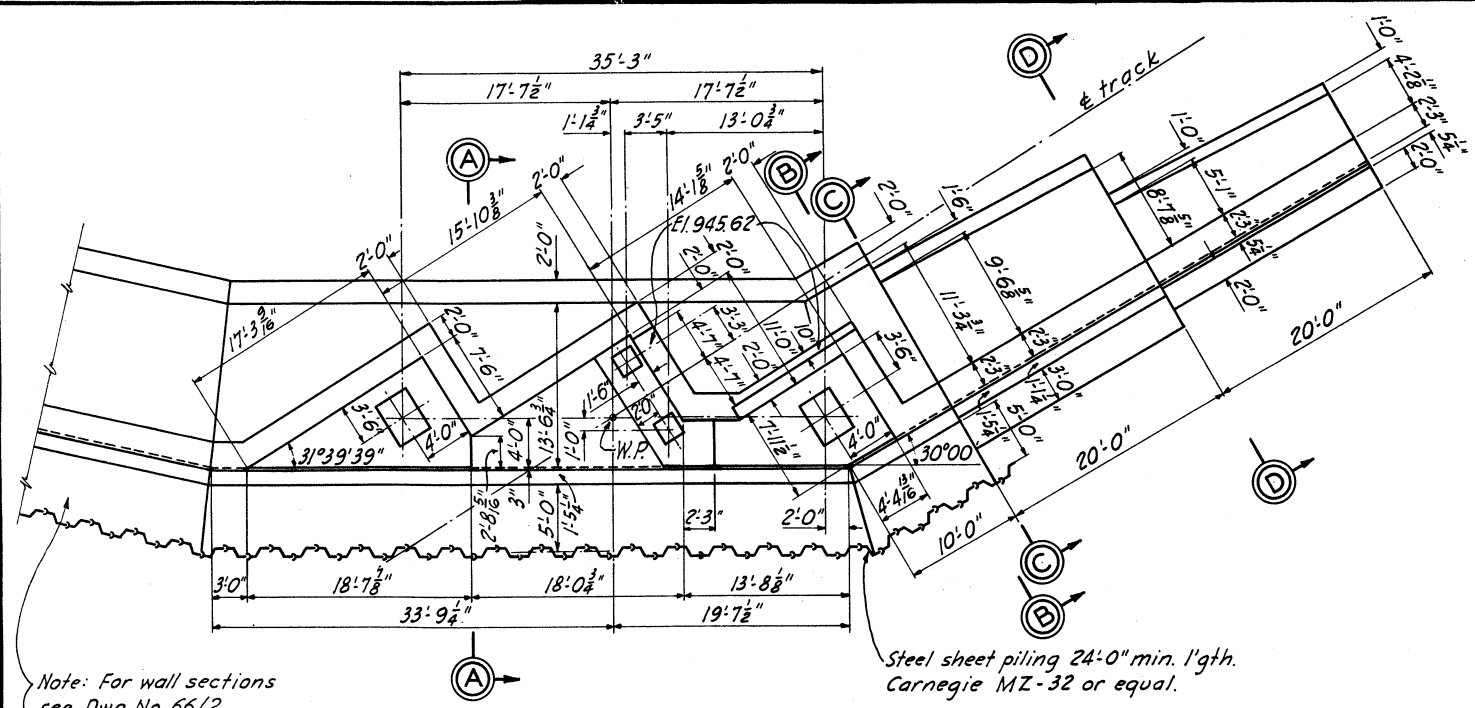
FILE NO. 0271-PM-66/37 MATED

TRANSMITTED WITH LETTER

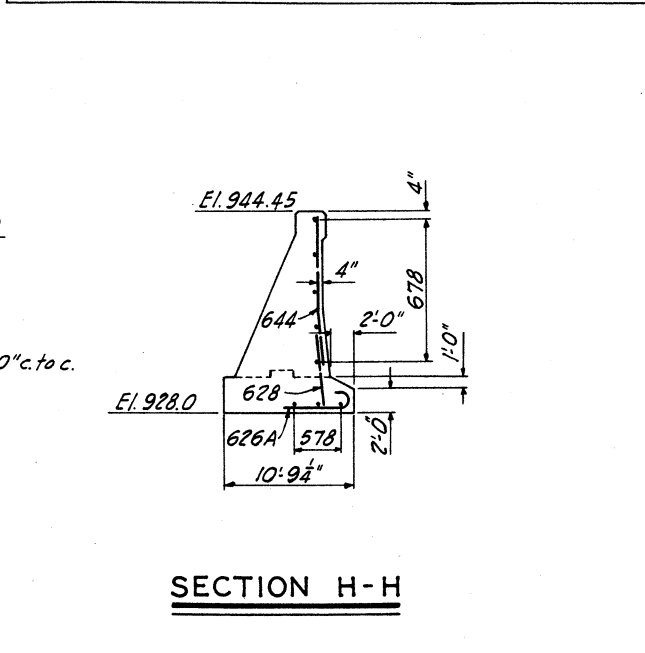
APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY:
SPECIAL ENGINEER

BY	DATE	CHARACTER
		REVISIONS



REINFORCING SCHEDULE						
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
500	3/4"	960'		1	1.043	1001
510	3/4"	2'-6"		33	2.61	86
578	3/4"	19'-6"		6	20.34	122
5140	3/4"	35'-0"		10	36.51	365
638A	3/4"	9'-6"	5'-8"	11	14.27	157
620	3/4"	5'-0"	8'-1"	62	7.51	466
640A	3/4"	10'-0"		45	15.02	676
626A	3/4"	6'-6"		40	9.76	390
628	3/4"	7'-0"		14	10.51	147
640	3/4"	10'-0"		146	15.02	2193
644	3/4"	11'-0"		10	16.52	165
678	3/4"	19'-6"		33	20.34	676
685	3/4"	21'-3"	5'-0"	7	31.92	223
696	3/4"	24'-0"	8'-0"	6	32.05	216
6109	3/4"	27'-3"		3	40.93	123
6131	3/4"	32'-9"		12	49.19	590
650A	3/4"	12'-6"		28	18.78	526
736A	3/4"	9'-0"	5'-0"	68	18.40	1251
Total						9668



NOTES

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.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
B. & O. R. R. & W. & L. E. RY. BRIDGE
EAST ABUTMENT

IN 147 SHEETS SHEET NO. 61 SCALE: 1/8" = 1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED: [Signature] APPROVED: [Signature]

DRAWN BY: J.E.H. CHECKED BY: J.S. TRANSMITTED WITH LETTER

FILE NO 027i-PM-66/38 DATED

BY	DATE	CHARACTER

REINFORCING SCHEDULE

PIER NO. 1

MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
620	3/8"	5'-0"		36	7.51	270
638	3/8"	9'-6"		44	14.27	628
644	3/8"	11'-0"		27	16.52	446
686	3/8"	21'-6"		36	32.29	1162
6112	3/8"	28'-0"		34	42.06	1430
6124	3/8"	31'-0"		18	46.56	838
6127A	3/8"	31'-9"		2	47.69	95
6130A	3/8"	32'-6"		2	48.82	98
6132A	3/8"	33'-0"		4	49.57	198
6135A	3/8"	33'-9"		2	50.69	101
6137A	3/8"	34'-3"		2	51.44	103
6138A	3/8"	34'-6"		2	51.82	104
6140A	3/8"	35'-0"		2	52.57	105
6142A	3/8"	35'-6"		2	53.32	107
674A	3/8"	18'-6"		36	27.79	1000
880A	1"	20'-0"		60	53.40	3204
Total						9889

PIER NO. 2

620	3/8"	5'-0"		49	7.51	368
638	3/8"	9'-6"		51	14.27	728
644	3/8"	11'-0"		18	16.52	297
686	3/8"	21'-6"		40	32.29	1,292
6124	3/8"	31'-0"		16	46.56	745
6127A	3/8"	31'-9"		2	47.69	95
6130A	3/8"	32'-6"		2	48.82	98
6132A	3/8"	33'-0"		4	49.57	198
6135A	3/8"	33'-9"		2	50.69	101
6137A	3/8"	34'-3"		2	51.44	103
6138	3/8"	34'-6"		36	51.82	1,866
6138A	3/8"	34'-6"		2	51.82	104
6140	3/8"	35'-0"		18	52.57	946
6140A	3/8"	35'-0"		2	52.57	105
6142A	3/8"	35'-6"		2	53.32	107
674A	3/8"	18'-6"		28	27.79	778
880A	1"	20'-0"		67	53.40	3,578
Total						11,509

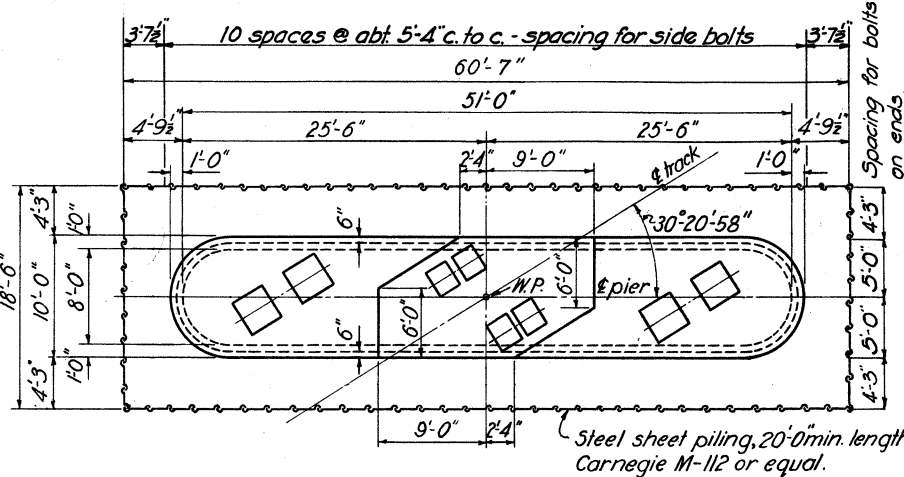
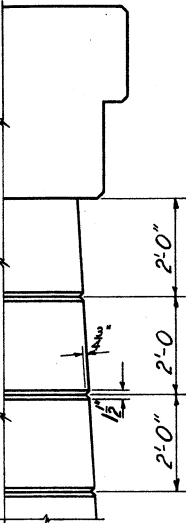
NOTES

Chamfer all exposed edges 1/2", unless otherwise noted.
Place all reinforcing steel 4" minimum from face unless otherwise noted.
For location plan, see Dwg. No. 66/35.
For anchor bolt layout, see Dwg. No. 66/46.

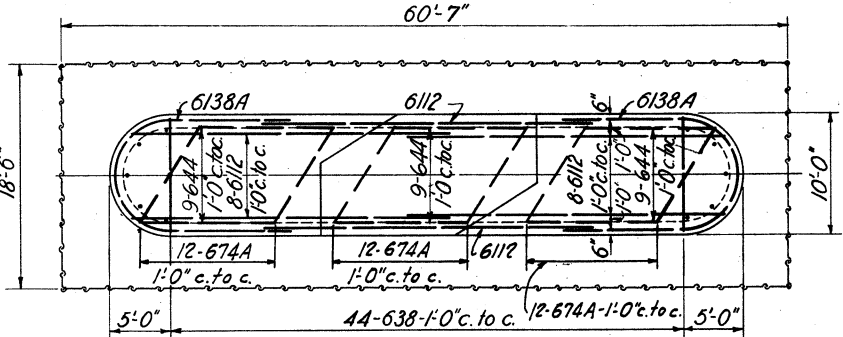
TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
B. & O. R. R. & W. & L. E. RY. BRIDGE
PIERS

IN 147 SHEETS SHEET NO. 62 SCALE: 1/8" = 1'-0"
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940
SUBMITTED: [Signature] APPROVED: [Signature]
DRAWN BY: J.E.H. TRANSMITTED WITH LETTER
CHECKED BY: E.K. FILE NO 027i-PM-66/39 DATED

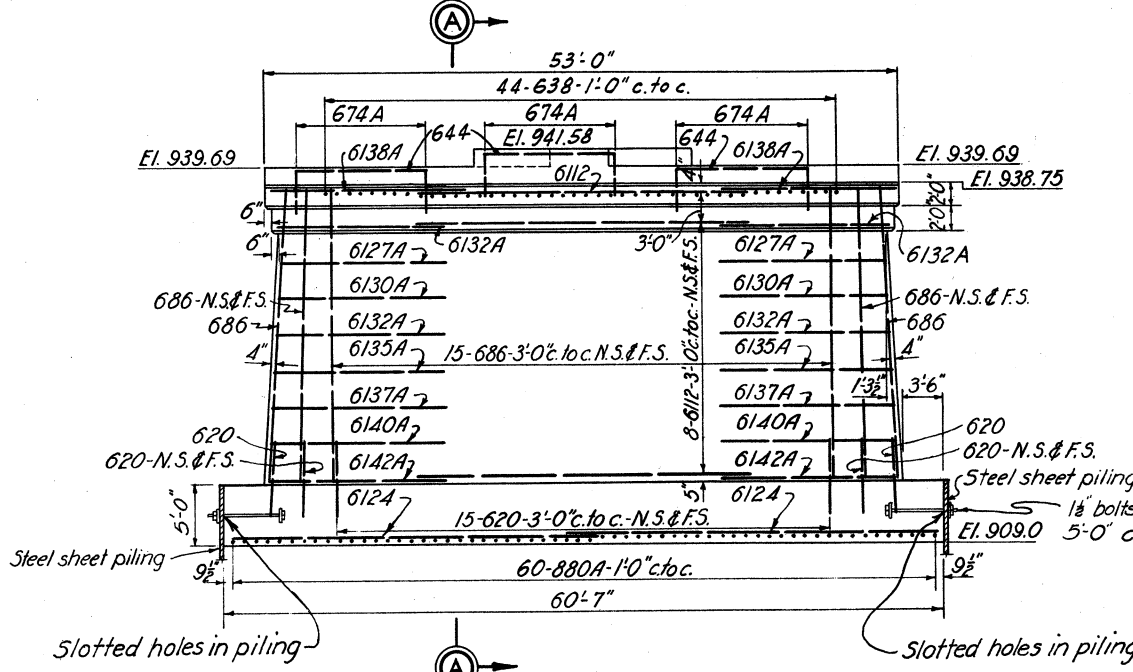
GROOVE DETAIL
SCALE: 1/2" = 1'-0"



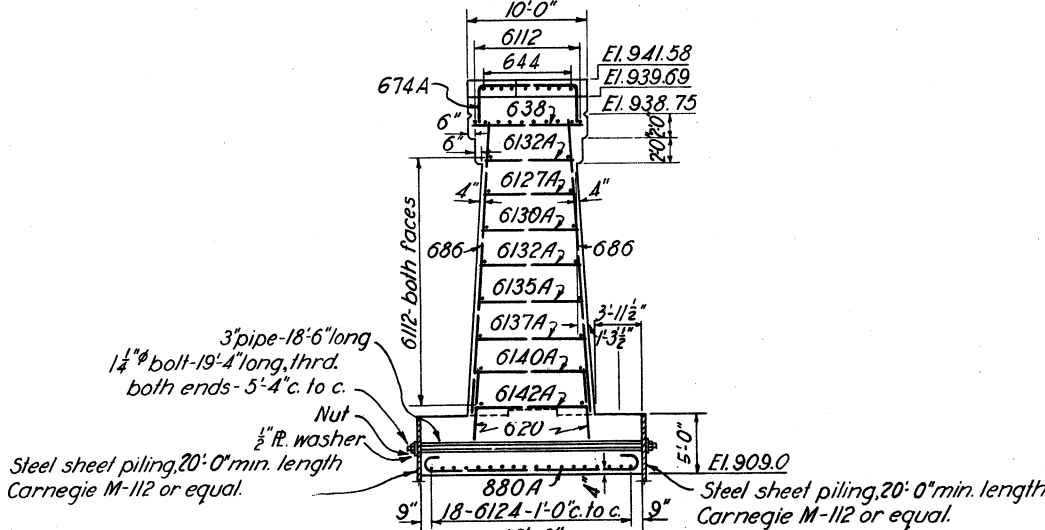
PIER NO. 1
PLAN



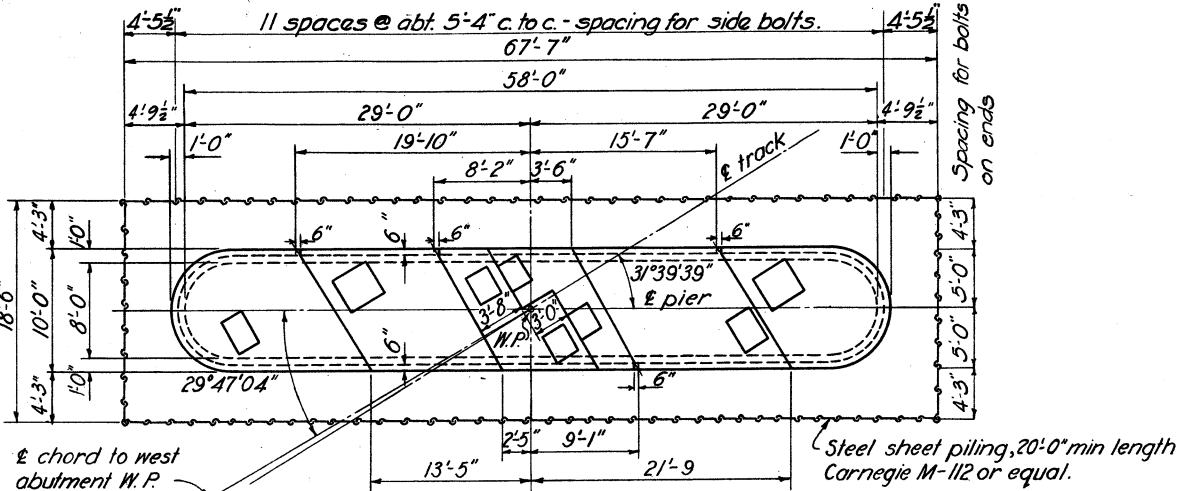
PIER NO. 1
PLAN



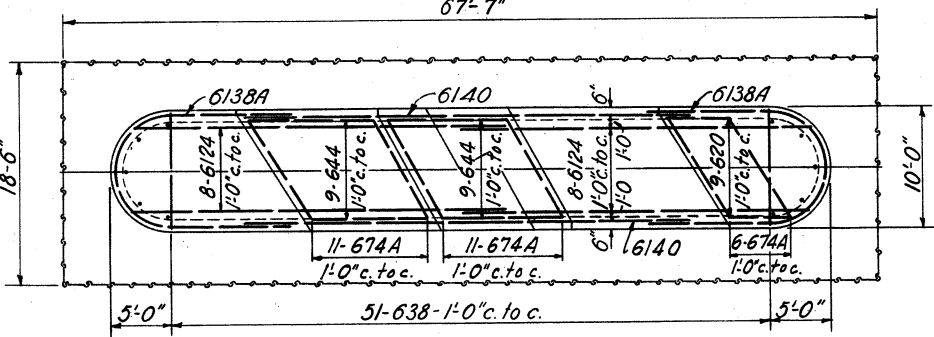
PIER NO. 1
ELEVATION



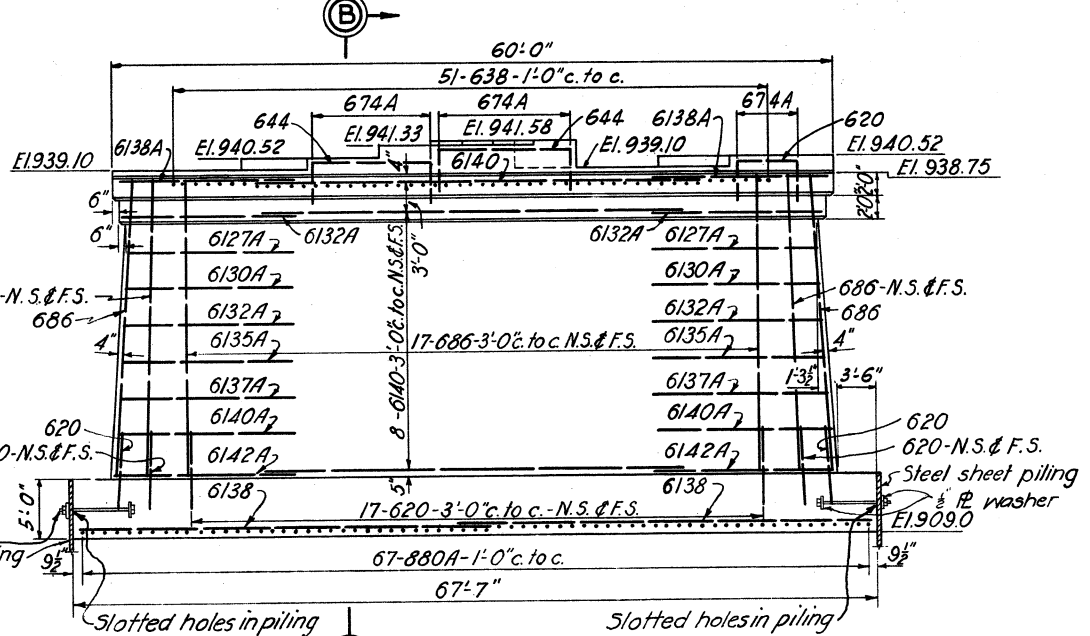
SECTION A-A



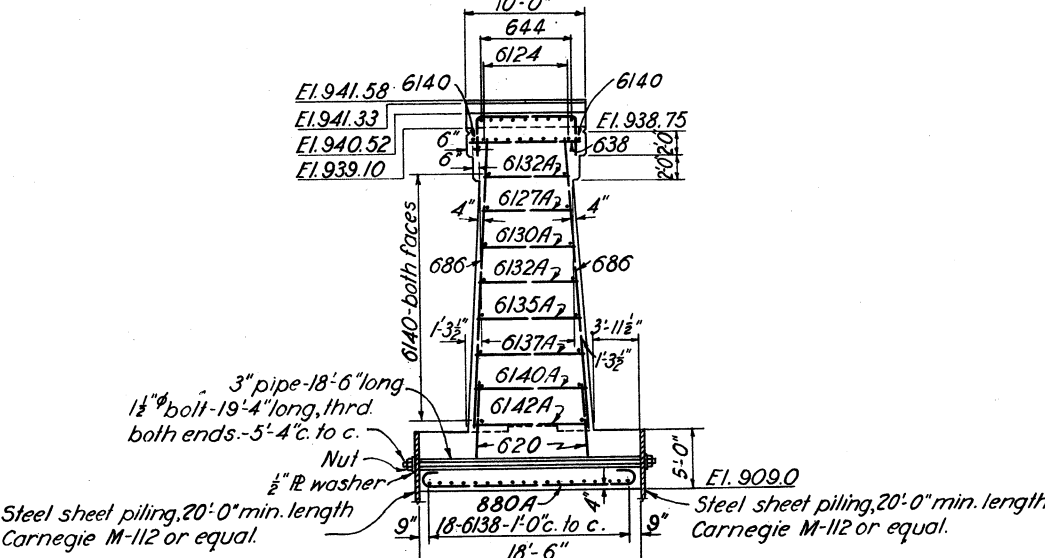
PIER NO. 2
PLAN



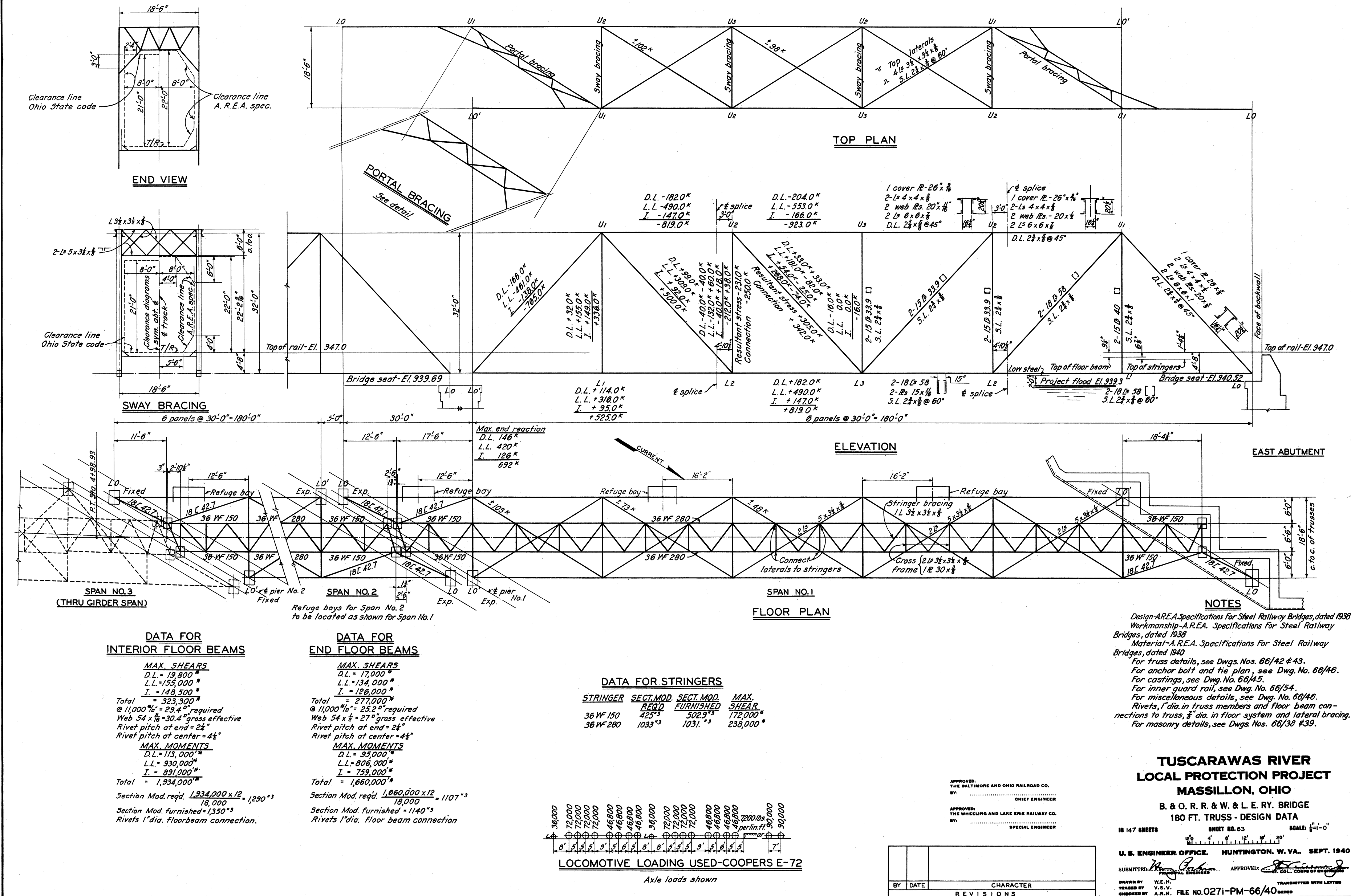
PIER NO. 2
PLAN

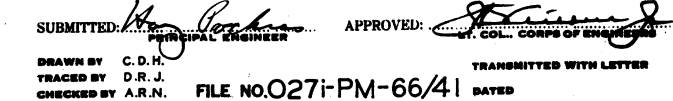


PIER NO. 2
ELEVATION



SECTION B-B

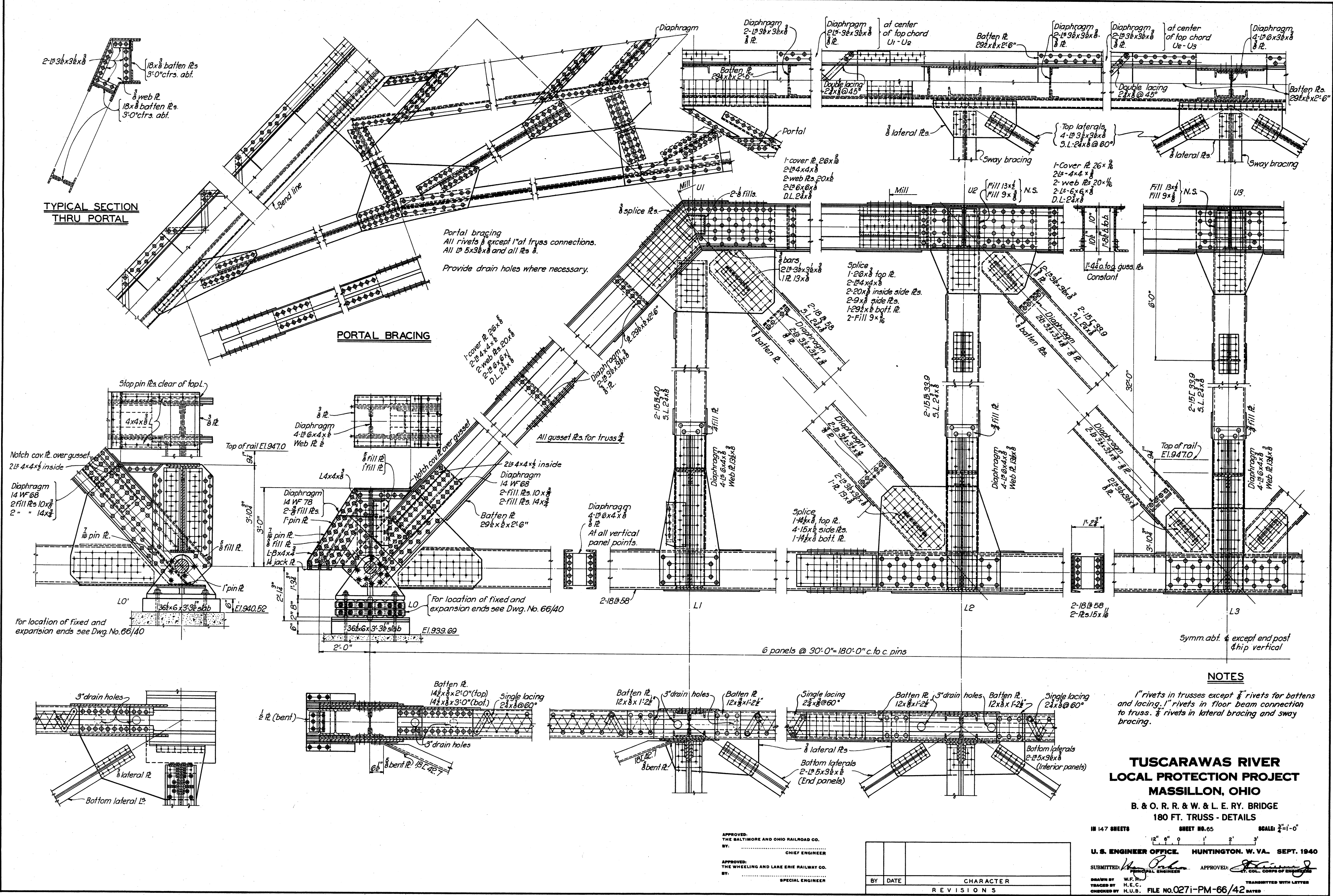


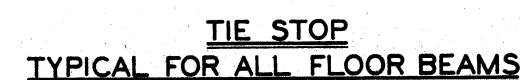
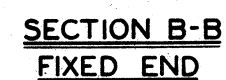
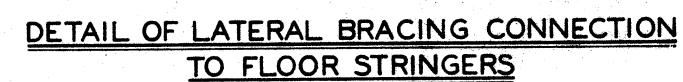
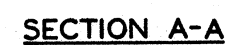


APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY:
SPECIAL ENGINEER

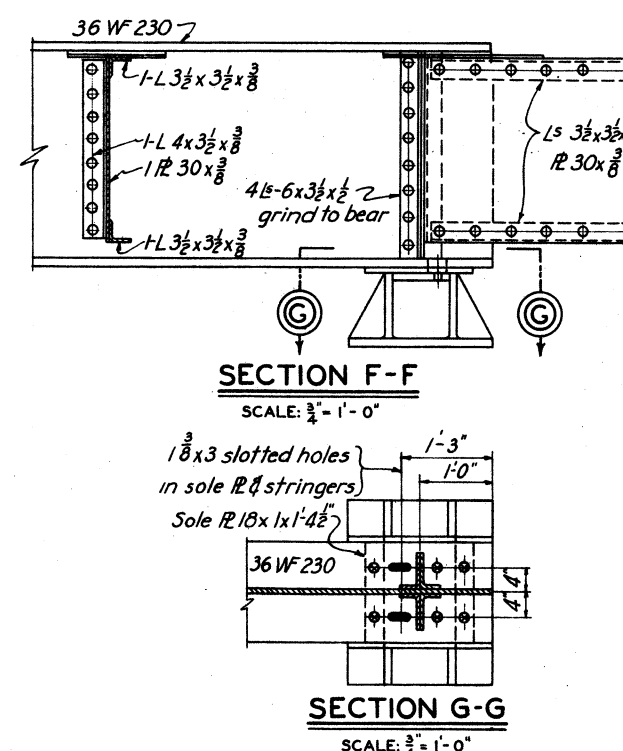
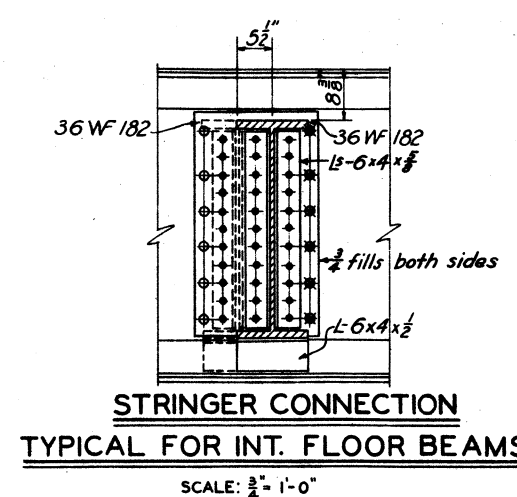
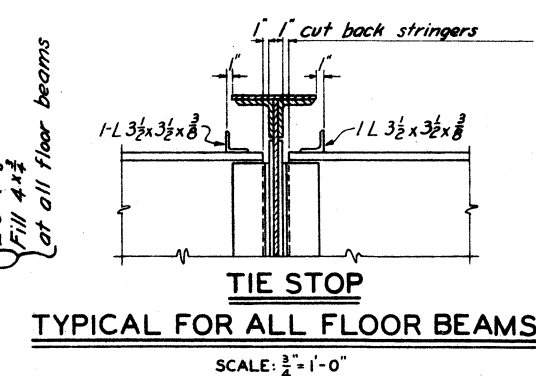
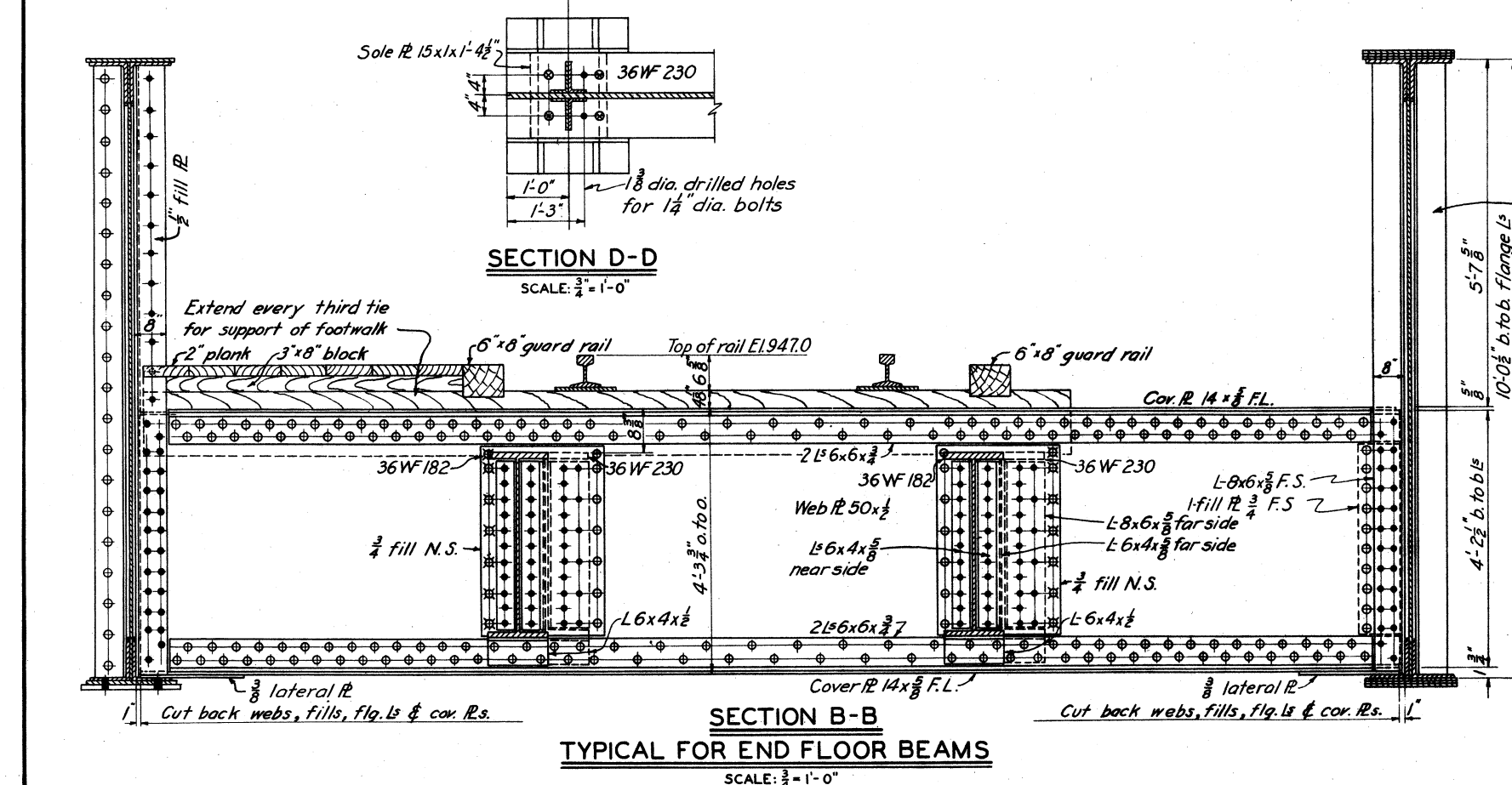
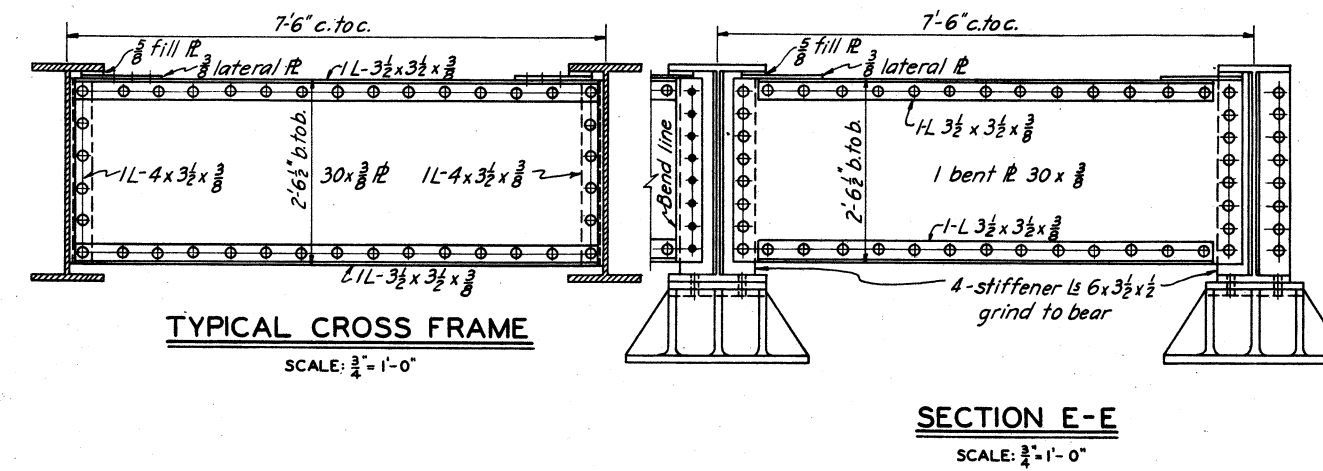
BY	DATE	CHARACTER
REVISIONS		





DRAWN BY W. F. H. TRANSMITTED WITH LETTERS
TRACED BY J. E. M^{AL}.
CHECKED BY H. U. B. FILE NO 027i-PM-66/43 DATED

BY	DATE	CHARACTER
		REVISIONS



APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY:
SPECIAL ENGINEER

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

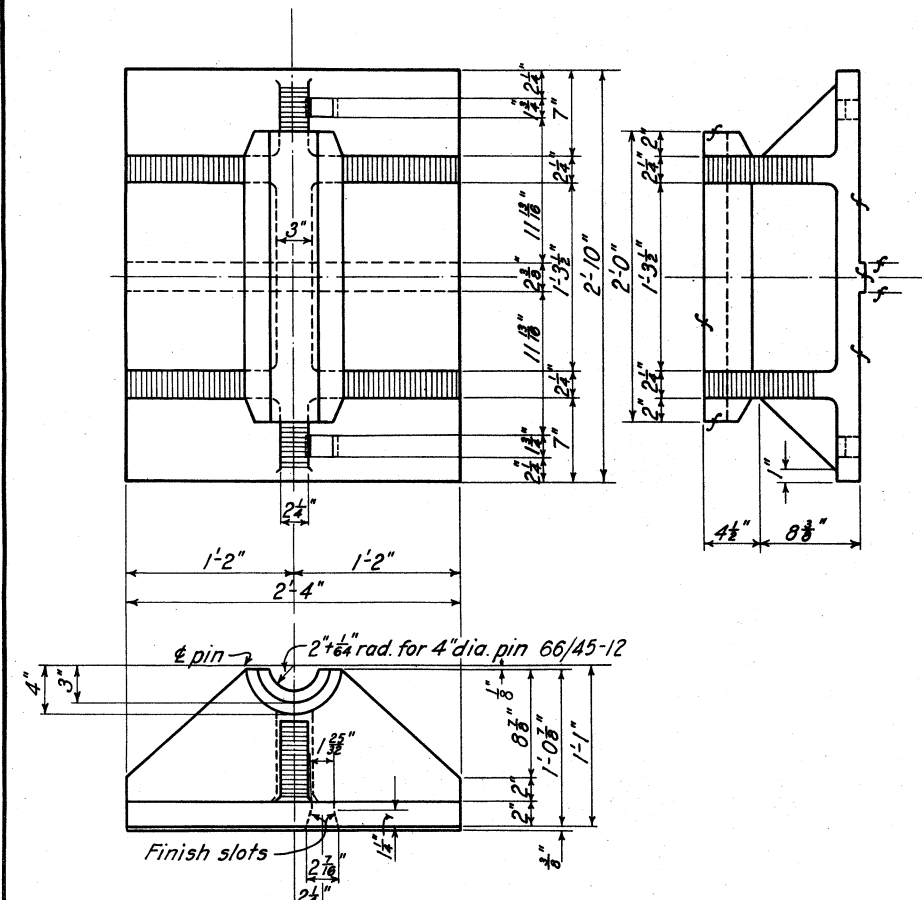
**B. & O. R. R. & W. & L. E. RY. BRIDGE
100 FT. GIRDER - DETAILS**

IN 147 SHEETS SHEET NO. 67 SCALE: $\frac{3}{8}" = 1'-0"$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

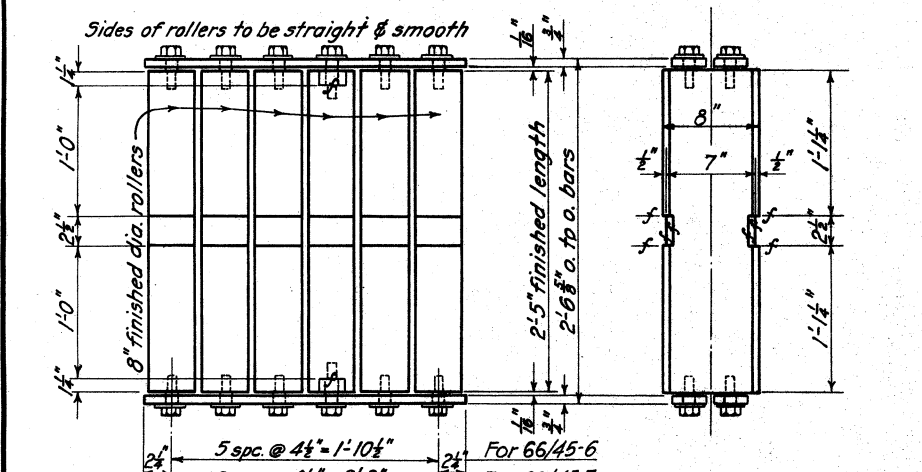
SUBMITTED: *[Signature]* APPROVED: *[Signature]*
 PRINCIPAL ENGINEER LT. COL. CORPS OF ENGINEERS

DRAWN BY C.D.H. TRANSMITTED WITH LETTER
 TRACED BY M.C.
 CHECKED BY H.U.B. FILE NO 027i-PM-66/44 DATED



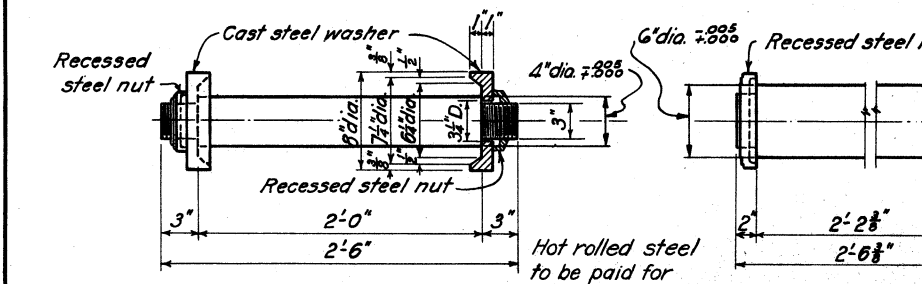
ROLLER CASTING

CAST STEEL (GRADE B-1) MARK 66/45-1
MAKE 2 WT. 955 LBS.



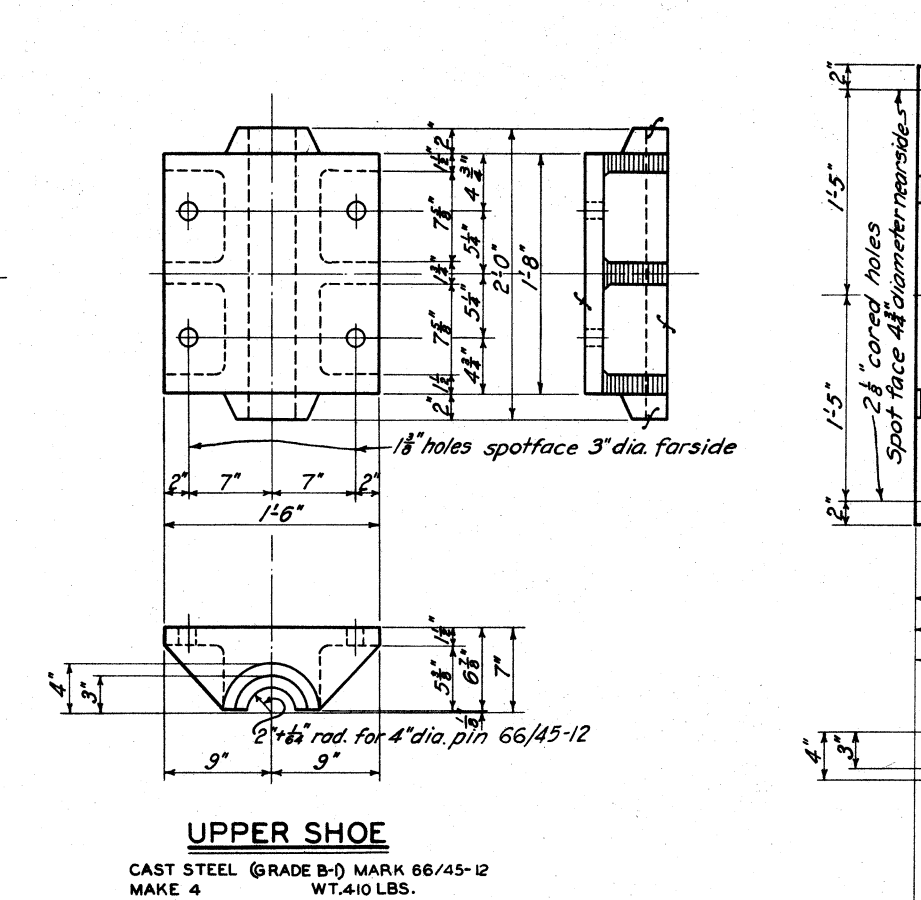
ROLLER NEST

FORGED STEEL ROLLERS WITH STRUCT. STEEL BARS
MARK 66/45-8 MAKE 2 FORGED STEEL WT. 1485 LBS.
STRUCT. STEEL WT. 110 LBS.
MARK 66/45-7 MAKE 4 FORGED STEEL WT. 1730 LBS.
STRUCT. STEEL WT. 125 LBS.



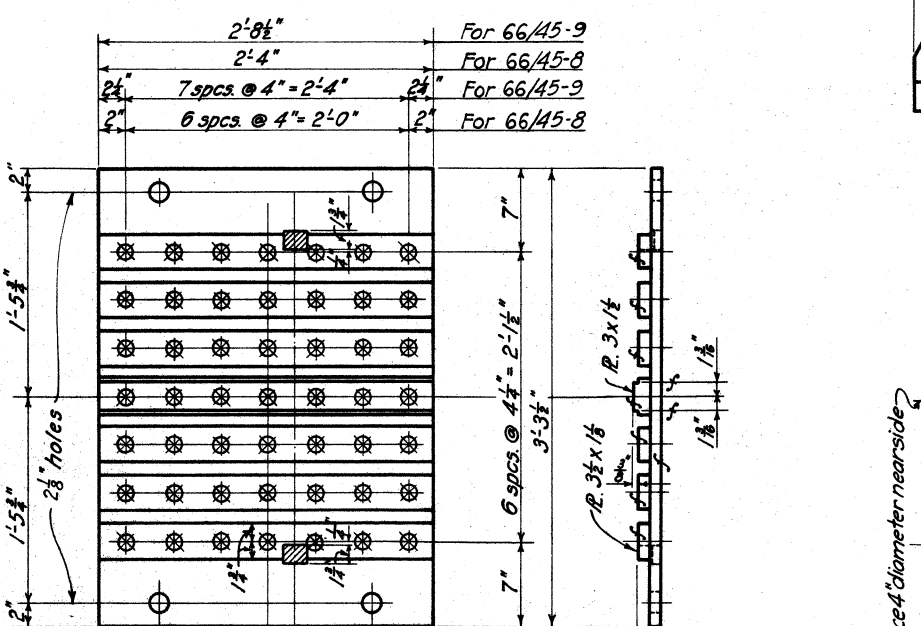
PIN

H.R. STEEL WITH C.S. WASHERS & RECESSED STEEL NUT
MARK 66/45-12 MAKE 4 HOT ROLLED STEEL WT. 97.5 LBS.
CAST STEEL WASHERS WT. 32.5 LBS.
STEEL NUTS WT. 8.0 LBS.



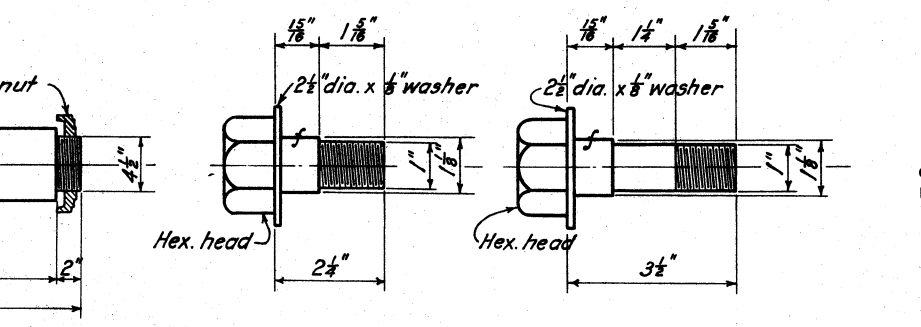
UPPER SHOE

CAST STEEL (GRADE B-1) MARK 66/45-12
MAKE 4 WT. 410 LBS.



ROLLER PLATE

STRUCT. STEEL
MARK 66/45-8 MAKE 2 WT. 510 LBS.
MARK 66/45-9 MAKE 4 WT. 595 LBS.

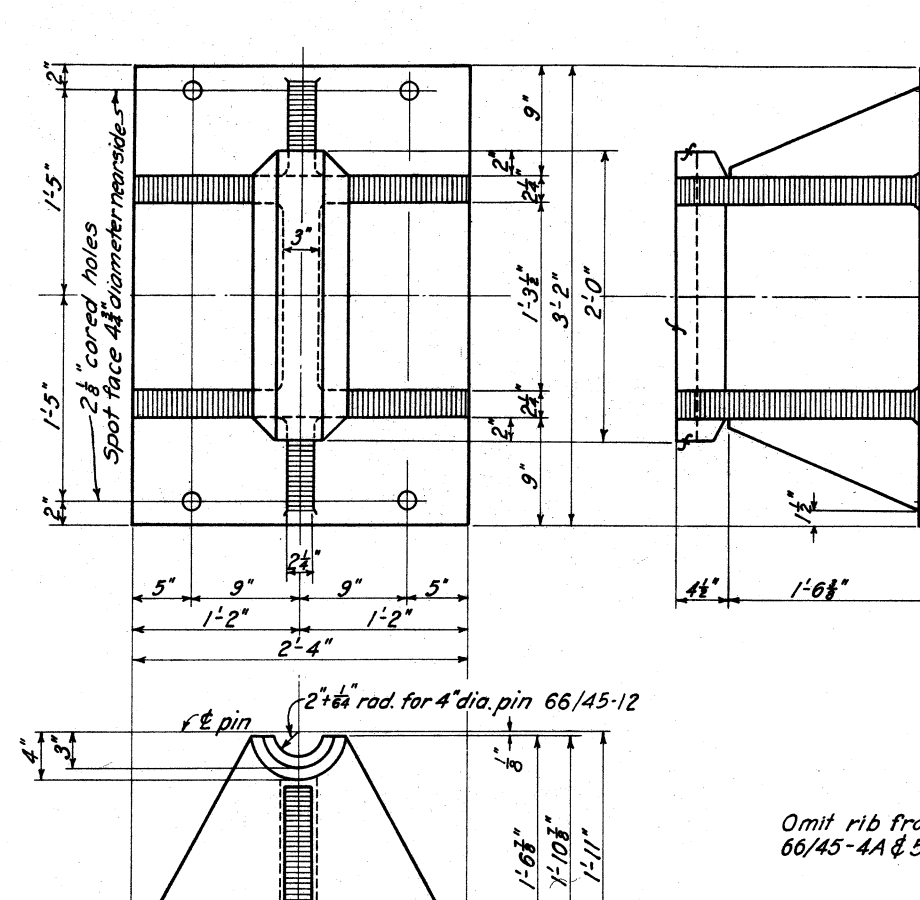


TAP BOLT

STRUCT. STEEL MARK 66/45-14 MAKE 136 WT. 1.33 LBS.
SCALE: 6"=1'-0"

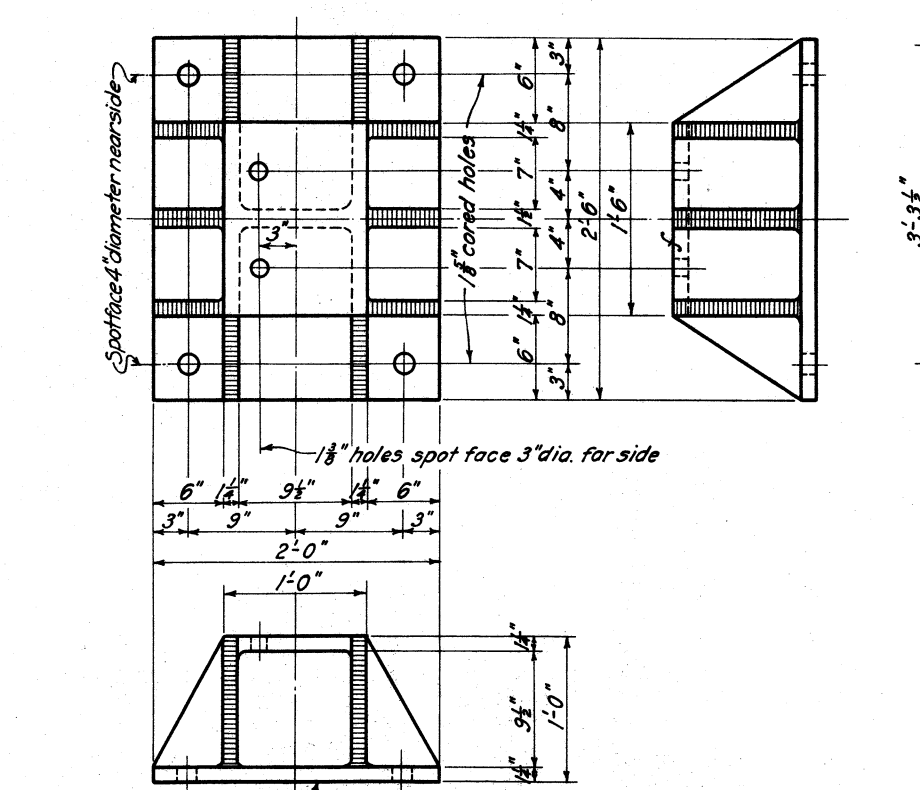
TAP BOLT

STRUCT. STEEL MARK 66/45-15 MAKE 24 WT. 1.64 LBS.
SCALE: 6"=1'-0"



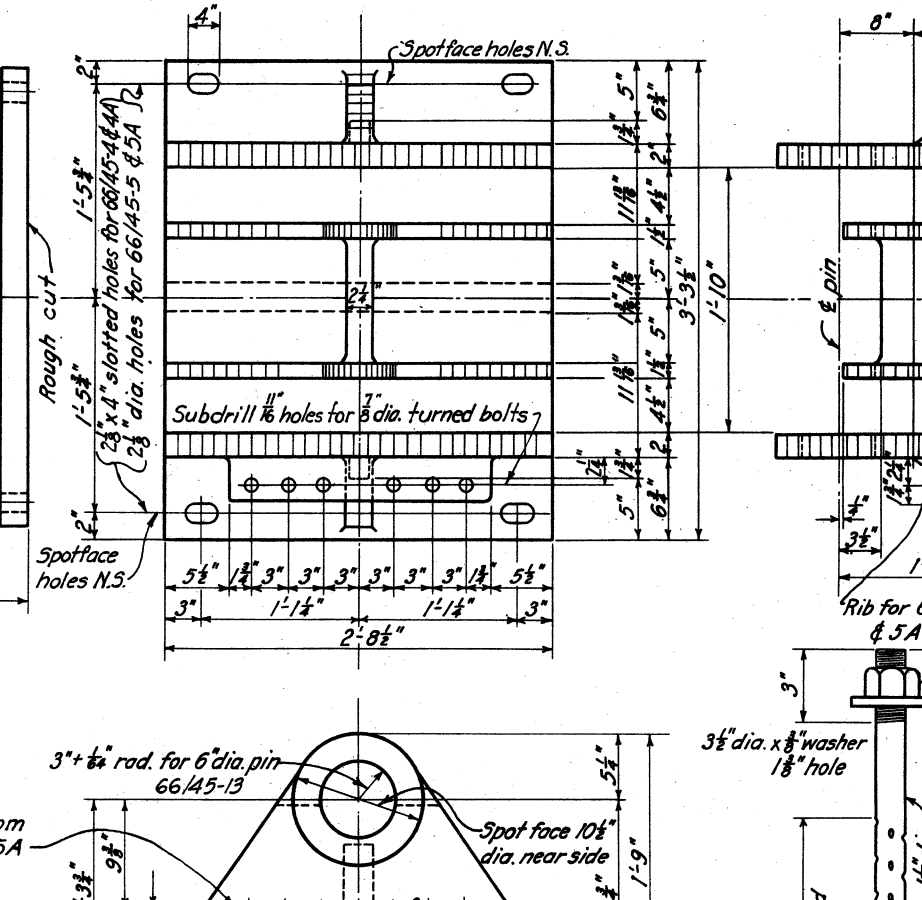
FIXED CASTING

CAST STEEL (GRADE B-1) MARK 66/45-3
MAKE 2 WT. 1620 LBS.



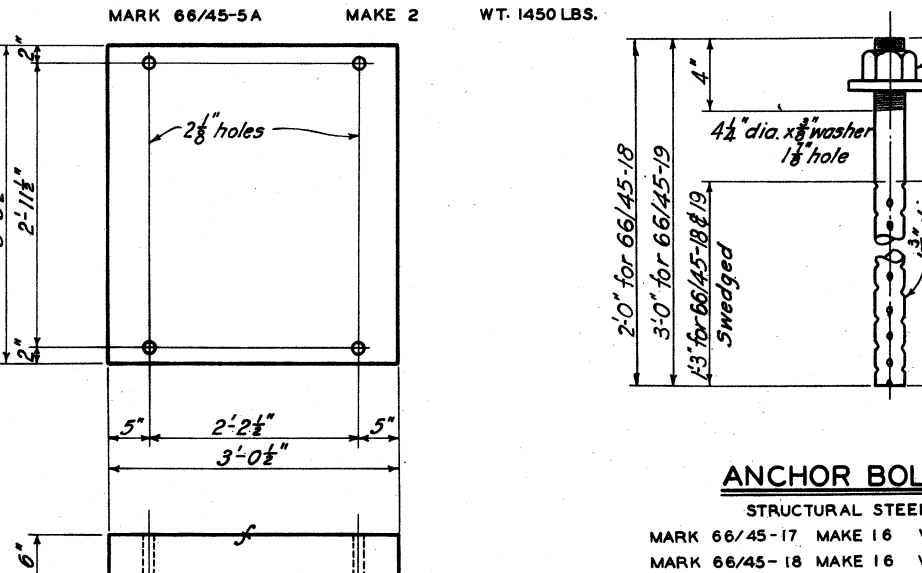
STRINGER CASTING

CAST STEEL (GRADE B-1) MARK 66/45-10
MAKE 12 WT. 620 LBS.



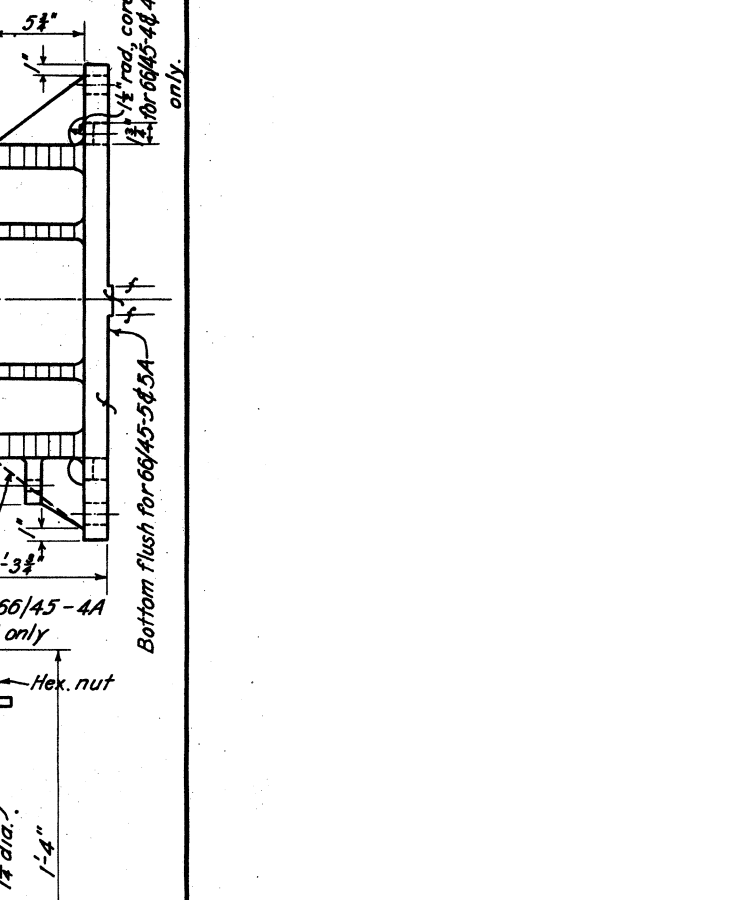
FIXED & ROLLER CASTINGS

CAST STEEL (GRADE B-1)
MARK 66/45-4 MAKE 2 WT. 1480 LBS.
MARK 66/45-4A MAKE 2 WT. 1450 LBS.
MARK 66/45-5 MAKE 2 WT. 1480 LBS.
MARK 66/45-5A MAKE 2 WT. 1450 LBS.



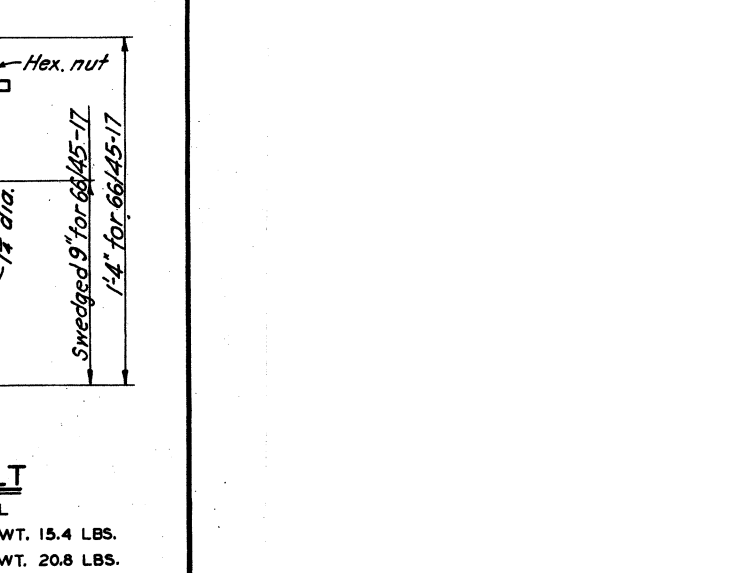
SLAB

STRUCT. STEEL MARK 66/45-11 MAKE 8 WT. 2435 LBS.
SCALE: 1"=1'-0"



ANCHOR BOLT

STRUCT. STEEL MARK 66/45-16 MAKE 48 WT. 7.5 LBS.
SCALE: 3"=1'-0"



ANCHOR BOLT

STRUCTURAL STEEL
MARK 66/45-17 MAKE 16 WT. 15.4 LBS.
MARK 66/45-18 MAKE 16 WT. 20.8 LBS.
MARK 66/45-19 MAKE 16 WT. 29.2 LBS.

NOTES

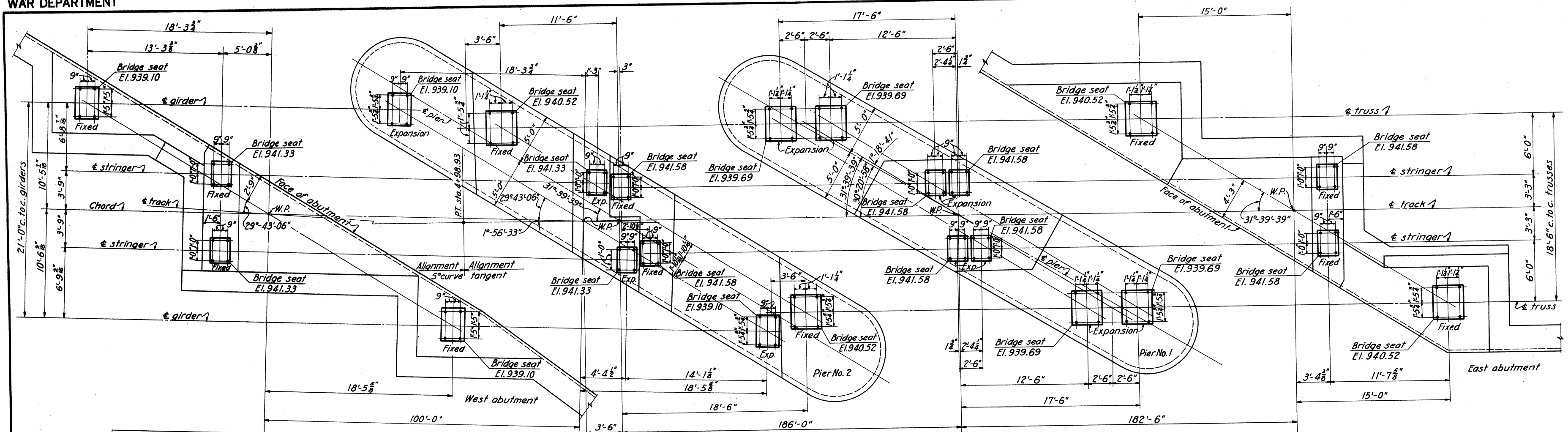
All fillets on castings 3/4" radius

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO**
B. & O. R. R. & W. & L. E. RY. BRIDGE
CASTINGS

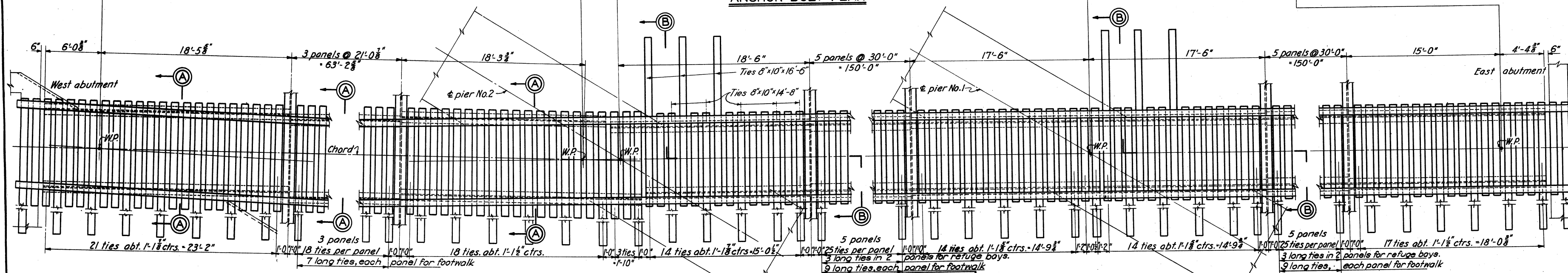
IN 147 SHEETS SHEET NO. 66 SCALE: 1/2"=1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

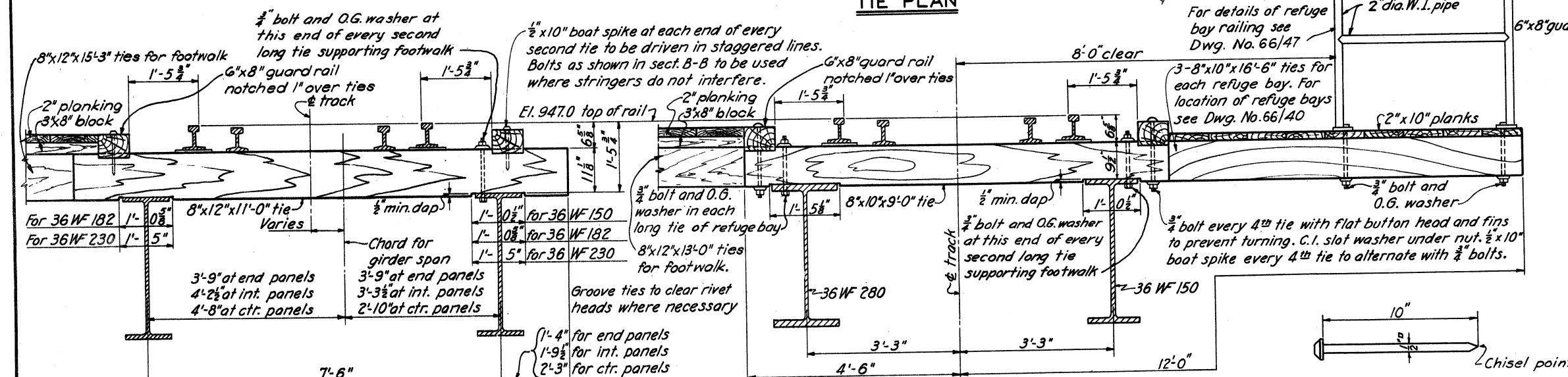
SUBMITTED: [Signature] APPROVED: [Signature]
DRAWN BY: H. S. M. TRANSMITTED WITH LETTER
CHECKED BY: V. S. V. FILE NO. 0271-PM-66/45 DATED



ANCHOR BOLT PLAN



TIE PLAN



SECTION A-A

TYPICAL FOR GIRDER SPAN

SCALE: 3/4\"/>

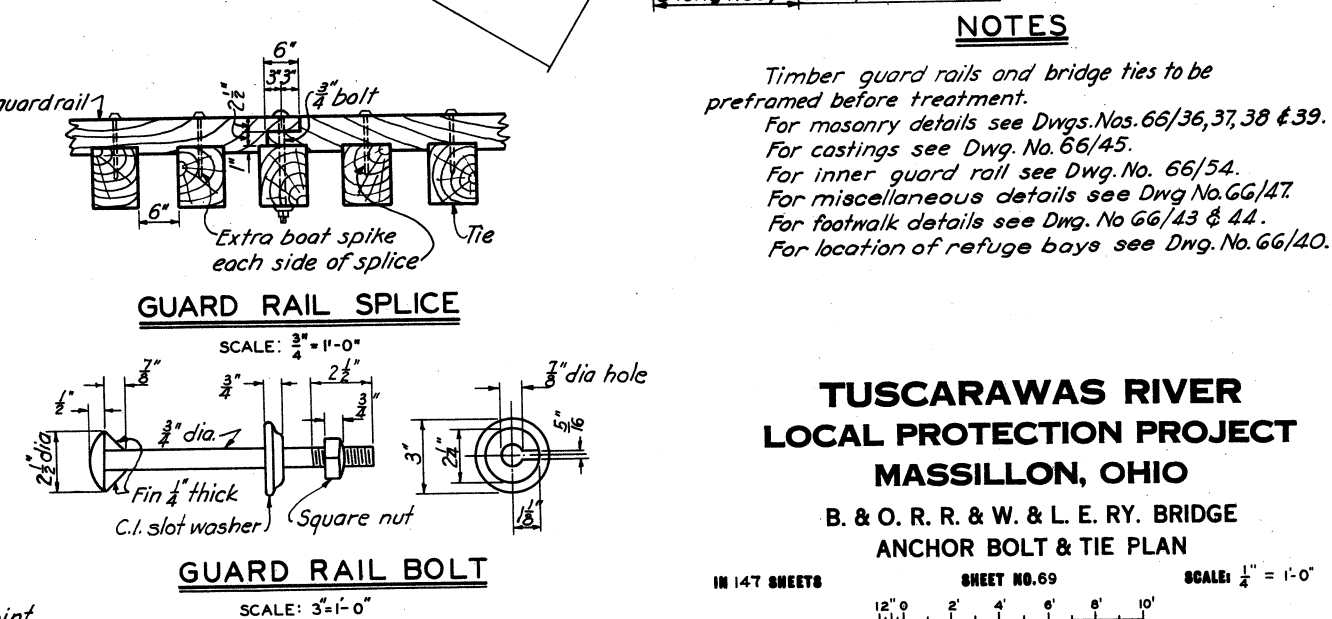
Note: Timber guard rails and refuge bay planking to be laid parallel to rail.

SECTION B-B

TYPICAL FOR TRUSS SPAN
SCALE: 3/4\"/>

BOAT SPIKE

SCALE: 3\"/>



GUARD RAIL BOLT

SCALE: 3\"/>

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

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

IN 147 SHEETS

SHEET NO. 69

SCALE: 1/4\"/>

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. SEPT. 1940

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

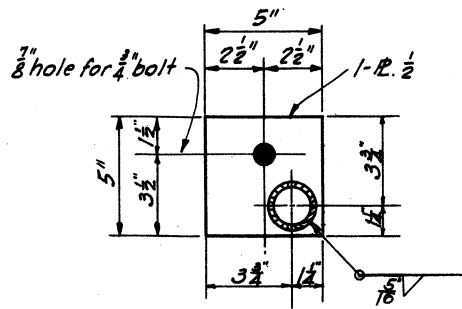
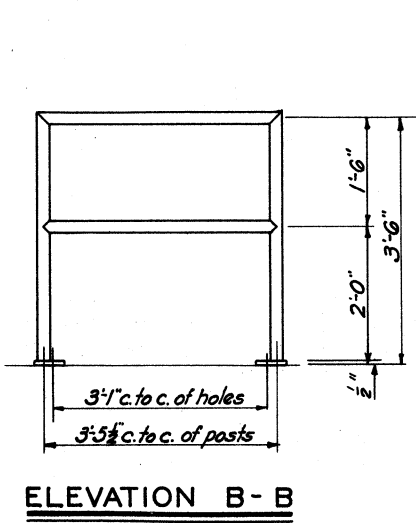
DRAWN BY: W. F. H.

TRACED BY: J. M. B.

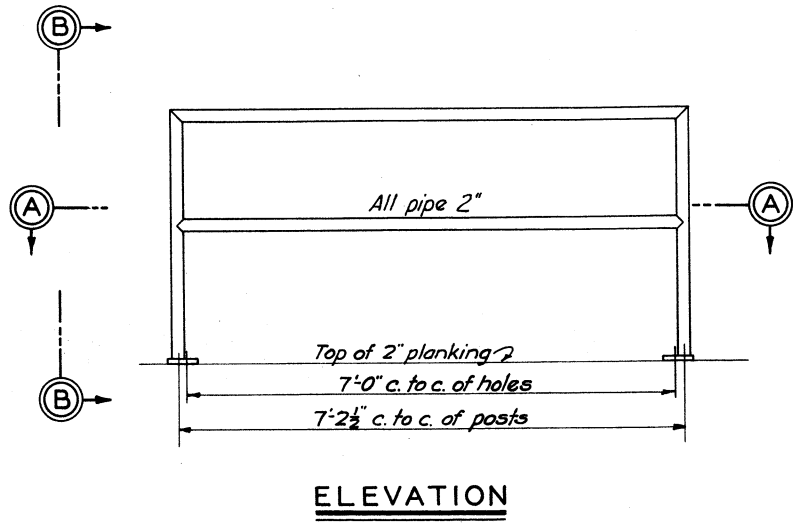
TRANSMITTED WITH LETTER

CHECKED BY: H. U. S. FILE NO. 0271-PM-66/46

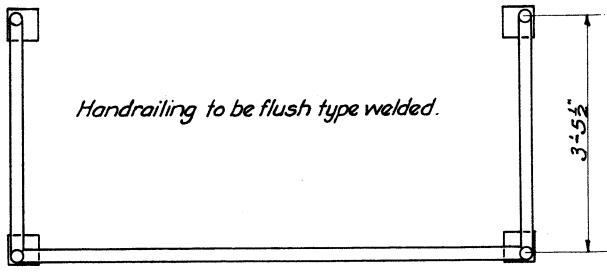
BY	DATE	CHARACTER



DETAIL OF BASE PLATE
SCALE: 3"=1'-0"

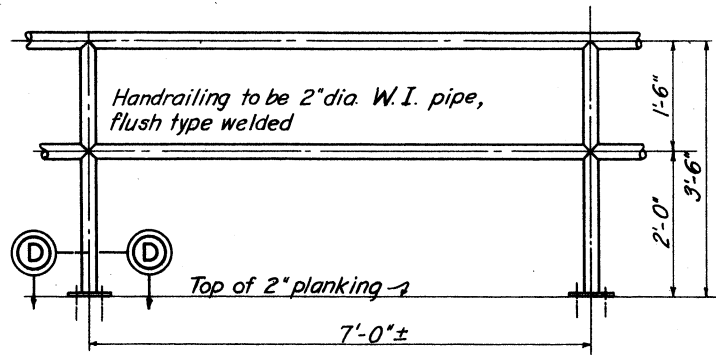


ELEVATION

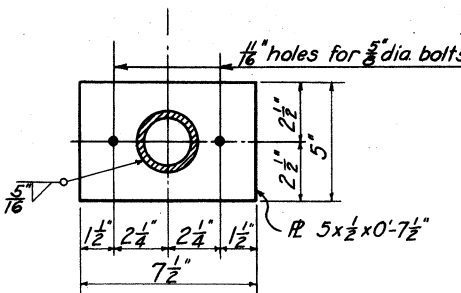


SECTION A-A

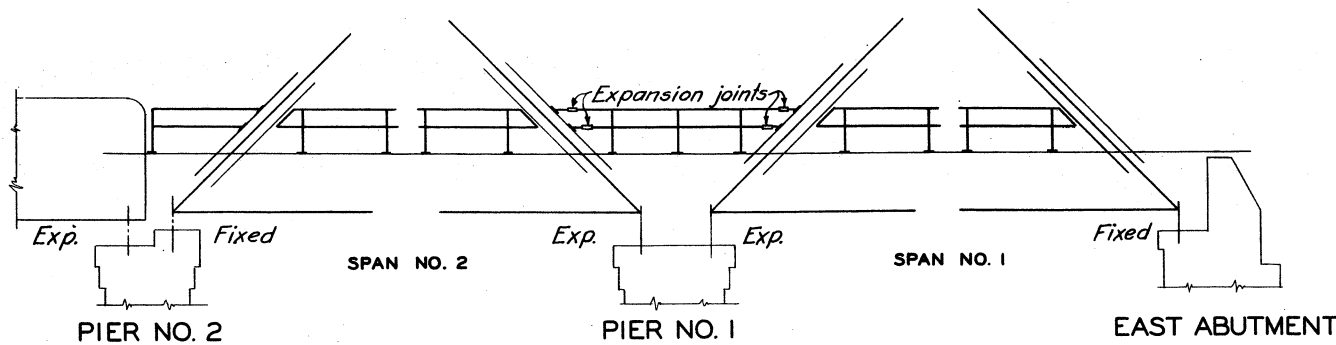
REFUGE BAY RAILING
2" W.I. PIPE



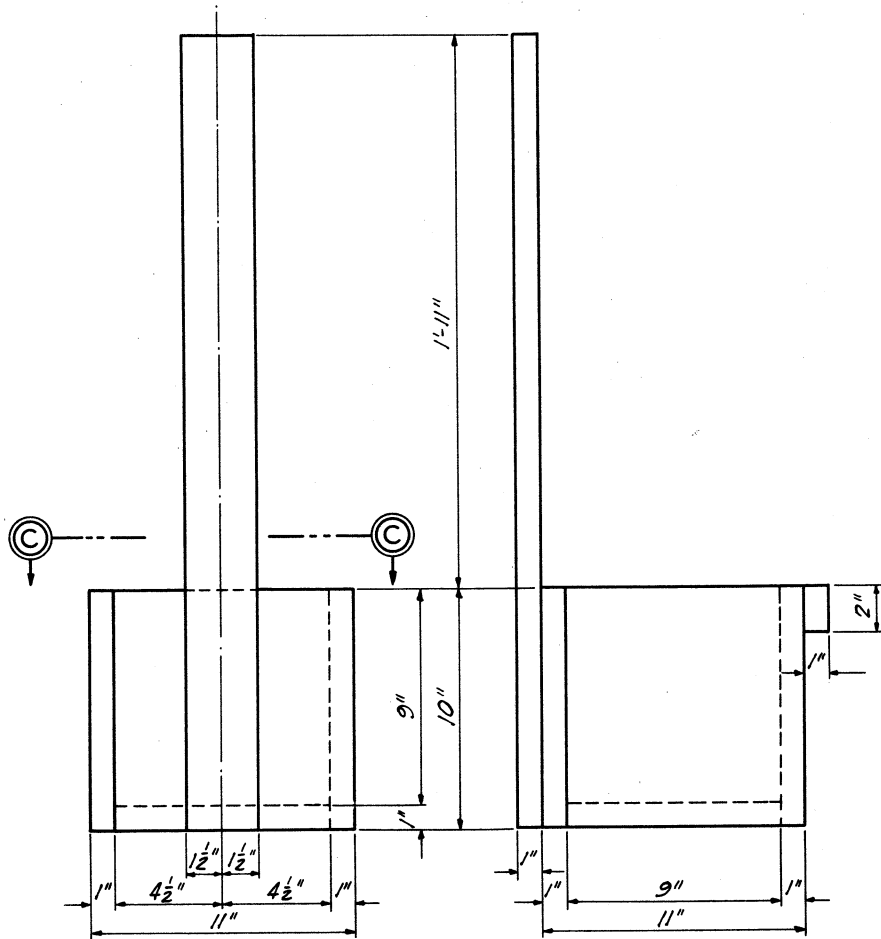
TYPICAL FOOTWALK RAILING PANEL



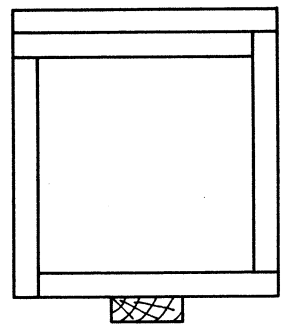
SECTION D-D
SCALE: 3"=1'-0"



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



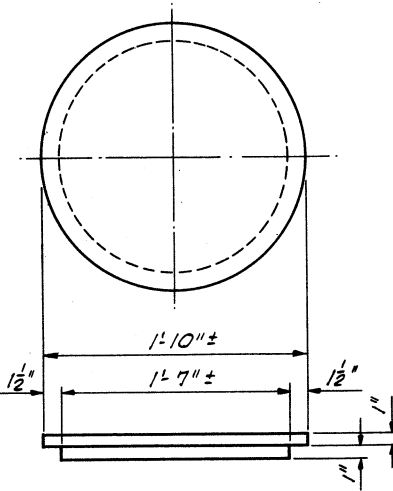
FIRE BUCKET
TO BE SUBMERGED IN BARREL
SCALE: 3"=1'-0"



VIEW C-C



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



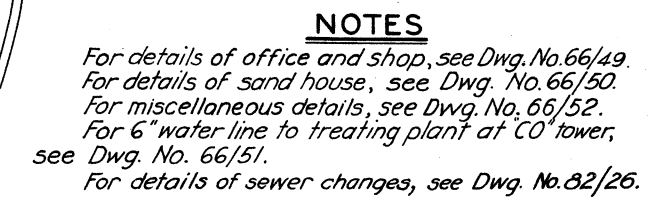
WOODEN FIRE BARREL COVER
SCALE: 1 1/2"=1'-0"

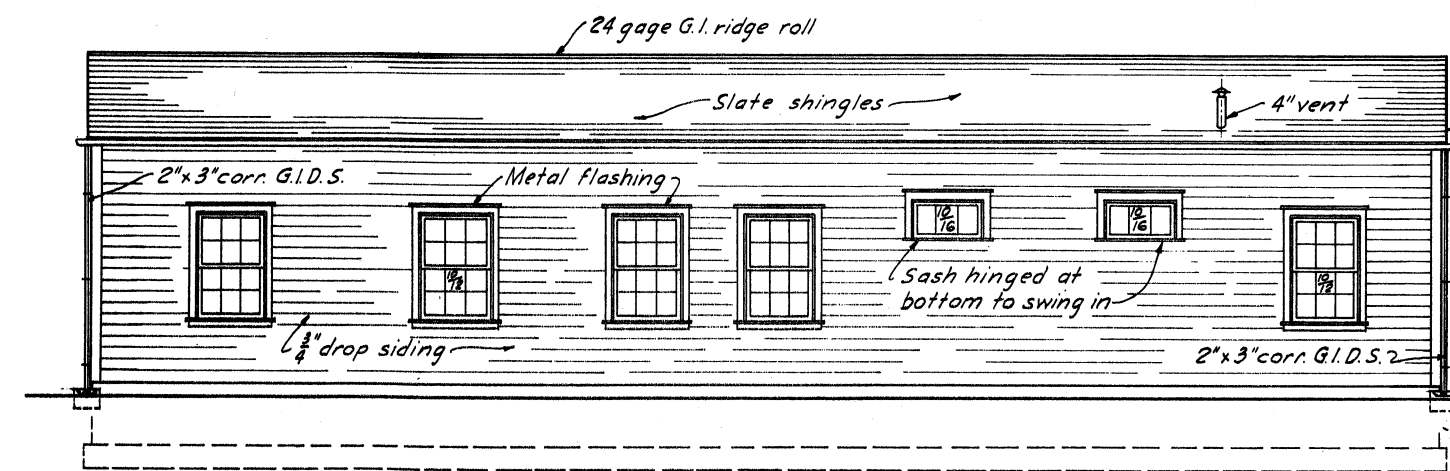
NOTES

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.

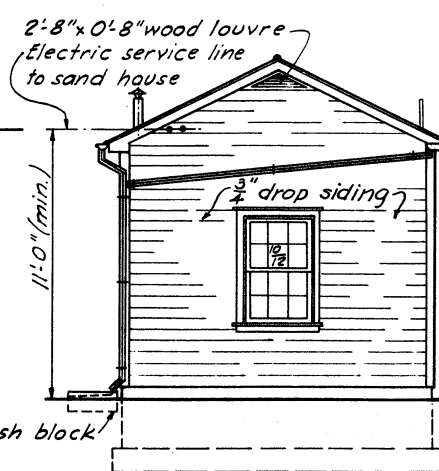
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
B. & O. R. R. & W. & L. E. RY. BRIDGE
MISCELLANEOUS DETAILS**

IN 147 SHEETS SHEET NO. 70 SCALE: 1/4"=1'-0"
U.S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940
SUBMITTED BY: [Signature] APPROVED: [Signature]
DRAWN BY: C.D.N. TRACED BY: A.S. CHECKED BY: H.U.B. FILE NO. 0271-PM-66/47 DATED: [Signature]
TRANSMITTED WITH LETTER

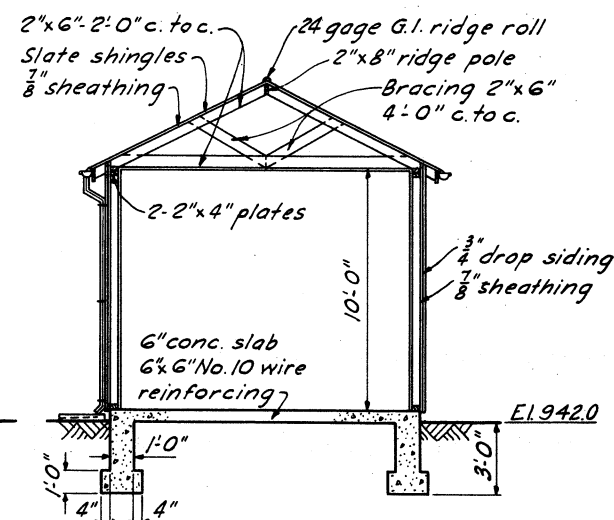




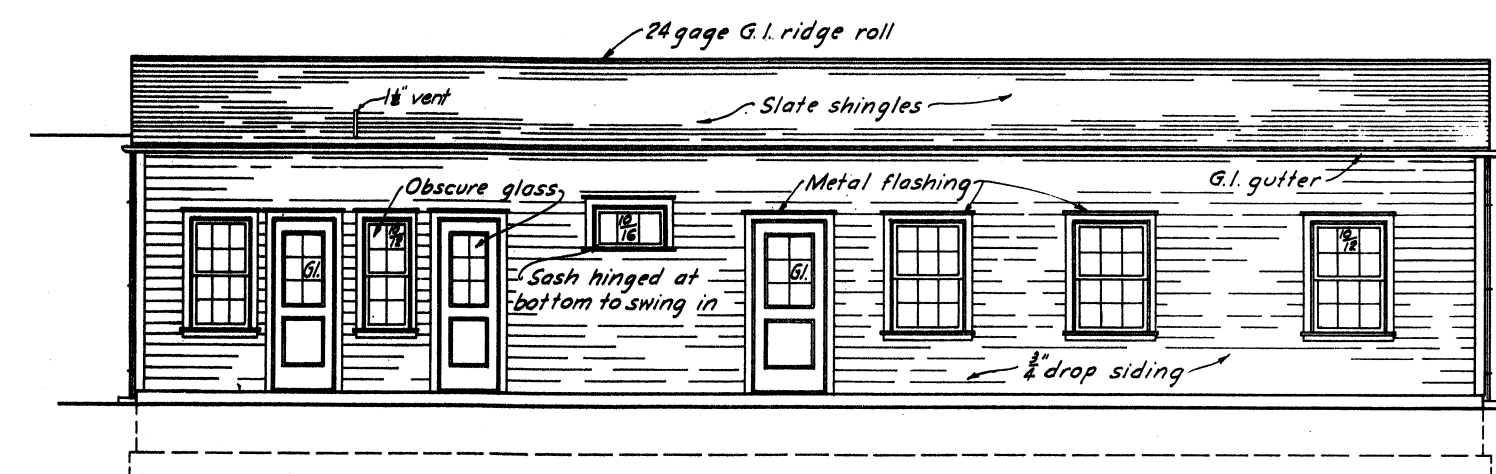
REAR ELEVATION



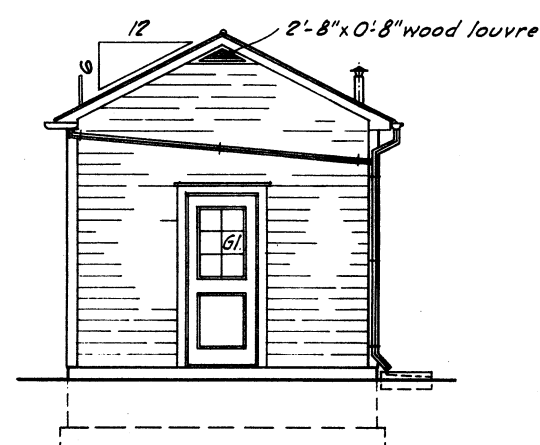
END ELEVATION



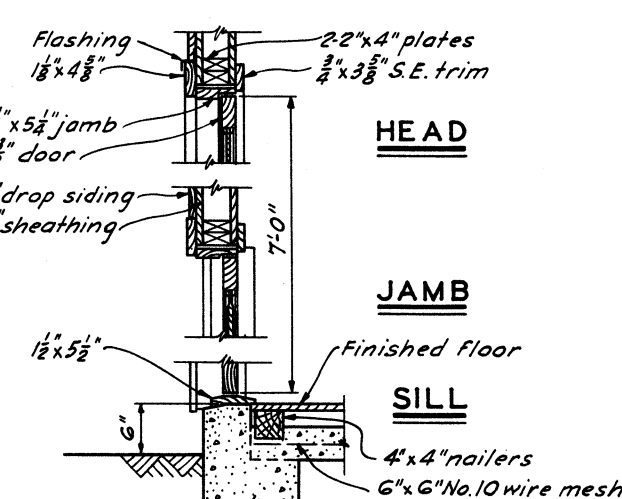
TYPICAL SECTION



FRONT ELEVATION



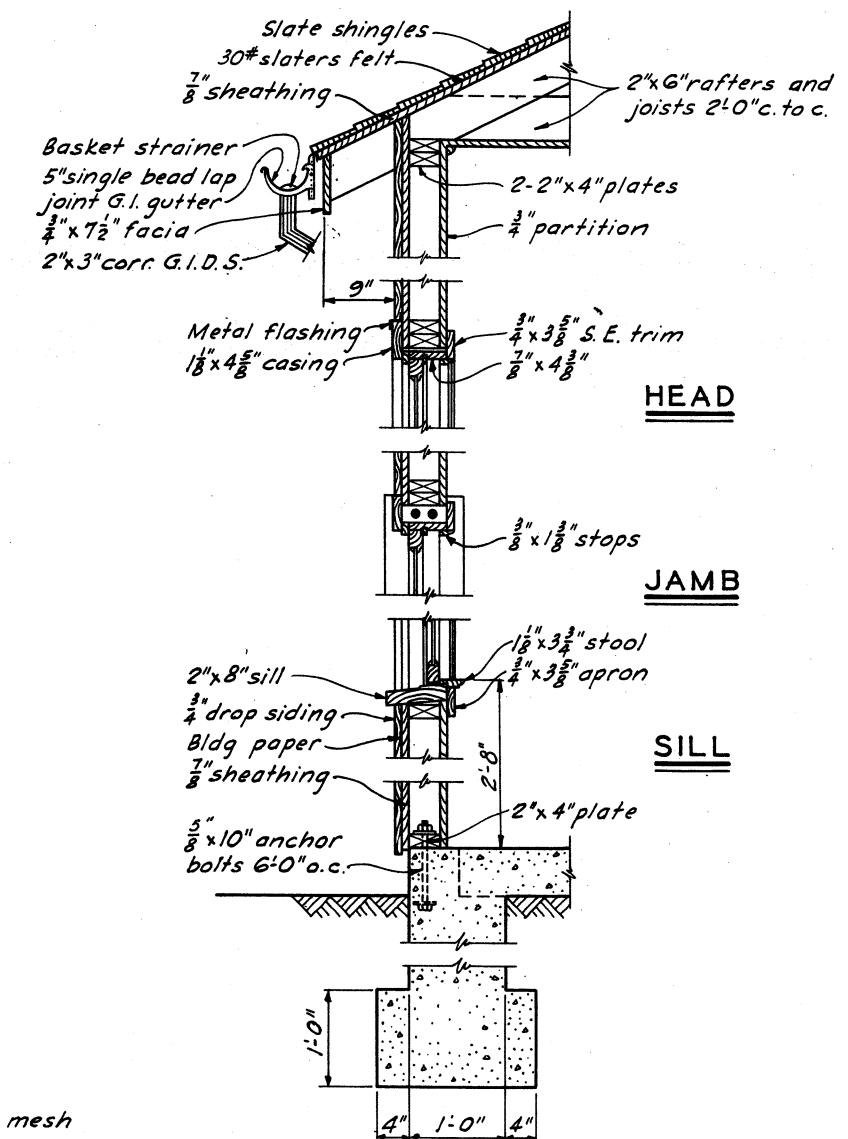
END ELEVATION



DOOR DETAILS

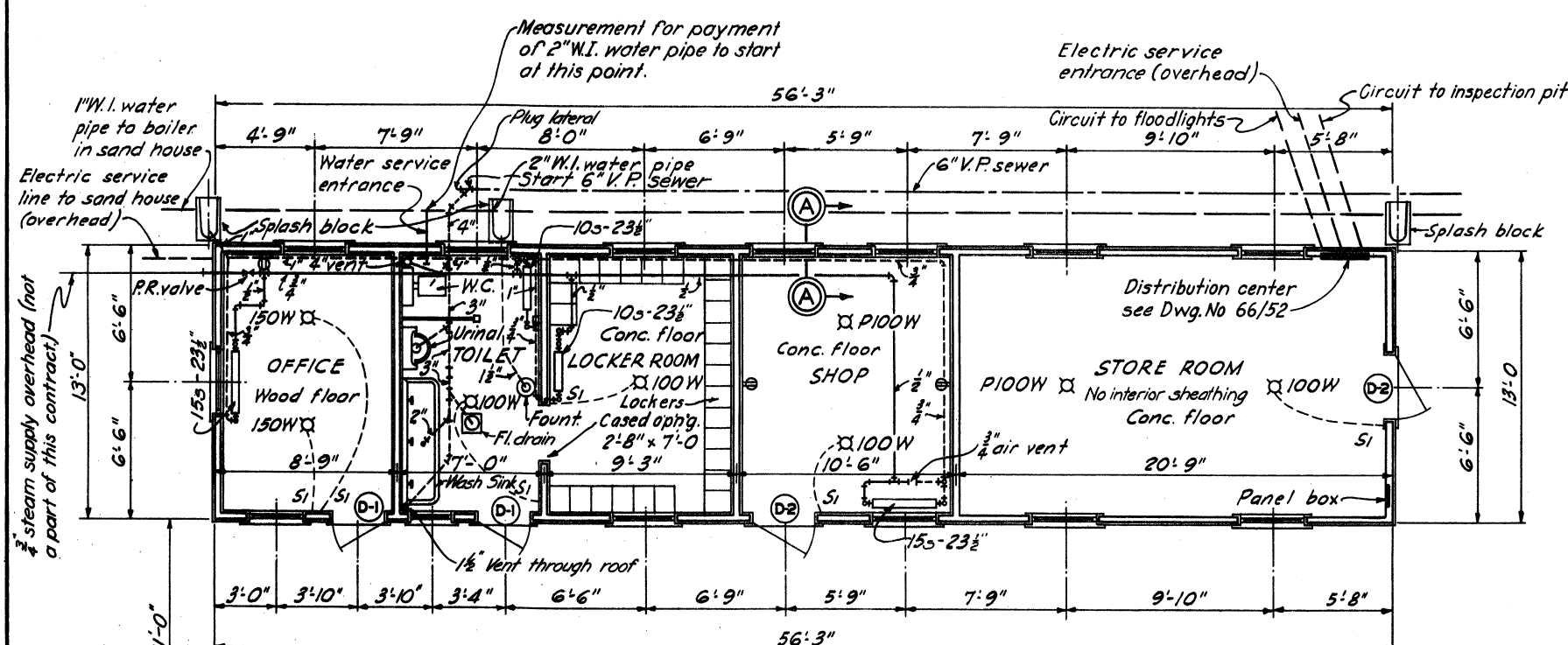
SCALE: 1"=1'-0"

Note: Provide wood saddle for door to "Office" only



SECTION A-A

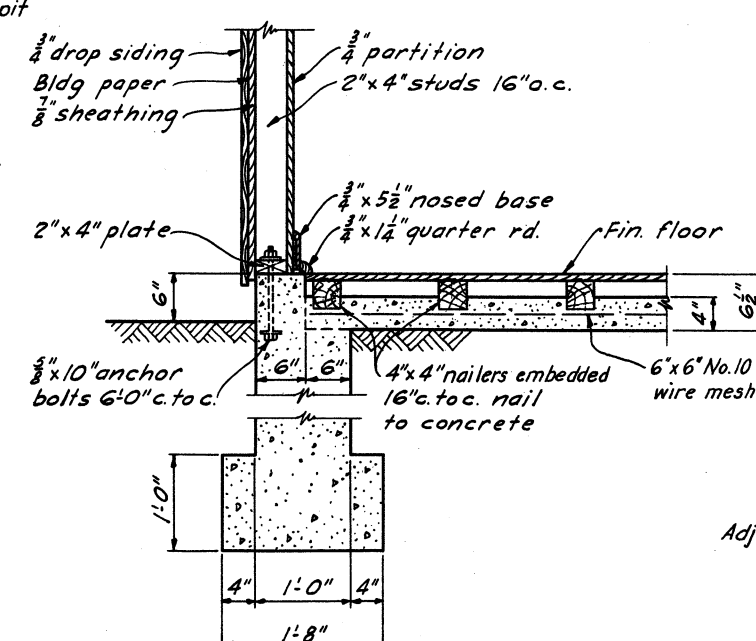
SCALE: 1"=1'-0"



FLOOR PLAN

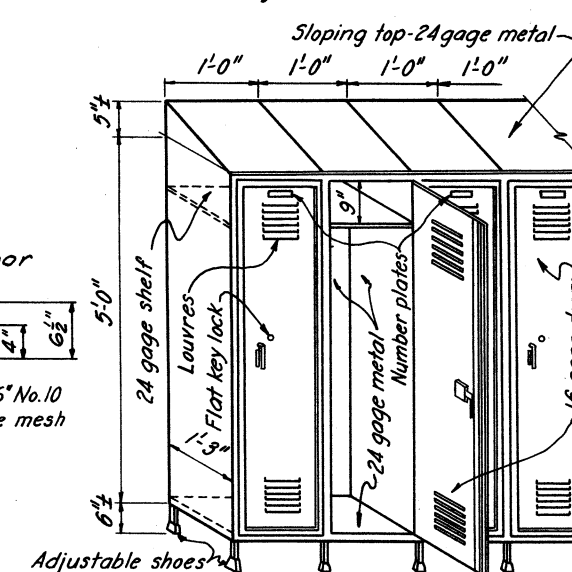
LEGEND

- ☐ Ceiling outlet
 S, Single pole switch
 ⊕ Convenience outlet



DETAIL OF OFFICE FLOOR

SCALE: 1"=1'-0"



STEEL LOCKERS

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

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:

CHAZZ LONDON

NOTES

*Pitch gutters $\frac{1}{16}$ " 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**

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

IN 147 SHEETS

SHEET NO. 73

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

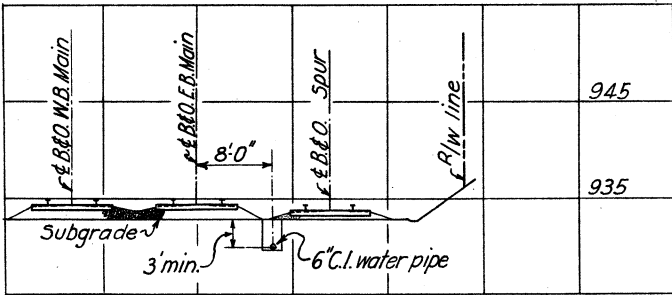
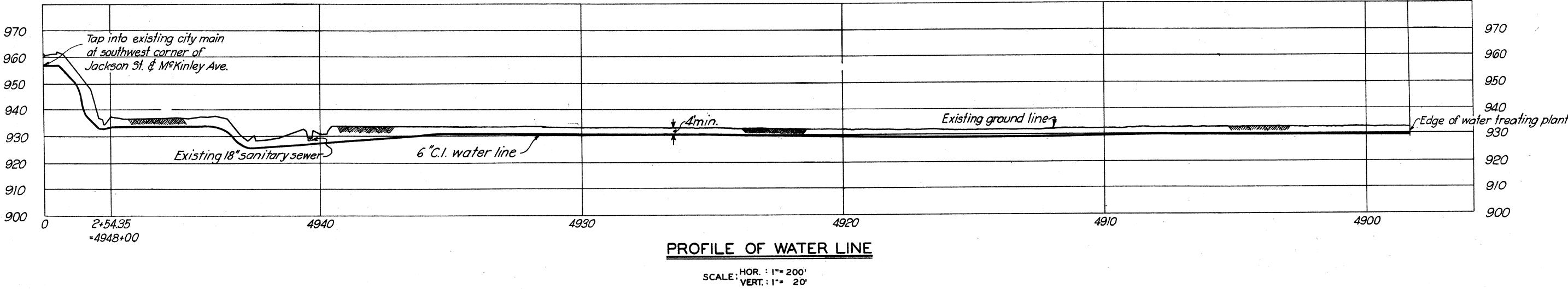
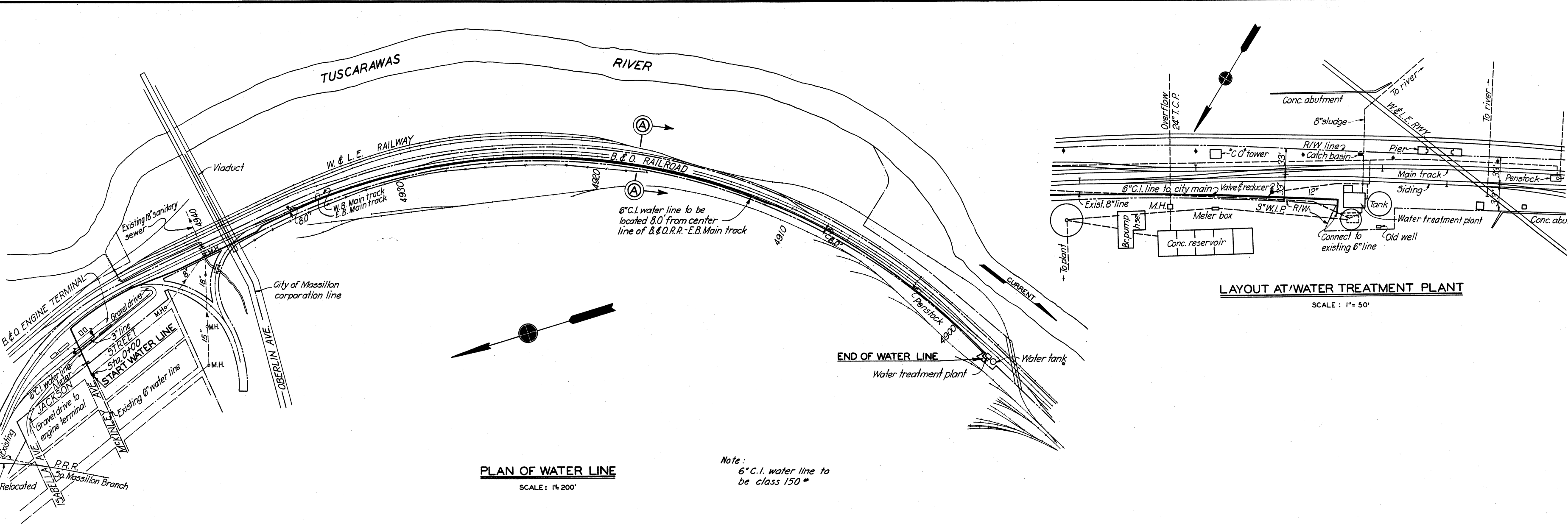
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

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

PRINCIPAL ENGINEER M. COL. CORPS OF ENGINEERS

TRANSMITTED WITH LETTER

CHECKED BY R. H. H. FILE NO 0271-PM-66/50 DATED



NOTES

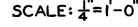
For general plan, see Dwg. Nos. 16/4 and 16/5.
For engine terminal layout, see Dwg. No. 66/48.

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

IN 147 SHEETS SHEET NO. 74 SCALE: AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940
SUBMITTED: H. G. R. APPROVED: H. E. C.
PRINCIPAL ENGINEER ST. COL. CORPS OF ENGINEERS
DRAWN BY: H. G. R. TRANSMITTED WITH LETTER
CHECKED BY: D. G. J. FILE NO. 0271-PM-66/51 DATED

BY	DATE	CHARACTER



NO.8 TURNOUT			
BILL OF TIES			
NO.OF TIES	SIZE	NO.OF TIES	SIZE
13	7" x 9" x 0"	4	7" x 13" x 0"
9	7" x 10" x 0"	6	7" x 14" x 0"
7	7" x 11" x 0"	5	7" x 15" x 0"
5	7" x 12" x 0"	5	7" x 16" x 0"
Total No. of Ties 54 = 3333 F.B.M.			

NOTES
No super-elevation necessary for
B.&O.R.R. tracks in this contract.
All concrete to be Class "A."

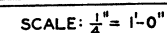
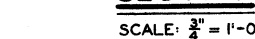
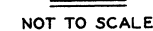
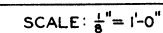
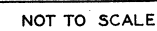
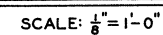
APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY: _____
CHIEF ENGINEER

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 194

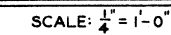
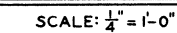
SUBMITTED *[Signature]* APPROVED *[Signature]*
PRINCIPAL ENGINEER LT. COL. CORPS OF ENGINEERS

EXAMINED BY W. B. TRANSMITTED WITH LETTER
TRACED BY C. C. B.

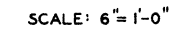
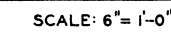
FILE NO 0271-PM-66/52-222



NO.10 TURNOUT			
BILL OF TIES			
NO.OF TIES	SIZE	NO.OF TIES	SIZE
11	7/8"x9'-0"	6	7/8"x15'-0"
11	7/8"x10'-0"	6	7/8"x16'-0"
7	7/8"x11'-0"		
7	7/8"x12'-0"		
8	7/8"x13'-0"		
6	7/8"x14'-0"		
Total No. of ties 62 = 3906 F.B.M.			



SCALE: 6" = 1'-0"



PLAN

PLAN

IN 147 SHEETS

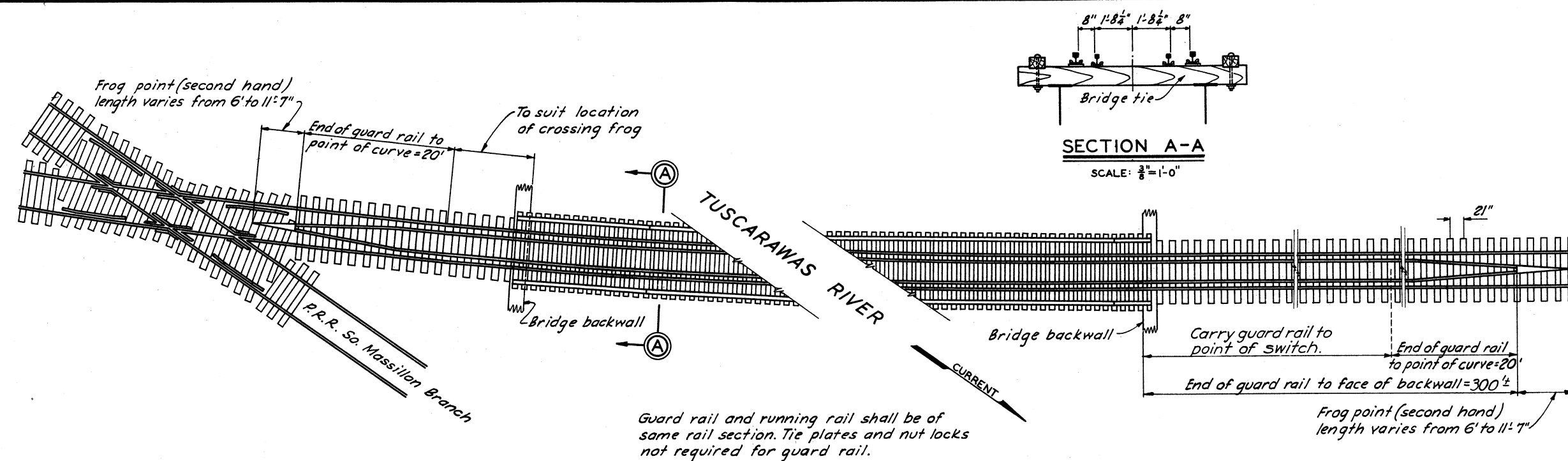
SHEET NO. 76

SCALE: AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

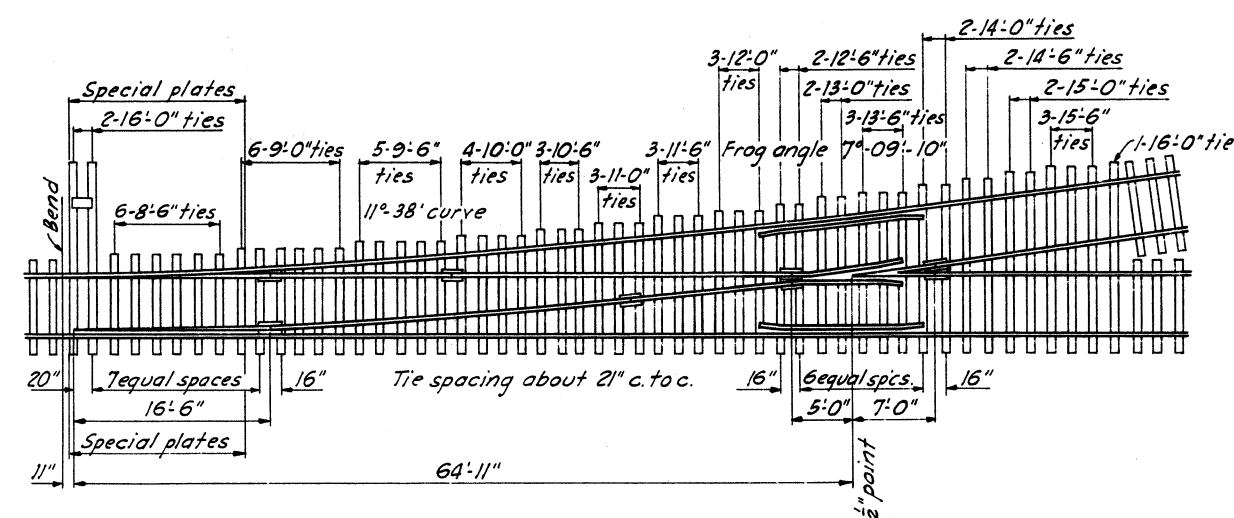
SUBMITTED: *[Signature]* PRINCIPAL ENGINEER APPROVED: *[Signature]* LT. COL., CORPS OF ENGINEERS

DRAWN BY E.W.H. & A.W.M.
TRACED BY A.S.
CHECKED BY D.G.J. FILE NO 027i-PM-66/53
TRANSMITTED WITH LETTER
DATED



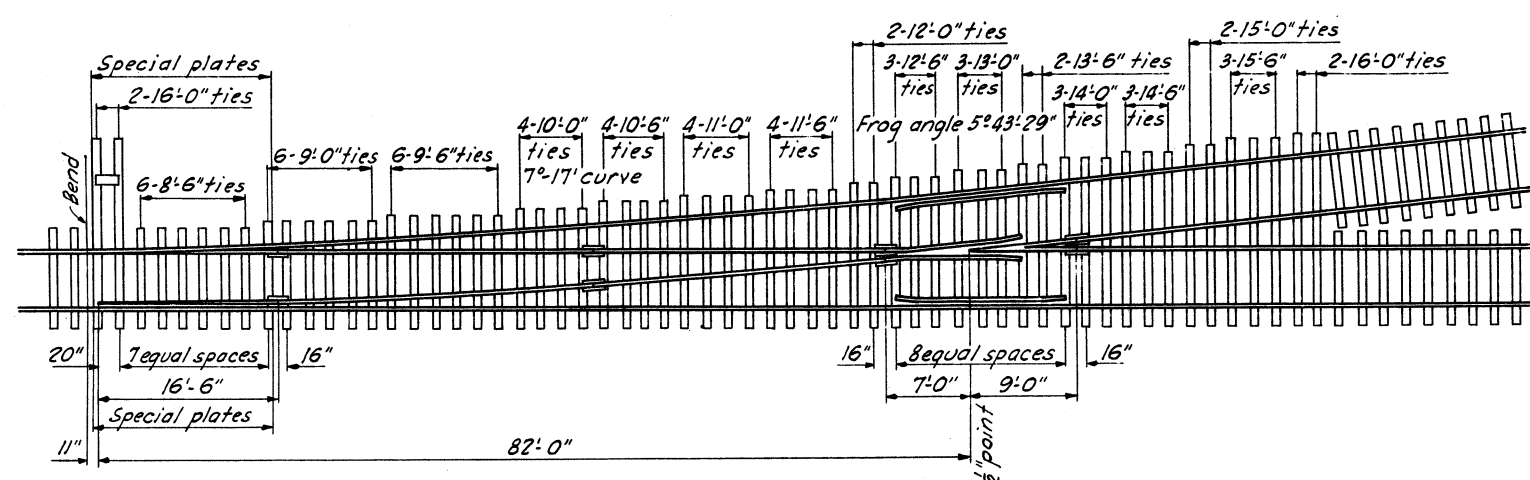
PLAN OF INNER GUARD RAILS FOR
B. & O. R. R. - W. & L. E. RY. BRIDGE

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



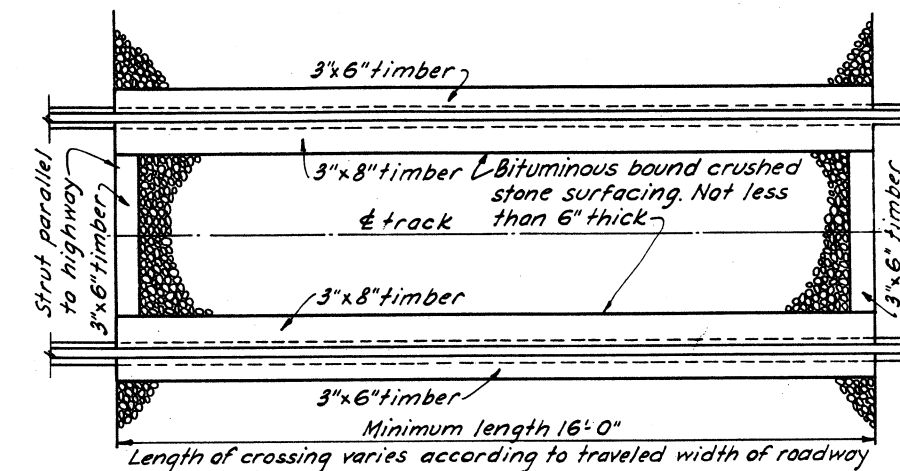
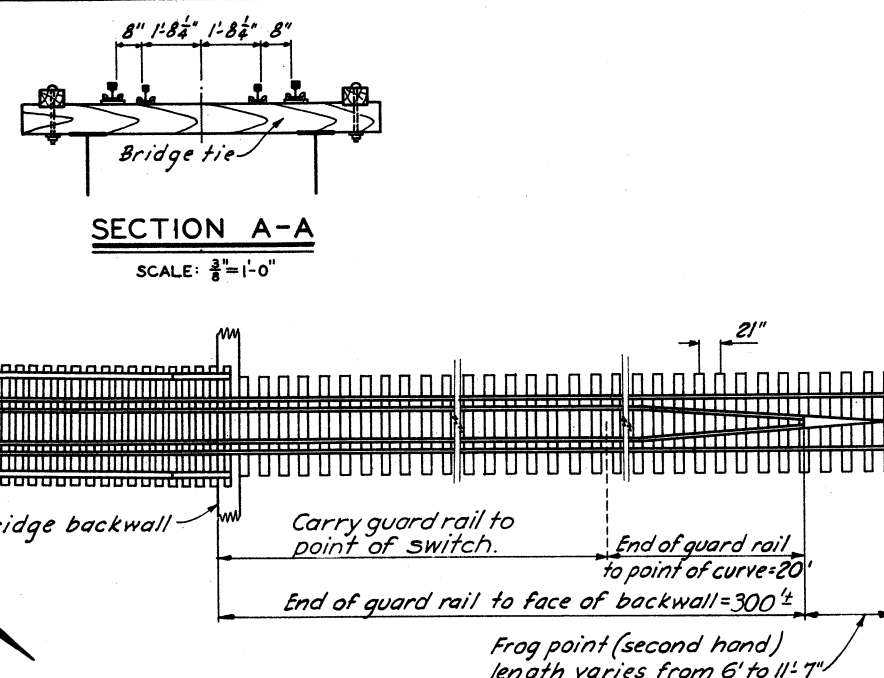
NO. 8 TURNOUT

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



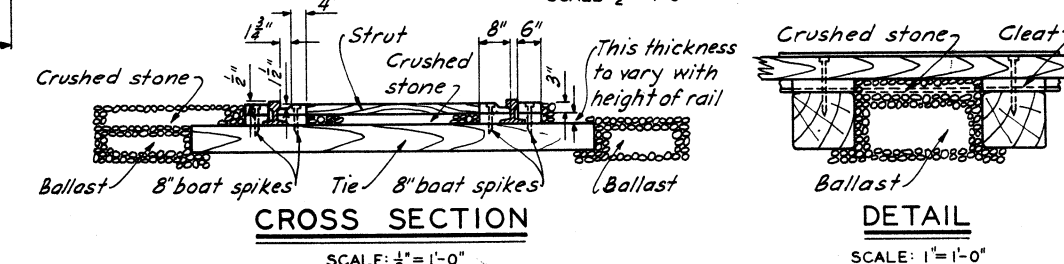
NO. 10 TURNOUT

NOT TO SCALE



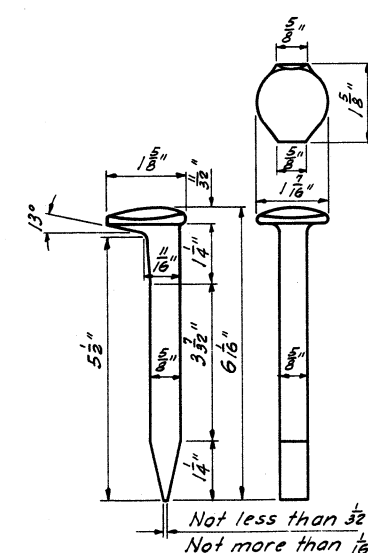
PLAN

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



HIGHWAY GRADE CROSSING

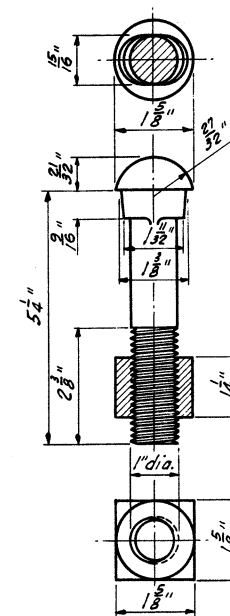
NO. 8 TURNOUT			
BILL OF TIES			
NO. OF TIES	SIZE	NO. OF TIES	SIZE
6	7x9x8'-6"	2	7x9x12'-6"
6	7x9x9'-0"	2	7x9x13'-0"
5	7x9x9'-6"	3	7x9x13'-6"
4	7x9x10'-0"	2	7x9x14'-0"
3	7x9x10'-6"	2	7x9x14'-6"
3	7x9x11'-0"	2	7x9x15'-0"
3	7x9x11'-6"	3	7x9x15'-6"
3	7x9x12'-0"	3	7x9x16'-0"
Total No. of ties = 52 = 3153 F. B. M.			



TRACK SPIKE

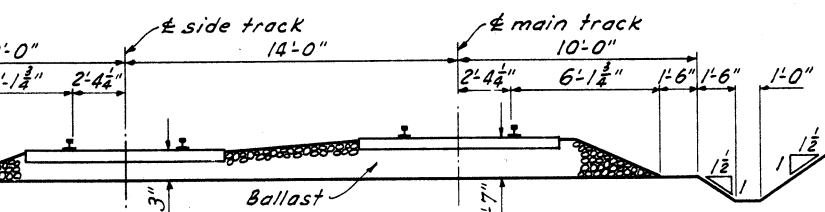
SCALE: 6" = 1'-0"

NO. 10 TURNOUT			
BILL OF TIES			
NO. OF TIES	SIZE	NO. OF TIES	SIZE
6	7x9x8'-6"	3	7x9x12'-6"
6	7x9x9'-0"	3	7x9x13'-0"
6	7x9x9'-6"	2	7x9x13'-6"
4	7x9x10'-0"	3	7x9x14'-0"
4	7x9x10'-6"	3	7x9x14'-6"
4	7x9x11'-0"	2	7x9x15'-0"
4	7x9x11'-6"	3	7x9x15'-6"
2	7x9x12'-0"	4	7x9x16'-0"
Total No. of ties = 59 = 3662 F. B. M.			



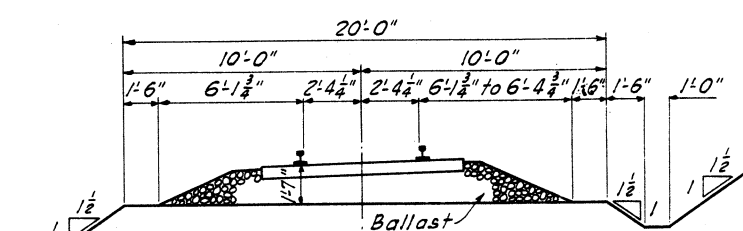
TRACK BOLT

SCALE: 6" = 1'-0"



SIDING AND MAIN TRACK TANGENT

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



SINGLE TRACK CURVE

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

SUPER-ELEVATION	
MAIN TRACKS	INDUSTRIAL TRKS.
2"	1"

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
W. & L. E. RY. DETAILS
& ROAD BED SECTIONS**

IN 147 SHEETS

SHEET NO. 77

SCALE: AS SHOWN

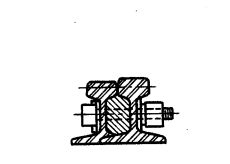
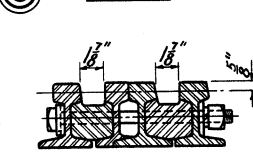
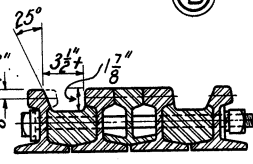
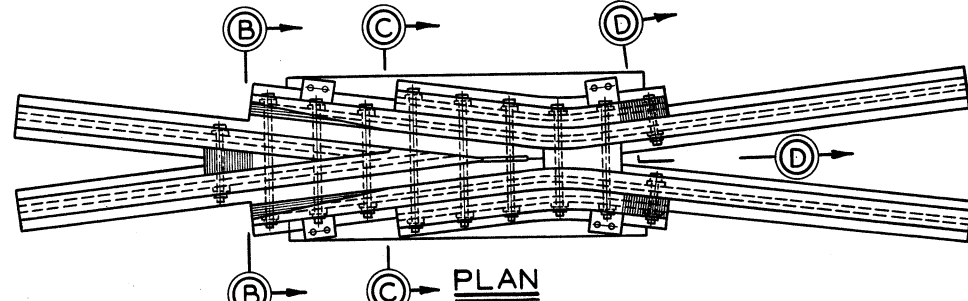
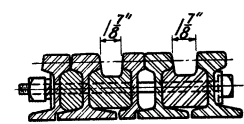
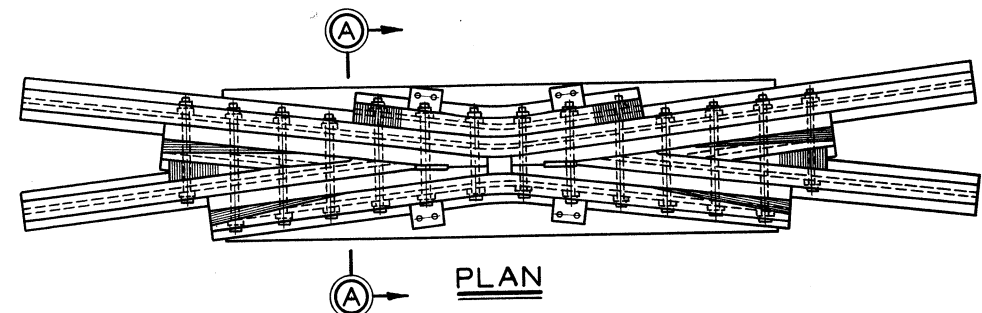
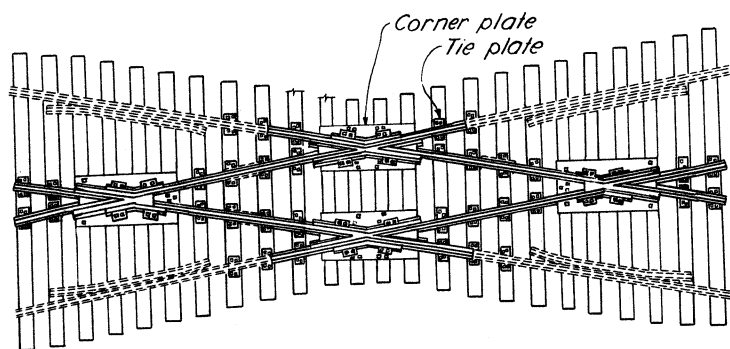
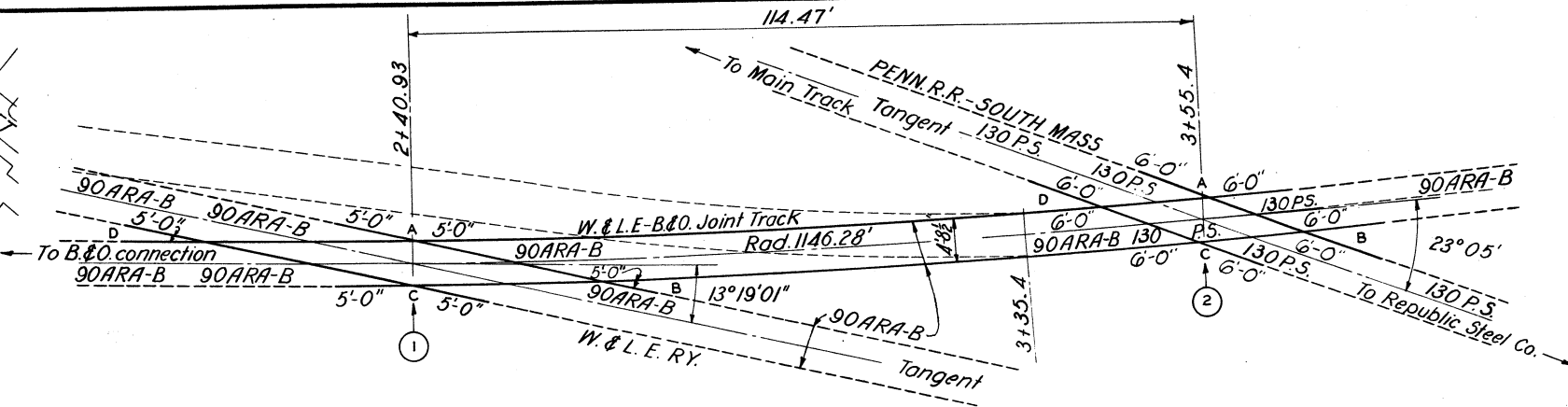
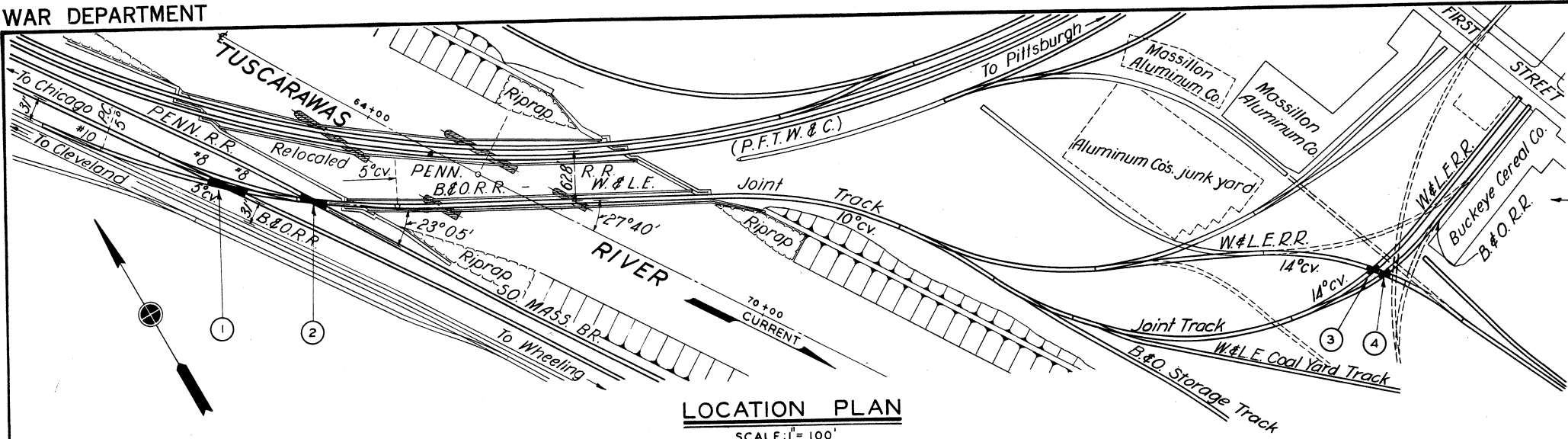
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED: *W. B. S.* PRINCIPAL ENGINEER APPROVED: *W. B. S.* COL. CORPS OF ENGINEERS

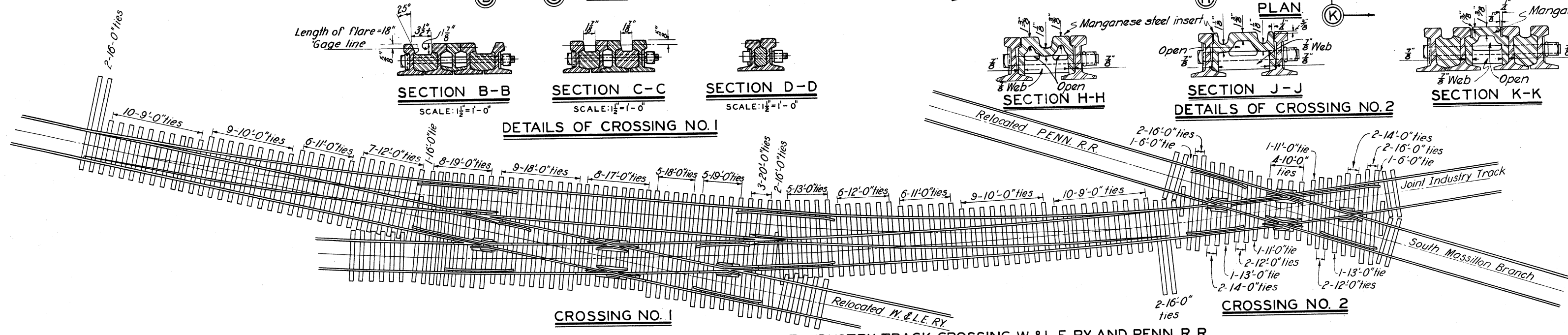
DRAWN BY: W. B. S. TRANSMITTED WITH LETTER

TRACED BY: A. S. FILE NO. 0271-PM-66/54 DATED

BY	DATE	CHARACTER
		REVISIONS



DETAILS OF CROSSING NO. 1



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.

APPROVED: THE BALTIMORE AND OHIO RAILROAD CO.
BY: CHIEF ENGINEER

APPROVED: THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION

APPROVED: THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: SPECIAL ENGINEER

NO. 2 CROSSING
BILL OF TIES

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 14,776 F.B.M.

BY	DATE	CHARACTER
		REVISIONS

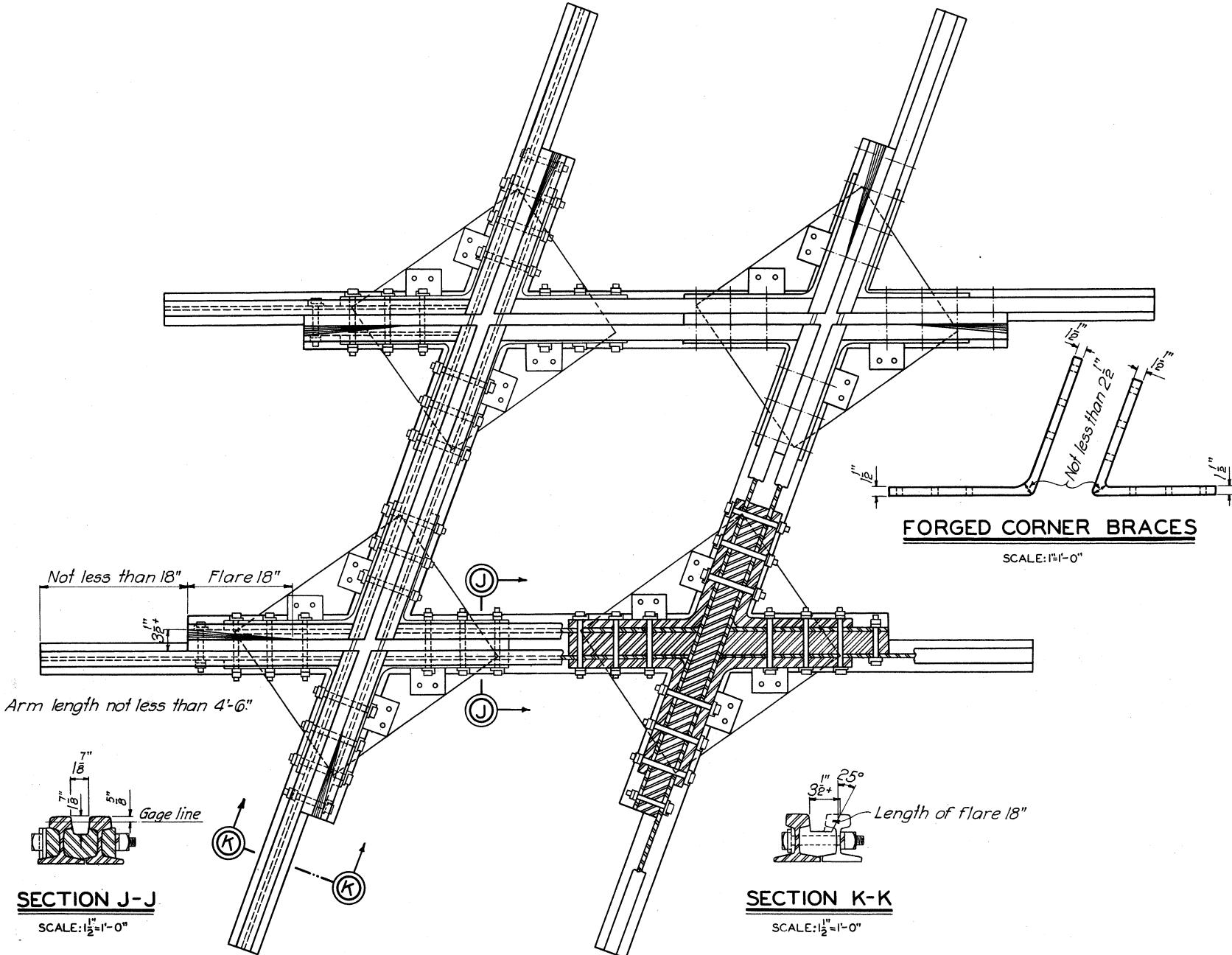
TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CROSSING FROG DETAILS

IN 147 SHEETS SHEET NO. 78 SCALE: 1" = 1'-0"

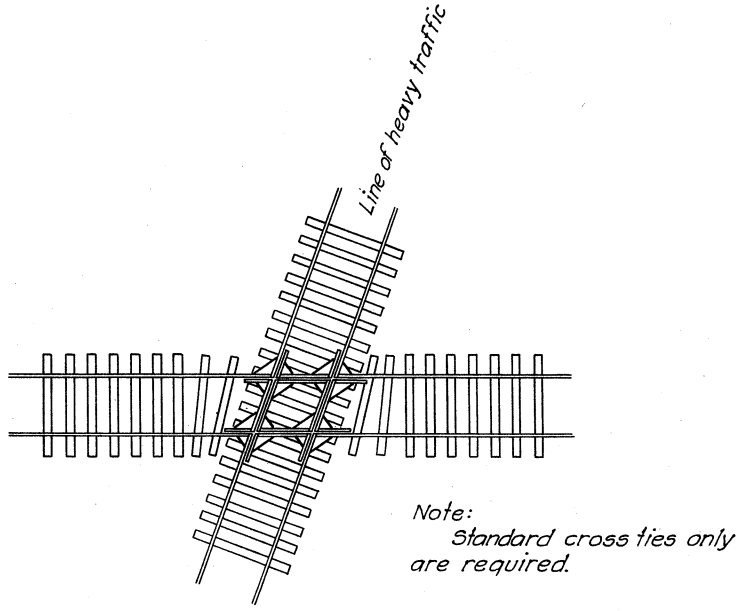
U.S. ENGINEER OFFICE, HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED: [Signature] APPROVED: [Signature]
Principal Engineer Lt. Col., Corps of Engineers

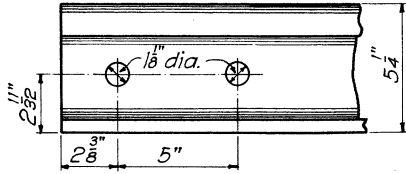
DRAWN BY: E.H.W. & A.W.N. TRANSMITTED WITH LETTER
CHECKED BY: D.G.J. FILE NO. 0271-PM-66/55



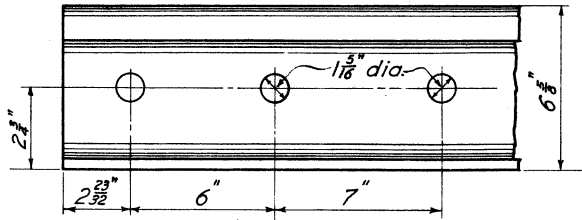
GENERAL PLAN OF CROSSINGS NUMBERS 3 & 4



TYPICAL TIE LAYOUT FOR CROSSINGS NUMBERS 3 & 4



END DRILLING FOR CROSSINGS NUMBERS 1 & 3



END DRILLING FOR CROSSING NUMBER 2

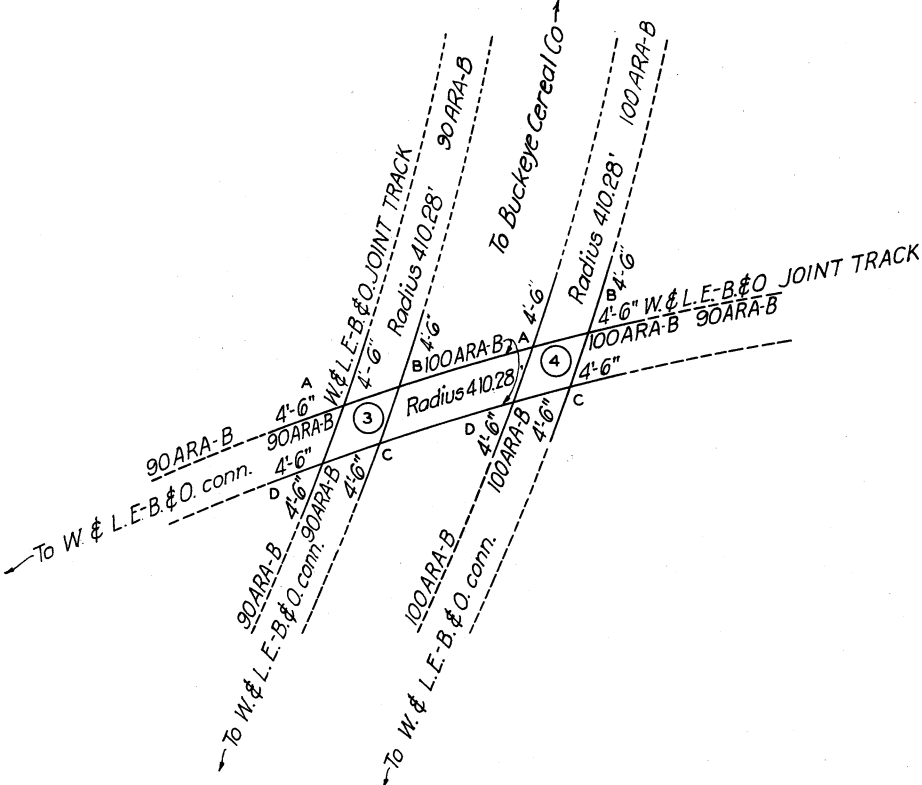
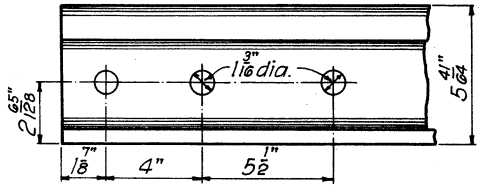


DIAGRAM OF CROSSINGS NUMBERS 3 & 4



END DRILLING FOR CROSSING NUMBER 4

APPROVED: THE BALTIMORE AND OHIO RAILROAD CO.
BY: CHIEF ENGINEER

APPROVED: THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION

APPROVED: THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: SPECIAL ENGINEER

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CROSSING FROG DETAILS

IN 147 SHEETS SHEET NO. 79 SCALE: AS SHOWN

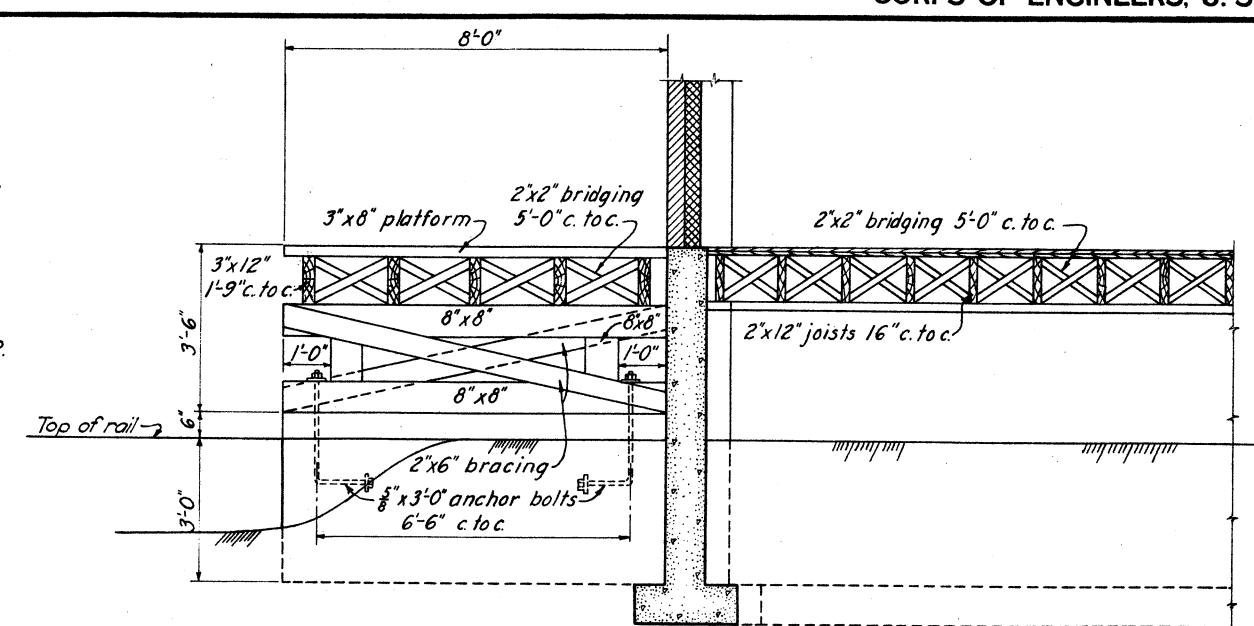
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: [Signature] APPROVED: [Signature]

DRAWN BY: A. W. M. TRACED BY: H. E. C. CHECKED BY: D. G. J.

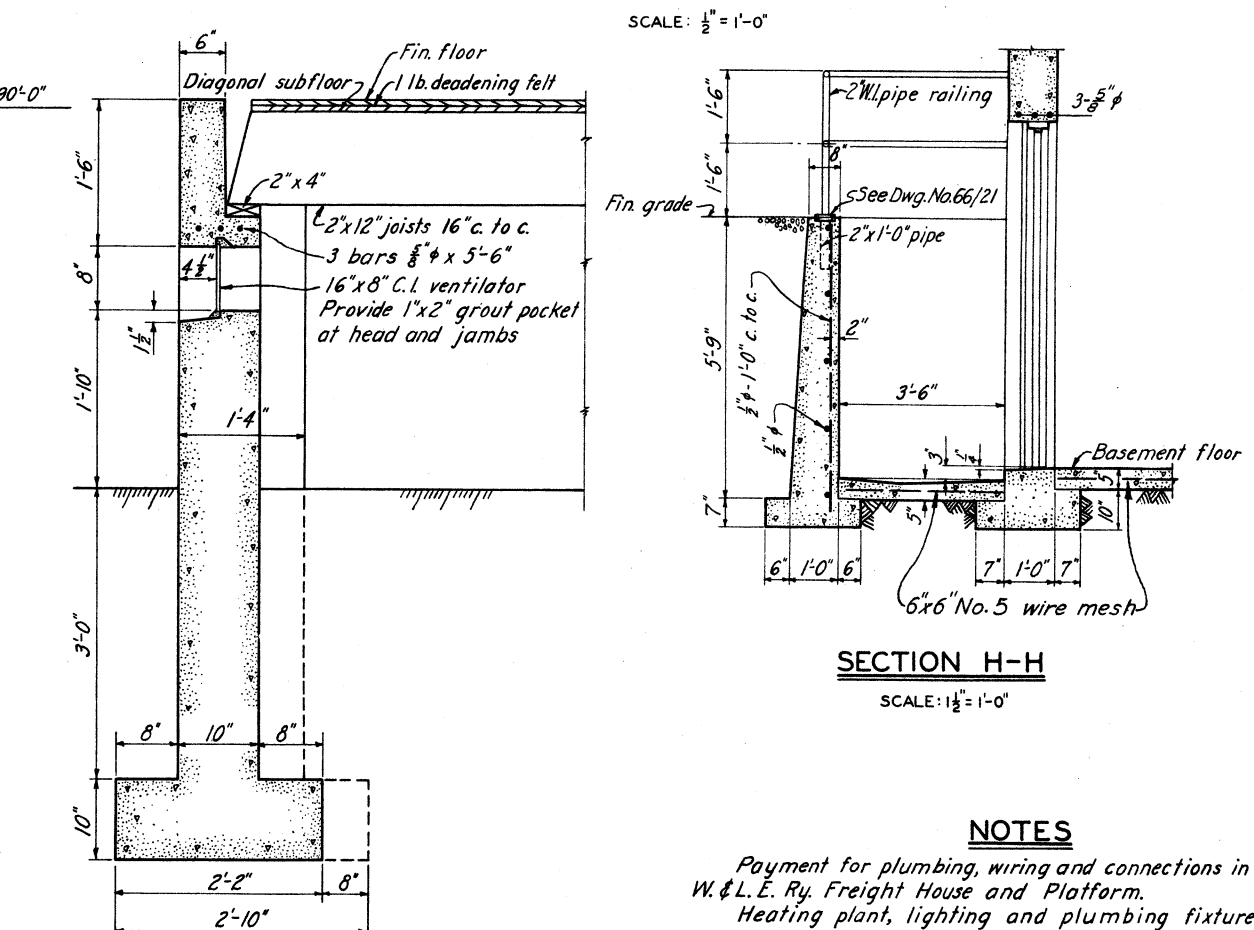
FILE NO. 027i-PM-66/56

BY	DATE	CHARACTER



SECTION F-F

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



SECTION H-H

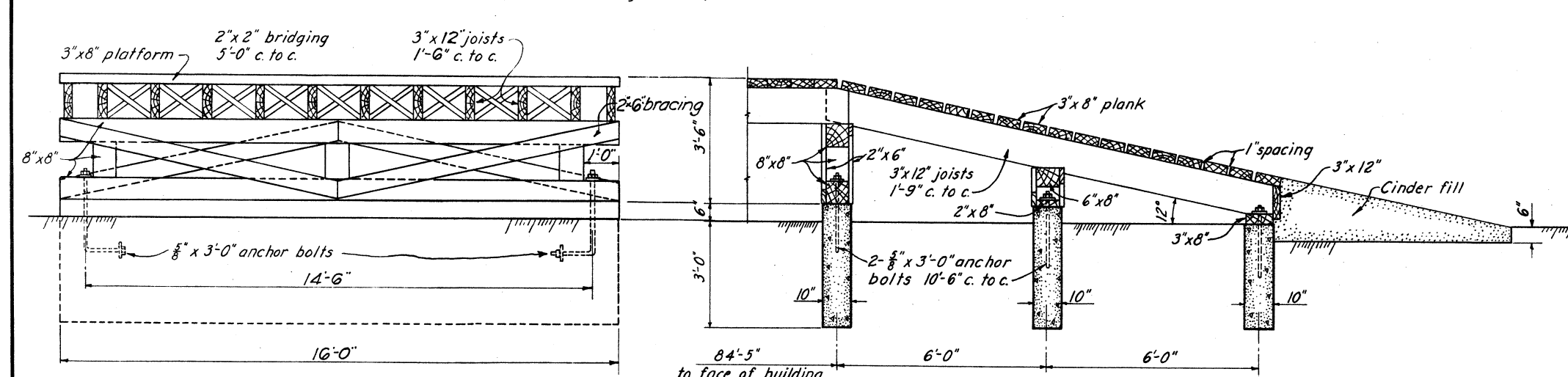
SCALE: $1\frac{1}{2}'' = 1'-0''$

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'.

SECTION G-G

SCALE: $1'' = 1'-0''$

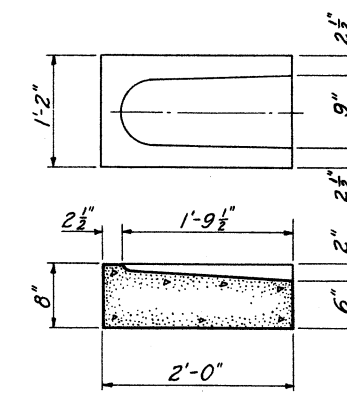


TYPICAL SECTION 16 FT. PLATFORM

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

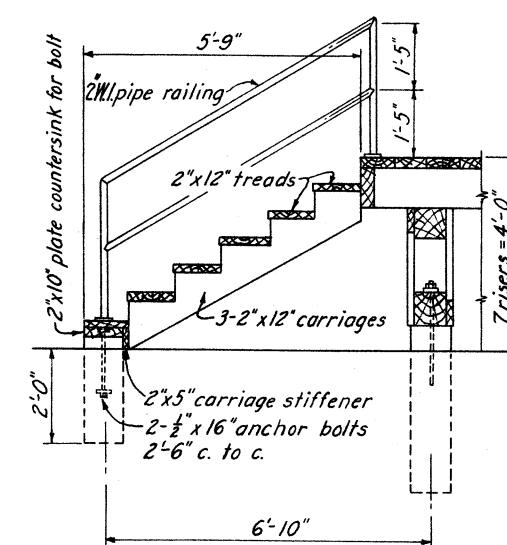
SECTION THROUGH RAMP

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



SPLASH BLOCK

SCALE: 1" = 1'-0"



SECTION E-E

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

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
W. & L. E. RY. FREIGHT TERMINAL
FOUNDATION PLAN**

IN 147 SHEETS

SHEET NO. 80

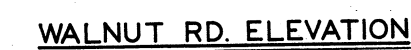
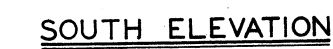
SCALE: $\frac{1}{4}'' = 1' - 0''$

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

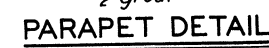
SUBMITTED: [Signature] APPROVED: [Signature]
CO. COMMANDER

DRAWN BY J.T.C. **TRANSMITTED WITH LETTER**

TRACED BY W.E.C.
CHECKED BY C.M.T. FILE NO. 027i-PM-66/57 DATED



All concrete to be Class "A"



**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
W. & L. E. RY. FREIGHT TERMINAL
ELEVATIONS & DETAILS**

IN 147 SHEETS SHEET NO. 91 SCALE: $\frac{1\frac{1}{2}"}{4} = 1-0"$

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

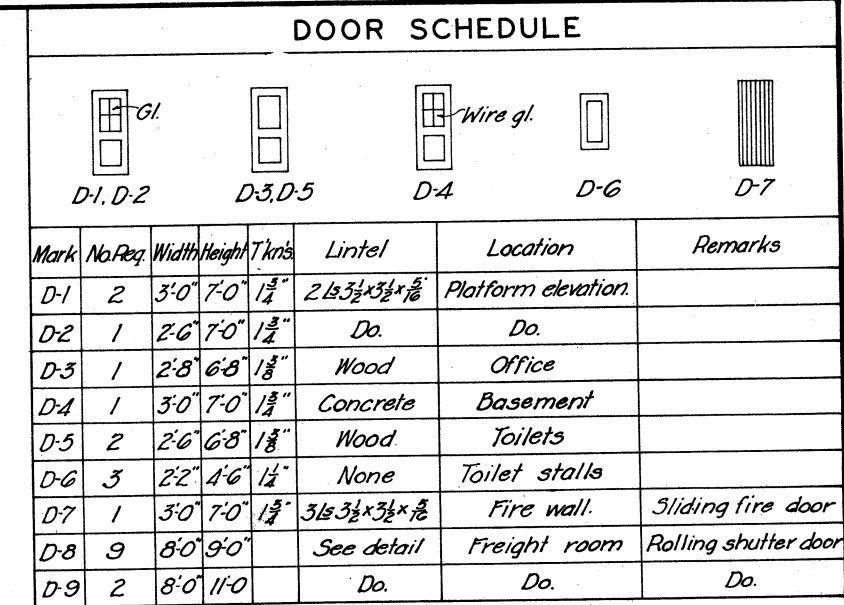
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED BY: *[Signature]* SPECIAL ENGINEER APPROVED: *[Signature]* LT. COL. COMPS OF ENGINEERS

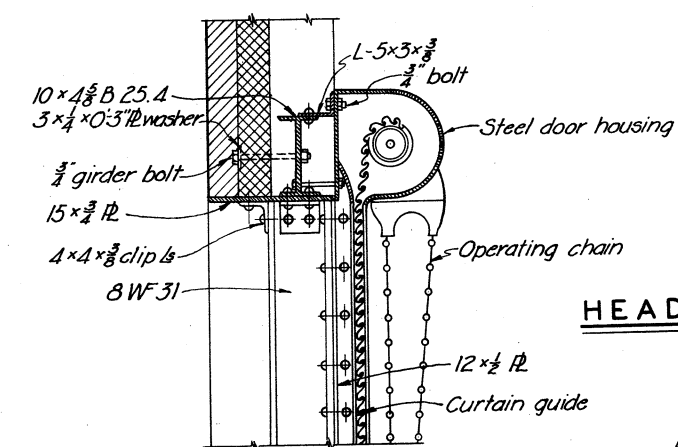
DRAWN BY: J.T.C.
TRACED BY: H.A.E.
CHECKED BY: C.M.T.

FILE NO. 0271-PM-66/58 TRANSMITTED WITH LETTER DATED

BY	DATE	CHARACTER
REVISIONS		

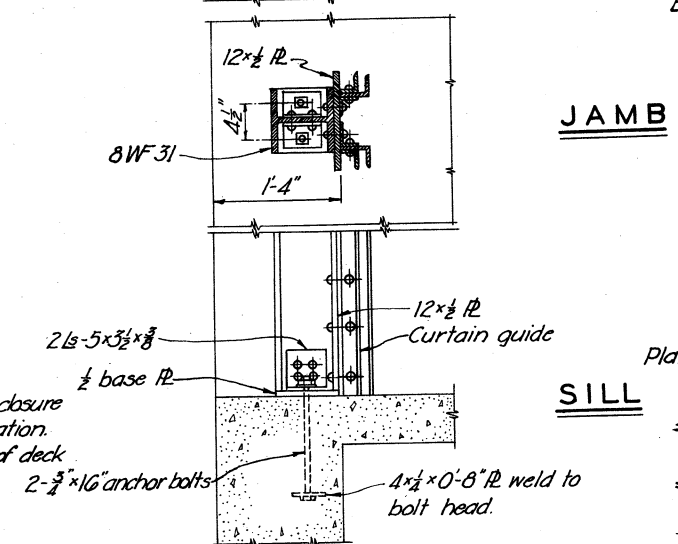


FLOOR PLAN



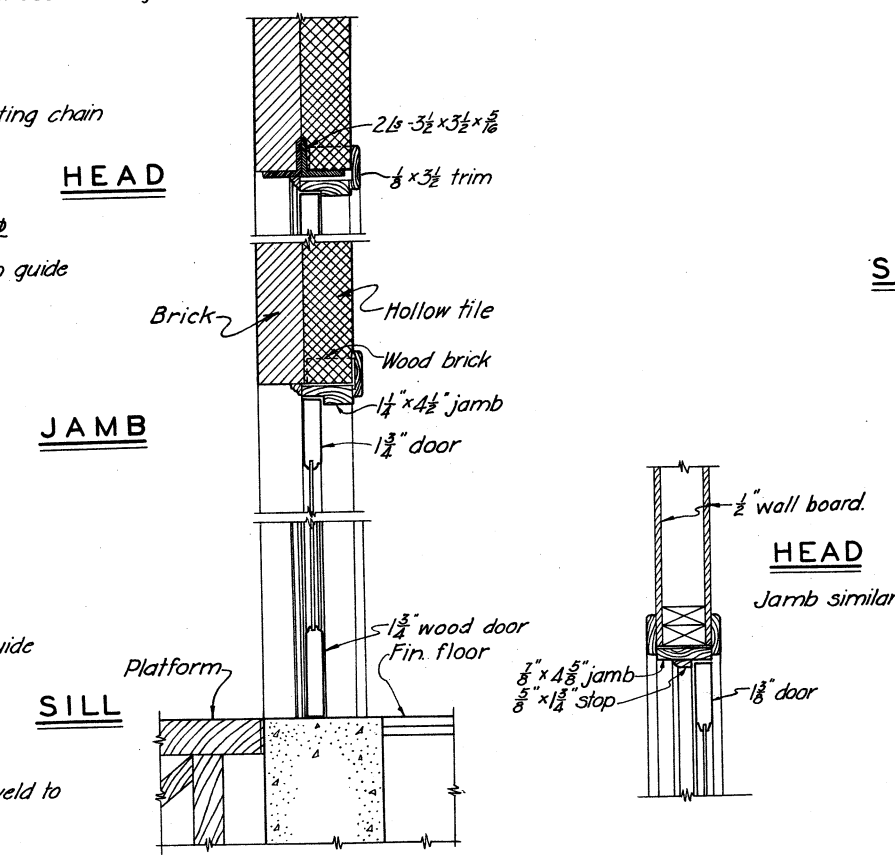
ROOF FRAMING PLAN

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



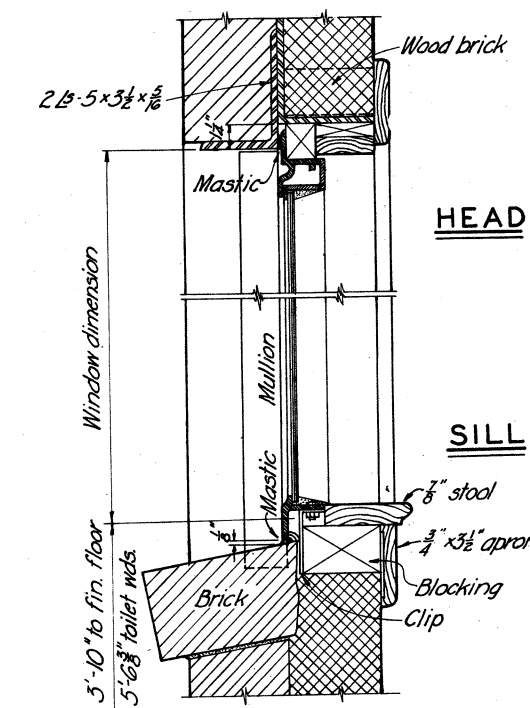
SECTION B-B

SCALE: 1" = 1'-0"



DOOR DETAILS

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



STEEL WINDOW DETAILS

SCALE: 3" = 1'-0"

LEGEND

- Ceiling outlet
 S₁ 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
W. & L. E. RY. FREIGHT TERMINAL
FLOOR & ROOF PLANS & DETAILS**

IN 147 SHEETS

SHEET NO. 82

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

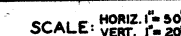
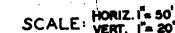
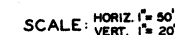
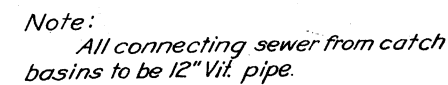
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

SUBMITTED: [Signature] PRINCIPAL ENGINEER APPROVED: [Signature] LT. COL., CORPS OF ENGINEERS

DRAWN BY J.T.C. TRANSMITTED WITH LETTER
TRACED BY E.M.M.
CHECKED BY C.M.T. FILE No. 027i-PM-66/59 DATED

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: _____
SPECIAL ENGINEER

BY	DATE	CHARACTER
		REVISIONS



For legend, see Dwg. No. 16/1.
For general plan, see Dwg. No. 16/2.
For details of catch basins and manholes
see Dwg. No. 82/36.
For guard rail details and approach sections,
see Dwg. No. 68/8.
25' approach slabs required at abutments
1, 5, 6 & 10. See Dwg. No. 68/28 for details.
For pavement details see Dwg. Nos. 68/28 & 68/45.

IN 147 SHEETS SHEET NO. 83 SCALE: AS SHOWN

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940.

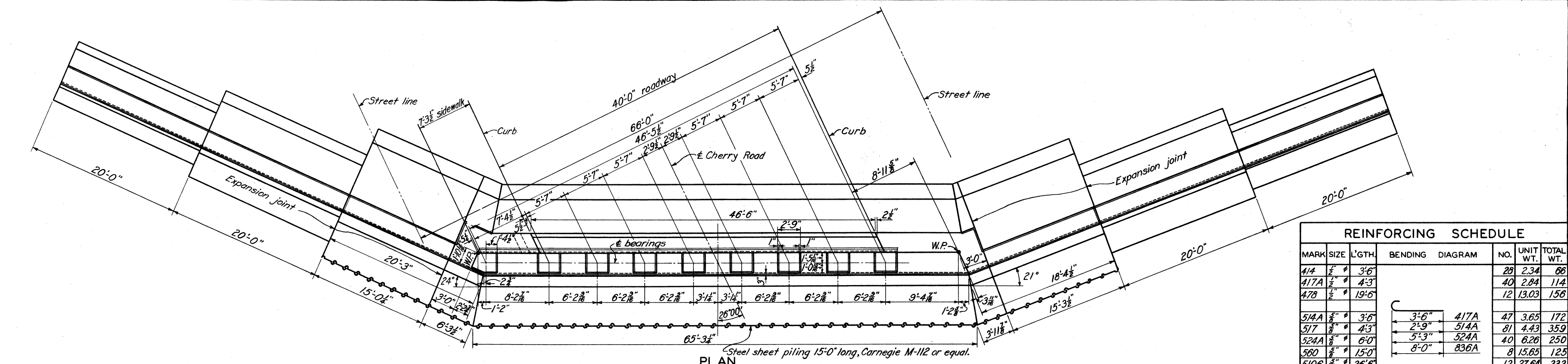
SUBMITTED: *Wm. O. ...* APPROVED: *...*
ENGINEER LT. COL., CORPS OF ENGINEERS

DRAWN BY H.G.H.
TRACED BY A.F.
CHECKED BY D.G.J.

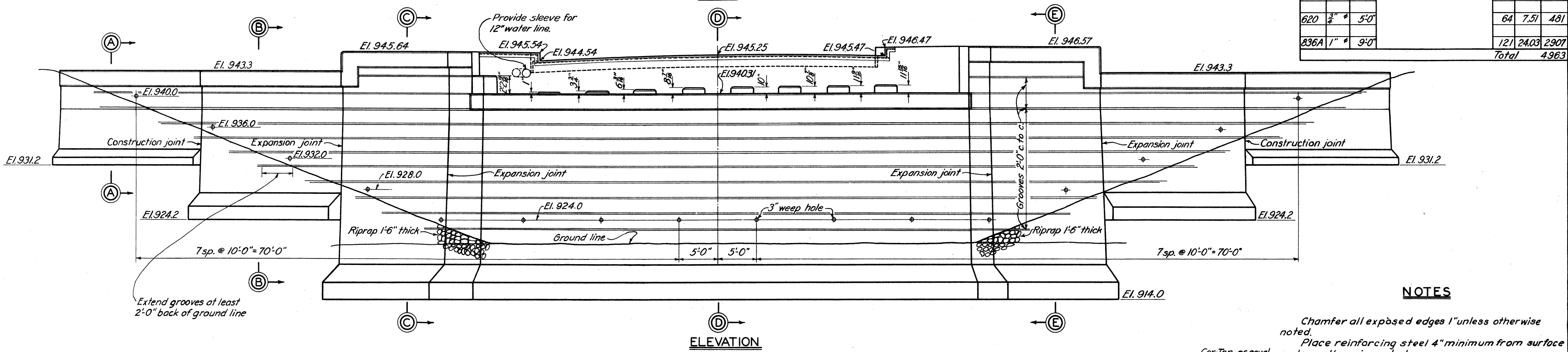
FILE NO. 027i-PM-68/1

TRANSMITTED WITH LETTER
DATED

BY	DATE	CHARACTER
		REVISIONS



REINFORCING SCHEDULE					
MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	UNIT WT.
414	1/2"	3'-6"		28	2.34
417A	1/2"	4'-3"		40	2.84
478	1/2"	19'-6"		12	13.03
514A	5/8"	3'-6"	3'-6"	47	3.65
517	5/8"	4'-3"	2'-9"	81	4.43
524A	5/8"	6'-0"	5'-3"	40	6.26
560	5/8"	15'-0"	8'-0"	8	15.65
5106	5/8"	26'-6"		12	27.64
620	3/4"	5'-0"		64	7.51
836A	1"	9'-0"		121	24.03
				Total	4963



NOTES

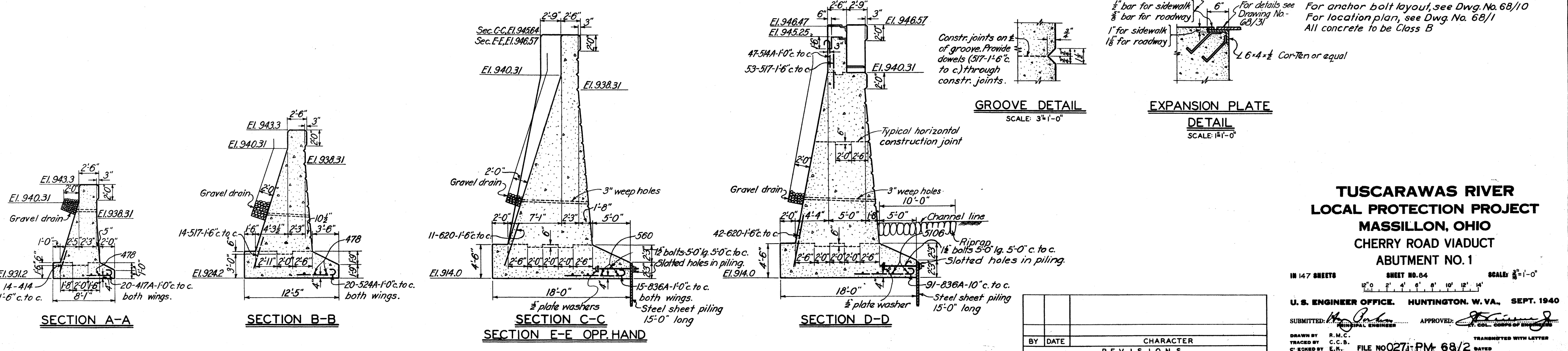
Chamfer all exposed edges 1" unless otherwise noted.

Place reinforcing steel 4" minimum from surface unless otherwise noted.

For anchor bolt layout, see Dwg. No. 68/10

For location plan, see Dwg. No. 68/11

All concrete to be Class B



**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD VIADUCT
ABUTMENT NO. 1**

IN 147 SHEETS SHEET NO. 84 SCALE: 1/8"=1'-0"

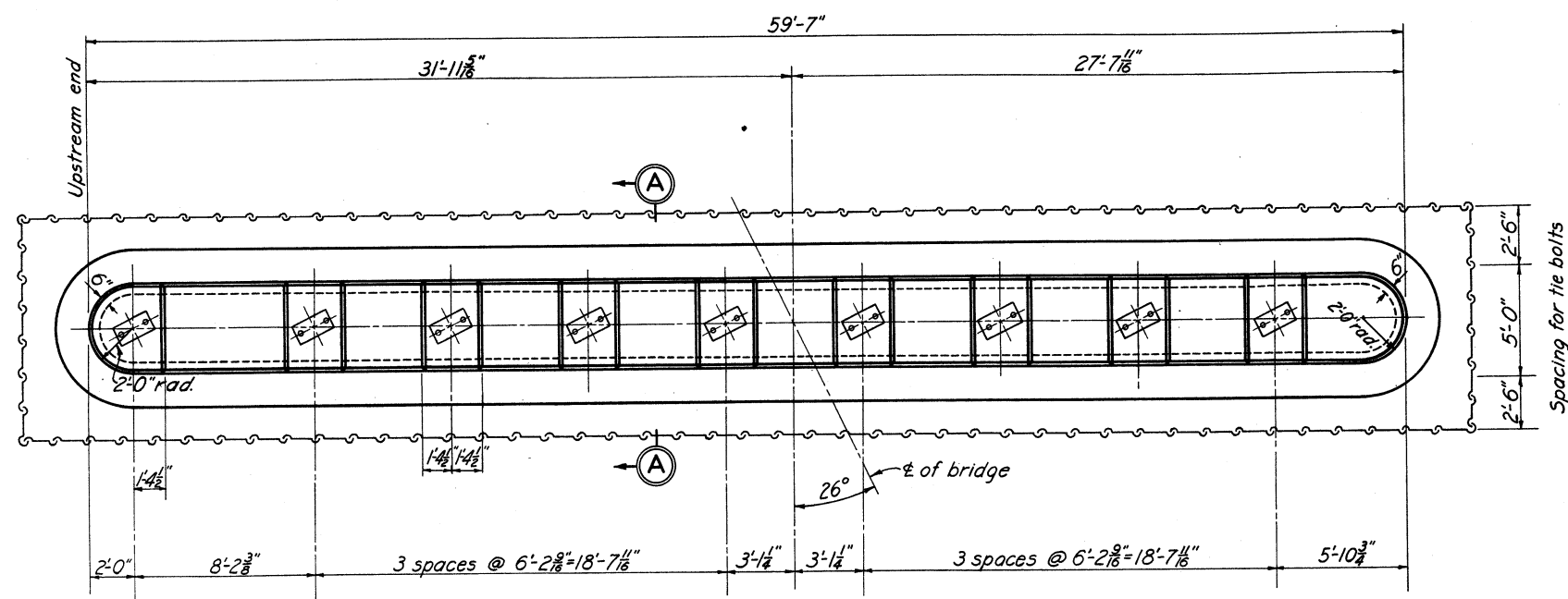
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

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

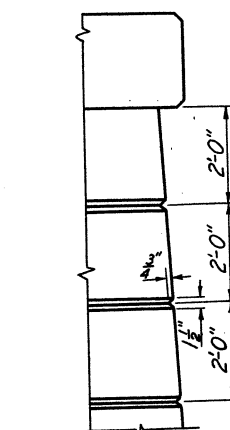
DRAWN BY: R. M. C. TRACED BY: C. C. B. CHECKED BY: E. N. FILE NO. 0271 PM 68/2 DATED

REVISIONS

BY	DATE	CHARACTER

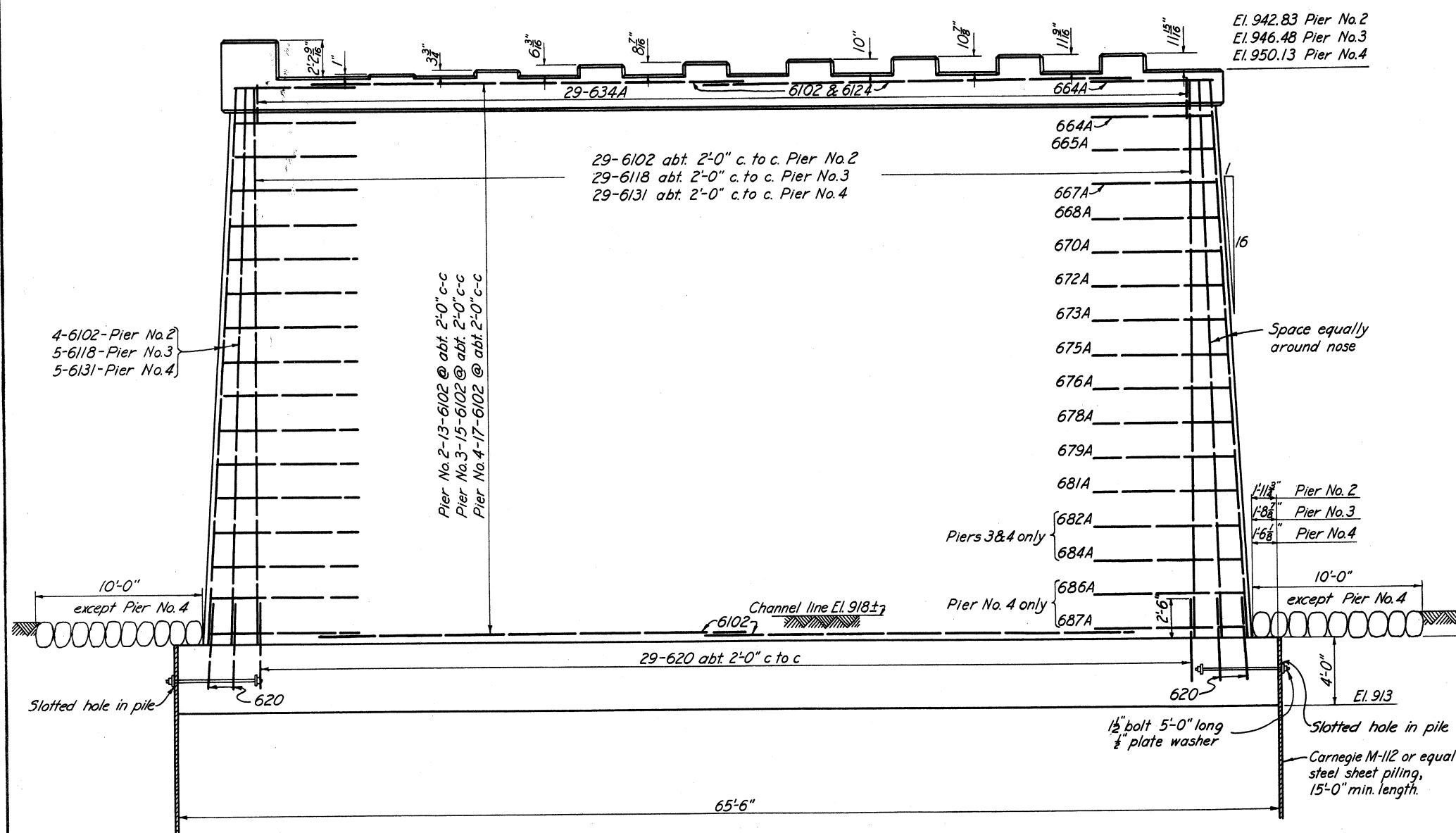


PLAN



GROOVE DETAIL

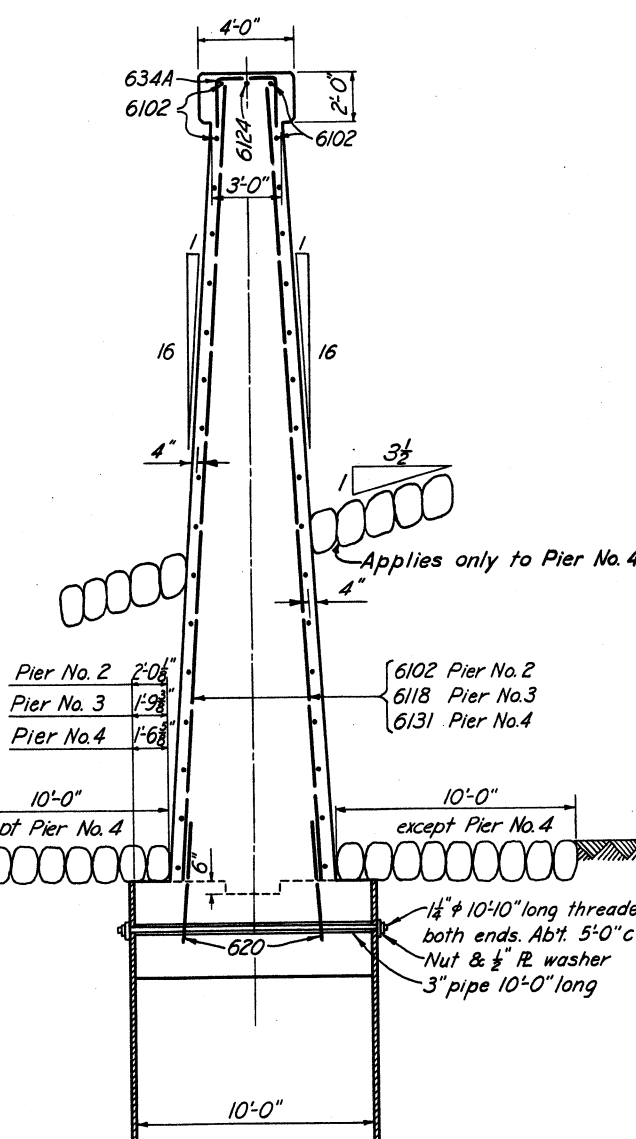
SCALE 1/2" = 1'-0"



ELEVATION

NOTES

Chamfer all exposed edges 1" unless otherwise noted
All concrete to be Class "B"
For riprap in the vicinity of Pier No. 4, see Dwg. No. 68/1



SECTION A-A

REINFORCING SCHEDULE

MARK	SIZE	LGTH.	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
620	3/4"	5'-0"		66	7.51	496
634A	3/4"	8'-6"		29	12.77	370
664A	3/4"	16'-0"		4	24.03	96
665A	3/4"	16'-3"		2	24.41	49
667A	3/4"	16'-9"		2	25.16	50
668A	3/4"	17'-0"		2	25.53	51
670A	3/4"	17'-6"		2	26.29	53
672A	3/4"	18'-0"		2	27.04	54
673A	3/4"	18'-3"		2	27.41	55
675A	3/4"	18'-9"		2	28.16	56
676A	3/4"	19'-0"		2	28.54	57
678A	3/4"	19'-6"		2	29.29	59
679A	3/4"	19'-9"		2	29.67	59
681A	3/4"	20'-3"		2	30.42	61
6102	3/4"	25'-6"		118	38.30	4519
6124	3/4"	31'-0"		2	46.56	93
Total						6178
620	3/4"	5'-0"		68	7.51	511
634A	3/4"	8'-6"		29	12.77	370
664A	3/4"	16'-0"		4	24.03	96
665A	3/4"	16'-3"		2	24.41	49
667A	3/4"	16'-9"		2	25.16	50
668A	3/4"	17'-0"		2	25.53	51
670A	3/4"	17'-6"		2	26.29	53
672A	3/4"	18'-0"		2	27.04	54
673A	3/4"	18'-3"		2	27.41	55
675A	3/4"	18'-9"		2	28.16	56
676A	3/4"	19'-0"		2	28.54	57
678A	3/4"	19'-6"		2	29.29	59
679A	3/4"	19'-9"		2	29.67	59
681A	3/4"	20'-3"		2	30.42	61
682A	3/4"	20'-6"		2	30.79	62
684A	3/4"	21'-0"		2	31.54	63
6102	3/4"	25'-6"		60	38.30	2298
6118	3/4"	29'-6"		68	44.31	3013
6124	3/4"	31'-0"		2	46.56	93
Total						7110
620	3/4"	5'-0"		68	7.51	511
634A	3/4"	8'-6"		29	12.77	370
664A	3/4"	16'-0"		4	24.03	96
665A	3/4"	16'-3"		2	24.41	49
667A	3/4"	16'-9"		2	25.16	50
668A	3/4"	17'-0"		2	25.53	51
670A	3/4"	17'-6"		2	26.29	53
672A	3/4"	18'-0"		2	27.04	54
673A	3/4"	18'-3"		2	27.41	55
675A	3/4"	18'-9"		2	28.16	56
676A	3/4"	19'-0"		2	28.54	57
678A	3/4"	19'-6"		2	29.29	59
679A	3/4"	19'-9"		2	29.67	59
681A	3/4"	20'-3"		2	30.42	61
682A	3/4"	20'-6"		2	30.79	62
684A	3/4"	21'-0"		2	31.54	63
686A	3/4"	21'-6"		2	32.24	65
687A	3/4"	21'-9"		2	32.67	65
6102	3/4"	25'-6"		68	38.30	2604
6124	3/4"	31'-0"		4	46.56	186
6131	3/4"	32'-9"		68	49.19	3345
Total						7971

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
CHERRY ROAD VIADUCT
PIERS NOS. 2, 3 & 4

IN 147 SHEETS

SHEET NO. 85

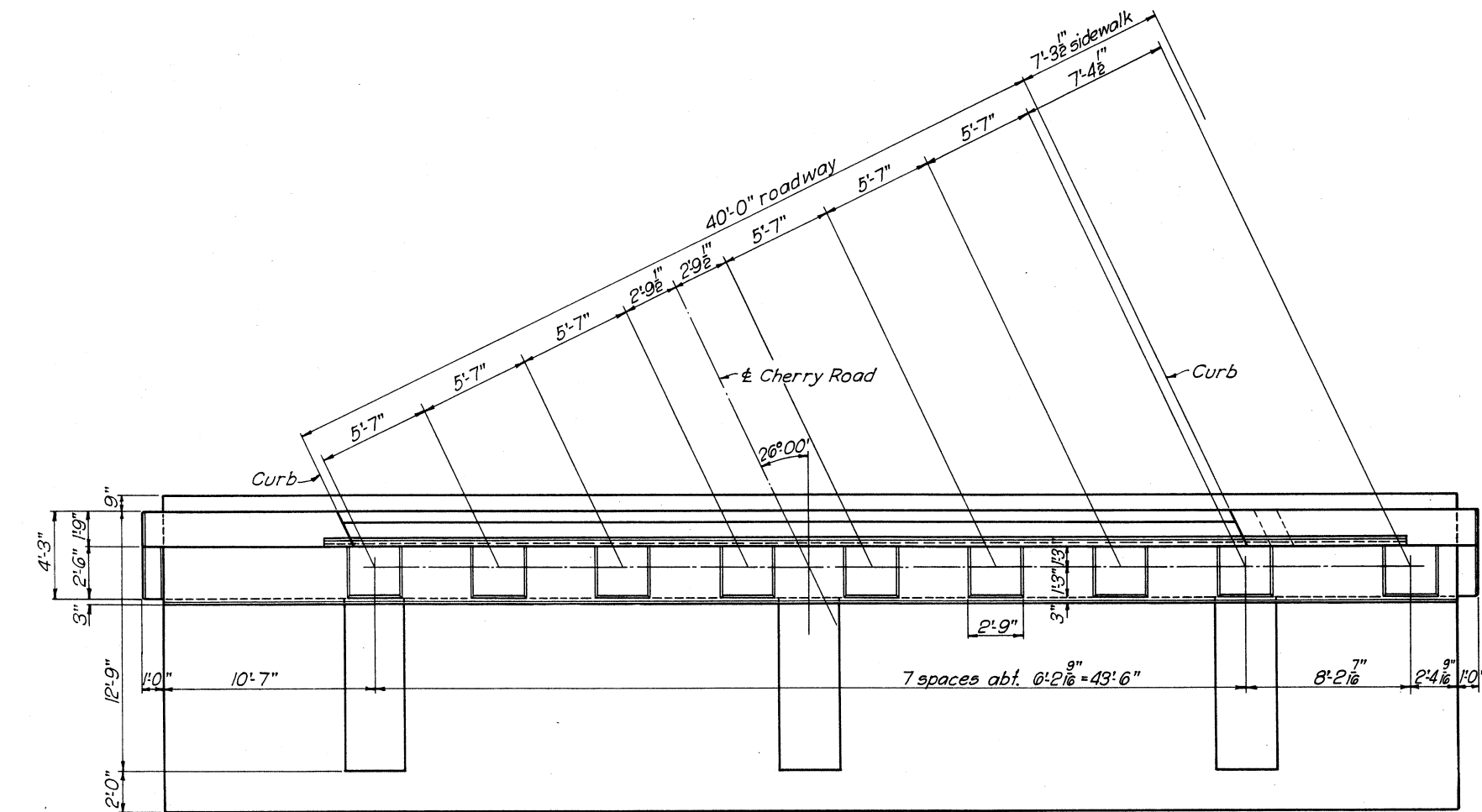
SCALE 1/2" = 1'-0"

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

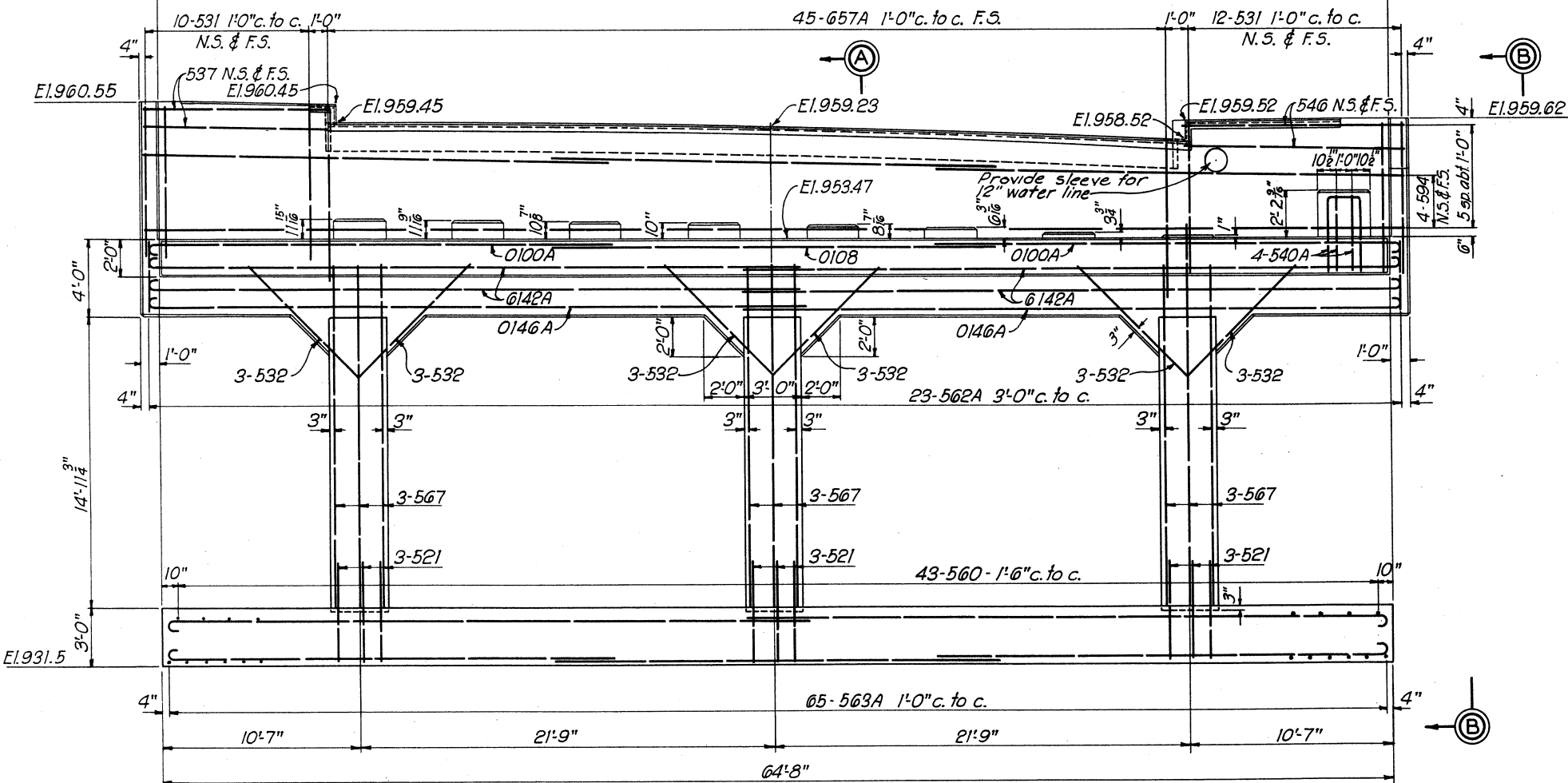
SUBMITTED: *W. J. Baker* APPROVED: *W. J. Baker*

DRAWN BY: A.C.H. TRANSMITTED WITH LETTER

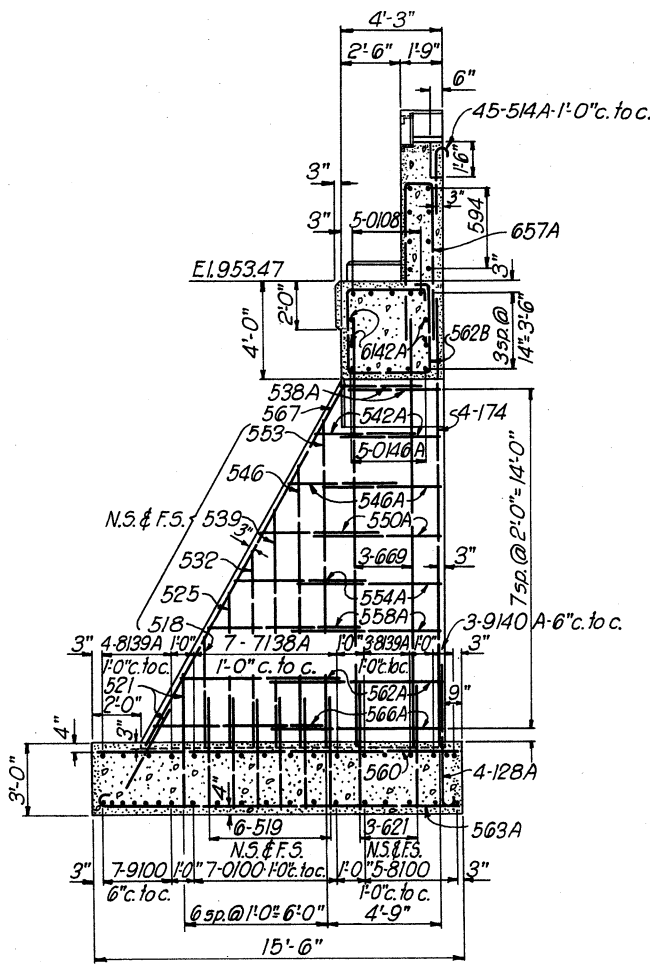
CHECKED BY: D. G. J. FILE NO. 0-271-PM 68/3 DATED



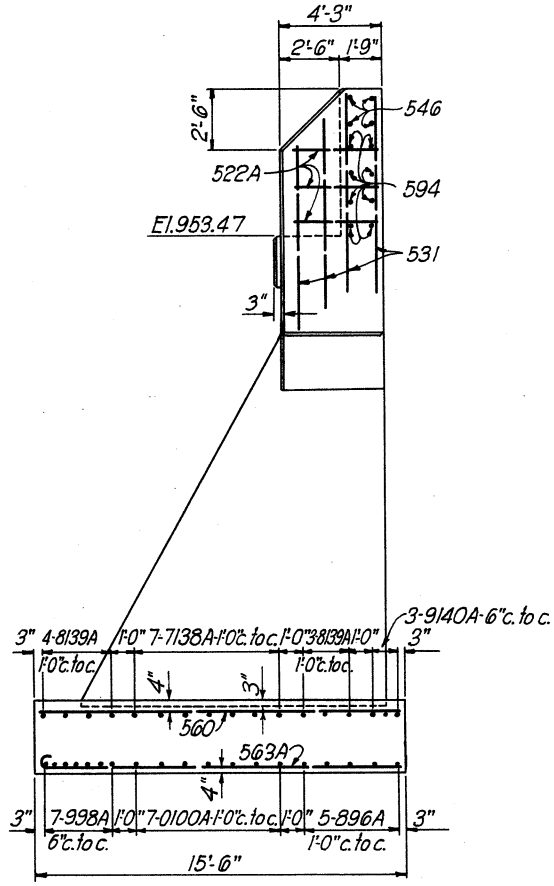
PLAN



ELEVATION



SECTION A-A



END VIEW B-B

REINFORCING SCHEDULE							
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.	
514A	3/8"	3'-6"		45	3.65	164	
518	3/8"	4'-6"		6	4.69	28	
519	3/8"	4'-9"		36	4.95	178	
521	3/8"	5'-3"		15	5.48	82	
522A	3/8"	5'-6"		6	5.74	34	
525	3/8"	6'-3"		6	6.52	39	
531	3/8"	7'-9"		48	8.08	388	
532	3/8"	8'-0"		24	8.34	200	
537	3/8"	9'-3"		4	9.65	38	
538A	3/8"	9'-6"		6	9.91	59	
539	3/8"	9'-9"		6	10.17	61	
540A	3/8"	10'-0"		4	10.43	42	
542A	3/8"	10'-6"		6	10.95	66	
546	3/8"	11'-6"		10	11.99	120	
546A	3/8"	11'-6"		6	11.99	72	
550A	3/8"	12'-6"		6	13.04	78	
553	3/8"	13'-3"		6	13.82	83	
554A	3/8"	13'-6"		6	14.08	84	
558A	3/8"	14'-6"		6	15.12	91	
560	3/8"	15'-0"		43	15.65	673	
562A	3/8"	15'-6"		6	16.17	91	
562B	3/8"	15'-6"		23	16.17	372	
563A	3/8"	15'-9"		65	16.43	1068	
566A	3/8"	16'-6"		6	17.21	103	
567	3/8"	16'-9"		9	17.47	157	
594	3/8"	23'-6"		24	24.51	588	
621	3/8"	5'-3"			18	7.89	135
657A	3/8"	14'-3"			45	21.40	963
669	3/8"	17'-3"			18	25.91	466
6142A	3/8"	35'-6"			8	53.32	427
7138A	3/8"	34'-6"			14	70.51	987
896A	1/2"	24'-0"			10	64.08	641
8100	1/2"	25'-0"			5	66.75	334
8139A	1/2"	34'-9"			14	92.78	1299
128A	1/2"	7'-0"			12	23.80	286
174	1/2"	18'-6"			12	62.90	755
998A	1/2"	24'-6"		14	105.42	1476	
9100	1/2"	25'-0"		7	107.58	753	
9140A	1/2"	35'-0"		6	150.61	904	
0100	1/2"	25'-0"		7	132.83	930	
0100A	1/2"	25'-0"	24	132.83	3188		
0108	1/2"	27'-0"	5	143.45	717		
0146A	1/2"	36'-6"	10	193.92	1939		
					Total	21,159	

NOTES

Chamfer all exposed edges 1" unless otherwise noted.
For anchor bolt layout, see Dwg. No. 68/10.
For location plan, see Dwg. No. 68/1.
For expansion plate detail, see Dwg. No. 68/2
All concrete to be Class "B".

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD VIADUCT
ABUTMENT NO. 5

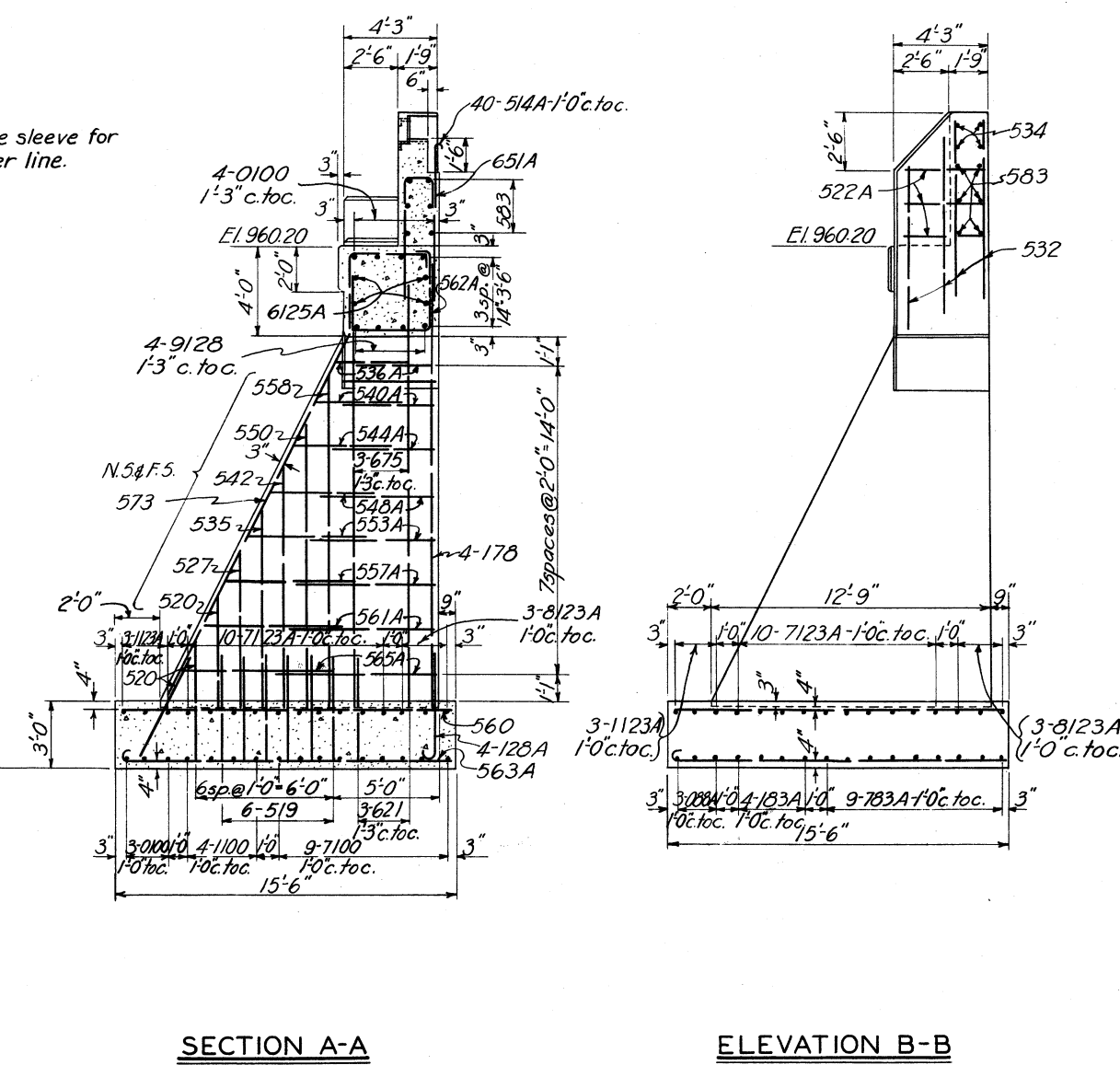
18147 SHEETS SHEET NO. 86 SCALE 1/2"=1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: R.M.C. APPROVED: H.E.C.

DRAWN BY: R.M.C. TRANSMITTED WITH LETTER
CHECKED BY: H.E.C. FILE NO. 0271-PM-68/4 DATED

BY	DATE	CHARACTER
		REVISIONS



REINFORCING SCHEDULE							
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.	
514A	#3	3'-6"		40	3.65	146	
519	#3	4'-9"		36	4.95	178	
520	#3	5'-0"		21	5.22	110	
522A	#3	5'-6"		563A	6	5.74	34
527	#3	6'-9"		5123A	6	7.04	42
532	#3	8'-0"		6125A	40	8.34	334
533	#3	8'-3"		9128A	18	8.60	155
534	#3	8'-6"		183A	8	8.87	71
535	#3	8'-9"		183A	6	9.13	55
536A	#3	9'-0"		288A	6	9.39	56
540A	#3	10'-0"		7123A	6	10.43	63
540B	#3	10'-0"		128A	4	10.43	42
542	#3	10'-6"		54A	6	10.95	66
544A	#3	11'-0"			6	11.47	69
548A	#3	12'-0"			6	12.52	75
550	#3	12'-6"			6	13.04	78
553A	#3	13'-3"			6	13.82	83
557A	#3	14'-3"		536A	6	14.06	89
558	#3	14'-6"		540A	6	15.12	91
560	#3	15'-0"		544A	38	15.65	595
561A	#3	15'-3"		549A	6	15.91	95
562A	#3	15'-6"		553A	20	16.17	323
563A	#3	15'-9"		557A	57	16.43	937
564A	#3	16'-3"		561A	6	16.95	102
573	#3	18'-3"		565A	9	19.03	171
583	#3	20'-9"		651A	13	21.64	390
621	#3	5'-3"		13	7.89	142	
651A	#4	12'-9"		522A	41	19.15	785
675	#4	18'-9"		18	20.16	507	
6125A	#4	31'-3"		8	46.94	376	
783A	#5	20'-9"		13	42.41	76.3	
7100	#5	25'-0"		9	51.10	460	
7123A	#5	30'-9"		20	62.85	125.7	
8123A	#1	30'-9"		6	82.10	493	
128A	#1	7'-0"		12	23.80	286	
178	#1	19'-6"		12	66.30	796	
183A	#1	20'-9"		8	70.55	564	
1100	#1	25'-0"		4	85.00	340	
1123A	#1	30'-9"		6	104.55	627	
9128A	#8	32'-0"		8	137.70	1102	
Q88A	#4	22'-0"		14	116.89	1636	
Q100	#4	25'-0"		7	132.83	930	
Total						15,514	

NOTES

*Chamfer all exposed edges 1" unless otherwise noted.
For anchor bolt layout, see Dwg. No. 68/10.
For location plan, see Dwg. No. 68/1.
For expansion plate detail, see Dwg. No. 68/2
All concrete to be Class 'B'.*

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD VIADUCT
ABUTMENT NO. 6**

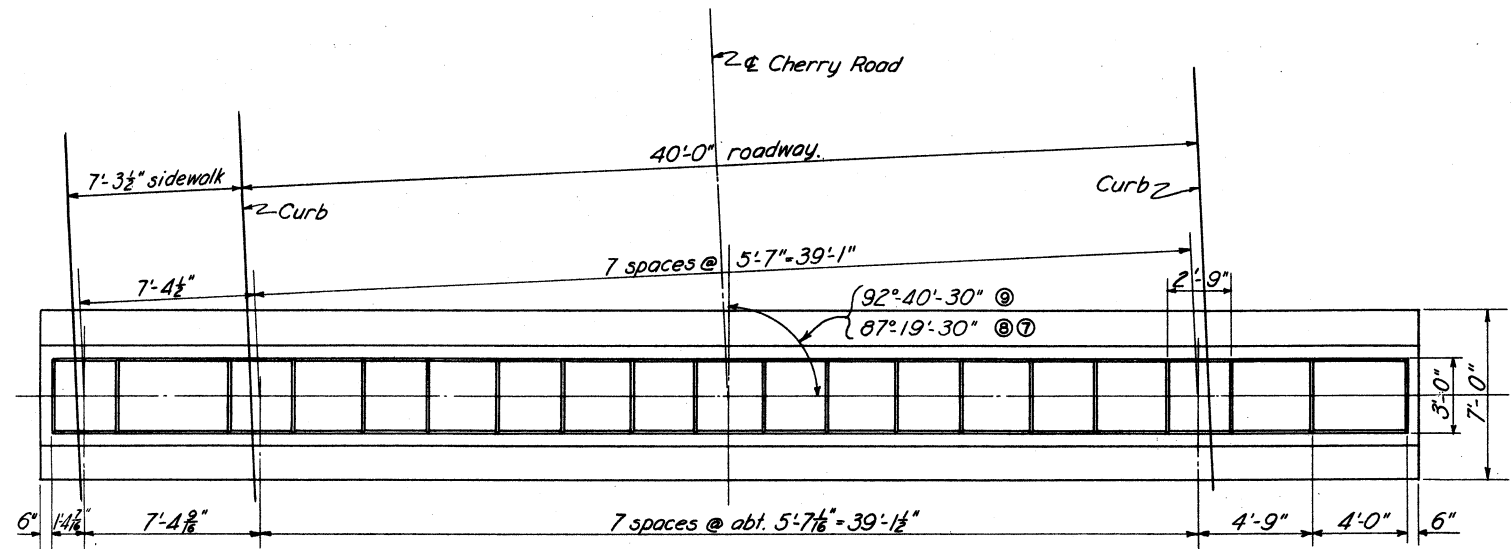
IN 147 SHEETS SHEET NO. 87 SCALE: $\frac{1}{4}'' = 1'-0''$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA.. SEPT. 1940

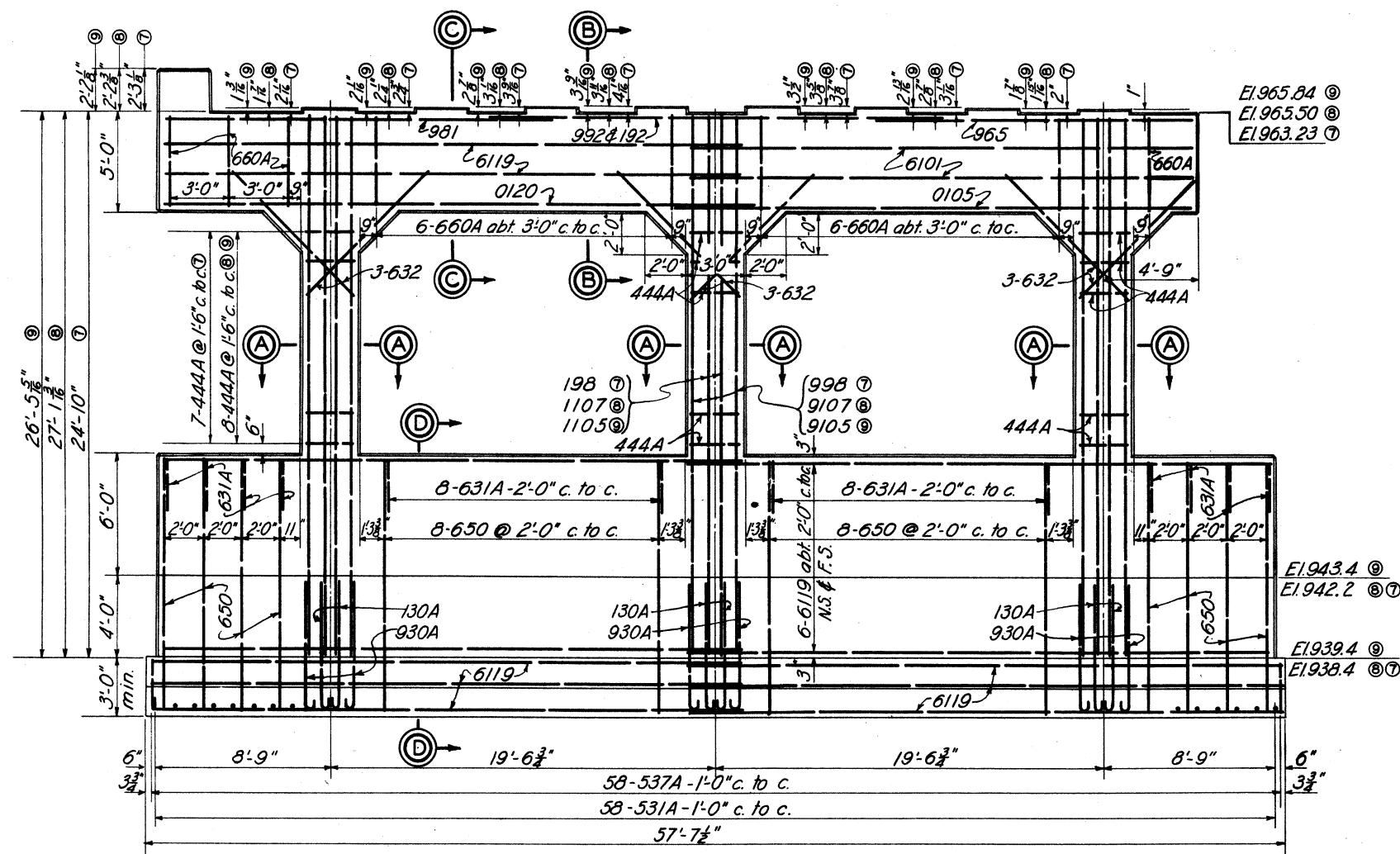
SUBMITTED: *Wm. Perkins*
PRINCIPAL ENGINEER

APPROVED: *J. Keiser*
T. COL., CORPS OF ENGINEERS

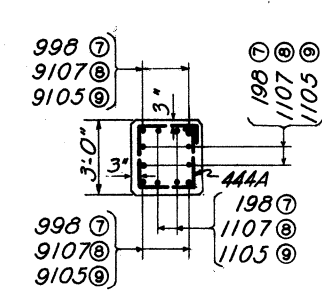
DRAWN BY R.M.C. TRANSMITTED WITH LETTER
TRACED BY L.D.H.
CHECKED BY E.K. FILE NO 027i-PM-68/5 DATED



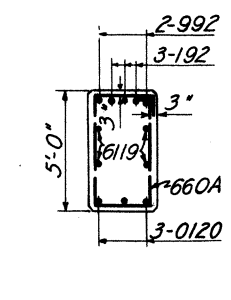
PLAN
PIERS 7, 8, & 9



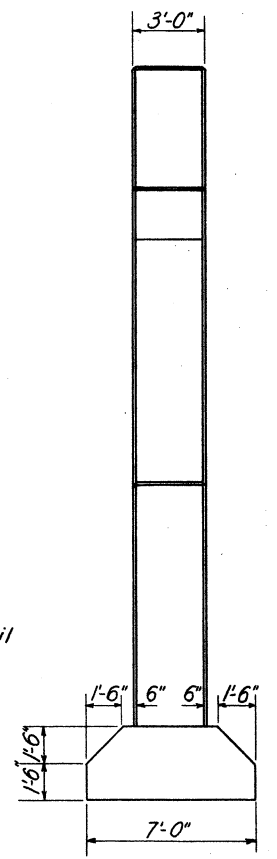
ELEVATION
PIER NO. 7 STATION 10+94.83
PIER NO. 8 STATION 11+82.53
PIER NO. 9 STATION 12+29.23



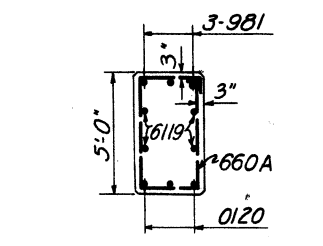
SECTION A-A



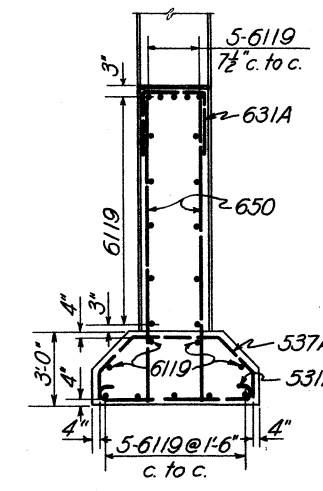
SECTION B-B



END ELEVATION



SECTION C-C



SECTION D-D

REINFORCING SCHEDULE									
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO. EACH PIER	TOTAL	UNIT	TOTAL		
				NO. 7	NO. 8	NO. 9	NO.	WT.	WT.
444A	1/2"	11'-0"		21	24	24	69	7.35	507
531A	3/8"	7'-9"	6'-4"	58	58	58	174	8.08	1406
537A	3/8"	9'-3"		58	58	58	174	9.65	1679
631A	3/8"	7'-9"	6'-5"	24	24	24	72	11.64	838
632	3/8"	8'-0"	6'-5"	10	18	18	54	12.02	649
650	3/8"	12'-6"		48	48	48	144	18.78	2704
660A	3/8"	15'-0"	1'-2" 3'-8" 1'-2"	16	16	16	48	22.53	1071
6101	3/8"	25'-3"		4	4	4	12	37.95	455
6119	3/8"	29'-9"		52	52	52	156	44.68	6970
130A	1"	7'-6"	6'-4"	24	24	24	72	25.50	1836
192	1"	23'-0"		3	3	3	9	78.20	704
198	1"	24'-6"		24			24	63.30	1999
1105	1"	26'-3"			24		24	89.25	2142
1107	1"	26'-9"			24		24	90.95	2183
930A	1 1/4"	7'-6"	4'-6"	12	12	12	36	32.27	1162
965	1 1/4"	16'-3"		3	3	3	9	69.92	69
981	1 1/4"	20'-3"	2'-6"	3	3	3	9	87.14	784
992	1 1/4"	23'-0"		2	2	2	6	98.97	594
998	1 1/4"	24'-6"		12			12	105.42	1265
9105	1 1/4"	26'-3"			12		12	112.95	1355
9107	1 1/4"	26'-9"			12		12	113.11	1381
0105	1 1/4"	26'-3"		3	3	3	9	139.47	1255
0120	1 1/4"	30'-0"		3	3	3	9	158.39	1435
Total								34443	

NOTES

Chamfer all exposed edges 1" unless otherwise noted.
For anchor bolt plan, see Dwg. No. 68/10
For location plan, see Dwg. No. 68/1
All concrete to be Class B.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD VIADUCT
PIERS NOS. 7, 8 & 9

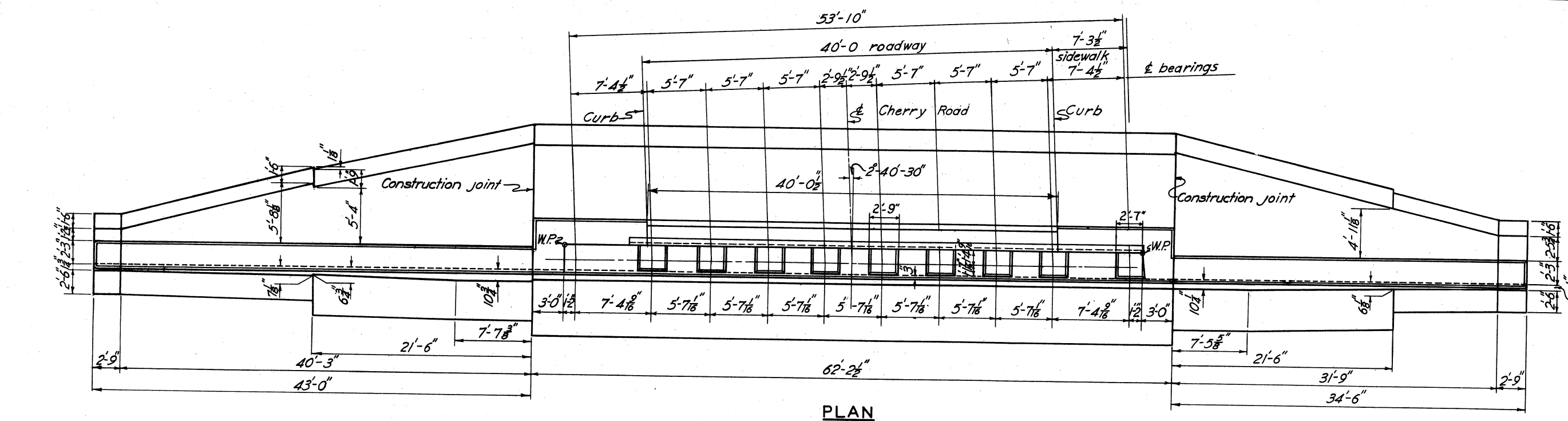
IN 147 SHEETS SHEET NO. 88 SCALE: 1/4" = 1'-0"

J. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

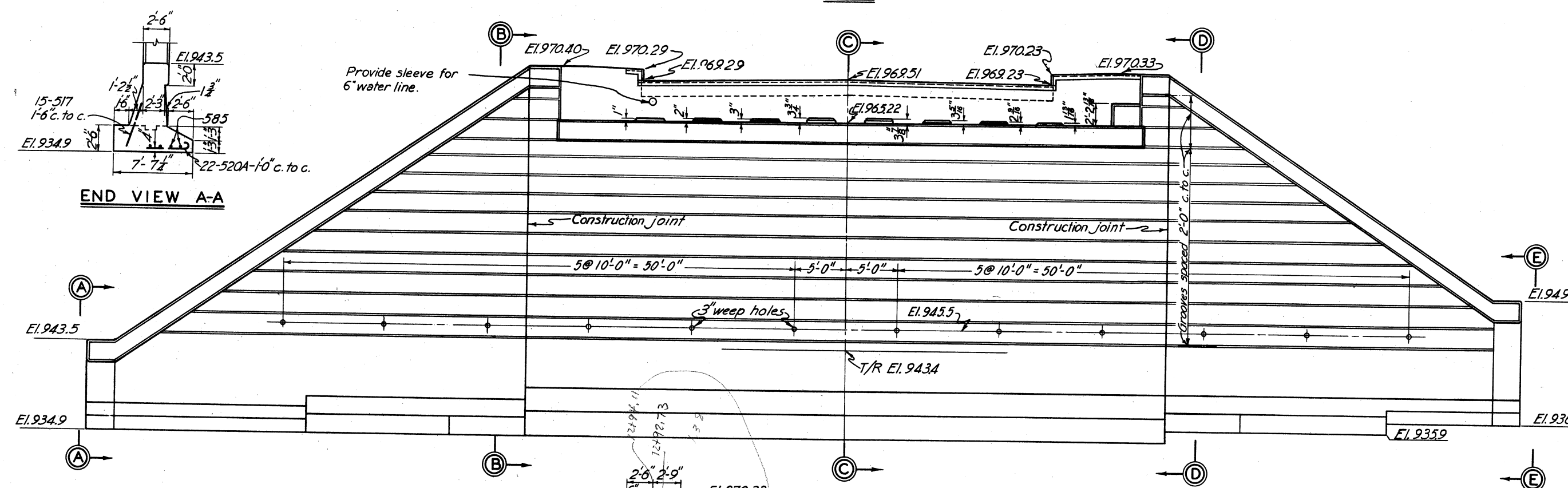
SUBMITTED: [Signature] APPROVED: [Signature]
TRANSMITTED WITH LETTER

FILE NO. 027i-PM-68/6 DATED

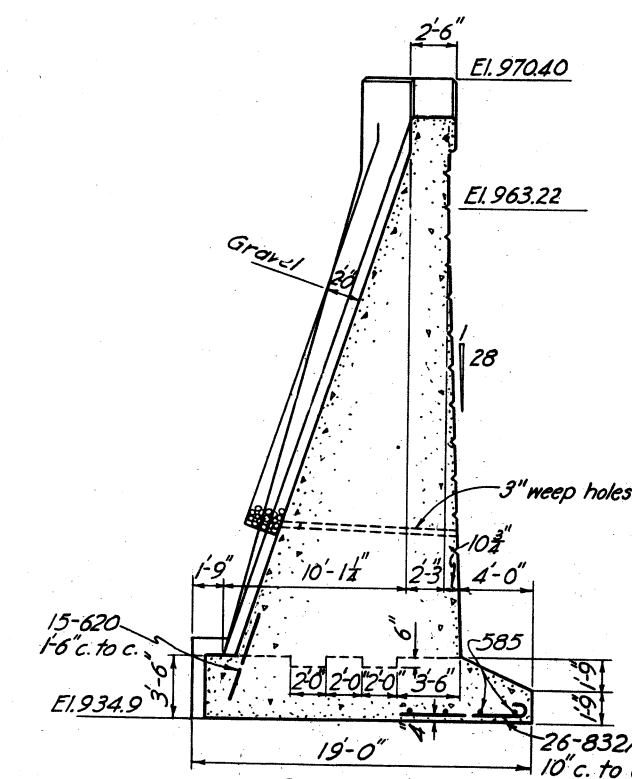
BY	DATE	CHARACTER
		REVISIONS



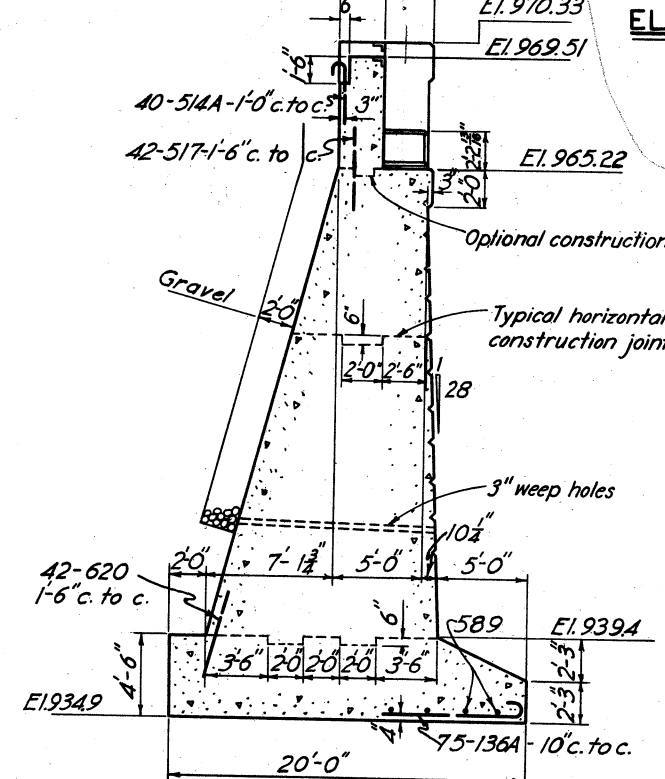
PLAN



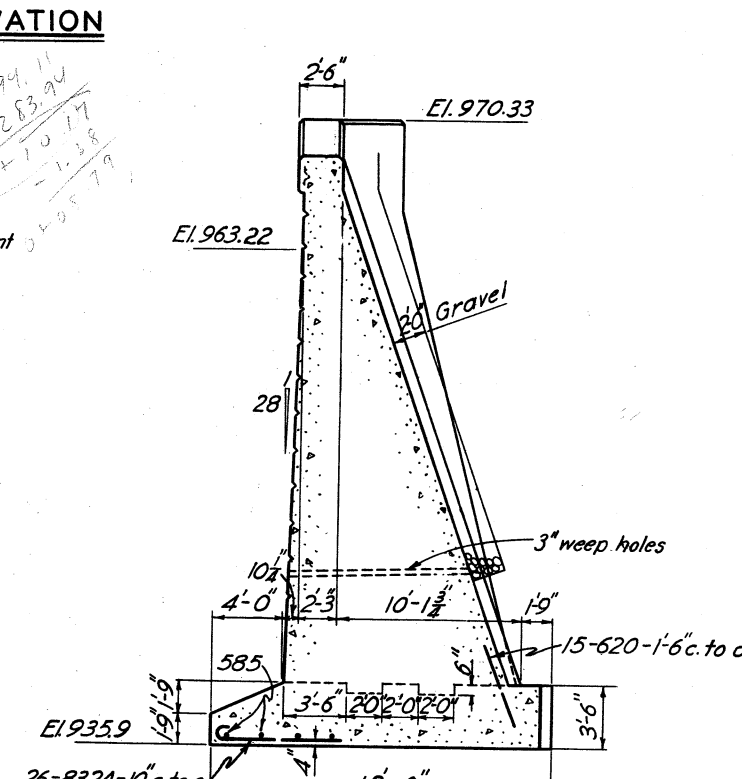
ELEVATION



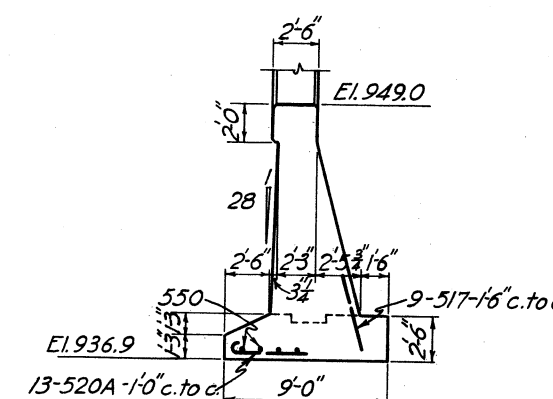
SECTION B-B



SECTION C-C



SECTION D-D



END VIEW E-E

REINFORCING SCHEDULE					
MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	UNIT
514A	3/8"	3'-6"		40	3.65
517	3/8"	4'-3"		66	4.43
520A	3/8"	5'-0"		33	5.22
550	3/8"	12'-6"		4	13.04
585	3/8"	21'-3"		12	22.16
589	3/8"	22'-3"		4	23.21
620	3/8"	5'-0"		72	7.51
832A	1"	8'-0"		52	21.36
136A	1"	9'-0"		75	30.60
					Total
					4968

NOTES

- Chamfer all exposed edges 1" unless otherwise noted.
 Place all reinforcing steel 4" minimum from surfaces unless otherwise noted.
 For groove detail, see Dwg. No. 68/2.
 For anchor bolt layout, see Dwg. No. 68/10.
 For location plan, see Dwg. No. 68/1.
 For expansion plate detail, see Dwg. No. 68/2.
 All concrete to be Class 'B'

**TUSCARAWAS RIVER
 LOCAL PROTECTION PROJECT
 MASSILLON, OHIO
 CHERRY ROAD VIADUCT
 ABUTMENT NO. 10**

IN 147 SHEETS SHEET NO. 89 SCALE: 1/8" = 1'-0"

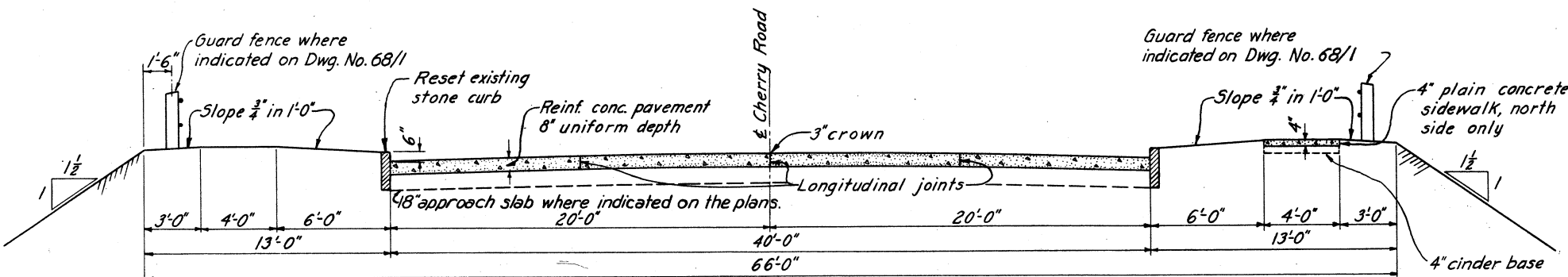
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: [Signature] APPROVED: [Signature]

DRAWN BY: [Signature] TRANSMITTED WITH LETTER

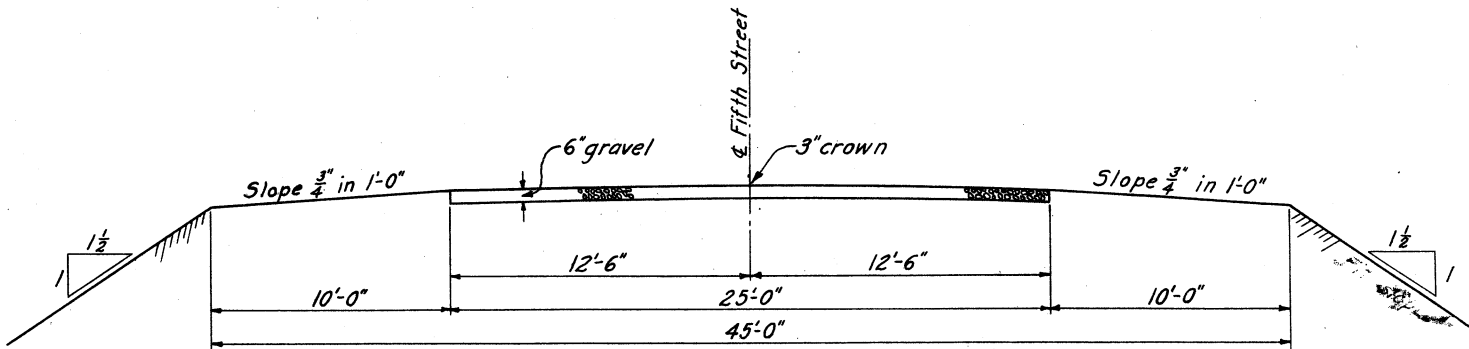
CHECKED BY: E.K. FILE NO. 0271-PM-68/7 DATED

BY	DATE	CHARACTER
		REVISIONS

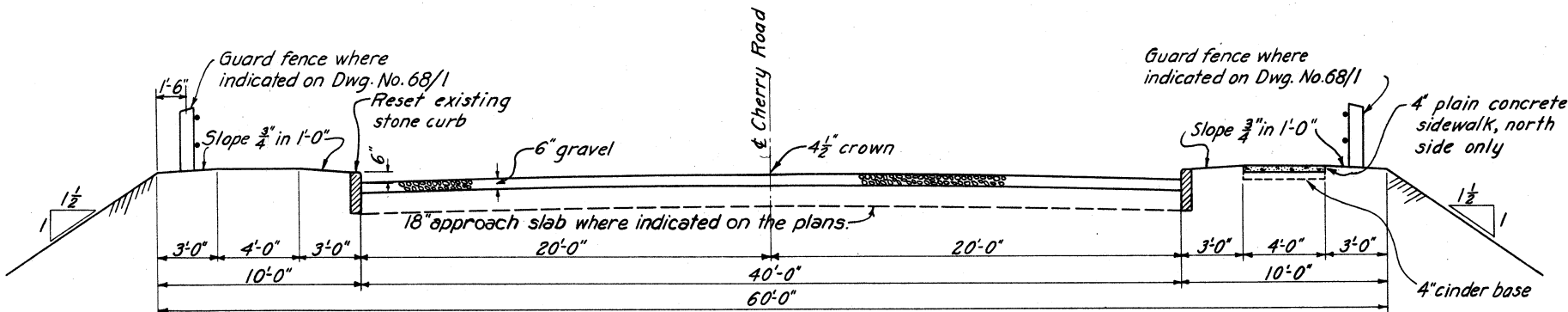


TYPICAL ROADWAY SECTION
FROM STA. 2+94 TO STA. 6+07
AND STA. 9+06 TO STA. 10+29

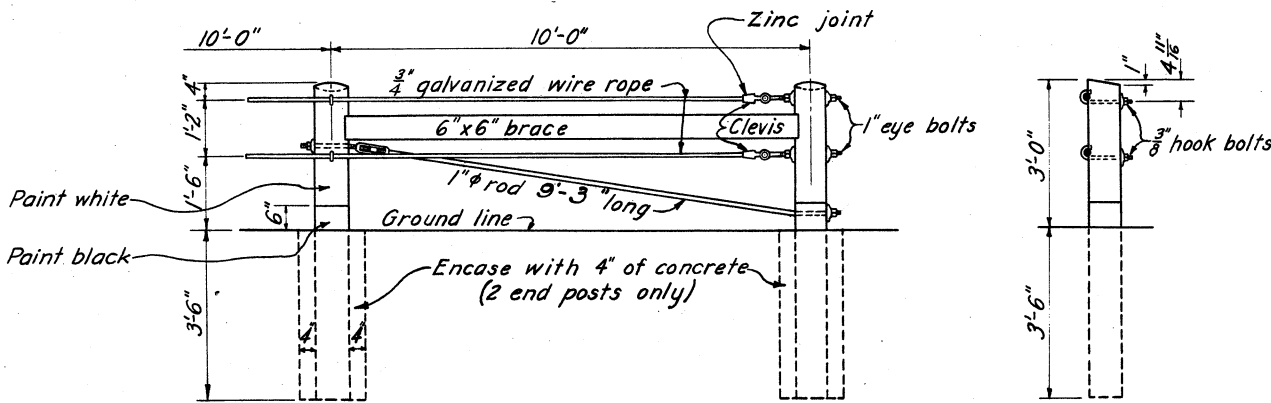
Note:
Curbs and sidewalks to be 6" higher at bridge. Run out to typical section in 50 feet.



TYPICAL ROADWAY SECTION
FIFTH ST. SOUTH OF CHERRY ROAD



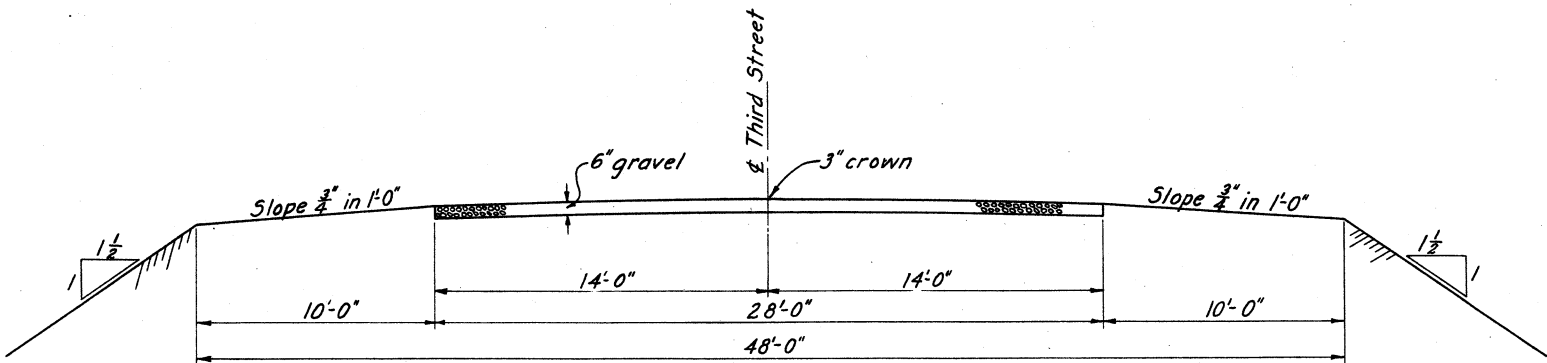
TYPICAL ROADWAY SECTION
FROM STA. 12+96 TO STA. 16+17



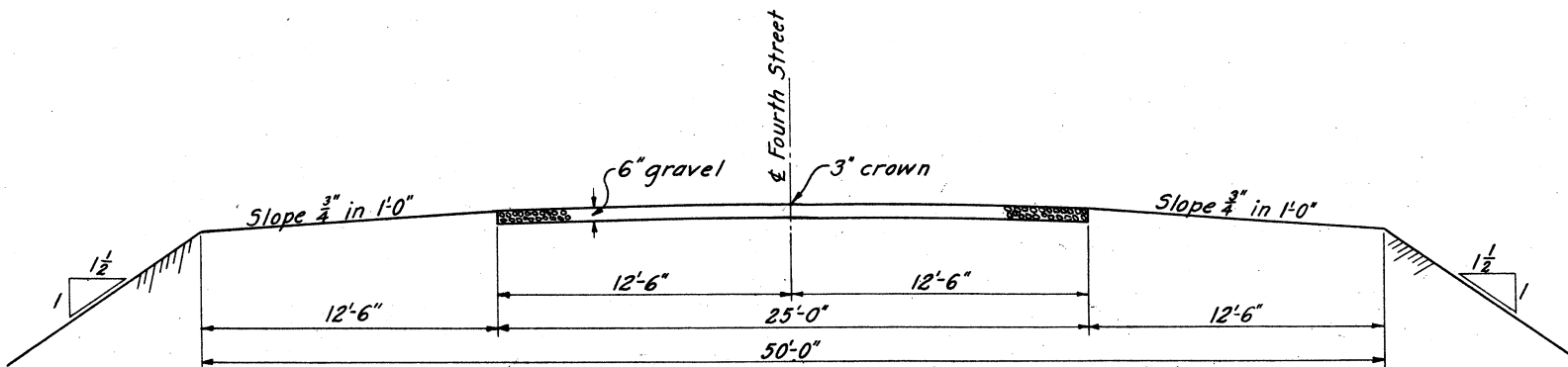
ELEVATION
SCALE: 1/2" = 1'-0"

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

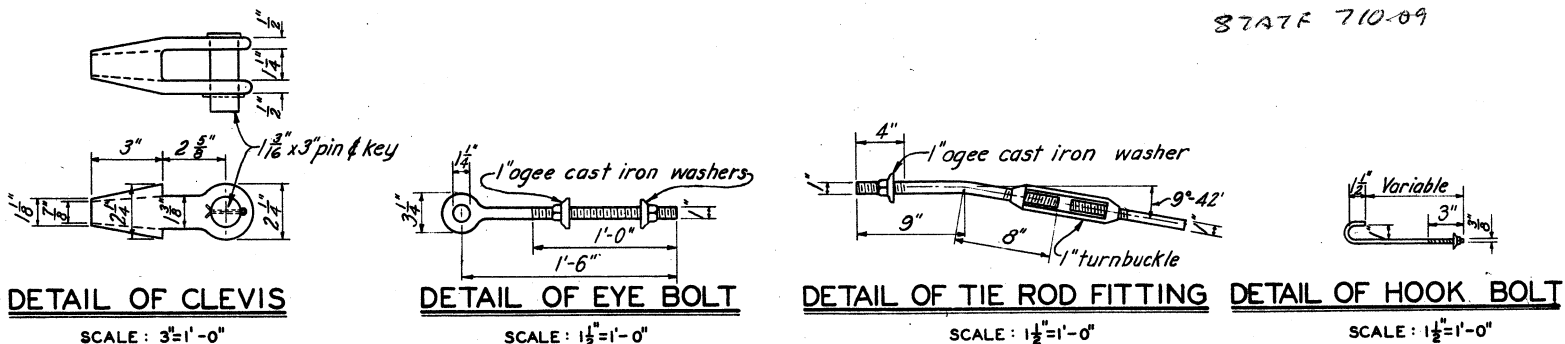
87A7F 710-09



TYPICAL ROADWAY SECTION
THIRD ST. NORTH OF CHERRY ROAD



TYPICAL ROADWAY SECTION
FOURTH ST. NORTH OF CHERRY ROAD



DETAIL OF CLEVIS
SCALE: 3/8" = 1'-0"

DETAIL OF EYE BOLT
SCALE: 1/2" = 1'-0"

DETAIL OF TIE ROD FITTING
SCALE: 1/2" = 1'-0"

DETAIL OF HOOK BOLT
SCALE: 1/2" = 1'-0"

GUARD FENCE DETAILS

WIDTH	DISTANCE IN FEET FROM CENTERLINE OF PAVEMENT																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
40'	0696	1437	2314	3257	4286	5400	6600	7886	9250	10715	12288	13987	15601	17401	19287	21258	23316	25459	27691	30000
26'	0727	1589	2587	3719	4987	6391	7929	9603	11412	13356	15435	17650	20000							
24'	0694	1528	2500	3611	4811	6250	7778	9444	11250	13194	15278	17500								
15'	0673	1549	2620	3911	5396	7085	8977	10900	(7.5' from t)											

ORDINATES FOR CROWN
REINF. CONCRETE PAVEMENT

NOTE

Concrete for sidewalks, post encasements and pavement to be Class "A".

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD VIADUCT
APPROACH SECTIONS & DETAILS

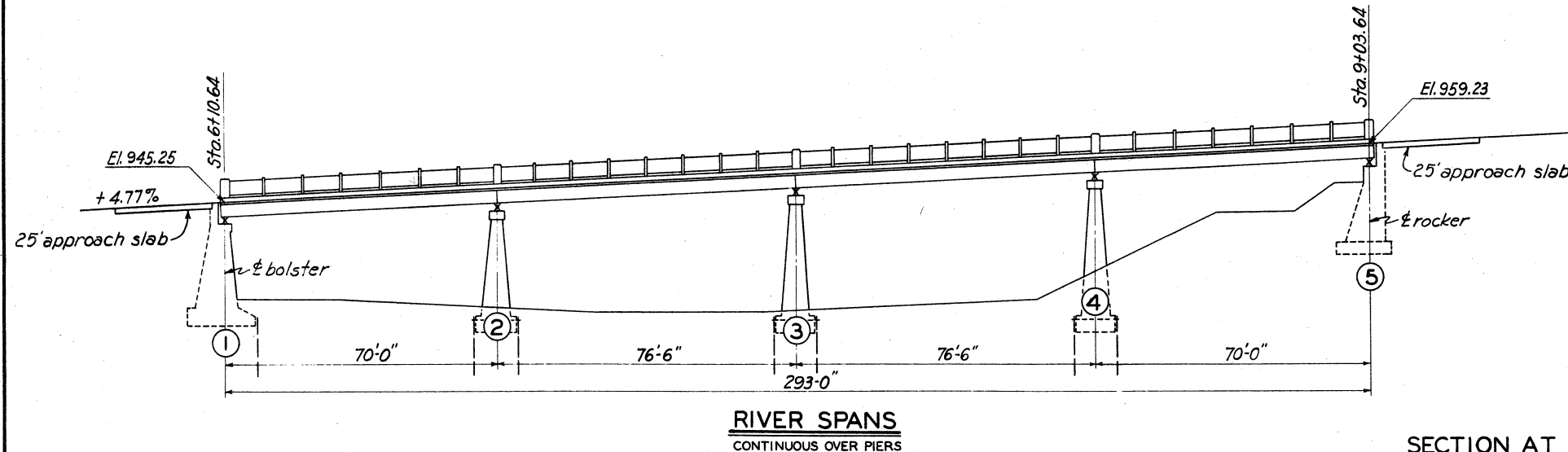
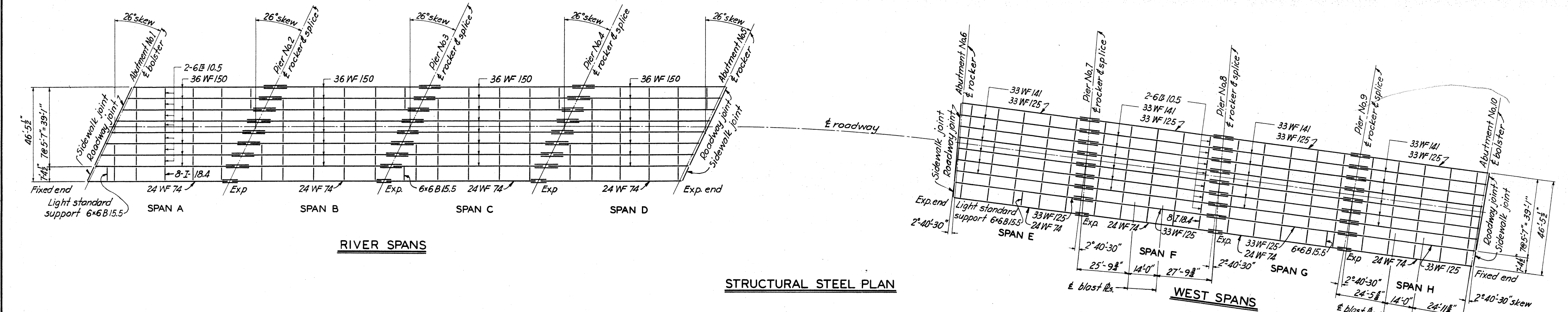
10147 SHEETS SHEET NO. 90 SCALE: 1/2" = 1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: [Signature] APPROVED: [Signature]

DRAWN BY: H. G. H. TRANSMITTED WITH LETTER

CHECKED BY: H. G. H. FILE NO. 0271-PM-68/8 DATED



POSITIVE MOMENTS IN FT.-LBS.												
LOADS	RIVER SPANS						WEST SPANS					
	SPANS A & D			SPANS B & C			SPANS E & F			SPANS G & H		
	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM
DEAD LOAD	228,000	223,000	98,000	196,000	193,000	88,000	185,000	173,000	81,000	143,000	132,000	66,000
LIVE LOAD	416,000	270,000		375,000	243,000		370,000	239,000		333,000	216,000	
IMPACT	107,000	69,000		93,000	60,000		98,000	64,000		87,000	56,000	
SIDEWALK LL		97,000	103,000		90,000	102,000		79,000	83,000		69,000	78,000
TOTAL	751,000	659,000	207,000	664,000	586,000	190,000	653,000	555,000	170,000	563,000	473,000	144,000

NEGATIVE MOMENTS IN FT.-LBS.												
LOADS	RIVER SPANS						WEST SPANS					
	PIER NOS 2 & 4			PIER NO 3			PIER NOS 7 & 9			PIER NO 8		
	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM
DEAD LOAD	209,000	202,000	81,000	172,000	166,000	67,000	166,000	160,000	65,000	124,000	120,000	48,000
LIVE LOAD	449,000	291,000		444,000	287,000		401,000	260,000		397,000	258,000	
IMPACT	83,000	54,000		80,000	52,000		78,000	51,000		76,000	49,000	
SIDEWALK LL		121,000	136,000		123,000	133,000		99,000	111,000		92,000	104,000
TOTAL	741,000	668,000	217,000	696,000	628,000	206,000	645,000	570,000	176,000	597,000	519,000	152,000

REACTIONS IN LBS.																			
LOADS	RIVER SPANS									WEST SPANS									
	ABUTMENT NOS 1 & 5			PIER NOS 2 & 4			PIER NO 3			ABUTMENT NOS 6 & 10			PIER NOS 7 & 9			PIER NO 8			
	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	
DEAD LOAD	15,400	15,000	6,500	41,900	40,800	17,400	39,300	38,300	16,500	13,700	12,900	6,000	36,900	34,800	15,600	33,100	31,300	14,200	
LIVE LOAD	32,100	19,400		56,000	36,300		55,100	35,700		31,400	19,100		53,200	34,400		52,300	33,900		
IMPACT	8,200	5,000		10,300	6,700		9,900	6,400		8,400	5,100		10,400	6,700		10,100	6,500		
SIDEWALK LL		6,200	7,000		17,400	19,600		17,100	19,300			5,600	6,300		15,500	17,400		14,800	16,700
TOTAL	55,700	45,600	13,500	108,200	101,200	37,000	104,300	97,500	35,800	53,500	42,700	12,300	100,500	91,400	33,000	95,500	86,500	30,900	

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 = $\frac{50}{L} \times \text{live load}$; where L = loaded length of span in feet
 $M_2 = \frac{5}{8} M_1$ = bending moment in interior beams due to lateral distribution of wheel loads; where M_1 = 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 $\frac{1}{16} \times \frac{10^6}{(b)^2}$
where L = length in inches of unsupported flange and b = flange width in inches

Shear
Girder web, 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 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
CHERRY ROAD VIADUCT
STEEL PLAN & DESIGN DATA**

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY: _____ CHIEF ENGINEER

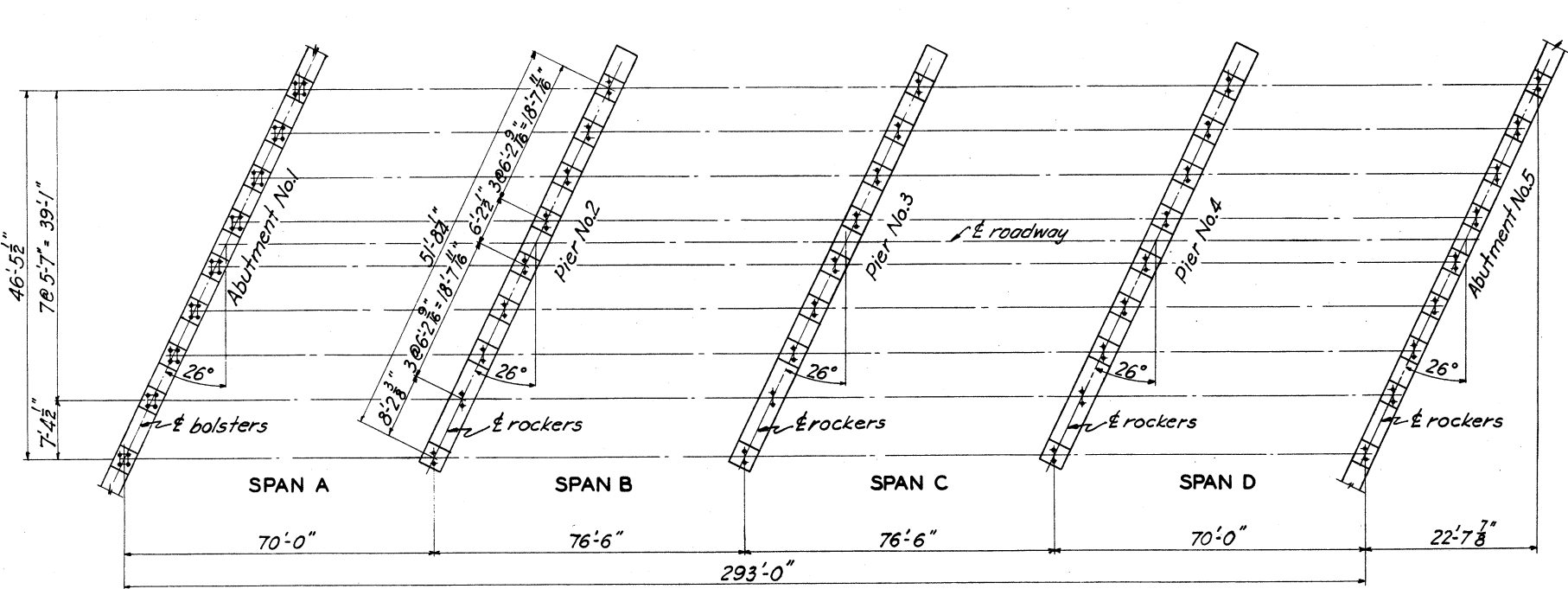
APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY: _____ CHIEF ENGINEER - CENTRAL REGION

IN 147 SHEETS SHEET NO. 91 SCALE: 1"=20'

U.S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: _____ APPROVED: _____
DRAWN BY: J.H. _____ TRANSMITTED WITH LETTER
CHECKED BY: C.D.H. _____
FILE NO 0271-PM-68/9 DATED

BY	DATE	CHARACTER
REVISIONS		

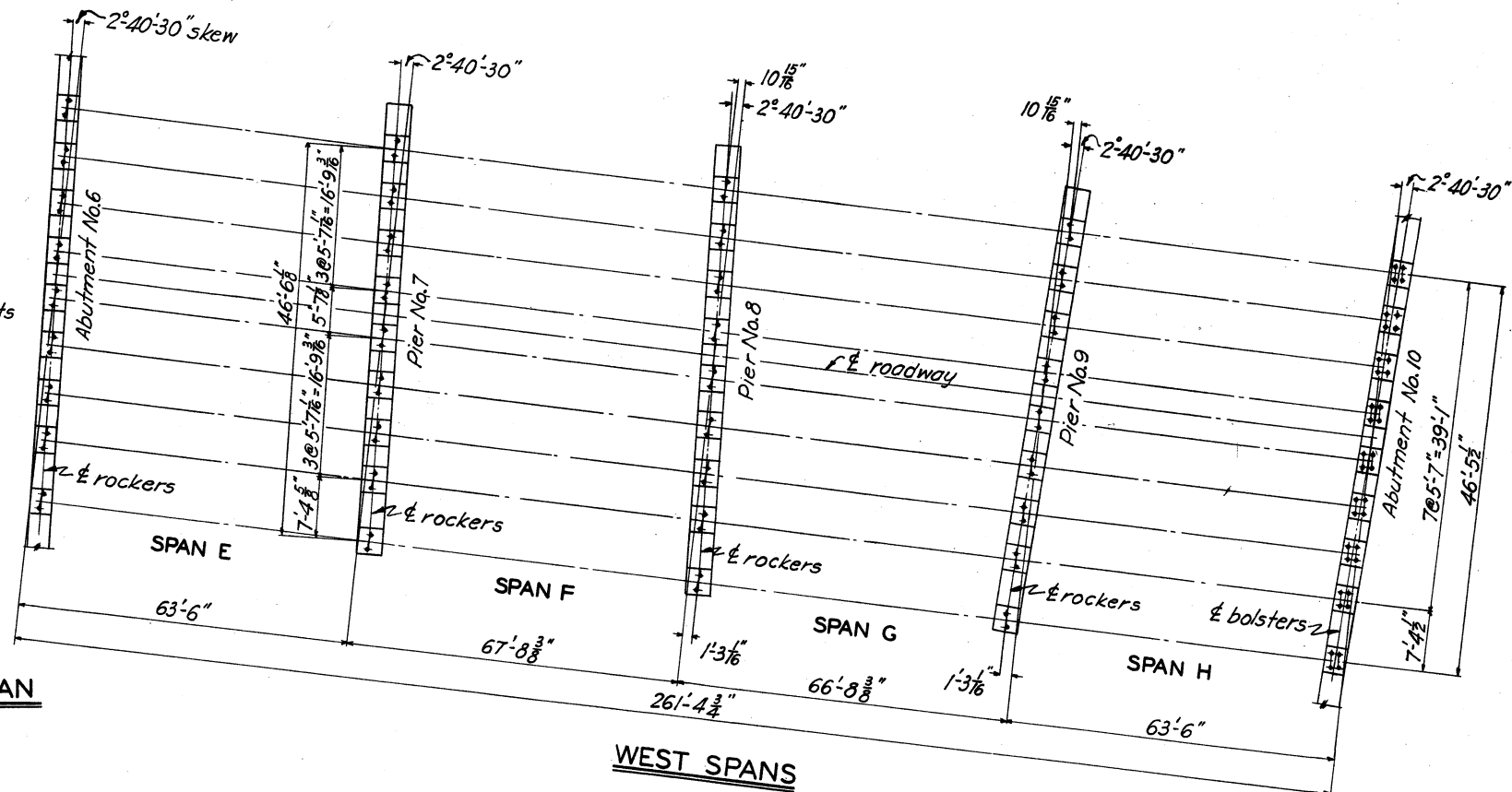


RIVER SPANS

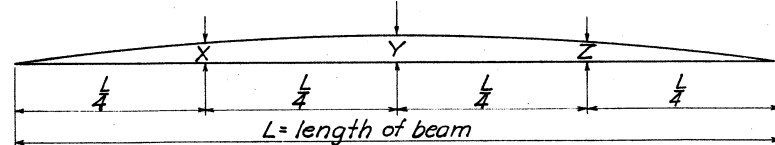
ANCHOR BOLT PLAN

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

For spacing of bolts
see anchor bolt
layouts below.



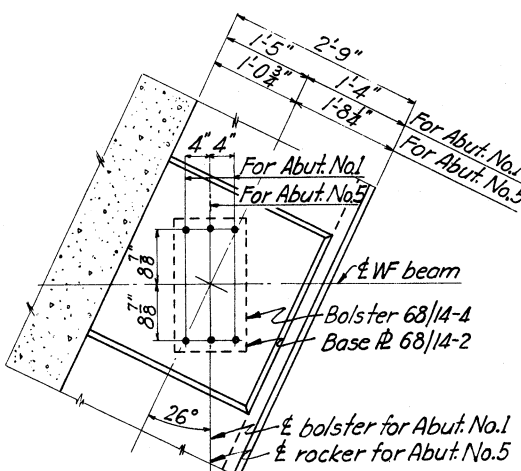
WEST SPANS



CAMBER DIAGRAM

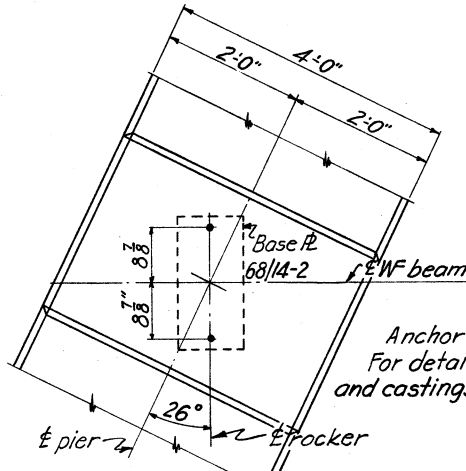
SPAN	INTERIOR BEAM			CURB BEAM			HANDRAIL BEAM		
	X	Y	Z	X	Y	Z	X	Y	Z
A & D	7/8"	1/8"	1/8"	7/8"	1/8"	1/8"	7/8"	1/8"	1/8"
B & C	7/8"	1/8"	1/8"	7/8"	1/8"	1/8"	7/8"	1/8"	1/8"
E	7/8"	1/8"	1/8"	7/8"	1/8"	1/8"	7/8"	1/8"	1/8"
F & G	2 1/8"	3 1/8"	2 1/8"	2 1/8"	3 1/8"	2 1/8"	2 1/8"	3 1/8"	2 1/8"
H	2 1/8"	3 1/8"	2 1/8"	2 1/8"	3 1/8"	2 1/8"	2 1/8"	3 1/8"	2 1/8"

TABLE OF CAMBER

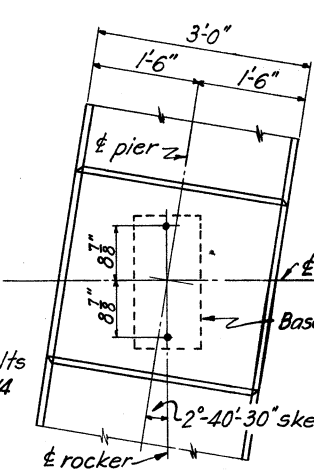


ABUTMENT NO. 1

ABUTMENT NO. 5 SIMILAR EXCEPT AS NOTED

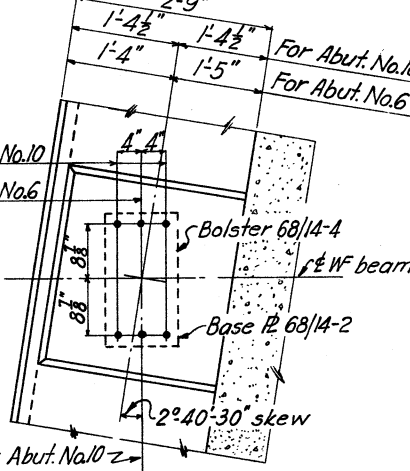


PIERS NOS. 2, 3 & 4



PIER NO. 9

PIER NOS. 7 & 8 SIMILAR EXCEPT OPPOSITE HAND

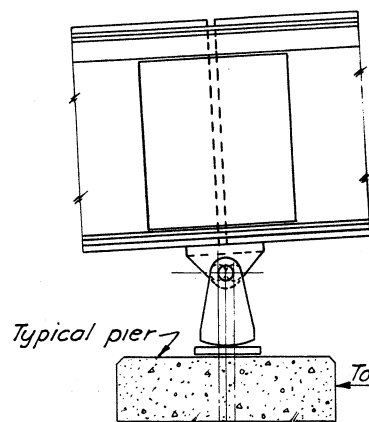


ABUTMENT NO. 10

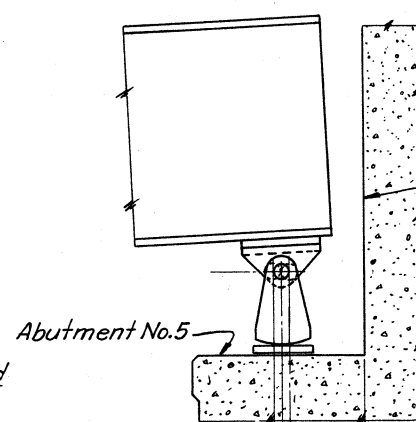
ABUTMENT NO. 6 SIMILAR EXCEPT OPPOSITE HAND AND AS NOTED

TYPICAL ANCHOR BOLT LAYOUTS

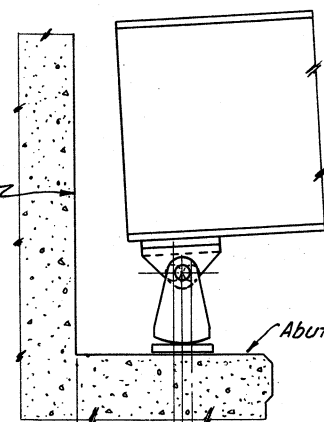
SCALE: 1/8"=1'-0"



Typical pier



Abutment No. 5



Abutment No. 6

(-) (+)
1/2" base R
1/2" rocker pin when correction in table 1 is (+)
1/2" rocker pin when correction in table 1 is (0)
1/2" rocker pin when correction in table 1 is (-)

(-) (+)
1/2" base R
1/2" rocker pin when correction in table 1 is (-)
1/2" rocker pin when correction in table 1 is (0)
1/2" rocker pin when correction in table 1 is (+)

(+) (-)
1/2" base R
1/2" rocker pin when correction in table 1 is (+)
1/2" rocker pin when correction in table 1 is (0)
1/2" rocker pin when correction in table 1 is (-)

Note: Distances A & B are measured perpendicular to the face of backwall

ROCKER SETTING

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

TABLE NO. 2	
DISTANCE "A" FOR ROCKER ON ABUTMENT NO. 5	
TEMPERATURE	
0°	20°
1'-2"	1'-1 1/2"

TABLE NO. 3	
DISTANCE "B" FOR ROCKER ON ABUTMENT NO. 6	
TEMPERATURE	
0°	20°
1'-6 1/2"	1'-5 1/2"

TABLE NO. 1	
TEMPERATURE CORRECTION FOR SETTING EXPANSION ROCKERS	
ROCKER LOCATION	TEMPERATURE
	0° 20° 40° 60° 80° 100° 120°
PIER NO. 2	- 1/8" - 1/8" - 1/8" 0 + 1/8" + 1/8" + 1/8"
PIER NO. 3	- 1/8" - 1/8" - 1/8" 0 + 1/8" + 1/8" + 1/8"
PIER NO. 4	- 1/8" - 1/8" - 1/8" 0 + 1/8" + 1/8" + 1/8"
ABUT. NO. 5	- 1/8" - 1/8" - 1/8" 0 + 1/8" + 1/8" + 1/8"
ABUT. NO. 6	- 1/8" - 1/8" - 1/8" 0 + 1/8" + 1/8" + 1/8"
PIER NO. 7	- 1/8" - 1/8" - 1/8" 0 + 1/8" + 1/8" + 1/8"
PIER NO. 8	- 1/8" - 1/8" - 1/8" 0 + 1/8" + 1/8" + 1/8"
PIER NO. 9	- 1/8" - 1/8" - 1/8" 0 + 1/8" + 1/8" + 1/8"

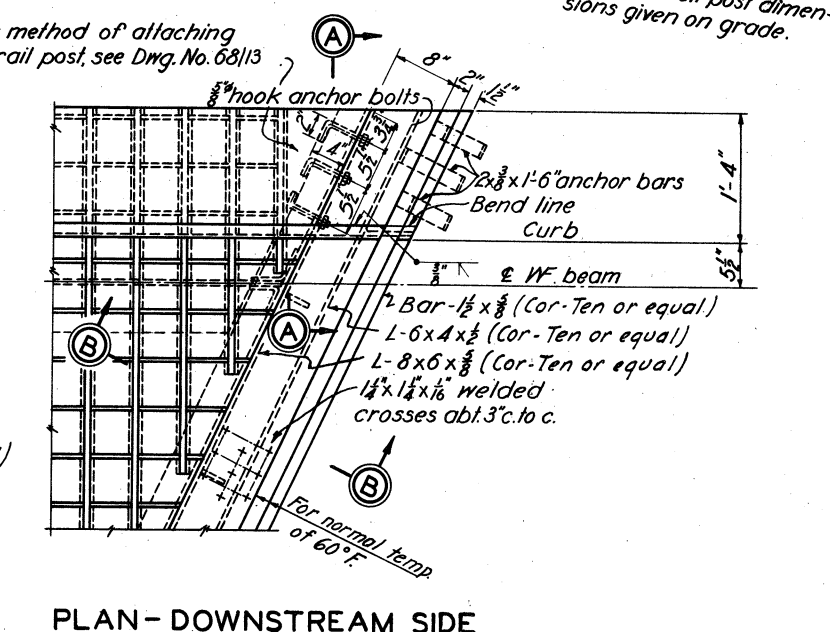
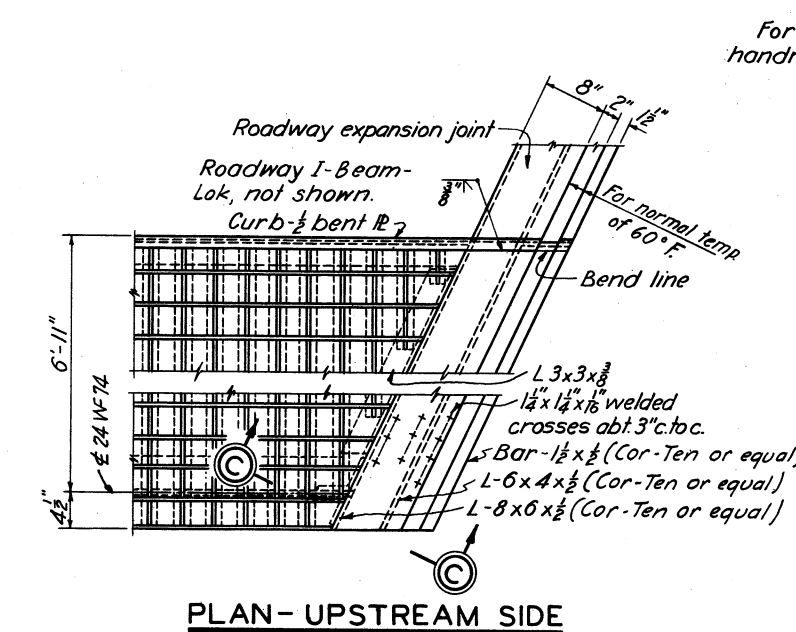
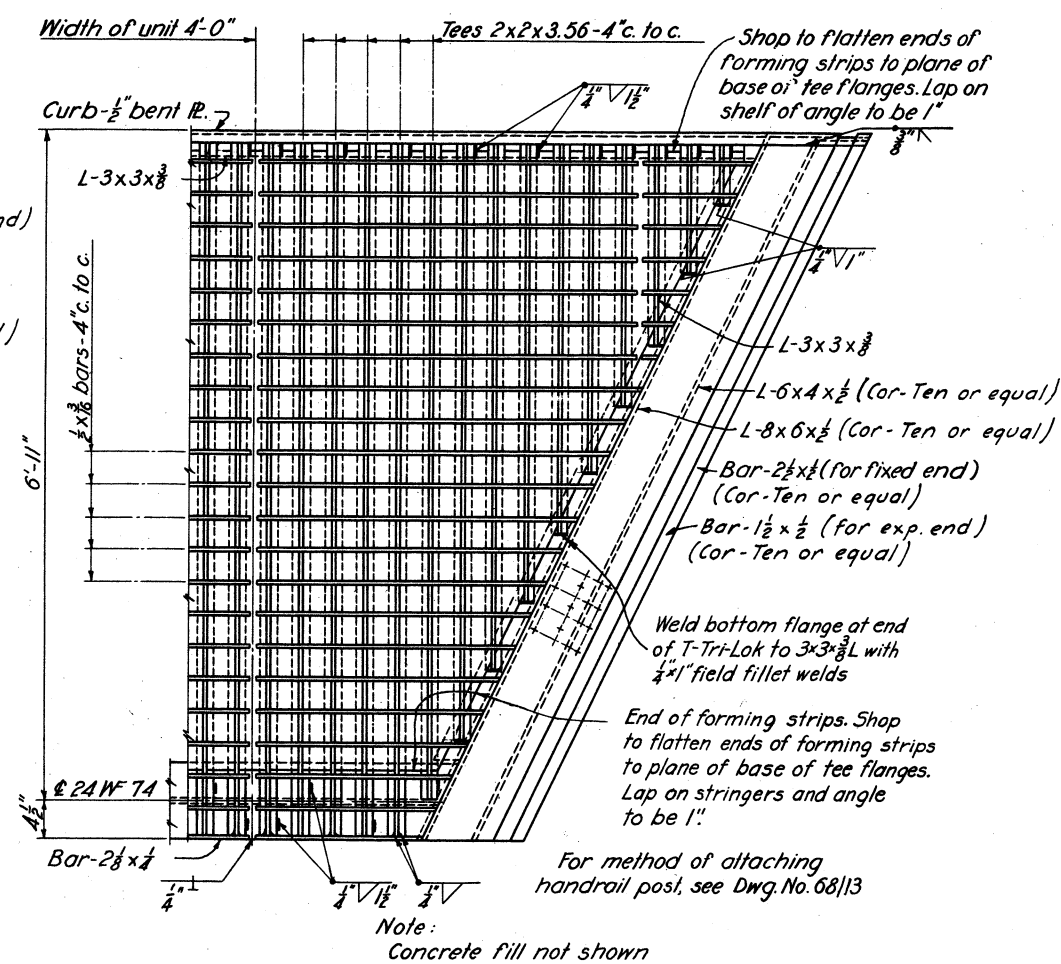
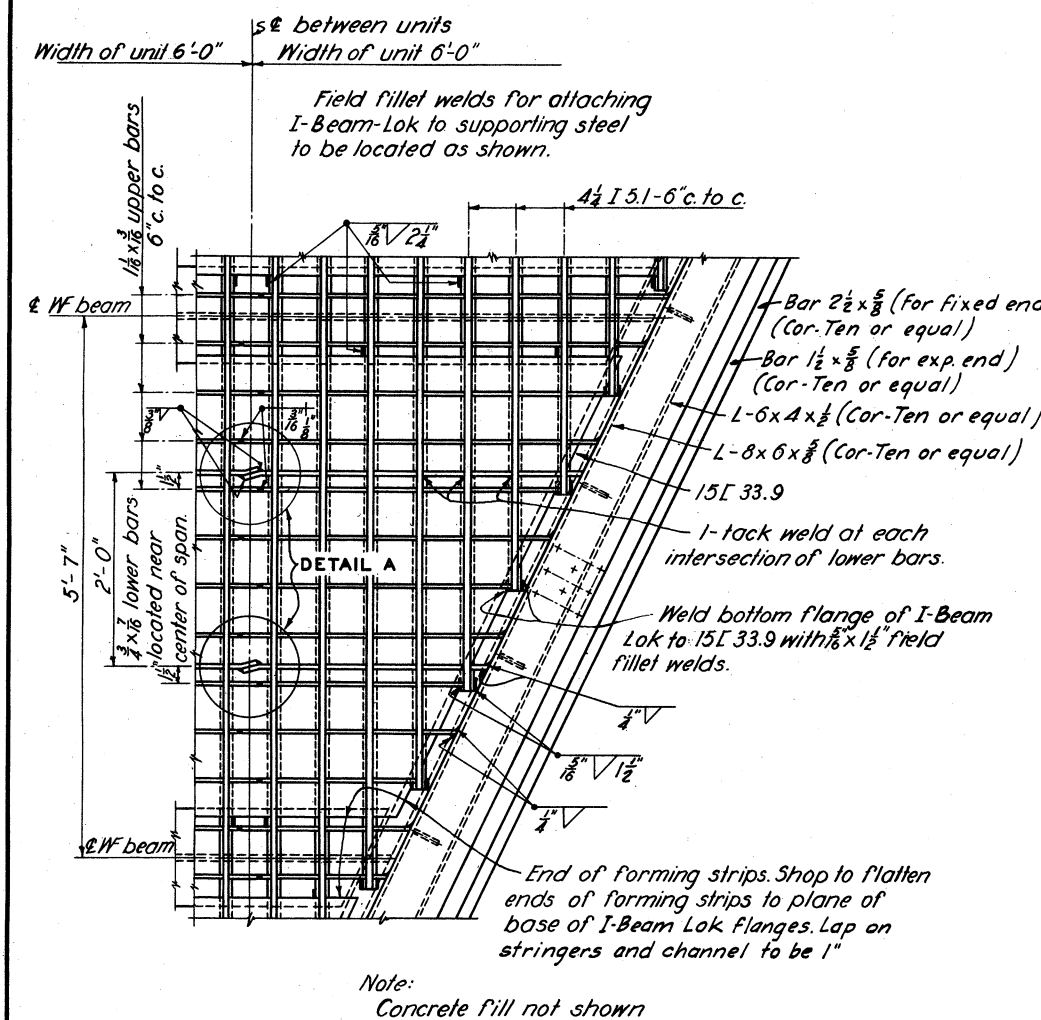
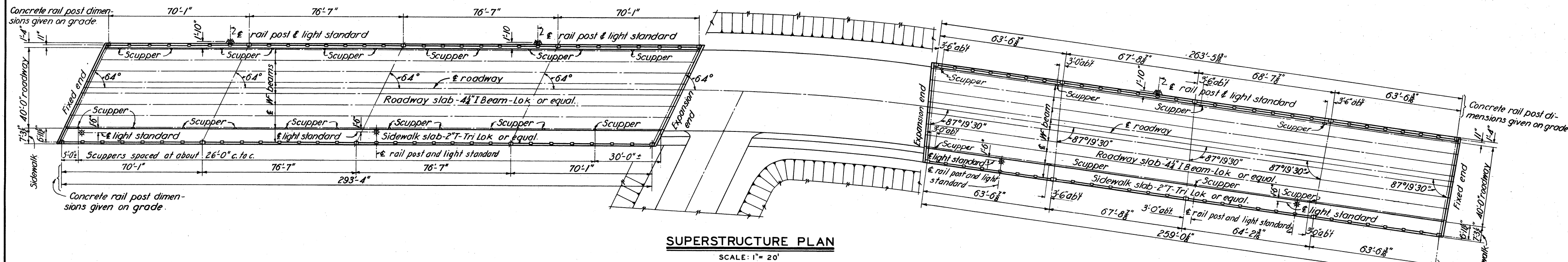
TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD VIADUCT
ANCHOR BOLT PLAN & ERECTION DATA

IN 147 SHEETS SHEET NO. 92 SCALE: AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

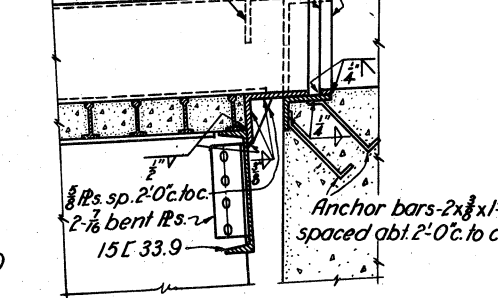
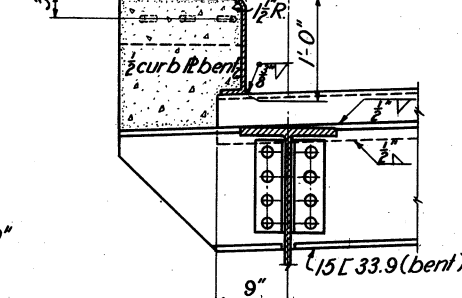
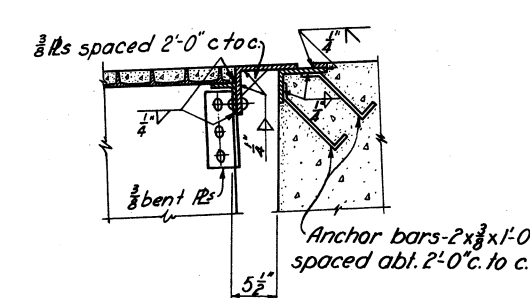
SUBMITTED: [Signature] APPROVED: [Signature]

DRAWN BY: N.W.D. TRACED BY: C.D.H. CHECKED BY: H.U.B. TRANSMITTED WITH LETTERS
FILE NO. 0271-PM-68/10 DATES



PLAN-UPSTREAM SIDE

PLAN-DOWNSTREAM SIDE



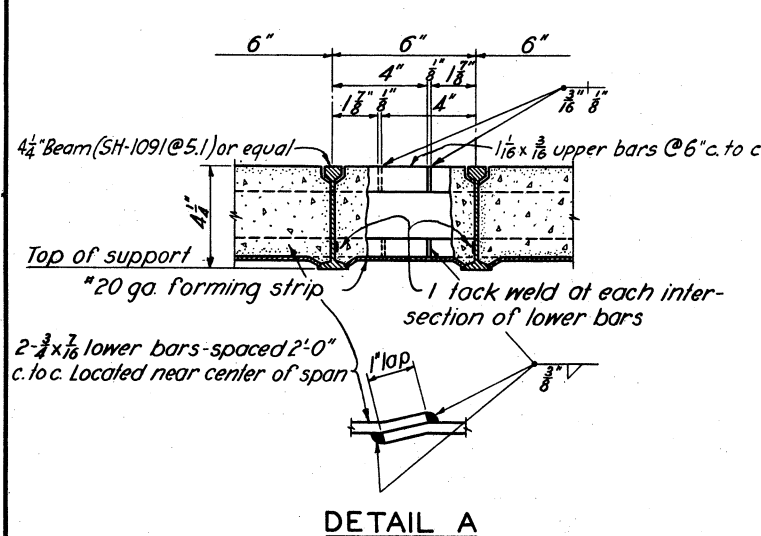
SECTION C-C

SECTION A-A

SECTION B-B

DETAILS OF SIDEWALK JOINT-EXPANSION END

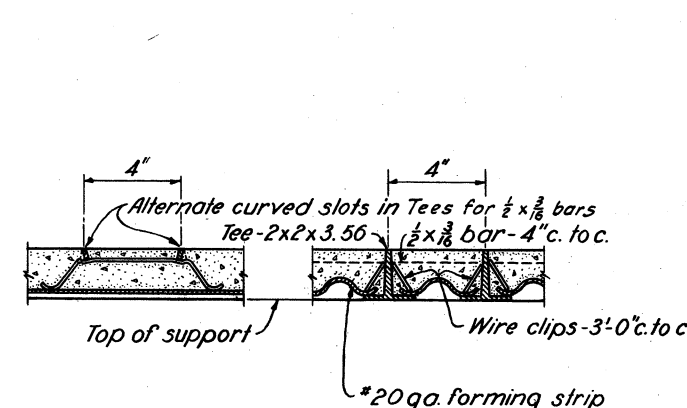
DETAILS OF ROADWAY JOINT-EXPANSION END



DETAILS OF ROADWAY SLAB

DETAIL A

SCALE: 3" = 1'-0"

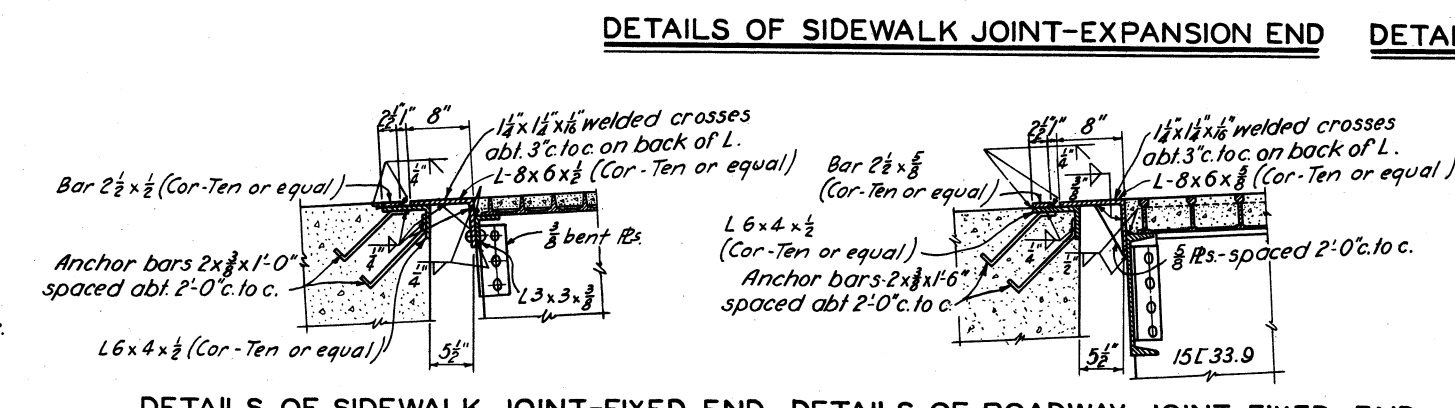


LONGITUDINAL SECTION

CROSS SECTION

DETAILS OF SIDEWALK SLAB

SCALE: 3" = 1'-0"



DETAILS OF SIDEWALK JOINT-FIXED END

DETAILS OF ROADWAY JOINT-FIXED END

NOTES

Expansion and fixed joints to be flared and bent to match roadway.

Details shown are for River Span-Mesh Span is similar.

Rivets 8"

Concrete for road surfacing and sidewalk to be class "A."

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD VIADUCT
FLOOR PLAN & DETAILS

18147 SHEETS SHEET NO. 93 SCALE: 1" = 1'-0"

U.S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: *W. B. R. A. E.* APPROVED: *W. B. R. A. E.*

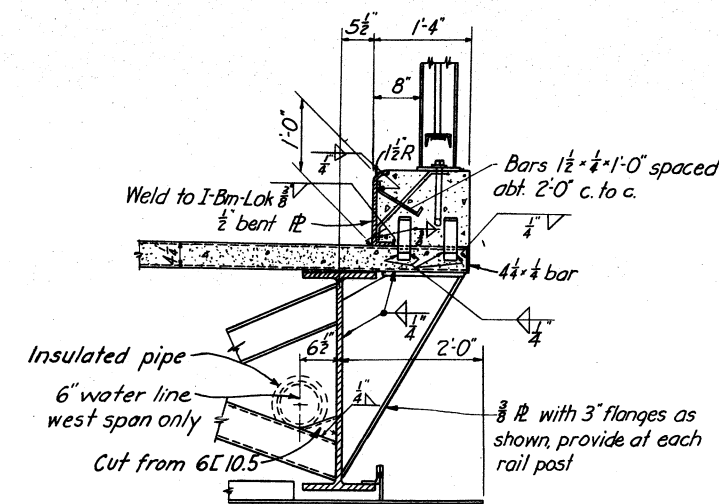
DRAWN BY: H. W. D. CHECKED BY: H. U. S. FILE NO. 0271-PM-68/11

TRANSMITTED WITH LETTER DATED

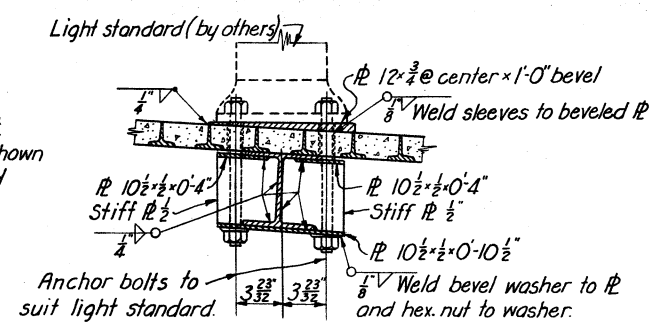
APPROVED: THE BALTIMORE AND OHIO RAILROAD CO.
BY: CHIEF ENGINEER

APPROVED: THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION

BY	DATE	CHARACTER
		REVISIONS

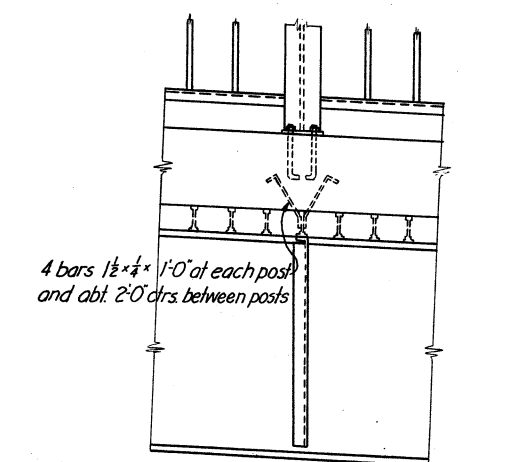


DOWNSTREAM CURB DETAIL

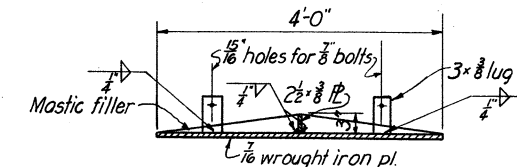


SECTION A- A

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

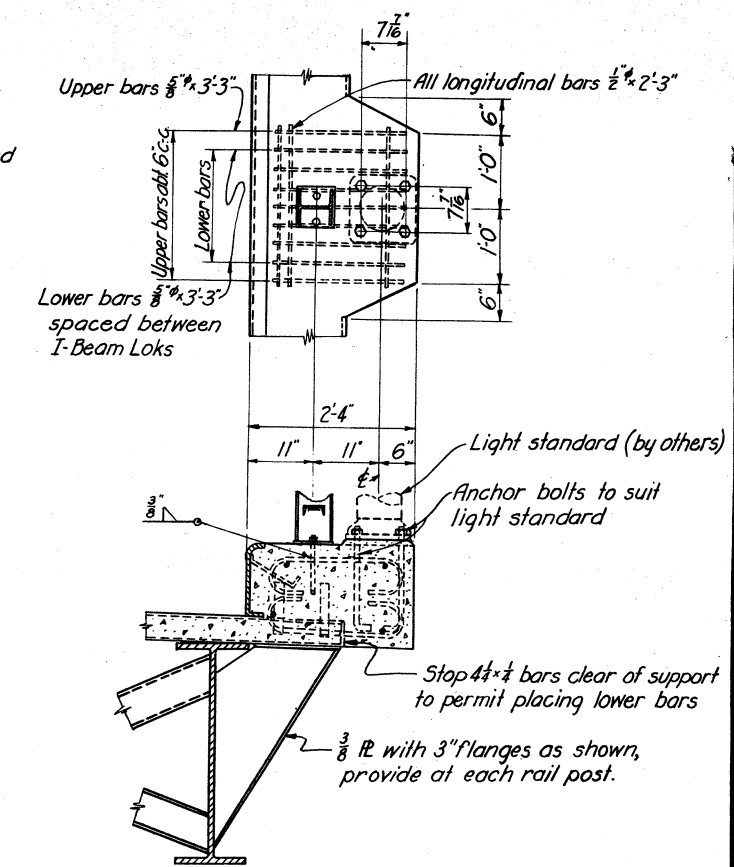


ROADWAY CURB ELEVATION
AT INTERMEDIATE POST

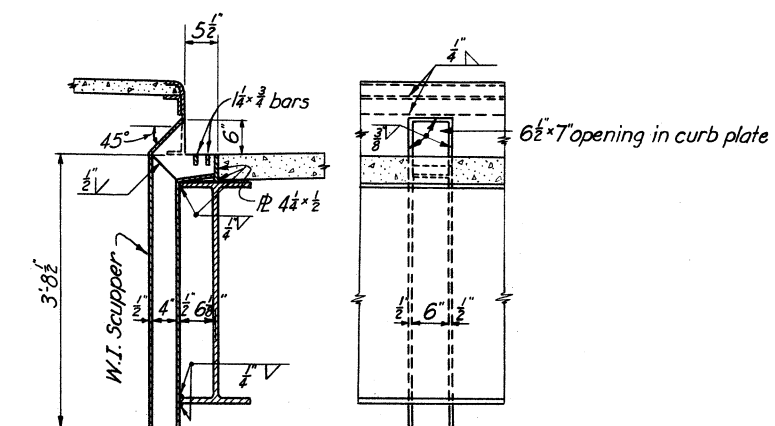


TYPICAL SECTION OF BLAST PLATE

203 LIN. FT. REQ'D.



LIGHT STANDARD SUPPORTS AT ROADWAY CURB



DETAIL OF SCUPPER

For location of blast plates, see Dwg. No. 68/9.

HEIGHT OF PEDESTALS UNDER BOLSTERS										BRIDGE SEAT ELEVATION	PLATE NORMAL SHIMS	PLUS SHIMS		
LOCATION	F	G	H	J	K	K-I	J-I	H-I	G-I				SIDEWALK BEAM	ROADWAY BEAMS
ABUT. NO.1	2'-2 1/2"	1'	3 3/4"	6 3/4"	8 1/4"	10"	10 3/4"	11 1/8"		940.31	7 1/2"	1'		
ABUT. NO.10	2'-2 1/2"	1'-2"	3 3/4"	3 3/4"	3 3/4"	3"	2"	1"		965.22	3 1/2"	1 1/2"		

HEIGHT OF PEDESTALS UNDER BOLSTERS										BRIDGE SEAT ELEVATION	PLATE NORMAL SHIMS	PLUS SHIMS		
LOCATION	F	G	H	J	K	K-I	J-I	H-I	G-I				SIDEWALK BEAM	ROADWAY BEAMS
ABUT. NO.1	2'-2 1/2"	1'	3 3/4"	6 3/4"	8 1/4"	10"	10 3/4"	11 1/8"		940.31	7 1/2"	1'		
ABUT. NO.10	2'-2 1/2"	1'-2"	3 3/4"	3 3/4"	3 3/4"	3"	2"	1"		965.22	3 1/2"	1 1/2"		

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD VIADUCT
TYPICAL SECTIONS & DETAILS**

IN 147 SHEETS SHEET NO. 94 SCALE: $\frac{3}{4}" = 1'-0"$

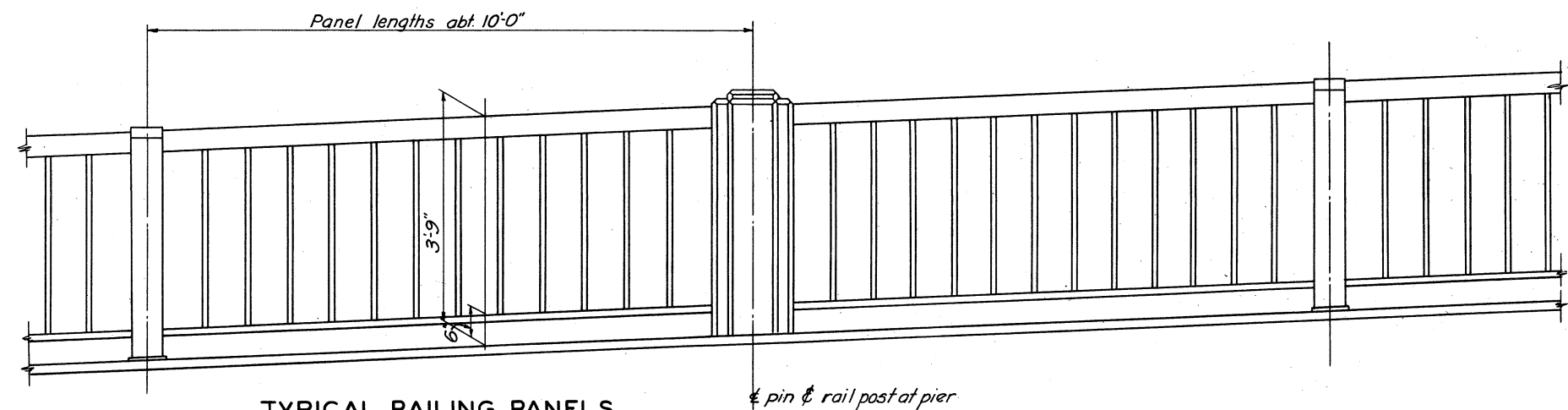
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

SUBMITTED: Wm. Perkins
PRINCIPAL ENGINEER

APPROVED: J. H.
T. COL. CORPS OF ENGINEERS

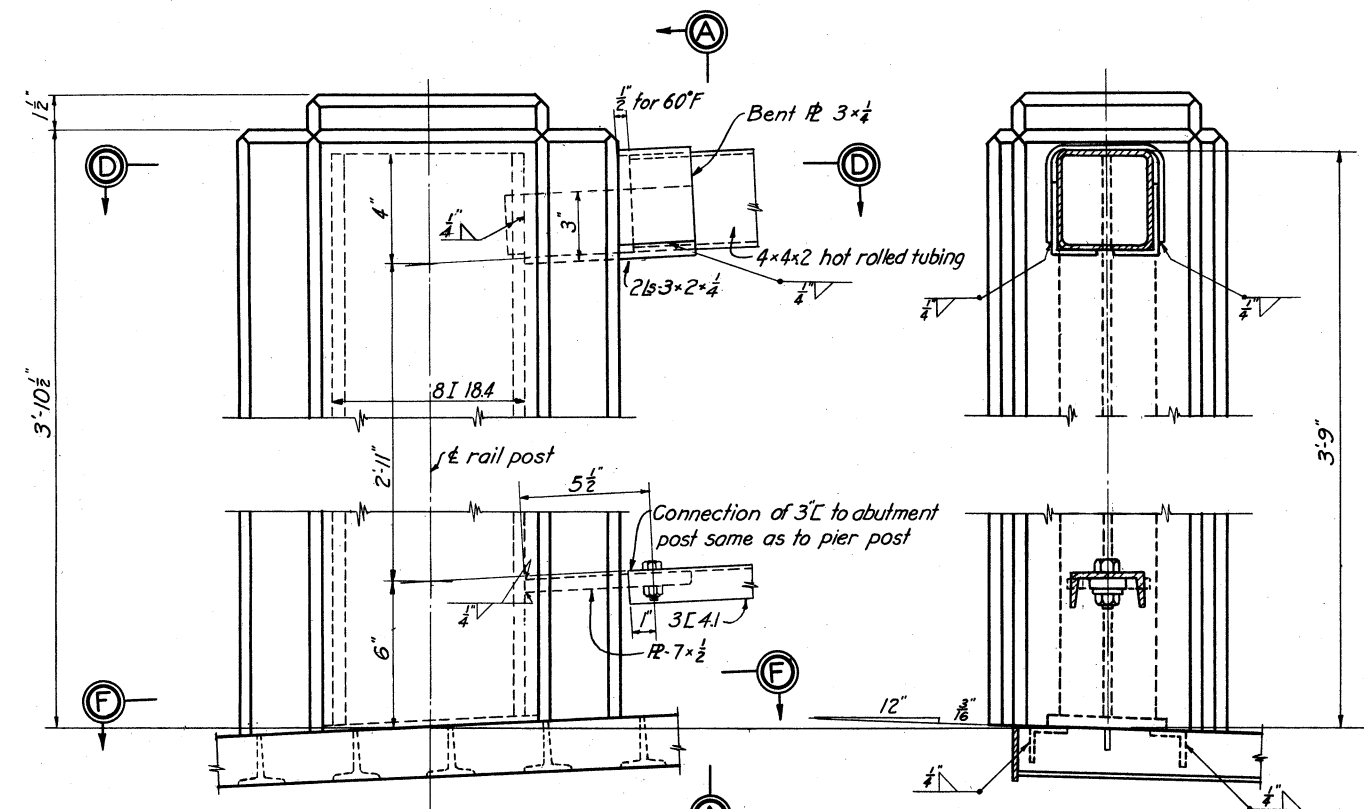
DRAWN BY A. W. S. TRANSMITTED WITH LETTER
TRACED BY H. C.
CHECKED BY H. U. B. FILE NO. 027i-PM-68/12 DATED

BY	DATE	CHARACTER
		REVISIONS



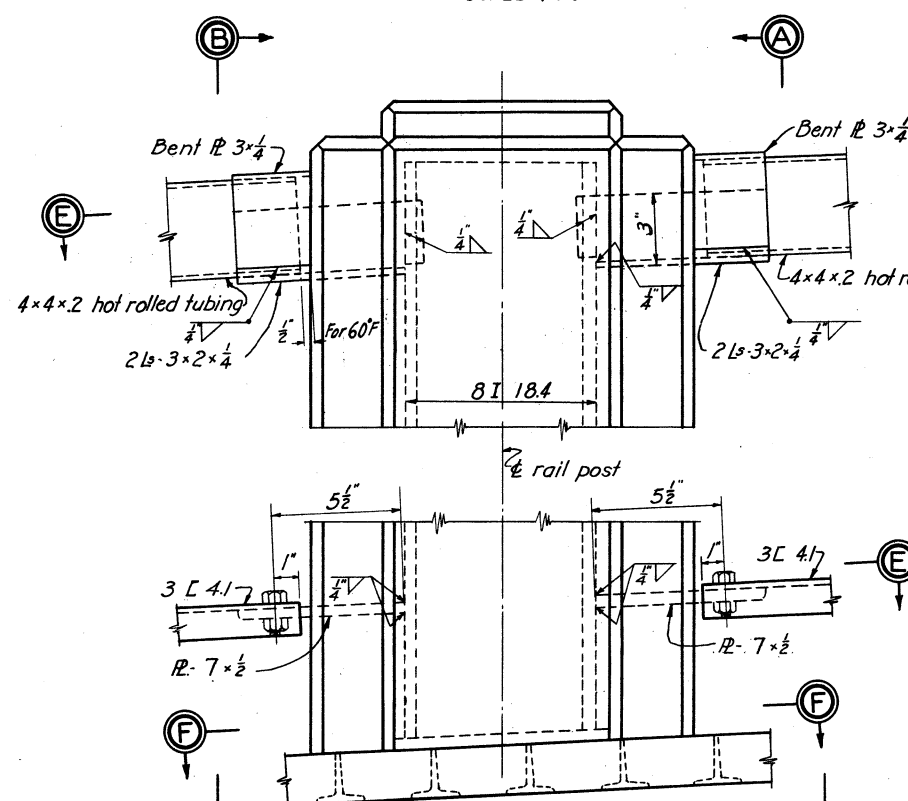
TYPICAL RAILING PANELS

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

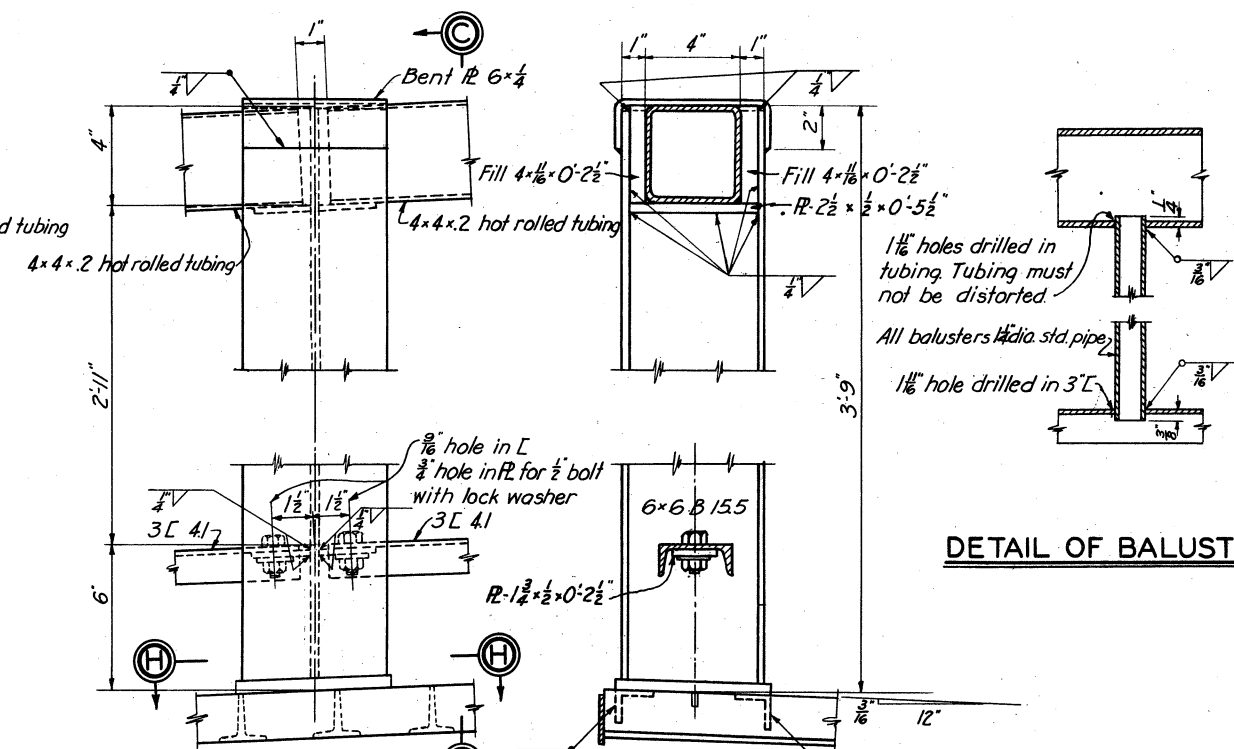


CONCRETE RAIL POST AT ABUTMENT

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



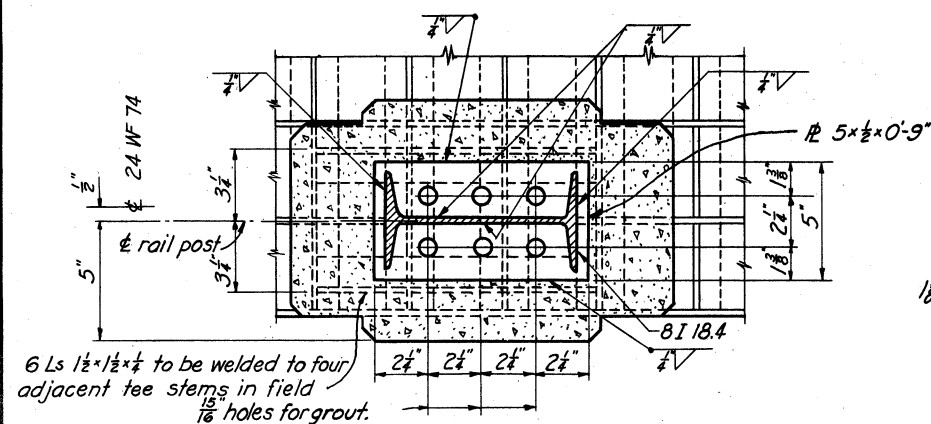
CONCRETE RAIL POST AT PIERS



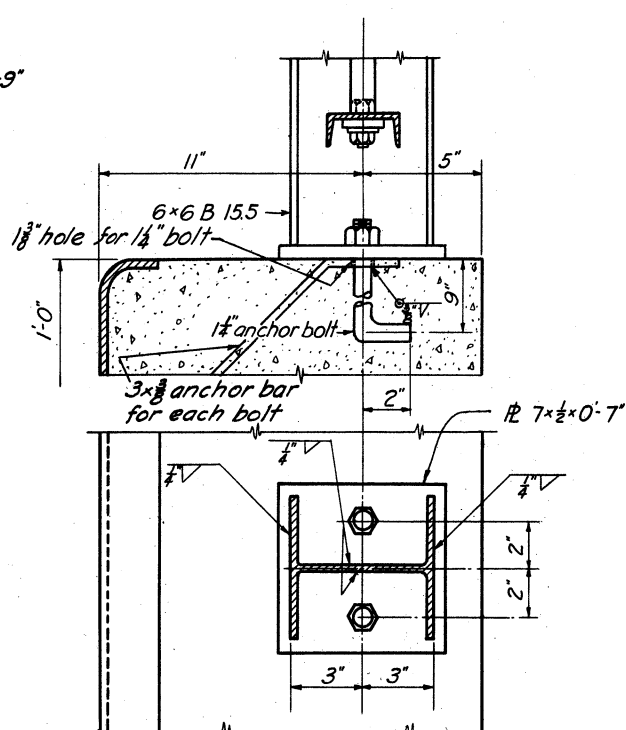
INTERMEDIATE RAIL POST

SECTION C-C

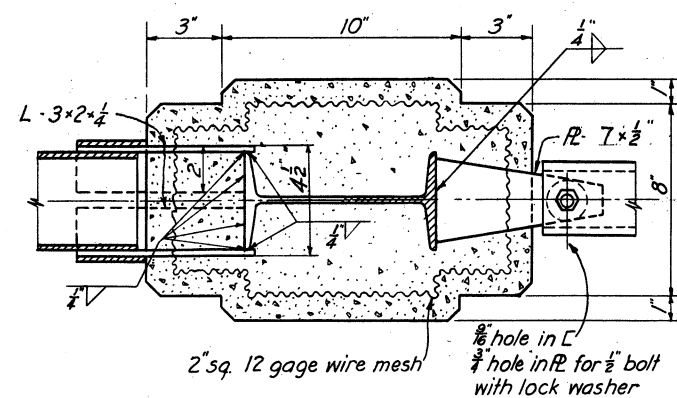
DETAIL OF BALUSTERS



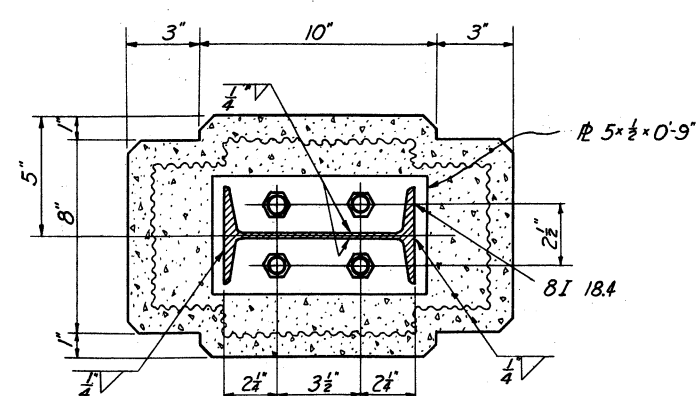
SECTION F-F



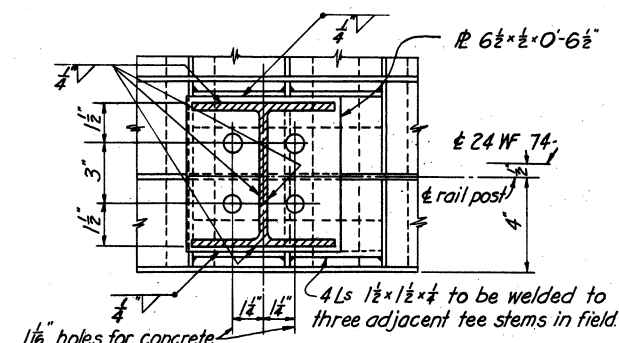
INTERMEDIATE RAIL POST
DOWNSIDE



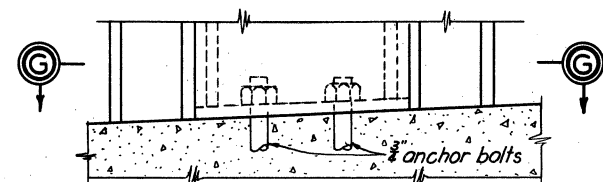
SECTION E-E



SECTION G-G



SECTION H-H



CONCRETE RAIL POST AT PIERS
DOWNSTREAM SIDE

NOTES

Material for railing to be structural steel.
Steel railing posts are to be welded in place before sidewalk
slab is poured.
All railing posts shown are for upstream side except as noted.
Railing posts to be beveled to take care of sidewalk slope and
grade of roadway.
Concrete for railing posts to be Class "A."

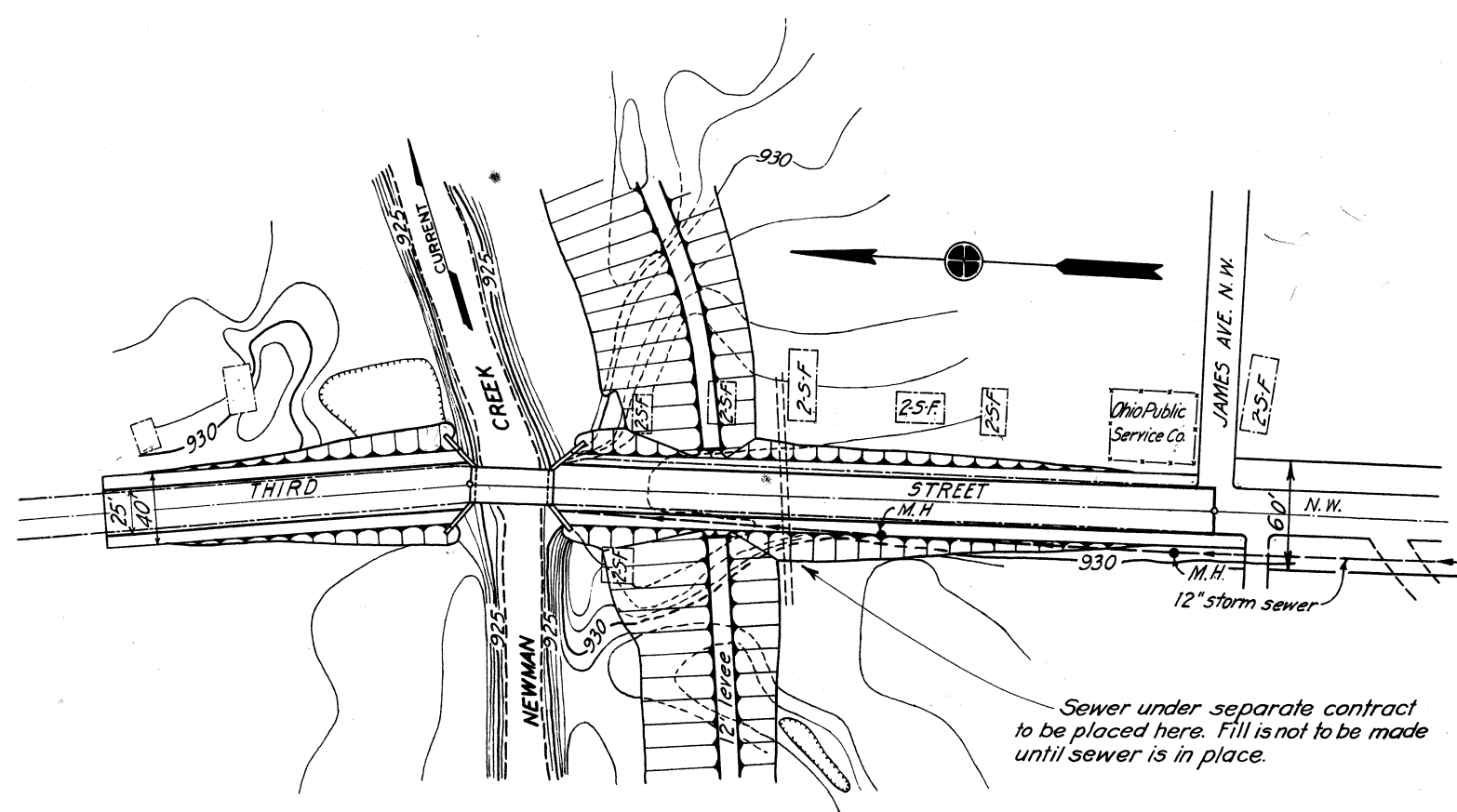
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD VIADUCT
RAILING DETAILS**

IN 147 SHEETS SHEET NO. 95 SCALE: 3"=1'-0"

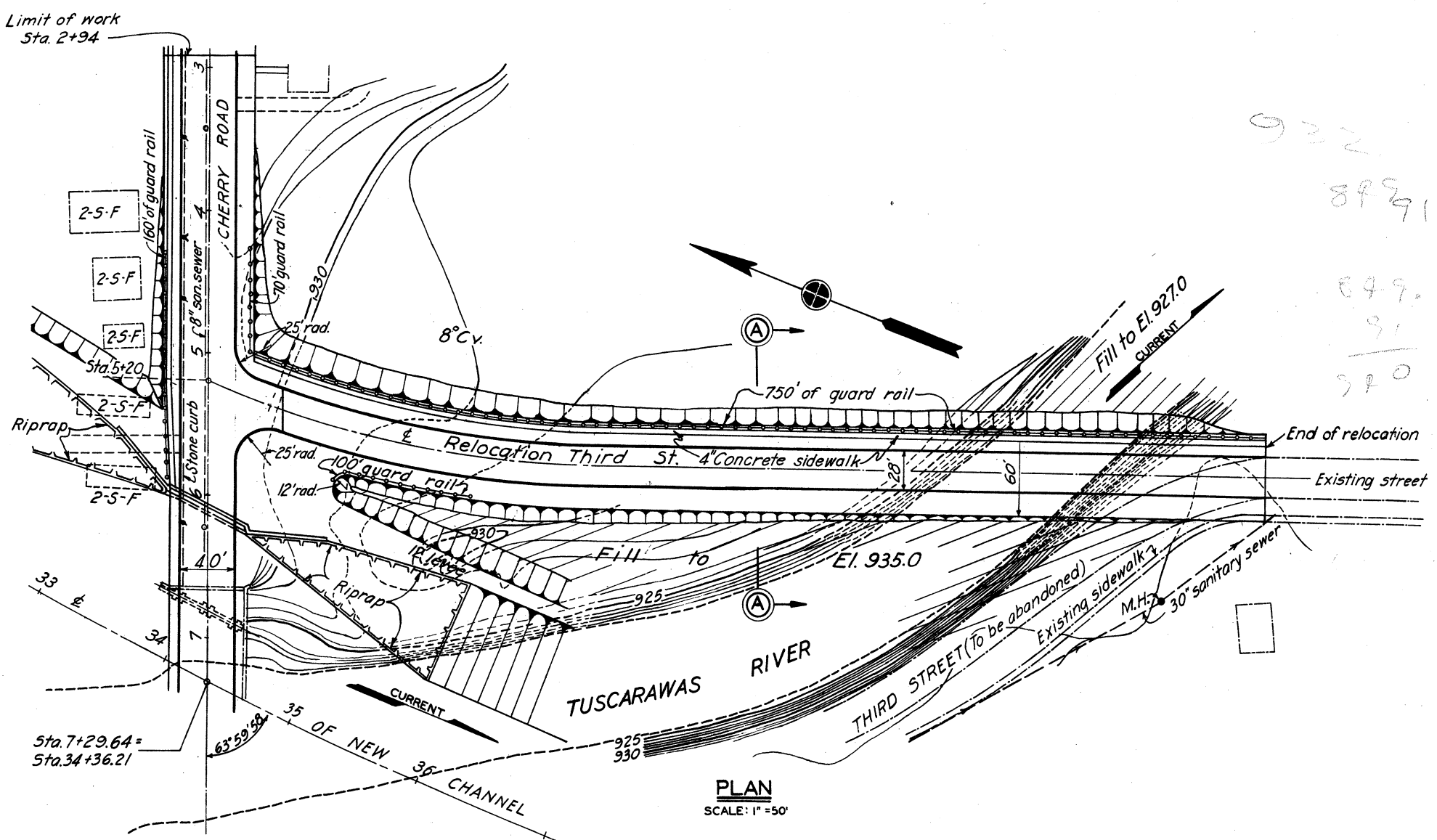
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
 PRINCIPAL ENGINEER LT. COL., CORPS OF ENGINEERS
 DRAWN BY A. J. M. TRANSMITTED WITH LETTER
 TRACED BY H. C.
 CHECKED BY H. U. B. FILE NO. 027i-PM-68/13 DATED

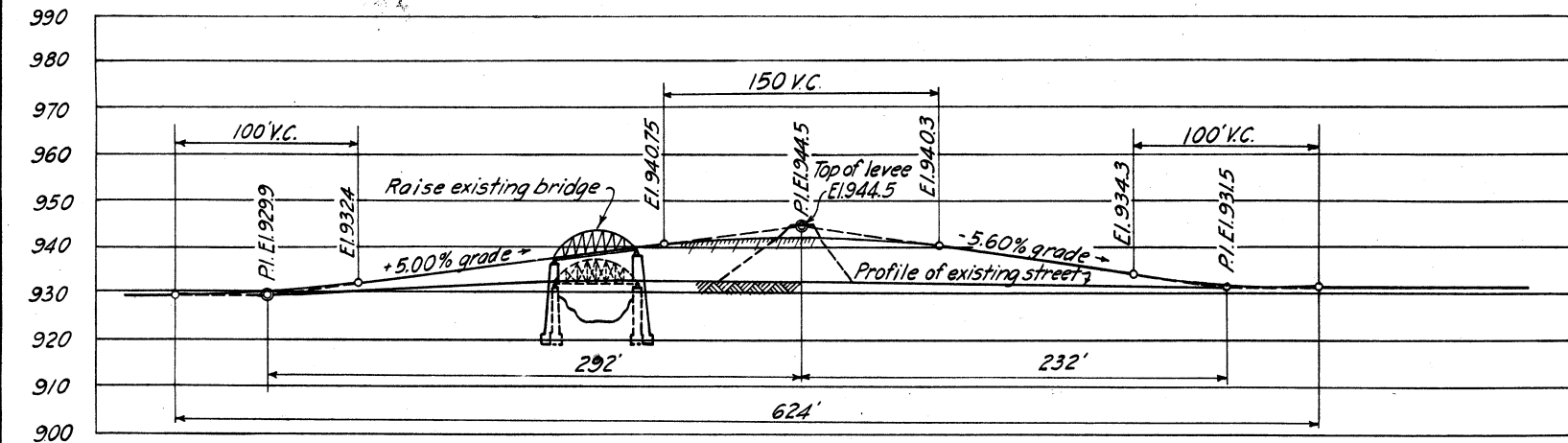
BY	DATE	CHARACTER
R E V I S I O N S		



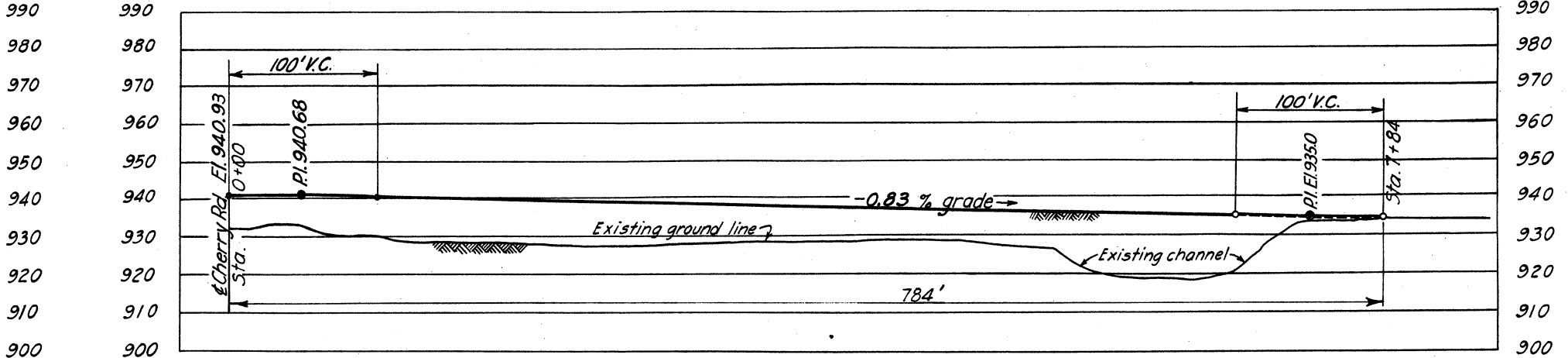
PLAN
SCALE: 1" = 50'



PLAN
SCALE: 1" = 50'



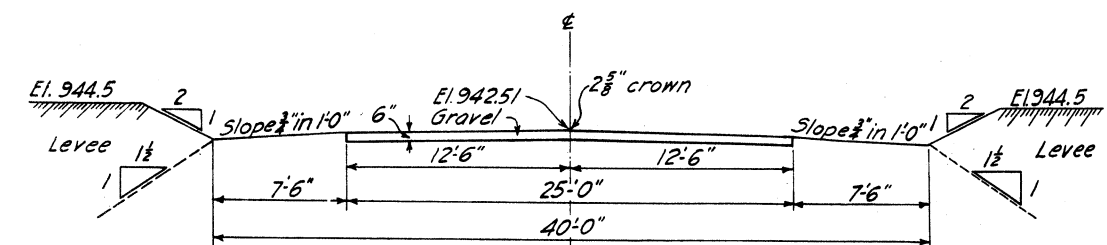
PROFILE ON C. OF STREET
HOR. SCALE: 1" = 50'
VERT. SCALE: 1" = 20'



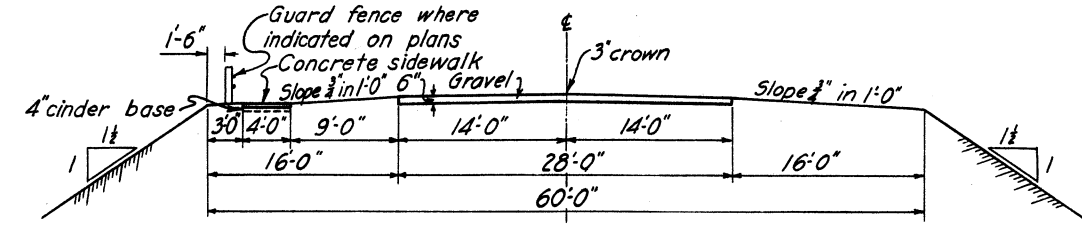
PROFILE ON C. OF RELOCATION
HOR. SCALE: 1" = 50'
VERT. SCALE: 1" = 20'

NOTES

For details of raising Third Street bridge over Newman Creek, see Dwg. No. 68/16.
For Cherry Road Viaduct General Plan and Profile, see Dwg. No. 68/1.
For general plans, see Dwg. Nos. 10/2 and 10/3.
For details of pavement return at Cherry Road, see Dwg. No. 68/45.



SECTION ON C. OF LEVEE
SCALE: 1" = 1'-0'



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

THIRD STREET BRIDGE OVER
NEWMAN CREEK

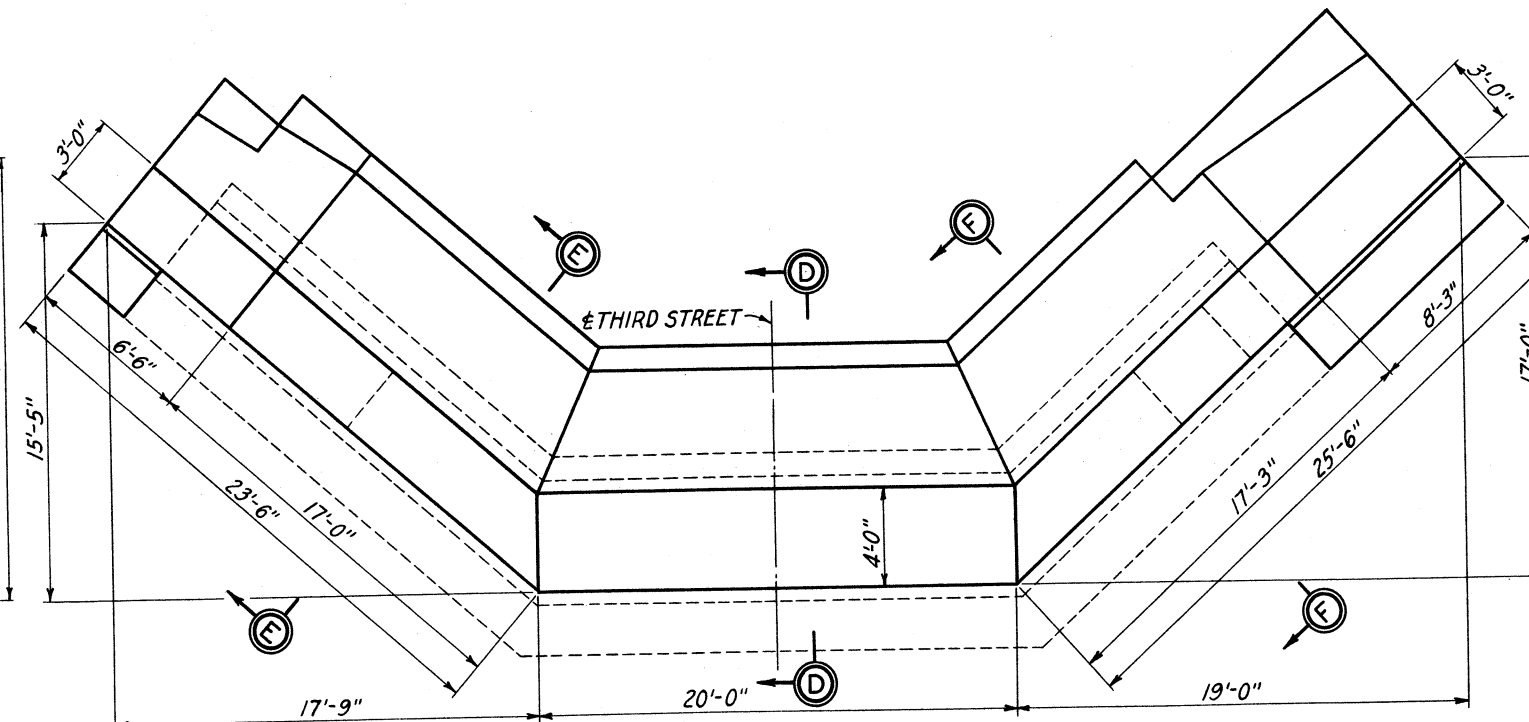
THIRD STREET RELOCATION AT
CHERRY ROAD

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
THIRD ST. AT CHERRY RD. & NEWMAN CK.
PLANS & PROFILES**

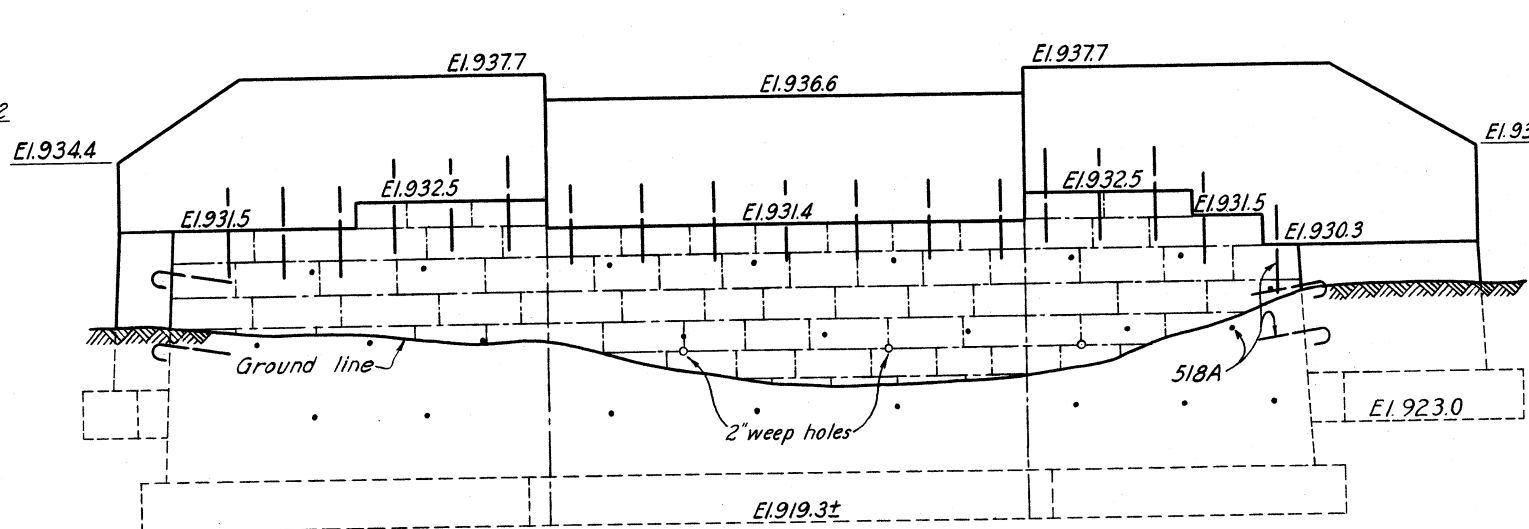
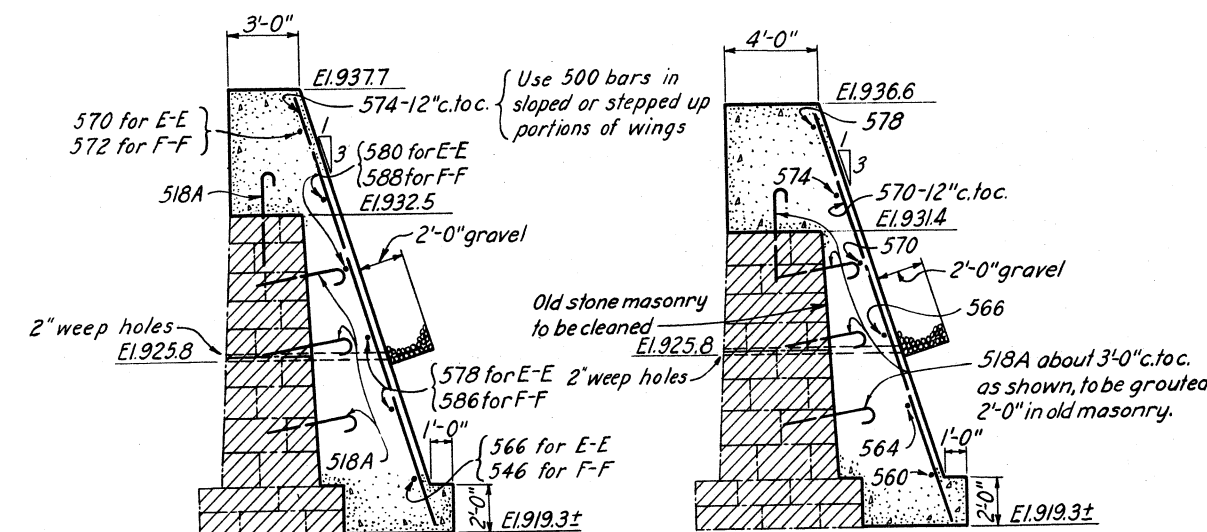
IN 147 SHEETS SHEET NO. 97 SCALE: AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940
SUBMITTED BY: [Signature] APPROVED BY: [Signature]
DRAWN BY: H. G. J. TRACED BY: D. R. J. CHECKED BY: D. G. J.
FILE NO. 0271-PM-68/15

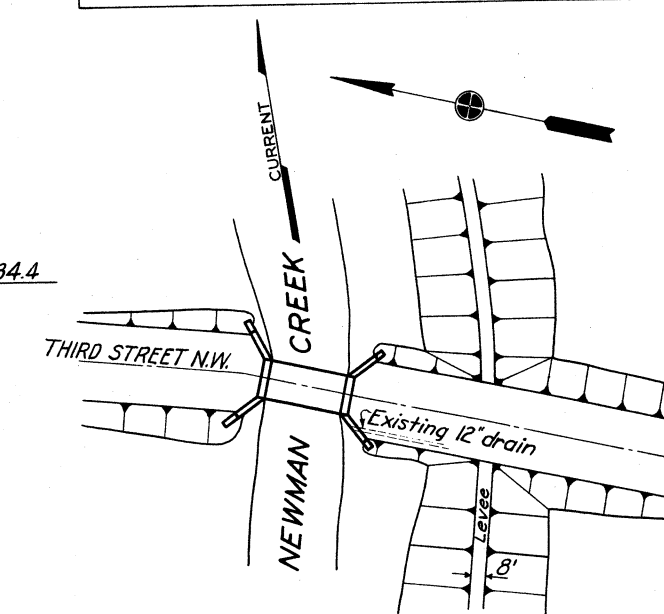
BY	DATE	CHARACTER
		REVISIONS



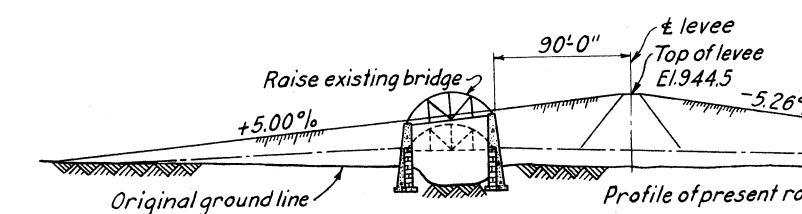
PLAN-NORTH ABUTMENT

ELEVATION-NORTH ABUTMENT

SECTION D-D



SCALE: 1"=50'



SCALE: 1"=50'

Concrete to be Class "B".

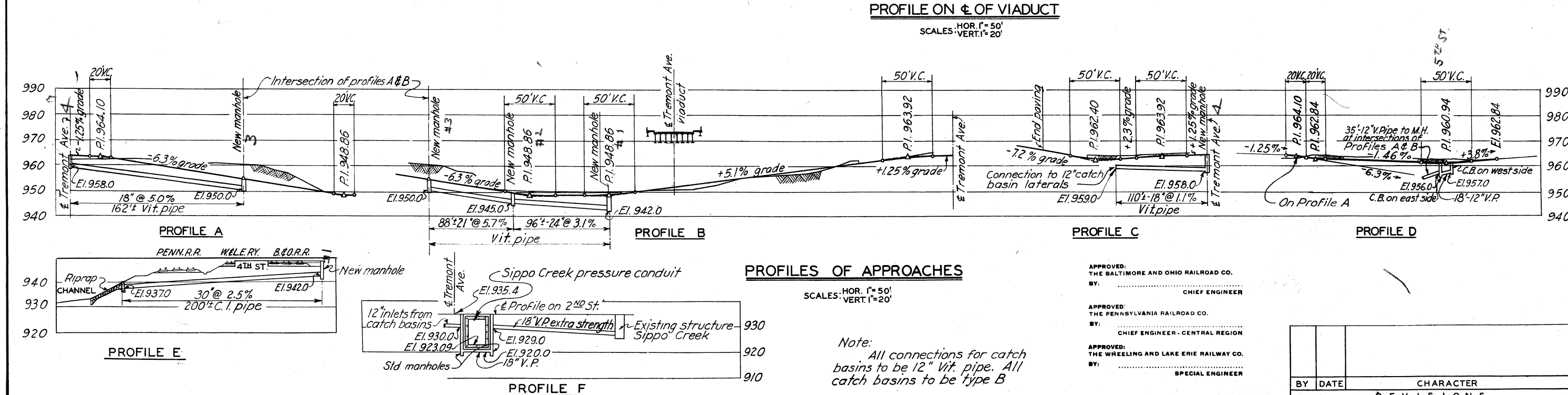
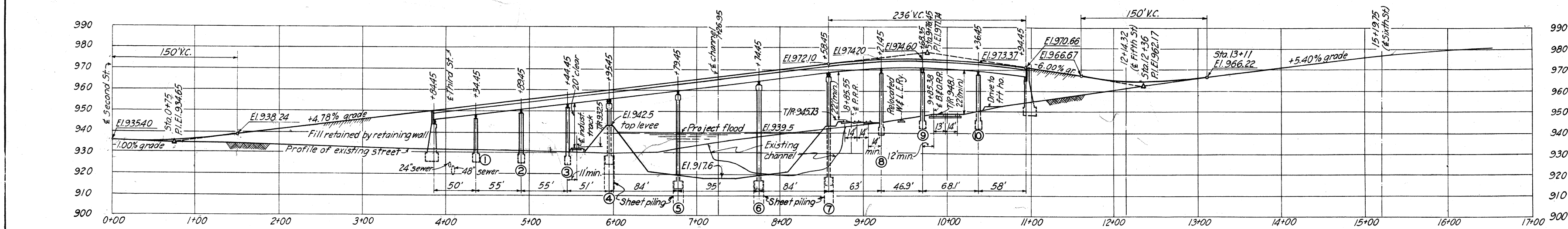
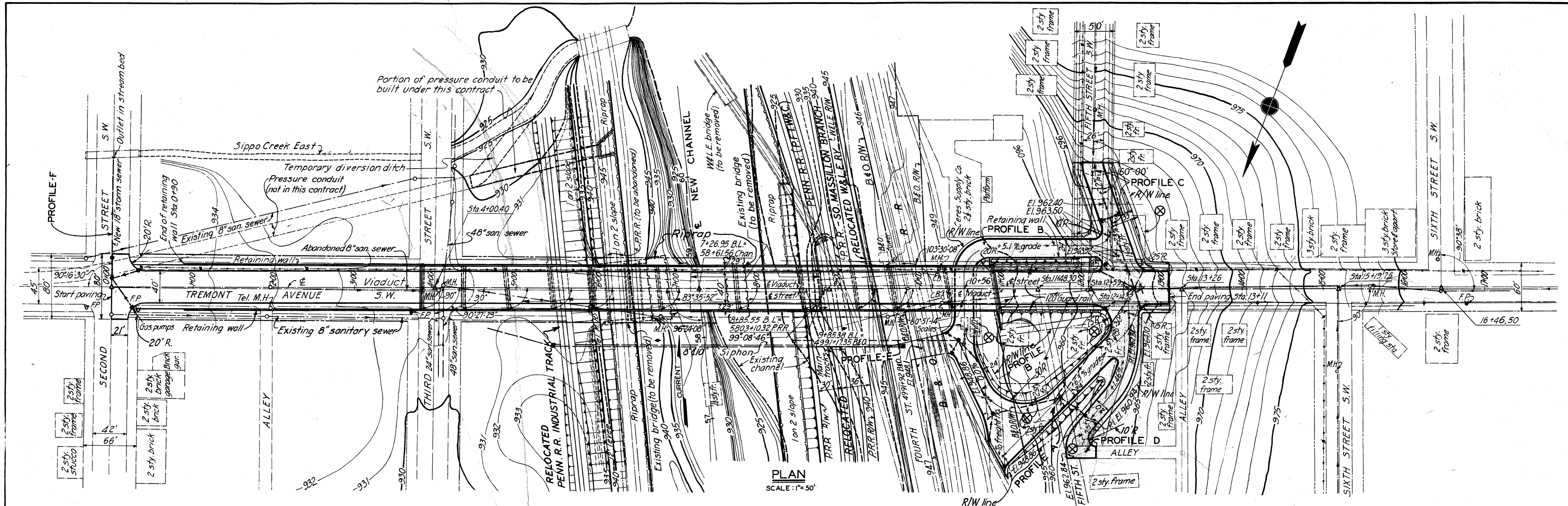
IN 147 SHEETS SHEET NO. 98 SCALE: $\frac{1}{4}" = 1'-0"$

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
 PRINCIPAL ENGINEER ST. COL. CORPS OF ENGINEERS

DRAWN BY R.M.C. TRANSMITTED WITH LETTER
 TRACED BY J.G.B.
 CHECKED BY D.G.J. FILE NO.027i-PM-68/16 DATED

BY	DATE	CHARACTER
		REVISIONS



NOTES

For legend, see Dwg. No. 16/1.
 For pavement details see Dwg. Nos. 68/28 & 68/45.
 For general plan, see Dwg. No. 16/2.
 For details of siphon, see Dwg. No. 82/31.
 For details of headwall, see Dwg. No. 20/13.
 For details of catch basins and manholes, see Dwg. No. 82/36.
 The B. & O. R.R. grade crossing is not included in this contract.
 For guard rail details, see Dwg. No. 68/8.
 For details of pressure conduit, see Dwg. No. 82/32.
 25' approach slabs required at both ends of viaduct for details, see Dwg. No. 68/28.

**TUSCARAWAS RIVER
 LOCAL PROTECTION PROJECT
 MASSILLON, OHIO
 TREMONT AVENUE VIADUCT
 GENERAL PLAN & PROFILE**

IN 147 SHEETS

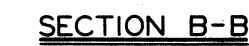
SHEET NO. 99

SCALE: AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
 DRAWN BY: H.S.K. TRANSMITTED WITH LETTER
 CHECKED BY: D.G.J. FILE NO. 0271-PM68/17 DATED

BY	DATE	CHARACTER
		REVISIONS



NOTES

*Chamfer all exposed edges 1" unless otherwise noted.
For reinforcing steel, see Dwg. No. 68/19.
For anchor bolt layout, see Dwg. No. 68/30.
For details of 22' wall, see Dwg. No. 68/27.
For location plan, see Dwg. No. 68/17.
For groove detail, see Dwg. No. 68/24.
Concrete to be Class "B."*

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
EAST ABUTMENT**

IN 147 SHEETS SHEET NO. 100 SCALE: $\frac{1}{4}" = 1' = 0"$

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

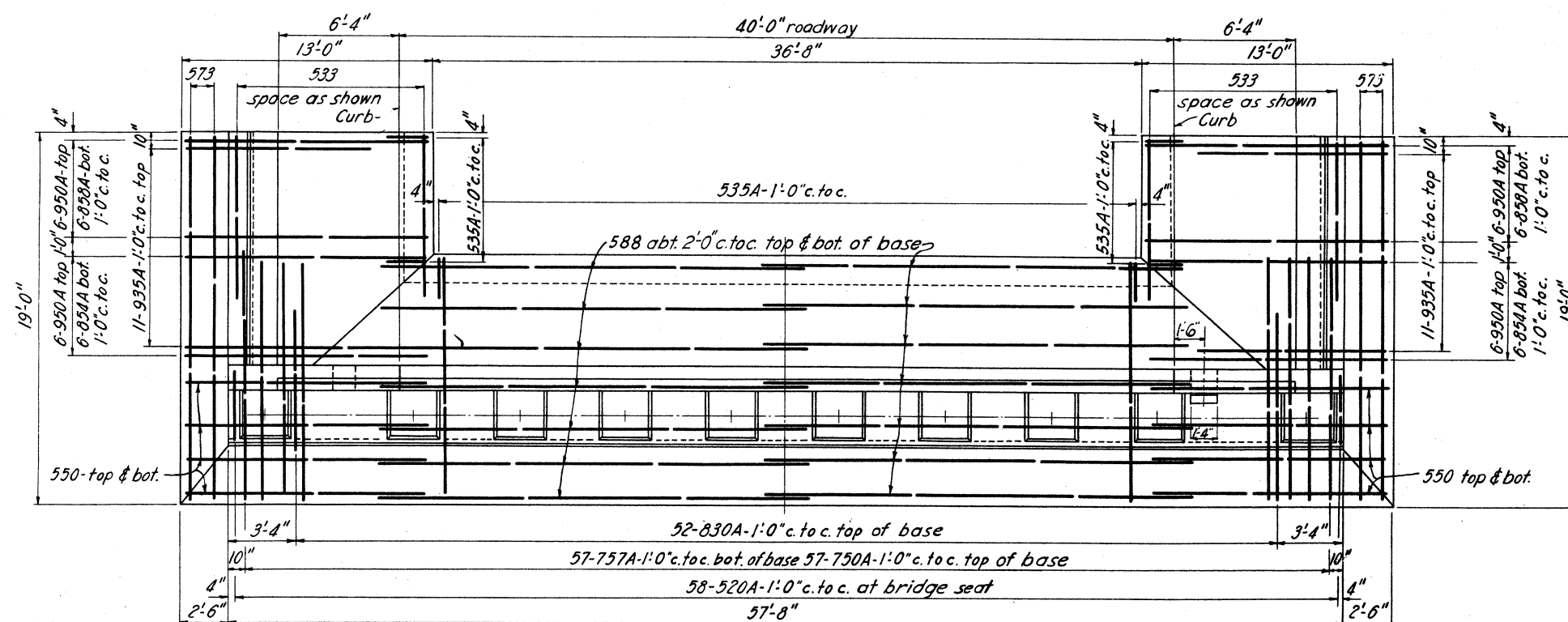
SUBMITTED: Wm. C. Barker
MAJOR, ENGINEER

APPROVED: Stinson
LT. COL., CORPS OF ENGINEERS

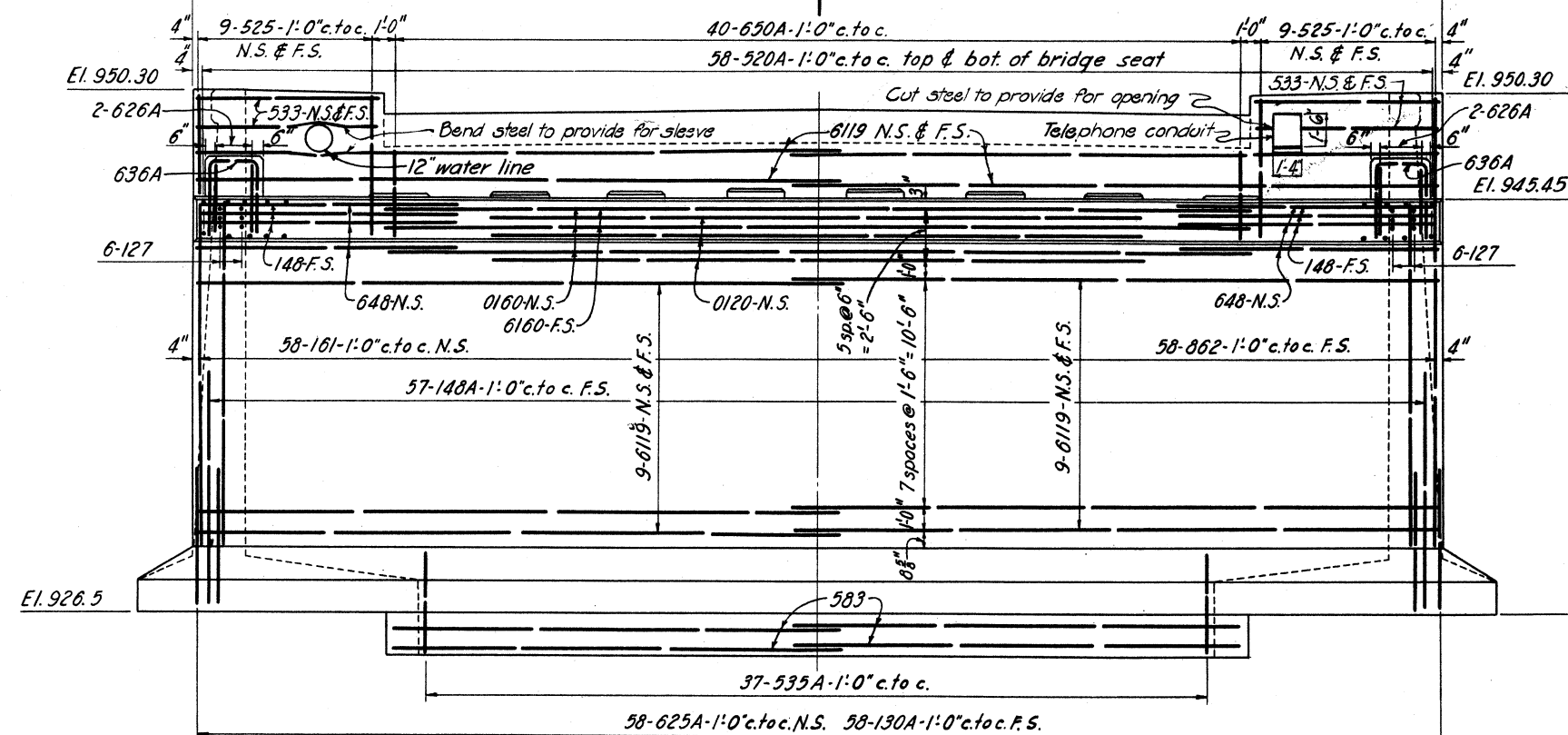
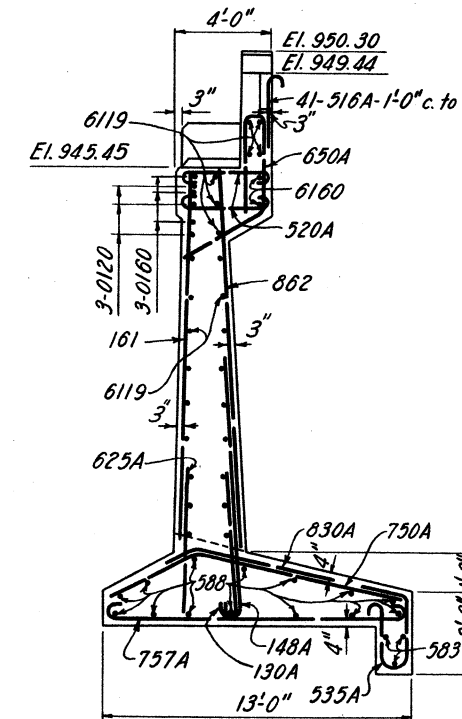
DRAWN BY R.M.C.
TRACED BY E.D.H.
CHECKED BY E.K.

TRANSMITTED WITH LETTER

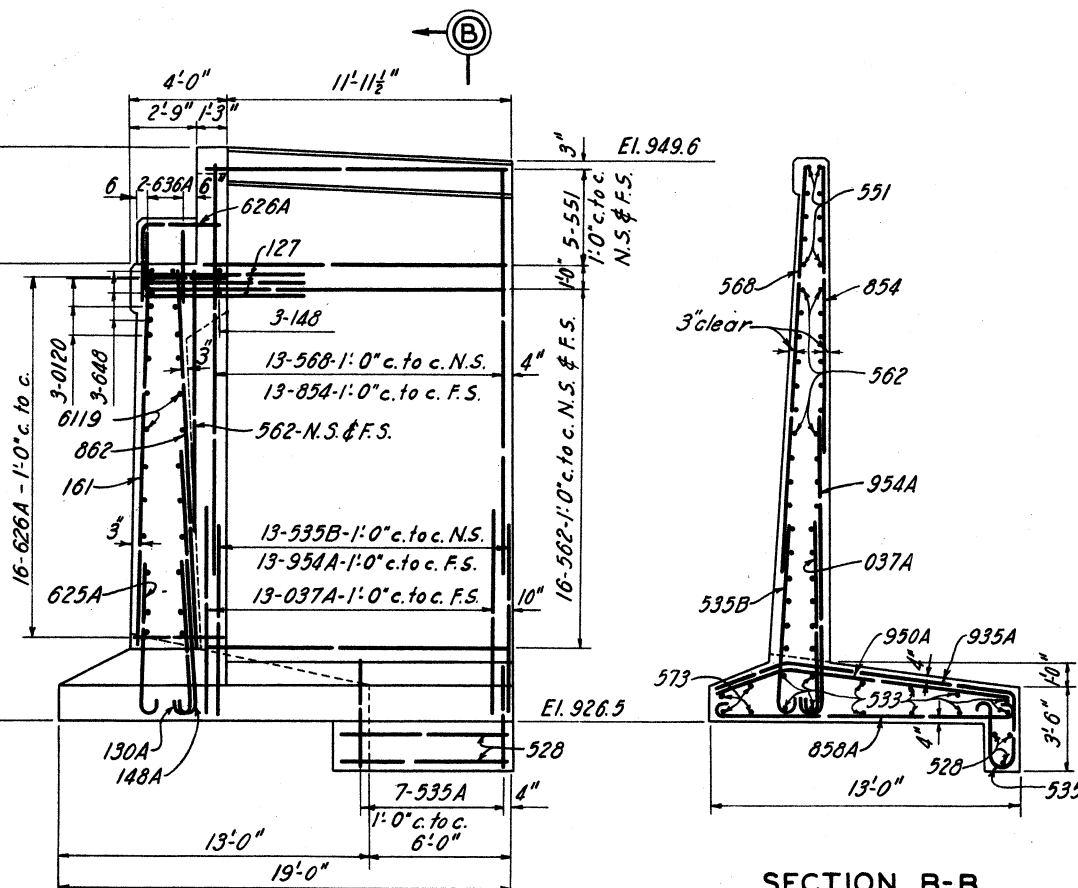
FILE NO. 027i-PM-68/18 DATED



PLAN

ELEVATION

SECTION A-A



SECTION B-B

REINFORCING SCHEDULE

MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
516A	3/8"	4'-0"		41	4.17	171
520A	3/8"	5'-0"		116	5.22	1212
525	3/8"	6'-3"		36	6.52	235
528	3/8"	7'-0"		6	7.30	44
533	3/8"	8'-3"		32	8.60	275
535A	3/8"	8'-9"		51	9.13	488
535B	3/8"	8'-9"		26	9.13	237
550	3/8"	12'-6"		16	13.04	209
551	3/8"	12'-9"		20	13.30	266
562	3/8"	13'-6"		64	16.17	1035
568	3/8"	17'-0"		26	17.73	481
573	3/8"	18'-3"		8	19.03	152
583	3/8"	20'-9"		6	21.64	130
588	3/8"	22'-0"		28	22.95	643
625A	3/4"	6'-3"		58	9.39	545
626A	3/4"	6'-6"		36	9.78	351
636A	3/4"	9'-0"		4	13.52	54
648	3/4"	12'-0"		8	18.02	108
648A	3/4"	12'-6"		40	18.78	791
6119	3/4"	29'-3"		30	44.88	2234
6160	3/4"	40'-0"		2	60.08	120
750A	3/4"	12'-6"		57	25.55	1458
757A	3/4"	14'-3"		57	29.13	1660
830A	1"	7'-6"		52	20.03	1042
854	1"	13'-6"		20	36.05	937
854A	1"	13'-6"		12	36.05	433
858A	1"	14'-6"		12	38.72	465
882	1"	15'-6"		58	41.39	2401
127	1"	6'-9"		12	22.95	275
130A	1"	7'-6"		50	25.50	1479
148	1"	12'-0"		6	40.80	245
148A	1"	12'-0"		57	40.80	2326
161	1"	15'-3"		58	51.85	2507
935A	1 1/8"	8'-9"		22	37.65	828
950A	1 1/8"	12'-6"		24	53.79	1291
954A	1 1/8"	13'-6"		26	58.09	1510
937A	1 1/8"	9'-3"		26	49.15	1278
0120	1 1/8"	30'-0"		3	159.39	478
0160	1 1/8"	40'-0"		3	212.52	638
					Total 287.1	

NOTES

For masonry details, see Dwg. No. 68/18

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
EAST ABUTMENT - REINFORCING DETAILS**

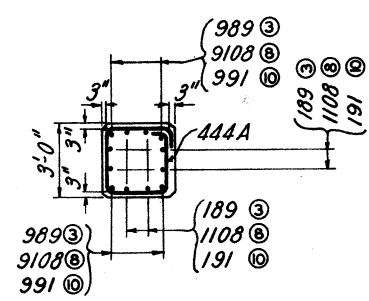
IN 147 SHEETS SHEET NO. 101 SCALE: $\frac{1}{4}" = 1'-0"$

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

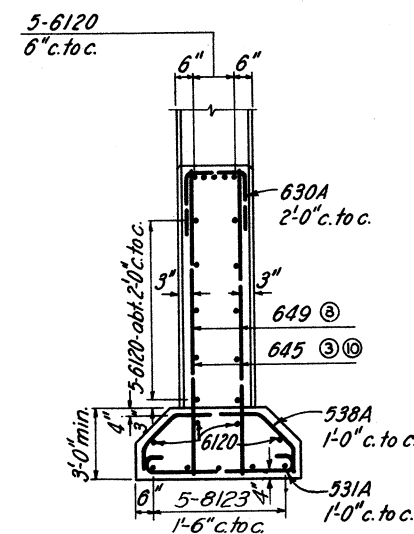
SUBMITTED: *[Signature]* **PRINCIPAL ENGINEER** APPROVED: *[Signature]* **LT. COL., CORPS OF ENGINEERS**

DRAWN BY R.M.C. TRANSMITTED WITH LETTER
TRACED BY H.A.E.
CHECKED BY E.K. FILE NO 027i-PM-68/19 DATED

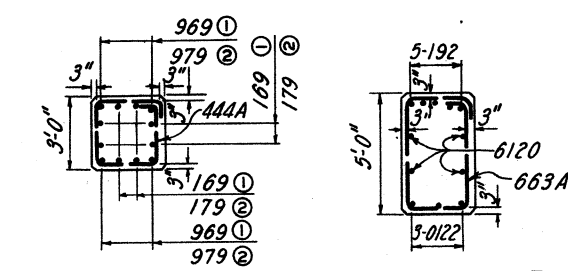
BY	DATE	CHARACTER
		REVISIONS



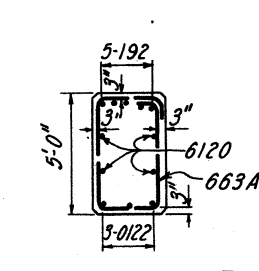
SECTION G-G



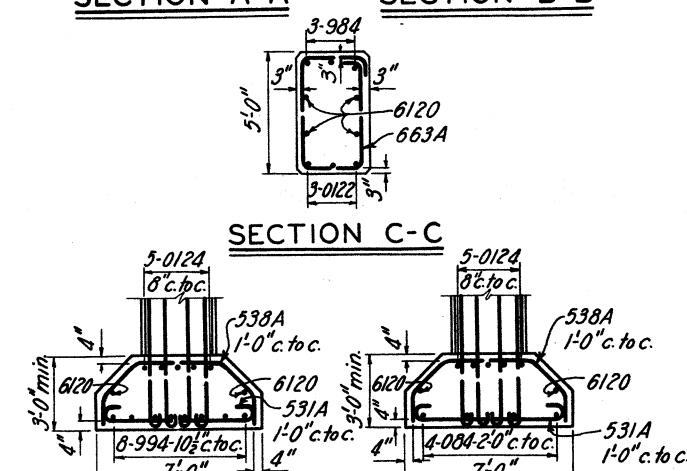
SECTION F-F



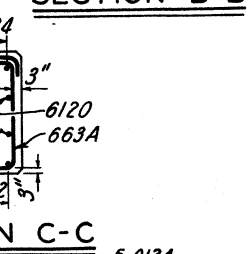
SECTION A-A



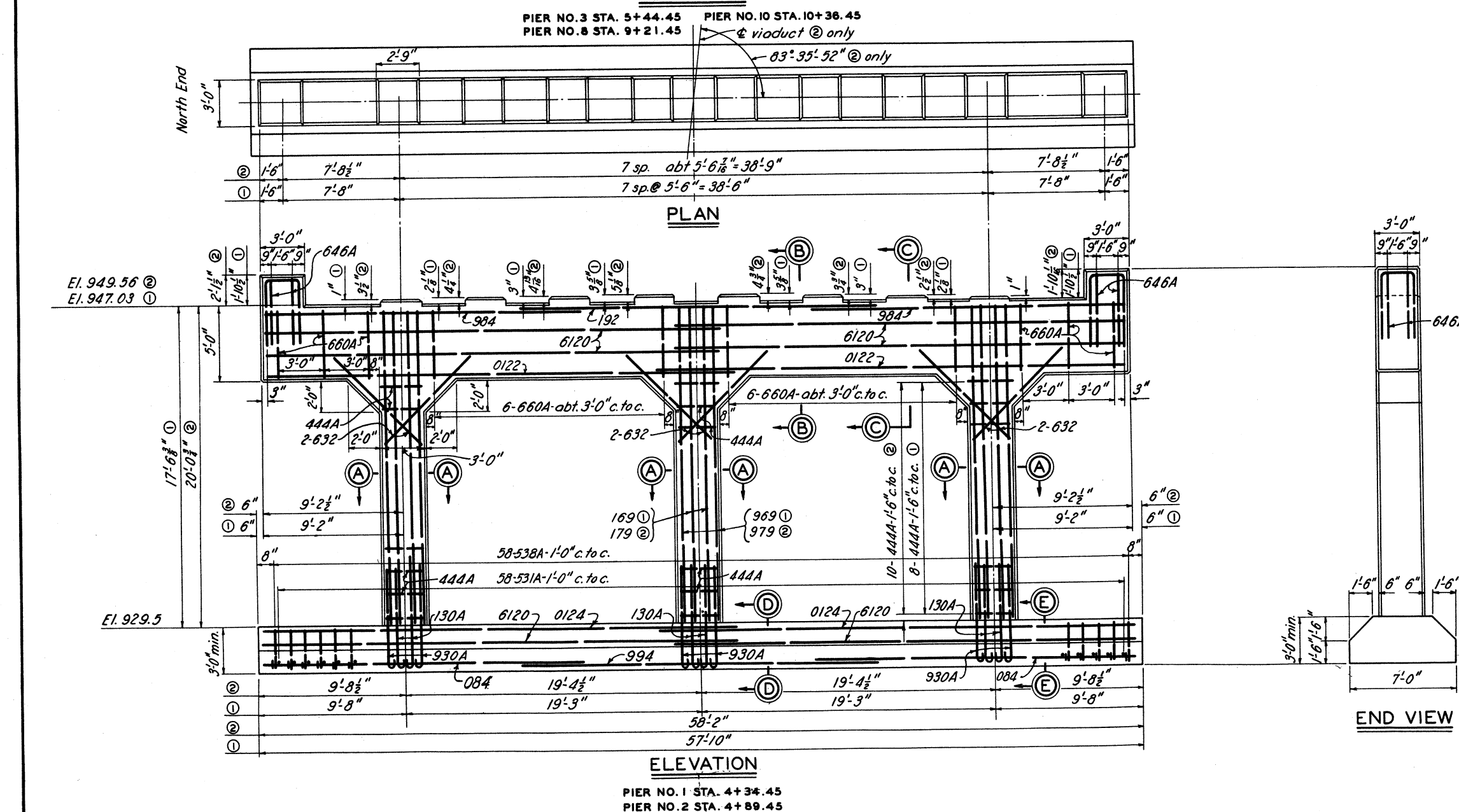
SECTION B-B



SECTION D-D



SECTION E-E



END VIEW

END VIEW

[illegible]

NOTES

Chamfer all exposed edges 1" unless otherwise noted.
For anchor bolt layout, see Dwg. No. 68/30.
For location plan, see Dwg. No. 68/17.
All concrete to be Class "B."

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
PIERS NOS. 1, 2, 3, 8 & 10**

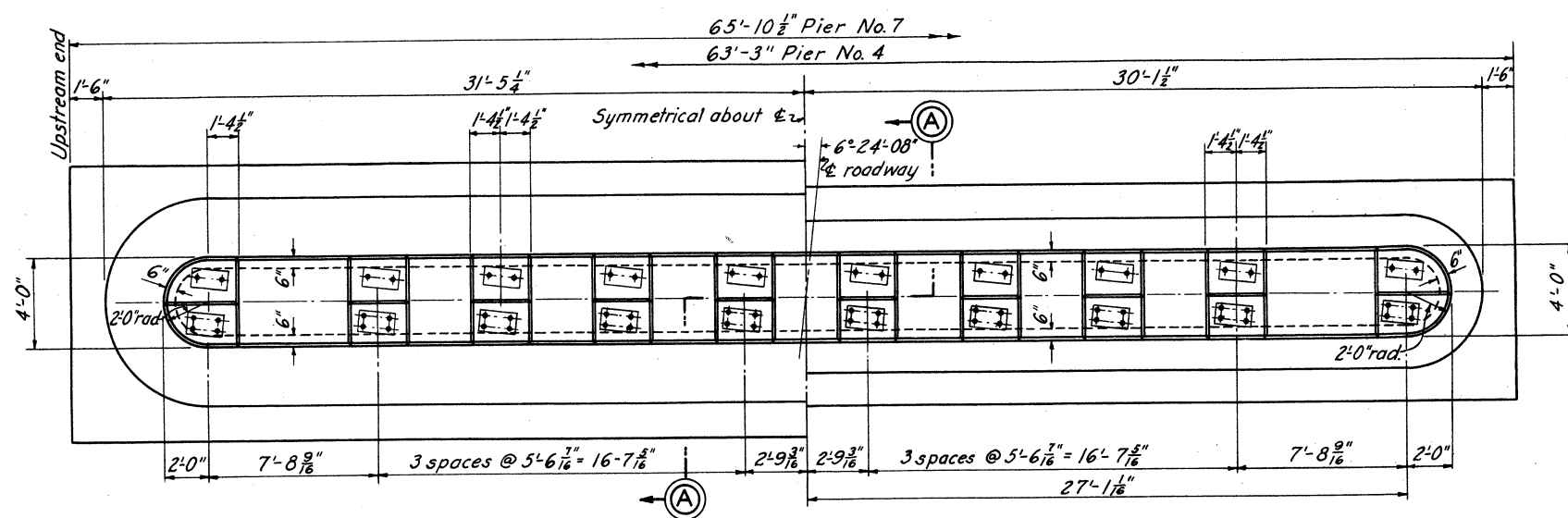
IN 147 SHEETS SHEET NO. 102 SCALE: $\frac{1}{4}'' = 1'-0''$

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

SUBMITTED: Han O. Park APPROVED: [Signature]
PRINCIPAL ENGINEER ET. COL., CORPS OF ENGINEERS

DRAWN BY R. M. C. TRANSMITTED WITH LETTER
TRACED BY H. A. E.
CHECKED BY E. K. FILE No 027i-PM-68/20 DATED

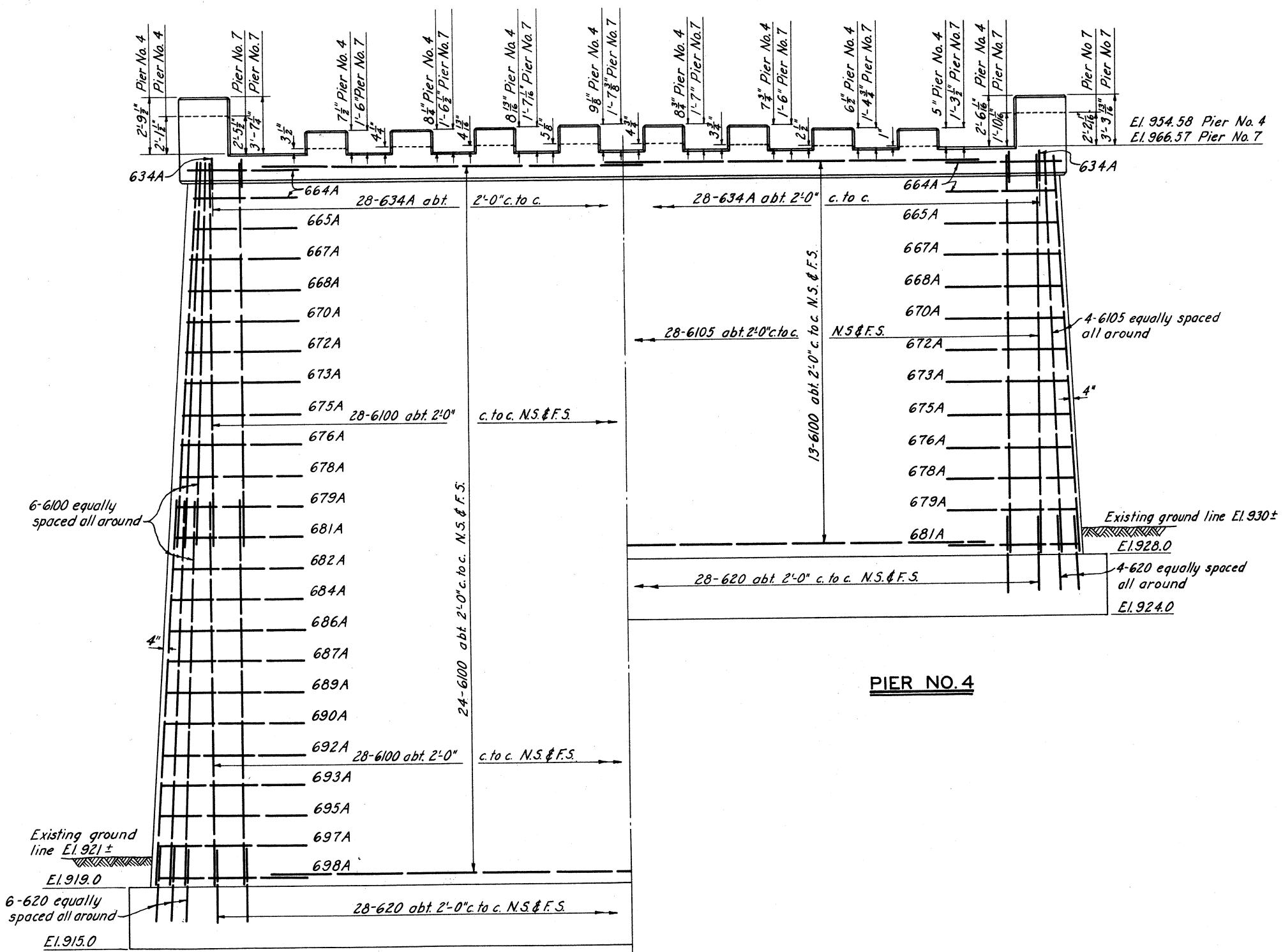
BY	DATE	CHARACTER
REVISIONS		



PIER NO. 7

PIER NO. 4

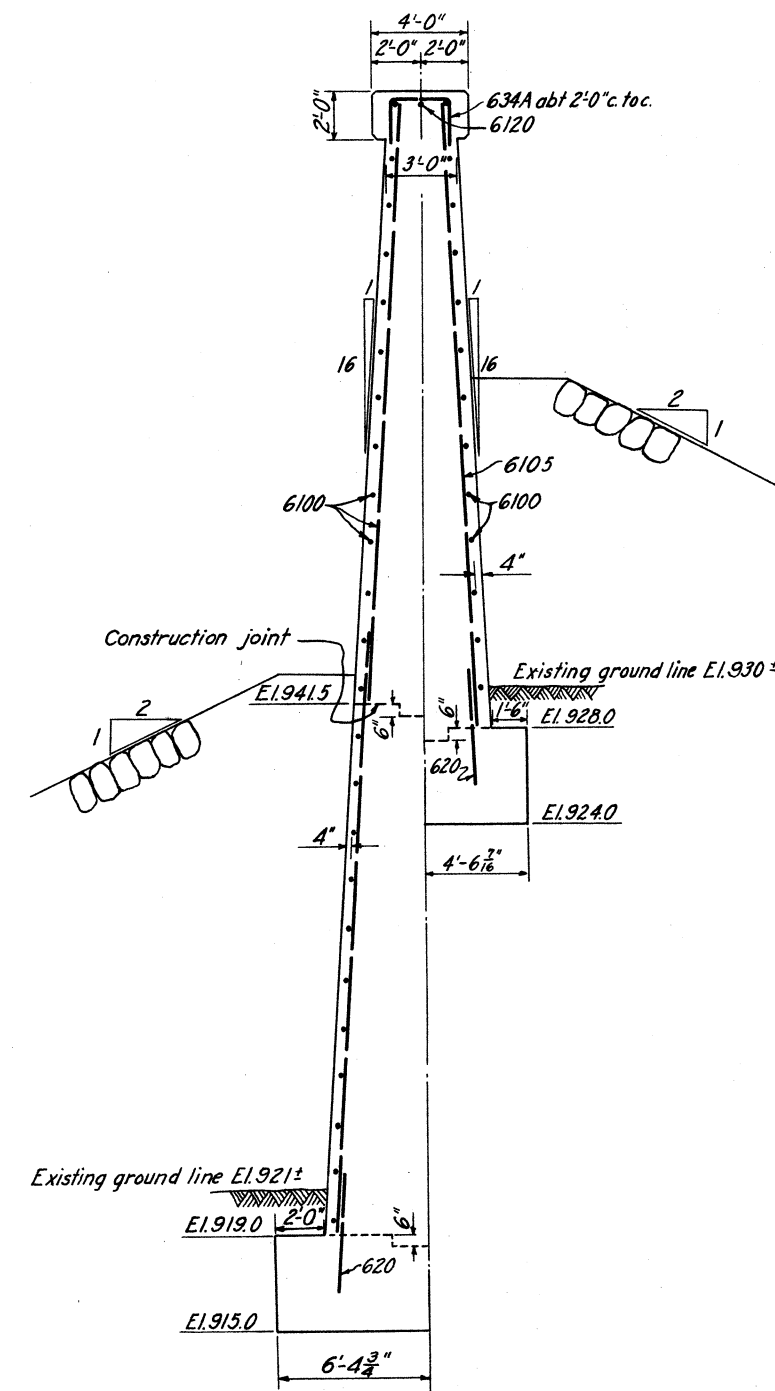
PLAN



PIER NO. 7

PIER NO. 4

ELEVATION



SECTION A-A

REINFORCING SCHEDULE

MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
620	3/4"	5'-0"		64	7.51	481
634A	3/4"	8'-6"		28	12.77	358
664A	3/4"	16'-0"		4	24.03	96
665A	3/4"	16'-3"		2	24.41	49
667A	3/4"	16'-9"		2	25.16	50
668A	3/4"	17'-0"		2	25.53	51
670A	3/4"	17'-6"		2	26.29	53
672A	3/4"	18'-0"		2	27.04	54
673A	3/4"	18'-3"		2	27.41	55
675A	3/4"	18'-9"		2	28.16	56
676A	3/4"	19'-0"		2	28.54	57
678A	3/4"	19'-6"		2	29.29	59
679A	3/4"	19'-9"		2	29.67	59
681A	3/4"	20'-3"		2	30.42	61
6100	3/4"	25'-0"		52	37.55	1953
6105	3/4"	26'-3"		64	39.49	2524
6120	3/4"	30'-0"		2	45.06	90
					Total	6106
620	3/4"	5'-0"		68	7.51	511
634A	3/4"	8'-6"		28	12.77	358
664A	3/4"	16'-0"		4	24.03	96
665A	3/4"	16'-3"		2	24.41	49
667A	3/4"	16'-9"		2	25.16	50
668A	3/4"	17'-0"		2	25.53	51
670A	3/4"	17'-6"		2	26.29	53
672A	3/4"	18'-0"		2	27.04	54
673A	3/4"	18'-3"		2	27.41	55
675A	3/4"	18'-9"		2	28.16	56
676A	3/4"	19'-0"		2	28.54	57
678A	3/4"	19'-6"		2	29.29	59
679A	3/4"	19'-9"		2	29.67	59
681A	3/4"	20'-3"		2	30.42	61
682A	3/4"	20'-6"		2	30.79	62
684A	3/4"	21'-0"		2	31.54	63
686A	3/4"	21'-6"		2	32.29	65
687A	3/4"	21'-9"		2	32.67	65
689A	3/4"	22'-3"		2	33.42	67
690A	3/4"	22'-6"		2	33.80	68
692A	3/4"	23'-0"		2	34.55	69
693A	3/4"	23'-3"		2	34.92	70
695A	3/4"	23'-9"		2	35.67	71
697A	3/4"	24'-3"		2	36.42	73
698A	3/4"	24'-6"		2	36.80	74
6100	3/4"	25'-0"		232	37.55	8712
6120	3/4"	30'-0"		2	45.06	90
					Total	11,118

NOTES

Chamfer all exposed edges 1", unless otherwise noted.
All concrete to be Class B.
For groove details, see Dwg. No. 68/3.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
TREMONT AVENUE VIADUCT
PIERS NOS. 4 & 7

IN 147 SHEETS

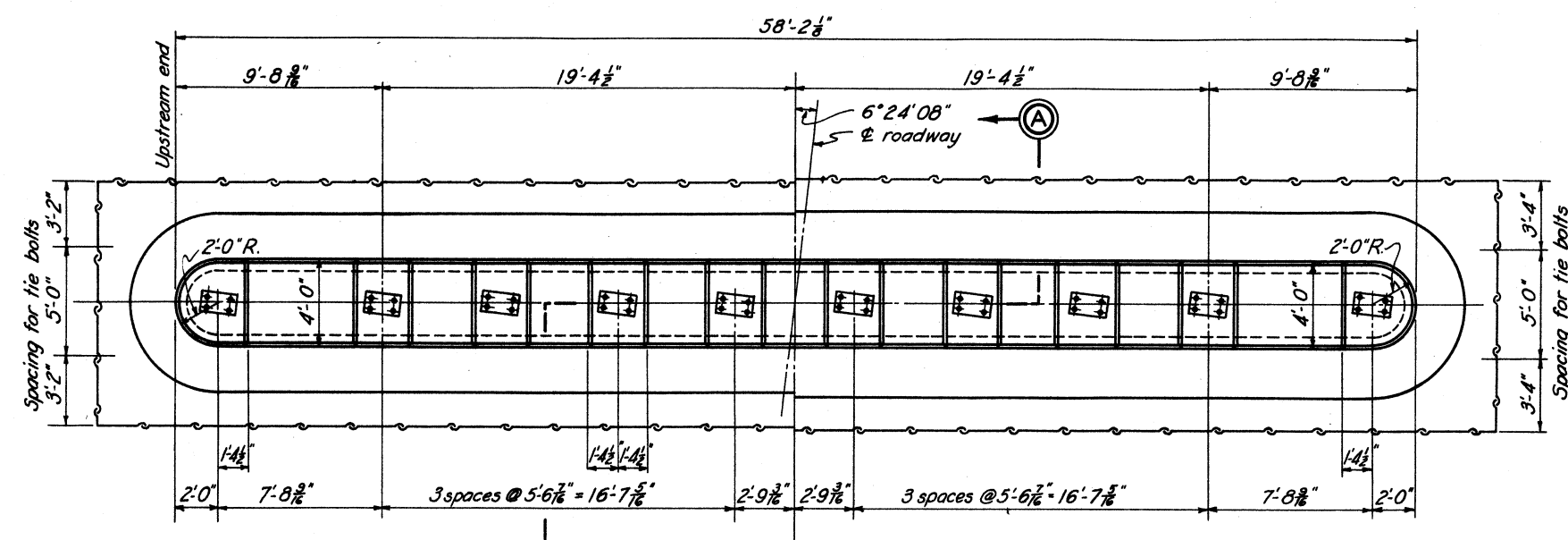
SHEET NO. 103

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

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

SUBMITTED: *W. E. C.* APPROVED: *W. E. C.*DRAWN BY: D. C. J. TRANSMITTED WITH LETTER
CHECKED BY: D. C. J. FILE NO. O-271-PM-68/21 DATED

BY	DATE	CHARACTER
REVISIONS		

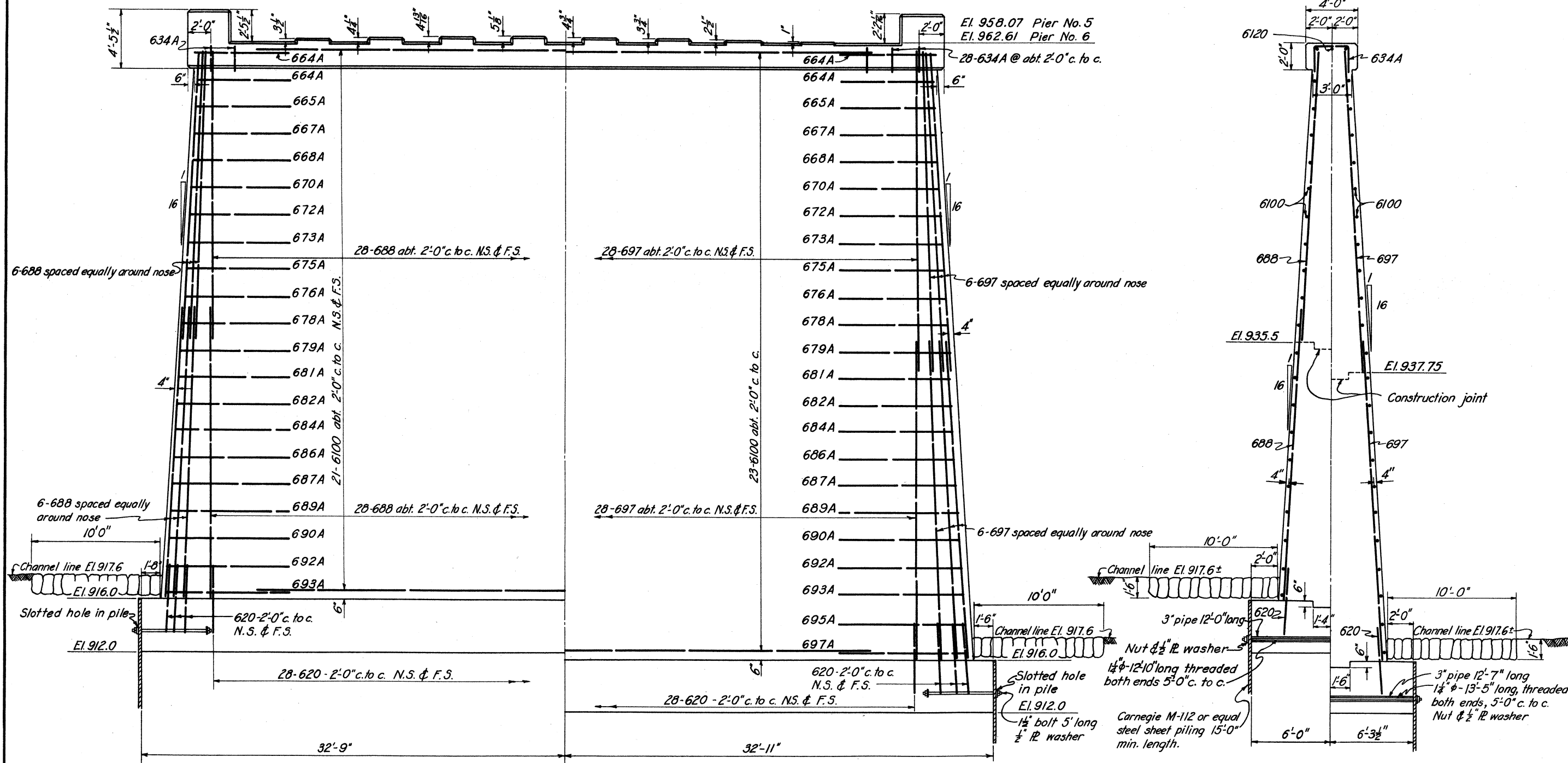


PIER NO. 5

PIER NO. 6

PLAN

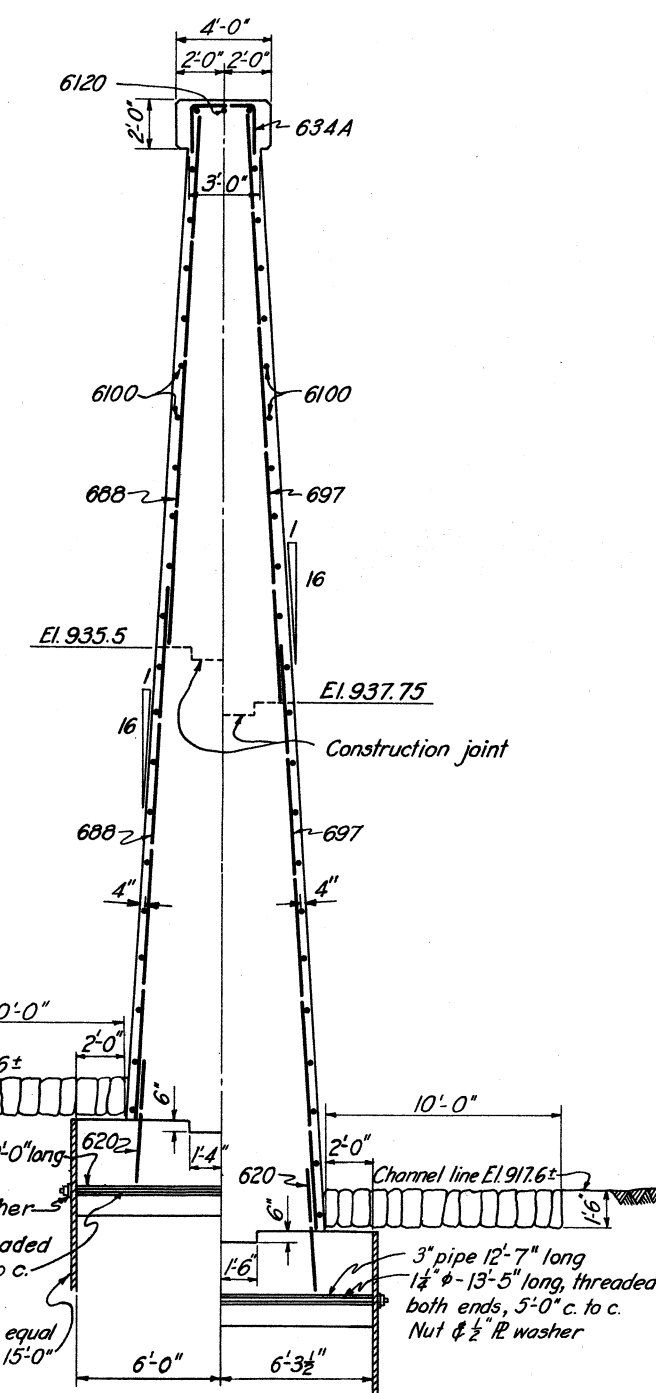
*Note: For details of utility
manhole, see Dwg. No. 68/35.*



PIER NO. 5

PIER NO. 6

ELEVATION



SECTION A-A

REINFORCING SCHEDULE						
MARK	SIZE	L'GTH.	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
620	#8	5'-0"		68	7.51	511
634A	#8	8'-6"		28	12.77	358
664A	#8	16'-0"		4	24.03	96
665A	#8	16'-3"		2	24.41	49
667A	#8	16'-9"		2	25.16	50
668A	#8	17'-0"		2	25.53	51
670A	#8	17'-0"		2	26.29	53
672A	#8	18'-0"		2	27.04	54
673A	#8	18'-3"		2	27.41	55
675A	#8	18'-9"		2	28.16	56
676A	#8	19'-0"		2	28.54	57
678A	#8	19'-6"		2	29.29	59
679A	#8	19'-9"		2	29.67	59
681A	#8	20'-3"		2	30.42	61
682A	#8	20'-6"		2	30.79	62
684A	#8	21'-0"		2	31.54	63
686A	#8	21'-6"		2	32.29	65
687A	#8	21'-9"		2	32.67	65
688	#8	22'-0"		136	33.04	4493
689A	#8	22'-3"		2	33.42	67
690A	#8	22'-6"		2	33.80	68
692A	#8	23'-0"		2	34.55	69
693A	#8	23'-3"		2	34.92	70
6100	#8	25'-0"		84	37.56	3155
6120	#8	30'-0"		2	45.06	90
			Total		10,705	
620	#8	5'-0"		68	7.51	511
634A	#8	8'-6"		28	12.77	358
664A	#8	16'-0"		4	24.03	96
665A	#8	16'-3"		2	24.41	49
667A	#8	16'-9"		2	25.16	50
668A	#8	17'-0"		2	25.53	51
670A	#8	17'-6"		2	26.29	53
672A	#8	18'-0"		2	27.04	54
673A	#8	18'-3"		2	27.41	55
675A	#8	18'-9"		2	28.16	56
676A	#8	19'-0"		2	28.54	57
678A	#8	19'-6"		2	29.29	59
679A	#8	19'-9"		2	29.67	59
681A	#8	20'-3"		2	30.42	61
682A	#8	20'-6"		2	30.79	62
684A	#8	21'-0"		2	31.54	63
686A	#8	21'-6"		2	32.29	65
687A	#8	21'-9"		2	32.67	67
689A	#8	22'-3"		2	33.42	67
690A	#8	22'-6"		2	33.80	68
692A	#8	23'-0"		2	34.55	69
693A	#8	23'-3"		2	34.92	70
695A	#8	23'-9"		2	35.67	71
697	#8	24'-3"		136	36.42	4953
697A	#8	24'-3"		2	36.42	73
6100	#8	25'-0"		92	37.17	3420
6120	#8	30'-0"		2	45.06	90
			Total		9,836	

NOTES

Chamfer all exposed edges 1" unless otherwise noted
All concrete to be Class B
For groove details, see Dwg. No. 68/3.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
TREMONT AVENUE VIADUCT
PIERS NOS. 5 & 6**

IN 147 SHEETS

SHEET NO.104

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

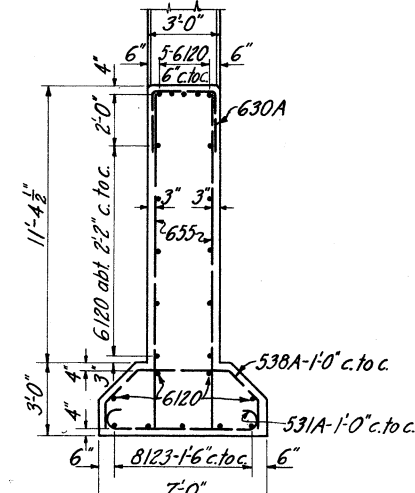
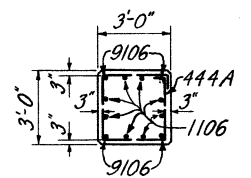
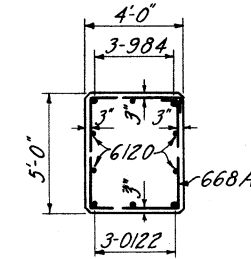
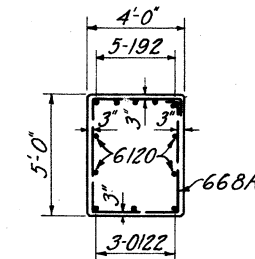
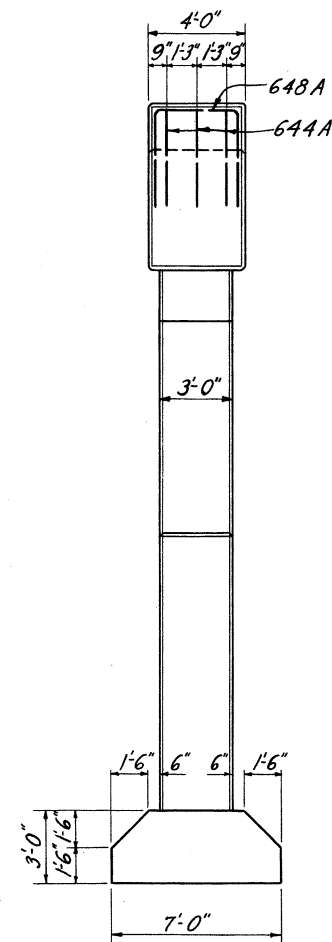
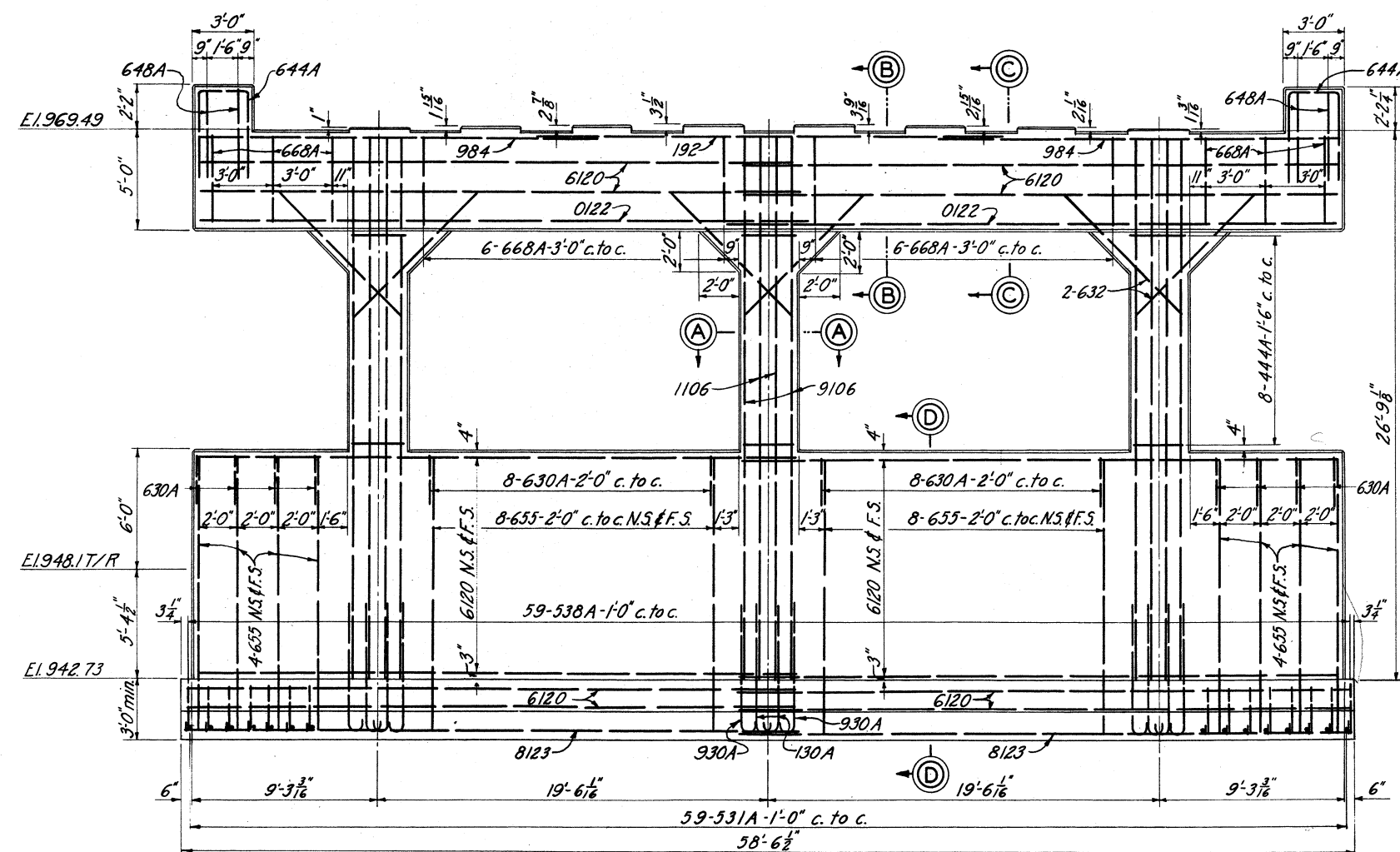
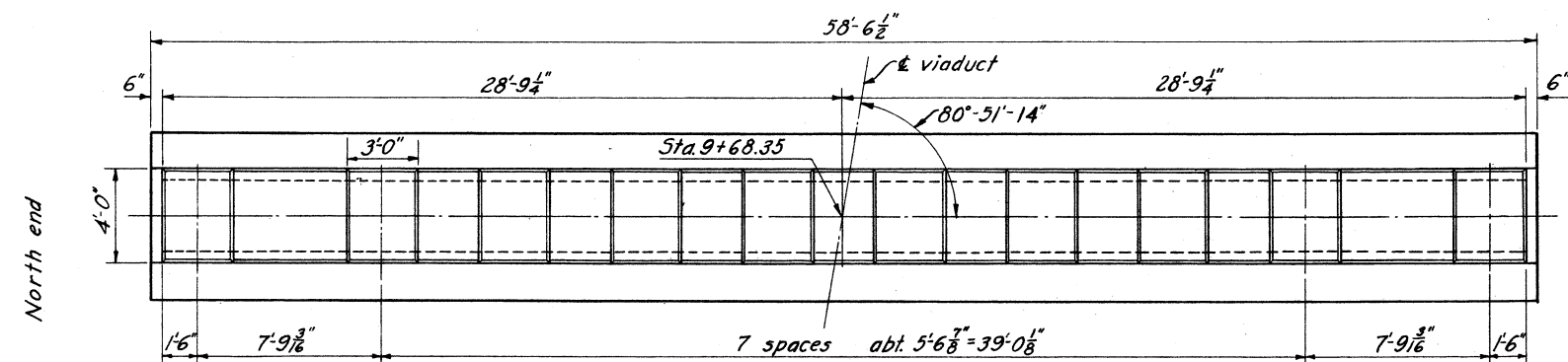
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., JAN. 1941

SUBMITTED: *H. J. Johnson*..... APPROVED: *H. J. Johnson*.....
PRINCIPAL ENGINEER CAPT. CORPS OF ENGINEERS

DRAWN BY E. S. W.
 TRACED BY R. C. H.
 CHECKED BY D. G. J.

FILE NO. 0-271-PM-68/22

TRANSMITTED WITH LETTER
 DATED

[illegible]

NOTES

Chamfer all exposed edges 1" unless otherwise noted.

For anchor bolt layout, see Dwg. No. 68/30.

For location plan, see Dwg. No. 68/17.

All concrete to be Class 'B'.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
PIER NO. 9**

IN 147 SHEETS **SHEET NO. 105** **SCALE: $\frac{1}{4}$ " = 1'-0"**

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

SUBMITTED: Wm. G. Gorman APPROVED: [Signature]
ST. COL. CORPS OF ENGINEERS

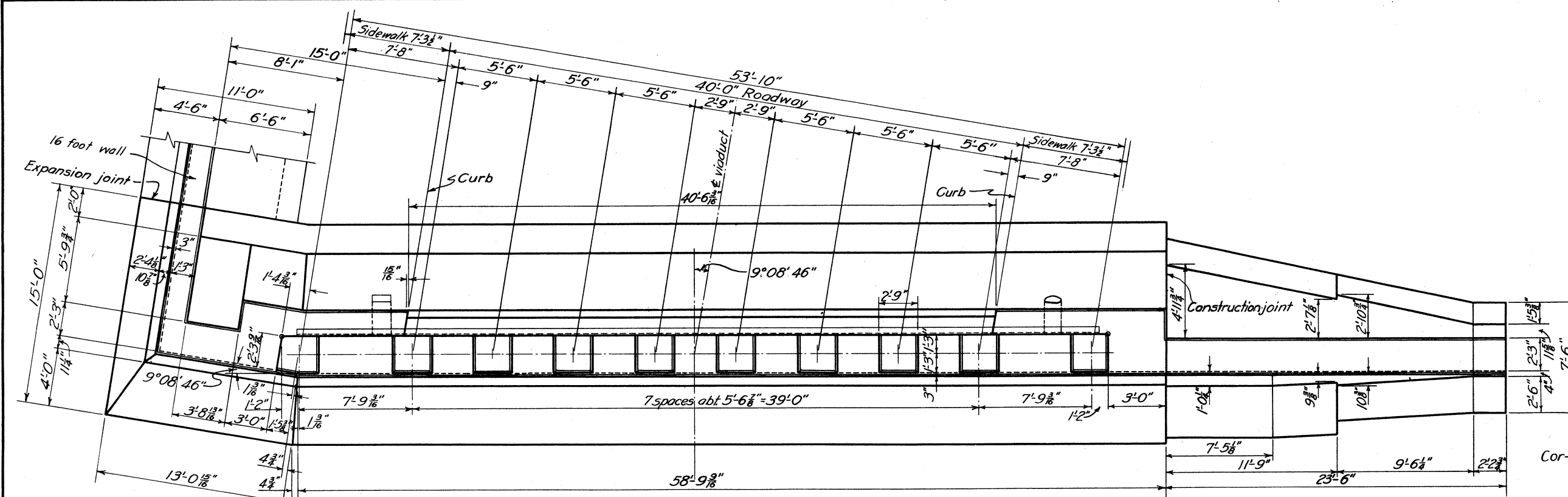
PRINCIPAL ENGINEER

DRAWN BY L.P.C.

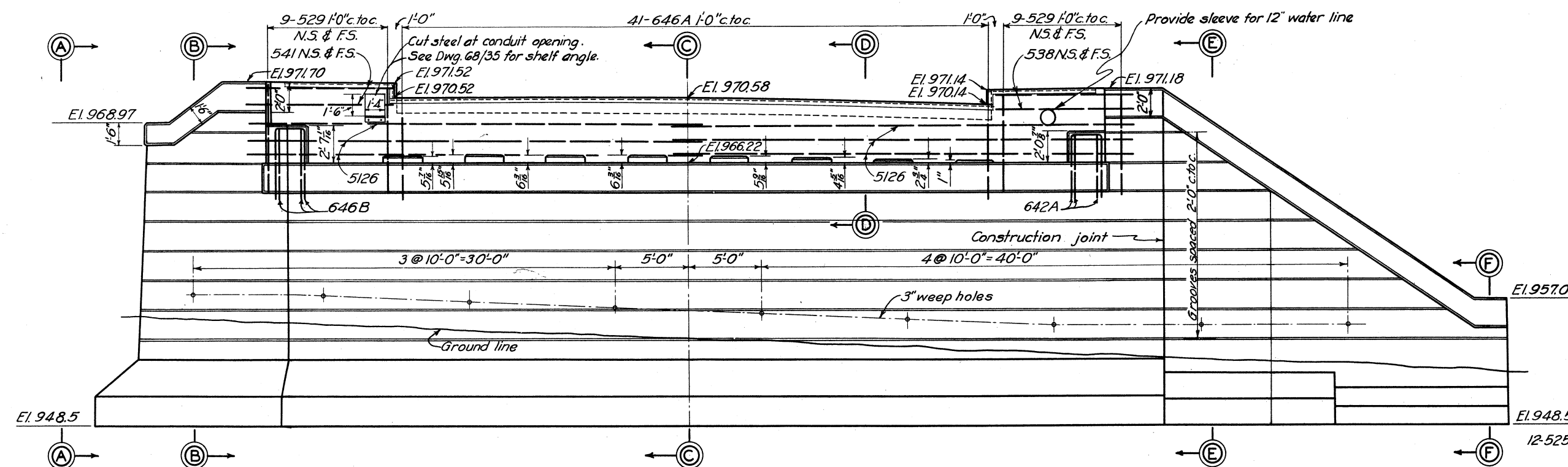
TRANSMITTED WITH LETTER

FILE NO 027i-PM-68/23

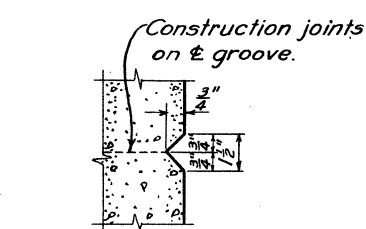
CHECKED BY E. R. FILE NO. 62-77171-5942 DATED



PLAN

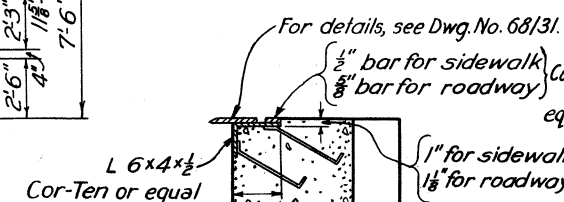


ELEVATION



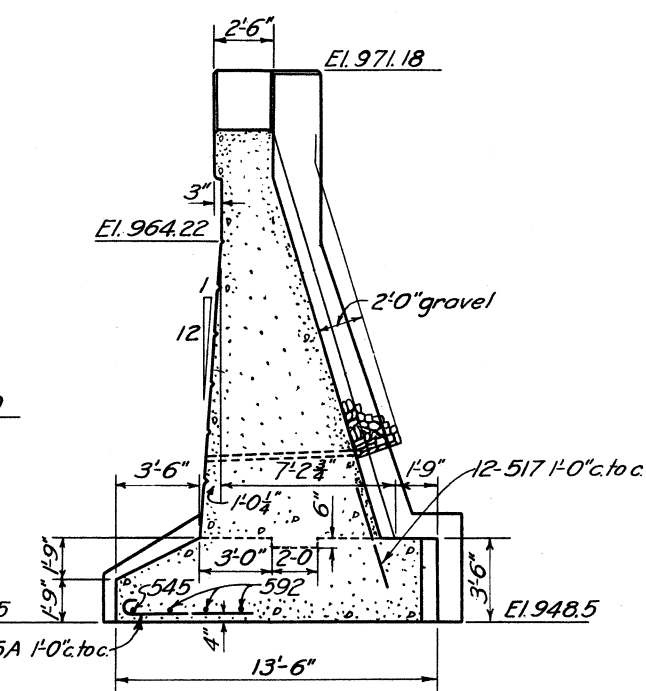
GROOVE DETAIL

SCALE: 3" = 1'-0"



SECTION D-D

SCALE: 1" = 1'-0"



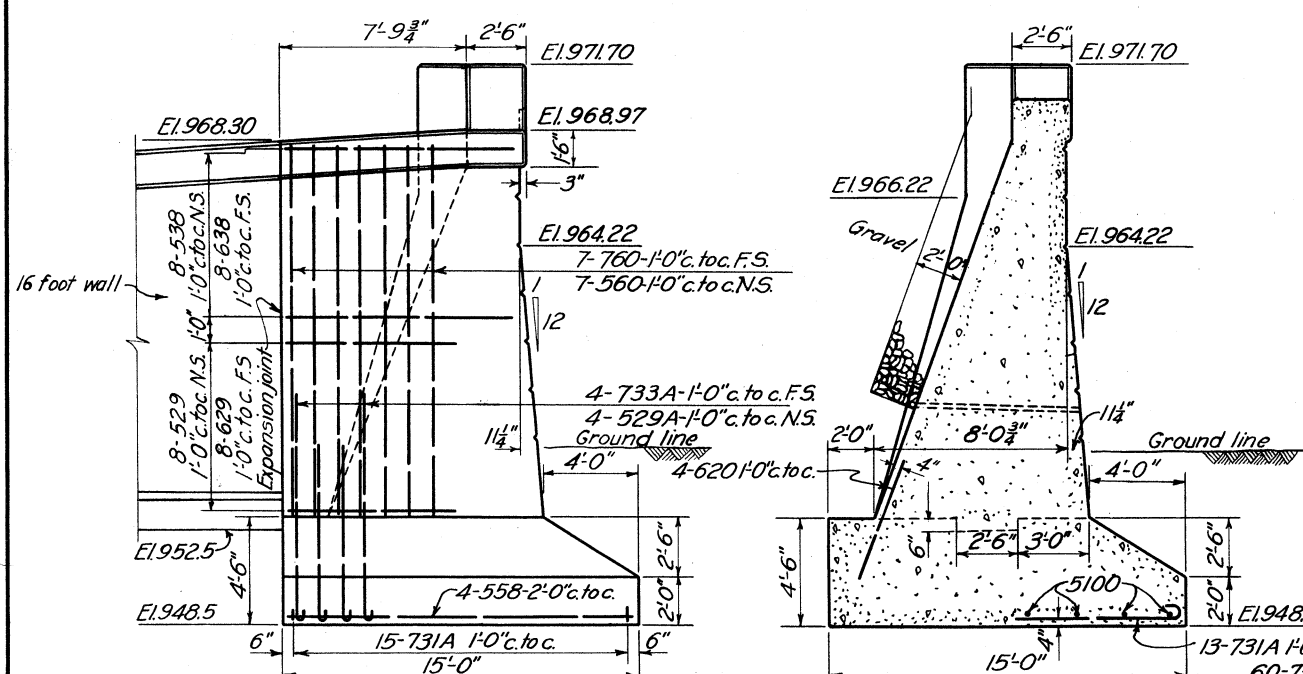
SECTION E-E

NOTES

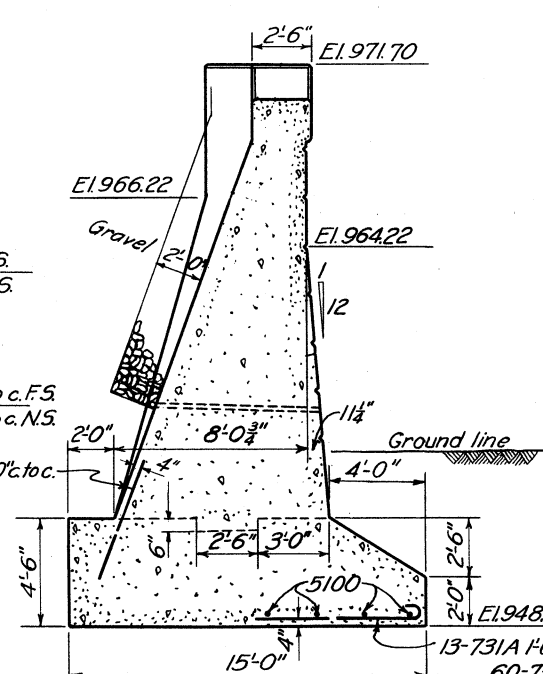
Chamfer all exposed edges 1" unless otherwise noted.
For anchor bolt layout, see Dwg. No. 68/30.
For details of 16 foot wall, see Dwg. No. 68/27.
For location plan, see Dwg. No. 68/17.
Concrete to be Class "B".

REINFORCING SCHEDULE

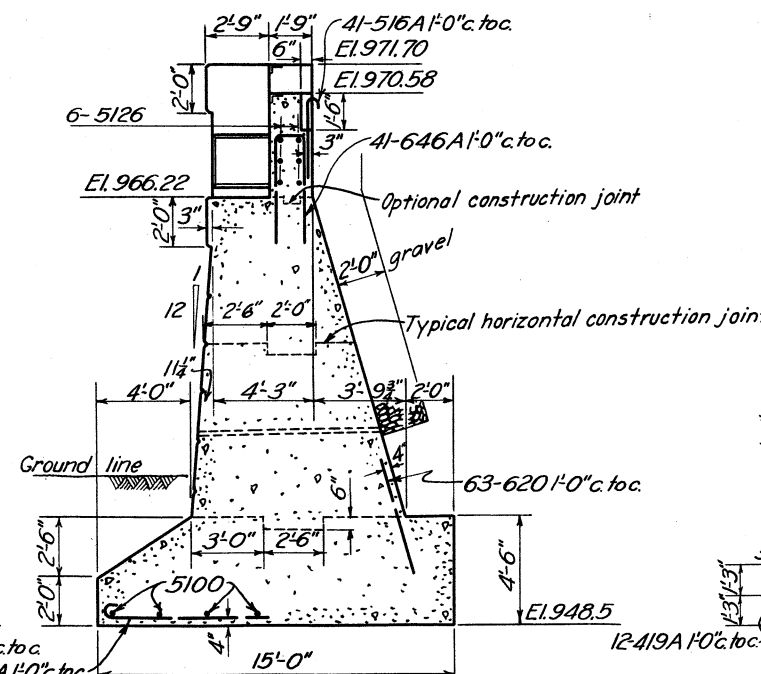
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
414	1/2"	3'-6"		12	234	28
419A	1/2"	4'-9"		12	317	38
516A	3/8"	4'-0"		41	417	17
517	3/8"	4'-3"		69	443	306
525A	3/8"	6'-3"		12	652	78
529	3/8"	7'-3"		44	756	333
529A	3/8"	7'-3"		4	756	30
538	3/8"	9'-6"		12	991	119
541	3/8"	10'-3"		4	1069	43
545	3/8"	11'-3"		1	1173	12
558	3/8"	14'-6"		4	1512	60
560	3/8"	15'-0"		7	1565	110
592	3/8"	23'-0"		3	2399	72
5100	3/8"	25'-0"		12	2608	313
5126	3/8"	31'-6"		12	3285	394
620	3/8"	5'-0"		67	751	503
629	3/8"	7'-3"		8	1069	87
638	3/8"	9'-6"		8	1427	114
642A	3/8"	10'-6"		4	1577	63
646A	3/8"	11'-6"		41	1727	708
646B	3/8"	11'-6"		4	1727	69
731A	3/8"	7'-9"		88	1584	1394
733A	3/8"	8'-3"		4	1686	67
760	3/8"	15'-0"		7	3066	215
Total						5173



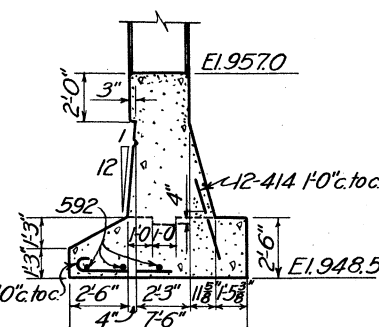
SECTION A-A



SECTION B-B



SECTION C-C



SECTION F-F

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
WEST ABUTMENT**

IN 147 SHEETS

SHEET NO. 106

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

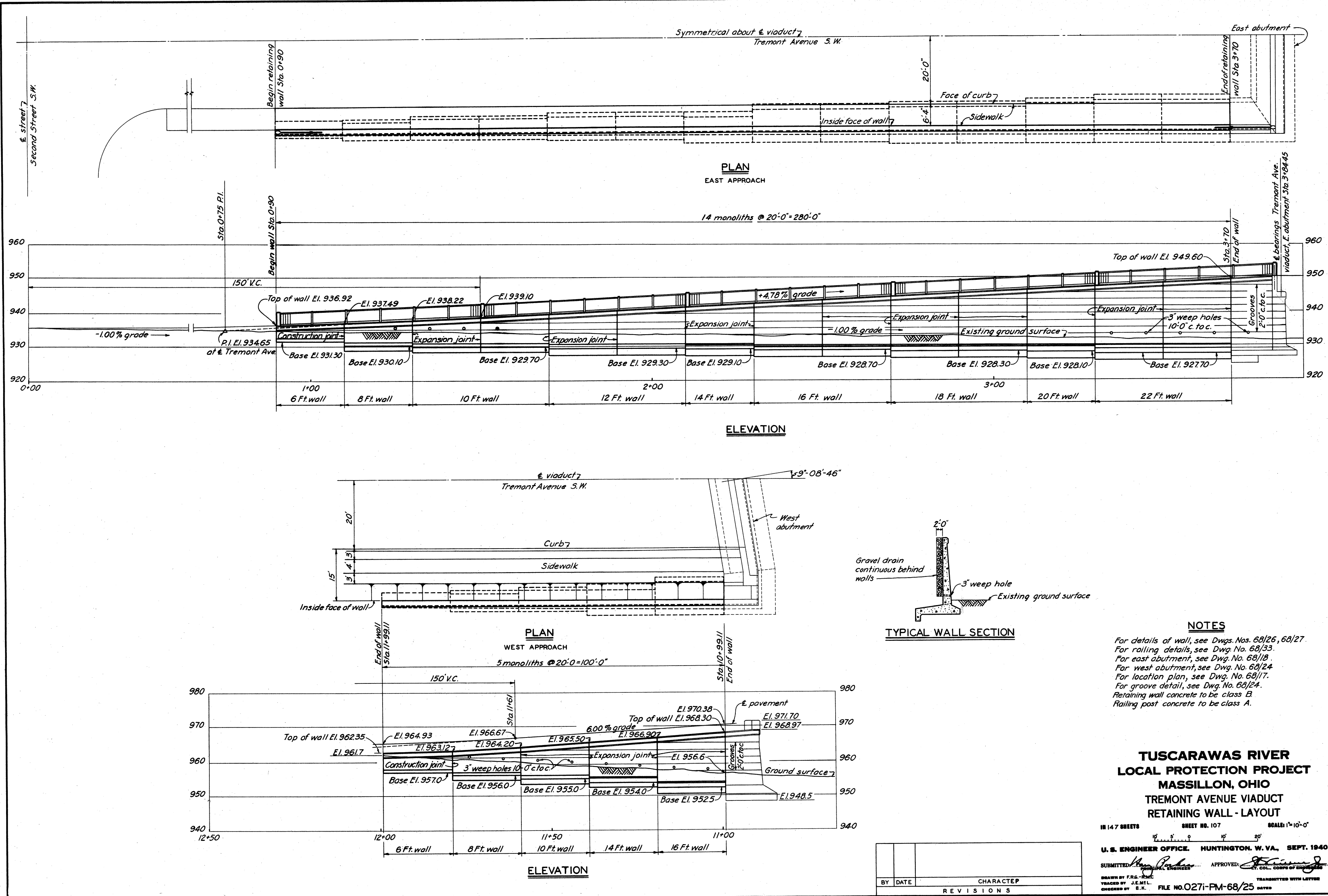
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

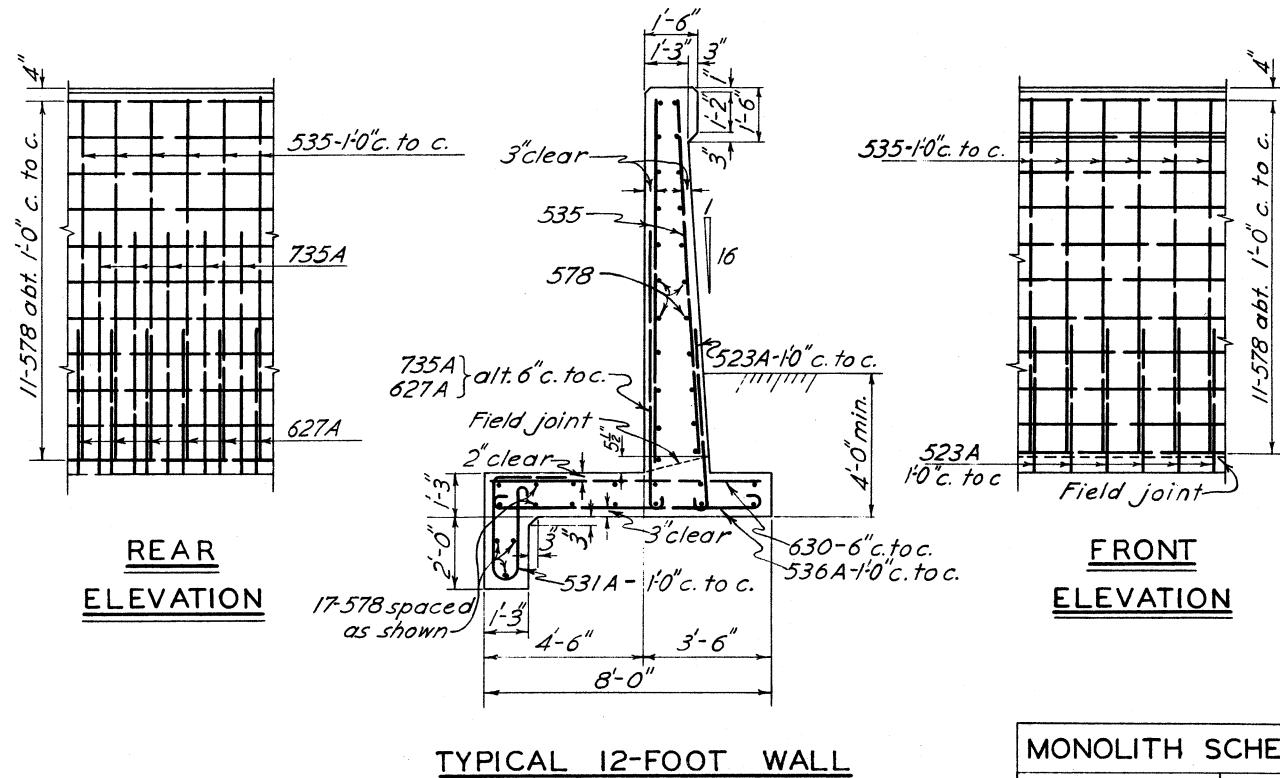
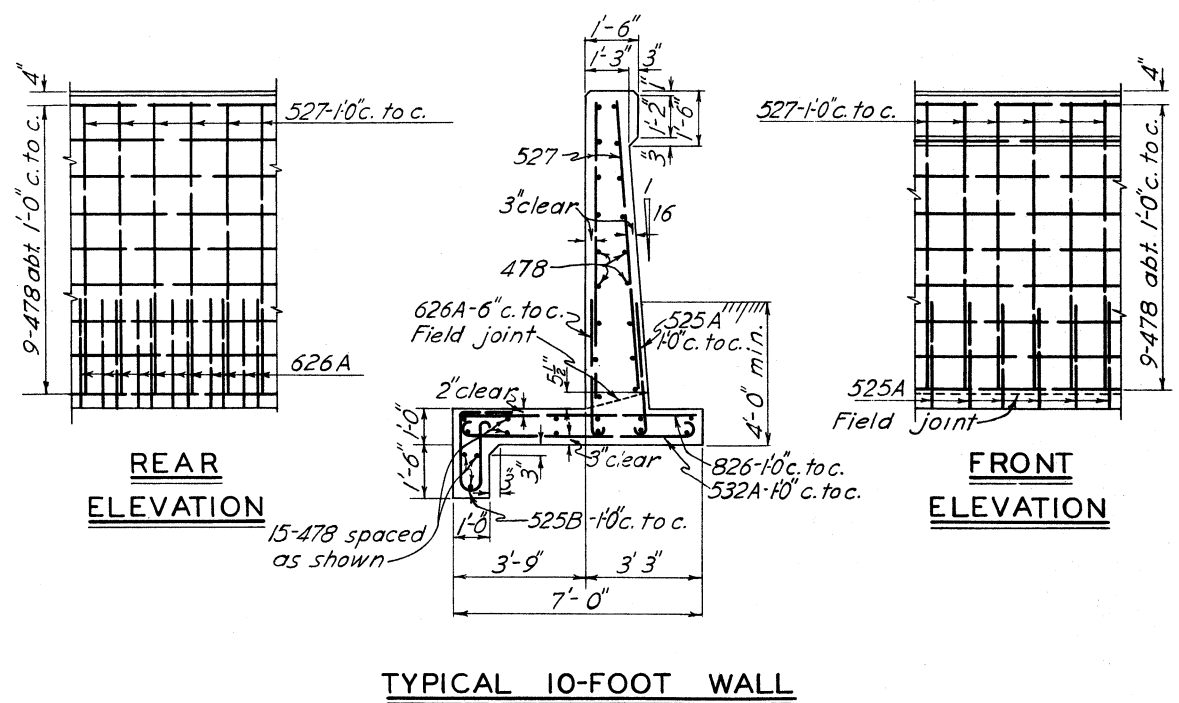
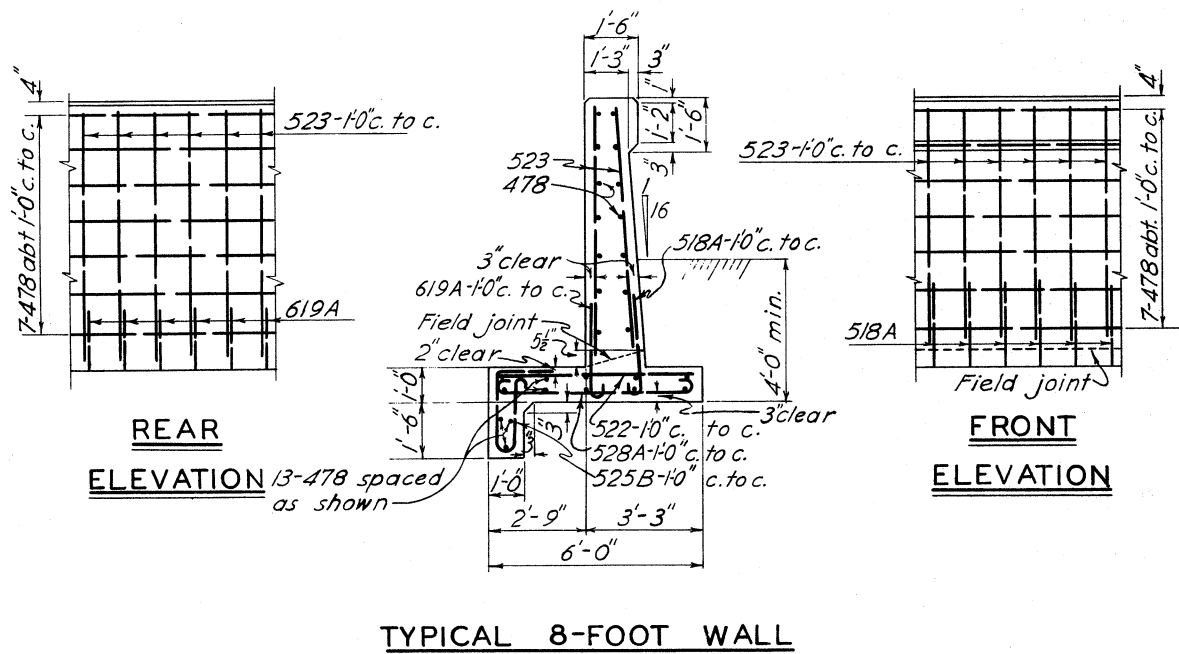
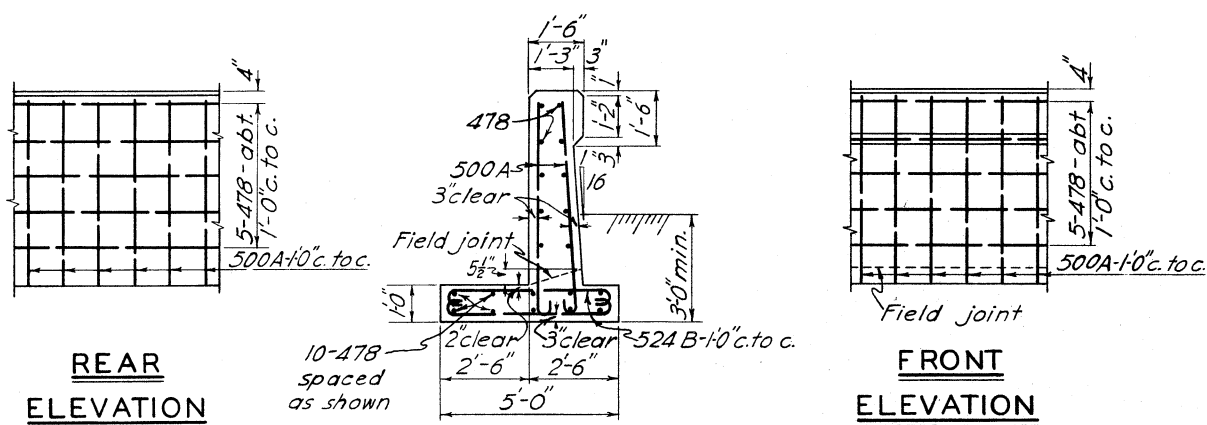
SUBMITTED BY: [Signature] APPROVED: [Signature]

DRAWN BY: R. M. [Signature] TRANSMITTED WITH LETTER

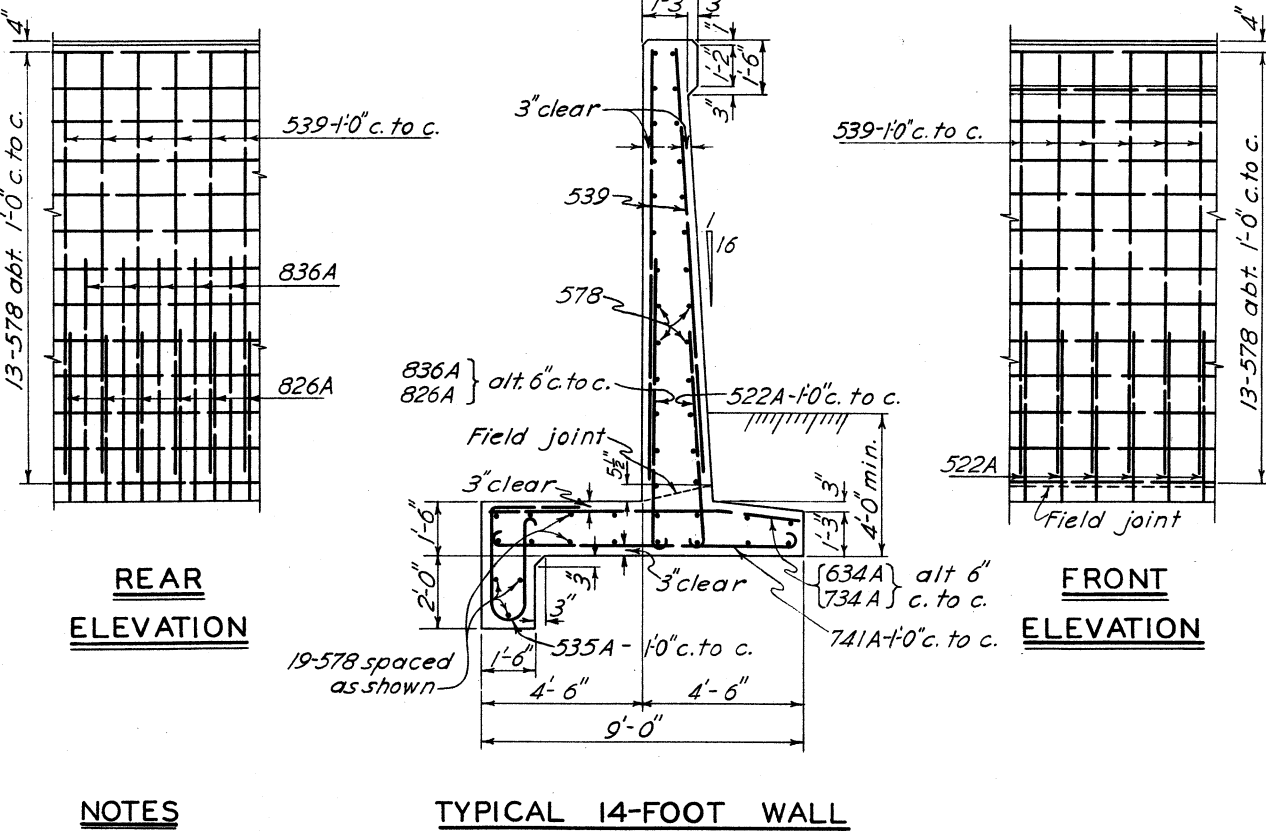
CHECKED BY: E. K. [Signature] FILE NO. 0271-PM-68/24 DATED

BY	DATE	CHARACTER
		REVISIONS





WALL HEIGHT		NO. REQ'D.
6 foot wall		3
8 foot wall		3
10 foot wall		5
12 foot wall		4
14 foot wall		3



NOTES

Reinforcing steel shown is quantity required for one 20'-0" monolith. For number of monoliths, see schedule.

Carry vertical steel in stem to 4" from top of wall and vary laps or cut to compensate for grade. Give horizontal steel equal spacing at each end of monolith.

For location of walls, see Dwg. No. 68/25.

For typical expansion joint, see Dwg. No. 20/3.

Concrete to be Class "B".

REINFORCING SCHEDULE					
6- FOOT WALL					
MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	TOTAL WT.
478	#6	19'-6"	5'-3" to 5'-10"	20	13.03
500A	#6	250 in ft.	4'-6"	40	1.04
524B	#6	6'-7"		40	6.26
Total					771
8- FOOT WALL					
478	#6	19'-6"	3'-9"	27	13.03
518A	#6	4'-6"	3'-11"	20	4.69
522	#6	5'-6"		20	5.74
523	#6	5'-9"	5'-6"	40	6.00
525B	#6	6'-3"	1'-6"	20	6.52
526A	#6	7'-0"		20	7.30
619A	#6	4'-9"	3'-rad	20	7.13
Total					1220
10-FOOT WALL					
478	#6	19'-6"	5'-6"	33	13.03
525A	#6	6'-3"	5'-8"	20	6.52
525B	#6	6'-3"		20	6.52
527	#6	6'-9"	6'-6"	40	7.04
532A	#6	8'-0"	1'-6"	20	8.34
626A	#6	6'-6"		40	9.76
826	#6	6'-6"	3'-rad	20	17.36
Total					1877
12-FOOT WALL					
523A	#6	5'-9"	5'-0"	20	6.00
531A	#6	7'-8"	5'-11"	20	8.08
535	#6	8'-9"		40	9.13
536A	#6	9'-0"	7'-10"	20	9.39
578	#6	18'-6"		39	20.34
627A	#6	6'-9"	7'-6"	20	10.14
630	#6	7'-6"	1'-6"	40	11.27
735A	#6	8'-9"		20	17.89
Total					2640
14- FOOT WALL					
522A	#6	5'-6"	4'-9"	20	5.74
535A	#6	8'-9"	5'-6"	20	9.13
539	#6	8'-9"		40	10.17
578	#6	19'-6"	8'-0"	45	20.34
634A	#6	8'-6"	8'-6"	20	12.77
734A	#6	8'-6"	6'-3"	20	17.37
741A	#6	10'-3"	2'-3"	20	20.95
826A	#6	6'-6"		20	17.36
836A	#6	9'-0"	2'-6"	20	24.03
Total					3480

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
RETAINING WALL - TYPICAL SECTIONS

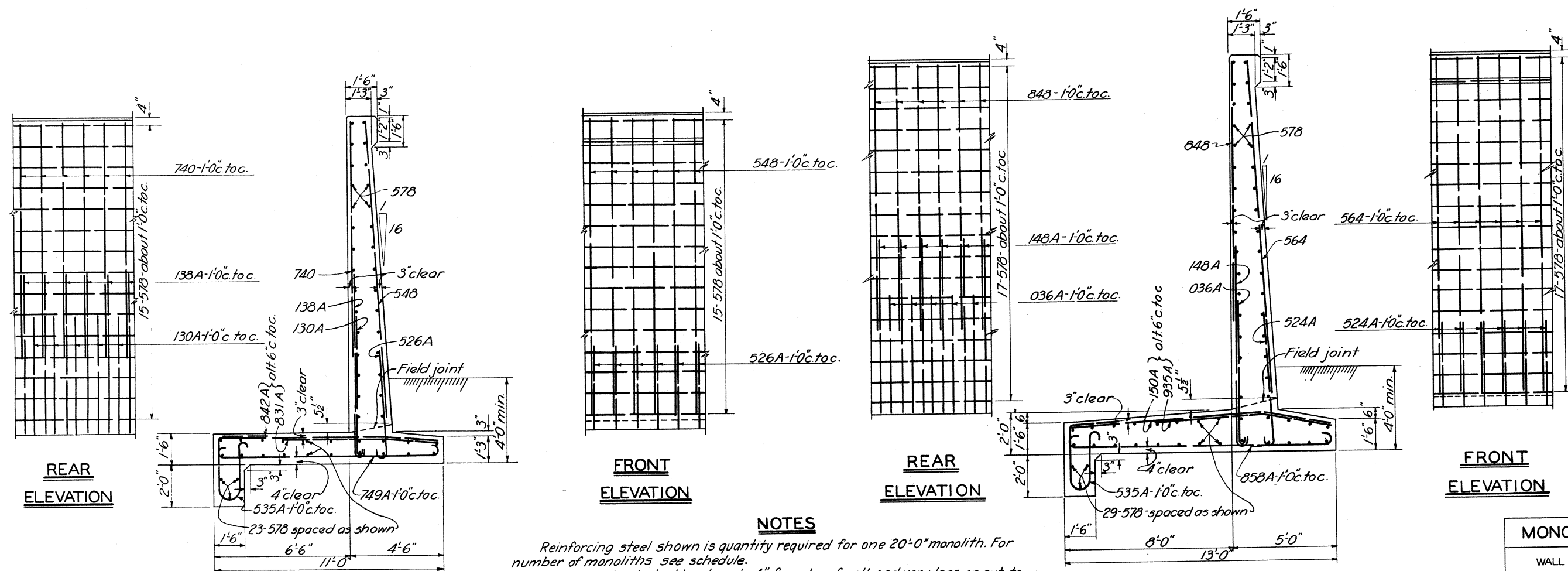
11/47 SHEETS SHEET NO. 108 SCALE 3/8"=1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

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

DRAWN BY: F.R.C. TRANSMITTED WITH LETTER
CHECKED BY: E.H. FILE NO. 0271-PM-68/26 DATED

BY	DATE	CHARACTER
		REVISIONS

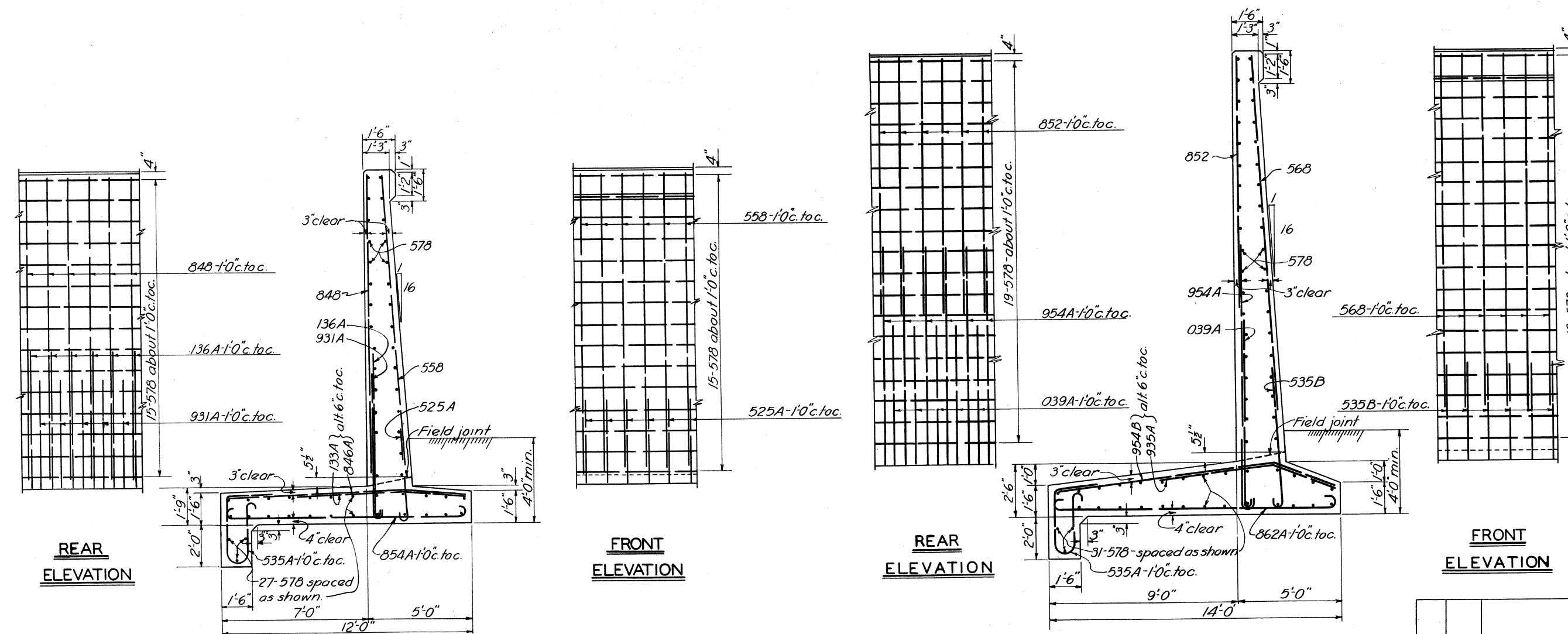


TYPICAL 16-FOOT WALL

TYPICAL 20-FOOT WALL

MONOLITH SCHEDULE

WALL HEIGHT	NO. REQD.
16 Foot Wall	5
18 Foot Wall	4
20 Foot Wall	2
22 Foot Wall	4



TYPICAL 18-FOOT WALL

TYPICAL 22-FOOT WALL

REINFORCING SCHEDULE

16-FOOT WALL

MARK	SIZE	LGTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
526A	3/8"	6'-6"		20	6.78	136
535A	3/8"	8'-9"		20	9.13	183
540	3/8"	12'-0"		20	12.52	250
578	3/8"	19'-6"		53	20.34	1078
740	3/8"	10'-0"		20	20.44	409
749A	3/8"	12'-3"		20	25.04	501
831A	1"	7'-9"		20	20.69	414
842A	1"	10'-6"		20	28.04	561
130A	1"	7'-6"		20	25.50	510
138A	1"	9'-6"		20	32.30	646
Total						4688

18-FOOT WALL

525A	3/8"	6'-3"		20	6.52	130
535A	3/8"	8'-9"		20	9.13	183
556	3/8"	14'-0"		20	14.60	292
578	3/8"	19'-6"		57	20.34	1159
848	1"	12'-0"		20	32.04	641
846A	1"	11'-6"		20	30.71	614
854A	1"	13'-6"		20	36.05	721
133A	1"	8'-3"		20	28.05	561
136A	1"	9'-0"		20	30.60	612
931A	1/2"	7'-9"		20	33.35	667
Total						5590

20-FOOT WALL

524A	3/8"	6'-0"		20	6.26	125
535A	3/8"	8'-9"		20	9.13	183
564	3/8"	16'-0"		20	16.69	334
578	3/8"	19'-6"		63	20.34	1281
848	1"	12'-0"		20	32.04	641
858A	1"	14'-6"		20	38.72	774
148A	1"	12'-0"		20	40.80	816
150A	1"	12'-6"		20	42.50	850
935A	1/2"	9'-9"		20	33.15	663
936A	1/2"	9'-0"		20	47.82	956
Total						6623

22-FOOT WALL

535A	3/8"	8'-9"		20	9.13	183
535B	3/8"	8'-9"		20	9.13	183
568	3/8"	17'-0"		20	17.73	355
578	3/8"	19'-6"		69	20.34	1403
852	1"	13'-0"		20	34.71	694
862A	1"	15'-6"		20	41.39	828
935A	1/2"	8'-9"		20	37.65	753
954A	1/2"	13'-6"		20	58.09	1162
954B	1/2"	13'-6"		20	58.09	1162
939A	1/4"	9'-9"		20	51.80	1036
Total						7759

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
RETAINING WALL - TYPICAL SECTIONS**

11/47 SHEETS

SHEET NO. 109

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

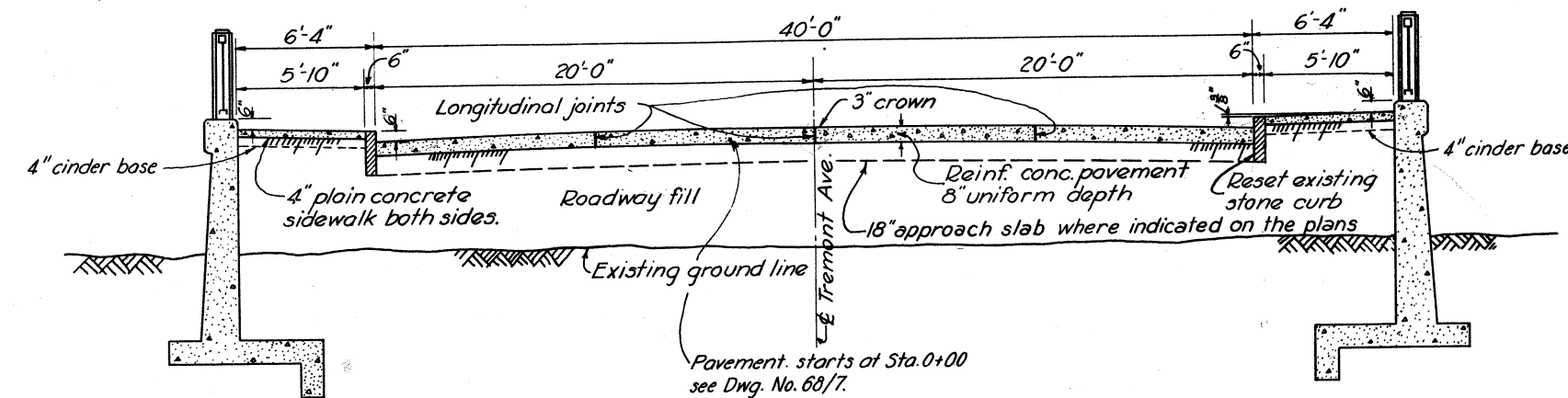
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

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

DRAWN BY: F.R.C. TRANSMITTED WITH LETTER

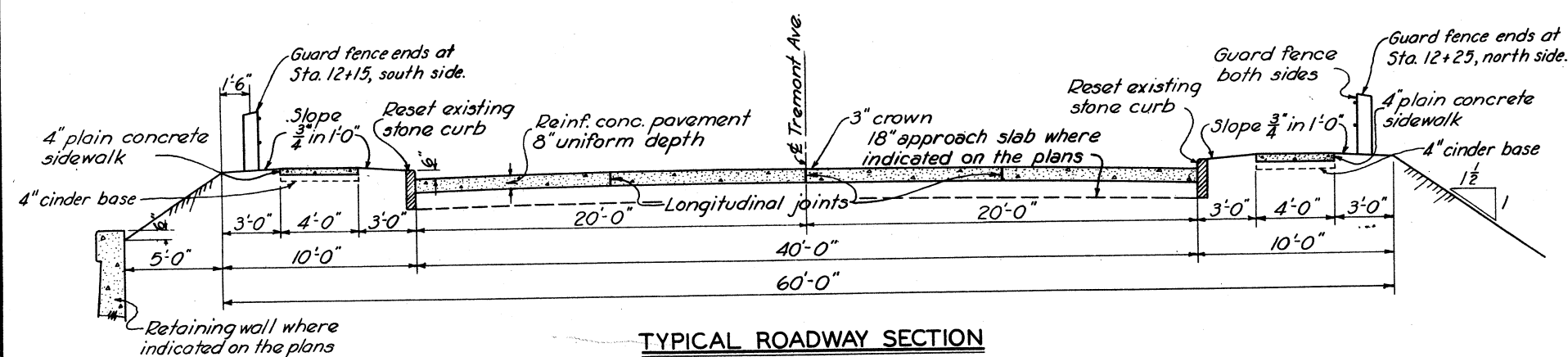
CHECKED BY: E.H. FILE NO 0271-PM-68/27 DATED

BY	DATE	CHARACTER
		REVISIONS

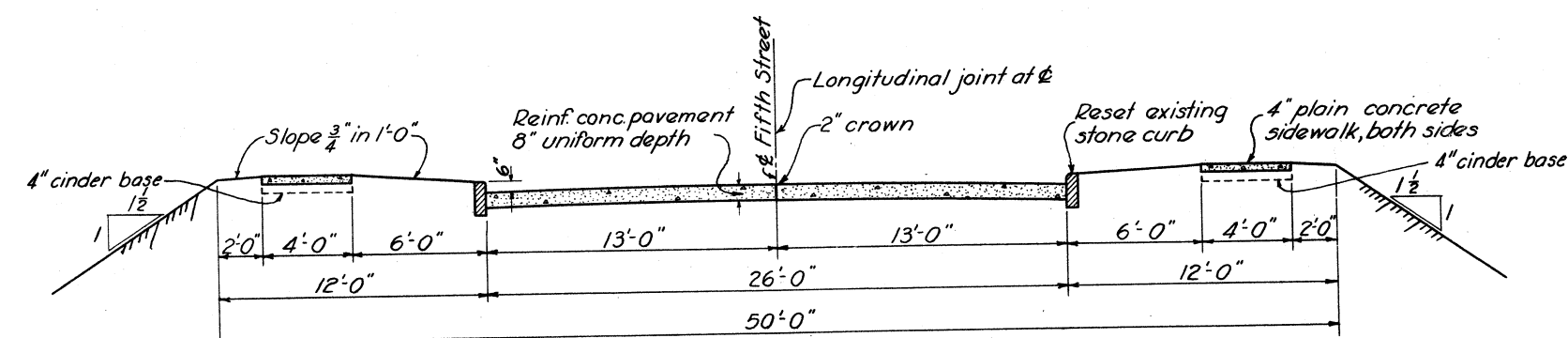


**TYPICAL ROADWAY SECTION
FROM STA. 0+90 TO STA. 3+82**

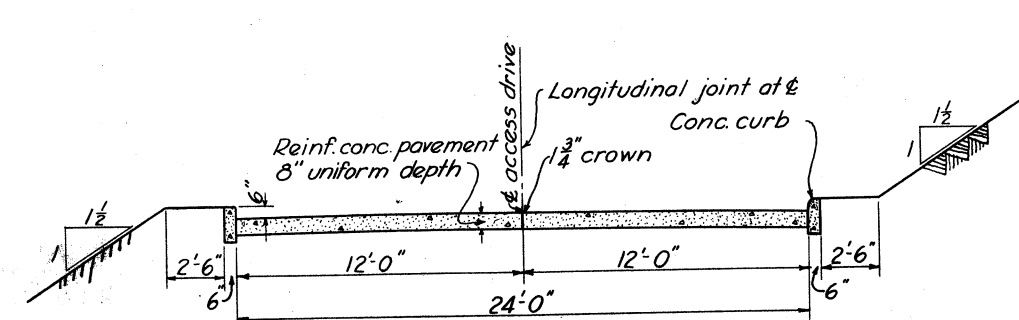
Note:
Curbs and sidewalks to be 6"
higher at bridge. Run out to
typical section in 50 ft.



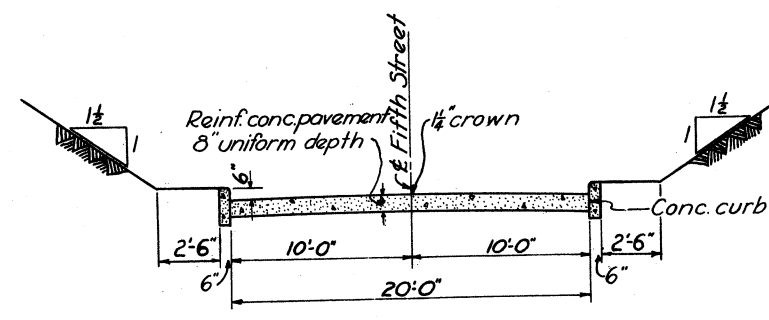
**TYPICAL ROADWAY SECTION
FROM STA. 10+97 TO STA. 13+11**



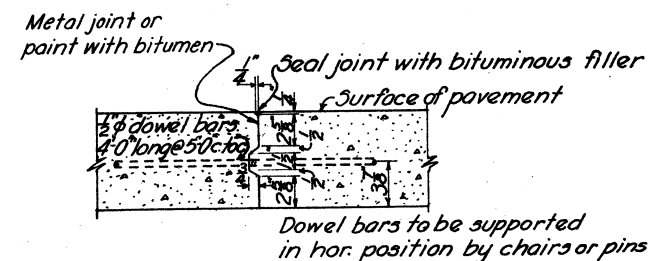
**TYPICAL ROADWAY SECTION
FIFTH ST. SOUTH OF TREMONT AVE.**



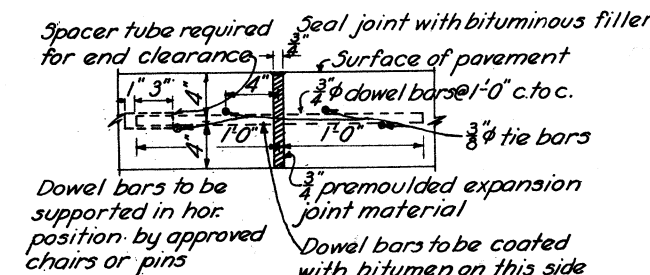
**TYPICAL ROADWAY SECTION
ACCESS DRIVES TO B.O. FREIGHT HOUSE**



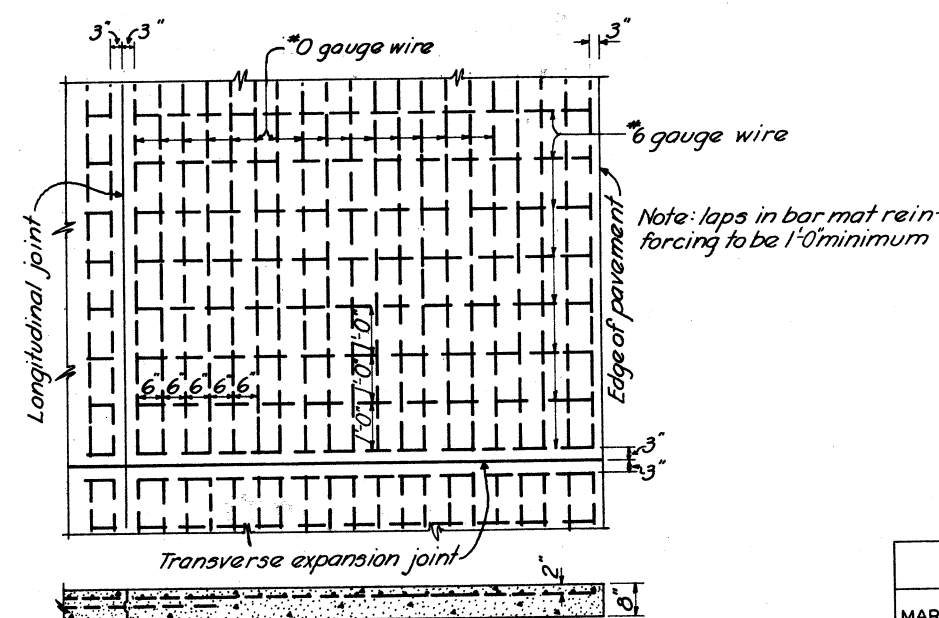
**TYPICAL ROADWAY SECTION
FIFTH ST. NORTH OF TREMONT AVE.**



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

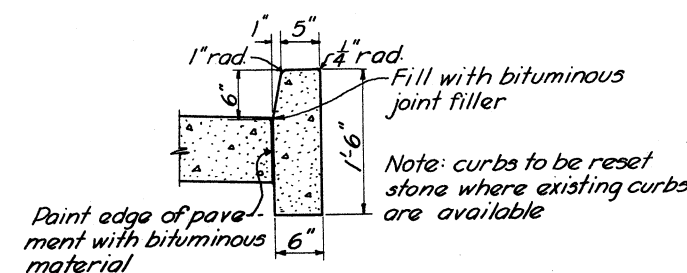


TRANSVERSE EXPANSION JOINT
SCALE: 1/2"=1'-0"

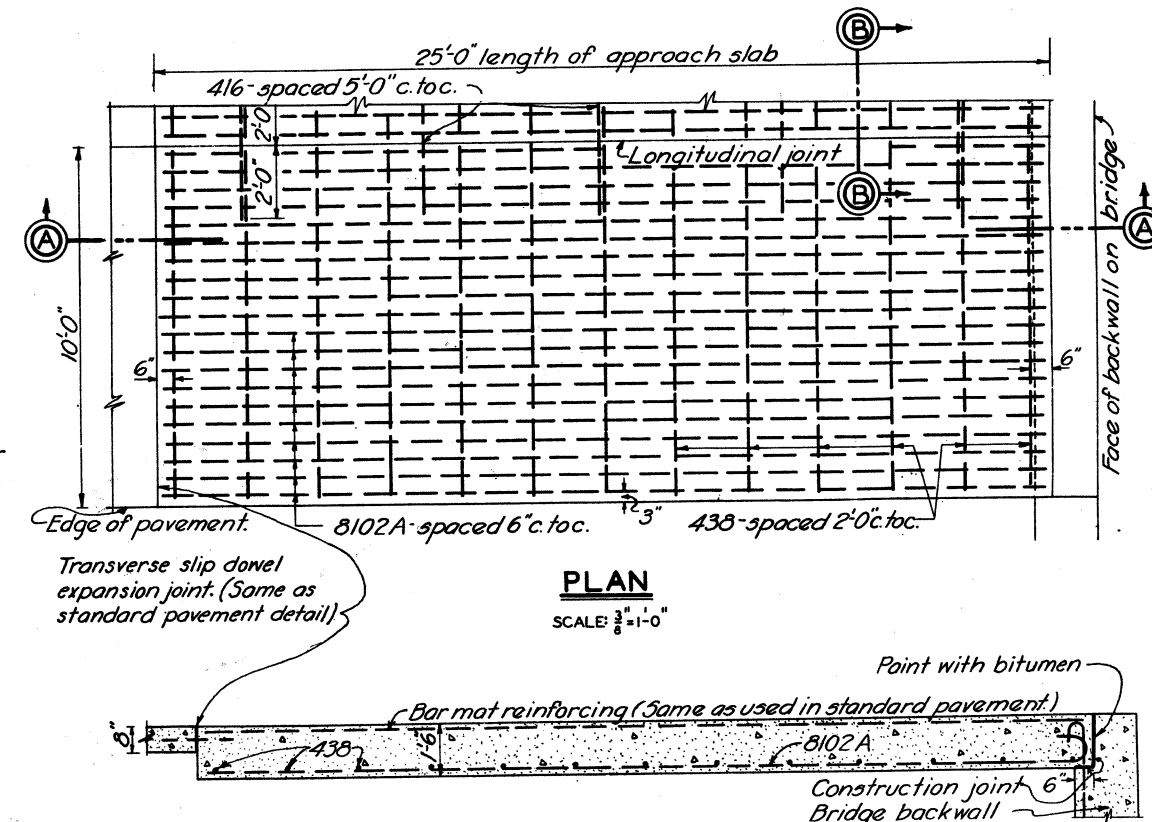


BAR MAT REINFORCING
SCALE: 1/2"=1'-0"

**STANDARD REINF. CONCRETE
PAVEMENT DETAILS**

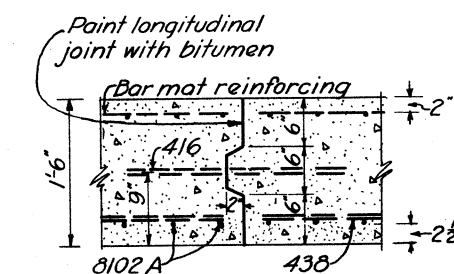


DETAIL OF CONCRETE CURB
SCALE: 1/2"=1'-0"



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

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



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

REINFORCING SCHEDULE					
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT W.T.
416	1/2"	4'-0"		15	267
438	3/8"	9'-6"		32	635
8102A	1"	25'-6"		20	6809
				Total	5917

Reinforcing steel for one approach slab.

APPROACH SLAB DETAILS

NOTES

Expansion joints to be placed in reinf. concrete pavement at intervals of not more than 60 feet. These joints shall be continuous across entire width of pavement and at right angles to ℓ of pavement. Construction joints, where necessary, shall be constructed similar to transverse expansion joints except that spacer tubes and premoulded joint material shall be omitted. Concrete to be Class 'A'.

TUSCARAWAS RIVER LOCAL PROTECTION PROJECT MASSILLON, OHIO TREMONT AVENUE VIADUCT APPROACH SECTIONS & DETAILS

1147 SHEETS SHEET NO. 110 SCALE: 1/2"=1'-0"

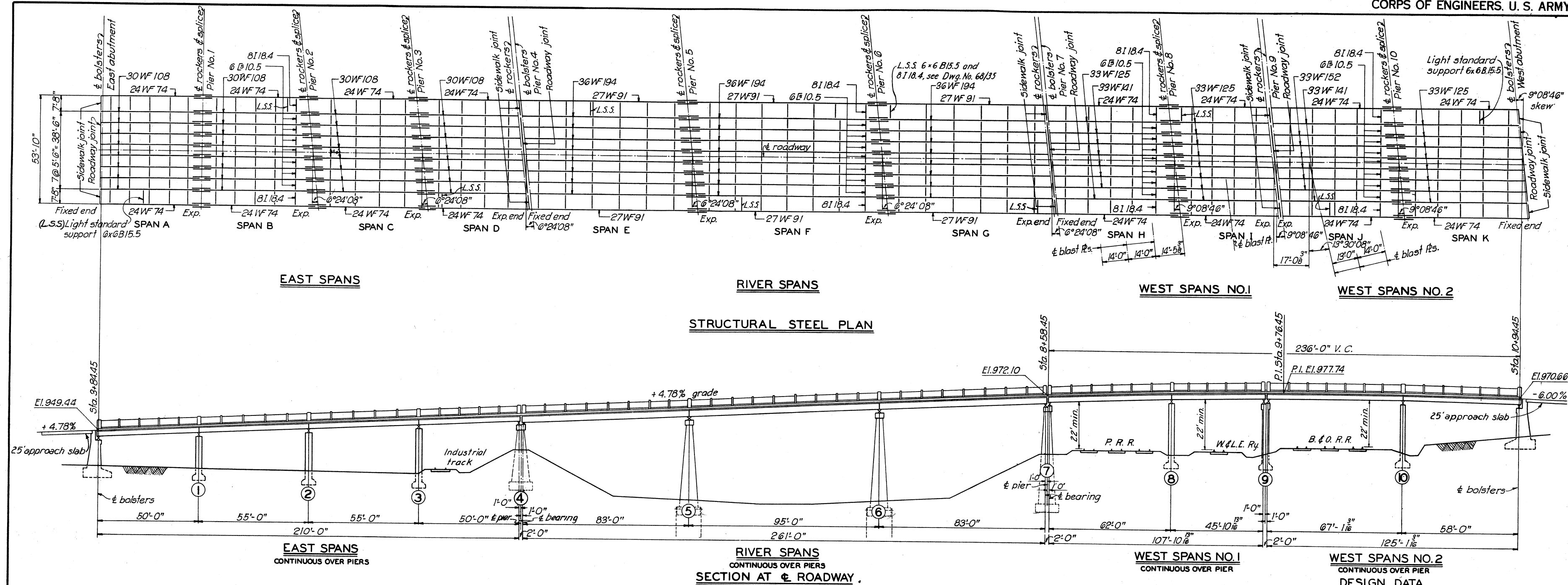
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

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

DRAWN BY: H.G.H. TRANSMITTED WITH LETTERS

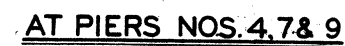
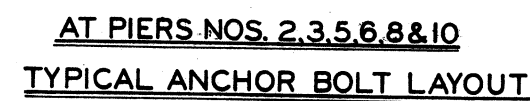
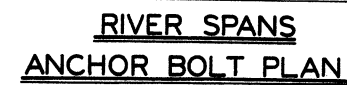
CHECKED BY: L.D.H. FILE NO. 027i-PM-68/28 DATED

BY	DATE	CHARACTER
		REVISIONS



POSITIVE MOMENTS IN FOOT POUNDS

LOADS	EAST SPANS						RIVER SPANS						WEST SPANS NO.1						WEST SPANS NO.2						
	SPANS A & D			SPANS B & C			SPANS E & G			SPAN F			SPAN H			SPAN I			SPAN J			SPAN K			
	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	
DEAD LOAD	103,000	122,000	60,000	84,000	97,000	52,000	359,000	413,000	183,000	352,000	389,000	175,000	180,000	212,000	99,000	64,000	72,000	36,000	207,000	238,000	109,000	125,000	145,000	71,000	
LIVE LOAD	267,000	188,000		240,000	168,000		511,000	360,000		478,000	336,000		348,000	226,000		246,000	159,000		386,000	251,000		327,000	213,000		
IMPACT	77,000	54,000		67,000	47,000		123,000	86,000		108,000	76,000		93,000	60,000		72,000	46,000		100,000	65,000		89,000	58,000		
SIDEWALK L.L		47,000	58,000		43,000	54,000		133,000	162,000		125,000	152,000		68,000	83,000		40,000	48,000		100,000	79,000		96,000	61,000	75,000
TOTAL	447,000	411,000	118,000	391,000	355,000	106,000	993,000	992,000	345,000	938,000	926,000	327,000	621,000	566,000	182,000	382,000	317,000	84,000	693,000	633,000	205,000	541,000	477,000	146,000	



SPAN	CURB & INT. BEAMS			HANDRAIL BEAM		
	X	Y	Z	X	Y	Z
A & D	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{4}$
B & C	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$
E & G	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
F	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{5}{8}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{2}$
H	$\frac{2}{16}$	$\frac{2}{16}$	$\frac{2}{16}$	$\frac{2}{4}$	$\frac{2}{8}$	$\frac{2}{4}$
I	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
J	$\frac{2}{16}$	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	$\frac{2}{16}$
K	$\frac{1}{16}$	$\frac{2}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{2}{16}$	$\frac{1}{16}$

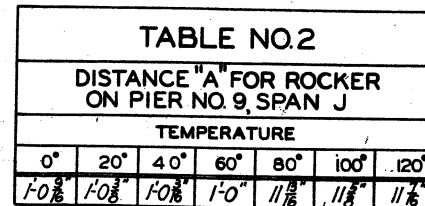


TABLE NO. I							
TEMPERATURE CORRECTIONS FOR SETTING EXPANSION ROCKERS							
ROCKER LOCATION	TEMPERATURE						
	0°	20°	40°	60°	80°	100°	120°
PIER NO.1	-7/8	-5/8	-7/8	0	+7/8	+5/8	+7/8
PIER NO.2	-7/8	-5/8	-5/8	0	+5/8	+7/8	+7/8
PIER NO.3	-7/8	-7/8	-5/8	0	+5/8	+7/8	+7/8
PIER NO.4	-5/8	-5/8	-7/8	0	+7/8	+5/8	+5/8
PIER NO.5	-5/8	-5/8	-5/8	0	+5/8	+5/8	+7/8
PIER NO.6	-5/8	-1/2	-5/8	0	+5/8	+5/8	+7/8
PIER NO.7	-1/2	-5/8	-5/8	0	+5/8	+7/8	+1/2
PIER NO.8	-5/8	-5/8	-7/8	0	+7/8	+5/8	+7/8
PIER NO.9 SPAN I	-5/8	-5/8	-7/8	0	+7/8	+5/8	+5/8
PIER NO.9 SPAN J	-5/8	-5/8	-5/8	0	+5/8	+7/8	+7/8
PIER NO.10	-5/8	-7/8	-7/8	0	+7/8	+5/8	+5/8

TABLE NO.3						
DISTANCE "B" FOR ROCKER ON PIER NO.9 SPAN I						
TEMPERATURE						
0°	20°	40°	60°	80°	100°	120°
1'-0"	1'-0 1/8"	1'-0 3/8"	1'-0"	11'-8"	11'-4"	11'-4"

TABLE NO. 4							
DISTANCE "C" FOR ROCKER ON PIER NO. 7							
TEMPERATURE							
0°	20°	40°	60°	80°	100°	120°	
2'-11"	2'-0 3/4"	2'-0 1/2"	2'-0"	1'-11 1/2"	1'-11 1/4"	1'-10"	

TABLE NO. 5						
DISTANCE "D" FOR ROCKER ON PIER NO.4						
TEMPERATURE						
0°	20°	40°	60°	80°	100°	120°
2'-0"	2'-0"	2'-0"	2'-0"	1'-11"	1'-11"	1'-11"

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
ANCHOR BOLT PLAN & ERECTION DATA**

IN 147 SHEETS SHEET NO. 112 SCALE: $\frac{3}{4}" = 1' - 0"$

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

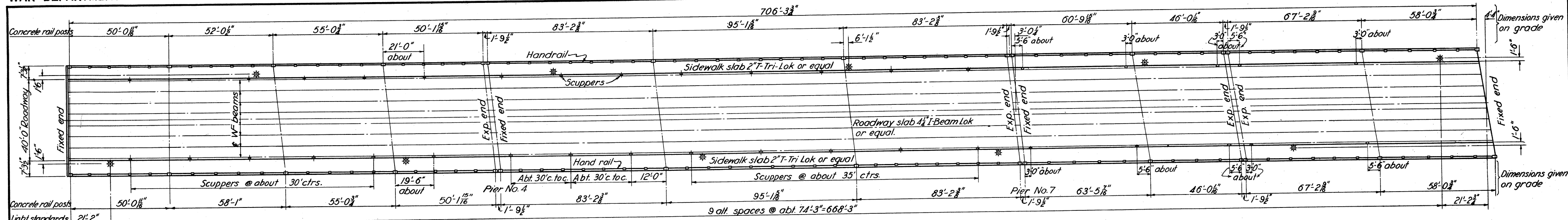
SUBMITTED: *[Signature]* APPROVED: *[Signature]*

DRAWN BY J. H.

TRACED BY C. D. H. FILE NO 027i-PM-68/30 TRANSMITTED WITH LETTER

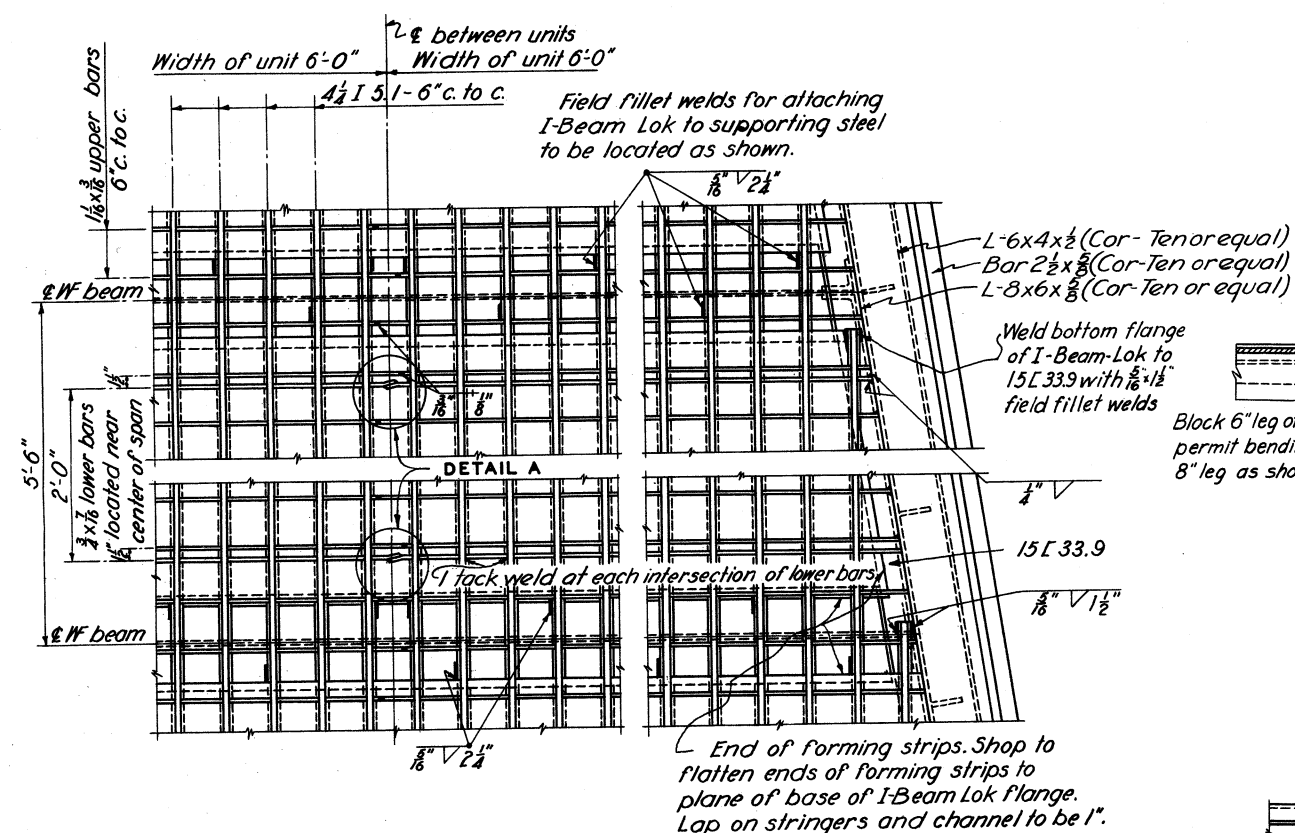
RECEIVED
JAN 11 1950

WAR DEPARTMENT



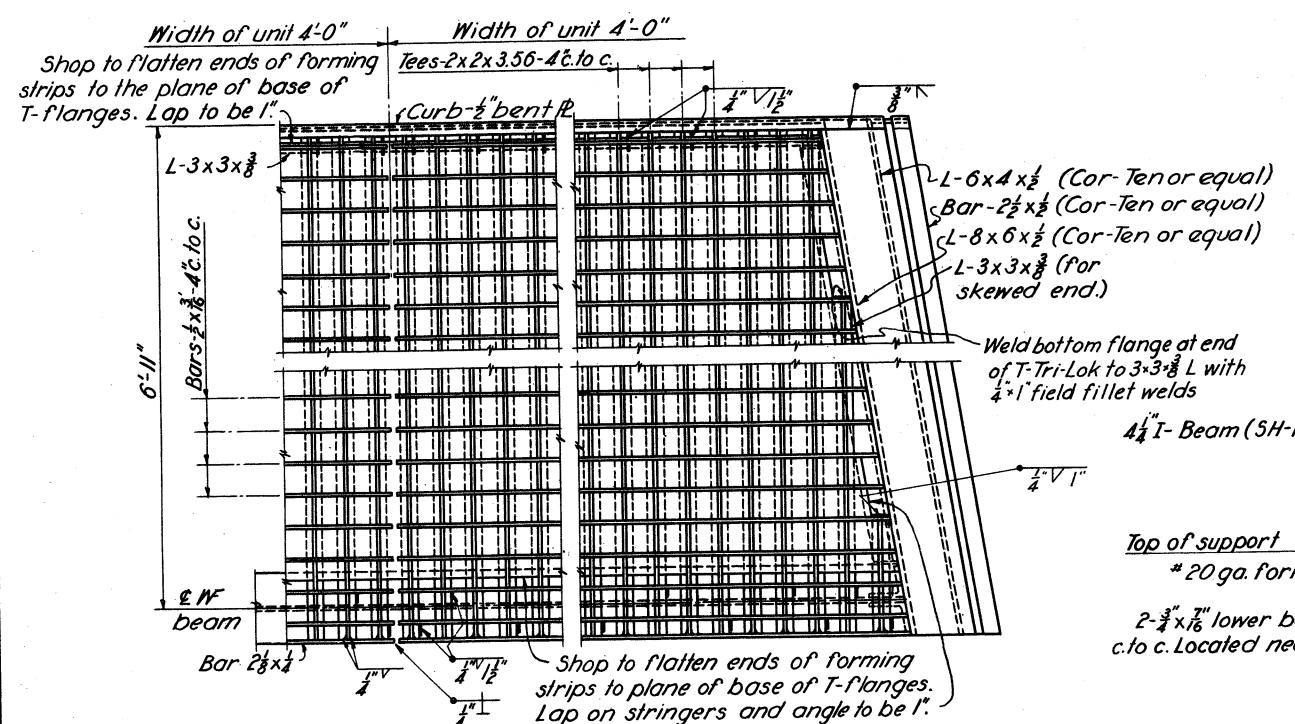
SUPERSTRUCTURE PLAN

SCALE: 1" = 20'



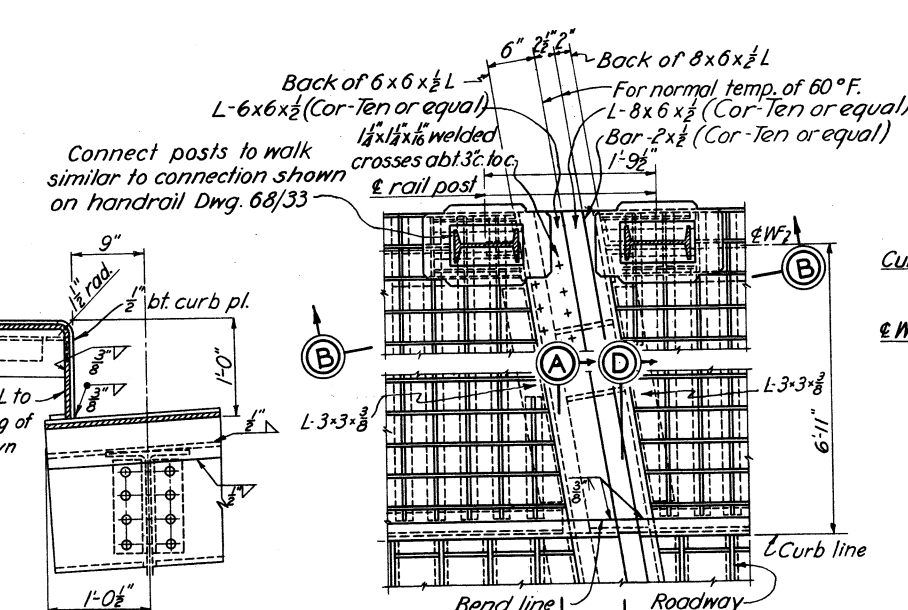
Note
Concrete fill not shown.

ROADWAY PLAN

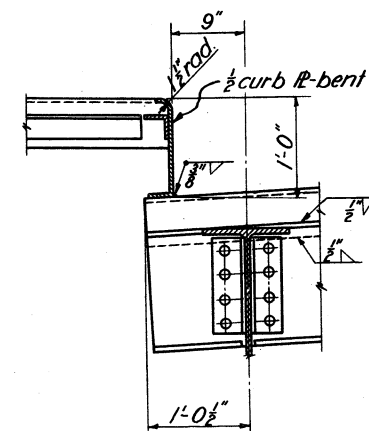


Note:-
Concrete fill not shown.
For method of attaching handrail posts, see Dwg. No. 68/33.

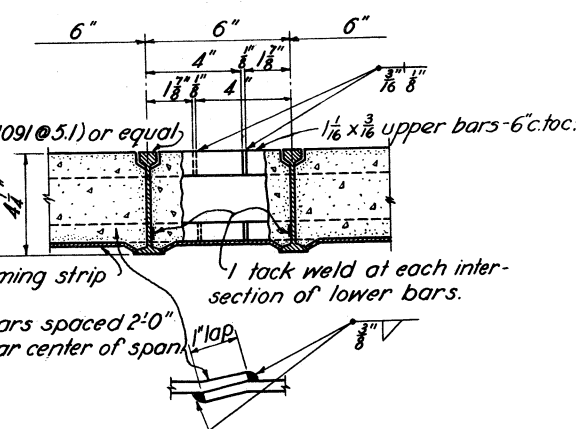
SIDEWALK PLAN



SECTION D-D

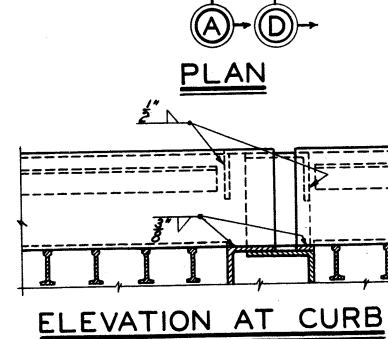


SECTION A-A
DETAILS OF SIDEWALK JOINT AT PIERS

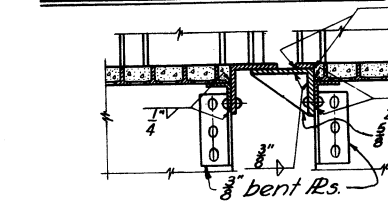


DETAILS OF ROADWAY SLAB

SCALE: 3" = 1'-0"

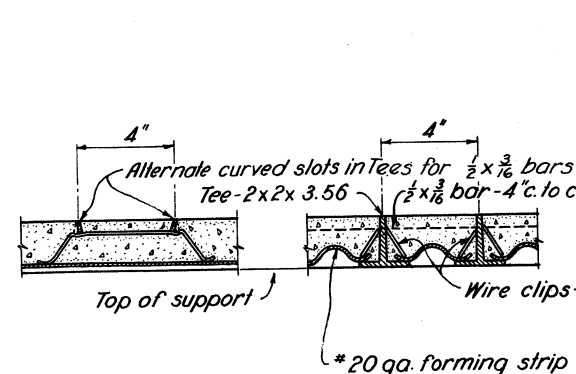


ELEVATION AT CURB



SECTION B-B

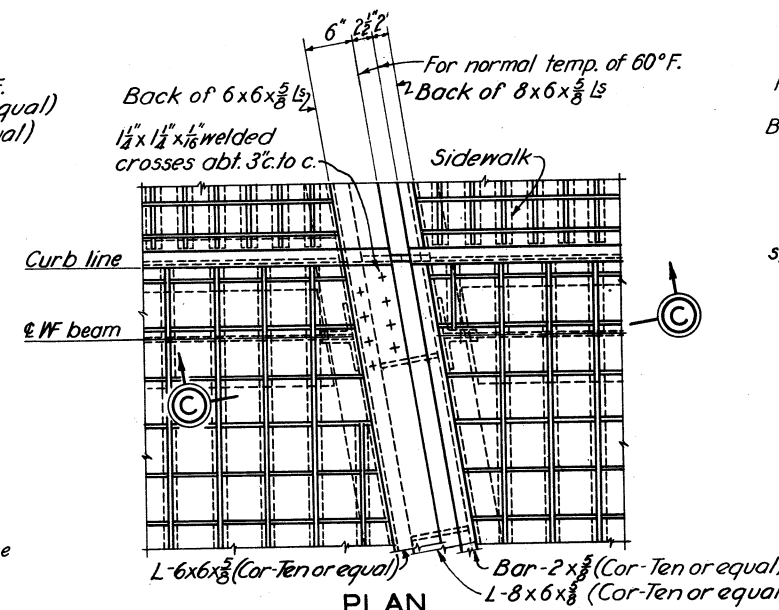
DETAILS OF SIDEWALK JOINT AT PIERS



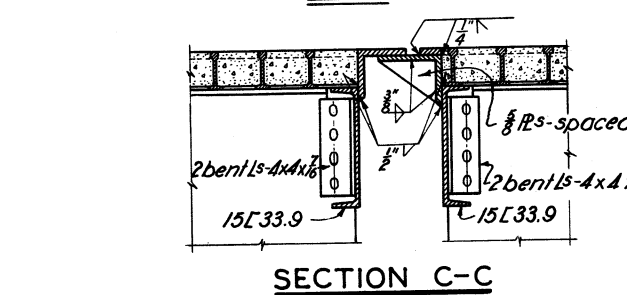
LONGITUDINAL SECTION

DETAILS OF SIDEWALK JOINT AT PIERS

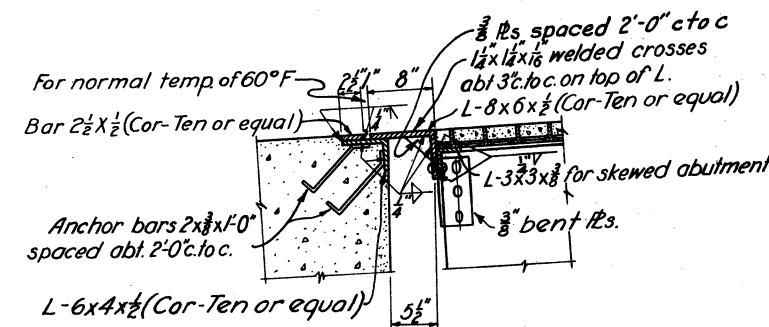
SCALE: 3" = 1'-0"



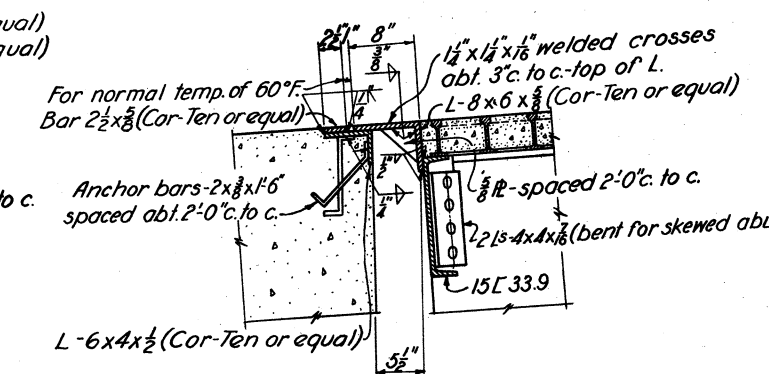
SECTION C-C



DETAILS OF ROADWAY JOINT AT PIERS



SECTION OF SIDEWALK JOINT AT ABUTMENTS



SECTION OF ROADWAY JOINT AT ABUTMENTS

NOTES

Expansion and fixed joints to be flared and bent to match roadway.
Rivets 3/8"
Concrete for roadway and sidewalk to be Class "A"

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
FLOOR PLAN & DETAILS

IN 147 SHEETS SHEET NO. 113 SCALE: 1" = 1'-0"

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

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

DRAWN BY: A.W.S. TRANSMITTED WITH LETTER

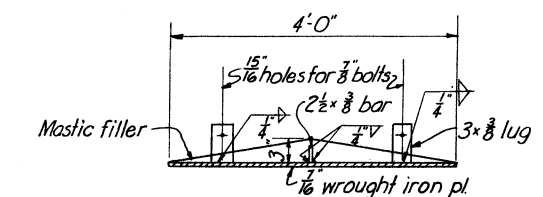
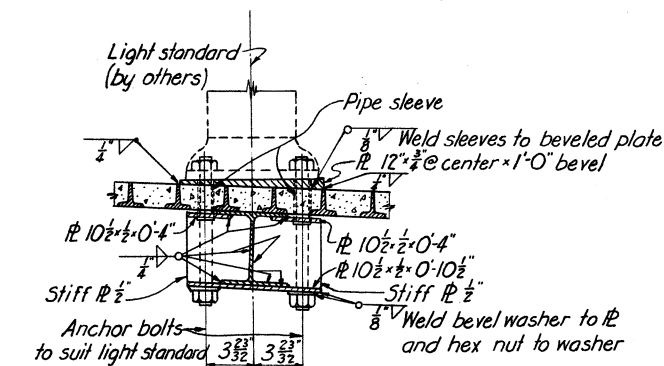
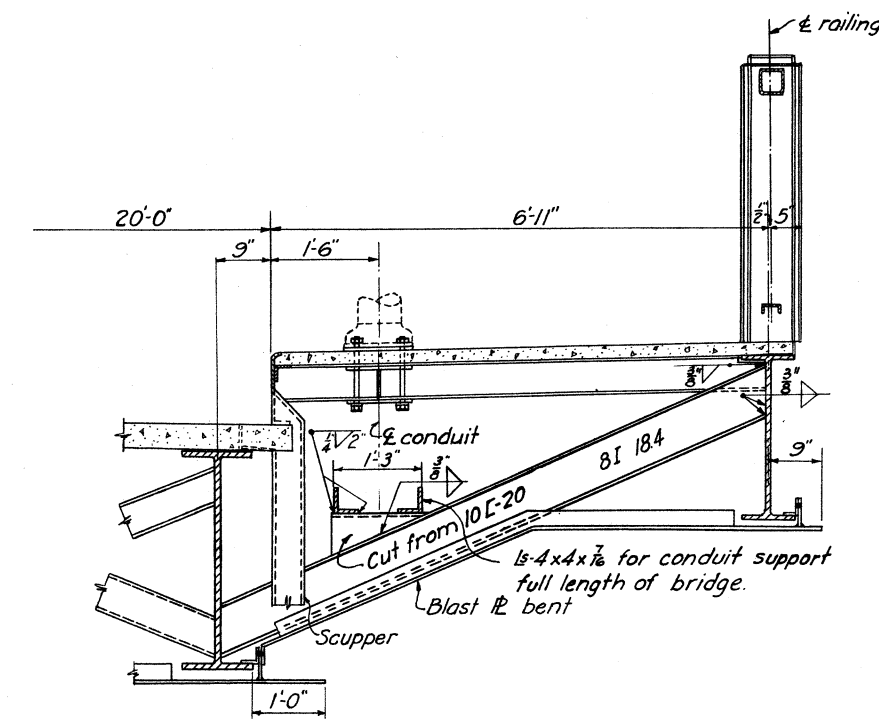
TRACED BY: R.A.E. FILE NO. 0271-PM-68/31 DATED

APPROVED: THE BALTIMORE AND OHIO RAILROAD CO.
BY: [Signature] CHIEF ENGINEER

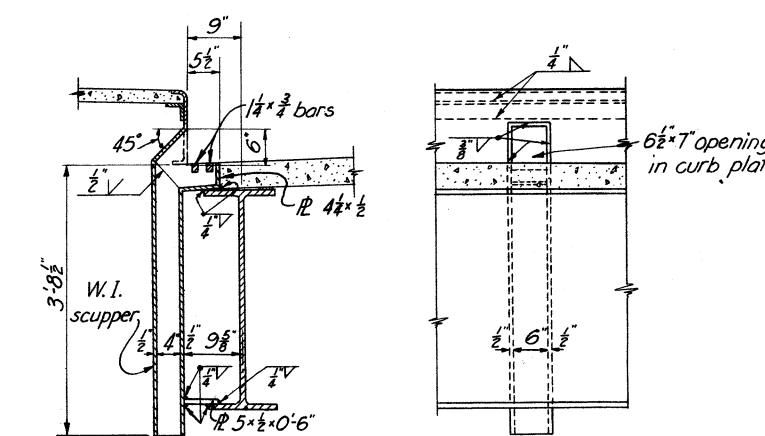
APPROVED: THE PENNSYLVANIA RAILROAD CO.
BY: [Signature] CHIEF ENGINEER - CENTRAL REGION

APPROVED: THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: [Signature] SPECIAL ENGINEER

BY	DATE	CHARACTER



TYPICAL SECTION OF BLAST PLATE
417 LIN. FT. REQ'D.



DETAIL OF SCUPPER

NOTES

For location of blast plates, see
Dwg. No. 68/29.

HEIGHT OF PEDESTALS UNDER BOLSTERS											BRIDGE SEAT ELEVATION	PLATE NORMAL SIDWALK BEAMS	PLUS SHIMS ROADWAY BEAM:
LOCATION	F	G	H	J	K	K-I	J-I	H-I	G-I	F-I			
EAST ABUT.	1'-0 1/2"	1'	2 1/8"	3'	3 3/8"	3 3/8"	3'	2 1/8"	1'	1'-0 1/2"			
PIER NO. 4	2-9 1/2"	7 1/2"	8 3/4"	8 1/8"	9 3/8"	8 3/4"	7 3/4"	6 1/2"	5'	2-6 1/8"			
PIER NO. 7	3-7 1/4"	1'-6"	1'-6 1/2"	1'-7 1/8"	1'-7 1/4"	1'-6"	1'-4 3/4"	1'-3 3/8"	3'-3 1/8"				
WEST ABUT.	2'-0 3/8"	1'	2 1/8"	4 1/8"	5 1/8"	6 1/8"	5 1/8"	5 1/8"	5 1/8"	3'-6 1/2"			

HEIGHT OF PEDESTALS UNDER BOLSTERS											BRIDGE SEAT ELEVATION	PLATE NORMAL SIDWALK BEAMS	PLUS SHIMS ROADWAY BEAM:
LOCATION	F	G	H	J	K	K-I	J-I	H-I	G-I	F-I			
EAST ABUT.	1'-0 1/2"	1'	2 1/8"	3'	3 3/8"	3 3/8"	3'	2 1/8"	1'	1'-0 1/2"	945.45	3/8"	1"
PIER NO. 4	2-9 1/2"	7 1/2"	8 3/4"	8 1/8"	9 3/8"	8 3/4"	7 3/4"	6 1/2"	5'	2-6 1/8"	954.58	3/8"	1 1/2"
PIER NO. 7	3-7 1/4"	1'-6"	1'-6 1/2"	1'-7 1/8"	1'-7 1/4"	1'-6"	1'-4 3/4"	1'-3 3/8"	3'-3 1/8"		966.57	3/8"	1 1/8"
WEST ABUT.	2'-0 3/8"	1'	2 1/8"	4 1/8"	5 1/8"	6 1/8"	5 1/8"	5 1/8"	5 1/8"	3'-6 1/2"	966.22	3/8"	1 1/8"

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY:
SPECIAL ENGINEER

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
TYPICAL SECTIONS & DETAILS**

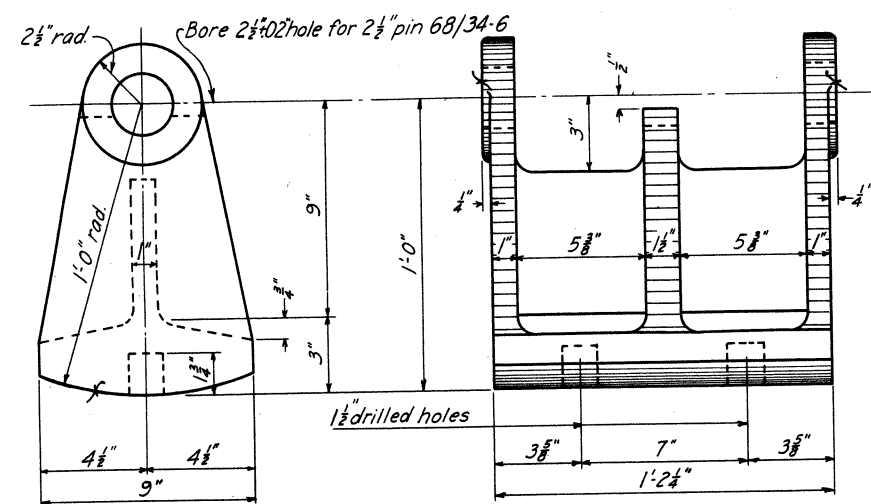
IN 147 SHEETS SHEET NO. 114 SCALE: $\frac{3}{4}" = 1' - 0"$

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
 PRINCIPAL ENGINEER ST. COL., CORPS OF ENGINEERS

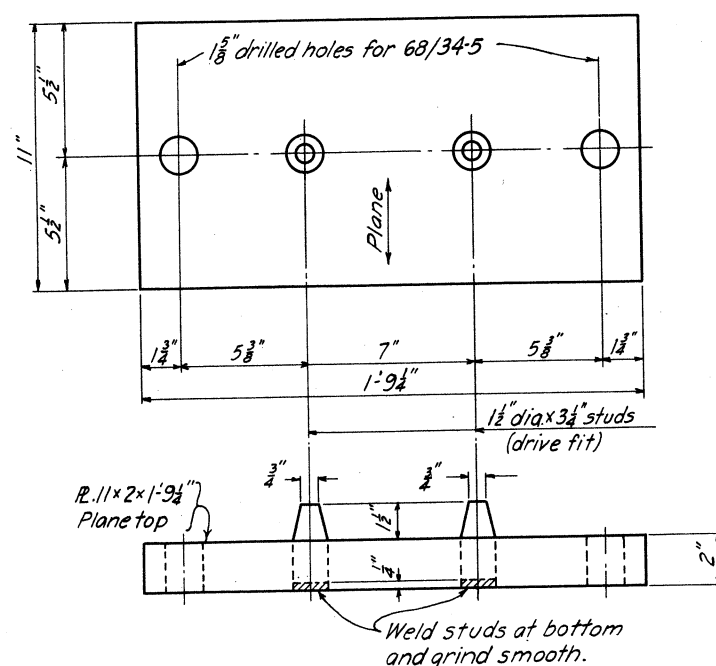
DRAWN BY A. W. S. TRANSMITTED WITH LETTER
 TRACED BY H. C.
 CHECKED BY H. U. B. FILE No. 027i-PM-68/32 DATED

BY	DATE	CHARACTER
		REVISIONS



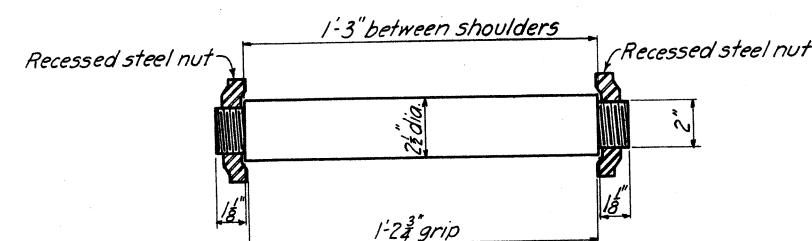
DETAIL OF ROCKER

CAST STEEL CLASS 2 MARK 68/34-1
MAKE 110 WT. 173.0 LBS.



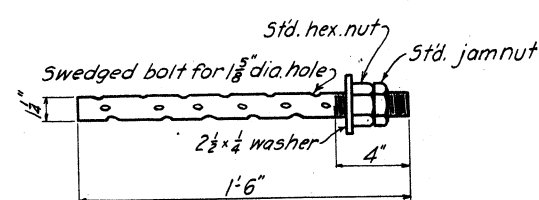
DETAIL OF BASE PLATE

STRUCTURAL STEEL MARK 68/34-2
MAKE 110 WT. 131.0 LBS.



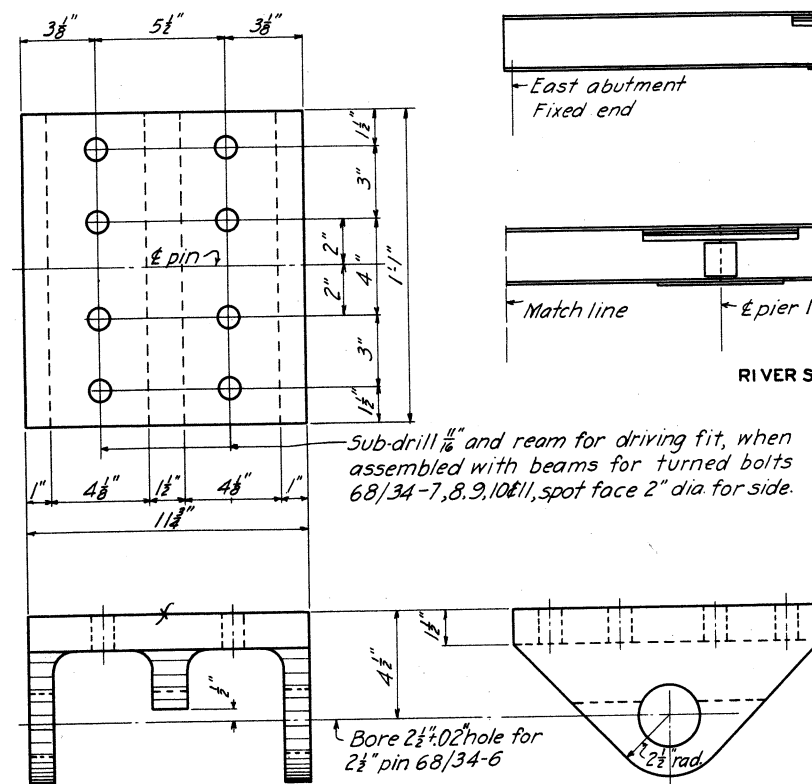
DETAIL OF PIN

COLD ROLLED STEEL WITH RECESSED STEEL NUT
MARK 68/34-6 COLD ROLLED STEEL WT. 26.9 LBS.
MAKE 150 RECESSED STEEL NUTS WT. 4.0 LBS.



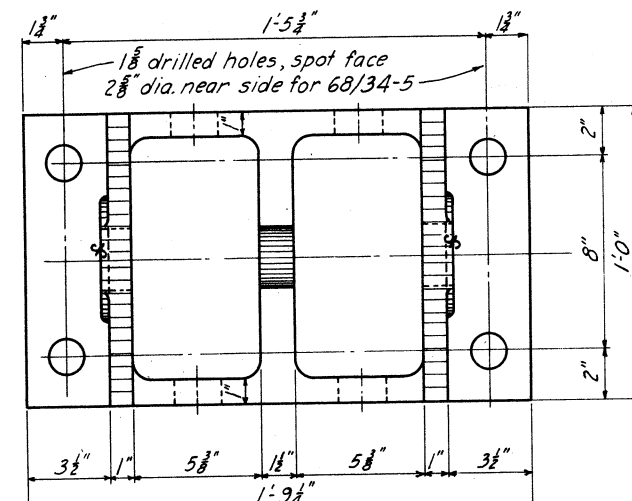
DETAIL OF ANCHOR BOLT

STRUCTURAL STEEL MARK 68/34-5
MAKE 380 WT. 78 LBS.



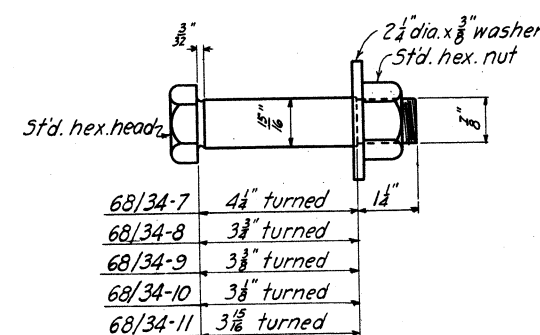
DETAIL OF UPPER SHOE

CAST STEEL CLASS 2 MARK 68/34-3
MAKE 150 WT. 95.0 LBS.



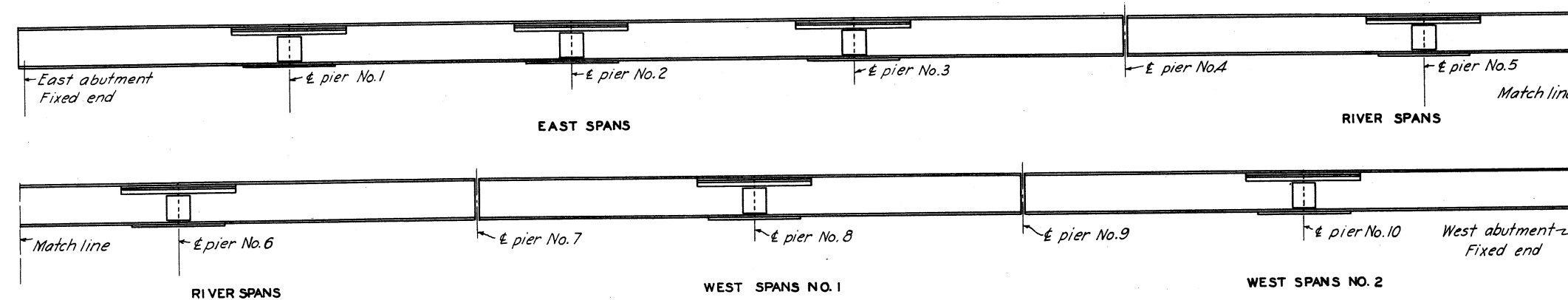
DETAIL OF BOLSTER

CAST STEEL CLASS 2 MARK 68/34-4
MAKE 40 WT. 145.0 LBS.

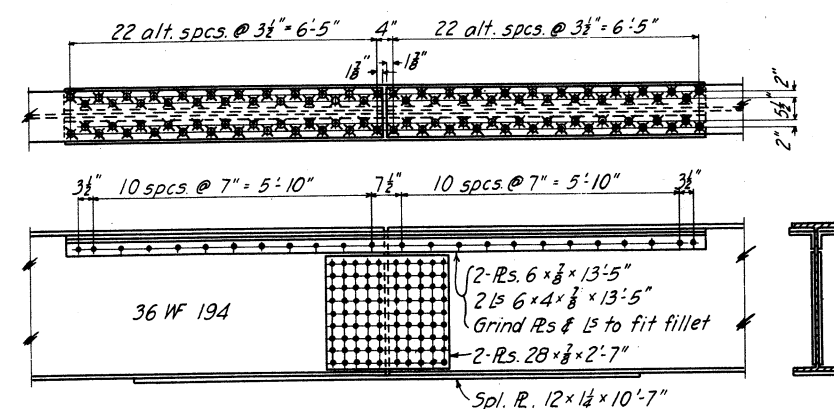


DETAIL OF TURNED BOLT

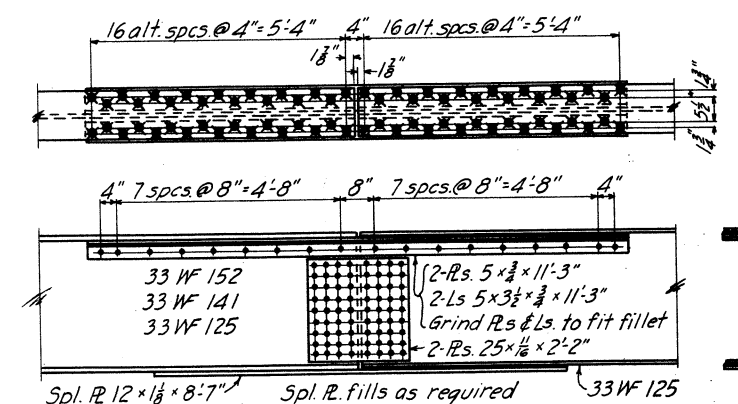
STRUCTURAL STEEL
MARK 68/34-7 MAKE 328 WT. 1.91 LBS.
MARK 68/34-8 MAKE 192 WT. 1.85 LBS.
MARK 68/34-9 MAKE 496 WT. 1.78 LBS.
MARK 68/34-10 MAKE 64 WT. 1.71 LBS.
MARK 68/34-11 MAKE 120 WT. 1.88 LBS.
SCALE: 6"=1'-0"



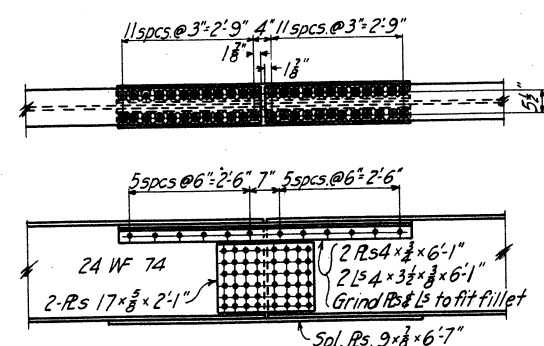
SPLICE DIAGRAM

SPLICE FOR ROADWAY STRINGERS
RIVER SPANS

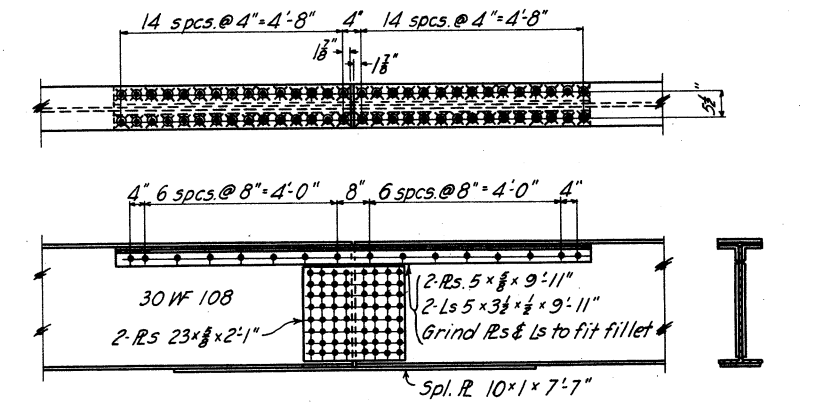
SCALE: 1/2"=1'-0"

SPLICE FOR ROADWAY STRINGERS
WEST SPANS NO. 1 AND NO. 2

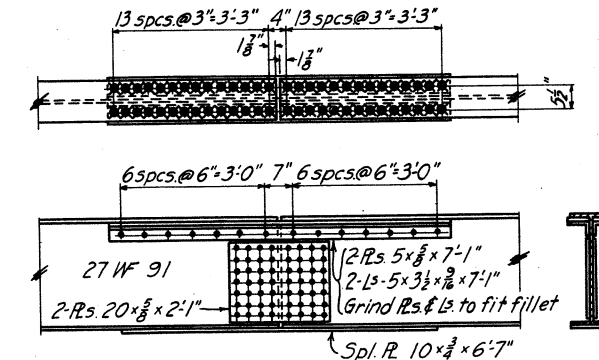
SCALE: 1/2"=1'-0"

SPLICE FOR SIDEWALK STRINGERS
EAST SPANS AND WEST SPANS NO. 1 AND NO. 2

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

SPLICE FOR ROADWAY STRINGERS
EAST SPANS

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

SPLICE FOR SIDEWALK STRINGERS
RIVER SPANS

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

NOTES

8 rivets for girder splices.
Casting fillets are 3/8 inch rad. unless noted.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
CASTINGS & SPLICES**

IN 147 SHEETS SHEET NO. 116 SCALE: 3/4"=1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

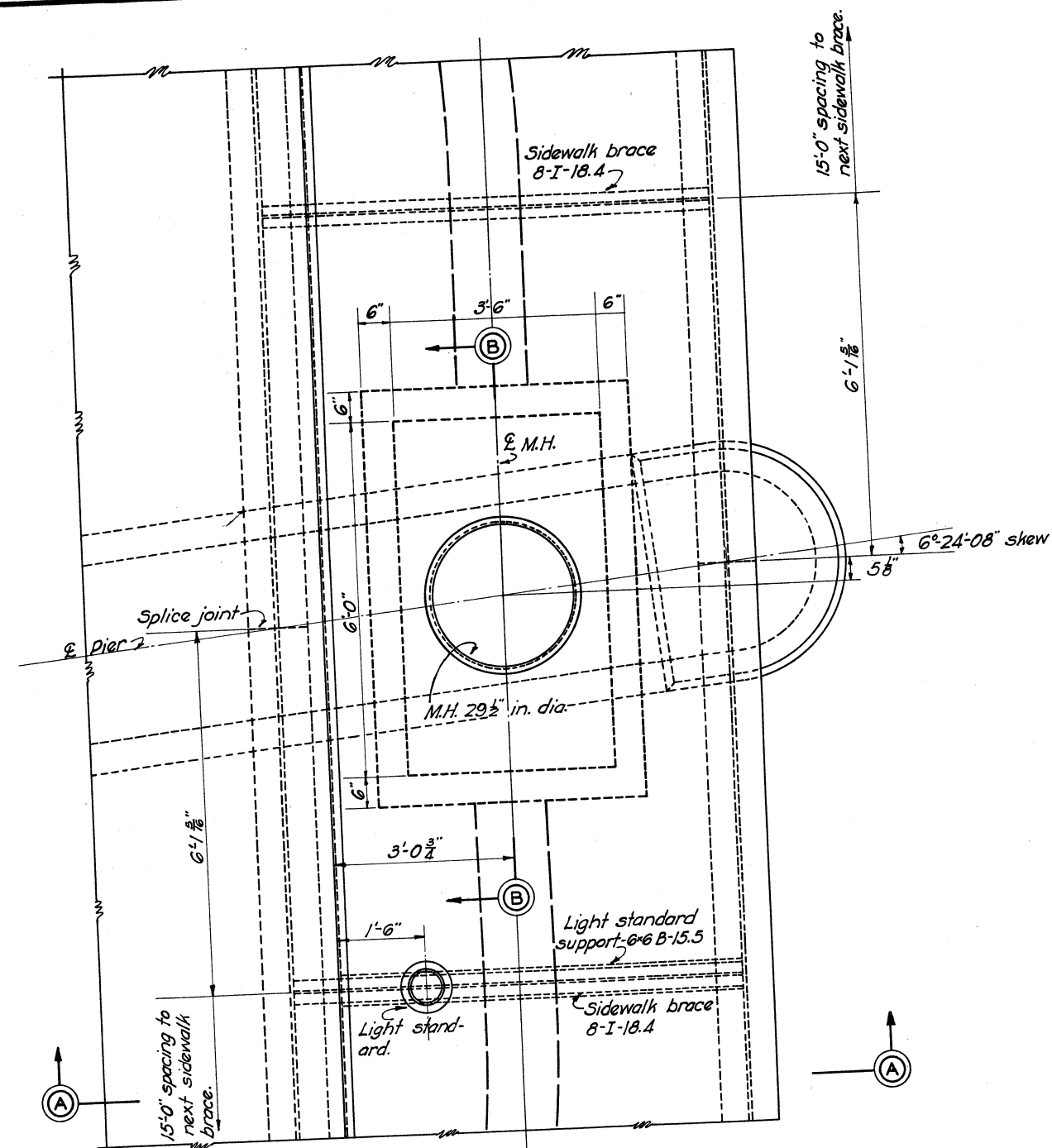
SUBMITTED BY: H. S. W. D. J. APPROVED: H. S. W. D. J.

DRAWN BY: N. W. D. TRANSMITTED WITH LETTER

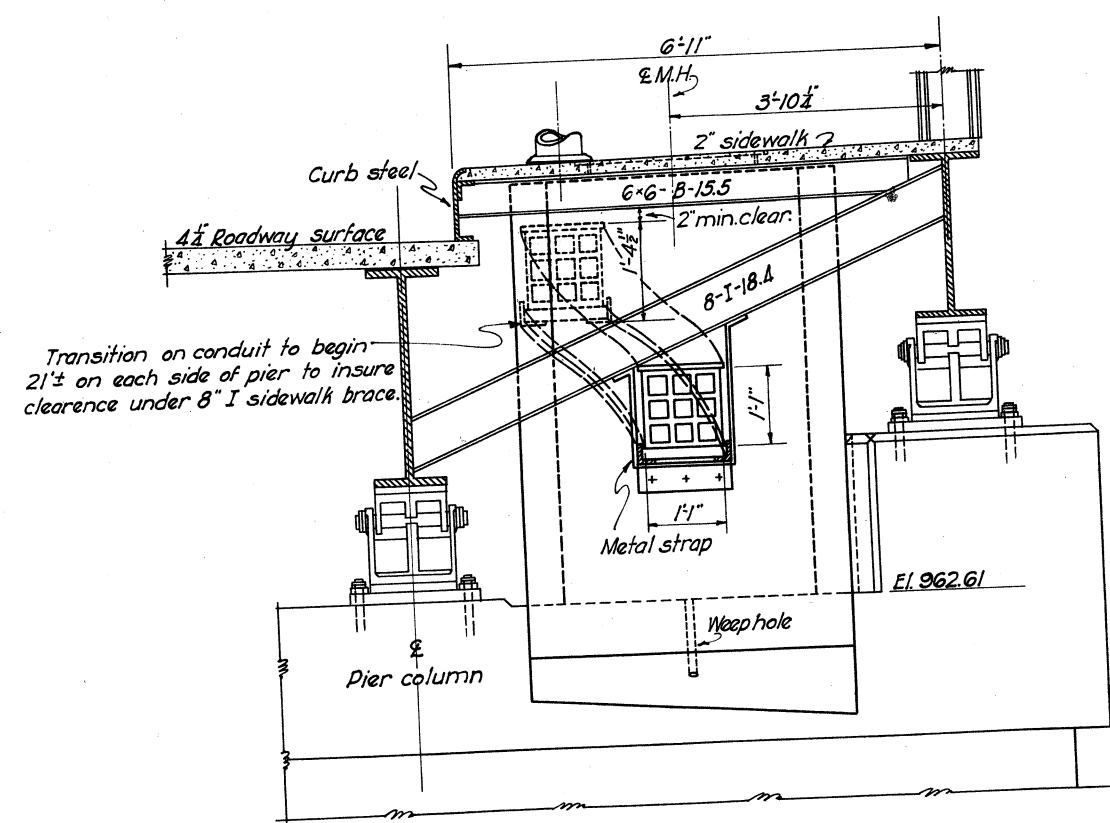
CHECKED BY: H. U. B. FILE NO. 0271-PM-68/34 DATED

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY: CHIEF ENGINEER
APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION
APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY: SPECIAL ENGINEER

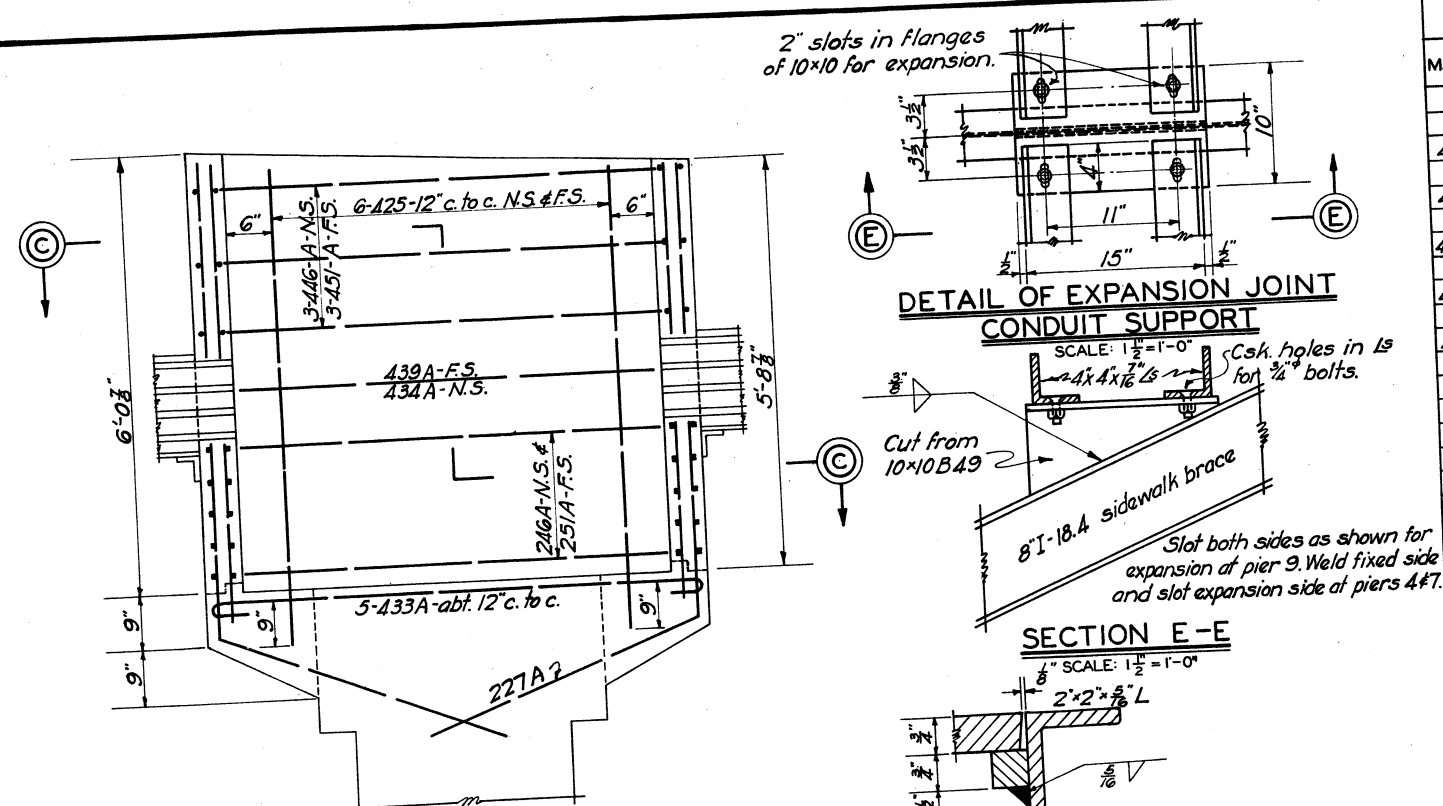
BY	DATE	CHARACTER
		REVISIONS



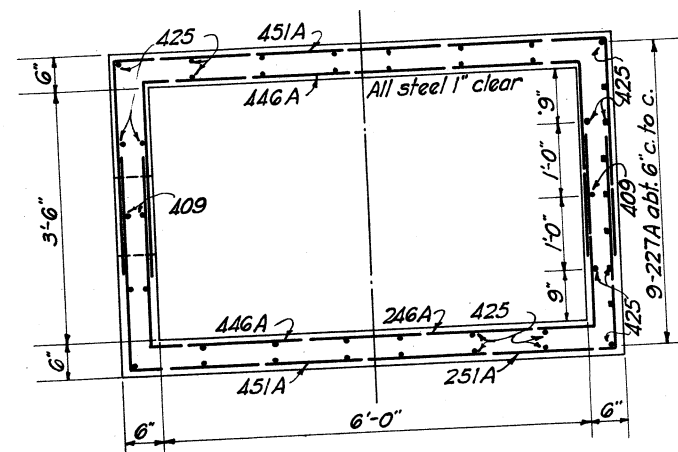
PLAN-LOCATION OF MANHOLE AT PIER NO. 6



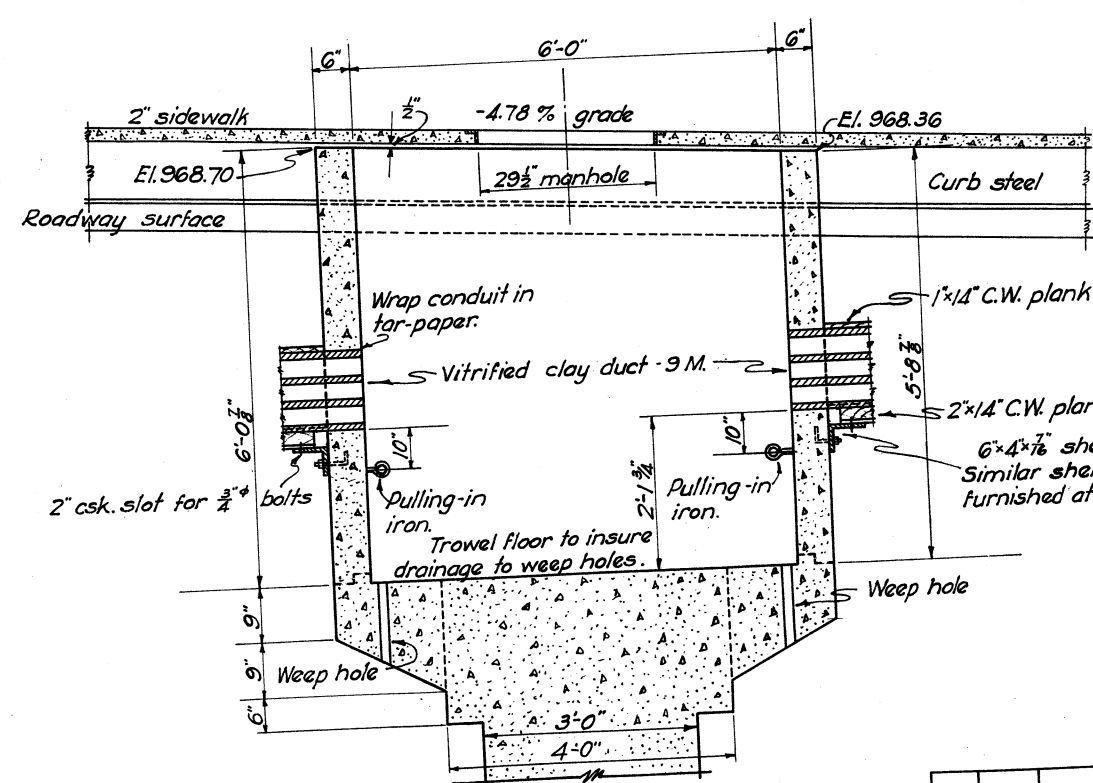
SECTION A-A



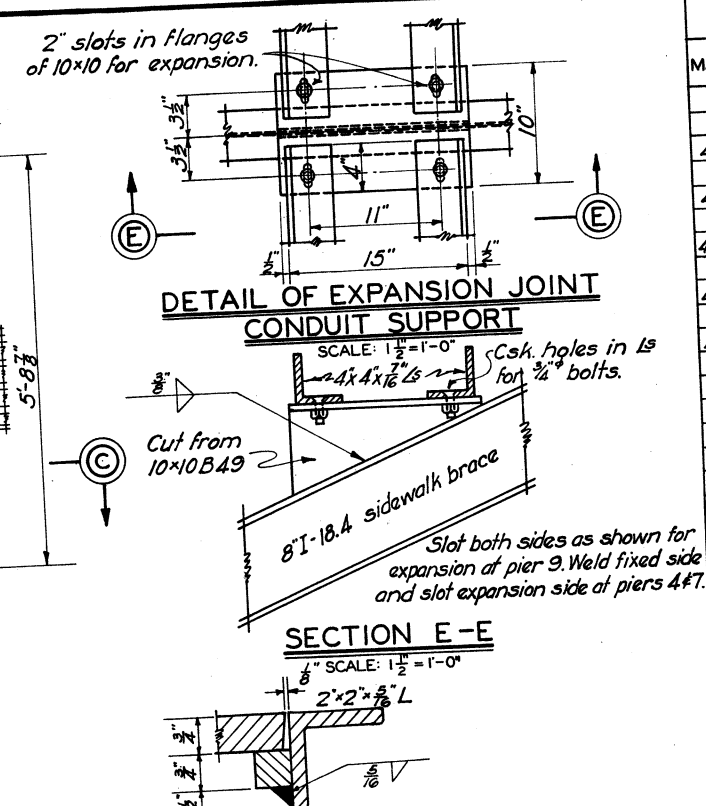
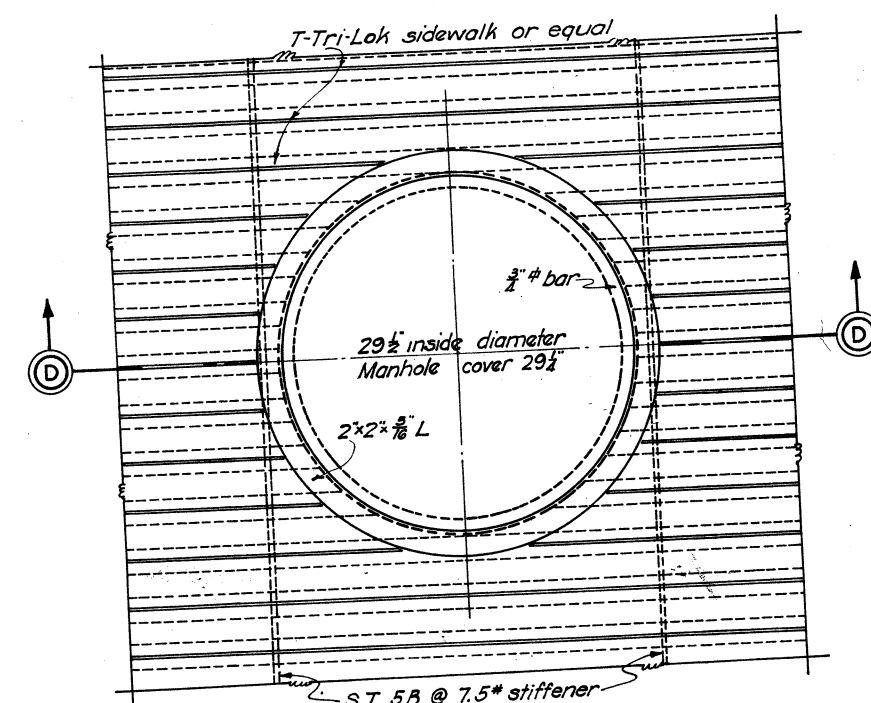
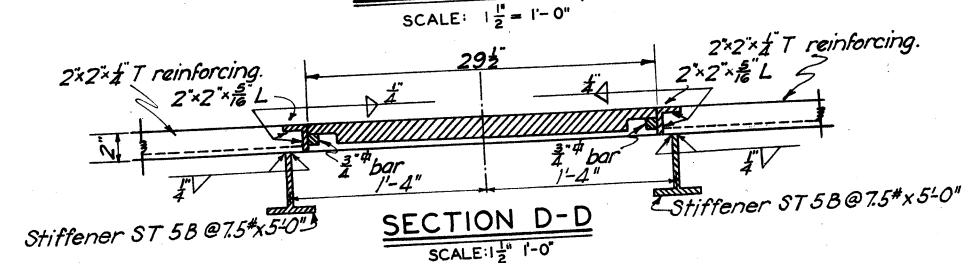
REINFORCING DETAIL



SECTION C-C



SECTION B-B

DETAIL OF ANGLE MANHOLE FRAME
SCALE: HALF SIZEPLAN-MANHOLE
SCALE: 1 1/2" = 1'-0"SECTION D-D
SCALE: 1 1/2" = 1'-0"

NOTES

Manhole cover, pulling-in irons and sections of vitrified clay duct to be furnished by the Ohio Bell Telephone Company and installed by the Contractor.
Conduit must be at least 10 1/2" below top of sidewalk to insure clearance of all light standards.
Concrete in manhole above top of pier to be class "A".

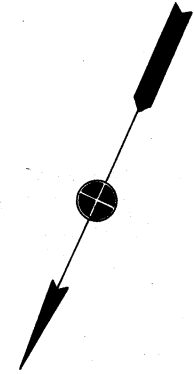
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
UTILITY MANHOLE DETAILS**

18 147 SHEETS SHEET NO. 117 SCALE: 3/4" = 1'-0"

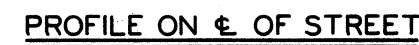
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
DRAWN BY: T.D. CHECKED BY: A.R.N. FILE NO. 0271-PM-68/35 DATED

BY	DATE	CHARACTER
		REVISIONS



PLAN

[illegible]

SCALE: $\frac{3''}{16'} = 1' - 0''$

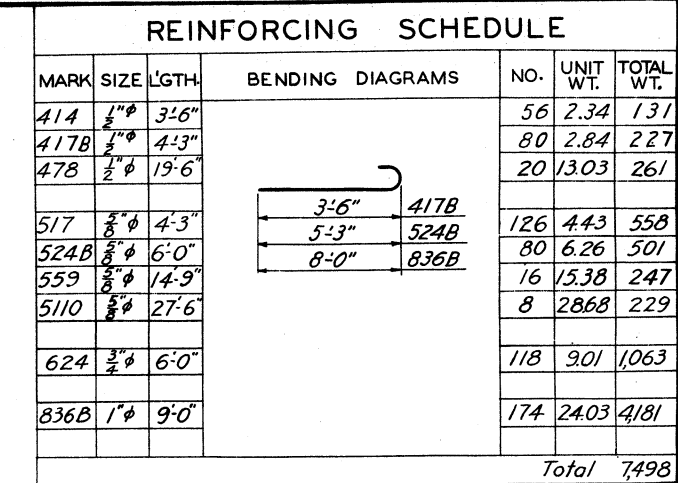
IN 147 SHEETS SHEET NO. 118 SCALE: 1" = 50'

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
PRINCIPAL ENGINEER ST. COL., CORPS OF ENGINEERS

DRAWN BY W. B. S.
TRACED BY W. B. S.
CHECKED BY D. G. J.

TRANSMITTED WITH LETTER

FILE NO 027i-PM-68/36 DATED

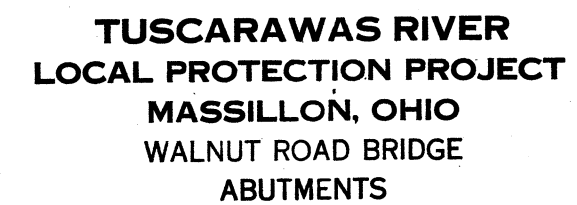


Note: Reinforcing bars for two abutments.



Chamfer all exposed edges 1" unless otherwise indicated.

Concrete to be Class "B."



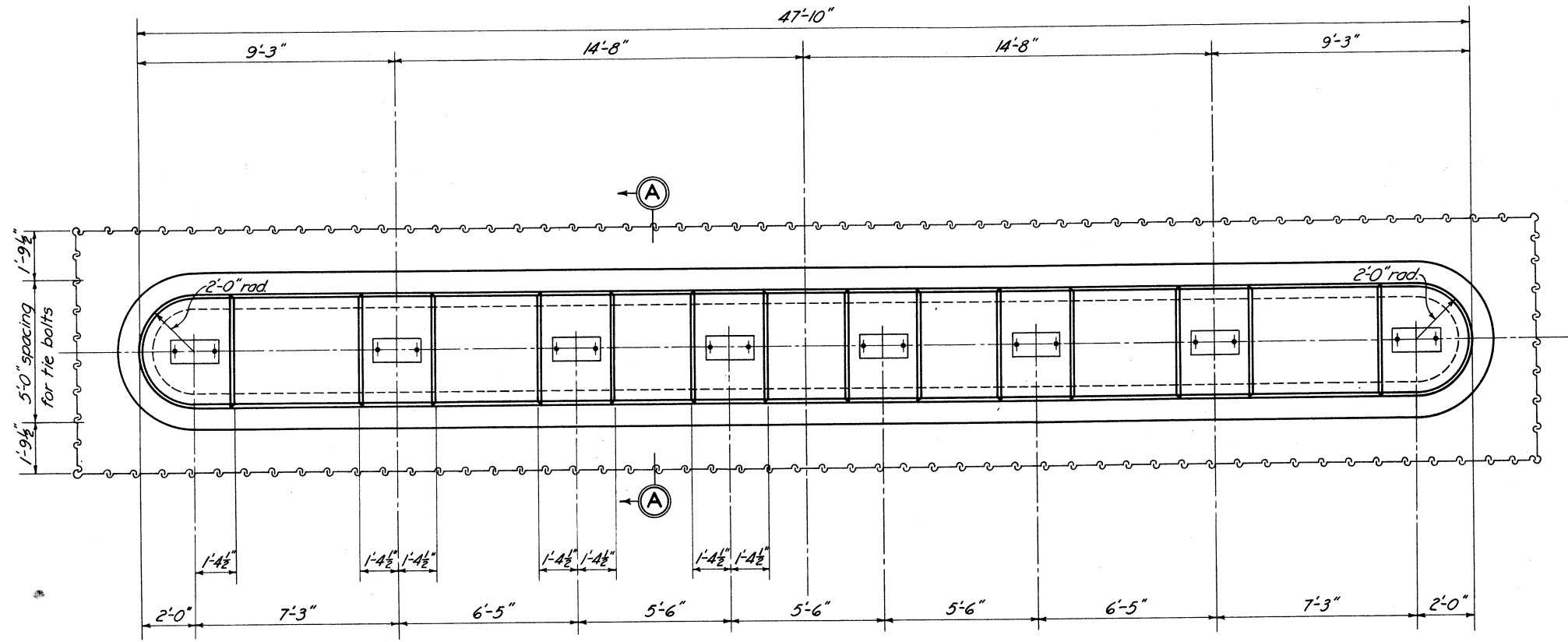
IN 147 SHEETS SHEET NO 119 SCALE: $\frac{3}{16}'' = 1'-0''$

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA. SEPT. 1940

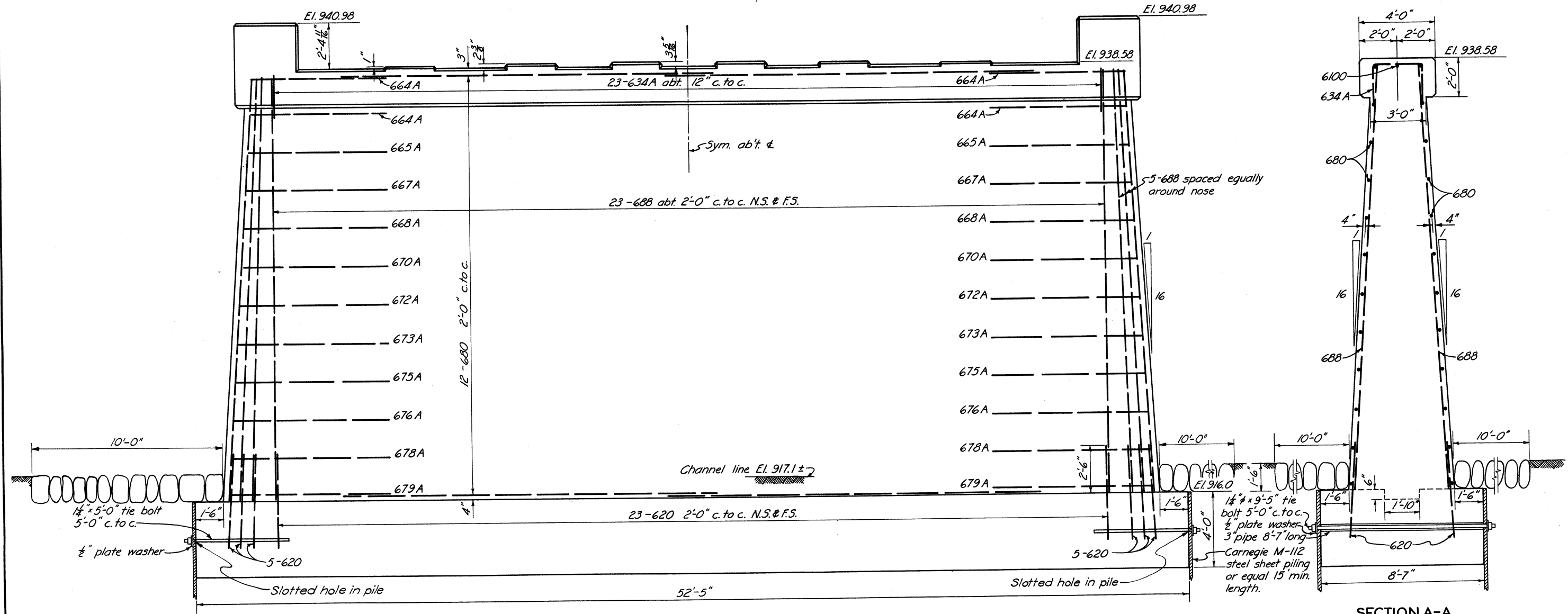
SUBMITTED: *[Signature]* PRINCIPAL ENGINEER APPROVED: *[Signature]* LT. COL. CORPS OF ENGINEERS

DRAWN BY J.E.H. TRANSMITTED WITH LETTER
TRACED BY N.W.D.
CHECKED BY E.K. FILE NO 027i-PM-68/37 DATED

BY	DATE	CHARACTER
		REVISIONS

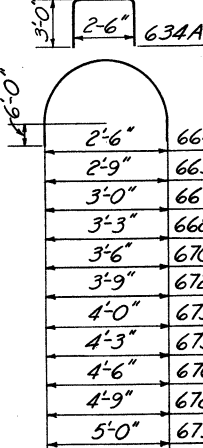


PLAN



ELEVATION

SECTION A-A

REINFORCING SCHEDULE						
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
620	#4	5'-0"		56	7.51	421
634A	#4	8'-6"		23	12.77	294
664A	#4	16'-0"		4	24.03	96
665A	#4	16'-3"		2	24.41	49
667A	#4	16'-9"		2	25.16	50
668A	#4	17'-0"		2	25.53	51
670A	#4	17'-6"		2	26.29	53
672A	#4	18'-0"		2	27.04	54
673A	#4	18'-3"		2	27.41	55
675A	#4	18'-9"		2	28.16	56
676A	#4	19'-0"		2	28.54	57
678A	#4	19'-6"		2	29.29	59
679A	#4	19'-9"		2	29.67	59
680	#4	20'-0"		48	30.04	1442
688	#4	22'-0"		56	33.04	1850
6100	#4	25'-0"		2	37.55	75
				Total		4,721

Note: Quantities shown are for one pier.

NOTES

Chamfer all exposed edges 1", unless otherwise noted.
All concrete to be Class B.
For groove details, see Dwg. No. 6B/3.

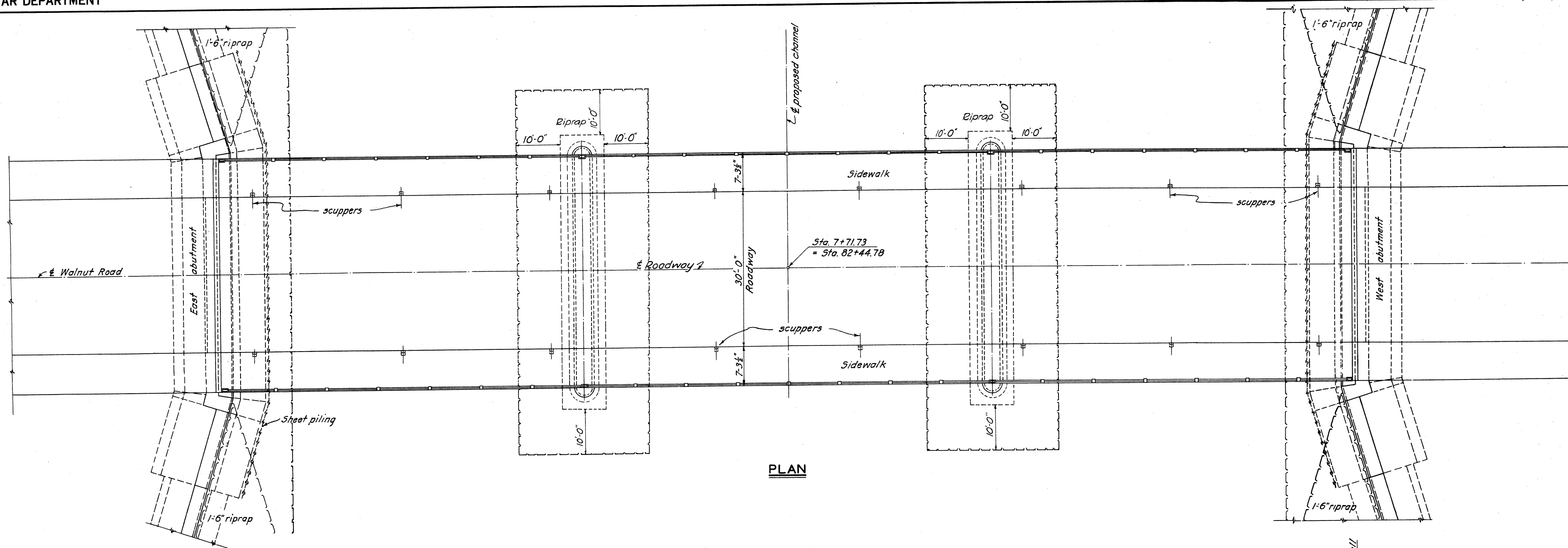
TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
WALNUT ROAD BRIDGE
PIERS

IN 147 SHEETS SHEET NO. 120 SCALE: 3/8" = 1'-0"

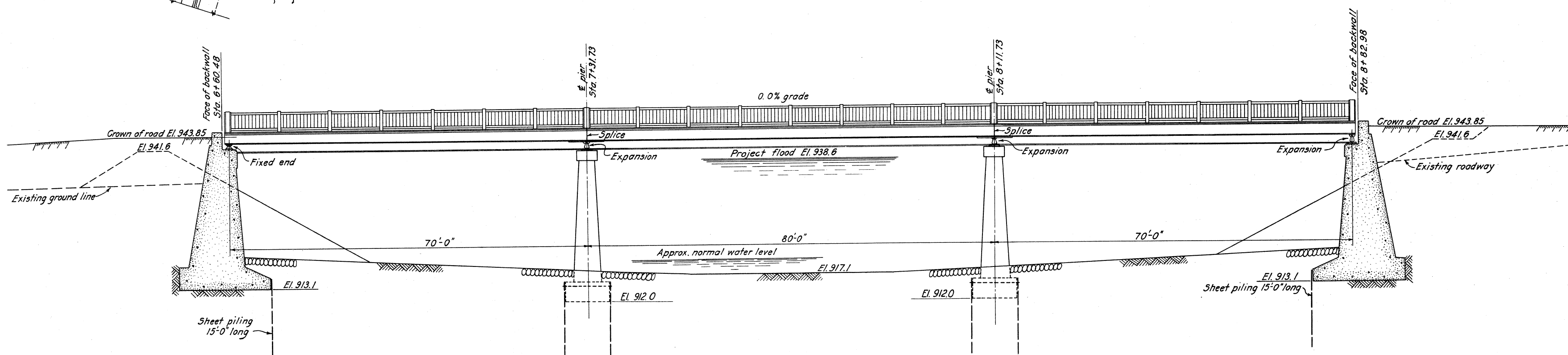
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., JAN. 1941

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
DRAWN BY: J.E.M. TRANSMITTED WITH LETTER
CHECKED BY: S.S.H. FILE NO. O-27i-PM68/38 DATED

BY	DATE	CHARACTER



PLAN



UPSTREAM ELEVATION

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
WALNUT ROAD BRIDGE
PLAN & ELEVATION**

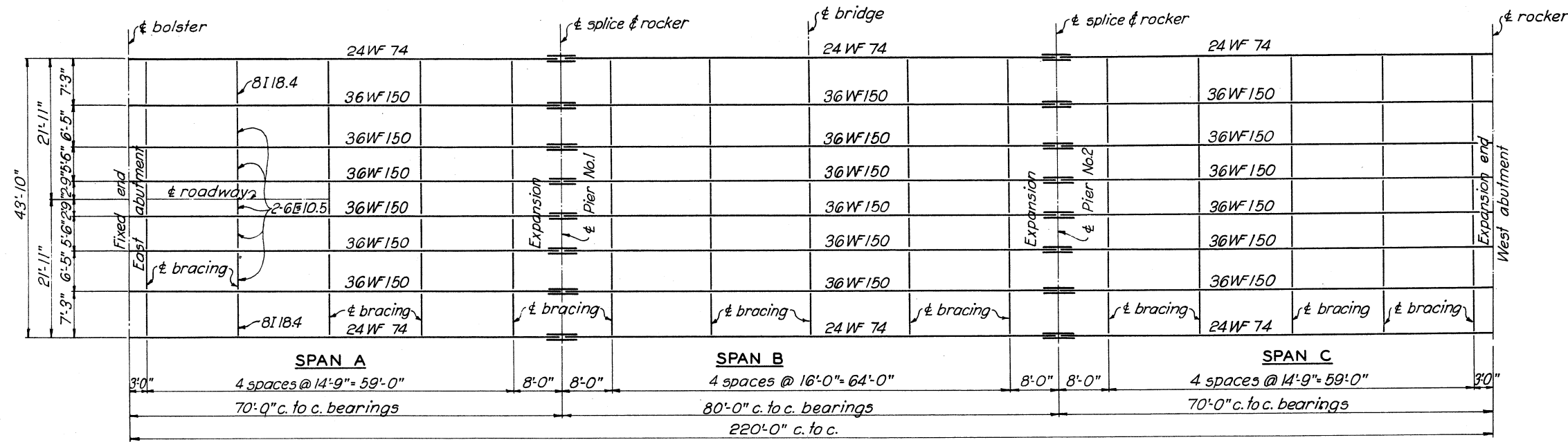
IN 147 SHEETS SHEET NO. 121 SCALE: 1/4" = 1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

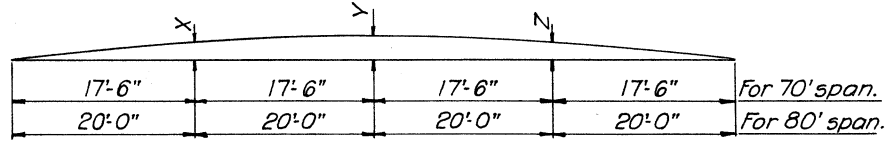
SUBMITTED: *[Signature]* APPROVED: *[Signature]*

DRAWN BY: H.S.M. TRANSMITTED WITH LETTER
CHECKED BY: V.S.V. FILE NO. 0271-PM-68/39
DESIGNED BY: H.U.B. DATED

BY	DATE	CHARACTER



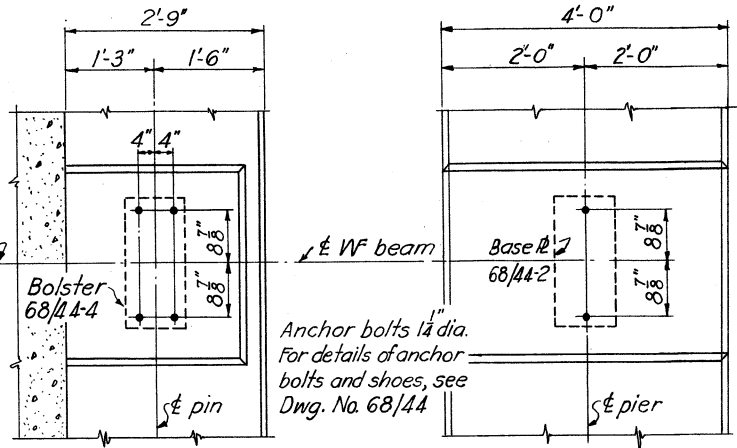
SUPERSTRUCTURE LAYOUT



CAMBER DIAGRAM

NOT TO SCALE

CAMBER						
SPAN	36WF 150			24WF 74		
	X	Y	Z	X	Y	Z
70'	8"	8"	8"	16"	14"	16"
80'	11"	8"	8"	18"	12"	18"



TYPICAL ANCHOR BOLT LAYOUT
EAST ABUTMENT
PIERS

SCALE: $\frac{3}{8}$ " = 1'-0"
WEST ABUTMENT SIMILAR EXCEPT USE BASE PLATE INSTEAD OF BOLSTER

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

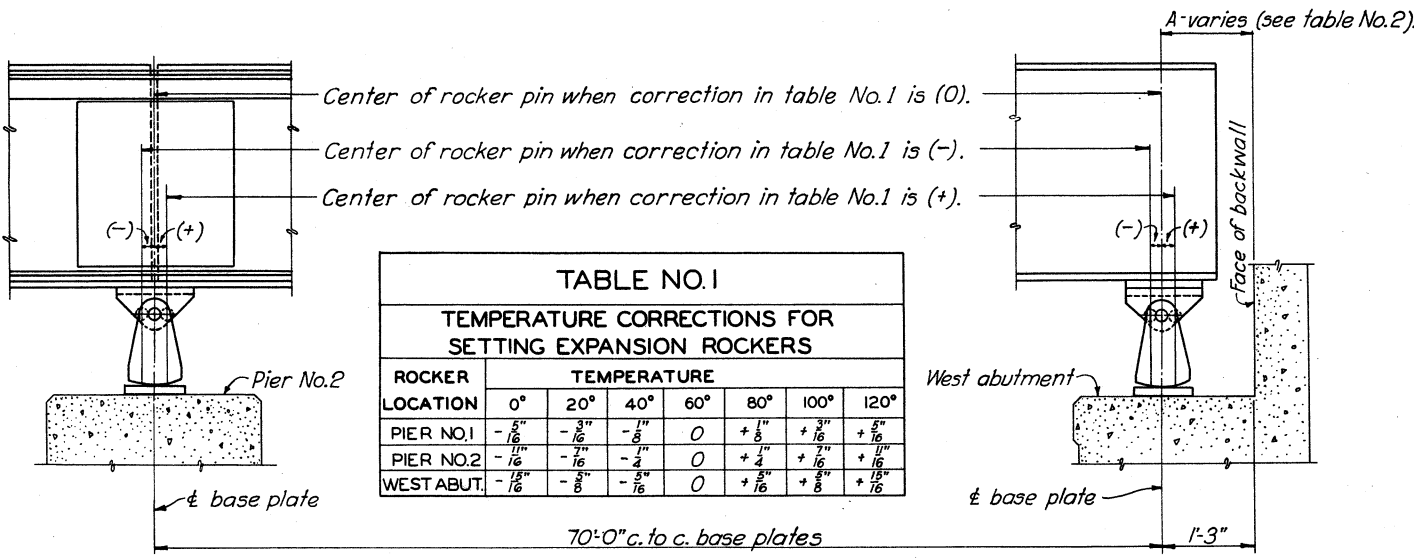


TABLE NO. 1 TEMPERATURE CORRECTIONS FOR SETTING EXPANSION ROCKERS							
ROCKER LOCATION	0°	20°	40°	60°	80°	100°	120°
PIER NO. 1	- 1/8"	- 1/16"	- 1/16"	0	+ 1/16"	+ 1/16"	+ 1/8"
PIER NO. 2	- 1/16"	- 1/16"	- 1/16"	0	+ 1/16"	+ 1/16"	+ 1/8"
WEST ABUT.	- 1/16"	- 1/8"	- 1/8"	0	+ 1/8"	+ 1/8"	+ 1/4"

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

ROCKER SETTING

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

ANCHOR BOLT PLAN

TYPICAL ANCHOR BOLT LAYOUT
EAST ABUTMENT
PIERS

SCALE: $\frac{3}{8}$ " = 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 = $\frac{50}{L+75}$ x live load; where L = loaded length of span in feet.
Me = $\frac{1}{3}$ 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 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
WALNUT ROAD BRIDGE
DESIGN & ERECTION DATA

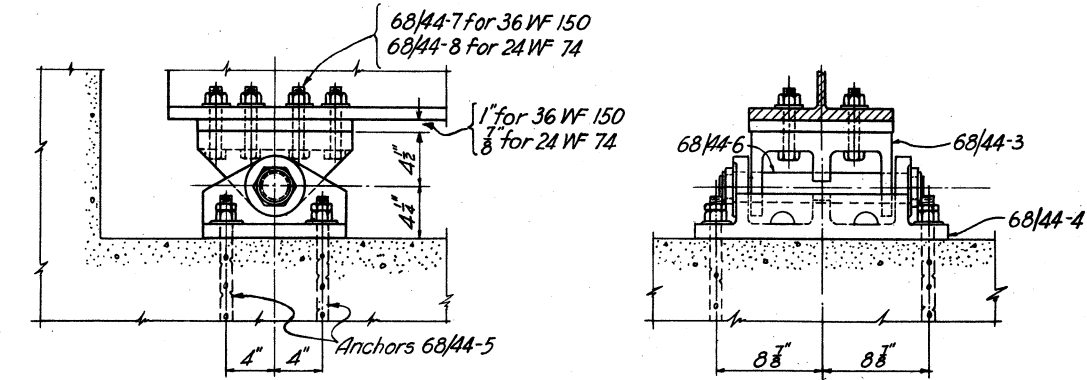
IN 147 SHEETS SHEET NO. 122 SCALE: $\frac{3}{8}$ " = 1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

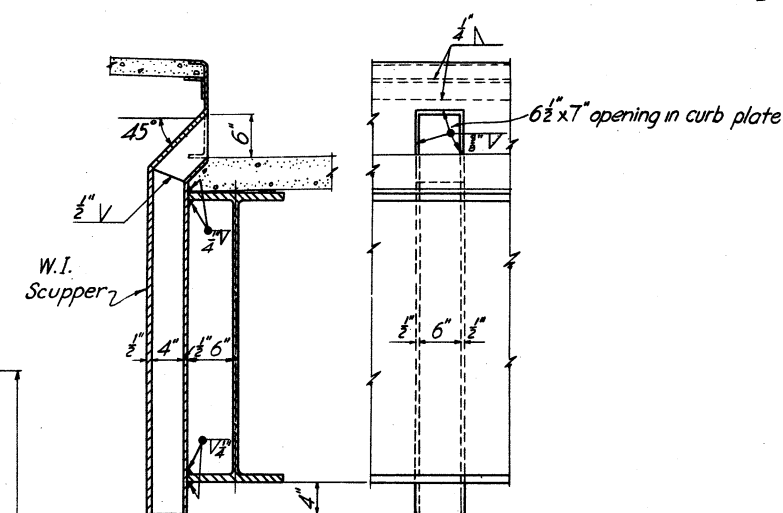
SUBMITTED: *[Signature]* APPROVED: *[Signature]*
PRINCIPAL ENGINEER LT. COL. CORPS OF ENGINEERS

DRAWN BY: S. B. TRACED BY: H.E.C. TRANSMITTED WITH LETTER
CHECKED BY: A.R.N. FILE NO. Q27i-PM-68/40 DATED

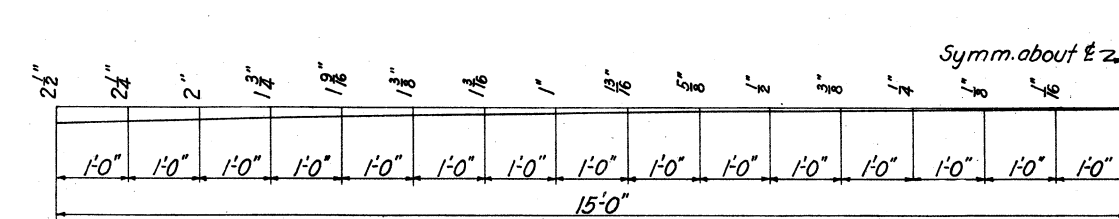
BY	DATE	CHARACTER
		REVISIONS



EAST ABUTMENT
BOLSTER ASSEMBLY
SCALE: $1\frac{1}{2}" = 1'-0"$



DETAIL OF SCUPPER
SCALE: 1" = 1'-0"



CROWN OF ROADWAY



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

IN 147 SHEETS **SHEET NO. 123** **SCALE: $\frac{3}{8}'' = 1'-0''$**

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA. SEPT. 1940

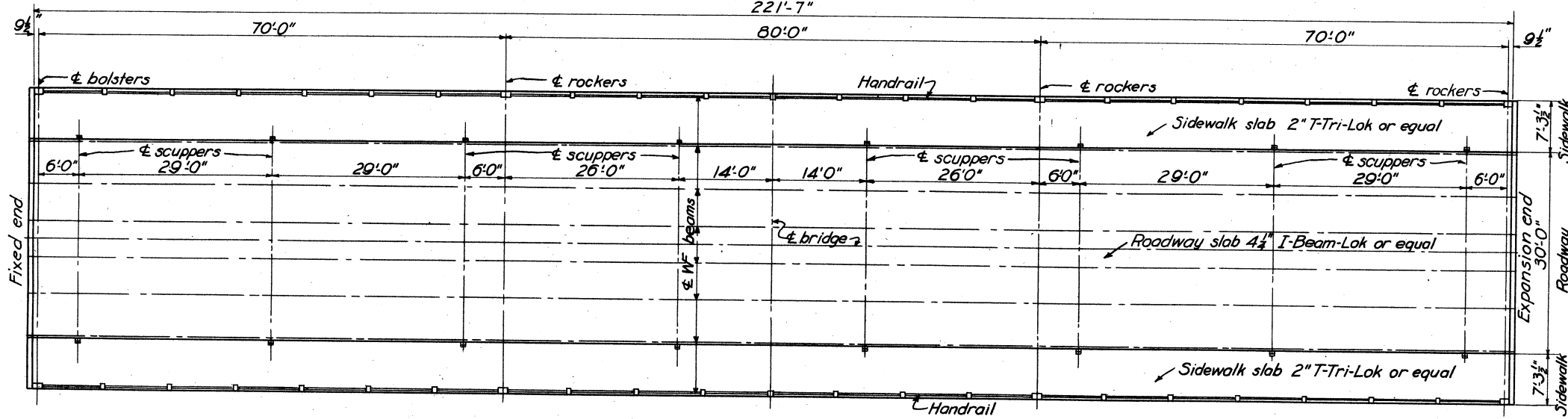
SUBMITTED: *[Signature]* **ENGINEER** APPROVED: *[Signature]* **COL. CORPS OF ENGINEERS**

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

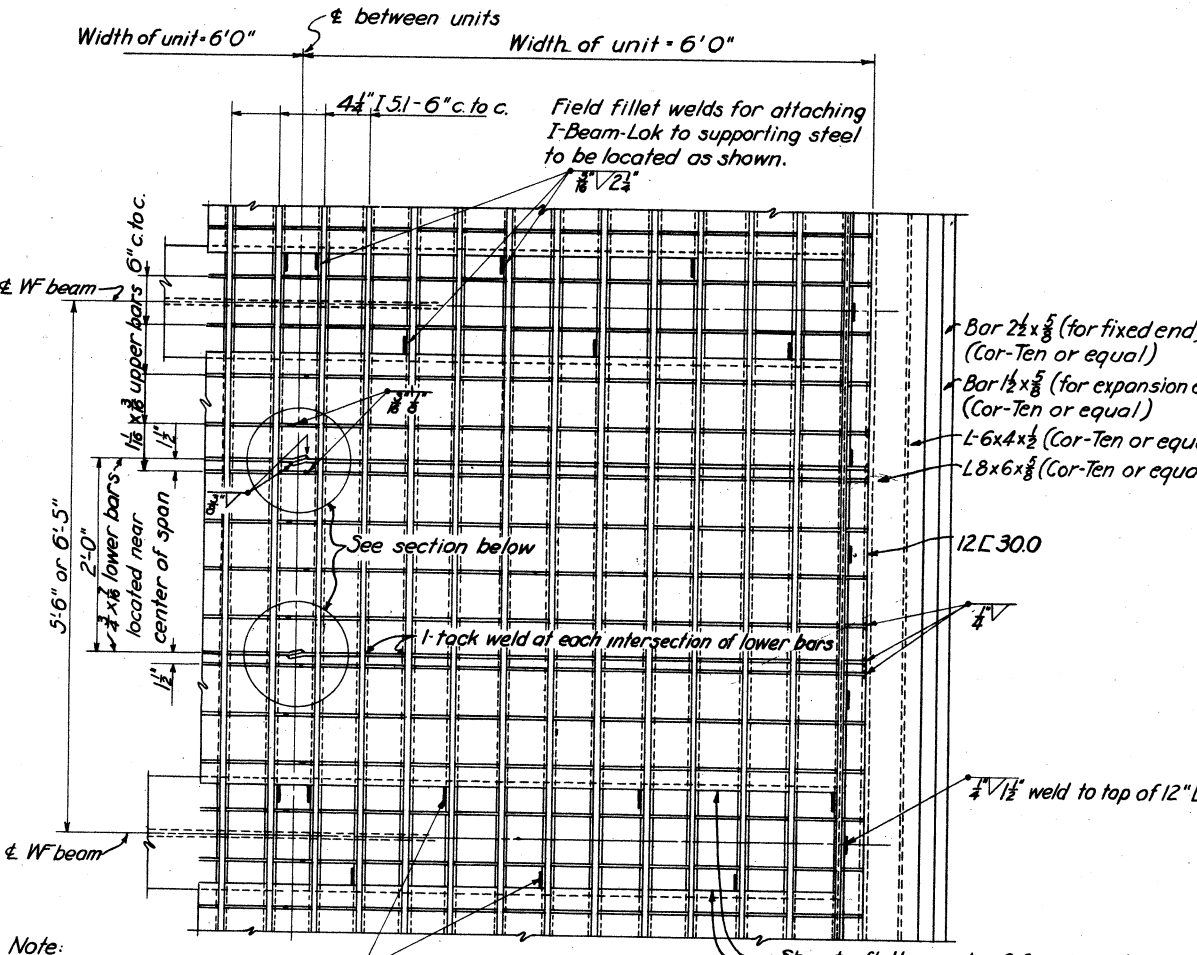
FILE NO 027i-PM-68/41

TRANSMITTED WITH LETTER
DATED

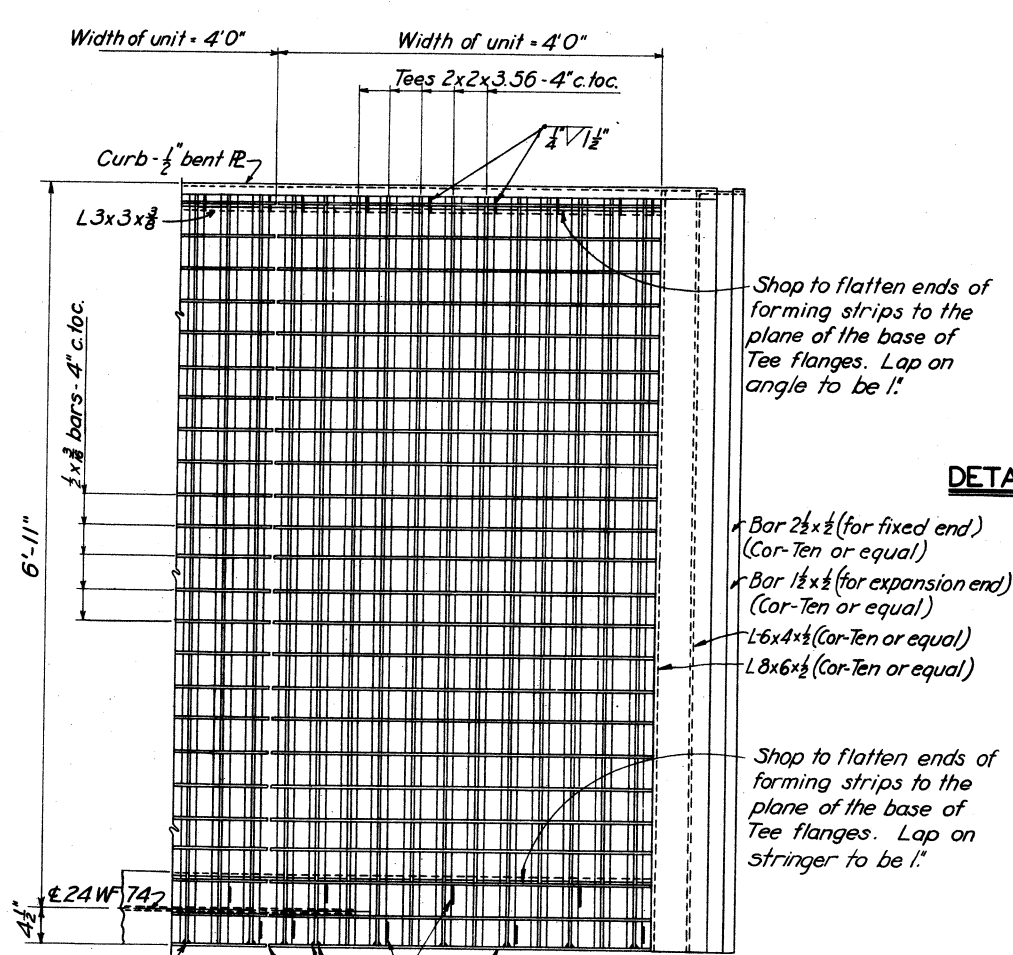
BY	DATE	CHARACTER
REVISIONS		



SUPERSTRUCTURE PLAN



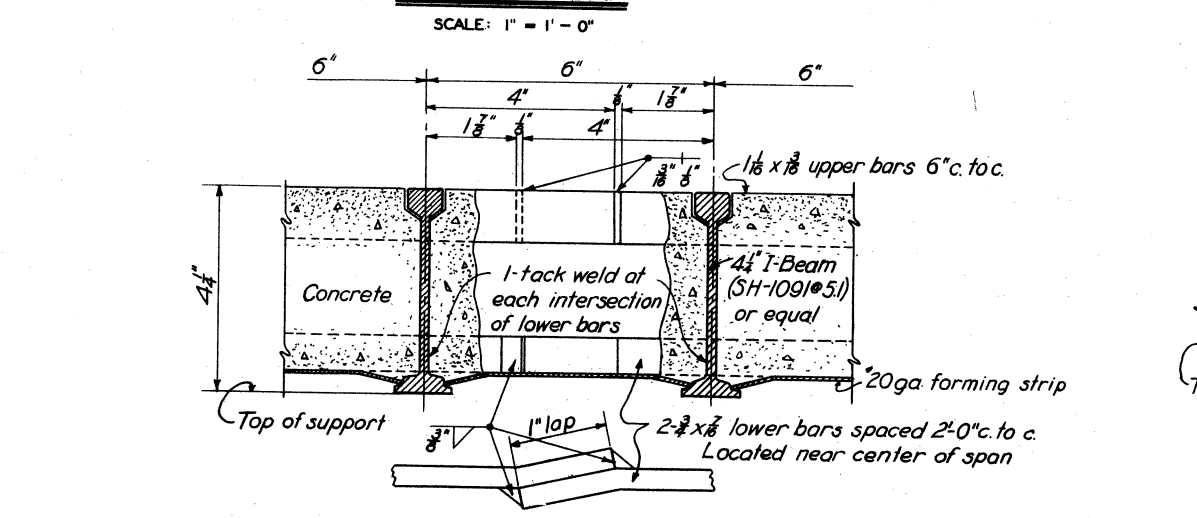
ROADWAY PLAN



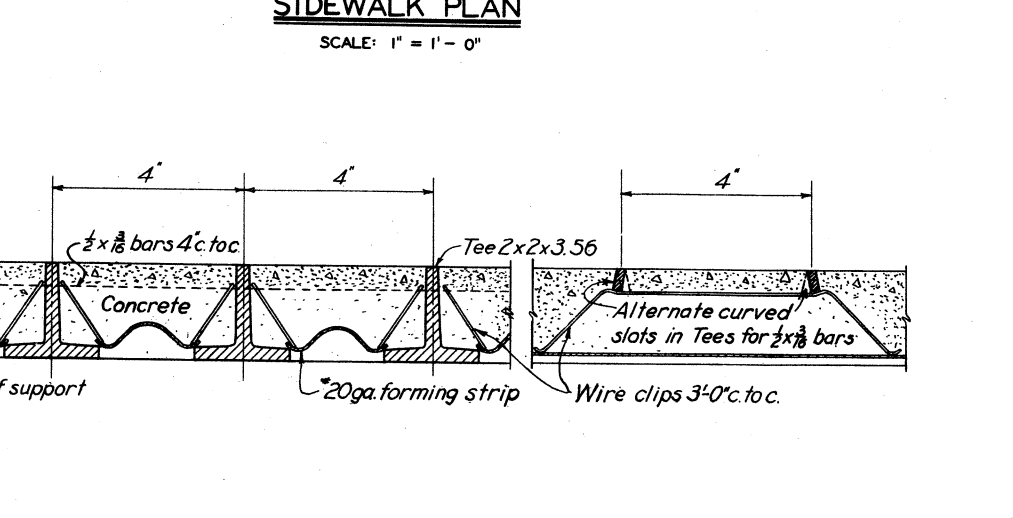
SIDEWALK PLAN

Note: Concrete fill not shown. Shop to flatten ends of forming strips to the plane of the base of I-Beam-Lok flange. Lap on stringers to be 1'.

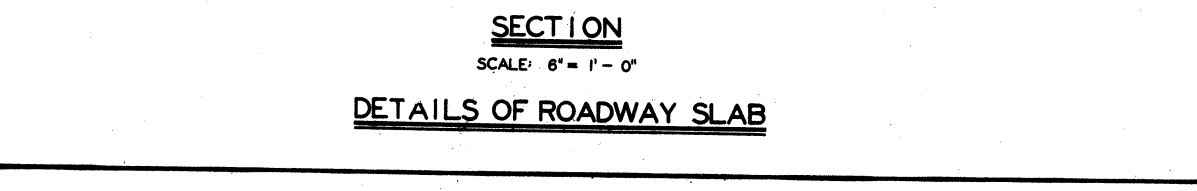
Note: Concrete fill not shown. Shop to flatten ends of forming strips to the plane of the base of Tee flanges. Lap on angle to be 1'.



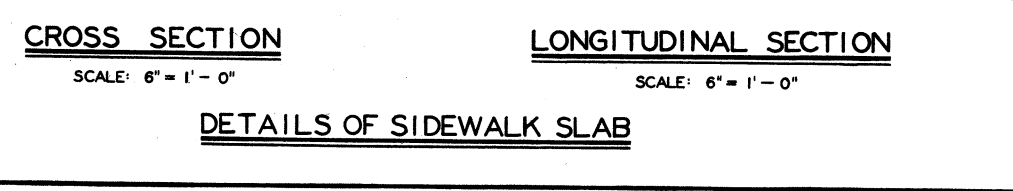
SECTION



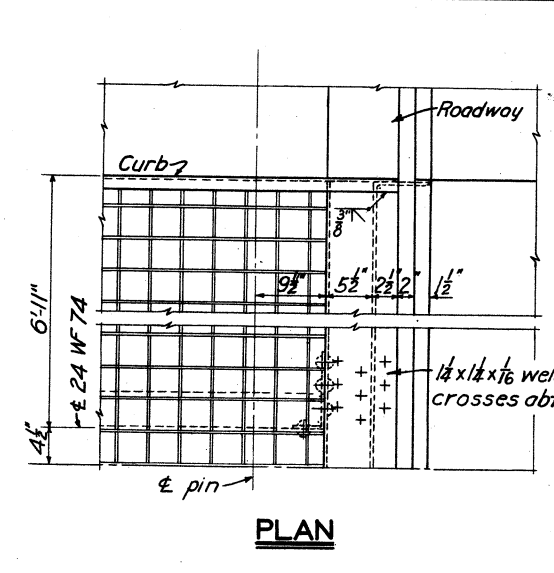
CROSS SECTION



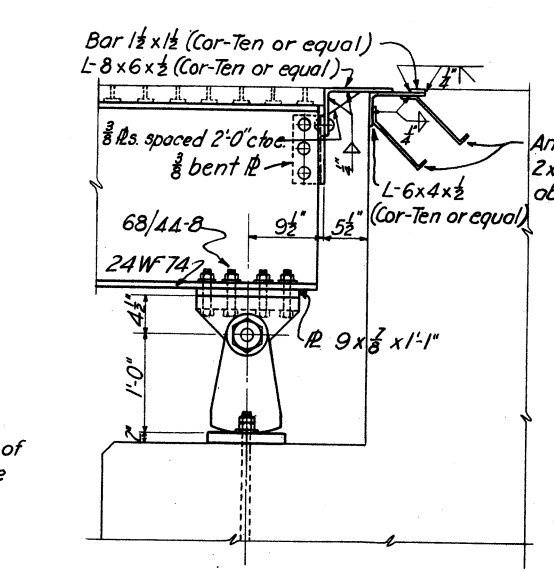
DETAILS OF ROADWAY SLAB



DETAILS OF SIDEWALK SLAB

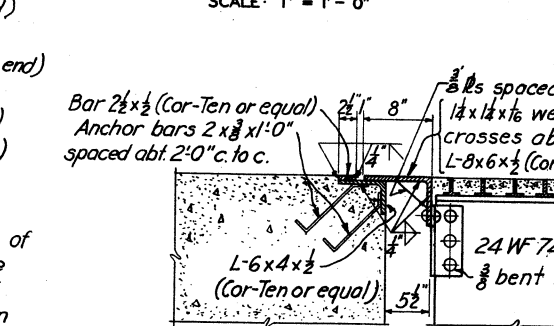


PLAN

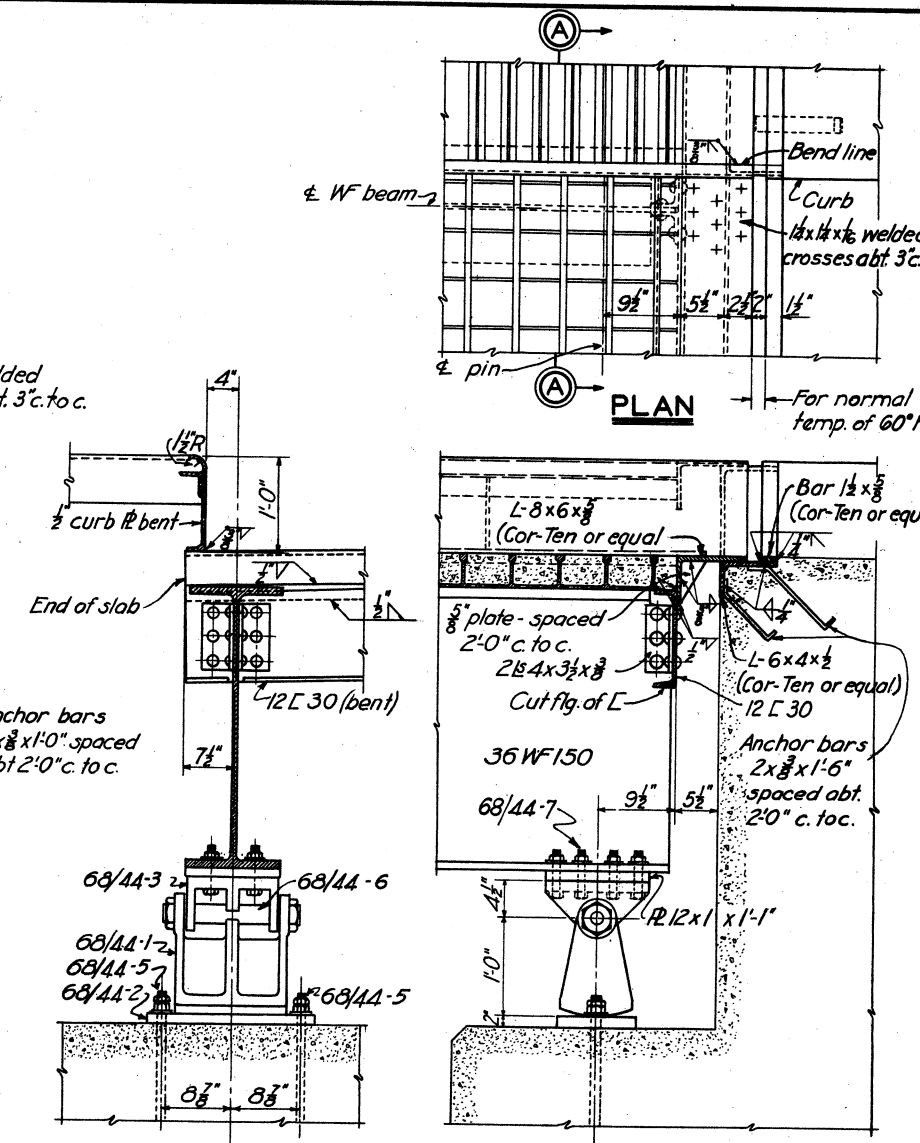


ELEVATION

DETAILS OF SIDEWALK EXPANSION JOINT

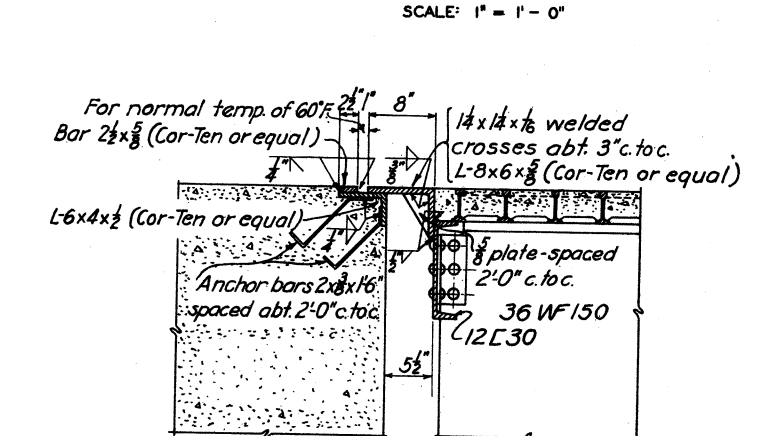


DETAILS OF SIDEWALK JOINT - FIXED END



SECTION A-A

DETAILS OF ROADWAY EXPANSION JOINT



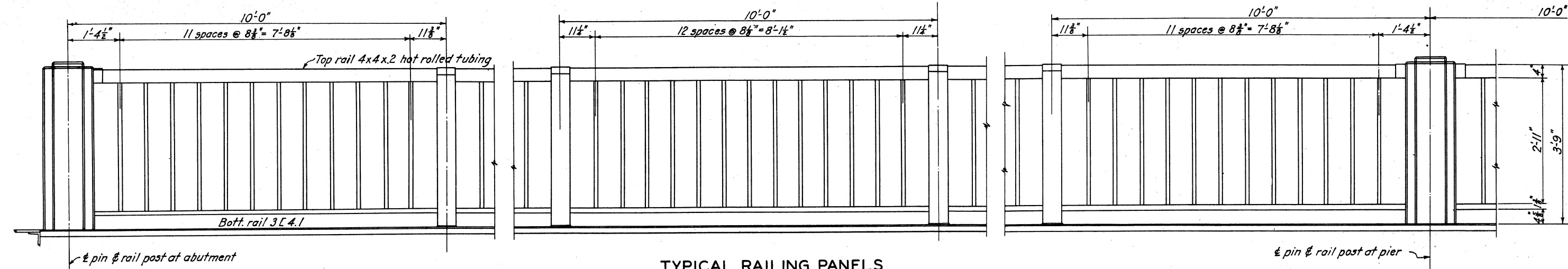
DETAILS OF ROADWAY JOINT - FIXED END

NOTES

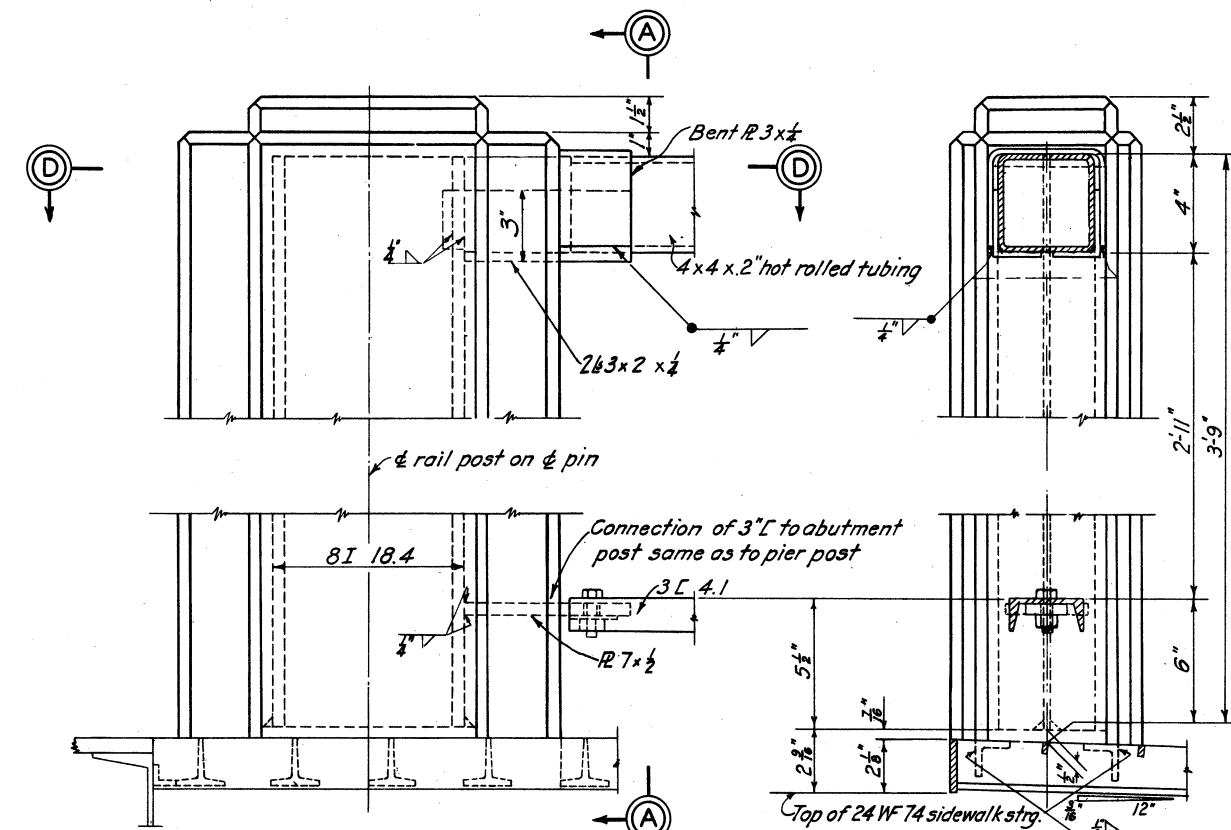
Expansion and fixed joints to be bent to match roadway. Concrete for road surfacing and sidewalks to be Class "A". Rivets 5/8".

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
WALNUT ROAD BRIDGE
FLOOR PLAN & DETAILS

IN 147 SHEETS. SHEET NO. 124. SCALE: 3/32" = 1'-0"
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940
SUBMITTED: [Signature] APPROVED: [Signature]
DRAWN BY: H. S. M. TRANSMITTED WITH LETTER
CHECKED BY: R. C. H. FILE NO. 0271-PM-68/42 DATED



TYPICAL RAILING PANELS

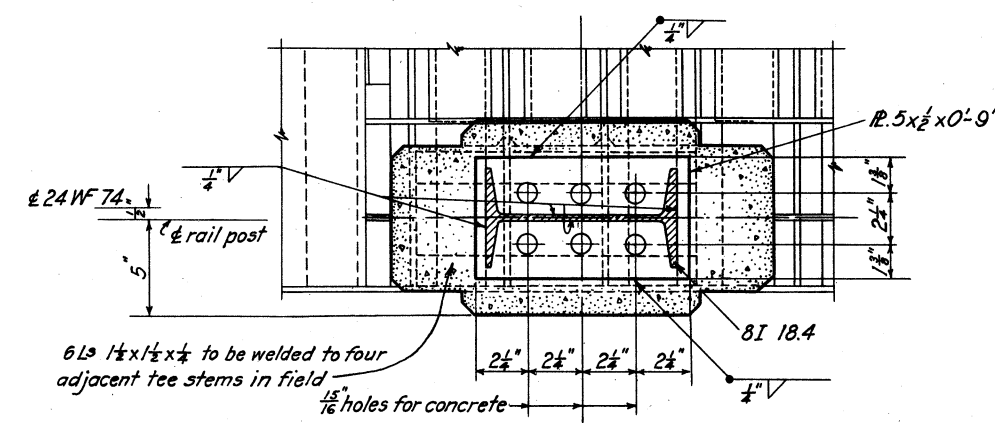
SCALE: $\frac{3}{8}$ " = 1'-0"

DETAILS AT ABUTMENT RAIL POST

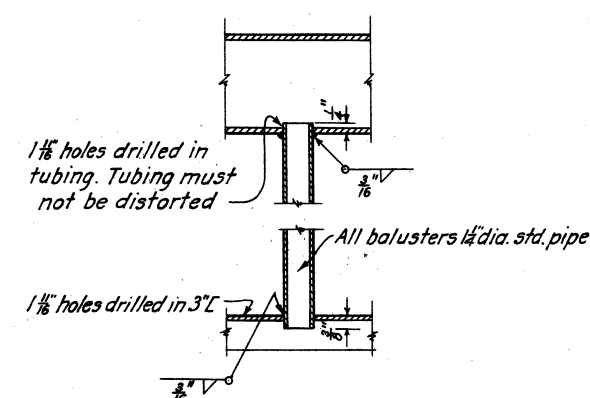
SCALE: $\frac{3}{8}$ " = 1'-0"

SECTION A-A AS SHOWN

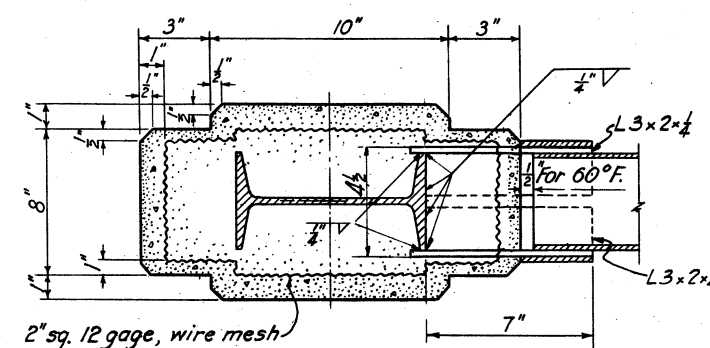
SECTION B-B OPP HAND



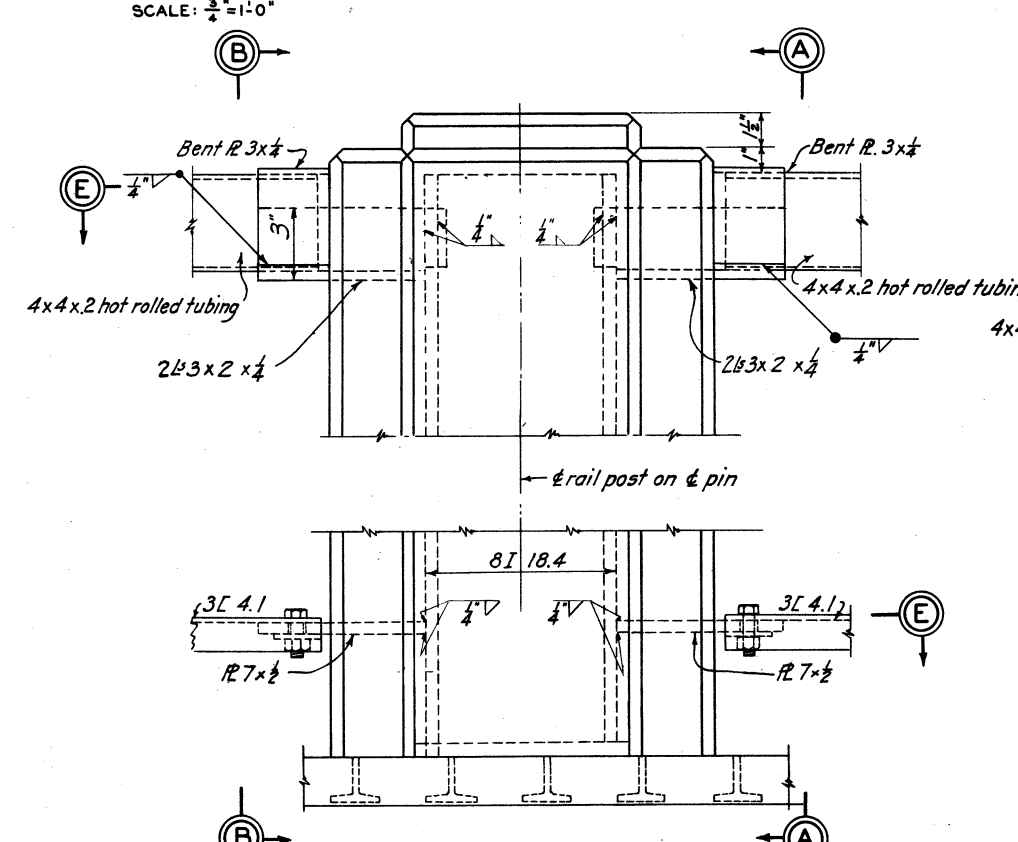
BASE DETAIL OF ABUTMENT RAIL POST

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

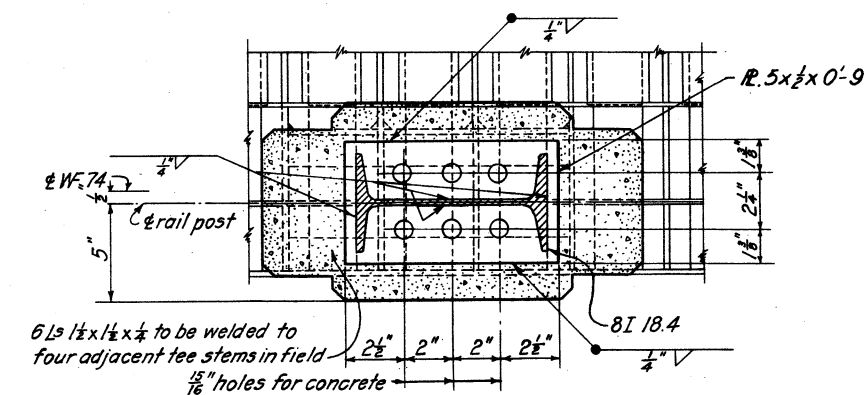
DETAIL OF BALUSTERS

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

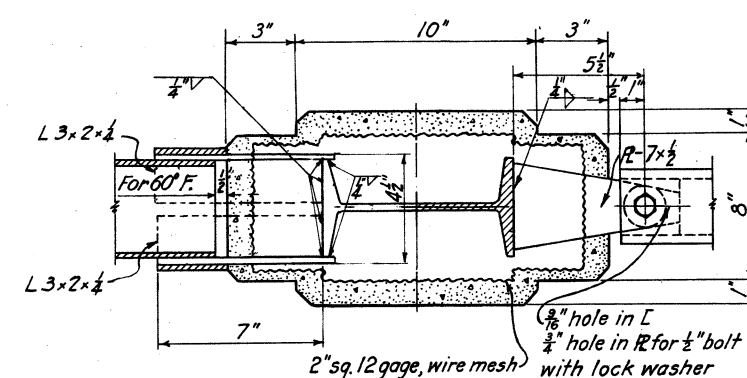
SECTION D-D



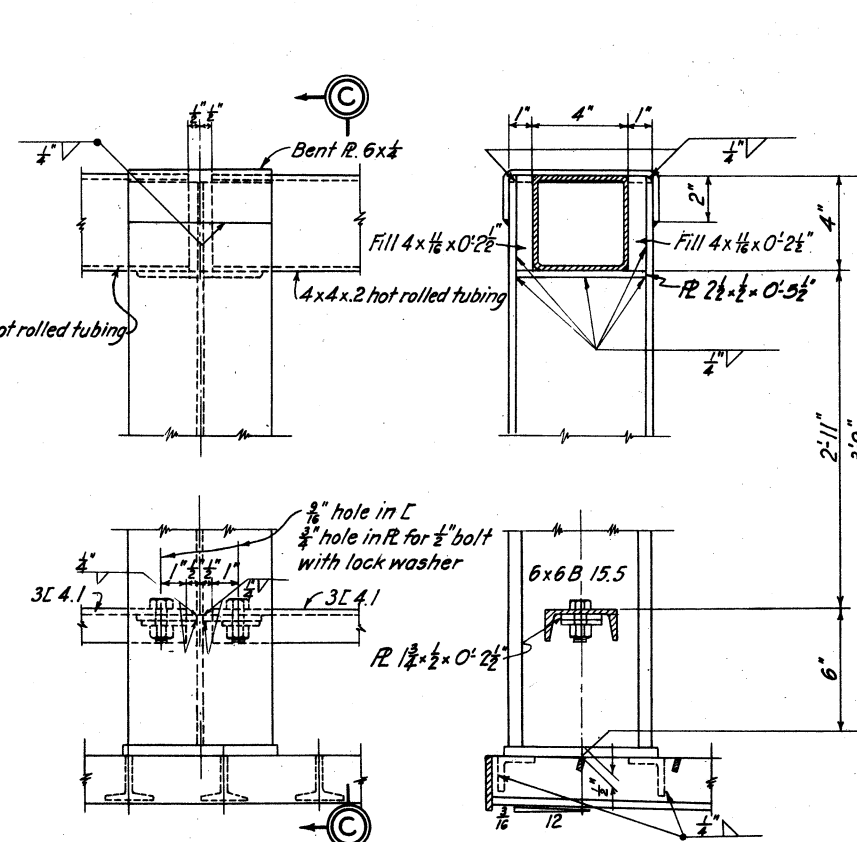
DETAILS AT PIER RAIL POST

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

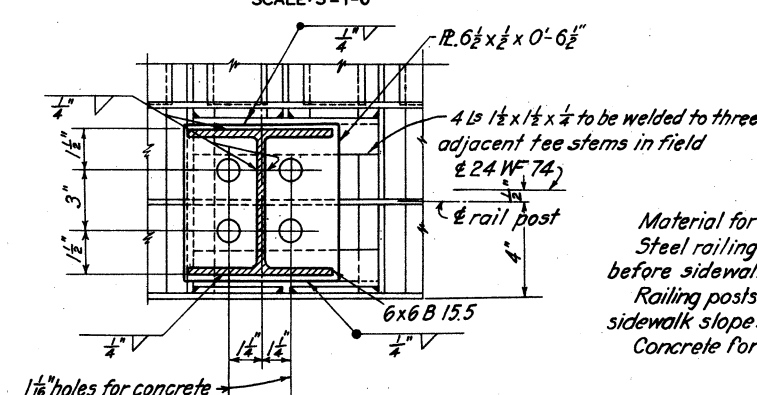
BASE DETAIL OF PIER RAIL POST

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

SECTION E-E



DETAILS AT INTERMEDIATE RAIL POST

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

BASE DETAIL OF INTERMEDIATE RAIL POST

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

NOTES

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 care of
sidewalk slope.
Concrete for railing posts to be Class "A"

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

IN 147 SHEETS SHEET NO. 125 SCALE: $\frac{3}{8}$ " = 1'-0"

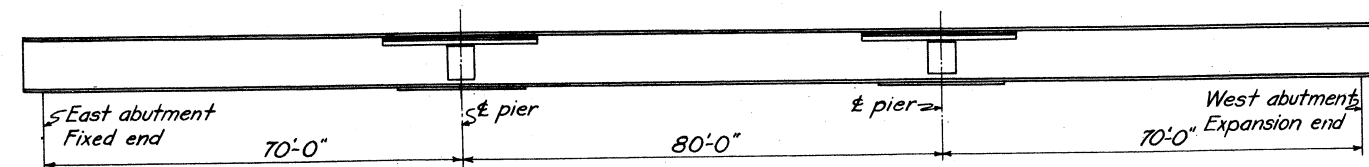
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED BY: [Signature] APPROVED: [Signature]

DRAWN BY: A. W. S. CHECKED BY: H. U. B. FILE NO. 0271-PM-68/43

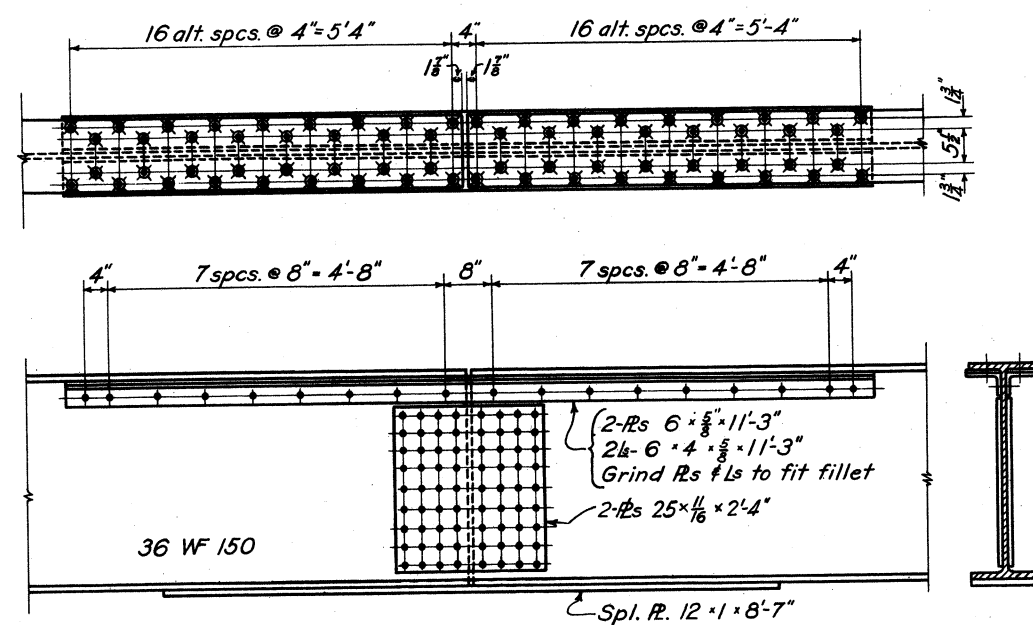
TRANSMITTED WITH LETTER DATED

BY	DATE	CHARACTER
		REVISIONS



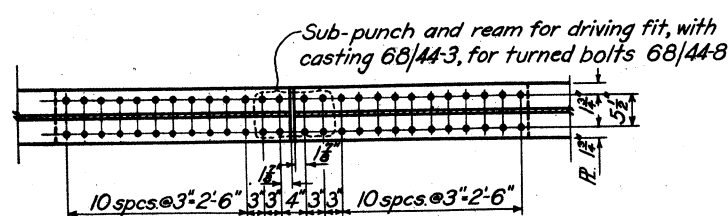
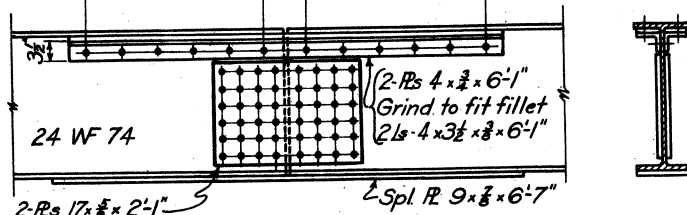
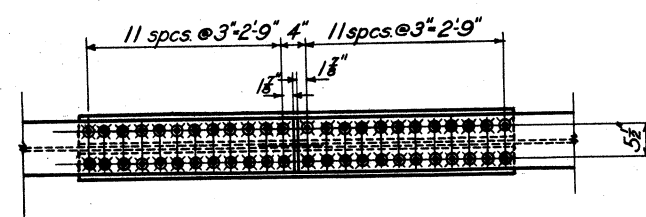
SPlice DIAGRAM

NOT TO SCALE



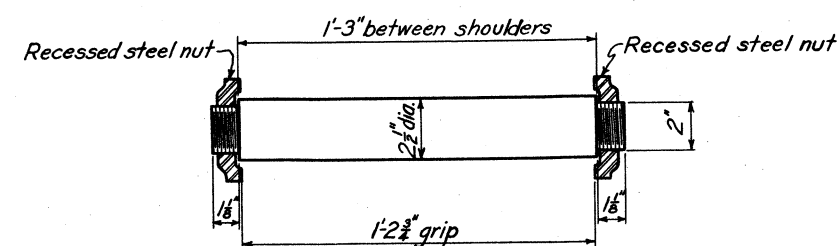
SPlice for roadway stringers

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



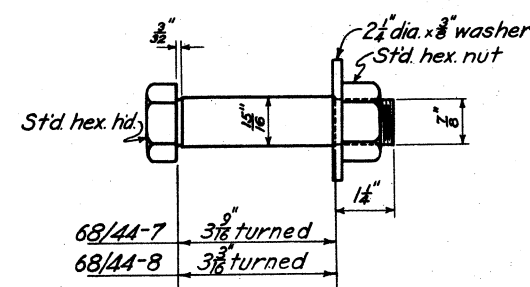
SPlice for sidewalk stringers

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



DETAIL OF PIN

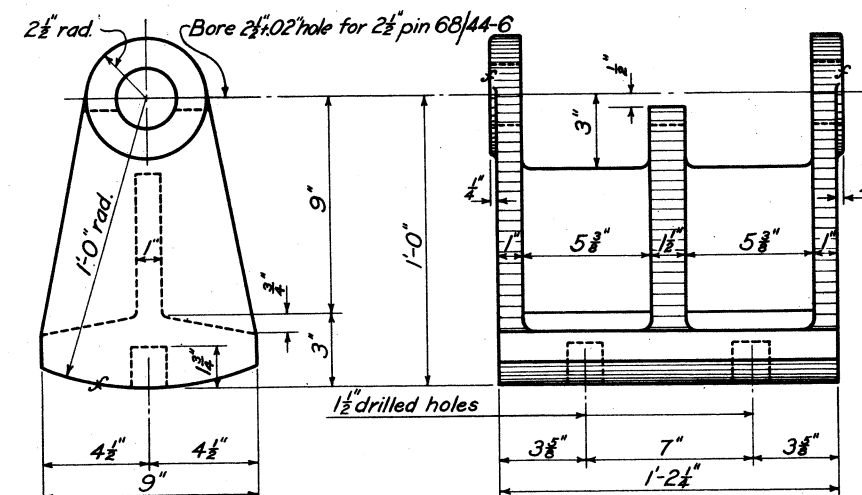
COLD ROLLED STEEL WITH RECESSED STEEL NUT
MARK 68/44-6 COLD ROLLED STEEL WT. 28.9 LBS.
MAKE 32 RECESSED STEEL NUTS WT. 4.0 LBS.



DETAIL OF TURNED BOLT

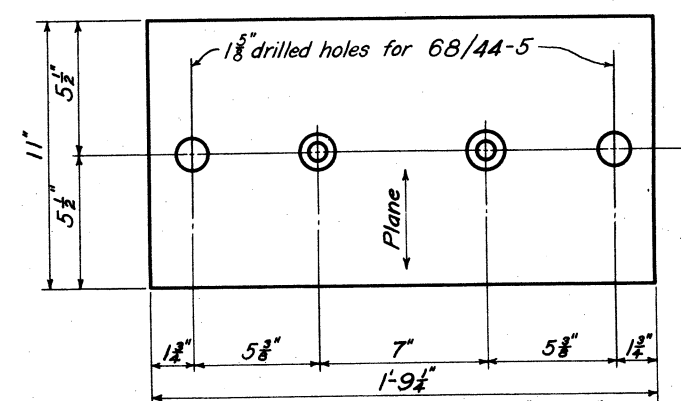
STRUCTURAL STEEL
MARK 68/44-7 MAKE 192 WT. 1.80 LBS.
MARK 68/44-8 MAKE 64 WT. 1.72 LBS.

SCALE: 6"=1'-0"



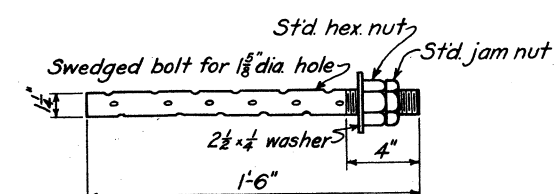
DETAIL OF ROCKER

CAST STEEL CLASS 2 MARK 68/44-1
MAKE 24 WT. 173.0 LBS.



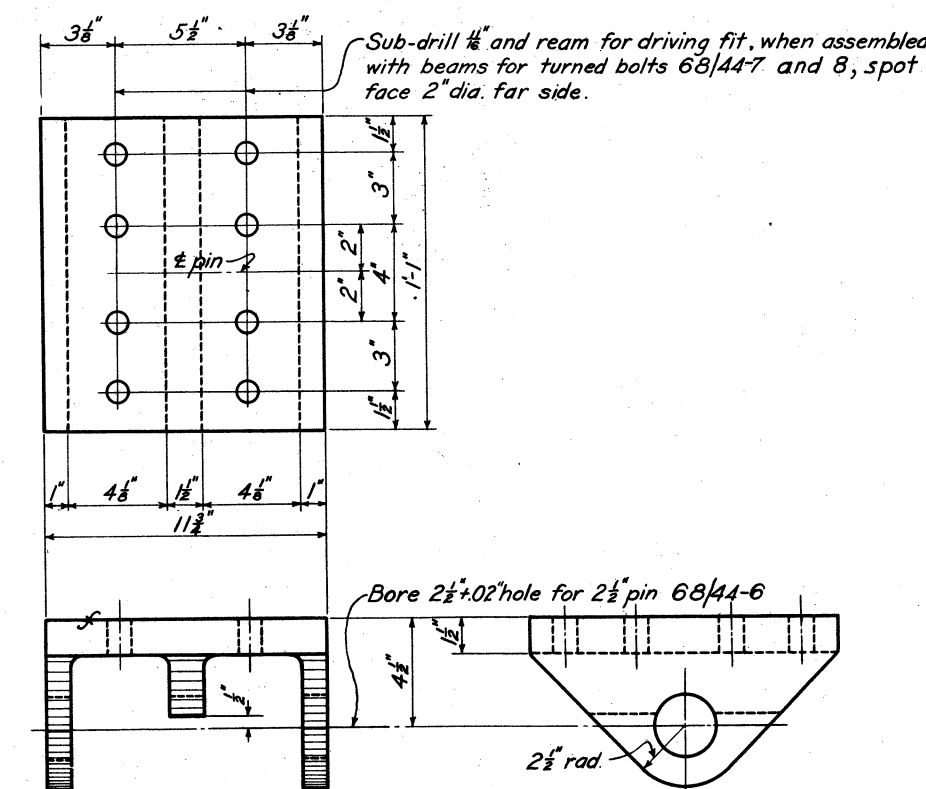
DETAIL OF BASE PLATE

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



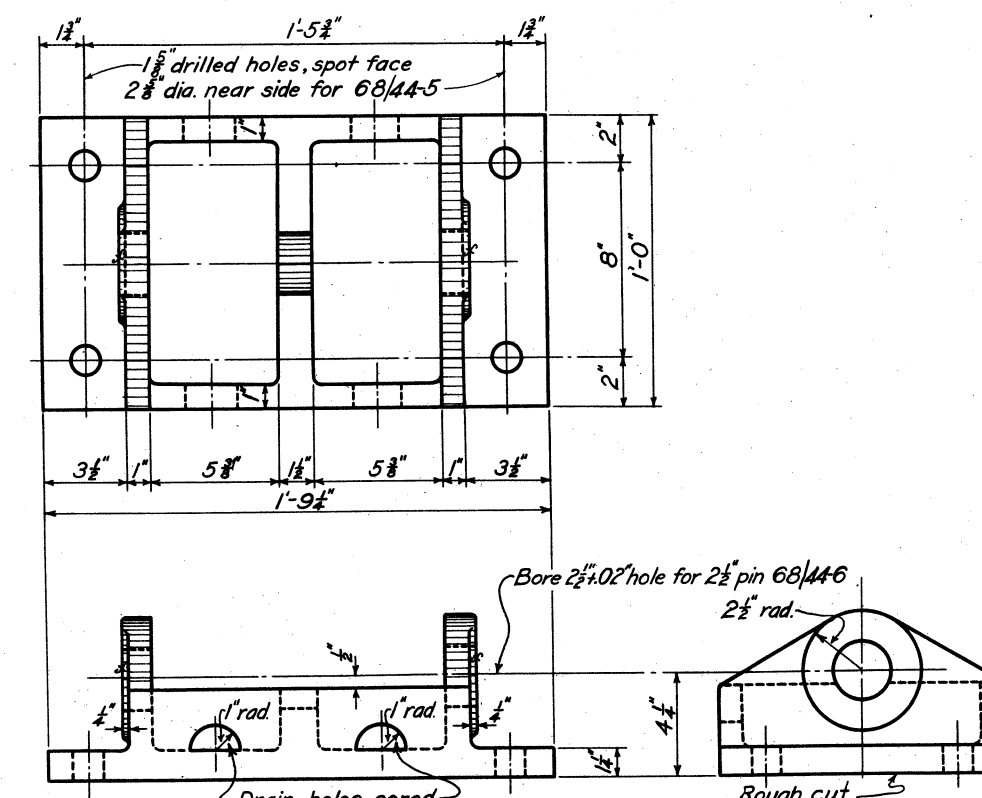
DETAIL OF ANCHOR BOLT

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. 95.0 LBS.



DETAIL OF BOLSTER

CAST STEEL CLASS 2 MARK 68/44-4
MAKE 8 WT. 145.0 LBS.

NOTES

5/8" rivets for girder splices.
Casting fillets are 1/4" rad. unless noted.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
WALNUT ROAD BRIDGE
CASTINGS & SPLICES**

IN 147 SHEETS SHEET NO. 126 SCALE: 3/4"=1'-0"

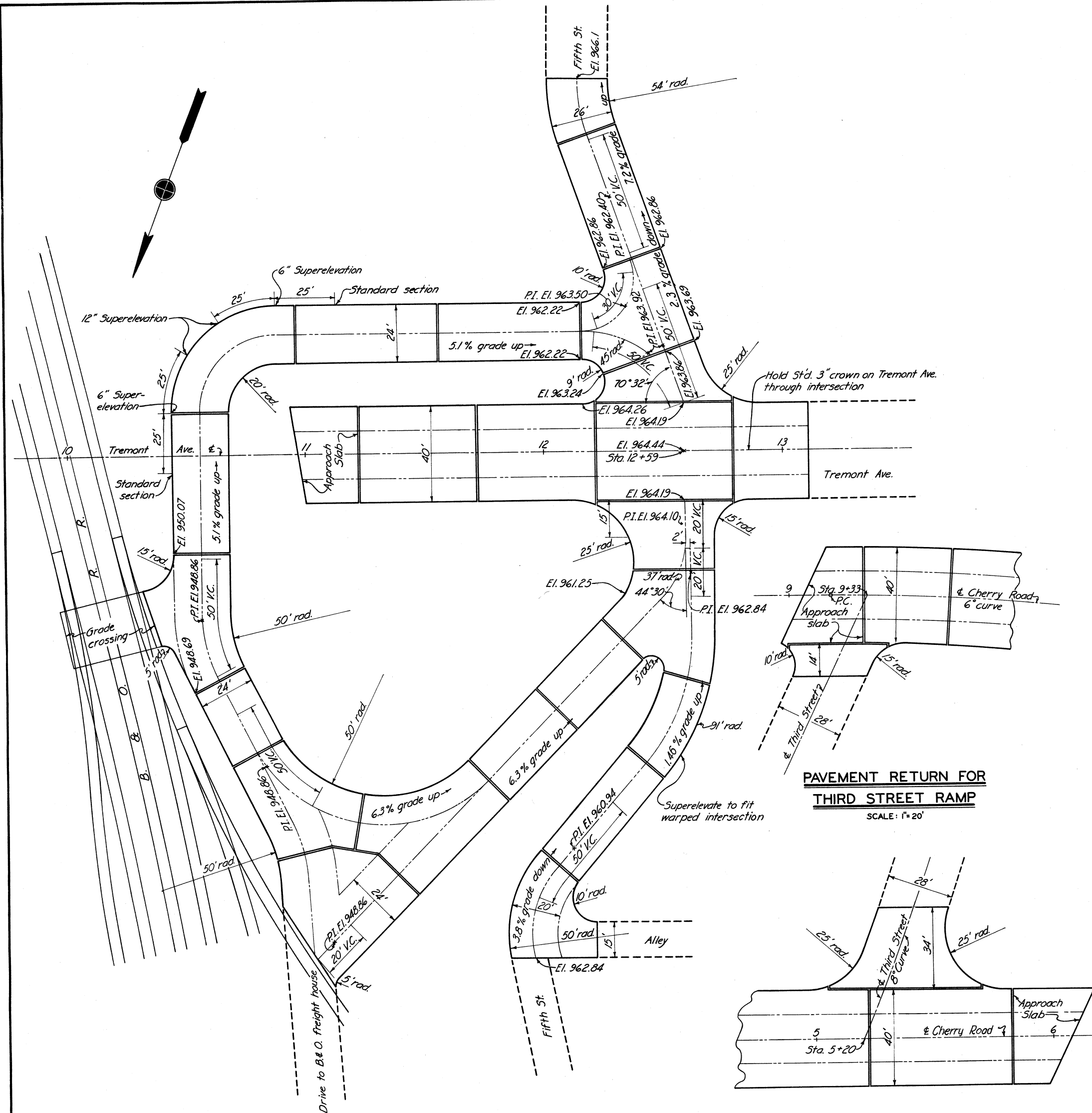
U. S. ENGINEER OFFICE HUNTINGTON, W. VA. SEPT. 1940

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

DESIGNED BY: A.N.S. TRANSMITTED WITH LETTER

CHECKED BY: H.U.B. FILE NO. 0271-PM-68/44-BAYES

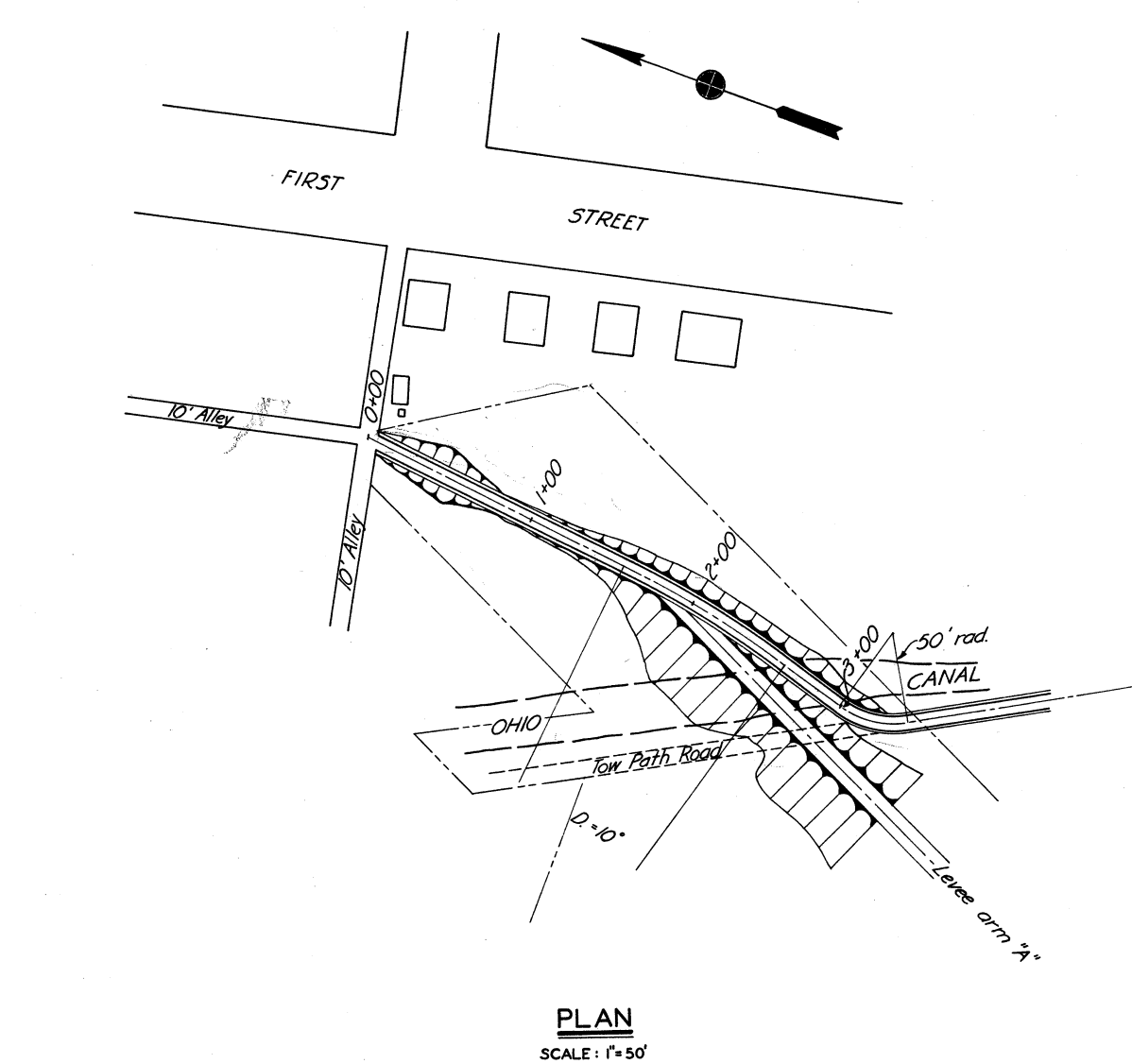
BY	DATE	CHARACTER
		REVISIONS



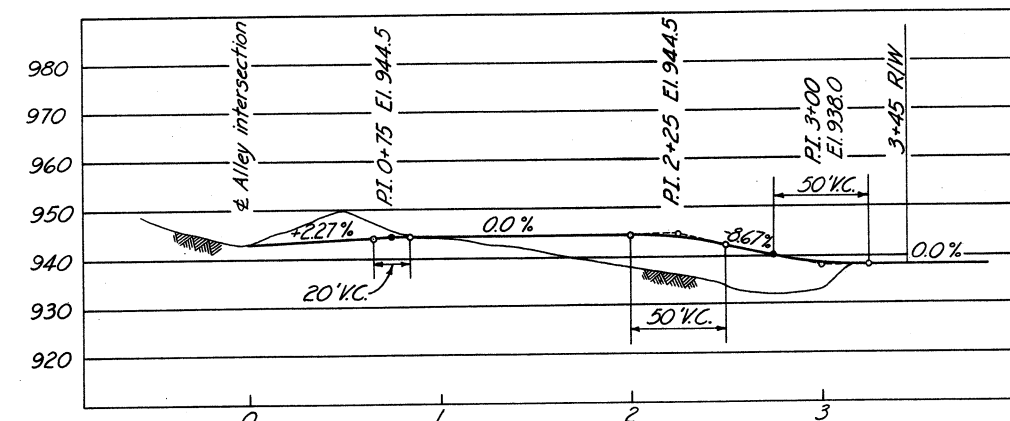
**APPROACHES TO FIFTH STREET
AND B. & O. FREIGHT HOUSE DRIVE**
SCALE: 1" = 20'

LEGEND
Expansion joint ———
Longitudinal joint ———
LAYOUT OF APPROACHES

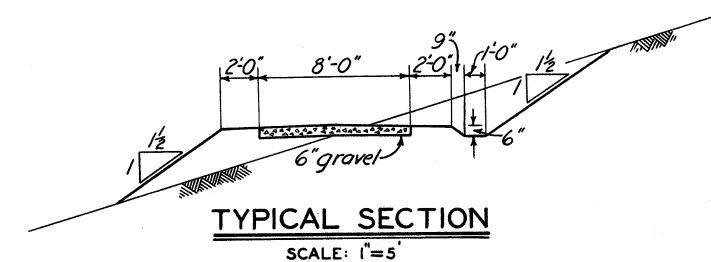
**PAVEMENT RETURN FOR
THIRD STREET RELOCATION**
SCALE: 1" = 20'



PLAN
SCALE: 1" = 50'



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



TYPICAL SECTION
SCALE: 1" = 5'

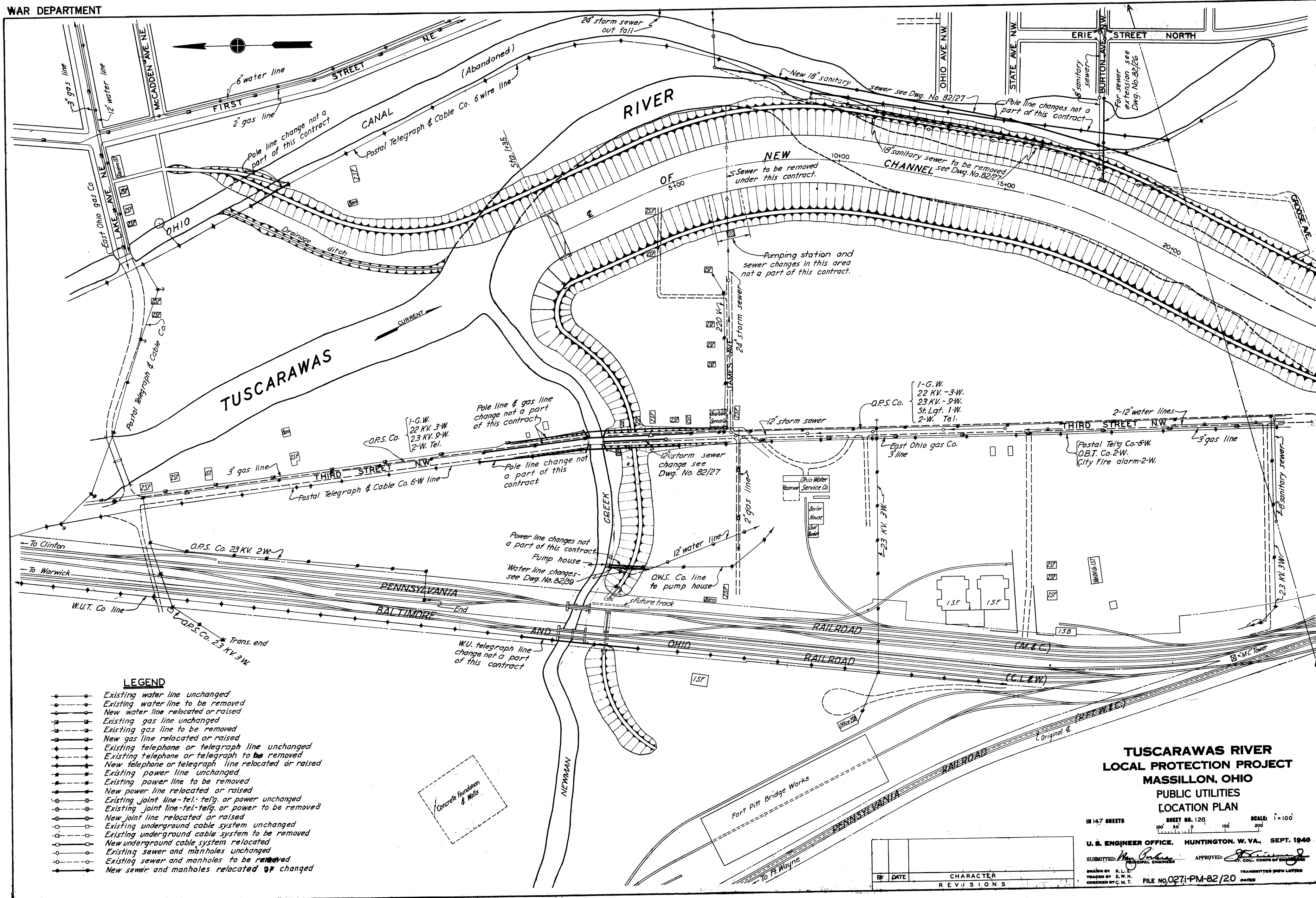
ACCESS ROAD
For location, see Dwg. No. 16/1

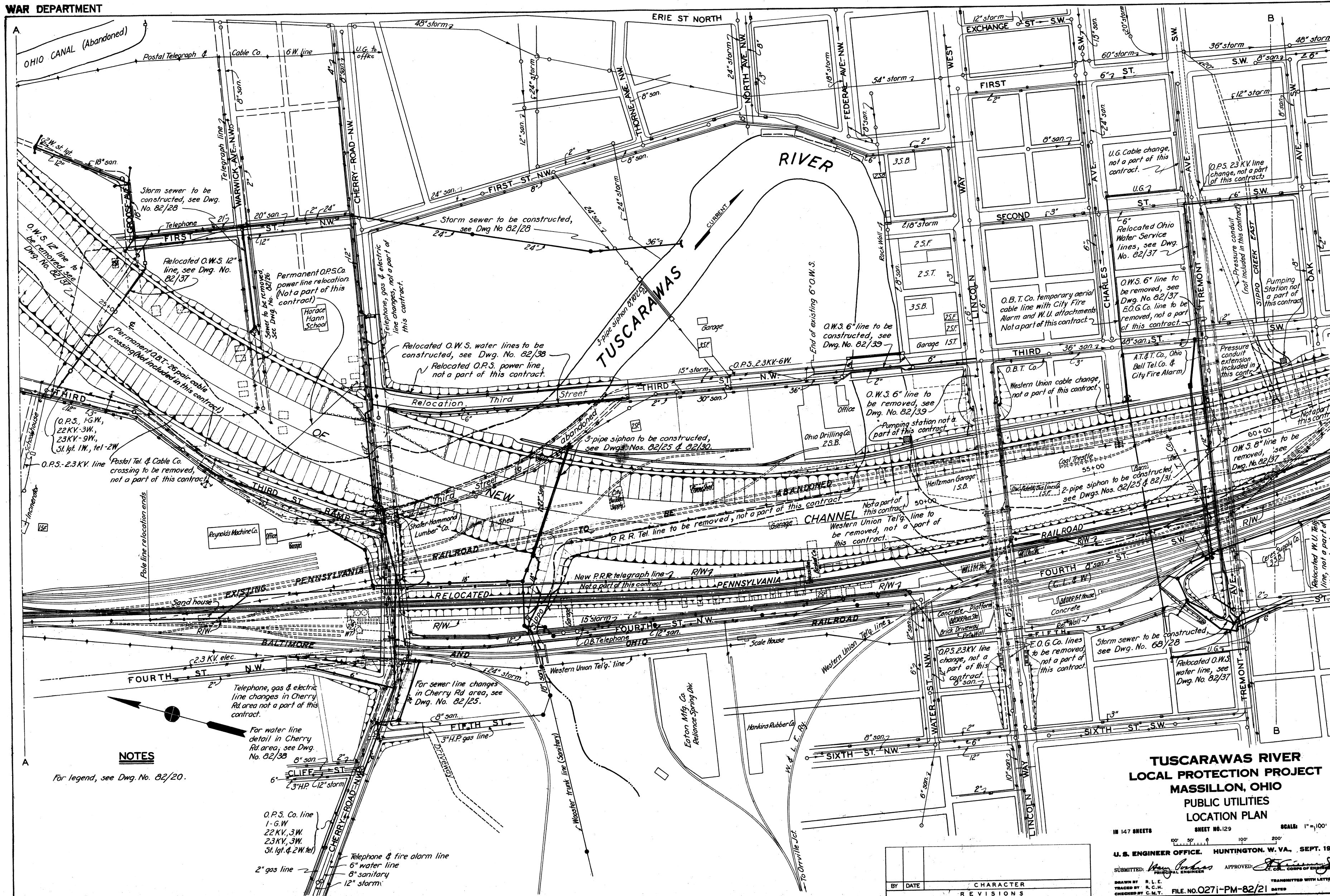
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
MISCELLANEOUS PAVEMENT
DETAILS AND ACCESS ROAD**

147 SHEETS SHEET NO. 127 SCALE: AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. JAN. 1941
SUBMITTED BY: *[Signature]* APPROVED: *[Signature]*
DRAWN BY: A.M.M. & F.G.M. TRANSMITTED WITH LETTER
CHECKED BY: S.S.H. FILE NO. O-271-PM 68/45 DATED

BY	DATE	CHARACTER





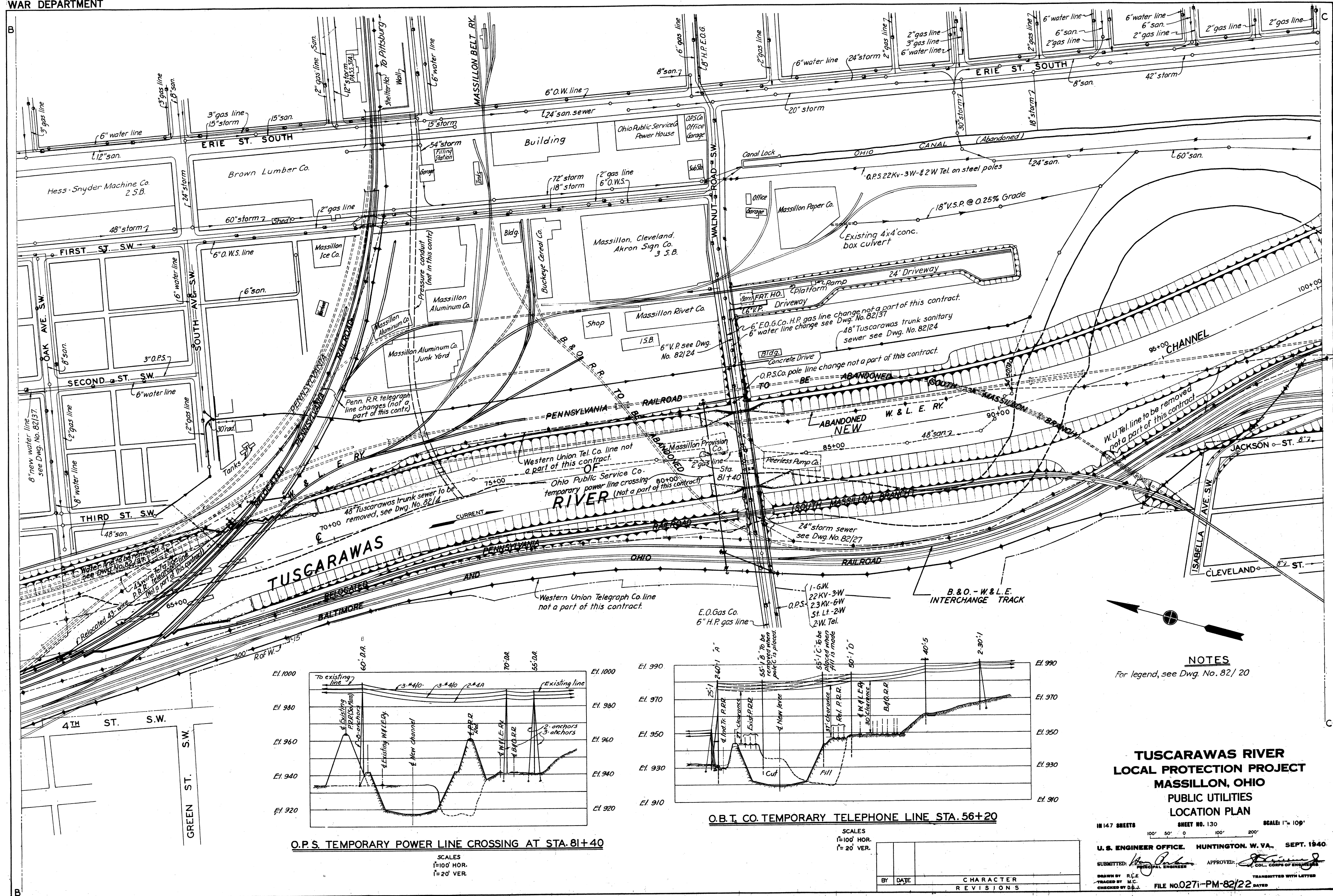
NOTES

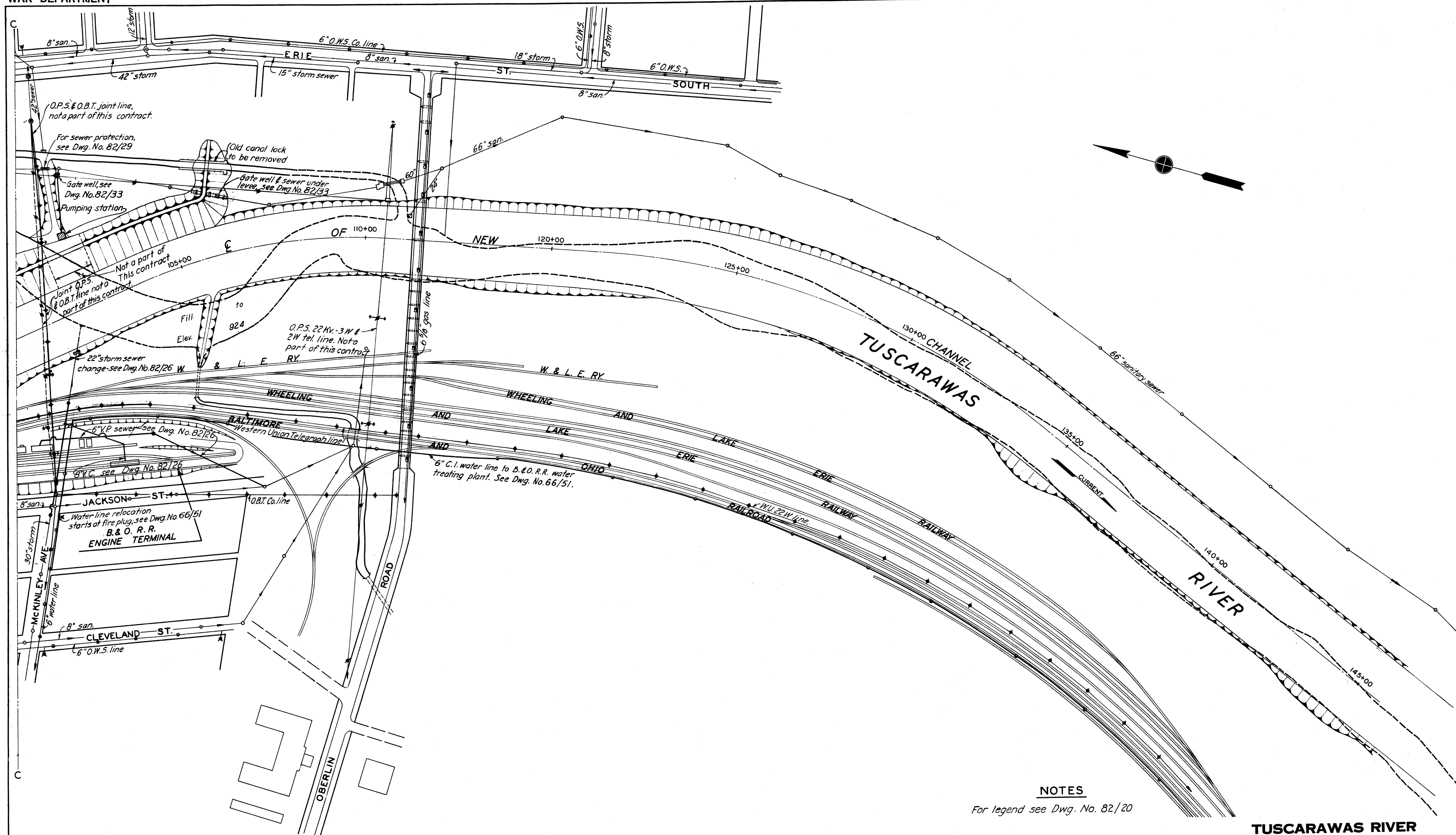
For legend, see Dwg. No. 82/20.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PUBLIC UTILITIES
LOCATION PLAN**

IN 147 SHEETS
SHEET NO. 129
SCALE: 1"=100'
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940
SUBMITTED: *[Signature]* APPROVED: *[Signature]*
DRAWN BY: R. L. E.
CHECKED BY: C. M. T. FILE NO. 0271-PM-82/21
TRANSMITTED WITH LETTERS

BY	DATE	CHARACTER





NOTES

For legend see Dwg. No. 82/20

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PUBLIC UTILITIES
LOCATION PLAN**

IN 147 SHEETS

SHEET NO. 131

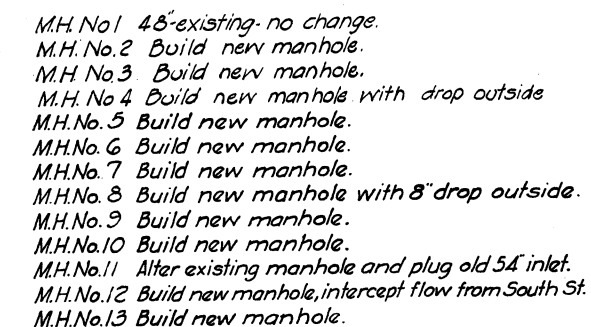
SCALE: 1"=100'

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

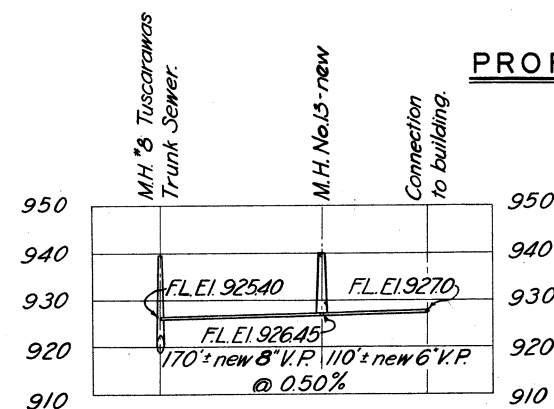
SUBMITTED: *[Signature]* APPROVED: *[Signature]*

DRAWN BY: R. L. E. TRACED BY: E. W. H. CHECKED BY: C. M. T. FILE NO. 0271-PM-82/23

BY	DATE	CHARACTER
		REVISIONS



PROFILE



PROFILE

APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE PENNSYLVANIA RAILROAD CO.
BY:
CHIEF ENGINEER - CENTRAL REGION

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO.
BY:
SPECIAL ENGINEER

For general plan, see Dwg. No. 10/4
For general utility plan, see Dwg. No. 82/22
For details of manholes, see Dwg. No. 82/35
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

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SEWER CHANGES
TUSCARAWAS TRUNK SANITARY SEWER**

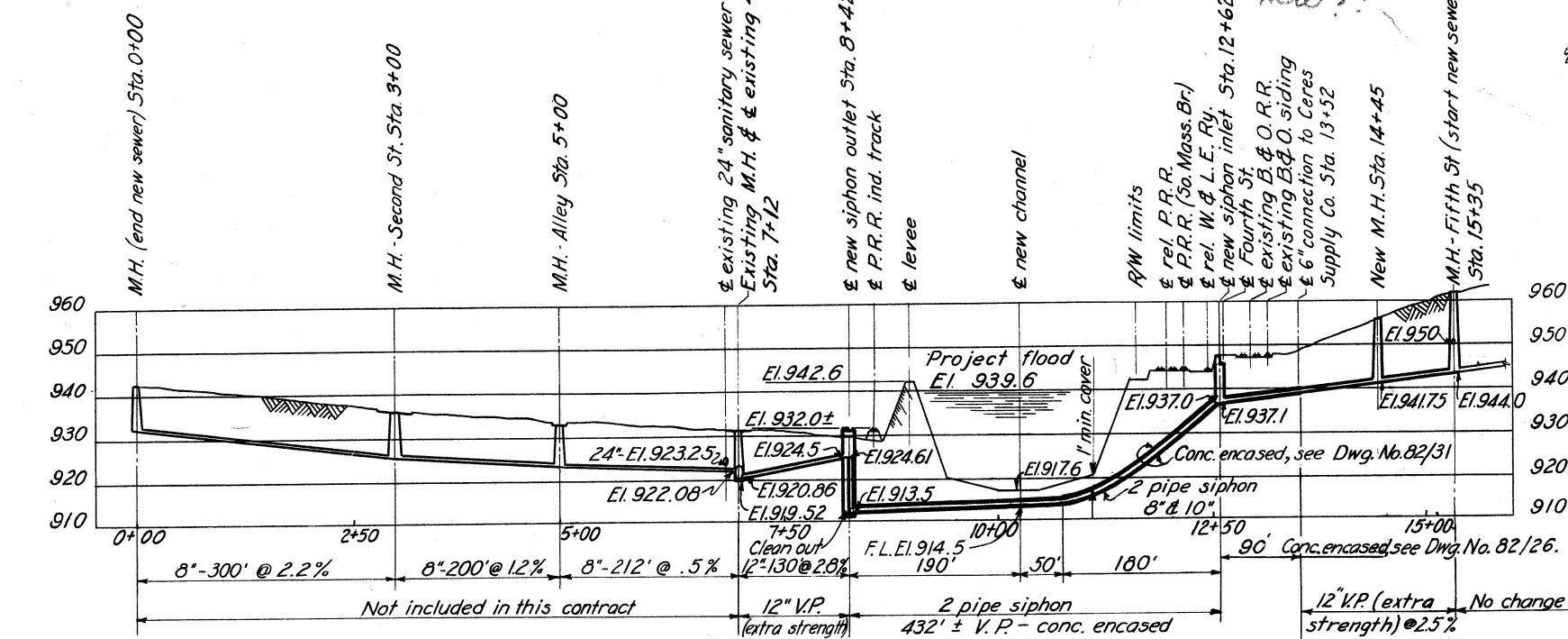
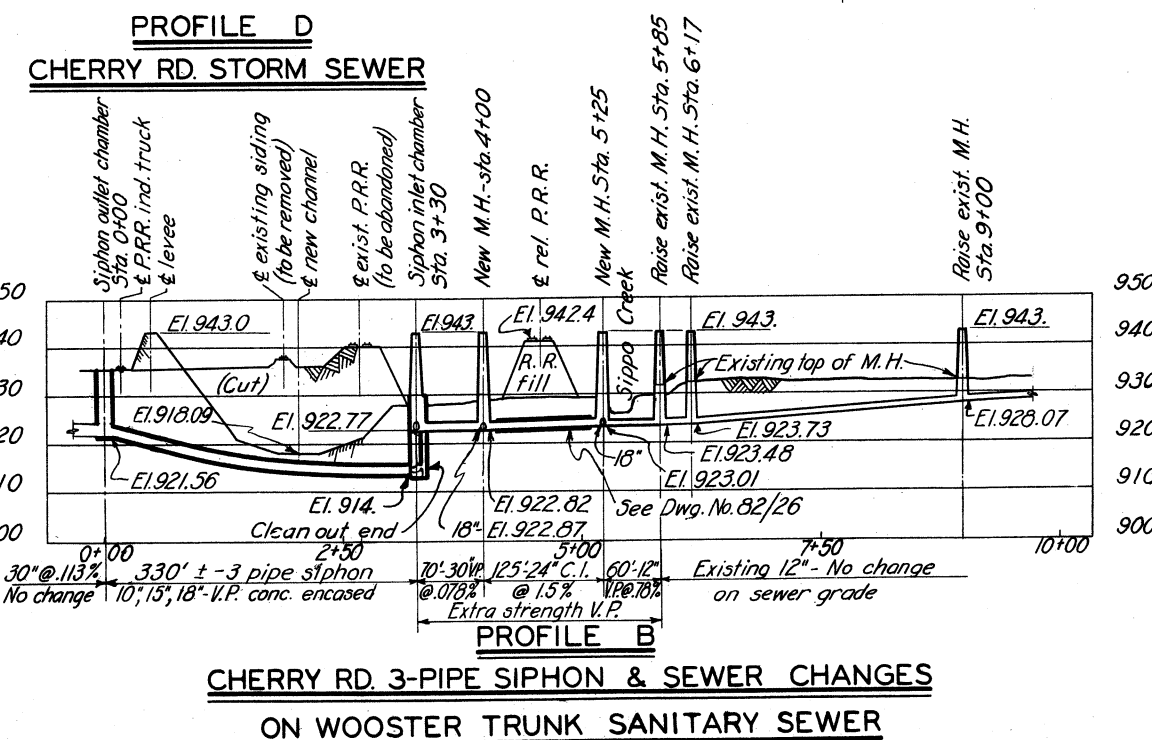
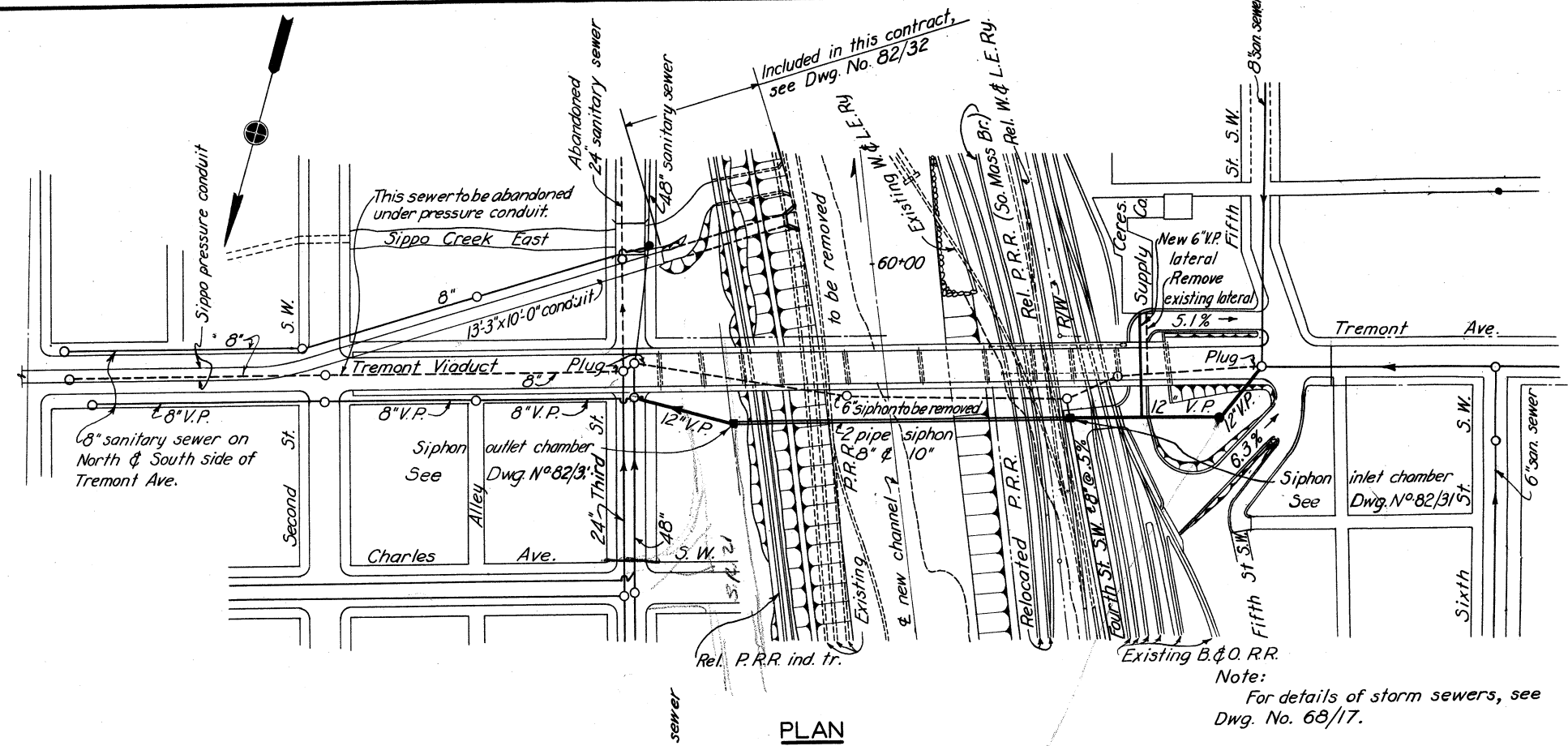
IN 147 SHEETS SHEET NO. 132 SCALE: 1" = 100'
VERT: 1" = 20'

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA.. SEPT. 1940

SUBMITTED: *Mano P...* APPROVED: *J. C. ...*
PRINCIPAL ENGINEER ST. COL. CORPS OF ENGINEERS

DRAWN BY R.L.E. TRANSMITTED WITH LETTER
TRACED BY H.C.
CHECKED BY C.M.T. FILE NO. 027i-PM-82/24 DATED

BY	DATE	CHARACTER
REVISIONS		



For Cherry Rd. & Tremont Ave. siphon chambers,
see Dwg. Nos. 82/30 & 82/31.
For manhole and sewer details, see Dwg. No. 82/14.
For Sippo pressure conduit details, see Dwg. No. 82/32
For general plan, see Dwg. No. 10/3.
For general utility plan, see Dwg. No. 82/21
On storm sewers shown V.P. pipe can be either V.P.
or concrete.

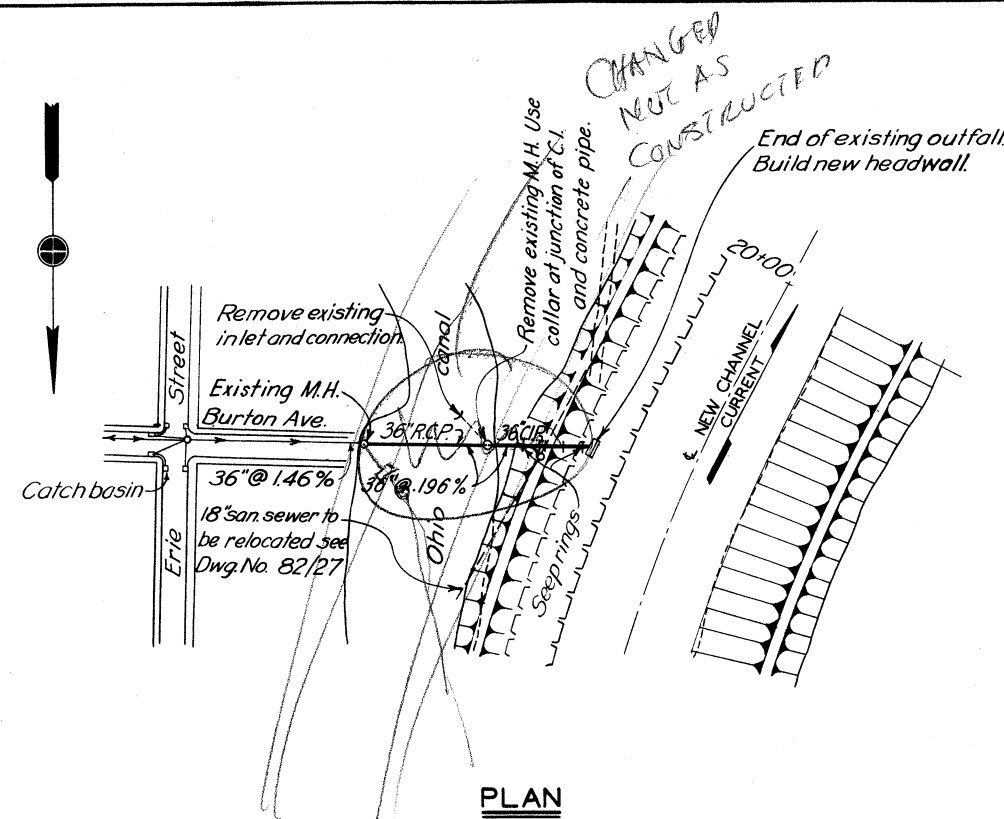
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA.. SEPT. 1940

SUBMITTED: *Wm. Parker* APPROVED: *W. C. ...*
CHIEF ENGINEER LT. COL. CORPS OF ENGINEERS

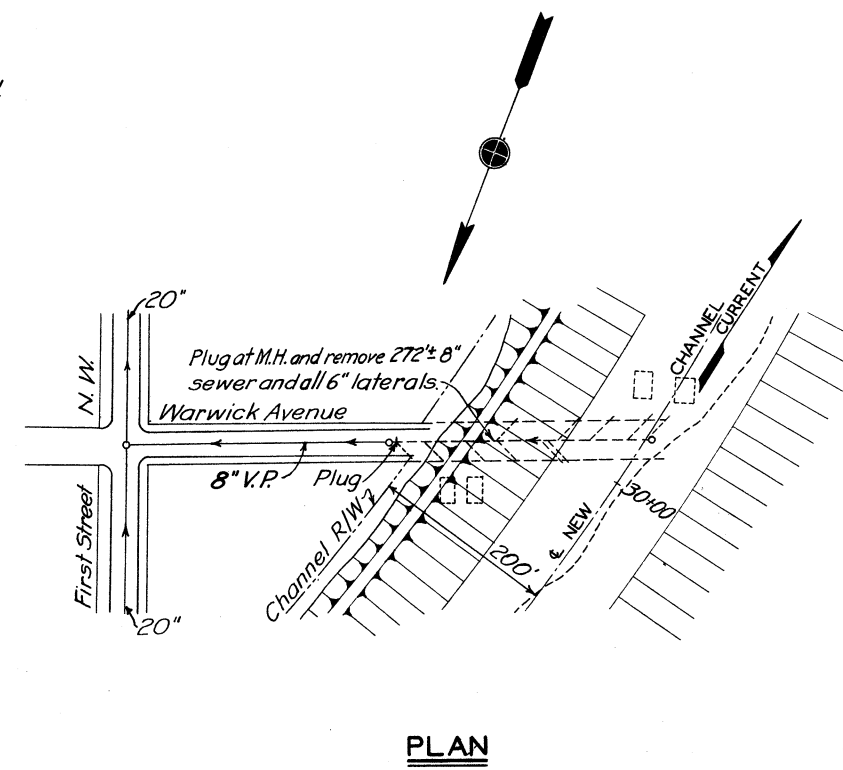
DRAWN BY R.L.E.
TRACED BY R.C.H.
CHECKED BY D.G.J. FILE NO. 027i-PM-82/25 DATED

TRANSMITTED WITH LETTER

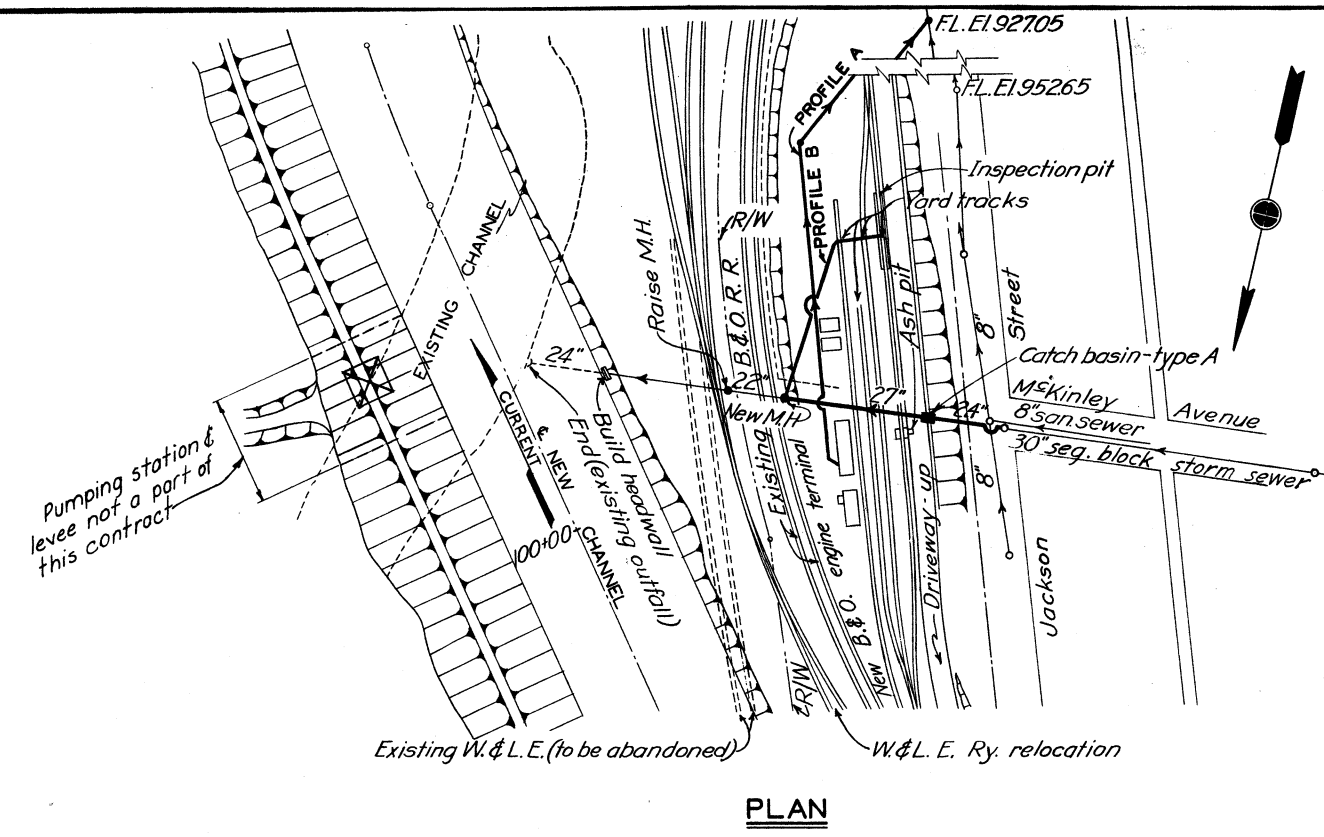
BY	DATE	CHARACTER
REVISIONS		



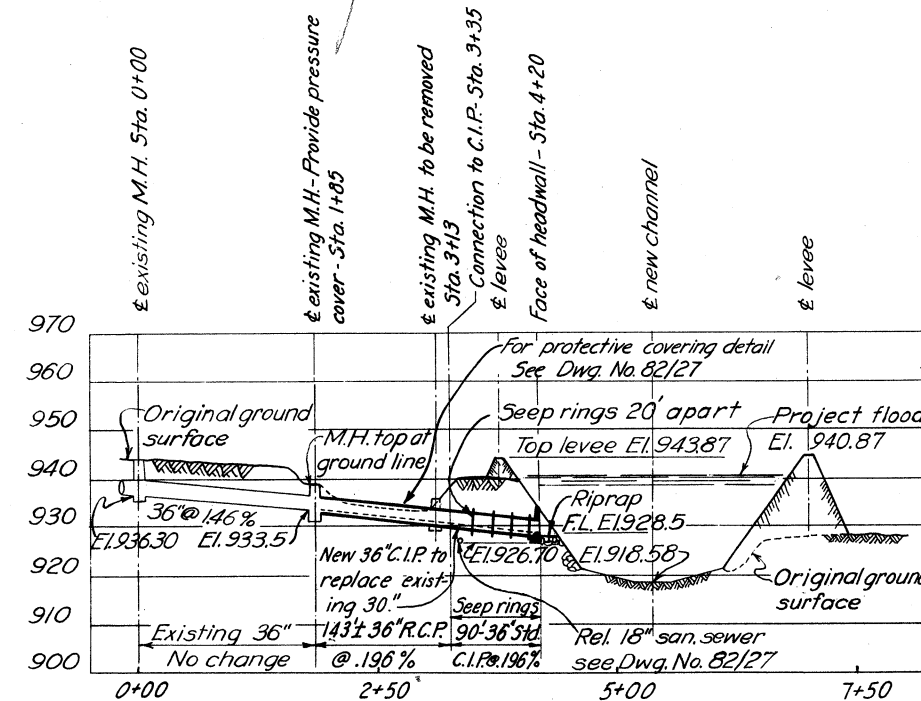
PLAN



PLAN

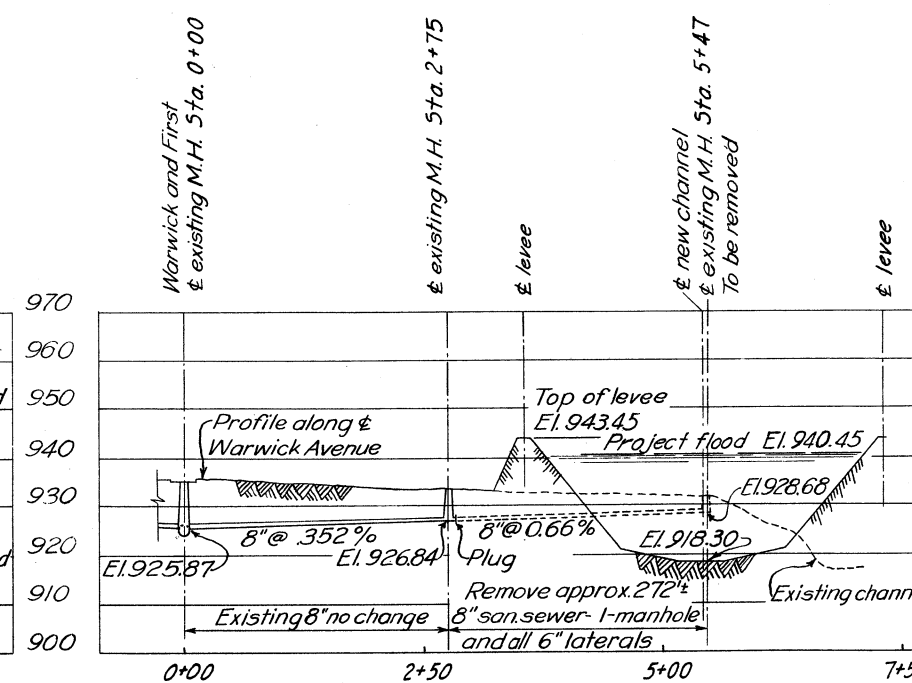


PLAN



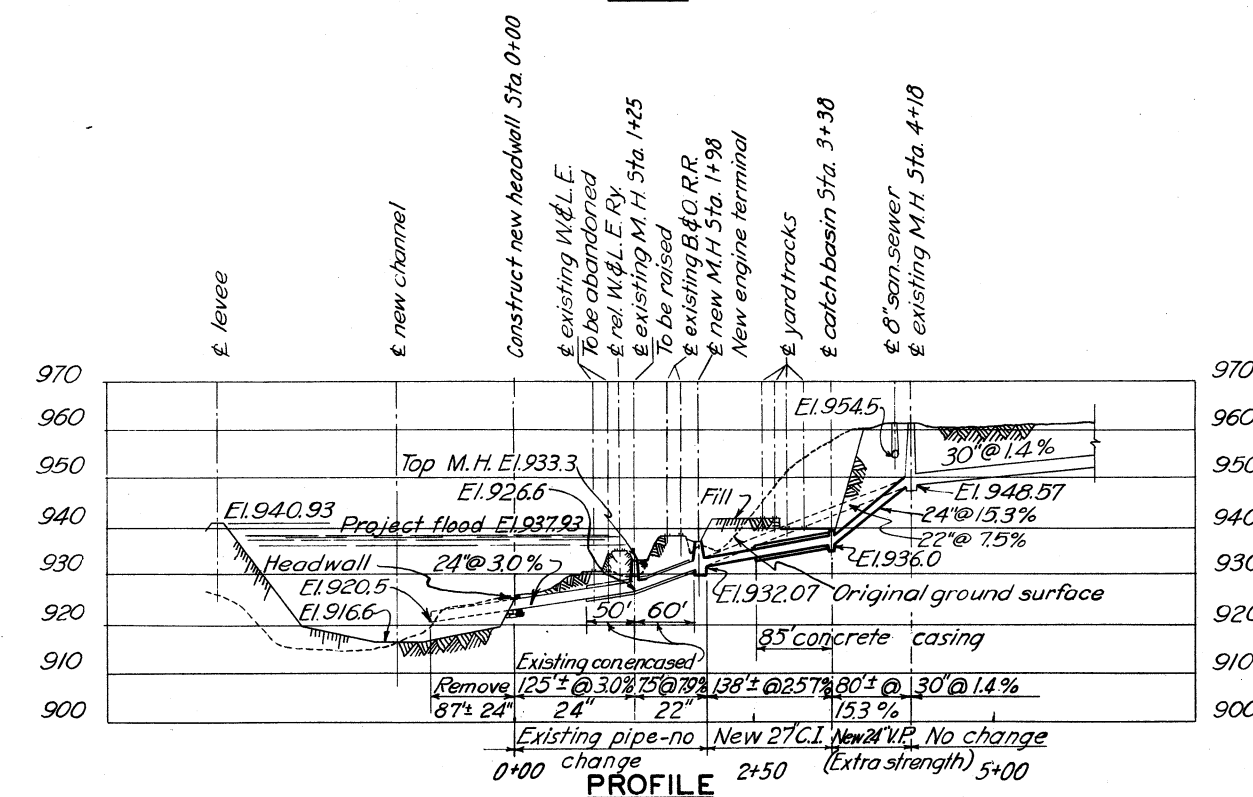
PROFILE

BURTON AVE. STORM SEWER CHANGES



PROFILE

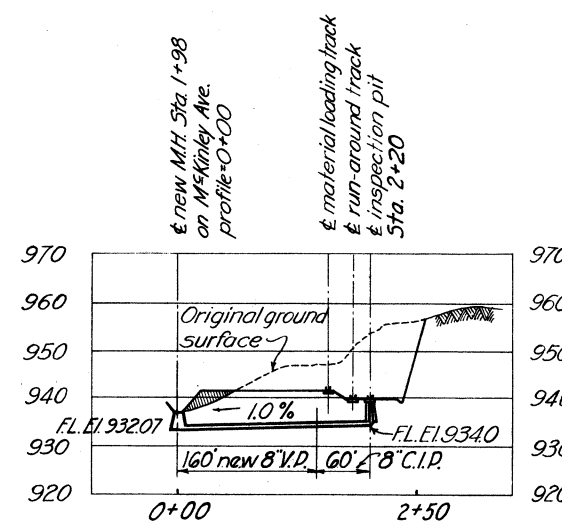
WARWICK AVE. SANITARY SEWER CHANGES



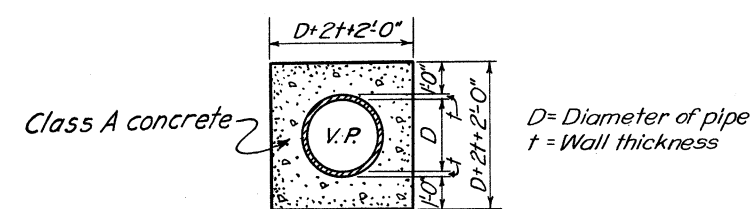
PROFILE

McKINLEY AVE. STORM SEWER CHANGES

NOTES

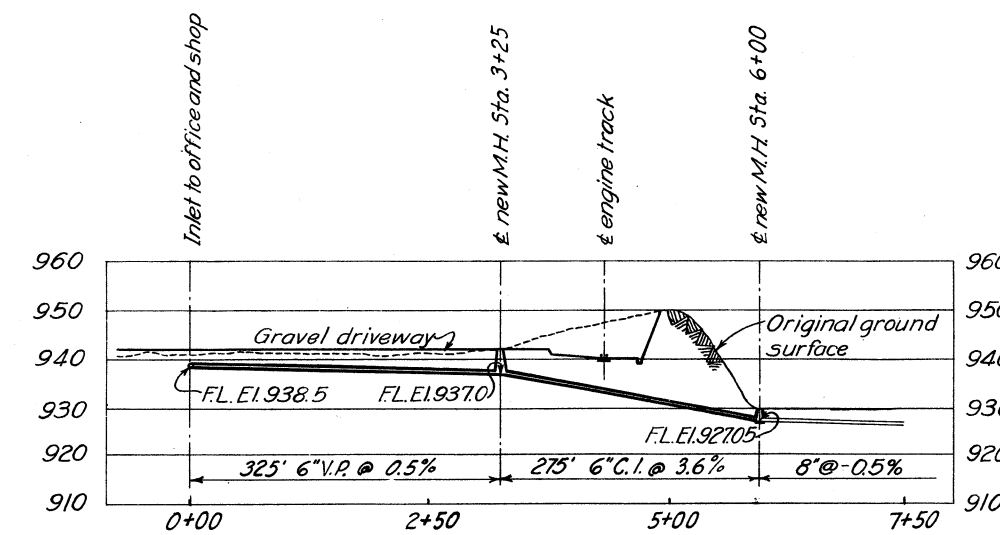


PROFILE B



DETAIL OF CONCRETE CASING

NOT TO SCALE



PROFILE A

For general plans, see Dwg. Nos. 10/2, 10/3 & 10/5.
For general utility plans, see Dwg. Nos. 82/20, 82/21
& 82/23.
For details of seep rings and headwalls, see Dwg.
No. 20/13
For miscellaneous sewer details, see Dwg. No. 82/35.
On storm sewers shown V.P., pipe can be either V.P.
or concrete.

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

BURTON, WARWICK & MC KINLEY AVENUES
 IN 147 SHEETS SHEET NO. 134 SCALE: HOR: 1" = 100'
 100' 50' 0' 100' 200' VERT: 1" = 20'

U. S. ENGINEER OFFICE. HUNTINGTON. W. VA. SEPT. 1940

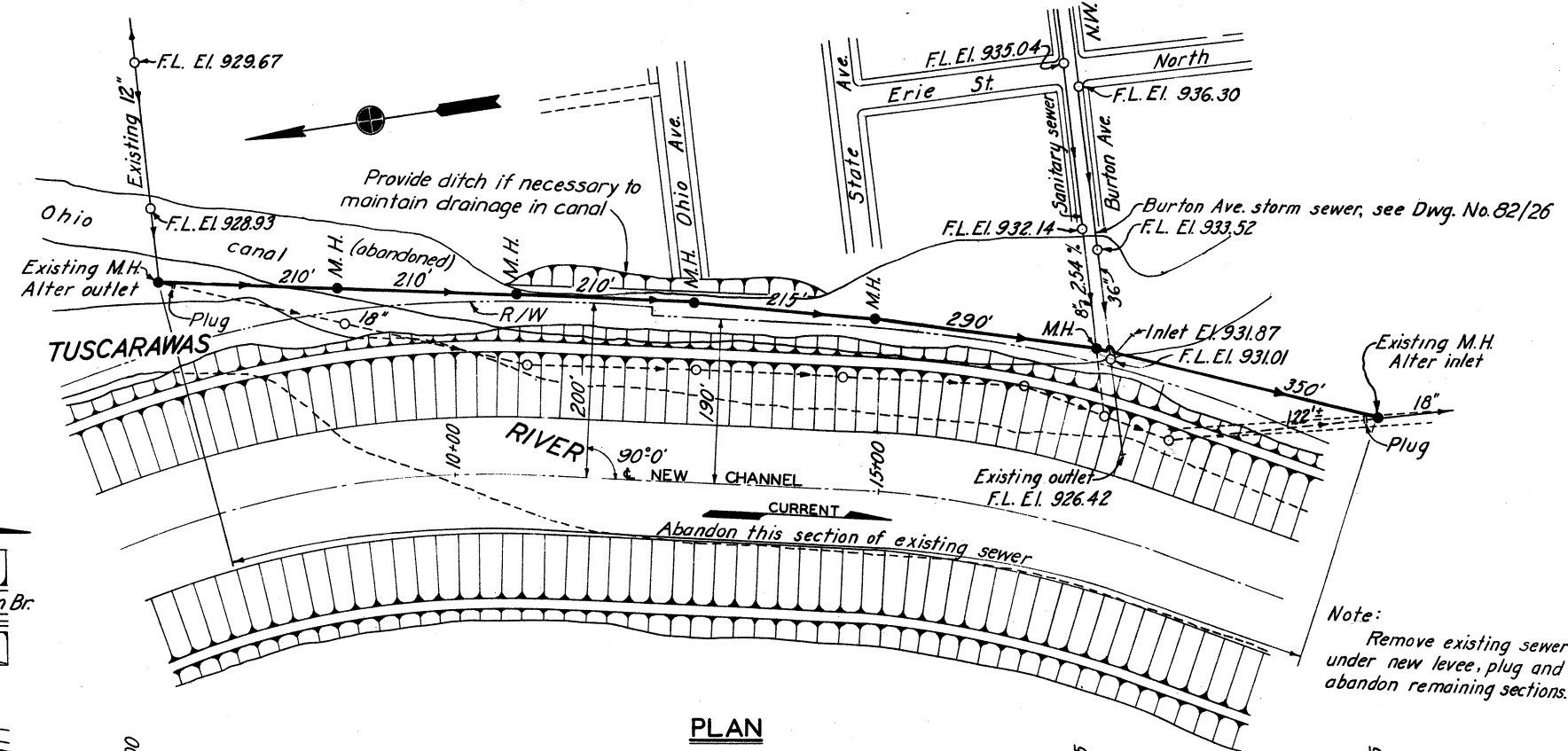
SUBMITTED: *W. J. Jackson* APPROVED: *William J. ...*
PRINCIPAL ENGINEER ET. COL. CORPS OF ENGINEERS

DRAWN BY R. L. E. TRANSMITTED WITH LETTER
TRACED BY E. B. H.
CHECKED BY C. M. T. FILE NO. 027i-PM-82/26 DATED

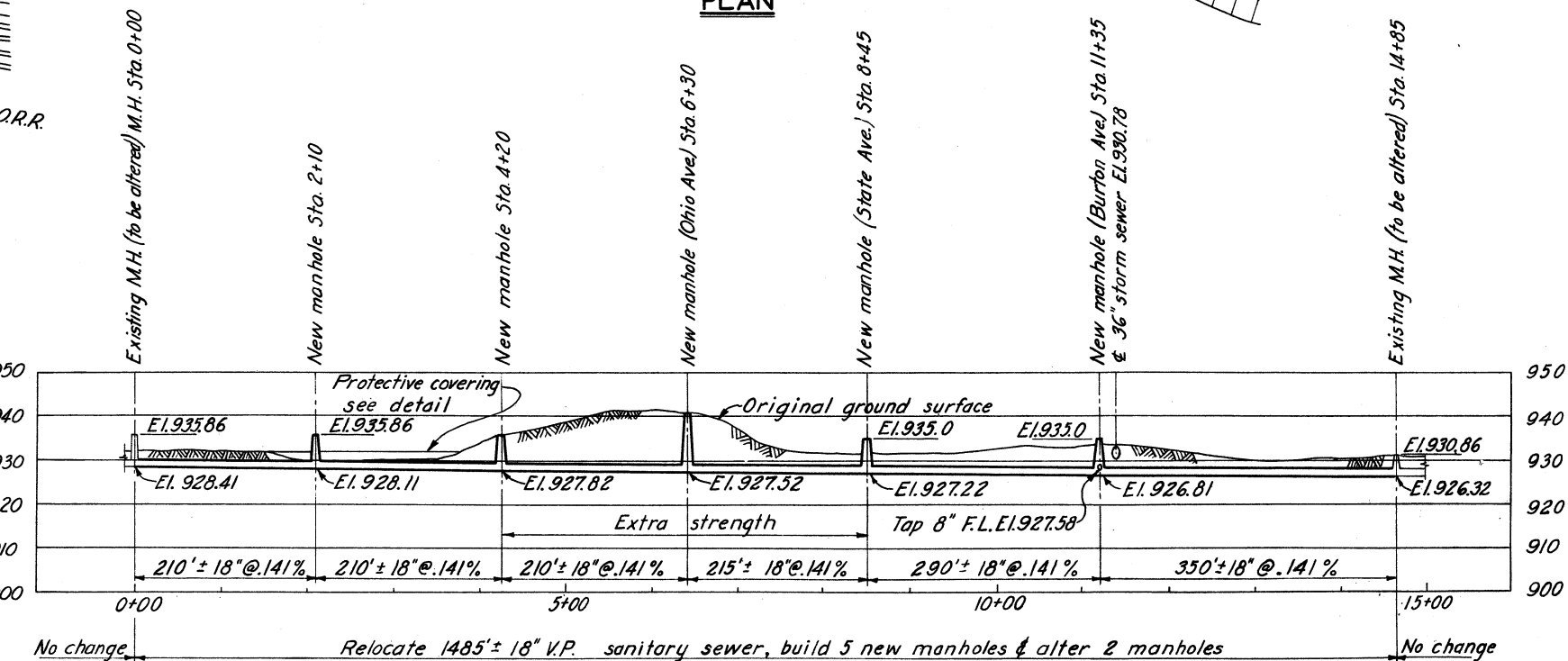
APPROVED:
THE BALTIMORE AND OHIO RAILROAD CO.
BY:
CHIEF ENGINEER

APPROVED:
THE WHEELING AND LAKE ERIE RAILWAY CO
BY:
SPECIAL ENGINEER

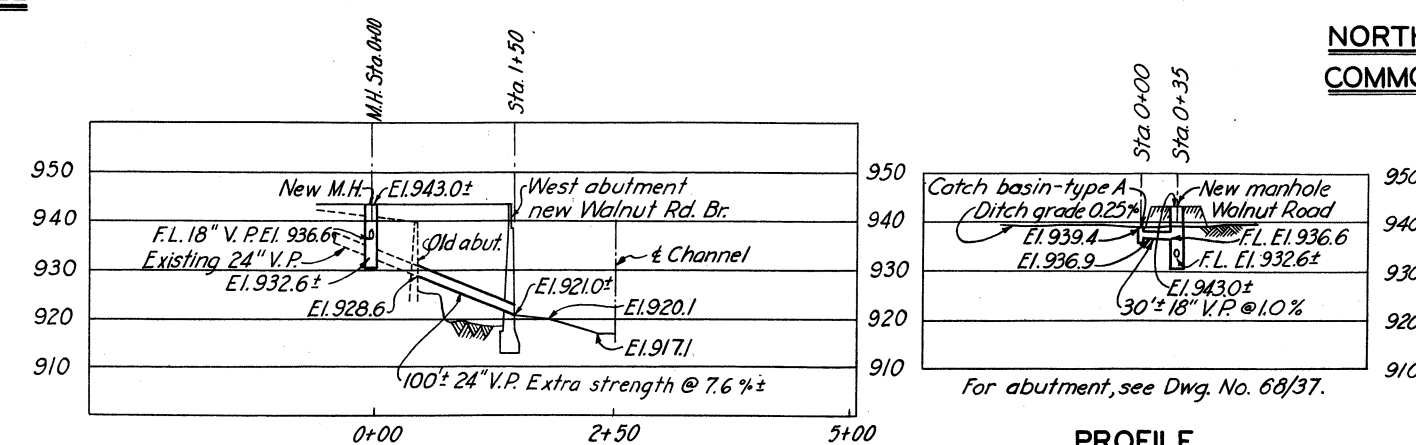
BY	DATE	CHARACTER
REVISIONS		



PLAN



PROFILE
NORTH END SANITARY TRUNK SEWER
COMMONWEALTH AVE. TO BURTON AVE.



PROFILE
18" V. P. SEWER ON WALNUT RD

NOTES

For general plans, see Dwg. Nos. 16/1, 16/2, & 16/3
For general utility plans, see Dwg. Nos. 82/20, 82/21 & 82/22.
For details of seep rings and headwalls, see Dwg. No. 20/13
For details of manholes and catch basins, see Dwg. No. 82/36.
On storm sewers shown V.P. pipe can be either V.P. or concrete.

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

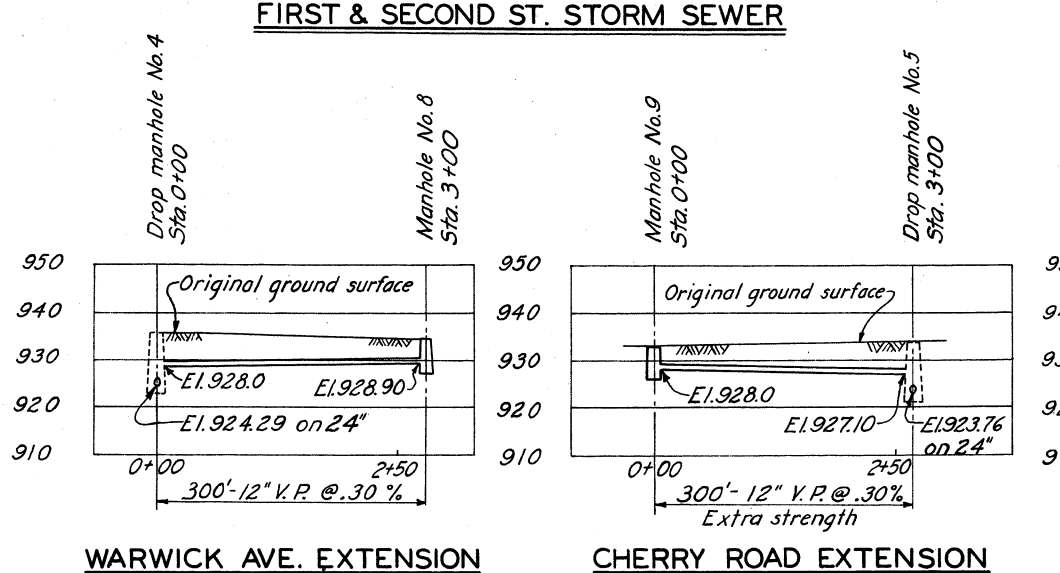
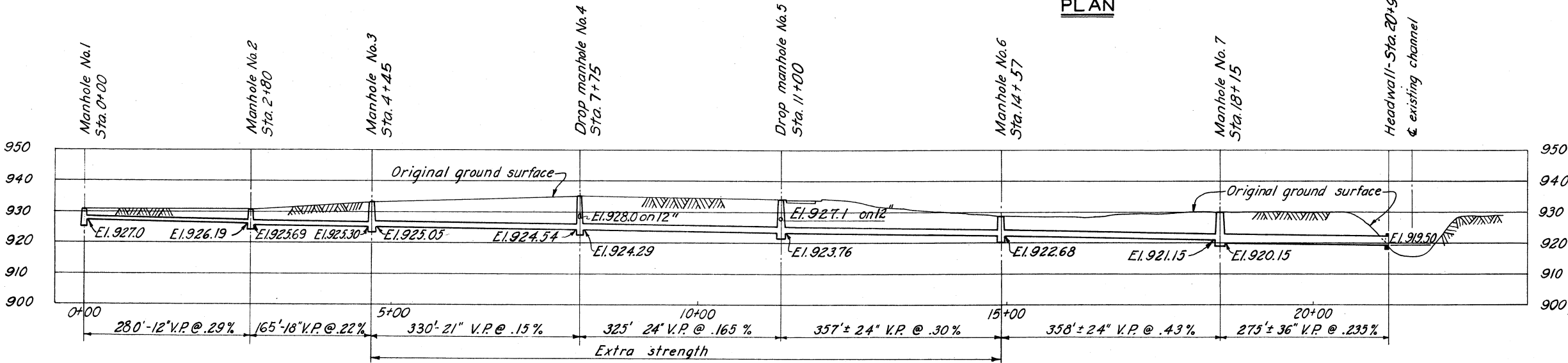
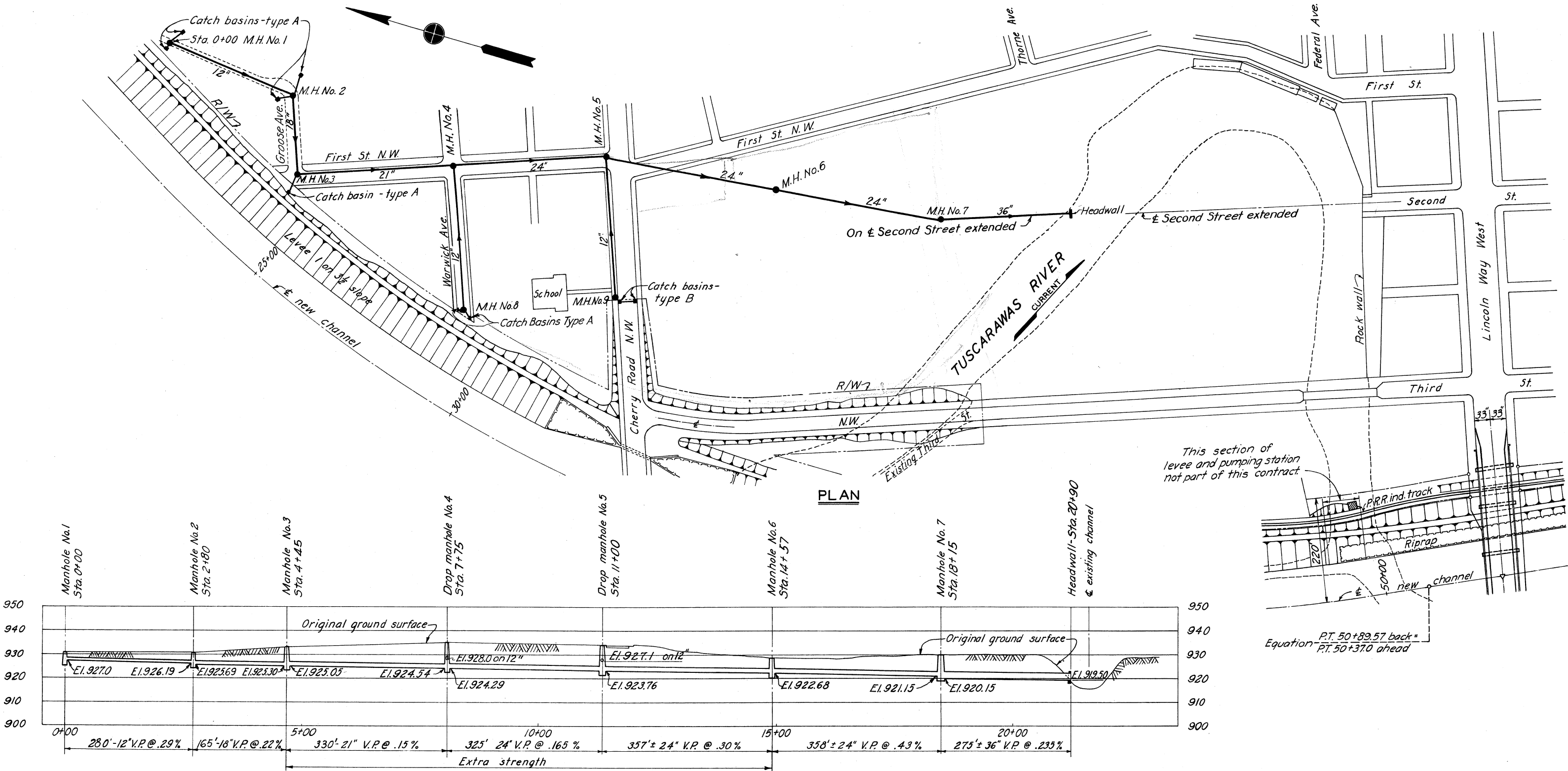
THIRD, LINCOLN, WALNUT & NORTH END TRUNK
IN 47 SHEETS SHEET NO. 135 SCALE: VERT. $\frac{1}{2} = 20'$
HOR. $1 = 100'$

U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: *[Signature]* PRINCIPAL ENGINEER APPROVED: *[Signature]* LT. COL., CORPS OF ENGINEERS

DRAWN BY R.L.E. TRANSMITTED WITH LETTER
TRACED BY W.E.C.
CHECKED BY C.M.T. FILE NO. 027i-PM-82/27 DATED

BY	DATE	CHARACTER
		REVISIONS



NOTES

For general plan, see Dwg. No. 10/3.
For general utility plan, see Dwg. No. 82/21.
For details of manholes and catch basins, see Dwg. No. 82/35.
For details of headwall, see Dwg. No. 30/3.
Connections from catch basins to be 12" V.P.
On storm sewers shown V.P., pipe can be either V.P. or concrete.

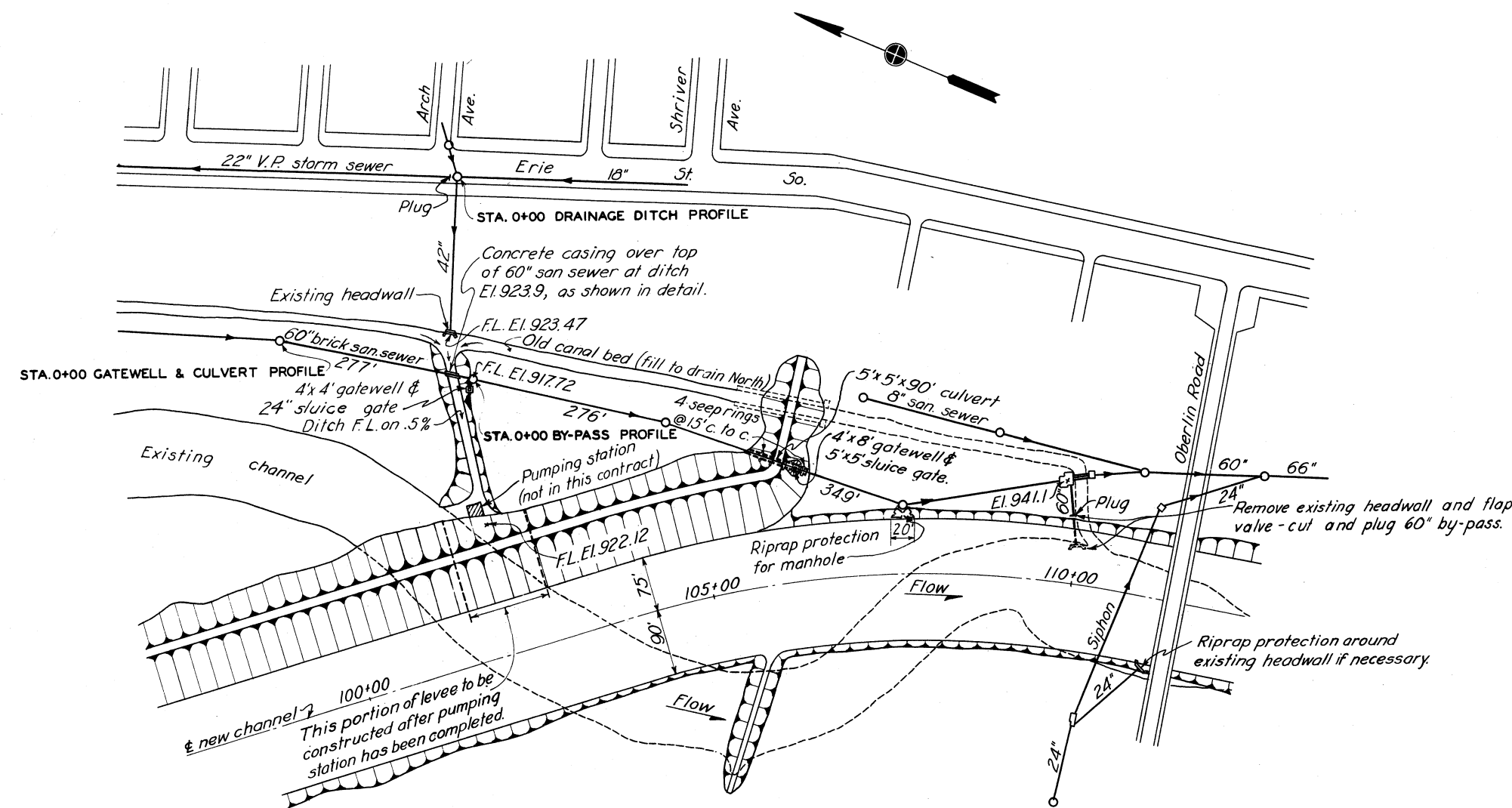
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SEWER CHANGES
FIRST & SECOND ST**

IN 147 SHEETS SHEET NO. 136 SCALE: HOR. 1"=100' VERT. 1"=20'

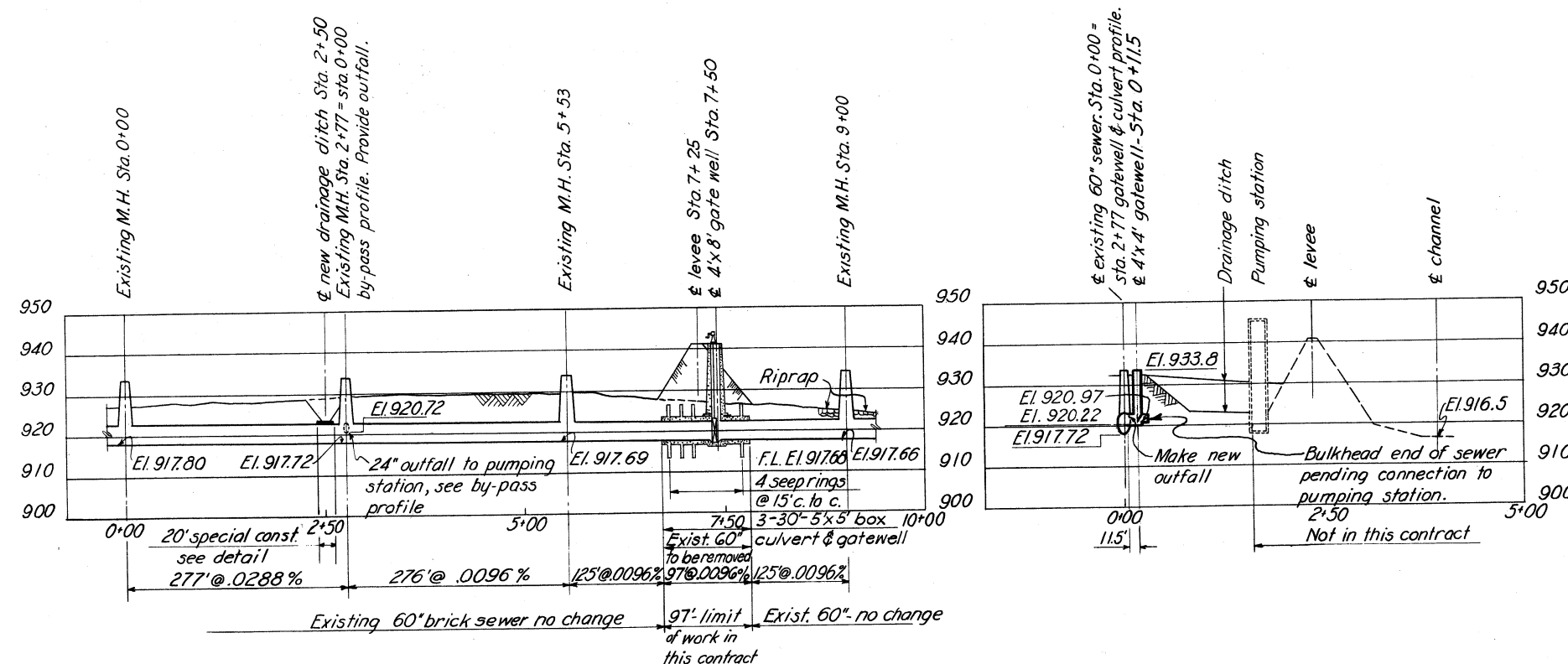
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED BY: [Signature] APPROVED: [Signature]
DRAWN BY: R.L.E. TRANSMITTED WITH LETTER
CHECKED BY: W.E.C. FILE NO. 027-PM-82/28 DATED

BY	DATE	CHARACTER



PLAN

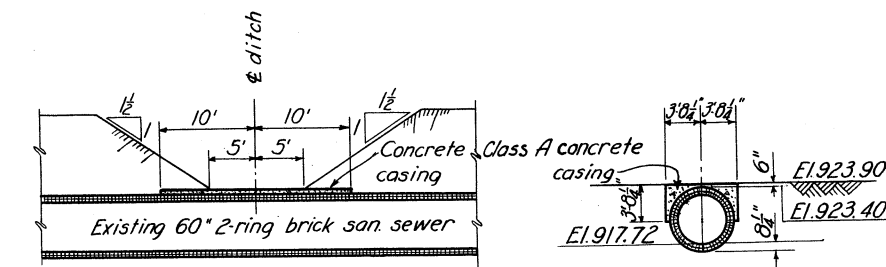


PROFILE
GATEWELL & CULVERT IN EXISTING 60" SANITARY SEWER

SCALE: HOR. 1" = 100'
VERT. 1" = 20'

PROFILE
24" BY-PASS TO PUMPING STATION

SCALE: HOR. 1" = 100'
VERT. 1" = 20'

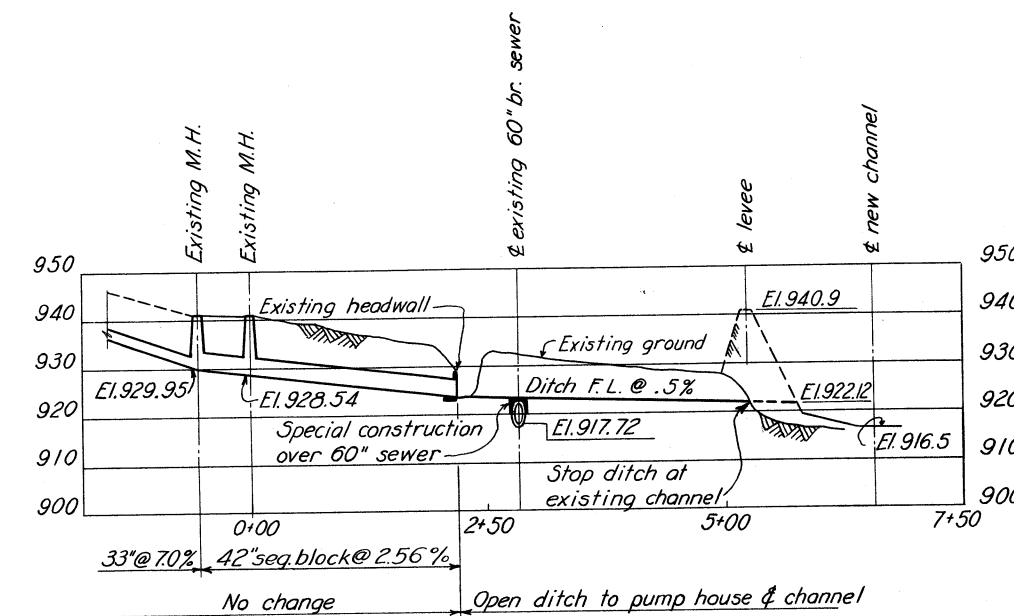


SECTION ON C. SEWER

SECTION ON C. DITCH

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

SCALE: 1" = 10'



PROFILE
DRAINAGE DITCH

SCALE: HOR. 1" = 100'
VERT. 1" = 20'

NOTES

For general plan, see Dwg. No. 10/5.
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
SEWER CHANGES
ARCH AVENUE

IN 147 SHEETS

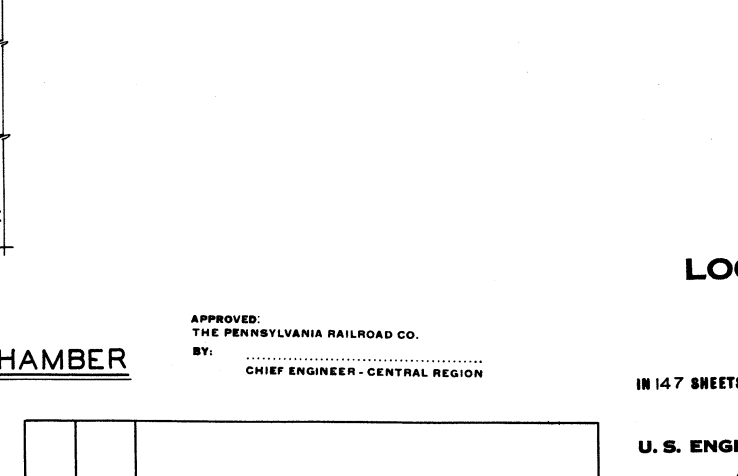
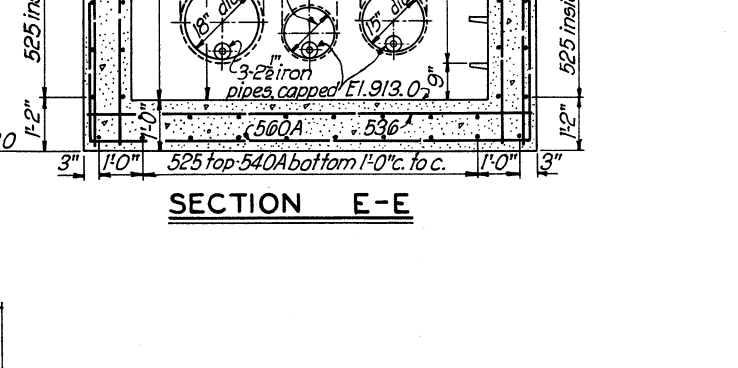
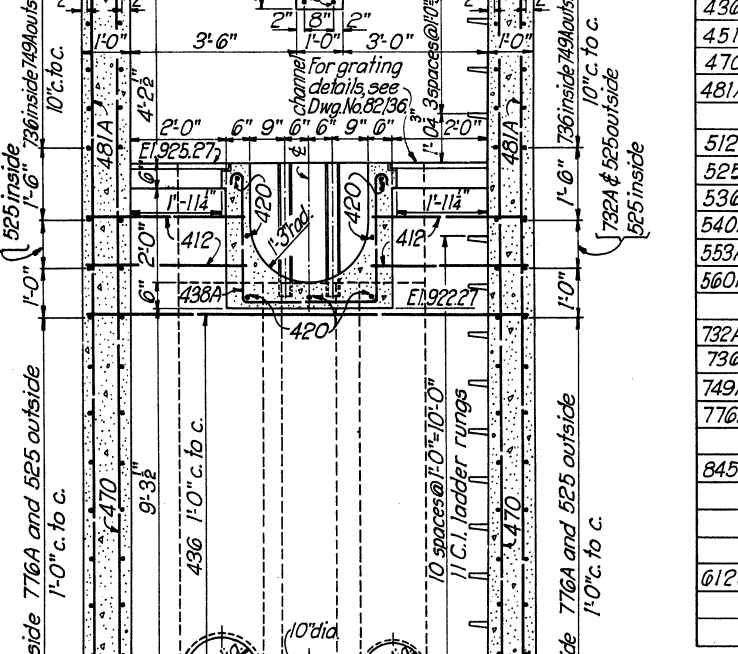
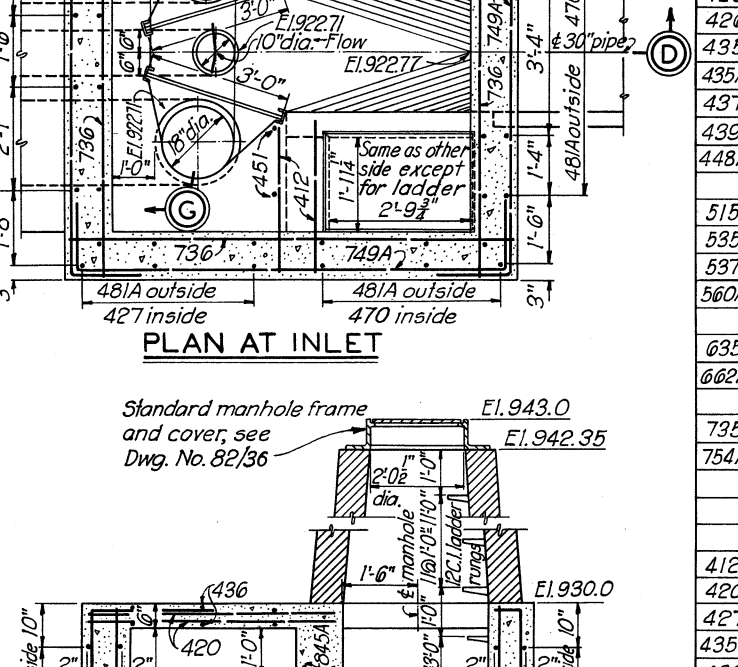
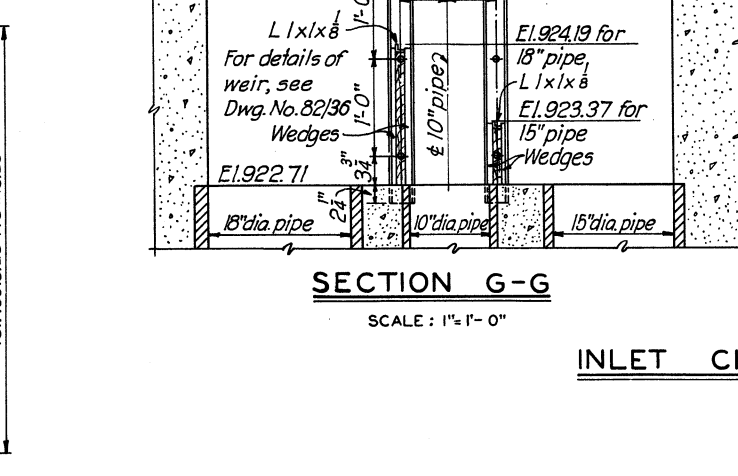
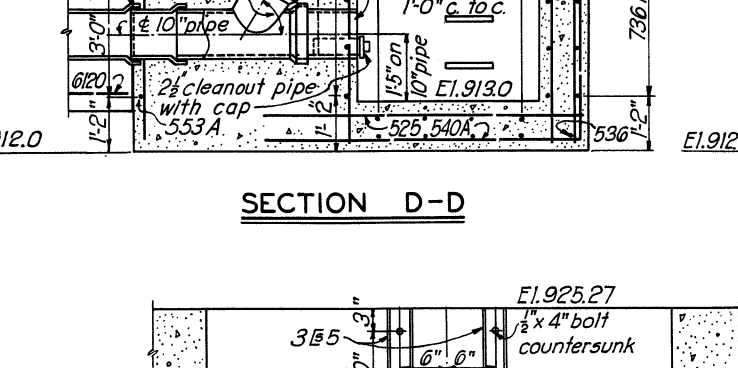
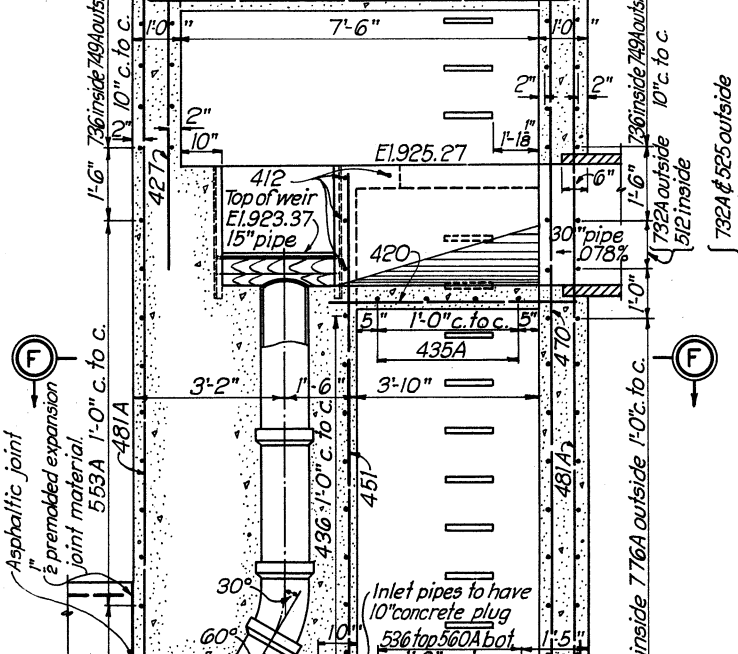
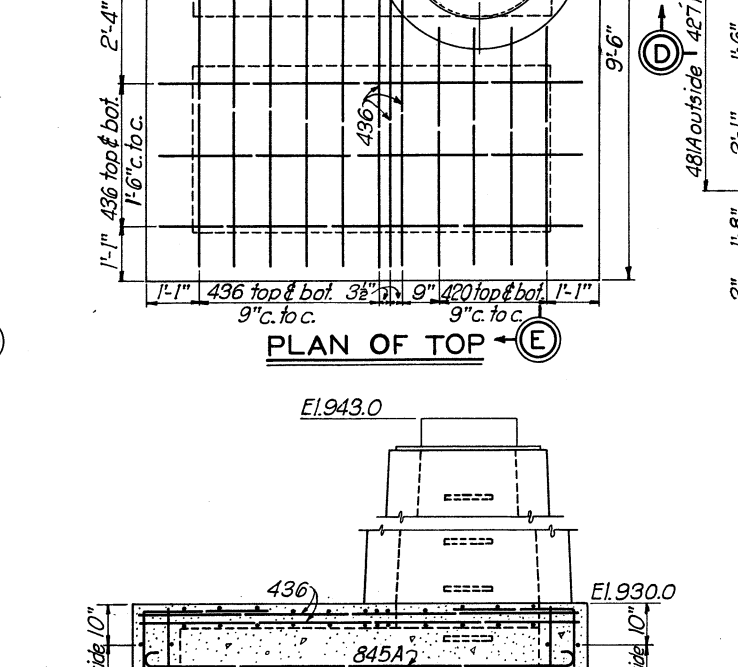
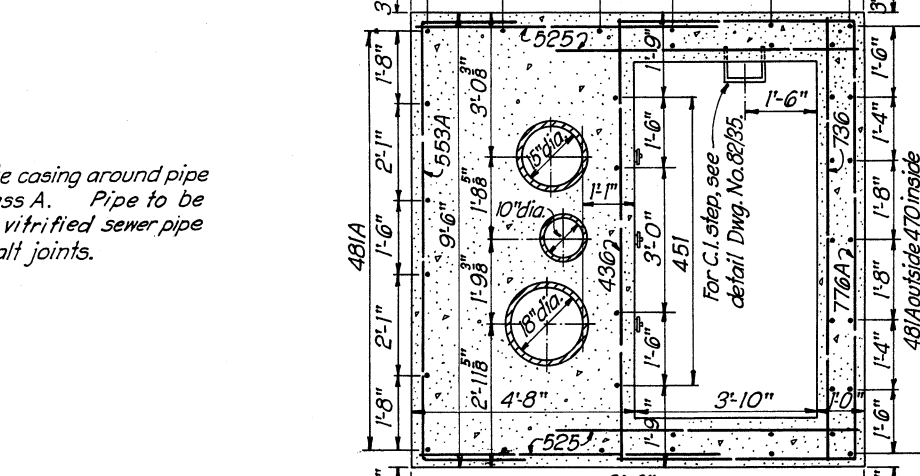
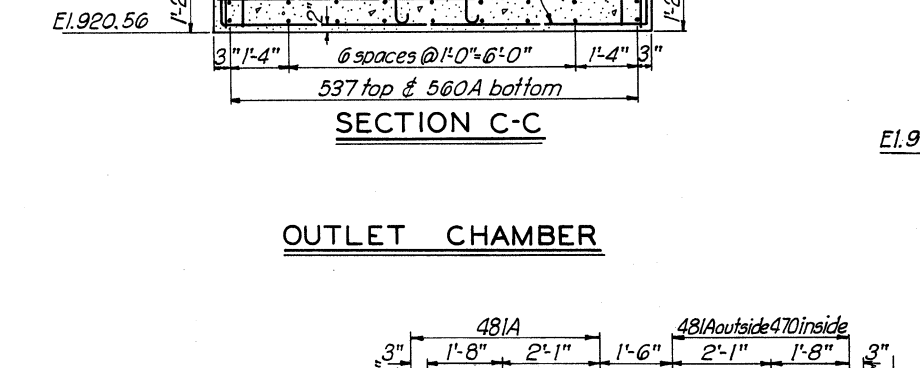
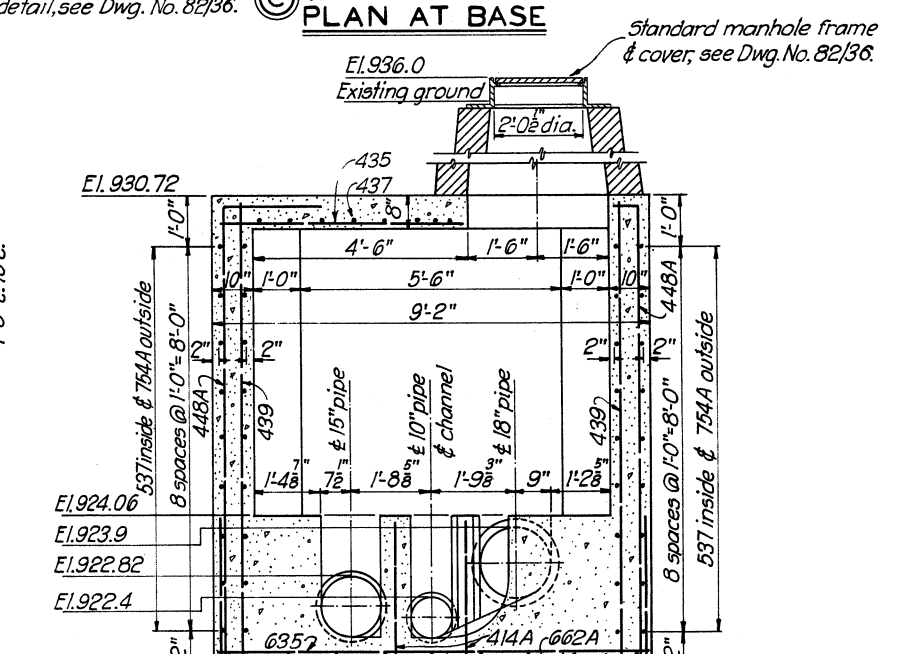
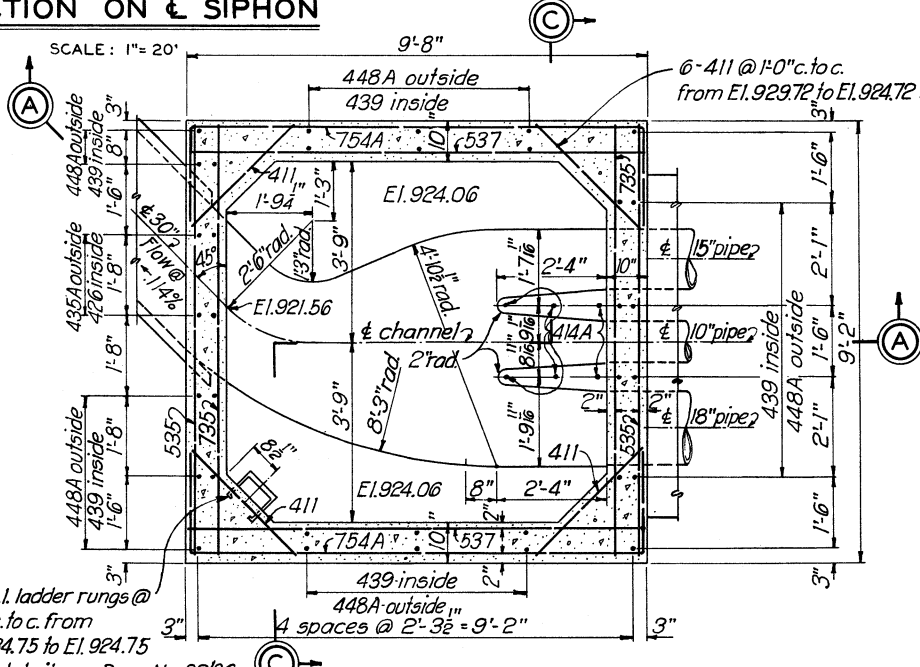
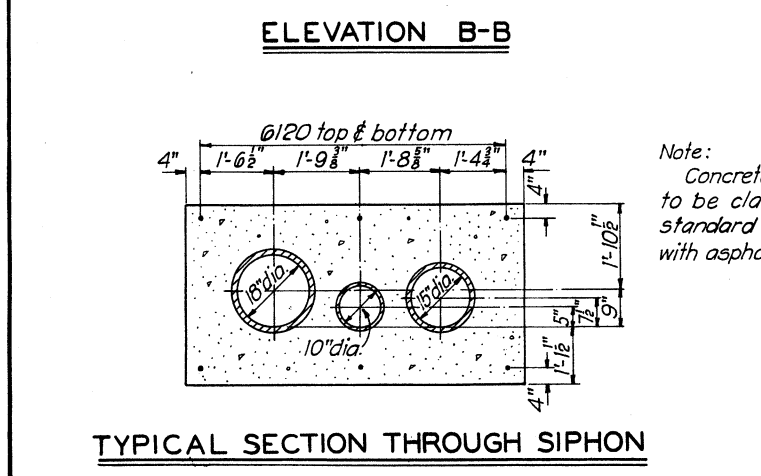
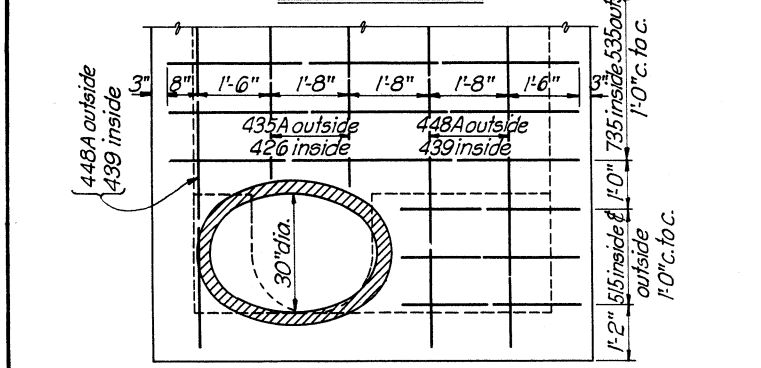
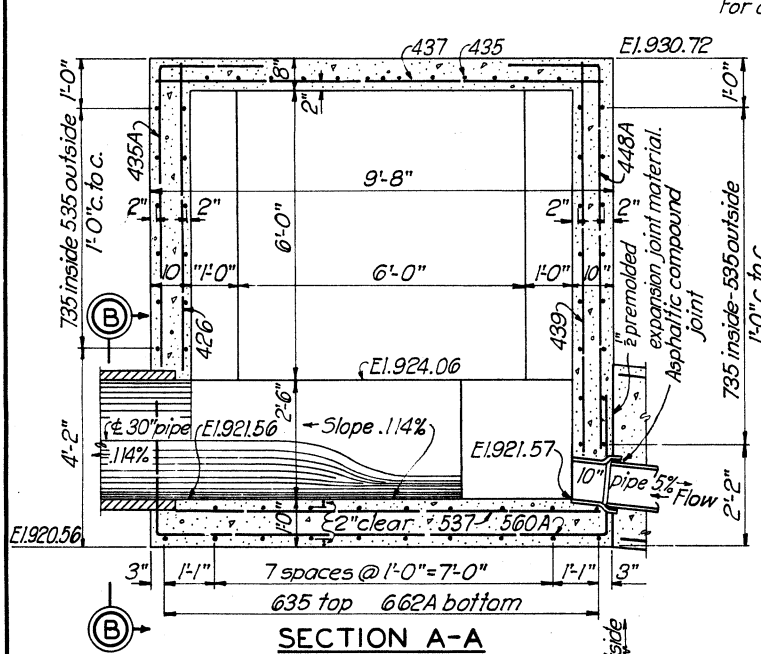
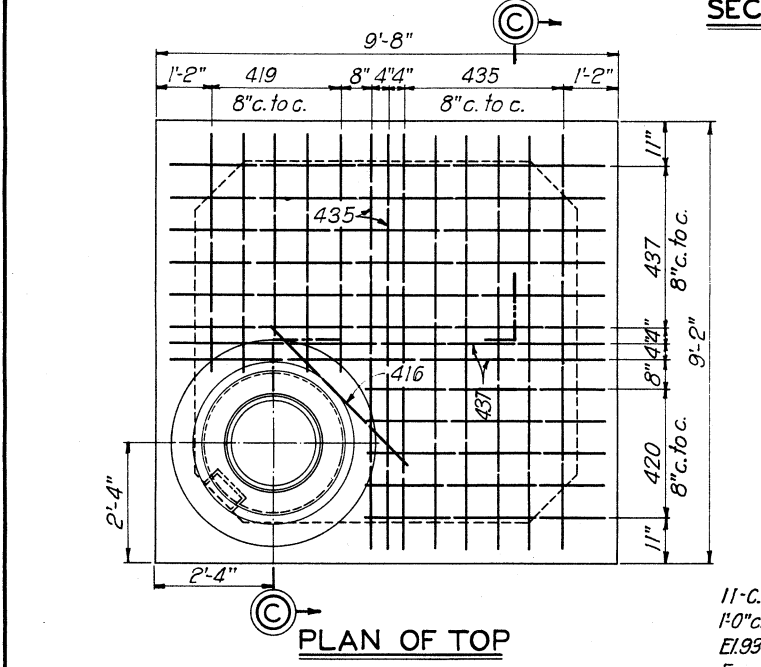
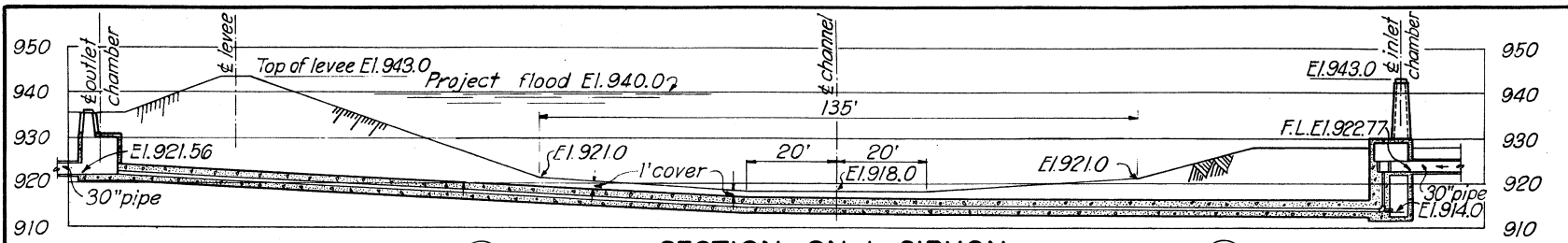
SHEET NO. 137

SCALE: AS SHOWN

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

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

BY DATE CHARACTER
REVISIONS
DRAWN BY R.L.E.
CHECKED BY D.C.J. FILE NO. 0271-PM-82/29 DATED

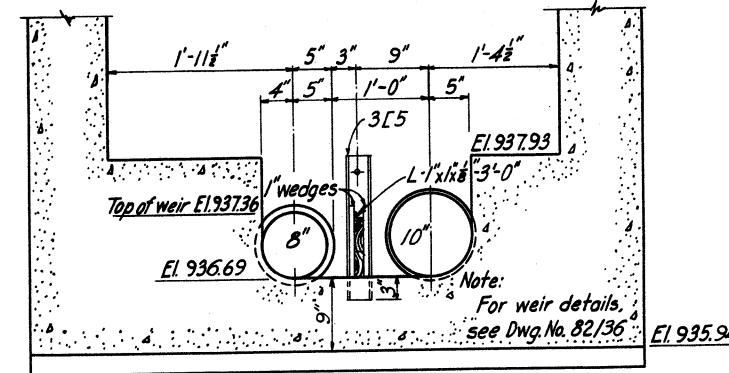


REINFORCING SCHEDULE						
K	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
OUTLET CHAMBER						
1	2"φ	2'-9"		24	1.84	44
2	2"φ	3'-6"		6	2.34	14
3	2"φ	4'-0"		1	2.67	3
4	2"φ	4'-9"		5	3.17	16
5	2"φ	5'-0"		5	3.34	17
6	2"φ	6'-6"		2	4.34	9
7	2"φ	8'-9"		8	5.85	47
8	2"φ	8'-9"		2	5.85	12
9	2"φ	9'-3"		8	6.18	49
10	2"φ	9'-9"		13	6.51	85
11	2"φ	12'-0"	17	8.02	136	
12	2"φ	3'-9"		6	3.91	23
13	2"φ	8'-9"		14	9.13	121
14	2"φ	9'-3"		27	9.65	260
15	2"φ	15'-0"		9	15.65	141
16	2"φ	8'-9"		10	13.14	131
17	2"φ	15'-6"		10	23.28	233
18	2"φ	8'-9"		14	17.89	251
19	2"φ	19'-6"		18	27.59	497
				Total		2097
INLET CHAMBER						
20	2"φ	3'-0"		8	2.0	16
21	2"φ	5'-0"		21	3.34	70
22	2"φ	6'-9"		10	4.51	45
23	2"φ	8'-9"		4	5.85	23
24	2"φ	9'-0"		32	6.01	192
25	2"φ	12'-9"		4	8.52	34
26	2"φ	17'-6"		10	11.69	117
27	2"φ	20'-9"		20	13.53	271
28	2"φ	3'-0"		4	3.13	13
29	2"φ	6'-3"		56	6.52	365
30	2"φ	9'-0"		5	9.39	47
31	2"φ	10'-0"		10	10.43	104
32	2"φ	13'-9"		10	13.82	138
33	2"φ	18'-0"		4	15.65	63
34	2"φ	8'-0"		4	16.35	65
35	2"φ	9'-0"		30	18.40	552
36	2"φ	12'-3"		20	25.04	501
37	2"φ	19'-0"		10	38.84	388
38	1"φ	11'-3"		2	30.04	60
				Total		3064
SIPHON						
39	3/4"φ	30'-0"		60	45.06	2704
				Total		2704

NOTES
For general plan, see Dwg. No. 16/2.
For general utility plan, see Dwg. No. 82/21.
For details of sewer changes, see Dwg. No. 82/25.
All concrete to be Class A.

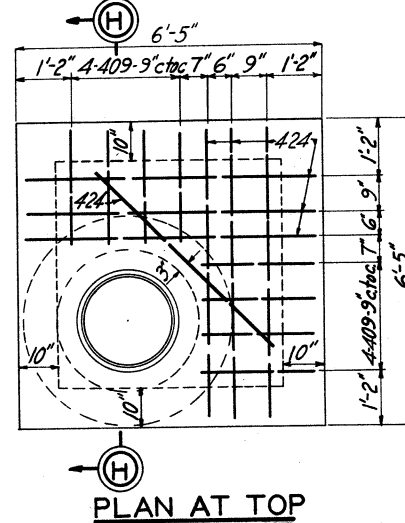
TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD SIPHON
IN 147 SHEETS SHEET NO. 138 SCALE: 1/2" = 1'-0"
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. SEPT. 1940
SUBMITTED: [Signature] APPROVED: [Signature]
DRAWN BY: R. J. [Signature] TRACED BY: H. E. C. CHECKED BY: D. G. J. FILE NO. 0271-PM-82/30 DATED

BY	DATE	CHARACTER
REVISIONS		

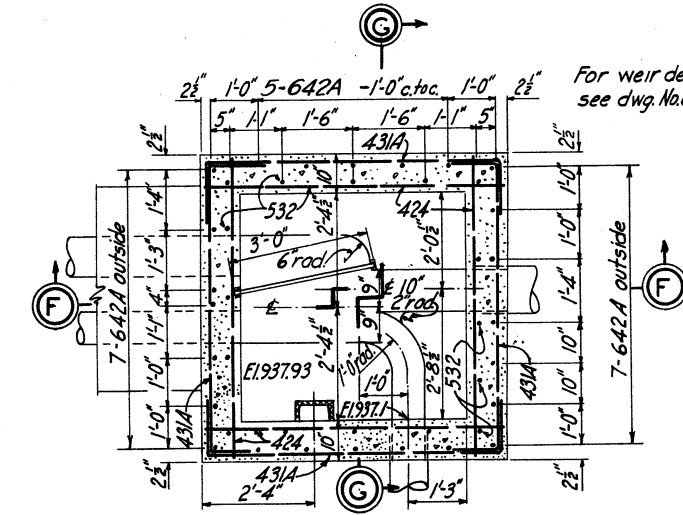


PARTIAL SECTION H-H ENLARGED
SCALE: 1" = 1'-0"

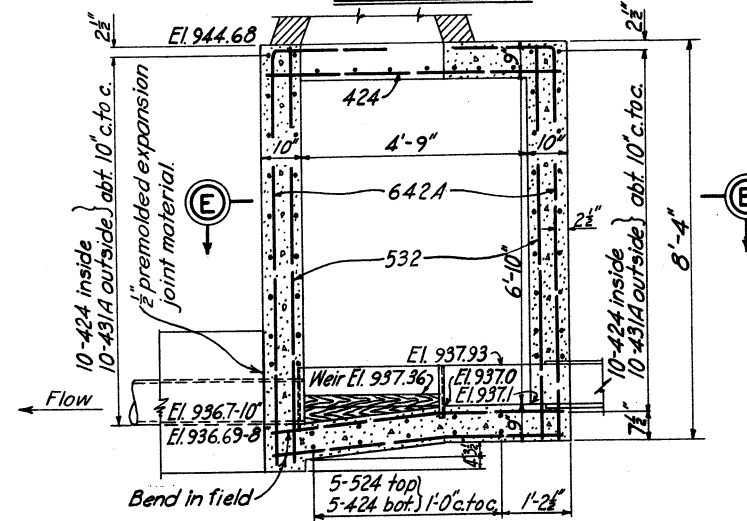
TYPICAL SECTION OF SIPHON



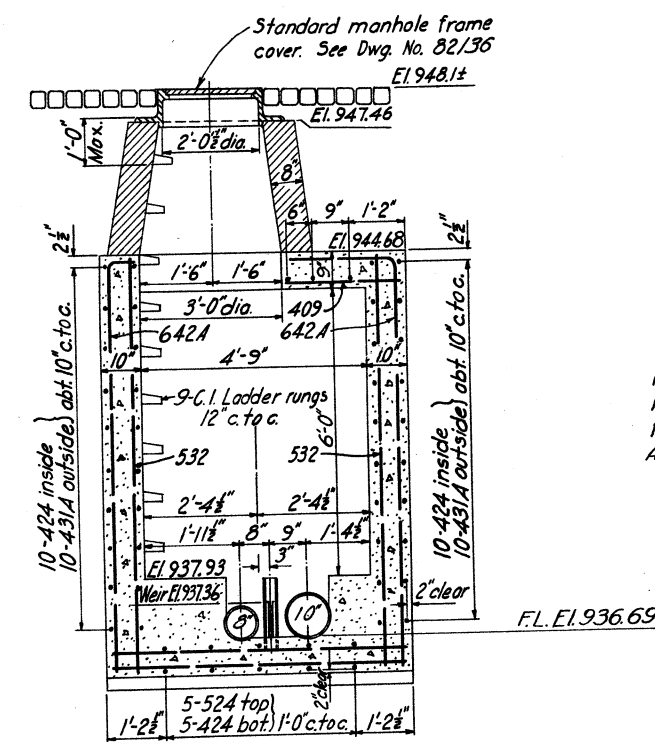
PLAN AT TOP



PLAN AT E-E

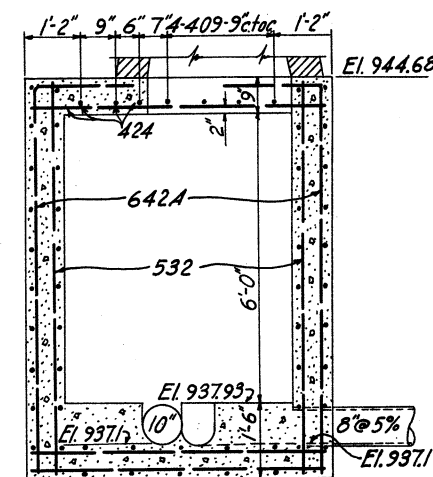


SECTION F-F



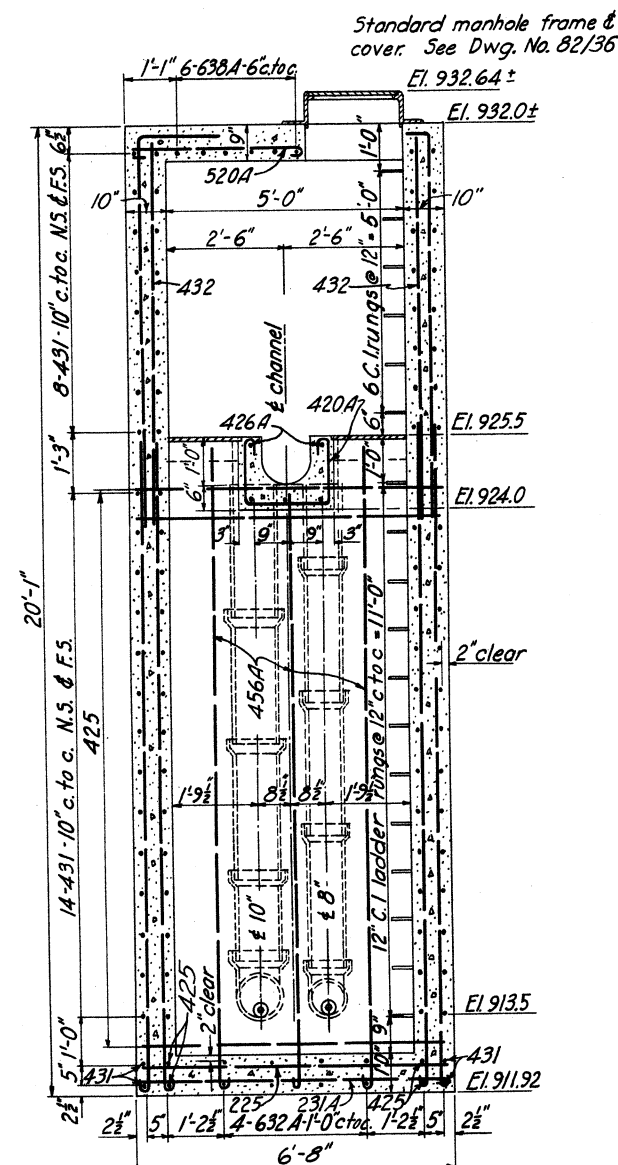
SECTION H-H

For general plan, see Dwg. No. 16/2.
For general utility plan, see Dwg. No. 82/21.
For details of sewer changes, see Dwg. No. 82/25.
All concrete to be Class "A."



SECTION G-G

INLET CHAMBER



SECTION D-D

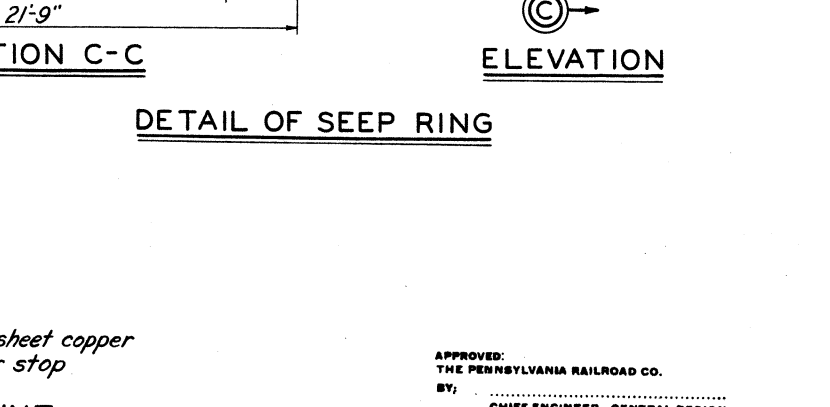
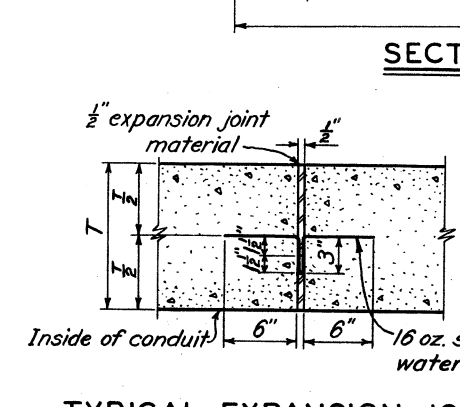
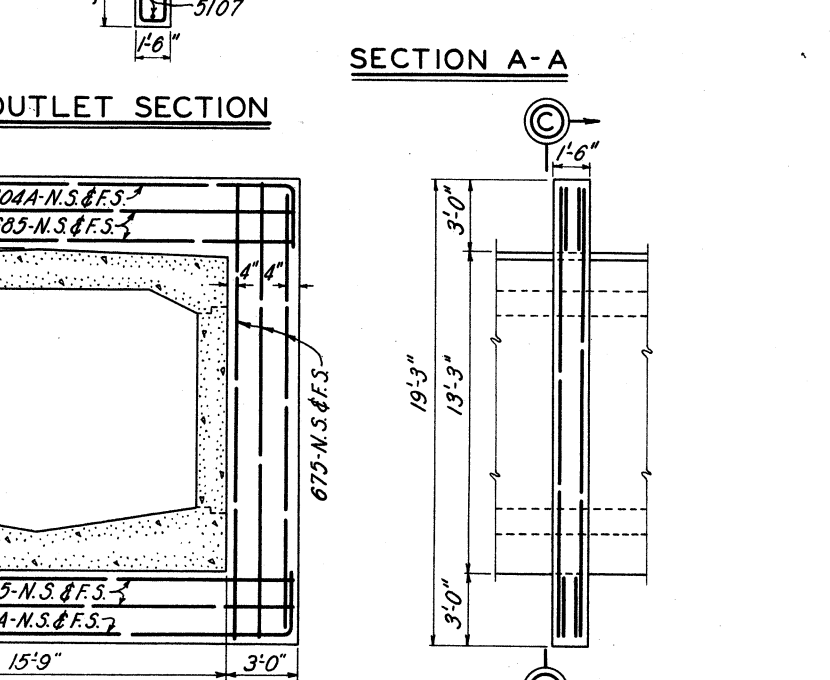
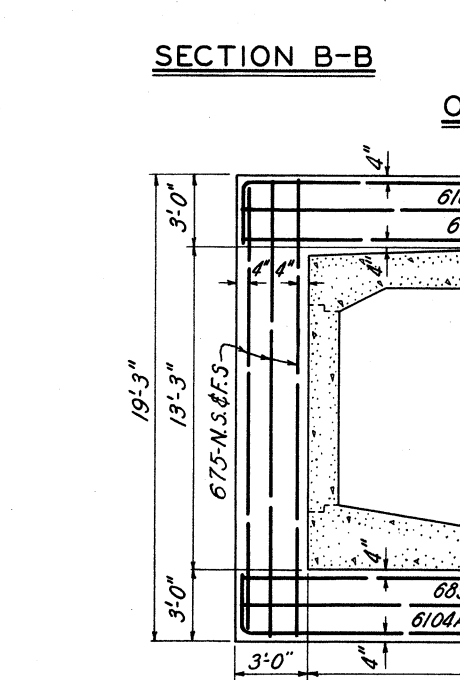
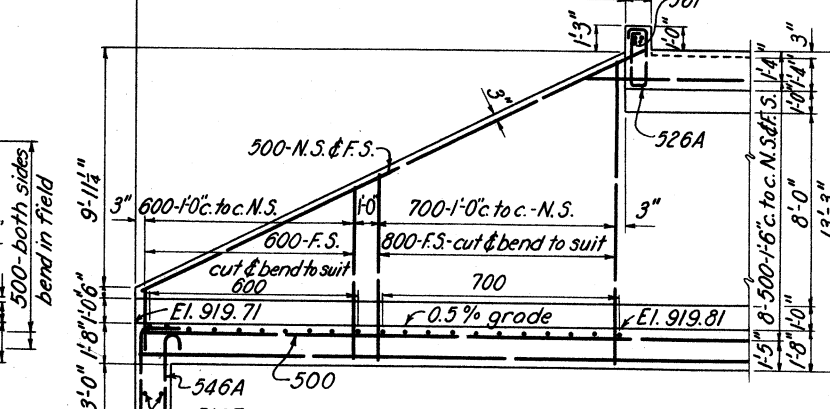
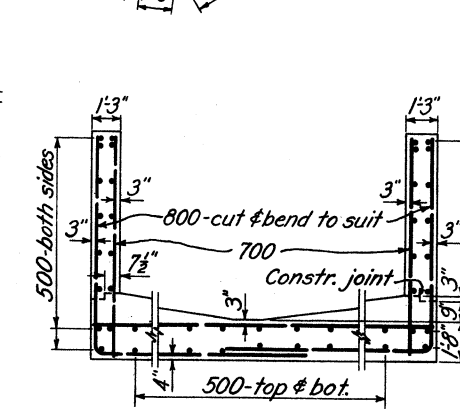
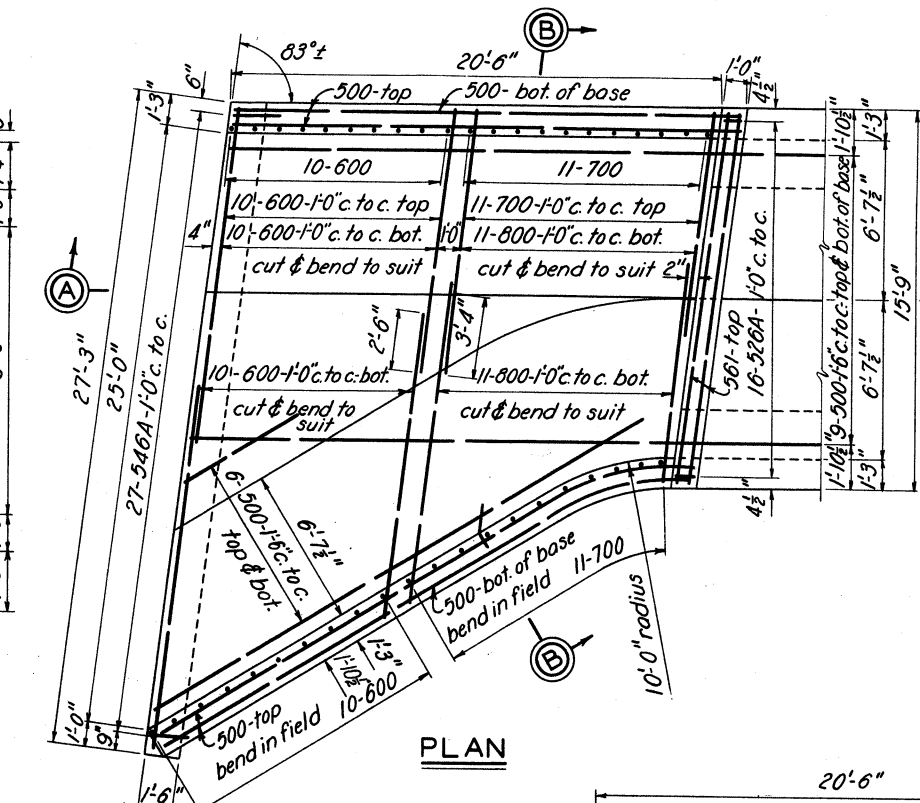
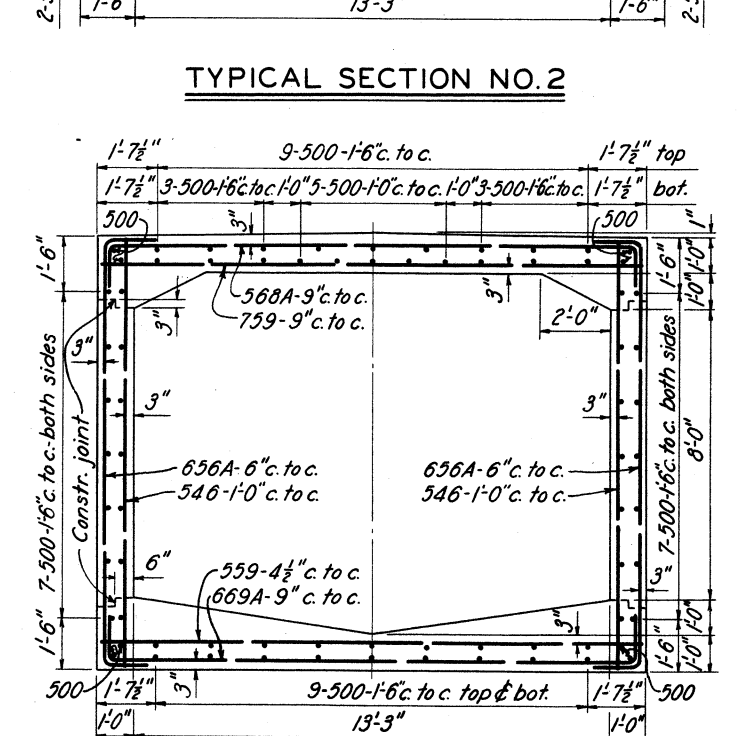
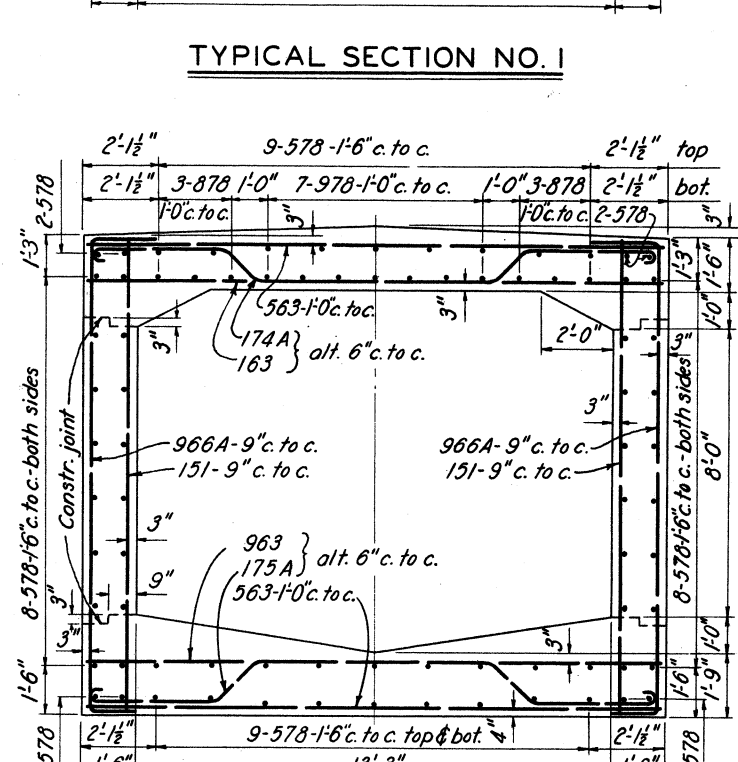
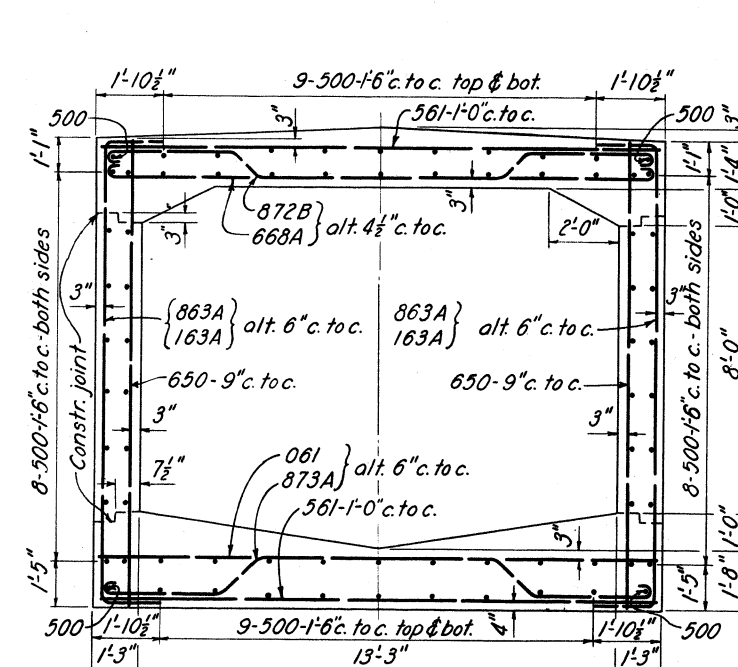
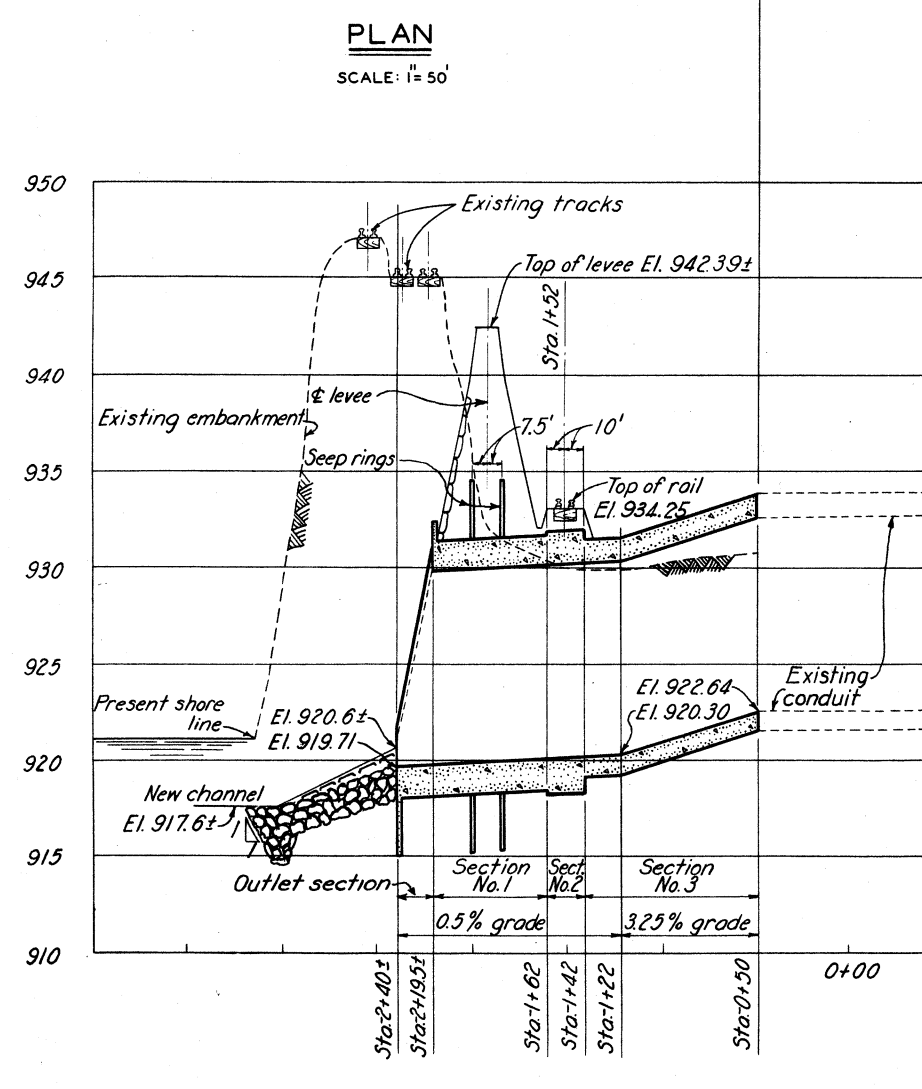
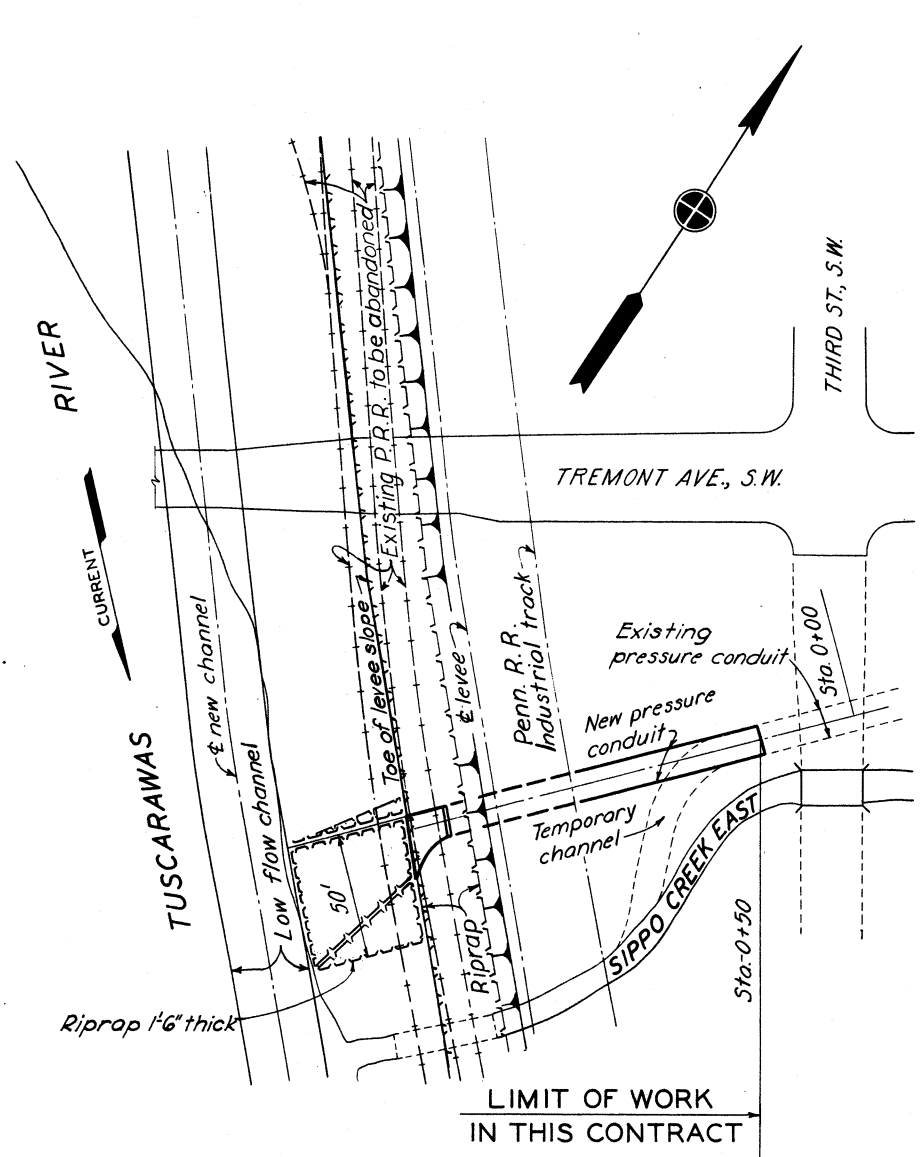
OUTLET CHAMBER

REINFORCING SCHEDULE									
MARK	SIZE	L'GTH	BENDING	DIAGRAM	NO.	UNIT	WT.	TOTAL	WT.
OUTLET CHAMBER									
225	1/2"	6'-3"			5	5.31	27		
225A	1/2"	7'-9"			5	6.59	33		
420A	1/2"	7'-9"			4	3.34	13		
425	3/4"	5'-0"			78	4.18	326		
426A	3/4"	6'-6"			5	4.34	22		
431	3/4"	7'-9"			64	5.18	332		
432	3/4"	8'-0"			17	5.34	91		
439A	3/4"	9'-9"			19	5.57	124		
440A	3/4"	10'-0"			45	6.68	301		
456A	3/4"	14'-0"			32	9.35	299		
520A	3/4"	5'-0"			2	5.22	10		
526A	3/4"	6'-6"			2	6.78	14		
632A	3/4"	8'-0"			17	12.02	204		
638A	3/4"	9'-6"			6	14.27	86		
						Total		1882	
INLET CHAMBER									
409	3/4"	2'-3"			8	1.57	12		
424	3/4"	6'-0"			57	4.01	229		
431A	3/4"	7'-9"			40	5.18	207		
524	3/4"	6'-0"			10	6.26	63		
532	3/4"	8'-0"			17	8.34	142		
642A	3/4"	10'-6"			24	16.52	396		
						Total		1049	
SIPHON									
6120	3/4"	30'-10"			128	45.06	5768		
						Total		5768	

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA.. SEPT. 1940

SUBMITTED: *[Signature]* APPROVED: *[Signature]*
DISTRICT ENGINEER DISTRICT ENGINEER
U. S. ARMY CORPS OF ENGINEERS U. S. ARMY CORPS OF ENGINEERS

DRAWN BY R. E. TRANSMITTED WITH LETTER
TRACED BY A. F.
CHECKED BY D. G. J. FILE NO. 027i-PM-82/31 DATED



REINFORCING SCHEDULE						
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
TYPICAL SECTION NO. 1-40'						
500	3/8"	2880		-	1.043	3004
561	3/8"	13'-3"		80	15.91	1273
650	3/4"	12'-6"		107	18.78	2009
668A	3/4"	17'-0"		53	29.53	1553
863A	1"	15'-9"		80	42.05	3364
872B	1"	18'-0"		53	48.06	2547
873A	1"	18'-3"		40	48.73	1949
163A	1"	15'-9"		80	53.55	4284
061	1/4"	15'-3"		40	8.102	3241
				Total 2,3024		
SEEP RING						
875	3/8"	18'-9"		24	28.16	676
885	3/8"	21'-3"		16	31.92	510
6104A	3/8"	26'-0"		8	39.05	312
				Total 1498		
TYPICAL SECTION NO. 2-20'						
563	3/8"	15'-9"		40	16.43	657
578	3/8"	19'-6"		67	20.34	1363
878	1"	19'-6"		6	52.07	312
151	1"	12'-9"		54	43.35	2341
163	1"	15'-9"		20	53.55	1071
174A	1"	18'-6"		20	62.90	1258
175A	1"	18'-9"		20	63.75	1275
963	1 1/8"	15'-9"		20	67.77	1355
968A	1 1/8"	16'-6"		54	71.00	3834
978	1 1/8"	19'-6"		7	83.91	587
				Total 14,053		
TYPICAL SECTION NO. 3-40'						
500	3/8"	2960		-	1.043	3087
546	3/8"	11'-6"		80	11.99	959
559	3/8"	14'-9"		107	15.38	1646
568A	3/8"	17'-0"		53	17.73	940
656A	3/4"	14'-0"		160	21.03	3365
669A	3/4"	17'-3"		53	29.91	1573
759	3/8"	14'-9"		53	30.15	1598
				Total 12,968		
OUTLET SECTION						
500	3/8"	1200'		-	1.043	1252
526A	3/8"	6'-6"		16	6.78	108
546A	3/8"	11'-8"		27	11.99	324
561	3/8"	15'-3"		2	15.91	32
5107	3/8"	26'-9"		3	27.90	84
600	3/8"	750'		-	1.502	1127
700	3/8"	450'		-	2.044	920
800	1"	500'		-	2.670	1335
				Total 5182		

NOTES

Copper water stop to be installed in all conduit monolith joints. Monoliths not to exceed 40 lin. ft.

All main reinforcing steel to be spaced a clear distance from concrete surfaces as shown.

Provide 1" chamfer on all exposed corners, unless otherwise shown or noted.

For general plan, see Dwg. No. 10/3.

All concrete to be Class B.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PRESSURE CONDUIT - SIPCO CREEK
TYPICAL SECTIONS & OUTLET STRUCT.**

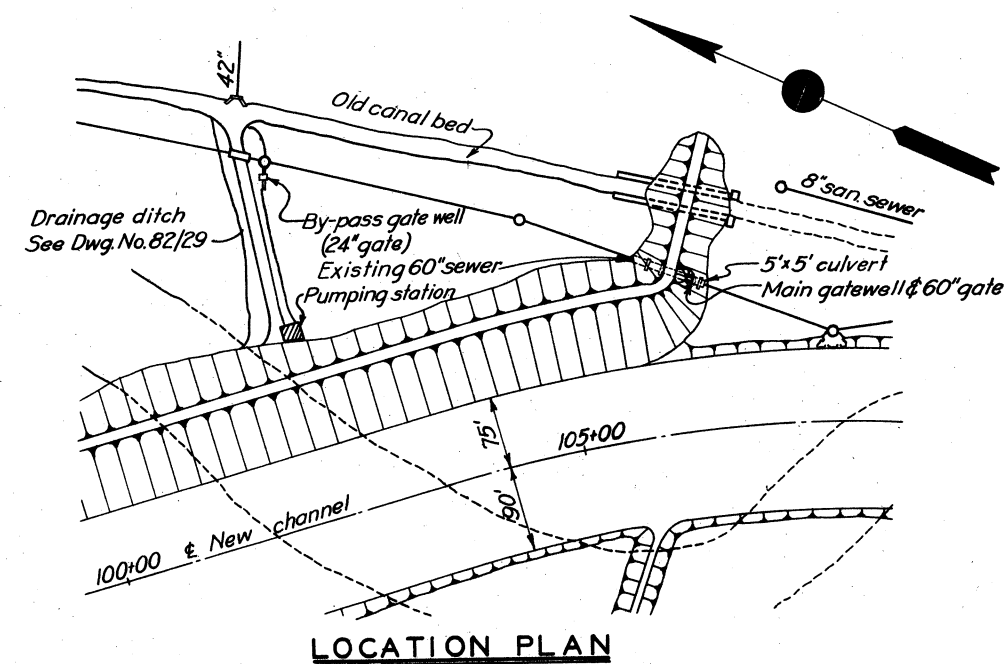
IN 147 SHEETS SHEET NO. 140 SCALE: 1/4" = 1'-0"

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

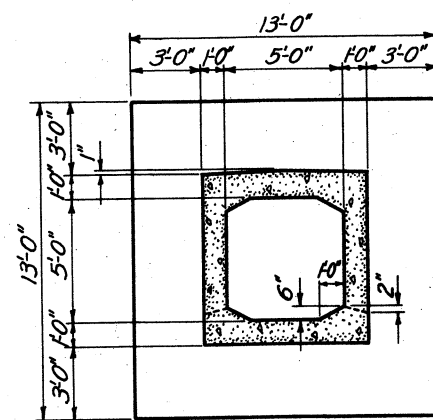
SUBMITTED: *[Signature]* APPROVED: *[Signature]*

DRAWN BY: M. C. E. TRANSMITTED WITH LETTER
CHECKED BY: E. K. FILE NO. 027i-PM-82/32 DATED

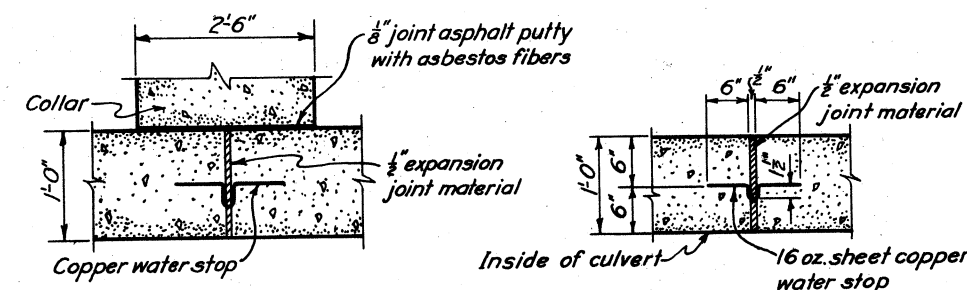
BY	DATE	CHARACTER
		REVISIONS



SCALE: 1" = 100'



SECTION A-A



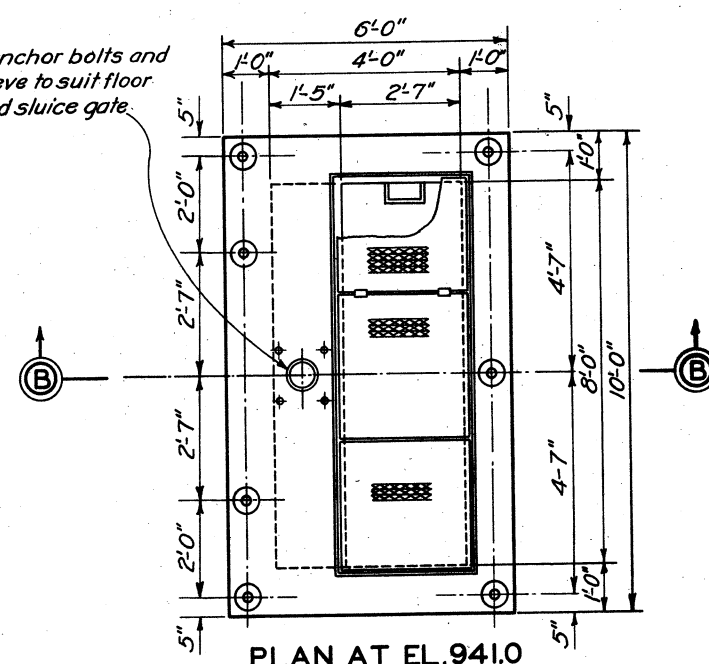
DETAIL A

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

TYPICAL EXPANSION JOINT

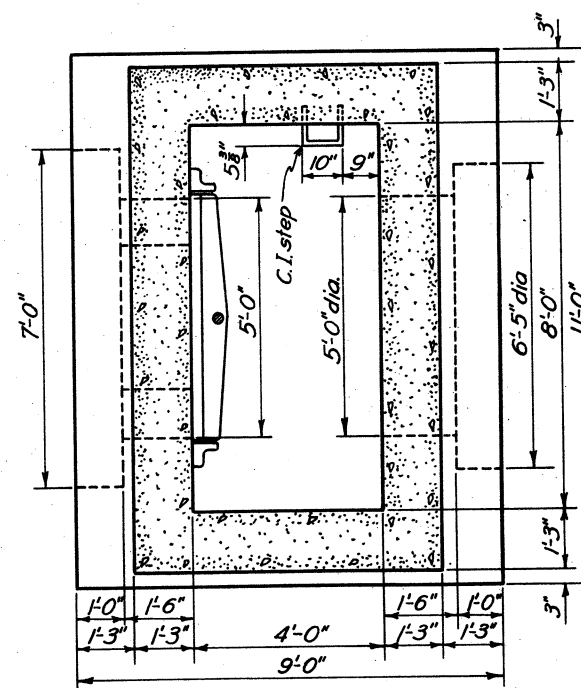
SCALE: 1/2" = 1'-0"

Locate anchor bolts and pipe sleeve to suit floor stand and sluice gate



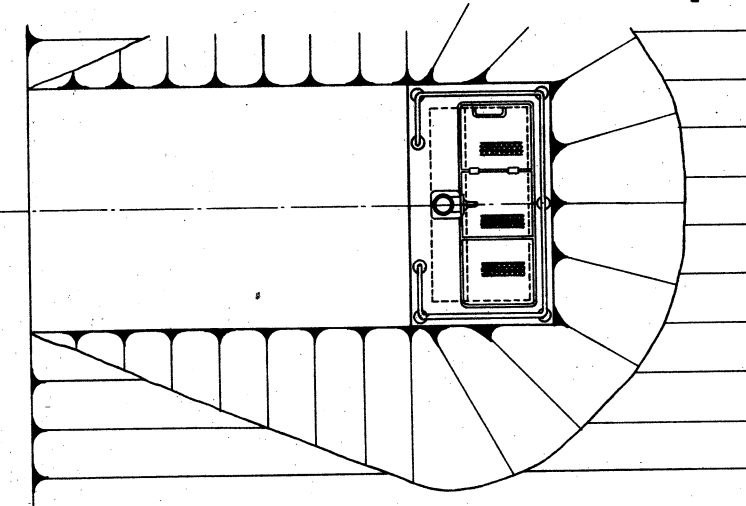
PLAN AT EL. 941.0

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

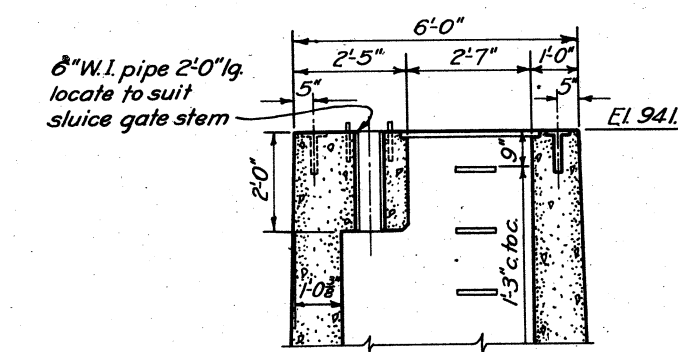


PLAN AT EL. 924.7

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

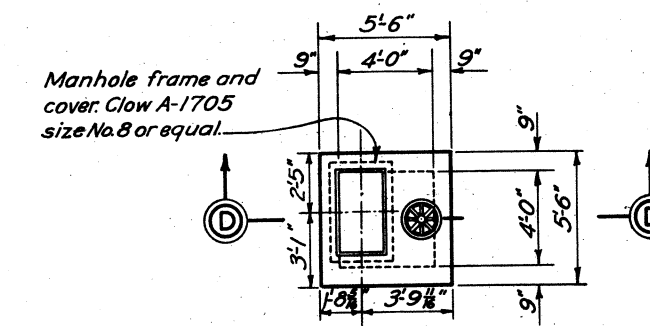


PLAN

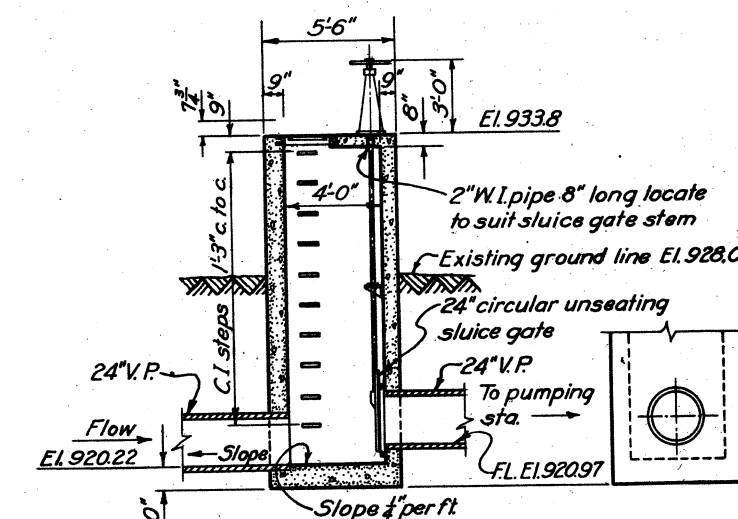


SECTION B-B

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



PLAN



SECTION D-D

END VIEW

BY-PASS GATEWELL

NOTES

For reinforcing details, see Dwg. No. 82/34.
All concrete to be Class 'A'.

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
GATE WELLS - MASONRY DETAILS**

IN 147 SHEETS

SHEET NO. 141

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

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

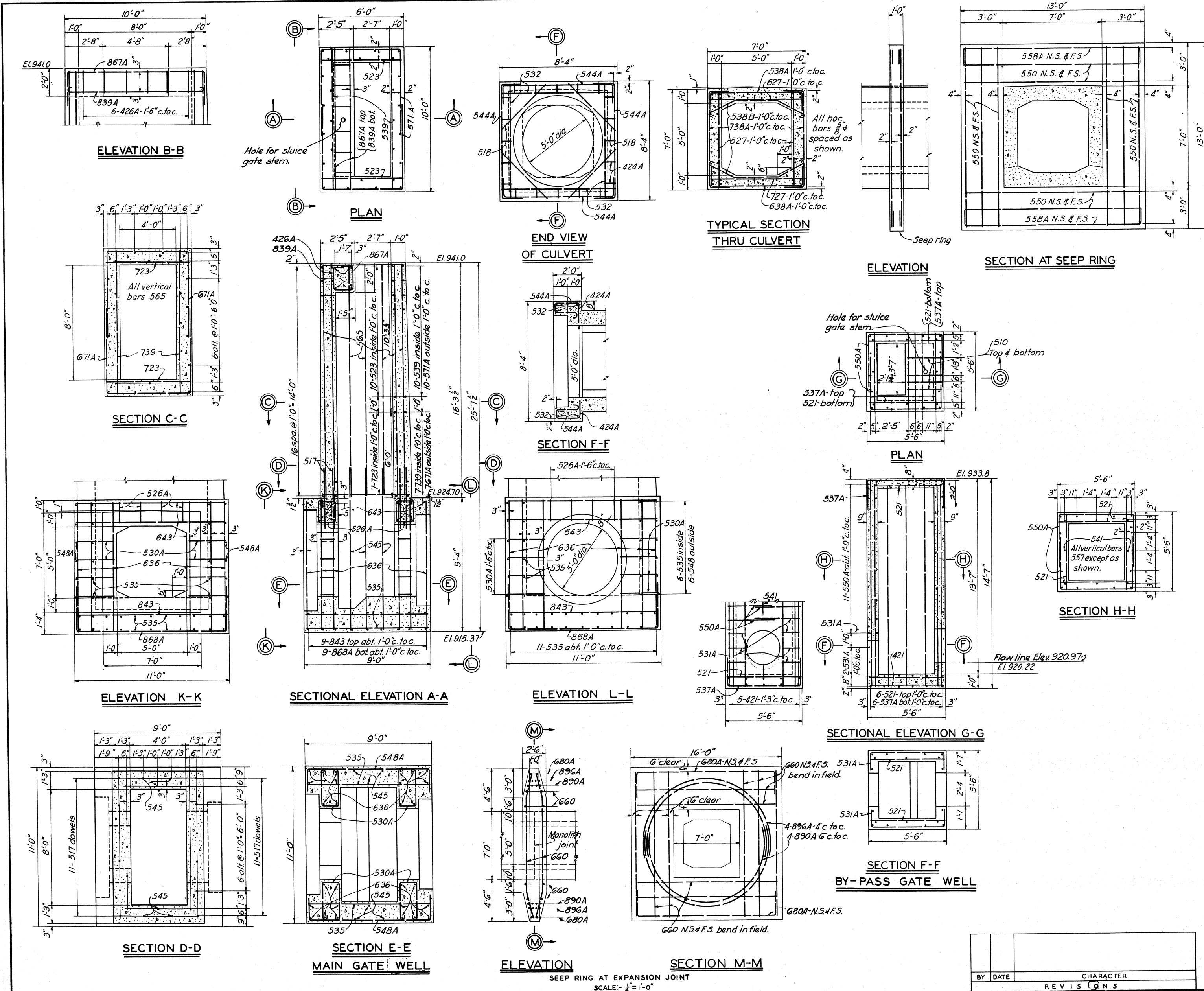
SUBMITTED: 1/10/41 APPROVED: 1/10/41

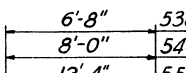
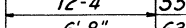
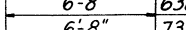
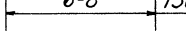
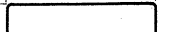
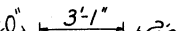
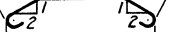
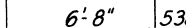
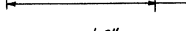
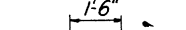
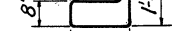
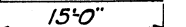
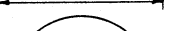
DRAWN BY: R. M. C. TRANSMITTED WITH LETTER
CHECKED BY: E. B. H. FILE NO. 0271-PM-82/33
DESIGNED BY: D. G. J.

END VIEW

SECTION ON & OF CULVERT
CULVERT & MAIN GATEWELL

BY	DATE	CHARACTER



REINFORCING SCHEDULE						
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
CULVERT						
424A	1/2"	6'-0"		20	4.01	80
518	5/8"	4'-6"		4	4.69	19
527	5/8"	6'-9"		180	7.04	1267
532	5/8"	8'-0"		4	8.34	33
538A	5/8"	9'-6"		90	9.91	892
538B	5/8"	9'-6"		180	9.91	1784
544A	5/8"	11'-0"		8	11.47	92
550	5/8"	12'-6"		80	13.04	1043
558A	5/8"	14'-6"		16	15.12	242
5118	5/8"	29'-6"		132	30.77	4062
627	3/4"	6'-9"		90	10.14	913
638A	5/8"	9'-6"		90	14.27	1284
727	5/8"	6'-9"		90	13.80	1242
738A	5/8"	9'-6"		180	19.42	3496
660	3/4"	15'-0"		20	22.53	451
680A	3/4"	20'-0"		4	30.04	120
890A	1"	22'-6"		4	60.08	240
896	1"	24'-0"		4	64.08	256

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
GATE WELLS - REINFORCING DETAILS

IN 147 SHEETS SHEET NO. 142 SCALE: 3/8" = 1'-0"

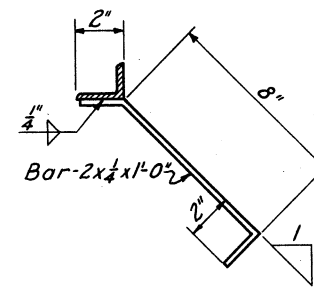
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED BY: *W. J. M. C.* APPROVED BY: *W. J. M. C.*

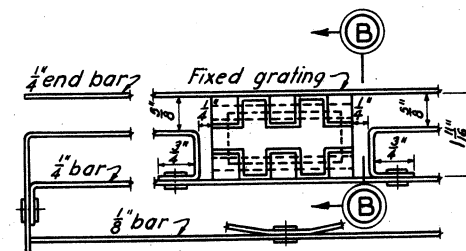
DRAWN BY: R. M. C. TRANSMITTED WITH LETTER

CHECKED BY: E. K. FILE NO. 027i-PM-82/34 DATED

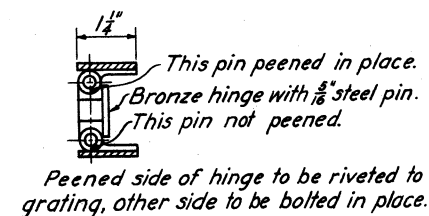
BY	DATE	CHARACTER
		REVISIONS



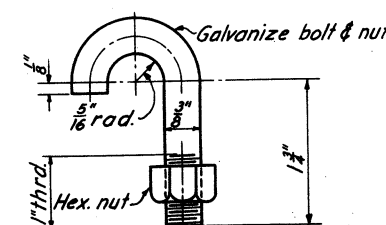
SECTION A-A
SCALE: 3" = 1'-0"



SECTION B-B



GRATING HINGE
3 REQUIRED
SCALE: 6"=1'-0"

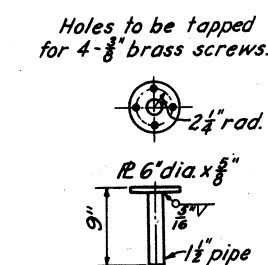


Technical drawing of a window frame showing dimensions and components. The drawing includes a vertical section on the left and a horizontal section on the right, both featuring a double-pane window unit. The vertical section has a height dimension of 5'-2" and a horizontal distance of 4'-7" from the wall to the window center. The horizontal section has a width dimension of 4'-7" from the wall to the window center. The horizontal section also shows a 2'-0" distance from the wall to the first window center, a 1'-1" distance between window centers, and a 3'-0" open space between the second window center and the next wall. The vertical section shows a 2'-0" distance from the wall to the first window center, a 1'-1" distance between window centers, and a 3'-0" open space between the second window center and the next wall. The drawing is labeled with "Post" and "3'-0" open" dimensions.

Diagram of a vertical post assembly:

- Top brace: $1\frac{1}{2}"$ pipe
- Distance between braces: $1'-6"$
- Distance from top brace to base: $3'-6"$
- Post label: *Post 2*
- Base detail:
 - $12\frac{6}{8}"$ dia. $\times \frac{3}{8}"$
 - $4\frac{3}{8}"$ brass screws
 - $2\frac{1}{2}"$ rad.
 - $\frac{7}{16}"$ hole

TYPICAL POST



RAIL POST ANCHOR
W.I. PIPE MARK 82/35-5 MAKE 7

NOTES

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

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
GATE WELL - METAL DETAILS**

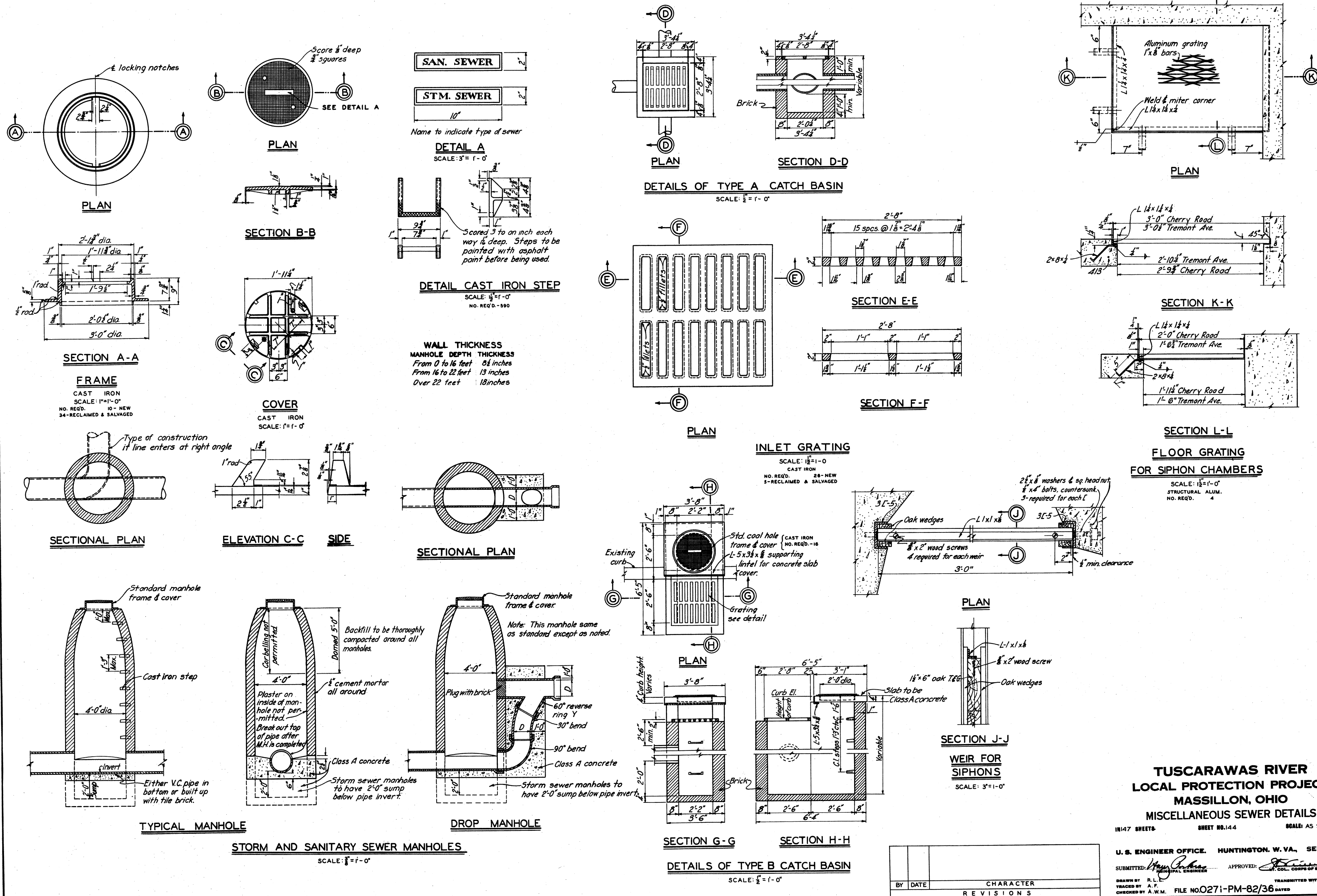
IN 147 SHEETS SHEET NO. 143 SCALE: 1"=1'-0"

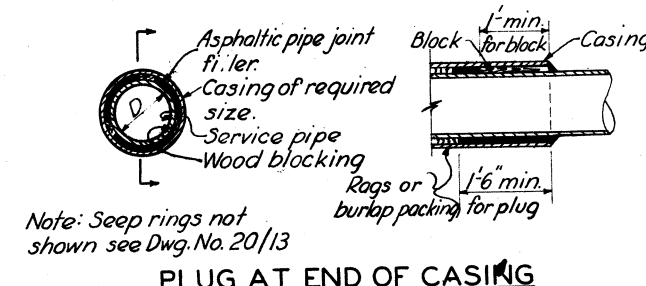
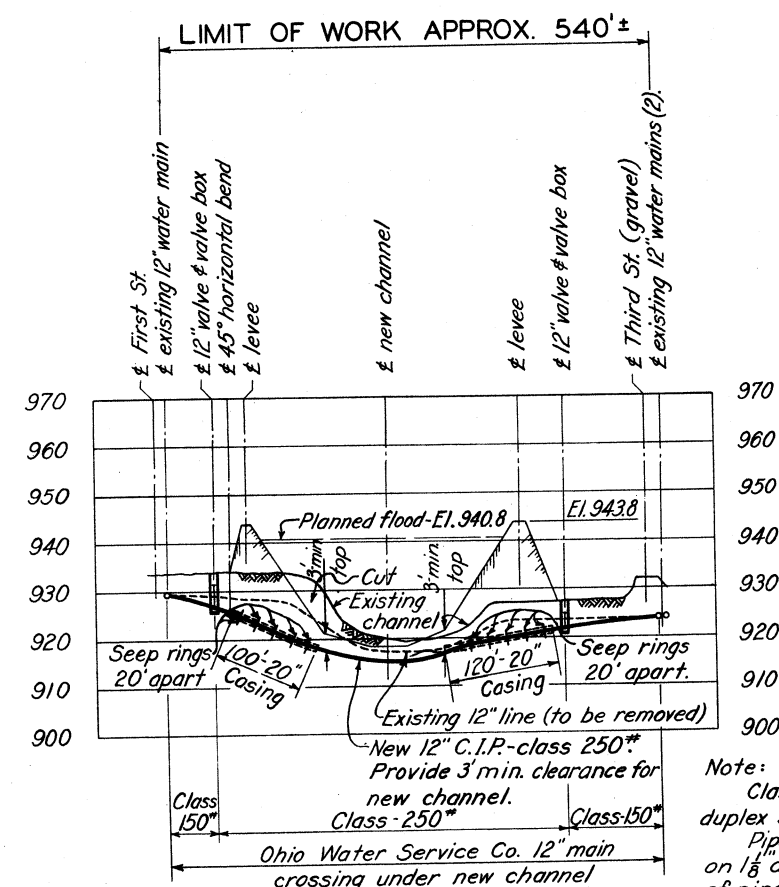
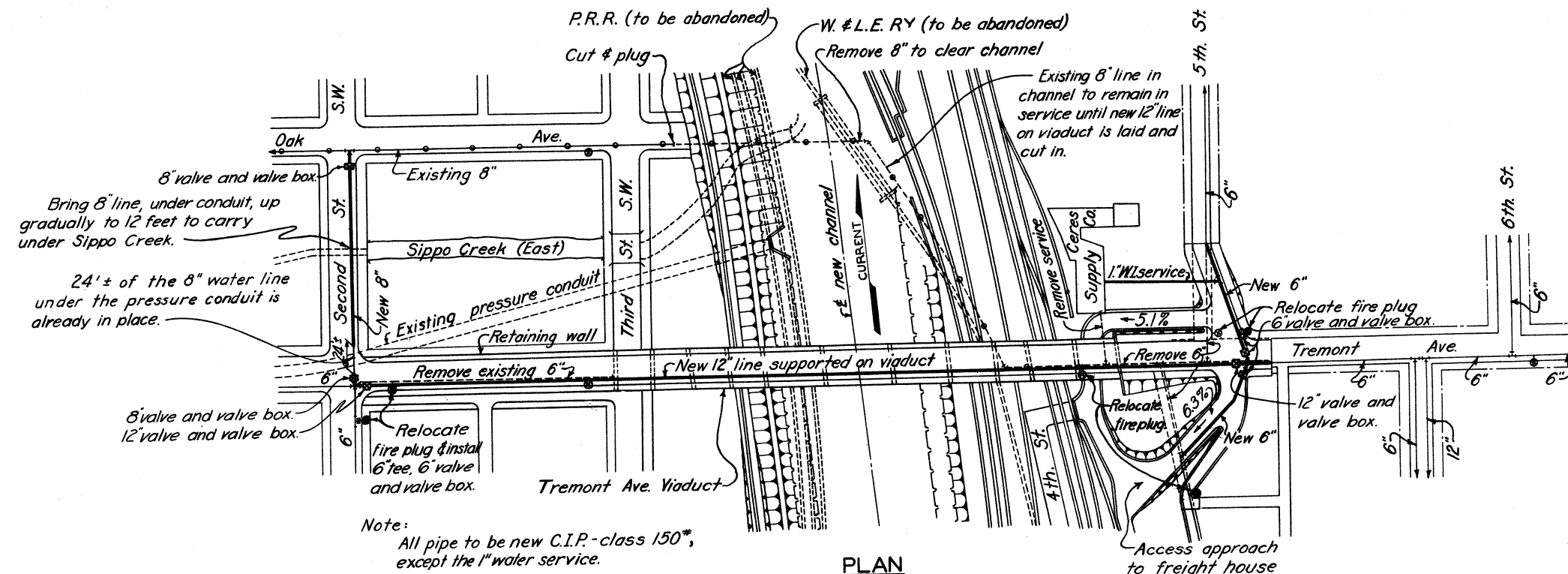
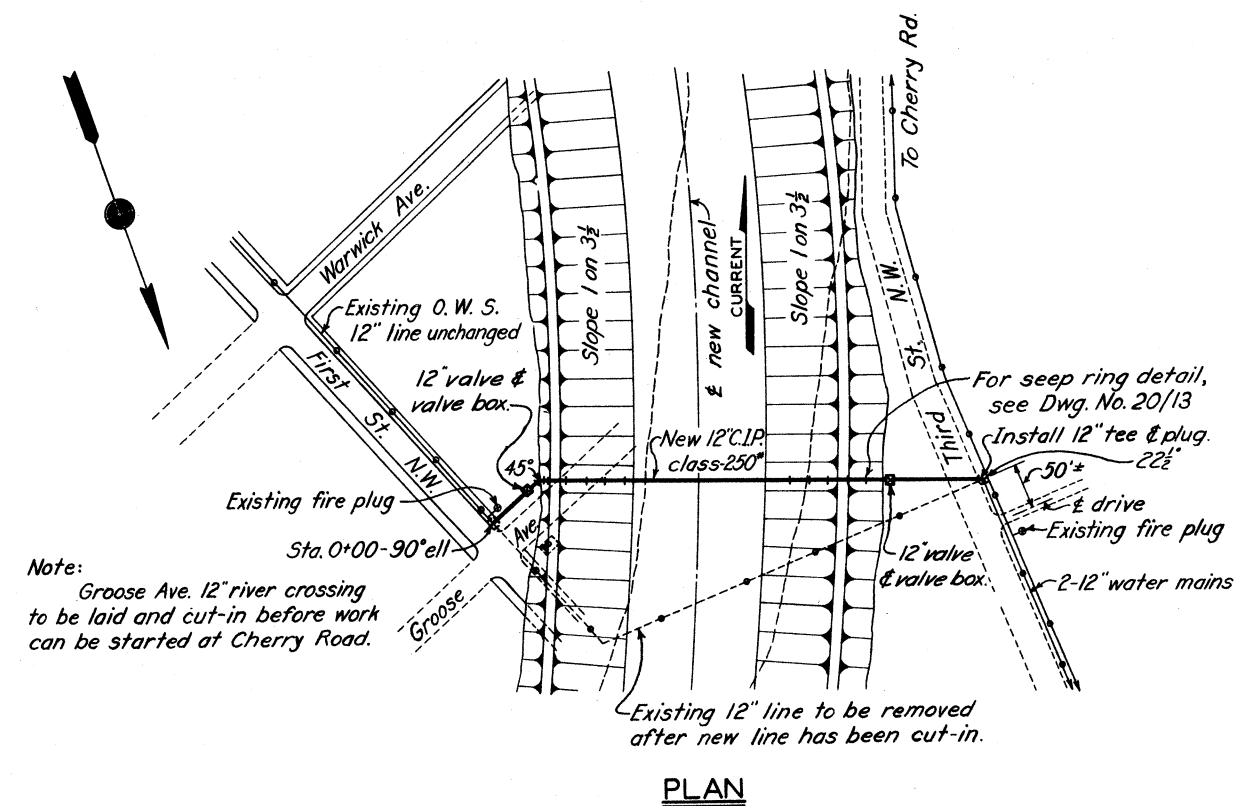
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., JAN. 1941

SUBMITTED: Ram Poshras APPROVED: [Signature]
CAP. CODE OF ENGINEERS

DRAWN BY A. J. S. TRANSMITTED WITH LETTER
TRACED BY W. E. C.
CHECKED BY A. R. N. FILE NO. 027i-PM-82/35 DATED

BY	DATE	CHARACTER
REVISIONS		

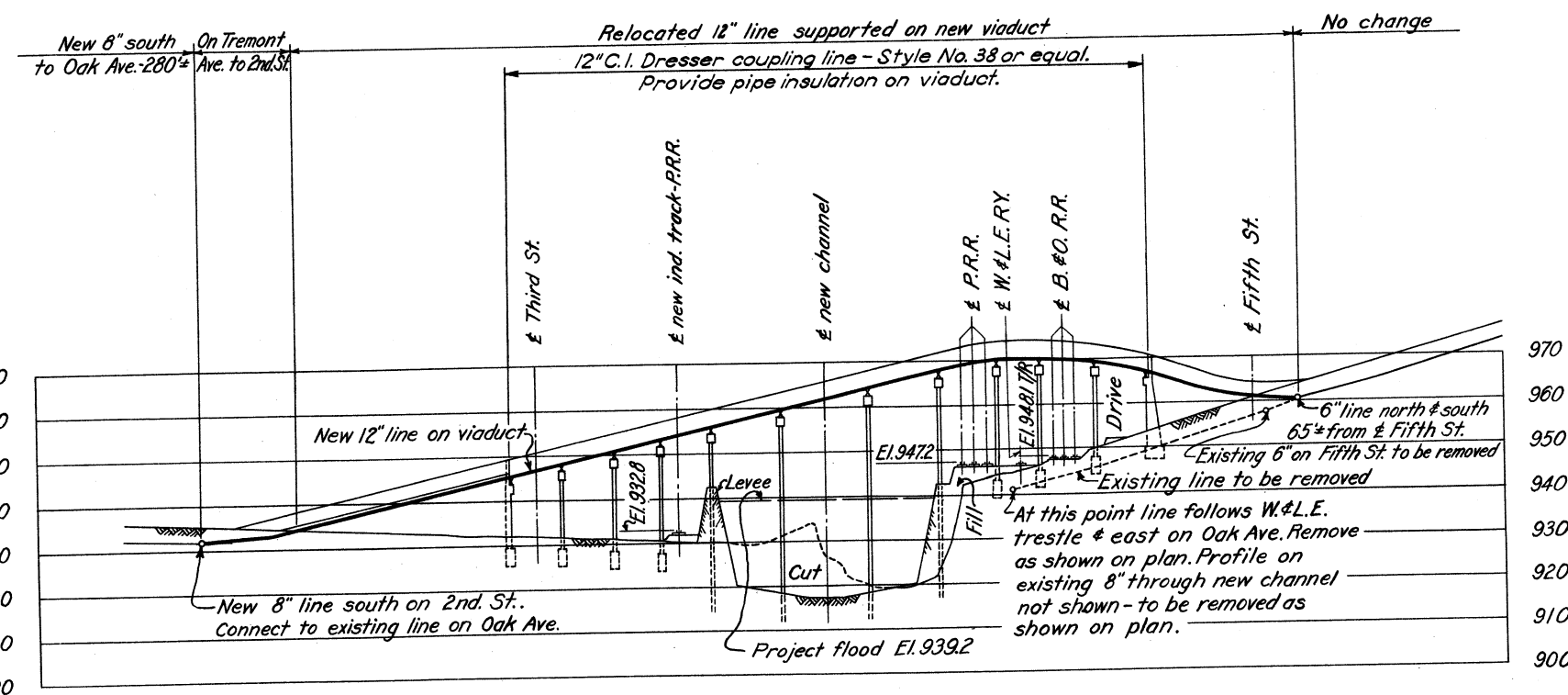




Note:
Class 250* to be mono-cast duplex simplex pipe or equal.
Pipe through channel & levee on 1/8" deflection per 12' length of pipe.
Casing to be 20" steel @ 63.7* per ft.

NOTES

For utility location plans, see Dwg. Nos. 82/20 and 82/21
For method of supporting pipe on Tremont Ave. Viaduct structure, see Dwg. No. 68/32.
For details of Tremont Ave. Viaduct east and west abutments, see Dwg. Nos. 68/18 and 68/24.
For details of seep rings, see Dwg. No. 20/13



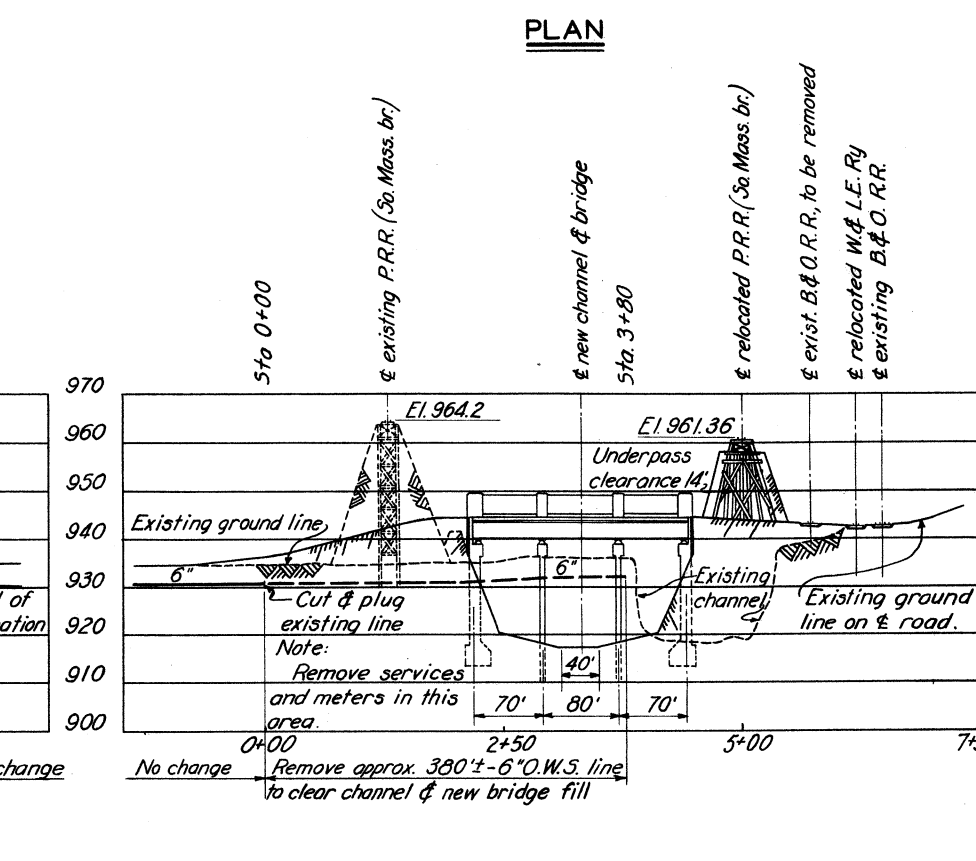
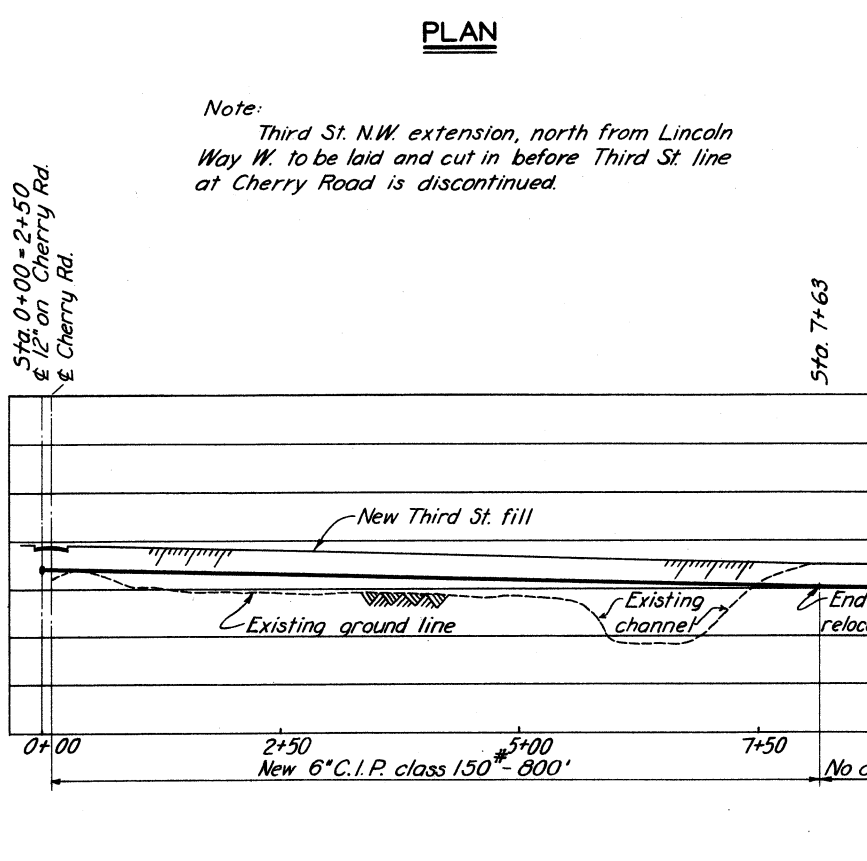
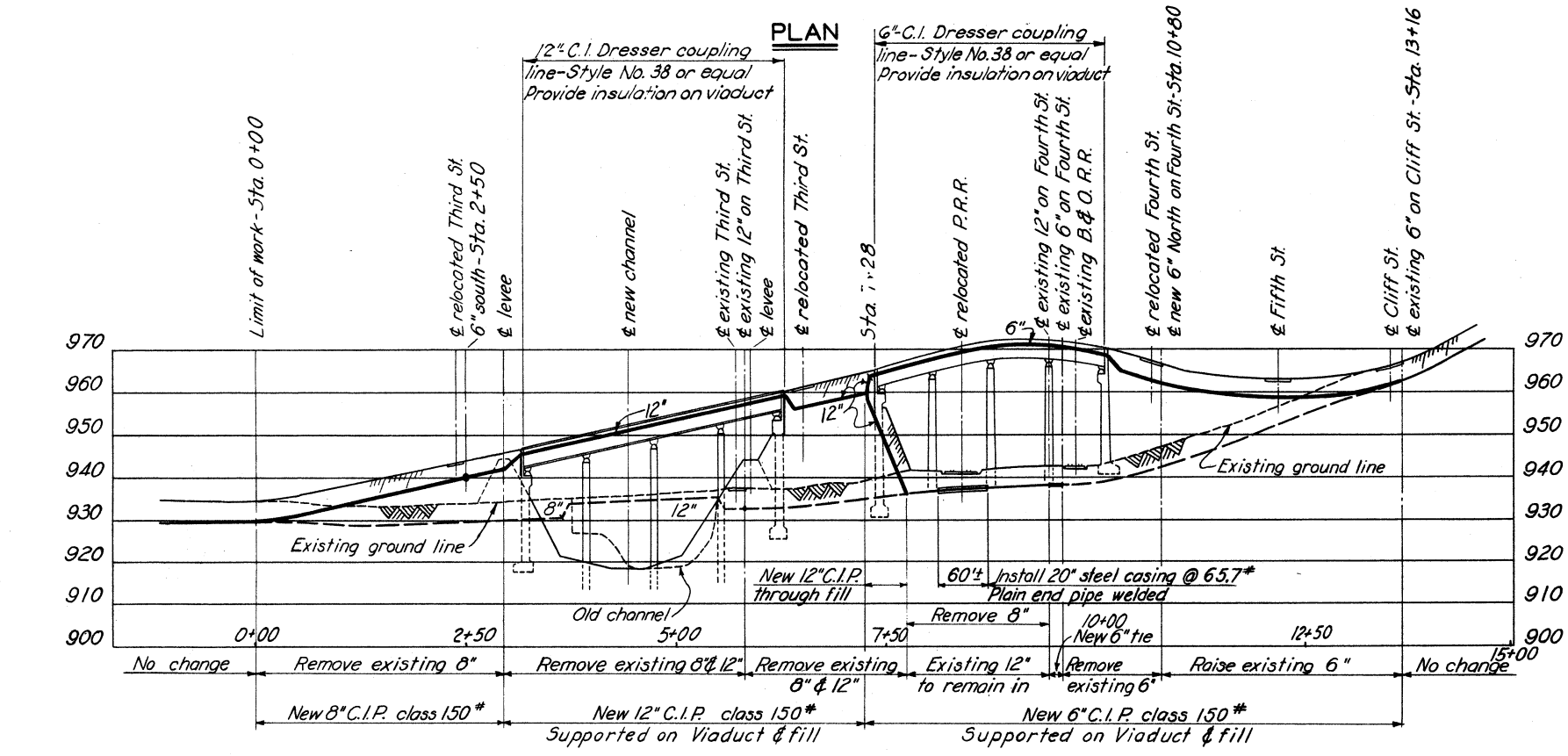
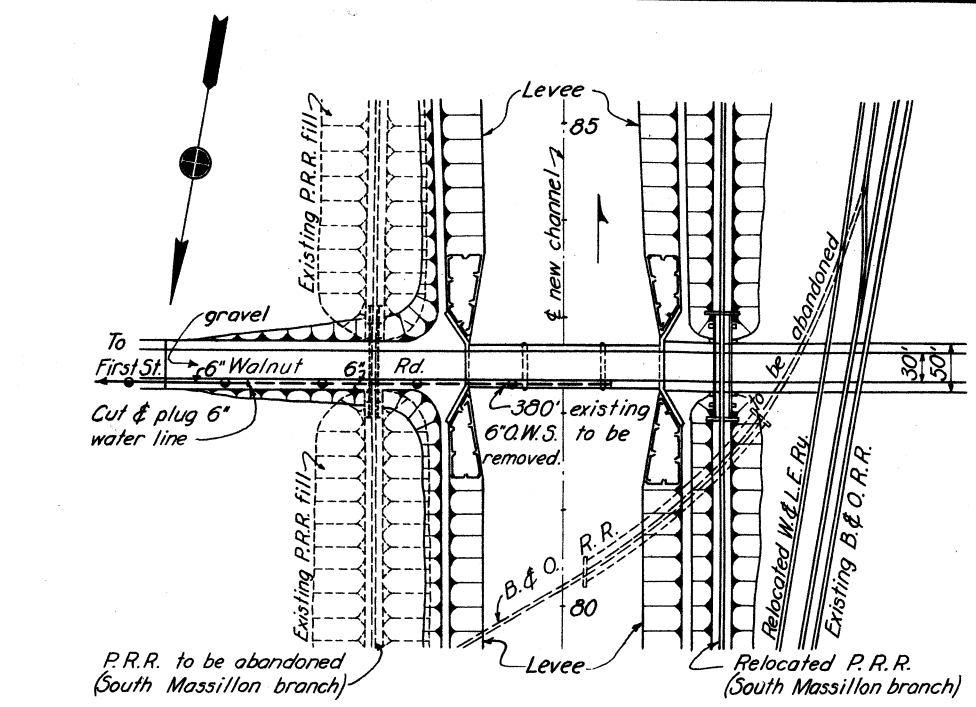
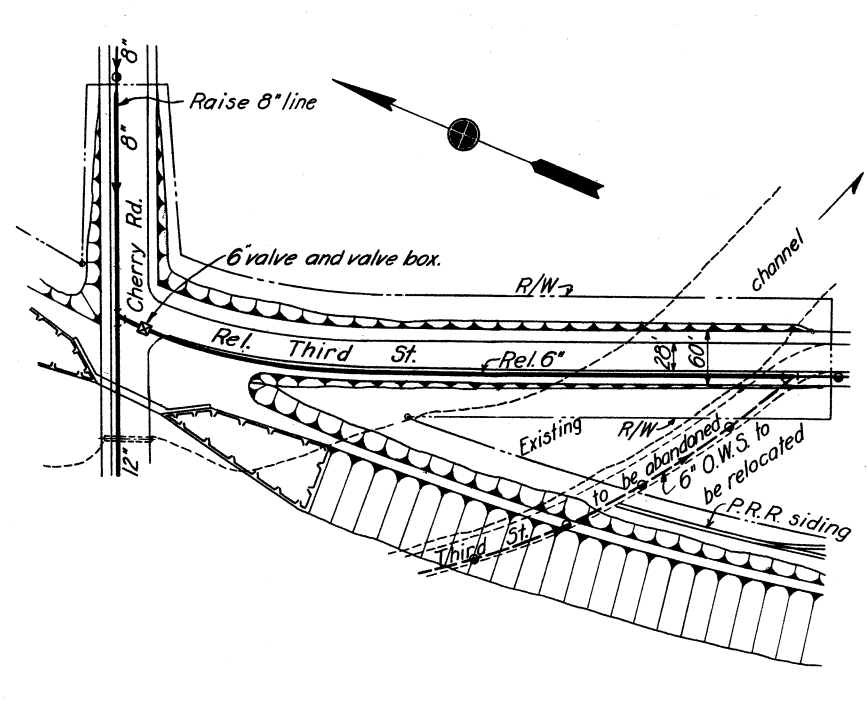
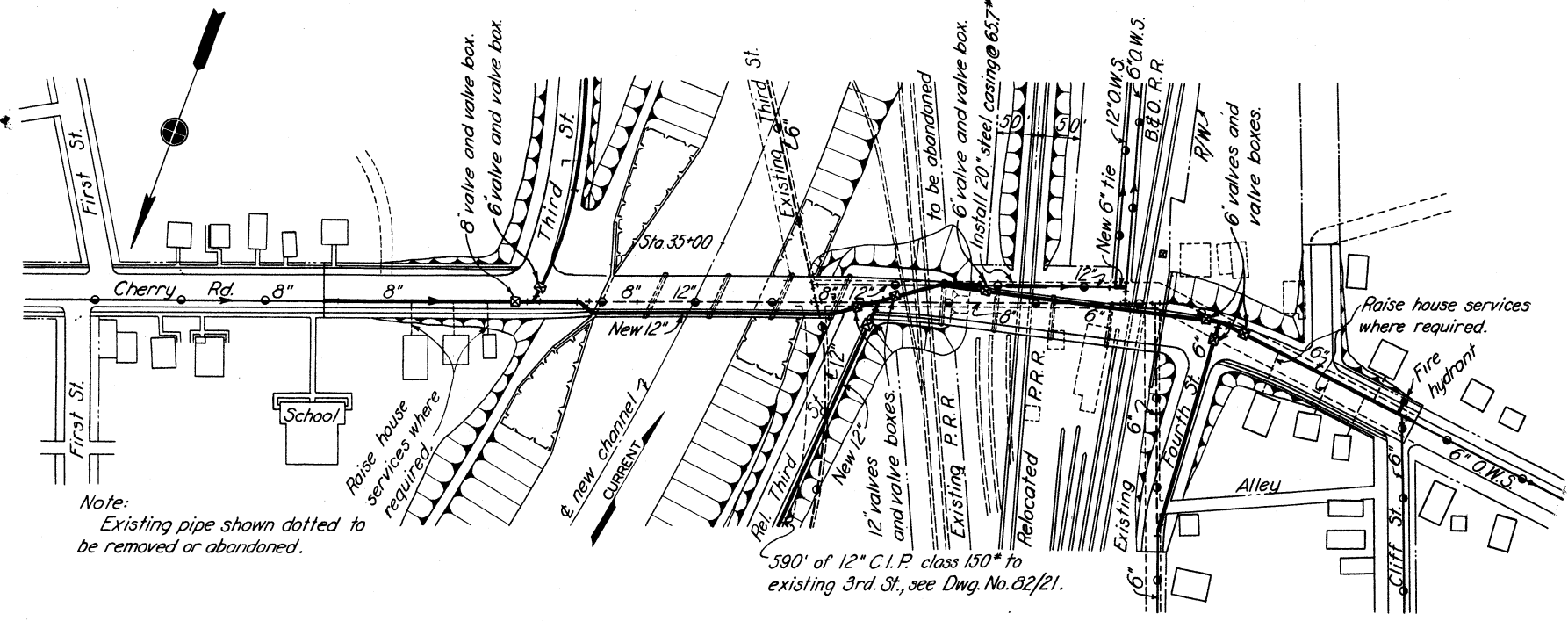
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
OHIO WATER SERVICE CO. CHANGES
TREMONT AVE. - GROOSE AVE.**

1147 SHEETS SHEET NO. 145 SCALE: HOR. 1"=100' VERT. 1"=20'

U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED BY: *W. J. Johnson* APPROVED BY: *W. J. Johnson*
PRINCIPAL ENGINEER
DRAWN BY: R.L.B. TRANSMITTED WITH LETTER
CHECKED BY: C.C.B. FILE NO. 027i-PM-82/37 DATED

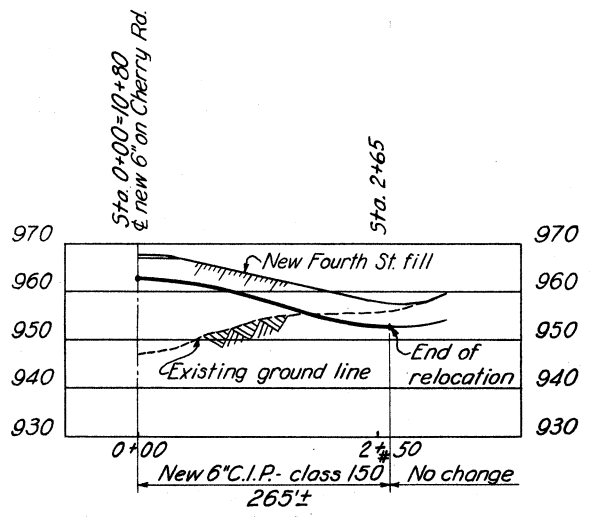
BY	DATE	CHARACTER
		REVISIONS



PROFILE
MAIN LINE CHANGES ON CHERRY RD.

PROFILE
6" LINE ON THIRD ST. RELOCATION

PROFILE
6" LINE ON WALNUT RD.



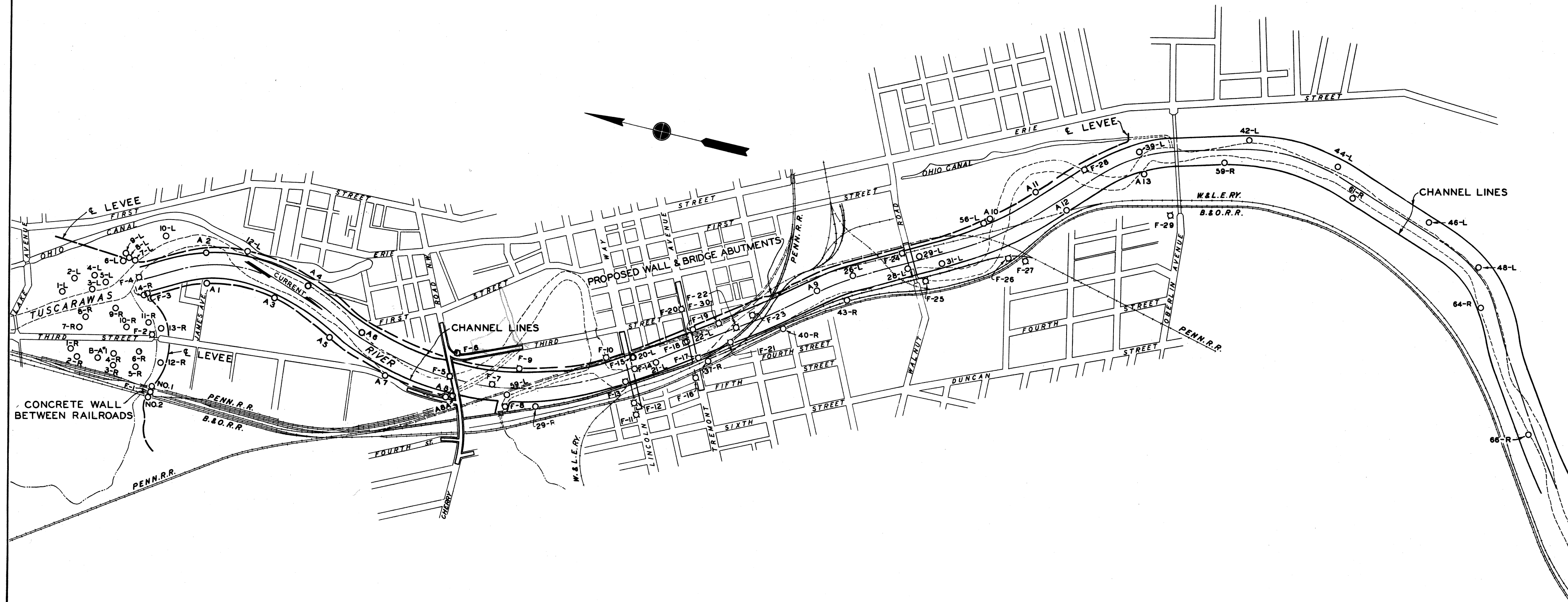
PROFILE
6" LINE ON FOURTH ST. RELOCATION

NOTES
For general plans, see Dwg. Nos. 10/2 and 10/3.
For general utility plans, see Dwg. Nos. 82/21 and 82/22.
For Cherry Road Viaduct, see Dwg. No. 68/1.
For detail of plug at end of casing, see Dwg. No. 82/36.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
OHIO WATER SERVICE CO. CHANGES
CHERRY RD. - WALNUT RD.

IN 147 SHEETS SHEET NO. 146 SCALE: HOR. 1" = 100' VERT. 1" = 20'
U.S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940
SUBMITTED BY: [Signature] APPROVED BY: [Signature]
DRAWN BY: R.L.E. TRANSMITTED WITH LETTER
CHECKED BY: D.G.J. FILE NO. 0271-PM-82/38

BY	DATE	CHARACTER
		REVISIONS



LEGEND

DRILLED HOLES. □
AUGER HOLES. ○

**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PLAN OF FOUNDATION EXPLORATIONS**

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

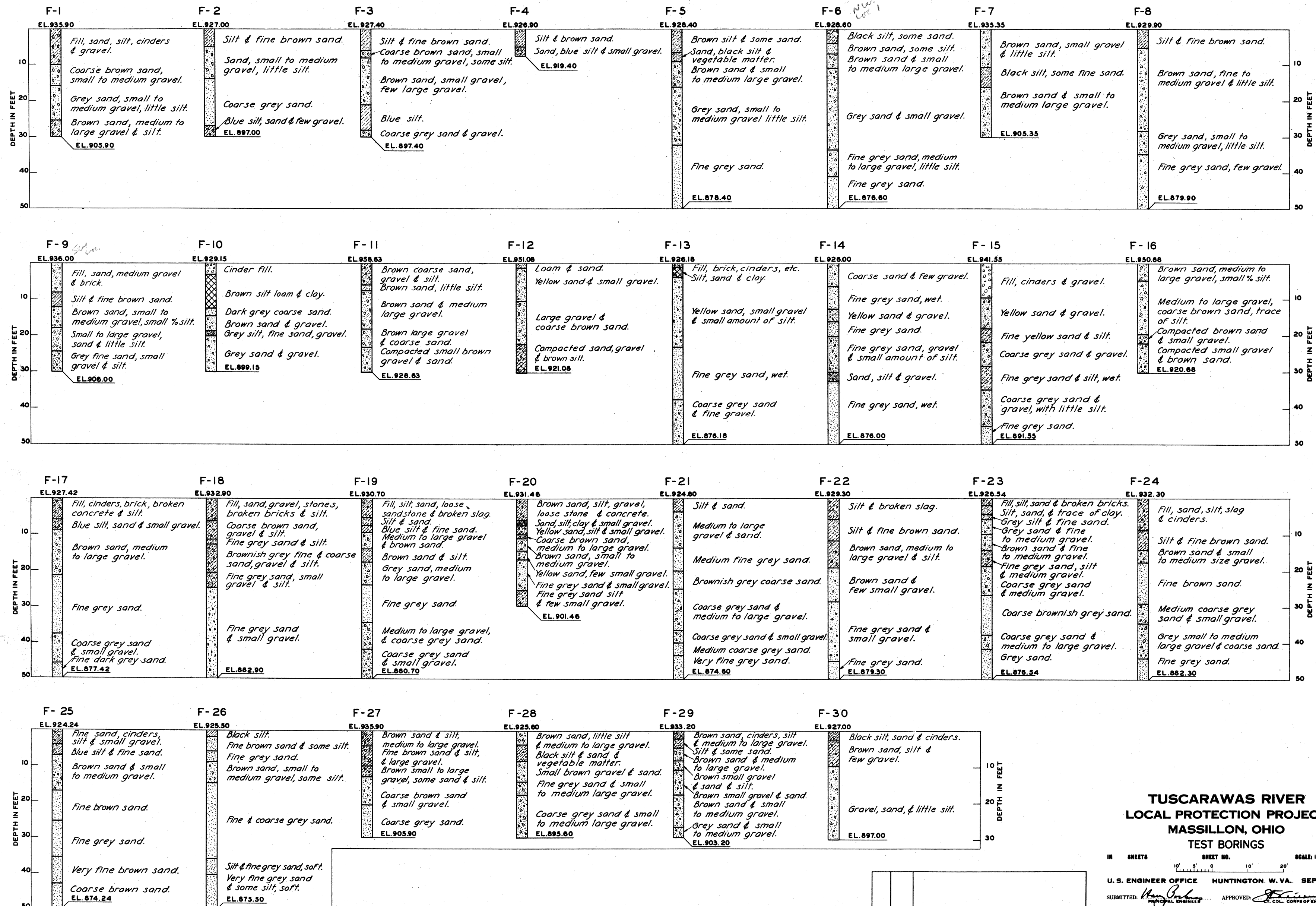
U. S. ENGINEER OFFICE HUNTINGTON, W. VA. SEPT. 1940

SUBMITTED: *W. B. S.* APPROVED: *J. H. C.*
TRACED BY: R. A. E. CHECKED BY: H. G. H. FILE NO. 0271-PM-10/2 DATED

TRANSMITTED WITH LETTER

SUBMITTED FOR INFORMATION PURPOSES ONLY

BY	DATE	CHARACTER
		REVISIONS



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

IN SHEETS SHEET NO. SCALE 1" = 10'-0"

U. S. ENGINEER OFFICE HUNTINGTON, W. VA. SEPT. 1940

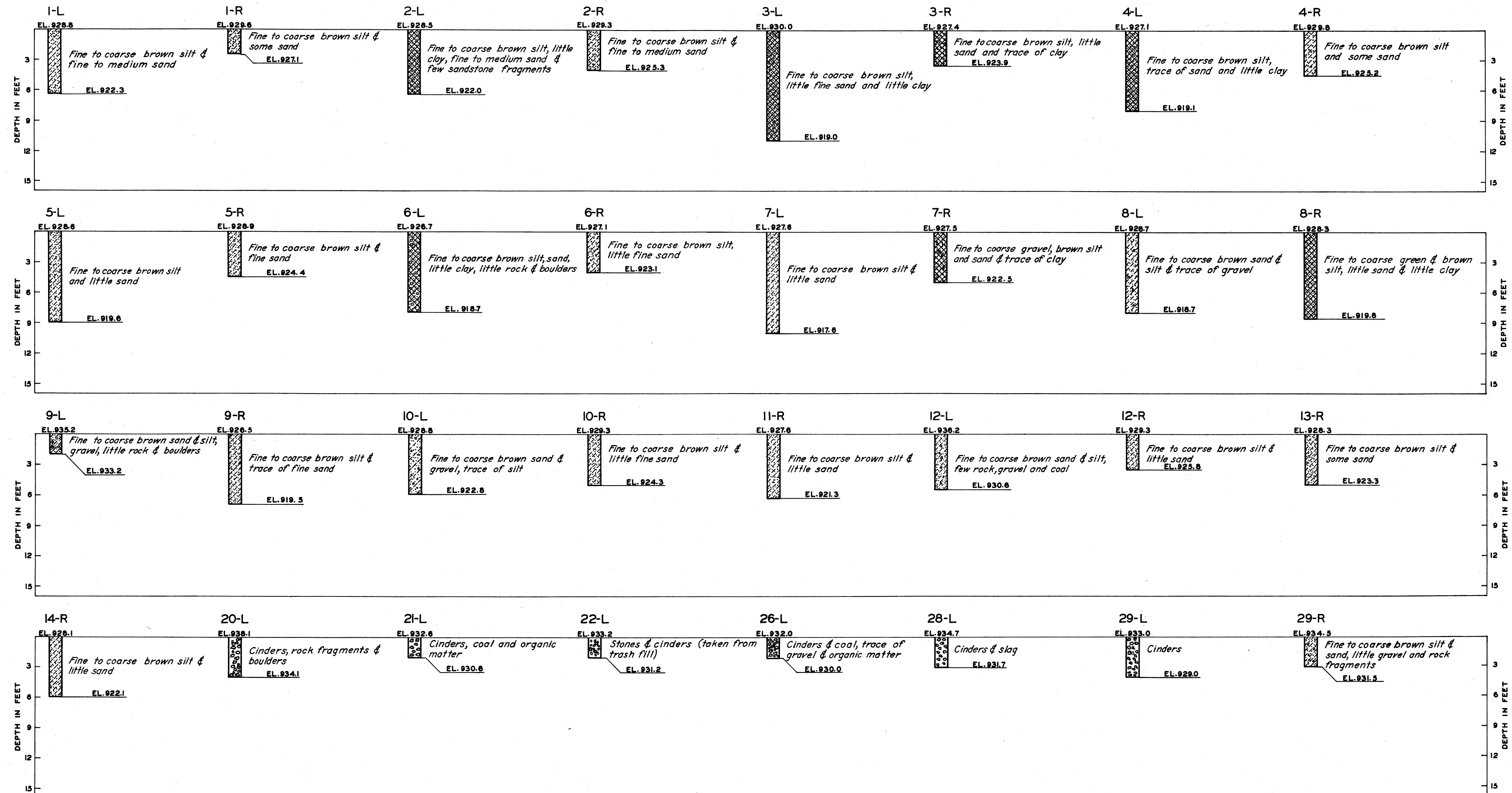
SUBMITTED: *W. B. S.* APPROVED: *W. B. S.*

DRAWN BY: W. B. S. TRANSMITTED WITH LETTER

CHECKED BY: H. G. H. FILE NO. 0271-PM-10/3 DATED

BY DATE CHARACTER REVISIONS

SUBMITTED FOR INFORMATION PURPOSES ONLY



**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
TEST BORINGS**

IN 147 SHEETS

SHEET NO.

SCALE: 1" = 1'-0"

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

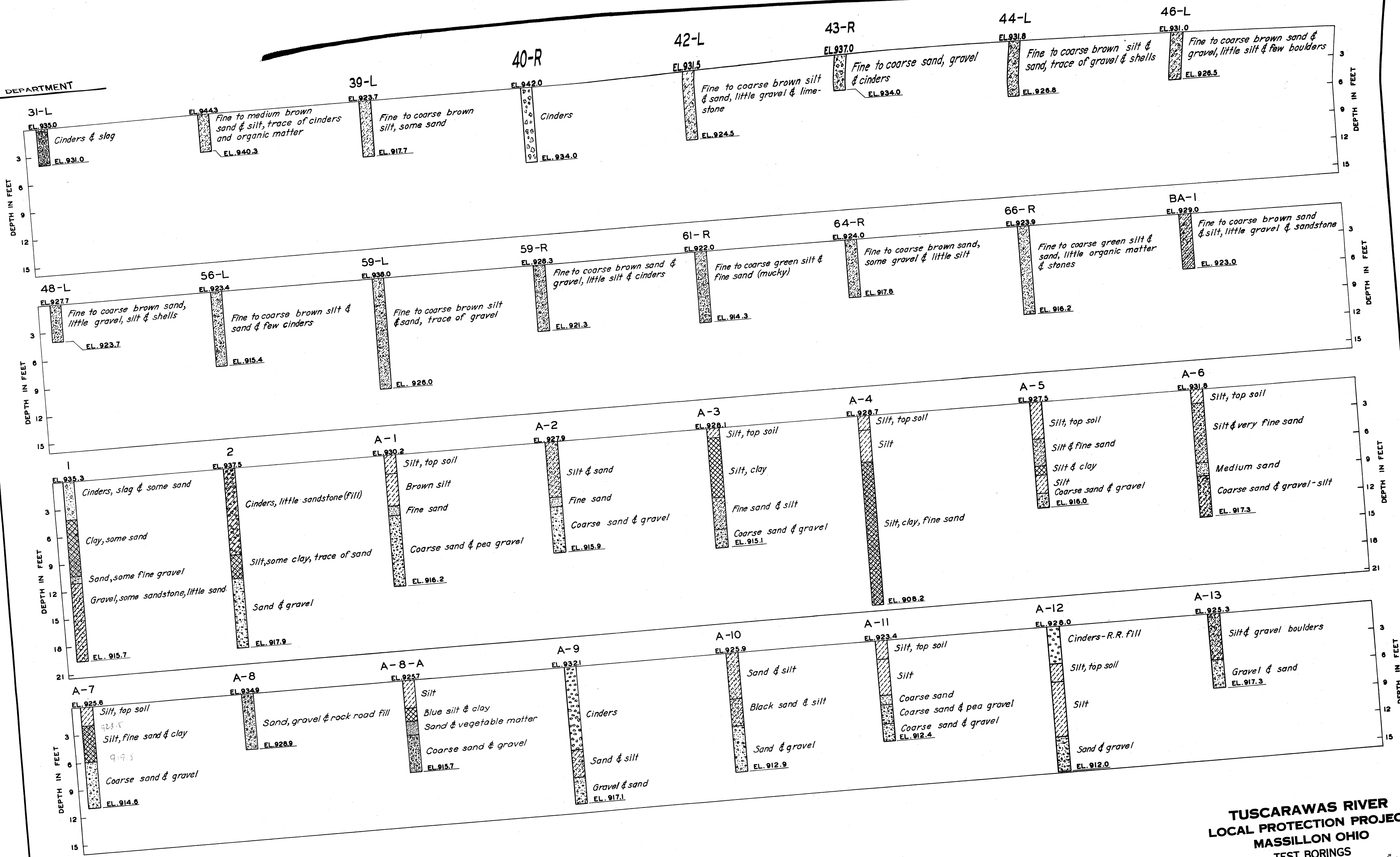
SUBMITTED: *W. R. B.* APPROVED: *W. R. B.*

DRAWN BY: T.F.D. CHECKED BY: A.R.M. TRANSMITTED WITH LETTER

FILE NO. 0271-PM-10/4 DATED

SUBMITTED FOR INFORMATION PURPOSES ONLY

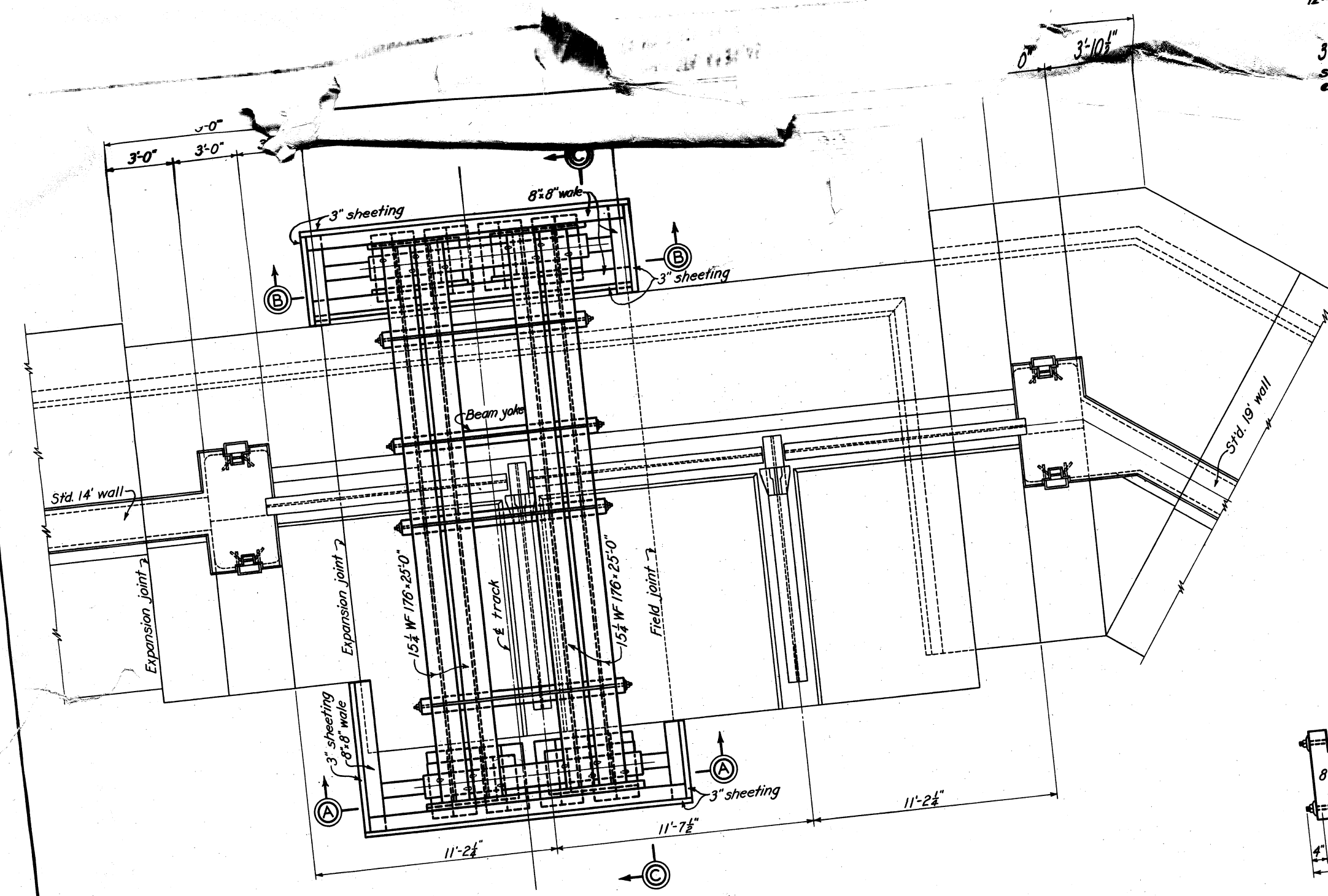
WAR DEPARTMENT



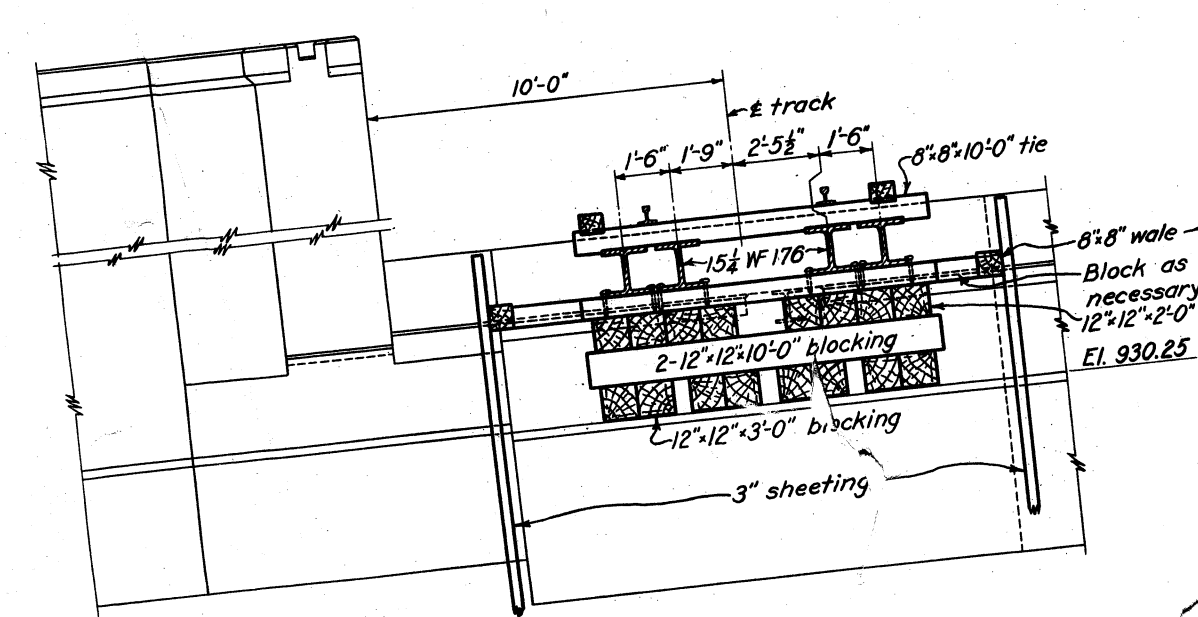
**TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
TEST BORINGS**

IN 147 SHEETS
SHEET NO. 1
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA. JAN. 1941
SUBMITTED: *[Signature]*
APPROVED: *[Signature]*
DRAWN BY: T.R.D.
CHECKED BY: J.A.L. & G.H.
FILE NO. 027i-PM-10/5
DATED: *[Date]*
TRANSMITTED WITH LETTERS

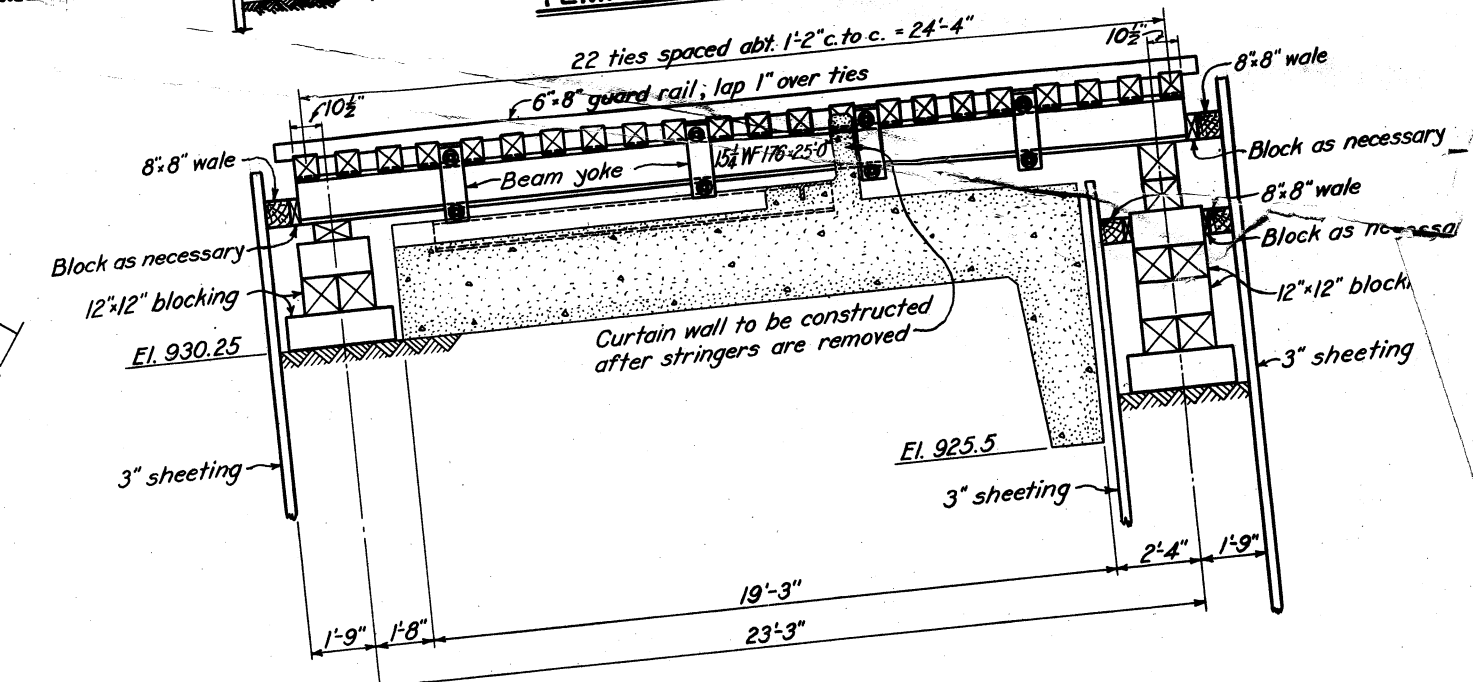
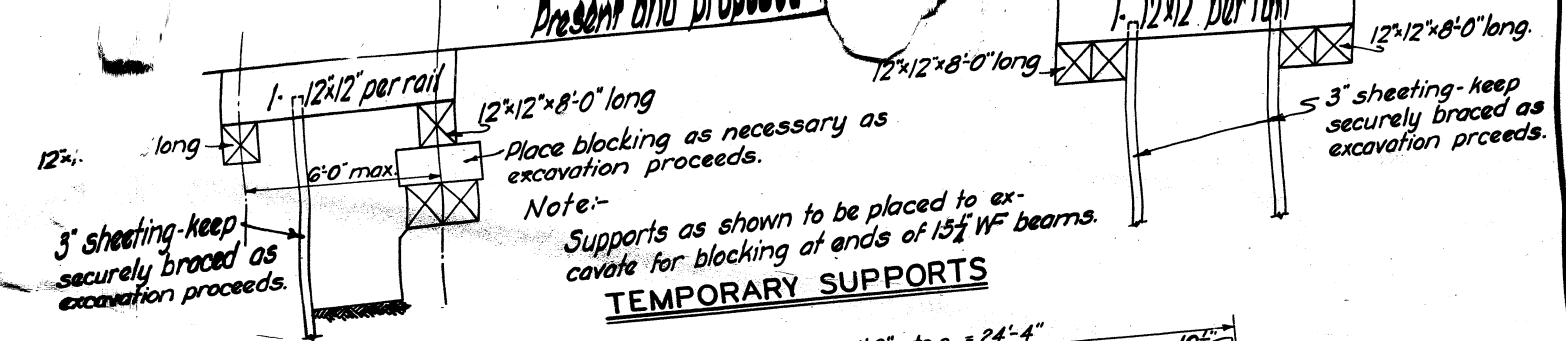
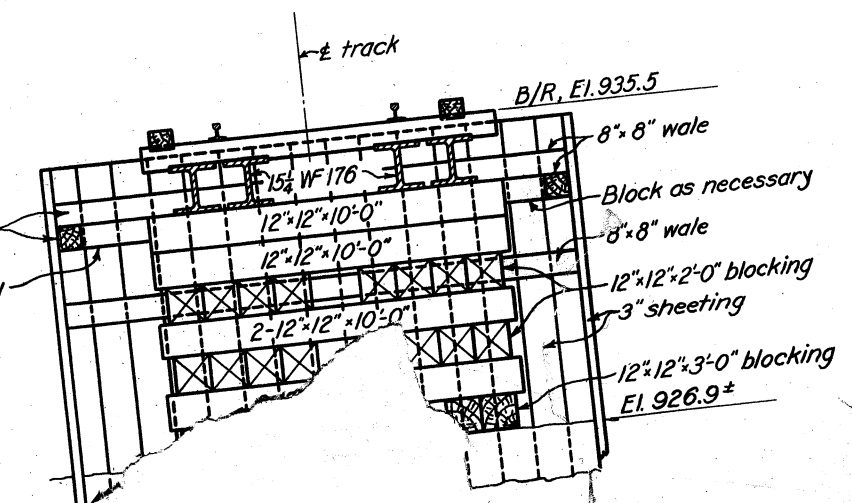
SUBMITTED FOR INFORMATION PURPOSES ONLY



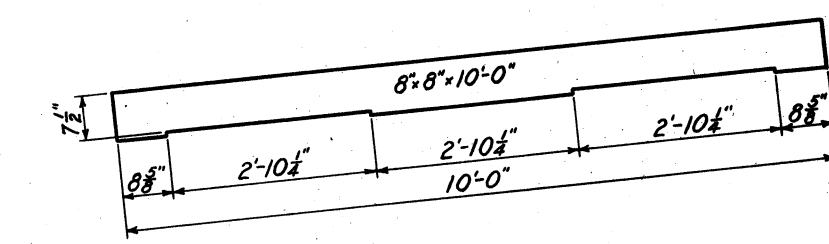
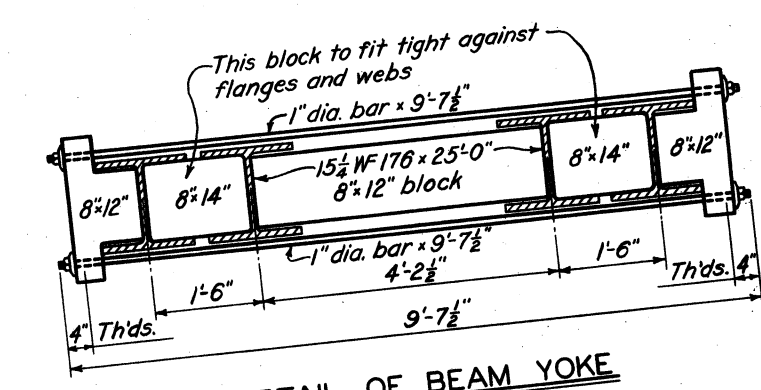
PLAN
(TIES REMOVED)



SECTION A-A



SECTION C-C



NOTES
Securely spike stringers to cap with track spikes and blocking to blocking with 1/2" drift bolts. Guard rail to be spiked to every other tie with 1/2" 10" boat spikes, driven in staggered lines. Extra boat spike each side of splice. Timber to be either white oak or long leaf yellow pine. Shoring material for B.O.R.R. opening shown on Dwg. No. 20/9 to be utilized for Penna. R.R. opening.

TUSCARAW
LOCAL PROTE
MAS
PEN

APPROVED: THE PENNSYLVANIA RAILROAD CO.
BY: CHIEF ENGINEER - CENTRAL REGION
U. S. ENGINEER OFFICE
SUBMITTED: [Signature]
DRAWN BY: S.C.B.
CHECKED BY: A.R.N.
FILE NO. 0271-T-1
SUBMITTED FOR INFORMATIC