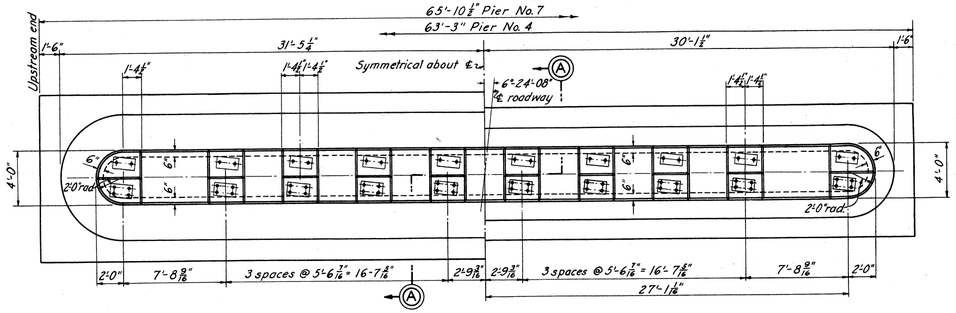
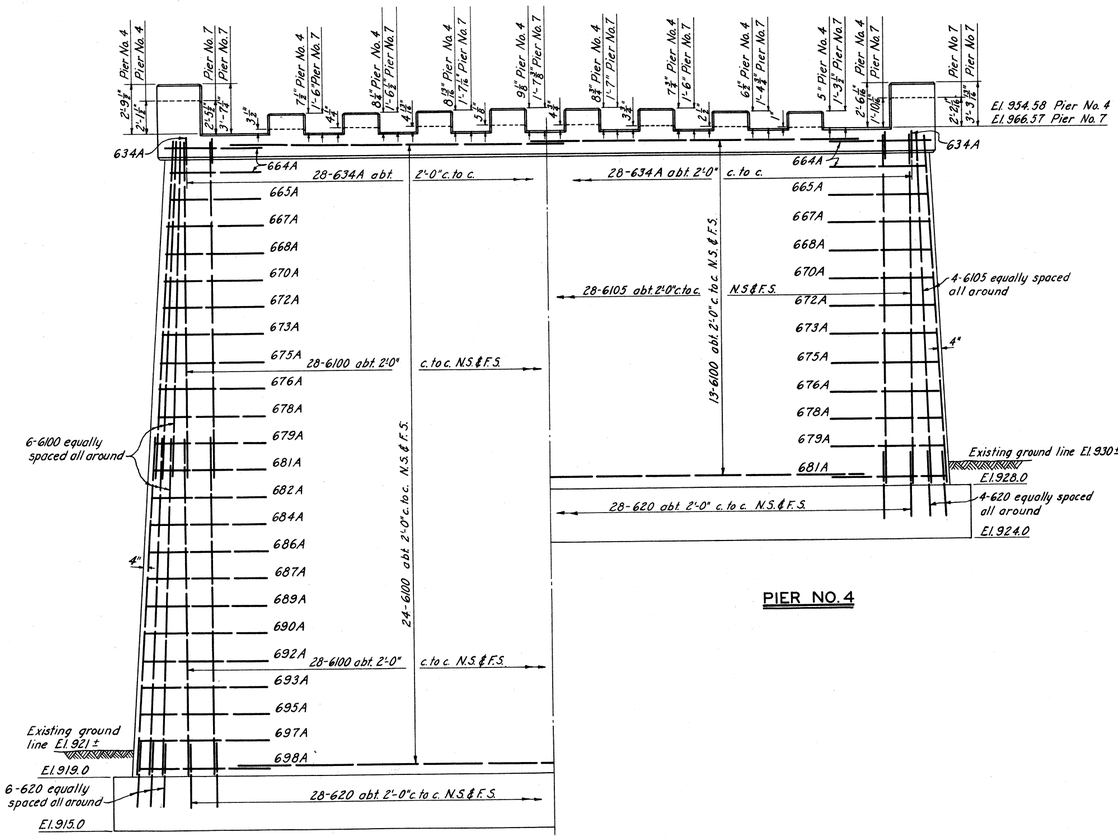
WAR DEPARTMENT

CORPS OF ENGINEERS. U. S. ARMY



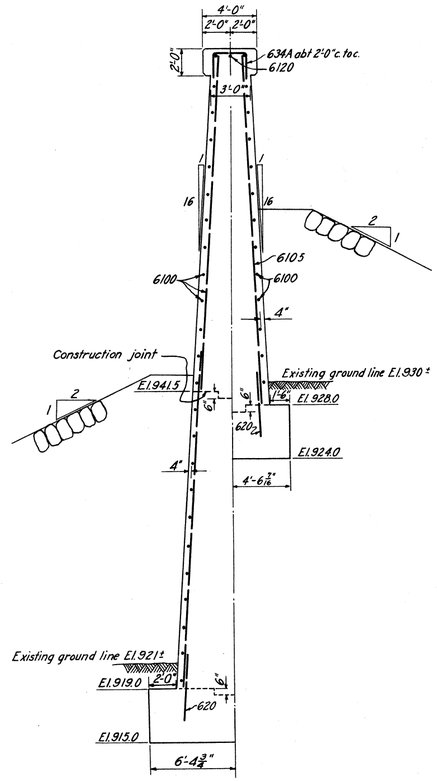
PLAN



PIER NO. 4

PIER NO. 7

ELEVATION



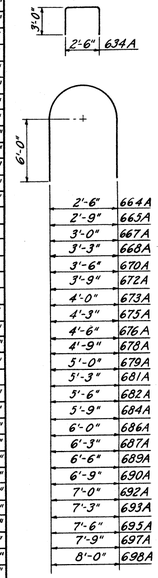
SECTION A-A

REINFORCING SCHEDULE

MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
620	¾"ϕ	5'-0"		64	7.51	481
634A	¾"ϕ	8'-6"		28	12.77	358
664A	¾"ϕ	16'-0"		4	24.03	96
663A	¾"ϕ	16'-3"		2	24.41	49
667A	¾"ϕ	16'-9"		2	25.16	50
668A	¾"ϕ	17'-0"		2	25.53	51
670A	¾"ϕ	17'-6"		2	26.29	53
672A	¾"ϕ	18'-0"		2	27.04	54
673A	¾"ϕ	18'-3"		2	27.41	55
675A	¾"ϕ	18'-9"		2	28.16	56
676A	¾"ϕ	19'-0"		2	28.54	57
678A	¾"ϕ	19'-6"		2	29.29	59
679A	¾"ϕ	19'-9"		2	29.67	59
681A	¾"ϕ	20'-3"		2	30.42	61
6100	¾"ϕ	25'-0"		52	37.55	1953
6105	¾"ϕ	26'-3"		64	39.43	2524
6120	¾"ϕ	30'-0"		2	45.06	90
				Total		6106
620	¾"ϕ	5'-0"		68	7.51	511
634A	¾"ϕ	8'-6"		28	12.77	358
664A	¾"ϕ	16'-0"		4	24.03	96
665A	¾"ϕ	16'-3"		2	24.41	49
667A	¾"ϕ	16'-9"		2	25.16	50
668A	¾"ϕ	17'-0"		2	25.53	51
670A	¾"ϕ	17'-6"		2	26.29	53
672A	¾"ϕ	18'-0"		2	27.04	54
673A	¾"ϕ	18'-3"		2	27.41	55
675A	¾"ϕ	18'-9"		2	28.16	56
676A	¾"ϕ	19'-0"		2	28.54	57
678A	¾"ϕ	19'-6"		2	29.29	59
679A	¾"ϕ	19'-9"		2	29.67	59
681A	¾"ϕ	20'-3"		2	30.42	61
682A	¾"ϕ	20'-6"		2	30.79	62
684A	¾"ϕ	21'-0"		2	31.54	63
686A	¾"ϕ	21'-6"		2	32.29	65
687A	¾"ϕ	21'-9"		2	32.67	65
689A	¾"ϕ	22'-3"		2	33.42	67
690A	¾"ϕ	22'-6"		2	33.80	68
692A	¾"ϕ	23'-0"		2	34.55	69
693A	¾"ϕ	23'-3"		2	34.92	70
695A	¾"ϕ	23'-9"		2	35.67	71
697A	¾"ϕ	24'-3"		2	36.42	73
698A	¾"ϕ	24'-6"		2	36.80	74
6100	¾"ϕ	25'-0"		232	37.55	8712
6120	¾"ϕ	30'-0"		2	45.06	90
				Total		11,118

Pier No. 4

Pier No. 7



NOTES

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

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

BY	DATE	CHARACTER
		REVISIONS

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

IN 147 SHEETS SHEET NO. 103 SCALE: 1" = 1'-0"

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

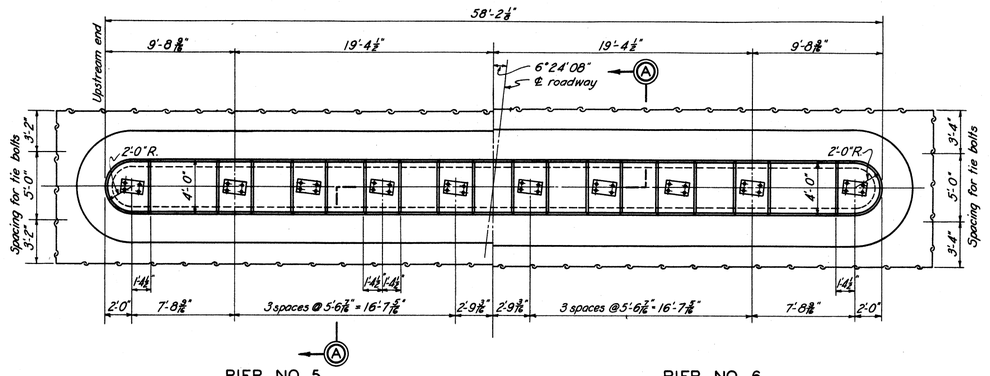
SUBMITTED: ..... PRINCIPAL ENGINEER APPROVED: ..... CAPT., CORPS OF ENGINEERS

DRAWN BY D.C.J. TRACED BY W.E.C. CHECKED BY D.G.J.

FILE NO. O-27i-PM-68/21 TRANSMITTED WITH LETTER DATED

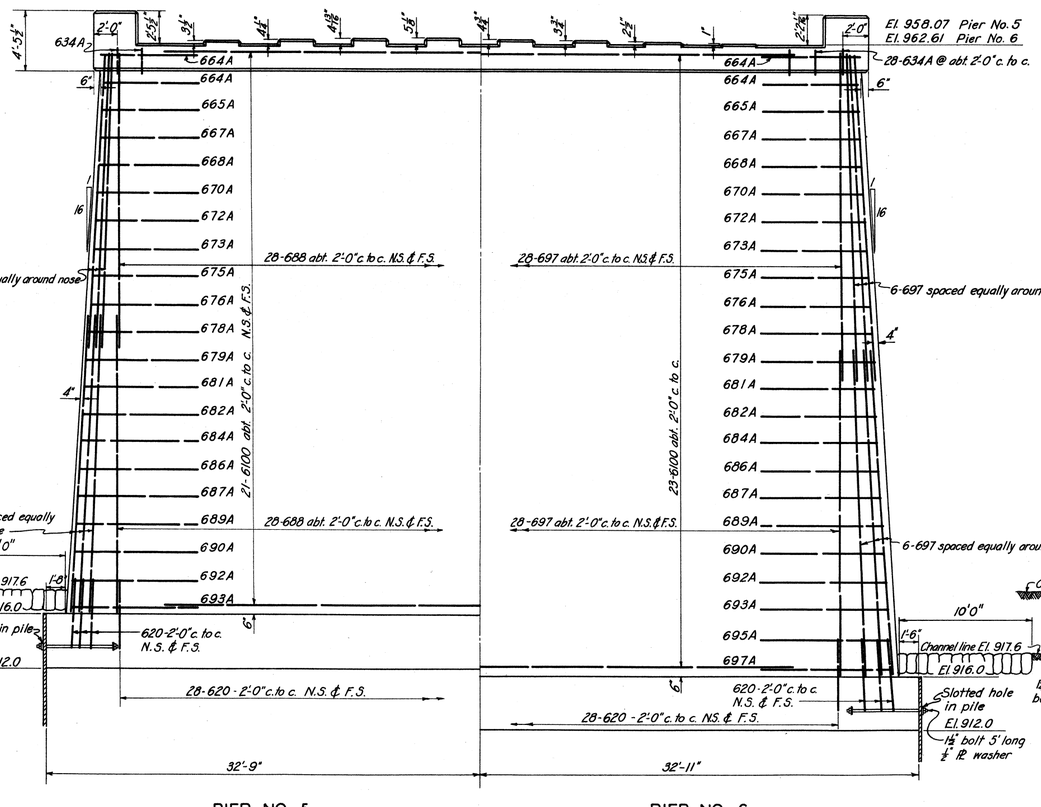
WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY



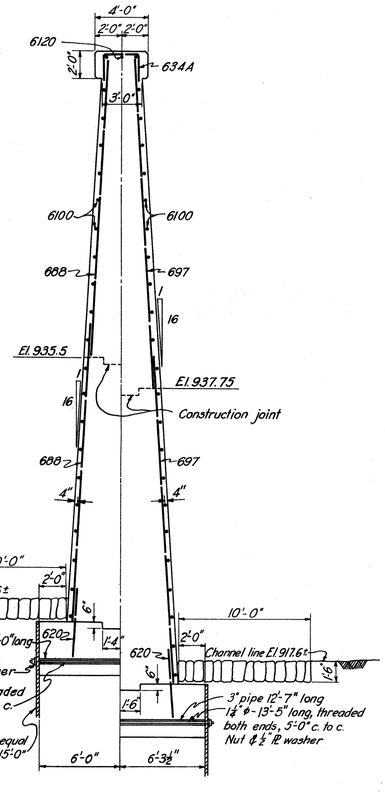
PLAN

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



ELEVATION

PIER NO. 5 PIER NO. 6



SECTION A-A

REINFORCING SCHEDULE

MARK	SIZE	L'GTH.	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
620	¾ø	5'0		68	7.51	511
634A	¾ø	8'6		28	12.77	358
664A	¾ø	16'0		4	24.03	96
665A	¾ø	16'3		2	24.41	49
667A	¾ø	16'9		2	25.16	50
668A	¾ø	17'0		2	25.53	51
670A	¾ø	17'0		2	26.29	53
672A	¾ø	18'0		2	27.04	54
673A	¾ø	18'3		2	27.41	55
675A	¾ø	18'9		2	28.16	56
676A	¾ø	19'0		2	28.54	57
678A	¾ø	19'6		2	29.29	59
679A	¾ø	19'9		2	29.67	59
681A	¾ø	20'3		2	30.42	61
682A	¾ø	20'6		2	30.79	62
684A	¾ø	21'0		2	31.54	63
686A	¾ø	21'6		2	32.29	65
687A	¾ø	21'9		2	32.67	65
688	¾ø	22'0		136	33.04	4493
689A	¾ø	22'3		2	33.42	67
690A	¾ø	22'6		2	33.80	68
692A	¾ø	23'0		2	34.55	69
693A	¾ø	23'3		2	34.92	70
6100	¾ø	25'0		84	37.56	3155
6120	¾ø	30'0		2	45.06	90
				Total		10,705

Pier No. 5

				4'-0"		
				2'-6"	634A	
				3'-0"		
				6'-0"		
				2'-6"	664A	
				2'-9"	665A	
				3'-0"	667A	
				3'-3"	668A	
				3'-6"	670A	
				3'-9"	672A	
				4'-0"	673A	
				4'-3"	675A	
				4'-6"	676A	
				4'-9"	678A	
620	¾ø	5'0		5'-0"	679A	
634A	¾ø	8'6		5'-3"	681A	
664A	¾ø	16'0		5'-6"	682A	
665A	¾ø	16'3		5'-9"	684A	
667A	¾ø	16'9		6'-0"	686A	
668A	¾ø	17'0		6'-3"	687A	
670A	¾ø	17'6		6'-6"	689A	
672A	¾ø	18'0		6'-9"	690A	
673A	¾ø	18'3		7'-0"	692A	
675A	¾ø	18'9		7'-3"	693A	
676A	¾ø	19'0		7'-6"	695A	
678A	¾ø	19'6		7'-9"	697A	
679A	¾ø	19'9				
681A	¾ø	20'3				
682A	¾ø	20'6				
684A	¾ø	21'0				
686A	¾ø	21'6				
687A	¾ø	21'9				
689A	¾ø	22'3				
690A	¾ø	22'6				
692A	¾ø	23'0				
693A	¾ø	23'3				
695A	¾ø	23'9				
697	¾ø	24'3				
697A	¾ø	24'3				
6100	¾ø	25'0				
6120	¾ø	30'0				

NO.	UNIT WT.	TOTAL WT.
68	7.51	511
28	12.77	358
4	24.03	96
2	24.41	49
2	25.16	50
2	25.53	51
2	26.29	53
2	27.04	54
2	27.41	55
2	28.16	56
2	28.54	57
2	29.29	59
2	29.67	59
2	30.42	61
2	30.79	62
2	31.54	63
2	32.29	65
2	32.67	67
2	33.42	67
2	33.80	68
2	34.55	69
2	34.92	70
2	35.67	71
136	36.42	4953
2	36.42	73
92	37.17	3420
2	45.06	90
Total		9,836

Pier No. 6

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: 1" = 1'-0"

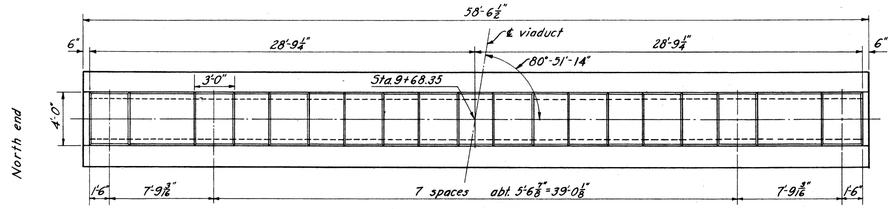
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., JAN. 1941

SUBMITTED: ..... PRINCIPAL ENGINEER APPROVED: ..... CAPT., CORPS OF ENGINEERS

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

FILE NO. O-27i-PM-68/22 TRANSMITTED WITH LETTER DATED

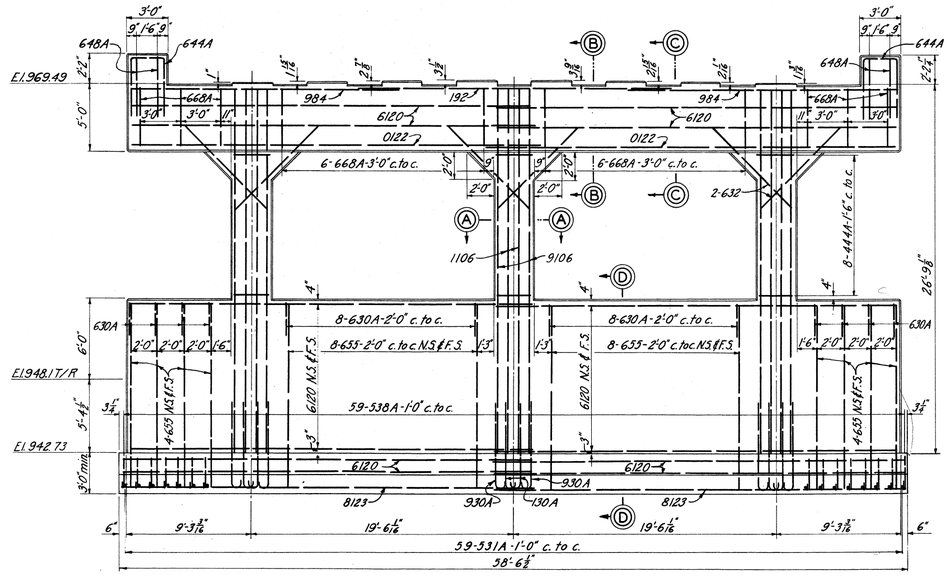
BY	DATE	CHARACTER
		REVISIONS



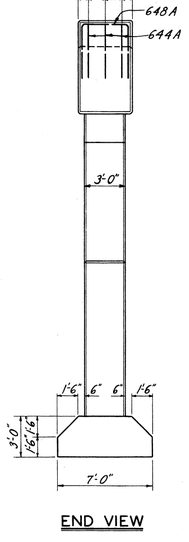
PLAN

REINFORCING SCHEDULE

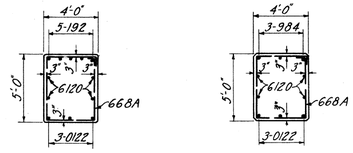
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
444A	1¼"ø	11'-0"	6'-4" 531A	24	7.35	176
531A	⅝"ø	7'-9"		59	8.08	477
538A	⅝"ø	9'-6"	6'-5" 130A; 6'-5" 930A	59	9.91	585
630A	¾"ø	7'-6"		24	11.27	270
632	¾"ø	8'-0"	1'-4" 3'-8" 1'-4"; 1'-10½" 1'-10½" 1'-4" 1'-0"	12	12.02	144
644A	¾"ø	11'-0"		6	16.52	99
648A	¾"ø	12'-0"		4	18.02	72
655	¾"ø	13'-9"	6'-4" 538A	48	20.65	991
668A	¾"ø	17'-0"		18	25.53	460
6120	¾"ø	30'-0"	6444A 648A 4'-3" 1'-6" 6'-0"	46	43.06	2,073
8123	1"ø	30'-9"	2'-6" 644A; 3'-6" 648A; 2'-6" 630A; 2'-6" 444A; 2'-6" 6; 3'-6" 668A; 4'-6" 9	10	79.43	794
130A	1"ø	7'-6"		24	25.50	612
192	1"ø	23'-0"		5	78.20	391
1106	1"ø	26'-6"		24	90.10	2,162
930A	1⅛"ø	7'-6"		12	32.27	387
984	1⅛"ø	21'-0"		6	90.36	542
9106	1⅛"ø	26'-6"		12	114.03	1,368
0122	1¼"ø	30'-6"		6	162.05	972
				Total		12,575



ELEVATION

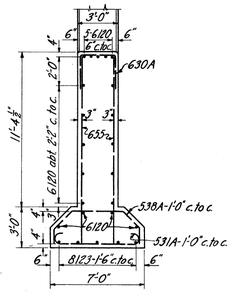


END VIEW

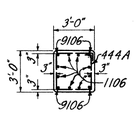


SECTION B-B

SECTION C-C



SECTION D-D



SECTION A-A

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'.

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

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

IN 147 SHEETS SHEET NO. 105 SCALE: ½"=1'-0"

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

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

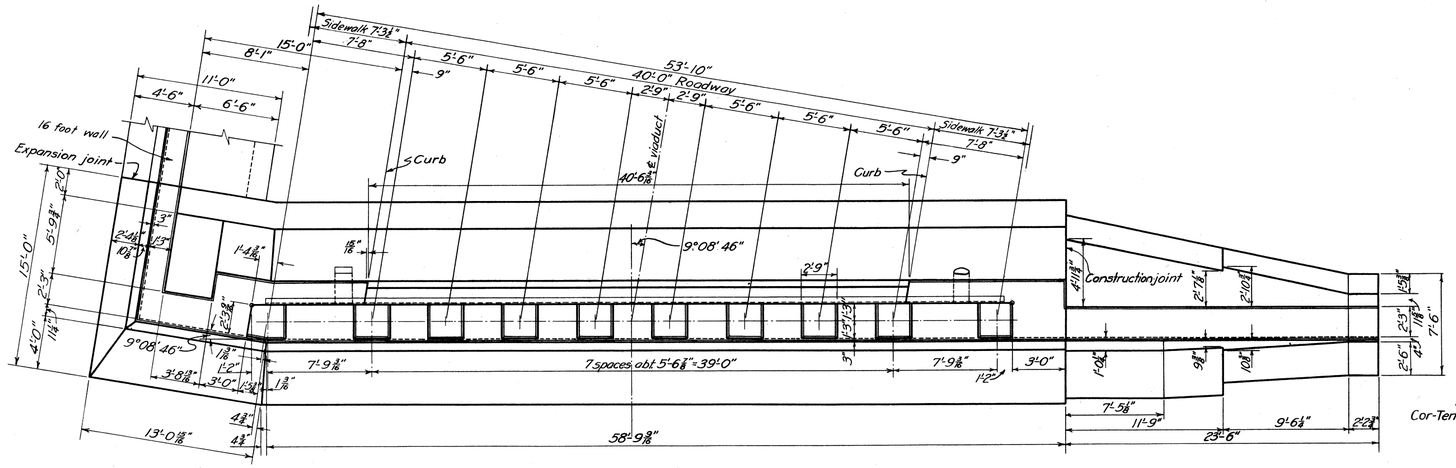
DRAWN BY L.D.C.
TRACED BY W.E.C.
CHECKED BY E.K.

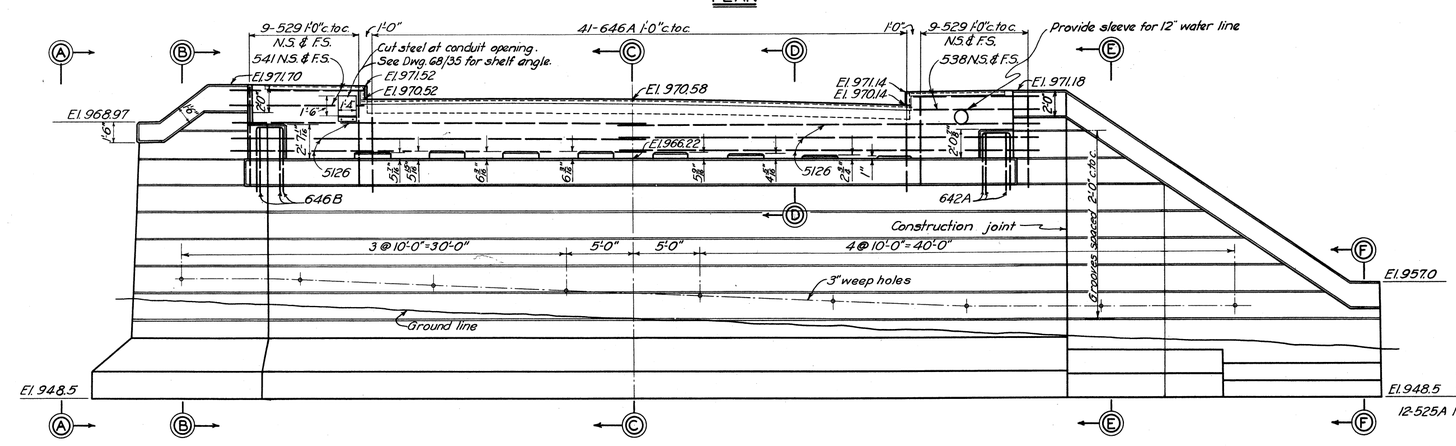
TRANSMITTED WITH LETTER

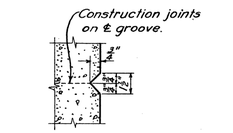
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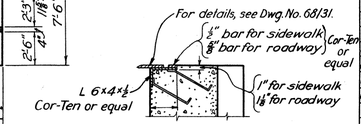
WAR DEPARTMENT

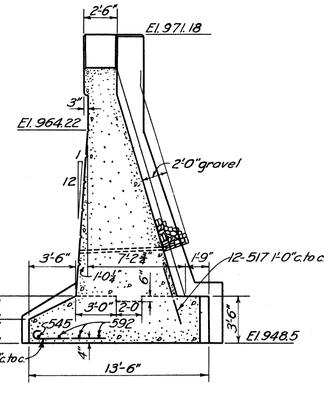
CORPS OF ENGINEERS, U. S. ARMY





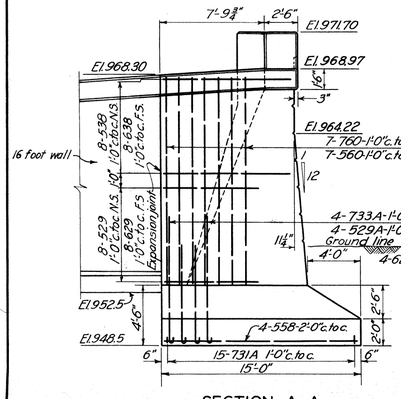


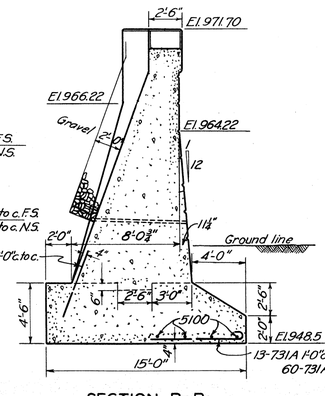


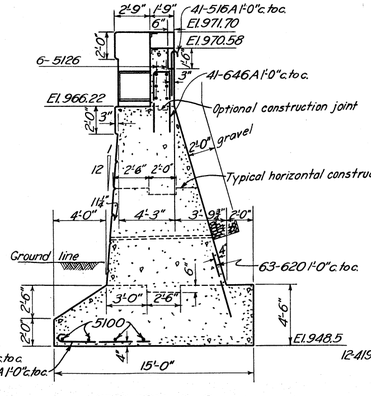


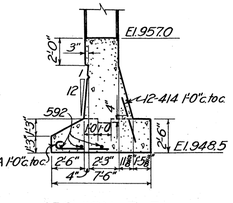
REINFORCING SCHEDULE

MARK	SIZE	L'GTH.	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
414	½" ℄	3'-6"		12	2.34	28
419A	½" ℄	4'-9"		12	3.17	38
516A	⅝" ℄	4'-0"	4'-0" 419A	41	4.17	171
517	⅝" ℄	4'-3"	5'-6" 525A	69	4.43	306
525A	⅝" ℄	6'-3"	6'-6" 529A	12	6.52	78
			6'-10" 731A			
529	⅝" ℄	7'-3"	3'-3" 516A	44	7.56	333
529A	⅝" ℄	7'-3"	7'-3" 733A	4	7.56	30
538	⅝" ℄	9'-6"		12	9.91	119
541	⅝" ℄	10'-3"		4	10.69	43
545	⅝" ℄	11'-3"		1	11.73	12
558	⅝" ℄	14'-6"		4	15.12	60
560	⅝" ℄	15'-0"	1'-3" 646A	7	15.65	110
592	⅝" ℄	23'-0"	2'-0" 646B	3	23.99	72
5100	⅝" ℄	25'-0"	2'-0" 642A	12	26.08	313
5126	⅝" ℄	31'-6"	5'-1¼"	12	32.85	394
			4'-9"			
620	¾" ℄	5'-0"	4'-3"	67	7.51	503
629	¾" ℄	7'-3"		8	10.89	87
638	¾" ℄	9'-6"		8	14.27	114
642A	¾" ℄	10'-6"		4	15.77	63
646A	¾" ℄	11'-6"		41	17.27	708
646B	¾" ℄	11'-6"		4	17.27	69
731A	⅞" ℄	7'-9"		88	15.84	1394
733A	⅞" ℄	8'-3"		4	16.86	67
760	⅞" ℄	15'-0"		7	30.66	215
			Total			5173









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".

BY	DATE	CHARACTER
		REVISIONS

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

IN 147 SHEETS | SHEET NO. 106 | SCALE: ½" = 1'-0"

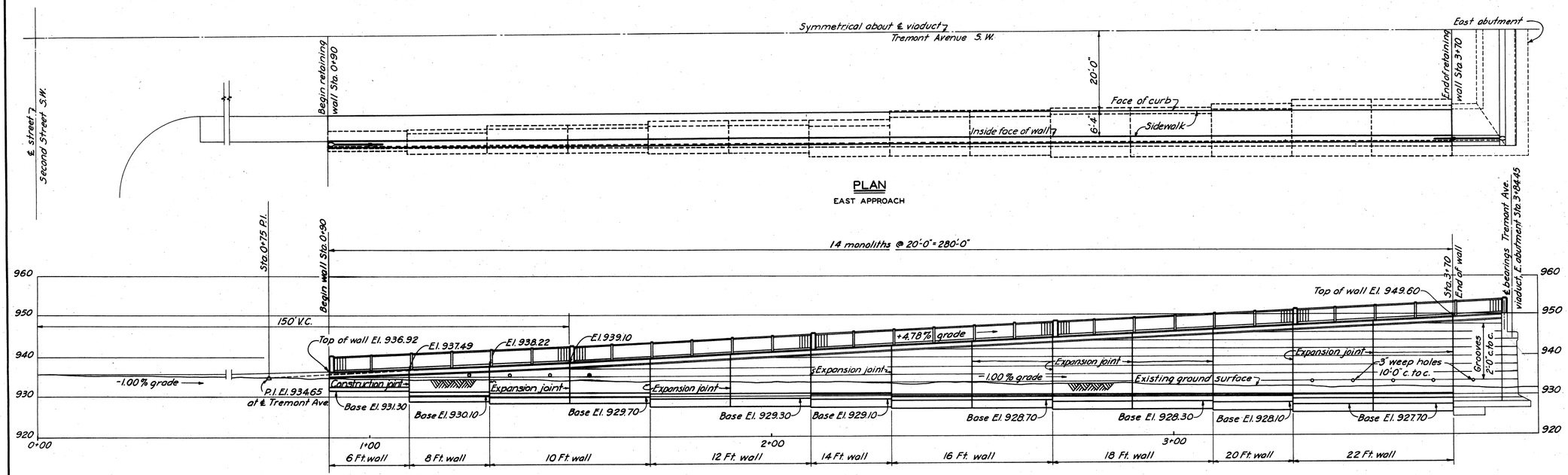
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

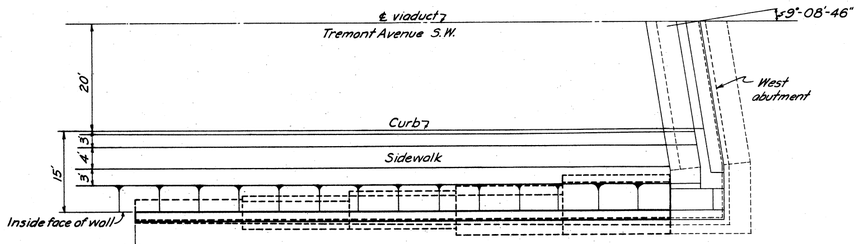
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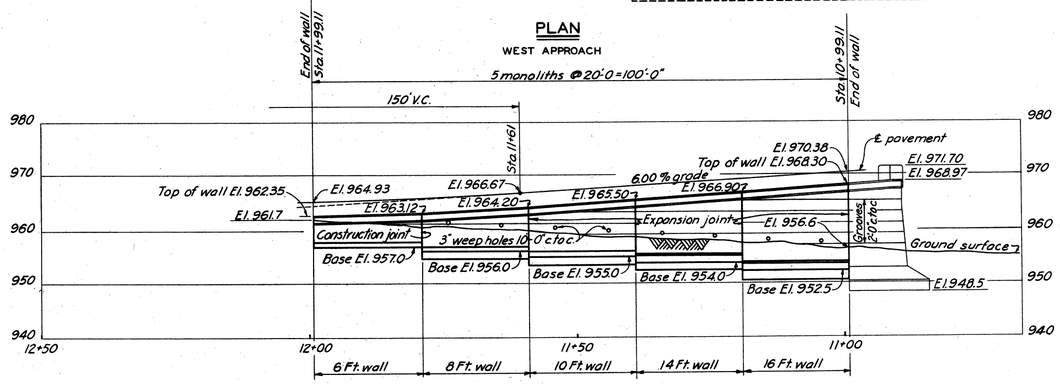
DRAWN BY R.M.C.
TRACED BY E.B.H.
CHECKED BY E.K.

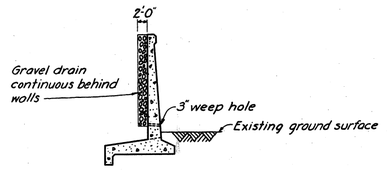
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FILE NO 027i-PM-68/24 DATED









TYPICAL WALL SECTION

NOTES

For details of wall, see Dwgs. Nos. 68/26, 68/27.
For railing details, see Dwg. No. 68/33.
For east abutment, see Dwg. No. 68/18.
For west abutment, see Dwg. No. 68/24.
For location plan, see Dwg. No. 68/17.
For groove detail, see Dwg. No. 68/24.
Retaining wall concrete to be class B.
Railing post concrete to be class A.

BY	DATE	CHARACTER
		REVISIONS

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

IN 147 SHEETS SHEET NO. 107 SCALE: 1"=10'-0"

10' 5' 0 10' 20'

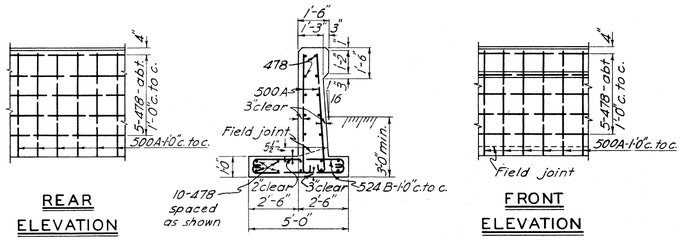
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

SUBMITTED: ..... CHIEF, ENGINEERING DIVISION APPROVED: ..... LT. COL., CORPS OF ENGINEERS

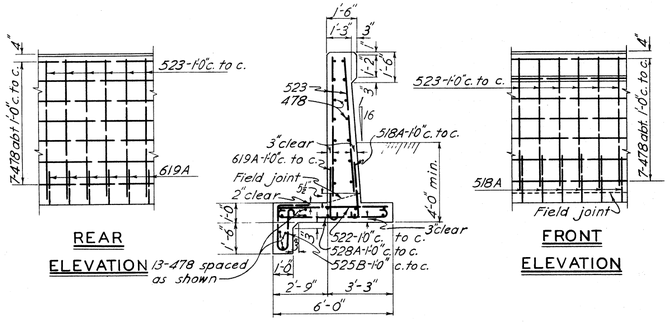
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TRANSMITTED WITH LETTER DATED

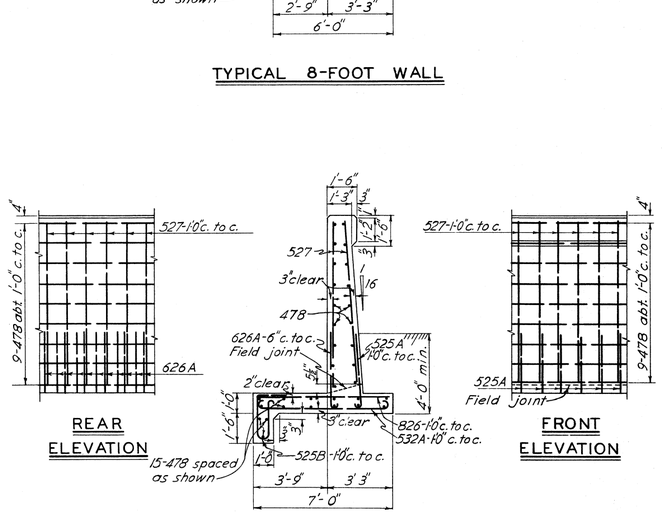
FILE NO. 027i-PM-68/25



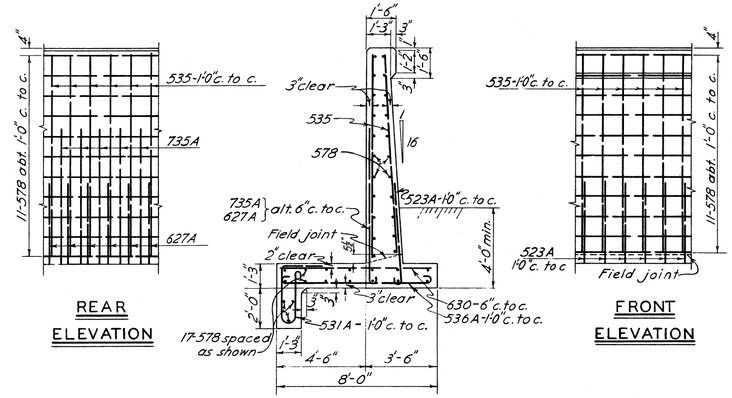
TYPICAL 6-FOOT WALL



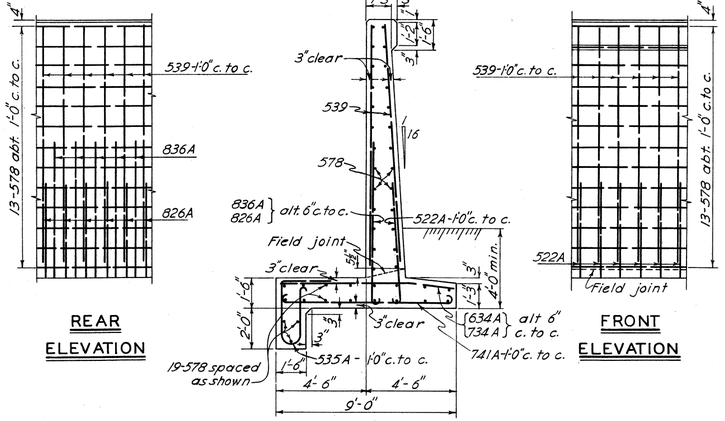
TYPICAL 8-FOOT WALL



TYPICAL 10-FOOT WALL



TYPICAL 12-FOOT WALL



TYPICAL 14-FOOT WALL

MONOLITH SCHEDULE

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

REINFORCING SCHEDULE

6- FOOT WALL

MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
478	#6	19'-6		20	13.03	261
			5'-3" to 5'-10" 500A			
500A	#8	250 lin. ft.			1.04	260
524B	#8	6'-0	4'-6" 524B	40	6.26	250
					Total	771

8- FOOT WALL

478	#6	19'-6		27	13.03	352
			3'-9" 518A			
518A	#8	4'-6	3'-11 619A	20	4.69	94
522	#8	5'-6		20	5.74	115
523	#8	5'-9	5'-6" 528A	40	6.00	240
525B	#8	6'-3		20	6.52	130
528A	#8	7'-0	1'-6" 525B	20	7.30	146
			1'-9" 1'-6"			
619A	#8	4'-9	3"rad	20	7.13	143
					Total	1220

10- FOOT WALL

478	#6	19'-6		33	13.03	430
			5'-6" 525A			
525A	#8	6'-3	5'-8" 626A	20	6.52	130
525B	#8	6'-3		20	6.52	130
527	#8	6'-9	6'-6" 532A	40	7.04	283
532A	#8	8'-0		20	8.34	167
			1'-6" 525B			
626A	#8	6'-6	1'-9" 1'-6"	40	9.76	390
826	1"	6'-6	3"rad	20	17.36	347
					Total	1877

12- FOOT WALL

523A	#8	5'9		20	6.00	120
531A	#8	7'-9	5'-0" 523A	20	8.08	162
535	#8	8'-9	5'-11" 627A	40	9.13	365
536A	#8	9'-0	7'-10" 735A	20	9.39	188
578	#8	19'-6		39	2034	793
			7'-6" 536A			
627A	#8	6'-9	1'-6" 531A	20	10.14	203
630	#8	7'-6		40	11.27	451
			2'-4½" 2'-0"			
735A	#8	8'-9	4½" rad.	20	17.89	358
					Total	2640

14- FOOT WALL

522A	#8	5'-6		20	5.74	115
535A	#8	8'-9	4'-9" 522A	20	9.13	183
539	#8	9'-9	5'-6" 826A	40	10.17	407
578	#8	19'-6	8'-0" 836A	45	2034	916
			8'-6" 741A			
634A	#8	8'-6	6'-3 2'-3" 634A	20	12.77	255
734A	#8	8'-6	734A	20	17.37	347
741A	#8	10-3		20	20.95	419
			2'-0" 535A			
826A	1"	6'6	2'-6" 2'-1"	20	17.36	357
836A	1"	9'-0	6" rad.	20	24.03	481
					Total	3480

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"

BY	DATE	CHARACTER
		REVISIONS

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

IN 147 SHEETS SHEET NO. 108 SCALE: ¾"=1'-0"

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

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

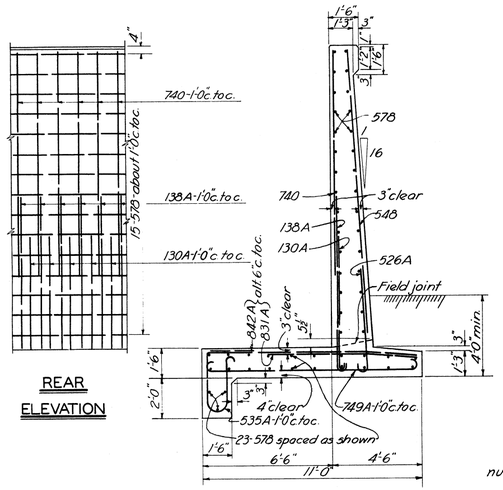
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TRACED BY A.R.M.
CHECKED BY E.K.

TRANSMITTED WITH LETTER DATED

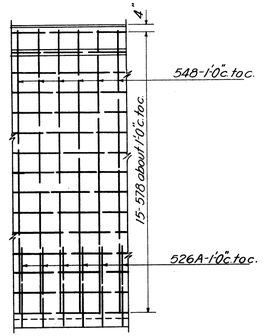
FILE NO. 027i-PM-68/26

WAR DEPARTMENT

CORPS OF ENGINEERS. U. S. ARMY

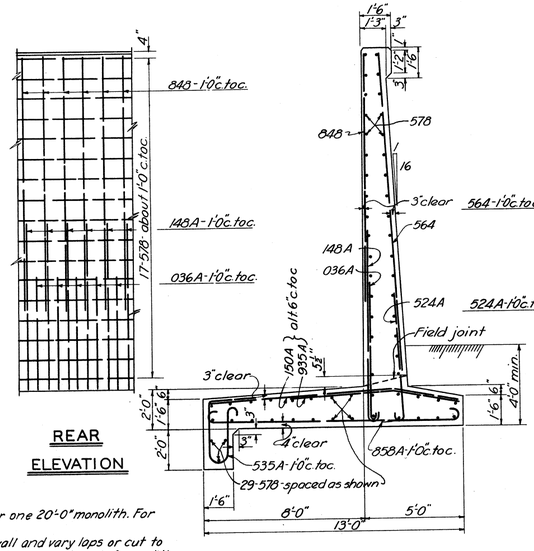


REAR ELEVATION

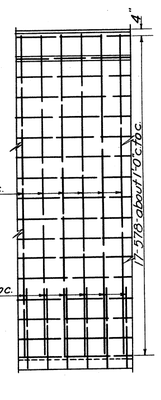


FRONT ELEVATION

TYPICAL 16-FOOT WALL



REAR ELEVATION



FRONT ELEVATION

TYPICAL 20-FOOT WALL

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.
All concrete to be Class "B".

MONOLITH SCHEDULE	
WALL HEIGHT	NO. REQ'D.
16 Foot Wall	5
18 Foot Wall	4
20 Foot Wall	2
22 Foot Wall	4

REINFORCING SCHEDULE

16-FOOT WALL

MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
526A	⅝"ø	6'6		20	6.78	136
535A	⅝"ø	8'9	5'9" 526A	20	9.13	183
548	⅝"ø	12'0	6'6" 138A	20	12.52	250
578	⅝"ø	19'6	6'6" 130A	53	20.34	1078
740	¾"ø	10'0"	10'6" 749A	20	20.44	409
749A	⅝"ø	12'3		20	25.04	501
831A	1"ø	7'9	3'0" 4'9" 7'6" 831A 842A	20	20.69	414
842A	1"ø	10'6	2'0" 535A	20	28.04	561
130A	1"□	7'6	2'5" 2'0" 6"rad.	20	25.50	510
138A	1"□	9'6		20	32.30	646
				Total		4688

18-FOOT WALL

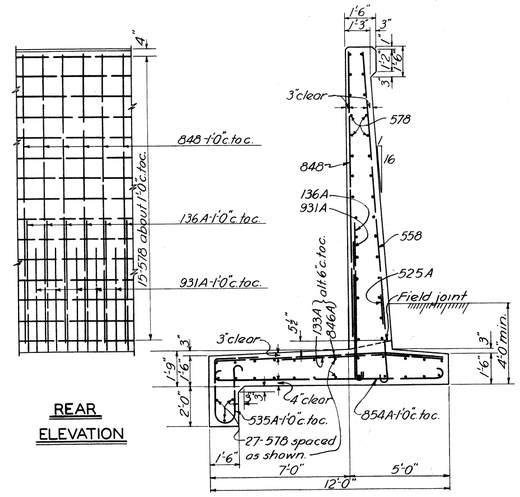
525A	⅝"ø	6'3		20	6.52	130
535A	⅝"ø	8'9	5'6" 525A	20	9.13	183
556	⅝"ø	14'0	6'0" 136A	20	14.60	292
578	⅝"ø	19'6	6'6" 931A	57	20.34	1159
848	1"ø	12'0	11'6" 854A	20	32.04	641
846A	1"ø	11'6	3'0" 8'6" 846A	20	30.71	614
854A	1"ø	13'6	5'3" 133A	20	36.05	721
			2'0" 535A			
133A	1"□	8'3"	2'5" 2'0"	20	28.05	561
136A	1"□	9'0"		20	30.60	612
931A	⅛"□	7'9"	6"rad.	20	3335	667
				Total		5590

20-FOOT WALL

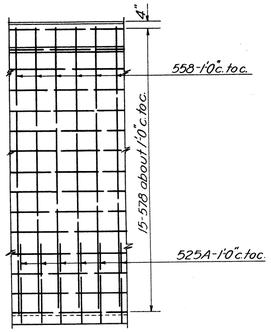
524A	⅝"ø	6'0"		20	6.26	125
535A	⅝"ø	8'9"	5'3" 524A	20	9.13	183
564	⅝"ø	16'0"	11'0" 148A	20	16.69	334
578	⅝"ø	19'6"	7'9" 036A	63	20.34	1281
848	1"ø	12'0"	12'6" 858A	20	32.04	641
858A	1"ø	14'6"		20	38.72	774
			3'3" 3'3" 3'3"			
148A	1"□	12'0"	9'3" 150A	20	40.80	816
150A	1"□	12'6"	5'6" 935A	20	42.50	850
			2'0" 535A			
935A	1⅛"□	9'9"	2'5" 2'0"	20	33.15	663
			6"rad.			
036A	1¼"□	9'0"		20	47.82	956
				Total		6623

22-FOOT WALL

535A	⅝"ø	8'9"		20	9.13	183
535B	⅝"ø	8'9"	8'0" 535B	20	9.13	183
568	⅝"ø	17'0"	12'6" 954A	20	17.73	355
578	⅝"ø	19'6"	8'6" 039A	69	20.34	1403
852	1"ø	13'0"	13'6" 862A	20	34.71	694
862A	1"ø	15'6"		20	41.39	828
			3'3" 3'3" 3'3"			
935A	1⅛"□	8'9"	10'3" 954B	20	37.65	753
954A	1¼"□	13'6"	5'6" 935A	20	58.09	1162
954B	1¼"□	13'6"		20	58.09	1162
			2'0" 535A			
039A	1¼"□	9'9"	2'5" 2'0"	20	51.80	1036
			6"rad.	Total		7759

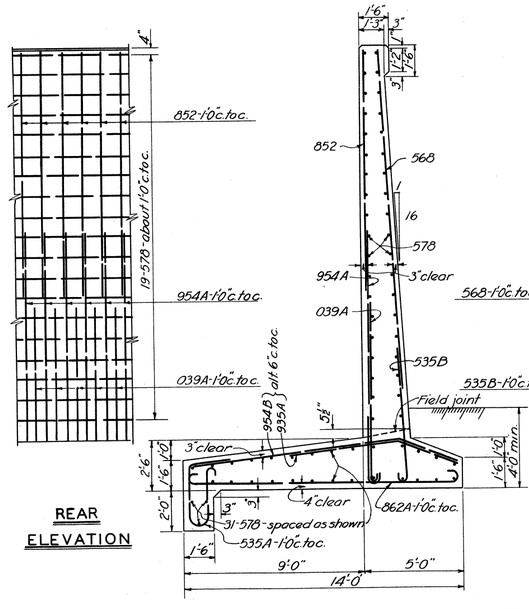


REAR ELEVATION

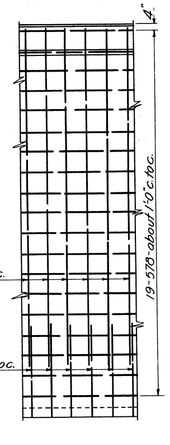


FRONT ELEVATION

TYPICAL 18-FOOT WALL



REAR ELEVATION



FRONT ELEVATION

TYPICAL 22-FOOT WALL

BY	DATE	CHARACTER
		REVISIONS

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

IN 147 SHEETS | SHEET NO. 109 | SCALE: ¾"=1'-0"

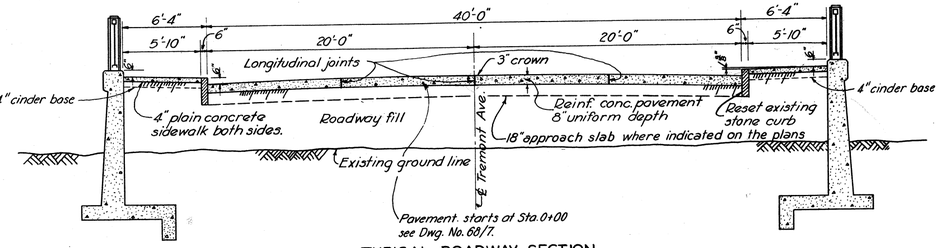
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

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

DRAWN BY F.R.G.
TRACED BY L.D.H.
CHECKED BY E.K.

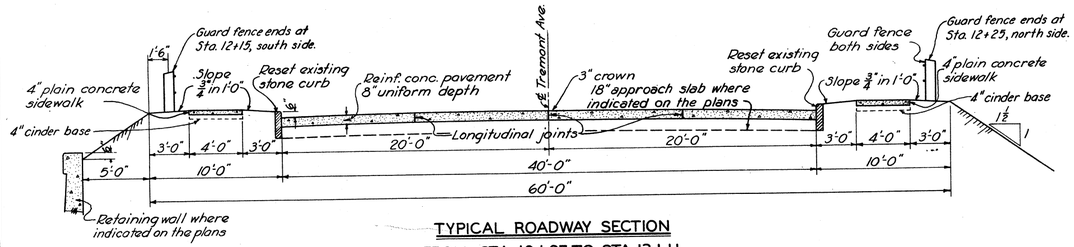
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FILE NO 027i-PM-68/27

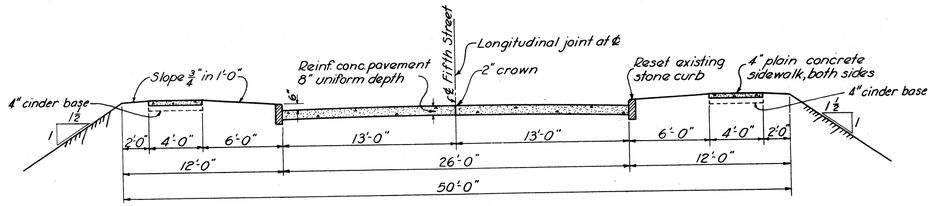


TYPICAL ROADWAY SECTION
FROM STA. 0+90 TO STA 3+82

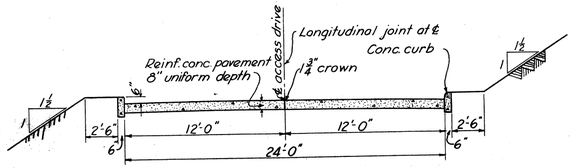
Note:
Curbs and sidewalks to be 6" higher at bridge. Run out to typical section in 50 Ft.



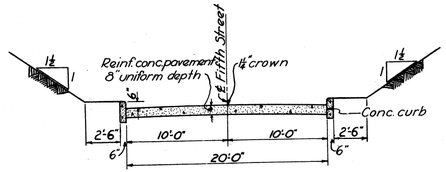
TYPICAL ROADWAY SECTION
FROM STA. 10+97 TO STA. 13+11



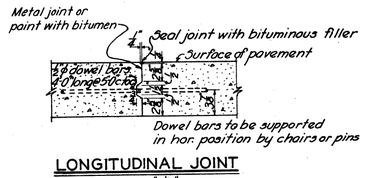
TYPICAL ROADWAY SECTION
FIFTH ST. SOUTH OF TREMONT AVE.



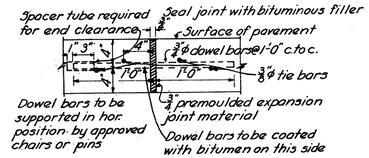
TYPICAL ROADWAY SECTION
ACCESS DRIVES TO B.&O. FREIGHT HOUSE



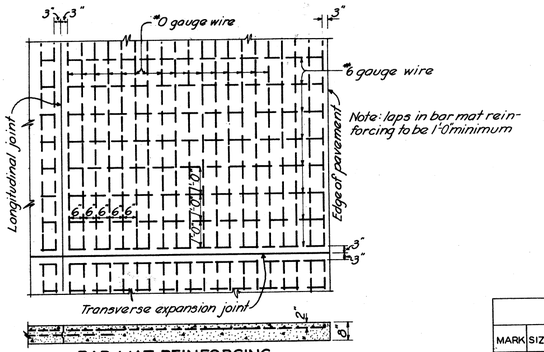
TYPICAL ROADWAY SECTION
FIFTH ST. NORTH OF TREMONT AVE.



LONGITUDINAL JOINT
SCALE: 1½"=1'-0"

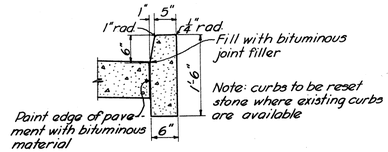


TRANSVERSE EXPANSION JOINT
SCALE: 1½"=1'-0"

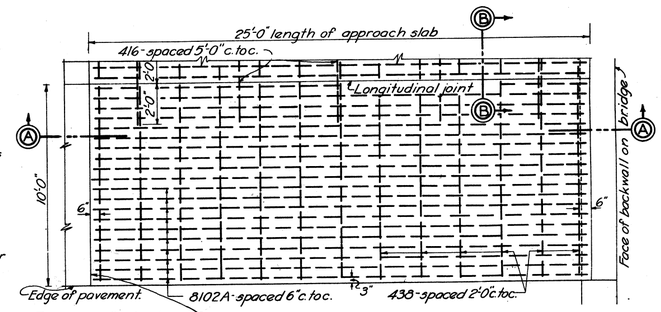


BAR MAT REINFORCING
SCALE ½"=1'-0"

STANDARD REINF. CONCRETE
PAVEMENT DETAILS



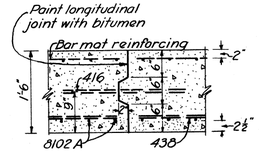
DETAIL OF CONCRETE CURB
SCALE: 1"=1'-0"



PLAN
SCALE: ⅜"=1'-0"



SECTION A-A
SCALE ⅜"=1'-0"



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

REINFORCING SCHEDULE						
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT W.T.	TOTAL W.T.
416	½" ϕ	4'-0		15	2.67	40
438	½" ϕ	9'-6		52	6.35	330
8102A	½" ϕ	25'-6	24'-6" 8102A	80	68.09	5447
				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 ℄ 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"

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO

TREMONT AVENUE VIADUCT
APPROACH SECTIONS & DETAILS

JB 147 SHEETS SHEET NO. 110 SCALE: ½"=1'-0"

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

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

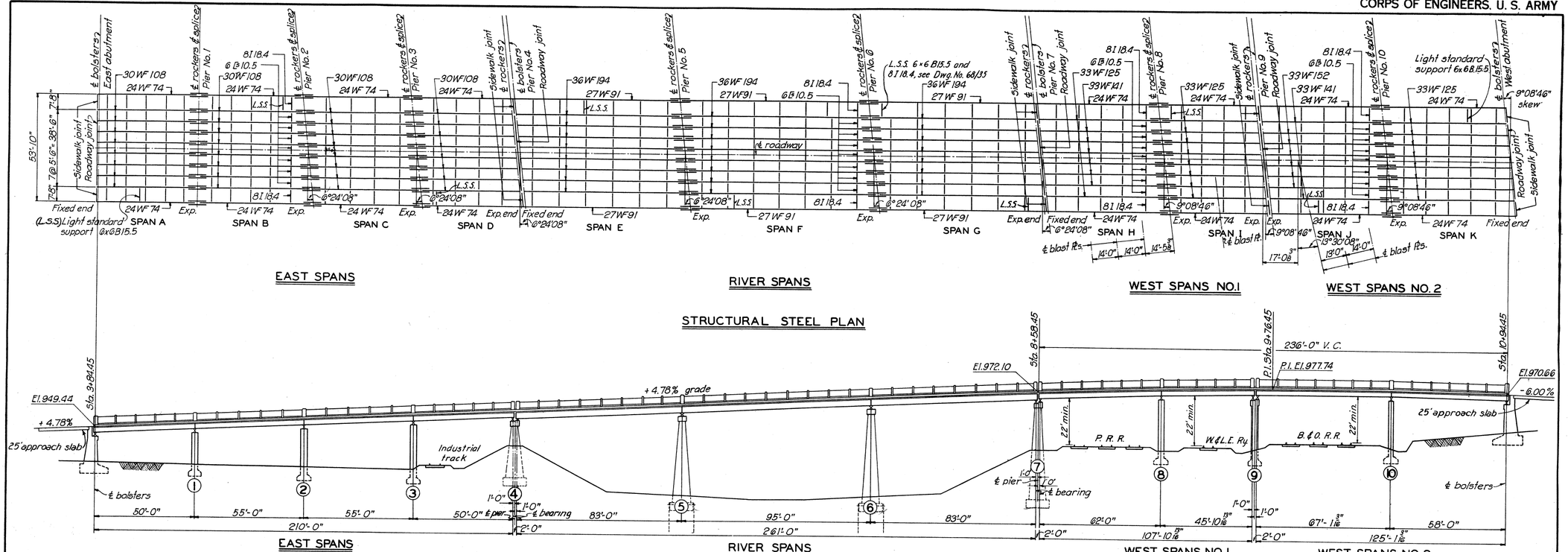
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TRANSMITTED WITH LETTER DATED

FILE NO. 027i-PM-68/28

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY



STRUCTURAL STEEL PLAN

EAST SPANS
CONTINUOUS OVER PIERS

RIVER SPANS
CONTINUOUS OVER PIERS

SECTION AT ℄ ROADWAY.

WEST SPANS NO.1
CONTINUOUS OVER PIER

WEST SPANS NO.2
CONTINUOUS OVER PIER

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		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

NEGATIVE MOMENTS IN FOOT POUNDS

LOADS	EAST SPANS						RIVER SPANS			WEST SPANS					
	PIER NOS. 1 & 3			PIER NO. 2			PIER NOS. 5 & 6			PIER NO. 8			PIER NO. 10		
	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	105,000	135,000	58,000	87,000	111,000	48,000	296,000	380,000	162,000	147,000	188,000	80,000	183,000	235,000	100,000
LIVE LOAD	287,000	202,000		285,000	200,000		545,000	383,000		326,000	212,000		384,000	250,000	
IMPACT	63,000	44,000		61,000	43,000		89,000	63,000		70,000	45,000		77,000	50,000	
SIDEWALK L.L.		59,000	72,000		60,000	73,000		173,000	211,000		75,000	91,000		93,000	113,000
TOTAL	455,000	440,000	130,000	433,000	415,000	121,000	930,000	999,000	373,000	543,000	520,000	171,000	644,000	628,000	213,000

MAXIMUM SHOE REACTIONS IN POUNDS

LOADS	RIVER SPANS					
	PIER NOS. 4 & 7			PIER NOS. 5 & 6		
	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM	INTERIOR BEAM	CURB BEAM	HANDRAIL BEAM
DEAD LOAD	19,900	23,200	10,300	54,000	64,400	28,200
LIVE LOAD	32,600	21,400		59,700	42,000	
IMPACT	7,800	5,100		9,800	6,900	
SIDEWALK L.L.		7,100	8,600		19,900	24,300
TOTAL	60,300	56,800	18,900	123,500	133,200	52,500

DESIGN DATA

Dead Load = Actual weight plus 10 # "s" 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 = $\frac{50}{L+125}$ × live load; where L = loaded length of span in feet.

$M = \frac{s}{5.5} M_1$ = 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 an extreme fiber

Compression in flanges ———— $\frac{20{,}000}{1+\frac{L}{8{,}000}\left(\frac{L}{b}\right)^2}$

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

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

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
STEEL PLAN & DESIGN DATA

IN 147 SHEETS SHEET NO. 111 SCALE: 1"= 20'

20' 15' 10' 5' 0 20' 40'

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

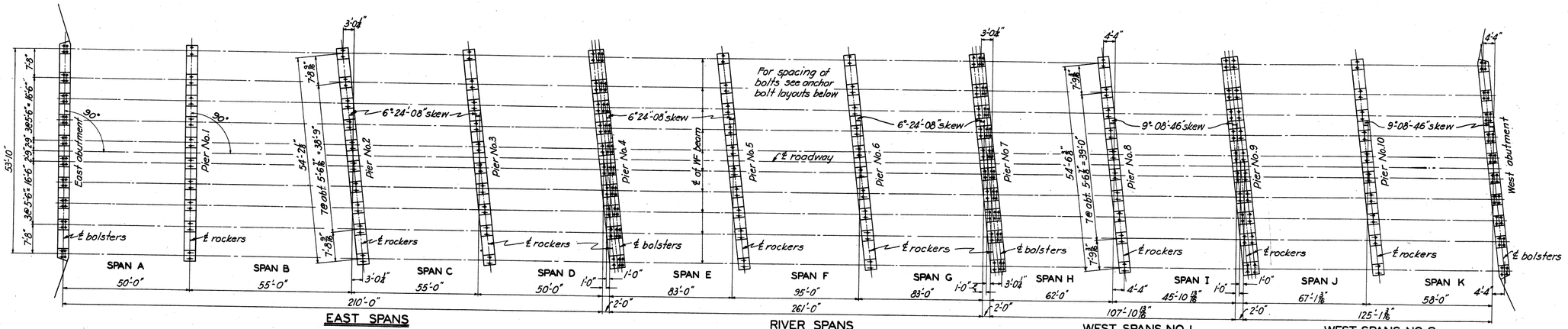
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CORPS OF ENGINEERS, U. S. ARMY



EAST SPANS

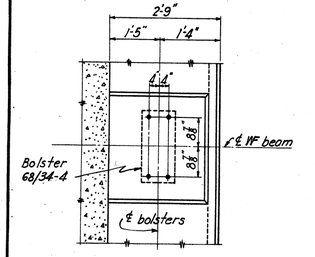
RIVER SPANS

WEST SPANS NO. 1

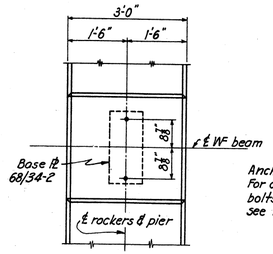
WEST SPANS NO. 2

ANCHOR BOLT PLAN

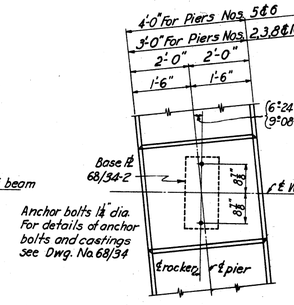
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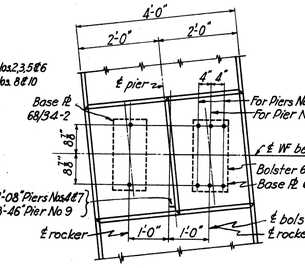
AT EAST ABUTMENT



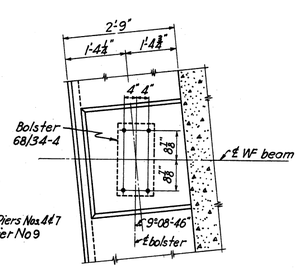
AT PIER NO. 1



AT PIERS NOS. 2,3,5,6,8 & 10

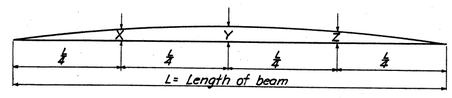


AT PIERS NOS. 4, 7 & 9



AT WEST ABUTMENT

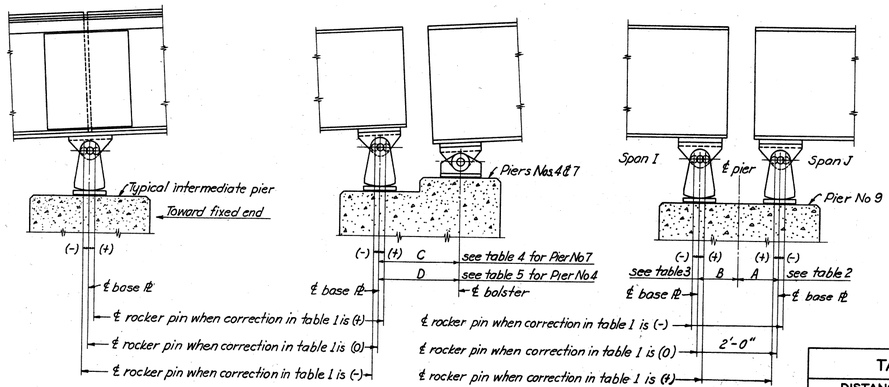
TYPICAL ANCHOR BOLT LAYOUT



CAMBER DIAGRAM

TABLE OF CAMBER

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



Note: Distances A, B, C, & D are measured perpendicular to the ℄ of pier

ROCKER SETTING

TABLE NO. 1

TEMPERATURE CORRECTIONS FOR SETTING EXPANSION ROCKERS

ROCKER LOCATION	TEMPERATURE					
	0°	20°	40°	60°	80°	100°	120°
PIER NO. 1	-3/16	-1/2	-13/16	0	+1/16	+1/2	+13/16
PIER NO. 2	-1/16	-5/16	-1/2	0	+1/2	+5/16	+1/16
PIER NO. 3	-1/16	-1/16	-1/2	0	+1/2	+1/16	+1/16
PIER NO. 4	-1/2	-3/8	-13/16	0	+1/16	+3/8	+1/2
PIER NO. 5	-3/8	-1/2	-5/8	0	+1/16	+1/2	+3/8
PIER NO. 6	-3/4	-1/2	-1/2	0	+1/2	+1/2	+3/4
PIER NO. 7	-1/16	-3/4	-3/8	0	+3/8	+3/8	+1/16
PIER NO. 8	-1/2	-3/8	-1/16	0	+1/16	+1/2	+1/2
PIER NO. 9 SPAN I	-1/2	-1/16	-1/16	0	+1/16	+1/16	+1/2
PIER NO. 9 SPAN J	-1/16	-3/8	-1/16	0	+1/16	+3/8	+1/2
PIER NO. 10	-1/2	-1/16	-1/16	0	+1/16	+1/2	+1/2

TABLE NO. 2

DISTANCE "A" FOR ROCKER ON PIER NO. 9 SPAN J

TEMPERATURE						
0°	20°	40°	60°	80°	100°	120°
1'-0 3/16"	1'-0 1/8"	1'-0 1/16"	1'-0"	11 13/16"	11 5/8"	11 7/16"

TABLE NO. 3

DISTANCE "B" FOR ROCKER ON PIER NO. 9 SPAN I

TEMPERATURE						
0°	20°	40°	60°	80°	100°	120°
1'-0 1/2"	1'-0 3/8"	1'-0 5/16"	1'-0"	11 11/16"	11 9/16"	11 7/16"

TABLE NO. 4

DISTANCE "C" FOR ROCKER ON PIER NO. 7

TEMPERATURE						
0°	20°	40°	60°	80°	100°	120°
2'-1 1/4"	2'-0 3/4"	2'-0 3/8"	2'-0"	1'-11 5/8"	1'-11 1/4"	1'-10 7/8"

TABLE NO. 5

DISTANCE "D" FOR ROCKER ON PIER NO. 4

TEMPERATURE						
0°	20°	40°	60°	80°	100°	120°
2'-0 3/8"	2'-0 1/8"	2'-0 1/16"	2'-0"	1'-11 13/16"	1'-11 5/8"	1'-11 7/16"

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT

ANCHOR BOLT PLAN & ERECTION DATA

IN 147 SHEETS | SHEET NO. 112 | SCALE: 3/4" = 1'-0"

12" 6" 0 1' 2' 3'

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

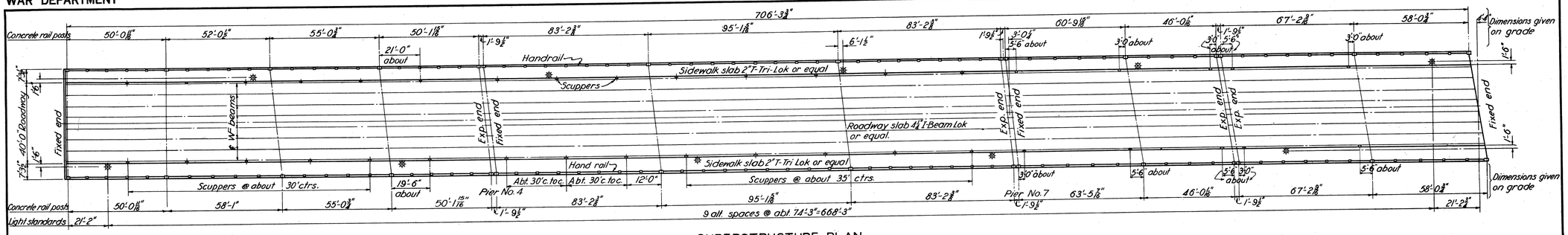
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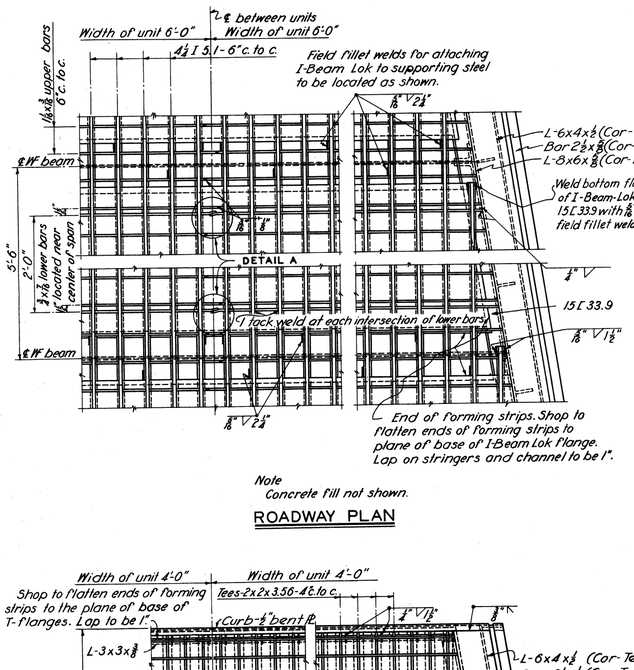
WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY



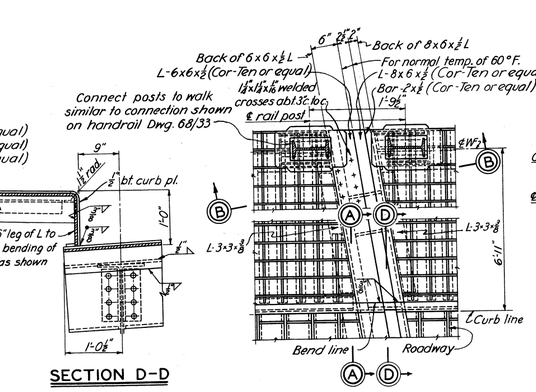
SUPERSTRUCTURE PLAN

SCALE: 1" = 20'



Note
Concrete fill not shown.

ROADWAY PLAN



PLAN

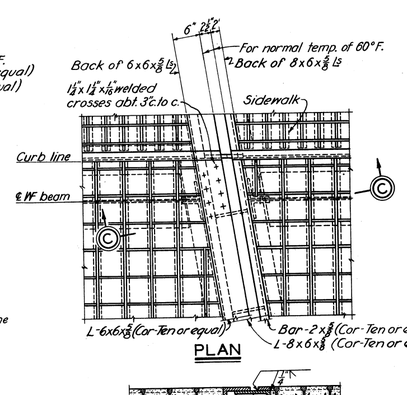
SECTION D-D

SECTION A-A

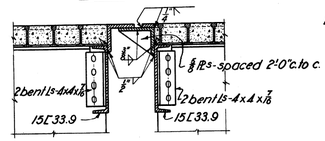
ELEVATION AT CURB

SECTION B-B

DETAILS OF SIDEWALK JOINT AT PIERS

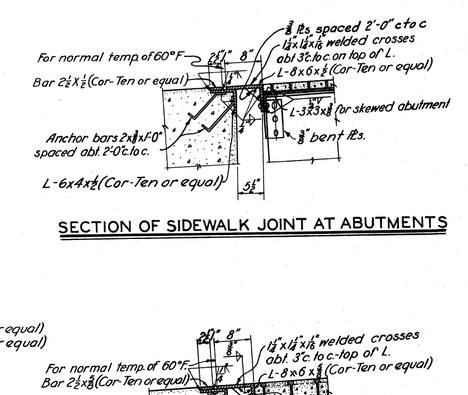


PLAN

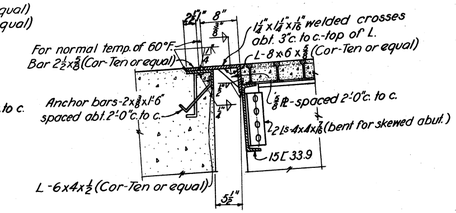


SECTION C-C

DETAILS OF ROADWAY JOINT AT PIERS



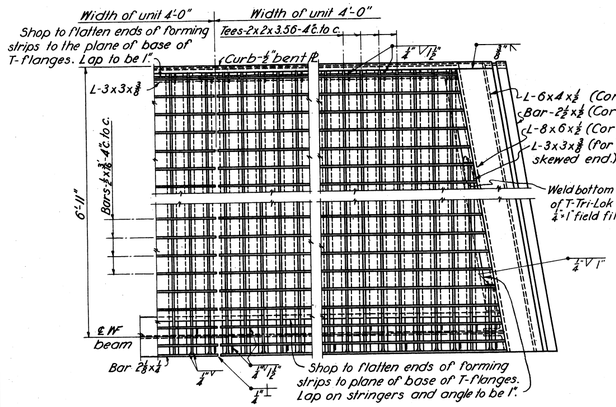
SECTION OF SIDEWALK JOINT AT ABUTMENTS



SECTION OF ROADWAY JOINT AT ABUTMENTS

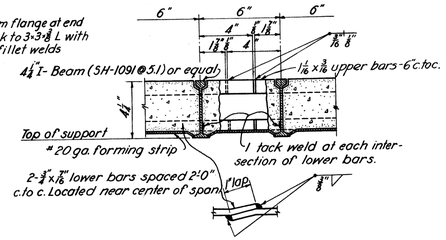
NOTES

Expansion and fixed joints to be flared and bent to match roadway.
Rivets ⅞".
Concrete for roadway and sidewalk to be Class "A"



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

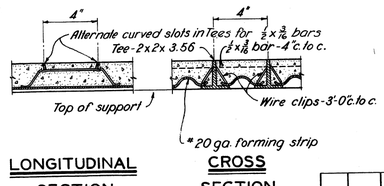
SIDEWALK PLAN



DETAIL A

DETAILS OF ROADWAY SLAB

SCALE: 3" = 1'-0"



LONGITUDINAL SECTION

CROSS SECTION

DETAILS OF SIDEWALK SLAB

SCALE: 3" = 1'-0"

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	REVISIONS
		CHARACTER

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

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

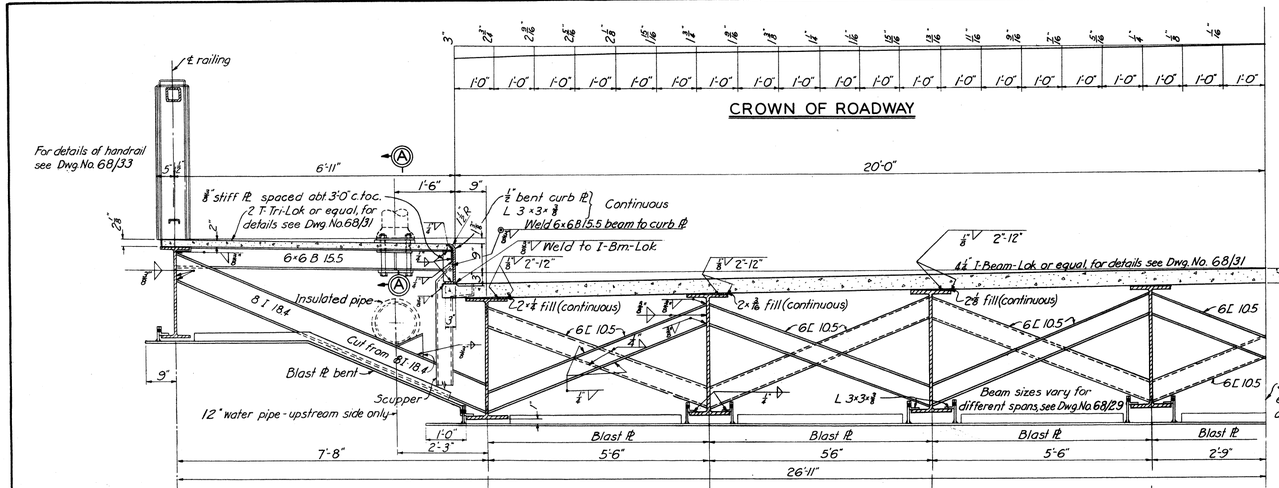
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA., SEPT. 1940

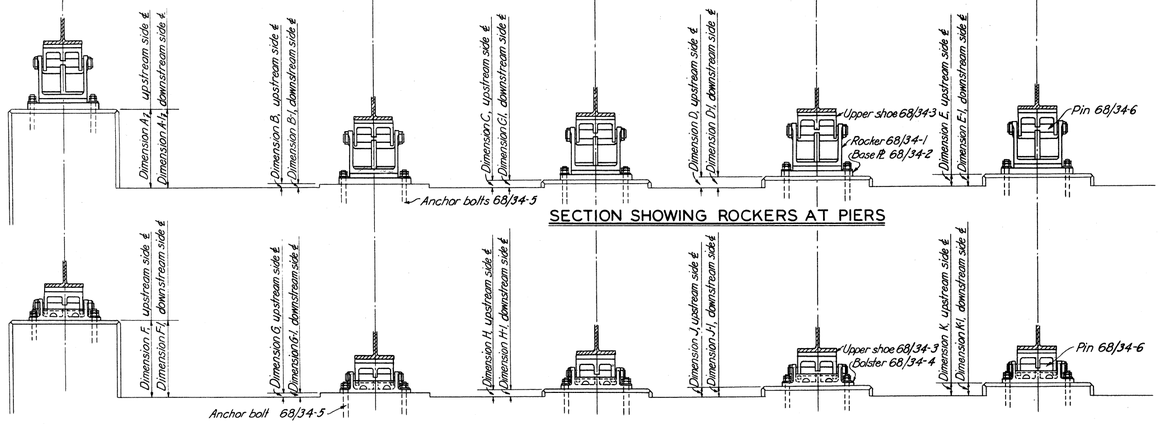
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APPROVED: ..... LT. COL., CORPS OF ENGINEERS

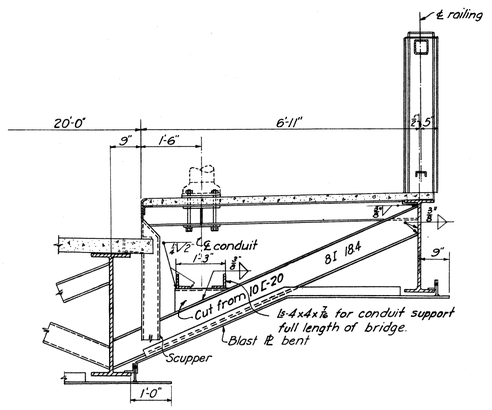
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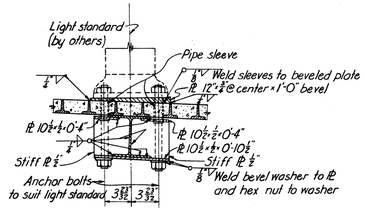
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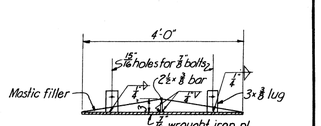
CORPS OF ENGINEERS, U. S. ARMY

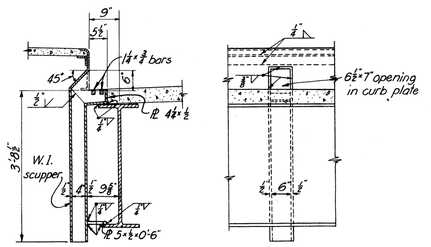












HEIGHT OF PEDESTALS UNDER ROCKERS											BRIDGE SEAT ELEVATION	PLATE PLUS NORMAL SHIMS	
PIER	A	B	C	D	E	E-1	D-1	C-1	B-1	A-1		SIDEWALK BEAMS	ROADWAY BEAMS
No.1	1'-10 5/8"	1"	2 5/8"	3"	3 5/8"	3 5/8"	3"	2 5/8"	1"	1'-10 5/8"	947.03	3/8"	1"
No.2	2'-1 1/2"	3 1/2"	4 1/2"	4 13/16"	5 1/8"	4 3/8"	3 3/8"	2 5/8"	1"	1'-10 5/8"	949.56	3/8"	1"
No.3	2'-1 1/2"	3 1/2"	4 1/2"	4 13/16"	5 1/8"	4 3/8"	3 3/8"	2 5/8"	1"	1'-10 5/8"	952.19	3/8"	1"
No.4	2'-1 1/2"	3 1/2"	4 1/2"	4 13/16"	5 1/8"	4 3/8"	3 3/8"	2 5/8"	1"	1'-10 5/8"	954.58	3/8"	1"
No.5	2'-5 1/2"	3 1/2"	4 1/2"	4 13/16"	5 1/8"	4 3/8"	3 3/8"	2 5/8"	1"	2'-2 1/16"	958.07	3/8"	1 1/4"
No.6	2'-5 1/2"	3 1/2"	4 1/2"	4 13/16"	5 1/8"	4 3/8"	3 3/8"	2 5/8"	1"	2'-2 1/16"	962.61	3/8"	1 1/4"
No.7	2'-5 1/2"	3 1/2"	4 1/2"	4 13/16"	5 1/8"	4 3/8"	3 3/8"	2 5/8"	1"	2'-2 1/16"	966.57	3/8"	1 1/4"
No.8	2'-3 1/2"	2 7/16"	3 3/8"	3 3/8"	4 1/4"	4 1/16"	3 1/4"	2 5/8"	1"	2'-1 1/2"	969.08	3/8"	1 5/8"
No.9 Span I	2'-2"	1"	1 15/16"	2 5/8"	3 1/2"	3 7/16"	2 15/16"	2 1/16"	1 7/16"	2'-2 1/4"	969.49	3/8"	1/4" curb, 1 5/8" others
No.9 Span J	2'-2"	1"	1 15/16"	2 5/8"	3 1/2"	3 7/16"	2 15/16"	2 1/16"	1 7/16"	2'-2 1/4"	969.49	3/8"	1 5/8"
No.10	2'-1 1/2"	1"	2 1/4"	3 1/2"	4 1/2"	4 3/8"	4 1/16"	4"	3 1/4"	2'-5"	968.18	3/8"	1 5/8"

HEIGHT OF PEDESTALS UNDER BOLSTERS											BRIDGE SEAT ELEVATION	PLATE PLUS NORMAL SHIMS	
LOCATION	F	G	H	J	K	K-1	J-1	H-1	G-1	F-1		SIDEWALK BEAMS	ROADWAY BEAMS
EAST ABUT	1'-10 5/8"	1"	2 5/8"	3"	3 3/8"	3 3/8"	3"	2 5/8"	1"	1'-10 5/8"	945.45	3/8"	1"
PIER NO. 4	2-9 1/2	7 1/2"	8 1/4"	8 11/16"	9 1/8"	8 3/8"	7 3/8"	6 1/2"	5"	2'-6 1/16"	954.58	3/8"	1 1/4"
PIER NO. 7	3'-7 1/4"	1'-6"	1'-6 1/2"	1'-7 1/16"	1'-7 7/8"	1'-7"	1'-6"	1'-4 3/8"	1'-3 1/2"	3'-3 13/16"	966.57	3/8"	1 1/4"
WEST ABUT	2'-0 7/8"	1"	2 3/8"	4 7/16"	5 1/8"	6 1/8"	6 1/16"	5 1/16"	5 1/16"	2'-7 1/16"	966.22	3/8"	1 5/8"

SECTION A-A

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

NOTES

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

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

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

IN 147 SHEETS SHEET NO. 114 SCALE: 3/4" = 1'-0"

12" 6" 0 1' 2' 3'

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

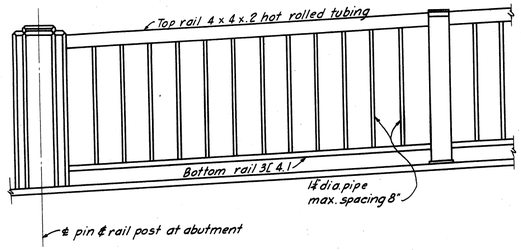
SUBMITTED: ..... PRINCIPAL ENGINEER APPROVED: ..... LT. COL., CORPS OF ENGINEERS

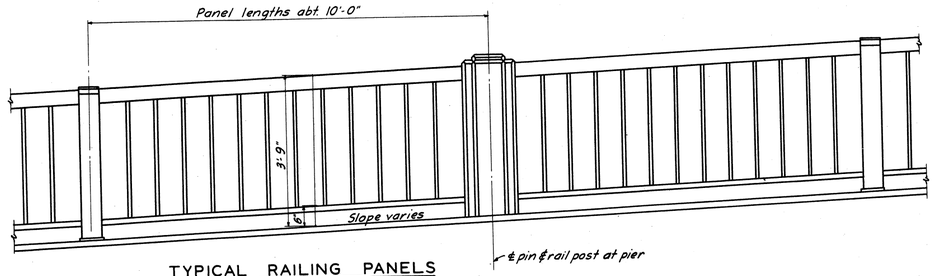
DRAWN BY A.W.S.
TRACED BY H. C.
CHECKED BY H. U. S.

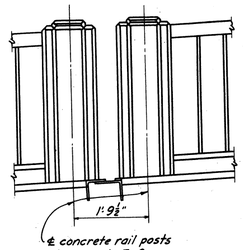
FILE NO. 027i-PM-68/32 DATED ..... TRANSMITTED WITH LETTER

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY

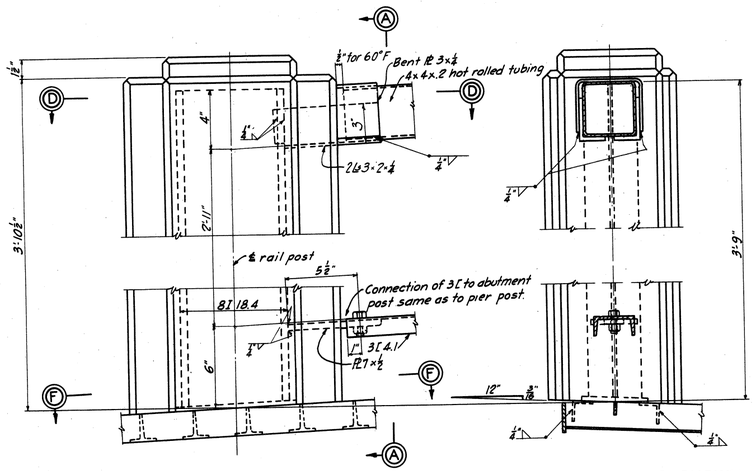






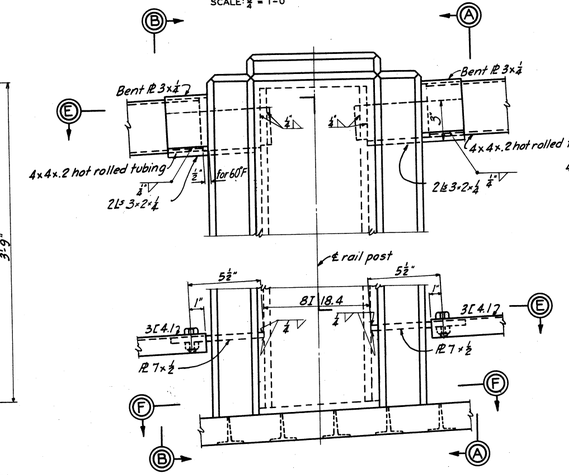
TYPICAL RAILING PANELS

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

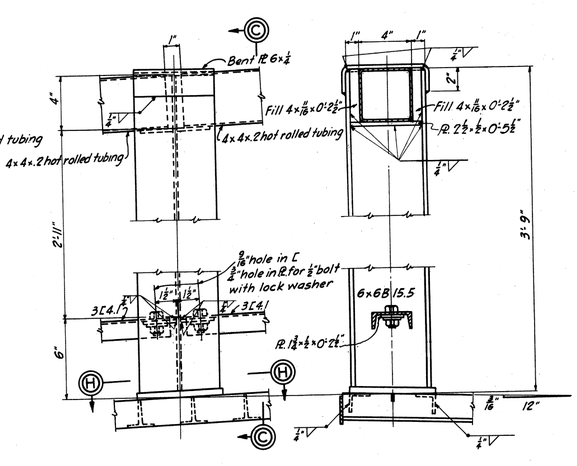


CONCRETE RAIL POST AT ABUTMENT

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

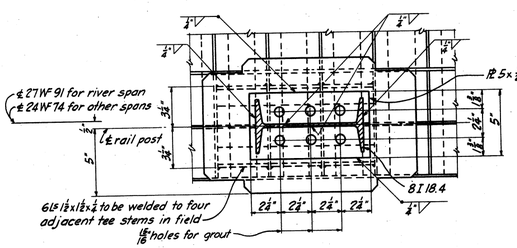


CONCRETE RAIL POST AT PIERS

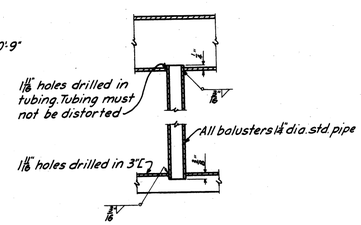


INTERMEDIATE RAIL POST

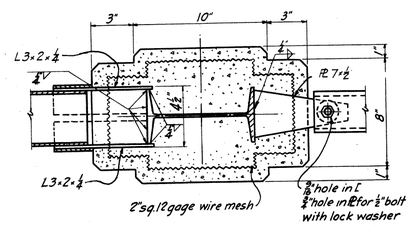
SECTION C-C



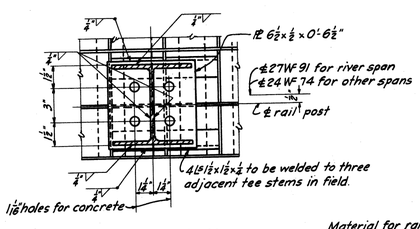
SECTION F-F



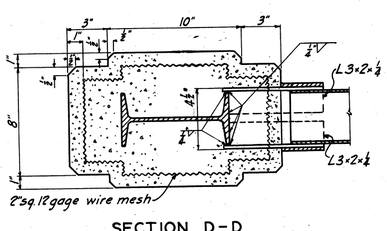
DETAIL OF BALUSTERS



SECTION E-E



SECTION H-H



SECTION D-D

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 and grade of roadway.
Concrete for railing posts to be class "A"

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE VIADUCT
RAILING DETAILS

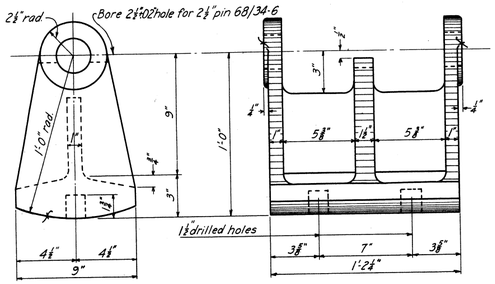
IN 147 SHEETS | SHEET NO. 115 | SCALE: 3" = 1'-0"

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

SUBMITTED: PRINCIPAL ENGINEER | APPROVED: LT. COL., CORPS OF ENGINEERS

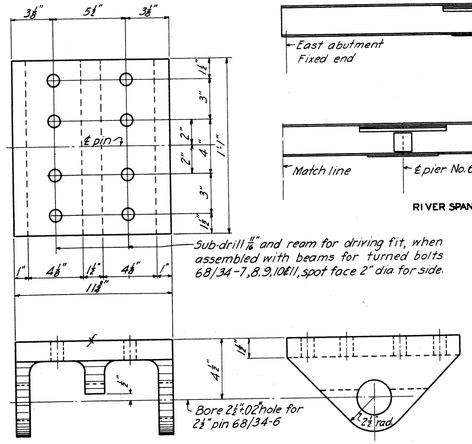
DRAWN BY H.S.M.
TRACED BY H.S.M.
CHECKED BY H.U.B.
TRANSMITTED WITH LETTER DATED
FILE NO. 027i-PM-68/33

BY	DATE	CHARACTER
		REVISIONS



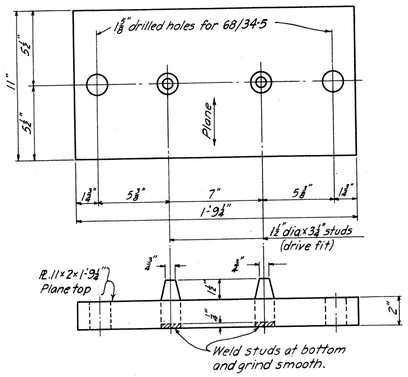
DETAIL OF ROCKER

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



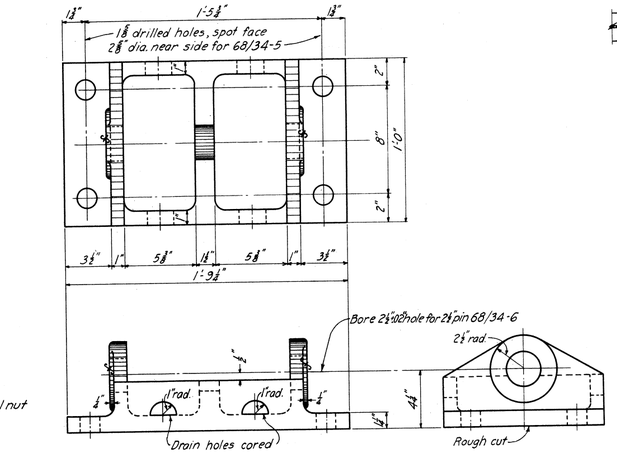
DETAIL OF UPPER SHOE

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



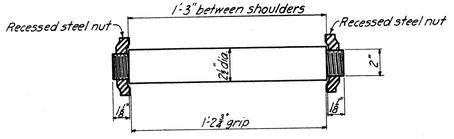
DETAIL OF BASE PLATE

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



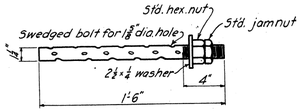
DETAIL OF BOLSTER

CAST STEEL CLASS 2 MARK 68/34-4
MAKE 40 WT. 1450 LBS.



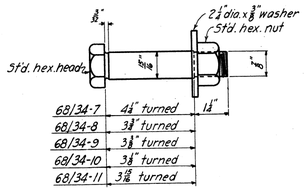
DETAIL OF PIN

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

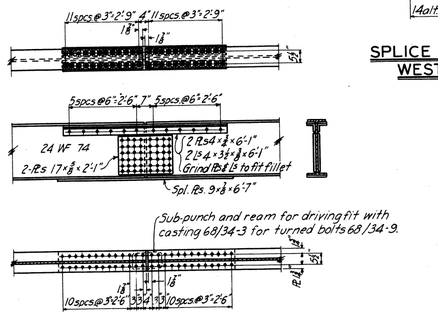
STRUCTURAL STEEL MARK 68/34-5
MAKE 380 WT. 7.8 LBS.



DETAIL OF TURNED BOLT

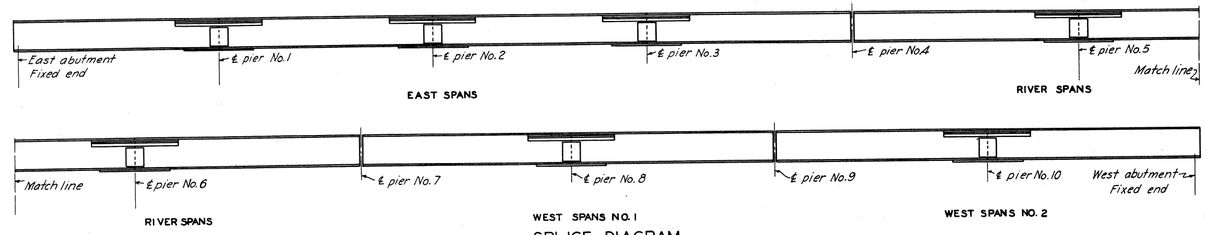
	STRUCTURAL STEEL		
MARK 68/34-7	MAKE 328	WT	1.91 LBS.
MARK 68/34-8	MAKE 192	WT.	1.85 LBS.
MARK 68/34-9	MAKE 496	WT.	1.78 LBS.
MARK 68/34-10	MAKE 64	WT.	1.71 LBS.
MARK 68/34-11	MAKE 120	WT.	1.88 LBS.

SCALE: 6"=1'-0"

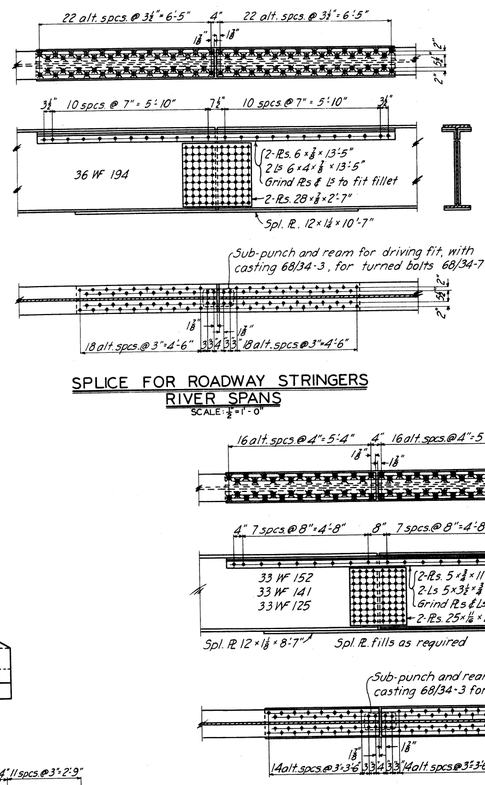


SPLICE FOR SIDEWALK STRINGERS EAST SPANS AND WEST SPANS NO. 1 AND NO. 2

SCALE: ½"=1'-0"



SPLICE DIAGRAM

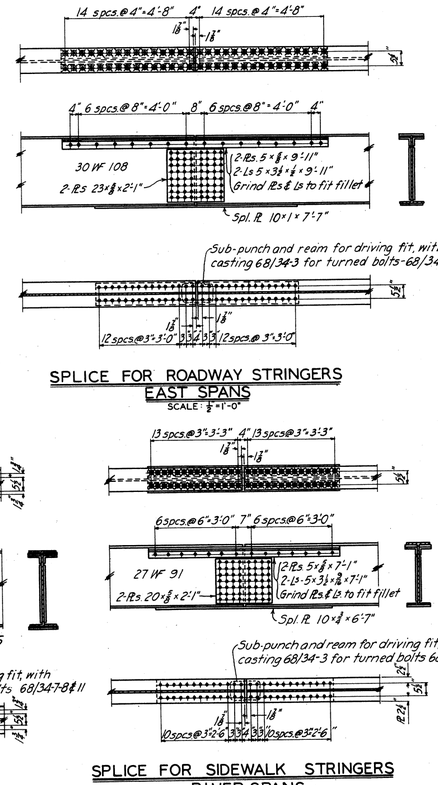


SPLICE FOR ROADWAY STRINGERS RIVER SPANS

SCALE: ½"=1'-0"

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

SCALE: ½"=1'-0"



SPLICE FOR ROADWAY STRINGERS EAST SPANS

SCALE: ½"=1'-0"

SPLICE FOR SIDEWALK STRINGERS RIVER SPANS

SCALE: ½"=1'-0"

NOTES

⅞" rivets for girder splices.
Casting fillets are ⅜" rad. unless noted.

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

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

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

0 3" 6" 9" 12"

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

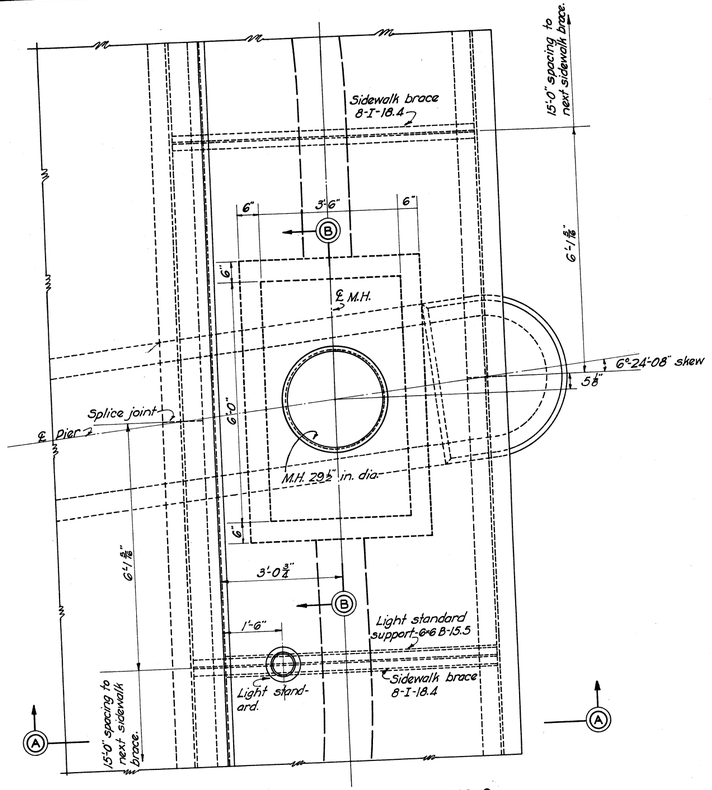
SUBMITTED: ..... PRINCIPAL ENGINEER APPROVED: ..... LT. COL., CORPS OF ENGINEERS, DIST. ENGR.

DRAWN BY N. U. D.
TRACED BY H.S.M-D.R.J.
CHECKED BY H. U. B. FILE NO. 027i-PM-68/34 DATED

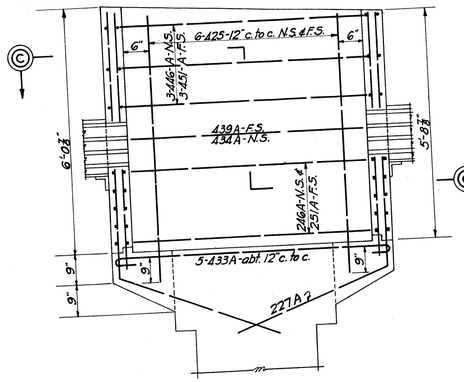
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WAR DEPARTMENT

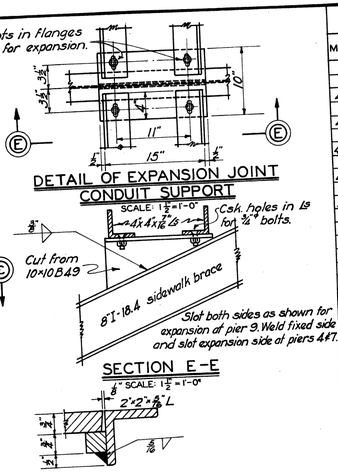
CORPS OF ENGINEERS, U. S. ARMY



PLAN - LOCATION OF MANHOLE AT PIER NO. 6



REINFORCING DETAIL

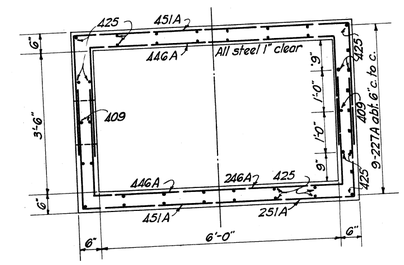


DETAIL OF ANGLE MANHOLE FRAME

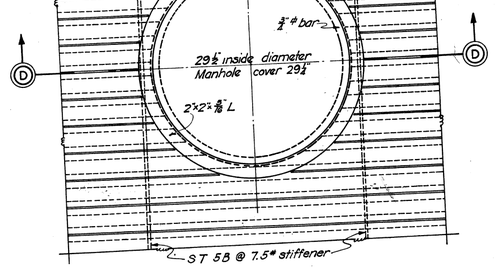
SCALE: HALF SIZE

REINFORCING SCHEDULE

MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
409	½" ø	2'-3"		6	1.51	9
425		6'-3"		36	4.17	150
433A		8'-3"		5	3.52	28
434A		8'-6"		2	3.68	11
439A		9'-9"		2	6.62	13
446A		11'-6"		6	7.70	46
451A		12'-9"		6	8.54	51
227A	½" ø	6'-9"		18	5.75	103
246A		11'-6"		10	9.77	98
251A		12'-9"		10	10.84	108
						617



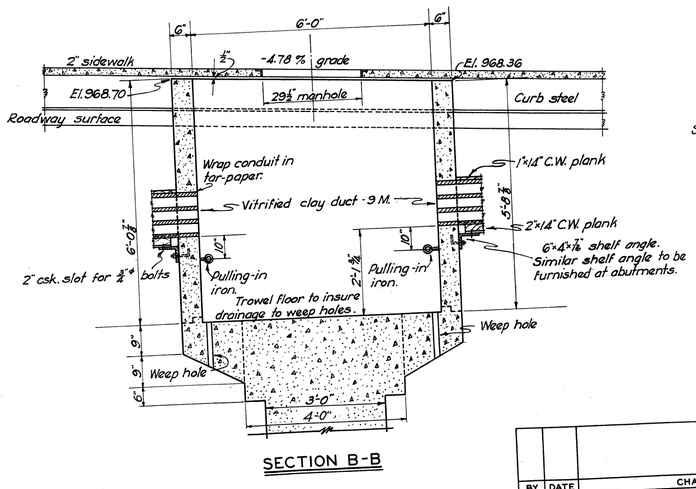
SECTION C-C



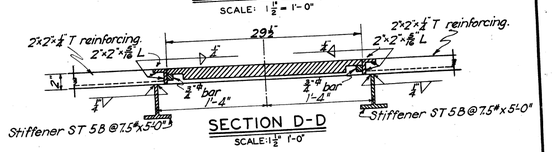
PLAN - MANHOLE

SCALE: 1½" = 1'-0"

SECTION A-A



SECTION B-B



SECTION D-D

SCALE: 1½" = 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 10½" 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

IN 147 SHEETS — SHEET NO. 117 — SCALE: ¾" = 1'-0"

12" 6" 0 1' 2" 3"

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

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

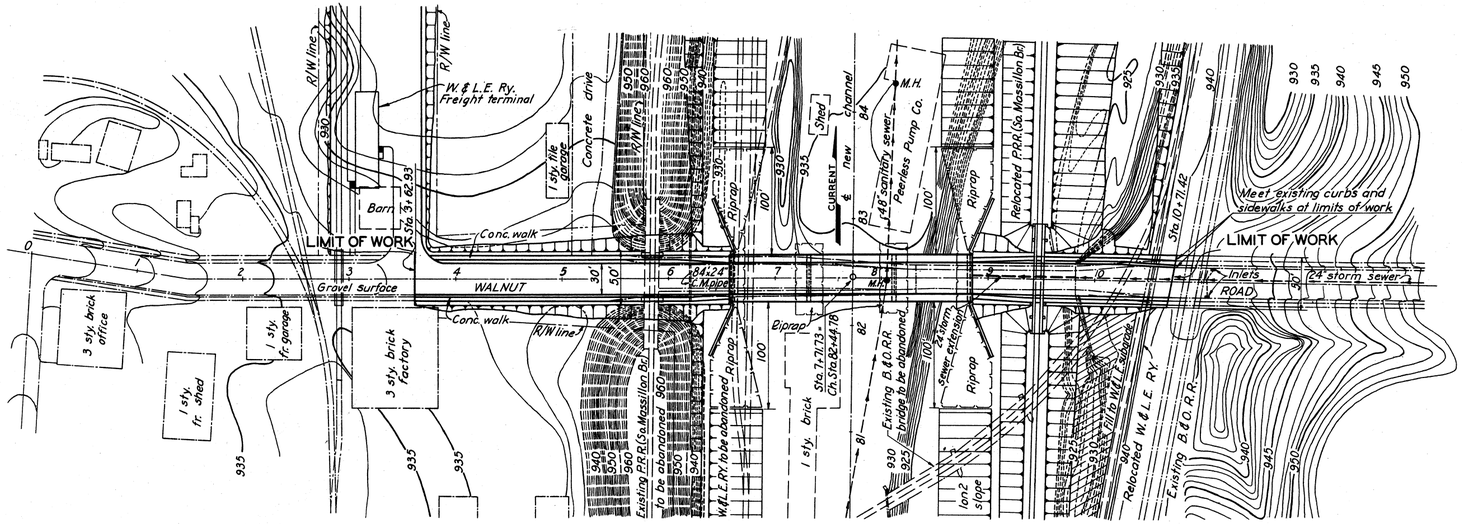
DRAWN BY T.D. TRACED BY T.D. CHECKED BY A.R.N.

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FILE NO. 027i-PM-68/35

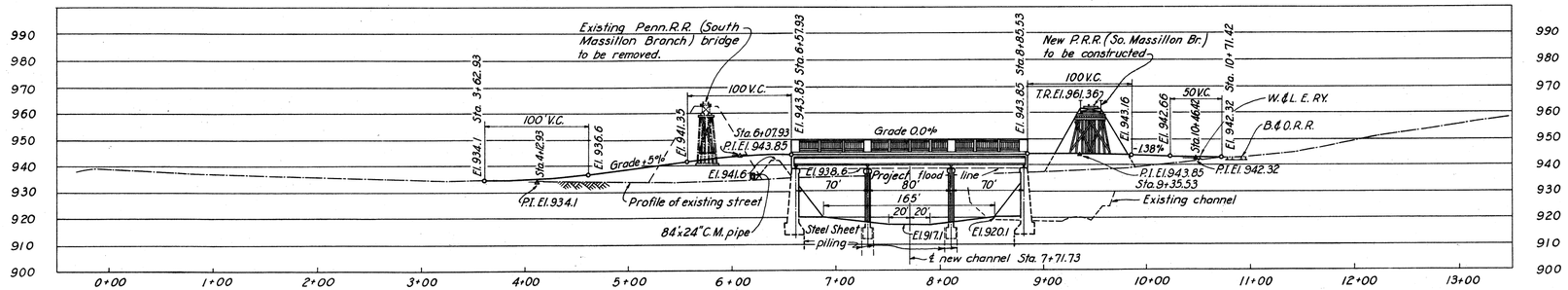
BY	DATE	CHARACTER

REVISIONS



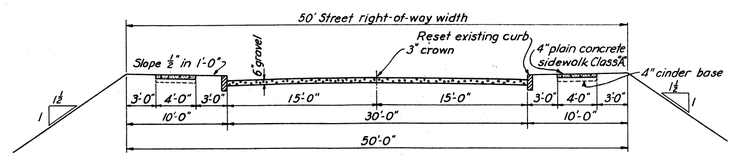
Note:
P. R. R. So. Massillon Branch embankment to be removed so that ground slopes toward levee.

PLAN



PROFILE ON ℄ OF STREET

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



TYPICAL ROADWAY SECTION

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

BY	DATE	CHARACTER

REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
WALNUT ROAD BRIDGE
GENERAL PLAN & PROFILE

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

50' 25' 0 50' 100'

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

SUBMITTED: ..... CHIEF, ENGINEERING DIVISION APPROVED: ..... LT. COL., CORPS OF ENGINEERS

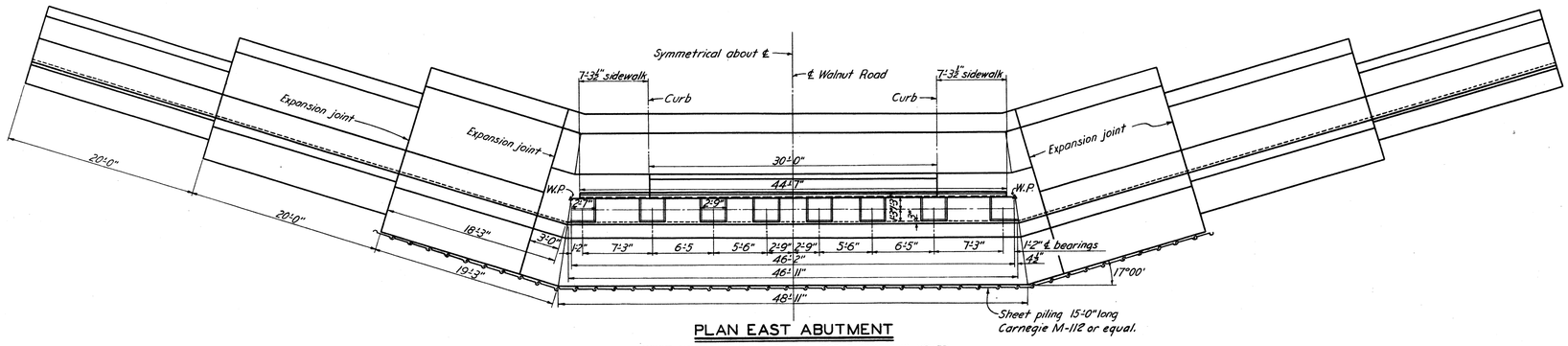
DRAWN BY W.B.S.
TRACED BY W.B.S.
CHECKED BY D.G.J.

TRANSMITTED WITH LETTER

FILE NO 027i-PM-68/36 DATED

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY



PLAN EAST ABUTMENT

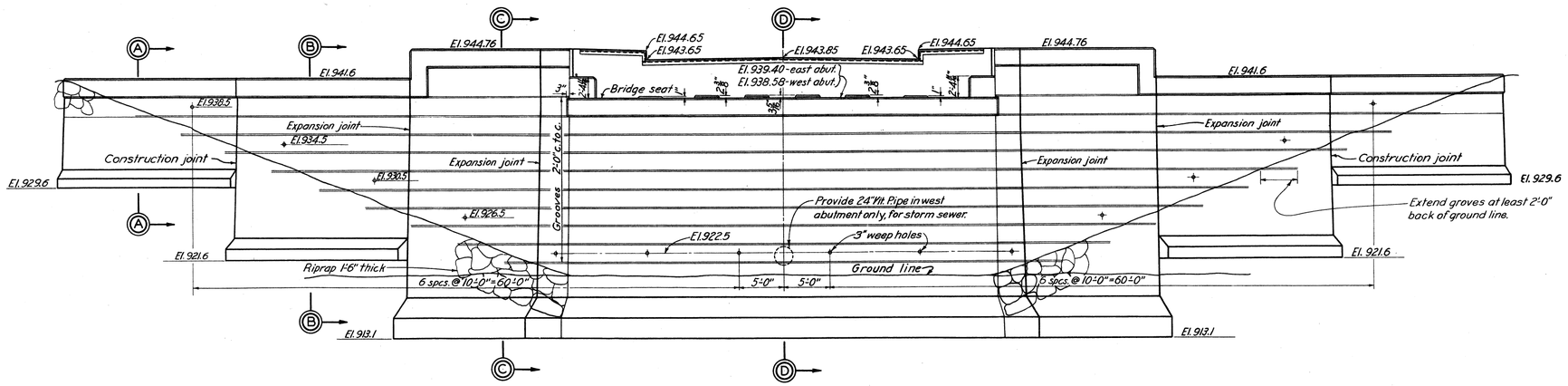
WEST ABUTMENT SAME EXCEPT FOR ELEVATIONS NOTED

REINFORCING SCHEDULE

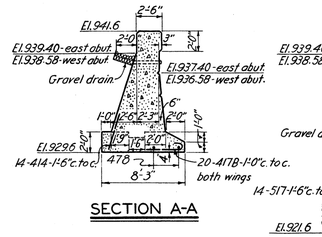
MARK	SIZE	LGTH	BENDING DIAGRAMS	NO.	UNIT WT.	TOTAL WT.
414	1" ϕ	31'6"		56	2.34	131
417B	1" ϕ	4'3"		80	2.84	227
478	1" ϕ	19'6"		20	13.03	261
517	⅝" ϕ	4'3"		126	4.43	558
524B	⅝" ϕ	6'0"		80	6.26	501
559	⅝" ϕ	14'9"		16	15.38	247
5110	⅝" ϕ	27'6"		8	28.68	229
624	⅝" ϕ	6'0"		118	9.01	1063
836B	1" ϕ	9'0"		174	24.03	4181
					Total	7498

3'-6" 417B
5'-3" 524B
8'-0" 836B

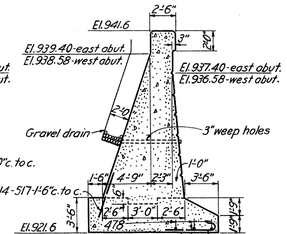
Note: Reinforcing bars for two abutments.



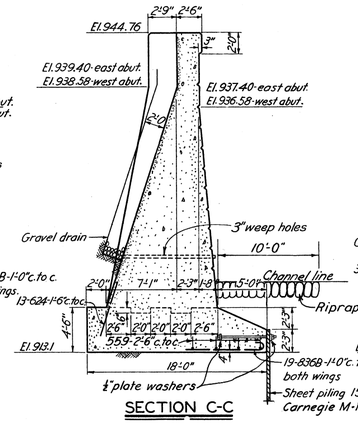
ELEVATION



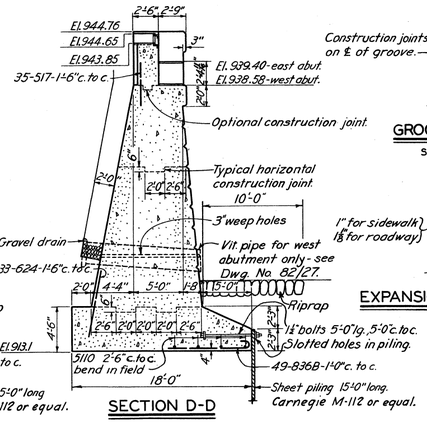
SECTION A-A



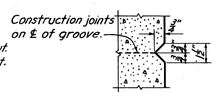
SECTION B-B



SECTION C-C

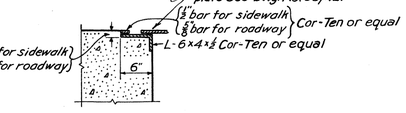


SECTION D-D



GROOVE DETAIL

SCALE: 3" = 1'-0"



EXPANSION PLATE DETAIL

SCALE: 1" = 1'-0"

NOTES

Chamfer all exposed edges 1" unless otherwise indicated.

Concrete to be Class "B."

BY	DATE	CHARACTER

REVISIONS

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

IN 147 SHEETS SHEET NO 119 SCALE: ⅛" = 1'-0"

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

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

DRAWN BY J.E.H.
TRACED BY N.W.D.
CHECKED BY E.K.

TRANSMITTED WITH LETTER

FILE NO 027i-PM-68/37 DATED

WAR DEPARTMENT

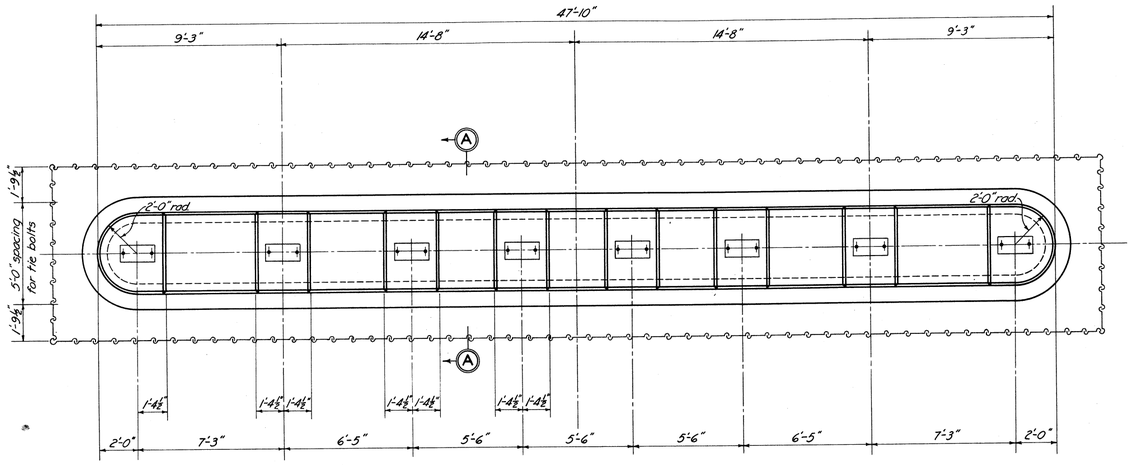
CORPS OF ENGINEERS, U. S. ARMY

REINFORCING SCHEDULE

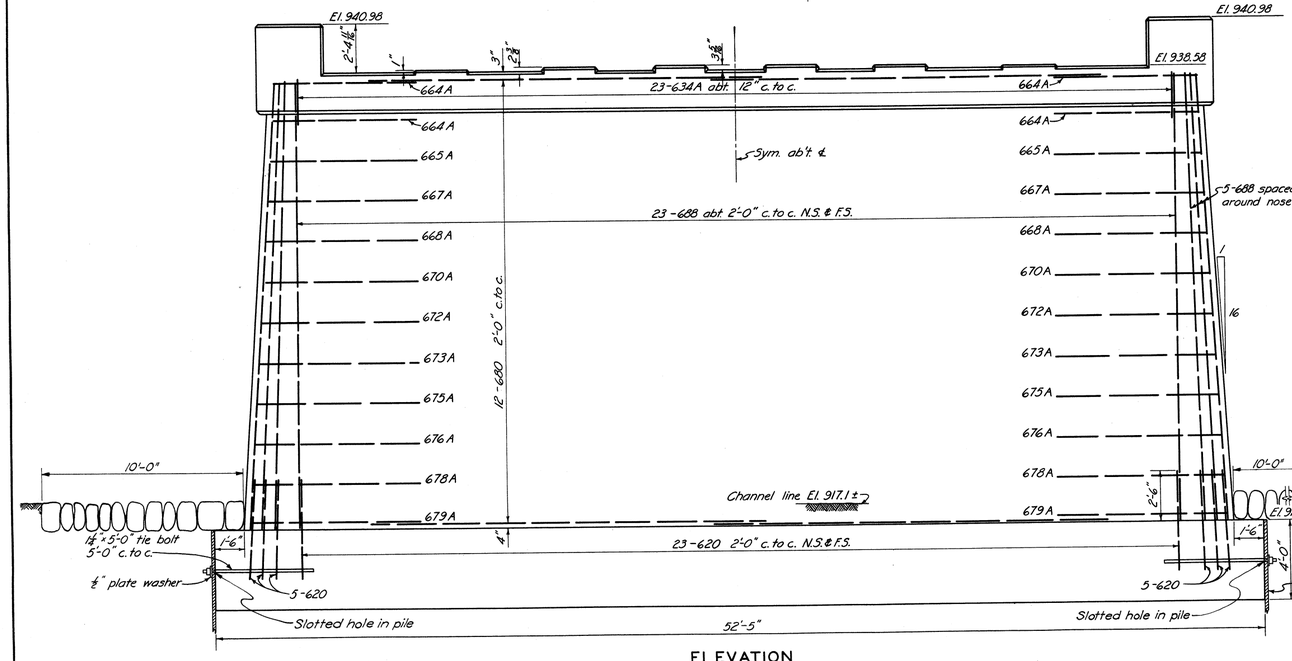
MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
620	3/4"	5'-0"		56	7.51	421
634A	3/4"	8'-6"		23	12.77	294
664A	3/4"	16'-0"		4	24.03	96
665A	3/4"	16'-3"		2	24.41	49
667A	3/4"	16'-9"		2	25.16	50
668A	3/4"	17'-0"		2	25.53	51
670A	3/4"	17'-6"		2	26.29	53
672A	3/4"	18'-0"		2	27.04	54
673A	3/4"	18'-3"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

2'-6" 634A; 2'-0"; 6'-0"; 2'-6" 664A; 2'-9" 665A; 3'-0" 667A; 3'-3" 668A; 3'-6" 670A; 3'-9" 672A; 4'-0" 673A; 4'-3" 675A; 4'-6" 676A; 4'-9" 678A; 5'-0" 679A

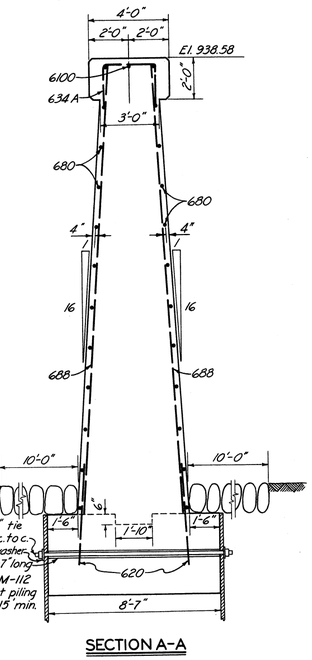
Note: Quantities shown are for one pier.



PLAN



ELEVATION



SECTION A-A

NOTES

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

BY	DATE	CHARACTER
		REVISIONS

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

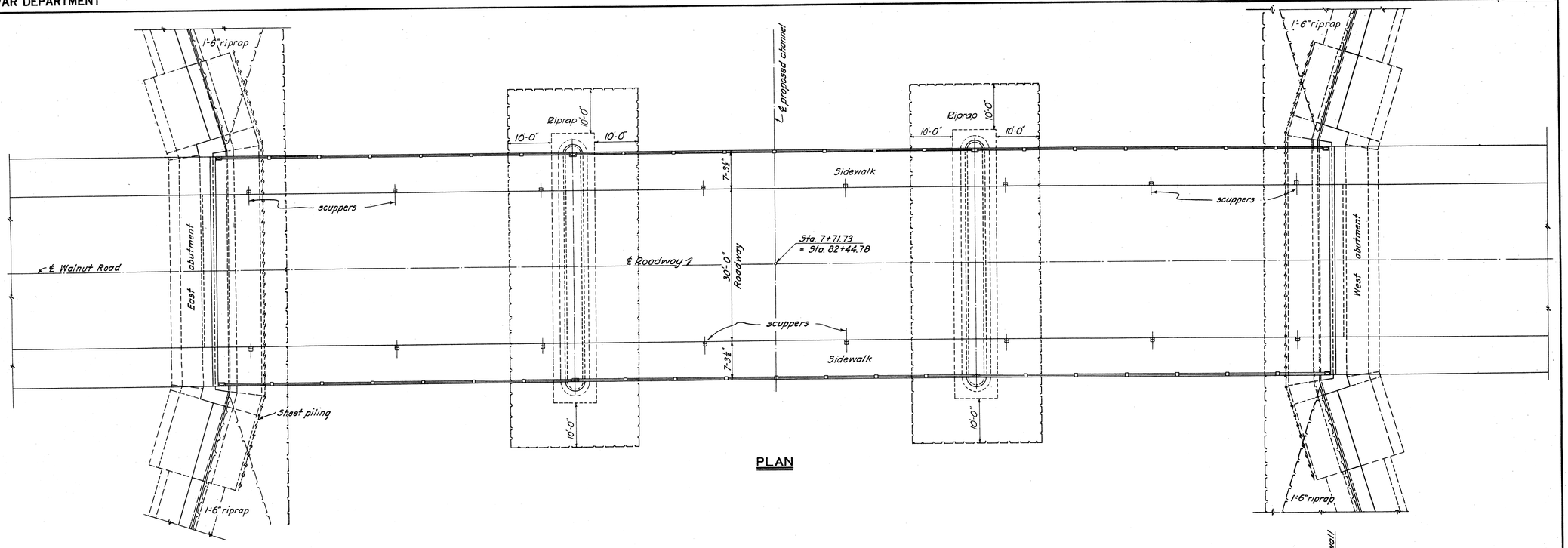
SUBMITTED: ..... PRINCIPAL ENGINEER APPROVED: ..... CAPT., CORPS OF ENGINEERS

DRAWN BY J.E.M.
TRACED BY S.S.H.
CHECKED BY D.G.J.

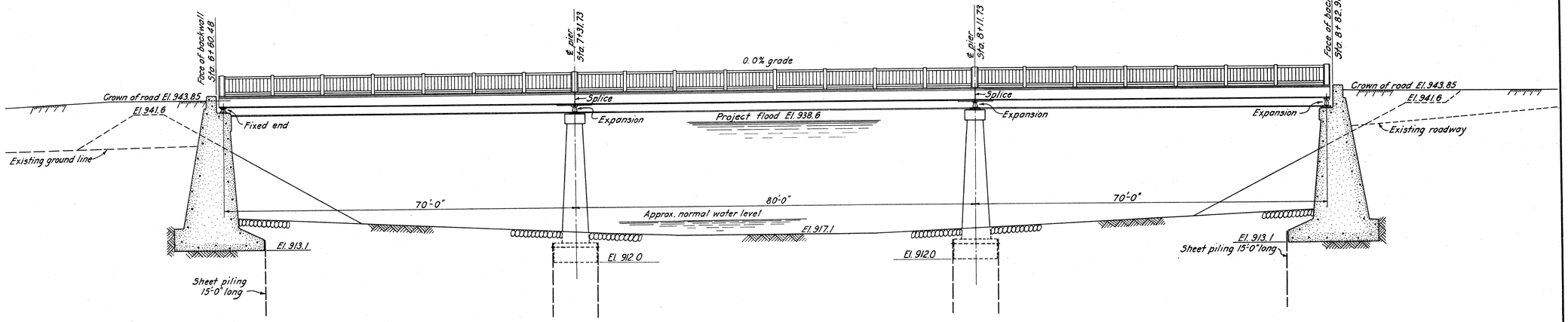
FILE NO. O-27i-PM68/38 DATED ..... TRANSMITTED WITH LETTER

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY



PLAN



UPSTREAM ELEVATION

BY	DATE	CHARACTER
		REVISIONS

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

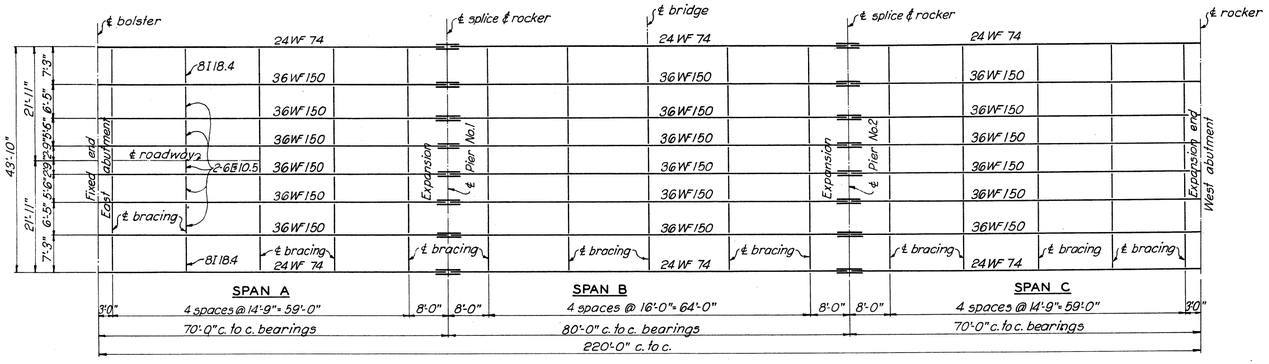
IN 147 SHEETS SHEET NO. 121 SCALE: 1/8" = 1'-0"

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

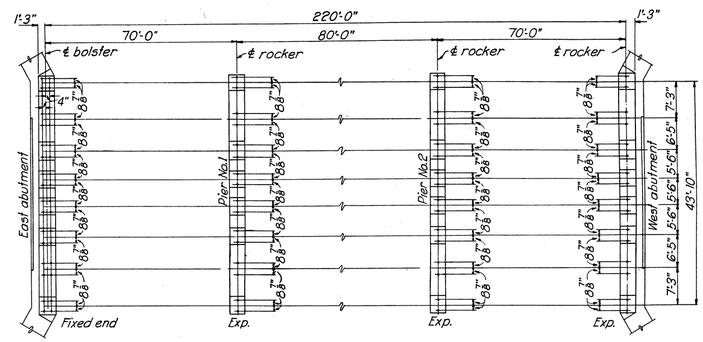
SUBMITTED: PRINCIPAL ENGINEER APPROVED: LT. COL. CORPS OF ENGINEERS

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

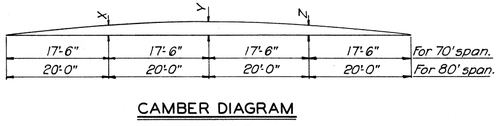
FILE NO. 027i-PM-68/39 TRANSMITTED WITH LETTER DATED



SUPERSTRUCTURE LAYOUT



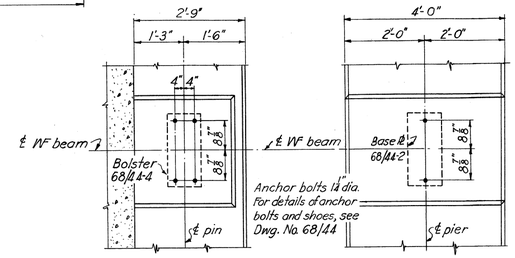
ANCHOR BOLT PLAN



CAMBER DIAGRAM

NOT TO SCALE

CAMBER							
SPAN	36 WF 150			24 WF 74			
	X	Y	Z	X	Y	Z	
70'	5/8"	7/8"	5/8"	15/16"	1 1/4"	15/16"	
80'	11/16"	7/8"	11/16"	1 1/16"	1 1/2"	1 1/16"	



TYPICAL ANCHOR BOLT LAYOUT

EAST ABUTMENT

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

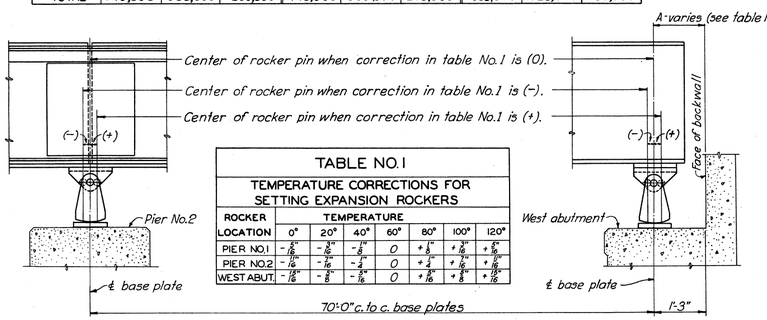
PIERS

SCALE: 3/4" = 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



ROCKER SETTING

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

TABLE NO.1 TEMPERATURE CORRECTIONS FOR SETTING EXPANSION ROCKERS							
ROCKER LOCATION	TEMPERATURE						
	0°	20°	40°	60°	80°	100°	120°
PIER NO.1	− 5/16"	− 3/8"	− 1/8"	0	+ 1/8"	+ 3/16"	+ 5/16"
PIER NO.2	− 1/16"	− 1/16"	− 1/4"	0	+ 1/4"	+ 1/16"	+ 1/16"
WEST ABUT.	− 1/8"	− 1/8"	− 3/16"	0	+ 1/16"	+ 1/8"	+ 1/16"

TABLE NO. 2 DISTANCE "A" FOR ROCKER ON WEST ABUTMENT						
TEMPERATURE						
0°	20°	40°	60°	80°	100°	120°
1'-3 13/16"	1'-3 5/8"	1'-3 7/16"	1'-3"	1'-2 5/16"	1'-2 1/8"	1'-1 15/16"

DESIGN DATA

Dead Load = Actual weight plus 10#/ft² 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 = $\frac{50}{L+125}$ x live load; where L = loaded length of span in feet.

$M_e = \frac{s}{5} M_l$ = 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

Compression in flanges ---------- $\frac{20,000}{1+\frac{L^2}{2000(b)^2}}$

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: 3/32" = 1'-0"

0'-0" 4' 8' 12' 16' 20' 24'

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

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

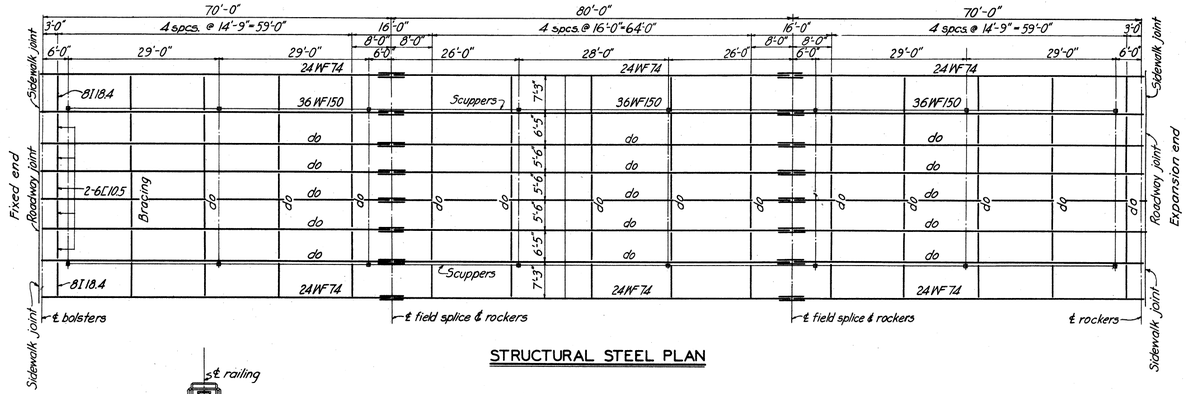
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TRACED BY H.E.C.
CHECKED BY A.R.N.

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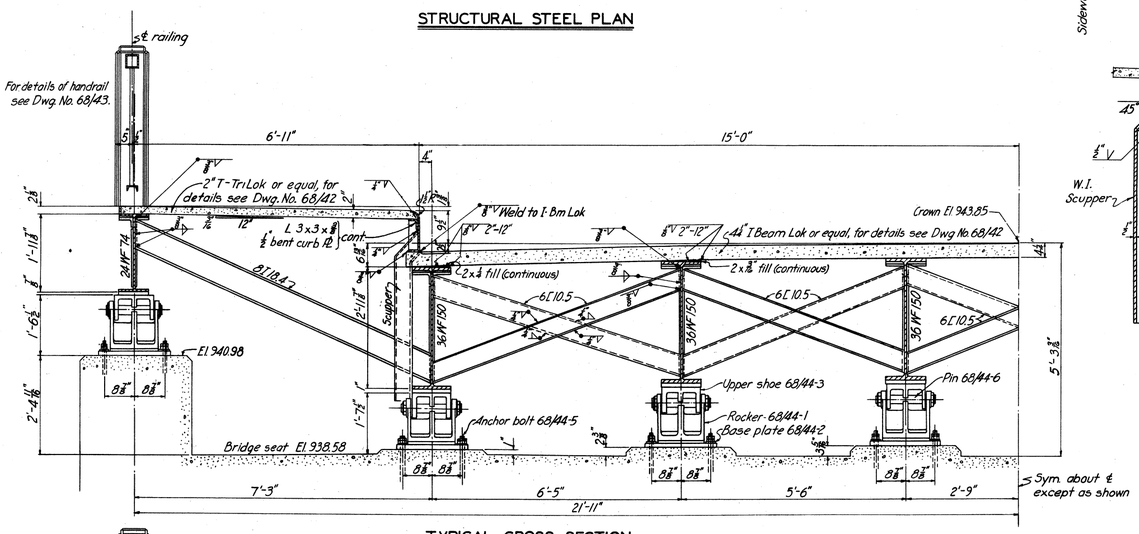
FILE NO. 027i-PM-68/40

BY	DATE	CHARACTER

REVISIONS

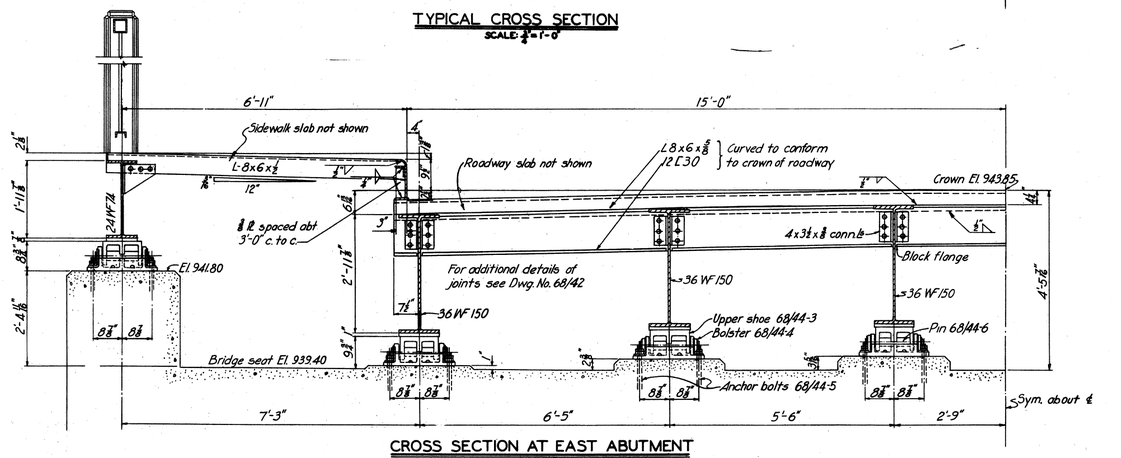


STRUCTURAL STEEL PLAN



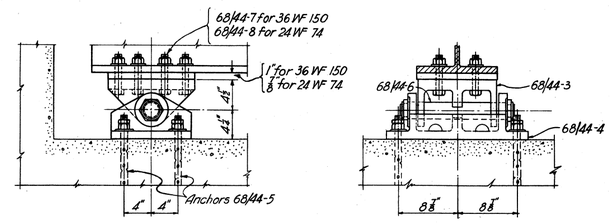
TYPICAL CROSS SECTION

SCALE: ¾" = 1'-0"



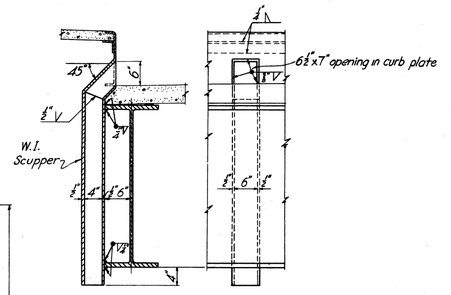
CROSS SECTION AT EAST ABUTMENT

SCALE: ¾" = 1'-0"



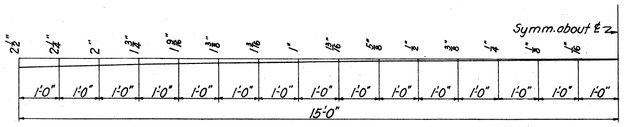
EAST ABUTMENT
BOLSTER ASSEMBLY

SCALE: 1½" = 1'-0"



DETAIL OF SCUPPER

SCALE: 1" = 1'-0"



CROWN OF ROADWAY

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
WALNUT ROAD BRIDGE
TYPICAL SECTIONS & DETAILS

IN 147 SHEETS SHEET NO. 123 SCALE: ¾" = 1'-0"

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

SUBMITTED: ..... DIVISIONAL ENGINEER APPROVED: ..... COL., CORPS OF ENGINEERS

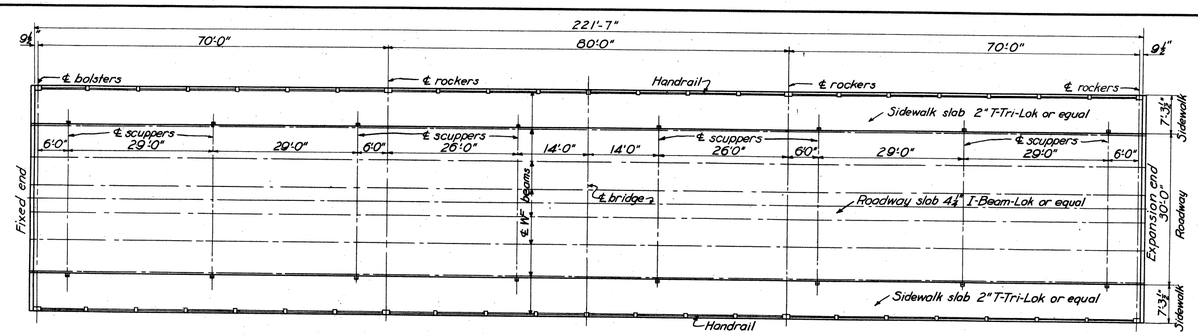
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TRACED BY A.F.
CHECKED BY H.U.B.

FILE NO 027i-PM-68/41 DATED

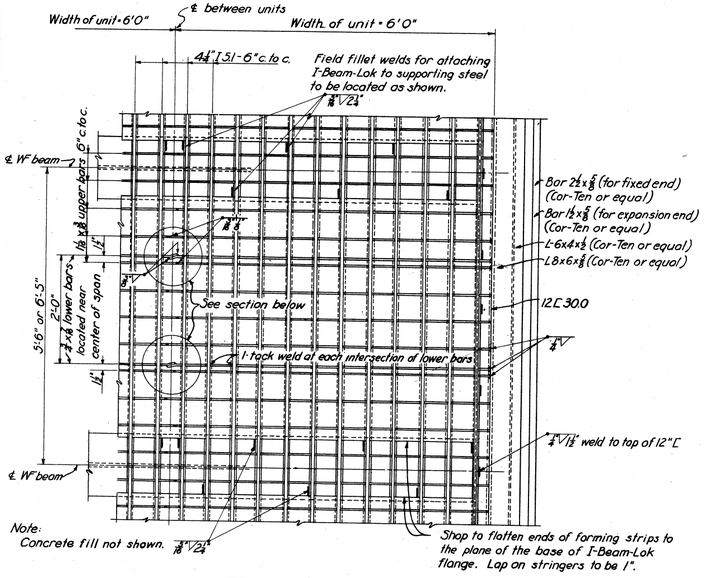
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WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY

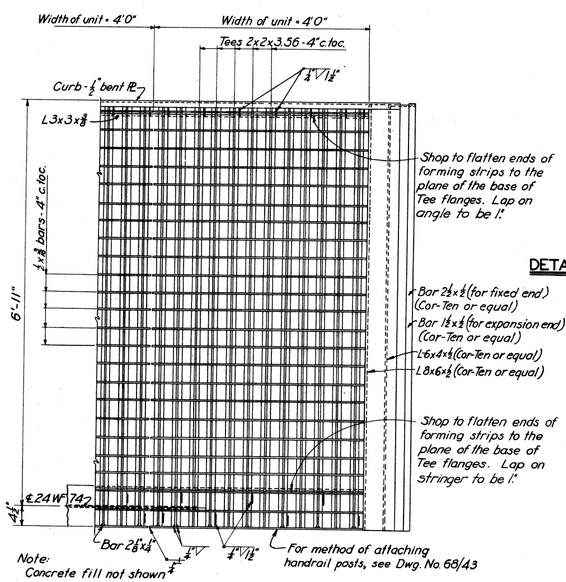


SUPERSTRUCTURE PLAN



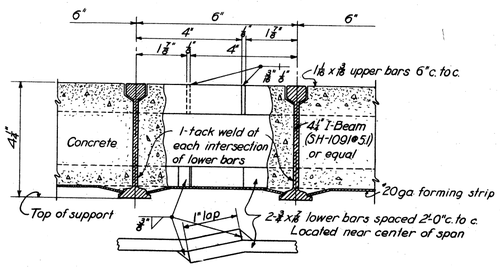
ROADWAY PLAN

SCALE: 1" = 1'-0"



SIDEWALK PLAN

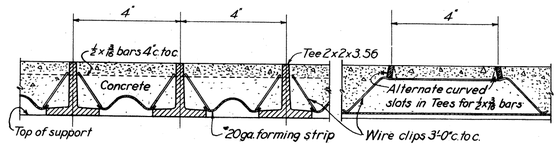
SCALE: 1" = 1'-0"



SECTION

SCALE: 6" = 1'-0"

DETAILS OF ROADWAY SLAB



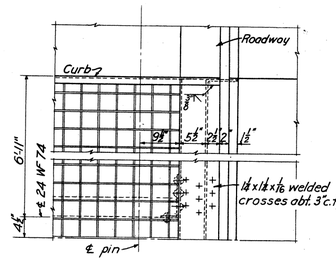
CROSS SECTION

SCALE: 6" = 1'-0"

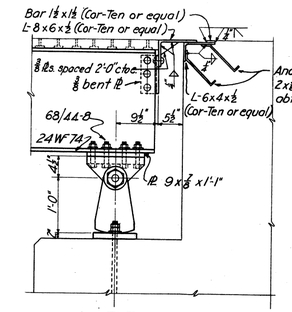
LONGITUDINAL SECTION

SCALE: 6" = 1'-0"

DETAILS OF SIDEWALK SLAB



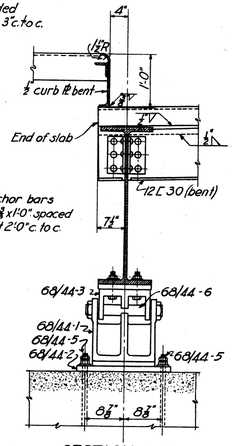
PLAN



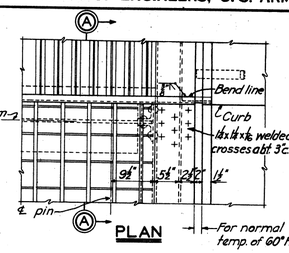
ELEVATION

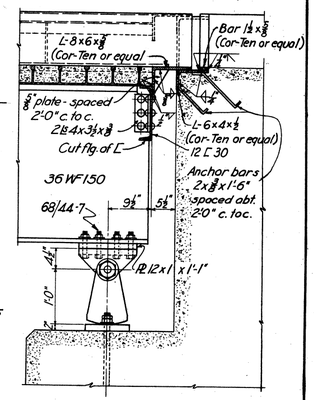
DETAILS OF SIDEWALK EXPANSION JOINT

SCALE: 1" = 1'-0"



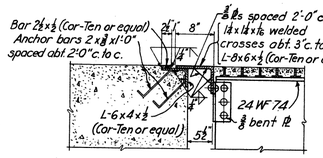
SECTION A-A





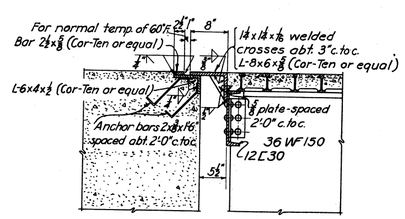
DETAILS OF ROADWAY EXPANSION JOINT

SCALE: 1" = 1'-0"



DETAILS OF SIDEWALK JOINT - FIXED END

SCALE: 1" = 1'-0"



DETAILS OF ROADWAY JOINT - FIXED END

SCALE: 1" = 1'-0"

NOTES

Expansion and fixed joints to be bent to match roadway.
Concrete for road surfacing and sidewalks to be Class "A".
Rivets ⅞".

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

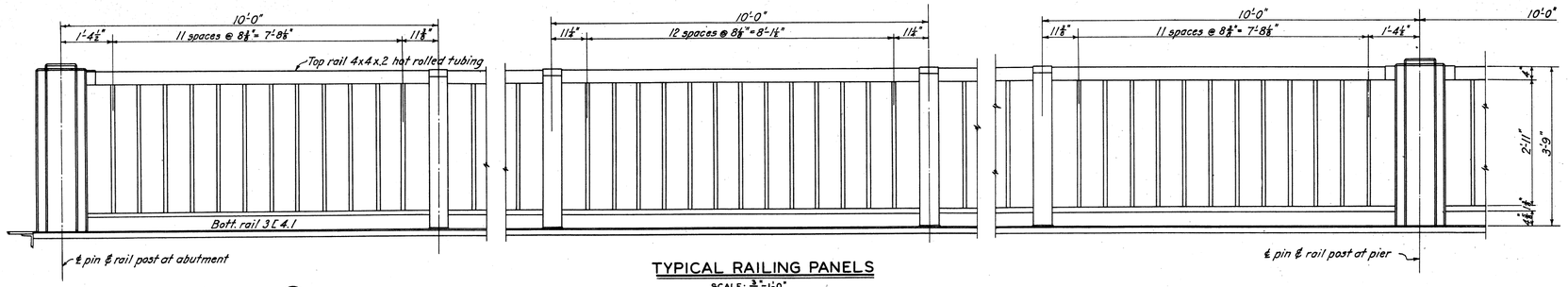
SUBMITTED: _____ APPROVED: _____

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

TRANSMITTED WITH LETTER

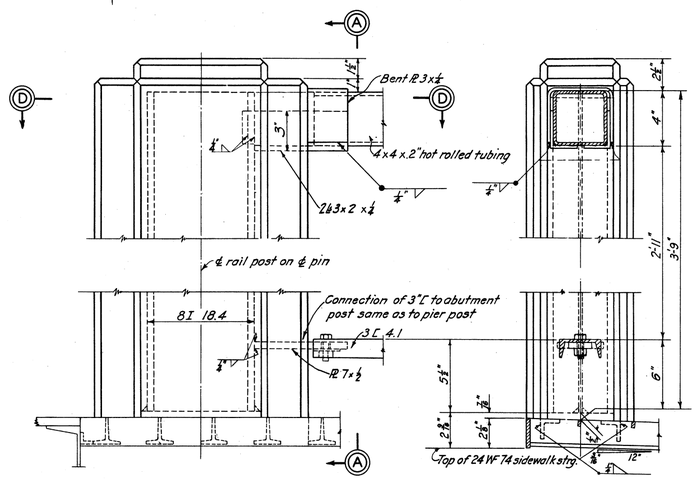
FILE NO 027i-PM-68/42 DATED

BY	DATE	CHARACTER
		REVISIONS



TYPICAL RAILING PANELS

SCALE: ¾" = 1'-0"

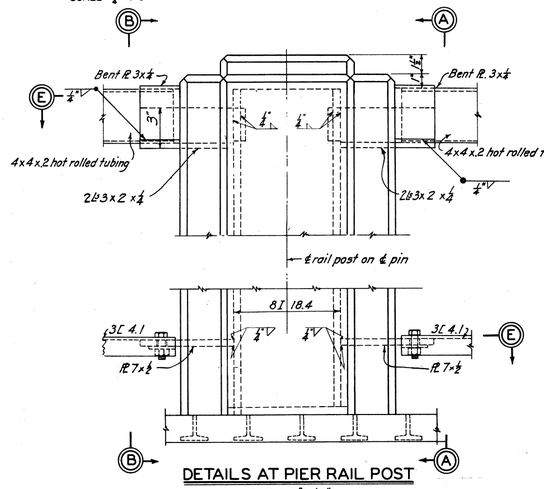


DETAILS AT ABUTMENT RAIL POST

SCALE: 3" = 1'-0"

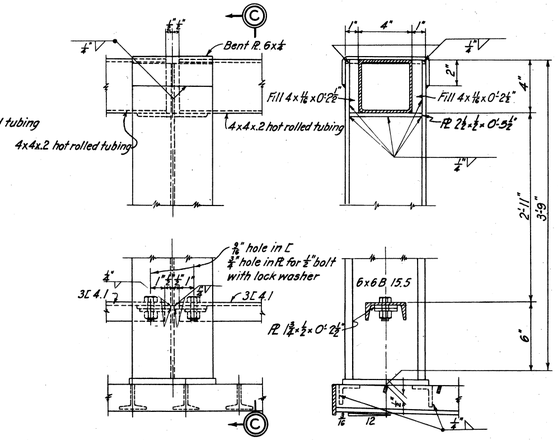
SECTION A-A AS SHOWN

SECTION B-B OPP. HAND



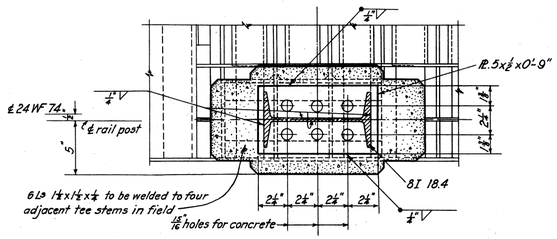
DETAILS AT PIER RAIL POST

SCALE: 3" = 1'-0"



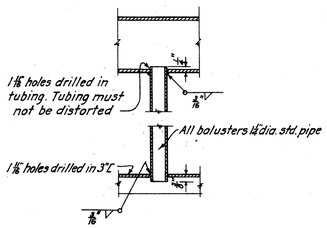
DETAILS AT INTERMEDIATE RAIL POST SECTION C-C

SCALE: 3" = 1'-0"



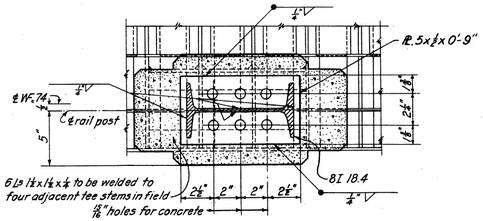
BASE DETAIL OF ABUTMENT RAIL POST

SCALE: 3" = 1'-0"



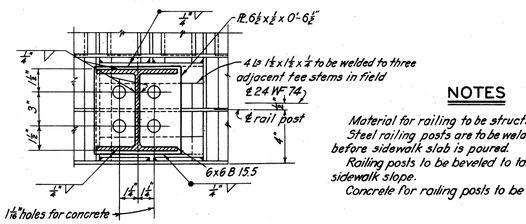
DETAIL OF BALUSTERS

SCALE: 3" = 1'-0"



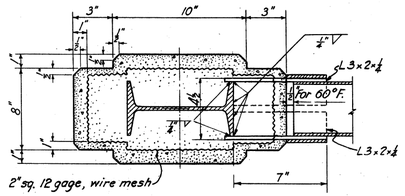
BASE DETAIL OF PIER RAIL POST

SCALE: 3" = 1'-0"

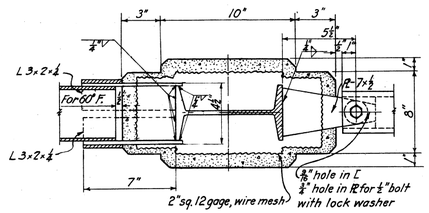


BASE DETAIL OF INTERMEDIATE RAIL POST

SCALE: 3" = 1'-0"



SECTION D-D



SECTION E-E

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"

BY	DATE	CHARACTER
		REVISIONS

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

IN 147 SHEETS SHEET NO. 125 SCALE: 3"=1'-0"

0 3" 6" 9" 12"

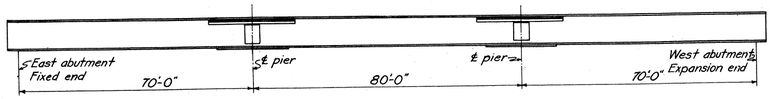
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA. SEPT. 1940

SUBMITTED: ..... DISTRICT ENGINEER APPROVED: ..... LT. COL., CORPS OF ENGINEERS

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

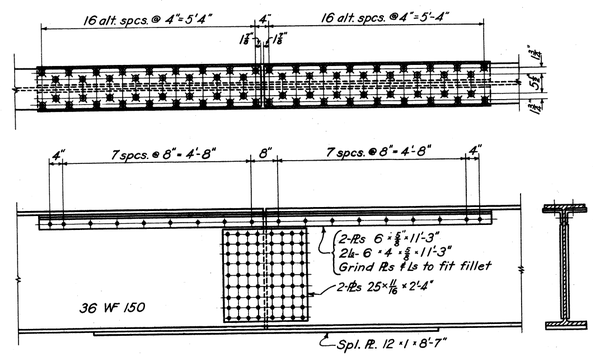
TRANSMITTED WITH LETTER DATED

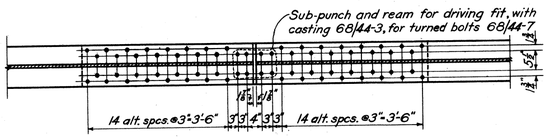
FILE NO. 027i-PM-68/43



SPLICE DIAGRAM

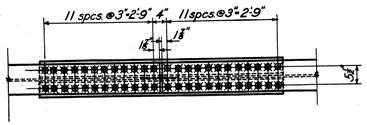
NOT TO SCALE

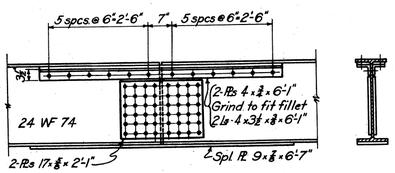


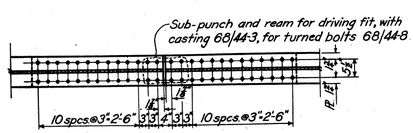


SPLICE FOR ROADWAY STRINGERS

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

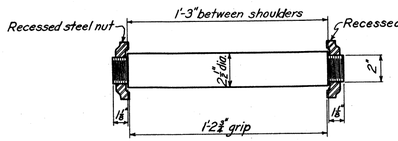






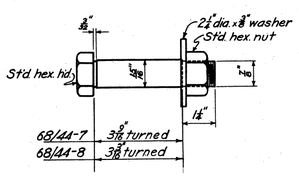
SPLICE FOR SIDEWALK STRINGERS

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



DETAIL OF PIN

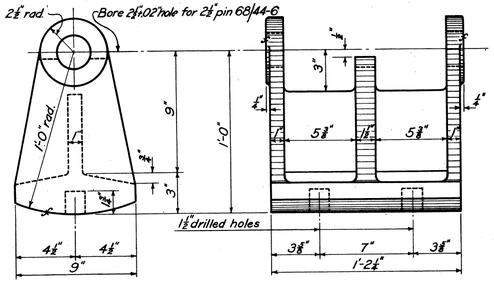
COLD ROLLED STEEL WITH RECESSED STEEL NUT
MARK 68/44-6 COLD ROLLED STEEL WT. 26.9 LBS.
MAKE 32 RECESSED STEEL NUTS WT. 4.0 LBS.



DETAIL OF TURNED BOLT

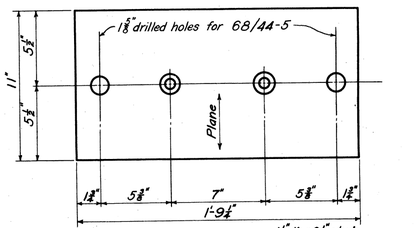
STRUCTURAL STEEL
MARK 68/44-7 MAKE 192 WT. 1.80 LBS.
MARK 68/44-8 MAKE 64 WT. 1.72 LBS.

SCALE 6" = 1'-0"



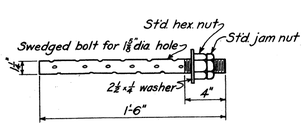
DETAIL OF ROCKER

CAST STEEL CLASS 2 MARK 68/44-1
MAKE 24 WT. 173.0 LBS.



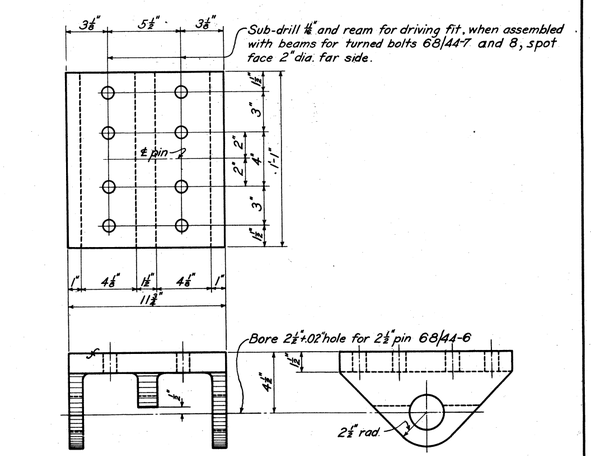
DETAIL OF BASE PLATE

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



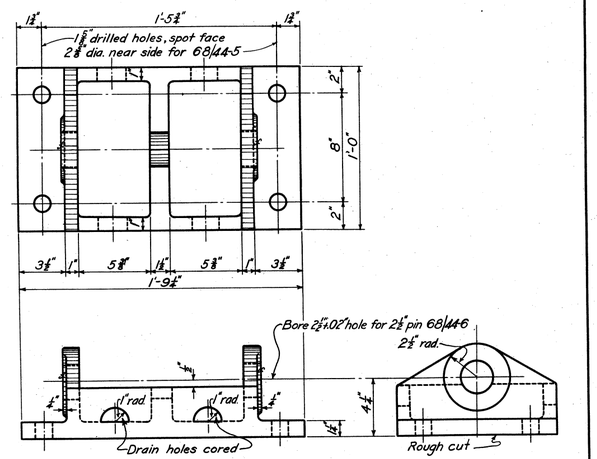
DETAIL OF ANCHOR BOLT

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

⅞" rivets for girder splices.
Casting fillets are ½" rad. unless noted.

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
WALNUT ROAD BRIDGE
CASTINGS & SPLICES

IN 147 SHEETS SHEET NO. 126 SCALE: 3" = 1'-0"

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

SUBMITTED: ... DIVISION ENGINEER APPROVED: ... COL. CORPS OF ENGINEERS

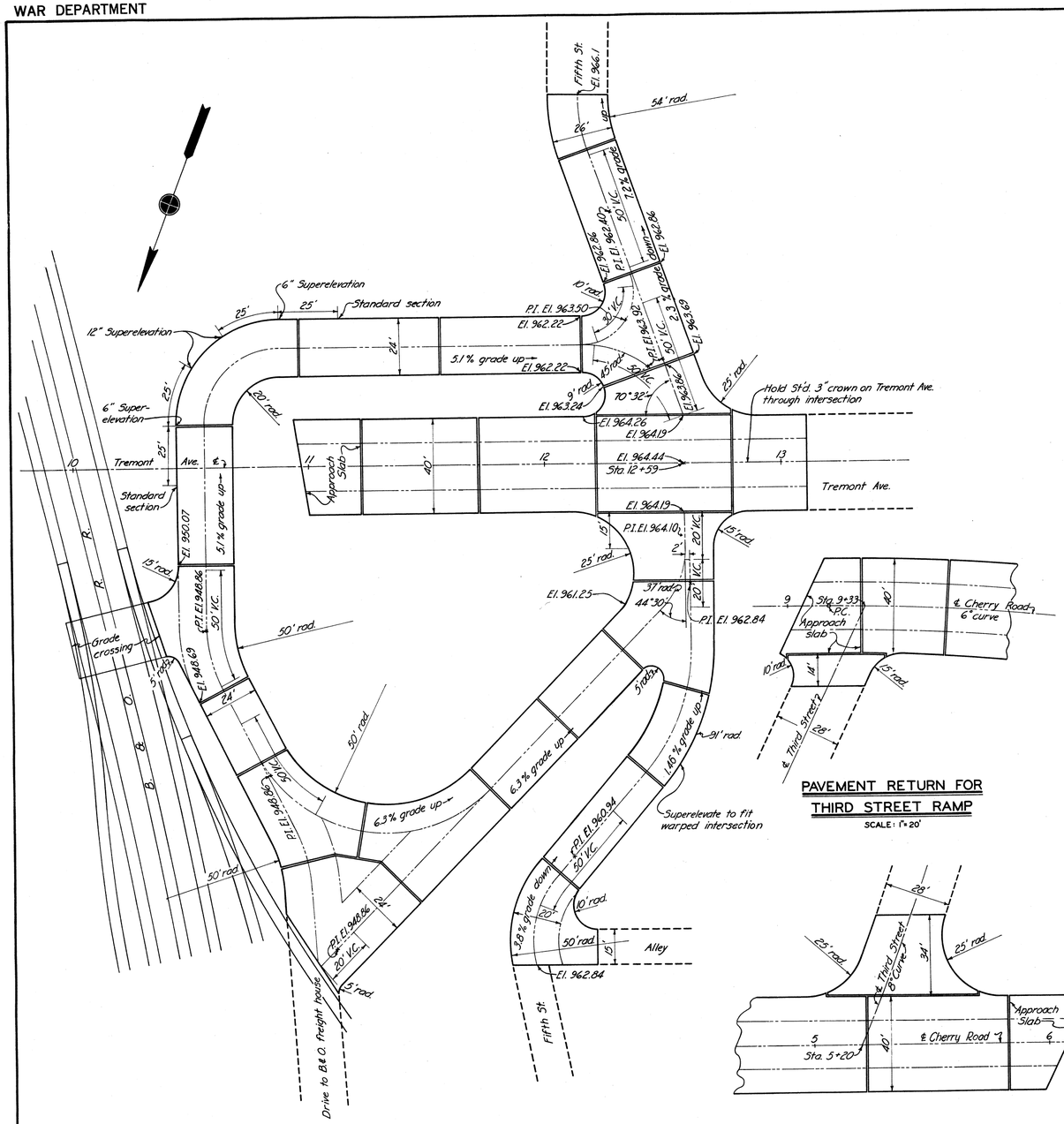
DRAWN BY A.W.S.
TRACED BY C.C.B.
CHECKED BY H.U.B.

TRANSMITTED WITH LETTER

FILE NO 027i-PM-68/44 DATED

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY



APPROACHES TO FIFTH STREET AND B. & O. FREIGHT HOUSE DRIVE

SCALE: 1"=20'

LEGEND

Expansion joint

Longitudinal joint

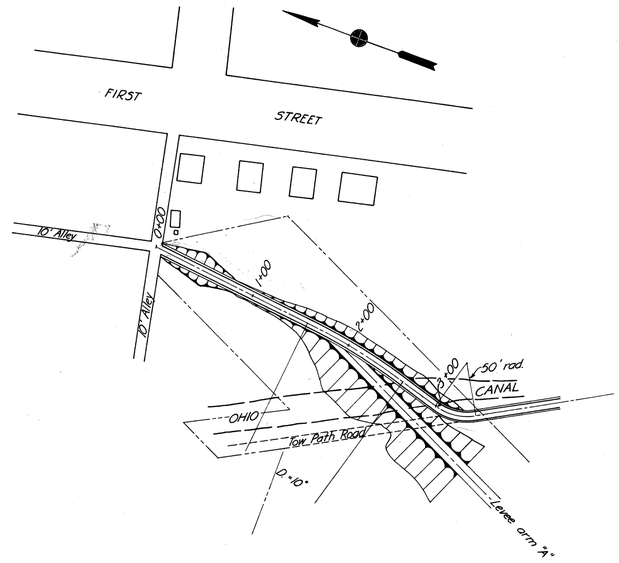
LAYOUT OF APPROACHES

PAVEMENT RETURN FOR THIRD STREET RAMP

SCALE: 1"=20'

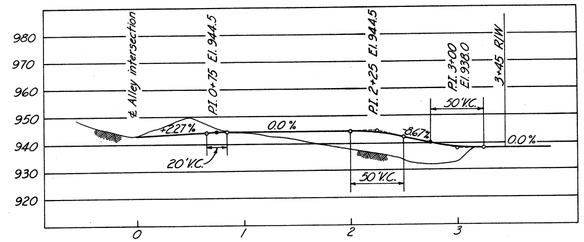
PAVEMENT RETURN FOR THIRD STREET RELOCATION

SCALE: 1"=20'



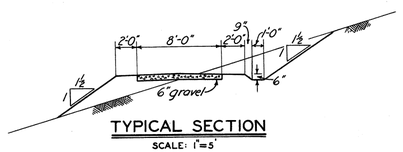
PLAN

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

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
MISCELLANEOUS PAVEMENT DETAILS AND ACCESS ROAD

IN 147 SHEETS SHEET NO. 127 SCALE: AS SHOWN

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

SUBMITTED: ..... PRINCIPAL ENGINEER APPROVED: ..... CAPT., CORPS OF ENGINEERS

DRAWN BY A.W.M. & R.G.H.

TRACED BY S.S.H.

CHECKED BY D.G.J.

TRANSMITTED WITH LETTER

FILE NO. O-27i-PM 68/45 DATED

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PUBLIC UTILITIES
LOCATION PLAN

IN 14.7 SHEETS — SHEET NO. 12B — SCALE: 1"=100'

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

SUBMITTED: _____ PRINCIPAL ENGINEER — APPROVED: _____ LT. COL. CORPS OF ENGINEERS

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

TRANSMITTED UNDER LETTER DATED

FILE NO. 027-PM-82/20

BY	DATE	CHARACTER
		REVISIONS

LEGEND

- Existing water line unchanged
- Existing water line to be removed
- New water line relocated or raised
- Existing gas line unchanged
- Existing gas line to be removed
- New gas line relocated or raised
- Existing telephone or telegraph line unchanged
- Existing telephone or telegraph to be removed
- New telephone or telegraph line relocated or raised
- Existing power line unchanged
- Existing power line to be removed
- New power line relocated or raised
- Existing joint line-tel.-telg. or power unchanged
- Existing joint line-tel-telg. or power to be removed
- New joint line relocated or raised
- Existing underground cable system unchanged
- Existing underground cable system to be removed
- New underground cable system relocated
- Existing sewer and manholes unchanged
- Existing sewer and manholes to be removed
- New sewer and manholes relocated or changed

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY

OHIO CANAL (Abandoned)

Postal Telegraph & Cable Co. 6 W. line

U.G. to office

ERIE ST NORTH

48" storm

12" storm

24" storm

54" storm

60" storm

20" storm

36" storm

40" storm

8" san.

12" san.

24" san.

18" san.

20" san.

30" san.

36" san.

Telegraph line

WARWICK AVE. N.W.

GROSE AVE.

CHERRY ROAD - NW

THORNE AVE. N.W.

NORTH AVE. N.W.

FEDERAL AVE. N.W.

WEST EXCHANGE ST. S.W.

FIRST ST. N.W.

FIRST ST.

SECOND ST.

THIRD ST.

FOURTH ST. N.W.

FIFTH ST.

SIXTH ST. N.W.

SIXTH ST. S.W.

CLIFF ST.

CHARLES AVE.

LINCOLN WAY

FREMONT AVE.

OAK ST.

RIVER

TUSCARAWAS

CURRENT

SIPPO CREEK EAST

Storm sewer to be constructed, see Dwg. No. 82/28

Storm sewer to be constructed, see Dwg No. 82/28

Telephone

Relocated O.W.S. 12" line, see Dwg. No. 82/37

O.W.S. 12" line to be removed, see Dwg. No. 82/37

Permanent O.P.S.Co. power line relocation. (Not a part of this contract)

Sewer to be removed see Dwg. No. 82/26

Horace Mann School

Telephone, gas & electric line changes, not a part of this contract.

3-pipe siphon to be removed

Relocated O.W.S. water lines to be constructed, see Dwg. No. 82/38

Relocated O.P.S. power line, not a part of this contract.

Garage

End of existing 6" O.W.S.

O.W.S. 6" line to be constructed, see Dwg. No. 82/39

O.P.S. 2.3KV-6W.

15" storm

Relocation Third Street

abandoned

3-pipe siphon to be constructed, see Dwgs. Nos. 82/25 & 82/30

Office

Ohio Drilling Co. 2.S.B.

O.W.S. 6" line to be removed, see Dwg. No. 82/39

Pumping station not a part of this contract.

O.B.T. Co. temporary aerial cable line with City Fire Alarm and W.U. attachments Not a part of this contract.

O.B.T. Co.

Western Union cable change, not a part of this contract.

U.G. Cable change, not a part of this contract.

O.P.S. 23 KV. line change, not a part of this contract.

Pressure conduit (not included in this contract)

Pumping Station not a part of this contract.

Relocated Ohio Water Service lines, see Dwg. No. 82/37

O.W.S. 6" line to be removed, see Dwg. No. 82/37

E.O.G. Co. line to be removed, not a part of this contract.

A.T.&T. Co., Ohio Bell Tel. Co. & City Fire Alarm)

Pressure conduit extension included in this contract.

Not a part of this contract

O.W.S. 8" line to be removed, see Dwg. No. 82/37

2-pipe siphon to be constructed, see Dwgs. Nos. 82/25 & 82/31.

Not a part of this contract

Western Union Tel'g. line to be removed, not a part of this contract.

P.R.R. Tel. line to be removed, not a part of this contract

ABANDONED CHANNEL

NEW CHANNEL

Coal Trestle

Heltzman Garage

Shafer-Hammond Lumber Co.

Reynolds Machine Co.

Office

Scale House

Sand house

Pole line relocation ends

Incinerator

Coal Tipple

Concrete Platform

Brick Driveway

Retaining Wall

Concrete

Gate at Pt. House

Storm sewer to be constructed, see Dwg. No. 68/28

Relocated O.W.S. water line, see Dwg. No. 82/37

Relocated W.U. Tel. line, not a part of this contract.

Western Union Tel'g. line

Telephone, gas & electric line changes in Cherry Rd. area not a part of this contract.

For water line detail in Cherry Rd area, see Dwg. No. 82/38

For sewer line changes in Cherry Rd area, see Dwg. No. 82/25.

O.P.S. 2.3KV. elec.

O.P.S., 1-G.W., 22KV.-3W., 23KV.-9W., 5t. lgt. 1W., tel-2W.

O.P.S.-2.3 KV. line

Postal Tel. & Cable Co. crossing to be removed, not a part of this contract.

O.P.S. Co. line 1-G.W 22 KV., 3W. 23 KV., 3W. 5t. lgt. & 2W. tel

Telephone & fire alarm line

2" gas line

6" water line

8" sanitary

12" storm

3" H.P. gas line

Wooster trunk line (Sanitary)

To Orrville Jct.

Eaton Mfg. Co. Reliance Spring div.

Hankins Rubber Co.

W. & L.E. Rly.

P.R.R. PENNSYLVANIA RAILROAD

BALTIMORE AND OHIO

EXISTING PENNSYLVANIA RAILROAD

RELOCATED PENNSYLVANIA RAILROAD

New P.R.R. telegraph line Not a part of this contract

R/W

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'

100' 50' 0 100' 200'

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

SUBMITTED: PRINCIPAL ENGINEER APPROVED: CHIEF, CORPS OF ENGINEERS

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

FILE. NO. 027i-PM-82/21

TRANSMITTED WITH LETTER DATED

BY	DATE	CHARACTER
		REVISIONS

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY

B

C

ERIE ST. SOUTH

FIRST ST. S.W.

SECOND ST. S.W.

THIRD ST. S.W.

4TH ST. S.W.

GREEN ST. S.W.

OAK AVE. S.W.

SOUTH AVE. S.W.

WALNUT ROAD S.W.

ISABELLA AVE. S.W.

JACKSON ST.

CLEVELAND ST.

MASSILLON BELT RY.

To Pittsburg

Shelter-ho.

Wall

Building

Ohio Public Service Power House

O.P.S.Co. Office Garage

Fitting Station

Garage

Sub Sta.

Brown Lumber Co.

Hess-Snyder Machine Co. 2 S.B.

Massillon Ice Co.

Shed

Bldg.

Pressure conduit (not in this contr.)

Buckeye Cereal Co.

Massillon, Cleveland, Akron Sign Co. 3 S.B.

Massillon Aluminum Co.

Massillon Aluminum Co. Junk Yard

Massillon Rivet Co.

Shop

1 S.B.

Penn. R.R. telegraph line changes (not a part of this contr.)

PENNSYLVANIA RAILROAD

B. & O. R.R. TO BE ABANDONED

PENNSYLVANIA RAILROAD

Massillon Provision Co.

Peerless Pump Co.

Tanks

30' rad.

Western Union Tel. Co. line not a part of this contract.

Ohio Public Service Co. temporary power-line crossing (Not a part of this contract)

48" Tuscarawas trunk sewer to be removed, see Dwg. No. 82/4

TUSCARAWAS RIVER

CURRENT

OHIO AND BALTIMORE RAILROAD

RELOCATED

Water line to be removed see Dwg. No. 82/37

13 wire P.R.R. telegraph line (Not a part of this contract)

Relocated 43 wire P.R.R. telegraph line

Western Union Telegraph Co. line not a part of this contract.

R. of W.

300

1:15

Canal Lock

OHIO CANAL (Abandoned)

O.P.S. 22 Kv-3W-& 2W Tel. on steel poles

Massillon Paper Co.

Office

Garage

18" V.S.P. @ 0.25% Grade

Existing 4'x4' conc. box culvert

24" Driveway

Platform

Ramp

Bldg.

FRT. HO.

16" V.P.

Driveway

6" E.O.G.Co. H.P. gas line change not a part of this contract.

6" water line change see Dwg. No. 82/37

48" Tuscarawas trunk sanitary sewer see Dwg. No. 82/24

Concrete Drive

O.P.S.Co. pole line change not a part of this contract.

TO BE ABANDONED

SOUTH MASSILLON BRANCH

ABANDONED W. & L. E. RY.

NEW SOUTH MASSILLON BRANCH

W.U.Tel. line to be removed not a part of this contract

CHANNEL

95+00

90+00

85+00

80+00

75+00

70+00

65+00

48" san.

24" storm sewer see Dwg. No. 82/27

B. & O. - W. & L. E. INTERCHANGE TRACK

1-G.W. 22 KV-3W 2.3 KV-6W 5 t. Lt.-2W 2W. Tel.

O.P.S.

E.O.Gas Co. 6" H.P. gas line

Sta. 81+40

8" new water line see Dwg. No. 82/37

8" water line

6" water line

6" san.

8" san.

12" san.

15" san.

24" san.

60" san.

42" storm

30" storm

24" storm

20" storm

18" storm

15" storm

54" storm

72" storm

60" storm

48" storm

12" storm (3433.3 Pa.)

6" O.W. line

8" san.

6" H.P.E.C.G.

6" gas line

2" gas line

3" gas line

6" water line

6" O.W.S. line

3" O.P.S.

2" gas line

3" gas line

15" storm

15" san.

6" water line

24" storm

2" gas line

6" water line

6" san.

2" gas line

2" gas line

6" water line

6" san.

2" gas line

2" gas line

2" gas line

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY

8" san.
12" storm
6" O.W.S. Co. line
ERIE ST. SOUTH
8" san.
18" storm
6" O.W.S.
8" storm
6" O.W.S.
8" san.
42" storm
15" storm sewer
42" sewer
O.P.S. & O.B.T. joint line, not a part of this contract.
For sewer protection, see Dwg. No. 82/29
Old canal lock to be removed
Gate well, see Dwg. No. 82/33
Pumping station
Gate well & sewer under levee, see Dwg. No. 82/33
60"
66" san.
OF NEW
110+00
120+00
125+00
105+00
Not a part of This contract
Joint O.P.S. & O.B.T. line not a part of this contract
Fill to Elev. 924
O.P.S. 22 Kv. - 3 W & 2 W tel. line. Not a part of this contract
6 3/8 gas line
22" storm sewer change - see Dwg. No. 82/26
W & L. E. RY.
W. & L. E. RY.
WHEELING AND LAKE ERIE RAILWAY
WHEELING AND OHIO RAILROAD
BALTIMORE
Western Union Telegraph line
6" V.P. sewer See Dwg. No. 82/26
G.V.C. see Dwg. No. 82/26
6" C.I. water line to B. & O. R.R. water treating plant. See Dwg. No. 66/51.
W.U. 22 W line
130+00 CHANNEL
TUSCARAWAS
66" sanitary sewer
135+00
CURRENT
140+00
RIVER
145+00
8" san.
JACKSON ST.
O.B.T. Co. line
Water line relocation starts at fire plug, see Dwg. No. 66/51
B. & O. R. R. ENGINE TERMINAL
30" storm
McKINLEY AVE
6" water line
8" san.
CLEVELAND ST.
6" O.W.S. line
OBERLIN ROAD

NOTES

For legend see Dwg. No. 82/20

BY	DATE	CHARACTER REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PUBLIC UTILITIES
LOCATION PLAN

IN 147 SHEETS — SHEET NO. 131 — SCALE: 1" = 100'

100' 50' 0 100' 200'

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

SUBMITTED: [signature] DIVISION ENGINEER — APPROVED: [signature] LT. COL., CORPS OF ENGINEERS

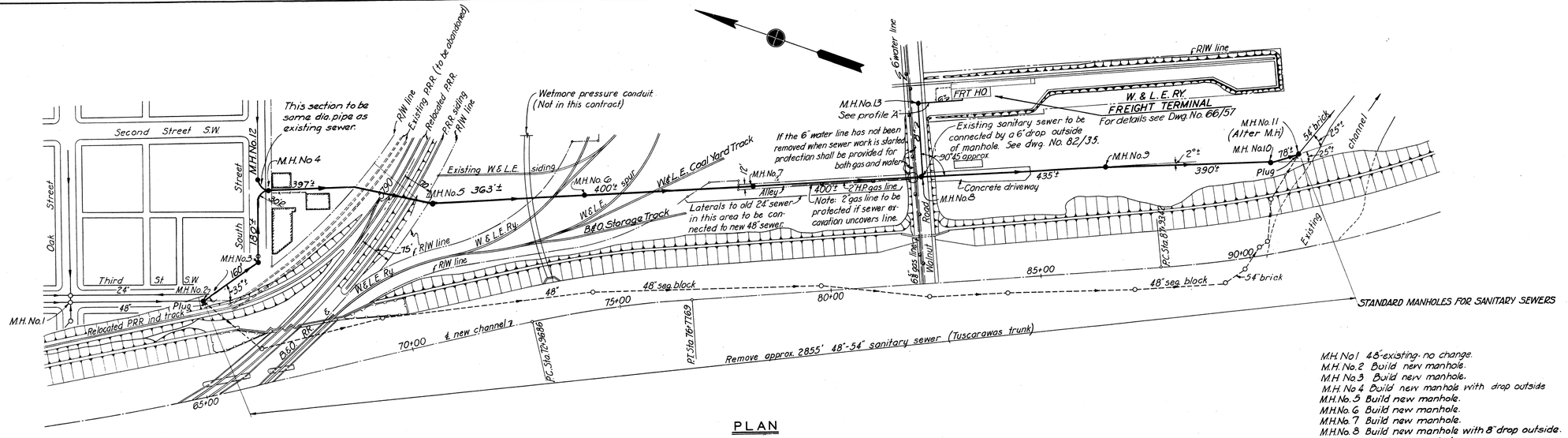
DRAWN BY R. L. E.
TRACED BY E. W. H.
RECHECKED C. M. T.

TRANSMITTED WITH LETTER

FILE NO. 027i-PM-82/23

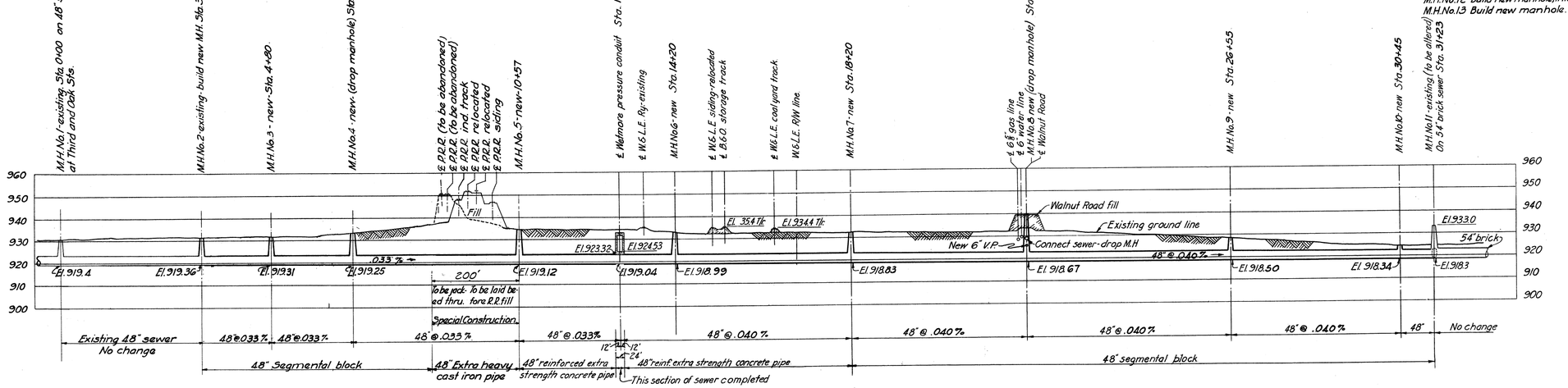
WAR DEPARTMENT

CORPS OF ENGINEERS. U. S. ARMY

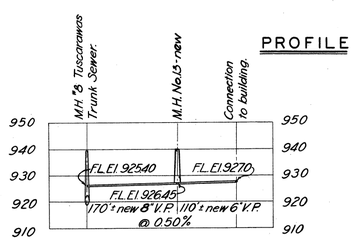


PLAN

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



PROFILE



PROFILE A

NOTES

For general plan, see Dwg. No. 10/4
For general utility plan, see Dwg. No. 82/22
For details of manholes, see Dwg. No. 82/35
Invert elevations of M. H. No. 1 & M.H. No. 11 to be checked and any necessary adjustment to grade made prior to initation of sewer construction

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

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SEWER CHANGES
TUSCARAWAS TRUNK SANITARY SEWER

IN 147 SHEETS — SHEET NO. 132 — SCALE: HOR: 1"=100' VERT: 1"=20'

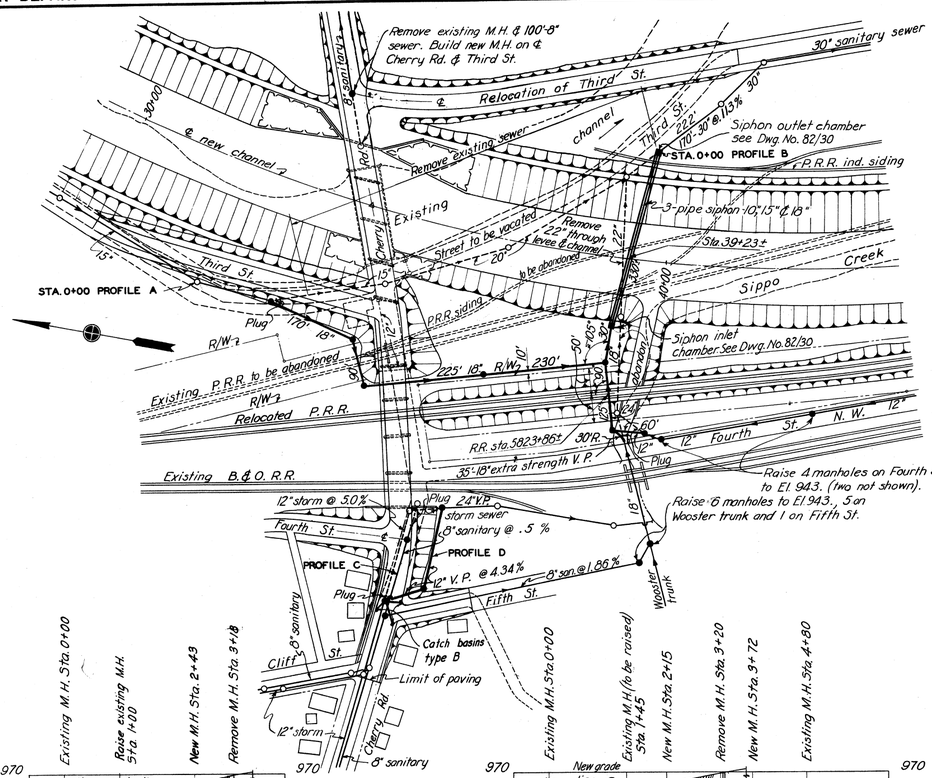
U. S. ENGINEER OFFICE. HUNTINGTON. W. VA.. SEPT. 1940

SUBMITTED: ..... PRINCIPAL ENGINEER — APPROVED: ..... LT. COL. CORPS OF ENGINEERS

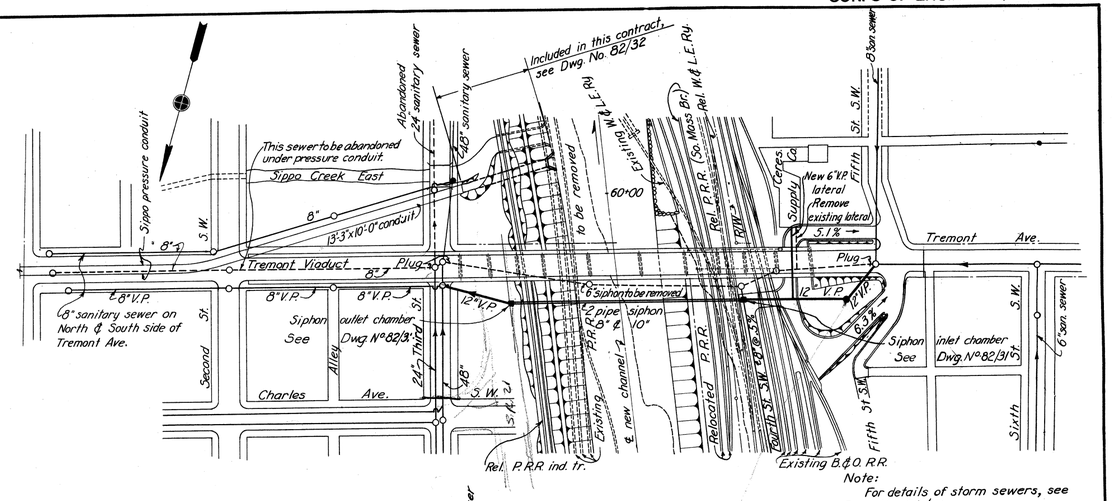
DRAWN BY R.L.E. TRACED BY H.C. CHECKED BY C.M.T. FILE NO. 027i-PM-82/24 DATED ..... TRANSMITTED WITH LETTER

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY



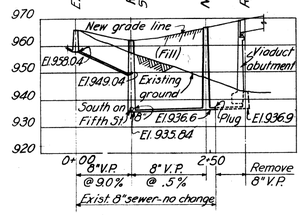
PLAN



PLAN

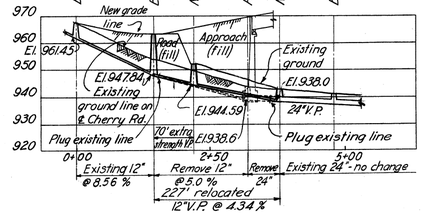
Note:
For details of storm sewers, see Dwg. No. 68/17.

REAR OF 308 TREMONT S.W.
LATERAL GOES INTO MH
NOW??



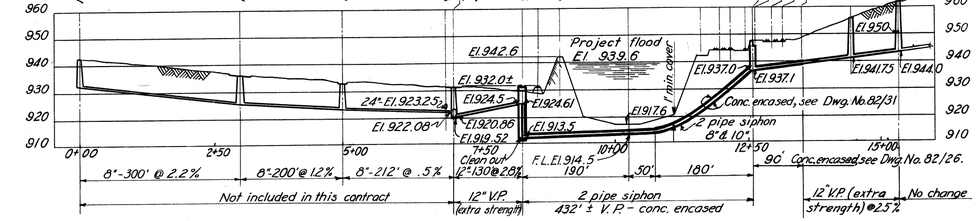
PROFILE C

CHERRY RD. 8" SANITARY SEWER



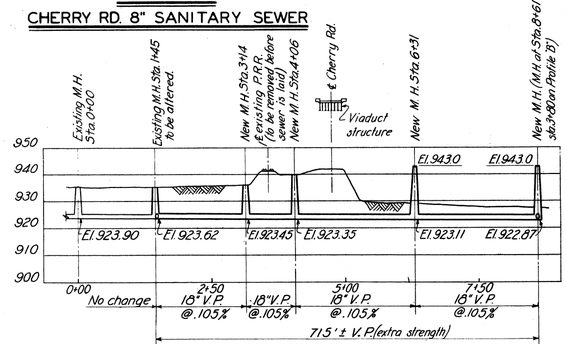
PROFILE D

CHERRY RD. STORM SEWER



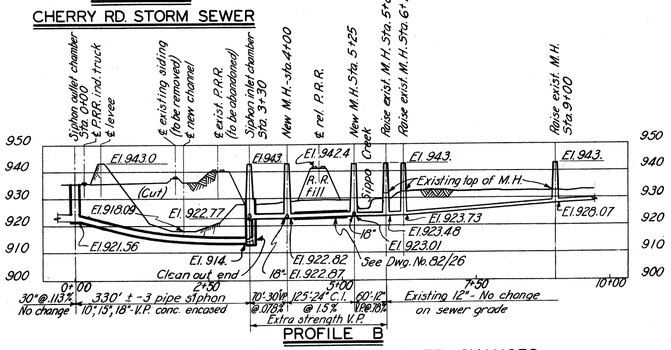
PROFILE

TREMONT AVE. 2-PIPE SIPHON & SANITARY SEWER



PROFILE A

RELOCATED SANITARY SEWER AT THIRD ST.



PROFILE B

CHERRY RD. 3-PIPE SIPHON & SEWER CHANGES

ON WOOSTER TRUNK SANITARY SEWER

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

NOTES

For Cherry Rd. & Tremont Ave. siphon chambers, see Dwgs. 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.

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SEWER CHANGES
CHERRY ROAD - TREMONT AVE.

IN 147 SHEETS SHEET NO. 133 SCALE: HORZ. 1"=100' VERT. 1"=20'

100' 50' 0 100' 200'

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

SUBMITTED: ..... DISTRICT ENGINEER APPROVED: ..... LT. COL., CORPS OF ENGINEERS

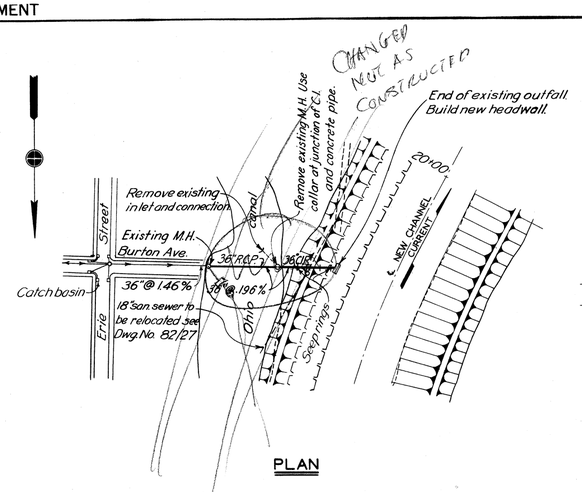
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TRACED BY R.C.H.
CHECKED BY D.G.J.

TRANSMITTED WITH LETTER DATED

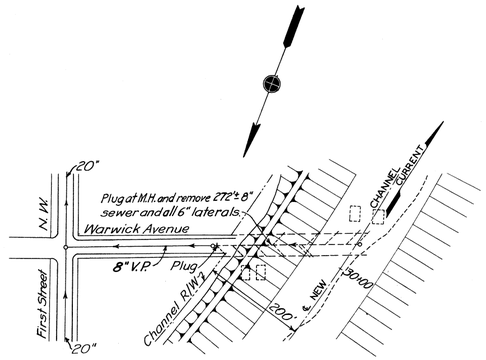
FILE NO. 027i-PM-82/25

WAR DEPARTMENT

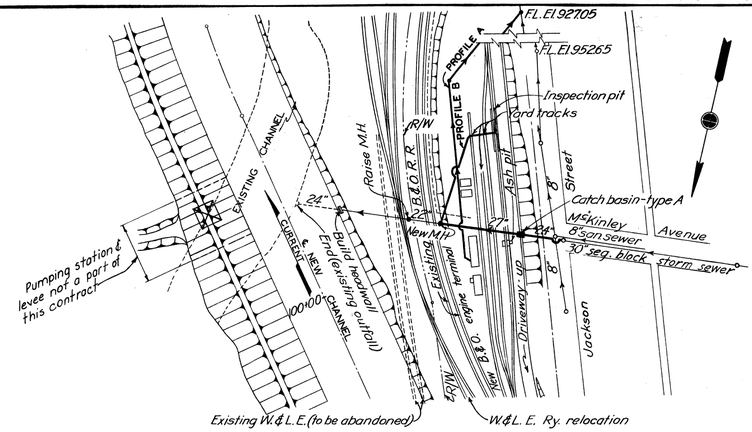
CORPS OF ENGINEERS, U. S. ARMY



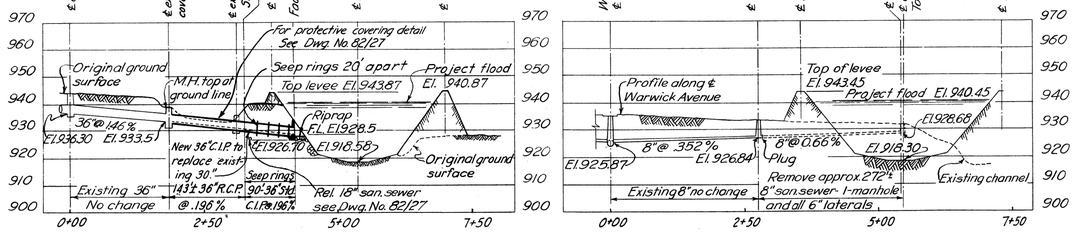
PLAN



PLAN



PLAN

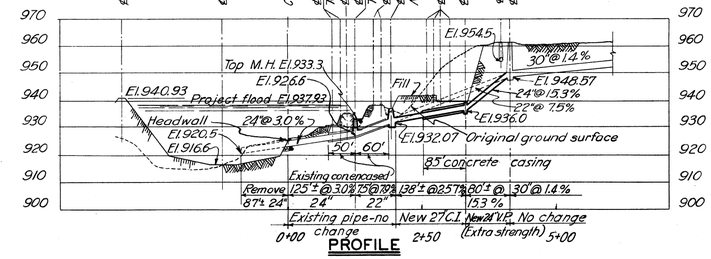


PROFILE

BURTON AVE. STORM SEWER CHANGES

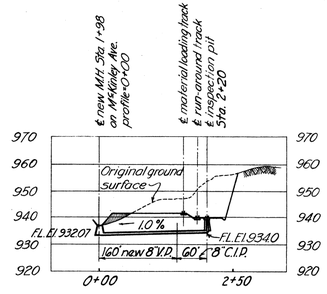
PROFILE

WARWICK AVE. SANITARY SEWER CHANGES

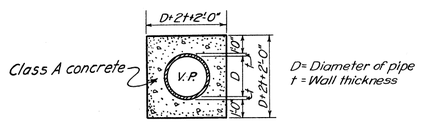


PROFILE

McKINLEY AVE. STORM SEWER CHANGES

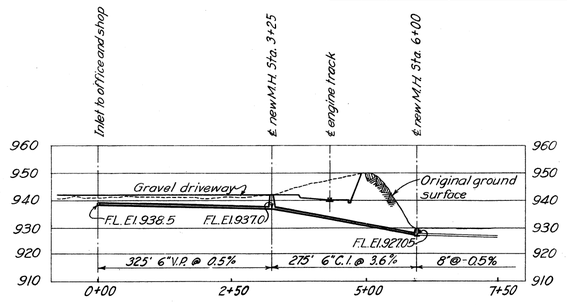


PROFILE B



DETAIL OF CONCRETE CASING

NOT TO SCALE



PROFILE A

NOTES

For general plans, see Dwgs. Nos. 10/2, 10/3 & 10/5.
For general utility plans, see Dwgs. 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.

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

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
SEWER CHANGES
BURTON, WARWICK & MC KINLEY AVENUES

IN 147 SHEETS SHEET NO. 134 SCALE: HOR: 1" = 100' VERT: 1" = 20'

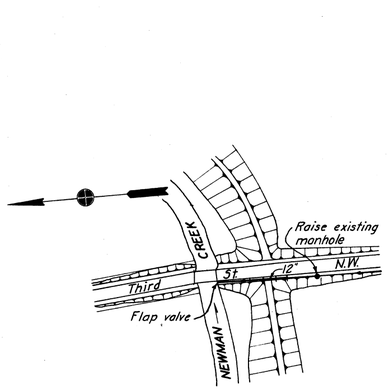
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. SEPT. 1940

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

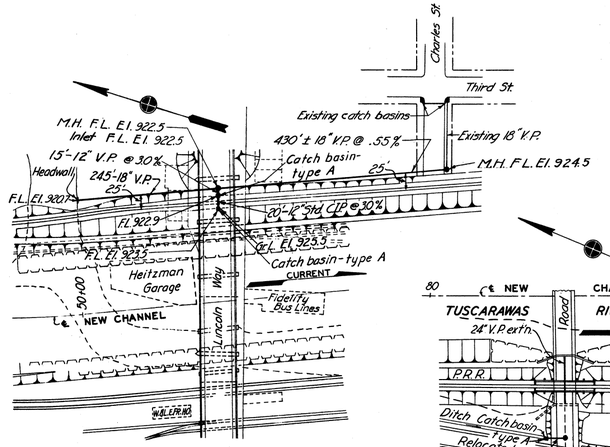
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TRACED BY E.B.H.
CHECKED BY C.M.T.

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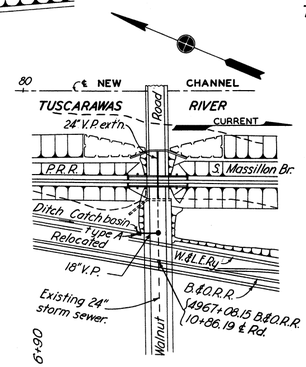
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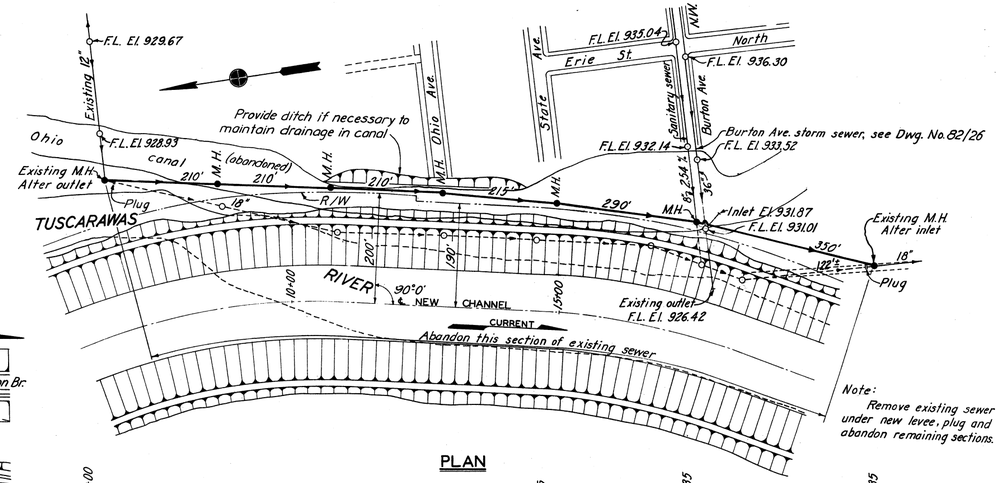
PLAN



PLAN

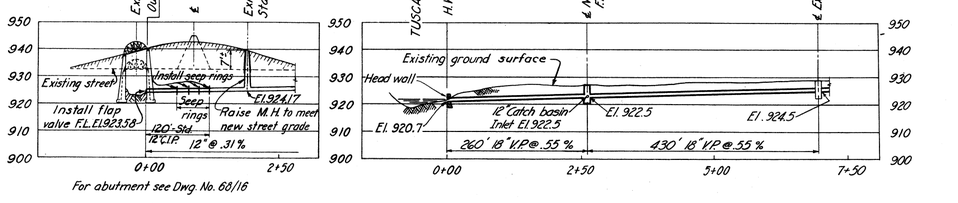


PLAN



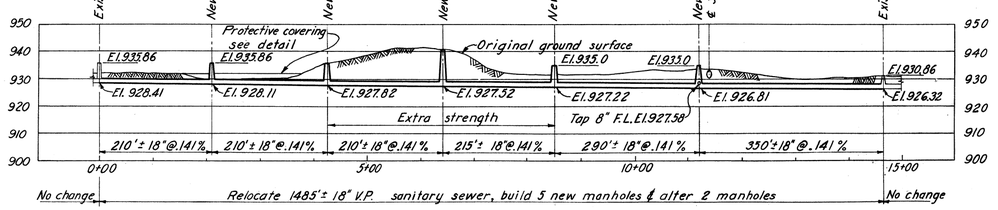
PLAN

Note:
Remove existing sewer under new levee, plug and abandon remaining sections.

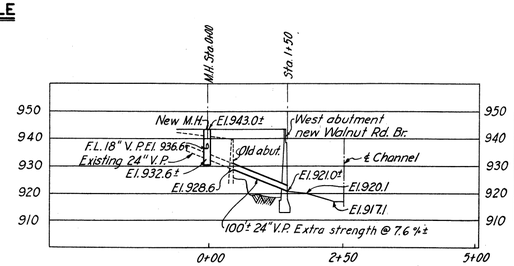


PROFILE
THIRD ST. SOUTH OF NEWMAN CREEK

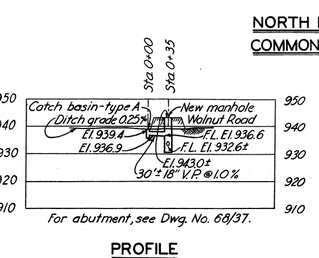
PROFILE



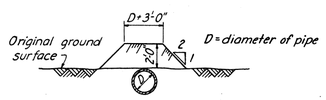
PROFILE
NORTH END SANITARY TRUNK SEWER
COMMONWEALTH AVE. TO BURTON AVE.



PROFILE
24" V. P. EXTENSION ON WALNUT RD.



PROFILE
18" V. P. SEWER ON WALNUT RD.



PROTECTIVE COVERING
NOT TO SCALE

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

NOTES

For general plans, see Dwgs. Nos. 16/1, 16/2, & 16/3
For general utility plans, see Dwgs. 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

BY	DATE	CHARACTER
		REVISIONS

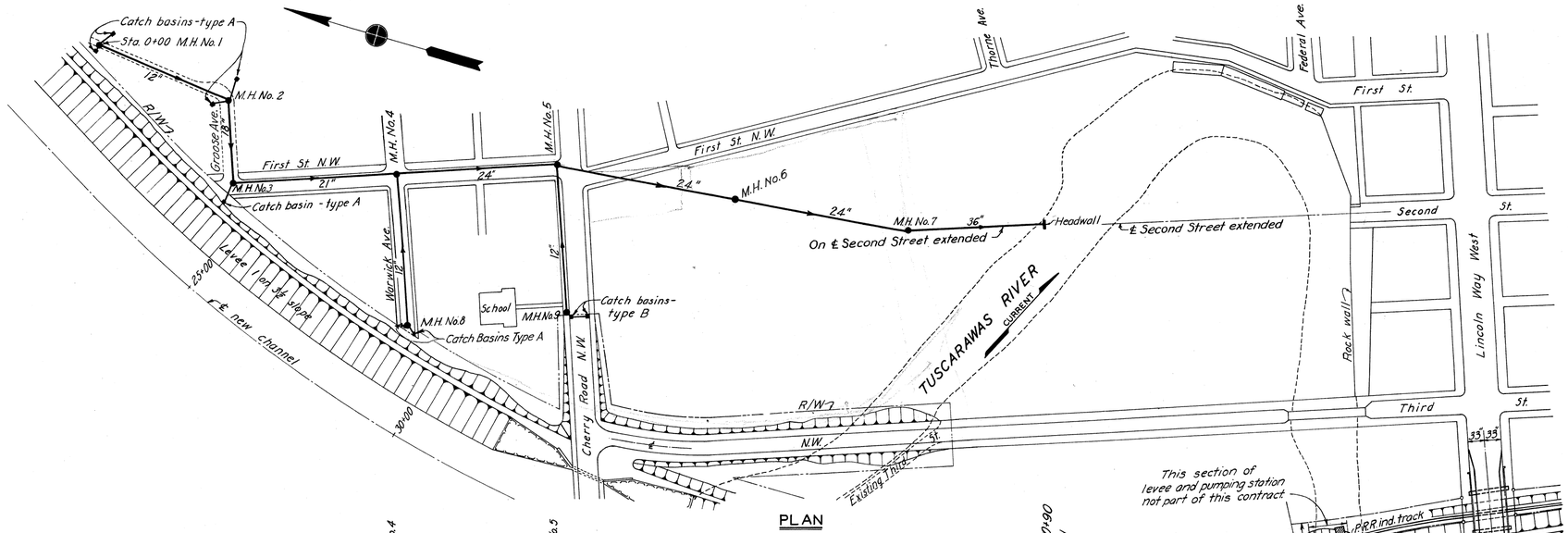
IN 147 SHEETS SHEET NO. 135 SCALE: VERT. 1" = 20' HOR. 1" = 100'

100' 50' 0 100' 200'

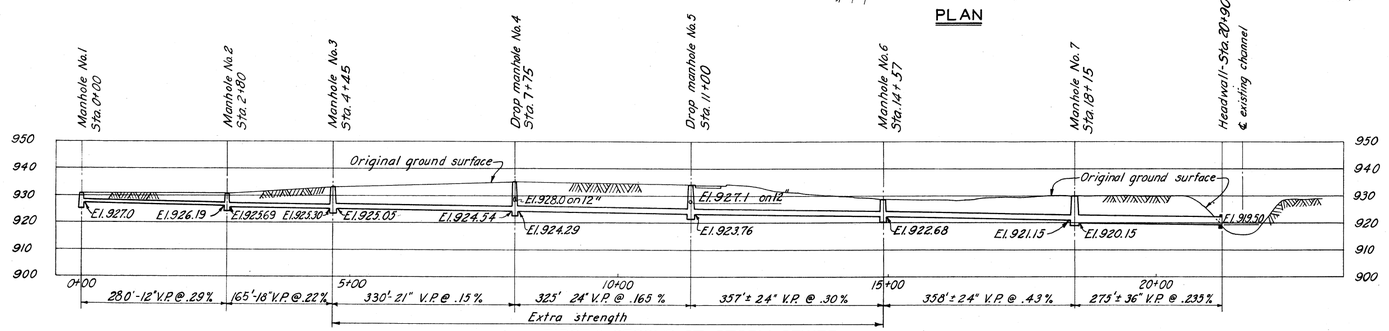
U. S. ENGINEER OFFICE, HUNTINGTON, W. VA., SEPT. 1940

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

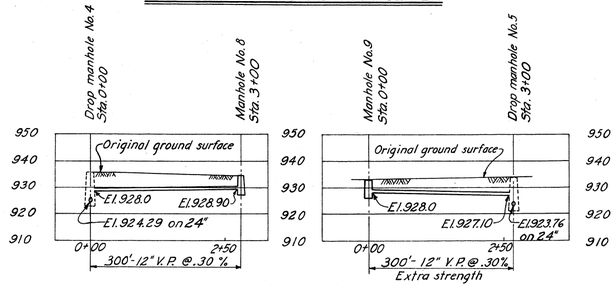
DRAWN BY R.L.E.
TRACED BY W.E.C.
CHECKED BY C.M.T.
TRANSMITTED WITH LETTER DATED
FILE No. 027i-PM-82/27



PLAN



FIRST & SECOND ST. STORM SEWER



WARWICK AVE. EXTENSION

CHERRY ROAD EXTENSION

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'

100' 50' 0 100' 200'

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.
TRACED BY W.E.C.
CHECKED BY C.M.T.

TRANSMITTED WITH LETTER DATED

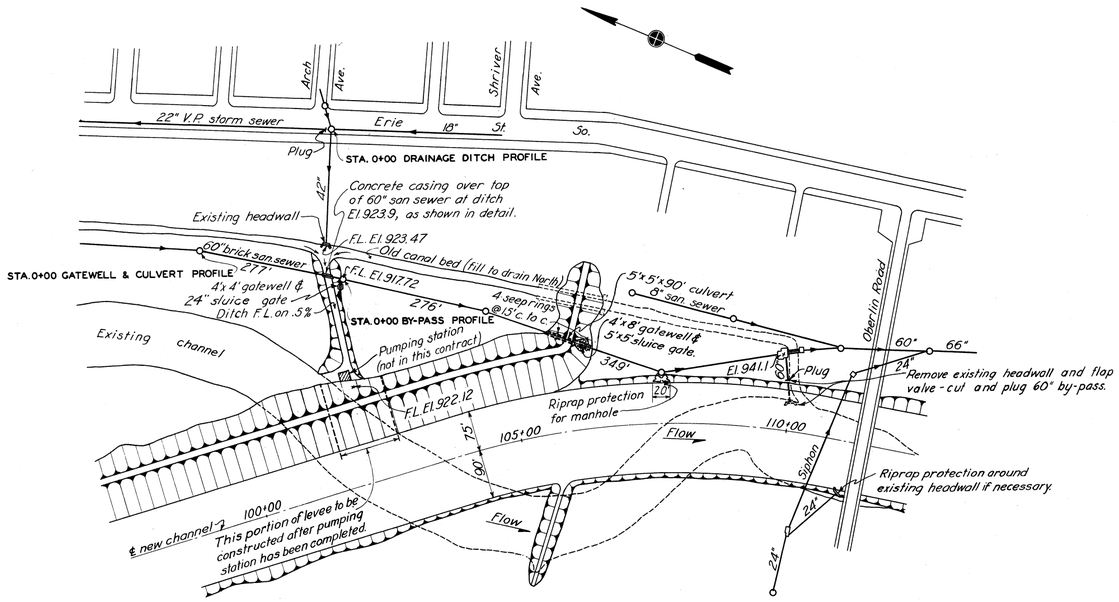
FILE NO. 027i-PM-82/28

BY	DATE	CHARACTER

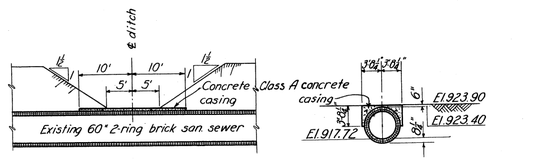
REVISIONS

WAR DEPARTMENT

CORPS OF ENGINEERS. U. S. ARMY



PLAN

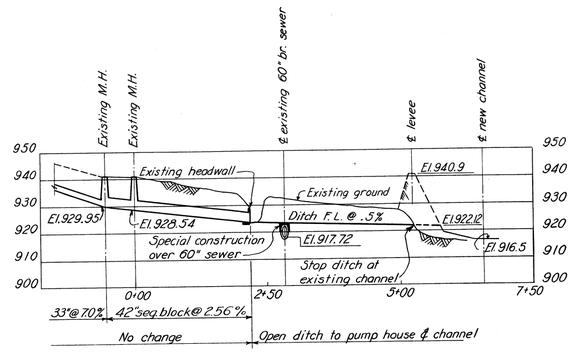


SECTION ON ℄ SEWER

SECTION ON ℄ DITCH

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

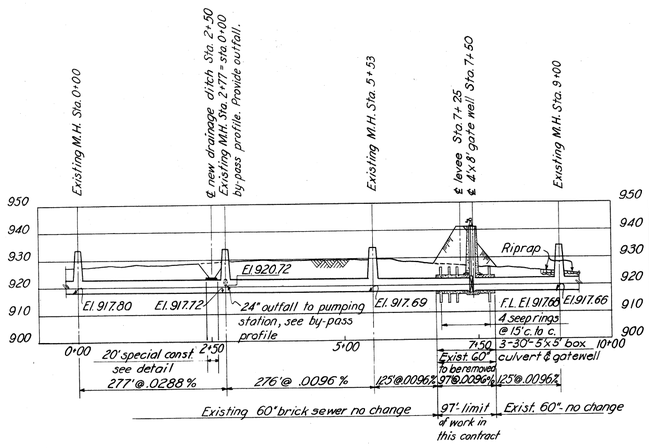
SCALE: 1" = 10'



PROFILE

DRAINAGE DITCH

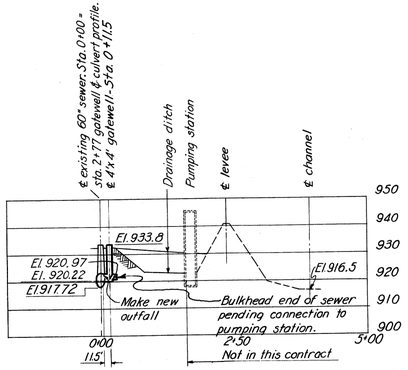
SCALES: HOR. 1" = 100'
VERT. 1" = 20'



PROFILE

GATEWELL & CULVERT IN EXISTING 60" SANITARY SEWER

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



PROFILE

24" BY-PASS TO PUMPING STATION

SCALES: 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 5'x5' 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

BY	DATE	CHARACTER
		REVISIONS

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

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

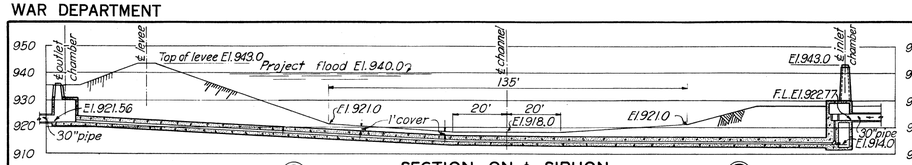
DRAWN BY R.L.E.
TRACED BY R.C.H.
CHECKED BY D.G.J.

TRANSMITTED WITH LETTER

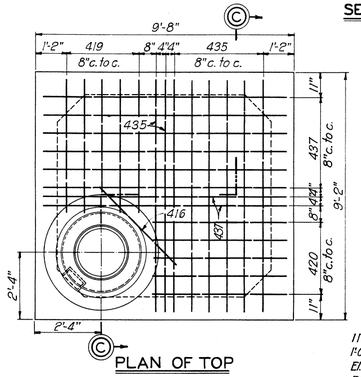
FILE NO. 027i-PM-82/29 DATED

WAR DEPARTMENT

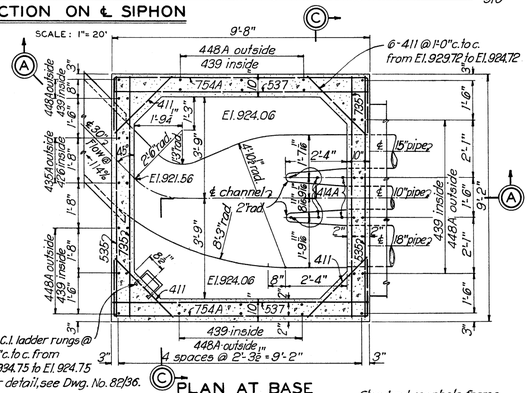
CORPS OF ENGINEERS, U. S. ARMY



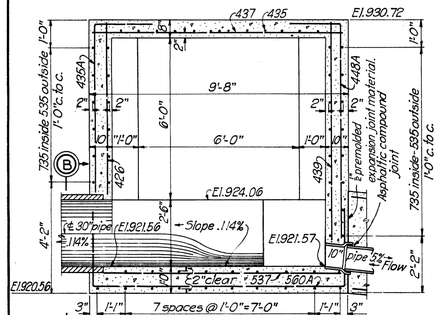
SECTION ON ℄ SIPHON



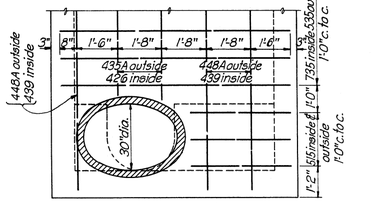
PLAN OF TOP



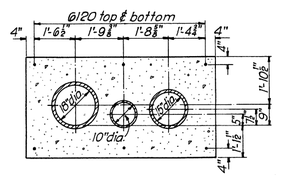
PLAN AT BASE



SECTION A-A

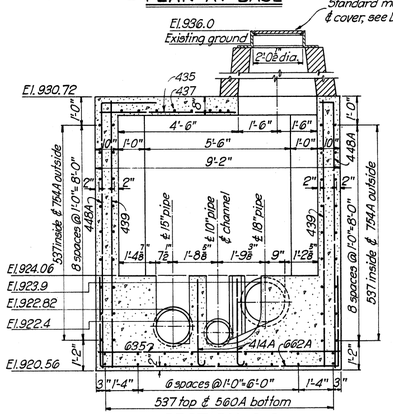


ELEVATION B-B



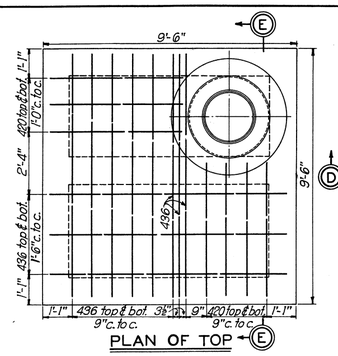
TYPICAL SECTION THROUGH SIPHON

Note:
Concrete casing around pipe to be class A. Pipe to be standard vitrified sewer pipe with asphalt joints.

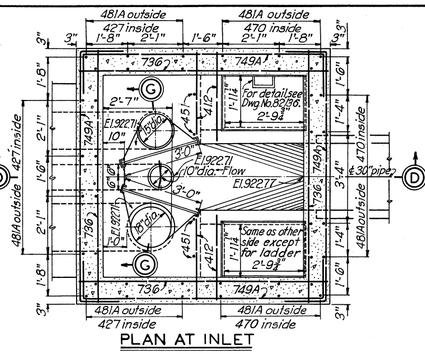


SECTION C-C

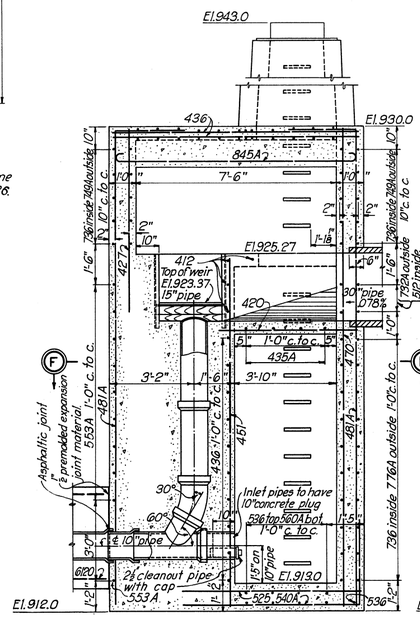
OUTLET CHAMBER



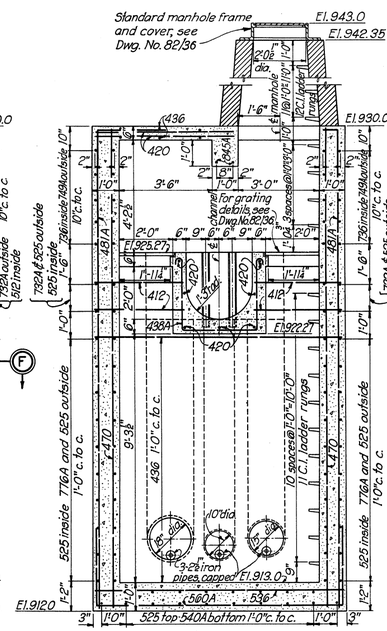
PLAN OF TOP



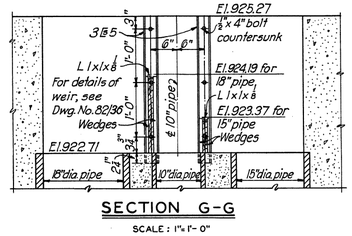
PLAN AT INLET



SECTION D-D

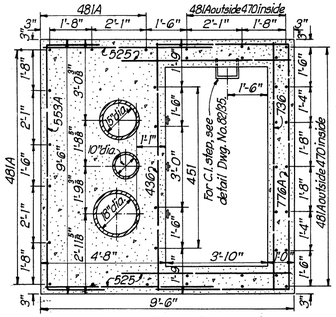


SECTION E-E



SECTION G-G

SCALE: 1"= 1'- 0"



SECTION F-F

INLET CHAMBER

REINFORCING SCHEDULE

MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
			OUTLET CHAMBER			
411	⅝	2'-9"		24	1.84	44
414A	⅝	3'-6"	2'-9" 414A	6	2.34	14
416	⅝	4'-0"		1	2.67	3
419	⅝	4'-9"		5	3.17	16
420	⅝	5'-0"		5	3.34	17
426	⅝	6'-6"		2	4.34	9
435	⅝	8'-9"		8	5.85	47
435A	⅝	8'-9"		2	5.85	12
437	⅝	9'-3"		8	6.18	49
439	⅝	9'-9"	6'-6" 435A 9'-9" 448A	13	6.51	85
448A	⅝	10'-0"		17	8.02	136
515	⅝	3'-9"		6	3.91	23
535	⅝	8'-9"		14	9.13	128
537	⅝	9'-3"		27	9.65	261
560A	⅝	15'-0"		9	15.65	141
635	⅝	8'-9"	2'-1" 2'-0" 3'-4"	10	13.14	131
662A	⅝	15'-6"	754A 9'-4" 560A 9'-4" 662A 8'-10"	10	23.28	233
735	⅞	8'-9"		14	17.89	251
754A	⅝	19'-6"		18	27.59	497
				Total		2097
			INLET CHAMBER			
412	⅝	3'-0"		8	2.0	16
420	⅝	5'-0"		21	3.34	70
427	⅝	6'-9"		10	4.51	45
435B	⅝	8'-9"	2'-7" Track 2'-7" Track 435A 2'-10"	4	5.85	23
436	⅝	9'-0"		32	6.01	192
451	⅝	12'-9"		4	8.52	34
470	⅝	17'-6"		10	11.69	117
481A	⅝	20'-3"	1'-6" 2'-0" 2'-1" 4'-1"	20	13.53	271
512	⅝	3'-0"	749A 9'-2"	4	3.13	13
525	⅝	6'-3"	553A 9'-2"	56	6.52	365
536	⅝	9'-0"	560A 9'-2"	5	9.39	47
540A	⅝	10'-0"	776A 9'-2"	10	10.43	104
553A	⅝	13'-9"		10	13.82	138
560A	⅝	15'-0"		4	15.65	03
732A	⅝	8'-0"	4'-11" 732A	4	16.35	65
736	⅝	9'-0"	6'-10" 540A	30	18.40	552
749A	⅝	12'-3"	17'-8" 481A	20	25.04	501
776A	⅝	19'-0"		10	38.84	388
845A	1"	11'-3"	9'-2" 845A	2	30.04	60
			Total			3064
			SIPHON			
6120	⅞	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.

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

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
CHERRY ROAD SIPHON

IN 147 SHEETS | SHEET NO. 138 | SCALE: 1"= 1'-0"

12" 6" 0 2' 4'

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

SUBMITTED: PRINCIPAL ENGINEER APPROVED: LT. COL. CORPS OF ENGINEERS

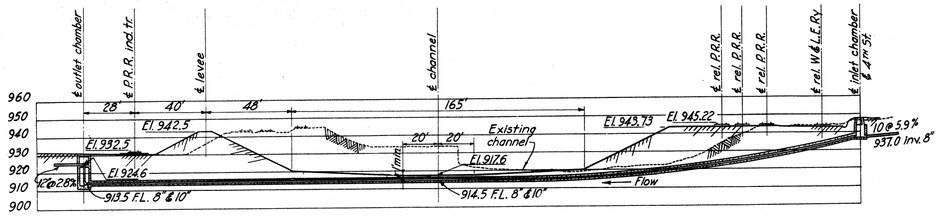
DRAWN BY R. L. C.
TRACED BY H. E. C.
CHECKED BY D. G. J.

FILE NO. 0271-PM-82/30 DATED

TRANSMITTED WITH LETTER

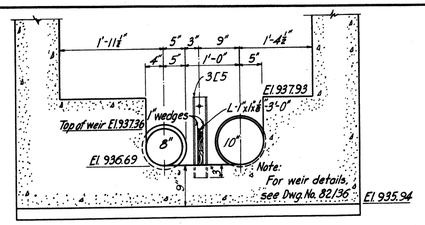
WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY



SECTION ON ℄ SIPHON

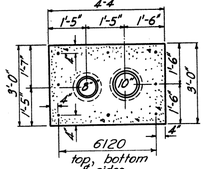
SCALE: 1" = 30'



PARTIAL SECTION H-H ENLARGED

SCALE: 1" = 1'-0"

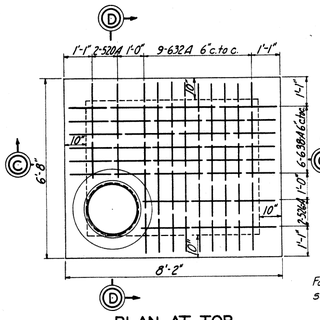
Note: Concrete casing around pipe to be class A. Pipe to be standard vitrified sewer pipe with asphalt joints.



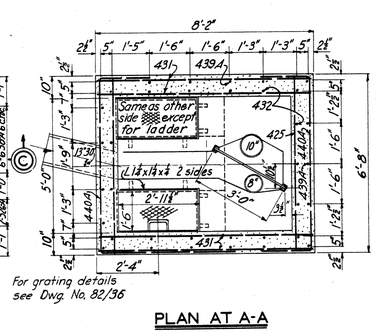
TYPICAL SECTION OF SIPHON

REINFORCING SCHEDULE

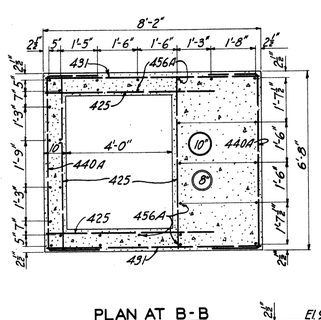
MARK	SIZE	L'GTH.	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
			OUTLET CHAMBER			
225	½" ℄	6'-3"		5	5.31	27
231A	½" ℄	7'-9"		5	6.59	33
420A	½" ℄	5'-0"		4	5.34	13
425	½" ℄	6'-3"	6'-3" 231A; 5'-0" 426A	78	4.18	326
426A	½" ℄	6'-6"	3'-6" 520A	5	4.34	22
431	½" ℄	7'-9"	5'-0" 526A	64	5.18	332
432	½" ℄	8'-0"	7'-10" 638A	17	5.34	91
439A	½" ℄	9'-9"		19	6.51	124
440A	½" ℄	10'-0"		45	6.68	301
456A	½" ℄	14'-0"	1"rad. 420A; 439A; 1'-8"; 8'-0"	32	9.35	299
520A	⅝" ℄	5'-0"		2	5.22	10
526A	⅝" ℄	6'-6"		2	6.78	14
632A	¾" ℄	8'-0"		17	12.02	204
638A	¾" ℄	9'-6"	10" 440A; 456A 13'-3"; 6'-4"; 632A 7'-2"	6	14.27	86
					Total	1882
			INLET CHAMBER			
409	½" ℄	2'-3"		8	1.51	12
424	½" ℄	6'-0"		57	4.01	229
431A	½" ℄	7'-9"	10" 6'-1" 431A	40	5.18	207
524	⅝" ℄	6'-0"		10	6.26	63
532	⅝" ℄	8'-0"		17	8.34	142
642A	¾" ℄	10'-6	8'-0" 642A	24	16.52	396
					Total	1049
			SIPHON			
6120	¾" ℄	30'-0"		128	45.06	5768
					Total	5768



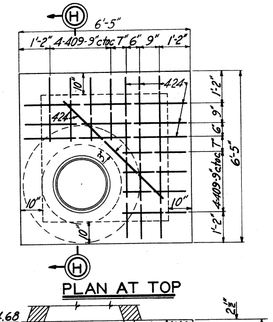
PLAN AT TOP



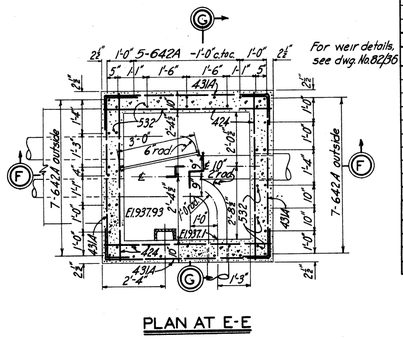
PLAN AT A-A



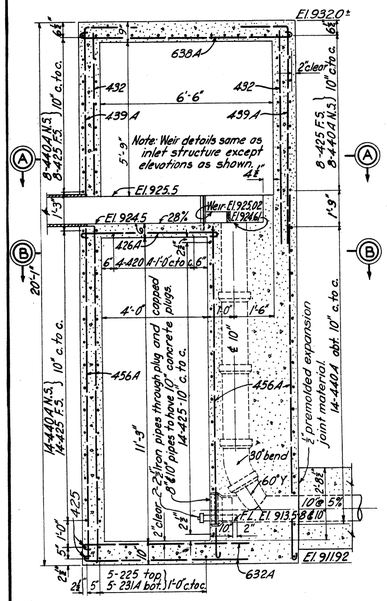
PLAN AT B-B



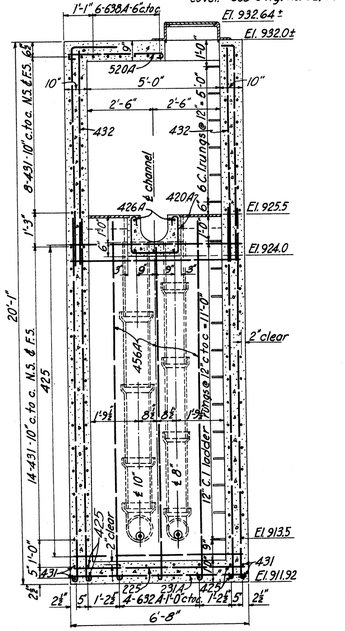
PLAN AT TOP



PLAN AT E-E

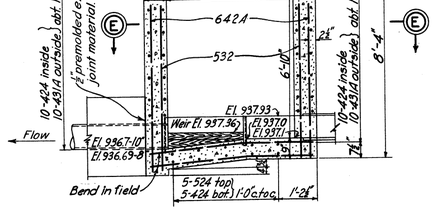


SECTION C-C

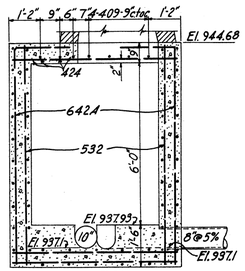


SECTION D-D

OUTLET CHAMBER

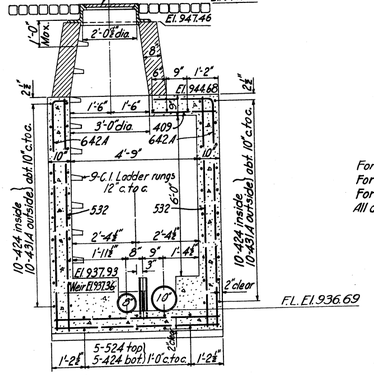


SECTION F-F



SECTION G-G

INLET CHAMBER



SECTION H-H

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."

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
TREMONT AVENUE SIPHON

IN 147 SHEETS — SHEET NO. 139 — SCALE: ½" = 1'-0"

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

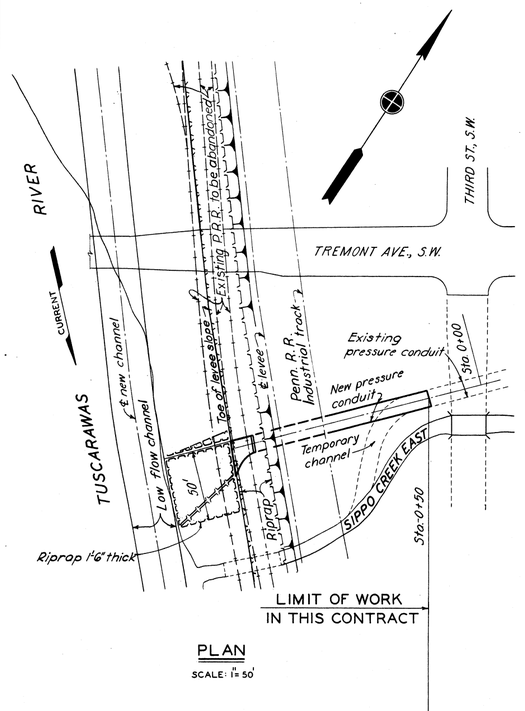
SUBMITTED: [signature] DISTRICT ENGINEER — APPROVED: [signature] LT. COL., CORPS OF ENGINEERS

DRAWN BY R.L.E.
TRACED BY A.F.
CHECKED BY D.G.J.

FILE NO. 027i-PM-82/31 TRANSMITTED WITH LETTER DATED

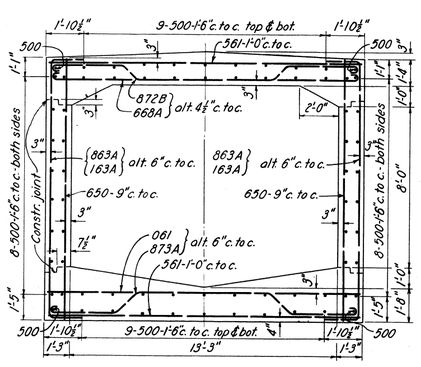
WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY

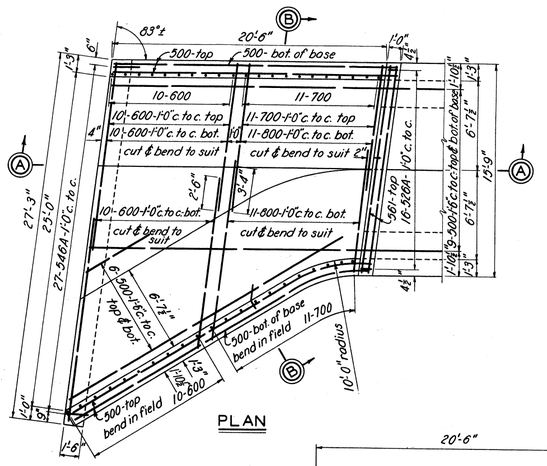


PLAN

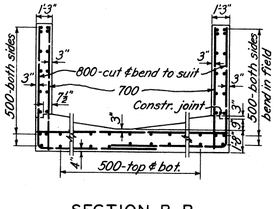
SCALE: 1"= 50'



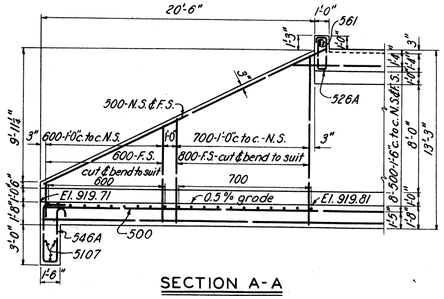
TYPICAL SECTION NO. 1



PLAN



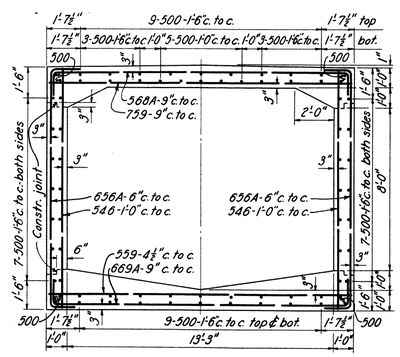
SECTION B-B



SECTION A-A

TYPICAL SECTION NO. 2

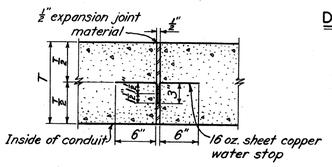
SECTION C-C



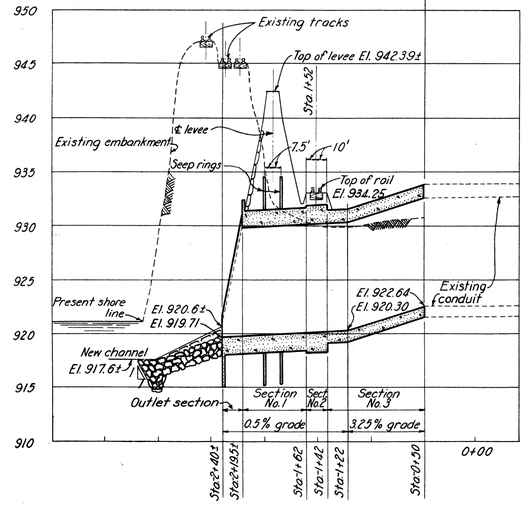
TYPICAL SECTION NO. 3

CONDUIT SECTIONS

SCALE: ⅜"= 1'-0"



TYPICAL EXPANSION JOINT



PROFILE

SCALES: HOR. 1"= 50'
VERT. 1"= 5'

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.
			TYPICAL SECTION NO. 1-40'			
500	⅜"ø	2800		–	1.043	3004
561	⅜"ø	15'-3"	15'-3" 668A	80	15.91	1273
650	⅜"ø	12'-6"		107	18.78	2009
668A	⅜"ø	17'-0"	1'-8" 12'-5" 863A 12'-5" 163A	53	29.59	1933
863A	1"ø	15'-9"		80	42.05	3364
872B	1"ø	18'-0"		53	48.06	2547
873A	1"ø	18'-9"		40	48.73	1949
163A	1"ø	15'-9"	45° 3'-6" 10" 6'-7" 10" 3'-5" 872B 3'-3" 1'-7" 6'-7" 1'-7" 3'-3" 873A	80	53.55	4284
061	1¼"ø	15'-3"		40	81.02	3241
			SEEP RING		Total	23,024
675	⅜"ø	18'-9"		24	28.16	676
685	⅜"ø	21'-3"	26° 21'-0" 6104A	16	31.92	510
6104A	⅜"ø	26'-0"		8	39.05	312
			TYPICAL SECTION NO. 2-20'	Total		1498
563	⅜"ø	15'-9"		40	18.43	657
578	⅜"ø	19'-6"	45° 3'-7" 1'-0" 6'-7" 1'-0" 3'-7" 174A 3'-5" 1'-2" 6'-7" 1'-2" 3'-5" 175A	67	20.34	1363
878	1"ø	19'-6"		6	52.07	312
151	1"ø	12'-9"		54	43.35	2341
163	1"ø	15'-9"		20	53.55	1071
174A	1"ø	18'-6"		20	62.90	1258
175A	1"ø	18'-9"		20	63.75	1275
963	1⅛"ø	15'-9"	1'-11" 12'-8" 966A	20	67.77	1355
966A	1⅛"ø	16'-5"		54	71.00	3834
978	1⅛"ø	19'-6"		7	83.91	587
				Total		14,053
			TYPICAL SECTION NO. 3-40'			
500	⅜"ø	2980		–	1.043	3087
546	⅜"ø	11'-6"		80	11.99	959
559	⅜"ø	14'-9"	1'-3" 1'-1" 14'-9" 568A 11'-6" 656A 14'-9" 669A	107	15.38	1646
568A	⅜"ø	17'-0"		53	17.73	940
656A	⅜"ø	14'-0"		160	21.03	3365
669A	⅜"ø	17'-3"		53	25.91	1373
759	⅜"ø	14'-9"		53	30.15	1598
				Total		12,968
			OUTLET SECTION			
500	⅜"ø	1200'	5" 8" 2'-2" 526A	–	1.043	1252
526A	⅜"ø	6'-6"		16	6.78	108
546A	⅜"ø	11'-6"		27	11.99	324
561	⅜"ø	15'-3"	1'-6" 4'-1" 4'-2" 1'-0" 546A	2	15.91	32
5107	⅜"ø	26'-9"		3	27.90	84
600	⅜"ø	750'		–	1.502	1127
700	⅜"ø	450'		–	2.044	920
800	1"ø	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 - SIPPO CREEK
TYPICAL SECTIONS & OUTLET STRUCT.

IN 147 SHEETS SHEET NO. 140 SCALE: ¾"= 1'-0"

10" 0 2" 4" 6" 8" 10"

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

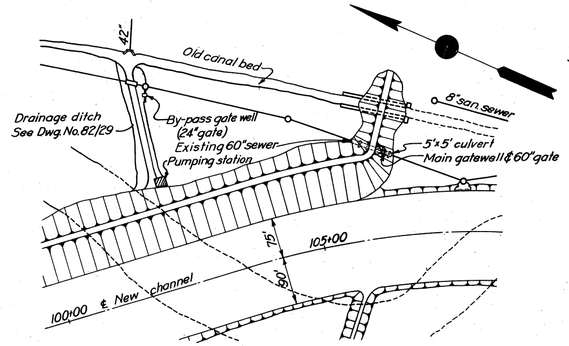
SUBMITTED: ..... MUNICIPAL ENGINEER APPROVED: ..... LT. COL., CORPS OF ENGINEERS

DRAWN BY M.C.S.
TRACED BY H.A.E.
CHECKED BY E.K.

FILE NO. 027i-PM-82/32 DATED ..... TRANSMITTED WITH LETTER

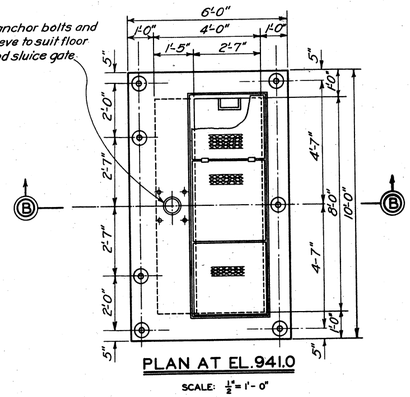
WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY



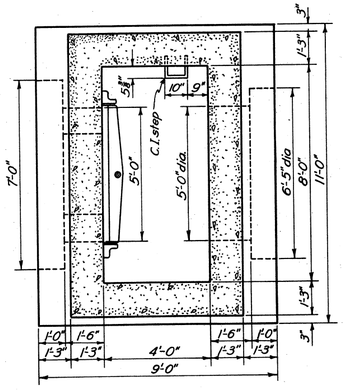
LOCATION PLAN

SCALE: 1" = 100'



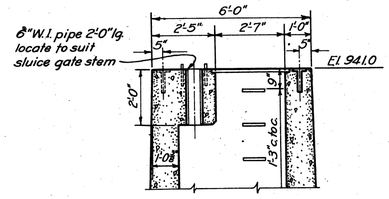
PLAN AT EL. 941.0

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



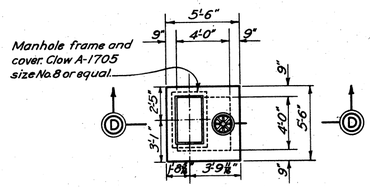
PLAN AT EL. 924.7

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

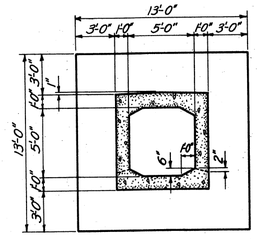


SECTION B-B

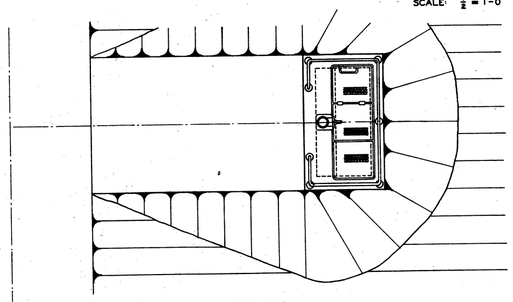
SCALE: $\frac{1}{2}$" = 1'-0"



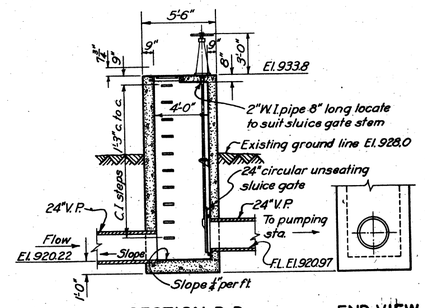
PLAN



SECTION A-A

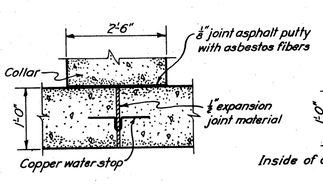


PLAN



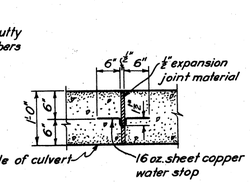
SECTION D-D END VIEW

BY-PASS GATEWELL

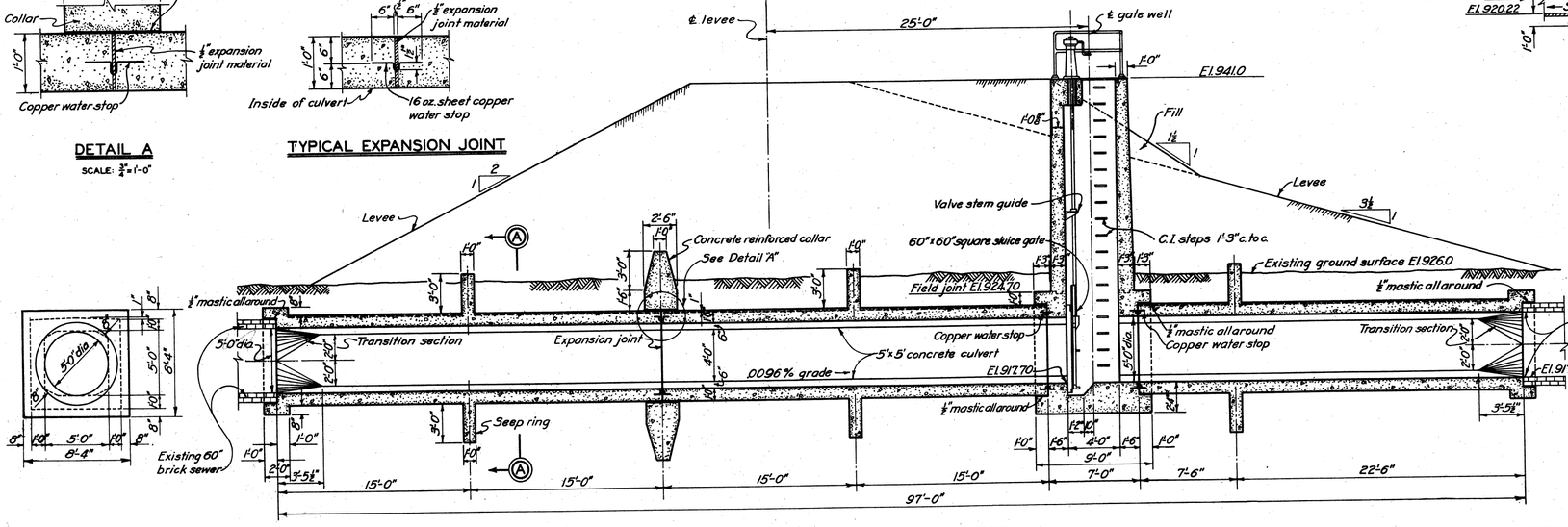


DETAIL A

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



TYPICAL EXPANSION JOINT



SECTION ON ℄ OF CULVERT CULVERT & MAIN GATEWELL

END VIEW

NOTES

For reinforcing details, see Dwg. No. 82/34.
All concrete to be Class "A."

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
GATE WELLS - MASONRY DETAILS

IN 147 SHEETS SHEET NO. 141 SCALE: 1" = 1'-0"

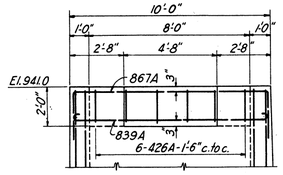
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., JAN. 1941

SUBMITTED: ..... CHIEF, ENGINEERING DIVISION APPROVED: ..... CAPT., CORPS OF ENGINEERS

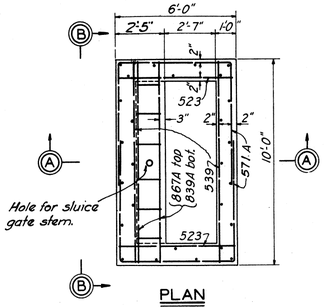
DRAWN BY R. M. C.
TRACED BY E. B. H.
CHECKED BY D. G. J. FILE NO. 027i-PM-82/33 DATED TRANSMITTED WITH LETTER

WAR DEPARTMENT

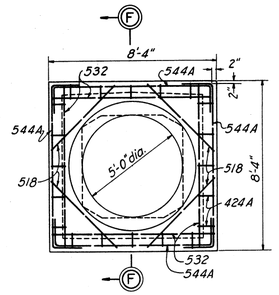
CORPS OF ENGINEERS, U. S. ARMY



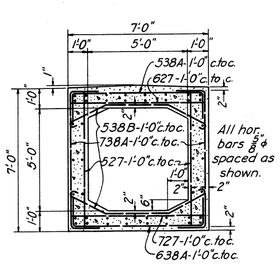
ELEVATION B-B



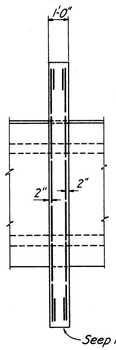
PLAN

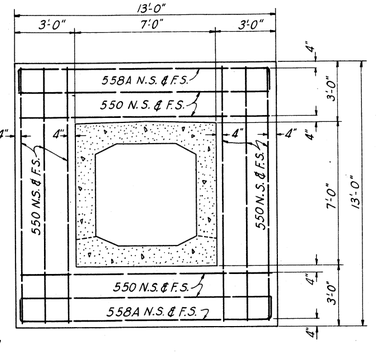


END VIEW OF CULVERT

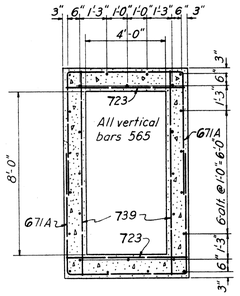


TYPICAL SECTION THRU CULVERT

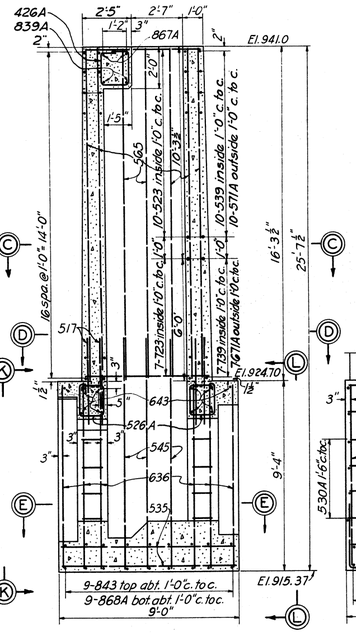




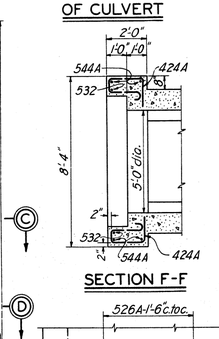
SECTION AT SEEP RING



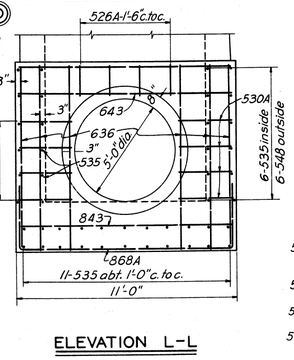
SECTION C-C



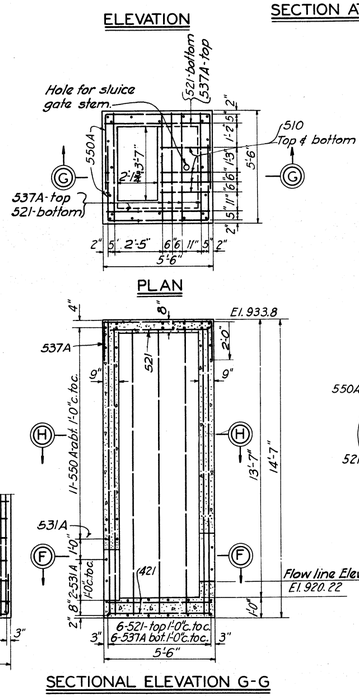
SECTIONAL ELEVATION A-A



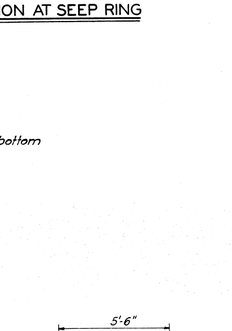
SECTION F-F



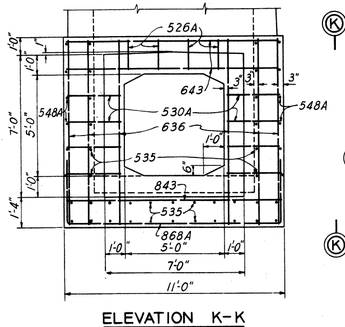
ELEVATION L-L



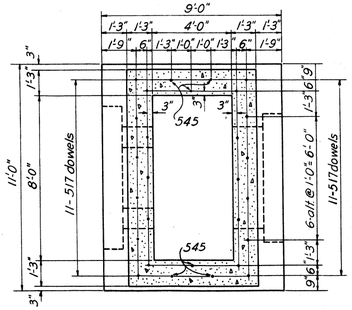
SECTIONAL ELEVATION G-G



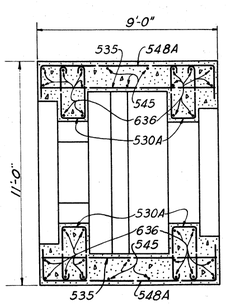
SECTION H-H



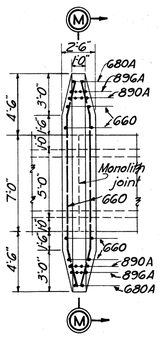
ELEVATION K-K



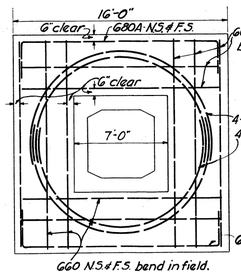
SECTION D-D



SECTION E-E
MAIN GATE WELL



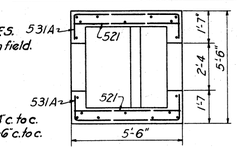
ELEVATION



SECTION M-M

SEEP RING AT EXPANSION JOINT

SCALE:- ½"=1'-0"



SECTION F-F
BY-PASS GATE WELL

REINFORCING SCHEDULE

MARK	SIZE	L'GTH	BENDING DIAGRAM	NO.	UNIT WT.	TOTAL WT.
			CULVERT			
424A	2 @	6'-0"	6'-8" 538A; 8'-0" 544A	20	4.01	80
518	5 @	4'-6"	Reinforcing Bars 12'-4" 558A	4	4.69	19
527	5 @	6'-9"	Reinforcing Bars 6'-8" 638A	180	7.04	1267
532	5 @	8'-0"	Reinforcing Bars 6'-8" 738A	4	8.34	33
538A	5 @	9'-6"	For 538A, 544A, For 538B, 558A	90	9.91	892
538B	5 @	9'-6"		180	9.91	1784
544A	5 @	11'-0"		8	11.47	92
550	5 @	12'-6"		80	13.04	1043
558A	5 @	14'-6"		16	15.12	242
5118	5 @	29'-6"	2'-0" 3'-1" 2'-0" 6'-8" 538B	132	30.77	4062
627	3 @	6'-9"		90	10.14	913
638A	3 @	9'-6"	1'-6" 8" 1'-4" 1'-8" 424A	90	14.27	1284
727	3 @	6'-9"		90	13.80	1242
738A	3 @	9'-6"		180	19.42	3496
680A	3 @	15'-0"	2'-6" 15'-0" 680A	20	22.53	451
680A	3 @	20'-0"		4	30.04	120
890A	1" @	22'-6"	889A R-6'-1" 896A R-6'-7"	4	60.08	240
896	1" @	24'-0"	MAIN GATE WELL	4	64.08	256
426A	2 @	6'-6"	2'-8" 1'-8" 4" 1'-2" 530A 1'-2" 526A	6	4.34	26
517	2 @	4'-3"		22	4.43	97
523	2 @	5'-9"		20	6.00	120
526A	2 @	6'-6"		8	6.78	54
530A	2 @	7'-6"	10" 1'-8" 1'-8" 8'-8" 548A	16	7.82	125
535	2 @	8'-9"		34	9.13	310
539	2 @	9'-9"		20	10.17	203
545	2 @	11'-3"	1'-4" 426A	6	11.73	70
548A	2 @	12'-0"		12	12.52	150
565	3 @	16'-3"	6'-0" 5'-8" 671A	28	16.95	475
571A	3 @	17'-9"		20	18.51	370
636	3 @	9'-0"	3'-6" 3'-2" 867A 9'-8" 10'-8" 868A	28	13.52	379
643	3 @	10'-9"		10	16.15	162
671A	3 @	17'-9"		14	16.65	373
839A	1" @	9'-9"		2	26.03	52
843	1" @	10'-9"		9	28.70	258
867A	1" @	16'-9"		2	44.12	89
868A	1" @	17'-0"		9	45.39	409
723	3 @	5'-9"	9'-8" 839A	14	11.75	165
739	3 @	9'-9"	BY-PASS GATE WELL	14	19.93	279
421	2 @	5'-3"	2'-0" 5'-2" 550A; 1'-3" 5'-2" 531A; 3'-8" 5'-2" 550A	10	3.51	35
510	2 @	2'-6"		8	2.61	21
521	2 @	5'-3"		57	5.48	312
531A	2 @	7'-9"		6	8.08	48
537A	2 @	9'-3"		13	9.65	125
541	2 @	10'-3"		2	10.69	21
550A	2 @	12'-6"		20	13.04	287
557	2 @	14'-3"		18	14.86	267
					Total=	22,798

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
GATE WELLS - REINFORCING DETAILS

IN 147 SHEETS | SHEET NO. 142 | SCALE: ½" = 1'-0"

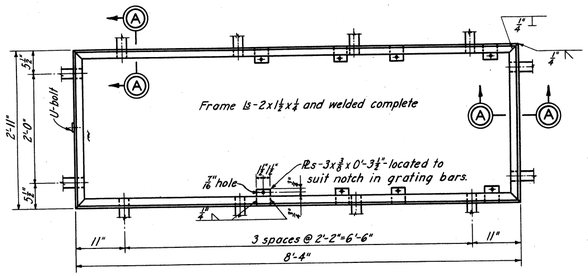
12" 6" 0 2' 4' 6'

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

SUBMITTED: ..... PRINCIPAL ENGINEER | APPROVED: ..... LT. COL., CORPS OF ENGINEERS

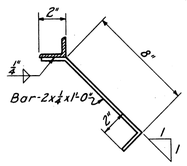
DRAWN BY R.M.C. | TRACED BY M.C. | CHECKED BY E.K. | TRANSMITTED WITH LETTER

FILE NO. 027i-PM-82/34 DATED



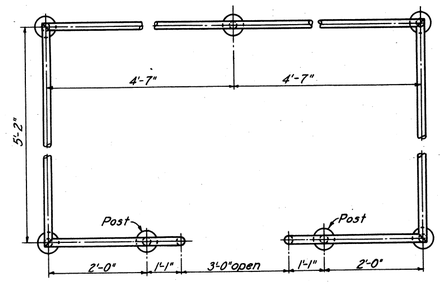
FRAME

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



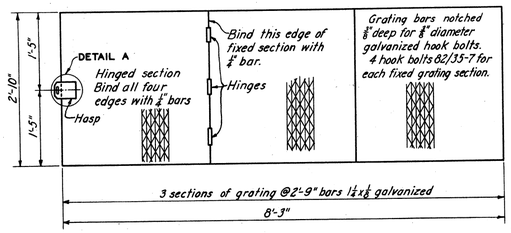
SECTION A-A

SCALE: 3"=1'-0"



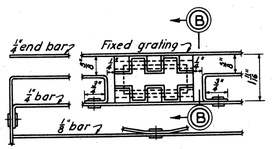
HANDRAILING

W.I. PIPE MARK 82/35-3 MAKE I



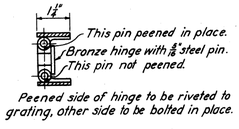
GRATING

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

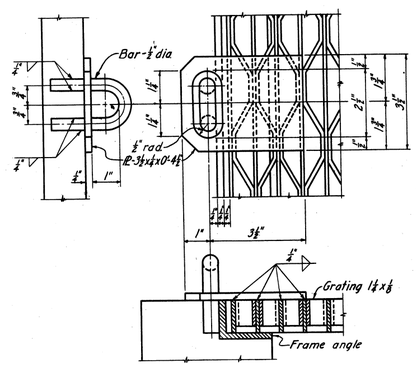


GRATING HINGE

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

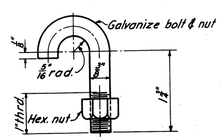


SECTION B-B



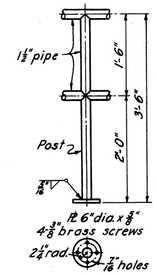
DETAIL A

SCALE: 6"=1'-0"

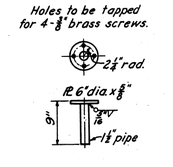


HOOK BOLT

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



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.

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO

GATE WELL - METAL DETAILS

IN 147 SHEETS SHEET NO. 143 SCALE: 1"=1'-0"

12" 9" 6" 3" 0 1' 2'

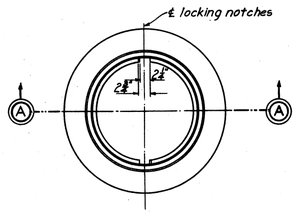
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. JAN. 1941

SUBMITTED: [signature] PRINCIPAL ENGINEER APPROVED: [signature] CAPT., CORPS OF ENGINEERS

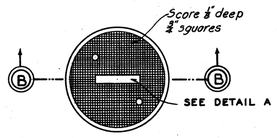
DRAWN BY A. J. S.
TRACED BY W. E. C.
CHECKED BY A. R. N.

TRANSMITTED WITH LETTER

FILE NO. 027i-PM-82/35 DATED



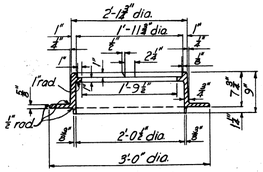
PLAN



PLAN



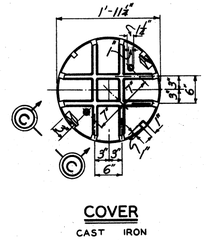
SECTION B-B



SECTION A-A

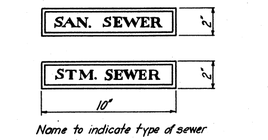
FRAME

CAST IRON
SCALE: 1"=1'-0"
NO. REQ'D. 10 - NEW
34 - RECLAIMED & SALVAGED



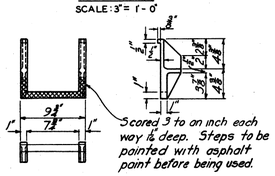
COVER

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



Name to indicate type of sewer

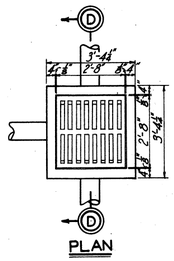
DETAIL A
SCALE: 3"=1'-0"



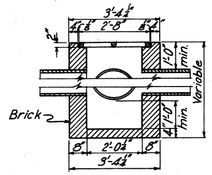
DETAIL CAST IRON STEP
SCALE: ½"=1'-0"
NO. REQ'D. - 590

WALL THICKNESS

MANHOLE DEPTH	THICKNESS
From 0 to 16 feet	8½ inches
From 16 to 22 feet	13 inches
Over 22 feet	18 inches

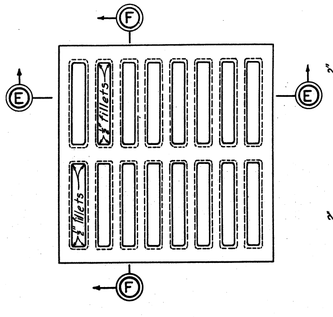


PLAN

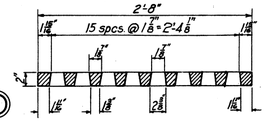


SECTION D-D

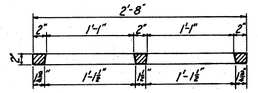
DETAILS OF TYPE A CATCH BASIN
SCALE: ½"=1'-0"



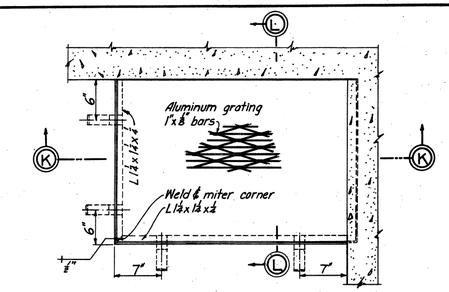
PLAN



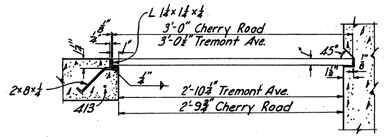
SECTION E-E



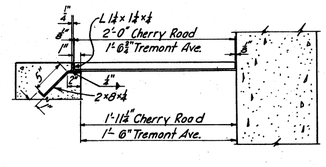
SECTION F-F



PLAN



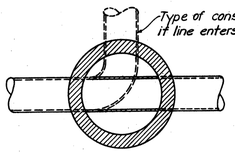
SECTION K-K



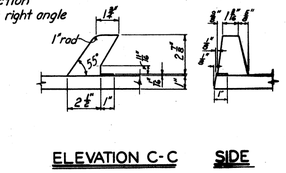
SECTION L-L

FLOOR GRATING FOR SIPHON CHAMBERS

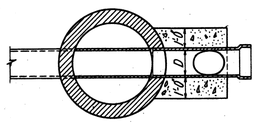
SCALE: 1½"=1'-0"
STRUCTURAL ALUM.
NO. REQ'D. 4



SECTIONAL PLAN



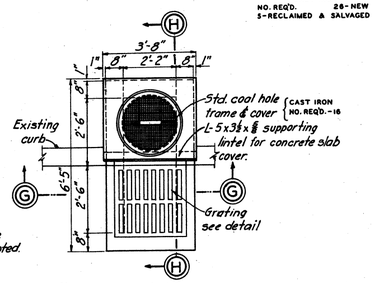
ELEVATION C-C SIDE



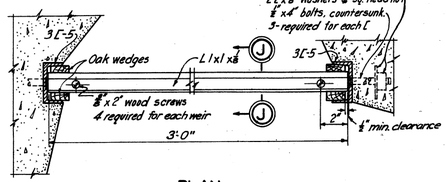
SECTIONAL PLAN

INLET GRATING

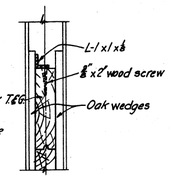
SCALE: 1½"=1'-0"
CAST IRON
NO. REQ'D. 28 - NEW
5 - RECLAIMED & SALVAGED



PLAN



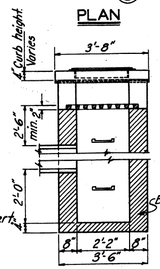
PLAN



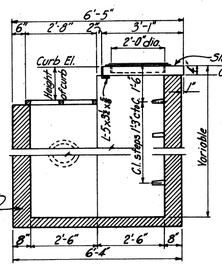
SECTION J-J

WEIR FOR SIPHONS

SCALE: 3"=1'-0"

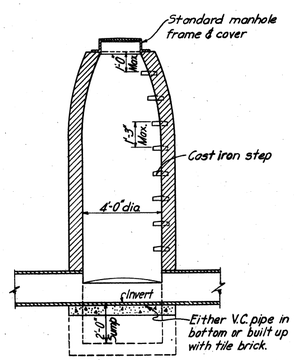


SECTION G-G

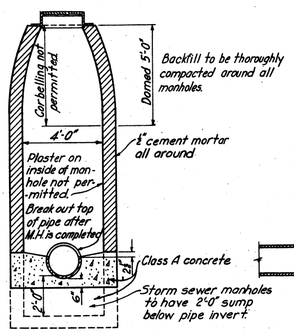


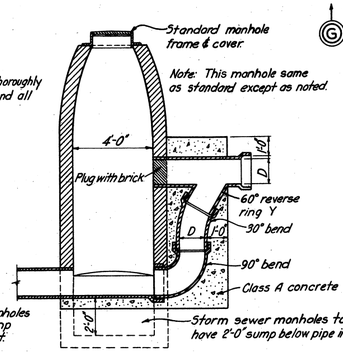
SECTION H-H

DETAILS OF TYPE B CATCH BASIN
SCALE: 1"=1'-0"



TYPICAL MANHOLE





DROP MANHOLE

STORM AND SANITARY SEWER MANHOLES
SCALE: ⅜"=1'-0"

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
MISCELLANEOUS SEWER DETAILS

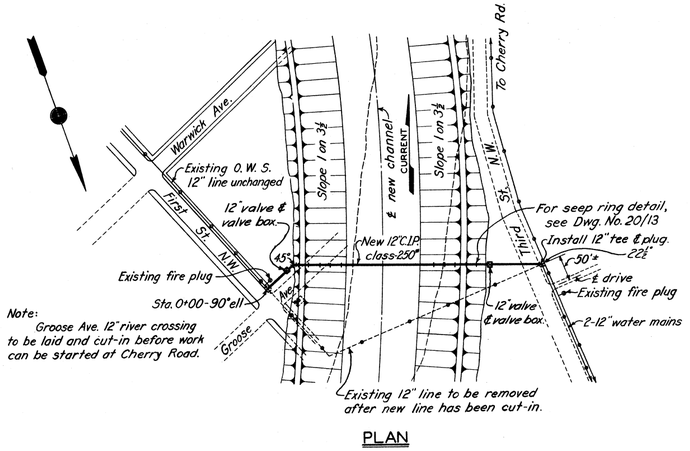
IN 47 SHEETS SHEET NO. 144 SCALE: AS SHOWN

BY	DATE	CHARACTER
		REVISIONS

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

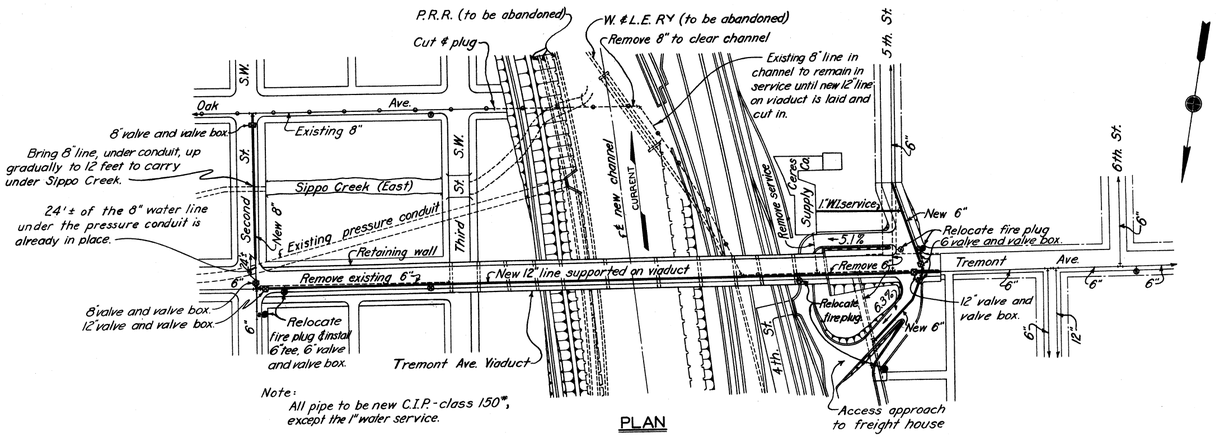
SUBMITTED: ..... APPROVED: .....
PRINCIPAL ENGINEER LT. COL., CORPS OF ENGINEERS

DRAWN BY R.L.C.
TRACED BY A.P.
CHECKED BY A.W.M.
FILE NO. 027-1-PM-82/36 DATED
TRANSMITTED WITH LETTER



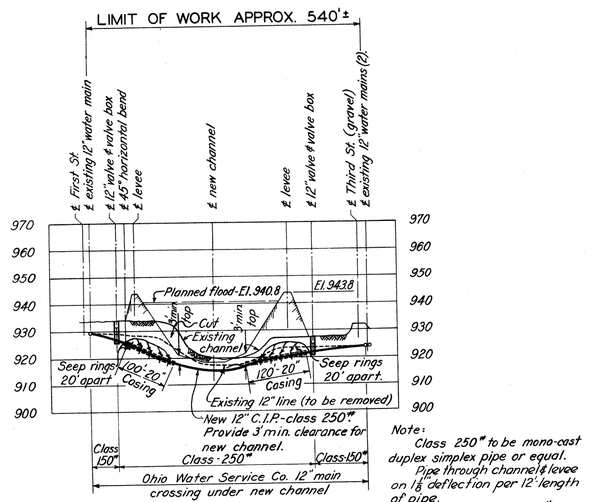
Note:
Groose Ave. 12" river crossing to be laid and cut-in before work can be started at Cherry Road.

PLAN



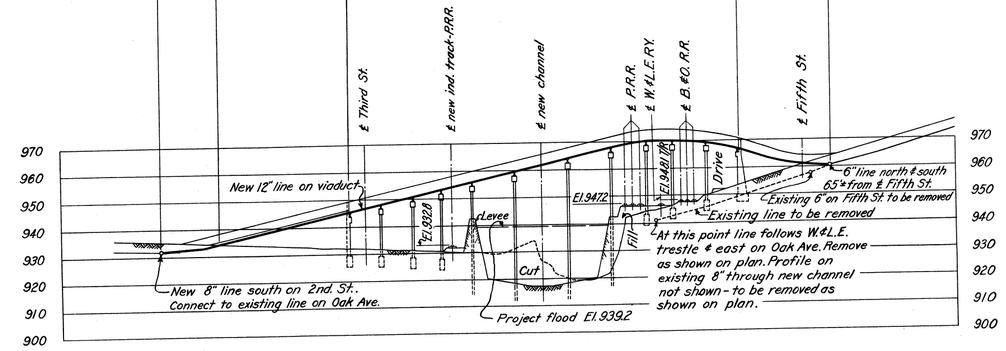
Note:
All pipe to be new C.I.P.-class 150", except the 1" water service.

PLAN

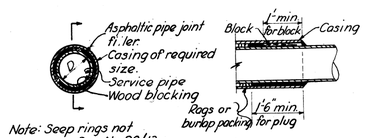


Note:
Class 250" to be mono-cast duplex simplex pipe or equal.
Pipe through channel & levee on 1⅛° deflection per 12' length of pipe.
Casing to be 20" steel @ 65.7# per ft.

PROFILE
THIRD ST. TO GROOSE AVE.



PROFILE
TREMONT AVE. VIADUCT & SECOND ST.



Note: Seep rings not shown see Dwg. No. 20/13

PLUG AT END OF CASING

NOTES

For utility location plans, see Dwgs. 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 Dwgs. Nos. 68/18 and 68/24.
For details of seep rings, see Dwg. No. 20/13

BY	DATE	CHARACTER

REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
OHIO WATER SERVICE CO. CHANGES
TREMONT AVE. - GROOSE AVE.

IN 47 SHEETS SHEET NO. 45 SCALE: HOR. 1"=100' VERT. 1"=20'

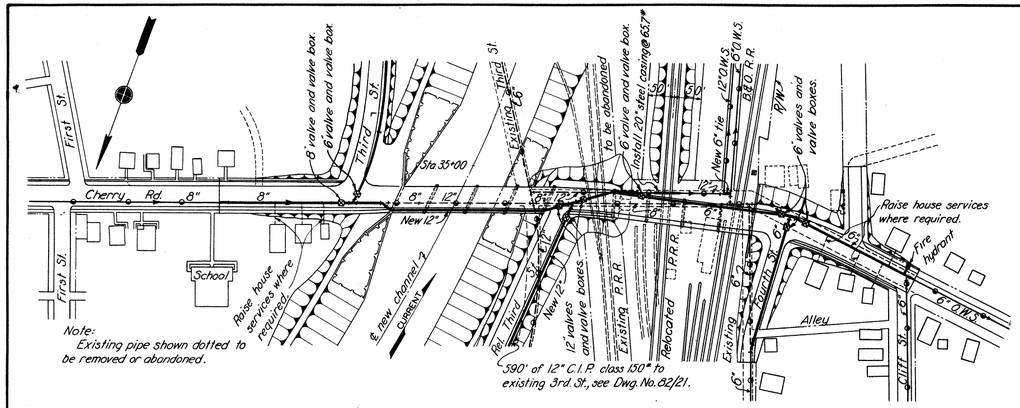
100' 50' 0 100' 200'

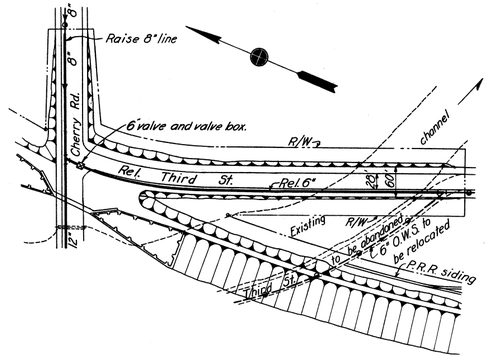
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA., SEPT. 1940

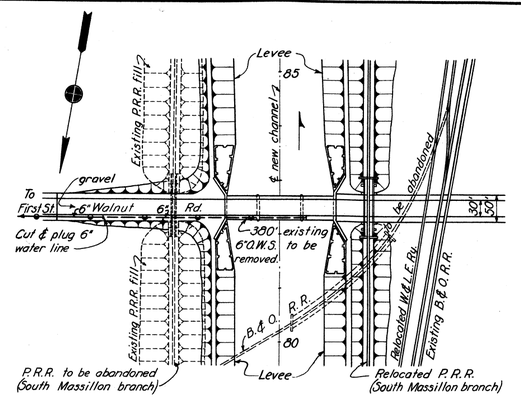
SUBMITTED: ..... PRINCIPAL ENGINEER APPROVED: ..... LT. COL., CORPS OF ENGINEERS

DRAWN BY R.L.E.
TRACED BY C.C.B.
CHECKED BY D.G.J.

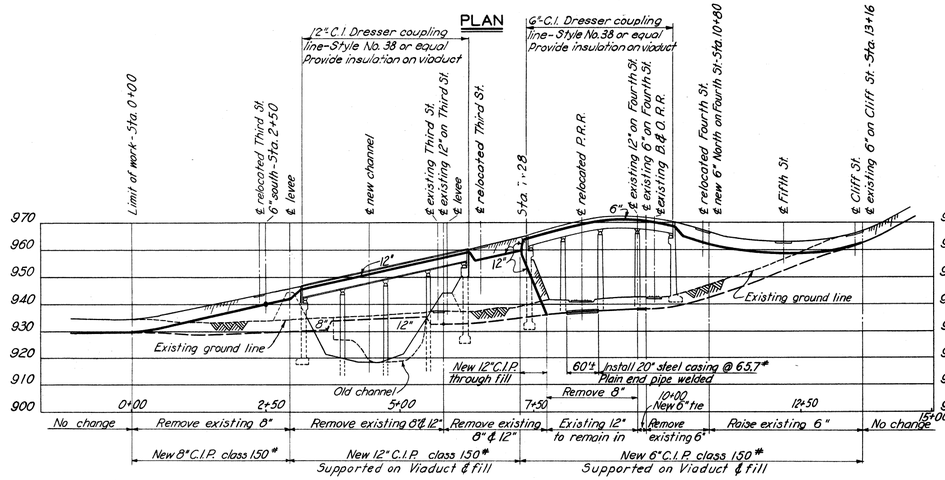
FILE NO. 027-PM-82/37 TRANSMITTED WITH LETTER DATED



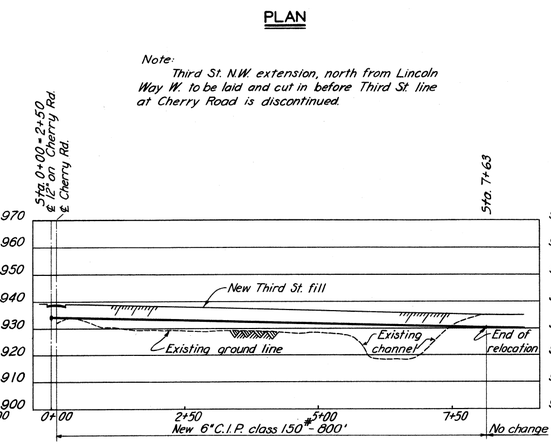




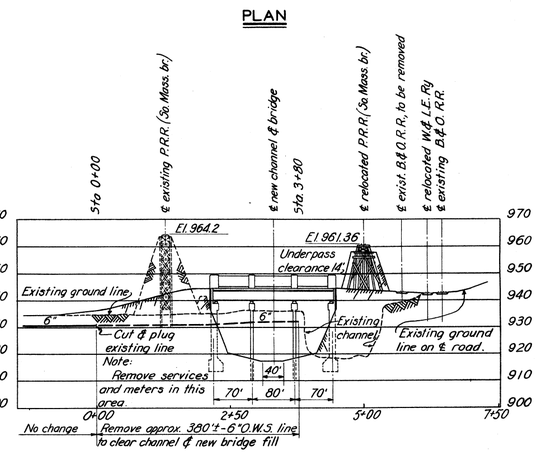
PLAN



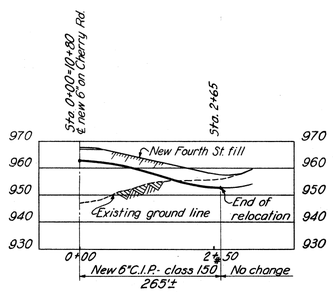
PROFILE
MAIN LINE CHANGES ON CHERRY RD.



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 Dwgs. Nos. 10/2 and 10/3.
For general utility plans, see Dwgs. 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.

BY	DATE	CHARACTER
		REVISIONS

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'
100' 50' 0 100' 200'

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

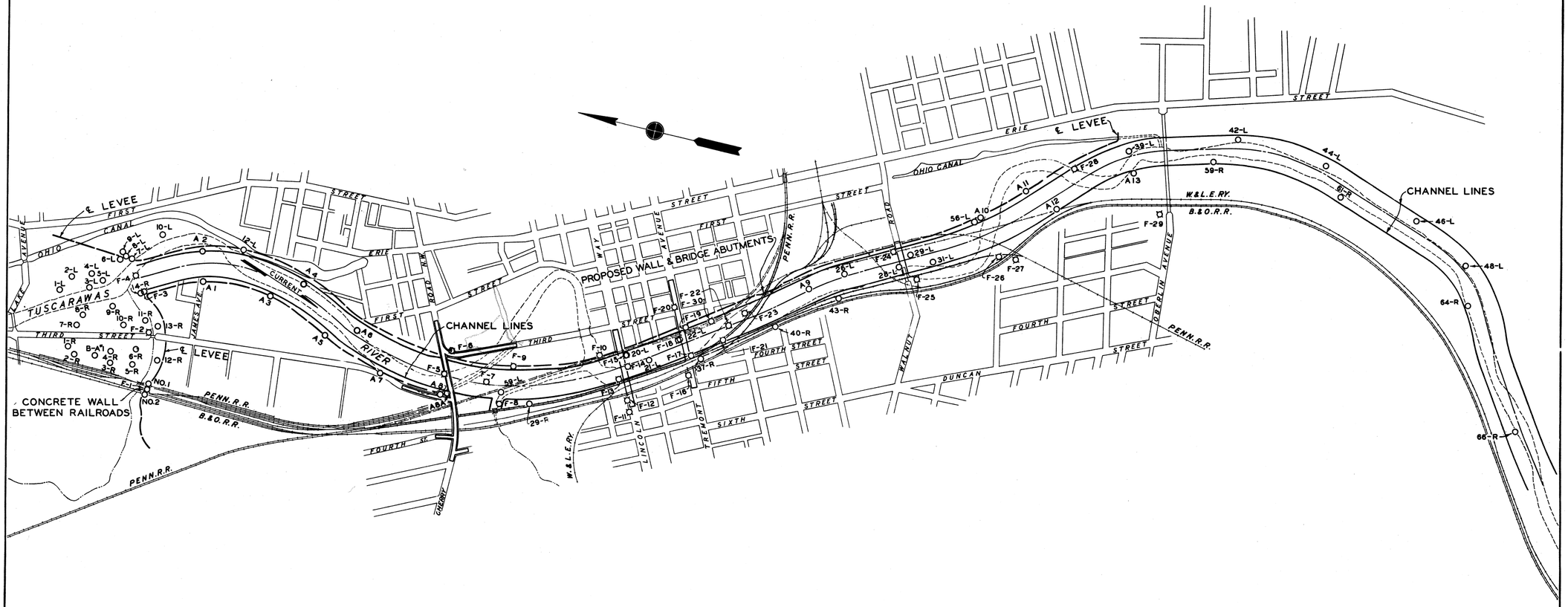
SUBMITTED: _____ PRINCIPAL ENGINEER APPROVED: _____ LT. COL., CORPS OF ENGINEERS

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

FILE NO. 027i-PM-82/38 TRANSMITTED WITH LETTER DATED

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY



LEGEND

DRILLED HOLES ⊡

AUGER HOLES ○

BY	DATE	CHARACTER
		REVISIONS

TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON, OHIO
PLAN OF FOUNDATION EXPLORATIONS

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

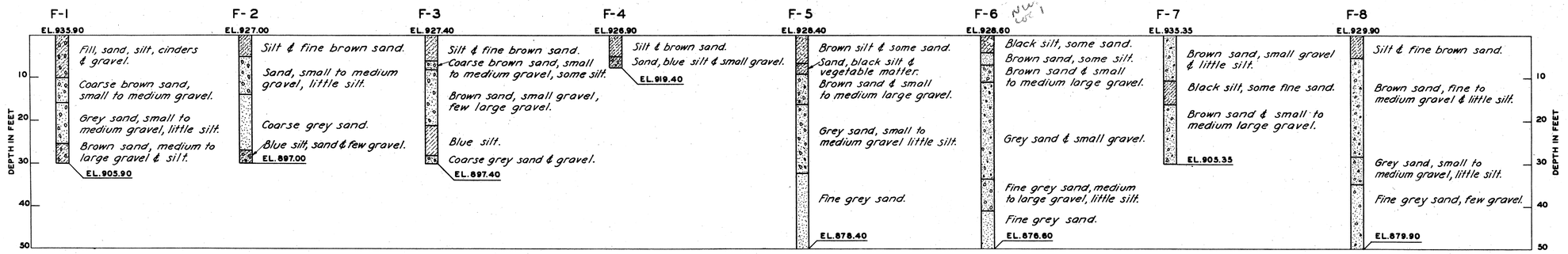
400' 0 400' 800'

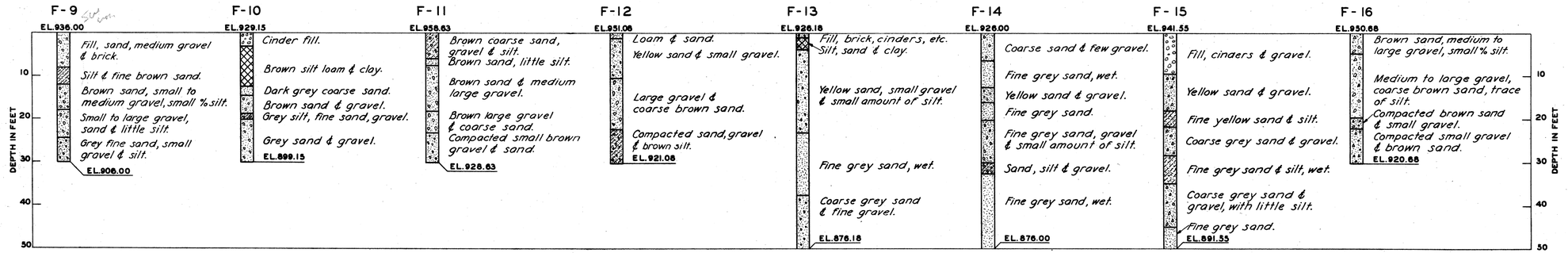
U. S. ENGINEER OFFICE HUNTINGTON, W. VA. SEPT. 1940

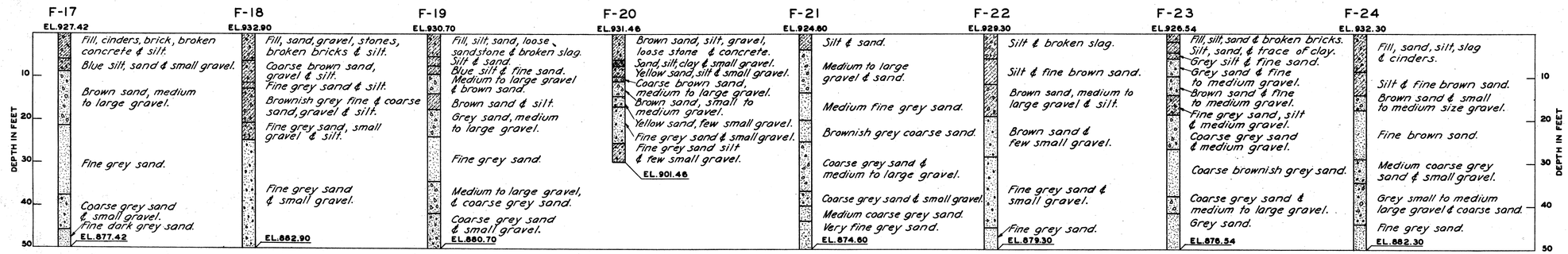
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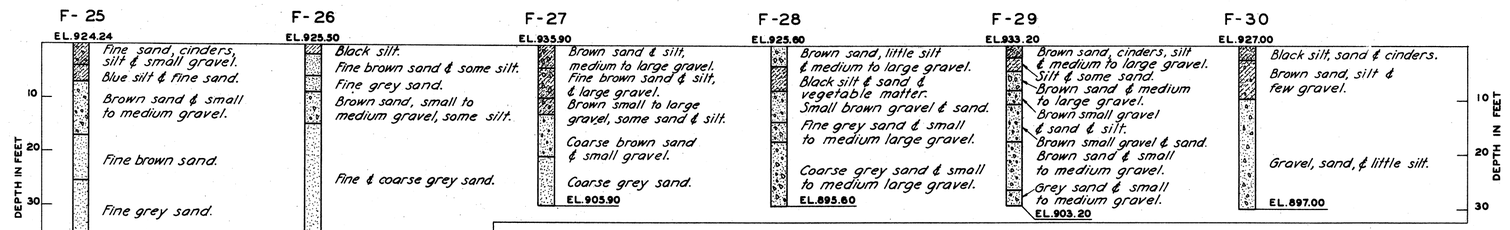
DRAWN BY W.B.S.
TRACED BY R.A.E.
CHECKED BY H.G.H. FILE NO. 027i-PM-10/2 DATED TRANSMITTED WITH LETTER

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"

10' 5' 0 10' 20'

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

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

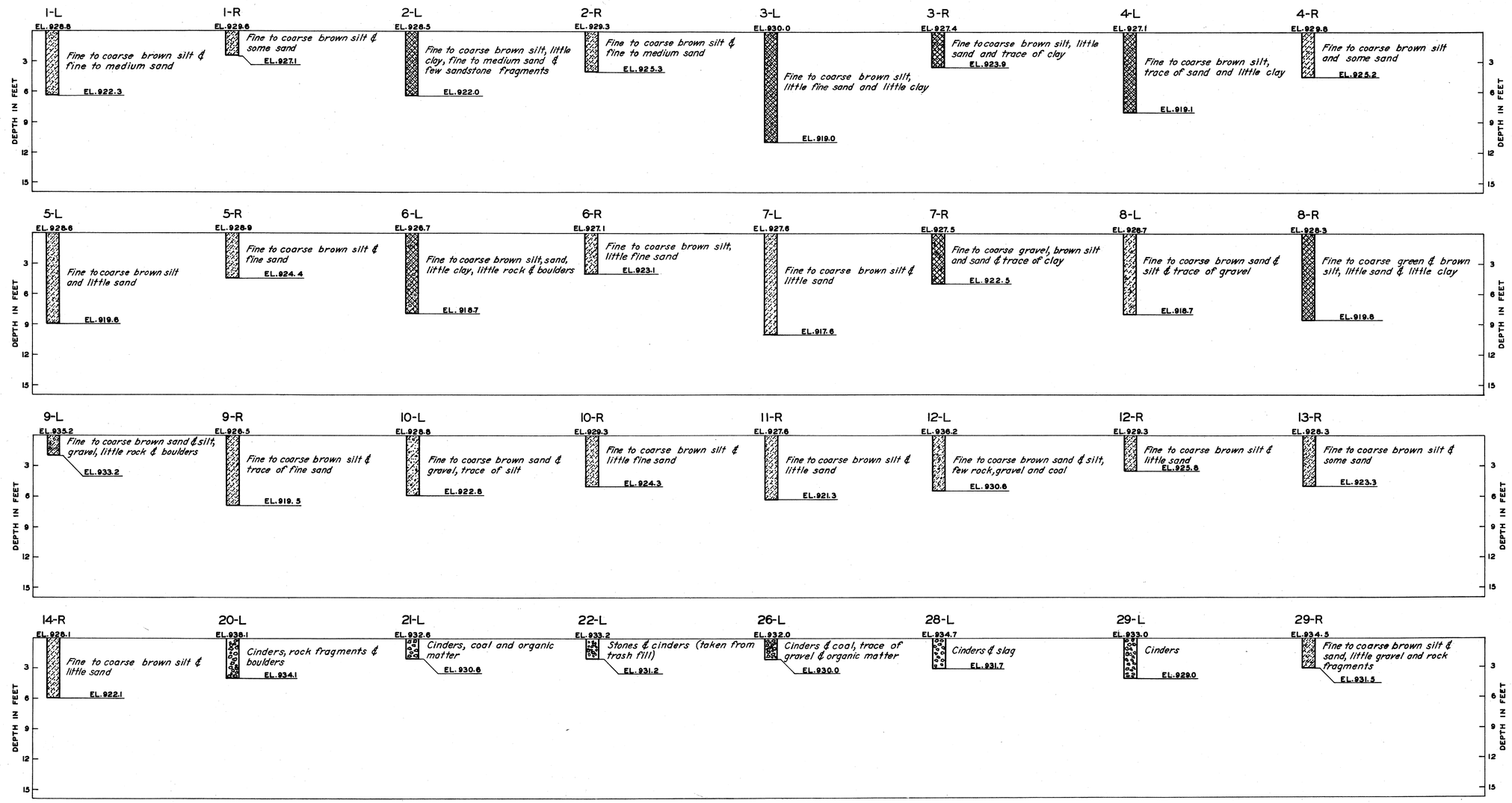
DRAWN BY W.B.S.
TRACED BY J.M.B.
CHECKED BY H.G.H.

FILE NO. 027i-PM-10/3 TRANSMITTED WITH LETTER DATED

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CORPS OF ENGINEERS. U. S. ARMY



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: ..... PRINCIPAL ENGINEER APPROVED: ..... CAPT., CORPS OF ENGINEERS

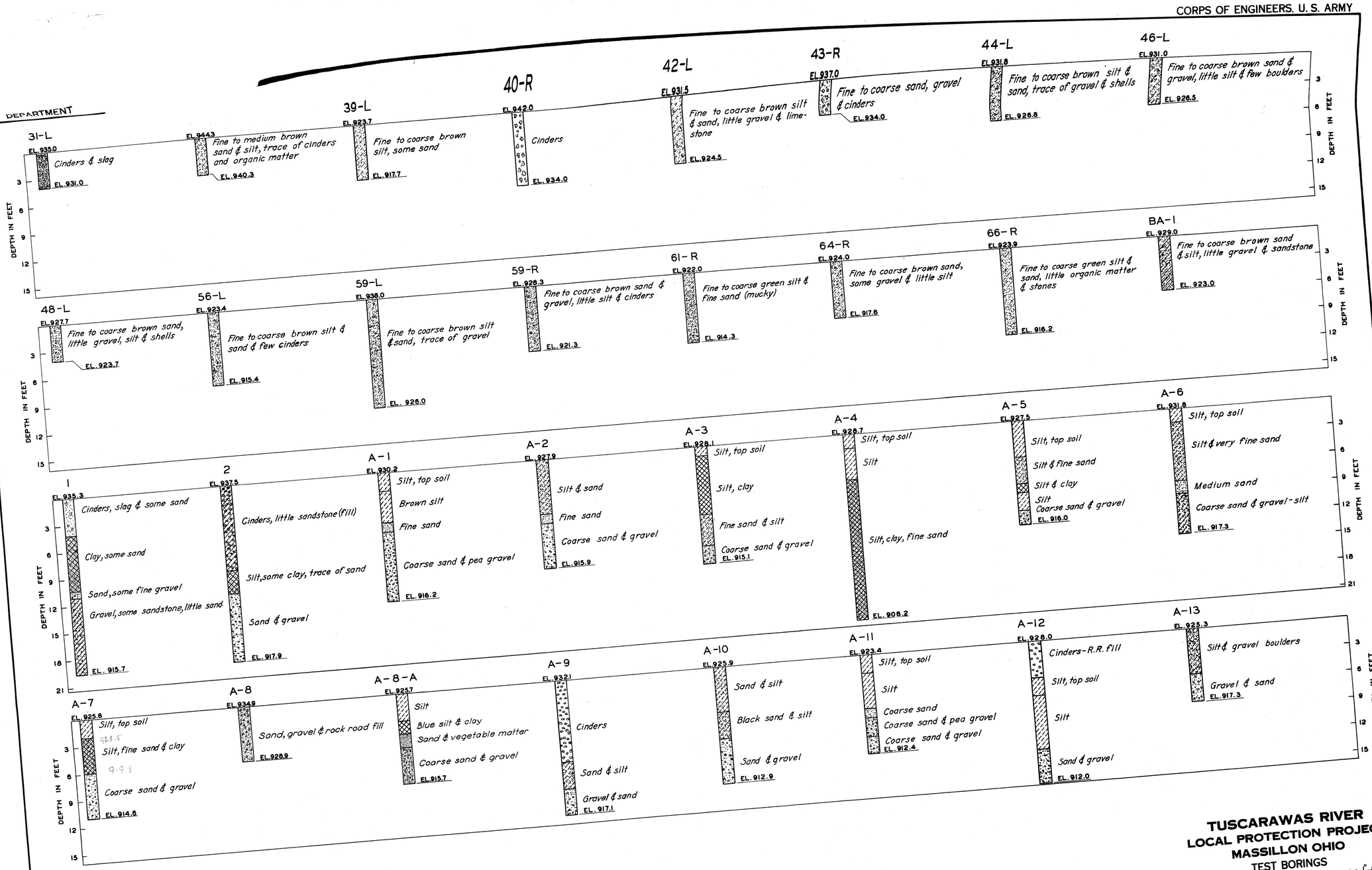
DRAWN BY T. F. D.
TRACED BY A. R. M.
CHECKED BY D. G. J.

FILE NO. 027i-PM-10/4

TRANSMITTED WITH LETTER DATED

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WAR DEPARTMENT



TUSCARAWAS RIVER
LOCAL PROTECTION PROJECT
MASSILLON OHIO
TEST BORINGS

18 147 SHEETS | SHEET NO. | SCALE: 1" = 1'-0"

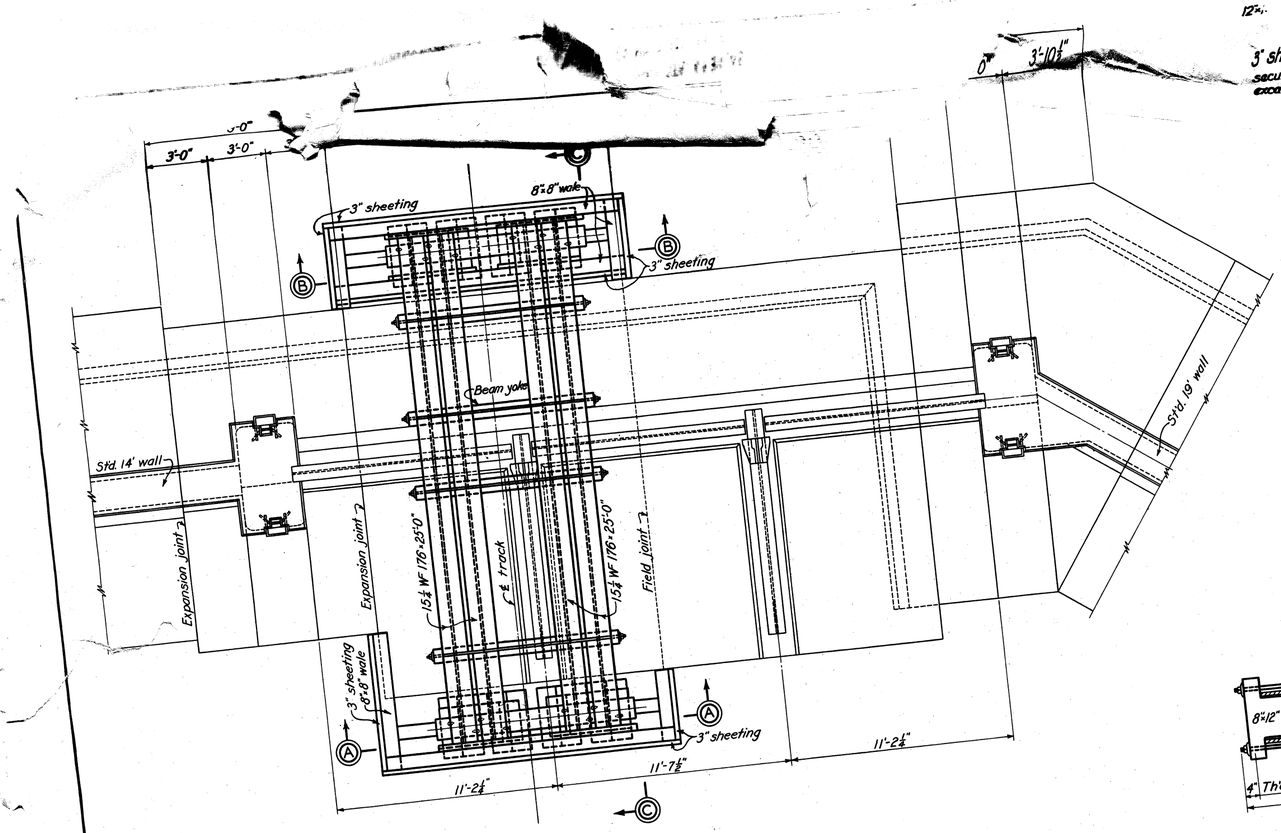
U. S. ENGINEER OFFICE. HUNTINGTON, W. VA. JAN. 1941

SUBMITTED: _____ DIVISION ENGINEER | APPROVED: _____ CAPT., CORPS OF ENGINEERS

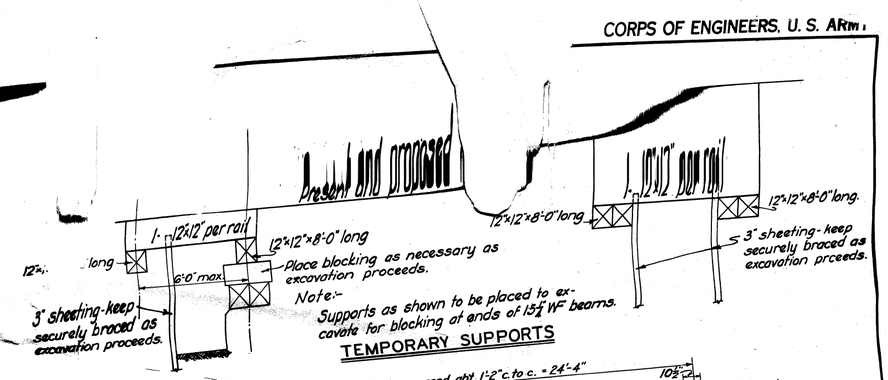
DRAWN BY T.R.D. | TRACED BY A.R.M. & G.H.H. | CHECKED BY D.G.J. | FILE NO. 027i-PM-10/5 | DATED | TRANSMITTED WITH LETTER

SUBMITTED FOR INFORMATION PURPOSES ONLY

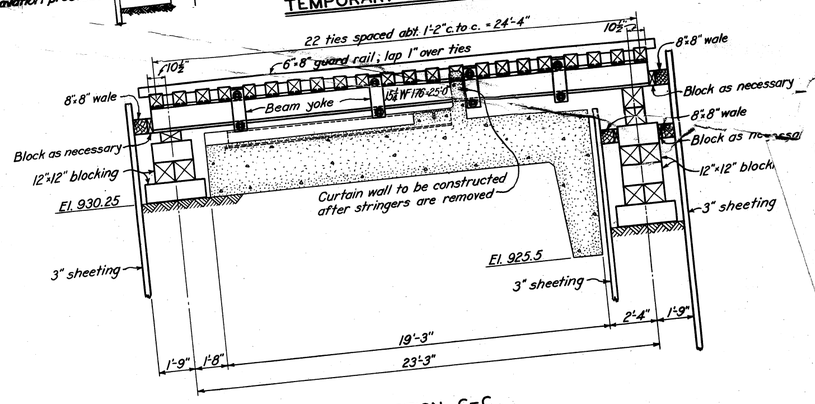
CORPS OF ENGINEERS, U. S. ARMY



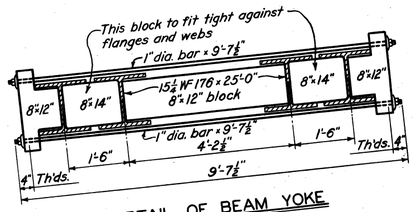
PLAN
(TIES REMOVED)



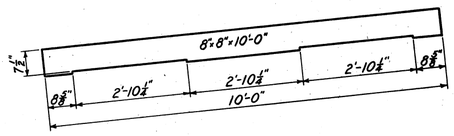
TEMPORARY SUPPORTS



SECTION C-C



DETAIL OF BEAM YOKE
4 REQUIRED
SCALE: ¾"=1'-0"



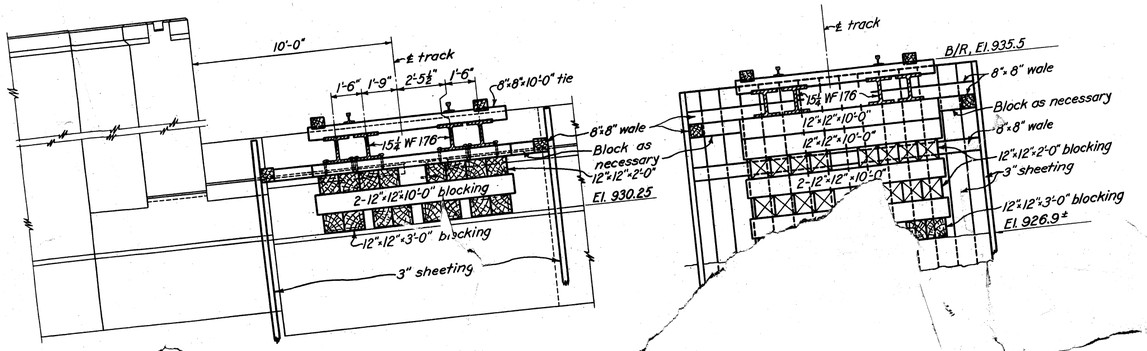
DETAIL OF TIE
22 REQUIRED
SCALE: ¾"=1'-0"

NOTES

Securely spike stringers to cap with track spikes and blocking to blocking with ¾" drift bolts. Guard rail to be spiked to every other tie with 1"x6" 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.



SECTION A-A

TUSCARAW
LOCAL PROTE
MASS
PENN
T

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

SHEETS 12

U.S. ENGINEER OFFIC

SUBMITTED: [signature]
PRINCIPAL ENGINEER

DRAWN BY S. B.
TRACED BY C. C. B.
CHECKED BY A. R. H. FILE No. 0271-F..

BY	DA	CHARACTER OF REVISIONS

SUBMITTED FOR INFORMATIO