

# LINE DATA.

F.A.P. 206(3) Begin Project Sta. 772+16.86 End Project Sta. 808+90  
Gross Length of Project = 3623.14 Lin. Ft.  
Deduction- Back Sta. 796+92.80 = Ahead Sta. 796+99.17 = 0.37 Lin. Ft.  
Net Length of Project = 3622.77 Lin. Ft. = 0.686 Miles.

F.A.P. 228(2) Begin Project Sta. 808+90 End Project Sta. 908+00  
Gross Length of Project = 9960.00 Lin. Ft.  
Deductions- Back Sta. 859+32.61 = Ahead Sta. 859+43.70 = 11.25 Lin. Ft.  
Net Length of Project = 9948.75 Lin. Ft. = 1.884 Miles.  
Total Net Length of Proj. (F.A.P. 206(3) & F.A.P. 228(2)) = 13571.52 Lin. Ft. = 2.570 Miles.

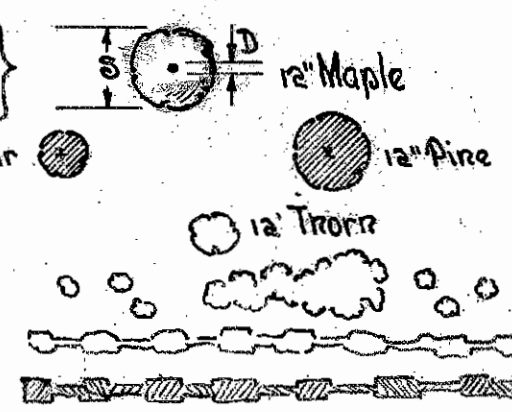
## CONVENTIONAL SIGNS

### HIGHWAY ENGINEERING FEATURES

County Line	
Township Line	
Center Line	
Property Line	
Fence Line	
Poles (Telephone & Electric)	
Guard Rail	
Storm Sewer & Inlet (New)	
Storm Sewer (Existing)	

### HIGHWAY LANDSCAPE FEATURES

EXISTING PLANT GROWTH (foliage indication at relative scale) Common English Name  
Wood, Forest or Grove  
Deciduous Tree (shade type)  
D = inch diameter at breast height (4 1/2 ft.)  
S = spread in feet, or 1/2 x inch diameter ±  
Evergreen Tree (screen type)  
Flowering Tree (small tree or shrub type)  
H = height in feet  
Shrub Mass (single or grouped)  
Hedge Row  
Clipped Hedge



## STATE OF OHIO DEPARTMENT OF HIGHWAYS

# CHAGRIN FALLS - GREENVILLE ROAD

S.H. NO. 35 SEC. W (PART)

# WARREN - BURTON ROAD

S.H. NO. 325 SEC. F (PART)

## GEAUGA COUNTY TROY AND PARKMAN TOWNSHIPS.

FED. AID DIST.	STATE	F.A.D. NO.	FISCAL YEAR
10	OHIO	228 (2)	1938

S.H. No. 35 Section W (Part)  
S.H. No. 325 Section F (Part)  
Geauga County.

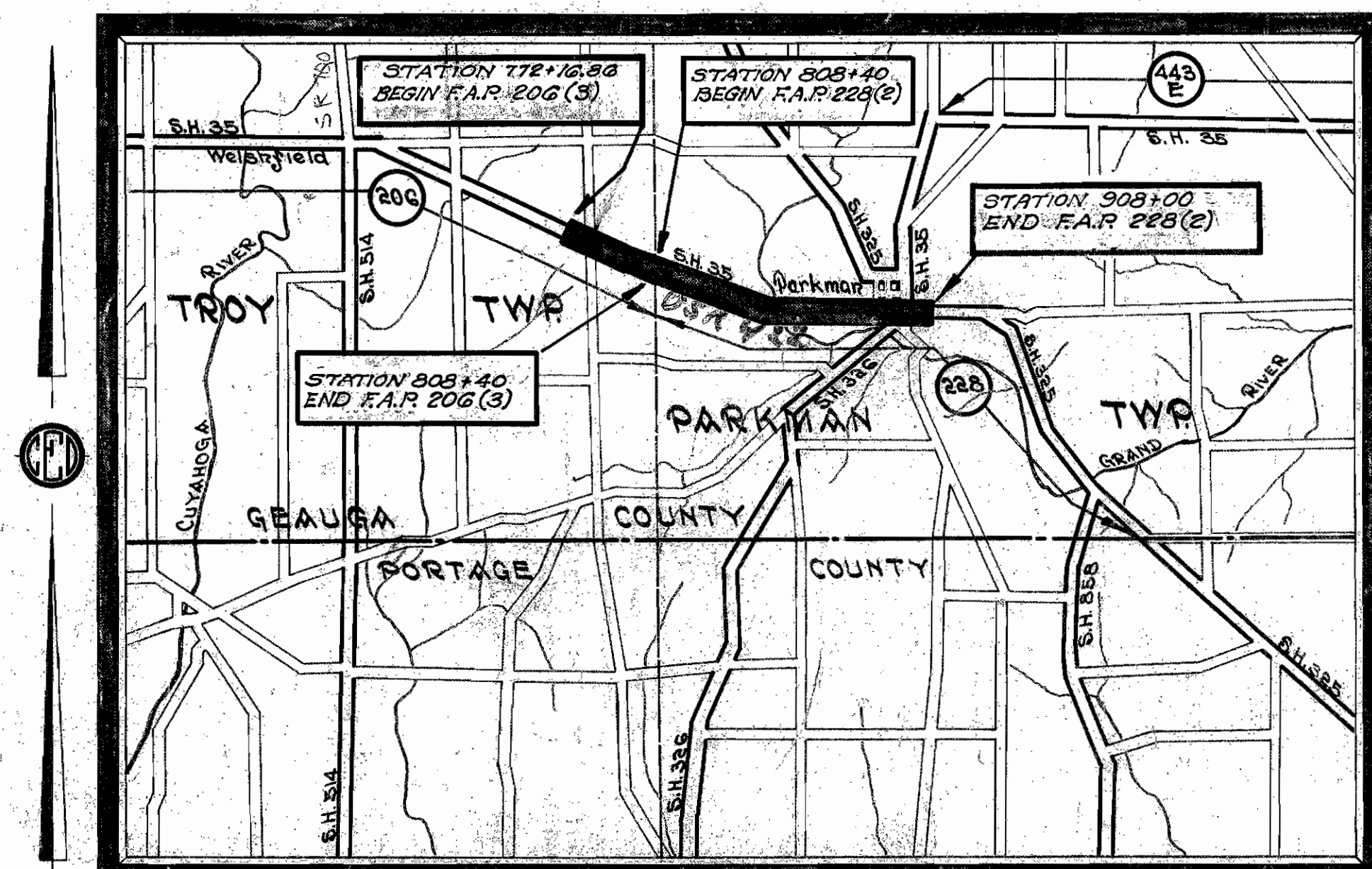
65A USR 922

14.5 ± - 18 ±

The Standard Specification of the State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare the making of this improvement will not require the closing of present highways, but that traffic will be maintained through the project in a manner set forth in these plans. Local access to properties abutting the improvement shall be provided for and maintained by the contractor at all times. See traffic note on sheet No. 3.

The right of way necessary for this improvement will be provided by the State of Ohio.



CONSTRUCTION BUREAU  
APR 12 1937  
GROUND PHOTOLAB

## LOCATION PLAN

SCALE OF MILES

PORTION TO BE IMPROVED  
STATE HIGHWAYS  
OTHER HIGHWAYS  
DELIVERY POINT (8 MILE HAUL) GARRETTSVILLE, O.

## SCALES

PLAN  
PROFILE - HORIZONTAL  
PROFILE - VERTICAL  
CROSS-SECTIONS

1" = 50'  
1" = 50'  
1" = 5'  
1" = 5'

## SHEET INDEX

Title Page	Sheet No.
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SUPPLEMENTAL SPECIFICATIONS  
S-122 78  
B-172 (Rev. 4-14-38) 102  
E-208 11-10-11 (Rev. 9-16-36)  
I-313 7-7 Rev. (9-12-38)  
37 (Rev. 2-24-38) No. 82 (Rev. 2-1-38)  
43 (Rev. 7-20-37)  
T-110 (Rev. 8-3-36)

000022

FILE	GEAUGA 35 W(4) & 325 F(4)
DATE OF LETTING	
CONTRACT NUMBER	

NUMBER	DATE
I-81 No. 1	1-1-36
G-707	10-1933
B-T-50-70-TIEN	10-1933
B-T-70-71-E No. 1	10-1933
B-T-71-E No. 1	10-1933
B-T-71-E No. 1	10-1933
B-T-71-E No. 1	10-1933
S-27 P.C. 1	4-1-36
S-27 P.C. 2	4-20-36
S-27 P.C. 3	1-1-36
I-123.4 & 5	1-1-36
I-80.8/222-2	11-12-35
I-80.8 No. 6	11-12-35
I-80.8 No. 7	6-10-36
I-80.8 No. 9-A	7-1-38
I-80.8 No. 10-A	3-1-38
I-81 No. 5	1-1-36
I-8 M.H. No. 1	2-20-36
I-8 M.H. No. 2	2-20-36
I-12	2-15-36
L-1	2-16-38
A-5 35	3-6-35
SBC 34	4-21-34
E-5 No. 2	8-1-38
E-5 No. 1	8-1-38

Approved \_\_\_\_\_  
Date \_\_\_\_\_ Resident District Deputy Director

Approved Louis E. Drasler P.E. #1568  
Date 5/6/38 Resident Division Deputy Director

Approved \_\_\_\_\_  
Date \_\_\_\_\_ Chief Engineer, Bureau of Maintenance

Approved J. J. Bunker P.E. #45  
Date 11-22-36 Chief Engineer, Bureau of Bridges

Approved V. L. Nottingham P.E. #83  
Date 11/24/35 Chief Engineer, Bureau of Location & Design

Approved Arthur E. Harvey  
Date 1/21/37 First Asst. Director & Chief Engineer

Approved C. H. Cull  
Date \_\_\_\_\_ Director of Highways

Recommended for Approval \_\_\_\_\_  
Date \_\_\_\_\_ District Engineer, Bureau of Public Roads.

Recommended for Approval \_\_\_\_\_  
Date \_\_\_\_\_ Chief Engineer, Bureau of Public Roads.

Approved \_\_\_\_\_  
Date \_\_\_\_\_ Chief of Bureau.



1 mi W. of Parkman

3x12 Spar, 24 Roadway, cross-tied timber superstructure on steel stringers, steel traffic plates over bridge floor. Substructure is stone and concrete abutments on solid rock at an elevation of 1068.5. Bridge in good condition and to remain in place. H-15 Loading

is concrete pavement to remain in place and used for the east bound traffic. At some future date to be removed and another lane built similar to the one being constructed at this time. To be constructed 7'-6" south of the proposed part.

22'-0" reinforced concrete pavement on a 1° curve  
and super-elevated 0.46 foot for width of pavement.  
To have 4" monolithic concrete curbs Type 3-a  
on both sides, 8'-0" berm on north side  
and 4'-0" berm on south side.

Test Hole No.	Station <i>on curve</i>	Offset North	Ground Elev.	Rock Elev.
1	854 + 87	75	1072.1	1068.7
2	854 + 98	55	1071.5	1069.1
3	855 + 03	27	1071.0	1068.5
4	855 + 11	25	1070.5	1069.0
5	855 + 29	6	1077.0	1074.±
6	855 + 44	28	—	1072.5
7	855 + 46.5	28	1075.2	1073.5
8	855 + 48.5	28	—	1076.6
9	855 + 41	41	—	1069.7
10	855 + 44	41	—	1074.9
11	855 + 39	55	—	1071.4
12	855 + 41	55	—	1073.3
13	855 + 42	55	1077.0	1075.8
14	855 + 44	55	—	1076.1
15	855 + 52	72	1066.8	1077.8
16	855 + 40	60	1074.2	1070.9
17	855 + 45	60	1078.7	1075.9
18	855 + 90	60	1083.8	1077.8
19	855 + 40	70	1075.9	1078.9
20	855 + 97	70	1088.8	—
21	855 + 43	80	1082.2	1077.2
22	855 + 53	80	1089.0	—
23	855 + 56	80	1090.8	—
24	855 + 65	80	1092.4	—

*This test hole data represents the  
subsoil information obtained but  
the State of Ohio does not guarantee  
the correctness thereof.*

Type: Rein. Concrete Rigid Frame  
Span: 40' clear  
Roadway: 26'  
Loading: H-20-33  
Skew: 10° R.F.  
Wear. Surf: 1" Monolithic concrete  
Appr. Slabs: 25' x 22' with 3-A curb  
Alignment: 1° curve left  
Superelevation: 0.021%

Type: Rein. Concrete Rigid Frame  
Span: 40' clear  
Roadway: 26'  
Loading: H-20-33  
Skew: 10° R.F.  
Wear. Surf: 1" Monolithic concrete  
Appr. Slabs: 25' x 22' with 3-A curb  
Alignment: 1° curve left  
Superelevation: 0.021%

# SITE PLAN

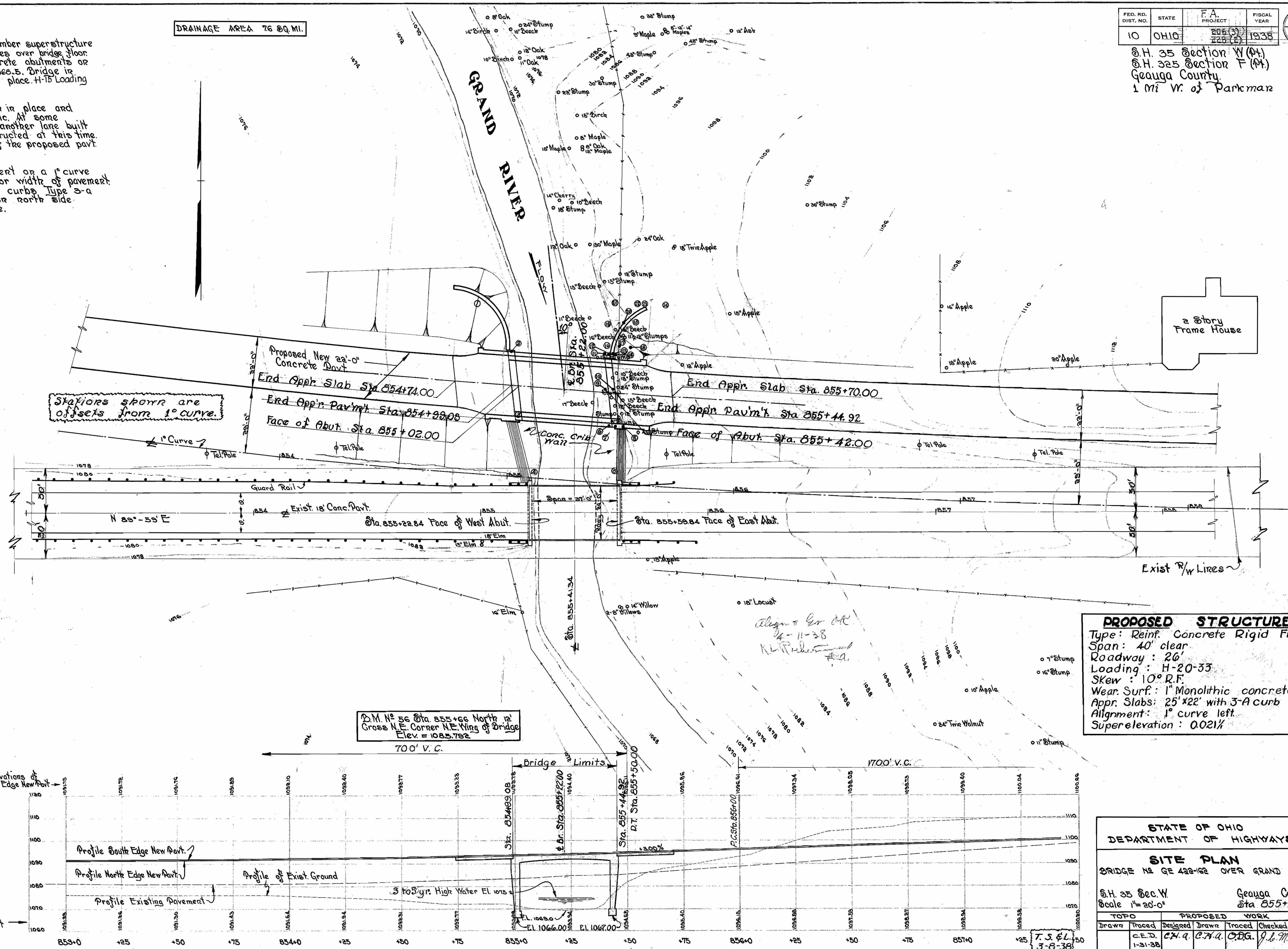
## BRIDGE NO GE 422-162 OVER GRAND RIVER

D.H. 35 Dec. W.  
 Scale 1"=20'-0"

Geauga County  
 Sta 855+22

TOPO		PROPOSED WORK				
Drawn	Traced	Designed	Drawn	Traced	Checked	Reviewed
	C.E.D. 1-31-38	C.H.A.	C.H.A.	C.D.G.	J.L.M.	W.S.H. M.H.C. 10/4/38

Rev. O.S.H.D. 10/31/38





GEAUGA COUNTY  
S.H. N° 35- SEC. W (PT.)  
S.H. N° 325- SEC. F (PT.)

### GENERAL NOTES

**FLOODING** of backfill not permitted back of abutments and wingwalls.

**CONCRETE CLASSIFICATION:** Class "A" concrete, 1:5½ mix, includes all concrete in frame and wings above footings. Class "B" concrete includes all concrete in footings.

**TYPE "A" WATERPROOFING** shall be placed on entire rear surface of breast walls from three (3) feet below approach slab seat to top of footing, on inside face of butterfly wings from 1'-0" below top of curb to bottom of wing and on entire rear surface of north wingwalls from 6 inches below finished ground line to top of footing.

**EXCAVATION** below top of footings shall be made to neat lines of footings and entire excavation below top of footings shall be filled with concrete.

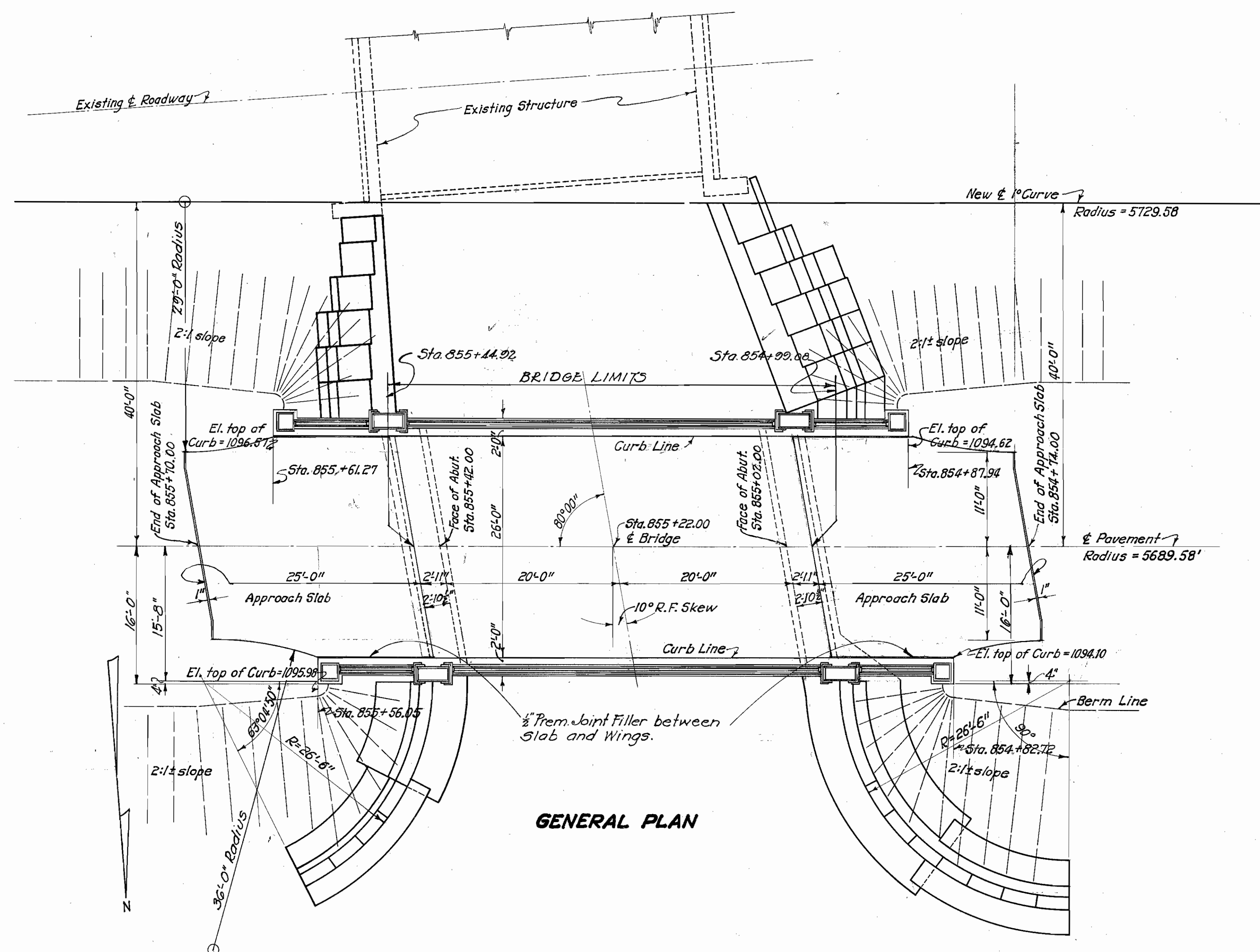
**VIBRATION:** All concrete shall be mechanically vibrated.

**CRIB WALL:** Precast Reinforced Concrete Crib Wall, with closed face, shall be constructed in conformance with Supplemental Specification No. 82, (Revised Feb. 1, 1938) "Precast Reinforced Concrete Crib Wall." Cement grout (1:3 mix) shall be used under sills to obtain a uniform bearing for the crib walls on the rock foundation.  
Backfill within crib wall and extending not less than 2'-0" back of wall shall conform to Item "E-2.08, Porous Backfill."

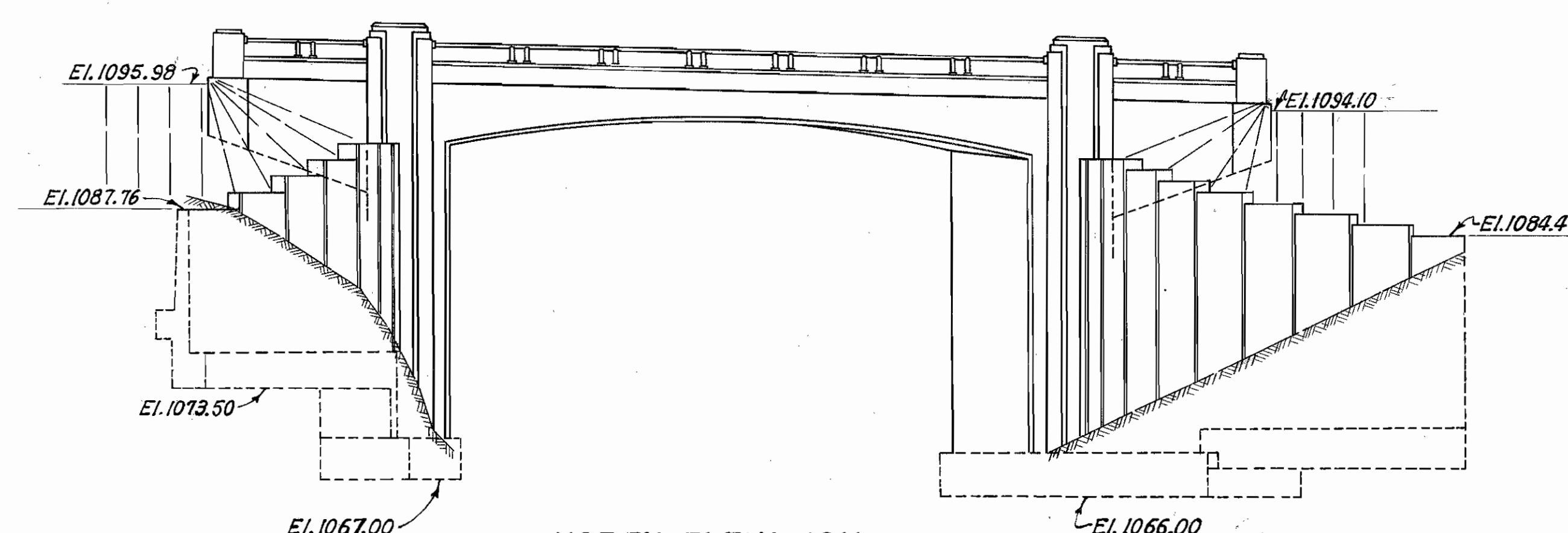
### ESTIMATED QUANTITIES

E-2	Cofferdam and Pumping	Lump Sum
E-2	Earth Excavation, unclassified	220 Cu. Yd.
E-2	Rock Excavation	140 Cu. Yd.
E-2	Porous Backfill	Lump Sum
S-1	1:5½ Concrete (Class "A")	440 Cu. Yd.
S-1	1:6½ Concrete (Class "B")	88 Cu. Yd.
S-3	Type "A" Waterproofing	270 Sq. Yd.
S-3	Type "B" Waterproofing	28 Sq. Yd.
S-4	Reinforcing Steel	60,440 Lbs.
S-9	Folded Copper Strip (12" @ 24 oz.)	41 Lin. Ft.
S-9	¾" Premolded Expansion Joint Filler	230 Sq. Ft.
S-14	Bridge Railing (Steel Pipe and Concrete)	145.33 Lin. Ft.
S-5-82	Precast Reinforced Concrete Crib Wall, with Closed Face, Face Area	700 Sq. Ft.
I-2	15"-14 Gage Corrugated Metal Pipe	12 Lin. Ft.

I-2



GENERAL PLAN



NORTH ELEVATION

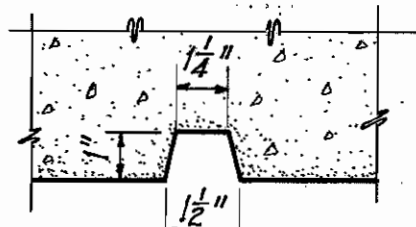
STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES					
<b>GENERAL PLAN &amp; ELEVATION NOTES &amp; ESTIMATED QUANTITIES</b>					
BRIDGE N° GE-422-162 OVER GRAND RIVER					
GEAUGA COUNTY SEC. "W"					
S.H. N° 35 Sta. 855+22.00					
DESIGNED W.B.R.	DRAWN W.B.R.	TRACED J.E.	CHECKED G.P.	REVIEWED W.S.H.	DATE 9/23/38
				REVISOR W.H.C.	DATE 10/4/38



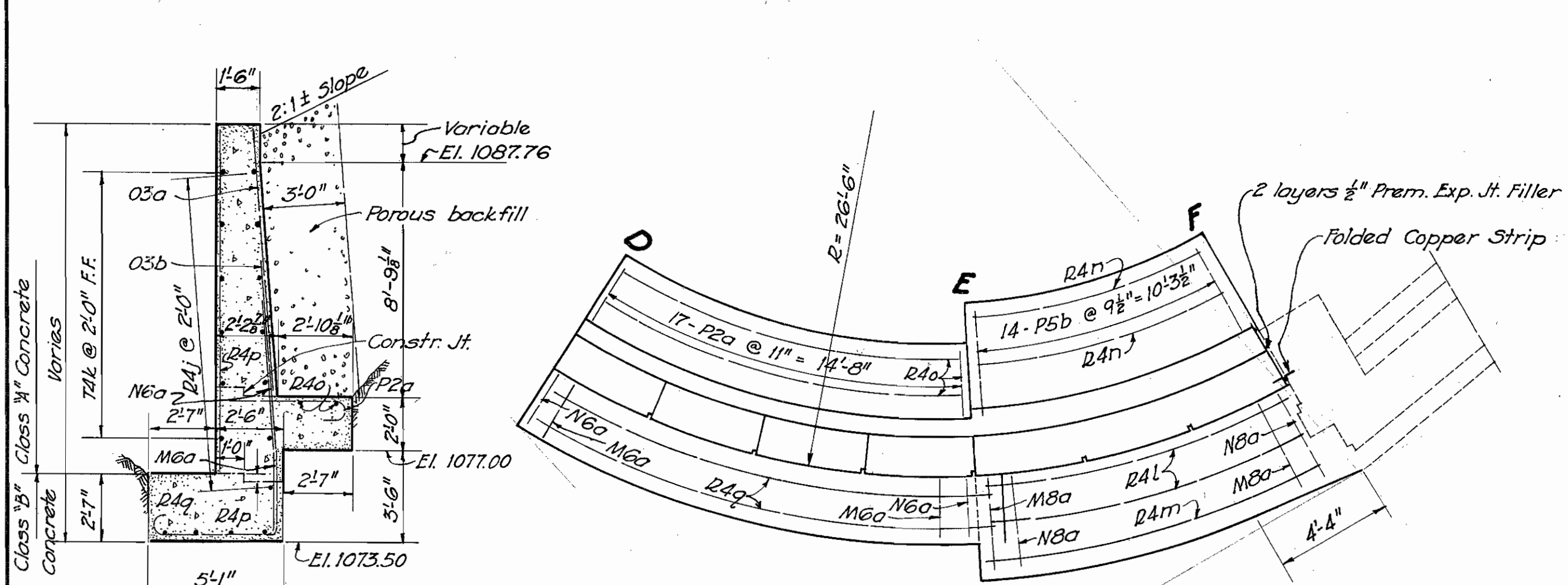




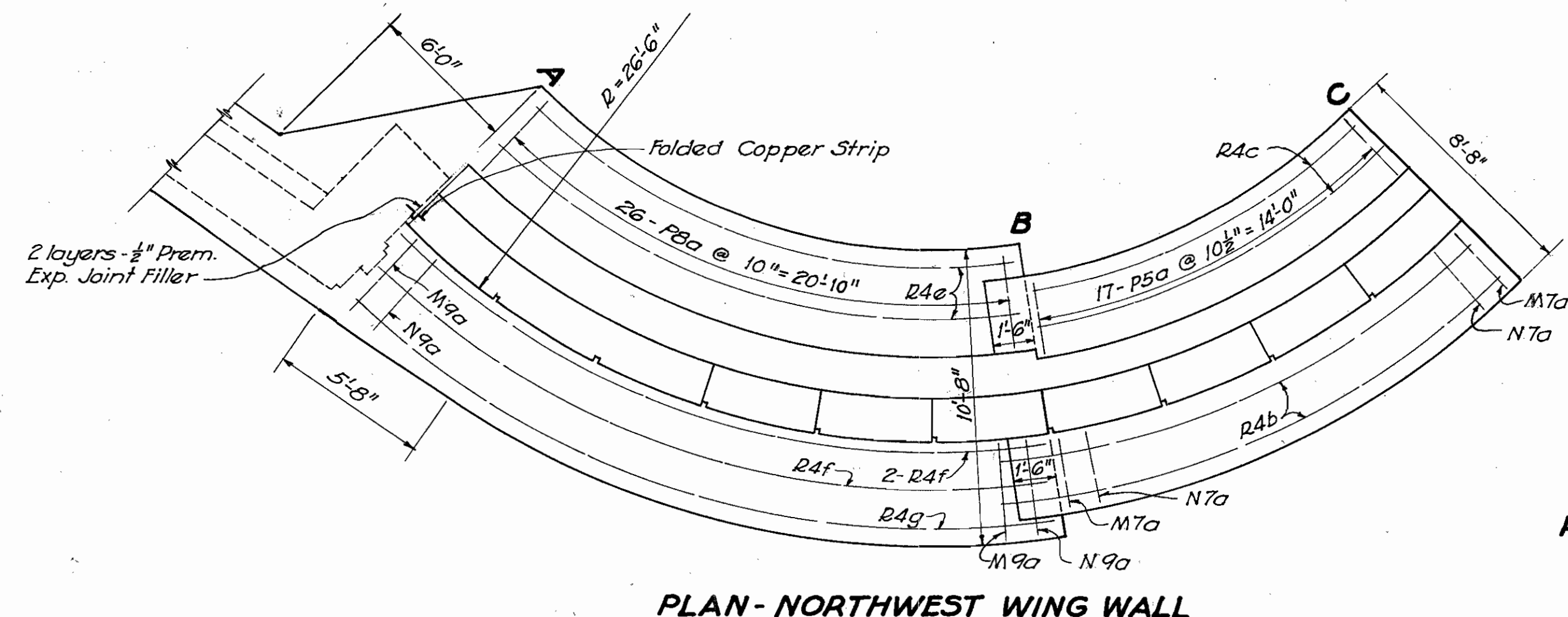
GEAUGA COUNTY  
S. H. 35 SEC. W (PT.)  
S. H. 325 SEC. F (PT.)



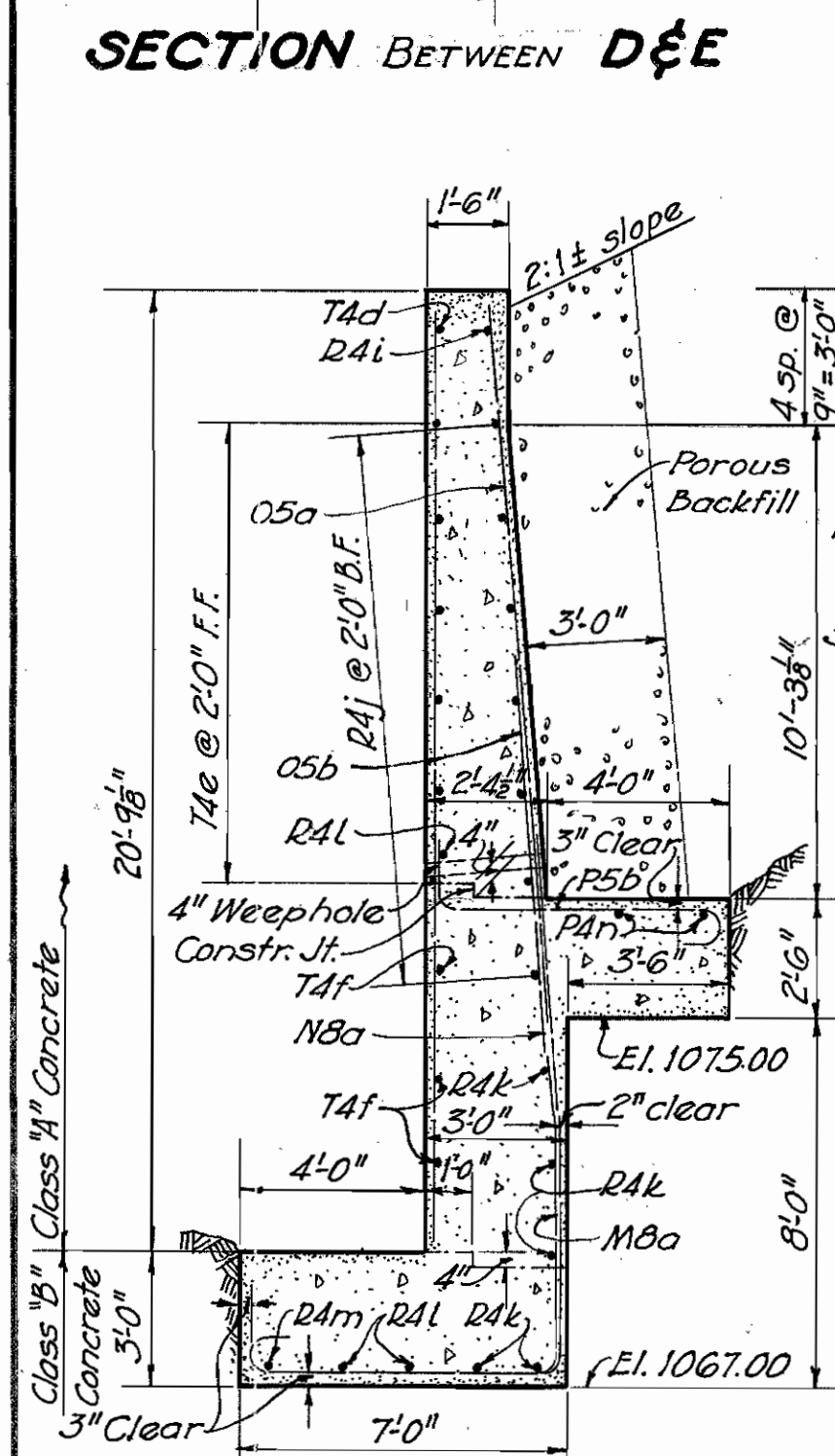
RUSTICATION DETAIL



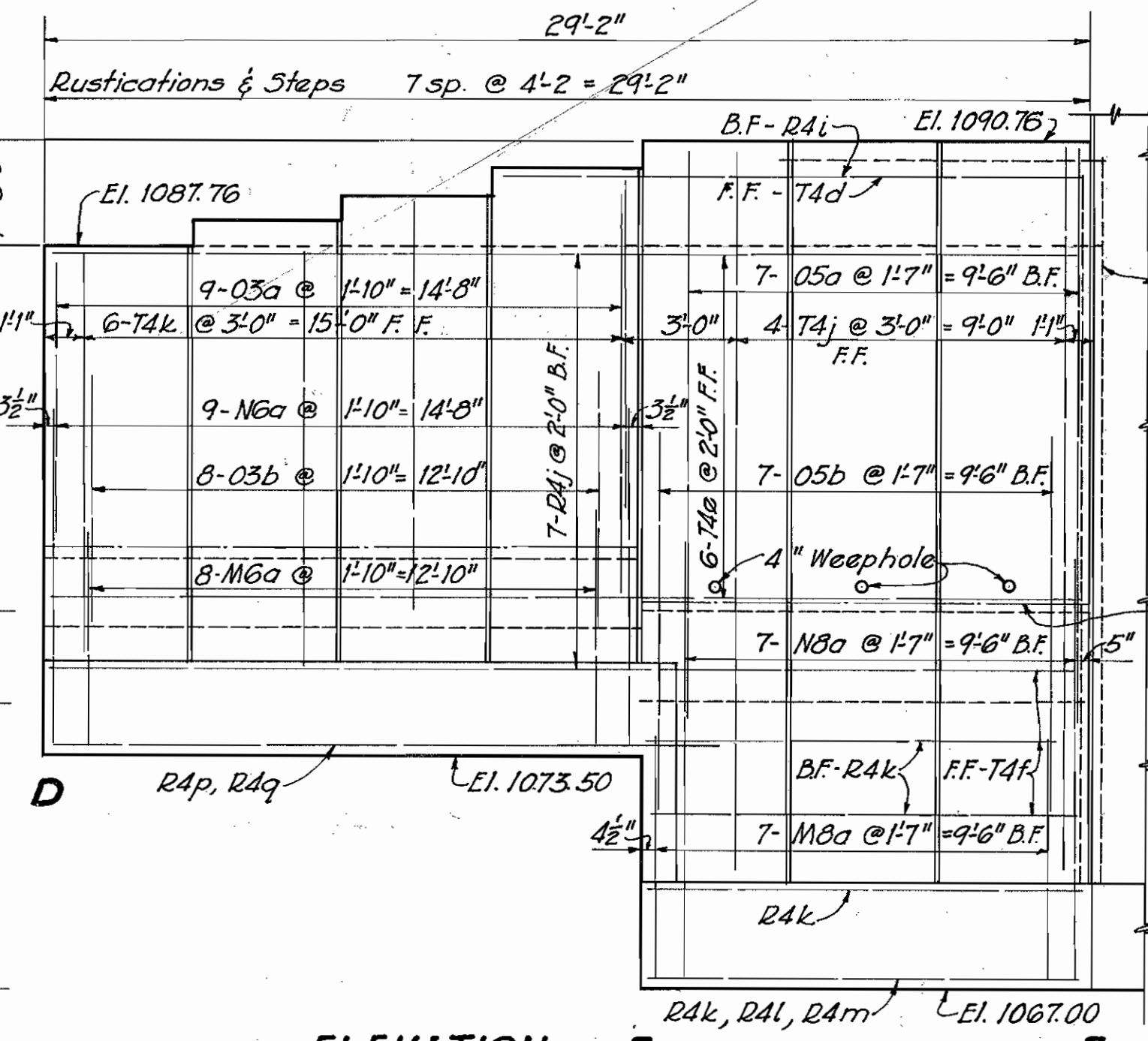
PLAN - NORTHEAST WING WALL



PLAN - NORTHWEST WING WALL

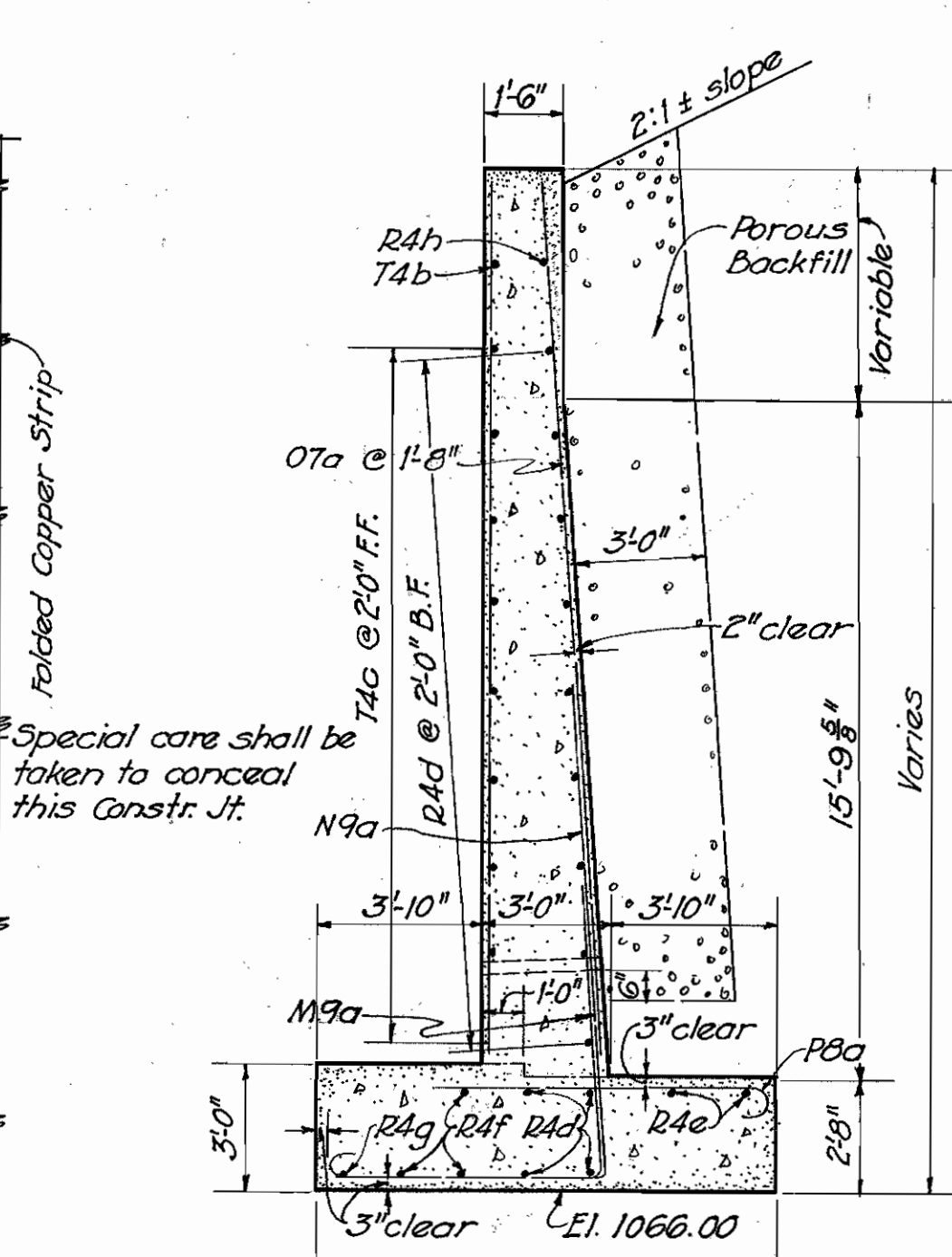


SECTION BETWEEN D & E

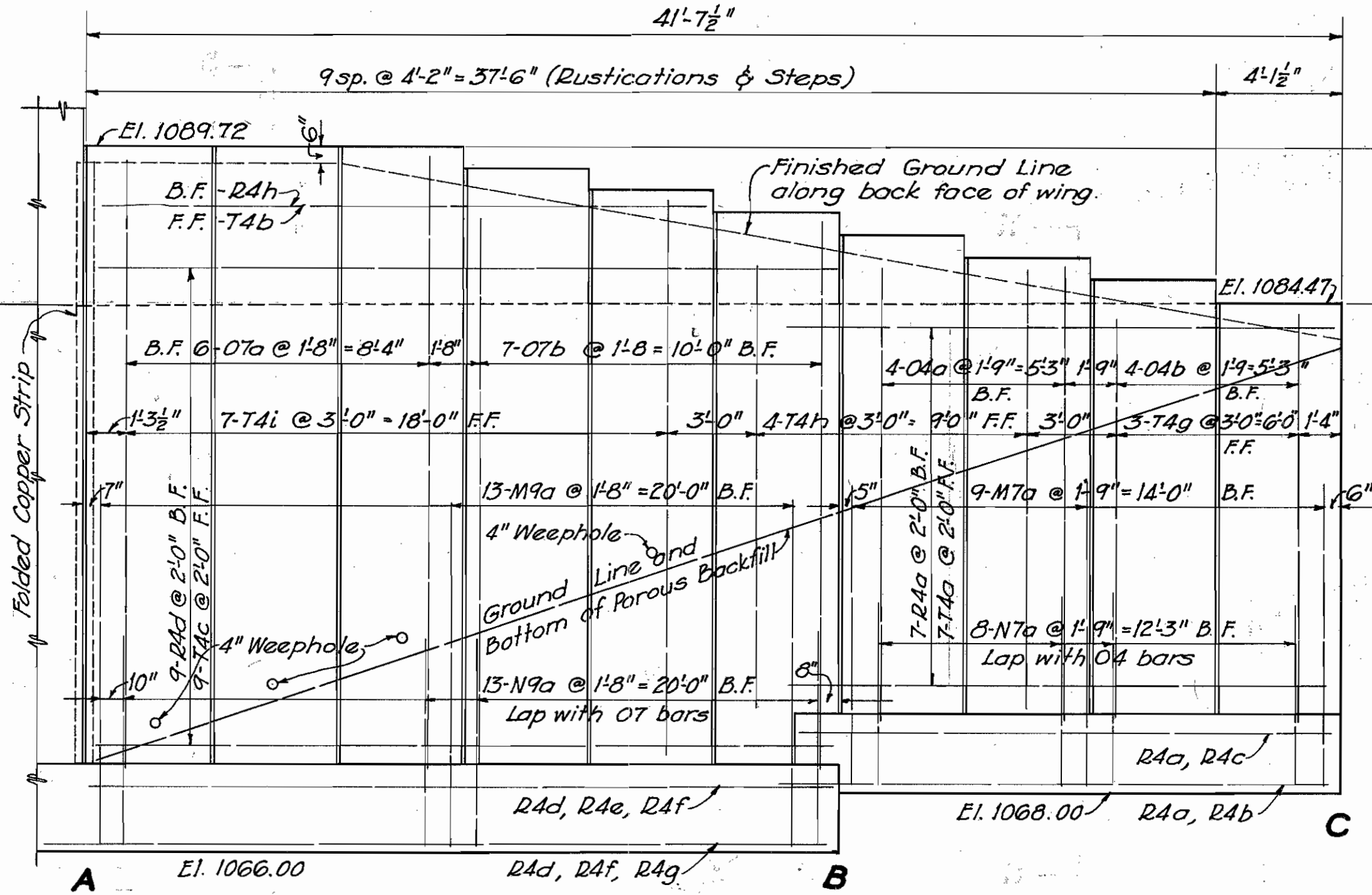


ELEVATION E

Developed along front face of wall. Reinforcing steel spacing along back face.

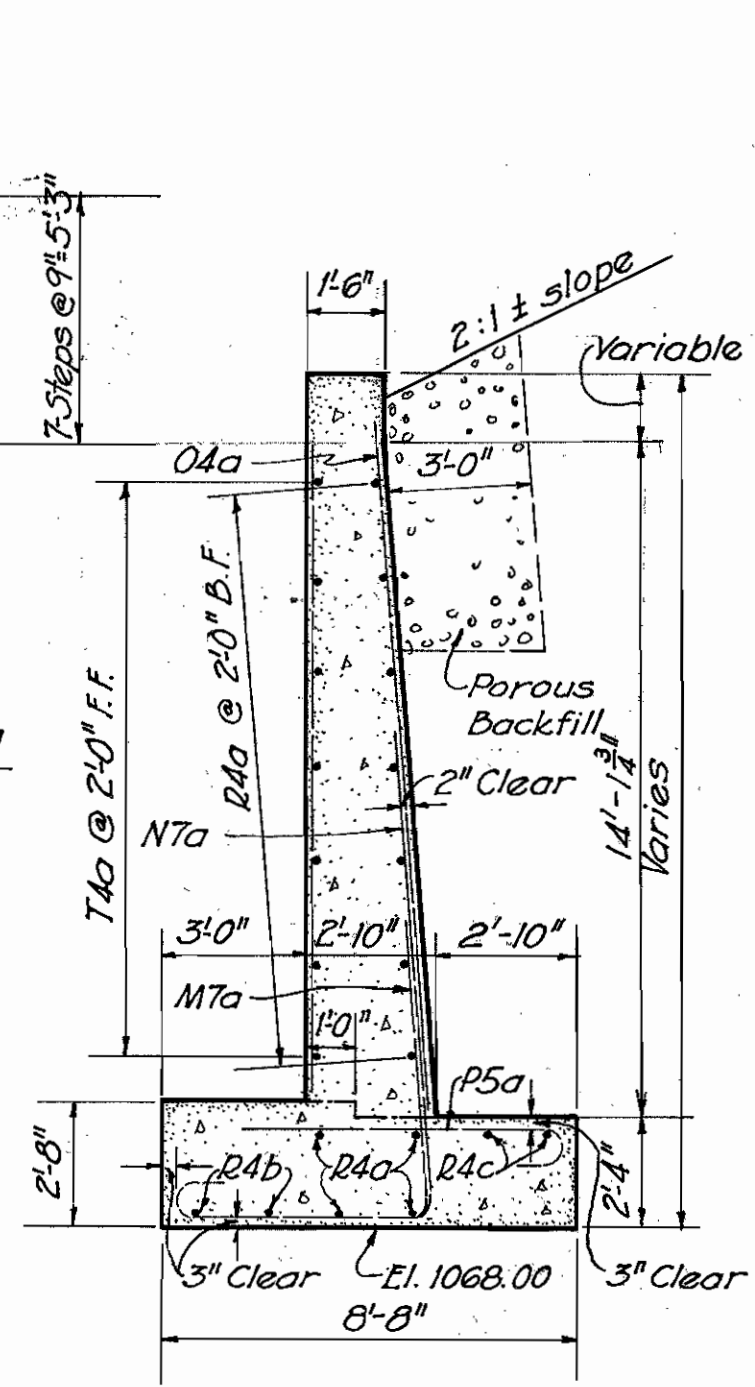


SECTION BETWEEN A & B



ELEVATION

Developed along front face of wall. Reinforcing steel spacing along back face.



SECTION BETWEEN B & C

NOTE:  
F.F. - Front Face  
B.F. - Back Face

STEEL LIST-NORTH WING WALLS					
MARK	SIZE	NO.	LENGTH	WEIGHT	SHAPE
M9a	1/2"	13	14'-6"	810	Bt.
N9a	1/2"	13	19'-0"	1060	Bt.
P8a	1"	26	8'-6"	750	Bt.
M8a	1"	7	14'-0"	330	Bt.
N8a	1"	7	19'-0"	450	Bt.
M7a	1"	9	12'-3"	290	Bt.
N7a	1"	8	16'-3"	350	Bt.
O7a	1"	6	20'-6"	330	Str.
O7b	1"	7	18'-3"	340	Str.
M6a	3/4"	8	11'-3"	190	Bt.
N6a	3/4"	9	14'-9"	280	Bt.
P5a	3/4"	17	6'-9"	170	Bt.
P5b	3/4"	14	8'-0"	170	Bt.
O5a	3/4"	7	15'-9"	170	Str.
O5b	3/4"	7	10'-6"	110	Str.
O4a	3/4"	4	15'-3"	60	Str.

STEEL LIST-NORTH WING WALLS (CONT.)					
MARK	SIZE	NO.	LENGTH	WEIGHT	SHAPE
O4b	3/4"	4	13'-3"	60	Str.
R4a	3/4"	11	17'-6"	200	Bt.
R4b	3/4"	2	19'-6"	40	Bt.
R4c	3/4"	2	12'-9"	30	Bt.
R4d	3/4"	13	22'-6"	310	Bt.
R4e	3/4"	2	19'-3"	40	Bt.
R4f	3/4"	3	24'-9"	80	Bt.
R4g	3/4"	1	27'-9"	30	Bt.
R4h	3/4"	1	23'-6"	20	Bt.
R4i	3/4"	1	15'-3"	20	Bt.
R4j	3/4"	7	26'-0"	190	Bt.
R4k	3/4"	5	11'-6"	60	Bt.
R4l	3/4"	3	12'-3"	40	Bt.
R4m	3/4"	1	14'-0"	10	Bt.
R4n	3/4"	2	9'-9"	20	Bt.
R4o	3/4"	2	13'-0"	30	Bt.
R4p	3/4"	3	15'-0"	50	Bt.
R4q	3/4"	2	17'-3"	40	Bt.
T4a	3/4"	7	18'-6"	130	Bt.
T4b	3/4"	1	20'-6"	20	Bt.
T4c	3/4"	9	24'-6"	230	Bt.
T4d	3/4"	1	16'-3"	20	Bt.
T4e	3/4"	6	28'-6"	100	Bt.
T4f	3/4"	3	12'-0"	40	Bt.
T4g	3/4"	3	13'-3"	40	Bt.
T4h	3/4"	4	14'-9"	60	Str.

STEEL LIST-NORTH WING WALLS (CONT.)					
MARK	SIZE	NO.	LENGTH	WEIGHT	SHAPE
T4i	3/4"	7	18'-6"	130	Str.
T4j	3/4"	4	20'-3"	80	Str.
T4k	3/4"	6	11'-3"	70	Str.
O3a	1/2"	9	9'-3"	70	Str.
O3b	1/2"	8	7'-0"	50	Str.
P2a	1/2"	17	6'-6"	70	Bt.
					TOTAL 8320
REPLACEMENT STEEL					
RE0	1/2"	1	11'-0"	60	Str.
RE9	1/2"	1	8'-6"	40	Str.
RE8	1"	2	8'-0"	50	Str.
RE7	1"	1	8'-0"	20	Str.
RE6	3/4"	1	7'-0"	20	Str.
RE5	3/4"	1	7'-0"	10	Str.
RE4	3/4"	1	6'-0"	10	Str.
RE3	1/2"	1	6'-0"	0	Str.
RE2	1/2"	1	6'-0"	0	Str.
RE1	3/4"	2	3'-3"	0	Str.
REx	3/4"	2	2'-6"	0	Str.
					TOTAL 210

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

**WING WALL DETAILS**

BRIDGE NO. GE-422-162  
OVER GRAND RIVER

GEAUGA COUNTY  
SECTION "W"

S. H. 35  
STA. 855+22.0

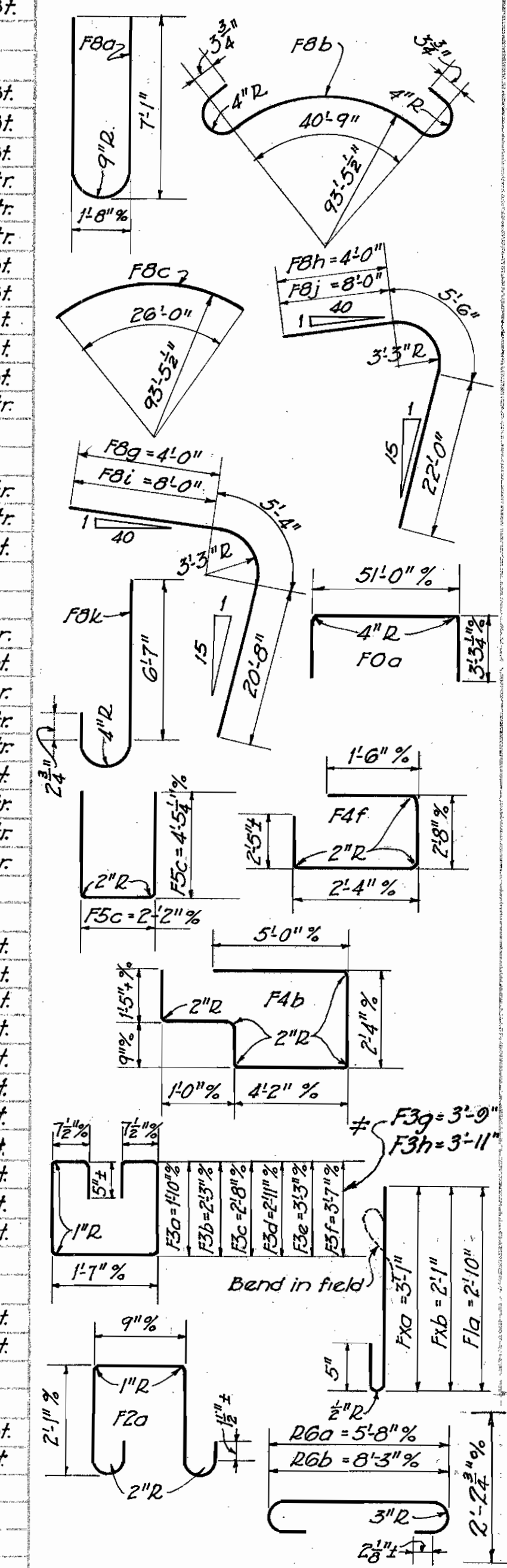
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.B.R.	W.B.R.	W.B.R.	W.B.R.	W.B.R.	9/27/54	
					11/16, 10/4/33	



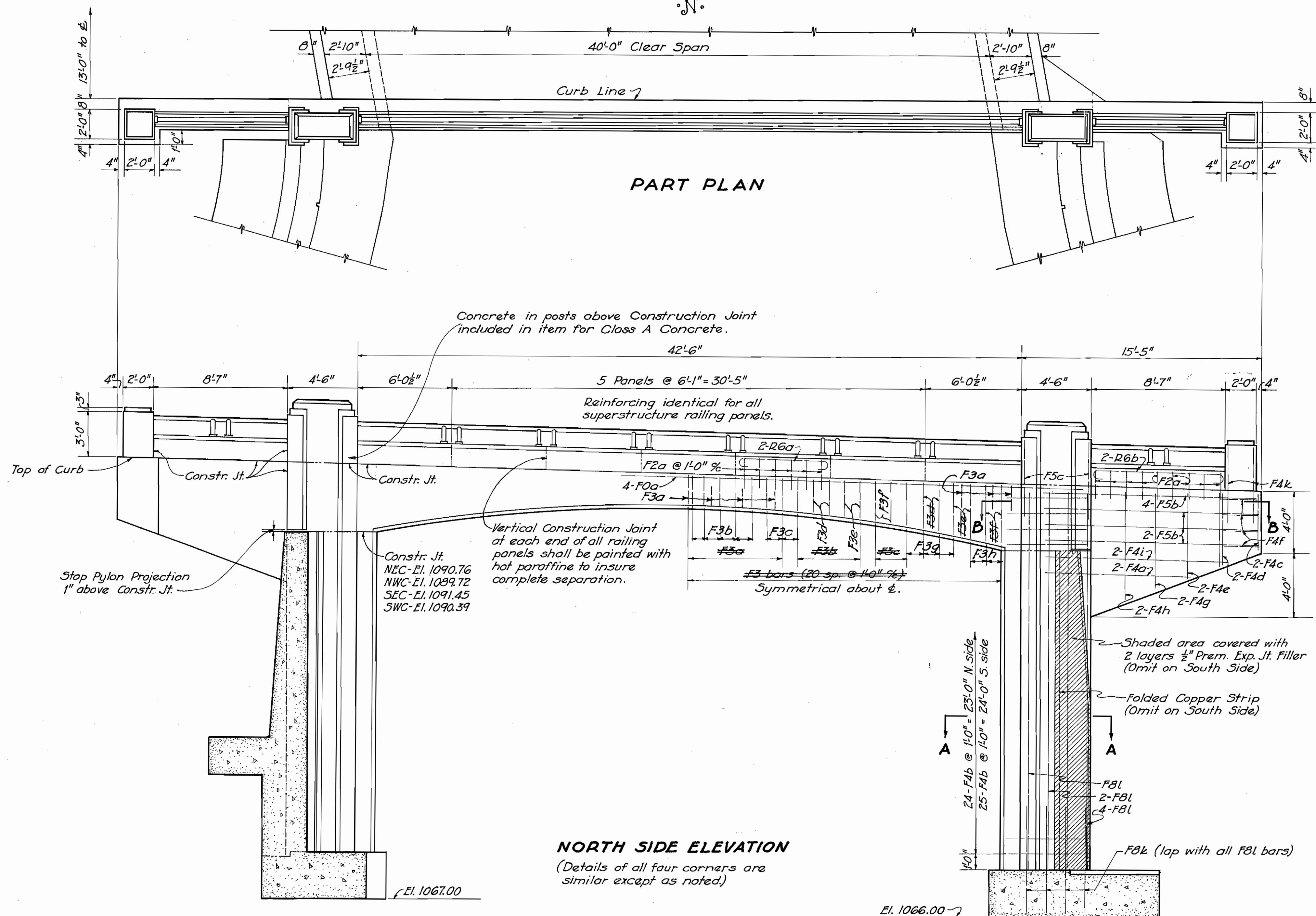
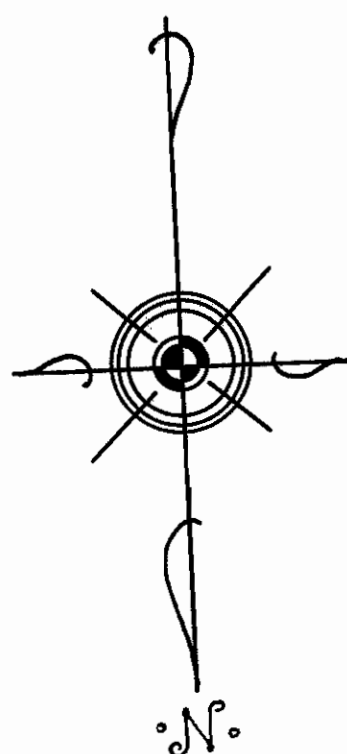
GEAUGA COUNTY  
S.H. 35 SEC. W (PT.)  
S.H. 325 SEC. F (PT.)

### FRAME REINFORCING STEEL

MARK	SIZE	NO.	LENGTH	WEIGHT	SHAPE
F0a	1/2" #	8	57'-0"	2420	Bt.
F8a	1" #	118	15'-0"	6020	Bt.
F8b	1" #	30	43'-9"	4460	Bt.
F8c	1" #	29	26'-0"	2570	Bt.
F8d	1" #	60	24'-0"	4900	Str.
F8e	1" #	58	14'-0"	2760	Str.
F8f	1" #	30	36'-0"	3680	Str.
F8g	1" #	30	30'-0"	3060	Bt.
F8h	1" #	29	31'-6"	3060	Bt.
F8i	1" #	29	34'-0"	3360	Bt.
F8j	1" #	30	35'-6"	3580	Bt.
F8k	1" #	36	8'-0"	980	Bt.
F8l	1" #	36	25'-6"	3120	Str.
F5a	3/4" #	70	29'-4"	3090	Str.
F5b	3/4" #	40	13'-6"	810	Str.
F5c	3/4" #	8	10'-9"	130	Bt.
F4a	5/8" #	8	9'-3"	80	Str.
F4b	5/8" #	98	14'-0"	1430	Bt.
F4c	5/8" #	8	3'-9"	30	Str.
F4d	5/8" #	8	4'-6"	40	Str.
F4e	5/8" #	8	5'-6"	50	Str.
F4f	5/8" #	16	8'-6"	140	Bt.
F4g	5/8" #	8	6'-3"	50	Str.
F4h	5/8" #	8	7'-0"	60	Str.
F4i	5/8" #	8	11'-6"	100	Str.
F3a	1/2" #	26	6'-9"	160	Bt.
F3b	1/2" #	20	7'-9"	140	Bt.
F3c	1/2" #	12	8'-6"	90	Bt.
F3d	1/2" #	8	9'-0"	60	Bt.
F3e	1/2" #	8	9'-9"	70	Bt.
F3f	1/2" #	8	10'-3"	70	Bt.
F3g	1/2" #	16	10'-7"	125	Bt.
F3h	1/2" #	12	10'-11"	132	Bt.
F2a	3/4" #	120	5'-9"	460	Bt.
Fxa	1/2" #	90	3'-6"	530	Bt.
Fxb	1/2" #	135	2'-6"	60	Bt.
R6a	3/8" #	28	7'-3"	*	Bt.
R6b	3/8" #	8	9'-9"	*	Bt.
F1a	3/8" #	120	3'-3"	150	Bt.
D4a	3/8" #	26	5'-0"	140	Bt.
TOTAL				51,910	
				52,167	



\* Included with railing for payment.



**NORTH SIDE ELEVATION**  
(Details of all four corners are similar except as noted.)

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES					
<b>FRAME DETAILS</b>					
BRIDGE NO. GE 422-162 OVER GRAND RIVER					
GEAUGA COUNTY			S.H. 35		
SECTION W			STA. 855 +22.0		
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
W.B.R.	W.B.R.	W.W.	C.R.D.	W.S.H.	9/27/38
					11-18-39