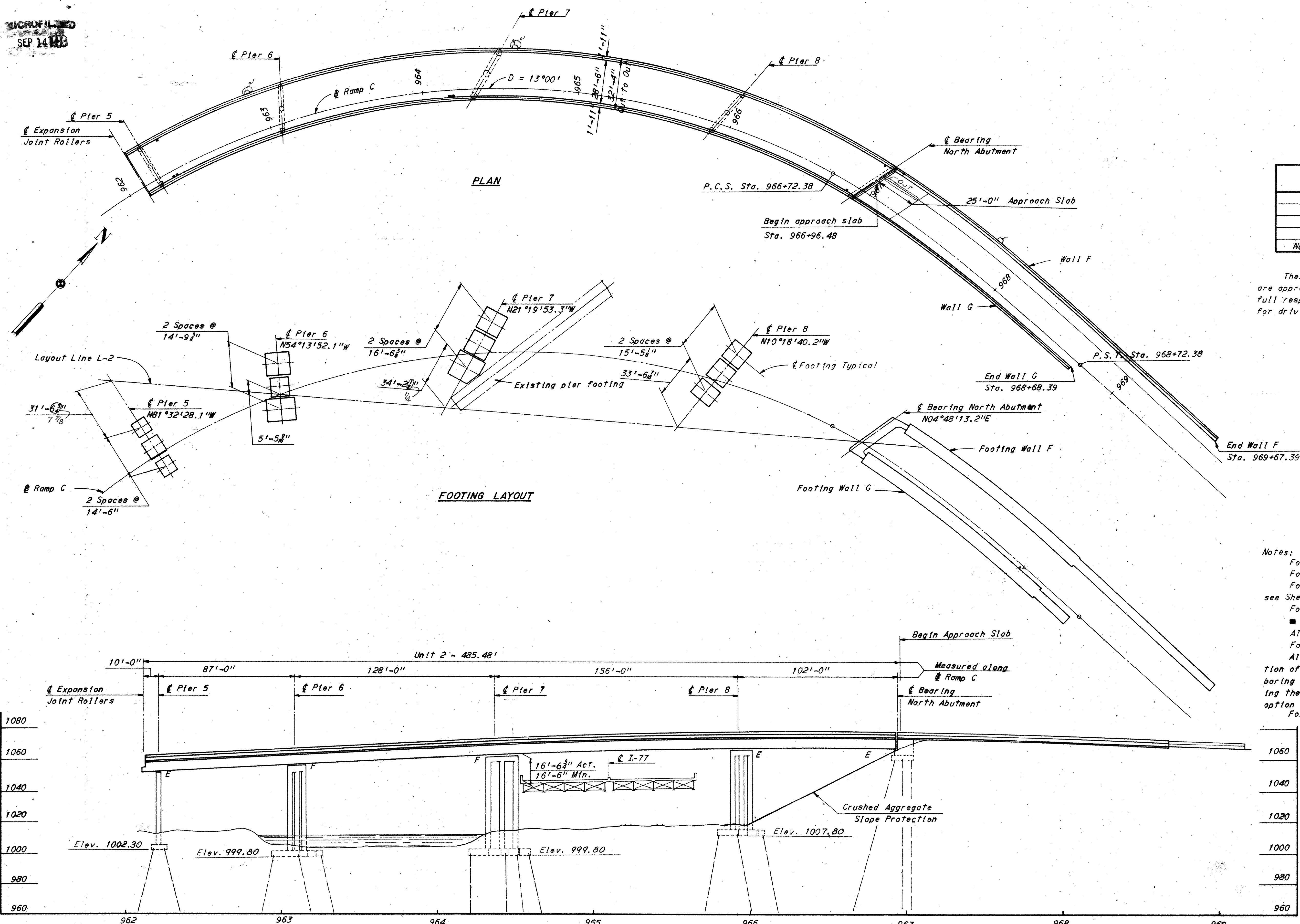


MICROFILMED
SEP 14 1983

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

308
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



ESTIMATED AVERAGE PILE LENGTH FOR PILING	
Pier 5	70'
Pier 6	70'
Pier 7	60'
Pier 8	60'
North Abutment	80'

These estimates are based on boring data and are approximate only. The contractor shall assume full responsibility for length of piling selected for driving.

Notes:
For profile grades see Sheet 2/19
For details of Pier 5 see Sheet 8/19
For details of Pier 6, Pier 7 and Pier 8 see Sheet 9/19
For details of North Abutment see Sheet 6/19
■ Denotes Standard Scupper
All piles shall be 12" ϕ cast-in-place concrete.
For lighting details see Lighting Plans.
All earthwork shall be completed before construction of adjacent piers and abutments started. Pre-boring through new or existing embankments before driving the piles will be allowed at the contractor's option and expense.
For layout lines see Sheet 2/19

H.N.T.B. BRIDGE NO. 13		Revised 6-4-75	By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS			4/19
KANSAS CITY CLEVELAND NEW YORK			
GENERAL PLAN - UNIT 2			
RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD			
BR. NO. STA. 30.1493		STA. 957 + 34.25	
SCALE: 1"=30'-0"		STA. 966 + 96.48	
RELOCATED U.S. 30			
CANTON		STARK COUNTY OHIO	
DRAWN D.W.B.	TRACED	CHECKED D.C.S.	REVIEWED M.T.R.
DATE 1-20-69	DATE	DATE 6-17-70	DATE 11-26-71
			1668

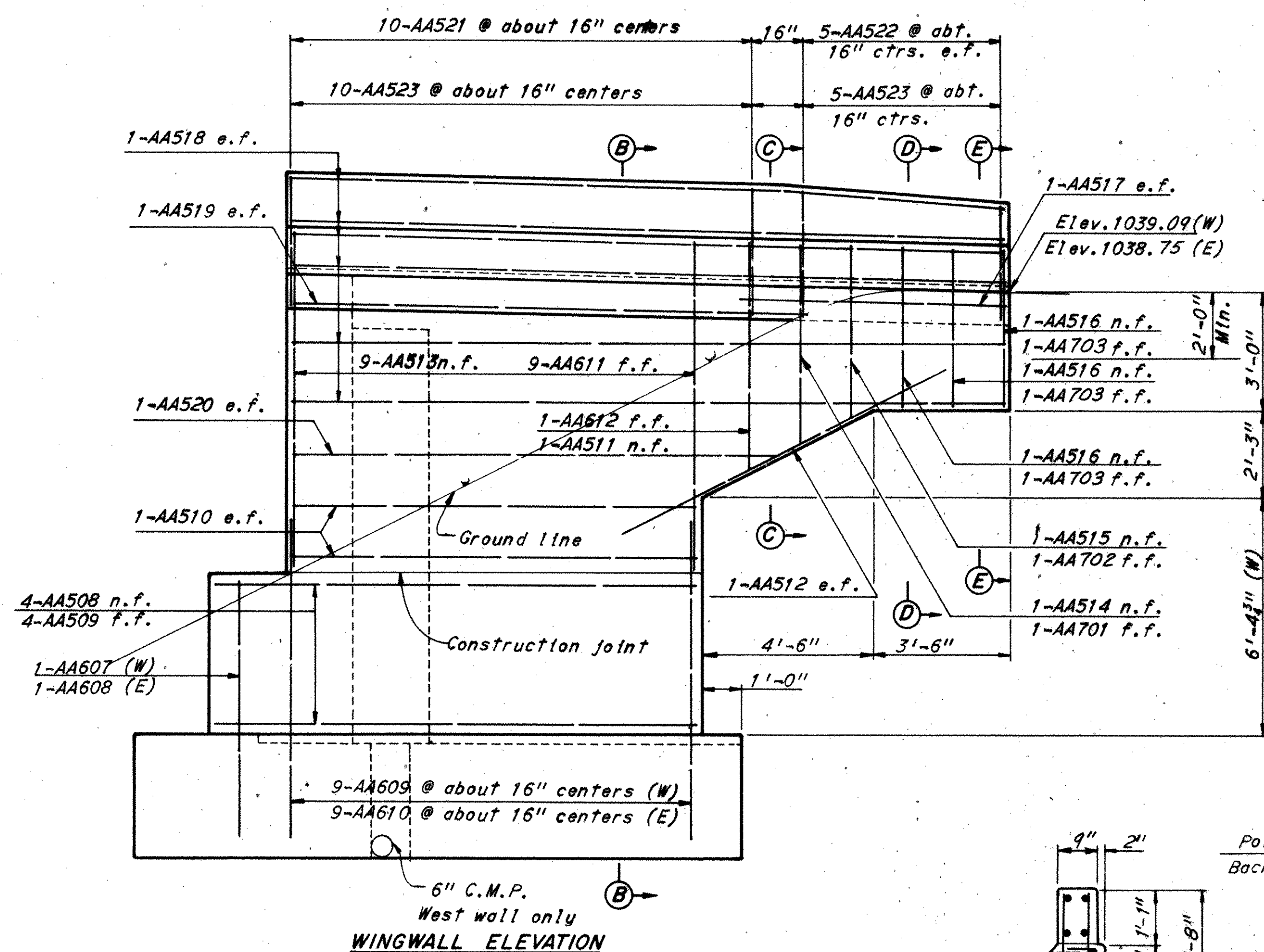
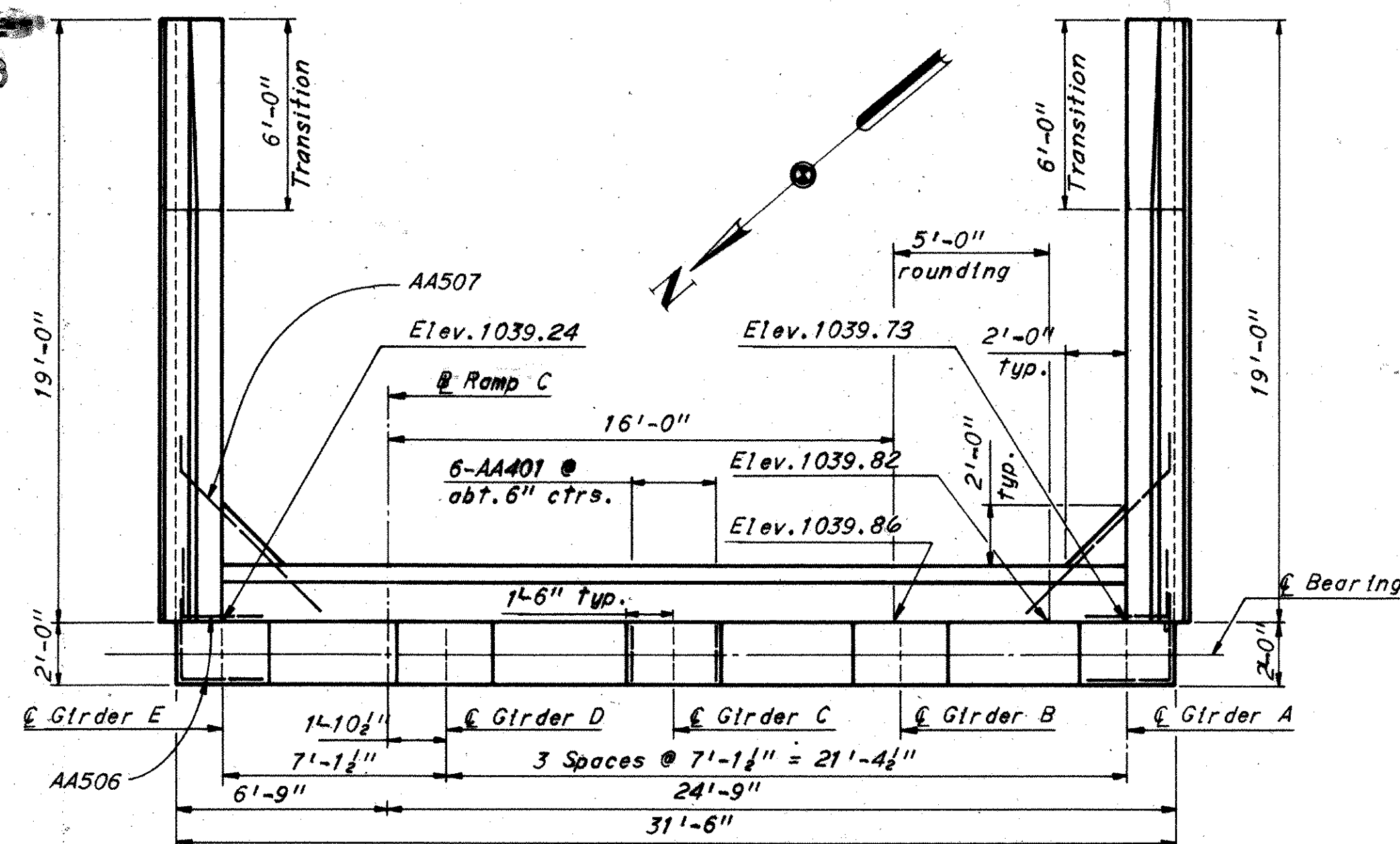
Revised 4-28-77

SEP 14 1968

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

STARK COUNTY
STA-30-14.12
STA-77-9.22

309
389



Note:
Parapet transitions shall be as shown on
Std. Drwg. BR-1-67 revised 10-15-71. Reinforcing steel
shall be field bent or cut to fit the revised shape.

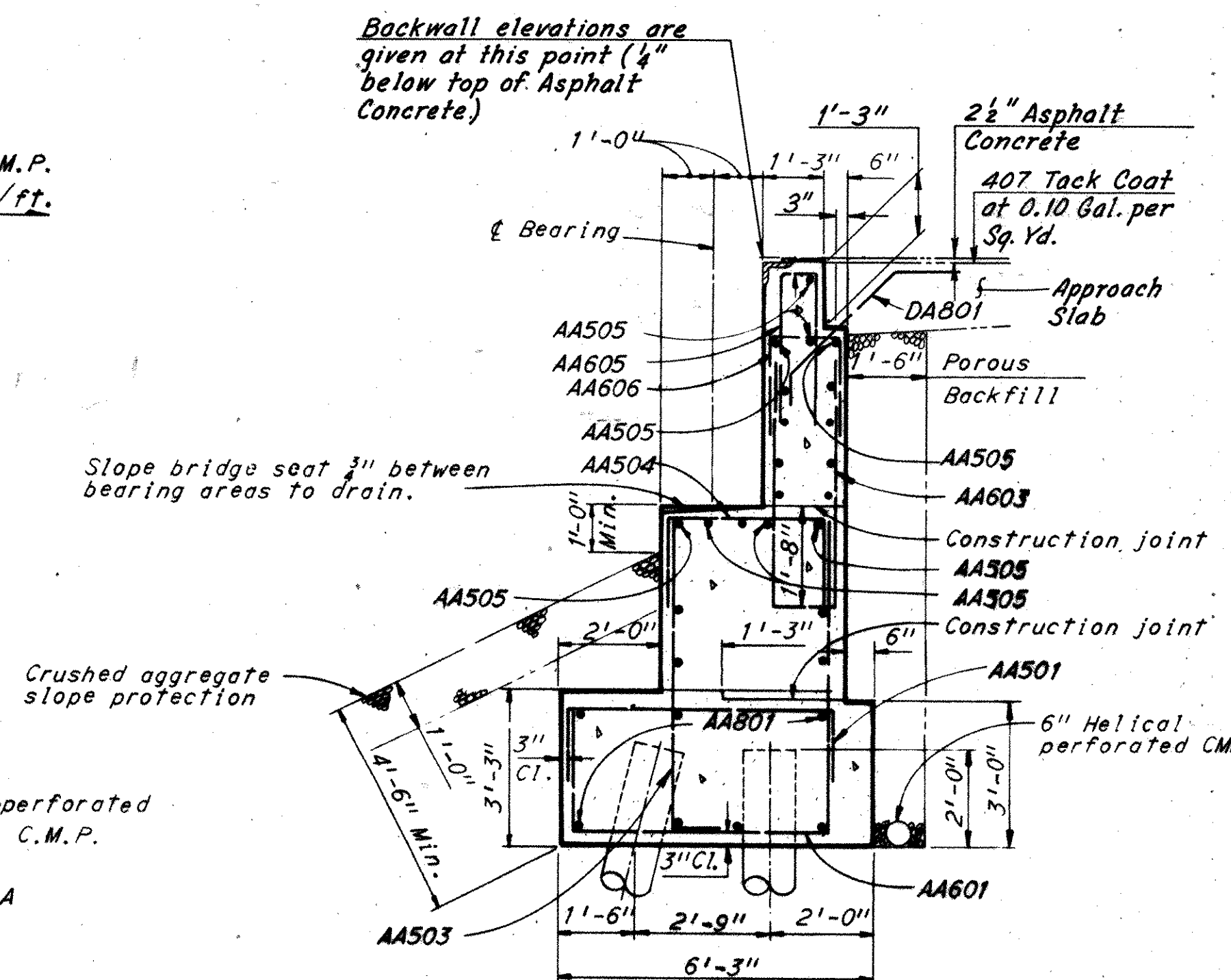
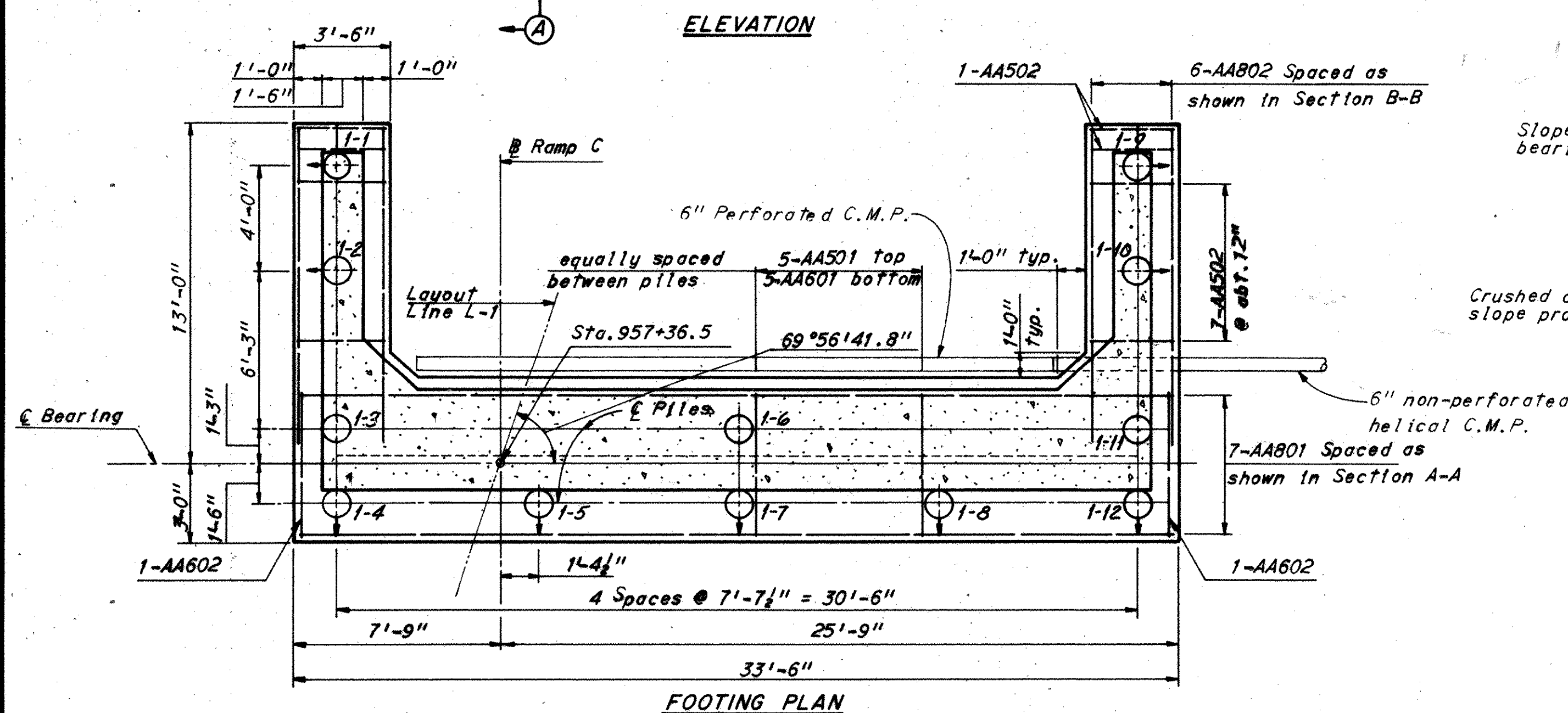
Backwall elevations are
given at this point (1/4"
below top of Asphalt
Concrete)

Slope bridge seat 3/4" between
bearing areas to drain.

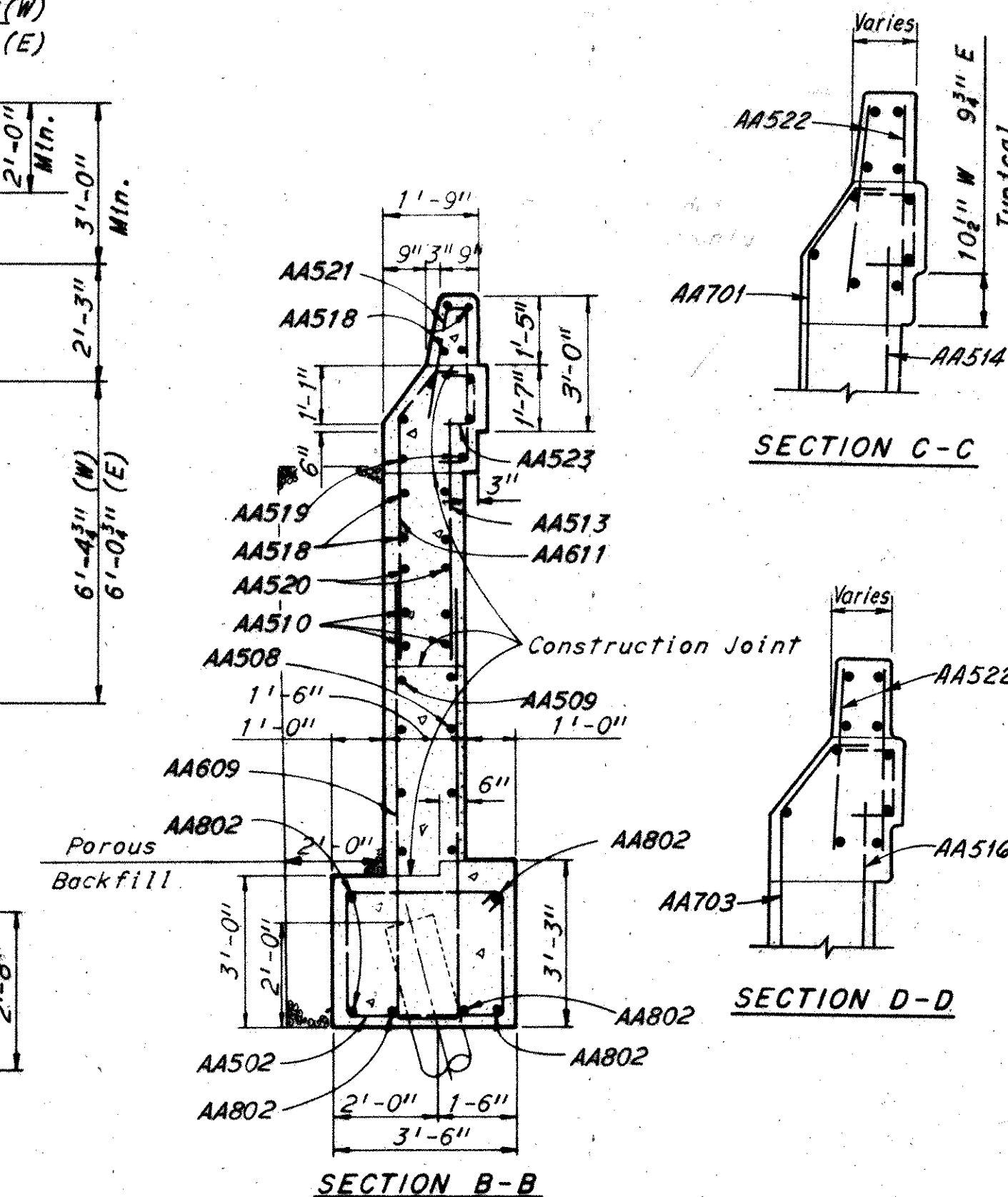
Crushed aggregate
slope protection

6" non-perforated
helical C.M.P.

7-AA801 Spaced as
shown in Section A-A



SECTION E-E



Notes:
For roadway end dam details see Ohio Standard
Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.
AA401 bars shall be placed 2 1/2" below top of
bridge seat.
n.f. denotes near face, f.f. denotes far face,
and e.f. denotes each face.
For reinforcement schedule see Sheet 16/19
All battered piles are battered 3 in 12.
Pile dimensions are measured along bottom of
footing.
All piles are 12" cast-in-place concrete.
Only that portion of C.M.P. within the
porous backfill shall be perforated.
E denotes East wingwall.
W denotes West wingwall.
O denotes battered piles.
Piles not shown in elevations.
For details of C.M.P. outlet at side
slopes, see Sheet 359.

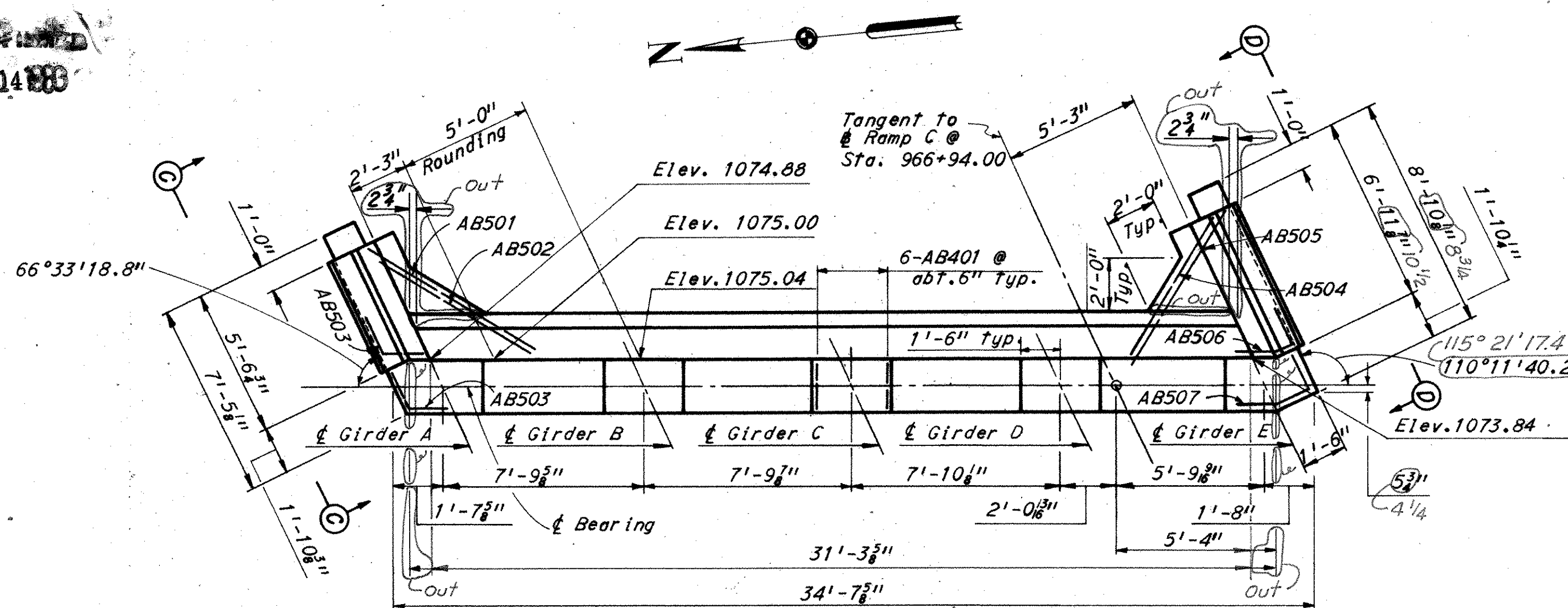
H.N.T.B. BRIDGE NO. 13		Revised 6-4-75 By RAS	
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK			
SOUTH ABUTMENT RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD			
BR. NO. STA. 30-1493		STA. 957 + 34.25	
SCALE: 1/4" = 1'-0"		STA. 966 + 96.48	
RELOCATED U.S. 30			
CANTON		STARK COUNTY OHIO	
DRAWN MAG	TRACED	CHECKED MAG	REVIEWED RAS
DATE 11-11-69	DATE	DATE 6-18-70	DATE 11-20-71
		1668	

SEP 14 1970

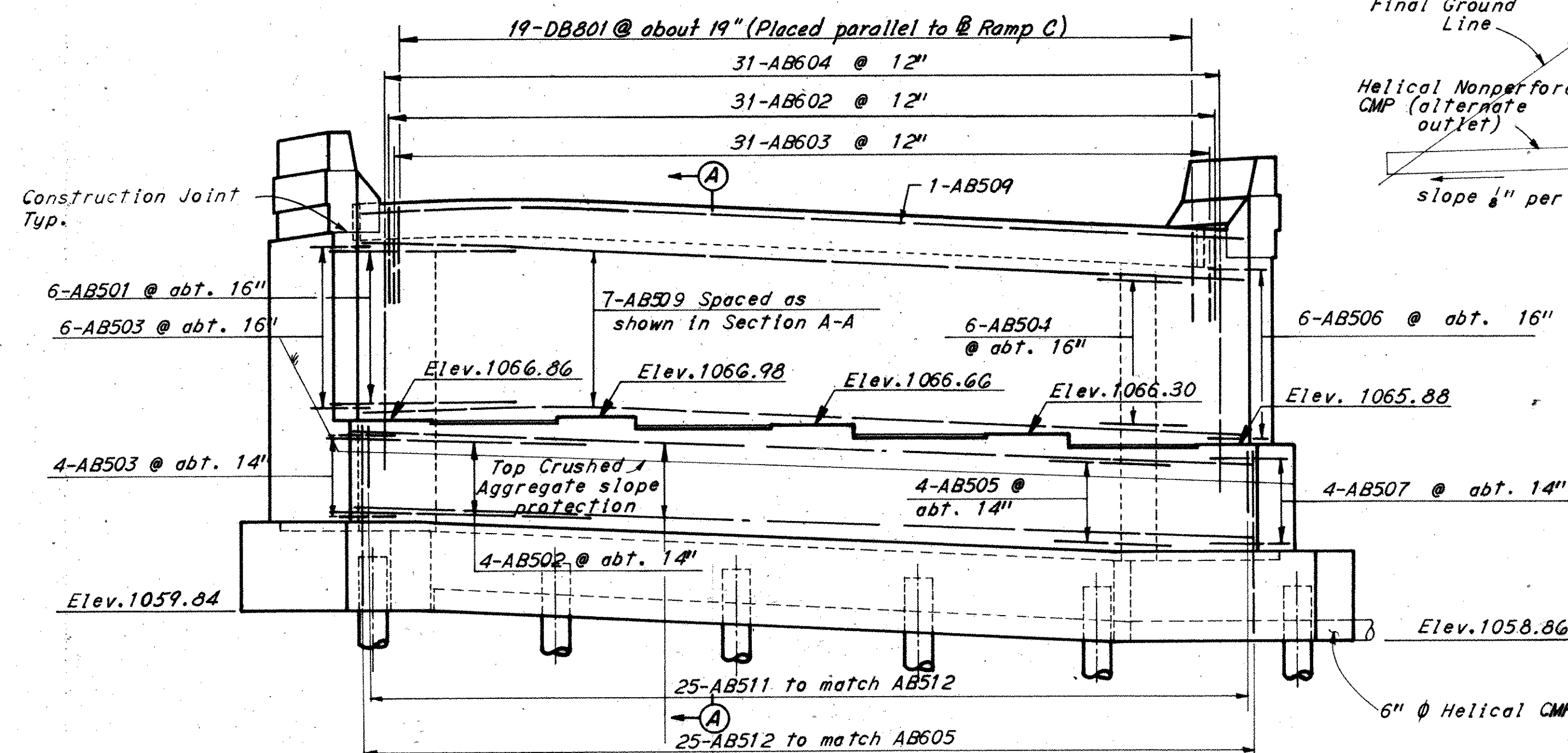
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

310
389

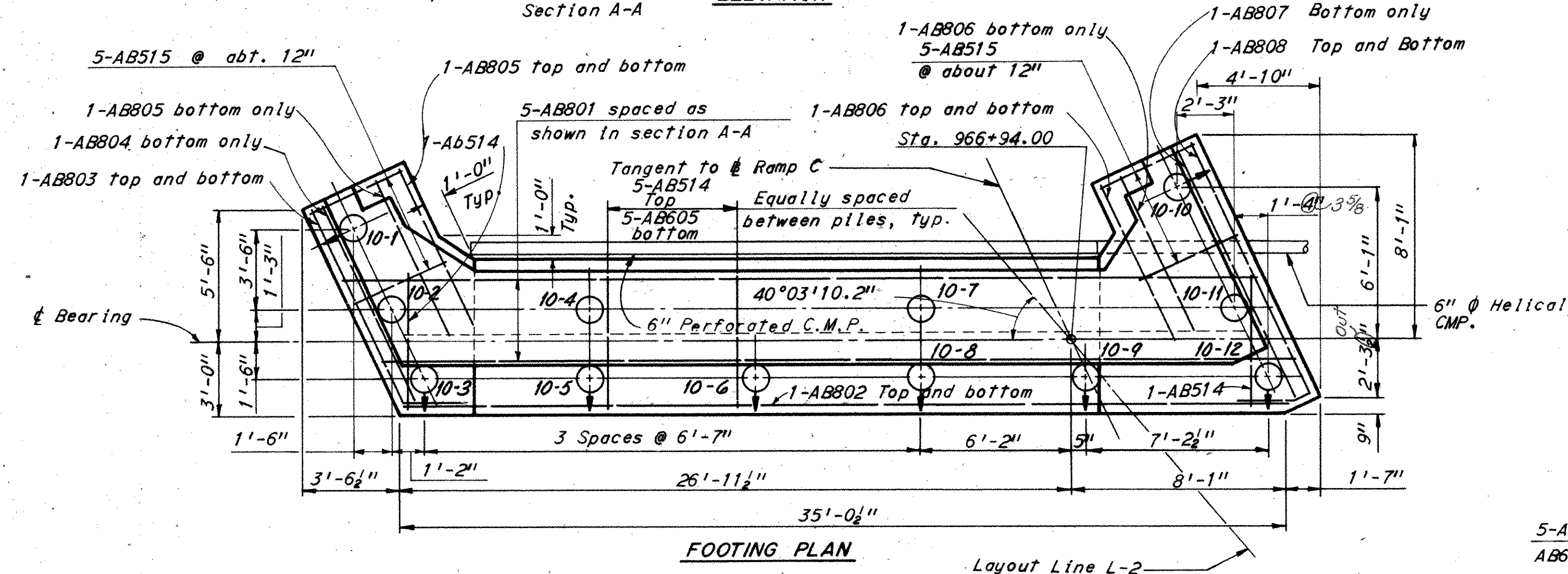
STARK COUNTY
STA-30-14.12
STA-77-9.22



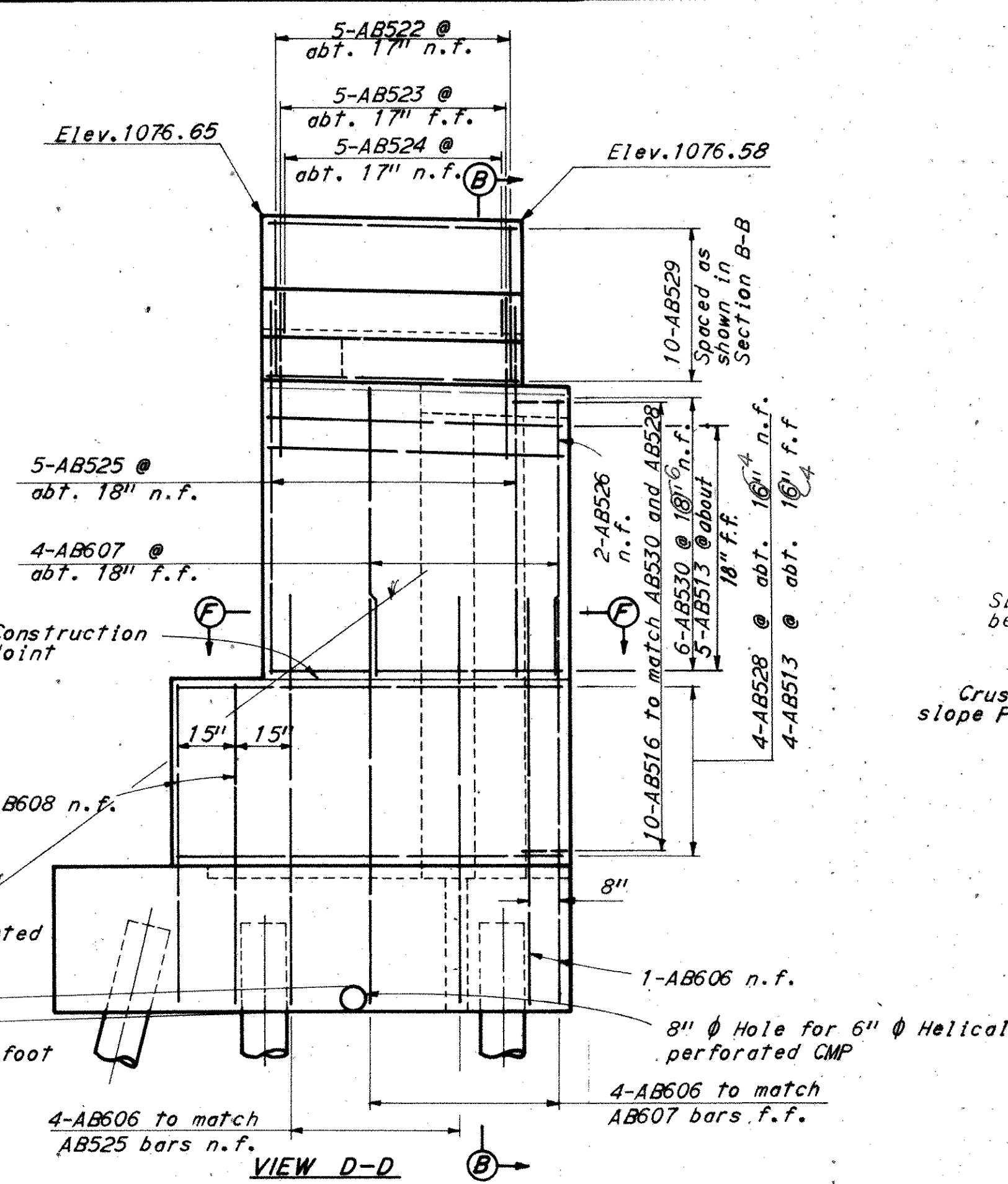
PLAN



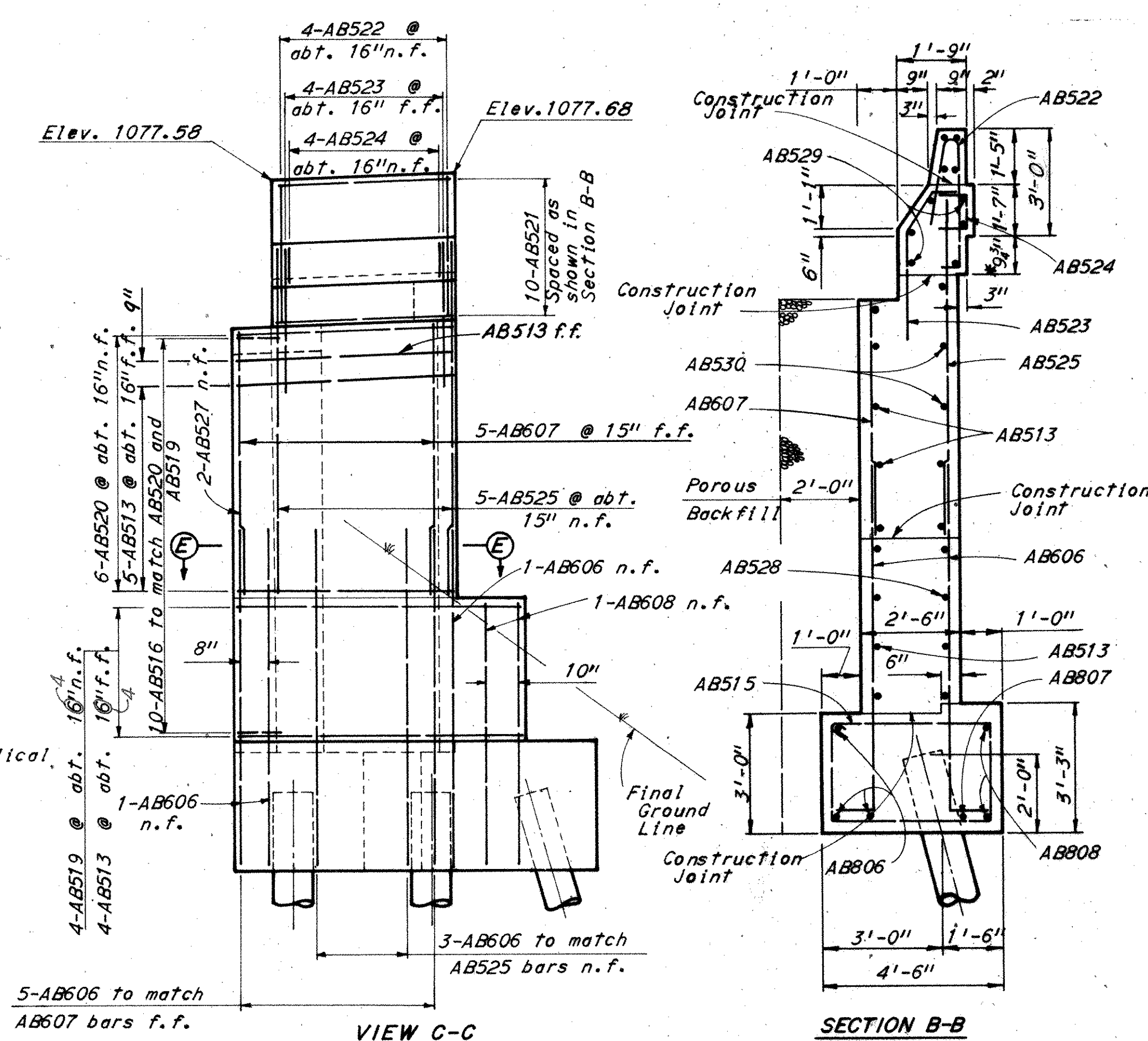
ELEVATION



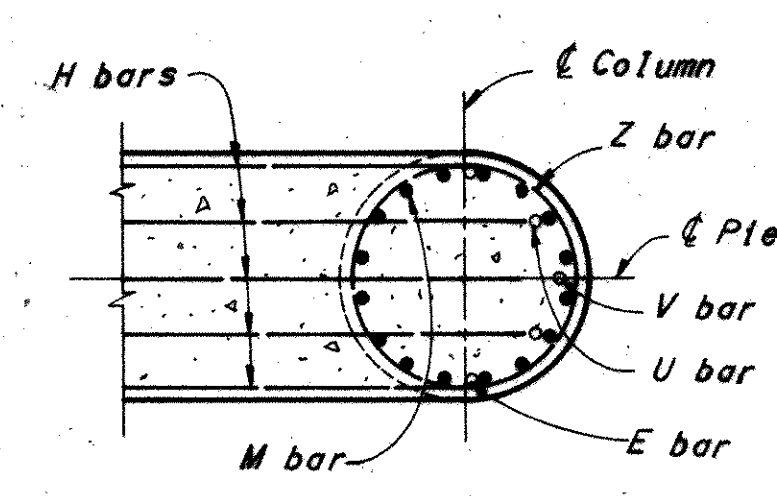
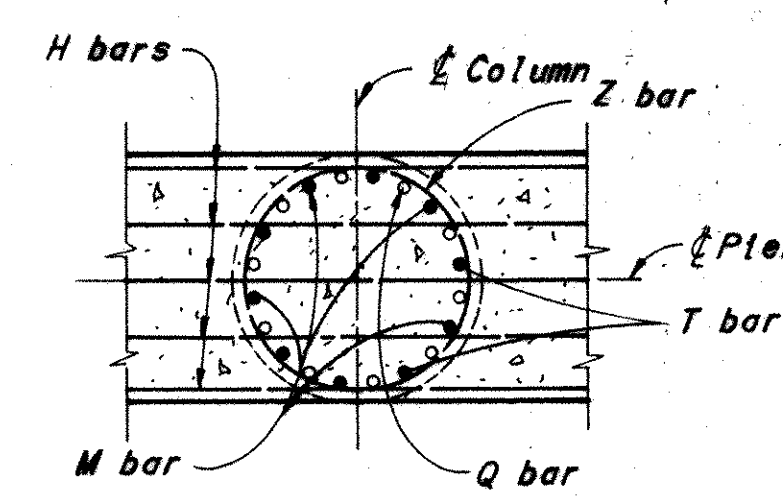
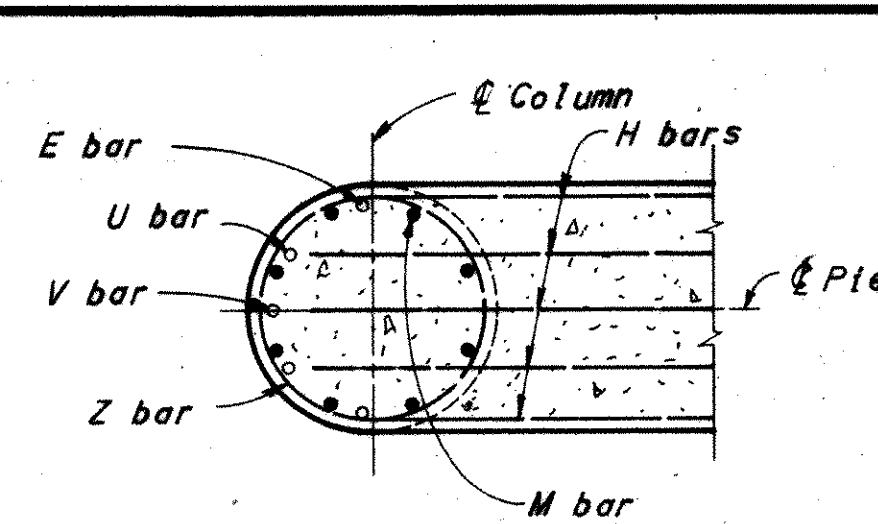
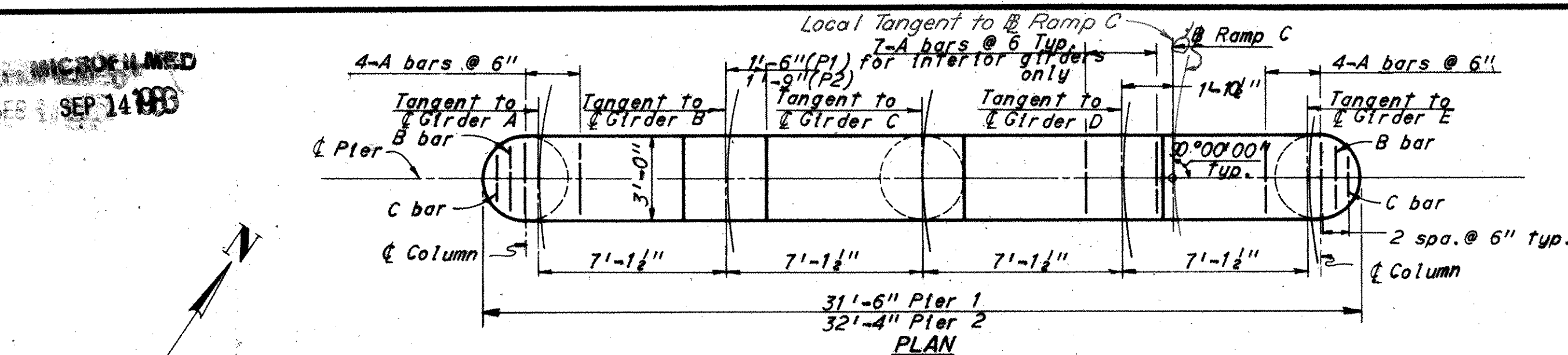
FOOTING PLAN



VIEW D-D



STARK COUNTY
STA-30-14.12
STA-77-9.22



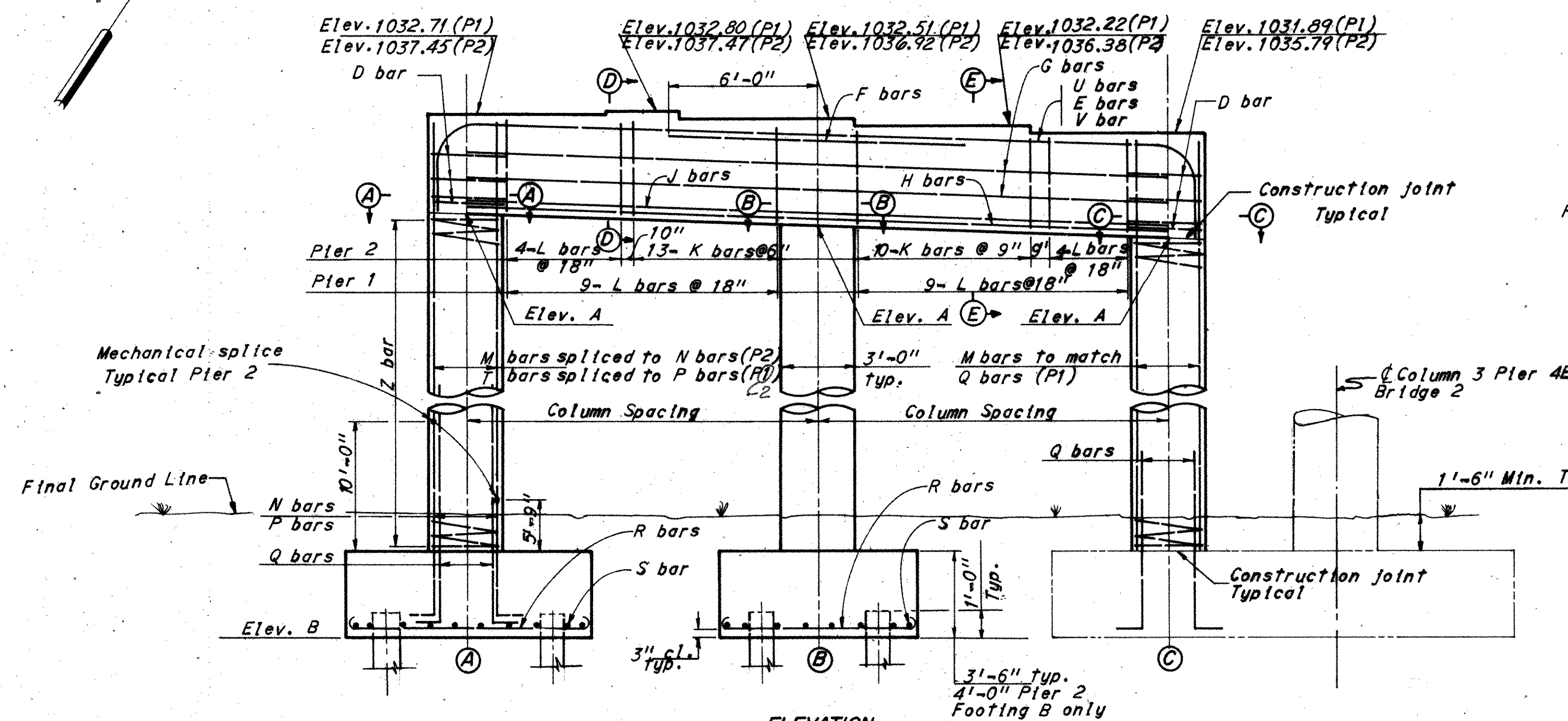
SECTION A-A
PIER 1

SECTION B-B
PIER 2

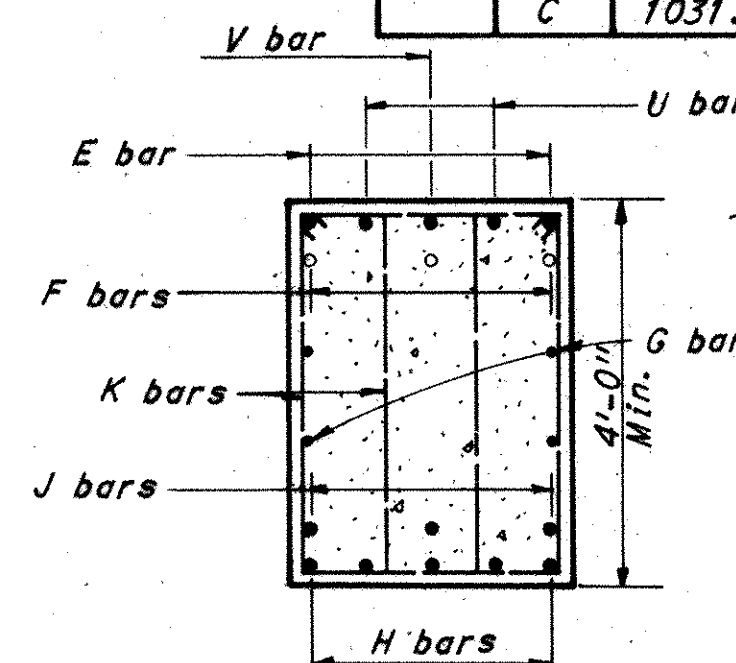
SECTION C-C
PIER 1

COLUMN DATA								
Pier No.	Column	Elevation A	Reinforcing Steel					
			M bars	N bars	P bars	Q bars	T bars	Z bar
1	A	1028.77	8-PA1001	_____	_____	8-PA1004	_____	1-SPA401
	B	1028.22	8-PA1002	_____	_____	8-PA1004	_____	1-APA402
	C	1027.67	16-PA1003	_____	_____	16-#10 *	_____	1-SPA403
2	A	1033.57	5-PB1401	5-#14 *	5-#14 *	10-#14 *	5-PB1410	1-SPB401
	B	1032.44	5-PB1402	5-PB1404	5-PB1405	10-PB1409	5-PB1411	1-SPB402
	C	1031.31	5-PB1403	5-PB1408	5-PB1406	10-PB1407	5-PB1412	1-SPB403

* Included with Bridge 2.



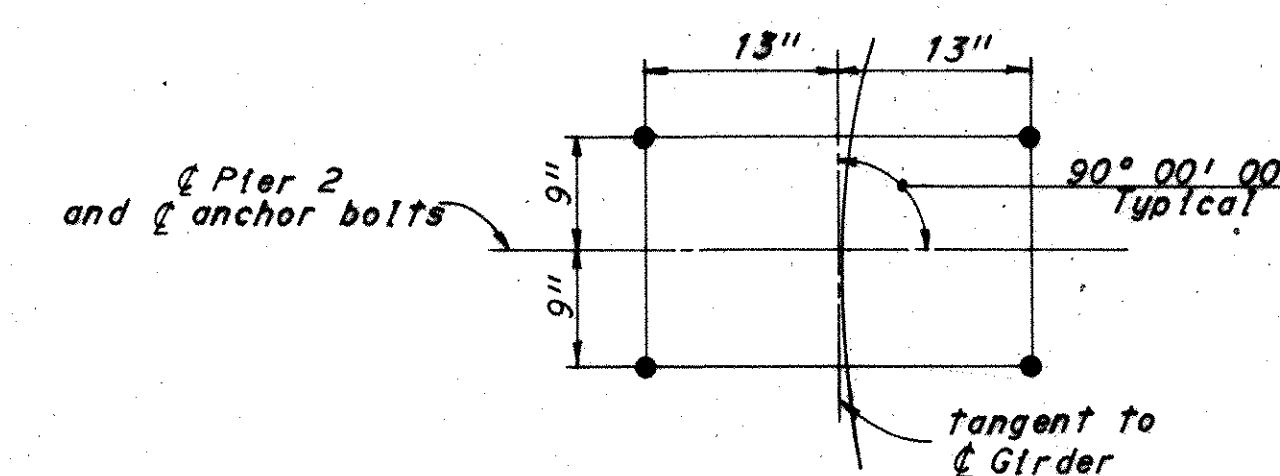
SECTION D-D



SECTION E-E

FOOTING DATA					
Pier No.	Column Spacing	Column	Elevation B	Reinforcing Steel	
				R- bar	S-bar
1	14'-3"	A	1009.80	PA901	PA603
		B	1009.80	PA801	PA801
		C	*	*	*
2	14'-8"	A	*	*	*
		B	997.80	PB1001	PB1101
		C	1004.30	PB801	PB1102

CAP BEAM REINFORCING STEEL												
Pier No	A bars	B bar	C bar	D bar	E bars	F bars	G bars	H bars	J bars	K bars	L bars	V bars
1	PA501	1-PA502	1-PA503	1-PA601	2-PA1005		PA602	5-PA1008			PA506	2-PA1006
2	PA501	1-PB502	1-PB503	1-PB601	2-PB1103	3-PB1106	PB602	5-PB1107	3-PB1107	2-PB504	PB505	2-PB1104



ANCHOR BOLT PLAN
PIER 2

Note:
Splices in No.14 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.

Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting, Pier 2 only. See Sheet 214.

A bars, B bars and C bars shall be placed $2\frac{1}{2}$ " below top of cap beam.

For reinforcement schedule see Sheet 16/19

All battered piles shall be battered 3 in 12

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

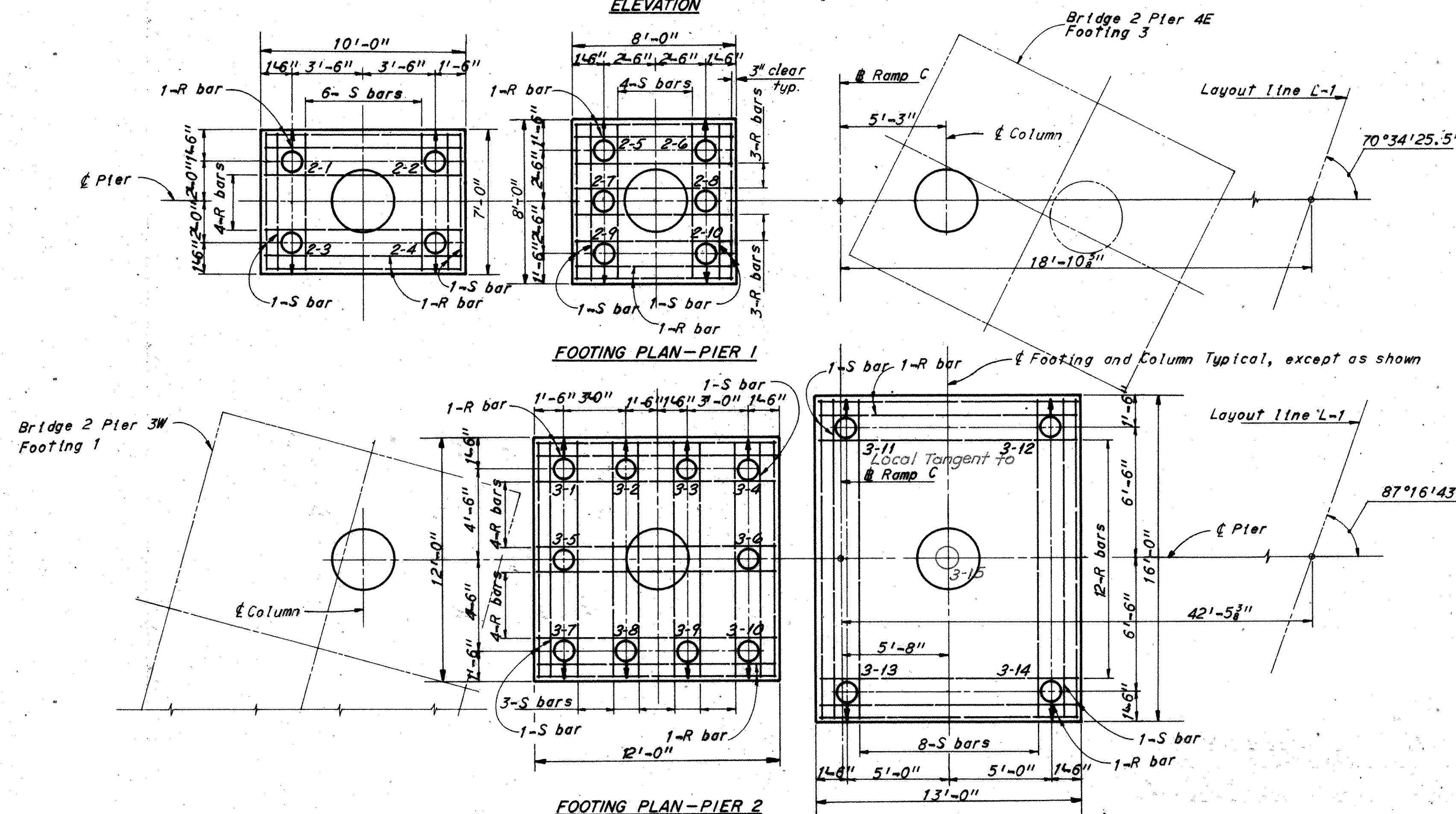
(P1) Denotes Pier 1 and (P2) denotes Pier 2.

e.f. denotes each face.

Footing C of Pier 1 and footing A of Pier 2 will be built with Bridge 2. For details see sheets 239 and 240

All stirrups within 4 feet of ϕ column shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

○—Denotes battered piles and direction of batter.



FOOTING PLAN-PIER 2

H.N.T.B. BRIDGE NO. 13 Revised 6-4-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS 1 AND 2

RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

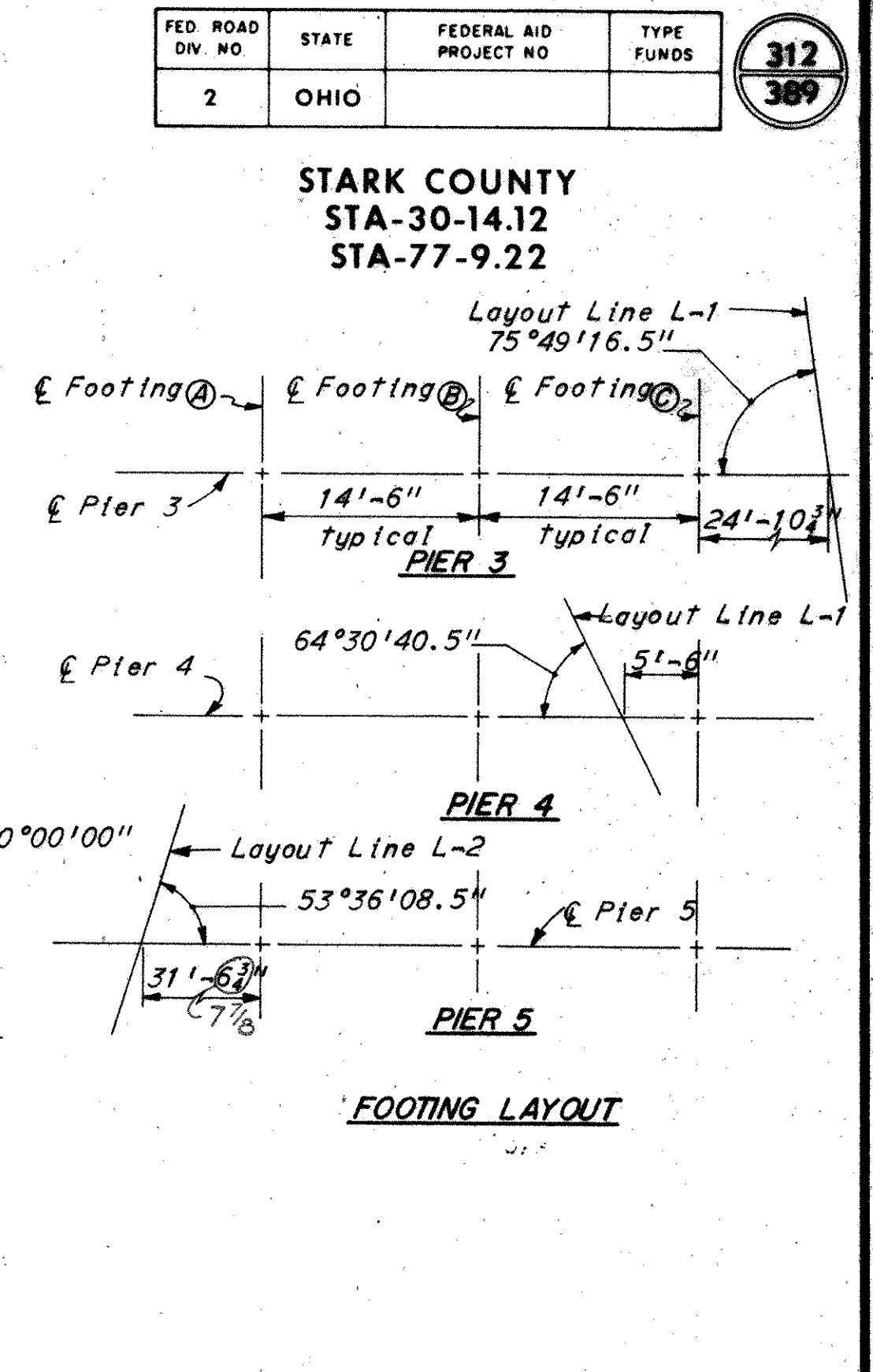
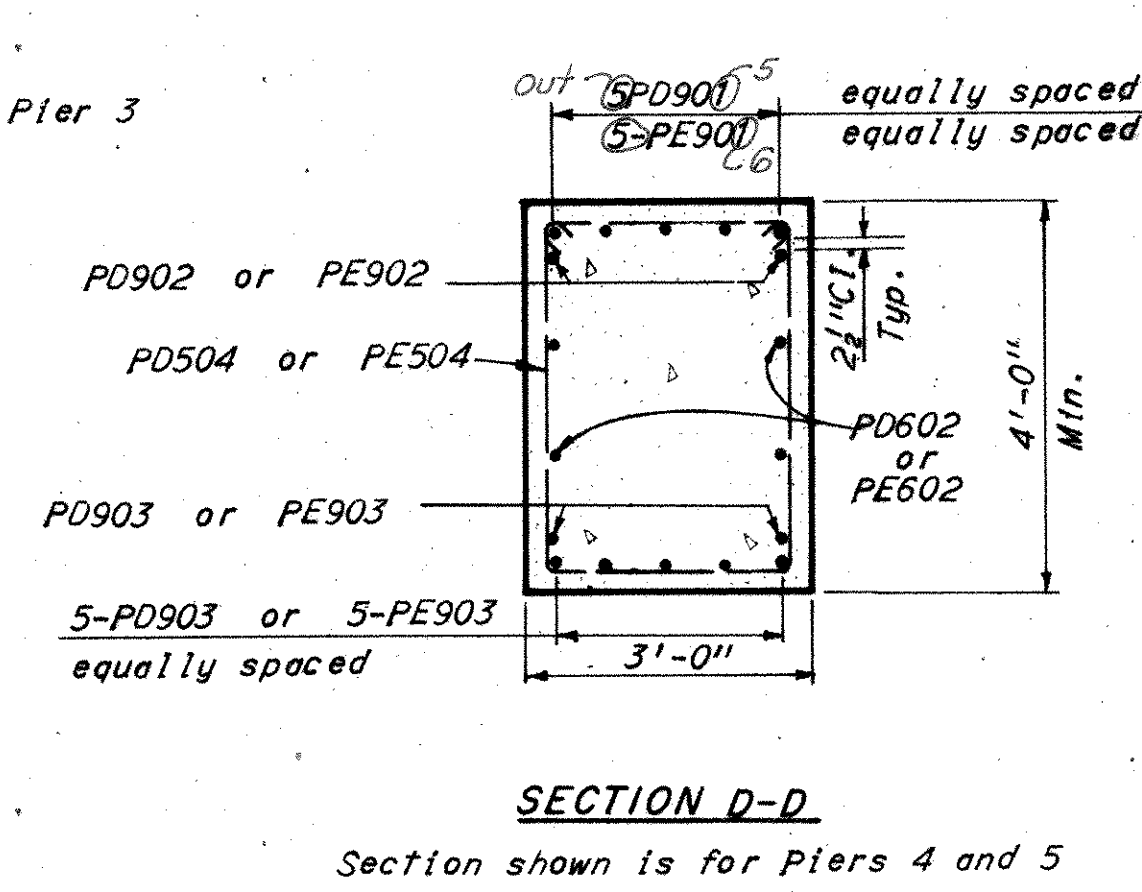
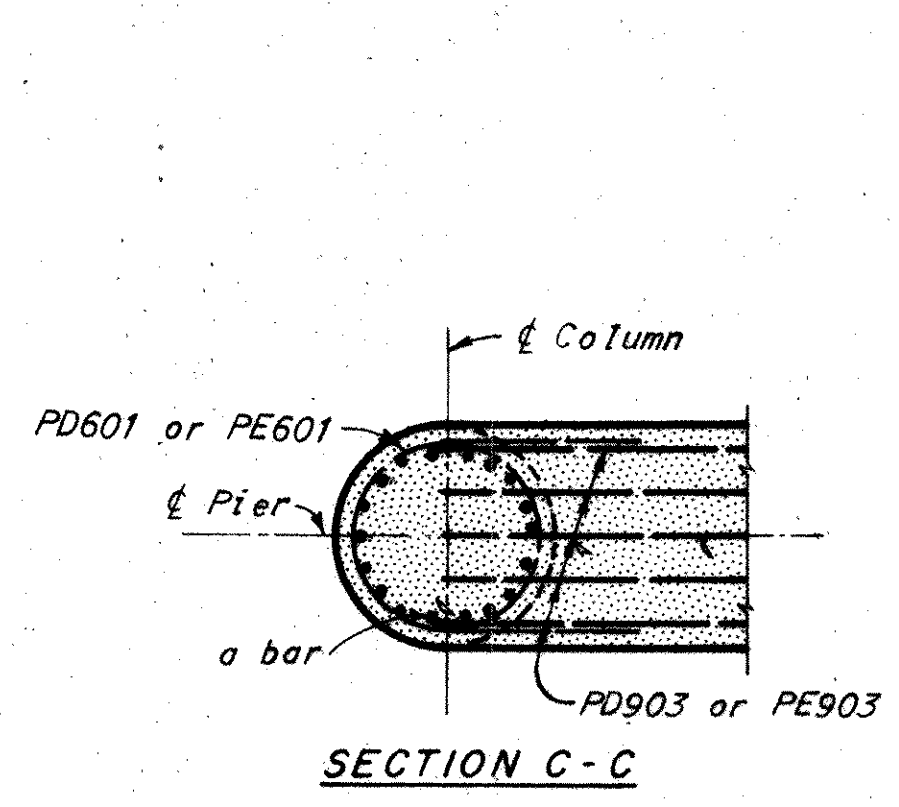
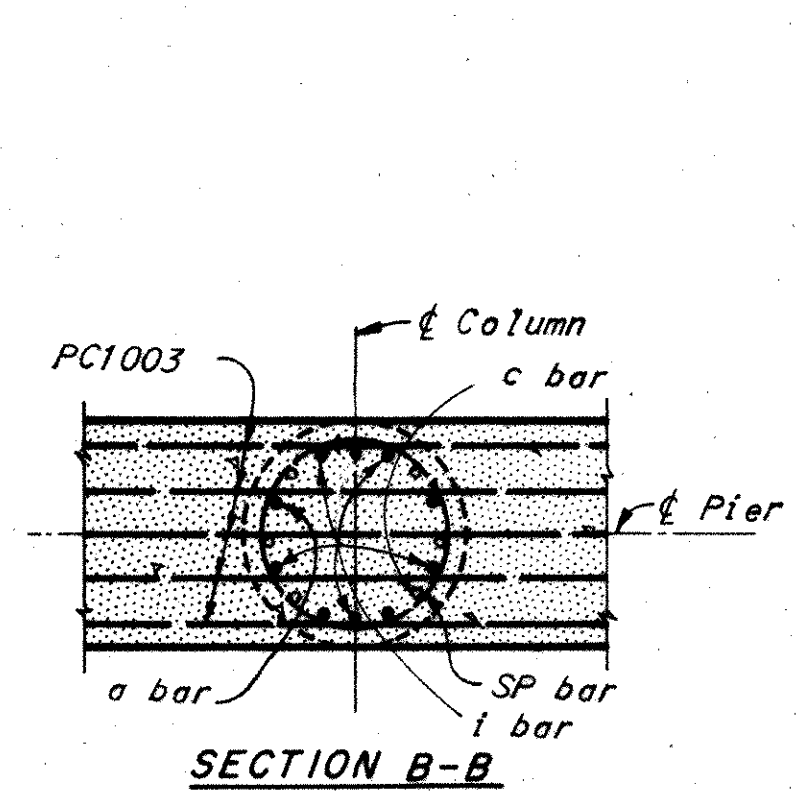
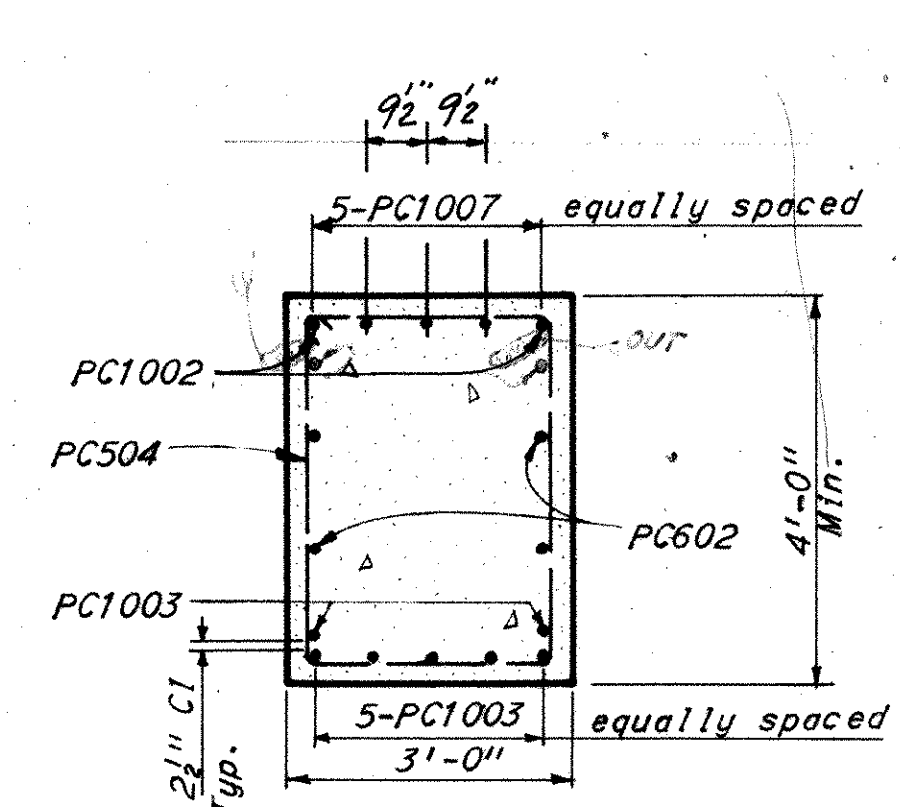
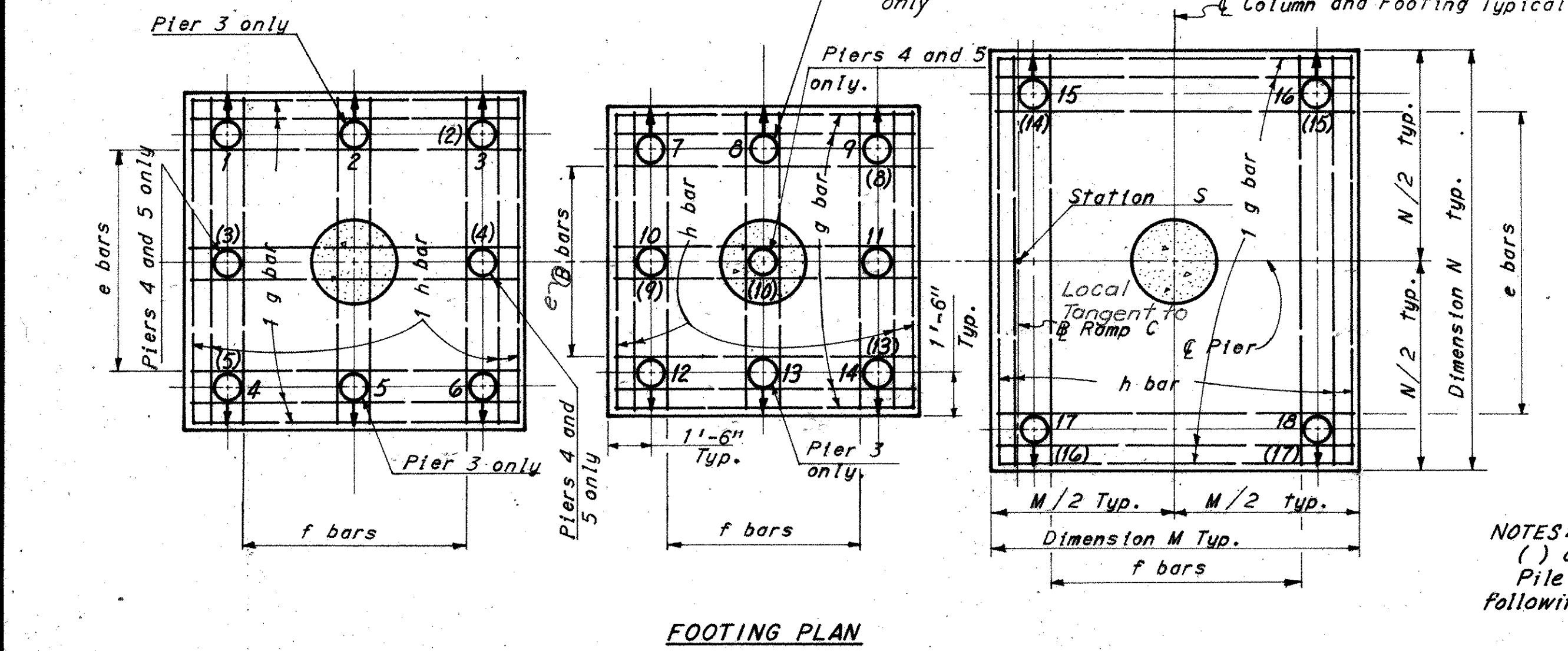
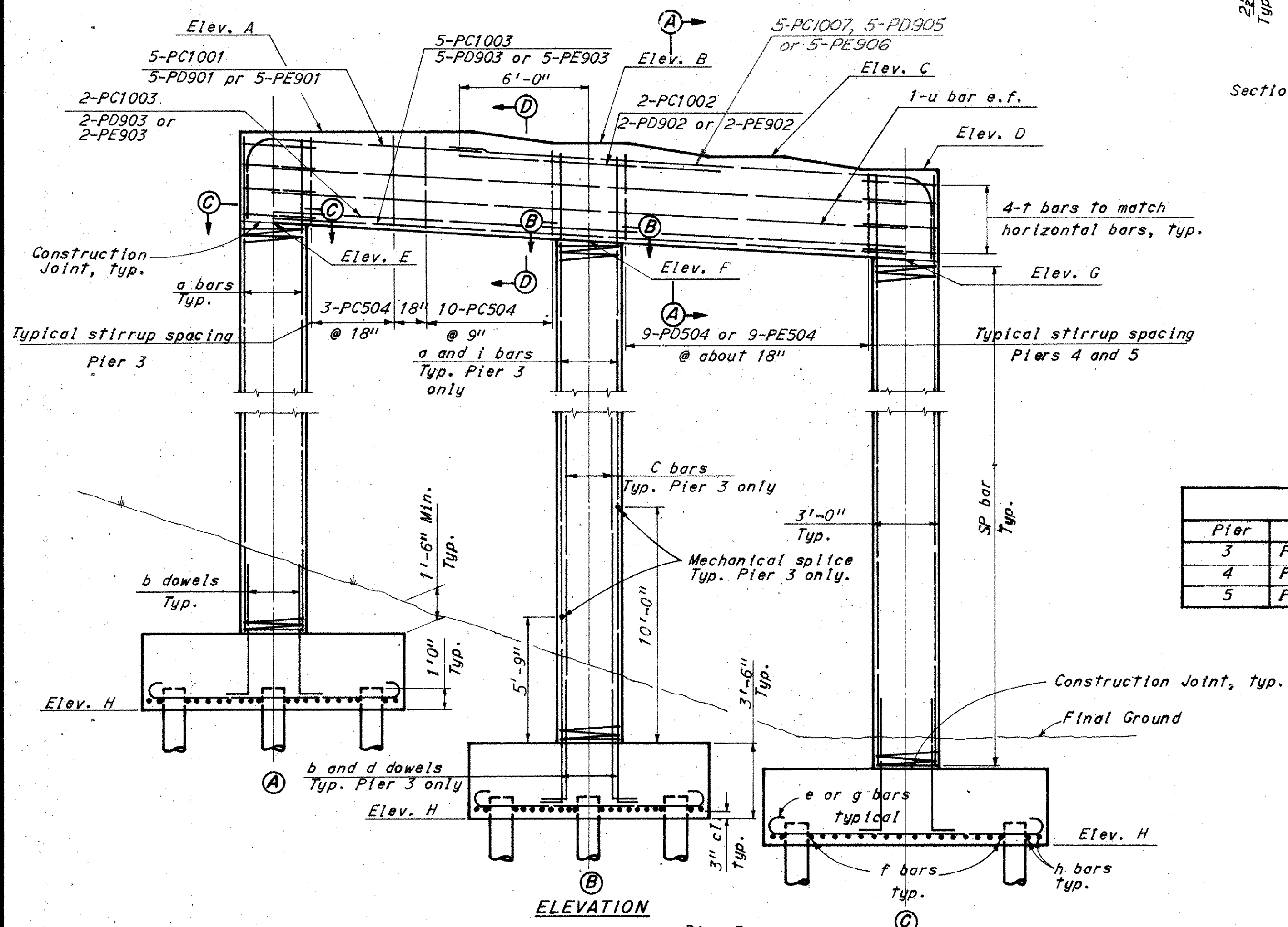
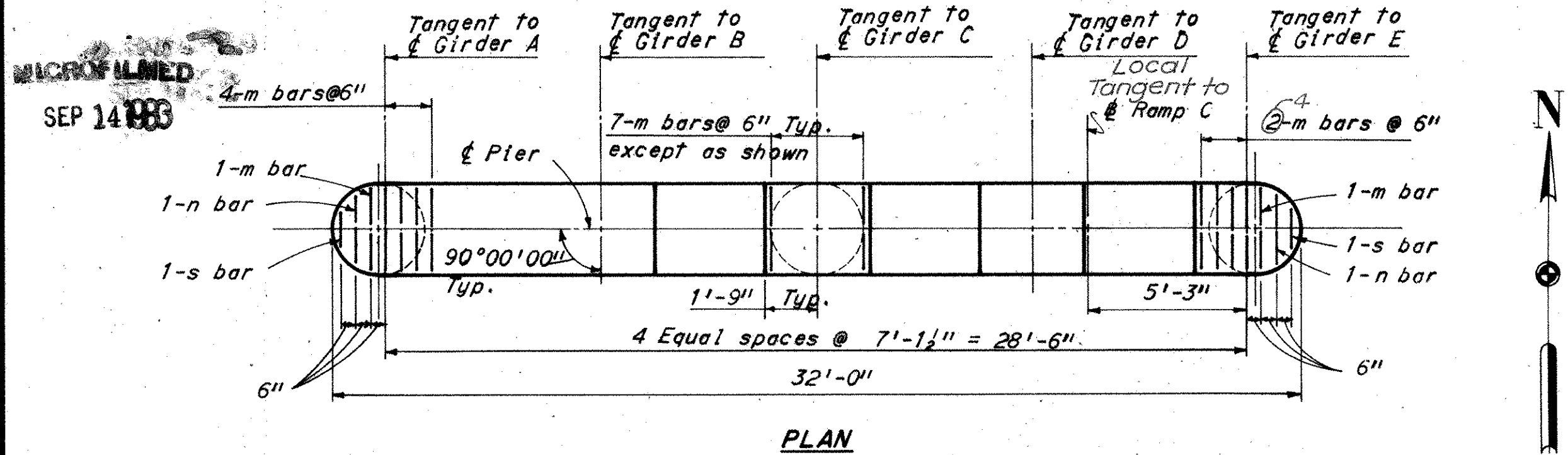
BR. NO. STA. 30+1493 STA. 957 + 34.25
SCALE: 1/4" = 1'-0" STA. 966 + 96.48

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN <i>B.M.</i>	TRACED	CHECKED <i>KSS</i>	REVIEWED <i>MSK</i>	REVISED
DATE <i>4/16/70</i>	DATE	DATE <i>5/24/70</i>	DATE <i>11-24-71</i>	1668

Revised 4-28-7



CAP BEAM DATA												
Pier	m bar	n bar	s bar	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G	t bar	u bar
3	PC501	PC502	PC503	1044.20	1043.65	1043.09	1042.50	1040.11	1039.25	1038.40	PC601	PC602
4	PD501	PD502	PD503	1048.61	1048.07	1047.50	1046.91	1044.52	1043.66	1042.81	PD601	PD602
5	PE501	PE502	PE503	1052.93	1052.38	1051.82	1051.23	1048.84	1047.98	1047.13	PE601	PE602

COLUMN REINFORCING STEEL							
Pier	Column	a bars	b dowels	c bars	d dowels	t bar	SP bar
3	A	5-PC1401	5-PC1404	6-PC1406	5-PC1407	5-PC1409	1-SPC401
	B	5-PC1402	5-PC1405	6-PC1406	5-PC1407	5-PC1408	1-SPC402
	C	5-PC1403	5-PC1404	6-PC1406	5-PC1407	5-PC1405	1-SPC403
4	A	16-PD1101	16-PD1104				1-SPD401
	B	16-PD1102	16-PD1104				1-SPD402
	C	16-PD1103	16-PD1104				1-SPD403
5	A	18-PE1101	18-PE1104				1-SPE401
	B	18-PE1102	18-PE1104				1-SPE402
	C	18-PE1103	18-PE1104				1-SPE403

* "b" dowels shall be matched with "a" bars and "d" dowels shall be matched with "i" bars, typ. Pier 3 only.

FOOTING DATA									
Pier	Station S	Footings	Elev. H	Dimension M	Dimension N	e bars	f bars	g bars	h bars
3	960+47.00	A	1003.30	12'-0"	12'-0"	8-PC901	8-PC1004	1-PC901	1-PC1004
		B	1000.80	11'-0"	11'-0"	8-PC1005	8-PC1005	1-PC1005	1-PC1005
		C	1000.80	13'-0"	15'-0"	12-PC801	9-PC1006	1-PC801	1-PC1006
4	961+34.00	A	1009.30	10'-0"	10'-0"	8-PD904	7-PD802	1-PD904	1-PD802
		B	1004.30	11'-0"	11'-0"	8-PD1001	8-PD801	1-PD1001	1-PD801
		C	1003.30	11'-0"	10'-0"	7-PD801	7-PD802	1-PD801	1-PD802
5	962+21.00	A	1009.30	10'-0"	10'-0"	8-PD904	7-PD801	1-PD904	1-PD801
		B	1004.80	12'-0"	12'-0"	8-PE1001	8-PE905	1-PE1001	1-PE905
		C	1002.30	11'-0"	10'-0"	7-PE802	7-PE801	1-PE802	1-PE801

NOTES:
() denotes Piers 4 and 5 only.
Pile Numbering Designations shall be proceeded with the following subscripts:
Pier 3:4; Pier 4:5; Pier 5:6; i.e. 4-1, 4-2, etc.

Notes:
Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting. Pier 3 only. See sheet 214.
All stirrups within 4 feet of ϕ of column shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.
m, n, and s bars shall be placed $2\frac{1}{2}$ " $\pm$ below top of cap beam.
For reinforcement schedule see Sheet 17/19.
All battered piles shall be battered 3 in 12.
Pile dimensions are measured along bottom of footing.
All piles are 12" ϕ cast-in-place concrete.
 $\odot$ denotes battered piles.
e.f. denotes each face.
Splices in No. 14 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.
Bars pre-fixed "PC" are for Pier 3, bars pre-fixed "PD" are for Pier 4 and bars pre-fixed "PE" are for Pier 5.

H.N.T.B. BRIDGE NO. 13

Revised 6-4-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF

CONSULTING ENGINEERS

KANSAS CITY CLEVELAND NEW YORK

PIERS 3, 4 AND 5

RAMP C OVER I-77 AND

PENNSYLVANIA RAILROAD

BR. NO. STA. 30+1493

SCALE: 1"=1'-0"

STA. 957+34.25

STA. 966+96.48

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN DATE 11-7-69

CHECKED DATE 6-4-70

REVIEWED DATE 11-20-71

REVISION 3-2-76

1668

SEP 14 1980

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

307
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

ESTIMATED AVERAGE PAY
LENGTH FOR PILING

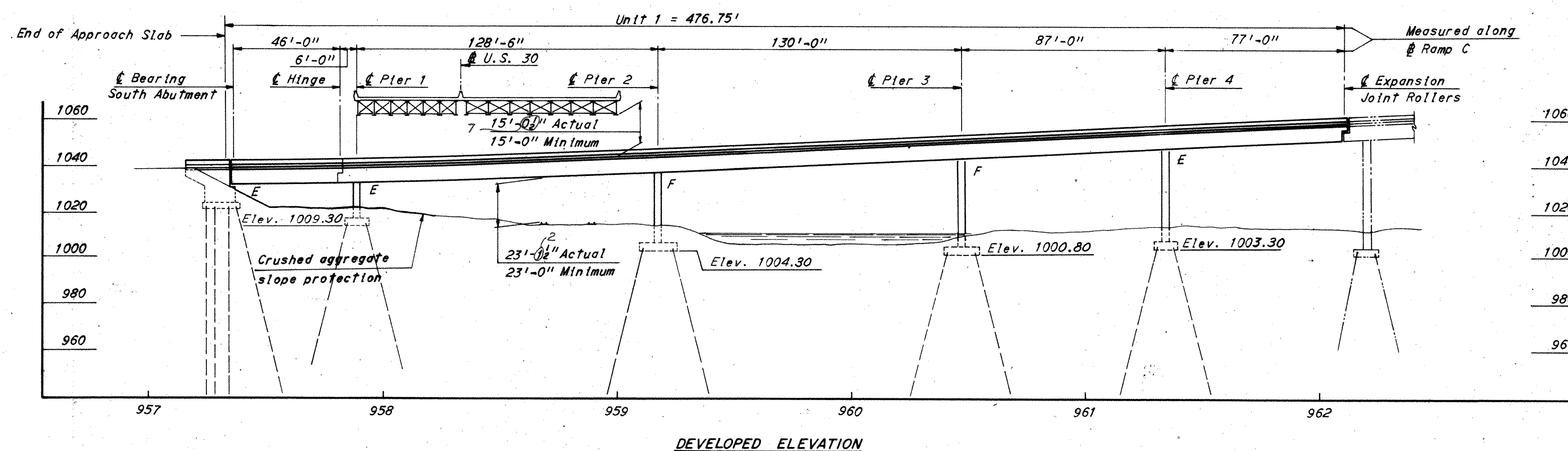
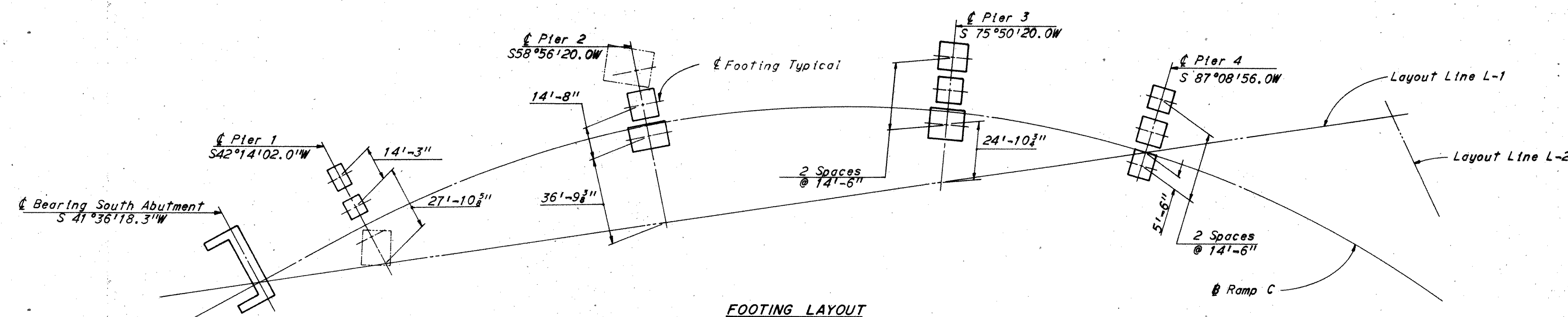
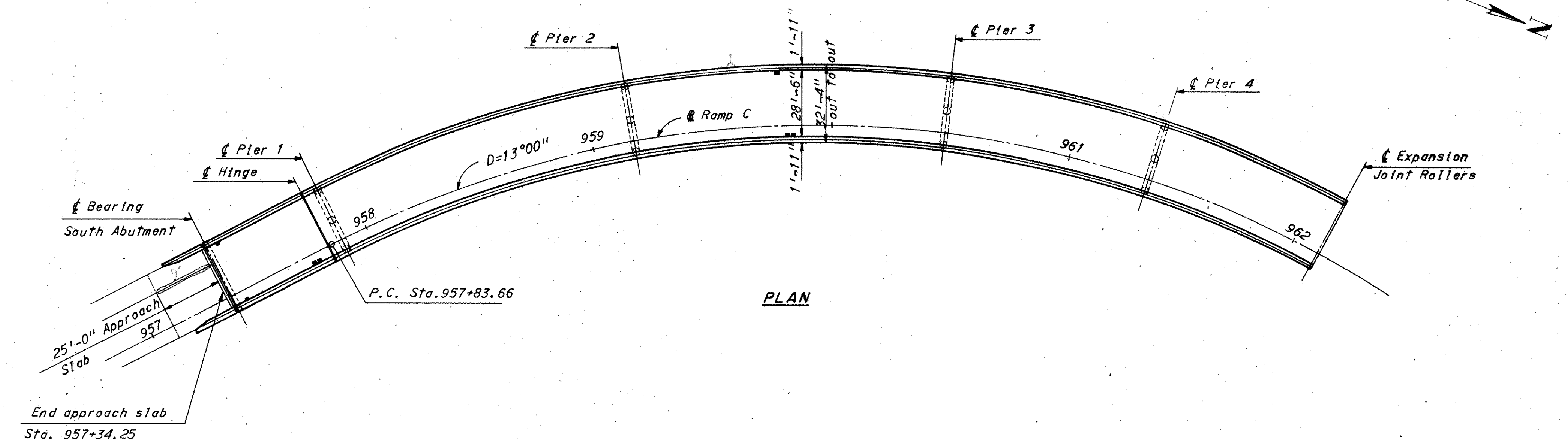
South Abutment	80'
Pier 1	70'
Pier 2	70'
Pier 3	70'
Pier 4	70'

These estimates are based on boring data and are approximate only. The contractor shall assume full responsibility for length of piling selected for driving.

All earthwork, including the area of the existing channel shall be completed before construction of adjacent piers and abutments is started. Pre-boring through new or existing embankments before driving the piles will be allowed at the contractor's option and expense.

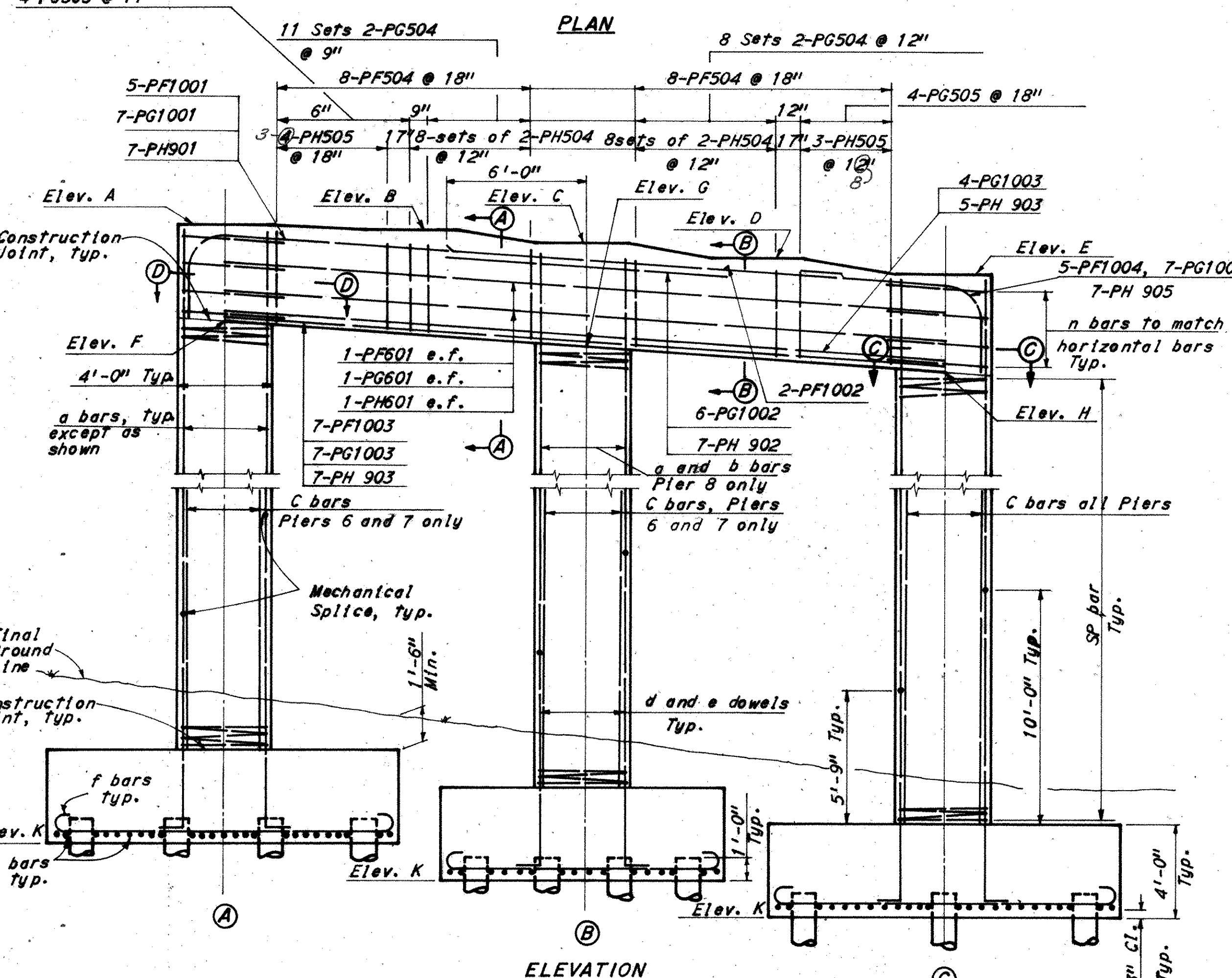
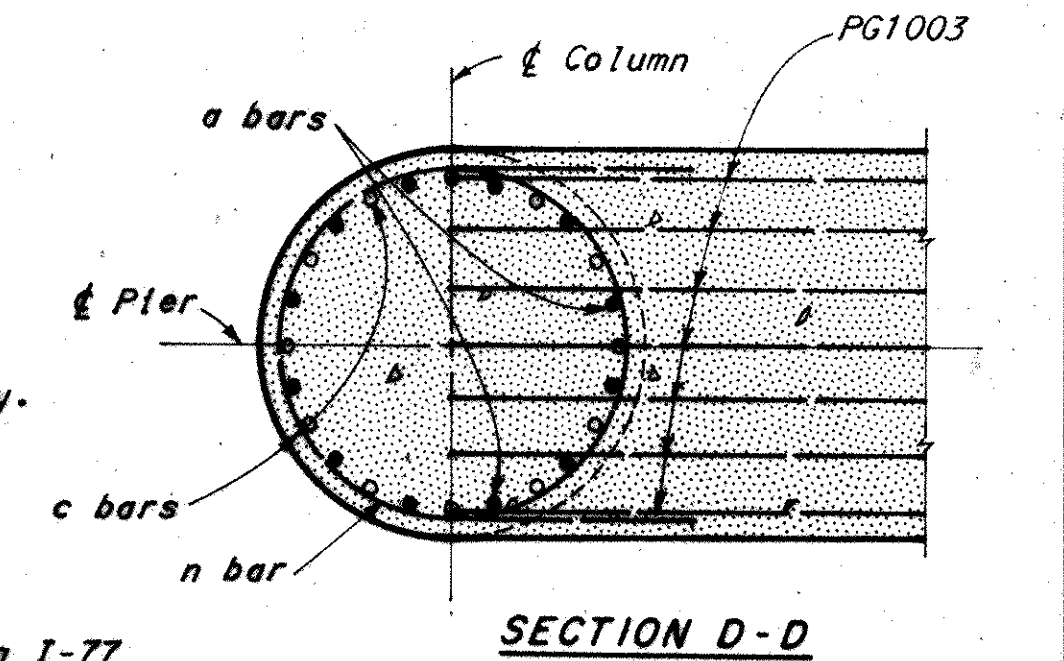
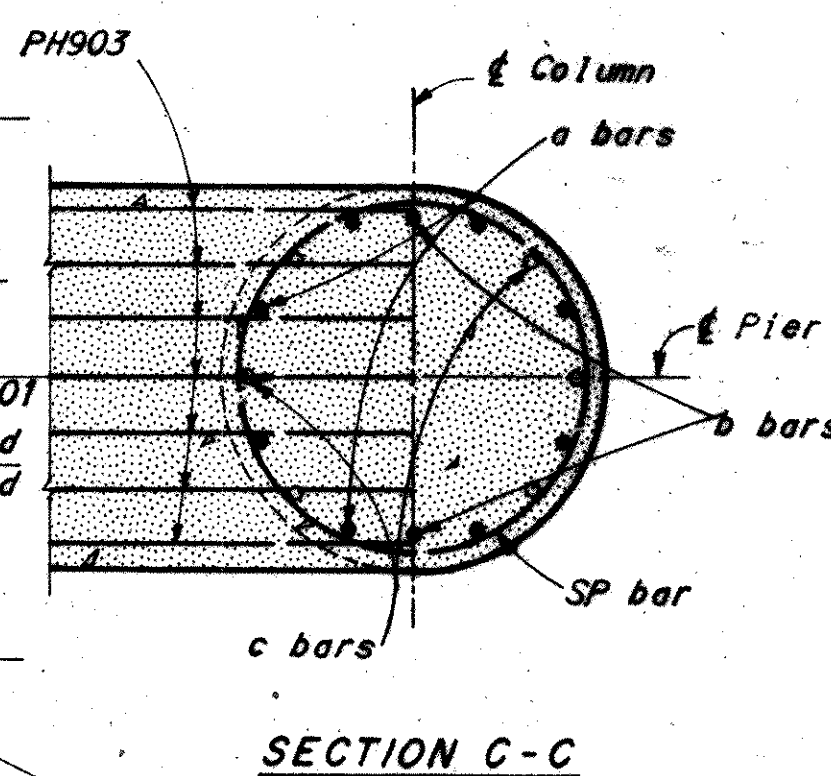
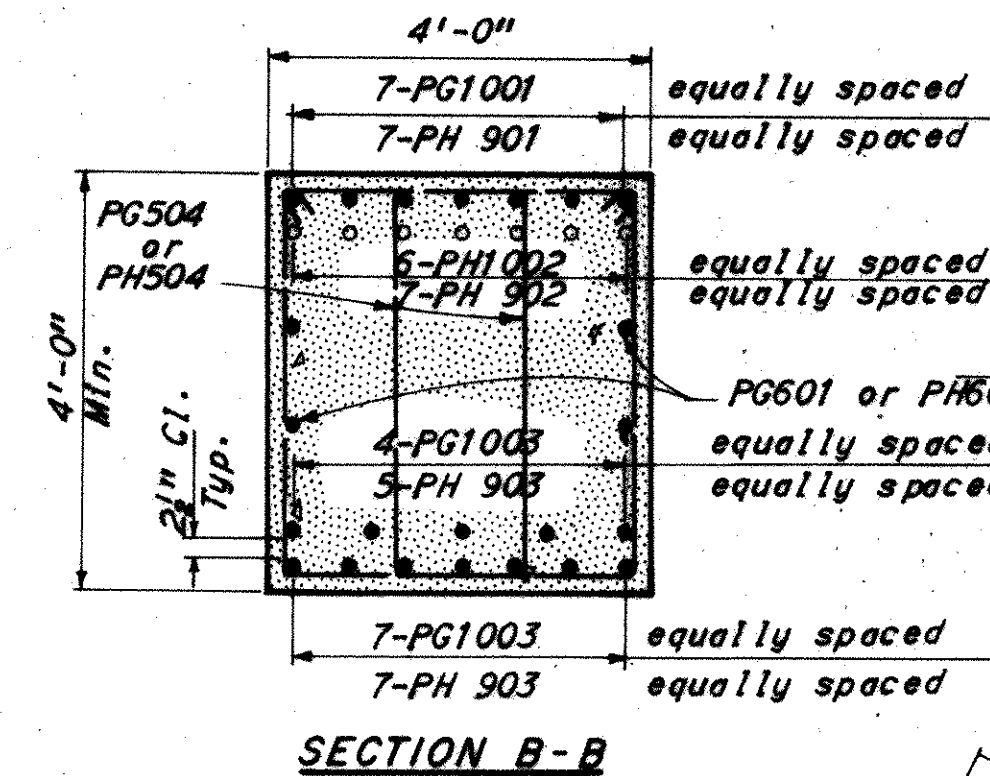
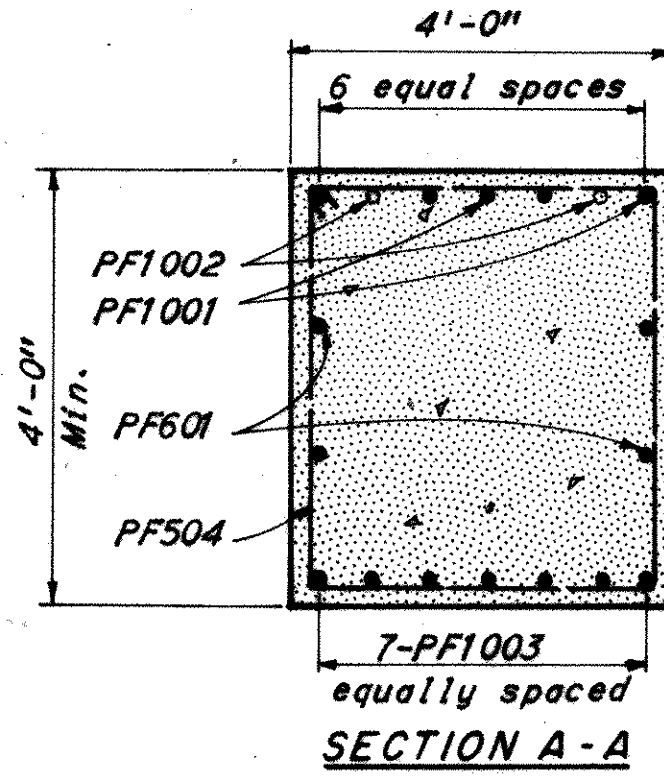
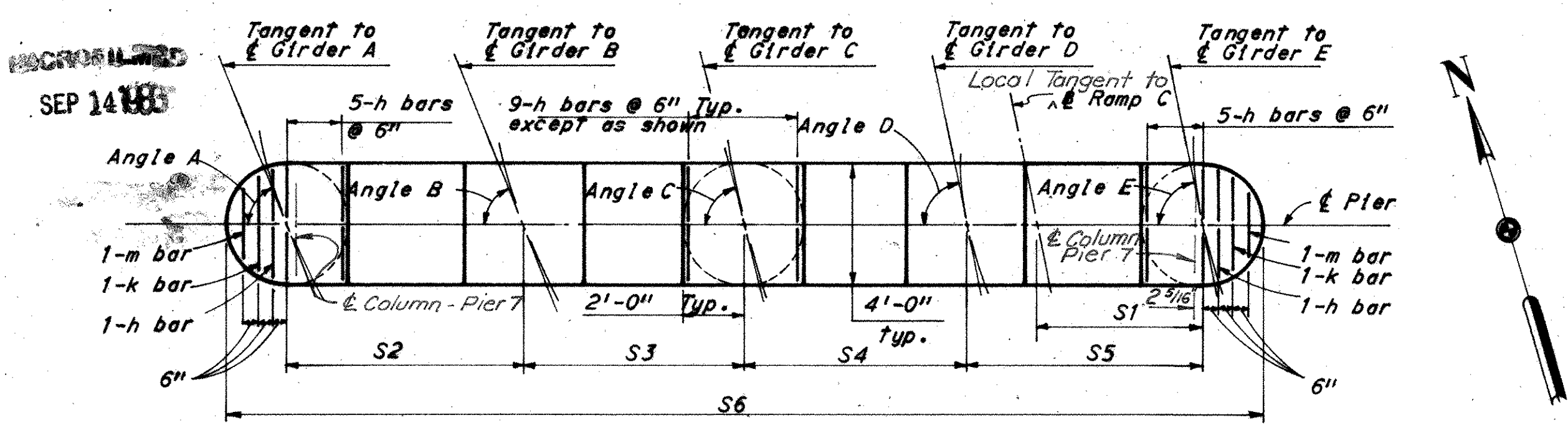
Notes:

- For profile grade see Sheet 2/19
- For details of Pier 1 see Sheet 7/19
- For details of Pier 2 see Sheet 7/19
- For details of Pier 3 and Pier 4 see Sheet 8/19
- For details of South Abutment see Sheet 5/19
- Denotes Standard Scupper
- All piles shall be 12" ϕ cast-in-place concrete.
- For lighting details see Lighting Plans
- For layout lines see Sheet 2/19

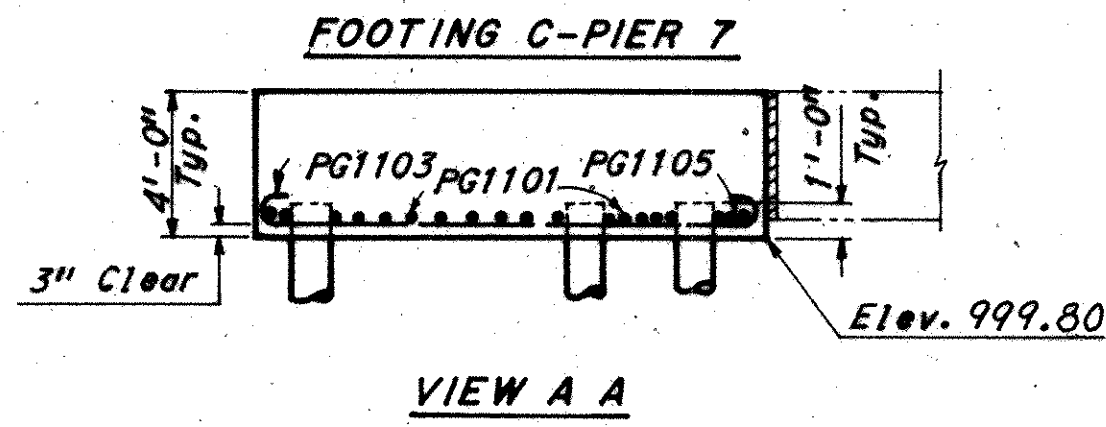
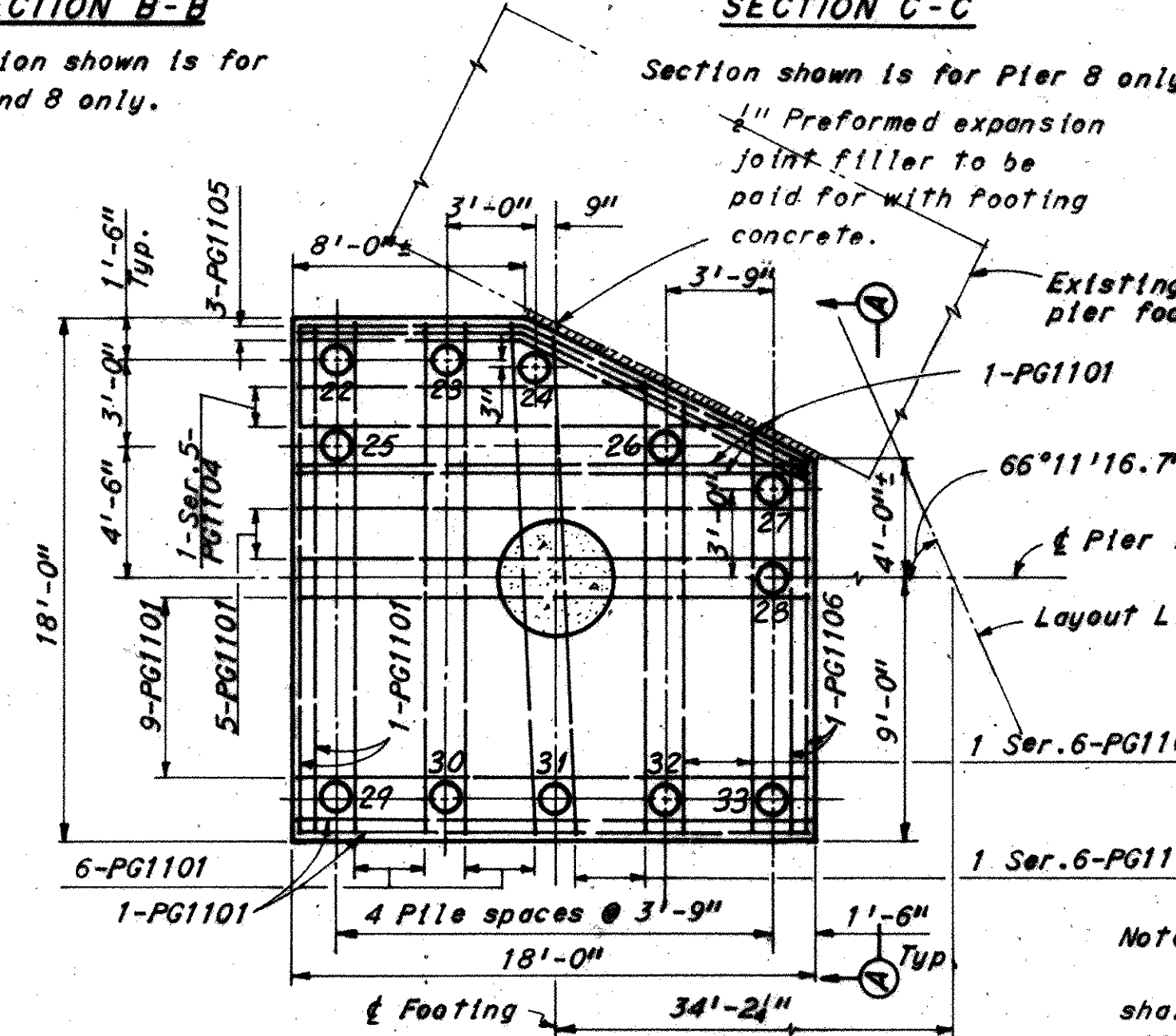


H.N.T.B. BRIDGE NO. 13		Revised 8-4-75	By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK			
GENERAL PLAN - UNIT 1 RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD			
BR. NO. STA. 30-1493		STA. 957 + 34.25	
SCALE: 1"=30'-0"		STA. 966 + 96.48	
RELOCATED U.S. 30			
CANTON		STARK COUNTY OHIO	
DRAWN BY	TRACED	CHECKED BY	REVIEWED
DATE 11-18-69	DATE	DATE 6-17-70	DATE 11-28-71
			166B

STARK COUNTY
STA-30-14.12
STA-77-9.22



CAP BEAM DATA			
Pier	6	7	8
Elev. A	1057.30	1063.42	1066.82
Elev. B	1057.23	1063.27	1066.84
Elev. C	1056.59	1062.56	1066.27
Elev. D	1055.95	1061.86	1065.71
Elev. E	1055.26	1061.08	1065.09
Elev. F	1053.16	1059.28	1062.70
Elev. G	1052.14	1058.11	1061.84
Elev. H	1051.12	1056.94	1060.97
S1	5'-5 3/4"	6'-2 1/4"	5'-8 1/2"
S2	7'-4 3/4"	8'-3 3/4"	7'-8 3/4"
S3	7'-4 3/4"	8'-4"	7'-8 3/4"
S4	7'-4 3/4"	8'-4 3/4"	7'-8 3/4"
S5	7'-4 3/4"	8'-5 1/4"	7'-8 3/4"
S6	33'-7 1/4"	37'-0 3/4"	34'-10 1/4"
h bar	PF501	PG501	PH501
k bar	PF502	PG502	PH502
m bar	PF503	PG503	PH503
n bars	4-PF602	4-PG602	4-PH602
Angle A	74°49'17.8"	59°32'06.2"	68°12'48.0"
Angle B	74°34'44.6"	59°00'28.8"	67°51'20.6"
Angle C	74°19'42.6"	58°27'40.3"	67°29'03.0"
Angle D	74°04'10.5"	57°53'36.2"	67°06'10.7"
Angle E	73°48'06.6"	57°18'11.8"	66°42'23.3"



COLUMN REINFORCING STEEL							
Pier	Column	a bars	b bars	c bars	*d dowels	*e dowels	SP bar
6	A	10-PF1401	-	10-PF1404	10-PF1406	10-PF1405	SPF401
	B	10-PF1402	-	10-PF1404	10-PF1406	10-PF1405	SPF402
	C	10-PF1403	-	10-PF1404	10-PF1406	10-PF1405	SPF403
7	A	12-PG1401	-	12-PG1404	12-PG1406	12-PG1405	SPG401
	B	12-PG1402	-	12-PG1404	12-PG1406	12-PG1405	SPG402
	C	12-PG1403	-	12-PG1404	12-PG1406	12-PG1405	SPG403
8	A	6-PH1401	6-PH1404	-	6-PH1409	6-PH1408	SPH401
	B	6-PH1402	6-PH1405	-	6-PH1409	6-PH1408	SPH402
	C	8-PH1403	2-PH1406	6-PH1407	8-PH1409	8-PH1408	SPH403

* "d" dowels shall be matched with "a" bars and "e" dowels shall be matched with "b" and "c" bars.

FOOTING DATA										
Pier	Station S	Column Spacing	Footing	Elev. K	M	N	No. Piles	Dimension A	Dimension B	f bars/g bars
6	963+08.00	14'-9 3/4"	A	1007.80	3	1	8	15'-0"	15'-0"	16-PF801/9-PF1101
			B	1004.30	3	2	11	12'-0"	12'-0"	12-PF902/16-PF901
			C	999.80	2	1	6	15'-0"	19'-0"	16-PF801/18-PF1102
7	964+36.00	16'-6 3/4"	A	998.80	3	2	10	12'-0"	16'-0"	16-PG801/16-PG1107
			B	998.80	3	3	13	12'-0"	15'-0"	16-PG1004/16-PG1108
			C	999.80	-	-	12	-	-	-
8	965+92.00	15'-5 1/4"	A	1007.80	3	2	10	13'-6"	13'-6"	14-PH804/13-PH1101
			B	1007.80	3	3	12	13'-6"	13'-6"	13-PH1101/13-PH1101
			C	1007.80	2	2	8	12'-0"	15'-0"	16-PH801/12-PH1101

NOTES: () denotes Pier 8 only.
Pile Numbering Designations shall be preceded with the following subscripts:
Pier 6:7; Pier 7:8; Pier 8:9; 7-1, 7-2, etc.

Notes:
The stirrups within 4 feet of ϵ of columns shall be placed with hooks in the bottom of cap. All others shall be placed in the top.
Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting. Piers 6 and 7 only. See sheet 214 h, k and m bars shall be placed 2 1/2" below top of cap beam.
For reinforcement schedule see Sheet 17/19 and 18/19.
Pile dimensions are measured along bottom of footing.
All piles are 12" ϕ cast-in-place concrete.
 $\bigcirc$ denotes battered piles.
All battered piles shall be battered 3 in 12 except as shown.
e.f. denotes each face.
Splice in No. 14 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.
Bars pre-fixed "PF" are for Pier 6, bars pre-fixed "PG" are for Pier 7 and bars pre-fixed "PH" are for Pier 8.

H.N.T.B. BRIDGE NO. 13 Revised 6-4-75 By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF 9/19
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
PIERS 6, 7 AND 8
RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD
BR. NO. STA. 30-14.93 STA. 957 + 34.25
SCALE: 1/4" = 1'-0" STA. 966 + 96.48
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO
DRAWN BY DATE 1-17-79
CHECKED BY DATE 6-10-79
REVIEWED BY DATE 11-20-79
REVISIONS 1668
Revised 4-28-77

STARK COUNTY STA-30-14.12 STA-77-9.22

Notes: Top and bottom flanges are identical in size. All stiffeners shall be placed normal to girder flanges. All intermediate stiffener to web welds shall be 1" continuous fillets on both sides of stiffeners. For detail of field splices see Sheet 355. Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of the girders instead of 2".

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices. End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4. For intermediate crossframe details see Sheet 360. All crossframes are intermediate crossframes unless shown otherwise. For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 2 of 4, and Sheet 359. Intermediate stiffeners shall be Pls. 5 x 1/2" for flanges over 12", for 12" flanges use Pls. 5 1/2 x 1/2". For hinge details see sheet 358. For expansion joint details see sheet 356. For details at rockers and bolsters see Ohio Standard Drawing RB-1-55. The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection. The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4. Dimensions to scuppers are measured along centerline of girders. ■ Denotes scupper. Tension areas of bottom flange are denoted by T. For the top flange, the areas are in compression. For details of expansion joint crossframe see sheet 360. For Camber and Deflection Table see Sheet 364. For details of intermediate stiffeners see Sheet 360. For Underdeck light details, see Lighting Plans.

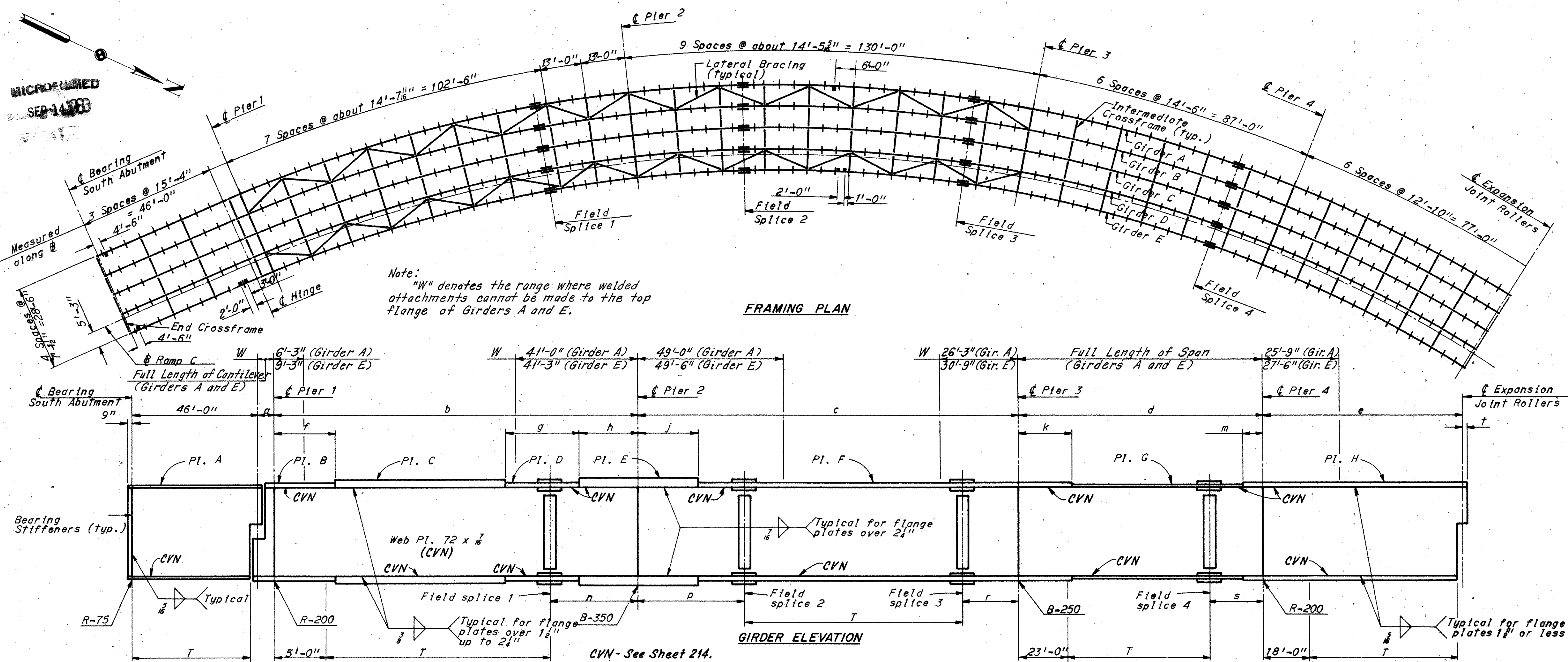


TABLE OF DIMENSIONS

Girder	a	b	c	d	e	f	g	h	j	k	m	n	p	r	s	t
A	6'-3 1/2"	135'-3 3/4"	136'-10 3/8"	91'-7 1/8"	81'-0 3/8"	20'-0"	25'-0"	20'-0"	20'-0"	18'-0"	7'-0"	31'-7"	38'-5 1/8"	20'-0"	20'-0"	7"
B	6'-2 1/2"	133'-2 1/2"	134'-9 1/8"	90'-2 3/8"	79'-9 1/8"	21'-0"	30'-0"	17'-0"	18'-0"	19'-0"	9'-0"	31'-1 1/8"	37'-10"	19'-8 3/8"	19'-8 3/8"	7"
C	6'-1 1/2"	131'-1 1/2"	132'-7 1/8"	88'-9 1/8"	78'-6 1/8"	24'-0"	32'-0"	15'-0"	18'-0"	18'-0"	8'-0"	30'-7 1/8"	37'-2 1/8"	19'-4 1/8"	19'-4 1/8"	7"
D	6'-0 1/2"	129'-0 1/2"	130'-6 1/8"	87'-4 1/8"	77'-3 1/8"	23'-0"	32'-0"	17'-0"	15'-0"	15'-0"	10'-0"	30'-1 1/8"	36'-7 1/8"	19'-1 1/8"	19'-1 1/8"	7"
E	5'-11 1/2"	126'-11 1/2"	128'-5 1/8"	85'-11 1/8"	76'-1"	17'-0"	37'-0"	14'-0"	14'-0"	11'-0"	6'-0"	29'-7 1/4"	36'-0 3/4"	18'-9 3/8"	18'-9 3/8"	7"

TABLE OF PLATES

Pl. A	Pl. B	Pl. C	Pl. D	Pl. E	Pl. F	Pl. G	Pl. H
12x 1/2	18x1 1/2	18x2	18x1 1/2	18x2 1/2	18x1 1/2	14x 1/2	14x1 1/2
12x 1/2	18x1 1/2	18x1 1/2	18x1 1/2	18x2 1/2	18x1 1/2	14x 1/2	14x1 1/2
12x 1/2	18x1 1/2	18x1 1/2	18x1 1/2	18x2 1/2	18x1 1/2	14x 1/2	14x1 1/2
12x 1/2	18x1 1/2	18x1 1/2	18x1 1/2	18x2 1/2	18x1 1/2	14x 1/2	14x1 1/2
12x 1/2	18x1 1/2	18x1 1/2	18x1 1/2	18x2 1/2	18x1 1/2	14x 1/2	14x1 1/2

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

Girder	Brig. S. Abut.	.25	.50	.75	Pier 1	.1	.2	.3	.4	.5	.6	.7	.8 *	.9	Pier 2	.1	.2	.3 *	.4
A	1039.56	1039.90	1040.27	1040.66	1041.06	1041.49	1041.95	1042.42	1042.92	1043.45	1044.00	1044.57	1044.95	1045.73	1046.31	1046.91	1047.53	1048.04	1048.81
B	1039.49	1040.02	1040.38	1040.75	1041.15	1041.57	1042.01	1042.48	1042.97	1043.49	1044.02	1044.58	1044.96	1045.73	1046.31	1046.91	1047.53	1048.04	1048.81
C	1039.48	1039.78	1040.11	1040.45	1040.82	1041.21	1041.62	1042.06	1042.52	1043.01	1043.51	1044.04	1044.40	1045.15	1045.72	1046.32	1046.94	1047.45	1048.22
D	1039.27	1039.54	1039.84	1040.15	1040.49	1040.85	1041.23	1041.64	1042.07	1042.52	1043.00	1043.50	1043.85	1044.57	1045.13	1045.73	1046.34	1046.86	1047.62
E	1039.07	1039.30	1039.56	1039.85	1040.16	1040.49	1040.84	1041.22	1041.62	1042.04	1042.49	1042.96	1043.29	1043.99	1044.54	1045.14	1045.75	1046.27	1047.03

BEARING STIFFENERS

Girder	S. Abut.	Pier 1	Pier 2	Pier 3	Pier 4
A	5x 1/2	8x 1/2	8x1 1/2	8x 1/2	6x 1/2
B	5x 1/2	8x 1/2	8x1 1/2	8x 1/2	6x 1/2
C	5x 1/2	8x 1/2	8x1 1/2	8x 1/2	6x 1/2
D	5x 1/2	8x 1/2	8x1 1/2	8x 1/2	6x 1/2
E	5x 1/2	8x 1/2	8x1 1/2	8x 1/2	6x 1/2

DIMENSIONS FOR BOLSTER B-350 AND ROCKER R-350

	A	B	C	D	F	G	H	K	L	M	R	T	Y
B-350	4	22	4	1/2	1/2	20 1/2	15	30	—	13 1/2	3 1/2	1 1/2	—
R-350	4	22	4	3/4	1/2	12 20 1/2	15	30	25	13 1/2	3 1/2	1 1/2	—

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE

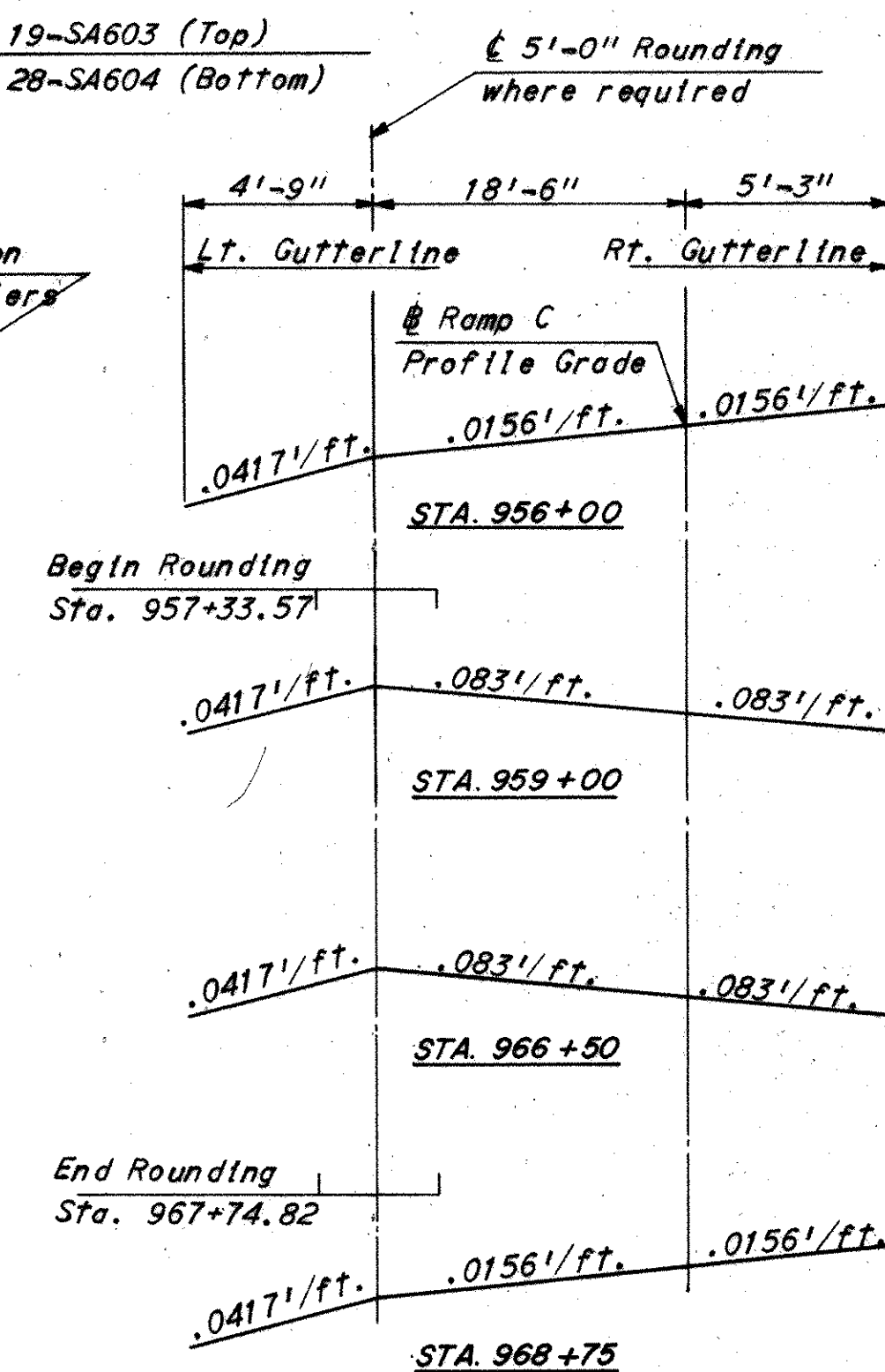
	Brig. S. Abut.	.25	.50	.75	Pier 1	.1	.2	.3	.4	.5	.6	.7	.8	.9	Pier 2	.1	.2	.3	.4	.5
West Gutterline	1039.56	1039.91	1040.28	1040.66	1041.06	1041.52	1042.00	1042.48	1043.00	1043.51	1044.05	1044.61	1045.17	1045.74	1046.31	1046.92	1047.55	1048.20	1048.85	1049.51
East Gutterline	1039.07	1039.31	1039.57	1039.86	1040.16	1040.50	1040.87	1041.27	1041.66	1042.09	1042.52	1042.99	1043.48	1044.00	1044.54	1045.14	1045.76	1046.40	1047.04	1047.69

Note: The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

Note: The above table of dimensions applies to the standard details shown on the state of Ohio standard drawing No. RB-1-55 Revised 2-2-59.

H.N.T.B. BRIDGE NO. 13 Revised 6-9-75 By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
FRAMING PLAN UNIT I
RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD
BR. NO. STA. 30-1493 STA. 957 + 34.25
SCALE: 1" = 20'-0" STA. 966 + 96.48
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO
DRAWN BY DATE 8-8-69 TRACED DATE 5-15-70 CHECKED KSS DATE 5-15-70 REVIEWED MJK DATE 11-20-71 REVISIONS 1668

STARK COUNTY
STA-30-14.12
STA-77-9.22



SUPERELEVATION DATA - RAMP C

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 362
For deflection joint details see Sheet 361
Transverse reinforcing steel shall be placed radially.

For reinforcement schedule see Sheets 18 19 & 19 19.

For intermediate crossframe details
see Sheet 360



HAUNCH DEPTHS	
Girder	Haunch Depth
A and B	10 $\frac{1}{2}$ "
C	10 $\frac{1}{8}$ "
D and E	9 $\frac{3}{4}$ "

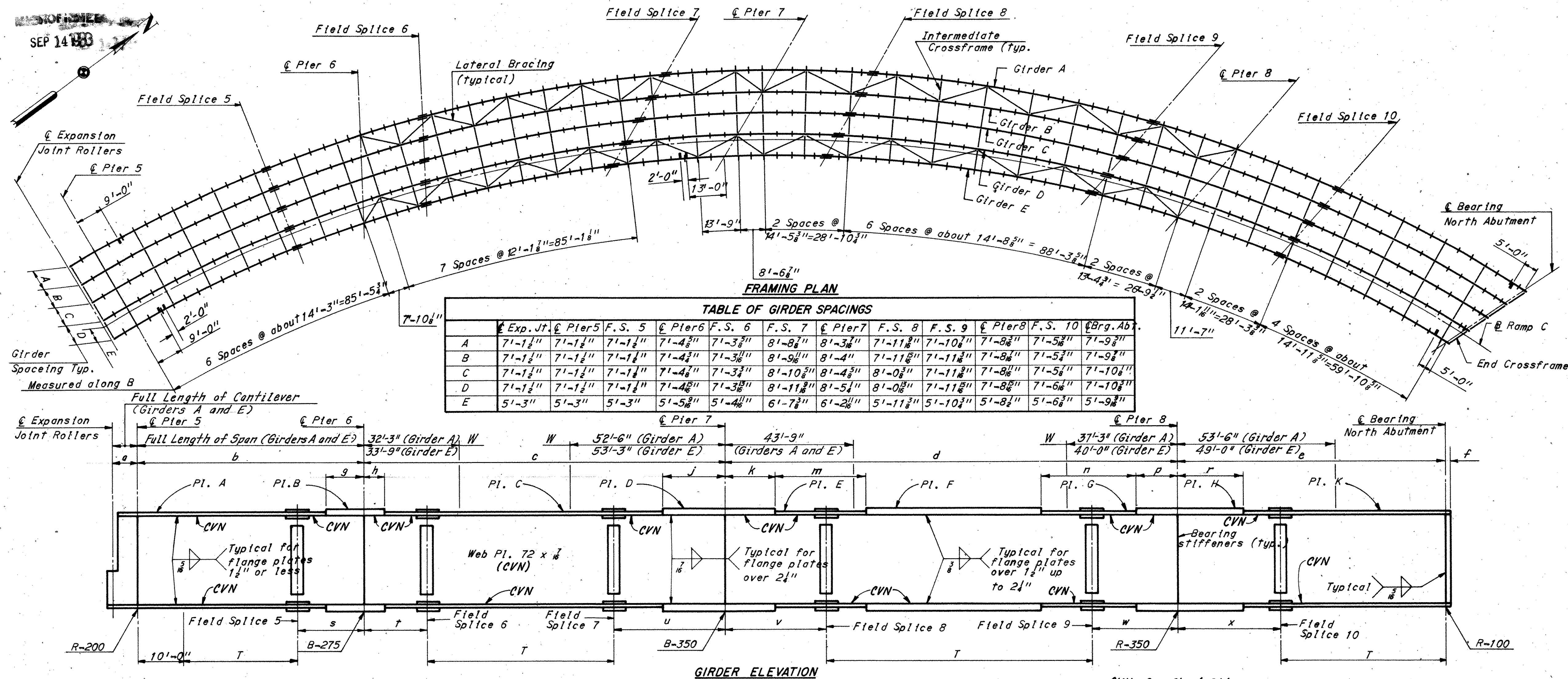
	A	B
Pier 2	21'-0"	31'-0"
Pier 3	19'-0"	33'-0"
Pier 4	17'-6"	17'-6"

**This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.*



H.N.T.B. BRIDGE NO. 13		Revised 6-4-75		By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS				11/19
KANSAS CITY CLEVELAND NEW YORK				
DECK PLAN UNIT I				
RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD				
BR. NO. STA. 30-1493.1			STA. 957 + 34.25	
SCALE: 1" = 20'-0"			STA. 966 + 96.48	
RELOCATED U.S. 30				
CANTON		STARK COUNTY		OHIO
DRAWN <i>D.N.B.</i>	TRACED	CHECKED	REVIEWED	REvised
DATE 7-30-69	DATE	DATE <i>K.S.S.</i>	DATE <i>M.H.</i>	
		6-15-70	11-20-71	1668

STARK COUNTY
STA-30-14.12
STA-77-9.22



Notes:
Top and bottom flanges are identical in size.
All stiffeners shall be placed normal to girder flanges.
All intermediate stiffener to web welds shall be 1/4" continuous fillets on both sides of stiffeners.
For detail of field splices see Sheet 355.
All intermediate stiffeners shall be Pls. 5x1/2".
For expansion joint details see Sheet 356.
Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of the girders instead of 2".

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.
End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.
For intermediate crossframe details see Sheet 360.
All crossframes are intermediate crossframes unless shown otherwise.
For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 2 of 4, and Sheet 359.

For treatment of girder ends at North Abutment see Sheet 360.
For details at rockers and bolsters see Ohio Standard Drawing RB-1-55 and Sheet 10/19.
The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.
The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.
Dimensions to scuppers are measured along centerline of girders.
■ Denotes scupper

Tension areas of the bottom flange are denoted by "T". For the top flange, these areas are in compression.
For Camber and Deflection Table see Sheet 364.
For detail of expansion crossframe see Sheet 360.
For details of intermediate stiffeners see Sheet 360.
For underdeck light details see Lighting Plans.

TABLE OF DIMENSIONS																		
Girder	a	b	c	d	e	f	g	h	i	j	k	m	n	p	r	s	t	u
A	10'-6 1/2"	98'-2 1/2"	142'-7 1/2"	159'-6 1/2"	108'-3 1/2"	9 1/2"	19'-0"	8'-0"	23'-0"	17'-0"	38'-0"	43'-0"	12'-0"	21'-0"	34'-0 1/2"	21'-11 1/2"	37'-1 1/2"	33'-5 1/2"
B	10'-4 1/2"	94'-9 1/2"	138'-2 1/2"	158'-5 1/2"	106'-4 1/2"	9 1/2"	14'-0"	7'-0"	24'-0"	17'-0"	45'-0"	50'-0"	11'-0"	20'-0"	31'-6 1/2"	21'-11 1/2"	37'-4 1/2"	33'-7 1/2"
C	10'-2 1/2"	91'-4 1/2"	133'-8 1/2"	157'-4 1/2"	104'-5 1/2"	9 1/2"	15'-0"	10'-0"	25'-0"	22'-0"	28'-0"	28'-0"	16'-0"	22'-0"	29'-1 1/2"	21'-11 1/2"	37'-7 1/2"	33'-9 1/2"
D	10'-0 1/2"	87'-10 1/2"	129'-2 1/2"	156'-3 1/2"	102'-6 1/2"	9 1/2"	13'-0"	7'-0"	21'-0"	17'-0"	31'-0"	31'-0"	14'-0"	22'-0"	26'-7 1/2"	21'-11 1/2"	37'-11 1/2"	33'-11 1/2"
E	9'-10 3/8"	84'-5 1/2"	124'-7 1/2"	150'-2 1/2"	100'-6 1/2"	9 1/2"	9'-0"	6'-0"	19'-0"	11'-0"	38'-0"	39'-0"	9'-0"	17'-0"	24'-2 1/2"	22'-0 1/2"	38'-2 1/2"	34'-1 1/2"

Note:
"W" denotes the range where welded attachments cannot be made to the top flange of Girders A and E.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS																		
Girder	Exp. Jt.	Pier 5	.25	.50	.75	Pier 6	.1	.2	.3	.4	.5	.6	.7	.8	.9	Pier 7	.1	.2
A	1060.76	1061.26	1062.41	1063.56	1064.27	1065.87	1066.53	1066.89	1067.87	1068.54	1069.21	1069.88	1070.79	1071.16	1071.75	1072.29	1072.85	1073.40
B	1060.76	1061.26	1062.39	1063.51	1064.27	1065.77	1066.43	1066.82	1067.75	1068.41	1069.07	1069.73	1070.57	1071.00	1071.59	1072.13	1072.71	1073.26
C	1060.17	1060.66	1061.77	1062.88	1063.68	1065.09	1065.73	1066.15	1067.03	1067.68	1068.32	1068.97	1069.74	1070.24	1070.83	1071.37	1071.97	1072.52
D	1059.58	1060.07	1061.15	1062.23	1063.09	1064.40	1065.03	1065.48	1066.30	1066.94	1067.57	1068.21	1068.89	1069.47	1070.05	1070.60	1071.22	1071.77
E	1058.99	1059.48	1060.54	1061.59	1062.50	1063.70	1064.33	1064.81	1065.57	1066.20	1066.82	1067.44	1068.03	1068.68	1069.27	1069.82	1070.46	1071.01

TABLE OF PLATES									
Grd.	Pl. A	Pl. B	Pl. C	Pl. D	Pl. E	Pl. F	Pl. G	Pl. H	Pl. K
A	14x6	18x1 1/2	18x1 1/2	18x3	18x1 1/2	18x1 1/2	18x1 1/2	18x2 1/2	18x1
B	14x6	18x1 1/2	18x1 1/2	18x2 1/2	18x1 1/2	18x1 1/2	18x1 1/2	18x2 1/2	18x1
C	14x6	18x1 1/2	18x1 1/2	18x2 1/2	18x1	18x1 1/2	18x1	18x2 1/2	18x1
D	14x6	18x1 1/2	18x1 1/2	18x2 1/2	18x1	18x1 1/2	18x1	18x2	18x1
E	14x6	18x1 1/2	18x1 1/2	18x2 1/2	18x1	18x1 1/2	18x1	18x2	18x1

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE																		
Girder	Exp. Jt.	Pier 5	.25	.50	.75	Pier 6	.1	.2	.3	.4	.5	.6	.7	.8	.9	Pier 7	.1	.2
A	1073.41	1073.83	1074.24	1074.60	1074.91	1075.18	1075.42	1075.56	1075.68	1075.73	1075.75	1075.74	1075.64	1075.52	1075.36	1075.17	1074.95	1074.71
B	1073.30	1073.72	1074.15	1074.53	1074.85	1075.13	1075.38	1075.53	1075.66	1075.72	1075.75	1075.76	1075.75	1075.67	1075.57	1075.43	1075.26	1075.04
C	1072.59	1073.01	1073.46	1073.85	1074.19	1074.48	1074.75	1074.91	1075.05	1075.11	1075.15	1075.17	1075.17	1075.12	1075.04	1074.94	1074.81	1074.65
D	1071.88	1072.30	1072.76	1073.17	1073.53	1073.83	1074.10	1074.29	1074.43	1074.50	1074.55	1074.57	1074.58	1074.55	1074.51	1074.43	1074.34	1074.22
E	1071.16	1071.58	1072.06	1072.49	1072.86	1073.18	1073.46	1073.66	1073.82	1073.89	1073.95	1073.98	1073.99	1073.98	1073.95	1073.91	1073.85	1073.77

BEARING STIFFENERS					
Girder	Pier 5	Pier 6	Pier 7	Pier 8	N. Abut.
A	6x4	8x4	8x1 1/2	8x1 1/2	8x4
B	6x4	8x4	8x1 1/2	8x1 1/2	8x4
C	6x4	8x4	8x1 1/2	8x1 1/2	8x4
D	6x4	8x4	8x1	8x4	8x4
E	6x4	8x4	8x1	8x4	8x4

* Elevations given are for Field Splice

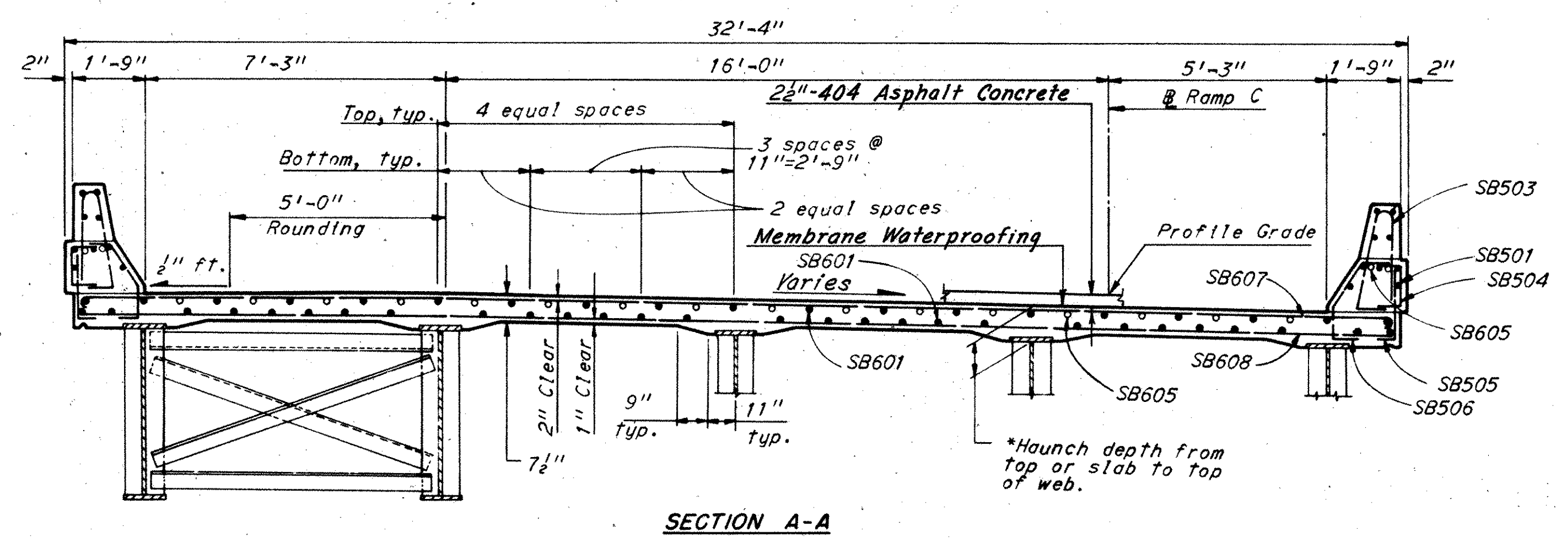
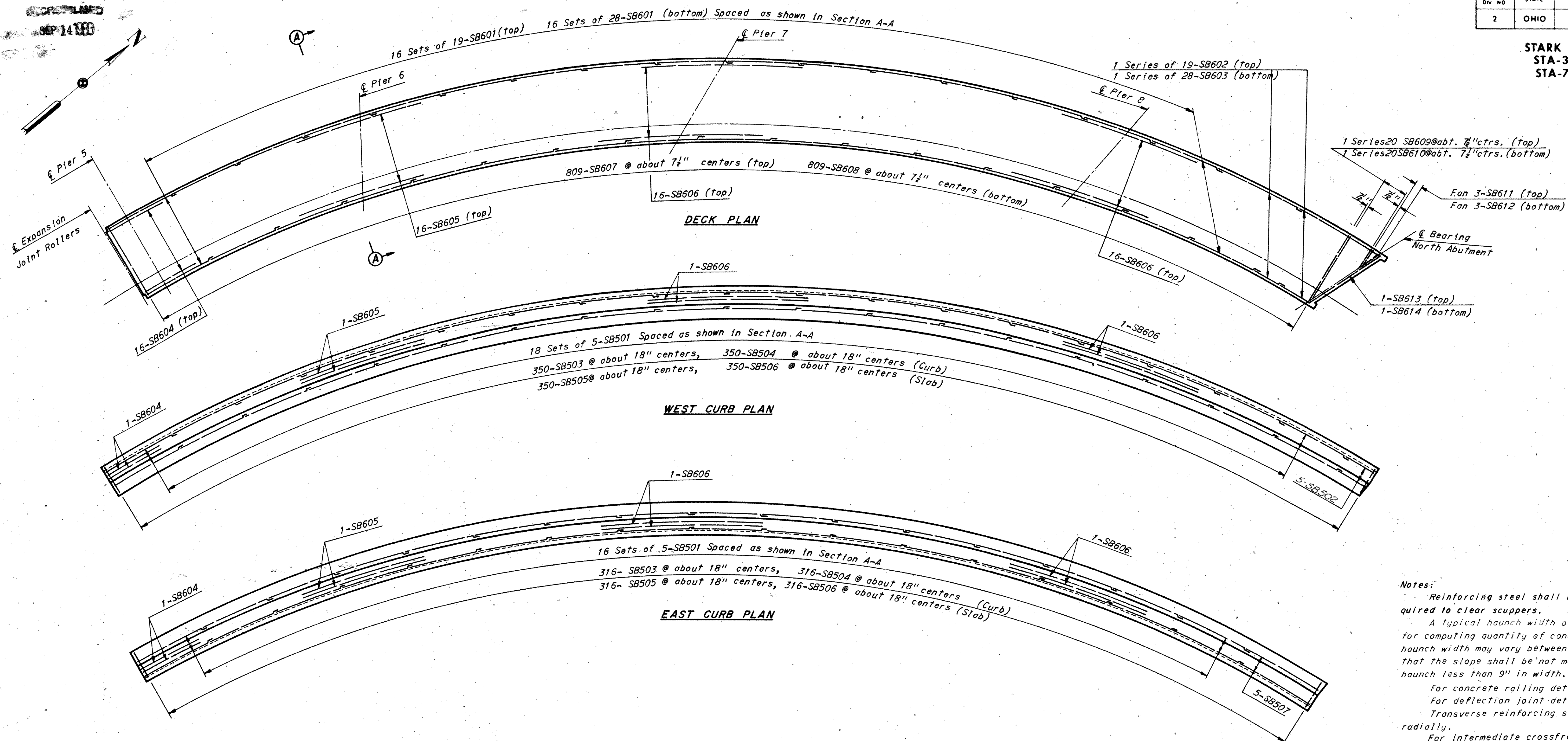
Note:
The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

H.N.T.B. BRIDGE NO. 13	Revised 6-4-75	By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK		
FRAMING PLAN UNIT 2		
RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD		
BR. NO. STA. 30-1493	STA. 957 + 34.25	
SCALE: 1" = 20'-0"	STA. 966 + 96.48	
RELOCATED U.S. 30		
CANTON	STARK COUNTY	OHIO
DRAWN BY	TRACED	CHECKED
DATE 8-5-69	DATE	DATE 6-12-70
		REVIEWED
		DATE 11-20-71
		REVISOR
		1668

SEP 14 1968

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	317 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22



HAUNCH DEPTHS	
Girder	Haunch Depth
A and B	10 1/2"
C	10 1/8"
D and E	9 3/4"

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

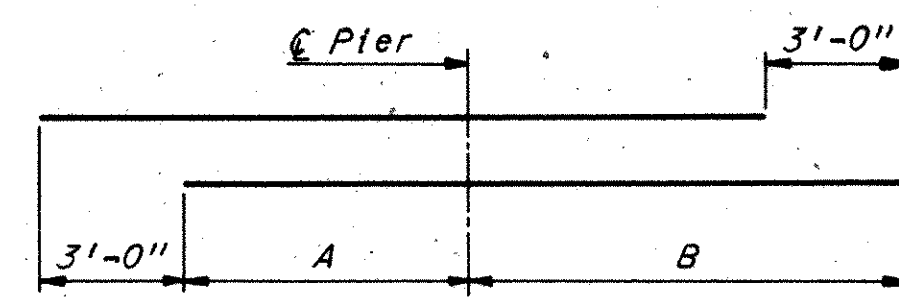


DIAGRAM SHOWING STAGGER OF SB605 AND SB606 BARS OVER PIERS

	A	B
Pier 6	26'-3"	25'-0"
Pier 7	30'-0"	30'-0"
Pier 8	25'-6"	34'-6"

Notes:
Reinforcing steel shall be adjusted as required to clear scuppers.
A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.
For concrete railing details see Sheet 362
For deflection joint details see Sheet 361
Transverse reinforcing steel shall be placed radially.
For intermediate crossframe details see Sheet 360
For reinforcement schedule see Sheets 18/19 & 19/19.
For superelevation data see Sheet 11/19
Concrete shall be placed from the expansion joint to Pier 4 before any concrete is placed from the expansion joint to Pier 6.

H.N.T.B. BRIDGE NO. 13 Revised 6-4-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK PLAN UNIT 2
RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

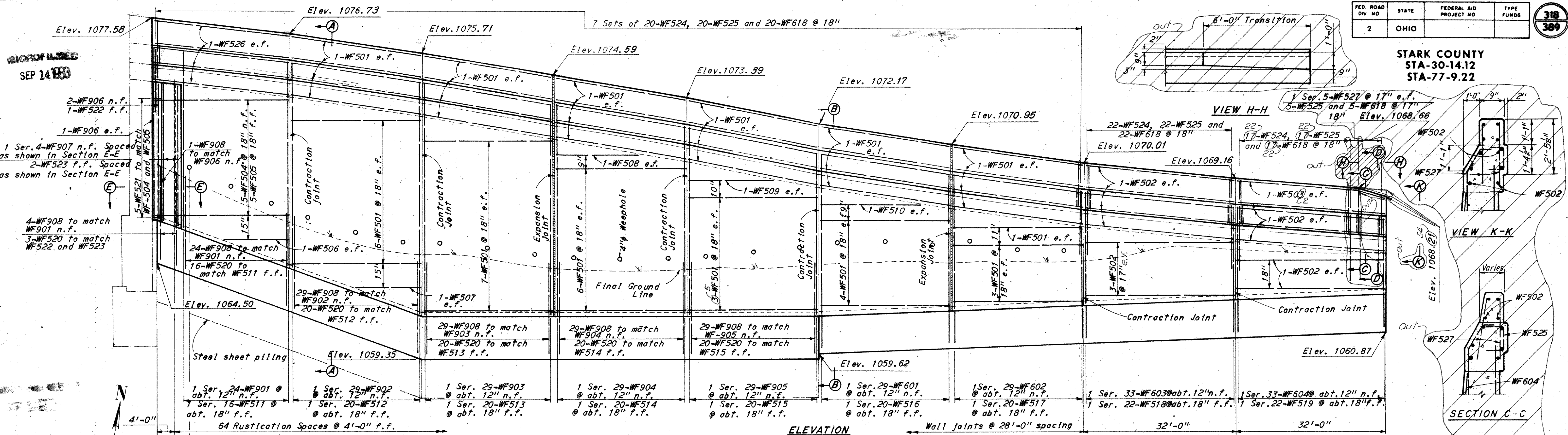
BR. NO. STA 30-1493 STA 957 + 34.25
SCALE: 1" = 20'-0" STA. 966 + 96.48

RELOCATED U.S. 30

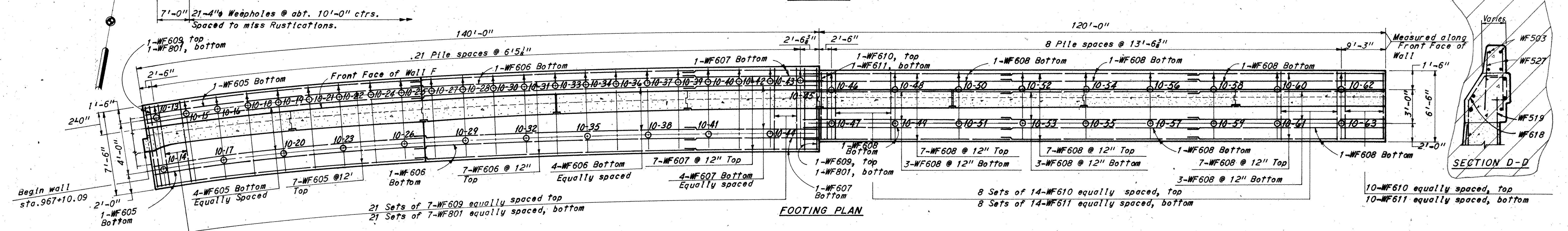
CANTON STARK COUNTY OHIO

DRAWN/DNB TRACED DATE 8-1-69 CHECKED KSS DATE 6-15-70 REVIEWED MTK DATE 11-20-71 REVISION 1668

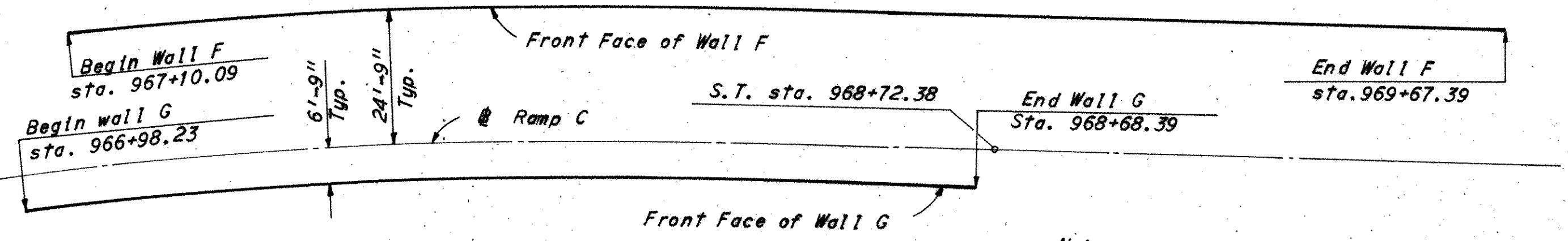
STARK COUNTY
STA-30-14.12
STA-77-9.22



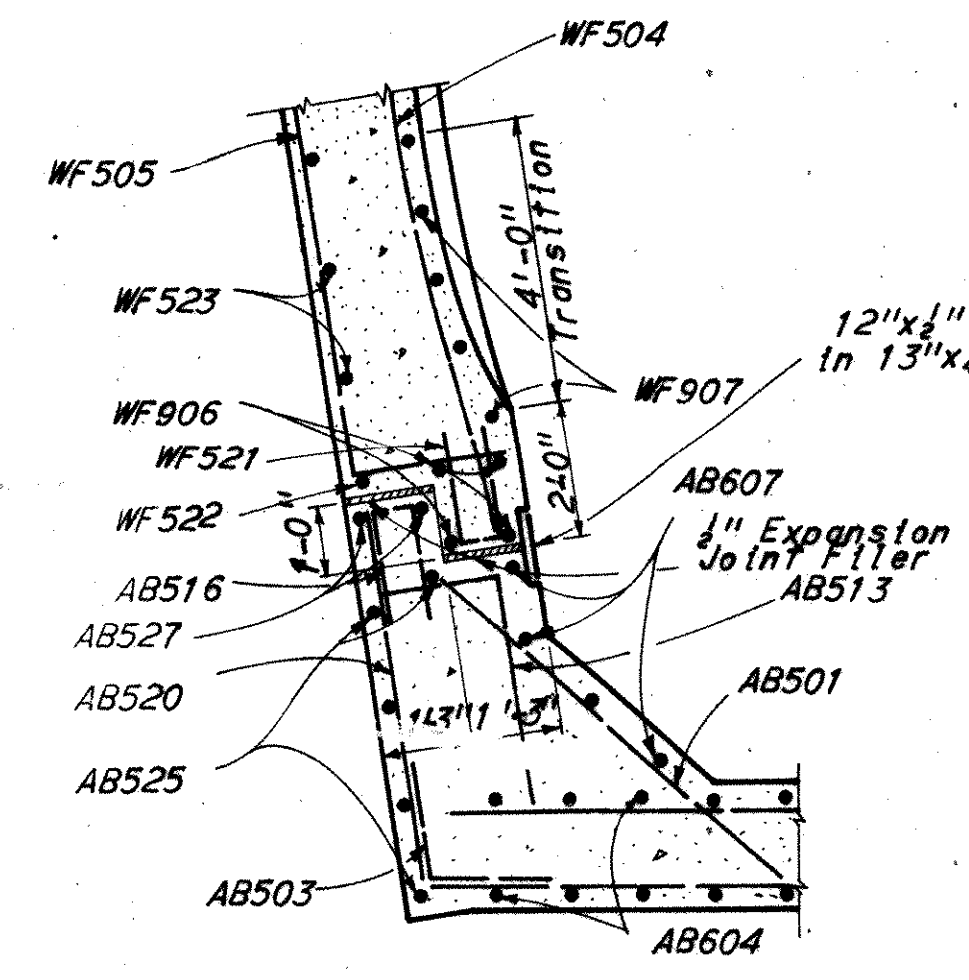
ELEVATION



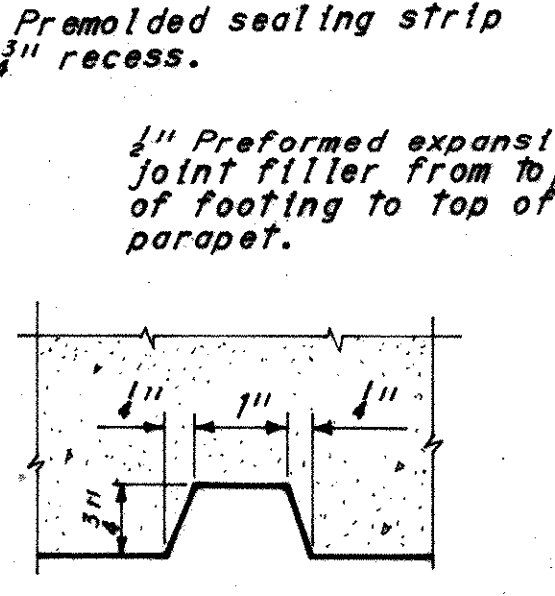
FOOTING PLAN



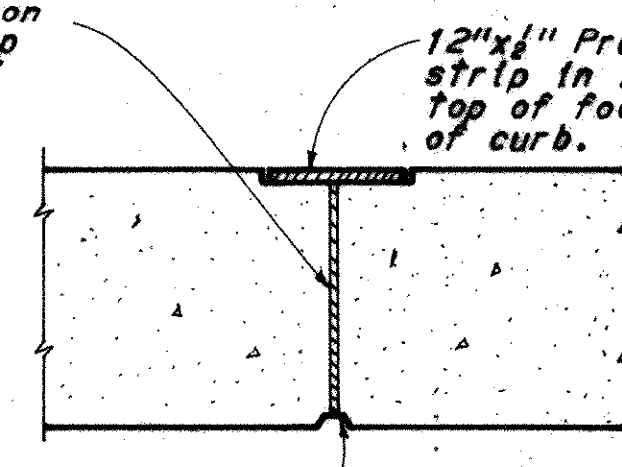
LAYOUT SKETCH



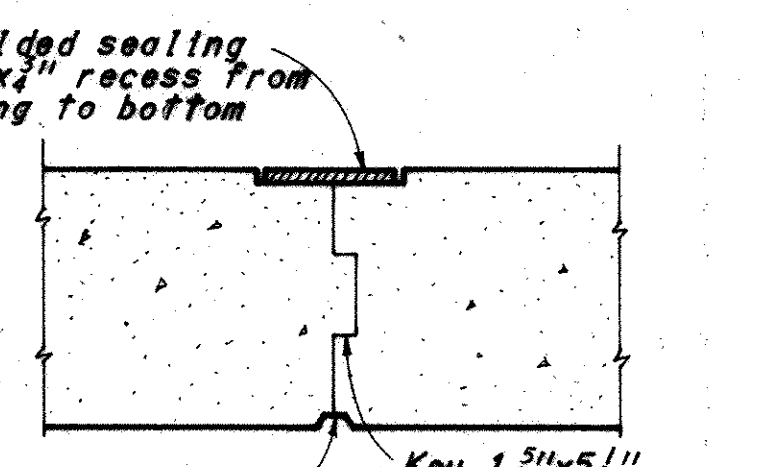
SECTION E-E



RUSTICATION DETAIL



EXPANSION JOINT



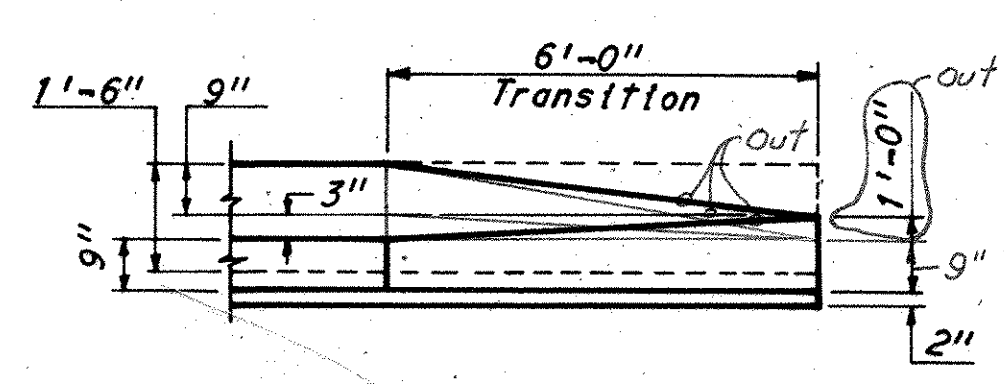
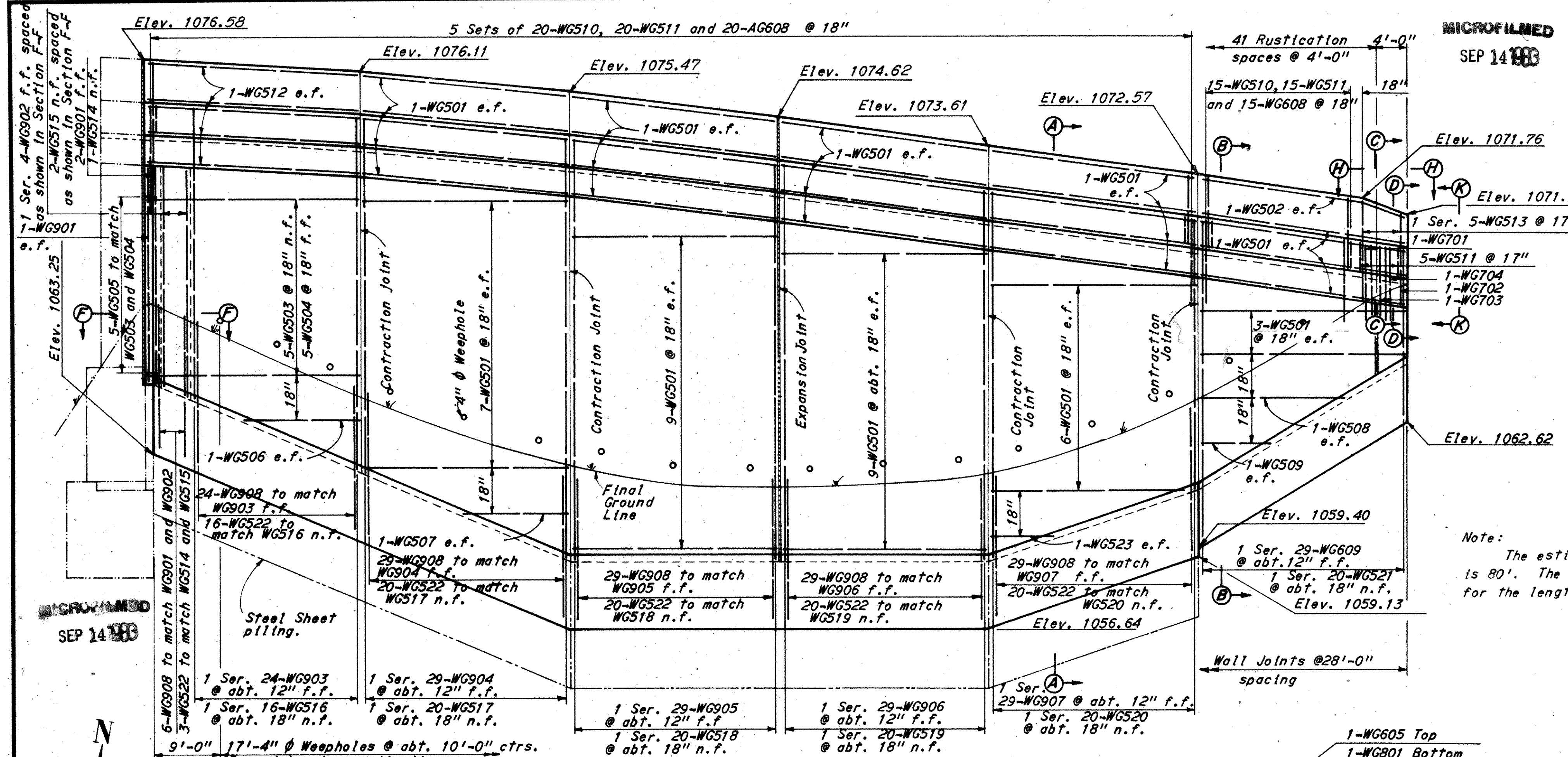
CONTRACTION JOINT

TYPICAL JOINT DETAIL

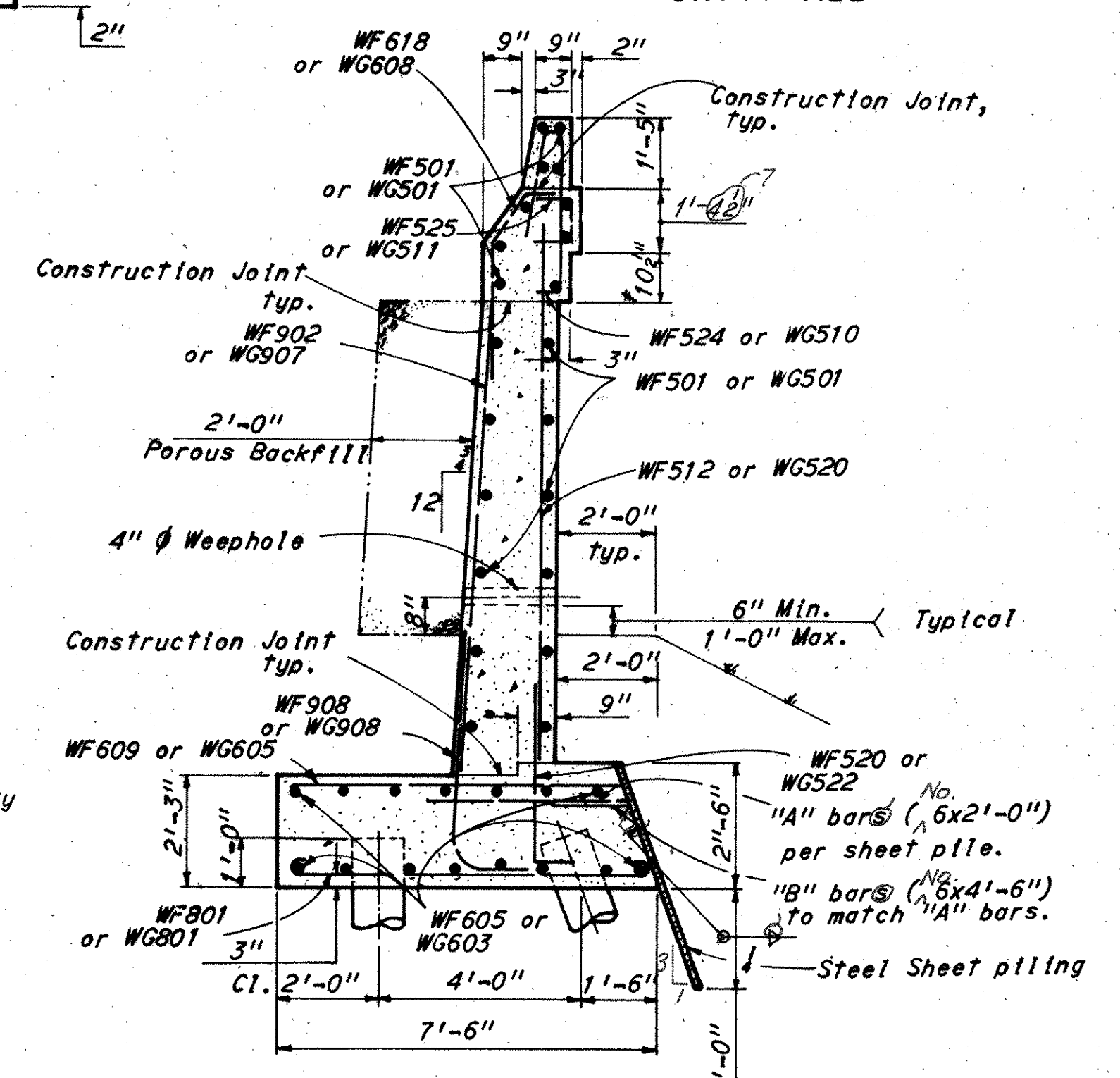
Note: For notes and sections not shown see Sheet 15/19

H.N.T.B. BRIDGE NO. 13		Revised 6-4-75	By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK			
RETAINING WALL F RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD			
BR. NO. STA. 30.1493	STA. 957 + 34.25		
SCALE: 1"=10'-0"	STA. 966 + 96.48		
RELOCATED U.S. 30			
CANTON	STARK COUNTY	OHIO	
DRAWN DATE 4-20-70	TRACED DATE	CHECKED DATE 5-20-70	REVIEWED DATE 11-20-71
			1668

STARK COUNTY
STA-30-14.12
STA-77-9.22



VIEW H-H



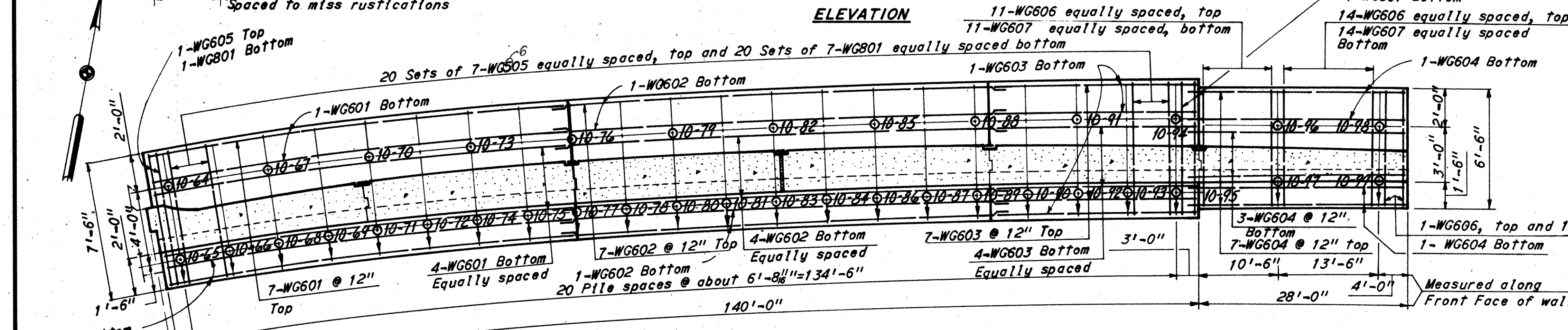
SECTION A-A

#9's shall be used for Wall "G"

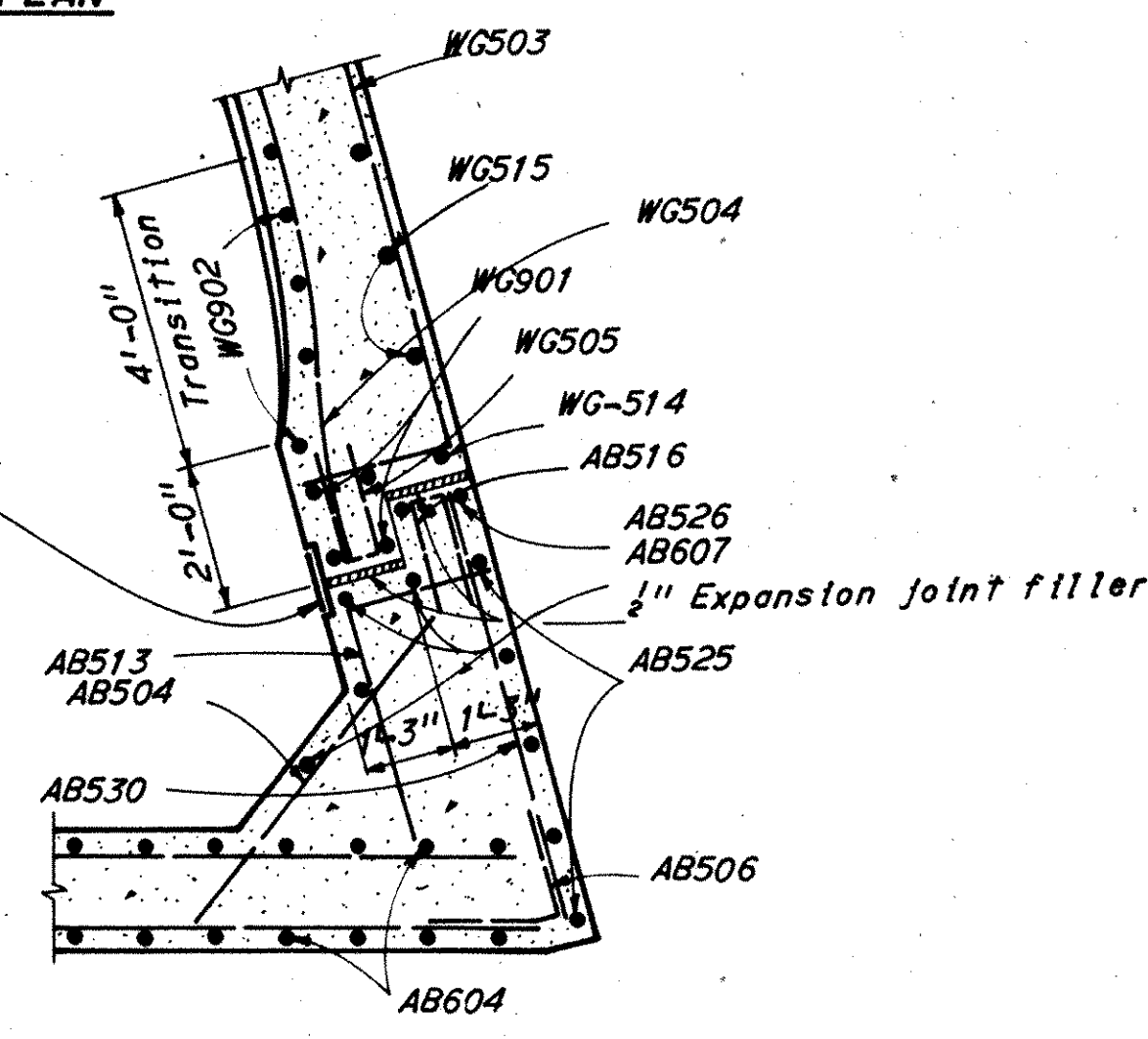
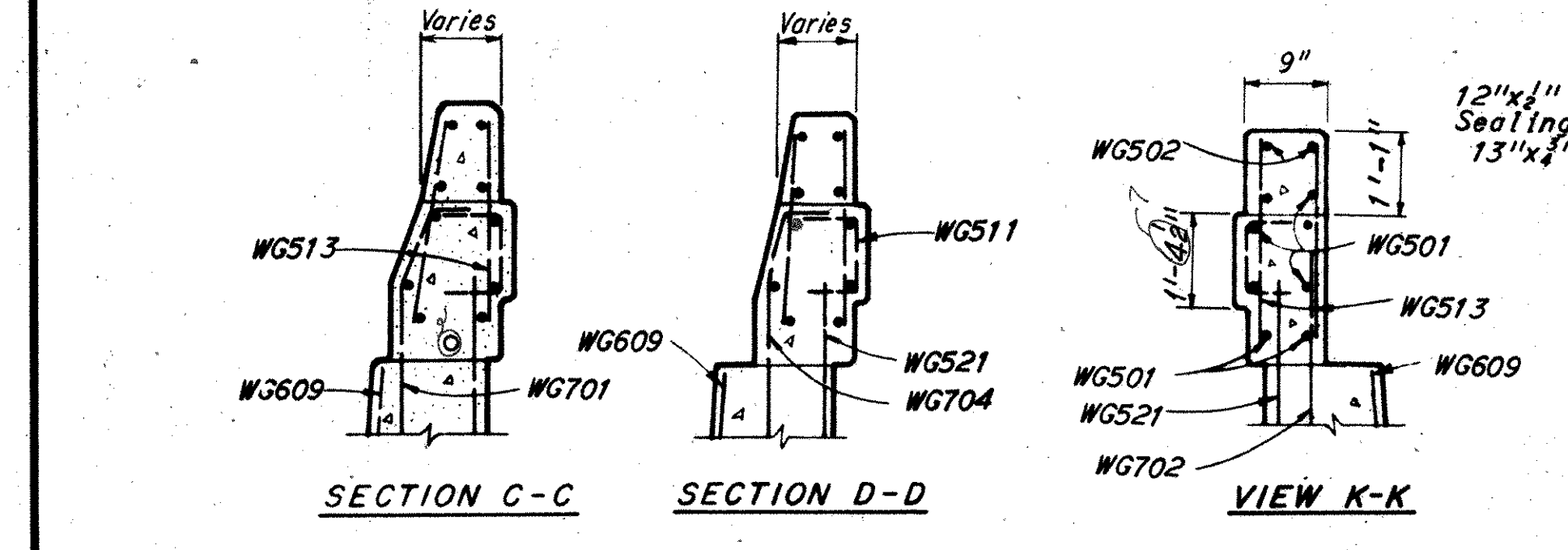
Notes:

- For detail of retaining wall excavation limits see Sheet 369
- All pile dimensions given are measured along bottom of footing.
- Piles are not shown in elevation.
- All piles are 12" Ø cast-in-place reinforced concrete piles.
- Denotes battered piles.
- All battered piles are battered 4 in 12.
- Steel sheet piling shall have a minimum section modulus of 7 in³ per foot.
- n.f. Denotes near face.
- f.f. Denotes far face.
- e.f. Denotes each face.
- All dimensions and bar spacing are given along front face of wall.
- "A" bars and "B" bars are to be included with item 504 steel sheet piling for payment.
- For reinforcement schedule see Sheet 19/19
- Steel sheet piling left in place shall have a minimum section modulus of 7 in³ per foot of wall. Used piling in good condition may be used.
- For layout sketch see Sheet 14/19
- For Typical Joint Details see Sheet 14/19
- For Rustication Detail see Sheet 14/19
- All sheet piling are battered 4 in 12.

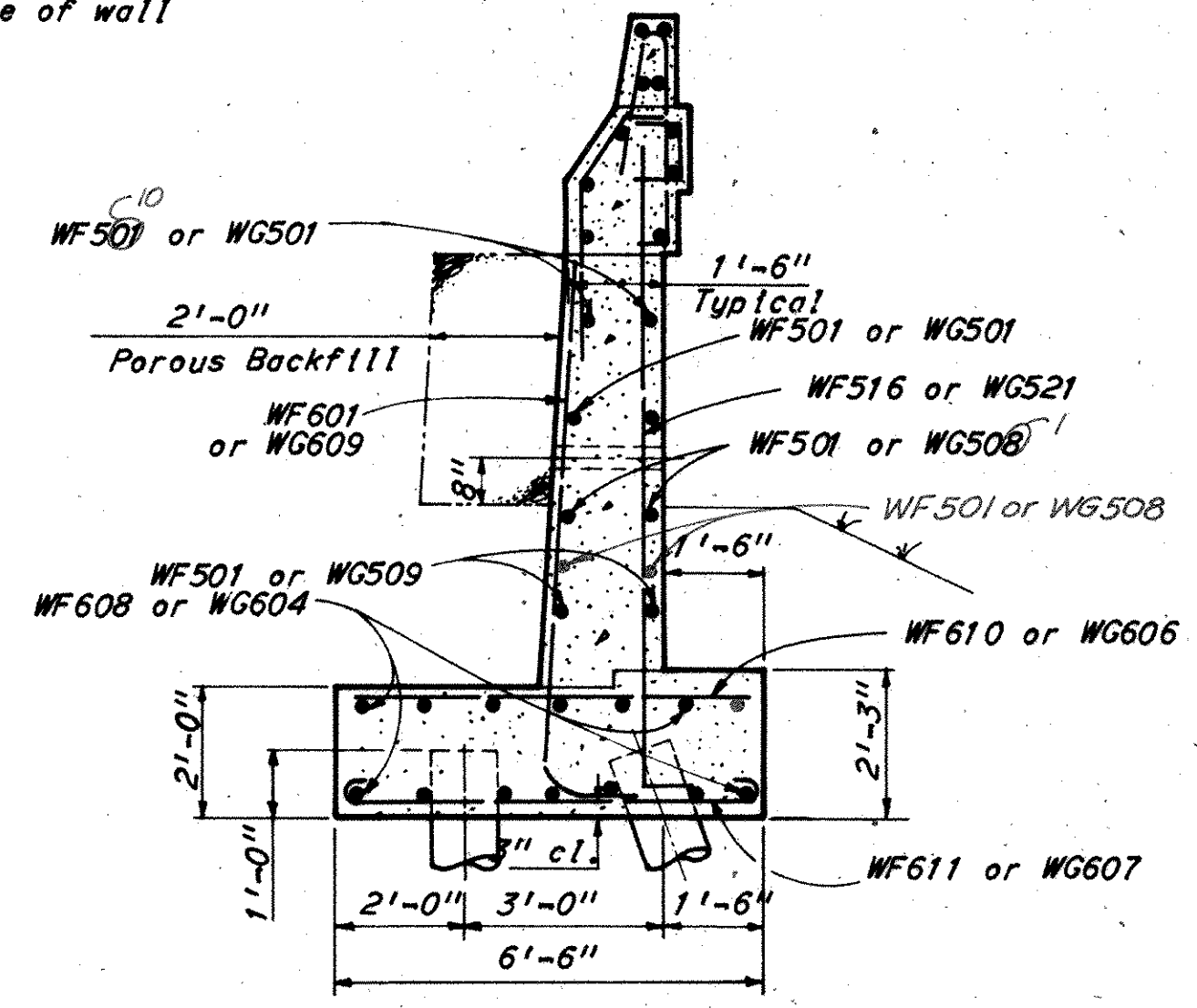
Note: Parapet Transitions shall be as shown on Std. Draw. BR-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.



FOOTING PLAN



SECTION F-F



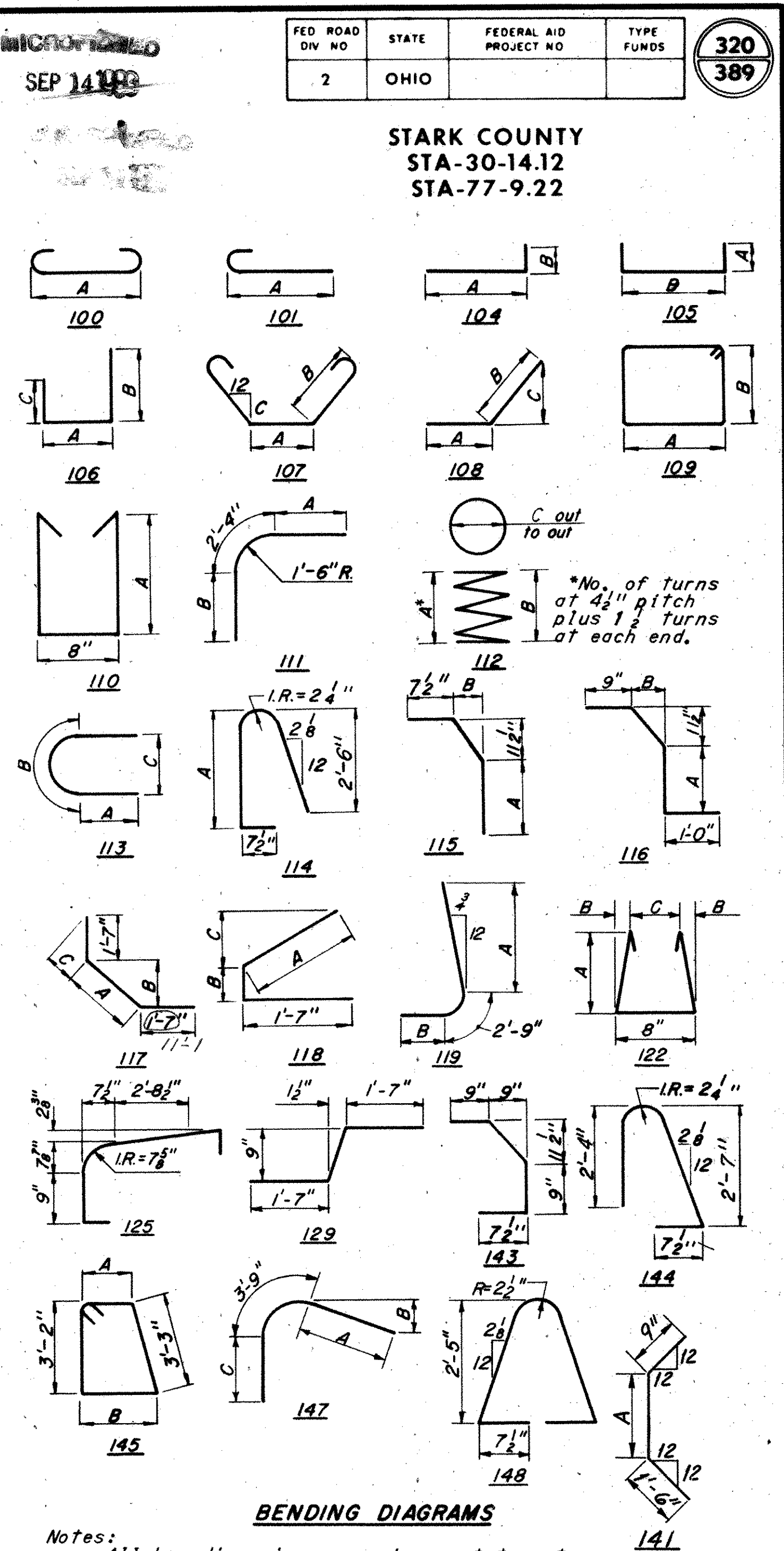
SECTION B-B

H.N.T.B. BRIDGE NO. 13		Revised 6-4-75	By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY, CLEVELAND, NEW YORK			
RETAINING WALL G			
RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD			
BR. NO. STA 30-1493		STA 957 + 34.25	
SCALE: 1"=10'-0"		STA. 966 + 96.48	
RELOCATED U.S. 30			
CANTON	STARK COUNTY	OHIO	
DRAWN OPK DATE 4-28-70	CHECKED BM DATE 5-22-70	REVIEWED MJA DATE 11-20-71	REVISOR 1668

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
SOUTH ABUTMENT								
AA401	30	3'-5"	105	1'-0"	1'-8"			70
AA501	20	8'-4"	105	1'-7"	5'-5"			174
AA502	18	10'-10 1/2"	109	3'-0"	2'-2 1/2"	6	214	222
AA503	20	7'-8"	104	1'-0"	6'-9"			160
AA504	20	7'-8"	105	2'-3"	3'-5"			160
AA505	21	31'-0"	Str.					677
AA506	24	3'-11"	104	2'-0"	2'-0"			98
AA507	22	6'-8"	108	5'-3"	1'-5"	1'-0"		153
AA508	8	12'-6"	Str.					104
AA509	8	9'-6"	Str.					79
AA510	8	10'-6"	Str.					88
AA511	2	5'-0"	Str.					10
AA512	4	9'-0"	Str.					38
AA513	18	7'-11"	Str.					149
AA514	2	4'-4"	Str.					9
AA515	2	3'-8"	Str.					8
AA516	6	3'-0"	Str.					19
AA517	4	7'-0"	Str.					29
AA518	24	18'-6"	Str.					463
AA519	4	13'-6"	Str.					56
AA520	4	12'-9"	Str.					53
AA521	20	6'-11"	114	3'-3"				144
AA522	20	2'-9"	Str.					57
AA523	30	2'-3"	105	7 1/2"	1'-3"			70
AA601	20	14'-6"	106	5'-5"	6'-9"	2'-8"		435
AA602	2	16'-2 1/2"	109	5'-5"	2'-6"		50	48
AA603	29	16'-11"	105	7'-11"	1'-5"			737
AA605	29	5'-7"	105	2'-6"	11"			243
AA606	29	4'-1"	105	1'-6"	1'-5"			178
AA607	1	14'-6"	105	6'-10"	1'-2"			22
AA608	1	13'-6"	105	6'-4"	1'-2"			20
AA609	9	18'-8"	105	8'-11"	1'-2"			252
AA610	9	17'-8 1/2"	105	8'-5 1/2"	1'-2"		264	238
AA611	18	9'-7"	115	7'-11"	9"			259
AA612	2	6'-8"	115	5'-0"	9"			20
AA701	2	6'-0"	115	4'-4"	9"			25
AA702	2	5'-4"	115	3'-8"	9"			22
AA703	6	4'-8"	115	3'-0"	9"			57
AA801	7	33'-0"	Str.					616
AA802	12	12'-0"	Str.					384
DA801	20	5'-2"	141	3'-1"				276
				Total South Abut.			=	6922
								64
NORTH ABUTMENT								
AA401	30	3'-5"	105	1'-0"	1'-8"			70
AB501	6	7'-6"	Str.					47
AB502	4	6'-0"	Str.					25
AB503	10	3'-2"	108	1'-7"	1'-7"	1'-6"		33
AB504	6	6'-3"	Str.					39

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
AA505	4	5'-6"	Str.					23
AB506	6	3'-9"	117	7"	7"	1'-6"		24
AB507	4	4'-5"	117	1'-3"	1'-6"	1'-6"		18
AB509	8	33'-6"	Str.					280
AB510	6	34'-3"	Str.					214
AB511	25	6'-4"	105	1'-7"	3'-5"			165
AB512	25	7'-4"	104	6'-6"	1'-0"			191
AB513	20 19	6'-0"	104	4'-6"	1'-7"		119	188
AB514	26	8'-4"	105	1'-7"	5'-5"			226
AB515	10	14'-11" 13'-6"	109	4'-8" 4'-0"	2'-8" 2'-6"		141	147
AB516	20	3'-8"	105	1'-7"	9"			78
AB519	4	7'-0"	Str.					29
AB520	6	5'-3"	Str.					33
AB521	10	4'-0"	Str.					42
AB522	9	6'-9"	114	3'-6"				63
AB523	9	4'-5"	115	2'-8"	9"			41
AB524	9	2'-3"	105	7 1/2"	1'-3"			21
AB525	10	8'-9"	Str.					91
AB526	2	6'-6"	Str.					14
AB527	2	5'-9"	Str.					12
AB528	4	8'-6"	Str.					35
AB529	10	5'-6"	Str.					57
AB530	6	6'-9"	Str.					42
AB531	3	33'-0"	Str.					103
AB602	31	5'-7"	105	2'-6"	11"			260
AB603	31	4'-1"	105	1'-6"	1'-5"			190
AB604	31	17'-1"	105	8'-0"	1'-5"			797
AB605	25	14'-4"	106	5'-5"	6'-7"	2'-8"		540
AB606	21	9'-6"	104	8'-8"	1'-0"			303
AB607	9	6'-6"	Str.					91
AB608	4	7'-7"	104	6'-9"	1'-0"			46
AB801	5	36'-6"	Str.					486
AB802	2	36'-2"	108	34'-8"	1'-6"	7"		193
AB803	2	11'-10"	108	8'-10"	3'-0"	2'-9"		63
AB804	1	9'-0"	Str.					24
AB805	3	6'-0"	Str.					48
AB806	3	5'-7"	Str.					45
AB807	1	11'-1"	Str.					29
AB808	2	12'-5"	104	11'-7" 1'-0"	1'-6"	11"		72-68
DB801	19	5'-3"	141	3'-2"				266
					Total	North	Abut=	5798
								629
PIER 1								
SPA401	1	361'-7"	112	43.8	15'-5"	2'-8"		291
SPA402	1	350'-0"	112	42.4	14'-11"	2'-8"		282
SPA403	1	337'-8"	112	40.9	14'-4"	2'-8"		271
PA501	29	4'-5"	105	1'-0"	2'-8"			134
PA502	2	3'-11"	105	1'-0"	2'-2"			8
PA503	2	3'-6"	105	1'-0"	1'-9"			7
PA504	18	13'-2"	109	2'-8"	3'-8"			248
		</						

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
PA601	8	8'-1"	113	1'-11"	4'-3"	2'-8"		96
PA602	4	28'-6"	Str.					177
PA603	10	7'-10"	100	6'-6"				117
PA801	18	9'-8"	100	7'-6"				467
PA901	8	12'-0"	100	9'-6"				325
PA1001	8	19'-0"	Str.					655
PA1002	8	18'-6"	Str.					637
PA1003	16	18'-0"	Str.					1236
PA1004	16	8'-1"	104	7'-3"	1'-1"			552
PA1005	2	35'-5"	105	3'-9"	28'-6"			305
PA1006	2	37'-5"	105	3'-9"	30'-6"			322
PA1007	1	37'-11"	105	3'-9"	31'-0"			163
PA1008	5	28'-6"	Str.					613
SPB401	1	720'-8"	112	87.3	31'-9"	2'-8"		583
SPB402	1	695'-1"	112	84.2	30'-7"	2'-8"		562
SPB403	1	539'-1"	112	65.3	23'-6"	2'-8"		435
PB501	29	4'-5"	105	1'-0"	2'-8"			134
PB502	2	3'-11"	105	1'-0"	2'-2"			8
PB503	2	3'-6"	105	1'-0"	1'-9"			7
PB504	46	11'-6"	109	1'-10"	3'-8"			552
PB505	8	13'-2"	109	2'-8"	3'-8"			110
PB601	8	8'-1"	113	1'-11"	4'-3"	2'-8"		96
PB602	4	29'-4"	Str.					177
PB801	16	14'-8"	100	12'-6"				625
PB1001	12	14'-4"	100	11'-6"				740
PB1101	13	14'-8"	100	11'-6"				1010
PB1102	12	18'-8"	100	15'-6"				1190
PB1103	2	35'-9"	105	3'-6"	29'-4"			379
PB1104	2	37'-9"	105	3'-6"	31'-4"			400
PB1105	1	38'-0"	105	3'-6"	31'-7"			202
PB1106	3	12'-0"	Str.					191
PB1107	8	29'-4"	Str.					1240



H.N.T.B. BRIDGE NO. 13 Revised 6-4-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

BR. NO. STA 30-1493 STA 957 + 34.25
SCALE: STA 966 + 96.48

RELOCATED U.S. 3

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
PARAPET								
R501	96	15'-6"	Str.					1554
R502	8	14'-9"	Str.					125
R503	364	7'-0"	Str.					2660
R504	164	14'-6"	Str.					2480
R505	36	13'-6"	Str.					508
R506	4	10'-9"	Str.					45
R507	20	14'-0"	Str.					292
R508	4	12'-9"	Str.					53
R509	4	13'-3"	Str.					55
R510	4	13'-9"	Str.					58

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
WF901	1 Ser. 24	7'-4" to 8'-8"	Str.				1 1/2"	653
WF902	1 Ser. 29	8'-8" to 10'-0"	Str.				1 1/2"	925
WF903	1 Ser. 29	9'-4" to 10'-3"	Str.				1 1/2"	965
WF904	1 Ser. 29	8'-0" to 9'-0"	Str.				1 1/2"	838
WF905	1 Ser. 29	6'-3" to 8'-0"	Str.				1 1/2"	703
WF905	4	7'-0"	Str.					95
WF907	1 Ser. 4	7'-0" to 7'-3"	Str.				1"	97
WF908	145	7'-3"	119	3'-6"	1'-0"			3590
							Total Ret. Wall F	= 63,846
								33,695
RETAINING WALL G								
WG501	116	27'-8"	Str.					3340
WG502	2	27'-8"	108	21'-10"	5'-10"	4"		58
WG503	5	29'-8"	104	27'-8"	2'-2"			155
WG504	5	28'-8"	Str.					149
WG505	5	3'-7"	105	1'-7"	8"			19
WG506	2	14'-6"	Str.					30
WG507	2	15'-6"	Str.					32
WG508	2	15'-0"	Str.					31
WG509	2	2'-9"	Str.					6
WG510	115	6'-7"	114	3'-4"				790
WG511	120	2'-1"	105	7 1/2"	1'-1"			261
WG512	10	28'-8"	Str.					290
WG513	2 Ser. 5	2'-11" to 3'-3"	Str.				1"	32
WG514	1	8'-9"	Str.					9
WG515	2	9'-0"	Str.					19
WG516	1 Ser. 16	9'-3" to 11'-6"	Str.				1 1/2"	174
WG517	1 Ser. 20	11'-6" to 14'-3"	Str.				1 1/2"	269
WG518	1 Ser. 20	13'-6" to 14'-3"	Str.				1 1/2"	284
WG519	1 Ser. 20	12'-6" to 13'-6"	Str.				1 1/2"	271
WG520	1 Ser. 20	8'-9" to 12'-6"	Str.				2 1/2"	222
WG521	1 Ser. 20	7'-5" to 11'-8"	104	6'-6" to 10'-9"	1'-0"		2 1/2"	200
WG522	99	4'-11"	104	4'-0"	1'-0"			515
WG523	2	9'-0"	Str.					19
WG601	15	59'-0"	Str.					1330
WG602	15	60'-0"	Str.					1355
WG603	15	30'-0"	Str.					677
WG604	14	29'-9"	Str.					627
WG605	144	7'-0" to 6'-4"	Str.				1370	1515
WG606	27	6'-0"	Str.					244
WG607	27	7'-4"	100	6'-0"				298
WG608	115	5'-3"	115	3'-3"	9"			907
WG609	1 Ser. 29	7'-0" to 11'-3"	119	3'-3" to 7'-6"	1'-0"		1 1/2"	398
WG701	2	5'-3"	115	3'-3"	6"			21
WG702	1	4'-6"	Str.					9
WG703	2	5'-1"	115	3'-3"	4"			21
WG704	1	5'-1"	115	3'-3"	2 1/4"			10
WG801	144	9'-2"	100	7'-0"				3532

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
WG901	4	7'-3"	Str.					99
WG902	1 Ser. 4	7'-3" to 7'-6"	Str.				1"	100
WG903	1 Ser. 24	7'-6" to 10'-3"	Str.				3/8"	728
WG904	1 Ser. 29	10'-3" to 13'-0"	Str.				1 1/8"	1145
WG905	1 Ser. 29	12'-3" to 13'-0"	Str.				3/8"	1242
WG906	1 Ser. 29	11'-3" to 12'-3"	Str.				1/8"	1158
WG907	1 Ser. 29	7'-6" to 11'-3"	Str.				1 3/8"	924
WG908	146	7'-3"	119	3'-6"	1'-0"			3600
							Total Wall G	= 27,123
								26,970

FED. ROAD DIV. NO.

2

STATE

OHIO

FEDERAL AID PROJECT NO.

TYPE FUNDS

SEP 14 1988

STARK COUNTY

STA-30-14.12

STA-77-9.22

100

101

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

122

125

129

143

144

145

146

147

148

141

*No. of turns at 4 1/2" pitch plus 1 1/2 turns at each end.

IR=24"

IR=7 1/2"

R=24"

Notes:

All bar dimensions are given out to out.

All bars of a series shall vary in length by a constant increment.

For replacement reinforcement schedule see sheet 256

Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 13

Revised 6-4-75

By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF

CONSULTING ENGINEERS

KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP C OVER I-77 AND

PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493

STA. 957 + 34.25

SCALE:

STA. 966 + 96.48

RELOCATED U.S. 30

CANTON

STARK COUNTY

OHIO

DRAWN

DATE

7-3-70

CHECKED

DATE

7-22-70

REVIEWED

DATE

11-20-71

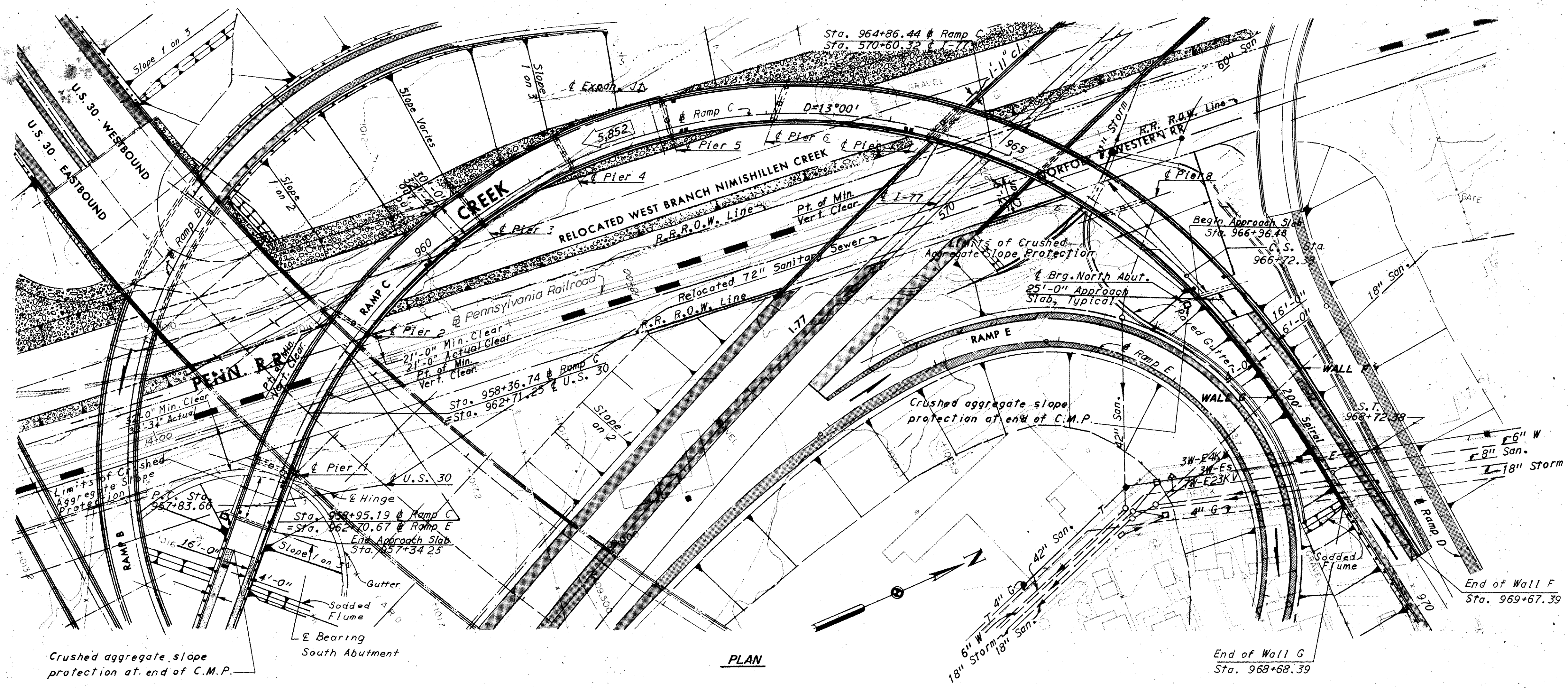
REVIS

DATE

1668

Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22



PROPOSED STRUCTURE

Type: Continuous Welded Curved Girders with Reinforced Concrete Slab.

Spans: 52.0', 128.5', 130.0', 87.0', 87.0', 87.0', 128.0', 156.0', 102.0', 87.0', 957.5'

Ctr. to Ctr. End Bearings along Ramp C.

Roadway: 30'-0" Face to Face parapets.

Loading: HS20-44

Skew: Varies See Plan

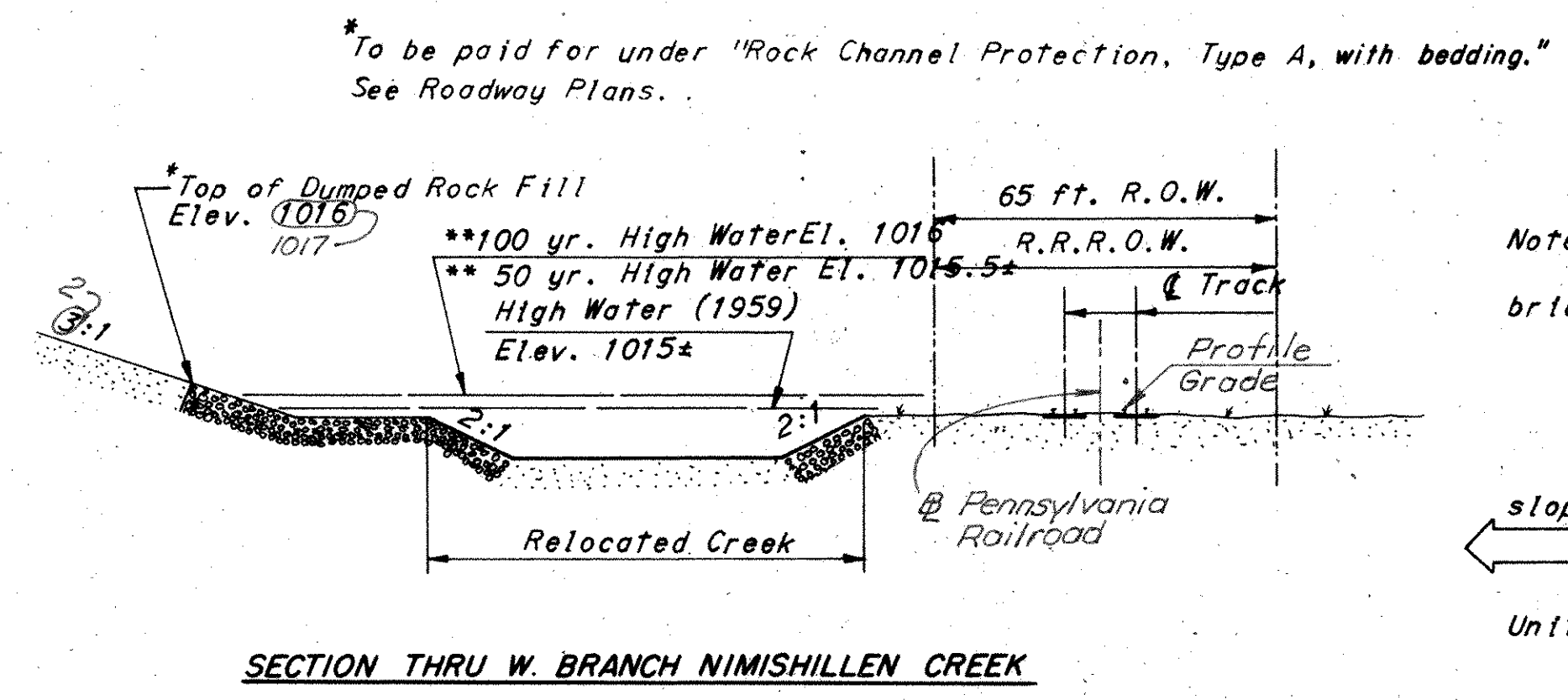
Wearing Surface: 2" Asphalt Concrete

Approach Slabs: AS-1-72 (Modified)

Alignment: Tangent to 13+00' Rk. on Ramp C

Modify Std. Drwg. AS-1-72 by providing 3" clear over the top rebars instead of the 2" shown on the Std. Drwg. The jacking holes as called for on Std. Drwg. AS-1-72 are not required.

- EXISTING UTILITY LEGEND**
- 4" G- GAS
 - 4" W- WATER
 - 16" Storm- STORM SEWER
 - 8" San- SANITARY SEWER
 - T- TELEPHONE
 - E- POWER LINES
 - 4W-E4KV 4 WIRE, PRIMARY 4 KILOVOLT
 - 3W-Es 3 WIRE, SECONDARY
 - W- WATER HYDRANT
 - o- MANHOLE
 - CATCH BASIN



FLOOD DISCHARGE WEST BRANCH NIMISHILLEN CREEK AT NAVARRE ROAD BRIDGE					
Occurance Interval (years)	5	10	20	50	100
* Discharge Q (c.f.s)	1360	1680	2010	2520	3000

* Taken from Table 5 "Flood Discharge-Frequency Relationship" page TA-23, "Flood Plain Study Main Report", Corps of Engineers, Feb. 1967.

** Taken 2,000 ft. above mouth as shown on Exhibit No. 4 and Exhibit No. 12, "Flood Plain Study-Main Report", Corps of Engineers, Feb. 1967.

Notes:

The following items are not included in the bridge plans. See roadway plans for detail.

- Relocation or removal of existing utilities.
- Approach grading pavements and slabs
- Guardrails.

Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections

Denotes 1987 average daily traffic.

For information not shown see General Plan Unit 1 sheet 3/19 and Unit 2 sheet 4/19

Denotes Standard Scupper

For details of retaining walls F and G see Sheets 14/19 and 15/19

For Estimated Quantities, see Sheet 365D.

H.N.T.B. BRIDGE NO. 13 Revised 6-4-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN
RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD
BR. NO. STA. 30-1493 STA. 957 + 34.25
SCALE: 1"=50'-0" STA. 966 + 96.48
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

DRAWN/DE TRACED
DATE 12-18-69 DATE
CHECKED/DES REVIEWED
DATE 6-17-70 DATE 11-20-71
REVISED 3-2-76
1668

MICROFILMED
SEP 14 1983

RAMP C CURVE DATA

P.C. Sta. 957+83.662
D = 13°00'00.0"
Δ = 115°31'58.3" Rt.
R = 440.737'
T = 698.970'
L = 888.715'

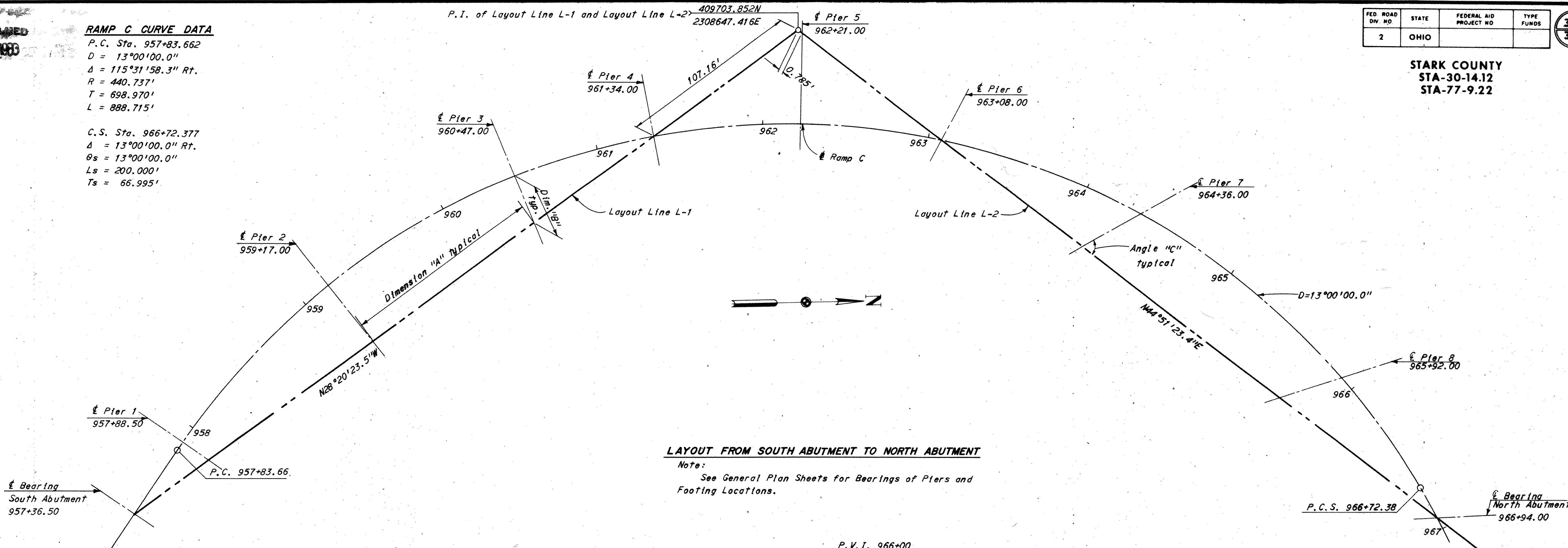
C.S. Sta. 966+72.377
Δ = 13°00'00.0" Rt.
θs = 13°00'00.0"
Ls = 200.000'
Ts = 66.995'

P.I. of Layout Line L-1 and Layout Line L-2
409703.852N
2308647.416E

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

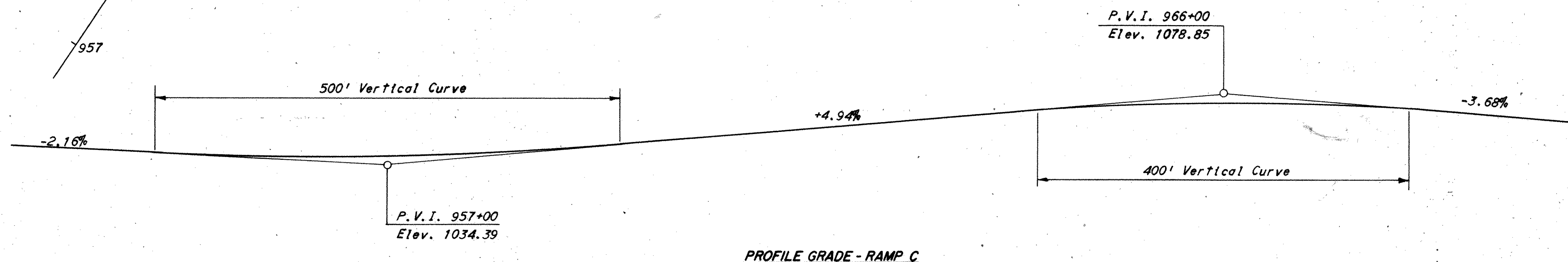
306
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



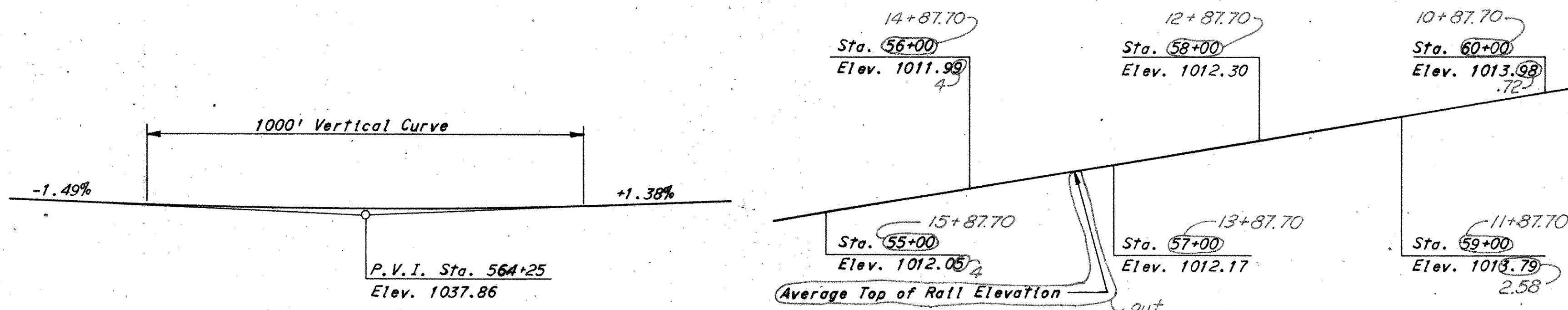
LAYOUT FROM SOUTH ABUTMENT TO NORTH ABUTMENT

Note:
See General Plan Sheets for Bearings of Piers and
Footing Locations.

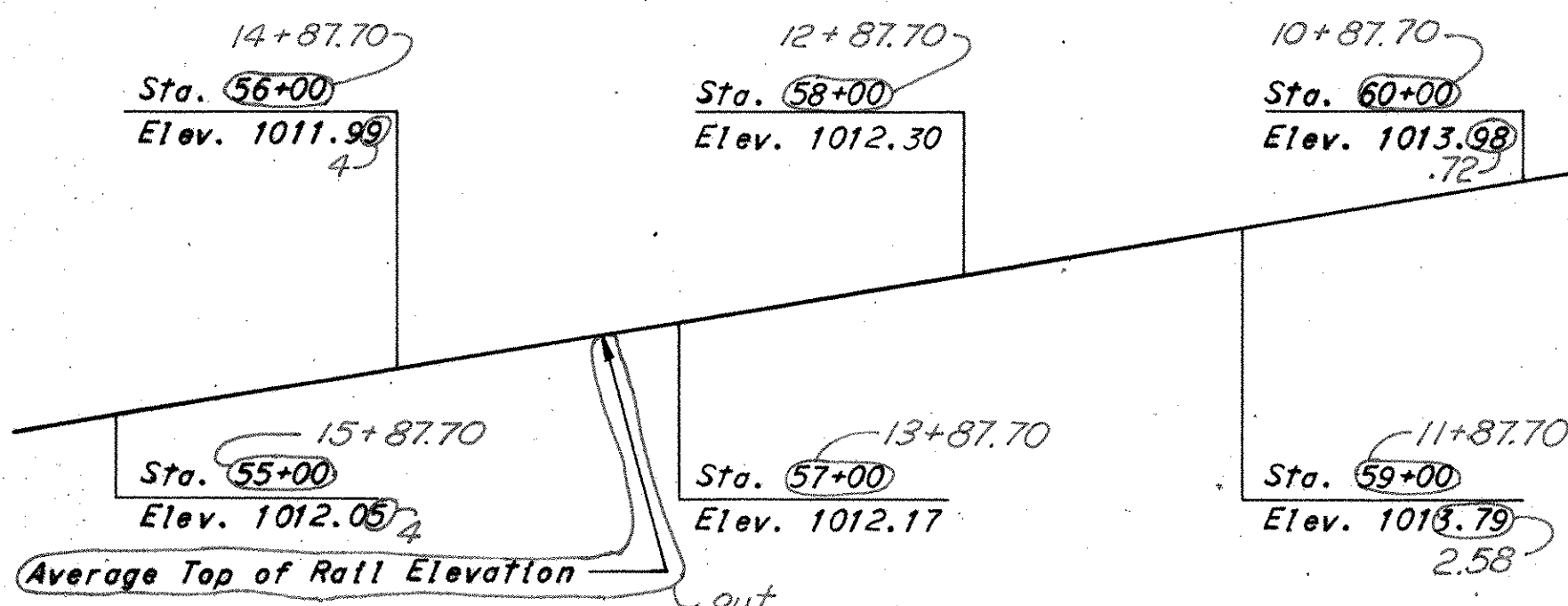


PROFILE GRADE - RAMP C

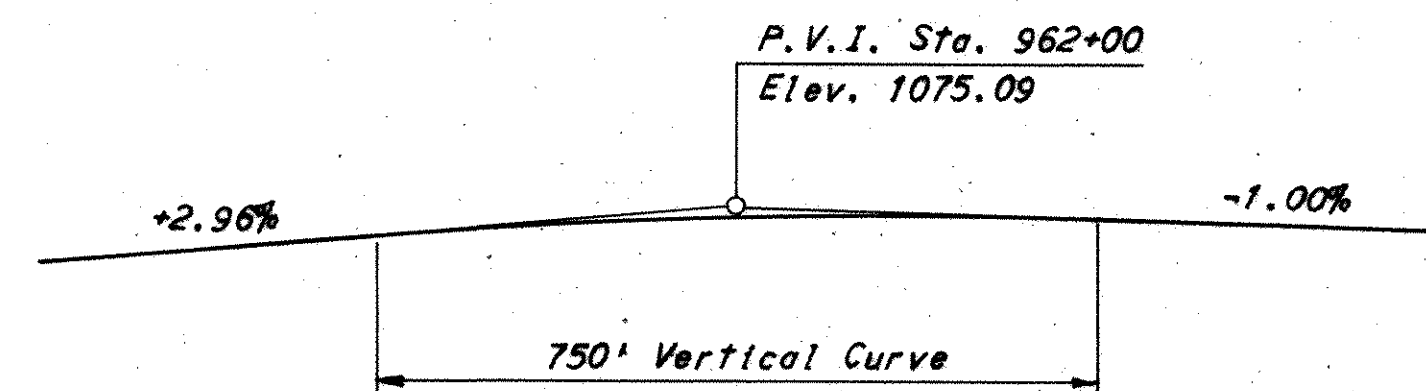
LAYOUT DIMENSIONS			
	A	B	ANGLE "C"
S. Abut.	0	0	110°03'18.2"
Pier 1	55.14	18.88	109°25'34.5"
Pier 2	121.40	42.45	92°43'16.5"
Pier 3	119.42	30.40	75°49'16.5"
Pier 4	89.15	0	64°30'40.5"
Pier 5		55.16	126°23'51.5"
Pier 6	107.38	0	99°05'15.5"
Pier 7	105.89	40.22	66°11'16.7"
Pier 8	148.94	39.24	55°10'03.6"
N. Abut.	118.96	0	40°03'10.2"



PROFILE GRADE - I-77



PROFILE GRADE - PENNSYLVANIA RAILROAD



PROFILE GRADE - U.S. 30

H.N.T.B. BRIDGE NO. 13

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

2/19

LAYOUT DATA

RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 STA. 957+34.25
SCALE: 1" = 30'-0" STA. 966+96.48

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN BY DATE 11-12-69	TRACED DATE	CHECKED DGS DATE 3-6-70	REVIEWED MJK DATE 11-20-71	REVISION 1668
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