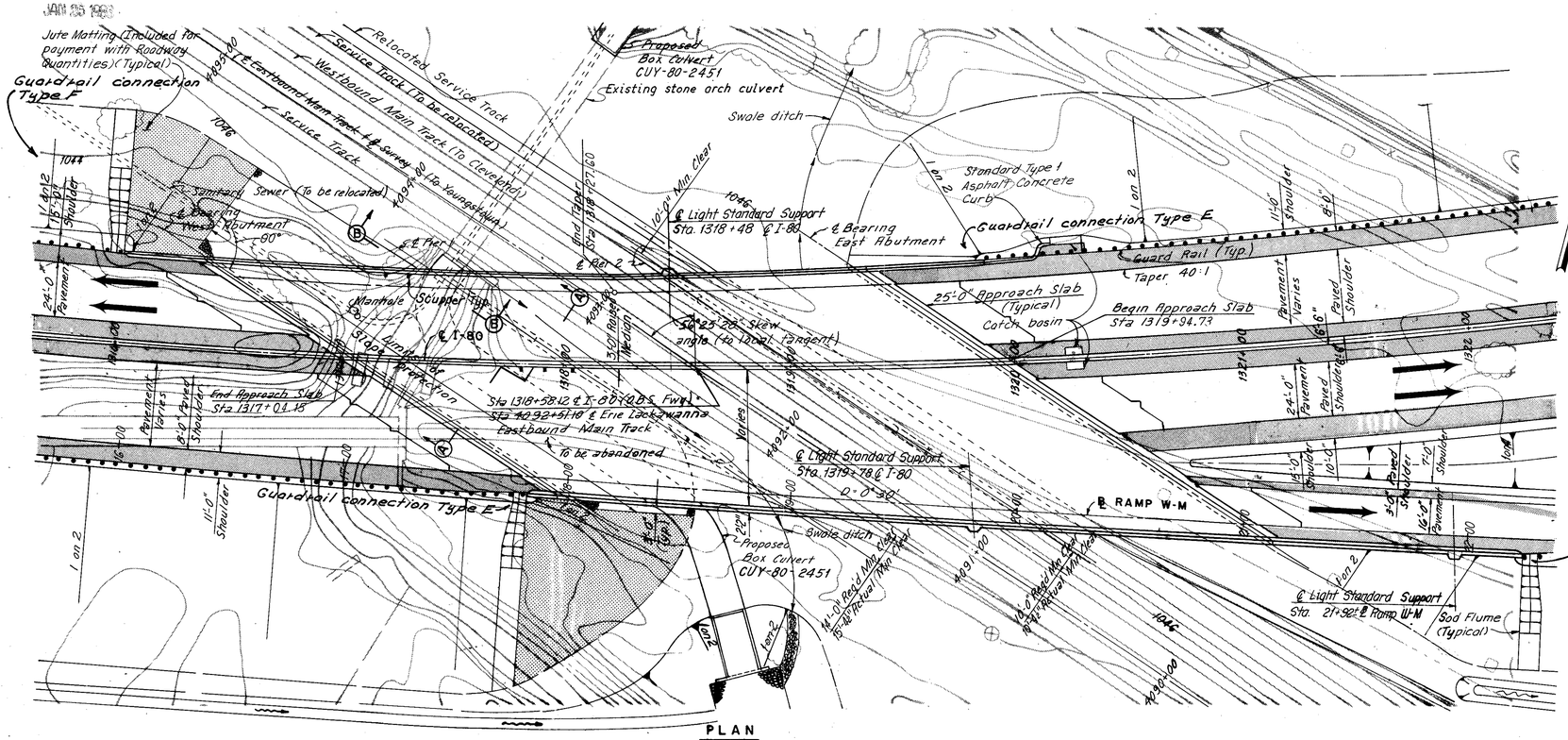
Stop

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

347
514

CUYAHOGA COUNTY
CUY - 80 - 24.63



PLAN
Scale: 1" = 30'

CURVE DATA - ℄ I-80

P.I. Sta. = 1319+94.49
Δ = 30°17'31"
Dc = 1°28'00" Left
R = 3906.53'
T = 1057.43'
L = 2065.36'
E = 140.58'

CURVE DATA - ℄ RAMP W-M

P.I. Sta. = 19+90.24
Δ = 5°09'48"
Dc = 0°30'00" Left
R = 11,459.16'
T = 516.67'
L = 1032.64'
E = 11.64'

PROPOSED STRUCTURES

TYPE: Continuous welded steel girder with reinforced concrete deck and substructure.
SPANS: 94'-2 15/16", 99'-8 3/8" and 87'-6 7/16"
(Measured along ℄ I-80)
ROADWAY: Width Varies, 103'± average face to face parapets
LOAD FREQUENCY: CF2000 (57) Adequate for A.A.S.H.O. Alternate loading
SKEW: 56°25'28" Right Forward
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: AS-1-67 (25' long)
ALIGNMENT: 1°28'00" Left
SUPERELEVATION: 7/16" per. ft.

Notes:

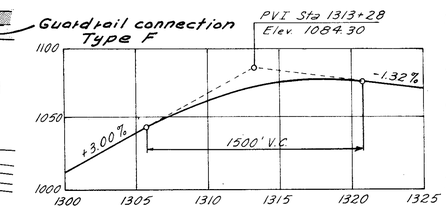
The embankment behind the West Abutment shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the abutment before excavating or driving piles for this abutment and Pier 1.

The embankment behind the East Abutment shall be constructed to the level of the subgrade, with a 1:1 slope from the existing ground line at a point 7'-0" back of the footing, for a minimum distance of 200 feet behind the abutment before excavating or driving piles for the abutment. Prior to the construction of the backwall the embankment shall be constructed with a 1:1 slope from the bridge seat to the level of the subgrade. Backfill in front of the East Abutment and its wingwalls shall be constructed prior to the embankment behind the abutment and walls.

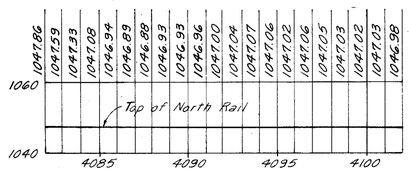
All piles are 12" ϕ C.I.P. reinforced concrete. Piles for the West Abutment shall be driven to a minimum bearing capacity of 35 tons per pile, piles for the piers shall be driven to a minimum bearing capacity of 40 tons per pile and piles for the East Abutment shall be driven to a minimum bearing capacity of 45 tons per pile.

The estimated average pay length of the piles are as follows:
West Abut. - 65 ft., Pier 1 - 52 ft., Pier 2 - 42 ft., East Abut. - 45 ft.

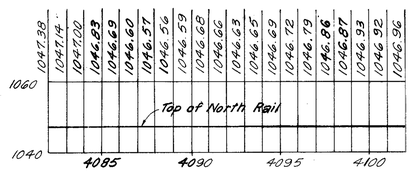
For Sections A-A and B-B see Sheet 2/20.



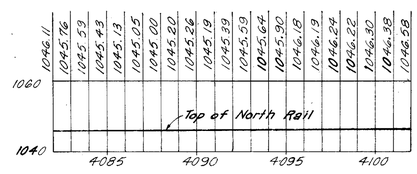
PROFILE - I-80 (OUTER BELT SOUTH FREEWAY)
Scale: Horiz. 1" = 500'
Vert. 1" = 50'



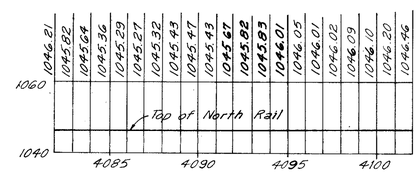
PROFILE - EASTBOUND MAIN TRACK
Scale: Horiz. 1" = 400'
Vert. 1" = 20'



PROFILE - WESTBOUND MAIN TRACK
Scale: Horiz. 1" = 400'
Vert. 1" = 20'

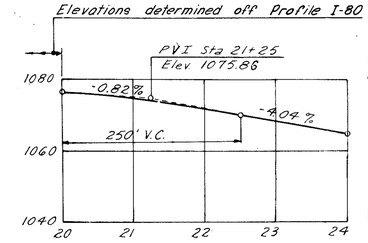


PROFILE - NORTH SERVICE TRACK
Scale: Horiz. 1" = 400'
Vert. 1" = 20'

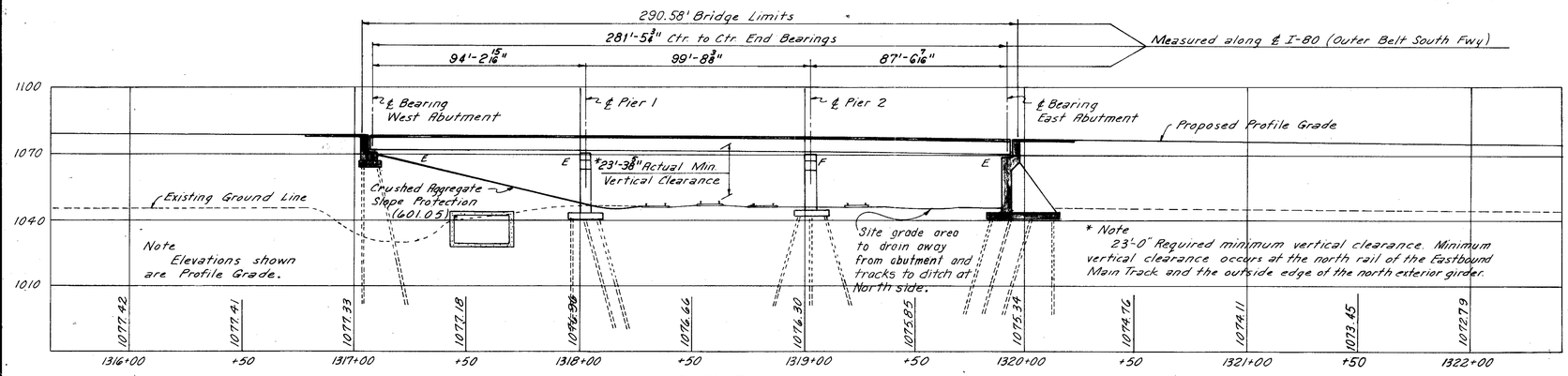


PROFILE - SOUTH SERVICE TRACK
Scale: Horiz. 1" = 400'
Vert. 1" = 20'

Elevations determined off Profile I-80



PROFILE - RAMP W-M
Scale: Horiz. 1" = 100'
Vert. 1" = 20'



ELEVATION

TRAFFIC DATA:

1986 - 34,856 A.D.T. (Total both ways)
2,335 D.D.H.V.

H.N.T.B. BR. NO. 20

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

SITE PLAN

I-80 OVER ERIE LACKAWANNA RAILROAD

BR. NO. CUY-80-2450 STA. 1317+04.15 TO STA. 1319+94.73

CUYAHOGA COUNTY OHIO

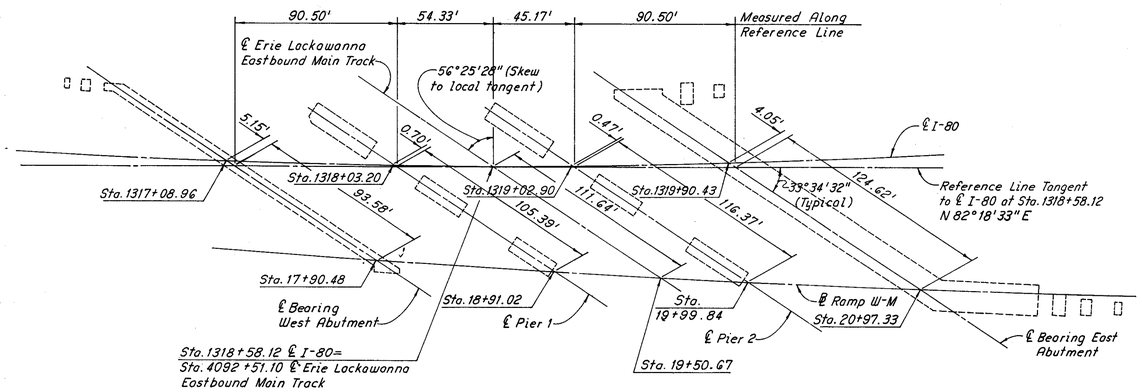
DRAWN CKB	TRACED DLA	CHECKED RAB	REVIEWED W.S.F.	REVISED
DATE 12-3-65	DATE 10-13-67	DATE 4-4-68	DATE 5-22-70	SHEET 1/20

JAN 25 1968

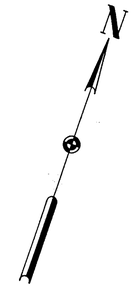
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

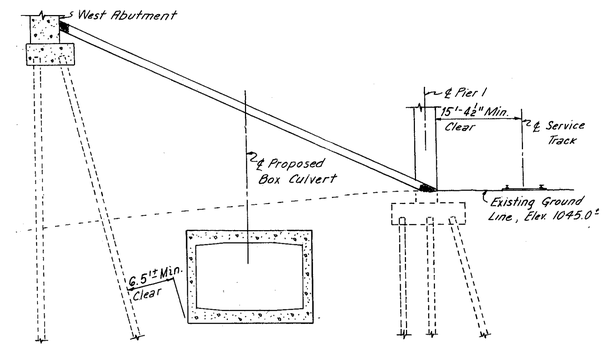
348 / 514

CUYAHOGA COUNTY
CUY - 80 - 24.63



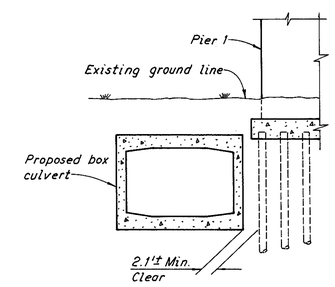
BRIDGE LAYOUT DIAGRAM





SECTION A-A
No Scale

NOTE:
The Box Culvert is to be in place and the ground line at its final spill thru slope prior to construction of the West Abutment and Pier 1.
For locations of Sections A-A and B-B see Sheet 1/20.



SECTION B-B
No Scale

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	H.N.T.B. BRIDGE NO. 20 ABUTMENTS	PIERS	SUPERSTRUCTURE	GENERAL		
503	Lump Sum	Lump Sum	Cofferdams, Cribs and Sheeting	Lump Sum	Lump Sum				
503	2360	Cu. Yd.	Unclassified Excavation	1772	588				
505	Lump Sum	Lump Sum	Test Pile	1772			Lump Sum		
506	Lump Sum	Lump Sum	First Pile Test Load				Lump Sum		
506	One	Each	Subsequent Pile Test Load				one		
507	23,394	Lin. Ft.	12" ϕ C.I.P. Reinforced Concrete Piles	14,880	8,514				
507	72	Lin. Ft.	Prebored Holes		72				
509	634,217	Pounds	Reinforcing Steel	228,554	109,817	295,846			
511	1000	Cu. Yd.	Class "C" Concrete, Superstructure			1000			
511	605	Cu. Yd.	Class "C" Concrete, Piers (Above Footing)		605				
511	985	Cu. Yd.	Class "C" Concrete, East Abutment (Above footing)	985					
511	152	Cu. Yd.	Class "C" Concrete, West Abutment (Above footing)	152					
511	903	Cu. Yd.	Class "C" Concrete, Footings	689	214				
512	318	Lin. Ft.	Premolded Sealing Strip	318					
513	1,051,630	Pounds	Structural Steel			1,051,630			
514	1,051,630	Pounds	Field Painting of Structural Steel			1,051,630			
516	418	Sq. Ft.	1" Preformed Expansion Joint Filler	418					
517	814.10	Lin. Ft.	Railing (Type 1)	218.30		595.80			
518	104	Lin. Ft.	6" Helical C.M.P. (Section 707.01) Non-Perforated, Including Specials	104					
518	209	Lin. Ft.	6" Perforated Helical C.M.P. (Section 707.01)	209					
518	587	Cu. Yd.	Porous Backfill	587					
518	84	Lin. Ft.	8" ϕ Perforated Bituminous Coated CMP (Section 707.04) Including Specials	84					
518	5	Each	Scuppers, Including Supports			5			
838	3	Hours	Special Pile Tests				3		
601	1,495	Sq. Yd.	Crushed Aggregate Slope Protection				1,495		
625			for lighting quantities see Lighting Plans						
808	1000	Units	Chemical Admixture for Concrete, Type A, B or D			1000			

H.N.T.B. BR. NO. 20

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

BRIDGE LAYOUT DIAGRAM, ESTIMATED QUANTITIES AND CULVERT CLEARANCES

I-80 OVER ERIE LACKAWANNA RAILROAD

BR. NO. CUY-80-2450 STA. 1317+04.15 TO STA. 1319+94.73

CUYAHOGA COUNTY OHIO

DRAWN T.L.S.	TRACED D.L.R.	CHECKED R.A.B.	REVIEWED W.S.F.	REVISED
DATE 6-5-67	DATE 6-12-67	DATE 5-1-68	DATE 5-22-70	SHEET 2/20

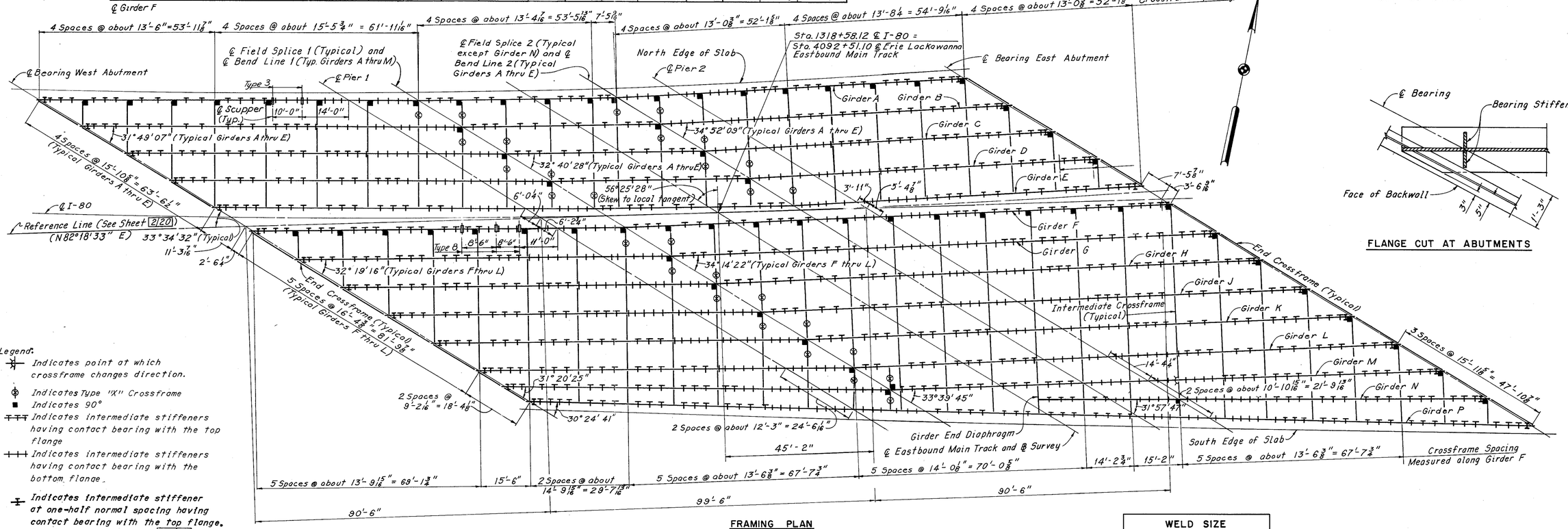
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

360
514

CUYAHOGA COUNTY
CUY - 80 - 24.63

HORIZONTAL OFFSETS TO EDGE OF SLAB														
LOCATION	℄ Brg. W. Abutment	1/4	1/2	3/4	℄ Field Splice 1	1/4	1/2	3/4	℄ Field Splice 2	1/4	1/2	3/4	℄ Brg. E. Abutment
℄ Girder A to North edge of slab	3'-2"	2'-7 3/8"	2'-3 1/4"	2'-1 5/8"	2'-3"	2'-1 5/8"	2'-1 1/2"	2'-1 5/8"	2'-3"	2'-2 3/8"	2'-4"	2'-7 5/8"	3'-2"
℄ Girder F to South edge of open joint	3'-11"	3'-7 1/4"	3'-6"	3'-7 1/4"	3'-11"	3'-8"	3'-5 3/4"	3'-4"	3'-3"	3'-2 3/8"	3'-5"	3'-9 3/8"	4'-4"
℄ Girder P to South edge of slab	2'-6"	2'-10 3/8"	3'-1 5/8"	3'-4 3/8"	3'-5 5/8"	3'-6 1/4"	3'-6 3/8"	3'-6 1/4"	3'-5 7/8"	3'-4 5/8"	3'-2"	2'-10 5/8"	2'-6 1/4"

Note: The 1/4, 1/2 and 3/4 points are measured between the ℄ of Abutment Bearing and Field Splice or between Field Splices. Horizontal offsets are given perpendicular to ℄ Girder.



FRAMING PLAN

FLANGE CUT AT ABUTMENTS

Legend:

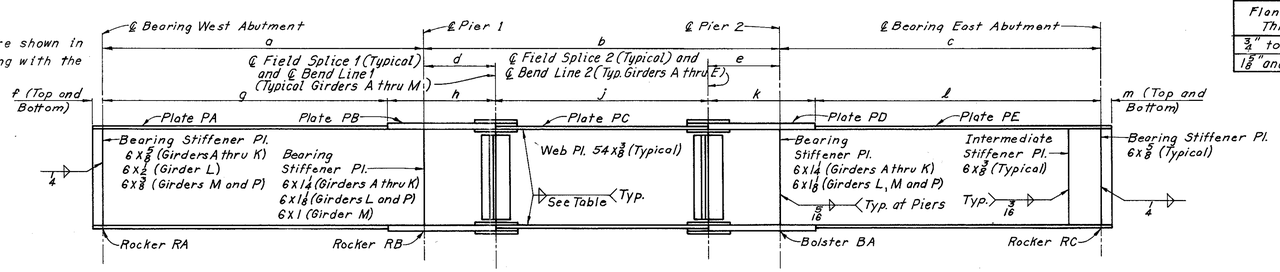
- Indicates point at which crossframe changes direction.
- Indicates Type "X" Crossframe
- Indicates 90°
- Indicates intermediate stiffeners having contact bearing with the top flange
- Indicates intermediate stiffeners having contact bearing with the bottom flange.
- **Indicates intermediate stiffener at one-half normal spacing having contact bearing with the top flange. See Girder Notes Sheet 15/20 for stiffener spacing.**

Note:

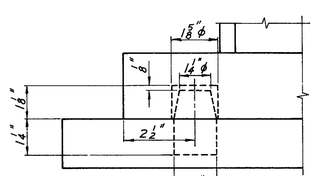
Intermediate stiffeners located at crossframes are shown in the "Framing Plan" only at places where contact bearing with the flange changes adjacent to the crossframe.

TABLE OF GIRDER DIMENSIONS						
	Girder	A thru E	F thru K	L	M	P
DIMENSION	a	94'-11 3/16"	93'-7 5/16"	93'-7 5/16"	96'-2 3/4"	98'-10 1/2"
	b	101'-3 1/8"	98'-9 15/16"	98'-9 15/16"	100'-7 1/16"	108'-8 1/2"
	c	87'-6 1/2"	88'-11 7/16"	88'-11 7/16"	90'-3 1/32"	98'-10 1/8"
	d	20'-11 3/4"	20'-8 1/4"	20'-8 1/4"	21'-3 3/16"	21'-10 13/16"
	e	19'-4 3/16"	19'-7 15/16"	19'-7 15/16"	19'-11 7/16"	21'-10 13/16"
	f	1'-10 11/16"	1'-10 1/8"	1'-10 1/8"	1'-10 3/4"	1'-11 3/8"
	g	84'-11 3/16"	83'-7 5/16"	82'-7 15/16"	77'-2 3/4"	74'-10 1/2"
	h	30'-11 3/4"	30'-8 1/4"	31'-8 1/4"	40'-3 3/16"	45'-10 13/16"
	j	60'-11 3/8"	58'-5 3/4"	58'-5 3/4"	59'-4 7/16"	65'-0 5/8"
	k	28'-4 3/16"	29'-7 15/16"	29'-7 15/16"	32'-11 7/16"	40'-10 13/16"
	ℓ	77'-6 1/2"	78'-11 7/16"	78'-11 7/16"	77'-3 1/2"	79'-10 13/16"
	m	1'-8 11/16"	1'-9 1/16"	1'-9 1/16"	1'-9 3/8"	1'-11 3/8"
	Plate PA	16 x 1 3/8	16 x 1 3/8	16 x 1 1/8	16 x 7/8	16 x 1
	Plate PB	16 x 1 3/4	16 x 1 3/4	16 x 1 1/2	16 x 1 1/2	16 x 1 3/4
	Plate PC	16 x 7/8	16 x 7/8	16 x 3/4	16 x 7/8	16 x 1 1/8
	Plate PD	16 x 1 3/4	16 x 1 3/4	16 x 1 5/8	16 x 1 5/8	16 x 1 3/4
	Plate PE	16 x 1 1/4	16 x 1 1/4	16 x 1 1/4	16 x 1 1/8	16 x 1 1/8
	Rocker RA	R125	R150	R125	R*100	R*100
	Rocker RB	R275	R300	R250	R225	R250
	Bolster BA	B275	B300	B275	B275	B275
	Rocker RC	R150	R150	R150	R125	R125

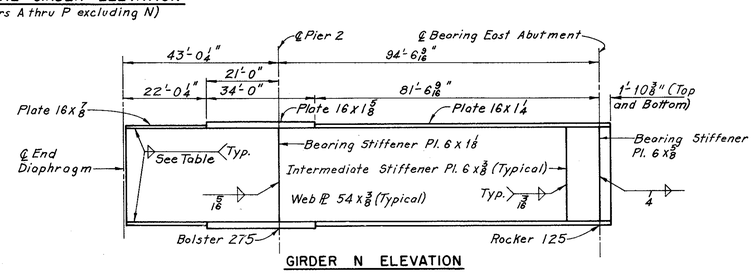
WELD SIZE WEB TO FLANGE	
Flange Plate Thickness	Fillet Weld Size
3/4" to 1 1/2"	5/16"
1 5/8" and 1 3/4"	3/8"



TYPICAL GIRDER ELEVATION
(Girders A thru P excluding N)



*DETAIL OF DOWEL MODIFICATION FOR R-100



GIRDER N ELEVATION

Notes:

For details of Rockers and Bolsters see Ohio Standard Drawing RB-1-55.

For details of end crossframe and roadway end dam see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4. The supporting angle shown in Section A-A on Sheet 1 of 4 shall be increased from 7x4x3/4 to 8x4x3/4 and the main angle shall be 8x4x1.

For details of Intermediate and Type "X" Crossframes, see Sheet CD3.

For drainage details see Sheet CD3.

For girder end diaphragm details see Sheet 15/20.

H.N.T.B. BR. NO. 20

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

FRAMING PLAN

I-80 OVER ERIE LACKAWANNA RAILROAD

BR. NO. CUY-80-2450 STA. 1317+04.15 TO STA. 1319+94.73

CUYAHOGA COUNTY OHIO

DRAWN JJG	TRACED JJG	CHECKED RHB	REVIEWED W.S.F.	REVISED
DATE 4-1967	DATE 4-21-67	DATE 6-12-67	DATE 5-11-70	SHEET 14/20