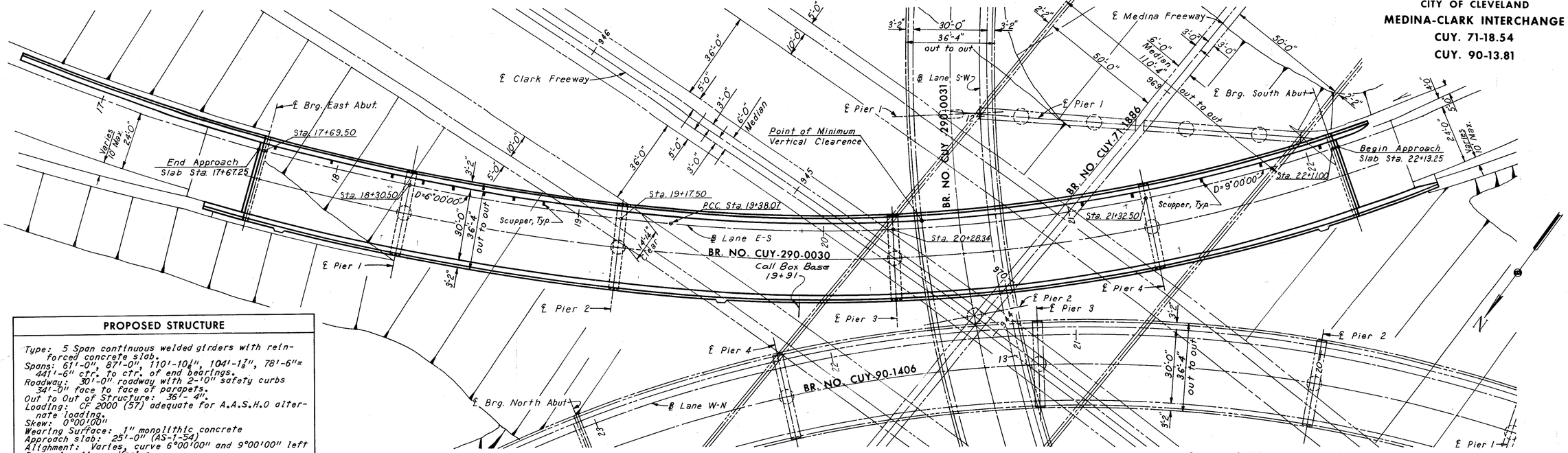
bl-W FILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND

MEDINA-CLARK INTERCHANGE

CUY. 71-18.54
CUY. 90-13.81



PLAN

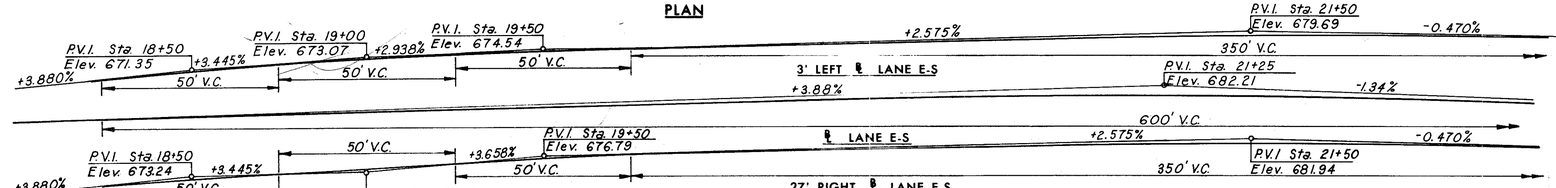
PROPOSED STRUCTURE

Type: 5 Span continuous welded girders with reinforced concrete slab.
Spans: 61'-0", 87'-0", 110'-10⅛", 104'-1⅞", 78'-6"= 441'-6" ctr. to ctr. of end bearings.
Roadway: 30'-0" roadway with 2-1'0" safety curbs 34'-0" face to face of parapets.
Out to Out of Structure: 36'- 4".
Loading: CF 2000 (57) adequate for A.A.S.H.O alternate loading.
Skew: 0°00'00"
Wearing Surface: 1" monolithic concrete
Approach slab: 25'-0" (AS-1-54)
Alignment: Varies, curve 6°00'00" and 9°00'00" left
Superelevation: Varies
1975 ADT: 15,581, Directional

HORIZONTAL CURVE DATA

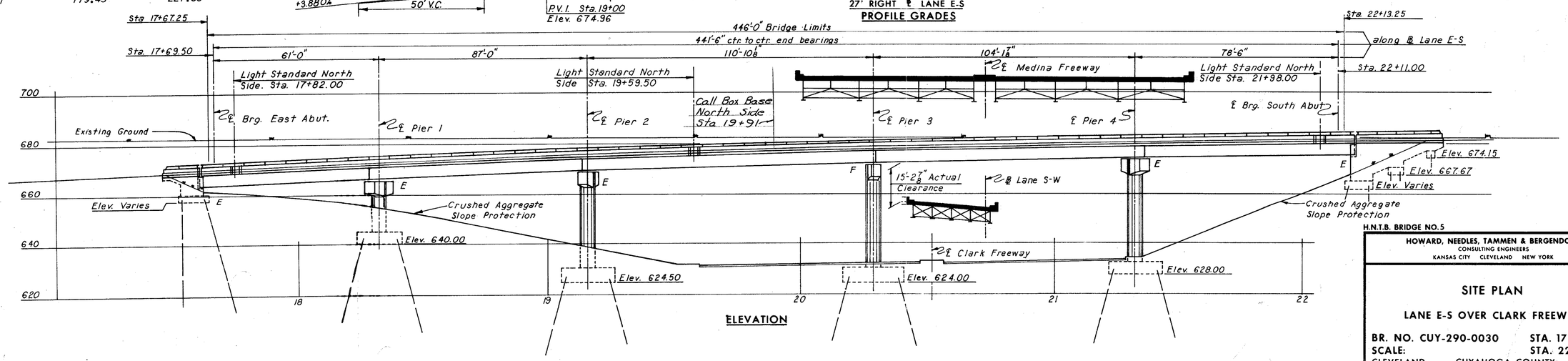
℄ Lane E-S

P.I. Sta.	17 + 56.50	21 + 65.45
Δ	21° 39' 36"	39° 18' 34"
D	6° 00' 00"	9° 00' 00"
R	954.93'	636.62'
L	361.00'	436.77'
T	179.43'	227.38'



PROFILE GRADES

Note: All piles shall be 12"⌀ cast-in-place concrete with estimated lengths as follows: East Abutment-65', Pier 1-60', Pier 2-60', Pier 3-60', Pier 4-60', and South Abutment-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.



ELEVATION

H.N.T.B. BRIDGE NO.5

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

SITE PLAN

LANE E-S OVER CLARK FREEWAY

BR. NO. CUY-290-0030 STA. 17+67.25
SCALE: STA. 22+13.25
CLEVELAND CUYAHOGA COUNTY OHIO

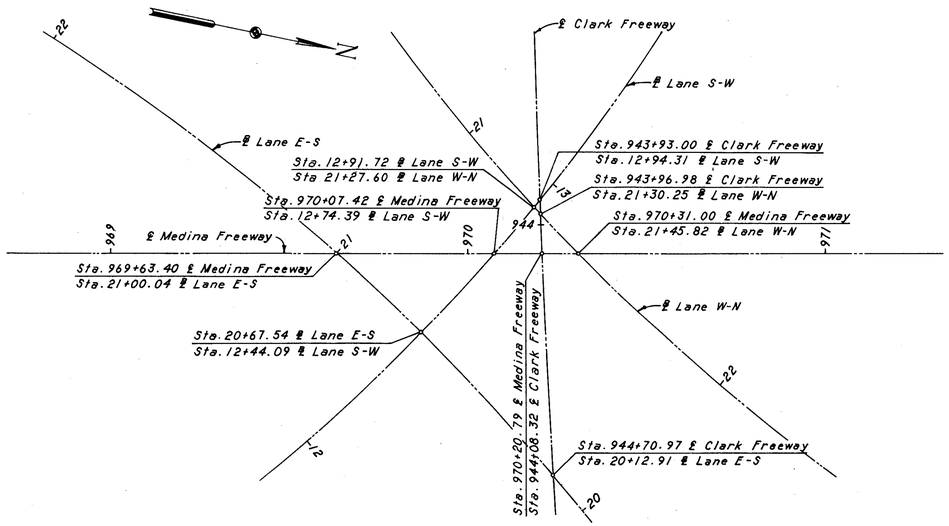
DRAWN P.E.H.	TRACED	CHECKED WEH	REVIEWED	REVISED
DATE 12-23-64	DATE	DATE 12-24-64	DATE	SHEET 439

MICROFILMED
OCT 28 1982

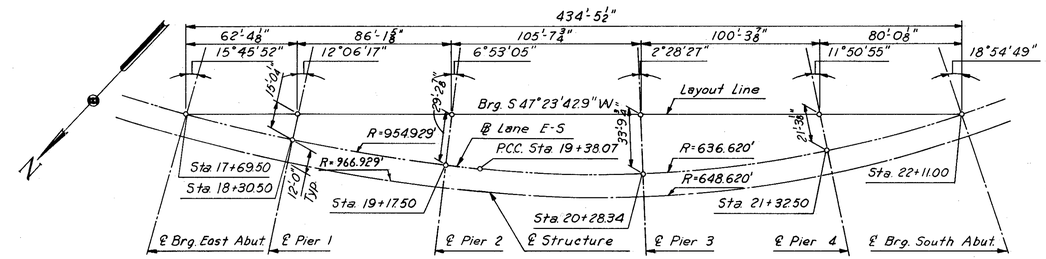
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

440
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



GEOMETRIC PLAN



LAYOUT SKETCH

ESTIMATED QUANTITIES - BRIDGE NO. CUY-290-0030

ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	TOTAL	AS BUILT
E-2	Cofferdams, Cribs and Sheeting	L.S.					Lump Sum	
E-2	Unclassified Excavation	Cu.Yd.	525	726			1251	
I-10	Crushed Aggregate Slope Protection	Sq.Yd.				2760	2760	
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			579		579	
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yd.		231			231	
S-1	Class "E" Concrete (Abutment above Footings)	Cu.Yd.	242				242	
S-1	Class "E" Concrete (Footings; Piers, Abutments, and Wingwalls)	Cu.Yd.	162	293			455	
S-3	Waterproofing Premolded Sealing Strip	Lin.Ft.	28				28	
S-4	Reinforcing Steel	Lbs.	29,783	120,578	148,794		299,155	
S-7	Structural Steel	Lbs.			535,400		535,400	
S-8	Field Painting of Structural Steel, as per proposal note	Lbs.			535,400		535,400	
S-9	¾" Preformed Expansion Joint Filler	Sq.Ft.	77				77	
S-14	Railing (Type A Aluminum Rail, Supports and Concrete Parapet)	Lin.Ft.	170		901		1,071	
S-16	First Test Pile	L.S.				Lump Sum	Lump Sum	
S-17	First Pile Test Load	L.S.				Lump Sum	Lump Sum	
S-17	Subsequent Pile Test Load	Each					1	
S-18	12"ϕ Cast-in-Place Piles	Lin.Ft.	4,605	7,500			12,105	
S-25	For Lighting Details and Quantities, see Sheet 200							
S-29	Scuppers, Including Supports	Each			13		13	
S-29	Porous Backfill	Cu.Yd.	107				107	
S-29	6" Perforated Helical C.M.P. M-6.4(h) including specials	Lin.Ft.	166				166	
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Lin.Ft.	90				90	
S-101	Water Reducing, Set-retarding Admixture	Each			579		579	

H.N.T.B. BRIDGE NO.5

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

ESTIMATED QUANTITIES

LANE E-S OVER CLARK FREEWAY

BR. NO. CUY-290-0030 **STA. 17+67.25**
SCALE: **STA. 22+13.25**
CLEVELAND CUYAHOGA COUNTY OHIO

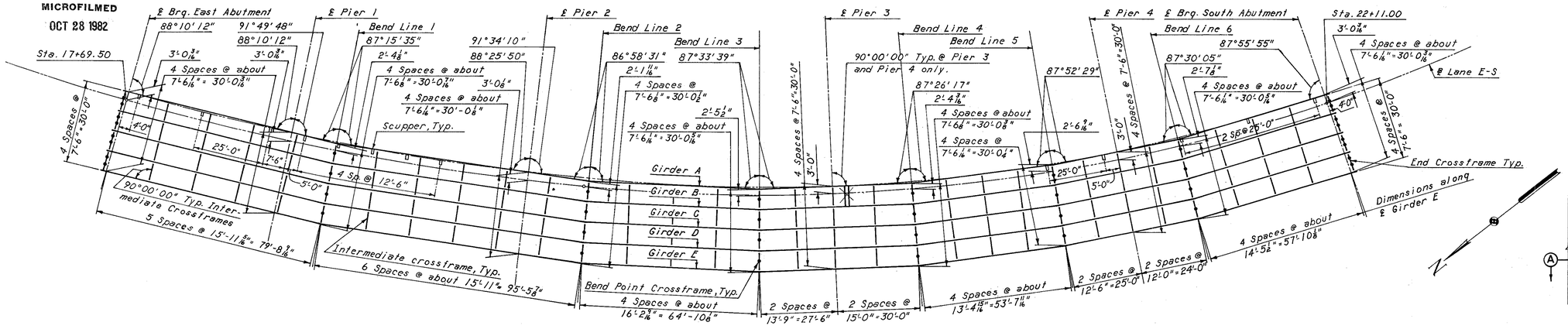
DRAWN L.J.R.	TRACED	CHECKED DAM	REVIEWED	REVISED
DATE 10-18-64	DATE	DATE 12-28-64	DATE	SHEET 440

MICROFILMED
OCT 28 1982

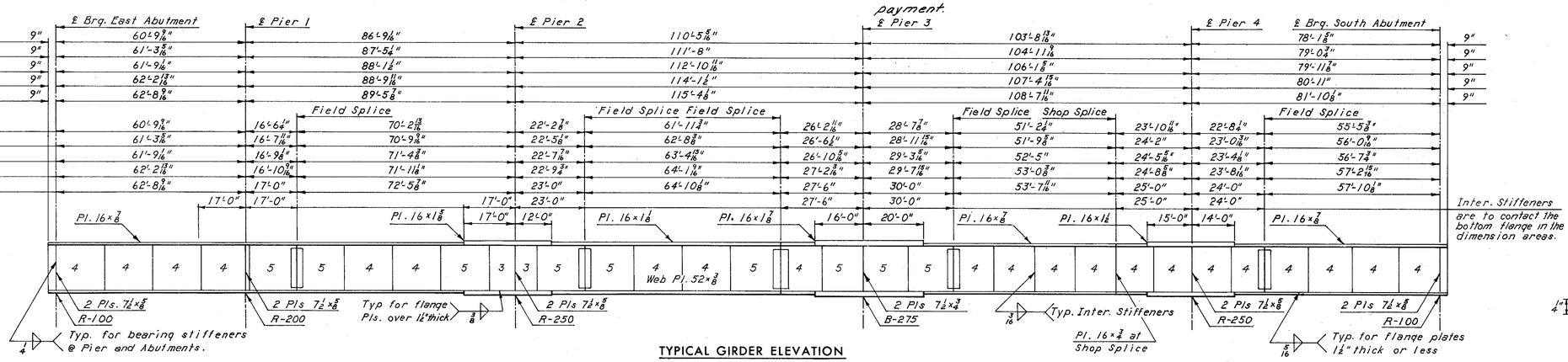
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

448
478

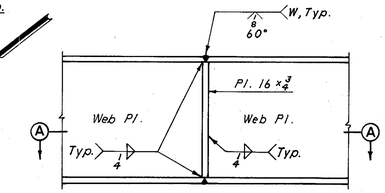
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



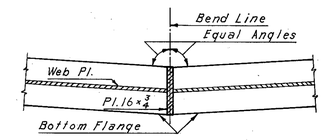
FRAMING PLAN



TYPICAL GIRDER ELEVATION

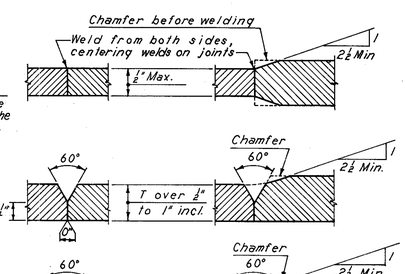


ELEVATION



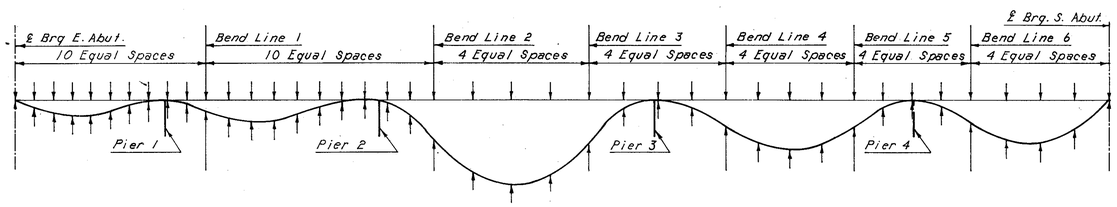
SECTION A-A

GIRDER SHOP SPLICE DETAIL



Note:
All the above full penetration welds shall be back-gouged and welded after welding far side.
Butt welds on girder flange plates shall be ground flush, the finished grinding being parallel to the direction of stress.

JOINT PREPARATION FOR SHOP BUTT WELDS



TYPICAL DEFLECTION DIAGRAM

Note:
Deflections are given to the nearest 1/16 inch.
In the table of deflection, T indicates the deflection due to total dead load and C indicates the deflection due to dead load of concrete only.

DEFLECTIONS

GIRDER		East Abut.	.1	.2	.3	.4	.5	.6	.7	.8	.9	Bend Line 1	.1	.2	.3	.4	.5	.6	.7	.8	.9	Bend Line 2	.25	.50	.75	Bend Line 3	.25	.50	.75	Bend Line 4	.25	.50	.75	Bend Line 5	.25	.50	.75	Bend Line 6	.25	.50	.75	South Abut.
A	T	0	1/8	3/16	3/16	3/16	1/8	1/16	0	0	0	1/8	3/16	1/4	1/4	3/16	1/16	0	0	1/16	3/16	3/8	3/4	7/8	3/4	7/16	1/8	0	1/16	5/16	1/2	9/16	7/16	3/16	1/16	0	1/8	1/4	7/16	1/2	5/16	0
	C	0	1/8	1/8	1/8	1/8	1/16	0	0	0	1/8	1/8	3/16	3/16	3/16	1/16	0	0	1/16	1/8	1/16	3/8	5/8	7/16	3/8	3/8	1/8	0	1/16	3/16	7/16	7/16	3/8	1/8	1/16	0	1/8	3/16	3/8	3/8	1/4	0
B	T	0	1/8	3/16	3/16	3/16	1/8	1/16	0	0	1/16	1/8	3/16	1/4	1/4	3/16	1/16	0	0	1/16	3/16	7/16	13/16	15/16	3/4	7/16	1/8	0	1/16	5/16	1/2	9/16	1/2	1/4	1/16	0	1/8	1/4	7/16	1/2	5/16	0
	C	0	1/8	1/8	1/8	1/8	1/8	1/16	0	0	1/16	1/8	1/8	3/16	3/16	1/8	1/16	0	0	1/16	3/16	5/16	5/8	3/4	5/8	3/8	1/8	0	1/16	1/4	3/8	7/16	3/8	3/16	1/16	0	1/8	3/16	3/8	3/8	1/4	0
C	T	0	1/8	3/16	3/16	3/16	1/8	1/16	0	0	1/16	1/8	3/16	1/4	1/4	3/16	1/16	0	0	1/16	1/4	7/16	13/16	1	13/16	1/2	1/8	0	1/16	5/16	1/2	9/16	1/2	1/4	1/16	0	1/8	1/4	1/2	1/2	5/16	0
	C	0	1/8	1/8	3/16	1/8	1/8	1/16	0	0	1/16	1/8	3/16	3/16	3/16	1/8	1/16	0	0	1/16	3/16	3/8	11/16	13/16	13/16	3/8	1/8	0	1/16	1/4	1/16	1/2	7/16	3/16	1/16	0	1/8	3/16	3/8	3/16	1/4	0
D	T	0	1/8	3/16	1/4	3/16	1/8	1/16	0	0	1/16	1/8	1/4	1/4	1/4	3/16	1/16	0	0	1/16	1/4	1/2	9/16	11/16	5/8	1/2	1/8	0	1/16	5/16	9/16	5/8	9/16	5/16	1/16	0	1/8	1/4	1/2	9/16	3/8	0
	C	0	1/8	1/8	3/16	1/8	1/8	1/16	0	0	1/16	1/8	3/16	1/4	1/4	1/8	1/16	0	0	1/16	3/16	3/8	3/4	13/16	3/4	7/16	1/8	0	1/16	1/4	7/16	1/2	7/16	1/4	1/16	0	1/8	1/4	3/8	7/16	5/8	0
E	T	0	1/8	3/16	1/4	3/16	1/8	1/16	0	0	1/16	1/8	1/4	5/16	5/16	3/16	1/16	0	0	1/16	1/4	9/16	1	1 1/16	1	5/8	7/16	0	1/16	3/8	5/8	11/16	5/8	5/16	1/8	0	1/8	5/16	9/16	5/8	7/16	0
	C	0	1/8	1/8	3/16	1/8	1/8	1/16	0	0	1/16	1/8	3/16	1/4	1/4	1/8	1/16	0	0	1/16	3/16	7/16	13/16	1	13/16	1/2	1/8	0	1/16	3/16	1/2	9/16	1/2	1/4	1/8	0	1/8	1/4	7/16	1/2	3/8	0

Notes:
Location of scuppers are dimensions along the south gutter line.
For Field Splice Details, see Sheet 450.
For Bolster and Rocker Details, see Ohio Standard Drawing RB-1-55, revised 2-2-59.
For Scupper Details, see Ohio Standard Drawing SD-1-63, Sheet 3 of 4.
Top and Bottom flanges are identical.
Intermediate stiffeners are pls. 6×3/8 placed on both sides of all girders.
Numbers shown on girder web indicate the number of intermediate stiffener spaces between crossframes.
Bearing stiffeners shall be fully grooved and butt welded to the lower flange and fitted in close contact with the upper flange.
For details of Intermediate Crossframes, Bend Point Crossframes and End Crossframes, see Sheet 449.
For Curb Plate Details at safety curbs, see Ohio Standard drawing SD-1-63, Sheet 2 of 4.
The girders shall be fabricated to line parallel to the profiles formed by top of pavement elevations directly over the girders, plus the camber required to compensate for dead load deflections.

H.N.T.B. BRIDGE NO. 5

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

FRAMING PLAN

LANE E-S OVER CLARK FREEWAY

BR. NO. CUY-290-0030 STA. 17+67.25
SCALE: STA. 22+13.25
CLEVELAND CUYAHOGA COUNTY OHIO

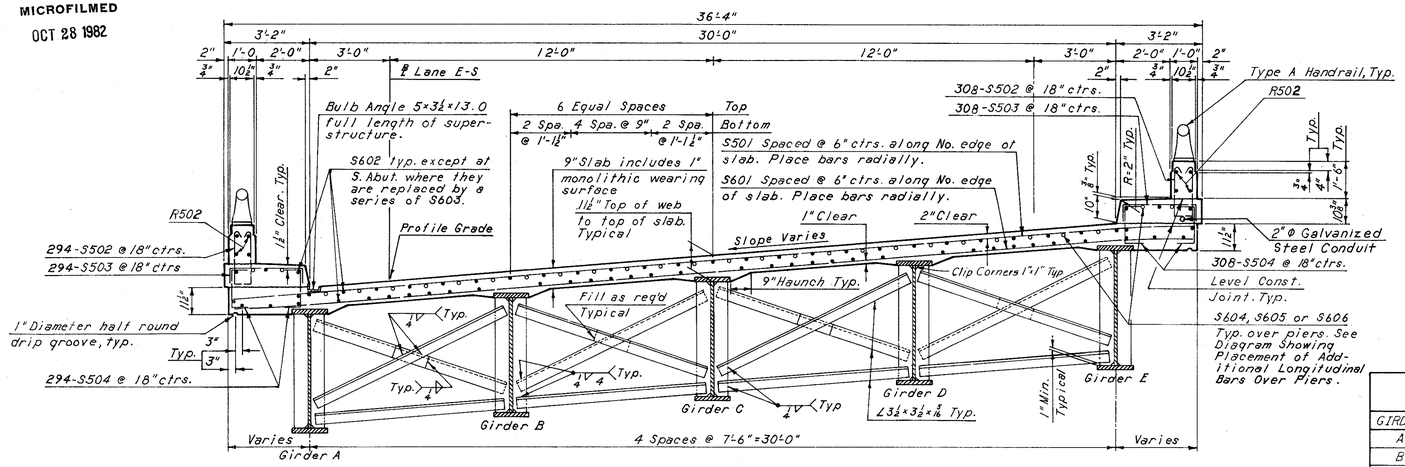
DRAWN L.J.R.	TRACED	CHECKED JFP	REVIEWED	REVISED
DATE 9-18-64	DATE	DATE 12-17-64	DATE	SHEET 448

MICROFILMED
OCT 28 1982

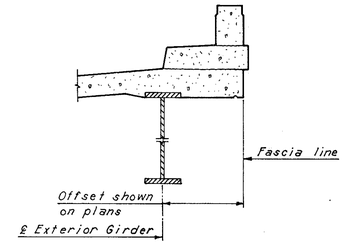
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

449
478

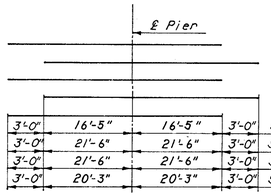
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



TYPICAL CROSS SECTION



LOCATION OF FASCIA LINE

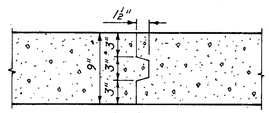


3'-0"	16'-5"	16'-5"	3'-0"	S604, Pier 1
3'-0"	21'-6"	21'-6"	3'-0"	S605, Pier 2
3'-0"	21'-6"	21'-6"	3'-0"	S605, Pier 3
3'-0"	20'-3"	20'-3"	3'-0"	S606, Pier 4

DIAGRAM SHOWING PLACEMENT OF ADDITIONAL LONGITUDINAL BARS OVER PIERS

TOP OF PAVEMENT ELEVATIONS AT PIERS

GIRDER	Pier 1	Pier 2	Pier 3	Pier 4
A	670.59	673.58	676.44	678.16
B	671.06	674.09	677.00	678.73
C	671.54	674.59	677.56	679.29
D	672.01	675.10	678.12	679.85
E	672.48	675.60	678.69	680.41

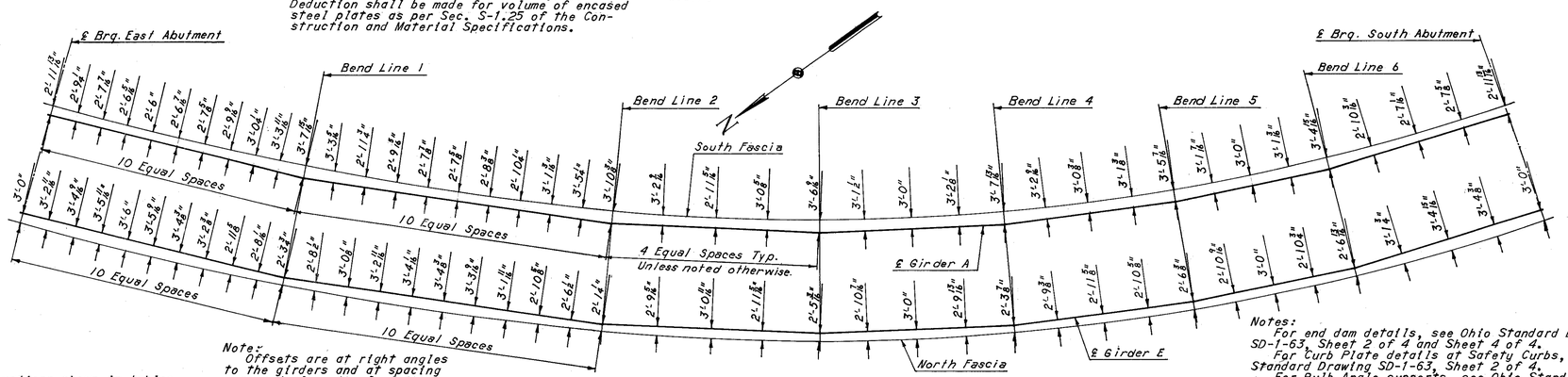


OPTIONAL TRANSVERSE CONSTRUCTION JOINT

Note:
The distance shown from top of deck slab to top of girder web is the normal 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. S-1.25 of the Construction and Material Specifications.

Note:
The haunch in the deck slab adjacent to the top of girders which is shown as 9" wide, may vary from this dimension between the limits of 6" and 12", except that the maximum slope shall not exceed 3 inches per foot for a haunch less than 9" in width. Payment for deck slab concrete shall be based on the 9" width.

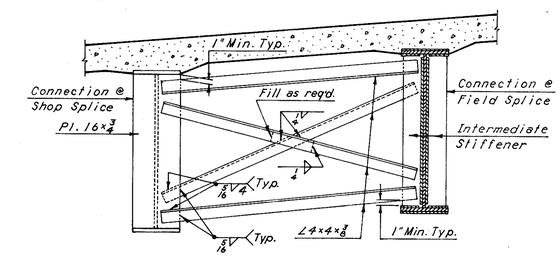
Note:
In order to facilitate water curing of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections between transverse construction joints which are normal to the centerline of bridge and located near the center of any span.



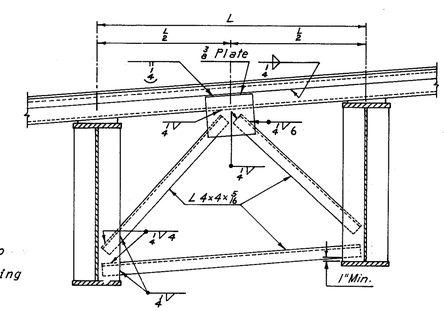
OFFSETS TO FASCIAS

Note:
Elevations shown in tables are to top of pavement along ℄ of girders at points shown.

Note:
Offsets are at right angles to the girders and at spacing measured along the ℄ of the girders.



BEND POINT CROSSFRAME



END CROSSFRAME

Notes:
For end dam details, see Ohio Standard Drawing SD-1-63, Sheet 2 of 4 and Sheet 4 of 4.
For curb Plate details at Safety Curbs, see Ohio Standard Drawing SD-1-63, Sheet 2 of 4.
For Bulb Angle supports, see Ohio Standard Drawing SD-1-63, Sheet 3 of 4.
For Reinforcement Schedule, see Sheet 452.
For Replacement Bar Schedule, see Sheet 452.
Reinforcement bars shall be adjusted as required to clear scuppers.
For location of light standards, see Sheet 439.
For Details of Light Support, see Sheet 450.
For Handrail Post and Parapet Joint spacing see Sheet 450.
Crossframes shown in Typical Cross Section are typical intermediate crossframes.

TOP OF PAVEMENT ELEVATIONS

GIRDER	East Abut.	.1	.2	.3	.4	.5	.6	.7	.8	.9	Bend Line 1	.1	.2	.3	.4	.5	.6	.7	.8	.9	Bend Line 2
A	668.23	668.53	668.83	669.13	669.43	669.73	670.03	670.33	670.63	670.95	671.26	671.57	671.88	672.21	672.52	672.83	673.13	673.42	673.70	674.00	674.30
B	668.70	668.99	669.28	669.57	669.87	670.18	670.48	670.79	671.11	671.42	671.73	672.04	672.36	672.67	672.98	673.28	673.59	673.90	674.22	674.53	674.84
C	669.17	669.46	669.75	670.05	670.34	670.65	670.96	671.27	671.58	671.89	672.20	672.52	672.83	673.14	673.45	673.76	674.08	674.40	674.73	675.06	675.38
D	669.64	669.93	670.22	670.52	670.82	671.12	671.43	671.74	672.05	672.36	672.67	672.99	673.30	673.61	673.92	674.24	674.57	674.90	675.24	675.58	675.92
E	670.12	670.40	670.70	670.99	671.29	671.59	671.90	672.21	672.52	672.82	673.10	673.44	673.77	674.08	674.40	674.72	675.05	675.40	675.74	676.08	676.40

GIRDER	.25	.50	.75	Bend Line 3	.25	.50	.75	Bend Line 4	.25	.50	.75	Bend Line 5	.25	.50	.75	Bend Line 6	.25	.50	.75	South Abut.	
A	674.68	675.08	675.48	675.89	676.17	676.46	676.76	677.06	677.25	677.46	677.67	677.88	678.02	678.16	678.30	678.44	678.55	678.66	678.76	678.84	
B	675.24	675.64	676.04	676.45	676.74	677.02	677.32	677.62	677.82	678.02	678.23	678.45	678.58	678.72	678.86	679.01	679.10	679.19	679.29	679.40	
C	675.79	676.20	676.60	677.02	677.30	677.59	677.88	678.18	678.38	678.58	678.79	679.01	679.14	679.28	679.42	679.57	679.66	679.76	679.86	679.96	
D	676.35	676.76	677.17	677.58	677.86	678.15	678.44	678.74	678.94	679.15	679.36	679.57	679.70	679.84	679.99	680.14	680.22	680.32	680.42	680.53	
E	676.89	677.32	677.72	678.10	678.41	678.71	679.99	679.26	679.49	679.71	679.91	680.10	680.26	680.41	680.54	680.67	680.79	680.88	680.98	681.09	

H.N.T.B. BRIDGE NO. 5

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

DECK DETAILS

LANE E-S OVER CLARK FREEWAY

BR. NO. CUY-290-0030 STA. 17+67.25
SCALE: STA. 22+13.25
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.J.R.	TRACED	CHECKED JFP	REVIEWED	REVISED
DATE 10-20-64	DATE	DATE 12-17-64	DATE	SHEET 449