2	OHIO	I-71-5(33) 244 US-1463(2)	

646

CUYAHOGA COUNTY
CUY-71-17.83
CUY-176-12.76

Part 1 ~ For Part 2 See CUY-80-9.08

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
CUY-71-17.83
CUY-176-12.76
CUYAHOGA COUNTY
CITY OF CLEVELAND

CONVENTIONAL SIGNS

Property Line
Existing Right of Way
Limited Access Line
Right of Way Line
Temporary Right of Way
Center Line
Work Agreement Line
Fence Line
Guard Rail (Existing)
Guard Rail (Proposed)
Railroad
Power Poles
Telephone Poles
Power & Telephone Poles
Light Poles
Trees (Existing)
Water Line
Gas Line
Telephone Conduit
Sewer (Existing)
Oil Line
Electrical Tower
Fire Hydrant
Manhole (Sewer)
Manhole (Telephone)
Catch Basin or Inlet
Underground Elect. Conduit
Original Twp. Lot Line
Subdivision Line
Sublot Line

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GENERAL NOTES	16-18	BR. NO. CUY-71-1826 (HNTB NO.19)	320-336
QUANTITY CALCS	19-34	BR. NO. CUY-71-1794 (HNTB NO.20)	337-357
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SCHEMATIC DRAINAGE PLAN	251	RETAINING WALL NO.84	477-482
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SEWER PROFILES	274-300	SIGNING PLANS	554-569
OUTFALL SEWER	301-302	LIGHTING PLANS	570-590, 590A
SPEC. UNDERDRAIN PROFILES	303-304	DETOUR ROAD PLANS	591-609
SANITARY SEWER PROFILES	305	SURVEY PLAT	610-611
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DELETED ~ SHEET 43

PREPARED AND RECOMMENDED BY

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

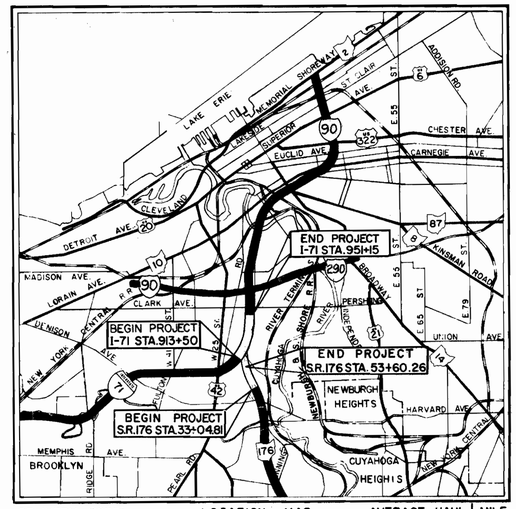
H. G. SOURS
ASSOCIATE
COLUMBUS

Carl L. Erb

00326

FILE NO.	CUYAHOGA COUNTY CUY-71-17.83 CUY-176-12.76 DATE OF LETTING _____ ,196__ CONTRACT NO. _____

STATE OF OHIO — CARL L. ERB, Jr. 18368 — REGISTERED PROFESSIONAL ENGINEER



DELIVERY POINT NYC R.R. — LOCATION MAP — AVERAGE HAUL ½ MILE

SCALE IN MILES
0 1 2

Portion to be improved
State Roads
Other Roads

SCALE

PLAN	1" = 20' & 50'
PROFILE: Horizontal	1" = 100'
PROFILE: Vertical	1" = 10'
CROSS SECTIONS	1" = 10' & 8'

SUPPLEMENTAL SPECIFICATIONS

NUMBER	DATE	NUMBER	DATE
		S-407	12 21-62
I-129	Rev. 4-5-61	CE-101.04	5-22-56
S-307	Rev. 10-1-64	L-120	Rev. 1-2-62
S-101	7-12-62	I-212	Rev. 6-23-61
M-106.11	1-26-61	T-335	10-28-63
M-106.6 (C)	2-17-59	M-106.6(d)	Rev. 4-1-58

LINE DATA

CUY-71-17.83 (I-71-5(33)244)
I-71 STA. 913+50.00 TO STA. 951+15.00 3,765.00 L.F.
NET LENGTH OF PROJECT 0.713 MILES
ADD FOR APPROACHES
I-71 STA. 908+18.00 TO STA. 913+50.00 = 532.00 L.F.
I-71 STA. 951+15.00 TO STA. 955+15.00 = 400.00 L.F.
DETOUR ROAD STA 10+00 TO 121+32.8 = 11,132.80 L.F.
OUTFALL SEWER STA 0+00 TO 23+30 2,330.00 L.F.
NET LENGTH OF WORK 18,159.80 L.F. OR 3.439 MILES
CUY-176-12.76 (US-1463(2))
S.R.176 STA. 33+04.81 TO STA. 53+60.26 = 2,055.45 L.F.
NET LENGTH OF PROJECT = 0.389 MILES
ADD FOR APPROACHES
S.R.176-STA. 25+23.00 TO STA. 33+04.81 = 781.81 L.F.
NET LENGTH OF WORK = 2,837.26 L.F. = 0.537 MILES
Part 1 TOTAL LENGTH OF PROJECT = 5,820.45 L.F = 1.102 MILES
Part 1 TOTAL LENGTH OF WORK 20,997.06 L.F = 3.976 MILES
Part 2 LENGTH OF PROJECT/WORK 5,808.00 L.F. = 1.100 MILE

TOTAL LENGTH OF PROJECT 11,628.45 L.F. = 2.202 MILES
TOTAL LENGTH OF WORK 26,805.06 L.F. = 5.076 MILES

STANDARD DRAWINGS

NUMBER	DATE		
B-T-70-71	11-15-60	I-8 C.B. I-2-A&B	2-1-63
B-T-71R	3-2-53	F-3	2-1-63
FACI-1	2-25-64	F-1	2-1-63
FACI-2	2-25-64	L-1	4-1-50
G-7.07	4-1-64	L-3A	4-1-50
I-1	11-15-60	I-15 NO. 6	2-1-63
I-8C.B. 2-2A&2B	2-1-63	I-15 NO. 2-A	8-17-60
I-15 No. 1	11-15-60	T-35	1-2-56
I-12	2-1-63	I-21-23	3-10-64
L J NO. 1	7-1-55	I-8C.B.2-3&2-4	2-1-63
RI-1	9-1-64	I-8 C.B. NO. 3	2-1-63
T.J.	9-12-60	I-8 C.B. NO. 3-A	2-1-63
I-14G	1-22-52	I-8 C.B. NO. 5	2-1-63
RB-1-55	2-2-59	I-8 C.B. NO. 6	2-1-63
AR-1-57	4-2-62	I-8 I. NO. 1	2-1-63
L-3	4-1-50	I-8 I. NO. 2-A	2-1-63
SD1-63 SHTS. 1-4	11-12-63	I-8 M.H. NO. 1	2-1-63
SP-53	6-30-61	I-8 M.H. NO. 1-A	2-1-63
FSB-1-62	1-15-63	I-8 M.H. NO. 2	2-1-63
L-2	4-1-50	I-8 C.B. NO. 7	2-1-63
		AS-1-54	7-5-62

LIMITED ACCESS

This improvement is especially designed for through traffic, and has been declared a limited access highway by action of the Director of Highways in accordance with the provisions of Section 5511.02, Revised Code of Ohio.

I-71-5(33)244
US-1463(2)

The standard specifications of the State of Ohio, Department of Highways, including changes and supplemental specifications listed in the proposal shall govern this improvement.

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

I hereby approve these plans and declare that the making of this improvement will not require the closing of the highway to traffic and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved Louis R. Krasler
Date 1/25/65 — Director of Public Service, City of Cleveland

Approved Charles M. Yurick
Date 1-22-65 — Divison Deputy Director

Approved R.N. Ricketts
Date 2-11-65 — Engineer of Location and Design

Approved R.E. Shultz
Date 2-11-65 — Deputy Director of Design and Construction

Approved T.H. Boyd
Date 2-2-65 — Deputy Director of Right of Way

Approved J. W. Wilson
Date 2-25-65 — Deputy Director of Planning and Programming

Approved C. H. Altwater
Date 2-10-65 — Engineer of Bridges

Approved _____
Date _____ — First Assistant Director

Approved R. S. Marshall
Date 2/26/65 — Director of Highways

Sheet Nos. 3A-5 and 3A revised 3-10-66
Sheet No. 357A added 3-10-66
Sheet Nos. 306 and 416 revised 6-2-65
Sheet No. 457 revised 11-30-65
Sheet Nos. 42 and 306-313 incl. revised 12-9-65
Sheet Nos. 314-319 incl. deleted 12-9-65
Sheet Nos. 307A and 309A added 12-9-65
Sheets 553, 560, 579 & 582 revised 12-28-65 C.E.H.
Sheets 17, 35, 613, 638 & 639 revised 2-18-66 C.E.H.
Sheet No. 582 revised 3-25-66 C.E.H.

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

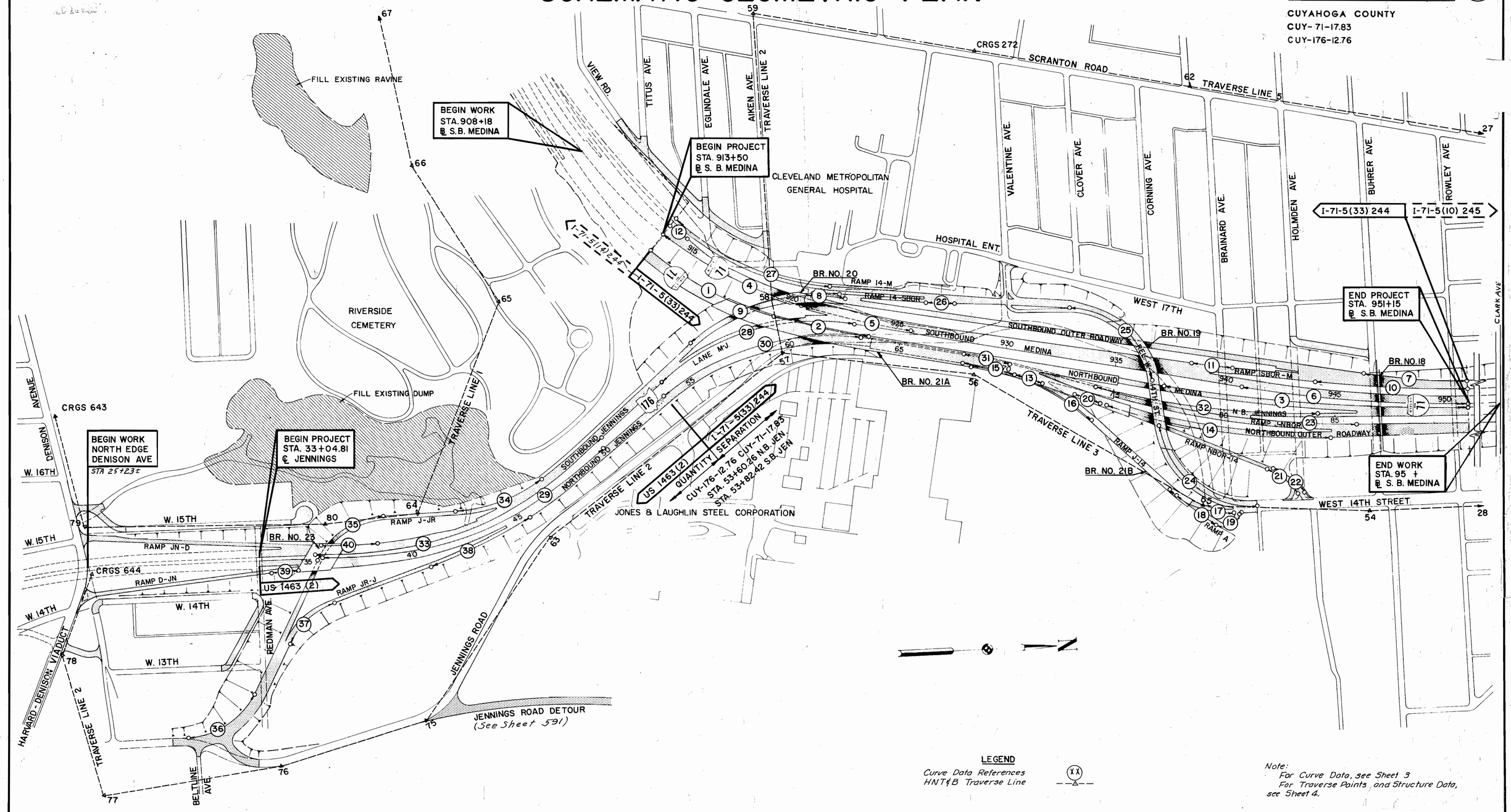
_____ DIVISION ENGINEER — DATE

SCHEMATIC GEOMETRIC PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2/646

CUYAHOGA COUNTY
CUY-71-17.83
CUY-176-12.76



LEGEND

Curve Data References (XX)
HNT&B Traverse Line —△—

Note:
For Curve Data, see Sheet 3
For Traverse Points, and Structure Data, see Sheet 4.

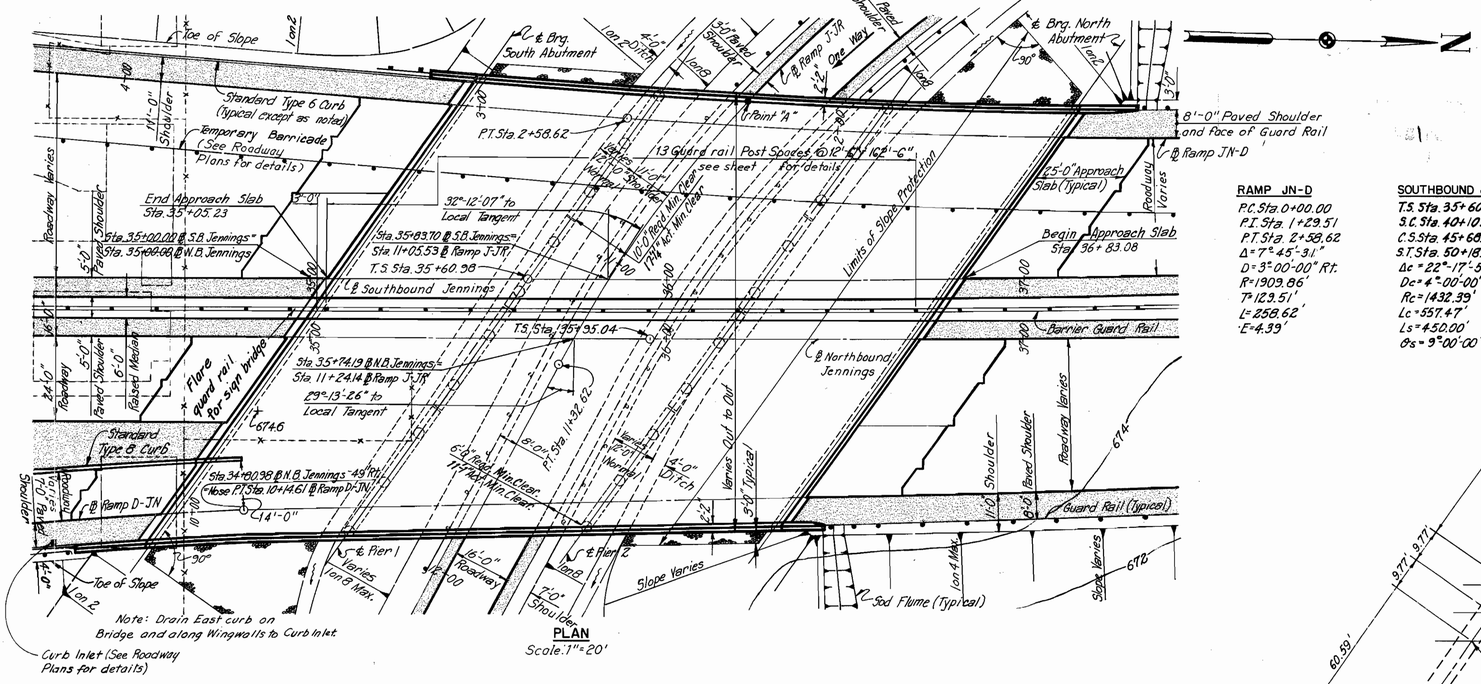
SCALE 1" = 200'
MADE DRK DATE 12-1-64
TRCD. RJK DATE 4-13-64
CKD. RPR DATE 12-2-64

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

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

4G1
G4G

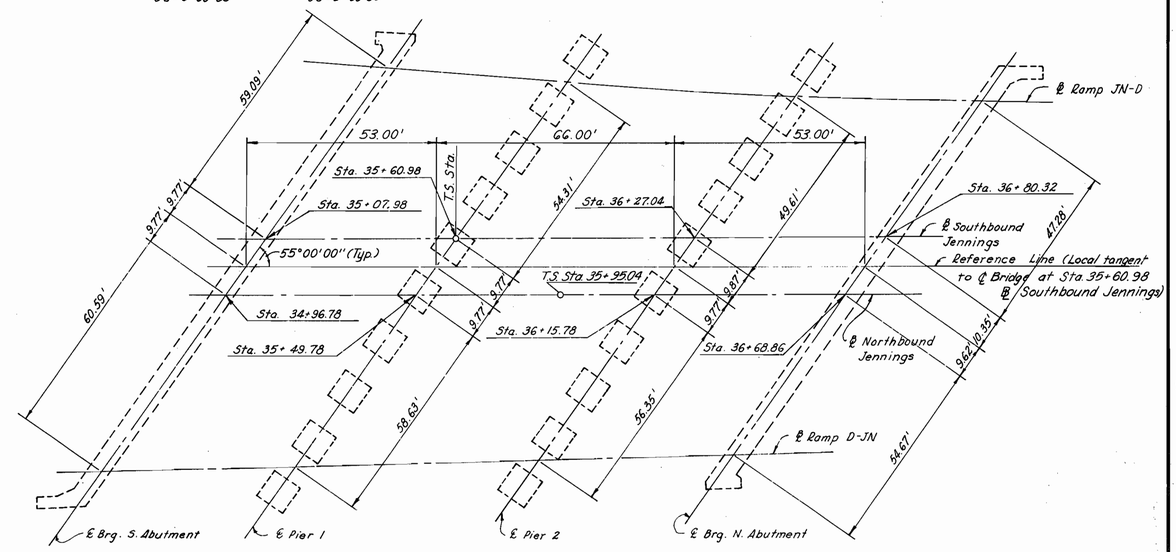
CUYAHOGA COUNTY
CUY-71-17.83
CUY-176-12.76



PLAN
Scale: 1" = 20'

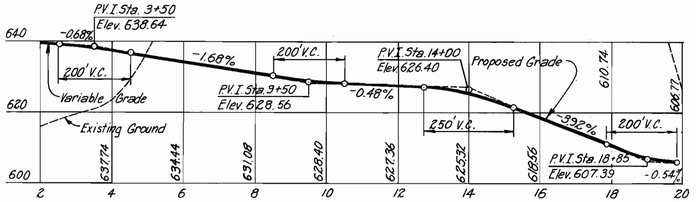
CURVE DATA

RAMP JN-D	SOUTHBOUND JENNINGS	NORTHBOUND JENNINGS	RAMP D-JN	RAMP J-JR
P.C. Sta. 0+00.00	T.S. Sta. 35+60.98	T.S. Sta. 35+95.04	P.C. Sta. 8+94.04	P.C. Sta. 7+52.15
P.I. Sta. 1+29.51	S.C. Sta. 40+10.98	S.C. Sta. 40+45.04	P.I. Sta. 9+54.35	P.I. Sta. 9+62.56
P.T. Sta. 2+58.62	C.S. Sta. 45+68.45	C.S. Sta. 45+53.01	P.T. Sta. 10+14.61	P.T. Sta. 11+32.62
Δ = 7°-45'-31"	S.T. Sta. 50+18.45	S.T. Sta. 50+03.01	Δ = 3°-37'-02"	Δ = 60°-52'-31"
D = 3°-00'-00" Rt.	Δc = 22°-17'-56"	Δc = 20°-19'-08"	D = 3°-00'-00" Rt.	D = 16°-00'-00" Lt.
R = 1909.86'	Dc = 4°-00'-00" Lt.	Dc = 4°-00'-00" Lt.	R = 1909.86'	R = 358.10'
T = 129.51'	Rc = 1432.39'	Rc = 1432.39'	T = 60.31'	T = 210.41'
L = 258.62'	Lc = 557.47'	Lc = 507.97'	L = 120.58'	L = 380.47'
E = 4.39'	Ls = 450.00'	Ls = 450.00'	E = 0.95'	E = 57.24'
	θs = 9°-00'-00"	θs = 9°-00'-00"		



BRIDGE LAYOUT DIAGRAM
No Scale

PROFILE—NORTHBOUND AND SOUTHBOUND JENNINGS
Scale: 1" = 200' Hor.
1" = 20' Vert.

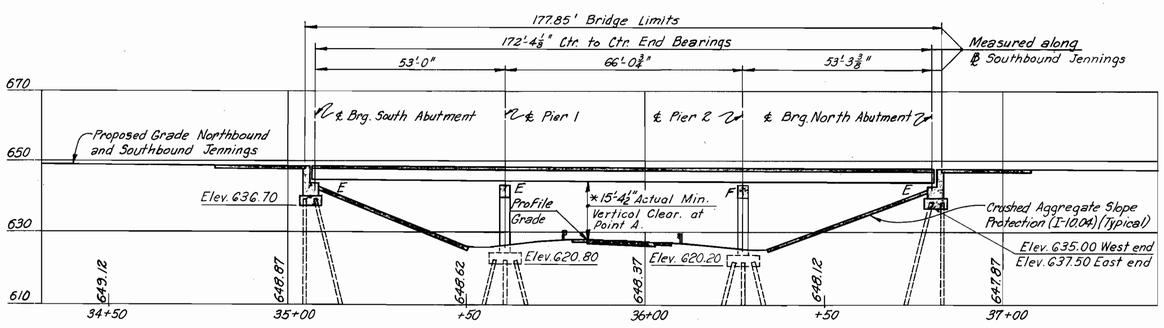


PROFILE - RAMP J-JR
Scale: 1" = 200' Hor.
1" = 20' Vert.

Notes:
All pier piles are 12 BP53 and all abutment piles are 10 BP42.
The estimated average vertical lengths are as follows
South Abutment - 49'-0"
Pier 1 - 32'-0"
Pier 2 - 31'-0"
North Abutment - 48'-0"
For scupper locations see sheet 471.
For light standard support locations see sheet 47GA.

PROPOSED STRUCTURE
TYPE: Continuous steel beam with reinforced concrete deck and substructure.
SPANS: 53'-0", 66'-0 3/8", 53'-3 3/8".
ROADWAY: Southbound Jennings - Width Varies Northbound Jennings - Width Varies
LOAD FREQUENCY: CF 2000 (57) Adequate for AASHO alternate loading
SKEW: Varies
WEARING SURFACE: 1" Monolithic concrete.
APPROACH SLABS: AS-1-54 (25'-0" long)
ALIGNMENT: Tangent and spiral curve left.

TRAFFIC DATA: 1975 - 23,092 A.D.T. (Each way)



ELEVATION

Notes:
*15'-0" Required minimum clear.
Point "A" occurs at west edge of west exterior beam and ℄ Ramp J-JR.

H.N.T.B. BR. NO. 23

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

SITE PLAN

NORTHBOUND AND SOUTHBOUND JENNINGS
OVER RAMP J-JR

CUY-176-1279

STA. 35+05.23
STA. 36+83.08

CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN WF DATE 8/64	TRACED DATE	CHECKED DATE 10-2-64	REVIEWED WF DATE 12-28-64	REVISED	SHEET 4G1

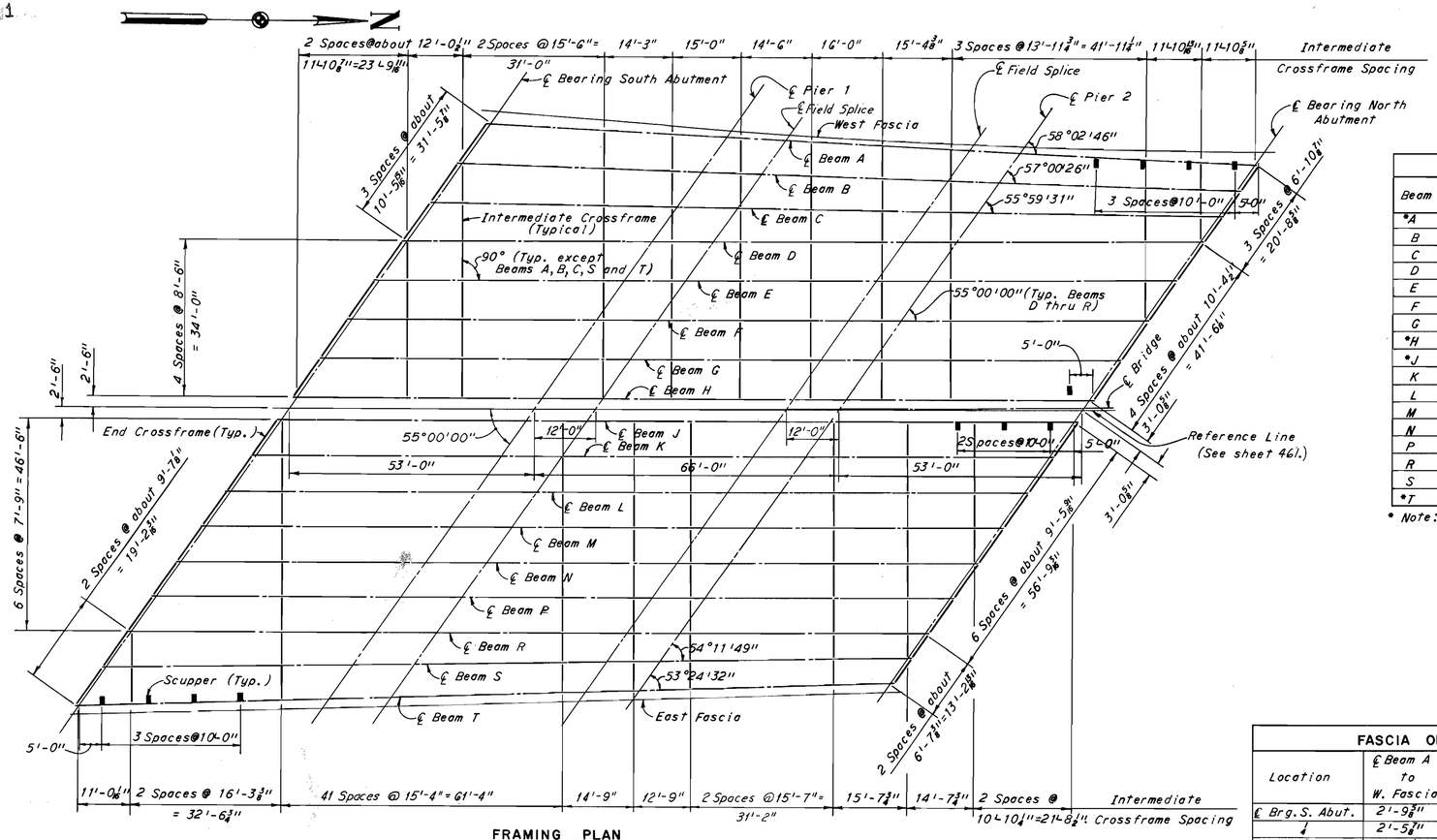
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

471
646

CUYAHOGA COUNTY
CUY 71-17.83
CUY-176-12.76

CAMBER NOTE

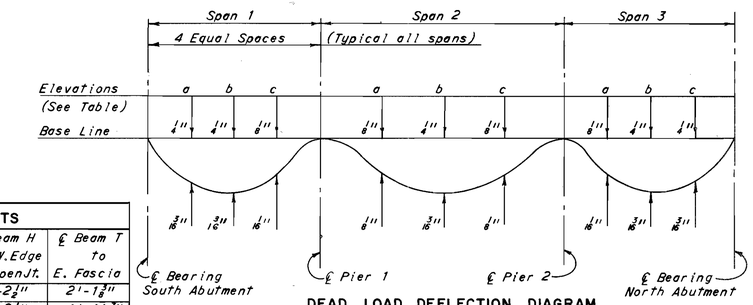
No camber is required but beams shall be fabricated so that any curved beam will be placed with the convex flange up.



FRAMING PLAN

TOP OF PAVEMENT ELEVATIONS													
Beam	℄ Brg. S. Abut.	a	b	c	℄ Pier 1	a	b	c	℄ Pier 2	a	b	c	℄ Brg. N. Abut.
*A	648.02	647.93	647.82	647.72	647.59	647.41	647.22	647.03	646.85	646.71	646.56	646.43	646.30
B	648.21	648.11	648.01	647.88	647.76	647.60	647.42	647.24	647.06	646.93	646.79	646.66	646.53
C	648.38	648.29	648.18	648.06	647.94	647.77	647.61	647.44	647.27	647.14	647.01	646.88	646.76
D	648.56	648.46	648.36	648.24	648.11	647.95	647.79	647.63	647.48	647.34	647.22	647.10	646.98
E	648.74	648.64	648.54	648.43	648.30	648.14	648.00	647.86	647.72	647.61	647.50	647.40	647.30
F	648.90	648.79	648.70	648.60	648.49	648.32	648.18	648.07	647.96	647.87	647.78	647.69	647.61
G	648.85	648.76	648.69	648.62	648.55	648.45	648.34	648.25	648.17	648.10	648.03	647.95	647.90
*H	648.77	648.71	648.64	648.57	648.51	648.42	648.34	648.26	648.18	648.11	648.05	647.98	647.91
*J	648.79	648.72	648.66	648.59	648.52	648.44	648.36	648.28	648.19	648.13	648.06	648.00	647.93
K	648.93	648.86	648.80	648.73	648.67	648.58	648.50	648.41	648.33	648.27	648.21	648.17	648.12
L	649.08	649.01	648.95	648.88	648.81	648.73	648.65	648.57	648.48	648.41	648.35	648.32	648.30
M	648.99	648.98	648.94	648.88	648.82	648.75	648.68	648.62	648.57	648.53	648.50	648.47	648.45
N	648.93	648.90	648.86	648.82	648.78	648.73	648.68	648.63	648.59	648.59	648.61	648.60	648.61
P	648.83	648.80	648.77	648.75	648.72	648.69	648.66	648.63	648.59	648.63	648.67	648.72	648.76
R	648.73	648.70	648.68	648.67	648.66	648.64	648.62	648.61	648.59	648.62	648.72	648.81	648.87
S	648.62	648.57	648.58	648.59	648.59	648.59	648.59	648.59	648.59	648.59	648.70	648.81	648.92
*T	648.35	648.35	648.38	648.41	648.43	648.46	648.49	648.52	648.55	648.58	648.62	648.72	648.81

* Note: Elevations for Beams A, H, J and T are gutter line elevations where these beams fall outside the roadway



DEAD LOAD DEFLECTION DIAGRAM

Values above Base Line are total deflections due to steel and concrete. Values below Base Line are deflections due to concrete only. Deflections are measured to nearest 1/16 inch.

FASCIA OFFSETS			
Location	℄ Beam A to W. Fascia	*℄ Beam H to W. Edge of Open Jt.	℄ Beam T to E. Fascia
℄ Brg. S. Abut.	2'-9⅝"	3'-2¼"	2'-1⅜"
¼	2'-5⅞"	3'-2⅛"	1'-11⅞"
½	2'-2⅛"	3'-2⅛"	1'-11½"
¾	1'-10⅜"	3'-2⅛"	1'-11½"
℄ Pier 1	1'-6¾"	3'-2⅛"	1'-11½"
¼	1'-3⅜"	3'-2⅛"	1'-11½"
½	1'-2⅛"	3'-2⅛"	1'-11½"
¾	1'-2¼"	3'-2¼"	1'-11½"
℄ Pier 2	1'-3⅞"	3'-1⅜"	1'-11½"
¼	1'-6⅜"	3'-0⅞"	1'-11½"
½	1'-9⅞"	3'-0"	1'-11½"
¾	2'-2½"	2'-10⅞"	1'-11½"
℄ Brg. N. Abut.	2'-6⅞"	2'-9⅛"	1'-11½"

* See sheet 473.

Notes.

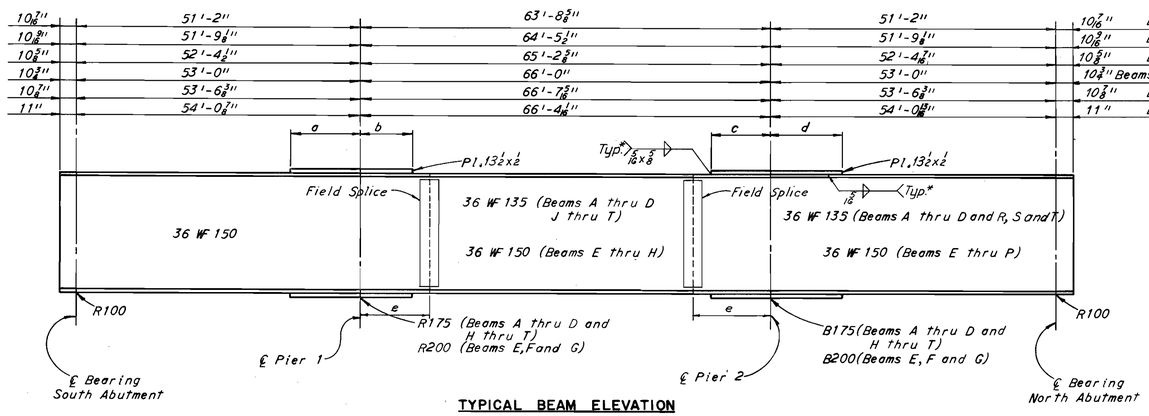
Fascia offsets are given at ℄ bearing and at ¼ points between ℄ bearing ans are perpendicular to ℄ beams.

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

For end crossframes, roadway end dam and curb plate details, see Ohio Standard Drawing SD-1-63, sheets 1, 2 and 4 of 4. The main angle shown in The "Roadway End Dam Data Table" shall be 8x6x1. The curb plates at the Median and at the Type 8 Curb shall be a total of 4 inches high rather than the 7 inches shown.

For drainage details see sheet 474.

For details of beam field splices see sheet 447.



TYPICAL BEAM ELEVATION

Note:
*Stop weld 1 inch from edge of beam and 1 inch from end of plate.
Cover plate lengths and sizes are typical top and bottom.

TABLE OF DIMENSIONS					
Beam	a	b	c	d	e
A	9'-0"	8'-0"	8'-0"	10'-0"	11'-7"
B	9'-0"	8'-0"	8'-0"	10'-0"	11'-8⅜"
C	9'-0"	8'-0"	8'-0"	10'-0"	11'-10 5/16"
D	10'-0"	8'-6"	9'-0"	12'-0"	12'-0"
E thru H	11'-0"	9'-0"	9'-0"	11'-0"	12'-0"
J thru P	9'-0"	8'-0"	8'-0"	9'-0"	12'-0"
R	8'-0"	8'-0"	8'-6"	10'-0"	12'-0"
S	7'-0"	8'-0"	8'-0"	8'-6"	12'-1 7/16"
T	7'-0"	8'-0"	8'-0"	8'-6"	12'-2 15/16"

H.N.T.B. BR. NO. 23

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

FRAMING PLAN

NORTHBOUND AND SOUTHBOUND JENNINGS OVER RAMP J-JR

CUY-176-1279 STA.35+05.23 STA.36+83.08

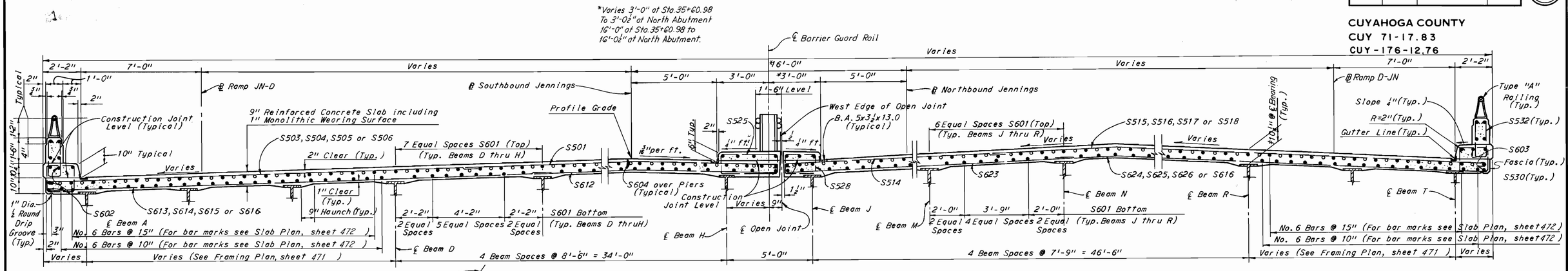
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN SAS	TRACED	CHECKED J.S.	REVIEWED WC	REVISED
DATE 6-17-64	DATE	DATE 9-8-64	DATE 12-8-64	SHEET 471

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

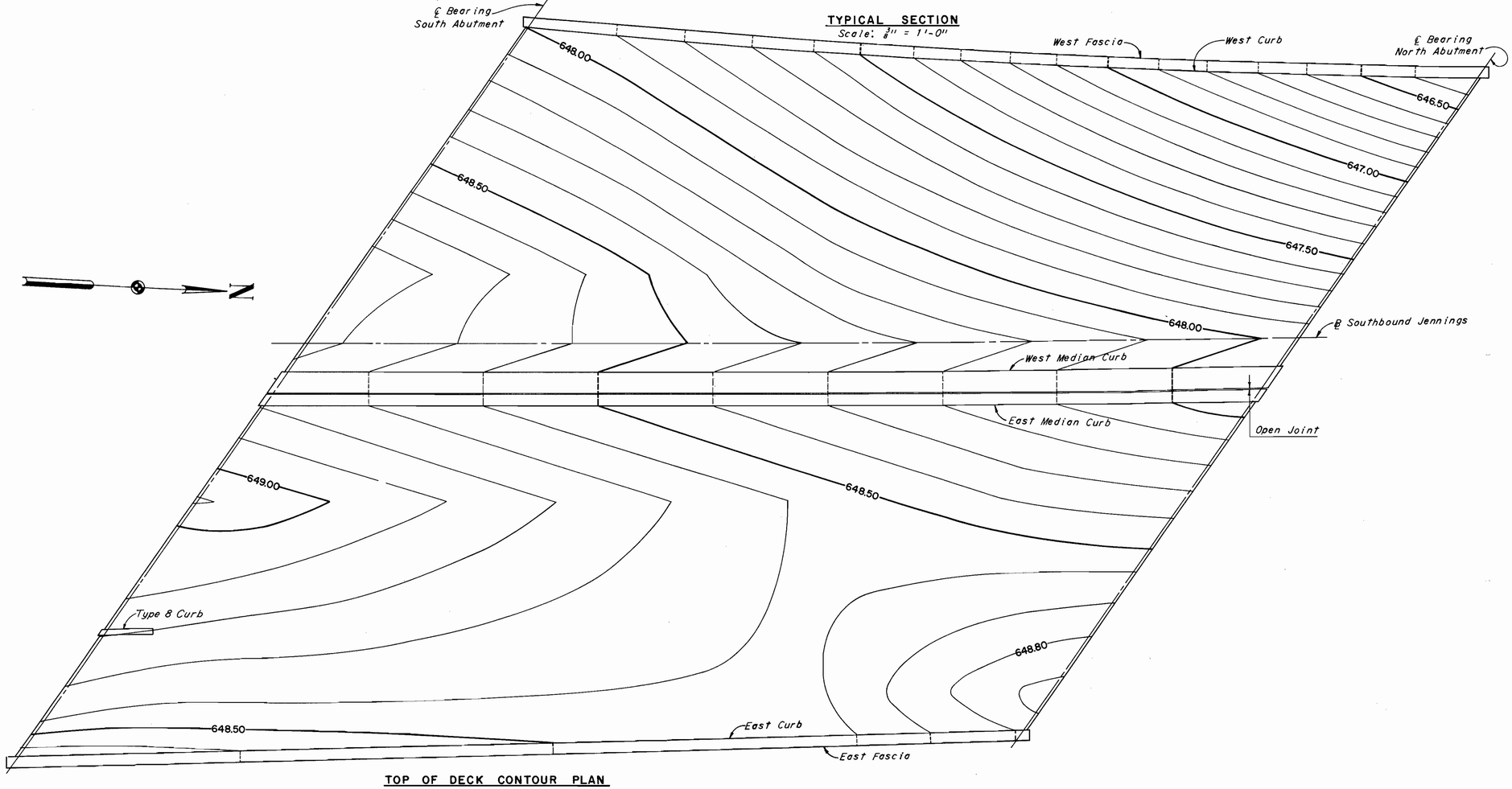
473/646

CUYAHOGA COUNTY
CUY 71-17.83
CUY-176-12.76



TYPICAL SECTION
Scale: ⅜" = 1'-0"

‡ When curb beams and median beams fall beneath the curbs and median, the 10½" dimension is measured from the gutter line elevation.



TOP OF DECK CONTOUR PLAN

10 5 0 10 20 30 40 50
SCALE - FEET

Notes:

For railing post spacing, parapet joint spacing and longitudinal reinforcement in the parapet see sheet 474.

For Type 8 Curb nose reinforcement see sheet 474 .

For Reinforcement Schedule and Bending Diagrams see sheet 476.

H.N.T.B. BR. NO. 23

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

CONTOUR PLAN AND TYPICAL SECTION
NORTHBOUND AND SOUTHBOUND JENNINGS OVER RAMP J-JR

CUY-176-1279 STA.35+05.23 STA.36+83.08

CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED	
DATE 6-1-64	DATE	DATE 9-8-64	DATE 12-8-64		SHEET 473