6-N

MAR 21 1984

MICROFILMED
APR 13 1984

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-77-5(8)151	

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

CUY-77-4.07

CUYAHOGA COUNTY
CITY OF BROADVIEW HEIGHTS
CITY OF INDEPENDENCE

CUYAHOGA COUNTY
CUY.-77-4.07

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-77-5(8)151
1967 SPECIFICATIONS

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 DATE 1-11-67 — Charles M. Yurick — DIVISION DEPUTY DIRECTOR

APPROVED DATE 3-13-67 — C. H. Altwater — ENGINEER OF BRIDGES

APPROVED DATE 3-14-67 — R. E. Bates — ENGINEER OF LOCATION AND DESIGN

APPROVED DATE 3-14-67 — R. E. Shultz — DEPUTY DIRECTOR OF DESIGN AND CONSTRUCTION

APPROVED DATE 3-27-67 — T. H. Borand — DEPUTY DIRECTOR OF RIGHT OF WAY

APPROVED DATE 3-27-67 — Thomas Mager — DEPUTY DIRECTOR OF PLANNING AND PROGRAMMING

APPROVED DATE 3-27-67 — R. W. Wilson — FIRST ASSISTANT DIRECTOR

APPROVED DATE 3-27-67 — P. E. Manchester — DIRECTOR OF HIGHWAYS

CONVENTIONAL SIGNS

PROPERTY LINE
EXISTING RIGHT OF WAY
LIMITED ACCESS LINE
RIGHT OF WAY LINE
TEMPORARY RIGHT OF WAY
CENTER LINE
SEWER EASEMENT LINE
FENCE LINE
GUARD RAIL(EXISTING)
GUARD RAIL(PROPOSED)
CHANNEL EASEMENT LINE
POWER POLES
TELEPHONE POLES
POWER AND TELEPHONE POLES
LIGHT POLES
TREES (EXISTING)
WATER LINE
GAS LINE
ELECTRICAL TRANSMISSION LINES
SEWER(EXISTING)
OIL LINE
ELECTRICAL TOWER
FIRE HYDRANT
MANHOLE(SEWER)
MANHOLE (TELEPHONE)
CATCH BASIN OR INLET
ORIGINAL TOWNSHIP LOT LINE
SUBDIVISION LINE
SUBLOT LINE

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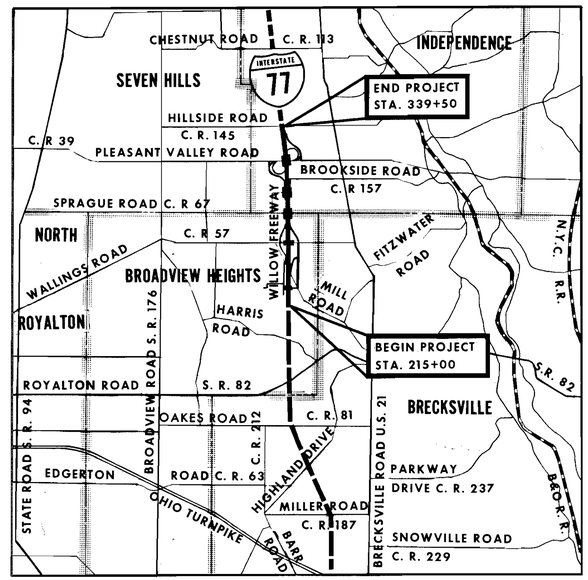


DELIVERY POINT-Independence Via-B&O Railroad — LOCATION MAP — AVERAGE HAUL 5 MILE

SCALE .5 0 1 2 3 4 MILES

Sheet No. 318 and 323 revised 3-11-67 EBL
Sheet No. 326 revised 12-4-67 EBL

UNDER CONSTRUCTION
PORTION TO BE IMPROVED
STATE ROADS
OTHER ROADS
FUTURE CONSTRUCTION

LINE DATA

BEGIN PROJECT	Sta. 215+00.00	
END PROJECT	Sta. 339+50.00	
NET LENGTH OF PROJECT	12,450.00 L.F. or 2.357 Miles	
ADD FOR APPROACHES:		
ADDITIONAL WORK	Sta. 339+50.00 to Sta. 341+62.05	= 212.05 L.F.
RELOCATED MILL ROAD	Sta. 0+00 to Sta. 29+78.22	= 2,978.22 L.F.
WALLINGS ROAD	Sta. 81+00.00 to Sta. 112+00.00	= 3,100.00 L.F.
PLEASANT VALLEY ROAD	Sta. 95+00.00 to Sta. 133+00.00	= 3,800.00 L.F.
C.E.I. SERVICE ROAD	Sta. 0+36 to Sta. 9+29.10	= 893.10 L.F.
KAREN LYNNE DRIVE	Sta. 0+14 to Sta. 5+32.53 and 14+92.21 to 30+83.71	= 2,116.03 L.F.
JEFFREY ALLAN DRIVE	Sta. 30+89.71 to Sta. 32+92.90	= 203.19 L.F.
DIANA DRIVE	Sta. 32+92.90 to Sta. 35+55.75	= 262.85 L.F.
Existing Mill Road	Sta. 32+99.57 to Sta. 36+95	= 395.43 L.F.
Existing Mill Road	Sta. 10+50.00 to Sta. 18+36.50	= 786.50 L.F.
NET LENGTH OF WORK	= 27,197.37 L.F. or 5.151 Miles	

STANDARD DRAWINGS

NUMBER	DATE	MH-1A CB-2-3 & 2-4	8-1-66 6-1-65
BP-1	6-1-65	CB-2-2-A B	6-1-65
BP-2	1-10-67	CB-2-5 & 2-6	6-1-65
BP-3	1-10-67	CB-3A	6-1-65
BP-4	1-10-67	CB-4	6-1-65
BP-5	6-1-65	CB-5	6-1-65
BP-7	1-1-66	CB-6	6-1-65
F-1	6-1-65	MH-1	6-1-65
GR-5B	6-1-65	MH-2	6-1-65
F-3	10-1-66	HW-E	6-1-65
FACI-1	6-1-65	HW-1	6-1-65
FACI-2	6-1-65	HW-D	6-1-65
GR-1	1-1-67	SP-53	6-30-61
GR-2A	1-1-67	AS-1-54	9-10-65
GR-6	6-1-65	BR-1-65(Sh. 1&2)	11-24-65
MC-1	6-1-65	HL-2	11-1-65
MC-3	5-1-66	RB-1-55	2-2-59
MC-4	6-1-65	SD-1-65(Sh. 1&2)	11-8-65
MC-5	6-1-65	HL-3	11-1-65
MC-6	6-1-65	HL-1,	11-1-65
MC-7	3-1-66	HL-4	1-1-66

SUPPLEMENTAL SPECIFICATIONS

NUMBER	DATE	NUMBER	DATE
801	1-1-67	815	1-1-67
808	1-13-67	806	1-1-67
811	1-1-67	825	1-1-67
816	8-6-65	828	1-1-67
1001	3-21-66	927	1-1-67

PREPARED AND RECOMMENDED BY

HOWARD NEEDLES TAMMEN & BERGENDOFF — H.G. SOURS
CONSULTING ENGINEERS — ASSOCIATE
KANSAS CITY CLEVELAND NEW YORK — COLUMBUS

STATE OF OHIO CARL L. ERB, Jr. 18348 REGISTERED PROFESSIONAL ENGINEER

Carl L. Erb
C. L. ERB 00331R

FILE NO.	CUYAHOGA COUNTY DATE OF LETTING CONTRACT NO.

SCALE

PLAN	1"=20'&50'
PROFILE	HOR 1"=50'
PROFILE	VERT 1"=10'
CROSS SECTIONS	1"=10'

DEPARTMENT OF TRANSPORTATION
BUREAU OF PUBLIC ROADS

APPROVED

DIVISION ENGINEER

Rev 6-6-67

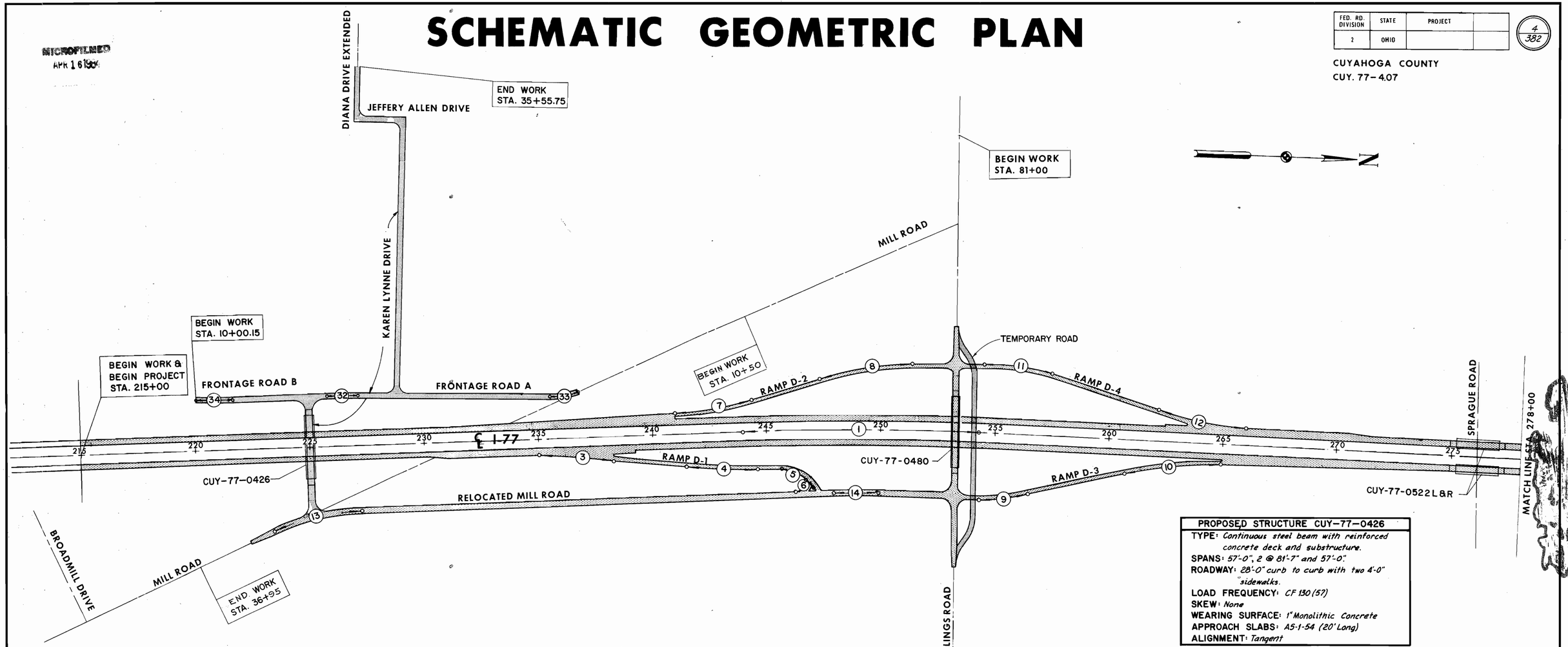
SCHEMATIC GEOMETRIC PLAN

MICROFILMED
APR 1 6 1980

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

4/382

CUYAHOGA COUNTY
CUY. 77-4.07



PROPOSED STRUCTURE CUY-77-0426

TYPE: *Continuous steel beam with reinforced concrete deck and substructure.*
SPANS: *57'-0", 2 @ 81'-7" and 57'-0"*
ROADWAY: *28'-0" curb to curb with two 4'-0" sidewalks.*
LOAD FREQUENCY: *CF 130 (57)*
SKEW: *None*
WEARING SURFACE: *1" Monolithic Concrete*
APPROACH SLABS: *AS-1-54 (20' Long)*
ALIGNMENT: *Tangent*

PROPOSED STRUCTURE CUY-77-0480

TYPE: *Continuous steel beam with reinforced concrete deck and substructure*
SPANS: *57'-6", 2@ 82'-0" and 57'-6"*
ROADWAY: *28'-0" curb/curb with two 4'-0" sidewalks*
LOAD FREQUENCY: *CF 400 (57)*
SKEW: *None*
WEARING SURFACE: *1" Monolithic Concrete*
APPROACH SLABS: *AS-1-54 (25' Long)*
ALIGNMENT: *Tangent*

PROPOSED STRUCTURE CUY-77-0522 L&R

TYPE: *Continuous steel beam with reinforced concrete deck and substructure*
SPANS: *44'-0", 63'-3", and 44'-0"*
ROADWAY: *40'-0" f/f parapets*
LOAD FREQUENCY: *CF 2000 (57) Adequate for A.A.S.H.O. Alternate loading*
SKEW: *1°53'24" Right Forward*
WEARING SURFACE: *1" Monolithic Concrete*
APPROACH SLABS: *AS-1-54 (25' Long)*
ALIGNMENT: *Tangent*

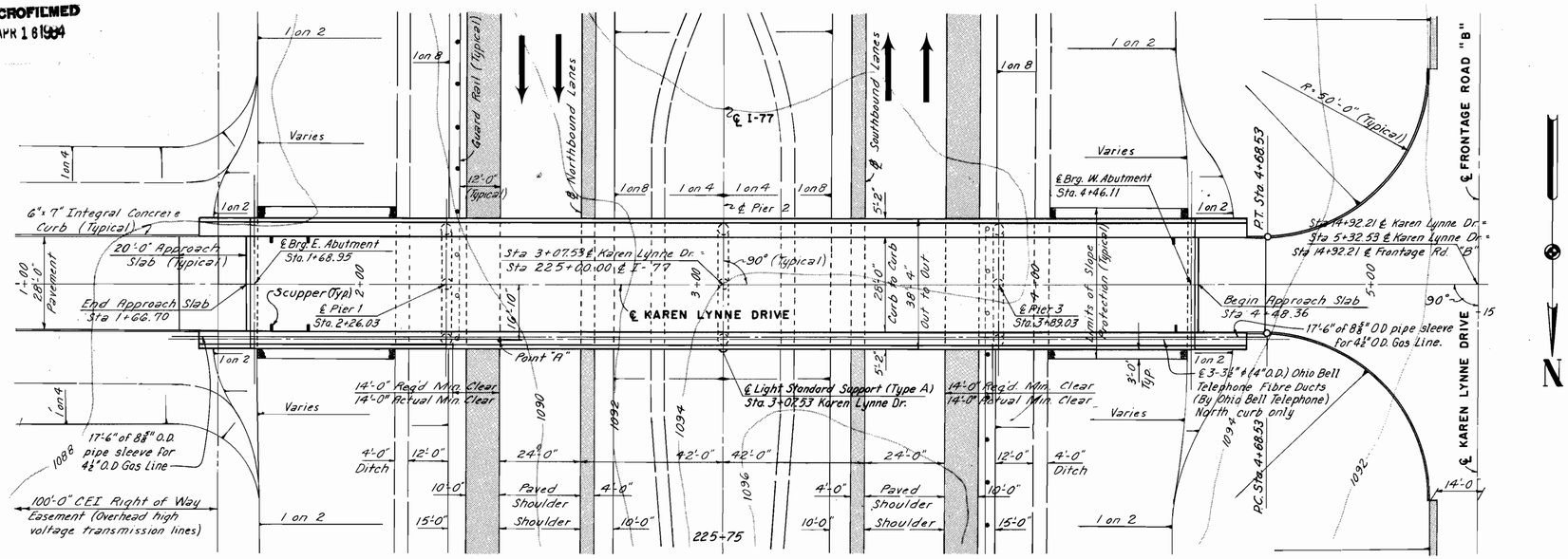
SCALE *1" = 200'* HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE *IM* DATE *11-11-65* CONSULTING ENGINEERS
TRCD. *IM* DATE *11-9-65* KANSAS CITY CLEVELAND NEW YORK
CKD. _____ DATE _____

MICROFILMED
APR 18 1984

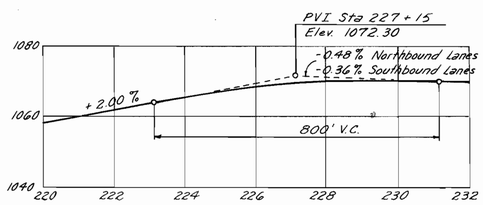
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

315
382

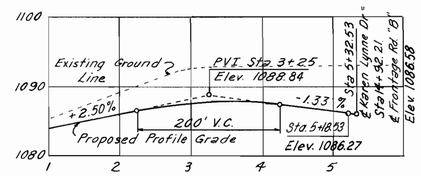
CUYAHOGA COUNTY
CUY-77-4.07



PLAN
Scale: 1"=20'

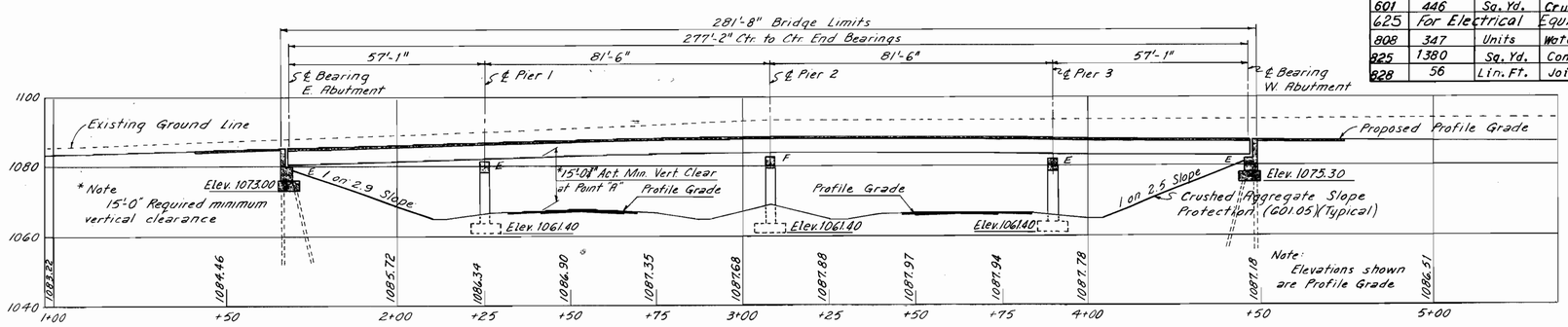


PROFILE I-77



PROFILE KAREN LYNNE DRIVE

PROFILE



ELEVATION

PROPOSED STRUCTURE

TYPE: Continuous steel beam with reinforced concrete deck and substructure.
SPANS: 57'-1", 2 @ 81'-6" and 57'-1".
ROADWAY: 28'-0" curb to curb with two 4'-0" sidewalks.
LOAD FREQUENCY: CF 130 (57)
SKEW: None
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: AS-1-54 (20' long)
ALIGNMENT: Tangent

TRAFFIC DATA:
1986 - 1,860 A.D.T. (Total both ways)

PREDICTED PEDESTRIAN TRAFFIC:
1986 - 1,280 Crossings per day

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	CUY-77-0426 H.N.T.B. BRIDGE NO. 12 ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL		
503	424	Cu. Yd.	Unclassified Excavation	232	192				
505	Lump Sum	Lump Sum	First Test Pile				Lump Sum		
507	750	Lin. Ft.	12" ϕ C.I.P. Reinforced Concrete Piles	750					
509	136,421	Pounds	Reinforcing Steel	13,982	35,518	86,921			
511	347	Cu. Yd.	Class "C" Concrete, Superstructure			347			
511	75	Cu. Yd.	Class "C" Concrete, Pier Caps and Columns		75				
511	100	Cu. Yd.	Class "E" Concrete, Abutment (Above footing)	100					
511	161	Cu. Yd.	Class "E" Concrete, Footings	66	95				
513	*265,720	Pounds	Structural Steel			*265,720			
514	*265,720	Pounds	Field Painting of Structural Steel			*265,720			
517	617.83	Lin. Ft.	Bridge Railing Type 2	60.67		557.16			
518	28	Cu. Yd.	Porous Backfill	28					
518	28	Lin. Ft.	6" Helical C.M.P. (Section 707.06)						
			Non-Perforated	28					
518	60	Lin. Ft.	6" Perforated Helical C.M.P. (Section						
			707.06) Including Specials	60					
518	6	Each	Scuppers, Including Supports			6			
601	446	Sq. Yd.	Crushed Aggregate Slope Protection				446		
625	For Electrical		Equipment Quantities, See Sheet 284						
808	347	Units	Water-Reducing, Set-Retarding Admixture			347			
825	1380	Sq. Yd.	Concrete Surface Treatment				1380		
828	56	Lin. Ft.	Joint Sealer (end dam)			56			

*Includes 427 pounds of structural steel to be paid for by East Ohio Gas Co.

Notes:
All piles in the abutments are 12" ϕ Reinforced Concrete with an estimated average vertical length of 25'.
The piers are founded on spread footings with an allowable bearing pressure of 2½ tons per sq. ft.

H.N.T.B. BR. NO. 12

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

SITE PLAN

I-77 UNDER KAREN LYNNE DRIVE

BR. NO. CUY-77-0426 STA. 1+66.70 STA. 4+48.36

CUYAHOGA COUNTY OHIO

DRAWN C.K.B. DATE 8-15-66	TRACED DATE	CHECKED CWB DATE 10-28-66	REVIEWED JJF DATE 11-23-66	REVISED	SHEET 315

MICROFILMED
APR 1 8 1994

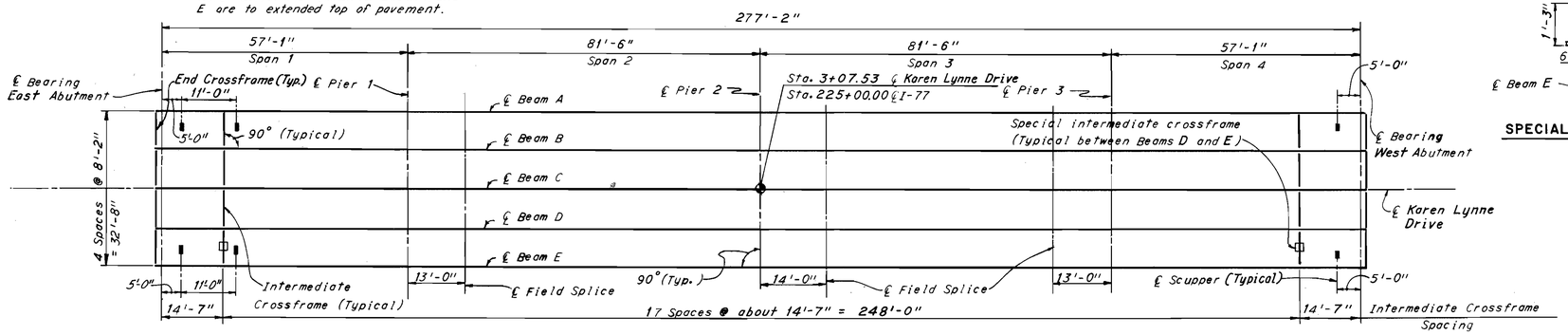
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-77-4.07

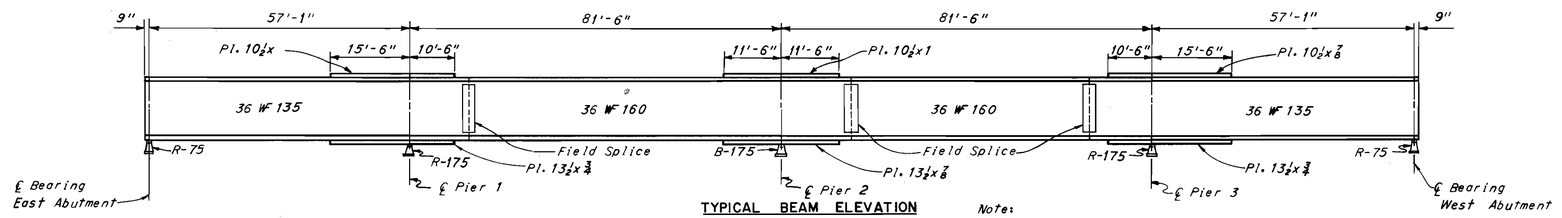
TOP OF PAVEMENT ELEVATIONS

BEAM	SPAN 1					SPAN 2				SPAN 3				SPAN 4				BEAM
	℄ BRG. E. ABUT.	a	b	c	℄ PIER 1	a	b	c	℄ PIER 2	a	b	c	℄ PIER 3	a	b	c	℄ BRG. W. ABUT.	
A	1084.68	1085.04	1085.40	1085.75	1086.11	1086.58	1086.96	1087.27	1087.50	1087.64	1087.71	1087.70	1087.61	1087.50	1087.35	1087.16	1086.97	A
B	1084.81	1085.17	1085.52	1085.88	1086.24	1086.70	1087.09	1087.40	1087.62	1087.77	1087.84	1087.83	1087.74	1087.62	1087.47	1087.29	1087.10	B
C	1084.94	1085.30	1085.65	1086.01	1086.37	1086.83	1087.22	1087.52	1087.75	1087.90	1087.97	1087.95	1087.86	1087.75	1087.60	1087.42	1087.23	C
D	1084.81	1085.17	1085.52	1085.88	1086.24	1086.70	1087.09	1087.40	1087.62	1087.77	1087.84	1087.83	1087.74	1087.62	1087.47	1087.29	1087.10	D
E	1084.68	1085.04	1085.40	1085.75	1086.11	1086.58	1086.96	1087.27	1087.50	1087.64	1087.71	1087.70	1087.61	1087.50	1087.35	1087.16	1086.97	E

Note: Elevations shown for Beams A and E are to extended top of pavement.



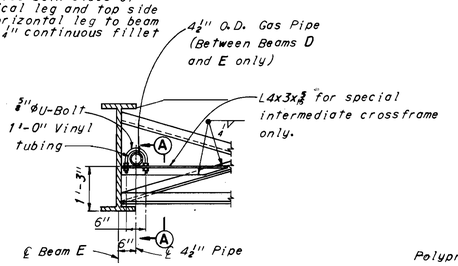
FRAMING PLAN



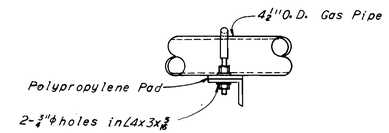
TYPICAL BEAM ELEVATION

Note: Cover plate lengths are typical for top and bottom.

Note: Weld both sides of vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.



SPECIAL INTERMEDIATE CROSSFRAME



SECTION A-A

Note: 4½" O.D. Gas Pipe, ⅝"φ U-bolt, washers, nuts, vinyl tubing, and polypropylene pad to be furnished and installed by The East Ohio Gas Company.

ELEVATION A		
LOCATION	NORTH CURB	SOUTH CURB
℄ East Abut.	1084.72	1084.72
¼ Pt.	1085.09	1085.09
½	1085.45	1085.45
¾	1085.80	1085.80
℄ Pier 1	1086.15	1086.15
¼	1086.64	1086.64
½	1087.04	1087.04
¾	1087.32	1087.32
℄ Pier 2	1087.53	1087.53
¼	1087.70	1087.70
½	1087.79	1087.79
¾	1087.76	1087.76
℄ Pier 3	1087.64	1087.64
¼	1087.54	1087.54
½	1087.40	1087.40
¾	1087.22	1087.22
℄ West Abut.	1087.01	1087.01

Note: Elevation A, at the face of curbs are those which are required before concrete is placed. Proper allowance has been made for the dead load deflections caused by the weight of the concrete.

Notes:

For railing post and parapet joint spacing and longitudinal reinforcement in the parapet, See Sheet 360.

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

For details of end crossframes and roadway and sidewalk end dam see Ohio Standard Drawing SD-1-65, Sheets 1 and 2 of 3. The end crossframe details shown for 8'-0" maximum beam spacing shall be used in order to facilitate installation of the 4" gas line. The supporting angle shown in the "Roadway End Dam Data" table shall be increased from 6x4x⅜ to 7x4x⅜. Provide 5¼"φ holes in ⅜" bent form plate for O.B.T. fiber ducts.

For details of beam field splices see Sheet 358.

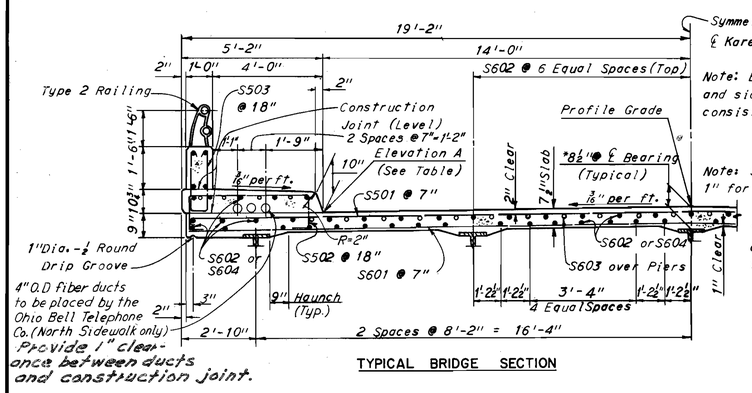
For moment plate welding details see Ohio Standard Drawing SD-1-65, Sheet 2 of 3.

For drainage details see Sheet 359.

For details of optional transverse slab construction joint see Sheet 359.

For light standard support details see Sheet 359.

For Intermediate Crossframe details see Sheet 360.



Note: Each line of longitudinal deck and sidewalk reinforcement shall consist of 9-S602 and 1-S604.

Note: Slab thickness includes 1" for monolithic wearing surface.

* Note: For Beams A and E this dimension is measured from extended top of pavement to top of beam.

TYPICAL BRIDGE SECTION

Note: 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.

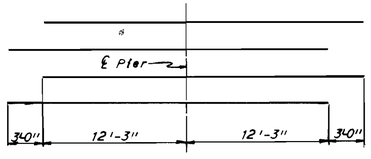
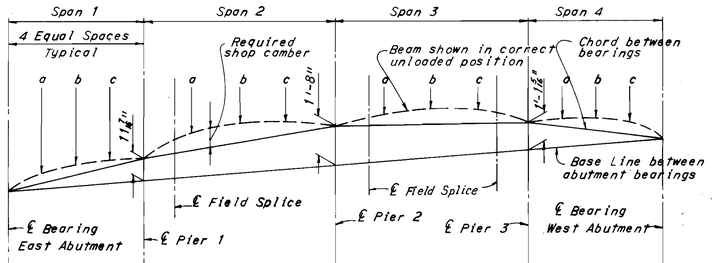


DIAGRAM SHOWING PLACEMENT OF S603 BARS OVER PIERS



	Span 1 a	Span 1 b	Span 1 c	Span 2 a	Span 2 b	Span 2 c	Span 3 a	Span 3 b	Span 3 c	Span 4 a	Span 4 b	Span 4 c
Deflection due to steel	1/16"	1/16"	0	1/16"	1/16"	1/8"	1/8"	0	1/16"	1/8"	1/16"	1/16"
Remaining Dead Load Deflection	3/16"	3/16"	1/16"	3/16"	5/16"	1/2"	3/16"	1/8"	3/16"	1/2"	3/16"	3/16"
Convexity	0	0	0	1"	1 7/16"	1 15/16"	1 1/16"	1 1/16"	1 7/16"	1 7/8"	1 7/16"	1 1/16"
Required Shop Camber	1/4"	1/4"	1/16"	1 1/4"	1 13/16"	2 3/16"	1 1/16"	1 3/16"	1 1/16"	2 1/2"	1 13/16"	1 5/16"
	3/8"	11/16"	3/8"	5/8"	15/16"	5/8"						

Note: Dimensions are typical for all beams.

LAYOUT DIAGRAM

H.N.T.B. BR. NO. 12

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

SUPERSTRUCTURE

I-77 UNDER KAREN LYNNE DRIVE

BR. NO. CUY-77-0426 STA. 1+66.70 STA. 4+48.36

CUYAHOGA COUNTY OHIO

DRAWN J.M.C. DATE 10-28-66	TRACED DATE	CHECKED DAB DATE 11-3-66	REVIEWED WF DATE 11-23-66	REVISED 8-11-67 SHEET 318