

9-7 U-6

CONVENTIONAL SIGNS

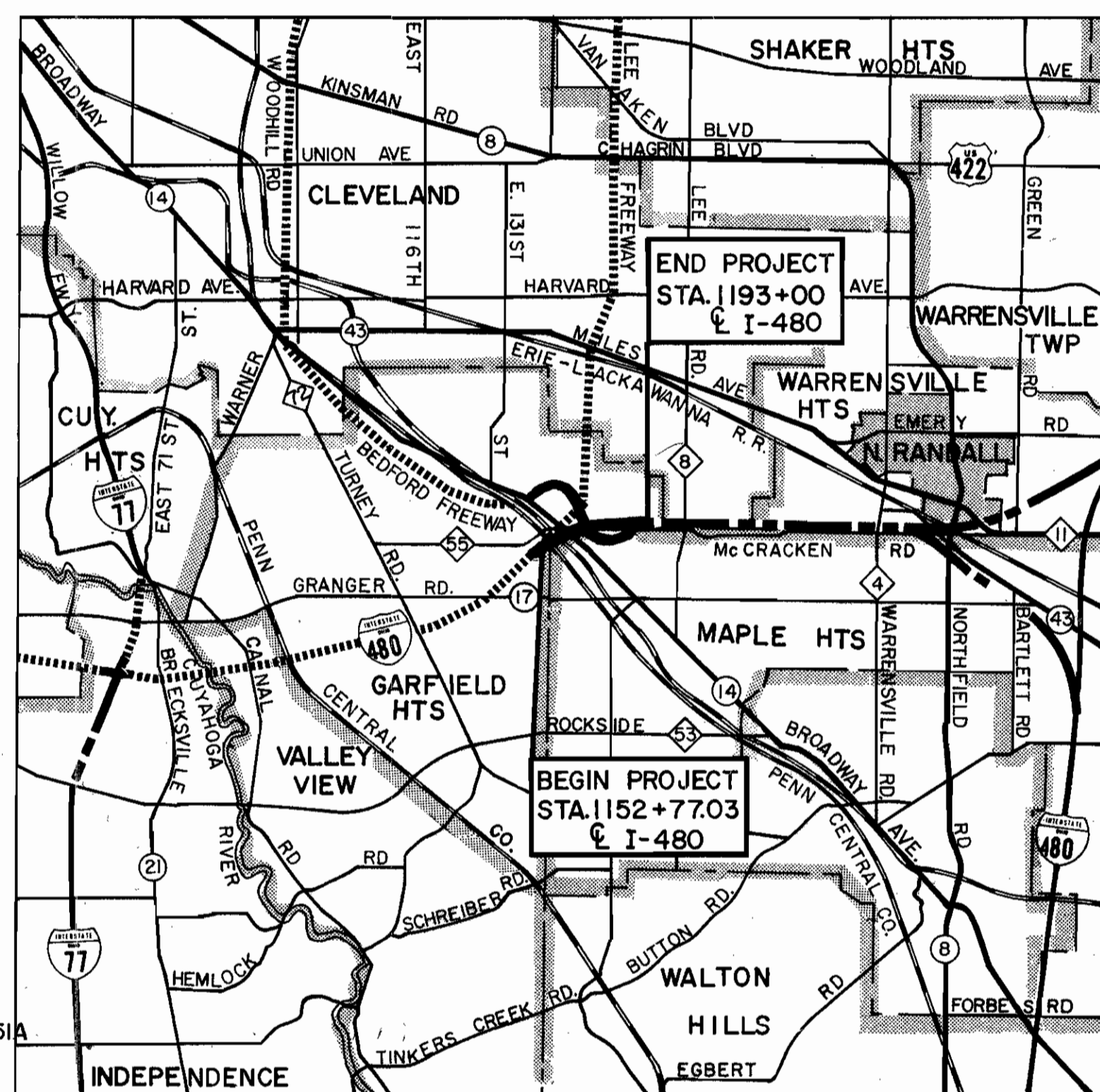
PROPERTY LINE	—	—
EXISTING RIGHT OF WAY	—	—
SUBDIVISION LINE	—	—
SUBLOT LINE OR EXISTING EASEMENT	—	—
ORIGINAL TOWNSHIP LOT LINE	—	—
CORPORATION LINE	—	—
LIMITED ACCESS LINE	—	LA
LIMITED ACCESS LINE AND RIGHT OF WAY LINE	—	LA & RW
RIGHT OF WAY LINE AND HIGHWAY EASEMENT LINE	—	R/W
AERIAL EASEMENT LINE	—	AERIAL
TEMPORARY RIGHT OF WAY	—	T
SEWER EASEMENT LINE	—	S
SLOPE EASEMENT LINE	—	SL
CHANNEL EASEMENT	—	X
PARTICIPATION LINE	—	P
CENTER LINE	—	—
FENCE LINE	—	x
GUARD RAIL (EXISTING)	—	—
GUARD RAIL (PROPOSED)	—	—
RAILROAD	—	—
POWER POLES	—	—
TELEPHONE POLES	—	—
POWER AND TELEPHONE POLES	—	—
LIGHT POLES	—	—
TREES (EXISTING)	—	—
ELECTRICAL TOWER	—	—
WATER LINE	—	—
GAS LINE	—	—
TELEPHONE CONDUIT	—	—
EXISTING SEWERS (R/W PLANS)	—	—
EXISTING STORM SEWER (DRAINAGE PLANS)	—	—
EXISTING SANITARY SEWER (DRAINAGE PLANS)	—	—
OIL LINE	—	—
FIRE HYDRANT (EXISTING)	—	—
FIRE HYDRANT (PROPOSED)	—	—
MANHOLE (EXISTING)	—	—
MANHOLE (PROPOSED STORM)	—	—
MANHOLE (PROPOSED SANITARY)	—	—
CATCH BASIN OR INLET (EXISTING)	—	—
CATCH BASIN OR INLET (PROPOSED)	—	—

MICROFILMED  
DEC 21 1982

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
**CUY-480-21.40**

CUYAHOGA COUNTY  
CITY OF GARFIELD HTS.  
CITY OF MAPLE HTS.

GRADE SEPARATION WITH PENN CENTRAL TRANSPORTATION COMPANY  
AND NORFOLK AND WESTERN RY. CO.



INDEX OF SHEETS

TITLE SHEET	1	MODULAR CRASH CUSHION	73-78
SCHEMATIC PLAN	2	DRIVE PROFILES	79-82
SCHEMATIC GEOMETRIC PLAN	3	SCHEMATIC DRAINAGE PLAN	83
GEOMETRIC TABLE	4	DRAINAGE PLANS	84-98
BENCH MARKS AND TRAVERSE TIES	5, 5A	MISCELLANEOUS DRAINAGE DETAILS	99-108, 108A, 108B & 108C
TRAFFIC VOLUMES	6	SEWER PROFILES	109-118
TYPICAL SECTIONS	7-18	SANITARY SEWER PROFILES	119-120 & 120A
GENERAL NOTES	19-22	CROSS SECTION LAY-OUT SHEET	121
COMPUTATIONS AND SUB-SUMMARIES	23-31	CROSS SECTIONS	122-183
GENERAL SUMMARY	32-38	WATERWORK	184-222
PAVEMENT PLANS	39-47	TRAFFIC CONTROL PLANS	223-255, 226A, 234A, 241A, 244A, 244B, 251A
PROFILES	48-58	TRAFFIC SIGNAL PLANS	256-265, 265A, 265B, 265C
SUPERELEVATION TABLES	59-63	LIGHTING PLANS	266-283, 269A, 269B, 275A
INTERSECTION DETAILS	64-66	STRUCTURES 20FT. AND UNDER	286-289
MISCELLANEOUS PAVEMENT DETAILS	67	STRUCTURES OVER 20FT. SPAN	290-361 & 361A
CONCRETE BARRIER DETAILS	68-69	RIGHT OF WAY PLANS	363-390
APPROACH SLAB DETAILS	70-72 & 72A		

SHEETS DELETED 30, 284, 285, 342  
Sheets 331 & 332 revised 9-27-74 EBL  
Sheets 311, 319, & 321 revised 12-27-74 EBL

PREPARED AND RECOMMENDED BY  
**HOWARD NEEDLES TAMMEN & BERGENDOFF**  
CONSULTING ENGINEERS  
KANSAS CITY CLEVELAND NEW YORK

**H.G. SOURS**  
ASSOCIATE  
COLUMBUS

*Browning Crow*  
**BROWNING CROW**



FILE NO.	CUYAHOGA COUNTY	00351
DATE OF LETTING	CUY-480-21.40	
CONTRACT NO.		

SUPPLEMENTAL SPECIFICATIONS

NUMBER	DATE	NUMBER	DATE
		839	11-25-70
808	1-1-71	941	11-25-70
815	9-20-72	1001	9-20-72
816	9-20-72		
836	1-1-71		
838	5-18-70		

PORTION TO BE IMPROVED  
EXISTING FREEWAYS  
STATE ROADS  
COUNTY ROADS  
OTHER ROADS  
FUTURE CONSTRUCTION  
UNDER CONSTRUCTION

SCALE  
PLAN 1"=201.50' PROFILE HOR 1"=201.100'  
CROSS SECTIONS 1"=101' PROFILE VERT 1"=51.101.20'

LINE DATA

Begin Project I-480 Sta. 1152+77.03  
End Project I-480 Sta. 1193+00.00  
Net Length of Project = 4,022.97 Lin. Ft. or 0.761 Miles

Mark Additions

WB I-480 Sta. 1149+42 # To Sta. 1152+77.03 = 335.03 Lin. Ft.  
Bedford Freeway Sta. 35+31.29 To Sta. 74+54.29 = 3,923.00 Lin. Ft.  
Orchard Road Sta. 4+66 To Sta. 11+00 = 634.00 Lin. Ft.  
Net Length of Work = 8,915 Lin. Ft. or 1.688 Miles

STANDARD DRAWINGS

NUMBER	DATE	NUMBER	DATE
BR-2-67	10-15-71	HW-E	6-1-65
BP-1	6-1-65	GR-5	1-1-71
BP-2	12-1-68	GR-6	1-1-71
BP-3	1-1-71	HL-1, HL-4 thru HL-10	3-6-73
BP-4	1-1-71	HL-2, HL-3	7-27-73
BP-5	6-1-72	HL-11, HL-12	4-6-73
I-2	6-6-69	HL-17A, HL-17B	4-6-73
BP-7	1-1-66	HW-4	1-1-70
CB-2-2A&B	6-1-65	I-2A	6-6-69
CB-3A	6-1-65	I-3	1-20-70
CB-4	9-1-69	L-1	6-1-71
CB-5	9-1-69	MC-1	6-13-69
CB-6	6-1-65	MC-3	6-1-71
F-1	6-1-72	MC-4	6-13-69
F-2	1-1-71	MC-5	6-1-71
F-3	3-10-69	MC-7	10-1-68
F-6	10-1-66	MC-8	12-1-67
HI-15, HL-16	4-6-73	MH-1	10-1-68
		MH-1A	10-1-68
GR-2A	1-1-71	AS-1-57	6-12-69
GR-2B	11-9-71	BR-1-67 1 of 3	10-15-71
GR-3	11-9-71	RB-1-55	2-2-59
GR-4	11-9-71	SD-1-69 1-4	6-12-69

ISSUE NO. 1

FHWA REGION	STATE	PROJECT
5	OHIO	I-480-4(3)174

1  
390

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR OF TRANSPORTATION IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02, REVISED CODE OF OHIO.

CUYAHOGA COUNTY  
CUY-480-21.40

PROJECT DESIGNATION CUY-80-21.40 APPEARING THROUGHOUT THIS PLAN SHALL BE CONSIDERED TO READ CUY-480-21.40.

"FEDERAL ROAD DIVISION 2" APPEARING IN THE UPPER RIGHT HAND BLOCKS SHALL BE CONSIDERED TO READ FHWA REGION 5.

1-480-4(31)174

1973 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, 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 9-26-73

*Joseph J. Lowell*  
DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED  
DATE 7-15-74

*Robert B. Pfeifer*  
ENGINEER, BUREAU OF BRIDGES

APPROVED  
DATE 11-26-73

*C. J. Schaefer*  
ENGINEER, BUREAU OF ROADWAY DESIGN

APPROVED  
DATE 11-26-73

*William E. Scholtz*  
ASSISTANT DEPUTY DIRECTOR FOR HIGHWAY DESIGN

APPROVED  
DATE 11-26-73

*Julius J. Keenan*  
ASSISTANT DEPUTY DIRECTOR FOR REAL ESTATE

APPROVED  
DATE 11-26-73

*William S. Brunkley*  
ASSISTANT DEPUTY DIRECTOR FOR PROGRAM DEVELOPMENT

APPROVED  
DATE

CHIEF ENGINEER, DIVISION OF HIGHWAYS

APPROVED  
DATE 11-26-73

*William W. Baker*  
DEPUTY DIRECTOR, DIVISION OF HIGHWAYS

APPROVED  
DATE 11-27-73

*William P. McKenna*  
ASSISTANT DIRECTOR, DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE 11-28-73

*William J. ...*  
DIRECTOR, DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ENGINEER DATE

Rev. 1-9-74  
Rev. 12-7-73

MICROFILMED  
DEC 21 1982

# SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

2  
390

CUYAHOGA COUNTY  
CUY. 480-21.40

**PROPOSED STRUCTURE - BEDFORD FREEWAY AND RAMP B-OBS OVER RELOCATED McCracken Road**

**TYPE:** Continuous rolled beams with reinforced concrete deck and substructure.

**SPANS:** Br 13L 38'-9", 64'-3", 40'-3"  
Br 13R 48'-9 3/4", 69'-3 1/4", 48'-7 3/4" (Measured along @ Ramp B-OBS)

**ROADWAYS:** Br 13L 76'-0" f.f. of parapet with raised Concrete Barrier Median.  
Br 13R 28'-0" f.f. of parapet

**DESIGN LOAD:** HS20-44

**SKEWS:** Br 13L -07°46'02" Left forward to local tangent  
Br 13R -23°50'55" Right forward to local tangent

**WEARING SURFACE:** 1 1/2" Asphalt Concrete on 13L, 2 1/2" on 13R

**APPROACH SLABS:** AS-1-67 (20 feet long)

**ALIGNMENT:** Br 13L -Tangent  
Br 13R -13°30'00" Left, Spiral

**SUPERELEVATION:** Br 13L -Varies .0156 ft. per ft. to 0.0 ft. per ft.  
Br 13R -Varies .042 ft. per ft. to .083 ft. per ft.

**PROPOSED STRUCTURE - LANE OBS-E-B OVER RELOCATED McCracken Road**

**TYPE:** Continuous steel girders with reinforced concrete deck and substructures

**SPAN:** 61'-8 3/4", 95'-1 3/4", 66'-5" (Measured along @ Lane OBS-E-B)

**ROADWAY:** 42'-0" f.f. of parapets (Initial)

**DESIGN LOAD:** HS20-44

**SKEW:** 46°51'13" Left Forward

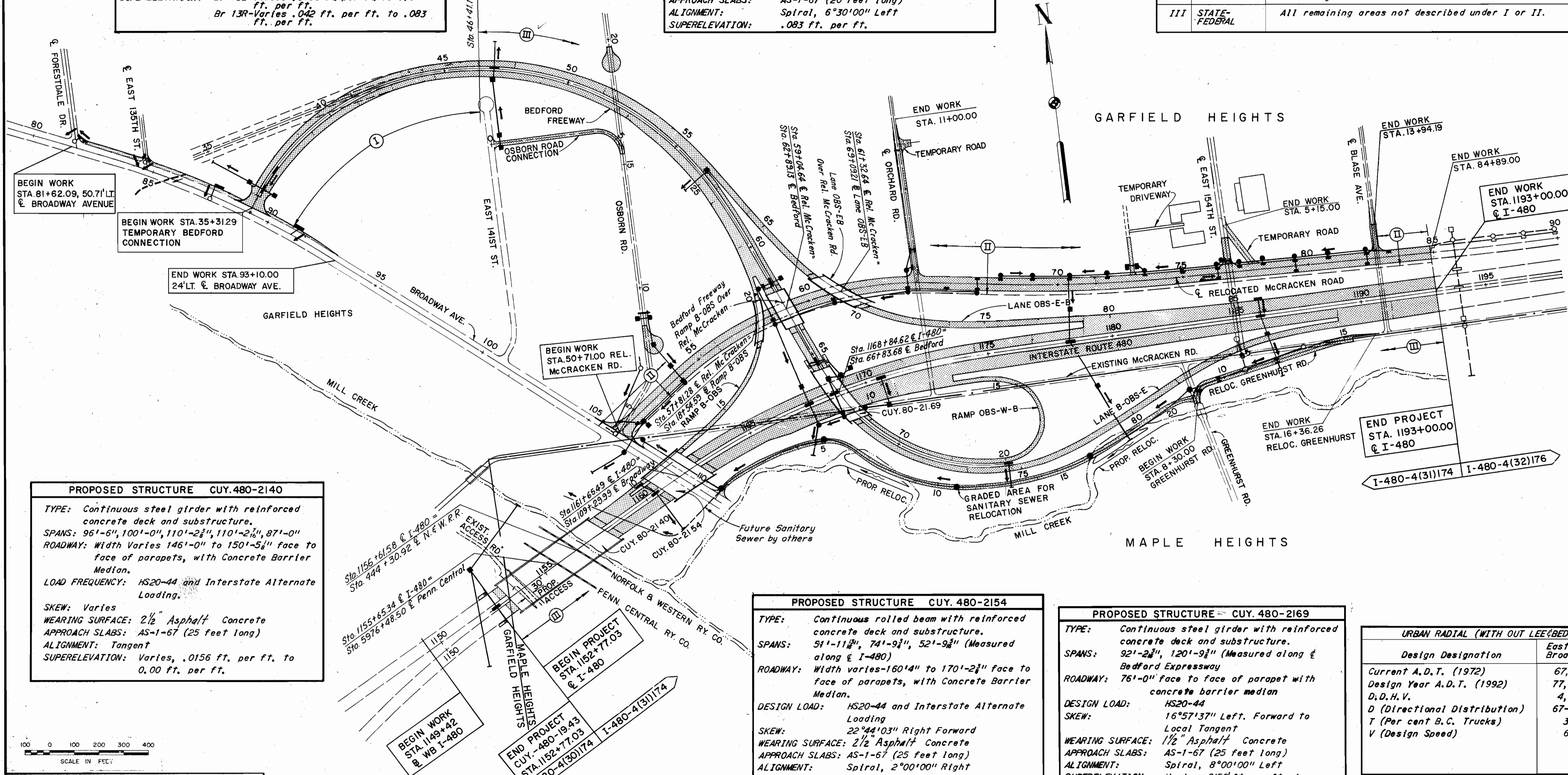
**WEARING SURFACE:** 2 1/2" Asphalt Concrete

**APPROACH SLABS:** AS-1-67 (20 feet long)

**ALIGNMENT:** Spiral, 6°30'00" Left

**SUPERELEVATION:** .083 ft. per ft.

CODE	TYPE	PARTICIPATION LIMITS
I	100% STATE	From Sta. 81+62.09 to Sta. 93+10.00 Broadway Ave. From Sta. 35+31.29 to Sta. 46+41.15 Bedford Freeway
II	COUNTY, STATE-FEDERAL	From Sta. 50+71 to Sta. 84+89 @ Relocated McCracken Rd. Bounded on the South by a line 40' Rt. of the @ and Bounded on the North by the Construction Limits not including cross roads.
III	STATE-FEDERAL	All remaining areas not described under I or II.



**PROPOSED STRUCTURE CUY. 480-2140**

**TYPE:** Continuous steel girder with reinforced concrete deck and substructure.

**SPANS:** 96'-6", 100'-0", 110'-2 3/4", 110'-2 3/4", 87'-0"

**ROADWAY:** Width Varies 146'-0" to 150'-5 1/2" face to face of parapets, with Concrete Barrier Median.

**LOAD FREQUENCY:** HS20-44 and Interstate Alternate Loading.

**SKEW:** Varies

**WEARING SURFACE:** 2 1/2" Asphalt Concrete

**APPROACH SLABS:** AS-1-67 (25 feet long)

**ALIGNMENT:** Tangent

**SUPERELEVATION:** Varies, .0156 ft. per ft. to 0.00 ft. per ft.

**PROPOSED STRUCTURE CUY. 480-2154**

**TYPE:** Continuous rolled beam with reinforced concrete deck and substructure.

**SPANS:** 51'-11 3/4", 74'-9 3/4", 52'-9 3/4" (Measured along @ I-480)

**ROADWAY:** Width varies -160'4" to 170'-2 3/4" face to face of parapets, with Concrete Barrier Median.

**DESIGN LOAD:** HS20-44 and Interstate Alternate Loading

**SKEW:** 22°44'03" Right Forward

**WEARING SURFACE:** 2 1/2" Asphalt Concrete

**APPROACH SLABS:** AS-1-67 (25 feet long)

**ALIGNMENT:** Spiral, 2°00'00" Right

**SUPERELEVATION:** I-480 Varies .0156 ft. per ft. to .047 ft. per ft. Ramp B-OBS .0156 ft. per ft.

**PROPOSED STRUCTURE - CUY. 480-2169**

**TYPE:** Continuous steel girder with reinforced concrete deck and substructure.

**SPANS:** 92'-2 3/4", 120'-9 3/4" (Measured along @ Bedford Expressway)

**ROADWAY:** 76'-0" face to face of parapet with concrete barrier median

**DESIGN LOAD:** HS20-44

**SKEW:** 16°57'37" Left. Forward to Local Tangent

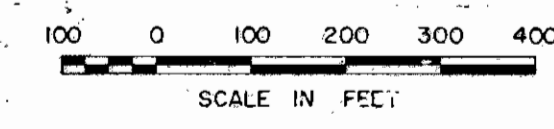
**WEARING SURFACE:** 1 1/2" Asphalt Concrete

**APPROACH SLABS:** AS-1-67 (25 feet long)

**ALIGNMENT:** Spiral, 8°00'00" Left

**SUPERELEVATION:** Varies .0156 ft. per ft. to .083 ft. per ft.

URBAN RADIAL (WITH OUT LEE BEDFORD FREEWAYS)		
Design Designation	East of Broadway	West of Broadway
Current A.D.T. (1972)	67,884	79,644
Design Year A.D.T. (1992)	77,582	91,022
D, D.H.V.	4,460	5,230
D (Directional Distribution)	67-33	55-45
T (Per cent B.C. Trucks)	3%	3%
V (Design Speed)	60	60



SCALE 1" = 200'  
HOWARD, NEEDLES, TAMMEN & BERGENOFF  
MADE ERA DATE 5-21-69 CONSULTING ENGINEERS  
TRCO. DATE KANSAS CITY CLEVELAND NEW YORK  
CRD. I.M. DATE 6-21-69

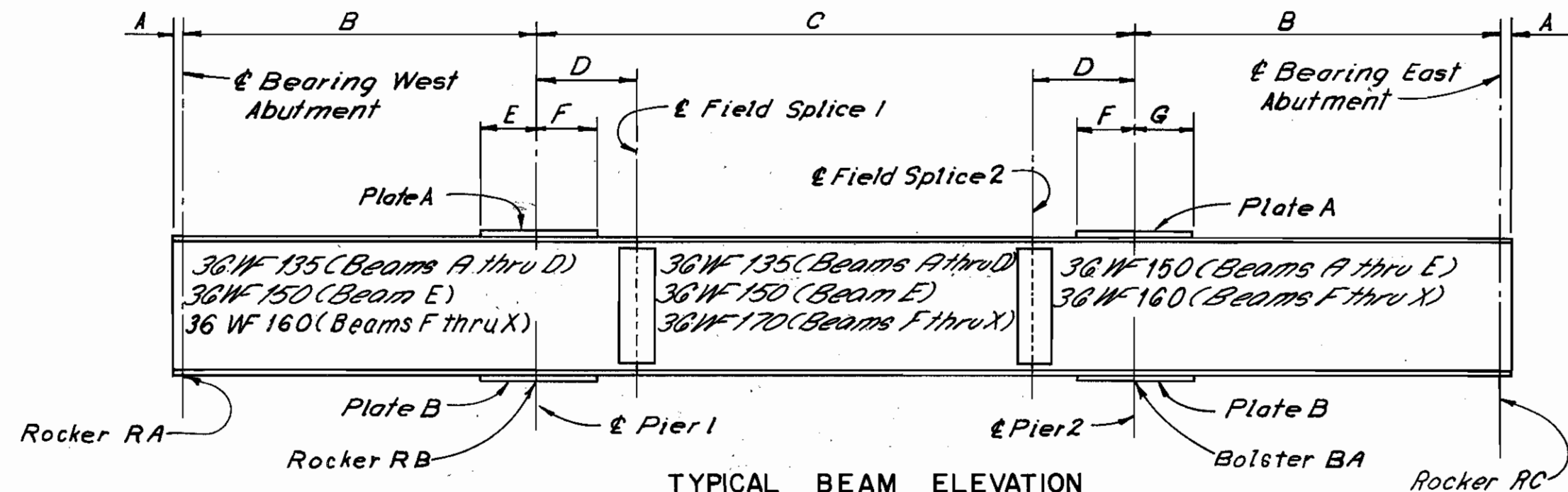
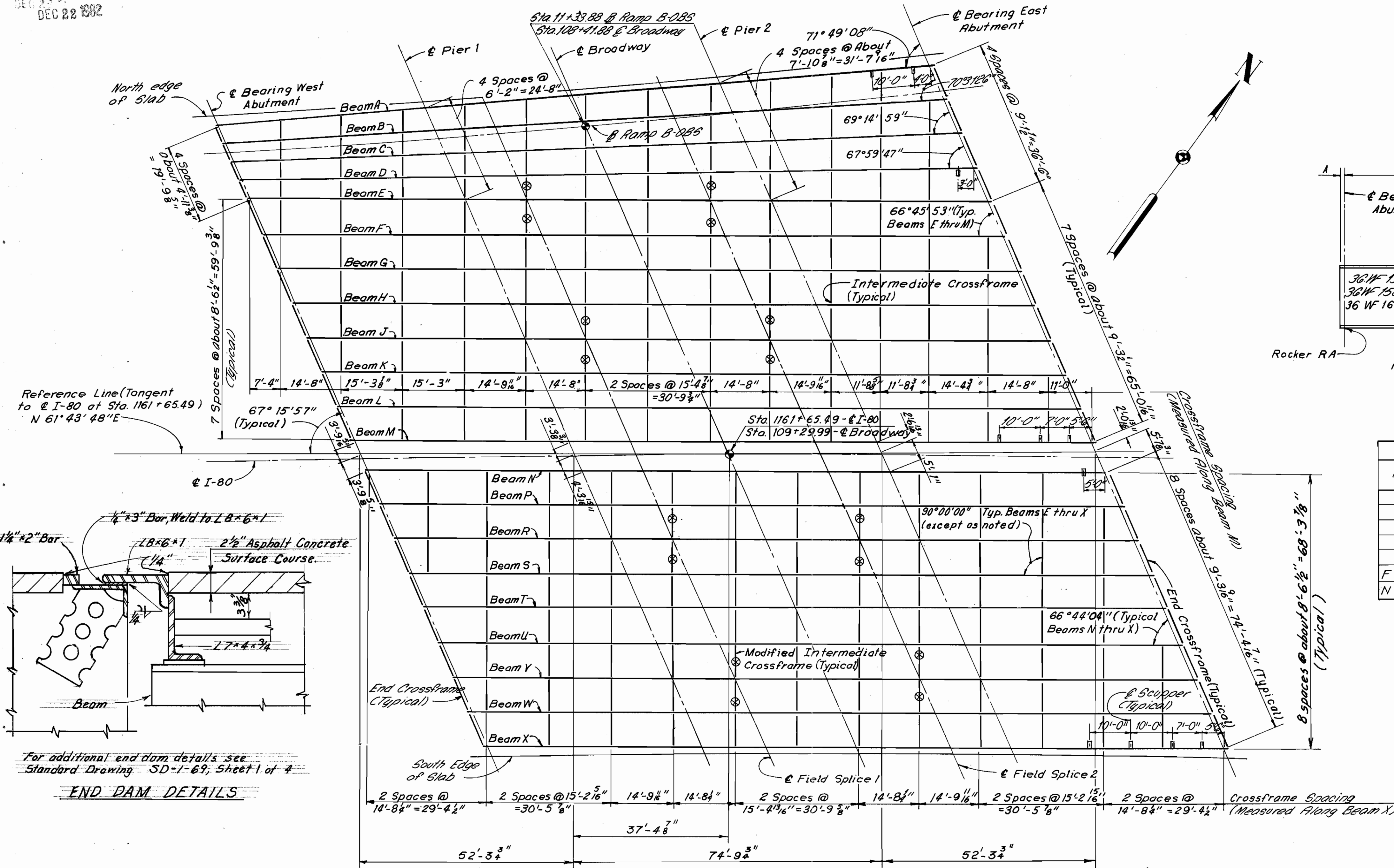


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FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

318  
390

CUYAHOGA COUNTY  
CUY-80-21.40



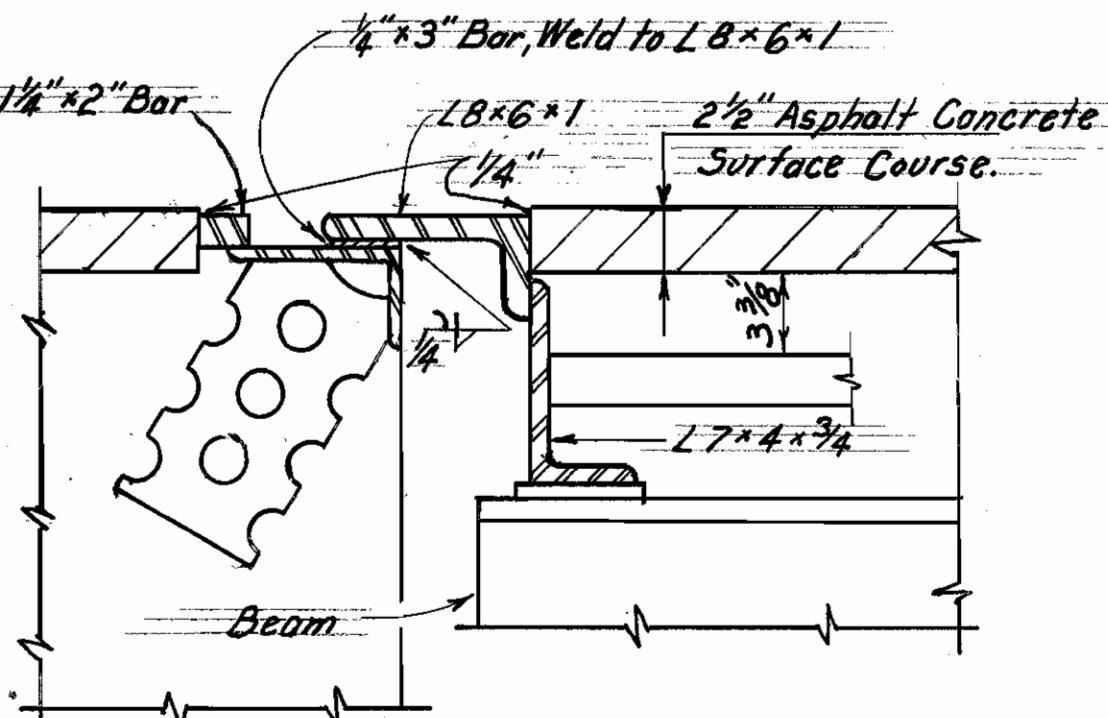
Note: Cover Plate lengths are typical top and bottom.

Beam	Dimensions							Plate Sizes	
	A	B	C	D	E	F	G	A	B
A	9 3/8"	50'-9 1/2"	72'-7 1/2"	74'-3 3/8"	71'-0"	71'-0"	71'-0"	10 1/2" x 7/8"	1 3/4" x 1/2"
B	9 1/8"	51'-2 1/2"	73'-2 1/2"	74'-5 3/8"	71'-0"	71'-0"	71'-0"	10 1/2" x 7/8"	1 3/4" x 1/2"
C	9 1/8"	51'-7 3/8"	73'-9 3/8"	74'-6 3/8"	71'-0"	71'-0"	71'-0"	10 1/2" x 7/8"	1 3/4" x 1/2"
D	9 3/8"	52'-0 1/2"	74'-5 1/8"	74'-9 1/8"	71'-0"	71'-0"	71'-0"	10 1/2" x 7/8"	1 3/4" x 1/2"
E	9 1/8"	52'-6 1/8"	75'-1 1/8"	74'-9 1/8"	71'-0"	71'-0"	71'-0"	10 1/2" x 7/8"	1 3/4" x 1/2"
F thru M	9 1/8"	52'-6 1/8"	75'-1 1/8"	74'-9 1/8"	71'-0"	71'-0"	71'-0"	10 1/2" x 7/8"	1 3/4" x 1/2"
N thru X	9 1/8"	52'-6 1/8"	75'-1 1/8"	74'-9 1/8"	71'-0"	71'-0"	71'-0"	10 1/2" x 7/8"	1 3/4" x 1/2"

Beam	Rocker RA	Rocker RB	Bolster BA	Rocker RC
A thru D	R-75	R-125	B-150	R-75
E	R-75	R-150	B-175	R-75
F thru X	R100	R-175	B-175	R-100

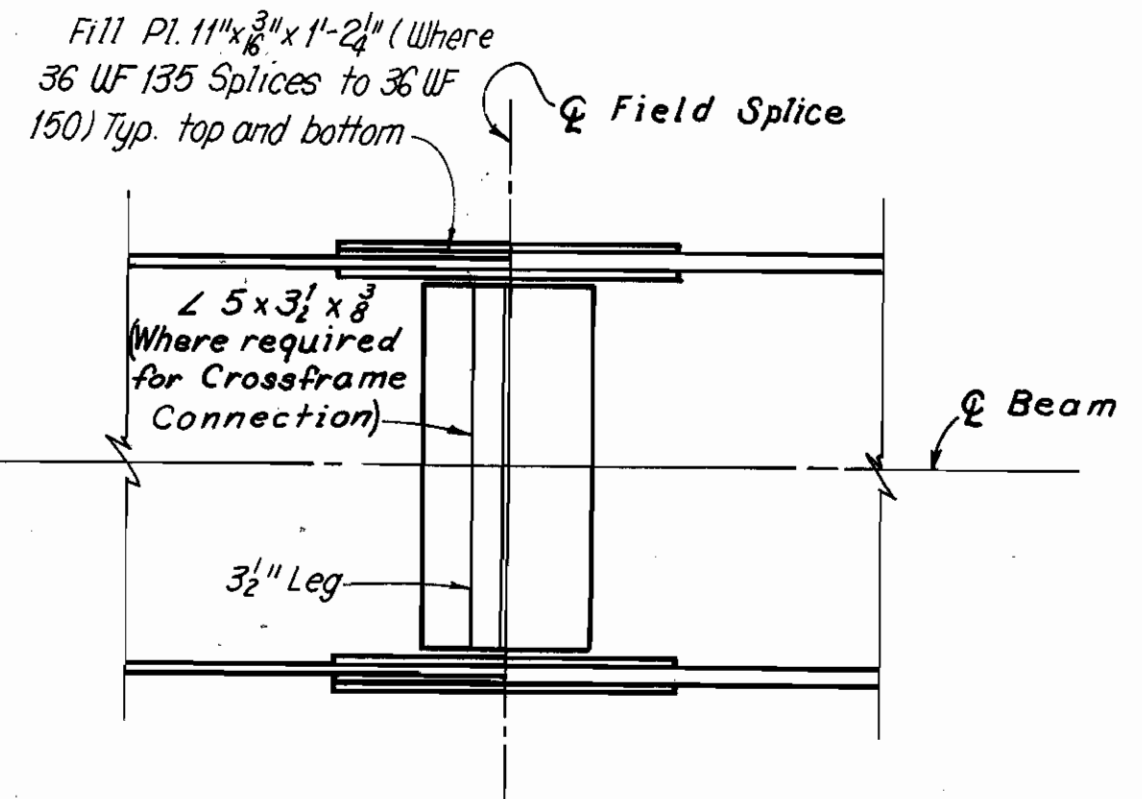
Note: Delete 1/2" side plates attached to both sides of sole plates for all rockers and bolsters on beams A, B, L, M, N and X.

Notes:  
 For details of Rockers and bolsters see Ohio Standard Drawing RB-1-55.  
 For additional details of end crossframes, roadway end dams and curb plates see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4. Curb plate details for the Type 8 Modified Curb shall be similar to the details shown for "Sidewalks, Safety Curbs and Raised Medians" on Sheet 2 of 4, except they shall be 6" high. The supporting angle (7x4x1/2") shall be continuous below the Type 8 Modified Curb.  
 For moment plate welding details see Ohio Standard Drawing SD-1-69, Sheet 3 of 4.  
 For drainage details see Sheets **CD1** & **CD2** \*  
 For horizontal offsets from exterior beams to edges of slab see sheet **13** / **17**.  
 For locations and details of underpass Luminaire supports see Lighting Plans. The supports are included with the Lighting Quantities for payment.

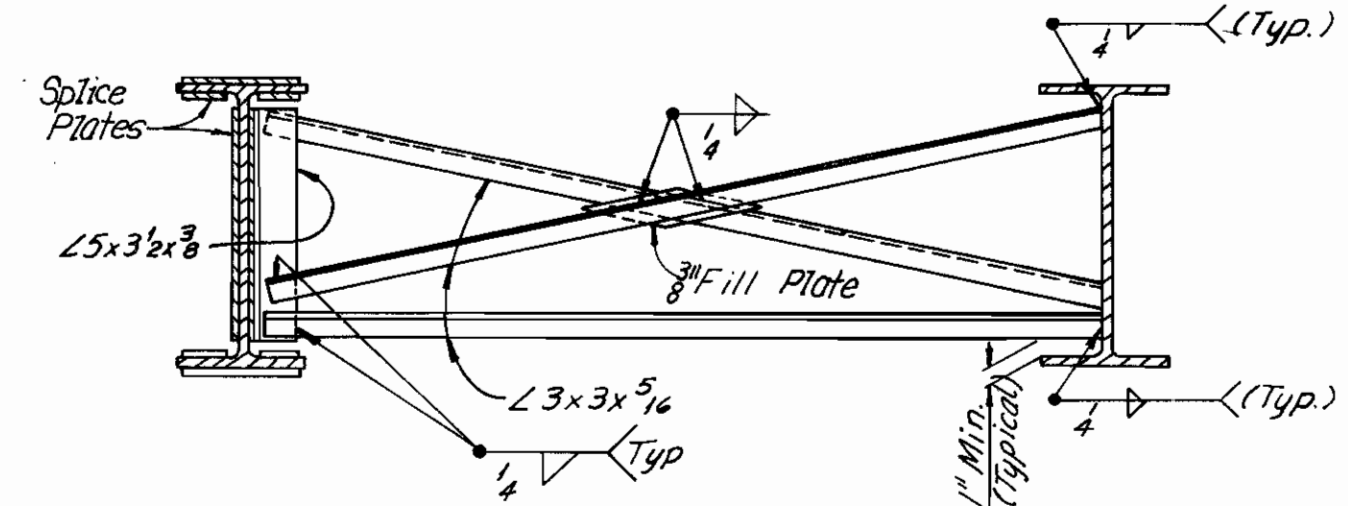


For additional end dam details see Standard Drawing SD-1-69, Sheet 1 of 4.

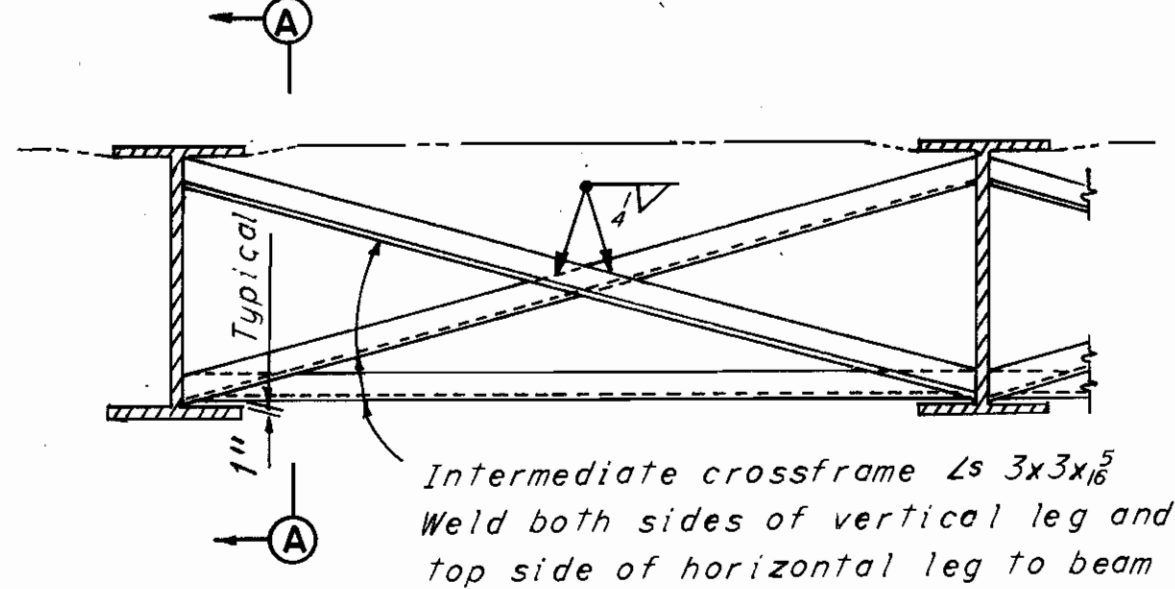
**END DAM DETAILS**



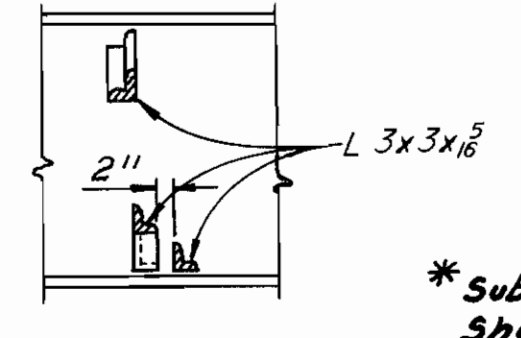
(For additional details see Ohio Standard Drawing SD-1-69, Sheet 4 of 4)



MODIFIED INTERMEDIATE CROSSFRAME



INTERMEDIATE CROSSFRAME



SECTION A-A

\* Subdrainage as per Sheet **CD2** shall not be provided on the ramp side of Type 8 Modified curb.

H.N.T.B. BR. NO. 7

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

**FRAMING PLAN**  
I-80 AND RAMP B-OBS OVER BROADWAY (S.R.14)

BR. NO. CUY-80-2154 STA. 1160+73.77  
STA. 1162+58.23

CUYAHOGA COUNTY OHIO

DRAWN T.J.S.	TRACED M.S.	CHECKED L.J.G.	REVIEWED	REVISED
DATE 5/14/68	DATE 6/3/68	DATE 7-23-68	DATE	DATE

SHEET 12 / 17

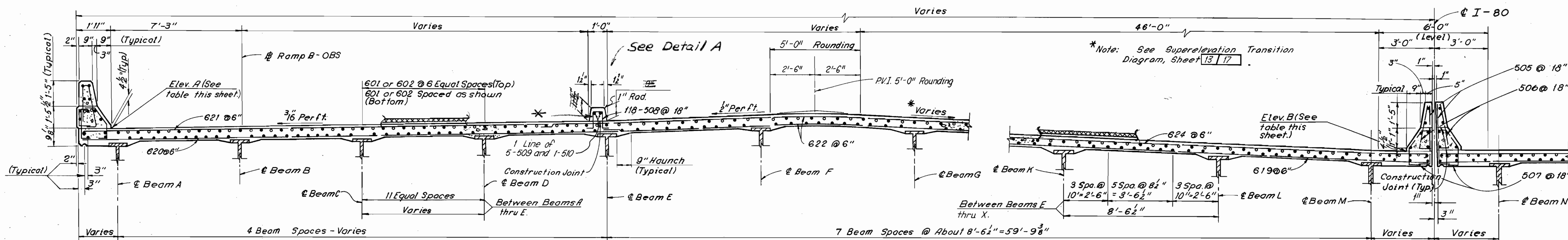
NOTES: \* Field bend reinforcing steel as required under type B modified curb.

FED. RD. DIVISION	STATE	PROJECT	321
2	OHIO		390

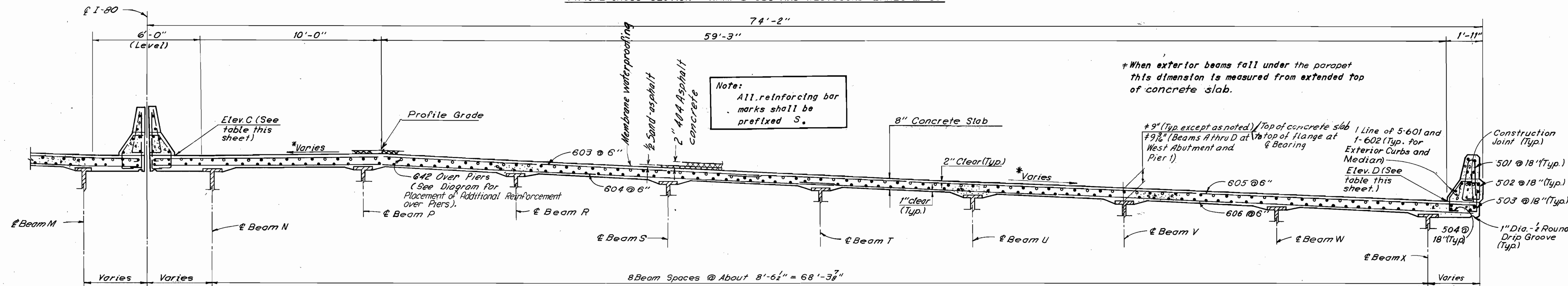
CUYAHOGA COUNTY  
CUY-80-21.40

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.

\*\* When beams D or E fall under the Type B modified curb the elevation shown is to a horizontal line extending from the top of concrete slab at the curb line nearest the beam.



TYPICAL CROSS SECTION - RAMP B-OBS AND WESTBOUND LANES I-80



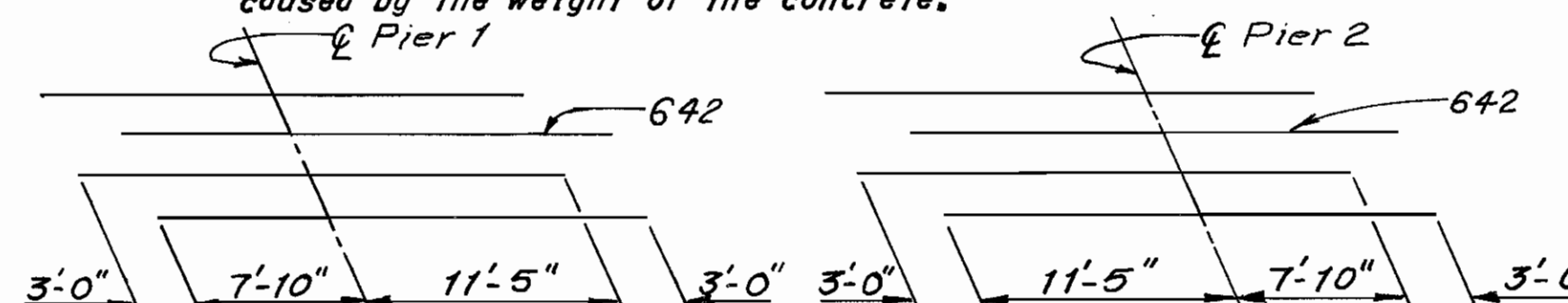
TYPICAL CROSS SECTION - EASTBOUND LANES I-80

Beam	TOP OF CONCRETE SLAB												
	Span 1				Span 2				Span 3				
W. Abut.	1/4 Point	1/2 Point	3/4 Point	1/4 Pier 1	1/2 Point	1/2 Point	3/4 Point	1/4 Pier 2	1/2 Point	1/2 Point	3/4 Point	E. Abut.	
A	879.31	879.04	878.77	878.49	878.20	877.78	877.34	876.89	876.44	876.12	875.80	875.51	875.25
B	879.35	879.08	878.81	878.53	878.25	877.82	877.39	876.95	876.49	876.19	875.87	875.58	875.33
C	879.39	879.13	878.85	878.58	878.29	877.87	877.44	877.00	876.55	876.24	875.93	875.66	875.42
D	879.43	879.17	878.90	878.62	878.34	877.92	877.49	877.05	876.61	876.30	876.00	875.74	875.50
E	879.47	879.21	878.94	878.67	878.38	877.97	877.54	877.18	876.79	876.52	876.24	875.92	875.57
F	879.67	879.40	879.13	878.87	878.61	878.23	877.85	877.46	877.07	876.80	876.51	876.18	875.82
G	879.72	879.42	879.13	878.83	878.53	878.11	877.68	877.26	876.83	876.55	876.24	875.90	875.54
H	879.48	879.16	878.84	878.53	878.21	877.75	877.30	876.85	876.39	876.09	875.75	875.40	875.03
J	879.22	878.89	878.55	878.21	877.87	877.39	876.90	876.42	875.94	875.61	875.26	874.90	874.52
K	878.96	878.60	878.24	877.89	877.53	877.01	876.50	875.99	875.48	875.13	874.76	874.39	874.01
L	878.68	878.30	877.92	877.54	877.16	876.61	876.08	875.54	875.01	874.64	874.26	873.88	873.49
M	878.23	877.85	877.48	877.08	876.70	876.16	875.63	875.09	874.55	874.15	873.76	873.37	872.98
N	878.09	877.72	877.35	876.99	876.63	876.10	875.57	875.03	874.48	874.08	873.69	873.29	872.89
P	878.28	877.90	877.52	877.13	876.75	876.19	875.63	875.07	874.50	874.10	873.71	873.31	872.91
R	878.08	877.66	877.24	876.82	876.39	875.79	875.19	874.59	874.00	873.60	873.21	872.82	872.44
S	877.76	877.32	876.88	876.44	875.99	875.36	874.72	874.10	873.49	873.09	872.69	872.31	871.92
T	877.43	876.97	876.51	876.04	875.58	874.91	874.25	873.60	872.98	872.57	872.18	871.79	871.41
U	877.09	876.61	876.13	875.64	875.15	874.46	873.77	873.09	872.47	872.06	871.67	871.28	870.89
V	876.75	876.24	875.74	875.23	874.72	873.99	873.27	872.58	871.95	871.54	871.15	870.76	870.38
W	876.38	875.86	875.33	874.80	874.27	873.51	872.76	872.06	871.43	871.03	870.64	870.25	869.86
X	876.01	875.47	874.92	874.36	873.81	873.02	872.24	871.53	870.91	870.51	870.12	869.73	869.35

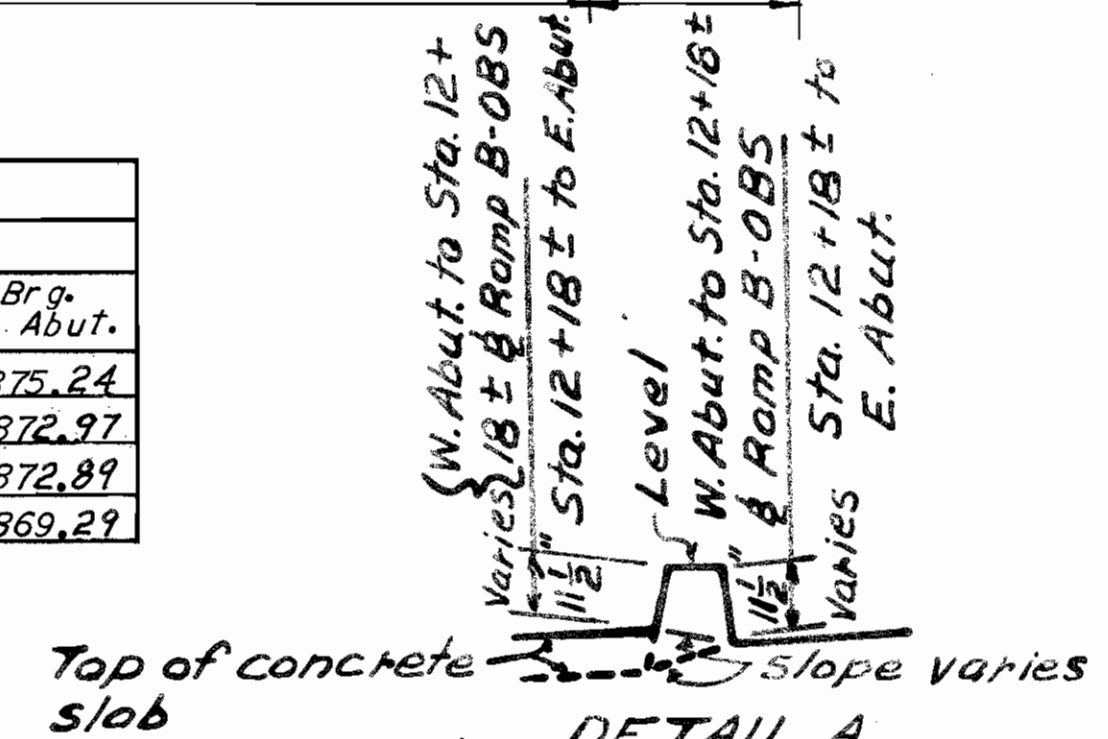
Note: When Beams A and X fall underneath the curb the elevation shown is to an extended top of concrete slab.

Elevation	FACE OF CURB ELEVATIONS AT TOP OF CONCRETE SLAB												
	Span 1				Span 2				Span 3				
W. Abut.	1/4 Point	1/2 Point	3/4 Point	1/4 Pier 1	1/2 Point	1/2 Point	3/4 Point	1/4 Pier 2	1/2 Point	1/2 Point	3/4 Point	E. Abut.	
A	879.31	879.05	878.78	878.49	878.20	877.80	877.37	876.92	876.44	876.13	875.81	875.52	875.24
B	878.15	877.80	877.44	877.06	876.68	876.18	875.67	875.12	874.55	874.16	873.77	873.39	872.97
C	878.08	877.73	877.36	876.98	876.62	876.11	875.60	875.04	874.47	874.08	873.69	873.30	872.89
D	875.98	875.46	874.92	874.37	873.83	873.07	872.30	871.58	870.93	870.51	870.12	869.71	869.29

Note: The elevations shown at the face of curb are those required before concrete is placed. Proper allowance has been made for the deadload deflections caused by the weight of the concrete.



PLACEMENT OF ADDITIONAL REINFORCEMENT OVER PIERS



H.N.T.B. BR. NO. 7  
HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
KANSAS CITY CLEVELAND NEW YORK

TYPICAL CROSS SECTION  
I-80 AND RAMP B-OBS OVER BROADWAY

BR. NO. CUY-80-2154 STA. 1160+73.77  
CUYAHOGA COUNTY OHIO STA. 1162+58.23

DRAWN T.J.S.	TRACED M.S.	CHECKED J.G.	REVIEWED	REVISED 12-27-74
DATE 3-13-68	DATE 4-11-68	DATE 8-5-68	DATE	SHEET 15/17