

9-7 U-6

CONVENTIONAL SIGNS

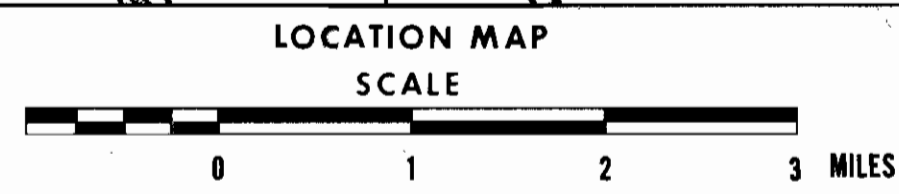
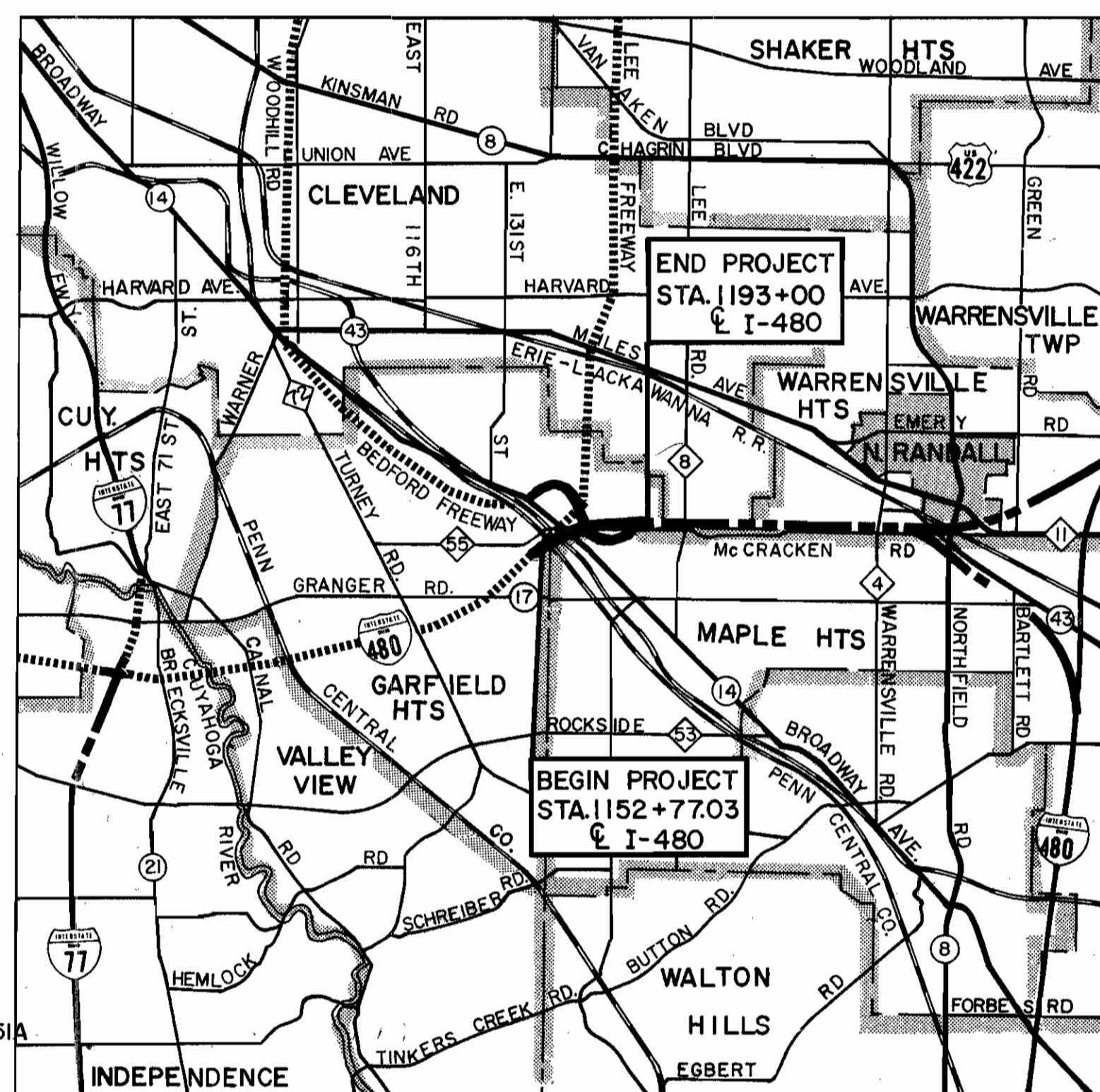
Table listing various signs and their corresponding symbols, including PROPERTY LINE, EXISTING RIGHT OF WAY, SUBDIVISION LINE, etc.

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.



SUPPLEMENTAL SPECIFICATIONS table with columns for NUMBER, DATE, NUMBER, DATE.

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

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

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

Work 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 table with columns for NUMBER, DATE, NUMBER, DATE.

ISSUE NO. 1

Table with columns FHWA REGION, STATE, PROJECT, and a circled number 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. Brunkle ASSISTANT DEPUTY DIRECTOR FOR PROGRAM DEVELOPMENT

APPROVED DATE 11-26-73

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

Director, DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION APPROVED DIVISION ENGINEER DATE

INDEX OF SHEETS

Table listing sheet titles and numbers, including TITLE SHEET, SCHEMATIC PLAN, GEOMETRIC PLAN, etc.

SHEETS DELETED 32, 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



Table with columns FILE NO., CUYAHOGA COUNTY, DATE OF LETTING, CONTRACT NO.

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 3/4", 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 13L

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

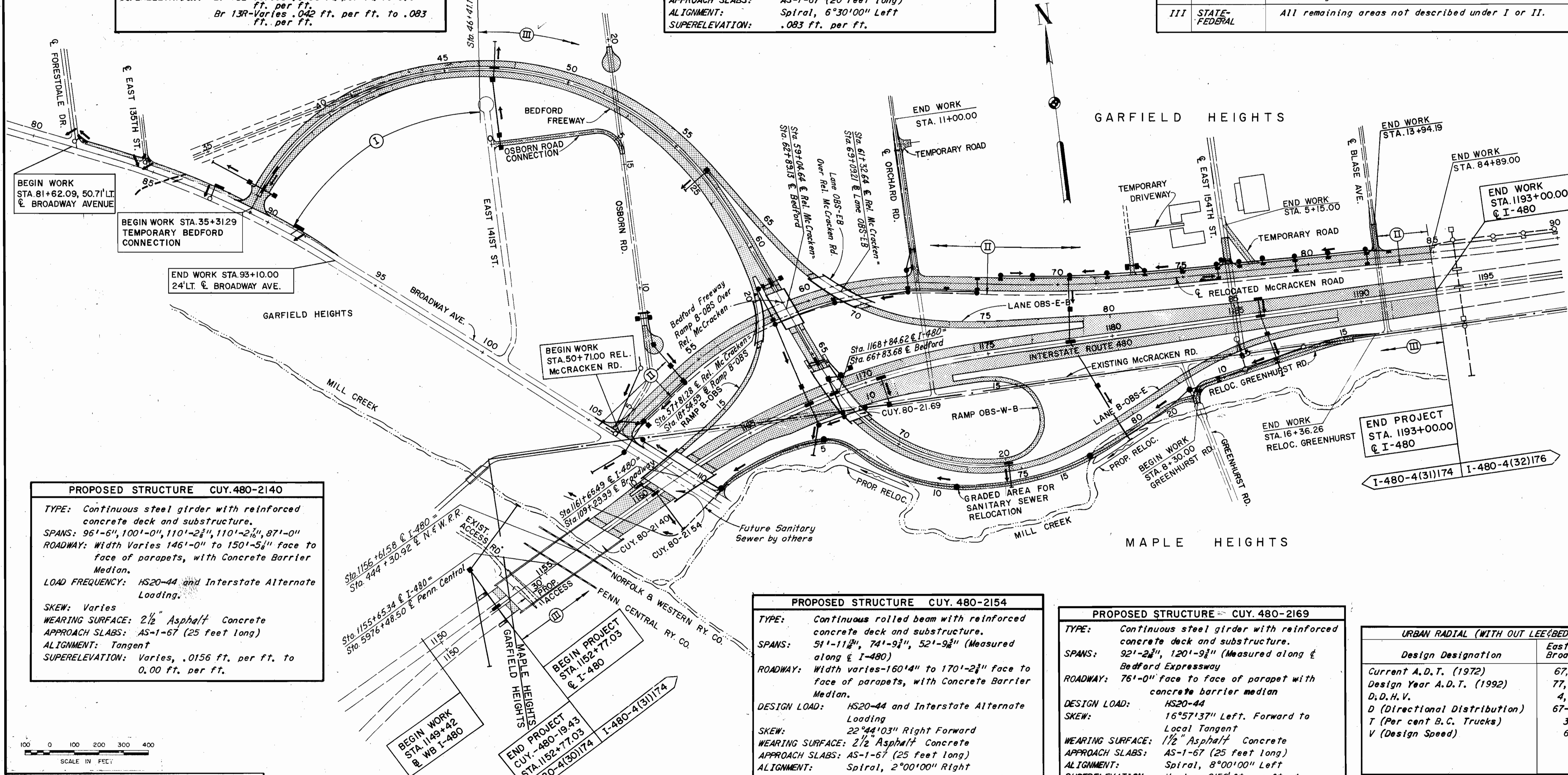
WEARING SURFACE: 2 1/2" Asphalt Concrete

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

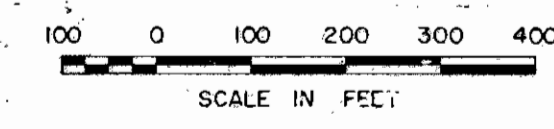
WEARING SURFACE: 1 1/2" Asphalt Concrete

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

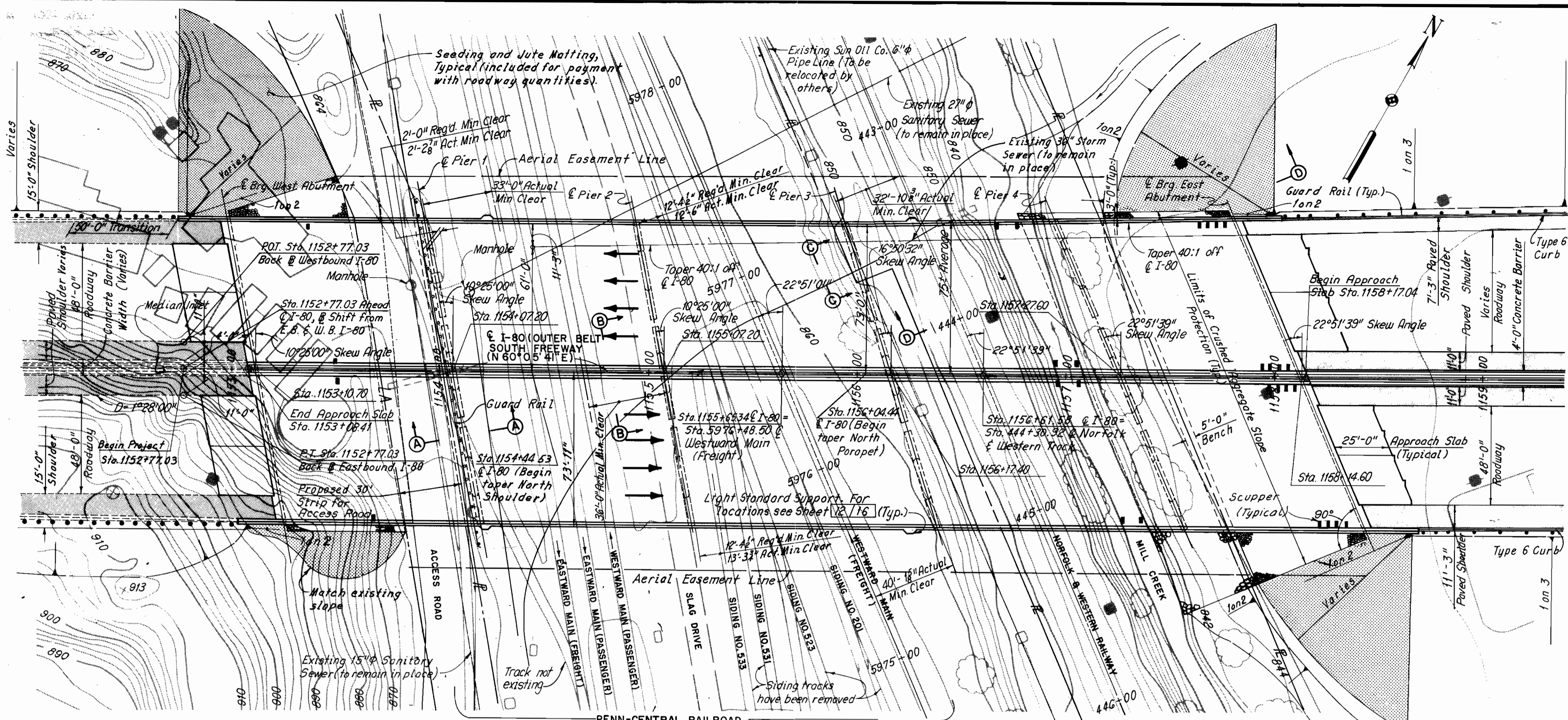


SCALE 1" = 200'
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE ERA DATE 5-21-69 CONSULTING ENGINEERS
TRCO. DATE KANSAS CITY CLEVELAND NEW YORK
CRD. I.M. DATE 6-21-69

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

291
390

CUYAHOGA COUNTY
CUY-80-21.40



PLAN
Scale: 1" = 30'-0"

Note: Earthwork limits shown are schematic.
Actual slopes shall conform to plan cross-sections.

PROPOSED STRUCTURE
 TYPE: Continuous steel girder with reinforced concrete deck and substructure.
 SPAN: 96'-6", 100'-0", 110'-2 1/2", 110'-2 1/2", 87'-0"
 (All spans are measured along ℓ -80).
 ROADWAY: Width varies - 146'-0" to 150'-5 1/2" face to face of parapets with Concrete Barrier.
 LOADING: HS 20-44 and Interstate Alternate Loading.
 SKEW: Varies (See Plan).
 WEARING SURFACE: 2 1/2" Asphalt concrete
 APPROACH SLABS: AS-1-67 (25 feet long).
 ALIGNMENT: Tangent.
 SUPERELEVATION: 0.0156 ft. per ft. and varies.

TRAFFIC DATA
 1991: 60,364 A.D.T.
 3,320 D.D.H.V.

MAINTENANCE OF TRAFFIC - ACCESS ROAD
 Two lanes of traffic with a minimum horizontal width of 20'-0" and a minimum vertical clearance of 13'-6" shall be maintained on the access road at all times.

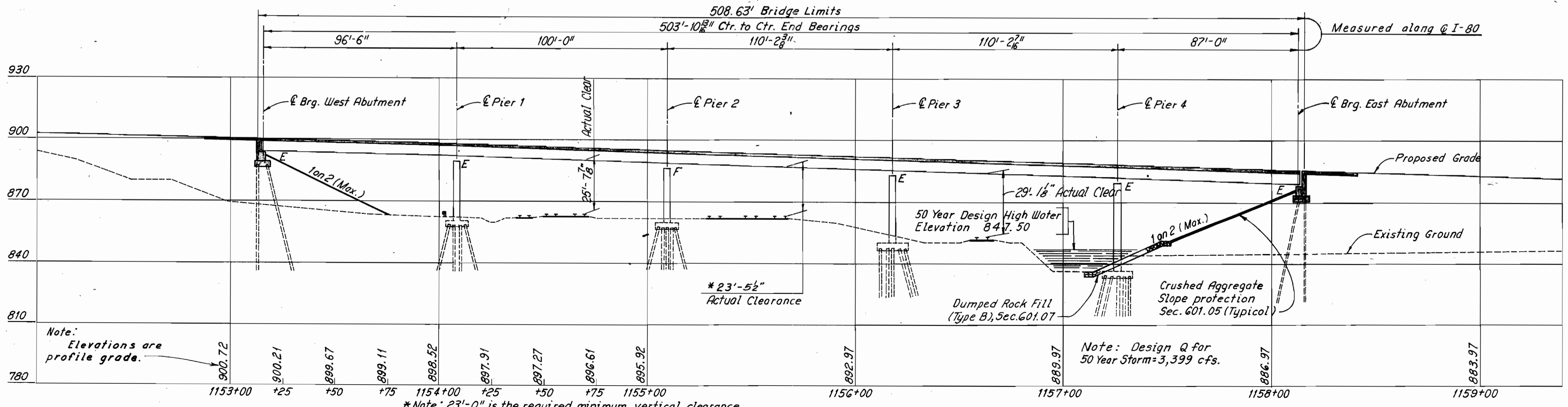
CURVE DATA

E EASTBOUND I-80	
P. I. Sta.	= 1149+00.85
Δ	= 11°04'08"
D	= 1°28'00" Right
R	= 3,906.53'
T	= 378.53'
L	= 754.71'
E	= 18.30'

Notes: The embankments shall be constructed to the finish spill-thru slopes and to the level of the subgrades for a minimum distance of 200 feet back of the abutments before excavating or driving piles for the abutments and Pier 4.
 All piles except at Pier 4 are 12" ϕ cast-in-place reinforced concrete. All piles at Pier 4 are HP 12x53.
 Piles at the abutments shall be driven to a minimum bearing capacity of 35 tons per pile and piles at the piers shall be driven to a minimum bearing capacity of 40 tons per pile.
 The estimated average pay length of the piles are as follows:

West Abutment	= 53 feet
Pier 1 and Pier 2	= 23 feet
Pier 3 (North)	= 20 feet
Pier 3 (Middle)	= 23 feet
Pier 3 (South)	= 25 feet
Pier 4	= 20 feet
East Abutment	= 48 feet

For Section A-A thru D-D see Sheet 2/16.



ELEVATION
Scale: Horiz. 1" = 30'-0"
Vert. 1" = 30'-0"

*Note: 23'-0" is the required minimum vertical clearance. Minimum vertical clearance occurs at the north rail of Westward main freight track and the outside edge of south exterior girder.

H.N.T.B. BR. NO. 6

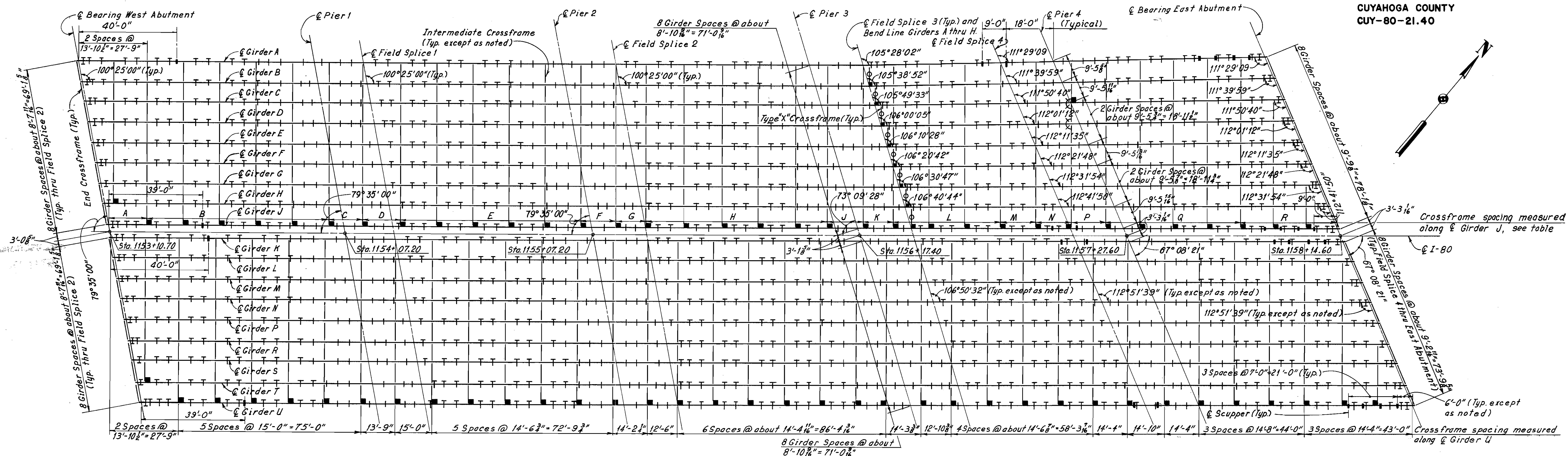
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN
 I-80 OVER PENN-CENTRAL RAILROAD,
 NORFOLK & WESTERN RAILWAY
 AND MILL CREEK

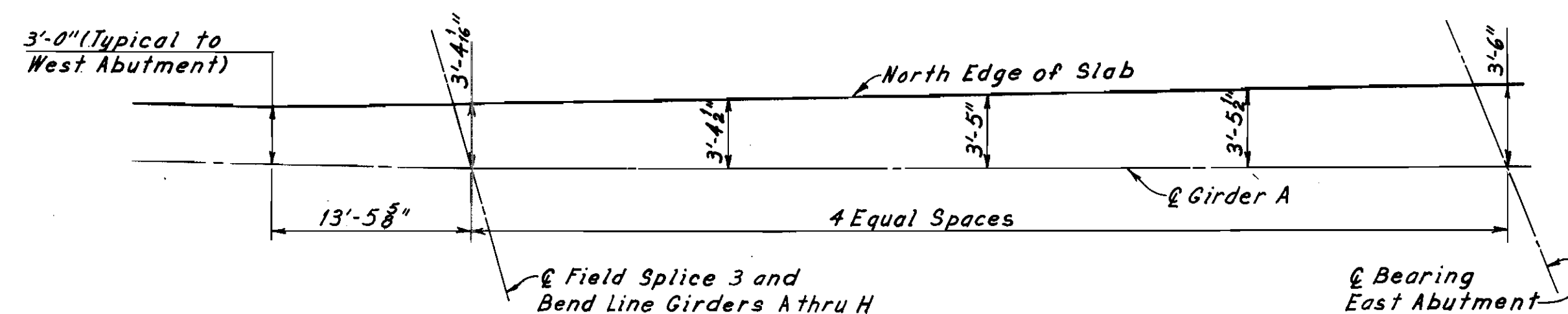
BR. NO. CUY-80-21.40 STA. 1153+08.41 TO STA. 1158+17.04
 CUYAHOGA COUNTY OHIO

DRAWN C.A.B. TRACED D.L.R. CHECKED J.H.S. REVISIONS
 DATE 8-21-67 DATE 8-30-67 DATE 9-22-70 DATE

SHEET 1/16



FRAMING PLAN

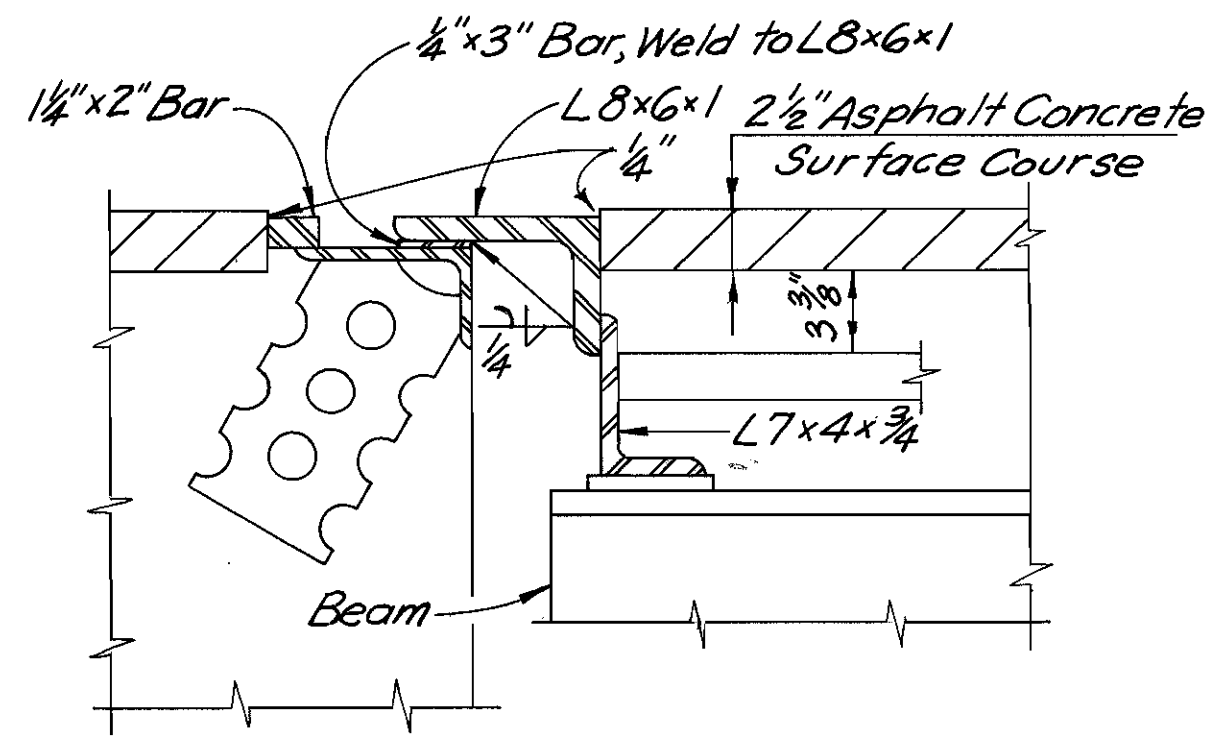


HORIZONTAL OFFSETS TO NORTH EDGE OF SLAB
Note: Offsets are measured perpendicular to Girder.

- Notes:**
- Intermediate stiffeners located at crossframes are shown in the "Framing Plan" only if contact bearing with the flange changes adjacent to the crossframe.
- FRAMING PLAN LEGEND**
- ⊗ Indicates point at which crossframe changes direction.
 - Indicates 90°
 - + Indicates intermediate stiffeners having contact bearing with the bottom flange.
 - ⊕ Indicates intermediate stiffeners having contact bearing with the top flange.
 - ⊚ Indicates intermediate stiffeners at one-half normal stiffener spacing. (See Girder Notes Sheet 10/16 for stiffener spacing.)

Intermediate stiffeners shall have contact bearing with top and bottom flanges. Stiffeners shall be located at all crossframes.

Dimension	Line Description
A	15'-3"
B	5 Spaces @ 15'-0" = 75'-0"
C	13'-9"
D	15'-0"
E	5 Spaces @ 14'-6 3/4" = 72'-9 3/4"
F	14'-2 1/2"
G	12'-6"
H	5 Spaces @ about 15'-0" = 74'-11 3/4"
J	14'-3 3/8"
K	12'-10 3/8"
L	3 Spaces @ about 14'-9 1/4" = 44'-3 3/4"
M	14'-7 3/8"
N	14'-7 3/8"
P	14'-7 1/2"
Q	4 Spaces @ about 13'-9" = 55'-0"
R	3 Spaces @ 13'-1 1/2" = 39'-4 1/2"



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

END DAM DETAILS

Note:
For details of End Crossframes, Roadway End Dam and curb plates see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4.

For Girder Notes see Sheet 10/16.
For details of Intermediate and Type "X" Crossframes and Drainage Details see Sheet CD7 and CD2.

H.N.T.B. BR. NO. 6

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

FRAMING PLAN
I-80 OVER PENN-CENTRAL RAILROAD,
NORFOLK & WESTERN RAILWAY
AND MILL CREEK

BR. NO. CUY-80-2140 STA. 1153+08.41 TO STA. 1158+17.04

CLEVELAND CUYAHOGA COUNTY OHIO

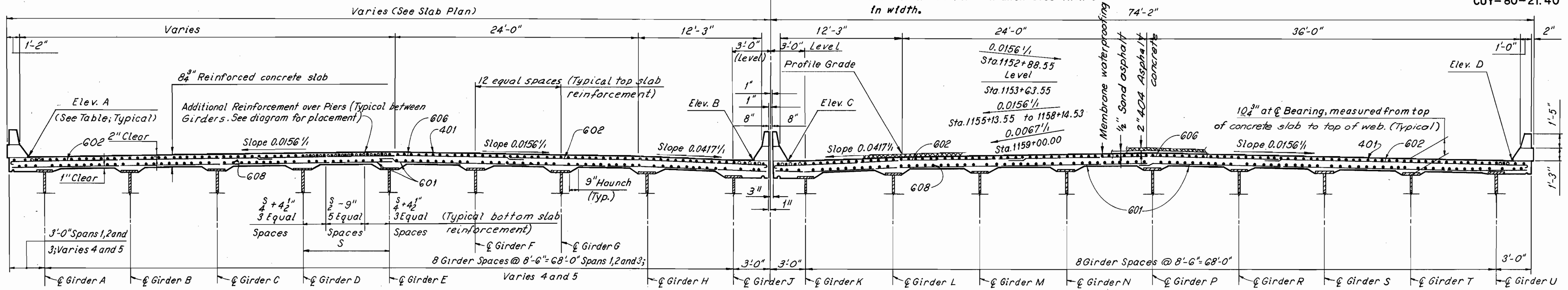
DRAWN S.M.S. TRACER, S.C. CHECKED J.S. REWIS
DATE 5-7-70 DATE 5-13-70 DATE 6-30-70 DATE

REVIS
SHEET 9/16

RECORDED
DEC 21 1982

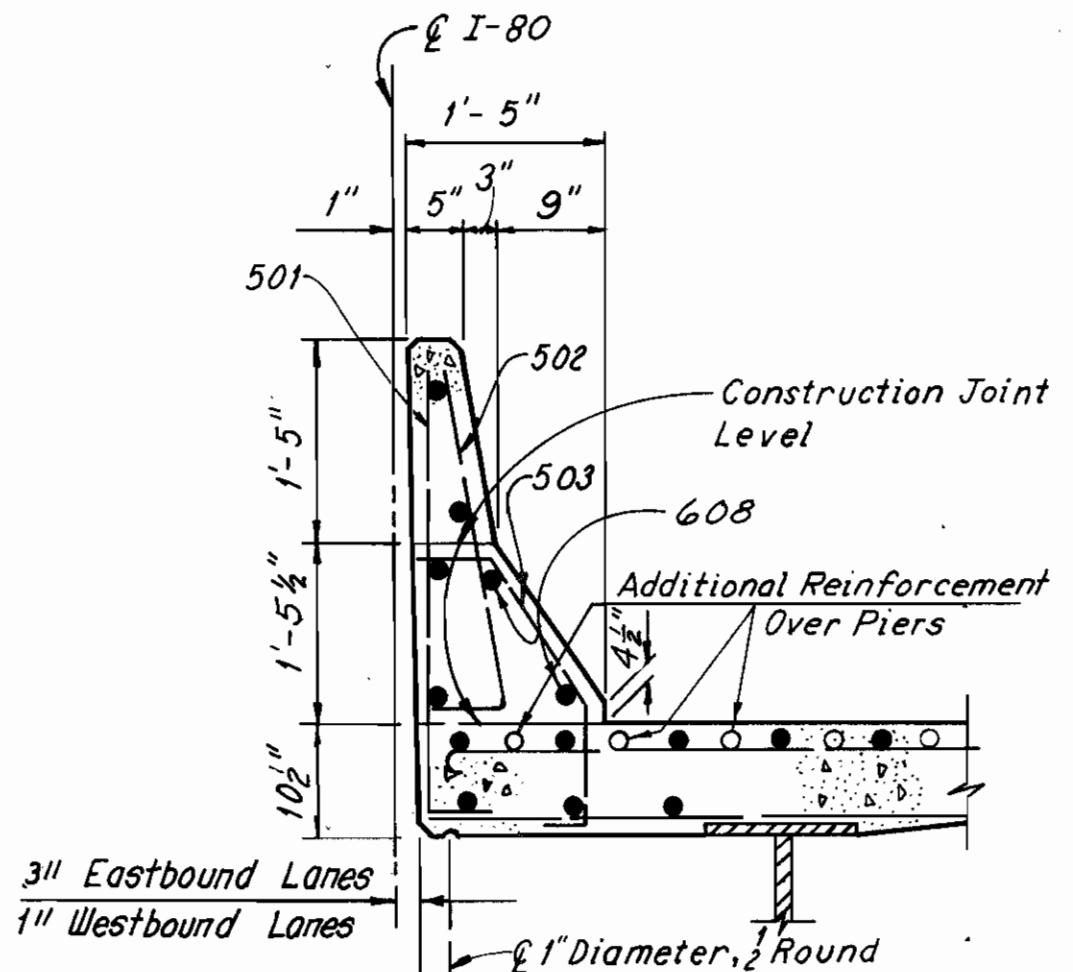
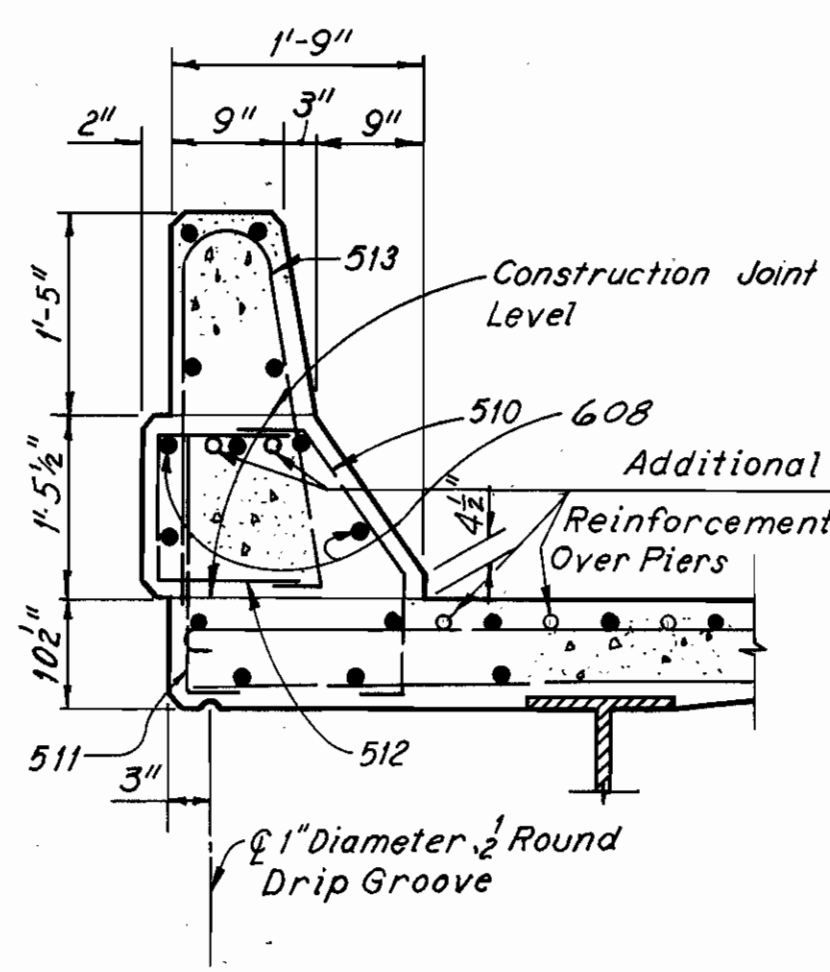
CUYAHOGA COUNTY
CUY-80-21.40

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 the slope shall be not more than 1:4 for a haunch less than 9" in width.

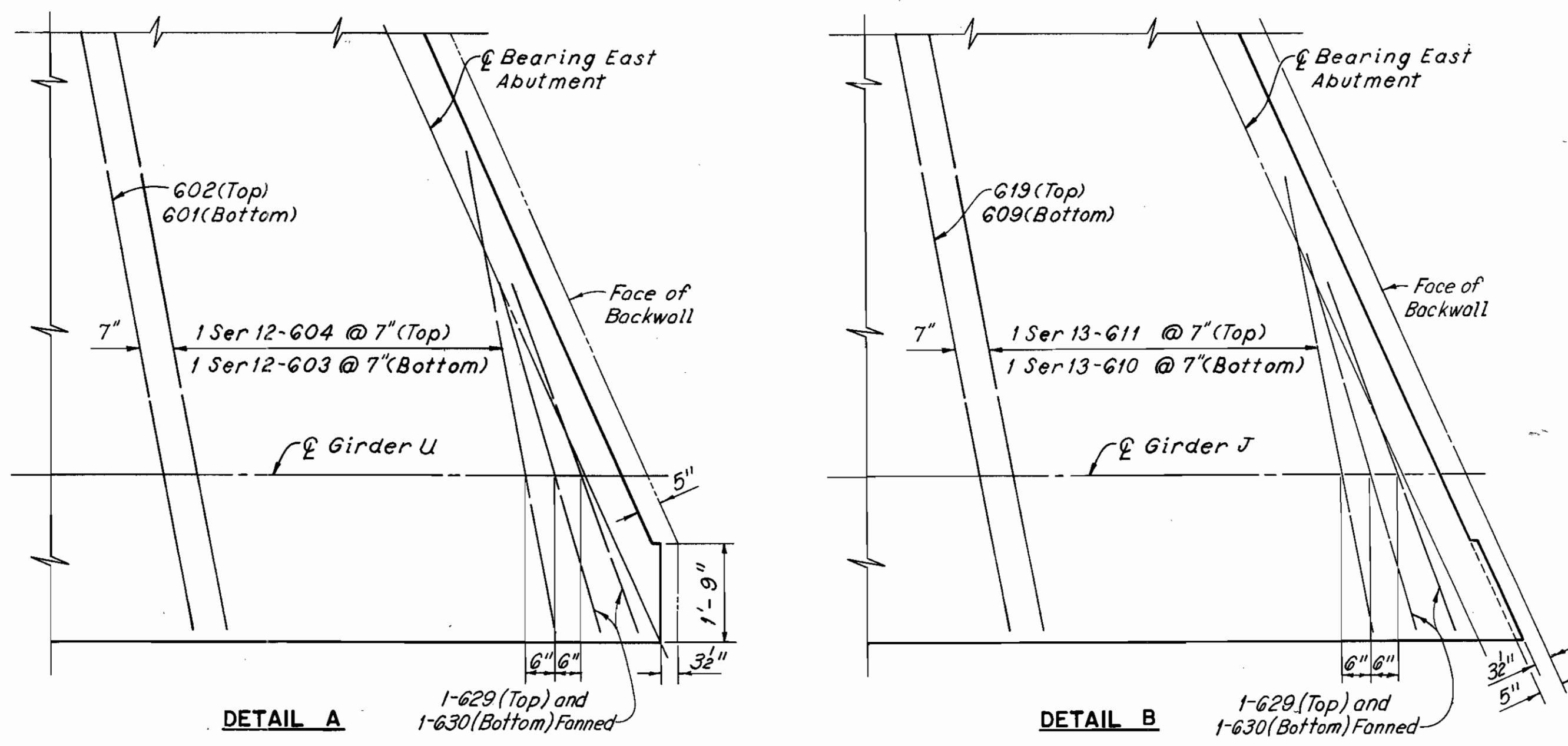


DECK REINFORCING BARS: At the Contractor's option, a portion (not to exceed 25%) of the upper longitudinal bars (S401) in the deck slab may be placed beneath the upper transverse bars for support of the top mat.

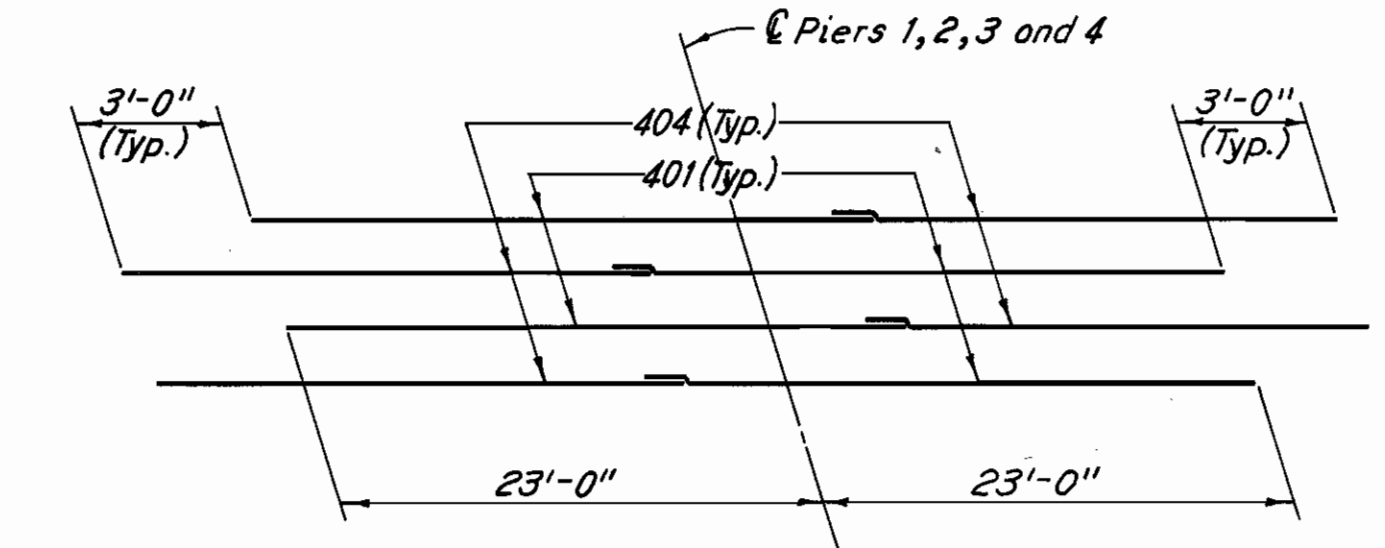
For subdrainage details see sheet CDE



TYPICAL CROSS SECTION



Note:
All reinforcing bar marks shall be prefixed S.



EXTERIOR CURB AND PARAPET DETAIL

MEDIAN CURB AND PARAPET DETAIL

DETAIL A

DETAIL B

ADDITIONAL REINFORCEMENT OVER PIERS

CURB ELEV.	WEST ABUTMENT	FACE OF CURB ELEVATIONS - TOP OF CONCRETE SLAB																EAST ABUTMENT								
		0.20	0.40	0.60	0.80	PIER 1	0.20	0.40	0.60	0.80	PIER 2	0.20	0.40	0.60	0.80	PIER 3	0.20		0.40	0.60	0.80	PIER 4	0.20	0.40	0.60	0.80
Elev. A	900.39	900.05	899.67	899.23	898.76	898.28	897.80	897.32	896.81	896.26	895.70	895.16	894.60	893.99	893.35	892.73	892.13	891.55	890.94	890.30	889.68	889.17	888.68	888.16	887.62	887.06
Elev. B	899.88	899.54	899.15	898.70	898.22	897.73	897.23	896.74	896.22	895.66	895.10	894.50	893.89	893.22	892.52	891.83	891.19	890.56	889.90	889.21	888.52	888.01	887.52	887.00	886.47	885.91
Elev. C	899.87	899.52	899.13	898.69	898.21	897.71	897.22	896.72	896.20	895.64	895.08	894.48	893.86	893.19	892.50	891.81	891.17	890.54	889.88	889.19	888.51	888.00	887.50	886.99	886.45	885.90
Elev. D	899.27	899.01	898.70	898.31	897.86	897.40	896.95	896.49	896.00	895.48	894.94	894.30	893.63	892.91	892.15	891.40	890.71	890.04	889.33	888.58	887.83	887.32	886.82	886.30	885.74	885.14

Note:
The elevations shown at the face of curb 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.

H.N.T.B. BR. NO. 6

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

TYPICAL CROSS SECTION
I-80 OVER PENN-CENTRAL RAILROAD,
NORFOLK & WESTERN RAILWAY
AND MILL CREEK

BR. NO. CUY-80-2140 STA. 1153+08.41 TO STA. 1158+17.04

CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN: M.S. TRACED: R.C.A. CHECKED: K.R. REVIEWED: DATE: 4-1-70 DATE: 4-9-70 DATE: 4-10-70 DATE: REVISED: SHEET 13/16