S-18

81-S

STATE OF OHIO
DEPARTMENT of TRANSPORTATION

CUY- 480 - 1.90

CUYAHOGA COUNTY
CITY OF NORTH OLMSTED
OLMSTED TOWNSHIP

MICROFILMED AUG 11 1982

MICROFILMED 1984

MICROFILMED JUL 8 1984

[I-480-4(12)156]

NOTE: Project designation CUY 80 appearing throughout this plan shall be considered to read CUY 480

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	I-480-4(12)156	

1 / 427

CUYAHOGA COUNTY
CUY-480-1.90

CONVENTIONAL SIGNS

Center Line
Existing R/W
Proposed R/W
Limited Access Line — LA —
Temporary R/W — T —
Work Agreement Line
Property Line — PL —
Original Lot Line — O.L. 78 / O.L. 79 —
Water Line — W —
Water Valve
Water Hydrant
Gas Line — G —
Gas Valve
Telephone Underground — T —
Electric Underground — E —
Power Pole
Light Pole
Telephone Pole

Existing Sewer
Proposed Sewer
Existing Manhole
Proposed Manhole
Existing Catch Basin
Proposed Catch Basin
Manhole Abandoned
Catch Basin Abandoned
Existing Guard Rail
Proposed Guard Rail
Fence
Existing Retaining Wall
Railroad
Existing Trees Removed

SHEETS DELETED FROM PLAN
24, 240, 243 thru 251, 267 268, 274 thru 288, 324 thru 327

ADDED SHEET 401A

INDEX OF SHEETS

Title Sheet — 1
Schematic Plan — 2-4
Typical Sections — 5-8, 8A
Bike Path Profile — 8B, 8C
General Notes — 9-11
General Summary & Sub-Summary — 12-18
Pavement Calculations — 19-20A
Special Details — 25B, 21-25, 25A
Superelevation Table — 26
I-480 Plan & Profile — 27-43
Mackenzie Rd Plan & Profile — 44
Southern & Burns Ave. Plan & Profile — 45
Fitch Rd. Plan & Profile — 46
Butternut Ridge Rd. Plan & Profile — 47-50
Kennedy Ridge Rd. Plan & Profile — 51-52
Reloc. S.R 252 Plan & Profile — 53-54
Columbia Rd. Plan & Profile — 55
Grace Ave. Plan & Profile — 56-57
Reloc. S.R.252 Interchange Ramps Plan & Profile — 58-64
Temporary Rds. Plan & Profile — 65-67
Pavement Details — 68-78
Storm Sewer Profiles — 79-90
Culvert Details — 91-100, 92A
Storm Sewer Outlet - Mastick Rd — 101
Columbia Rd. Sanitary Sewer Relocation — 102
Cross Section Index — 103
I-480 Cross Sections — 104-141
Cross Rd. Cross Sections — 142-156
Reloc. S.R 252 & Interchange Ramp Cross Sections — 157-195
Water Work Plans — 215A, 215B, 225A, 225B, 196-233, 225C
Traffic Control Plans — 234-273
Lighting Plans — 323B, 289A, 289-323, 323A
Structures Over 20' Feet in Length — 328-401, 401A
Right of Way Plans — 402-427, 421A

Sht. Nos. 376, 377, 378, 379 & 380 revised 4-11-79 WTF
Sht. No. 380 revised 4-20-79 WTF
Sht. Nos. 381A & 382A added and Sht. Nos 381 & 382 revised 8-10-79 WTF
Sheets 351 & 393 revised 10-24-79 EBL

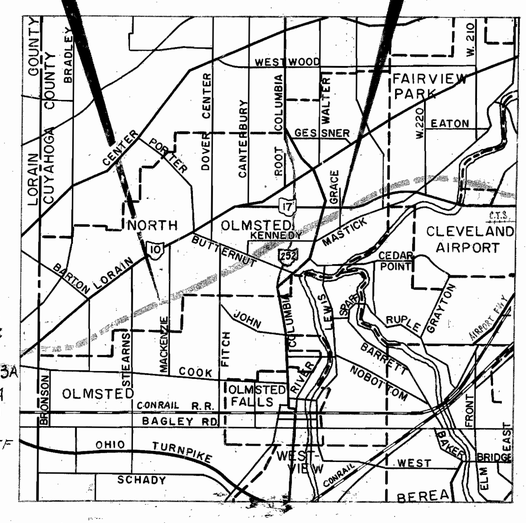
LINE DATA

Begin Project		Sta. 200+75.00
End Project		Sta. 357+00.00
Net Length of Project		15,625.00 L.F. or 2.959 Mi.
Additional Work		
I-480	Sta. 198+75.0 to Sta. 200+75.0	200.0 L.F.
	Sta. 357+00.0 to Sta. 359+50.0	250.0 L.F.
Butternut Ridge Rd.	Sta. 54+00.0 to Sta. 64+20.0	920.0 L.F.
Relocated S.R 252	Sta. 58+0.00 to Sta. 80+00	2200.0 L.F.
Columbia Rd. (Temp)	Sta. 0+00.00 to Sta. 7+08.87	708.87 L.F.
Fitch Rd. (Temp.)	Sta. 0+75.00 to Sta. 9+50.43	875.43 L.F.
	Add for Sign Work	100.00 L.F.
Mastick Rd Storm Sewer		647.0 L.F.
	Total Additional Work =	5901.30 L.F.
	Net Length of Work =	21,526.30 L.F. or 4.076 Mi.

FILE NUMBER	CUYAHOGA COUNTY CUY480-1.90 00391
	DATE OF LETTING
	CONTRACT NUMBER

Begin Project Sta. 200+75.00 S.L.M. 1.90

End Project Sta. 357+00.00 S.L.M. 4.86



LOCATION MAP

0 1 2 3
SCALE OF MILES

Portion To Be Improved
State Routes
U.S. Routes
Interstate Routes
City Streets
To Be Improved Under Separate Contract

SCALES

PLAN	0 50	1" = 50'
PROFILE: HORIZ.	0 50	1" = 50'
VERT.	0 10 20	1" = 20' 1" = 10'
CROSS SECTIONS	0 10	1" = 10'
PAVEMENT DETAILS	0 20	1" = 20'

SUPPLEMENTAL SPECIFICATIONS

NUMBER	DATE
801	4-25-77
808	1-1-71
836	3-12-75
838	1-13-77
839	11-25-70
842	8-29-74
843	10-23-75
844	11-8-74
846	4-25-77
847	4-3-76
948	2-19-74
950	4-25-77
951	4-25-77
1001	1-3-77
8625	1-11-74
5713	1-11-74

STANDARD DRAWINGS

NUMBER	DATE
BP-1	6-1-65
BP-2	12-6-76
BP-3	12-6-76
BP-4	12-6-76
BP-5	8-11-75
BP-7	12-6-76
BP-9	12-6-76
BP-10	1-3-75
BP-12	8-11-75
CB-2-2 A & B	6-1-65
CB-2-3 & 2-4	6-1-65
CB-3A	1-1-76
CB-4	9-1-69
CB-5	9-1-69
CB-6	6-1-65
CB-45B A	6-6-68
F-1	5-1-76
F-3	5-1-76
F-4	5-1-76
F-5	5-1-76
F-6	5-1-76
GR-1	12-6-76
GR-2B	12-6-76
GR-3	12-6-76
GR-8	12-6-76
GR-9A	7-26-76
GR-5	1-1-71
GR-6	1-1-71
E-2	5-1-76
HW-3	6-1-65
HW-4	1-1-70
I-2	6-6-69
I-2A	6-6-69
L-1	6-1-73
MC-1	6-13-69
MC-3	6-1-73
MC-4	7-26-76
MC-6	6-1-65
MC-7	10-15-76
MH-1	6-12-75
MH-2	6-12-75
MH-3	6-12-75
MH-5	6-12-75
HL-1	9-6-73
HL-2	7-27-73
HL-3	7-27-73
HL-4	1-21-76
HL-5	9-6-73
HL-6	3-22-77
HL-7	1-21-76
HL-8	1-21-76
HL-9	3-22-77
HL-10	1-21-76
HL-11	4-6-73
HL-12	4-6-73
TC-7.65	10-1-74
TC-12.30	10-1-74
TC-21.10	10-1-74
TC-21.20	4-18-77
TC-21.40	8-19-77
TC-22.10	8-19-77
TC-31.21	8-27-76
TC-32.10	8-27-76
TC-32.11	8-27-76
TC-41.10	8-19-77
TC-41.20	4-1-77
TC-41.50	4-1-77
TC-42.10	8-19-77
TC-42.20	4-1-77
TC-51.10	6-2-75
TC-51.11	6-2-75
TC-52.10	4-1-77
TC-52.20	4-1-77
TC-61.10	8-19-77
TC-71.10	12-1-75
TC-72.20	8-29-77
TC-81.10	4-18-77
TC-82.10	9-5-75
TC-83.10	9-5-75
TC-83.20	9-5-75
TC-84.20	9-5-75
TC-85.10	9-5-75
TC-85.20	9-5-75
AS-1-72	6-30-72
BR-1-67	10-15-71
RB-1-55	2-2-59
SD-1-69	6-12-69

"LIMITED ACCESS"

This improvement is especially designed for thru traffic and has been declared a Limited Access Highway or Freeway by action of the Director of Highways, in accordance with the provisions of Sec. 5511.02 of The Revised Code of Ohio.

1977 SPECIFICATIONS

The Standard Specifications of the State of Ohio, Department of Transportation incl. 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 maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved Thomas M. Frale
Date 6-22-77 District Deputy Director of Transportation

Approved Robert B. Pfeifer
Date 3-29-78 Engineer, Bureau of Bridges and Structural Design

Approved R. E. Rathin
Date 3-29-78 Chief Engineer, Planning and Design

Approved David Z. Wain
Date 3-29-78 Director, Department of Transportation

DESIGN DESIGNATION
1970 A.D.T. = 26,500
1987 A.D.T. = 58,900
D.H.V. 2,945
D. (directional distribution) 67%
T. (percent B&C trucks) 5%
V. (design speed) 60 M.P.H.

PLANS PREPARED BY
ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
75 PUBLIC SQUARE
CLEVELAND, OHIO
FOR
STATE OF OHIO

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE:

REV 4-5-78

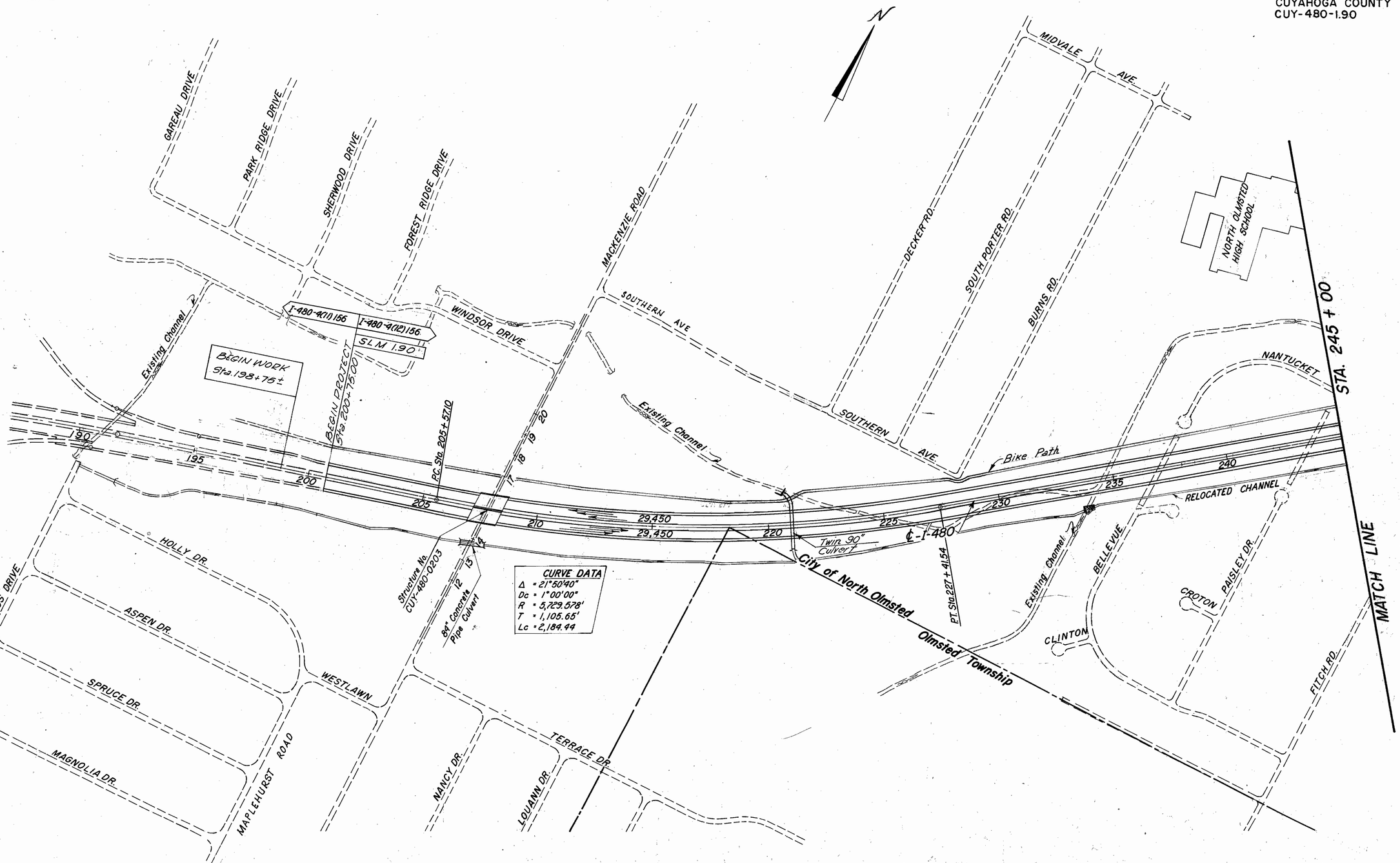
MICROFILMED
AUG 11 1992

SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2
427

CUYAHOGA COUNTY
CUY-480-1.90



S-20

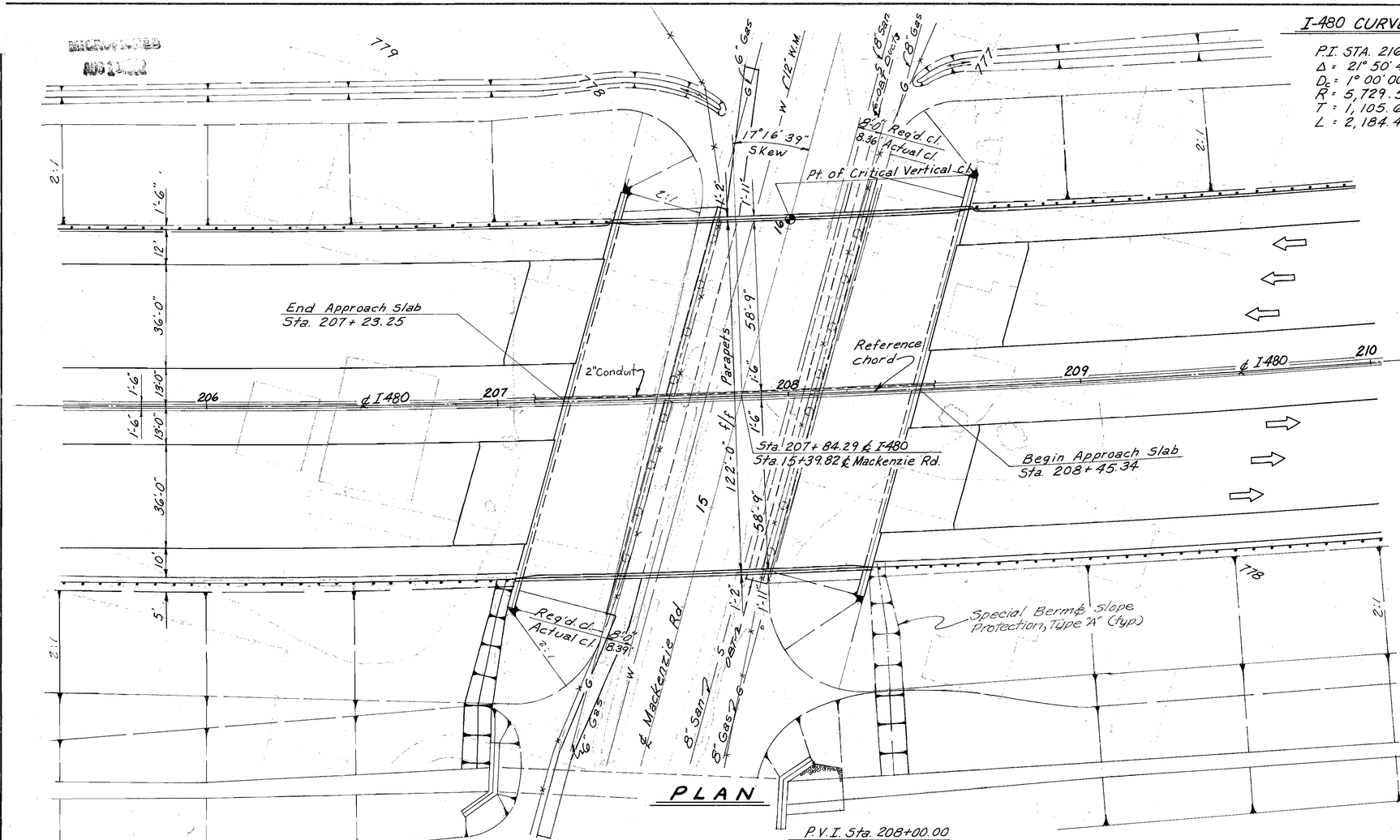
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

328
427

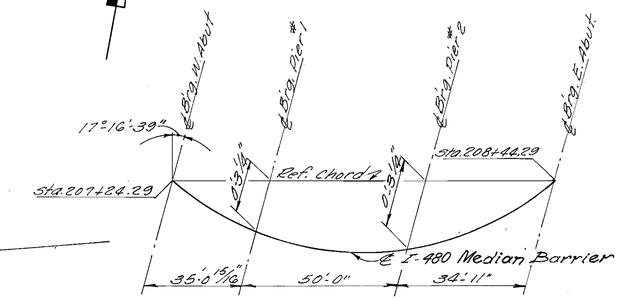
CUYAHOGA COUNTY
CUY-480-1.90

I-480 CURVE DATA

P.I. STA. 216+62.75
Δ = 21° 50' 40"
D_c = 1° 00' 00"
R = 5,729.578'
T = 1,105.65'
L = 2,184.44'



PLAN



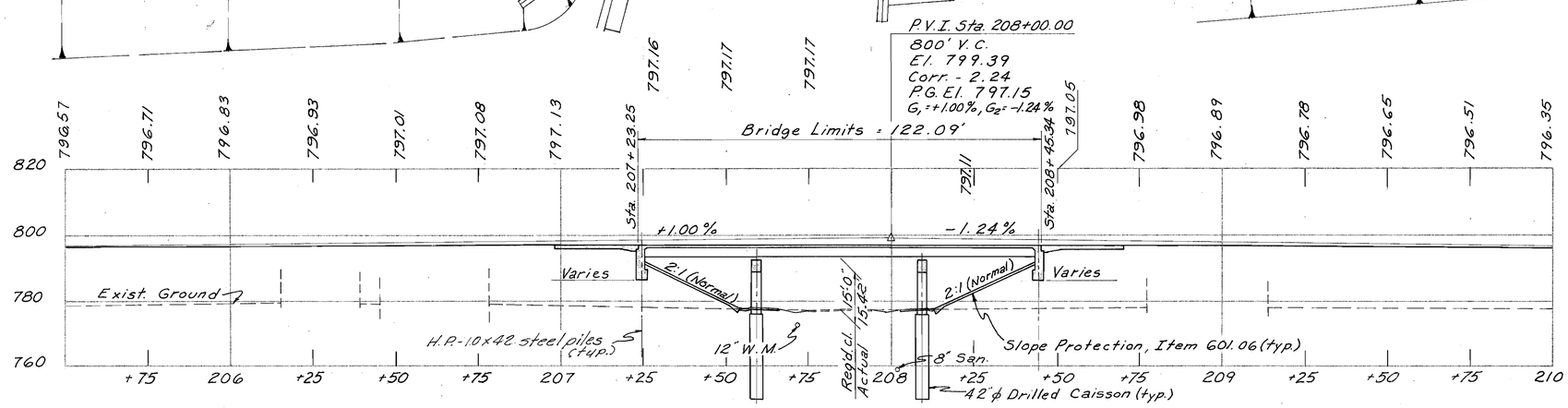
SCHEMATIC LAYOUT PLAN

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

The Reference chord is a line between abutment bearing lines at Sta. 207+24.29 & Sta. 208+44.29, ℄ I-480
Estimated Average Pay Length for Abutment piles is 25 Ft.

PROPOSED STRUCTURE

TYPE: Continuous steel beam with reinforced concrete deck and substructure
SPANS: 35'-0", 50'-0", 35'-0" c/c brgs. on ℄
ROADWAY: 122'-0" f/f parapets, BR-1-67 railing, concrete median barrier
LOADING: HS 20-44 plus Alternate Military Loading
WEARING SURFACE: monolithic concrete
SKEW: 17°-16'-39" Lt. Forward with respect to reference chord.
ALIGNMENT: 1°-00'-00" Curve, left
SUPERELEVATION: 0.024 ft/ft.
APPROACH SLABS: AS-1-72, 25' long (Modified)



PROFILE ALONG ℄ I-480

Modify AS-1-72 by providing 3" cover over the top rebars instead of the 2" shown, by changing from full width to the width of the approach pavement and by omitting the jacking holes.

TRAFFIC ESTIMATE

Design Year - 1987
Total A.D.T. - 4543

1/16

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

SITE PLAN

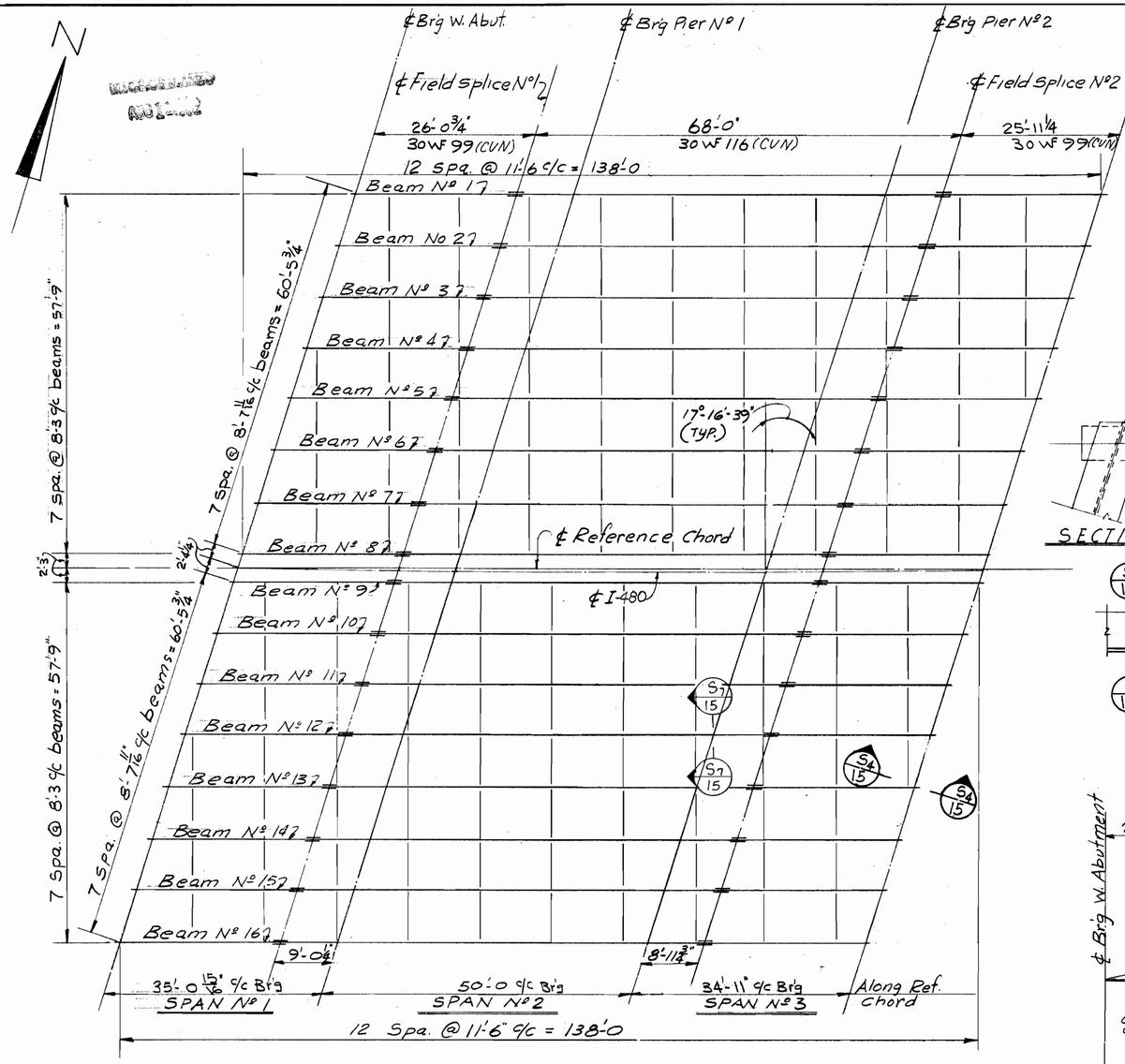
BRIDGE № CUY-480-0203
I-480 OVER MACKENZIE ROAD
CUYAHOGA COUNTY STA. 207 + 23.25 STA. 208 + 45.34

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	G.W.M.	M.B.		G.W.M.	7/2/69	

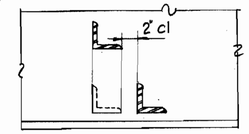
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

342
427

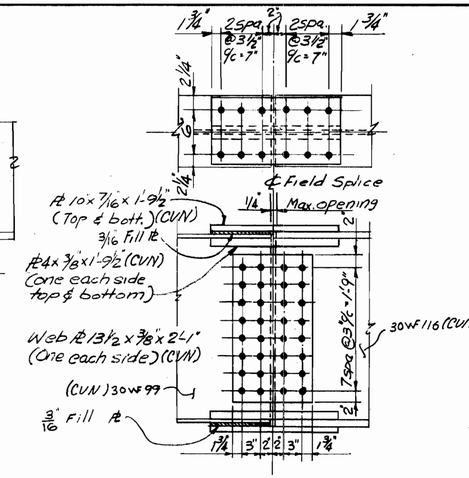
CUYAHOGA COUNTY
CUY-480-1.90



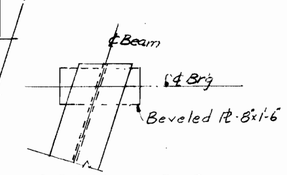
FRAMING PLAN



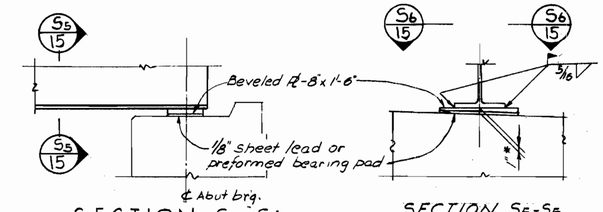
SECTION S1-S1



FIELD SPLICE Nº 1 & Nº 2 DETAILS



SECTION S6-S6



SECTION S4-S4

SECTION S5-S6
* Includes 1/8" bearing pad

BEARING DETAIL AT ABUTMENTS

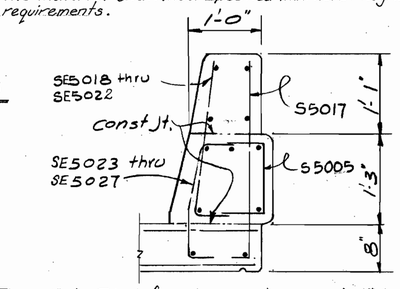
Notes
1" ϕ High Strength bolts shall be used at the field splices. Bolt heads shall placed on fascia side of exterior beam webs and bottom side of bottom flange. Holes shall be 1 1/16" ϕ. Bolts shall confirm to A-325 steel.

For details and notes not shown see Std. dwg. SD-1-69, Sheet Nº 4.

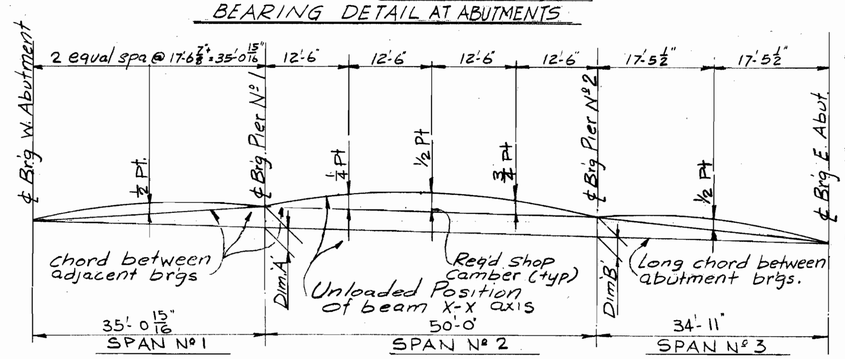
Cross frames may be shifted, if necessary, to avoid field splice.

Place all intermediate crossframes normal to beam.

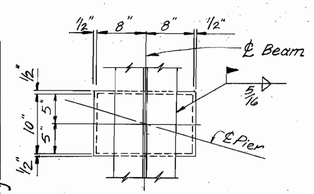
Note: Where a shape or plate is designated (CVN) the material shall meet specified min. notch toughness requirements.



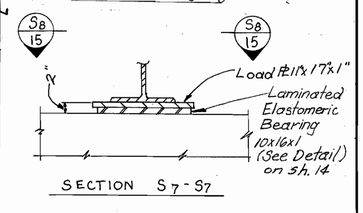
Typical Reinforcement @ 6'-0"
Transition sections of parapet.



CAMBER AND BLOCKING DIAGRAM.



SECTION S8-S8



SECTION S7-S7

DEFLECTION AND CAMBER

	SPAN Nº 1	SPAN Nº 2							SPAN Nº 3	
Location	½ Pt	¼ Pt	½ Pt						¾ Pt	½ Pt
Beam Nº	ALL BEAMS	ALL BEAMS	1 & 16	2 to 7	8	9	10	11 to 15	ALL BEAMS	ALL BEAMS
Deflection due to Steel Weight	0	0	1/16	1/16	1/16	1/16	1/16	1/16	0	0
Deflection due to Remaining D.L.	1/16	1/8	3/16	1/4	3/16	3/16	1/4	1/4	1/8	1/16
Adjustment for Vertical Curve	1/16	1/16	1/8	1/8	3/16	1/16	1/16	1/8	1/16	1/16
Required Shop Camber	1/8	3/16	3/8	7/16	7/16	5/16	3/8	7/16	3/16	1/8

Blocking Dimensions

Beam Nº	1 To 7	8	9 & 10	11 to 14	15 & 16
DIM. "A"	7/16"	11/16"	3/8"	7/16"	5/8"
DIM. "B"	7/16"	11/16"	3/8"	7/16"	5/8"

15/16

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

BRIDGE Nº CUY-480-0203
I-480 OVER MACKENZIE ROAD
CUYAHOGA COUNTY STA. 207 + 23.25 STA. 208 + 45.34

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	B.D.		B.I.P.	G.W.M.	7/8/69	