E-1

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-480-4.86

CUYAHOGA COUNTY
CITY OF NORTH OLMSTED
CITY OF FAIRVIEW PARK

I-480-4(14)-158

FHWA REGION	STATE	PROJECT	
5	OHIO	I-480-4(14)-158	

1/347

CUYAHOGA COUNTY
CUY-480-4.86

MICROFILMED AUG 19 1982

MICROFILMED JUN 27 1984

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 ADDED TO PLAN.
No's. 231A, 265A, 265B

SHEETS DELETED FROM PLAN.
No's. 24, 185 thru 195, 216 thru 229, 329 330

INDEX OF SHEETS

Title Sheet	1
Schematic Plan	2-3
Typical Sections	4-9
General Notes	10-12
General Summary	13-16
Pavement Calculations	17-18
Superelevation Tables	19-20
Special Details	21-29
I-480 Plan & Profile	30-39
Clague Rd. Plan & Profile	40-43
Ramp C-1 Plan & Profile	44
Ramp C-2 Plan & Profile	45
W. 227th St. Plan & Profile	46-48
Maple Dr. Plan & Profile	49
W. 224th St. Plan & Profile	50-51
W. 220th St. Plan & Profile	52-53
Mastick Rd. Plan & Profile	54-55
Pavement Details	56-62
Temporary Road, Plan & Profile	63-64
Storm Sewer Profiles	65-78
Sanitary Sewer Relocation	79-81
I-480 Cross Sections	82-105
Cross Road - Cross Section	106-133
Water Line Work	134-161
Traffic Control	162-184
Lighting	196-215, 196A & 197A
Structures Over 20' Span	231A, 265A & B, 275A, 230-328, 291A
Right-of-Way	331-347

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

LINE DATA

Begin Project ~ Sta. 357+00.00 to
End Project ~ Sta. 442+32.50 = 8,532.50 Lin. Ft. or 1.616 Miles

ADD FOR WORK

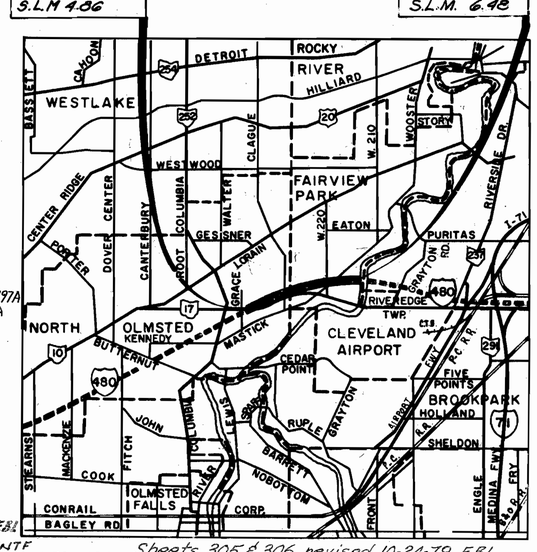
Mainline I-480 Sta. 355+43.00 to Sta. 357+00.00	= 157.00 Lin. Ft.
Clague Road ~ Sta. 0+38.26 to Sta. 16+27.00	= 1,588.74 Lin. Ft.
W. 227th. Street ~ Sta. 10+36.20 to Sta. 21+29.00	= 1,092.80 Lin. Ft.
Maple Drive ~ Sta. 8+90.00 to Sta. 15+40.00 (-24 ft. ~ W. 227th.)	= 626.00 Lin. Ft.
* Mastick Road ~ Sta. 7+50.75 to Sta. 15+40.00	= 789.25 Lin. Ft.
Temp. Road W. 220th. St. ~ Sta. 7+20.00 to Sta. 17+65.00	= 1,045.00 Lin. Ft.
Total "Add for Work"	= 5,298.79 Lin. Ft.
TOTAL WORK = 13,831.29 Lin. Ft. or 2.619 Miles	

* Length adjusted for work on temporary road.

FILE NUMBER	CUYAHOGA COUNTY CUY-480-4.86 00392
	DATE OF LETTING
	CONTRACT NUMBER

BEGIN PROJECT
STA. 357+00
S.L.M. 4.36

END PROJECT
STA. 442+32.50
S.L.M. 6.48



Sheets 305 & 306 revised 10-24-79 EBL

Sh. No. 273 revised 9-7-78 WTF
Sh. No. 297 revised 3-12-78 EBL
Sh. Nos. 243 & 271 revised 10-2-78 WTF
Sh. Nos. 298, 305, 307 & 310 revised 10-12-78 WTF
Sh. Nos. 268 & 271 revised 1-4-79 EBL

SUPPLEMENTAL SPECIFICATIONS	
NUMBER	DATE
808	1-1-71
836	3-12-75
843	10-23-75
846	4-25-77
948	2-13-74
839	11-25-70
842	8-23-74
844	11-8-74
801	4-25-77
1001	1-3-77
950	4-25-77
951	4-25-77
5625	1-11-74
5713	1-11-74
934	1-1-69

LOCATION MAP

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'

STANDARD	DRAWINGS
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
CB-2-2-A&B	6-1-65
CB2-3 & 2-4	6-1-65
CB-3	1-1-76
CB-3A	1-1-76
CB-5	9-1-69
CB-458A	6-6-68
CB-6	6-1-65
BF-6	6-1-65
F-1	5-1-76
F-3	5-1-76
F-6	5-1-76
GR-1	12-6-76
GR-2B	12-6-76
GR-3	12-6-76
GR-4	12-6-76
GE-5	1-1-71
GE-6	1-1-71
GR-4A	7-26-76
HW-4	1-1-70
MH-4	6-12-75
L-1	6-1-73
MH-1	6-12-75
MH-3	6-12-75
MH-2	6-12-75
MH-5	6-12-75
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
MC-10	5-1-76

STANDARD	DRAWINGS
TC-22.20	8-10-77
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-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

STANDARD	DRAWINGS
SD-1-69	6-12-69
BR-1-67	10-15-71
RB-1-35	2-2-59
AS-1-72	6-30-72

HL-1	9-6-73	HL-15	1-21-76
HL-2	7-27-73	HL-22	11-9-77
HL-3	7-27-73	HL-17A	4-6-73
HL-4	1-21-76	HL-17B	4-6-73
HL-5	9-6-73		
HL-6	1-21-76	TC-7.65	10-1-74
HL-7	1-21-76	TC-12.30	10-1-74
HL-8	1-21-76	TC-15.115	10-1-74
HL-9	1-21-76	TC-18.26	10-1-74
HL-10	1-21-76	TC-21.10	10-1-74
HL-11	4-6-73	TC-21.20	4-18-77
HL-12	4-6-73	TC-21.40	8-19-77

"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 Transportation, 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, 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 maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved _____ Thomas M. Krall
Date 5-22-75 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

Approved _____
Date _____ Engineer, Bureau of Bridges and Structural Design

Approved _____ R. E. Gottheim
OK DGG Date 4-14-78 Chief Engineer, Planning and Design

Approved _____ David L. Weir
Date 4-14-78 Director, Department of Transportation

DESIGN DESIGNATION
1969 A.D.T. = 37,500
1987 A.D.T. = 73,200
D.H.V. = 4,800
D. (directional distribution) 67%
T. (percent B&C trucks) 4%
V. (design speed) 60 M.P.H.

NOTE: PROJECT DESIGNATION CUY-80 APPEARING THROUGHOUT THIS PLAN SHALL BE CONSIDERED TO READ CUY-480

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

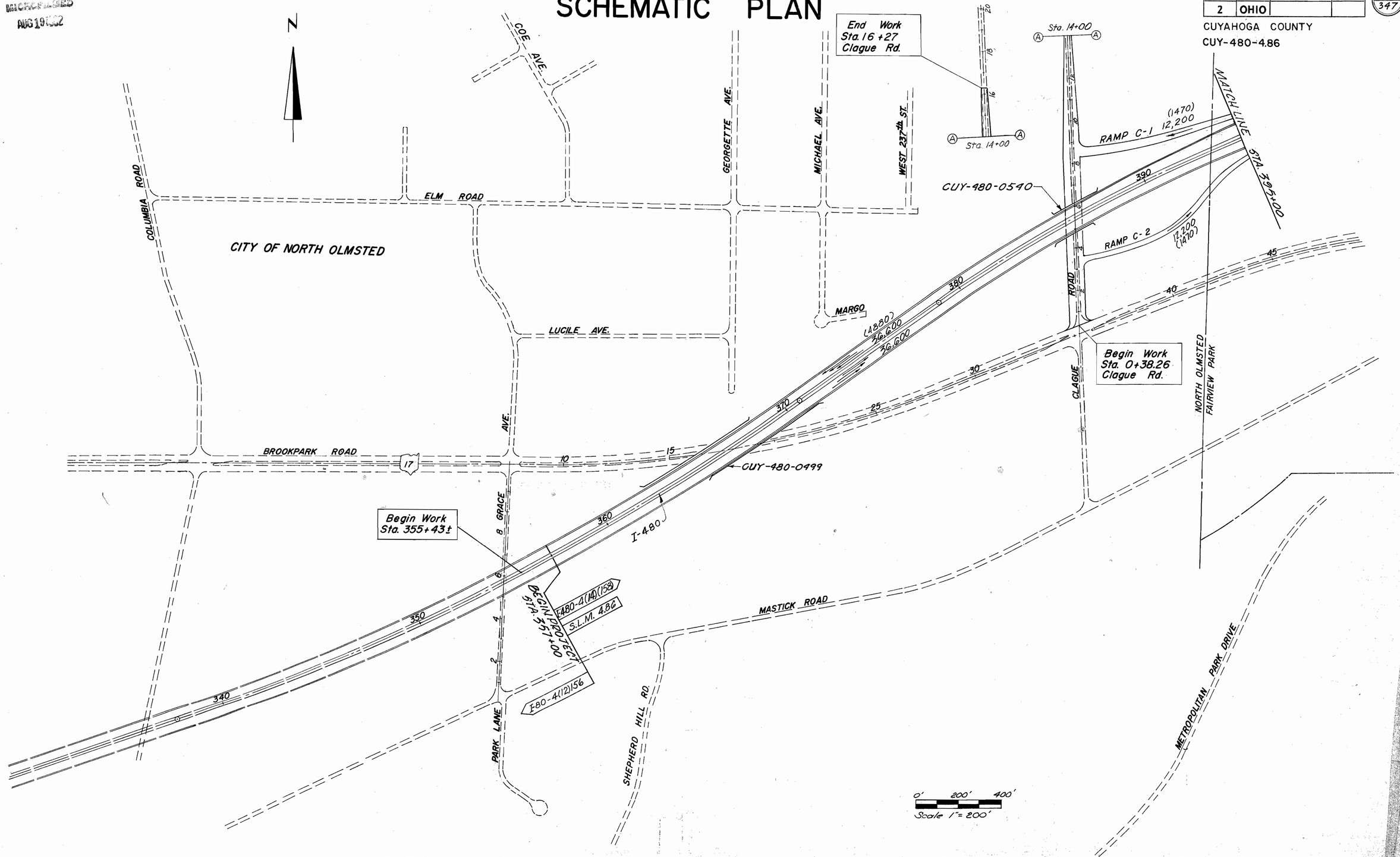
DIVISION ADMINISTRATOR _____ DATE: _____

MICROFILMED
AUG 19 1982

SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

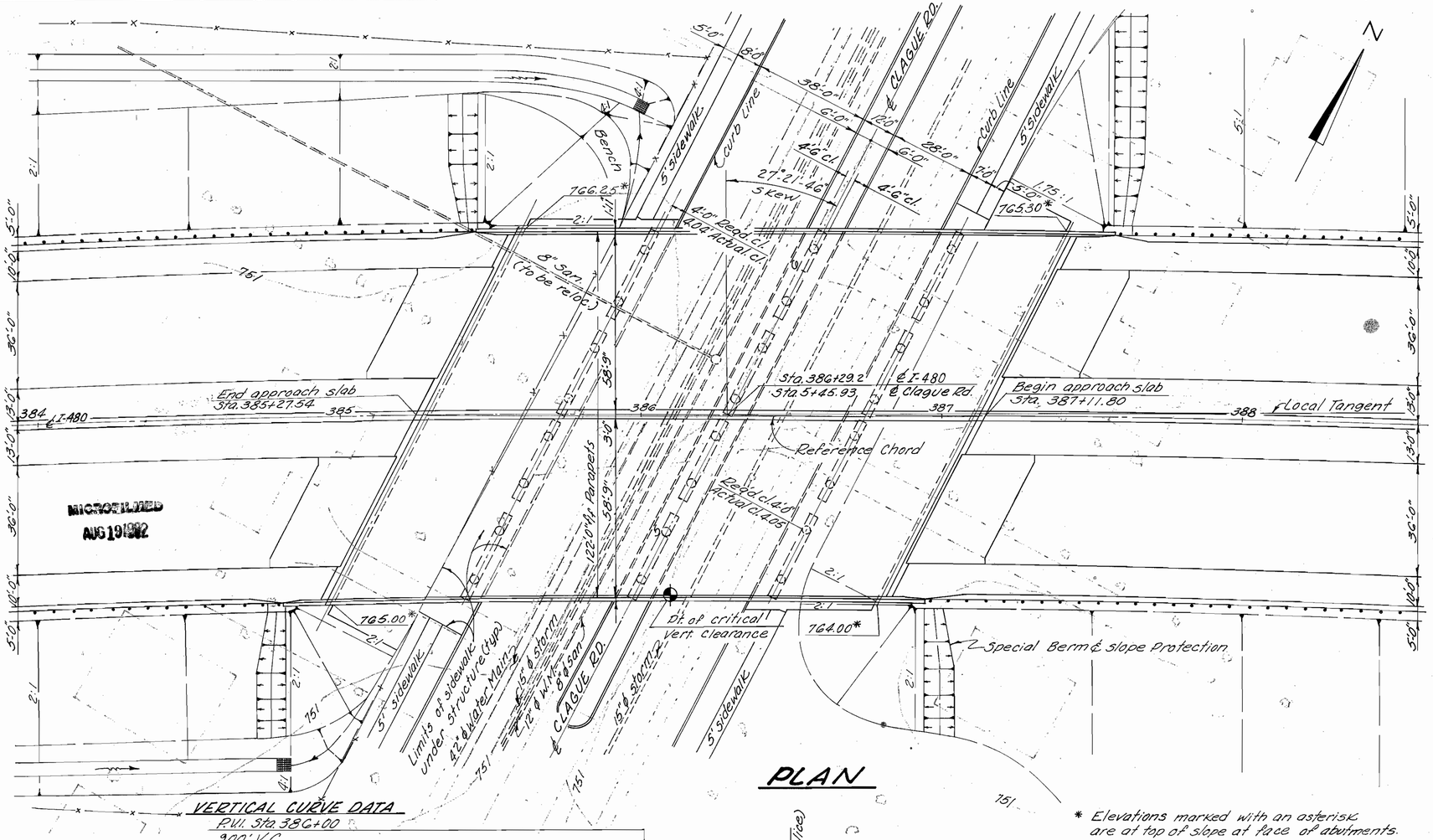
CUYAHOGA COUNTY
CUY-480-4.86



FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

276/347

CUYAHOGA COUNTY
CUY-480-4.86

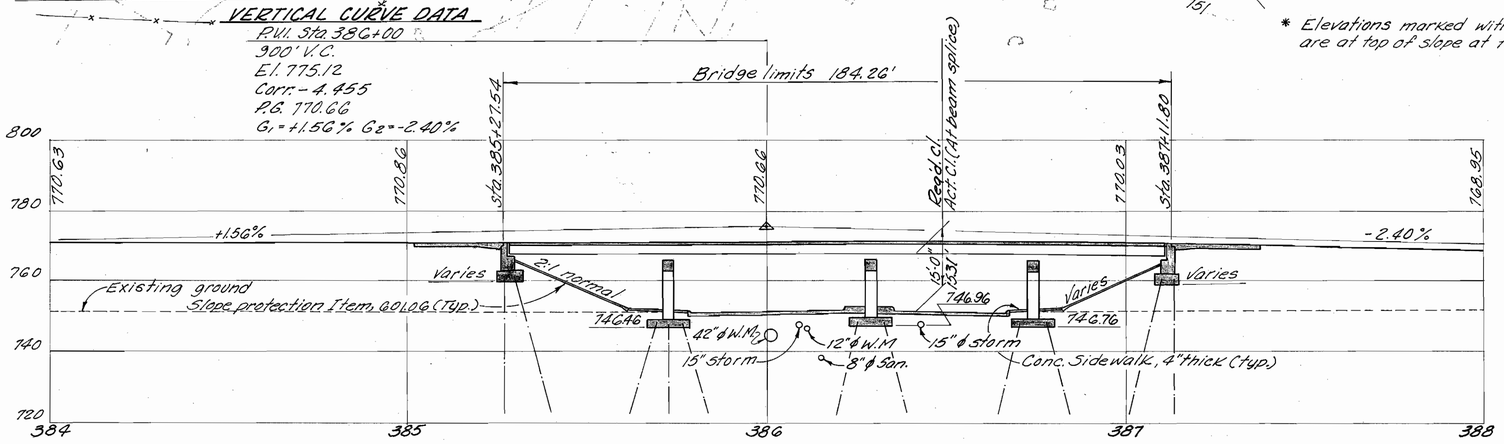


PLAN

* Elevations marked with an asterisk are at top of slope at face of abutments.

VERTICAL CURVE DATA

P.V.I. Sta. 386+00
900' V.C.
El. 775.12
Corr. - 4.455
P.G. 770.66
G_1 = +1.56% G_2 = -2.40%



PROFILE ALONG ℄ I-480

Note: All piles are HP10×42 H-Piles.
Estimated average pay lengths.
Abutments - 39'
Piers - 28'

PROPOSED STRUCTURE

TYPE: Continuous steel beam with reinforced concrete deck and substructure.
SPANS: 42'-9", 55'-9", 44'-6", 35'-6" ℄ brgs. on local tangent.
ROADWAY: 122' f/f concrete parapets, with concrete barrier median.
LOADING: HS 20-44 and Alternate Military Loading
WEARING SURFACE: monolithic concrete.
SKEW: 27°-21'-46" L.F. with Reference Chord
ALIGNMENT: 0°-45'-00" curve right
APPROACH SLAB: AS-1-72 (Modified) (25' long)
SUPERELEVATION: 0.02'/ft.

CURVE DATA

Δ = 40°-36'-40"
Dc = 0°-45'-00"
R = 763.94'
Lc = 541.18'
T = 282.97'
P.I. Sta. 404+72.02 Fwd.
P.I. Sta. 407+10.78 Back

TRAFFIC ESTIMATES

Design Year - 1987
Total A.D.T. = 73,200

NOTES:

Earthwork limits shown are schematic.
Actual slopes shall conform to plan cross-sections.
For drainage details see sheet No. 33

For additional General Notes see sheet 231A/347

1/16

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

SITE PLAN

BRIDGE No. CUY-480-0540
I 480-OVER CLAGUE ROAD
CUYAHOGA COUNTY STA. 385+27.54 STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		G.W.M.	G.W.M.	6/13/68	

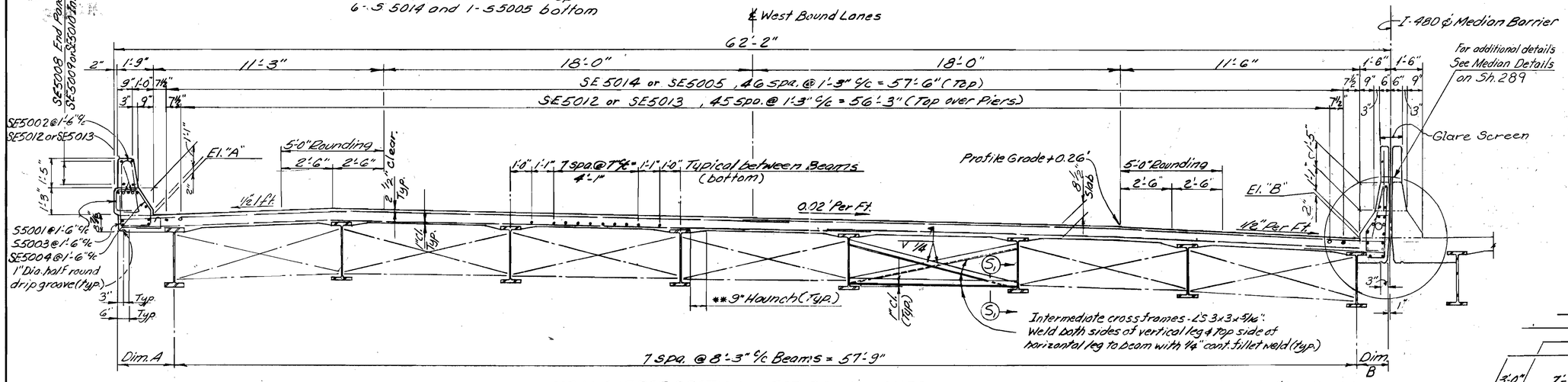
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

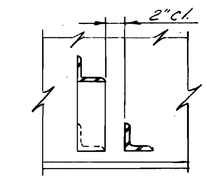
288
347

MICROFILMED
AUG 20 1982

NOTE: Each longitudinal run of deck reinforcing, excluding SE5012 & SE5013 bars over the piers shall be as follows:
6-SE 5014 and 1-SE 5005 top
6-S 5014 and 1-S5005 bottom



TRANSVERSE SECTION - WEST BOUND LANES



SECTION S1-S1

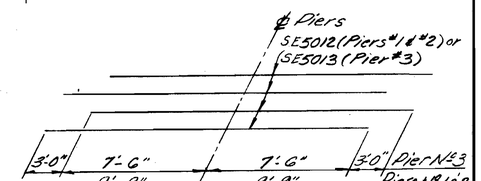
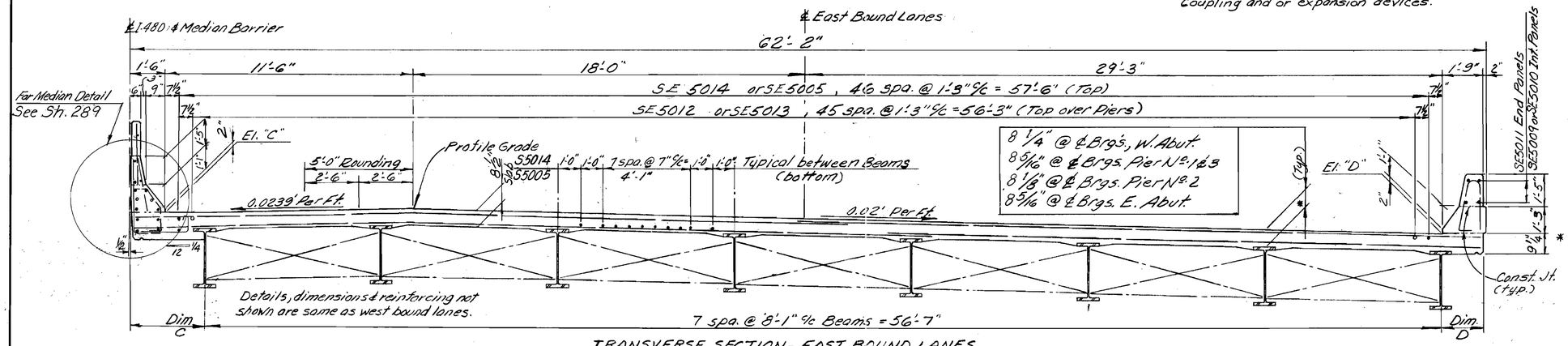


DIAGRAM SHOWING STAGGER OF SE5012, & SE5013 BARS OVER PIERS

Note: The first and last 1'-6" length of the superstructure median lighting raceway shall be increased to 6" ℄ to accomodate coupling and or expansion devices.



TRANSVERSE SECTION - EAST BOUND LANES

NOTES:

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

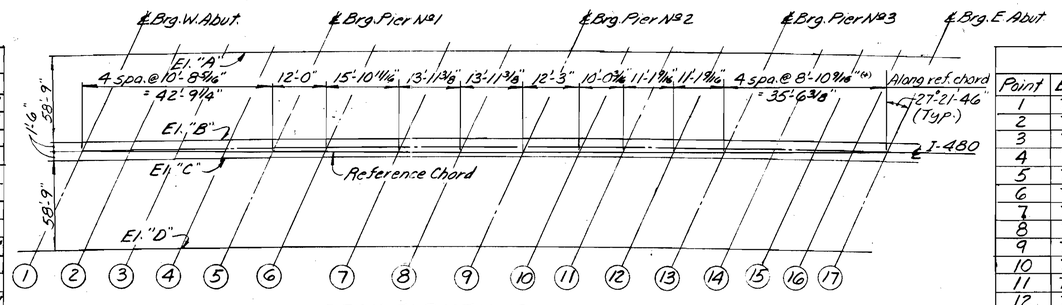
* * A typical haunch width of 9" shall be used for all beams in computing quantity of concrete. However the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less then 9" in width.

Field bend transverse bars to fit crown

For transverse slab reinforcing see Sht. 14/16

Epoxy coated bars damaged by field bending shall be repaired as per approved manufacturer's recommendations.

TABLE OF SLAB CANTILEVERS				
LOCATION	DIM. A	DIM. B	DIM. C	DIM. D
℄ Brg. W. Abut	2'-9 3/16"	1'-8 3/8"	2'-11"	2'-10 3/16"
1/4 Point Span 1	2'-10 1/4"	1'-7 1/4"	3'-0 1/2"	2'-8 1/2"
1/2 Point " "	2'-11"	1'-6"	3'-1 3/4"	2'-6 3/4"
3/4 Point " "	2'-11 1/2"	1'-5"	3'-2 3/4"	2'-5 1/8"
℄ Brg. Pier No. 1	2'-11 7/8"	1'-4 1/8"	3'-3 1/4"	2'-3 3/4"
Splice Point No. 1	3'-0"	1'-3 3/8"	3'-4 1/2	2'-2 3/8"
1/2 Point Span 2	2'-11 7/8"	1'-2 3/4"	3'-5 1/4"	2'-0 7/8"
3/4 Point " "	2'-11 1/8"	1'-2 1/2"	3'-5 1/2"	2'-0"
℄ Brg. Pier No. 2	2'-10 3/4"	1'-2 5/8"	3'-5 1/2"	1'-11 3/8"
Splice Point No. 2	2'-9 3/8"	1'-2 7/8	3'-5 1/4"	1'-11"
1/2 Point Span 3	2'-9"	1'-3 1/4"	3'-4 3/4"	1'-11"
3/4 Point " "	2'-7 3/4"	1'-4"	3'-4 1/8"	1'-11 1/8"
℄ Brg. Pier No. 3	2'-6 1/2"	1'-4 7/8"	3'-3 3/8"	1'-11 3/8"
1/4 Point Span 4	2'-5 1/8"	1'-5 5/8"	3'-2 5/8"	1'-11 3/4"
1/2 Point " "	2'-3 7/8"	1'-6 5/8"	3'-1 5/8"	2'-0 1/4"
3/4 Point " "	2'-2 3/4"	1'-7 5/8"	3'-0 5/8"	2'-0 7/8"
℄ Brg. E. Abut.	2'-0 3/4"	1'-8 7/8"	2'-11 1/2"	2'-1 3/4"



DECK ELEVATIONS

NOTE: The deck elevations shown are those which are required prior to placing of the concrete deck. Proper allowance has been made for the dead load deflection caused by the weight of the concrete.

DECK ELEVATIONS				
Point	El. "A"	El. "B"	El. "C"	El. "D"
1	771.46	770.68	770.69	769.92
2	771.44	770.68	770.68	769.93
3	771.40	770.66	770.66	769.92
4	771.36	770.63	770.63	769.91
5	771.31	770.60	770.60	769.89
6	771.27	770.57	770.57	769.88
7	771.20	770.52	770.52	769.84
8	771.11	770.45	770.45	769.79
9	771.00	770.37	770.37	769.73
10	770.92	770.29	770.30	769.68
11	770.85	770.23	770.24	769.63
12	770.75	770.15	770.17	769.57
13	770.66	770.07	770.08	769.50
14	770.58	770.00	770.02	769.45
15	770.51	769.93	769.95	769.39
16	770.42	769.86	769.88	769.33
17	770.32	769.77	769.79	769.25

ALDEN E. STILSON & ASSOCIATES, LIMITED 13/16
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-480-0540

I-480 OVER CLAGUE ROAD

CUYAHOGA COUNTY STA. 385+27.54 STA. 387+11.80

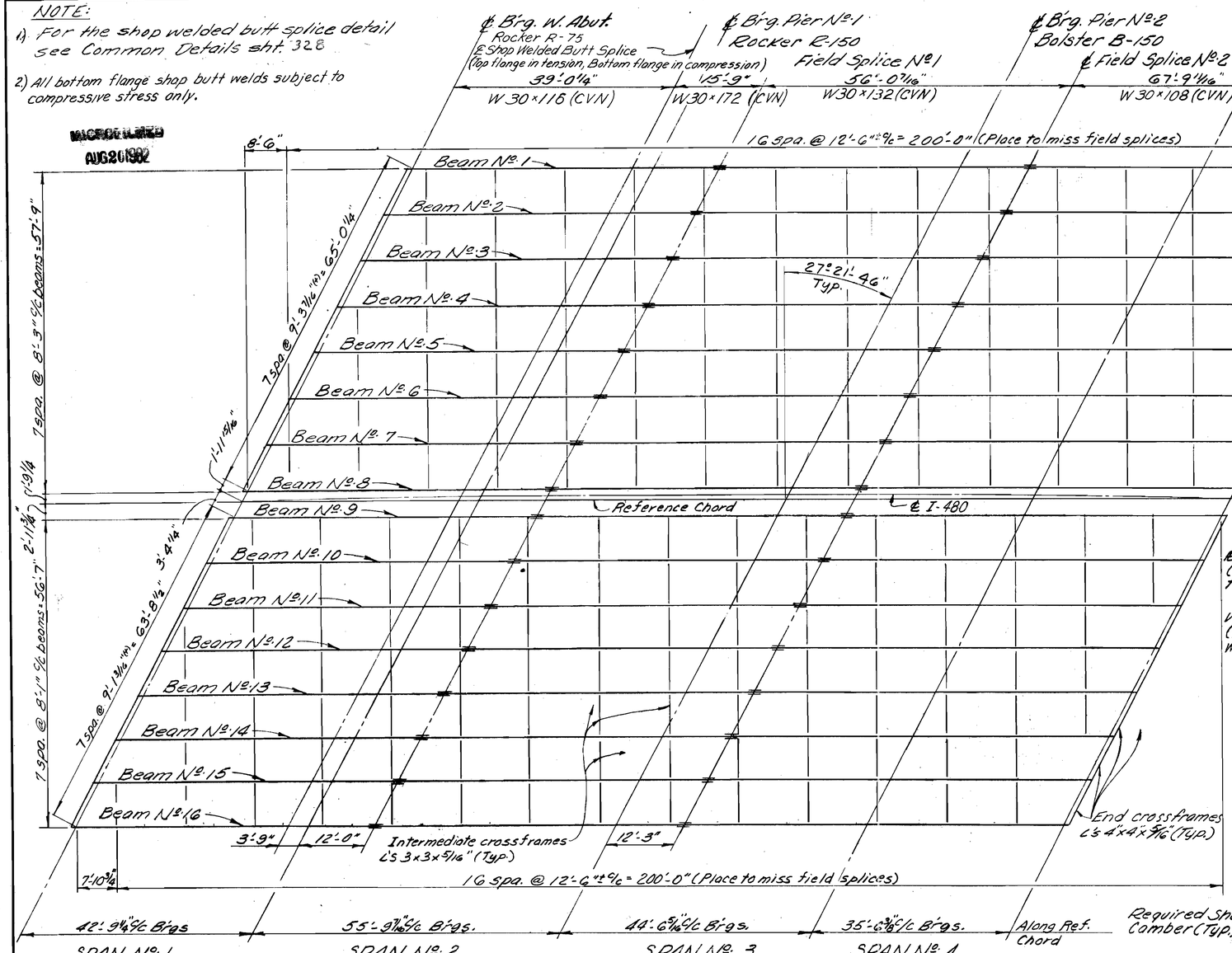
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.W.M.	6/13/68	

NOTE:

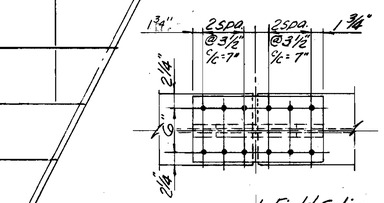
1) For the shop welded butt splice detail see Common Details sht. 328

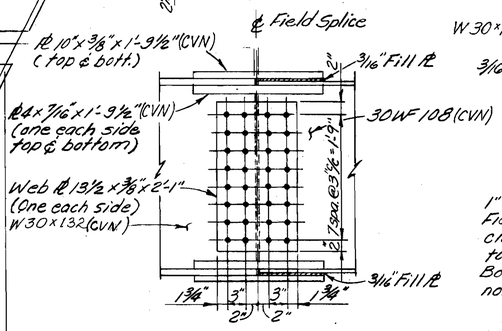
2) All bottom flange shop butt welds subject to compressive stress only.

MICROFILMED
AUG 20 1982

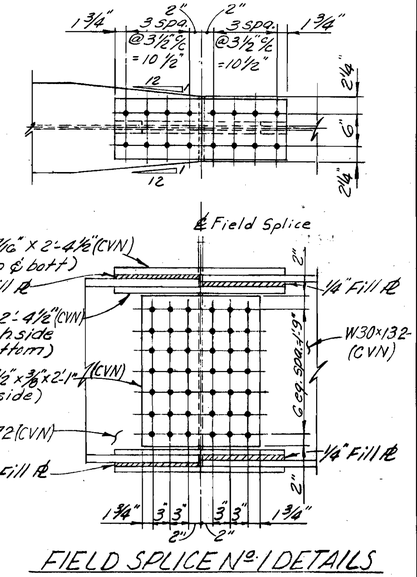


FRAMING PLAN





FIELD SPLICE No. 2 DETAILS

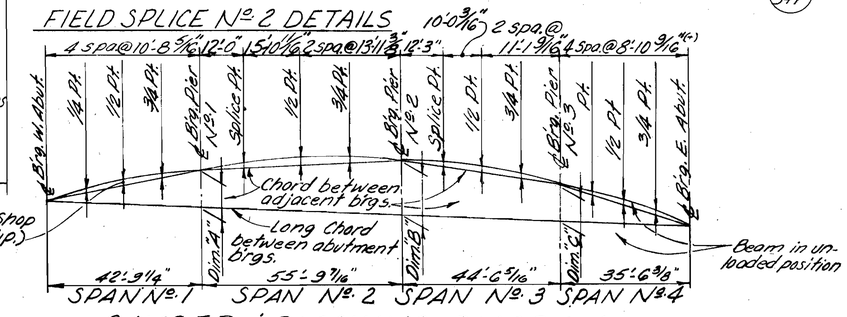


FIELD SPLICE No. 1 DETAILS

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 conform to A-325 steel. For details & notes not shown see Std. Dwg. SD-1-63, sheet #4.

For additional notes see sheet 23A/347



CAMBER & BLOCKING DIAGRAM

DEFLECTION AND CAMBER

BEAM	SPAN No. 1						SPAN No. 2												SPAN No. 3						SPAN No. 4					
	ALL BEAMS EXCEPT No. 8			No. 8			ALL BEAMS EXCEPT No. 3 & 16			No. 9			No. 16			No. 1			No. 2 THRU No. 16			No. 1, 9 & 16			ALL BEAMS EXCEPT No. 1, 9 & 16		
LOCATION	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	Sp. Pt.	1/2 Pt.	3/4 Pt.	Sp. Pt.	1/2 Pt.	3/4 Pt.	Sp. Pt.	1/2 Pt.	3/4 Pt.	Sp. Pt.	1/2 Pt.	3/4 Pt.	Sp. Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.
Deflection due to weight of steel	0	0	0	0	0	0	0	1/16	1/16	0	1/16	1/16	0	1/16	1/16	0	0	0	0	0	0	0	0	0	0	0	0
Deflection due to remaining dead load	1/8	1/8	1/16	1/8	1/8	1/16	1/8	1/4	3/16	1/8	1/4	3/16	1/8	3/16	1/8	0	1/16	0	0	1/16	0	1/16	1/16	1/16	1/16	1/8	1/16
Adjustment due to Vertical Curve	1/16	1/8	1/16	1/16	1/16	1/16	1/8	3/16	1/8	1/8	1/4	3/16	1/8	3/16	1/8	1/8	1/8	1/16	1/8	1/8	1/8	1/16	1/16	1/16	1/16	1/16	1/16
Required Shop Camber	3/16	1/4	1/8	3/16	3/16	1/8	1/4	1/2	3/8	1/4	9/16	7/16	1/4	7/16	5/16	1/8	3/16	1/16	1/8	3/16	1/8	1/8	1/8	1/8	1/8	3/16	1/8

BLOCKING DIMENSIONS

Beam No.	Dim. "A"	Dim. "B"	Dim. "C"
3 thru 6	1 7/16"	1 15/16"	1 1/4"
7	1 9/16"	1 13/16"	1 3/16"
8	1 3/8"	1 15/16"	1 3/16"
9	1 5/8"	2 1/4"	1 7/16"
10 & 11	1 7/16"	1 15/16"	1 1/4"
12 thru 16	1 7/16"	2"	1 1/4"
1	1 11/16"	2 5/16"	1 1/2"
2	1 7/16"	2"	1 5/16"

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

290/347

CUYAHOGA COUNTY
CUY-480-4.86

ALDEN E. STILSON & ASSOCIATES, LIMITED 15/16
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS
BRIDGE No CUY-480-0540
I-480 OVER CLAGUE ROAD
CUYAHOGA COUNTY STA. 385+27.54
STA 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.W.M.	6/13/62	