01-1

MICROFILMED JUL 5 1978
MICROFILMED AUG 3 1978

CUYAHOGA COUNTY CUY-480-8.54	OHIO	1 / 346
I-480-4(35)162	FHWA REGION 5 / FEDERAL PROJECT	

I-480-4(35)162

ISSUE 1

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-480-8.54

CUYAHOGA COUNTY

CITY OF CLEVELAND & CITY OF BROOKPARK

GRADE SEPARATION WITH THE CONSOLIDATED RAIL CORPORATION

DESIGN DESIGNATION

1978 ADT	=	62,000
1998 ADT	=	82,716
DHV	=	4,950
D	=	67%
T	=	4%
V	=	60MPH

CONVENTIONAL SIGNS

Proposed Sewer
Temporary R/W — T
Work Agreement Line
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
Corporation Line
Fence Line (existing) — (proposed)
Center Line — 352 — 353
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light.

Existing Sewer
Existing Manhole
Proposed Manhole
Existing Catch Basin
Proposed Catch Basin
Manhole Abandoned
Catch Basin Abandoned
Existing Retaining Wall
Limited Access (only) — LA
Right of Way (only) — RW
Limited Access & Right of Way — LA & RW
Existing Right of Way
Property Line — (in existing fence)
Railroad — or
Guardrail (existing) — (proposed)

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SHEETS ADDED TO PLAN

NOS. 41A, 41B, 56A, 66A, 66B, 67A, 67B, 298A, 298B, 328A, 328B, 328C, 328D, 203A, 217A, 217B, 217C, 67C, 67D, 10A

SHEETS DELETED FROM PLAN

NOS. 28, 163, 180 thru 200, 205, 216, 218, 329, 330

LINE DATA

BEGIN PROJECT	STA. 476+00.00
END PROJECT	STA. 573+50.00

PROJECT LENGTH = 9,750.00 LIN. FT. OR 1.846 MILES

ADDITIONAL WORK

I-480 ~ Sta. 573+50 to Sta. 575+09	=	159 Lin. Ft.
N.B. I-71 Signs ~ 4 @ 25 ft. ea.	=	100 Lin. Ft.
S.B. I-71 Signs ~ 3 @ 25 ft. ea.	=	75 Lin. Ft.
Access Rd. C Sta. 0+27 to Sta. 9+00	=	873 Lin. Ft.
Brookpark Road Sta. 161+00 to Sta. 173+25	=	1,225 Lin. Ft.
Sta. 175+75 (Sign)	=	25 Lin. Ft.

TOTAL ADDITIONAL WORK = 2,457 Lin. Ft.

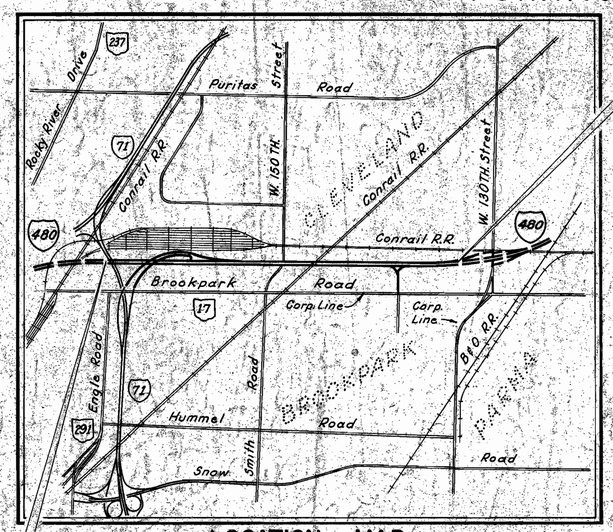
TOTAL LENGTH OF WORK = 12,207 LIN. FT. OR 2.311 MILES

00383

Project: CUYAHOGA COUNTY CUY-480-8.54
Date of Letting _____ 19__, Contract No. _____

LD0300 Rev. 9-3-75

BRUNING 44-560 29724



LOCATION MAP

SCALE IN MILES 0 ½ 1

BEGIN PROJECT
STA. 476+00.00
S.L.M. = 8.54

SCALES

Plan 0 50 100
Profile: Horizontal 0 50 100, Vertical 0 10 or 20 20 or 40
Cross Section: Horizontal 0 10 20, Vertical 0 10 20

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 _____ Director of Public Service, City of Cleveland
Date 10/20/77

Approved _____ District Deputy of Transportation
Date 10-20-77

Approved _____ Engineer, Bureau of Bridges and Structural Design
Date 11-9-77

Approved _____ Chief Engineer, Planning and Design
Date 2-15-78

Approved _____ Director, Department of Transportation.
Date 2-15-78

NOTE: All references to former Penn Central Transportation Co. appearing throughout this plan shall be considered to pertain to the Consolidated Rail Corporation.

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

SUPPLEMENTAL SPECIFICATIONS			
801	4-25-77		
808	1-1-71	021	12-4-72
		048	2-19-74
836	3-12-75	950	4-25-77
838	1-13-77	951	4-25-77
839	11-25-70		
842	8-29-74	1001	1-3-77
843	10-23-75		
844	11-8-74		
846	4-25-77		
		3625	1-11-74
850	6-27-77	3713	1-11-74

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS															
BP-1	6-1-65			GR-5	1-1-71	MC-6	6-1-65	HL-1	9-6-73	HL-16	4-6-73	TC-31.21	8-27-76		
BP-2	12-6-76	F-1	5-1-76	GR-6	1-1-71	MC-7	10-15-76	HL-2	7-27-73	HL-22	11-9-77	TC-32.10	8-27-76	TC-61.10	8-19-77
BP-3	12-6-76	F-3	5-1-76			MC-9	11-1-77	HL-3	7-27-73			TC-32.11	8-27-76	TC-71.10	12-1-75
BP-4	12-6-76			HW-1	6-1-65	MH-1	6-12-75	HL-4	1-21-76			TC-41.10	8-19-77		
BP-5	8-11-75	F-5	5-1-76	HW-3	6-1-65	MC-10	5-1-76	HL-5	9-6-73			TC-41.20	4-1-77	TC-81.10	4-18-77
BP-6	6-1-65	F-6	5-1-76	HW-4	1-1-70	MH-3	6-12-75	HL-6	3-22-77			TC-41.50	4-1-77	TC-83.10	9-5-75
BP-7	12-6-76	F-7	11-1-77			MH-5	6-12-75	HL-7	1-21-76	TC-7.65	10-1-74	TC-42.10	8-19-77	TC-83.20	9-5-75
BP-9	12-6-76	GR-1	12-6-76	I-2A	6-6-69			HL-8	1-21-76	TC-12.30	10-1-74	TC-42.20	4-1-77	TC-84.20	9-5-75
BP-10	1-3-75	GR-2B	12-6-76			AS-1-72	6-30-72	HL-9	3-22-77	TC-21.10	10-1-74			TC-85.10	9-5-75
BP-11	1-3-75	GR-3	12-6-76	L-1	6-1-73	BR-1-67	10-15-71	HL-10	1-21-76	TC-21.20	4-18-77	TC-51.10	6-2-75	TC-85.20	9-5-75
CB-3A	1-1-76	GR-3A	12-6-76	MC-1	6-13-69	RB-1-55	2-2-59	HL-11	4-6-73	TC-21.40	8-19-77	TC-51.11	6-2-75	TC-82.10	9-5-75
CB-5	9-1-69	GR-4	12-6-76	MC-3	6-1-73	SD-1-69	6-12-69	HL-12	4-6-73	TC-22.20	8-19-77	TC-52.10	4-1-77		
CB-6	6-1-65	GR-4A	7-26-76	MC-4	7-26-76			HL-15	1-21-76			TC-52.20	4-1-77		

Rev. 7-5-78

Rev. 4-12-78

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. 6-22-78

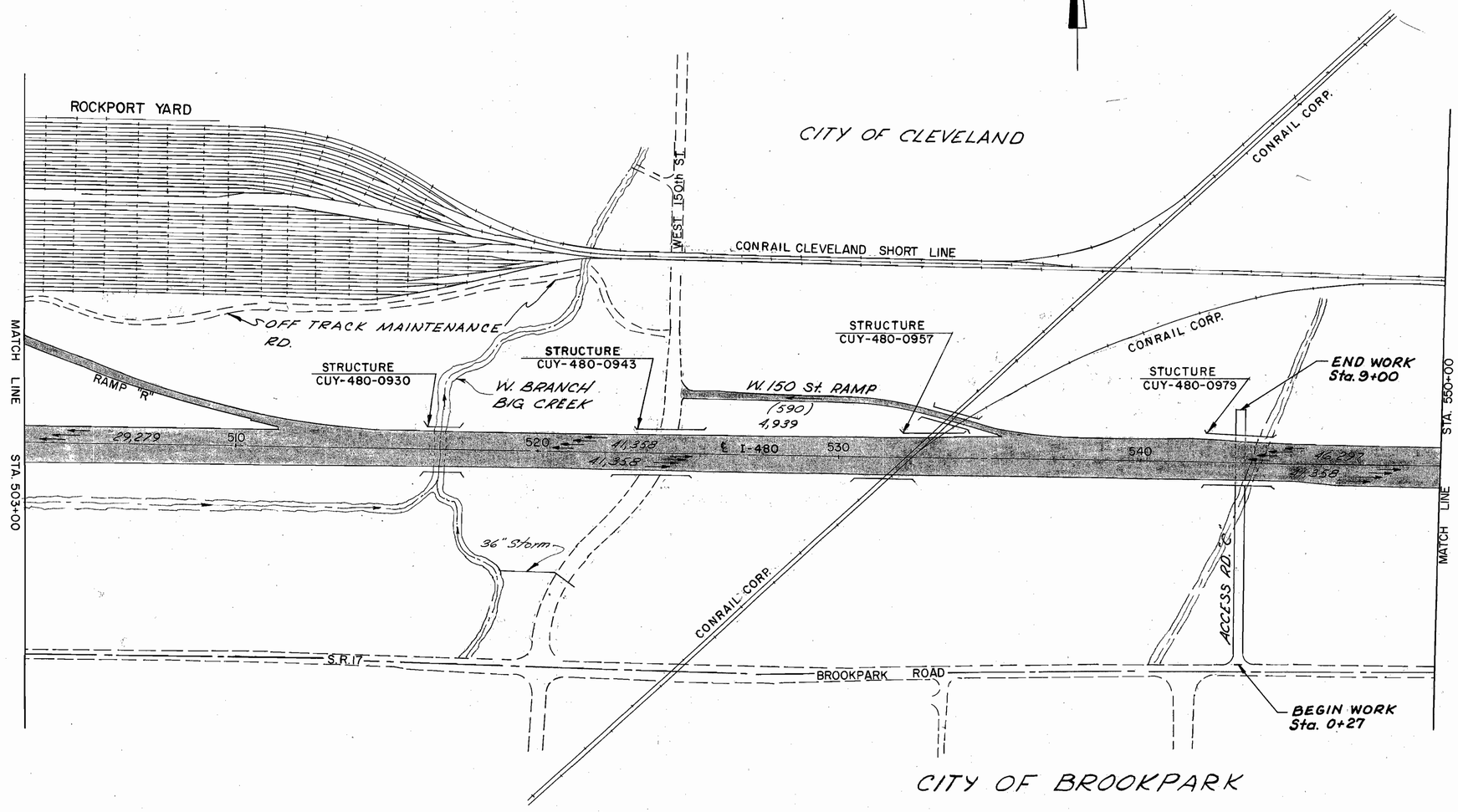
MICROFILMED
AUG 8 1002

SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

3/346

CUYAHOGA COUNTY
CUY-480-8.54



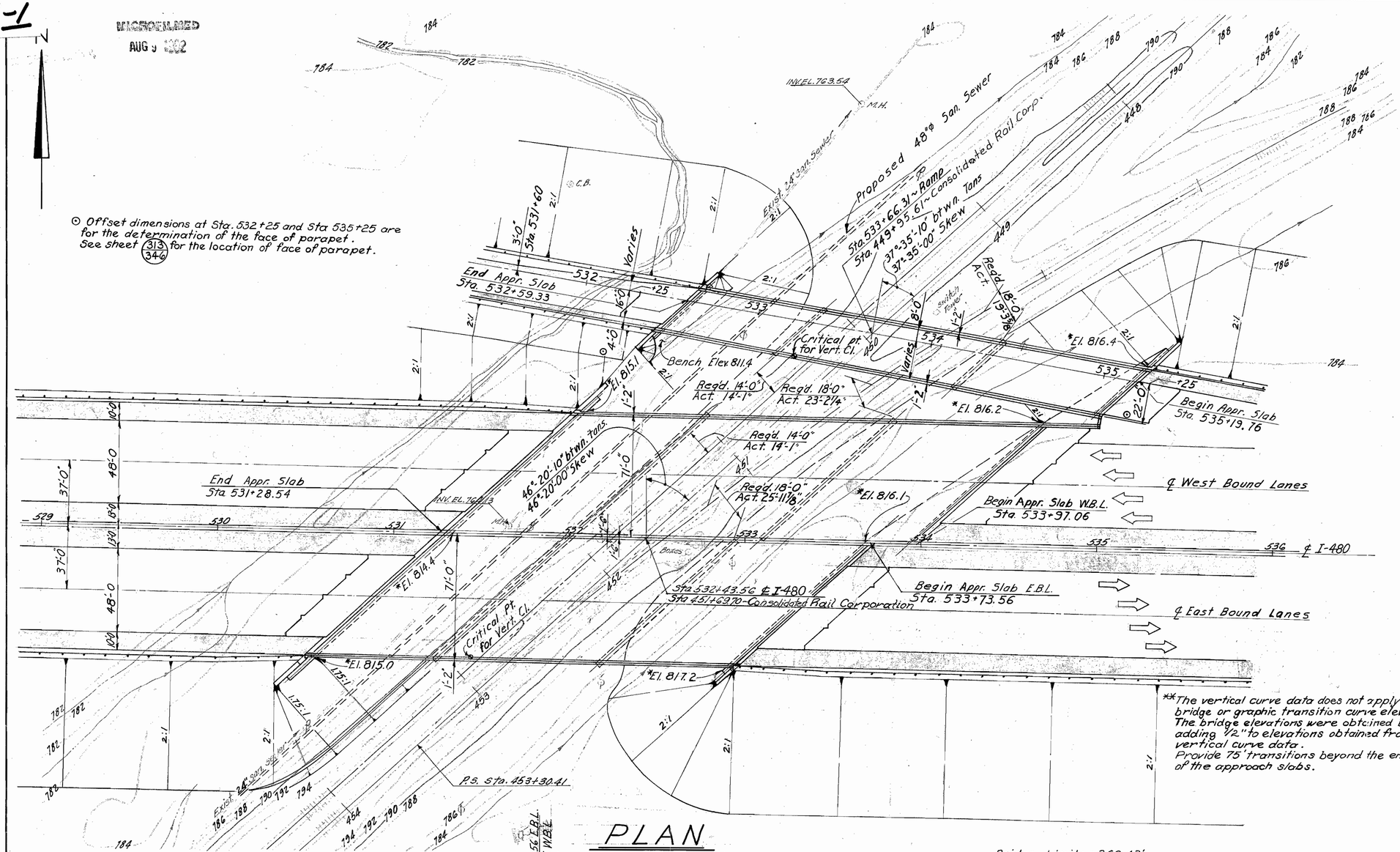
11-1

MICROFILMED
AUG 9 1982

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

280/346

CUYAHOGA COUNTY
CUY-480-8.54



PLAN

PROPOSED STRUCTURE ~ RAMP

Type: Continuous steel plate girder with reinforced concrete deck and superstructure.
Spans: 67'-9" ~ 104'-0" ~ 83'-0" ℄ brgs.
Roadway: Variable f/f concrete parapets

Loading: CF-2000 (1957) adequate for AASHO alternate loading.
SURFACE COURSE Monolithic Concrete
Skew: 37° 35'-00" Left Forward
Alignment: Tangent
Approach Slabs: AS-1-72 (25'-0" long) Modified

PROPOSED STRUCTURE ~ I-480

Type: Continuous steel plate girder with reinforced concrete deck and substructure.
Spans: W.B.L.: 70'-0" ~ 107'-0" ~ 85'-0" ℄ brgs.
E.B.L.: 70'-0" ~ 94'-0 ~ 74'-6" ℄ brgs.
Roadway: 142'-0" f/f concrete parapets with concrete median barrier
Loading: CF-2000 (1957) Adequate for AASHO alternate loading.
SURFACE COURSE Monolithic Concrete
Skew: 46°-20'-00" Left Forward.
Alignment: Tangent
Approach Slabs: AS-1-72 (25'-0" long) Modified

NOTES:

All piles shall be HP10X42 steel piles.
Estimated average pay lengths are:

West Abutments	-47'
Piers #1	-30'
Piers #2	-20'
East Abutments	-47'

EARTHWORK LIMITS shown are schematic. Actual slopes shall conform to plan cross-sections.

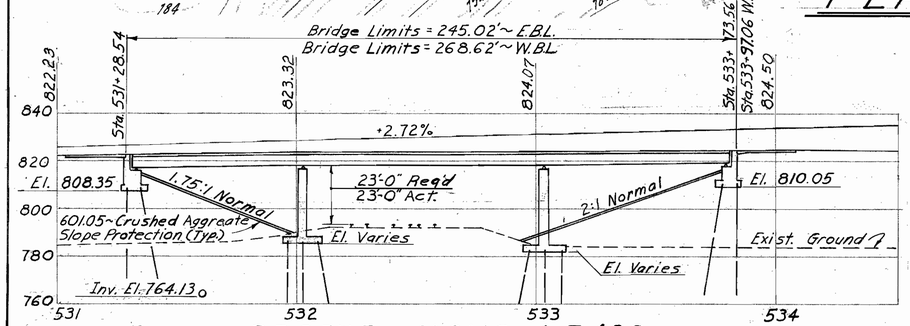
* Elevations marked with an asterisk are at top of embankment slope at face of abutment.

** The vertical curve data does not apply to bridge or graphic transition curve elevations. The bridge elevations were obtained by adding 1/2" to elevations obtained from vertical curve data. Provide 75' transitions beyond the ends of the approach slabs.

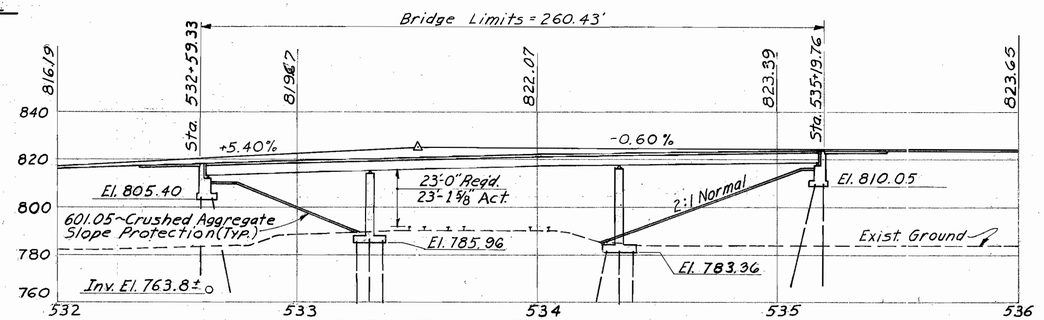
V.C. DATA - RAMP	** V.C. DATA - I-480
PVI - Sta. 533+50.00	PVI - Sta. 534+50.00
Elev - 825.20	Elev. - 835.03
V.C. = 560'	V.C. = 1600'
g_1 = +5.40%; g_2 = -0.60%	g_1 = +2.72%; g_2 = -2.52%
P.G. = 821.00	P.G. = 824.55
Corr. = -4.20'	Corr. = -10.48'

TRAFFIC ESTIMATE

Design Year	1987	
Total A.D.T.	87,655	I-480
Total A.D.T.	4,939	Ramp



PROFILE ALONG ℄ I-480



PROFILE ALONG ℄ RAMP

0 30 60
Scale in Feet

1/26

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

SITE PLAN

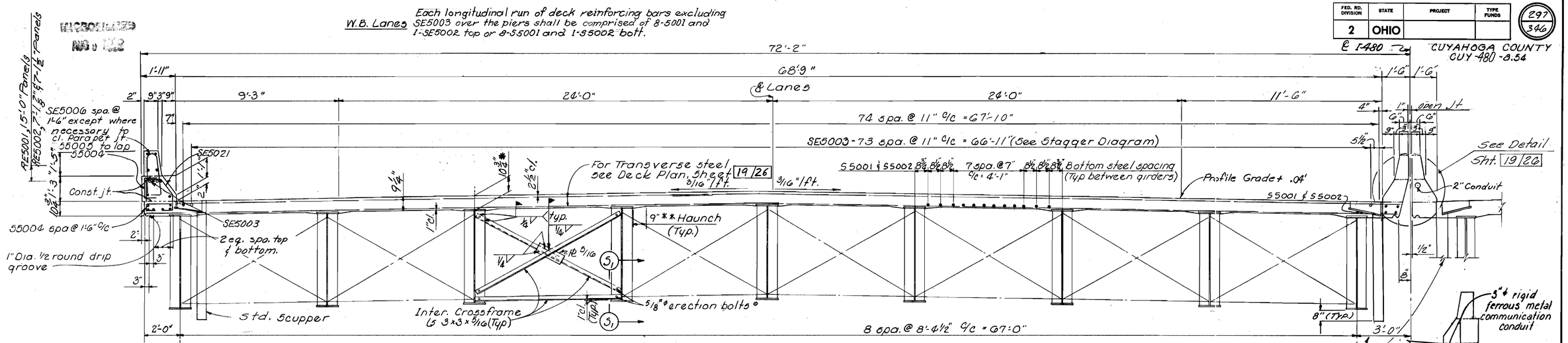
BRIDGE-RAMP OVER CONSOLID. RAIL CORP.
BRIDGE № CUY-480-0957
I-480 OVER CONSOLIDATED RAIL CORP.
CUYAHOGA COUNTY STA. 531+28.54 STA. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
ANA	ANA		pwd	G.W.M.	6/3/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

297 / 346

CUYAHOGA COUNTY
CUY-480-8.54



TRANSVERSE SECTION ~ WEST BOUND LANES

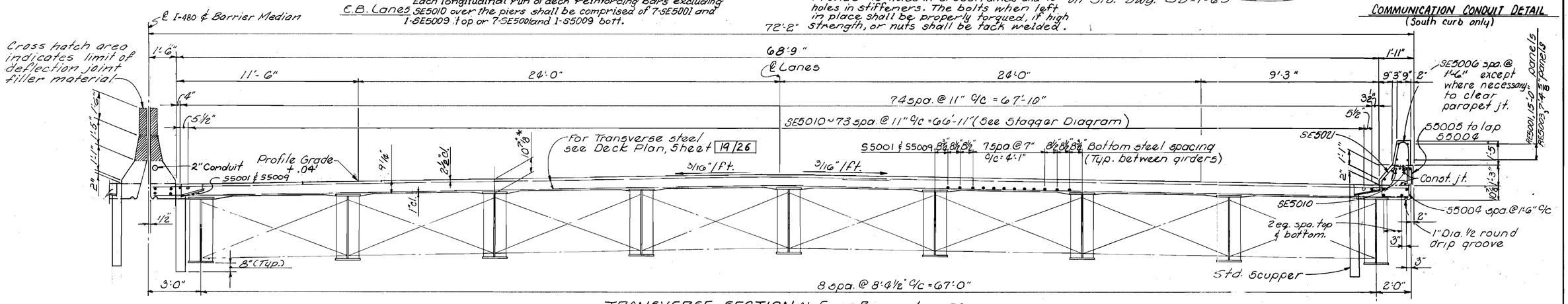
(End Posts not shown)

• Provide 11/16" holes in crossframes and 13/16" holes in stiffeners. The bolts when left in place shall be properly torqued, if high strength, or nuts shall be tack welded.

Std. Scupper, Note that location of face of curb and slope of top of scupper is opposite to that shown on Std. Dwg. SD-1-69

COMMUNICATION CONDUIT DETAIL

(South curb only)



TRANSVERSE SECTION ~ EAST BOUND LANES

Details not shown same as West Bound Lanes.

NOTES

* This is the design dimension. The quantity of deck concrete to be paid for shall be based upon this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.19 of the Construction and Material Specifications.

** 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.

9 1/4" Slab thickness

Transverse bars shall be field bent to fit roadway crown. Cost is included with Item 509.

Lap SE5001, SE5002 & SE5009 bars 1'-7" min.
Lap S5001, S5002 & S5009 bars 1'-7" min.

For additional notes and details see Sheets 19/26 thru 23/26.

Lighting conduits shall be placed 1" min. clear above the construction joint at the top of the slab.

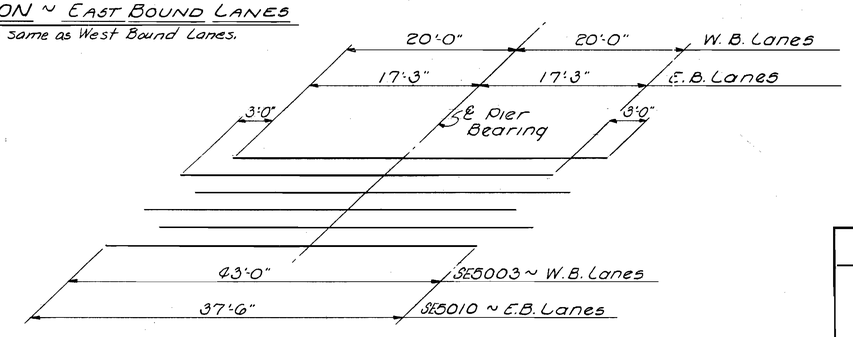
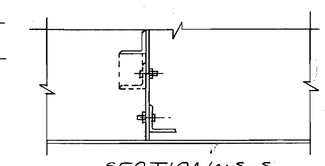


DIAGRAM SHOWING STAGGER of SE5003 and SE5010 BARS OVER PIERS



SECTION ~ S1-S1

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

18/26

TRANSVERSE SECTION
BRIDGE No. CUY-480-0957
FABO OVER CONSOLIDATED RAIL CORP.

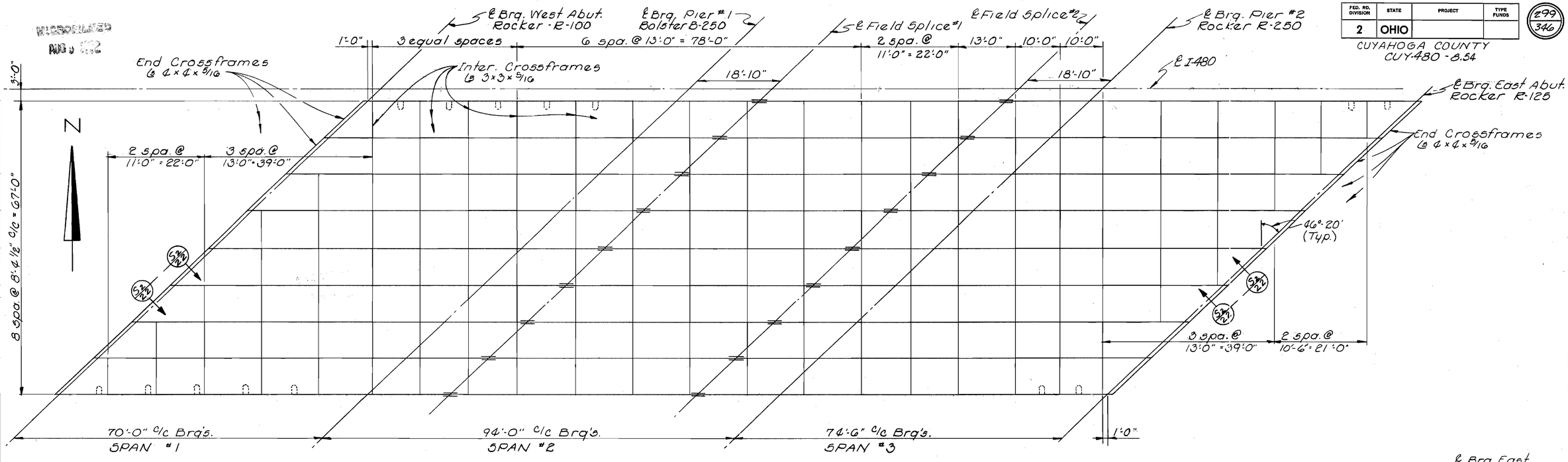
CUYAHOGA COUNTY Sta. 531+28.54 Sta. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	JEK		fwd	G.W.M.	6/13/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480 - 8.54

299
346

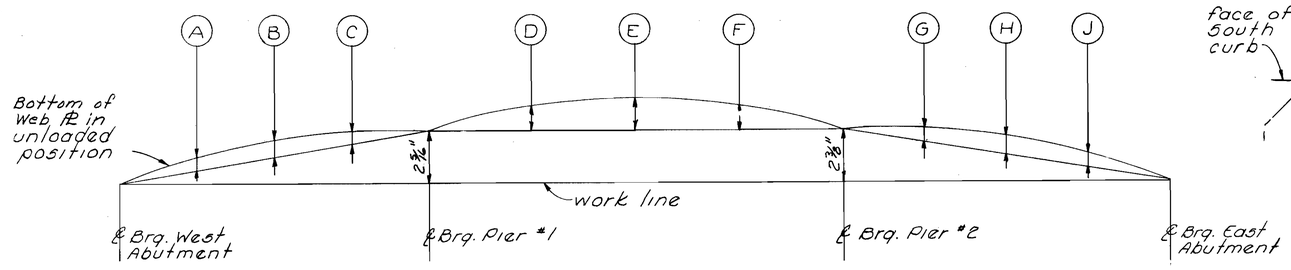


FRAMING PLAN ~ E.B. Lanes

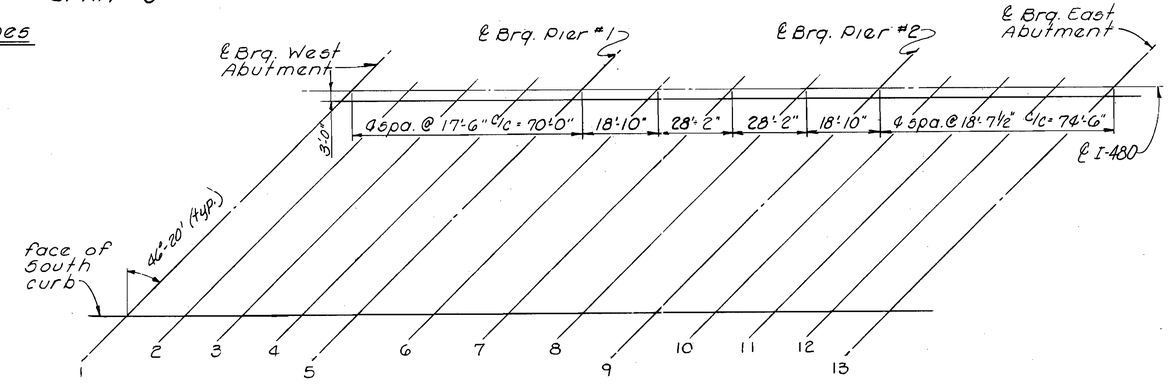
NOTES

Screed elevations shown are at the top of the reinforced concrete deck and at the face of curb and 3' South of ℄ and are those elevations which are required before the concrete deck is placed. Proper allowance has been made for the Dead Load deflections due to the weight of the concrete.

For additional notes and details see Sheets 18/26, 19/26 and 22/26



CAMBER and BLOCKING DIAGRAM ~ E.B. Lanes



PLAN of SCREEDS ~ E.B. Lanes

*SCREED ELEVATIONS	1	2	3	4	5	6	7	8	9	10	11	12	13
3'-0" South of ℄ I-480	822.42	822.64	822.83	822.49	823.15	823.34	823.59	823.77	823.87	824.00	824.12	824.20	824.24
face of South curb	821.55	821.81	822.04	822.24	822.44	822.66	822.98	823.23	823.38	823.54	823.70	823.82	823.91

* Screed elevations are given at the top of the reinforced concrete slab.

DEFLECTION and CAMBER ~ E.B. GIRDERS

	SPAN #1									SPAN #2									SPAN #3								
	MEDIAN			INTERIOR			EXTERIOR			MEDIAN			INTERIOR			EXTERIOR			MEDIAN			INTERIOR			EXTERIOR		
	1/4 pt. A	1/2 pt. B	3/4 pt. C	1/4 pt. A	1/2 pt. B	3/4 pt. C	1/4 pt. A	1/2 pt. B	3/4 pt. C	Splice D	1/2 pt. E	Splice F	Splice D	1/2 pt. E	Splice F	Splice D	1/2 pt. E	Splice F	1/4 pt. G	1/2 pt. H	3/4 pt. J	1/4 pt. G	1/2 pt. H	3/4 pt. J	1/4 pt. G	1/2 pt. H	3/4 pt. J
Defl. due to wt. of steel	1/16	1/16	0	1/16	1/16	0	1/16	1/16	0	1/16	1/8	1/16	1/16	1/8	1/16	1/16	1/8	1/16	0	1/16	1/16	0	1/16	1/16	0	1/16	1/16
Defl. due to remaining D.L.	5/16	5/16	1/8	1/4	5/16	1/8	1/4	5/16	1/8	1/4	9/16	7/16	9/16	1/2	7/16	9/16	1/2	7/16	3/16	7/16	3/8	3/16	3/8	5/16	1/8	3/8	5/16
Convex. req'd. for vert. curve	3/16	1/4	3/16	3/16	1/4	3/16	3/16	1/4	3/16	1/4	7/16	1/4	1/4	7/16	1/4	1/4	7/16	1/4	3/16	1/4	3/16	3/16	1/4	3/16	3/16	1/4	3/16
Req'd. shop camber	3/16	5/8	7/16	1/2	5/8	5/16	1/2	3/8	5/16	3/16	1 1/8	1/2	1/2	1 1/16	1/2	1/2	1 1/16	1/2	3/8	3/4	5/8	3/8	11/16	9/16	5/16	11/16	9/16

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

20/26

E.B. FRAMING PLAN and SUPERSTRUCTURE DETAILS

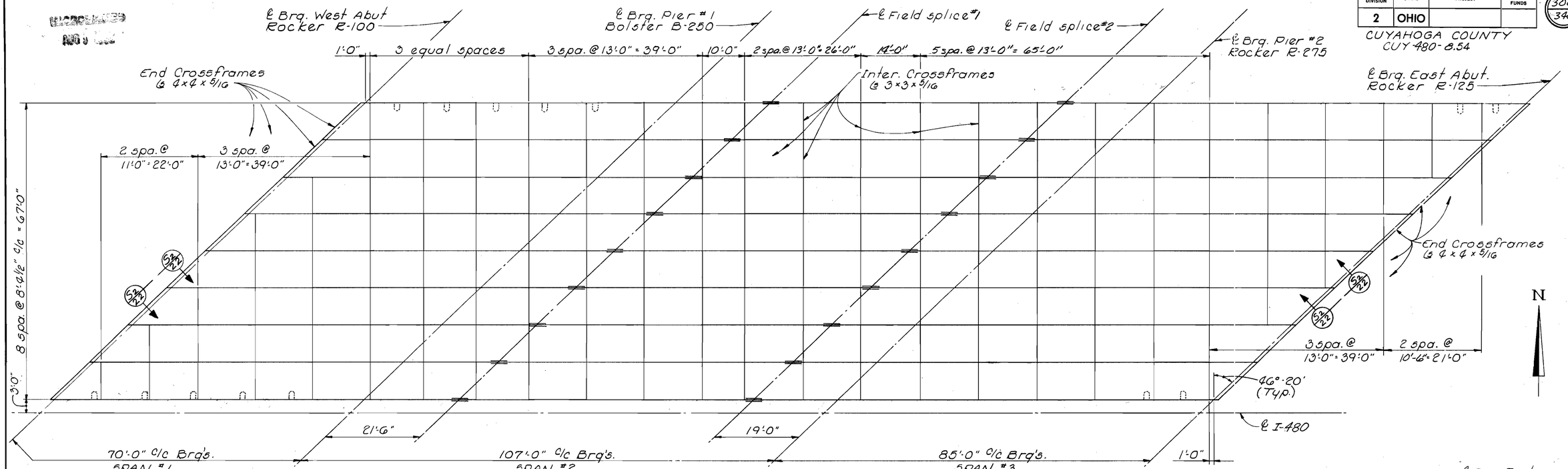
BRIDGE No CUY-480-0957
I-480 OVER CONSOLIDATED RAIL CORP.
Sta. 531+28.54
CUYAHOGA COUNTY Sta. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	JEK		FWD	G.W.M.	6/13/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

300/346

CUYAHOGA COUNTY
CUY-480-8.54

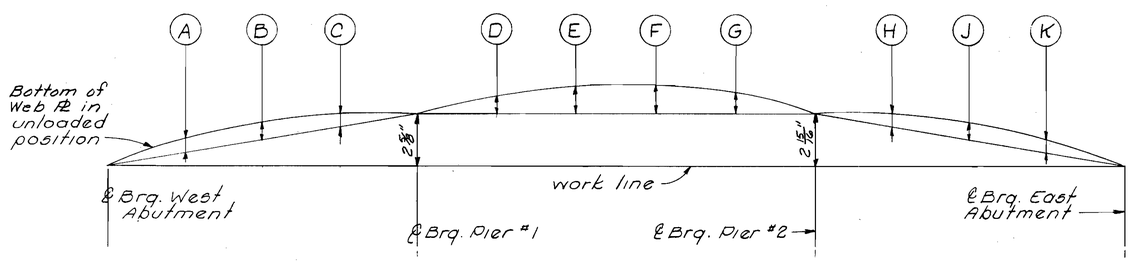


FRAMING PLAN ~ W.B. Lanes

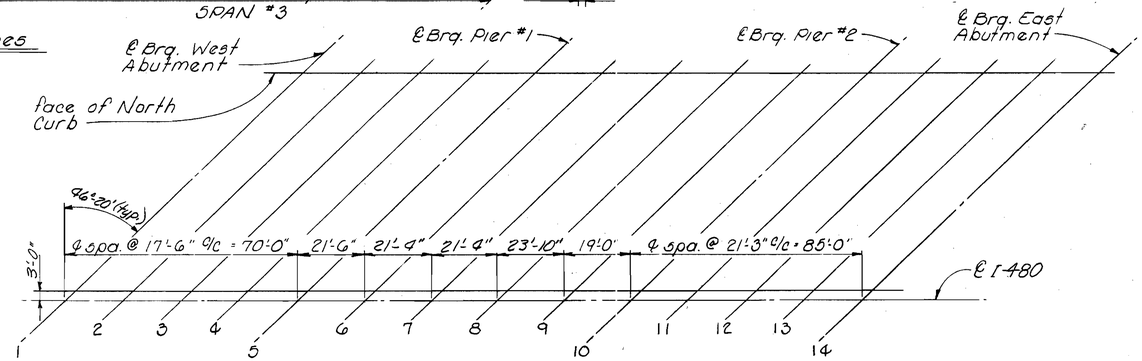
NOTES

Screed elevations shown are at the top of the reinforced concrete deck and at the face of curb and 3'-0" North of ℄ and are those elevations required before the concrete deck is placed. Proper allowance has been made for the Dead Load deflection due to the weight of the concrete.

For additional notes and details see Sheets 18/26, 19/26 and 22/26.



CAMBER and BLOCKING DIAGRAM ~ W.B. Lanes



PLAN of SCREEDS ~ W.B. Lanes

*SCREED ELEVATIONS	1	2	3	4	5	6	7	8	9	10	11	12	13	14
face of North curb	823.22	823.39	823.54	823.66	823.77	823.94	824.08	824.19	824.26	824.31	824.38	824.45	824.48	824.46
3'-0" North of ℄ I-480	822.49	822.70	822.89	823.05	823.21	823.42	823.61	823.76	823.89	823.98	824.11	824.22	824.30	824.34

* Screed elevations are given at the top of the reinforced concrete slab.

DEFLECTION and CAMBER ~ W.B. GIRDERS

	SPAN #1									SPAN #2												SPAN #3								
	MEDIAN			INTERIOR			EXTERIOR			MEDIAN				INTERIOR				EXTERIOR				MEDIAN			INTERIOR			EXTERIOR		
	1/4 Pt. A	1/2 Pt. B	3/4 Pt. C	1/4 Pt. A	1/2 Pt. B	3/4 Pt. C	1/4 Pt. A	1/2 Pt. B	3/4 Pt. C	Splice D	0.4 Pt. E	0.6 Pt. F	Splice G	Splice D	0.4 Pt. E	0.6 Pt. F	Splice G	Splice D	0.4 Pt. E	0.6 Pt. F	Splice G	1/4 Pt. H	1/2 Pt. J	3/4 Pt. K	1/4 Pt. H	1/2 Pt. J	3/4 Pt. K	1/4 Pt. H	1/2 Pt. J	3/4 Pt. K
Defl. due to wt. of steel	0	0	0	0	0	0	0	0	0	1/16	1/8	1/8	1/16	1/16	1/8	1/8	1/16	1/16	1/8	1/8	1/16	0	1/16	1/16	0	1/16	1/16	0	1/16	1/16
Defl. due to remaining D.L.	3/16	3/16	1/16	3/16	3/16	1/16	3/16	3/16	1/16	3/8	5/8	9/16	1/4	3/8	11/16	5/8	1/4	3/8	5/8	9/16	1/4	3/16	3/8	3/8	3/16	3/8	3/8	3/16	3/8	3/8
Convex. req'd for vert. curve	3/16	1/4	3/16	3/16	1/8	3/16	3/16	1/4	3/16	3/8	9/16	9/16	5/16	3/8	9/16	9/16	5/16	3/8	9/16	9/16	5/16	1/4	3/8	1/4	1/4	3/8	1/4	1/4	3/8	1/4
Req'd shop camber	3/8	7/16	1/4	3/8	7/16	1/4	3/8	7/16	1/4	7/16	1 5/16	1 1/8	5/8	7/16	1 3/8	1 5/16	3/8	7/16	1 3/8	1 1/4	5/8	7/16	1 3/16	1 1/16	7/16	1 3/16	1 1/16	7/16	1 3/16	1 1/16

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

21/26

W.B. FRAMING PLAN and SUPERSTRUCTURE DETAILS
BRIDGE No. CUY-480-0957
I-480 OVER CONSOLIDATED RAIL CORP.

CUYAHOGA COUNTY Sta. 531+28.54 Sta. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	JEK		fwd	G.W.M.	6/13/09	