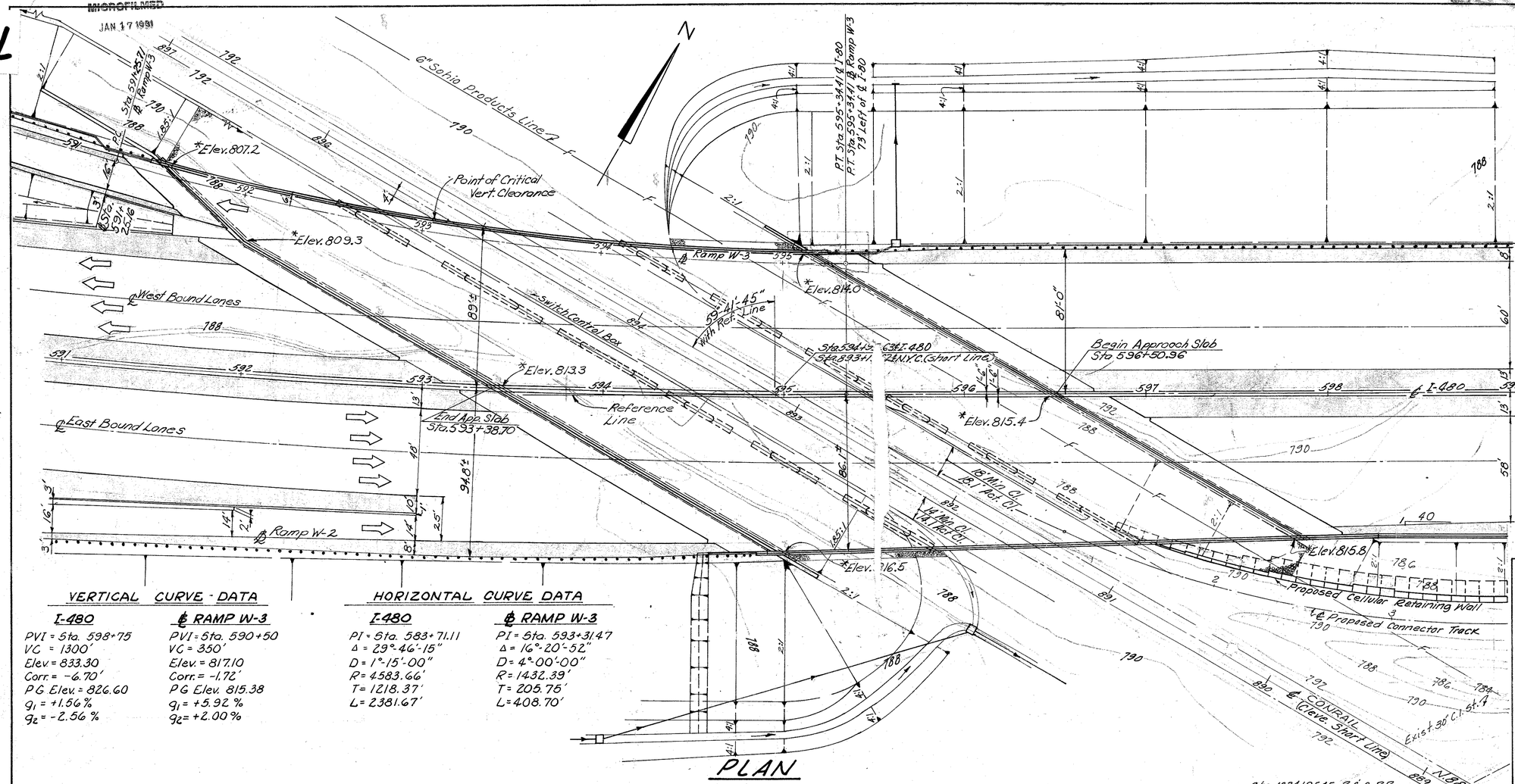
MICROFILMED
JAN 17 1991

T-10

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

332
300

CUYAHOGA COUNTY
CUY. 480-1039



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

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

Reference line is an extension of the tangent from PT Sta. 595+34.41 on ℄ I-480

VERTICAL CURVE - DATA

I-480	℄ RAMP W-3
PVI = Sta. 598+75	PVI = Sta. 590+50
VC = 1300'	VC = 350'
Elev. = 833.30	Elev. = 817.10
Corr. = -6.70'	Corr. = -1.72'
PG Elev. = 826.60	PG Elev. 815.38
g_1 = +1.56%	g_1 = +5.92%
g_2 = -2.56%	g_2 = +2.00%

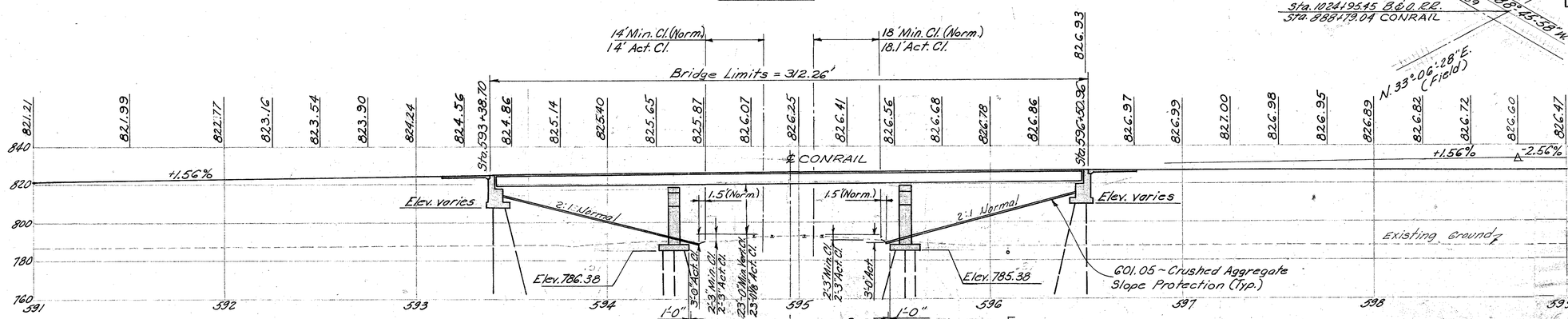
HORIZONTAL CURVE DATA

I-480	℄ RAMP W-3
PI = Sta. 583+71.11	PI = Sta. 593+31.47
Δ = 29°-46'-15"	Δ = 16°-20'-52"
D = 1°-15'-00"	D = 4°-00'-00"
R = 4583.66'	R = 1432.39'
T = 1218.37'	T = 205.75'
L = 2381.67'	L = 408.70'

PLAN

PROPOSED STRUCTURE

TYPE: Continuous steel girder with reinforced concrete deck and reinforced concrete substructure.
SPANS: 91'-0"-121'-0"-91'-0" % Brgs. on ℄ I-480
ROADWAY: Width varies f/f Concrete parapets. Avg. width = 169'-0". Bridge Roadway BR-1 Railing, and concrete barrier median.
LOADING: HS 20-44 Case I and the alternate Military Loading.
WEARING SURFACE: 1½" Latex Modified Concrete
SKEW: 59°41'-45" Right f.wd. with respect to Ref. Line
ALIGNMENT: 1°-15'-00" Curve and Tangent
APPROACH SLABS: AS-1-81 (25' long). (Mod.)
SUPERELEVATION: Varies. (0.03 ft/ft per f/f max.)



PROFILE ALONG ℄ I-480

TRAFFIC ESTIMATE

Design Year 2000
Total A.D.T. 98,198

All piles shall be H.P. 10x42 steel bearing piles. Estimated average pay lengths are:

S. Abut.	45'±
Pier #1	20'±
Pier #2	20'±
N. Abut.	45'±

1 | 46

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

SITE PLAN
BRIDGE No. CUY-480-1078

I-480 OVER CONRAIL (CLEVE. SHT. LN.)
CUYAHOGA COUNTY STA. 593+38.70 STA. 596+50.96

Scale - 1" = 30'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TJ	TJ		HT	G.W.M.	11/90	

MICROFILMED
JAN 27 1984

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	WINGS	PIERS	SUPER	GENERAL
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING					LUMP
503	3324	C.Y.	UNCLASSIFIED EXCAVATION	2138	315	871		
505	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION					LUMP
								LUMP
								1
507	14,715	L.F.	STEEL PILES, HP10X42 (SEE PROPOSAL NOTE)	8910	1125	4680		
509	452,725	LB	REINFORCING STEEL	96,867	7876	148828	199154	
511	1657	C.Y.	CLASS S CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)				1657	
511	1076	C.Y.	CLASS C CONCRETE, PIERS ABOVE FOOTINGS			1076		
511	1225	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	1225				
511	989	C.Y.	CLASS C CONCRETE, FOOTINGS	676	78	235		
511	88	C.Y.	CLASS C CONCRETE, WINGWALLS ABOVE FOOTINGS		88			
512	15	S.Y.	TYPE B WATERPROOFING	15				
513	1,437,400	LB.	STRUCTURAL STEEL (AISC CATEGORY III) (SEE PROPOSAL				1,437,400	
			NOTE) ASTM A-588					
513	15272	EA	WELDED STUD SHEAR CONNECTORS (SEE PROPOSAL NOTE)				15272	
516	698.98	L.F.	STRUCTURAL STEEL EXPANSION JOINTS, AS PER PLAN				698.98	
516	242	L.F.	PVC WATERSTOP, AS PER PLAN	242				
516	1	EA	LAMINATED ELASTOMERIC BEARINGS (12" X 15" X 2.398"	1				
			ELASTOMERIC PAD WITH 14" X 18" X 1.5" X 1"					
			STEEL LOAD PLATE)					
516	1	EA	LAMINATED ELASTOMERIC BEARINGS (6" X 12" X 2.222"	1				
			ELASTOMERIC PAD WITH 8" X 14" X 1"					
			STEEL LOAD PLATE)					
516	1	EA	LAMINATED ELASTOMERIC BEARINGS (10" X 12" X 1.648"	1				
			ELASTOMERIC PAD WITH 12" X 14" X 1"					
			STEEL LOAD PLATE)					
516	20	EA	LAMINATED ELASTOMERIC BEARINGS (12" X 15" X 2.398"	20				
			ELASTOMERIC PAD WITH 14" X 17" X 1"					
			STEEL LOAD PLATE)					
516	1	EA	LAMINATED ELASTOMERIC BEARINGS (15" X 12" X 5.694"	1				
			ELASTOMERIC PAD WITH 17" X 18" X 1" X 1"					
			STEEL LOAD PLATE)					
516	18	EA	LAMINATED ELASTOMERIC BEARINGS (15" X 12" X 5.694"	18				
			ELASTOMERIC PAD WITH 17" X 14" X 1"					
			STEEL LOAD PLATE)					
516	1	EA	LAMINATED ELASTOMERIC BEARINGS (30" X 20" X 1.574"			1		
			ELASTOMERIC PAD WITH 32" X 22" X 2"					
			STEEL LOAD PLATE)					
516	20	EA	LAMINATED ELASTOMERIC BEARINGS (18" X 24" X 1.574"			20		
			ELASTOMERIC PAD WITH 20" X 26" X 2"					
			STEEL LOAD PLATE)					
516	1	EA	LAMINATED ELASTOMERIC BEARINGS (27.5"X20"X6.518"			1		
			ELASTOMERIC PAD WITH 29.5" X 22" X 2"					
			STEEL LOAD PLATE)					
516	18	EA	LAMINATED ELASTOMERIC BEARINGS (18" X 24" X 4.870"			18		
			ELASTOMERIC PAD WITH 20" X 26" X 2"					
			STEEL LOAD PLATE)					
516	428	S.F.	1 INCH PREFORMED EXPANSION JOINT FILLER	428				
518	616	C.Y.	POROUS BACKFILL	583	33			
518	19	EA	SCUPPERS INCLUDING SUPPORTS				19	
518	736	L.F.	6 INCH PERFORATED, HELICAL CSP, 707.01	736				
518	485	L.F.	6 INCH NON-PERFORATED, HELICAL CSP, INCLUDING	485				
			SPECIALS, 707.01					
601	4823	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION					4823
625			SEE SHEET FOR LIGHTING SUMMARY					
824	226,507	LB	EPOXY COATED REINFORCING STEEL	1614			224,893	
845	5786	S.Y.	LATEX MODIFIED CONCRETE OVERLAY, 1 1/4 INCHES THICK				5786	
			(SEE PROPOSAL NOTE)					
SPEC	21,000	S.F.	PROTECTION OF CONCRETE SURFACES (SEE PROPOSAL			21,000		
			NOTE)					
SPEC	1043	S.Y.	SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE)	1043				

B202010A

FHWA REGION	STATE	PROJECT	
5	OHIO		

333
500

CUYAHOGA COUNTY
CUY-480-10.39

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	SHT.	DATE
END DAM AND END CROSSFRAME	SD-1-69	1-2	6-12-69
CURB PLATES	SD-1-69	2	6-12-69
SCUPPERS	SD-1-69	3	6-12-69
BRIDGE ROADWAY RAILING	BR-1		5-29-79
APPROACH SLABS	AS-1-81	1-3	11-27-81
HIGHWAY LIGHTING	HL-7		1-21-76 R

(R INDICATES REVISED DATE)

SUPPLEMENTAL SPECIFICATION REFERENCES

DESCRIPTION	NO.	DATE
EPOXY COATED REINFORCING STEEL	824	10-08-82
CONCRETE CURING AND PROTECTIVE MEMBRANE	836	3-12-75
BRIDGE DECK REPAIR AND OVERLAY WITH LATEX MODIFIED CONCRETE	845	3-2-81
LATEX FOR CONCRETE MODIFICATION	953	8-21-80

COMMON DETAIL REFERENCES

CONTRACTION JOINTS	SHEET 476
EXPANSION JOINTS	SHEET 476
RUSTICATION GROOVES	SHEET 476
PVC WATERSTOP	SHEET 476

DESIGN SPECIFICATIONS
THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1977, INCLUDING THE 1978, 1979, 1980, AND 1981, INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA
DESIGN LOADING-HS20-44 CASE I AND THE ALTERNATE MILITARY LOADING.
CONCRETE CLASS S - UNIT STRESS 1500 P.S.I. (SUPER-STRUCTURE).
CONCRETE CLASS C - UNIT STRESS 1333 P.S.I. (SUB-STRUCTURE).
STRUCTURAL STEEL ASTM A588 - UNIT STRESS 27,000 P.S.I.
REINFORCING STEEL ASTM A615, A616 OR A617.
GRADE 40 - UNIT STRESS 20,000 P.S.I.

REINFORCING BAR LAPPED SPLICES
ALL SPLICES SHALL BE LAPPED 30 BAR DIAMETERS.

DECK PROTECTION METHOD
EPOXY COATED REINFORCING STEEL, TOP MAT ONLY.

LATEX MODIFIED CONCRETE OVERLAY.

EMBANKMENT CONSTRUCTION
THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENTS. EXCAVATION SHALL THEN BE MADE FOR THE ABUTMENTS AND PIERS AND PILES DRIVEN.

PILES
PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

DESIGN LOAD
45 TONS PER PILE FOR THE ABUTMENTS AND WINGWALLS
45 TONS PER PILE FOR THE PIERS

UTILITY LINES
ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WOULD BE HELD TO A MINIMUM.

CONSTRUCTION CLEARANCE
CONSTRUCTION CLEARANCE OF 8 FEET HORIZONTALLY FROM THE CENTER OF TRACKS AND 20 FEET VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AND 4 FEET FROM THE CENTER OF TRACKS, SHALL BE MAINTAINED AT ALL TIMES.

RAILROAD AERIAL LINES
RAILROAD AERIAL LINES WILL BE RELOCATED BY THE RAILROAD. THE CONTRACTOR SHALL USE ALL PRECAUTIONS NECESSARY TO SEE THAT THE LINES ARE NOT DISTURBED DURING THE CONSTRUCTION STAGE AND SHALL COOPERATE WITH THE RAILROAD IN THE RELOCATION OF THESE LINES. THE COST OF THE RELOCATION SHALL BE INCLUDED IN THE RAILROAD FORCE ACCOUNT WORK.

2/46

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WHEELING

GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. CUY-480-1078
I-480 OVER CONRAIL

CUYAHOGA COUNTY STA. 593+38.70 TO STA. 596+50.96

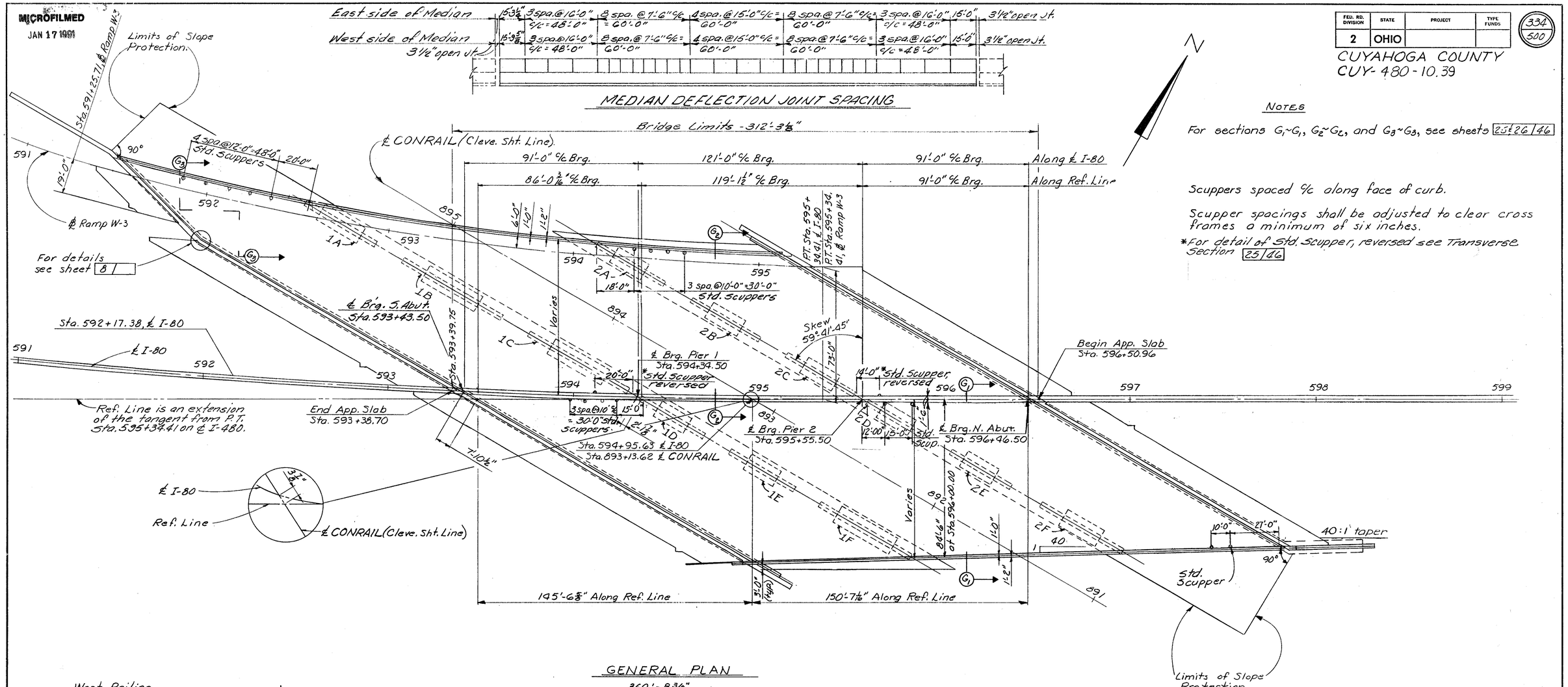
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WM			BTG 3-14-83	G.W.M.	3/15/83	

MICROFILMED
JAN 17 1991

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

334/500

CUYAHOGA COUNTY
CUY-480-10.39



NOTES

For sections G_1~G_1, G_2~G_2, and G_3~G_3, see sheets 25 & 26 / 46

Scuppers spaced % along face of curb.

Scupper spacings shall be adjusted to clear cross frames a minimum of six inches.

*For detail of Std. Scupper, reversed see Transverse Section 25/46

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

3/46

GENERAL PLAN and ELEVATION

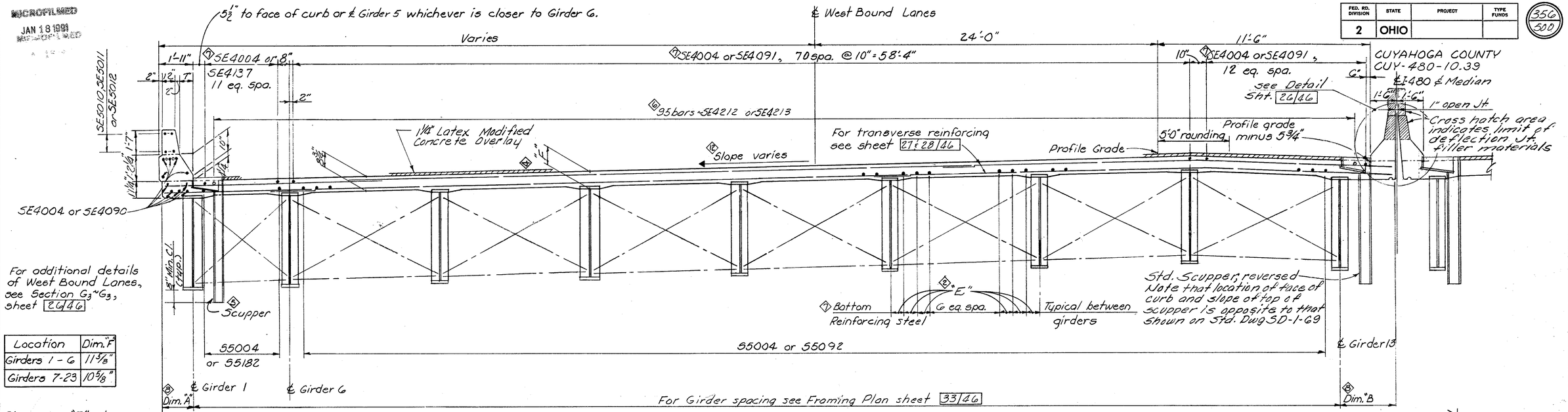
BRIDGE No. CUY-80-1078
I-480 over CONRAIL (CLEVE. SHT. LN.)
STA. 593+38.70
CUYAHOGA COUNTY STA. 596+50.96

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TJ	DW		SBP PHB	G.W.M.	11/16/71	

MICROFILMED
JAN 18 1991

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

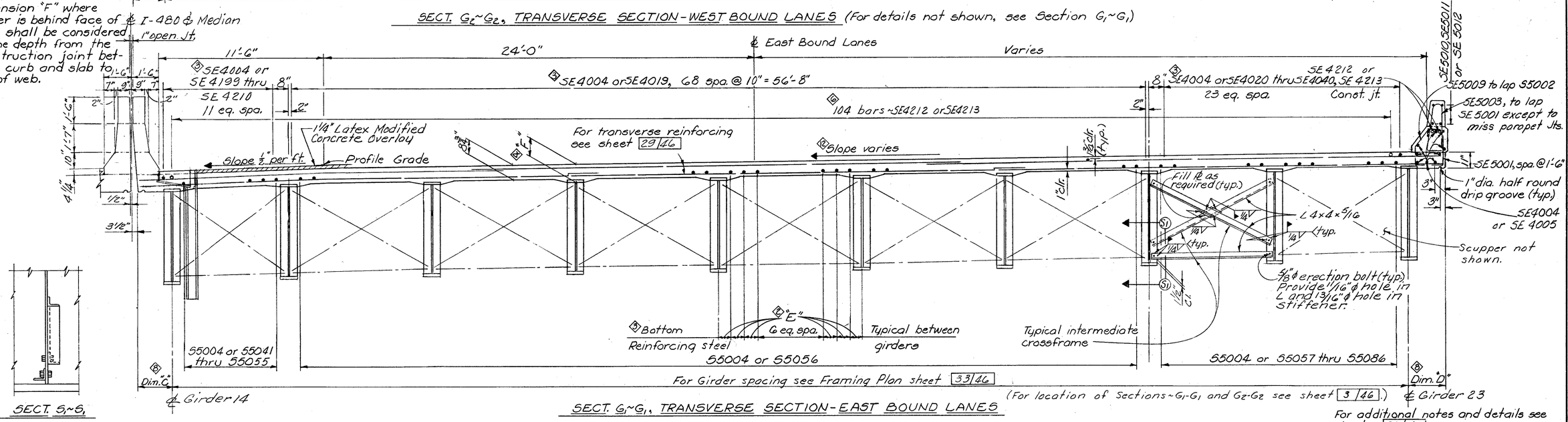
356
500



Location	Dim. "F"
Girders 1 - 6	11⅝"
Girders 7-23	10⅝"

Dimension "F" where girder is behind face of curb shall be considered as the depth from the construction joint between curb and slab to top of web.

SECT. G2~G2, TRANSVERSE SECTION - WEST BOUND LANES (For details not shown, see Section G1~G1)



SECT. G1~G1, TRANSVERSE SECTION - EAST BOUND LANES

(For location of Sections ~ G1-G1 and G2-G2 see sheet 3/46.)

For additional notes and details see sheet 26/46

NOTES

1. 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 not be more than 1:4 for a haunch less than 9" in width.
2. Dimension "E" is one-twelfth of ℄ distance between girders.
3. Measured normal to reference line.

For details of median curb plates see Std. Dwg. SD-1-69, Sht. 2.

4. 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. 511.18 of the Construction and Material Specifications.
5. Std. scupper. For details see Std. Dwg. SD-1-69. For location see General Plan Sht. 3/46
6. Stagger bars to be spaced alternate between top longitudinal reinforcing steel. See bar stagger diagram, sheet 26/46
7. Measured normal to West Bound interior girders.
8. For dimensions A, B, C, & D, see Table of Slab Cantilevers sheet 26/46
9. Longitudinal reinforcing shall be field cut as necessary to clear scuppers.
10. Concrete parapet shall be included with Item 511, Class S concrete, for payment.
11. For slab profile see sheet 26/46

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

25/46

SUPERSTRUCTURE DETAILS
TRANSVERSE SECTION
BRIDGE Nº CUY-80-1078
I-480 over CONRAIL (CLEVE. SHT. LN.)
CUYAHOGA COUNTY
STA. 593+38.70
STA. 596+50.96

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TJ	GTR		SBP	G.W.M.	11/22/71	