FED. RD. DIVISION	STATE	PROJECT	TOTAL SHEETS
5	OHIO		

CUYAHOGA COUNTY
CUY. 480-8.54

NOTES

1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S). CALCULATED TO NEAREST 1/8". WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.
2. DELETED
3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.
4. LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
5. END PREPARATION AND FIELD WELDING INCLUDED WITH ITEM 509.
6. "LENGTH" SHOWN FOR SPIRAL BARS IS DISTANCE FROM TOP OF FOOTING TO BOTTOM OF PIER CAP. "NO. TURNS" SHOWN IS "LENGTH" DIVIDED BY PITCH, PLUS 3 TURNS (NUMBER OF CLOSED COILS), EXPRESSED AS NEAREST WHOLE NUMBER.

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MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			SUPERSTRUCTURE				(CONTINUED)			
S 601	363	30- 0	16357	ST						
S 602	33	14- 0	694	ST						
S 701	432	29- 8	26196	ST						
S 702A	1	27- 9		ST						1
THRU			1123		VARY	LENGTH BY	0'- 6 3/8''			
S 702Z	1	14- 6		ST						1
S 703A	1	13-11		ST						1
THRU			345		VARY	LENGTH BY	0'- 6 3/8''			
S 703R	1	4-10		ST						1
S 704	7	4- 3	61	ST						
S 705A	1	28- 0		ST						1
THRU			1045		VARY	LENGTH BY	0'- 8 0/0''			
S 705Z	1	11- 4		ST						1
S 706A	1	10- 8		ST						1
THRU			136		VARY	LENGTH BY	0'- 8 0/0''			
S 706H	1	6- 0		ST						1
S 707	7	5- 6	79	ST						

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			LIGHT POLE SUPPORTS - EPOXY COATED							
LE 505	8	2-10	24	1		0-7½	1-10	0-7½		4
LE 506	8	8-5	72	4	0-6½	3-2	2-4	3-2		4
LE 507	12	7-3	90	16		0-6	1-10	1-4	1-10	4
LE 508	8	3-2	26	ST						4
			PARAPET REINFORCING - EPOXY COATED							
RE 501	112	14-8	1713	ST	INCLUDE WITH SUPERSTRUCTURE REINFORCING					
RE 502	124	6-9	873	ST	do					
RE 507	4	16-3	68	ST	INCLUDE WITH ABUTMENT REINFORCING					3
RE 508	4	28-7	119	ST	do					3
RE 509	4	23-1	96	ST	do					3
RE 510	4	26-0	108	ST	do					3
			EPOXY COATED REINFORCING STEEL - SUPERSTRUCTURE							
SE 503	427	5'-8"	2524	25						
SE 504	427	3'-5"	1522	15	0-7½	1-1	0-11½	0-9	0-9	
SE601	443	30'-0"	19962	ST						
SE602	34	14'-0"	715	ST						
SE603	46	11'-11"	823	ST						
SE604	23	8-11	308	ST						
SE605	432	29'-8"	19250	ST						
SE606A	1	27'-9"		ST						1
THRU			825		VARY LENGTH BY 0'-6 3/8"					
SE606Z	1	14'-6"		ST						1

REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

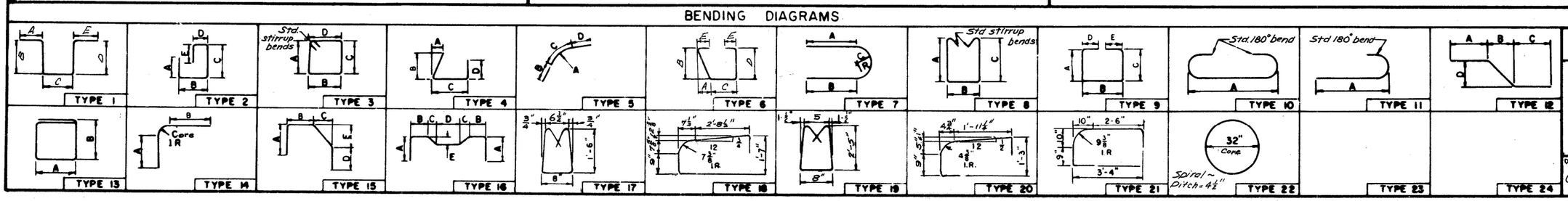
SE607A	1	13'-11"	253	ST	VARY LENGTH BY 0'-6 3/8"		1
THRU SE607R	1	4'-10"		ST			1
SE608	7	4'-3"	45	ST			
SE609A	1	28'-0"	768	ST	VARY LENGTH BY 0'-8"		1
THRU SE606Z	1	14'-6"		ST			1

		EPOXY COATED REINFORCING STEEL - SUPERSTRUCTURE (CON'T				
SE610A	1	10'-8"	100	ST	VARY LENGTH BY 0'-8"	1
THRU SE610H	1	6'-0"		ST		1
SE611	7	5'-6"	58	ST		

BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHE THREE DIGITS ARE USED, AND TH FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A700 IS A NO. 7 SIZE BAR AND A1014 IS A NO. 10 SIZE.

BENDING DIAGRAMS



ALDEN E. STILSON & ASSOCIATES, LIMI
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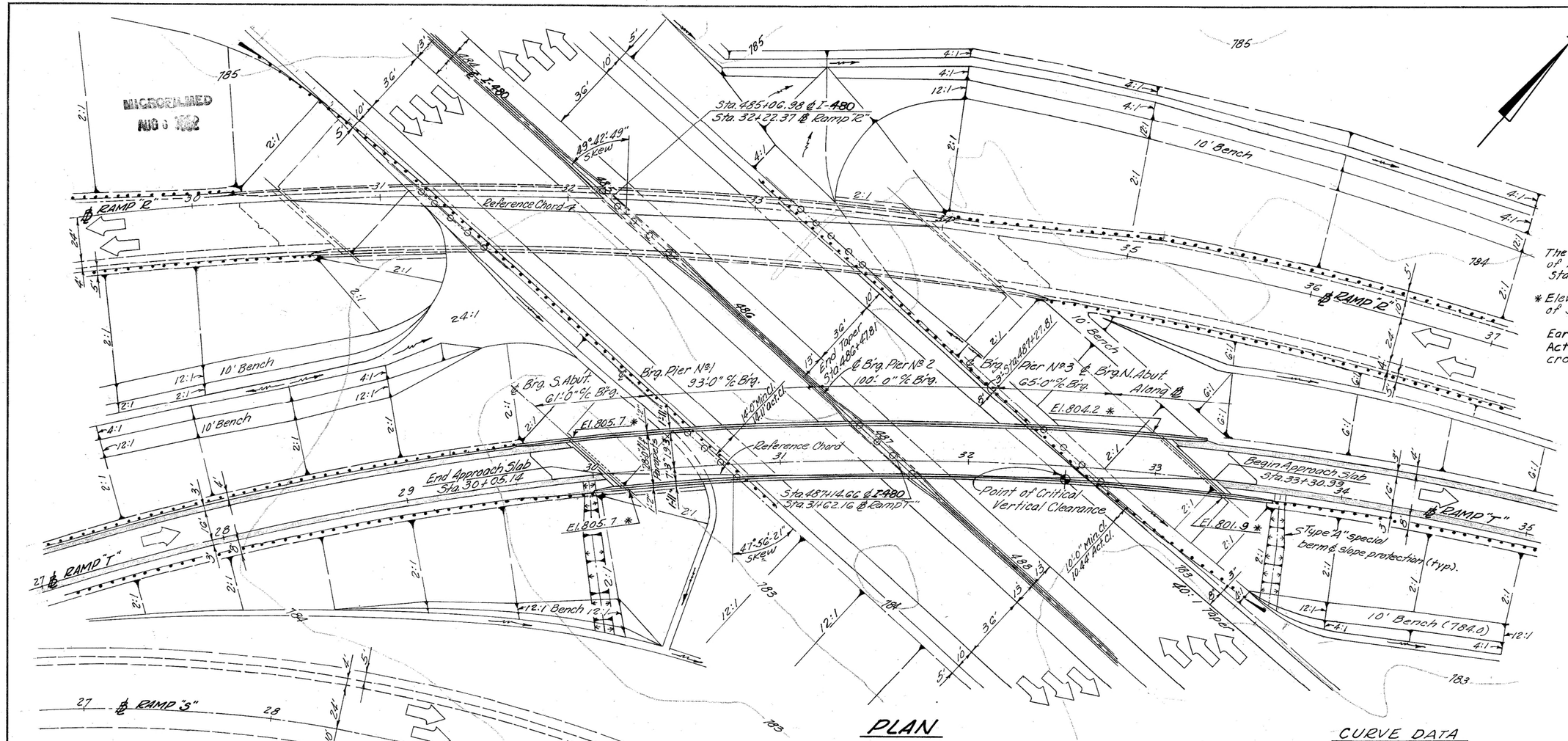
COLUMBUS, OHIO

REINFORCING STEEL LIST
Bridge No. CUY-480-0873
Ramp "T" over I-480
Cuyahoga County
Sta. 30 + 05.1
Sta. 33 + 30.9

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.			R.J.P.	G.W.M.	3/7/67

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY.-480-8.54



PLAN

NOTES:

The Reference Chord is a line between the intersec of the ℄ Ramp "T" and the ℄ Brg's. at the abutmen Sta. 30+08.16 & Sta. 33+27.16

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

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

TRAFFIC ESTIMATE

DESIGN YEAR	1987
TOTAL A.D.T.	1935

PROPOSED STRUCTURE

TYPE: Continuous steel girder with reinf concrete deck and substructure.

SPANS: 61'-0", 93'-0", 100'-0", 65'-0" % Brg. alo

ROADWAY: 28'-0" f/f concrete parapets

LOADING: C.F.-2000 (1957) Adequate for AAS alternate loading.

SURFACE COURSE: Monolithic concre

SKEW: 47°-56'-21" Rt. forward with respect t Reference Chord.

ALIGNMENT: 3°-45'-00" Curve Right

APPROACH SLABS: AS-1-72, Modified (25'

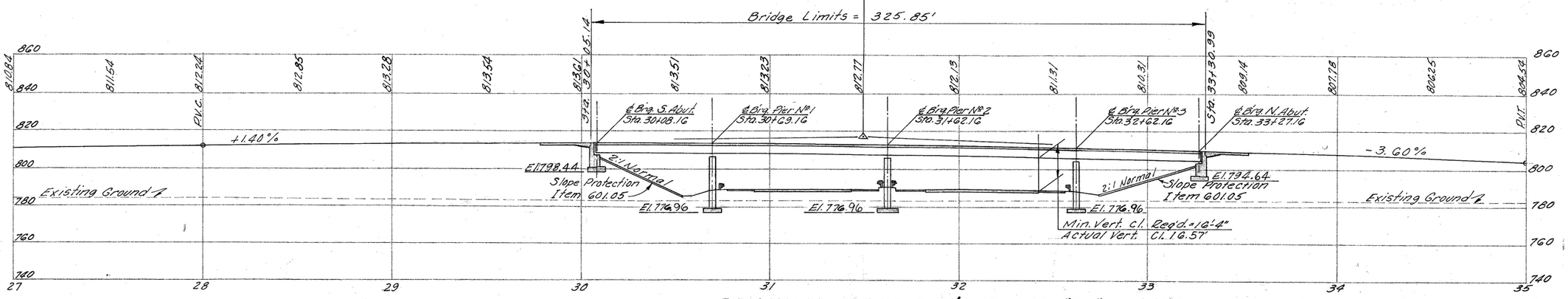
SUPERELEVATION: 0.062 ft. per ft.

VERTICAL CURVE DATA

P.V.I. Sta. 31+50
700' V.C.
Elev. 817.14
Corr. = -4.37'
P.G. Elev. 812.77
G_1 = +1.40% G_2 = -3.60%

CURVE DATA
℄ RAMP "T"

Δ	= 60°-00'-56"
Dc	= 3°-45'-00"
R	= 1,527.89'
T	= 882.40'
Lc	= 1,600.42'
C	= 1,528.25'



PROFILE ALONG ℄ RAMP "T"

0 30 60
Scale in Feet

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

SITE PLAN
BRIDGE No. CUY.-480-087
RAMP "T" OVER I-480
CUYAHOGA COUNTY STA. 30+05 STA. 33+30

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.T.		R.J.P.	G.W.M.	3/6/67

NOTES

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2	OHIO		

CUYAHOGA COUNTY
CUY.-480-8.54

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GENERAL		
503	1100	C.Y.	UNCLASSIFIED EXCAVATION	391	709				
503		LUMP	COFFERDAMS, CRIBS AND SHEETING		L.S.				
509	101,229	LB	REINFORCING STEEL	12664	40488	48077			
SPECIAL	52089	LB	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)	2138		49951			
511	373	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (See Proposal Note)			373			
511	83	C.Y.	CLASS C CONCRETE, PIER COLUMNS		83				
511	187	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	187					
511	186	C.Y.	CLASS C CONCRETE, FOOTINGS	62	124				
513	293550	LB	STRUCTURAL STEEL, PRIMER PER 846 (SEE PROPOSAL NOTES)			293,550			
846	293,550	LB	FIELD PAINTING OF STRUCTURAL STEEL			293,550			
518	74	C.Y.	POROUS BACKFILL	74					
518	107	L.F.	6 INCH PERFORATED, HELICAL CSP, INCLUDING SPECIALS, 707.01	107					
518	82	L.F.	6 INCH NON-PERFORATED, HELICAL CSP, 707.01	82					
518	9	EA	SCUPPERS INCLUDING SUPPORTS			9			
601	603	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION				603		
S625			SEE SHEET 203 FOR LIGHTING SUMMARY						
808	373	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE TYPE A, B OR D			373			

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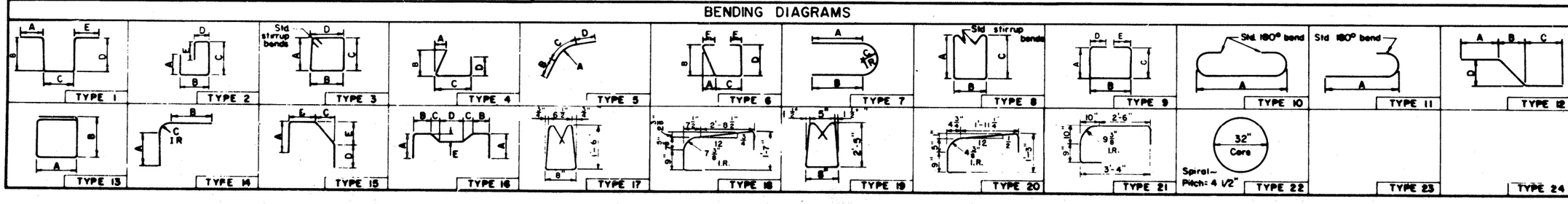
BENDING DIAGRAMS



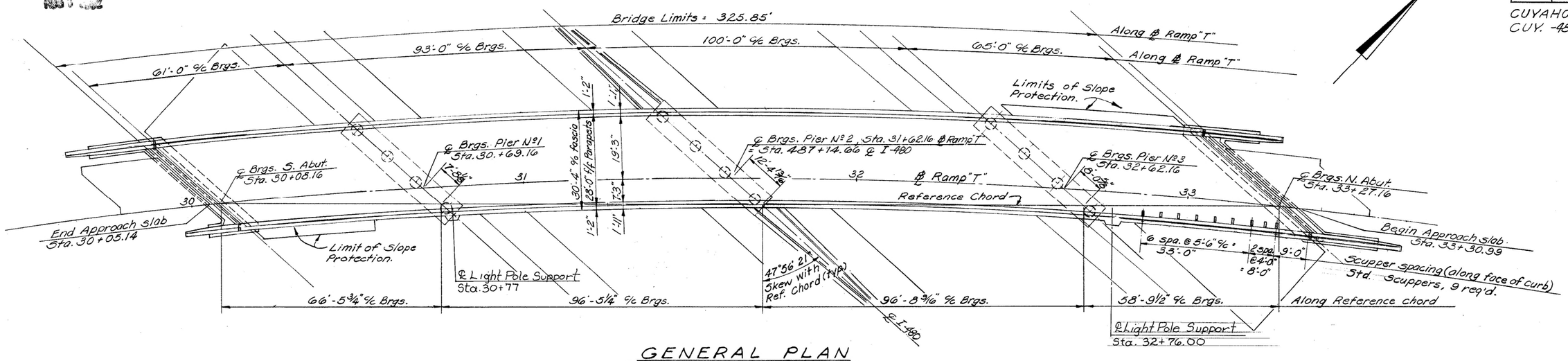
ALDEN E. STILSON & ASSOCIATES, LIMI
CONSULTING ENGINEERS
COLUMBUS, OHIO

ESTIMATED QUANTITIES
Bridge No. CUY-480-0873
Ramp "T" over I-480
Cuyahoga County
Sta. 30 + 05.
Sta. 33 + 30.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
R.S.S.			R.J.P. 2-9-67	G.W.M.	3/7/67

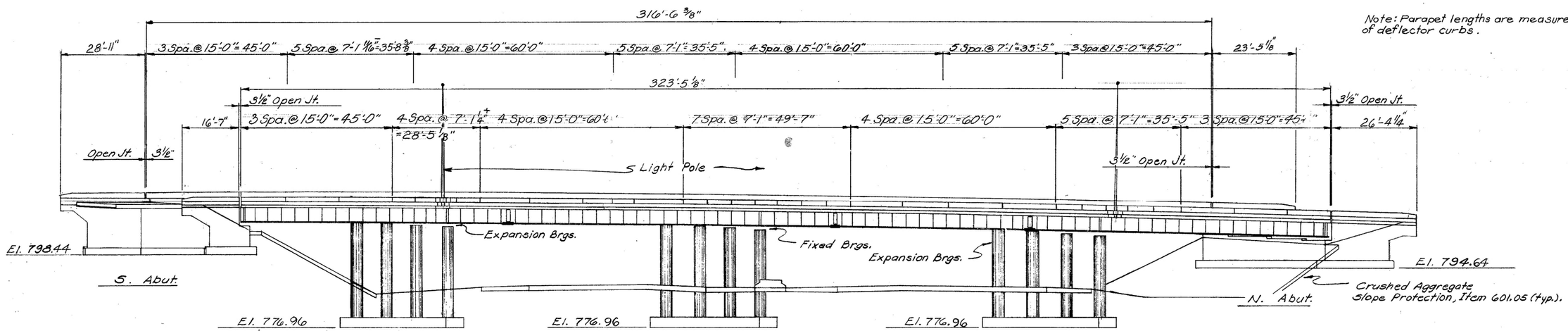
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY. -480 - 8.54



GENERAL PLAN

Note: Parapet lengths are measured along faces of deflector curbs.



ELEVATION

GENERAL NOTES

REFERENCES:

STANDARD DRAWINGS:

End Dam, End Crossframe and Scupper Details	SD-1-69, Sheets 1, 2 & 3 Dated 6-12-69
Bridge Railing	BR-1-67, Sheet 1 Revised 10-15-71
Rockers and Bolsters	RB-1-55 Revised 2-2-59
Reinforced Concrete Approach Slabs	AS-1-72 Dated 6-30-72
Highway Lighting	HL-3 Dated 7-27-73 HL-4 & HL-7 Dated 1-21-76 HL-5 Dated 9-6-73

SUPPLEMENTAL SPECIFICATIONS

Chemical Admixture for Concrete	808, Dated 1-1-71
Concrete Curing and Protective Membrane	836, Dated 3-12-75

DESIGN SPECIFICATIONS

This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

DESIGN DATA:

Design Loading — CF 2,000 (57)
Concrete Class C — Basic Unit Stress 1,200 P.S.I. (superstructure & columns)
Concrete Class C — Basic Unit Stress 1,333 P.S.I. (abutments & footings)
High Strength Bolts — A.S.T.M. A325 — Basic Unit Stress (shear) 13,500 P.S.I.
Structural Steel — A.S.T.M. A 36 Basic Unit Stress 20,000 P.S.I.
Reinforcing Steel — A.S.T.M. A615, A616, or A617 — Unit Stress 20,000 P.S.I.
Spiral reinforcement may be plain bars ASTM A82 or A615.

ROADWAY FINISH: See Sheet No. 251.

EXCAVATION QUANTITY:

Includes the removal of fill material required for construction of abutments and piers.

FOUNDATION BEARING PRESSURE:

Pier footings are designed for a maximun bearing pressure of 2.5 tons per square foot.

Modify Standard Drawing AS-1-72 as follows:

a. Dimension W = 16'-0"
b. change clearance for top reinforcing steel to 3" from 2"
~~c. Jacking Holes Shall Be omitted~~

SUPPLEMENTAL SPECIFICATION REFERENCES (CONTINUED)

Painting for New Structural Steel	846	Dated 4-25-77
Inorganic Zinc Silicate Paint	950	Dated 4-25-77
Blue-Green Vinyl Paint	951	Dated 4-25-77

~~Monolithic Wearing Surface Thickness Is Assumed to Be 1".~~

Deck Protection Method: Epoxy coated reinforcing ste
top mat only. Minimum bar lap shall be 30 diamet
Attachment of guardrail to concrete parapets: Concr
Insert Anchor Assemblies Per Standard Construction
Drawing GR-3 And GR-1 shall be placed during parapet
construction.

Preformed Bearing Pads: In lieu of the hardn
requirement of 711.21, preformed bearing pad
shall have a Shore A durometer of 80 ± 10.

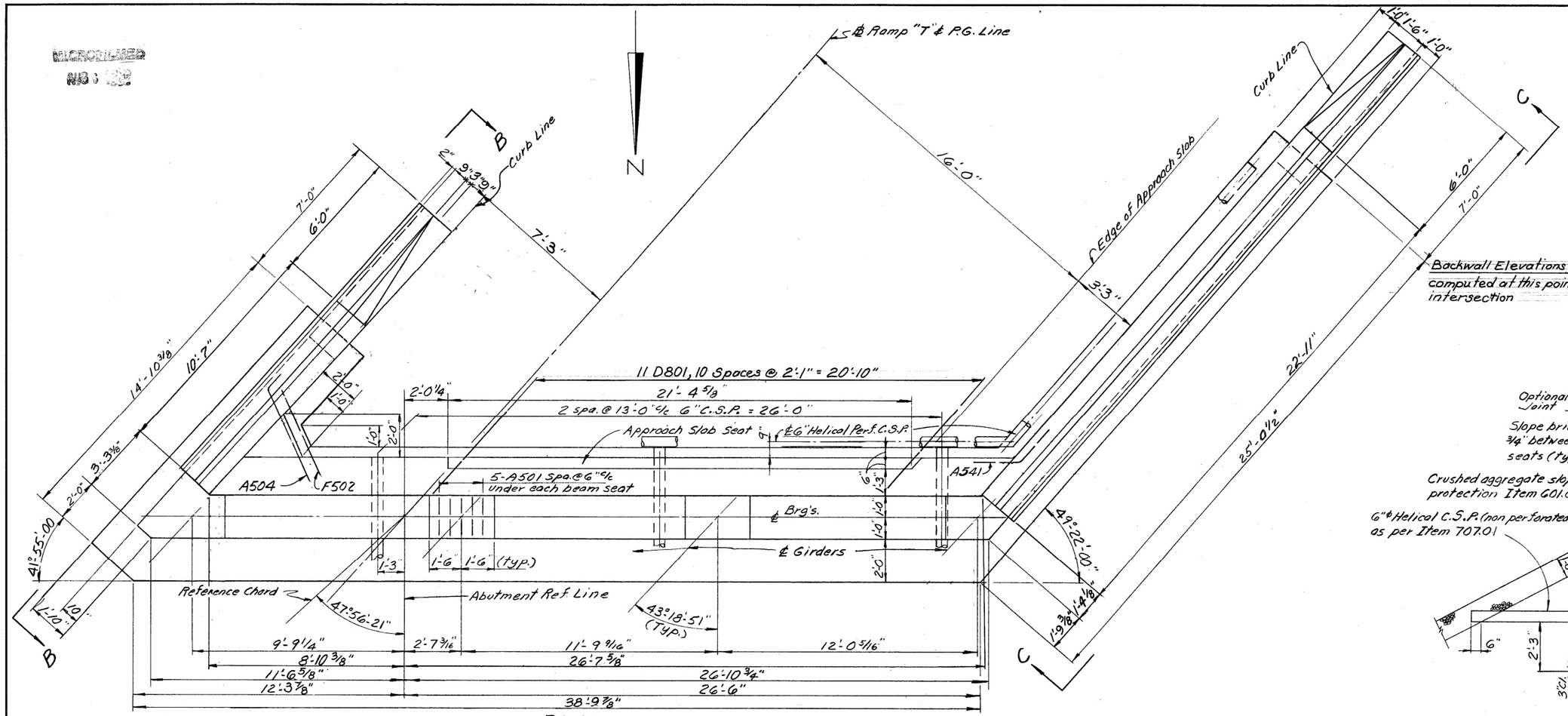
ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W

GENERAL PLAN & ELEVAT
BRIDGE Nº CUY.480 - 0873
RAMP "T" OVER I-480
CUYAHOGA COUNTY STA. 30+05.1
STA. 33+30.99

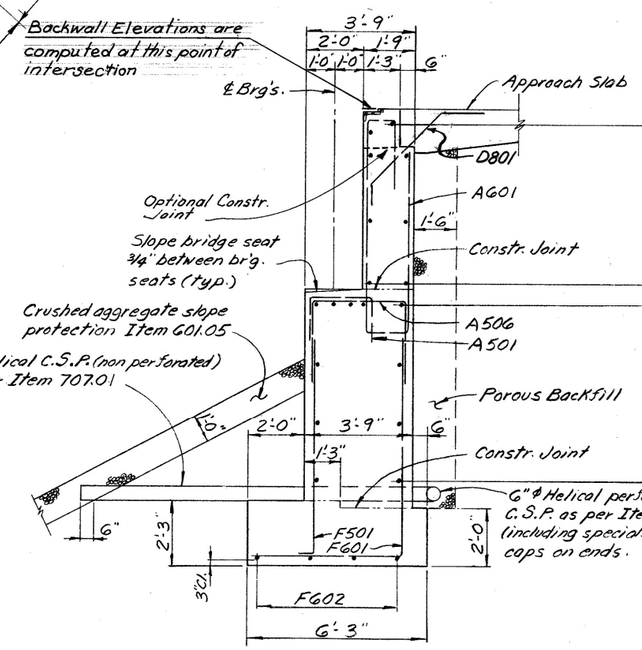
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	G.W.M.		R.J.P.	G.W.M.	3/7/67

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

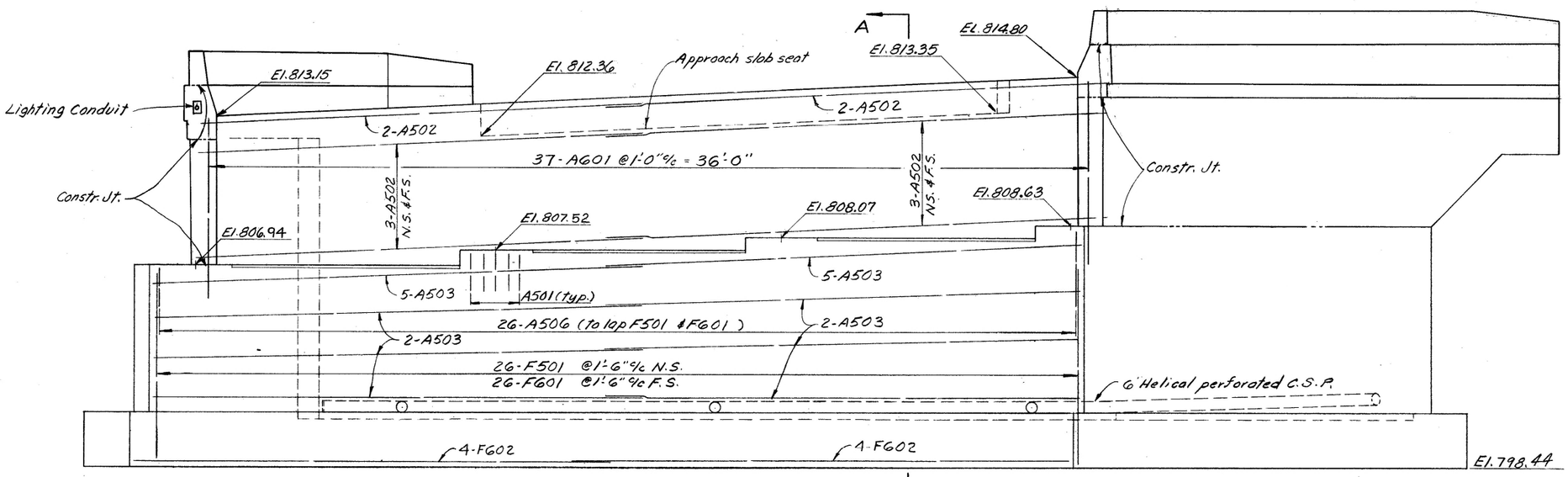
CUYAHOGA COUNTY
CUY-480-8.54



PLAN



SECTION A-A



ELEVATION

NOTES

For location of Elevation "B-B" & "C-C" see Sht. 6

For additional notes see Sht. 5/15.

NS indicates near side.
FS indicates far side.

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CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING,

SOUTH ABUTMENT DETA

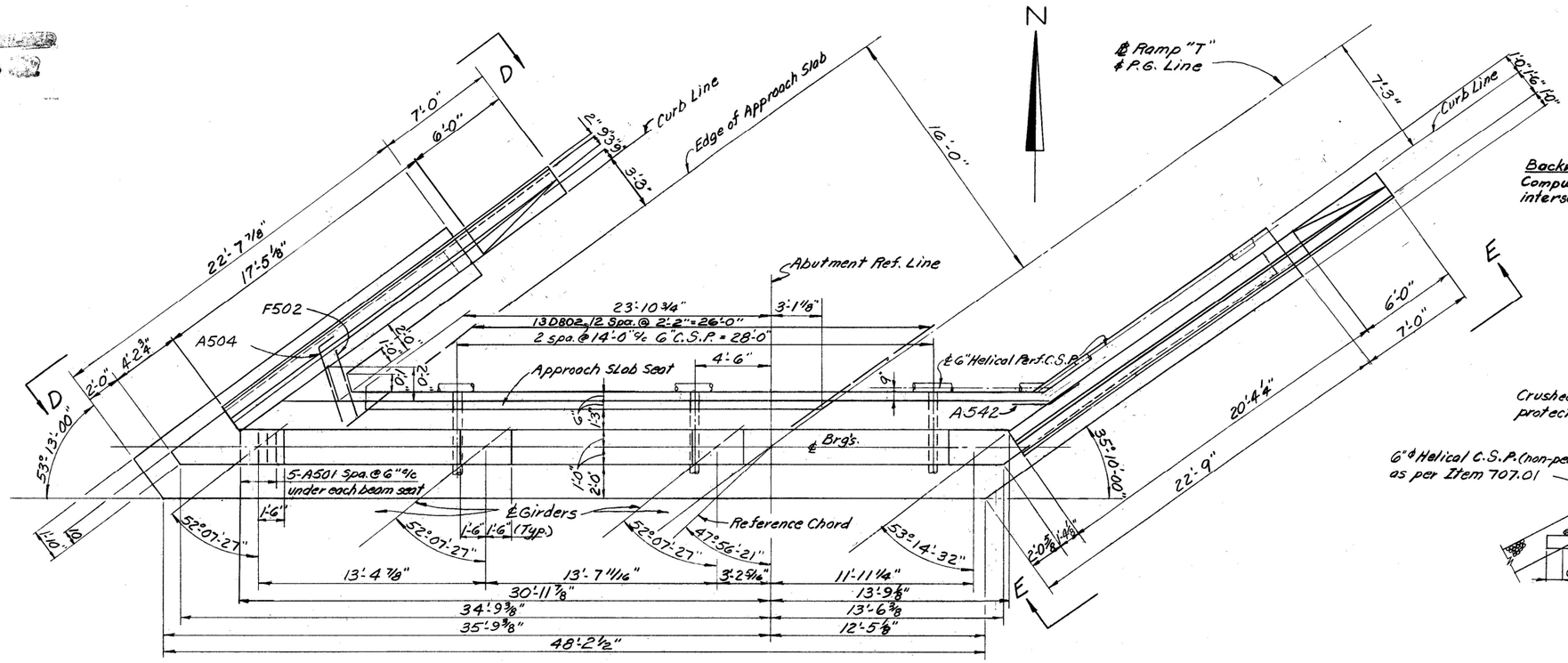
BRIDGE Nº CUY-480-0873
RAMP "T" OVER I-480

CUYAHOGA COUNTY STA. 30+05. STA. 33+30.

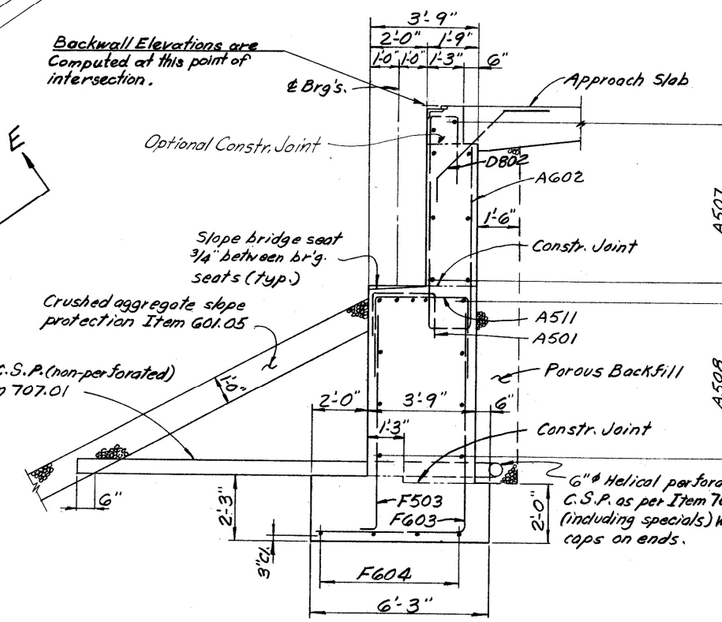
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.J.P.		R.S.S.	G.W.M.	3/7/67

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

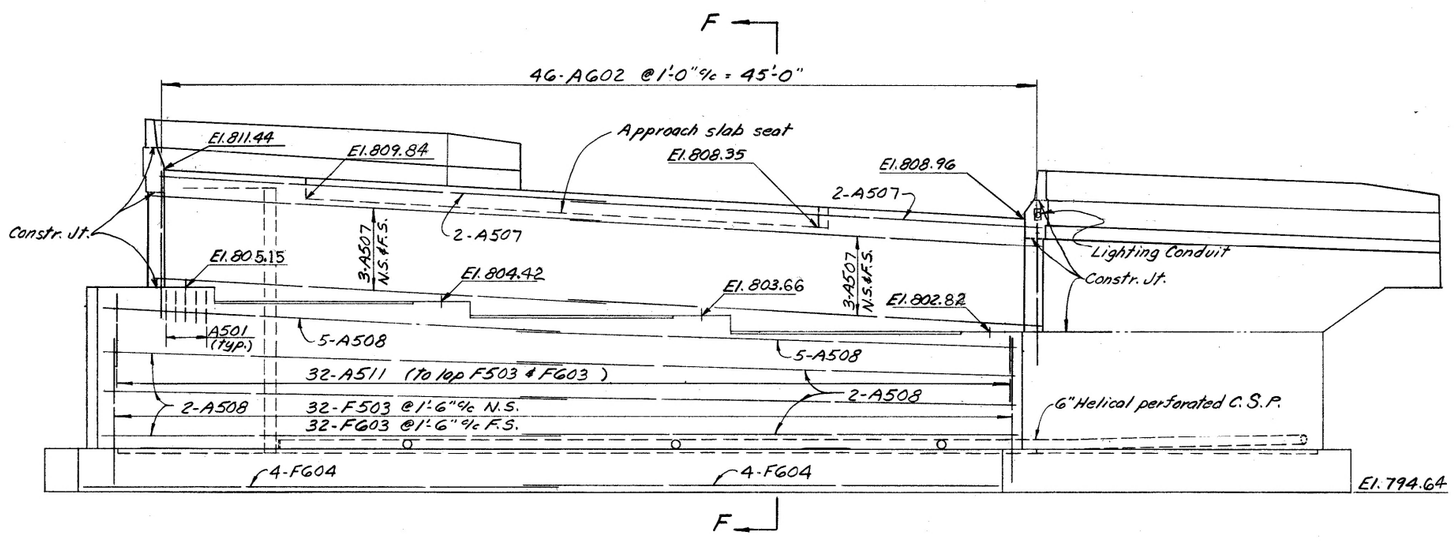
CUYAHOGA COUNTY
CUY-480-8.54



PLAN



SECTION F-F



ELEVATION

NOTES:

Embankment Procedure: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments. After placing of the embankment there shall be a waiting period of 30 days after which excavation shall be made for the abutments.

Porous backfill shall extend upward to the underside of the approach slab and the paved shoulders, and outward to the inside of the wingwalls.

Backwall Concrete: In addition to the provisions of 511.08, backwall concrete shall not be placed until after the deck concrete in the span adjacent to the backwall has been placed.

In reinforcing bar callouts, N.S. indicates near side & F.S. indicates far side.

For location of Elevation "D-D" & "E-E" see Sht. 6/15.

For details of lighting conduits in abutments see Standard Construction Drawing HL-5.

For parapet details see Standard Drawing BR-1-67 sheet 1 of 3.

5

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CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W.

NORTH ABUTMENT DETAIL

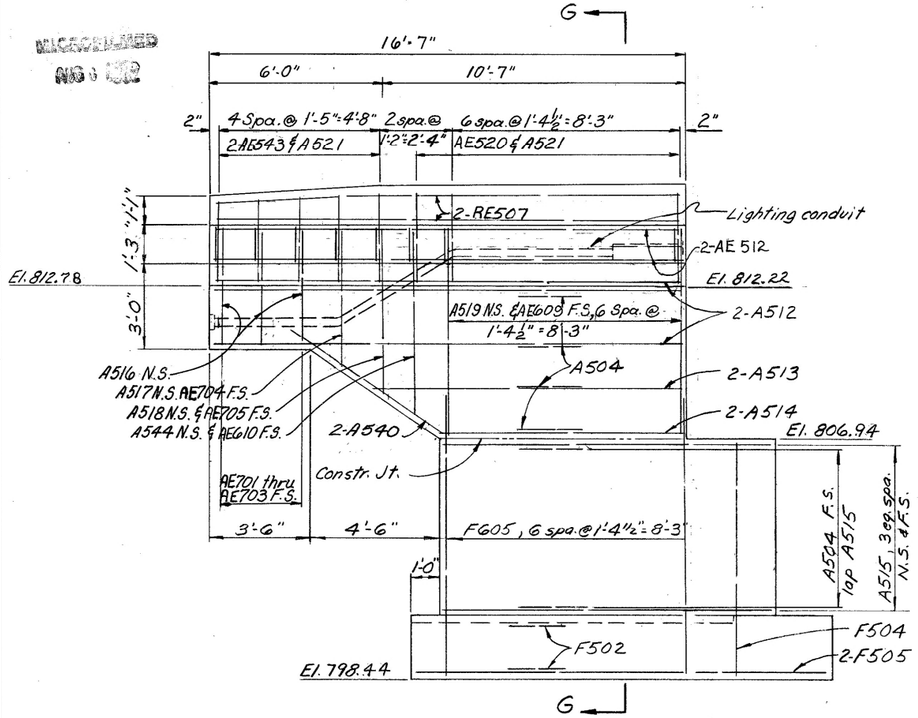
BRIDGE Nº CUY-480-0873
RAMP "T" OVER I-480

STA. 30+05.14
CUYAHOGA COUNTY STA. 33+30.99

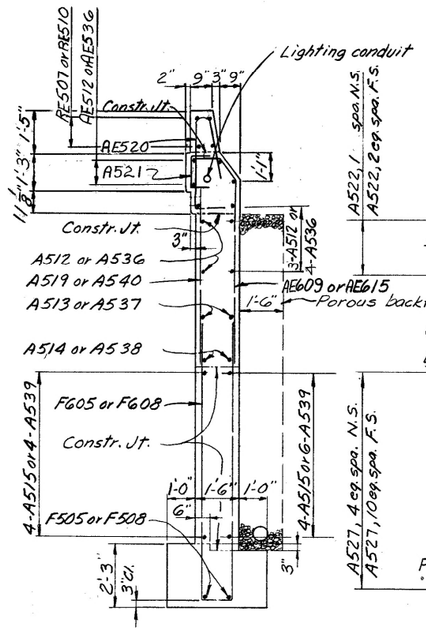
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.J.P.		R.S.S.	G.W.M.	3/7/67

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

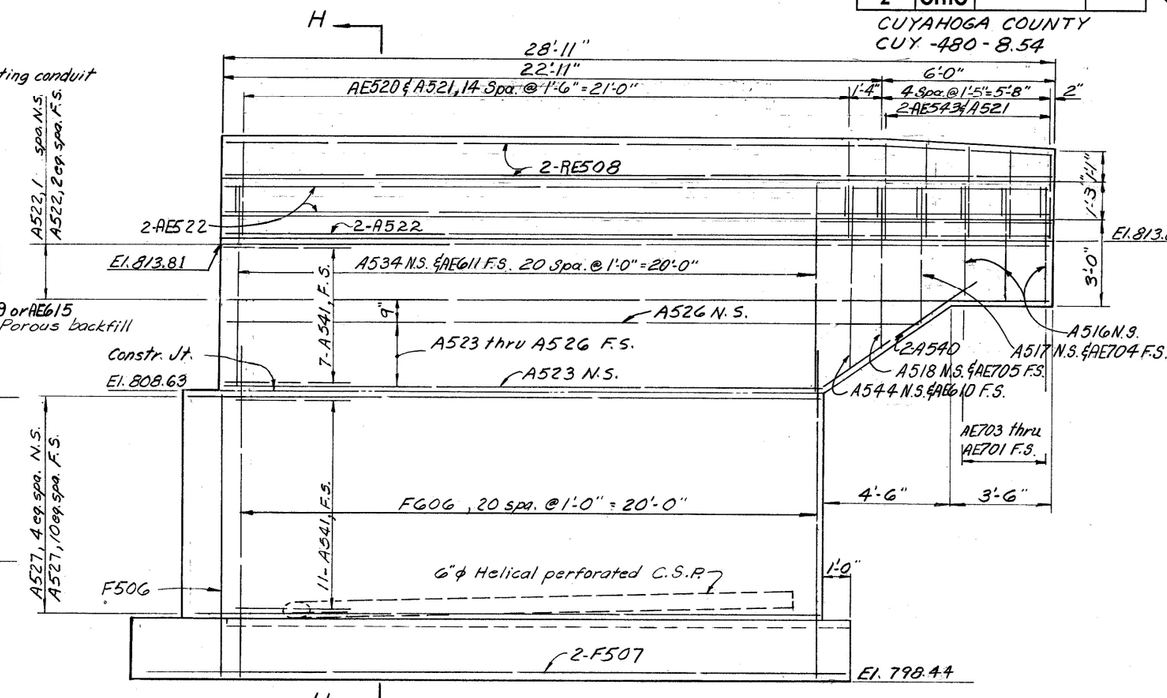
CUYAHOGA COUNTY
CUY -480 - 8.54



ELEVATION B-B
VIEW OF S.E. WINGWALL



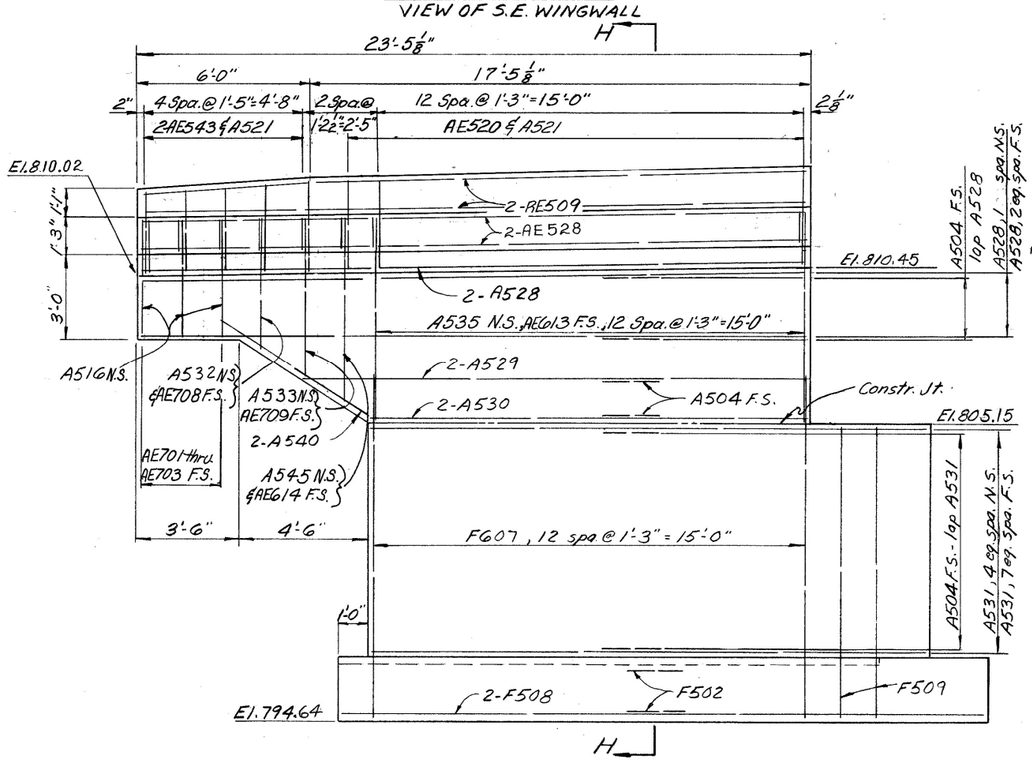
SECTION G-G
Note: Porous backfill & 6" C.S.P. behind N.E. Wingwall only.



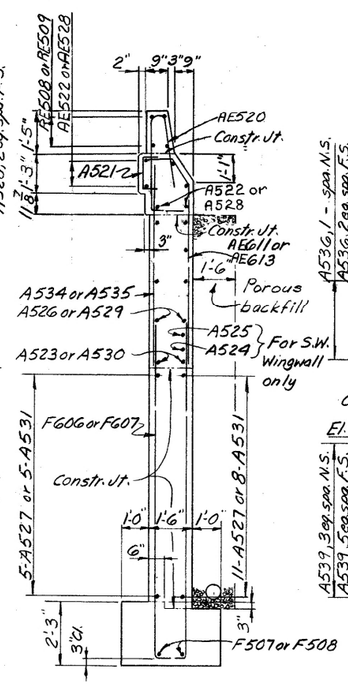
ELEVATION C-C
VIEW OF S.W. WINGWALL

For details of expansion fittings and couplings at abutments and conduit in elevations B-B & E-E, see Std. Dwg. HL-5.

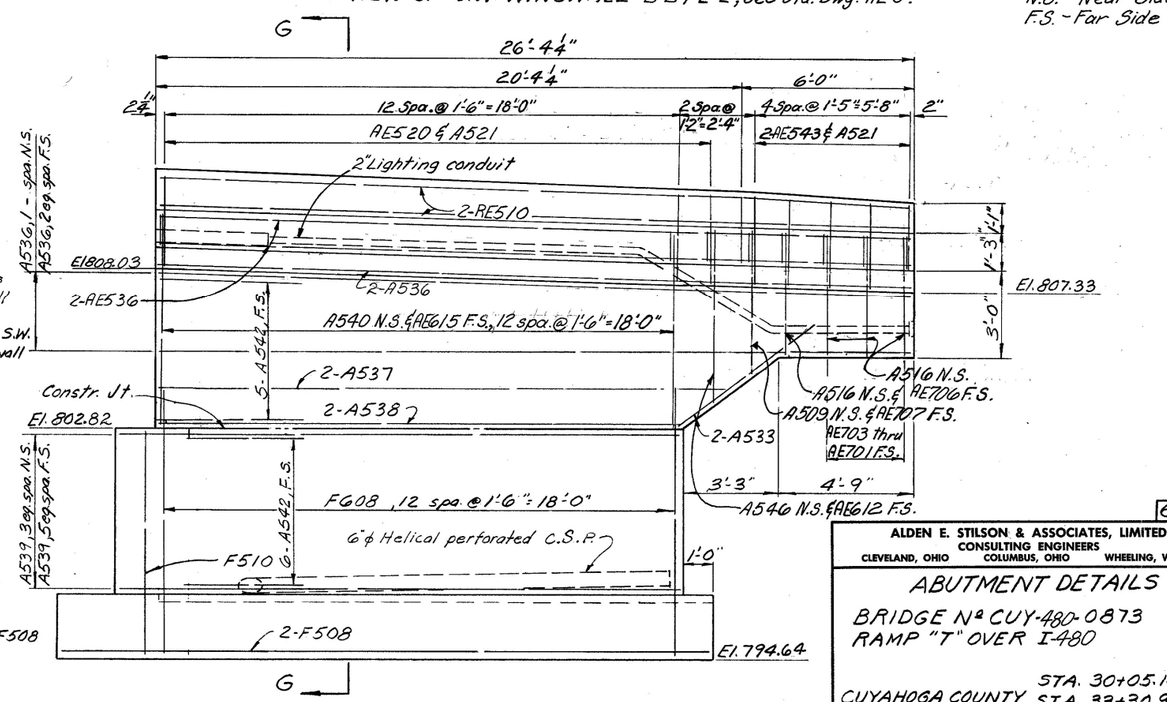
LEGEND
N.S. ~ Near Side
F.S. ~ Far Side



ELEVATION D-D
VIEW OF N.W. WINGWALL



SECTION H-H
Note: Porous backfill & 6" C.S.P. behind S.W. wingwall only.



ELEVATION E-E
VIEW OF N.E. WINGWALL

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CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W

ABUTMENT DETAILS

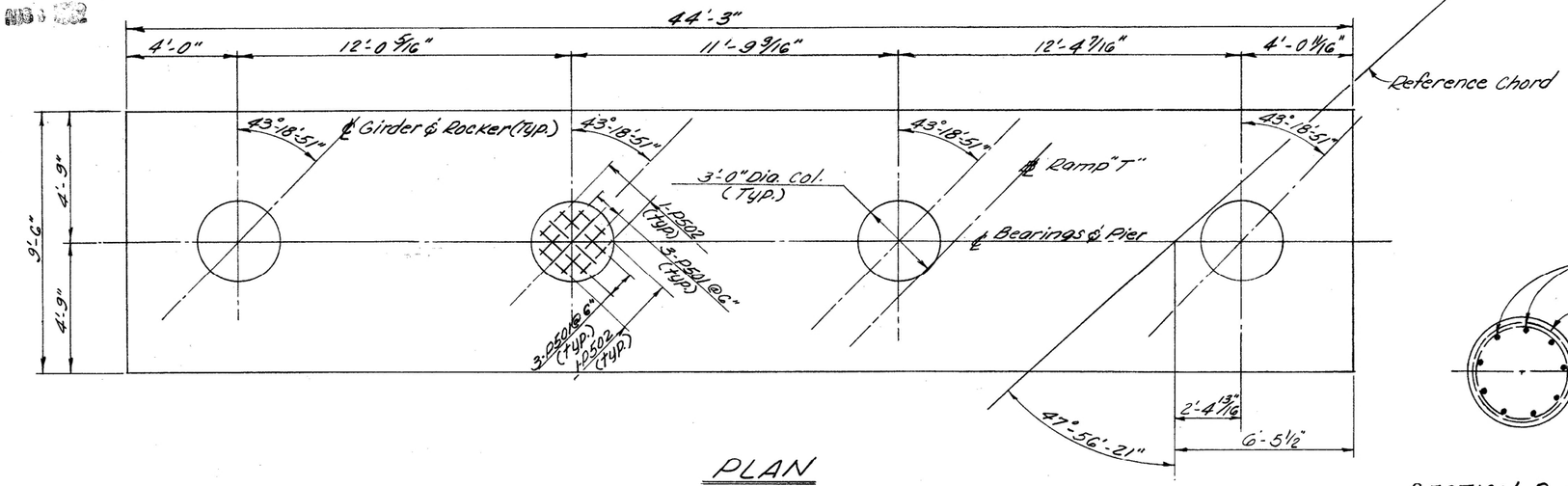
BRIDGE Nº CUY-480-0873
RAMP "T" OVER I-480

CUYAHOGA COUNTY STA. 30+05.1
STA. 33+30.9

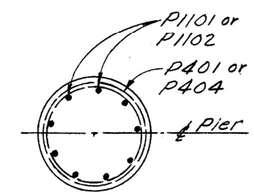
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.J.P.		R.S.S.	G.W.M.	3/7/61

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

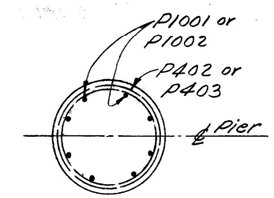
CUYAHOGA COUNTY
CUY.-480-8.54



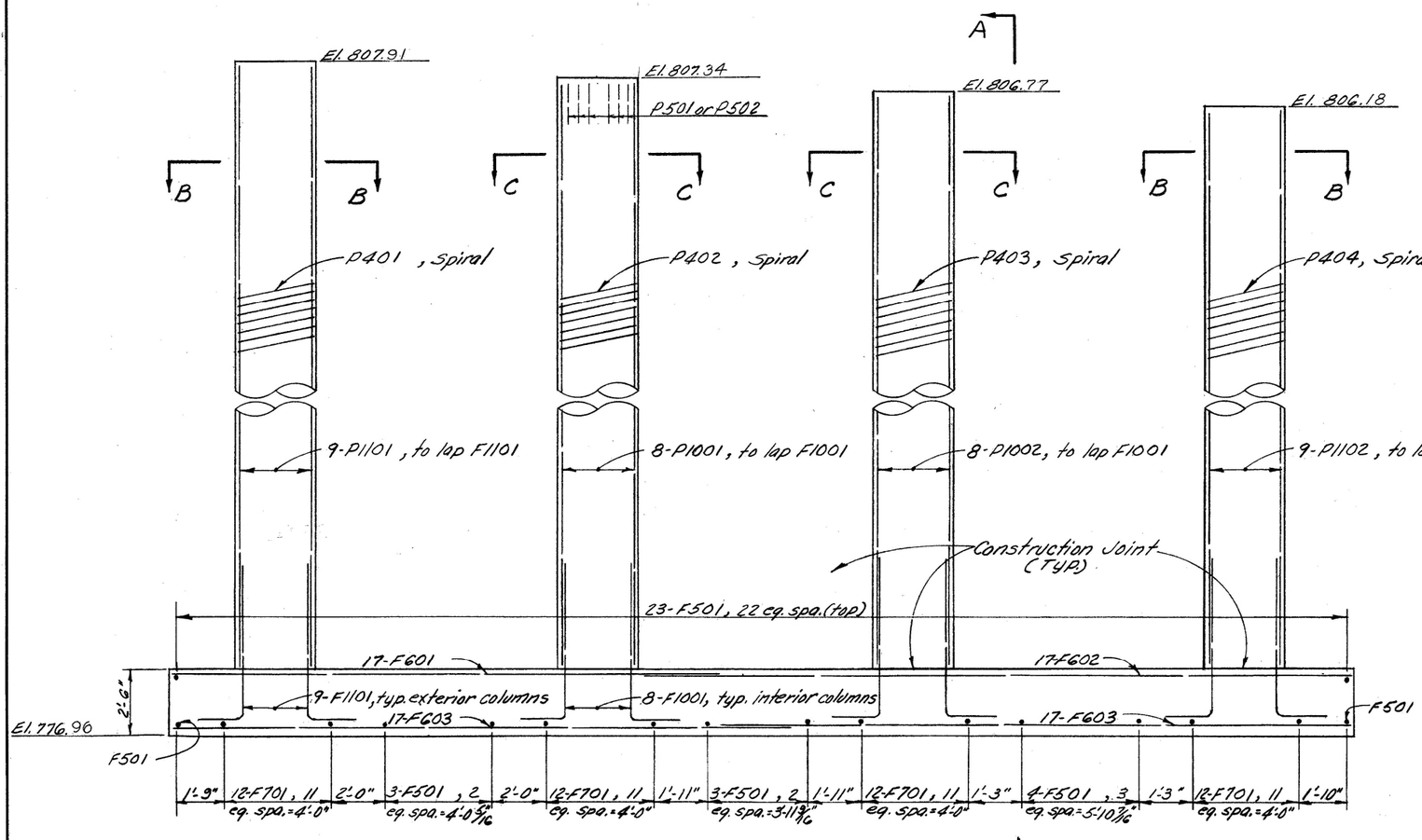
PLAN



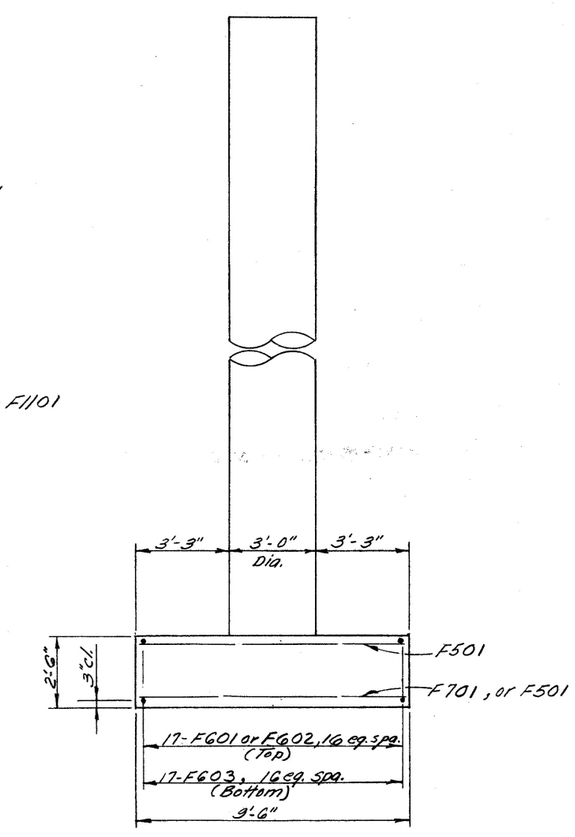
SECTION B-B



SECTION C-C



ELEVATION



SECTION A-A

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

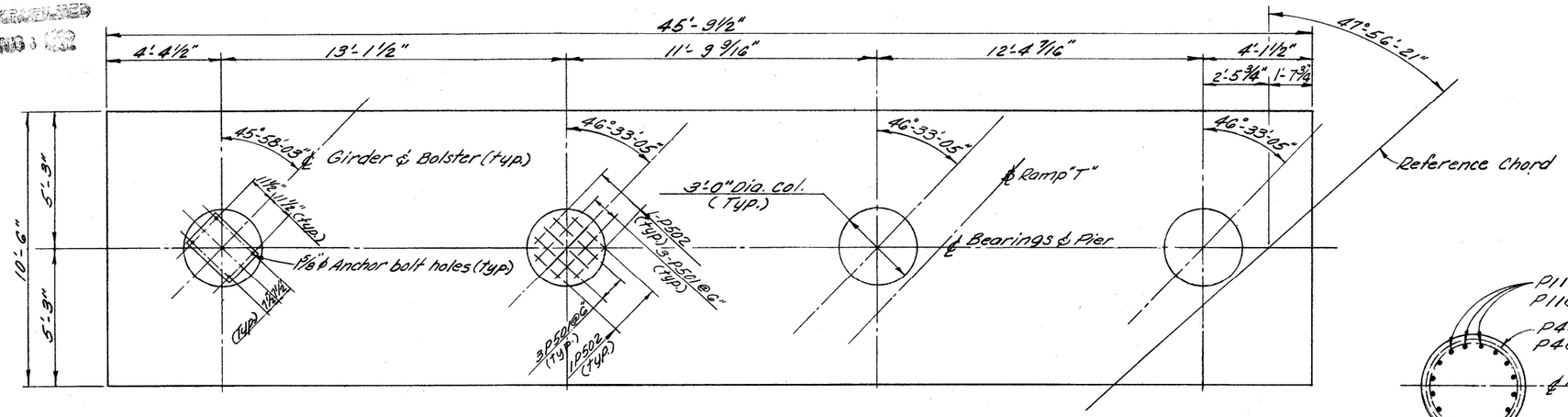
PIER No. 1 DETAILS

BRIDGE No. CUY-480-0873
RAMP "T" OVER I-480
CUYAHOGA COUNTY STA. 30+05. STA. 33+30.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.T.		R.J.P	G.W.M.	8/7/67

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY.-480- 8.54



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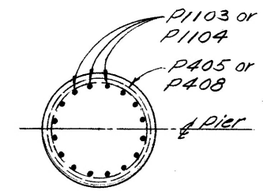
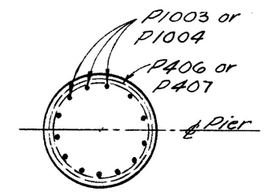
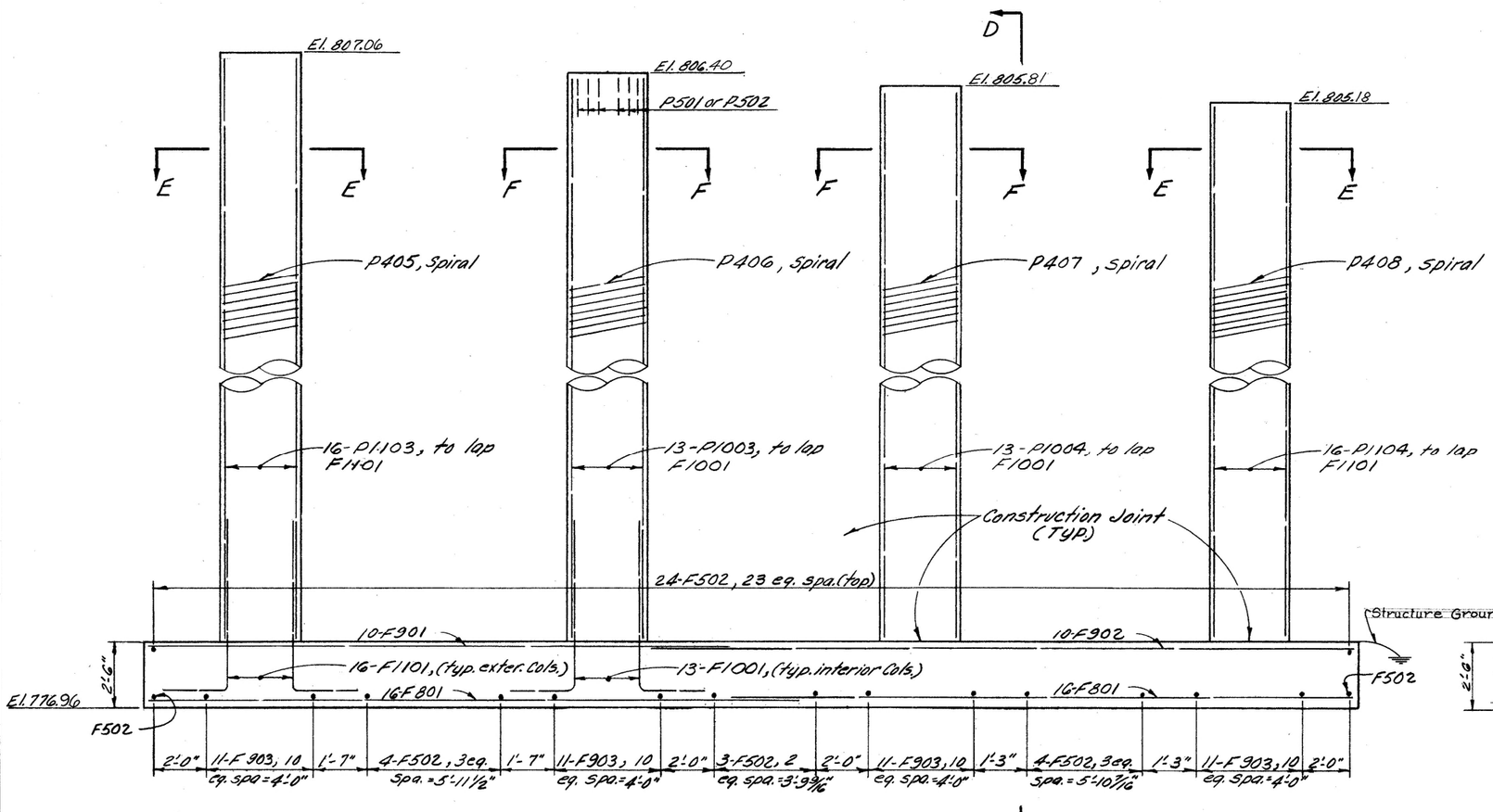


SECTION E-E



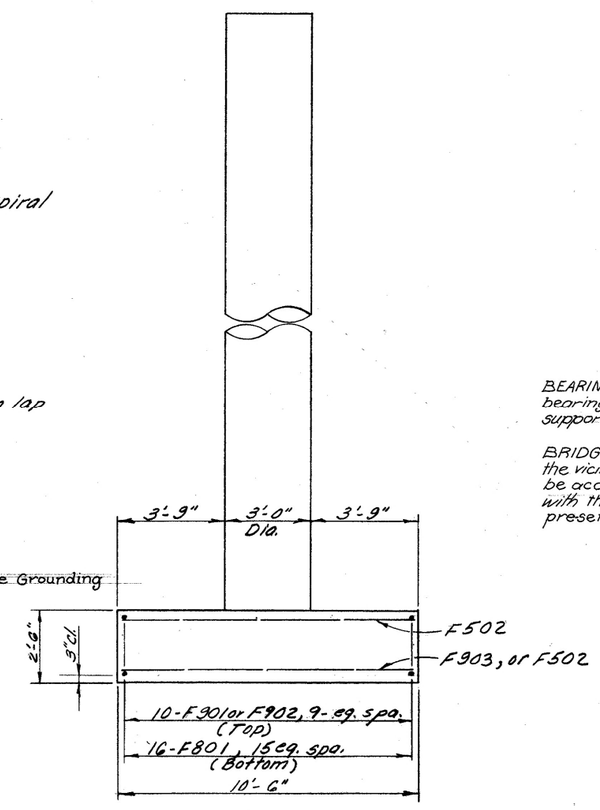
SECTION F-F



ELEVATION

D

Note: Ground Center Pier. For Grounding Details, see Standard Drawing HL-7.



SECTION D-D

BEARING ANCHORS: At the option of the Contractor bearing anchors (or formed holes), located and supported by templates, may be cast in place

BRIDGE SEAT REINFORCING: Reinforcing steel the vicinity of the bridge seat at Pier No. 2 sh be accurately placed to avoid interference with the drilling of bearing anchor holes or the presetting of bearing anchors.

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

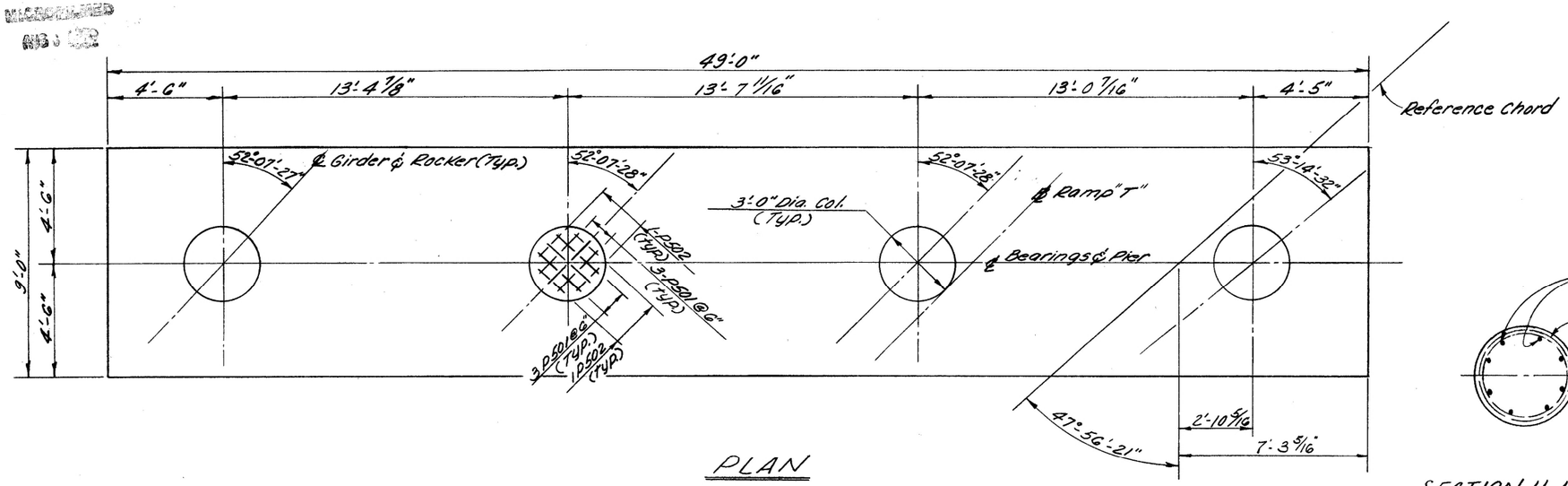
PIER No. 2 DETAILS

BRIDGE No. CUY.-480- 0873
RAMP "T" OVER I-480
CUYAHOGA COUNTY STA. 30+05. STA. 33+30.

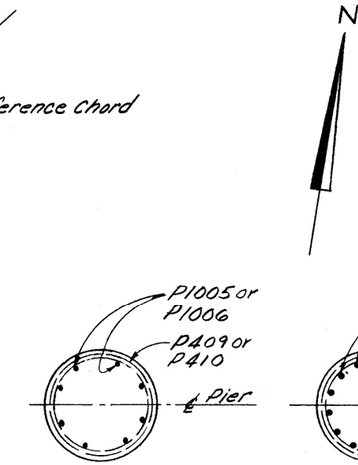
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.T.		R.J.P.	G.W.M.	3/7/67

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

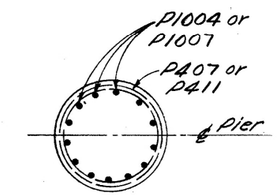
CUYAHOGA COUNTY
CUY.-480-8.54



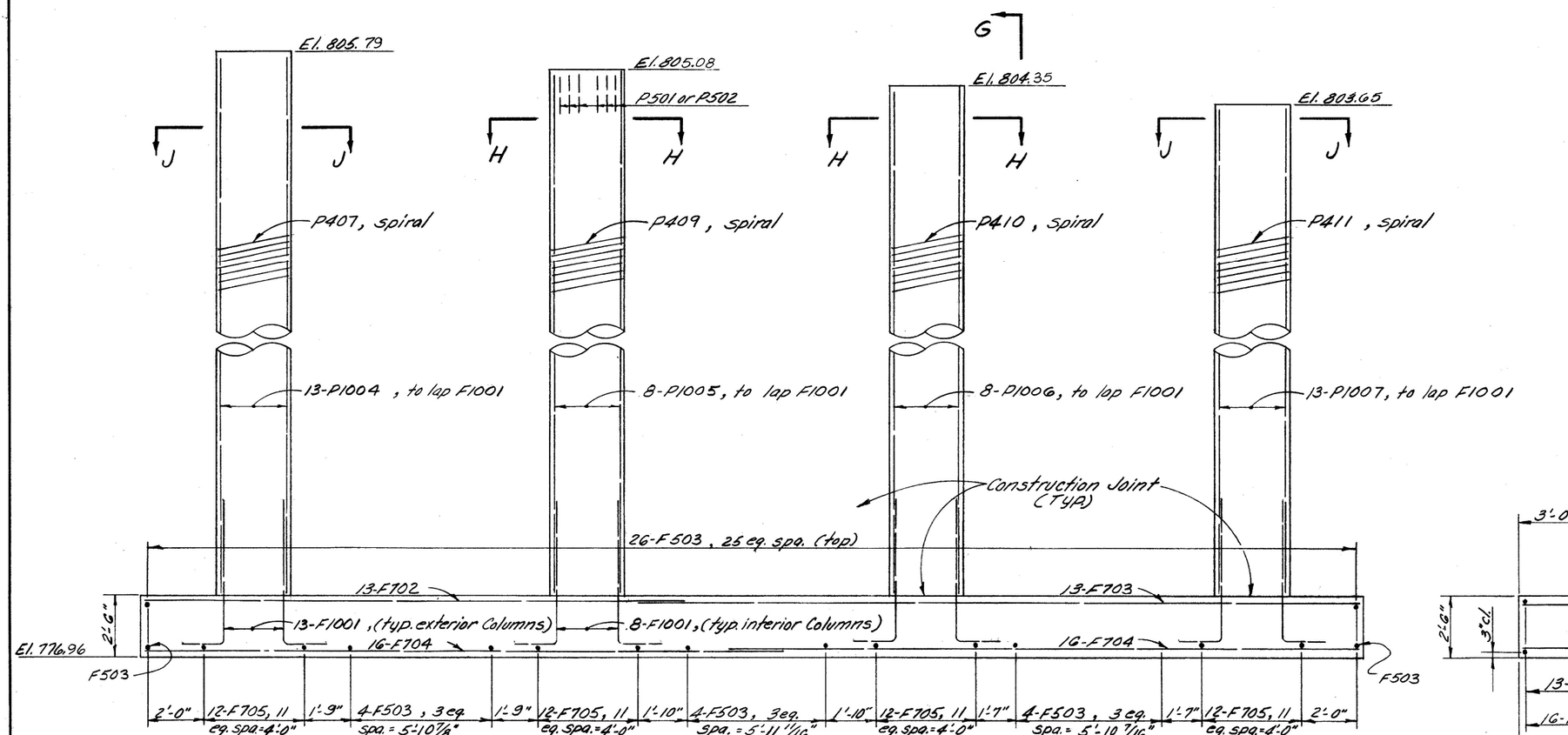
PLAN



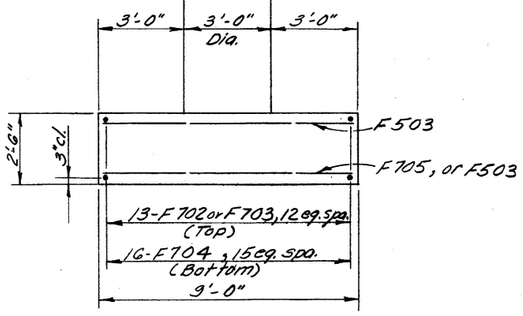
SECTION H-H



SECTION J-J



ELEVATION



SECTION G-G

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

PIER No. 3 DETAILS

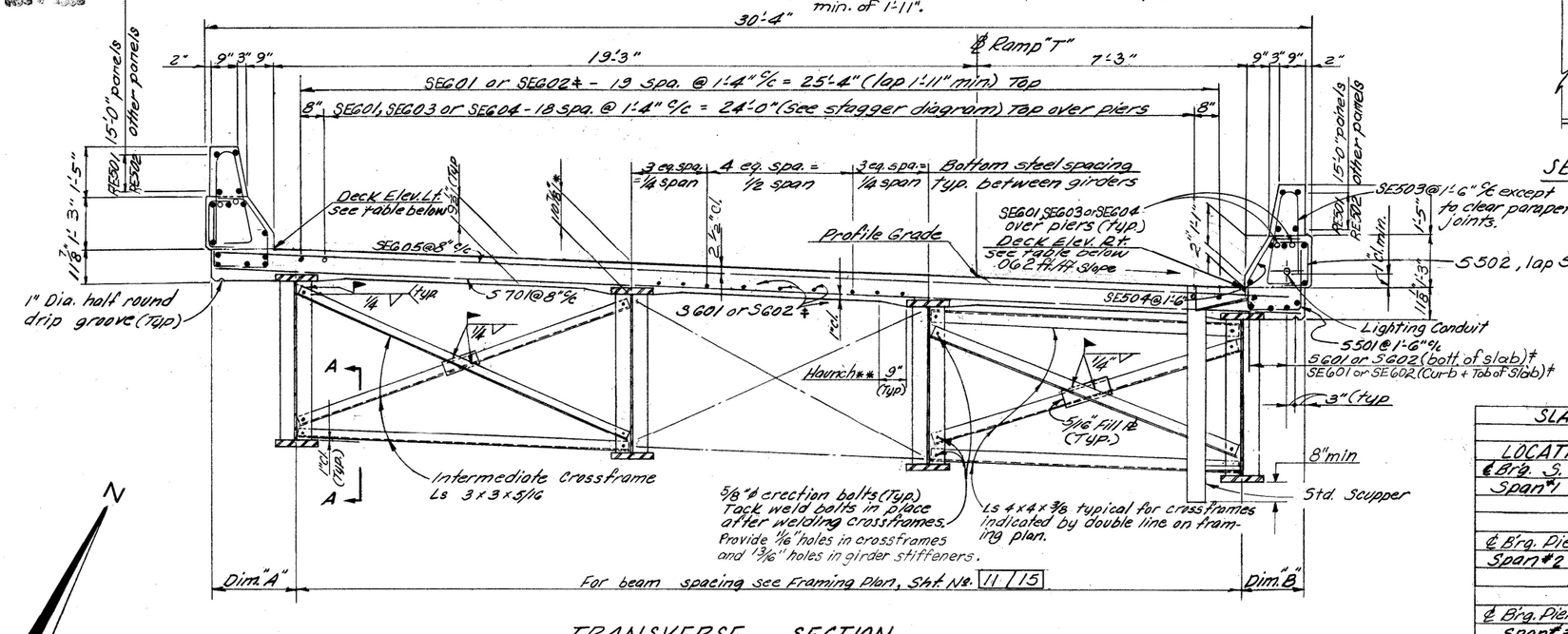
BRIDGE No. CUY.-480-0873
RAMP "T" OVER I-480
CUYAHOGA COUNTY STA. 30+05.
STA. 33+30.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.T.		R.J.P.	G.W.M.	3/7/67

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

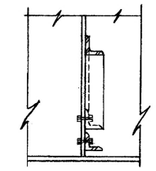
CUYAHOGA COUNTY
CUY.-480-8.54

† Each longitudinal run of deck reinforcing, excluding SEG01, SEG03 or SEG04 over the piers, shall be comprised of 11-S601 and 1-S602 (Bott.) and 11-SE 601 & 1-SEG602 (Top and Curbs) lapped a min. of 1'-11".



TRANSVERSE SECTION

(All transverse dimensions shown in Transverse Section are normal to the ℄ of Ramp "T")



SECTION "A-A"

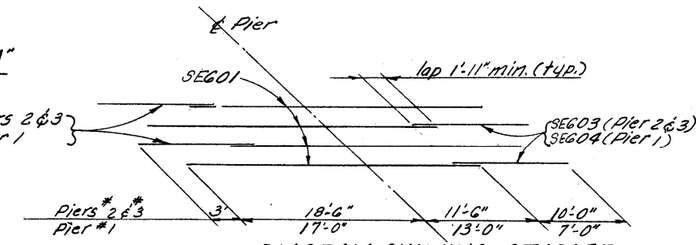


DIAGRAM SHOWING STAGGER OF SEG01, SEG03 & SEG04 BARS OVER PIER

SLAB CANTILEVERS		
LOCATION	DIM. "A"	DIM. "B"
℄ Brg. S. Abut.	1'-3"	1'-9"
Span #1 1/4 Pt.	1'-8 1/16"	1'-6 3/8"
1/2 Pt.	2'-0 1/4"	1'-5 5/8"
3/4 Pt.	2'-2 1/8"	1'-6 5/8"
℄ Brg. Pier No. 1	2'-2 1/4"	1'-9 5/8"
Span #2 Splice Pt.	2'-0"	2'-3 3/4"
1/2 Pt.	2'-7 1/8"	1'-10 1/2"
3/4 Pt.	2'-8 3/8"	1'-11 1/8"
℄ Brg. Pier No. 2	2'-5 1/2"	2'-4 1/4"
Span #3 Splice Pt.	2'-0"	2'-1 5/8"
1/2 Pt.	2'-3 3/8"	2'-7 5/8"
Splice Pt.	2'-0"	2'-10 3/4"
℄ Brg. Pier No. 3	2'-8"	2'-2 3/4"
Span #4 1/4 Pt.	3'-0"	1'-10 3/4"
1/2 Pt.	3'-2"	1'-9 1/8"
3/4 Pt.	3'-2"	1'-9 1/2"
℄ Brg. N. Abut.	3'-0"	2'-0"

* This dimension is from the top of the slab to the top of the web of the girder and 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 girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deductions 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 quantities 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 in width.

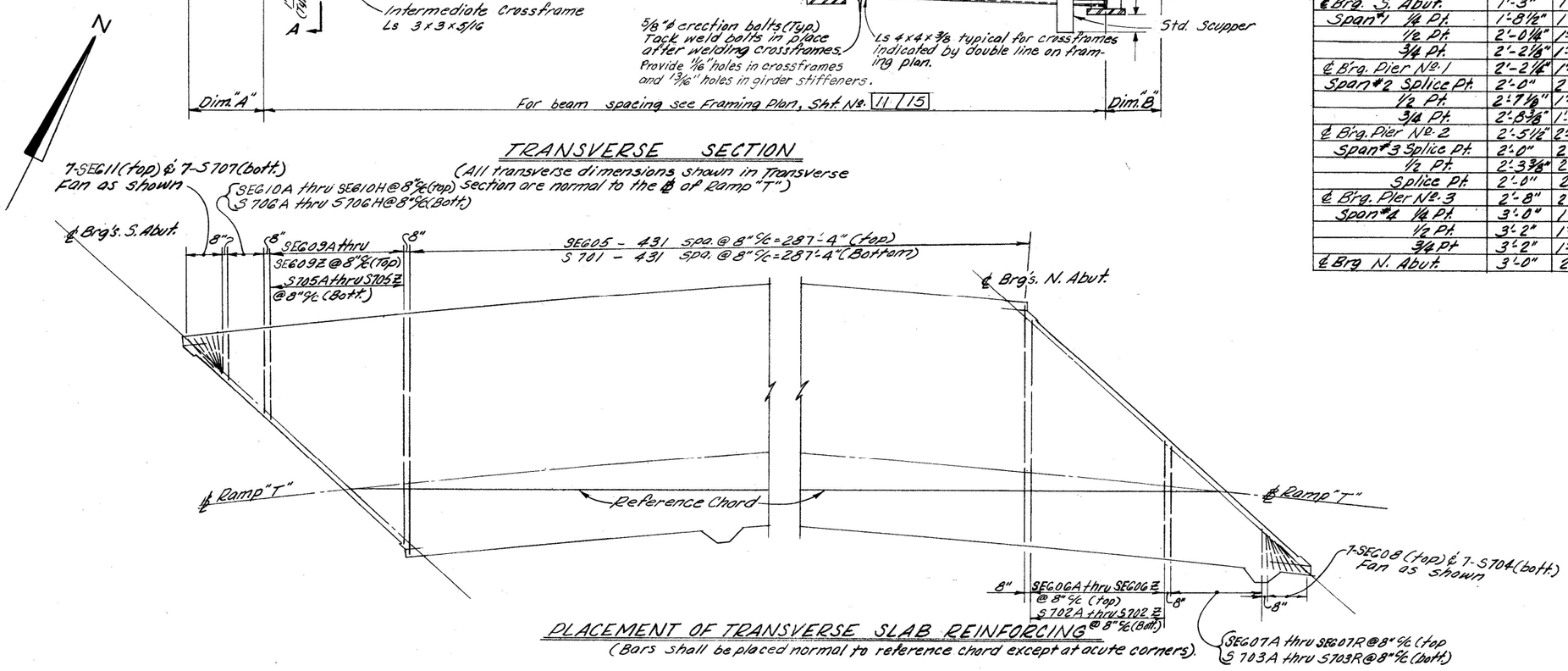
Longitudinal reinforcing steel shall be field cut as necessary to avoid interference with scuppers.

Transverse slab bars shall be field bent below safety curb as required. Cost of Field bending shall be included in Item 509 for Payment.

For Scupper Details see Standard Drawing SD-1-69.

SCUPPERS shall be in accordance with Standard Drawing SD-1-69 except that scupper pipes shall extend 8" below the bottom of the beams instead of 2".

For details of pilaster and anchor bolts see Std. Dwgs. 1145



PLACEMENT OF TRANSVERSE SLAB REINFORCING

(Bars shall be placed normal to reference chord except at acute corners).

NOTE: The elevations shown are at the top of the reinforced concrete slab and are required before the concrete deck is placed. Proper allowance has been made for the dead load deflection caused by the weight of concrete.

DECK ELEVATION AT FACE OF CURB											
Station	Elevation	Station	Elevation	Station	Elevation	Station	Elevation	Station	Elevation	Station	Elevation
29+91.50 Lt.	814.81	30+96.53 Lt.	814.48	32+39.61 Lt.	812.69	30+14.72 Rt.	813.16	31+22.66 Rt.	812.63	32+70.74 Rt.	810.47
30+05.82 Lt.	814.82	31+19.34 Lt.	814.28	32+55.46 Lt.	812.41	30+30.10 Rt.	813.14	31+46.10 Rt.	812.38	32+87.26 Rt.	810.14
30+20.94 Lt.	814.80	31+42.15 Lt.	814.05	32+71.31 Lt.	812.12	30+45.47 Rt.	813.09	31+63.53 Rt.	812.09	33+03.80 Rt.	809.80
30+36.05 Lt.	814.76	31+61.13 Lt.	813.86	32+87.16 Lt.	811.80	30+60.86 Rt.	813.02	31+83.03 Rt.	811.86	33+20.32 Rt.	809.43
30+51.16 Lt.	814.70	31+90.27 Lt.	813.52	33+01.75 Lt.	811.47	30+76.23 Rt.	812.94	32+19.35 Rt.	811.44	33+36.86 Rt.	809.02
30+69.04 Lt.	814.64	32+19.42 Lt.	813.06			30+94.41 Rt.	812.84	32+49.68 Rt.	810.90		

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

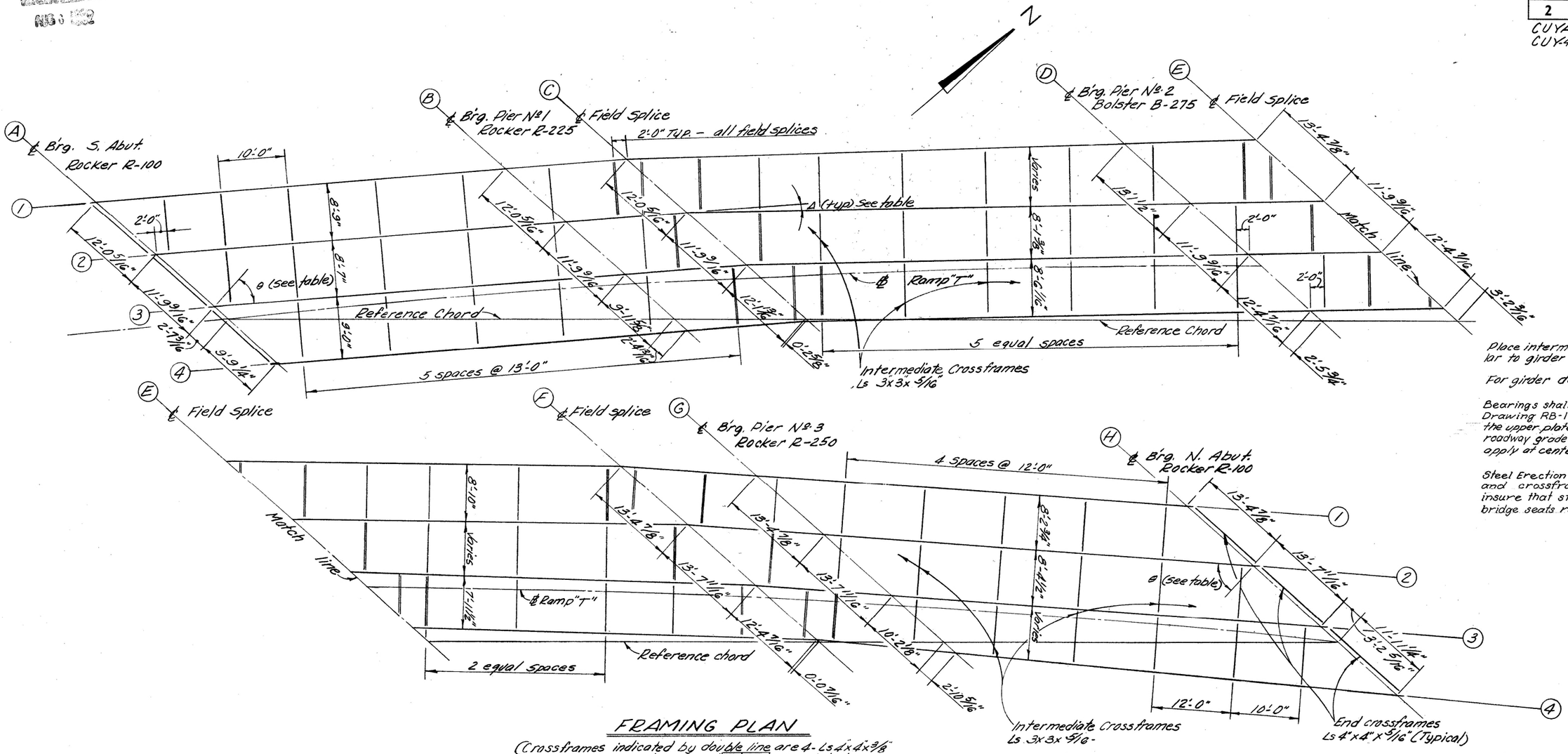
SUPERSTRUCTURE DETAIL

BRIDGE No. CUY.-480-0873
RAMP "T" OVER I-480
CUYAHOGA COUNTY STA. 30+05. STA. 33+30.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.T.		R.J.P.	G.W.M.	3/7/67

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-8.54



FRAMING PLAN

(Crossframes indicated by double line are 4-Ls 4x4x3/8
See Transverse Section, Sheet 10/15 for details.
These crossframes shall be placed immediately upon completion of all bolting of the adjacent field splices.

NOTES:

Place intermediate crossframes perpendicular to girder row (1) in each span.

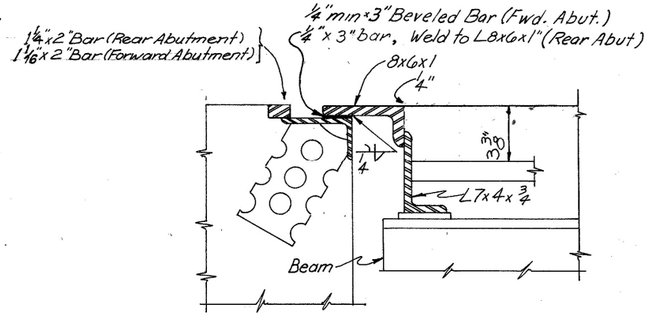
For girder details see Sht. 12/15

Bearings shall be in accordance with Standard Drawing RB-1-55 except that for the forward the upper plate element shall be beveled to match roadway grade. Tabulated plate thickness C shall apply at centerline of plate.

Steel Erection: During the erection of end diaphragms and crossframes care shall be taken to insure that stringers, bearing parts and bridge seats remain in bearing contact.

TABLE OF DEFLECTION ANGLES & GIRDER LENGTHS

Bearing Point or Splice Point		Girder Row (1)	Girder Row (2)	Girder Row (3)	Girder Row (4)
(A)	θ	43°-18'-51"	43°-18'-51"	43°-18'-51"	43°-18'-51"
	Length (A)(B)	61'-2 1/2"	61'-2 1/2"	61'-2 1/2"	61'-2 1/2"
(B)	Δ	0	0	0	0
	Length (B)(C)	18'-1 1/4"	18'-1 1/4"	18'-1 1/4"	18'-1 1/4"
(C)	Δ	2°-39'-12"	3°-14'-14"	3°-14'-14"	3°-14'-14"
	Length (C)(D)	73'-11 15/16"	74'-9 7/16"	74'-9 7/16	74'-9 7/16"
(D)	Δ	0	0	0	0
	Length (D)(E)	19'-2 9/16"	19'-5"	19'-5"	19'-5"
(E)	Δ	2°-49'-10"	2°-14'-09"	3°-23'-19"	3°-23'-19"
	Length (E)(F)	59'-0 1/8"	59'-0 1/8"	60'-4 7/8"	60'-4 7/8"
(F)	Δ	3°-20'-14"	3°-20'-14"	2°-11'-04"	3°-18'-08"
	Length (F)(G)	20'-5 7/16"	20'-5 7/16"	20'-5 7/16"	20'-11 13/16"
(G)	Δ	0	0	0	0
	Length (G)(H)	64'-1 13/16"	64'-1 13/16"	64'-1 13/16"	65'-9 3/4"
(H)	θ	52°-07'-27"	52°-07'-27"	52°-07'-27"	53°-14'-32"



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

END DAM DETAILS

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

SUPERSTRUCTURE DETA

BRIDGE Nº CUY.-480-0873
RAMP "T" OVER I-480
CUYAHOGA COUNTY STA. 30+05.
STA. 33+30.

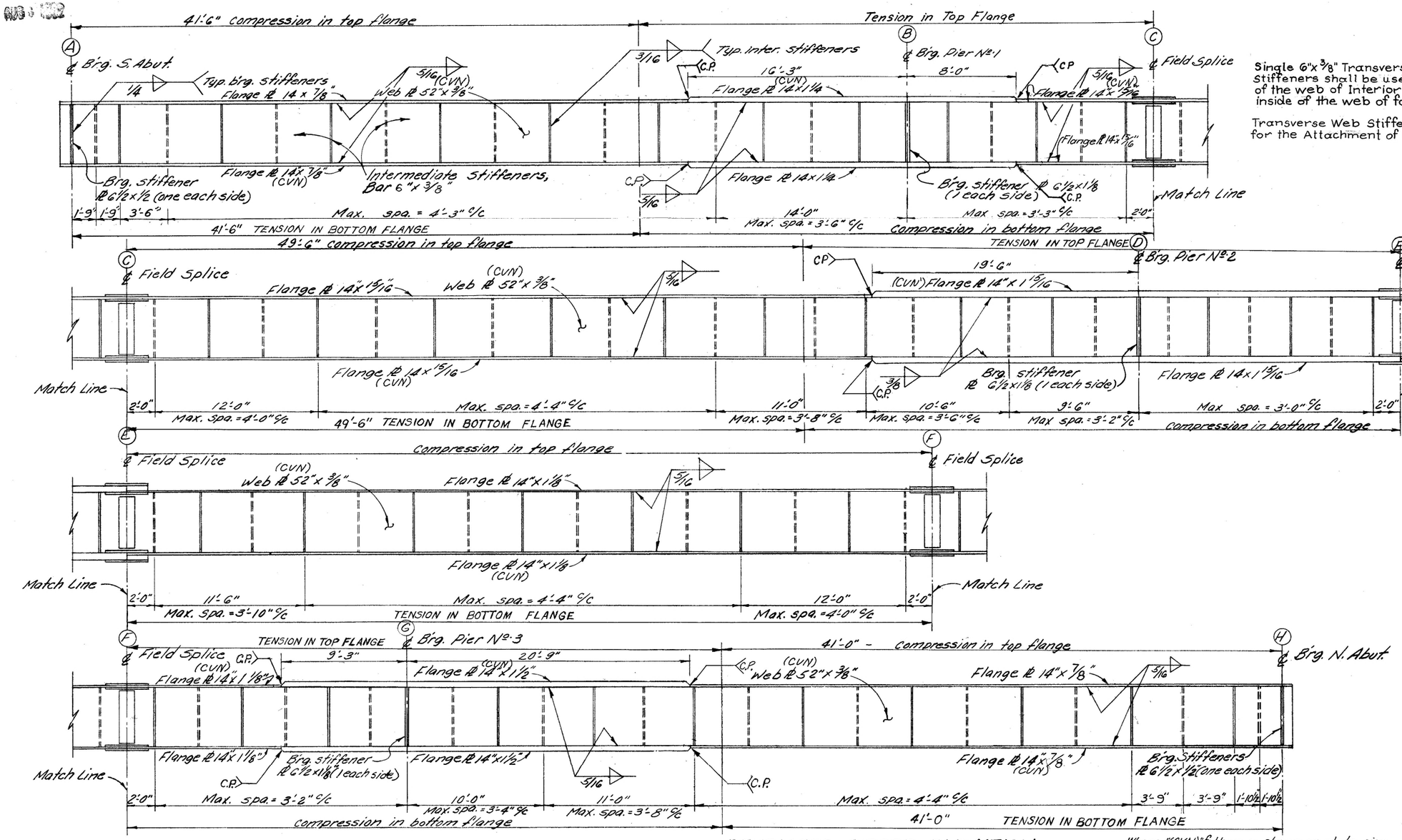
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.T.		R.J.A	G.W.M.	3/7/67

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY.480-8.54

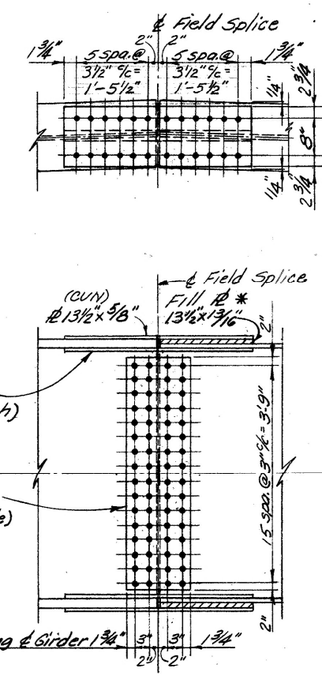
Single 6"x 3/8" Transverse Intermediate Web Stiffeners shall be used on alternate sides of the web of Interior Girders and on the inside of the web of fascia girders.

Transverse Web Stiffeners shall be provided for the Attachment of Deck Crossframes.



DEVELOPED GIRDER ELEVATION

Where "(CVN)" follows a shape or plate size designation, the material shall meet specified minimum notch toughness requirements.



GIRDER FIELD SPLICE DET

* Fill plates occur at Field Splice (E) o

NOTES:

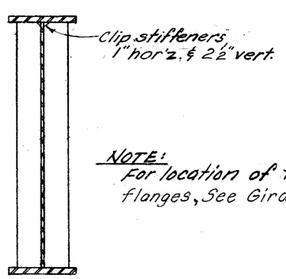
1" ϕ High strength bolts shall be used at field splic
Bolt heads on exterior girder web splices shall be a
fascia side. Bolts shall conform to A 325 steel.

For location of points (A) thru (H) see Sht. 11 / 15

For additional notes & details see sht. 13 / 15

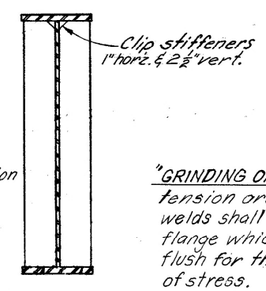
C.P.-Complete Penetration Butt weld.

Locate intermediate stiffeners to serve as atta
ments for intermediate crossframes.



NOTE:
For location of tension and compression flanges, See Girder Elevation above.

TYPICAL SECTION THRU GIRDER



Intermediate stiffeners shall have a tight fit with the tension flange and may have either a tight fit or be welded to the compression flange with 1/4" fillet weld.

"GRINDING OF SHOP WELDS: Flange butt welds shall be ground flush in tension areas only. Except for webs of fascia girders, web welds shall be ground flush from the neutral axis of the web to the flange which is in tension. Webs of fascia girders shall be ground flush for their full depth. Grinding shall be done in the direction of stress.

TYPICAL SECTION THRU GIRDER AT BEARING

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

SUPERSTRUCTURE DETA

BRIDGE No CUY-480 -0873
RAMP "T" OVER I-480
CUYAHOGA COUNTY STA. 30+05.
STA. 33+30.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.T.		R.J.P.	G.W.M.	3/7/67

MICROFILMED
AUG 1 1968

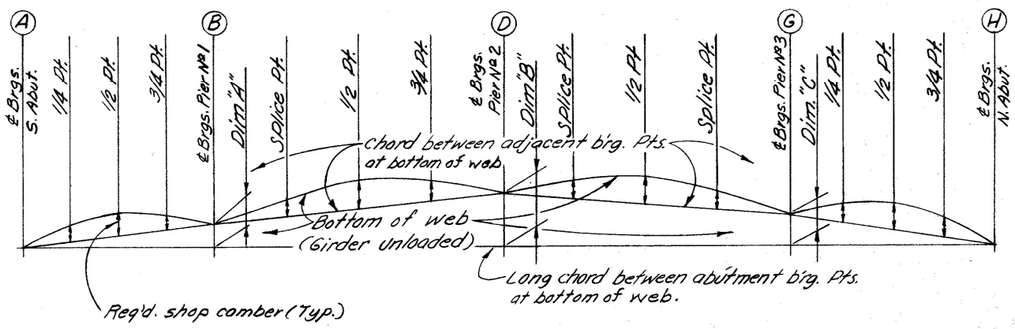
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-80-8.54

DEFLECTION AND CAMBER

LOCATION	SPAN Ⓐ – Ⓑ												SPAN Ⓑ – Ⓓ											
Girder	No. 1			No. 2			No. 3			No. 4			No. 1			No. 2			No. 3			No. 4		
Point	1/4	1/2	3/4	1/4	1/2	3/4	1/4	1/2	3/4	1/4	1/2	3/4	Spl.	1/2	3/4	Spl.	1/2	3/4	Spl.	1/2	3/4	Spl.	1/2	3/4
Defl. due to weight of steel	0	1/16	0	0	1/16	0	0	1/16	0	0	1/16	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16
Defl. due to remaining D.L.	1/8	3/16	1/16	1/8	3/16	1/16	1/8	3/16	1/16	1/8	3/16	1/16	3/16	3/8	3/16	3/16	3/8	3/16	3/16	3/8	3/16	3/16	3/8	3/16
Adj. req'd for horiz. & vert. curve	1/8	3/16	1/8	1/8	3/16	1/8	1/8	3/16	1/8	1/8	3/16	1/8	3/4	11/16	7/16	7/8	13/16	1/2	7/8	13/16	1/2	7/8	13/16	1/2
Required Shop Camber	1/4	7/16	3/16	1/4	7/16	3/16	1/4	7/16	3/16	1/4	7/16	3/16	1	1 1/8	11/16	1 1/8	1 1/4	3/4	1 1/8	1 1/4	3/4	1 1/8	1 1/4	3/4

LOCATION	SPAN Ⓓ – Ⓖ												SPAN Ⓖ – Ⓗ											
Girder	No. 1			No. 2			No. 3			No. 4			No. 1			No. 2			No. 3			No. 4		
Point	Spl.	1/2	Spl.	Spl.	1/2	Spl.	Spl.	1/2	Spl.	Spl.	1/2	Spl.	1/4	1/2	3/4	1/4	1/2	3/4	1/4	1/2	3/4	1/4	1/2	3/4
Defl. due to weight of steel	1/16	1/8	1/16	1/16	1/8	1/16	1/16	1/8	1/16	1/16	1/8	1/16	0	0	0	0	0	0	0	0	0	0	0	0
Defl. due to remaining D.L.	1/4	5/8	5/16	1/4	5/8	5/16	1/4	5/8	5/16	1/4	5/8	5/16	0	1/8	1/8	0	1/8	1/8	0	1/8	1/8	0	1/8	1/8
Adj. req'd. for horiz. & vert. curve	1	1 1/4	1/8	15/16	1 3/16	1/8	1/8	1 3/16	15/16	1 3/16	1 3/8	1 3/16	1/8	3/16	1/8	1/8	3/16	1/8	1/8	3/16	1/8	1/8	3/16	1/8
Required Shop Camber	1 5/16	2	1 1/2	1 1/4	1 15/16	1 1/2	1 7/16	1 15/16	1 5/16	1 1/2	2 1/8	1 9/16	1/8	5/16	1/4	1/8	5/16	1/4	1/8	5/16	1/4	1/8	5/16	1/4



CAMBER & BLOCKING DIAGRAM

BLOCKING DIMENSIONS			
Dimension	"A"	"B"	"C"
Girder No. 1	6 1/16	10 1/8	6 3/4
Girder No. 2	6 1/4	10 1/8	6 3/4
Girder No. 3	6 1/2	10 5/8	6 9/16
Girder No. 4	6 7/8	11 7/16	7 1/2

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

SUPERSTRUCTURE DETAI

BRIDGE No. CUY. -80-08.73
RAMP "T" OVER I-80
CUYAHOGA COUNTY STA. 30+05.
STA. 33+30.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.T.		R.J.P.	G.W.M.	3/7/67

RECEIVED
AUG 0 1 1972

FED. RD. DIVISION	STATE	PROJECT	TYPE NUMBER
1	OHIO		

CUYAHOGA COUNTY
CUY.-480-8.54

NOTES

1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST 1/8". WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.
2. DELETED
3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.
4. LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
5. END PREPARATION AND FIELD WELDING INCLUDED WITH ITEM 509.
6. "LENGTH" SHOWN FOR SPIRAL BARS IS DISTANCE FROM TOP OF FOOTING TO BOTTOM OF PIER CAP.
"NO. TURNS" SHOWN IS "LENGTH" DIVIDED BY PITCH, PLUS 3 TURNS (NUMBER OF CLOSED COILS), EXPRESSED AS NEAREST WHOLE NUMBER.

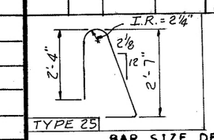
SPIRAL BARS SHALL NOT HAVE DEFORMATIONS BUT SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. 1 1/2 CLOSED COILS SHALL BE PROVIDED AT ENDS OF EACH SPIRAL UNIT. 4 STEEL CHANNEL, TEE, OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.68 LB. PER LIN. FT. OF SPACER SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG PERIPHERY OF COIL. WEIGHT OF SPACERS, AT 0.68 LB. PER LIN. FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN TABULATED WEIGHT.

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				ABUTMENTS						
A 501	40	4-11	205	1		1- 6	2- 2	1- 6		
A 502	16	19- 3	321	ST						
A 503	22	20- 0	459	ST						
A 504	21	5-11	130	6	0- 5	0-11	5- 0			
A 506	26	9- 8	262	1		3- 3	3- 5	3- 3		
A 507	16	23-10	398	ST						
A 508	22	24-10	570	ST						
A 509	1	4-10	5	ST						
A 511	32	11- 0	367	1		3-11	3- 5	3-11		
A 512	6	16- 3	102	ST						
A 513	2	10-10	23	ST						
A 514	2	8- 4	17	ST						
A 515	8	11- 0	92	ST						
A 516	13	4- 1	55	ST						
A 517	2	4-7	10	ST						
A 518	2	5-7	12	ST						
A 519	7	7-5	54	ST						
A 521	71	2-3	167	1		0-7½	1-3	0-7½		
A 522	7	28-7	209	ST						
A 523	2	20-7	43	ST						
A 524	1	21-9	23	ST						
A 525	1	22-11	24	ST						
A 526	2	24-1	50	ST						
A 527	16	21-11	366	ST						
A 528	7	23-1	169	ST						
A 529	2	17-3	36	ST						
A 530	2	15-1	31	ST						
A 531	13	18- 8	253	ST						
A 532	1	4-6	5	ST						
A 533	3	5-5	17	ST						
A 534	21	7-4	161	ST						
A 535	13	7-1	96	ST						
A 536	7	26-0	190	ST						
A 537	2	20-0	42	ST						
A 538	2	18-2	38	ST						
A 539	10	19- 4	202	ST						
A 540	19	6-10	135	ST						
A 541	18	4- 0	75	6	1- 4	1- 6	2- 0			
A 542	11	4- 0	46	6	1- 9	1- 3	2- 0			

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			ABUTMENTS				(CONTINUED)			
D 801	11	6-3	184	23	4-2					
D 802	13	6-9	234	23	4-8					
A 601	37	18-10	1047	2	6- 6	1- 5	7-10	0-11	2-10	
A 602	46	19-10	1370	2	7- 0	1- 5	8- 4	0-11	2-10	
F 501	26	8- 6	231	1		8- 0	0- 8			
F 502	4	4- 0	17	ST						
F 503	32	8- 2	273	1		7- 8	0- 8			
F 504	1	17- 1	18	1		8- 1	1- 2	8- 1		
F 505	2	14- 6	30	ST						
F 506	1	20- 5	21	1		9- 9	1- 2	9- 9		
F 507	2	24- 8	51	ST						
F 508	4	22- 3	93	ST						
F 509	2	21- 1	44	1		10- 1	1- 2	10- 1		
F 510	1	16- 5	17	1		7- 9	1- 2	7- 9		
F 601	26	13- 3	517	1		8- 0	5- 5			
F 602	8	20- 4	244	ST						
F 603	32	12-11	621	1		7- 8	5- 5			
F 604	8	25- 0	300	ST						
F 605	7	21- 2	223	1		10- 2	1- 2	10- 2		
F 606	21	23-10	752	1		11- 6	1- 2	11- 6		
F 607	13	25- 2	491	1		12- 2	1- 2	12- 2		
F 608	13	20- 6	400	1		9-10	1- 2	9-10		
				PIER						
P 401	1	28- 3	507	22	NO. TURNS= 78		NO. SPACERS = 4			6
P 402	1	27- 8	500	22	NO. TURNS= 77		NO. SPACERS = 4			6
P 403	1	27- 1	487	22	NO. TURNS= 75		NO. SPACERS = 4			6
P 404	1	26- 6	480	22	NO. TURNS= 74		NO. SPACERS = 4			6
P 405	1	27- 5	494	22	NO. TURNS= 76		NO. SPACERS = 4			6
P 406	1	26- 9	481	22	NO. TURNS= 74		NO. SPACERS = 4			6
P 407	2	26- 2	948	22	NO. TURNS= 73		NO. SPACERS = 8			6
P 408	1	25- 6	461	22	NO. TURNS= 71		NO. SPACERS = 4			6
P 409	1	25- 5	461	22	NO. TURNS= 71		NO. SPACERS = 4			6
P 410	1	24- 8	448	22	NO. TURNS= 69		NO. SPACERS = 4			6
P 411	1	24- 0	435	22	NO. TURNS= 67		NO. SPACERS = 4			6
P 501	72	5- 1	382	1		1- 6	2- 4	1- 6		
P 502	48	4- 5	221	1		1- 6	1- 8	1- 6		

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			PIER				(CONTINUED)			
P 1001	8	27- 8	952	ST						
P 1002	8	27- 1	932	ST						
P 1003	13	26- 9	1496	ST						
P 1004	26	26- 2	2927	ST						
P 1005	8	25- 5	875	ST						
P 1006	8	24- 8	849	ST						
P 1007	13	24- 0	1343	ST						
P 1101	9	28- 3	1351	ST						
P 1102	9	26- 6	1267	ST						
P 1103	16	27- 5	2331	ST						
P 1104	16	25- 6	2168	ST						
F 501	35	9- 2	335	ST						
F 502	37	10- 2	392	ST						
F 503	40	8- 8	362	ST						
F 601	17	19- 3	492	ST						
F 602	17	26- 7	679	ST						
F 603	34	22-11	1170	ST						
F 701	48	9- 2	899	ST						
F 702	13	21- 5	569	ST						
F 703	13	29- 5	782	ST						
F 704	32	25- 5	1662	ST						
F 705	48	8- 8	850	ST						
F 801	32	24- 0	2051	ST						
F 901	10	21- 8	737	ST						
F 902	10	26- 8	907	ST						
F 903	44	10- 2	1521	ST						
F 1001	84	6- 7	2380	1		5- 6	1- 5			
F 1101	50	7- 2	1904	1		5-10	1- 8			
				SUPERSTRUCTURE						
S 501	427	2-5	1076	1		1-11	0-7½			
S 502	427	2-2	965	1		0-7½	1-2	0-7½		

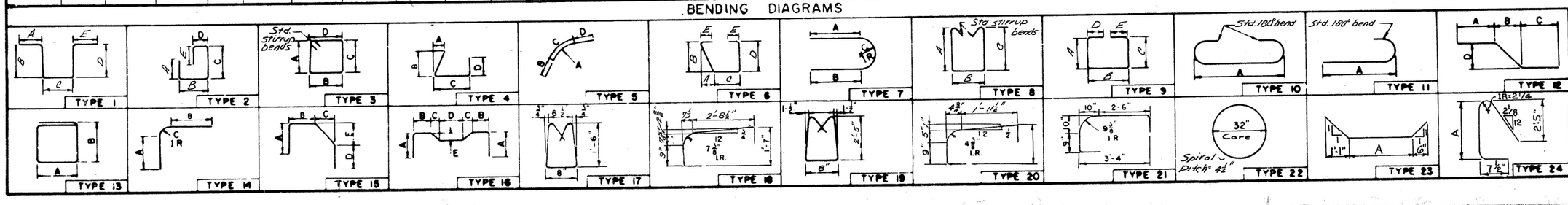
MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C
		ABUTMENTS		(CONT.)			
A544	2	6-5	13	ST.			
A545	1	6-3	7	ST.			
A546	1	5-9	6	ST.			
EPOXY COATED REINFORCING STEEL - ABUTME							
AE609	7	8-1	85	15		6-5	11½
AE610	2	7-1	21	15		5-5	11½
AE611	21	8-0	252	15		6-4	11½
AE612	1	6-5	10	15		4-9	11½
AE613	13	7-9	151	15		6-1	11½
AE614	1	6-11	10	15		5-3	11½
AE615	13	7-6	146	15		5-10	11½
AE701	4	4-11	40	11	4-1		
AE702	4	4-6	37	15		3-1	11½
AE703	4	4-7	37	15		3-1	11½
AE704	2	5-1	21	15		3-7	11½
AE705	2	6-3	26	15		4-7	11½
AE706	1	4-8	10	15		3-1	11½
AE707	1	5-6	11	15		3-10	11½
AE708	1	5-1	10	15		3-6	11½
AE709	1	6-1	12	15		4-5	11½
AE512	4	16-3	68	ST			
AE520	51	6-5	341	24	3-4		
AE522	4	28-7	119	ST			
AE528	4	23-1	96	ST			
AE536	4	26-0	108	ST			
AE543	40	3-3	136	ST			



BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHEN THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE A700 IS A NO. 7 SIZE BAR AND A1014 IS A NO. 10 SIZE.

BENDING DIAGRAMS



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

REINFORCING STEEL LIST
Bridge No. CUY-480-0873
Ramp "T" over I-480
Cuyahoga County
Sta. 30 + 05.
Sta. 33 + 30.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DA
G.W.M.			R.J.P.	G.W.M.	3/7/6