

011  
MICROFILMED  
JUL 5 1982

DESIGN DESIGNATION

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

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

I-480-4(35)162  
ISSUE 1

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

# CUY-480-8.54

## CUYAHOGA COUNTY CITY OF CLEVELAND & CITY OF BROOKPARK GRADE SEPARATION WITH THE CONSOLIDATED RAIL CORPORATION

### CONVENTIONAL SIGNS

Proposed Sewer	_____	Existing Sewer	_____
Temporary R/W	_____ T _____	Existing Manhole	○
Work Agreement Line	_____	Proposed Manhole	●
Original Lot Line	_____ O.L. 78 _____	Existing Catch Basin	⊕
Water Line	_____ W _____	Proposed Catch Basin	■
Water Valve	○	Manhole Abandoned	⊗
Water Hydrant	⊕	Catch Basin Abandoned	⊗
Gas Line	_____ G _____	Existing Retaining Wall	
Gas Valve	○	Limited Access (only)	LA
Telephone Underground	_____ T _____	Right of Way (only)	RW
Electric Underground	_____ E _____	Limited Access & Right of Way	LA & RW
Corporation Line	_____	Existing Right of Way	_____
Fence Line (existing)	-x-x- (proposed) -x-x-	Property Line	⊥ (in existing fence) -x-x-
Center Line	_____ 352 _____ 353 _____	Railroad	_____ or _____
Trees	⊙, Stumps ⊕, (to be removed) ⊗	Guardrail (existing)	—o—o—o— (proposed) —o—o—o—
Utility Poles: Telephone ⊕, Power ⊕, Light ⊕.			

### INDEX OF SHEETS

Title Sheet	1	West 150th. Ramp Plan and Profile	52
Schematic Plan	2-4	Access Road "C" Plan and Profile	53-54
Typical Sections	5-9	West 139th. Interchange Plan and Profile	55-56
General Notes	10-12	Pavement Details	57-71
General Summary	13-16	Sewer Profiles	72-73
Pavement Calculations	17-19	Culvert Details	74-76
Special Details	20-27	Relocated Channel-Access Rd "C"	77
I-480 Plan and Profile	29-39	I-480 Cross Sections	78-110
I-71 Interchange Schematic Plan	40-41	Cross Road Cross Sections	111-155
Ramp "R" Plan and Profile	42-45	Traffic Control Plans	156-179
Ramp "S" Plan and Profile	46-47	Lighting Plans	201-218
Ramp "T" Plan and Profile	48-50	Structure over 20' Span	219-328
West 150th. St. Plan and Profile	51	Right of way	331-346

### 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

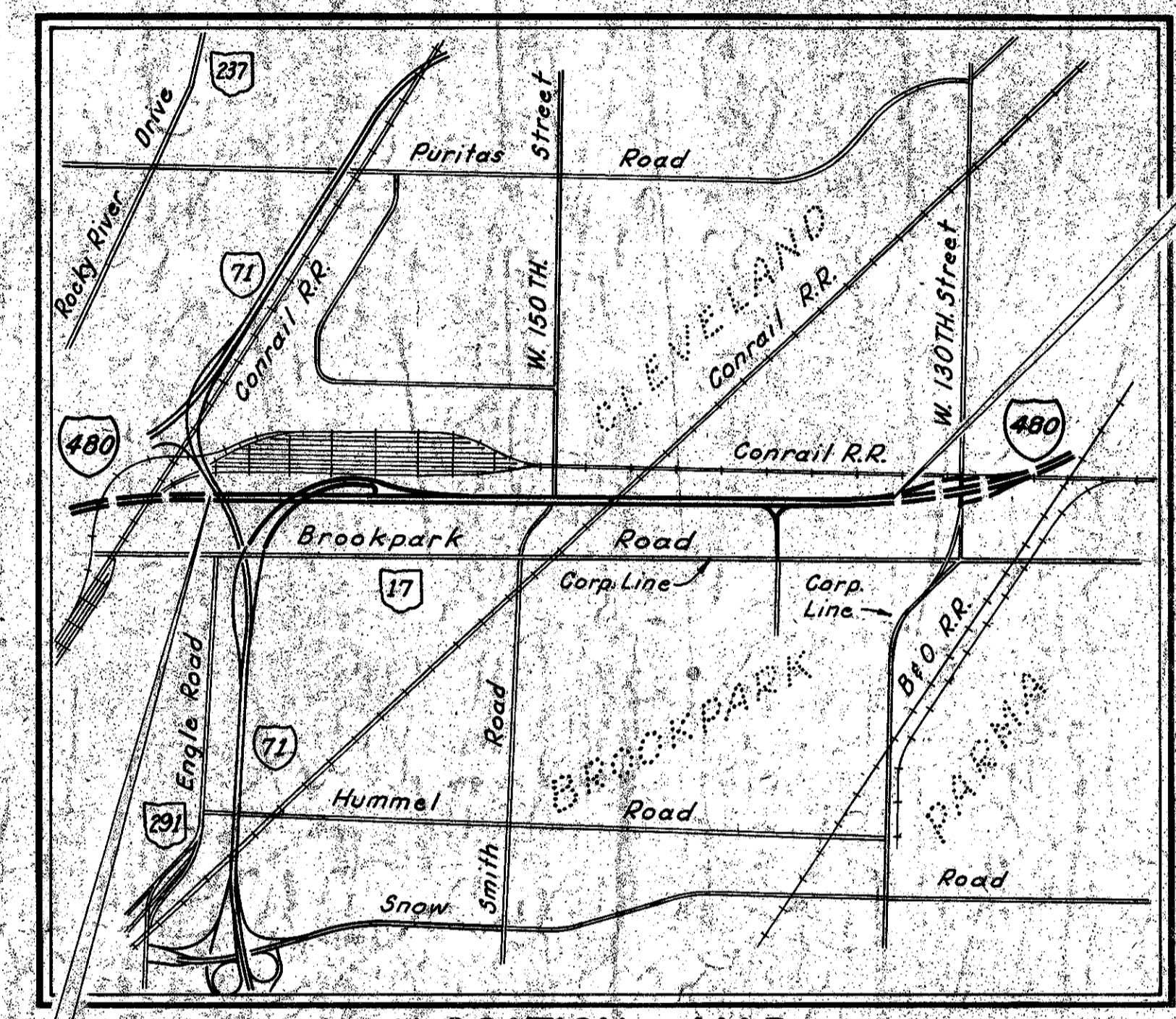
Project: CUYAHOGA COUNTY CUY-480-8.54  
Date of Letting 19 Contract No.  
LD0300 Rev. 9-3-75

### 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

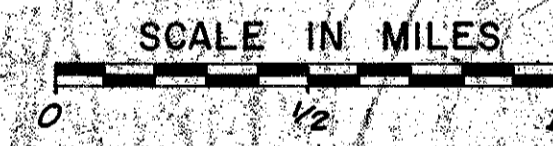


BEGIN PROJECT  
STA. 476+00.00  
S.L.M. = 8.54

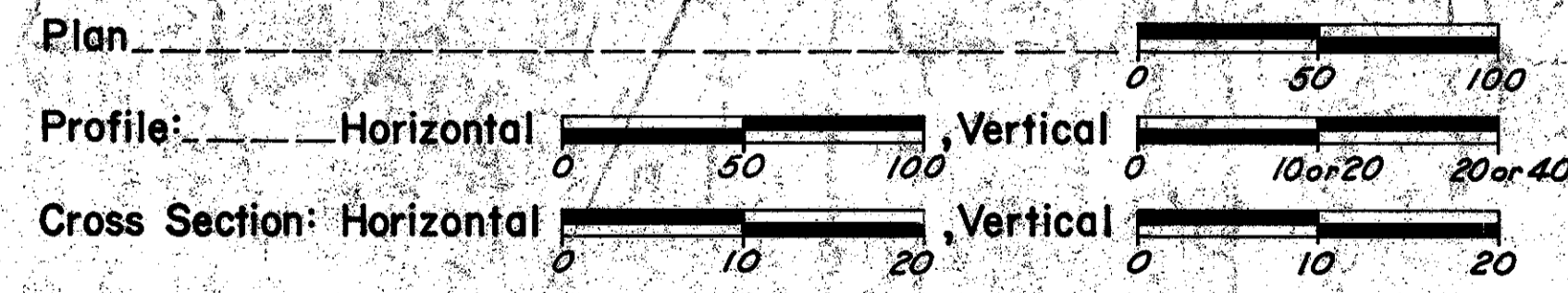
END PROJECT  
STA. 573+50.00  
S.L.M. = 10.39

Sheet 313 revised 10-24-79 EBL

### LOCATION MAP



### SCALES



### SUPPLEMENTAL SPECIFICATIONS

801	4-25-77	921	12-4-72
808	1-1-77		
		948	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		
		5625	1-11-74
		5713	1-11-74

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.

Approved \_\_\_\_\_  
Date 10/20/77 Director of Public Service, City of Cleveland  
Approved \_\_\_\_\_  
Date 10-20-77 District Deputy of Transportation  
Approved \_\_\_\_\_  
Date 11-9-77 Engineer, Bureau of Bridges and Structural Design  
Approved \_\_\_\_\_  
Date 2-15-78 Chief Engineer, Planning and Design  
Approved \_\_\_\_\_  
Date 2-15-78 Director, Department of Transportation.

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

### 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. 4-12-78

Rev. 7-5-78

Rev. 6-22-78

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AUG 6 1982

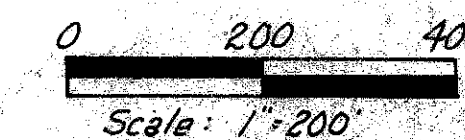
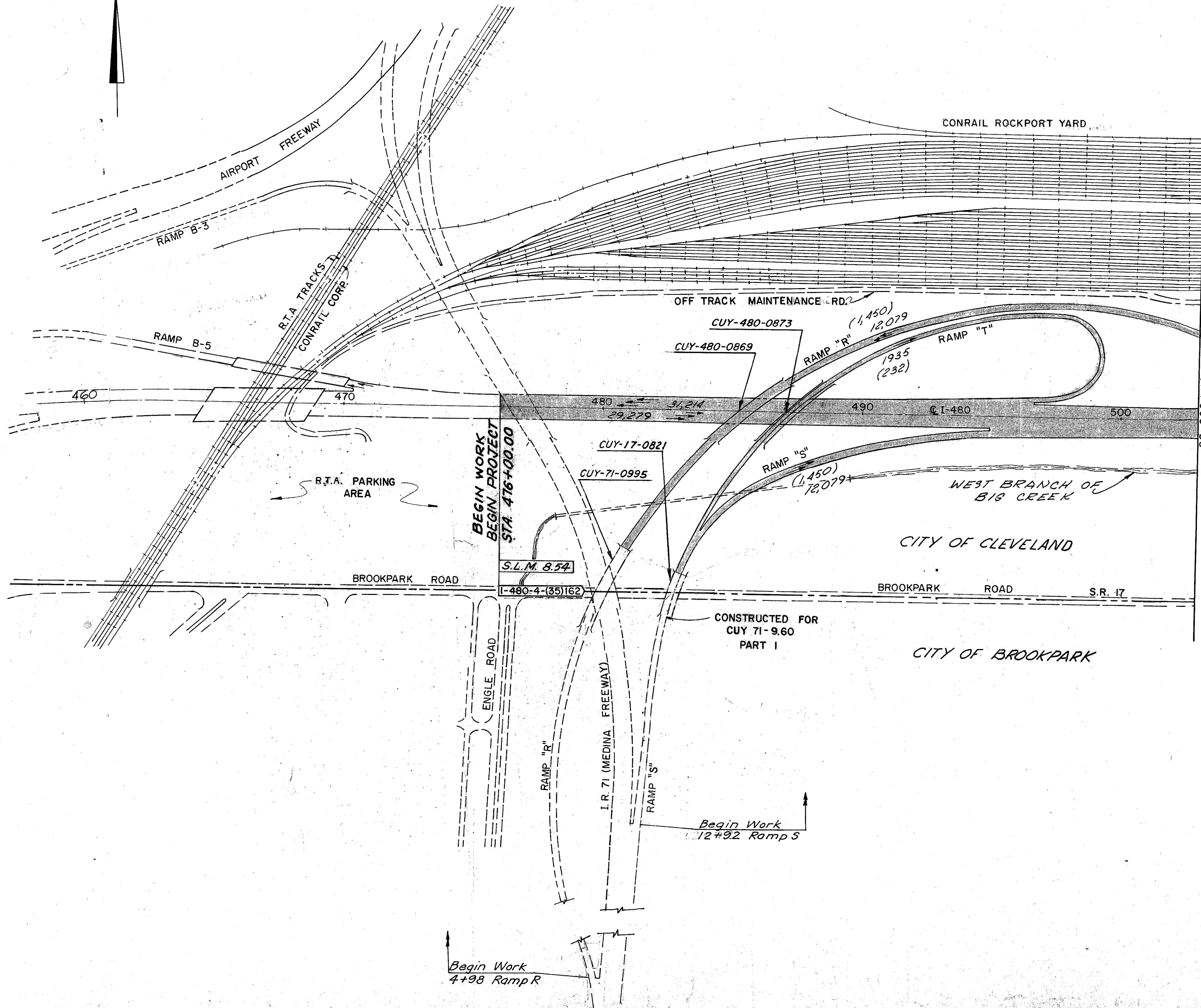


# SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

2  
346

CUYAHOGA COUNTY  
CUY-480-8.54



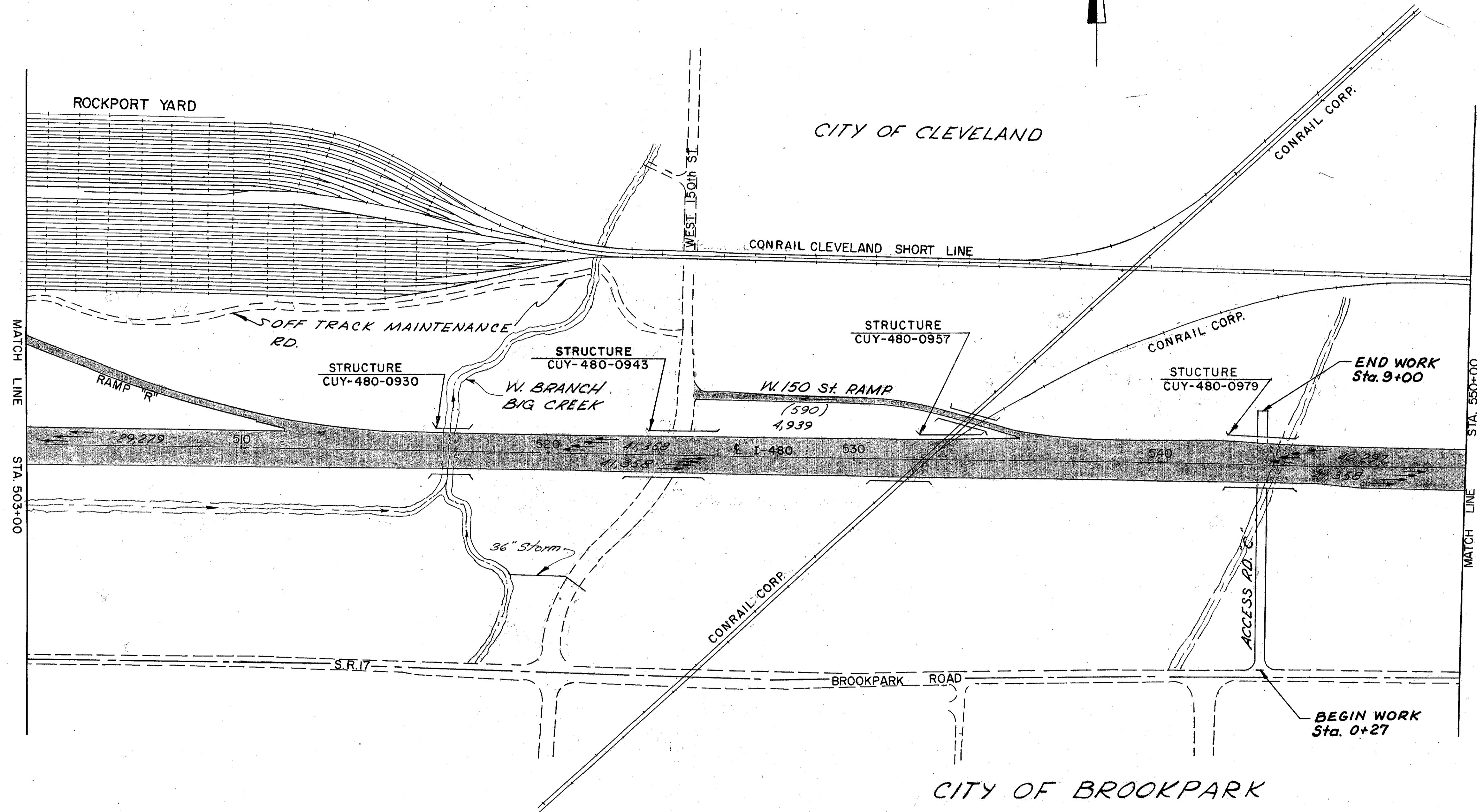
MICROFILMED  
AUG 6 1982

# SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

3  
346

CUYAHOGA COUNTY  
CUY-480-8,54



0 200 400  
Scale: 1" = 200'

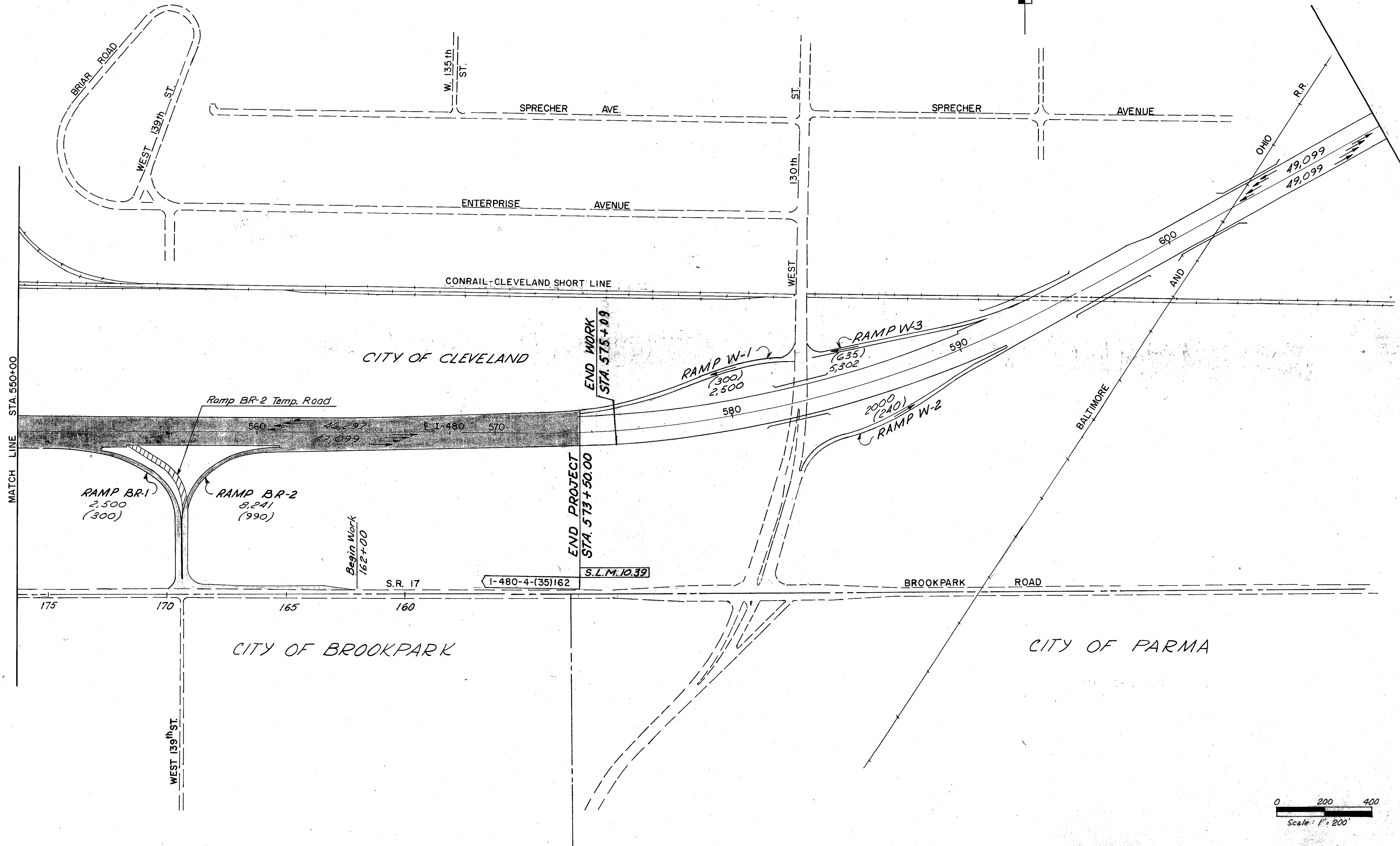
MICROFILMED  
AUG 3 1982

# SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

4  
346

CUYAHOGA COUNTY  
CUY-480-8.54



**WEED CONTROL BENEATH GUARD RAIL**

Before erecting the guard rail, the Contractor shall prepare the subgrade and pave the area beneath the guard rail run as shown on the Typical Sections. Special care shall be exercised, by coordination between the contractors, to insure the 301 Bit. Agg. Base is installed in the proper locations.

Preparation of the subgrade shall include an application of SIMAZINE pre-emergence herbicide. The rate and method of application shall be in strict conformance with the manufacturer's instructions. Before applying, the Contractor shall obtain the necessary permit from the Ohio Department of Agriculture.

Before setting the guard rail posts, the asphalt curb shall be installed as shown in the Typical Sections and within the limits described on Sheet No. 17.

After setting the guard rail posts but before attaching the rail element, any damage to the pavement resulting from the post-setting operations shall be repaired and additional paving material shall be compacted around the posts sufficient to prevent water from collecting.

Cost of all materials, equipment and labor necessary to accomplish the above shall be included in the unit prices bid for Item 301-Bituminous Aggregate Base (Weed Control) and Item Special-Herbicides for Weed Control. Asphalt Curb is paid for separately under Item 609.

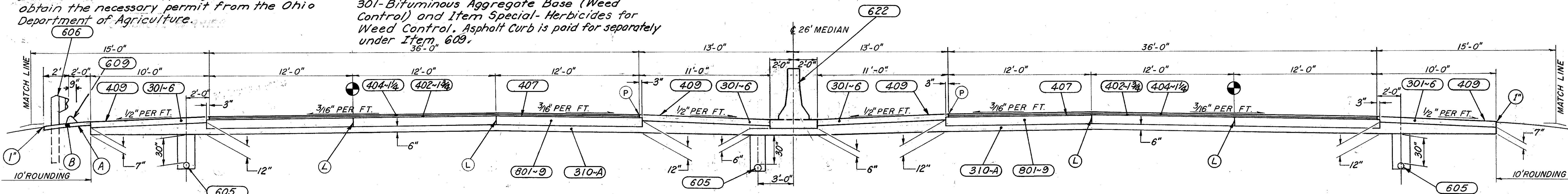
**TYPICAL SECTIONS  
TYPE 404 ON 801**

For Median details at bridge pier see sheet no. 20.  
For median mounted overhead sign support foundations see sheet no. 188A.

**UNDERDRAIN NOTES**

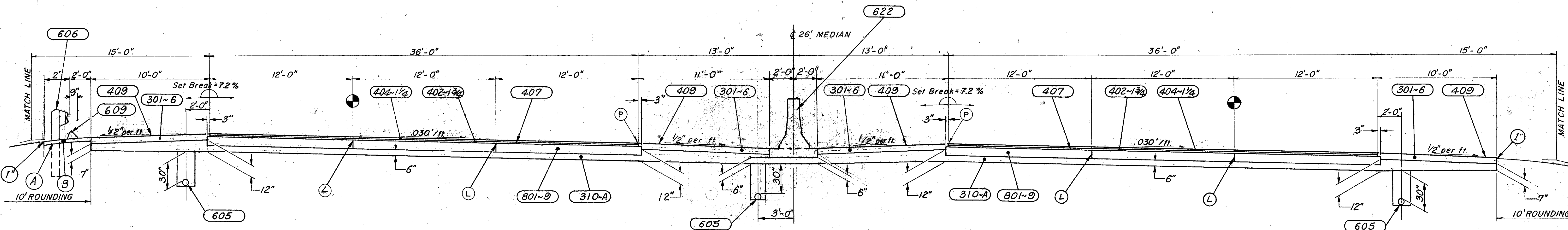
Median underdrain location varies 3'-0" L to R of C. See Plan & Profile sheets for location.

Omit underdrain on high side of superelevation when in fill.



**WESTBOUND LANES**  
Sta. 476+00.00 to Sta. 516+44.75  
Sta. 517+33.25 to Sta. 521+54.63

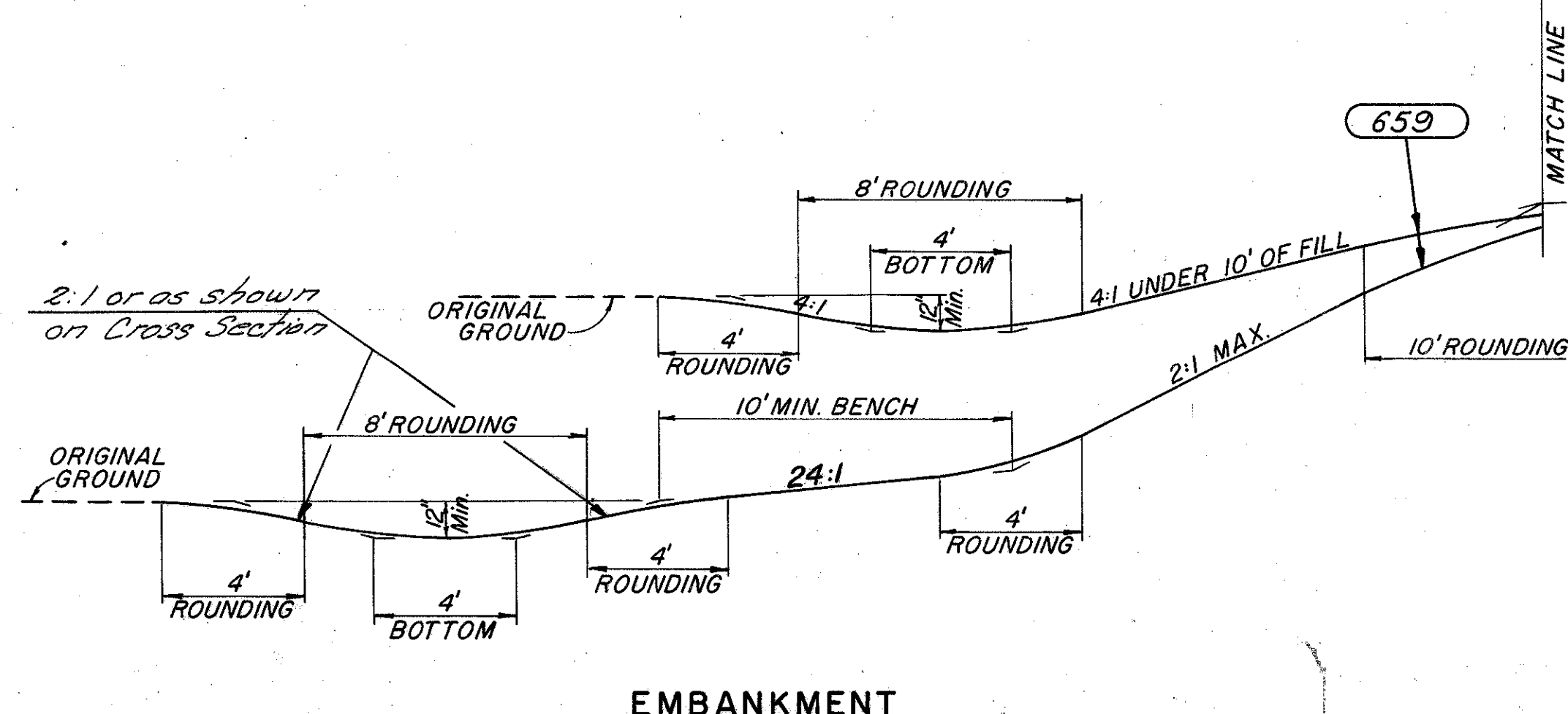
**EASTBOUND LANES**  
Sta. 476+00.00 to Sta. 504+86.79



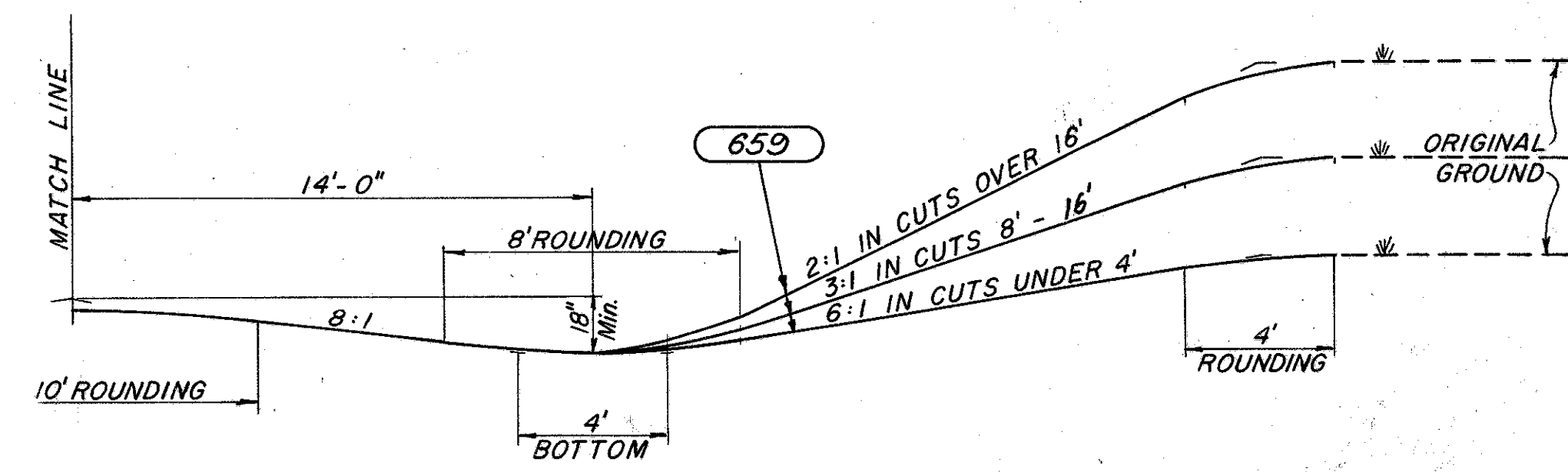
**SUPERELEVATED SECTION - 6 LANES  
NOT APPLICABLE**

**LEGEND.**

- |             |  |
|-------------|--|
| <b>ITEM</b> | <b>LEGEND.</b>   |
| 404-1/4     | 1/4" Asphalt Concrete  |
| 402-1/4     | 1/4" Asphalt Concrete  |
| 407         | Tack Coat (0.10 Gal./Sq.Yd.) and Cover Aggregate   |
| 801-9       | 9" Portland Cement Concrete Base   |
| 310-A       | Subbase, Grading A, as per plan; Thickness as shown  |
| 409         | Seal Coat, Bit. Mat. (0.20 Gal./Sq.Yd.) and Seal Coat Cover Agg. No. 9 (0.005 Cu.Yd./Sq.Yd.) |
| 301-6       | 6" Bituminous Aggregate Base   |
| 622         | Concrete Barrier, Type H   |
| 606         | Guardrail, Type 5  |
| 605         | 6" Underdrain, (30" Shallow ~ 50" Deep)  |
| 659         | Seeding and Mulching   |
| (L)         | Standard Longitudinal Joint  |
| (P)         | Profile Grade  |
| (H)         | Hot Longitudinal Joint (See Proposal Note)   |
| (I)         | Drop Shoulder 1"   |



**EMBANKMENT**



**EXCAVATION**

- (B) 301 - 3" Bituminous Aggregate Base (Weed Control)
- (A) Special-Herbicide for Weed Control.
- (609) - Asphalt Concrete Curb, Type 1

# TYPICAL SECTIONS

## TYPE 404 ON 801

For Median Details at Bridge Pier, See Sheet No. 20

For Median Mounted Overhead Sign Support Foundations, See Sheet No. 188A

For note on weed Control Beneath Guard Rail see sheet no. 5.

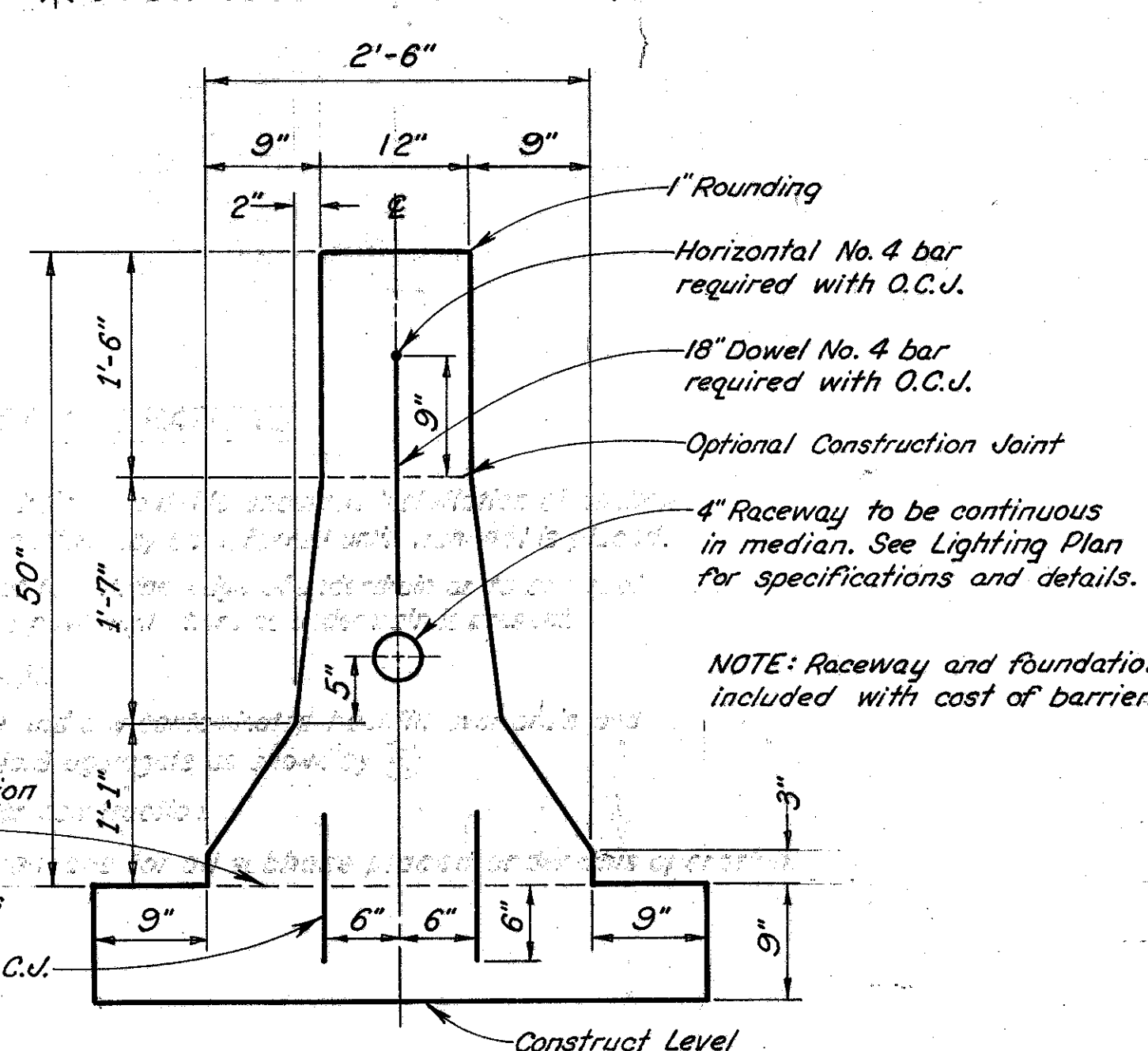
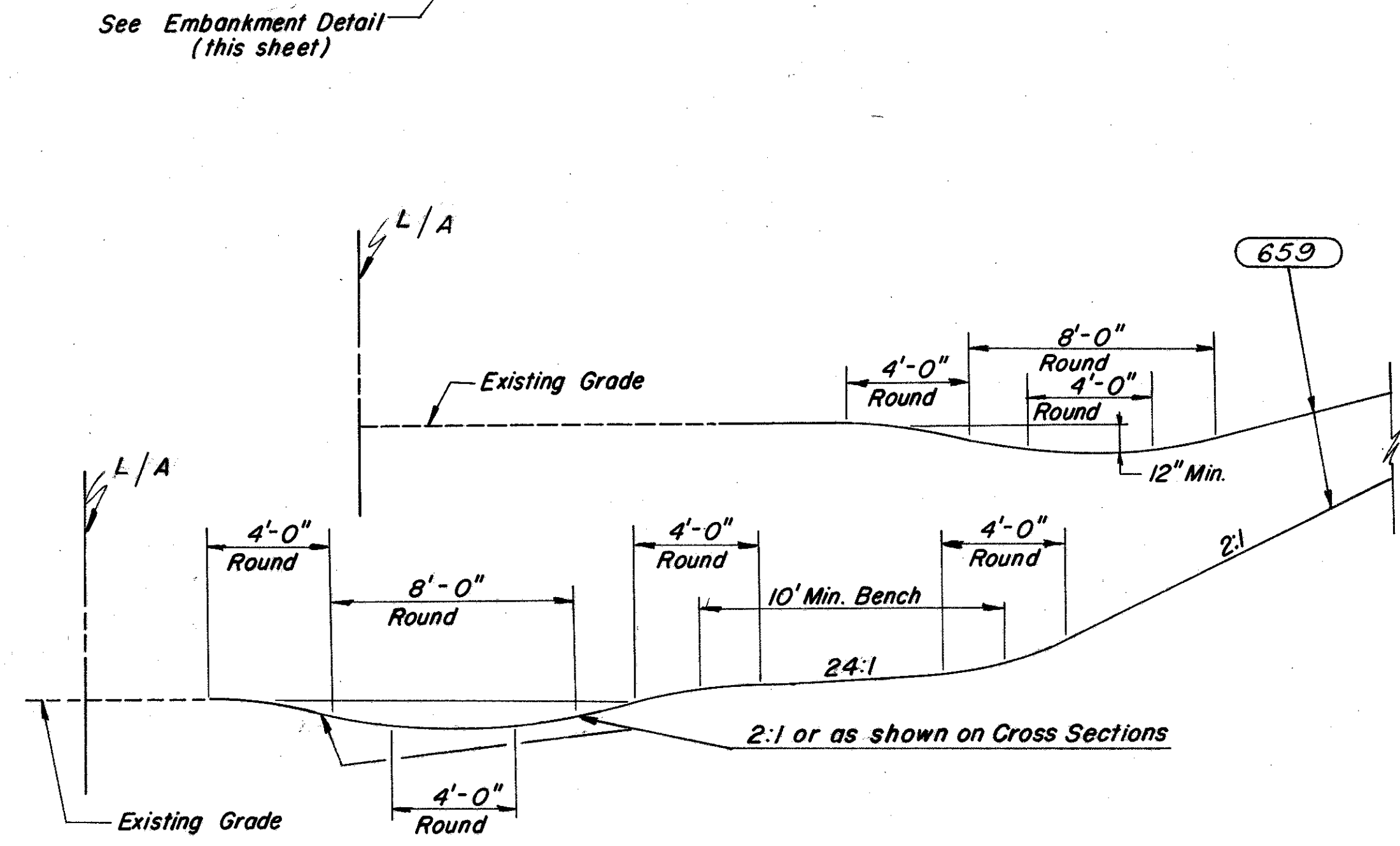
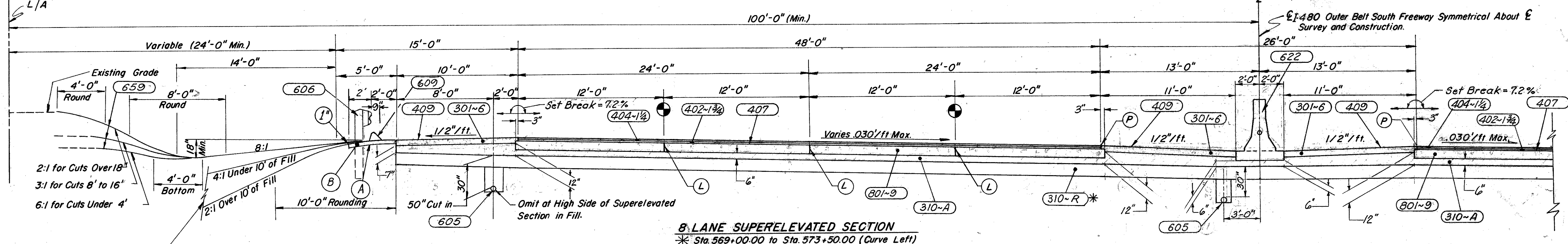
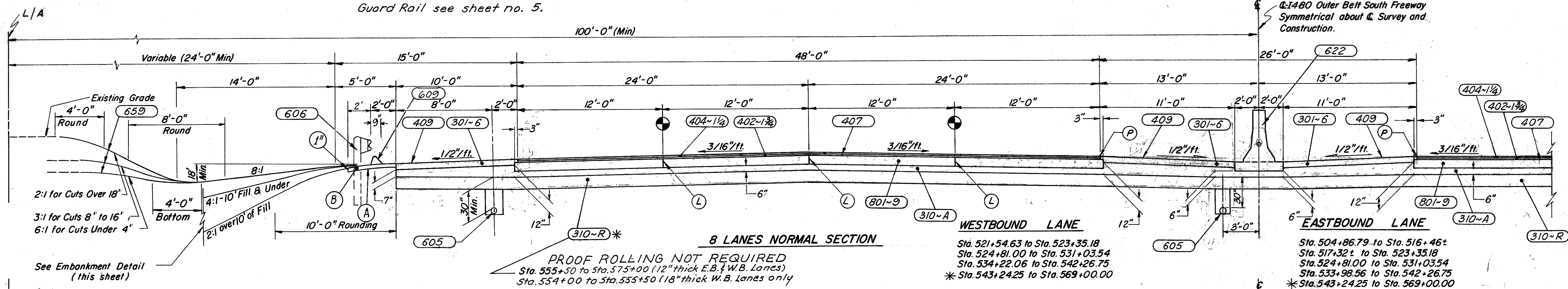
### UNDERDRAIN NOTE

Median underdrain location varies 3'-0" Lf or Rt of  $\bar{C}$ . See Plan & Profile sheets for location.

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

6  
346

CUYAHOGA COUNTY  
CUY-480-8.54



ITEM	LEGEND
404-1/4	1/4" Asphalt Concrete
402-1 3/4	1 3/4" Asphalt Concrete
407	Tack Coat (0.10 Gal./Sq.Yd.) and Cover Aggregate
801-9	9" Portland Cement Concrete Base
310-A	Subbase, Grading A, as per plan; Thickness as shown
310-R *	12" Subbase, (E.B. & W.B. Sta. 555+50 to Sta. 575+00); 18" Subbase (W.B. only Sta. 555+50 to Sta. 555+50)
409	Seal Coat Bit. Mat. (0.20 Gal./Sq.Yd.) and Seal Coat Cover Agg. No. 9 (0.005 Cu.Yd./Sq.Yd.)
301-6	6" Bituminous Aggregate Base
622	Concrete Barrier, Type H
606	Guardrail, Type 5
605	6" Underdrain, (30" Shallow ~ 50" Deep)
659	Seeding and Mulching
609	Asphalt Concrete Curb, Type 1
(B)	301 - 3" Bituminous Aggregate Base (Weed Control).
(A)	Special - Herbicides for weed control.
(L)	Standard Longitudinal Joint
(P)	Profile Grade
(H)	Hot Longitudinal Joint (See Proposal Note)
(1')	Drop Shoulder 1"

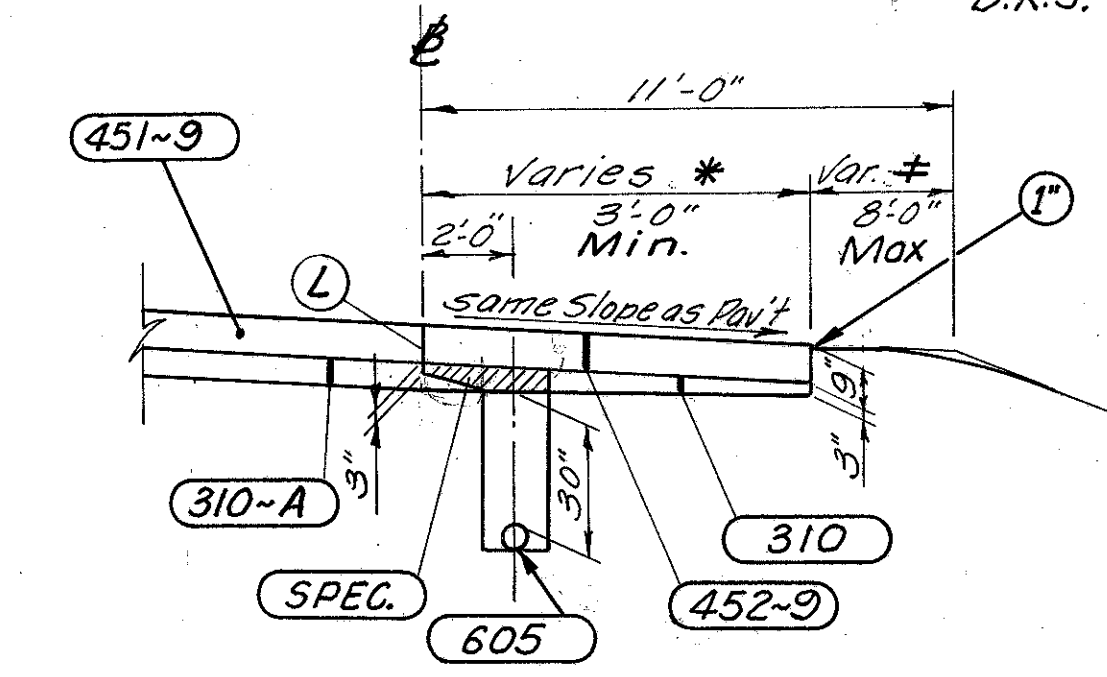
Rev. 4-12-78

For note on weed control beneath guard rail, see sheet no. 5.

# TYPICAL SECTIONS TYPE 451

Shoulder width increased to 5' with Type 6 Curb from Sta. 39+40 to Sta. 48+35

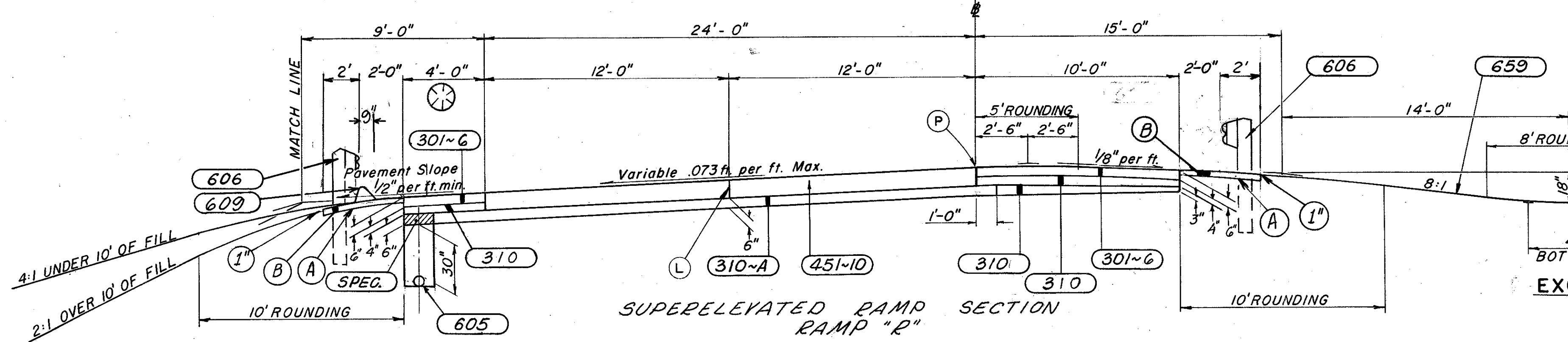
DIRECTION OF TRAFFIC



\* 8' Maximum BR-1  
 \* 10' Maximum BR-2  
 ≠ 3' Minimum BR-1  
 ≠ 1' Minimum BR-2

### CONCRETE SHOULDER DETAIL

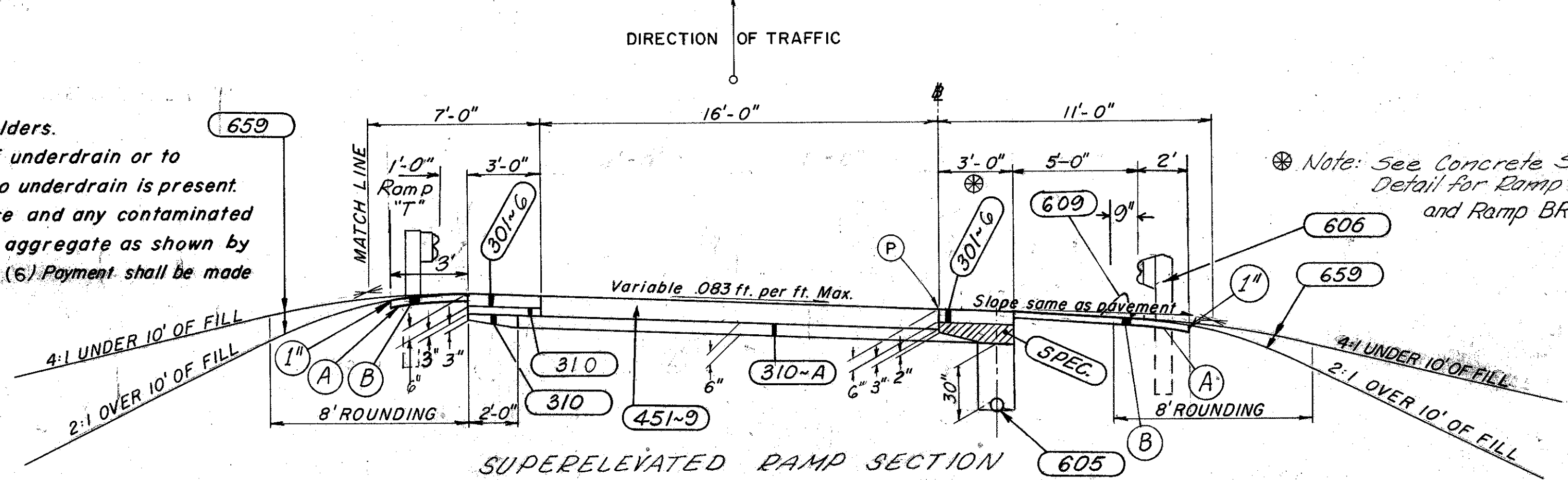
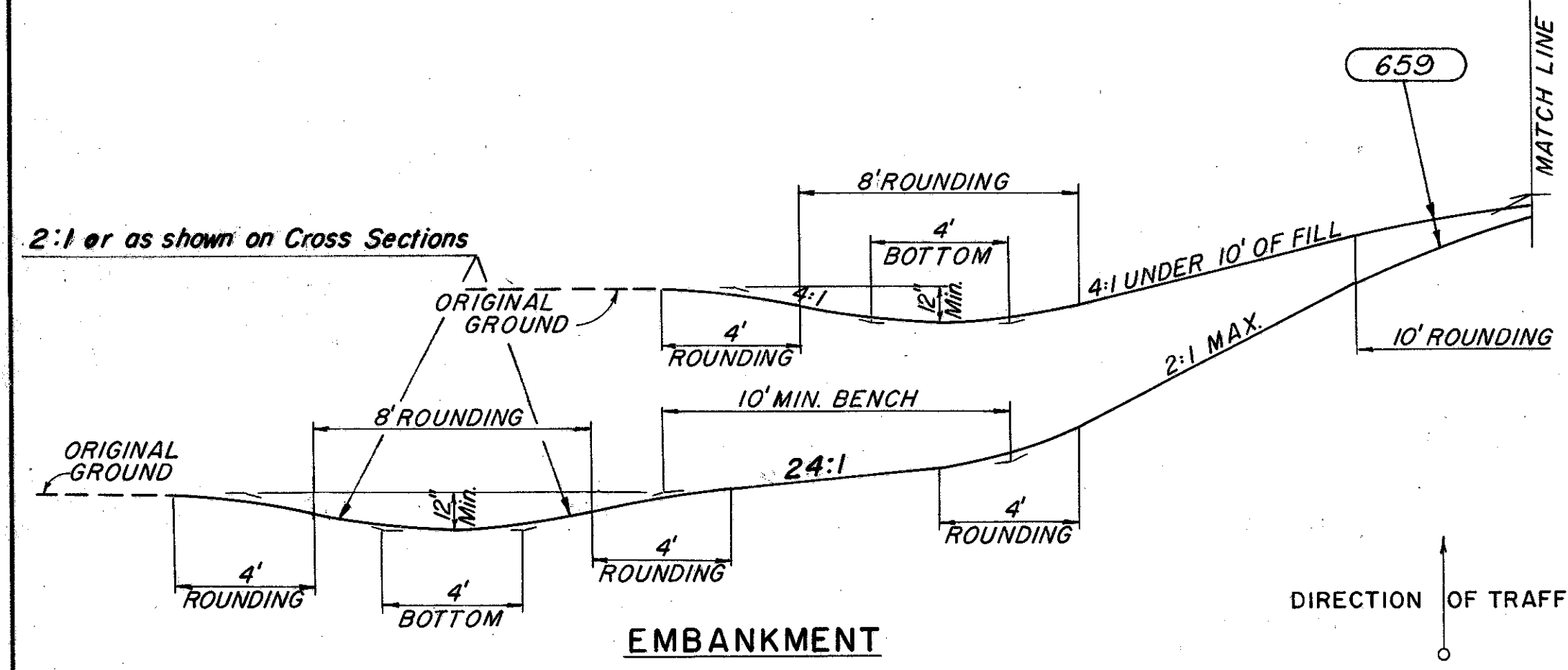
Ramp BR-1 Sta. 553+75.7 to Sta. 557+50.0  
 Ramp BR-2 Sta. 3+66 to Sta. 5+21.66  
 Sta. 555+21.66 to Sta. 556+00



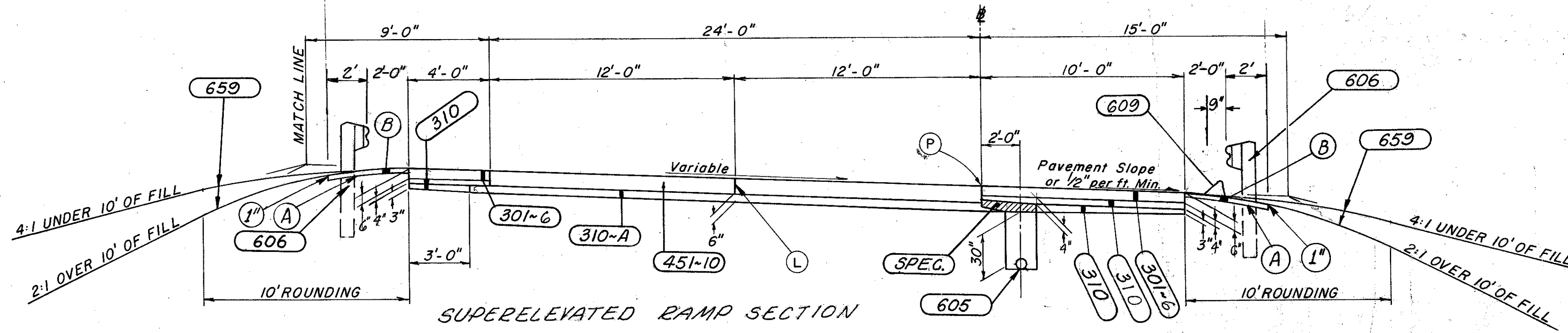
Sta. 25+36.91 to Sta. 30+24.21  
 Sta. 34+22.28 to Sta. 51+53.00

### SEQUENCE OF OPERATIONS

- (1) Install pipe underdrains on outside shoulders.
- (2) Place subbase out to outside edge of underdrain or to one foot beyond edge of pavement where no underdrain is present.
- (3) Construct Item 451 (4) Remove subbase and any contaminated backfill over drain and replace with No. 8 aggregate as shown by SPEC. (5) Complete shoulder construction. (6) Payment shall be made for all subbase placed under this operation.



Ramp "BP-1" Sta. 553+15.70 to Sta. 556+45.70  
 Sta. 556+45.70 to Sta. 558+29.84 (Width Var.)  
 Ramp "BR-2" Sta. 555+21.66 to Sta. 556+17 (Width Var.)  
 Sta. 556+17 to Sta. 560+87.84  
 Ramp "T" Sta. 26+50.19 to Sta. 29+80.14  
 Ramp "T" Sta. 33+35.99 to Sta. 41+90.61  
 Ramp "T" Sta. 41+90.61 to Sta. 48+57.97 (Width Varies, See Detail)



Ramp "P" Sta. 51+53.00 to Sta. 62+38.18 (Super 0.025/ft.)  
 Ramp "S" Sta. 26+41.25 to Sta. 37+66.20

### ITEM

### LEGEND.

- 451-10 10" Reinforced Portland Cement Concrete Pavement
- 451-9 9" Reinforced Portland Cement Concrete Pavement
- 310-A 6" Subbase, Grading A, as per plan
- 310 Subbase, thickness as shown
- 609 Asphalt Concrete Curb, Type 1
- 301-G 6" Bituminous Aggregate Base
- 452-9 9" Plain Portland Cement Concrete Pavement
- SPEC. Special Drainage Connection using No. 8 Aggregate, see note in proposal
- 605 6" Pipe Underdrains (30" shallow ~50" deep)
- 606 Guardrail, Type 5
- 659 Seeding and mulching

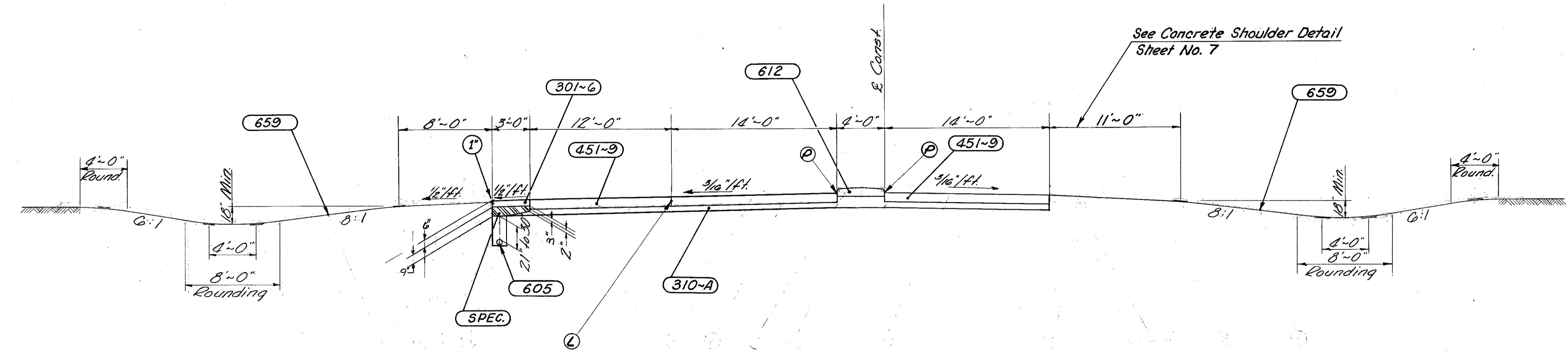
### LEGEND

- (L) Standard Longitudinal Joint
- (P) Profile Grade
- (M) Drop Shoulder 1 inch
- (B) 301 - 3" Bituminous Aggregate Base (Weed Control)
- (A) Special - Herbicides for Weed Control

For note on weed control beneath guard rail see sheet no. 5.

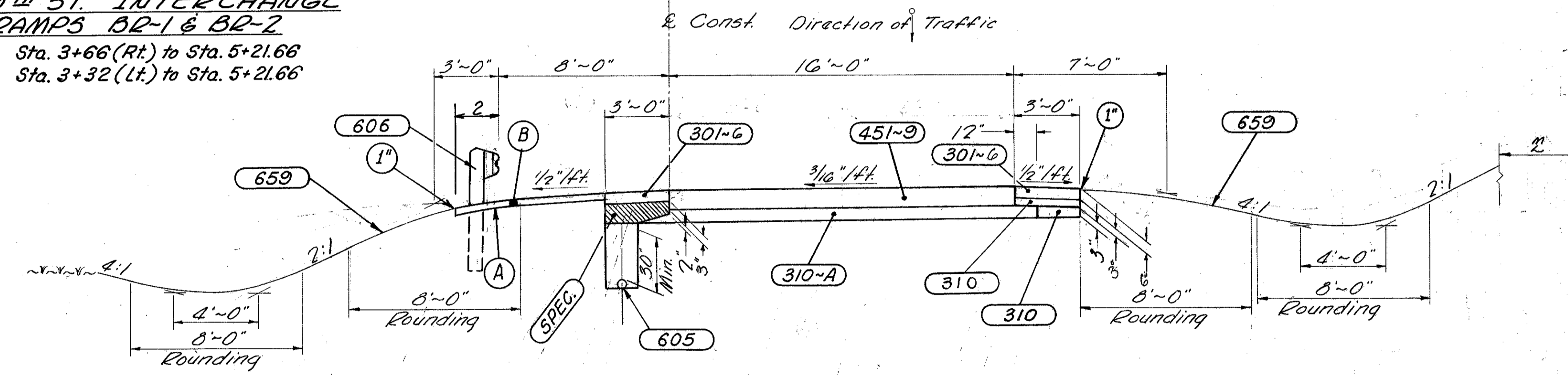
## TYPICAL SECTIONS

### TYPE 451



### WEST 130<sup>TH</sup> ST. INTERCHANGE RAMP BR-1 & BR-2

Sta. 3+66 (Rt.) to Sta. 5+21.66  
Sta. 3+32 (Lt.) to Sta. 5+21.66

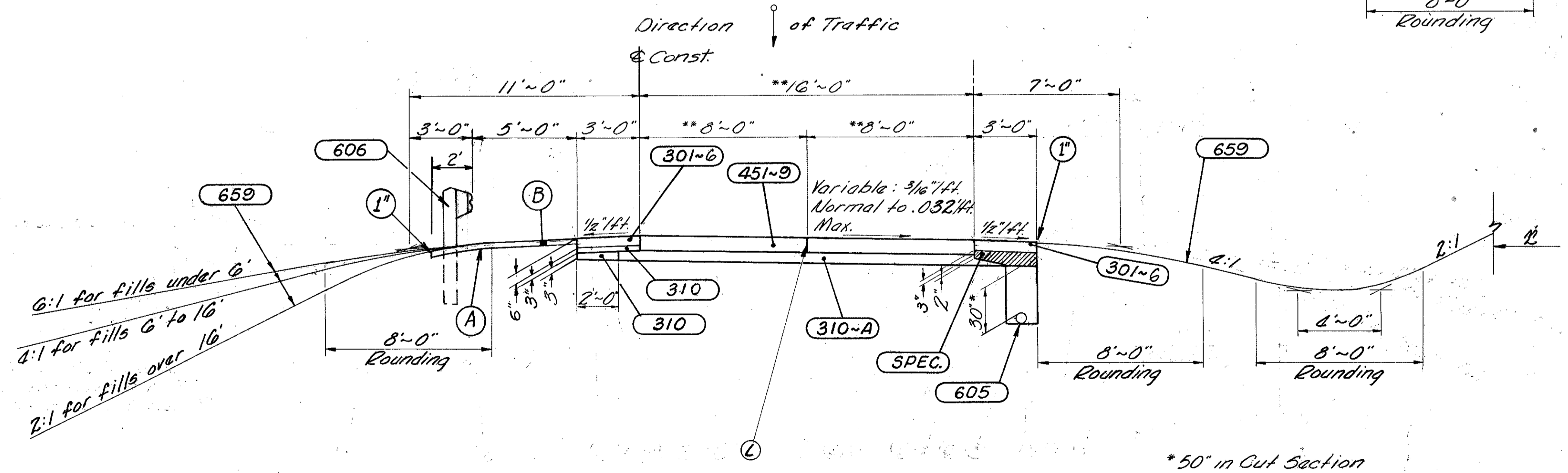


### RAMP NORMAL SECTION WEST 150<sup>TH</sup> STREET RAMP

Sta. 531+00 to Sta. 532+34.33

- | ITEM    | LEGEND  |
|---------|---|
| (451-9) | 9" Reinforced Portland Cement Concrete Pavement                         |
| (310-A) | 6" Subbase, Grading A, as per plan                                      |
| (310)   | Subbase, thickness as shown   |
| (301-6) | 6" Bituminous Aggregate Base  |
| (SPEC.) | Special Drainage Connection using No. 8 Aggregate, see note in proposal |
| (605)   | 6" Pipe Underdrain (30" Shallow ~ 50" Deep)                             |
| (606)   | Guardrail, Type 5   |
| (612)   | Concrete Median, Standard Type  |
| (659)   | Seeding and Mulching  |
| (B)     | 301-3" Bituminous Aggregate Base (Weed Control)                         |
| (A)     | Special - Herbicides for Weed Control.                                  |
| (L)     | Standard Longitudinal Joint   |
| (P)     | Profile Grade   |
| (1")    | Drop Shoulder 1 inch  |

- Sequence of Operations**
- 1) Install pipe underdrain on outside shoulder. Installation of shallow underdrain in median may be deferred until Item 451 is placed.
  - 2) Place subbase out to outside edge of underdrain or to one foot beyond edge of pavement where no underdrain is present.
  - 3) Construct Item 451.
  - 4) Remove subbase and any contaminated backfill over drain and replace with No. 8 aggregate as shown by SPEC.
  - 5) Complete shoulder construction. 6) Payment shall be made for all subbase placed under this operation.



### RAMP SUPERELEVATED SECTION WEST 150<sup>TH</sup> STREET RAMP

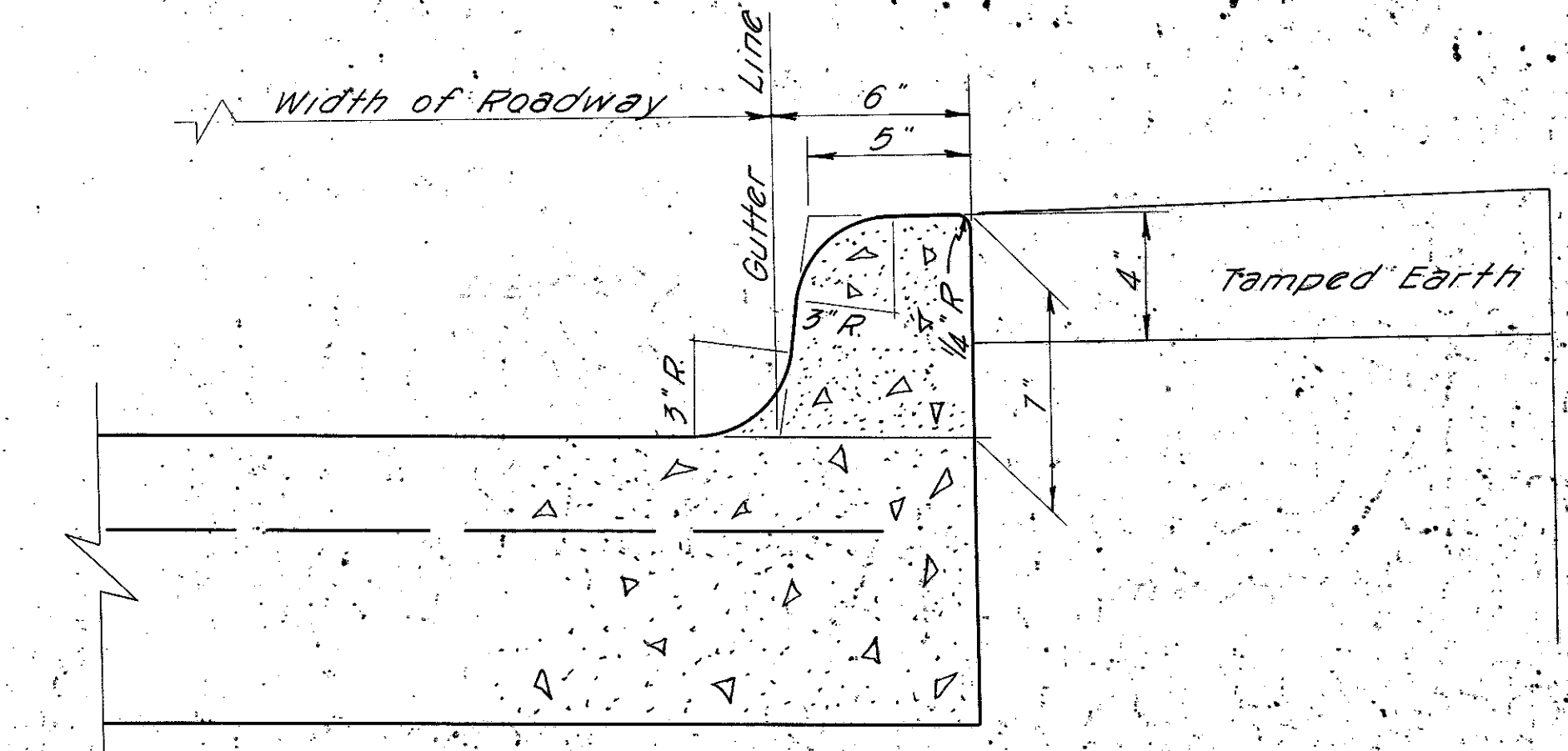
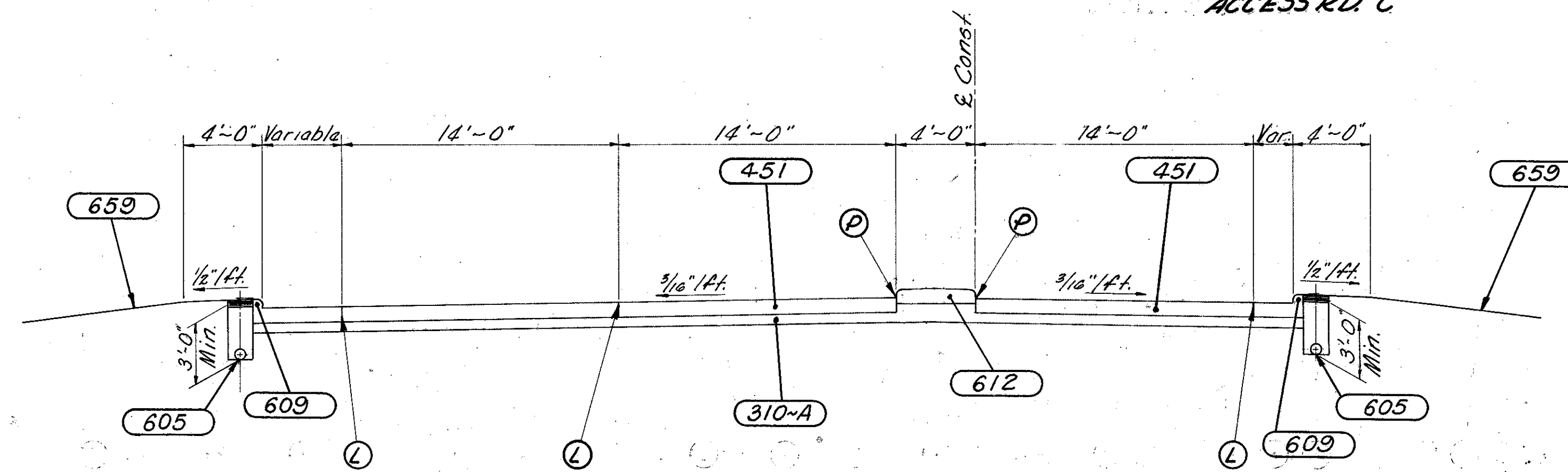
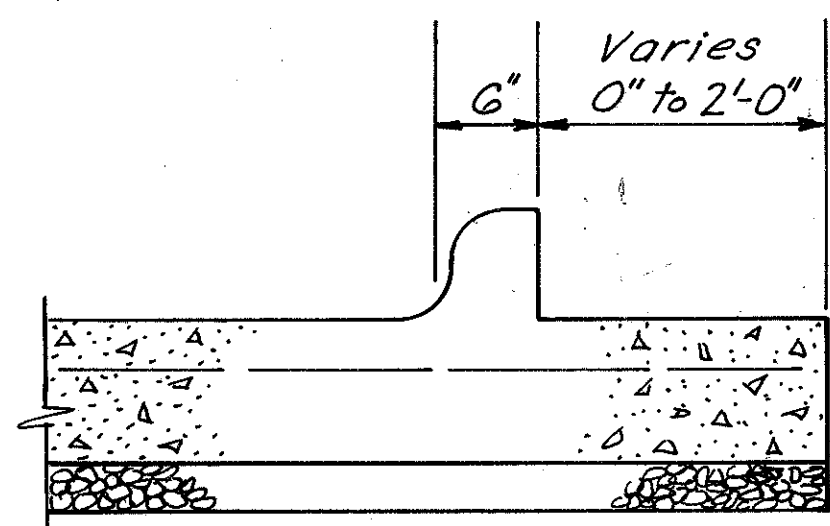
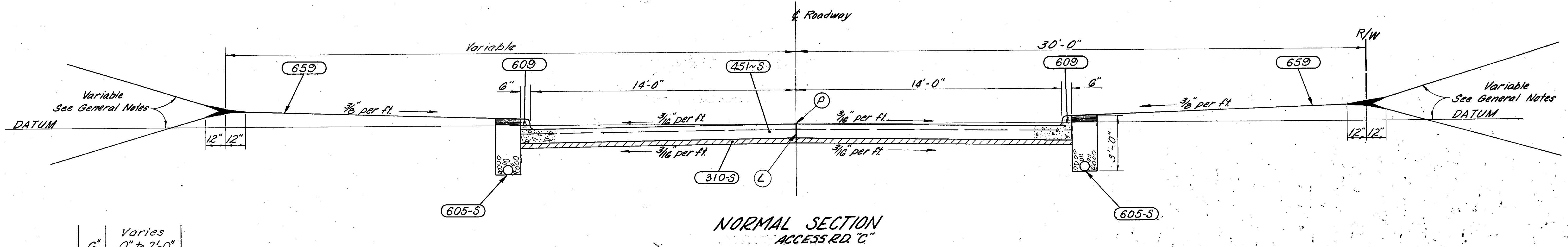
Sta. 529+00 to 531+00 (16' Wide) No Longitudinal Joint  
\*\*Sta. 525+60 to 529+00 (Part Width Varies from 24' to 16')

**NOTE:**  
& Const. & Profile Grade on Left Part Edge of 16' Ramp  
& Const. & Profile Grade 8' from Left Part Edge of 24' Ramp



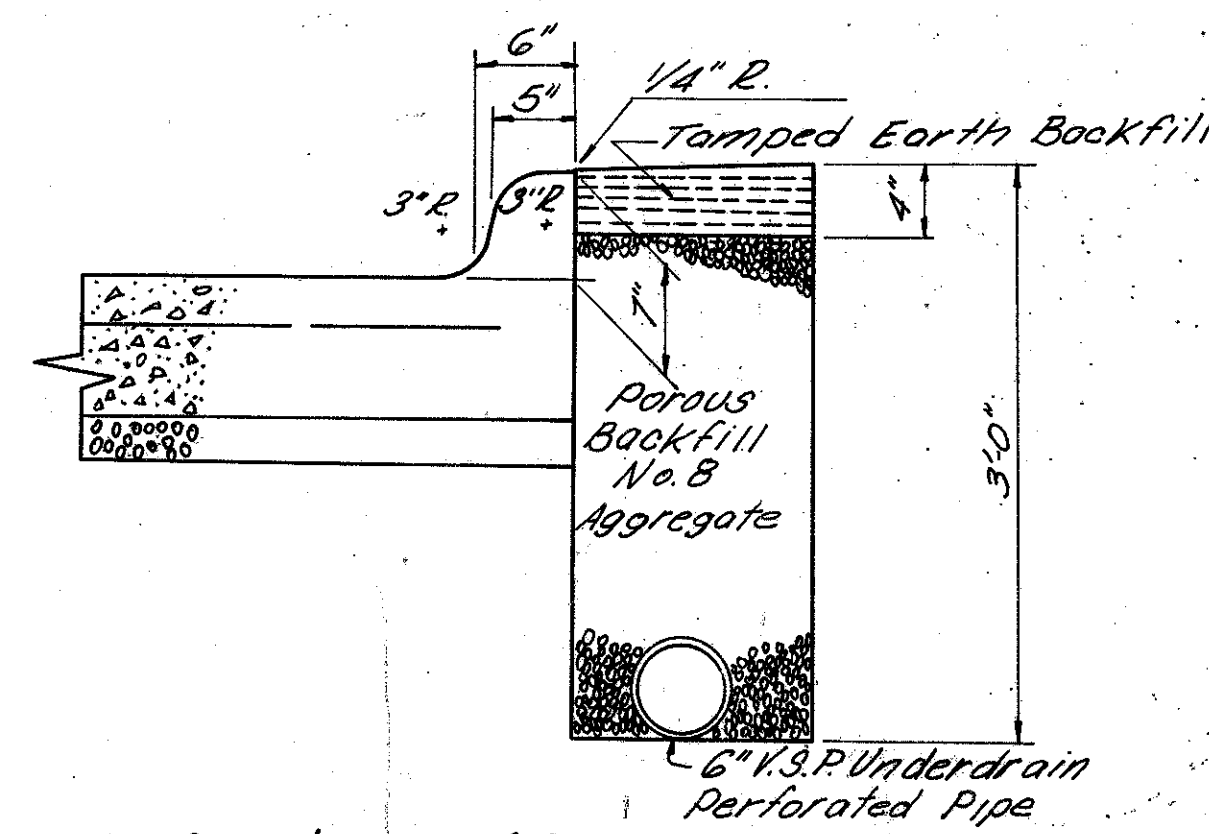
# TYPICAL SECTION

## TYPE 451



**ITEM      LEGEND**

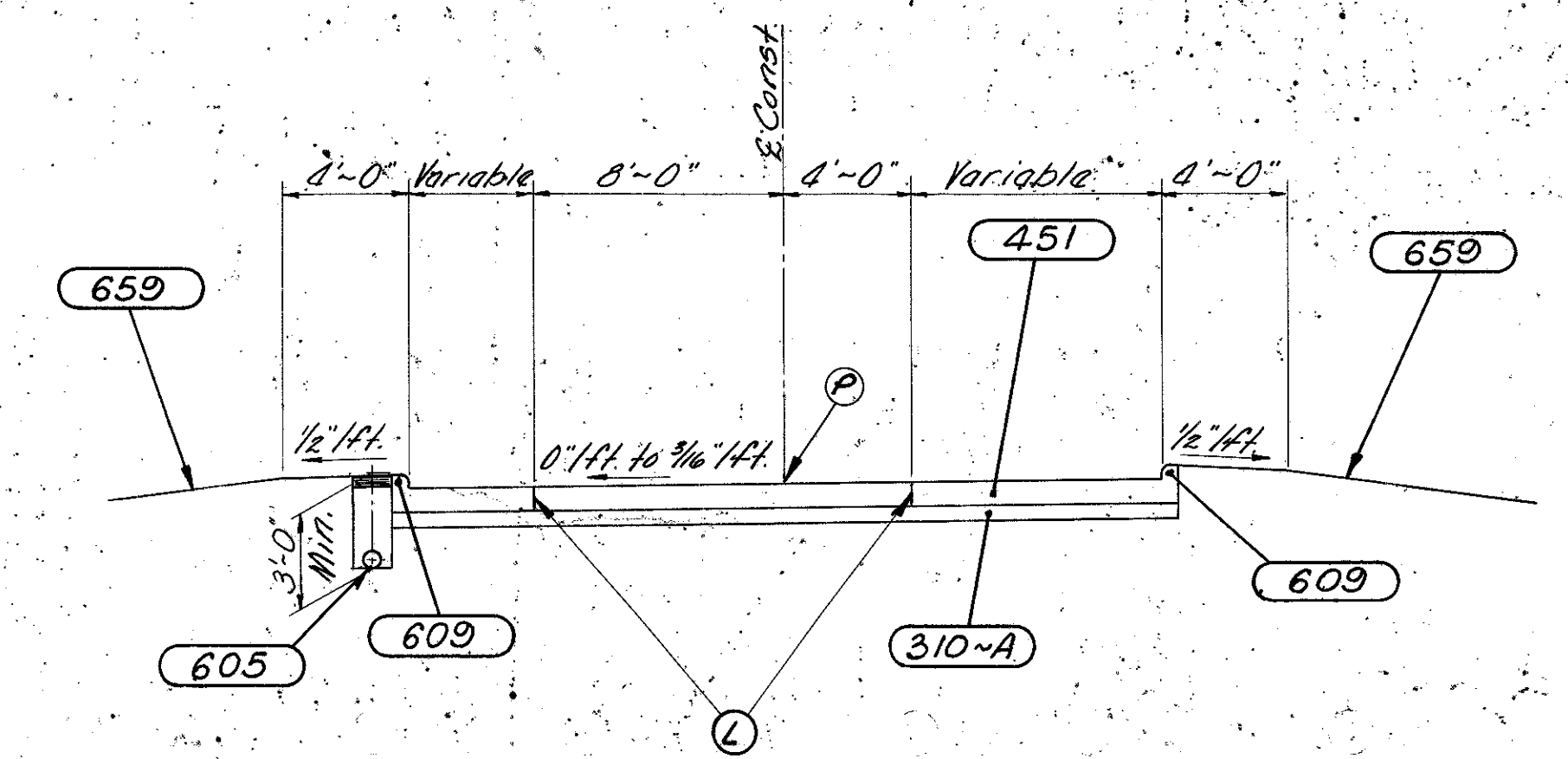
- 451 9" Reinforced Portland Cement Concrete Pavement
- 451-S 9" Reinforced Portland Cement Concrete Pavement, as per plan
- 310-S 3" Subbase 703.08 or 703.10
- 310-A 6" Subbase, Grading A as per plan
- 605-S 6" Pipe Underdrains - 706.08 as per plan
- 605 6" Shallow Pipe Underdrain
- 609 6" x 7" Integral Curb
- 612 Concrete Median, Standard Type
- 659 Seeding and Mulching



Note: 706.08 Perforated Bell & Spigot Vitrified Clay Pipe with perforations in accordance with AASHTO M 65 shall be used for pipe underdrains. In addition, three jugs designed to center and align the pipe and provide a 3/8" gap between pipe lengths shall be provided in the bell end of each pipe.

**6" PIPE UNDERDRAIN, 706.08 AS PER PLAN**

**DETAIL OF 6" X 7" INTEGRAL CONCRETE CURB**



- Ⓢ Standard Longitudinal Joint
- Ⓟ Profile Grade

# GENERAL NOTES

D.R.S. 3-29-78

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

10  
346

CUYAHOGA COUNTY  
CUY-480-8.54

## REVIEW OF PROJECT

Before any work is started on the project, representatives of the State, the City and the contractor shall make a visual inspection of existing storm, sanitary, and combined sewers which are to remain in service and which are within the limits of the work. A record of the inspection shall be kept in writing by the State. All new sewers, inlets and manholes constructed as a part of the project shall be free of all foreign matter and in a clean condition before the project is accepted by the State. All existing sewers inspected initially by the above mentioned parties shall be maintained and left in the same condition as determined by the original inspection. Any change in the condition resulting from the contractor's operations shall be corrected by the contractor to the satisfaction of the engineer. The cost of making inspections and any repairing or correcting of sewers as a result of construction operation shall be included in the unit prices bid for the respective pipe items of the contract.

## ITEM 619, FIELD OFFICE

The contractor shall provide a minimum of 800 sq. ft. of floor space for the field office and in addition to the requirements of Item 619, shall provide and maintain sanitary provisions as per 107.06. All the above is included in the lump sum price bid for Item 619, Field Office.

## ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

The rounded corners shown on the typical sections, apply to all cross sections, even though otherwise shown on these plans.

## ESTIMATED QUANTITIES

Specific locations and usage of estimated quantities set up on this plan to be used "as directed by the engineer" shall be made a matter of record by incorporation into the final change order governing completion of this project. *Estimated quantities of material shall not be ordered for delivery to the project unless authorized by the Engineer.*

## REMOVAL OF EXISTING PIPE

*The removal of all existing pipe drains which would normally be removed in various excavation items shall be included for payment in the unit prices bid for the respective excavation items, unless otherwise itemized in the plans*

## Fence Erection - Schedule of Operations

For the protection of pedestrians, children, and animals, the Contractor shall, insofar as practical, so schedule and prosecute the work that the erection of the right-of-way fence shall be performed prior to any other operation in the area.

In his Progress Schedule, the Contractor shall include a complete schedule of how he proposes to erect the right-of-way fence.

## MONUMENTS

*Monuments shall be constructed in accordance with details shown on Standard Drawing MC-1. For locations, see Sheet No. 332.*

## DUST CONTROL

100 tons of 616 Calcium Chloride for dust control and 5000 M gallons of 616 Water for dust control are to be used at the direction of and in amounts requested by the engineer for dust control within the limits of the project.

## UNDERGROUND UTILITIES

The locations of the underground utilities shown on the plans have been obtained by diligent field checks and searches of available records. It is believed that they are essentially correct, but the State of Ohio does not guarantee their accuracy and completeness.

## UTILITIES

The contractor shall notify, at least two working days before breaking ground, all public service corporations having wire poles, pipe, conduits, manholes or other structures which may be affected by this operation, including all structures which are affected and not shown on these plans. He shall conduct his operations in such a manner as to avoid damages to any and all utilities, and all work required for public or private utilities will be done by and at the expense of their respective owners, unless otherwise noted on these plans.

## UTILITY OWNERSHIP

Department of Public Safety  
Fire Signal System  
310 Carnegie Avenue  
Cleveland, Ohio 44115

Department of Public Utilities  
Div. of Utilities Engineering  
1825 Lakeside Avenue  
Cleveland, Ohio 44114

Standard Oil Company  
P. O. Box 188  
Vandalia, Ohio 45377

Department of Public Service  
Room 227 City Hall  
601 Lakeside Avenue  
Cleveland, Ohio 44114

Department of Public Safety  
Div. of Traffic Engineering & Parking  
4160 South Marginal Road  
Cleveland, Ohio 44114

Department of Public Utilities  
Division of Water and Heat  
1825 Lakeside Avenue  
Cleveland, Ohio 44114

Cleveland Electric Illuminating Co.  
Illuminating Building  
Public Square  
Cleveland, Ohio 44113

## UNSUITABLE EARTHWORK

Unsuitable surface soils encountered in embankment construction from approximately Sta. 524+50 to 554+00 shall be removed and disposed of, as directed by the Engineer. In addition to specific volumes of unsuitable earthwork calculated from the cross-hatched areas on the cross-sections, estimated quantities of 5000 C.Y. of Item 203 excavation not including embankment construction and 5000 C.Y. Item 203 embankment are provided in the general summary to be used at the discretion of the Engineer.

Calc. by T.R.B. Date 12-14-70  
Chkd. by H.J.H. Date 12-18-70

## REMOVAL OF TREES AND STUMPS

All trees and stumps specifically marked for removal within the construction limits of this project shall be removed under the lump sum price bid for Item 201 Clearing and Grubbing, except that those trees for which protection and preservation work is indicated elsewhere in these plans shall not be removed.

The following is an approximate estimate of the number of trees and stumps to be removed:

SIZES	NO. TREES	NO. STUMPS
18"	510	0
30"	48	0
48"	0	0
60"	0	0

The above estimate is approximate and the State of Ohio reserves the right to order the removal of additional trees or stumps outside of the limits of construction but within the right-of-way and/or easement lines. Payment for the removal of these additional trees or stumps shall be included in the lump sum price bid for Item 201 Clearing and Grubbing.

## PLUGGING OIL AND GAS WELLS

*All oil and gas wells located within the limits of the right of way, except those which have been plugged to the satisfaction of the Department of Natural Resources, shall be plugged by the Contractor before any other construction work is started in the vicinity of the wells. All work shall be done in accordance with the requirements of the State of Ohio, Department of Natural Resources, Division of Oil and Gas, Fountain Square, Columbus Ohio, 43224. All work connected with plugging of the wells must be performed under the supervision of a representative of the Division of Oil and Gas. The Contractor shall notify the project engineer and the Division of Oil and Gas at least 14 days in advance of the date he intends to begin work*

*Recorded information regarding these wells and permits to plug the wells shall be obtained by the Contractor at the Division of Oil and Gas.*

*Payment for the work shall be made per each under "Item Special Plugging Oil and Gas Well", which price and payment shall constitute full compensation for furnishing all material, labor, tools and equipment, and all incidentals necessary to complete this item.*

*The following estimated quantity of "Plugging Oil and Gas Wells" was carried to the General Summary in the Contractor encounters additional wells requiring plugging or the Engineer requires wells that were plugged prior to this project, to be re-plugged. All or part of this quantity may be nonperformed.*

Item Special 2 Each Plugging Oil or Gas Wells

## VENTING OIL AND GAS WELLS

*All oil and gas wells located within the limits of this project, whether plugged as part of this project or plugged by others, shall be vented as detailed on Sht. No. 21.*

*The following list of gas wells, obtained from the East Ohio Gas Co. records, are located within the of this project. However, the well locations could not be confirmed in the field.*

No. E.O. 166 at Sta. 488+00 ~ 180' Rt. No. 902 at Sta. 506+95 ~ 90' Rt.  
No. 907 at Sta. 507+90 ~ 140' Lt. No. 1009 at Sta. 523+55 ~ 125' Lt.

*The following estimated quantities have been included in the General Summary for venting these wells.*

Item 602 Concrete Masonry, as per plan 8 Cu. Yds.  
Item 603 3" Conduit, Type F, 707.08  
Std. Weight, Bituminous Coated 500 Lin. Ft.

## WATERING AND MOWING PERMANENT SEEDED AREAS

*The following estimated quantities are to be used as directed by the Engineer to promote growth and to care for the permanent seeded areas, as per 659.09.*

659 Water 400 M. Gal. 659 Mowing 750 M Sq. Ft.

Rev. 4-12-78

# GENERAL NOTES

Calc. & Ckd. D.R.S. 3-29-78

FHWA REGION	STATE	PROJECT
5	OHIO	

IOA  
346

CUYAHOGA COUNTY  
CUY-480-8.54

## STATION MARKING

The Contractor shall stencil station numbers into the top of the concrete barrier before it takes its final set. The complete station number is to be marked each 100 feet. The numerals shall be 3 to 4 inches in height and 0.25 inch in depth. The station numbers shall be placed parallel with the pavement edge and centered on the top of the concrete barrier. Payment shall be included in the contract price bid per Item 622 - Concrete Barrier, all Types.

## ITEM 607-5' FENCE TYPE CL, AS PER PLAN - LUMP SUM

The work comprised under this item is a result of the relocation of a 3 inch water meter vault at station 168+02 right, Brookpark Road on Permanent Parcel number 20-20-49 owned by the General Investment Funds Real Estate Holding Co.

The subject parcel is protected by a 5' chain link A.D.T. (American District Telegraph Co.) electronic surveillance fence. No disruption of this fence security system shall be permitted except as noted.

Whenever new fence is to be integrated into the existing fence system it shall be the contractor's responsibility to contact the A.D.T. forces for rewiring of the system.

Two (2) weeks prior notice will be required. The contractor shall also cooperate with and assist where necessary, the said A.D.T. forces.

For further information contact the A.D.T. office at 14835 Emery Road, telephone number 216-252-3615.

The work to be performed and its sequence shall be as outlined below:

- 1) Install temporary 5' CL fence within temporary R/W (Parcel #785-T to abut with existing fence.
  - 2) A.D.T. forces to rewire temporary fence into overall circuit.
  - 3) Remove inoperative portion of existing fence.
  - 4) Proceed with relocation of 3 inch water meter vault under pertinent waterwork items.
  - 5) Install permanent 5' CL fence to original existing location.
  - 6) A.D.T. forces to rewire into overall circuit.
  - 7) Remove temporary fence and restore area under pertinent roadway items.
- For further details see sheets 67A and 343.

All costs of the above stated operations including labor, materials, equipment and payment to A.D.T. for work performed shall be included in the bid price for: Item 607-5' chain link fence, as per plan - lump sum.

Rev. 4-12-78

# GENERAL NOTES

D.R.S. 3-29-78

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

11  
346

CUYAHOGA COUNTY  
CUY-480-8.54

## EXISTING UNDERDRAINS

Where existing underdrains are encountered and no provision has been made for new underdrains, they shall be connected to new inlet with 6 inch Type "F" pipe. A quantity of 100 feet has been provided in the general summary to be used as directed by the engineer for that purpose. The materials shall not be ordered by the contractor unless prior approval is received from the project engineer.

## EROSION CONTROL

Items 601, 660, and 667 are provided in the plans for erosion control. Rock or turf of a stable nature will not be removed in order to place any of these items. The engineer shall check and non-perform quantities or adjust locations and quantities for these items where indicated by field conditions during construction.

## WATER POLLUTION, SOIL EROSION AND SILTATION CONTROL

The following estimated quantities are to be used as directed by the engineer for erosion and siltation control measures.

### TO GENERAL SUMMARY

207	Temporary Seeding and Mulching	70,000	Sq.Yd.
207	Straw or Hay Bales	400	Each
207	Temporary Slope Drains	1,000	Lin.ft.
207	Temporary Benches, Dikes, Dams, and Sediment Basins	1,200	Cu.Yd.
659	Water	150	M.Gal.
659	Mowing	750	M.Sq.Ft.
659	Commercial Fertilizer (12-12-12)	9	Ton
659	Repair Seeding and Mulching	17,000	Sq.Yd.

## COATED DOWEL BARS

Dowel bars required on Standard Drawing BP-4 shall be coated in accordance with Supplemental Specification 94B.

## TEMPORARY CONCRETE BARRIER

The Contractor shall furnish and erect temporary concrete barrier sections on top of existing pavement from station 534+20 to station 553+77 eastbound I-480. Alignment shall be as shown on sheet no. 167. Barrier height shall be 32" and shape shall be as for Type A, concrete barrier shown on standard drawing MC-9. Modifying standard drawing MC-9, the 9" foundation and dowels shall be omitted. Drain slots 4" high by 24" wide shall be provided in the base at 10' intervals. Barrier sections shall be securely fastened together at the ends by means of hook and pin or other approved joint design.

Payment shall be per linear foot as Item 622 Concrete Barrier, Type A, Modified as per plan, and shall include all materials, labor and equipment necessary to construct the temporary barrier as shown in the plans.

## MANHOLE COVERS

The contractor shall set the frames for manhole covers at such an elevation and inclination as to place the surface of the cover in the plane of the finished surface except on slopes steeper than 1 on 4.

## SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS

This plan makes no provision for connecting, nor shall the engineer or contractor connect, any existing or new drainage into the highway drainage system when such drains carry flow from any plumbing fixtures including floor drains and sink drains or drains from livestock lots or barns or polluted water of any kind.

Existing pipe carrying flow comes within the category outlined above shall be plugged with Class "C" concrete at the right-of-way line. Payment for said plugging shall be included in the unit price bid for Item 203 excavation.

## LOCATION AND SIZE OF EXISTING PIPES

The location, type, depth, and size of all existing pipes are shown as near exact as the available information will permit. The State will not be responsible for any variations found during construction.

FOR WATER WORK NOTE SEE SHEET No. 67-B

## CATCH BASIN LOCATION

The location of a C.B. as shown on the plans is the center of grate.

## INLET LOCATION

The location of an inlet as shown on the plans is to the center of the manhole cover, or to the center of the grate for I-3H Inlets

## SPRING DRAINS

Reference is made to the details on Standard Drawing MC-1 showing the method of draining any spring that may be shown on the plan or encountered during construction as determined by the engineer. The following estimated quantities have been included in the general summary for this purpose:

Item 605 - 6" Unclassified Pipe Underdrain, 707.01 Type III or 707.12 Type III as per plan 270 L.F.

Item 605 - Aggregate Drains for springs, as per plan 9 L.F.

The contractor shall not order materials for "Spring Drains" until authorized by the engineer and in the event no springs are encountered, the item shall be nonperformed.

## ITEM 604 - MANHOLES, DESIGNATED "MODIFIED AS PER PLAN"

Modification of designated manholes shall consist of using the frame and covers as detailed on Sht's. 22, 23, and 24 in lieu of the standard frame and covers.

### COOPERATION BETWEEN CONTRACTORS

Access to the work site east of the railroad overpass within the CUY-480-826 project shall be via R/W for the CUY-480-8.54 project. The Contractors shall coordinate their activities according to Construction Specification 105.07.

## CONNECTIONS TO EXISTING PIPE

Where the plans provide for proposed conduit to be connected to, or to cross either over or under an existing sewer, it shall be the responsibility of the Contractor to locate the existing pipe both as to line and grade before he starts to lay the proposed conduit.

Payment for all operations described above shall be included in the unit price bid for the pertinent 603 conduit items.

## MANHOLES ADJUSTED TO GRADE

This item consists of adjusting a manhole frame and cover to grade, if such adjustment does not exceed 6 inches down nor 12 inches up. Payment shall be made under Item 604, Manhole adjusted to grade.

## 310 SUBBASE GRADING "A" AS PER PLAN

Material for this item shall meet the requirements of grading A of 310.02 after all operations of placing and compacting have been completed.

CALC. BY EJK DATE 12-16-70  
CHKD. BY TRB DATE 12-17-70

## ITEM 203 PROOF ROLLING

An estimated quantity for this item has been provided in the general summary for use in proof rolling of subgrade for the mainline and ramp pavements, and for paved shoulders.

## SEEDING

Quantities for seeding are calculated for the soil areas between the right-of-way fence lines, between the right-of-way lines in unfenced areas, and within the work limits for areas outside the right-of-way lines covered by work agreement or slope easement.

## ELEVATION DATUM

All elevation are based on U. S. G. S. datum.

## CONTRACTION JOINTS IN 45I CONCRETE PAVEMENT

Although specific locations of certain contraction joints have been detailed on this plan, no waiver of specifications is intended and the maximum distance between contraction joints shall be in all cases in accordance with standard drawing BP-4.

## EXPANSION JOINTS

Although specific locations of certain expansion joints have been detailed on this plan, no waiver of the specifications is intended.

## CONTRACTION JOINTS IN 80I CONCRETE BASE

In lieu of spacing requirements of Standard Construction Drawing BP-4, contraction joints without dowels shall be spaced at 20' intervals and shall be skewed right edge forward at a rate of 1" in 6" of width except for the first 25 joints away from the pressure relief joints. These joints shall not be skewed and shall be dowelled. Dowels shall meet the requirements of BP-4.

## ITEM 622 - CONCRETE BARRIER TYPE H

The 50" high concrete barrier shall be built to the dimensions shown in the plan details. The upper 18" may be constructed integrally with the bottom, or separately with #4 rebar dowels at 4' maximum spacing. Start and end dowels 6" from barrier vertical joints. Barrier foundation shall be 9" deep and 18" wider than the base of the barrier. The top width shown on the details is minimum and varies with transitions around sign support foundations and bridge piers. At end terminals, taper the upper 18" to 0" in 6'.

Concrete barrier if constructed on top of an approach slab shall omit 9" deep foundation. Dowels shall be retained to tie barrier to the approach slab.

## ITEM 606 BRIDGE TERMINAL ASSEMBLIES

### ATTACHMENT OF GUARDRAIL TO CONCRETE PARAPETS:

Concrete insert anchor assemblies per Standard Construction Drawings GR-3 and GR-1 shall be placed during parapet construction.

### WEED CONTROL BENEATH GUARD RAIL

See note on sheet no. 5 for pay item descriptions.

## GUARD RAIL LOCATION

Prior to erection of the guard rail, the engineer shall make a field inspection and if necessary adjust the locations of the end posts to accommodate field conditions and to provide better protection for traffic.

## CATCH BASINS AND INLETS OVER 4 FEET DEEP

All catch basins and inlets with a depth greater than four (4) feet and an inside dimension of 2'-8" or more shall have steps as shown on Standard Construction Drawing MH-1.

Rev. 4-12-78

# GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		12 346

CUYAHOGA COUNTY  
CUY-480-8.54

## FOR ACCESS ROAD "C" & WEST 150<sup>th</sup> St PAVEMENT REPLACEMENT

### ITEM 451, 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT AS PER PLAN

All applicable provisions of Item 451 as set forth in the Construction and Material Specifications shall apply unless modified herein and the following shall be considered as supplemental to the provisions set forth therein.

Curing material for exposed concrete shall conform to Interim Federal Specification TT-C00800 Type 1 (chlorinated rubber liquid membrane forming compound).

High Early Strength Portland Cement shall be used for base or pavement replacement unless otherwise directed by the Engineer.

Bituminous Material (451.08) ----- 702.01, 702.02, and 702.04.

The placing of reinforcement by vibratory means will not be permitted.

**JOINTS:** Longitudinal key joints and vertical faces of existing rigid pavement shall be cleaned of foreign material and given an application of bituminous material in a manner which results in a residual coating of 1/4 gallon per square yard before the adjoining slab is poured.

When not shown on the Plans, or provided for elsewhere, joints in the pavement within intersections shall be of the type, and at such locations, as designated by the Engineer.

In those areas where a pavement is being widened using a section consisting of a Portland Cement Concrete Pavement with or without an Asphalt Concrete Surface Course, traverse joints shall be placed in the base to match joints in the original concrete base, as shown on the Plans and/or as directed by the Engineer.

(d) Contraction Joint. The location of the joints should be clearly marked on the forms in such a manner that the center line can be readily determined for the sawing operation.

Unless otherwise approved by the Engineer the following method should be used. Immediately after the finishing machine has cleared the joint, and prior to any hand finishing, a transverse slot 2" in depth shall be cut into the plastic concrete with a steel plate 3/8" thick and of sufficient length to cut a slot the total width of the pavement in one operation. The plate shall have the cutting edge serrated and shall be moved longitudinally in such a manner as to provide a sawing action while it is being forced into the concrete. The plate shall be reinforced in such a manner as will keep it rigid and in straight alignment and it shall be suspended and guided from a movable bridge, of an approved design, so that the plate will be held rigidly perpendicular to the surface of the slab and at right angles to the center line of the pavement when it is inserted in the concrete.

Immediately following the removal of the steel cutting plate, a 1/4" x 2" premolded joint filler meeting the requirements of 705.03 shall be inserted in the slot so that the top edge of the filler is flush with the top of the concrete slab. The pavement shall then be finished as required elsewhere.

This joint shall be sawed within 3 days with a 3/8" thick blade cutting a kerf 2" deep. Any residual joint filler remaining in the slot shall be removed by a suitable means and the joint cleaned, protected and sealed as provided elsewhere.

**STEEL REINFORCING:** Steel reinforcing shall be wire fabric as per 709.10 and Std. Drawg. BP-2.

(f) Hinge Joint. When called for on the Plans or in the Proposal, two hinge joints shall be sawed into the pavement, at the 1/3 points, between successive contraction joints or between adjacent contraction and expansion joints. Hinge joints shall not be placed as an extension of either a contraction, expansion or construction joint in an adjacent slab, but may be used to extend a longitudinal tied joint of a more or less perpendicular intersecting roadway when approved by the Engineer. In order to insure the correct identification of the sawed joint for extension when adjacent or future lanes are placed, a 3" block letter, C, for contraction or construction and H. for hinge, shall be impressed 1/4" into the finished slab adjacent to and at each end of the joint. If it is not possible to place two successive hinge joints as herein specified, the sawed contraction joint described herein shall be used. When hinged joints are used the spacing between successive contraction and/or expansion joints shall not generally exceed 75 feet and the intermediate hinge joint spacing shall not exceed 25 feet except as approved by the Engineer.

Hinge joints shall be constructed in the same manner as the contraction joint described in (d) above except that no dowel assembly is required and the reinforcing mesh in the pavement or base shall be carried through the joint. Care shall be taken that the mesh reinforcement is not cut when the joint is being sawed.

**CONSOLIDATING AND FINISHING:** Vibratory finishing will not be permitted.

Unless otherwise specified the pavement shall be given a broom finish using a broom of an approved type, not less than 18 inches in width of bass or bassine fiber not more than 5 inches in length. The strokes shall be from edge to edge of the slab, one stroke per width of broom with adjacent strokes slightly overlapped and shall be drawn without "tearing" of the concrete and so as to produce regular corrugations approximately 1/16 inch depth.

Brooms shall be washed thoroughly at frequent intervals during each day. Any coarse or long bristles which cause irregularities shall be trimmed or removed.

**CURING:** The curing of concrete, which is to be covered with asphalt concrete, may be accomplished thru the use of an approved Asphalt Membrane Curing Compound which meets the moisture retention properties set forth in 705.07. The use of asphalt membrane curing compound on exposed surfaces will not be permitted.

**PROTECTION AGAINST RAIN:** In order that the concrete may be properly protected against the effects of rain before the concrete is sufficiently hardened, the Contractor will be required to have available at all times materials for the protection of the surface of the unhardened concrete. Such protective materials shall consist of standard covering material such as burlap or cotton mats, curing paper, or plastic sheeting material for the protection of the surface of the pavement. When rain appears imminent, all paving operations shall stop and all available personnel shall begin covering the surface of unhardened concrete with the protective covering.

**SURFACE SMOOTHNESS:** All sections of pavement that have been ground, repaired or replaced by the contractor shall be given a protective application of the specified curing compound.

### TEXTURING ~ ITEM 451 REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT

On Ramps R, S, T, W, 150th St Ramp, BR-1, and BR-2, the pavement surface shall be textured by use of a burlap drag in the longitudinal direction followed by an approved device that will produce a relatively uniform pattern of grooves in the transverse direction. The grooves shall be spaced at approximately 1/2 inch between centers, and shall be 0.10 inch to 0.20 inch deep and 0.08 inch to 0.12 inch wide. The cost of texturing shall be included in the unit price bid for Item 451 Reinforced Portland Cement Concrete Pavement.

### ITEM 614 ~ MAINTAINING TRAFFIC

#### WEST 150TH STREET

The Contractor shall maintain two-way traffic at all times with a minimum of two lanes in the peak direction during rush hours for West 150th Street. The Contractor is required to notify the City of Cleveland, Traffic Engineering Department in writing fourteen days prior to restricting traffic flow on W. 150th St.

In addition to Item 614 Maintaining Traffic a quantity of 100 cubic yards of Item 410 Traffic Compacted Surface, Type A or B, and 15 cubic yards of Item 404 Asphalt Concrete or an Approved Bituminous Premixed Surface Course for Maintaining Traffic have been provided in the General Summary. These items are only to be used as directed by the Project Engineer.

#### BROOKPARK ROAD (S.R. 17)

The Contractor shall maintain four lanes of traffic at all times (two lanes in each direction) for Brookpark Rd. The Contractor is required to notify the City of Cleveland, Traffic Engineering Department in writing fourteen days prior to restricting traffic flow on Brookpark Rd.

Existing traffic signals are to be maintained during the construction of Ramps BR-1 and BR-2.

New signals shall not be installed prior to completion of Ramps BR-1 and BR-2.

The Contractor shall contact the City of Cleveland Traffic Engineer to obtain the specified time for which the new signals shall become operational and the existing signals shall be turned off.

Cost of maintaining existing signals shall be included in the lump sum bid for Item 614 Maintaining Traffic.

#### TRENCH FOR WIDENING (BROOKPARK ROAD)

The open trench shall be adequately maintained and protected with drums or barricades at all times. Placement of proposed subbase and base material shall follow as closely as possible behind the excavation operations. The length of widening trench which is open at any one time shall be held to a minimum and shall at all times be subject to approval of the Engineer.

### ITEM 606 ~ GUARDRAIL, TYPE 5, AS PER PLAN

Rail elements salvaged under 202 on this project may be used in lieu of furnishing new rail elements for 606 Guardrail. If salvaged rail is used, it must be renovated prior to installation and new splice bolts furnished.

Painted rail elements shall be dismantled and all paint, rust, dirt and other foreign material detrimental to galvanizing shall be removed from rails, and intermediate post bolt slots 3/4" x 2 1/2" shall be punched where required for Type 5 installations. The rail shall then be galvanized in accordance with 710.06. Immediately after award of the contract, the Contractor shall submit an outline of the galvanizing plant operations. The outline shall include information on the plant capacity and storage facilities for the articles as delivered for galvanizing and storage facilities for the articles after the work is completed. This outline, when approved by the Department, will become a part of the contract.

The Contractor shall notify the Engineer at least 72 hours in advance of galvanizing any lot of articles in order that arrangements may be made to have the Department Inspector at the plant when the work is in progress. The inspector shall have free entry, at all times while work on the contract is being performed, to all parts of the plant that concern the cleaning and galvanizing of the articles. The Contractor shall afford the Inspector all reasonable facilities without charge, to satisfy him that the work is being performed in accordance with these specifications.

Existing galvanized rail elements shall be cleaned of rust, dirt and other foreign materials. Intermediate post bolt slots 3/4" x 2 1/2" shall be field punched or drilled. Areas on which the spelter coating has been damaged and intermediate holes shall be repaired or regalvanized in accordance with ASSHO Specifications M 36-73I Section 23 or they may be repaired under the direction of the Engineer with stick-form galvanizing repair compound meeting the requirements of FSS 0-6-93.

Payment for all of the above shall be included in the unit price bid for 606 Guardrail, Type 5, as per plan or 606 Guardrail, Type 5, Barrier Design, as per plan.



# GENERAL SUMMARY

CALC. BY A.J.F. DATE 9/23/68  
 CHD. BY J.L. DATE 5-19-71  
J.L. 10-23-72  
D.R.S. 3-29-78  
 FED. RD. DIVISION STATE PROJECT  
 5 OHIO  
 CUYAHOGA COUNTY  
 CUY-480-8.54

14  
346

TYPE CODE ~ 6707 UNLESS OTHERWISE SHOWN

ITEM	SHEET NUMBERS																												GRAND TOTAL	UNIT	ITEM	DESCRIPTION
	//	29	30	31	32	33	34	35	36	37	38	39	42	43	44	45	46	47	48	49	50	51	52	53	54	55	67-B	74				
<b>DRAINAGE</b>																																
202																													1	Ea.	202	Combination Inlet/Manhole Removed
202																													7	Ea.	202	Manhole Removed
202																													6	Ea.	202	Catch Basin Removed
202																													2	Ea.	202	Catch Basin Abandoned
602																													100.5	C.Y.	602	Concrete Masonry
603																													164	L.F.	603	6" Conduit, Type B
603	100																												794	L.F.	603	6" Conduit, Type F
603																													66	L.F.	603	12" Conduit, Type B
603																													174	L.F.	603	12" Conduit, Type C, 706.01 or 706.08 with Class C Bedding
603																													210	L.F.	603	12" Conduit, Type C, 706.02 or 706.08 Encased with Class C Bedding
603																													1344	L.F.	603	15" Conduit, Type B
603																													505	L.F.	603	15" Conduit, Type C, 706.01 Class 3, 706.02 or 706.08 E.S.
603																													202	L.F.	603	15" Conduit, Type C, 706.01 or 706.08 with Class C Bedding
603																													137	L.F.	603	15" Conduit, Type A
603																													474	L.F.	603	15" Conduit, Type F
603																													34	L.F.	603	15" Conduit, Type F, 707.05 Type C
603																													449	L.F.	603	18" Conduit, Type B
603																													134	L.F.	603	18" Conduit, Type B, 706.02 D-1750
603																													22	L.F.	603	18" Conduit, Type C
603																													551	L.F.	603	21" Conduit, Type B
603																													380	L.F.	603	21" Conduit, Type C, 706.01 Class 3, 706.02, 706.08 E.S. or 707.13
603																													151	L.F.	603	24" Conduit, Type A, 706.02, 706.08 or 27" 707.05 Type C
603																													230	L.F.	603	30" Conduit Type A, 706.02, 706.08 or 36" 707.05 Type C
603																													82	L.F.	603	33" Conduit, Type A, 706.02 D-1500 with Class C Bedding
603																													76	L.F.	603	42" Conduit, Type A, 706.02 D-1500 with Class C Bedding or 48" 707.05
603																													564	L.F.	603	54" Conduit, Type A, D-2000, 706.02
603																													194	L.F.	603	29"x45" Conduit, Type A, 706.04 Class HE II
604																													3	Ea.	604	Catch Basin, Standard No. 3-A
604																													1	Ea.	604	Catch Basin Adjusted to Grade
604																													1	Ea.	604	Manhole Adjusted to Grade
604																													11	Ea.	604	City of Cleveland, Catch Basin, No. 3-C
604																													8	Ea.	604	Catch Basin, Standard No. 5
604																													1	Ea.	604	Catch Basin, Standard No. 6
604																													3	Ea.	604	Manhole, Standard No. 1
604																													4	Ea.	604	Manhole, Standard No. 1, Modified as per plan
604																													1	Ea.	604	Manhole, Standard No. 3
604																													1	Ea.	604	Manhole Reconstructed to Grade
604																													18	Ea.	604	Median Inlet, No. I-3H
604																													1	Ea.	604	Paved Shoulder Inlet, Standard No. 2-A-6
605																													34,786	L.F.	605	6" Shallow pipe underdrain
605																													2,108	L.F.	605	6" Deep pipe underdrain
605																													50	L.F.	605	6" Unclassified pipe underdrain
605	270																												270	L.F.	605	6" Unclassified pipe underdrain, 707.01 Type III or 707.12 Type III as per plan
605	9																												9	L.F.	605	Aggregate drains for springs, as per plan
605																													1,694	L.F.	605	6" Shallow Pipe UNDERDRAIN, 706.08, as per plan
605																													40	L.F.	605	Aggregate Drains
<b>EROSION CONTROL ~ TYPE CODE Y005</b>																																
207	70,000																												70,000	S.Y.	207	Temporary Seeding and Mulching
207	400																												400	Ea.	207	Straw or Hay Bales
207	1,000																												1,000	L.F.	207	Temporary Slope Drains
207	1,200																												1,200	C.Y.	207	Temporary Benches, Dikes, Dams and Sediment Basins
659	17,000																												17,000	S.Y.	659	Repair Seeding and Mulching







# PAVEMENT CALCULATIONS

## 609 CURB, TYPE G

Ramp "R"  
Sta. 39+40 to Sta. 41+50 = 210 L.F.

Ramp "T"  
Sta. 38+75 to Sta. 39+00 = 25 L.F.

Total = 235 L.F.

Total 609 Curb, Type G to Gen. Sum. = 235 L.F.

### ITEM 451

## 10" REINF. PORTLAND CEMENT CONCRETE PAVEMENT

### RAMP "R"

Sta. 25+36.21 to Sta. 30+24.21 = 487.30 LF = 1299.5 SY

Sta. 34+22.28 to Sta. 41+50.00 = 727.72 LF = 1940.6 SY

Sta. 49+00.00 to Sta. 59+88.18 = 1088.18 LF = 2901.8 SY

Less amount for Pressure Relief Joint A 4' x 72' ÷ 9 = -32.0 SY

### RAMP "S"

Sta. 28+50.00 to Sta. 34+50.00 = 600.00 LF = 1600.0 SY

Less Amount For Pressure Relief Joint A 4' x 36' ÷ 9 = -16.0 SY

Sub-Total = 7693.9 SY

Total 451-10" To General Summary = 7694 SY.

## 451-9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT

### RAMP "T"

Sta. 28+50.00 to Sta. 29+30.14 = 130.14 x  $\frac{1535.89}{1527.89} = 130.82$

Sta. 33+55.99 to Sta. 39+00.00 = 544.01 x  $\frac{1535.89}{1527.89} = 546.86$

677.68 x 16 ÷ 9 = 1204.8 SY

Less Amount For Pressure Relief Joint A 4' x 32' ÷ 9 = 142 SY

Total = 1,190.6 SY

TOTAL 9" 451 TO GENERAL SUMMARY = 1,191 Sq.Yds.

## 310-6" SUBBASE (GRADING A) ~ I-480

From 801 (Shf. No. 19) = 87,125.35 SY + From 811 (Shf. No. 18) = 2,490.0 SY.

Less amount for Pres. Rif. Jts. (829' x 8' ÷ 9) = -736.9 SY = 88,878.4 Sq.Yds.

88,878.4 SY x 6" ÷ 36" = 14,813.1 CY

Sta. 476+00.00 to Sta. 486+47.81 = 1047.81 x 1.3426 C/LF = 1,406.8 CY

Sta. 486+47.81 to Sta. 492+98.00 = 650.19 x 1.0567 C/LF = 687.1 CY

Sta. 492+98.00 to Sta. 504+86.79 = 1188.79 x 0.77083 C/LF = 916.4 CY

Sta. 504+86.79 to Sta. 516+69.75 = 1182.96 x 1.0567 C/LF = 1,250.0 CY

Sta. 517+08.25 to Sta. 521+54.63 = 446.38 x 1.0567 C/LF = 471.7 CY

Sta. 497+73.00 to Sta. 512+67.17 (Lt. Shld.) = 1494.17 x 0.28588 C/LF = 427.2 CY

Sta. 521+54.63 to Sta. 523+65.18 = 210.55 x 1.3426 C/LF = 282.7 CY

Sta. 524+51.00 to Sta. 531+28.54 = 677.54 x 1.3426 C/LF = 909.7 CY

Sta. 533+73.96 to Sta. 542+51.75 (E.B. Lanes) = 878.19 x 0.38542 C/LF = 338.5 CY

Sta. 533+97.06 to Sta. 542+51.75 (WB Lanes) = 854.69 x 0.38542 C/LF = 329.4 CY

## 310-6" SUBBASE (GRADING "A"), I-480

Sta. 533+04.61 to Sta. 542+51.75 (Rt. Shld.) = 947.2 x 0.28588 C/LF = 270.8 CY

Sta. 542+26.75 to Sta. 542+51.75 (Lt. Shld.) = 2500 x 0.28588 C/LF = 71 CY

Sta. 543+99.25 to Sta. 563+50.00 = 195075 x 1.0567 C/LF = 2,061.4 CY

Sta. 543+99.25 to Sta. 545+48.43 (Rt. Shld.) = 14918 x 0.28588 C/LF = 42.6 CY

Sta. 554+50.00 to Sta. 559+31.00 (Lt. Shld.) = 481.00 x 0.28588 C/LF = 137.5 CY

Sta. 563+50.00 to Sta. 573+50.00 = 1,000 x 0.77083 C/LF = 770.8 CY

Sta. 570+87.84 to Sta. 573+50.00 (Rt. Shld.) = 262.16 x 0.28588 C/LF = 74.9 CY

I-480 Sub-Total ~ 310 "A" = 25,197.7 Cu.Yds.

### RAMP "R"

Sta. 25+11.91 to Sta. 30+49.21 = 531.30 x 29.00 = 15,581.7 SF

Sta. 33+97.28 to Sta. 41+50.00 = 752.72 x 29.00 = 21,828.9 SF

Sta. 49+00.00 to Sta. 53+00.00 = 400.00 x 29.00 = 11,600.0 SF

Sta. 53+00.00 to Sta. 59+88.18 = 688.18 x 25.00 = 17,204.5 SF

Sta. 52+50.00 to Sta. 59+88.18 (Lt. Shld.) = 738.18 x 2.67 = 1,970.9 SF

### RAMP "S"

Sta. 28+50.00 to Sta. 34+50.00 = 600.00 x 27.67 = 16,602.0 SF

### RAMP "T"

Sta. 28+50.00 to Sta. 30+05.14 = 153.14 x  $\frac{1535.89}{1527.89} = 155.95$

Sta. 33+30.99 to Sta. 39+00.00 = 56901 x  $\frac{1535.89}{1527.89} = 571.99$

727.94 x 20.00 = 14,558.8 SF

Ramps R, S, & T Subtotal Area = 99,346.8 S.F.

Ramps R, S, & T Total ~ 310 "A" = 99,346.8 S.F. x 0.5' ÷ 27 = 1,839.8 Cu.Yds

TOTAL ~ 310 SUBBASE "A" (25,197.7 CY + 1,839.8) = 27,037.5

TOTAL-310 SUBBASE "A" TO GENERAL SUMMARY = 27,038 Cu.Yds.

## 609 ASPHALT CONCRETE CURB, TYPE 1

### I-480 Rt. & Lt.

Sta. 515+55 to Sta. 549+96 (344' x 2) = 6882.0 L.F.

Deduct for Bridge CUY-480-0930 (38.5' x 2) = -77.0 L.F.

Deduct for Bridge CUY-480-0943 (85.8' x 2) = -171.6 L.F.

Deduct for Bridge CUY-480-0957 (268.5' x 2) = -537.0 L.F.

Deduct for Bridge CUY-480-0979 (147.5' x 2) = -295.0 L.F.

Deduct for Reinforced Sodded Flumes (2 @ 6') = -138.0 L.F.

SUBTOTAL I-480 = 5,663.4 L.F.

### RAMP "R" Rt. Side

Sta. 25+00 to Sta. 36+16 = 1116.0 L.F.

Deduct for Bridge CUY-480-0869 = -348.1 L.F.

Deduct for Reinforced Sodded Flumes (4 @ 6') = -24.0 L.F.

SUBTOTAL RAMP "R" = 743.9 L.F.

### RAMP "S" Rt. Side

Sta. 24+29 to Sta. 31+96 = 767.0 L.F.

Deduct for Reinforced Sodded Flumes (2 @ 6') = -12.0 L.F.

SUBTOTAL RAMP "S" = 755.0 L.F.

### RAMP "T" Rt. Side

Sta. 28+04 to Sta. 37+96 = 992.0 L.F.

Deduct for Bridge CUY-480-0873 = -325.9 L.F.

Deduct for Reinforced Sodded Flumes (2 @ 6') = -12.0 L.F.

SUBTOTAL RAMP "T" = 654.1 L.F.

Total 609 Asphalt Curb, Type 1 to General Summary = 7817 L.F.

## 310 SUBBASE (REGULAR GRADING) RAMP "R"

Sta. 25+11.91 to Sta. 26+00.00 (Lt. Shld.) = 0.15' (Planimetered) x 50' = 375.0 SF

Sta. 26+00.00 to Sta. 29+50.00 (Lt. Shld.) = 35000 x 900 = 31500 SF

Sta. 29+50.00 to Sta. 30+49.21 (Lt. Shld.) = 0.58' (Planimetered) x 30' = 5220 SF

Sta. 33+97.28 to Sta. 35+00.00 (Lt. Shld.) = 0.77' (Planimetered) x 30' = 693.0 SF

Sta. 35+00.00 to Sta. 41+50.00 (Lt. Shld.) = 650.00 x 900 = 58500 SF

Sta. 49+00.00 to Sta. 52+50.00 (Lt. Shld.) = 35000 x 900 = 31500 SF

Sta. 52+50.00 to Sta. 59+88.18 (Lt. Shld.) = 738.18 x 7.33 = 5410.0 SF

Sta. 53+00.00 to Sta. 59+88.18 (Rt. Shld.) = 688.18 x 3.00 = 2064.5 SF

### RAMP "S"

Sta. 28+50.00 to Sta. 34+50.00 = 600.00 [3.00 + 7.33] = 6198.0 SF

### RAMP "T"

Sta. 28+50.00 to Sta. 30+05.14 (Lt. Shld.) = 153.14 x  $\frac{1545.89}{1527.89} = 156.97$

Sta. 33+30.99 to Sta. 39+00.00 (Lt. Shld.) = 56901 x  $\frac{1545.89}{1527.89} = 575.71$

732.68 x 2.00 = 1465.4 SF

TOTAL = 28,877.9 Sq.Ft.

310 Reg. = 28,877.9 x 0.375 ÷ 27 = 401.1 Cu.Yds.

310 Reg., from Shf. 19 = 12,350 Cu.Yds.

310 Reg., from Shf. 18 = 514.3 Cu.Yds.

TOTAL = 13,265.4 Cu.Yds.

Total 310 - SUBBASE (REGULAR GRADING) to General Summary = 13,266 Cu.Yds.

## 301-BIT AGGREGATE BASE ~ I-480

Sta. 476+00.00 to Sta. 486+47.81 = 1047.81 x 42 = 44,008.0 SF

Sta. 486+47.81 to Sta. 492+98.00 = 650.19 x 32 = 20,806.1 SF

Sta. 492+98.00 to Sta. 504+86.79 = 1188.79 x 22 = 26,153.4 SF

Sta. 504+86.79 to Sta. 516+69.75 = 1182.96 x 32 = 37,854.7 SF

Sta. 497+73.00 to Sta. 512+67.17 (Lt. Shld.) = 1494.17 x 10 = 14,941.7 SF

Sta. 517+08.25 to Sta. 521+54.63 = 446.38 x 32 = 14,284.2 SF

Sta. 521+54.63 to Sta. 523+65.18 = 210.55 x 42 = 8,843.1 SF

Sta. 524+51.00 to Sta. 531+28.54 = 677.54 x 42 = 28,456.7 SF

Sta. 533+73.96 to Sta. 542+51.75 (E.B. Lanes) = 878.19 x 11 = 9,660.1 SF

Sta. 533+97.06 to Sta. 542+51.75 (WB Lanes) = 854.69 x 11 = 9,401.6 SF

Sta. 533+04.61 to Sta. 542+51.75 (Rt. Shld.) = 947.2 x 10 = 9,472.0 SF

Sta. 542+26.75 to Sta. 542+51.75 (Lt. Shld.) = 2500 x 10 = 2500 SF

Sta. 543+99.25 to Sta. 563+50.00 = 195075 x 32 = 62,424.0 SF

Sta. 543+99.25 to Sta. 545+48.43 (Rt. Shld.) = 14918 x 10 = 1,491.8 SF

Sta. 554+50.00 to Sta. 559+31.00 (Rt. Shld.) = 481.00 x 10 = 4810.0 SF

Sta. 563+50.00 to Sta. 573+50.00 = 1000.00 x 22 = 22,000.0 SF

Sta. 570+87.84 to Sta. 573+50.00 (Rt. Shld.) = 262.16 x 10 = 2621.6 SF

Sub-Total = 317,479.0 S.F.

Deduct for O.H. Sign Supports = 5 x [(30.0 + 10.0) x 1.5] = -300.0 S.F.

Deduct for Pier Protection I-71 over I-480 = (60.0 + 110.5) x 3 = -511.5 S.F.

Cuy. 480-0869 = (60.0 + 57.2) x 3.5 = -410.2 S.F.

Cuy. 480-0873 = (60.0 + 47.3) x 3 = -321.9 S.F.

I-480 Sub-Total = 315,935.4 Sq.Ft.

# PAVEMENT CALCULATIONS

## 301-BIT. AGGREGATE BASE (CONT.) RAMP "R"

Sta 25+11.91 to Sta 26+00.00 =  $[0.19 \times 0.19] \text{ (Planimetered)} \times 50^2 = 9500 \text{ SF}$   
 Sta 26+00.00 to Sta 29+50.00 =  $350.00 \times [10.00+4.00] = 49000 \text{ SF}$   
 Sta 29+50.00 to Sta 30+49.21 =  $[0.69 \times 0.55] \text{ (Planimetered)} \times 30^2 = 1116.0 \text{ SF}$   
 Sta 33+97.28 to Sta 35+00.00 =  $[0.89 \times 0.28] \text{ (Planimetered)} \times 30^2 = 1053.0 \text{ SF}$   
 Sta 35+00.00 to Sta 41+50.00 =  $650.00 \times [10.00+4.00] = 91000 \text{ SF}$   
 Sta 39+40.00 to Sta 41+50.00 (Rt. Shld.) =  $210' \times 1.0 = 210.0 \text{ SF}$   
 Sta 49+00.00 to Sta 59+88.18 =  $1088.18 \times [10.00+4.00] = 15234.5 \text{ SF}$   
**RAMP "R" Sub-Total = 32,563.5 SF**

## RAMP "S"

Sta 28+50.00 to Sta 34+50.00 =  $600.00 [10.00+4.00] = \text{Ramp "S" Sub-Total} = 84000 \text{ SF}$

## RAMP "T"

Sta 28+50.00 to Sta 30+05.14 (Rt. Shld.) = 155.14  
 Sta 33+30.99 to Sta 39+00.00 (Rt. Shld.) = 569.01  
 Rt. Shld. Sub-Total =  $724.15 \times 300 = 21725 \text{ SF}$   
 Sta 28+50.00 to Sta 33+05.14 (Lt. Shld.) = 156.97 (See 310-Reg.)  
 Sta 33+30.99 to Sta 39+00.00 (Lt. Shld.) = 575.71 (See 310-Reg.)  
 Lt. Shld. Sub-Total =  $732.68 \times 300 = 21980 \text{ SF}$   
**RAMP "T" Sub-Total = 4370.5 Sq.Ft.**

## TOTAL-301 BITUMINOUS AGGREGATE BASE

(I-480) ~  $315,935.4 \text{ S.F.} \times 0.5' \div 27 = 5850.7 \text{ C.Y.}$   
 (Ramp R) ~  $32,563.5 \text{ S.F.} \times 0.5' \div 27 = 603.0 \text{ C.Y.}$   
 (Ramp S) ~  $8,400.0 \text{ S.F.} \times 0.5' \div 27 = 155.6 \text{ C.Y.}$   
 (Ramp T) ~  $4,370.5 \text{ S.F.} \times 0.5' \div 27 = 80.9 \text{ C.Y.}$   
**Total 301 Bit. Agg. Base = 6690.2 Cu.Yds.**

**TOTAL 301 BITUMINOUS AGGREGATE BASE TO GENERAL SUMMARY = 6691 Cu.Yds.**

## 622 CONCRETE BARRIER TYPE H I-480

Sta 476+00.00 to Sta 516+69.75 = 4069.75 LF  
 Sta 517+08.25 to Sta 523+65.18 = 6563 LF  
 Sta 524+51.00 to Sta 531+28.54 = 6775 LF  
 Sta 533+97.06 to Sta 542+51.75 = 8546 LF  
 Sta 543+99.25 to Sta 573+50.00 = 29507.5 LF  
**SUBTOTAL = 9209.66 L.F.**  
 Deduct for Temporary Barrier Connection = - 80.00 L.F.  
 Deduct for Temporary Road BR-1 = - 250.00 L.F.  
 Deduct for O.H. Sign Fdtns. 5x10.0 = - 50.00 L.F.  
 Deduct for Inlets 18x20.0 = - 360.00 L.F.  
 Deduct for Lighting Foundations 31x2.5 = - 77.50 L.F.  
**TOTAL = 8392.16 L.F.**  
**Total 622 Concrete Barrier to General Summary = 8,392 LF.**

## 310 SUBBASE (REGULAR GRADING) Cont. from Sht. No. 17

### RAMP "R"

From 301 =  $32,563.5 \text{ S.F.} \times 0.333 \div 27 = 402.0 \text{ C.Y.}$   
 Sta. 51+53.00 to Sta. 59+88.18 ~ Deduct  $835.18' \times 0.222 \text{ S.F.} \div 27 = 6.9 \text{ C.Y.}$

### RAMP "S"

From 301 =  $8,400.0 \text{ S.F.} \times 0.333 \div 27 = 103.7 \text{ C.Y.}$   
 Sta. 28+50.00 to Sta. 34+50.00 ~ Deduct  $600.00' \times 0.222 \text{ S.F.} \div 27 = 4.9 \text{ C.Y.}$

### RAMP "T"

From 301 (Lt. Shld.) =  $2,198.0 \text{ SF} \times 0.25 \div 27 = 20.4 \text{ CY}$   
**Total = 514.3 CY**

**Total 310 Subbase (Regular Grading) to sheet no. 17 = 514.3 CY**

## 611 REINFORCED CONCRETE APPROACH SLABS I-480

(T=15) Bridge No. CUY I-480-0930 =  $2500 \times 2 [48+36] \div 9 = 466.7 \text{ SY}$   
 (T=17) Bridge No. CUY I-480-0943 =  $3000 \times 4 \times 48 \div 9 = 6400 \text{ SY}$   
 (T=15) Bridge No. CUY I-480-0957 =  $2500 \times [3 \times 48 + 58] \div 9 = 561.1 \text{ SY}$   
 (T=15) Bridge No. CUY I-480-0979 =  $2500 \times 4 \times 48 \div 9 = 533.3 \text{ SY}$

### RAMP "R"

(T=15) Bridge No. CUY I-480-0869 =  $2500 \times 2 \times 24 \div 9 = 133.3 \text{ SY}$   
 (T=15) Bridge No. CUY I-71-0997 =  $2500 \times 1 \times 24 \div 9 = 66.7 \text{ SY}$

### RAMP "T"

(T=15) Bridge No. CUY I-480-0873 =  $2500 \times 2 \times 16 \div 9 = 88.9 \text{ SY}$

**TOTAL 611 REINFORCED CONCRETE APPROACH SLAB (T=15") TO GENERAL SUMMARY = 1850 S.Y.**

**TOTAL 611 REINFORCED CONCRETE APPROACH SLAB (T=17") TO GENERAL SUMMARY = 640 S.Y.**

## SPECIAL DRAINAGE CONNECTION USING NO 8 AGGREGATE RAMP "R"

Sta 25+01.00 to Sta 29+85.00 (Rt. Shld.) = 484.00 LF  
 Sta 34+60.00 to Sta 41+50.00 (Rt. Shld.) = 690.00 LF  
 Sta 49+00.00 to Sta 53+00.00 (Rt. Shld.) = 400.00 LF  
 Sta 52+50.00 to Sta 59+88.18 (Lt. Shld.) = 738.18 LF  
 $1574.00 \text{ LF} \times 0.075 \text{ SF} \div 27 = 38.9 \text{ CY}$   
 $1244.5 \text{ LF} \times 0.222 \text{ SF} \div 27 = 34.0 \text{ CY}$

## RAMP "S"

Sta 28+50.00 to Sta 34+50.00 (Rt. Shld.) = 600.00 LF  
 $600.00 \text{ LF} \times 1.244 \text{ SF} \div 27 = 27.6 \text{ CY}$

## RAMP "T"

Sta 28+50.00 to Sta 29+30.00 (Rt. Shld.) = 130.00 LF  
 Sta 33+60.00 to Sta 39+00.00 (Rt. Shld.) = 540.00 LF  
**RAMP "T" Sub-Total = 670.00 LF**  
 $670.00 \text{ LF} \times 1.972 \text{ SF} \div 27 = 48.9 \text{ CY}$   
**Total SPECIAL DRAINAGE CONNECTION = 149.4 CY**

**TOTAL-SPECIAL DRAINAGE CONNECTION TO GENERAL SUMMARY = 150 Cu.Yds.**

## 203 SUBGRADE COMPACTION

From 301 (Sht. No. 18) =  $361,269.4 \text{ S.F.} \div 9 = 40,141.0 \text{ SY}$   
 From 451-9" (Sht. No. 17) = 1,204.8 SY  
 From 451-10" (Sht. No. 17) = 7,741.9 SY  
 From 622 (Sht. No. 18) =  $9,209.66 \times 4.0 \div 9 = 4,093.2 \text{ SY}$   
 From 611 (Ramps R & T, Sht. No. 18) = 288.9 SY  
 From 404 (Sht. No. 19) = 88,491.2 SY  
**Total 203 SUBGRADE COMPACTION to General Summary = 141,961 SY**

## 203 PROOF ROLLING

Sheet No.	203 Subgrade Compaction
18	141,961 SY
58	2,948 SY
59	4,975 SY
60	3,226 SY
61	3,552 SY
62	5,468 SY
63	1,702 SY
64	1,012 SY
65	4,578 SY
67	1,607 SY
68	2,926 SY
69	4,789 SY
70	2,826 SY
71	2,287 SY
<b>Sub-Total</b>	<b>177,857 SY</b>

Deduct for extra-depth subbase:  
 Sta. 554+00 to Sta. 555+50 W.B.  
 $150 \text{ L.F.} \times 71' \div 9 = -1184 \text{ S.Y.}$   
 Sta. 555+50 to Sta. 575+00 E.B. & W.B.  
 $1950 \text{ L.F.} \times 142' \div 9 = -30,767 \text{ S.Y.}$

$145,906 \text{ S.Y.} \div 3000 \text{ SY/HR} = 48.6 \text{ Hrs.}$

**TOTAL-203 PROOF ROLLING TO GENERAL SUMMARY = 49 Hrs.**

Rev. 4-12-78  
 Rev. D.R.S., 4-7-78  
 Rev. D.R.S., 1-4-78  
 Rev. D.R.S., 8-31-77  
 J.L.  
 Rev. J.L.  
 3-6-68  
 10-18-72

# PAVEMENT CALCULATIONS

## 801-9" PORTLAND CEMENT CONCRETE BASE-I-480

Sta. 476+00.00 to Sta. 486+47.81 = 1047.81 L.F.  
 $1047.81' \times 36.5' \times 2 \div 9 = 8498.9$  S.Y.

Sta. 486+47.81 to Sta. 492+98.00 = 650.19 L.F.  
 $650.19' \times (36.5' + 36.25') \div 9 = 5,255.7$  S.Y.

Sta. 492+98.00 to Sta. 497+73.00 = 475.00 L.F.  
 $475.00' \times 36.25' \times 2 \div 9 = 3,826.4$  S.Y.

Sta. 497+73.00 to Sta. 504+86.79 = 713.79 L.F.  
 $713.79' \times (36.5' + 36.25') \div 9 = 5,769.8$  S.Y.

Sta. 504+86.79 to Sta. 512+67.17 = 780.38 L.F.  
 $780.38' \times (36.5' + 48.5') \div 9 = 7,370.3$  S.Y.

Sta. 512+67.17 to Sta. 516+44.75 = 377.58 L.F.  
 $377.58' \times (36.25' + 48.5') \div 9 = 3,555.5$  S.Y.

Sta. 517+33.25 to Sta. 521+54.63 = 421.38 L.F.  
 $421.38' \times (36.25' + 48.50') \div 9 = 3,968.0$  S.Y.

Sta. 521+54.63 to Sta. 523+35.18 = 180.55 L.F.  
 $180.55' \times 48.5' \times 2 \div 9 = 1,945.9$  S.Y.

Sta. 524+81.00 to Sta. 531+03.54 = 622.54 L.F.  
 $622.54' \times 48.5' \times 2 \div 9 = 6,709.6$  S.Y.

(E.B.) Sta. 533+98.56 to Sta. 542+26.75 = 828.19 L.F.  
 $828.19' \times 48.5' \div 9 = 4,463.0$  S.Y.

(W.B.) Sta. 534+22.06 to Sta. 542+26.75 = 804.69 L.F.  
 $804.69' \times 48.25' \div 9 = 4,314.0$  S.Y.

Sta. 544+24.25 to Sta. 545+48.43 = 124.18 L.F.  
 $124.18' \times 48.5' \times 2 \div 9 = 1,338.4$  S.Y.

Sta. 545+48.43 to Sta. 554+50.00 = 901.57 L.F.  
 $901.57' \times (48.5' + 48.25') \div 9 = 9,691.9$  S.Y.

Sta. 554+50.00 to Sta. 559+31.00 = 481.00 L.F.  
 $481.00' \times 48.5' \times 2 \div 9 = 5,184.1$  S.Y.

Sta. 559+31.00 to Sta. 563+50.00 = 419.00 L.F.  
 $419.00' \times (48.5' + 48.25') \div 9 = 4,504.3$  S.Y.

Sta. 563+50.00 to Sta. 570+87.84 = 737.84 L.F.  
 $737.84' \times 48.25' \times 2 \div 9 = 7,911.3$  S.Y.

Sta. 570+87.84 to Sta. 573+50.00 = 262.16 L.F.  
 $262.16' \times (48.25' + 48.5') \div 9 = 2,818.2$  S.Y.

SUB-TOTAL = 87,125.3 S.Y.

Less amount for Pressure Relief Joints  
 $829' \times 4' \div 9 = -368.4$  S.Y.

TOTAL = 86,756.4 S.Y.

**TOTAL~801 9" PORT. CEM. CONC. BASE TO GENERAL SUMMARY = 86,757 SQ.YDS.**

## WEED CONTROL BENEATH GUARD RAIL

I-480 sta. 476+00 to sta. 560+00  
 $8947.5$  L.F.  $\times 4' \div 9 = 3976.7$  S.Y.

Ramp R sta. 25+00 to sta. 55+00  
 $2597.5$  L.F.  $\times 4' \div 9 = 1154.4$  S.Y.

Ramp S sta. 23+99 to sta. 34+00  
 $1270.5$  L.F.  $\times 4' \div 9 = 564.7$  S.Y.

Ramp T sta. 24+00 to sta. 48+58  
 left:  $1322.5$  L.F.  $\times 3' \div 9 = 440.8$  S.Y.  
 right:  $837.5$  L.F.  $\times 7' \div 9 = 651.4$  S.Y.

Ramp W. 150th St. sta. 526+50 to sta. 532+50  
 right:  $600.0$  L.F.  $\times 7' \div 9 = 466.7$  S.Y.

SUB-TOTAL = 7254.7 S.Y.

Total Item Special-Herbicides for Weed Control to General Summary = 7255 S.Y.

Total Item 301 - Bituminous Aggregate Base (Weed Control) to General Summary = 605 C.Y.

7254.7 S.Y.  $\times 3' \div 36 = 604.6$  C.Y.

Rev. 4-12-78  
 Rev. DRS 9-1-77  
 Rev. DRS 12-8-77  
 D.R.S. 1-3-78

## 310 SUBBASE, REG. GRADING (I-480)

Sta. 554+00 to Sta. 555+50 W.B. Lanes only  
 $150' \times 69.0' \times 1.5' \div 27 = 575$  Cu.Yds.

Sta. 555+50 to Sta. 575+00 W.B.L. & E.B.L.  
 $1950' \times 142.0' \times 1.0' \div 27 = 10,256$  Cu.Yds.

Add for speed change Lanes:  
 $2 \times \frac{33+8}{2} \times 1000' \times 1.0' \div 27 = 1,519$  Cu.Yds.

Total 310 Reg. Gdp. = 12,350 Cu.Yds.  
 Quantity carried to Sht. No. 17

## 407~ TACK COAT AND COVER AGG.~I-480

From 801 (Sht. No. 19) = 87,125.3 S.Y.

87,125.3  $\times 0.1$  Gal./S.Y. = 8,712.53 Gal.

**TOTAL~407 TACK COAT TO GENERAL SUMMARY 8,713 GAL.**

87,125.3  $\times 7$  lb./S.Y.  $\div 2000 = 304.9$  Ton

**TOTAL~407 COVER AGGREGATE TO GENERAL SUMMARY = 305 TON**

## 409~ SEAL COAT BITUMINOUS MATERIAL AND COVER AGGREGATE NO.9 ~ I-480

From 301 (Sht. No. 17) - 315,935.4 S.F.  $\div 9 = 35,103.9$  S.Y.  
 $35,103.9$  S.Y.  $\times 0.2$  Gal./S.Y. = 7020.8 Gal.

**TOTAL~409 SEAL COAT BITUMINOUS MATERIAL TO GENERAL SUMMARY = 7,021 GAL.**

$35,103.9$  S.Y.  $\times .005$  Cu./Yd. = 175.5 Cu.Yd.

**TOTAL~409 COVER AGGREGATE NO.9 TO GENERAL SUMMARY = 176 CU.YD.**

7254.7 S.Y.  $\times 3' \div 36 = 604.6$  C.Y.

Location Sta. to Sta.	Seeding S.Y.
Channel Seeding	2,882
476+00 to 490+00	73,890
490+00 to 500+00	43,147
500+00 to 510+00	38,621
510+00 to 520+00	20,480
520+00 to 530+00	22,947
530+00 to 540+00	30,489
540+00 to 550+00	32,452
550+00 to 560+00	23,922
560+00 to 570+00	15,743
570+00 to 573+50	5,106
<b>Total (Includes Ramps)</b>	<b>309,679</b>

Total Seeding Area = 309,679 S.Y.  
 - Weed Control beneath G.R. = - 7,255 S.Y.  
 - R.C.P. = - 139 S.Y.

Liming and Fertilizing Area = 302,285 S.Y.

## 659 FERTILIZING

$309,540$  S.Y.  $\times \frac{20}{1000}$  S.F.  $\times \frac{93.5}{5.5}$   $\times \frac{1}{2000}$  Ton = 27.24 Tons

## 659 LIMING

$309,540$  S.Y.  $\times \frac{100}{1000}$  S.F.  $\times \frac{95.5}{5.5}$   $\times \frac{1}{2000}$  Ton = 136.03 Tons

## 659 SEEDING & MULCHING

Total Seeding 302,424 S.Y.  
 Deduct Seeding & Jute Matting 5,847 S.Y.  
 Deduct Sodding 2,591 S.Y.

Total Seeding & Mulching to General Summary 293,986 S.Y.

## 404~1 1/4" ASPHALT CONCRETE ~ I-480

From 402 = 86,317.8 Sq.Yds.  $\times 1.25" \div 36 = 2,997.15$  C.Y.

**TOTAL~404 ASPHALT CONCRETE TO GENERAL SUMMARY = 2,998 CU.YDS.**

Sheet No.	Location Sta. to Sta.	Excavation Not Including Emb. Const. C.Y.	Embankment C.Y.
<b>I-480</b>			
30	480+00 to 490+00	656	4,136.4
31	490+00 to 500+00	2,937	21,189
32	500+00 to 510+00	8,111	2,293
33	510+00 to 520+00	11,587	45,496
34	520+00 to 530+00	1,091	186,664
35	530+00 to 540+00	1,953	263,488
36	540+00 to 550+00	5,672	165,986
37	550+00 to 560+00	19,903	10,955
38	560+00 to 570+00	39,176	5,324
39	570+00 to 580+00	18,184	158
<b>RAMP "R"</b>			
42	25+00 to 35+00	186	7,460.6
43	35+00 to 45+00	1,932	31,375
44	45+00 to 55+00	9,614	1,255
45	55+00 to 64+30	7,548	5
<b>RAMP "S"</b>			
46	23+99 to 34+00	591	47,081
47	34+00 to 37+66.20	107	2,349
<b>RAMP "T"</b>			
48	24+00 to 34+00	15	36,128
49	34+00 to 44+00	4,557	23,308
50	44+00 to 48+57.97	2,333	638
52	W. 150th St. Ramp	1,236	34,827
<b>ACCESS RD "C"</b>			
53	0+00 to 4+50	1,018	323
54	4+50 to 9+00	83	2,789
56	W. 139th St. Conn.	1,678	355
56	Ramp BR-1	1,540	843
56	Ramp BR-2	505	1,504
<b>TOTAL</b>		<b>140,158</b>	<b>1,001,060</b>

**TOTALS TO GENERAL SUMMARY**  
**203 EMBANKMENT = 1,001,060 CU.YD.**  
**203 EXCAVATION NOT INCLUDING EMB. CONST. = 140,158 CU.YD.**

## 402~1 3/4" ASPHALT CONCRETE ~ I-480

Sta. 476+00.00 to Sta. 504+86.79 = 2886.79'  $\times 36' \times 2 \div 9 = 23,094.3$  S.Y.

Sta. 504+86.79 to Sta. 516+44.75 = 4157.96'  $\times (36' + 48') \div 9 = 10,807.6$  S.Y.

Sta. 517+33.25 to Sta. 521+54.63 = 421.38'  $\times (36' + 48') \div 9 = 3,932.9$  S.Y.

Sta. 521+54.63 to Sta. 523+35.18 = 180.55'  $\times 48' \times 2 \div 9 = 1,925.9$  S.Y.

Sta. 524+81.00 to Sta. 531+03.54 = 622.54'  $\times 48' \times 2 \div 9 = 6,640.4$  S.Y.

(E.B.) Sta. 533+98.56 to Sta. 542+26.75 = 828.19'  $\times 48' \div 9 = 4,417.0$  S.Y.

(W.B.) Sta. 534+22.06 to Sta. 542+26.75 = 804.69'  $\times 48' \div 9 = 4,291.7$  S.Y.

Sta. 544+24.25 to Sta. 573+50.00 = 2925.75'  $\times 48' \times 2 \div 9 = 31,208.0$  S.Y.

I-480 PAVEMENT AREA = 86,317.8 S.Y.

SUB-TOTAL~402 = 86,317.8  $\times 1.75" \div 36 = 4,196.0$  CU.YDS.

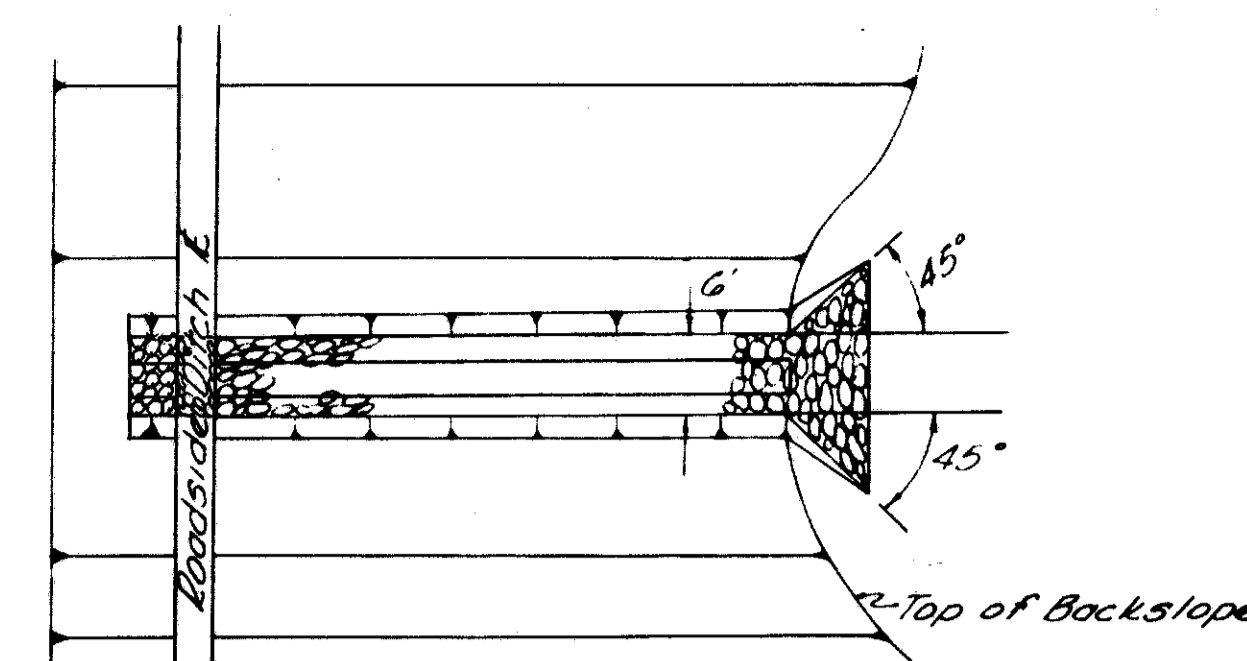
**TOTAL~402 ASPHALT CONCRETE TO GENERAL SUMMARY 4,196 CU.YDS.**

3090

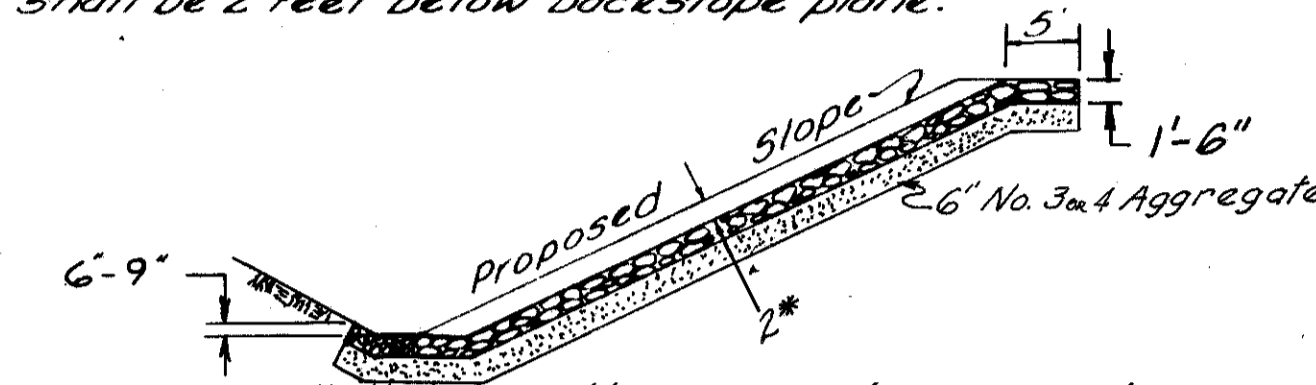
FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

20  
346

CUYAHOGA COUNTY  
CUY-480-8.54

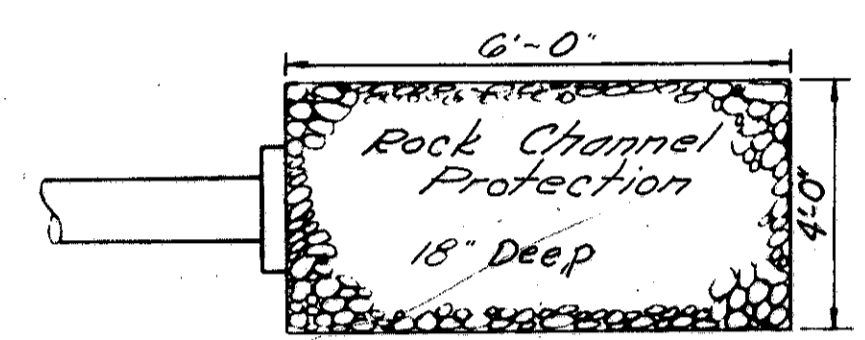


Typical Section for Rock Chan Prot. shall be the same as shown on the Roadside Ditch Rock Chan Prot. Detail with 2:1 slopes. Ditch flow line shall be 2 feet below backslope plane.



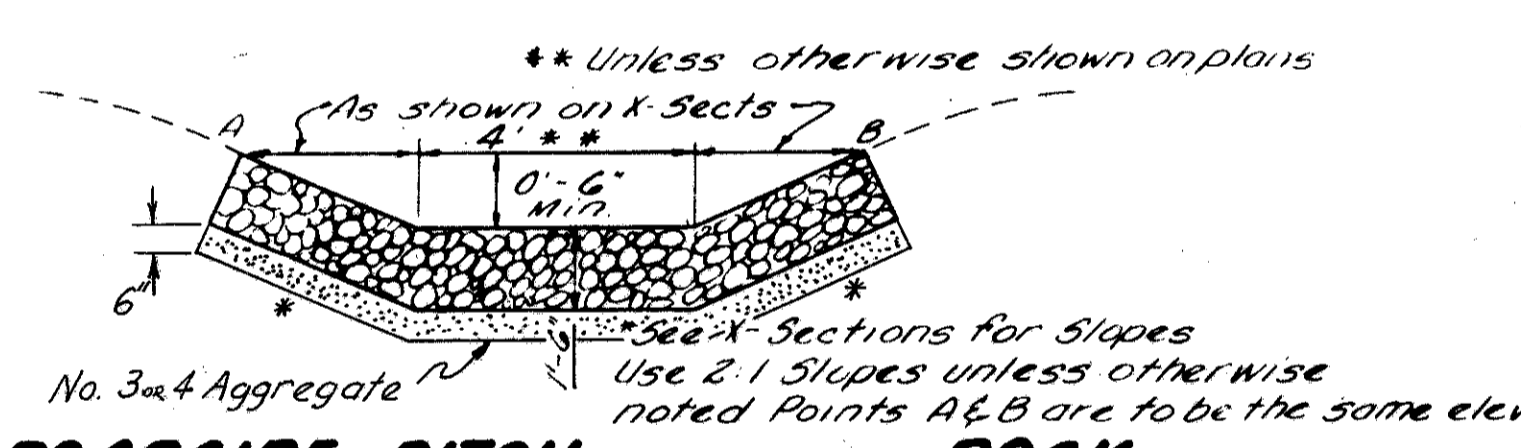
**ROCK CHANNEL PROTECTION FOR DITCHES OVER SLOPES**

\* Unless otherwise shown on plans



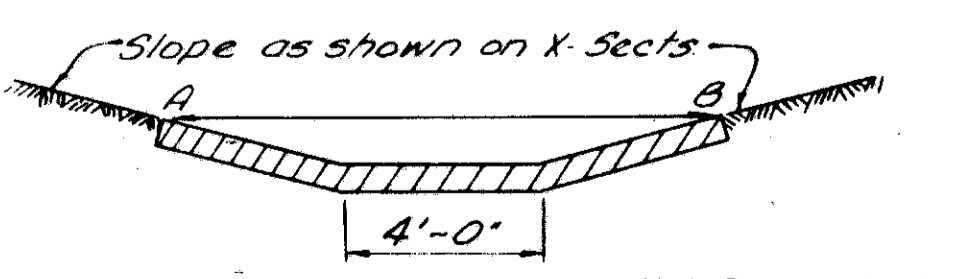
**MEDIAN OUTLET PROTECTION**

To be used as noted in areas where no ditches are to be constructed



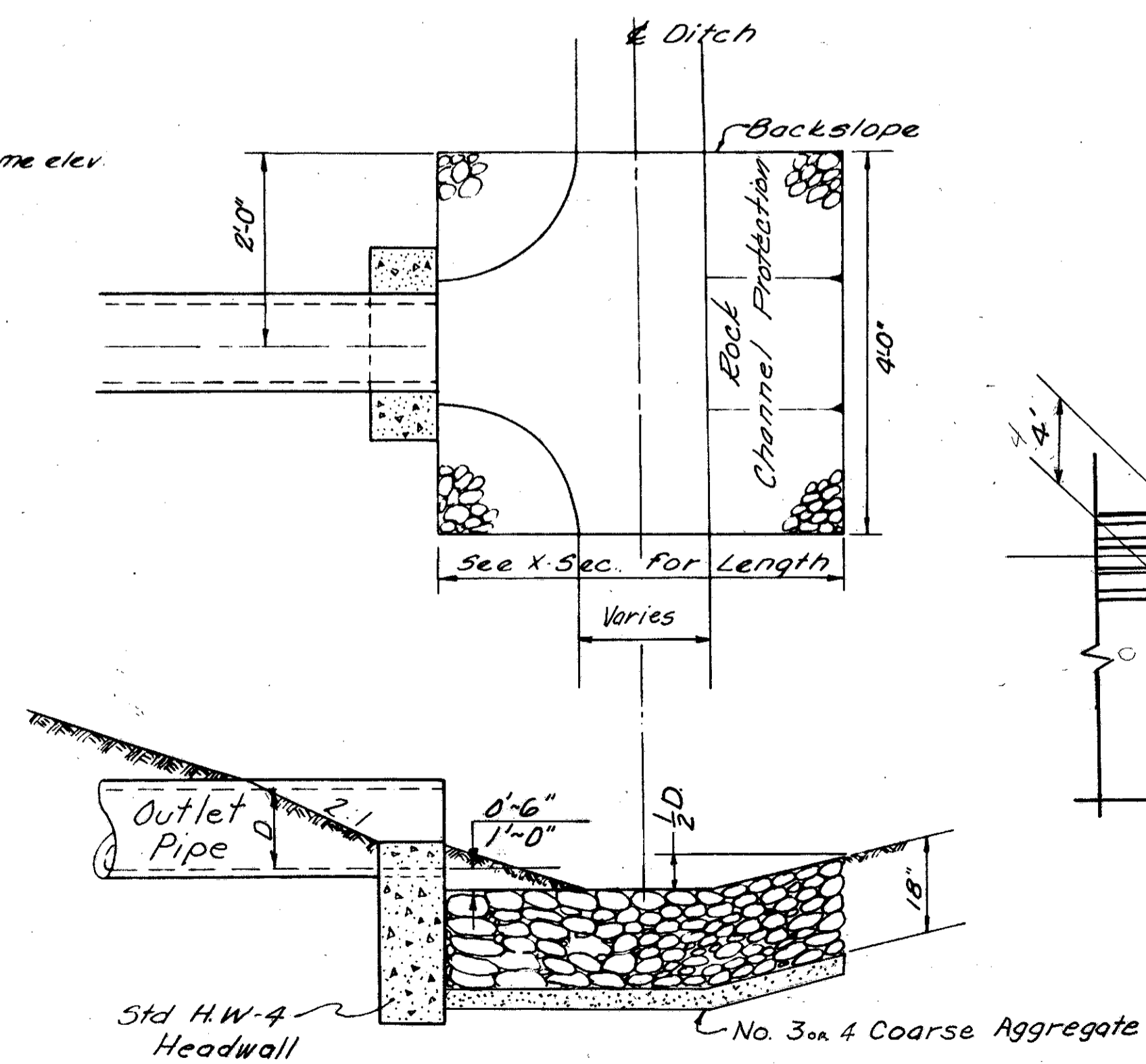
**ROADSIDE DITCH ROCK CHANNEL PROTECTION**

\*\* Unless otherwise shown on plans  
No. 3 or 4 Aggregate  
See X-Sections for Slopes  
Use 2:1 Slopes unless otherwise noted  
Points A & B are to be the same elev.

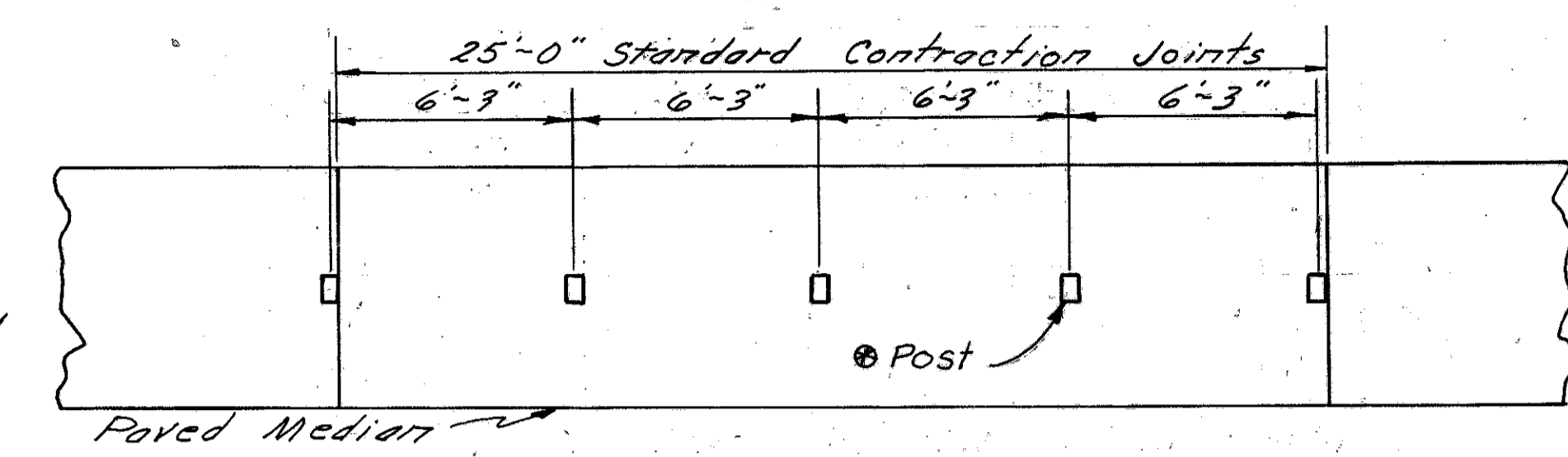


**ROADWAY DITCH SOD & J.M. DETAIL**

Points A & B are to be the same elev.



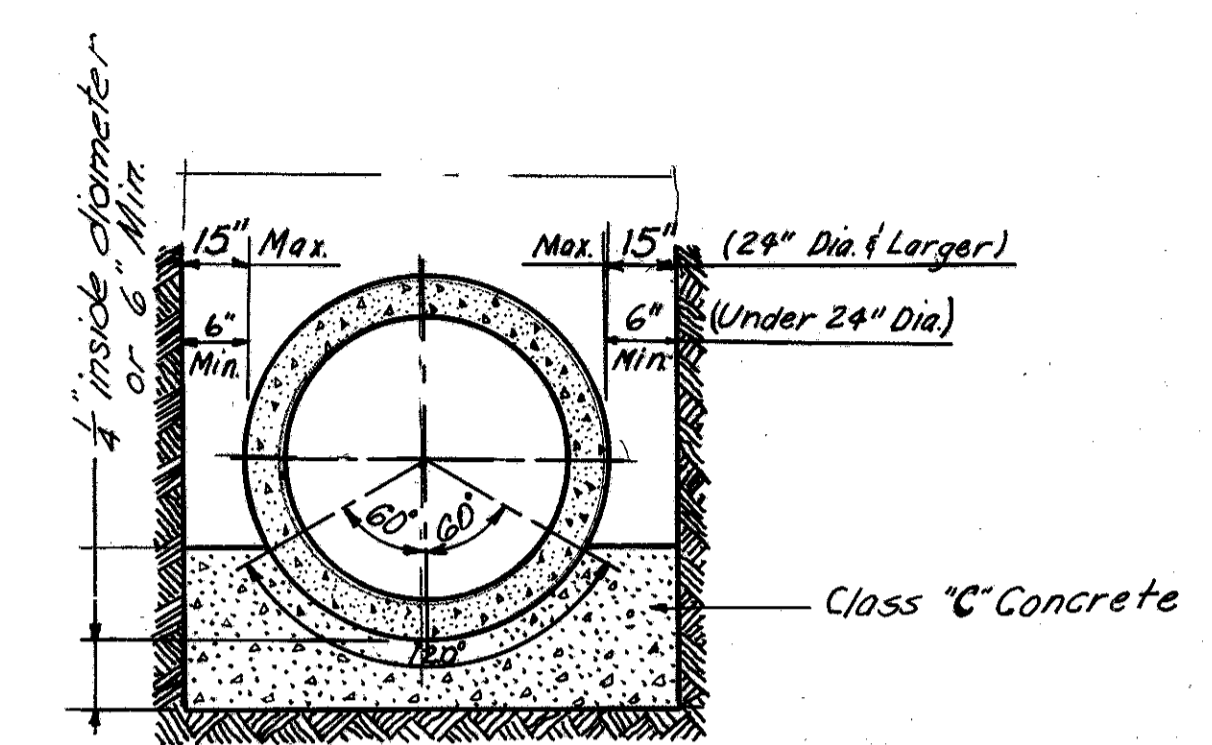
**ROCK CHANNEL PROTECTION FOR OUTLETS INTO SIDE DITCH**



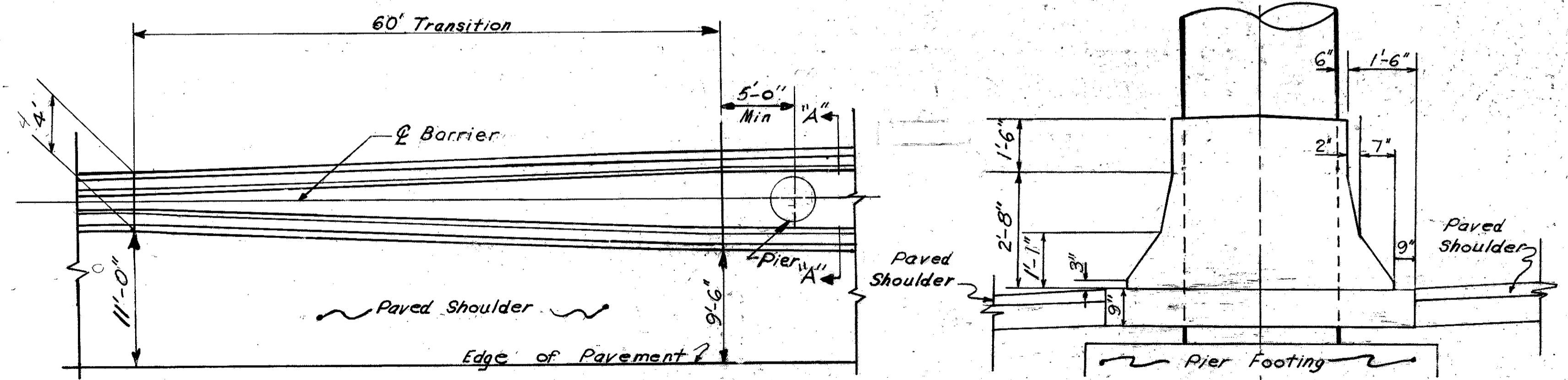
**JOINT DETAIL AT GUARDRAIL POSTS**

**NOTES**  
In lieu of the spacing requirements of Standard Drawing Me-6, expansion and contraction joints shall be provided in the concrete median as required hereon whenever guardrail is specified.  
1/4" expansion joints, 705.03, shall be provided at each construction joint, at each end of each inlet and approximately 20 feet and 60 feet beyond each approach slab, cost included with 612 for payment.  
Contraction joints shall conform with details shown on Standard Drawing BP-4, 305 Base, except that spacing shall be 25'. Joint opening shall not extend below surface of shoulder paving.  
Circular or square openings may be cast in the median paving so that guardrail posts may be installed later. Maximum dimensions for openings shall be 18" diameter or 18" square. Remaining space shall be filled with 1:3 grout or Class C concrete.

⊕ For square-sawed wood posts, 1/4" 705.03 expansion joint material shall be used on all four sides for the depth of median. When steel posts are used, a coating of an oil such as S.A.E. 140 or other "bond-breaking" material shall be applied to the depth of median prior to placing the concrete. Payment shall be included in 612.



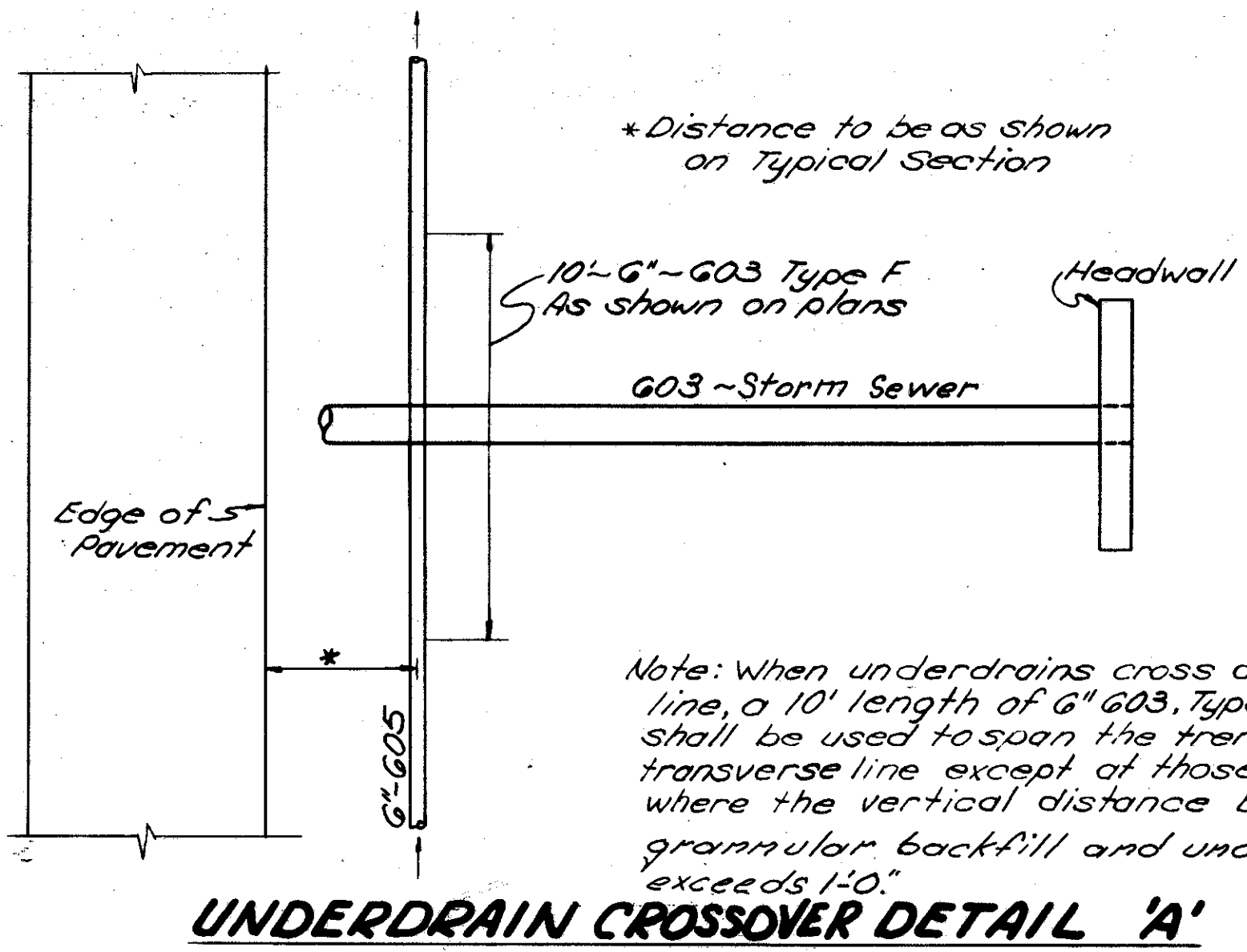
**CLASS "A" BEDDING DETAIL**



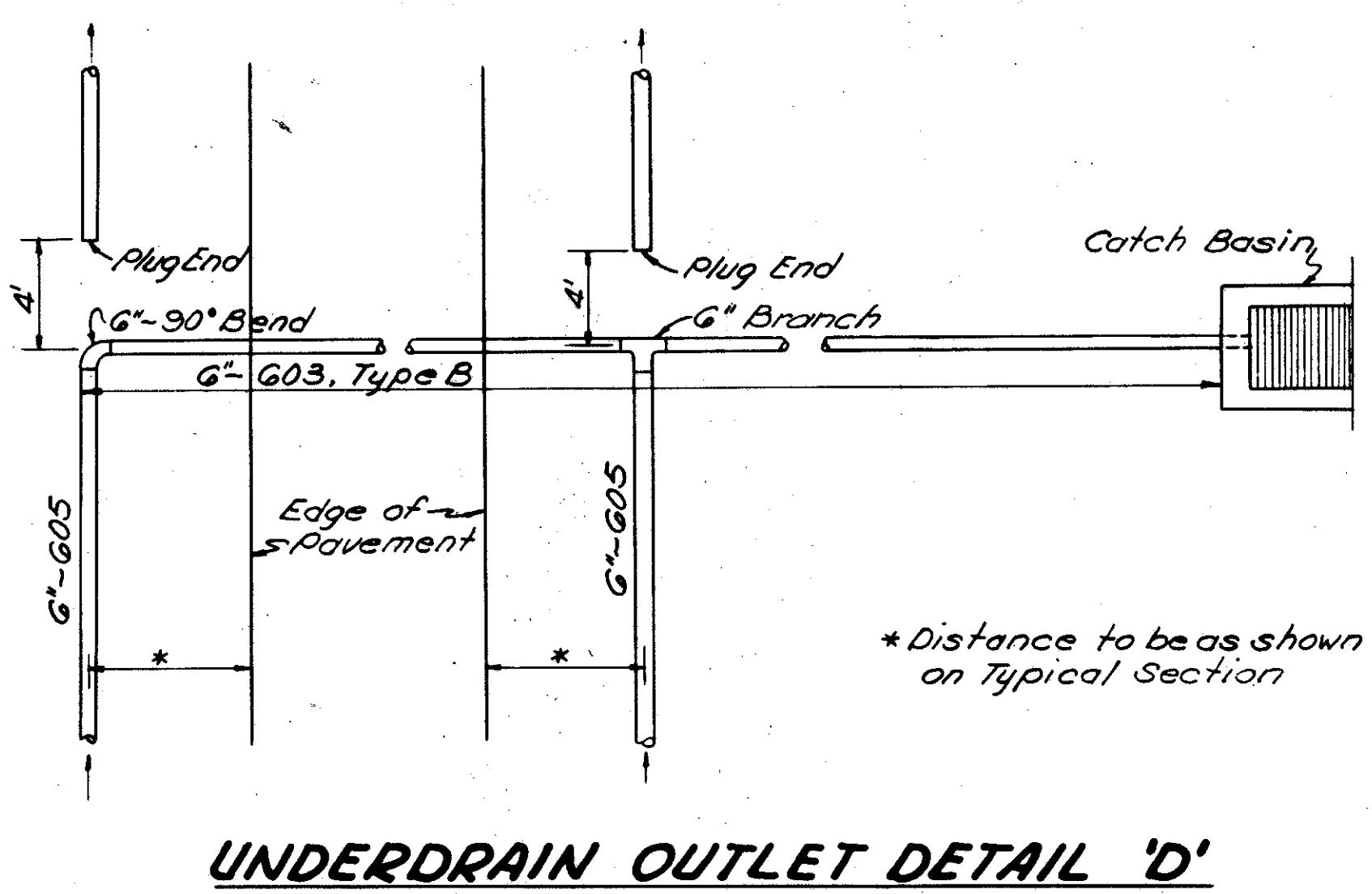
**CONCRETE BARRIER MEDIAN AT BRIDGE PIERS**

All materials, labor, equipment and incidentals necessary to perform this item shall be included in the unit price bid per L.F. for Item 622 Concrete Barrier.

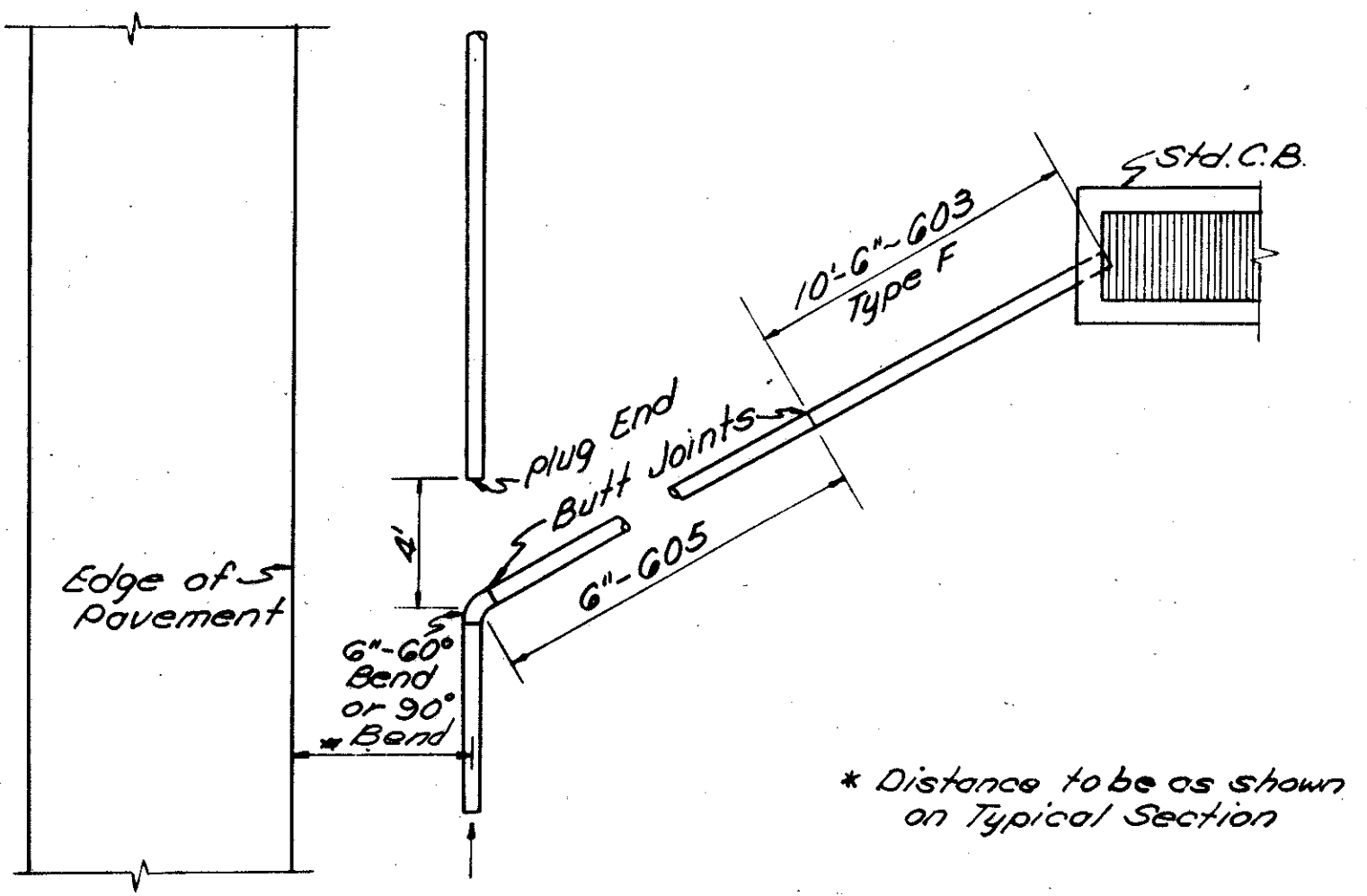
SECTION A-A



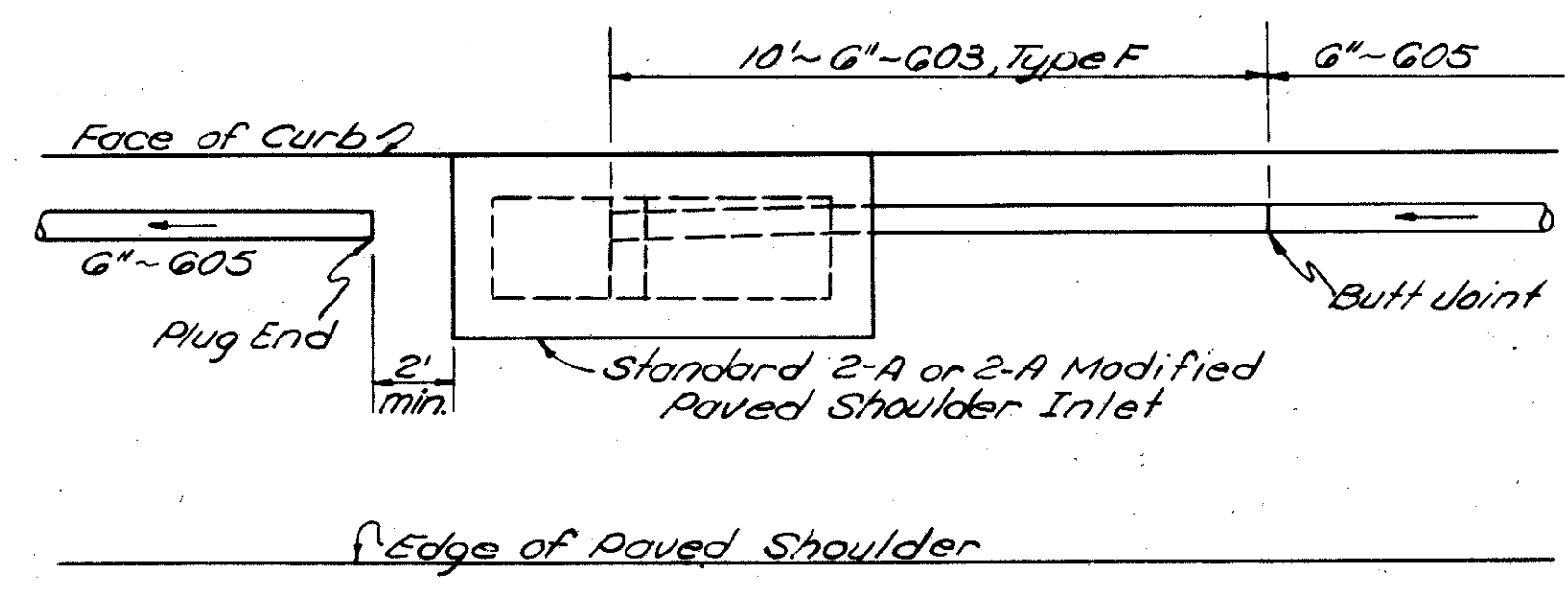
**UNDERDRAIN CROSSOVER DETAIL 'A'**



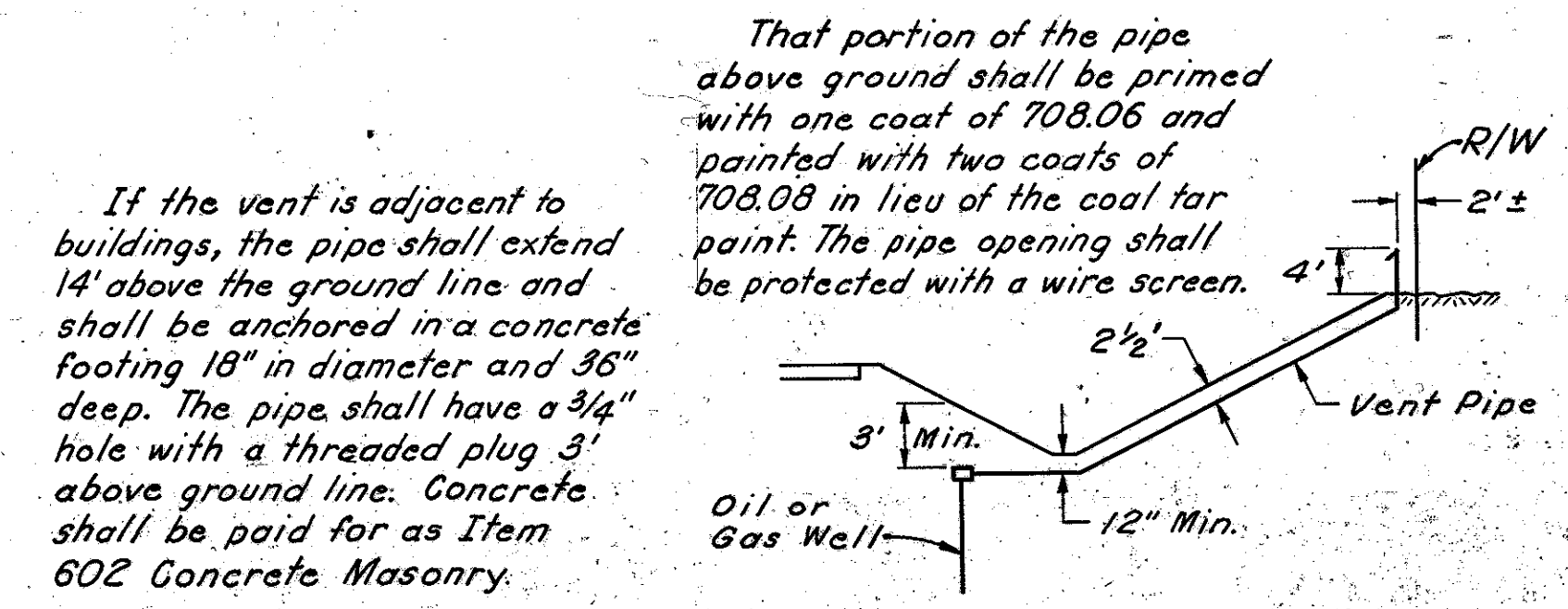
**UNDERDRAIN OUTLET DETAIL 'D'**



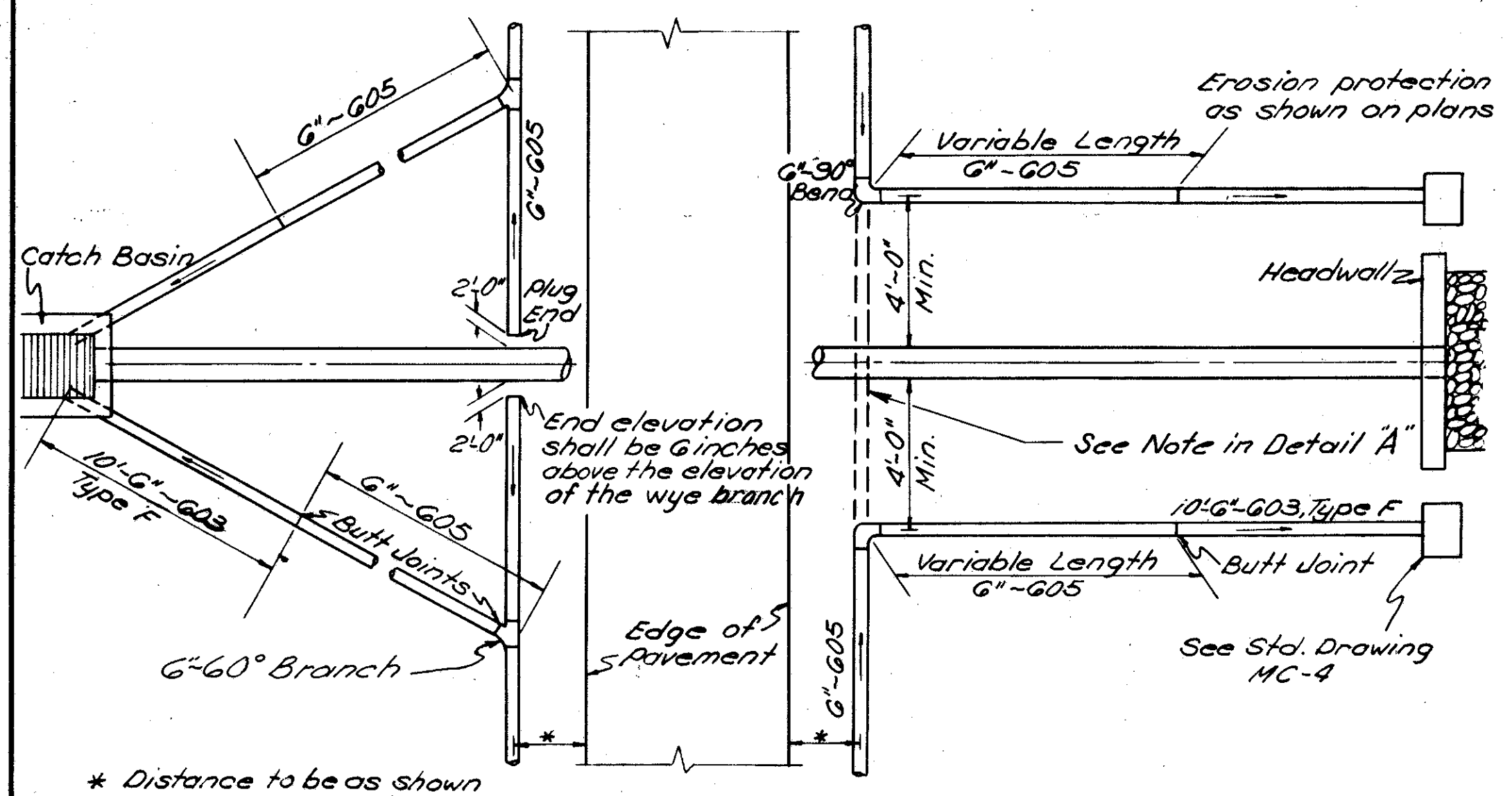
**UNDERDRAIN OUTLET DETAIL 'B'**



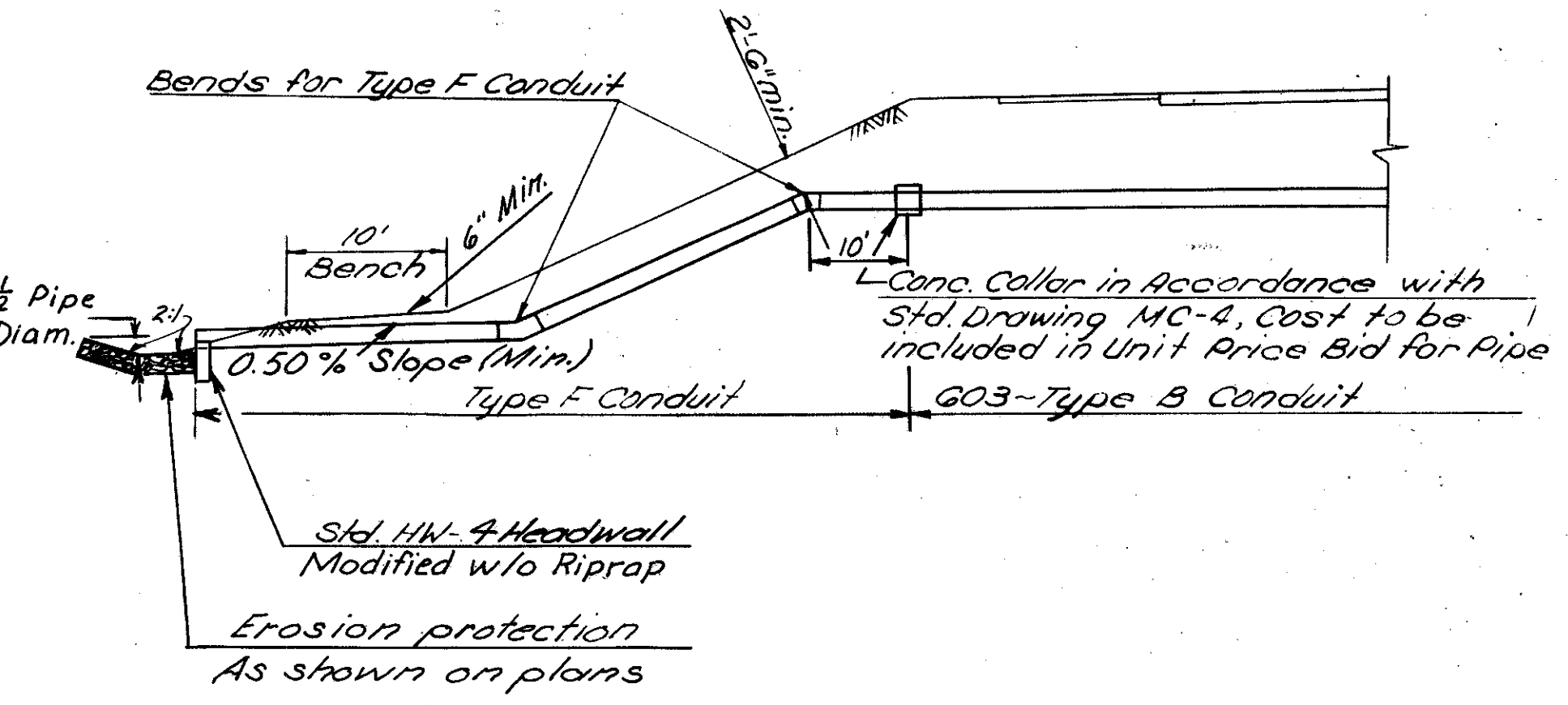
**UNDERDRAIN OUTLET DETAIL 'E'**



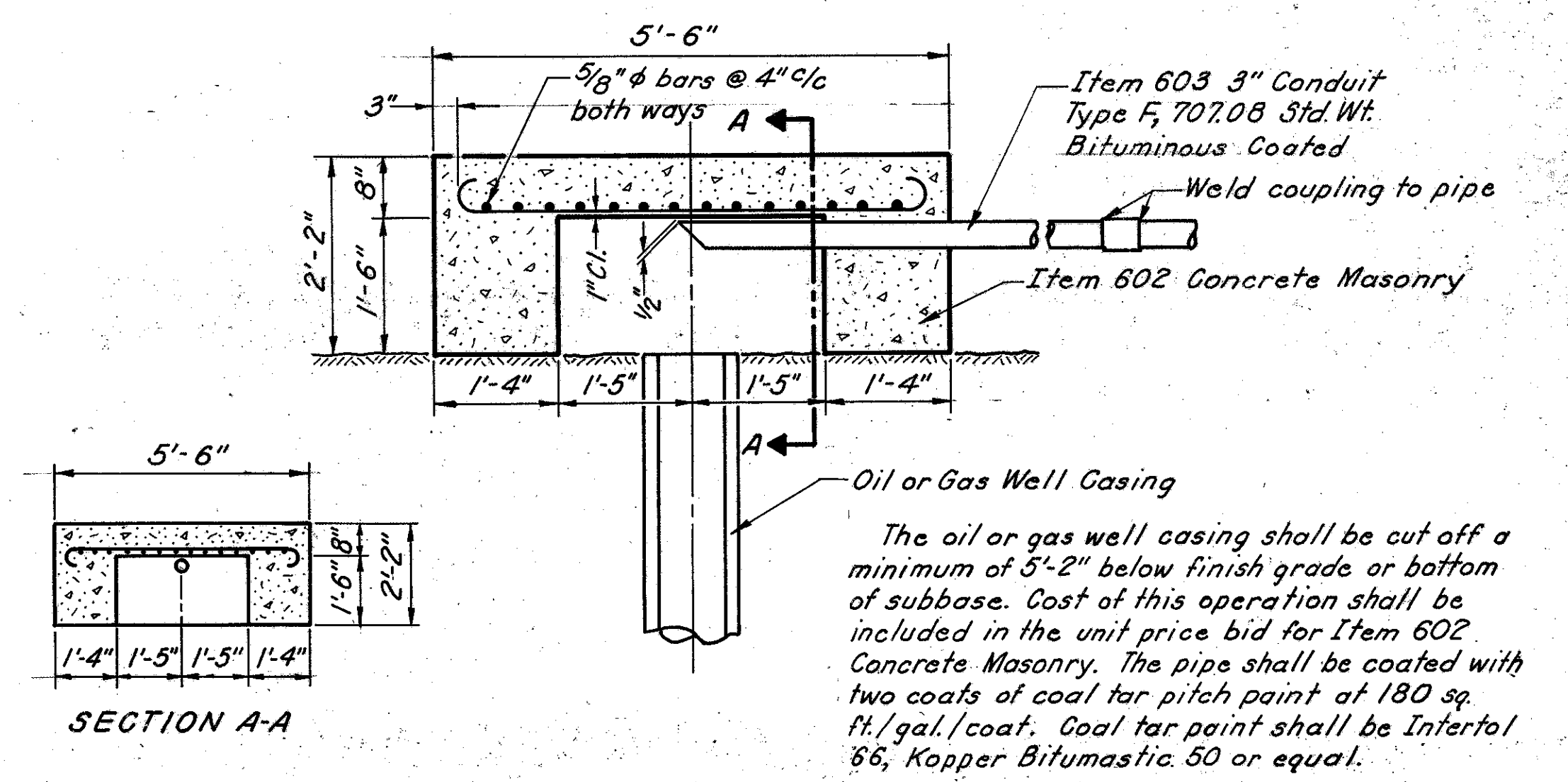
If the vent is adjacent to buildings, the pipe shall extend 14' above the ground line and shall be anchored in a concrete footing 18" in diameter and 36" deep. The pipe shall have a 3/4" hole with a threaded plug 3" above ground line. Concrete shall be paid for as Item 602 Concrete Masonry.



**UNDERDRAIN OUTLET DETAIL 'C'**

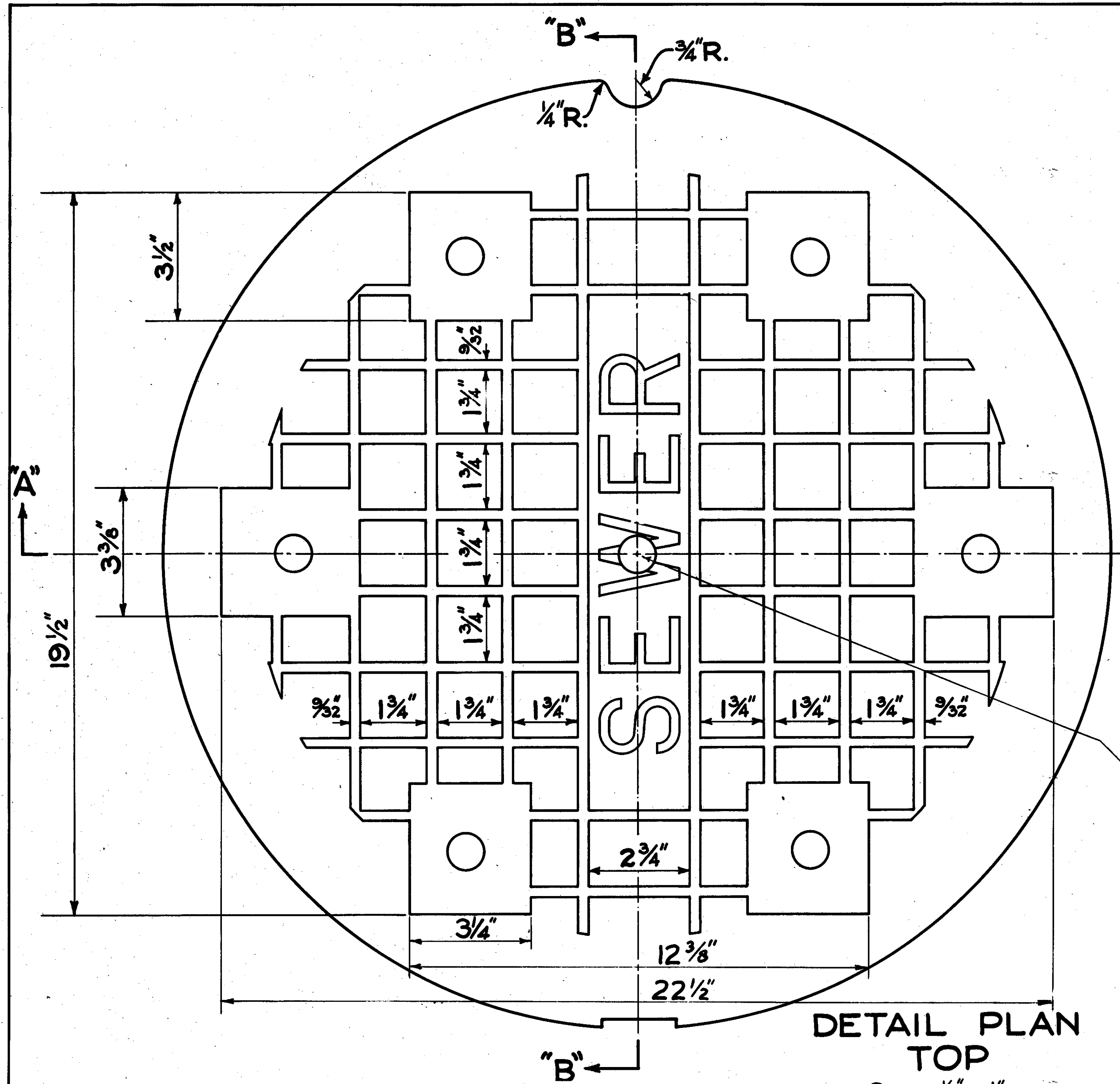


**STORM SEWER OUTLET DETAIL IN HIGH FILL**

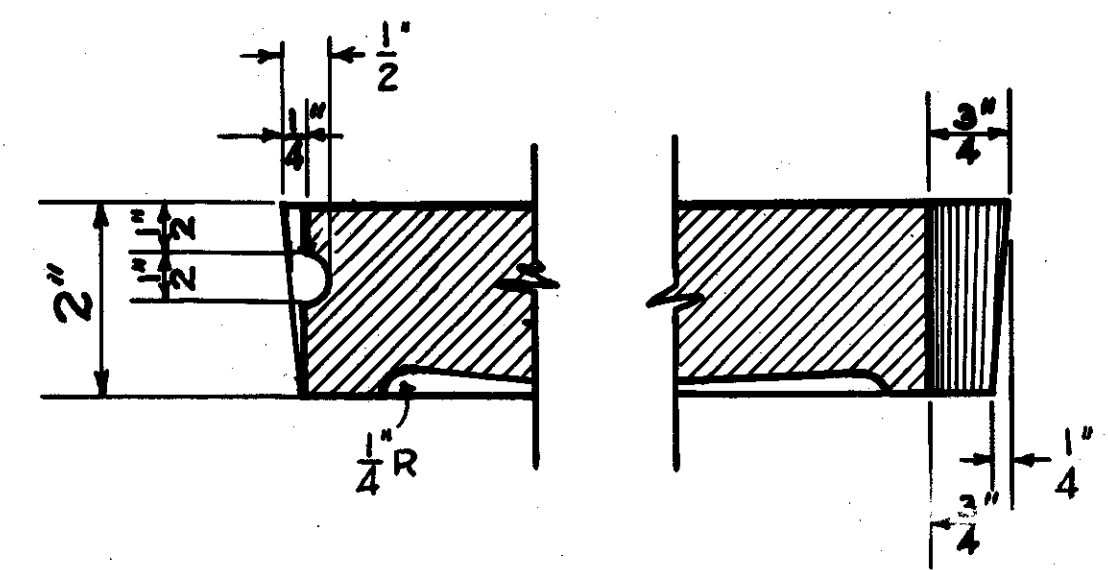


**OIL OR GAS WELL VENT DETAIL**  
For estimated quantities, see Gen. Note Sht. No. 10

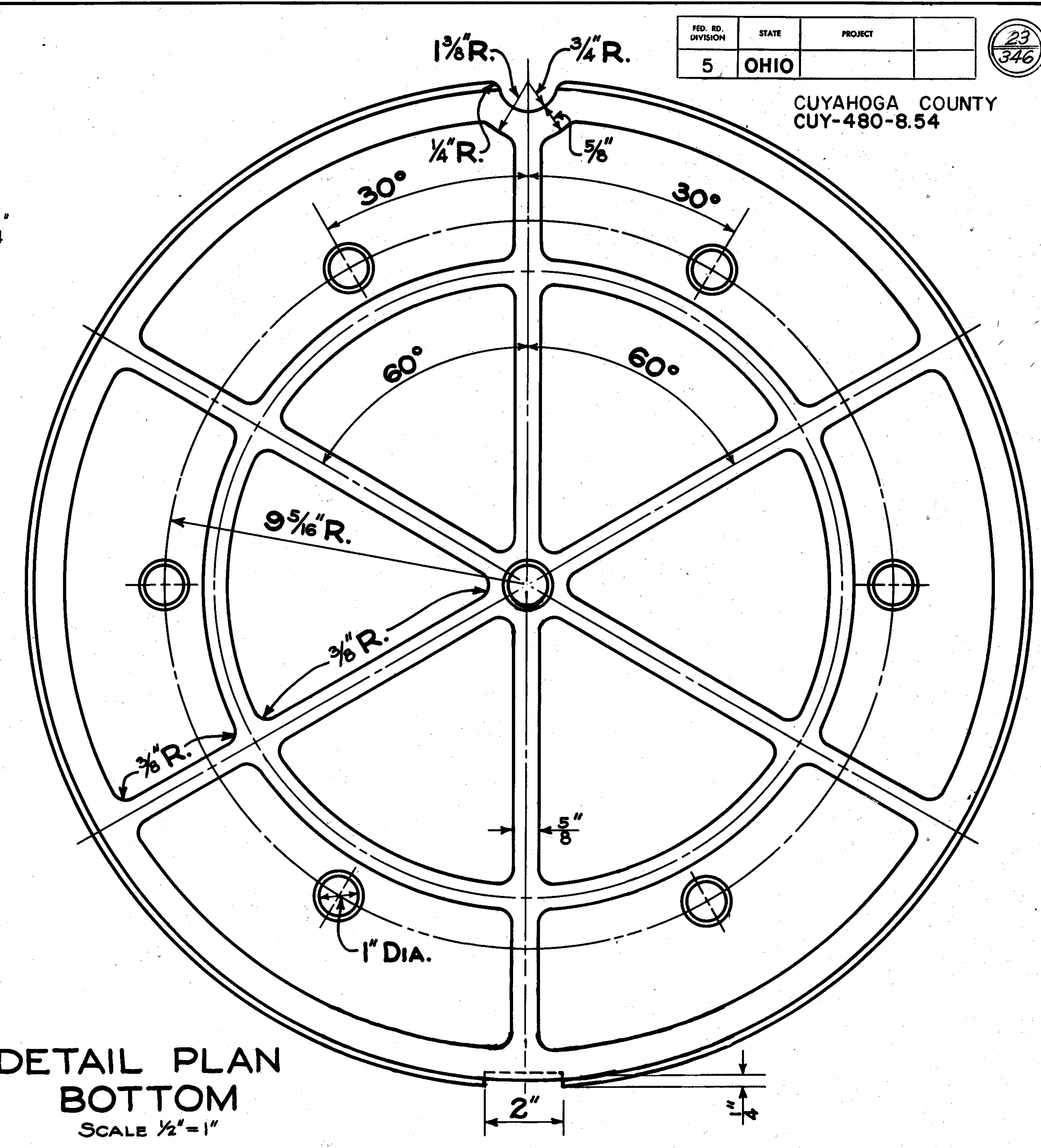




DETAIL PLAN TOP  
SCALE 1/2" = 1"

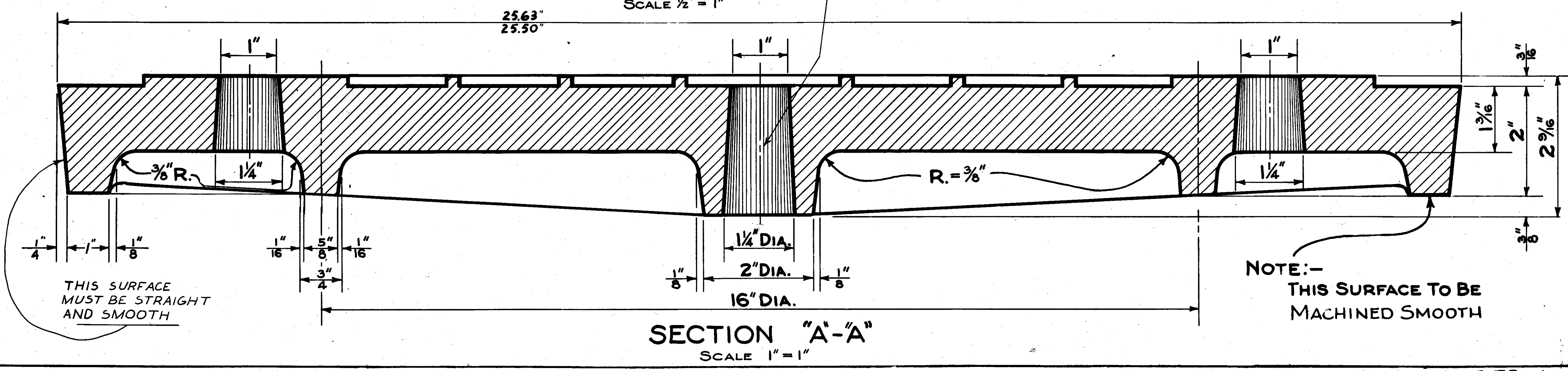


SECTION "B-B"  
SCALE 1/2" = 1"



DETAIL PLAN BOTTOM  
SCALE 1/2" = 1"

OPTION -  
CENTER HOLE  
MAY BE OMITTED



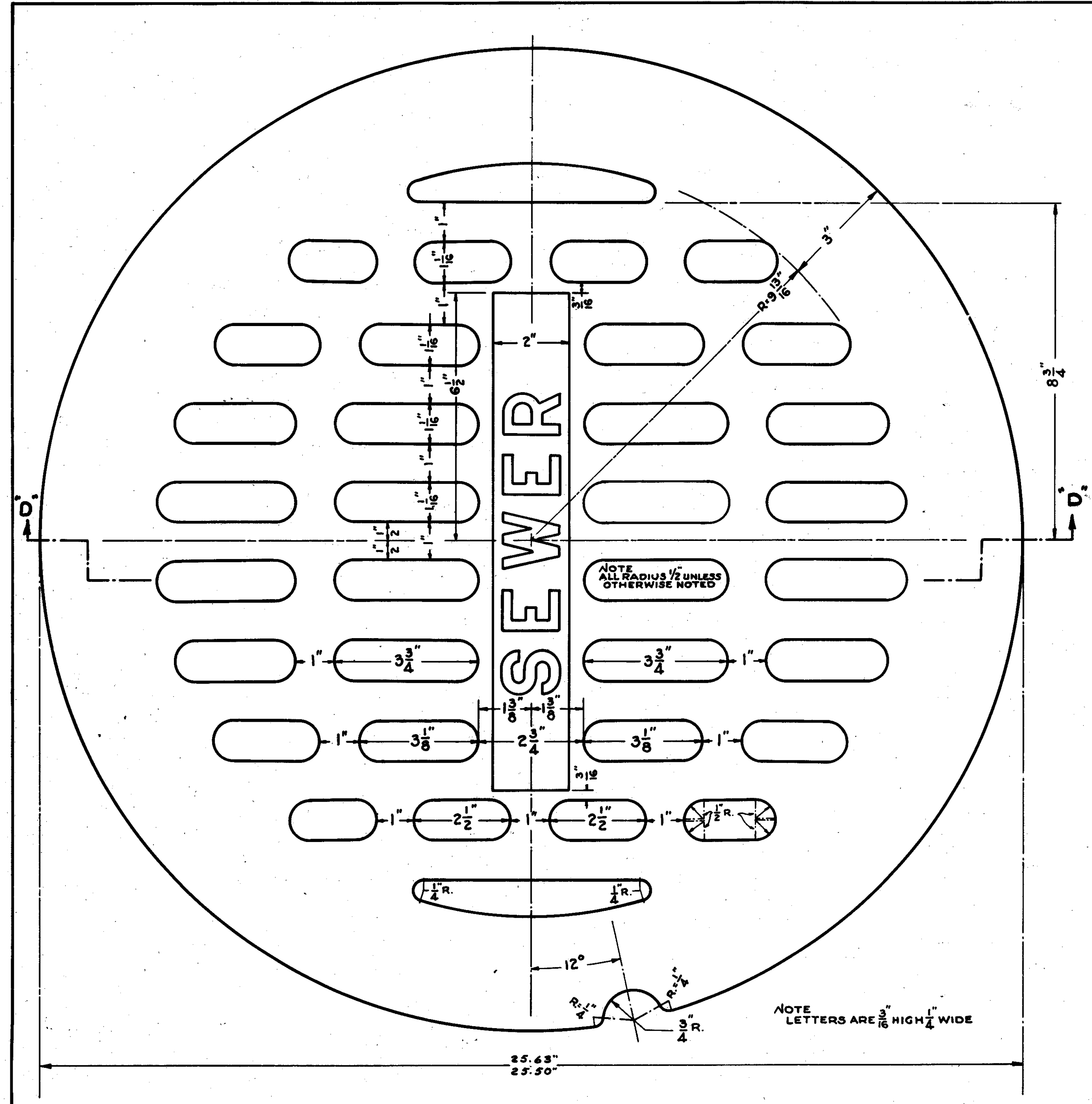
SECTION "A-A"  
SCALE 1" = 1"

NOTE: MATERIAL SHALL BE IN ACCORDANCE WITH STATE OF OHIO 1977 SPECIFICATIONS. MIN. WEIGHT 195 LBS.

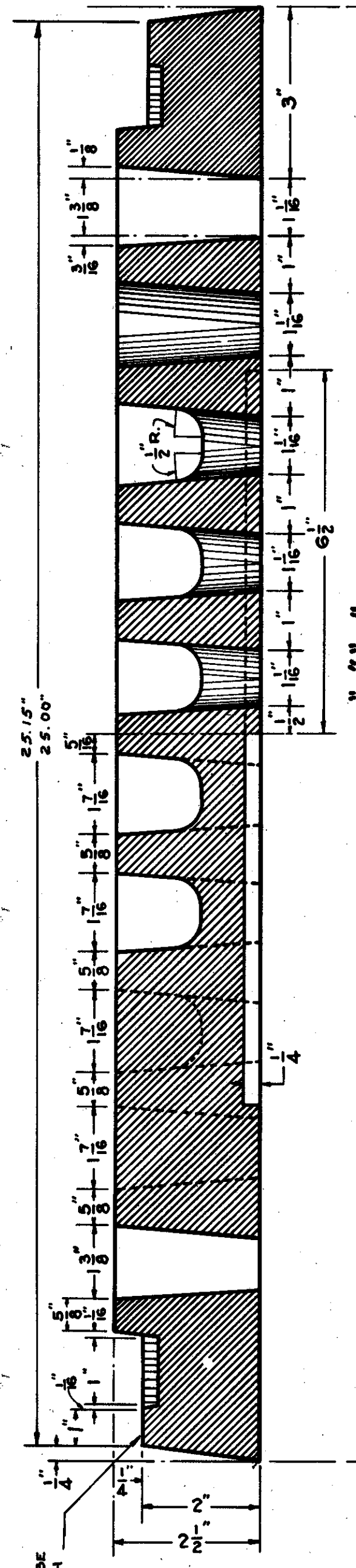
NOTE: - THIS SURFACE TO BE MACHINED SMOOTH

THIS SURFACE MUST BE STRAIGHT AND SMOOTH

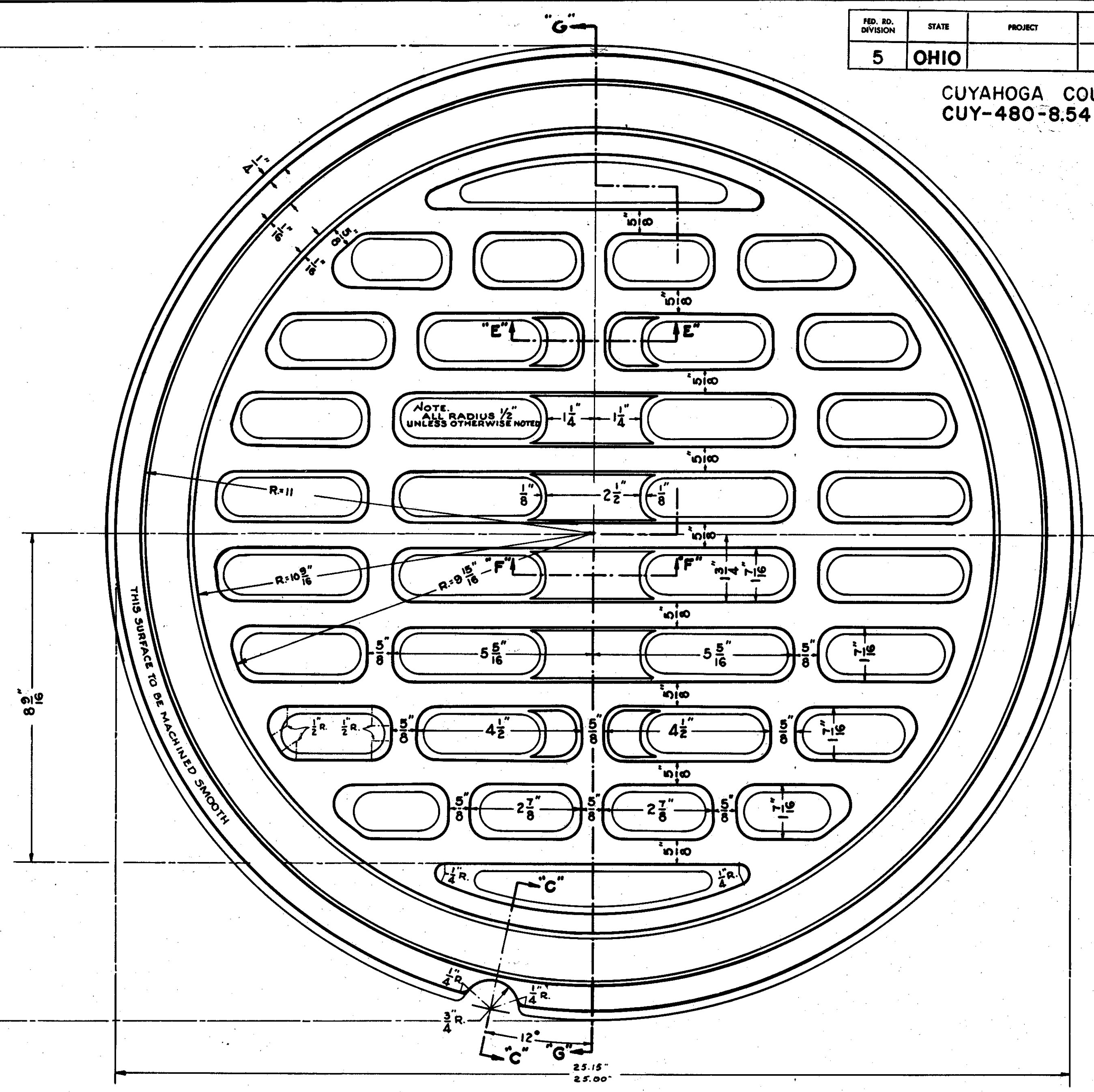




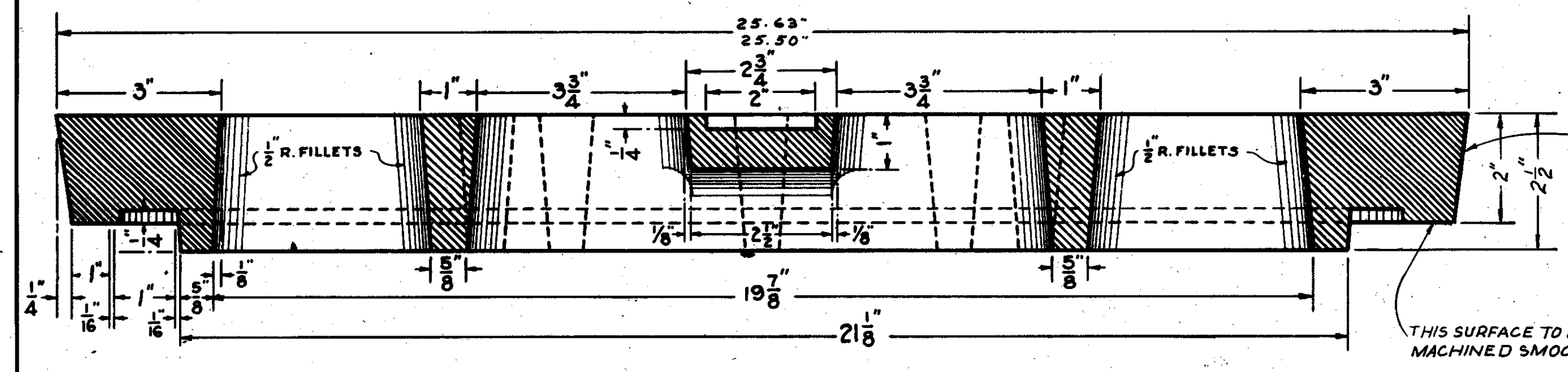
PLAN OF TOP  
SCALE 1/2"=1"



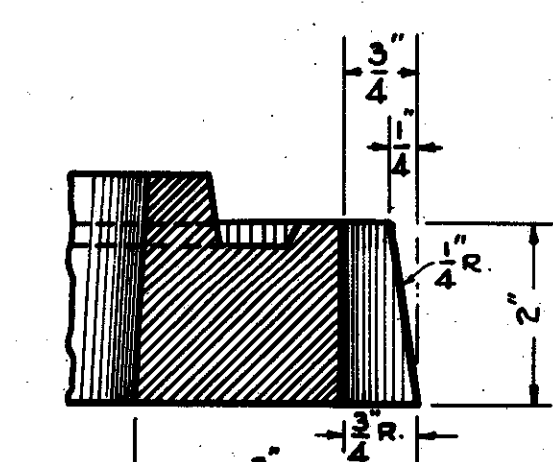
SECTION G-G  
SCALE 1/2"=1"



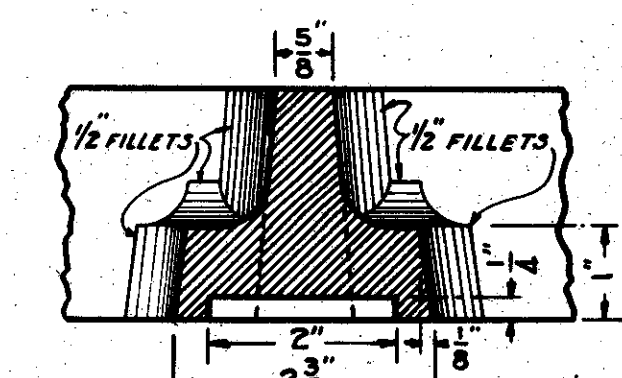
PLAN OF BOTTOM  
SCALE 1/2"=1"



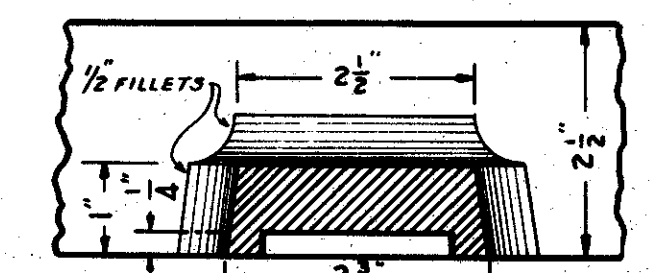
SECTION D-D  
SCALE 1/2"=1"



SECTION C-C  
SCALE 1/2"=1"



SECTION E-E  
SCALE 1/2"=1"



SECTION F-F  
SCALE 1/2"=1"

NOTE: CORRECTNESS OF UNDERGROUND INFORMATION HEREON SHOWN IS NOT GUARANTEED, AND MUST BE USED AT THE BIDDERS OWN RISK.

NOTE: MATERIAL SHALL BE IN ACCORDANCE WITH STATE OF OHIO 1977 SPECIFICATIONS. MIN. WEIGHT 190 LBS.

EXCEPT WHERE LIMITS ARE NOTED-A CASTING VARIATION OF 1/8" PER FOOT PERMITTED

# 3-C CATCH BASIN

**NOTES**

CASTINGS shall meet the requirements of 604, except that the grate material shall be restricted to 711.13 ASTM A536 Grade 65-45-12. Exposed part of curb casting to be thoroughly cleaned and given one coat of asphalt varnish or coal tar pitch paint.

**WEIGHTS minimum -**

- Curb casting 100 pounds
- Gutter grate 130 pounds
- Gutter frame 300 pounds

**BEARING AREAS** or frame and grate shall be so fitted and finished as to provide a firm and even seat for the portions of the grate in the frame. No projections shall exist on bearing areas of either casting and the grate shall seat in its frame without rocking. The frame and grate shall be fitted, matched and marked before delivery to the project.

**DOWELS** shall be 11/8 inch round, smooth bars 18 inches long spaced as shown hereon and greased.

**PAVEMENT:** The portion blocked out of the pavement shall be placed after the casting has been set but shall be paid for as part of the pavement.

**CONCRETE** for brick and cast in place or precast chambers shall be CLASS "C".

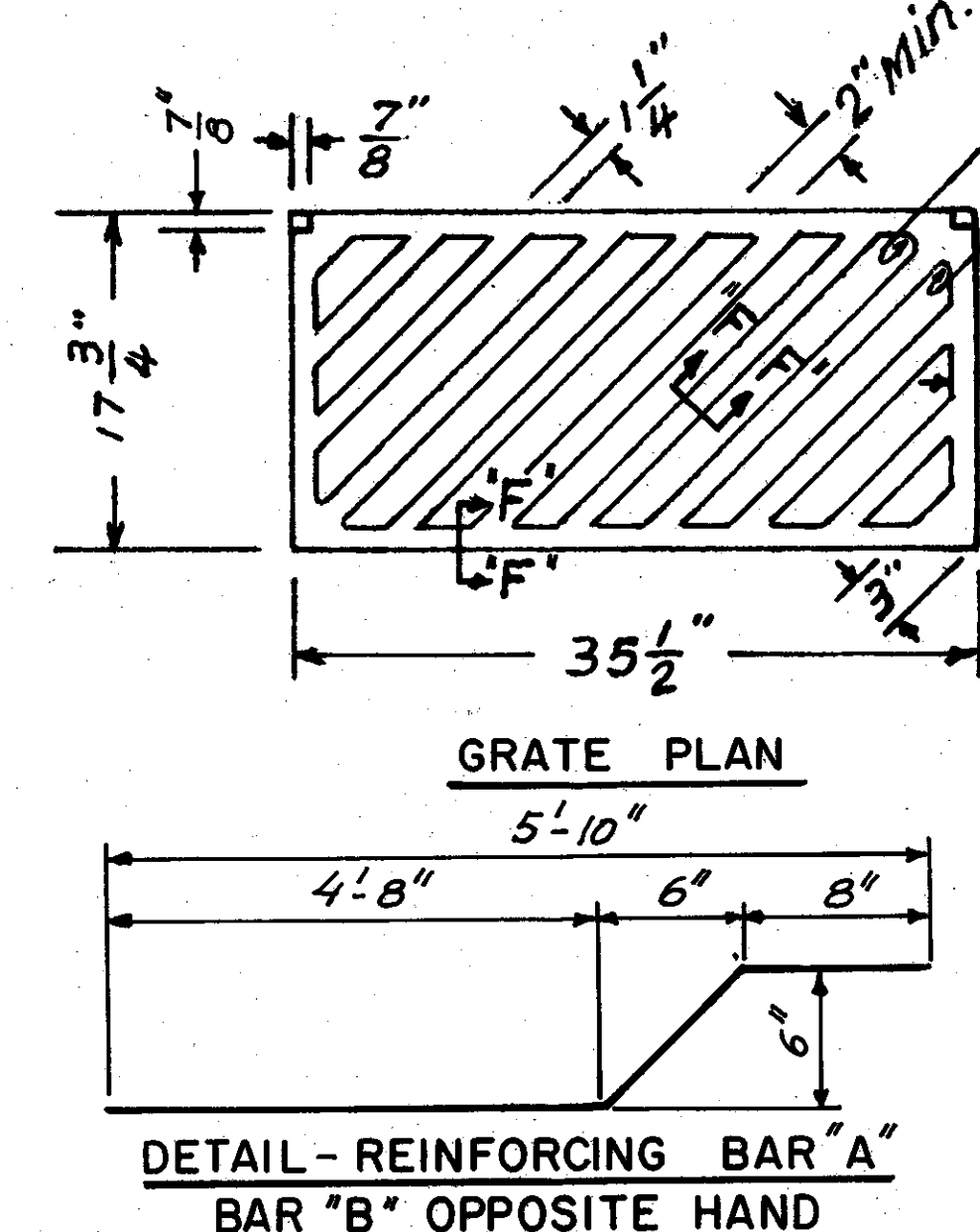
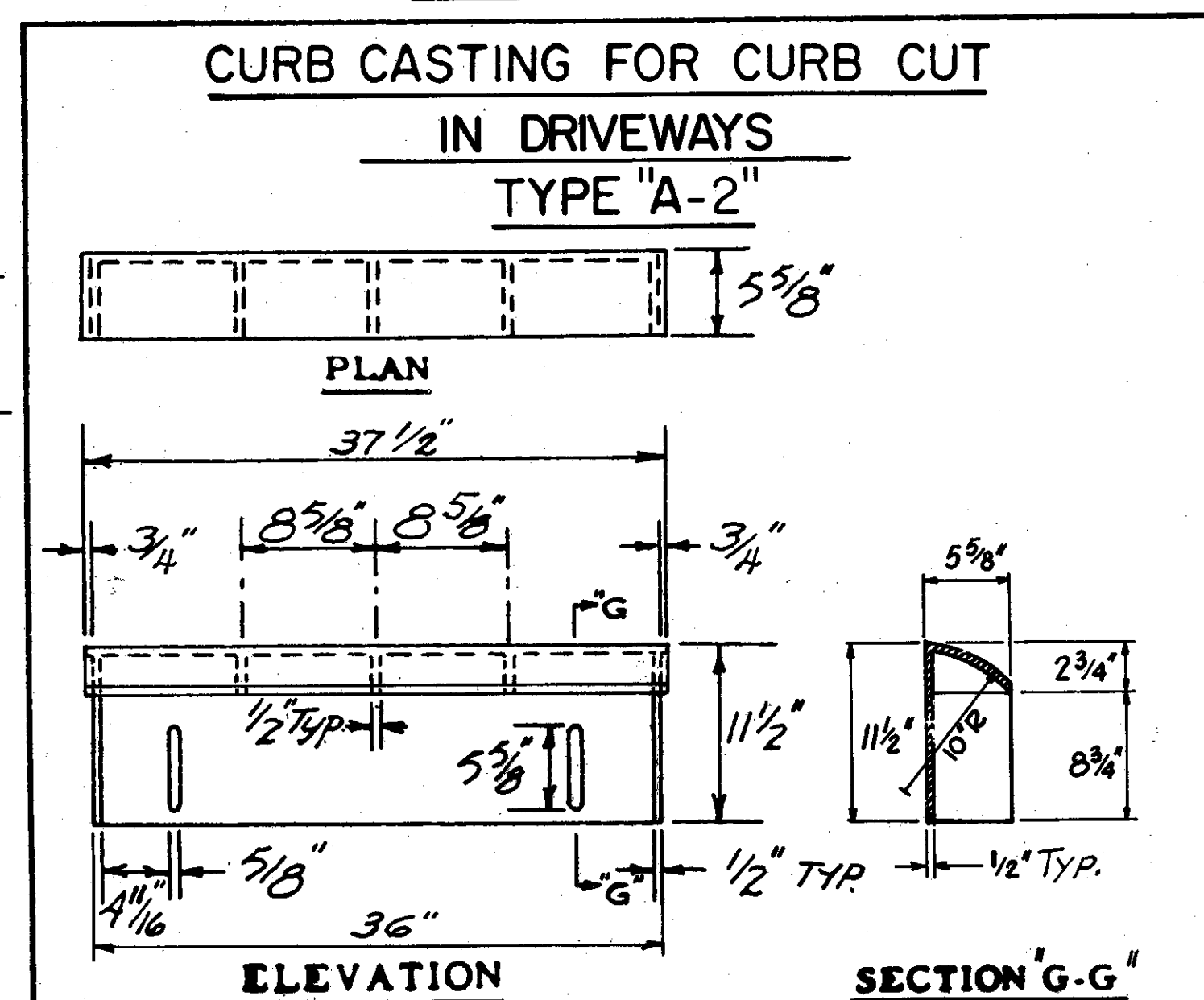
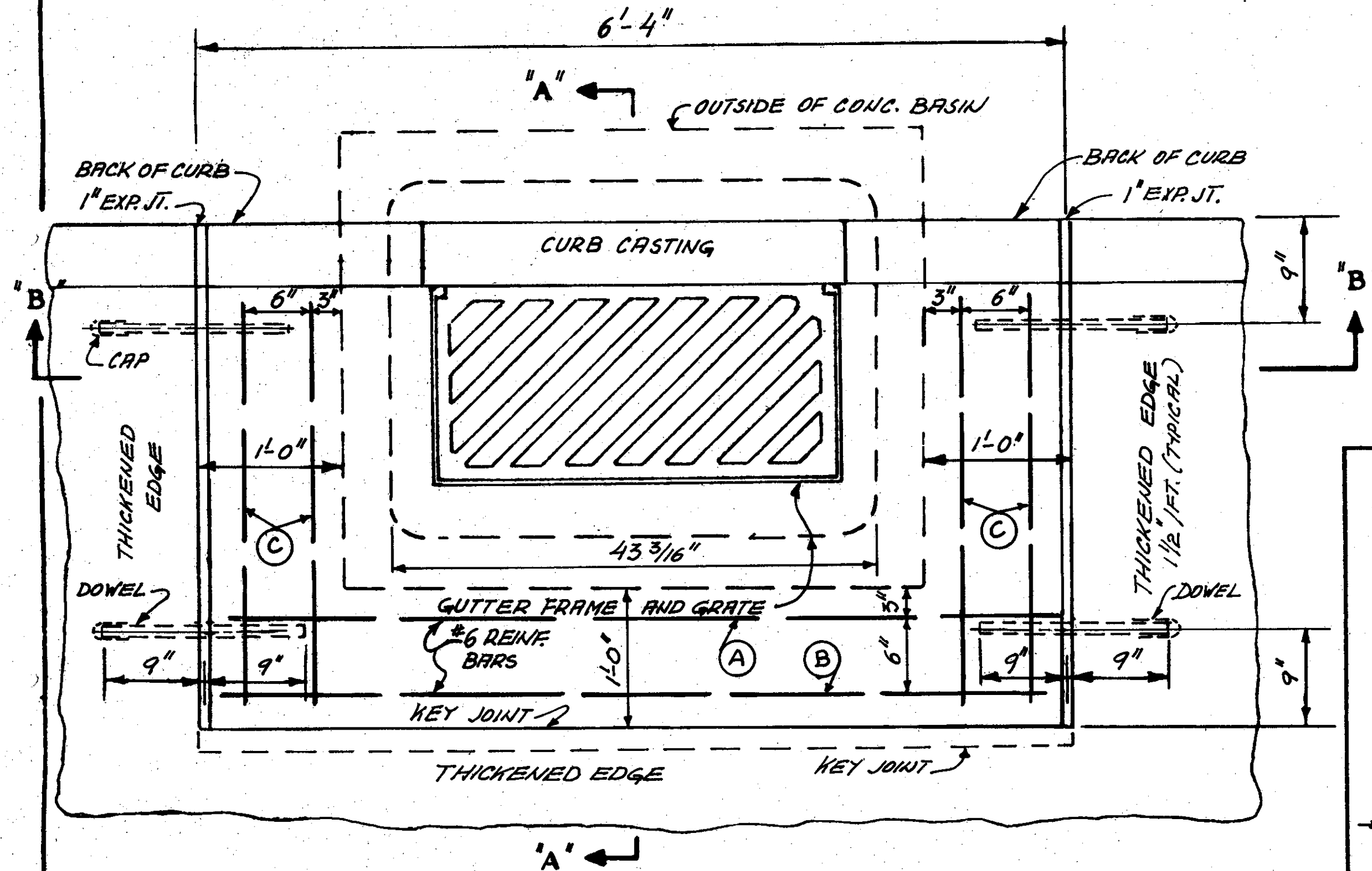
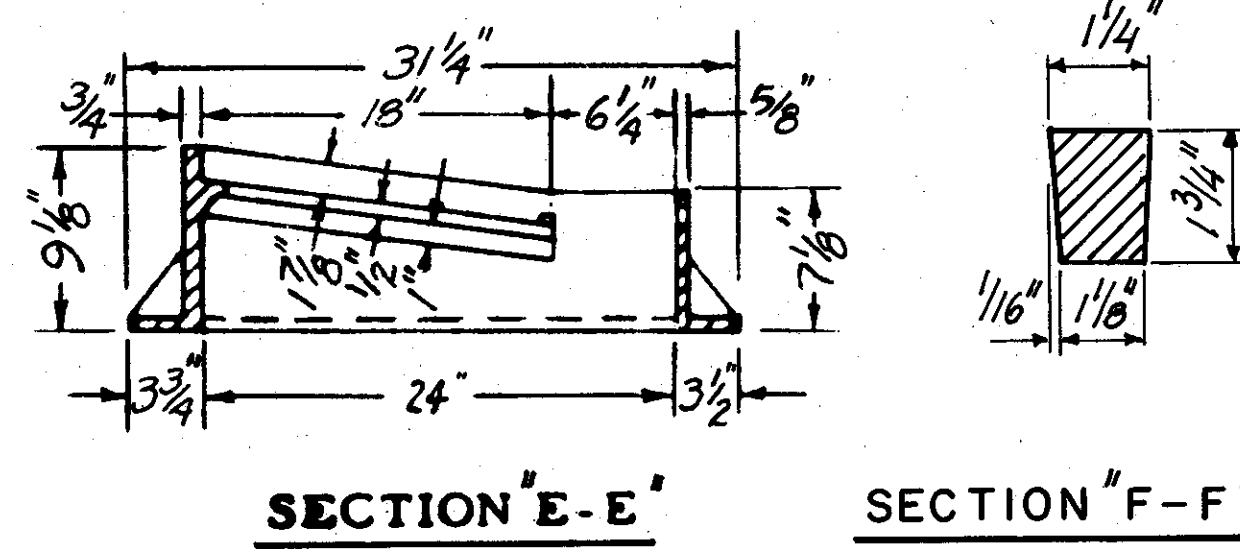
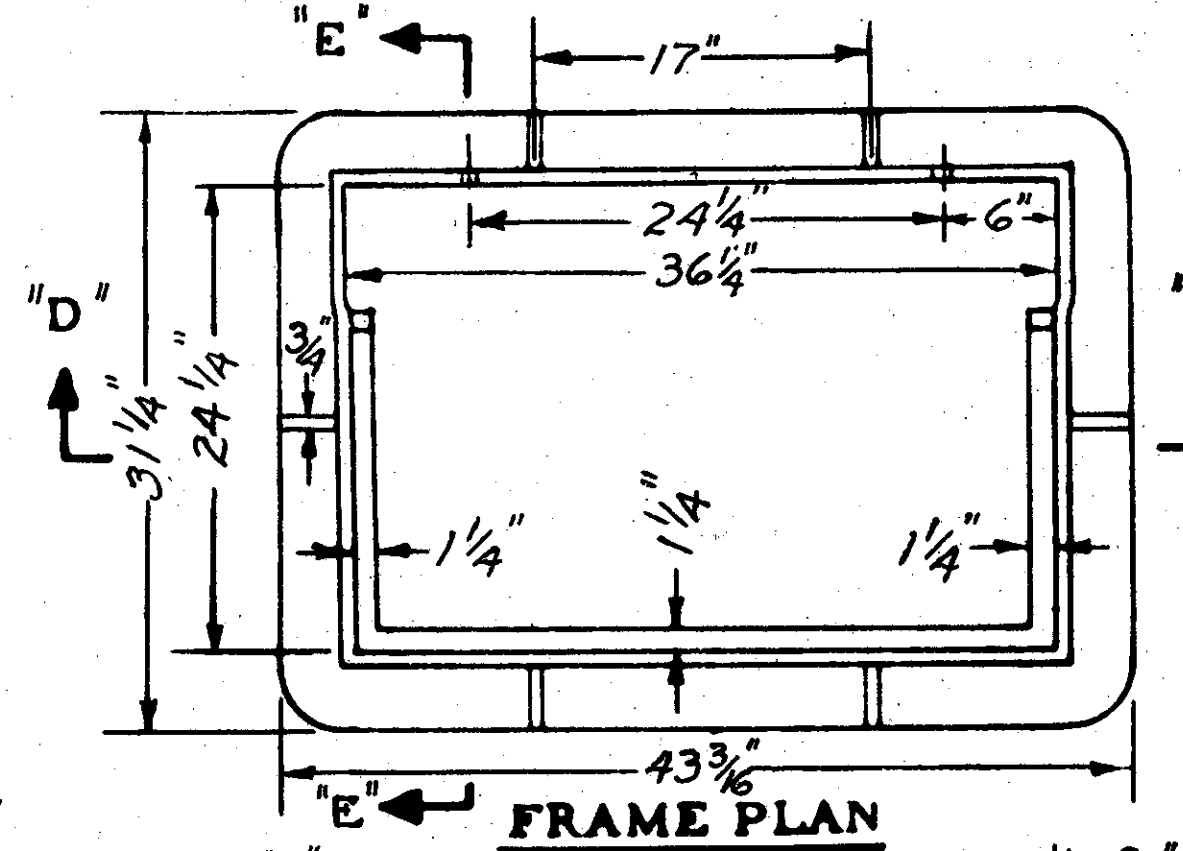
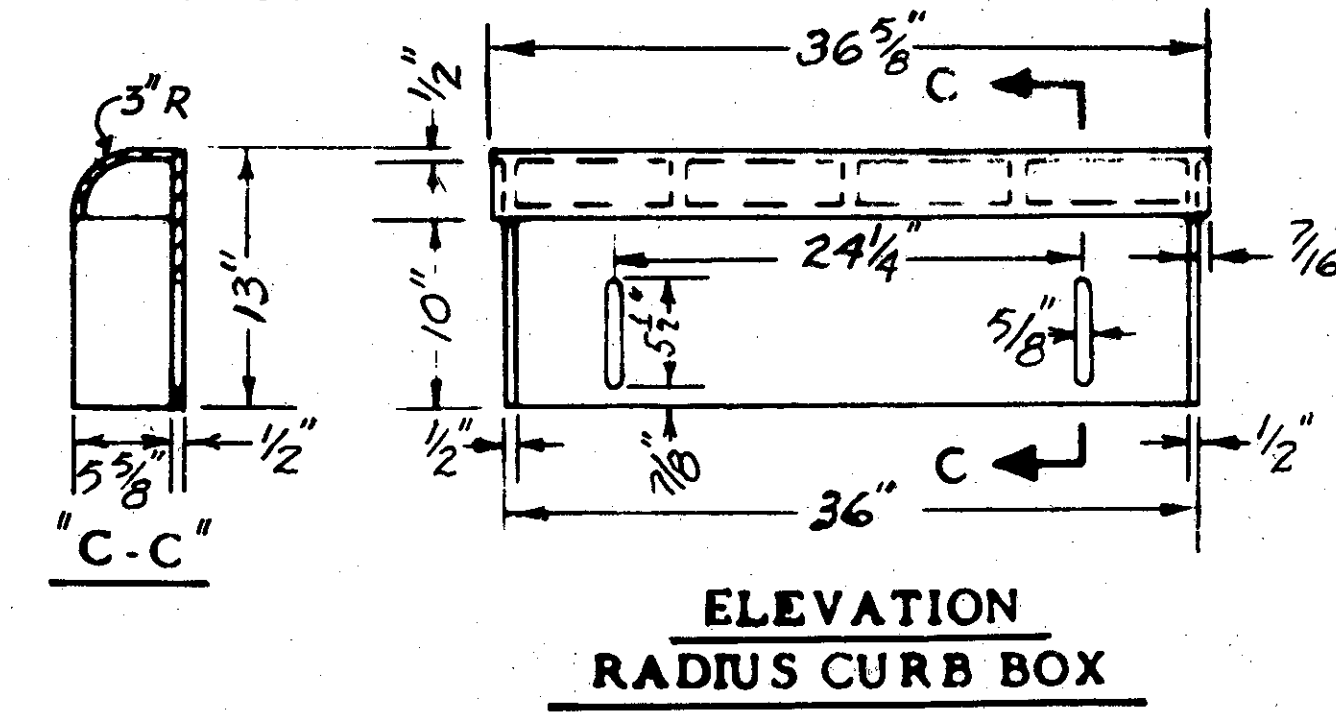
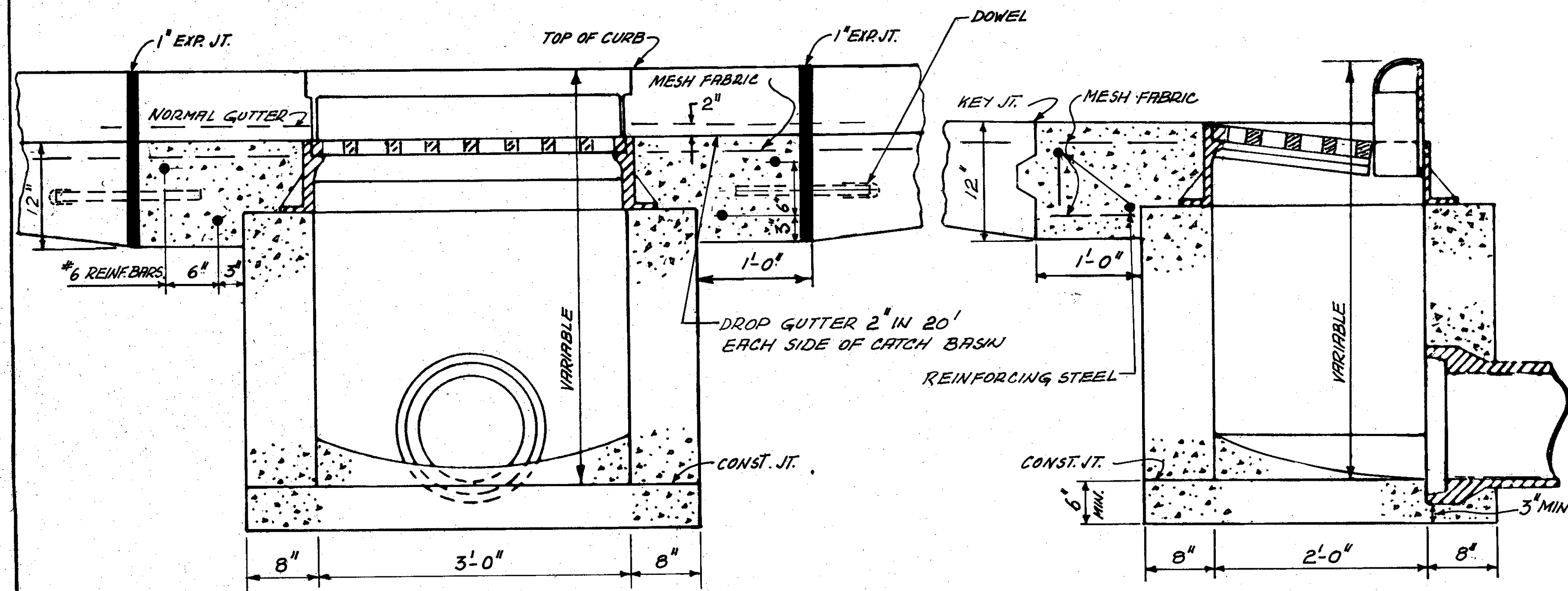
**EXPANSION JOINT**-The elastomeric Expansion Joint seal shall be omitted when an asphalt concrete surface is part of pavement. The expansion joint material shall be omitted when a flexible base is used.

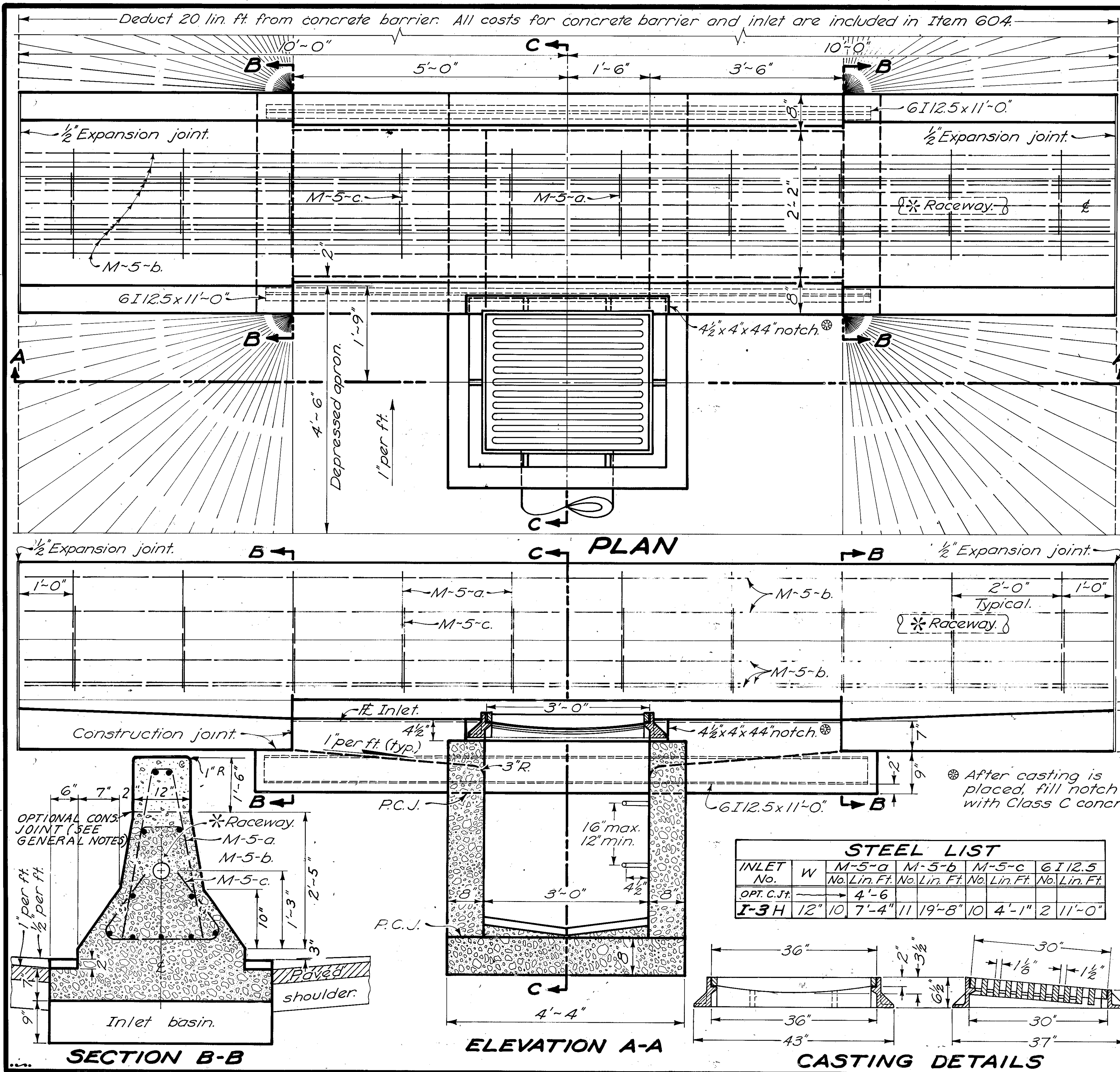
**BAR LIST**

MARK	NO. REQ'D.	SHAPE	LENGTH	WT.
A	1	BENT	5'-10"	9#
B	1	BENT	5'-10"	9#
C	4	STR.	2'-10"	4.25#

Note: This catch basin is the Cuyahoga County Standard No. 3-C Catch Basin.

Rev. 4-12-78





**NOTES**

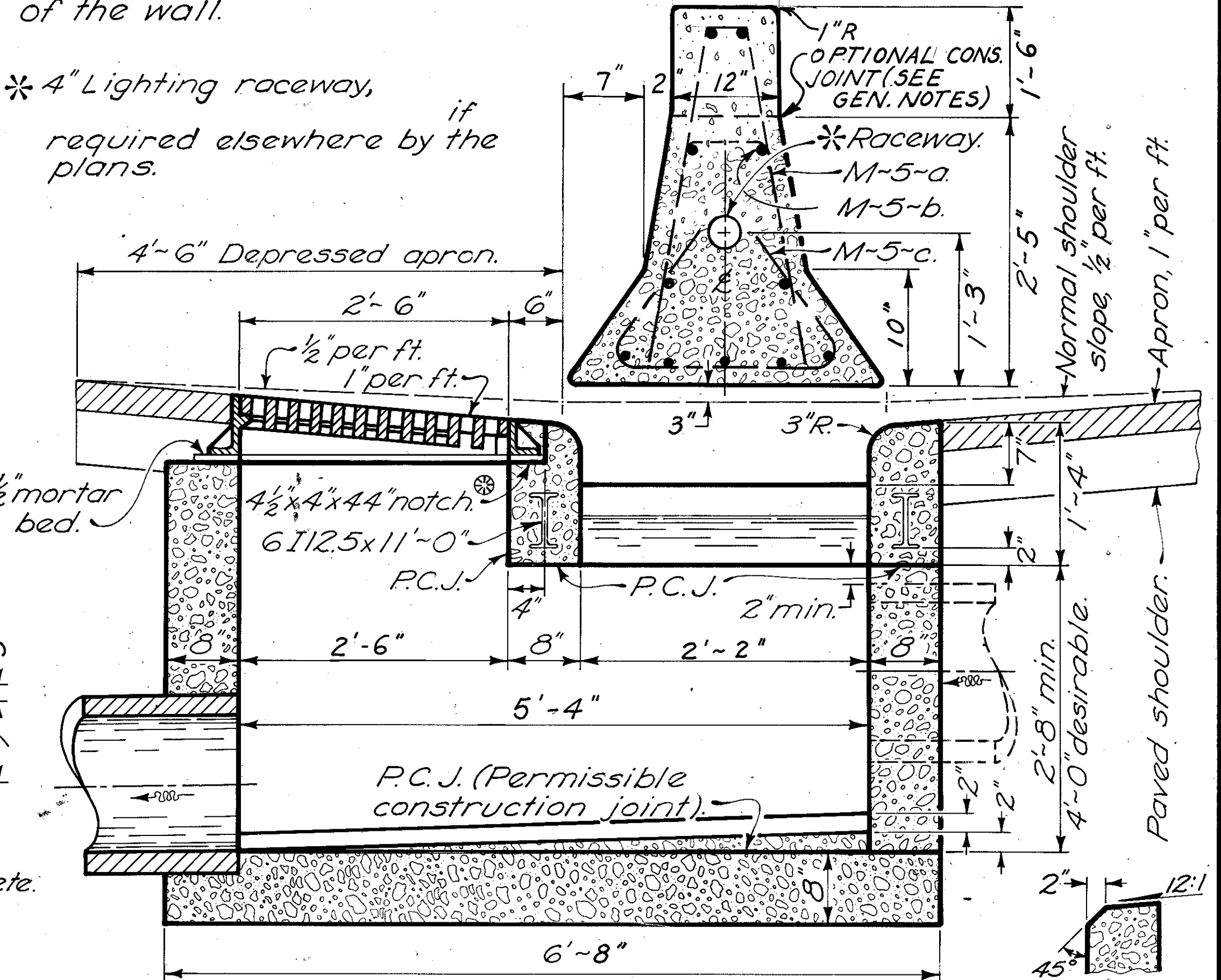
**WALLS:** The sections between the base and the upper permissible construction joint may be built of brick, concrete block, or cast-in-place concrete, 8" nominal thickness, for depths of 12' or less. The unit above the upper permissible construction joint may be precast or cast-in-place. Concrete for precast or cast-in-place construction shall meet the requirements of 511 Class C. If a skewed pipe protrudes more than 2" inside a wall, the pipe shall be trimmed flush and finished to produce a neat appearance.

**STEPS** shall be in accordance with Standard Drawing MH-1. Minimum weight of frame and cover shall be 540 pounds.

**GRATE LOCATION:** In superelevated curves or at other locations where there is unequal discharge from the directional roadways, the inlet grating shall be located in the roadway which discharges the major flow.

**INLETS OVER 12 FEET IN DEPTH** shall be built of Class C concrete reinforced by placing 1/2" bars 12" center-to-center both vertically and horizontally with a 2" clearance from inside face of the wall.

\* 4" Lighting raceway, if required elsewhere by the plans.



**STEEL LIST**

INLET No.	W	M-5-a No.	M-5-a Lin. Ft.	M-5-b No.	M-5-b Lin. Ft.	M-5-c No.	M-5-c Lin. Ft.	6I12.5 No.	6I12.5 Lin. Ft.
OPT. C.J.T.			4'-6"						
I-3H	12"	10	7'-4"	11	19'-8"	10	4'-1"	2	11'-0"

**I-3H**

**MEDIAN INLETS**

NOTE: Drawing not to scale, dimensions govern. See General Notes for optional top construction.

**MEDIAN INLET DETAILS**

**NOTES**

**JOINTS:** Unsealed contraction joints spaced at 20' max. shall be constructed throughout the run of Concrete Barrier except that expansion joints shall be used at the center line of and around each bridge pier column and on either side of overhead sign supports. See 625 Light pole foundation drawing for other joint details.

Contraction joints may be constructed with metal inserts inside the forms, preformed full width joint filler, a grooving tool, or by sawing. Inserts or tooled or sawed joints shall have a 1 1/2" min. depth. All joints shall be constructed for the full height of the barrier including the base.

**LIGHTING:** The 4" polyvinyl chloride raceway shall be included in the unit price bid for 622.

**MEASUREMENT:** 622 Concrete Barrier, including transitions and end terminals and pier sections, is paid for in linear feet with the following deductions for structures covered under other items:

- 604 I-3 Median inlets..... 20 Lin. Ft.
- 625 Light pole foundation..... 2.5 Lin. Ft.
- 844 Overhead sign support foundation..... 10 Lin. Ft.

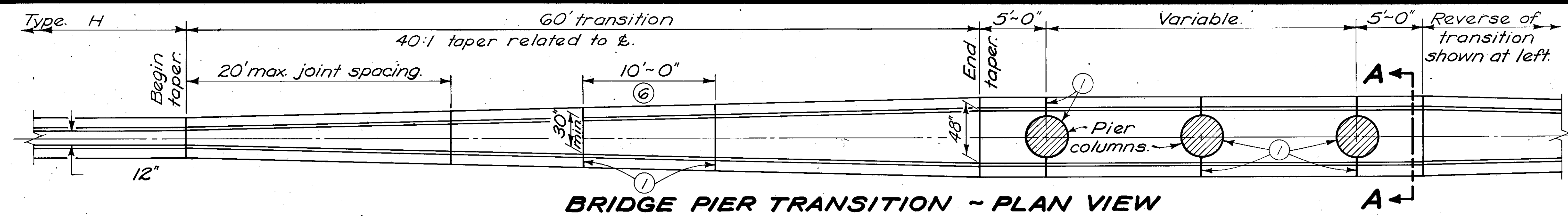
The following table gives information to compute the volume of the various type barriers:

CUBIC YARDS PER LINEAR FOOT		
Barrier	Top	Base
TYPE H	0.206	0.111
SECTION A-A†	0.672	0.194

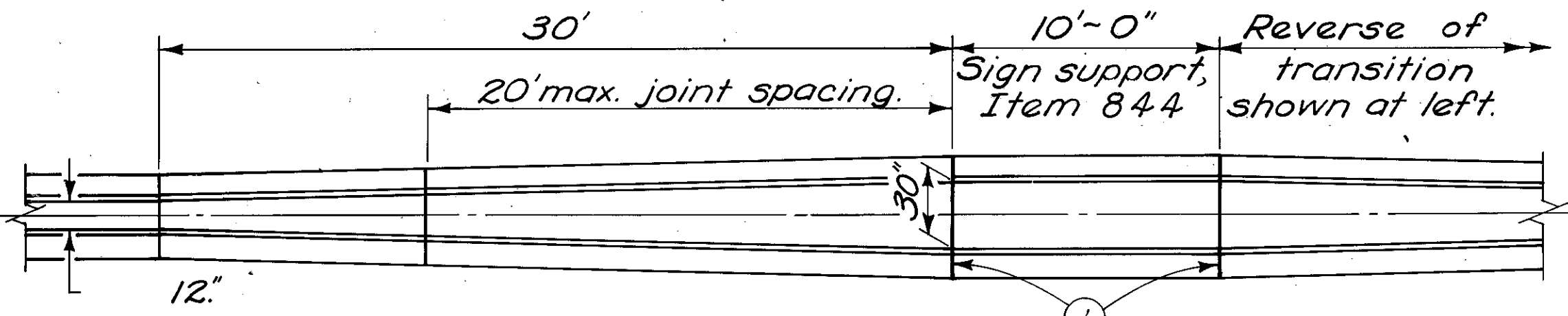
† Deduct 1.3 Cu Yd. for each 36" dia. pier column.

- ① Expansion joint, 3/4" min. Preformed Filler 705.03.
- ② No. 8 deformed steel bars, 12" long, spaced on staggered 4' centers. The End Terminal will require shorter dowels between points A & C. Omit dowels when top is constructed integral with the base.
- ③ 1" Radius or 3/4" chamfer.
- ④ Permissible 10" radius.
- ⑤ Permissible 1" radius.
- ⑥ 844 Overhead Sign Support Foundation, if specified in the plan.
- ⑦ Permissible construction joint.

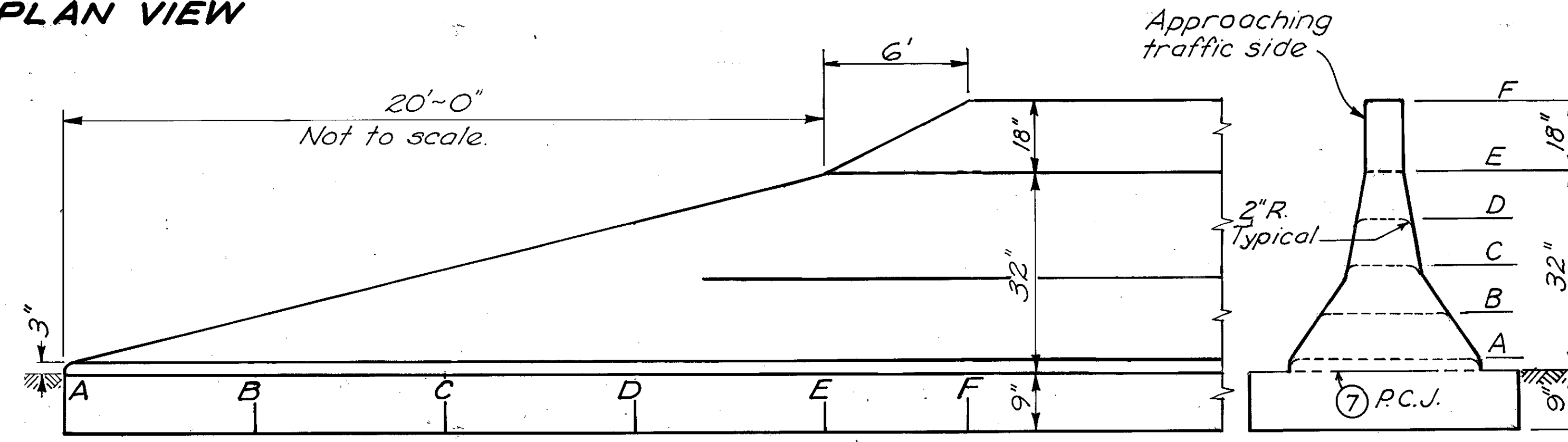
NOTE: Drawing not to scale, dimensions govern. See General Notes for optional top construction.



**BRIDGE PIER TRANSITION - PLAN VIEW**



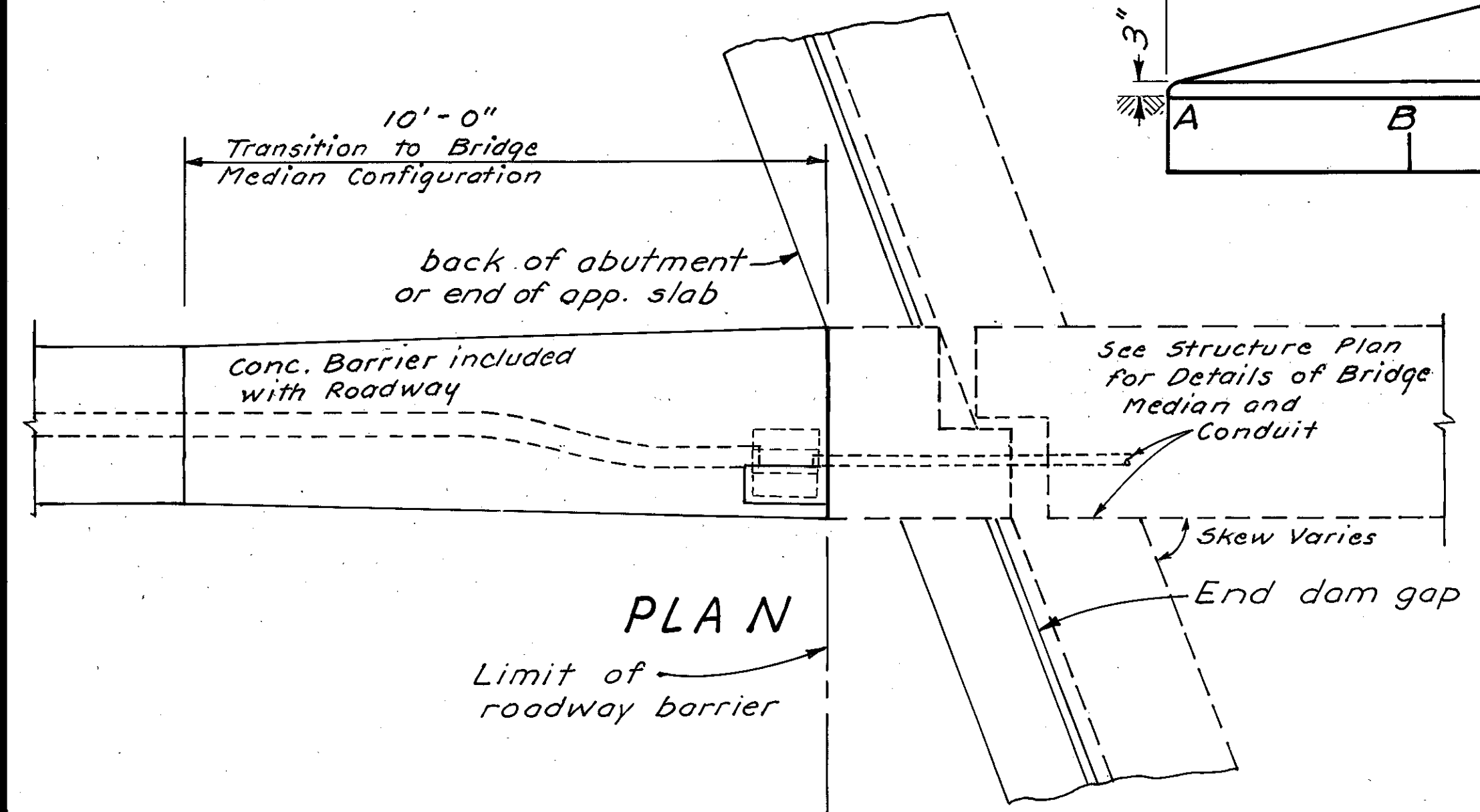
**SIGN SUPPORT TRANSITION - PLAN VIEW**



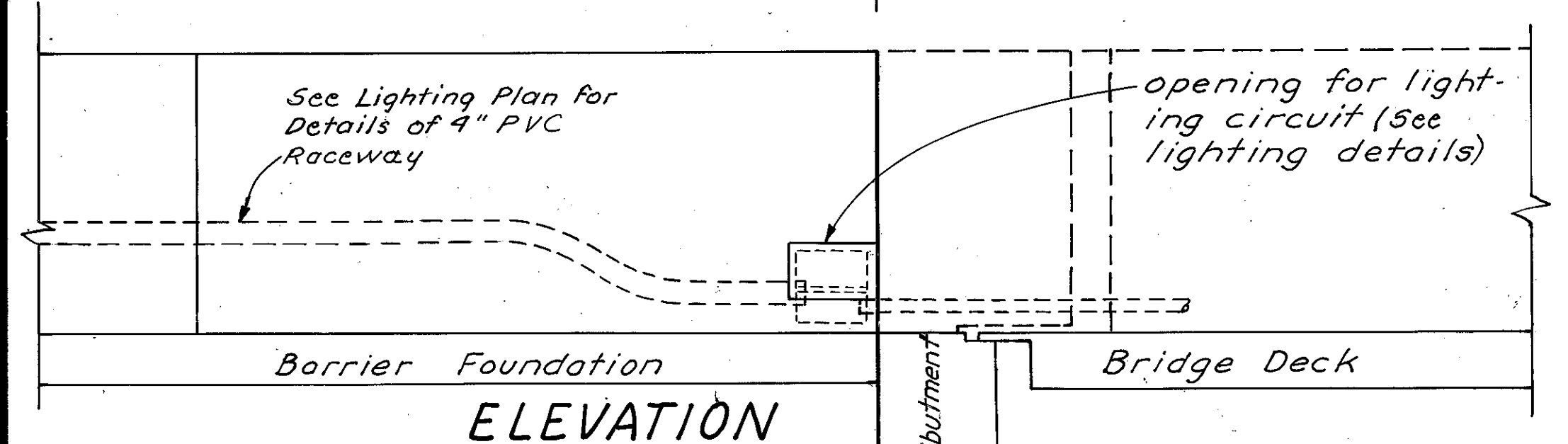
**PROFILE VIEW**

**END TERMINAL DETAIL**

**END VIEW**

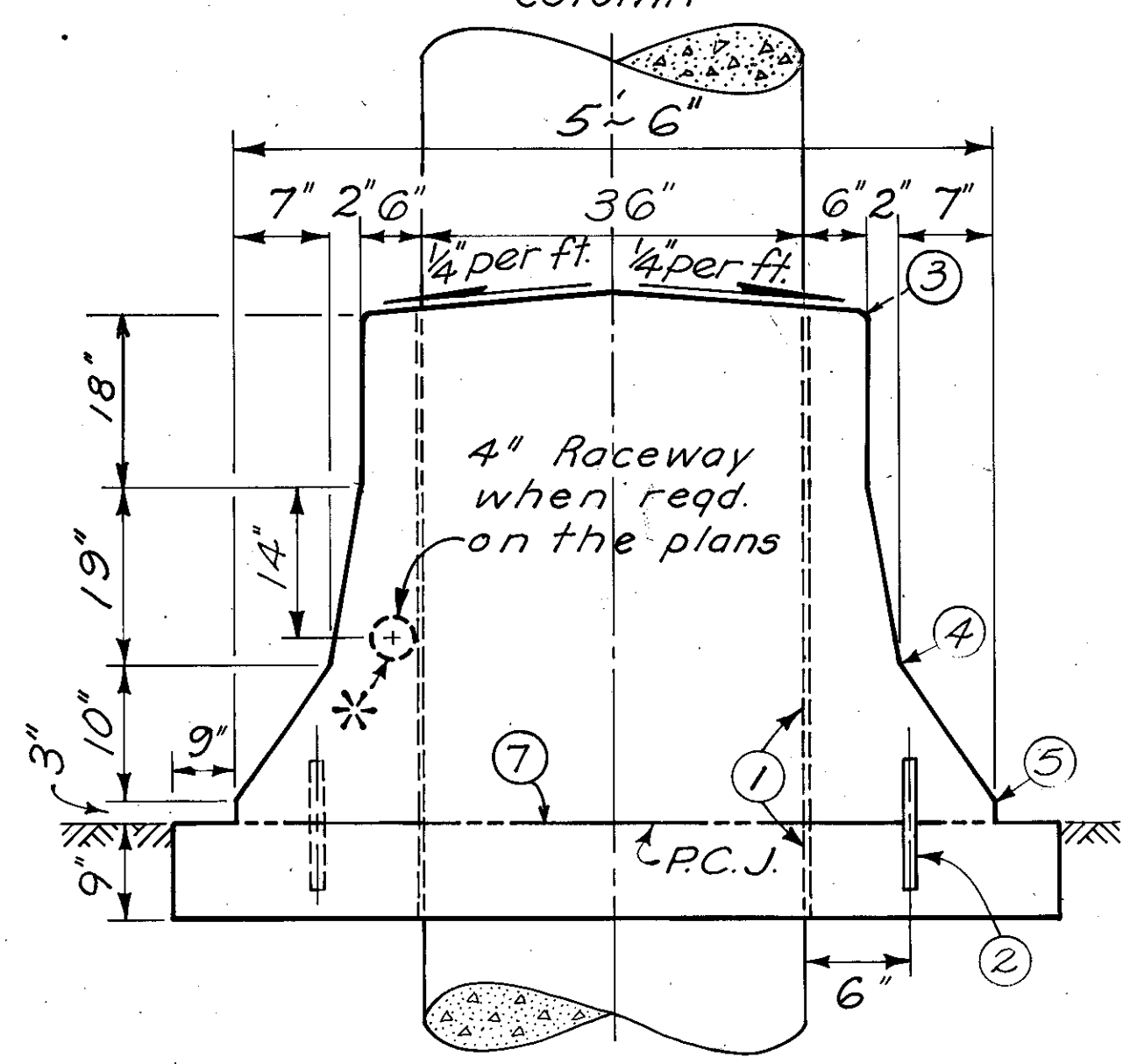


**PLAN**



**ELEVATION**

**BRIDGE MEDIAN TRANSITION DETAIL**



**BRIDGE PIER TRANSITION SECTION A-A**

**CONCRETE BARRIER DETAILS**

CUYAHOGA COUNTY  
CUY-480-8.54

TREE REMOVAL  
476+00 to 480+00

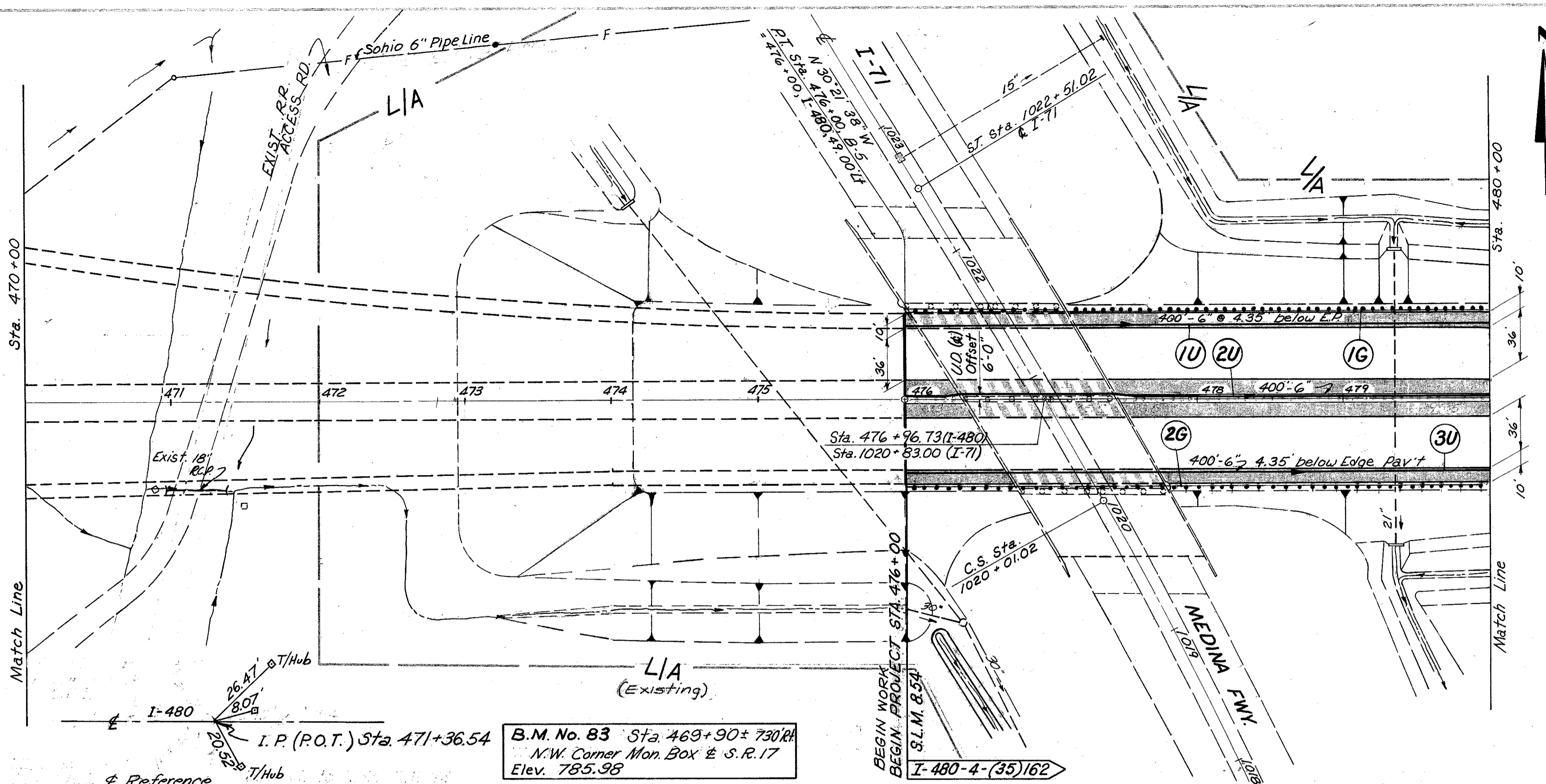
SIZE	No
	None

**CROSS REFERENCE**

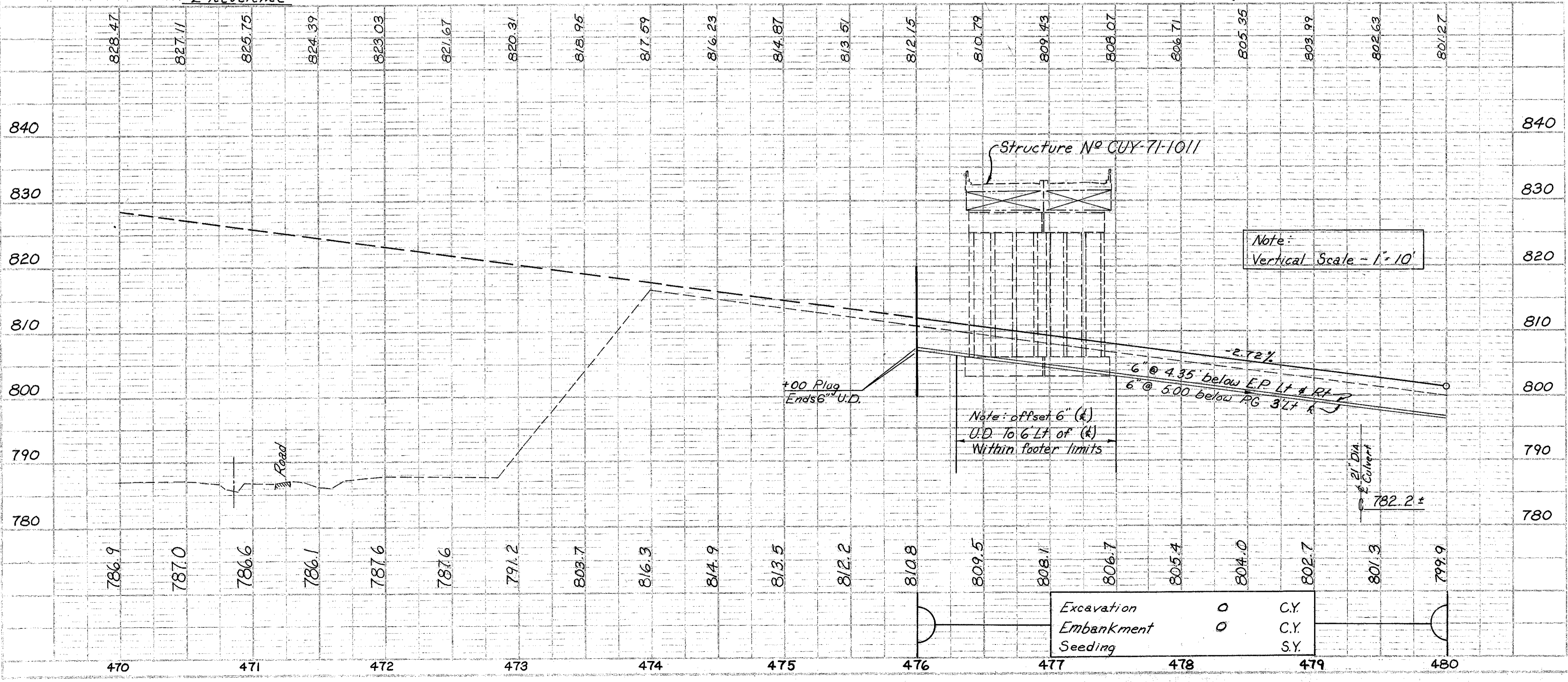
Sht No.	Item
79-80	Cross Sections
33/	Center Line Control

**ESTIMATED QUANTITIES**

Ref. No.	Side	LOCATION	605	606
			Underdrain Shallow 6"	Guard Rail Type 5 L.F.
1G	Lt	476+00 to 480+00		400
2G	Rt	476+00 to 480+00		400
1U	Lt	476+00 to 480+00	400	
2U	Lt	476+00 to 480+00	400	
3U	Rt	476+00 to 480+00	400	
<b>TOTAL</b>	<b>To Gen. Summary</b>		<b>1200</b>	<b>800</b>



B.M. No. 83 Sta. 469+90 ± 730 RA  
N.W. Corner Mon. Box & S.R. 17  
Elev. 785.98



Excavation	0	C.Y.
Embankment	0	C.Y.
Seeding		S.Y.

E.P.F. 2/20/65  
F.N.K. 3/1/65

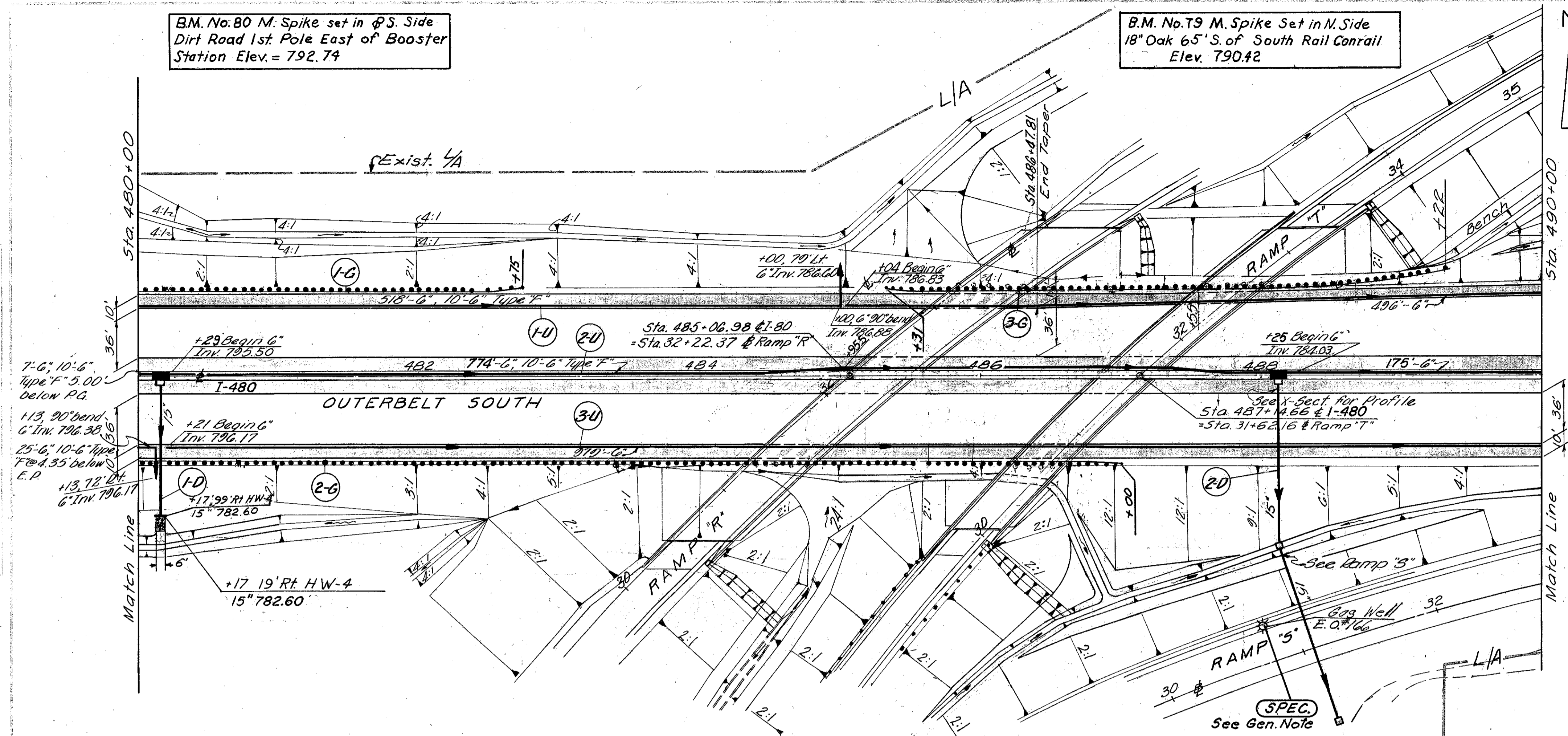
B.M. No. 80 M. Spike set in P.S. Side  
Dirt Road 1st Pole East of Booster  
Station Elev. = 792.74

B.M. No. 79 M. Spike Set in N. Side  
18" Oak 65' S. of South Rail Corral  
Elev. 790.42

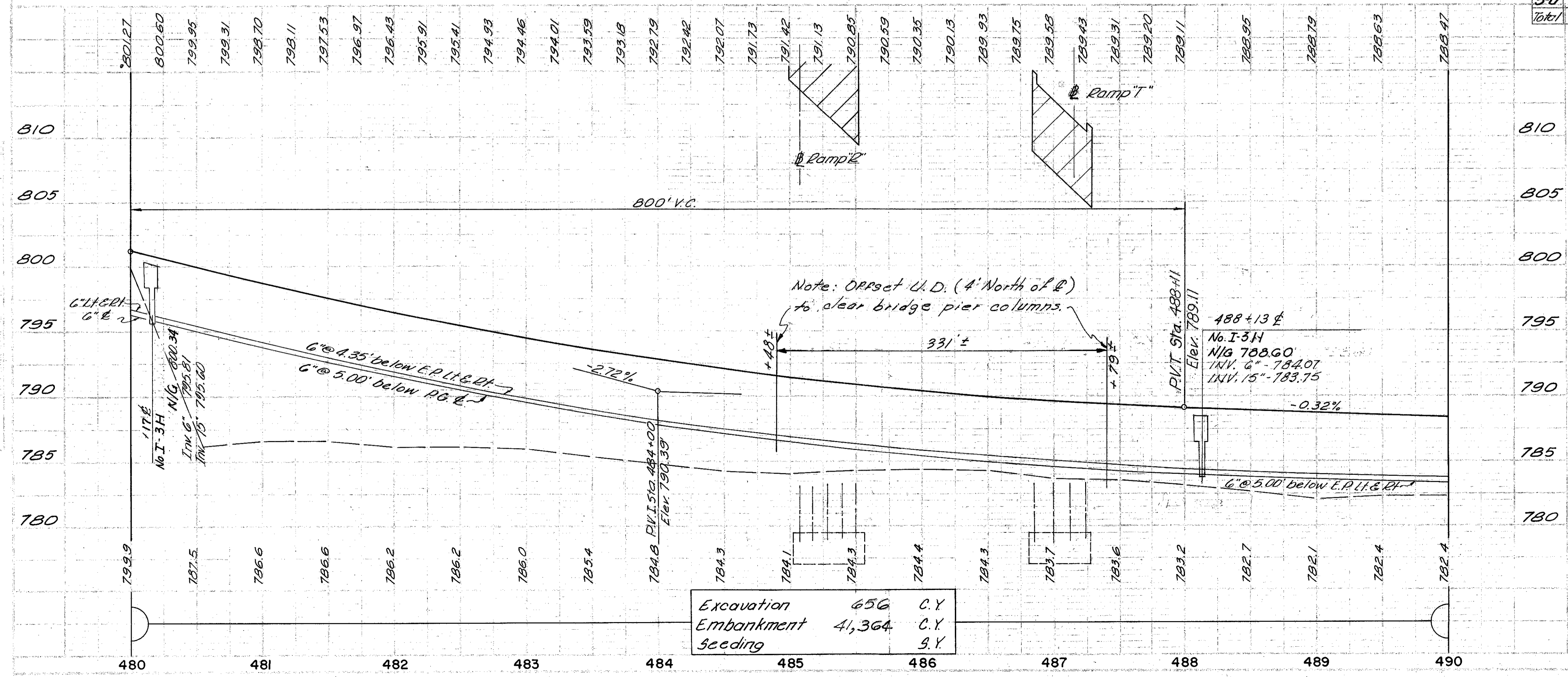
CUYAHOGA COUNTY  
CUY-480-8.54

CROSS REFERENCE	
Sht. No.	Item
80-82	Cross Sections
219-225	Structures "R" & "T"
20-21	Drainage Details
331	Center Line Control

TREE REMOVAL 480+00 to 490+00		
SIZE	No	
18"	8	
30"	3	



ESTIMATED QUANTITIES		Type 5"	Type 6"	Type 15"	Rock Churn Prof. Type B" W/ Bed.	Masonry	I-3H Inlet	Plugging Oil or Gas Well	Branches & Branches Unrooted in Shallow	Branches & Branches	Guard Rail Type 5	Anchor Assembly Type A	Anchor Assembly Type T	Storm Sewer Profile
Rt/Lt	Side	LOC	15' G"	15' G"	C.V.	C.V.	Ea.	Ea.	C.F.	L.F.	Ea.	Ea.	Ea.	Sht. #
1-D	Rt.	480+78 to 480+77.25	6.6		36	4	0.27	1						80
2-D	Rt.	488+13 to 488+08.70	12.3											82
1-G	Lt.	480+00 to 482+75									250	1		
2-G	Rt.	480+00 to 487+00									675		1	
3-G	Lt.	485+31 to 489+22									366	1	1	
SPEC	Rt.	488+00						1						
1-U	Lt.	480+00 to 490+00	10								1014	1		
2-U	Rt.	480+00 to 490+00	20								956	8		
3-U	Rt.	480+00 to 490+00	10								1004	1		
Total	To Gen. Summary		189	40	36	4	0.27	2	1		2974	129	2	2



Excavation	656	C.Y.
Embankment	4,364	C.Y.
Seeding		S.Y.

For Ramps "R", "5", & "T" Plan & Profile  
See Sheet No. 42-50  
For Ramps "R", "5", & "T" Pavement Details  
See Sheet No. 58-62

G.P.S. 5/4/66  
W.S. 5/6/66

B.M. No. 78 M. Spike set in N. Side  
24" Oak 60' S. of South Rail Conrail  
and Approx 42.5' Lt of Sta.  
499+00 Elev. 786.83

5	OHIO		
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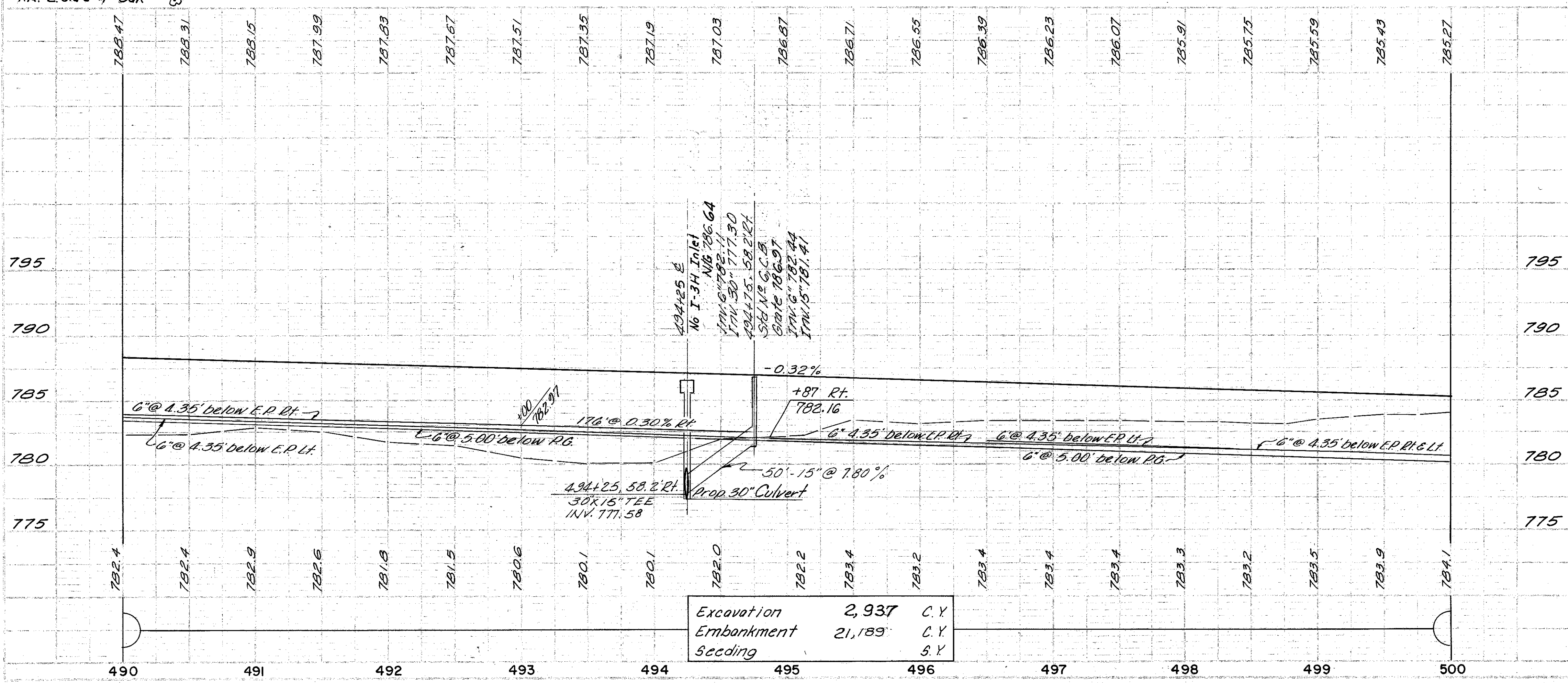
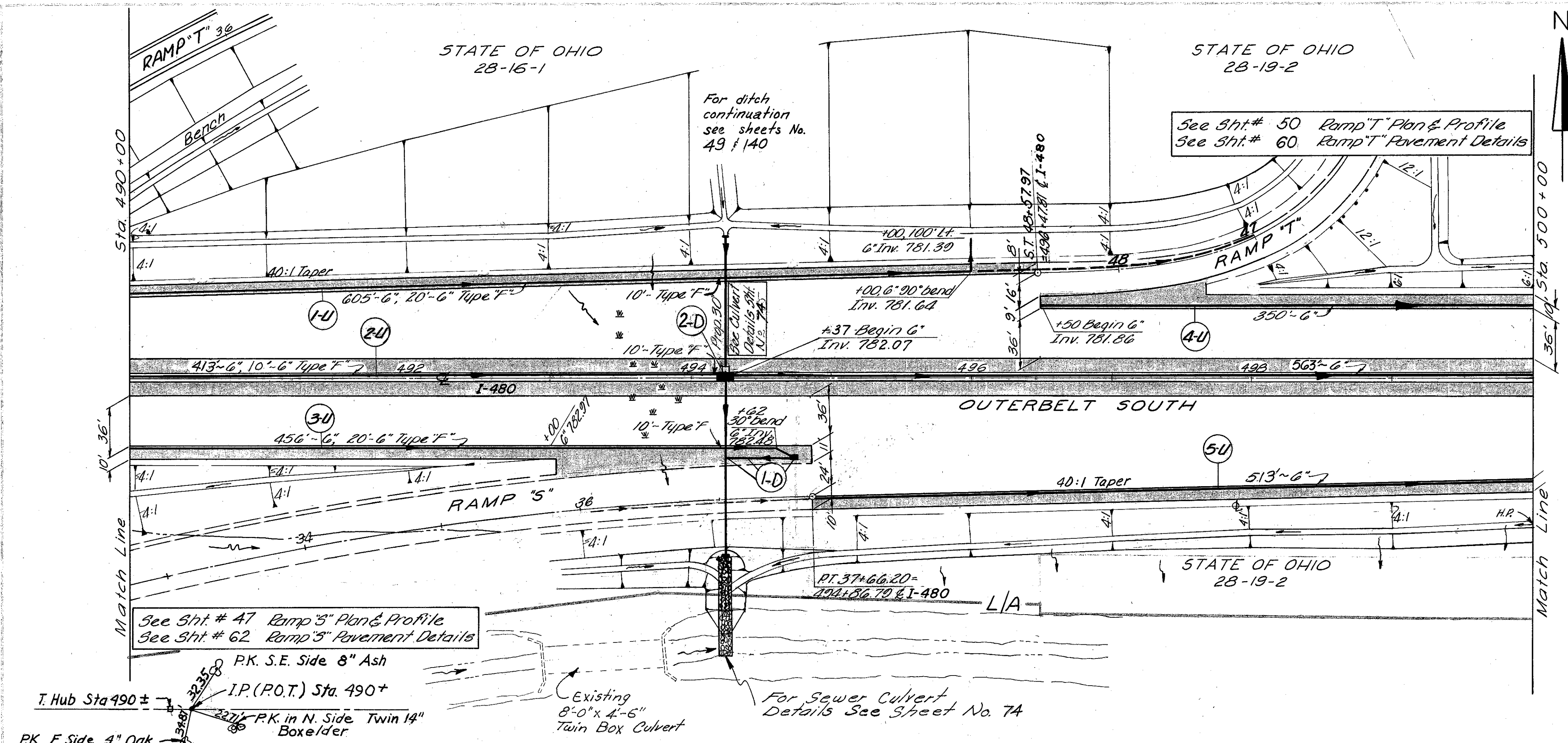
CUYAHOGA COUNTY  
CUY-480-8.54

TREE REMOVAL  
490+00 to 500+00

SIZE	N <sup>o</sup> .
18"	398
30"	39

CROSS REFERENCE	
Sht. No.	Item
83-85	Cross Sections
20-21	Drainage Details
331	Center Line Control
74	Culvert Detail

ESTIMATED QUANTITIES		603		604		605		603		Storm Sewer Profile
Qty	Side	15" L.F.	6" L.F.	I-3H Inlet Ea.	N <sup>o</sup> 6 Catch Basin Ea.	Underdrain Shafts Ea.	Branches Ea.	30x15" Tee Ea.		
1-D	Rt.	494+25 to 494+75	50							31
2-D	Lt.	494+25								74
1-U	Lt.	490+00 to 496+00	20							
2-U	Lt.	490+00 to 500+00	10							
3-U	Rt.	490+00 to 494+75	20							
4-U	Lt.	496+50 to 500+00								
5-U	Rt.	37+66.5" to 500+00								
Total	To Gen. Summary	50	50	1	1	2900				



Excavation	2,937	C.Y.
Embankment	21,189	C.Y.
Seeding	5.1	S.Y.

G.P.S 5/4/00  
T.L.S. 5/16/00

B.M. No. 77 Most Westerly Nut on Top  
 Ring of F. Hydt. S.S. Conrail Approx.  
 2000' W. of W. 150 th. St.  
 Elev. 787.87

STATE OF OHIO  
 28-19-2

SEE SHEET NO. 45 RAMP "R"  
 FOR DETAILS

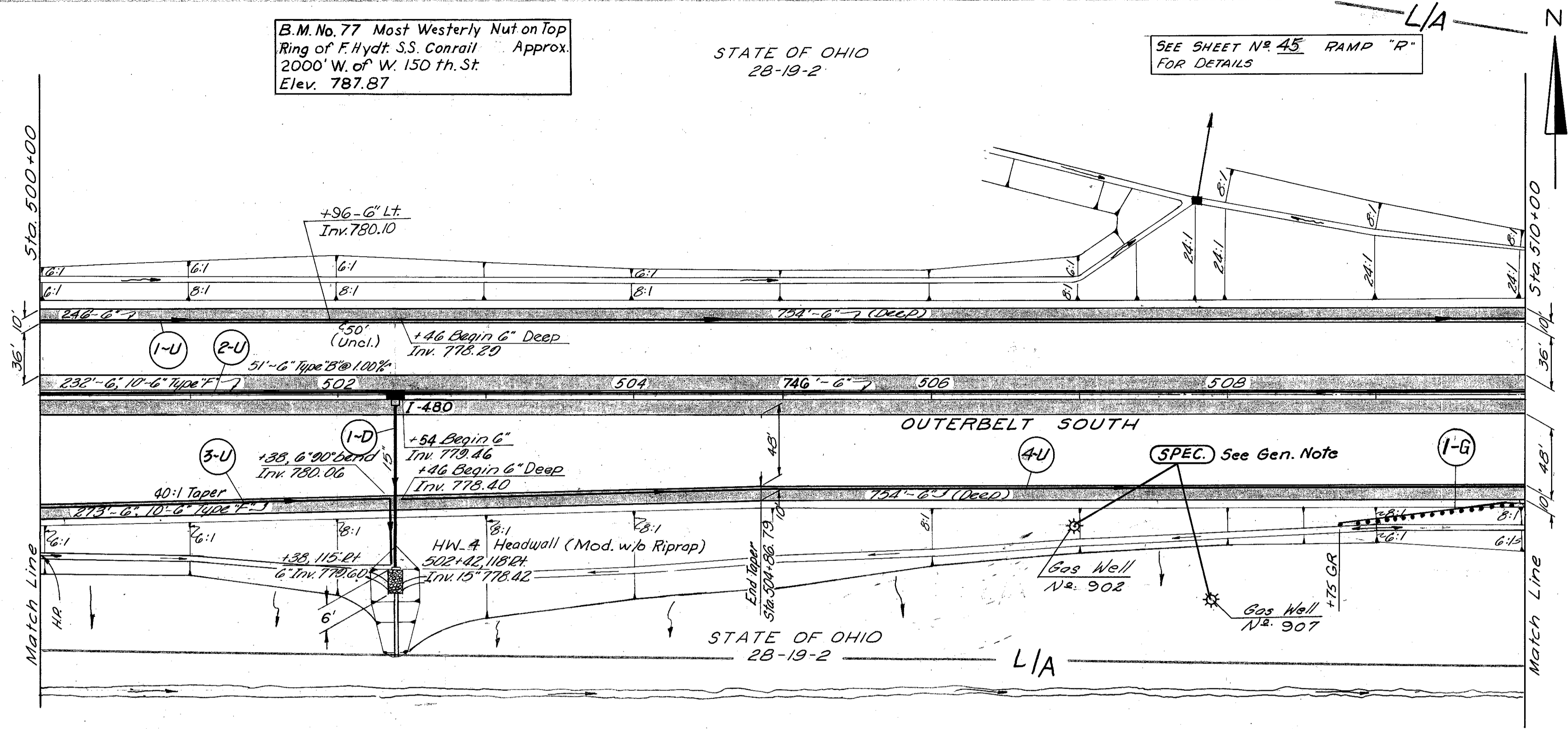
FED. DD. DIVISION	STATE	PROJECT	TYPE PLANED
5	OHIO		

CUYAHOGA COUNTY  
 CUY-480-8.54

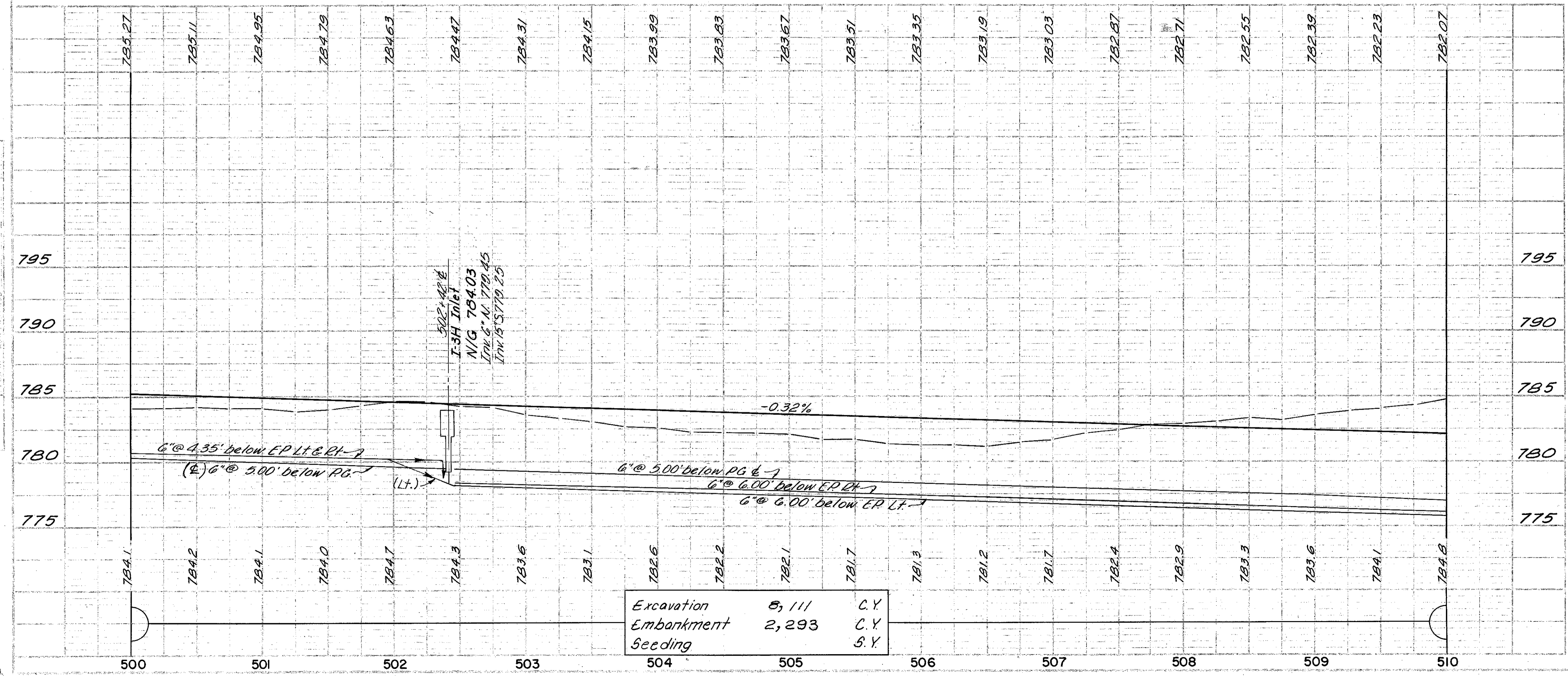
TREE REMOVAL  
 500+00 to 510+00

Sheet No.	Item
85-87	Cross Sections
20-21	Drainage Details

SIZE	N <sup>o</sup>
18"	96
30"	5



ESTIMATED QUANTITIES	603		602	SPEC. 604	605		601	606	606			
	Type "B"	Type "F"	Conc. Masonry	Plugging Oil or Gas Well	I-3H Inlet	Underdrain Deep	Underdrain Shallow	Branches & Bends	Underdrain	Unclassified Rock Channel Protection Type B w/bed. Storm Sewer Profile	Guard Rail Type 5	Anchor Assembly type A
REF. #	SIDE	LOCATION	L.F.	L.F.	C.Y.	Ea.	Ea.	L.F.	L.F.	C.Y.	Sht. #	Ea.
1-D	Lt.	502+42, 51' Lt. to 118' Rt.	118		0.25		1				4.0	86
SPEC. Rt.		506+95 & 507+90				2						
1-G	Rt.	508+75 to 510+00										100
1-U	Lt.	500+00 to 510+00					754	196		50		
2-U	Lt.	500+00 to 510+00		10				978				
3-U	Rt.	500+00 to 502+38		10				273	1			
4-U	Rt.	502+46 to 510+00					754					
TOTALS TO GEN. SUM.			118	20	0.25	2	1508	1447	50	4.0		100



Excavation	8,111	C.Y.
Embankment	2,293	C.Y.
Seeding		S.Y.

For Ramp "5" Pavement Detail  
 See Sheet No. 62

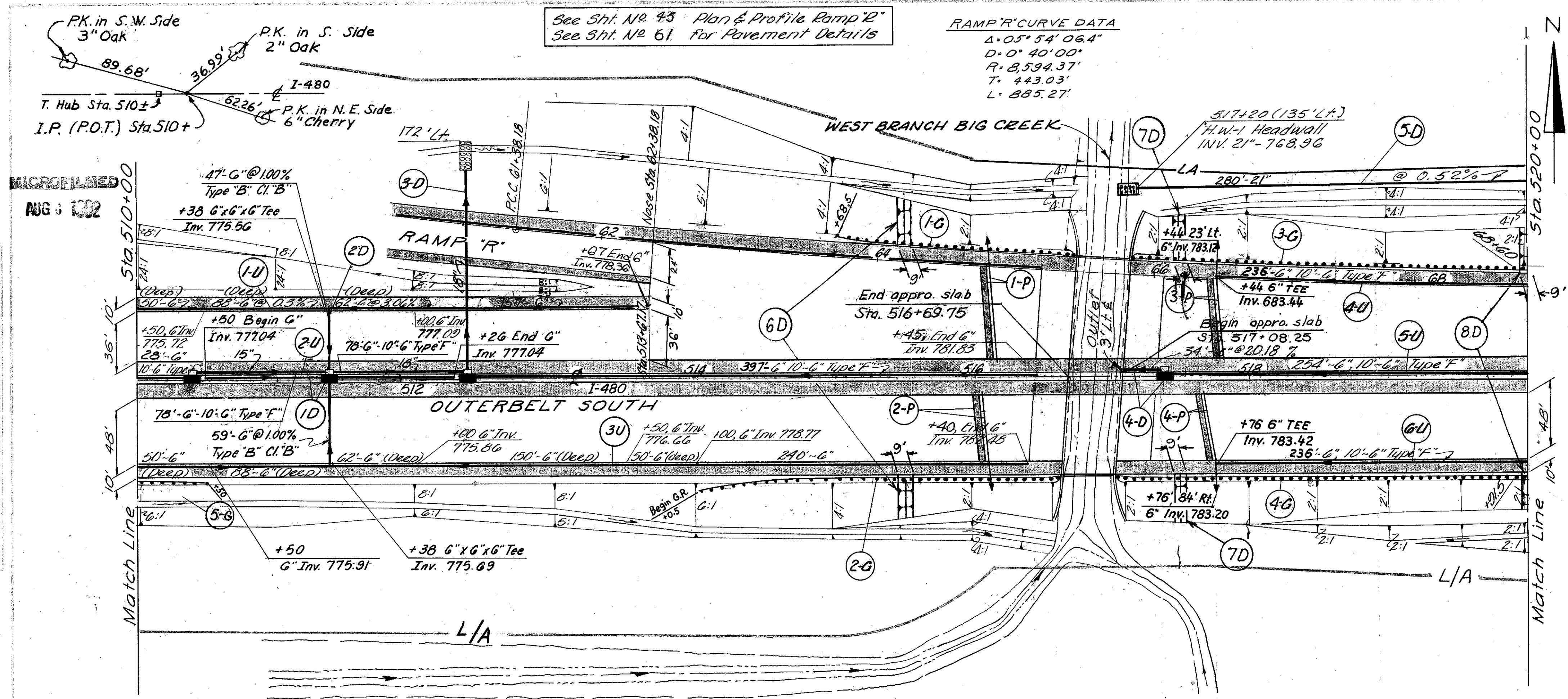
G.P.S. 5/4/66  
 M.S. 5/6/66



TREE REMOVAL  
510+00 to 520+00

CROSS REFERENCE	
Sht. No.	Item
250	Structure
87-90	Cross Sections
20-21	Drainage Details

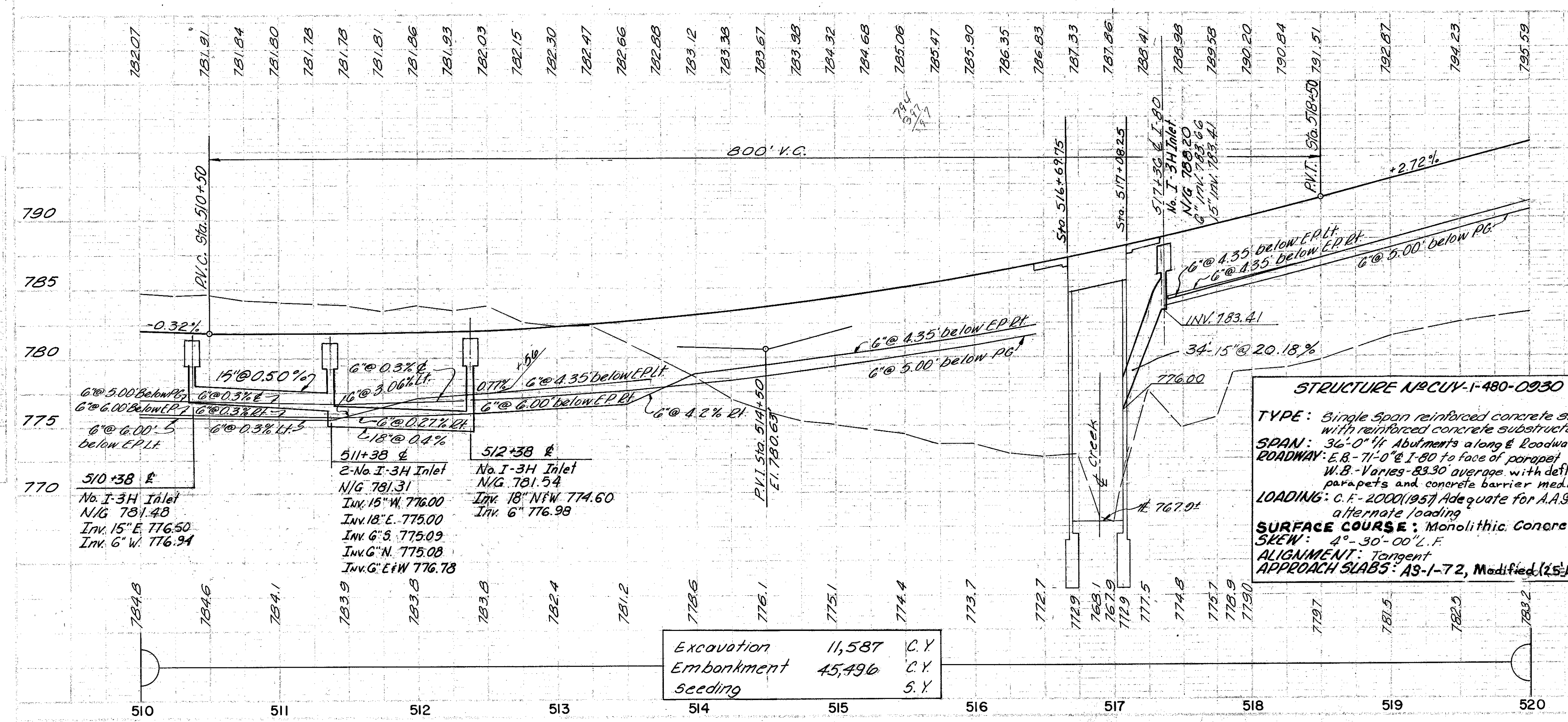
SIZE	N <sup>o</sup>
18"	8
30"	1



RAMP 'R' CURVE DATA  
 $\Delta = 05^{\circ} 54' 06.4''$   
 $D = 0^{\circ} 40' 00''$   
 $R = 2,594.37'$   
 $T = 443.03'$   
 $L = 885.27'$

See Sht. No. 43 Plan & Profile Ramp 'R'  
 See Sht. No. 61 for Pavement Details

P.P. No.	Side	LOCATION	603		603		605		Spec 604		660		601		602		Sht. #
			Type 'B'	Type 'F'	Type 'B'	Type 'F'	Type 'C'	Type 'C'	Type 'C'	Type 'C'	Type 'C'	Type 'C'	Type 'C'	Type 'C'	Type 'C'		
1-D	Lt	510+38 to 512+38															33
2-D	Lt+Rt	511+38, 51' Lt-63' Rt															33
3-D	Lt	512+38, 6' to 172' Lt															33
4-D	Lt	517+06, 31' to 517+36															33
5-D	Lt	517+20 to 520+00															33
6-D	Lt+Rt	515+50															33
1-P	Lt	516+13															33
2-P	Rt	516+02															33
3-P	Lt	517+77															33
4-P	Rt	517+62															33
7-D	Lt+Rt	517+50															33
1-U	Lt	510+00 to 513+67															33
2-U	Lt	510+00 to 516+45															33
3-U	Rt	510+00 to 516+40															33
4-U	Lt	66+10 to 68+70															33
5-U	Lt	517+36 to 520+00															33
6-U	Rt	517+40 to 520+00															33
8-D	Lt+Rt	522+00															33
Total		To Gen. Summary	34	148	254	80	106	280	600	2046	222	4	190	820	50		33



Excavation	11,587	C.Y.
Embankment	45,496	C.Y.
seeding		S.Y.

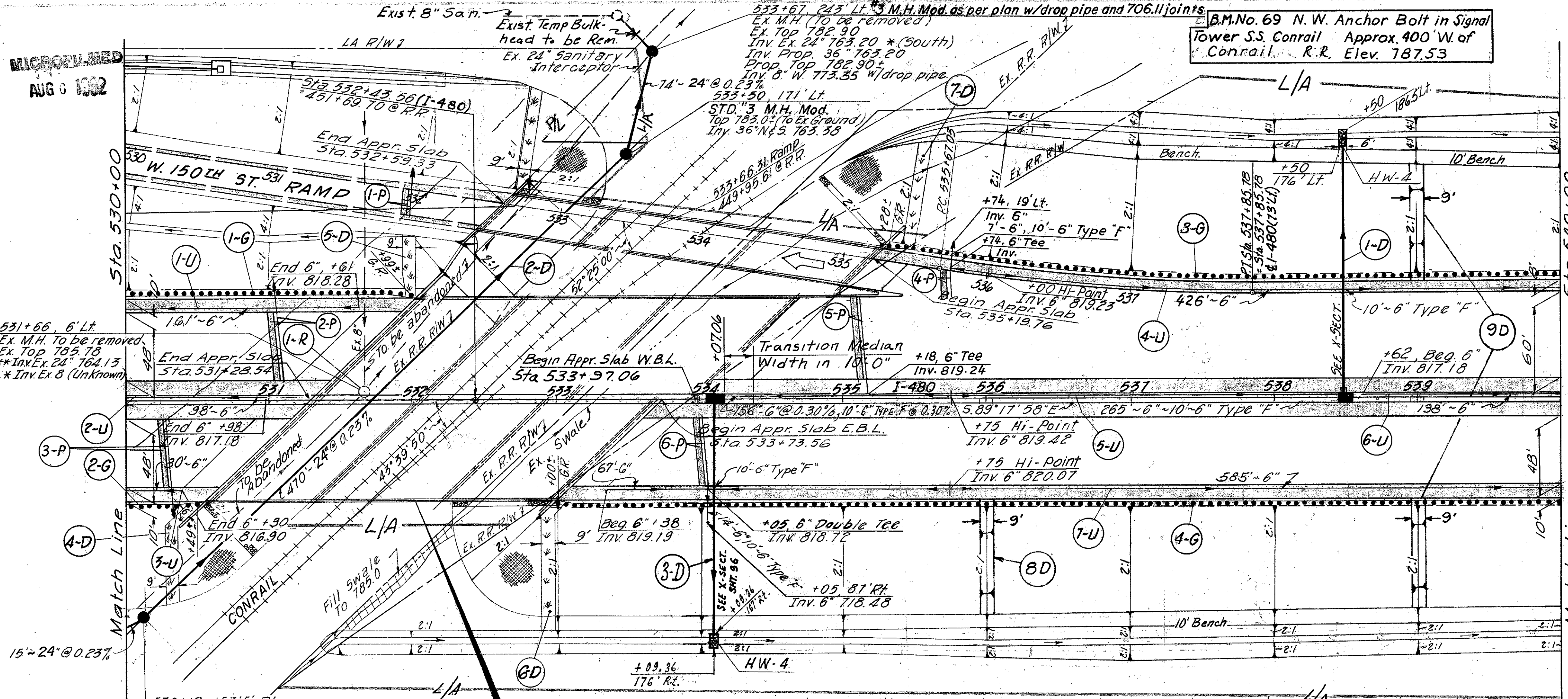
**STRUCTURE NO. CUY-1-480-0930**  
 TYPE: Single span reinforced concrete slab with reinforced concrete substructure  
 SPAN: 36'-0" w/ Abutments along E Roadway  
 ROADWAY: E.B. - 71'-0" to I-80 to face of parapet  
 W.B. - Varies - 83.30 average with deflector parapets and concrete barrier median.  
 LOADING: C.F. - 2000 (1957) Adequate for A.A.S.H.O. alternate loading  
 SURFACE COURSE: Monolithic Concrete  
 SKEW: 4° - 30' - 00" L.F.  
 ALIGNMENT: Tangent  
 APPROACH SLABS: AS-1-72, Modified (25' Long)

ESTIMATED QUANTITIES		606				
P.P. No.	Side	Location	Guard Rail Type 5	Anchor Assembly Type A	Anchor Assembly Type T	Bridge Terminal Assembly Type A
1-G	Lt	63+48.5 to 65+43.5	150		1	1
2-G	Rt	514+00.5 to 516+63	2375	1		1
3-G	Lt	65+85 to 68+70	285			1
4-G	Rt	517+04 to 520+00	296			1
5-G	Rt	510+00 to 510+50	50		1	1
Total			10185	1	2	4

Rev. D.P. 4-1-73  
 G.P.S. 5/4/66  
 M.S. 5/9/66

Rev 4-12-78





**W. 150th ST. RAMP CURVE DATA**  
 PI = 536+76.62  
 Δ = 8°45'00" Lt  
 D = 4'00"  
 T = 109.59'  
 R = 1432.39'  
 L = 218.75'  
 E = 4.19'

**TREE REMOVAL**  
 530+00 to 540+00  
 SIZE No.

5	OHIO	35	346
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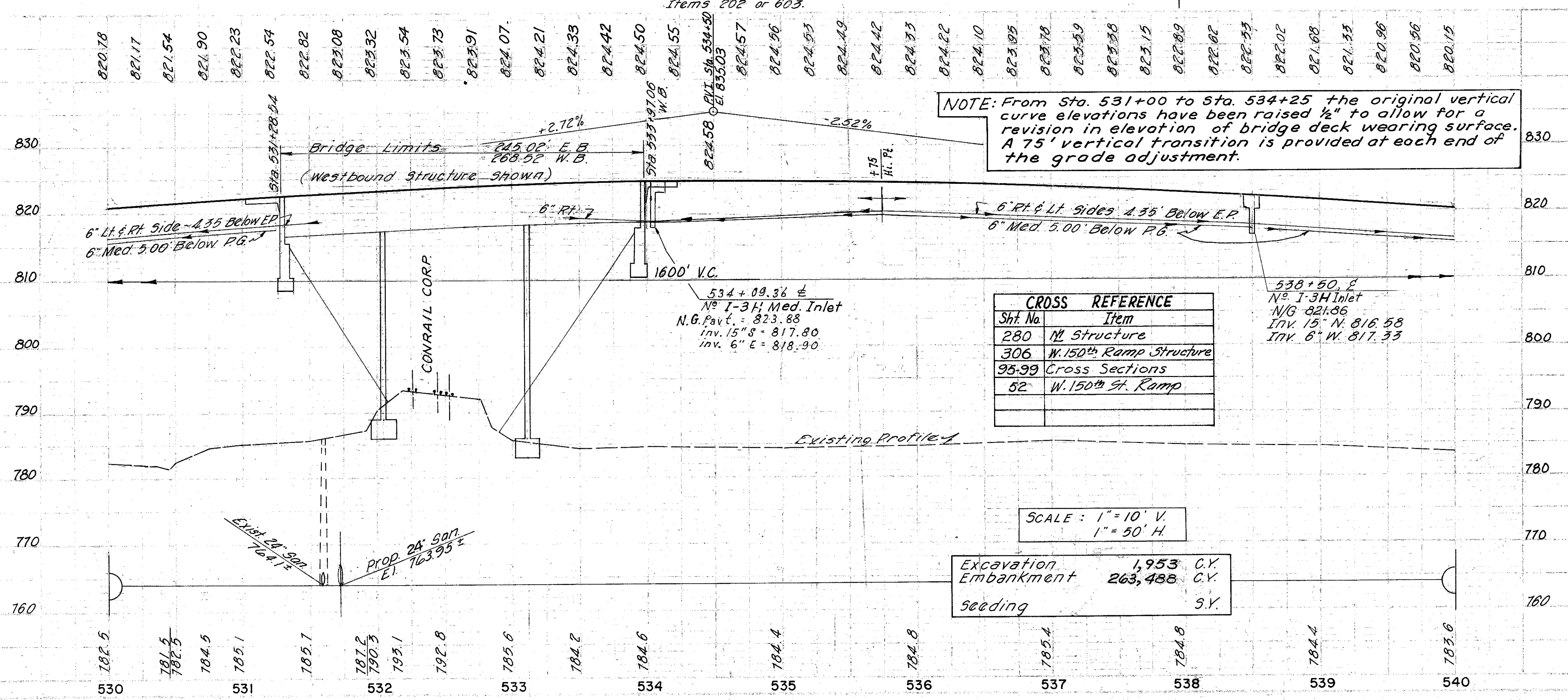
CUYAHOGA COUNTY  
 CUY-480-8.54

ESTIMATED QUANTITIES	202 601 602 603 680 603 605 605 604 606 604 606												
	Manholes Removed	Manholes	Concrete	15" Type 'B'	Reinforced Soding	24" Type 'F'	15" Type 'F'	6" Type 'F'	Branches	Branches	Branches	Storm Sewer Profile	
REF# SIDE LOCATION	Ea.	C.Y.	C.Y.	L.F.	S.Y.	L.F.	L.F.	L.F.	Ea.	L.F.	Ea.	Sht#	
1-D L 538+50 E		3.5	0.25	86			96	2				98	
2-D L/R 530+00 to 533+67						559						73	
3-D R 534+09.36 to Rt.		3.0	0.25	80			95	2				96	
1-U L 530+00 to 531+61										161			
2-U Med 530+00 to 530+29										98			
3-U R 530+00 to 530+30										30			
4-U L 535+50 (Ramp) to 540+00								20		433			
5-U Med 534+09 to 538+50								20		421			
6-U Med 538+62 to 540+00										138			
7-U R 533+38 to 540+00								14		676			
1-G L 530+00 to 531+99											199	1	
2-G R 530+00 to 530+29											19	1	
3-G L 535+28± Ramp to 540+00											472	1	
4-G R 533+00 to 540+00											700	1	
8-D R 536+00						8.5							
9-D L/R 539+00						160							
1-R L/R As indicated													
Total to Gen. Summary	1	6.5	0.50	166	245	559	19	54	195	72	2	1420	4

For W. 150th St. Ramp Roadway Design Details, See sheet No. 52.  
 For W. 150th St. Ramp Pavement Details & Elevations, See sheet No. 63, 64 & 65.  
 For Profile of proposed 24" Sanitary Sewer see sheet No. 73.  
 For Class "A" Bedding Detail, See sheet No. 20.  
 For I-60 Centerline Control Data, See sheet No. 331.

**Estimated Quantities**

REF#	Location	L.F.	L.F.
1P	531+90	16	35
2PL	531+06	49	70
3PR	530+24	49	70
4P	535+69	20	23
5PL	535+08	58	69
6PR	533+98	49	53
<b>TOTAL</b>		<b>241</b>	<b>320</b>



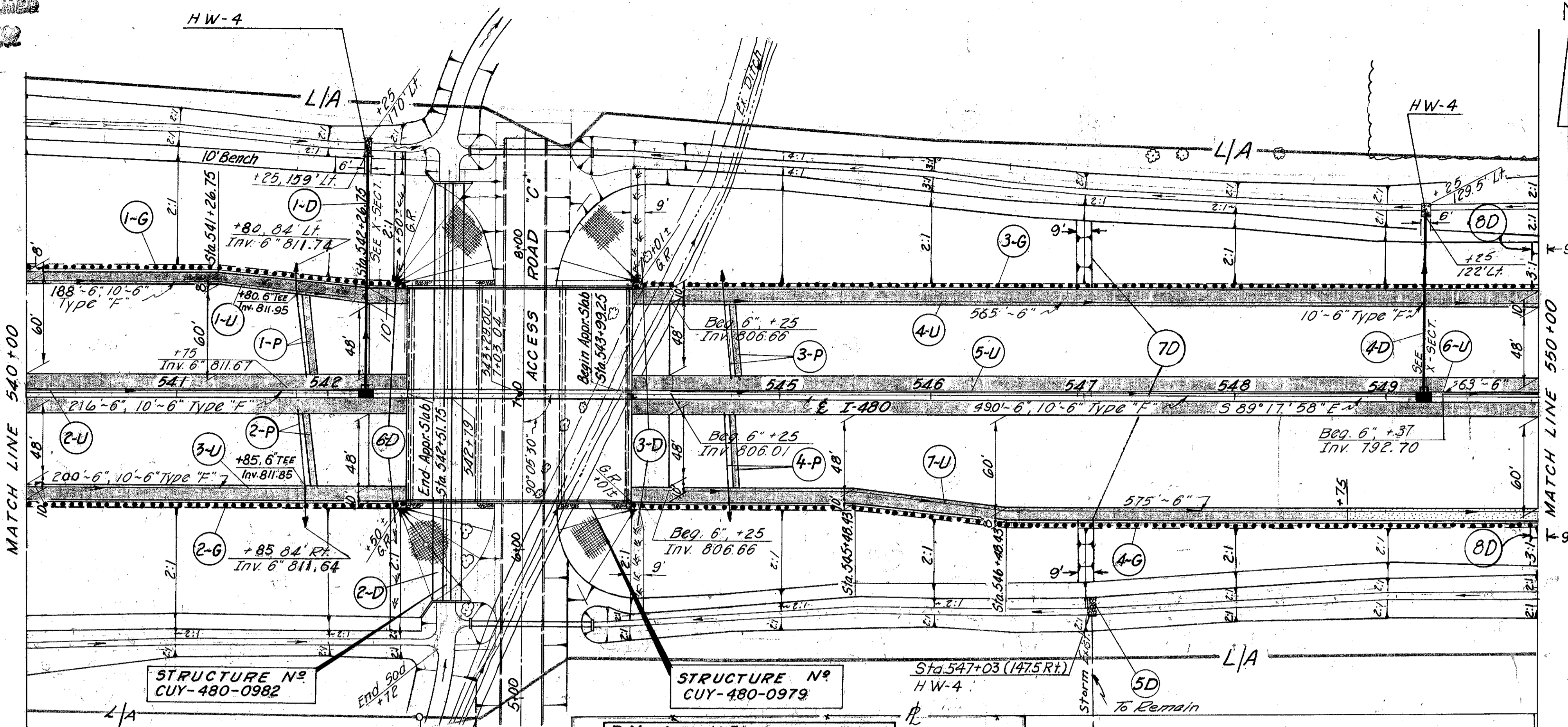
**PROPOSED STRUCTURE - RAMP**  
 TYPE: Continuous steel plate girder with reinforced concrete deck and substructure.  
 SPANS: 67'-9" 104'-0" 85'-0" 9c brgs.  
 ROADWAY: Variable f/c concrete parapets  
 LOADING: C.F. 2000 (1957) adequate for AASHO alternate loading.  
 SURFACE COURSE: Monolithic Concrete  
 SKEW: 31°-35' Left Forward  
 ALIGNMENT: Tangent  
 APPROACH SLABS: AS-1-72, Modified (25' Long) See Sheet No. 306

**PROPOSED STRUCTURE - No. CUY-480-0957**  
 TYPE: Continuous steel plate girder with reinforced concrete deck and substructure.  
 SPANS: W.B.L: 70'-0" 107'-0" 85'-0" 9c brgs.  
 E.B.L: 70'-0" 94'-0" 74'-6" 9c brgs.  
 ROADWAY: 142'-0" f/c concrete parapets with concrete barrier median.  
 LOADING: C.F. 2000 (1957) Adequate for AASHO alternate loading.  
 SURFACE COURSE: Monolithic Concrete  
 SKEW: 46°-20' Left Forward  
 ALIGNMENT: Tangent  
 APPROACH: AS-1-72, Modified (25' Long) See Sheet No. 280

**Estimated Quantities**

REF#	Description	S.Y.	S.Y.
4-D	As Indicated	79	270
6-D	As Indicated	100	455
7-D	As Indicated	90	350
5-D	As Indicated	44	
<b>Total Gen'l Sum</b>		<b>313</b>	<b>1075</b>

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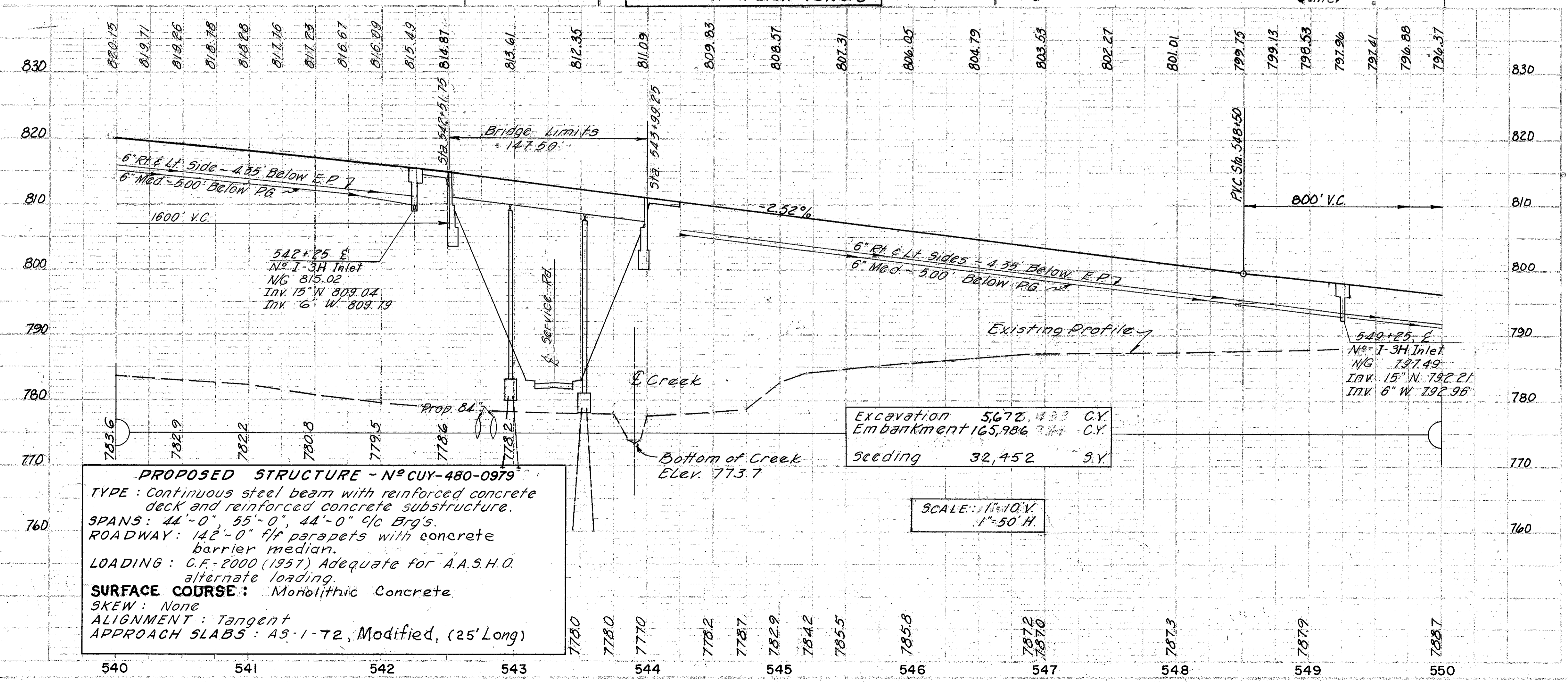
CROSS REFERENCE	
Sheet No.	Item
318	Structure
95-104	Cross Sections
20-21	Drainage Details

5 OHIO  
CUYAHOGA COUNTY  
CUY-480-8.54

ESTIMATED QUANTITIES		601	602	603	CONDUIT	667	603	605	605	604	606	660	606	
REF.#	SIDE	Location	Rock Chas. Prot. Type B w/ Bed	Concrete Masonry Type B	Type F	Type F	Seeding and Jute Matting	Berms & Branches	Berms & Branches	Shallow Underdrains	Guard Rail Type S	Reinforced Soading	Bridge Terminal Assembly Type A Storm Sewer Facilities	
			C.Y.	C.Y.	L.F.	L.F.	S.Y.	L.F.	L.F.	L.F.	L.F.	S.Y.	Eq.	
1-D	L	542+25	3.3	0.27	78								100	
2-D	L/R	542+79	56.4	71.3	564								75	
3-D	L/R	As Indicated					625					141		
4-D	L	549+25	2.5	0.27	77								104	
5-D	R	547+03	3.6	0.33									103	
6-D	L/R	As Indicated					886					156		
7-D	L/R	547+00										85		
8-D	L/R	550+00										60		
1-U	L	540+00 to 542+20							1	188				
2-U	Med	540+00 to 542+26								216				
3-U	R	540+00 to 542+26							1	200				
4-U	L	544+25 to 550+00								565				
5-U	Med	544+25 to 549+25								490				
6-U	Med	549+37 to 550+00								63				
7-U	R	544+25 to 550+00								575				
1-G	L	540+00 to 542+50									250		1	
2-G	R	540+00 to 542+50									250		1	
3-G	L	544+01 to 550+00									599		1	
4-G	R	544+01 to 550+00									599		1	
TOTALS TO GEN. SUM.			65.8	72.17	195	564	50	129	1511	2297	2	1698	442	4

BM = O.M. 1051 Approx. 26 ft. N. & Brookpark Rd. 0.7 Mi. W. of W. 130th St. Elev. = 787.018

For all Culvert Details, See Sheet No. 75.  
For Access Road "C" Roadway Design Details, See Sheets No. 53 & 54.  
For Ditch Relocation Details, See Sheet No. 72.  
For I-80, Centerline Control Data, See Sheet No. 331.



TREE REMOVAL  
540+00 to 550+00  
SIZE No.

Excavation 56,724.33 C.Y.  
Embankment 165,986.74 C.Y.  
Seeding 32,452 S.Y.

SCALE: 1" = 10' V.  
1" = 50' H.

**PROPOSED STRUCTURE - NO. CUY-480-0979**  
TYPE: Continuous steel beam with reinforced concrete deck and reinforced concrete substructure.  
SPANS: 44'-0", 55'-0", 44'-0" g/c Brg's.  
ROADWAY: 142'-0" flt parapets with concrete barrier median.  
LOADING: C.F.-2000 (1957) Adequate for A.A.S.H.O. alternate loading.  
SURFACE COURSE: Monolithic Concrete.  
SKEW: None  
ALIGNMENT: Tangent  
APPROACH SLABS: A5-1-72, Modified, (25' Long)

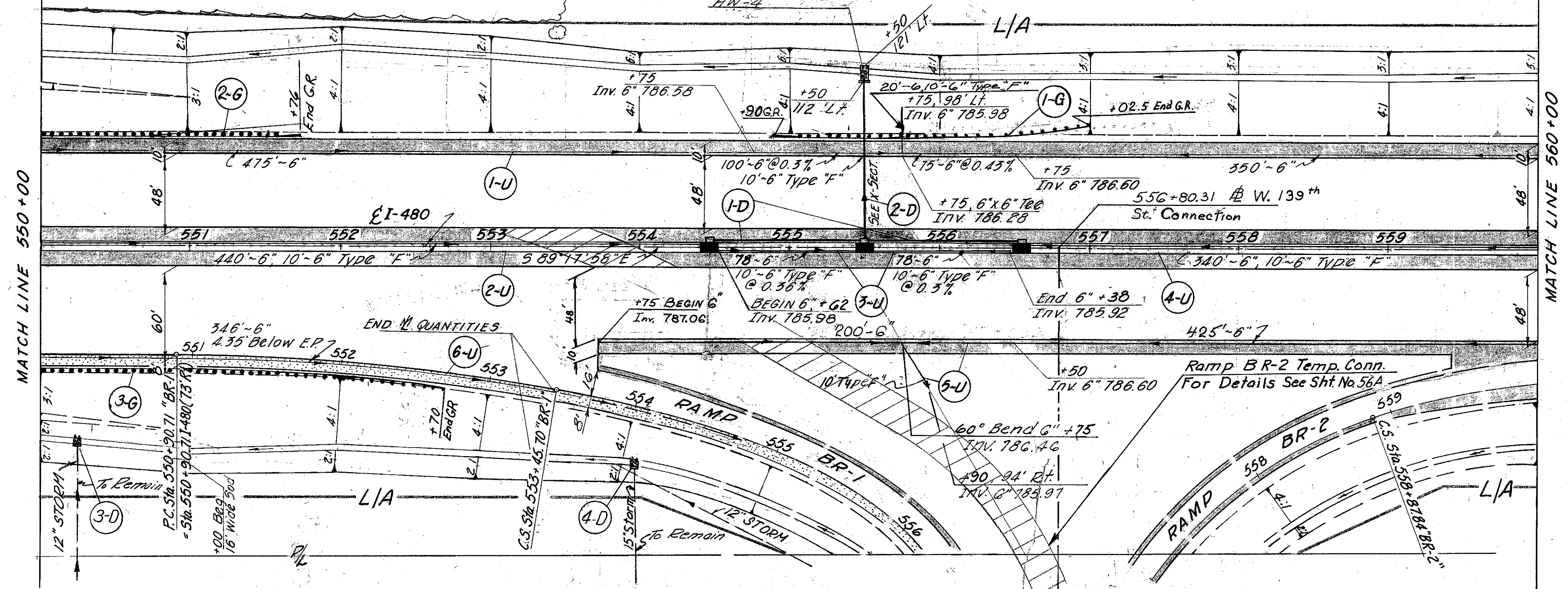
ESTIMATED QUANTITIES		SPEC. 605		
REF.#	SIDE	Location	Pressure Relief Joint, Type A	6" Shallow Underdrain
			L.F.	L.F.
1-P	Lt.	541+91	54	57
2-P	Rt.	541+85	49	52
3-P	Lt.	544+73	49	70
4-P	Rt.	544+68	49	70
TOTAL			201	249

Rev. 4-12-78

**RAMP BR-1  
CURVE DATA**  
 P.I. = 552+18.54  
 Δ = 10°11'59"  
 D = 4°00'  
 R = 1432.39'  
 T = 127.83'  
 L = 254.99'

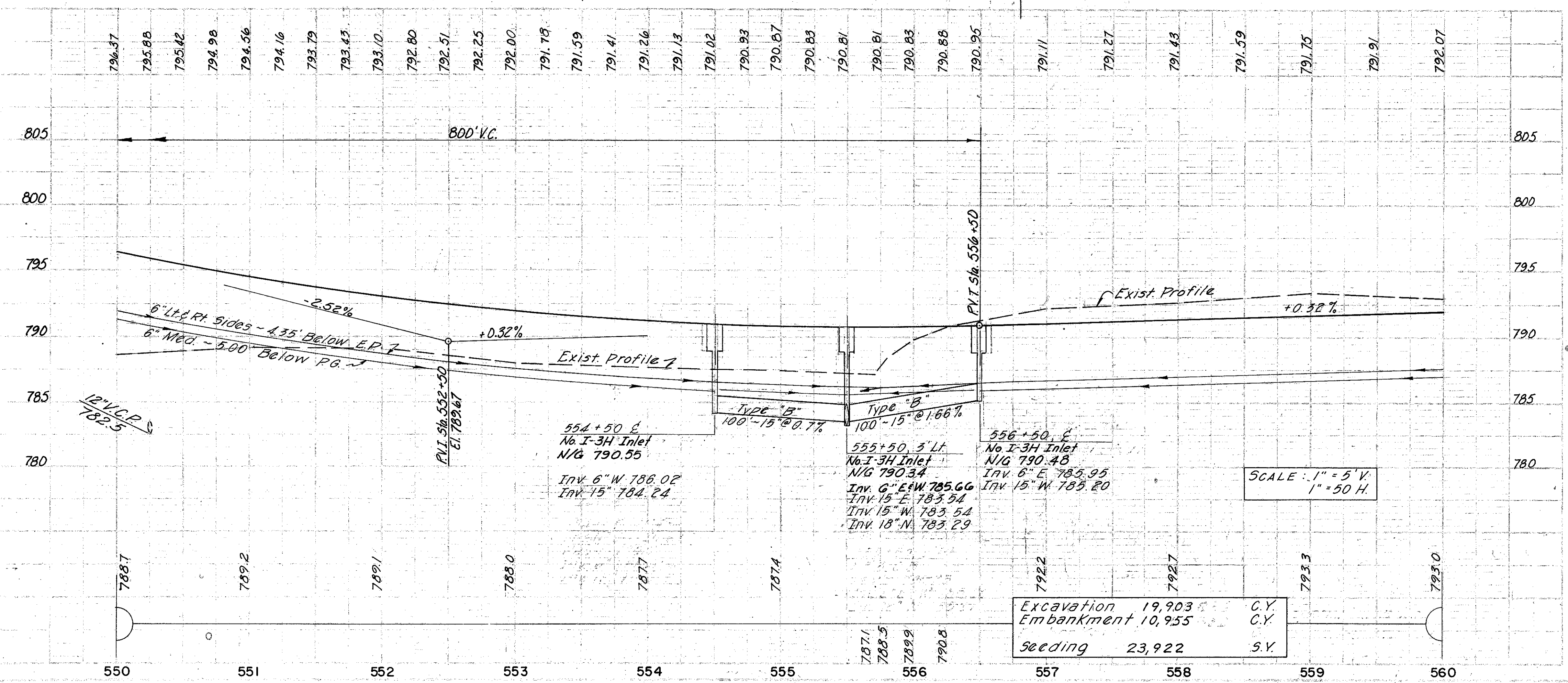
PK Nail Set  
in 3" Apple  
 I.P. (P.O.T.)  
Sta. 552+08.44  
 PK Nail Set  
in 4" Th. Apple

CROSS REFERENCE	
Sht. No.	Item
104-106	Cross Sections
20-21	Drainage Details



ESTIMATED QUANTITIES	601 602 603 CONDUIT			605 605		604		606		Storm Sewer Profile	606
	Arch Chan Prof. Type 'B' w/ Bed.	Concrete Masonry	Type 'B'	Type 'B'	Type 'F'	Branches	Manholes	Guard Rail	Storm Profile		
1-D Med 554+50 to 556+50			200								37
2-D L&P 555+50	3	.31		112							105
3-D R 550+245	3										
4-D R 553+94	3.3										
1-U L 550+00 to 560+00						1	1010				
2-U Med 550+00 to 554+50							440				
3-U Med 554+62 to 556+38							156				
4-U Med 558+50 to 560+00							340				
5-U R 553+75 to 560+00							625				
6-U R 550+00 to 553+46							346				
1-G L 554+90 to 557+02.5									1625		1
2-G L 550+00 to 551+76									151		1
3-G R 550+00 to 552+70									245		1
<b>TOTALS TO GEN. SUM.</b>	<b>33</b>	<b>.31</b>		<b>200</b>	<b>112</b>	<b>70</b>	<b>2917</b>		<b>3</b>	<b>5585</b>	<b>2</b>

For Ramps BR-1 & BR-2 Roadway Design Details, See Sheet No. 55.  
 For Ramps BR-1 & BR-2, Pavement Elevations & Pavement Details, See Sheet No's 68, 69.  
 For I-80 Centerline Control Data See Sheet No. 332.

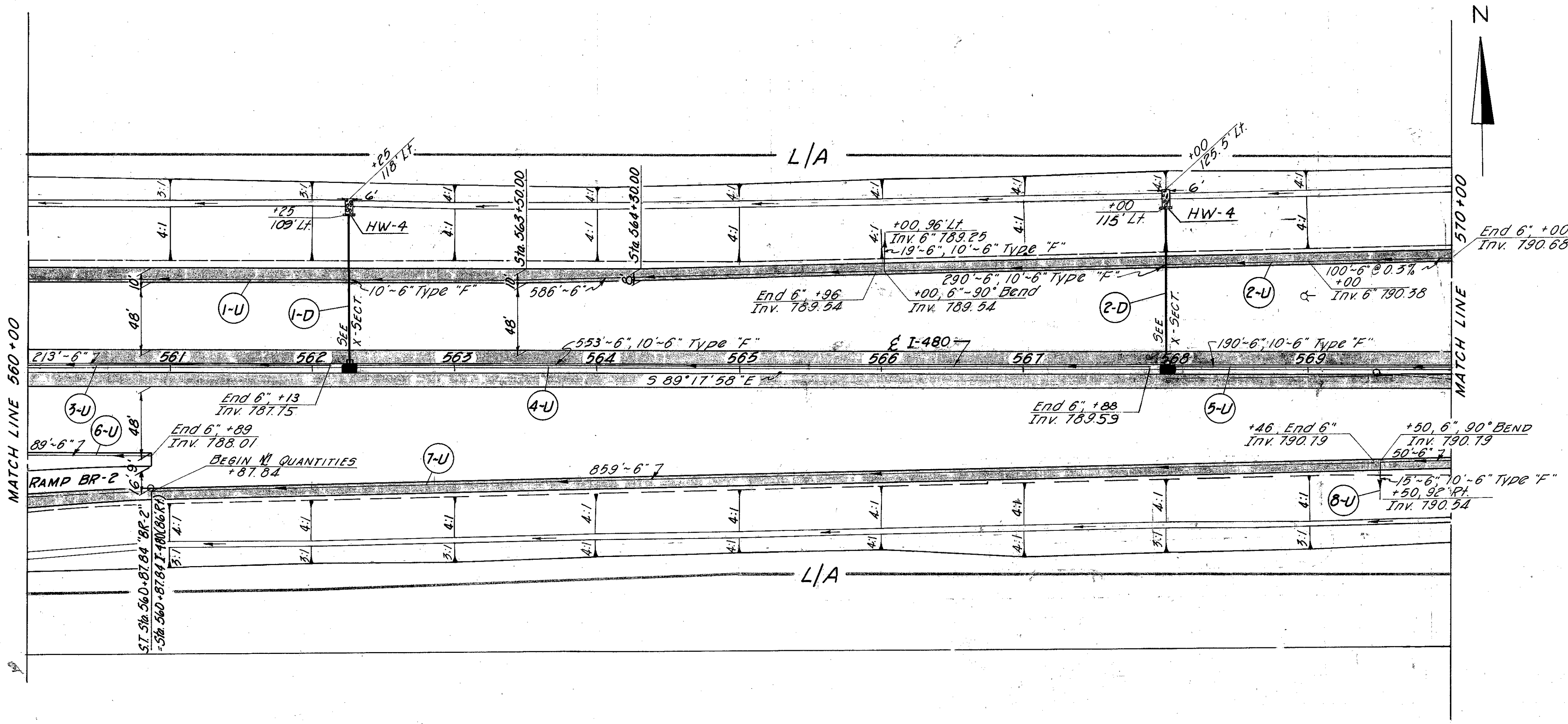


**TREE REMOVAL**  
550+00 to 560+00

SIZE	NO.

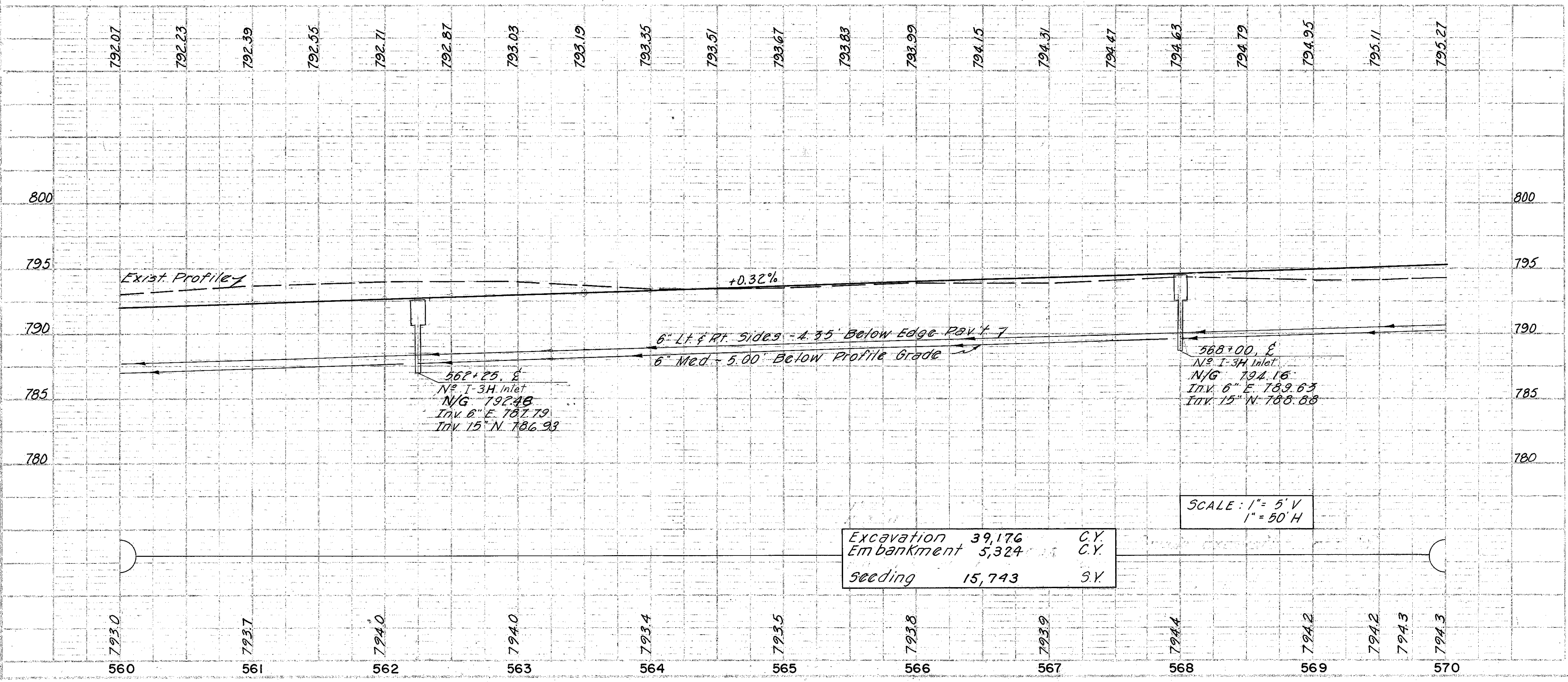
Rev. D.R.S. 1-3-78  
 FO 3-2-66  
 MS 3-7-66

CROSS REFERENCE	
Sht. No.	Item
107-109	Cross Sections
20,21	Drainage Details
39	Superelevation Table



ESTIMATED QUANTITIES	REF. SIDE	LOCATION	601 602 603 CONDUIT				605 604		Storm Sewer Profile
			Feet	Concrete	Masonry	Branches	Shallow Pipe Under	I-3H Inlet	
1-D L		562+25	3	.25	109			107	
2-D L		563+00	3.5	.25	115			108	
1-U L		560+00 to 565+96				10	586		
2-U L		566+00 to 570+00				20	1	409	
3-U Med		560+00 to 562+13						213	
4-U Med		562+25 to 567+83				10		553	
5-U Med		568+00 to 570+00				10		190	
6-U R		560+00 to 560+39						89	
7-U R		560+37.84 to 569+46						85.9	
8-U R		569+50 to 570+00				10	1	65	
TOTALS TO GEN. SUM.			6.5	.50	224	60		2964	2

For Ramp BR-2, Roadway Design Details, see Sheet No. 55  
 For Ramp BR-2, Pavement Elevations & Pavement Details, see Sheet Nos. 69-70  
 For I-80 Centerline Control Data, see Sheet No. 332.



Excavation	39,176	C.Y.
Embankment	5,324	C.Y.
Seeding	15,743	S.Y.

TREE REMOVAL	
SIZE	No.

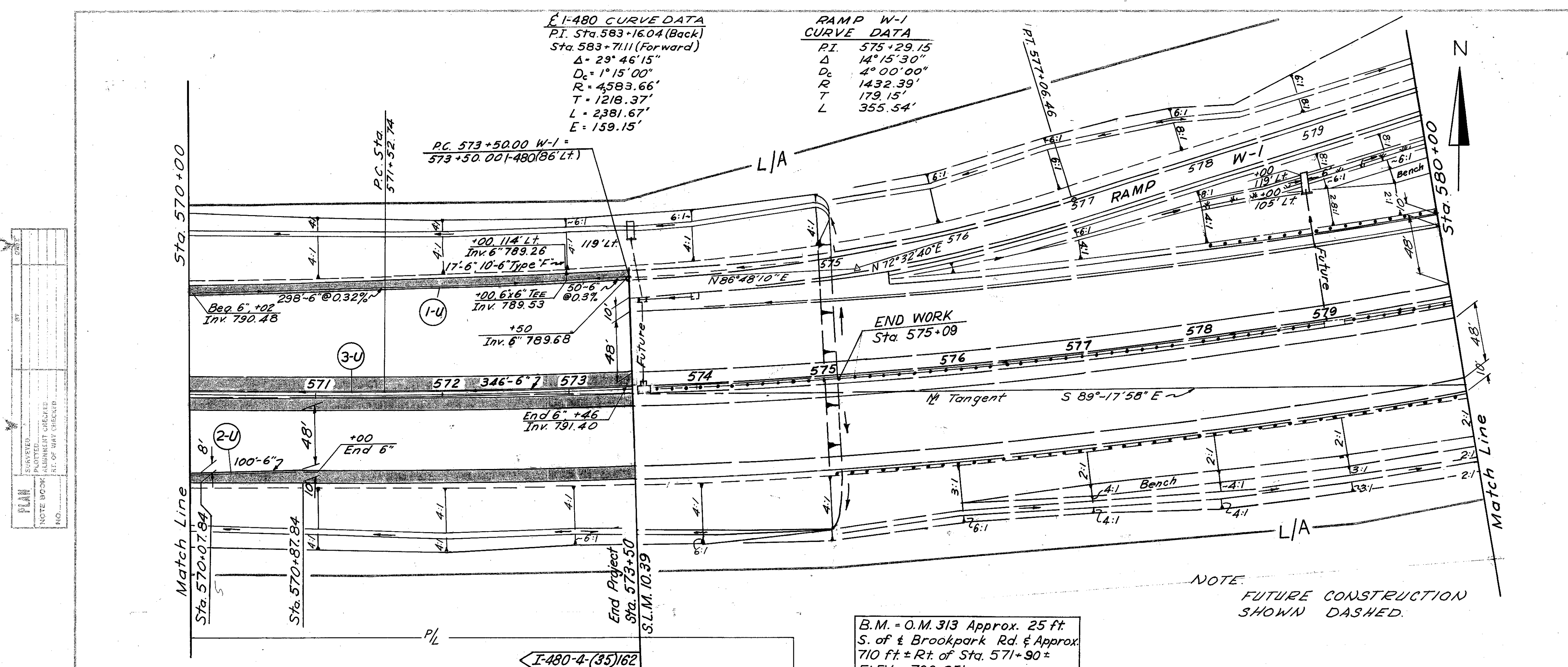
Rev. D.R.S. 1-3-78  
 F.D. 3-2-66  
 T.H.S. 3-8-66

CROSS REFERENCE	
Sheet No.	Item
109-110	Cross Sec. M.

NO.	DATE	BY	REVISION

NO.	DATE	BY	REVISION

Excavation	18,184	C.Y.
Embankment	158	C.Y.
Seeding	5,106	S.Y.



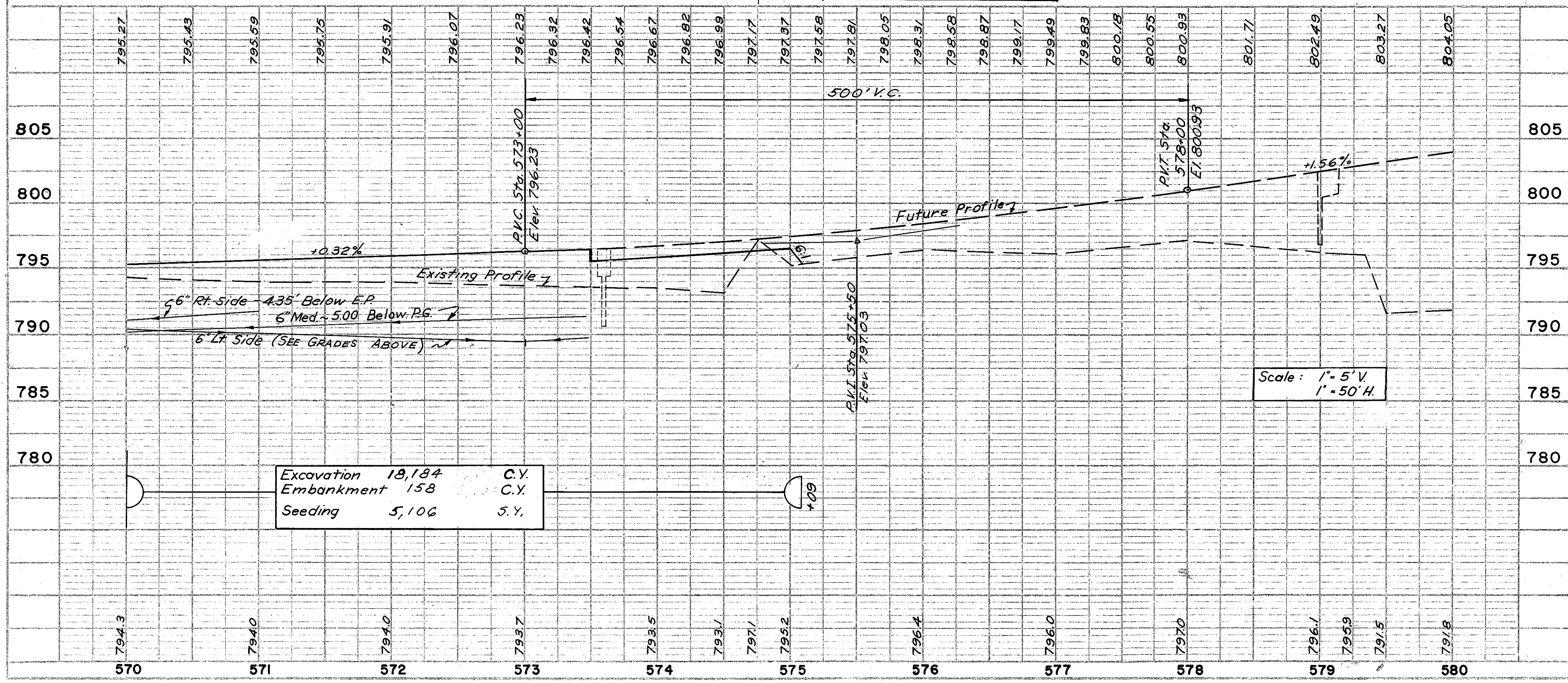
NOTE: FUTURE CONSTRUCTION SHOWN DASHED.

B.M. = O.M. 313 Approx. 25 ft S. of Brookpark Rd. & Approx. 710 ft ± Rt. of Sta. 571+90 ± ELEV. = 790.251

ESTIMATED QUANTITIES	Type F'	603	605	605
		Bends & Branches	Shallow Pipe	Under
1-U L 570+02 to 573+50	10	1	365	
2-U R 570+00 to 571+00			100	
3-U Med 570+00 to 573+46			346	
TOTALS TO GEN. SUM.	10	811		

For Ramp W-1, Roadway Design Details See Sheet No. 71  
For Ramp W-1, Pavement Elevations & Pav't. Details, See Sheet No's 71  
For I-80, Centerline Control Data, See Sheet No. 332

Rev. By D.R.S. Date 1-3-78  
CALG. BY TRB DATE 12-15-70  
CHKD. BY HJH DATE 12-21-70



SUPERELEVATION TABLES							
Dc = 1'15"00" Max. Super 0.30'/ft.							
STATION 569+25 TO STATION 575+00							
WEST BOUND		STATION		EAST BOUND			
61'Lt	37'Lt	PG		PG	37'Rt	61'Rt	
795.01	795.39	795.03	569+25	795.03	795.41	795.05	Begin
795.05	795.43	795.11	+50	795.11	795.49	795.17	Transition
795.07	795.45	795.19	+75	795.19	795.57	795.31	
795.08	795.46	795.27	570+00	795.27	795.65	795.46	
795.10	795.48	795.35	+25	795.35	795.73	795.60	
795.12	795.50	795.43	+50	795.43	795.81	795.74	
795.12	795.50	795.51	+75	795.51	795.89	795.89	
795.10	795.48	795.59	571+00	795.59	795.97	796.08	
795.05	795.43	795.67	+25	795.67	796.05	796.29	
795.01	795.39	795.75	+50	795.75	796.13	796.49	
794.97	795.40	795.83	+75	795.83	796.26	796.69	
794.92	795.41	795.91	572+00	795.91	796.41	796.90	
794.88	795.43	795.99	+25	795.99	796.55	797.10	
794.83	795.45	796.07	+50	796.07	796.69	797.31	
794.79	795.47	796.15	+75	796.15	796.83	797.51	
794.82	795.51	796.23	573+00	796.23	796.95	797.65	
794.88	795.60	796.32	+25	796.32	797.04	797.76	
794.98	795.70	796.42	+50	796.42	797.14	797.86	Begin Full
795.10	795.82	796.54	+75	796.54	797.26	797.98	Super
795.23	795.95	796.67	574+00	796.67	797.39	798.11	
795.38	796.10	796.82	+25	796.82	797.54	798.26	
795.55	796.27	796.99	+50	796.99	797.71	798.43	
795.73	796.45	797.17	+75	797.17	797.89	798.61	
795.93	796.65	797.37	575+00	797.37	798.09	798.81	



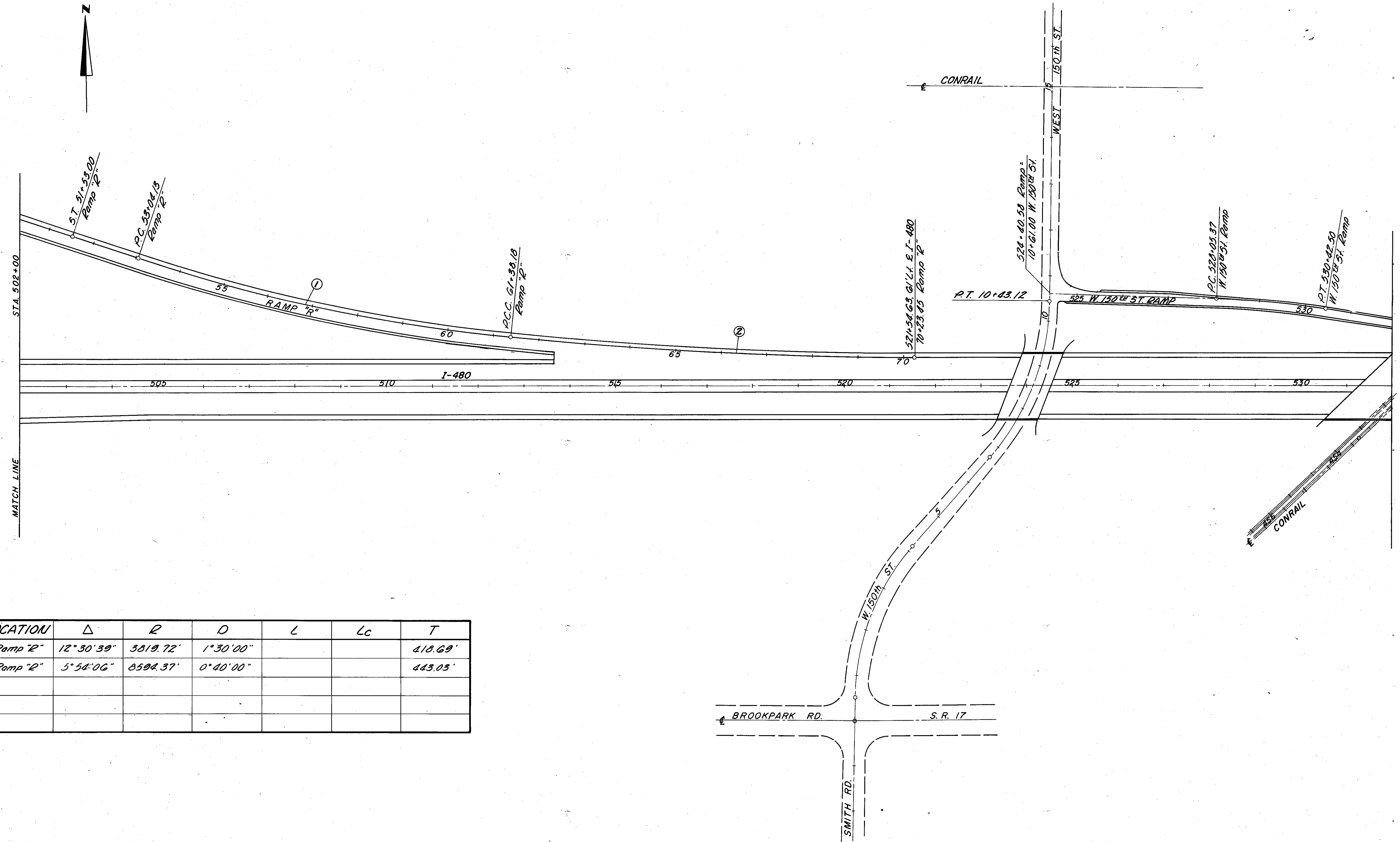


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FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

41  
346

CUYAHOGA COUNTY  
CUY-480-8.54



N <sup>o</sup>	LOCATION	Δ	R	D	L	L <sub>C</sub>	T
1	Ramp "R"	12°30'39"	3819.72'	1°30'00"			418.69'
2	Ramp "R"	5°54'06"	8594.37'	0°40'00"			443.03'

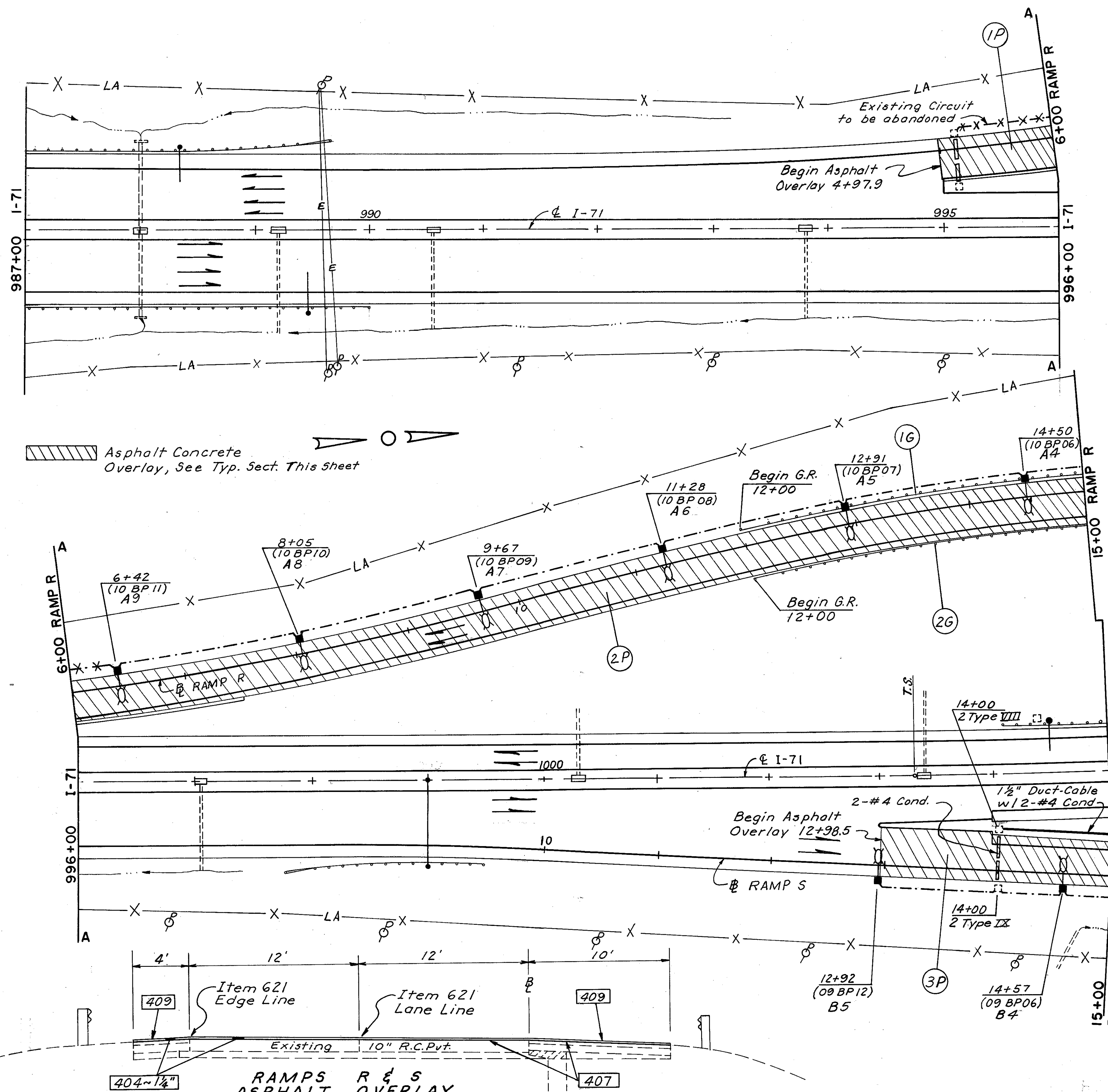
SCHEMATIC PLAN ~ I-71 INTERCHANGE (RAMPS "R", "5", & "T")

CUYAHOGA COUNTY  
CUY-480-8.54

\* NOTE: These quantities carried to the Lighting General Summary.

\* LIGHTING ESTIMATED QUANTITIES

LOCATION	605		5 625									
	L.F.	Ea.	Ea.	Ea.	Ea.	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.	
Ramp R 6+42 to 15+00		6	6	6				591				
Ramp S 12+92 to 15+00		2	2	2	200	240	197	205	2	2		
<b>TOTALS</b>		8	8	8	200	240	788	205	2	2		



Asphalt Concrete Overlay, See Typ. Sect. This Sheet

LIGHTING SYMBOLS

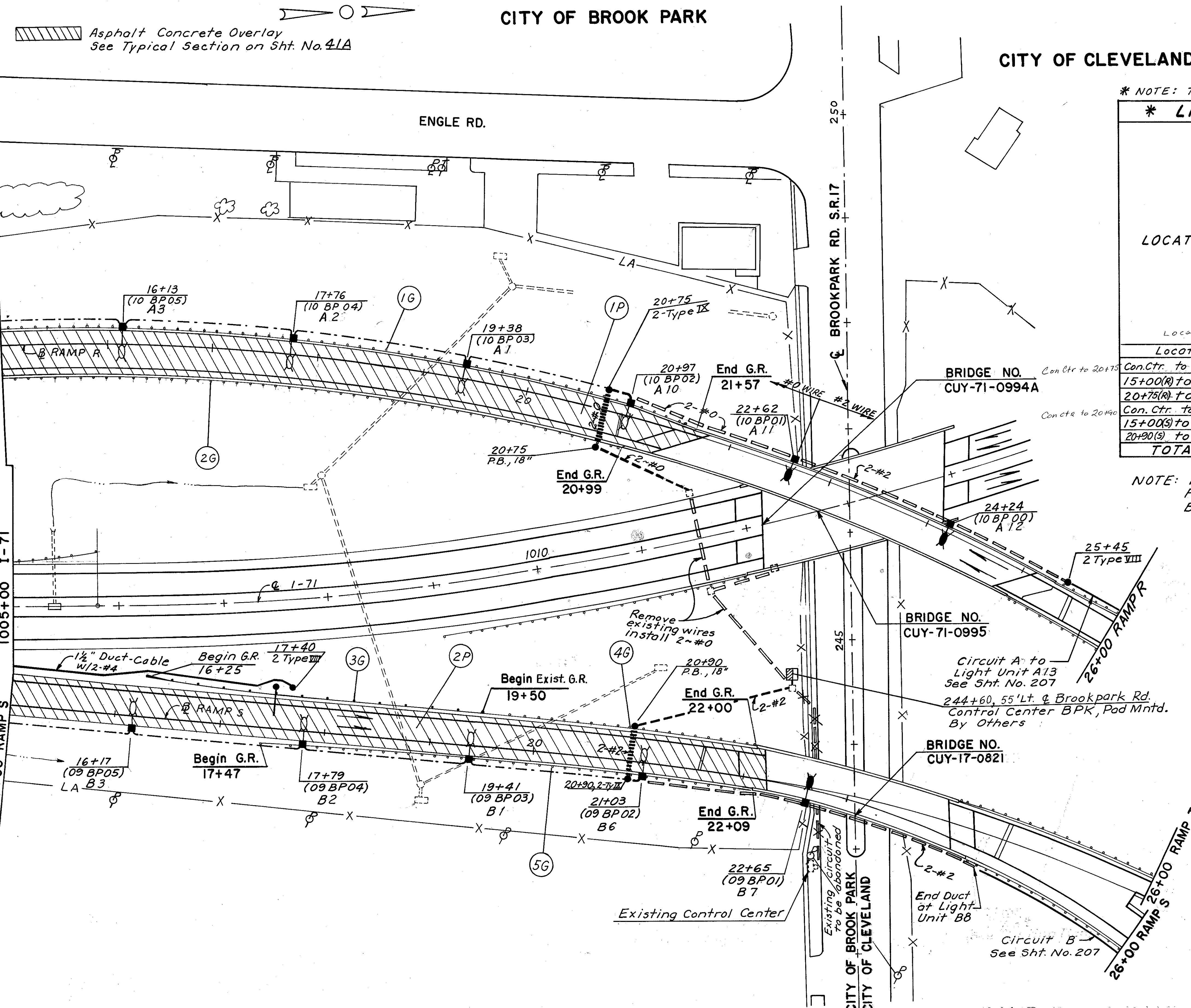
- Station (Original Ckt. No.) Prop. Ckt. No. Existing Roadway Light to be Upgraded
- Station (Original Ckt. No.) Prop. Ckt. No. Existing Structure Mounted Light
- Proposed 2" Conduit
- Existing Circuit Cable to Remain
- Proposed 3" Conduit, Jacked Under Pvt. as per plan
- Proposed 1/2" Duct-Cable 713.03 in 24" deep Trench, Cond. Size & No. Shown
- Existing Conduit, Conductor Size & Number Shown
- Existing Pullbox
- Proposed Pullbox, 18" Circular, 5713.09

≠ These quantities carried to the Traffic Control Gen. Summary.

Ref.	ROADWAY QUANTITIES	202		606	
		G.R. Removed for Reuse or Storage	G.R. Type 5 as per plan	Anchor Assembly TYPE I	
Ramp R					
16	12+00 to 15+00	300	275	1	
26	12+00 to 15+00	300	275	1	
<b>TOTALS</b>		600	550	2	

≠	PAVEMENT MARKING	621	
		Lane Lines	Edge Lines
Ramp R			
5+00 to 15+00		0.19	0.38
Ramp S			
12+98.5 to 15+00		0.04	0.08
<b>TOTALS</b>		0.23	0.46

Ref.	PAVEMENT QUANTITIES	404			407		409	
		1/4" Asphalt Concrete	Tack Coat	Cover Aggregate	Seal Coat Bituminous Material	Seal Coat Cover Aggregate No. 9		
1P	4+97.9 to 6+00	13.8	39.7	1.4	22.7	0.6		
2P	6+00 to 15+00	131.9	380.0	13.3	280.0	7.0		
3P	12+98.5 to 15+00	33.2	95.7	3.4	61.4	1.5		
<b>TOTALS</b>		179	516	18	364	9		



\* NOTE: These quantities carried to the Lighting General Summary.

		* LIGHTING ESTIMATED QUANTITIES											
		605				5 625							
LOCATION		Location											
Location	L.F.	Eq.	Eq.	Eq.	L.F.	L.F.	L.F.	L.F.	Eq.	L.F.	L.F.	L.F.	Eq.
Con. Ctr. to 20+75 (R)	30			2	100								
15+00(R) to 20+75 (R)		4	4							394			
20+75(R) to 25+45(R)	30	2	2	1	25	610	168		2	25	430		
Con. Ctr. to 20+90(S)	30			2	155	450				155		60	2
15+00(S) to 20+90(S)		4	4	1	4	240	394	245	2				
20+90(S) to 24+33(S)	15	1	1		15	760	84			15			
<b>TOTALS</b>	<b>105</b>	<b>11</b>	<b>11</b>	<b>6</b>	<b>8</b>	<b>535</b>	<b>1820</b>	<b>1040</b>	<b>245</b>	<b>4</b>	<b>295</b>	<b>1200</b>	<b>120</b>

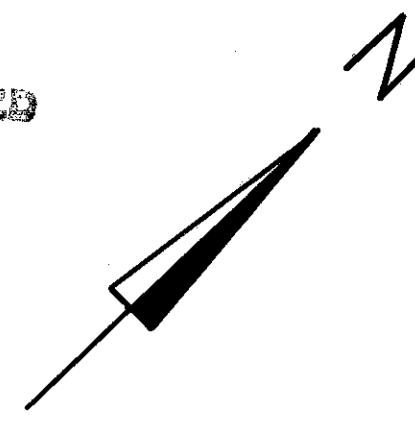
NOTE: For key to lighting symbols see sheet no. 41A.  
For continuation of Lighting Circuits north of Brookpark Road, See Sheet No. 207.

Ref.	ROADWAY QUANTITIES	202		606			
		Guard Rail Removed for Reuse or Storage	Guard Rail Type 5 as per plan	Guard Rail Type 5	Anchor Assy. Type A	Bridge Term. Assm. Type D	Bridge Term. Assm. Type F
		L.F.	L.F.	L.F.	Eq.	Eq.	Eq.
16	15+00 to 21+57	657	657				1
26	15+00 to 20+99	599	599				1
36	16+25 to 19+50			300	1		
46	19+50 to 22+00	250	250				1
56	17+47 to 22+09	462	462				1
	<b>TOTALS</b>	<b>1968</b>	<b>1968</b>	<b>300</b>	<b>1</b>	<b>2</b>	<b>2</b>

Ref.	PAVEMENT QUANTITIES	404		407		409	
		1/4" Asphalt Concrete	Tack Coat	Cover Aggregate	Seal Coat Bituminous Material	Seal Coat Aggregate No. 9	
		C.Y.	Gal.	Ton	Gal.	C.Y.	
1P	15+00 to 21+69.8	95.9	276.1	9.7	203.5	5.1	
2P	15+00 to 22+19	105.1	302.7	10.6	223.1	5.6	
	<b>TOTALS</b>	<b>201</b>	<b>579</b>	<b>21</b>	<b>427</b>	<b>11</b>	

	≠ PAVEMENT MARKING	621	
		Lane Lines	Edge Lines
		Miles	Miles
Ramp R			
15+00 to 25+11.9	0.19	0.38	
Ramp S			
15+00 to 24+00	0.17	0.34	
<b>TOTALS</b>	<b>0.36</b>	<b>0.72</b>	

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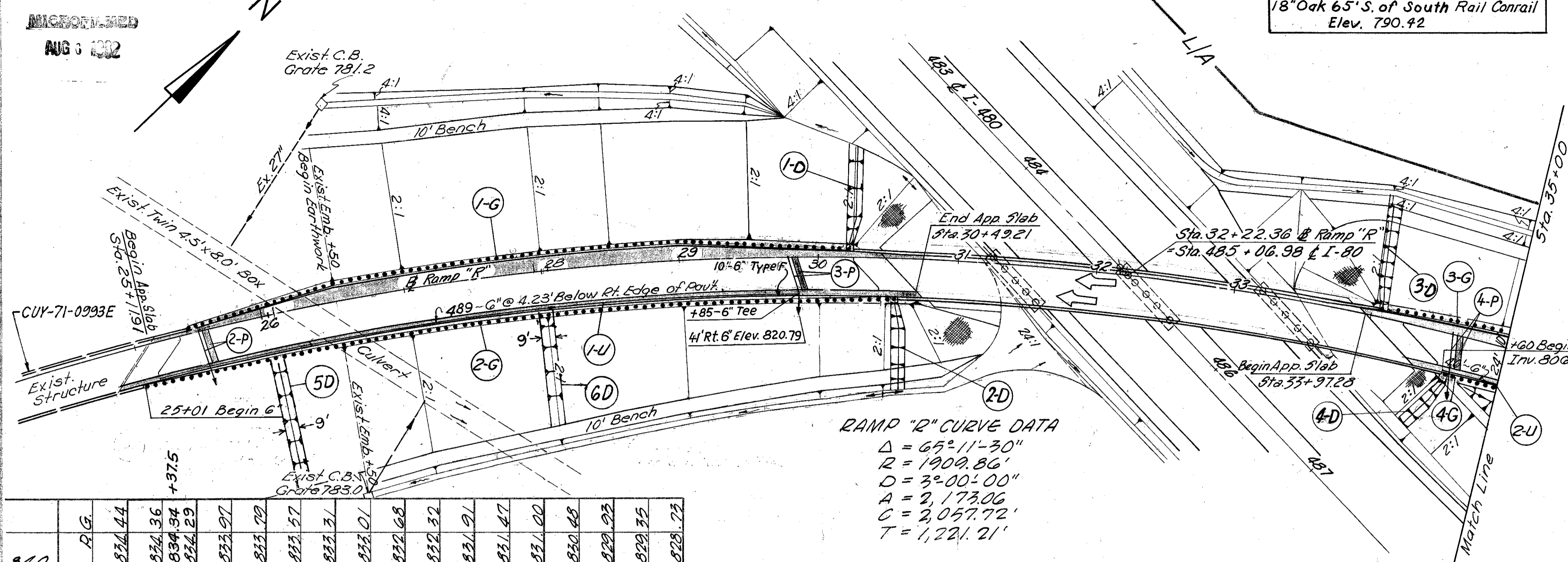
B.M. No. 79: M. Spike Set in N. Side  
18" Oak 65' S. of South Rail Conrail  
Elev. 790.42

FED. RD. DIVISION	STATE	PROJECT	TYPE
5	OHIO		

A2  
346

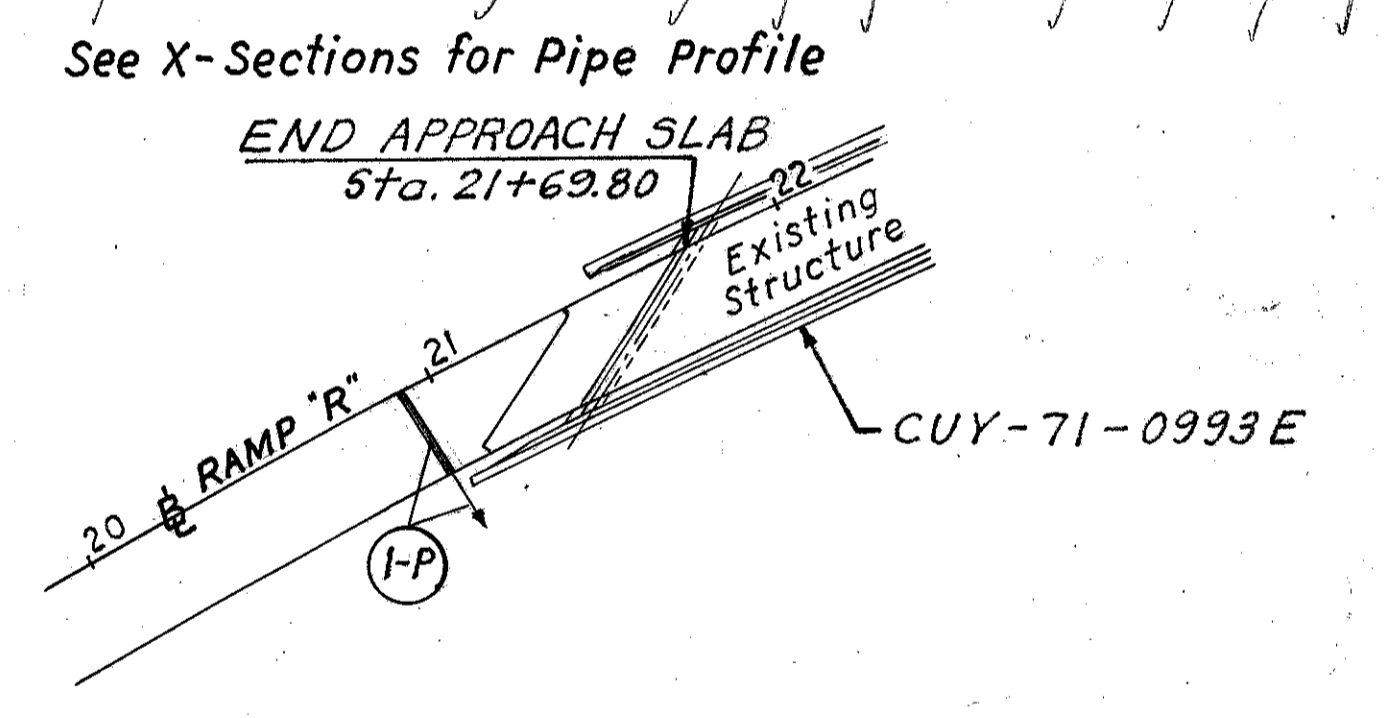
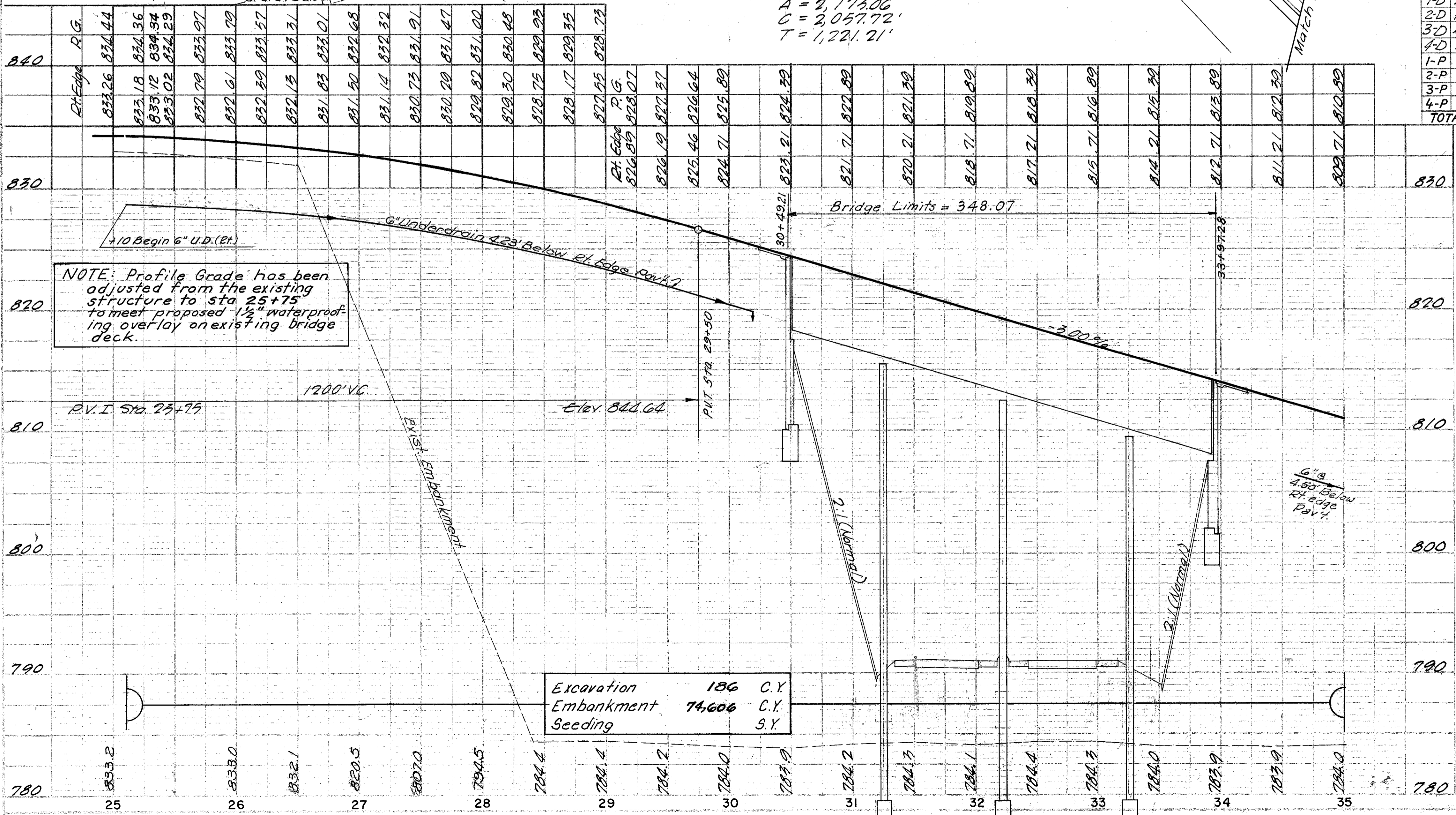
CUYAHOGA COUNTY  
CUY-480-8.54

CROSS REFERENCE	
Sht. No.	Item
III-116	Cross Sec. Ramp "R"
219	Structure



RAMP "R" CURVE DATA  
 $\Delta = 65^\circ 11' 30''$   
 $R = 1909.86'$   
 $D = 3^\circ 00' 00''$   
 $A = 2,173.06'$   
 $C = 2,057.72'$   
 $T = 1,221.21'$

ESTIMATED QUANTITIES	603	SPEC.	SPEC.	605	605	605	606	606	606	667
REF. No.	TYPE	Pressure Relief Joint, Type A	Pressure Relief Joint, Type C	Aggregate Drain	Underdrain	Bands & Branches	Guard Rail Type 5	Bridge Terminal Assembly Type A	Reinforced Seeding	Seeding
LOCATION	6" L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	S.Y.	S.Y.	S.Y.
1-U Rt. 25+01 to 30+45	10									
2-U Rt. 34+60 to 35+00					489	1				
5-D Rt. 26+00					40					100
6-D Rt. 28+00										85
1-G Lt. 25+41 to 30+17							477	2		
2-G Rt. 25+01 to 30+59							558	2		
3-G Lt. 34+07 to 35+00							93	1		
4-G Rt. 34+66 to 35+00							34	1		
1-D Lt. 30+26 ±										84 312
2-D Rt. 30+55 ±										62 350
3-D Lt. 34+08 ±										87 375
4-D Rt. 34+60 ±										27 86
1-P - 20+92			25	15						
2-P - 25+52			24			42				
3-P - 29+84			24			28				
4-P - 34+66			24			50				
TOTAL TO GEN. SUMMARY	10		72	25	15	649	1162	6	445	1123



**PROPOSED STRUCTURE No. CUY-480-0869**

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

SPANS: 72'-6", 91'-6", 103'-6", 67'-6" Beg. along @ ROADWAY: 34'-0" ft of parapets

LOADING: C.F. 2000 (1957) Adequate for A.A.S.H.O. alternate loading.

SURFACE COURSE: Monolithic Concrete

SKEW: 49° 42' 49" Rt. forward with respect to Ref. Chord.

ALIGNMENT: 3° 00' 00" Curve

APPROACH SLABS: 45'-1-72, Modified, (25' Long)

SUPERELEVATION: 0.049 ft. per ft.

REV. 5/23/86  
REL  
5/23/86

CUYAHOGA COUNTY  
CUY-480-8.54

For Tree Removal See *N* Sheets.

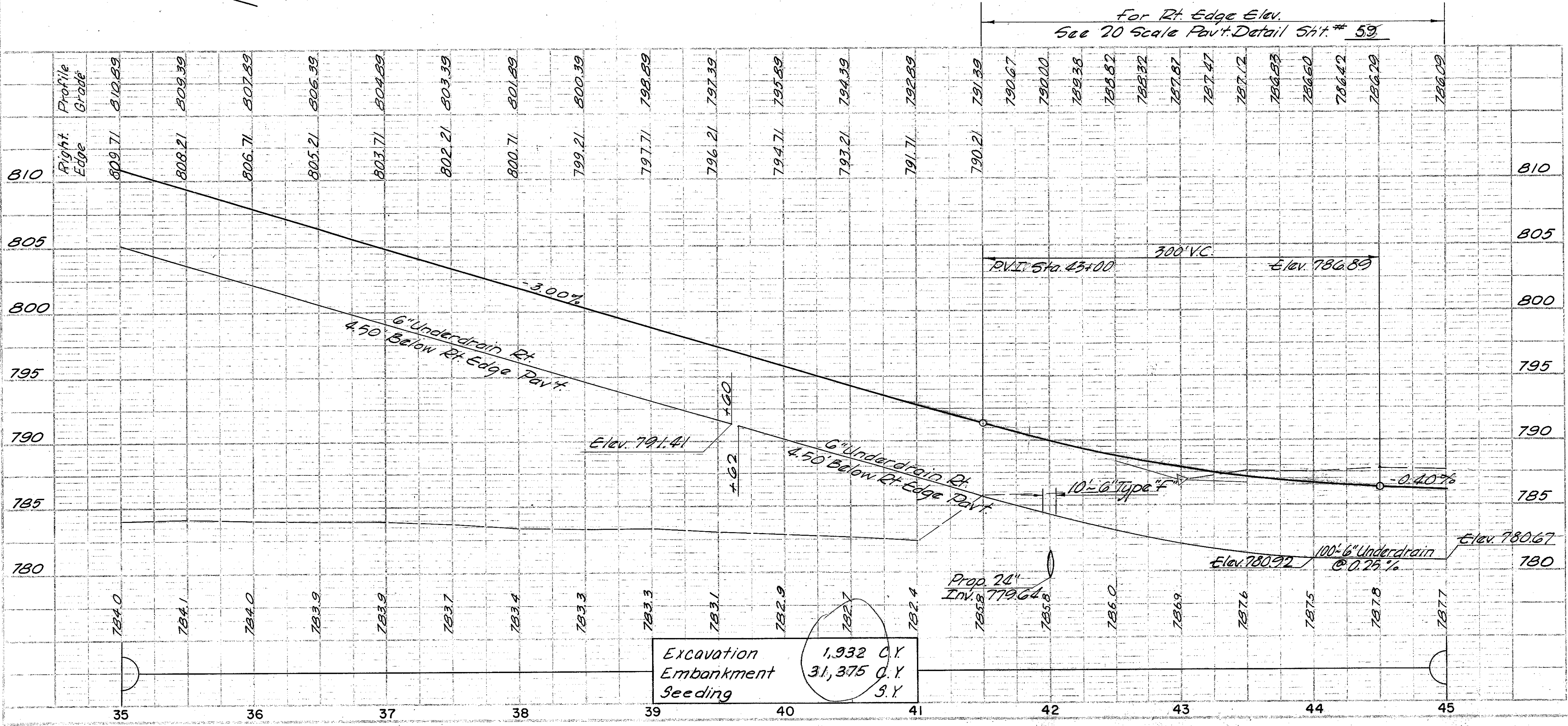
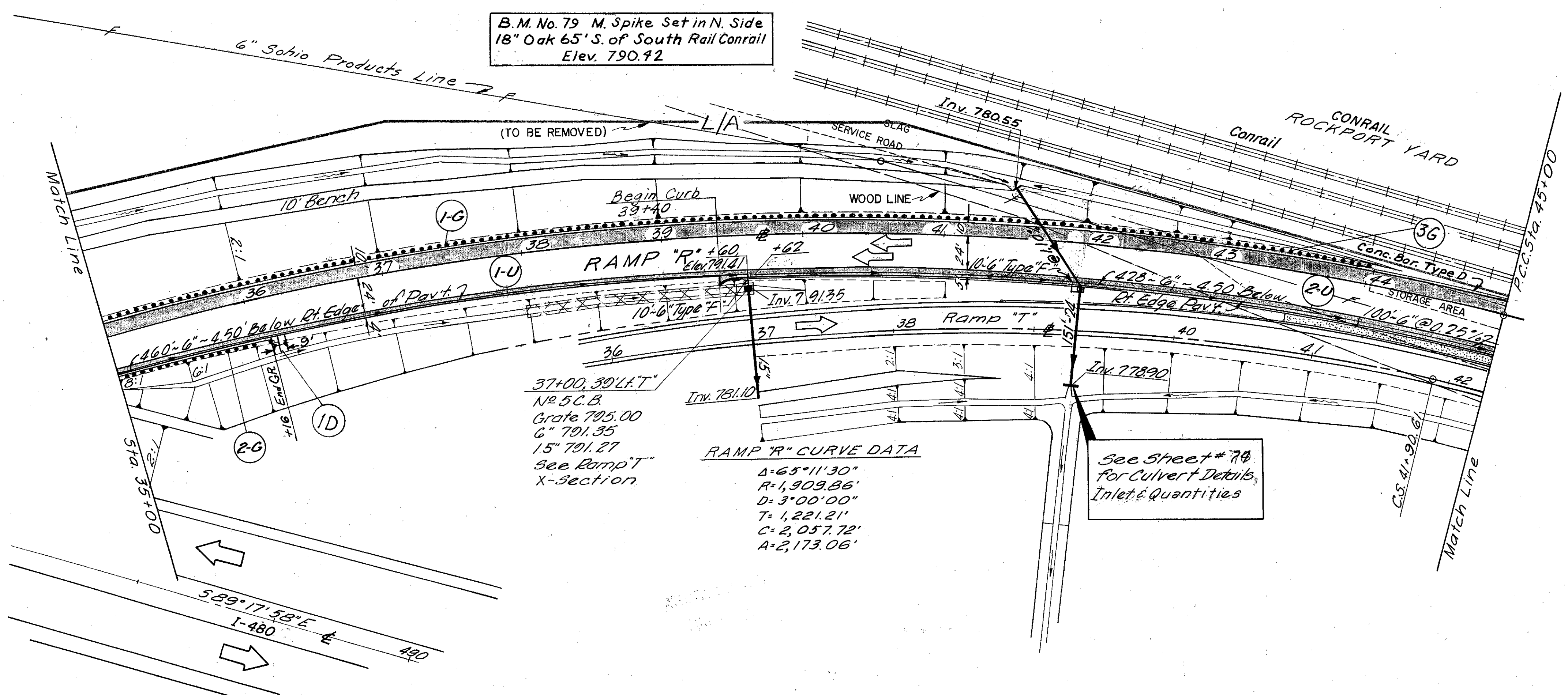
CROSS REFERENCE	
Sht. No.	Item
116-120	Cross Sections
59	Pavement Details
20-21	Drainage Details
59	Type D Barrier

ESTIMATED QUANTITIES		603	660	606	605	605	606
P&S Side	LOCATION	Type "F"	Reinforced	Sodding	Anchor	Underdrain	Barrels &
		L.F.	S.Y.	Ea.	L.F.	Barrels	Guard Rail
							Type S
1D Rt.	36+20		15				807
1-U Lt.	35+00 to 39+60	10			460	1	91
2-U Lt.	39+62 to 45+00	10			428		100
1-G Lt.	35+00 to 43+00						807
2-G Lt.	35+00 to 36+16			1			91
3G Lt.	43+00 to 44+00			1			100
Total to Gen. Sum.		20	15	2	898		998

See X-Sections for Pipe Profile

DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 IN CHARGE: \_\_\_\_\_

PROJECT: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 NO. \_\_\_\_\_



Rev. 4-12-78

EX. REV. 5/24/78

Rev. D.R.S. 3-30-78  
 REL 5/23/78  
 5/23/78

B.M. No. 78 M. Spike set in N. Side  
24' Oak 60'S. of South Rail Conrail  
Elev. 786.83

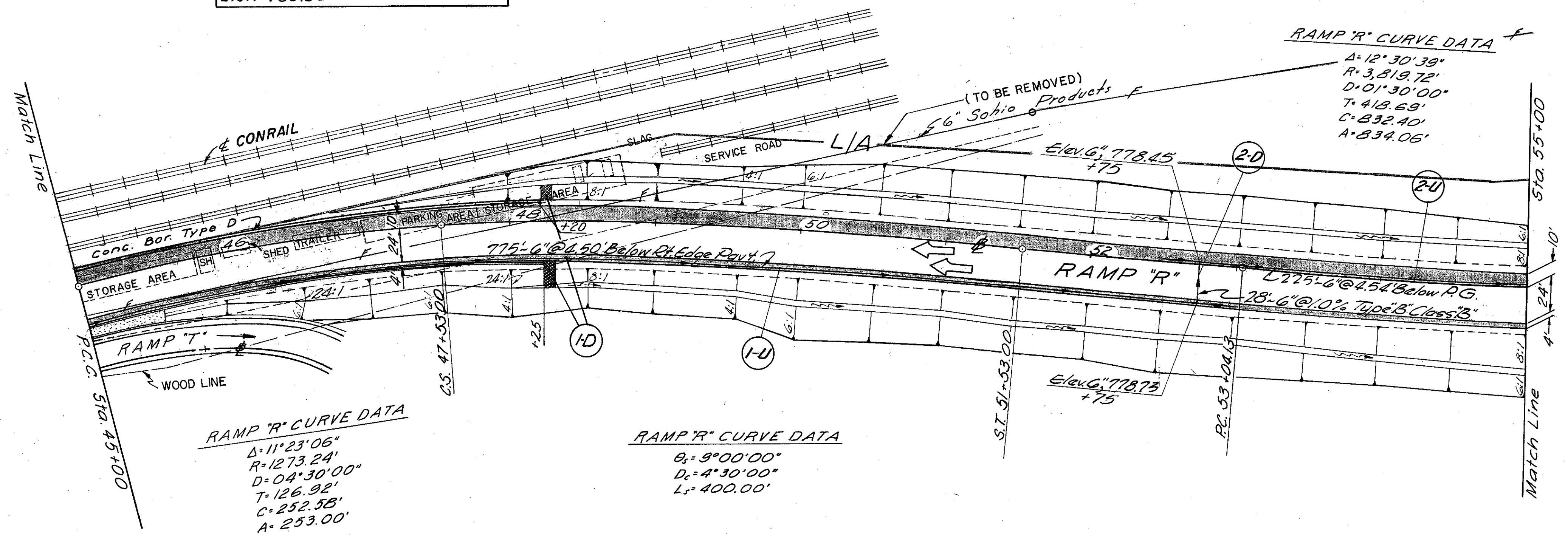
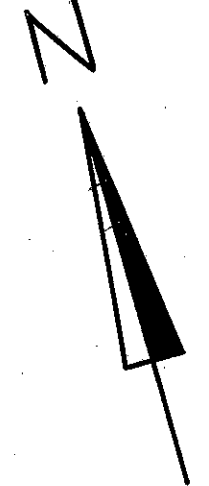
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
5	OHIO		

44  
346

CUYAHOGA COUNTY  
CUY-480-8.54

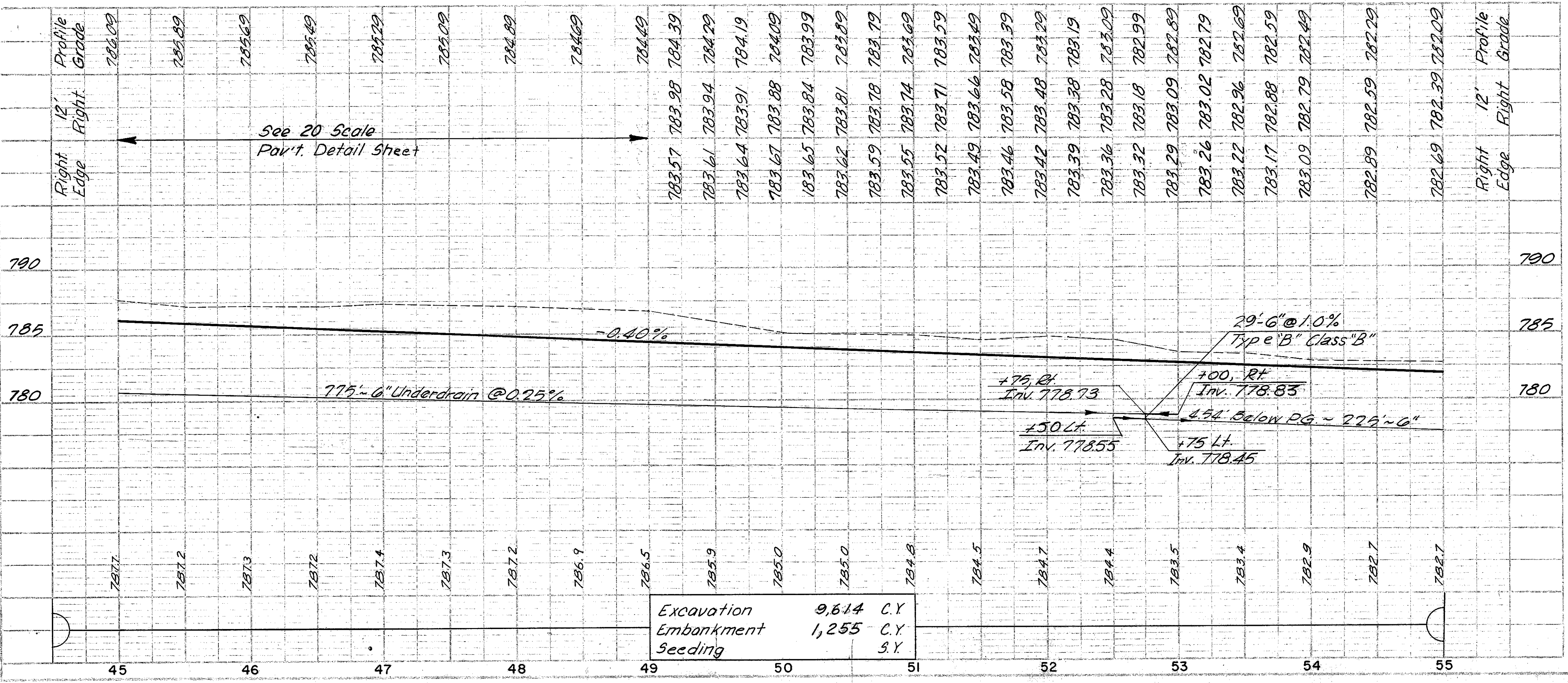
For Tree Removal See *N* Sheets.

CROSS REFERENCE	
Sht No.	Item
12-124	Cross Sections
59	Pavement Details
59	Type D Barrier



ESTIMATED QUANTITIES	603	605	605	667
LOCATION	Type B	Underdrain	Shallow	Branches
1-D Rt. 48+25				20
2-D Lt. 52+75 Dt. to Lt.	28			
1-U Rt. 45+00 to 52+75		775	1	
2-U Lt. 52+75 to 55+00		225	1	
Total to Gen Sum. 28		1000		20

See X-Sections for Pipe Profile

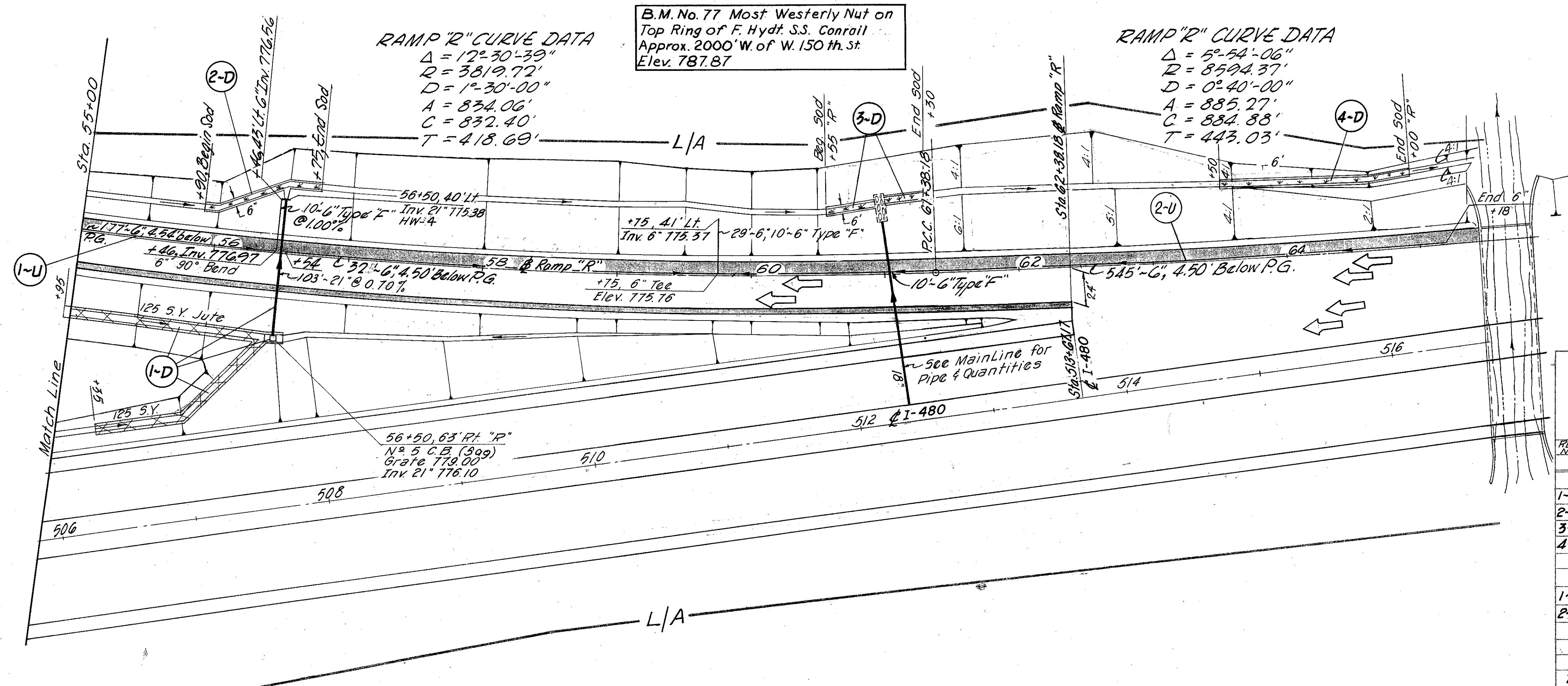


Excavation	9,614	C.Y.
Embankment	1,255	C.Y.
Seeding		S.Y.

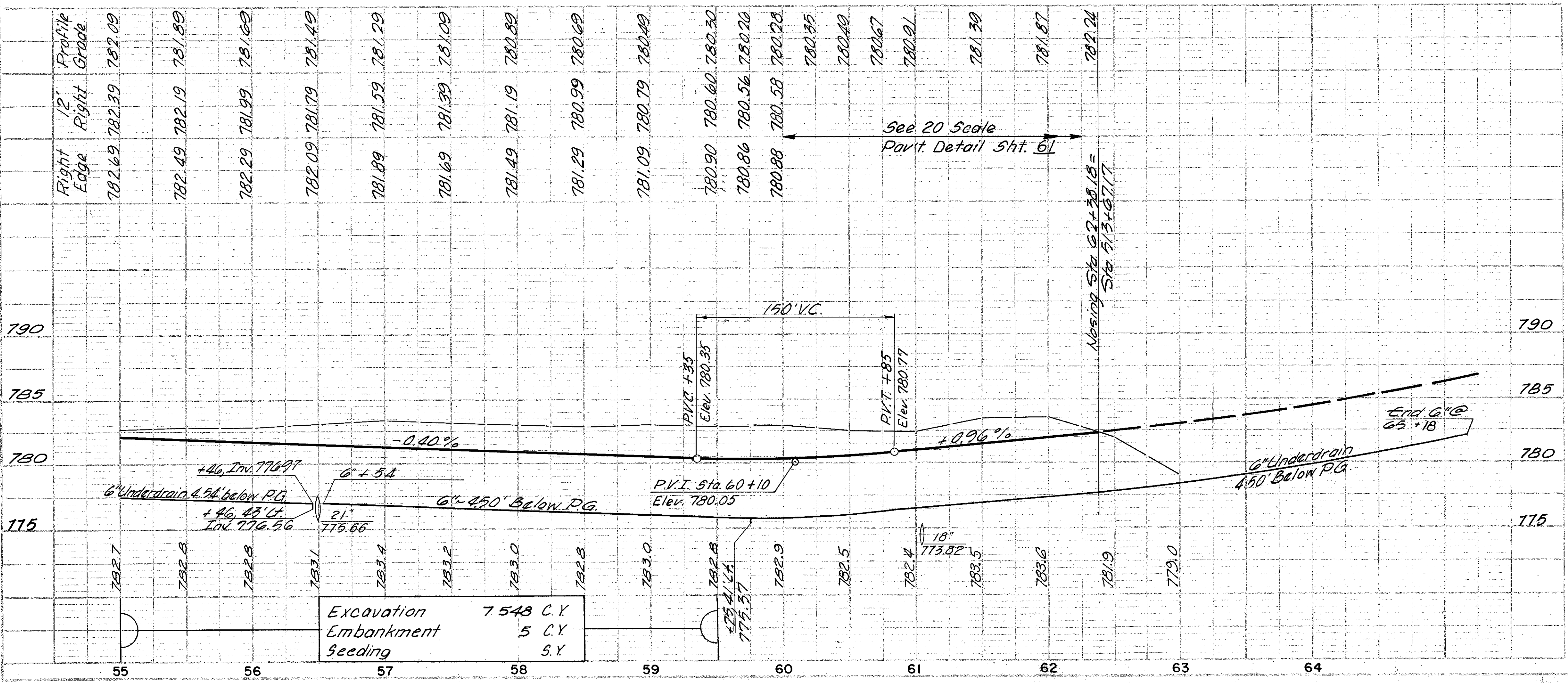
Rev. 4-12-78

Rev. D.R.S. 3-30-78  
R.E.L. 5/23/66  
F.N.K. 5-23-66  
EX. REV. 5/26/72

CROSS REFERENCE	
Sht. No.	Item
125-126	Cross Sections
20,21	Drainage Details
61	Pvmt. Details



REF. NO.	SIDE	LOCATION	ESTIMATED QUANTITIES		No. 5 Catch Basin	Underdrain Shallow Basins	Seeding & Planting	Storm Sewer Profile	
			Conc. Masonry C.Y.	Type 'F' 6" L.F.					
1-D	Rt.	54+95 to 56+50	.37	103	1		250	125	
2-D	Lt.	55+90 to 56+75					60		
3-D	Lt.	60+55 to 61+30					43		
4-D	Lt.	63+50 to 65+00					100		
1-U	Lt.	55+00 to 56+46		10		177	1		
2-U	Lt.	56+54 to 65+18		20		883	1		
TOTALS TO GEN. SUM.			.37	30	103	1	1060	250	203

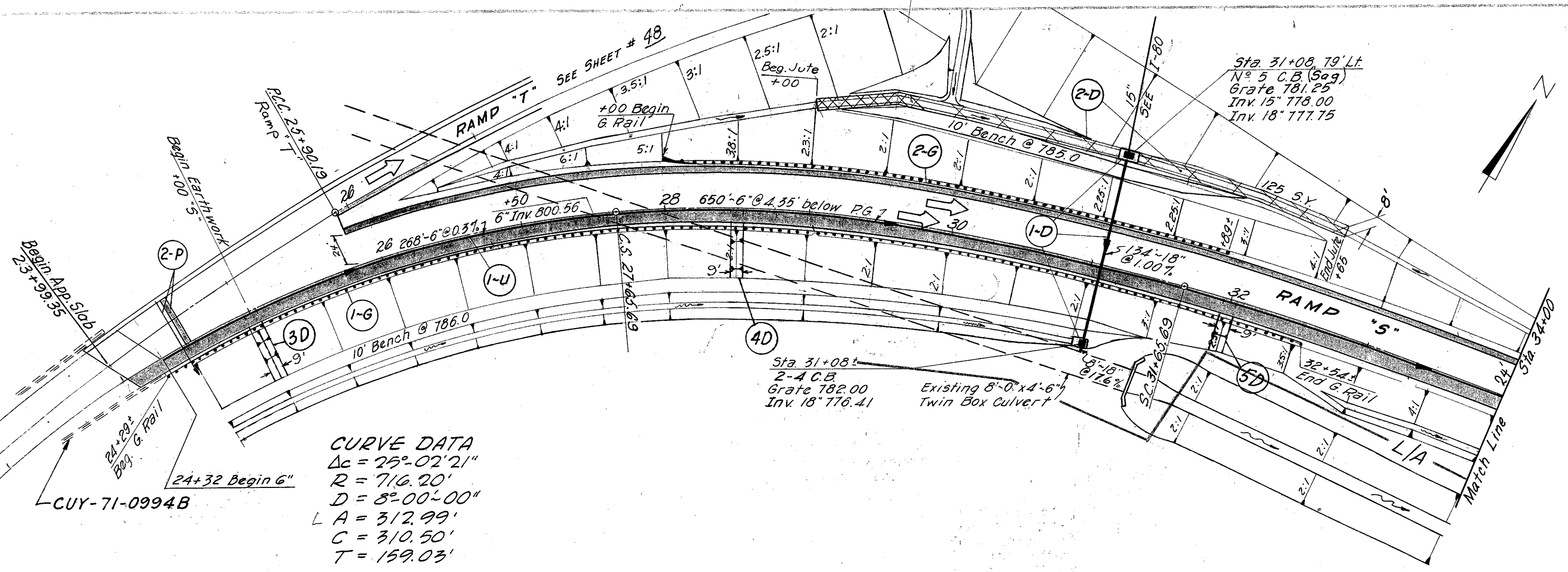


REL 5/23/66  
5-23-66

CUYAHOGA COUNTY  
CUY-480-8.54

For Tree Removal See *N* Sheets

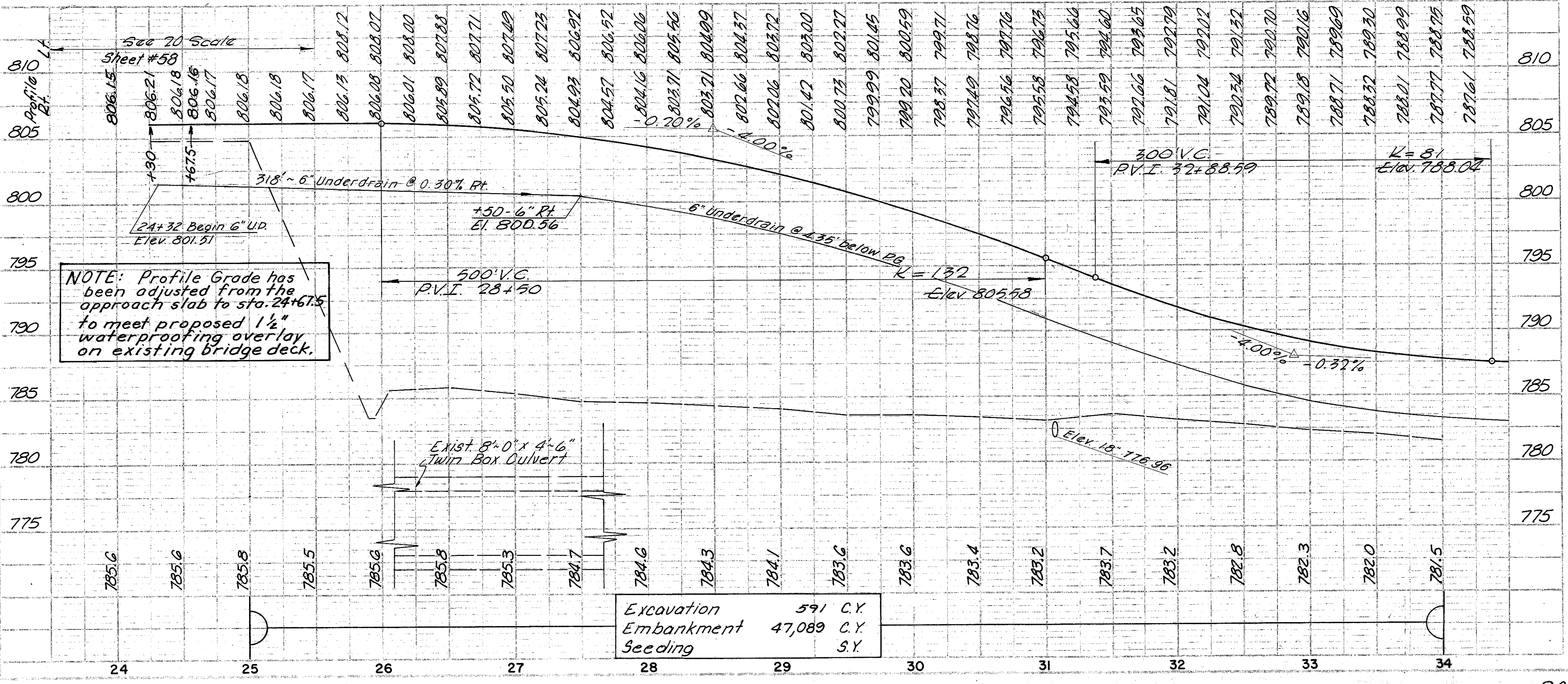
CROSS REFERENCE	
Sht No.	Item
127-122	Cross Sections
58	Pavement Details
20,21	Drainage Details



**CURVE DATA**  
 $\Delta_c = 25^\circ-02'-21''$   
 $R = 716.20'$   
 $D = 8^\circ-00'-00''$   
 $LA = 312.99'$   
 $C = 310.50'$   
 $T = 159.03'$

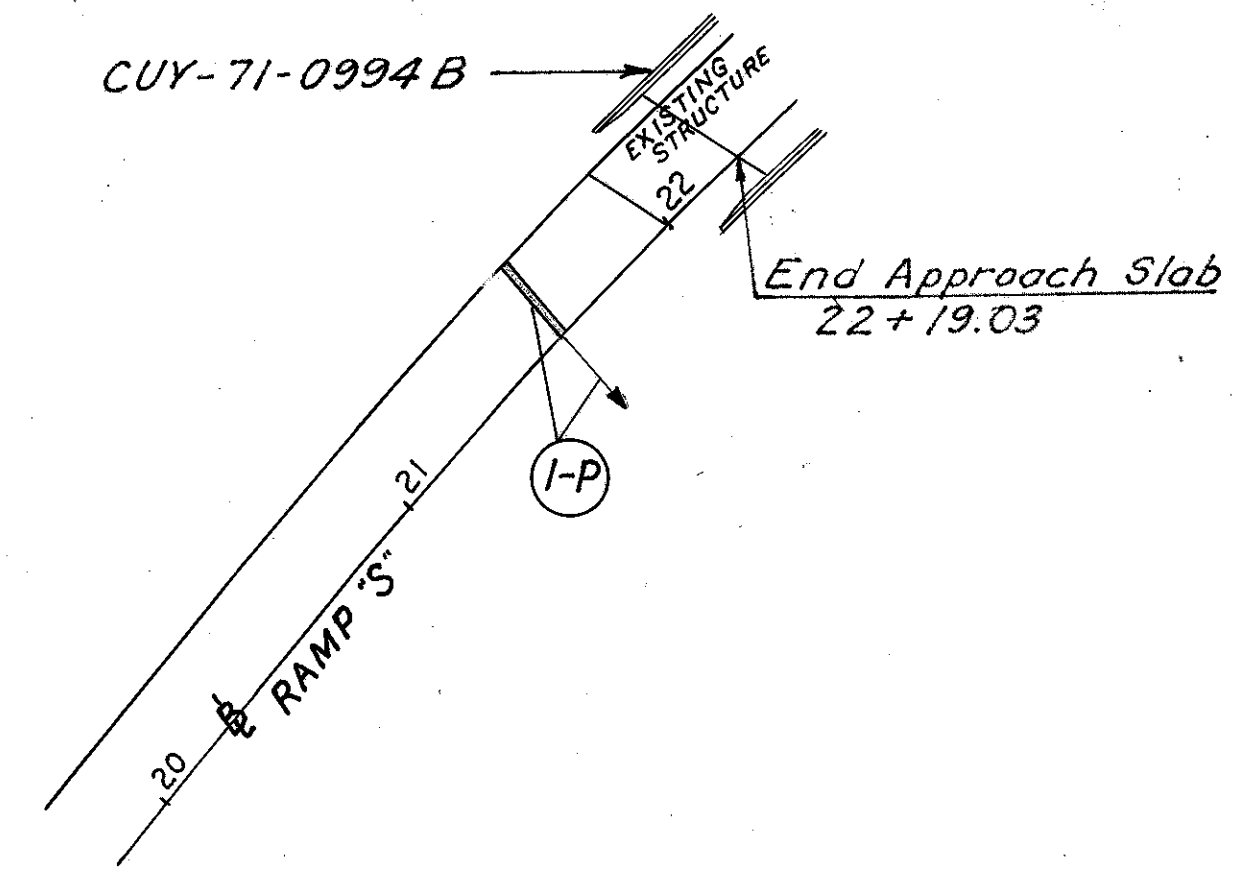
**CURVE DATA**  
 $\Delta = 15^\circ-00'-46''$   
 $R = 2291.83'$   
 $D = 2^\circ-30'-00''$   
 $A = 600.51'$   
 $C = 598.79'$   
 $T = 301.98'$

ESTIMATED QUANTITIES	REF #	SIDE	LOCATION	603		604	605	606	606	667	605	606	SPECIAL		660		
				Type C	Type D	N <sup>o</sup> 5 Catch Basin	Underdrain 6" Shallow	Guard Rail Type 5	Anchor Assy. Type A	Seeding & Muffling		Storm Sewer Profile	Aggregate Drain	Anchor Assy. Type T	Bridge Terminal Assembly Type A	Pressure Relief Joint Type A	Pressure Relief Joint Type C
				L.F.	L.F.	Ea.	L.F.	L.F.	Ea.	S.Y.	Sht #	L.F.	Ea.	Ea.	L.F.	L.F.	S.Y.
1-D L.H.P.			31+08, 19' Lt. to 63' Rt.	8	134	2					130						
2-D Lt.			29+00 to 32+65							300		25				24	
1-P			21 + 60														
2-P			24 + 53					58						36			
1-U Rt.			24+32 to 34+00				968										45
3-D Rt.			25+00														40
4-D Rt.			28+50														
1-G Rt.			24+29 to 32+54					800				1	1				
2-G Lt.			28+00 to 31+89					358	1			1					
5-D Rt.			32+00														30
<b>TOTALS TO GEN. SUM.</b>				8	134	2	1026	1158	1	300		25	2	1	36	24	115



NOTE: Profile Grade has been adjusted from the approach slab to sta. 24+67.5 to meet proposed 1/2" waterproofing overlay on existing bridge deck.

Excavation	591 C.Y.
Embankment	47,089 C.Y.
Seeding	S.Y.



Rev. D.R.S. 3-30-78  
 G.P.S. 5/5/66  
 CHD. BY T.L.S. 5/23/68

Rev. 4-12-78





MICROFILMED  
AUG 6 1982

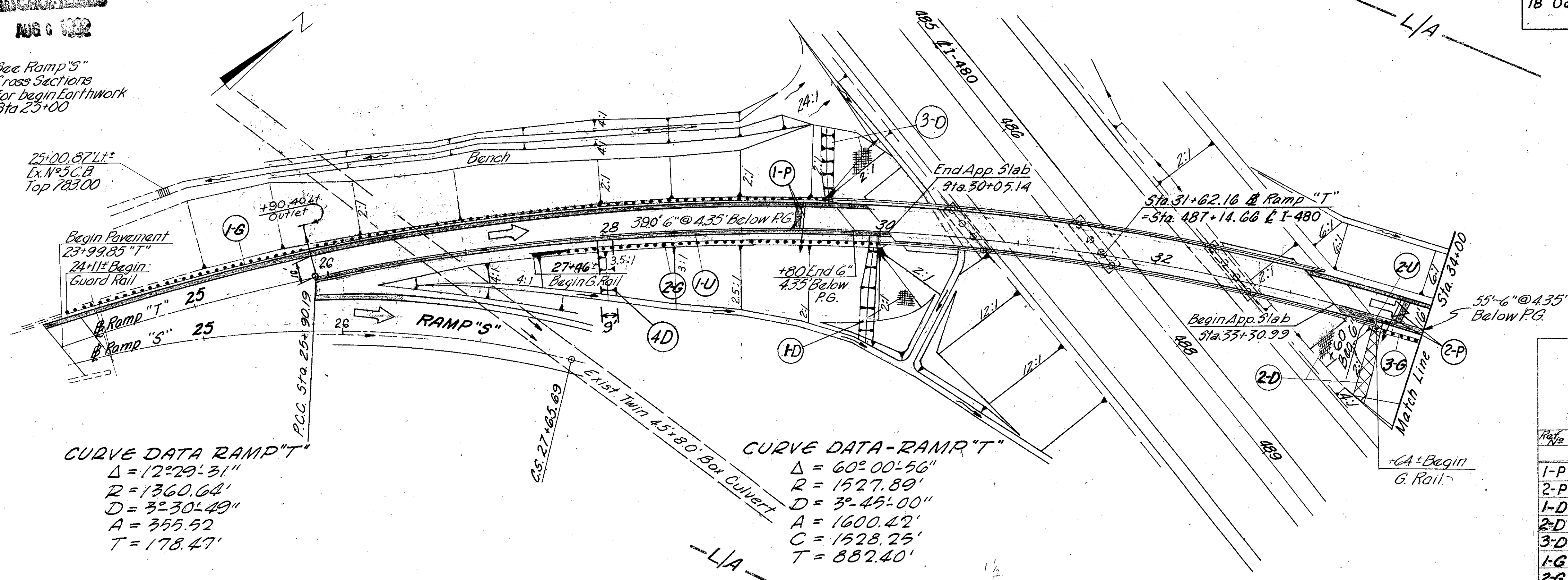
See Ramp "S"  
Cross Sections  
for begin Earthwork  
Sta 23+00

B. M. No. 79 M. Spike Set in N. Side  
18" Oak 65' S. of South Rail Corral  
Elev. 790.42

PROJECT NO.	STATE	PROJECT	TYPE
5	OHIO		BRIDGE

CUYAHOGA COUNTY  
CUY-480-854

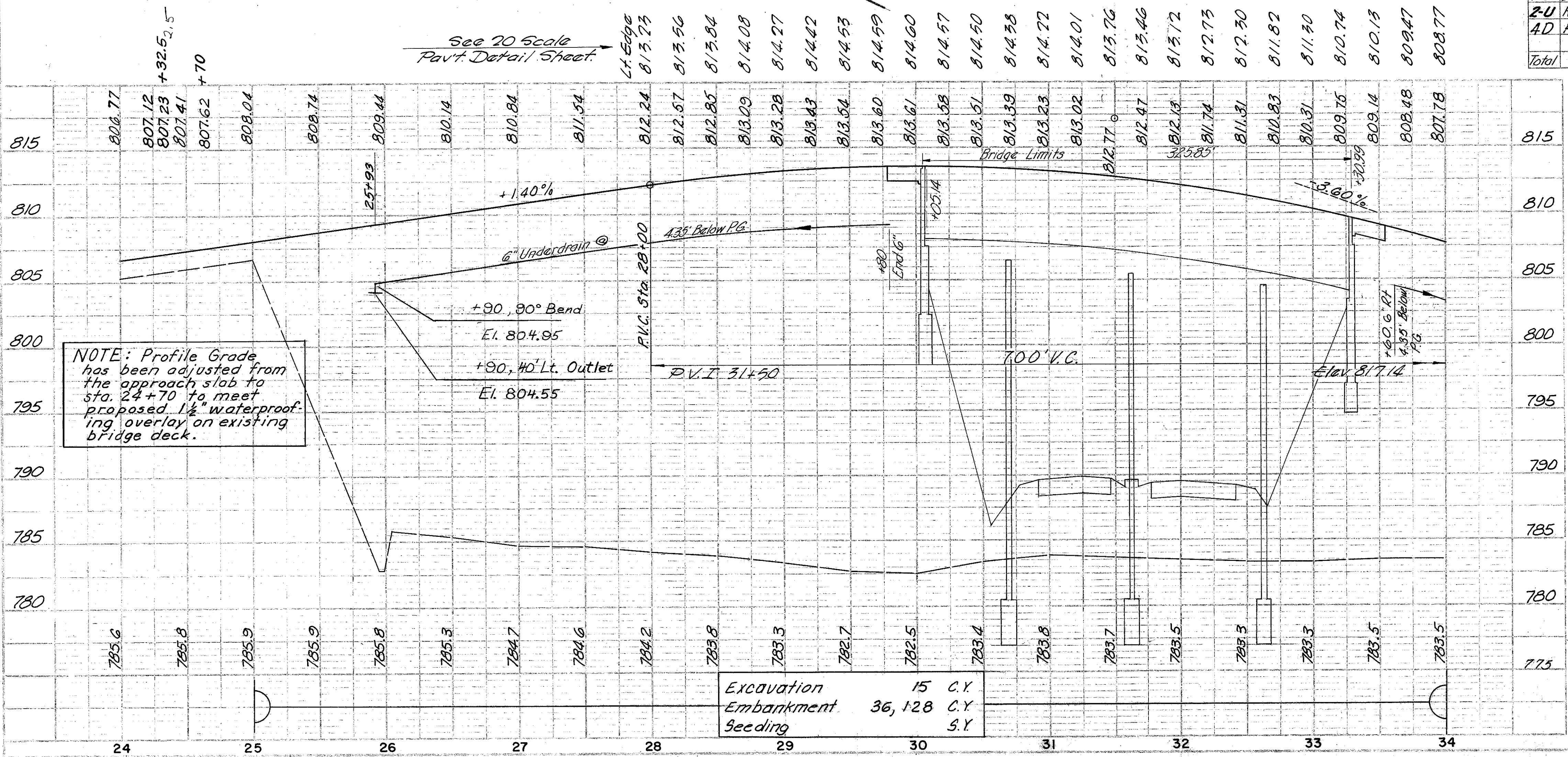
CROSS REFERENCE	
Sht. No.	Item
127-137	Cross Sections
58	Pavement Details
235	Structure



**CURVE DATA RAMP "T"**  
 $\Delta = 12^{\circ}29'31''$   
 $R = 1360.62'$   
 $D = 3^{\circ}30'49''$   
 $A = 355.52'$   
 $T = 178.47'$

**CURVE DATA-RAMP "T"**  
 $\Delta = 60^{\circ}00'56''$   
 $R = 1527.89'$   
 $D = 3^{\circ}45'00''$   
 $A = 1600.42'$   
 $C = 1528.25'$   
 $T = 882.40'$

ESTIMATED QUANTITIES	Type F	Type B	SPEC.	603		606		605		606		667		660	
				L.F.	L.F.	Ea.	Ea.	L.F.	L.F.	L.F.	S.Y.	S.Y.	S.Y.	S.Y.	
1-P			Pressure Relief Joint, Type A												
2-P															
1-D															
2-D															
3-D															
1-G															
2-G															
3-G															
1-U															
2-U															
AD															
Total	To Gen. Summary	10 30	32	1	4	496	822	683	223						



**STRUCTURE NO. CUY-480-0873**  
 TYPE: Continuous steel girder with reinforced concrete deck and substructure  
 SPANS: 61'-0", 93'-0", 100'-0", 65'-0" % Brg.  
 ROADWAY: 28'-0" fl. concrete parapets  
 LOADING: C.F. - 2000 (1957) Adequate for A.A.S.H.O. alternate loading  
 SURFACE COURSE: Monolithic Concrete  
 SKEW: 47° - 56' - 21" Rt. Forward with respect to Reference Chord  
 ALIGNMENT: 3° - 45' - 00" Curve  
 APPROACH SLABS: 45'-1'-72, Modified (25' Long)  
 SUPERELEVATION: 0.062 ft per ft.

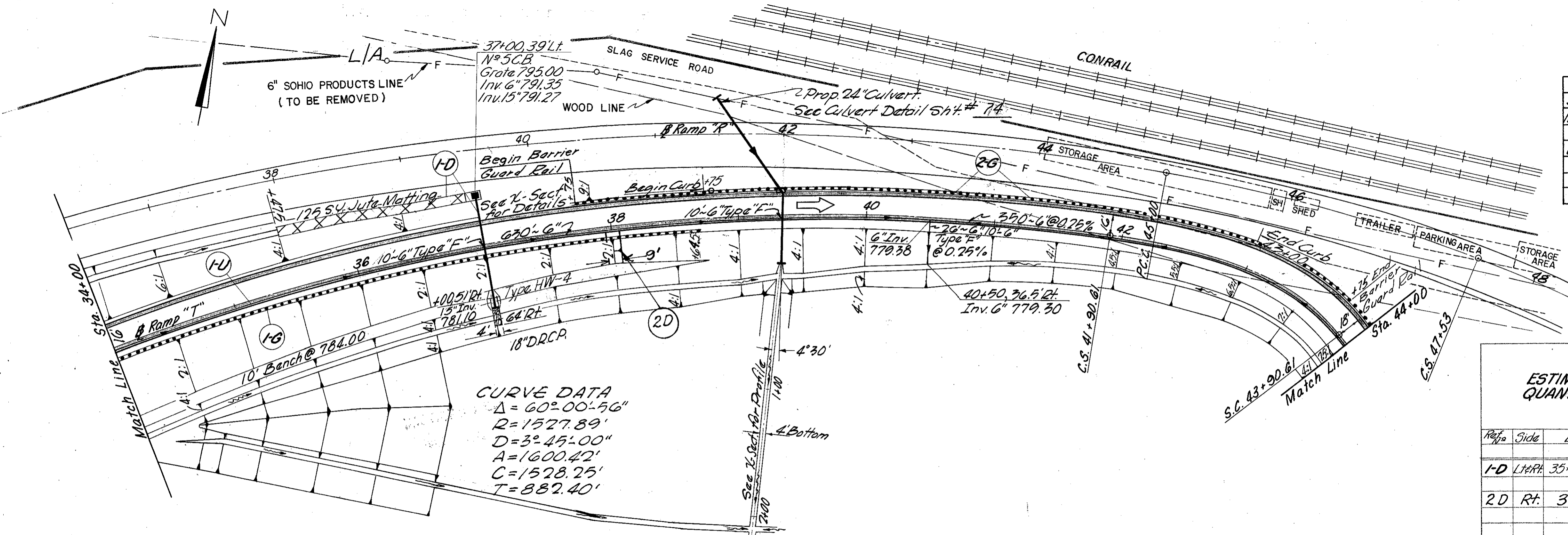
Excavation	15	C.Y.
Embankment	36, 128	C.Y.
Seeding		S.Y.

Rev. D.R.S. 3-30-78  
 R.E.L. 5/5/66  
 T.S. 5/20/66

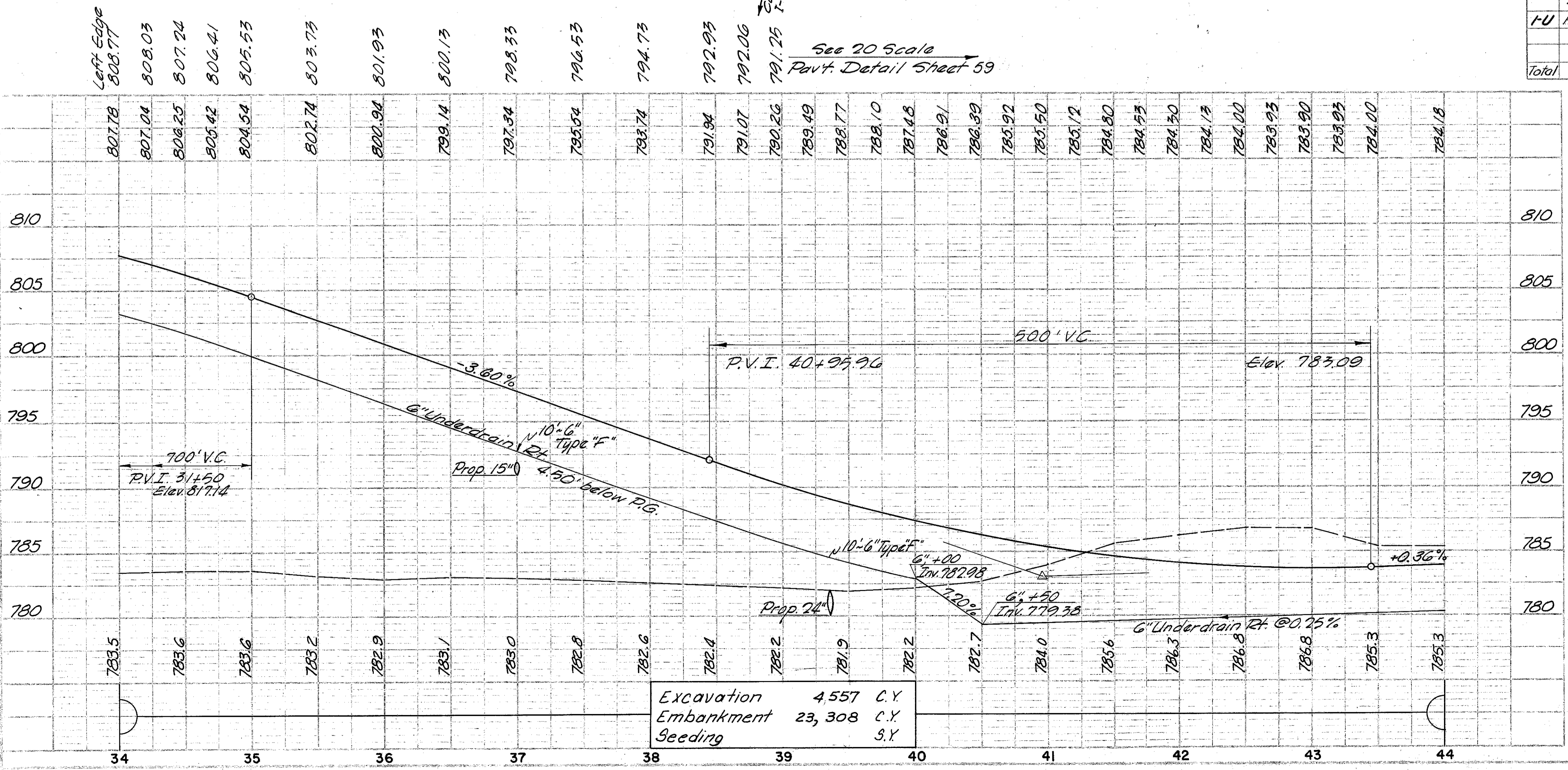
Rev. 4-12-78

For Tree Removal See *N* Sheets

CROSS REFERENCE	
Sht. No.	Item
137-142	X-Sections
140	Ditch Profile
20-21	Drainage Details
59	Pavement Details



ESTIMATED QUANTITIES			603	601	606	602	604	605	603	606	606	667	660						
Ref.	Side	LOCATION	Type B' 15\"	Type F' 15\"	Type F' 6\"	Rock Chert Prot. Type B' w/ Backfiller Assembly	Barrier Detail Arch. Assy. Type T	Conc. Masonry	N°5 Catch Basin	Underdrain Shallow	Bands & Branches	Branches	Guard Rail Type S	Guard Rail Type S w/ 5\"	Seeding & Mulch	Storm Sewer	Reinforced Pro File	Seeding	
1-D	Lt. Rt.	35+47.5 Lt. to 37+00 Rt.	54	38		2.9		0.27	1										
2-D	Rt.	38+00																	25
1-G	Rt.	34+00 to 38+64+						1						439					
2-G	Lt.	37+75 to 44+00						1						25	612.5				
1-U	Rt.	34+00 to 44+50			30					1006	1								
Total		To Gen. Summary	54	38	30	2.9	1	0.27	1	1006			464	612.5	125				25

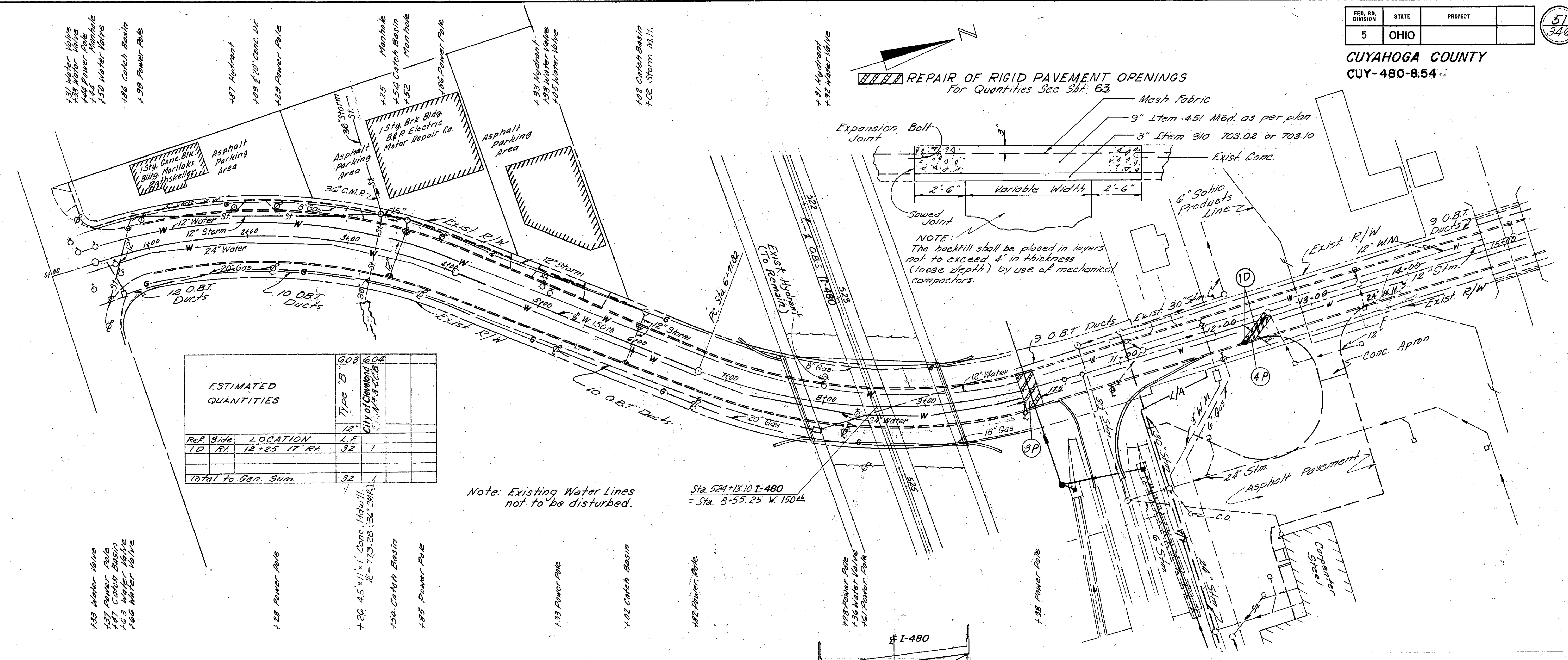


Rev. P.R.S. 8-30-78  
G.P.S. 5/5/66  
T.L.S. 5/24/66  
EX. REV. 5/26/72

Rev. 4-12-78



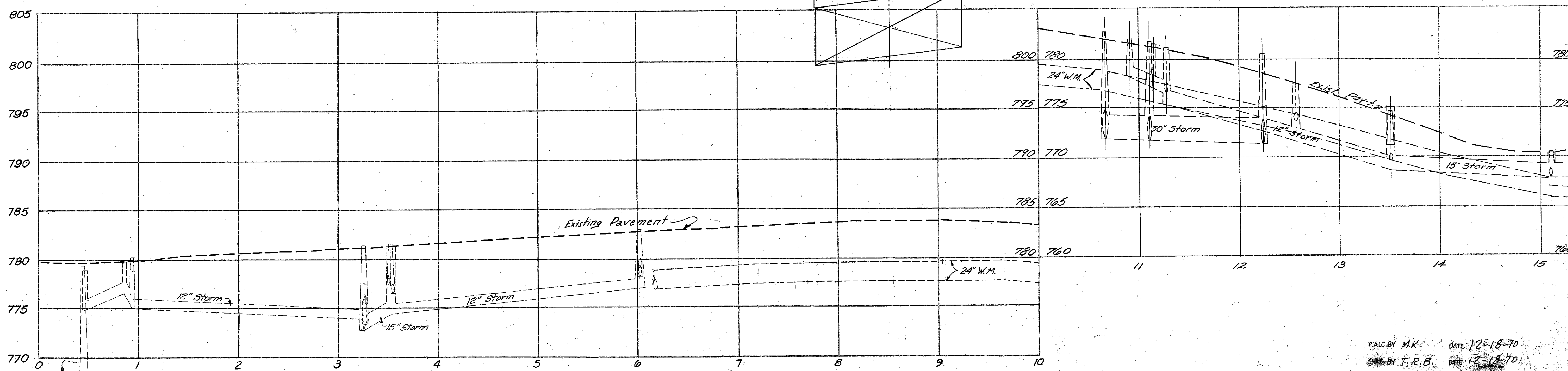
**REPAIR OF RIGID PAVEMENT OPENINGS**  
For Quantities See Sht. 63



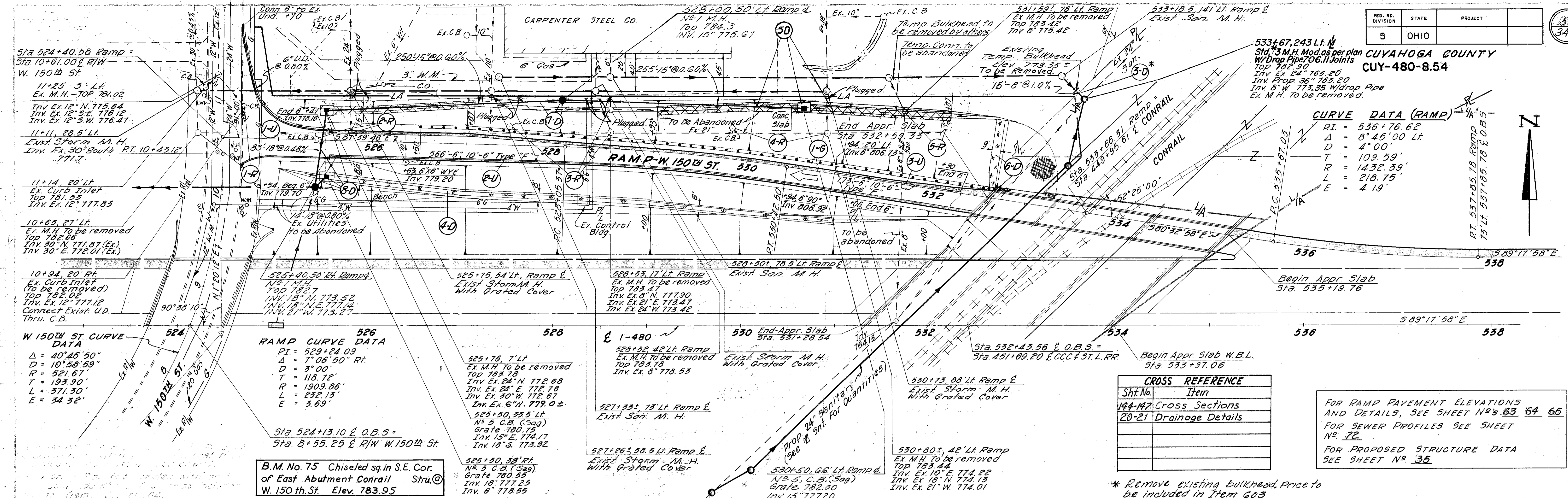
ESTIMATED QUANTITIES		603	604
Ref. ID	Side	Type	City of Cleveland
12	RA	12"	32
Total to Gen. Sum.			32

Note: Existing Water Lines not to be disturbed.

Sta 524+13.10 I-480  
= Sta. 8+55.25 W 150th

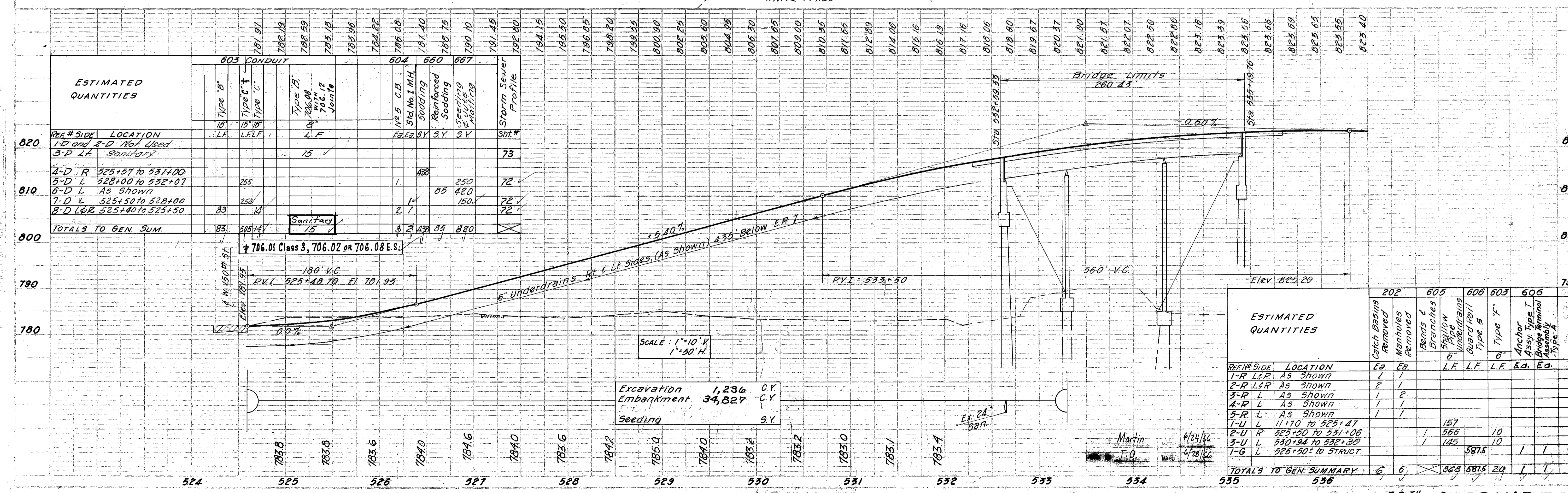


CALC. BY M.K. DATE: 12-18-70  
CHKD. BY T.R.B. DATE: 12-18-70



PLAN  
 SURVEYED  
 PLOTTED  
 CHECKED  
 NO.

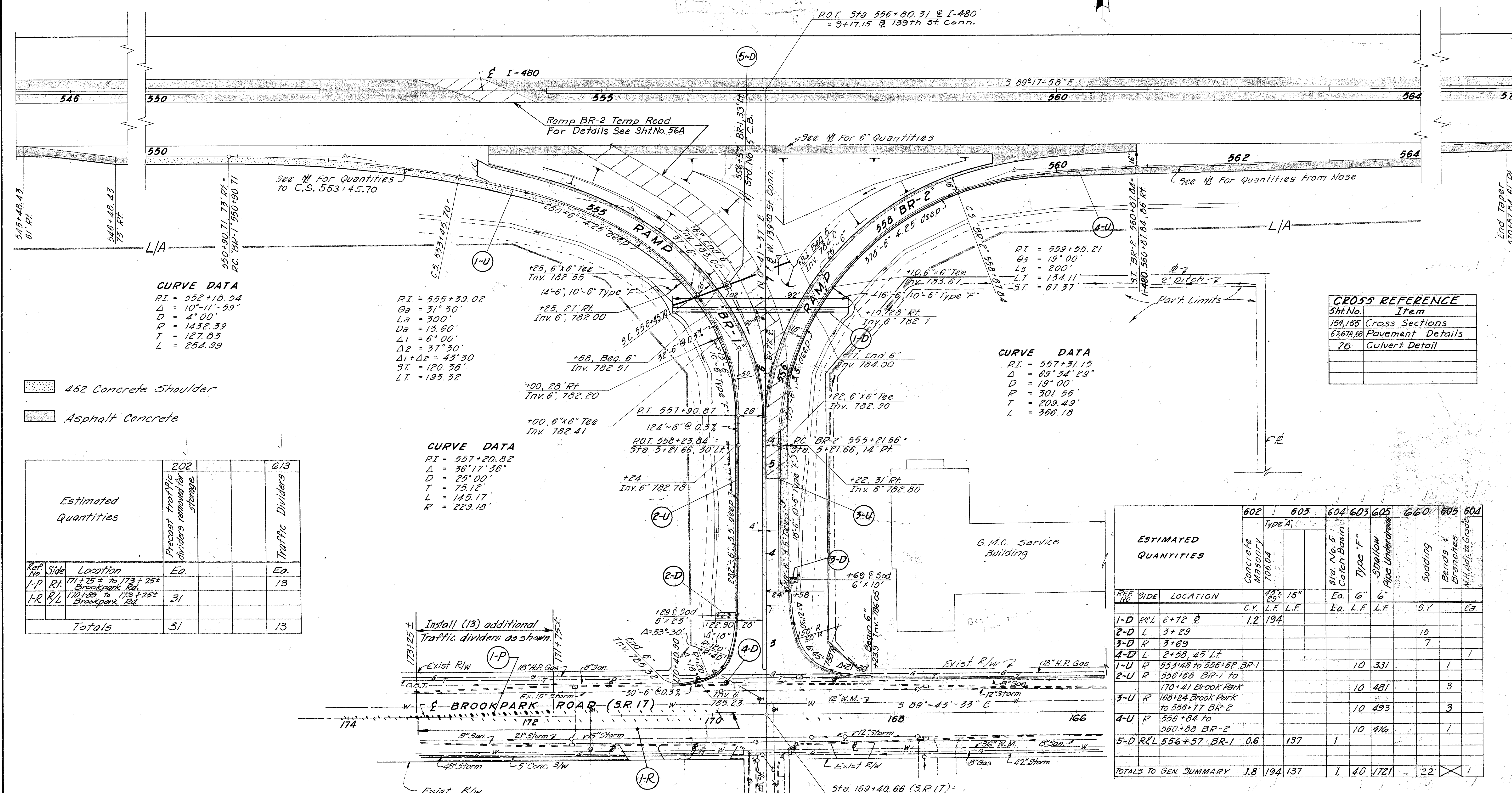
PROFILE  
 SURVEYED  
 PLOTTED  
 CHECKED  
 NO.











**CURVE DATA**  
 P.I. = 552+18.54  
 $\Delta$  = 10°-11'-59"  
 D = 4'-00"  
 R = 1432.39  
 T = 127.83  
 L = 254.99

PI = 555+39.02  
 $\theta_a$  = 31° 30'  
 L<sub>a</sub> = 300'  
 D<sub>a</sub> = 13.60'  
 $\Delta_1$  = 6° 00'  
 $\Delta_2$  = 37° 30'  
 $\Delta_1 + \Delta_2$  = 43° 30'  
 S.T. = 120.36'  
 L.T. = 193.32'

**CURVE DATA**  
 P.I. = 557+20.82  
 $\Delta$  = 36° 17' 36"  
 D = 25'-00"  
 T = 75.12'  
 L = 145.17'  
 R = 229.18'

**CURVE DATA**  
 P.I. = 557+31.15  
 $\Delta$  = 69° 34' 29"  
 D = 19'-00"  
 R = 301.56'  
 T = 209.49'  
 L = 366.18'

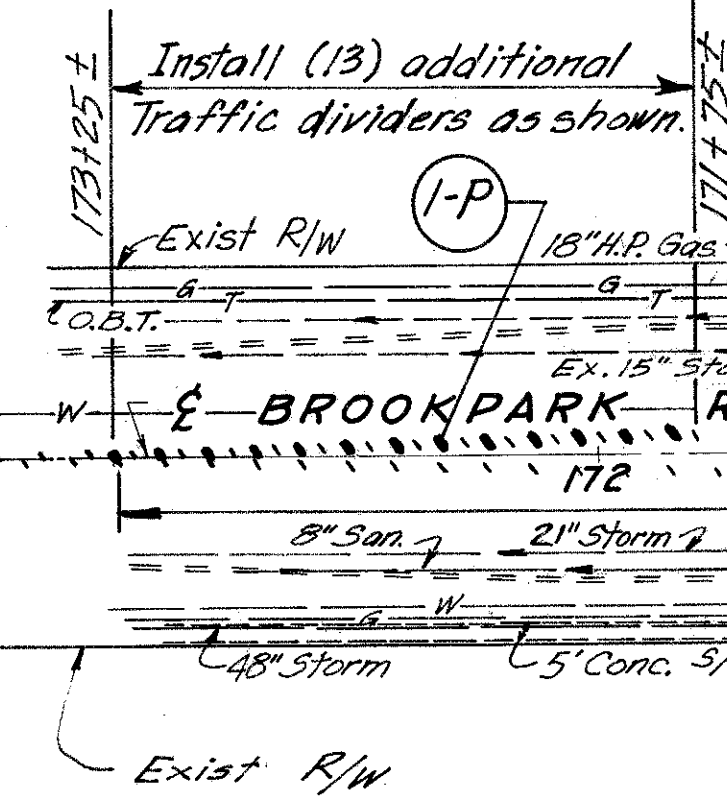
**CROSS REFERENCE**

Sht.No.	Item
154,155	Cross Sections
67,67A,68	Pavement Details
76	Culvert Detail

452 Concrete Shoulder  
 Asphalt Concrete

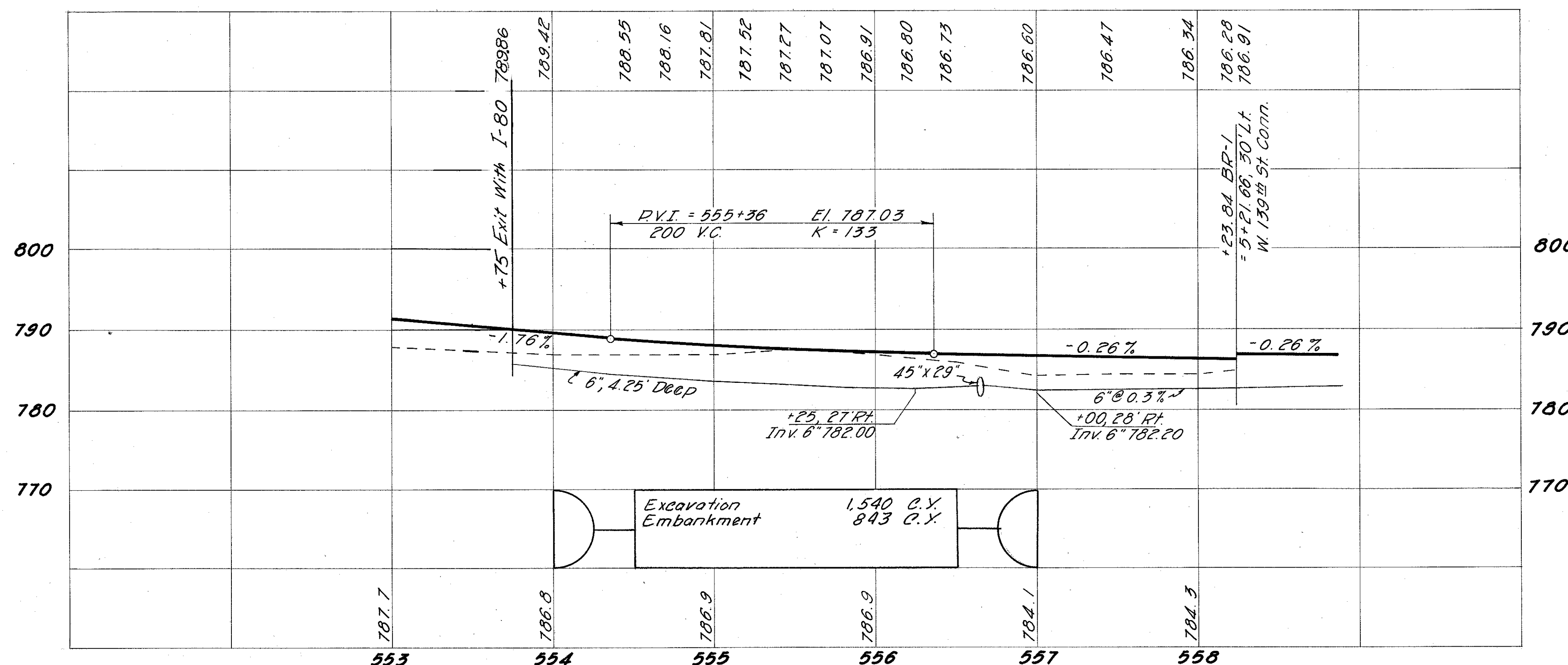
Estimated Quantities		202		613
		Precast traffic dividers removed for storage		Traffic Dividers
Ref. No.	Side	Location	Ea.	Ea.
1-P	Rt.	171+25' to 173+25' Brookpark Rd.		13
1-R	Lt.	170+25' to 173+25' Brookpark Rd.	31	
<b>Totals</b>			31	13

ESTIMATED QUANTITIES		602	603	604	603	605	660	605	604	
		Concrete Masonry	Type A	Std. No. 5 Catch Basin	Type 'F'	Shallow Pipe Underdrains	Sodding	Branches & W.H. Adj. to Grade		
REF. NO.	SIDE	LOCATION	48" x 24" L.F.	15" L.F.	Ea.	6" L.F.	6" L.F.	S.Y.	Ea.	
1-D	R/L	6+72 E	1.2	194						
2-D	L	3+29						15		
3-D	R	3+69						7		
4-D	L	2+58, 45' LT							1	
1-U	R	553+46 to 556+62 BR-1				10	331		1	
2-U	R	556+68 BR-1 to 170+41 Brook Park				10	481		3	
3-U	R	168+24 Brook Park to 556+77 BR-2				10	493		3	
4-U	R	556+84 to 560+88 BR-2				10	416		1	
5-D	R/L	556+57 BR-1	0.6	137	1					
<b>TOTALS TO GEN. SUMMARY</b>			1.8	194	137	1	40	1721	22	1

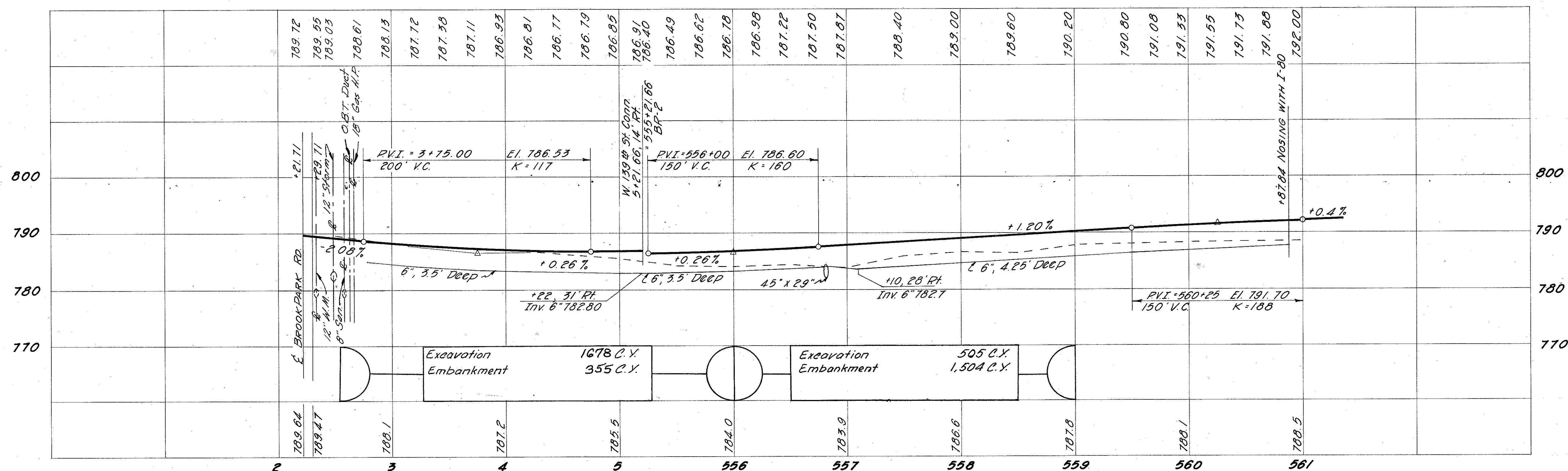


B.M. = O.M. No. 1029 N. Side  
 Brookpark Road - 1800' W. of W. 130th  
 Elev. 791.660

Rev. D.R.S. 10-7-77  
 W.J.M. 3-22-66  
 J.L. 6-28-67



RAMP BR-1

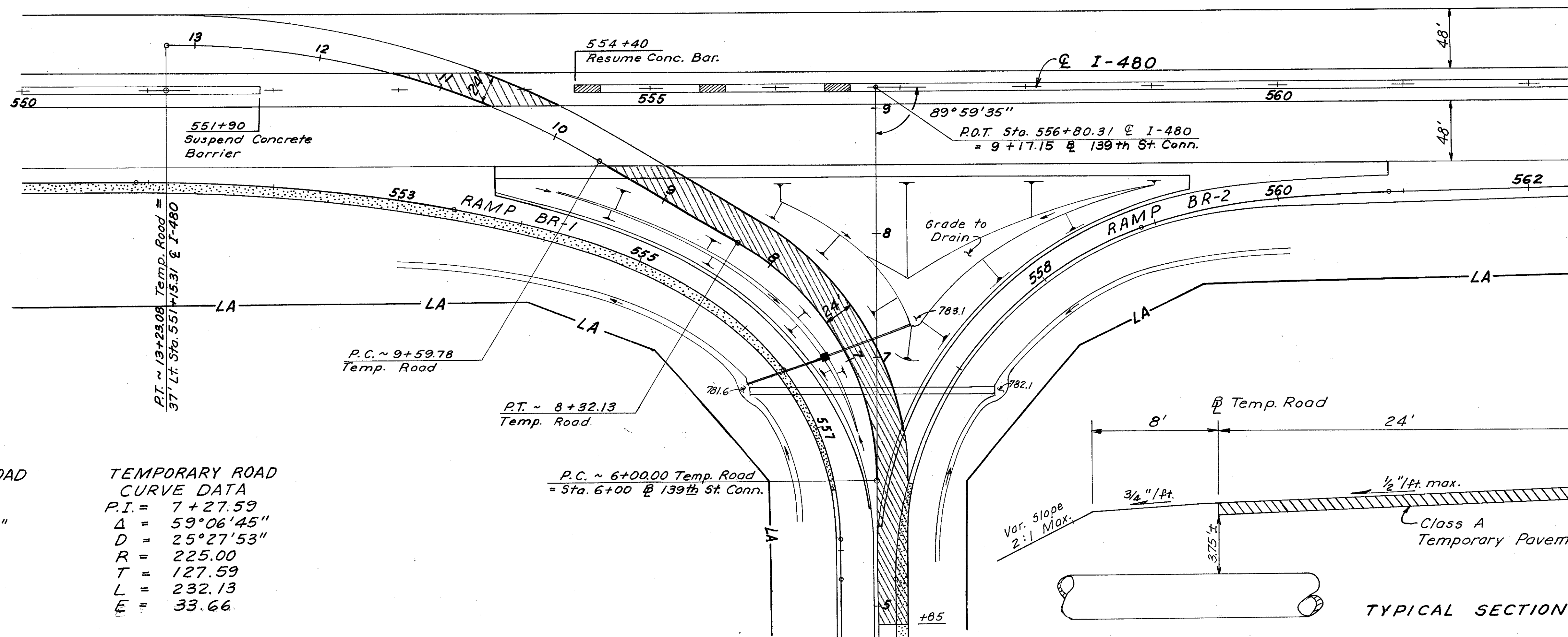


W. 139th ST. CONN. & RAMP BR-2

W.J.M. 3/23/66  
R.A.T. 6/28/67

**CUYAHOGA COUNTY**  
**CUY-480-8.54**

QUANTITIES	
Item 615	Class A Temporary Pavement 1435 SY



TEMPORARY ROAD CURVE DATA

P.I. = 11+45.96

Δ = 30° 52' 50"

D = 8° 30'

R = 674.07

T = 186.18

L = 363.30

E = 25.24

TEMPORARY ROAD CURVE DATA

P.I. = 7+27.59

Δ = 59° 06' 45"

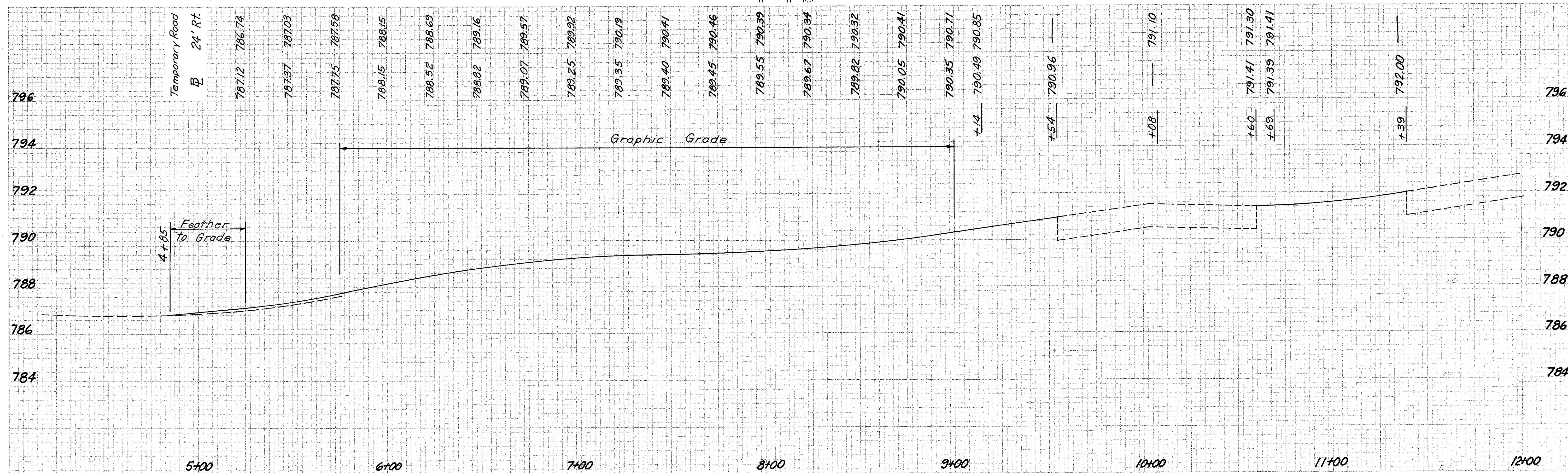
D = 25° 27' 53"

R = 225.00

T = 127.59

L = 232.13

E = 33.66

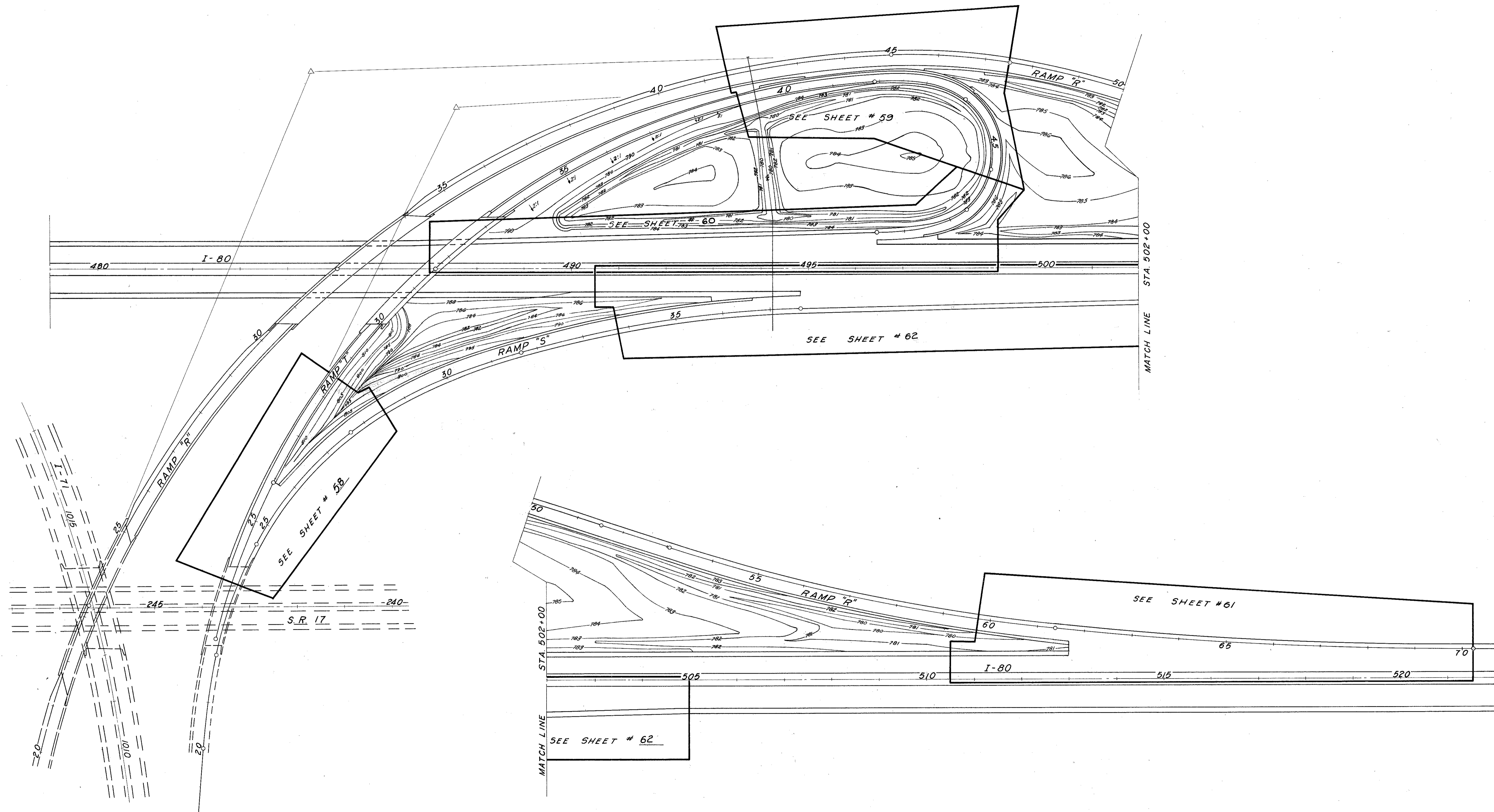


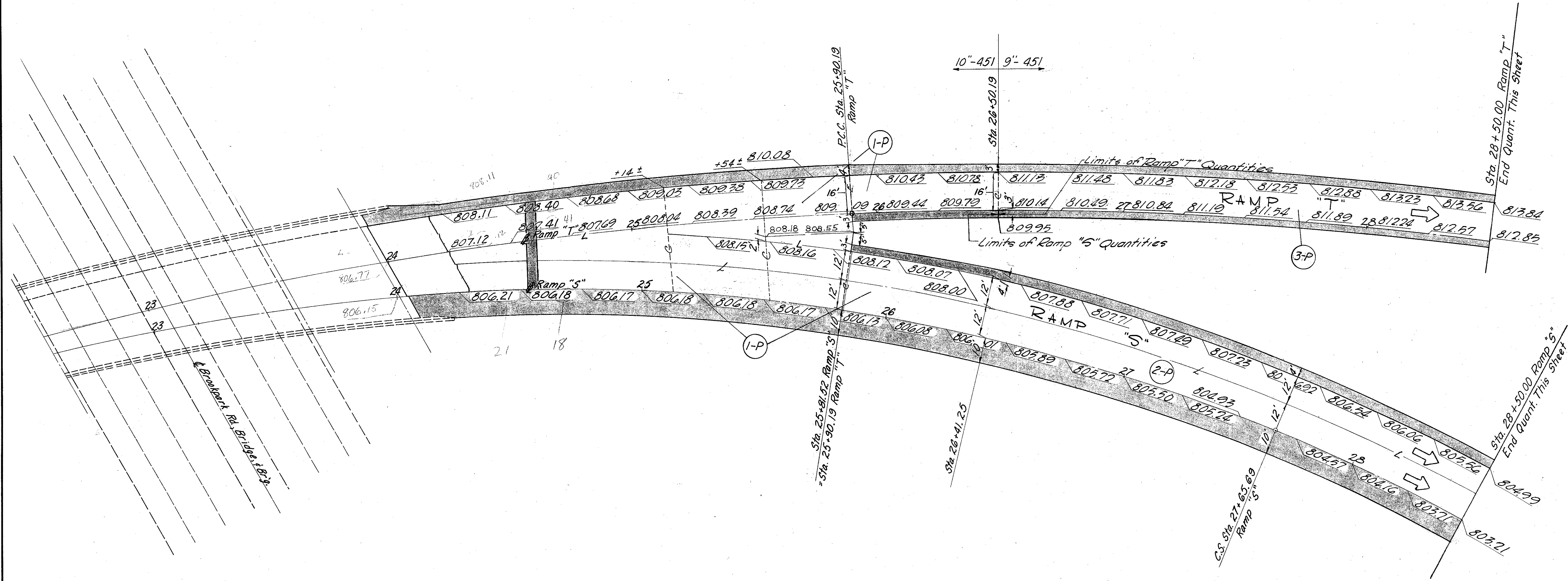
**RAMP BR-2 TEMPORARY ROAD**

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

57  
346

CUYAHOGA COUNTY  
CUY-480-8.54





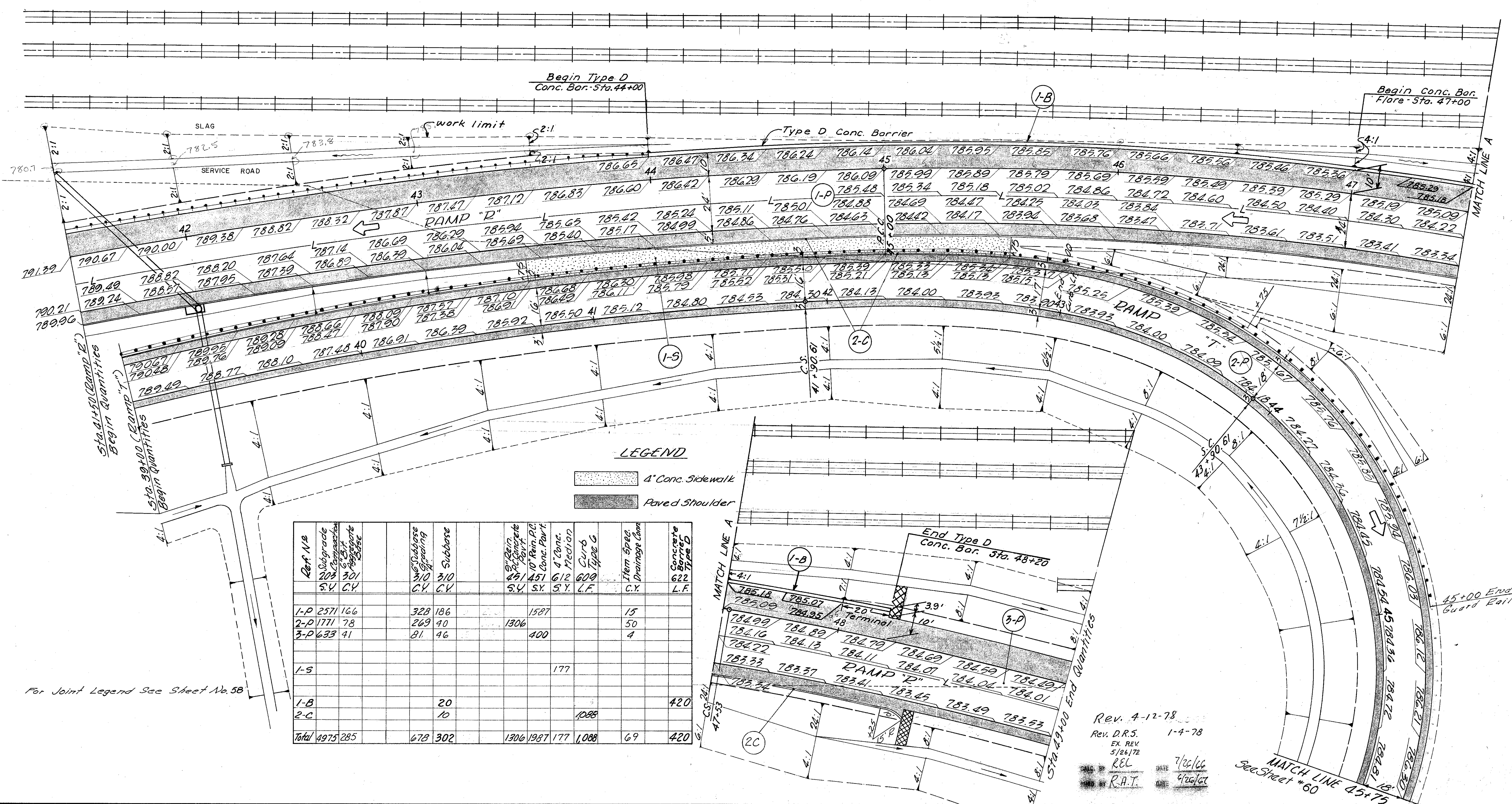
**JOINT LEGEND**  
 C Standard Contraction Joint  
 E Standard Expansion Joint  
 L Standard Longitudinal Joint

NOTE: Profile Grade has been adjusted between the approach slab and sta. 24+70 to meet proposed 1 1/2" waterproofing overlay on existing bridge deck.

Ref. No.	Subgrade	20% Compaction	6" Bit. Aggregate Base	Subbase	9" Rein. Concrete Pav't	10" Rein. Conc. Pav't	Special Drainage Conn.	Rein. Conc. Slab 7.75"	
	S.Y.	C.Y.	C.Y.	C.Y.	S.Y.	S.Y.	C.Y.	S.Y.	
1-P	1346	70		212	75		1039	91	
2-P	890	55		108	62		564	10	
3-P	492	23		75	12		358	15	
<b>Total</b>	<b>2948</b>	<b>148</b>		<b>395</b>	<b>149</b>		<b>358</b>	<b>1603</b>	<b>36</b>

Rev. D.R.S. Date 1-4-78  
 Rev. D.R.S. Date 8/28/77  
 TRB 1/11/71  
 D.R.H. 1/14/71

CUYAHOGA COUNTY  
CUY-480-854



**LEGEND**

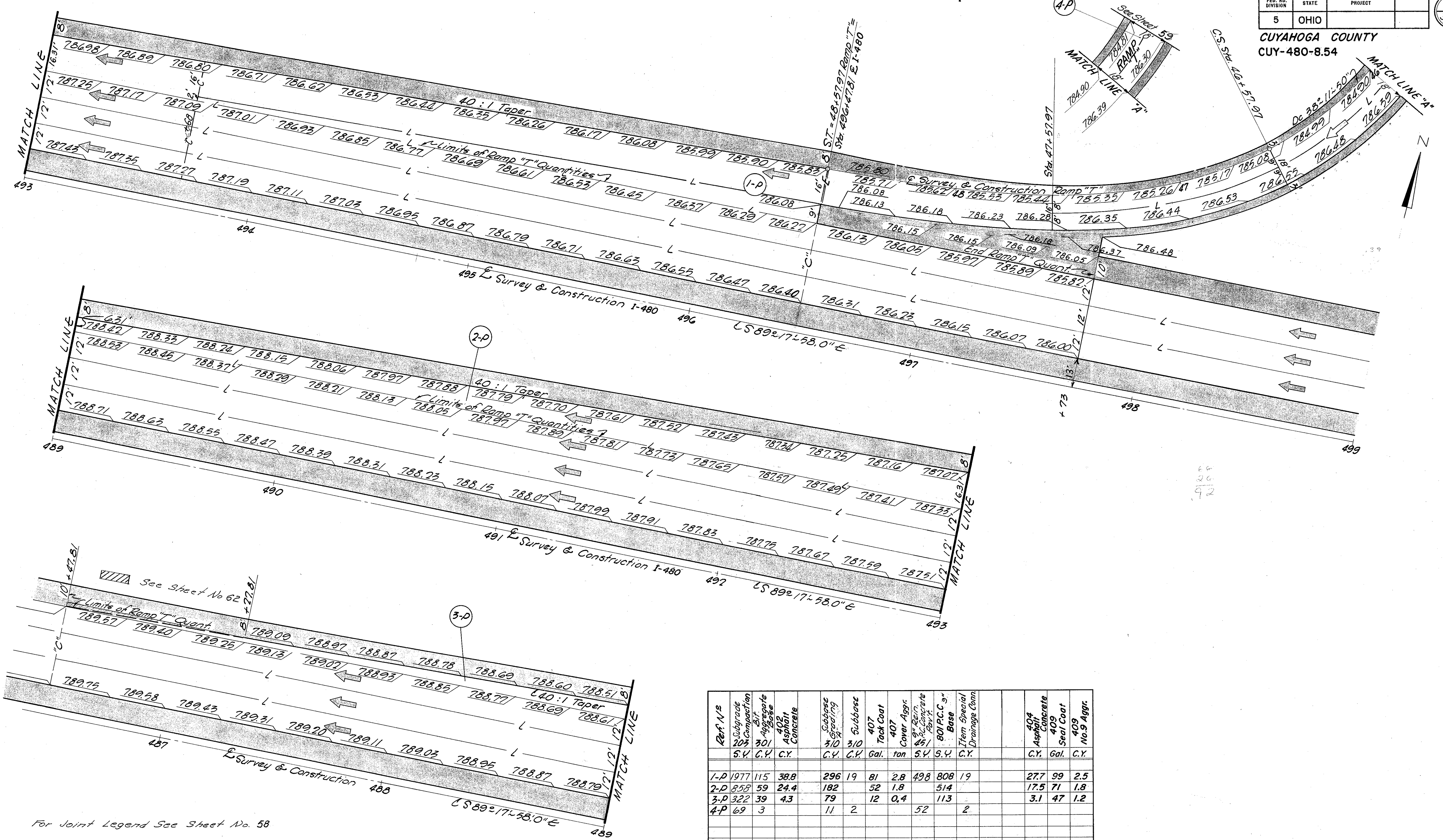
	4' Conc. Sidewalk
	Paved Shoulder

Ref. No.	Subgrade	Subbase	4" Conc. Pav't	10" Rein. P.C. Conc. Pav't	4" Conc. Median	Curb Type C	Item Spec. Drainage Conn.	Concrete			
	S.Y.	C.Y.	S.Y.	S.Y.	S.Y.	L.F.	C.Y.	L.F.			
1-P	2571	166	328	186			1587	15			
2-P	1771	78	269	40			1306	50			
3-P	633	41	81	46			400	4			
1-S							177				
1-B			20					420			
2-C			10				1088				
<b>Total</b>	<b>4975</b>	<b>285</b>	<b>678</b>	<b>302</b>			<b>1306/1987</b>	<b>177</b>	<b>1088</b>	<b>69</b>	<b>420</b>

For Joint Legend See Sheet No. 58

Rev. 4-12-78  
 Rev. D.R.S. 1-4-78  
 EX. REV. 5/26/78  
 REL. DATE 7/25/66  
 R.A.T. DATE 6/22/67

CUYAHOGA COUNTY  
CUY-480-8.54

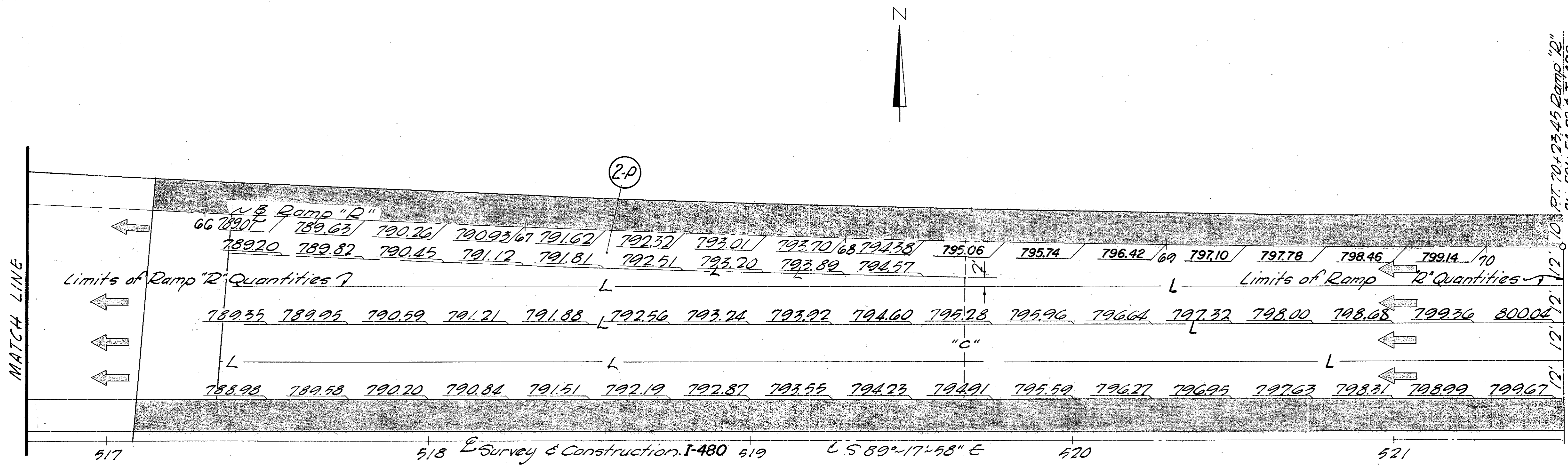
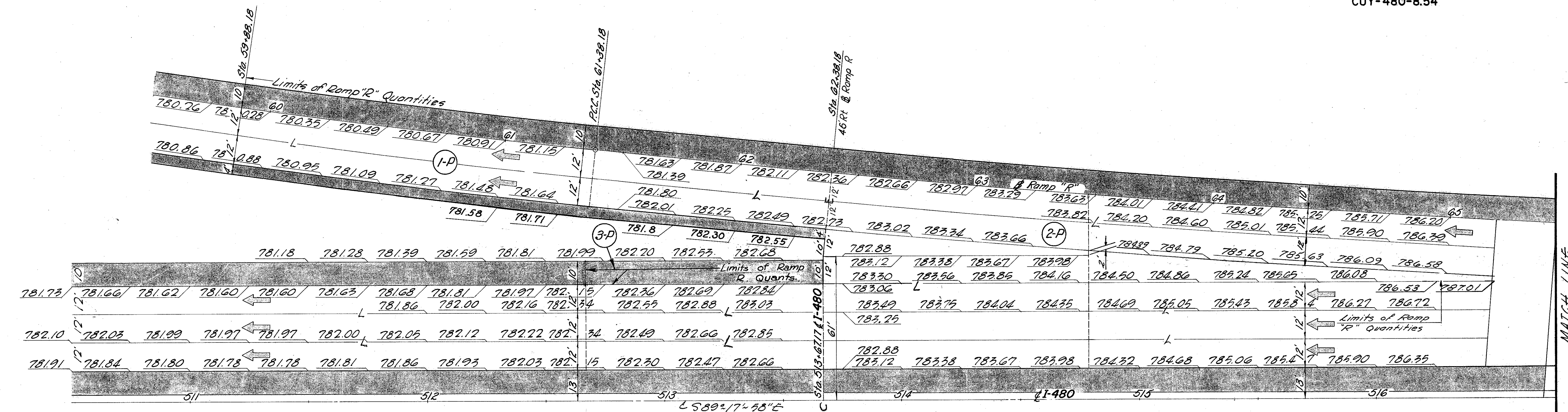


For Joint Legend See Sheet No. 58

Ref. No.	Subgrade 20% Compaction	301 Aggregate Base	402 Asphalt Concrete	310 Subbase Spreading	310 Subbase	407 Tack Coat	407 Cover Aggr.	9" Rein. % Concrete Rev't	801 P.C.C. 5"	Base	Item Special Drainage Conn.	404 Asphalt Concrete	409 Seal Coat	409 No. 9 Aggr.
	S.Y.	C.Y.	C.Y.	C.Y.	C.Y.	Gal.	ton	S.Y.	S.Y.	C.Y.		C.Y.	Gal.	C.Y.
1-P 1977	115	38.8	296	19	81	2.8	498	808	19			27.7	99	2.5
2-P 858	59	24.4	182		52	1.8		514				17.5	71	1.8
3-P 322	39	4.3	79		12	0.4		113				3.1	47	1.2
4-P 69	3		11	2			52		2					
Totals	3226	216	68	568	21	145	5	550	1435	21		49	217	5.5

Rev. D.R.S. 1-4-78  
Rev. D.R.S. 12-7-77  
Rev. by D.R.S. Date 8/28/77  
REL  
R.A.T. 6/23/67

CUYAHOGA COUNTY  
CUY-480-8.54

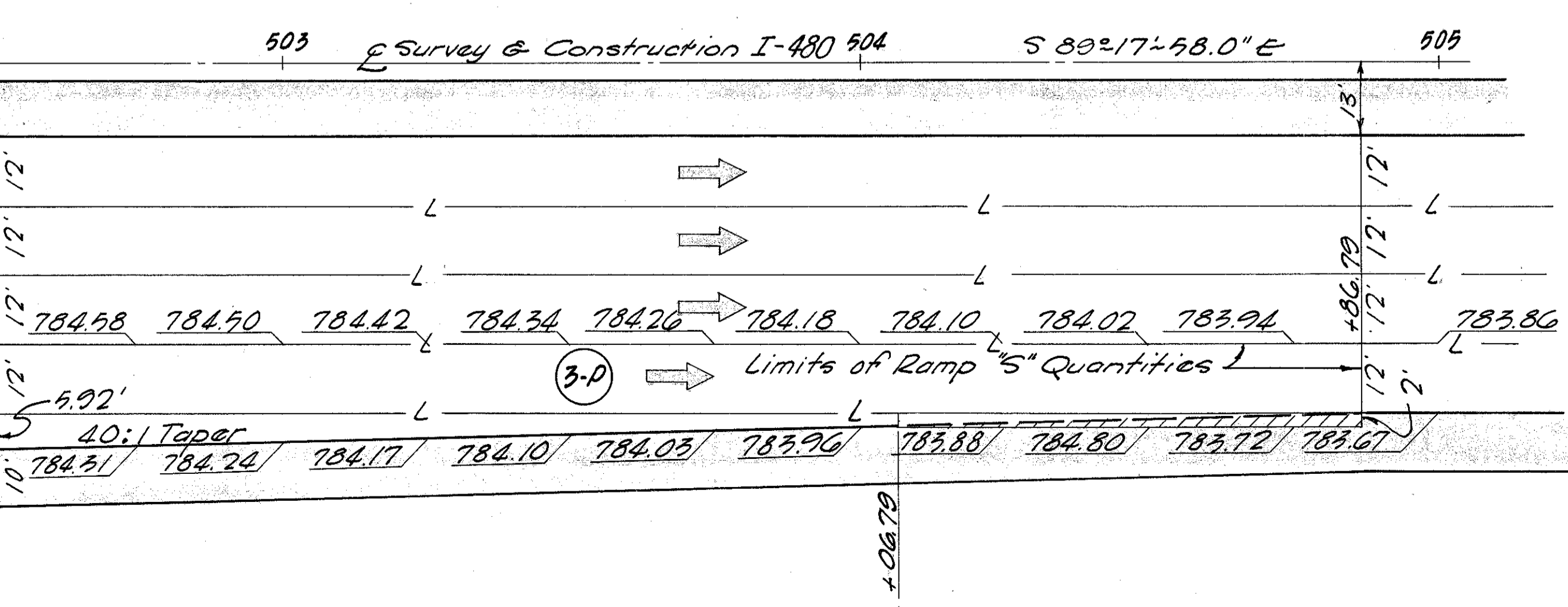
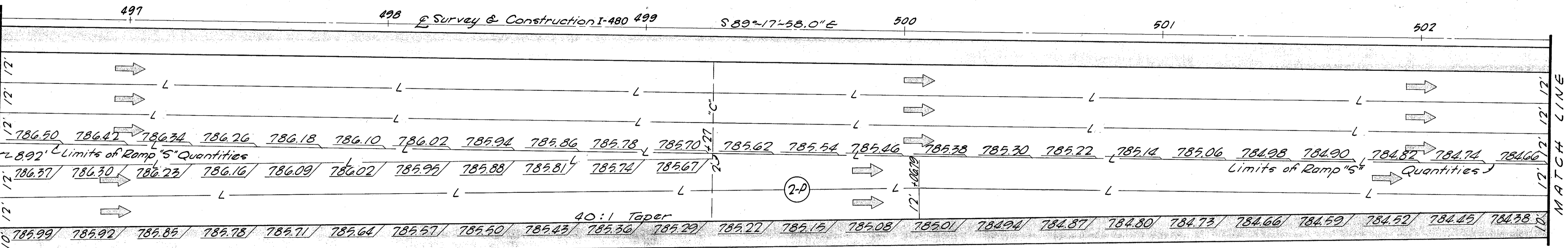
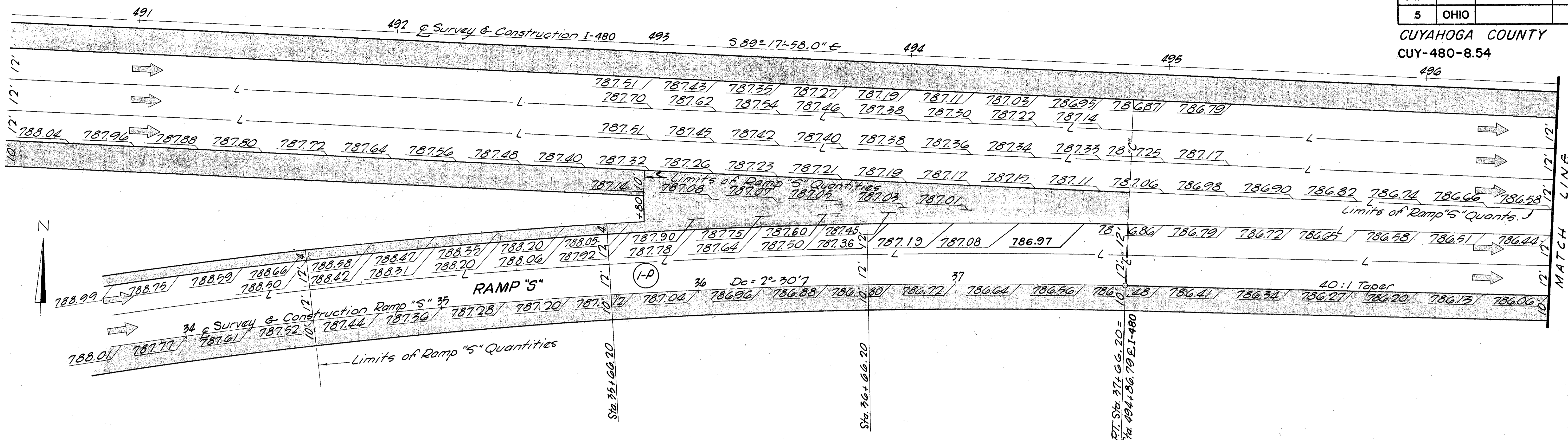


Ref. No.	Subgrade	Compaction	Bituminous	Aggr. Base	Subbase	Grading 'A'	Subbase	Asphalt Concrete	Asphalt Concrete	10" Reinf. Port. Conc.	Drainage Connector	Portland Cement Concrete Base	Tack Coat	Cover	Seal Coat	No. 9 Aggregate	Reinf. Conc. App. Slab (1-15)
	S.Y.	C.Y.			C.Y.	C.Y.	C.Y.	C.Y.	S.Y.	C.Y.	S.Y.	Gal.	Ton	Gal.	C.Y.	S.Y.	
1P	1056	65			119	74			667	12							
2P	2385	139			549		76	54				1879	201	7.0	166	4.2	135
3P	111	19			30												
<b>Total</b>	<b>3552</b>	<b>223</b>			<b>698</b>	<b>74</b>	<b>76</b>	<b>54</b>	<b>667</b>	<b>12</b>	<b>1879</b>	<b>201</b>	<b>7</b>	<b>166</b>	<b>4</b>	<b>135</b>	

For Joint Legend See Sheet No. 58

Rev. D.R.S. 1-4-78  
Rev. By R.J.M. 9-13-77  
R.E.L. 7/20/66  
R.A.T. 9/23/67





Ref. No.	Subgrade	20% Compaction	Sub. Bit. Aggregate Base	Asphalt Concrete	Subbase	Subbase	Asphalt Concrete	9% P.C.C. Base	10% Bit. Aggregate Base	Tack Coat	Item Special Drainage Conn.	Cover Aggr.	Seal Coat	No. 9 Aggr.
	S.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	S.Y.	S.Y.	Gal.	Gal.	C.Y.	Ton	Gal.	C.Y.
1-P	2450	159	31	377	100	22	639	844	64	15		2.2	97	2.4
2-P	2361	111	83	457	59	1711		171				6	133	3.4
3-P	657	44	19	136		14	409		41			1.5	53	1.3
<b>Total</b>	<b>5468</b>	<b>314</b>	<b>133</b>	<b>970</b>	<b>100</b>	<b>95</b>	<b>2759</b>	<b>844</b>	<b>276</b>	<b>15</b>		<b>10</b>	<b>283</b>	<b>7</b>

Extend 801 Concrete Base 2' from edge of pavement and surface with 3" of 301. No deduction in normal shoulder quantity. Calculations shall be made because of this extension.

For Joint Legend See Sheet No. 58

Rev. D.R.S. 1-4-78  
 Rev. D.R.S. 12-7-77  
 Rev. by D.R.S. Date 8/29/77  
 R.E.L. 7/23/67  
 R.A.T. 6/26/67

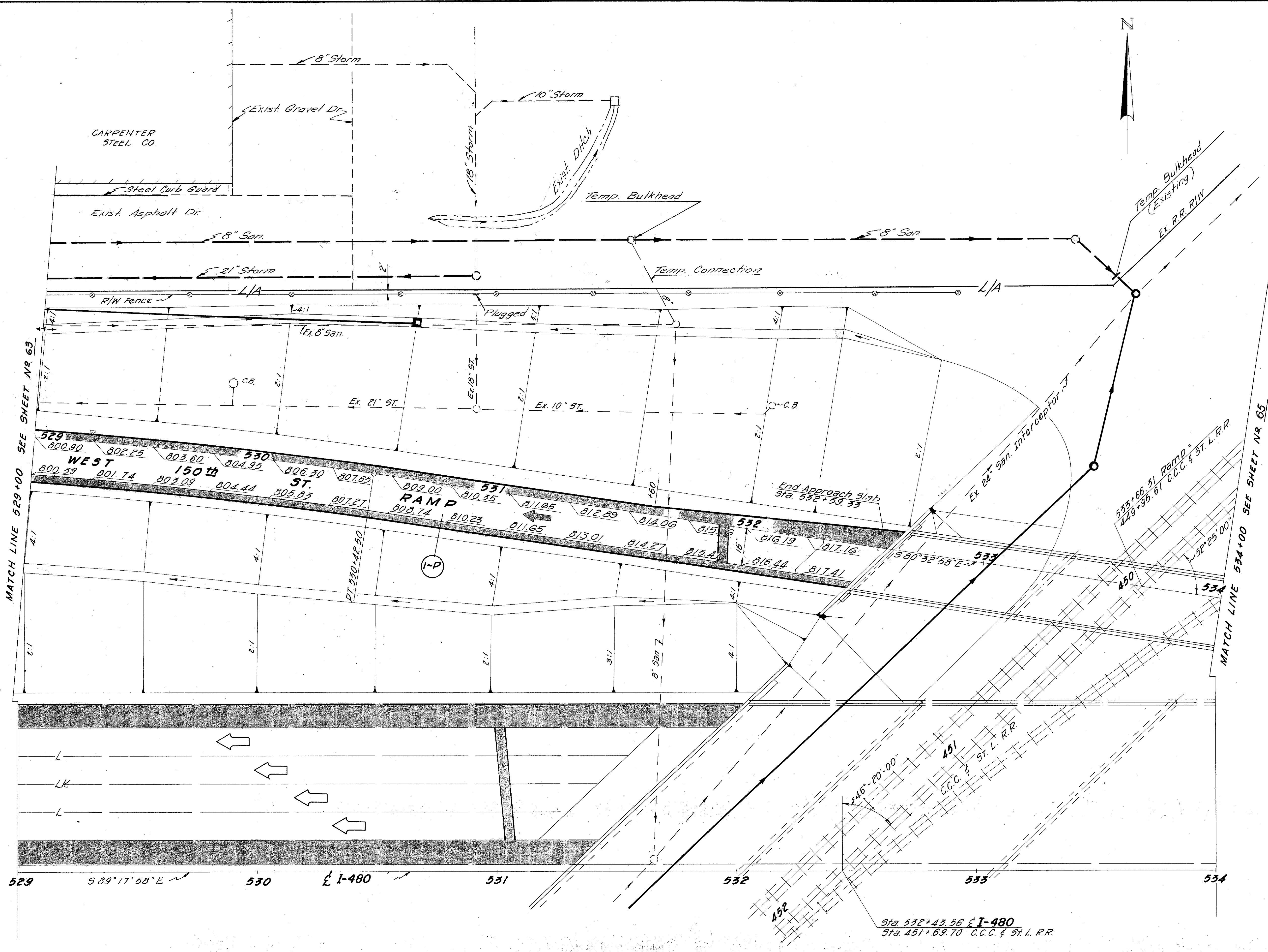


FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

64  
346

CUYAHOGA COUNTY  
CUY-480-8.54

CROSS REFERENCE	
Sht. No.	Item
145-147	Cross Sections
306	Structure
52	Plan & Profile
72,73	Sewer Details



MATCH LINE 529+00 SEE SHEET NO. 63

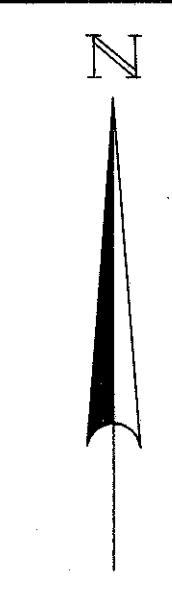
MATCH LINE 534+00 SEE SHEET NO. 65

205	Subgrade Compaction	SY		1012		1012
611-RC	Appro. Slab (7'-15")	CY SY		445		45
310	Subbase	CY CY		19	19	19
	SPECIAL Drain Connection	CY CY		27	27	27
301	Bit. Agg. Base	CY		44	44	44
310	"A"	CY		1314		131
451	9"	SY		555		55
REF. NO.	I-P					TOTAL 555

Rev. D.R.S. 1-4-78 W.J.M. 6/24/66  
F.O. 6-28-66

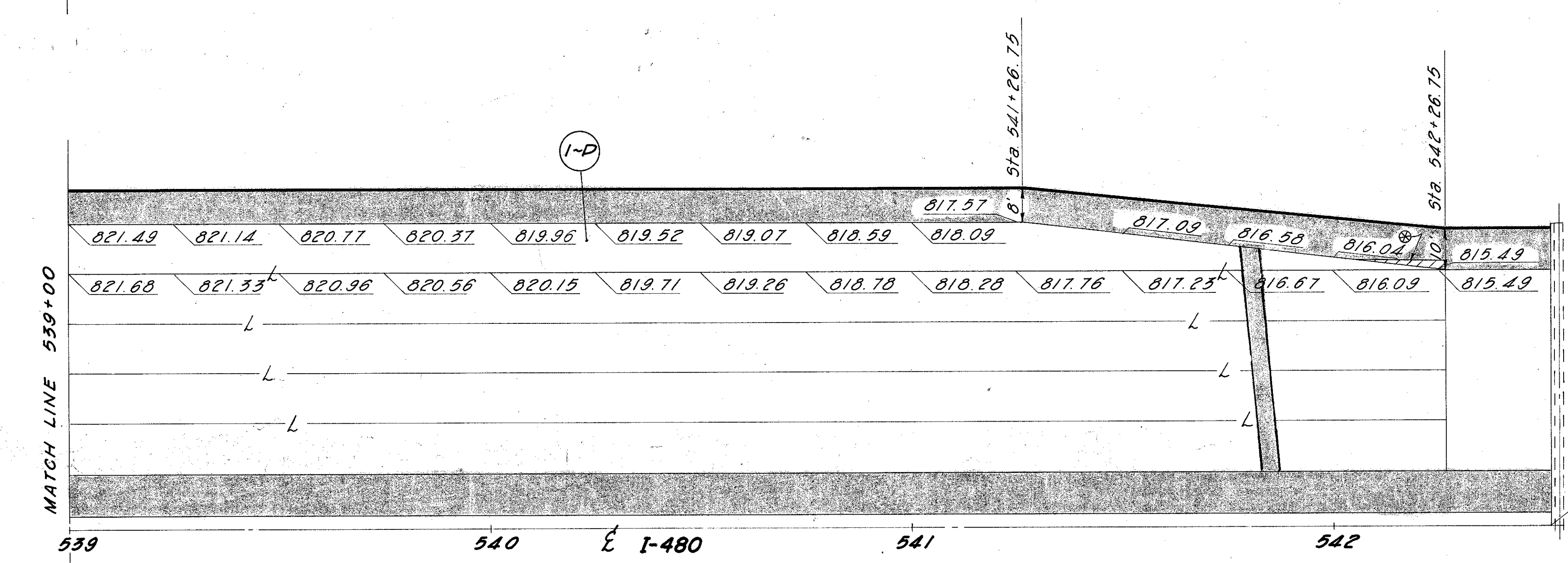
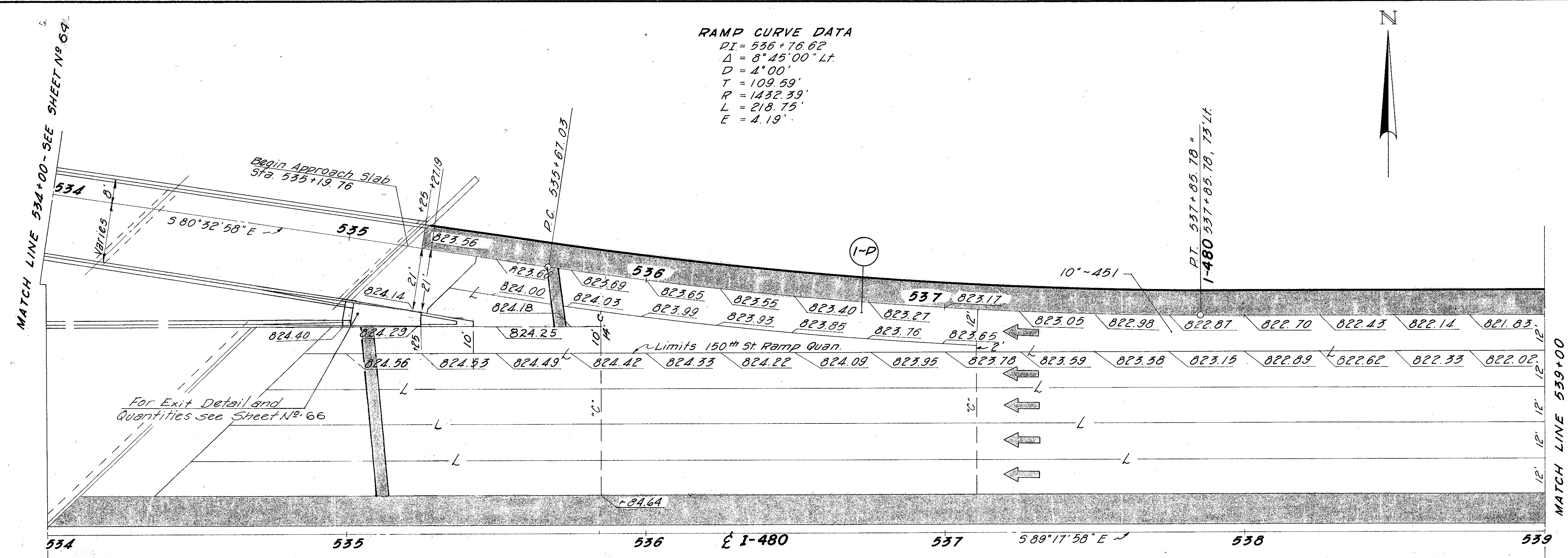
WEST 150<sup>TH</sup> ST. RAMP

**RAMP CURVE DATA**  
 PI = 536+76.62  
 Δ = 8°45'00" Lt.  
 D = 4'00"  
 T = 109.59'  
 R = 1452.59'  
 L = 218.75'  
 E = 4.19'



**CROSS REFERENCE**

Sht. No.	Item
52	Plan & Profiles
144-147	Cross Sections
306	Structure



REF. NO.	3" 801 P.C.C. Base	30" 301 "A"	30"-6" Bit. Aggr. Base	407 Tack Coat	407 Cover Aggr.	409 Seal Coat	409 No. 9 Aggr.	611 P.C. Appr. Slab (T-157)	203 Subgrade Compaction	Asphalt Concrete	404 Asphalt Concrete
Unit	S.Y.	C.Y.	C.Y.	Gal.	Tons	Gal.	C.Y.	S.Y.	S.V.	C.Y.	C.Y.
1-P	936	328	107	94	3.3	129	3.2	58.7	1578	45	32
<b>TOTAL</b>	<b>936</b>	<b>328</b>	<b>107</b>	<b>94</b>	<b>3.3</b>	<b>129</b>	<b>3.2</b>	<b>59</b>	<b>1578</b>	<b>45</b>	<b>32</b>

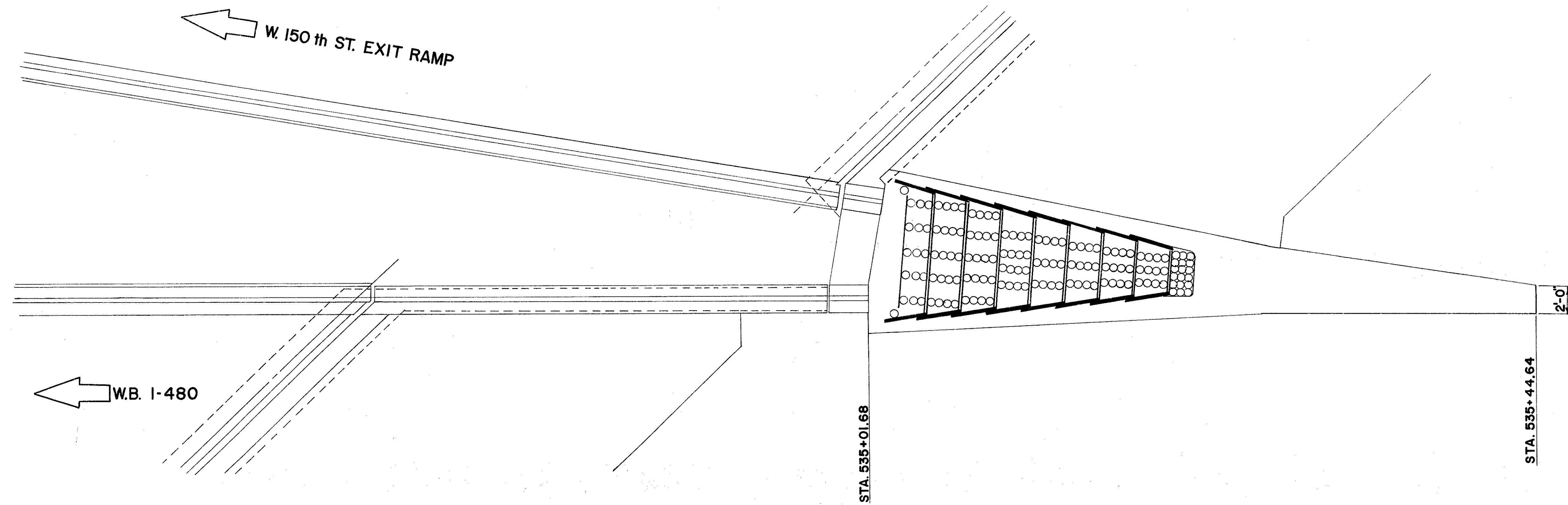
Extend 801 Concrete Base 2' from edge of pavement and surface with 3" of 301. No deduction in normal shoulder quantity calculations shall be made because of this extension.

For Joint Legend See Sheet No. 58

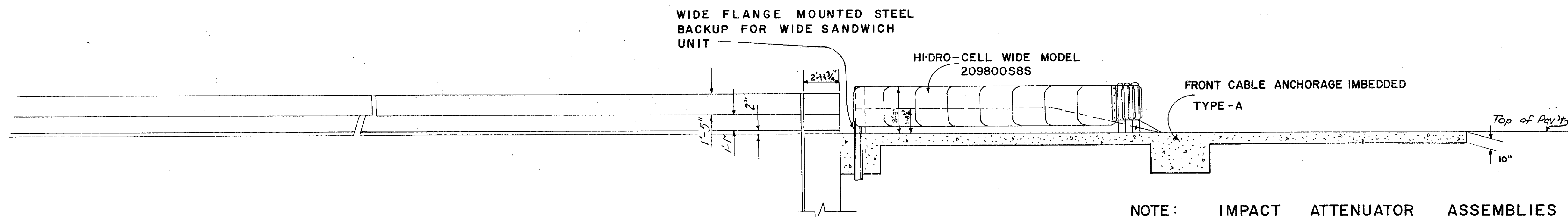
FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

66  
346

CUYAHOGA COUNTY  
CUY-480-8.54



**PLAN**



**ELEVATION**

**NOTE: IMPACT ATTENUATOR ASSEMBLIES**

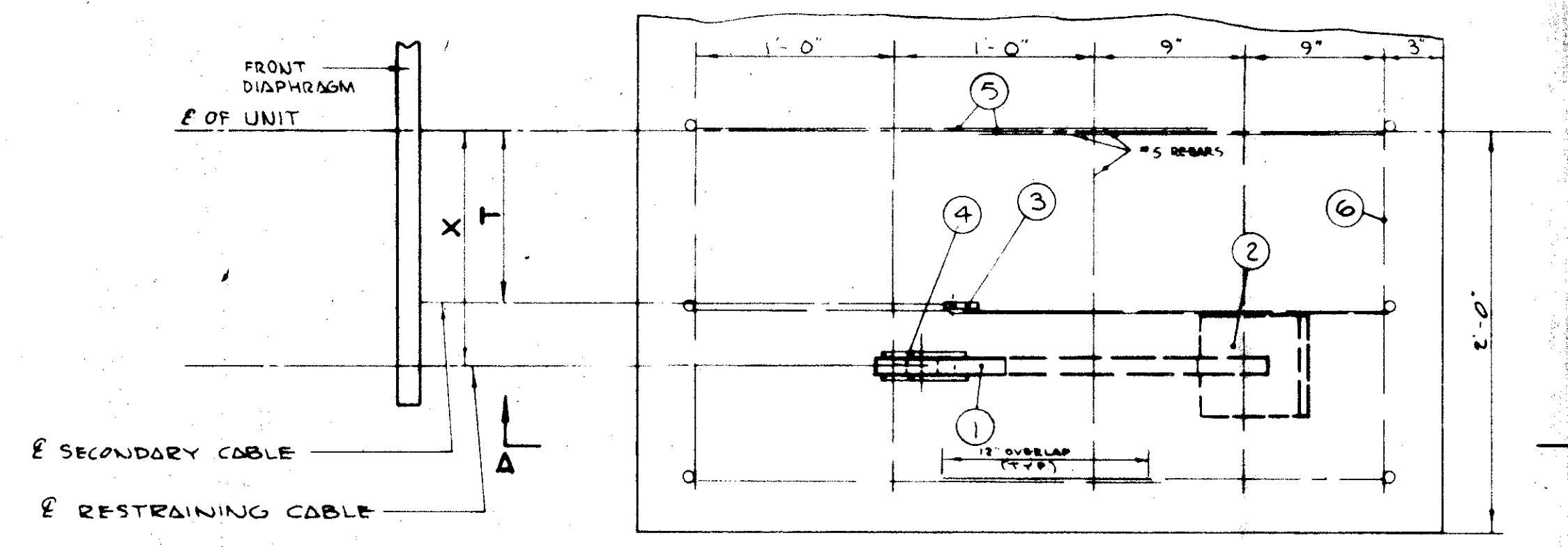
THIS PROJECT REQUIRES THE CONSTRUCTION OF AN IMPACT ATTENUATOR OF THE TYPE, HI-DRO CUSHION SYSTEM MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., CHICAGO, ILLINOIS. THE ATTENUATION DEVICE BY SIZE AND MODEL NUMBER SHALL BE CONSTRUCTED WITHIN THE RESERVE AREA SHOWN ABOVE AND IN ACCORDANCE WITH THE MANUFACTURER'S PLAN AND RECOMMENDATIONS. THE WORK TO BE PERFORMED UNDER THIS ITEM SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY FOR FURNISHING AND INSTALLING THE ATTENUATION DEVICE INCLUDING FOUNDATIONS, BACKUP WALLS, ANCHOR BLOCKS, SURFACE TREATMENT OR ANY OTHER ITEMS NECESSARY FOR A COMPLETE AND FUNCTIONAL INSTALLATION.

THE MATERIALS USED IN THE INSTALLATION SHALL ALL BE NEW, FIRST QUALITY AND FREE FROM DEFECTS. THE METHOD OF MEASUREMENT FOR THIS ITEM SHALL BE THE ACTUAL NUMBER OF IMPACT ATTENUATOR ASSEMBLIES COMPLETED AND ACCEPTED.

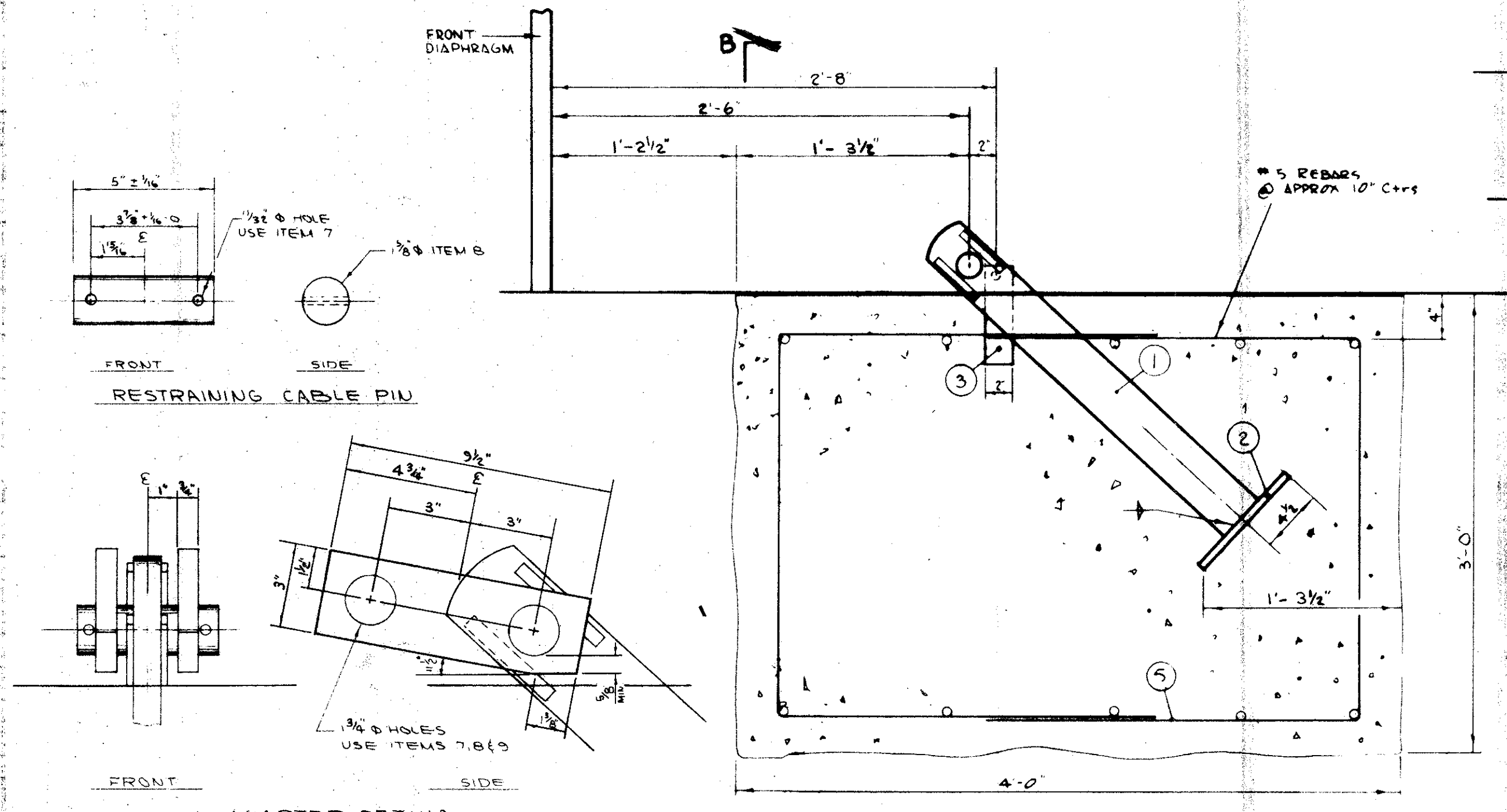
THE BASIS OF PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL IMPACT ATTENUATOR ASSEMBLY.

PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	REMARKS
1		RESTRAINING CABLE ANCHOR FB. 3 1/2" x 1" x 2'-0"	2
2		PLATE 6" x 1/2" x 0'-9"	2
3		SECONDARY CABLE ANCHOR FB. 2" x 1/2" x 0"	2
4		FB. 1/2" x 1/2" x 0'-4"	2
5		REBAR # 5 x 6'-10"	10
6		" 3 x 3'-6"	10
7	27-14-371	FB. 3" x 3/4" x 0'-9 1/2"	SEE NOTE 3 4
8	27-02-041	1 3/8" Ø ROD x 5"	4
9	27-02-031	COTTER PIN	8

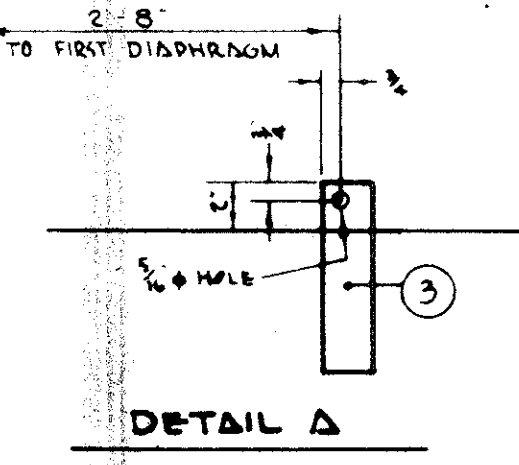
TABLE OF DIMENSIONS			
	FRONT DIAPHRAGM WIDTH	X	T
A	1'-11"	10 1/4"	5 1/2"
B	2'-4"	1'-0 3/4"	8 1/2"
C	2'-5"	1'-2 1/2"	0-10 1/2"



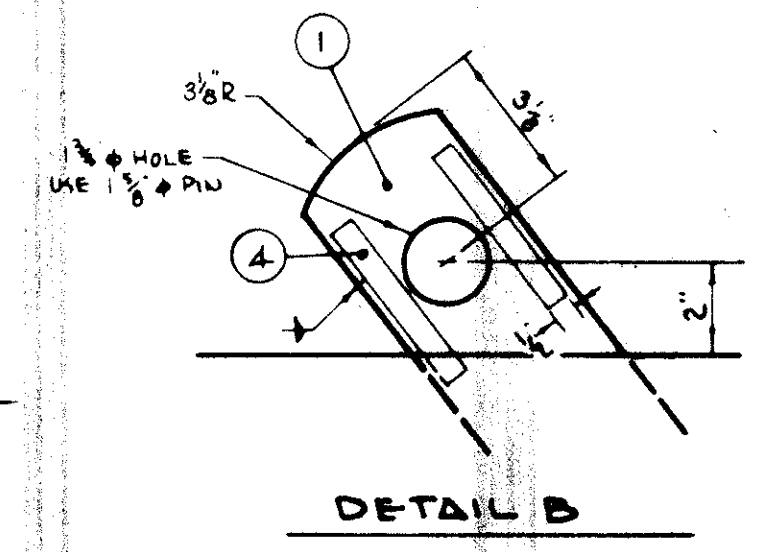
TOP VIEW



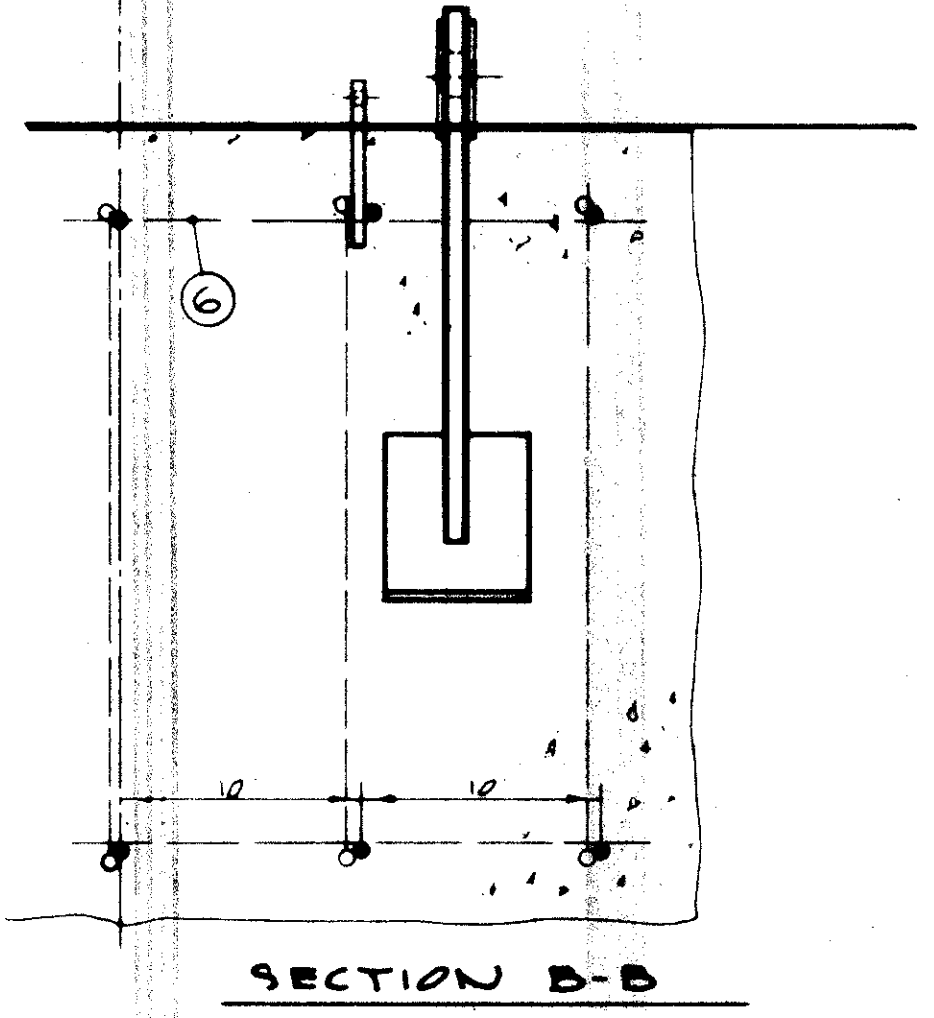
SECTION A-A



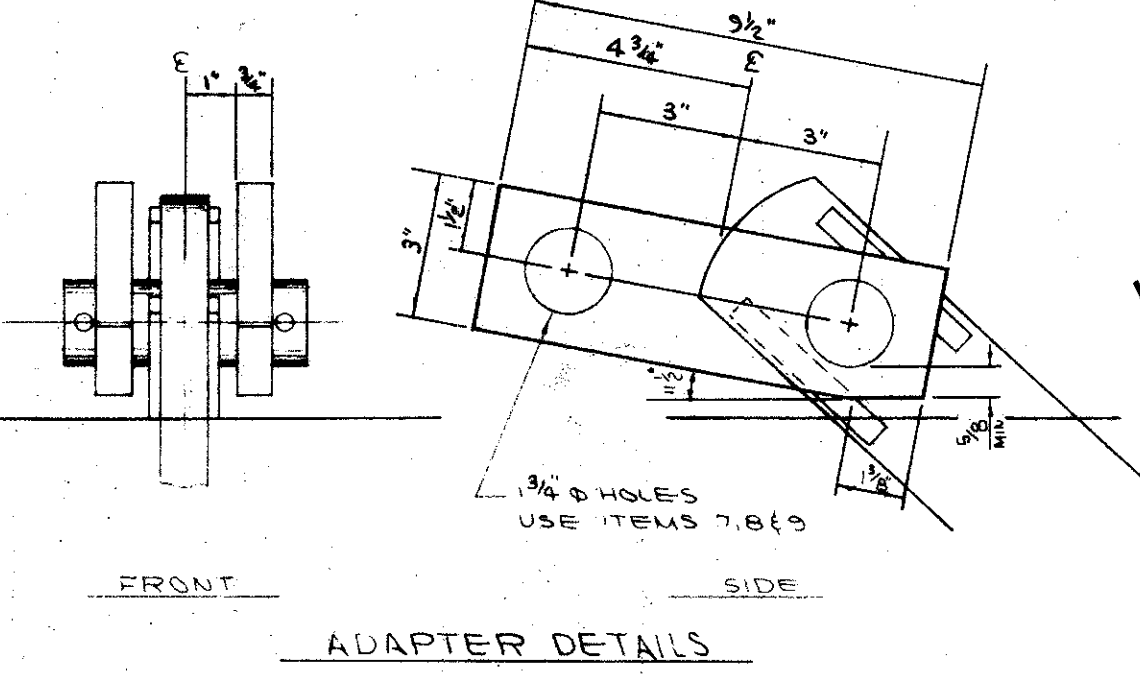
DETAIL A



DETAIL B



SECTION B-B

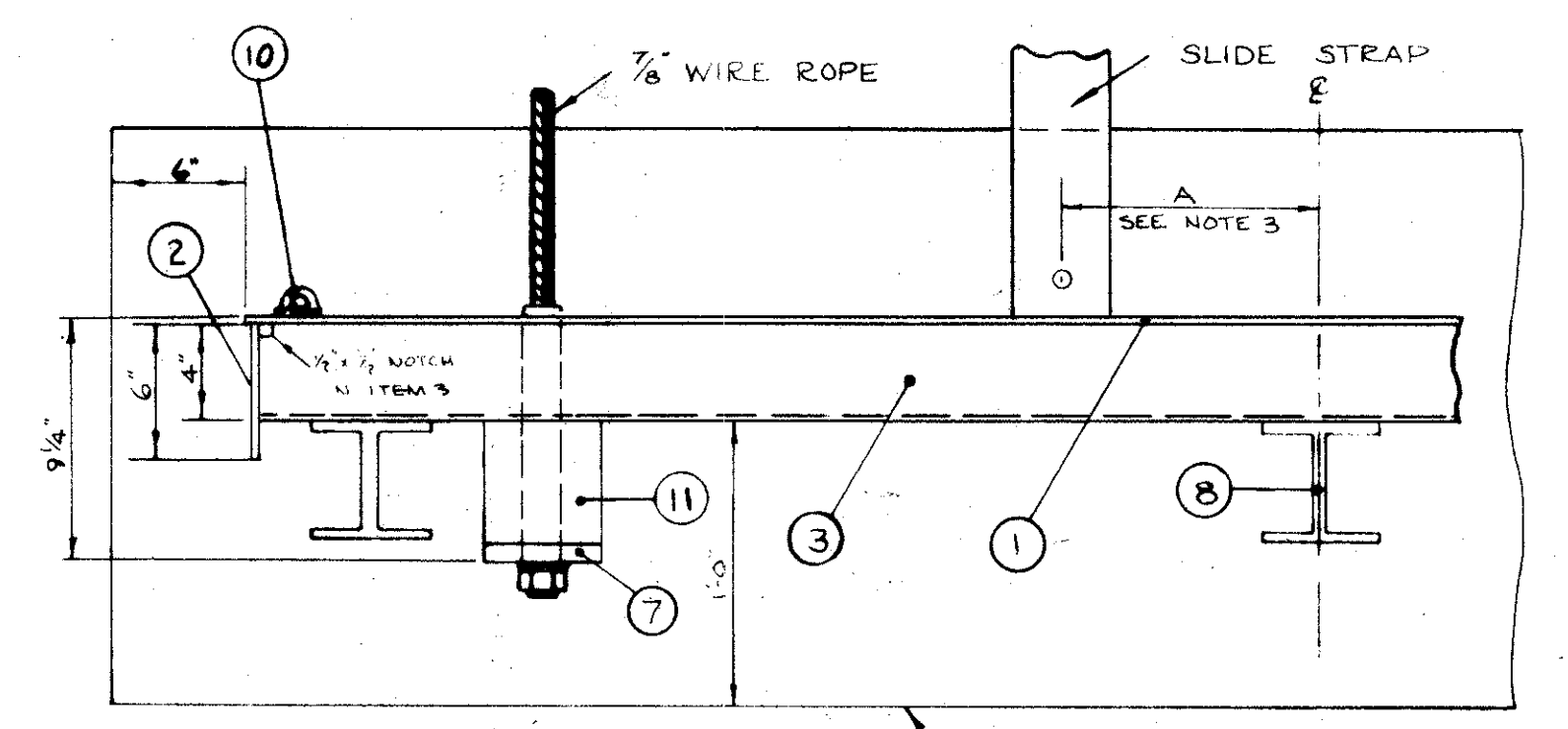


ADAPTER DETAILS

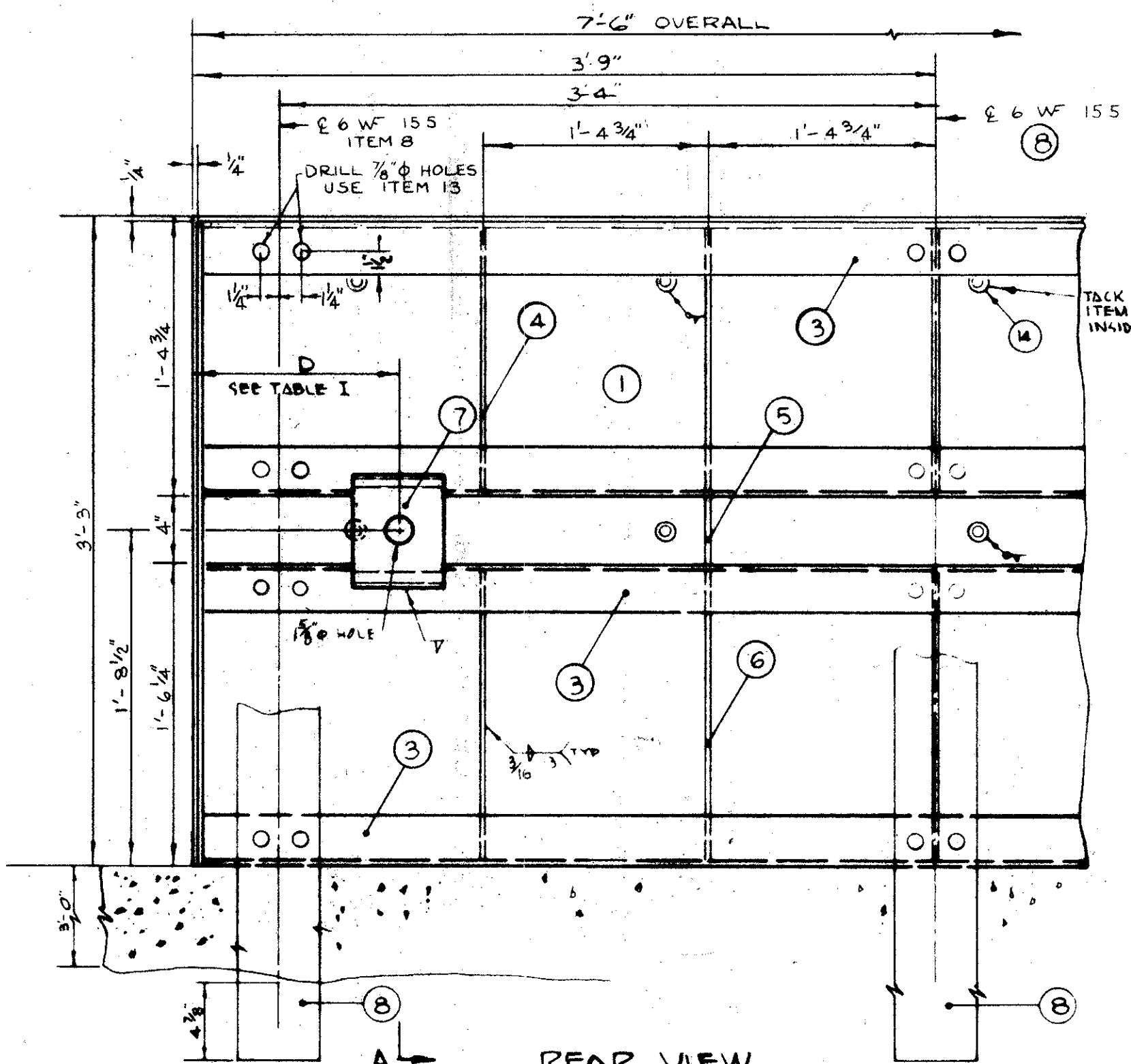
- NOTES:
1. APPROXIMATELY 48 CF OF CON. 19 REQUIRED.
  2. REINFORCEMENT SHALL BE DEFORMED - STRUCT. GRADE OR BETTER.
  3. ITEMS 7, 8 & 9 ARE REQD. ONLY WHEN RESTRAINING CABLES WITH MALE CLEVIS ENDS ARE USED.

SCALE 1/2" = 1'-0"

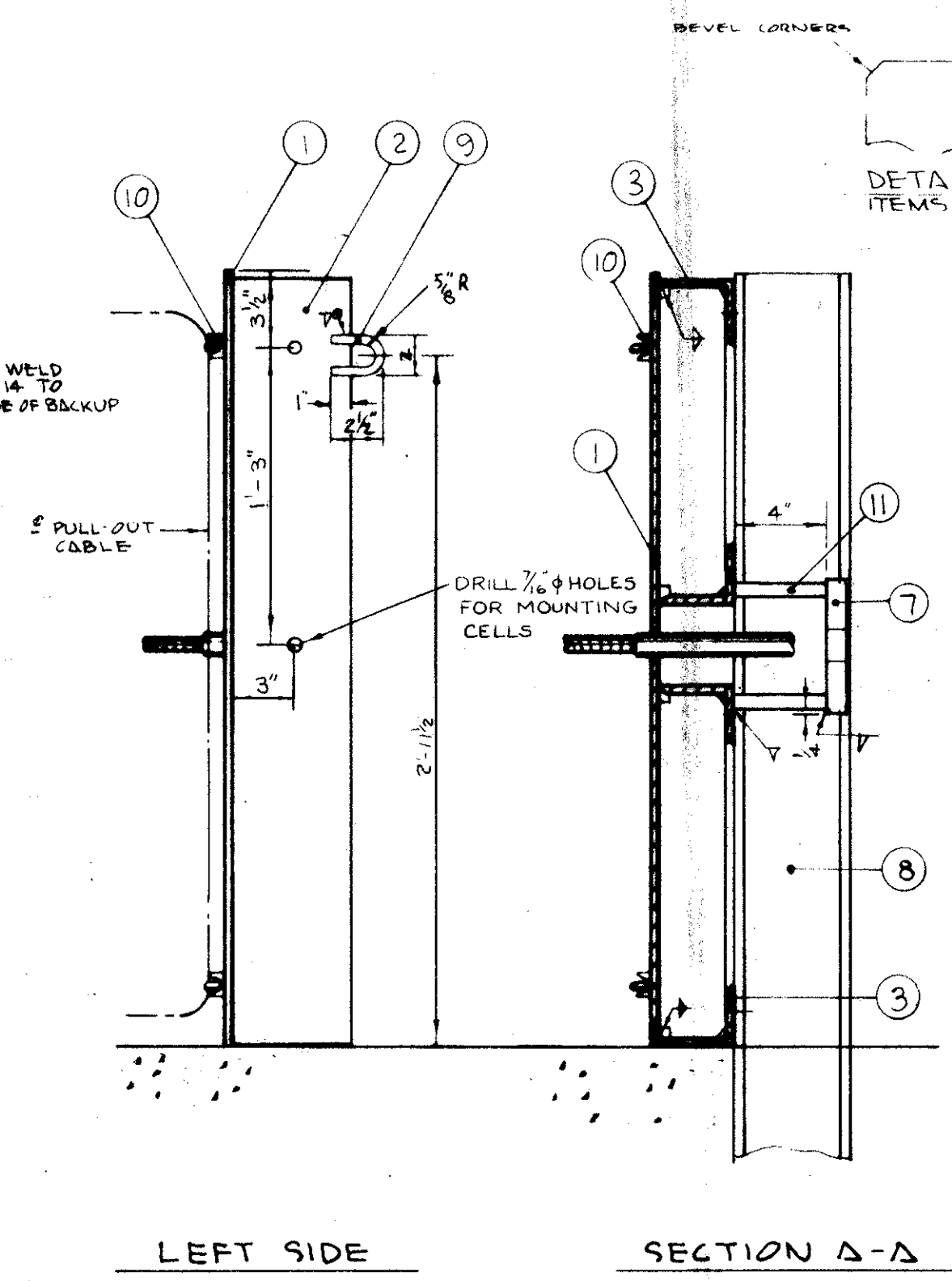
FRONT  
CABLE ANCHORAGE  
IMBEDDED TYPE-A  
DWG. NO. 35-07-02 REV. E



TOP VIEW

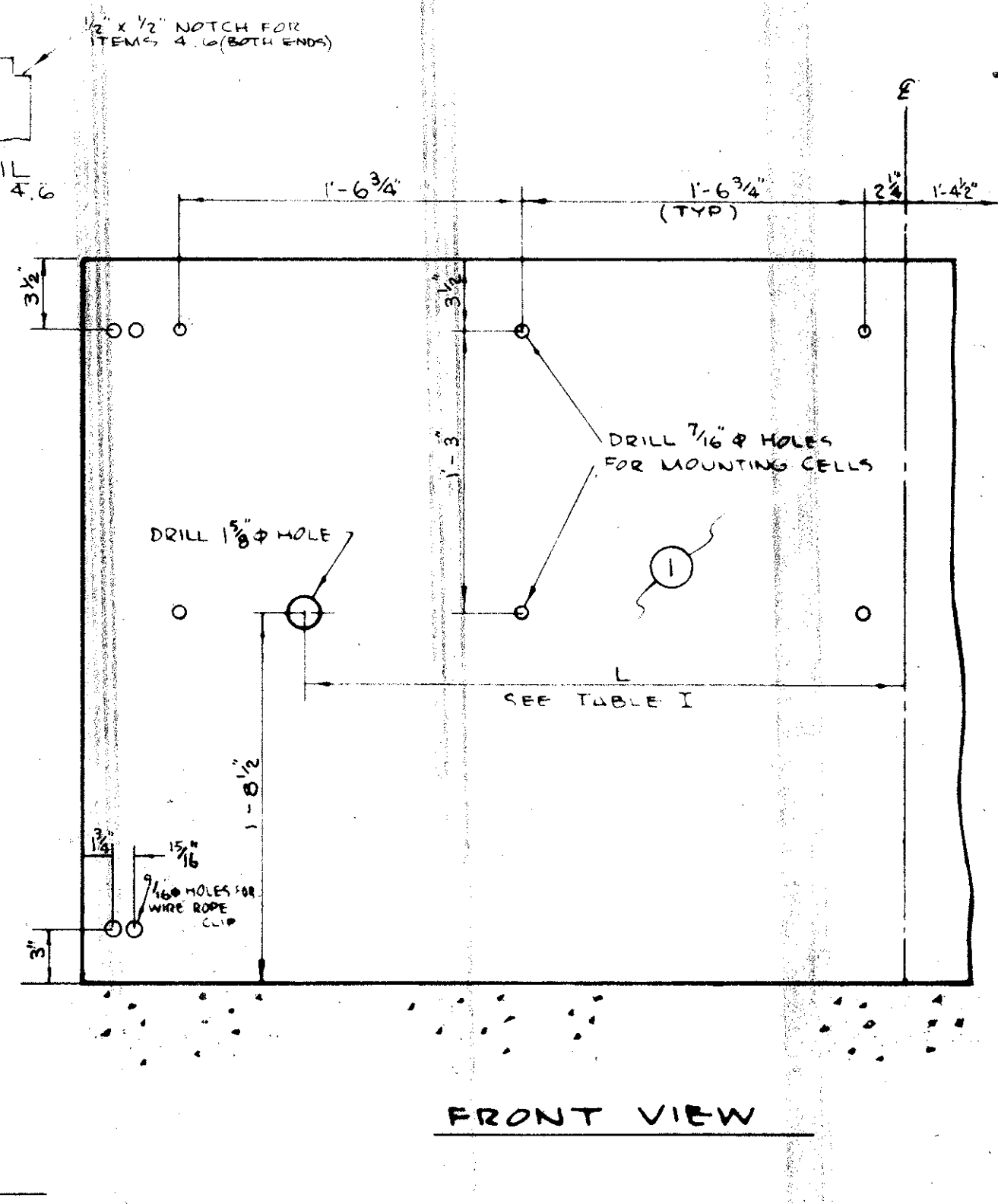


REAR VIEW



LEFT SIDE

SECTION A-A



FRONT VIEW

TABLE I

CELL SANDWICH MODEL NO.	D	L
209711555	1'-7 3/4"	2'-1 1/4"
209711565	1'-5 1/2"	2'-3 1/2"
209800375	1'-3"	2'-6"
209800585	1'-0 1/2"	2'-8 3/4"
209711595	1'-0 1/2"	2'-8 3/4"
2047115105	1'-0 1/2"	2'-8 3/4"
2047115115	1'-0 1/2"	2'-8 3/4"

PARTS LIST

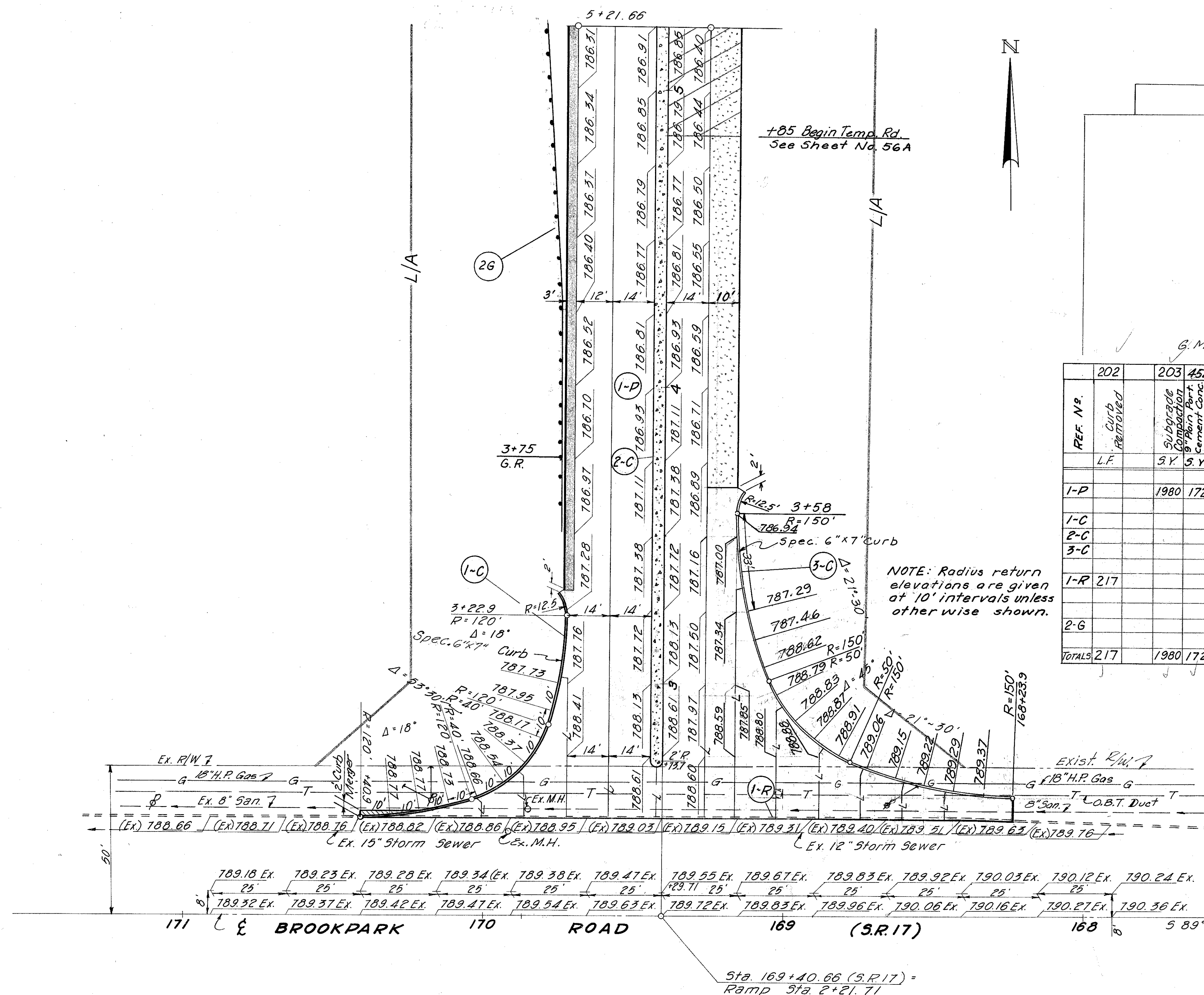
ITEM	STOCK NO.	DESCRIPTION	REQ'D.
1		2 3-3 x 1/2 x 7 6	1
2		BAR 6 x 1/4 x 3-2 3/4	2
3		L 4 x 3 x 3/8 x 7-5	2
4		BAR 3 1/2 x 1/4 x 1-3 3/8	5
5		3 1/2 x 1/4 x 0-4	2
6		3 1/2 x 1/4 x 1-5 3/8	5
7		5 1/2 x 1" x 2-7	2
8		6 WF 55 x 6-7 1/2	3
9	SEE NOTE 1	3/8" ϕ ROUND STOCK x 6 1/2"	2
10	SEE NOTE 4	3/8" WIRE ROPE CLIPS	4
11		FB 5" x 3/4" x 4"	4
12	OMIT		
13		BOLTS - H.S. 3/4" ϕ x 2" W/NUT & WASHERS	24
14		SPEED WASHER/NUT (TINNERMAN)	14
15	OMIT		
16	OMIT		
17	OMIT		

- NOTES
- ITEM 9 IS REQ ONLY WHEN WATER WALL IS USED
  - WF FOUNDATION REINFORCING SHALL CONSIST OF TEMPERATURE REINFORCEMENT IN ACCORDANCE WITH ACI SPECS
  - DIMENSION A IS 0" EXCEPT FOR 10" BAY UNITS IN WHICH A IS 0.9

- SPECIAL WASHER PART NO. 27-08-111 IS REQUIRED WHEN USING 3/8" ϕ U-BOLT FOR WIRE ROPE CLIP. WHEN WIRE ROPE CLIP U-BOLT IS 7/16" ϕ SPECIAL WASHER IS NOT REQUIRED

WIDE FLANGE MOUNTED  
STEEL BACKUP FOR  
WIDE SANDWICH UNIT

SCALE 1/2" = 1'-0" DWG. NO. 35-80-03 REV. E



Sheet No.	Item
55	Plan & Profile
154-159	Cross Sections
9	Curb Merger Detail

REF. No.	202	203	452	301	310	310	606	451	609	612	Spec.	606
	Curb Removed	Subgrade Compaction & Plain Pavement Conc. Pavement	Aggregate Base	6" Sub-base Grading	Subbase	Anchor Assembly	9" Rein. At Concrete Pavt.	Curb Type 6"x7"	Concrete Median	Special Drainage Conn. No. 8, 402		Guard Rail Type 5
	L.F.	S.Y.	S.Y.	C.Y.	C.Y.	C.Y.	Ea.	S.Y.	L.F.	S.Y.	C.Y.	L.F.
1-P		1980	172	11	324	15		1629			20	
1-C									118			
2-C										111		
3-C									158			
1-R	217											
2-G							1					175
TOTALS	217	1980	172	11	324	15	1	1629	276	111	20	175

LEGEND

	Curb Merger
	Standard Conc. Median, Item 612
	Conc. Shoulder, Item 452

For Joint Legend See Sheet No. 58  
For Ramp BR-2 Concrete Shoulder Typical Section See Sheet No. 7.

Rev. D.R.S. 1-4-78  
Rev. R.J.M. 10-19-77  
W.J.M. 3/22/72  
J.L. 9/29/67



**CUYAHOGA COUNTY  
CUY-480-8.54**

Conform to existing

**PROPOSED ELEVATIONS  
(Face of Curb at  
Gutter Line)**

Station	Elev.
162+00	Conform
+25	791.90
+50	791.93
+75	791.93
163+00	791.90
+25	791.83
+50	791.72
+75	791.62
164+00	791.52
+25	791.41
+50	791.31
+75	791.21
165+00	791.10
+25	791.00
+50	790.90
+75	790.79
166+00	790.69
+25	790.59
+50	790.49
+75	790.38
167+00	790.27
+25	790.14
+50	790.00
+75	789.86
168+00	789.71
+23.9	789.44

Exist. San. Manhole  
36' Rt. Sta. 166+87  
Reconstruct to grade  
using 706.11 Jts.  
Elev. Ex. Cover = 791.0±  
Elev. Prop. Cover = 790.08

Exist. Storm M.H.  
No Work Required

Exist. Catch Basin  
27' Rt. Sta. 166+30  
Abandon  
Connect Pipes Thru  
Install New 6" Ty. F

Construct Std. No. 3A C.B.  
38' Rt. Sta. 166+30  
E. Grate = 790.40  
E. 6" Ty. F's = 788.40  
E. 12" Ty. B = 787.40

Exist. Storm Manhole  
27' Rt. Sta. 166+43  
Install New 12" Type B  
E = 787.10

Remove Exist.  
Asphalt Surface

Exist. 2 1/2" Asphalt  
Exist. 9" Conc. Base

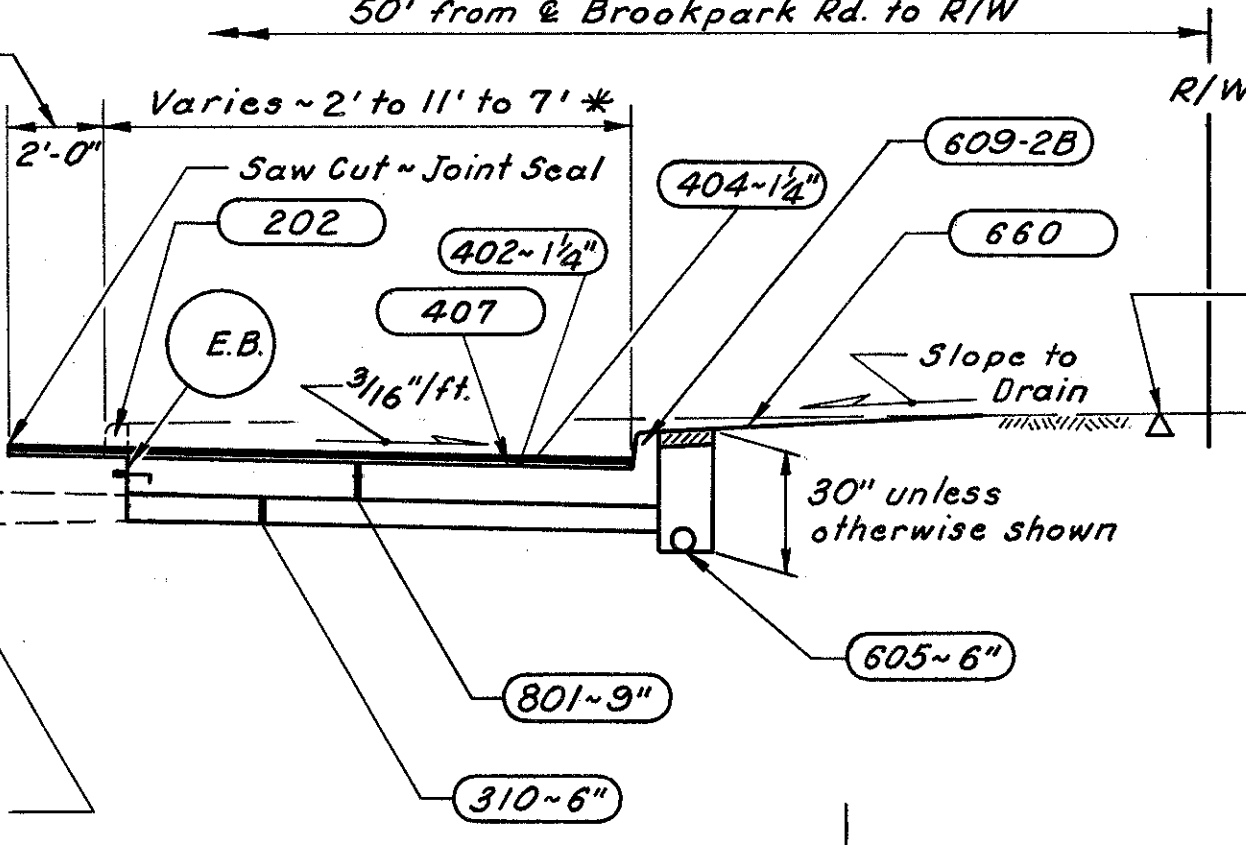
Exist. 6" U.D.  
to remain & function

Exist. Subbase  
Var. Thickness

**\* LIMITING STATIONS**  
Transition 2' to 11' ~ Sta. 162+00 to Sta. 163+50  
Constant 11' ~ Sta. 163+50 to Sta. 166+67  
Transition 11' to 7' ~ Sta. 166+67 to Sta. 168+23.9

- LEGEND**
- 404-1/4" 1/4" Asphalt Concrete
  - 402-1/2" 1/2" Asphalt Concrete
  - 407 Tack Coat @ 0.1 gal./sq.yd. with Cover Aggregate
  - 801-9" 9" Reinforced Portland Cement Concrete Base
  - 310-6" 6" Subbase, Grading A, as per plan
  - 609-2B Concrete Curb, Standard Type 2-B
  - 605-6" 6" Shallow Pipe Underdrain
  - 660 Sodding
  - 202 Remove Existing Integral Curb
  - (E.B.) Expansion Bolts as per Std. Dwg. BP-3

**TYPICAL SECTION  
PAVEMENT WIDENING**



NOTE: Perform work no closer than one foot to existing right of way.

APPROVED FEB. 2, 1978

*John J. ...* DIRECTOR OF PUBLIC UTILITIES  
*W. E. Stallworthy, Jr.* COMMISSIONER OF WATER AND HEAT  
*William J. ...* ENGINEER OF DESIGN REVIEW

For Quantities and Calculations, See Sht. No. 67B  
For Details of Ramps BR-1 & BR-2, See Sht. No. 67  
For Water Work Notes, See Sht. No. 67B  
For Driveway Details, See Sht. No. 67B  
For Traffic Control, See Sht. No. 167 & Sht. No. 173

Pavement Widening

Designed, Checked & Inked  
C.C.C. - 11-10-77

**RIGHT TURN LANE AT WEST 139TH STREET INTERSECTION**

# WATER WORK NOTES

## STATUS OF CITY INSPECTOR

Inspectors, as designated by the Director of Public Utilities, City of Cleveland shall be authorized to inspect all work done and materials furnished. Such inspection may extend to all or any part of the waterworks, and to the preparation or manufacture of the materials to be used in the waterworks. The city inspector as designated by the Director of Public Utilities shall make work instructions through the Project Engineer.

## LOCATION OF EXISTING UTILITIES

The exact location of existing underground structures, utilities, etc. is not known and the information shown on the plans is to be used at the contractor's risk. The Contractor shall notify R.J. Mettler Insp. & Enforc't. three (3) working days prior to starting any waterworks construction. Call 694-3065.

## EXCAVATION

The use of excavating machinery will be permitted except in places where operation of same will cause damage to trees, buildings, or existing structures above or below ground; in which case hand methods shall be employed.

## FIRE HYDRANTS RELOCATED

## WORK INCLUDED

The Contractor shall remove the hydrants and properly set in place and connect at the location shown on the drawings or as directed by the engineer. This shall include all excavation, backfilling, seeding and sodding, and repaving required for the proper completion of the work included under this contract.

## MATERIALS

All hydrants to be relocated must be in good condition. All other materials and appurtenances necessary for the proper completion of this item shall be of the kind and grade called for in these notes for the particular kind of construction in which the materials are to be used.

## SETTING

**Location Regarding Curb Lines:** When placed behind curb the hydrant barrel shall be set so that center of barrel will be no less than 3 feet from the gutter face of the curb, or deviate from location shown on contract drawings, except by consent of the Engineer.

**Position of Nozzles:** The hydrant shall stand plumb, with the nozzles pointing toward the road and at an angle of forty-five degrees therefrom. Where hydrant branch piping is parallel with, or not at right angles to the curb, the Contractor shall release swivel head bolts and adjust the hydrant nozzles to face the road at the proper angle. A hydrant without swivel heads will be adjusted by the City where necessary to correct the angle on nozzles. The elevation shall conform to the established grade with tops of frost casing at least four (4) inches above grade.

**Connection to Main:** The hydrant shall be connected to the main pipe with a cast iron branch controlled by the independent gate valve of the same size as hydrant, except as otherwise directed.

**Drainage at Hydrant:** Drainage shall be provided at the base of the hydrant by filling around the elbow with coarse gravel or crushed stone to least six (6) inches above the waste opening. Wherever a hydrant is set in rock, clay or other impervious soil, the trench shall be widened and deepened on each side of the hydrant base, which space shall be filled compactly with coarse gravel or broken stone mixed with coarse sand of sufficient quantity to absorb all water to be drained from the hydrant when the valve is closed.

**Anchor for Hydrant:** The hydrant shall be set on a stone slab or similar foundation and base of hydrant and hydrant tee well braced against unexcavated earth at the end of trench with concrete backing, or it shall be tied to the pipe with suitable rods or clamps as directed by the Engineer.

**Cleaning:** The hydrant shall be thoroughly cleaned of dirt or foreign matter before setting.

## MATERIALS

All pit cast pipe shall be manufactured in all respects in accordance with, and shall meet the requirements of the latest "Standard Specifications for Cast Iron Pipe and Special Fittings" as adopted by the American Water Works Association.

The centrifugally cast pipe shall conform to the American Standard Specification A21.6-1952 and all subsequent amendments thereto.

All ductile iron pipe shall be manufactured in accordance with A.S.A. A21.51-1965. All ductile iron fittings shall be manufactured in accordance with A.S.A. A21.10 or AWWA C 100-55. All Pipe and Fittings shall be Cement Lined.

In addition to all the above, all other material specifications, construction methods, policy and procedure as prescribed by the Department of Public Utilities of the City of Cleveland, shall be strictly adhered to as pertains to Water Work item in this plan.

**BASIS OF PAYMENT:** The work included in this item shall be paid for at the contract unit price bid for Each ~ "Item Special ~ Fire Hydrants Relocated" which price and payment shall constitute removing and reconnection according to the provisions of these specifications for the particular type of construction called for on the plans, and for all excavation, backfilling, sodding and repaving, and the furnishing of all material, labor, equipment, tools and appliances necessary to complete the work as specified or as shown.

# ESTIMATED QUANTITIES & CALCULATIONS

Location	Item 451-8" Reinf. Port. Cement Conc. Pavement	Item 202 Pavement Removed
1-DW Rt. Sta. 163+08	17 Sq. Yds.	24.4 Sq. Yds.
2-DW Rt. Sta. 164+70	42 Sq. Yds.	88.2 Sq. Yds.
3-DW Rt. Sta. 166+64	42 Sq. Yds.	88.2 Sq. Yds.
<b>TOTALS</b>	<b>101 Sq. Yds.</b>	<b>201 Sq. Yd.</b>

101 Sq. Yds. ~ Item 451 ~ 8" Reinforced Portland Cement Concrete Pavement  
201 Sq. Yds. ~ Item 202 ~ Pavement Removed

To General Summary

ITEM 202 ~ METER VAULT REMOVED ~ Rt. Sta. 168+02 = 1 Ea.

ITEM 202 ~ CURB REMOVED

Rt. Sta. 162+00 to Sta. 163+01 = 101 L.F.

Rt. Sta. 163+15 to Sta. 164+45 = 130 L.F.

Rt. Sta. 164+91 to Sta. 166+41 = 150 L.F.

Rt. Sta. 166+87 to Sta. 168+24 = 137 L.F.

**TOTAL = 518 L.F.**

518 Lin. Ft. ~ Item 202 ~ Curb Removed  
To General Summary

1925 Cu. Yds. ~ Item 203 ~ Excavation Not Including Embankment Construction  
To General Summary

ITEM 660-SODDING

624' x 11' (avg. work behind curb) = 6864 Sq. Ft.

6864 S.F. ÷ 9 = 763 Sq. Yds. - 101.5 Y. (driveways)

662 Sq. Yds. ~ Item 660 ~ Sodding  
To General Summary

ITEM 659-LIMING (100 lbs./1000 S.F.)

662 S.Y. x 9 ÷ 1000 = 6 units x 100 lbs. = 600 lbs.

600 ÷ 2000 = 0.3 Tons

0.3 Tons ~ Item 659 ~ Agricultural Liming  
To General Summary

ITEM 609- CURB-TYPE 2-B

Rt. Sta. 162+00 to Sta. 163+01 = 101 L.F.

Rt. Sta. 163+15 to Sta. 164+50 = 135 L.F.

Rt. Sta. 164+90 to Sta. 166+44 = 154 L.F.

Rt. Sta. 166+84 to Sta. 168+24 = 140 L.F.

**TOTAL 530 L.F.**

530 Lin. Ft. ~ Item 609 ~ Concrete Curb Std. Type 2-B  
To General Summary

## DRIVEWAYS

Item 451-8" Reinf. Port. Cement Conc. Pavement

Item 202 Pavement Removed

Item 202 Wearing Course Removed

Item 202 Meter Vault Removed

Item 202 Fire Hydrant Relocated

Item 202 Fire Hydrant Relocated

Item 202 Fire Hydrant Relocated

Item 202 Fire Hydrant Relocated

Item 202 Fire Hydrant Relocated

Item 202 Fire Hydrant Relocated

Item 202 Fire Hydrant Relocated

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Item 202 Fire Hydrant Relocated

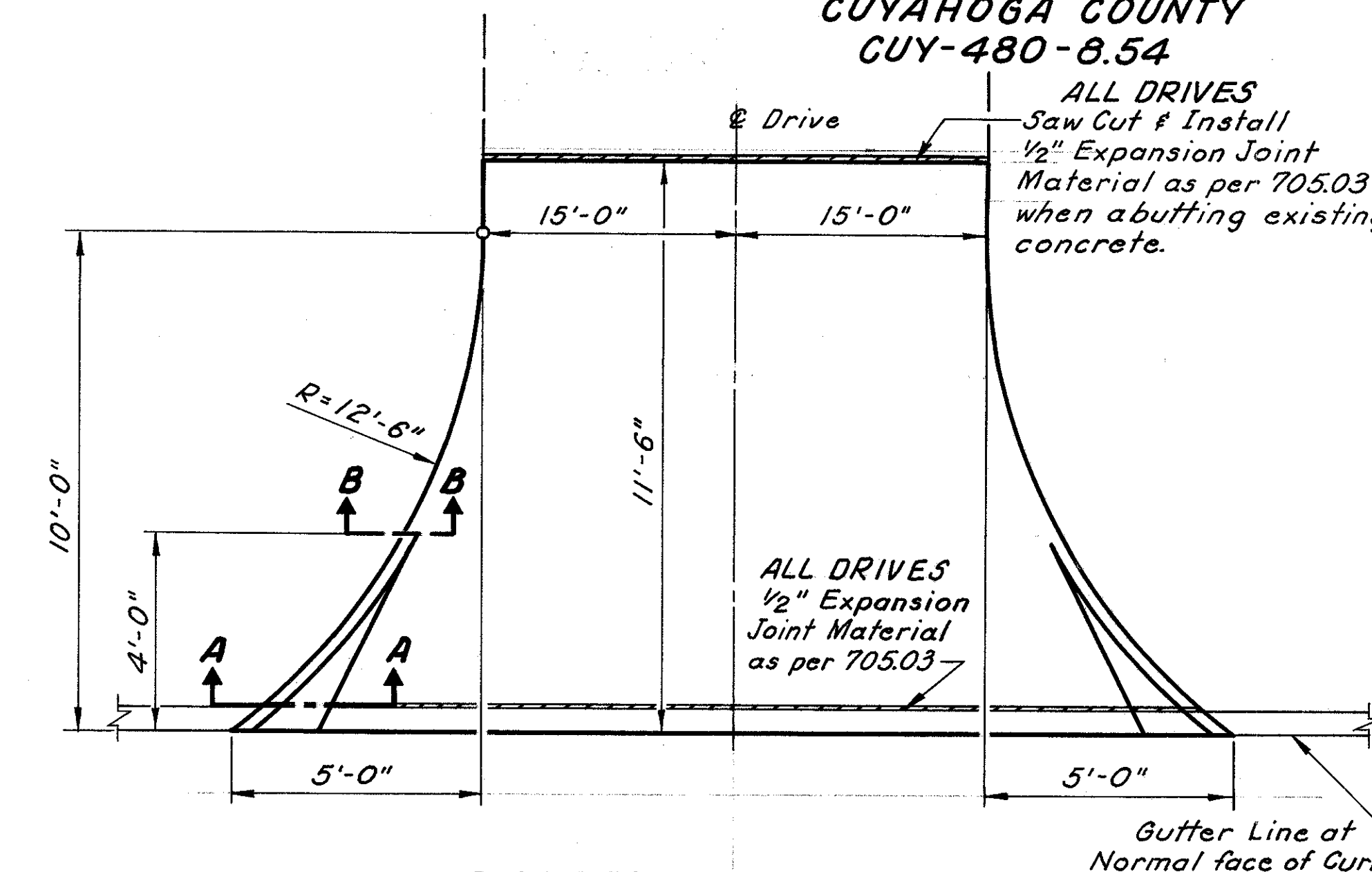
Item 202 Fire Hydrant Relocated

Designed, Checked & Inked - C.C.C. - 11-10-77

FHWA REGION	STATE	PROJECT
5	OHIO	

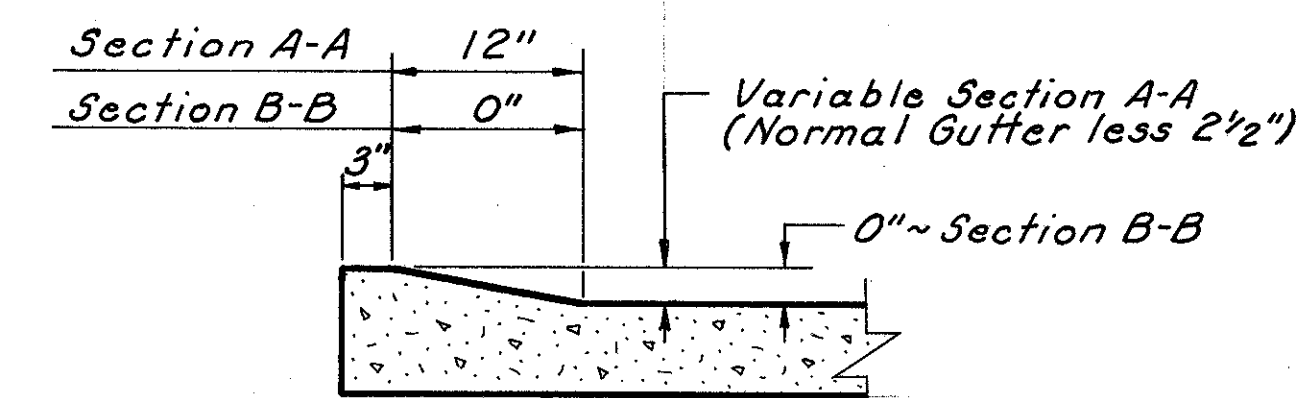
67-B  
346

CUYAHOGA COUNTY  
CUY-480-8.54

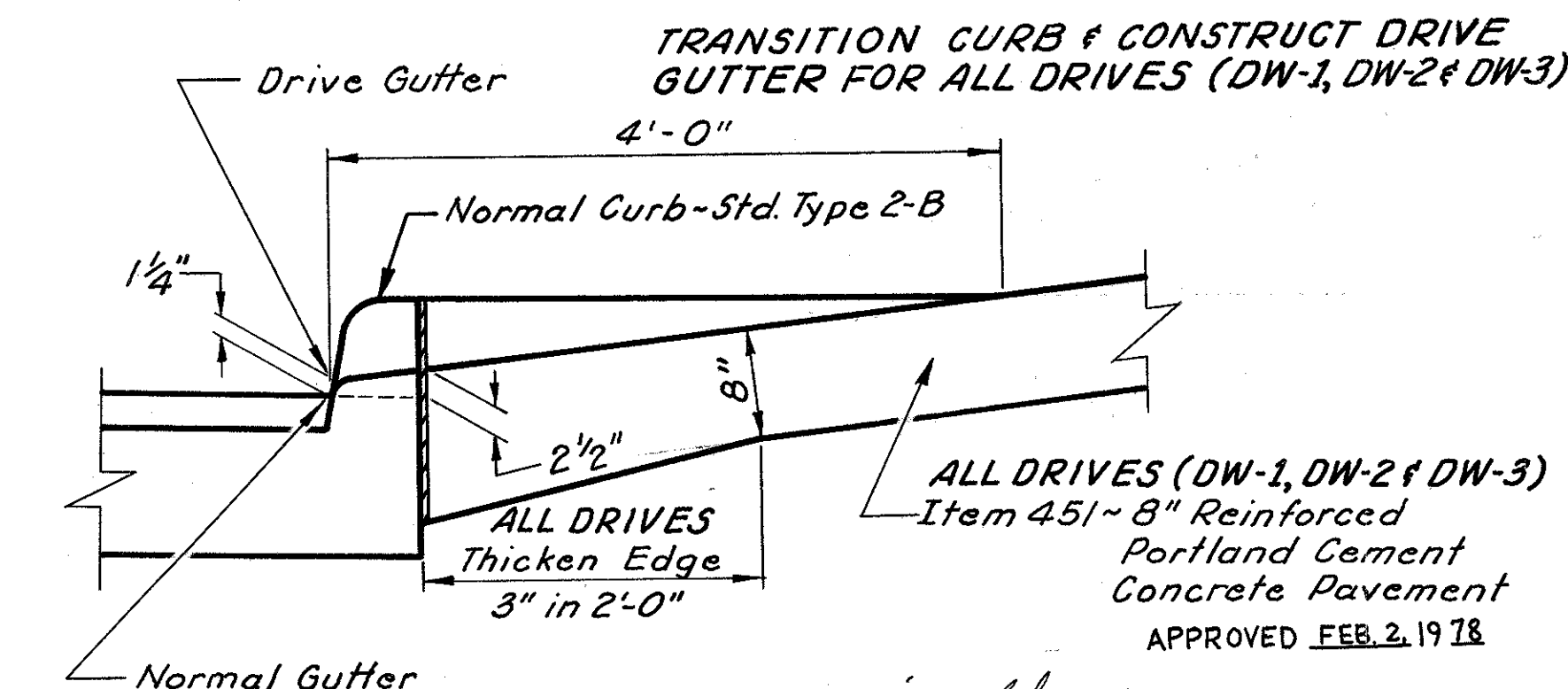


## CONCRETE DRIVE DETAIL DRIVES DW-2 & DW-3

CONSTRUCT DRIVE DW-1 AS SHOWN ON SHT. 67-A



## SECTION A-A & B-B



## APRON CURB TRANSITION AND DRIVE TYPICAL

## DRIVE NOTES:

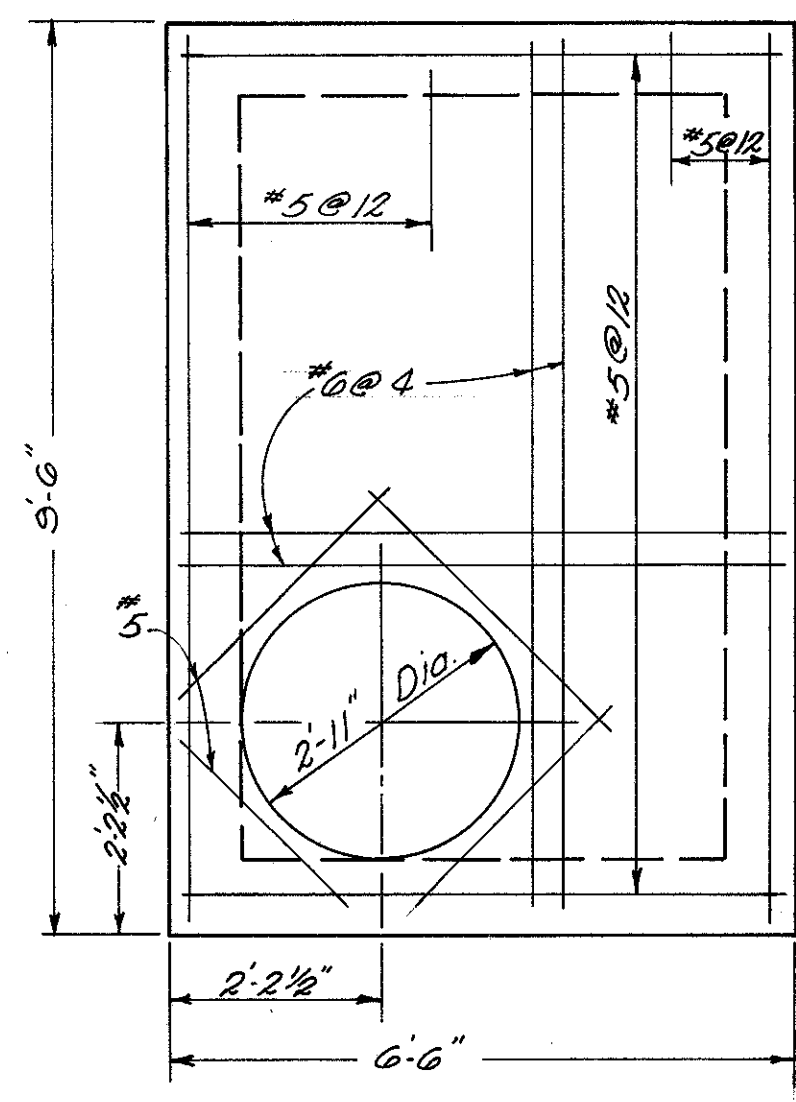
Actual field location of drives shall be as determined by the Engineer at the time of construction.

The cost of all materials, labor and incidentals to construct; drive curbs and gutters, thickened edges, saw cuts and expansion joints, shall be included in the unit price bid for: Item 451-8" Reinforced Portland Cement Concrete Pavement.

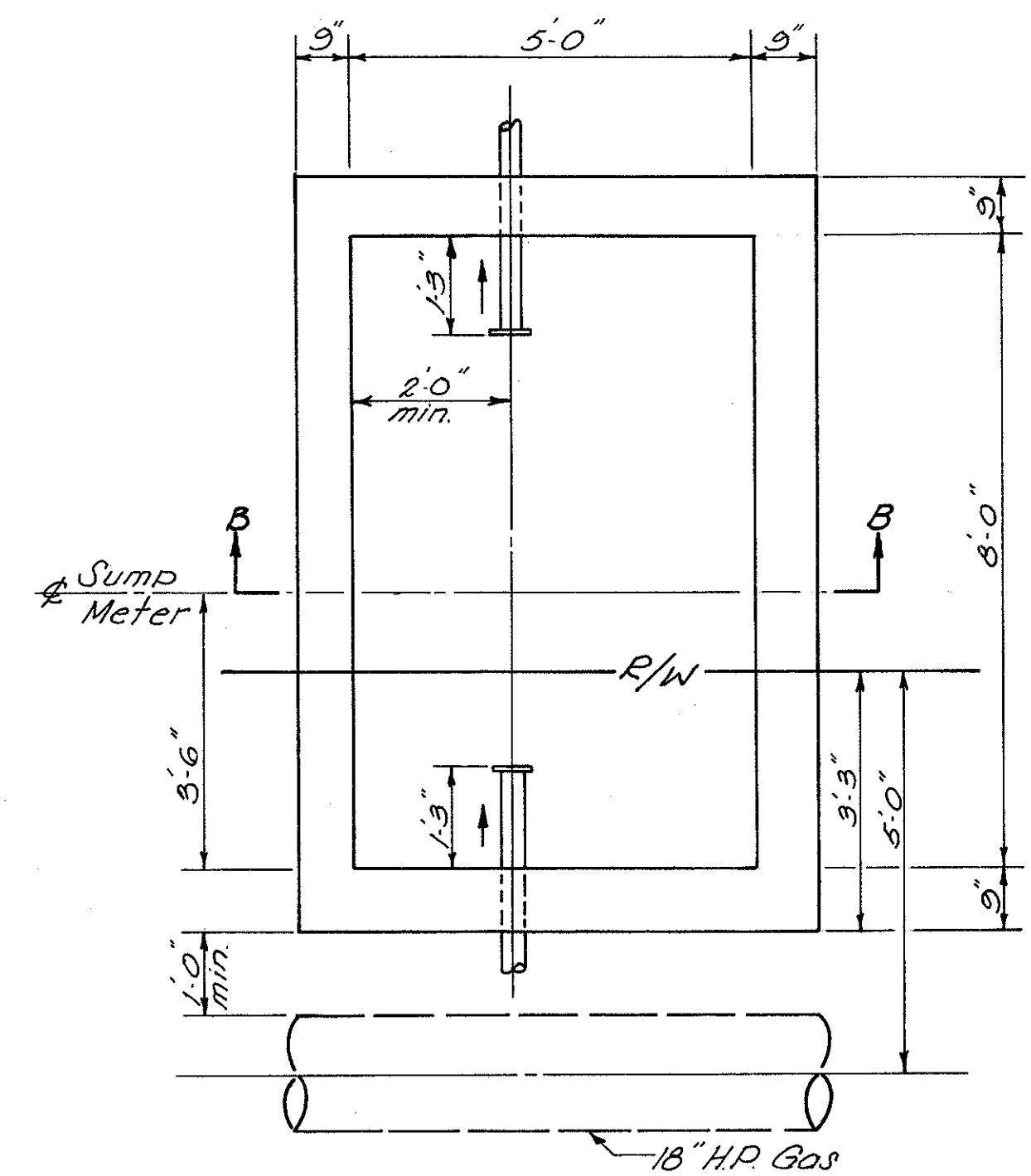
WEST 139TH. STREET INTERSECTION

DRAINAGE QUANTITIES TO GENERAL SUMMARY											
Ref. No.	Location	Side	202 Comb. Inlet/M.H. Removed	202 Catch Basin Abandon	603 12" Round Type B	603 6" Cond. Type F	604 M.H. Reconn. to grade	604 M.H. Reconn. to grade	604 6" M.H. Modified	604 6" M.H. Modified	605 6" Steel Pipe U.D.
			Each	Each	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each	Lin. Ft.
1-SAW	163+37.5	Rt.					1				
2-SAW	166+42	Rt.					1				
3-SAW	166+87	Rt.					1				
1-STR.	163+93	Rt.						1			
2-STR.	164+37.5 to 164+40.5	Rt.	1		10				1	1	
3-STR.	166+30 to 166+43	Rt.		1	14	10				1	
4-STR.	167+85.5 to 167+95.3	Rt.		1	10	10				1	
Underdrains											
	163+17 to 164+37.5	Rt.				10					110
	164+92 to 166+30	Rt.				10					128
	166+86 to 167+72	Rt.				10					76
	167+77 to 168+24	Rt.									47
<b>Totals</b>			<b>1</b>	<b>2</b>	<b>34</b>	<b>50</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>361</b>

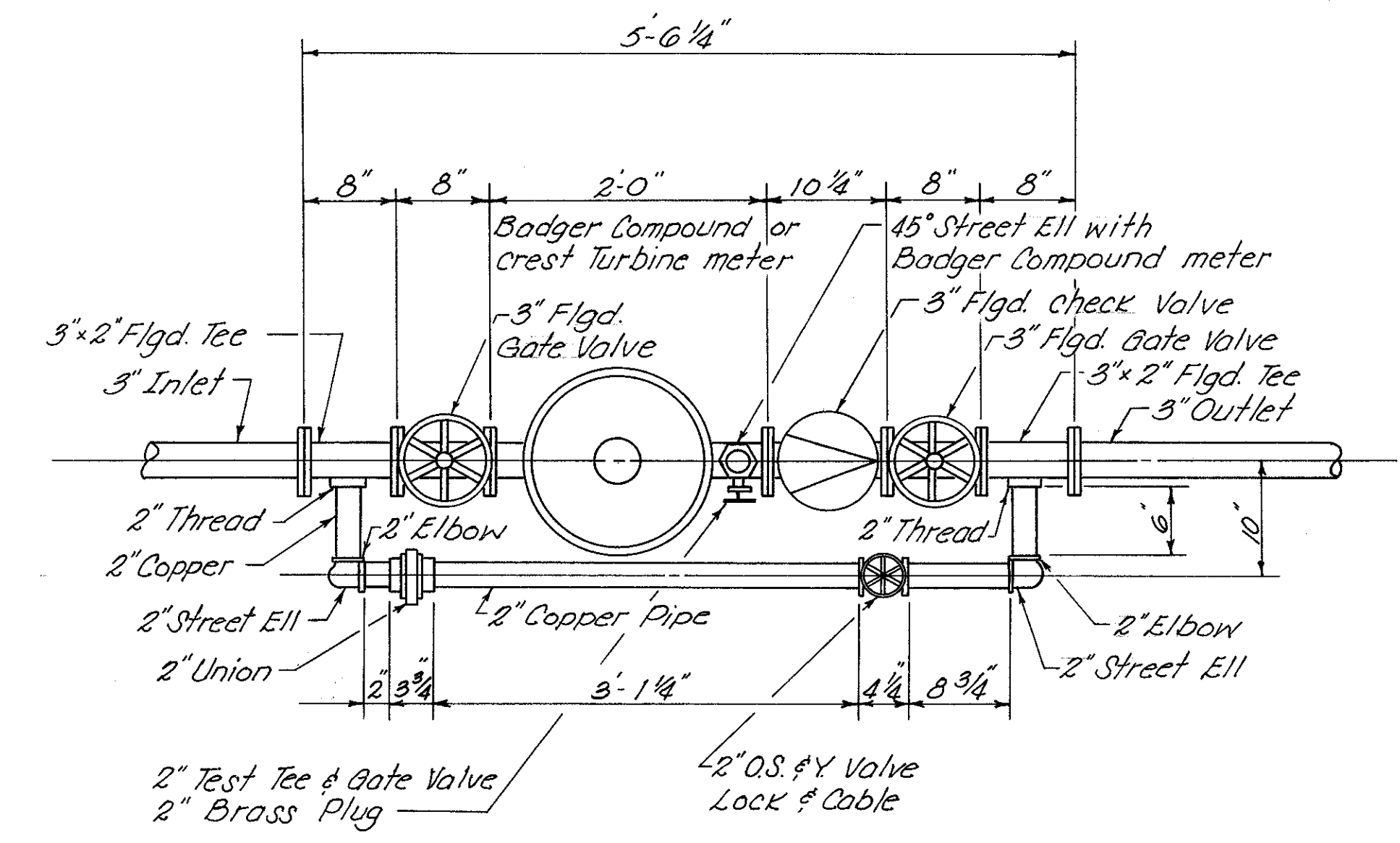
CUYAHOGA COUNTY  
CUY-480-8.54



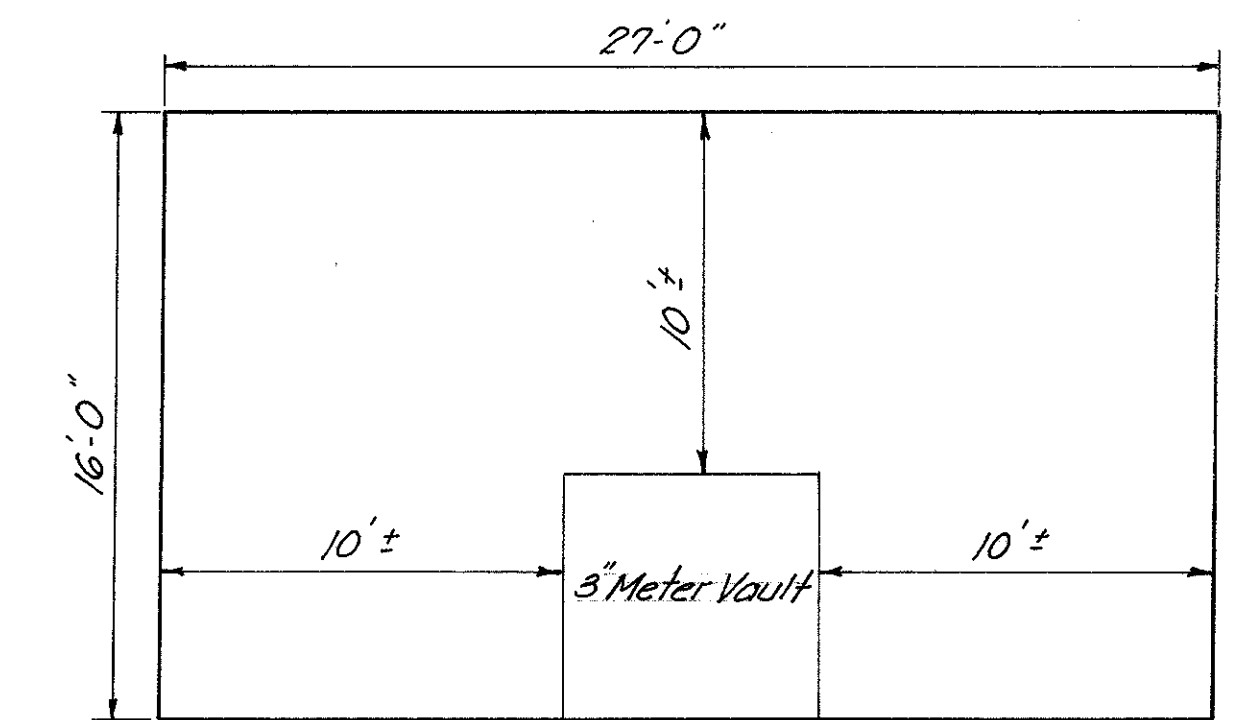
PLAN-TOP SLAB



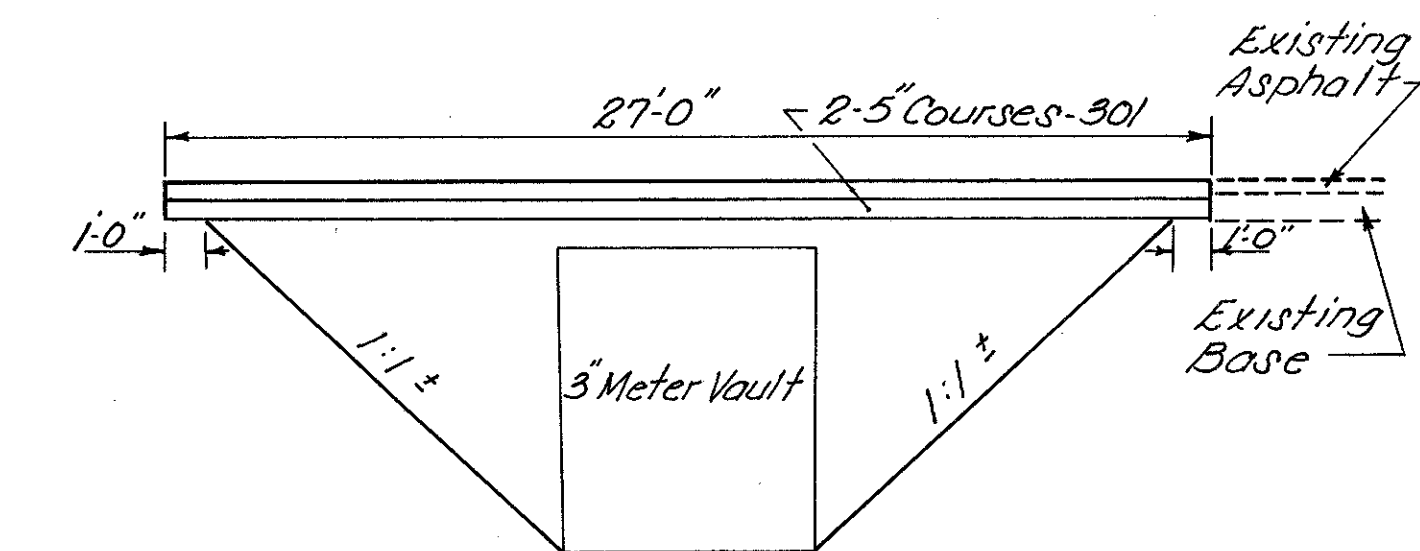
PLAN



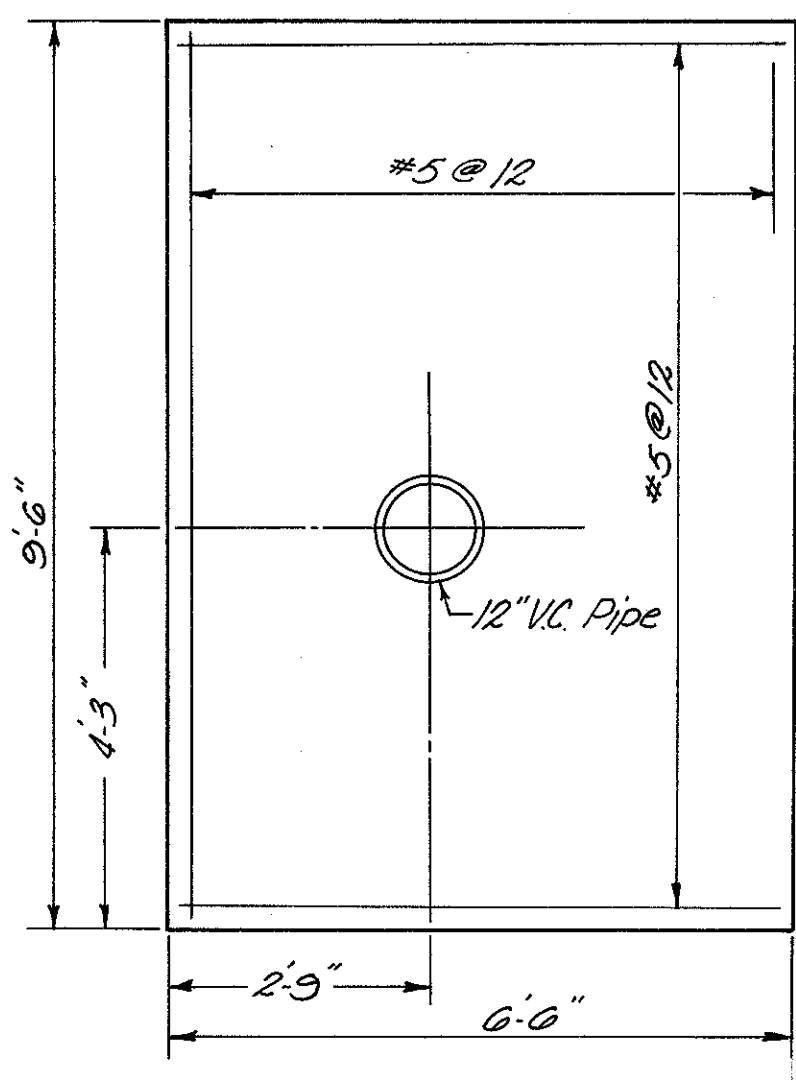
3" METER SETTING



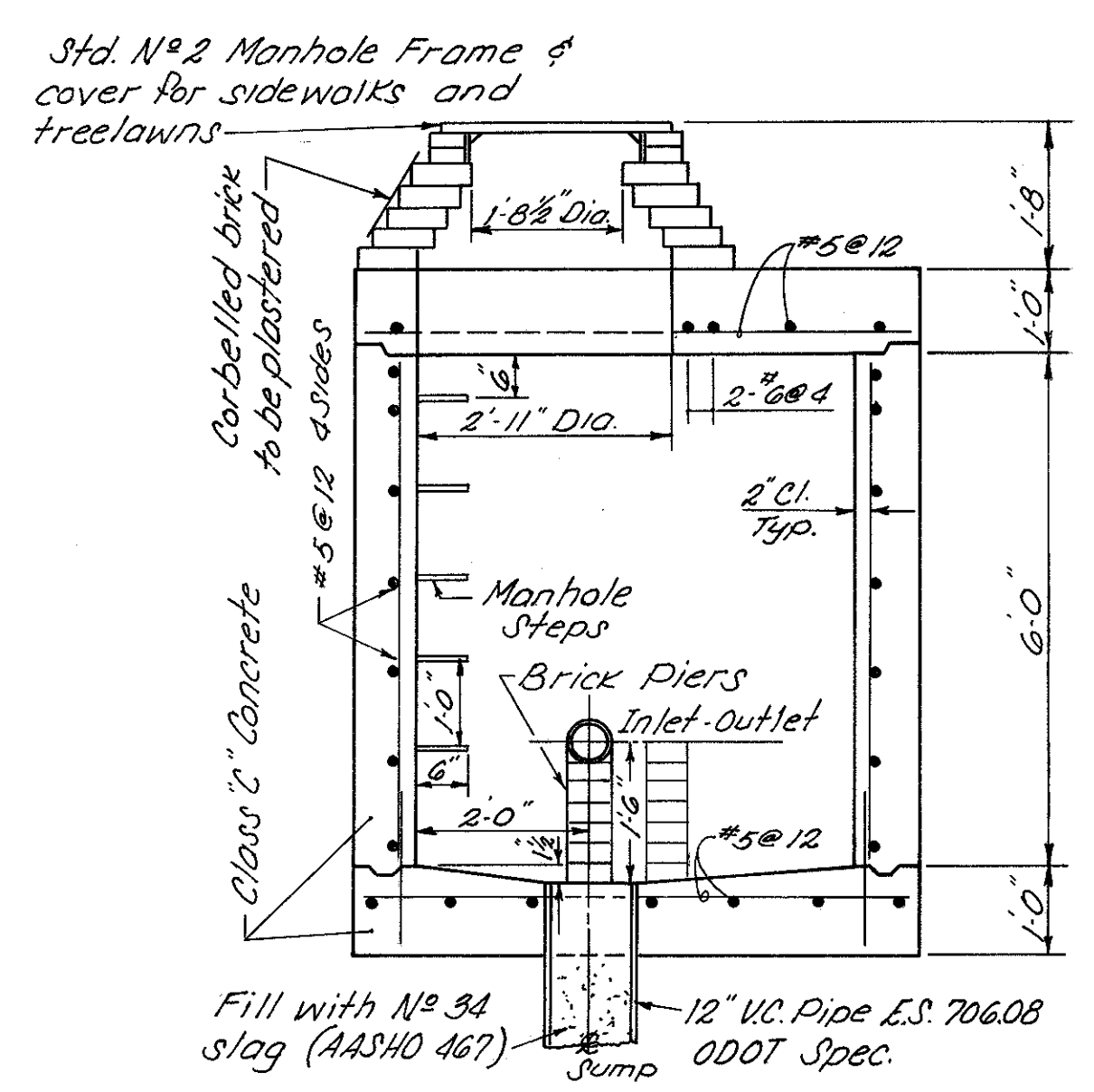
PLAN VIEW



REPLACEMENT OVER METER VAULT

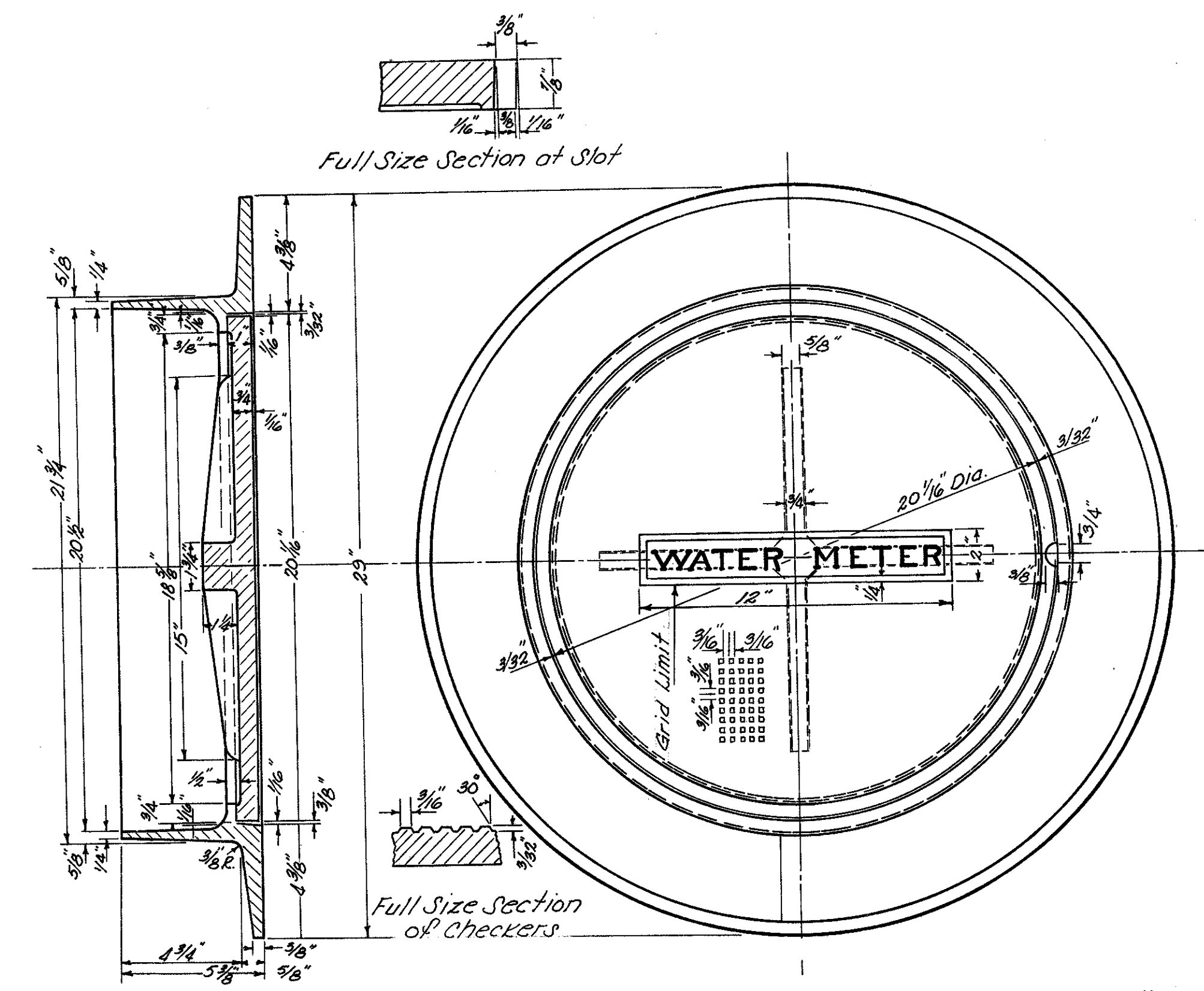


PLAN-BOTTOM SLAB



SECTION B-B

3" METER VAULT



MANHOLE RING and COVER #2

APPROVED FEB. 2, 1978

*William J. Sweeney* ENGINEER OF DESIGN REVIEW

**ITEM SPECIAL - ADJUST EXISTING VALVE BOX TO GRADE**

The contractor shall adjust the existing valve box to fit the revised grade by excavating around the box and raising or lowering the existing extension section or new extension section. Backfill shall be tamped under the adjusted valve box to ensure the box has a firm footing.

The work included in this item shall be paid for at the contract unit price bid for each "Item Special - Adjust Existing Valve Box To Grade," which price and payment shall constitute full compensation for adjusting the valve box, excavation, tamping earth under valve box, backfill, seeding, and for all labor, equipment, tools, materials (miscellaneous metal) and incidentals necessary to complete this item.

**ITEM SPECIAL - VAULTS**

Under this item the contractor shall furnish all necessary labor, materials, tools and equipment for the construction, complete, of meter vaults, and other appurtenant work together with the hauling, mixing, placing, forming, scaffolding, sheeting and bracing, grouting, plastering, curing, etc., all as specified, required or shown on the contract drawings.

**BRICK AND MASONRY MATERIAL**

The material furnished by the contractor for the various kinds of masonry construction to be constructed shall conform to the following Ohio Department of Transportation (ODOT) specifications:

(A.) All brick furnished and used shall be No. 2 shale brick and shall comply with the requirements for "Grade SA" ASTM C32, or ODOT 704.02 concrete brick.

(B.) Portland cement shall conform to the requirements of 701.04 (ASTM C 150 Type 1) ODOT.

(C.) Fine aggregate for mortar or grout shall conform to the requirements of 703.03 ODOT.

(D.) Aggregate for portland cement concrete shall conform to the requirements of 703.02 ODOT.

(E.) All water shall be clean and accurately measured for each batch of concrete.

(F.) All plain concrete shall be the ODOT 499 Class "C".

(G.) All reinforcing steel shall be ODOT Item 509.

(H.) All cement mortar shall be mixed in the proportion of one (1) part of cement to three (3) parts of sand, except the mortar for brick catch basins and sewer manholes which shall be 1 to 2 mix.

(I.) Precast masonry vault sections may be furnished if they meet the requirements of the drawings and specifications on file with the Cleveland Division of Water.

**VAULT CONSTRUCTION**

(A.) All vaults shall be built in accordance with the contract drawings.

(B.) The walls of circular structures shall be built of No. 2 shale brick or concrete brick laid in 1:3 portland cement mortar, with brick arranged radially as headers, forming a wall nine (9) inches thick. In deep manholes, the wall shall be thirteen (13) inches thick below a point 12 feet from the surface. All of the brick composing said structures shall be laid in full mortar beds and joints, with no mortar joints appearing on the inner surface of the manhole exceeding three-eighths (3/8) inches thick.

(C.) The top of the wall of structures shall be properly leveled off with mortar so as to form a flat surface upon which the cast iron manhole ring is to rest, and the structure shall be built to proper height as indicated by the contract drawings.

(D.) The entire outer surface of all brick structures shall be plastered with a smooth coating of 1:3 portland cement mortar, at least one-half (1/2) inch thick.

(E.) Precast or cast in place concrete masonry construction shall follow the applicable section of Item 604 ODOT specification.

Payment shall be made at the contract unit price bid per each "Item Special - Vaults" classified as to size and type, complete and accepted in place. Payment for brick or concrete masonry is to be included in the unit price bid for the item in which it is used and shall constitute full compensation for performing all the requirements of this item including all necessary material including frames, covers, steps (miscellaneous metal); labor, tools, equipment and incidentals to make this a complete item of work.

**ITEM SPECIAL - METER SETTING**

The contractor shall furnish all the material for and shall arrange for the installation by the city of meters (assemblies) in the new vaults at the locations shown on the drawings or as directed by the engineer. Materials required for each size and type of installation have been tabulated in these notes - See "Materials Required for Installation". The necessary dimension and other details are included in the detailed plan section. The contractor shall provide the necessary labor and equipment for handling the material and assisting the city in the installation.

The City of Cleveland, Division of Water, will install all necessary pipe, fittings, valves and meter in the new vaults including the furnishing of all necessary labor, tools and equipment required to complete this item of work.

The meter setting to be paid for shall be the actual number of each unit listed and estimated separately, complete and accepted.

Payment for this work, performed jointly by the city and the contractor, will be at the contract price bid for each "Item Special - Meter Setting" classified by pipe size, complete. This price and payment shall constitute full compensation for performing all the requirements of this item including furnishing all necessary materials (including pipe, valves and miscellaneous metal), labor, tools, equipment, supplies and incidentals. The labor, tools, equipment and incidentals furnished by the City of Cleveland, Division of Water, will be at no expense to the contractor.

**MATERIALS REQUIRED FOR INSTALLATION OF 3" METER SETTING - FLANGED**

1	2"	H.W. Gate Valve - Screwed
2	3"	Ring Gaskets
1	2" x 10"	Brass Nipple
2	3"	H.W. Gate Valve - Flanged
1	3"	Swing Gate Check Valve - Flanged
1	2"	O.S.Y. Valve - Screwed
2	3"	Double Flanged Test Tees - 2" Tap
26	5/8" x 2 1/2"	Machine Bolts
2	5/8" x 3"	Stud Bolts
4	5/8"	Hex Bolts
5	3"	Ring Gaskets
2	2" x 6"	Galvanized Nipple
1	2" x 10"	Galvanized Nipple
2	2"	Galvanized Elbows - 90°
2	2"	Galvanized St. Elbows
1	2"	Galvanized Union, Male to Female
40 inches	2"	Galvanized Pipe, Extra Heavy
1	3"	Current Meter
		or (To be obtained from Cleveland Water Department)
1	3"	Compound Meter
8	5/8" x 2"	Machine Bolts
1	2"	Brass 45° St. El. *

\* St. El. used only if meter is badger compound.

**ITEM SPECIAL - EXISTING SERVICE CONNECTION EXTENDED**

The contractor shall furnish all the material and arrange for the City of Cleveland, Division of Water, to do the actual relocating of curb boxes and extending connections from existing curb box location to new curb box location. Work performed by the City of Cleveland will be at no expense to the contractor.

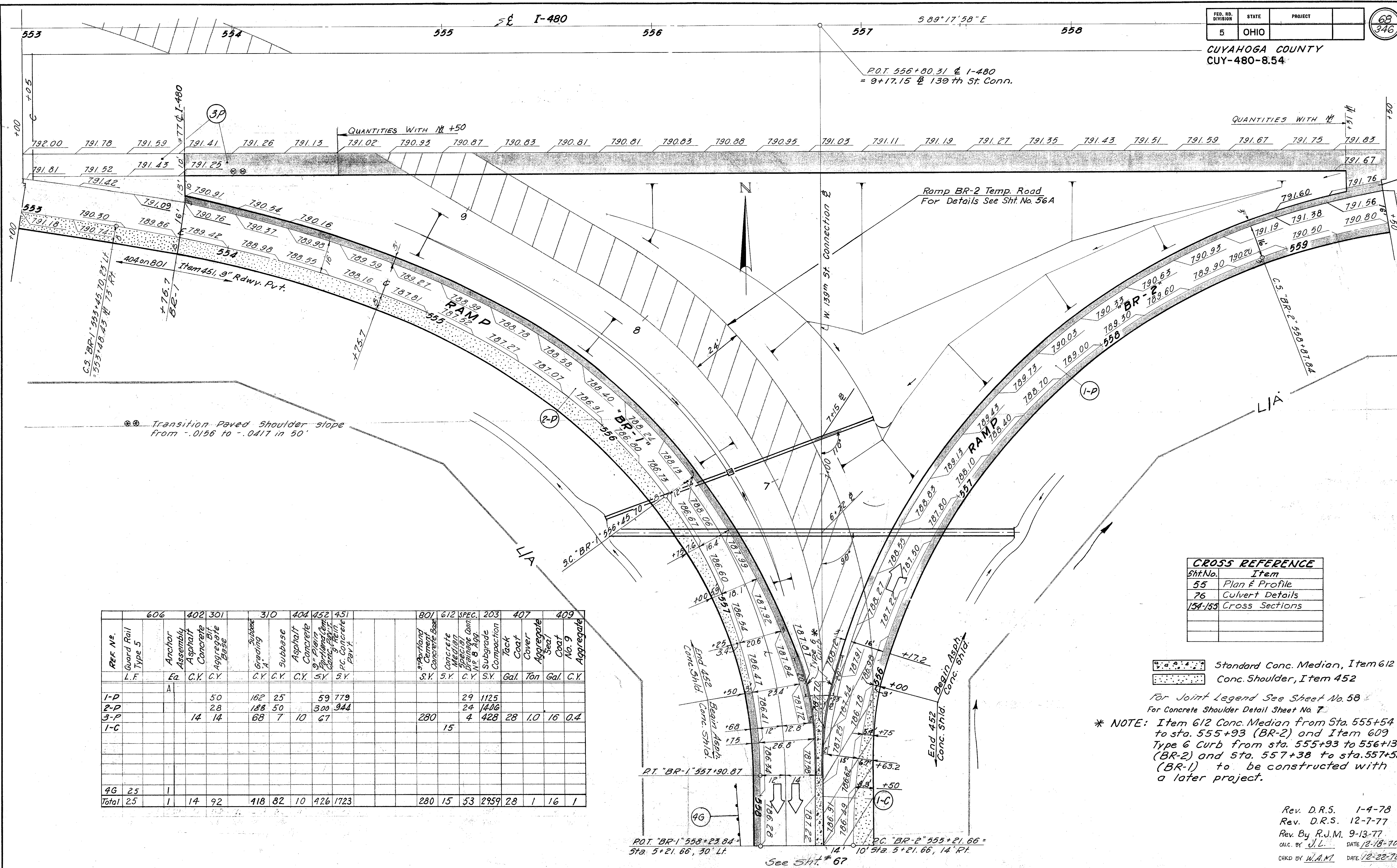
The contractor shall furnish all the material and shall do all the necessary excavation, backfilling, seeding, sodding and repaving required in making these service connections and alterations and costs thereof shall be included in the unit price bid for "Service Connection Extended". The curb boxes shall be relocated by the city and set to final grade by the contractor. Water meter vaults for connections 3/4" and over shall be constructed by the contractor and paid for at contract unit price bid for each "Item Special - Vaults".

The service connection extended to be paid for shall be the actual number of each listed and estimated separately, complete and accepted.

The unit price stipulated for each "Item Special - Existing Service Connection Extended", classified by size, under this item shall include the excavation, backfilling, seeding and sodding and repaving and the furnishing of all labor, materials, tools and appliances necessary to complete the work as specified or as shown. The labor, tools, equipment and incidentals furnished by the City of Cleveland, Division of Water, will be at no expense to the contractor.

**MATERIALS REQUIRED FOR INSTALLATION OF 3" SERVICE CONNECTION**

1	12" x 3"	Branch Sleeve
1	3"	Cast Iron Tap Valve
1	# 2	Valve Box Top
1	# 2	Valve Box Bottom
1	# 2	Valve Box Cover
30 feet	3"	Cement Lined CL 24 or Cement Lined CL 56 Pipe
4	3"	Connection Piece, Flange + Bell or Flanged Coupling Adapter
4	3"	Connection Piece, F+S or Pig Lead
4	3"	Connection Piece, F+S or Pig Lead
30 Lbs.	3"	Pig Lead



REF. NO.	606	402	301	310	404	452	451	801	612	SPEC.	203	407	409			
Guard Rail Type 5	Anchor Assembly	Asphalt Concrete Bit Aggregate Base	Subbase Grading A	Subbase	Asphalt Concrete	9" Plain Portland Cement Conc. with 3" Rein. PC Concrete Pavt.		9" Portland Cement Concrete Base	Concrete Median	Special Drainage Channel No. 8 Agg.	Subgrade Compaction	Tack Coat	Cover	Aggregate Seal	Coat No. 9	Aggregate
L.F.	Eq.	C.Y.	C.Y.	C.Y.	C.Y.	S.Y.	S.Y.	S.Y.	S.Y.	C.Y.	S.Y.	Gal.	Ton	Gal.	C.Y.	C.Y.
1-P			50	162	25	59	779			29	1125					
2-P			28	188	50	300	944			24	1406					
3-P			14	14	68	7	10	67	280	4	428	28	1.0	16	0.4	
1-C										15						
4G	25	1														
Total	25	1	14	92	418	82	10	426	1723	280	15	53	2959	28	1	16

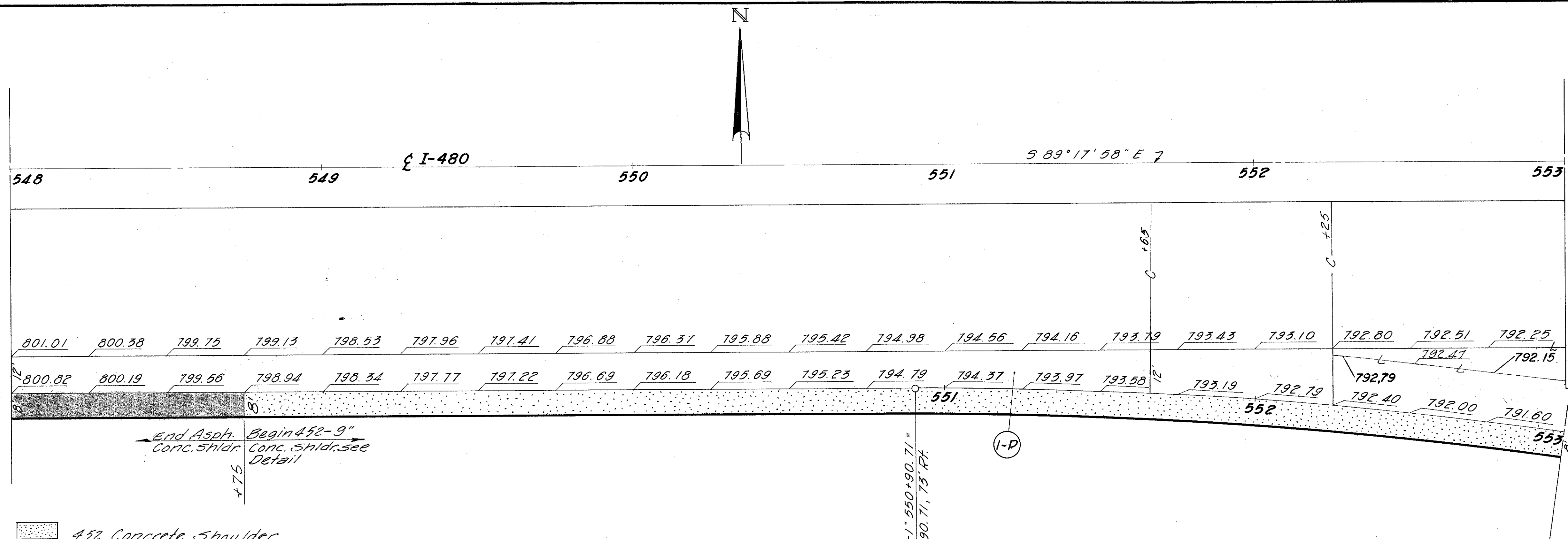
Sht. No.	Item
55	Plan & Profile
76	Culvert Details
154-155	Cross Sections

Standard Conc. Median, Item 612  
Conc. Shoulder, Item 452

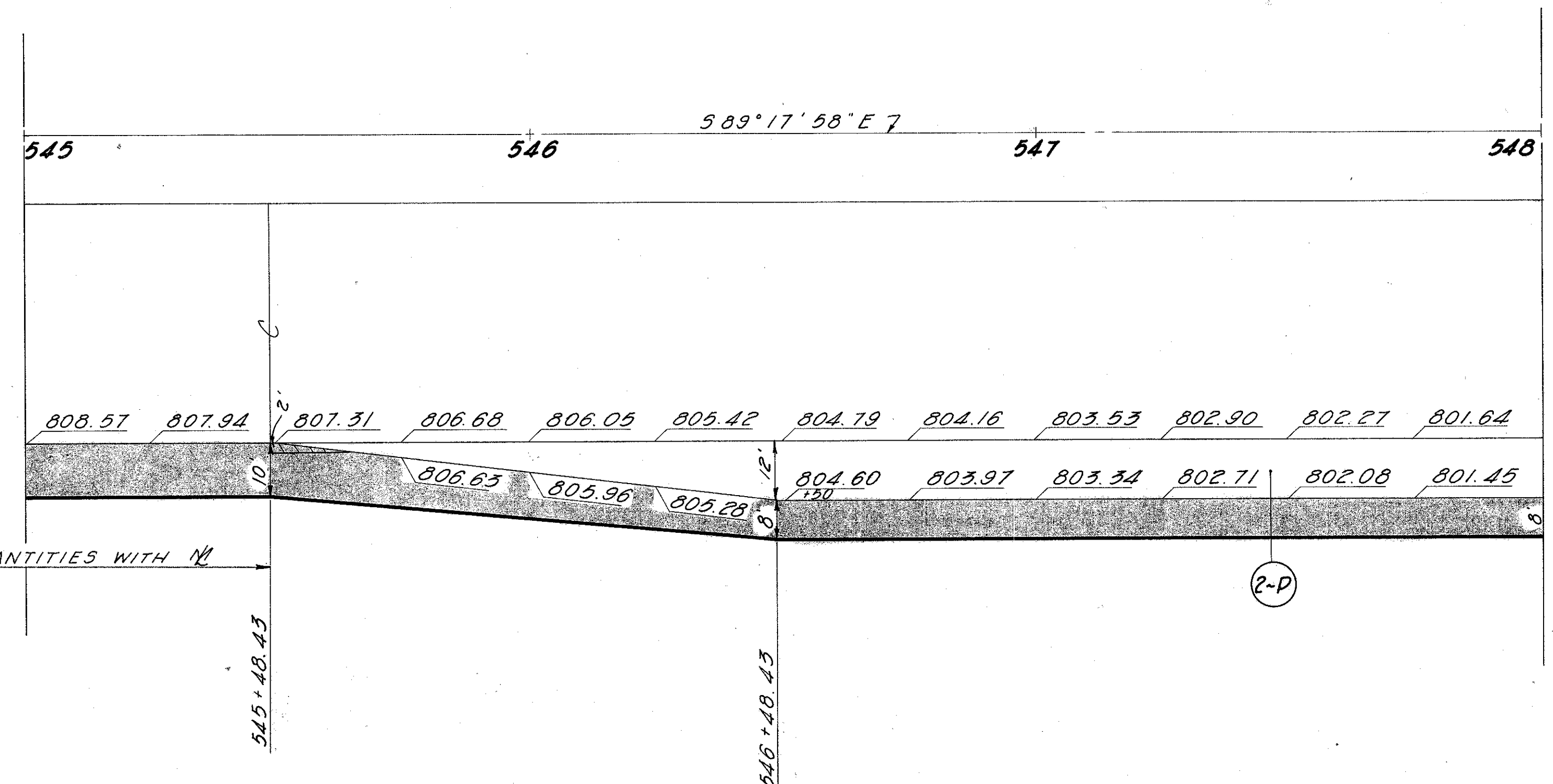
For Joint Legend See Sheet No. 58  
For Concrete Shoulder Detail Sheet No. 7

\* NOTE: Item 612 Conc. Median from Sta. 555+54 to sta. 555+93 (BR-2) and Item 609 Type 6 Curb from sta. 555+93 to 556+13 (BR-2) and sta. 557+38 to sta. 557+58 (BR-1) to be constructed with a later project.

Rev. D.R.S. 1-4-78  
Rev. D.R.S. 12-7-77  
Rev. By R.J.M. 9-13-77  
CALC. BY J.L. DATE 12-18-70  
CHKD BY W.A.M. DATE 12-22-70

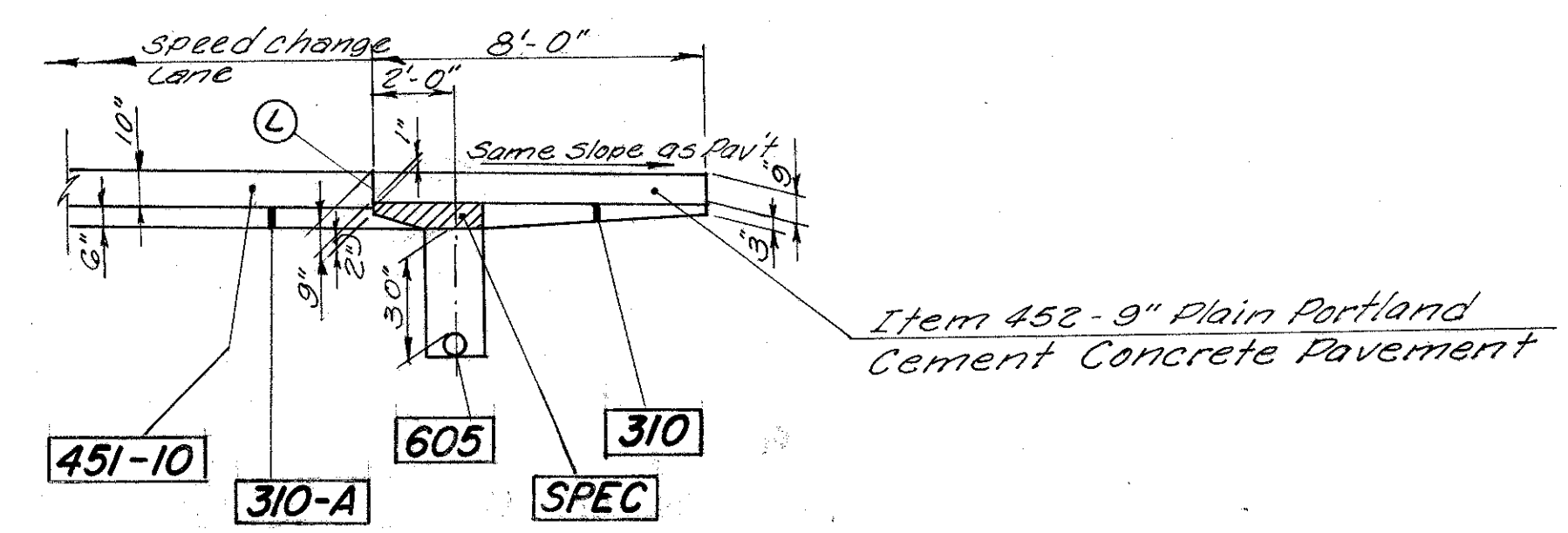


452 Concrete Shoulder  
 Asphalt Concrete



QUANTITIES WITH 1/2"

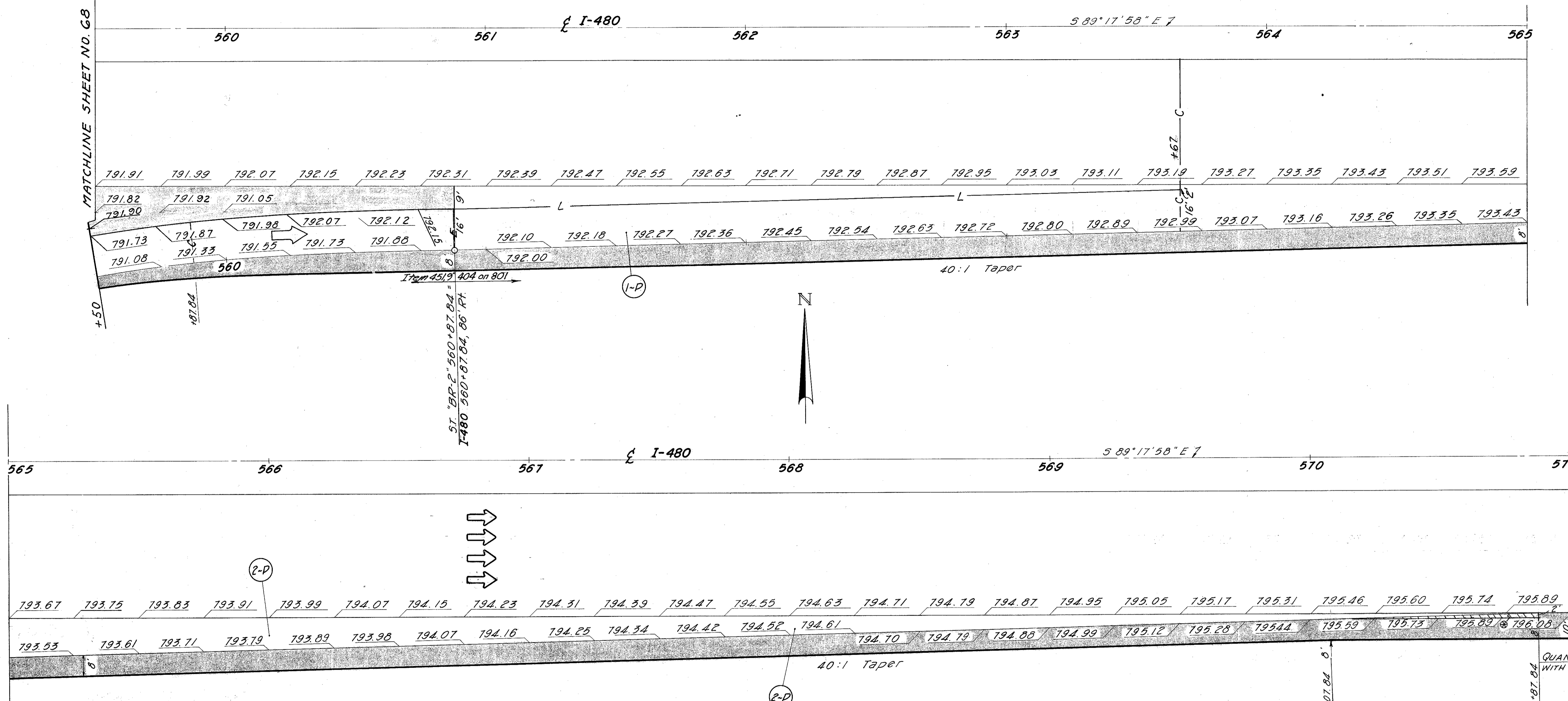
Extend 60I Concrete Base 2" from edge of pavement and surface with 3" of 30I. No deduction shall be made in normal shoulder quantity calculations because of this extension.



**CONCRETE SHOULDER DETAIL**  
 Sta. 548+75 (I-80) to Sta. 553+75.7 (BR-1)  
 For Pavement Legend see Typical section  
 Sheet No. 7

Ref. No.	Subgrade	Compaction	Bituminous Aggregate Base	Subbase Grading A	Subbase	Asphalt Concrete	Asphalt Concrete	9" Plain Port. Cem. Concrete Base	Drainage Connector	9" Portland Cement Concrete Base	Tack Coat	Cover Aggregate	Seal Coat	No. 9 Aggregate
	S.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	S.Y.	S.Y.	C.Y.	Gal.	Ton	Gal.	C.Y.
I-P 1286	11	158	39	41	29	378	24	843	84	30	13	0.3		
2-P 503	39	107		19	9		11	276	28	10	47	1.2		
<b>Totals</b>	<b>1789</b>	<b>50</b>	<b>265</b>	<b>39</b>	<b>60</b>	<b>38</b>	<b>378</b>	<b>35</b>	<b>1119</b>	<b>112</b>	<b>4</b>	<b>60</b>	<b>2</b>	

Rev. By R.J.M. 9-13-77  
 CALC BY U.L. DATE 12-21-70  
 CHD BY W.M. DATE 12-22-70



REF. NO.	203 Subgrade	402 Asphalt	404 Asphalt	310 Concrete	310 Subgrade	407 Tack Coat	407 Cover Aggr.	5' 801 P.C. Base	451 5" Rein. P.C. Conc. Pav't.	Special Drainage Conn.	409 Seal Coat	409 No. 9 Aggr.	
	S.Y.	C.Y.	C.Y.	C.Y.	C.Y.	Gal.	Ton	S.Y.	S.Y.	C.Y.	Gal.	C.Y.	
1-P	1814	44	109	32	332	12	92	3.2	920	251	10	109	2.7
2-P	1012	23	89	17	226		50	1.8	497			107	2.7
TOTALS	2826	67	198	49	558	12	142	5.0	1417	251	10	216	5.4

Extend 801 Concrete Base 2" from edge of pavement and surface with 3" of 301. No deduction shall be made in normal quantity calculations because of this extension.

For Joint Legend See Sheet No 58

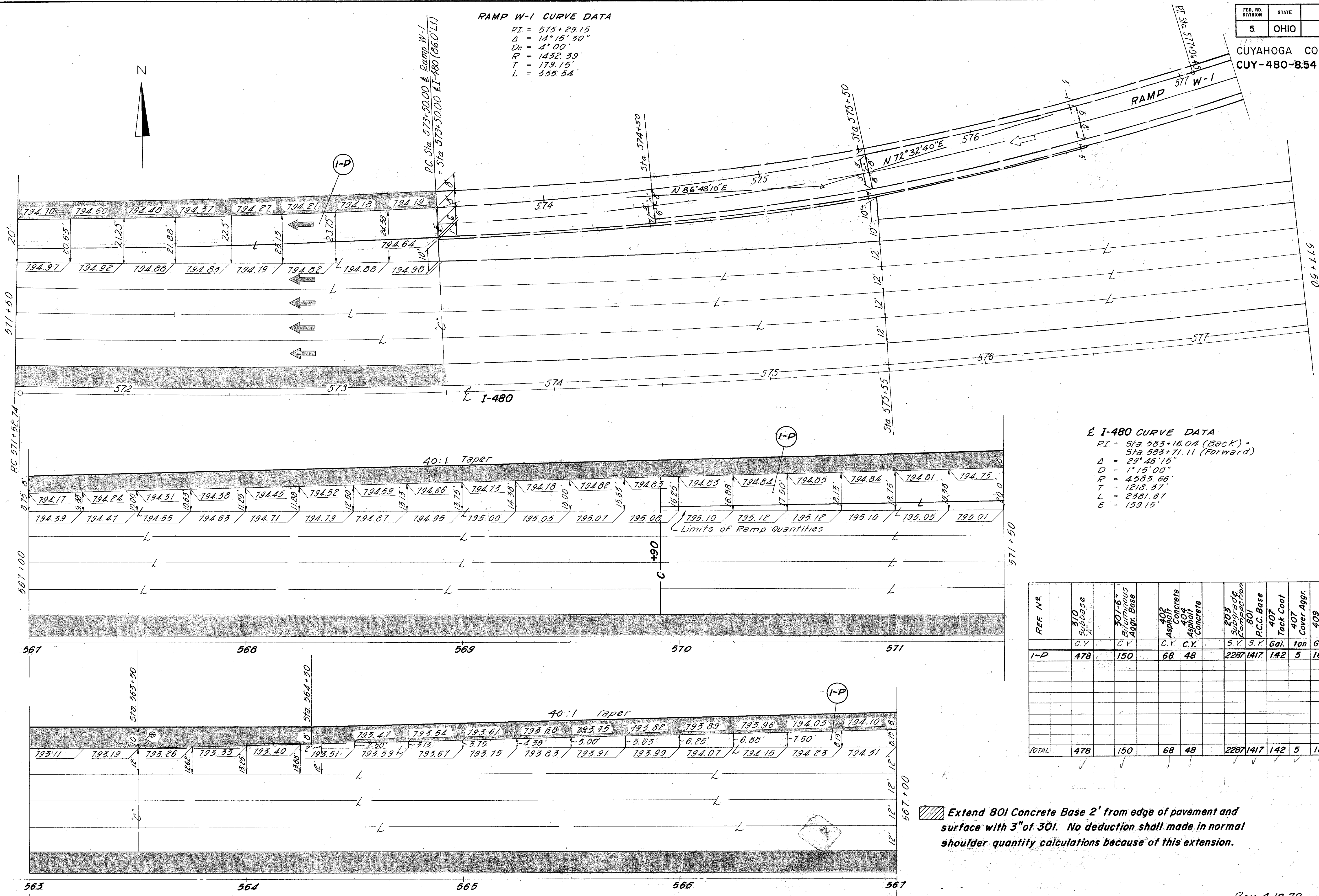
Rev. D.R.S. 1-4-78  
 Rev. D.R.S. 12-7-77  
 Rev. by D.R.S. Date 8/29/77  
 W.J.M. 3/25/66  
 J.L. 6-29-67

**RAMP W-1 CURVE DATA**

PI = 575 + 29.15  
 Δ = 14° 15' 30"  
 Dc = 4° 00'  
 R = 1432.39'  
 T = 179.15'  
 L = 355.54'

**É I-480 CURVE DATA**

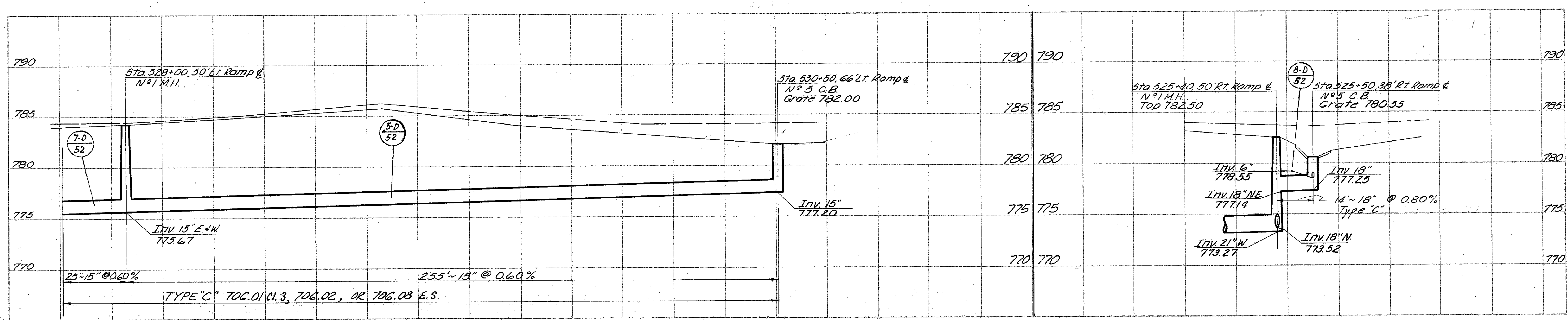
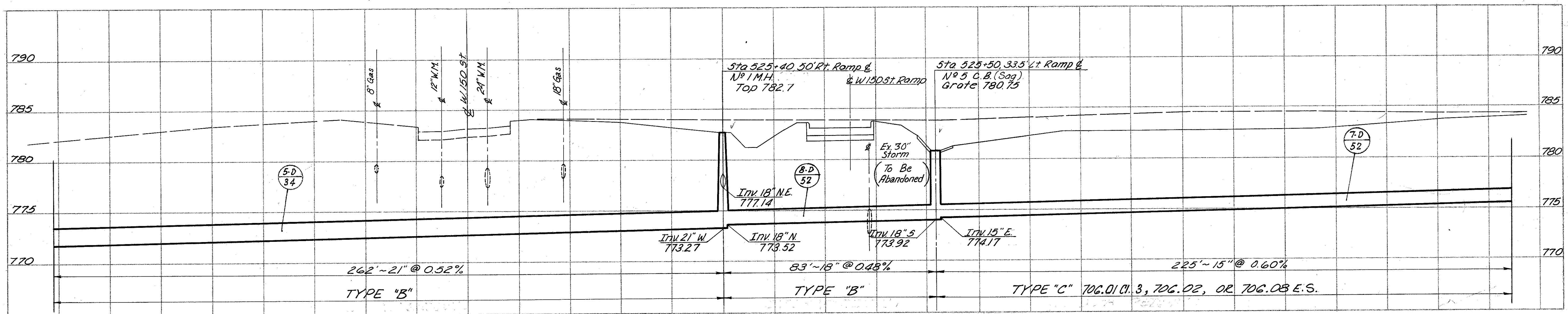
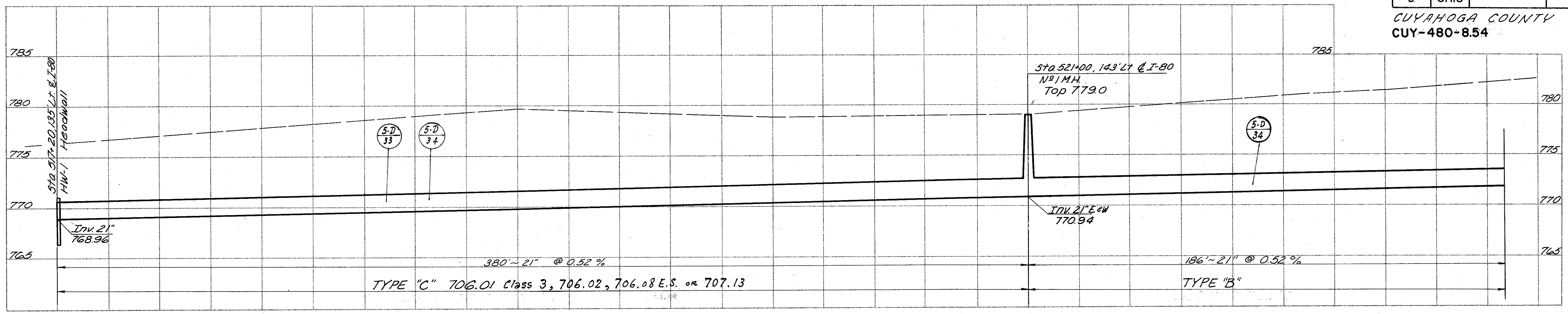
PI = Sta 583 + 16.04 (Back) =  
 Sta 583 + 71.11 (Forward)  
 Δ = 29° 46' 15"  
 D = 1° 15' 00"  
 R = 4583.66'  
 T = 1218.37'  
 L = 2381.67'  
 E = 159.15'

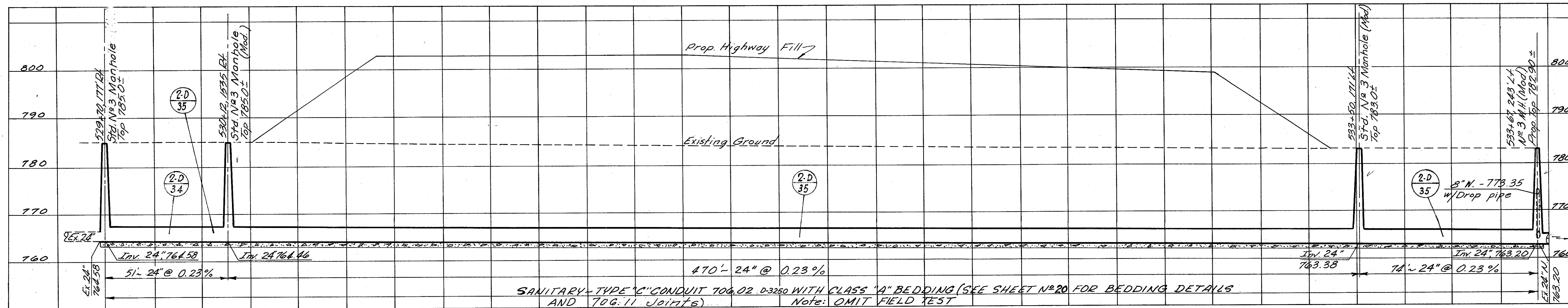


REF. N <sup>o</sup>	310 Subbase A	301.5" 301.5" Aggr. Base	40 <sup>2</sup> Asphalt Concrete	40 <sup>4</sup> Asphalt Concrete	20 <sup>3</sup> Subgrade Correction	P.C.C. Base	40 <sup>7</sup> Tack Coat	40 <sup>7</sup> Cover Aggr.	40 <sup>9</sup> Seal Coat	40 <sup>9</sup> No. 9 Aggr.
	C.Y.	C.Y.	C.Y.	C.Y.	S.Y.	S.Y.	Gal.	ton	Gal.	C.Y.
I-P	478	150	68	48	2287	1417	142	5	180	4.5
TOTAL	478	150	68	48	2287	1417	142	5	180	4.5

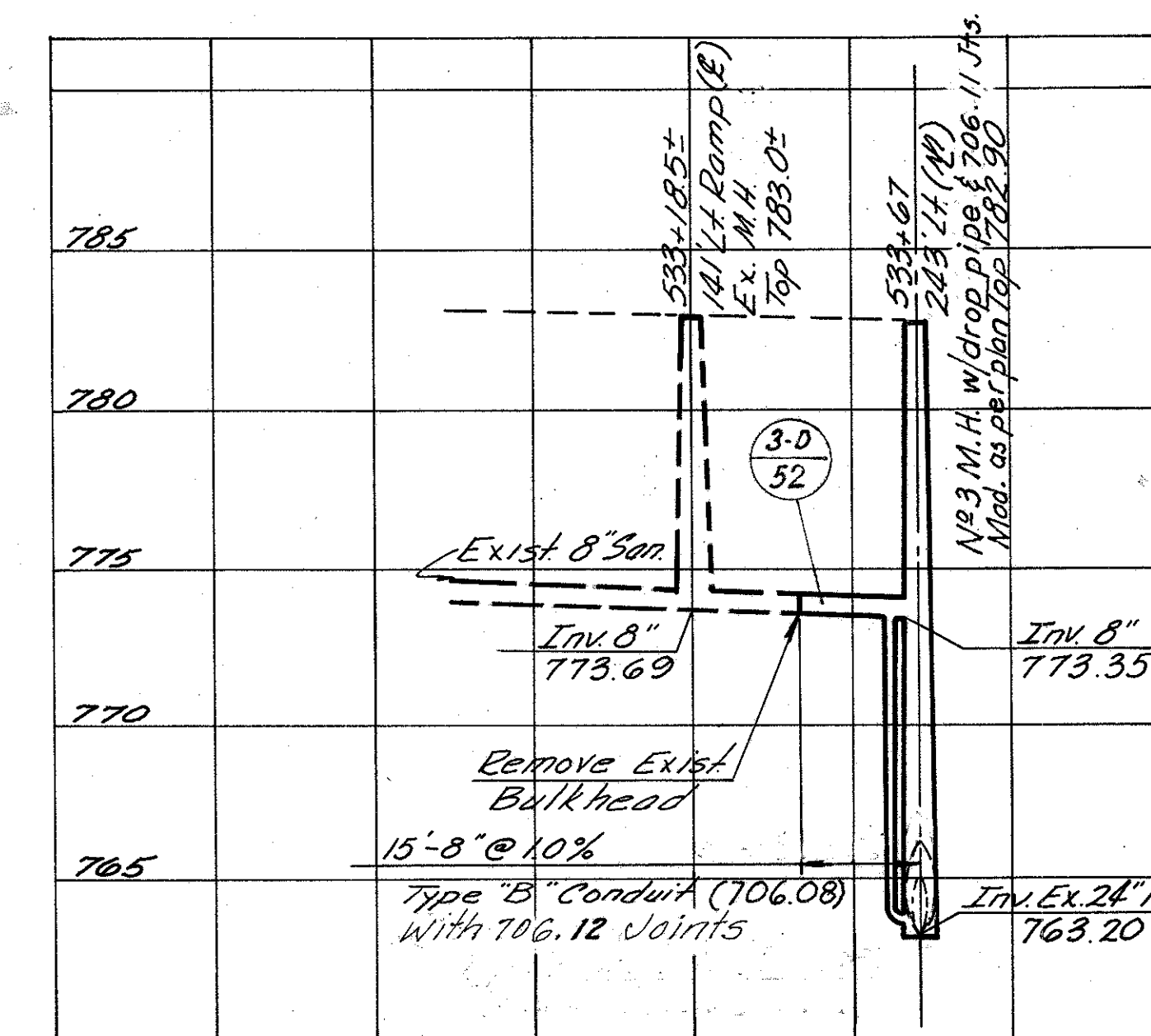
Extend 801 Concrete Base 2' from edge of pavement and surface with 3" of 301. No deduction shall be made in normal shoulder quantity calculations because of this extension.





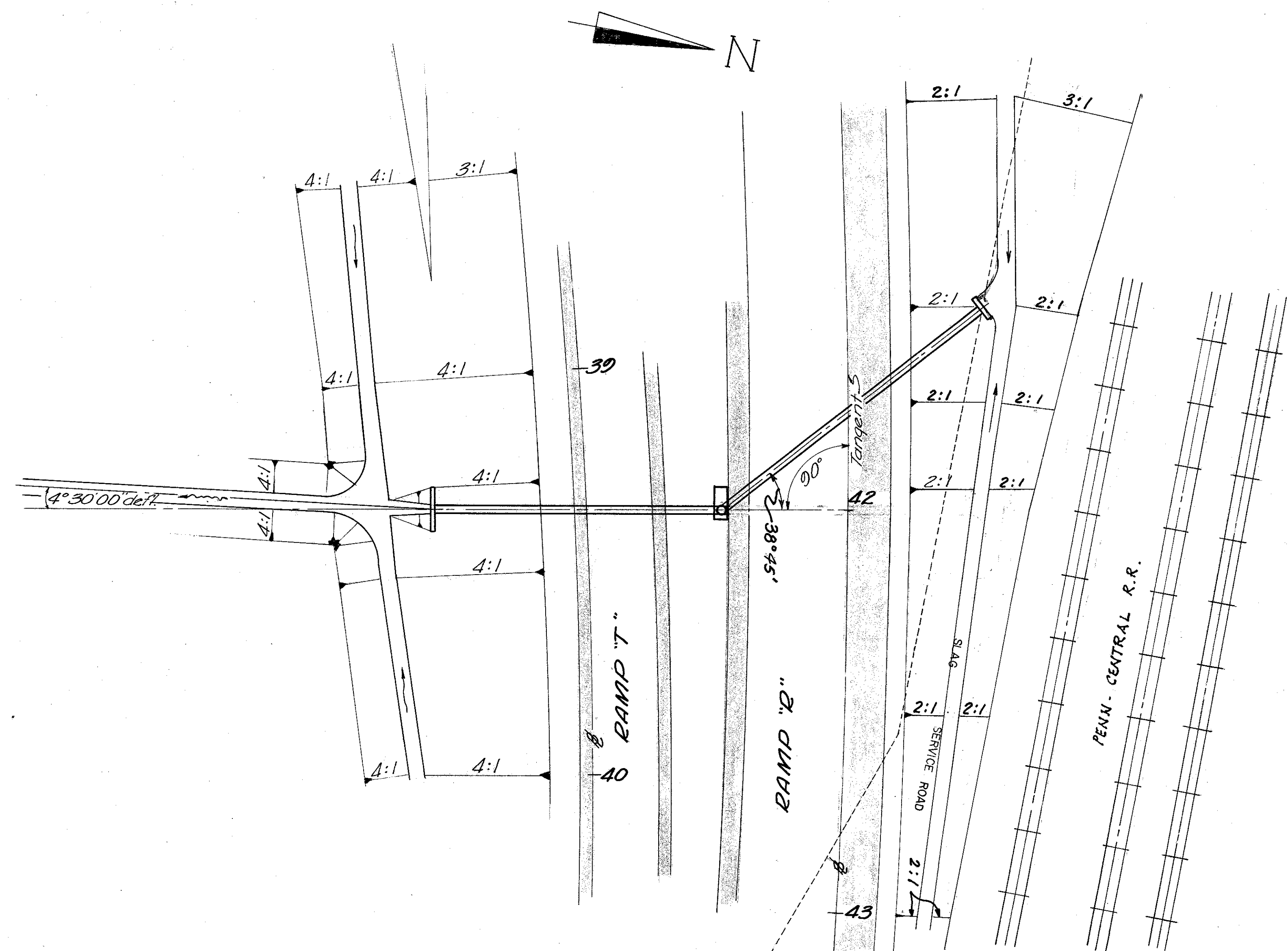


SANITARY INTERCEPTOR ALONG CONRAIL R. R.



SANITARY (CONT'D.)

Scale 1" = 20' Horiz.  
1" = 10' Vert.



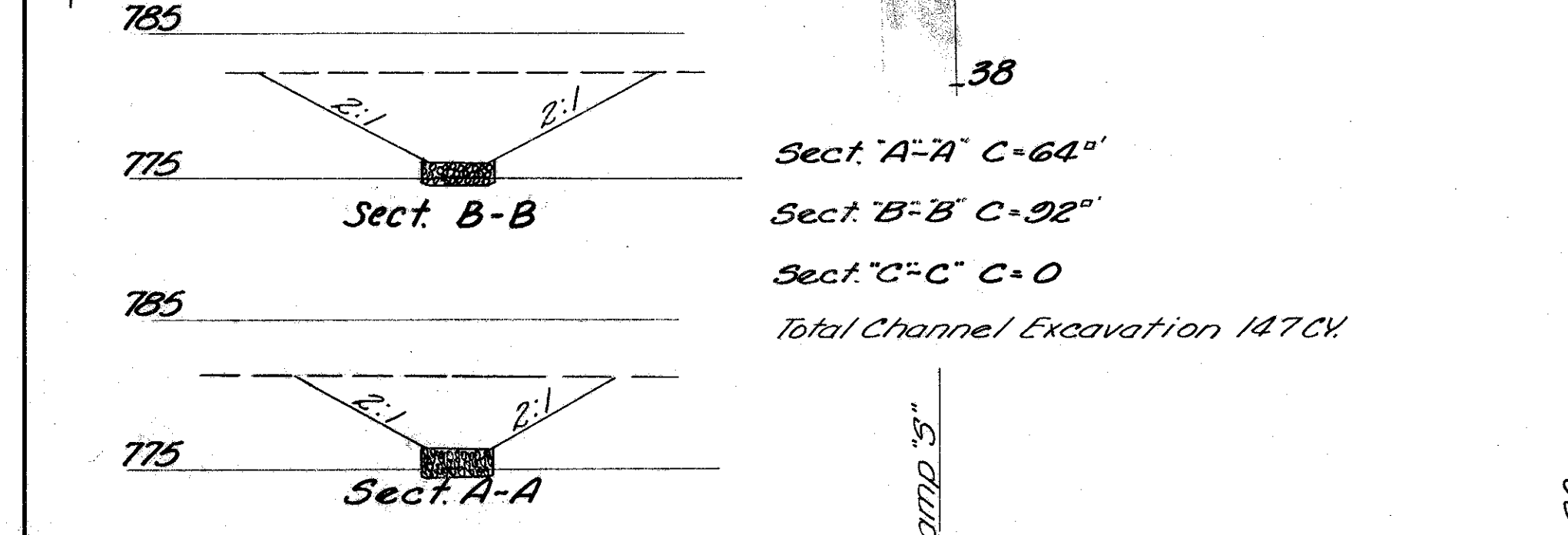
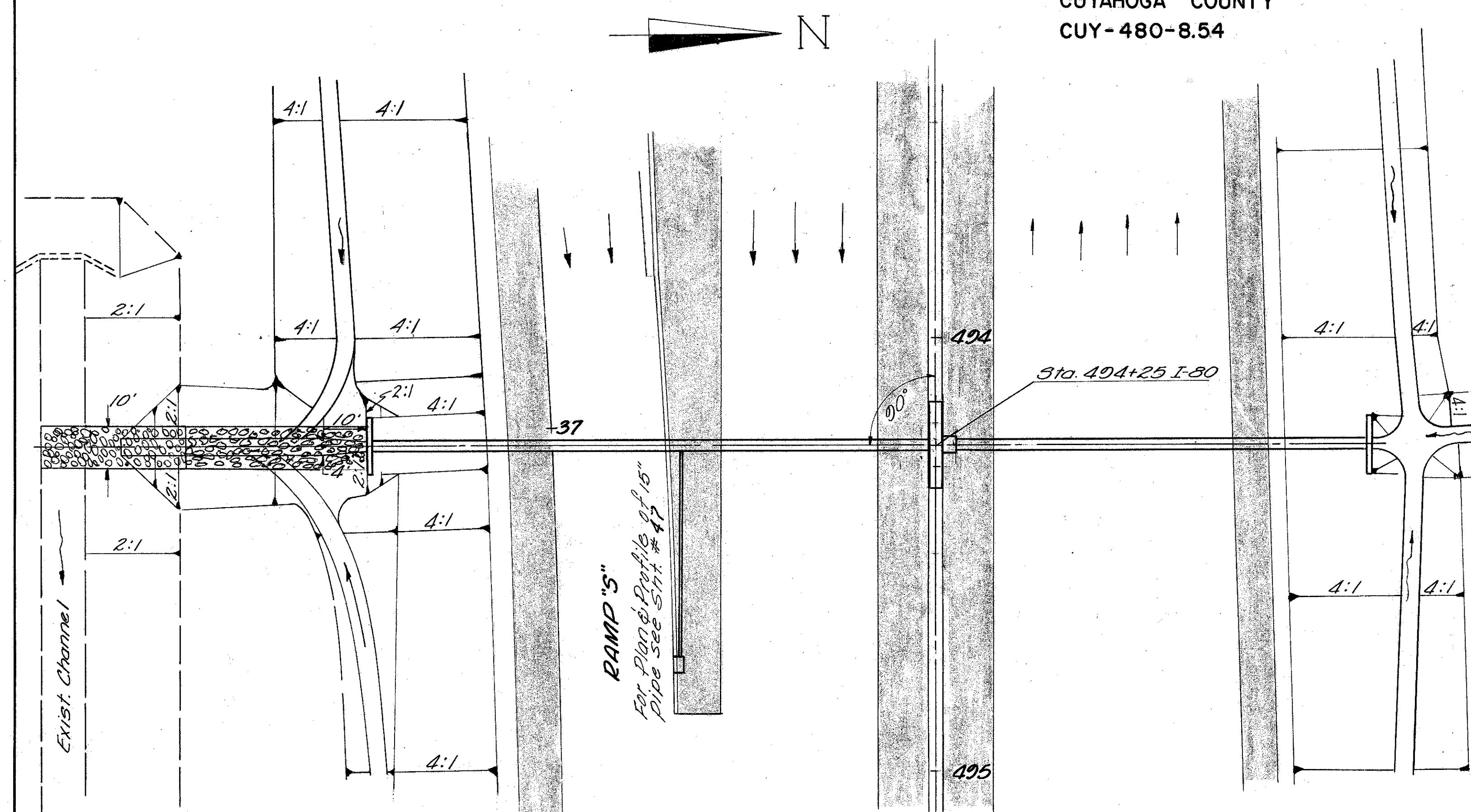
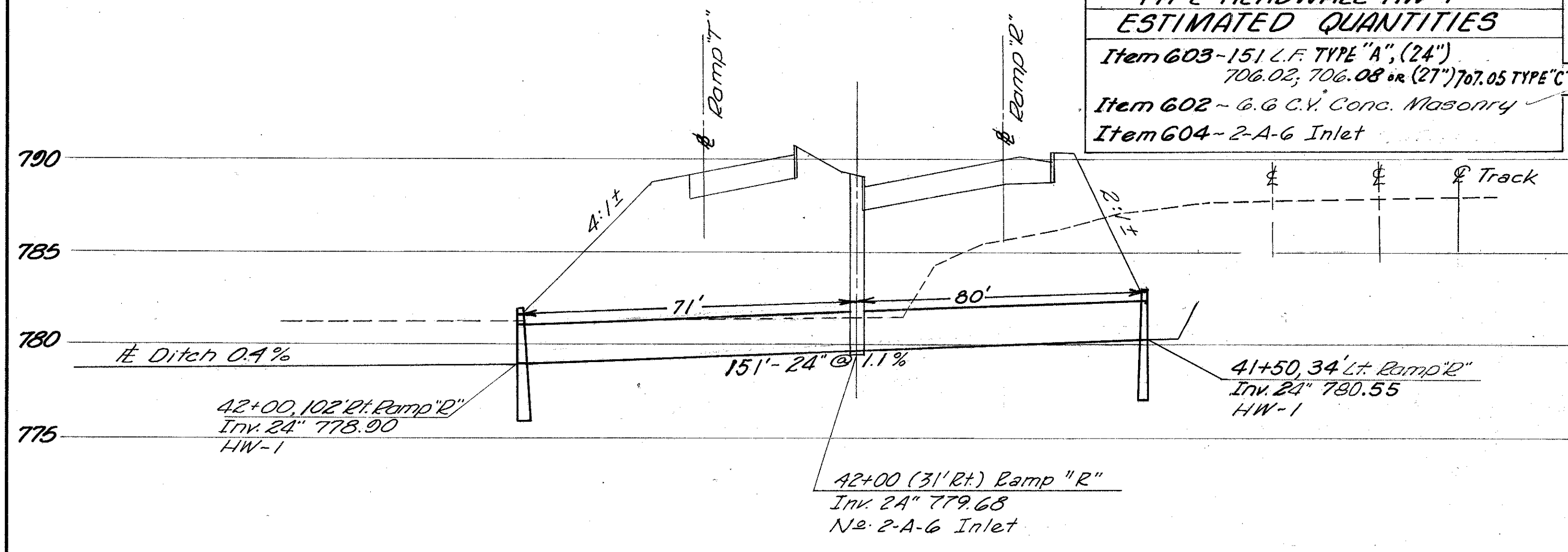
**DRAINAGE STRUCTURE 42+00 "R"**  
**DESIGN INFORMATION**

D.A.	Q50	Q100
10 Ac.	24.4cfs	28.1cfs

**TYPE HEADWALL HW-1**  
**ESTIMATED QUANTITIES**

Item 603	151' L.F. TYPE "A", (24")	
	706.02, 706.08 or (27") 707.05 TYPE "C"	
Item 602	6.6 C.Y. Conc. Masonry	
Item 604	2-A-6 Inlet	

HW<sub>100</sub> = 784.83

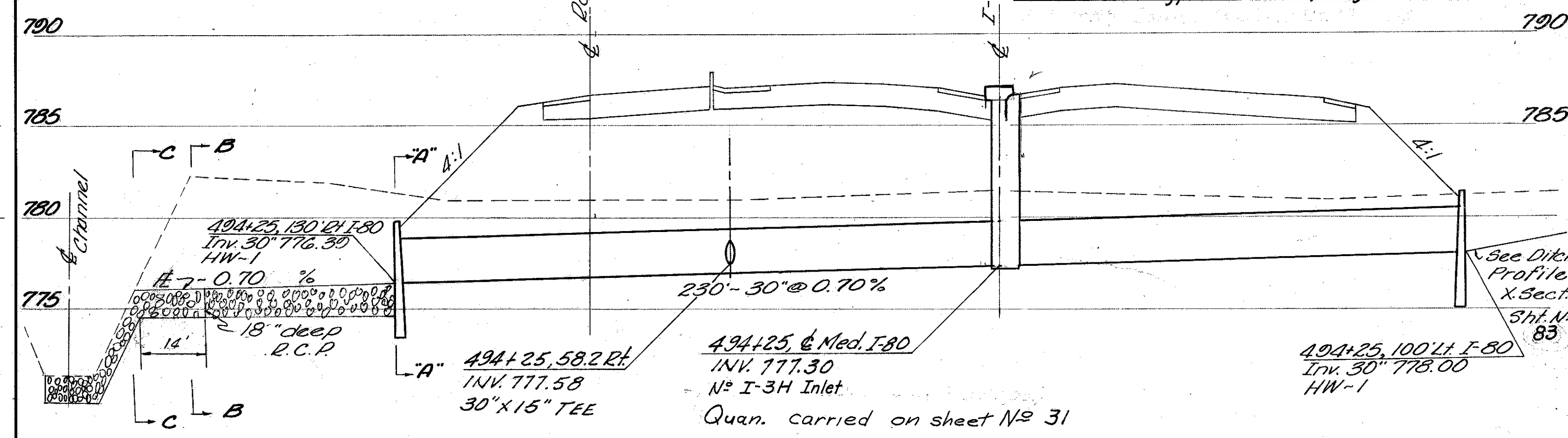


HW<sub>100</sub> 781.21  
**DRAINAGE STRUCTURE CUY-I-80 0887**  
**DRAINAGE INFORMATION**

D.A.	Q50	Q100
18 Ac.	35.5cfs	40.7cfs

**TYPE HEADWALL HW-1**  
**ESTIMATED QUANTITIES**

Item 603	230' L.F. TYPE "A" (30")	706.02,
	706.08 or (36")	707.05 TYPE "C"
Item 602	Concrete Masonry	0.4 C.Y.
Item 601	Rock Churn Pref. Type B with Bedding	55.6 C.Y.



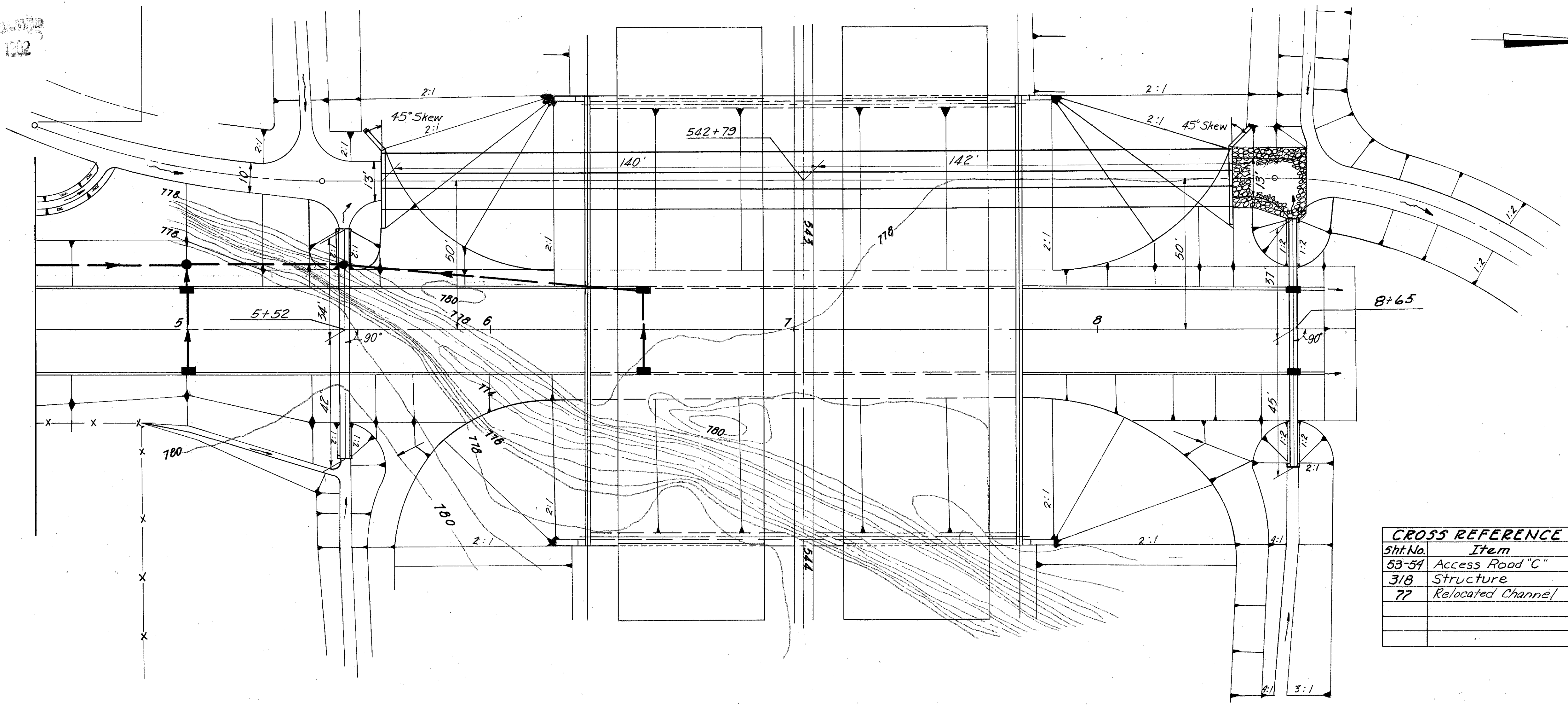
Rev. P.R.S. 3-30-78  
 G.P.S. 4-19-66  
 T.C.S. 4-22-66  
 EX. REV 5/25/72  
 Rev. 4-12-78

REVISED  
AUG 6 1962

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

75  
346

CUYAHOGA COUNTY  
CUY-480-8.54

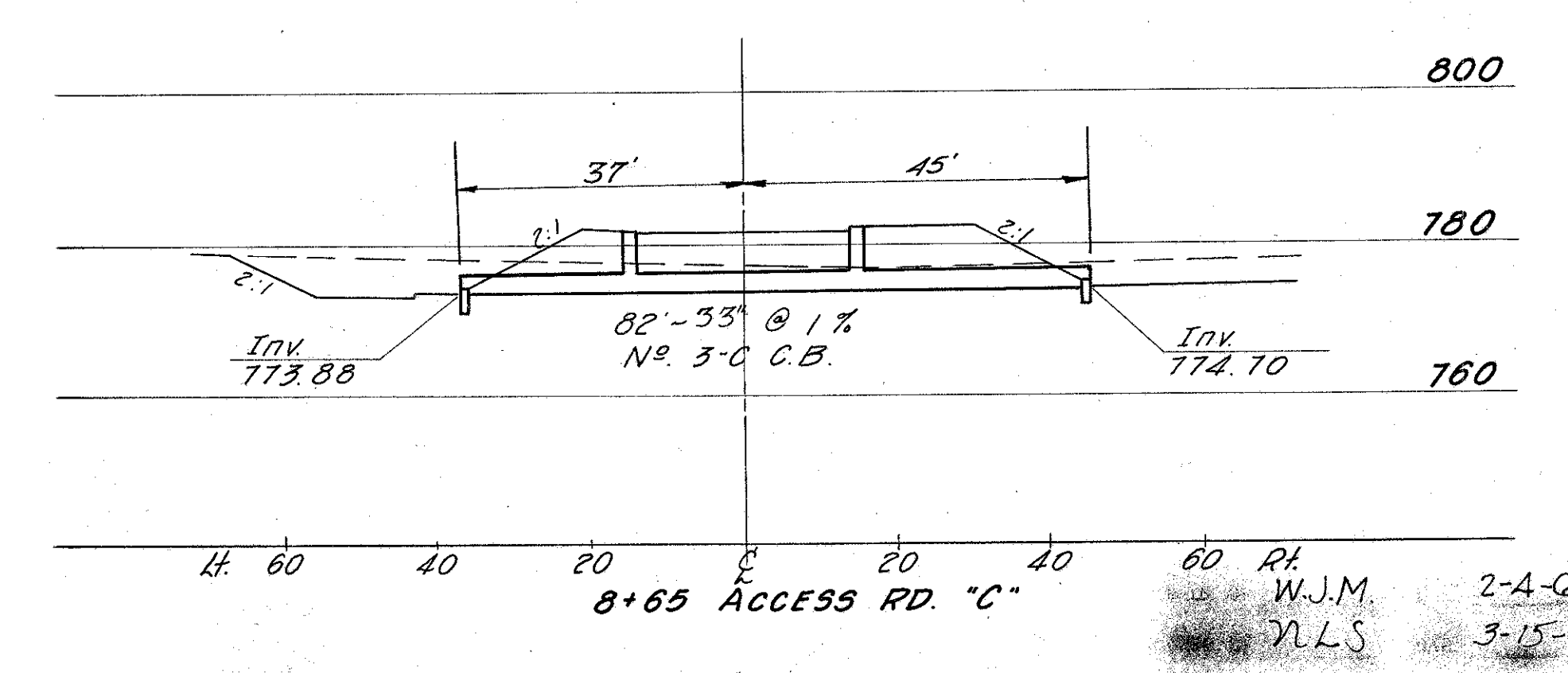
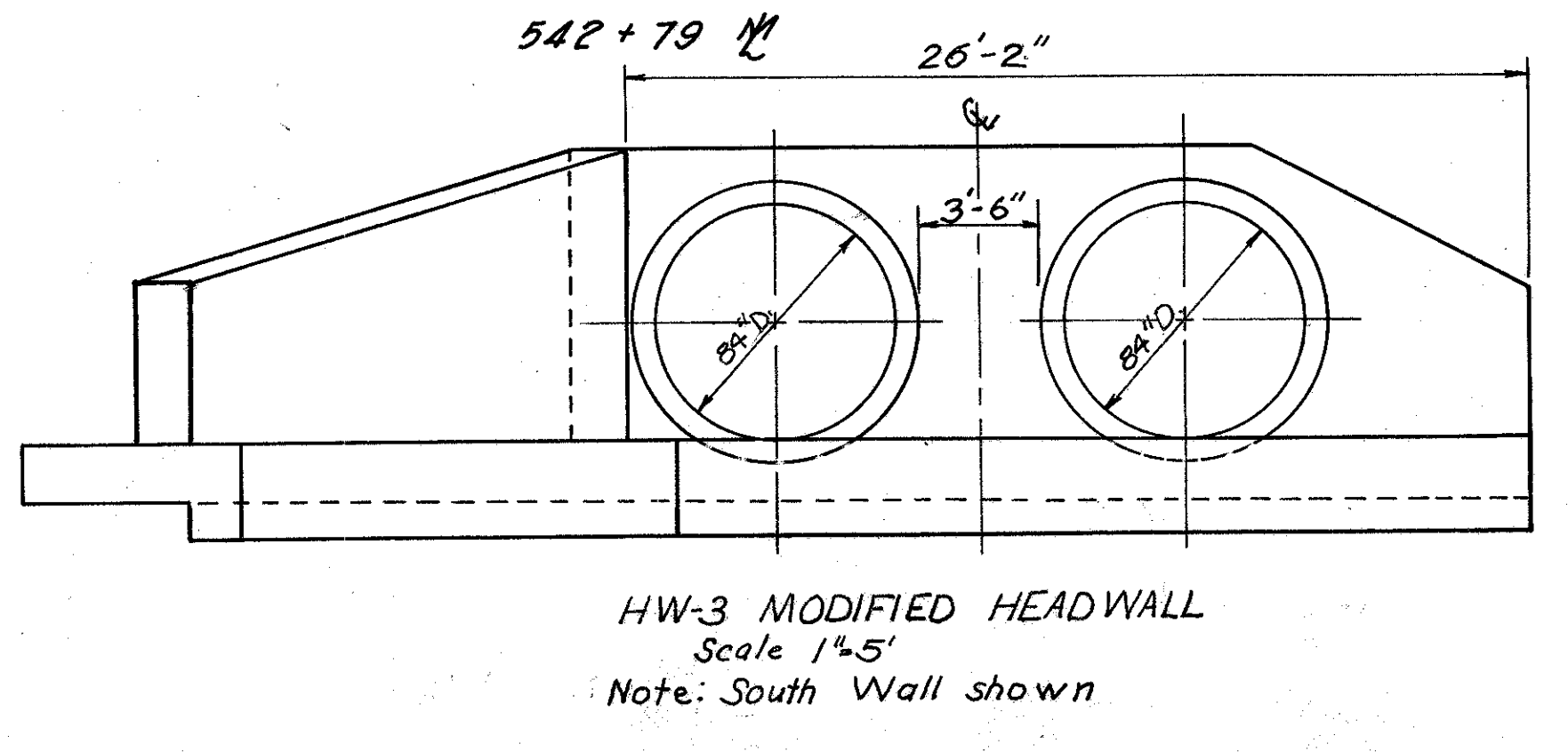
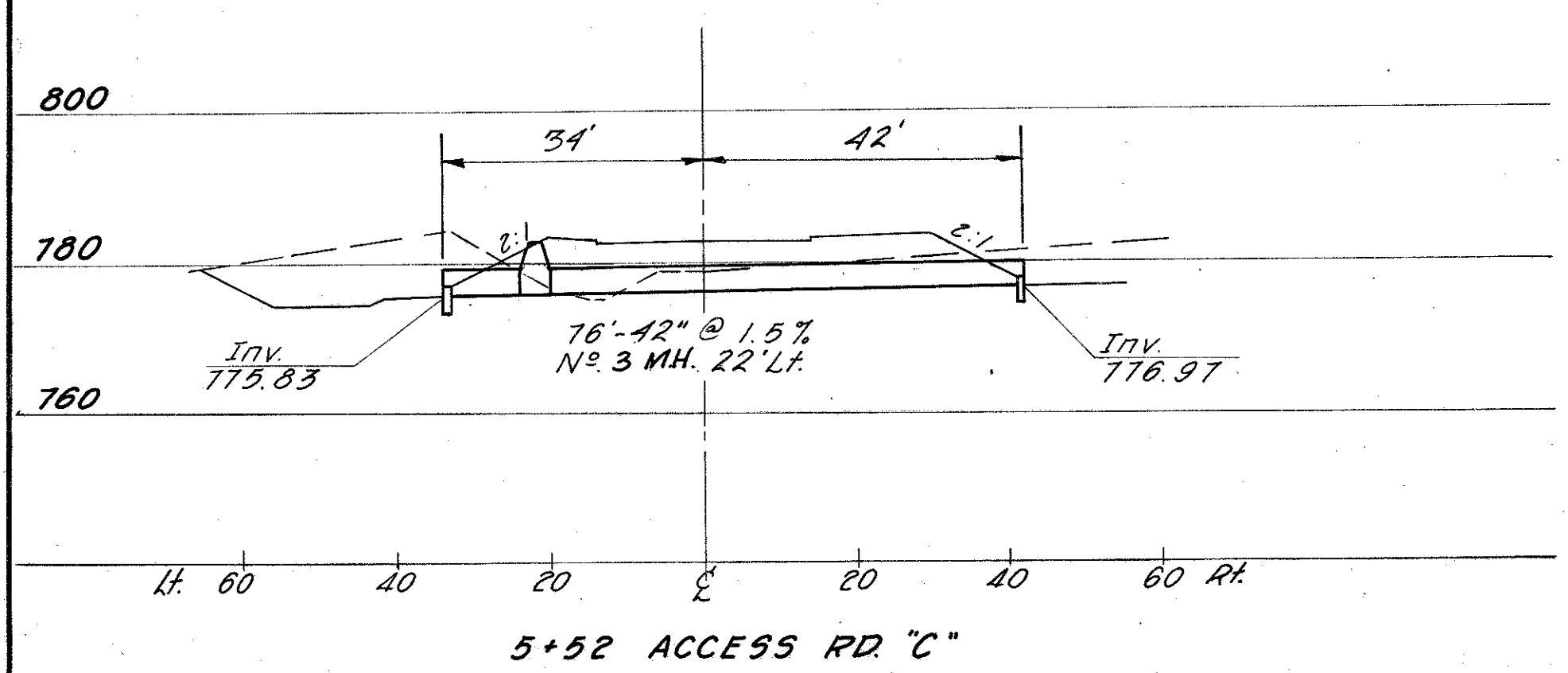
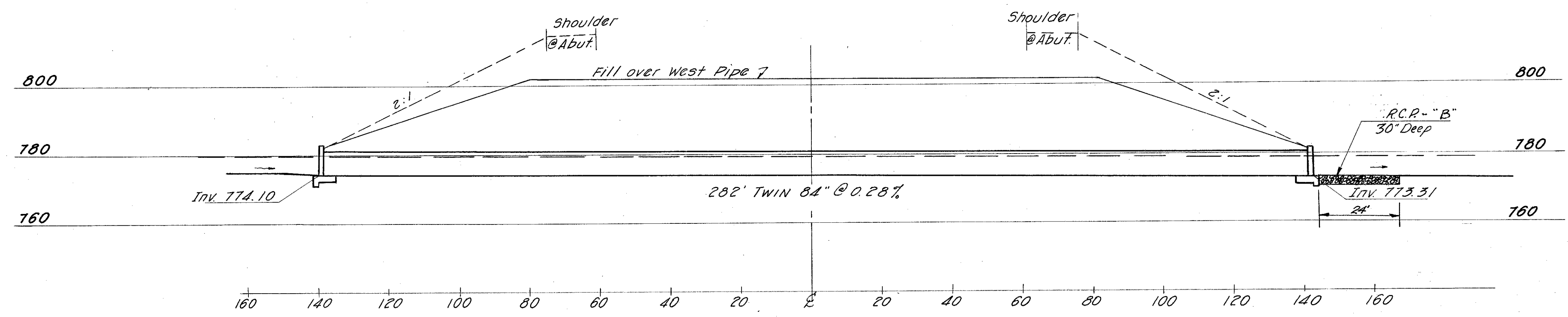


DRAINAGE STRUCTURE CUY-0979 STA. 542+79 M		
DESIGN INFORMATION		
DA	Q 50	Q100
606 AC	650 cfs	730 cfs
TYPE HEADWALL HW-3 MODIFIED		
ESTIMATED QUANTITIES		
Item 603 564 LF 84" Type "A" D-2000, 706.02		
Item 602 71.3 C.Y. Masonry		
Item 601 564 C.Y. R.C.P. Type B 30" Deep		
Quantities Carried with 12.		

CROSS REFERENCE	
Sht. No.	Item
53-54	Access Road "C"
3/8	Structure
77	Relocated Channel

HW100 782.51 DRAINAGE STRUCTURE STA. 5+52 ACCESS RD. "C"		
DESIGN INFORMATION		
DA	Q 25	Q100
40 AC	72 cfs	96.3 cfs
TYPE HEADWALL HW-4 (2 Req'd.)		
ESTIMATED QUANTITIES		
Item 603 76 LF 42" Type "A" 706.02		
D-1500 w/ Class "C" Bedding or 48" 707.05		
Item 602 Conc. Masonry 1.68 C.Y.		
Quantities Carried with Access Rd. "C"		

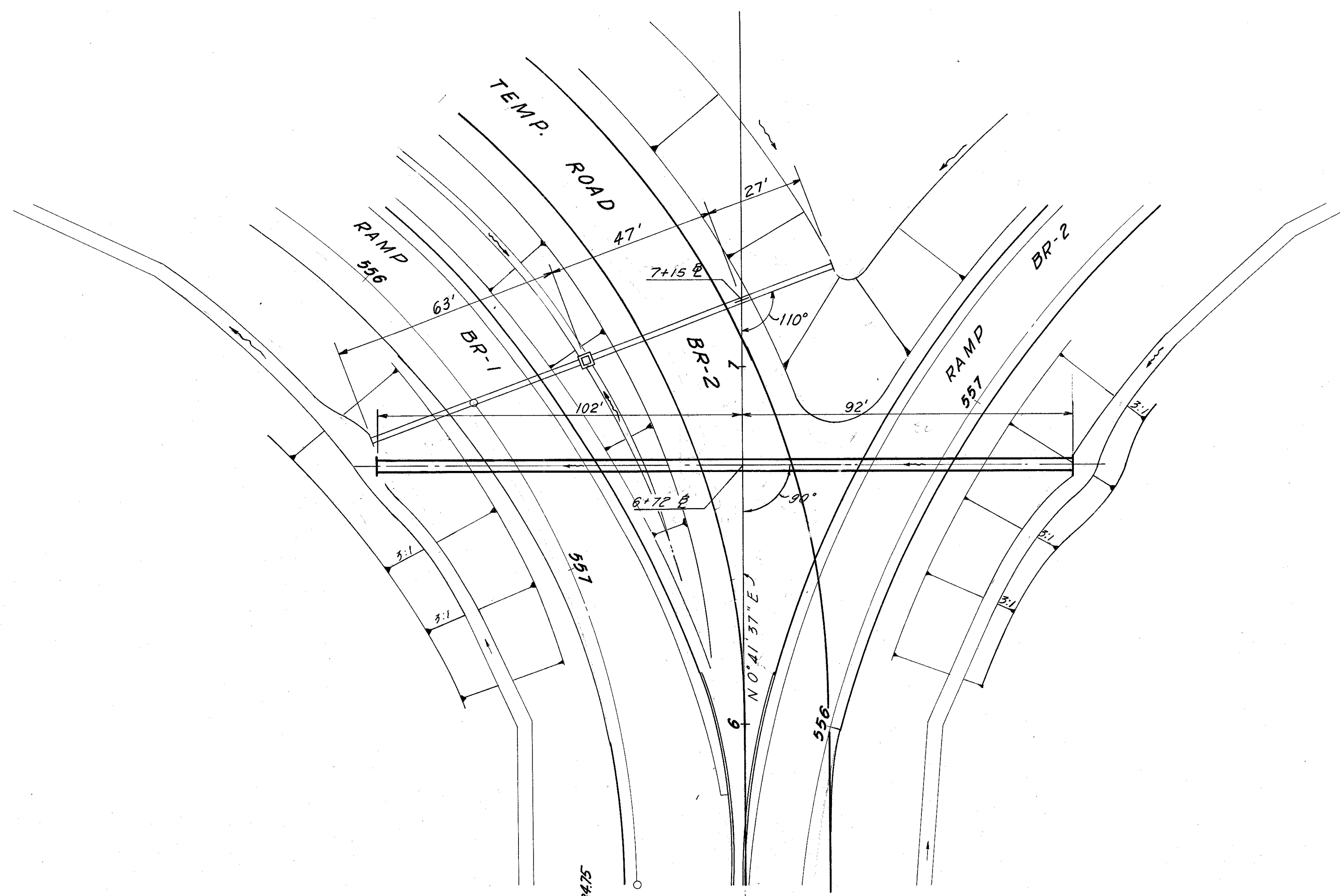
DRAINAGE STRUCTURE STA. 8+65 ACCESS RD. "C"		
DESIGN INFORMATION		
DA	Q 25	Q100
16 AC	50 cfs	67.1 cfs
TYPE HEADWALL HW-4 (2 Req'd.)		
ESTIMATED QUANTITIES		
Item 603 82 LF 33" Type "A" 706.02		
D-1500 Class "C" Bedding		
Item 602 1.24 C.Y. Masonry		
Quantities Carried with Access Rd. "C"		



FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

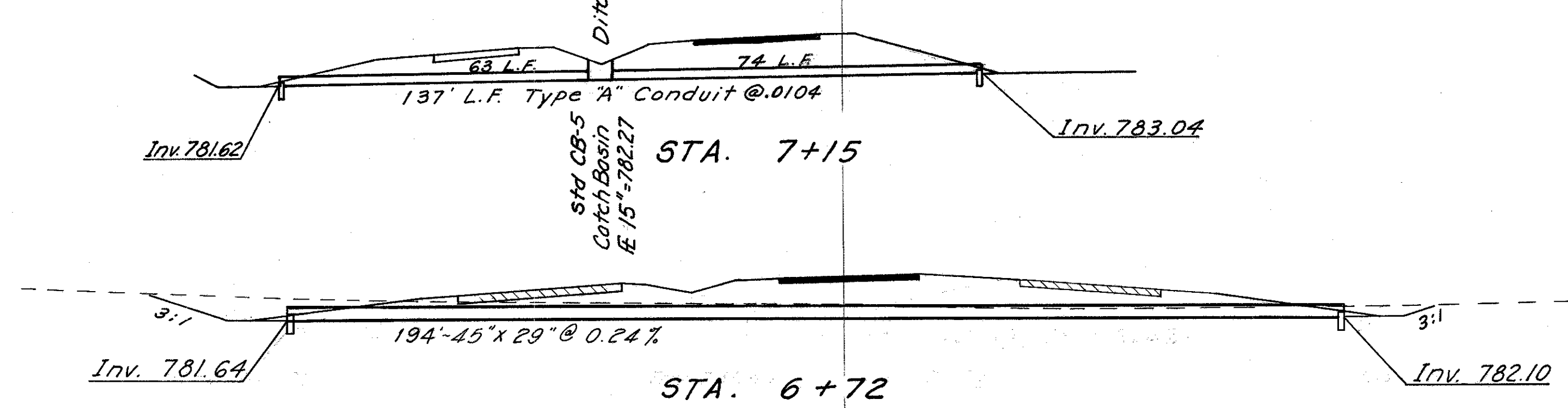
76  
346

CUYAHOGA COUNTY  
CUY-480-8.54



DRAINAGE STRUCTURE STA. 6+72 @ 139 <sup>th</sup> ST. CONN.	
DESIGN INFORMATION	
DA	Q 50
20 Ac.	38 cfs
TYPE HEADWALL HW-4	
ESTIMATED QUANTITIES	
Item 603 194 L.F. 45" x 29" Conduit, Type "A" 706.04	
Item 602 1.2 C.Y. Concrete Masonry Quantities carried with W. 139 <sup>th</sup> St. Interchange	

TEMPORARY CONNECTOR STA. 7+15 @ 139 <sup>th</sup> ST. CONN.	
DESIGN INFORMATION	
DA	Q 50
1.9 Ac.	6.5 cfs
TYPE HEADWALL HW-4	
ESTIMATED QUANTITIES	
Item 603 137 L.F. 15" Conduit, Type "A"	
Item 602 0.6 C.Y. Concrete Masonry	
Item 604 1 Ea. Std. No. 5 Catch Basin	
Quantities carried to W. 139 <sup>th</sup> St. Interchange	



800  
780  
760

800  
780  
760

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

Rev. D.R.S. 10-15-77  
W.J.M. 2-23-66  
T.J.S. 3-15-66

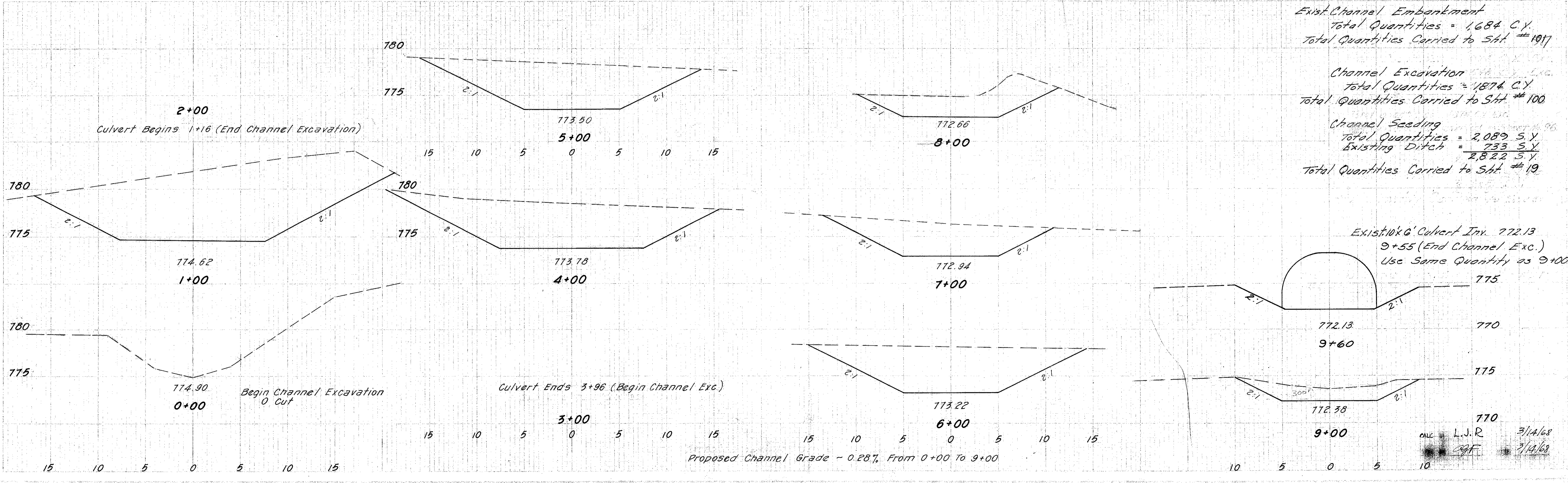
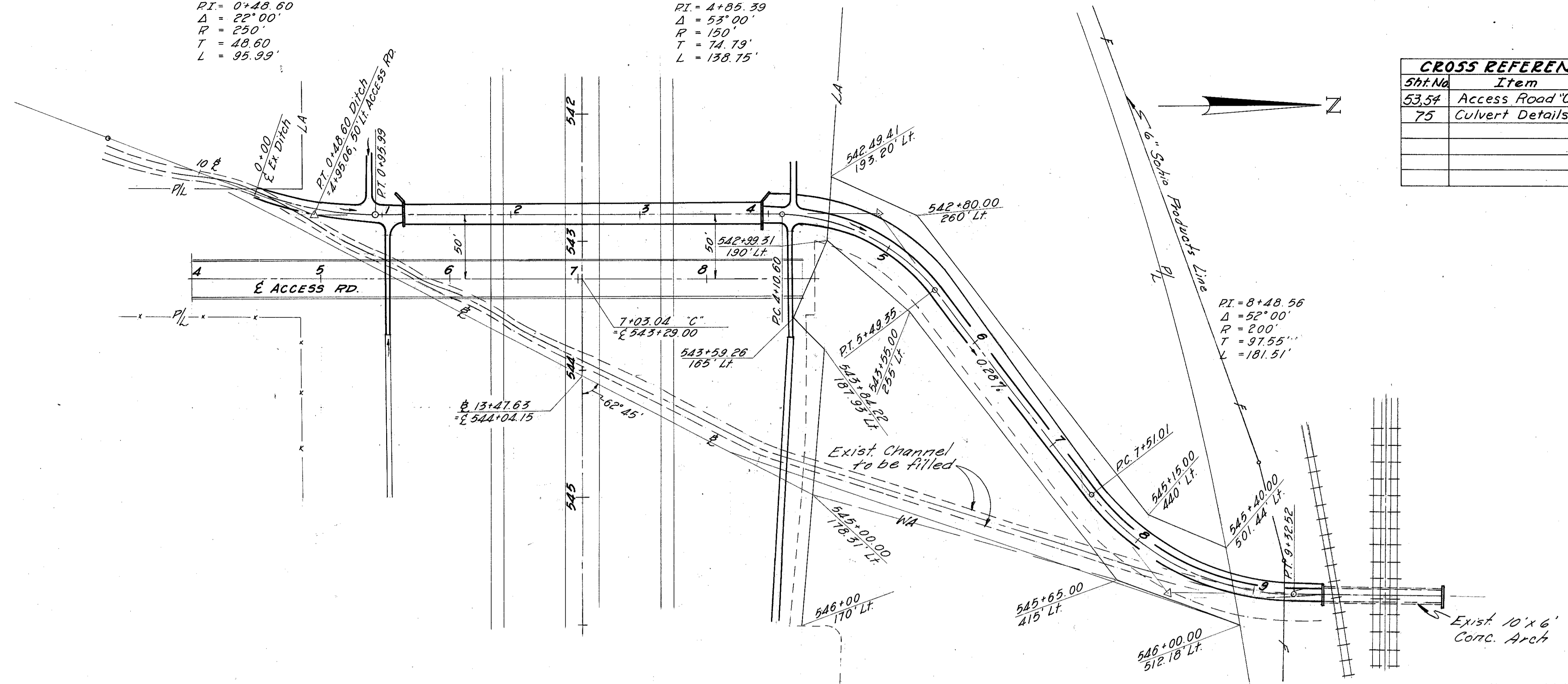
PI = 0+48.60  
 $\Delta = 22^\circ 00'$   
 R = 250'  
 T = 48.60  
 L = 95.99'

PI = 4+85.39  
 $\Delta = 53^\circ 00'$   
 R = 150'  
 T = 74.79'  
 L = 138.75'

PI = 8+48.56  
 $\Delta = 52^\circ 00'$   
 R = 200'  
 T = 97.55'  
 L = 181.51'

CUYAHOGA COUNTY  
 CUY-480-8.54

CROSS REFERENCE	
Sht. No.	Item
53.54	Access Road "C"
75	Culvert Details



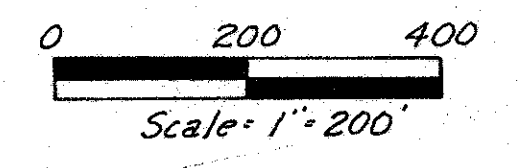
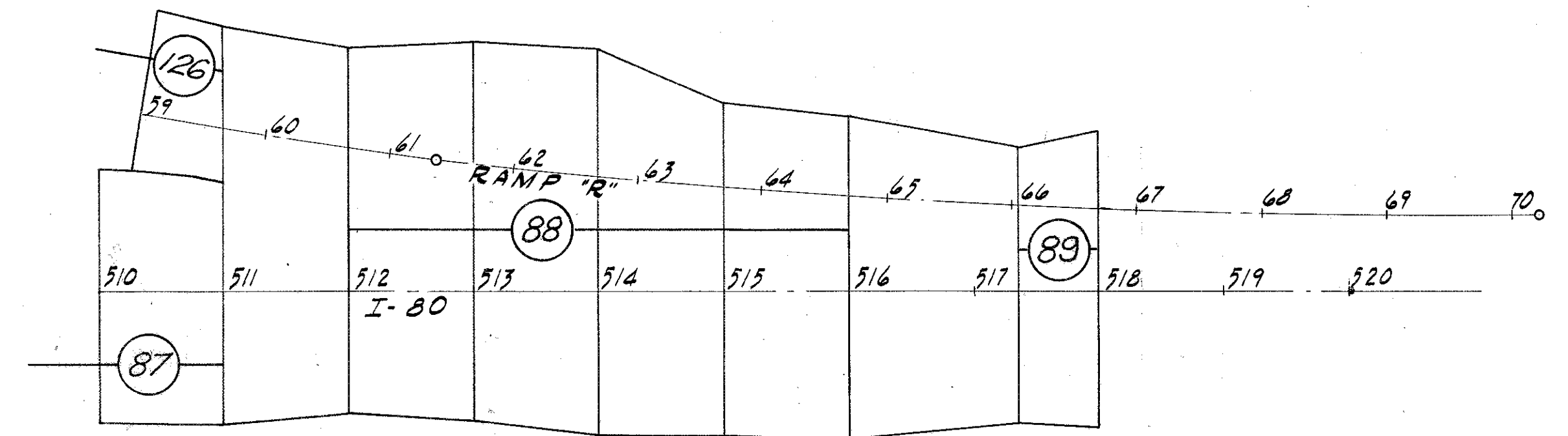
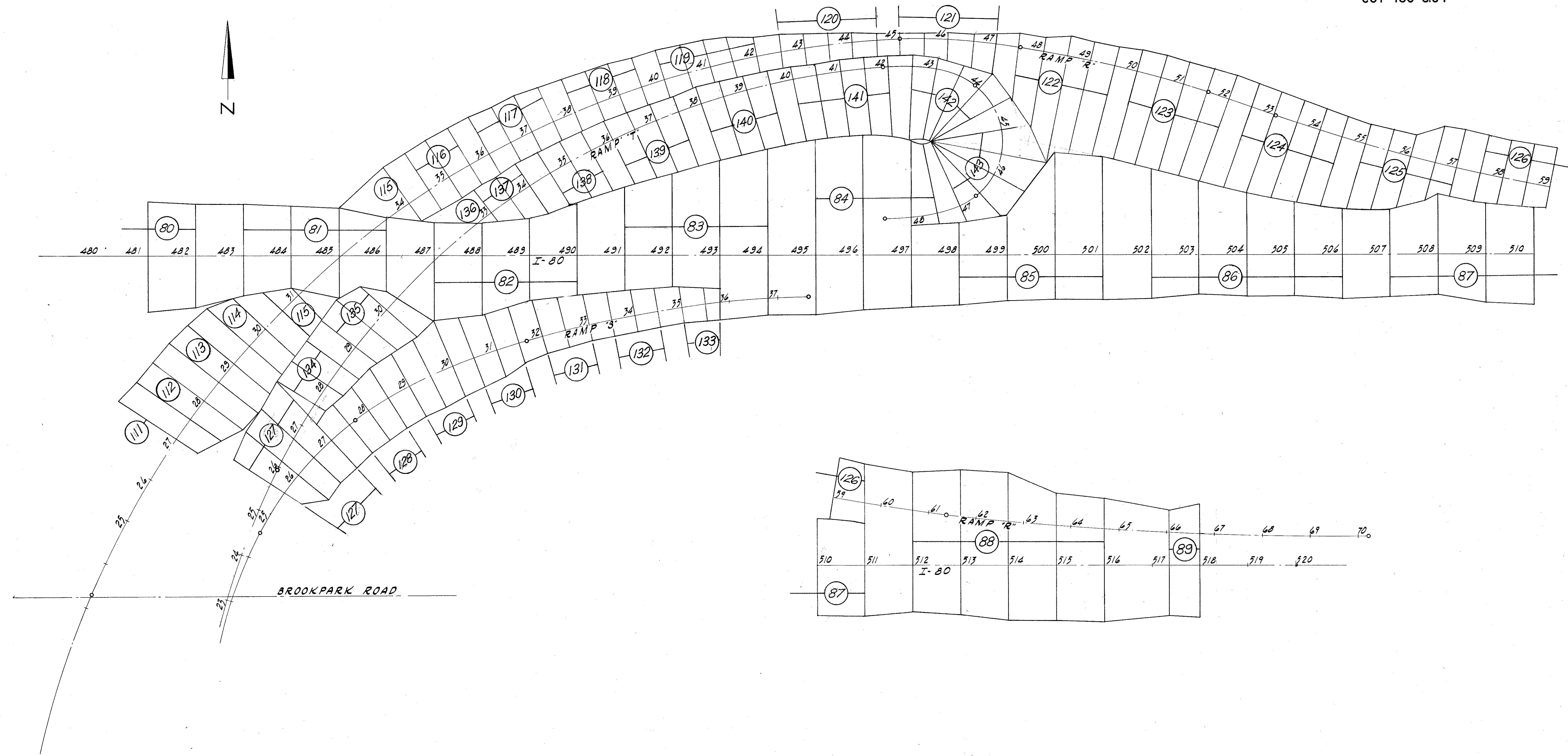
RELOCATED CHANNEL STA. 0+00 TO 9+55

DATE L.J.R. 3/14/68  
 CCF 3/14/68

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

78  
346

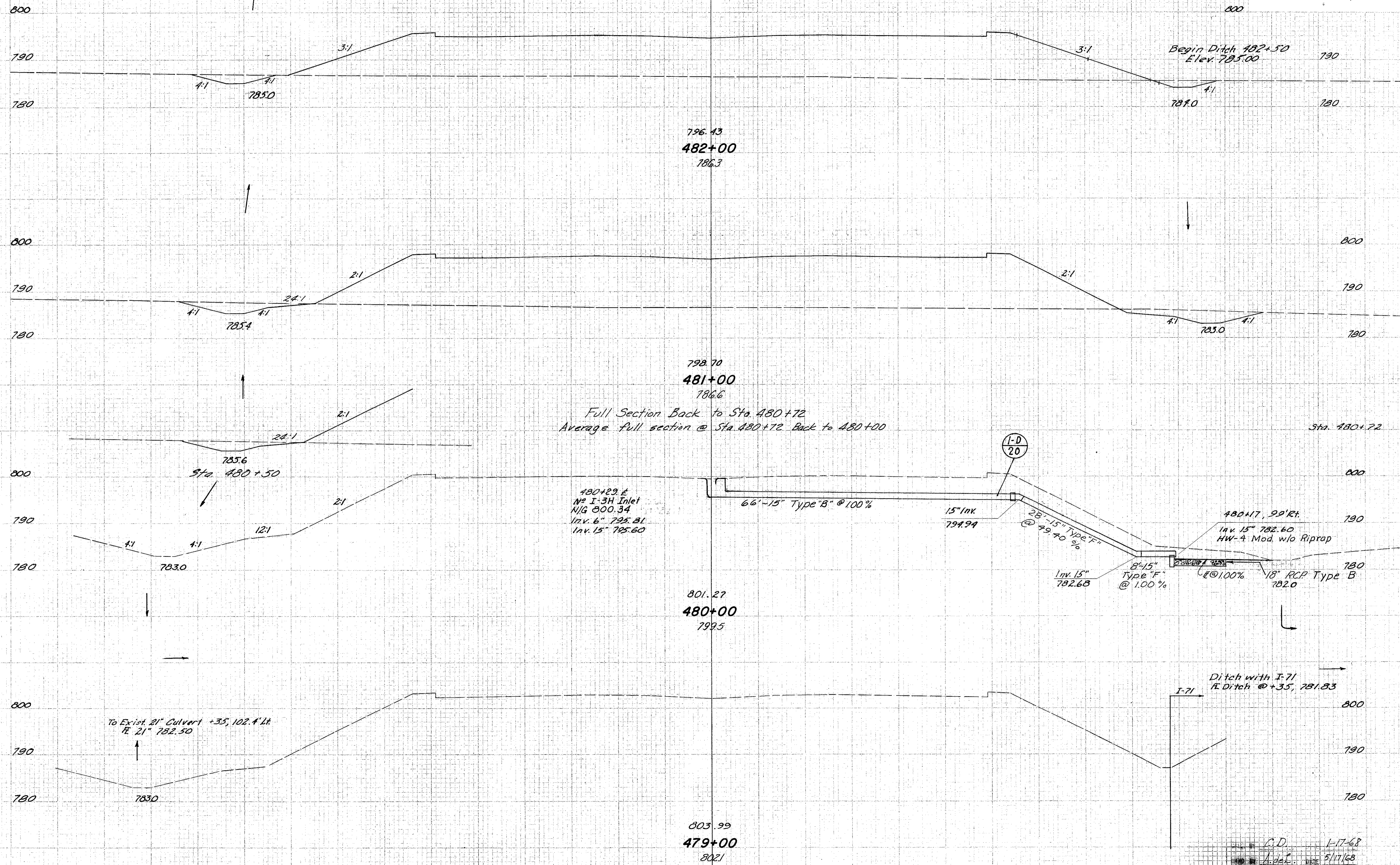
CUYAHOGA COUNTY  
CUY-480-8.54







CUYAHOGA COUNTY  
CUY-480-8.54



CROSS SECTION	CROSS SECTION	
	DATE	SCALE
381396		
224 5586		
83 1620		
154 3000		
0 0		

CROSS-SECTIONS STA. 479+00 TO STA. 482+00

C.D. 1-17-68  
A.C.E. 5/17/68

CUYAHOGA COUNTY  
CUY-480-8.54

NO.	AREA	CU	YD
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0 1242

24 4426

13 1148

44 5723

11 1942

46 5787

14 1183

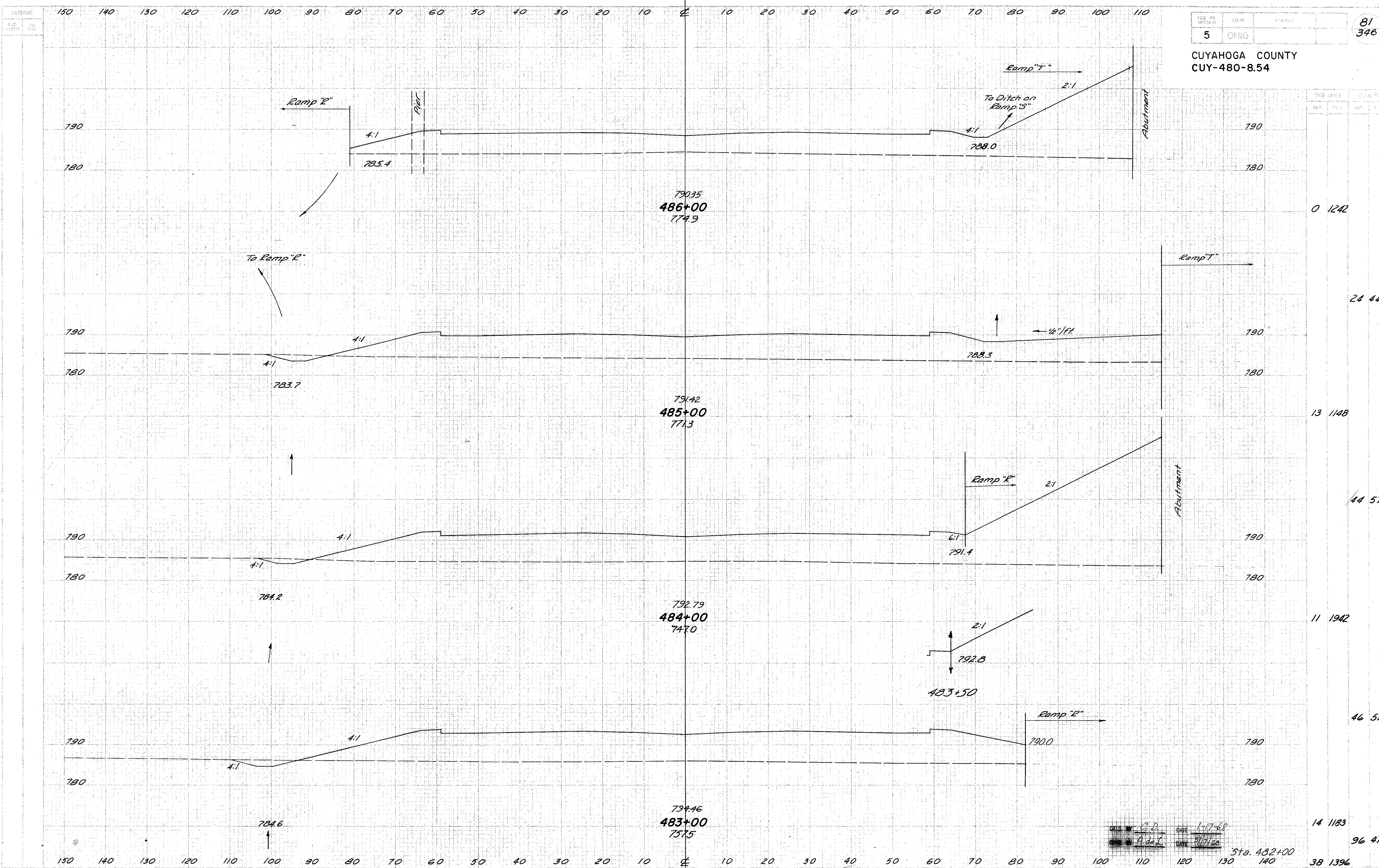
96 4776

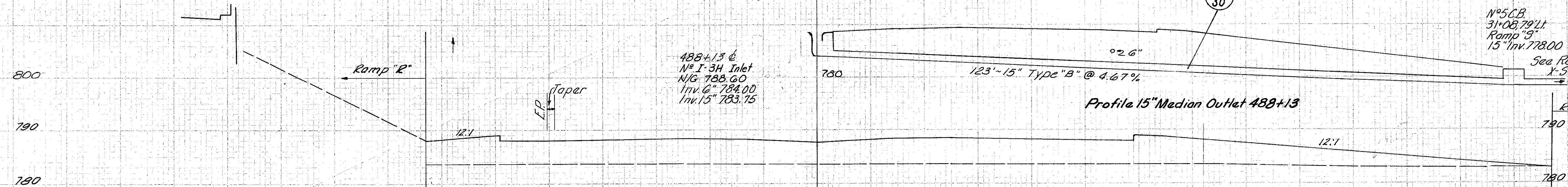
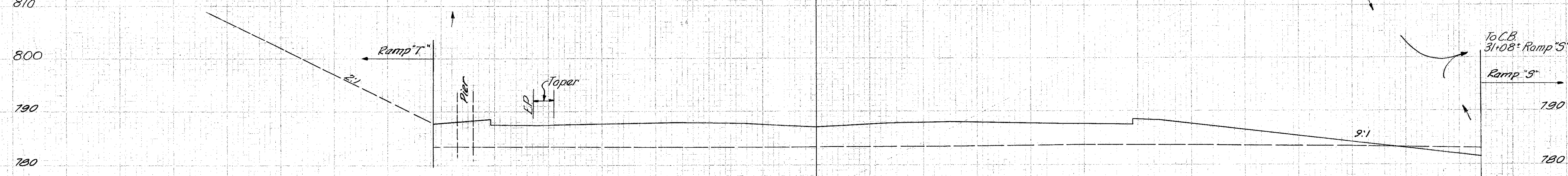
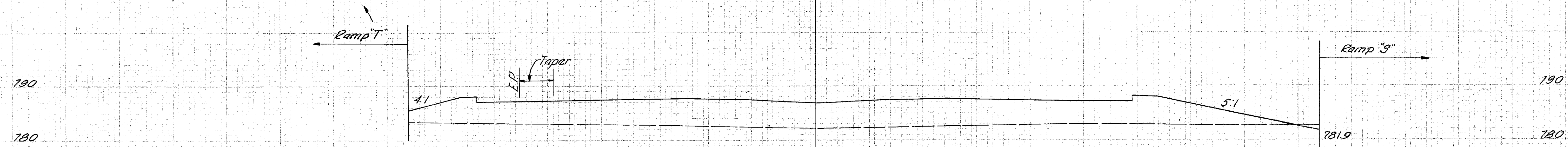
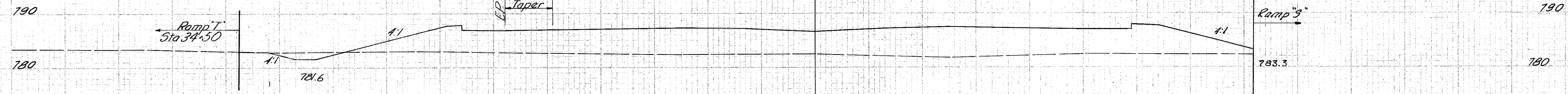
DATE: 1-17-68  
BY: J.D.  
DATE: 3/17/68  
BY: A. de J.

Sta. 482+00

38 1396

CROSS-SECTIONS STA. 483+00 TO STA. 486+00





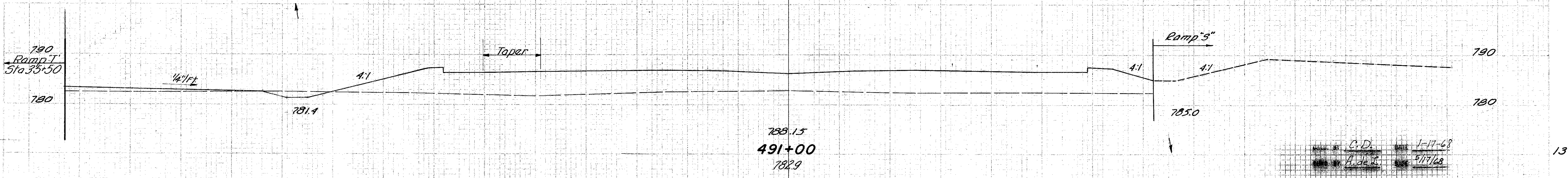
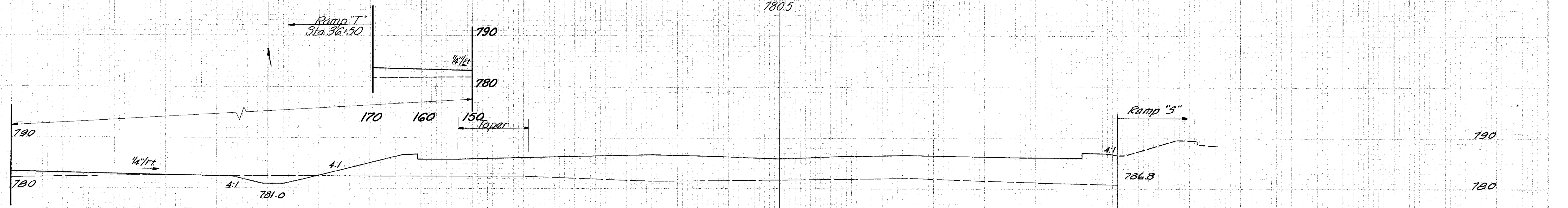
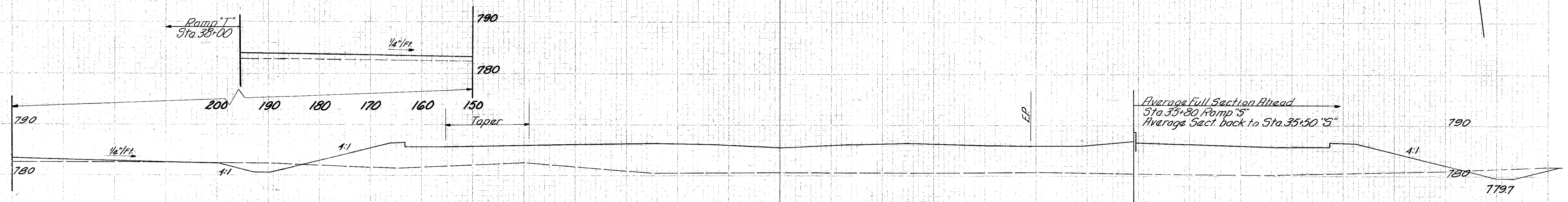
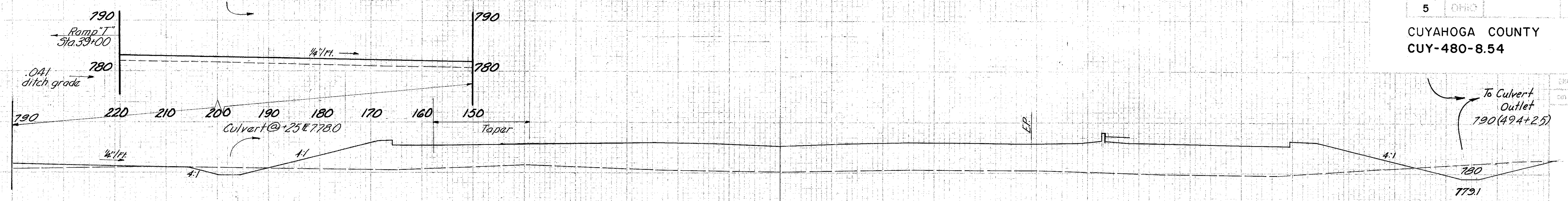
DATE: 1-17-68  
BY: G.D.  
CHECKED: A.D.L. DATE: 3/17/68

CROSS-SECTIONS STA. 487+00 TO STA. 490+00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

83  
346

CUYAHOGA COUNTY  
CUY-480-8.54



DATE 1-17-68  
BY G.D.  
CHECKED BY H. de S.  
DATE 2/19/68

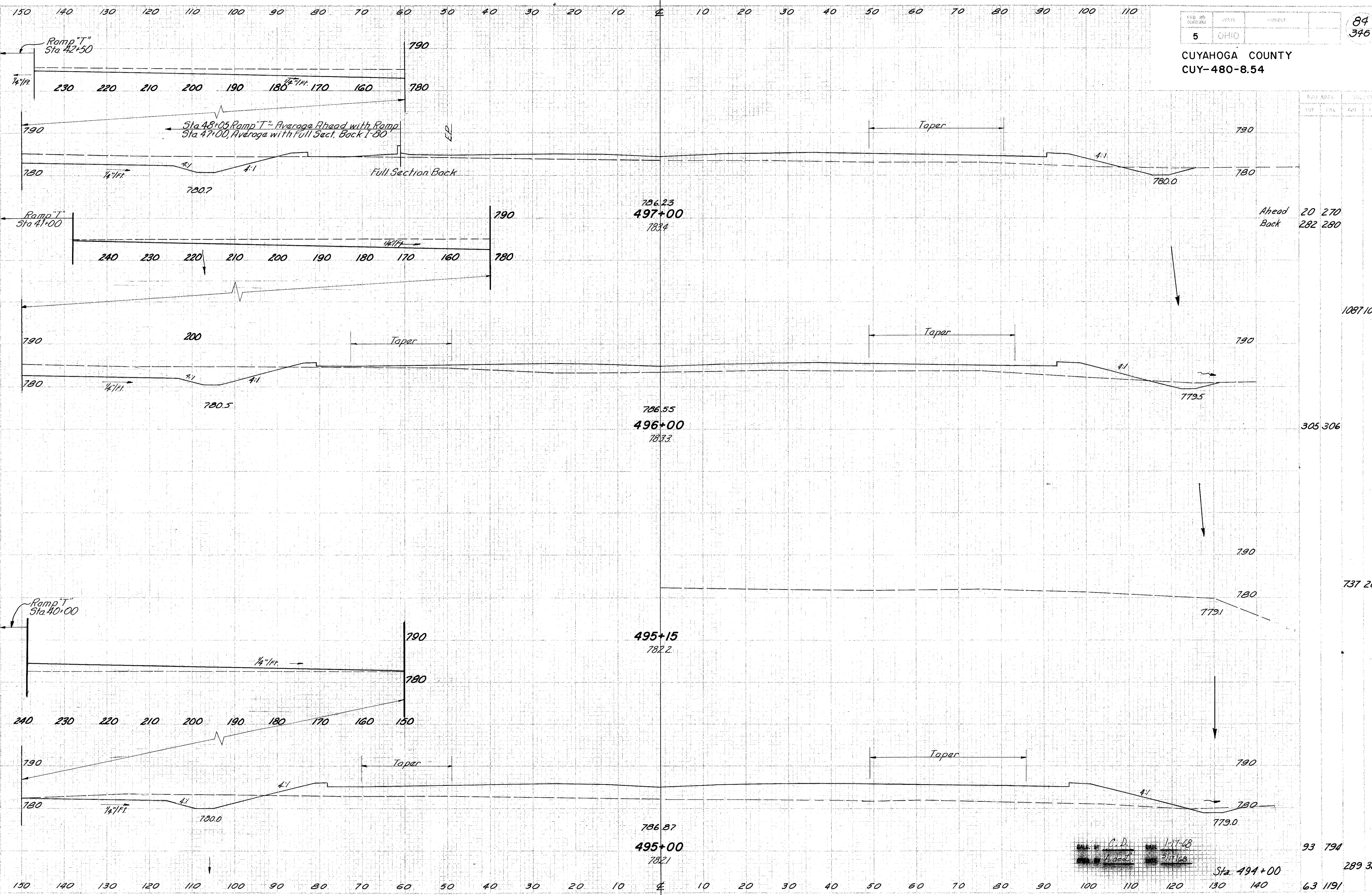
CROSS-SECTIONS STA. 491+00 TO STA. 494+00

63 1191  
187 4247  
38 1102  
785  
102 2785  
17 719  
56 2576  
13 672  
44 2624  
11 745

SECTION  
 5

84  
 346

CUYAHOGA COUNTY  
 CUY-480-8.54



Ahead 20 270  
 Back 282 280

1087 1085

305 306

737 2037

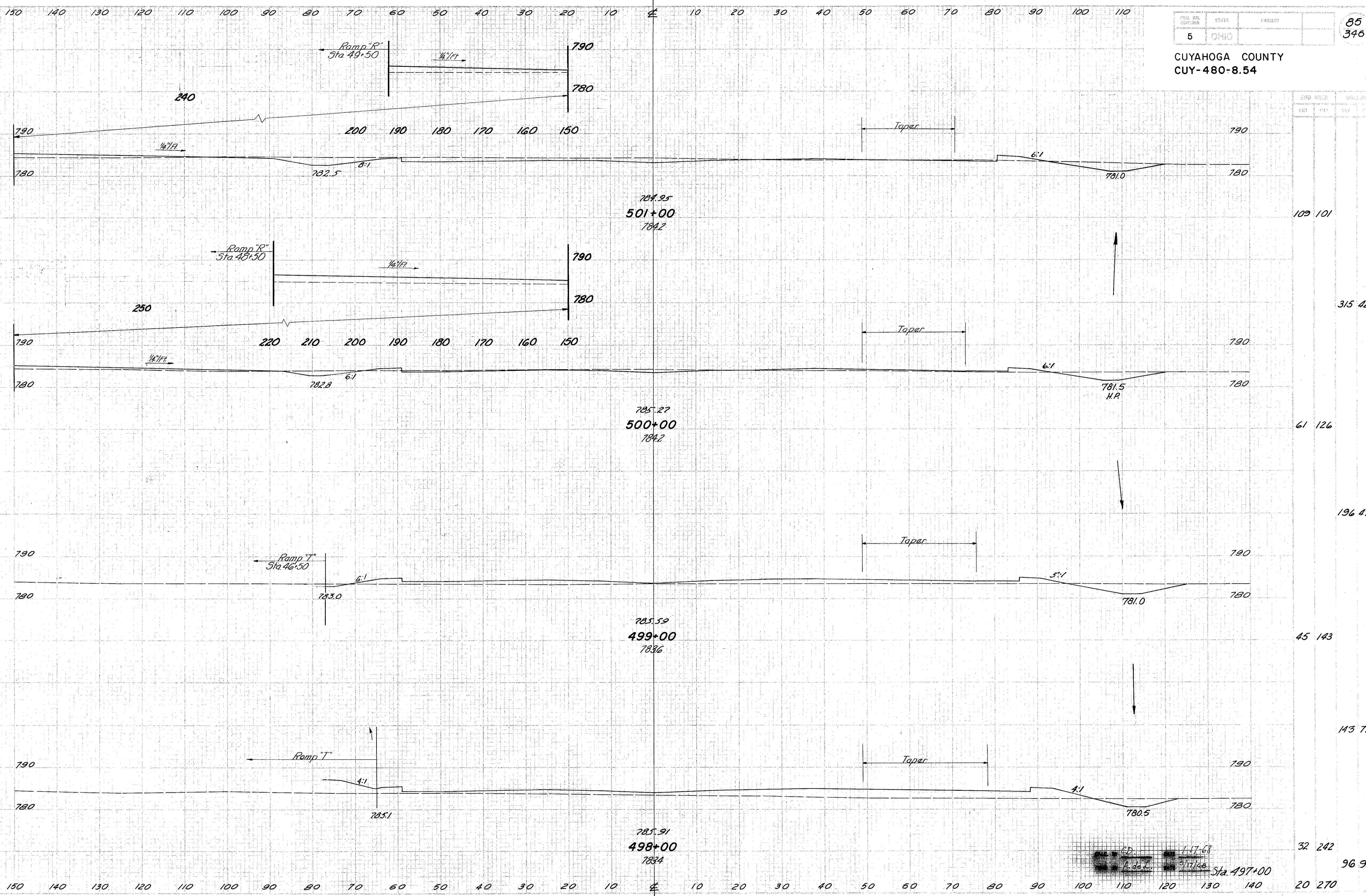
93 794

289 3676

CROSS-SECTIONS STA. 495+00 TO STA. 497+00

CUYAHOGA COUNTY  
CUY-480-8.54

NO.	AREA	WALL
109	101	
315	420	
61	126	
196	498	
45	143	
143	713	
32	242	
96	948	



CROSS-SECTIONS STA. 498+00 TO STA. 501+00

CUYAHOGA COUNTY  
CUY-480-8.54

DATE	NO.	BY

31 173

231 478

94 85

381 267

112 59

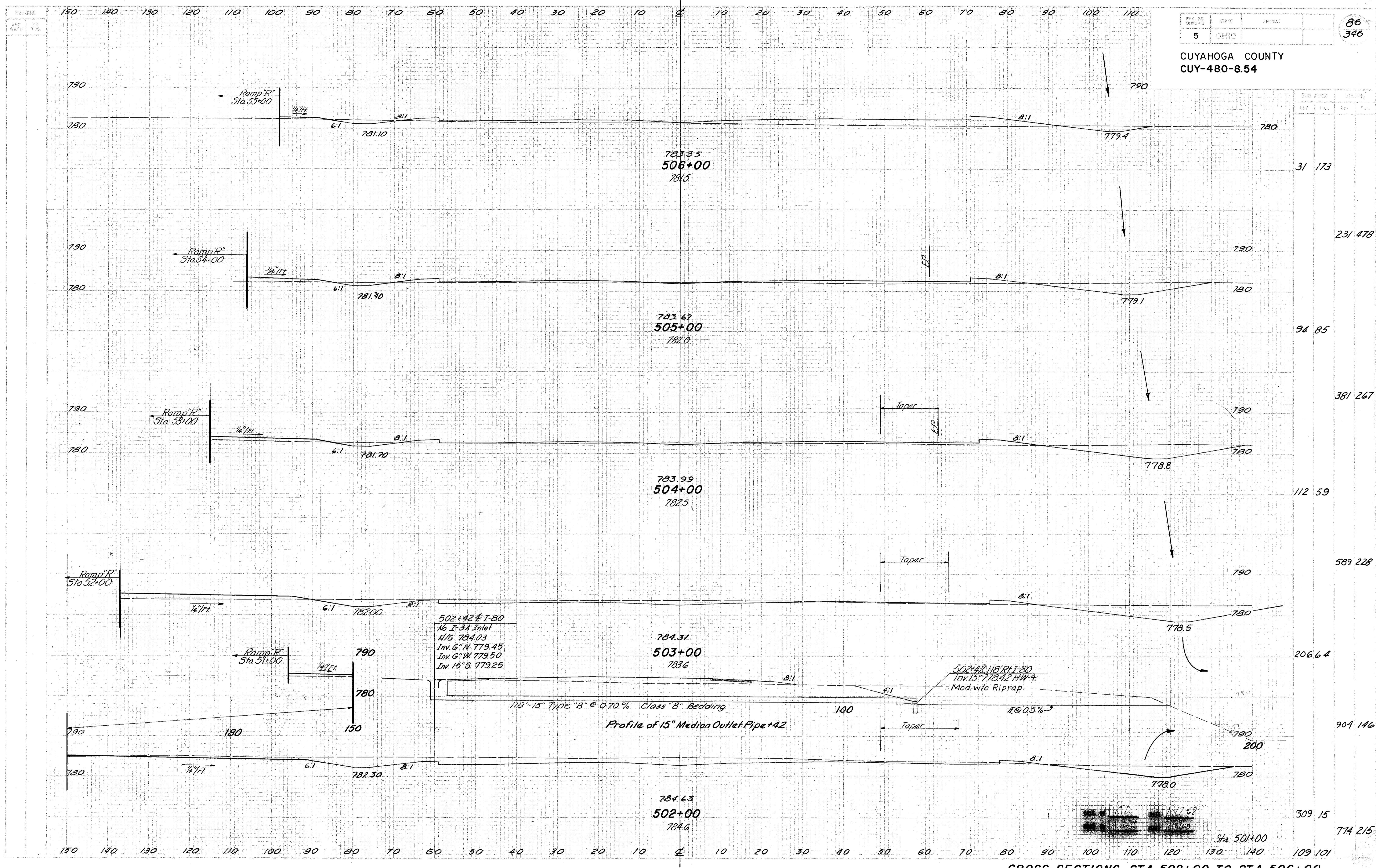
589 228

206 64

904 146

309 15

774 215

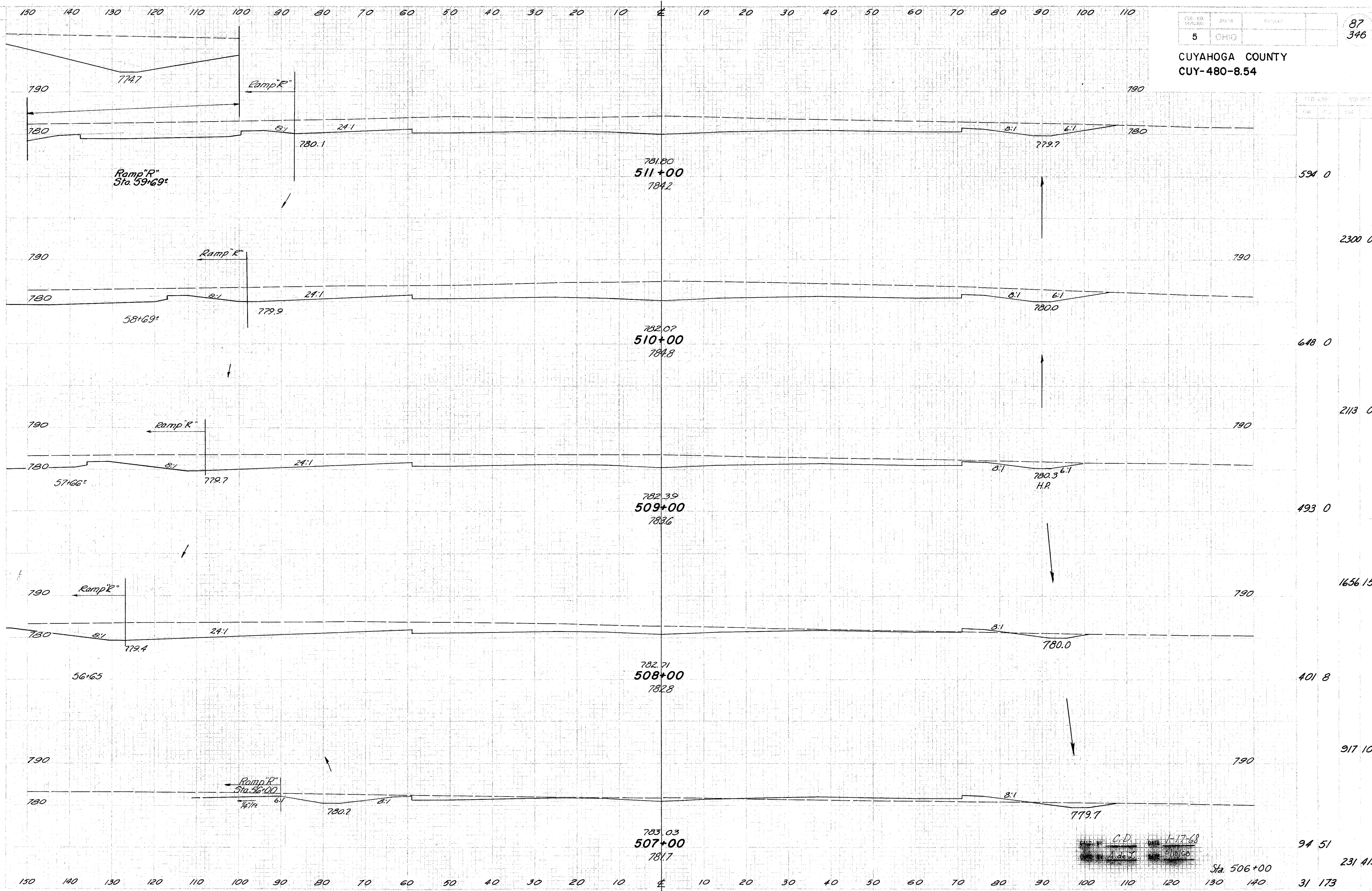


502+42  $\phi$  I-80  
No I-34 Inlet  
N/G 784.03  
Inv. G'N. 779.45  
Inv. G'W. 779.50  
Inv. 15" S. 779.25

118"-15" Type "B" @ 0.70% Class "B" Bedding  
Profile of 15" Median Outlet Pipe +42  
502+42 18" R/I-80  
Inv. 15" 778.42 HW-4  
Mod. w/o Riprap

C.D. 1-17-68  
2/18/68

CUYAHOGA COUNTY  
CUY-480-8.54



CROSS-SECTIONS STA. 507+00 TO STA. 511+00

C.D. 1-17-68  
A.L. 5/18/68

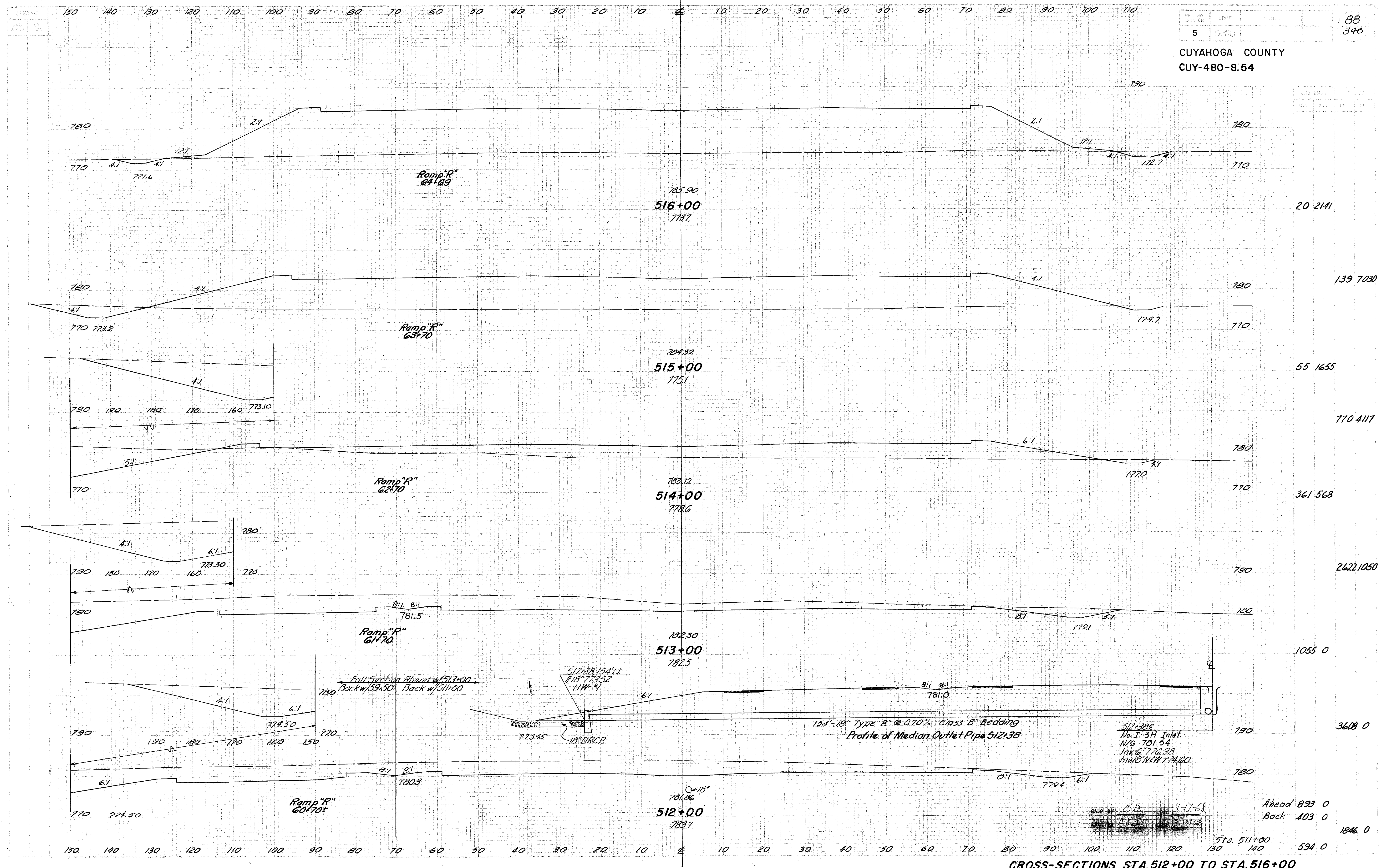
Sta. 506+00

94.51

231.415

31.173





STA.	PRO. ELEV.	GRD. ELEV.
516+00	785.90	773.7
515+00	784.32	773.1
514+00	783.12	778.6
513+00	782.30	782.5
512+00	781.96	783.7

STA.	PRO. ELEV.	GRD. ELEV.
20+2141		
139+7030		
55+1655		
770+4117		
361+568		
2622+1050		
1055+0		
3608+0		
Ahead 893+0		
Back 403+0		
1846+0		

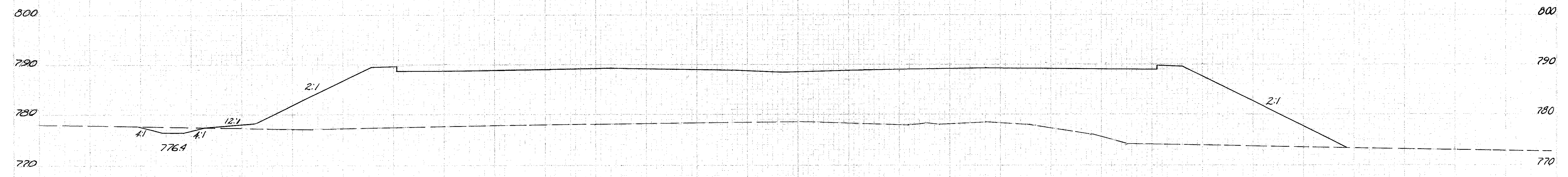
CROSS-SECTIONS STA. 512+00 TO STA. 516+00

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5  
89  
346

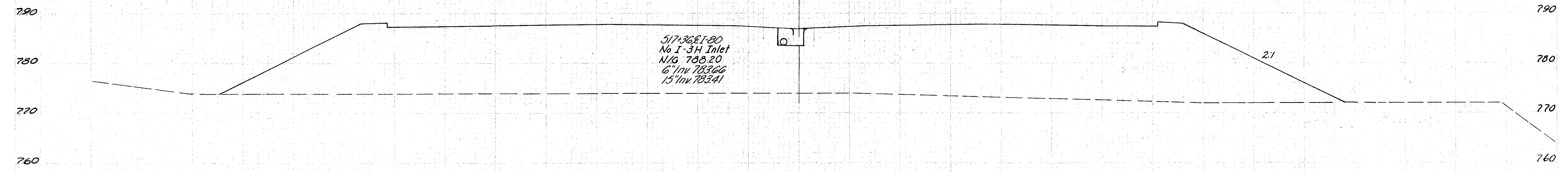
CUYAHOGA COUNTY  
CUY-480-8.54

120 130 140



790.20  
**518+00**  
778.5

8 2265



517+36.81-80  
No 1'-3" Inlet  
N/G 788.20  
6" Inv. 783.66  
15" Inv. 783.41

788.66  
**517+36**  
774.0

15 9268

0 2740

Misc. for Structure

0 8694

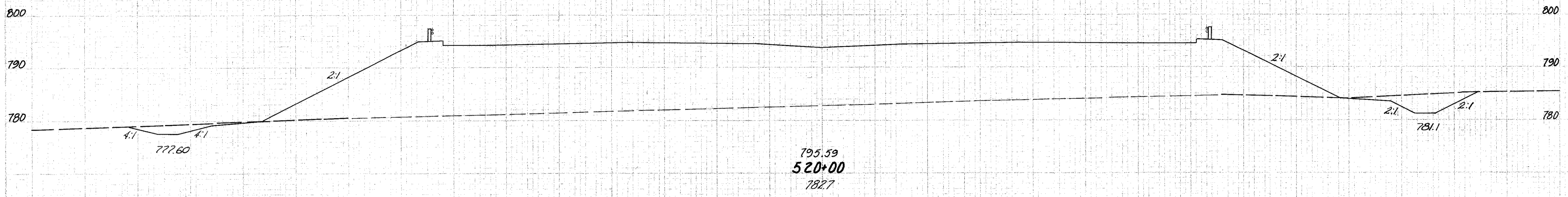
DATE 1-17-68  
DATE 5/18/68

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CROSS-SECTIONS STA. 517+00 TO STA. 518+00

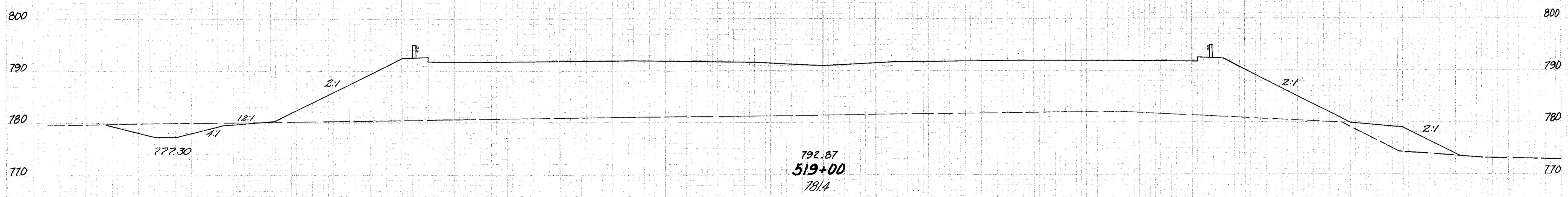
CUYAHOGA COUNTY  
CUY-480-8.54

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110



59 2057

191 7476



44 1980

96 7861

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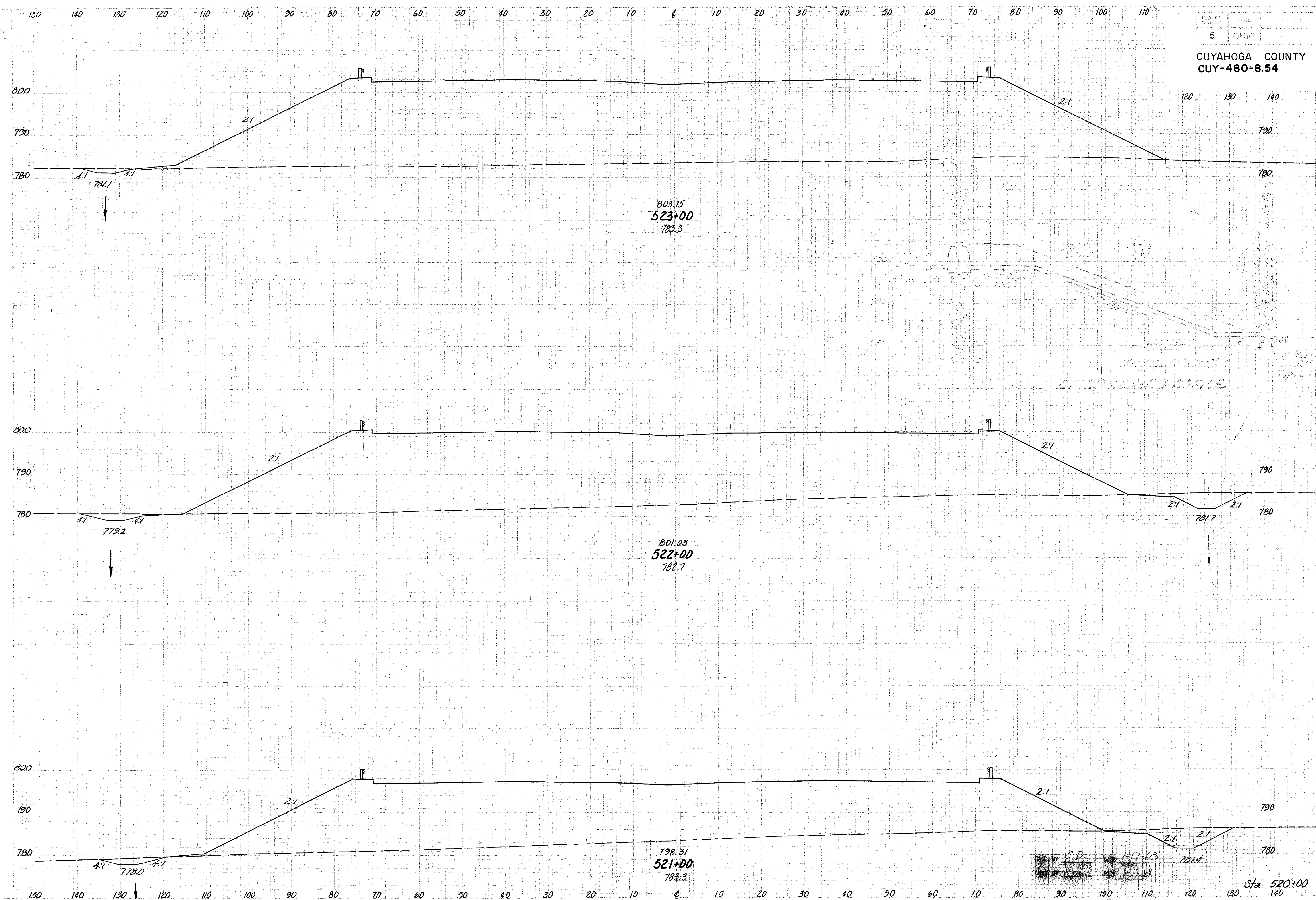
DATE BY C.D. DATE 1-17-68  
DATE BY A.D.S. DATE 5/15/68

Sta. 518+00 B 2265

CROSS-SECTIONS STA. 519+00 TO STA. 520+00

CUYAHOGA COUNTY  
CUY-480-8.54

91  
346



803.75  
523+00  
783.3

801.03  
522+00  
782.7

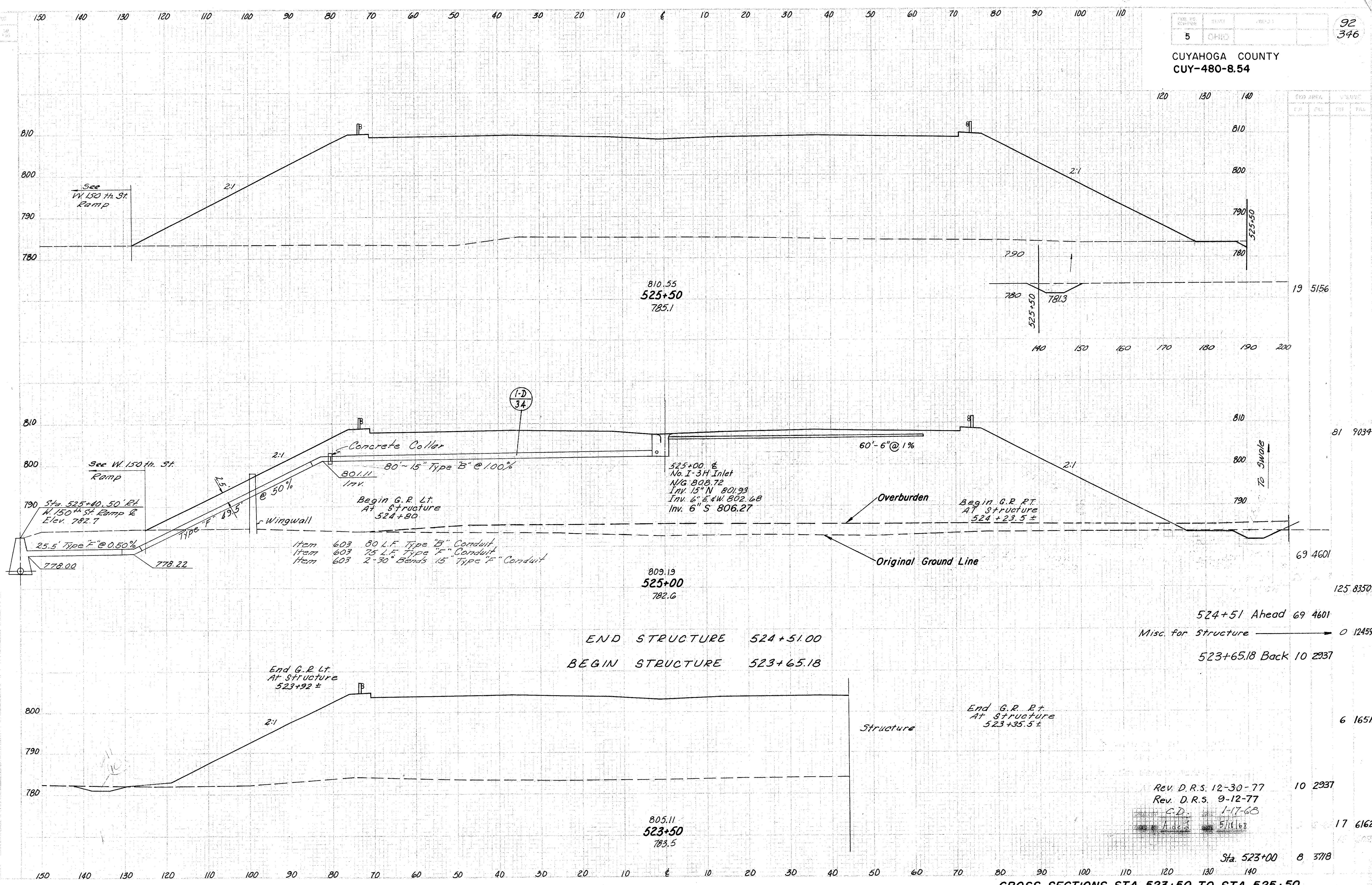
798.31  
521+00  
783.3

DATE BY C.D. 1-17-68  
DRAWN BY A. J. 5-11-68

CROSS-SECTION STA. 521+00 TO STA. 523+00

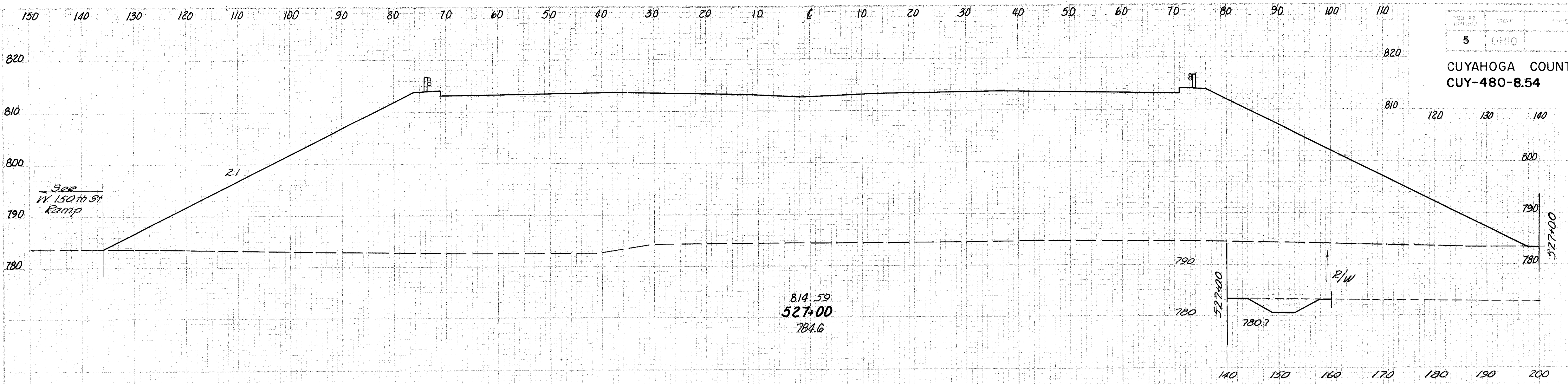
TIME	DATE	NO.	BY
8		3718	
113		12,672	
53		3125	
237		10,476	
75		2532	
		248	8498
		59	2057
			Rev'd 7-17-78

CUYAHOGA COUNTY  
CUY-480-8.54

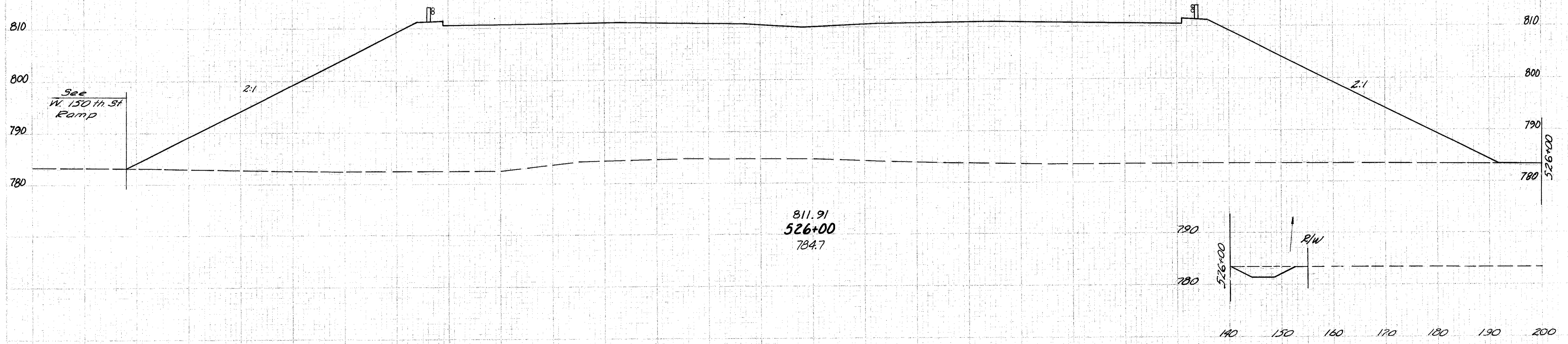


CROSS-SECTIONS STA. 523+50 TO STA. 525+50

CUYAHOGA COUNTY  
CUY-480-8.54



NO.	AREA	VOLUME



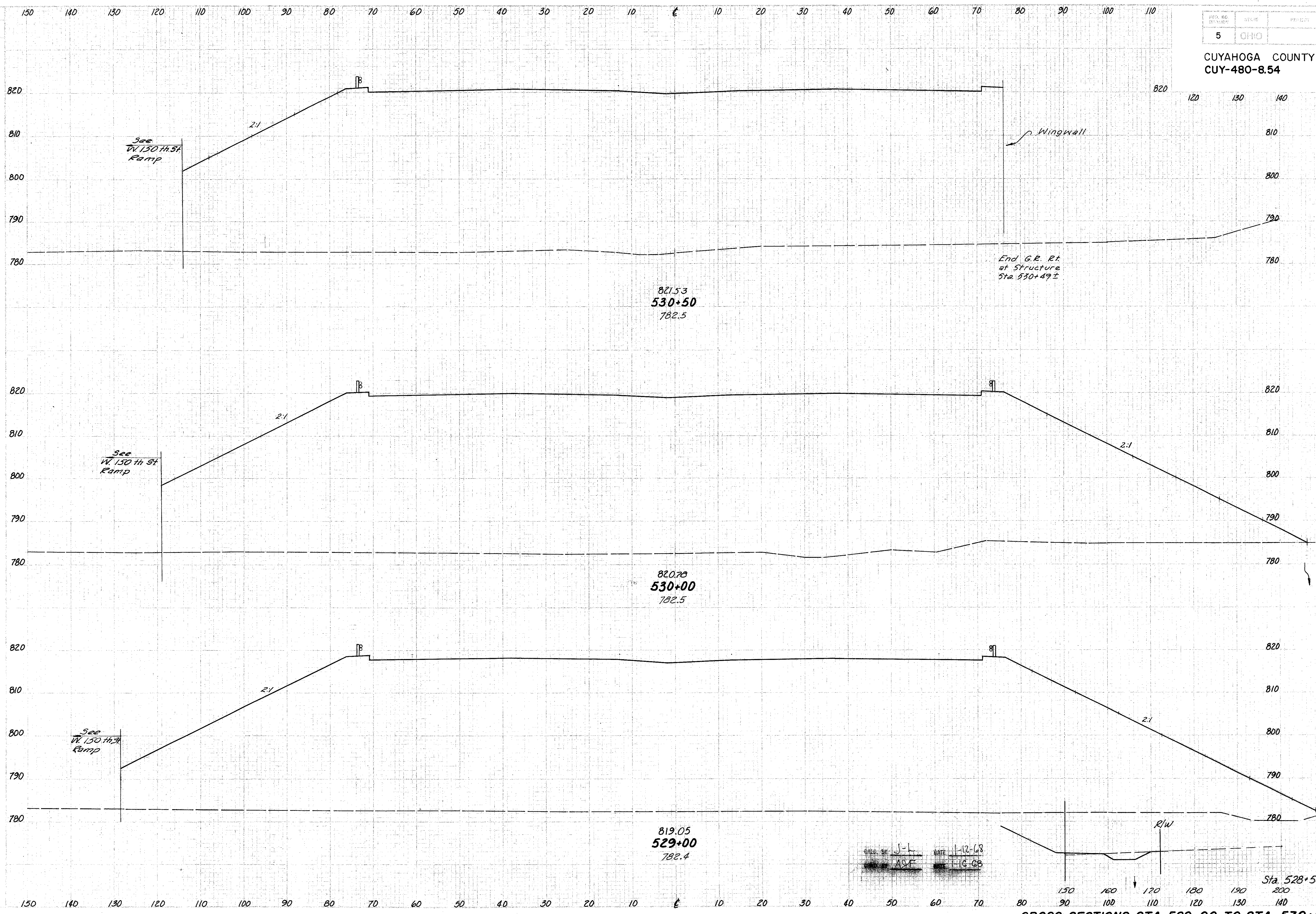
Rev. D.R.S. 9-12-77  
G.D. 1-17-08  
A.G. 8-19-08

Sta. 525+50 19 5156

CROSS-SECTIONS STA. 526+00 TO STA. 527+00



CUYAHOGA COUNTY  
CUY-480-8.54



821.53  
**530+50**  
782.5

820.78  
**530+00**  
782.5

819.05  
**529+00**  
782.4

DATE 1-12-68  
FIG. GB

CROSS-SECTIONS STA. 529+00 TO STA. 530+50

0 6611

0 13374

0 7833

26 29076

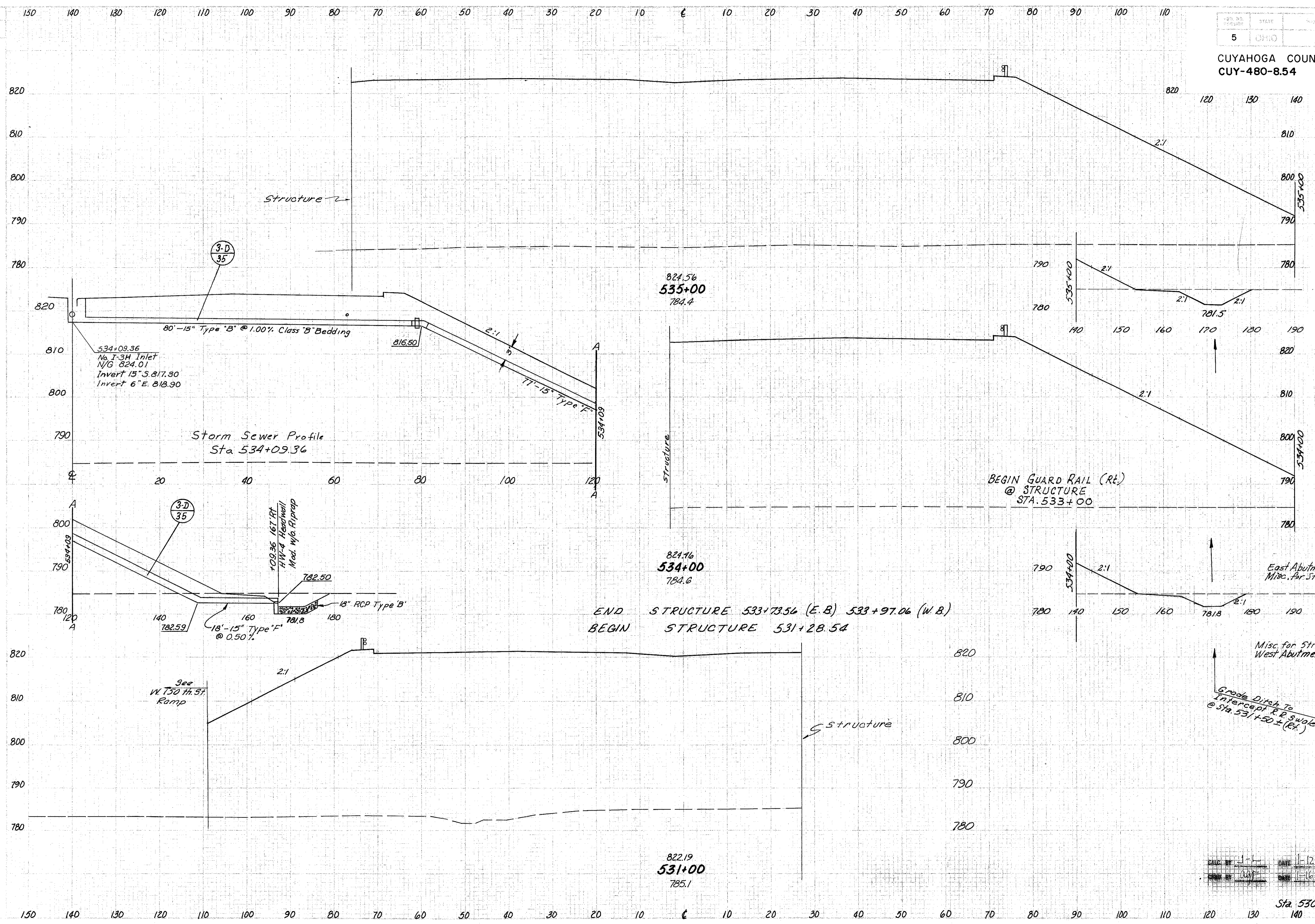
14 7868

26 1426A

Sta. 528+50 14 7537



CUYAHOGA COUNTY  
CUY-480-8.54



NO.	DESCRIPTION	AMOUNT
45	7255	
144	21817	
33	4526	
	Misc. for Struct.	286 33519
	Misc. for Struct. West Abutment	0 23099
	Grade Dirch To Intercept R.P. Swale @ Sta. 531+50 ± (Rt.)	
0	4782	
		0 10550
	Sta. 530+50	0 6611

CROSS-SECTIONS STA. 531+00 TO STA. 535+00

CALC BY: J-L  
DATE: 1-12-68  
CHKD BY: WAF  
DATE: 1-16-68

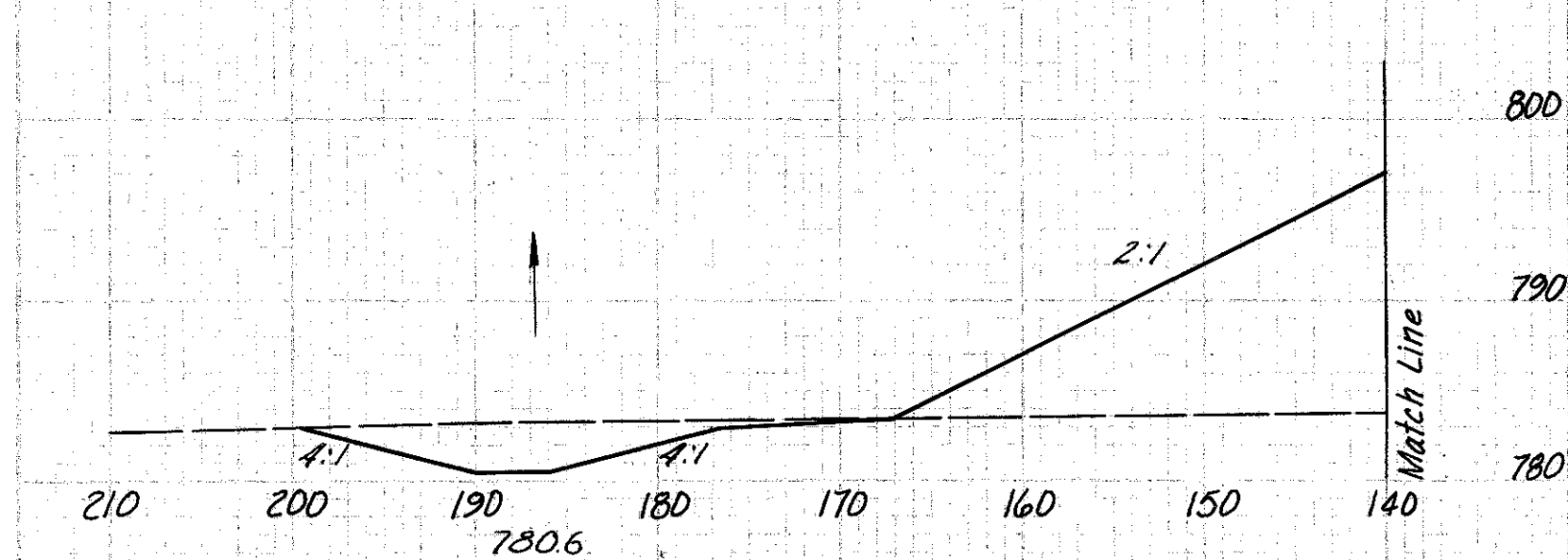
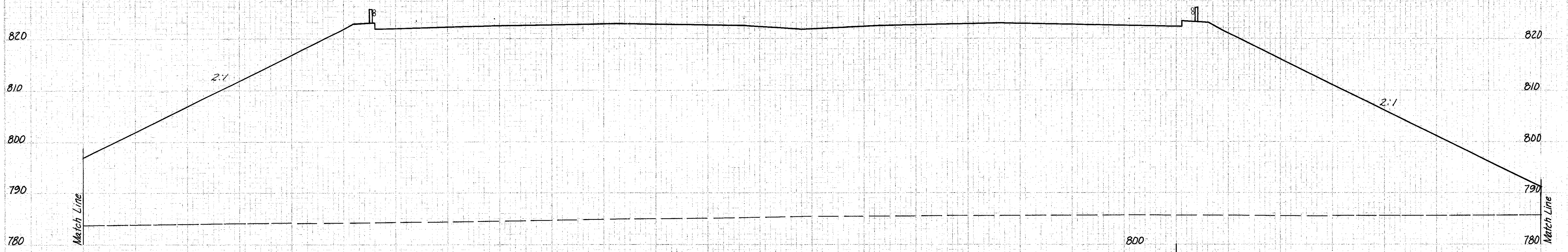
END STRUCTURE 533+73.56 (E.B) 533+97.06 (W.B)  
BEGIN STRUCTURE 531+28.54

See  
W. 150 Th. St.  
Ramp

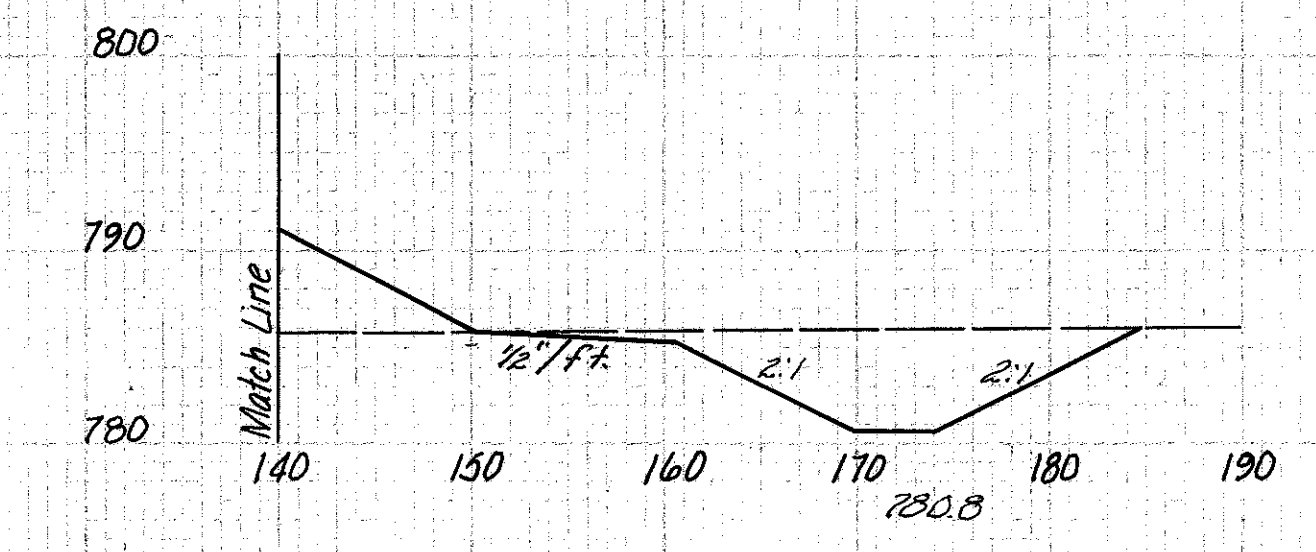
BEGIN GUARD RAIL (RT.)  
@ STRUCTURE  
STA. 533+00

Grade Dirch To  
Intercept R.P. Swale  
@ Sta. 531+50 ± (Rt.)

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

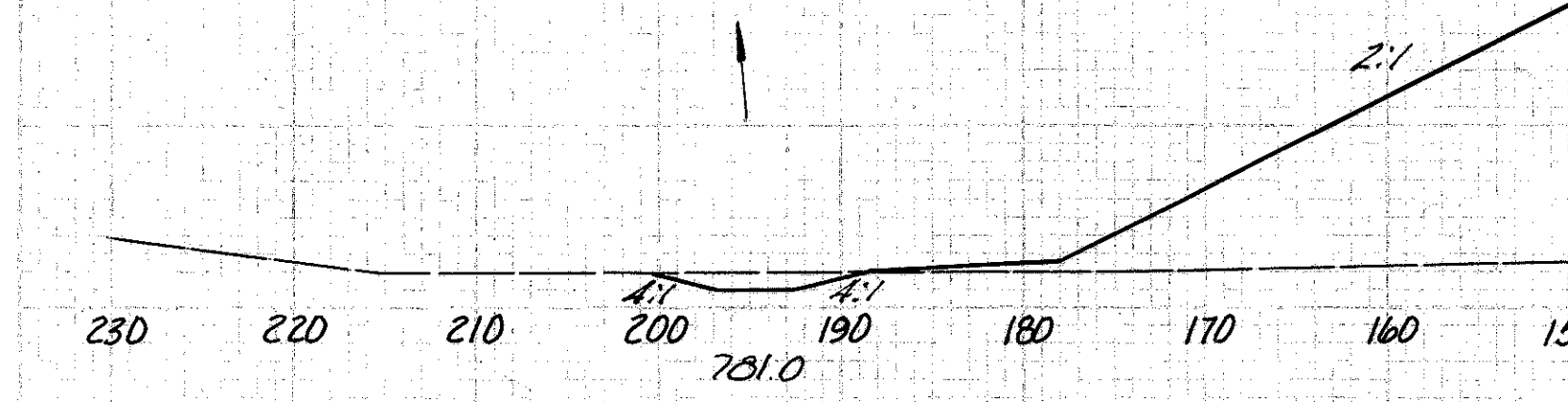
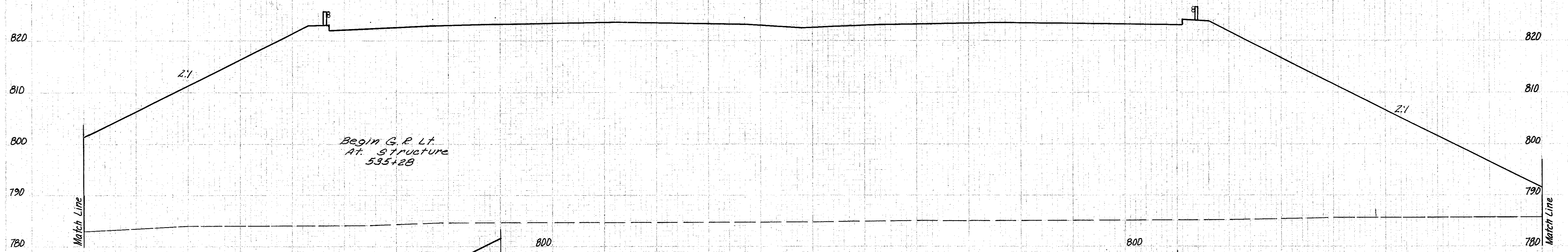


823.78  
537+00  
785.4

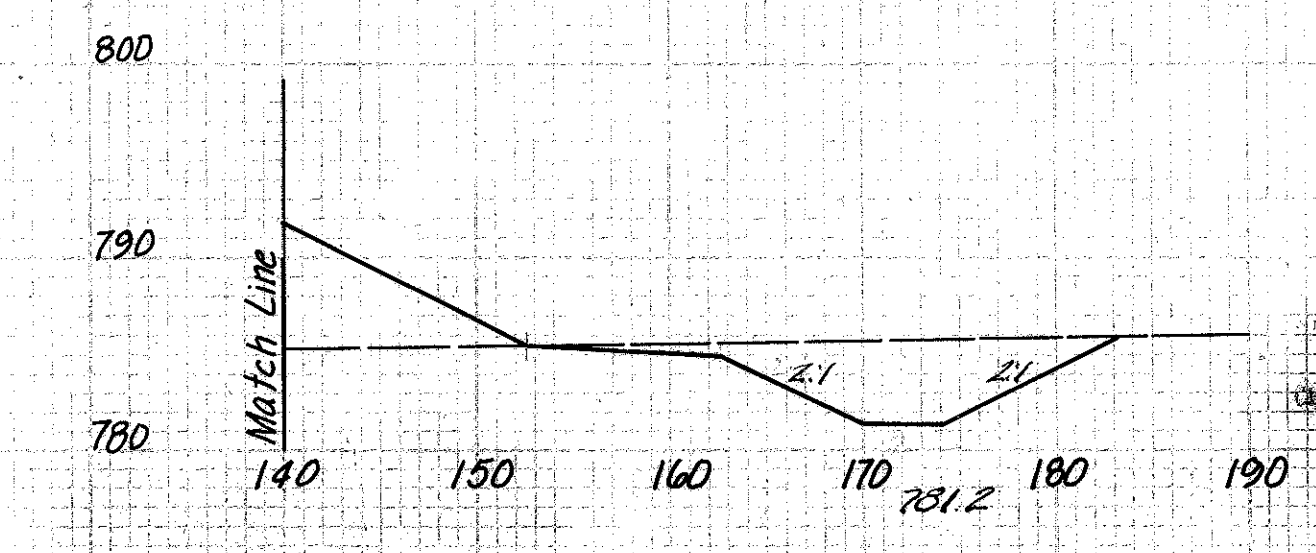


97 6926

294 34,275



824.33  
536+00  
784.8



J-L 1-12-68  
DATE 6-16-68

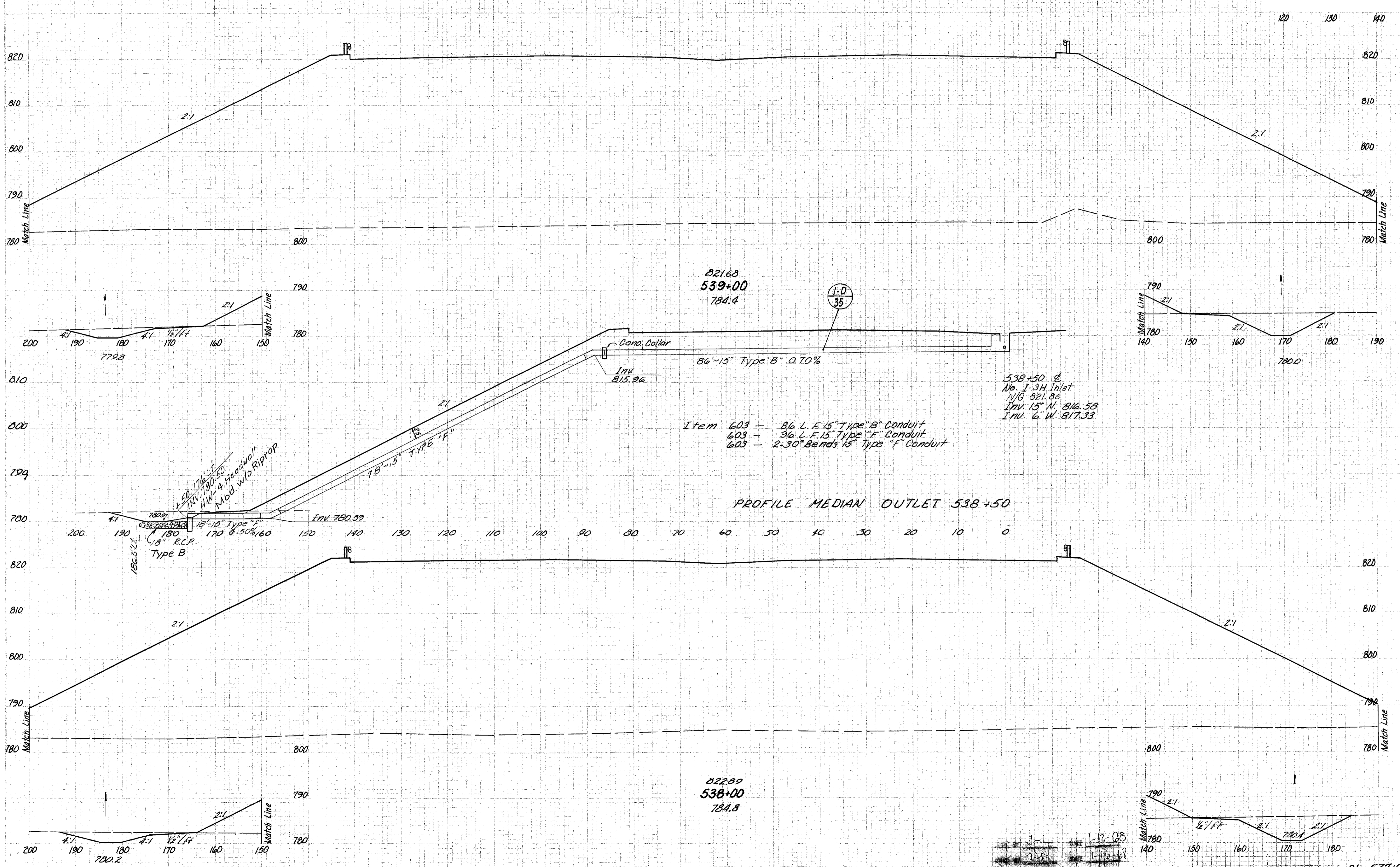
62 9582

198 31,180

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

Sta 535+00 45 7255

CUYAHOGA COUNTY  
 CUY-480-8.54



- Item 603 - 86 L. F. 15" Type "B" Conduit  
 603 - 96 L. F. 15" Type "F" Conduit  
 603 - 2-30° Bends 15" Type "F" Conduit

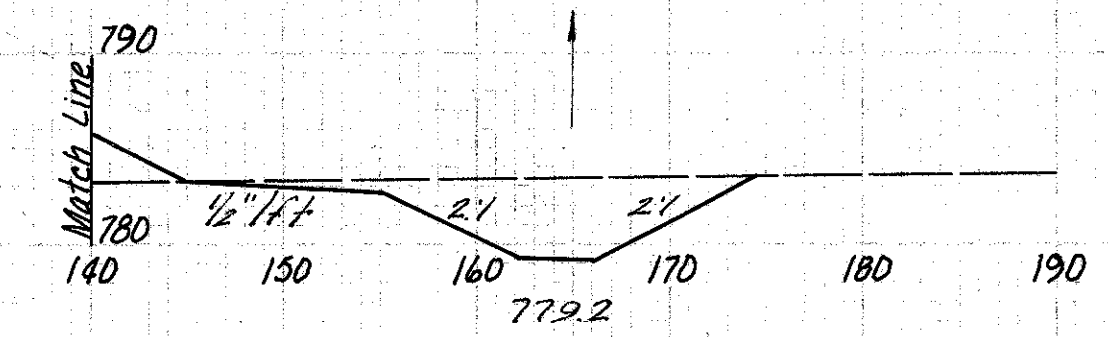
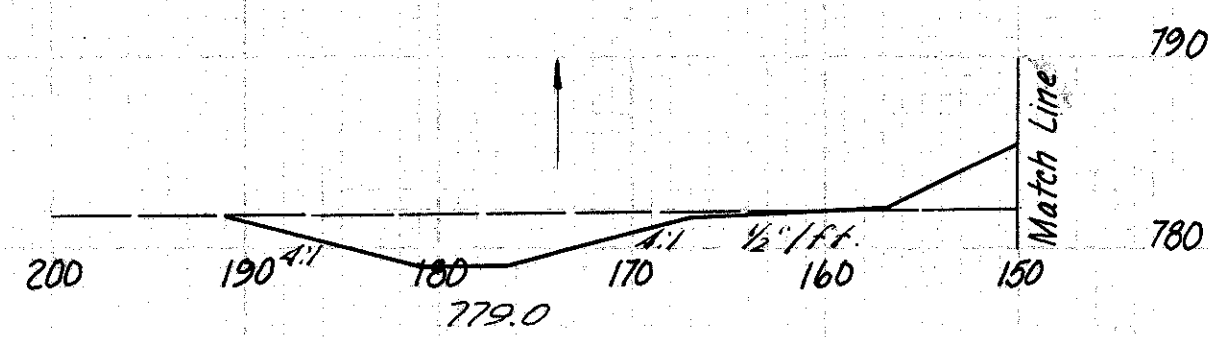
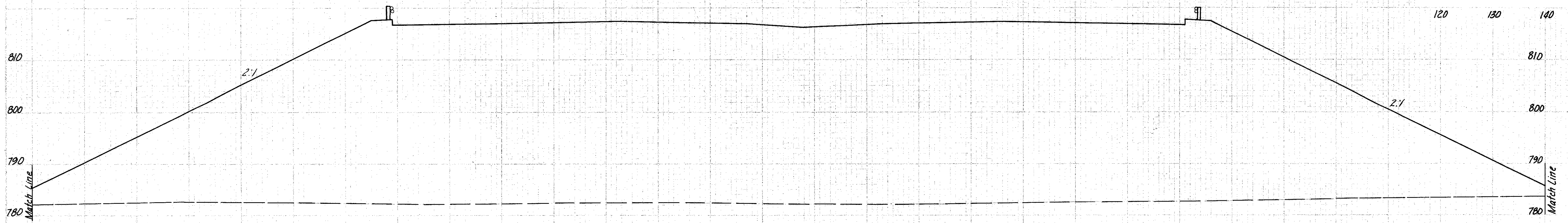
538+50 E  
 No. 1-34 Inlet  
 N/G 821.86  
 Inv. 15" N. 816.58  
 Inv. 6" W. 817.33

PROFILE MEDIAN OUTLET 538+50

CROSS-SECTIONS STA. 538+00 TO STA. 539+00

CROSS SECTION	AREA		VOL.	CUB. YDS.
	PLAN	VERT.		
84	8475			
331	3,875			
95	8737			
356	32,710			
97	8926			

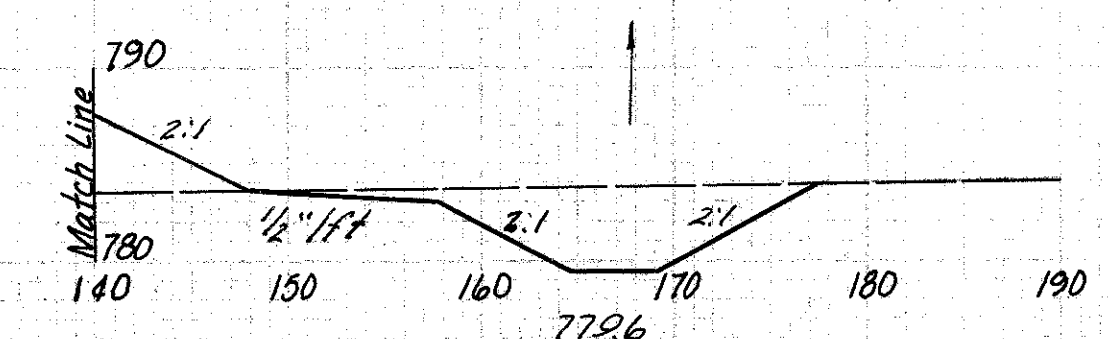
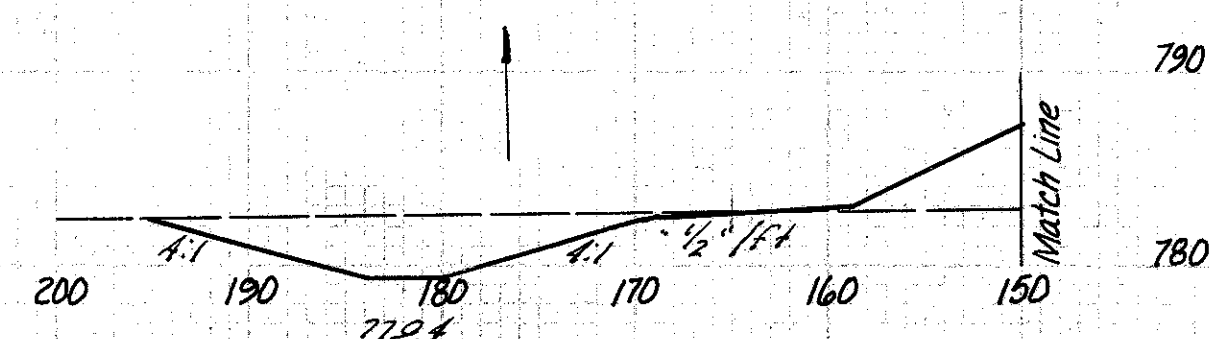
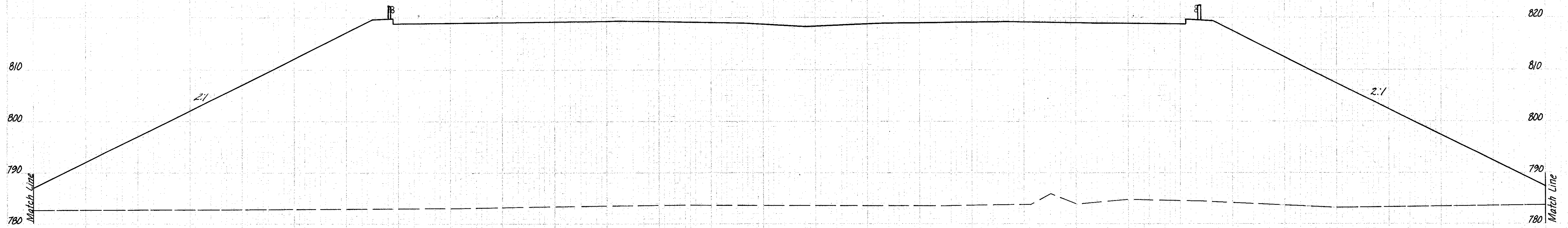
CUYAHOGA COUNTY  
CUY-480-8.54



810.60  
541+00  
782.2

94 8034

363 30,273



820.15  
540+00  
783.6

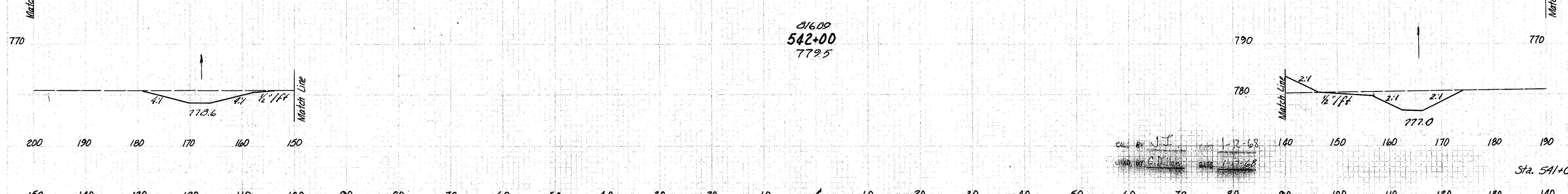
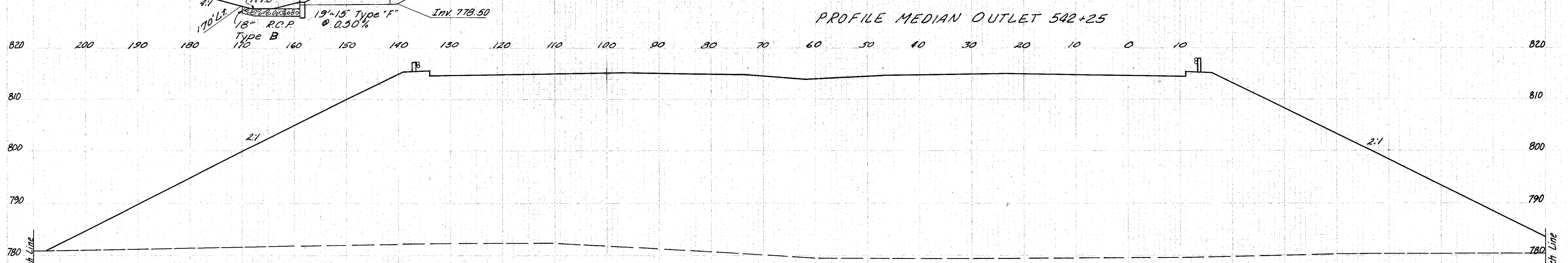
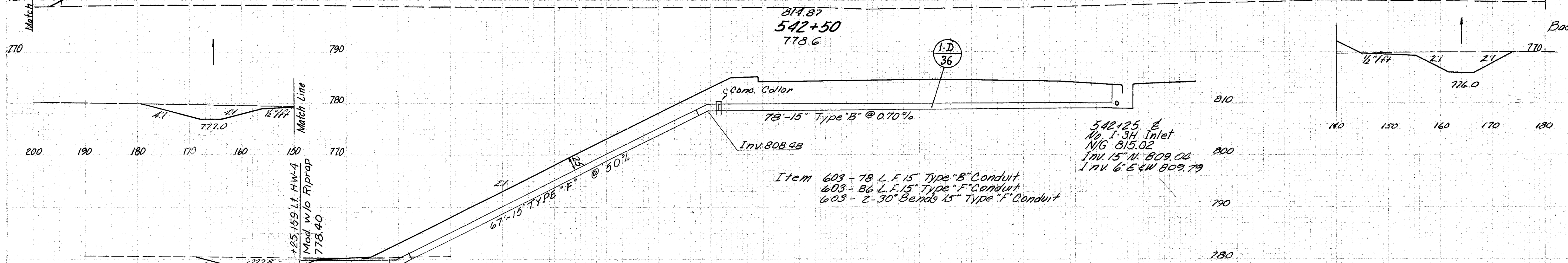
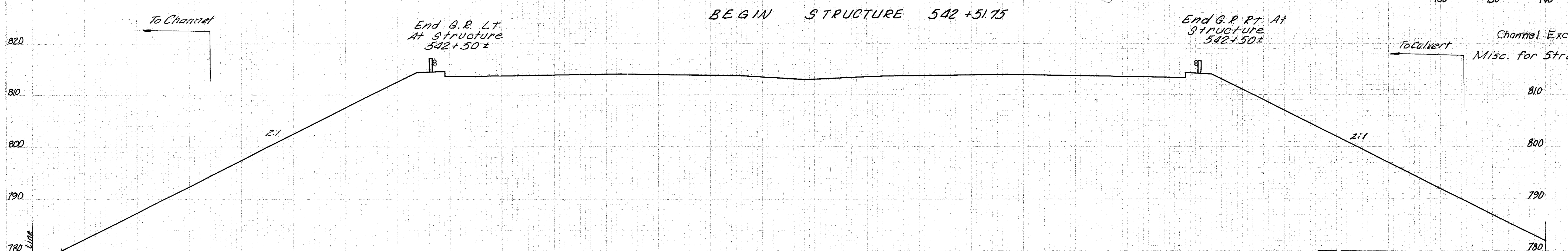
102 8313

344 31,089

J-1  
1-12-CB  
16-68

Sta 539+00 84 8175

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	AMOUNT
1874	Channel Exc.	---	---	1874
73	Misc. for Struct.	---	---	17060

BEGIN STRUCTURE 542+51.75

PROFILE MEDIAN OUTLET 542+25

Item 603 - 78 L.F. 15" Type "B" Conduit  
 603 - 86 L.F. 15" Type "F" Conduit  
 603 - 2-30" Bends 15" Type "F" Conduit

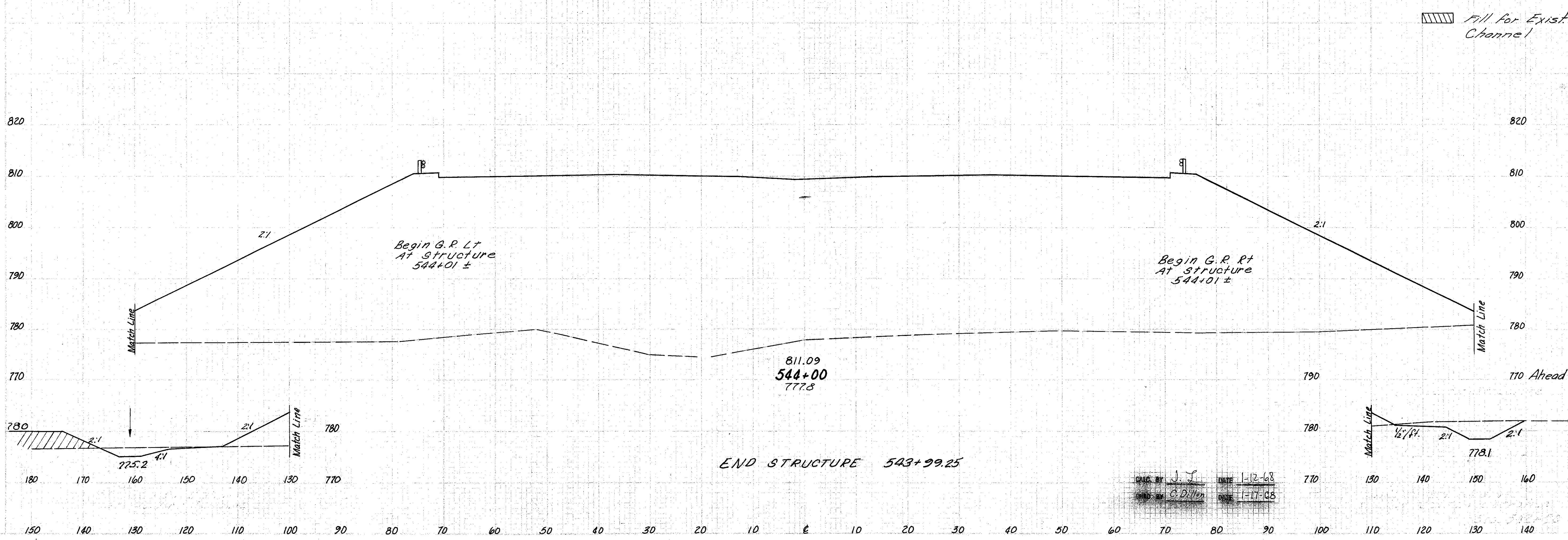
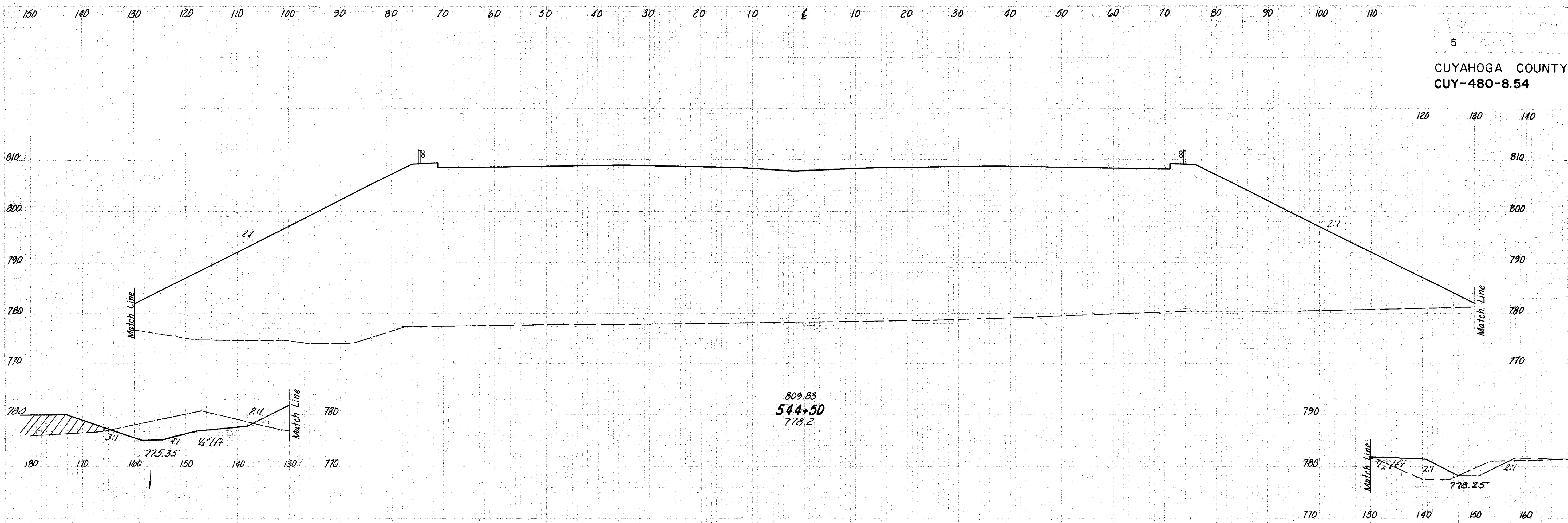
542+25.0  
 No. 1-34 Inlet  
 N/G 815.02  
 INV. 15" N: 809.04  
 INV. 6" E+W 809.79

CROSS-SECTIONS STA. 542+00 TO STA. 542+50

CAL. BY J.T.  
 CHECKED BY G.D.  
 1-7-68  
 1-7-68

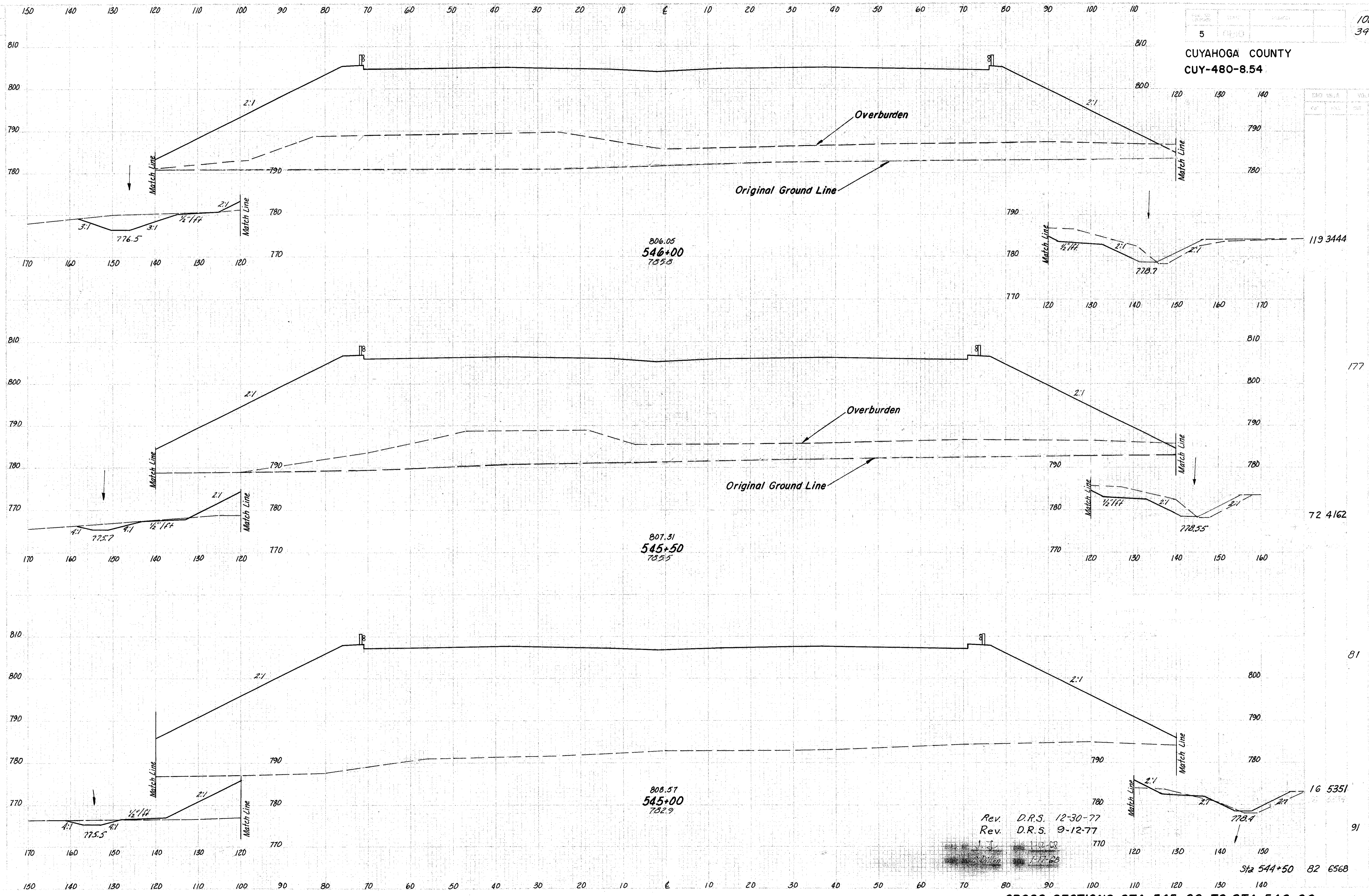
1874  
 17060  
 88 7782  
 146 14282  
 69 7642  
 94 8034  
 Sta. 541+00

CUYAHOGA COUNTY  
CUY-480-8.54



DATE 1-12-68  
DATE 1-17-68

CUYAHOGA COUNTY  
CUY-480-8.54

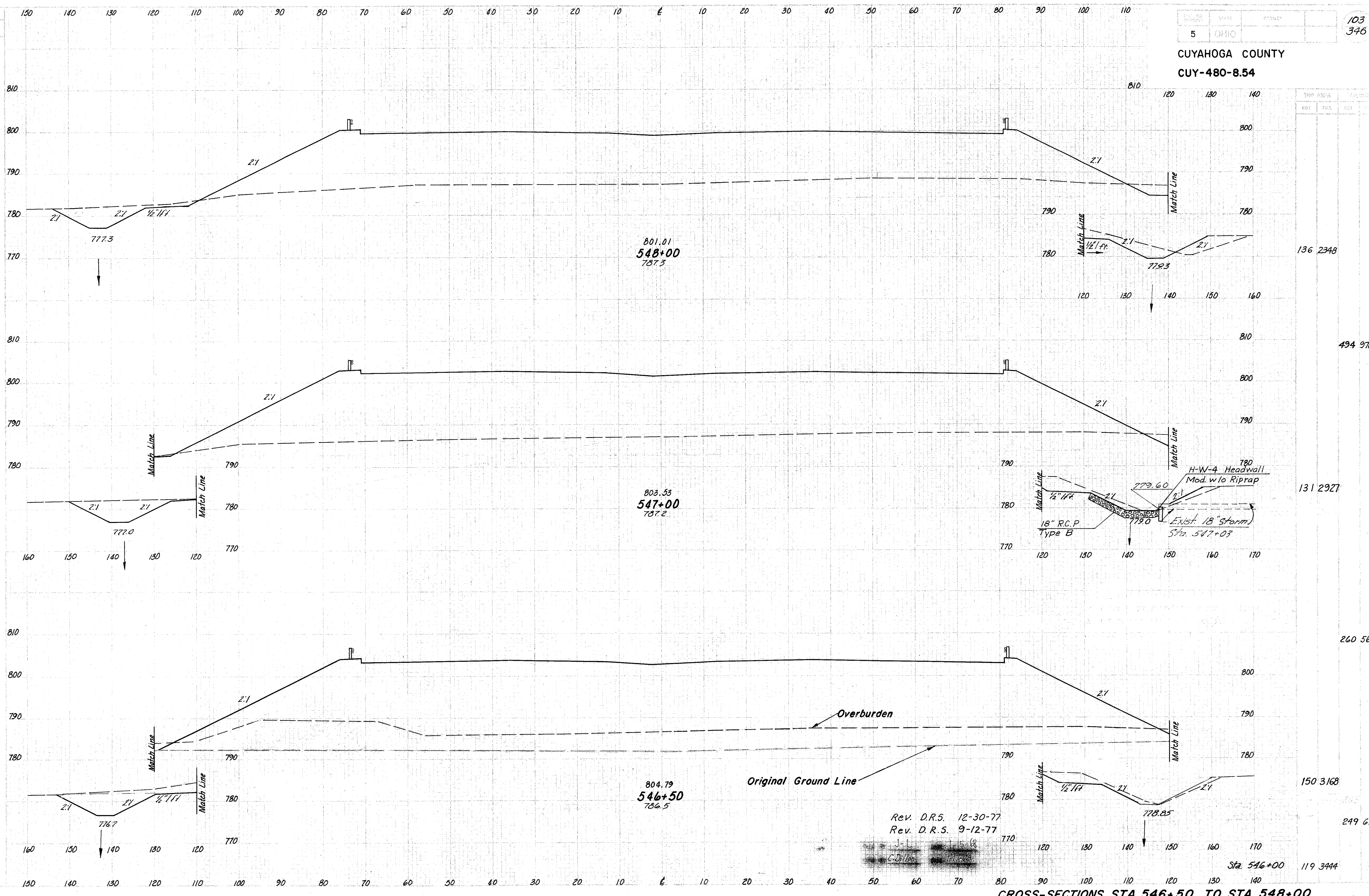


Rev. D.R.S. 12-30-77  
Rev. D.R.S. 9-12-77

CROSS-SECTIONS STA. 545+00 TO STA. 546+00

Sta 544+50 82 6568

CUYAHOGA COUNTY  
CUY-480-8.54



NO.	AREA	PERCENT
1		
2		
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99		
100		

136 2348

494 9769

131 2927

260 5644

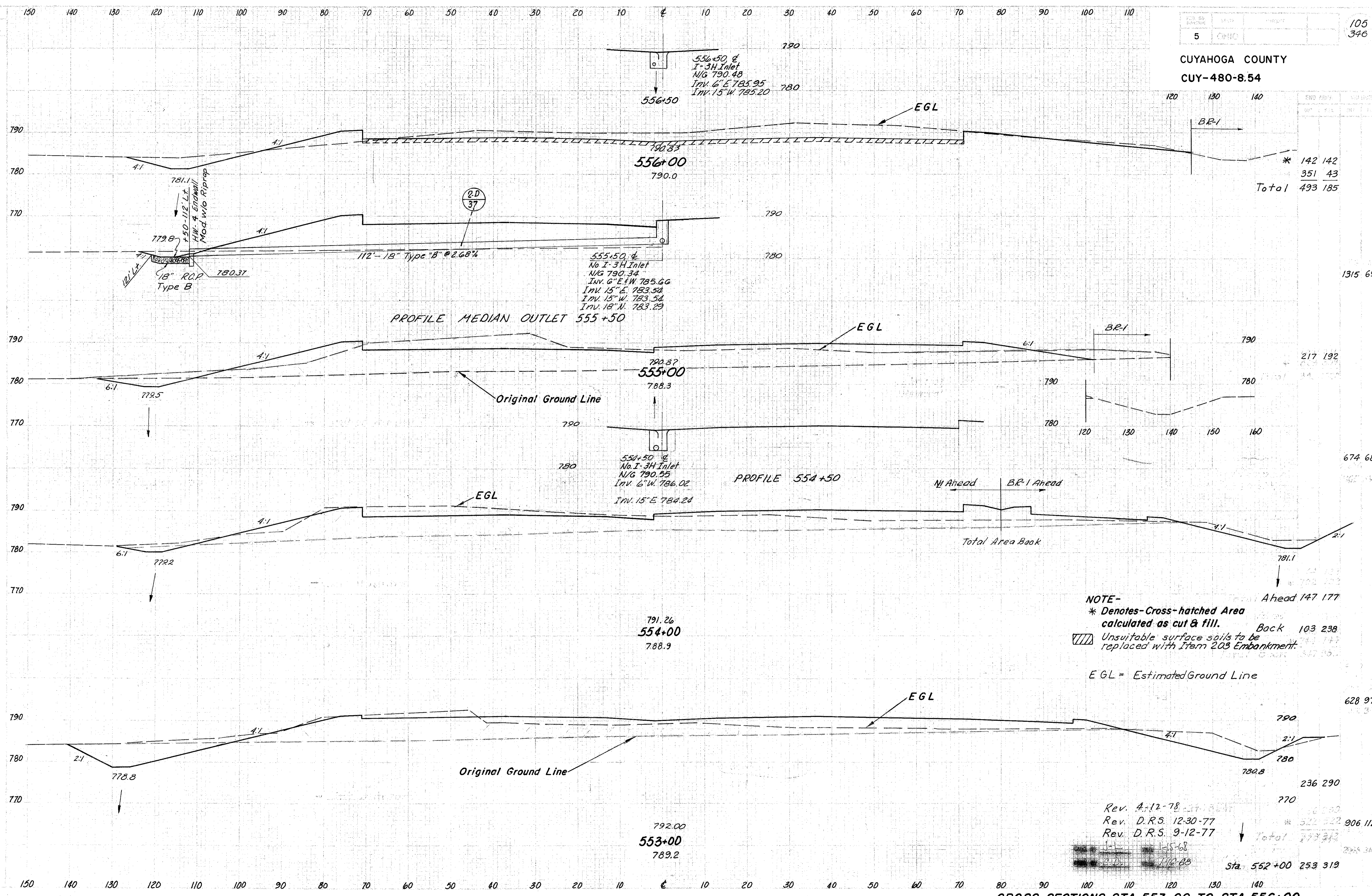
150 3168

249 6122





CUYAHOGA COUNTY  
CUY-480-8.54



NOTE-  
\* Denotes-Cross-hatched Area calculated as cut & fill.  
Unsuitable surface soils to be replaced with Item 203 embankment.

EGL = Estimated Ground Line

Rev. 4-12-78  
Rev. D.R.S. 12-30-77  
Rev. D.R.S. 9-12-77  
Sta. 552+00 253 319

CROSS-SECTIONS STA. 553+00 TO STA. 556+00

* 142	142
351	43
Total 493 185	

217 192

674 683

628 978

236 290

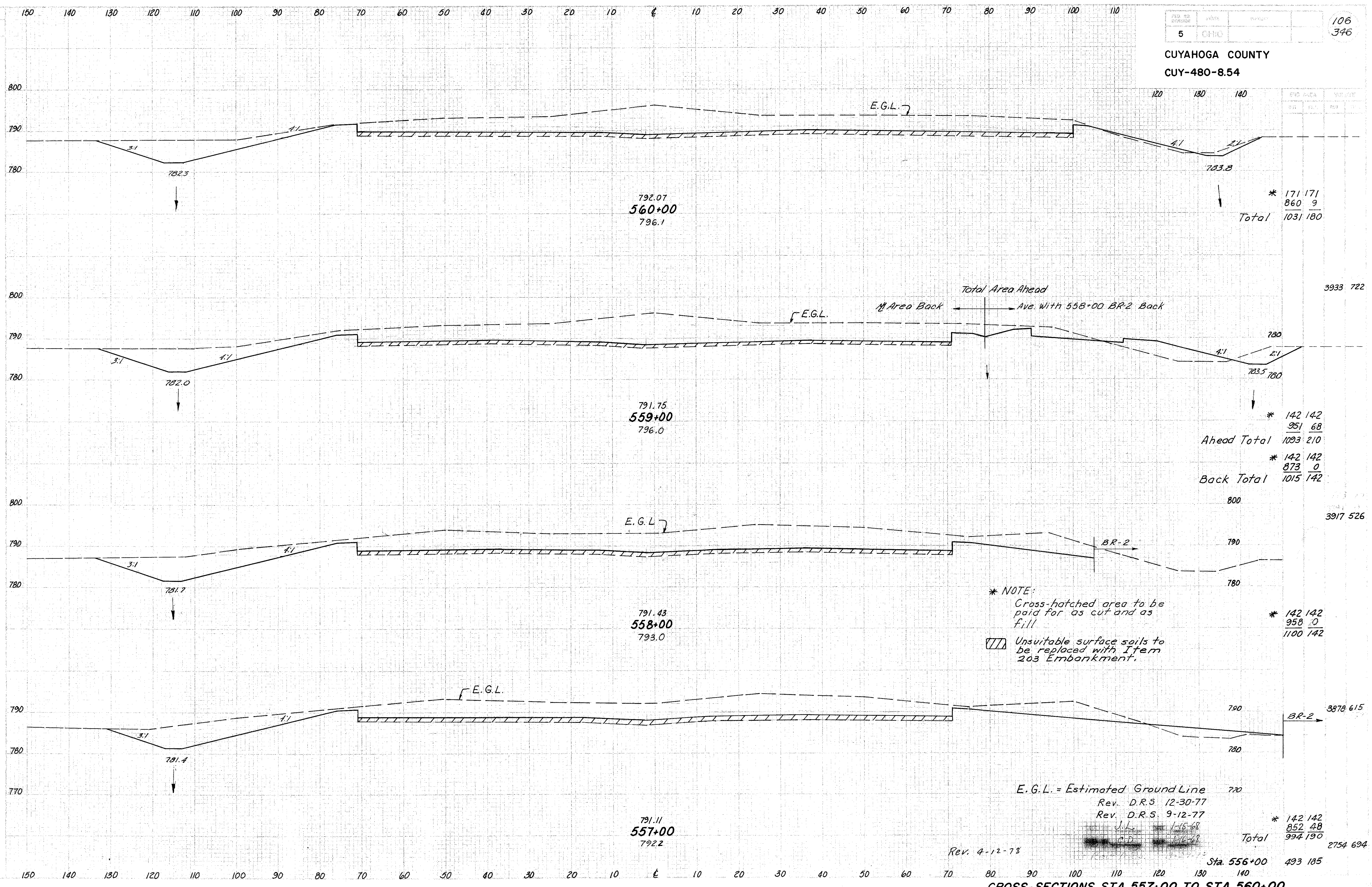
770

\* 322 322 906 1128

Total 273 313

2004 3478

CUYAHOGA COUNTY  
CUY-480-8.54



792.07  
**560+00**  
796.1

\* 171 171  
860 9  
Total 1031 180

791.75  
**559+00**  
796.0

\* 142 142  
951 68  
Ahead Total 1093 210

791.43  
**558+00**  
793.0

\* 142 142  
873 0  
Back Total 1015 142

791.11  
**557+00**  
792.2

\* 142 142  
958 0  
1100 142

\* 142 142  
852 48  
994 190

\* NOTE:  
Cross-hatched area to be paid for as cut and as fill  
Unsuitable surface soils to be replaced with Item 203 Embankment.

E.G.L. = Estimated Ground Line  
Rev. D.R.S. 12-30-77  
Rev. D.R.S. 9-12-77

Rev. 4-12-78

Sta. 556+00 493 185

3933 722

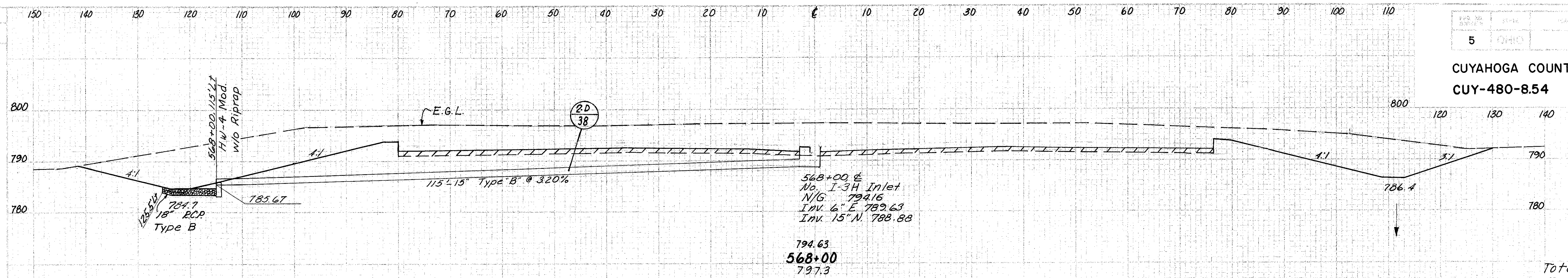
3917 526

3878 615

2754 694

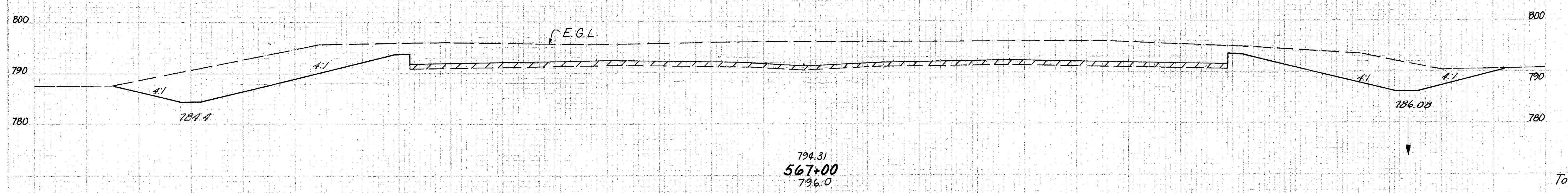


CUYAHOGA COUNTY  
CUY-480-8.54



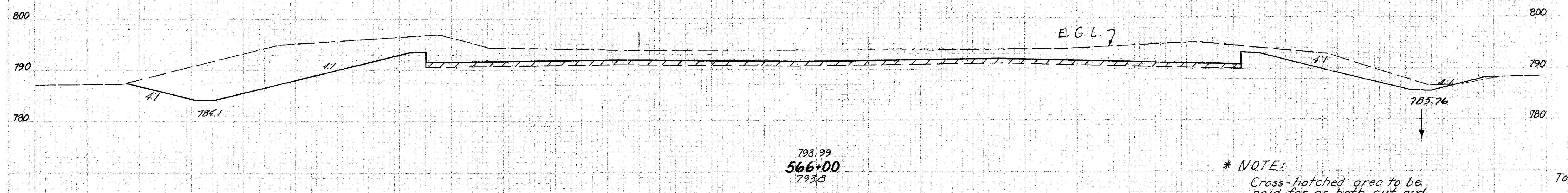
568+00 @  
No. I-3H Inlet  
N/G. 794.16  
Inv. 6" E. 789.63  
Inv. 15" N. 788.88  
  
794.63  
568+00  
797.3

\* 157 157  
1340 0  
Total 1497 157



794.31  
567+00  
796.0

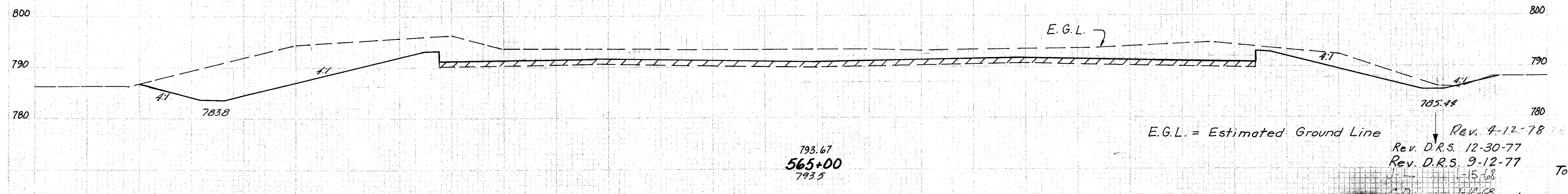
\* 157 157  
1055 0  
Total 1212 157



793.99  
566+00  
793.0

\* 156 156  
766 2  
Total 922 158

\* NOTE:  
Cross-hatched area to be paid for as both cut and fill  
Unsuitable surface soil to be replaced with Item 203 Embankment.



793.67  
565+00  
793.5

\* 156 156  
748 1  
Total 904 157

E.G.L. = Estimated Ground Line  
Rev. 4-12-78  
Rev. D.R.S. 12-30-77  
Rev. D.R.S. 9-12-77  
C.D. 1-15-68  
1-16-68  
Sta. 564+00 793 166

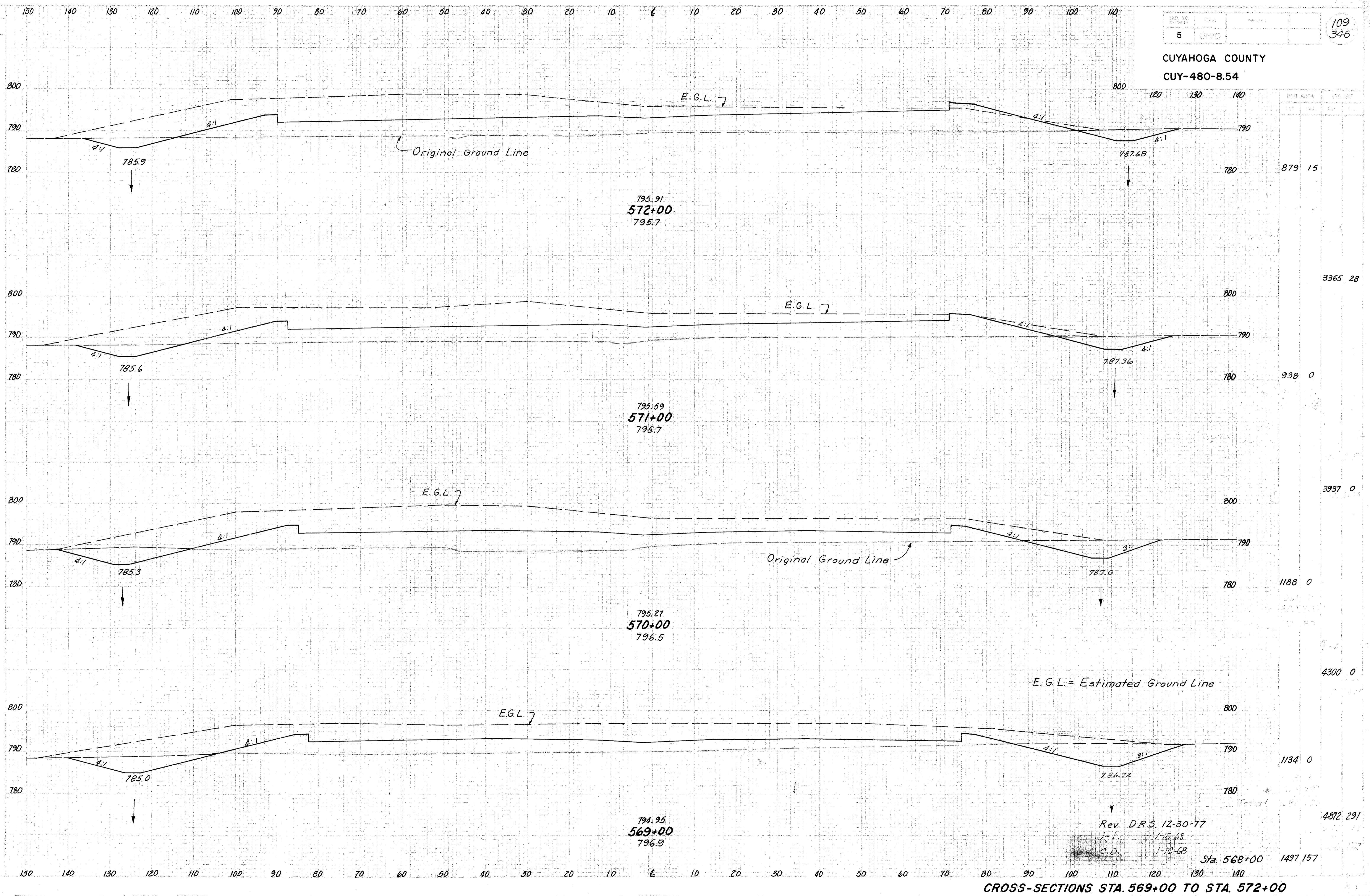
5017 581

3952 583

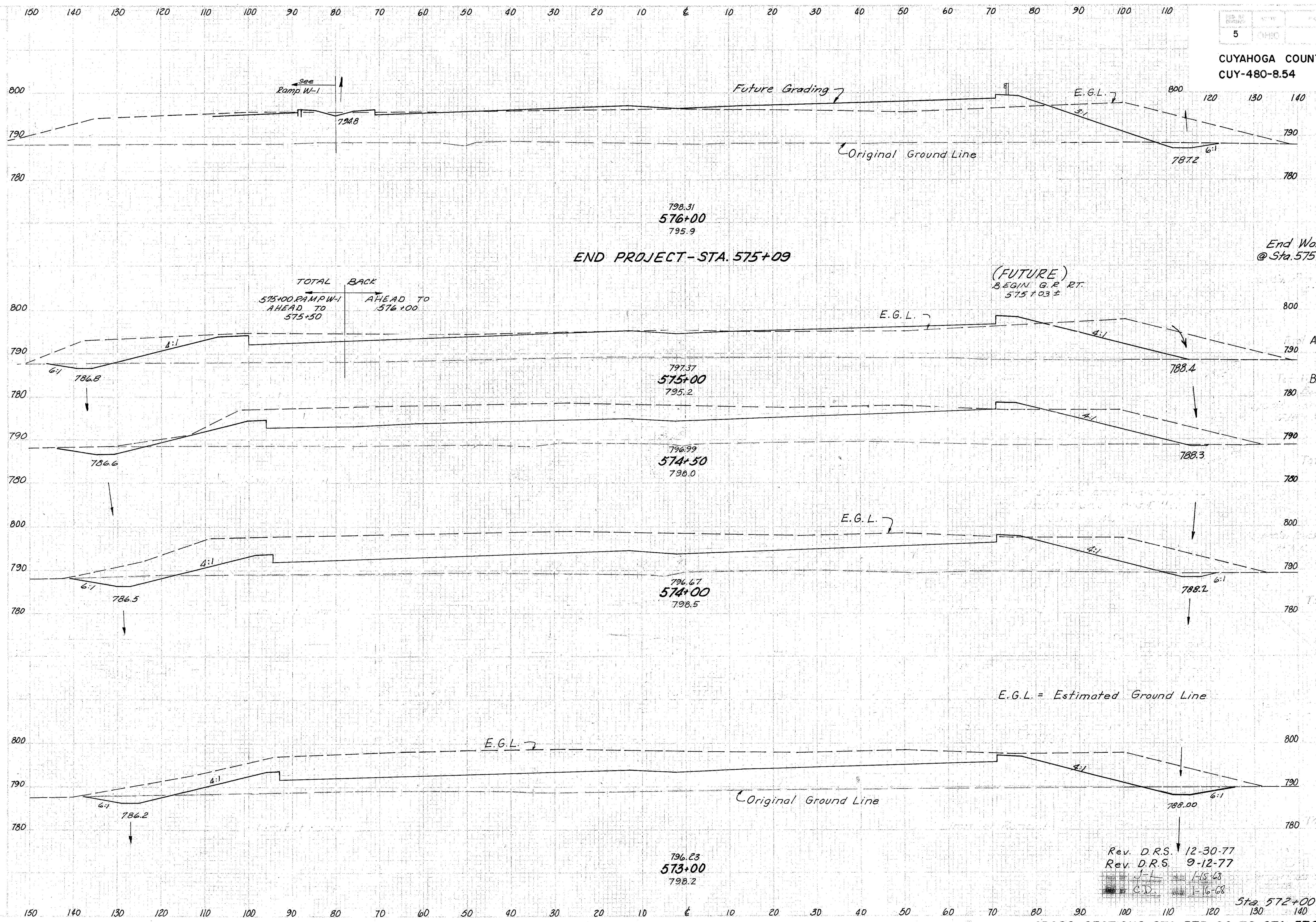
3381 583

3143 598

CUYAHOGA COUNTY  
CUY-480-8.54



CUYAHOGA COUNTY  
CUY-480-8.54



END PROJECT - STA. 575+09

End Work  
@ Sta. 575+09 313 60

TOTAL BACK  
575+00 RAMP W-1  
AHEAD TO  
575+50

(FUTURE)  
BEGIN G.R. RT.  
575+03 ±

Ahead 280 57  
Back 462 57

1144 63  
\* 774 11  
Total 1821 30

1748 13  
Sub 2231

1114 3  
\* 151 077  
Total 2025 080

4163 6

1134 0  
\* 1048 048  
Total 2025 1048

3728 28  
\* 276 000 161  
Total 2025 1249

E.G.L. = Estimated Ground Line

Rev. D.R.S. 12-30-77  
Rev. D.R.S. 9-12-77  
J-L 1-15-68  
C.D. 1-16-68

Sta 572+00 879 15

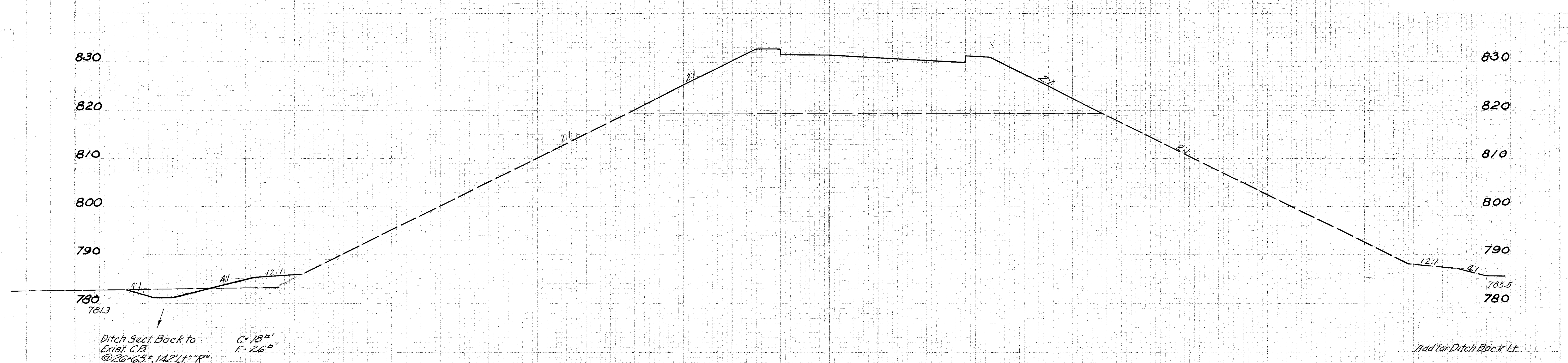
01-L

140 120 100 80 60 40 20 0 20 40 60 80 100

PROJ. NO.	DATE	PROJECT	
5	OHIO		

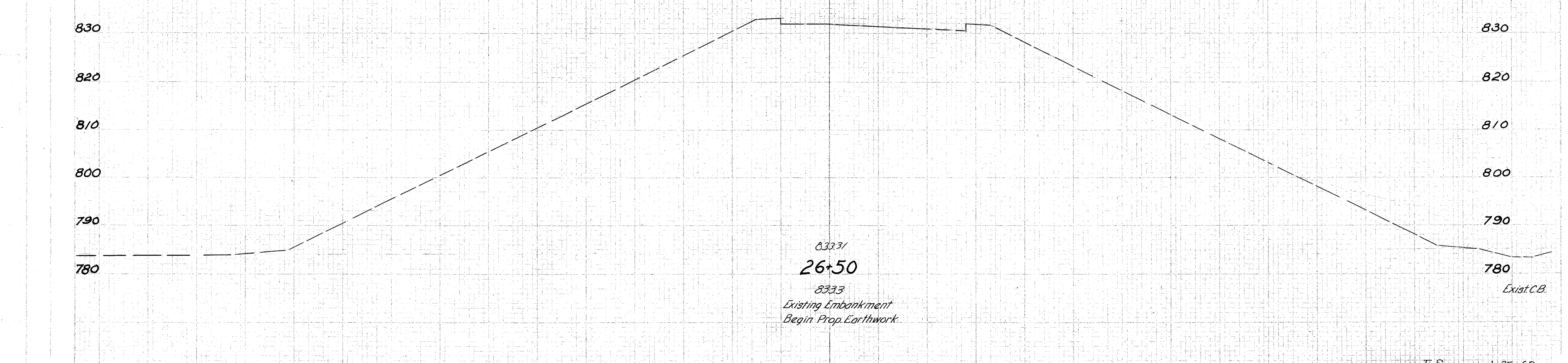
111  
346

CUYAHOGA COUNTY  
CUY-480-8.54



832.68  
27+00  
8195

27 39  
0 820



8333/  
26+50  
8333  
Existing Embankment  
Begin Prop. Earthwork

Exist. C.B.

DATE: T.S. 1-25-68  
DRAWN BY: A. ed. DATE: 5/18/68

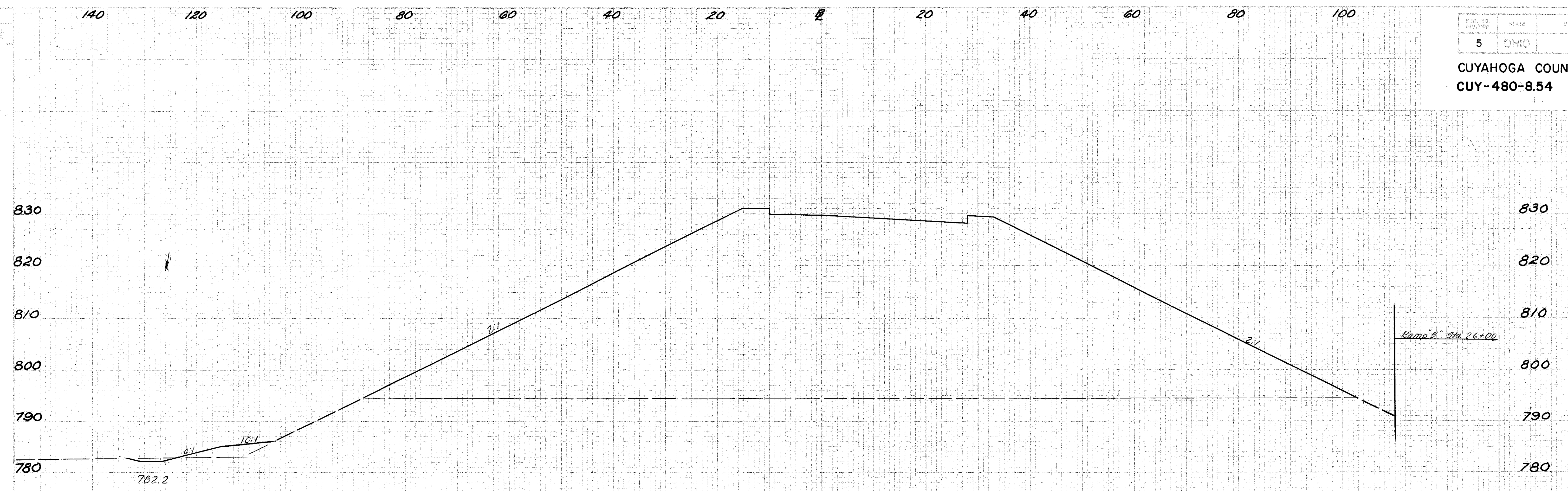
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RAMP-R STA. 26+50 TO STA. 27+00



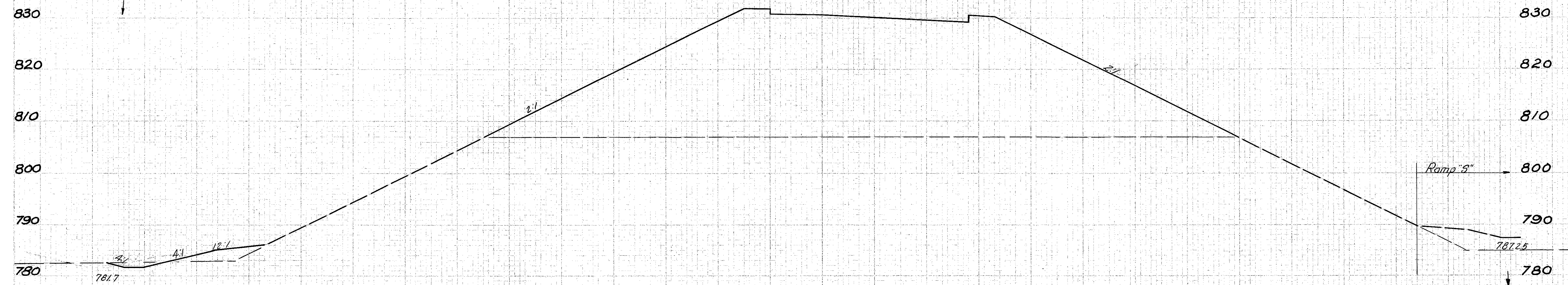
CUYAHOGA COUNTY  
CUY-480-8.54

CROSS AREA		VOLUME	
EST.	ACT.	EST.	ACT.



831.00  
**28+00**  
794.5

5 4313



831.91  
**27+50**  
807.0

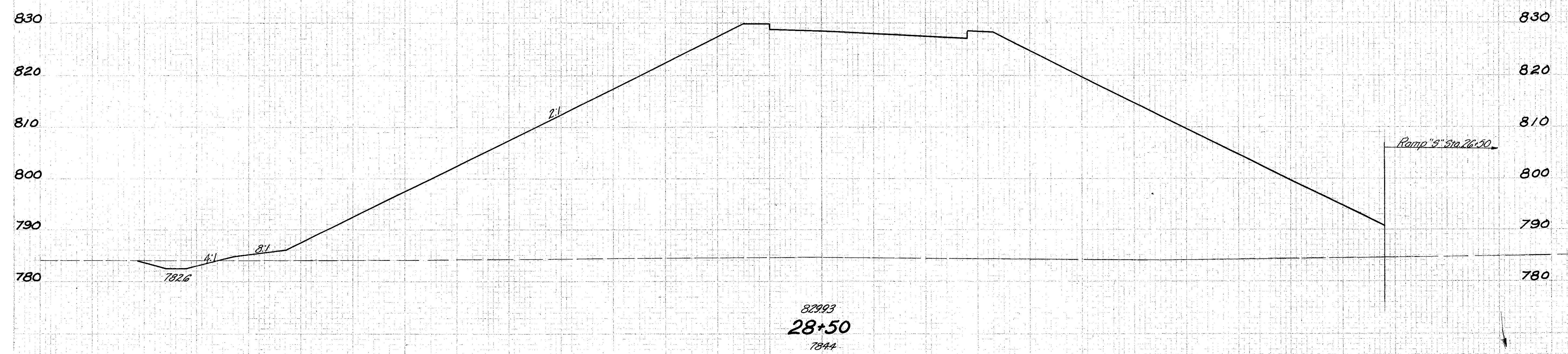
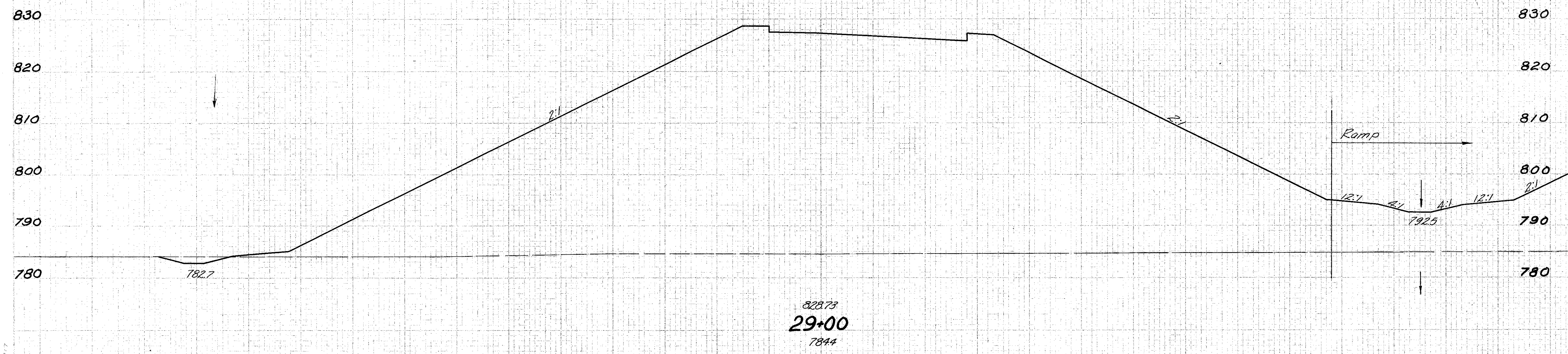
10 6140

6 2318

6 2952

DATE: J.S. DATE: 1-25-63  
BY: A. J. DATE: 5/16/65

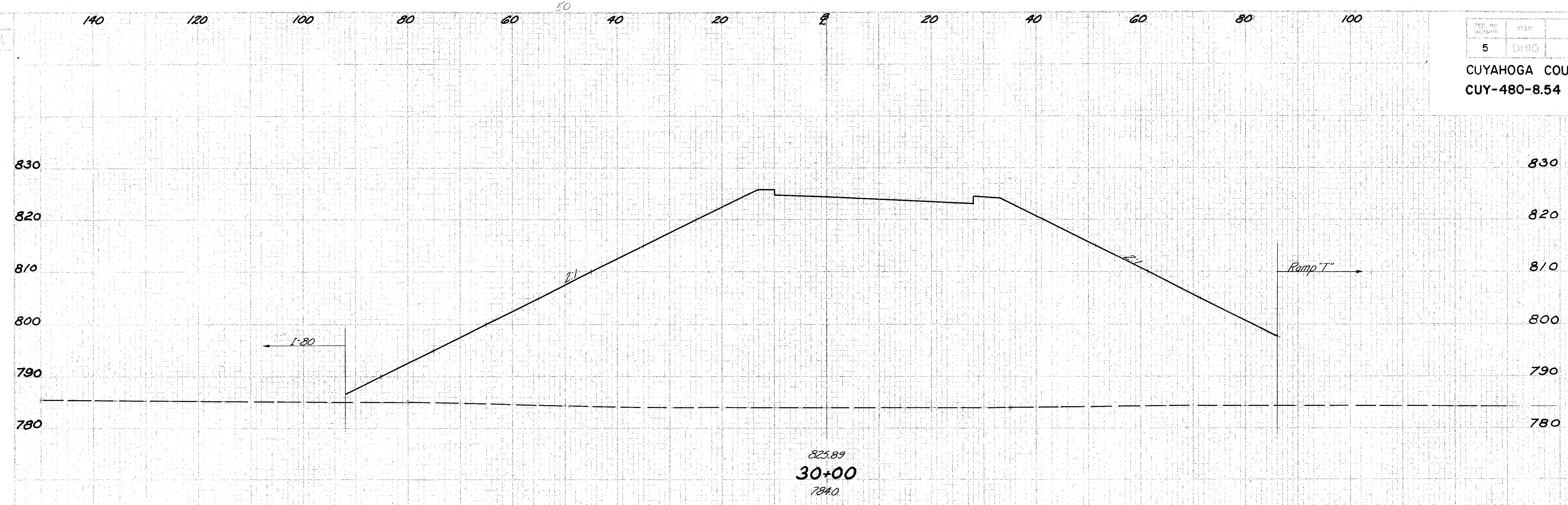
Sta. 27+00  
140



DESIGNED BY T.S. DATE 1-25-68  
CHECKED BY A. DESIG. DATE 5/18/68

CUYAHOGA COUNTY  
CUY-480-8.54

114  
346



STATION	EXIST. ELEV.	PROPOSED ELEV.
---------	--------------	----------------



TS  
A. Dea  
DATE 1-25-68  
5/16/68

Sta. 29+00  
140  
11 5729

RAMP-R STA. 29+50 TO STA. 30+00

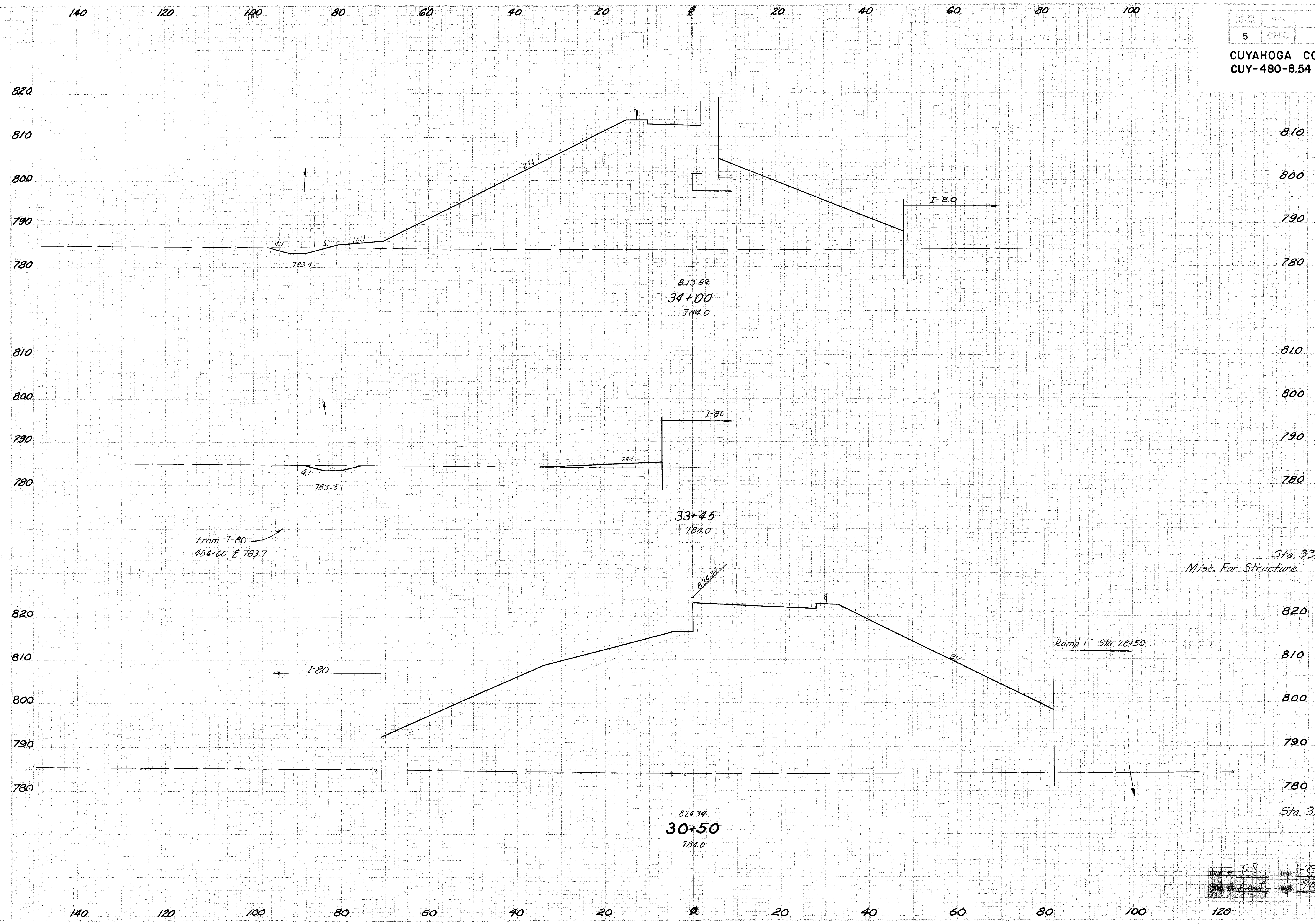
0 4994

9 9713

10 5496

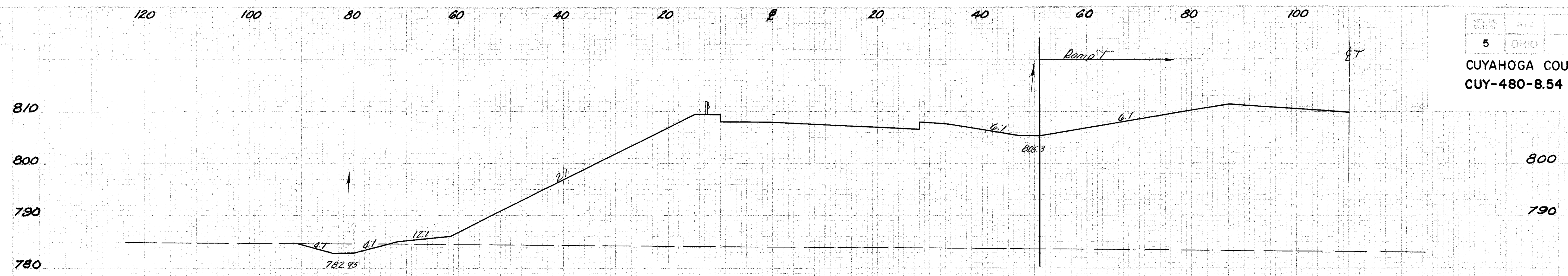
20 10394

CUYAHOGA COUNTY  
CUY-480-8.54

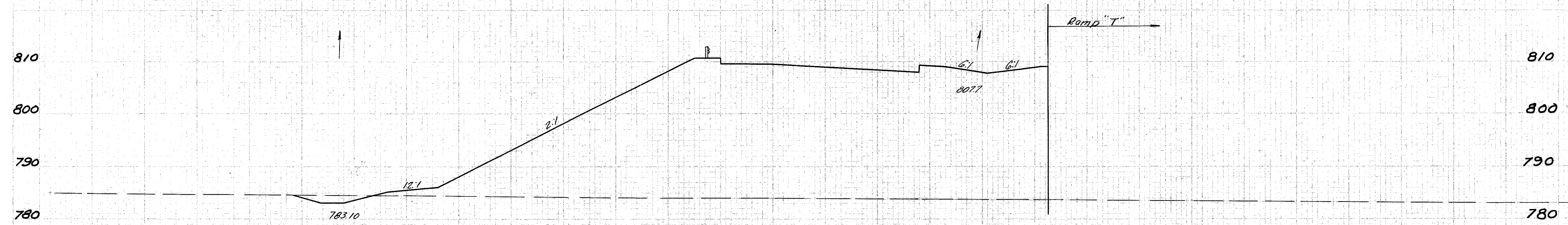


STATION	END AREA		VOL. CUT		VOL. FILL	
	SQ. FT.	PER. FT.	SQ. FT.	PER. FT.	SQ. FT.	PER. FT.
12 2007						
12 2060						
10 15						
9 13						
Misc. For Structure						
Sta. 33+00	0	0	0	0	0	1788
Sta. 31+00	0	0	0	0	0	3856
	0	4164				
						8480
0 4994						

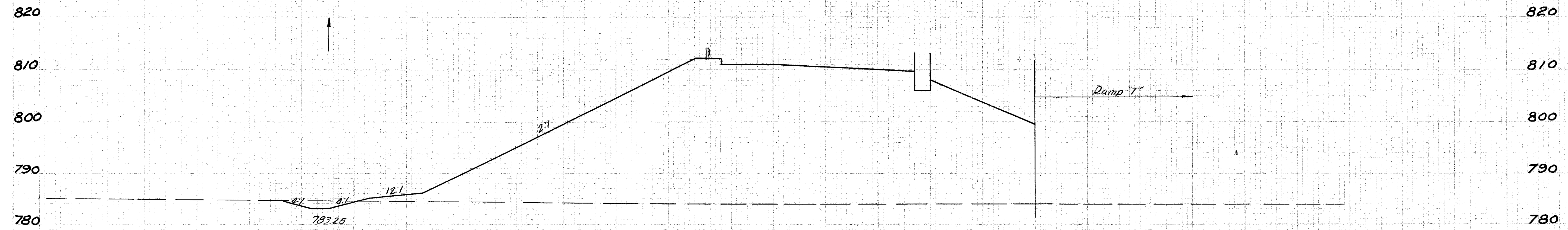
DATE BY T.S. 1-25-68  
 CHECK BY A. def. 1/13/68



NO.	AREA	VOL.
17	2176	
31	4260	



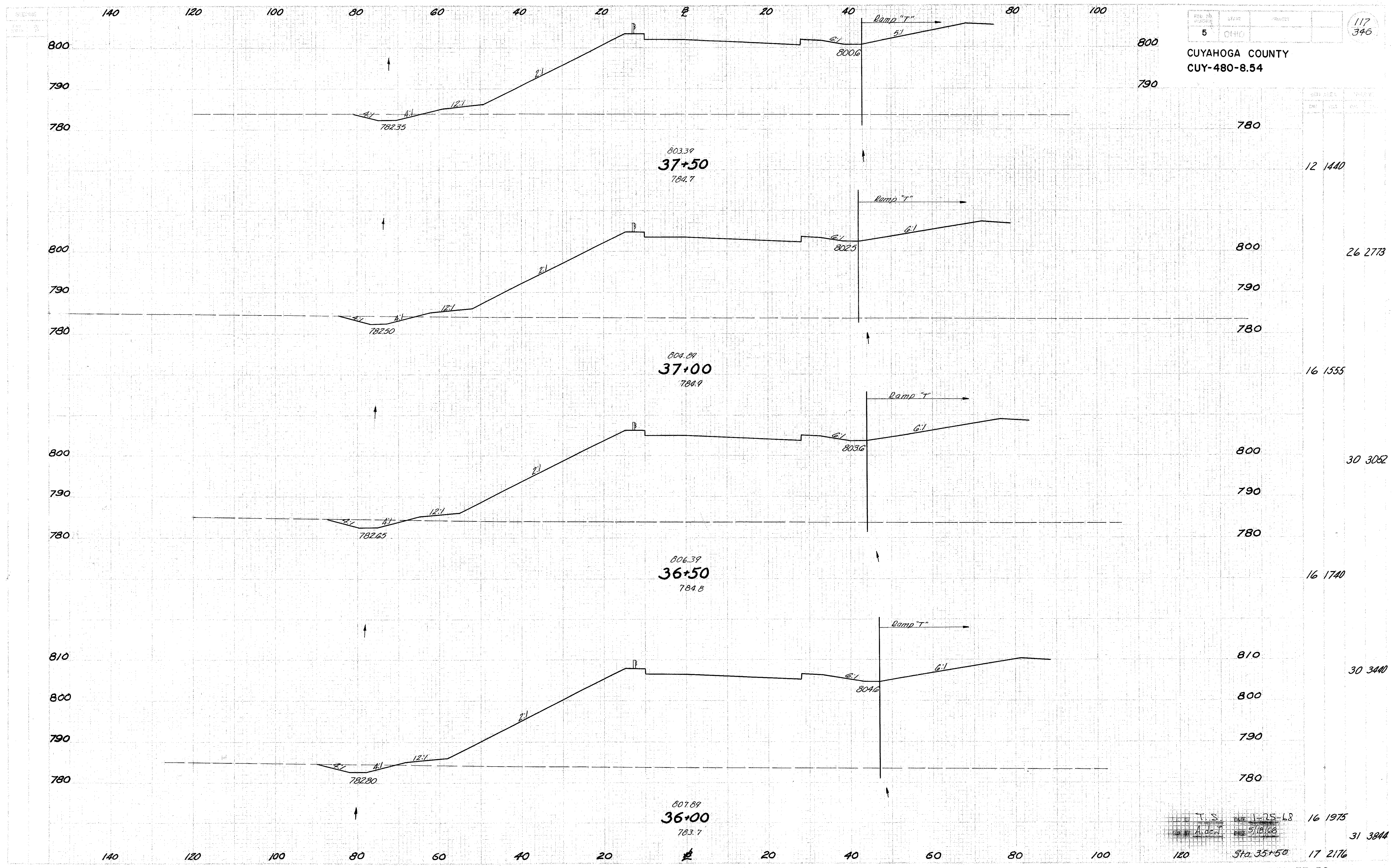
16	2424	
29	4435	



15	2366	
25	4049	

T.S. 1-25-68  
A. J. ... 5/16/68

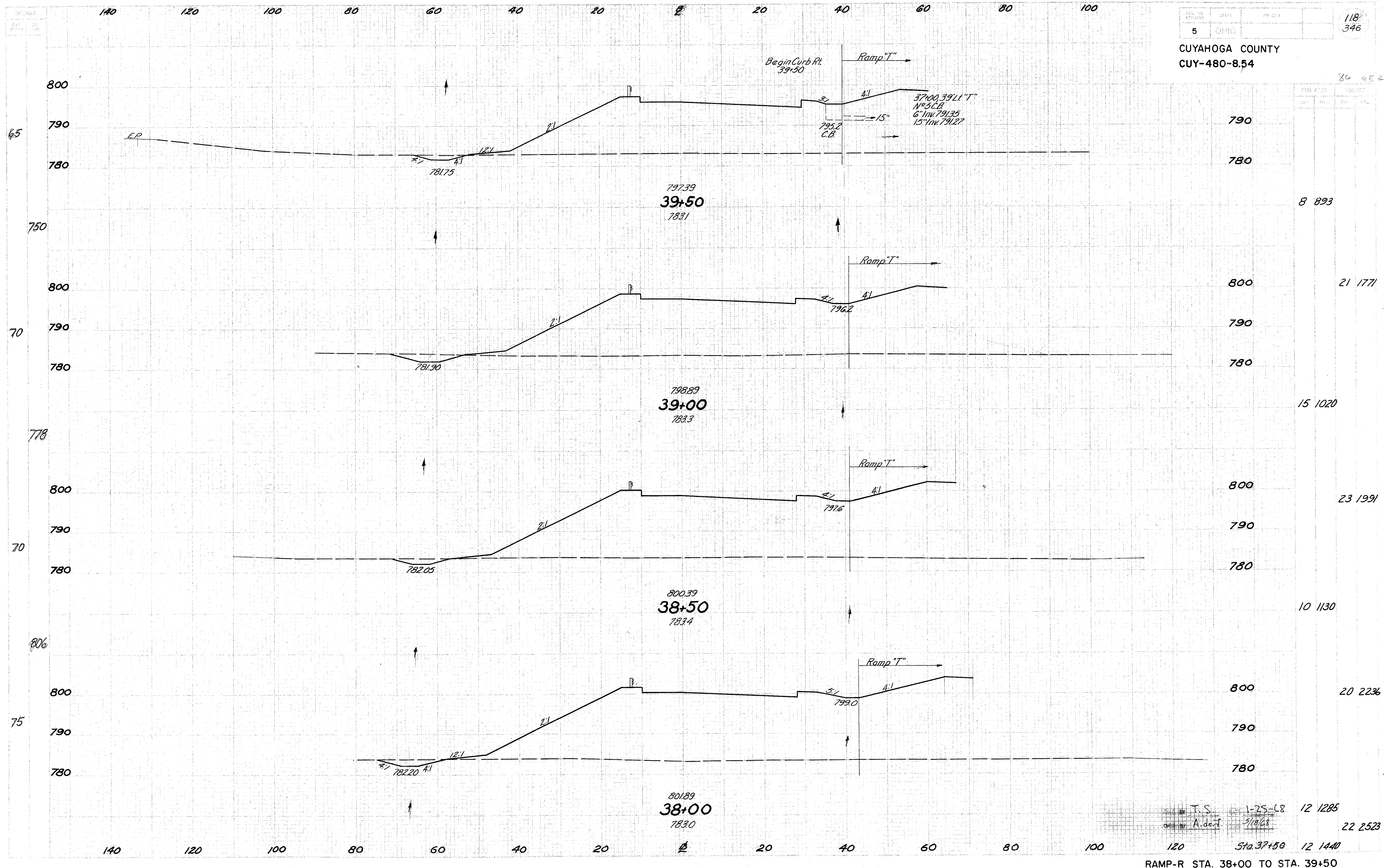
CUYAHOGA COUNTY  
CUY-480-8.54



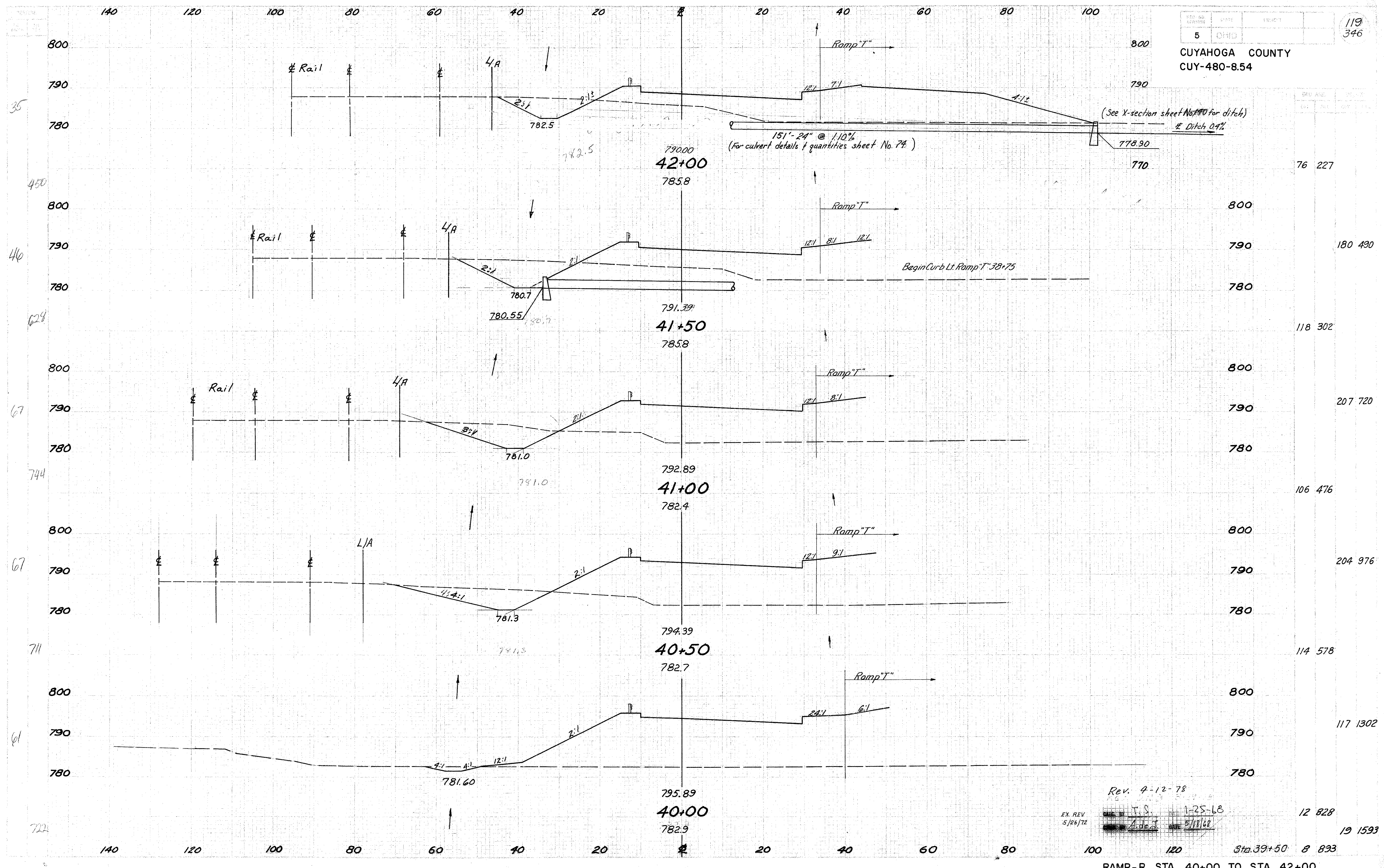
12 1440  
26 2773  
16 1555  
30 3052  
16 1740  
30 3440  
16 1975  
31 3844  
Sta. 35+50 17 2176

T.S. 1-25-68  
A. de C. 5/18/68

CUYAHOGA COUNTY  
CUY-480-8.54

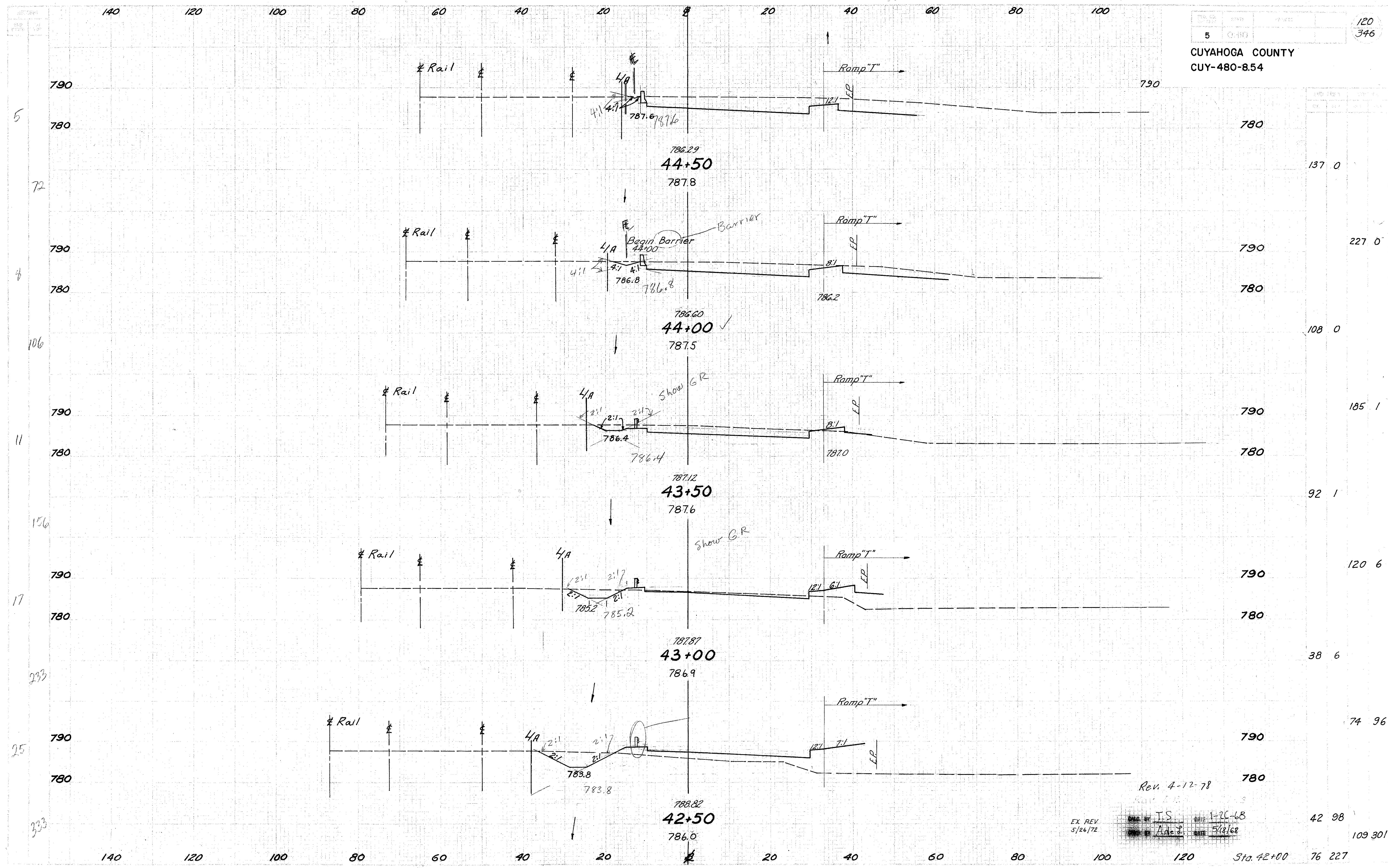


RAMP-R STA. 38+00 TO STA. 39+50



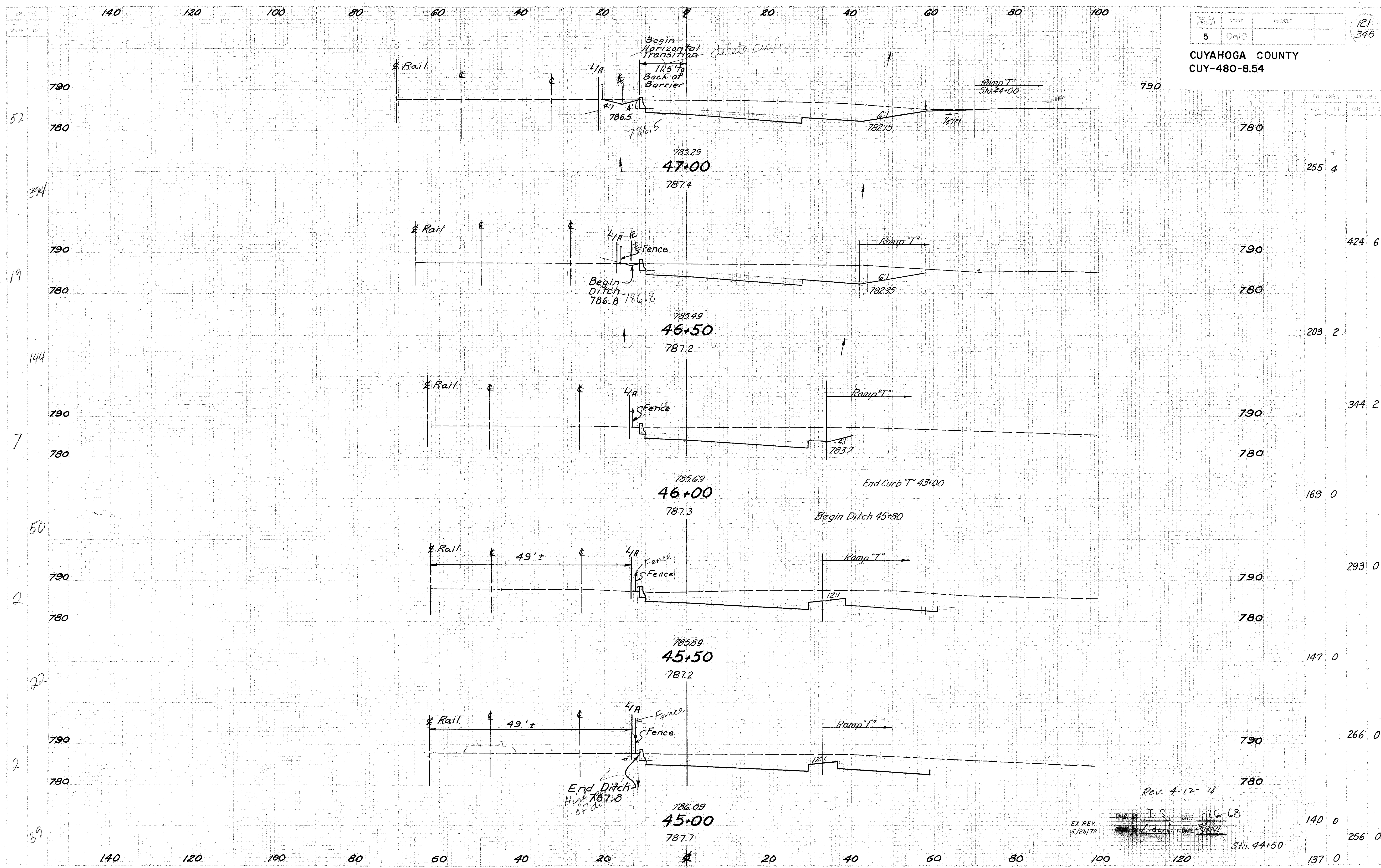
Rev. 4-12-78  
 EX. REV. 5/26/72  
 DATE BY 1-25-68  
 DATE 5/18/68  
 12 828  
 19 1593





RAMP-R STA. 42+50 TO STA. 44+50

CUYAHOGA COUNTY  
CUY-480-8.54

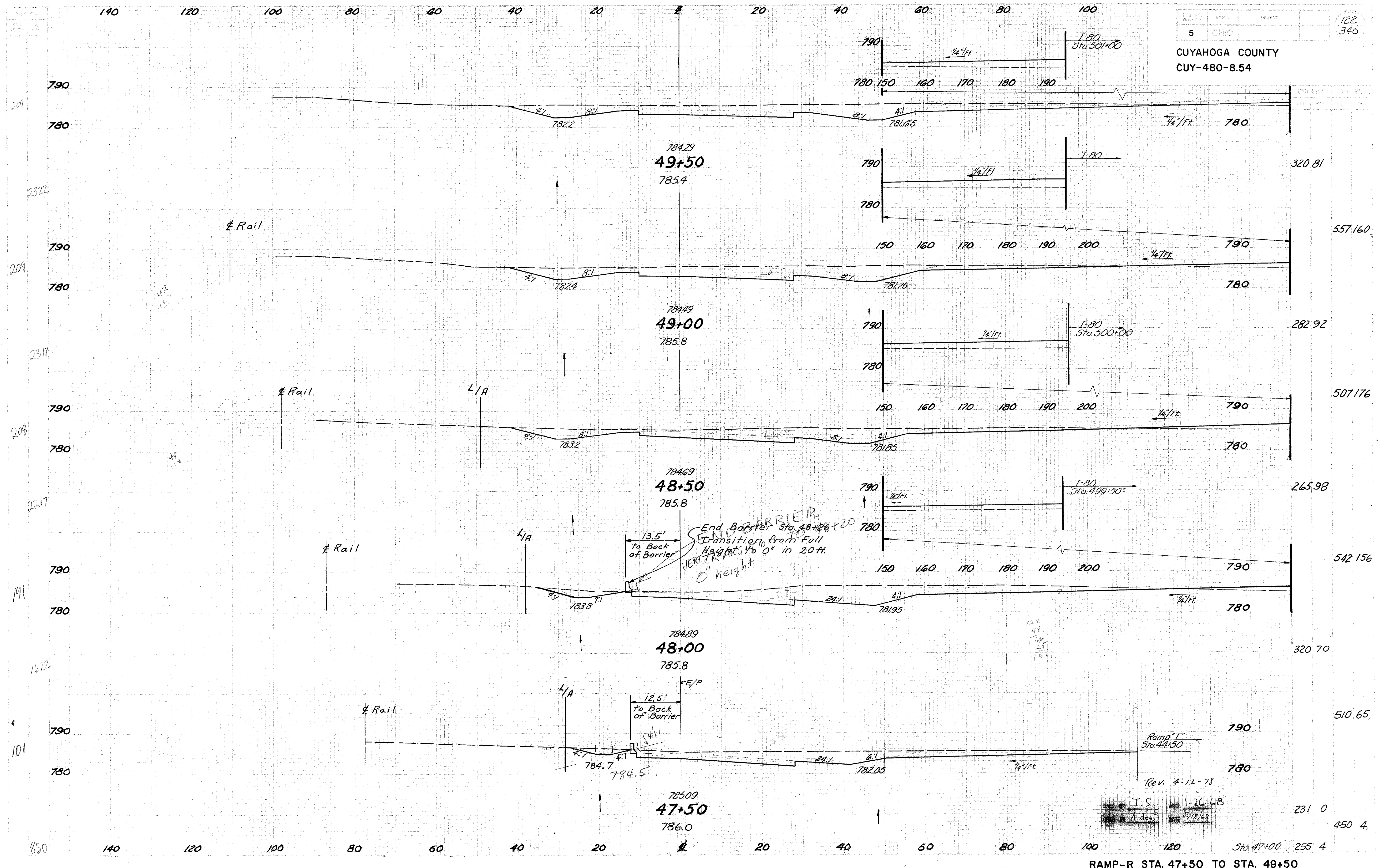


STATION	AREA	VOLUME
47+00	255	4
46+50	424	6
46+00	203	2
45+50	344	2
45+00	169	0
45+00	293	0
45+00	147	0
45+00	266	0
45+00	140	0
45+00	256	0
45+00	137	0

Rev. 4-12-78  
 EX. REV. 5/24/72  
 DATE BY 1-26-68  
 DATE BY 5/18/68  
 Sta. 44+50

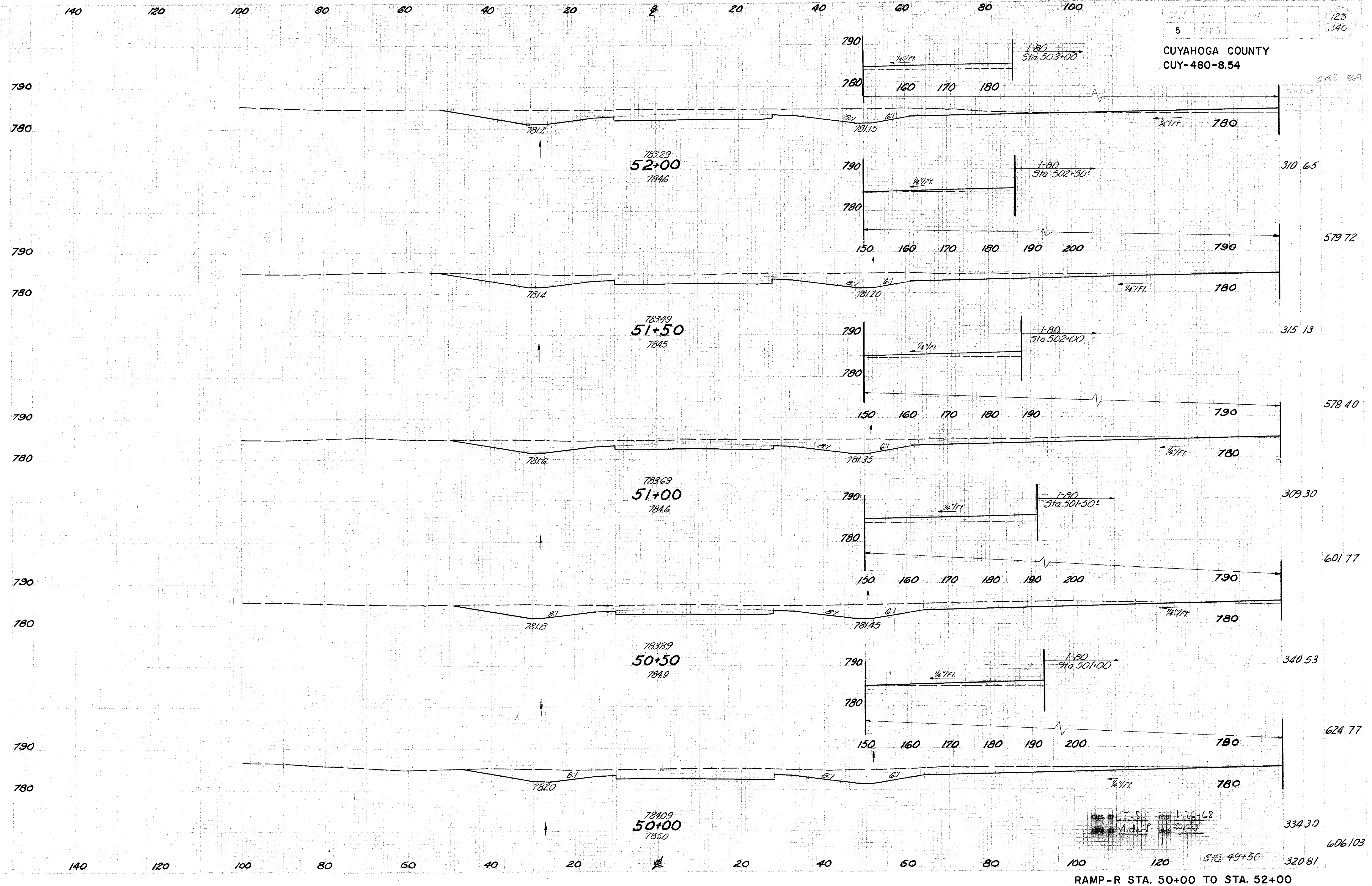
RAMP-R STA. 45+00 TO STA. 47+00

CUYAHOGA COUNTY  
CUY-480-8.54



RAMP-R STA. 47+50 TO STA. 49+50

CUYAHOGA COUNTY  
CUY-480-8.54



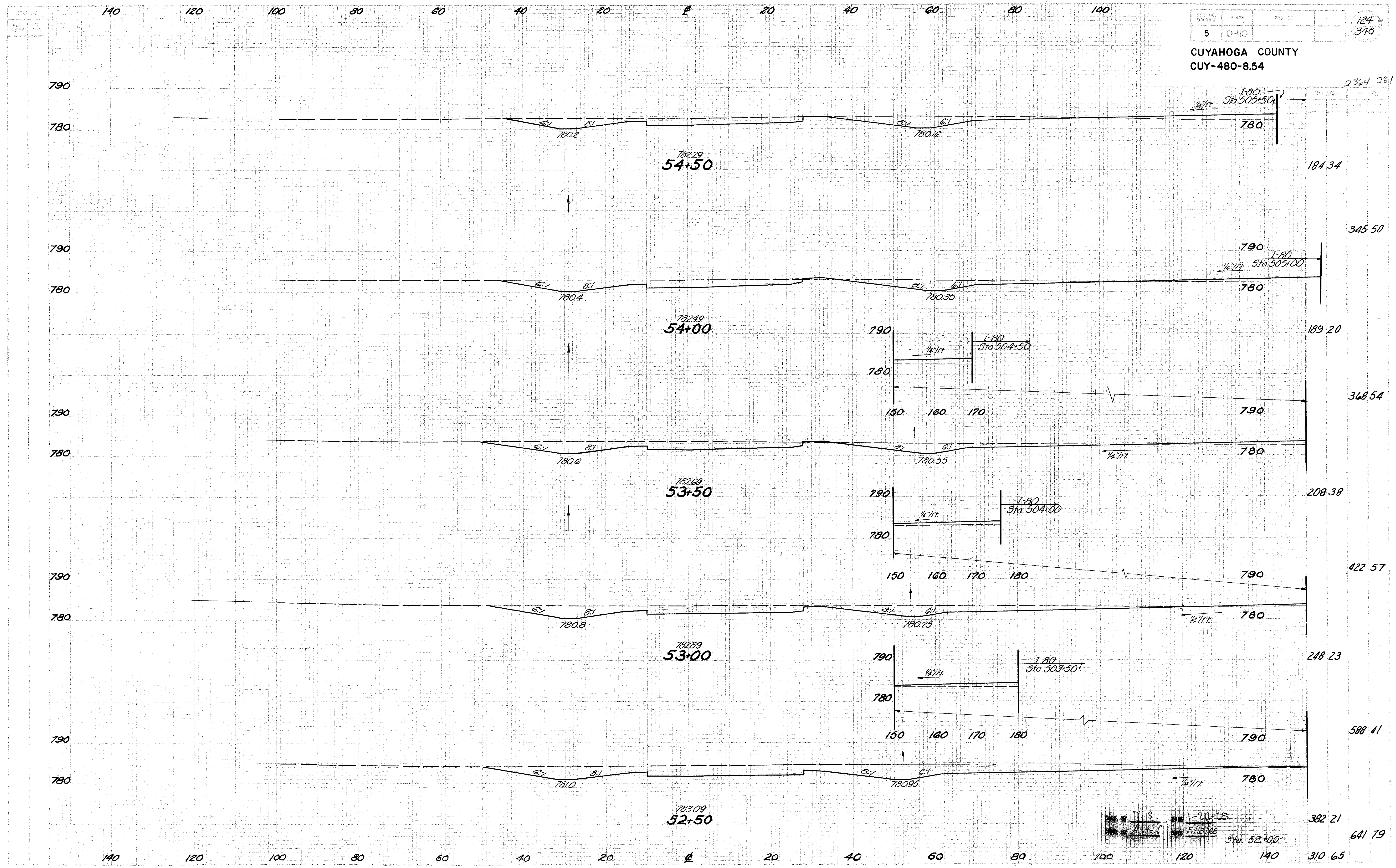
DATE: 1-26-68  
DRAWN BY: J.S.  
CHECKED BY: J.S.  
DATE: 5/18/68

STA: 49+50 320.81  
RAMP-R STA. 50+00 TO STA. 52+00

PROJ. NO.	STATE	PROJECT	
5	OHIO		

CUYAHOGA COUNTY  
CUY-480-8.54

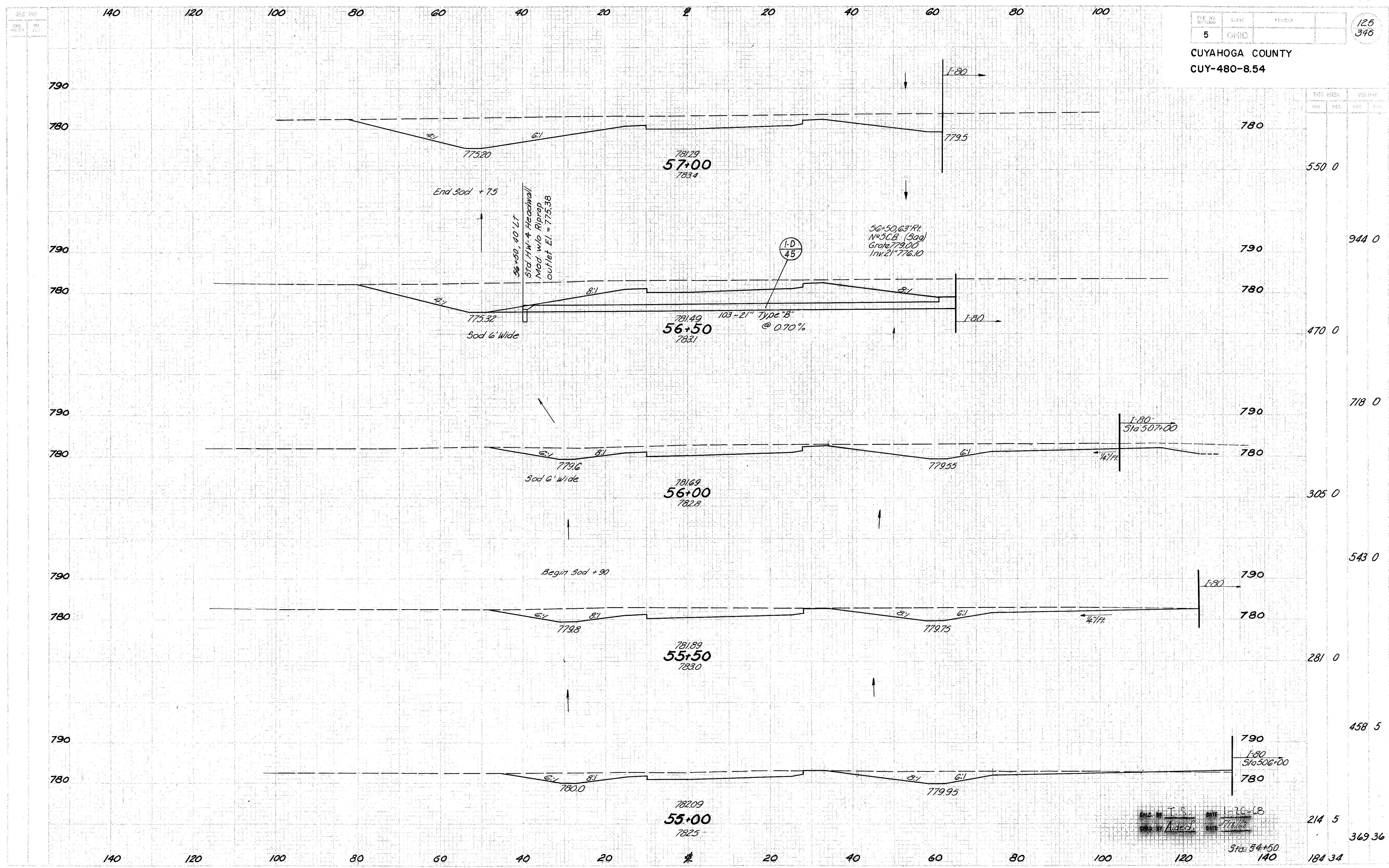
124  
346



DATE: J.S. 1-20-68  
 DATE: 5/16/88  
 STA. 52+00

RAMP-R STA. 52+50 TO STA. 54+50

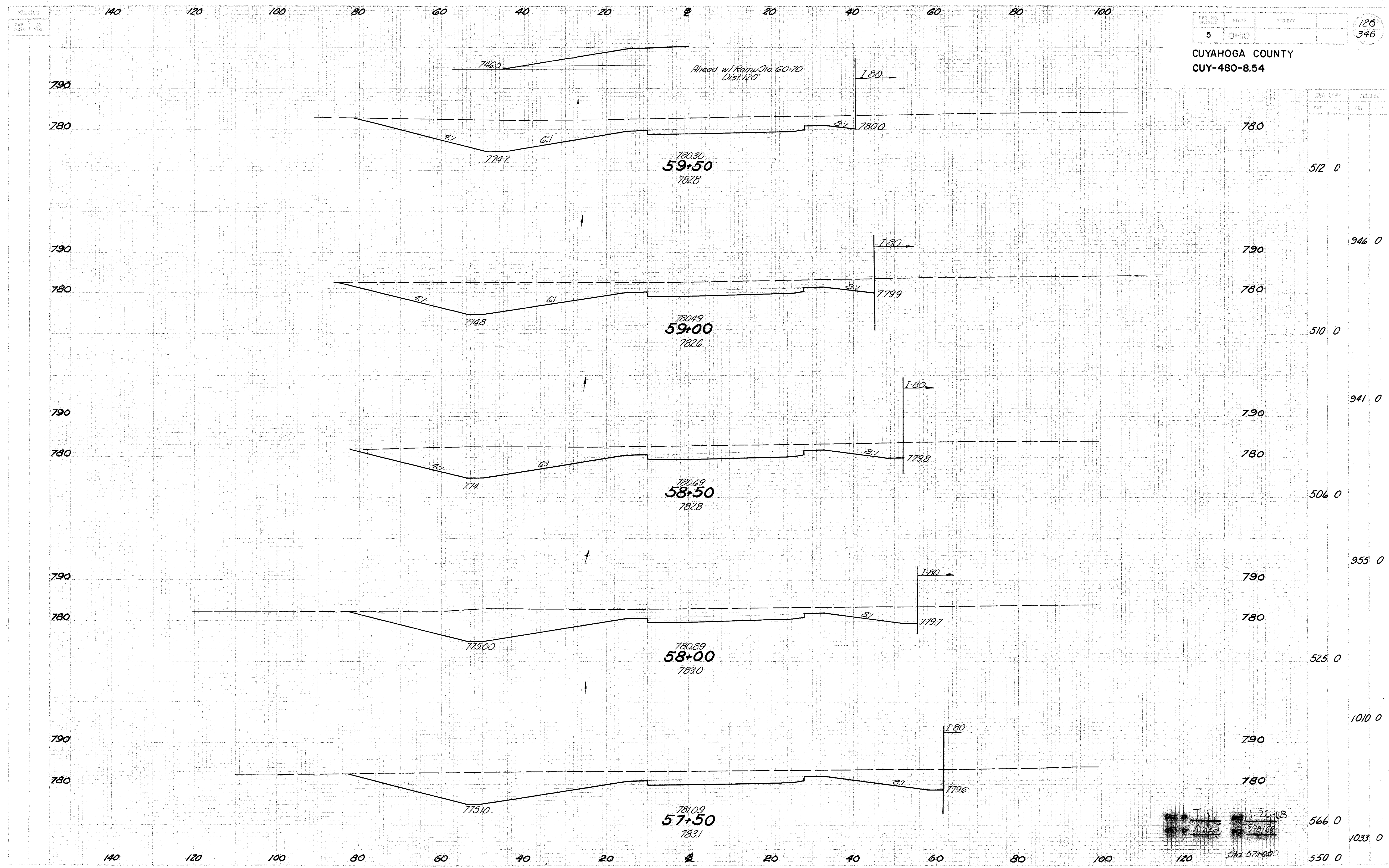
CUYAHOGA COUNTY  
CUY-480-8.54



RAMP-R STA. 55+00 TO STA. 57+00

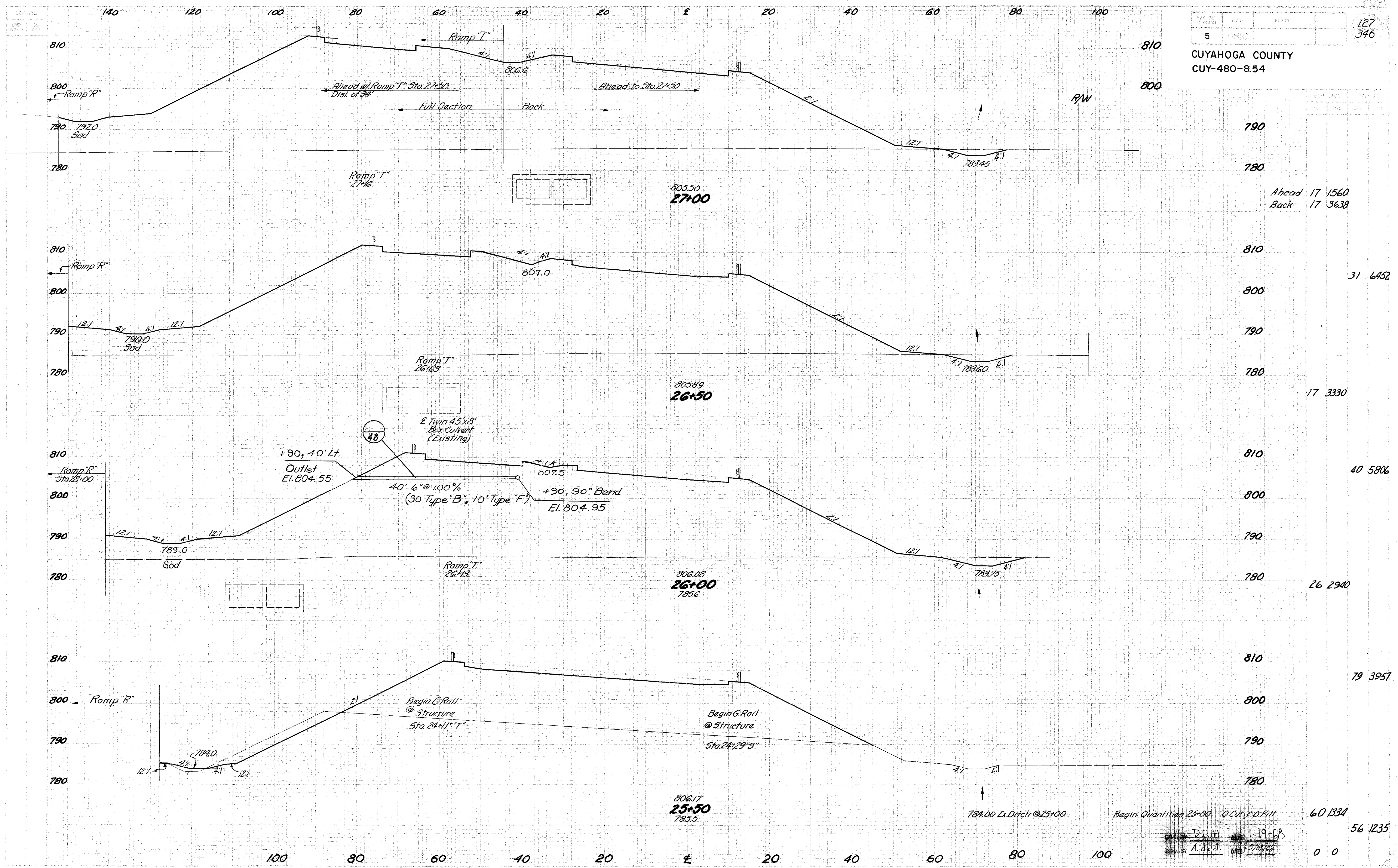
I.S. 1-20-68  
 Added: *[Signature]*  
 Sta. 54+50  
 140 184.34

CUYAHOGA COUNTY  
CUY-480-8.54



CNG. AREA	VOLUME	
	CUY	PLA
512 0		
946 0		
510 0		
941 0		
506 0		
955 0		
525 0		
1010 0		
566 0		
1033 0		
550 0		

I.S.  
I-20-68  
5/28/68  
Sta. 57+00



LINE NO.	STATE	PARCELS
5	OHIO	

Ahead 17 1560  
Back 17 3638

31 6452

17 3330

40 5806

26 2940

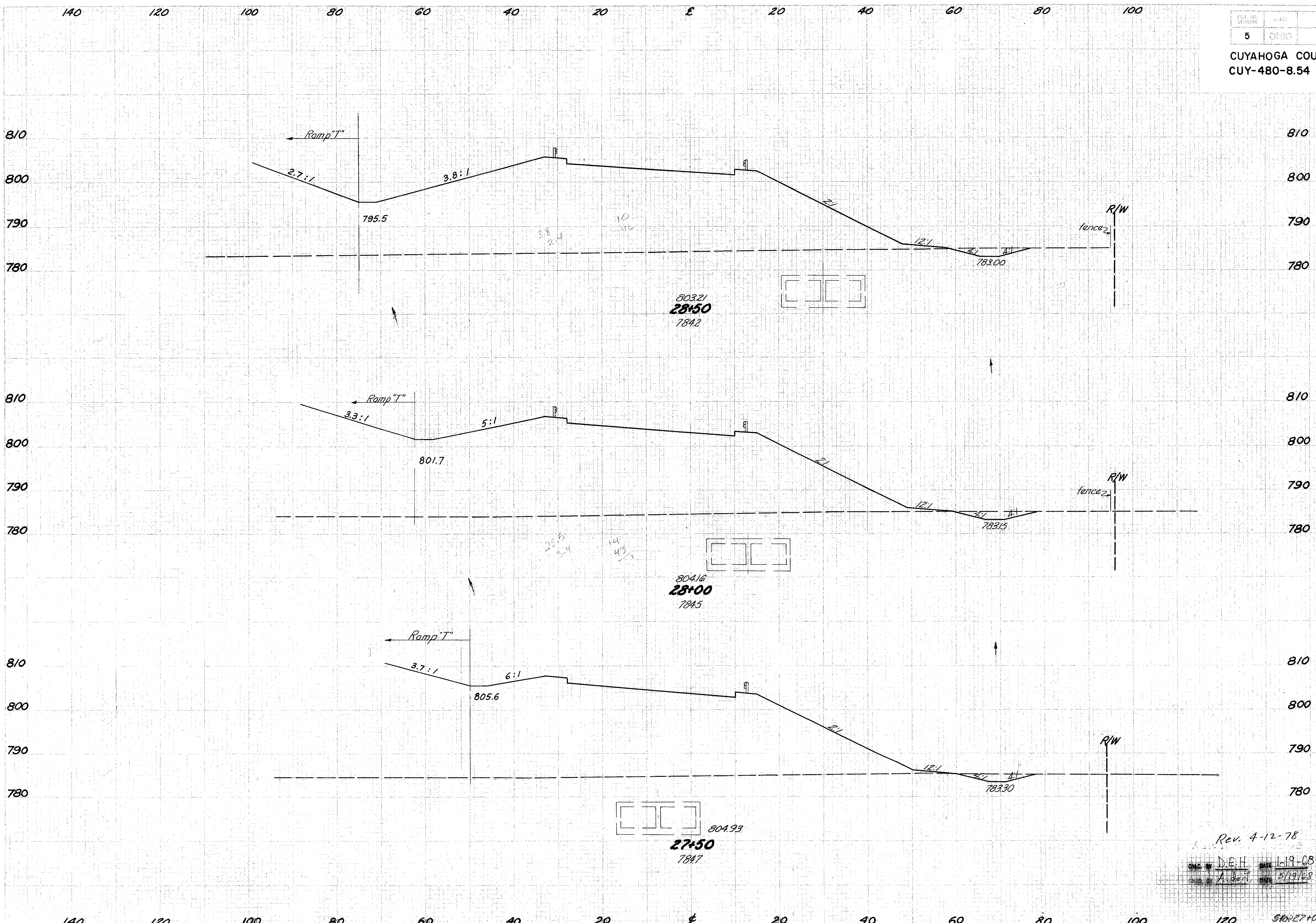
79 3957

60 1334

56 1235

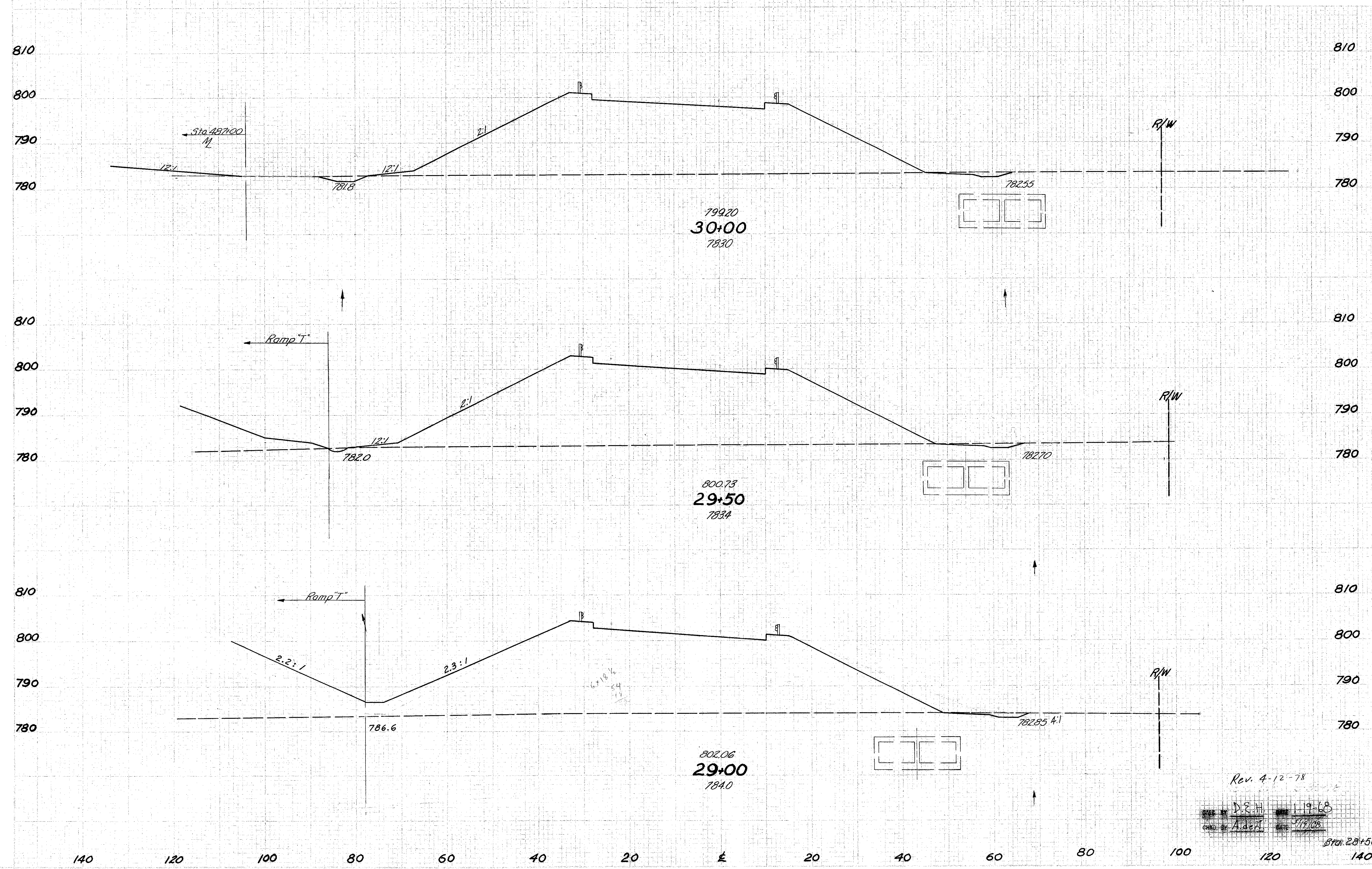
DEAD END  
A. de A. 5/19/68





CUT	EING AREA		MULTIPLY	
	FEET	SQ. FT.	FEET	SQ. FT.
17	1913			
31	3518			
16	1887			
32	3319			
18	1637			
33	3016			
17	1560			

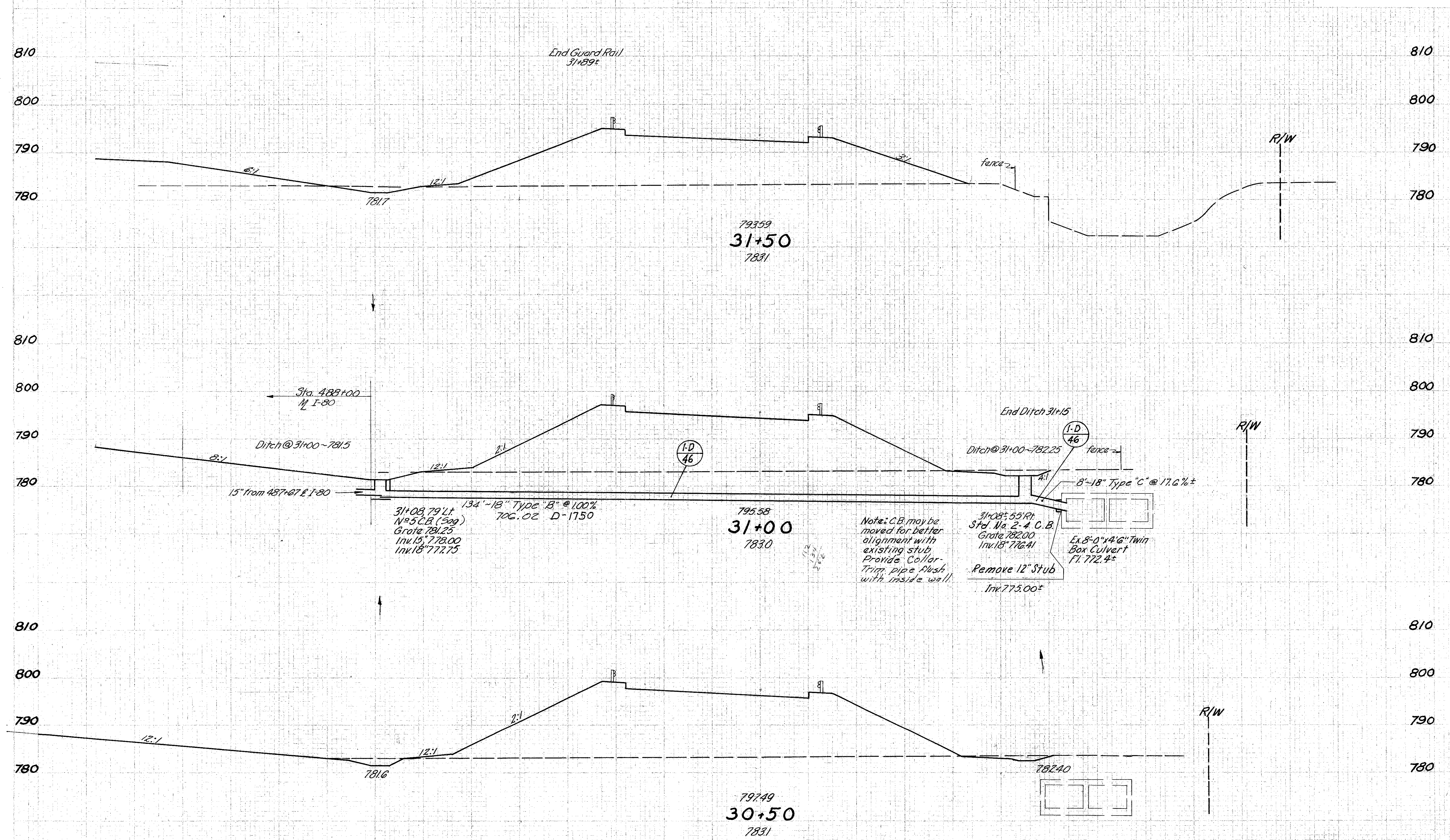
Rev. 4-12-78  
 DEH  
 5/19/68



END AREA	VOLUME
CU	CU
20 1310	
29 2602	
12 1500	
17 2849	
7 1649	
22 3298	
17 1913	

Rev. 4-12-78  
D.E.H. 1968  
S/12/108

RAMP-S STA. 29+00 TO STA. 30+00



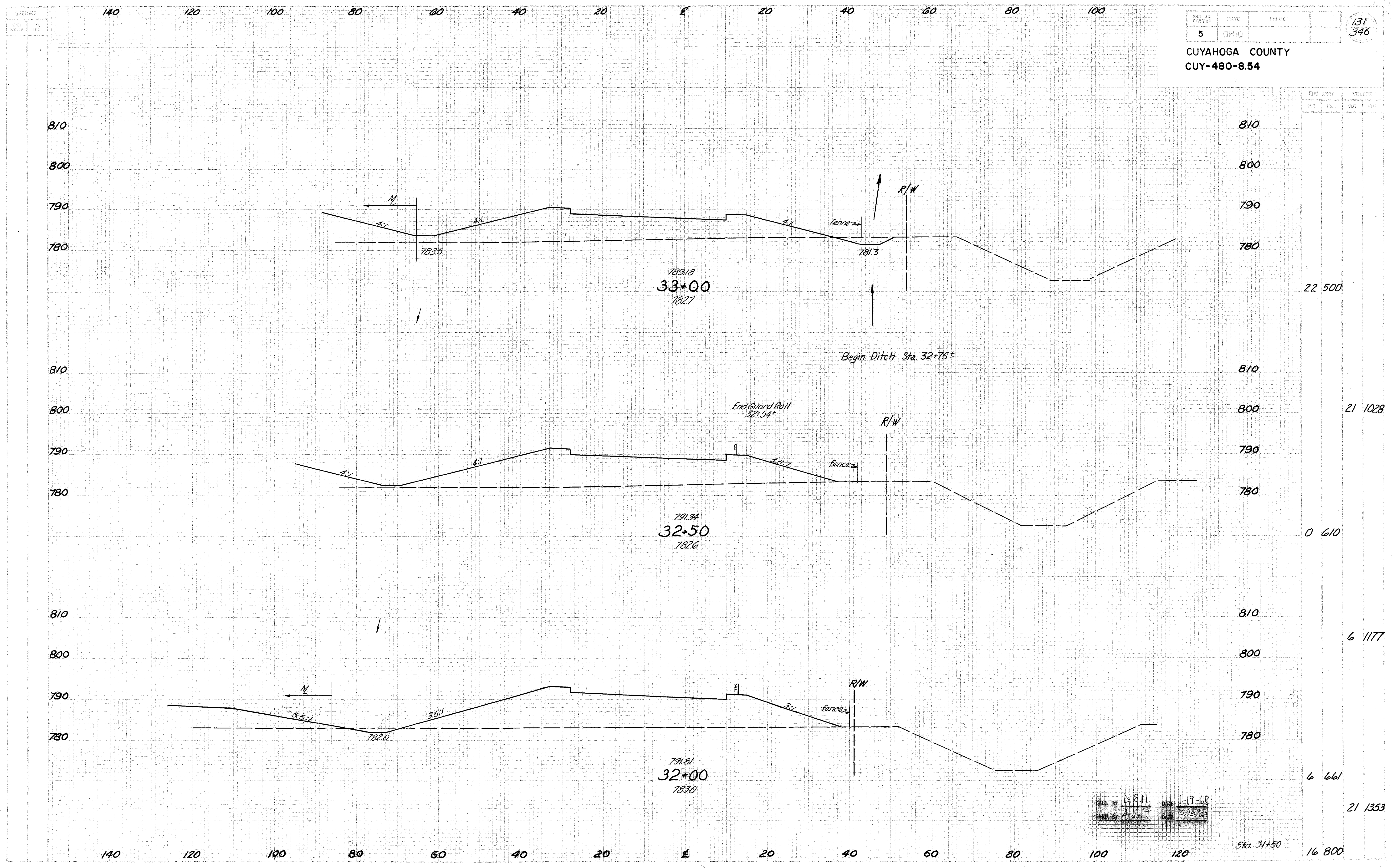
NO.	AREA	VOL. 1934	
		CUY	FT.
16	800		
19	934		
25	1112		
42	2243		
20	1310		

MADE BY D.E.H. DATE 1-19-68  
 DRAWN BY A. J. L. DATE 5/19/68

PROJ. NO.	STATE	PROJECT
5	OHIO	

131  
346

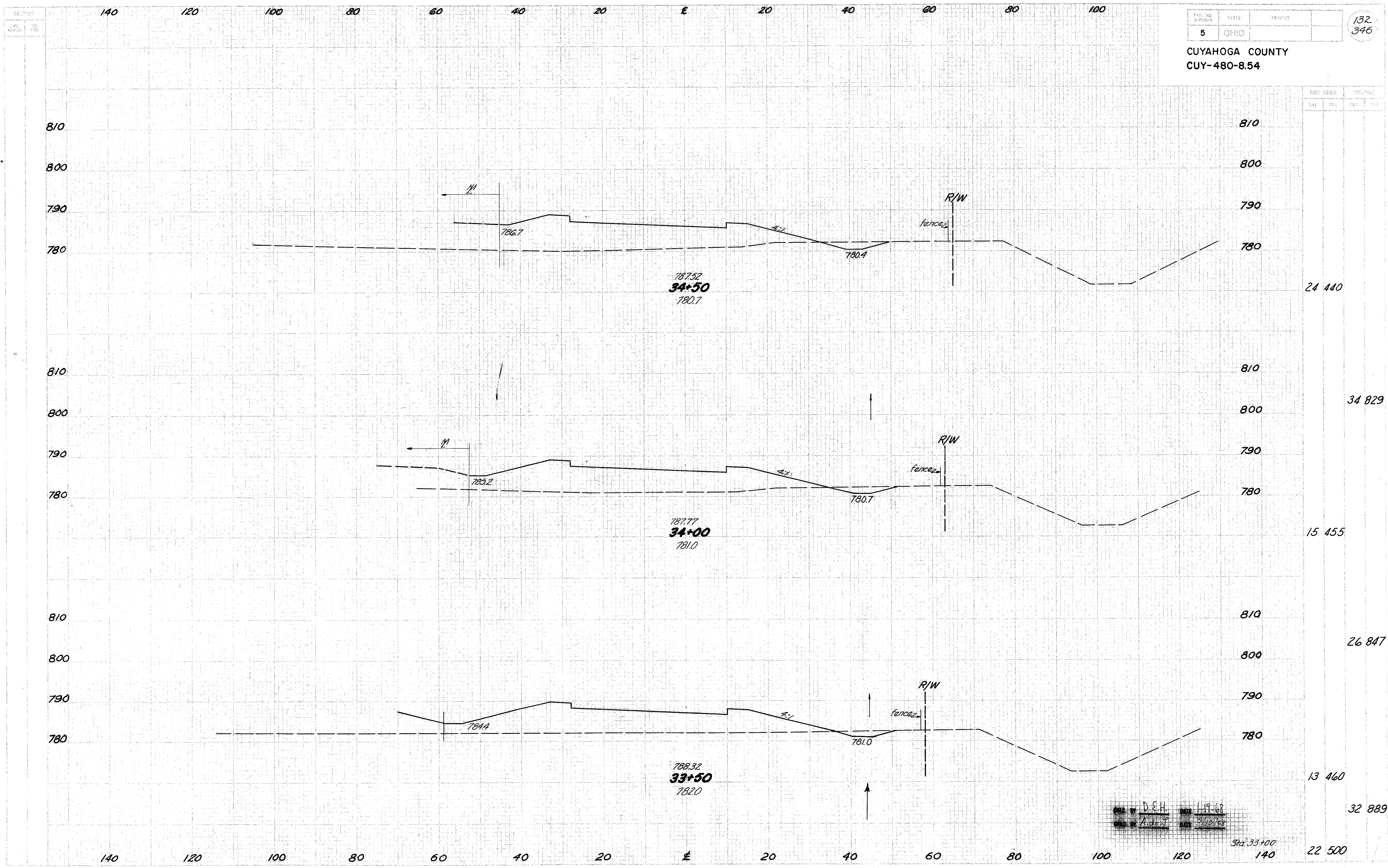
CUYAHOGA COUNTY  
CUY-480-8.54



DATE 1-19-68  
BY D.E.H.  
DATE 5/12/68  
BY A. J. [unclear]

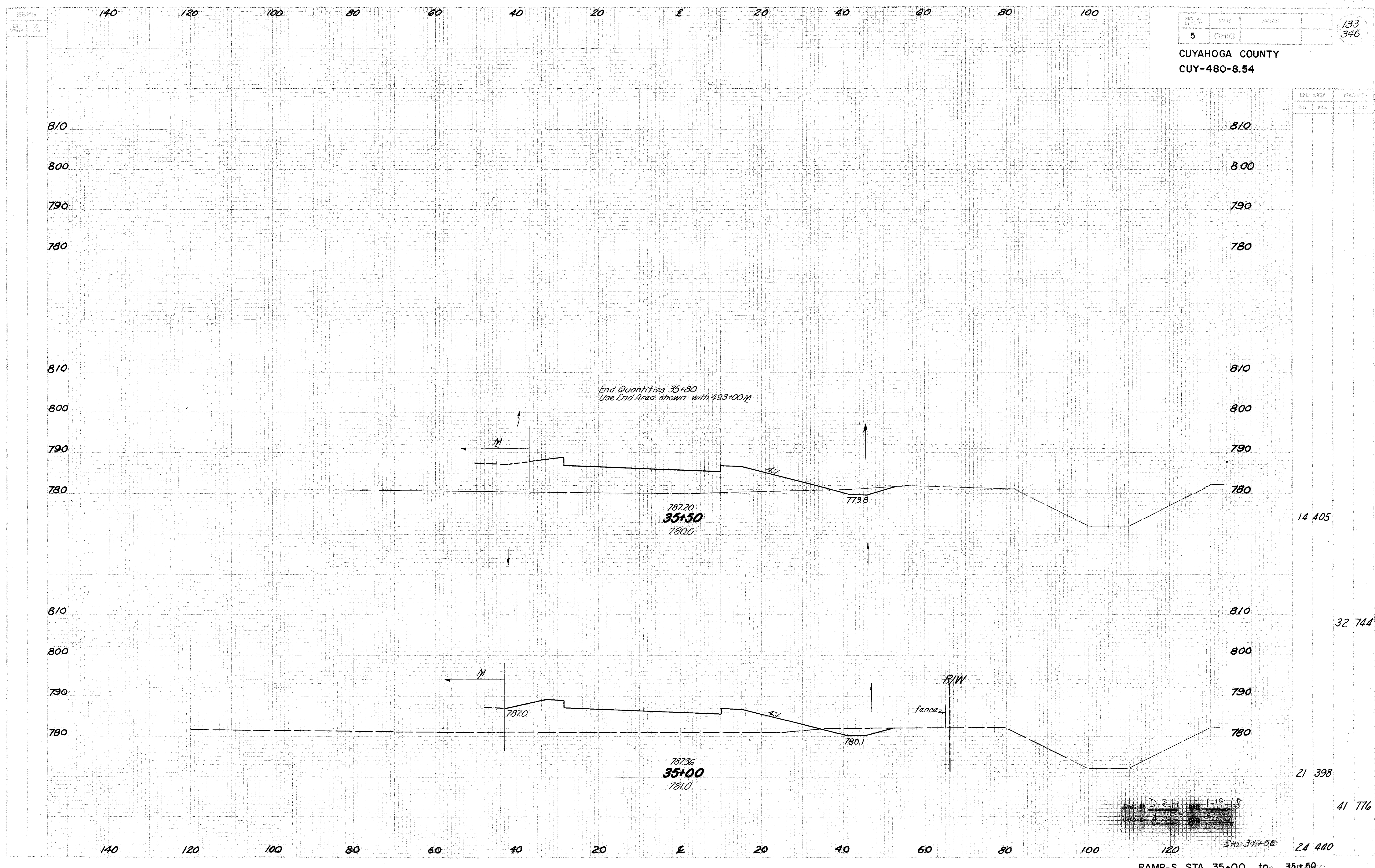
RAMP-S STA. 32+00 TO STA. 33+00

STA.	VOL.	
	CUT	FILL
33+00	22,500	
32+50	0,610	
32+00	6,661	
Sta. 31+50	16,800	
		21,1353



DESIGNED BY D.E.H. DATE 11-9-68  
CHECKED BY A. JENSEN DATE 5/15/69

CUYAHOGA COUNTY  
CUY-480-8.54



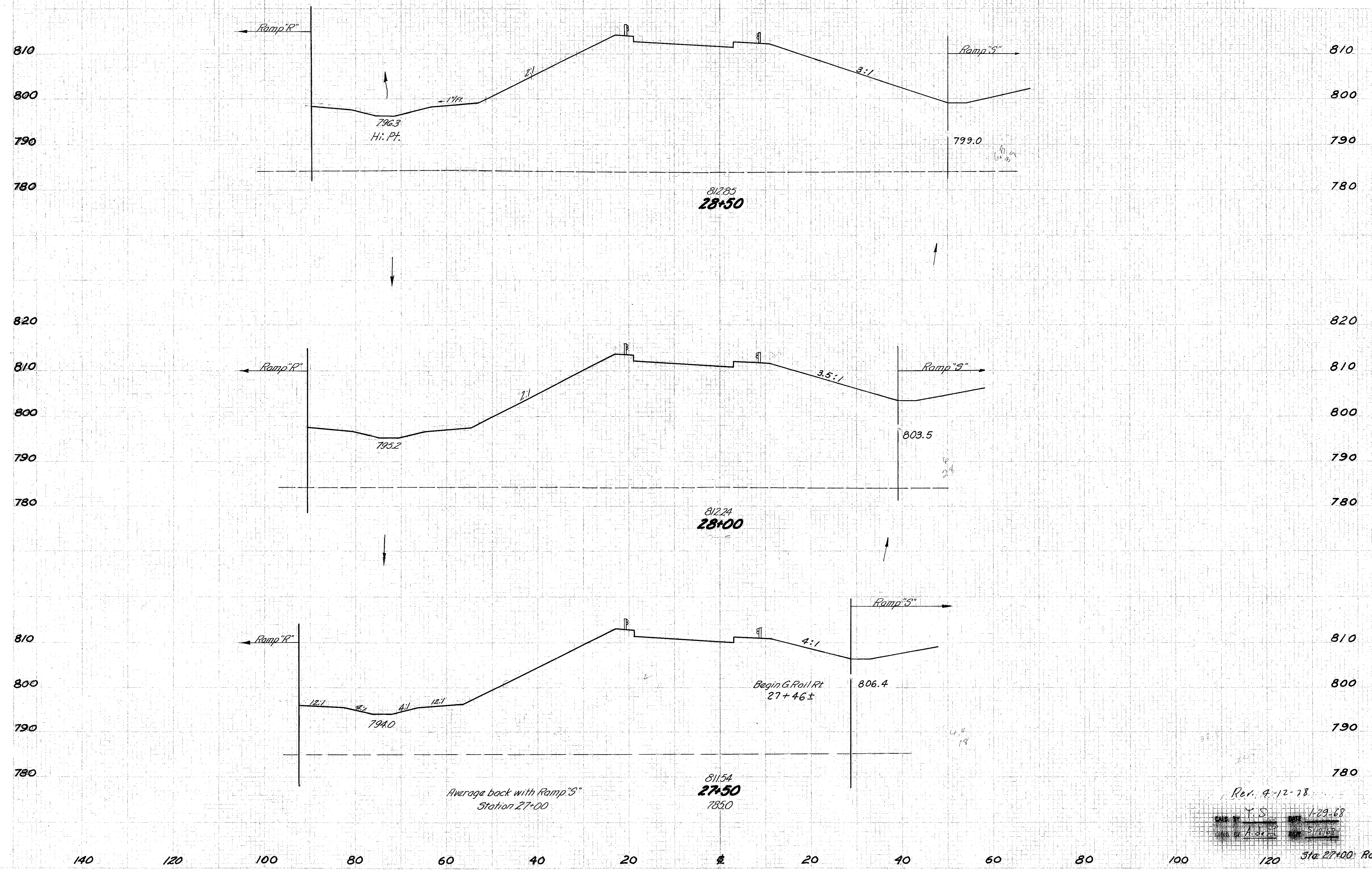
RAMP-S STA. 35+00 to 35+50

DESIGNED BY D.E.H. DATE 1-19-68  
CHECKED BY A. J. [Signature]

Sta. 34+50

24 440

CUYAHOGA COUNTY  
CUY-480-8.54

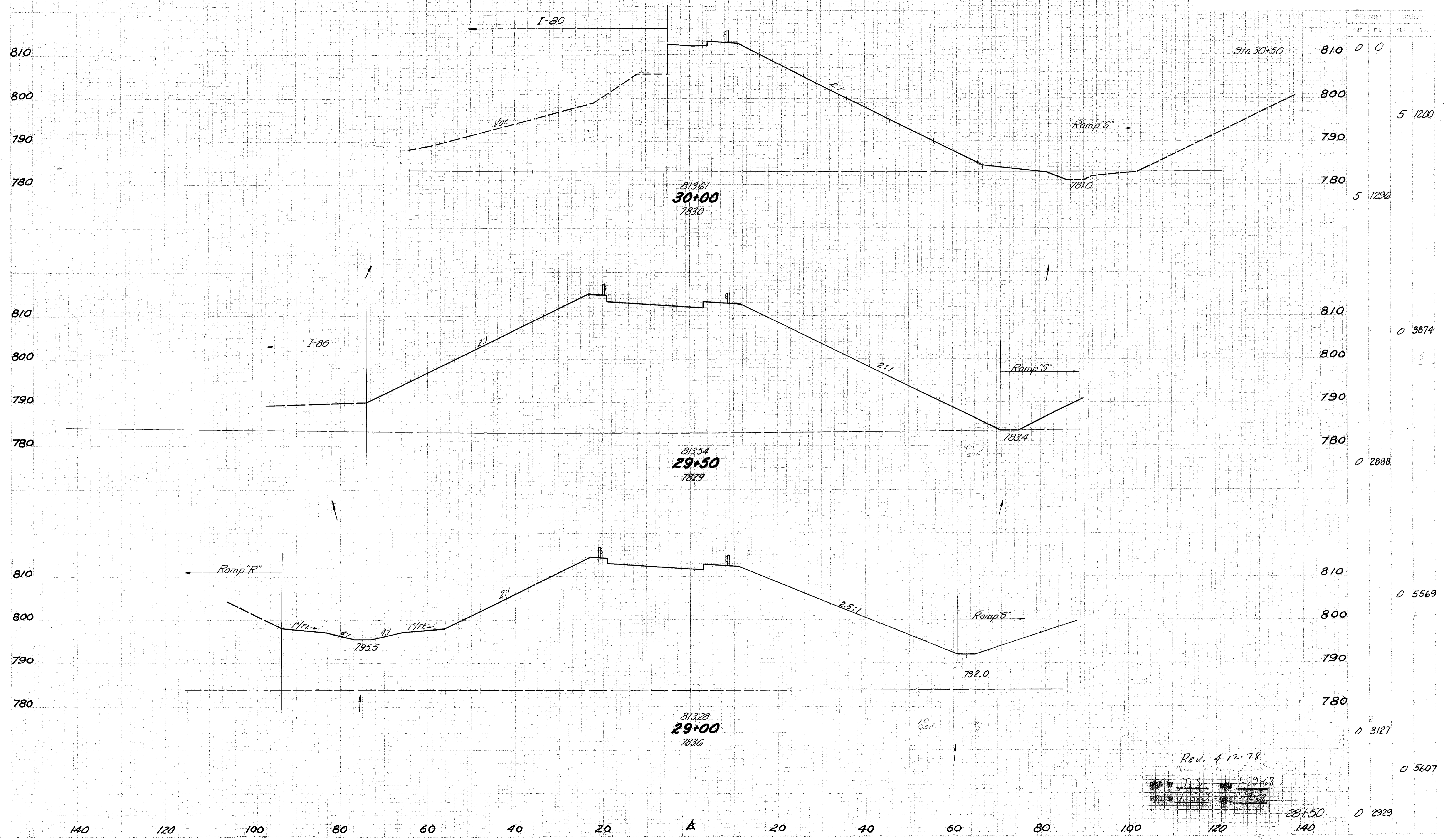


EMB AREA		VOLUMES	
CUT	FILL	CUY	STATE
0	2929		
0	5201		
0	2688		
0	4657		
0	2342		

Rev. 9-12-78  
Y.S. 1-29-68  
A.S. 5-18-68

CUYAHOGA COUNTY  
CUY-480-8.54

Begin Structure @ 30+05.14



STA	END AREA		VOLUME	
	CUT	FILL	CUB	YD.
Sta 30+50	810	0	0	
			5	1200
			5	1296
			0	3874
			0	2888
			0	5569
			0	3127
			0	5607
28+50	0	2929		

Rev. 4-12-78  
 DRAWN BY J.S. DATE 1-29-68  
 CHECKED BY J.A. DATE 5-14-68



FED. RD. DIST. NO.	STATE	PROJECT	
5	OHIO		

136  
346

CUYAHOGA COUNTY  
CUY-480-8.54

810

800

790

780

Ramp "P"

Structure

32+50

1:80

810

800

790

780

Ramp "P"

Structure

Structure  
32+00

1:80

Misc. for Structure

END AREA  
CUB. YDS.

VOLUME  
CUB. YDS.

0 550

0 581

0 -198

0 -14

0 78

0 36

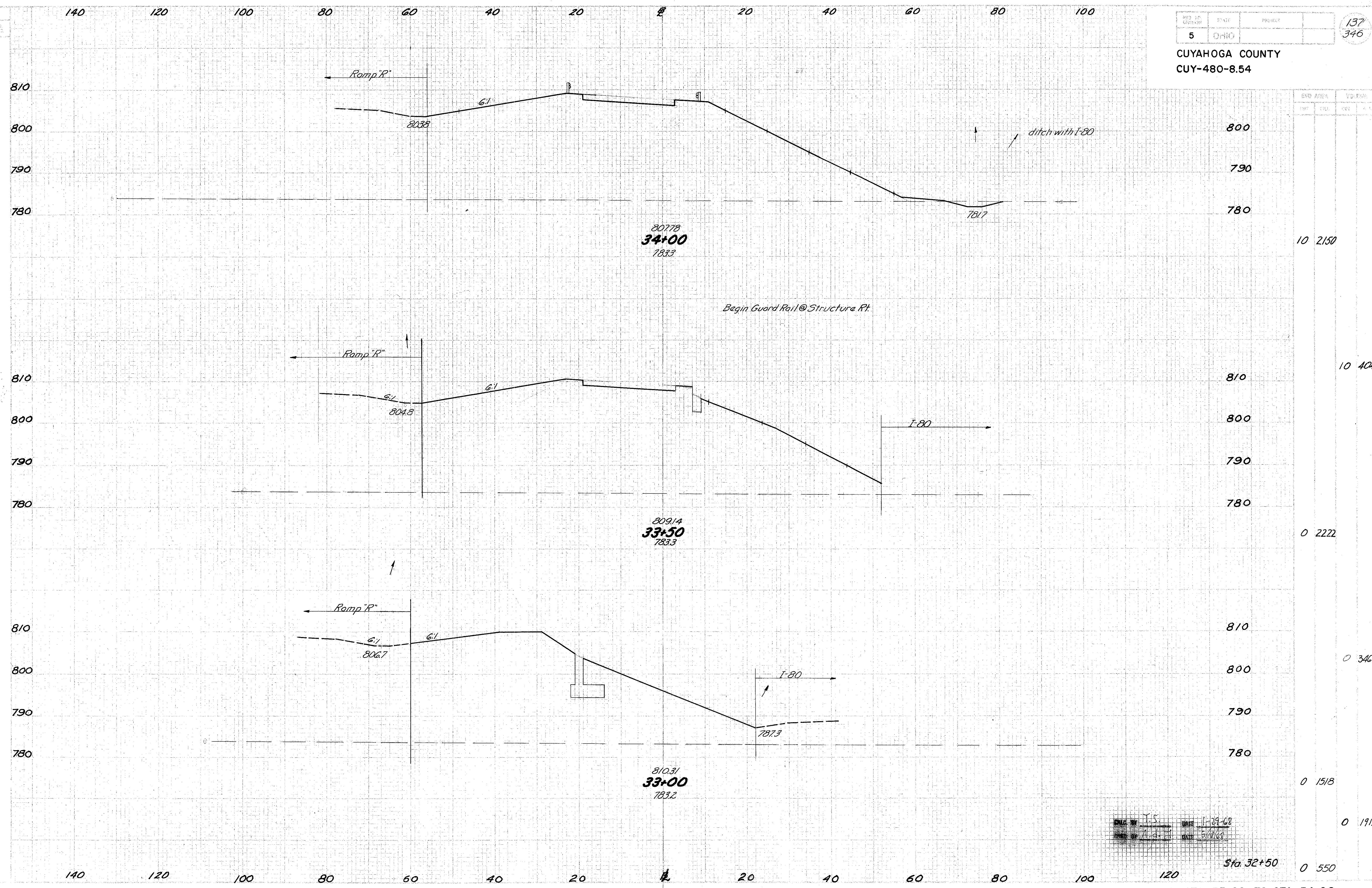
31+75

0 0

DATE: 12-29-68  
BY: J. D. C. DATE: 5/19/68

NO. OF SHEETS	STATE	PROJECT	137
5	OHIO		346

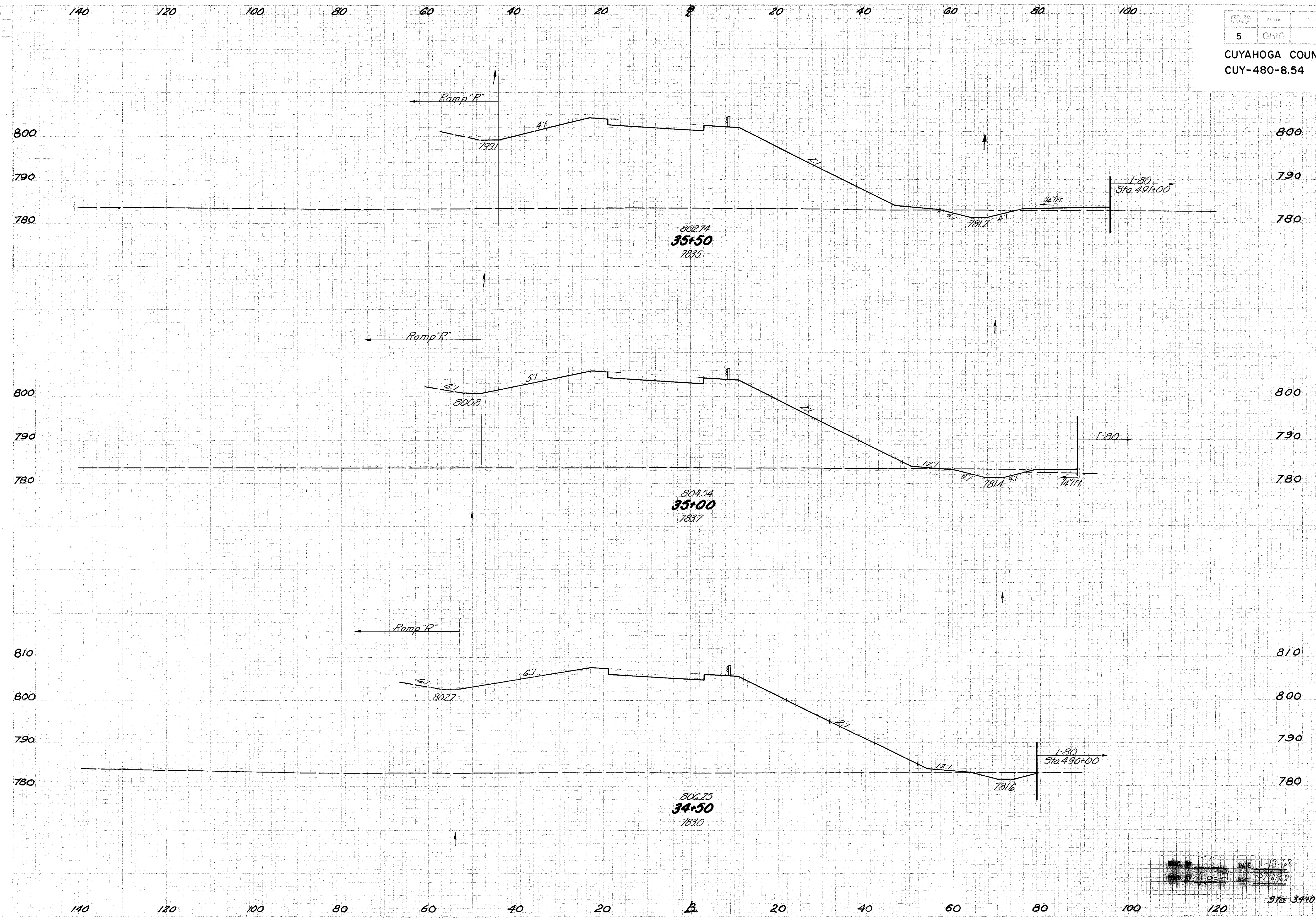
CUYAHOGA COUNTY  
CUY-480-8.54



DESIGNED BY T.S. DATE 11-29-68  
DRAWN BY A.B. DATE 5/10/69

RAMP-T STA. 33+00 TO STA. 34+00

CUYAHOGA COUNTY  
CUY-480-8.54

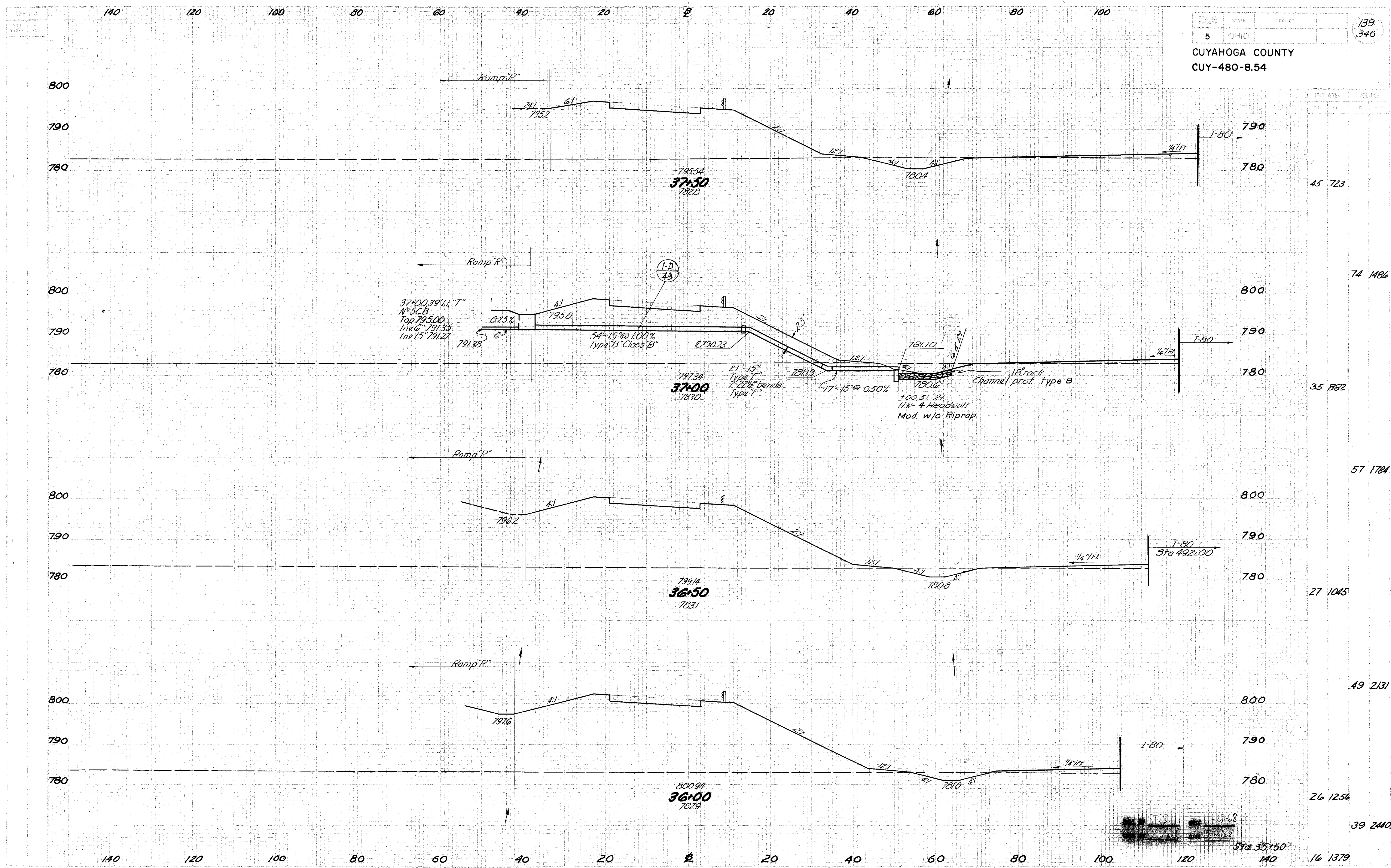


END AREA	VOLUME		
	CUT	FILL	TOTAL
16	1379		
31	2783		
17	1626		
27	334		
12	1953		
20	3799		
10	2150		

DATE 11-29-68  
BY [Signature]

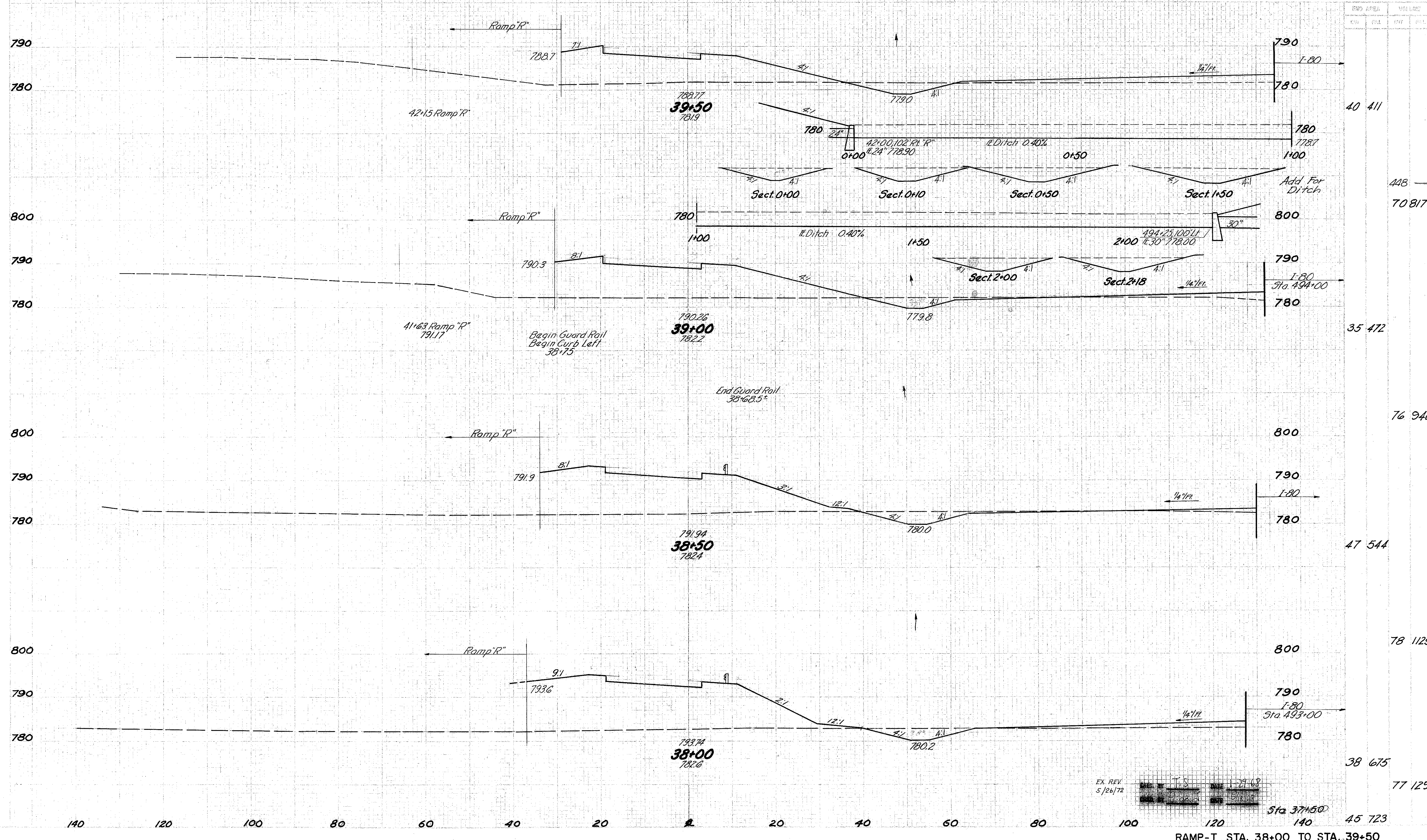
RAMP-T STA. 34+50 TO STA. 35+50

CUYAHOGA COUNTY  
CUY-480-8.54



PROJ. AREA	ELEVATION		REMARKS
	CUT	FILL	
			45 723
			74 1486
			35 882
			57 1784
			27 1045
			49 2131
			26 1256
			39 2440
			16 1379

RAMP-T STA. 36+00 TO STA. 37+50



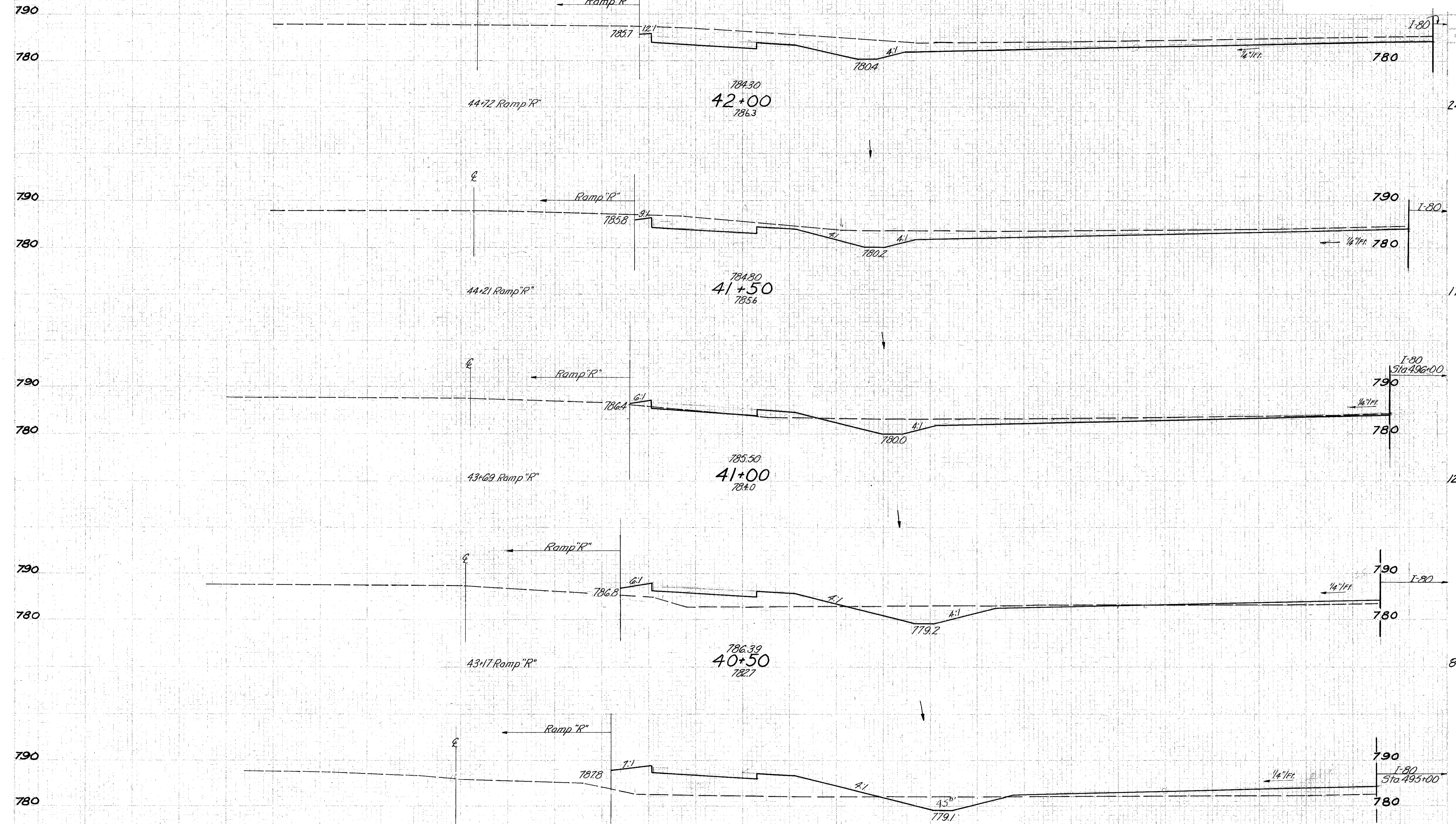
EX. REV  
5/26/72

Sta 37+50  
140  
45 723

RAMP-T STA. 38+00 TO STA. 39+50

CUYAHOGA COUNTY  
CUY-480-8.54

141  
346



END AREA	AREA		TOTAL
	PLAN	VERT	
248.3			
394.11			
178.9			
276.63			
120.59			
192.198			
87.155			
122.437			
45.317			
79.674			
40.411			

EX. REV. 5/26/72  
CALC. BY T.S.  
DATE 5/18/68

CUYAHOGA COUNTY  
CUY-480-8.54

142  
346

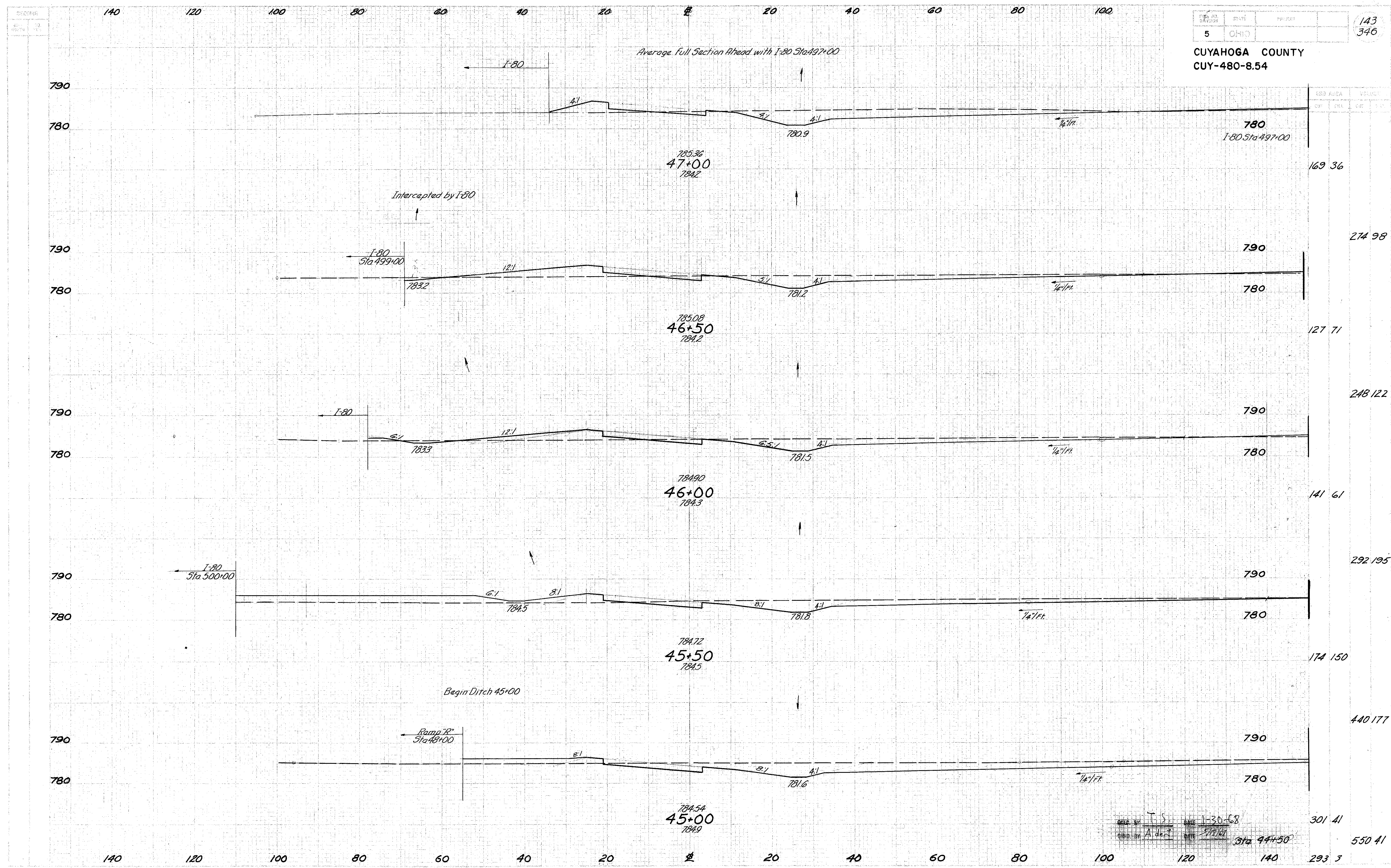


STATION	ELEVATION	REMARKS
42+50	784.9	
43+00	783.90	
43+50	780.8	
44+00	781.2	
44+50	781.4	

DESIGNED BY: J.S. DATE: 1-30-68  
 CHECKED BY: A. G. DATE: 5/18/68

RAMP - T STA. 42+50 TO STA. 44+50

CUYAHOGA COUNTY  
CUY-480-8.54

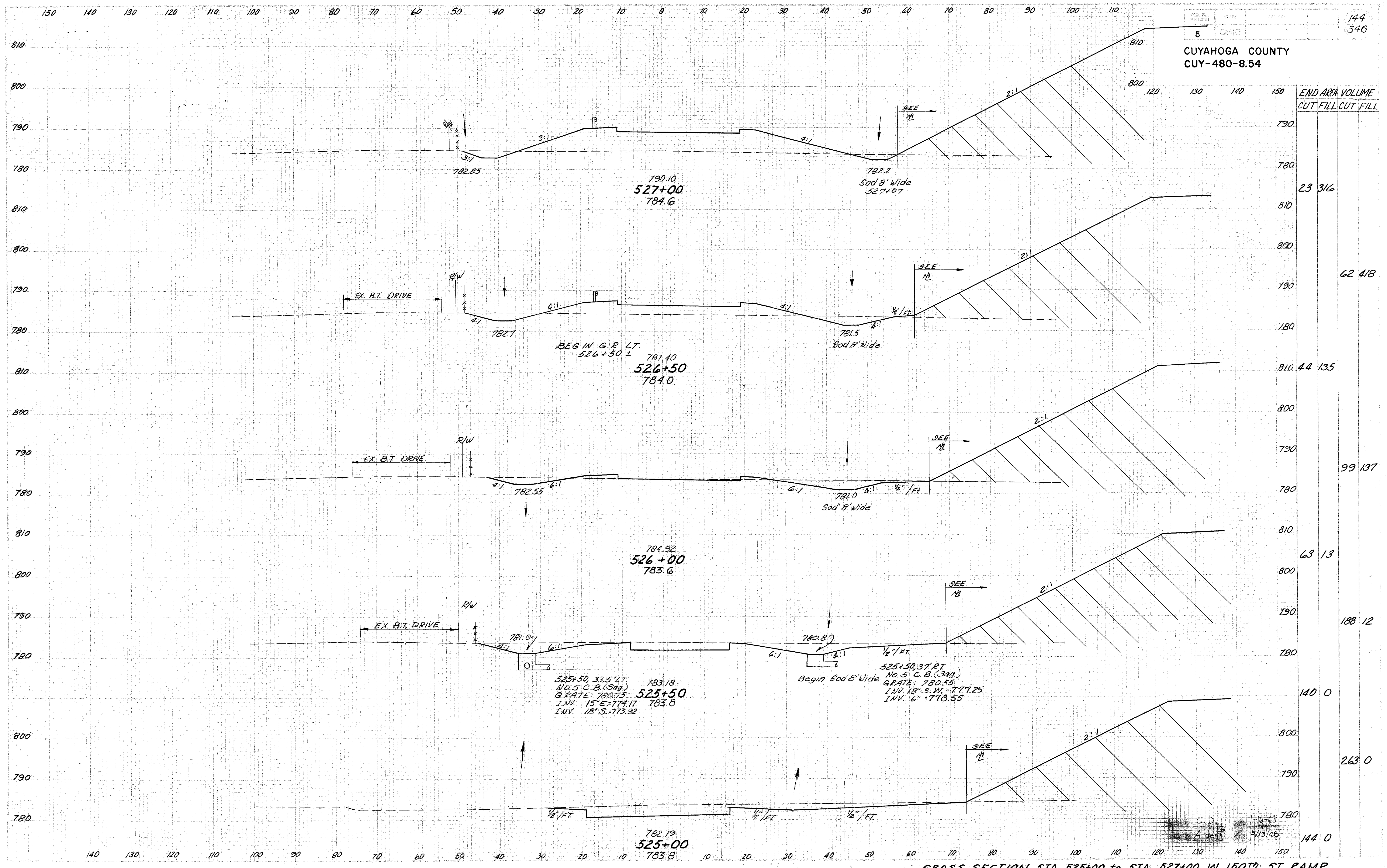


DATE BY T.S. DATE 11-30-68  
 CHECK BY Alder DATE 5/11/69  
 Sta 44+50

RAMP-T STA. 45+00 TO STA. 47+00



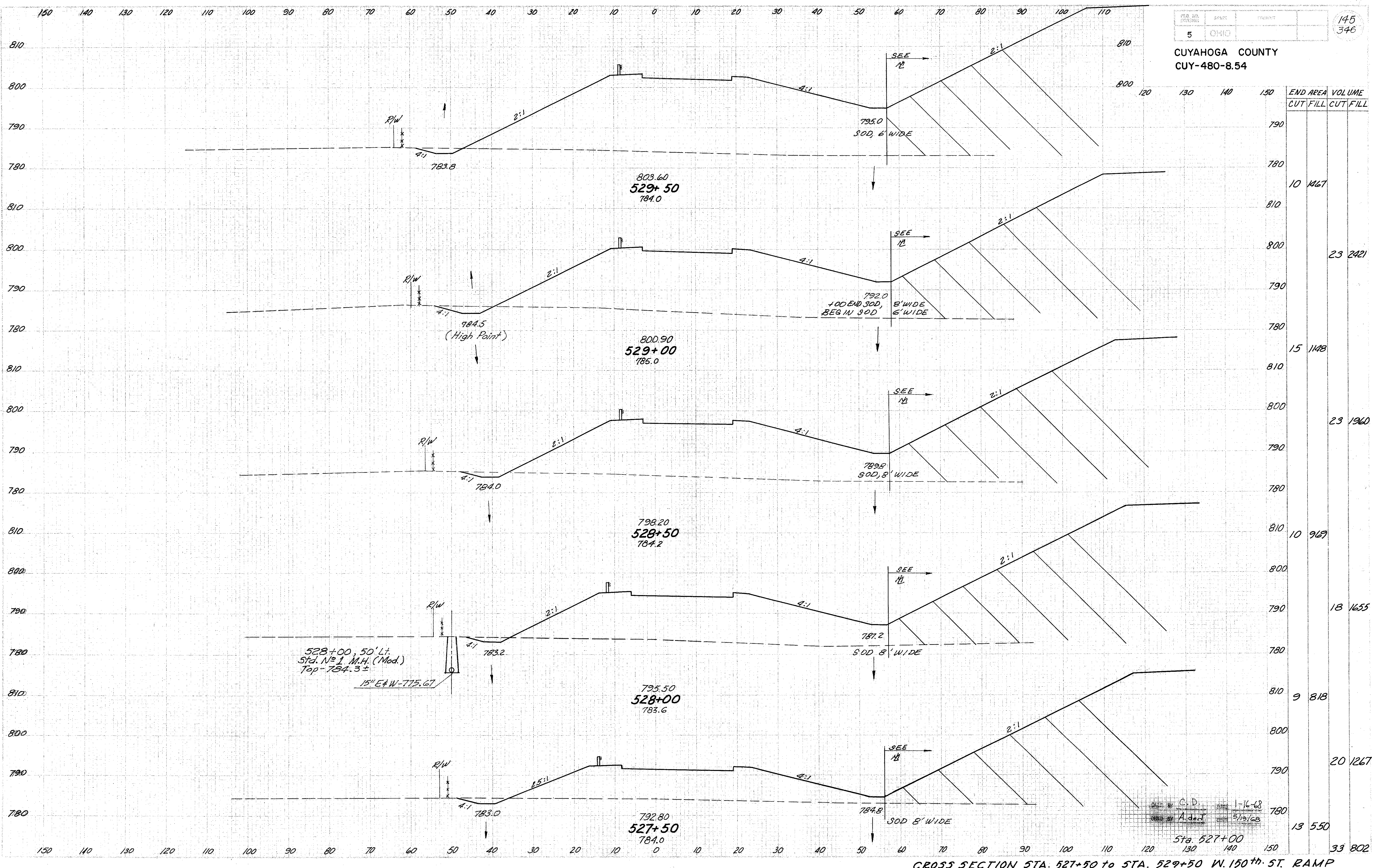
CUYAHOGA COUNTY  
CUY-480-8.54



CROSS SECTION STA. 525+00 to STA. 527+00 W. 150th ST. RAMP

C.D. 1-16-68  
A. def. 5/19/68

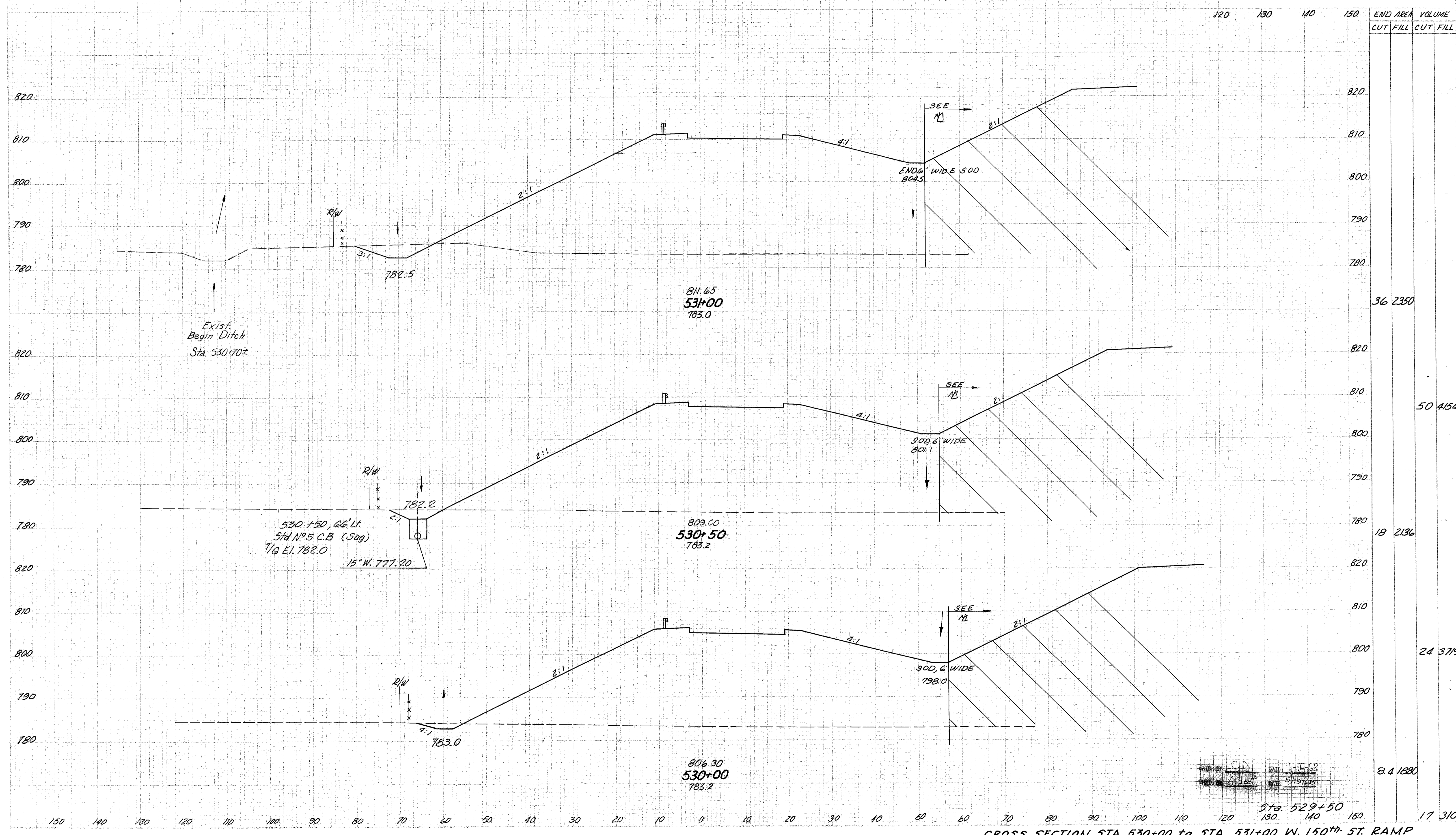
CUYAHOGA COUNTY  
CUY-480-8.54



CROSS SECTION STA. 527+50 to STA. 529+50 W. 150th ST. RAMP

Checked by C.D. Date 1-16-68  
Drawn by A.D.J. Date 5/19/68

CUYAHOGA COUNTY  
CUY-480-8.54

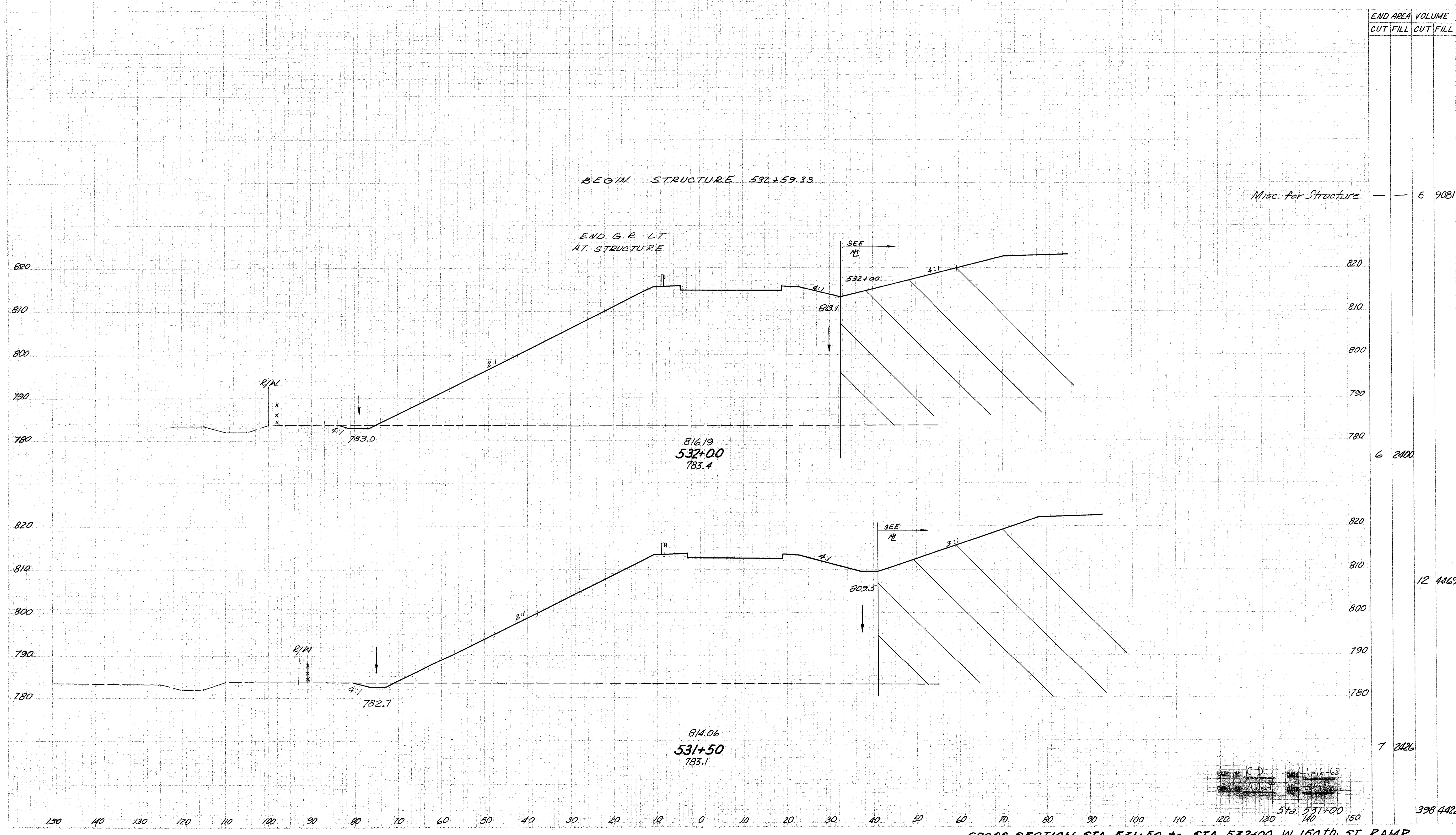


END AREA	VOLUME	
	CUT	FILL
36	2350	
18	2136	50 4154
24	3719	
8.4	1880	
17	310	

DATE 1-16-68  
BY G.D.  
DATE 5/13/68  
BY [Signature]

Sta. 529+50  
130 140 150  
CROSS SECTION STA. 530+00 TO STA. 531+00 W. 150' W. ST. RAMP

CUYAHOGA COUNTY  
CUY-480-8.54



END AREA		VOLUME	
CUT	FILL	CUT	FILL
			6 9081
		6	2400
			12 4469
		7	2426
			398 4422

DATE: 1-16-68  
 5/13/68

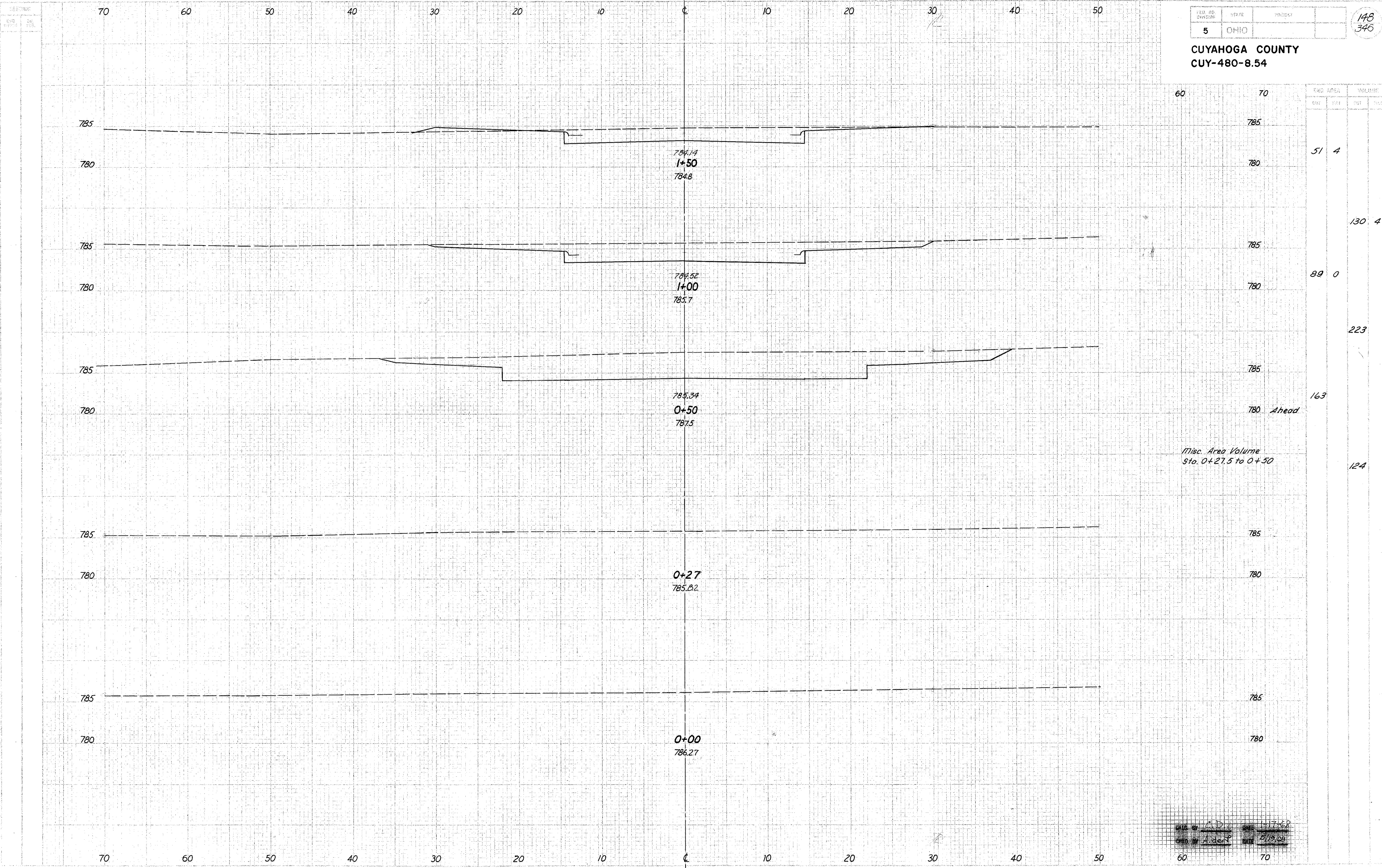
Sta. 531+00

CROSS SECTION STA. 531+50 to STA. 532+00 W. 150th. ST. RAMP

FED. RD. DIST. NO.	STATE	PROJECT
5	OHIO	

148  
346

**CUYAHOGA COUNTY**  
**CUY-480-8.54**



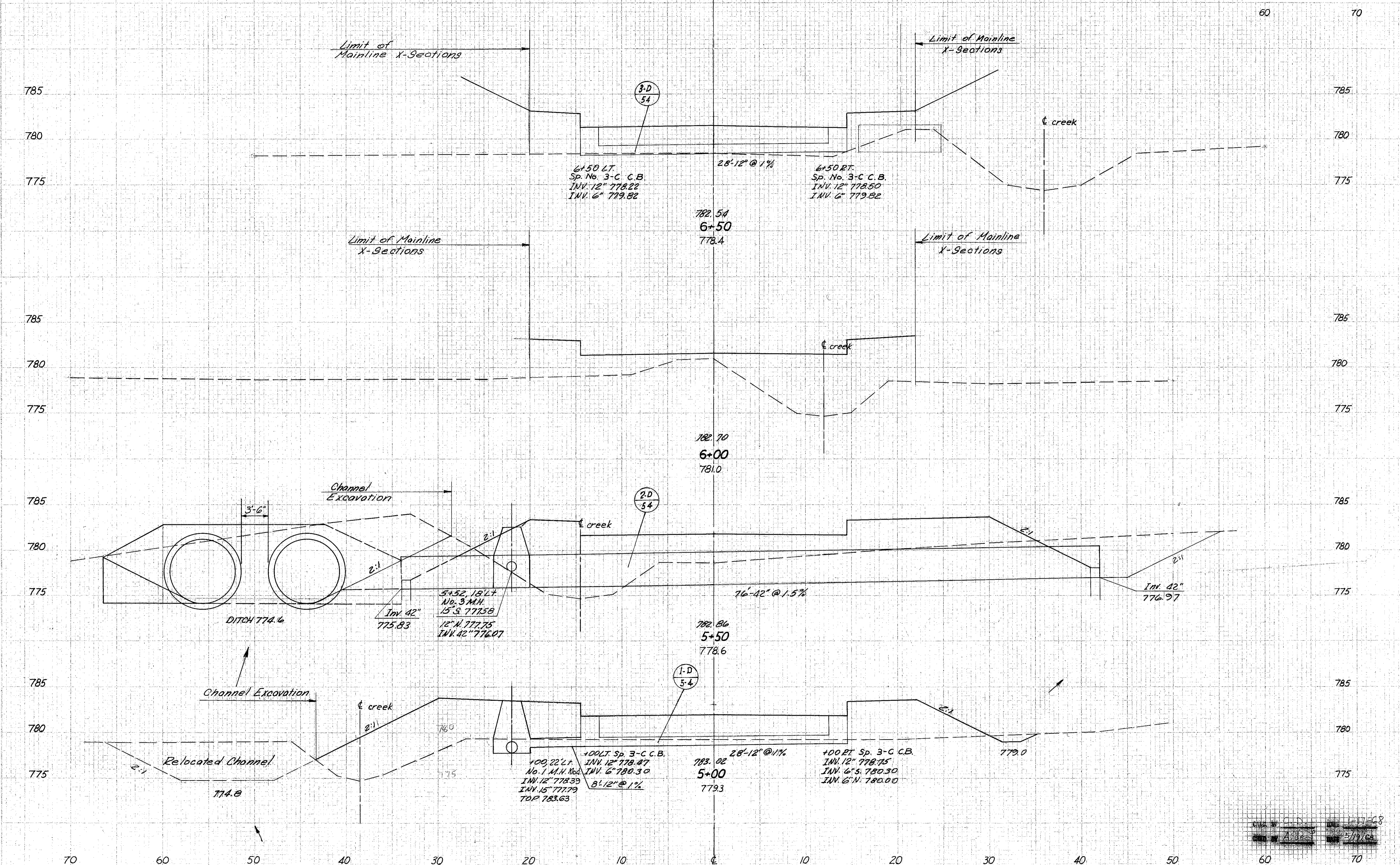
CROSS AREA		VOLUME	
CUY	STATE	CUY	STATE
51	4	130	4
89	0	223	
163			
		124	

Misc. Area Volume  
Sta. 0+27.5 to 0+50

DATE: 11/7/68  
BY: J. A. [Signature]  
DATE: 5/13/69



CUYAHOGA COUNTY  
CUY-480-8.54

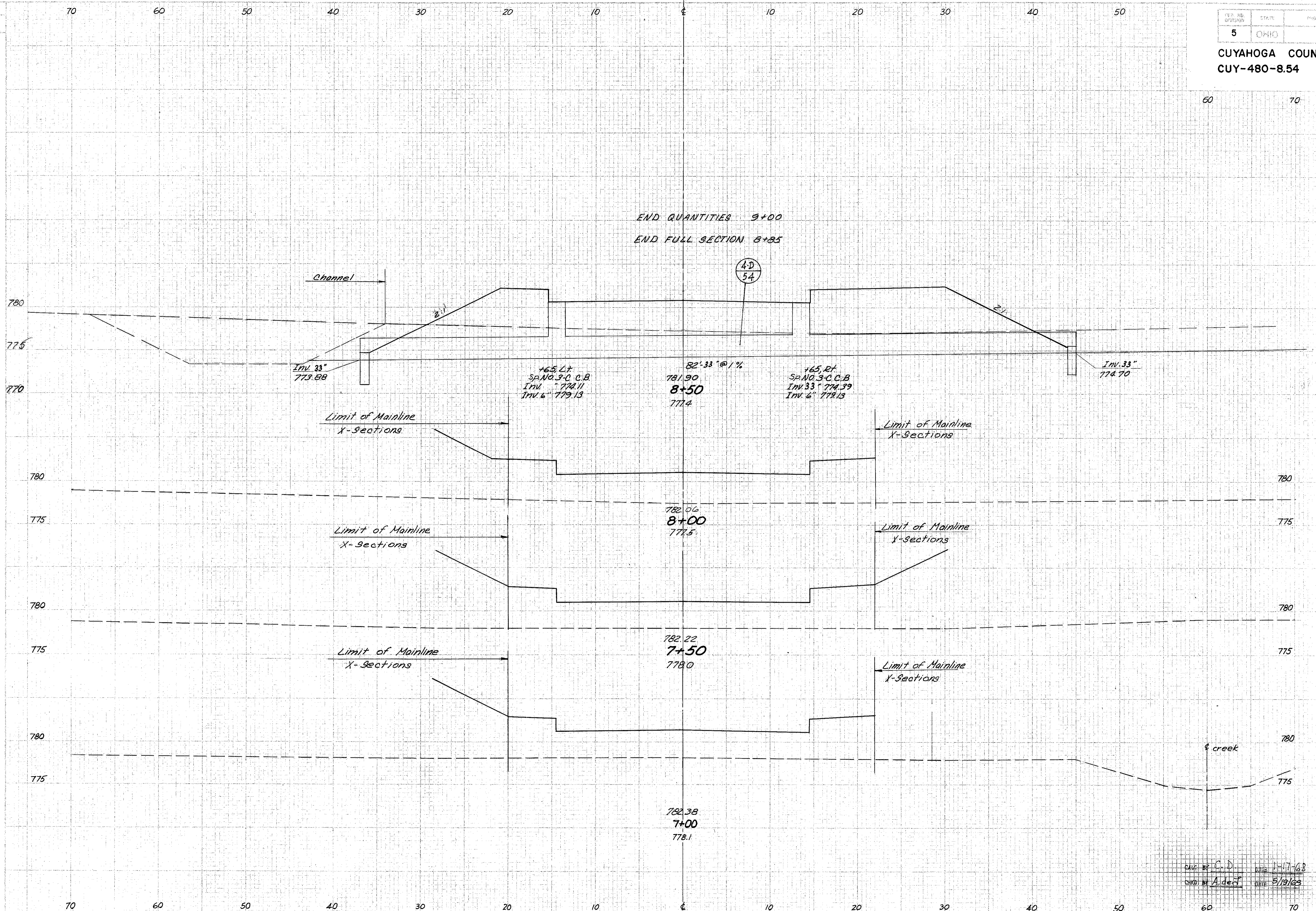


STATION	CUT		FILL	
	FEET	INCHES	FEET	INCHES
148				
283				
152				
358				
51	229			
50	445			
3	251			
33	315			

DATE: 5/19/68  
DRAWN BY: [Signature]

CUYAHOGA COUNTY  
CUY-480-8.54

ERO AREA		TOTAL	
CUT	FILL	CUT	FILL



END QUANTITIES 9+00  
END FULL SECTION 8+85

4-D  
54

Channel

Inv. 33"  
773.88

+65, Lt.  
SP. NO. 3-C C.B.  
Inv. 774.11  
Inv. 6" 779.13

82:33 @ 1%  
781.90  
8+50  
777.4

+65, Rt.  
SP. NO. 3-C C.B.  
Inv. 33" 774.39  
Inv. 6" 778.13

Inv. 33"  
774.70

Limit of Mainline  
X-Sections

Limit of Mainline  
X-Sections

Limit of Mainline  
X-Sections

Limit of Mainline  
X-Sections

Limit of Mainline  
X-Sections

Limit of Mainline  
X-Sections

782.06  
8+00  
777.5

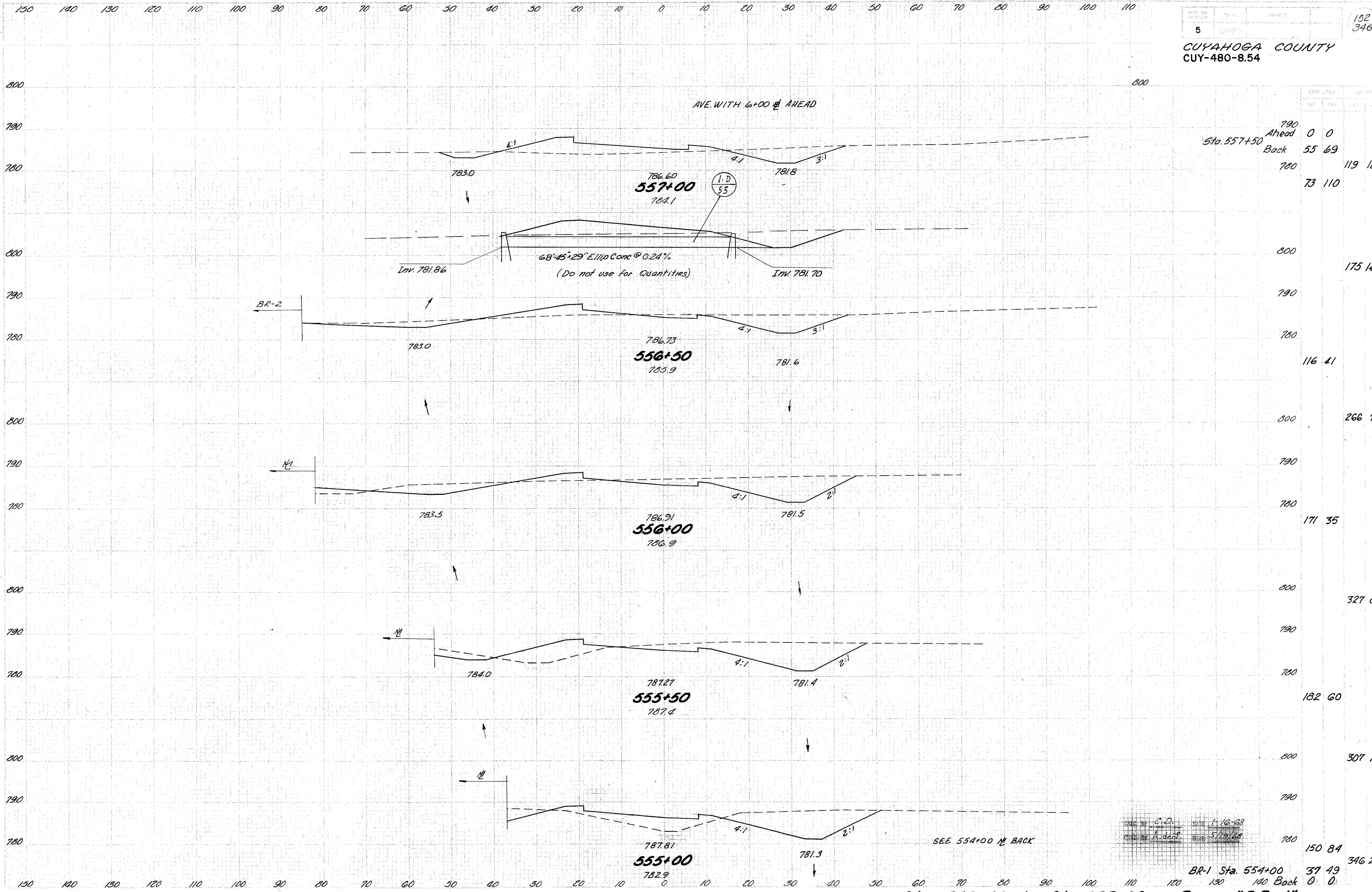
782.22  
7+50  
778.0

782.38  
7+00  
778.1

creek

CHKD BY C.D. DATE 1-17-68  
CHKD BY A. deP. DATE 5/19/68





Sta. 557+50	790 Ahead	0	0
	780 Back	55	69
		119	166
		73	110

	800	175	140
--	-----	-----	-----

	780	116	41
--	-----	-----	----

	800	266	70
--	-----	-----	----

	780	171	35
--	-----	-----	----

	800	327	88
--	-----	-----	----

	780	182	60
--	-----	-----	----

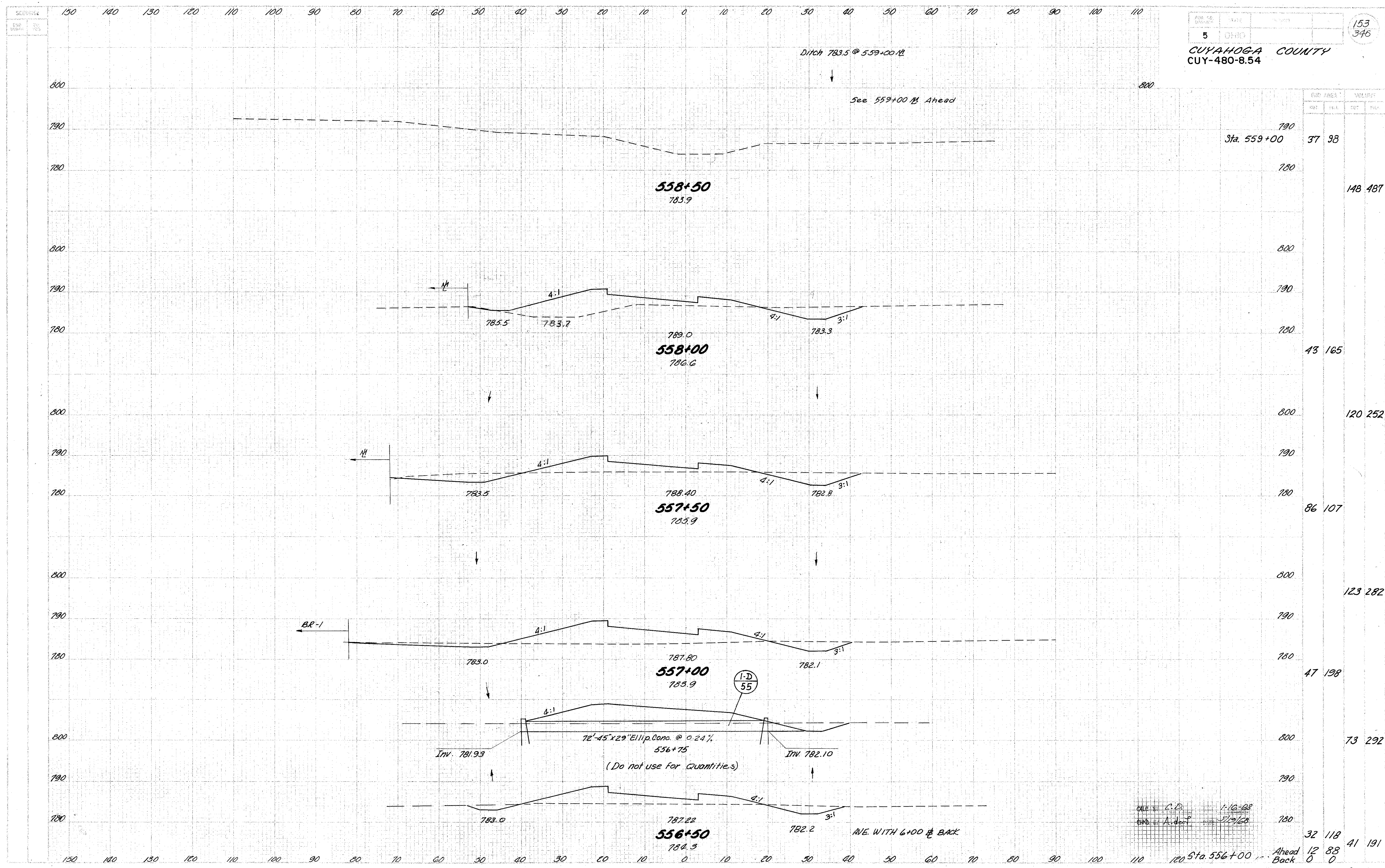
	800	307	133
--	-----	-----	-----

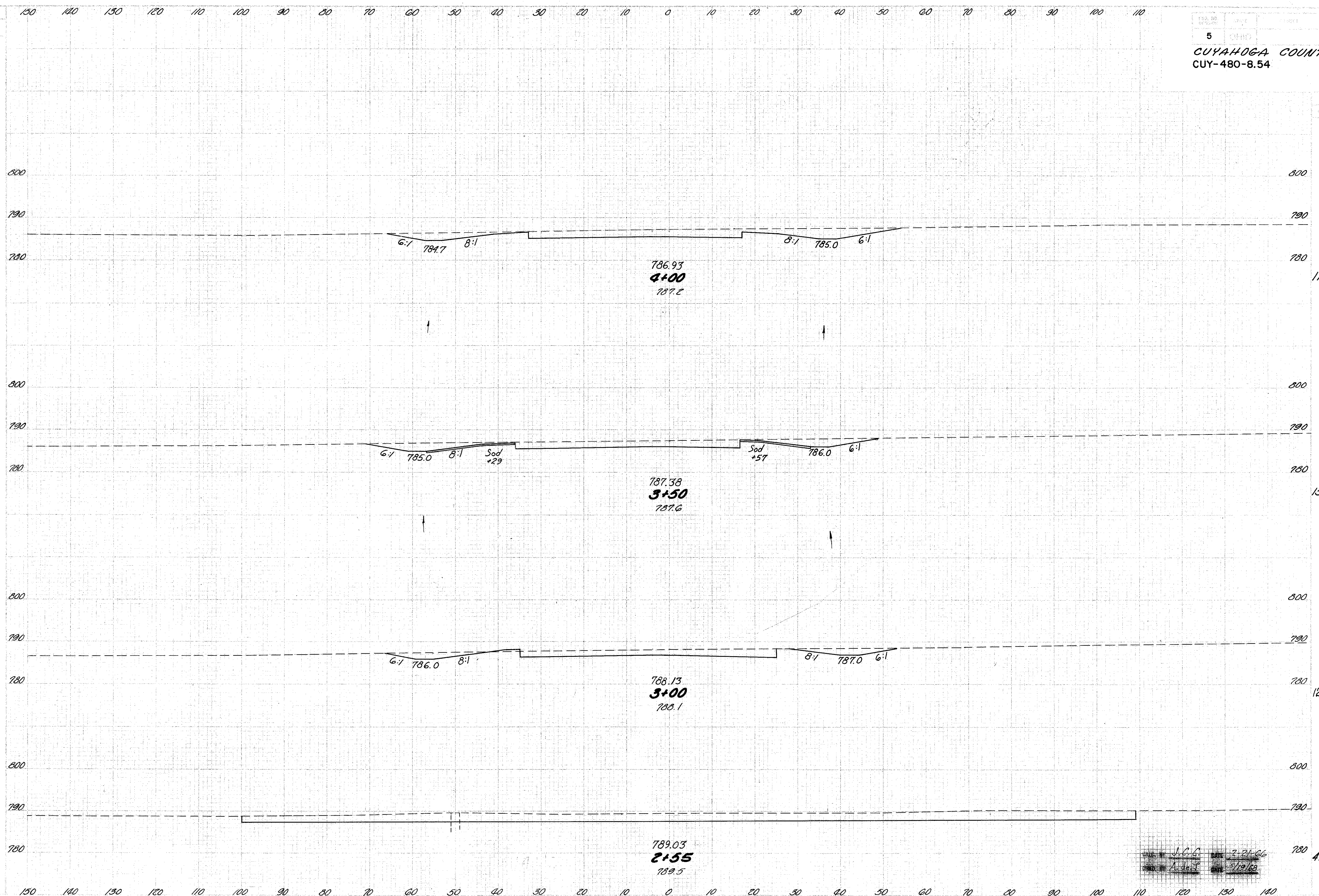
C.D. 1-16-68  
 A. de G. 5/19/68

	780	150	84
--	-----	-----	----

BR-1 Sta. 554+00	37	49
Back	0	0

Sta. 555+00 to Sta. 557+00 - Ramp "BR-1"

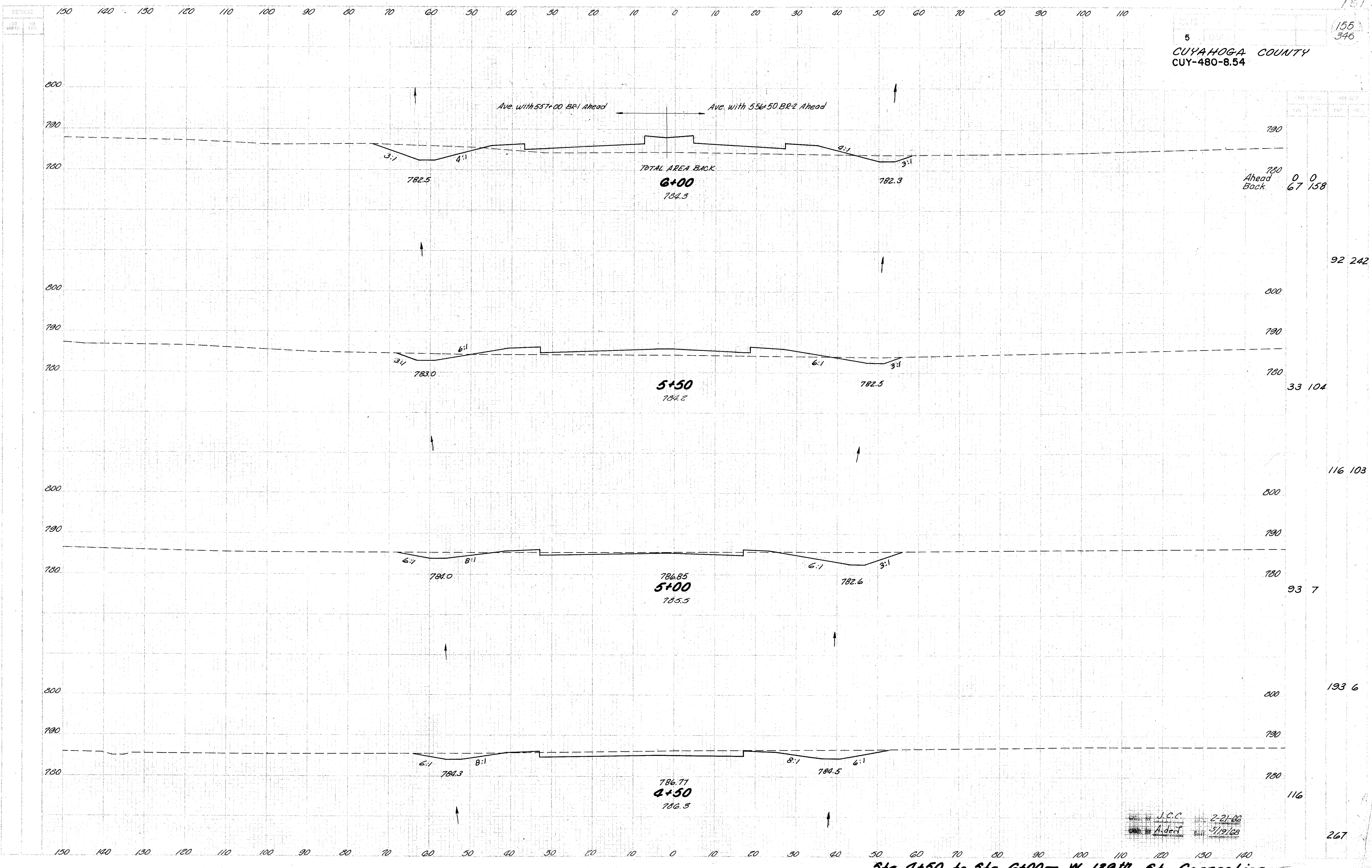




ELEVATION		DISTANCE	
FT.	IN.	FT.	IN.
173			
302			
152	0		
258	2		
126	2		
450	2		
780	414	0	

J.C.G. DATE 2-21-66  
 A.J.S. DATE 1/19/68

Sta. 2+55 to Sta. 4+00 - W. 139th St. Connection



J.C.C. 2-21-02  
 A. J. 5/19/05

Sta. 4+50 to Sta. 6+00 - W. 139<sup>th</sup> St. Connection



# GENERAL SUMMARY TRAFFIC CONTROL

CALC. BY CAF DATE 3/26/70  
CHKD. BY HJH DATE 11-24-70

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

157  
346

CUYAHOGA COUNTY  
CUY-480-8.54

TYPE CODE 6707 unless otherwise shown

ITEM	SHEET NUMBERS												COST PARTICIPATION		GRAND TOTAL	UNIT	ITEM	DESCRIPTION
	158	159	160	161	172	173	100% STATE OHIO	INTER-STATE										
									Lump	Lump	Lump	Lump	202			<b>TRAFFIC SIGNALS</b>		
					1					1	1	Ea.	843			Removal of Existing Signal Equipment		
						1				1	1	Ea.	843			Traffic Signal Controller with Controller Cabinet, As Per Plan (2 Phase Semi-Actuated)		
										1	1	Ea.	843			Traffic Signal Controller with Controller Cabinet, As Per Plan (4 Phase Semi-Actuated, with Left Turn Phase)		
					1	4				5	5	Ea.	842			Loop Detector Amplifier		
					135	982				1117	1117	L.F.	842			Loop Detector Wire		
					162	588				750	750	L.F.	842			Loop Detector Lead In Cable		
					64	448				512	512	L.F.	842			Loop Detector Pavement Cutting		
						1				1	1	Ea.	842			Vehicular Signal Heads, 3 Section 12" Lenses, 3 Way		
						2				2	2	Ea.	842			Vehicular Signal Heads, 3 Section 12" Lenses, 2 Way		
					6	3				9	9	Ea.	842			Vehicular Signal Heads, 3 Section 12" Lenses, 1 Way		
					3	6				9	9	Ea.	5625			Pull Boxes, Type A, as per plan		
					87	213				300	300	L.F.	5625			3" Conduit S713.04		
					150	810				960	960	L.F.	842			Traffic Signal Cable, 5 Conductor #12 AWG -		
					60					60	60	L.F.	842			Traffic Signal Cable, 2 Conductor #12 AWG -		
					40	80				120	120	L.F.	842			Power Cable, 3 Conductor #8 AWG,		
						150				150	150	L.F.	842			Messenger Wire with Accessories		
					118	296				414	414	L.F.	5625			Trench		
					85	213				298	298	L.F.	5625			2" Conduit S713.04		
						1				1	1	Ea.	842			Signal Pole .2500"x15"x21'6" with Mast Arms, .2500"x12"x43' & (2) 4" Sch. 40 Pipe x 8'		
						1				1	1	Ea.	842			Signal Pole .3125"x13"x90'0"		
					210	178				39	39	Cu.Yd.	842			Concrete For Anchor Base Foundations		
					290	290				1.8	1.8	Cu.Yd.	842			Concrete For Controller Cabinet Foundation		
					1	1				2	2	Ea.	842			Cable Support Assy		
					160					160	160	L.F.	842			Service Cable, 3 Cond. No 8 Awg		
					1	1				2	2	Ea.	842			Power Service for Signals		
					6	10				16	16	Ea.	842			covering of signals		

# OVERHEAD SIGNS - SUB SUMMARY

Support No.	Station	844												S625			844			844		INTERIM		Support No.									
		Span Wire Sign Support, Span 83 Feet	No. 7.65 Des. No. 8 Mod. 72' Span (36)	No. 7.65 Des. No. 8 Mod. 78' Span (39)	No. 7.65 Des. No. 8 Mod. 86'-0" Span (35)	No. 7.65 Des. No. 8 Mod. 94' Span (42)	No. 7.65 Des. No. 8 Mod. 96' Span (40)	100' Span (38)	No. 12.30 Des. No. 3 23'-6" Pole, 18' Arm (59)	No. 12.30 Des. No. 2 Mod. 23'-6" Pole, 22' Arm (45)	23' Pole, 24' Arm (44)	No. 12.30 Des. No. 8 26' Pole, 24' Arm (36A, 40A)	No. 12.30 Des. No. 8 Mod. 28' Pole, 25' Arm (18, 35A, 41)	No. 12.30 Des. No. 8 Mod. 27' Pole, 26' Arm	No. 16.10 Des. No. 3 Mod. 27' Pole, 33' Arm	Concrete For Anchor Base Foundations	Signs Erected & Extru Sheet	Signs Erected, Flat Sheet	Mercury Vapor Lumin- aire with 100 W. Lamp	Mercury Vapor Lumin- aire with 175 W. Lamp	Mercury Vapor Lumin- aire with 250 W. Lamp	Ballasts, 480V	Disconnect Switch with Enclosure Type X		Ground Rod	Signs Wired	Sign Service	Interim Covering For Signs	Interim Overlay #				
		Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Cu. Yd.	Sq. Ft.	Sq. Ft.	Ea.	Ea.	Ea.	Ea.	Ea.		Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Sq. Ft.		
18	Ramp "S", 17+50														4.3	156.0																	18
35	I-80, 481+00														13.0	374.5																	35
35A	I-80, 484+00														4.3	198.0																	35A
36	Ramp "S", 25+20														11.7	334.5																	36
36A	Ramp "R", 28+00														4.5	157.0																	36A
37	I-80, 510+00														4.3	198.0																	37
38	I-80, 515+40														13.3	572.5																	38
39	I-80, 526+00														13.6	371.0																	39
40	I-80, 536+50														13.4	520.0																	40
40A	I-80, 555+40														4.1#	168.0#																	40A
41	I-80, 538+00														4.4	198.0																	41
42	I-80, 552+20														13.2	514.0																	42
43	W. 139th. Com., 4+00														1.7	44.0																	43
44	S.R. 17, 175+75														2.6	60.0																	44
45	S.R. 17, 168+90														3.1	150.0																	45
59	S.R. 17, 161+00														3.1	75.0																	59
58	S.R. 17, 165+15														4.4		300																58
PROJECT TOTAL		1	1	1	1	1	1	1	1	1	1	1	3	1				4	29	14							15	15	26	15		1378.0	770
TOTAL														114.9	3922.5	300																	

# Note: For information only. Supplied attached to signs.

\* Note: Sign No. 18 - Sta. 17+50 Ramp "S" to be connected to existing electrical service. Item 625 - Sign Service is to include pull box and all necessary work to provide sign service.

NOTE → # SIGN 40A BY OTHERS





# TRAFFIC CONTROL SUB-SUMMARY

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

160  
346

CUYAHOGA COUNTY  
CUY-480-8.54

621 Pavement Marking														620 Delineators										
Roadway	Station to Station		Side	White						24" Broad Transverse Stripe	Lane Arrow	Yellow		Word on Pavement	12" Chan. Line	Roadway	Station to Station		Side	Interval	C		D	
				4" Edge Line L.F.	4" Lane Line L.F.	6" Lane Line L.F.	6" Center Line L.F.	4" Center Line L.F.	8" Channel Line L.F.			24" Stop Line L.F.	6" Crosswalk Line L.F.								4" Edge Line L.F.	12" Chan. Line L.F.	Post	Bracket
I-80 (E.B.)	476+00	494+87	Rt.	1887		3774									Ramp "R"	26+00	30+00	Lt.	100'					
" "	494+87	499+27	Rt.	880	680	880									" "	31+00	34+00	Lt.	100'	5		4		
" "	499+27	551+47	Rt.	5220	250	15660									" "	35+00	45+00	Lt.	100'		11			
" "	551+47	553+77	Rt.	230		690									" "	45+70	47+80	Lt.	70'		4			
" "	553+77	560+88	Rt.	711		2133									" "	48+80	63+80	Lt.	100'		16			
" "	560+88	566+08	Rt.	1040	260	1560									" "	64+80	65+80	Lt.	100'			2		
" "	566+08	573+50	Rt.	742		2256									" "	66+80	69+80	Lt.	100'		3			
I-80 (W.B.)	476+00	491+28	Lt.	1528		3056									Ramp "S"	24+40	26+00	Rt.	80'		3			
" "	491+28	496+48	Lt.	1040	260	1040									" "	28+00	28+00	Lt.	50'				5	
" "	496+48	513+67	Lt.	1719		3438									" "	28+00	28+80	Lt.	80'				1	
" "	513+67	516+57	Lt.	290	290	580									" "	28+80	35+80	Lt.	100'				7	
" "	516+57	519+67	Lt.	310	310	620									" "	35+80	504+80 (I-80)	Rt.	100'		13			
" "	519+67	535+44	Lt.	1577		4731									Ramp "T"	24+40	29+20	Lt.	80'				7	
" "	535+44	537+11	Lt.	167		501									" "	30+00	33+20	Lt.	80'				5	
" "	537+11	539+19	Lt.	208		624									" "	34+00	42+00	Lt.	80'				4	
" "	539+19	568+50	Lt.	2931		8793									" "	42+00	44+00	Lt.	50'				4	
" "	568+50	573+50	Lt.	1000	300	1500									" "	44+00	46+70	Lt.	30'				9	
" "	476+00	483+00	Lt.												" "	46+70	48+50	Rt.	60'		3			
Ramp "R"	25+12	62+38	Rt.	3726	3726										" "	48+50	487+50 (I-80)	Rt.	100'		10			
Ramp "S"	24+05	25+82	Lt.	177	157										W.150th Ramp	525+85	531+85	Lt.	100'		7			
" "	25+82	37+66	Lt.	1184	1184										" "	532+85	534+85	Lt.	100'			3		
Ramp "T"	23+94	24+94	Lt.	100											" "	535+85	538+25	Lt.	80'		4			
" "	24+94	25+90	Lt.	96											" "	538+25	542+25	Lt.	100'		4			
" "	25+90	46+58	Lt.	2068											Ramp "BR-1"	545+50 (I-80)	553+50	Rt.	100'		9			
" "	46+58	48+58	Lt.	200											" "	553+50	554+50	Lt.	100'				2	
W.150th St.	10+27	10+86	R/L												" "	554+50	555+10	Lt.	60'				1	
W.150th Ramp	524+70	527+25	R/L	255	106										" "	555+10	557+50	Lt.	30'				8	
" "	527+25	535+44	Rt.	819											" "	557+50	5+40 (W.139)	Rt.	60'		2			
Access Rd. "C"	0+70	9+00	Lt.												W.139th Conn.	3+40	5+40	Lt.	100'		2			
Ramp BR-1	551+47	553+77	Lt.	230											" "	3+50	5+50	Rt.	100'		3			
" "	553+77	558+24	Lt.	447											Ramp "BR-2"	5+50 (W.139)	556+10	Rt.	60'		1			
Ramp BR-2	555+22	560+88	Lt.	566											" "	556+10	559+10	Lt.	30'				11	
W.139th Conn.	2+76	5+22	Lt.	246	244										" "	559+10	559+70	Rt.	60'		2			
" "	3+56	5+22	Rt.	166											" "	559+70	570+70 (I-80)	Rt.	100'		11			
W.139th St.	1+70	1+84	R/L												I-80 (W.B.)	563+50	573+50 (W-1)	Lt.	100'		11			
Brookpark Rd.	166+67	168+95	R/L			510																		
" "	168+95	173+25	R/L			330																		
" "	163+50	166+67	Rt.			317																		
" "	168+68	169+22	Rt.																					
<b>Project Total</b>				31,760	7767	52,993	830	330	3,862	231	90													

**ITEM 621 - Pavement Marking**

4" Edge Lines : - 60,937 L.F. ÷ 5,280 = 11.54 Miles

4" Lane Lines : - 7,767 L.F. ÷ 5280 = 1.47 Miles

6" Lane Lines : - 52,993 L.F. ÷ 5280 = 10.04 Miles

6" Centerline : - 830 L.F. ÷ 5280 = 0.16 Miles

4" Centerline : - 330 L.F. ÷ 5280 = 0.06 Miles

INTERIM										Concrete Barriers Type A, Mod. As Per Plan
Station to Station	Side	Interval	Interim 4" Edge Line	Signs Erected Flat Sheet	Interim Steel Drive Post 4 Lbs 1 Ft.	Interim Delineator As Per Plan				
L.F.	Sq.Ft.	L.F.	Ea.	L.F.	Ea.	L.F.	Ea.	L.F.	Ea.	
I-80 Sta. 534+20 to 553+77	Rt.	125'								
I-80 Sta. 534+00 to 552+00	Rt.	1,800								
I-80 Sta. 534+00 to 553+77	Rt.		81.25		144					
I-80 Sta. 534+50 to 551+80	Rt.					11				
<b>Project Total</b>			1,800	81.25	144	11			1960	

\* These items included in lump sum for 614.  
For additional Items included with 614 see sheet no. 175.

Rev. 4-12-78  
Rev. D.R.S. 10-13-77

This item carried to Pavement General Summary Sheet No. 13.

# TRAFFIC CONTROL NOTES

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

161  
346

CUYAHOGA COUNTY  
CUY - 480 - 854

## 844 INTERNALLY ILLUMINATED SIGNS

The case of the internally illuminated signs shall be formed from aluminum extrusions F-16 and alloy 6063-T5 with minimum wall, corner and joint thickness of 0.100 inch.

The sign faces shall be 36" high and 30" wide of 0.125 inch white translucent plexiglass with legend on the face using black acrylic paint and protected by a sprayed coat of clear acrylic. The legend on sign faces shall correspond to the information shown in the plans. The State shall furnish the successful bidder full-size drawings of the sign faces from which the Contractor shall prepare and submit shop drawings to the Director for approval prior to the fabrication of the sign faces. The plexiglass sign face and back panel shall slide out from either the bottom or one side of the sign and be retained by angles or other locking devices held in place by simple thumb machine bolts. Interior illumination shall be provided by four, equally spaced, vertically mounted type F36T12/CW Fluorescent lamps guaranteed for 7500 hours of operation and fired by one four-lamp ballast, 425 MA 90% power factor corrected, Underwriter's approved, 120 volt 60 cycle line current and 1.6 ampere load. The line side of the ballast shall be protected by a 5-ampere replaceable fuse. All electrical components shall be mounted in the interior and none shall be mounted on the bottom panel.

The top center balance point of sign shall be provided with a waterproof 1-1/2" internally threaded hub complete with locking fitting.

A barrier type terminal block shall be provided for internal and field wiring.

The sign shall be convertible from single to double sign face type by inserting either a plexiglass sign face or replaceable metal panel 0.125" thick, 36" high, 30" wide in the back section of sign.

All nuts, bolts and miscellaneous hardware shall be 18-8 stainless steel.

All aluminum used in this assembly shall be cleaned and treated as per U.S. Army Specification 72-51 as amended and MIL Spec. C-5441. The sign assembly shall be painted in accordance with the following requirements.

1st Coat all Surfaces: Zinc Chromate Primer - MIL P-6889 A.  
2nd and 3rd Coats on Inside Surfaces: Flat Template White, Alkyd Urea White Baked Enamel, MIL Spec. 5557.  
2nd and 3rd Coats on Outside Surfaces: Alkyd Urea Federal Yellow Baking Enamel Federal Spec. TT-E-4896 13538

Stainless steel components shall not be painted.

Balance adjustors shall be installed if necessary to maintain the illuminated signs in a vertical position.

The assembly shall consist of the following major components:

1. Disconnect Hanger
2. 1-1/2" Service Entrance Head
3. 1-1/2" Galvanized Conduit Drop Pipe (Variable Length)
4. Two 1-1/2" Galvanized Conduit Lock Nuts
5. One single-face interior illuminated 30" wide x 36" high sign complete with fluorescent tubes and proper legend on face.
6. All other miscellaneous items required to make the installation complete.
7. Disconnect switch mounted in controller cabinet

Payment for Item 844, Internally Illuminated Sign will be made at the Contract unit price each, completely assembled, mounted in place, tested and accepted.

## 844 GROUND MOUNTED SUPPORT No.6 POST, AS PER PLAN

This item shall consist of the furnishing, assembly and installation of two (2) #3 posts (No.6 post) in combination with a square welded or seamless tubular post extension spliced to the top of the No.6 post. Details are shown on Std. Dwg. TC-41.50.

Square tubular post material shall conform to A.S.T.M. A 570 grade B

Work shall include all labor, materials, equipment, tools, and hardware necessary to perform the required item of work.

Basis of payment shall be for 844 Ground Mounted Support No.6 Post per linear foot measured by the total overall length of combination.

## 844 SIGNS FURNISHED BY THE STATE

The Contractor shall submit, in triplicate, a schedule for sign erection to the Engineer at least 120 calendar days prior to the start of any scheduled erection work. The schedule shall include proposed dates, sign numbers and delivery point. The Engineer will furnish copies of the schedule to the district traffic Engineer and to the Engineer of design services, 25 South Front Street, Columbus, Ohio 43215.

## 844 MILE MARKER LOCATION

The locations shown in the plans for mile markers are approximate. The bureau of transportation technical services will locate the longitudinal position of the mile markers by a paint mark on the completed pavement edge. On divided highways only one pavement edge will be marked. Markers for the opposite direction shall be set across from those on the marked edge. The Contractor shall notify the Project Engineer 30 days in advance of the planned marker installation. The Project Engineer will then notify the bureau of transportation technical services. Any delineator within 50 feet of a mile marker shall be omitted.

## BALLASTS

In addition to the requirements of 844.10, ballasts for mercury vapor luminaires shall be located within the luminaire housing or contained in a weatherproof housing contiguous to the luminaire.

## 844 PADLOCKS AND KEYS

Padlocks furnished shall be either brass or bronze padlocks equal to master No.4 BKA or Wilson Bohannon 660 and shall be keyed in accordance with 844.10.

Payment will be included in the price bid for each item 844 overhead sign support, by type.

## 844 SPAN WIRE MOUNTED SIGN ATTACHMENT

This work shall consist of the furnishing and installation of span wire hanger and sign hanger brace as detailed on sheet 176.

Basis of payment will be at the contract bid price per each, 844 Span wire mounted sign attachment, which price will include all labor, material, equipment and incidentals necessary to perform the required work.

## 844 DRIVE POSTS

Drive posts shall be steel in accordance with 712.20.

## 844 INTERIM COVERING FOR SIGNS

In addition to the 1378 Sq.Ft. referred to in the plans, an additional quantity of 200 Sq.Ft. for Item 844, Interim Covering for Signs, have been included to cover signs, as directed by the Engineer.

## Maintenance of New Or Temporary Traffic Signal Installations

The Contractor shall be responsible for the maintenance of each traffic signal he has in part or fully constructed until such time as the testing requirements are satisfied and the signal installation is completed and accepted by the Engineer.

The Contractor shall correct as quickly as possible all outages or malfunctions. He shall provide the city and the Engineer such addresses and phone numbers where his maintenance forces are located. The Contractor shall provide one or more persons to receive all calls and dispatch the necessary maintenance forces to correct outages. Such a person or persons may be used to perform other duties as long as prompt attention is given to trouble calls. All lamp outages, cables outages, electrical faults, equipment malfunctions, and misaligned signal heads shall be corrected to the satisfaction of the Engineer with the signal back in service within four hours after the Contractor's notification of outage.

In the event new signals are damaged prior to acceptance, all damaged equipment, except poles and control equipment, shall be replaced by the Contractor to the satisfaction of the Engineer, with the signal back in service within 8 hours after the Contractor notification of the outage.

All poles and control equipment which are damaged and which must be replaced shall be replaced by the Contractor to the satisfaction of the Engineer with the signal back in service within 8 hours after the Contractor's notification of the outage.

None of the above shall be constructed as collective or consecutive outage time at any one location then the allotted time limit shall be for the worst single outage.

Where outages are the direct result of a vehicular accident, the responsibility of the Contractor shall be as outlined above. The Contractor shall be responsible for collection or compensation for this work from those parties responsible for the damage.

Where the Contractor has failed to or cannot respond to an outage or signal equipment at those locations within his responsibility, within periods as specified above, the engineer may invoke the provisions of section 105.15 and any subsequent billings to the state from the city of Cleveland for Police service and maintenance by city forces shall be deducted from monies due or about to become due to the contractor in accordance with provisions of Section 105.15.

The Contractor shall provide maintenance service in one or more of the following manners:

1. 7:00 A.M. - 7:00 P.M. With the city providing coverage from 7:00 P.M. - 7:00 A.M. at the Contractor's expense, as previously provided herein.
2. 24 hour service by the Contractor.
3. Complete city maintenance at the Contractor's expense, as previously provided herein.

The Contractor shall indicate the manner in which he proposes to provide the above service.

The Contractor shall be responsible for any damage to any traffic signal components required to be handled during the relocation of poles and revisions to the signal systems.

This item shall be considered a subsidiary work item and the cost thereof included in the price bid for the respective traffic signal bid items.

FED RD DIVISION	STATE	PROJECT	
5	OHIO		

162  
346

CUYAHOGA COUNTY  
CUY-480-8.54

844-5 OVERHEAD SIGN SUPPORTS REMOVED FOR STORAGE

SUPPORTS OF THE OVERHEAD MOUNTED SIGN TYPE SHALL BE REMOVED WHERE INDICATED ON THE PLANS. BEFORE REMOVAL, CONNECTING PARTS IN FIELD CONNECTIONS SHALL BE MATCH MARKED TO THE SATISFACTION OF THE ENGINEER, AND A DIAGRAM SHOWING SUCH MARKING PREPARED FOR THE ENGINEER. THE SUPPORT SHALL THEN BE CAREFULLY DISMANTLED, REMOVED, AND STORED ON THE PROJECT FOR REMOVAL BY THE DEPARTMENT. SUPPORT FOUNDATIONS SHALL BE REMOVED TO AT LEAST ONE FOOT BELOW GROUNDLINE WITH BACKFILLING, RESTORATION OF SURFACES AND DISPOSAL OF SURPLUS MATERIAL IN ACCORDANCE WITH 603.09. SEPARATE WORK ITEMS WILL BE USED FOR REMOVAL OF OVERHEAD MOUNTED SIGNS AND SIGN LIGHTING ITEMS.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH SUPPORT REMOVED AND STORED

844 OVERHEAD SIGN REMOVED FOR DISPOSAL

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE SIGN, SIGN BRACKETS, FIXTURES SUPPORT ARMS AND OTHER HARDWARE & WIRING FROM THE SIGN SUPPORT. MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR

PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE PER EACH SIGN RECOMMENDED AND DISPOSED OF.

844 OVERHEAD SIGN LUMINAIRE MOUNTING ASSEMBLY

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING THE SIGN BRACKETS, FIXTURE SUPPORTS, AND OTHER HARDWARE NEEDED TO MOUNT A SIGN ON EXISTING OVERHEAD SIGN SUPPORT.

PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE PER EACH ASSEMBLY FURNISHED AND INSTALLED.

ALTERNATE DESIGNS FOR SIGN SUPPORTS

IF THE CONTRACTOR DESIRES TO FURNISH ALTERNATE DESIGNS OR MATERIALS FOR SIGN SUPPORTS THE ALTERNATE DESIGNS MUST BE SUBMITTED TO THE STATE AT LEAST 21 DAYS PRIOR TO OPENING OF BIDS. THE BIDDER WILL BE NOTIFIED AS TO ACCEPTANCE OR REJECTION OF ALTERNATE DESIGN AT LEAST 7 DAYS BEFORE BIDS ARE TO BE OPENED. SUBMISSIONS SHALL BE MADE TO OHIO DEPARTMENT OF TRANSPORTATION, BUREAU OF DESIGN SERVICES, 25 SOUTH FRONT STREET, COLUMBUS, OHIO, 43215.

PULL BOX - TYPE "A"

24 INCH X 12 INCH REINFORCED CONCRETE PULL BOXES SHALL BE PROVIDED WHERE SHOWN ON THE PLANS. THE CONSTRUCTION OF BOXES, DRAINS, REINFORCING, DUCT SLOTS, HANDLES, COVERS AND OPENINGS SHALL BE AS SHOWN IN THE PLANS. BOXES MAY BE PRECAST OR CAST-IN-PLACE. THE WALLS SHALL BE COMPOSED OF MONOLITHIC CONCRETE.

THE TOP OF THE BOX SHALL HAVE PROVISION FOR A FLUSH COVER AND THE INTERIOR SURFACES SHALL BE SMOOTH AND FREE FROM OBSTRUCTIONS AND ROUGH OR FLAKY AREAS. ALL ENTERING CONDUIT SLEEVES SHALL BE CAST OR GROUTED IN PLACE. CABLE DUCT HOLES NOT USED SHALL BE SEALED WITH GROUT OR MORTAR AS DIRECTED BY THE ENGINEER. THE BOTTOM OF THE BOX SHALL BE OPEN AND PLACED ON AN AGGREGATE DRAIN, IN ACCORDANCE WITH SECTION 605.05, FROM THE PULL BOX TO THE PIPE UNDERDRAIN OR SHOULDER.

REINFORCING STEEL SHALL BE NO. 4 BARS AS PER PLAN. BOXES SHALL BE CLASS "C" CONCRETE CONFORMING WITH SECTION 511.03 OF THE STANDARD SPECIFICATIONS, AND SHALL BE SEATED WITH LESS THAN 0.5 INCH TOTAL CLEARANCE EACH WAY.

PAYMENT FOR ITEM 625 "PULL BOX - TYPE "A", AS PER PLAN, WILL BE MADE AT THE CONTRACT UNIT PRICE PER BOX, FURNISHED IN PLACE, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL REQUIRED MATERIALS, INCLUDING EXCAVATION, FORMS, CONCRETE, REINFORCING STEEL, COVER, IMPRESSED "SIGNAL" ON COVER OF PULL BOXES, HANDLE, GROUTING CONDUITS, AGGREGATE DRAIN TO UNDERDRAIN OR TO SHOULDER, REMOVAL OF WASTE, AND ALL OTHER INCIDENTALS.

625 POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM THE CLEVELAND ELECTRIC ILLUMINATING COMPANY AT THE LOCATION SHOWN ON THE PLANS. THE VOLTAGE SUPPLIED SHALL BE 120/240 VOLTS.

ALL NECESSARY WORK TO INSTALL A COMPLETE OPERATIVE SYSTEM WILL BE INCLUDED IN THE VARIOUS ELECTRICAL BID ITEMS IN THIS CONTRACT.

TRAFFIC SIGNAL CONTROLLERS AND CABINETS

IN ADDITION TO THE REQUIREMENTS OF 843, TRAFFIC SIGNAL CONTROLLERS SHALL HAVE THE FOLLOWING FEATURES:

- 1) LIGHTING ARRESTORS SHALL BE OF THE TYPE WHICH IS REPLACEABLE WITH A STANDARD FUSE PULLER.
- 2) THE FLASHING FEATURE SHALL BE AVAILABLE WHEN THE TIMER IS REMOVED FROM THE CABINET.
- 3) A POLICE PANEL SHALL BE PROVIDED. THE PANEL SHALL HAVE SWITCHES TO TURN THE SIGNAL LIGHTS ON OR OFF OR TO FLASHING OPERATION.
- 4) CABINET SHALL HAVE A 15 AMP DUPLEX CONVENIENCE OUTLET INSIDE.
- 5) A SEPARATE 15 AMP CIRCUIT SHALL BE PROVIDED FOR INTERNALLY ILLUMINATED SIGNS WHEN SUCH SIGNS ARE INSTALLED AS PART OF THE SIGNAL SYSTEM.

TRAFFIC SIGNAL EQUIPMENT APPROVALS

IN ADDITION TO THE REQUIREMENTS OF 842 AND 843, THE CONTRACTOR SHALL SUBMIT THREE ADDITIONAL SETS OF THE SCHEDULE OF MATERIALS (i.e. CATALOG CUTS, DIAGRAMS, DRAWINGS, DATA SHEETS, ETC.) TO THE ENGINEER WHO SHALL FORWARD SOME TO THE CITY OF CLEVELAND, DIVISION OF TRAFFIC & PARKING. THE ENGINEER SHALL OBTAIN THE CITY'S COMMENTS WHEN APPROVING THE MATERIALS FOR USE IN THE PROJECT.

IN ADDITION THE CONTRACTOR SHALL SUPPLY TO THE ENGINEER WHO SHALL FORWARD TO THE CITY RECORD PRINTS OF WIRING DIAGRAMS, EQUIPMENT PARTS LISTS ETC. AS REQUIRED TO COMPLETELY DESCRIBE THE EQUIPMENT INSTALLED FOR THE PURPOSE OF TROUBLE SHOOTING AND MAINTAINING SAME AFTER THE PROJECT IS COMPLETED.

614 MAINTENANCE OF EXISTING SIGNAL INSTALLATION

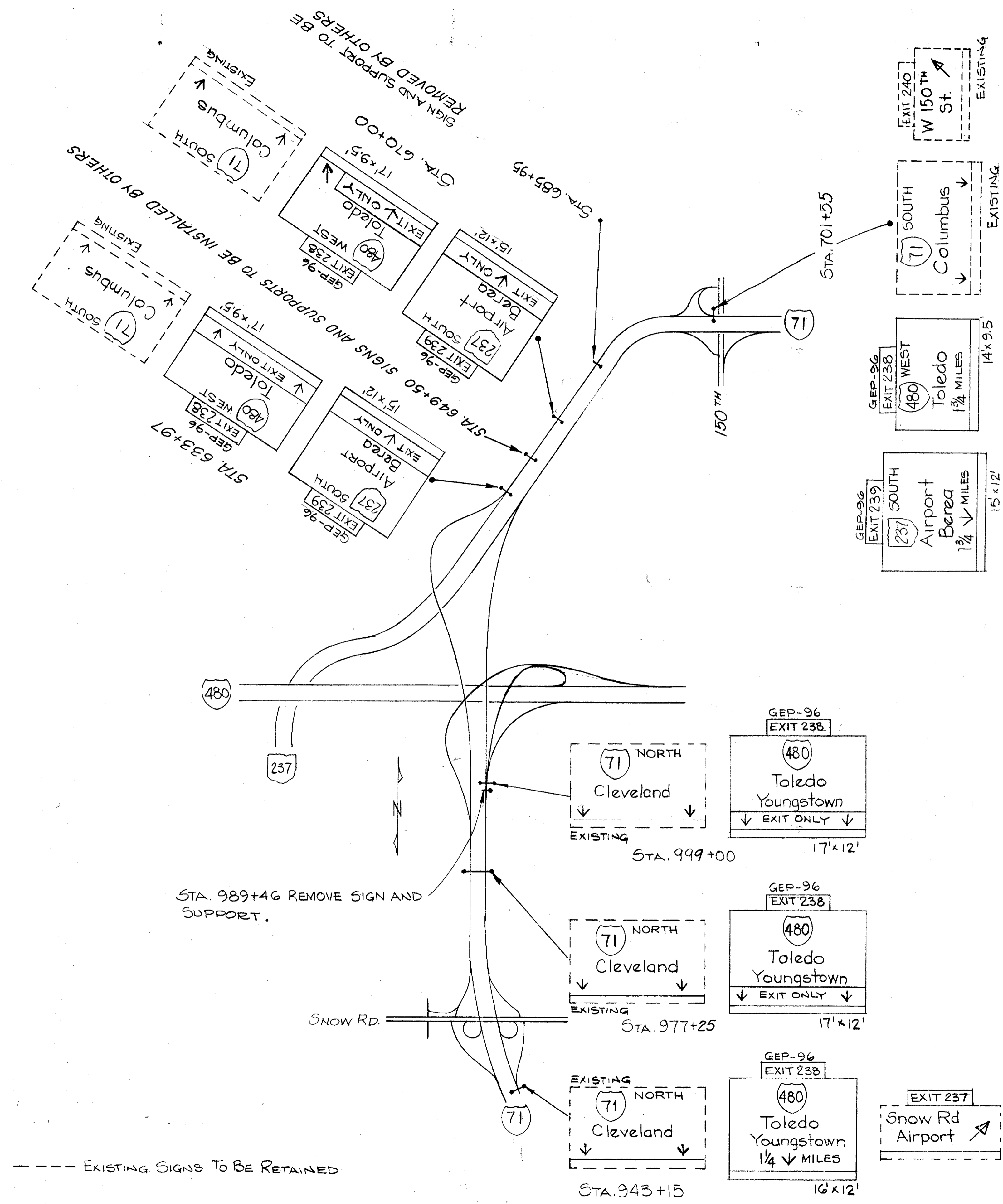
THE EXISTING TRAFFIC SIGNAL(S) SHALL BE KEPT IN OPERATION UNTIL THE NEW SIGNAL IS OPERATIONAL. IF EXISTING ITEMS ARE TO BE INCORPORATED INTO THE NEW SIGNAL, SUCH ITEMS SHALL NOT BE REMOVED AND REINSTALLED UNTIL ALL OTHER NEW WORK WHICH CAN BE DONE PRIOR TO THE RELOCATION WORK IS COMPLETED. AT THIS TIME, THE EXISTING SIGNAL MAY BE TURNED OFF AND THE REMAINING WORK COMPLETED. SIGNAL HEADS SHALL BE COVERED WHEN NOT IN OPERATION AND TRAFFIC MAINTAINED AT THE INTERSECTION THROUGH THE USE OF STOP SIGNS.

SIGNAL CONTROL OF THE INTERSECTION SHALL NOT BE INTERRUPTED DURING THE HOURS OF 6:00 AM TO 9:00 AM AND 3:00 PM TO 6:00 PM ON WEEKDAYS. SIGNALS SHALL BE INOPERATIVE NO LONGER THAN SIX HOURS.

PAYMENT WILL BE INCLUDED IN THE LUMP SUM PRICE BID FOR 614, MAINTENANCE OF TRAFFIC.

signal cable

Signal cable shall have stranded conductors

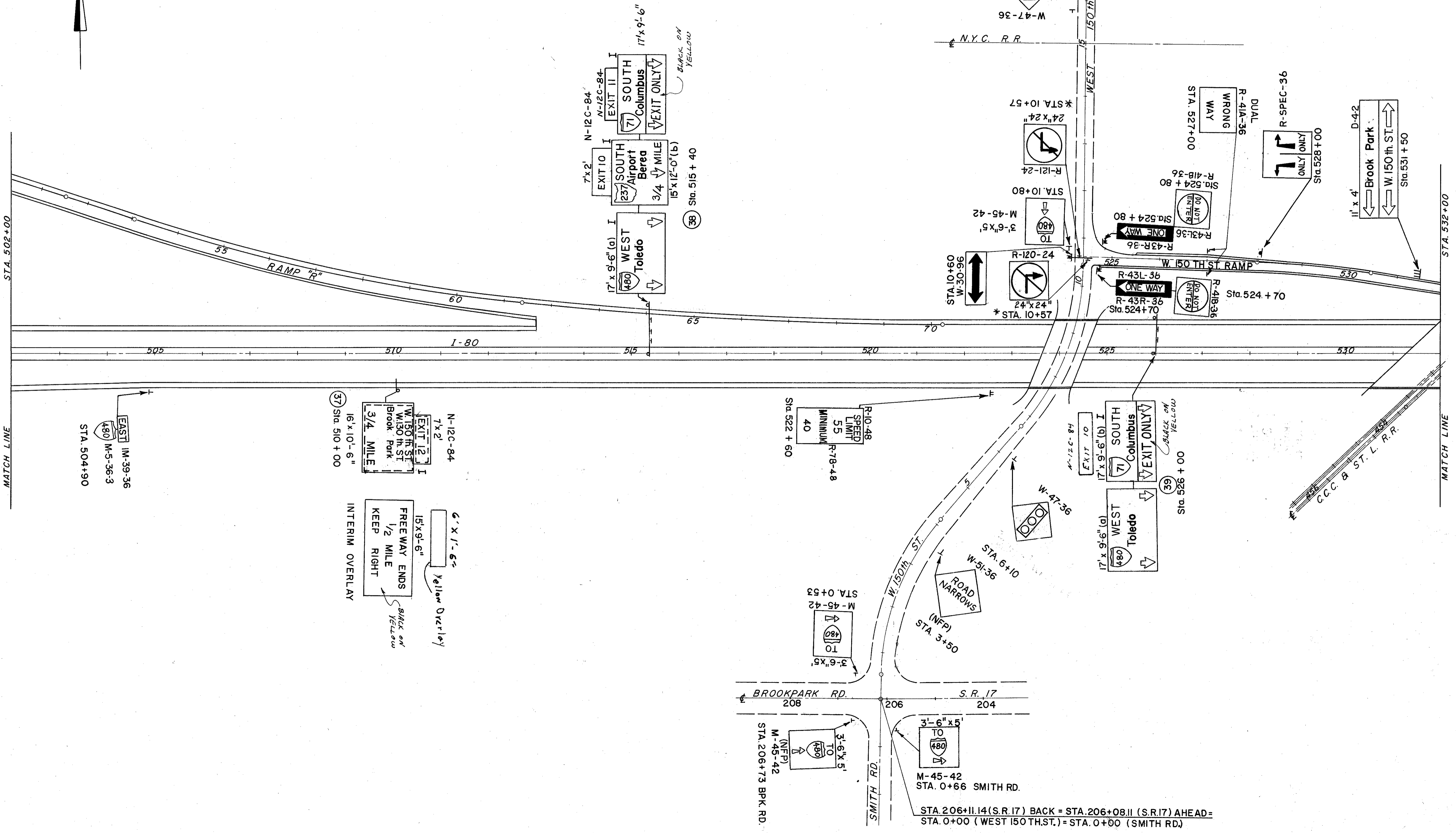
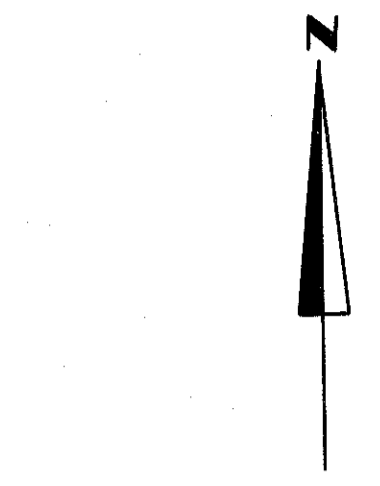


STATION	202 OVERHEAD SIGN, REMOVED FOR DISPOSAL	202 OVERHEAD SIGN SUPPORT, REMOVED FOR STORAGE	844 OVERHEAD SIGN AND LUMINAIRE MOUNTING ASSEMBLY	844 SIGNS ERECTED, EXTRU-SHEET	844 MERCURY VAPOR LUMINAIRE WITH 175 WATT LAMP	844 MERCURY VAPOR LUMINAIRE WITH 250 WATT LAMP	844 BALLAST, CMRI-175-480V	844 BALLAST, CMRI-250-480V	844 SIGN WIRED
	EACH	EACH	EACH	SQ. FT.	EACH	EACH	EACH	EACH	EACH
NB-71									
943+15			1	224		2		2	1
977+25	1		1	237		2		2	1
989+46	1	1							
999+00			1	237		2		2	1
SB-71									
701+55	1		2	374	2	2	2	2	2
670+00	1		2	406	2	2	2	2	2
633+97	1		2	406	2	2	2	2	2
PROJECT TOTAL	5	1	9	1884	6	12	6	12	9



CUYAHOGA COUNTY  
CUY-480-8.54

\* Note: R-120-24 & R-121-24 are Single Face Internally Illuminated Signs.

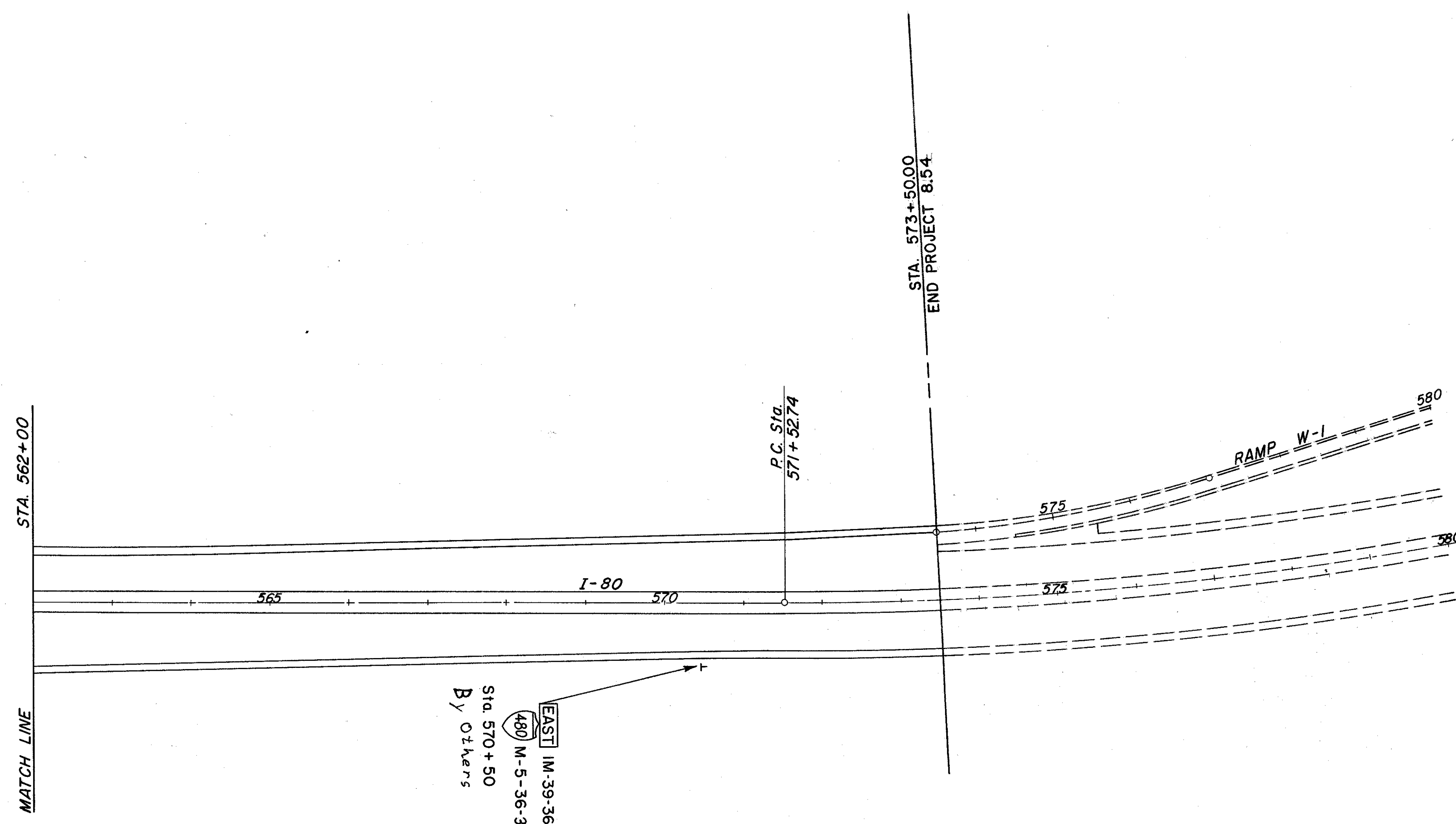




FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

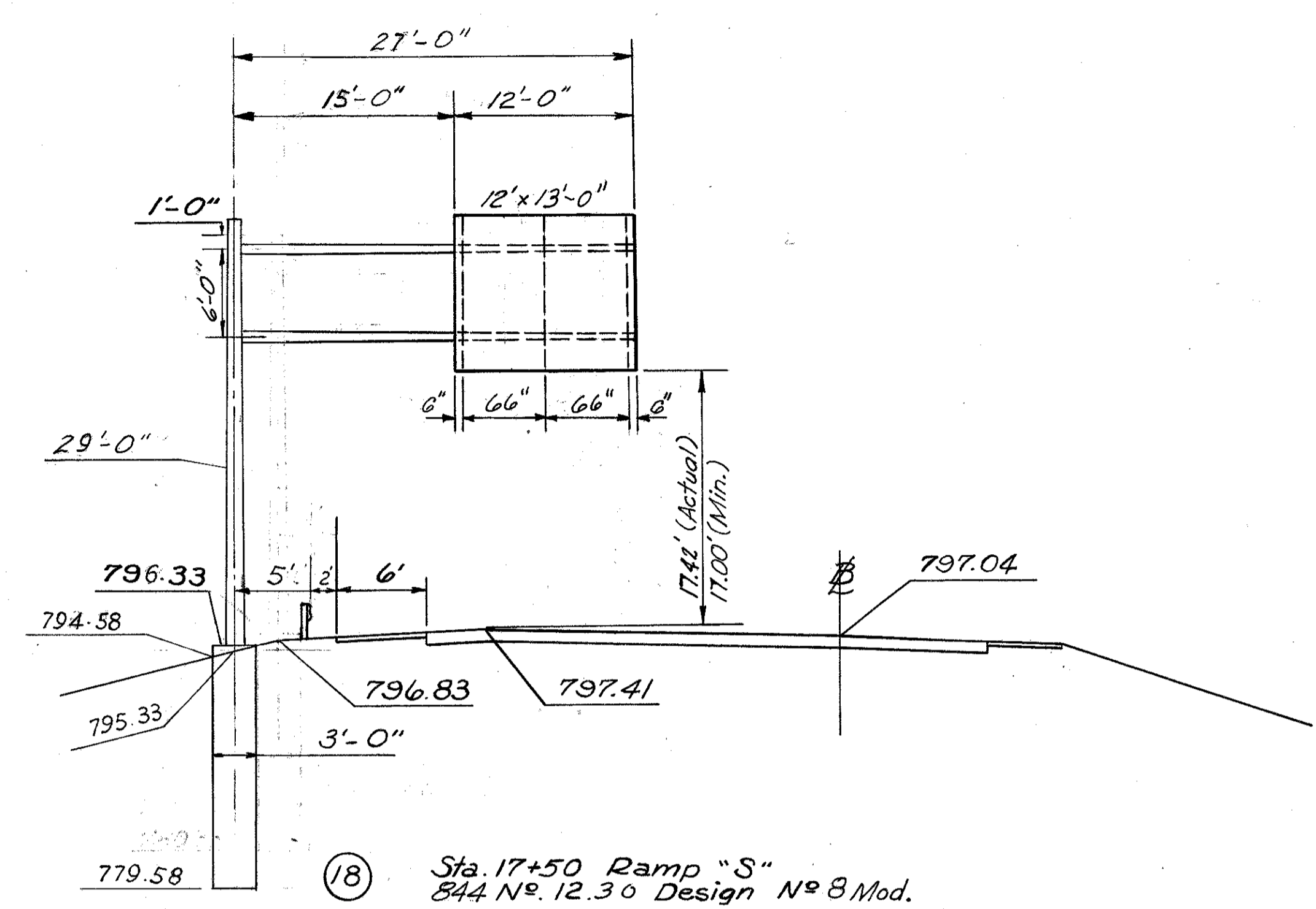
168  
346

CUYAHOGA COUNTY  
CUY-480-8.54

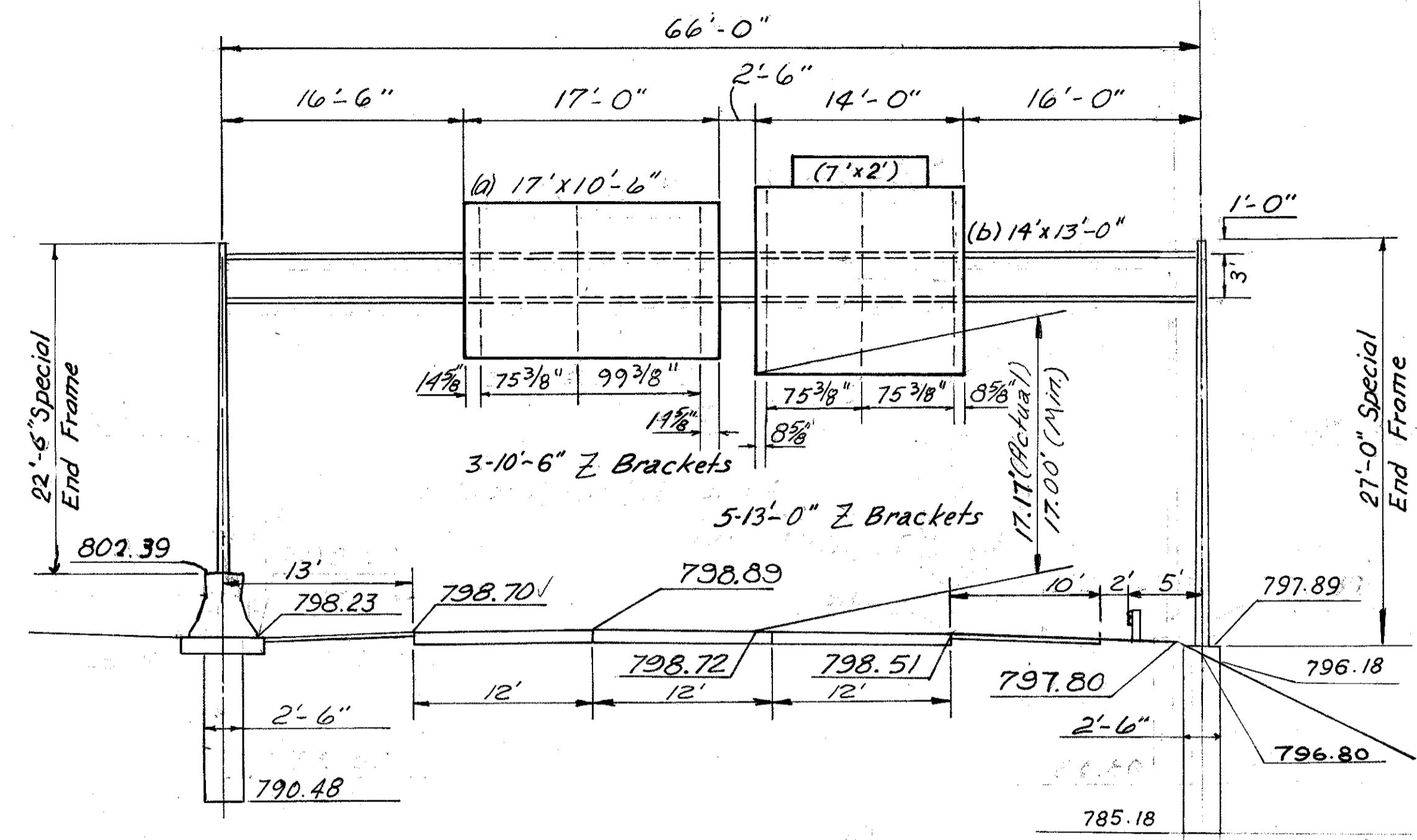




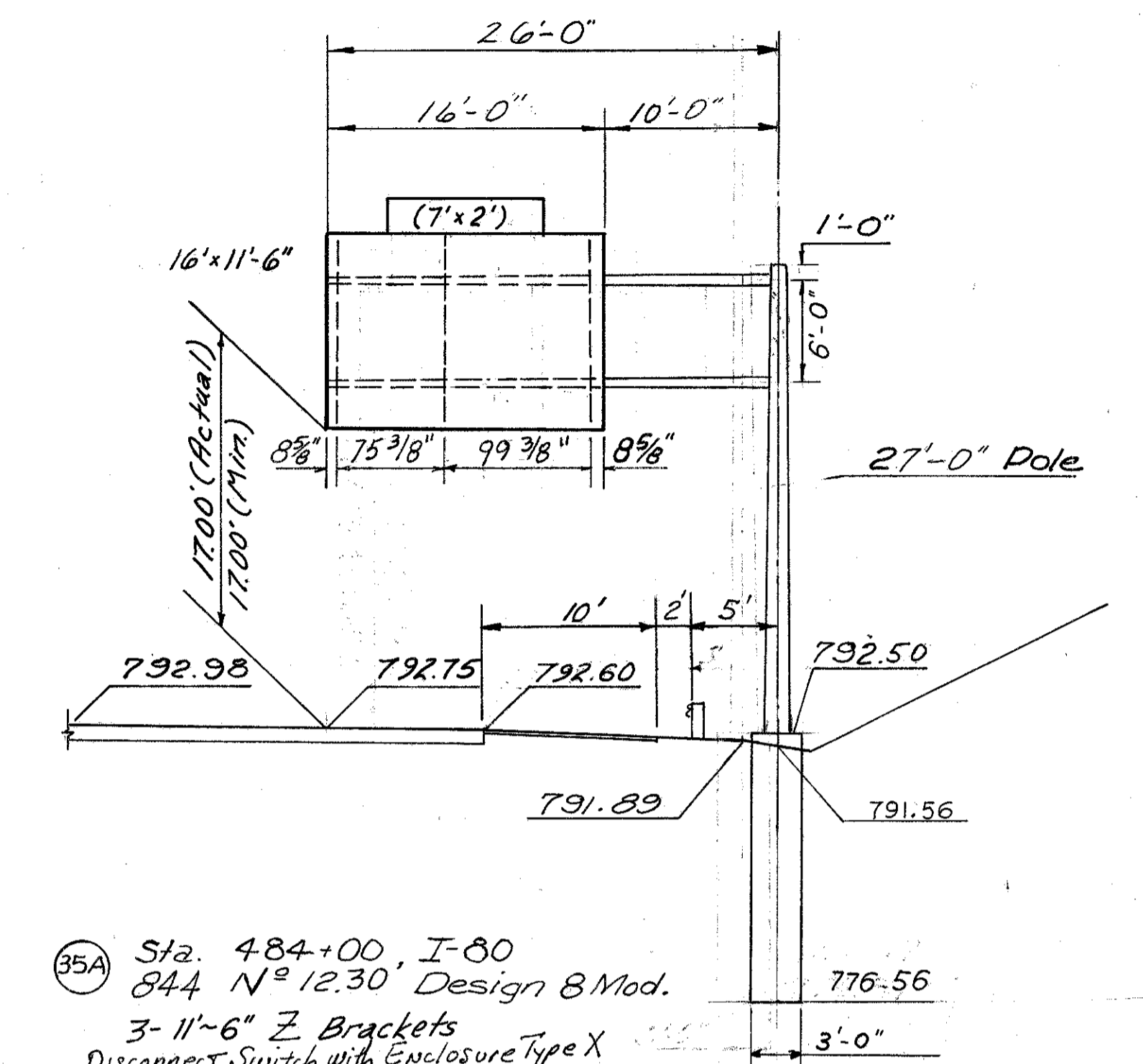
CUYAHOGA COUNTY  
CUY-480-8.54



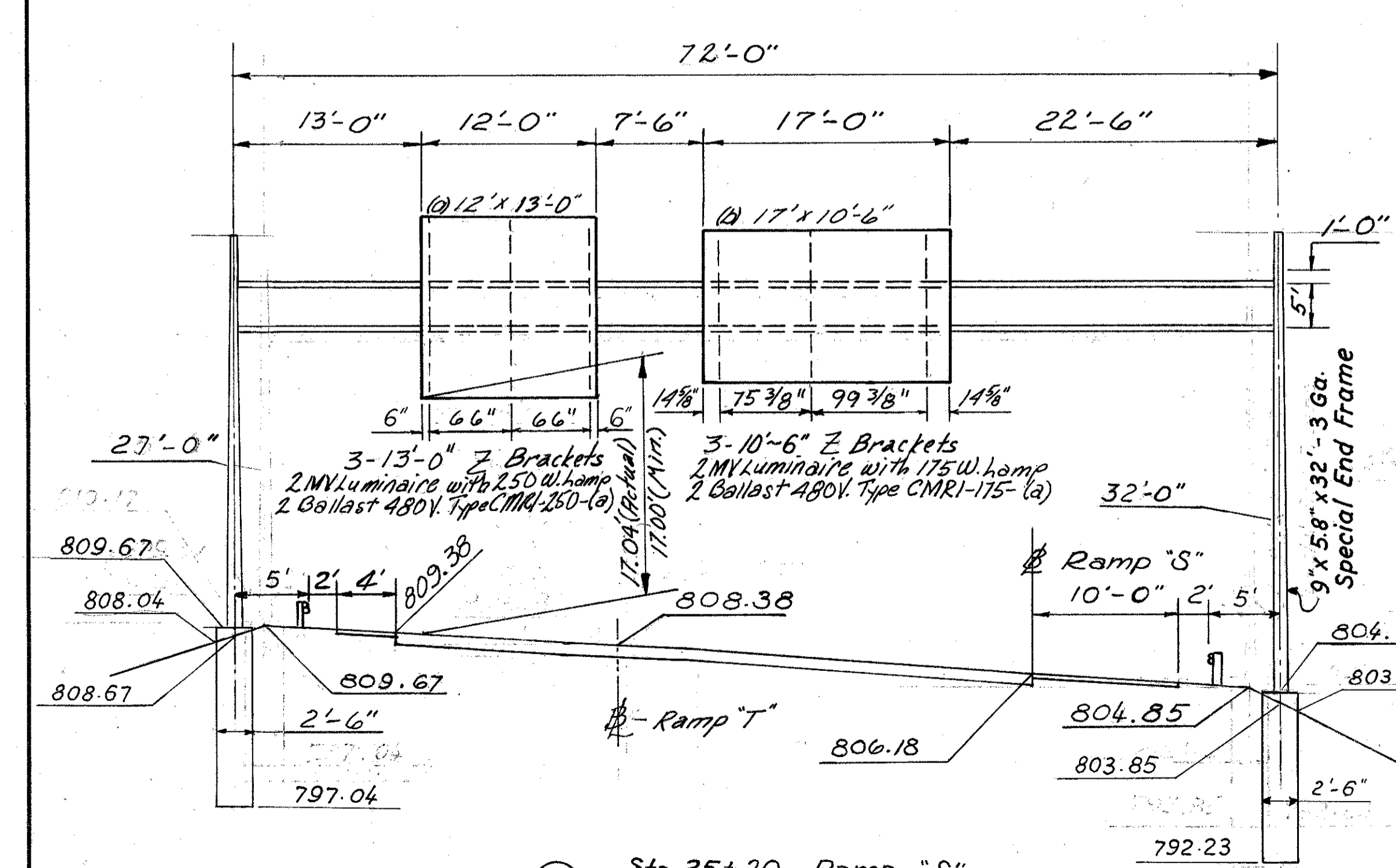
18 Sta. 17+50 Ramp "S"  
844 N<sup>o</sup> 12.30 Design N<sup>o</sup> 8 Mod.  
3-13'-0" Z Brackets  
Disconnect Switch with Enclosure Type X  
2 MV Luminaire with 250 W. Lamp  
2 Ballast 480V. Type CMRI-250-(a)



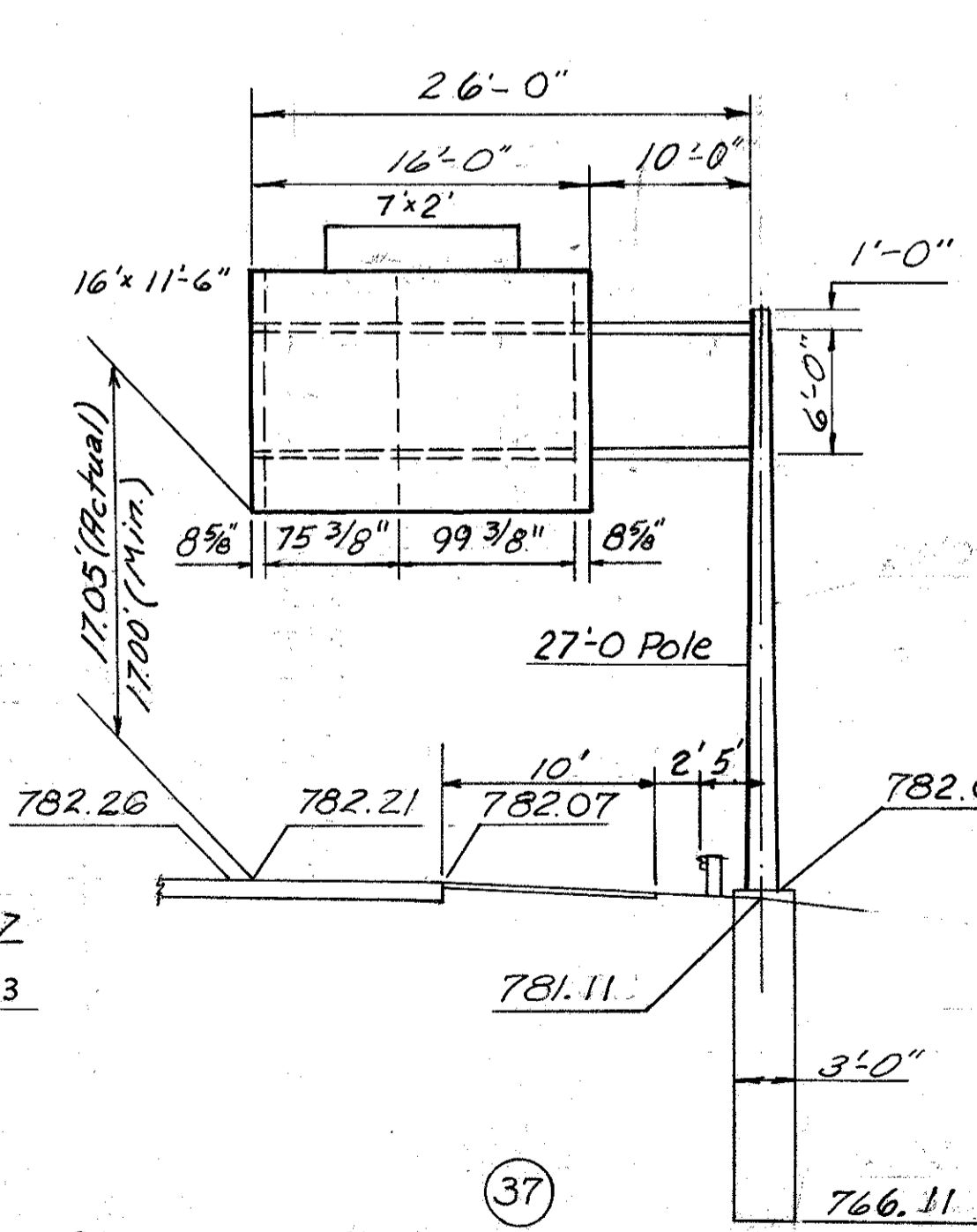
35 Sta. 481+00 I-480  
844 N<sup>o</sup> 7.65 Design 6 Mod.  
Disconnect Switch with Enclosure Type X  
2 MV Luminaire with 175 W. Lamp  
2 MV Luminaire with 250 W. Lamp  
2 Ballast 480V. Type CMRI-175-(a)  
2 Ballast 480V. Type CMRI-250-(a)



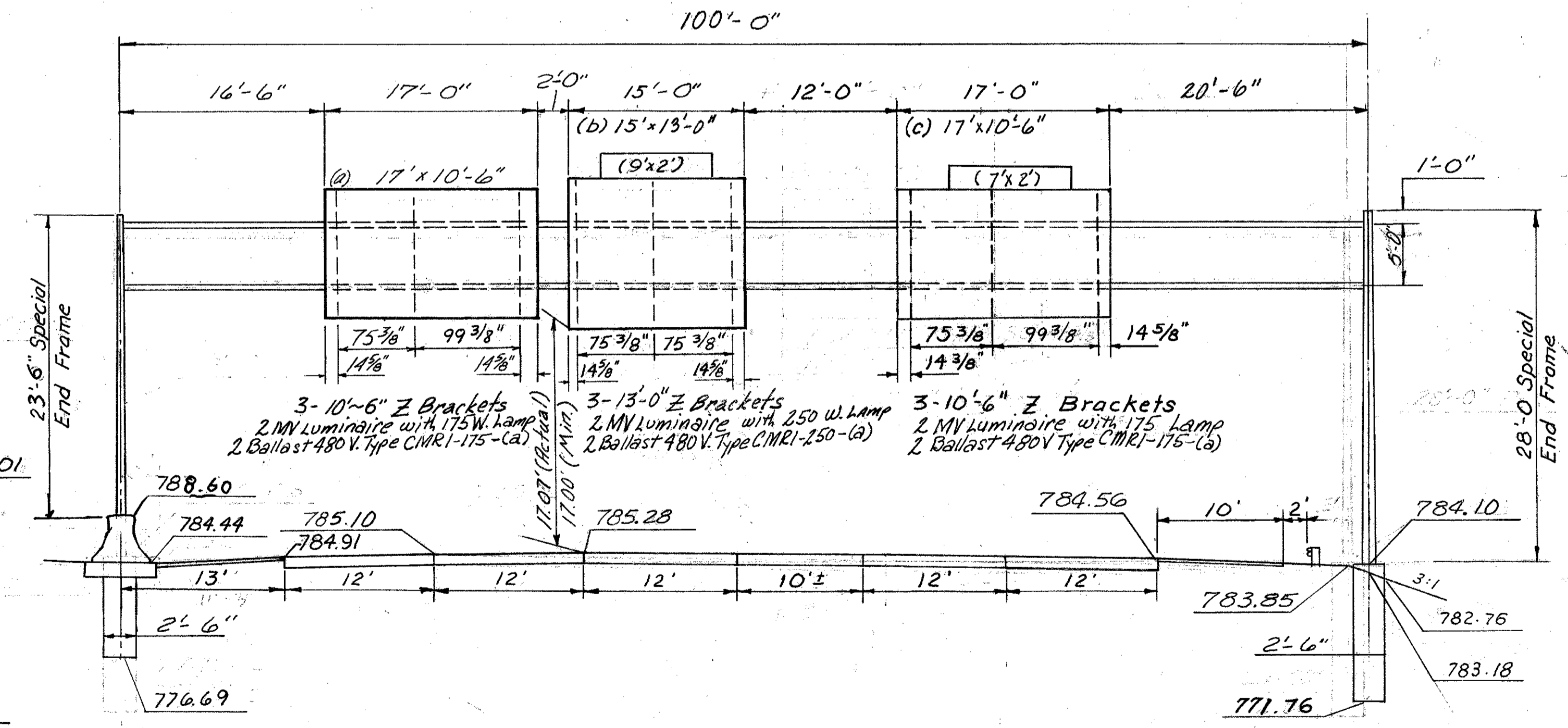
35A Sta. 484+00 I-80  
844 N<sup>o</sup> 12.30 Design 8 Mod.  
3-11'-6" Z Brackets  
Disconnect Switch with Enclosure Type X  
2 MV Luminaire with 250 W. Lamp  
2 Ballast 480V. Type CMRI-250-(a)



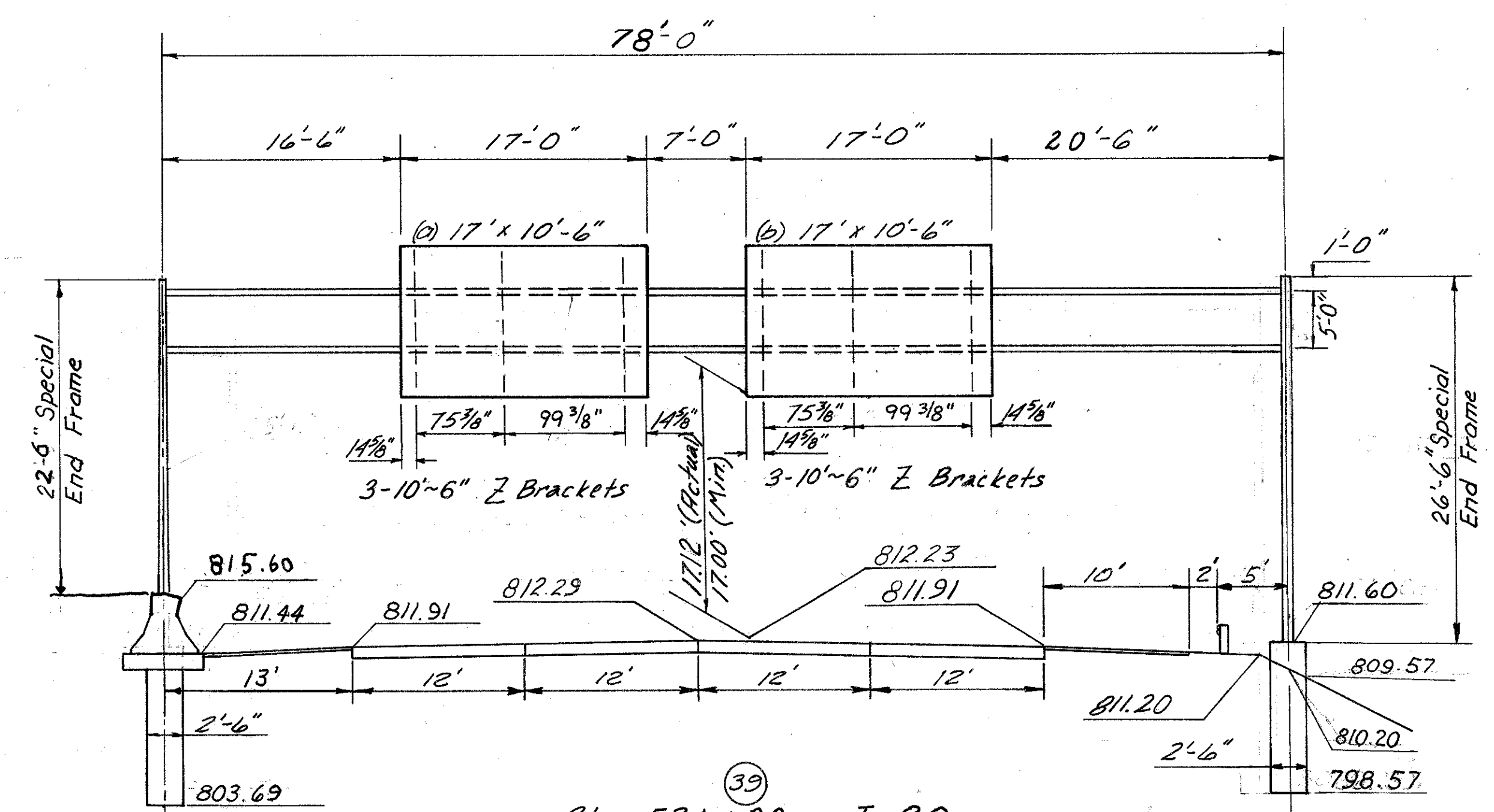
36 Sta. 25+20 Ramp "S"  
844 N<sup>o</sup> 7.65 Design N<sup>o</sup> 8 Mod.



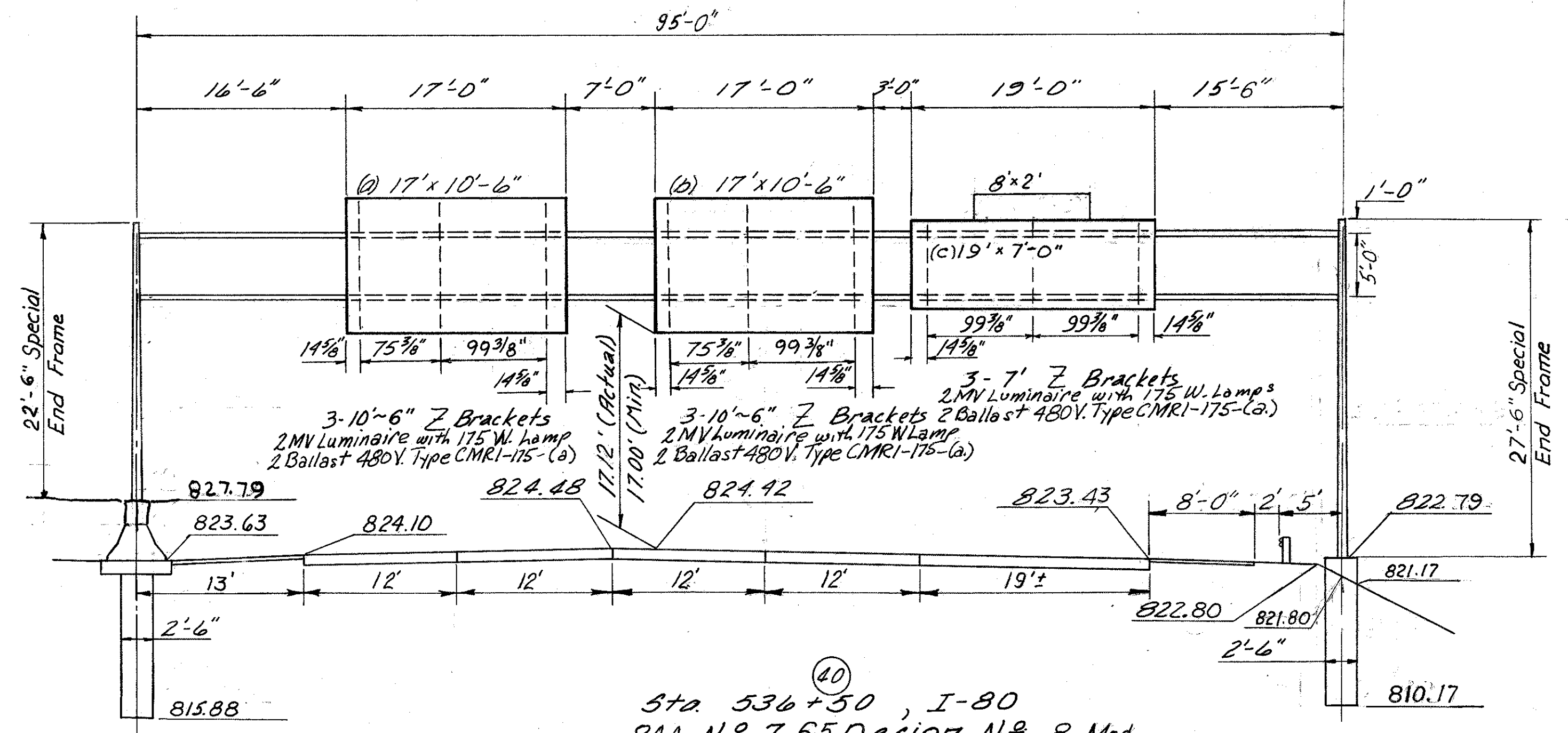
37 Sta. 510+00 I-80  
844 N<sup>o</sup> 12.30 Design N<sup>o</sup> 8 Mod.  
3-11'-6" Z Brackets  
Disconnect Switch Enclosure Type X  
2 MV Luminaire with 250 W. Lamp  
2 Ballast 480V. Type CMRI-250-(a)



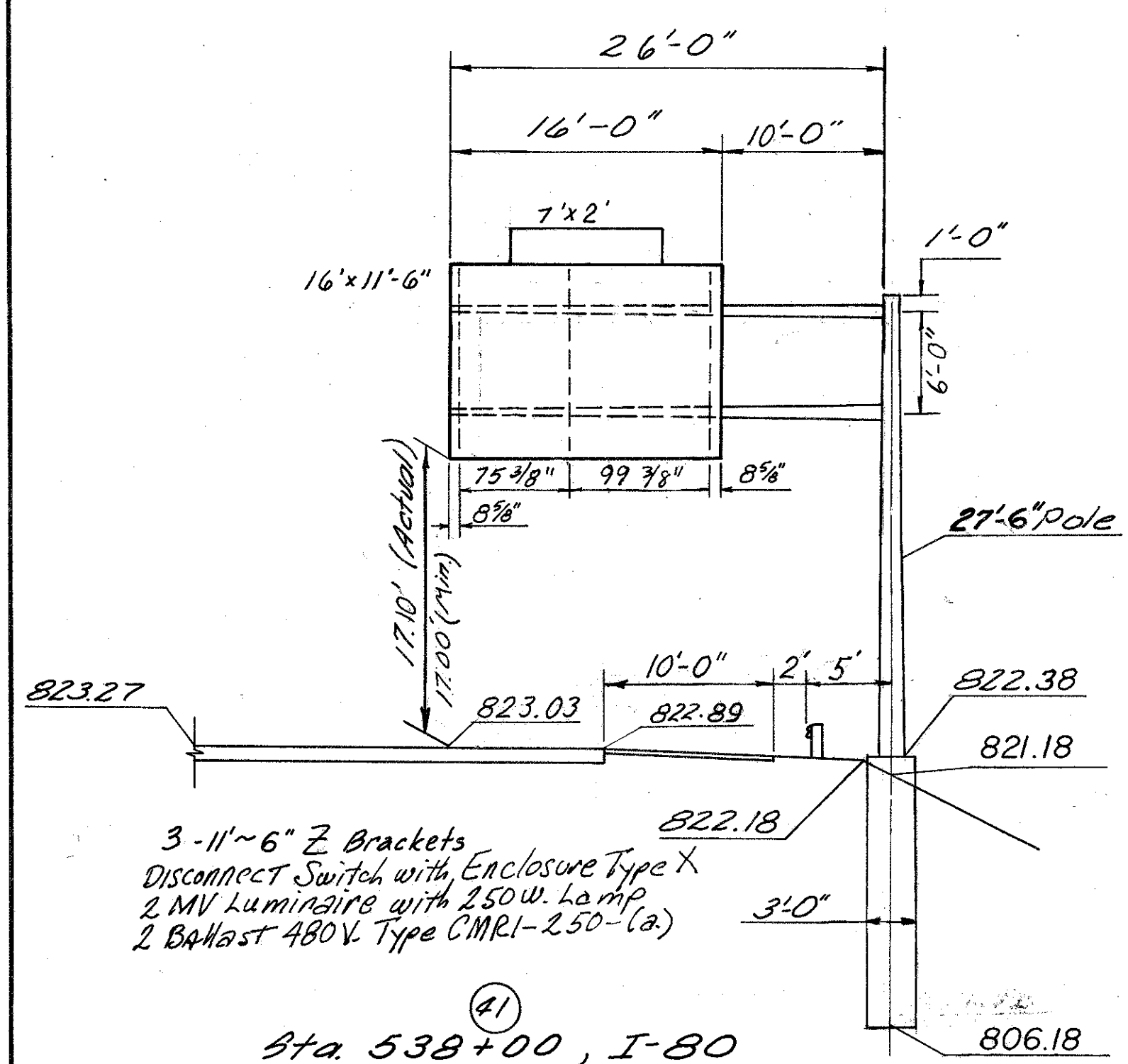
38 Sta. 515+40 I-80  
844 N<sup>o</sup> 7.65 Design N<sup>o</sup> 8 Mod.  
Disconnect Switch with Enclosure Type X



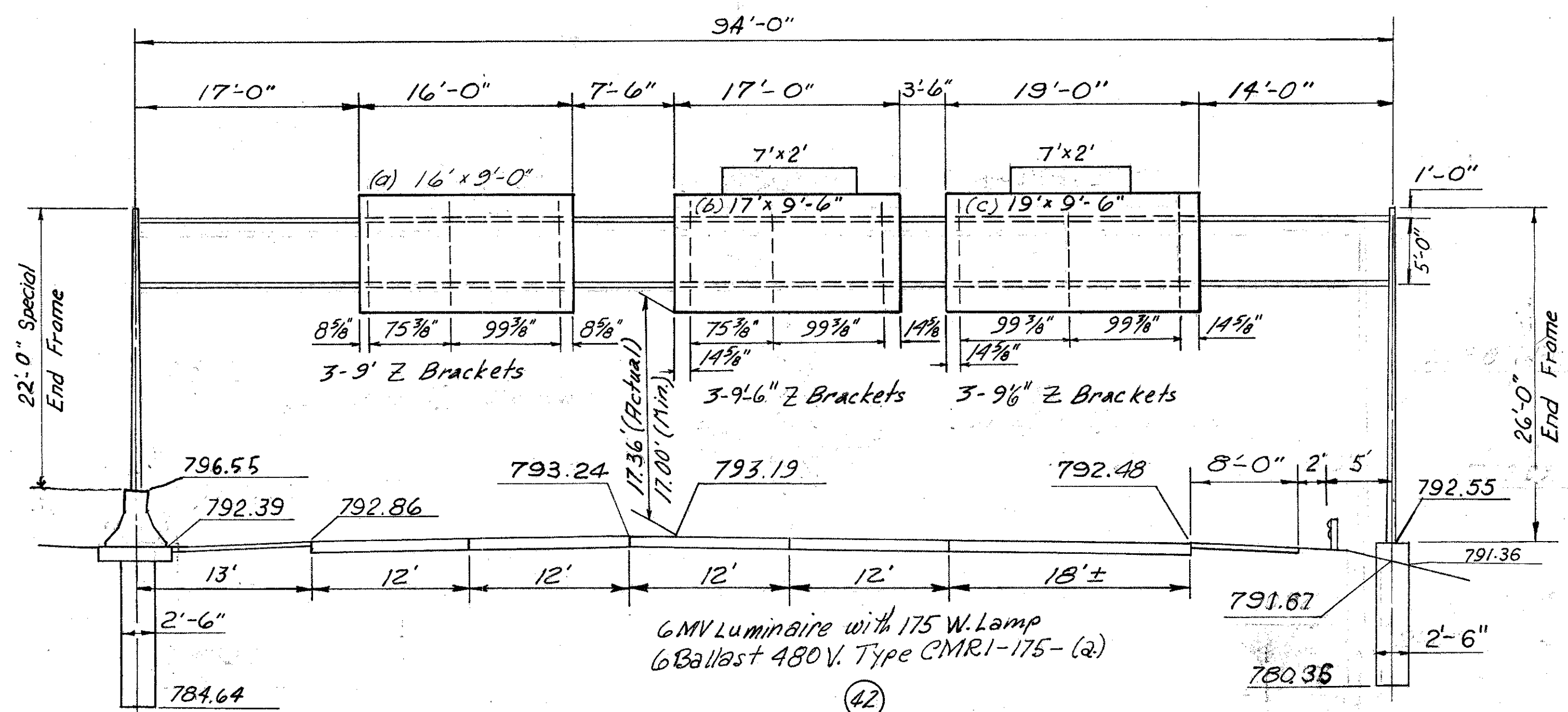
Sta. 526+00, I-80  
844 N<sup>o</sup> 7.65 Design N<sup>o</sup> 8 (Mod.)  
Disconnect Switch with Enclosure Type X  
4 MV Luminaire with 175 W. Lamp  
4 Ballast 480V. Type CMRI-175-(a)



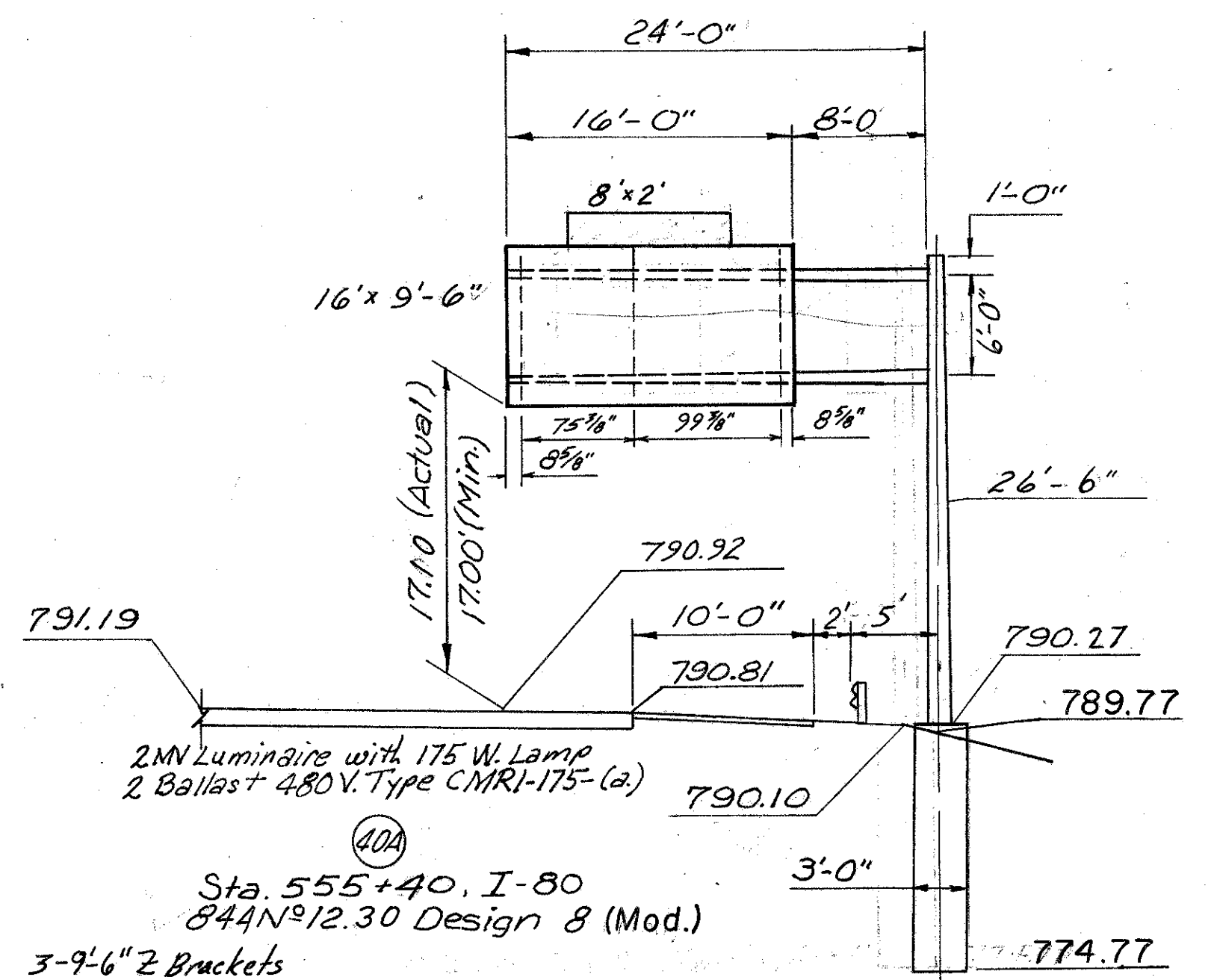
Sta. 536+50, I-80  
844 N<sup>o</sup> 7.65 Design N<sup>o</sup> 8 Mod.  
Disconnect Switch with Enclosure Type X



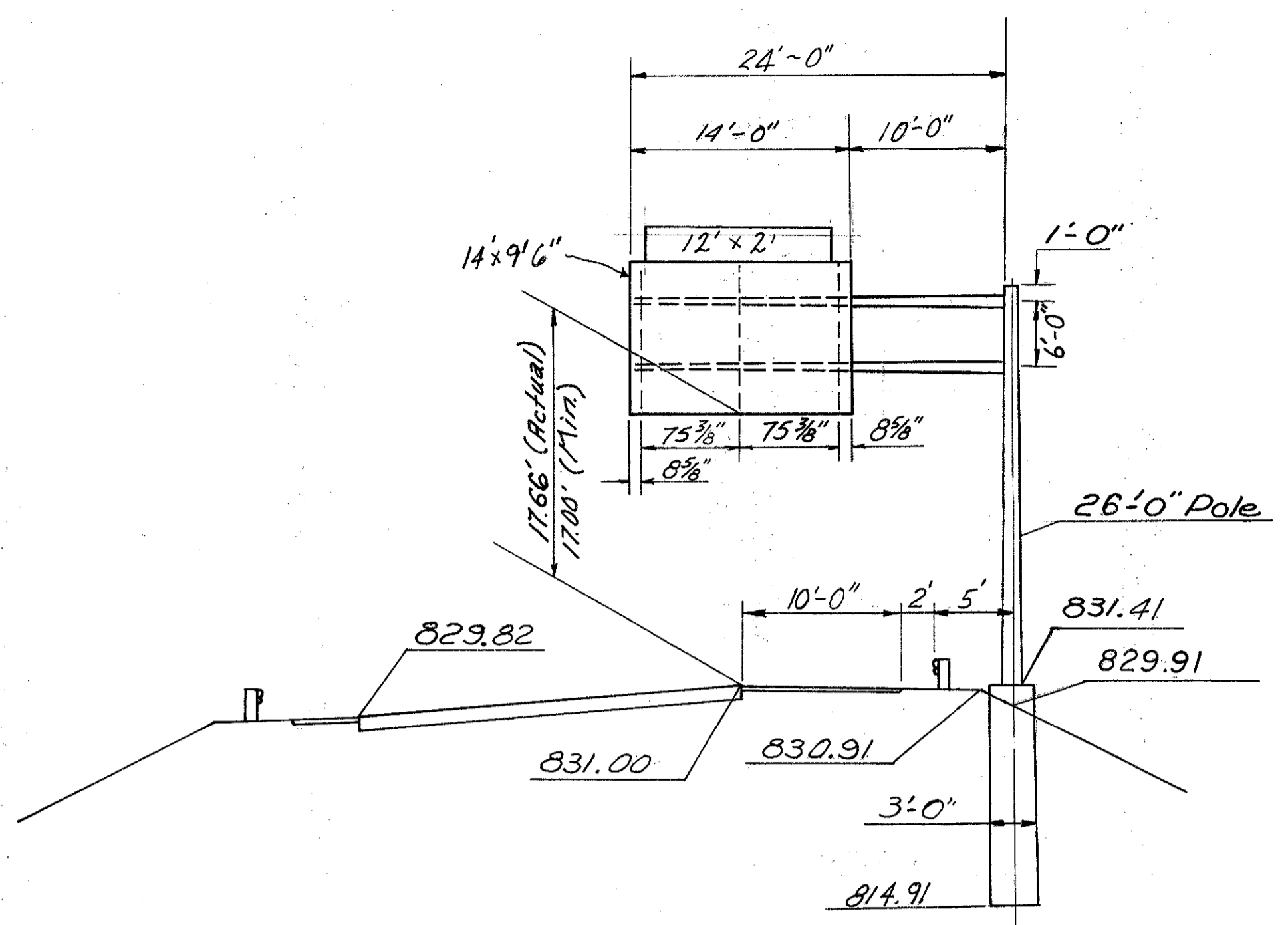
Sta. 538+00, I-80  
844 N<sup>o</sup> 12.30 Design N<sup>o</sup> 8 Mod.



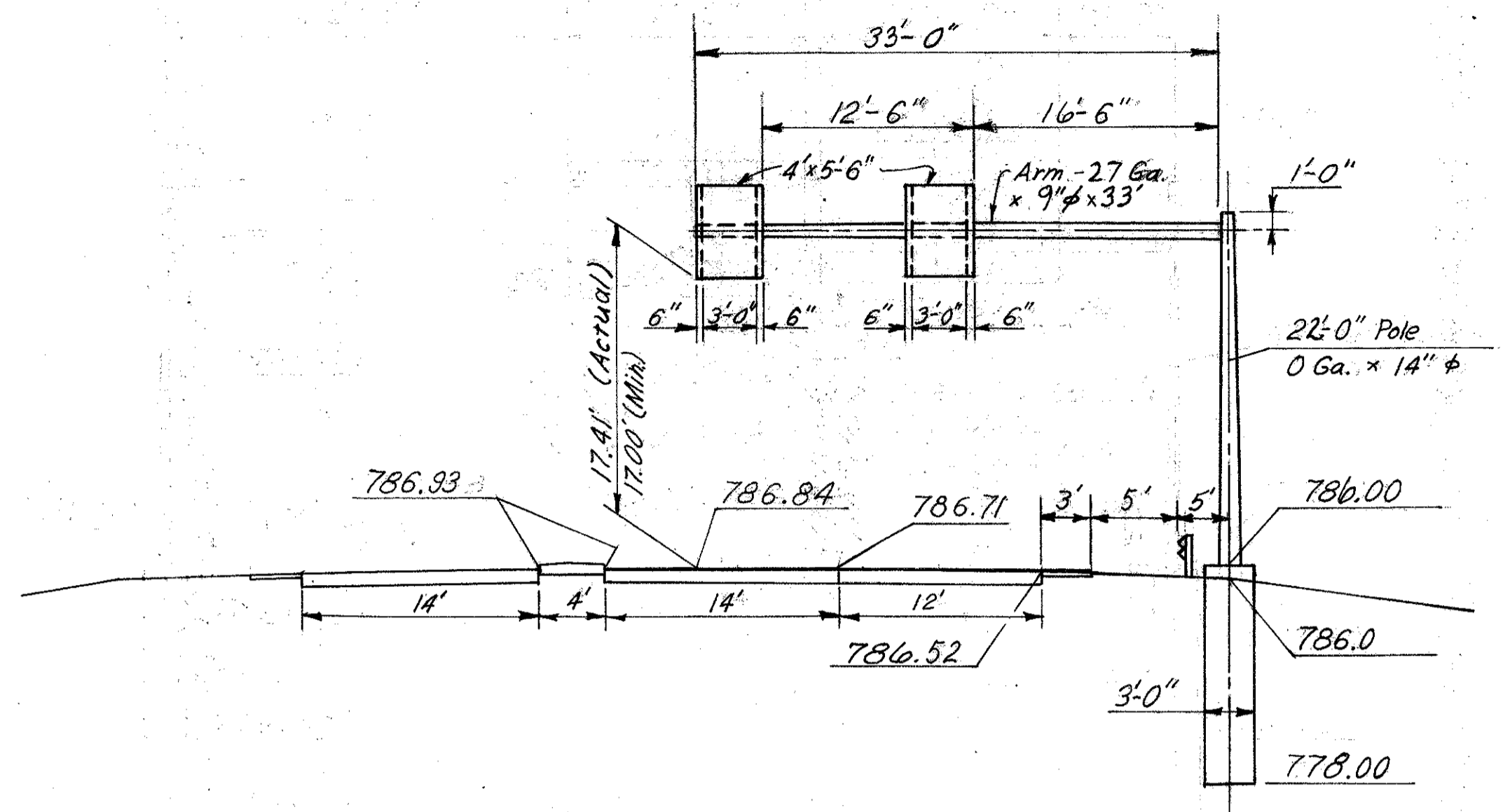
Sta. 552+20, I-80  
844 N<sup>o</sup> 7.65 Design N<sup>o</sup> 8 (Mod.)  
Disconnect Switch with Enclosure Type X



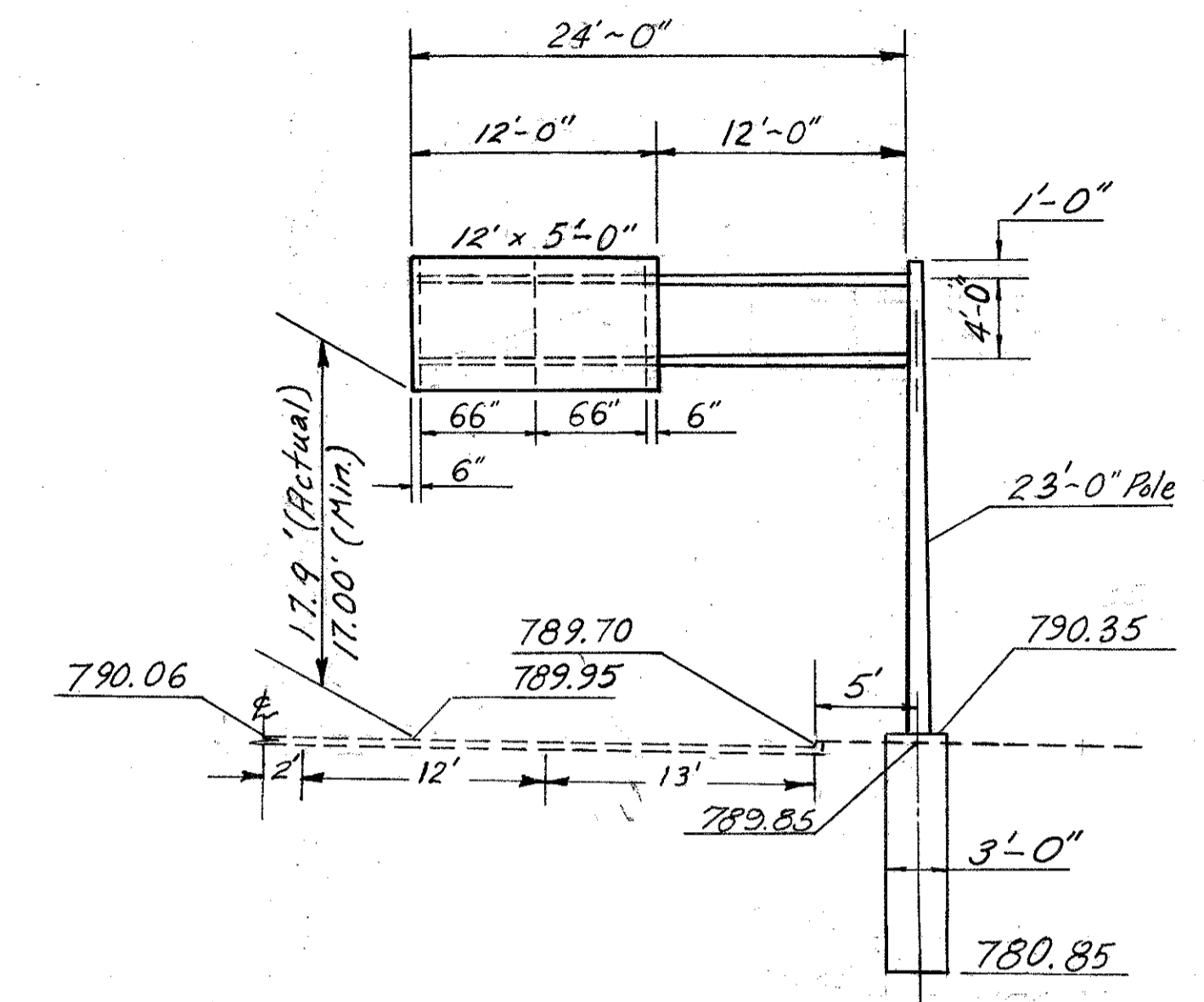
Sta. 555+40, I-80  
844 N<sup>o</sup> 12.30 Design N<sup>o</sup> 8 (Mod.)  
3-9'-6" Z Brackets  
Disconnect Switch with Enclosure Type X



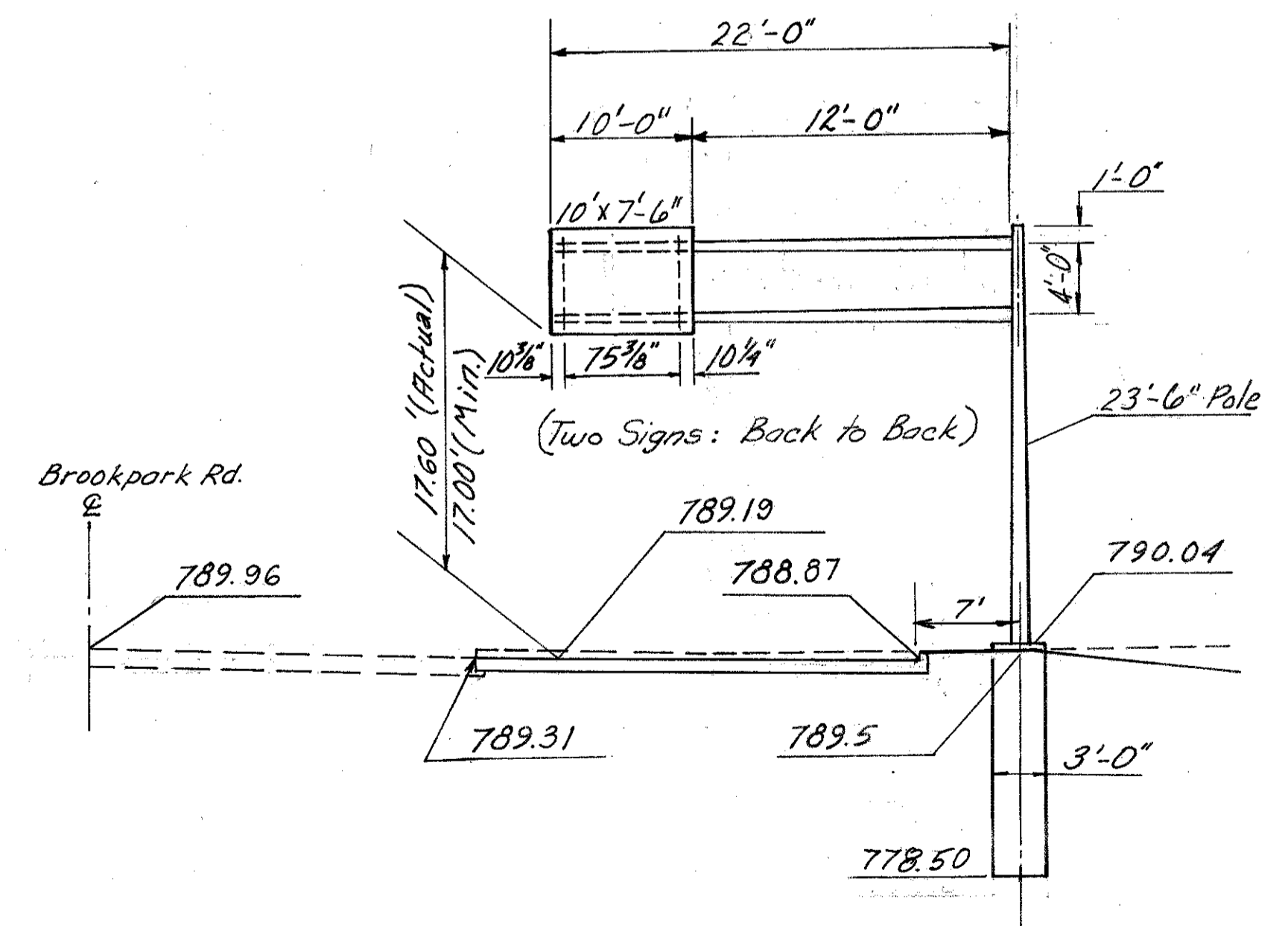
36A Sta. 28+00, Ramp "R"  
844 No 12.30 Design No 8  
3-9'-6" Z Brackets  
Disconnect Switch with Enclosure Type X  
2 MV Luminaires with 175 W. Lamp  
2 Ballast 480V Type CMRI-175-(a)



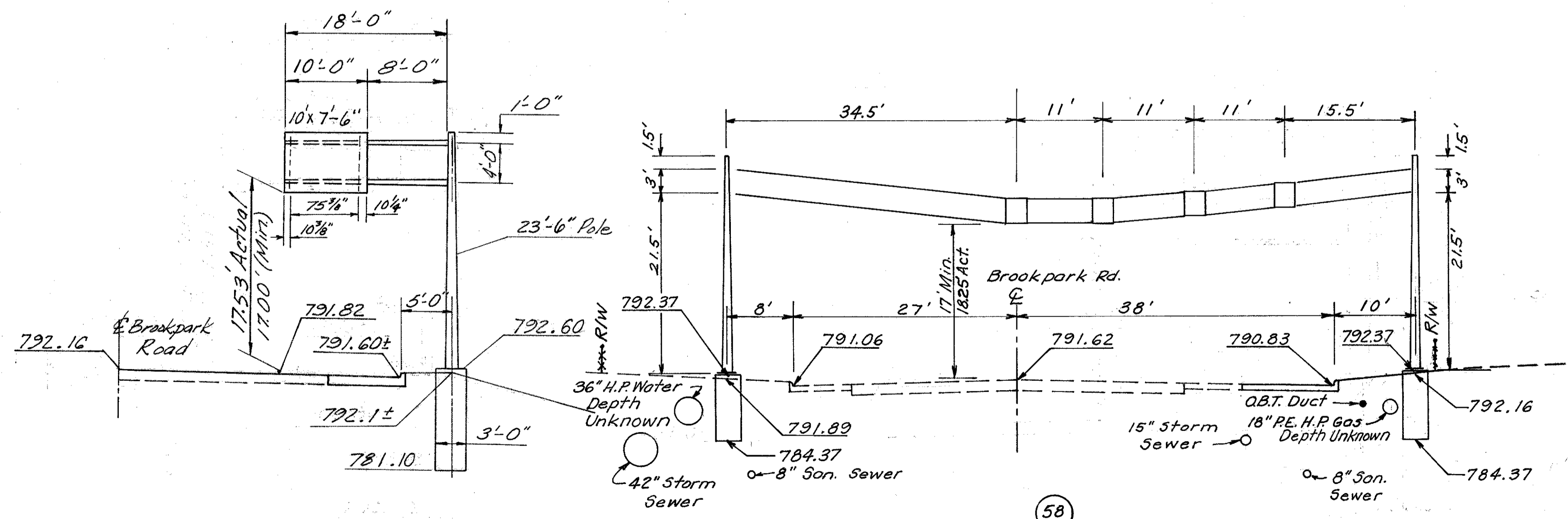
43 Sta. 4+00, W. 139th Conn.  
844-16.10 Des. 3-33' Arm-21' Pole  
4-5'-6" Z Brackets  
Disconnect Switch with Enclosure Type X  
2 MV Luminaires with 100 W. Lamp  
2 Ballast 480V Type CMRI-100-(a)



44 Sta. 175+75, S.R. 17  
844 No 12.30 Design No 2 Mod.  
3-5'-0" Z Brackets  
Disconnect Switch with Enclosure Type X  
2 MV Luminaires with 100 W. Lamp  
2 Ballast 480V Type CMRI-100-(a)

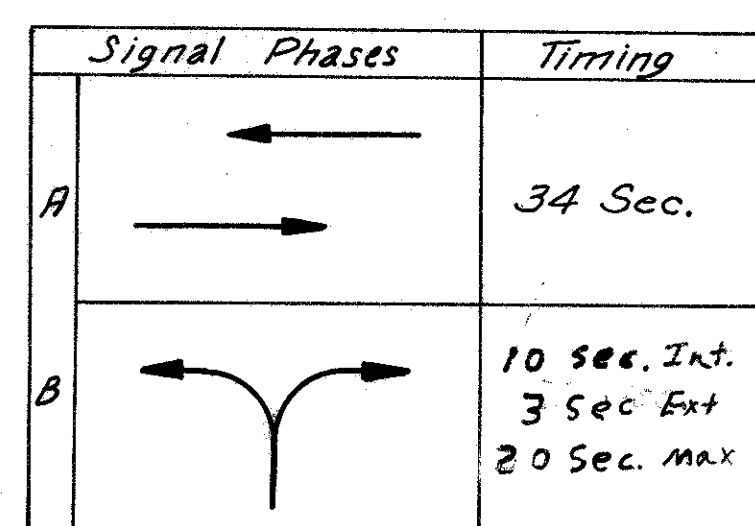
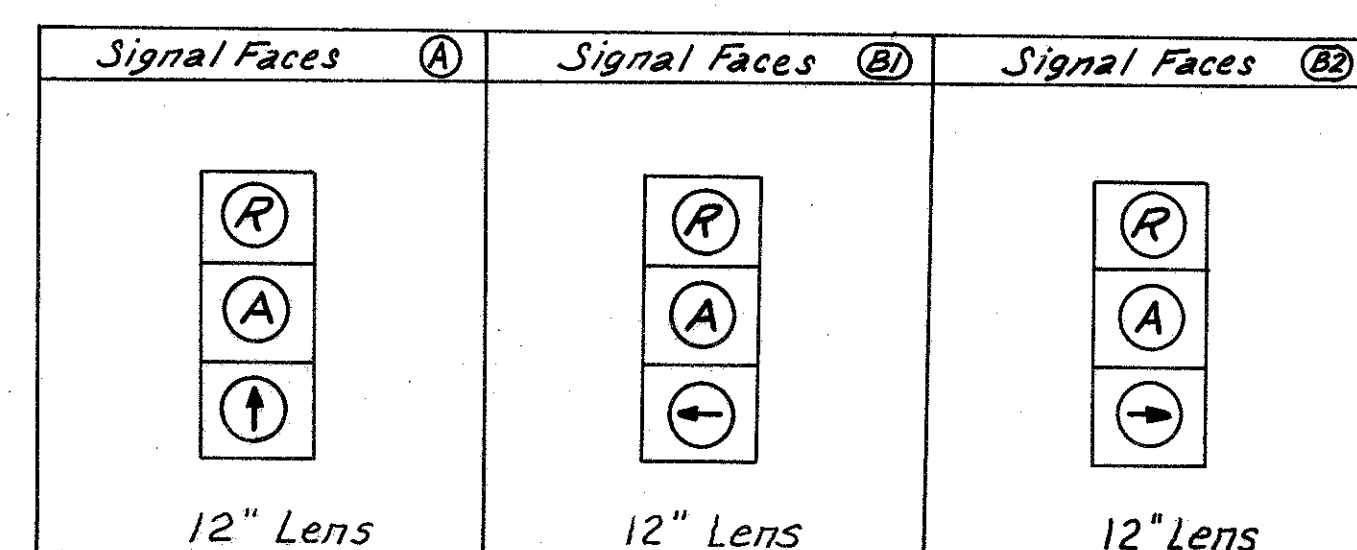
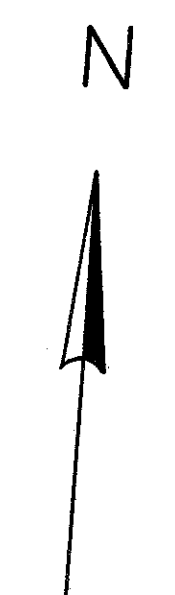


45 Sta. 168+90, S.R. 17  
844 No 12.30 Design No 4 Mod.  
4-7'-6" Z Brackets  
Disconnect Switch with Enclosure Type X  
2 MV Luminaires with 175 W. Lamp  
2 Ballast 480V Type CMRI-175-(a)



59 Sta. 161+00, S.R. 17  
844 No 12.30 Design No 3 Mod.  
2-7'-6" Z Brackets  
Disconnect Switch with Enclosure Type X  
1 MV Luminaires with 175 W. Lamp  
1 Ballast 480V Type CMRI-175-(a)

58 Sta. 165+15, S.R. 17  
844 Span Wire Sign Support, Span 83 Feet



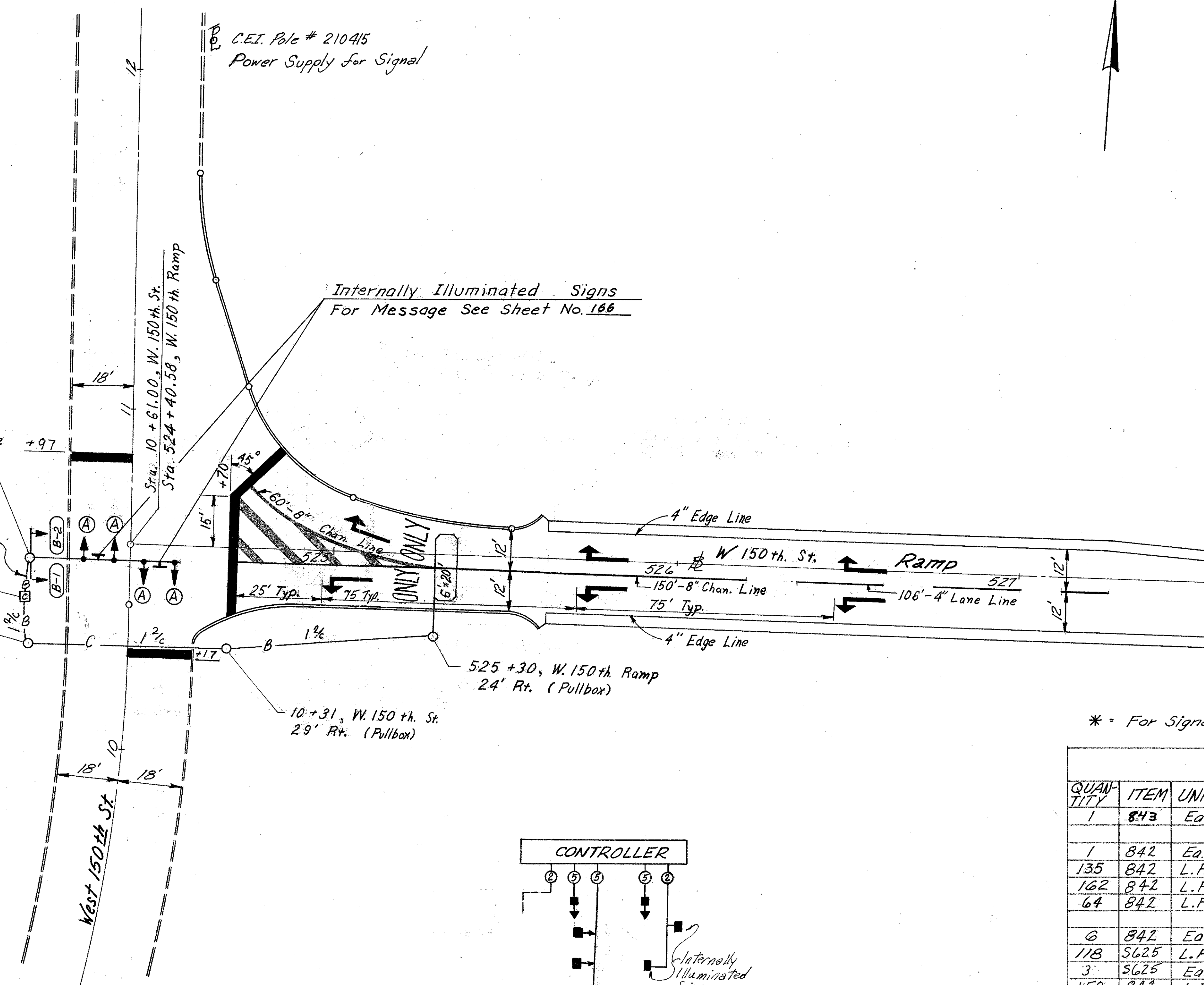
3 Sec. Red  
3 Sec. Amber

3 Mast Arm Signal Pole +97  
10+57, W. 150th St.  
30' Lt. (Controller)

10+31, W. 150th St.  
29' Lt. (Pullbox)

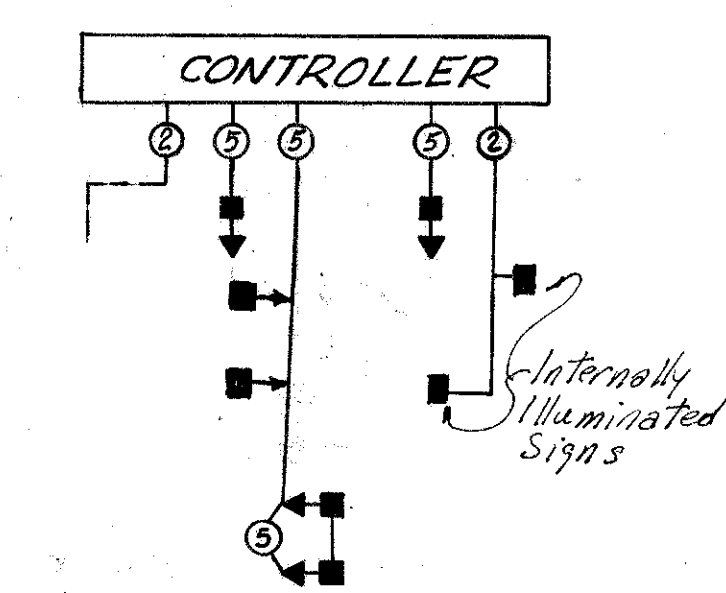
SIGNAL DISPLAY SCHEDULE

PHASE	A		B		FLASH	
MOVEMENT	R/W	C	R/W	C	R/W	C
SIGNAL	A	G	Y	R	R	Y
	B1	R	R	G	Y	R
	B2	R	R	G	Y	R



- LEGEND**
- B — 2" Conduit
  - C — 3" Conduit
  - Single Pullbox for Signal System
  - ⊠ Controller
  - Loop Detector

Note: Controller shall have recall switch and lock-unlock memory switch for each actuated phase.



WIRING DIAGRAM

\* = For Signal Head Placement See Sheet No. 174

QUANTITIES			
QUANTITY	ITEM	UNIT	DESCRIPTION
1	842	Ea.	Traffic Signal Controller With Controller Cabinet, As Per Plan. (2 Phase Semi-Actuated)
1	842	Ea.	Loop Detector Amplifier
135	842	L.F.	Loop Detector Wire
162	842	L.F.	Loop Detector lead in Cable
64	842	L.F.	Loop Detector Pavement Cutting
6	842	Ea.	Vehicular Signal Heads 3 Section, 12 inch lens, 1-way
118	5625	L.F.	Trench
3	5625	Ea.	Pull Boxes, Type A as per plan
150	842	L.F.	Signal Cable (Stranded) 5 Conductor, #12 AWG
160	842	L.F.	Signal Cable (Stranded) 2 Conductor, #12 AWG
40	842	L.F.	Power Cable, 3 Conductor #8 AWG, Stranded
87	5625	L.F.	3" Conduit 713.04,
1	5625	Ea.	Ground Rod
1	842	Ea.	Signal Pole; 2500" x 15" x 21'-6" with Mast Arms .2500" x 12" x 43" (2) 4" Sch. 40 PIPE x 8'
85	5625	L.F.	2" Conduit 713.04
2.10	842	Cu.Yd.	Concrete for Anchor Base Foundation
0.90	842	Cu.Yd.	Concrete Foundation for Controller Cabinet
2	842	Ea.	Single Face Internally Illuminated Sign 30" x 36", as per plan
6	842	Ea.	Covering of signals
160	842	L.F.	Service Cable 3 Cond. No. 8 AWG
1	842	Ea.	Power Service
1	842	Ea.	Cable Support Assy

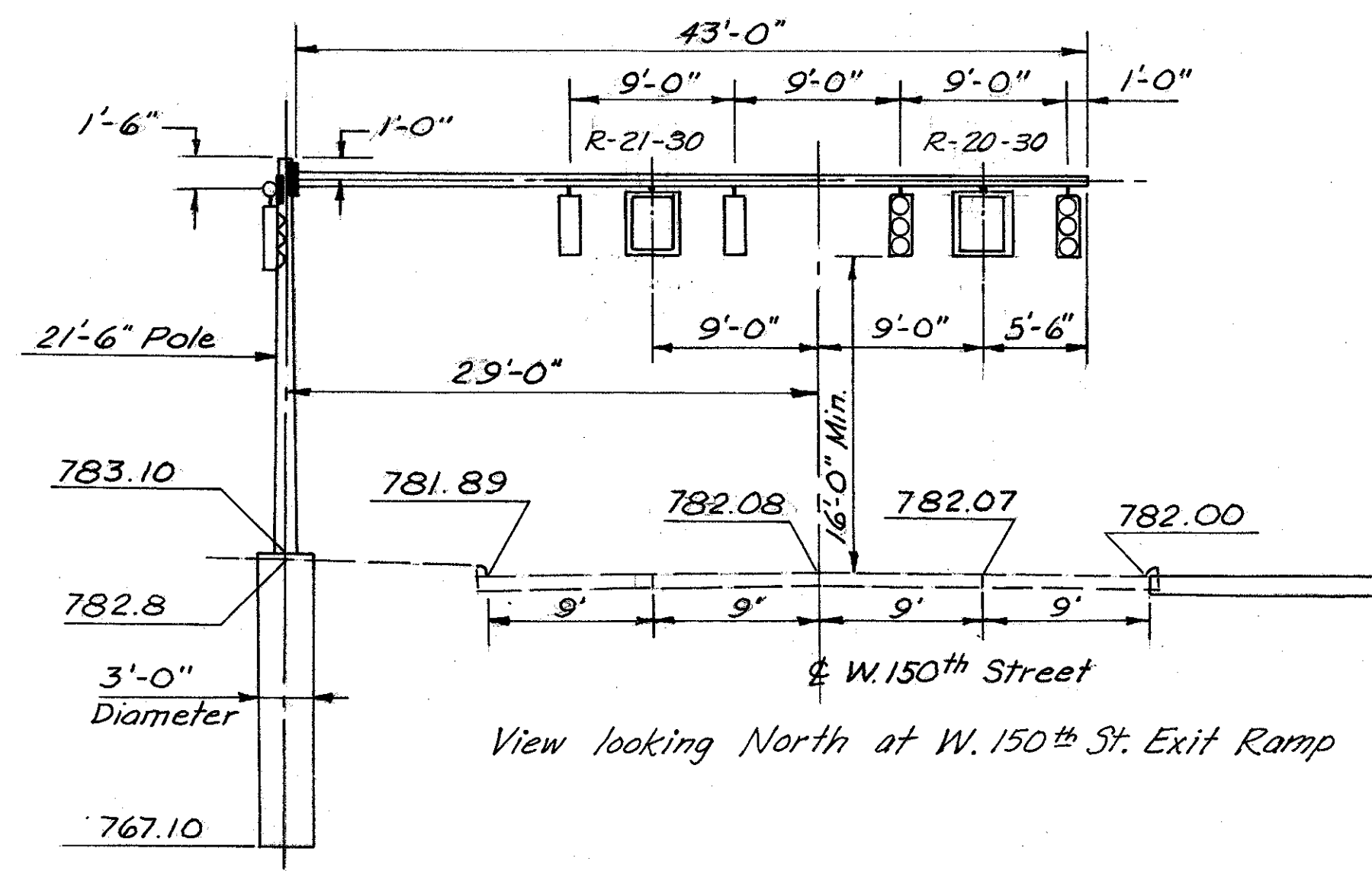
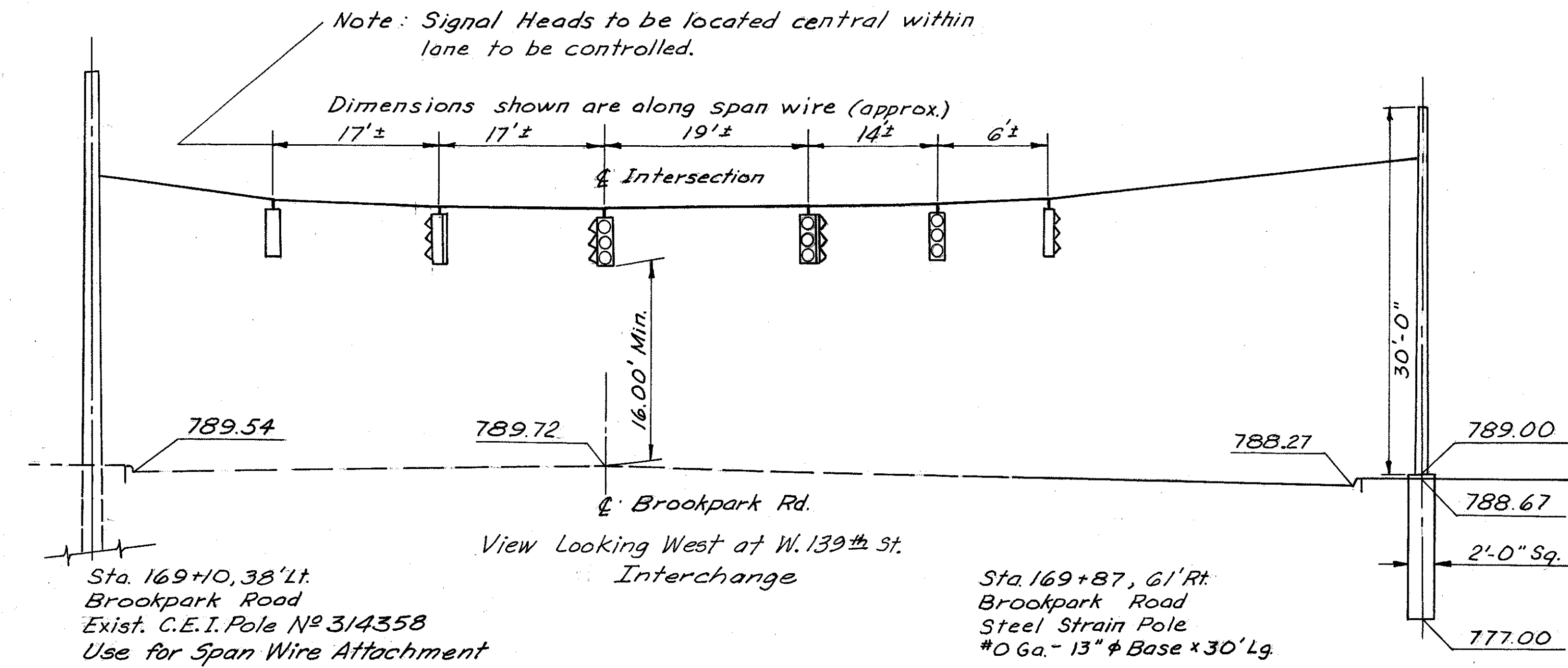
ALC. BY: DAF 3-13-70  
TR.B 11-18-70



FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

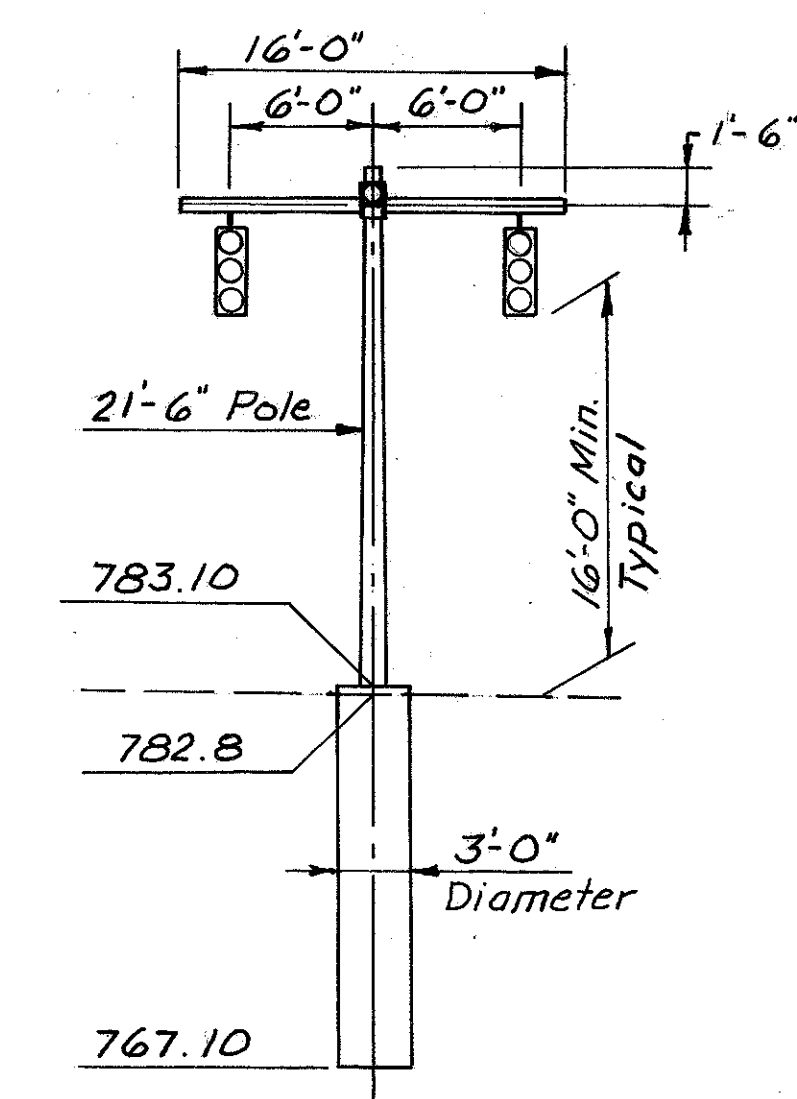
174  
346

CUYAHOGA COUNTY  
CUY-480-854



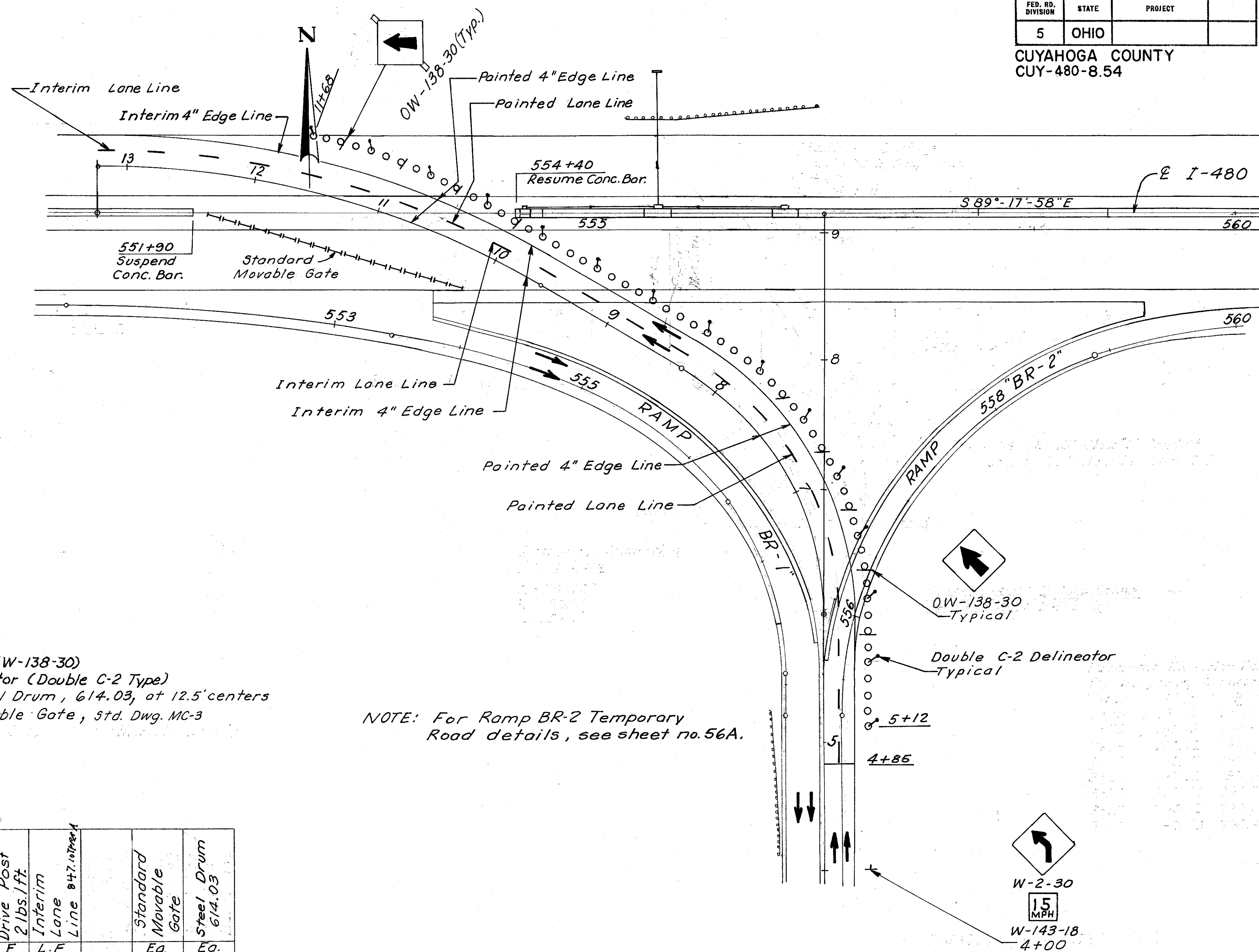
**MAIN MAST ARM VIEW**

Sta. 10+57, W. 150th St. - 29' Lt.  
3 Mast Arm Signal Support with (2) 30" x 36" Internally Illuminated Signs (R-121-30 & R-120-30)  
Pole: 3 Ga. - 15.0" x 11.99" x 21'-6" Lg.  
Main Arm: 3 Ga. - 12.0" x 5.98" x 43'-0" Lg.  
Side Arm: 4" Sch. 80, Grade "A" Steel Pipe x 16'-0" Lg.



**SIDE ARM VIEW**

Note: Signs & Signals on Main Mast Arm Not Shown.



Note: Quantities shown on this sheet are for information only, and the cost to furnish, and erect in and subsequently remove same shall be included under 614 Maintaining Traffic. Station limits for items on this sheet are approximate only and may be revised as required by the Engineer.

± Interim pavement marking shall be used on all permanent pavement and removed upon completion of the succeeding project. Painted pavement marking shall be used on all temporary pavement or pavement to be removed or resurfaced. Quantities and locations of pavement marking shown are approximate only.

# Modifying Specification 614, the Contractor shall furnish and erect all signs listed on this sheet unless otherwise noted.

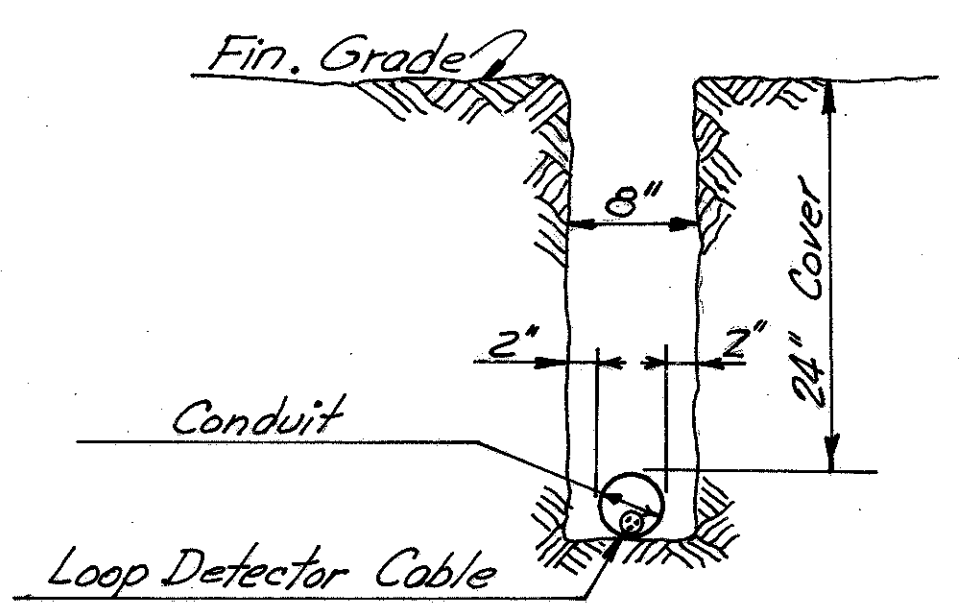
**LEGEND**

- = Interim Sign (W-138-30)
- ⊙ = Interim Delineator (Double C-2 Type)
- ○ = Standard Steel Drum, 614.03, at 12.5' centers
- |— = Standard Movable Gate, Std. Dwg. MC-3

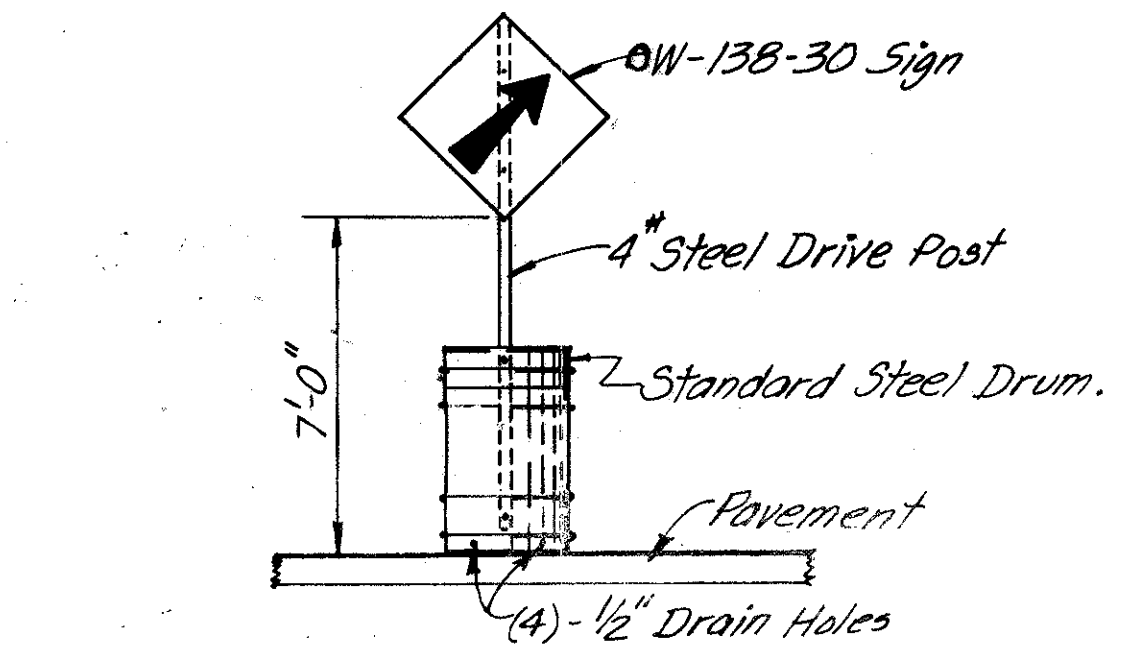
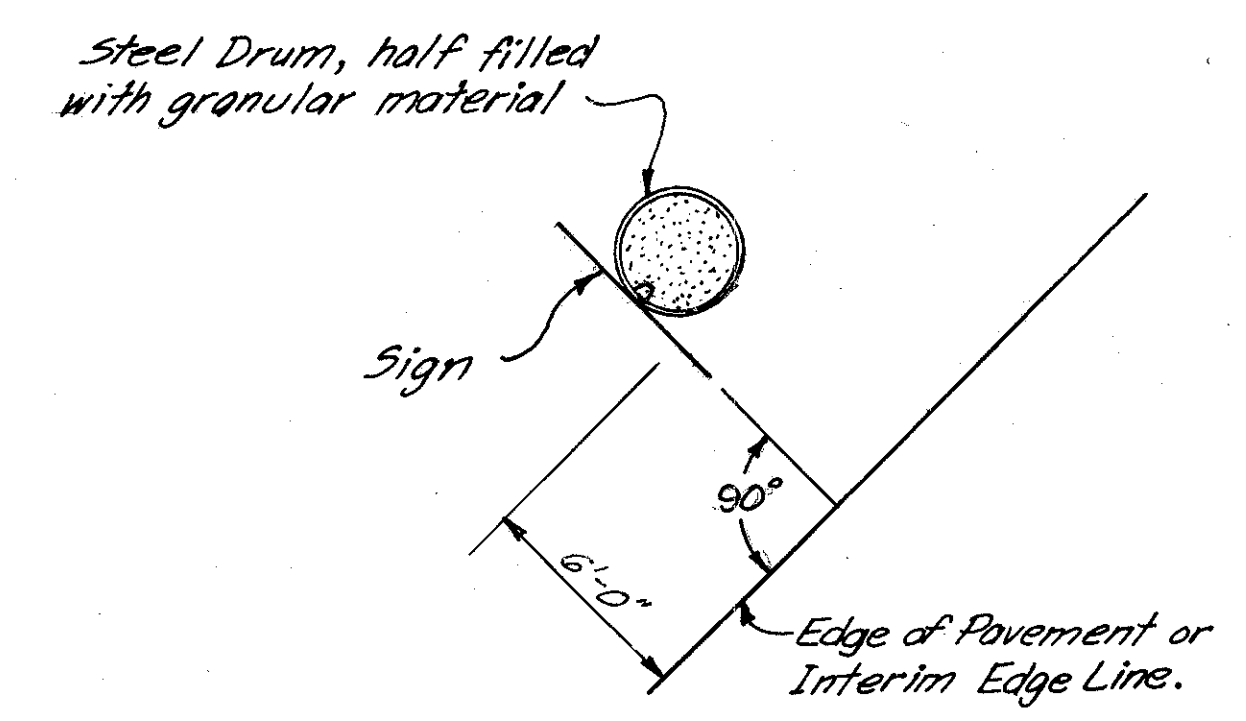
NOTE: For Ramp BR-2 Temporary Road details, see sheet no. 56A.

Station to Station	Side	Interval	Painted 4" Edge Line		Interim 4" Edge Line		Temporary Sign W-2-30 F. W-143-18 (5 MPH)	Interim Sign (W-138-30)	Total Sign Area Sq. Ft.	Interim Steel Drive Post 3 lbs./ft.		Painted Lane Line	Interim Delineator As Per Plan	Interim Steel Drive Post 2 lbs./ft.		Interim Lane Line	Standard Movable Gate	Steel Drum 614.03
			L.F.	Ea.	L.F.	Ea.				L.F.	Ea.			L.F.	Ea.			
Ramp BR-2 Temp. Conn. Sta. 4+85 to 9+32			804		192							447				96		
" " " " Sta. 9+32 to 10+28			142								71							
" " " " Sta. 10+28 to 10+99					448											224		
" " " " Sta. 10+99 to 13+23																		
Ramp BR-2 Temp. Conn. Sta. 5+12 to 11+68	Rt.	125%																57
Ramp BR-2 Temp. Conn. Sta. 5+87 to 7+87	Rt.	50'					5	31.2	55									
Ramp BR-2 Temp. Conn. Sta. 10+00 to 11+42	Rt.	50'					4	25	44									
Ramp BR-2 Temp. Conn. Sta. 5+12 to 11+68	Rt.	50'											15	60				
Ramp BR-2 Temp. Conn. Sta. 10+13 to 12+35	Lt.																17	
# Ramp BR-2 Sta. 4+00, 21' Rt.	Rt.						1	8.5	16									
<b>Totals</b>			1036		640		1	9	64.7	115	518		15	60		320	17	57

Rev. D.R.S. 10-13-77  
BB 11-16-70  
TRB 11-17-70

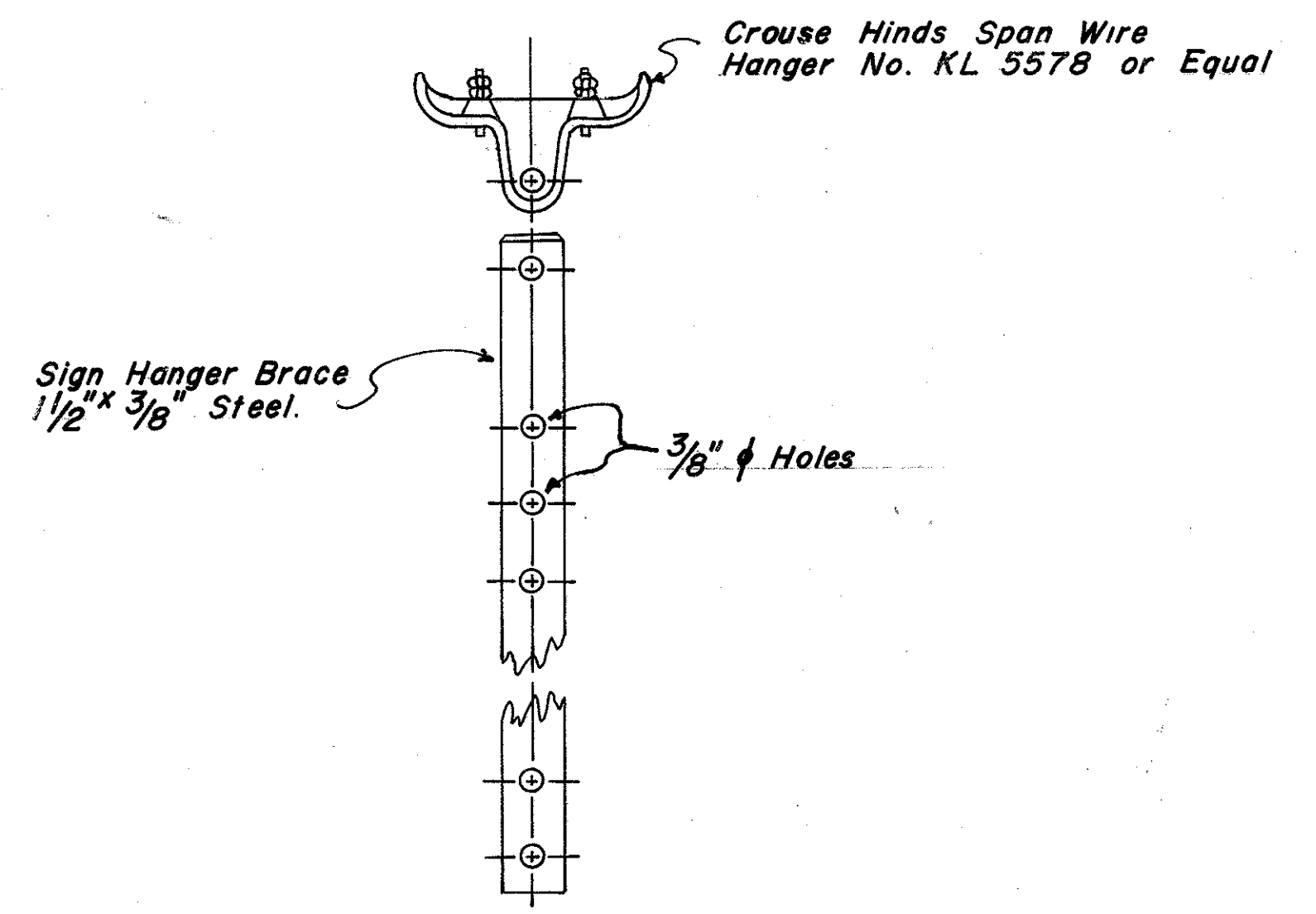


TRENCH DETAIL

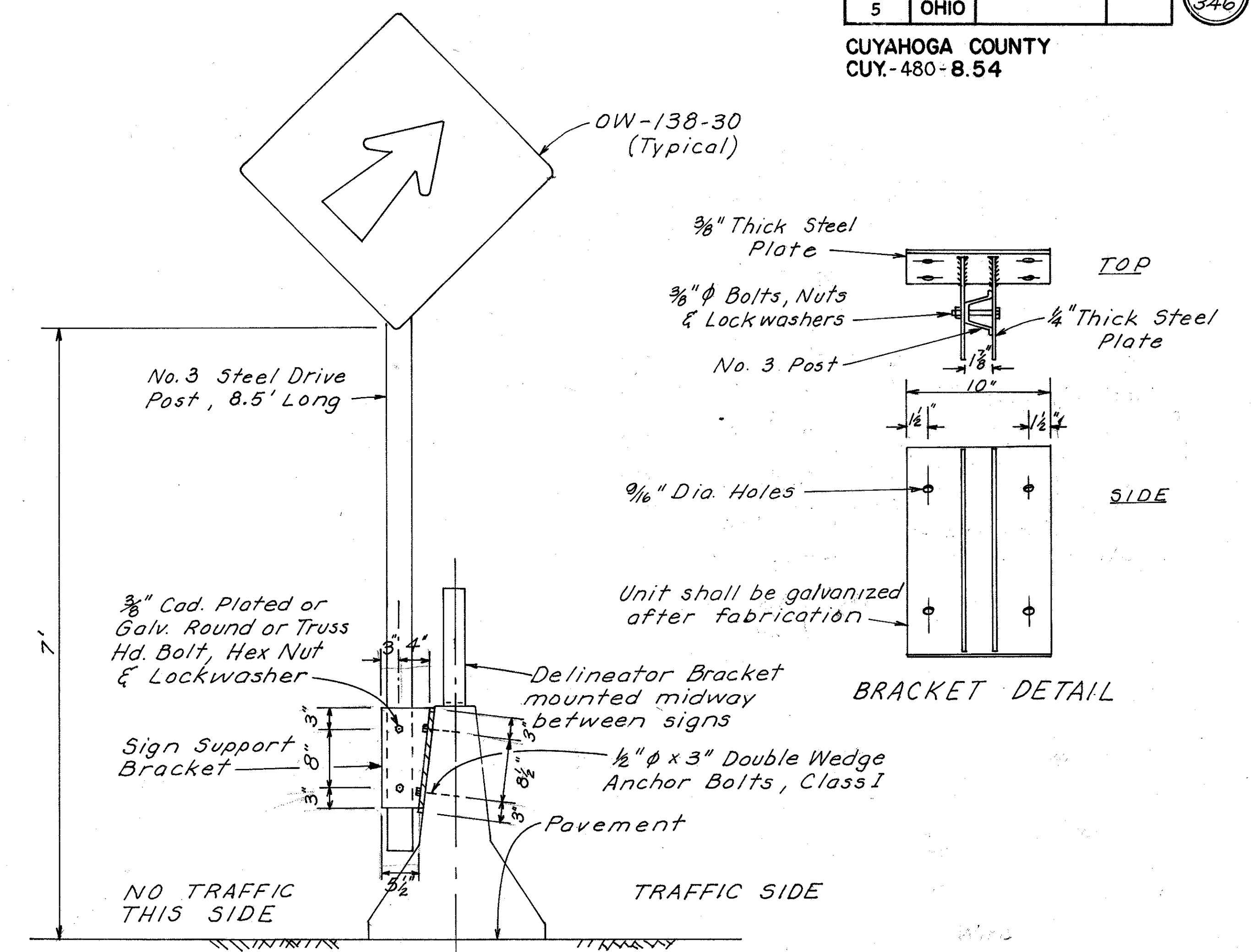


Double amber (C-2) delineators shall be erected approximately midway between signs on barrels.  
For location of OW-138-30 Signs and delineators on Ramp BR-2 Temporary Connection See Sheet No. 175.

SIGN ATTACHMENT TO TEMPORARY DRUM

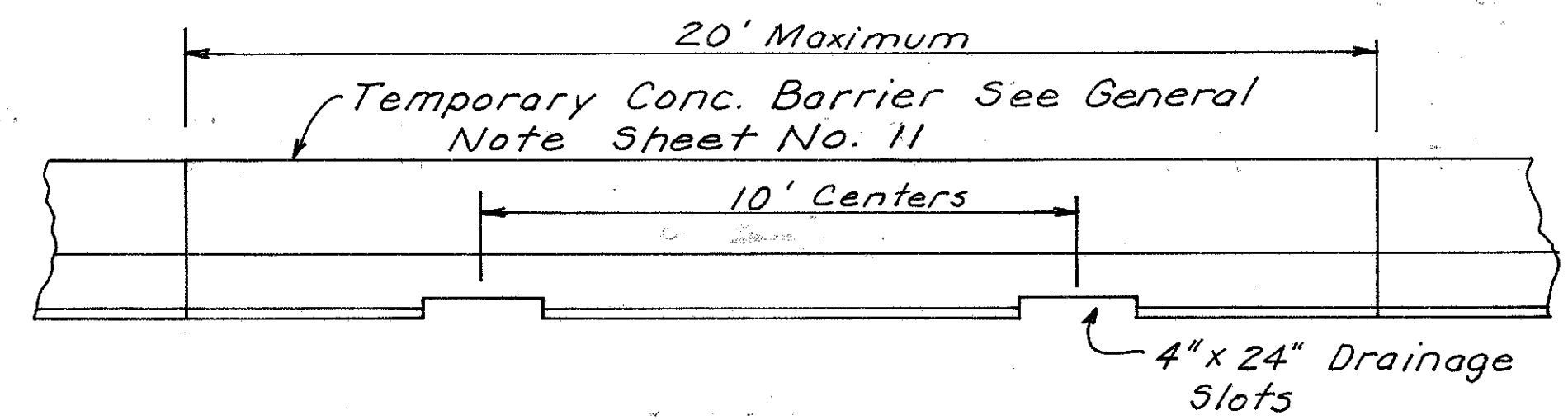


SIGN ATTACHMENT BRACKET

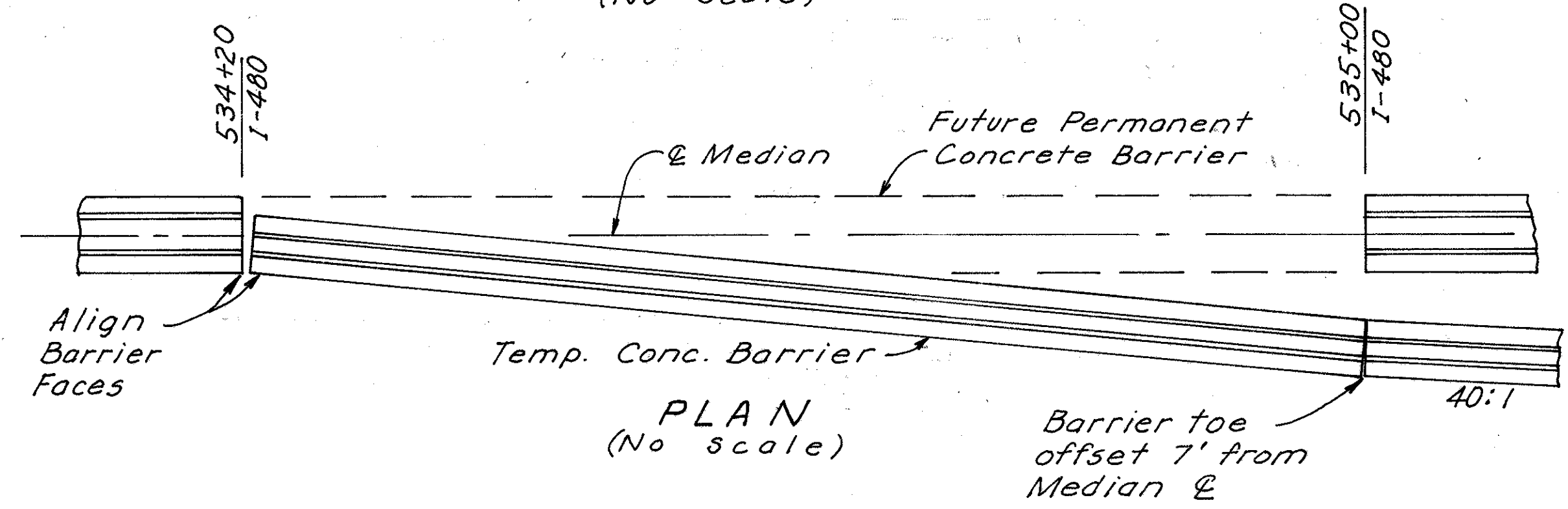


SIGN ATTACHMENT TO CONCRETE BARRIER

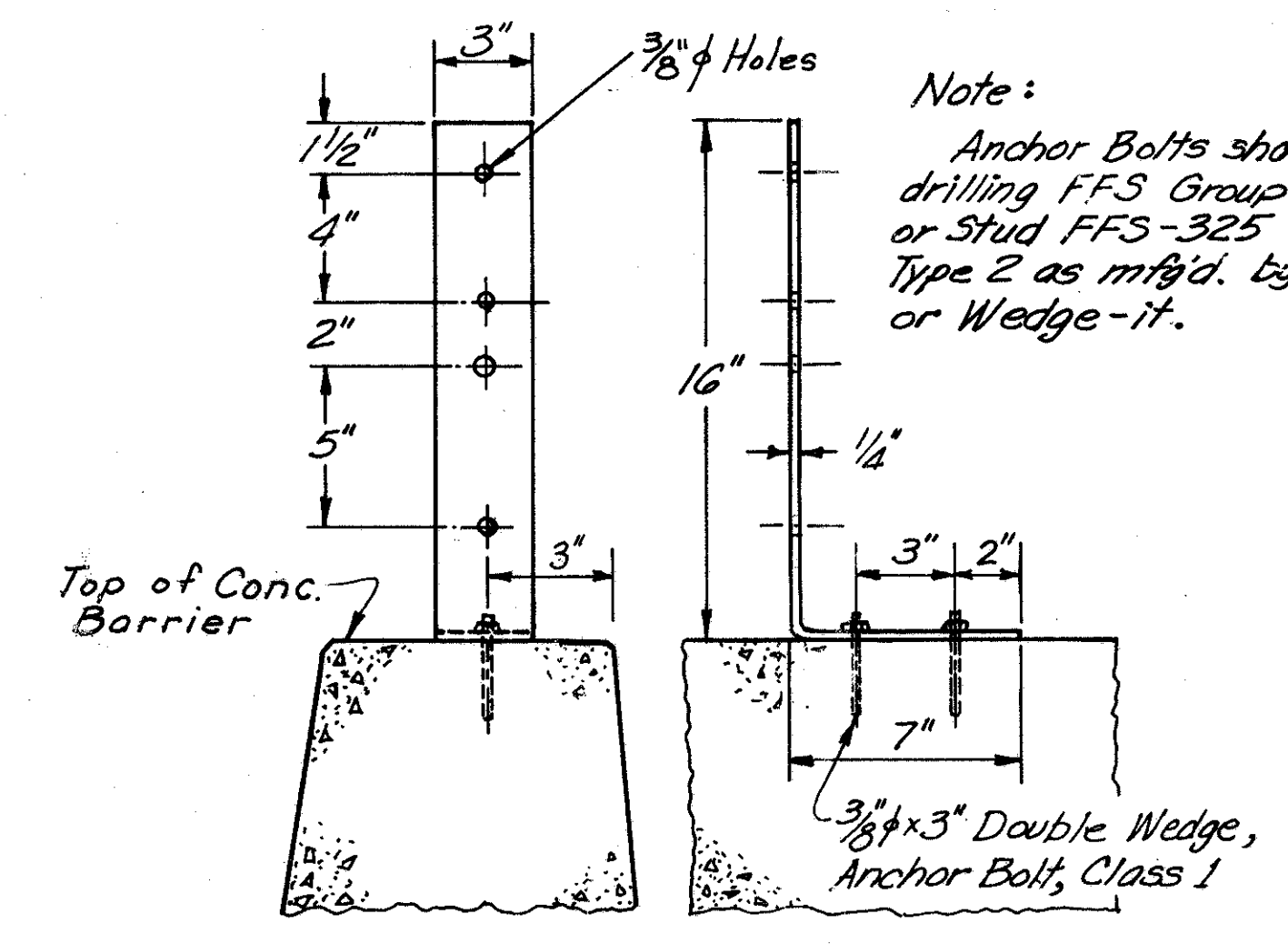
NOTE: All items except concrete barrier to be paid for under Item 614



ELEVATION (No Scale)

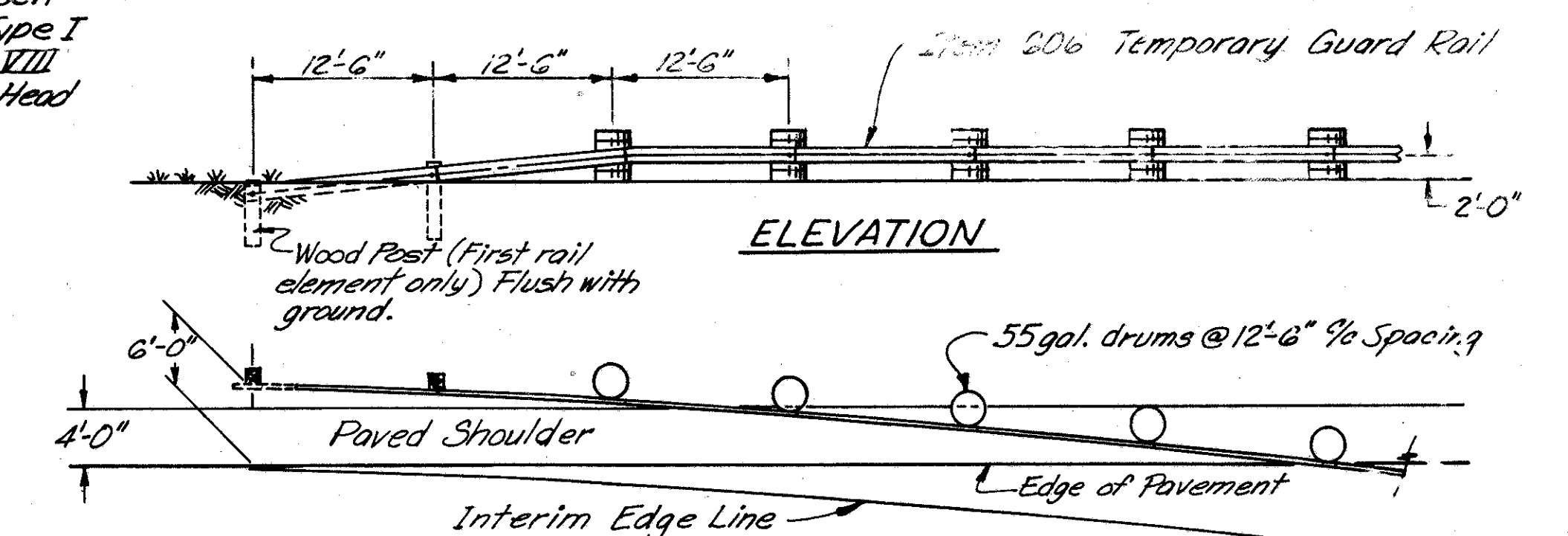


TEMPORARY CONCRETE BARRIER END TREATMENT



DELINEATOR ATTACHMENT BRACKET

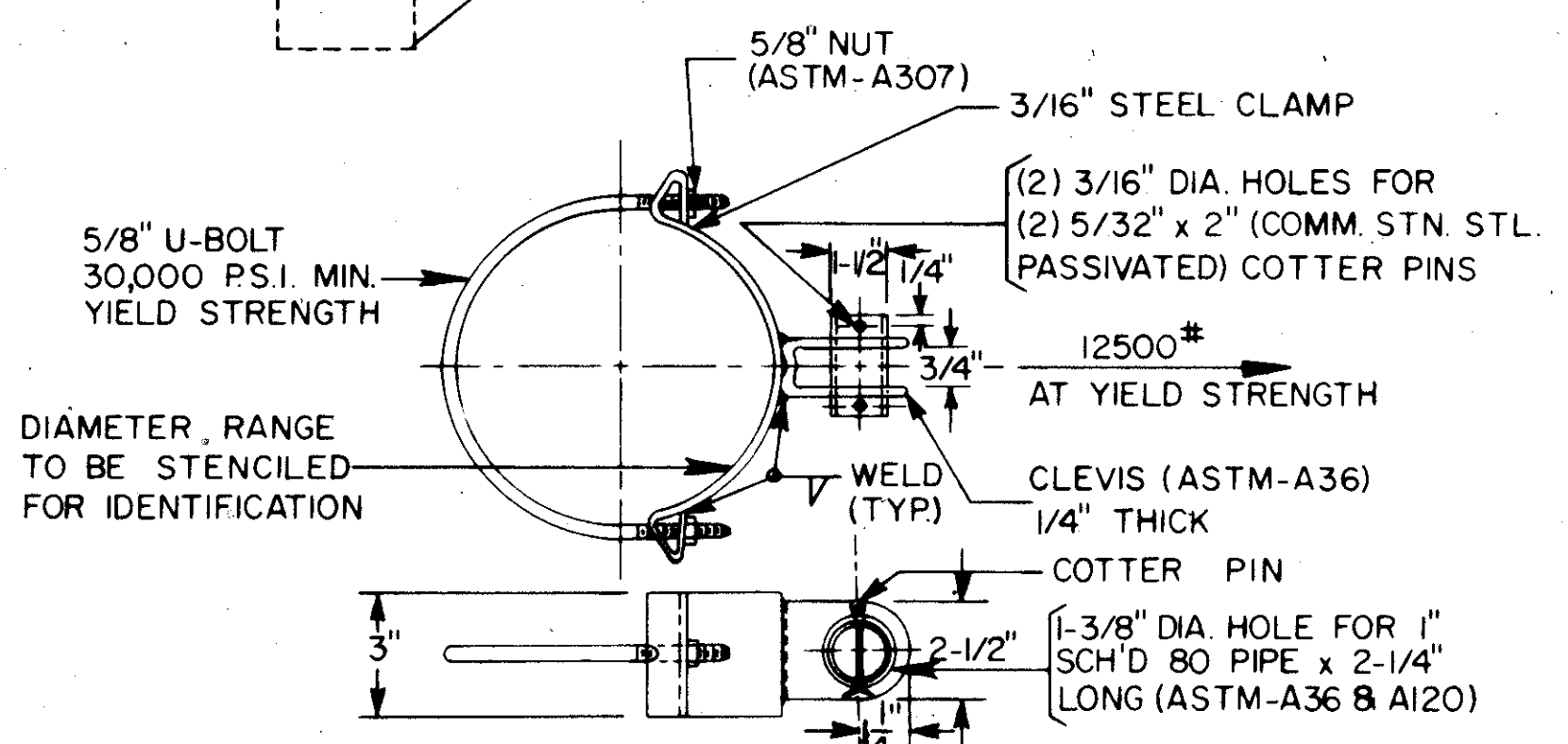
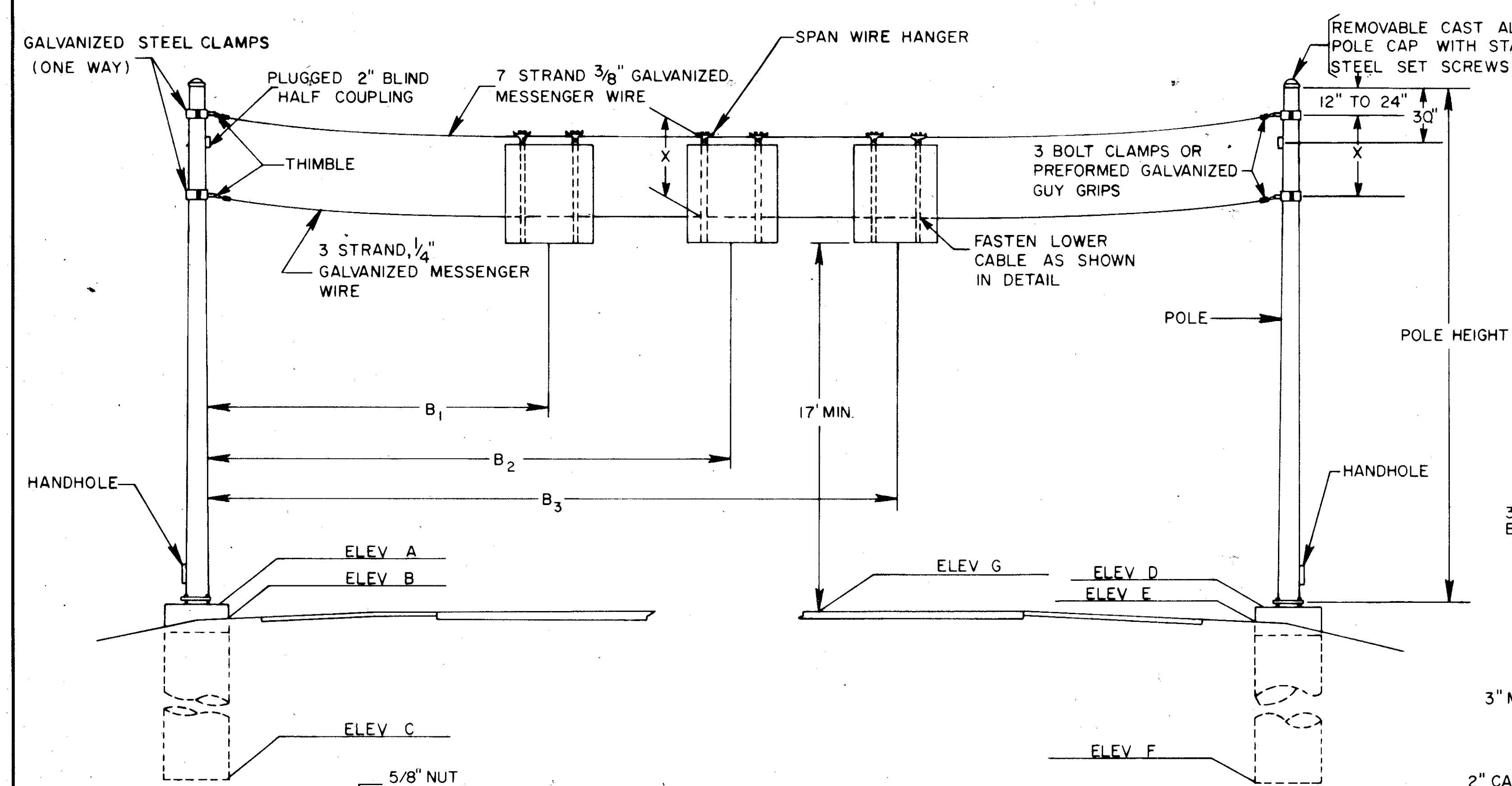
Note: Anchor Bolts shall be self-drilling FFS Group IV, Type I or Stud FFS-325 Group VIII Type 2 as mfg'd. by Red Head or Wedge-it.



ANCHOR DETAIL FOR SPECIAL GUARD RAIL

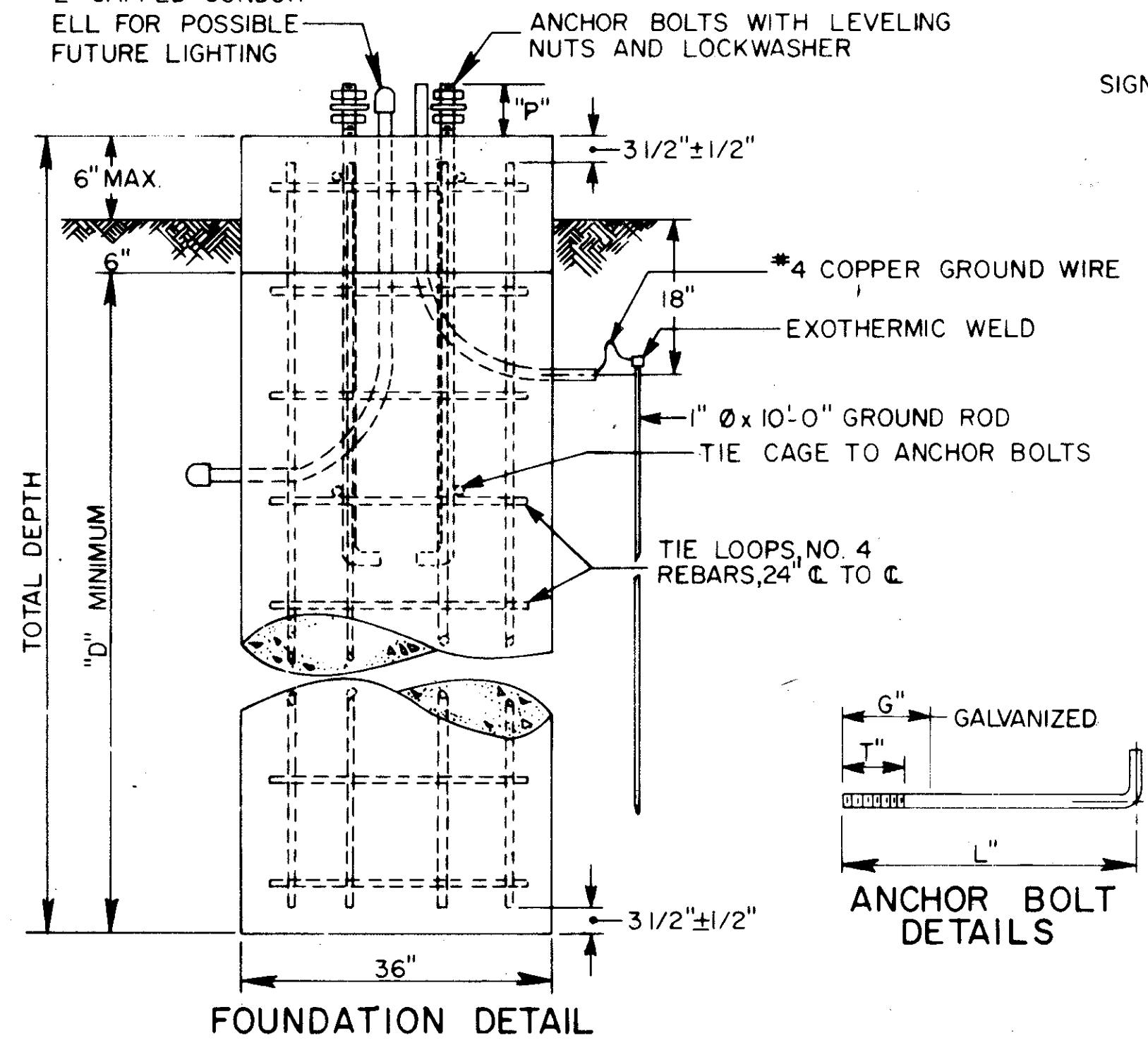
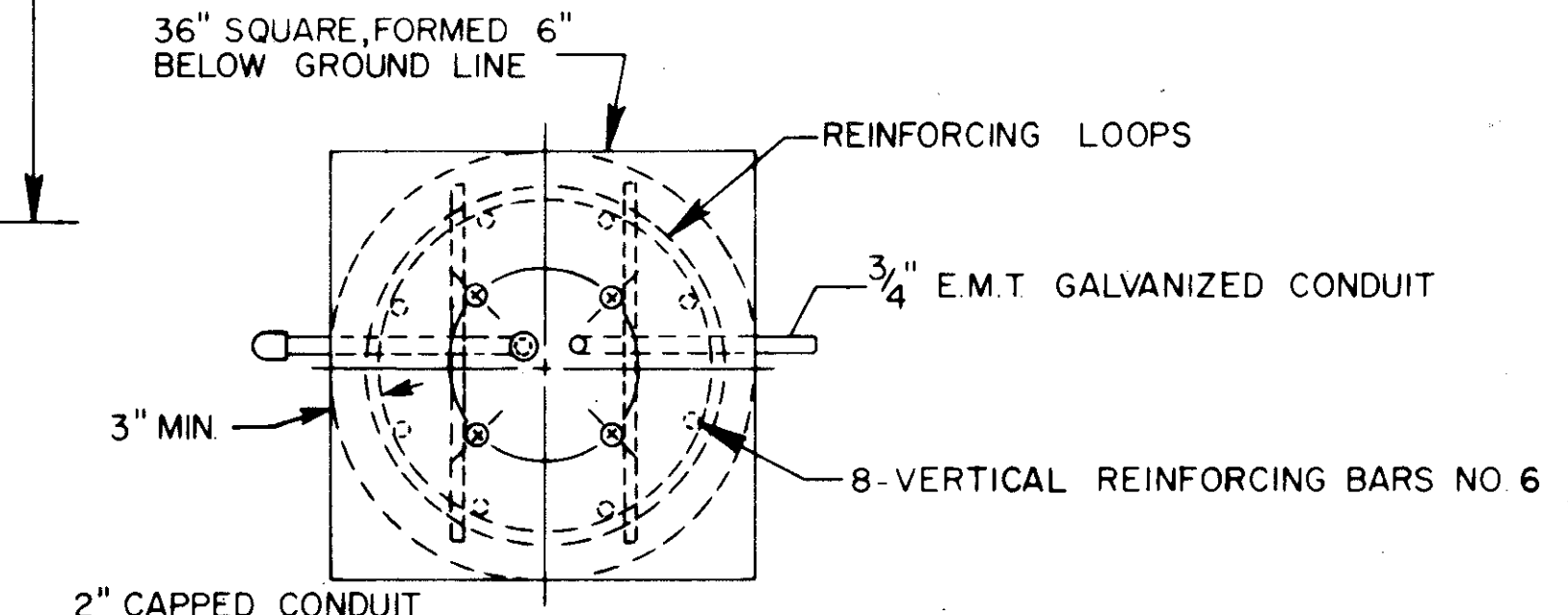
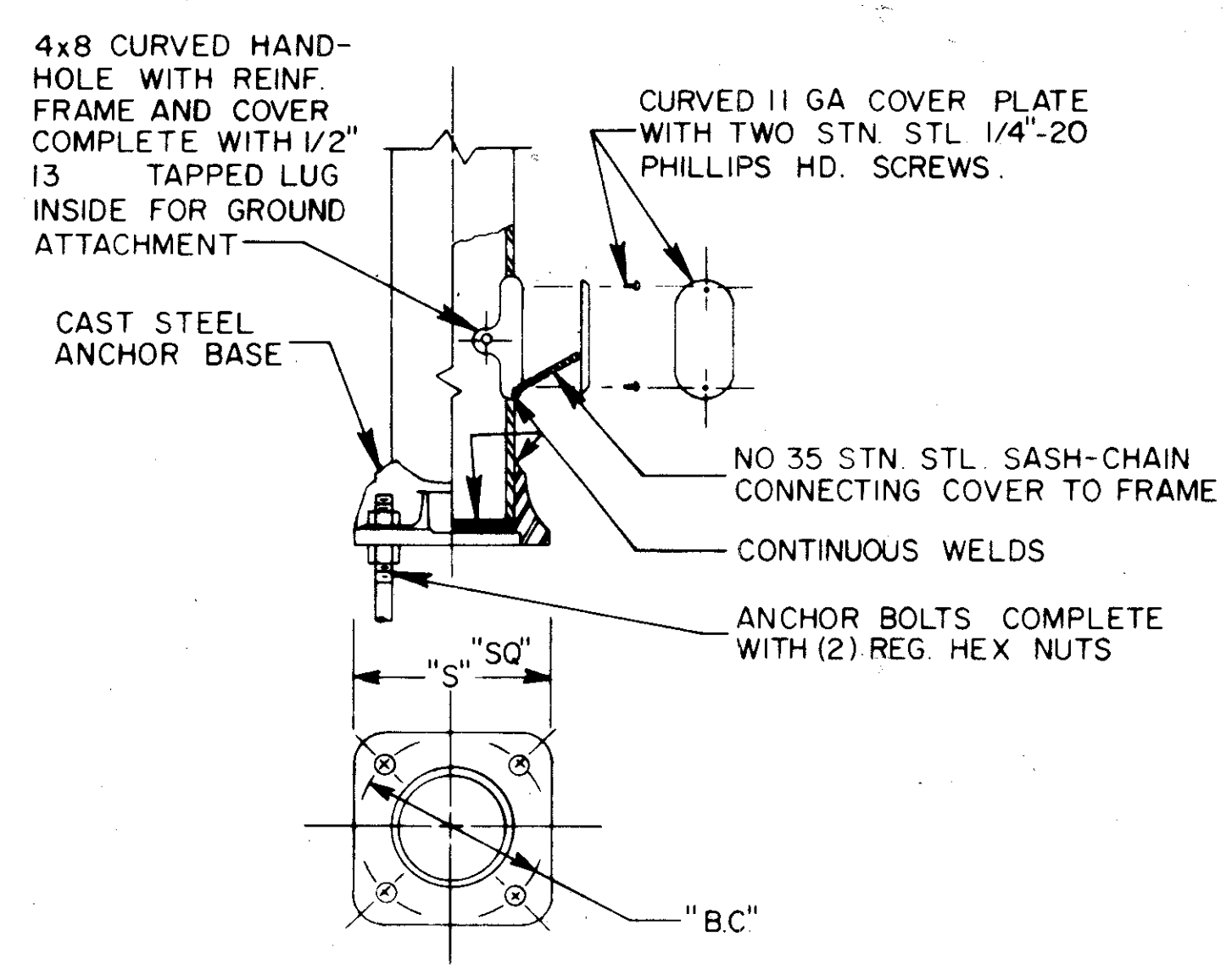




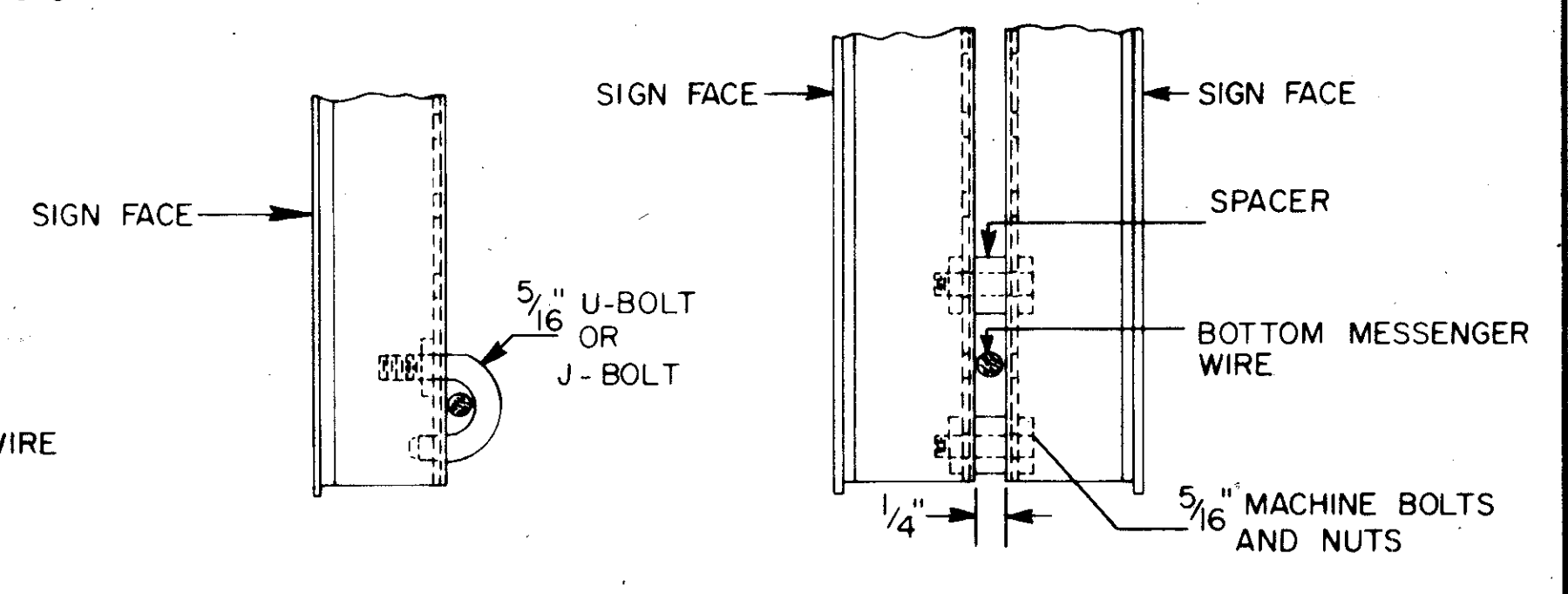
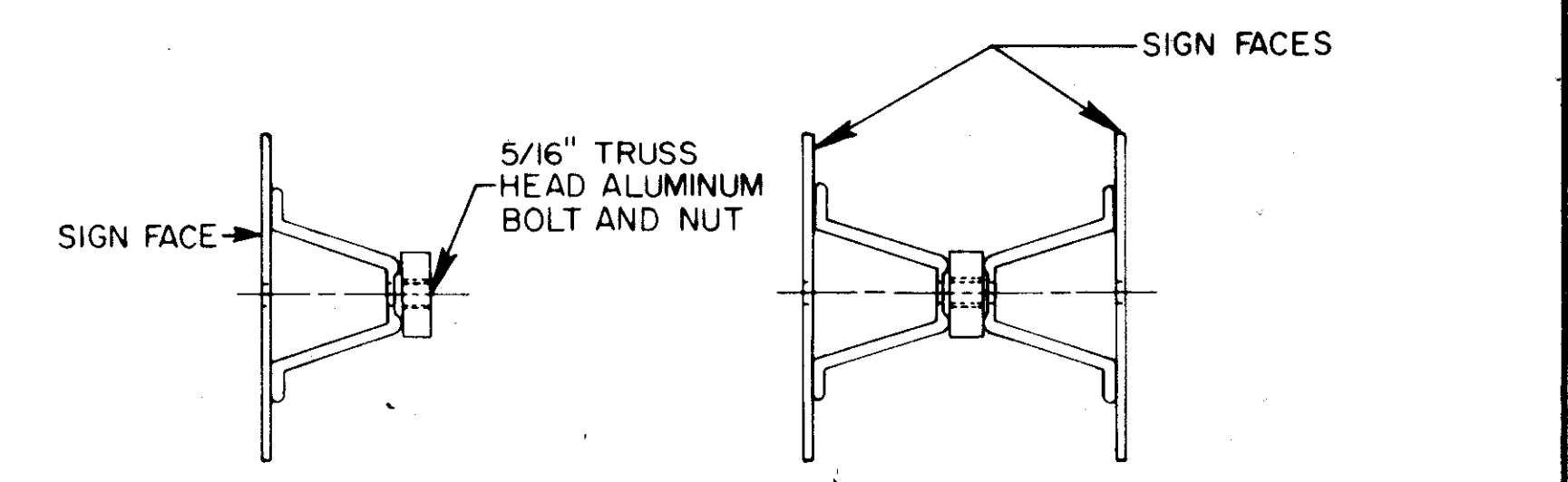
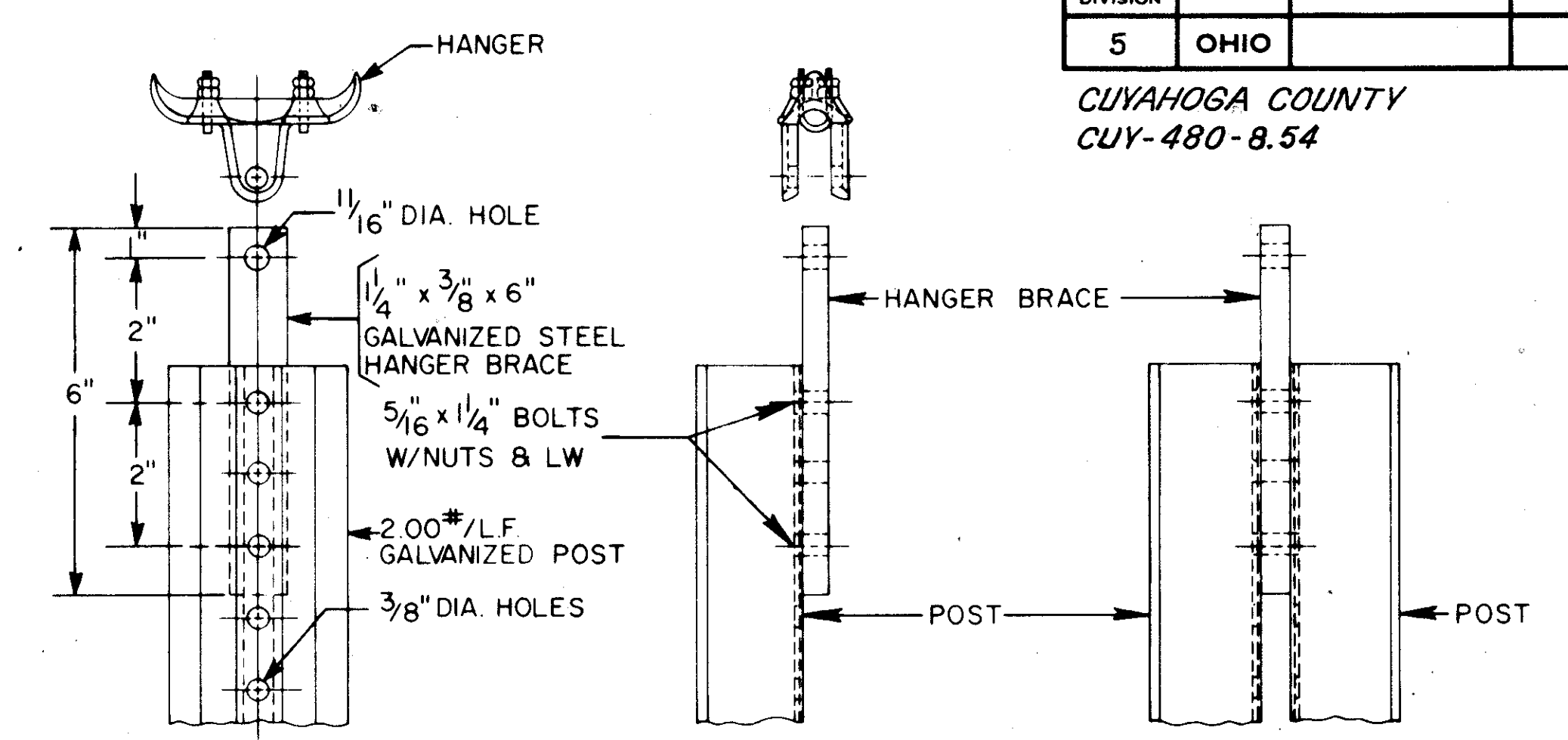


TYPE	CLAMP RANGE	
	MIN.	MAX.
I	3.1"	3.6"
II	3.6"	4.4"
III	4.4"	5.2"
IV	5.2"	5.8"
V	5.8"	6.8"
VI	6.8"	7.9"
VII	7.9"	9.0"
VIII	9.0"	10.1"
IX	10.1"	11.3"
X	11.3"	12.1"
XI	12.1"	13.4"
XII	13.4"	14.5"
XIII	14.5"	15.5"
XIV	15.5"	16.5"

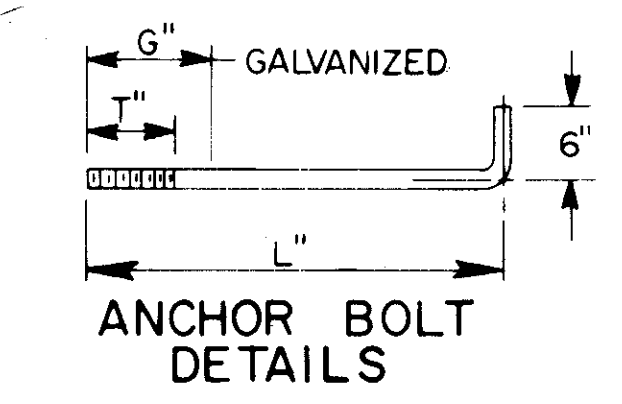
SPAN WIRE CLAMP DETAILS



FOUNDATION DETAIL



SIGN ATTACHMENT DETAILS



ANCHOR BOLT DETAILS

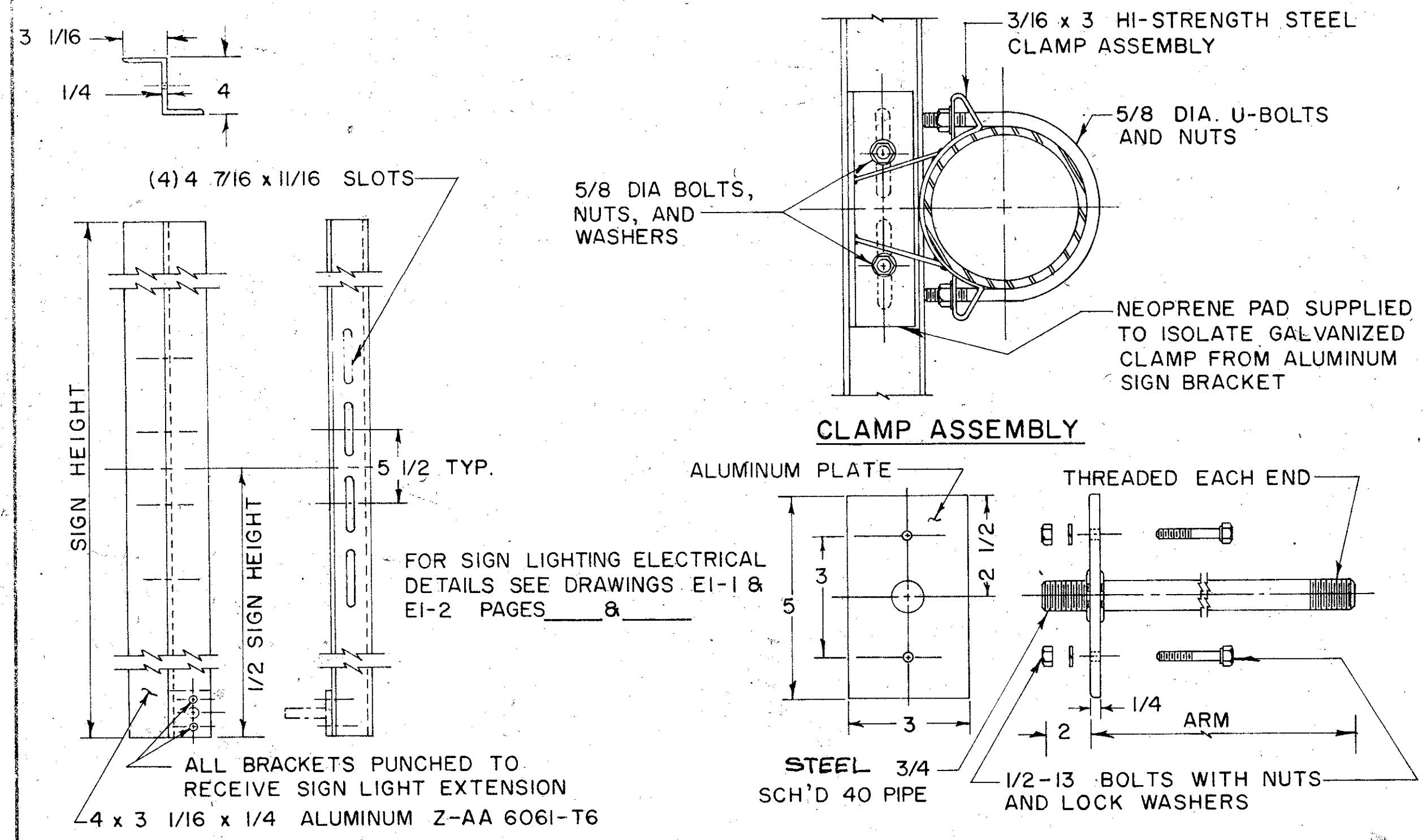
SUPP. NO.	STATION LOCATION	SPAN LENGTH	SIGN 1		SIGN 2		SIGN 3		SIGN 4		SIGN 5		SIGN 6		LEFT HAND STRAIN POLE			RIGHT HAND STRAIN POLE			BOLT CIRCLE	"D" MIN.	"P"	"S"	L	T	G	ANCHOR BOLT	ELEVATIONS							DIMENSION X
			A <sub>1</sub>	B <sub>1</sub>	A <sub>2</sub>	B <sub>2</sub>	A <sub>3</sub>	B <sub>3</sub>	A <sub>4</sub>	B <sub>4</sub>	A <sub>5</sub>	B <sub>5</sub>	A <sub>6</sub>	B <sub>6</sub>	DIA	GA	HEIGHT	DIA	GA	HEIGHT									A	B	C	D	E	F	G	
58	169916	83	36"	34 1/2"	36"	45'-6"	36"	56'-6"	36"	67'-6"					12"	3	26'-0"	12"	3	26'-0"	16"	9'	8 1/2"	17	84"	9'	12"	1 3/4" x 90"	792.37	791.89	784.37	792.37	792.16	784.37	791.62	36"

BUREAU OF DESIGN SERVICES  
OHIO DEPARTMENT OF HIGHWAYS

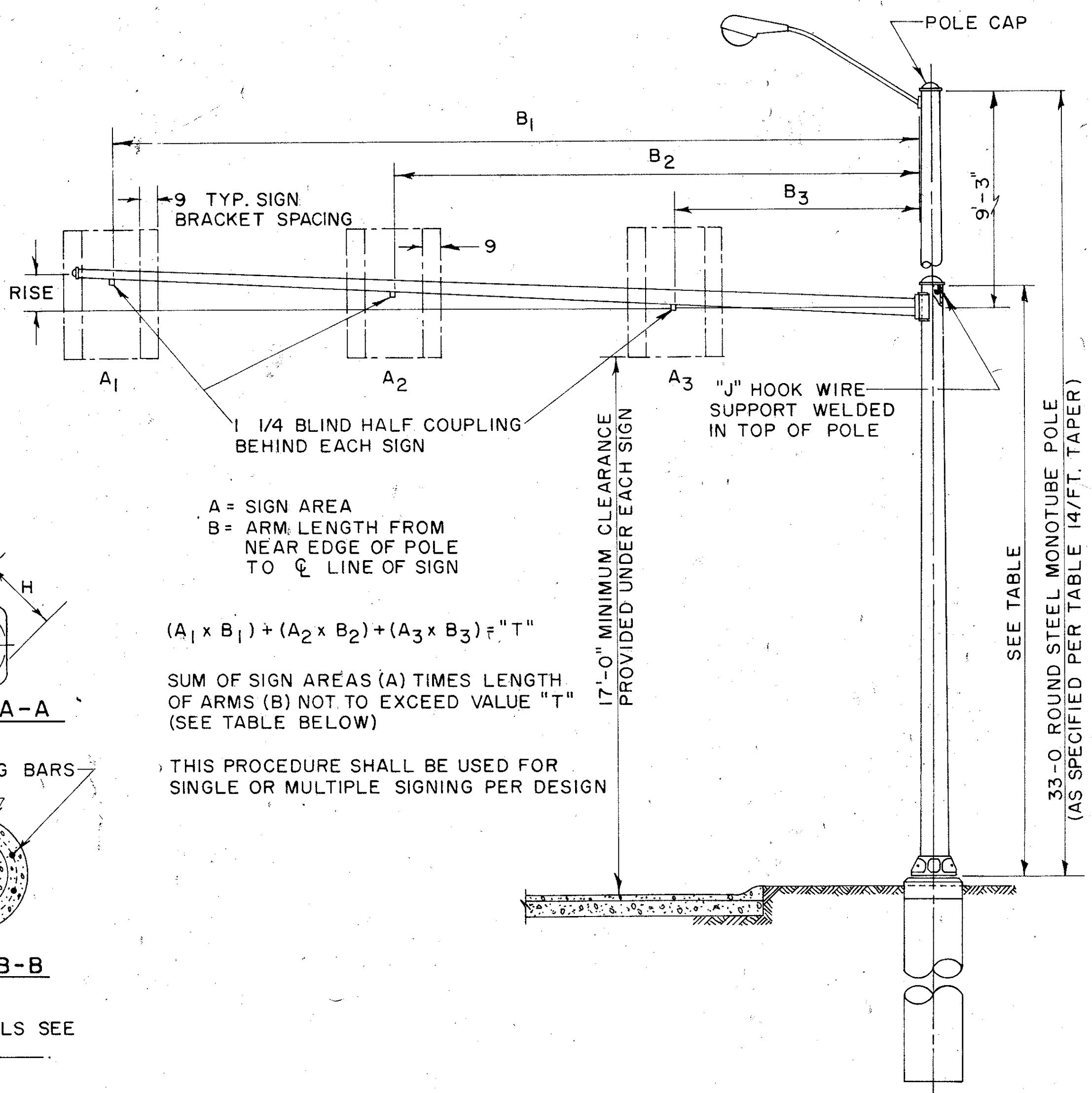
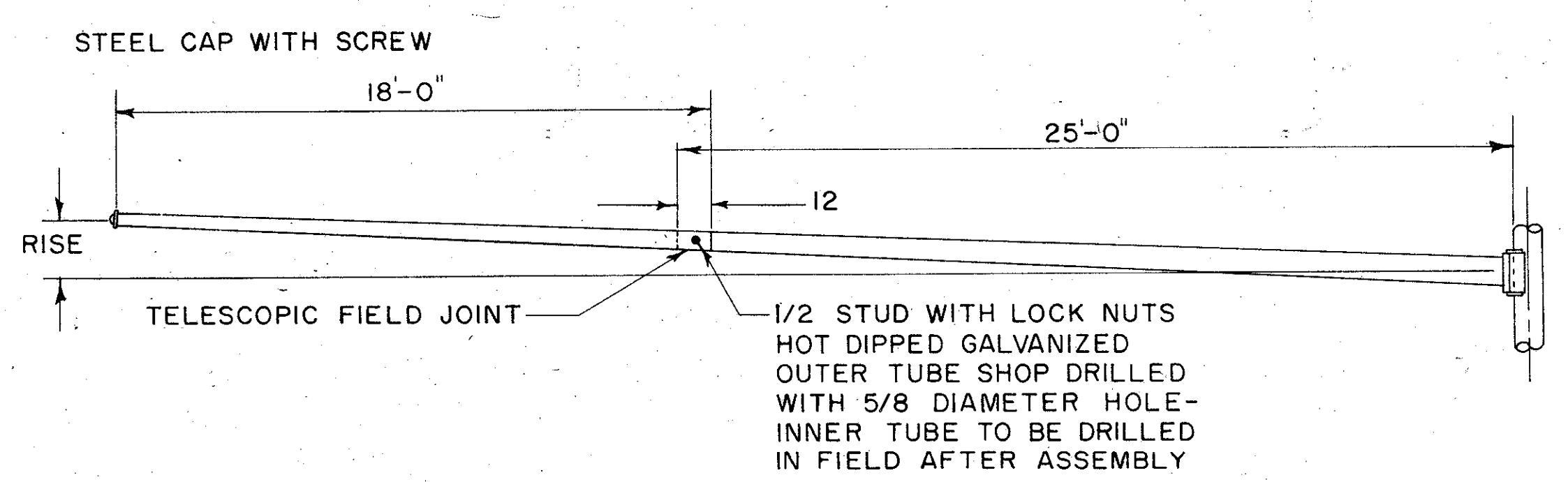
SPAN WIRE SIGN SUPPORT DETAILS

DATE 6/13/72

APPROVED \_\_\_\_\_ ENGINEER OF DESIGN SERVICES

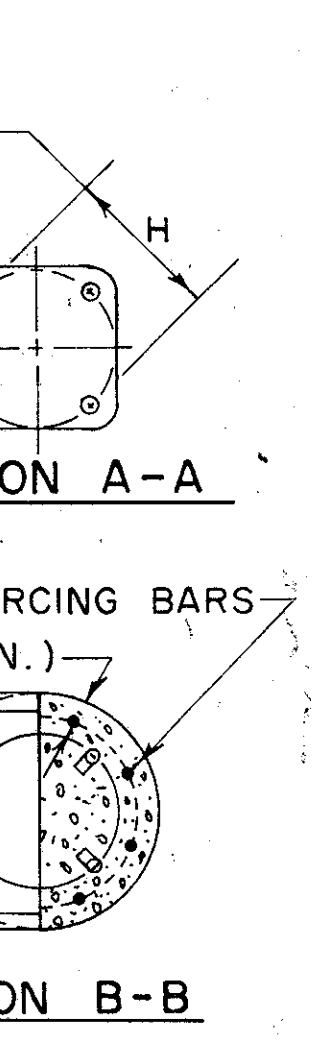
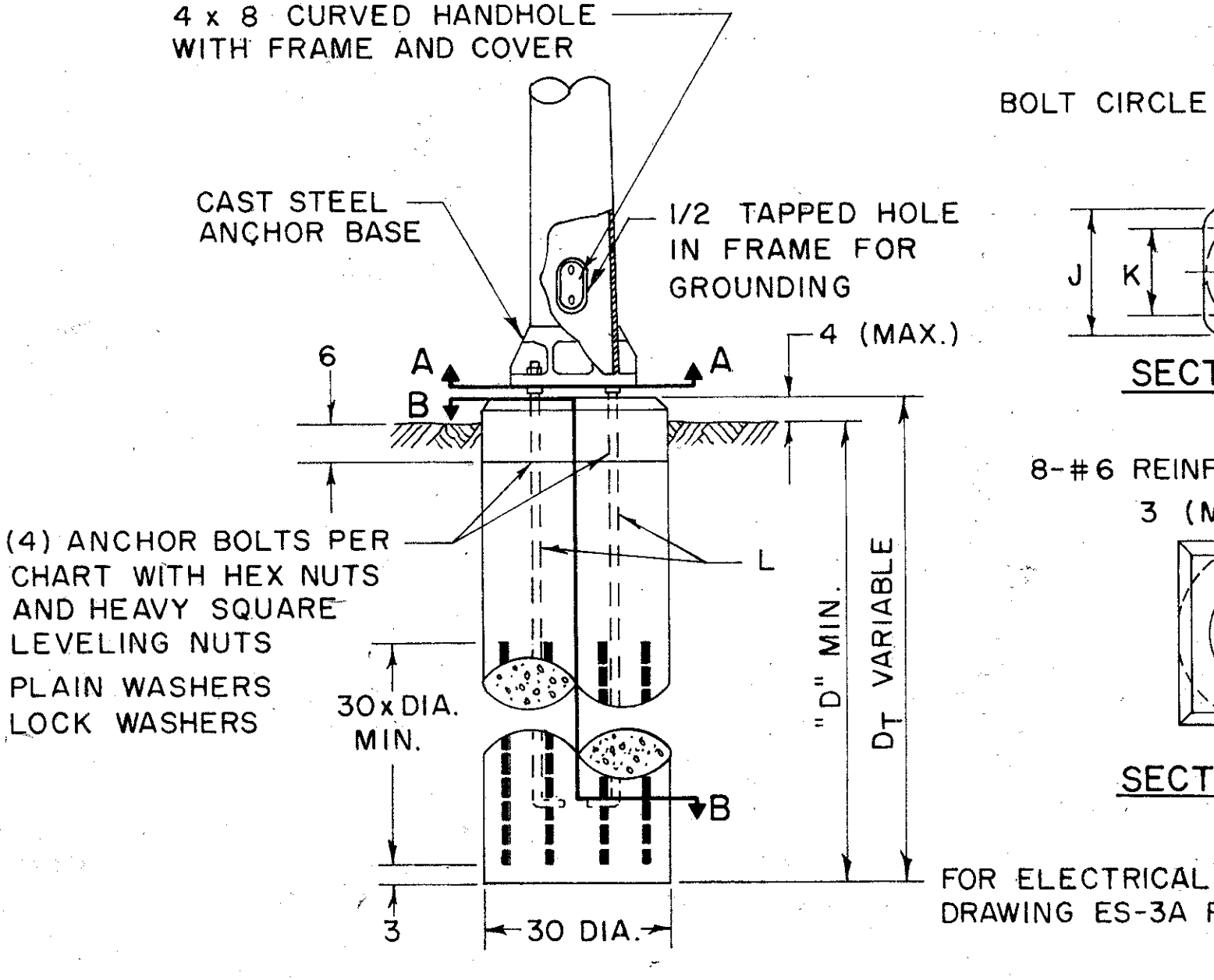
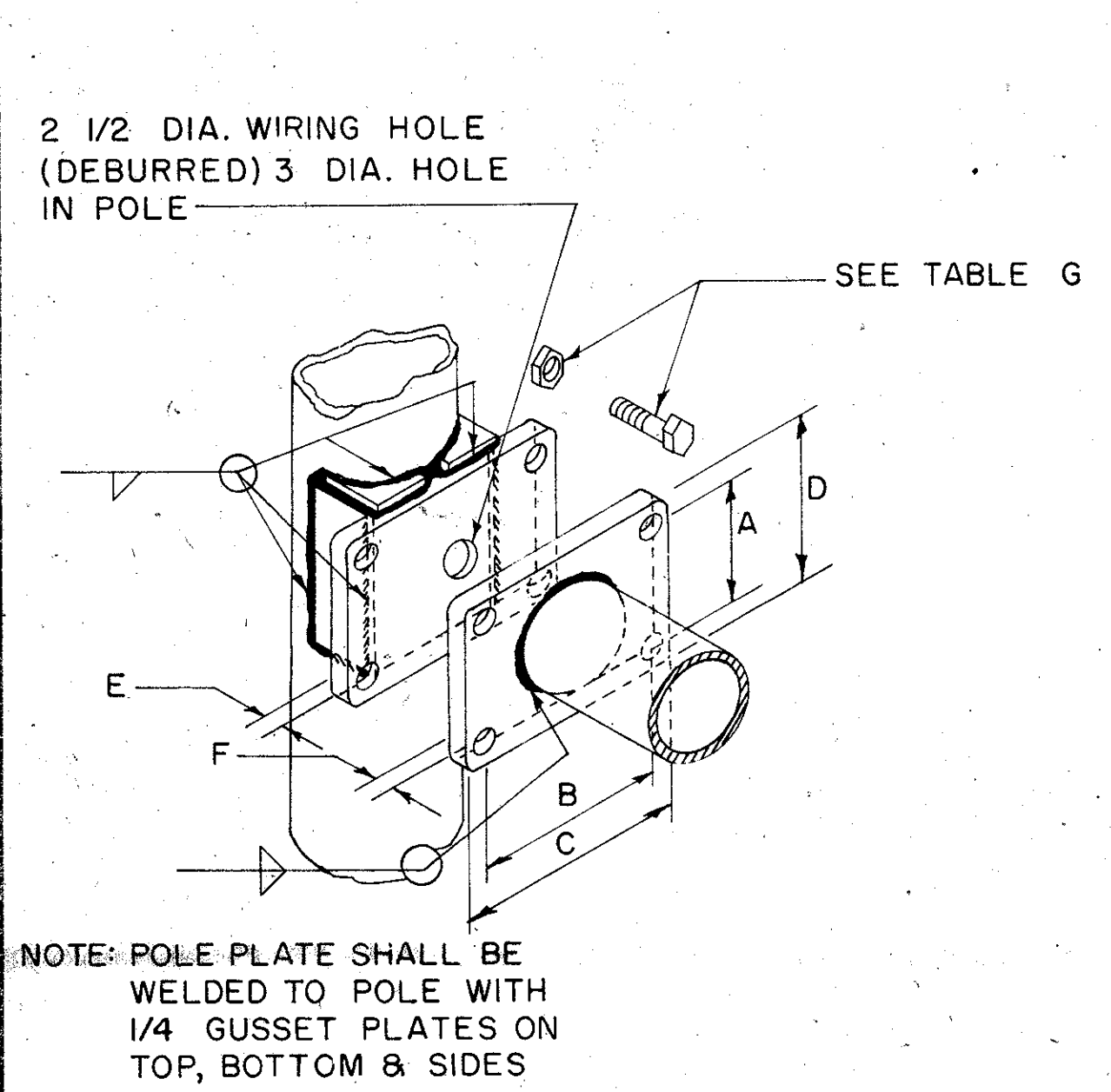


DES. NO.	ARM SIZE
3	2' - 9"
4	3' - 3"
5	3' - 3"
6	4' - 3"
7	4' - 3"



- ### NOTES
- MATERIALS**
- STEEL: SAE 1020
  - POLES & ARMS: A 36 AND A 441
  - PLATES: A 36 AND A 441
  - ARM CAP & HANDHOLE COVER: A 325
  - ARM ATTACHMENT BOLT & NUTS: A 325
  - U-BOLTS: A 307
  - ANCHOR BOLTS: A 307
  - BOLT FOR ARM CAP & NUTS: A 307
  - CLAMP BODY: A 242 AND A 375
  - CAST BASE & HANDHOLE FRAME: A 27 GRADE 65-35
  - ALL OTHERS: 300 SERIES, STAINLESS CLASS "C"
  - CONCRETE: ALUMINUM NO.
  - ALUMINUM ALLOY: ALUMINUM NO.
  - 3/4 PIPE: 6063-T6
  - 4 ZEE (SIGN BRACKETS): 6061-T6
  - PLATES: 6061-T6
  - POLE TOP: # 43
  - FINISH: ASTM
  - GALVANIZING, STRUCTURAL STEEL: A 123
  - GALVANIZING STEEL HARDWARE: A 153
  - STAINLESS STEEL: PASSIVATED
  - ALUMINUM ALLOY: NATURAL
- AFTER FABRICATION TAPPED POLES & ARMS SHALL HAVE A MINIMUM YIELD STRENGTH OF 55,000 PSI.
- ALL MATERIALS SHALL CONFORM TO THE STATE OF OHIO, CONSTRUCTIONS & MATERIALS SPECIFICATION AND THE SUPPLEMENTAL SPECIFICATIONS 816, OR AS OTHER-WISE SPECIFIED.

## SIGN BRACKET & FIXTURE SUPPORT ARM DETAIL



## ARM ATTACHMENT DETAIL

## FOUNDATION & POLE BASE DETAIL

## FRONT ELEVATION & SIGN PLACEMENT DETAIL

DES. NO.	POLE SIZE	SIGN SIZE	MAX. SIGN AREA	VALUE "T"	RISE		ARM SIZE	ARM ATTACHMENT DATA							ANCHOR BOLT DATA				REINF. BAR TYPE	NO. REQ'D	FOUNDATIONS "D" MIN.
					MIN	MAX		A	B	C	D	E	F	G	H	J	K	L			
1.	Oga 12" x 9.27" x 19'-6"	2'-6" x 3'-0"	22.5	585	11	24	2-7ga-9.0" x 3.68" x 38'-0"	9	13 1/2	17 1/2	13	2	1 1/4	1 1/4	16	17	11 5/16	1 3/4 x 90	6	8	7'-0"
2.	7ga 11" x 8.27" x 19'-6"	2'-6" x 3'-0"	22.5	315	9	18	7ga-8.0" x 4.08" x 28'-0"	8	12	16	12	1 1/4	1	1	15	15 5/8	10 5/8	1 1/2 x 60	6	8	5'-0"
3.	A/B Oga 14" x 10.54" x 24'-9" Oga 14" x 9.38" x 33'-0"	4'-0" x 5'-6"	66.0	1485	11	23	2-7ga-9.0" x 3.96" x 36'-0"	9	13 1/2	17 1/2	13	2	1 1/4	1 1/4	20	20 1/2	14 1/8	2 x 96	6	8	8'-0"
4.	A/B Oga 14" x 10.54" x 24'-9" Oga 14" x 9.38" x 33'-0"	4'-0" x 5'-6"	66.0	1881	12	28	2-7ga-10.0" x 6.50" x 25'-0" 7ga-7.0" x 4.48" x 18'-0"	11	14 1/2	18 1/2	15	2	1 1/4	1 1/4	20	20 1/2	14 1/8	2 x 96	6	8	8'-0"
5.	3ga 14" x 11.06" x 21'-0"	4'-0" x 6'-0"	72.0	1848	11	24	3ga-11" x 5.68" x 38'-0"	11	15 1/2	19 1/2	15	2	1 1/4	1 1/4	20	20 1/2	14 1/8	1 3/4 x 90	6	8	7'-6"
6.	3ga 11" x 8.06" x 21'-0"	4'-0" x 6'-0"	72.0	984	9	18	3ga-8.0" x 4.08" x 28'-0"	8	12	16	12	1 1/2	1	1	15	15 5/8	10 5/8	1 3/4 x 90	6	8	7'-6"
7.	Oga 12" x 9.06" x 21'-0"	5'-0" x 7'-0"	105.0	1435	9	18	2-7ga-8.0" x 4.08" x 28'-0"	8	13 1/2	17 1/2	12	2	1 1/4	1 1/4	16	17	11 5/16	1 3/4 x 90	6	8	7'-6"

NOTE: ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

**SOILS**

THE FOUNDATION DETAIL SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY.) FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

**FOUNDATIONS**

THE TOP ELEVATION OF ALL FOUNDATIONS SHALL BE FORMED TO BE FLUSH WITH ADJOINING CONCRETE CONSTRUCTION, OR A MAXIMUM OF 4" ABOVE FINISHED GRADE.

**BUREAU OF TRAFFIC**  
**OHIO DEPARTMENT OF HIGHWAYS**

**OVERHEAD SIGN SUPPORT**

**816-16.10**

APPROVED \_\_\_\_\_  
ENGINEER OF TRAFFIC

DATE  
5-31-68

# GENERAL NOTES - LIGHTING

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

201  
346

CUYAHOGA COUNTY  
CUY-480-8.54

## PLAN SPECIFICATION REFERENCES

References to item 625 and 713 in these plans shall be considered to read as respective references to items S 625 and S 713.

## 625.03 GENERAL

Electric power for this project, including the service transformer, primary control switch and photo-electric control will be provided by the CLEVELAND ELECTRIC ILLUMINATING COMPANY, CLEVELAND, OHIO. All references to CUY-80 should read CUY-480.

## SPECIFICATIONS

These notes are supplemental to items 625 and 713 of the State of Ohio Department of Transportation, construction and material specifications.

Reference shall be made to standard construction drawings listed on the title sheet.

The project has been designed on the basis of 5% voltage drop permissible on branch circuits. The project will receive 480 volt two-wire secondary service one side grounded from Cleveland Electric Illuminating Company.

The project has been designed on the basis of continuous lighting with 1.2 foot candle average initial, with a maximum uniformity ratio of 4.0 to 1.

## TRANSITION JUNCTION BOX

The unit price bid for each "Item 625, Transition Junction Box" shall be full compensation for furnishing and placing the junction box as shown in the detail on sheet R17C, and all labor, material, equipment, and incidentals necessary to complete the work as specified.

## 625.13 CONDUIT

Expansion fittings at structure expansion joints and at abutments shall be OZ Company Type AX and AX-8, Appleton No. XJ-4 and XJB-4, Crouse Hinds XJ-4, or other approved equal.

Each expansion fitting shall have a copper external bonding jumper.

## 625-713 POLYVINYL CHLORIDE PLASTIC CONDUIT

The specification covers polyvinyl chloride conduit for either direct burial in earth or for encasement in concrete and shall be of the size and type specified.

Detail requirements: Conduit furnished under this specification shall comply with the following, conduit conforming to NEMA standards publication No. TC 6-74 with the exception that conduit and conduit fittings composed of Acrylonitrile - Butadiene - Styrene (ABS) shall not be acceptable.

## CONNECTOR KITS

At the option of the Contractor, Type IX cable connections may be substituted where Type II or III cable connections are specified in hand holes or transformer bases of light poles.

Type I through Type VII cable connections in pull boxes, junction boxes and other enclosures below ground may be accomplished by the use of either of the following:

- (1) A sleeve or tee cable connector conforming to the general requirements of Style "S" or "H" or other connecting device approved by the Engineer. The Connector shall be installed in accordance with the Manufacturer's directions and the connection shall be sealed and waterproofed with a Hi-Dielectric compound such as AQUA SEAL as manufactured by Kearney, The Scotch #2200 compound manufactured by 3-M Company, or kit as manufactured by Blackburn, or equal approved by the Engineer. The sealing material shall be applied in accordance with the manufacturer's directions to make a water-tight connection. Connections not accomplished in-line or in tee form shall be additionally protected by use of a hi-dielectric PVC, or other approved material, boot with an approved fastening device.
- (2) A preassembled kit, as manufactured by Joy or Bussman or approved equal, with a waterproof or water-tight rating acceptable to the Engineer.

## HIGH PRESSURE SODIUM LAMPS FOR LUMINAIRES

High pressure sodium lamps shall be General Electric "Lucalox," Sylvania Lumalux, Westinghouse "Ceramalux," or equal approved by the Engineer.

## 625.07-713.11 LUMINAIRES FOR HIGH PRESSURE SODIUM

25,000 lumen horizontal Style B luminaires, designed for use with 200 watt High Pressure Sodium lamps, shall have single rated 480 volt, 200 watt integral regulator ballasts. Style B luminaires shall be General Electric M-400, Westinghouse OV-25, M<sup>o</sup>Graw-EDISON "Unistyle-400," or equal approved by the Engineer.

53,000 lumen horizontal Style C luminaires, designed for use with 400 watt High Pressure Sodium lamps, shall have single rated 480 volt, 400 watt integral regulator ballasts. The Style C luminaires shall be General Electric M-1000, Westinghouse OV-50, M<sup>o</sup>Graw Edison Unistyle-1000, or equal approved by the Engineer.

## LIGHT POLES

The requirements of S713.01, Paragraph 2(a) requiring circular cross sections for pole shafts is hereby waived. The cross section of the shaft may be circular or multiside (with no less than 8 sides) and the diameters or across the flat dimensions measured at any point along the longitudinal axis shall not vary from each other more than 3/16 inch. The cross section of the bracket arms shall be compatible with that of the pole. All other requirements of S713.01 shall apply.

## 713.02 ELECTRICAL CABLES

In lieu of the requirements listed under S713.02, paragraphs 2(a) and 2(b), all cable to be used for 300 and 600 volt service shall be UL type RHH, or RHW, or RHH/RHW and further meet the requirements of UL type USE.

All single conductor cables to be used for 300 and 600 volt service shall not have a separate outer covering.

Alternate bids for 5000 volt cable shall be for an XLP Type UL MV-90, dry.

## ALUMINUM TRANSFORMER BASES

Where indicated in the plans, light poles shall be equipped with cast aluminum transformer bases which conform to the AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals as instructed by FHWA Notice N5040.20. The contractor shall submit a certification from the manufacturer that the base supplied does meet the AASHTO breakaway specification. The certification shall be accompanied by reports of tests performed by the manufacturer or other agencies. If test results have been evaluated and found acceptable by FHWA, a copy of the approval letter from FHWA shall accompany the certification. Transformer bases shall be marked or labeled to identify that they meet the requirements of FHWA Notice N5040.20.

## 625.07-713.13 UNDERPASS LUMINAIRES

Underpass luminaires shall be Holophane "Underpass Wallpack," or equal Westinghouse, M<sup>o</sup>Graw-Edison or General Electric underpass unit approved by the Engineer, and shall be furnished with an integral fuseholder and 10-ampere fuse. The integral ballast shall be of a regulator type, single rated 480 Volts, and designed for use with a 100 watt High Pressure Sodium lamp.

## 625.07-713.11 LUMINAIRES FOR HIGH PRESSURE SODIUM (Cont)

25,000 lumen horizontal Style B luminaires, designed for use with 250 watt High Pressure Sodium lamps, shall have single rated 480 volt, 250 Watt integral regulator ballasts. Style B luminaires shall be General Electric M-400, Westinghouse OV-25, M<sup>o</sup>Graw-Edison "Unistyle-400" or equal approved by the Engineer.

## SERVICE TO UNDERDECK LIGHTING, AS PER PLAN

This item shall consist of providing complete electrical service, except for luminaires, and lamps for an underdeck lighting system on Bridges No. 71-1011, 171 over I-480 and No. 0943 over West 150th St.

The installation work shall include conduits, mountings, fittings, junction boxes, cables, and all incidentals necessary to complete, ready for use, the service as detailed on sheets 214-215.

The lump sum price bid for "Item 625 - Service to Underdeck Lighting, As Per Plan" shall include payment for all equipment, labor, and materials necessary to complete the work as specified. Component parts not specifically mentioned but required for satisfactory operation of this item shall be furnished and considered paid for as part of the item.

# GENERAL NOTES - LIGHTING

CUYAHOGA COUNTY  
CUY-480-8.54

COMPUTED BY: R.M.B. 1-15-76  
CHECKED BY: T.M.D. 1-16-76

## LIGHT POLE ANCHOR BOLTS FOR BRIDGES AND RETAINING WALLS

Anchor bolts for mounting light poles on bridges and retaining walls shall conform to the requirements of S713.01 and details shown on the plans and standard drawings, or the approved shop drawings, for the respective poles to be placed thereon. Payment shall be made at the unit price bid for each set of the size required and necessary to install one pole, and this payment shall constitute full compensation for furnishing and placing the bolts.

## CONDUIT JACKED UNDER PAVEMENT, AS PER PLAN

This item shall consist of furnishing and installing conduit of the size or sizes indicated under existing pavement and contiguous shoulders by an approved method such as "drilling" or "jacking."

The contractor shall place the conduit with the least amount of disturbance to the existing pavement, subbase, berm pavement, or shoulders of the roadway. All push pits or any necessary excavations shall be backfilled and restored in accordance with S625.01.

Measurement of the conduit shall be the actual amount of lineal feet installed under pavement and shoulders, measured in place, as accepted by the Engineer. The unit price bid for Item S625 "Conduit Jacked Under Pavement, As Per Plan" shall be full compensation for excavation, drilling or jacking, backfilling, compaction, restoration, and all labor, material, equipment, and incidentals necessary to complete the work as specified.

## ELECTRICAL SERVICE FOR ILLUMINATED SIGNS

The pay items in the Lighting General Summary include the pull box or junction box adjacent to each lighted sign and the electrical service connections leading into the box, including connector kits in the pull box or junction box. Quantities for electrical service from the connector kits in the pull box or junction box to the sign are included in the Traffic Control General Summary.

## STANDARD CONSTRUCTION DRAWING HL-3

Pole Base Details shown on this drawing are essentially for galvanized steel poles. For aluminum designs, or other permitted steel material designs, variations from these details will be acceptable, as approved by the Engineer.

## CONTROL CENTER

A by-pass switch consisting of a 20 amp switch complete with wire and conduit, shall be furnished and installed by the Contractor.

Cleveland Electric Illuminating Co. will connect the switch for manual by-pass control of the lighting controller.

Cost of switch to be included in the price bid for Control Center, as per plan.

## HIGH VOLTAGE DIRECT CURRENT TEST

A high voltage direct current test, as described in supplemental specification 839, shall be performed on all distribution cable and duct cable systems to be installed on this project. The test shall not be performed until after all new construction, such as guard rail, fence, delineator posts, sign supports, etc., in the immediate vicinity of the location of the cable run being tested, has been completed.

The testing requirements of 625.22 (B) are hereby waived for those circuits on which the high voltage test is to be performed.

POLE DESIGN NUMBER	TRANSFORMER BASE STYLE	FOUNDATION ANCHOR BOLTS	
		SIZE	DIAMETER BOLT CIRCLES
A12BB47.5D*	NONE	1/4"x70"	Rect.
A12BB37.5D*	NONE	1/4"x70"	Rect.
A15B36.7	AT	1"x40"	12 1/2"
A78B36.7	AT	1"x40"	12 1/2"
ST8836.7	STEEL	1"x40"	15"
ST12B36.7	STEEL	1"x40"	15"

\*The median pole base plate shall be "12 x 22", 1/4" thick, with 1/2" diameter holes spaced to match the anchor bolts as shown in the detail on sheet 217A.

## PULL BOX COVERS

SUPPLEMENTING S713.09(3), COVERS FOR CIRCULAR PULLBOXES SHALL BE PRECAST, STEEL REINFORCED CONCRETE OF THE SIZE AND DIMENSIONS DETAILED IN THE PLANS, WITH TWO (2) No. 4 Ga. GALVANIZED STEEL LIFTING EYES RECESSED FLUSH WITH THE TOP OF THE COVER. THE COVER SHALL BE CONSTRUCTED WITH 4 x 4/8 REINFORCING MESH AND CLASS C CONCRETE WITH No. 4 AGGREGATE CONFORMING TO ITEM 499 OF THE SPECIFICATIONS.

PAYMENT FOR PULL BOX COVERS FOR CIRCULAR PULL BOXES, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 625-"PULL BOX, BY SIZE, S713.09, WITH CONCRETE COVER, AS PER PLAN."

## ESTIMATED QUANTITIES

An estimated quantity of 232 lin. ft. of Item 605, "4-inch shallow pipe underdrains" is provided in the lighting general summary for use as directed by the Engineer in providing positive drainage for pull boxes in fill areas. It is intended that all pull boxes in these areas be provided with such drainage, provided the length of underdrain necessary to obtain a satisfactory outfall does not exceed 35 feet approximately. A perforated PVC pipe or conduit material approved by the Engineer may be used in the construction of this item.

See sheets 202 and 203 for individual lengths and locations.

## PULLBOX SUMMARY

LOCATION	4" U.D.	TYPE	CONNECTOR KITS
STA. 480 + 90	☉ I-480 64' LT.	18" DIA., AS PER PLAN	2 - TYPE VIII
STA. 477 + 60	☉ I-480	SPECIAL MEDIAN BARRIER	2 - TYPE VIII
STA. 480 + 90	☉ I-480	SPECIAL MEDIAN BARRIER	2 - TYPE IX
STA. 477 + 60	☉ I-480 64' RT.	18" DIA., AS PER PLAN	2 - TYPE VIII
STA. 484 + 10	☉ I-480 64' RT.	18" DIA., AS PER PLAN	2 - TYPE VIII
STA. 489 + 44	☉ I-480 64' LT.	14'	18" DIA., AS PER PLAN
STA. 494 + 00	☉ I-480	SPECIAL MEDIAN BARRIER	4 - TYPE IX
STA. 494 + 00	☉ I-480 108' RT.	14'	18" DIA., AS PER PLAN
STA. 495 + 00	☉ I-480 100' RT.		
STA. 27 + 90	☉ RAMP 'R' 15' LT.	7'	18" DIA., AS PER PLAN
STA. 30 + 15	☉ RAMP 'R' 15' LT.	7'	18" DIA., AS PER PLAN
STA. 34 + 15	☉ RAMP 'R' 15' LT.	7'	18" DIA., AS PER PLAN
STA. 36 + 23	☉ RAMP 'R' 15' LT.	7'	18" DIA., AS PER PLAN
STA. 25 + 30	☉ RAMP 'S' 15' RT.	7'	18" DIA., AS PER PLAN
STA. 29 + 78	☉ RAMP 'T' 11' RT.	7'	18" DIA., AS PER PLAN
STA. 33 + 80	☉ RAMP 'T' 11' RT.	7'	18" DIA., AS PER PLAN
STA. 497 + 20	☉ I-480	SPECIAL MEDIAN BARRIER	2 - TYPE IX
STA. 510 + 10	☉ I-480	SPECIAL MEDIAN BARRIER	2 - TYPE VIII
STA. 510 + 10	☉ I-480 77' RT.	18" DIA., AS PER PLAN	2 - TYPE VIII
STA. 44 + 25	☉ RAMP 'R' 15' LT.	18" DIA., AS PER PLAN	2 - TYPE VIII
STA. 41 + 50	☉ RAMP 'T' 11' RT.	14'	18" DIA., AS PER PLAN
STA. 47 + 80	☉ RAMP 'T' 11' RT.	14'	18" DIA., AS PER PLAN
STA. 515 + 30	☉ I-480 98.5 LT.	15'	18" DIA., AS PER PLAN
STA. 515 + 30	☉ I-480	SPECIAL MEDIAN BARRIER	2 - TYPE IX
STA. 516 + 66	☉ I-480	SPECIAL MEDIAN BARRIER	4 - TYPE VIII
STA. 517 + 12	☉ I-480	SPECIAL MEDIAN BARRIER	4 - TYPE VIII
STA. 522 + 40	☉ I-480	SPECIAL MEDIAN BARRIER	4 - TYPE IX
STA. 523 + 62	☉ I-480	SPECIAL MEDIAN BARRIER	4 - TYPE VIII
STA. 524 + 57	☉ I-480	SPECIAL MEDIAN BARRIER	4 - TYPE VIII

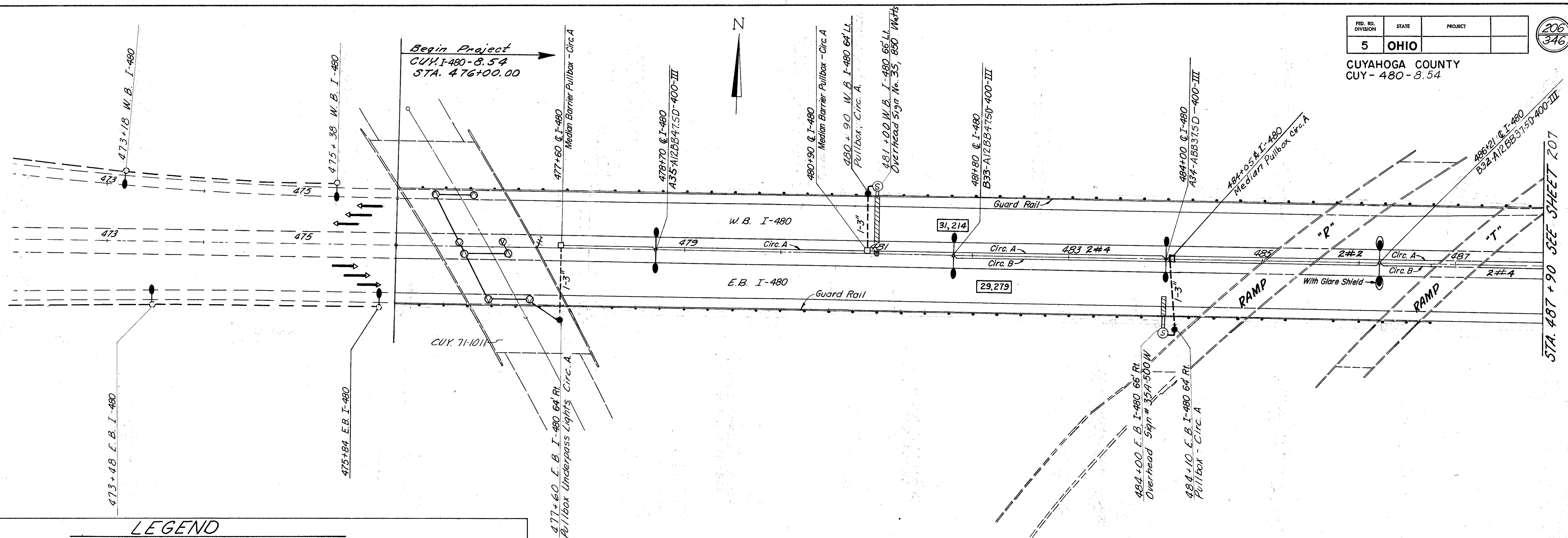
For Continuation See Sheet No. 203









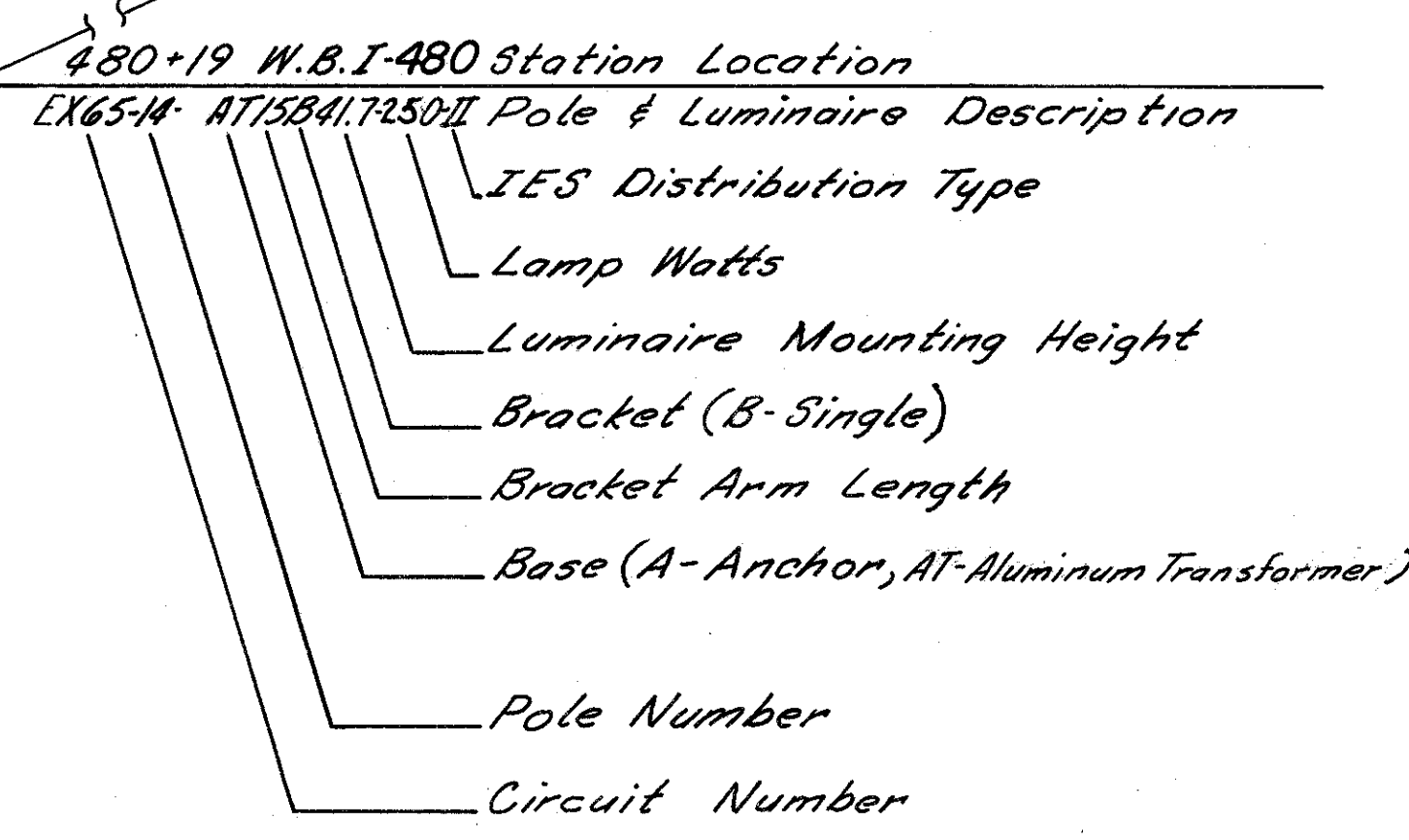


**LEGEND**

- △ Control Center
- Pullbox - 18" S713.09 With Concrete Cover As Per Plan
- Special Median Barrier Pullbox

- ⊙ Overhead Sign Connection
- 31,214 1969 Average Daily Traffic
- ⊙ Underpass Luminaire
- Ferrous Metal Conduit
- Duct Cable

Light Pole & Luminaire (Arm Perpendicular to Stationing)

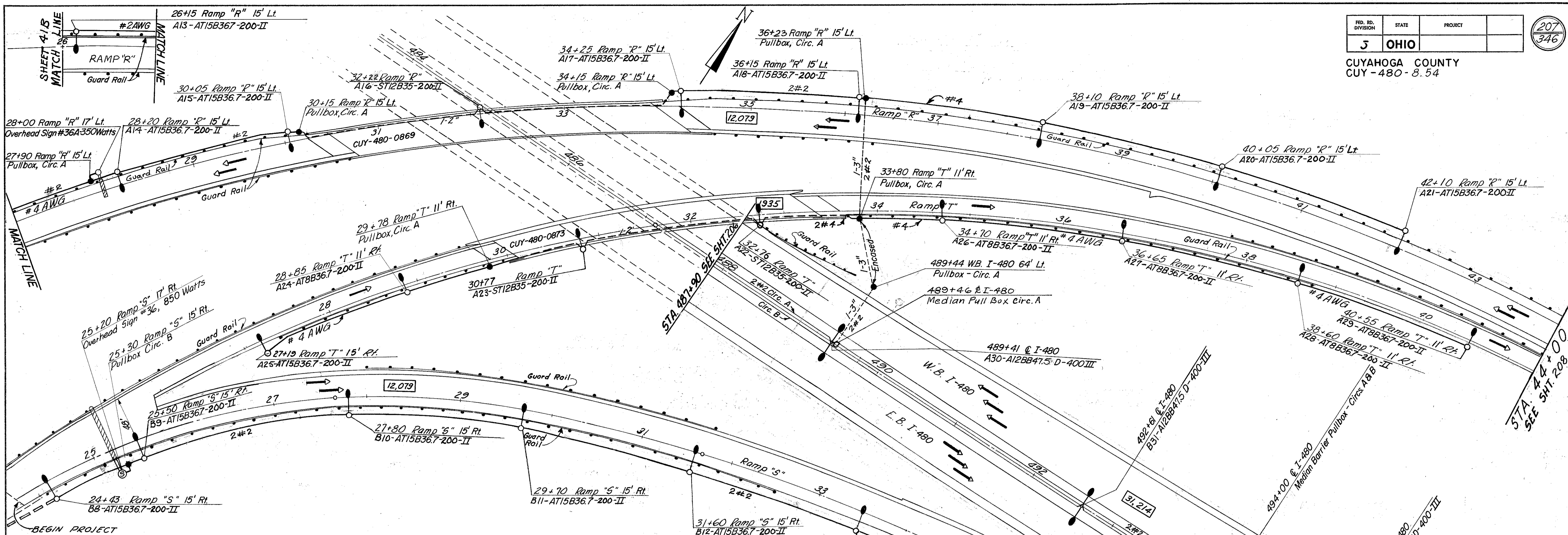


**ELECTRICAL QUANTITIES**

LINE NO.	STRUCTURE				TOTAL	ITEM	UNIT	DESCRIPTION	LINE NO.
	1011	I-480 W.B.	I-480 E.B.						
1	2			2	S625	Ea.	Light Pole - A12BB375D (MEDIAN MOUNTED)	1	
2	2			2	S625	Ea.	Light Pole - A12BB475D (MEDIAN MOUNTED)	2	
18	4			4	S625	Ea.	MEDIAN Light Pole Foundation	18	
9	8			8	S625	Ea.	Style C Luminaire, Type III, W/400 Watt HPS Ballast	9	
12	8			8	S625	Ea.	Luminaire, Underpass, W/100 Watt HPS Ballast	12	
17	2			2	S625	Ea.	Glare Shield, S713.11, Style C Luminaire	17	
14	8			8	S625	Ea.	Lamp, 400 Watt, High Pressure Sodium	14	
13	8			8	S625	Ea.	Lamp, 100 Watt, High Pressure Sodium	13	
20	6	1	1	8	S625	Ea.	Ground Rod	20	
21								21	
23								23	
24		1	2	3	S625	Ea.	Pull Box - 18" S713.09 With Concrete Cover As Per Plan	24	
25		3		3	S625	Ea.	Median Pullbox	25	
38		64	128	192	S625	L.F.	Conduit, 3", S713.04	38	
27	Lump			Lump	S625	Lump	Service to Underpass Lighting For Bridge No. 71-1011	37	
41		64	128	192	S625	L.F.	Trench, 24" Deep	41	
42								42	
43								43	
22								22	
47		790		790	S625	L.F.	No. 2 AWG, 600 Volt Distribution Cable	47	
44		2610	148	3054	S625	L.F.	No. 4AWG, 600 Volt Distribution Cable	44	
49								49	
45		750		750	S625	L.F.	No. 10AWG Pole & Bracket Cable	45	
		8		8	S625	Ea.	Connector Kit Type VII As Per Plan		
50		8		8	S625	Ea.	Connector Kit Type III As per plan	50	
51		4		4	S625	Ea.	Connector Kit Type IX As per plan	51	
48		2	2	4	S625	Ea.	Connector Kit Type VIII As per plan	48	

RS 4-19-71  
TRB 5-20-71

CUYAHOGA COUNTY  
CUY-480-8.54



ELECTRICAL QUANTITIES

LINE NO	ROADWAY							TOTAL	ITEM	UNIT	DESCRIPTION	LINE NO
	0873	0869	I-480 WB.	I-480 E.B.	RAMP "R"	RAMP "S"	RAMP "T"					
2				3				3	S625 Ea.	Light Pole - A12BB47.5 D (Median Mounted)	2	
3					8	7	1	16	S625 Ea.	Light Pole - AT15B36.7	3	
4							5	5	S625 Ea.	Light Pole - AT8B36.7	4	
5	2	1						3	S625 Ea.	Light Pole - ST12B36.7 (Bridge Mounted)	5	
18				3				3	S625 Ea.	Median Light Pole Foundation	18	
19					8	7	6	21	S625 Ea.	Foundation 24" X 24" X 6' Deep	19	
9				6				6	S625 Ea.	Style C Luminaire, Type III, w/400 Watt HPS Ballast	9	
10	2	1			8	7	6	24	S625 Ea.	Style B Luminaire, Type II, w/200 Watt HPS Ballast	10	
15	2	1			8	7	6	24	S625 Ea.	Lamp, 200 Watt, H.P. Sodium	15	
14				6				6	S625 Ea.	Lamp, 400 Watt, H.P. Sodium	14	
20			1	4	1	9	8	29	S625 Ea.	Ground Rod	20	
25				2				2	S625 Ea.	Median Pullbox	25	
21									S625 Ea.		21	
23									S625 Ea.		23	
24			1		4	1	2	9	S625 Ea.	Pull Box - 18" S713.09 With Concrete Cover As Per Plan	24	
39				85				85	S625 L.F.	Conduit, 3" S713.06, Encased	39	
36	2	1						3	S625 Sets	Light Pole Anchor Bolts For Structure, S713.01	36	
29	1							1	S625 Ea.	Structure Grounding System For Bridge No. Cuy-480-0873	29	
37	402	400						802	S625 L.F.	Conduit, 2" S713.04	37	
38				64	105	65	52	351	S625 L.F.	Conduit, 3" S713.04	38	
41				143	208	1260	1289	3905	S625 L.F.	Trench, 24" Deep	41	
42	864	840		338	1680		140	4002	S625 L.F.	No. 2 AWG, 600 Volt Distribution Cable	42	
43					693	967		1661	S625 L.F.	1 1/2" Duct-Cable with Two No. 2 AWG 600V Cables	43	
46					1295	1322	994	1966	S625 L.F.	1 1/2" Duct-Cable with Two No. 4 AWG 600 V. Cables	46	
44					1660	240		1900	S625 L.F.	No. 4 AWG, 600 Volt Distribution Cable	44	
45	188	94		608	827	724	536	2977	S625 L.F.	No. 10 AWG, Pole & Bracket Cable	45	
30		1						1	S625 Ea.	Structure Grounding System For Bridge No. Cuy-480-0869	30	
49	2	1			8	7	6	24	S625 Ea.	Connector Kit Type II, As per plan	49	
50	2	1			8	7	6	24	S625 Ea.	Connector Kit Type III, As per plan	50	
51				6	2	4	2	14	S625 Ea.	Connector Kit Type IX, As per plan	51	
22				6				6	S625 Ea.	Connector Kit Type VI, As per plan	22	
52				6				6	S625 Ea.	Connector Kit Type VII-C, As per plan	52	
48				2	4		2	10	S625 Ea.	Connector Kit Type VIII, As per plan	48	
54									S625 Ea.		54	

STA. 496+00 SEE SHEET 208

Rev. D.R.S. 3-30-78

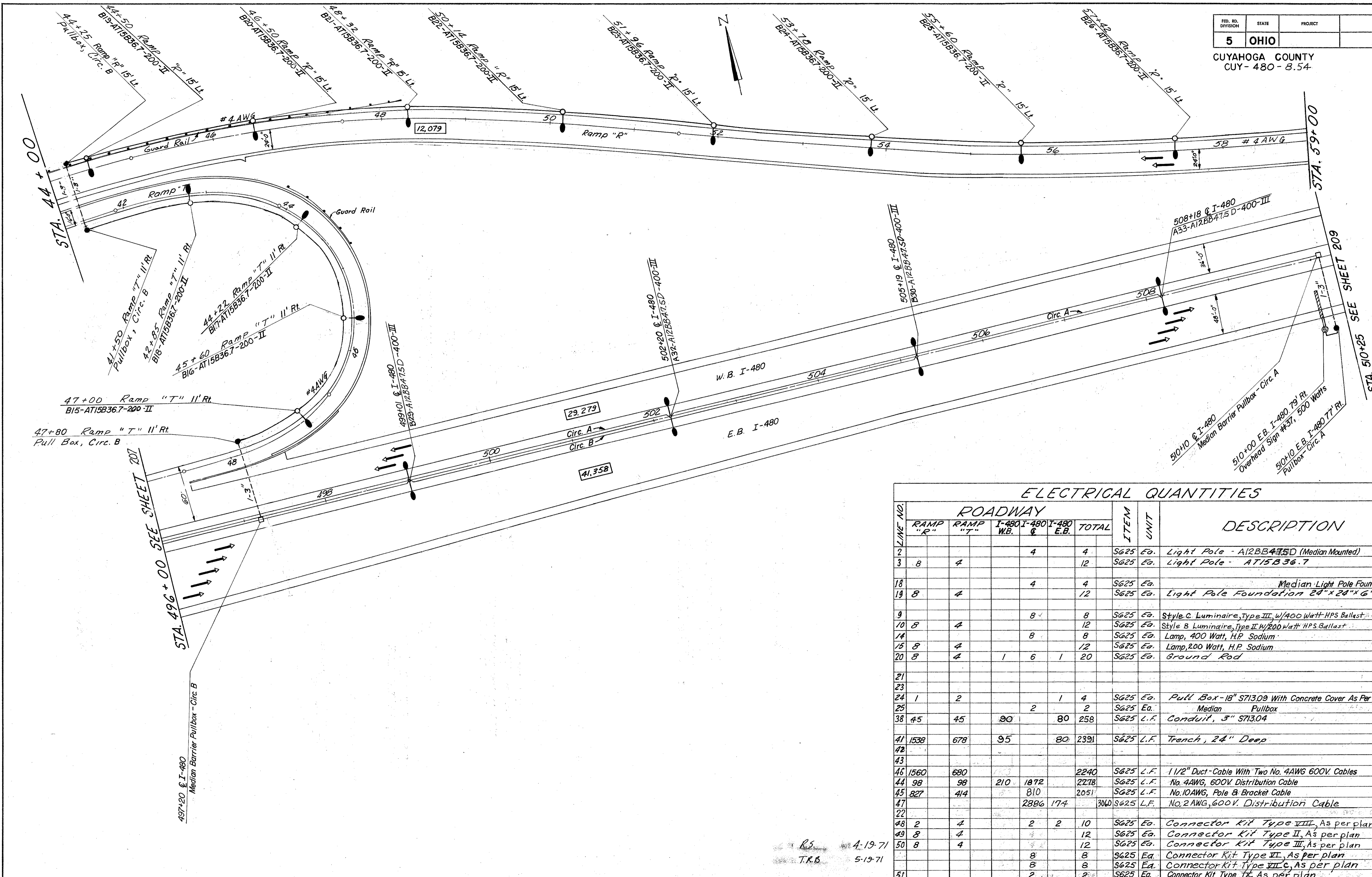
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T.R.B. 5-20-78

Rev. 6-22-78

Rev. 4-12-78

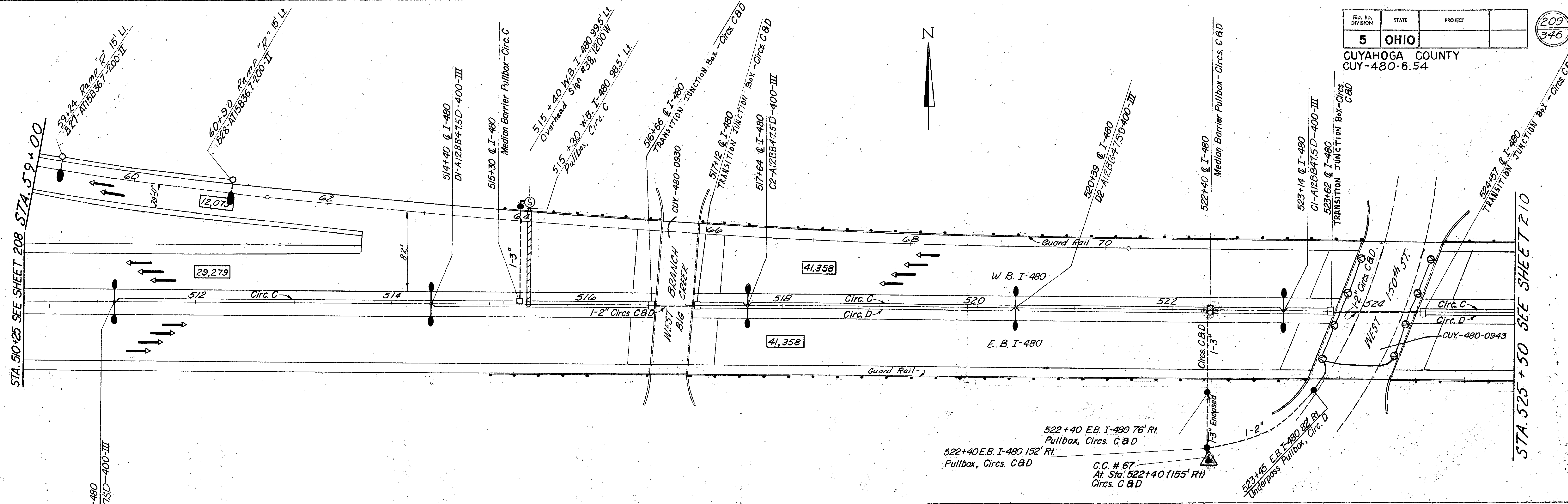
LIGHTING PLAN



ELECTRICAL QUANTITIES

LINE NO.	ROADWAY					ITEM	UNIT	DESCRIPTION	LINE NO.
	RAMP "R"	RAMP "T"	I-480 W.B.	I-480 C	I-480 E.B.				
2				4		4	S625 Ea.	Light Pole - A12BB47.5D (Median Mounted)	2
3	8	4				12	S625 Ea.	Light Pole - AT15B36.7	3
18				4		4	S625 Ea.	Median Light Pole Foundation	18
19	8	4				12	S625 Ea.	Light Pole Foundation 24"x24"x6' Deep	19
9				8		8	S625 Ea.	Style C Luminaire, Type III, w/400 Watt HPS Ballast	9
10	8	4				12	S625 Ea.	Style B Luminaire, Type II, w/200 Watt HPS Ballast	10
14				8		8	S625 Ea.	Lamp, 400 Watt, H.P. Sodium	14
15	8	4				12	S625 Ea.	Lamp, 200 Watt, H.P. Sodium	15
20	8	4	1	6	1	20	S625 Ea.	Ground Rod	20
21									21
23									23
24	1	2			1	4	S625 Ea.	Pull Box - 18" S713.09 With Concrete Cover As Per Plan	24
25				2		2	S625 Ea.	Median Pullbox	25
38	45	45	90		80	258	S625 L.F.	Conduit, 3" S713.04	38
41	1538	678	95		80	2391	S625 L.F.	Trench, 24" Deep	41
42									42
43									43
46	1560	680				2240	S625 L.F.	1 1/2" Duct-Cable With Two No. 4AWG 600V. Cables	46
44	98	98	210	1872		2278	S625 L.F.	No. 4AWG, 600V. Distribution Cable	44
45	827	414		810		2051	S625 L.F.	No. 10AWG, Pole & Bracket Cable	45
47				2886	174	3060	S625 L.F.	No. 2AWG, 600V. Distribution Cable	47
22									22
48	2	4		2	2	10	S625 Ea.	Connector Kit Type VIII, As per plan	48
49	8	4				12	S625 Ea.	Connector Kit Type II, As per plan	49
50	8	4				12	S625 Ea.	Connector Kit Type III, As per plan	50
				8		8	S625 Ea.	Connector Kit Type VI, As per plan	
				8		8	S625 Ea.	Connector Kit Type VIIc, As per plan	
51				2		2	S625 Ea.	Connector Kit Type IX, As per plan	51

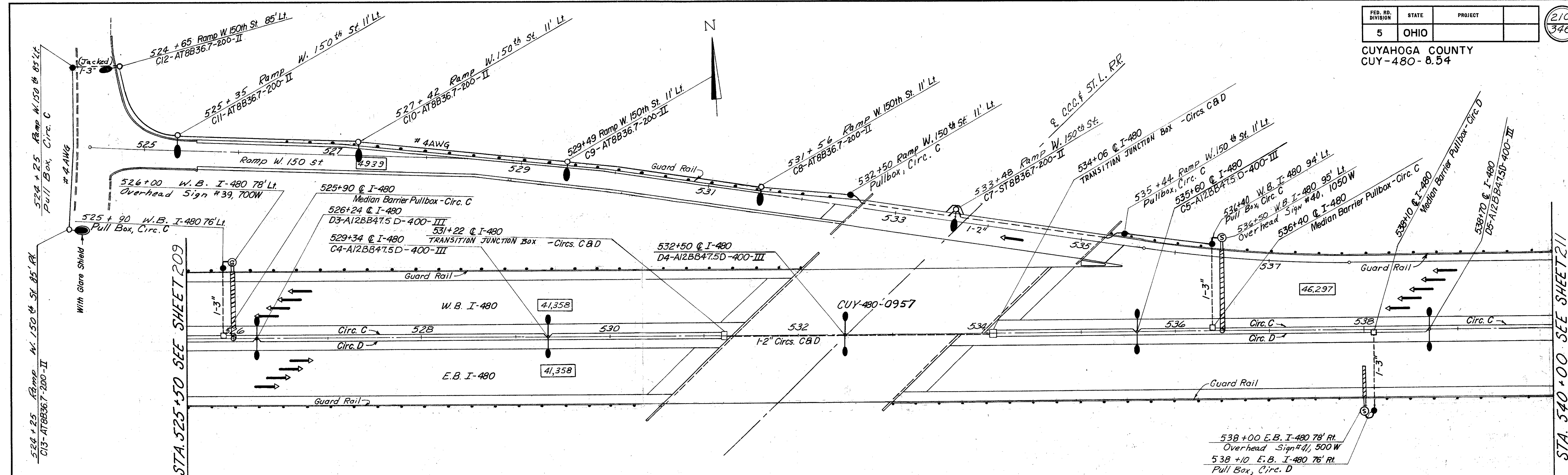
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T.R.B. 5-19-71



### ELECTRICAL QUANTITIES

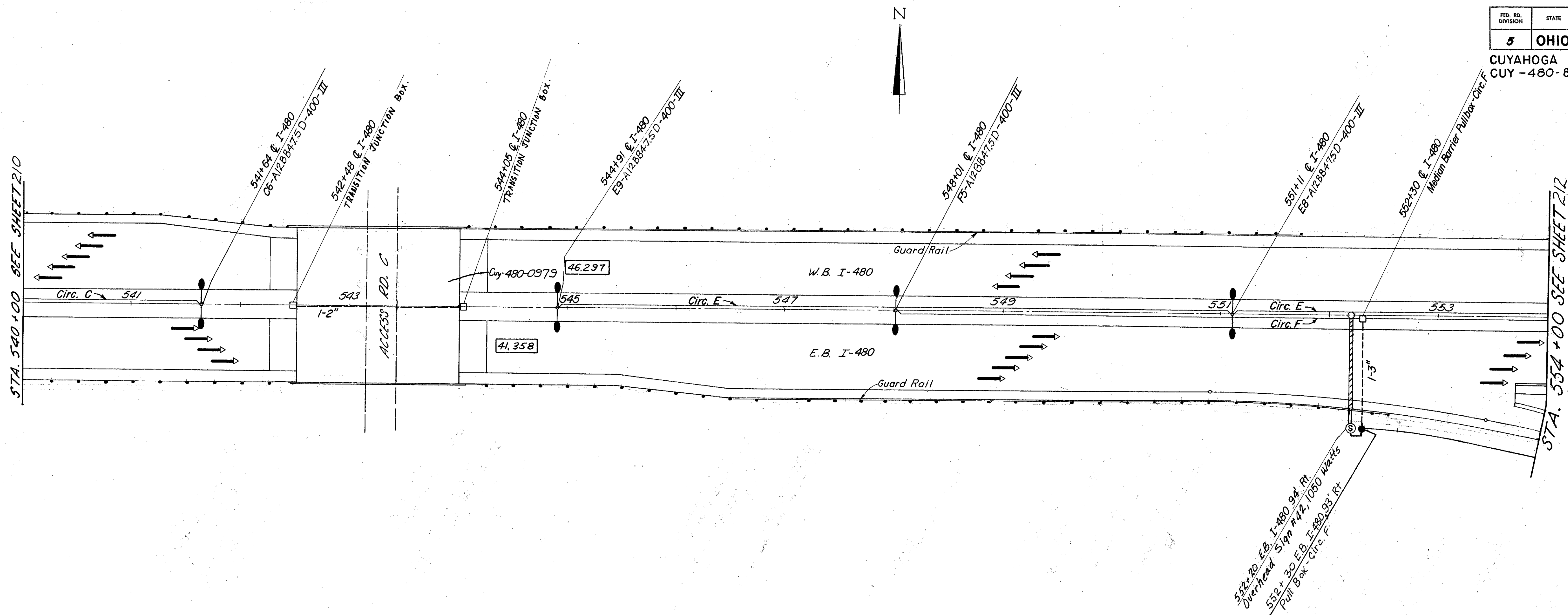
LINE NO.	STRUCTURE		ROADWAY				TOTAL	ITEM	UNIT	DESCRIPTION	LINE NO.	
	0943	0930	RAMP "R"	I-480 W.B.	I-480 E.B.	I-480 E.B.						
31		1				1	S625	Ea.	Structure Grounding System For Bridge No. Cuy-480-0930	31		
2					5	5	S625	Ea.	Light Pole - A12BB475D (Median Mounted)	2		
3			2			2	S625	Ea.	Light Pole - AT15B367	3		
39					76	76	S625	L.F.	Conduit, 3" S71306, Encased	39		
37	95	46				130	271	S625	L.F.	Conduit, 2" S71304	37	
19			2			2	S625	Ea.	Light Pole Foundation - 24" x 24" x 6' Deep	19		
18					5	5	S625	Ea.	Median Light Pole Foundation	18		
9					10	10	S625	Ea.	Style C Luminaire, Type III, W/400 Watt HPS Ballast	9		
10			2			2	S625	Ea.	Style B Luminaire, Type II, W/200 Watt HPS Ballast	10		
12	8					8	S625	Ea.	Luminaire Underpass W/100 Watt HP Sodium Ballast	12		
14					10	10	S625	Ea.	Lamp, 400 Watt, High Pressure Sodium	14		
15			2			2	S625	Ea.	Lamp, 200 Watt, High Pressure Sodium	15		
13	8					8	S625	Ea.	Lamp, 100 Watt, High Pressure Sodium	13		
20			2	2	11	2	17	S625	Ea.	Ground Rod	20	
21								S625	Ea.		21	
23								S625	Ea.		23	
24				1	3	4	S625	Ea.	Pull Box - 18" S71309 With Concrete Cover As Per Plan	24		
25					2	2	S625	Ea.	Median Pullbox	25		
32	1					1	S625	Ea.	Structure Grounding System For Bridge No. Cuy-480-0943	32		
22					4	4	S625	Ea.	TRANSITION JUNCTION Box	22		
51					6	6	S625	Ea.	Connector Kit Type IX, As Per Plan	51		
38					195	195	240	S625	L.F.	Conduit, 3" S71304	38	
28	Lump							S625	Lump	Service to Underpass Lighting For Bridge No. 480-0943	28	
41			190	95		270	555	S625	L.F.	Trench, 24" Deep	41	
42								S625	L.F.		42	
43								S625	L.F.		43	
46			205			205		S625	L.F.	1 1/2" Duct-Cable With Two No. 4AWG 600V. Cables	46	
47								S625	L.F.		47	
44	420	224			217	4582	1020	6463	S625	L.F.	No. 4AWG, 600 Volt Distribution Cable	44
45			207			1013	1220		S625	L.F.	No. 10AWG, Pole & Bracket Cable	45
48				2	16	6	24		S625	Ea.	Connector Kit Type VIII, As Per Plan	48
49			2				2		S625	Ea.	Connector Kit Type II, As Per Plan	49
50			2				2		S625	Ea.	Connector Kit Type III, As Per Plan	50
						10	10		S625	Ea.	Connector Kit Type VI, As Per Plan	
						10	10		S625	Ea.	Connector Kit Type VII, As Per Plan	
55								Lump	S625	Lump	Control Center No. 67	55

DATE BY R.S. DATE 4-20-71  
DATE BY T.E.B. DATE 5-18-71



ELECTRICAL QUANTITIES											
LINE NO.	STRUCTURE		ROADWAY				TOTAL	ITEM	UNIT	DESCRIPTION	LINE NO.
	0957 150th St.	0957 I-480	RAMP 150 ST.	I-480 WB.	I-480 C.	I-480 E.B.					
22											22
2		1			4		5	S625	Ea.	Light Pole - A12BB47.5D (Median Mounted)	2
7											7
4			6				6	S625	Ea.	Light Pole - AT8B36.7	4
6	1						1	S625	Ea.	Light Pole - ST8B36.7 (Bridge Mounted)	6
16			1				1	S625	Ea.	Glare Shield, S713.11, Style B Luminaire	16
19			6				6	S625	Ea.	Light Pole Foundation 24" X 24" X 6' Deep	19
9		2					8	S625	Ea.	Style C Luminaire, Type III, w/400 Watt HPS Ballast	9
10	1		6				7	S625	Ea.	Style B Luminaire, Type II, w/200 Watt HPS Ballast	10
18					4		4	S625	Ea.	Median Light Pole Foundation	18
14		2			8		10	S625	Ea.	Lamp, 400 Watt, H.P. Sodium	14
15	1		6				7	S625	Ea.	Lamp, 200 Watt, H.P. Sodium	15
20			6	2	9	2	19	S625	Ea.	Ground Rod	20
21								S625	Ea.		21
23					2		2	S625	Ea.	TRANSITION JUNCTION Box	23
24			3	2		1	6	S625	Ea.	Pull Box - 18" S713.09 With Concrete Cover As Per Plan	24
25					3		3	S625	Ea.	Median Pullbox	25
36	1	1					2	S625	Sets	Light Pole Anchor Bolts For Structure, S713.01	36
33		1					1	S625	Ea.	Structure Grounding System For Bridge No. Cuy-480-0957	33
34	1						1	S625	Ea.	Structure Grounding System For Ramp Bridge No. Cuy-480-0957	34
37	294	284					578	S625	L.F.	Conduit, 2" S713.04	37
38				170			250	S625	L.F.	Conduit, 3" S713.04	38
40			40				40	S625	L.F.	Conduit, 3" S713.04 Jacked Under Pavement, As Per Plan	40
41			1126	170		80	1376	S625	L.F.	Trench, 24" Deep	41
42								S625	L.F.		42
43											43
46			1161				1161	S625	L.F.	1 1/2" Duct-Cable With Two No. 4AWG 600V. Cables	46
47											47
44	628	1104	100	380	4586	172	6970	S625	L.F.	No. 4AWG, 600 Volt Distribution Cable	44
45	90	203			810		1639	S625	L.F.	No. 10AWG, Pole & Bracket Cable	45
48			6	2	8	2	18	S625	Ea.	Connector Kit Type VIII, As Per Plan	48
49	1		6				7	S625	Ea.	Connector Kit Type II, As Per Plan	49
50	1		6				7	S625	Ea.	Connector Kit Type III, As Per Plan	50
		2			8		10	S625	Ea.	Connector Kit Type IV, As Per Plan	
		2			8		10	S625	Ea.	Connector Kit Type V, As Per Plan	
51				2	6		8	S625	Ea.	Connector Kit Type IX, As Per Plan	51

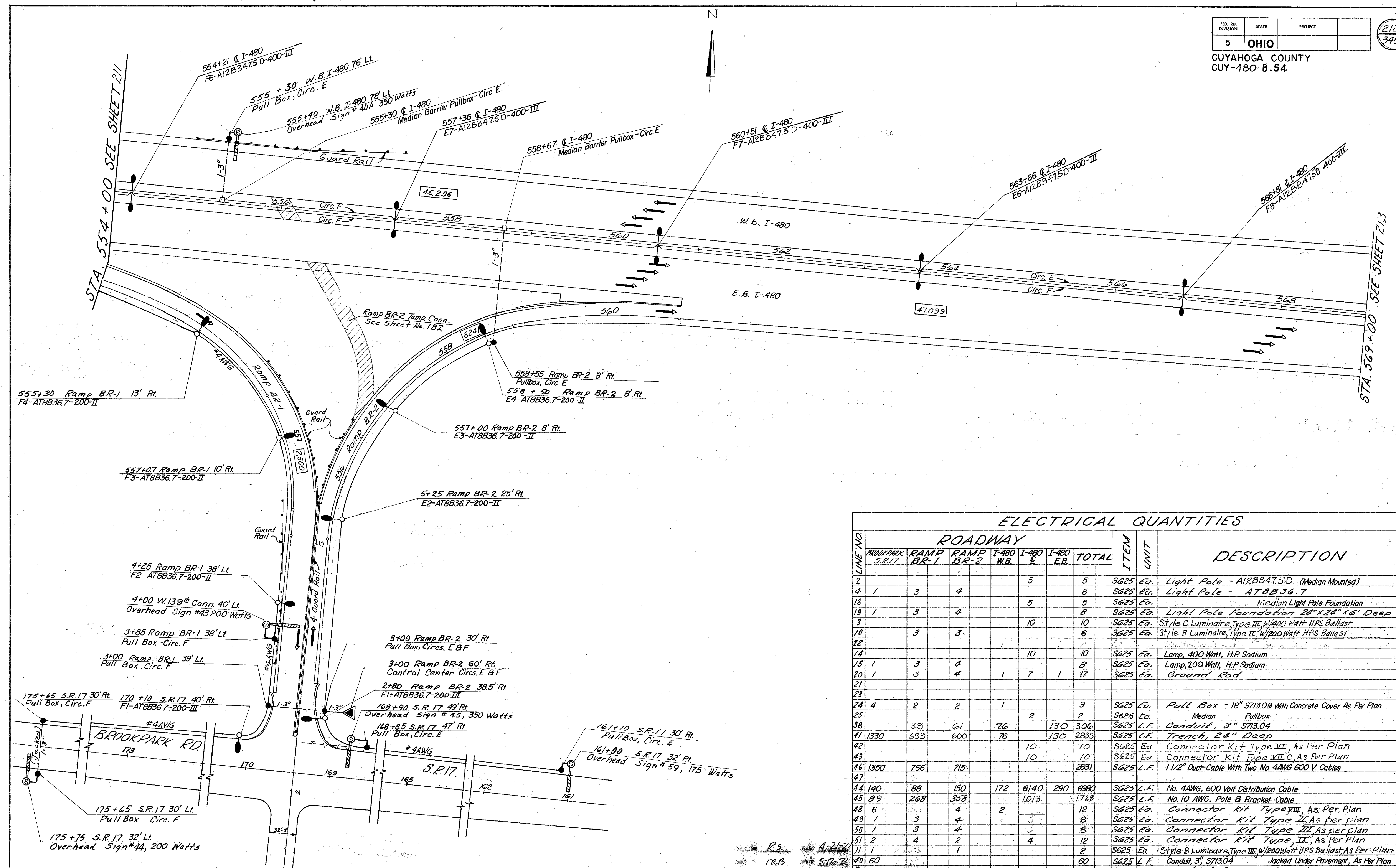
DESIGNED BY R.S. DATE 4-21-71  
CHECKED BY T.K.B. DATE 5-18-71



ELECTRICAL QUANTITIES

LINE NO	STRUCTURE	ROADWAY				ITEM	UNIT	DESCRIPTION	LINE NO
		I-480 W.B.	I-480 C.	I-480 E.B.	TOTAL				
2			4		4	S625 Ea.	Light Pole - A12BB47.5D (Median Mounted)	2	
18			4		4	S625 Ea.	Median Light Pole Foundation	18	
9			8		8	S625 Ea.	Style C Luminaire, Type III, w/400 Watt HPS Ballast	9	
14			8		8	S625 Ea.	Lamp, 400 Watt, H.P. Sodium	14	
22								22	
20		1	7	1	9	S625 Ea.	Ground Rod	20	
21			2		2	S625 Ea.	TRANSITION JUNCTION Box.	21	
25			1		1	S625 Ea.	Median Pullbox	25	
23								23	
24				1	1	S625 Ea.	Pull Box - 18" S713.09 With Concrete Cover As Per Plan	24	
37	157				157	S625 L.F.	Conduit, 2" S713.04	37	
38				93	93	S625 L.F.	Conduit, 3" S713.04	38	
35	1				1	S625 Ea.	Structure Grounding System for Bridge No. Cuy-480-0779	35	
41		76		273	349	S625 L.F.	Trench, 24" Deep	41	
42								42	
43								43	
46				175	175	S625 L.F.	1 1/2" Duct-Cable With Two No. 4AWG 600V. Cables	46	
47								47	
44		3414	206		3620	S625 L.F.	No. 4AWG, 600V. Distribution Cable	44	
45		810			810	S625 L.F.	No. 10AWG, Pole & Bracket Cable	45	
49			8		8	S625 Ea.	Connector Kit Type II, As per plan	49	
50			8		8	S625 Ea.	Connector Kit Type III, As per plan	50	
51			2	2	4	S625 Ea.	Connector Kit Type IX, As per plan.	51	

DESIGNED BY: R.S. DATE: 4-21-71  
 CHECKED BY: T.R.B. DATE: 5-17-71

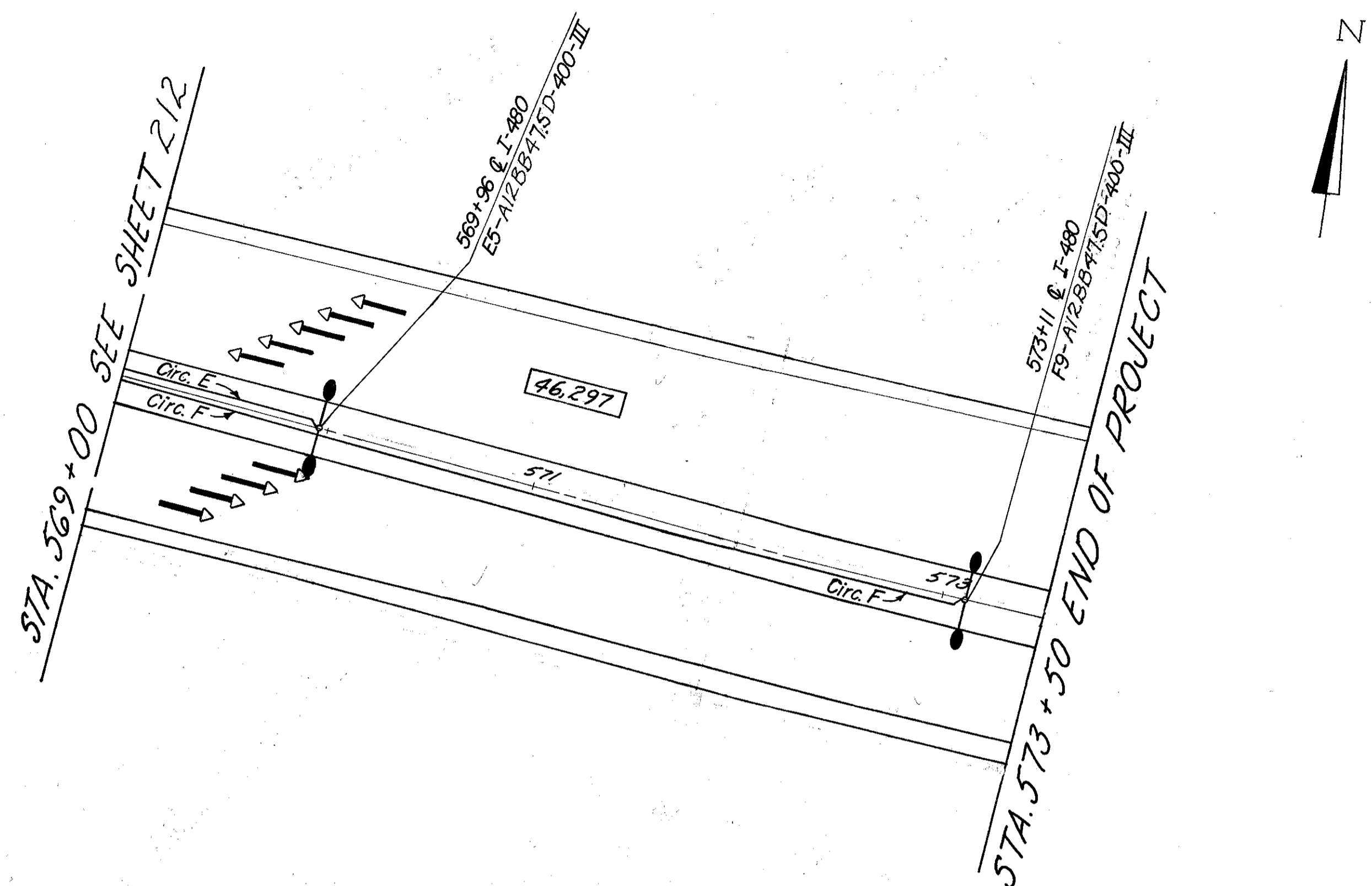


ELECTRICAL QUANTITIES											
LINE NO.	ROADWAY						TOTAL	ITEM	UNIT	DESCRIPTION	LINE NO.
	BROOKPARK S.R.17	RAMP BR-1	RAMP BR-2	I-480 W.B.	I-480 E.	I-480 E.B.					
2					5	5	S625	Ea.	Light Pole - A12BB47.5D (Median Mounted)	2	
4	1	3	4			8	S625	Ea.	Light Pole - AT8B36.7	4	
18					5	5	S625	Ea.	Median Light Pole Foundation	18	
19	1	3	4			8	S625	Ea.	Light Pole Foundation 24" x 24" x 6" Deep	19	
9					10	10	S625	Ea.	Style C Luminaire, Type III, w/400 Watt HPS Ballast	9	
10		3	3			6	S625	Ea.	Style B Luminaire, Type II, w/200 Watt HPS Ballast	10	
22					10	10	S625	Ea.	Lamp, 400 Watt, H.P. Sodium	22	
14					10	10	S625	Ea.	Lamp, 200 Watt, H.P. Sodium	14	
15	1	3	4			8	S625	Ea.	Lamp, 200 Watt, H.P. Sodium	15	
20	1	3	4	1	7	17	S625	Ea.	Ground Rod	20	
21										21	
23										23	
24	4	2	2	1		9	S625	Ea.	Pull Box - 18" S713.09 With Concrete Cover As Per Plan	24	
25					2	2	S625	Ea.	Median Pullbox	25	
38		39	61	76		130	S625	L.F.	Conduit, 3" S713.04	38	
41	1330	699	600	76		130	S625	L.F.	Trench, 24" Deep	41	
42					10	10	S625	Ea.	Connector Kit Type II, As Per Plan	42	
43					10	10	S625	Ea.	Connector Kit Type III, As Per Plan	43	
46	1350	766	715			2831	S625	L.F.	1 1/2" Duct-Cable With Two No. 4AWG 600 V. Cables	46	
47										47	
44	140	88	150	172	6140	290	S625	L.F.	No. 4AWG, 600 Volt Distribution Cable	44	
45	89	268	358		1013	1728	S625	L.F.	No. 10 AWG, Pole & Bracket Cable	45	
48	6		4	2		12	S625	Ea.	Connector Kit Type III, As Per Plan	48	
49	1	3	4			8	S625	Ea.	Connector Kit Type II, As per plan	49	
50	1	3	4			8	S625	Ea.	Connector Kit Type III, As per plan	50	
51	2	4	2		4	12	S625	Ea.	Connector Kit Type II, As Per Plan	51	
11	1		1			2	S625	Ea.	Style B Luminaire, Type III, w/200 Watt HPS Ballast, As Per Plan	11	
40	60					60	S625	L.F.	Conduit, 3" S713.04	40	
56							S625	Lump	Control Center & Service Pole #70	56	

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

213  
346

CUYAHOGA COUNTY  
CUY.-480-8.54



ELECTRICAL QUANTITIES

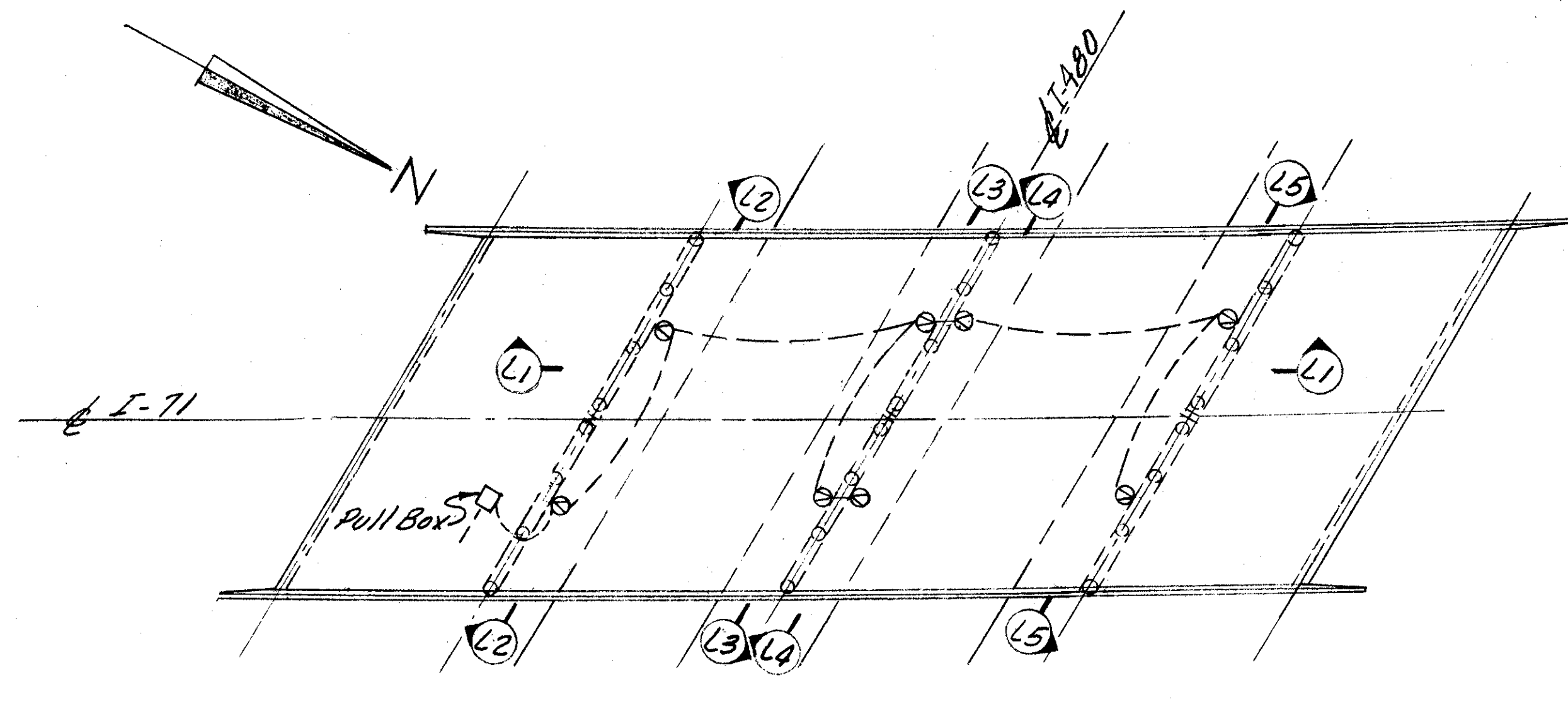
LINE NO.	ROADWAY				TOTAL	ITEM	UNIT	DESCRIPTION	LINE NO.
	I-480 C	I-480 W.B.	I-480 E.B.						
2	2				2	S625	Ea.	Light Pole - A12BB47SD (Median Mounted)	2
18	2				2	S625	Ea.	Median Light Pole Foundation	18
9	4				4	S625	Ea.	Style C, Luminaire, Type III, w/400 Watt HPS Ballast	9
14	4				4	S625	Ea.	Lamp, 400 Watt, H.P. Sodium	14
20	2	1	1		4	S625	Ea.	Ground Rod	20
21									21
22									22
23									23
38									38
41									41
47									47
43									43
44	1034				1034	S625	L.F.	No. 4AWG, 600 Volt Distribution Cable	44
45	405				405	S625	L.F.	No. 10AWG, Pole & Bracket Cable	45
49	4				4	S625	Ea.	Connector Kit Type VII, As per plan	49
50	4				4	S625	Ea.	Connector Kit Type VIII, As per plan	50

DESIGNED BY: R.S. DATE: 4-22-71  
 CHECKED BY: T.R.B. DATE: 5-17-71

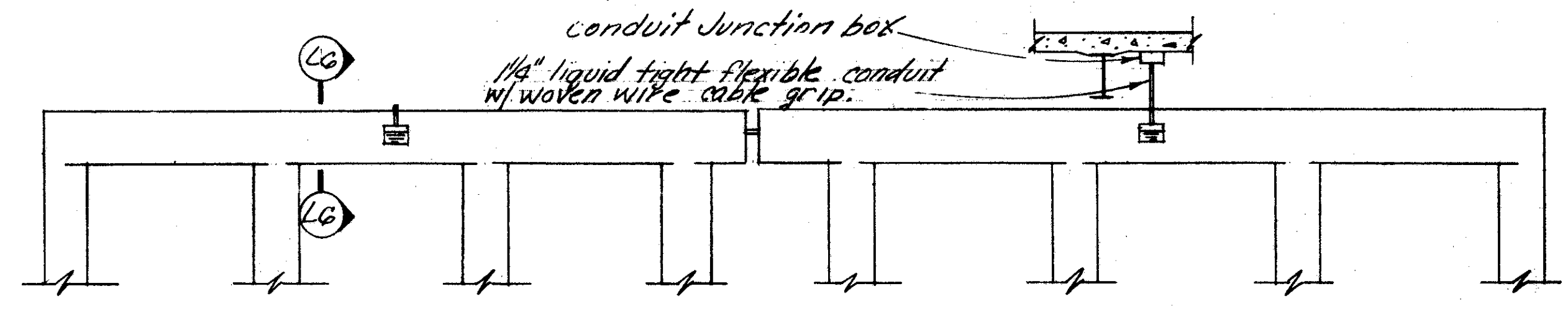
Rev. G-22-7B

LIGHTING PLAN

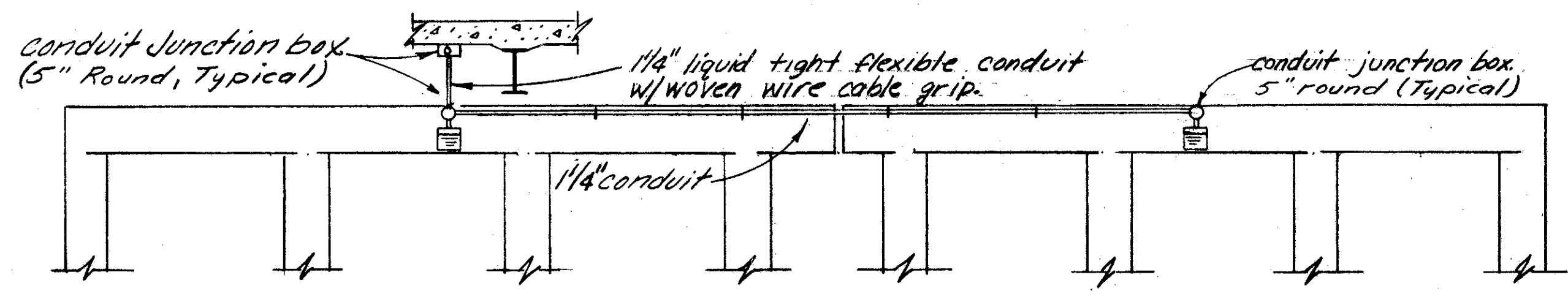




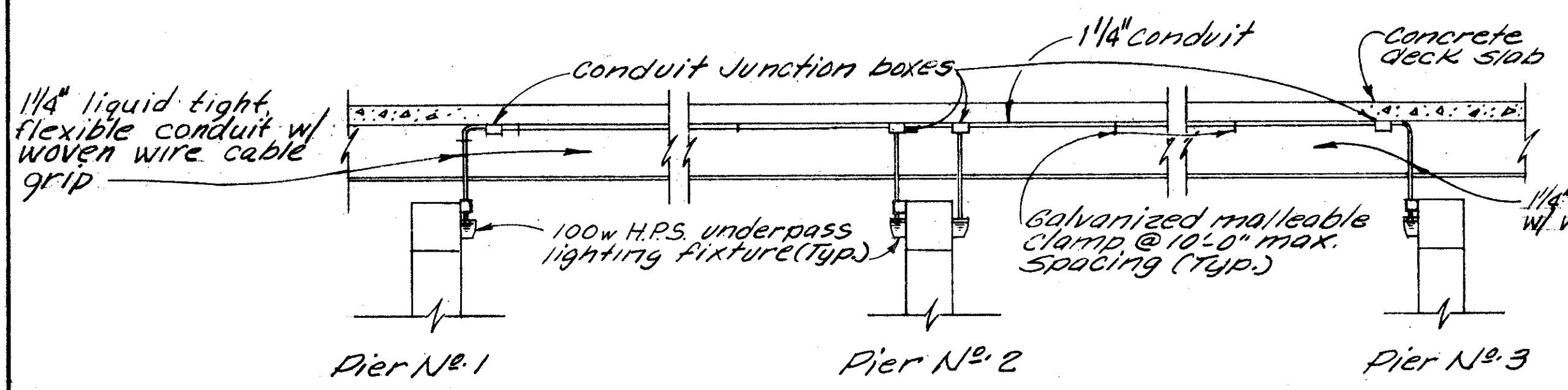
SCHEMATIC PLAN



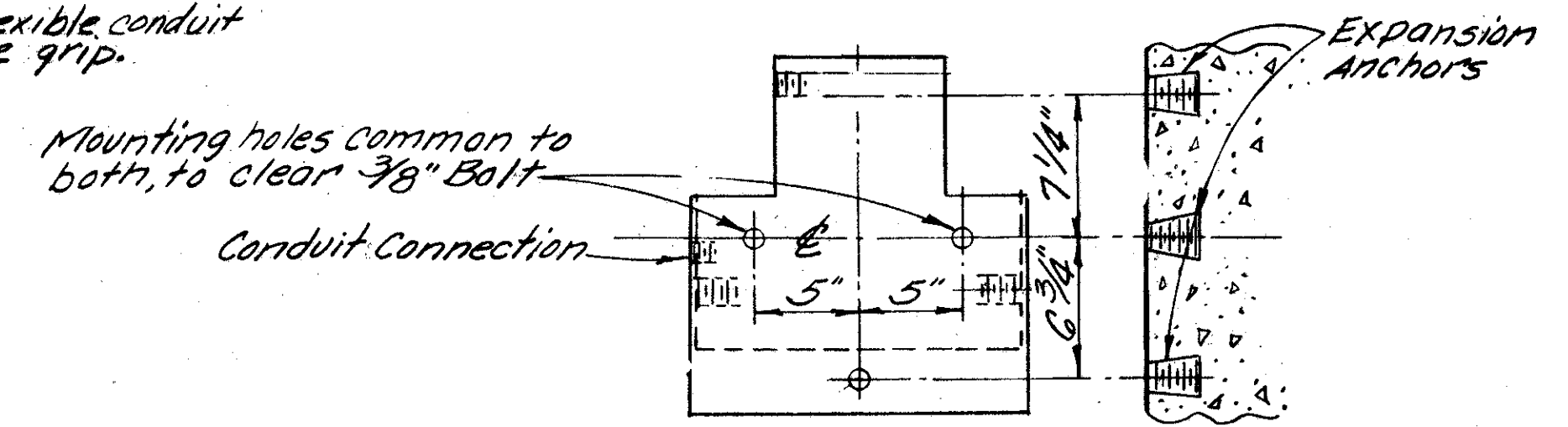
SECTION L4-L4



SECTION L5-L5



SECTION L1-L1



UNDERPASS LUMINAIRE MOUNTINGS

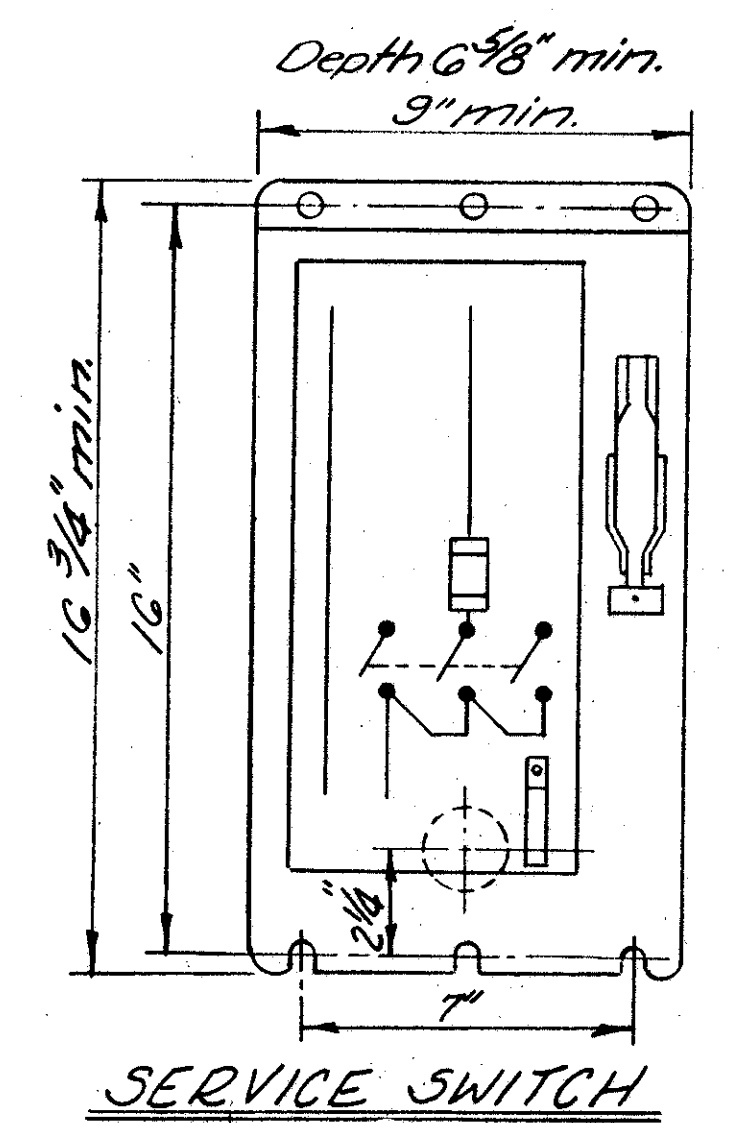
UNDERPASS LIGHTING NOTES

Conduit- All conduit shall be rigid ferrous metal, per 5713.04

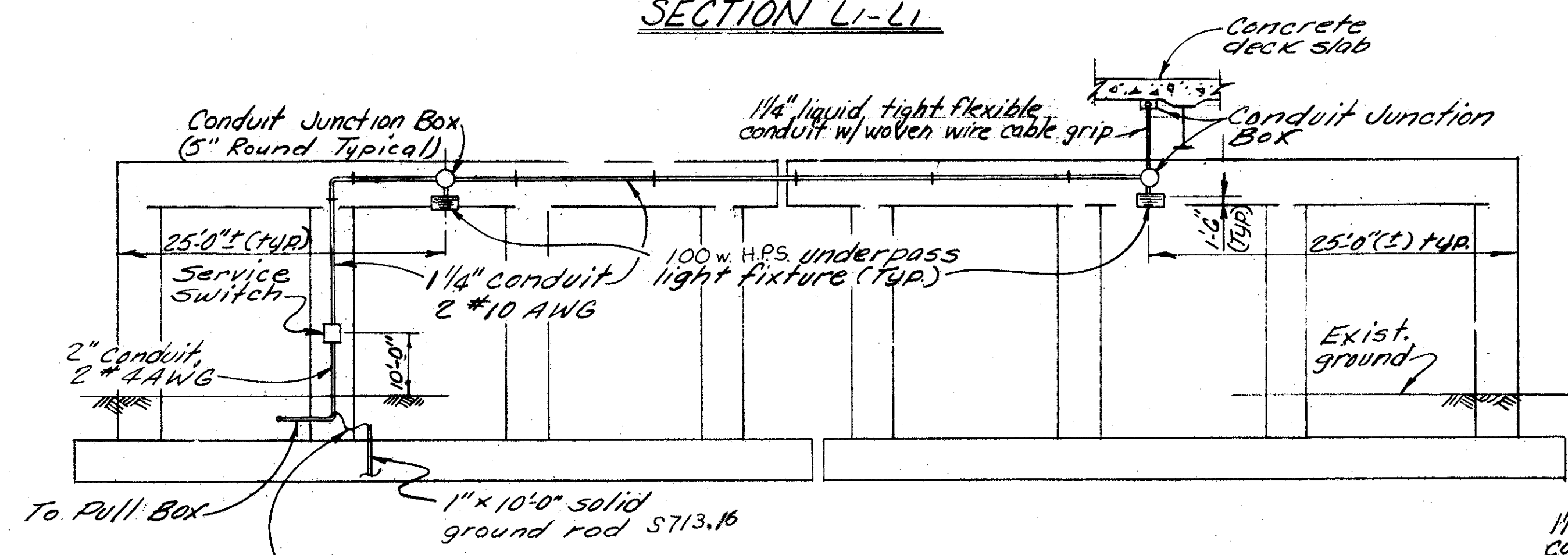
Junction Boxes- All junction boxes shall be cast 5" waterproof boxes, galvanized in accordance with Item 711.02. Stainless Steel safety switch w/ Special 100 ampere Neutral base. Square D-H361NDS, or Cutler Hammer 9589 X601-2F30, or Westinghouse WHF-461-N or an approved equal. Payment for all junction boxes shall be included with service to underdeck lighting.

Anchorage- The conduit and Junction Boxes shall be attached to the concrete with 1/2" flat head drive pins.

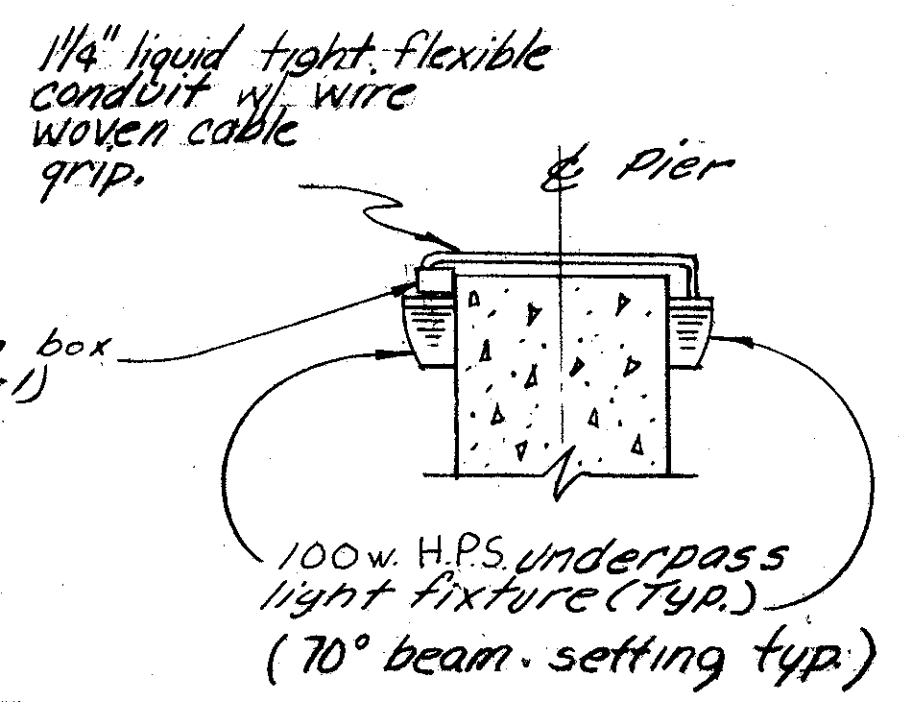
Light Fixture- See Supplemental Specifications 5713.13



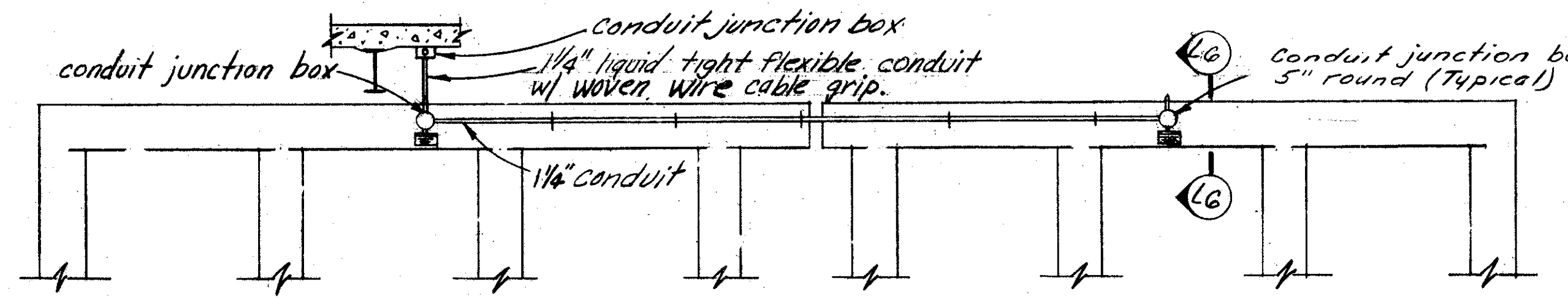
SERVICE SWITCH



SECTION L2-L2



SECTION L6-L6



SECTION L3-L3

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.						
<u>UNDERPASS LIGHTING DETAILS</u>						
BRIDGE NO. CUY. 71-1011						
I-71 OVER I-480						
CUYAHOGA COUNTY STA. 1019+55.23						
STA. 1022+12.95						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	R.T.		G.W.M.	G.W.M.	4/69	R.M.B. 1-14-76

CUYAHOGA COUNTY  
CUY-480-8.54

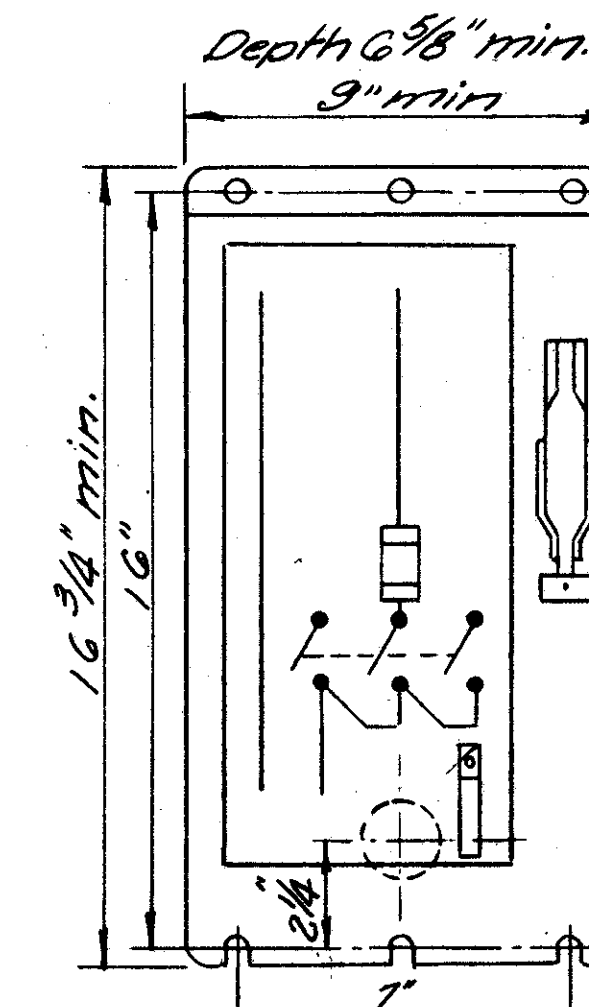
UNDERPASS LIGHTING NOTES

Light Fixture - See Supplemental Specifications 5713.13

Conduit - All conduit shall be rigid ferrous metal per S713.04.

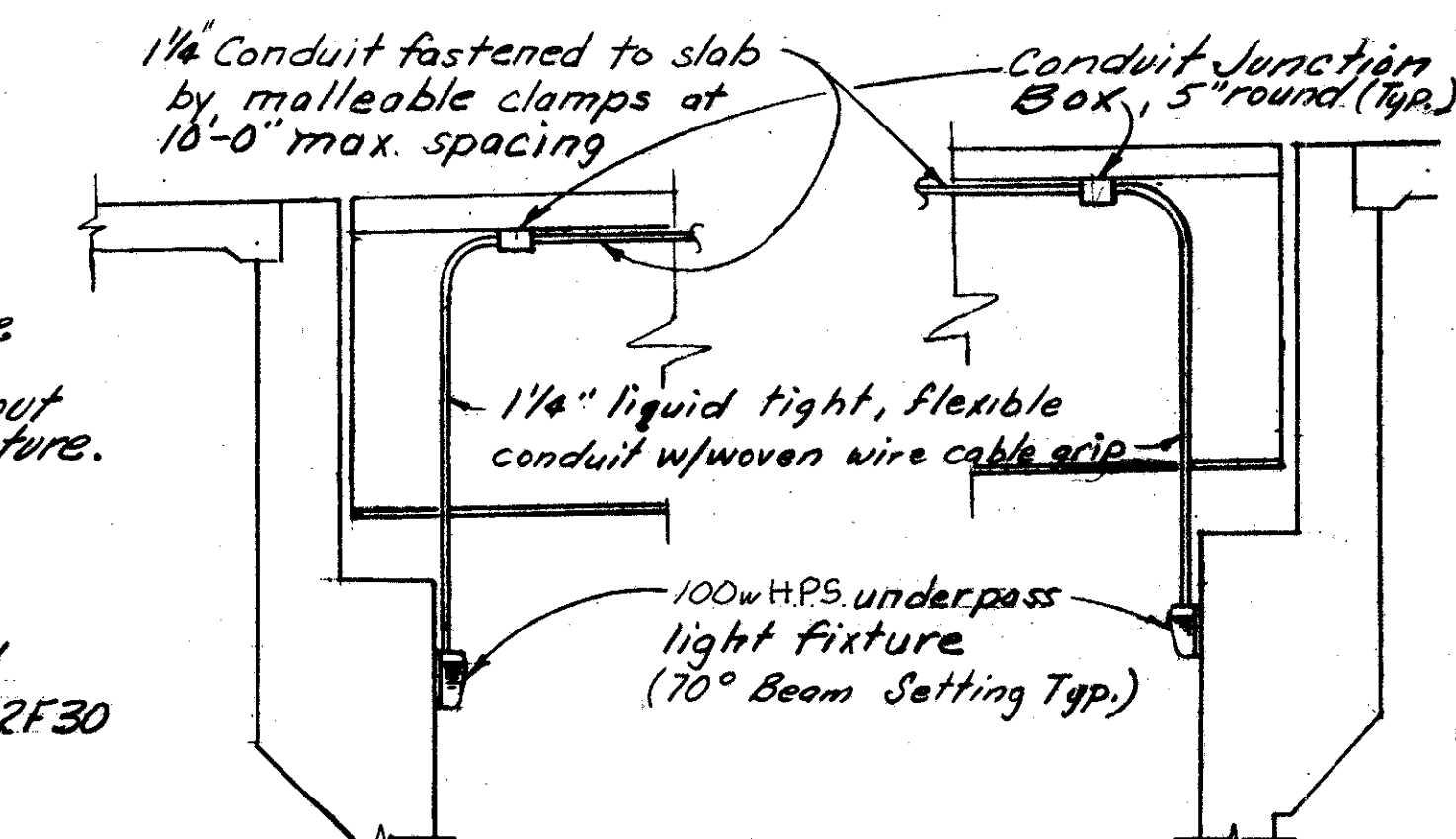
Junction Boxes - All junction boxes shall be cast, water proof boxes, galvanized in accordance with Item 711.02. Stainless Steel Safety Switch w/ Special 100 ampere neutral base. Square D - H361NDS, or Cuttler Hammer - 9589X601-2F30, or Westinghouse - WHF-461-N or an approved equal. Payment for all junction boxes shall be included with service to underdeck lighting.

Anchorage - The conduit and Junction Boxes shall be attached to the concrete with 1/4" flat head drive pins.

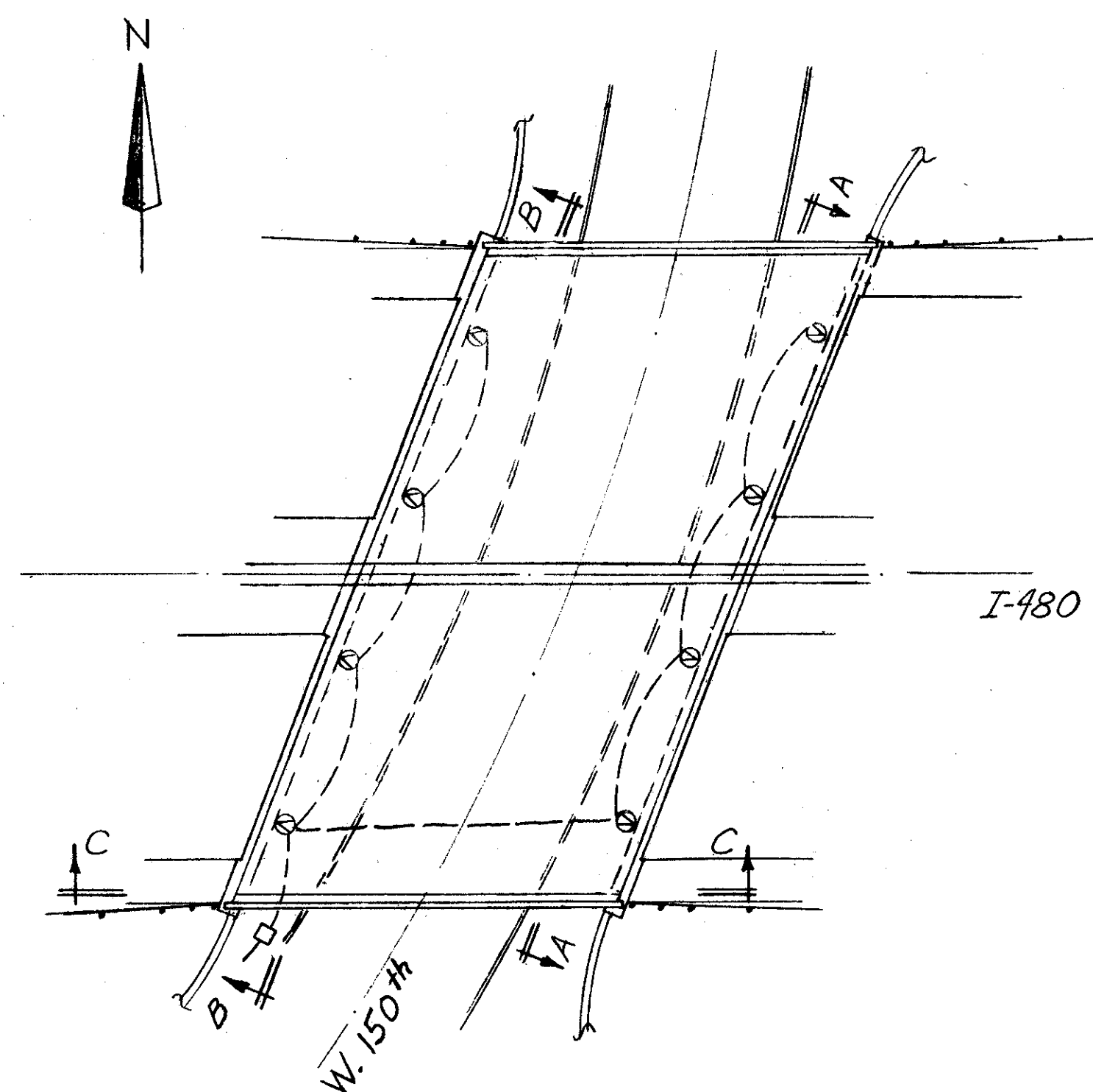


SERVICE SWITCH

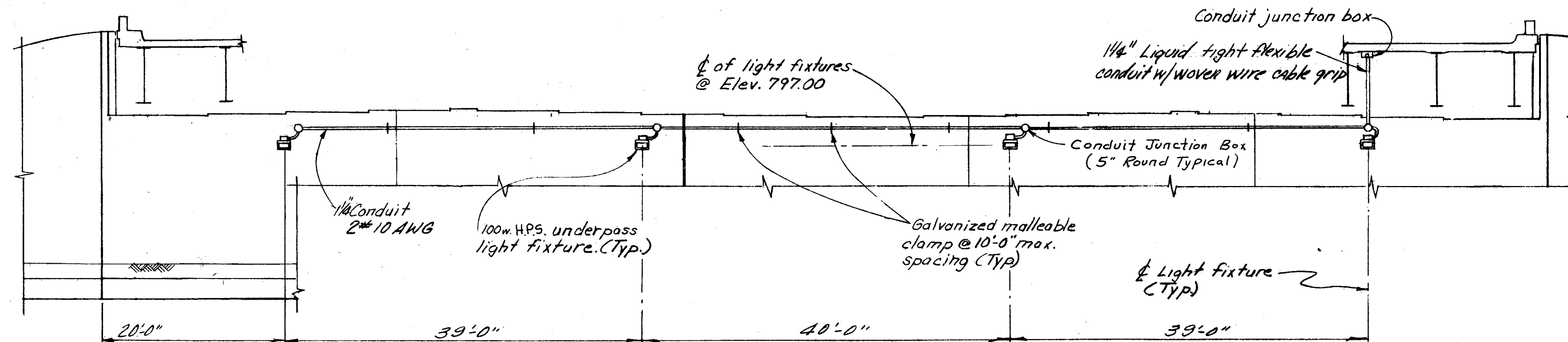
Enclosure Nema 4 Water-tight A151, 302 or 303 stainless steel with flange mounted switch handle. Space provided for knockout for wiring direct into structure.  
480 Volt  
30 Amp switch  
20 Amp fuse  
Square D - H361NDS  
Westinghouse - WHF-461-N  
Cuttler Hammer - 9589X601-2F30



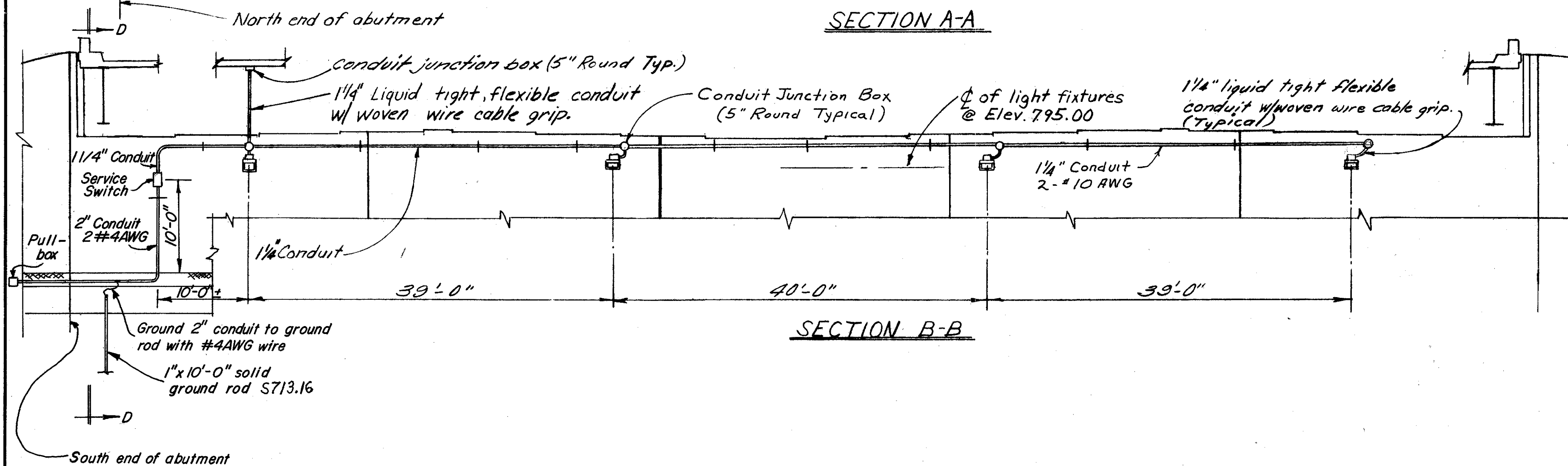
SECTION C-C



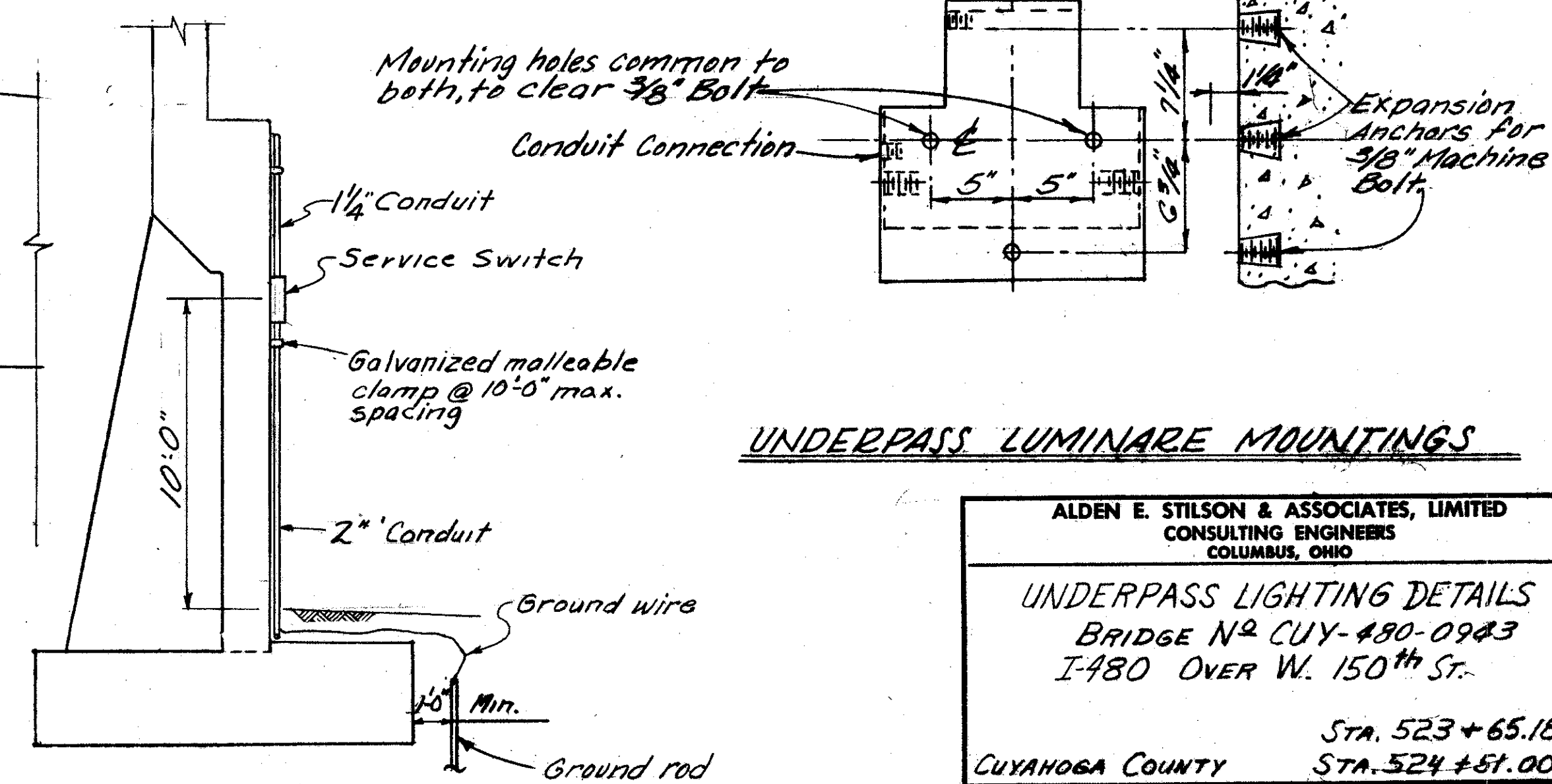
SCHEMATIC PLAN  
(Underpass lighting)



SECTION A-A



SECTION B-B



SECTION D-D

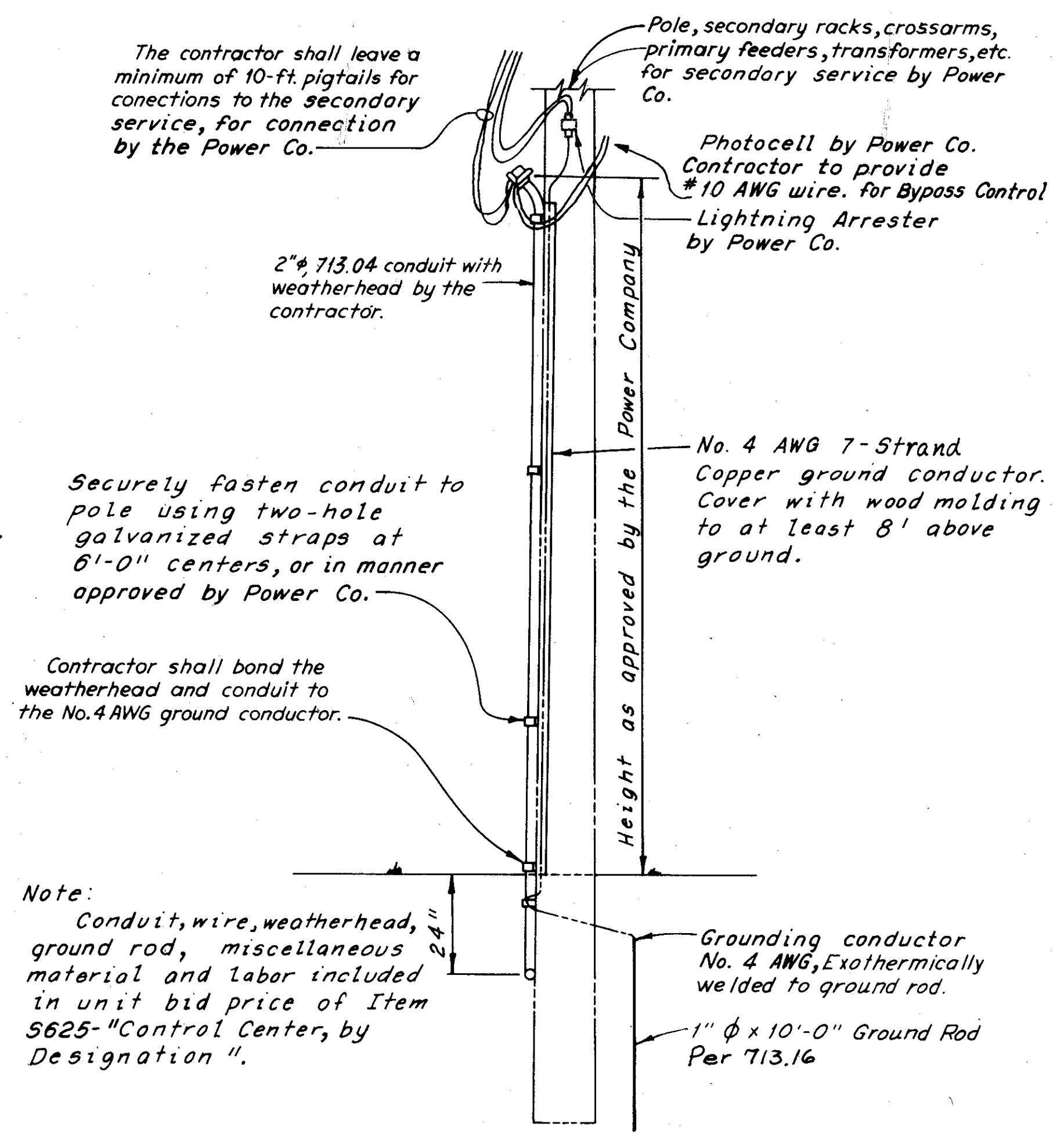
UNDERPASS LUMINAIRE MOUNTINGS

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						
UNDERPASS LIGHTING DETAILS BRIDGE N <sup>o</sup> CUY-480-0923 I-480 OVER W. 150 <sup>th</sup> ST.						
CUYAHOGA COUNTY						STA. 523 + 65.18 STA. 524 + 51.00
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	BY
TJ	TJ		ANA	G.W.M.	2/26/69	R.M.B. 1-14-76

# LIGHTING DETAILS

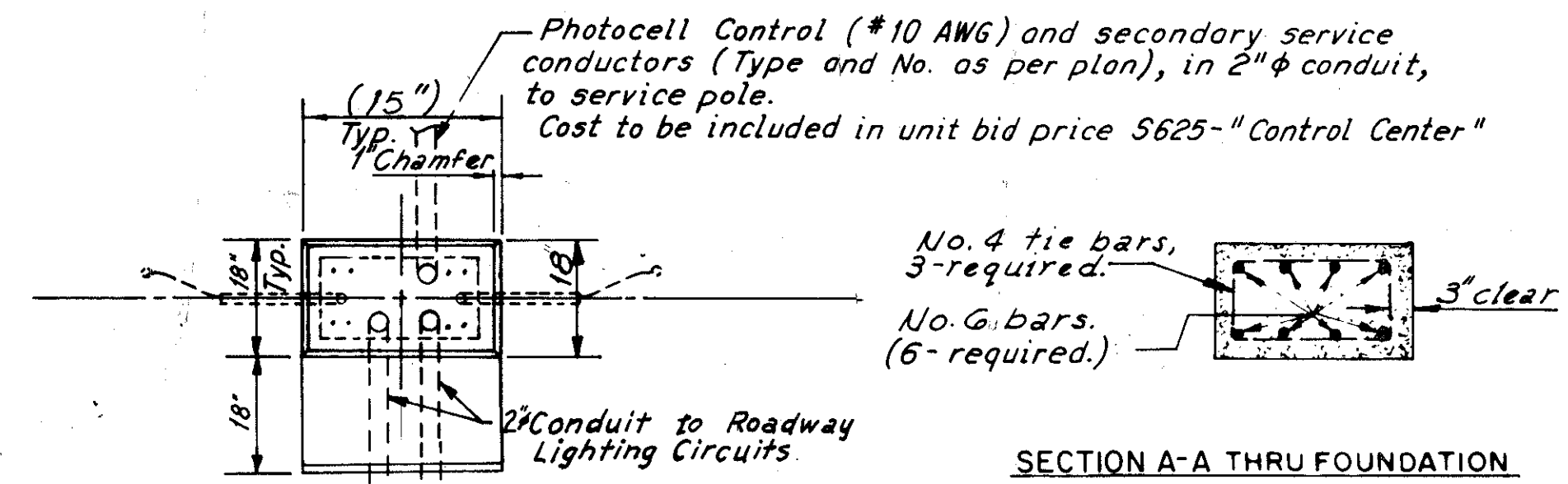
## BYPASS SWITCH

A 20 Ampere by-pass switch rated at 240 volts, complete with #10 wire and conduit, shall be furnished and installed by the Contractor. The Cleveland Electric Illuminating Company will make final connection to the switch for manual bypass control of their lighting controller.

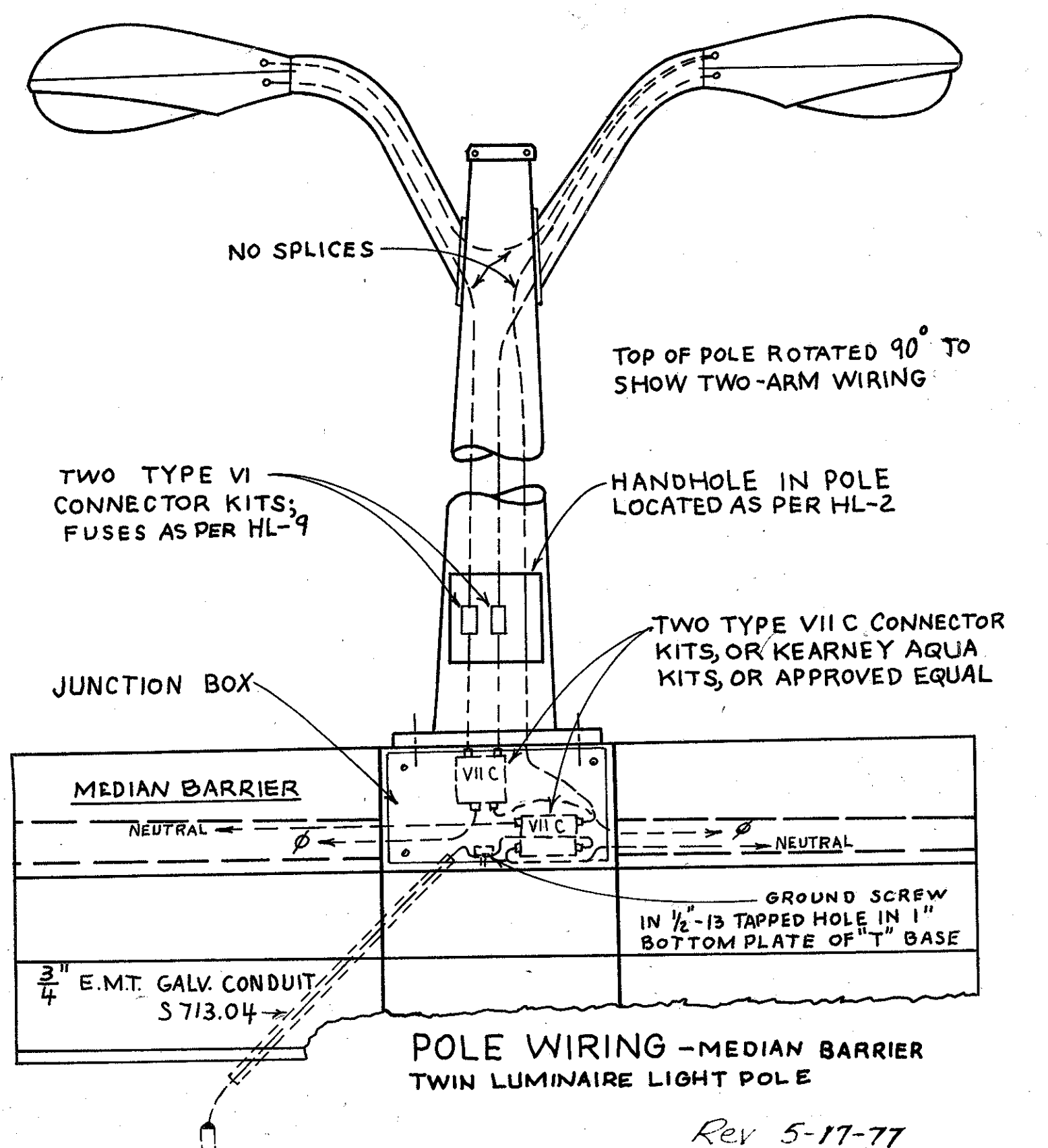
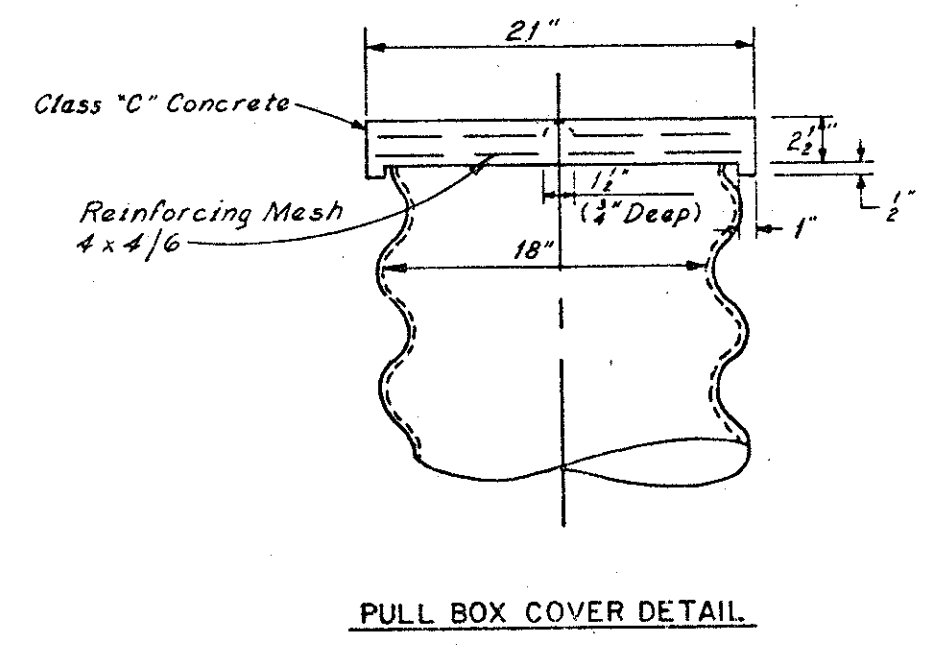
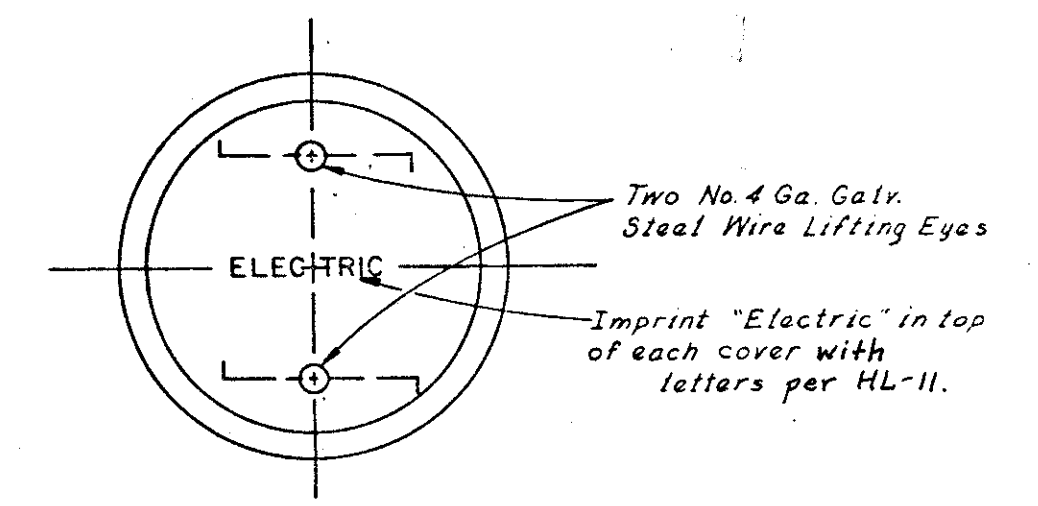
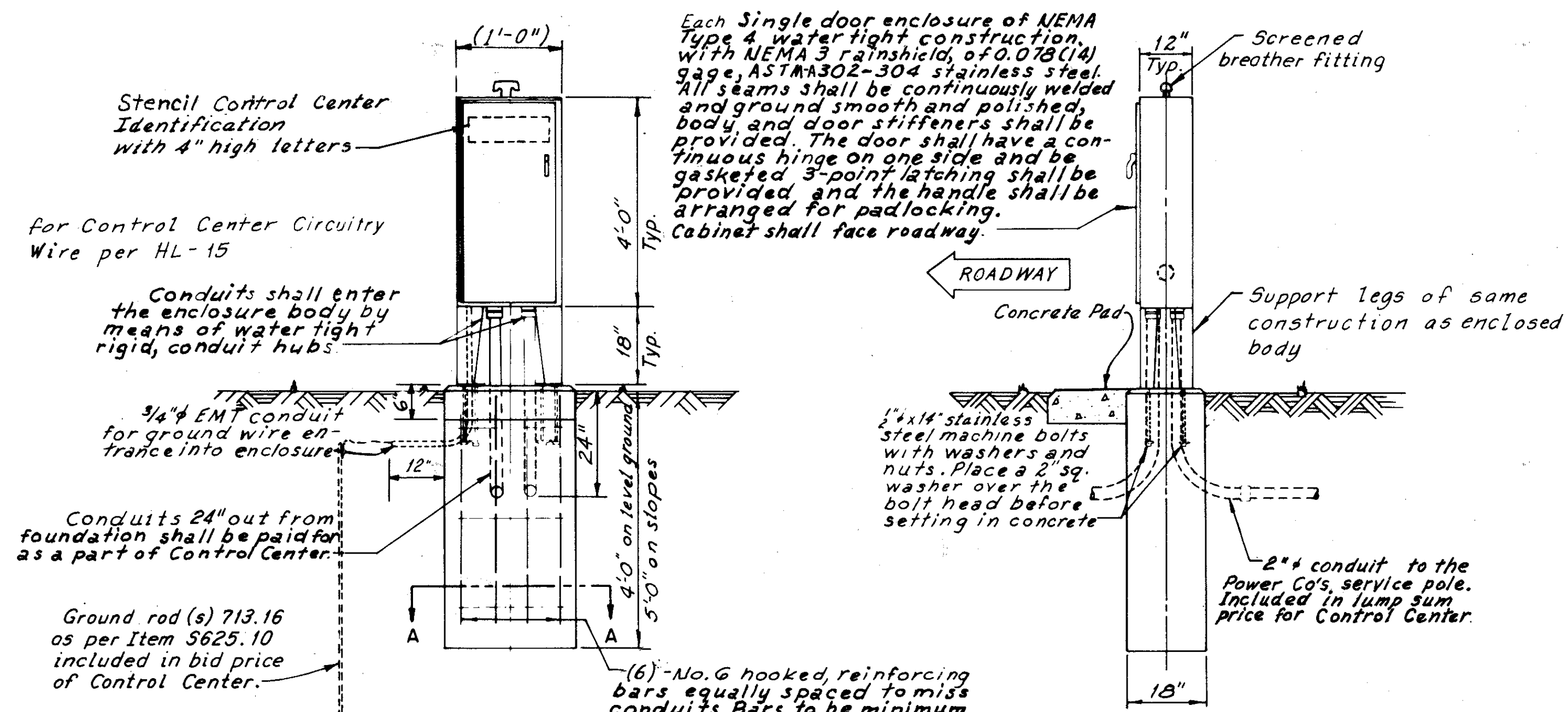


**POWER SERVICE**  
Scale  $\frac{3}{8}$ " = 1'-0"

Note: Each pad mounted control center shall contain two 50 watt, 300 VAC lamps in porcelain sockets with metal lamp guards. Install lamps in series to operate at 240 volts for increased lamp life. For control centers with two enclosures, the contractor may install one lamp in each enclosure, with the two lamps operating in series. For control centers with single enclosures, both lamps shall be installed inside the enclosure.

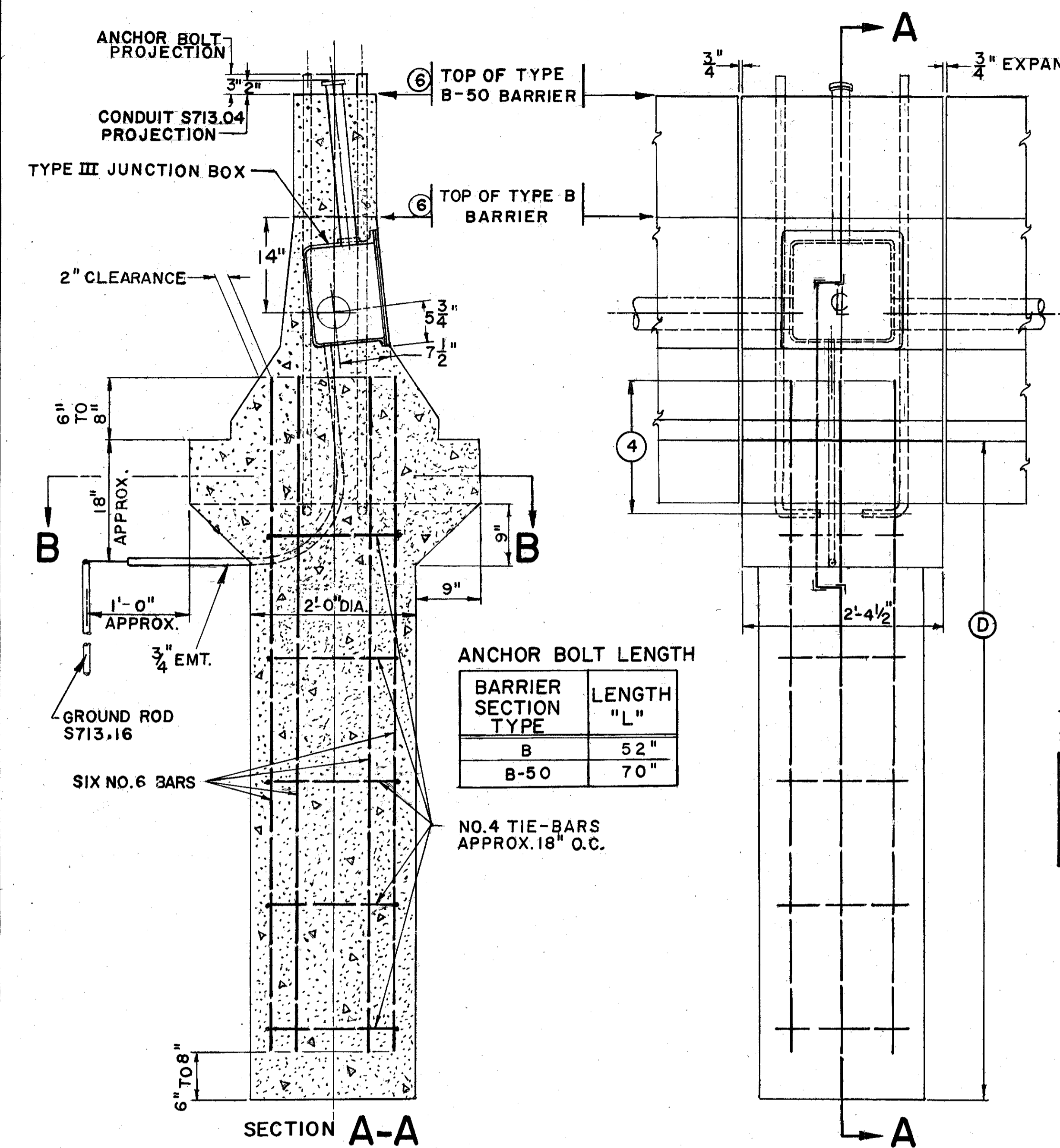


Notes: See "Lighting Layout" sheets for direction and number of conduits out of foundation. Spacing and placement of anchor bolts in foundation is dependent upon the enclosure manufacturer's dimensions. Enclosure dimensions are inside measurements.



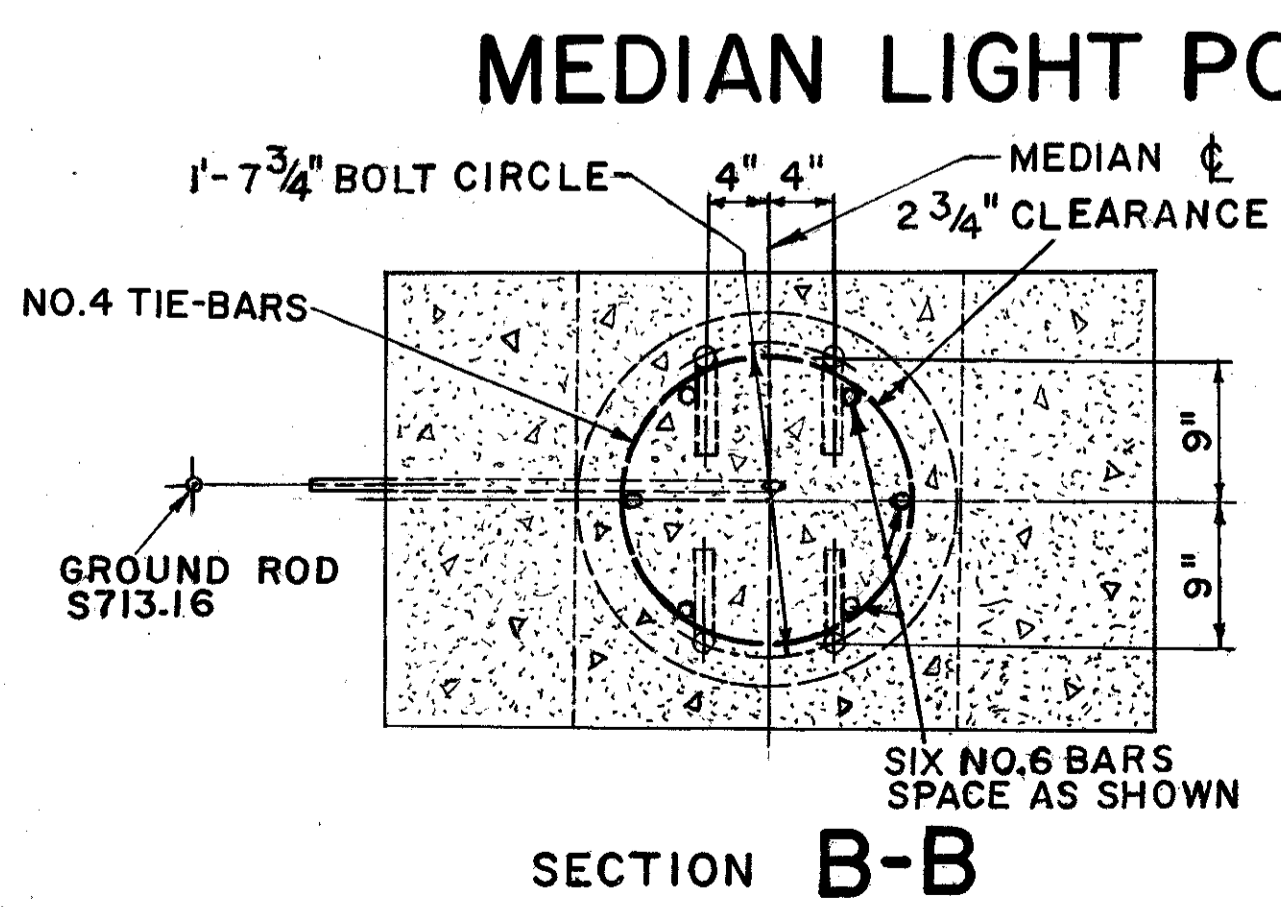
NOTE: The MEDIAN BARRIER and JUNCTION BOX as drawn, only serve to show POLE WIRING and should not be considered specifically correct in other detail.

# FOUNDATION AND PULL BOX DETAILS - MEDIAN MOUNTED LIGHT POLES - TYPE 3

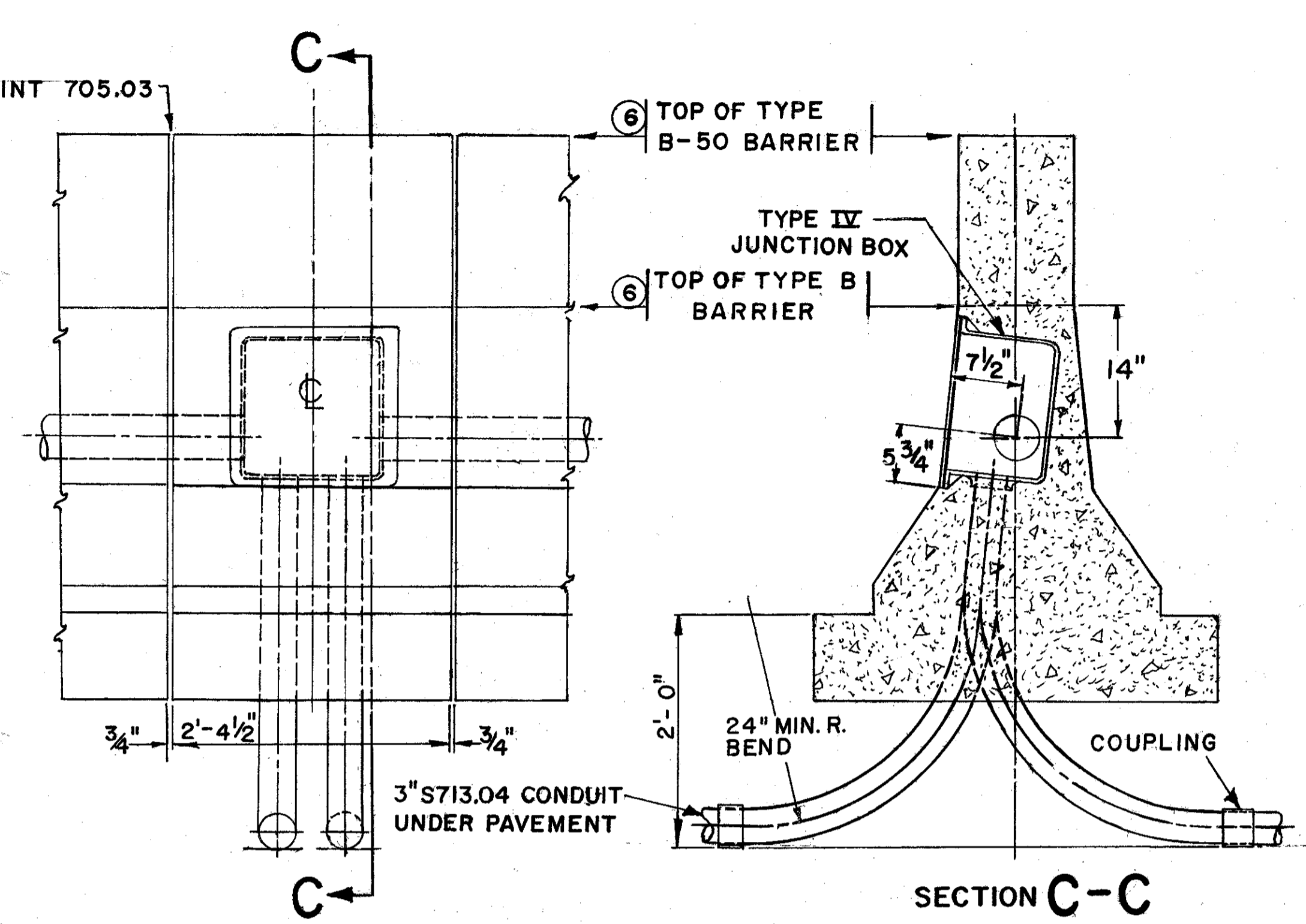


ANCHOR BOLT LENGTH

BARRIER SECTION TYPE	LENGTH "L"
B	52"
B-50	70"



LIGHT POLE MOUNTING HEIGHT	MINIMUM FOUNDATION DEPTH BELOW GRADE
40'	8' - 0"
45'	9' - 0"
50'	10' - 0"



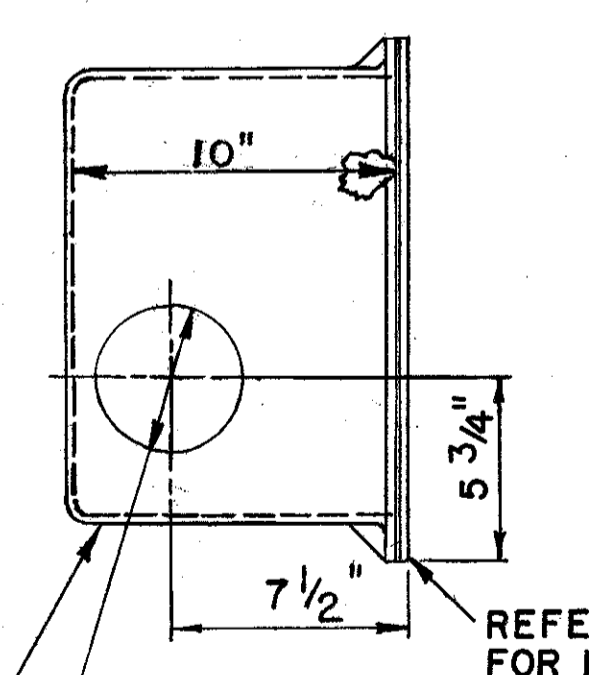
## MEDIAN PULLBOX

TYPE III JUNCTION BOX  
2" CONDUIT LOCATION

BARRIER SECTION TYPE	T
B	6"
B-50	4"

BOSS, DRILL & TAP FOR 2" CONDUIT S713.04, JUNCTION BOX TYPE III ONLY.

S.S. FLAT HD. SCREWS

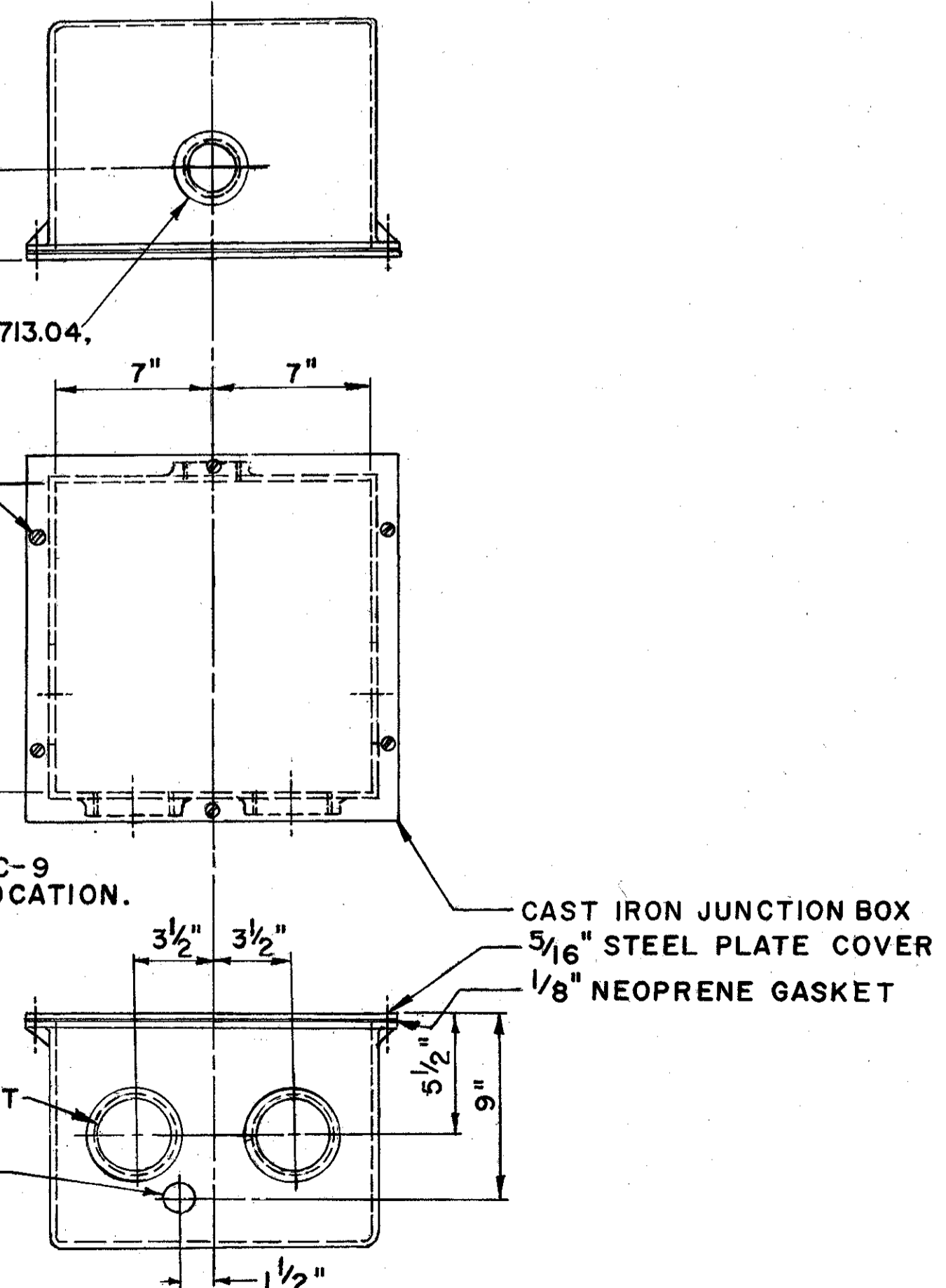


REFER TO MC-9 FOR HOLE LOCATION.

SLIP HOLE, 4" CONDUIT JCT. BOX TYPES III AND IV.

BOSS, DR., TAP, TWO HOLES FOR 3" CONDUIT TYPE IV JUNCTION BOX ONLY.

SLIP HOLE, 3/4" EMT. TYPE III JUNCTION BOX ONLY.



## JUNCTION BOX TYPES III AND IV

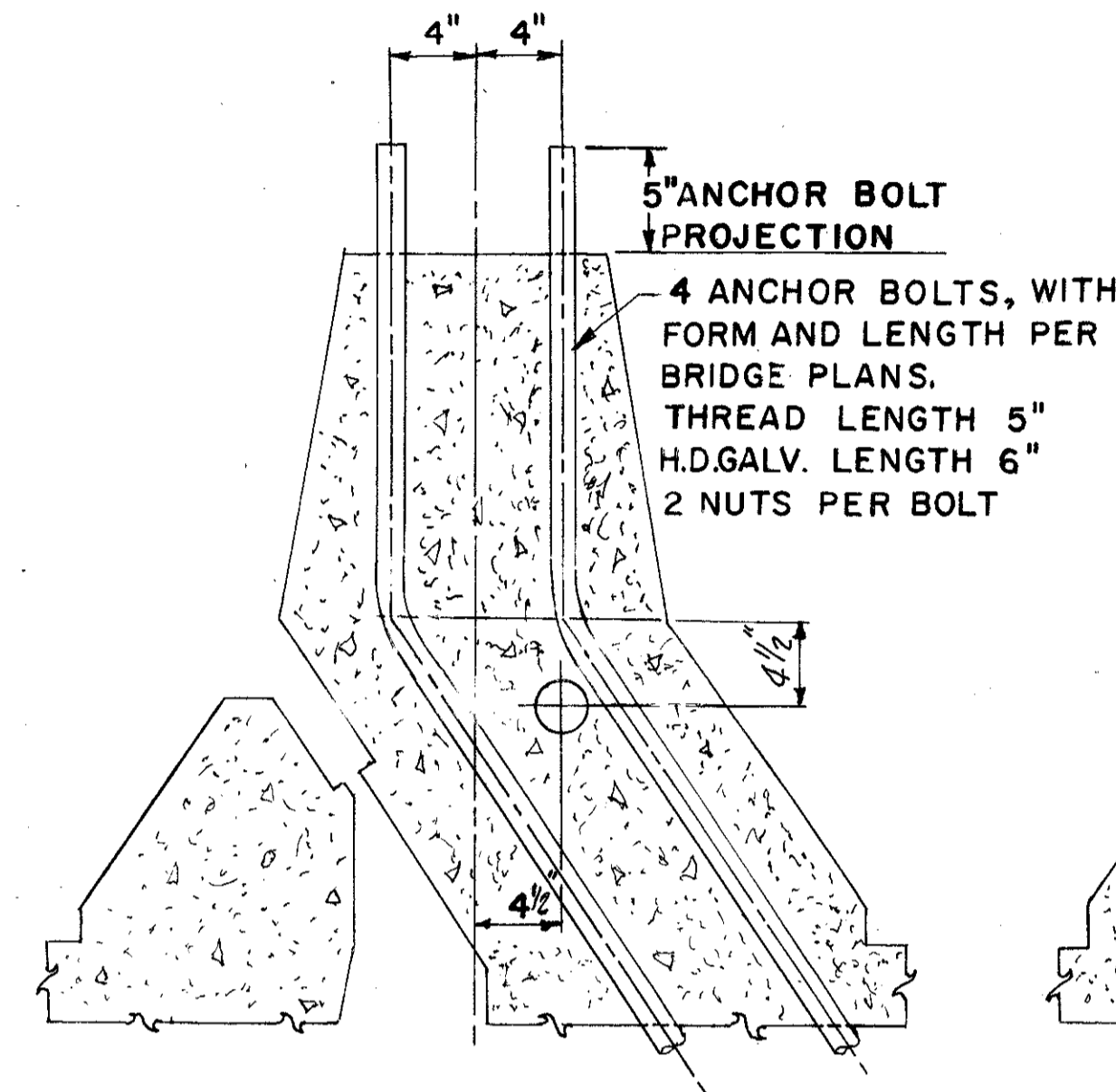
## NOTES

- FOUNDATION TO BE CAST-IN-PLACE CLASS "C" CONCRETE.
- REINFORCING TO COMPLY WITH AND BE PLACED IN ACCORDANCE WITH 509.
- LIGHT POLE ANCHOR BOLTS TO BE 1/4" DIA. x LENGTH "L" INCLUDING 6" L-BEND, WITH ONE HEX NUT PER BOLT, PROJECTION ABOVE CONCRETE 3", THREAD LENGTH 3", GALVANIZED LENGTH 4".
- MAINTAIN MINIMUM 17" OVERLAP OF ANCHOR BOLTS AND REINFORCEMENT BARS PER AASHTO.
- THE TOP OF THE CONCRETE BARRIER SHALL BE FLAT, SMOOTH, AND LEVEL TO ELIMINATE NEED FOR LIGHT POLE SHIMS. GRIND SURFACE, IF REQUIRED, TO MAKE CONCRETE LEVEL.
- REFER TO STANDARD CONSTRUCTION DRAWING MC-9 FOR BARRIER DIMENSIONS.
- JUNCTION BOXES SHALL CONFORM TO S713.10, EXCEPT THAT GALVANIZED STEEL PLATE COVERS SHALL CONFORM TO ASTM A-242 OR A-36.
- THE UNIT PRICE BID FOR EACH "ITEM S625, MEDIAN LIGHT POLE FOUNDATION," SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING ANCHOR BOLTS, REINFORCING, TYPE III JUNCTION BOX, EMT., AND ALL LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.
- THE UNIT PRICE BID FOR EACH "ITEM S625, MEDIAN PULL BOX," SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING TYPE IV JUNCTION BOX, CONDUIT ELLS, AND ALL LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.
- CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF 622 AND S625.

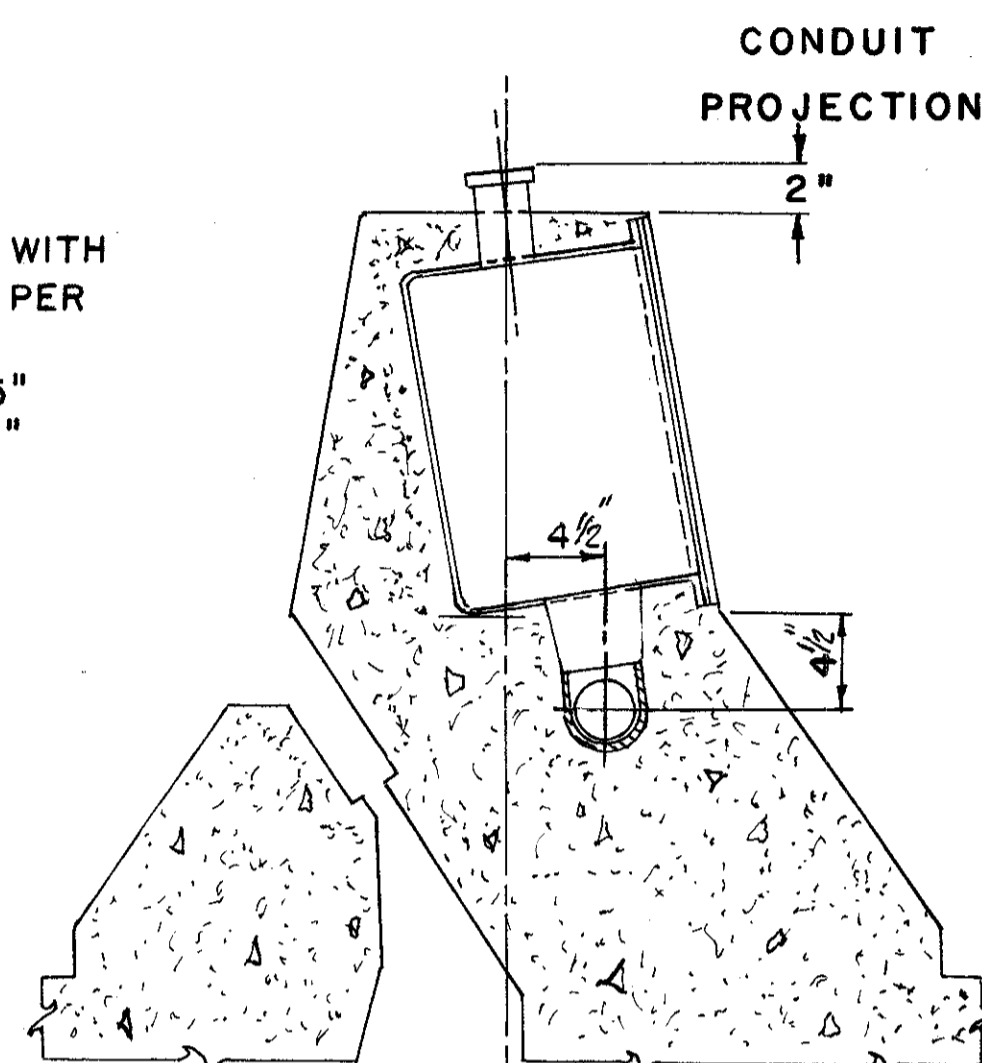
FHWA DIVISION	STATE	PROJECT	
5	OHIO		

217B

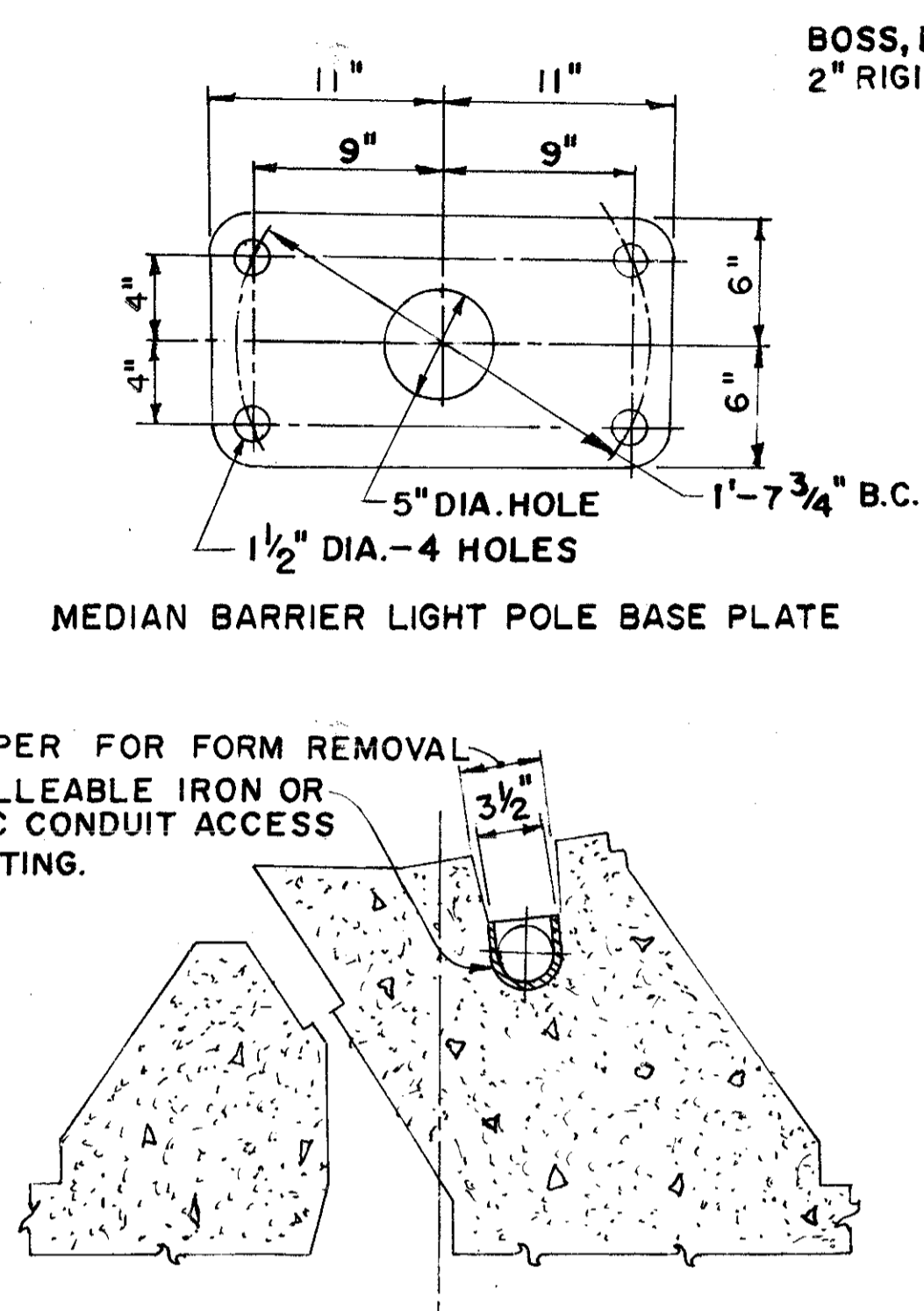
CUYAHOGA COUNTY  
CUY-480-8.54



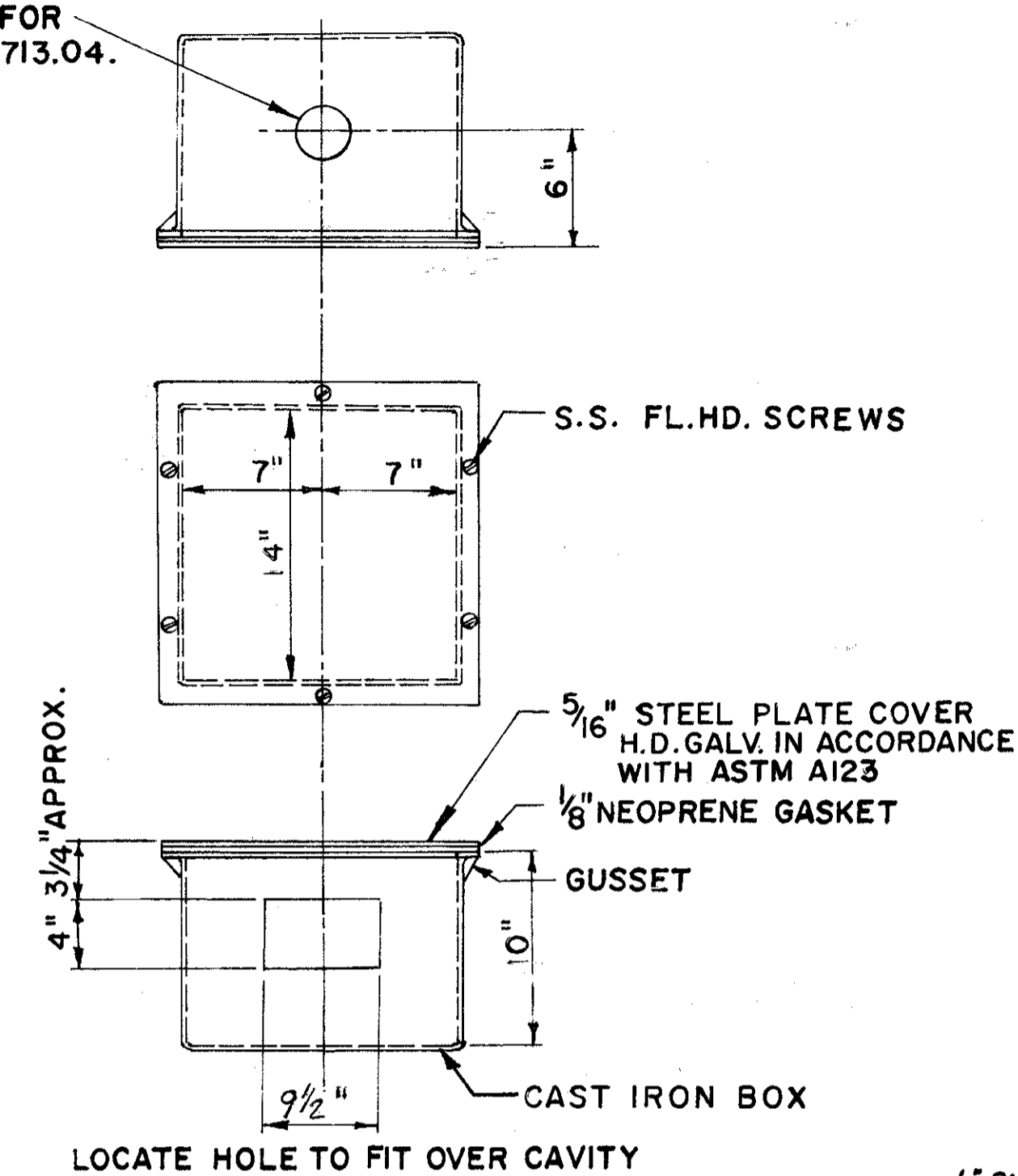
SECTION B-B



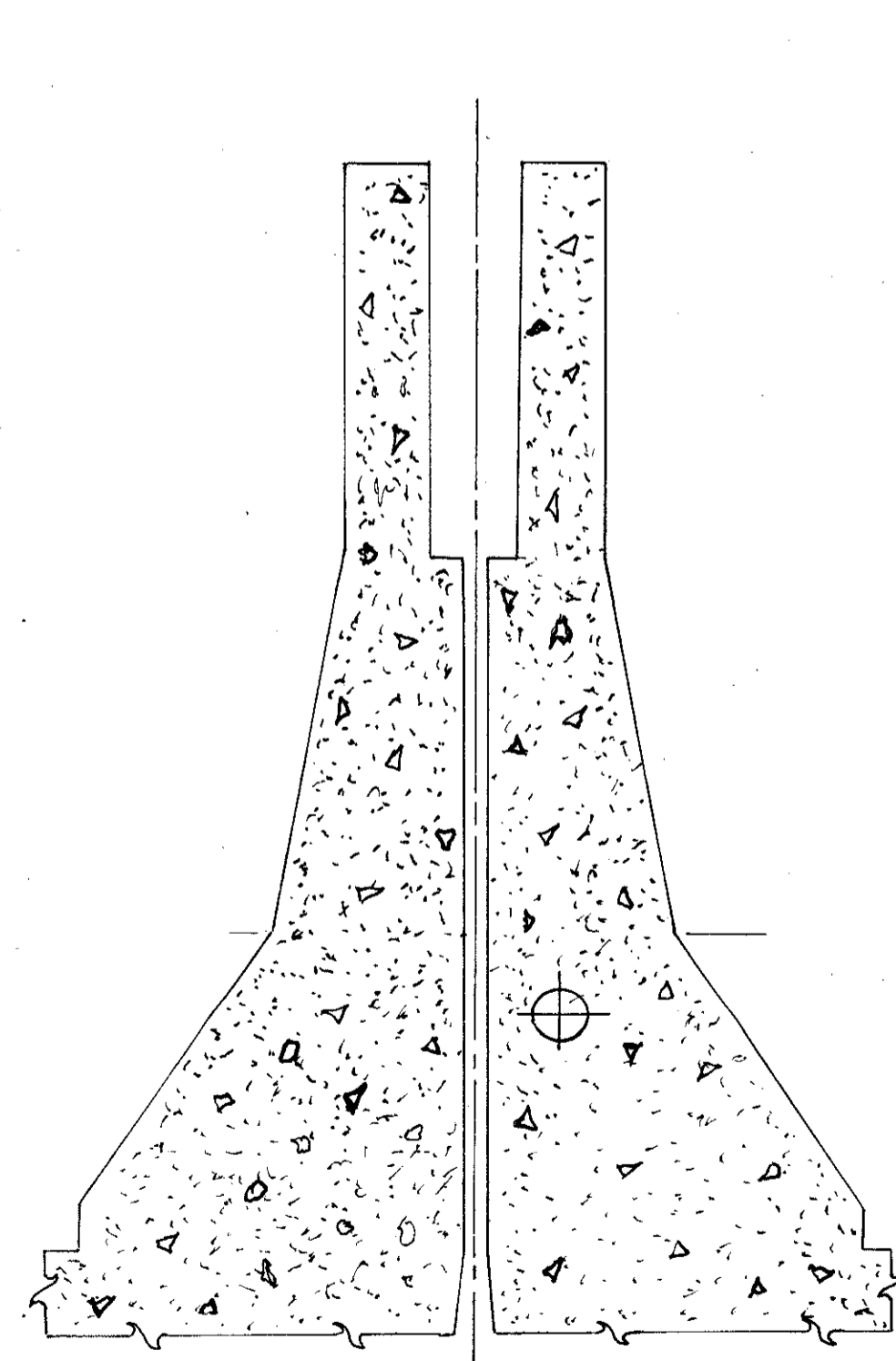
SECTION C-C



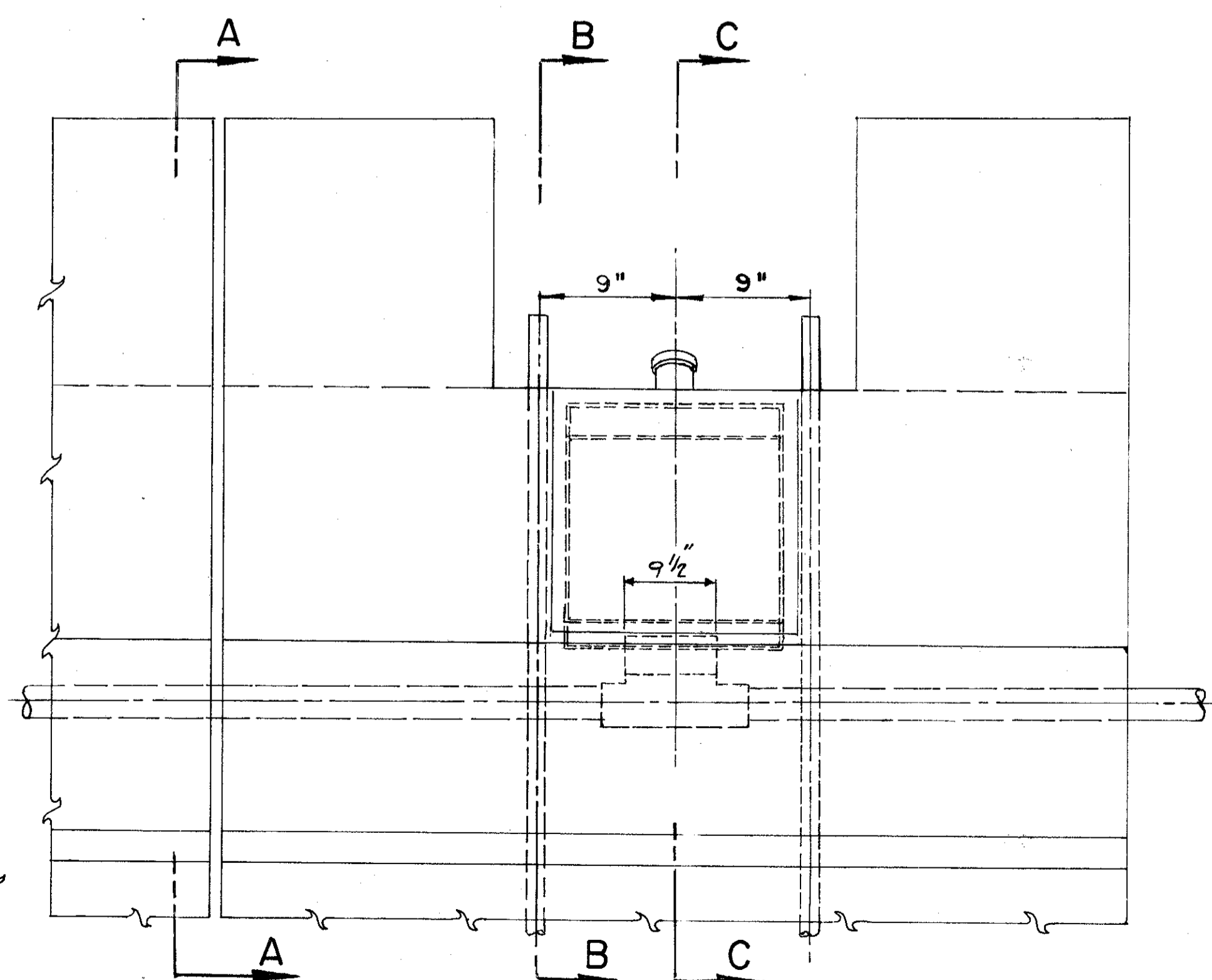
DETAIL OF CONCRETE POUR BELOW JUNCTION BOX, SECTION C-C.



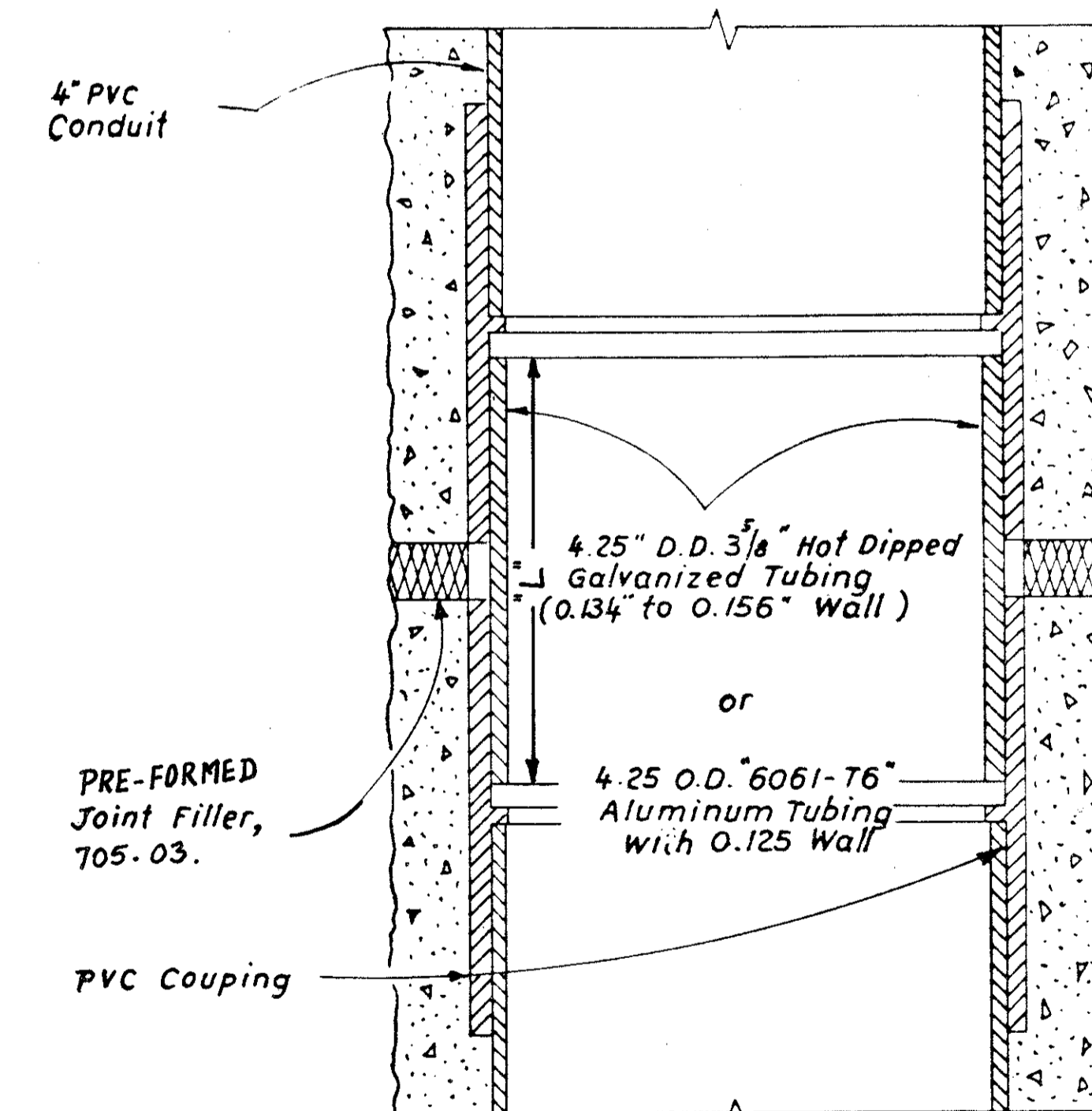
JUNCTION BOX



SECTION A-A



STRUCTURE BARRIER POLE MOUNTING DETAILS



DETAILS OF CONSTRUCTION JOINT  
4" PVC COUPLING IN MEDIAN  
CONCRETE BARRIER

"L" IS APPROX. 3 3/4" WHEN JOINT IS 1/2"  
NOTE: CONDUIT COUPLINGS AS DETAILED HEREIN SHALL BE PROVIDED AT ALL MEDIAN BARRIER JOINTS WHERE A JOINT FILLER IS USED, AS REQUIRED OR PERMITTED BY ITEM 622 OR STANDARD CONSTRUCTION DRAWING MC-9.

FHWA REGION	STATE	PROJECT	
5	OHIO		

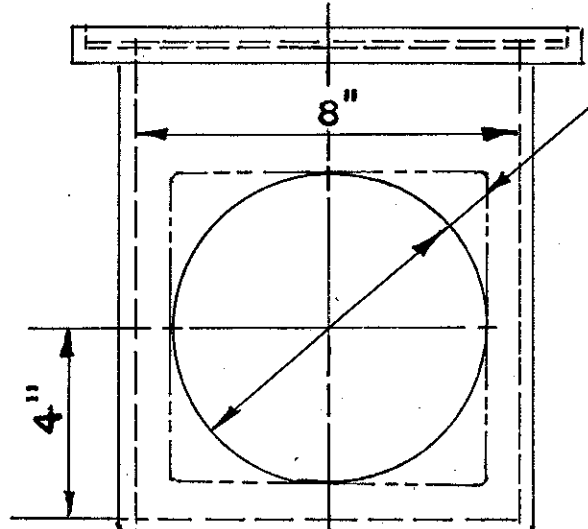
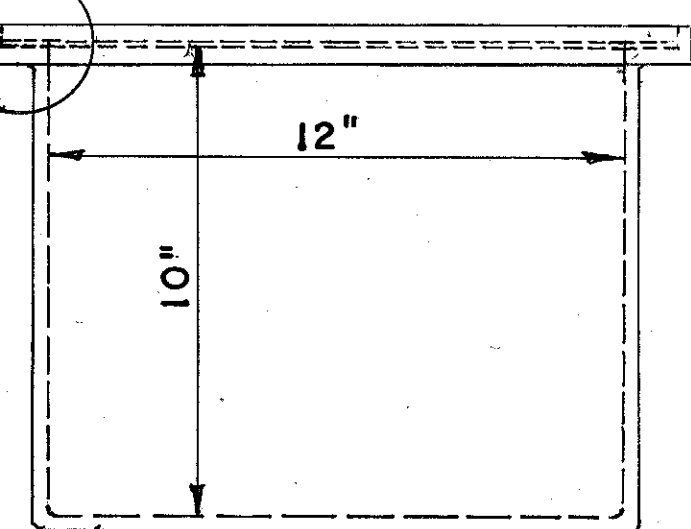
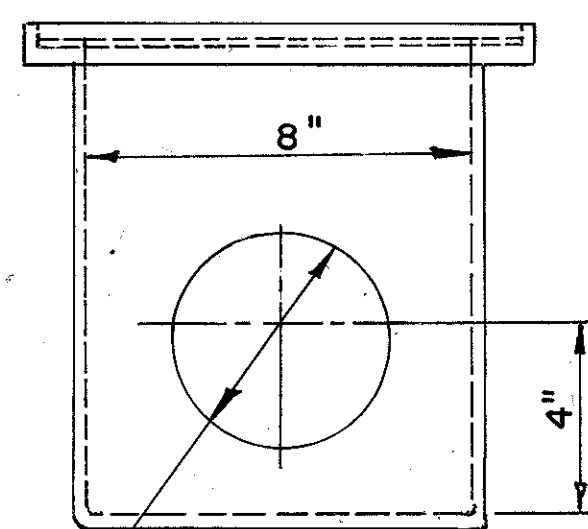
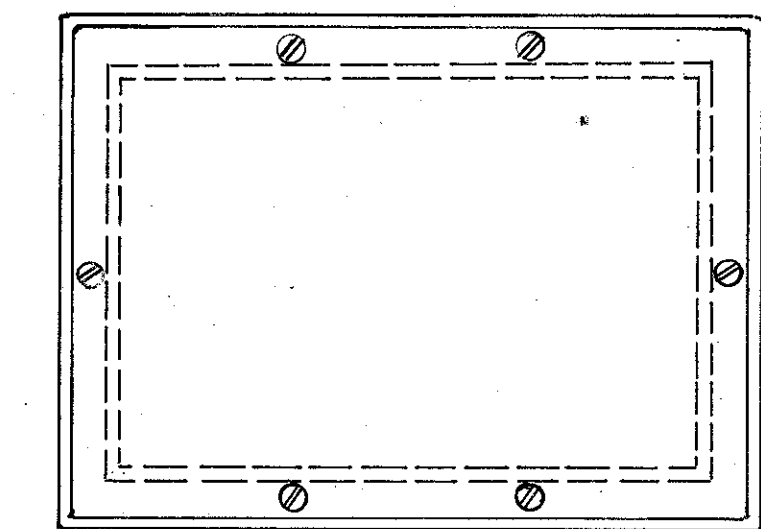
217C

CUYAHOGA COUNTY  
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5/16" GALVANIZED STEEL  
PLATE COVER  
FLUSH MOUNTED

S.S. FL. HD. SCREWS

1/8" NEOPRENE GASKET



SLIP HOLE FOR 4" RIGID CONDUIT, S713.04

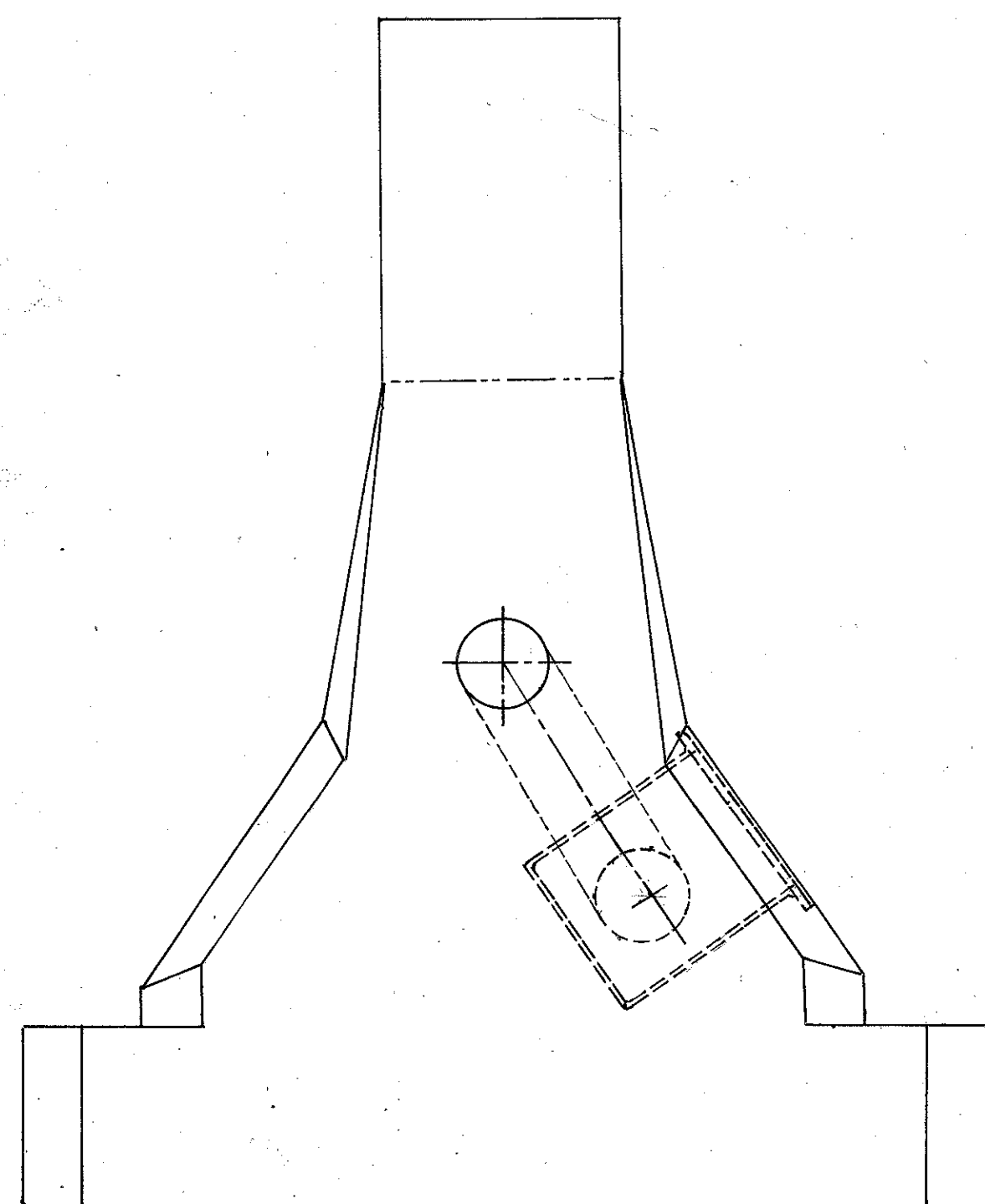
12" x 8" x 10" DP. CAST IRON BOX, 5/16" WALL, APPROX. WT. 70 LB., NEMA 4, FLANGED, RECESSED COVER.

6 3/4" SQUARE HOLE, OR 6 3/4" DIA. RD. HOLE.

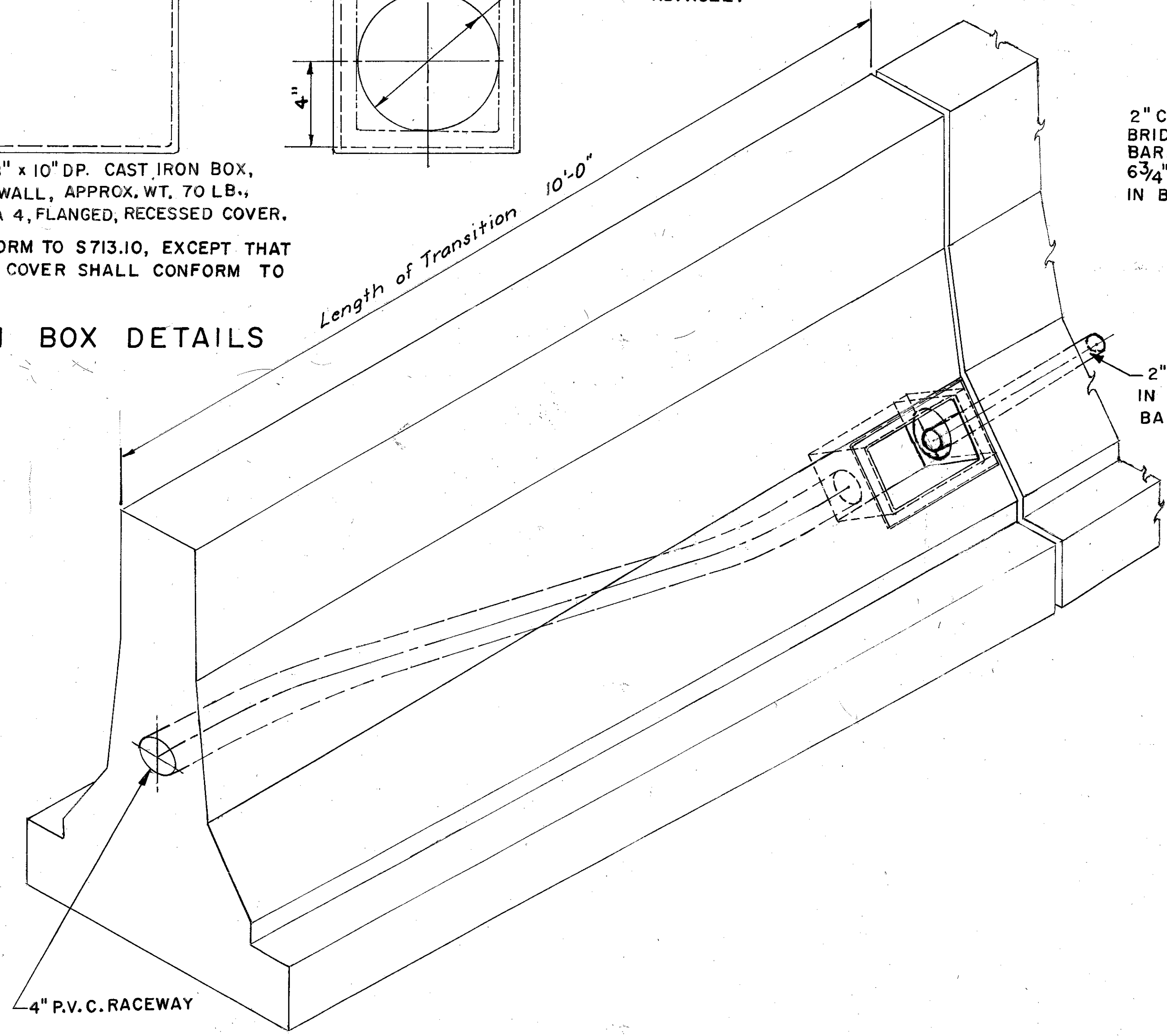
JUNCTION BOX SHALL CONFORM TO S713.10, EXCEPT THAT THE GALVANIZED STEEL PLATE COVER SHALL CONFORM TO ASTM A-242 OR A-36.

TRANSITION JUNCTION BOX DETAILS

Length of Transition 10'-0"



END ELEV. A-A



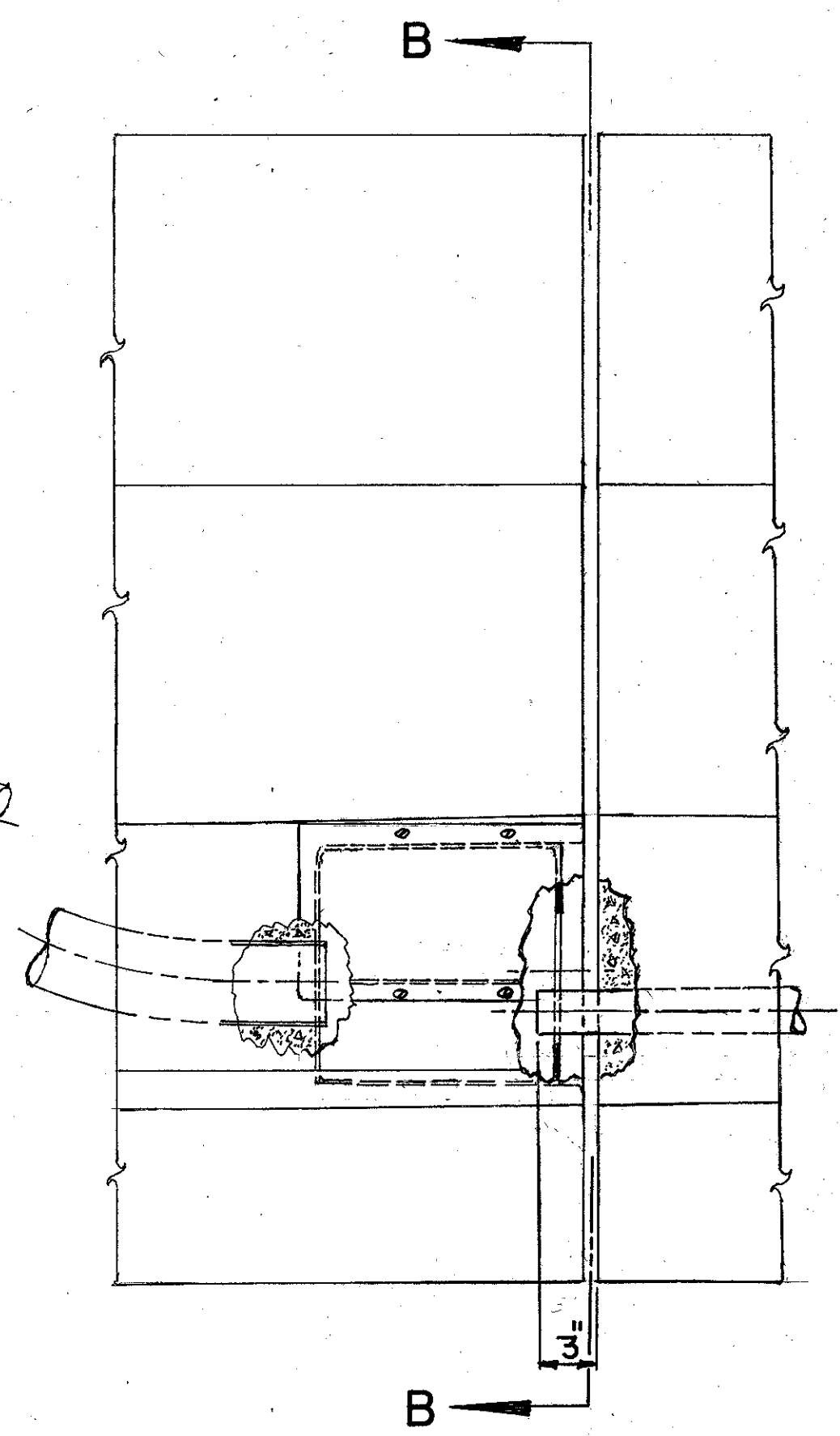
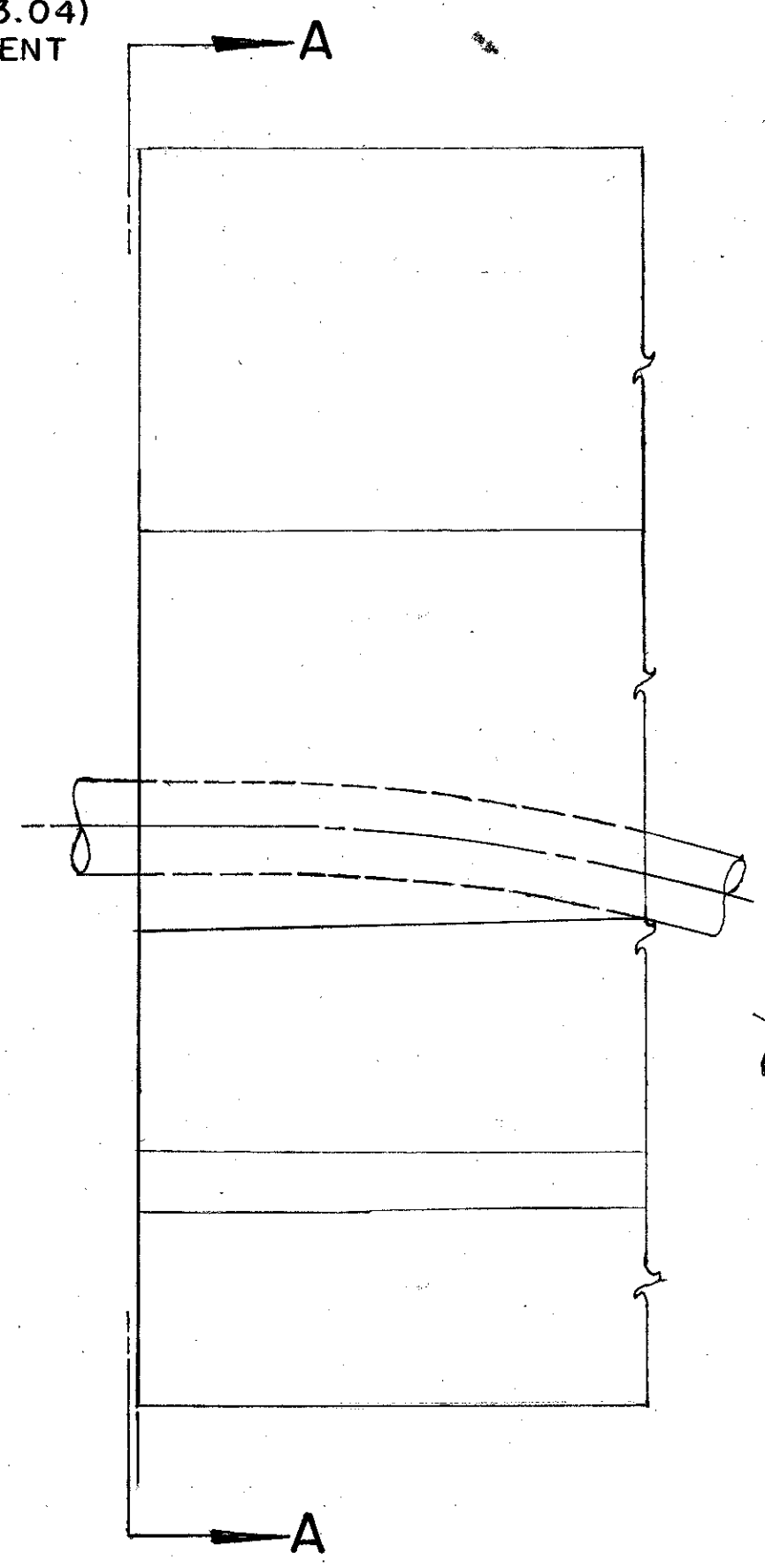
4" P.V.C. RACEWAY

1 7/8" APPROX. C. TO C. 2" CONDUIT OF BRIDGE ABUTM'T. BARRIER THROUGH 6 3/4" HOLE IN BOX.

ALLOW APPROXIMATELY 4" FOR ROADWAY BARRIER SETTLEMENT ADJACENT TO ABUTMENT SECTION

END ELEV. B-B

2" CONDUIT (S713.04) IN BRIDGE ABUTMENT BARRIER



SIDE ELEVATION, TRANSITION BARRIER FROM ROADWAY TO BRIDGE CONFIGURATIONS

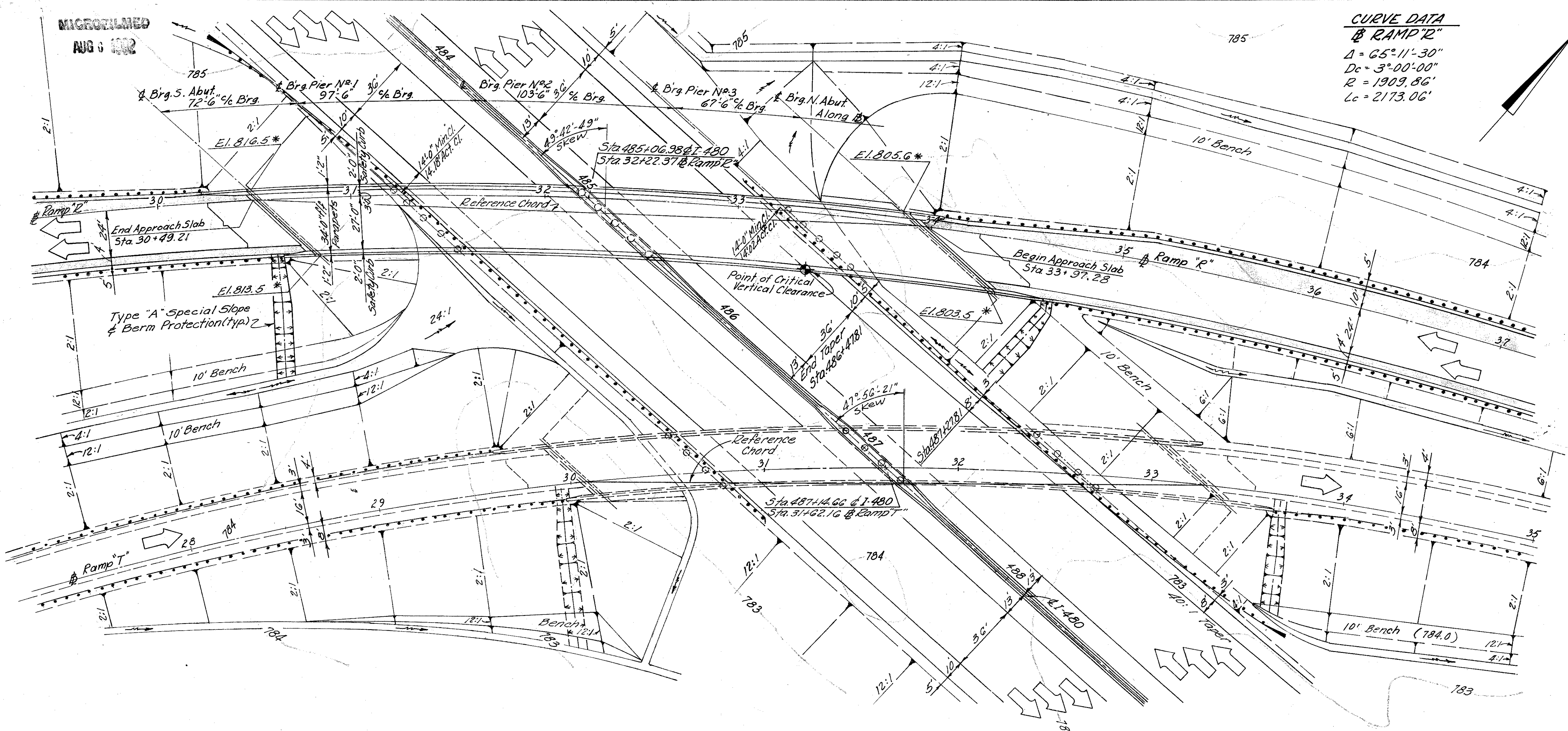
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**CURVE DATA**  
**RAMP "R"**  
 $\Delta = 65^{\circ}11'30''$   
 $D_c = 3^{\circ}00'00''$   
 $R = 1909.86'$   
 $L_c = 2173.06'$

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-8.54

219  
346



**PLAN**

NOTE:

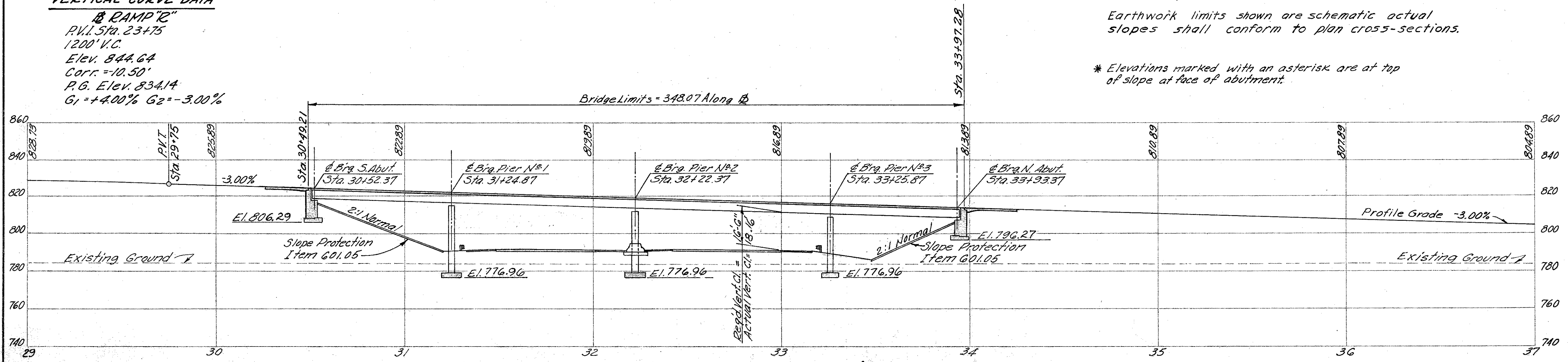
Reference chord is a line between intersections of Ramp "R" and Brgs. at abutments, Sta. 30+52.37 & Sta. 33+93.37.

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

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

**VERTICAL CURVE DATA**

**RAMP "R"**  
P.V.I. Sta. 23+75  
1200' V.C.  
Elev. 844.64  
Corr. = -10.50'  
P.G. Elev. 834.14  
 $G_1 = +4.00\%$   $G_2 = -3.00\%$



**PROFILE ALONG RAMP "R"**

**TRAFFIC ESTIMATE**

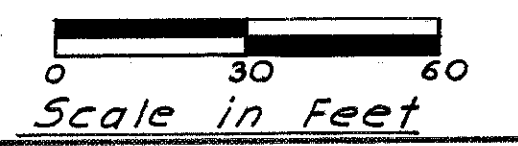
DESIGN YEAR 1987  
TOTAL A.D.T. 12,079

**PROPOSED STRUCTURE**

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

SPANS: 72'-6", 97'-6", 103'-6", 67'-6" Brg. Along B ROADWAY: 34'-0" f/f Parapets

LOADING: C.F.-2000 (1957) Adequate for AASHTO alternate loading.  
SURFACE COURSE: Monolithic Concrete.  
SKEW: 49°42'-49" Rt. forward with respect to Ref. Chord.  
ALIGNMENT: 3°00'-00" Curve Right  
APPROACH SLABS: A5-1.72 Modified (25' long)  
SUPERELEVATION: 0.049 ft per ft



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**SITE PLAN**  
BRIDGE No CUY-480-0869  
RAMP "R" OVER I-480  
CUYAHOGA COUNTY STA. 30+49.21  
STA. 33+97.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.T.		G.W.M.	G.W.M.	3/16/7	

CUYAHOGA COUNTY  
CUX-480-8.54

NOTES

- 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.
- DELETED
- COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.

- LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
- END PREPARATION AND FIELD WELDING INCLUDED WITH ITEM 509.
- "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.

ESTIMATED QUANTITIES

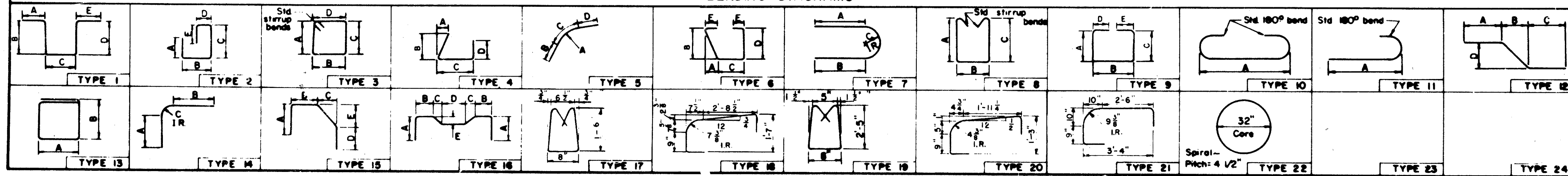
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GENERAL
503		LUMP	COFFERDAMS, CRIBS AND SHEETING				
503	1496	C.Y.	UNCLASSIFIED EXCAVATION	473	1023		
509	108987	LB	REINFORCING STEEL	15965	52976	40046	
511	456	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			456	
511	165	C.Y.	CLASS C CONCRETE, PIER COLUMNS		165		
511	237	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	237			
511	233	C.Y.	CLASS C CONCRETE, FOOTINGS	73	160		
512	13	L.F.	PREMOLDED SEALING STRIP	13			
513	371,400	LB	STRUCTURAL STEEL, PRIMER PER 846 (SEE PROPOSAL NOTES)			371,400	
846	371,400	LB	FIELD PAINTING OF STRUCTURAL STEEL			371,400	
518	99	C.Y.	POROUS BACKFILL	99			
518	134	L.F.	6 INCH PERFORATED, HELICAL CSP, INCLUDING SPECIALS, 707.01	134			
518	124	L.F.	6 INCH NON-PERFORATED, HELICAL CSP, 707.01	124			
518	11	EA	SCUPPERS INCLUDING SUPPORTS			11	
601	859	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION				859
S 625			SEE SHEET 203 FOR LIGHTING SUMMARY				
808	456	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE TYPE A, B OR D			456	
SPECIAL	87081	LBS	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)	2347		84734	

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BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE 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



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COLUMBUS, OHIO

ESTIMATED QUANTITIES  
Bridge No. CUY480-0869  
Ramp "R" over I- 480  
Cuyahoga County Sta. 30 + 49.21  
Sta. 33 + 97.28

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

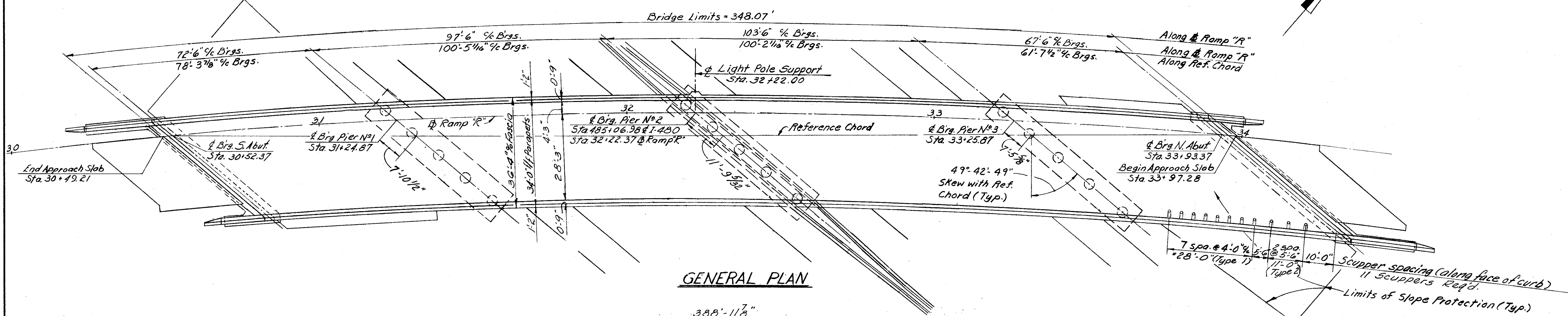


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FED. ID. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

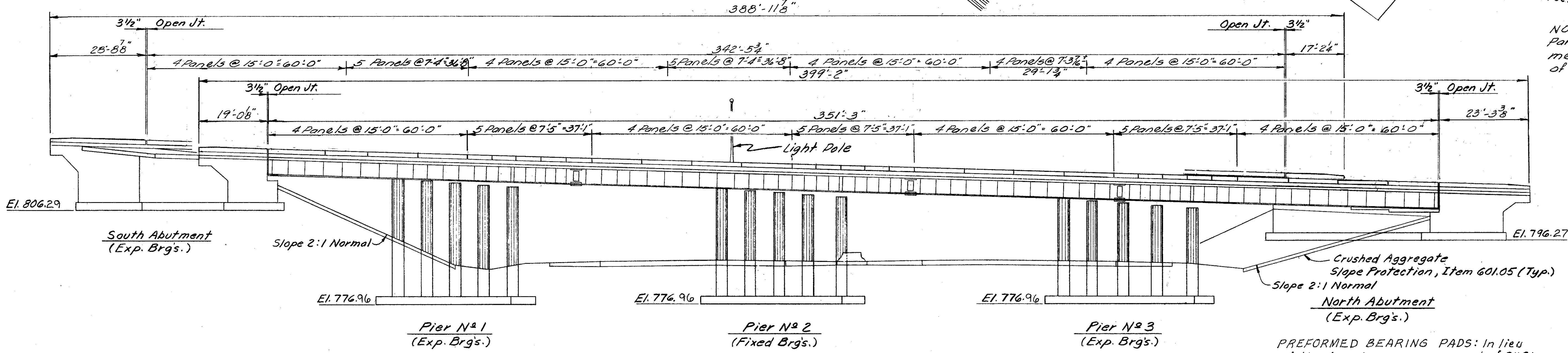
221  
346

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 of 3 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 dated 1-21-76, HL-5 dated 9-6-76, HL-7 dated 1-21-76 Sheet 328

**COMMON DETAILS:**

- Contraction Joint 808, dated 1-1-71

**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 & Pier Columns)
- Concrete Class C - Basic Unit Stress 1,333 P.S.I. (Abutments & Footings)
- Structural Steel - ASTM. A36 Basic Unit Stress 20,000 P.S.I.
- High Strength Bolts - ASTM. A325 - Basic Unit Stress (shear) 13,500 P.S.I.
- Reinforcing Steel - ASTM. A615, A616, A617 - Unit Stress 20,000 P.S.I.
- Spiral reinforcement may be plain bars A.S.T.M. A82 or A615.

**EXCAVATION QUANTITY:**

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

**FOUNDATION BEARING PRESSURE:**

All footings are designed for a maximum bearing pressure of 2.5 tons per square foot.

ROADWAY FINISH: See Sheet 251.

**MODIFY STANDARD DWG. AS-1-72**

- a. Dimension  $w = 24' - 0''$
- b. change clearance for top reinforcing steel to 3" from 2"
- c. Jacking holes shall be omitted

**ATTACHMENT OF GUARDRAIL TO CONCRETE PARAPETS:**

Concrete insert anchor assemblies per Standard Construction Drawings GR-3 and GR-1 shall be placed during parapet construction.

**EMBANKMENT PROCEDURE**

The embankment shall be placed, prior to excavation for pier N21, 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. Excavation for pier N21 may be made immediately upon placing of the embankment.

DECK PROTECTION METHOD: Epoxy Coated reinforcing steel, top mat only.

MONOLITHIC WEARING SURFACE thickness is assumed for design purposes, to be 1".

**PREFORMED BEARING PADS:** In lieu of the hardness requirement of 711.21, preformed bearing pads shall have a Shore A durometer of 80 ± 10.

**SUPPLEMENTAL SPECIFICATION REFERENCES (CONT)**

- 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

**LAPS**

Minimum bar lap shall be 30 Dia.

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**GENERAL PLAN AND ELEVATION**

BRIDGE N° CUY-480-0869  
RAMP "R" OVER I-480  
CUYAHOGA COUNTY STA. 30+49.21  
STA. 33+97.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.U.P.	R.U.P.		G.W.M.	G.W.M.	3/6/77	7-17-78

3/16



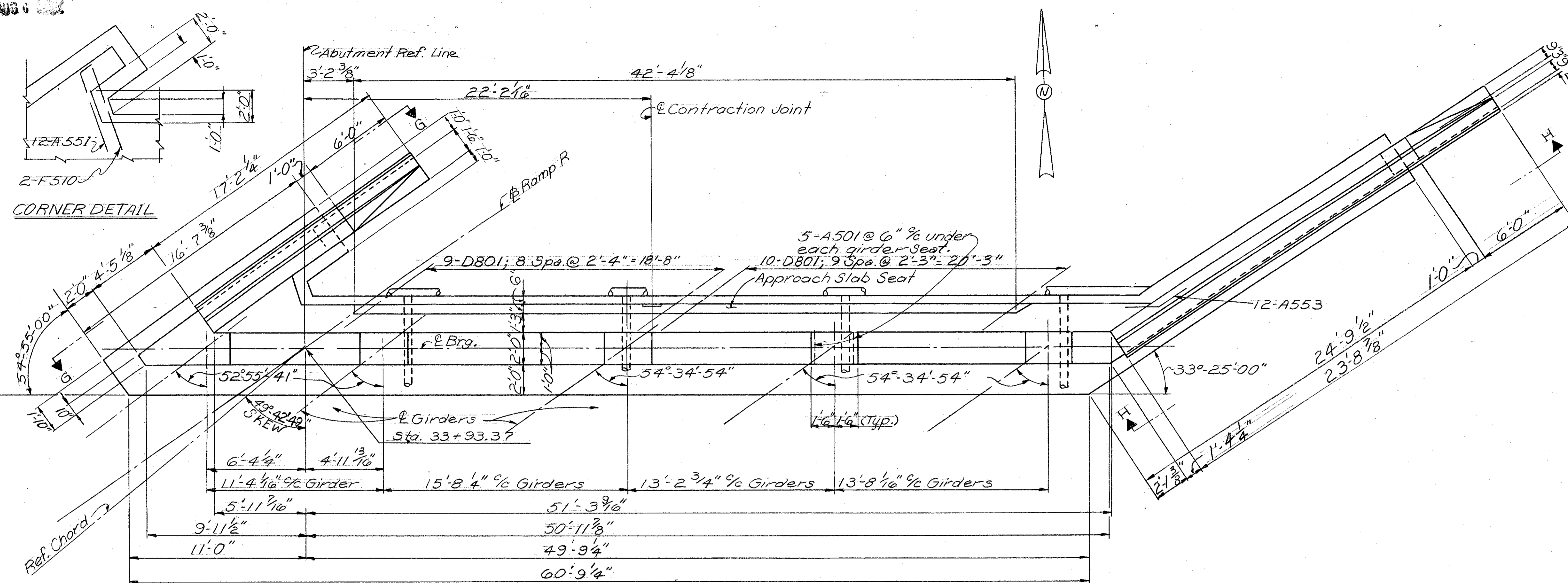


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NO. 102

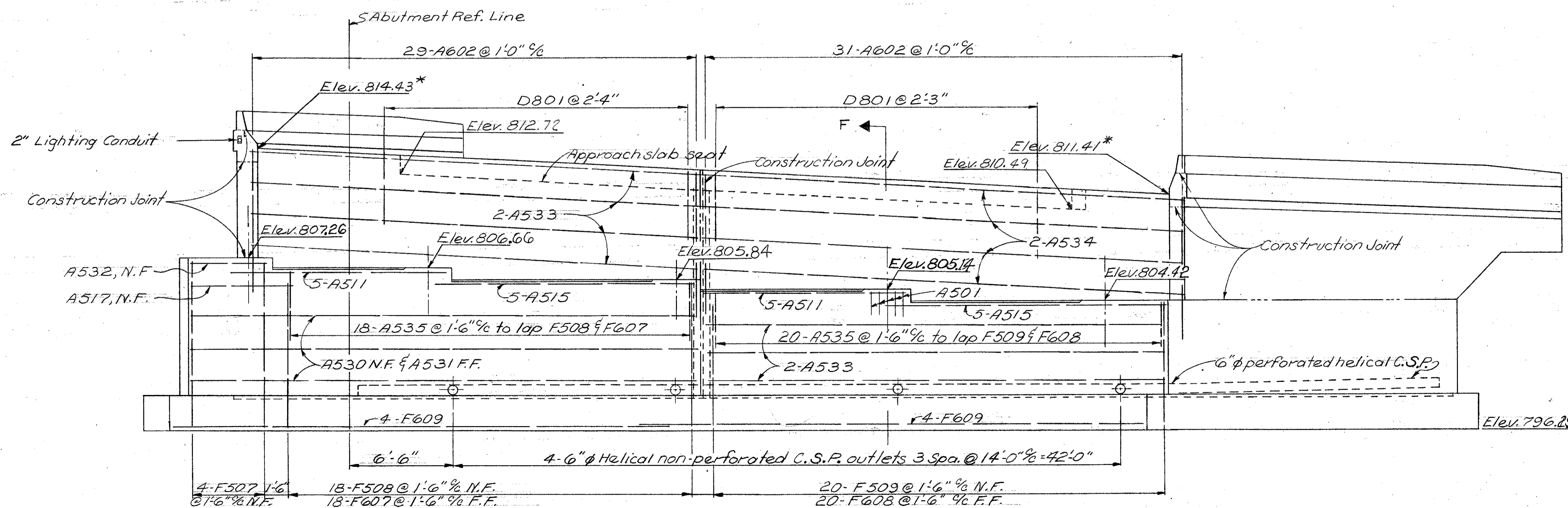
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

224  
346

CUYAHOGA COUNTY  
CUY-480-8.54



PLAN



ELEVATION

NOTES

A joint shall be provided in the abutment portion of end dam at the contraction joint.

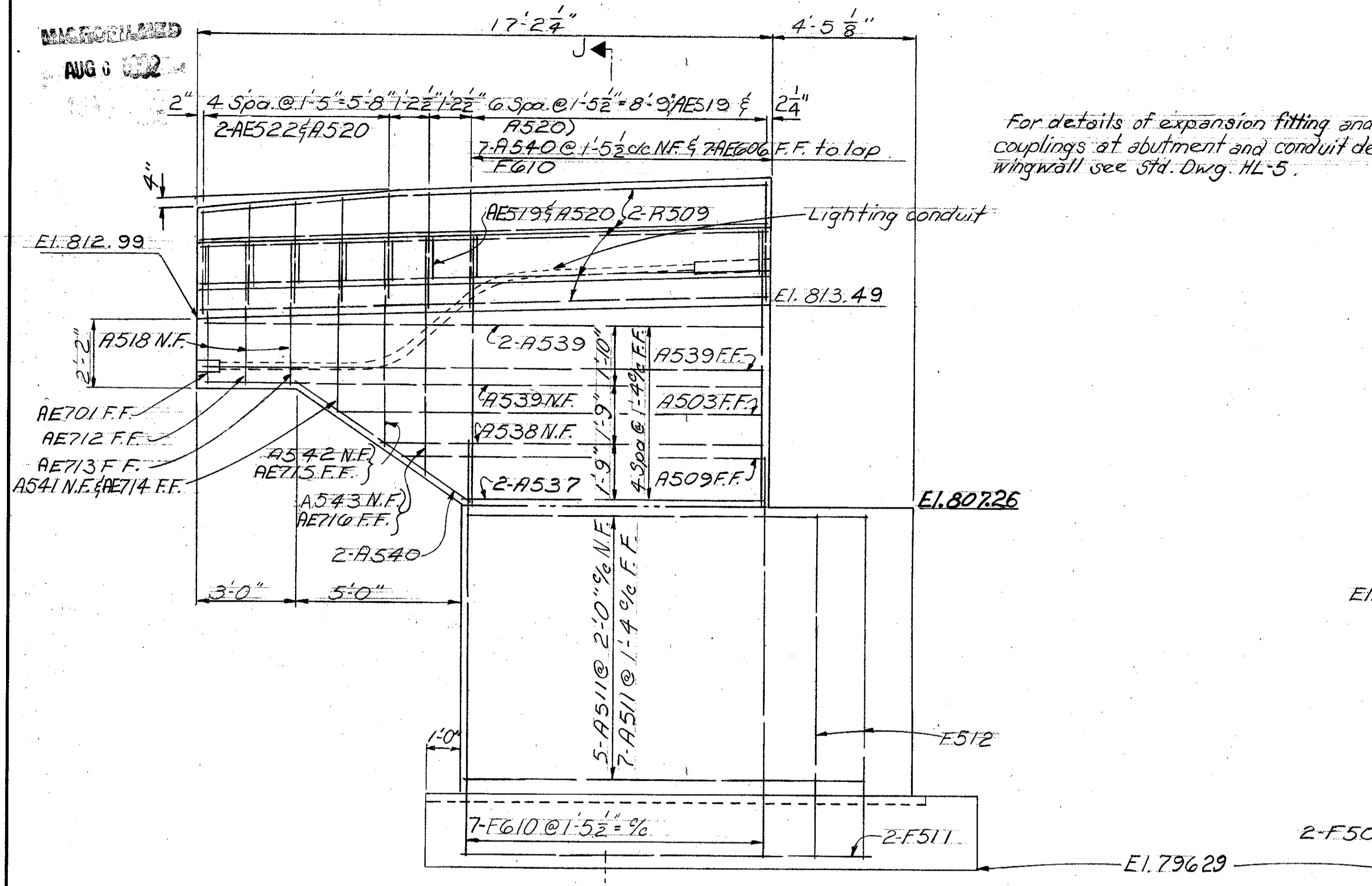
For details of the contraction joint see Common Details Sheet N<sup>o</sup> 328.

For Section F-F & Elevations G-G & H-H see Sheet N<sup>o</sup> 2216.

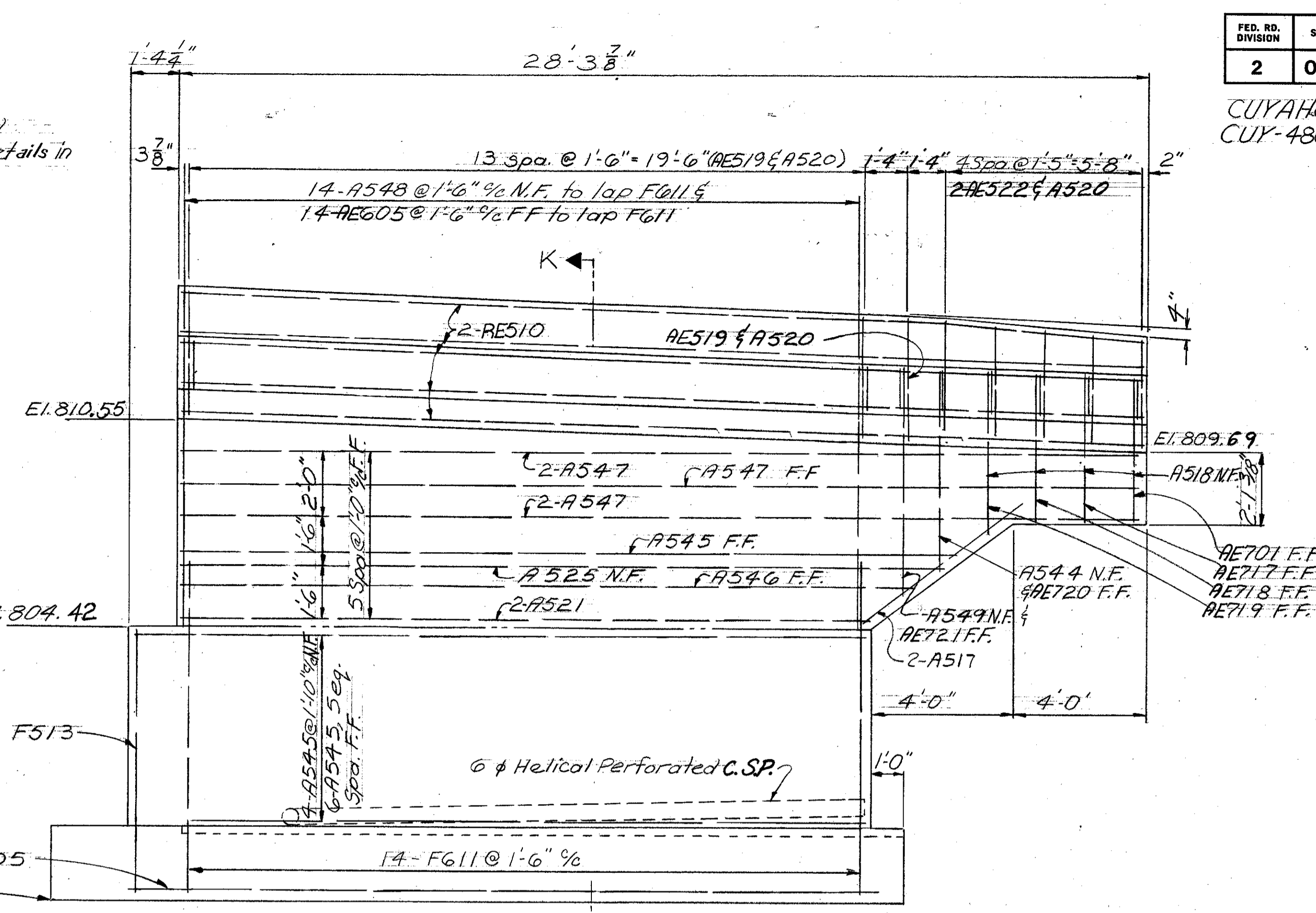
For additional notes see sheet N<sup>o</sup> 4716.

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES							6/16
NORTH ABUTMENT DETAILS							
BRIDGE N <sup>o</sup> CUY-480-0869							
RAMP "R" Over I-480							
CUYAHOGA COUNTY							
STA. 30+49.21				STA. 33+97.28			
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
RJP	GWM		RJP	GWM	3-6-67		
MR6	GFJ		JEM	WTF	7-17-75		

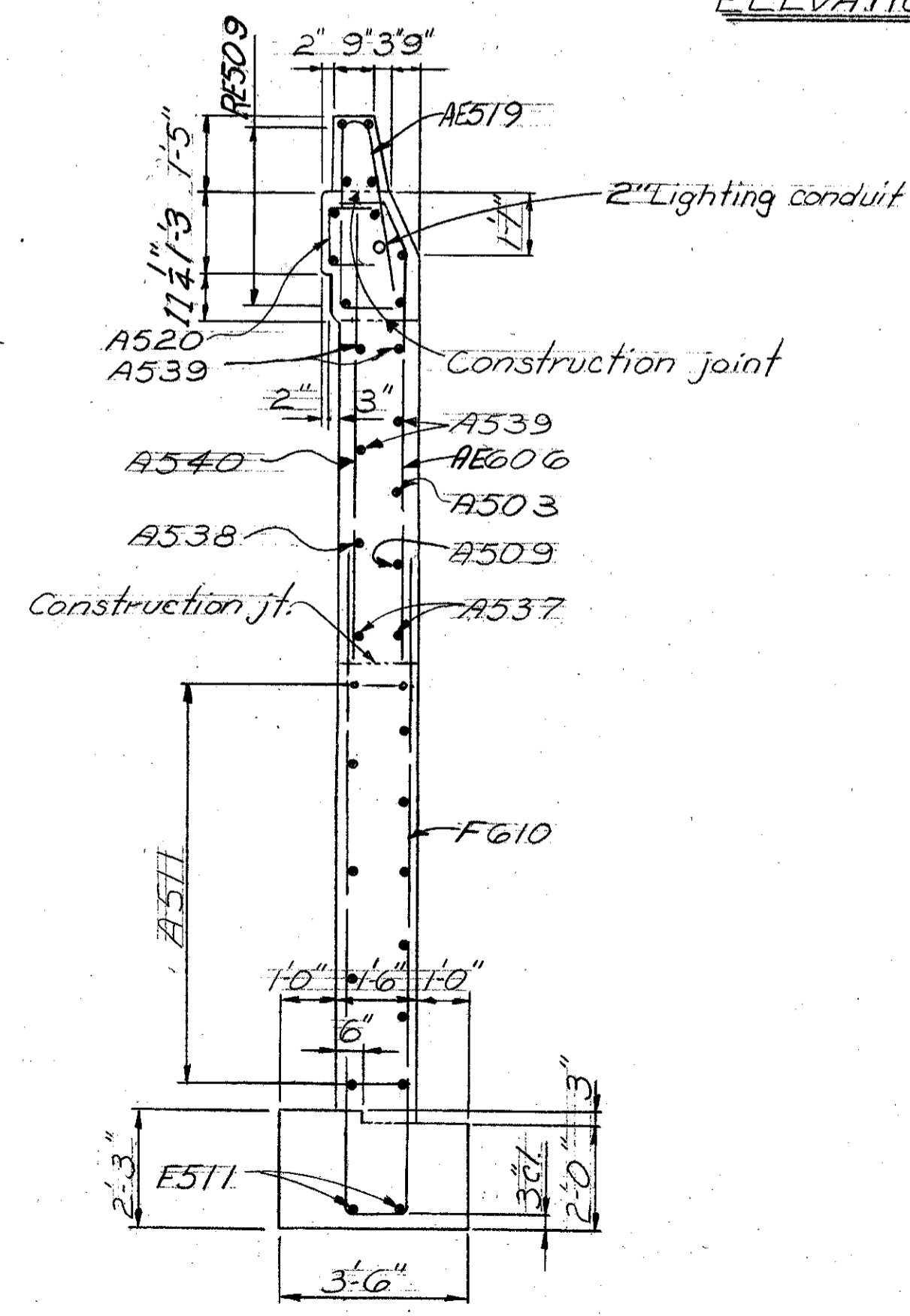
CUYAHOGA COUNTY  
CUY-480-8.54



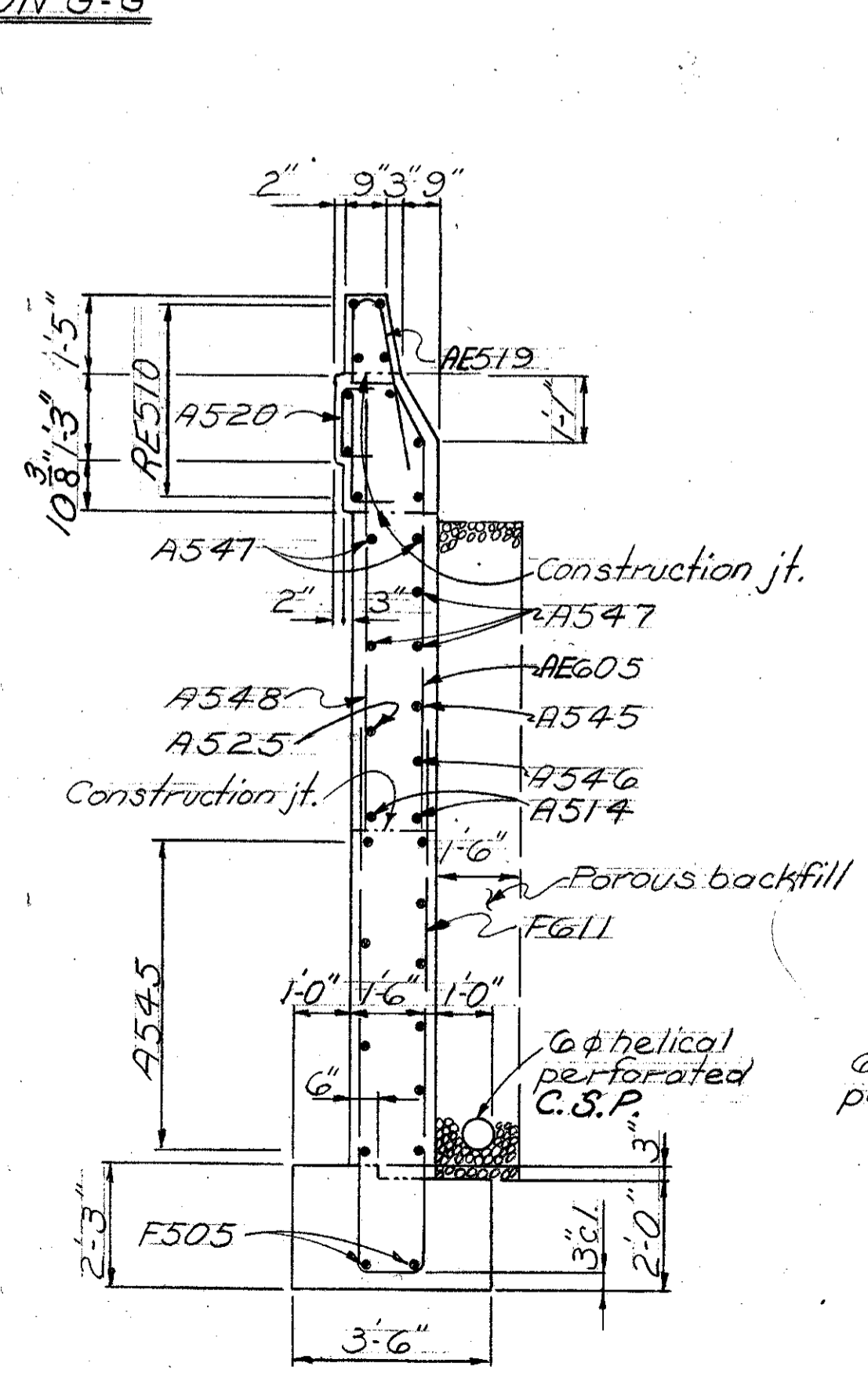
ELEVATION G-G



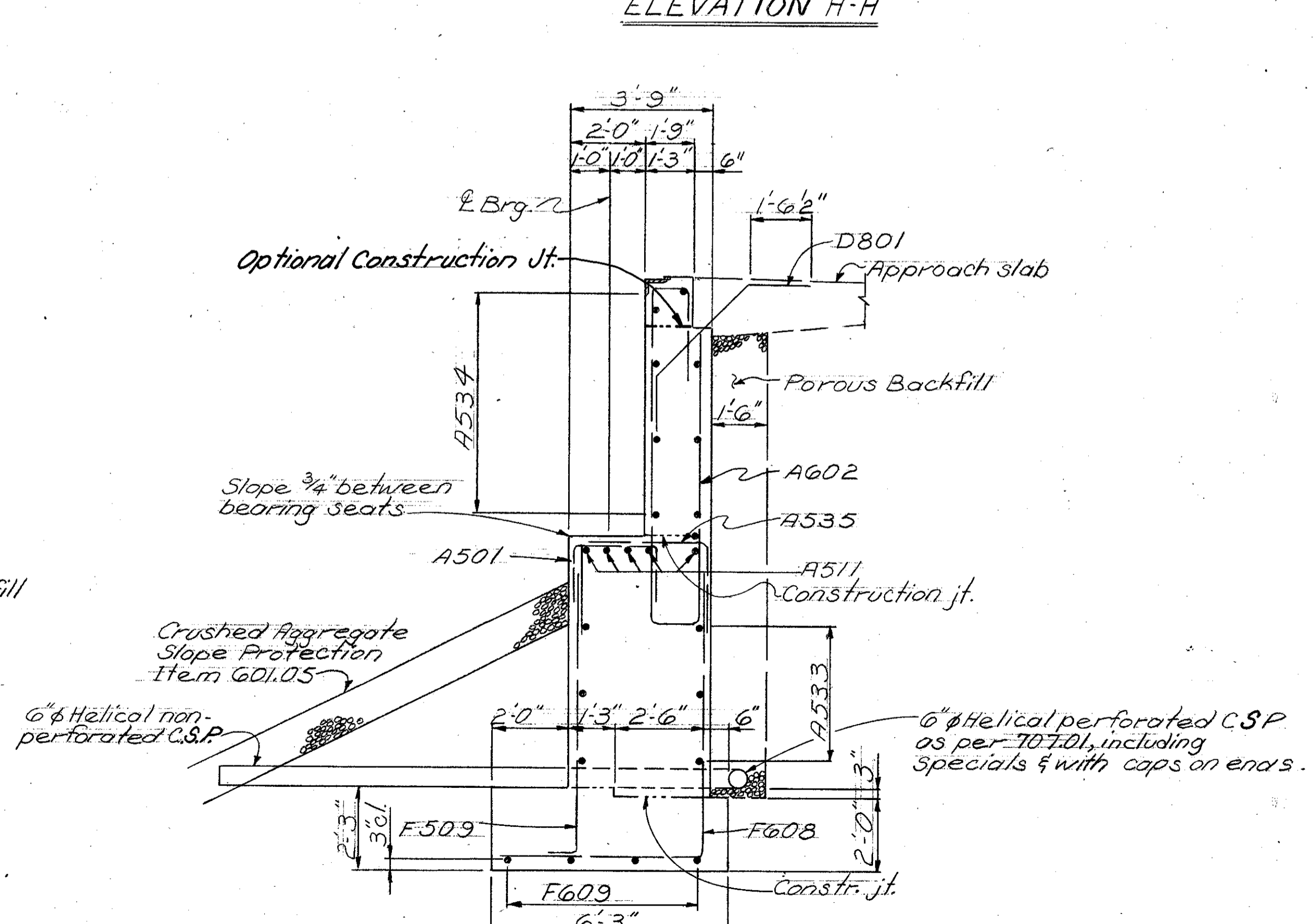
ELEVATION H-H



SECTION J-J



SECTION K-K



SECTION F-F

For details of expansion fitting and couplings at abutment and conduit details in wingwall see Std. Dwg. HL-5.

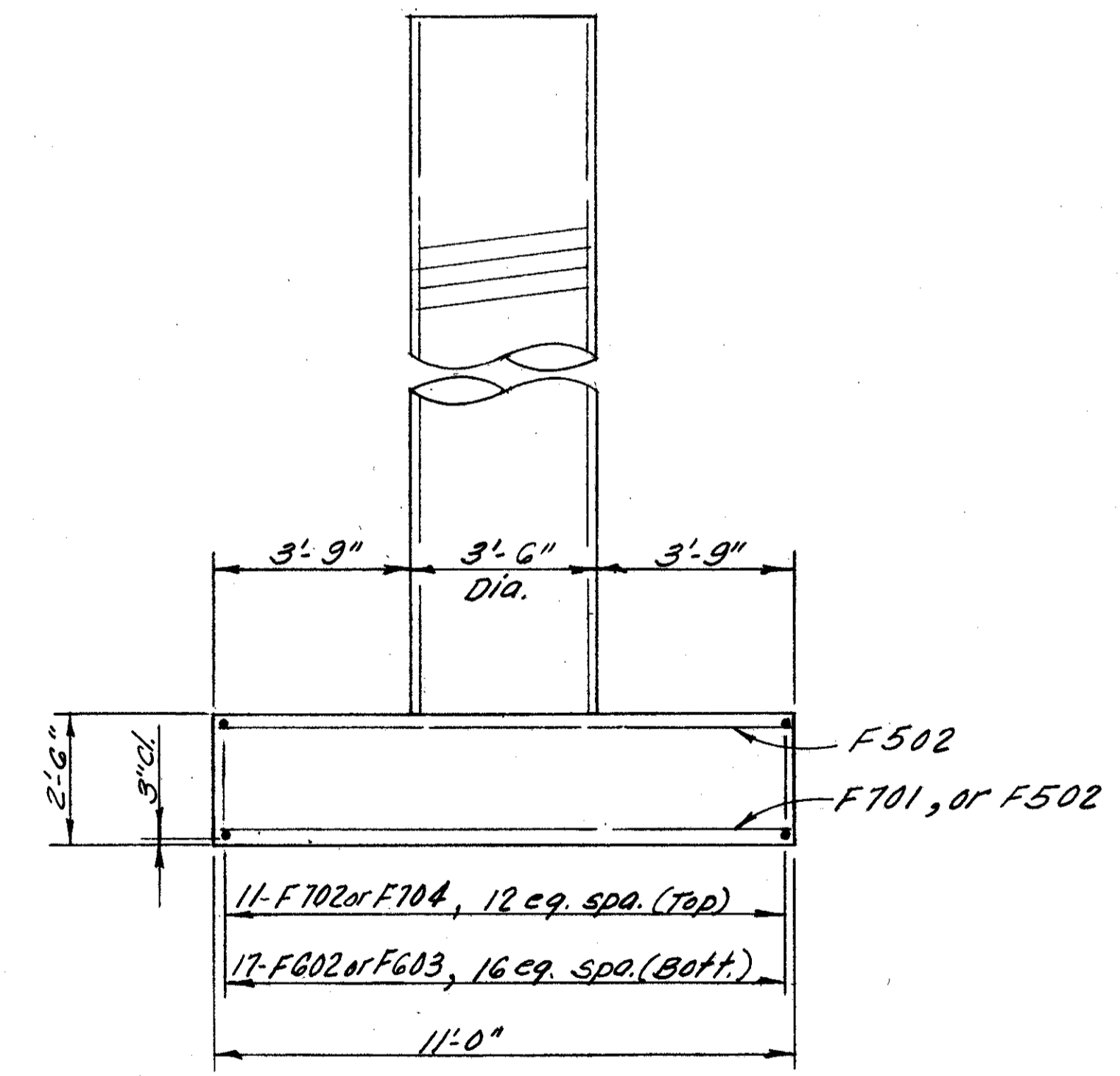
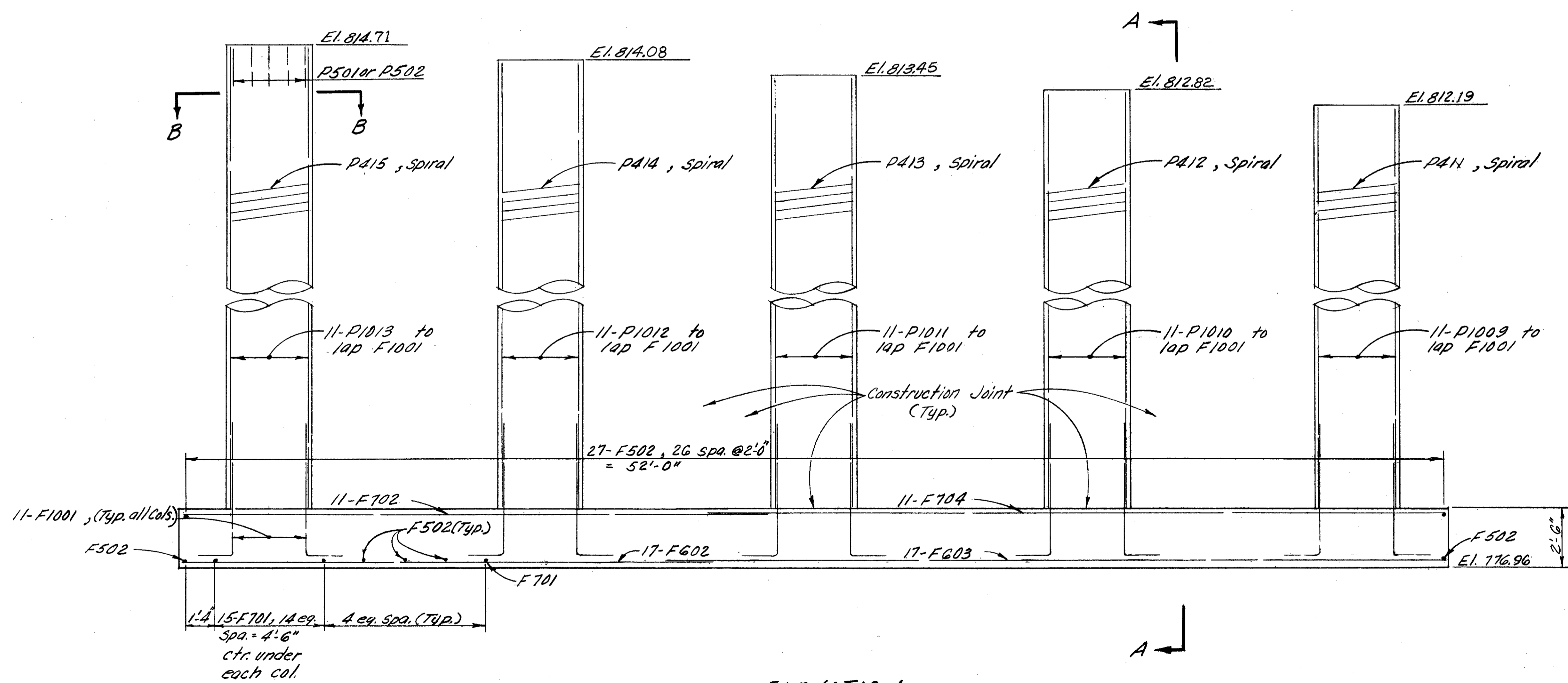
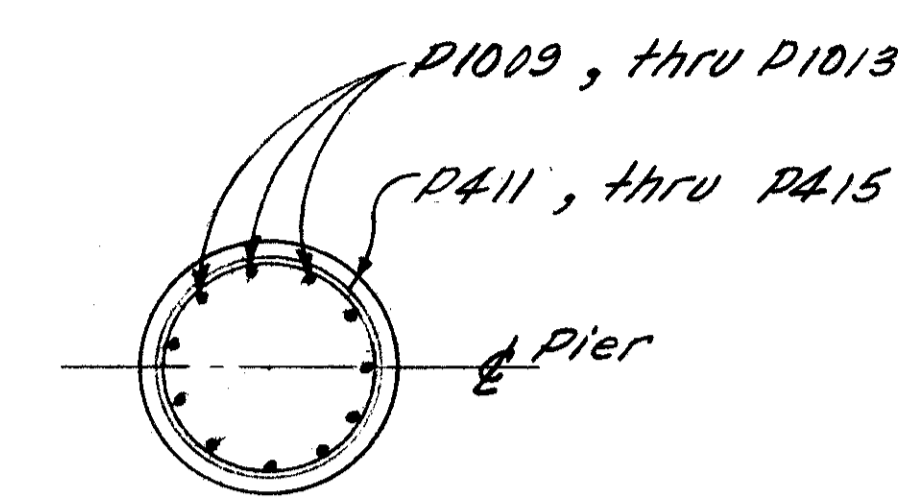
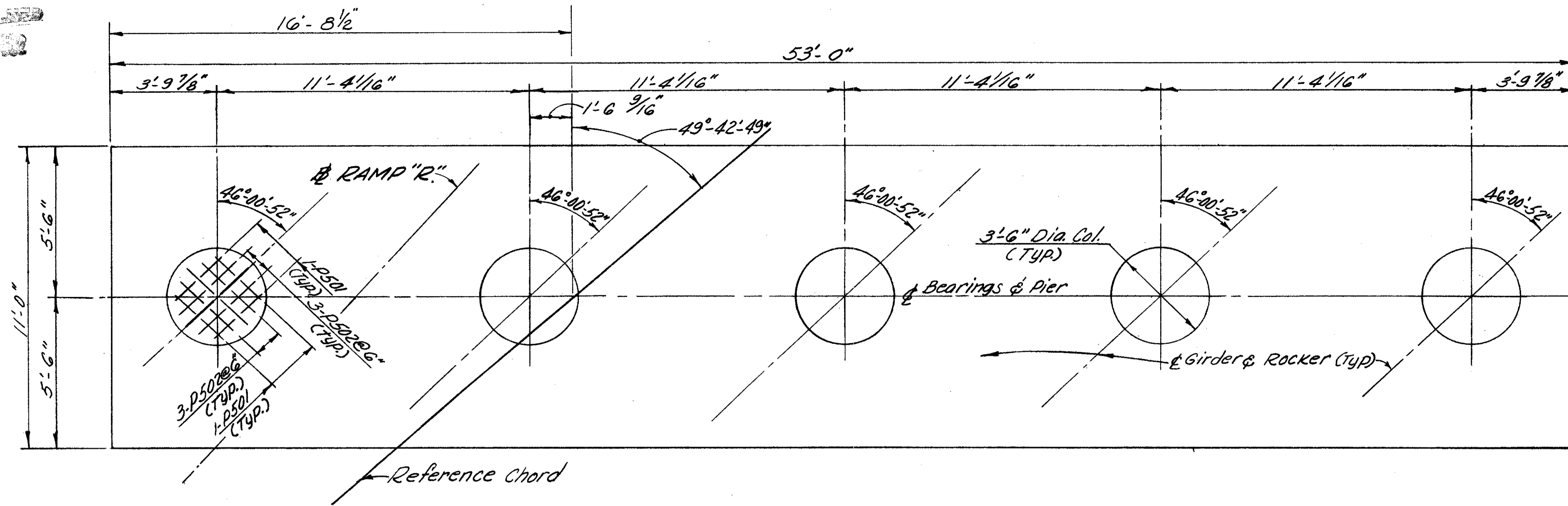
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RJP	GMW		RJP	GMW	3-10-67	
MRG	GFJ		JEM	WTF	7-17-75	

NORTH ABUTMENT DETAILS  
BRIDGE NO. CUY-480-0869  
RAMP R.OVER I-480  
CUYAHOGA COUNTY  
STA. 30+49.21  
STA. 33+97.28

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

226  
346

CUYAHOGA COUNTY  
CUY-480-8.54



8/16

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PIER No. 1 DETAILS

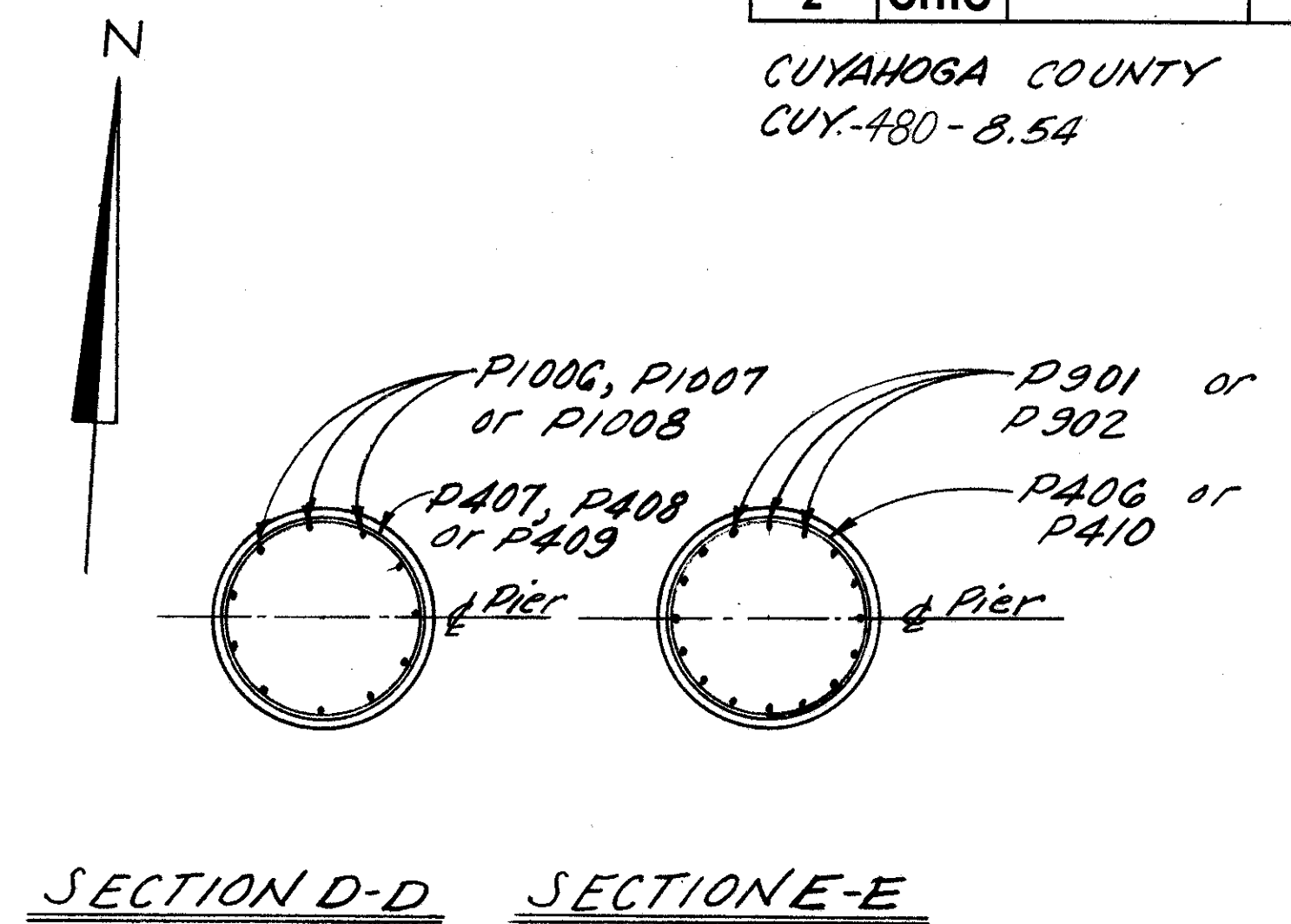
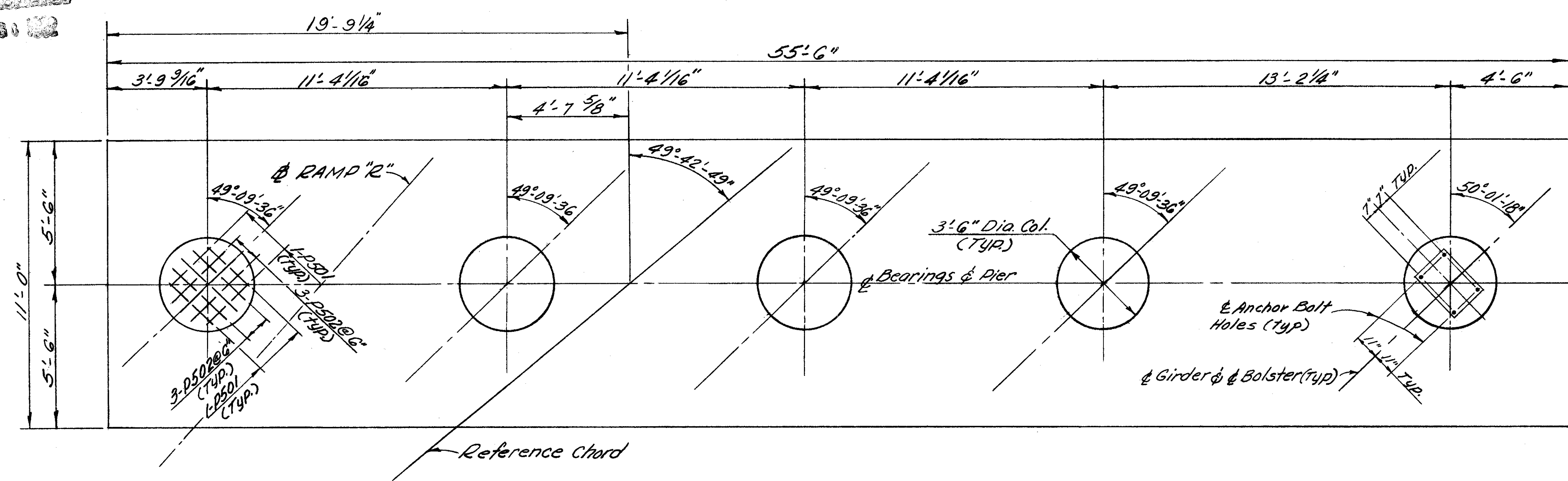
BRIDGE No. CUY-480-0869  
RAMP "R" OVER I-480  
CUYAHOGA COUNTY STA. 30+49.21  
STA. 33+97.28

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

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

227  
346

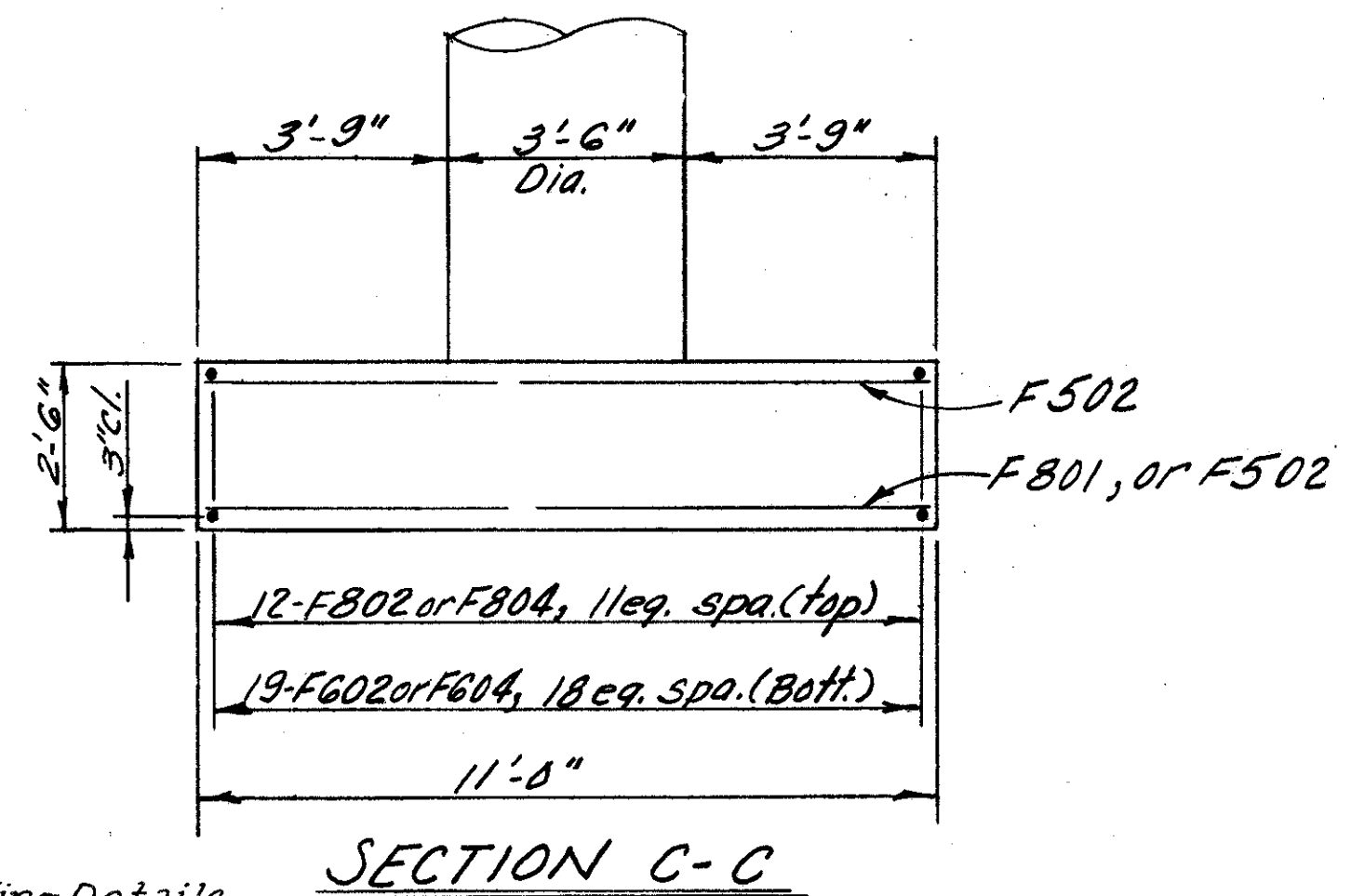
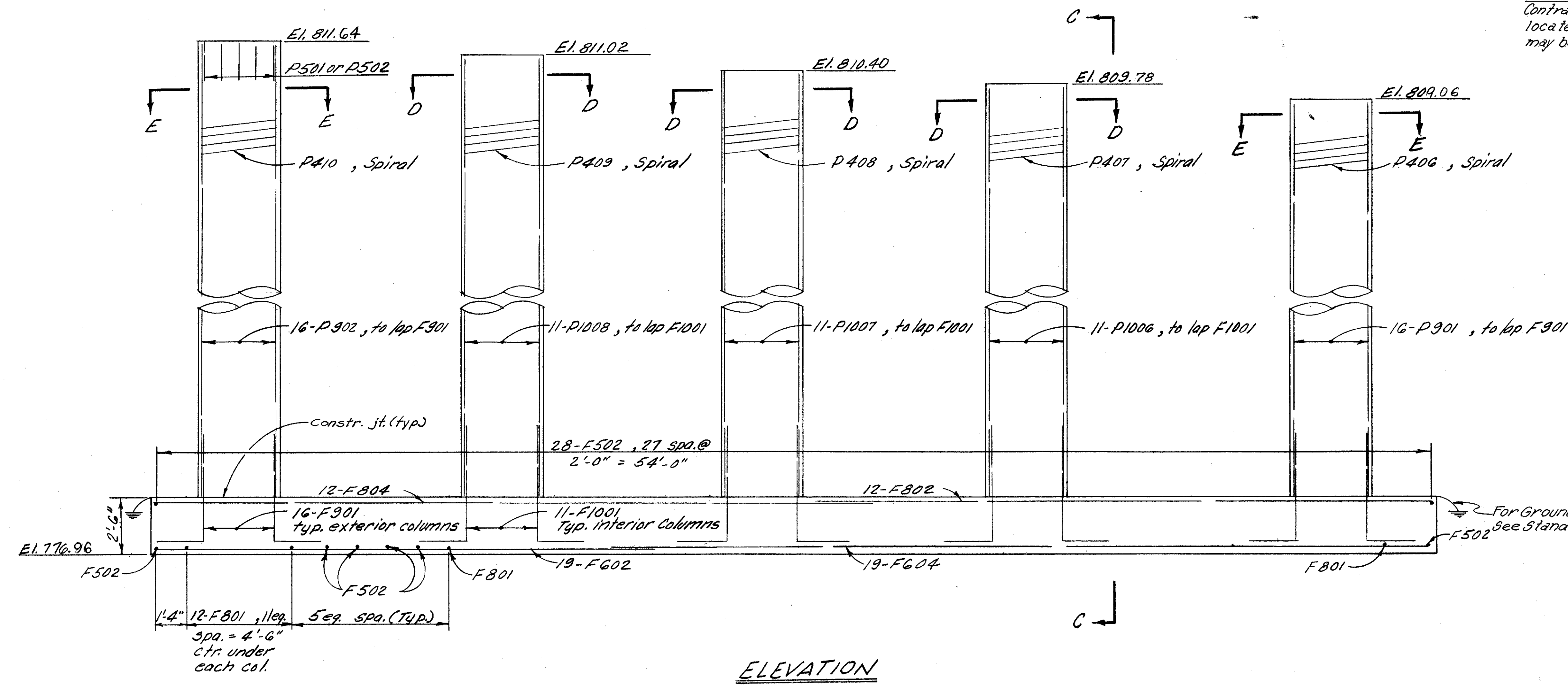
CUYAHOGA COUNTY  
CUY-480-8.54



PLAN

**BRIDGE SEAT REINFORCING:** Reinforcing steel in the vicinity of the bridge seat of Pier No. 2 shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the pre-setting of bearing anchors.

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



SECTION C-C

ELEVATION

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

**PIER No. 2 DETAILS**

BRIDGE No. CUY-480-0869  
RAMP "R" OVER I-480  
CUYAHOGA COUNTY STA. 30+49.21  
STA. 33+97.28

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

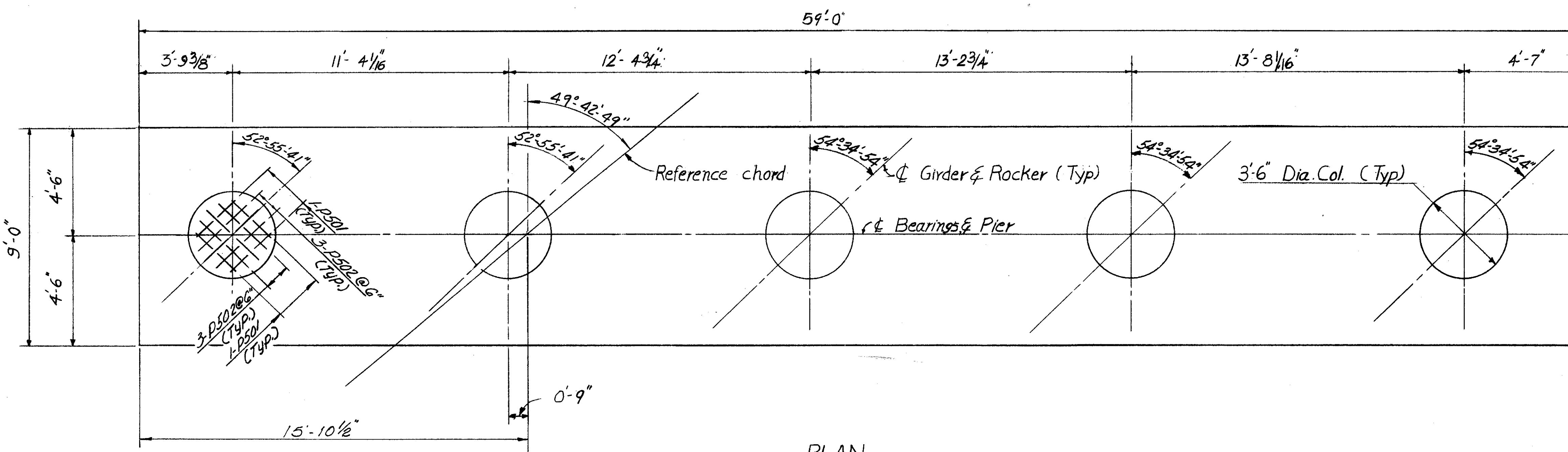
9/16

MICROFILMED  
AUG 1982

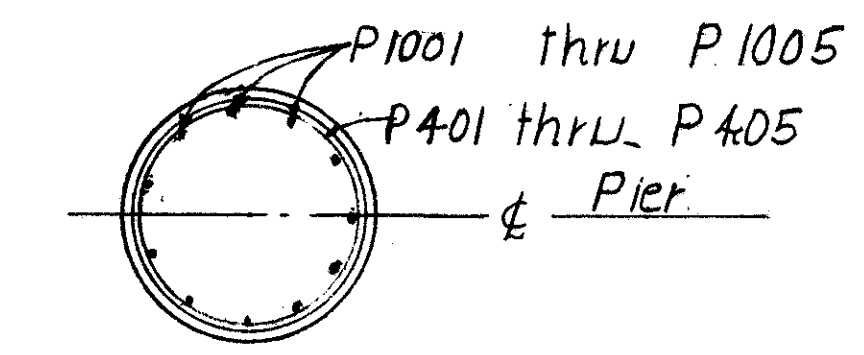
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

228  
346

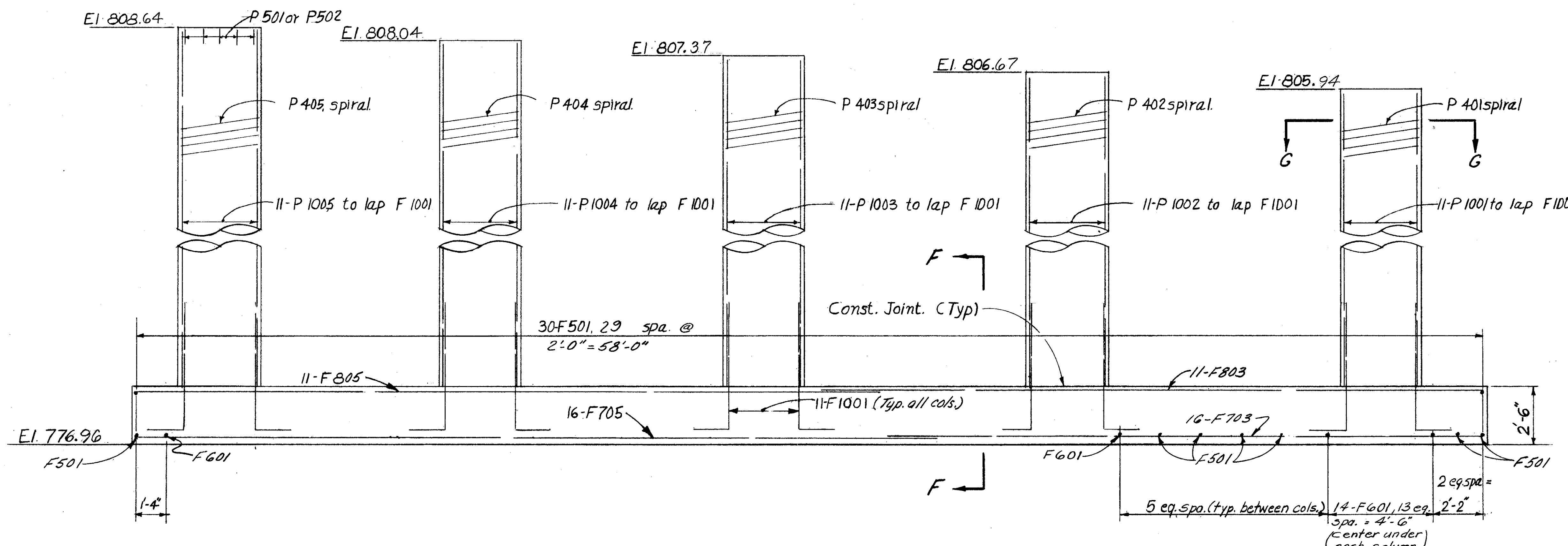
CUYAHOGA COUNTY  
CUY-480-8.54



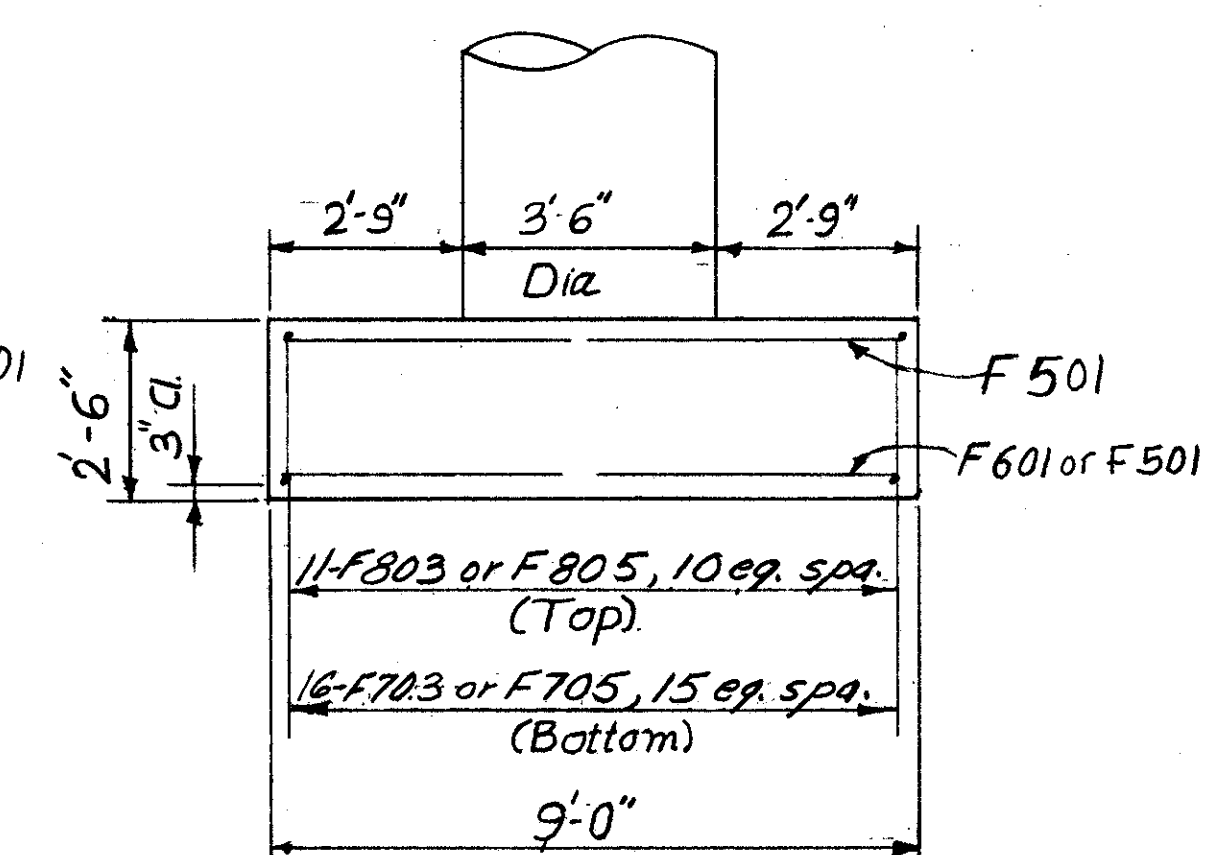
PLAN



SECTION G-G  
(Typical Column Section)



ELEVATION



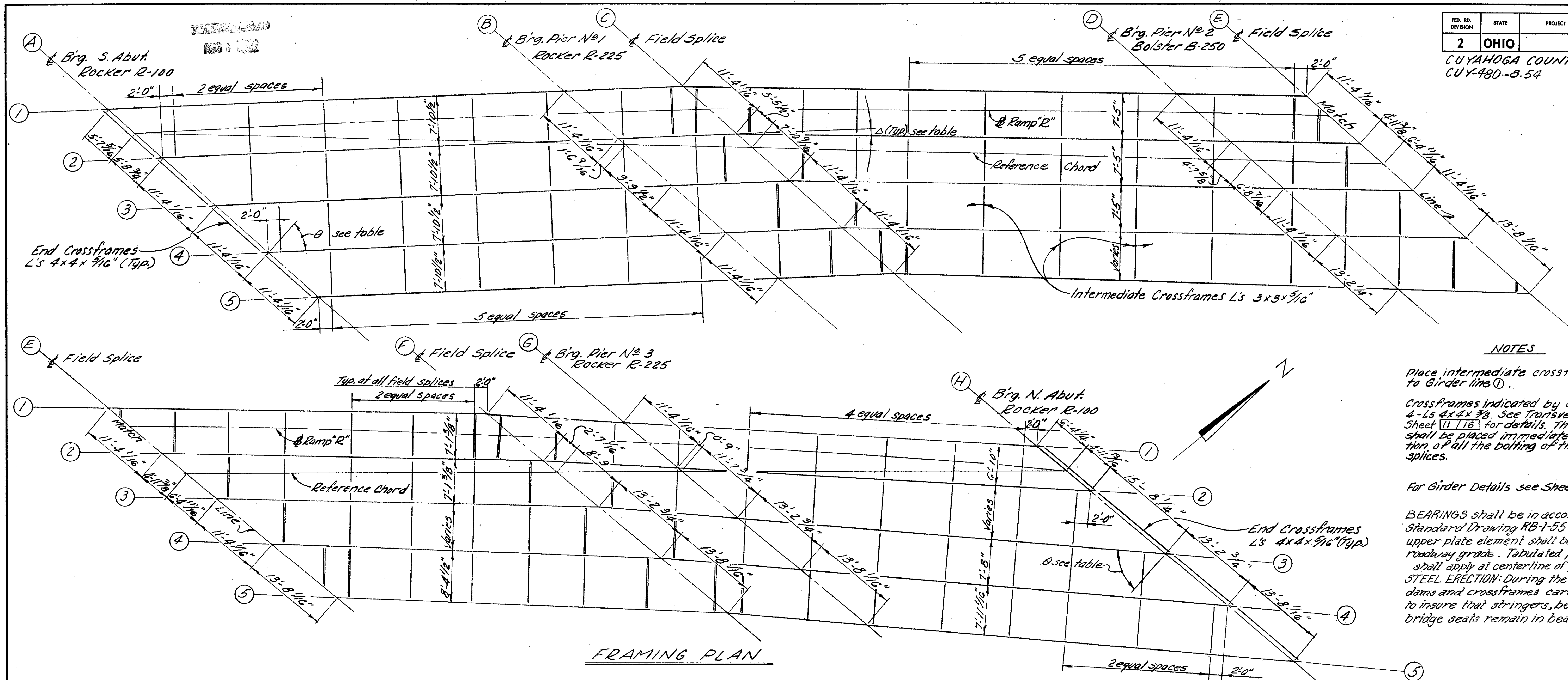
SECTION F-F

ALDEN E. STILSON & ASSOCIATES, LIMITED CLEVELAND, OHIO CONSULTING ENGINEERS COLUMBUS, OHIO WHEELING, W. VA.						
PIER No. 3 DETAILS						
BRIDGE No. CUY-480-0869 RAMP "R" OVER I-480						
CUYAHOGA COUNTY STA. 30+49.21 STA. 33+97.28						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.S.		G.W.M.	G.W.M.	3/16/67	

10/16







**NOTES**

Place intermediate crossframes normal to Girder line ①.

Crossframes indicated by double line are 4-Ls 4x4x 3/8. See Transverse Section Sheet 11/16 for details. These Crossframes shall be placed immediately upon completion of all the bolting of the adjacent field splices.

For Girder Details see Sheet No. 13/16.

BEARINGS shall be in accordance with Standard Drawing RB-1-55 except that 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 dams and crossframes care shall be taken to insure that stringers, bearing parts and bridge seals remain in bearing contact.

**FRAMING PLAN**

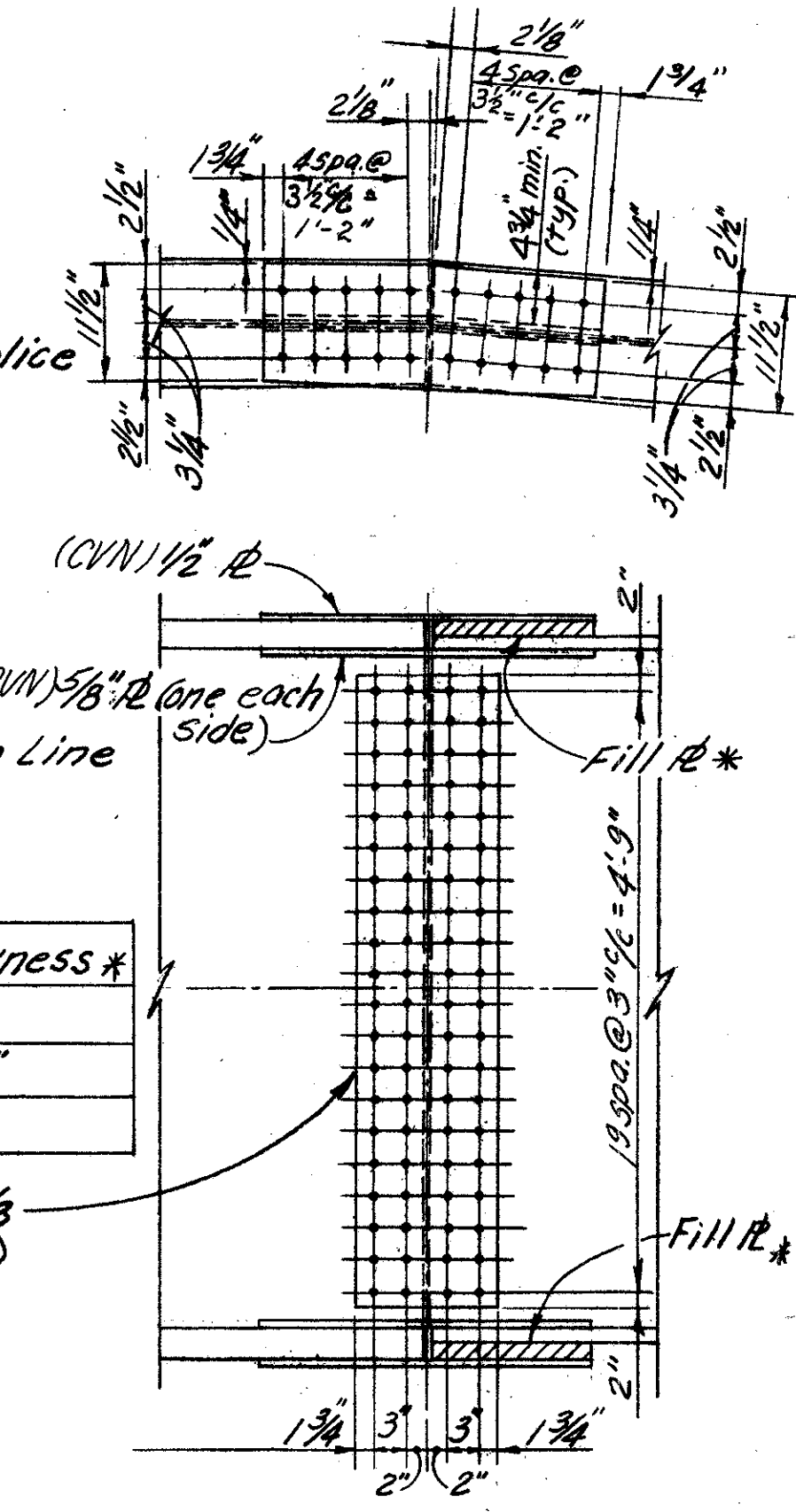
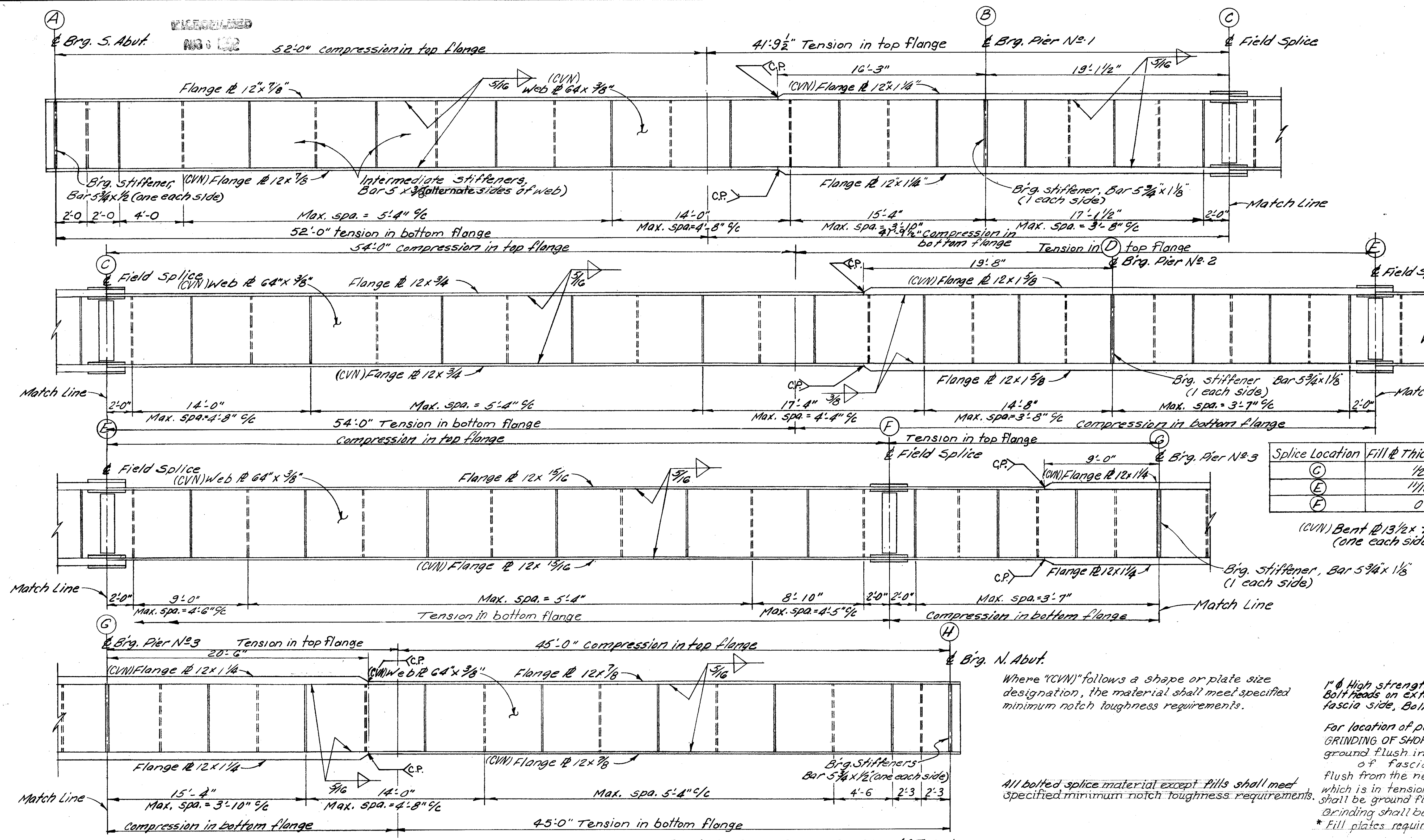
TABLE OF DEFLECTION ANGLES & GIRDER LENGTHS					
	Girder Row ①	Girder Row ②	Girder Row ③	Girder Row ④	Girder Row ⑤
①	46°-00'-52"	46°-00'-52"	46°-00'-52"	46°-00'-52"	46°-00'-52"
②	Length ①② 72'-11 1/8"	72'-11 1/8"	72'-11 1/8"	72'-11 1/8"	72'-11 1/8"
③	Length ②③ 19'-1 1/2"	19'-1 1/2"	19'-1 1/2"	19'-1 1/2"	19'-1 1/2"
④	Length ③④ 78'-11 13/16"	78'-11 13/16"	78'-11 13/16"	78'-11 13/16"	80'-4 1/16"
⑤	Length ④⑤ 20'-7 5/8"	20'-7 5/8"	20'-7 5/8"	20'-7 5/8"	21'-0 1/16"
⑥	Length ⑤⑥ 61'-4 3/16"	61'-4 3/16"	61'-4 3/16"	62'-10"	62'-10"
⑦	Length ⑥⑦ 21'-2 9/16"	21'-2 9/16"	22'-0 3/4"	22'-0 3/4"	22'-0 3/4"
⑧	Length ⑦⑧ 66'-1 1/2"	66'-1 1/2"	68'-9 1/8"	68'-9 1/8"	68'-9 1/8"
⑨	52°-55'-41"	52°-55'-41"	54°-34'-54"	54°-34'-54"	54°-34'-54"

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

**SUPERSTRUCTURE DETAILS**

BRIDGE NO. CUY-480-0869  
RAMP "R" OVER I-480  
CUYAHOGA COUNTY STA. 30+49.21  
STA. 33+97.28

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



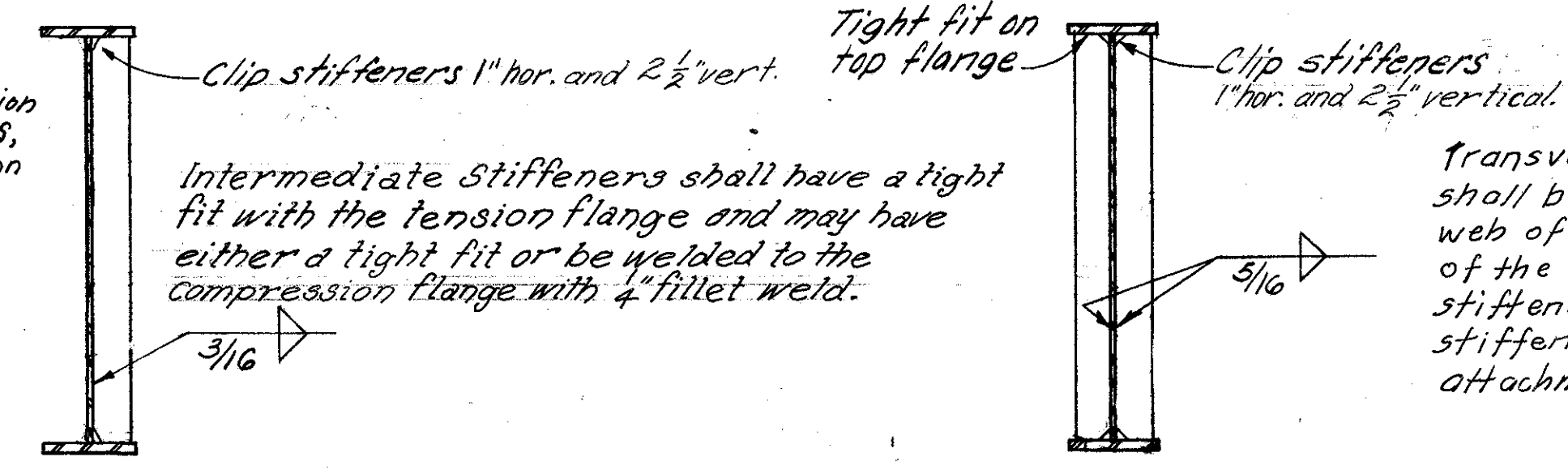
GIRDER FIELD SPLICE DETAIL

NOTES:

- Where "(CVN)" follows a shape or plate size designation, the material shall meet specified minimum notch toughness requirements.
- 1" High strength bolts shall be used at field splices. Bolt heads on exterior girder web splices shall be on fascia side. Bolts shall conform to A325 steel.
- For location of points A thru H see Sht. No. 12/16
- 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.
- \* Fill plates required at field splices, locations C & E.

CP - Complete Penetration Weld.  
For additional notes & details see Sht. 14/16. 13/16

Note: For location of tension & compression flanges, see girder elevation above.



TYPICAL SECTION THRU GIRDER

TYPICAL SECTION THRU GIRDER AT BEARING

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

**SUPER STRUCTURE DETAILS**

BRIDGE NO. CUY-480-0869  
RAMP "R" OVER I-480  
CUYAHOGA COUNTY STA. 30+49.21  
STA. 33+97.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.T.		G.W.M.	G.W.M.	3/6/77	7-17-78

UNRECORDED  
NO. 102

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

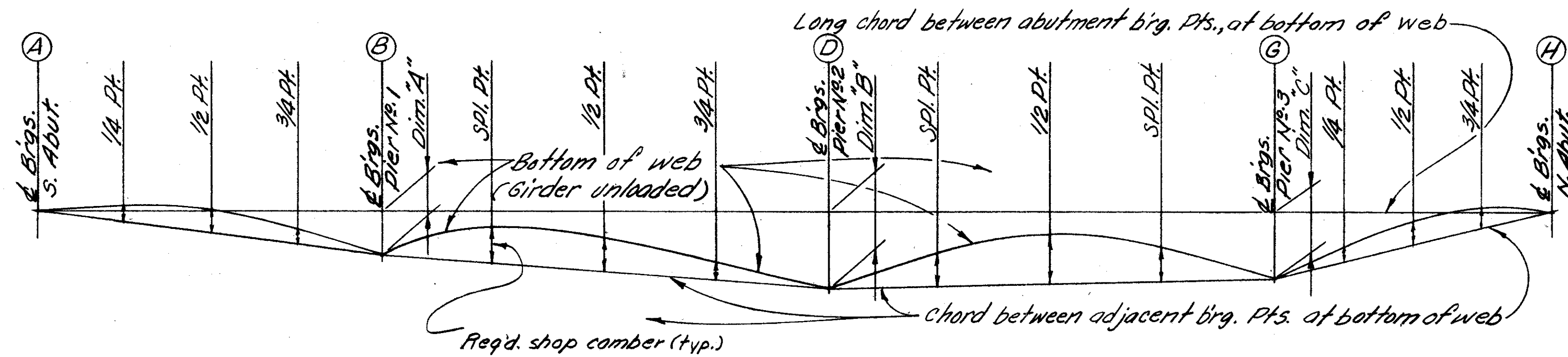
232  
246

CUYAHOGA COUNTY  
CUY-480-8.54

		DEFLECTION AND CAMBER																							
LOCATION		SPAN ① - ⑤										SPAN ③ - ⑦													
Girder		No. 1		No. 2		No. 3		No. 4		No. 5		No. 1		No. 2		No. 3		No. 4		No. 5					
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	SPI.	1/2	3/4	SPI.	1/2	3/4	SPI.	1/2	3/4	SPI.	1/2	3/4
Defl. due to weight of steel		1/16	1/16	0	1/16	1/16	0	1/16	1/16	0	1/16	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.		1/4	5/16	1/8	1/4	1/4	1/8	1/4	1/4	1/8	1/4	1/4	1/8	3/16	3/8	3/16	1/8	5/16	1/8	1/8	5/16	1/8	3/16	3/8	3/16
Adj. req'd. for horiz. 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	1/4	-1/16	-1/8	1/4	-1/16	-1/8	1/4	-1/16	-1/8	1/4	-1/16	-1/8
Required Shop Camber		3/16	3/16	0	3/16	1/8	0	3/16	1/8	0	3/16	1/8	0	1/2	3/8	1/8	7/16	5/16	1/16	7/16	5/16	1/16	7/16	5/16	1/8

LOCATION		SPAN ① - ⑥										SPAN ⑥ - ⑩													
Girder		No. 1		No. 2		No. 3		No. 4		No. 5		No. 1		No. 2		No. 3		No. 4		No. 5					
Point		SPI.	1/2	SPI.	SPI.	1/2	SPI.	SPI.	1/2	SPI.	SPI.	1/2	SPI.	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	1/8	1/16	0	1/16	1/16	0	1/16	1/16	0	1/16	1/16	0
Defl. due to remaining D.L.		1/4	5/8	5/16	3/16	1/2	1/4	3/16	1/2	1/4	3/16	1/2	1/4	1/4	5/8	5/16	1/16	3/16	3/16	1/16	3/16	3/16	1/16	3/16	3/16
Adj. req'd. for horiz. curve		1/8	0	1/8	1/8	0	1/8	1/4	3/16	7/16	3/8	3/16	1/4	3/16	1/16	1/4	-1/8	-3/16	-1/8	-1/8	-3/16	-1/8	-1/8	-3/16	-1/8
Required Shop Camber		7/16	3/4	1/2	3/8	5/8	7/16	1/2	13/16	3/4	5/8	13/16	9/16	1/2	13/16	5/8	-1/16	1/16	1/8	-1/16	1/16	1/8	-1/16	1/16	1/8



Dimension	"A"	"B"	"C"
Girder No. 1	5/16	5/8	1/2
Girder No. 2	5/16	5/8	1/2
Girder No. 3	0	0	-1/4
Girder No. 4	-1/8	-5/16	-1/16
Girder No. 5	-1/4	0	1/8

NOTE: Dimensions shown (-) indicate that the bottom of web is above the long chord.

CAMBER & BLOCKING DIAGRAM

14/16

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

**SUPERSTRUCTURE DETAILS**

BRIDGE No. CUY-480-0869  
RAMP "R" OVER I-480  
CUYAHOGA COUNTY STA. 30+49.21  
STA. 33+37.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.T.			G.W.M.	3/16/67	

CUYAHOGA COUNTY  
CUY-480-8.54

AUG 1962

- NOTES**
- 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. 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 IN ACCORDANCE WITH 509.08.
  - COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.

- LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
- END PREPARATION AND FIELD WELDING INCLUDED WITH ITEM 509.
- "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.

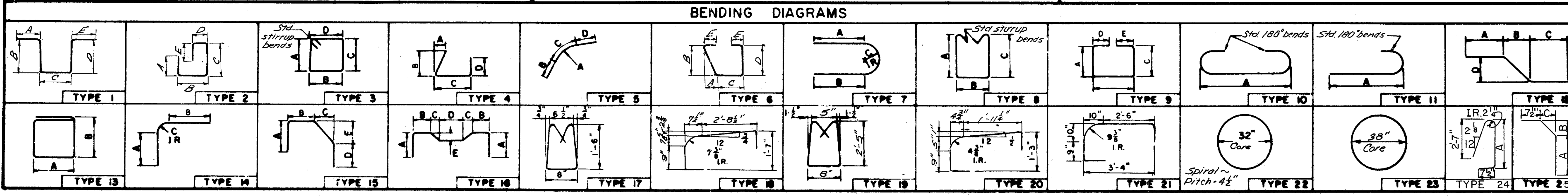
MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	
ABUTMENTS											(CONTINUED)											PIERS																						
A 501	50	4-11	256	1		1-6	2-2	1-6			A 543	1	7-0	7	ST							P 401	1	26-3	550	23 NO. TURNS= 73						NO. SPACERS = 4	6											
A 502	14	25-4	370	ST							A 544	1	5-6	6	ST							P 402	1	27-0	566	23 NO. TURNS= 75						NO. SPACERS = 4	6											
A 503	30	13-0	407	ST							A 545	11	21-4	245	ST							P 403	1	27-9	581	23 NO. TURNS= 77						NO. SPACERS = 4	6											
A 504	20	8-10	184	1		2-10	3-5	2-10			A 546	1	20-0	21	ST							P 404	1	28-5	596	23 NO. TURNS= 79						NO. SPACERS = 4	6											
A 505	10	7-8	80	1		2-3	3-5	2-3			A 547	5	28-0	146	ST							P 405	1	29-0	604	23 NO. TURNS= 80						NO. SPACERS = 4	6											
A 506	4	3-8	15	1		1-0	2-10				A 548	14	7-7	111	ST							P 406	1	29-5	612	23 NO. TURNS= 81						NO. SPACERS = 4	6											
A 507	16	24-6	409	ST							A 549	1	6-6	7	ST							P 407	1	30-1	627	23 NO. TURNS= 83						NO. SPACERS = 4	6											
A 509	3	10-8	33	ST							A 550	10	6-0	63	6	0-5	1-0	5-0				P 408	1	30-9	641	23 NO. TURNS= 85						NO. SPACERS = 4	6											
A 510	12	8-0	100	ST							A 551	12	5-11	74	6	0-3	1-0	5-0				P 409	1	31-4	656	23 NO. TURNS= 87						NO. SPACERS = 4	6											
A 511	23	12-6	300	ST							A 552	24	4-0	100	6	1-6	1-6	2-0				P 410	1	32-0	665	23 NO. TURNS= 88						NO. SPACERS = 4	6											
A 512	2	13-6	28	ST							A 553	12	4-0	50	6	1-9	1-2	2-0				P 411	1	32-6	679	23 NO. TURNS= 90						NO. SPACERS = 4	6											
A 513	2	15-8	33	ST							DB01	35	6-7	615	27	1-1	4-6	0-6				P 412	1	33-2	687	23 NO. TURNS= 91						NO. SPACERS = 4	6											
A 514	2	18-8	39	ST							A 601	47	21-2	1494	2	7-8	1-5	9-0	0-11	2-10		P 413	1	33-9	702	23 NO. TURNS= 93						NO. SPACERS = 4	6											
A 515	10	16-0	167	ST							A 602	60	21-8	1953	2	7-11	1-5	9-3	0-11	2-10		P 414	1	34-5	717	23 NO. TURNS= 95						NO. SPACERS = 4	6											
A 516	3	4-6	14	ST							F 501A	23	8-8	208	1	0-8	8-2					P 415	1	35-2	732	23 NO. TURNS= 97						NO. SPACERS = 4	6											
A 517	3	6-4	20	ST							F 502A	10	10-6	110	1	0-8	10-0					P 501	60	4-11	308	1		1-6	2-2	1-6														
A 518	13	4-0	54	ST							F 503	2	17-2	36	ST							P 502	90	5-7	524	1		1-6	2-10	1-6														
A 520	68	2-3	160	1		0-7 1/2	1-3	0-7 1/2			F 504	1	17-3	18	1		8-2	1-2	8-2				P 901	16	29-5	1600	ST																	
A 521	2	20-0	42	ST							F 505	4	22-6	94	ST							P 902	16	32-0	1741	ST																		
A 523	24	21-8	542	ST							F 506	2	22-5	47	1		10-9	1-2	10-9				P 1001	11	26-3	1242	ST																	
A 524	2	19-8	41	ST							F 507	4	11-0	46	1	0-8	10-6					P 1002	11	27-0	1278	ST																		
A 525	2	20-8	43	ST							F 508	18	9-7	180	1	0-8	9-1					P 1003	11	27-9	1313	ST																		
A 526	1	22-10	24	ST							F 509	20	8-2	170	1	0-8	7-8					P 1004	11	28-5	1345	ST																		
A 527	2	23-10	50	ST							F 510	2	5-6	11	ST							P 1005	11	29-0	1373	ST																		
A 528	3	28-4	89	ST							F 511	2	13-6	28	ST							P 1006	11	30-1	1424	ST																		
A 529	15	8-5	132	ST							F 512	2	21-11	46	1		10-6	1-2	10-6				P 1007	11	30-9	1455	ST																	
A 530	3	31-10	100	ST							F 513	1	16-1	17	1		7-7	1-2	7-7				P 1008	11	31-4	1483	ST																	
A 531	3	26-0	81	ST							F 514	2	4-6	9	ST							P 1009	11	32-6	1538	ST																		
A 532	1	4-9	5	ST							F 601A	20	13-5	403	1	5-5	8-2					P 1010	11	33-2	1570	ST																		
A 533	14	28-6	416	ST							F 602A	10	15-3	229	1	5-5	10-0					P 1011	11	33-9	1597	ST																		
A 534	8	30-4	253	ST							F 603A	8	27-0	324	ST							P 1012	11	34-5	1629	ST																		
A 535	38	8-0	317	1		2-5	3-5	2-5			F 604	8	22-10	274	1		10-11	1-2	10-11			P 1013	11	35-2	1665	ST																		
A 537	2	8-10	18	ST							F 605	32	14-4	689	1	1-0	13-6					F 501	49	8-8	443	ST																		
A 538	1	11-4	12	ST							F 606	18	8-10	239	1	1-0	8-0					F 502	87	10-8	968	ST																		
A 539	4	16-10	70	ST							F 607	18	14-4	388	1	5-5	9-1					F 601	70	8-8	911	ST																		
A 540	9	8-2	77	ST							F 608	20	12-11	388	1	5-5	7-8					F 602	36	21-8	1172	ST																		
A 541	1	5-2	5	ST							F 609	8	32-0	385	ST							F 603	17	33-0	843	ST																		
A 542	1	6-2	6	ST							F 610	7	26-10	282	1		13-0	1-2	13-0																									
											F 611	14	22-0	463	1		10-7	1-2	10-7																									

ABUTMENTS (CONTINUED)

A554	1	5-3	5	ST						
A555	1	6-6	7	ST						
A556	1	7-6	8	ST						
A557	1	5-4	5	ST						
A558	1	6-9	7	ST						
A559	1	7-10	8	ST						

**BAR SIZE DESIGNATION**

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE 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.



**ALDEN E. STILSON & ASSOCIATES, LIMITED**  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 15/16

**REINFORCING STEEL LIST**  
Bridge No. CUY-480-0869  
Ramp "R" over I-480

Cuyahoga County Sta. 30 + 49.21  
Sta. 33 + 97.28

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

CUYAHOGA COUNTY  
CUY-480 - 8.54

- NOTES
- 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.
  - DELETED
  - COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.

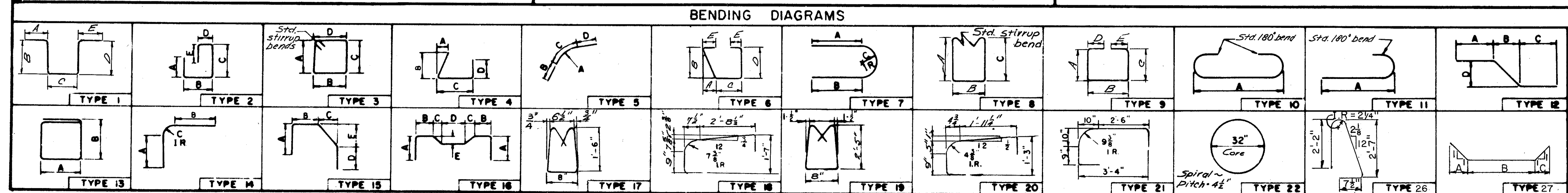
- LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
- END PREPARATION AND FIELD WELDING INCLUDED WITH ITEM 509.
- "LENGTH" SHOWN FOR SPIRAL BARS IS DISTANCE FROM TOP OF FOOTING TO BOTTOM OF PIER CAP.
- "NO. TURNS" SHOWN IS "LENGTH" DIVIDED BY PITCH, PLUS 3 TURNS (NUMBER OF CLOSED COILS); EXPRESSED 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	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE		
PIERS (CONTINUED)											EPOXY COATED REINFORCING STEEL - SUPERSTRUCTURE (CONT)																							
F 604	19	35-6	1013	ST							SE 611A	1	18-3		ST							1	EPOXY COATED REINFORCING STEEL ABUTMENTS											
F 701	75	10-8	1635	ST							THRU			379										MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
F 702	11	24-2	543	ST							SE 611U	1	5-9		ST							1	AE 519	48	6-7	330	24	3-4						
F 703	16	25-9	842	ST							SUPERSTRUCTURE											AE 522	40	3-0	125	ST								
F 704	11	30-8	690	ST							S 701	457	35-8	33317	ST								AE 603	8	9-3	111	25	7-7	1 1/2	9				
F 705	16	35-1	1147	ST							S 702A	1	34-6		ST							1	AE 604	20	9-2	275	25	7-6	1 1/2	9				
F 801	60	10-8	1709	ST							THRU			1501									AE 605	14	8-4	175	25	6-8	1 1/2	9				
F 802	12	26-9	857	ST							S 702Z	1	22-0		ST							1	AE 606	7	8-8	91	25	7-0	1 1/2	9				
F 803	11	29-2	857	ST							S 703A	1	21-4		ST							1	AE 701	4	4-11	40	11	4-1						
F 804	12	31-0	993	ST							THRU			802									AE 702	1	4-6	9	25	3-1	1 1/2	2				
F 805	11	32-0	940	ST							S 703Z	1	8-10		ST							1	AE 703	1	4-7	9	25	3-1 1/2	1 1/2	4				
F 901	32	6-1	662	1		5-1	1-3				S 704A	1	8-2		ST							1	AE 704	1	6-0	12	25	4-5 1/2	1 1/2	6				
F 1001	143	6-7	4051	1		5-6	1-5				THRU			73									AE 705	1	7-4	15	25	5-8	1 1/2	9				
EPOXY COATED REINFORCING STEEL - SUPERSTRUCTURE (CONT)											S 705	18	5-6	202	ST							AE 706	1	8-4	17	25	6-8	1 1/2	9					
SE 503	464	3-4	1613	15	7 1/2	1-1	11 1/2	9	9		THRU			1417									AE 707	1	4-8	10	25	3-3	1 1/2	2				
SE 504	464	5-6	2662	26							S 706A	1	34-6		ST							1	AE 708	1	4-6	9	25	3-0 1/2	1 1/2	4				
SE 601	1032	30-0	46502	ST							THRU			515									AE 709	1	6-2	13	25	4-7 1/2	1 1/2	6				
SE 602	79	14-0	1661	ST							S 706Z	1	18-10		ST							1	AE 710	1	7-7	15	25	5-11	1 1/2	9				
SE 603	28	10-11	459	ST							S 707A	1	18-3		ST							1	AE 711	1	8-9	18	25	7-1	1 1/2	9				
SE 604	56	13-5	1129	ST							THRU												AE 712	1	4-7	9	25	3-2	1 1/2	2				
SE 605	457	35-8	24482	ST							S 707U	1	5-9		ST							1	AE 713	1	4-8	10	25	3-2 1/2	1 1/2	4				
SE 606A	1	34-6		ST						1	EPOXY COATED REINFORCING STEEL - SUPERSTRUCTURE (CONTINUED)											AE 714	1	5-6	11	25	3-1 1/2	1 1/2	6					
THRU			1103								PARAPET REINFORCING											AE 715	1	6-8	14	25	5-0	1 1/2	9					
SE 606Z	1	22-0		ST						1	RE 501	128	14-8	1958	ST								AE 716	1	7-8	16	25	6-0	1 1/2	9				
SE 607A	1	21-4		ST						1	RE 502	116	7-0	847	ST								AE 717	1	4-5	9	25	3-0	1 1/2	2				
THRU			589								LIGHT POLE SUPPORTS											AE 718	1	4-6	9	25	3-0	1 1/2	4					
SE 607Z	1	8-10		ST						1	LE505	4	2-10	12	1		0-7 1/2	1-10	0-7 1/2			4	AE 719	1	5-0	10	25	3-5	1 1/2	6				
SE 608A	1	8-2		ST						1	LE506	4	8-5	36	4	0-6 1/2	3-2	2-4	3-2			4	AE 720	1	6-6	13	25	4-10	1 1/2	9				
THRU			54								LE507	6	7-3	45	16		0-6	1-10	1-4	1-10		4	AE 721	1	7-3	15	25	5-7	1 1/2	9				
SE 608E	1	6-2		ST						1	LE508	4	3-2	13	ST							4	RE507	10	18-8	195	ST						3	
SE 609	18	5-6	149	ST																		RE508	10	25-8	296	ST						3		
SE 610A	1	34-6		ST						1												RE509	10	16-8	174	ST						3		
THRU			1041																			RE510	10	28-0	292	ST						3		
SE 610Z	1	18-10		ST						1																								

Refer to CMS Sections 106.03, 700, 709.01 thru 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in structures by the additional steel, spliced in accordance with 509.08.

**BAR SIZE DESIGNATION**  
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE 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.



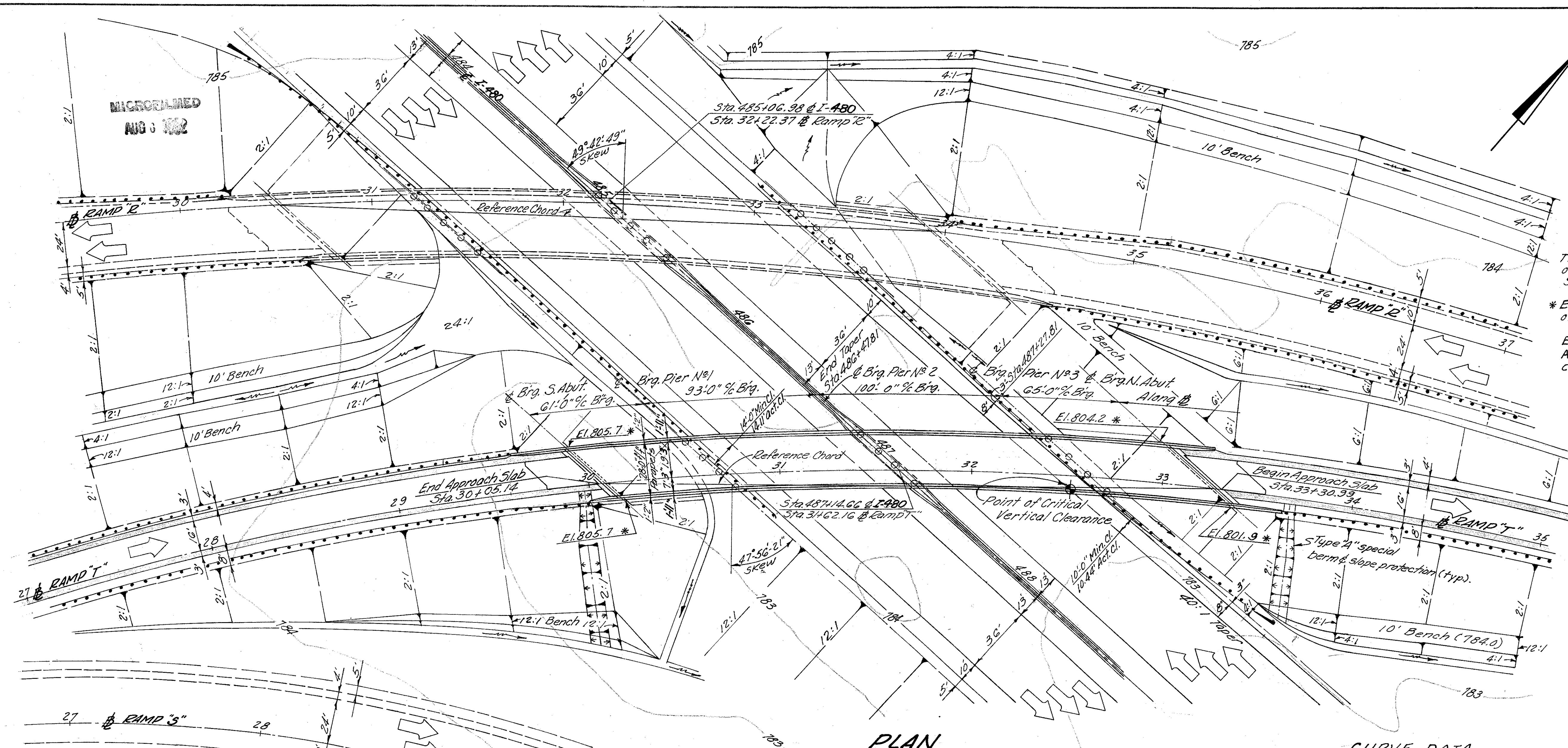
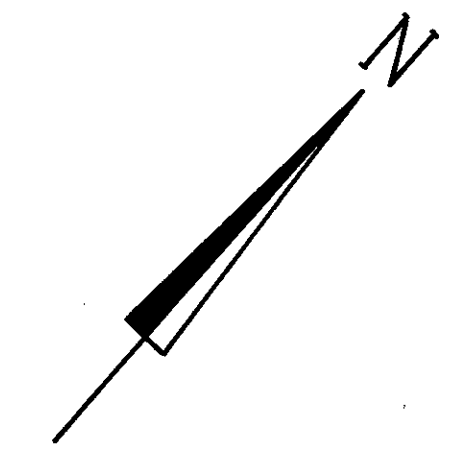
**ALDEN E. STILSON & ASSOCIATES, LIMITED**  
CONSULTING ENGINEERS  
COLUMBUS, OHIO

16/16

**REINFORCING STEEL LIST**  
Bridge No. CUY-480-0869  
Ramp "R" over I-480

Cuyahoga County Sta. 30 + 49.21  
Sta. 33 + 97.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.			G.W.M.	G.W.M.	5/6/17	



**NOTES:**  
 The Reference Chord is a line between the intersections of the Ramp T and the Brigs. at the abutments, Sta. 30+09.16 & Sta. 33+27.16  
 \* Elevations marked with an asterisk are at top 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**

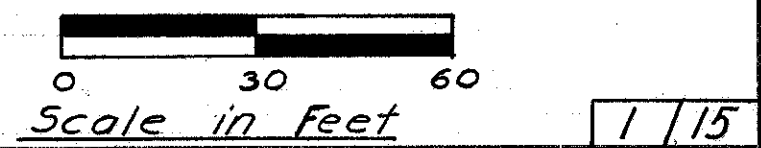
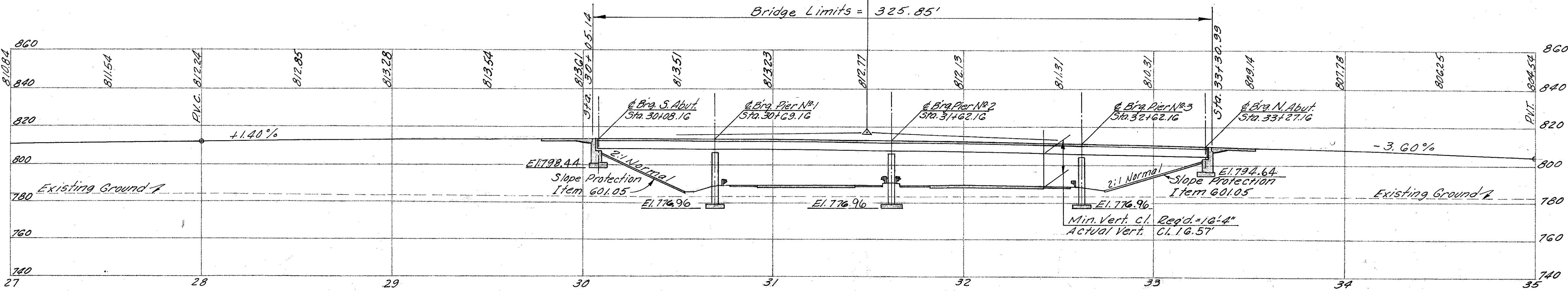
**TYPE:** Continuous steel girder with reinforced concrete deck and substructure.  
**SPANS:** 61'-0", 93'-0", 100'-0", 65'-0" % Brig. along the ROADWAY: 28'-0" # concrete parapets  
**LOADING:** CE-2000 (1957) Adequate for AASHO alternate loading.  
**SURFACE COURSE:** Monolithic concrete.  
**SKIEW:** 47°-56'-21" Rt. forward with respect to Reference Chord.  
**ALIGNMENT:** 3°-45'-00" Curve Right  
**APPROACH SLABS:** AS-1-72, Modified (25' long)  
**SUPERELEVATION:** 0.062 ft. per ft.

**VERTICAL CURVE DATA**

PVI: Sta. 31+50  
 700' V.C.  
 Elev. 817.14  
 Corr. = -4.37'  
 P.G. Elev. 812.77  
 G<sub>1</sub> = +1.40% G<sub>2</sub> = -3.60%

**CURVE DATA**

**RAMP "T"**  
 Δ = 60°-00'-56"  
 D<sub>c</sub> = 3°-45'-00"  
 R = 1,527.89'  
 T = 882.40'  
 L<sub>c</sub> = 1,600.42'  
 C = 1,528.25'



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

**SITE PLAN**  
 BRIDGE NO. CUY. 480-0873  
 RAMP "T" OVER I-480  
 CUYAHOGA COUNTY STA. 30 + 05.14  
 STA. 33 + 30.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	R.T.		R.J.P.	G.W.M.	3/16/7	

- NOTES
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ESTIMATED QUANTITIES

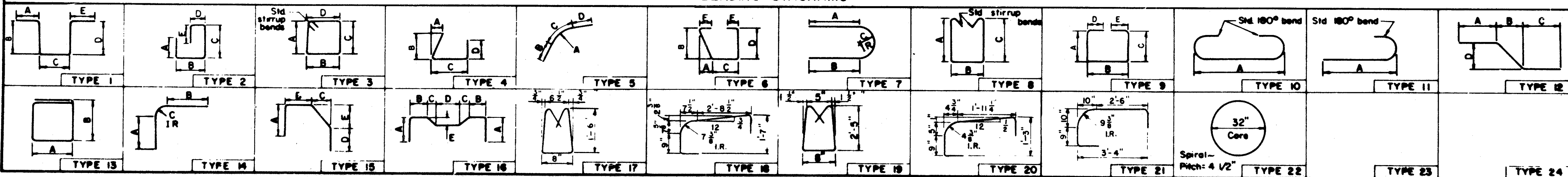
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GENERAL
503	1100	C.Y.	UNCLASSIFIED EXCAVATION	391	709		
503		LUMP	COFFERDAMS, CRIBS AND SHEETING		L.S.		
509	101,229	LB	REINFORCING STEEL	12664	40488	48077	
SPECIAL	52089	LB	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)	2138		49951	
511	373	C.Y.	CLASS 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	

REVISIONS  
NO. 1

BAR SIZE DESIGNATION

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BENDING DIAGRAMS



ALDENE STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO

ESTIMATED QUANTITIES  
Bridge No. CUY-480-0873  
Ramp "T" over I-480  
Cuyahoga County  
Sta. 30 + 05.14  
Sta. 33 + 30.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.			R.J.P.	G.W.M.	3/1/67	

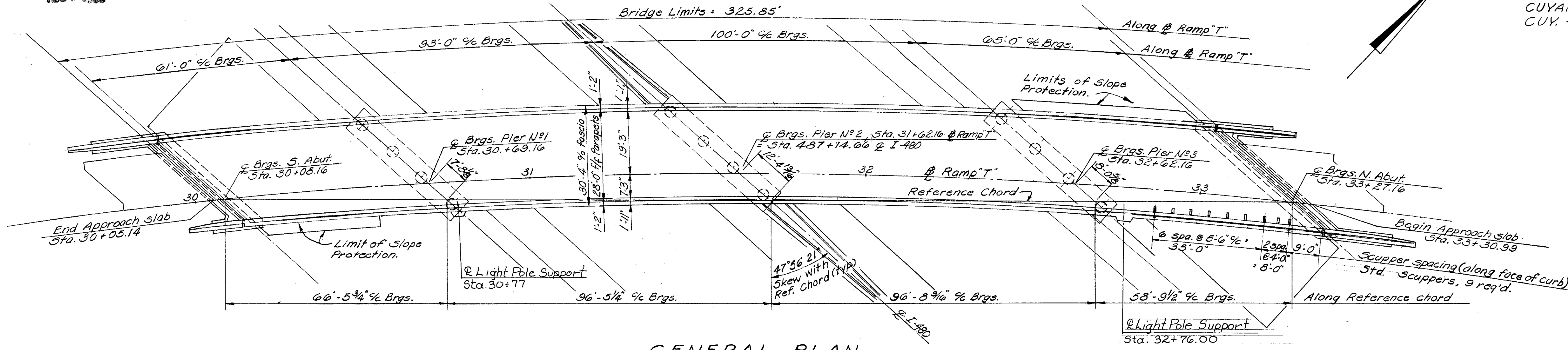


MICROFILMED  
AUG 1 1982

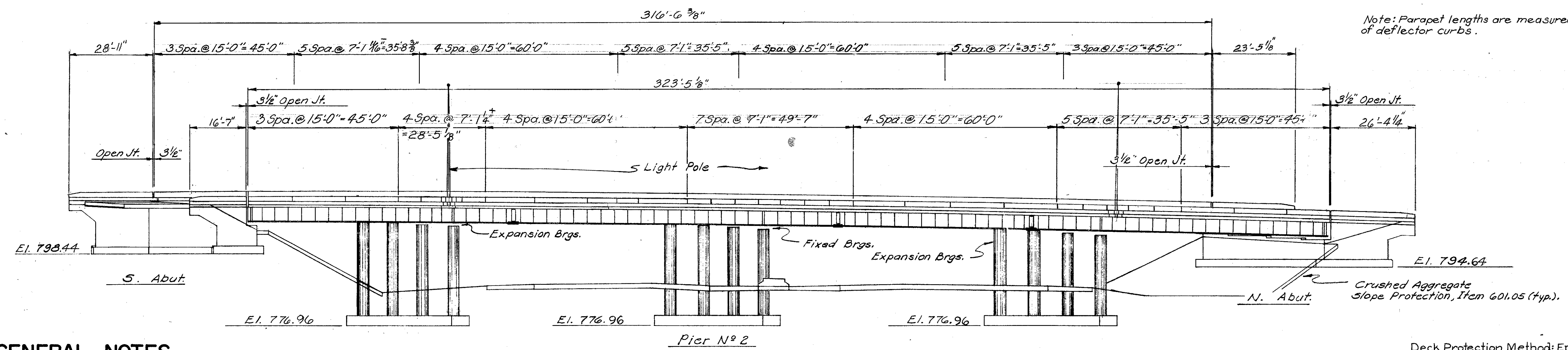
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

237  
346

CUYAHOGA COUNTY  
C.U.Y. -480-8.54



**GENERAL PLAN**



**ELEVATION**

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

**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. A36 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 maximum 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 steel, top mat only. Minimum bar lap shall be 30 diameters. Attachment of guardrail to concrete parapets: Concrete 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 hardness requirement of 711.21, preformed bearing pads shall have a Shore A durometer of 80±10.

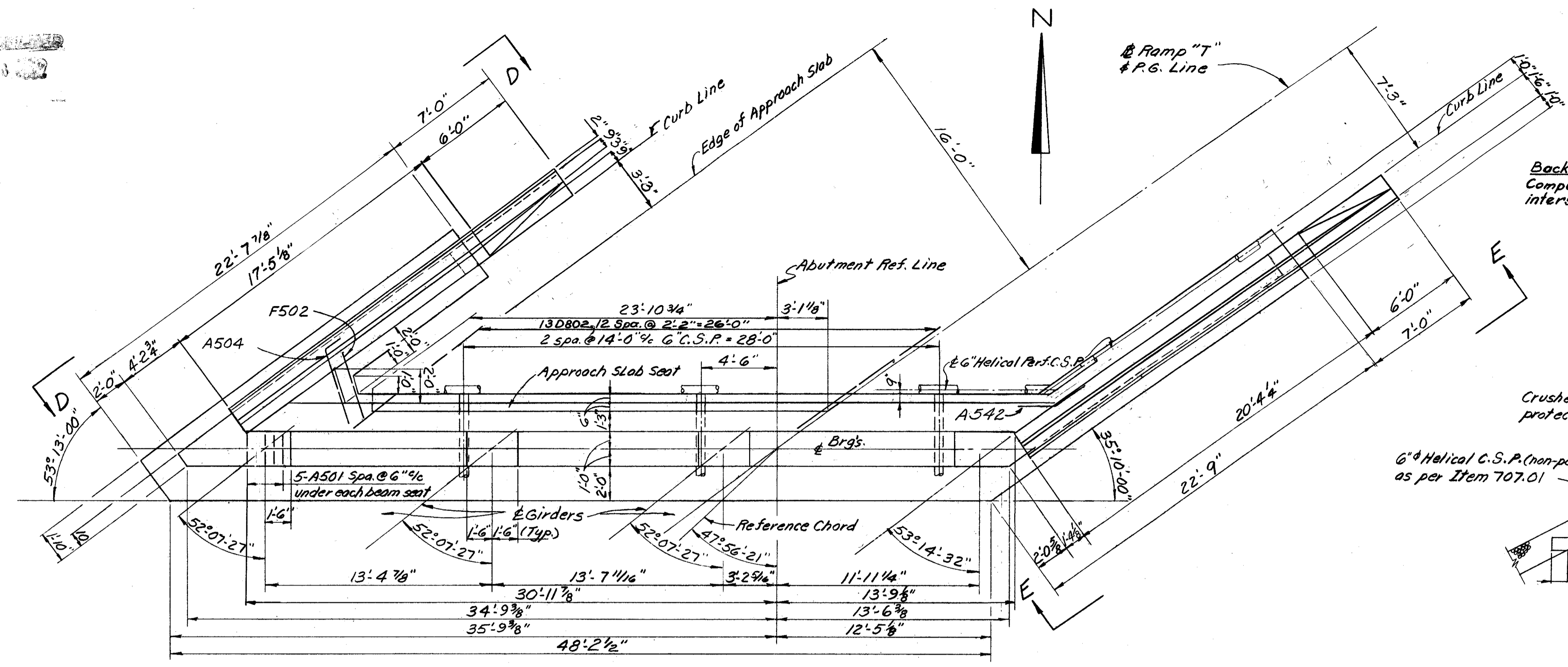
3/15

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

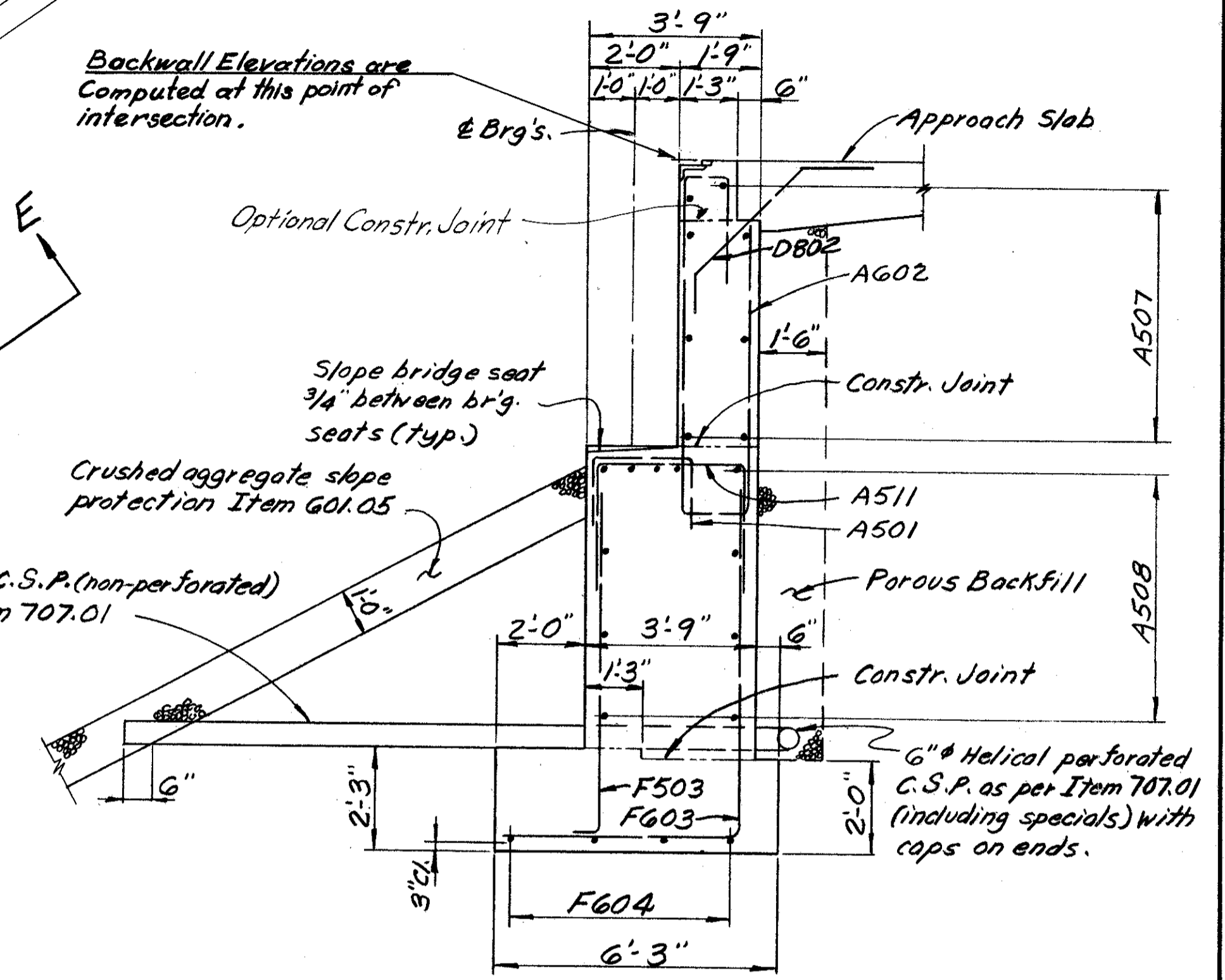
**GENERAL PLAN & ELEVATION**  
**BRIDGE NO CUY.480 - 0873**  
**RAMP "T" OVER I-480**  
CUYAHOGA COUNTY STA. 30+05.14  
STA. 33+30.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	G.W.M.		R.J.P.	G.W.M.	3/7/67	7-17-78





PLAN



SECTION F-F

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.

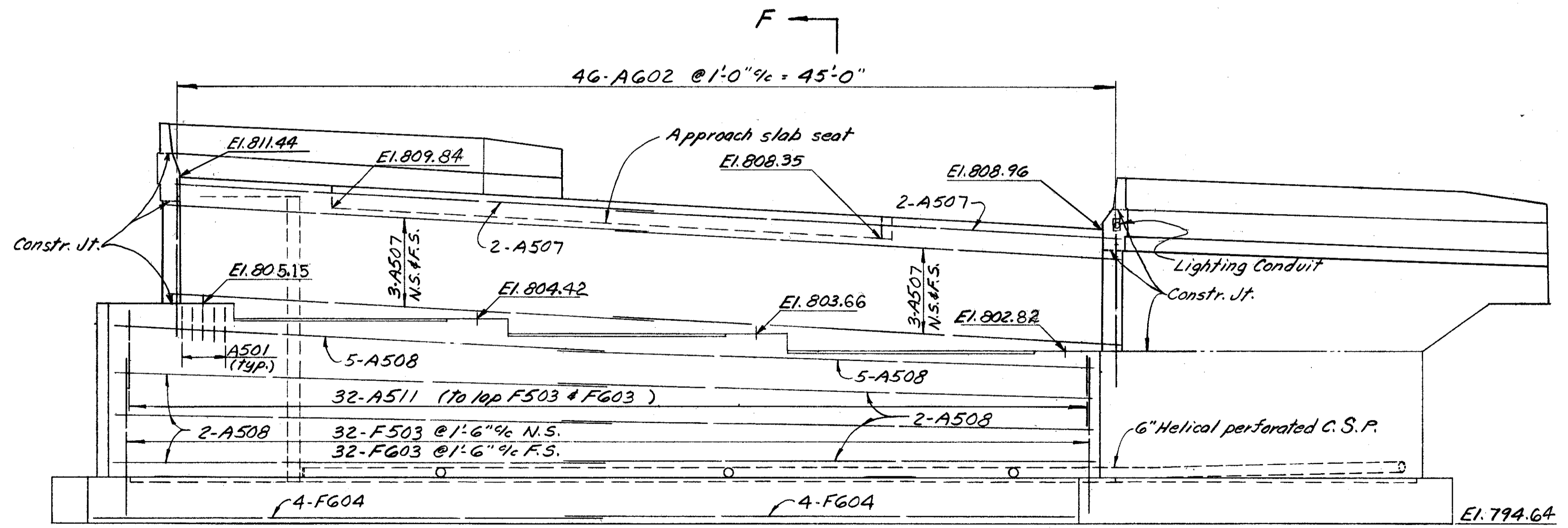
**Backwall Concrete:** In addition to the provisions of 511.08, backwall concrete shall not be placed until after the deck concrete in the span adjacent to the backwall has been placed.

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.



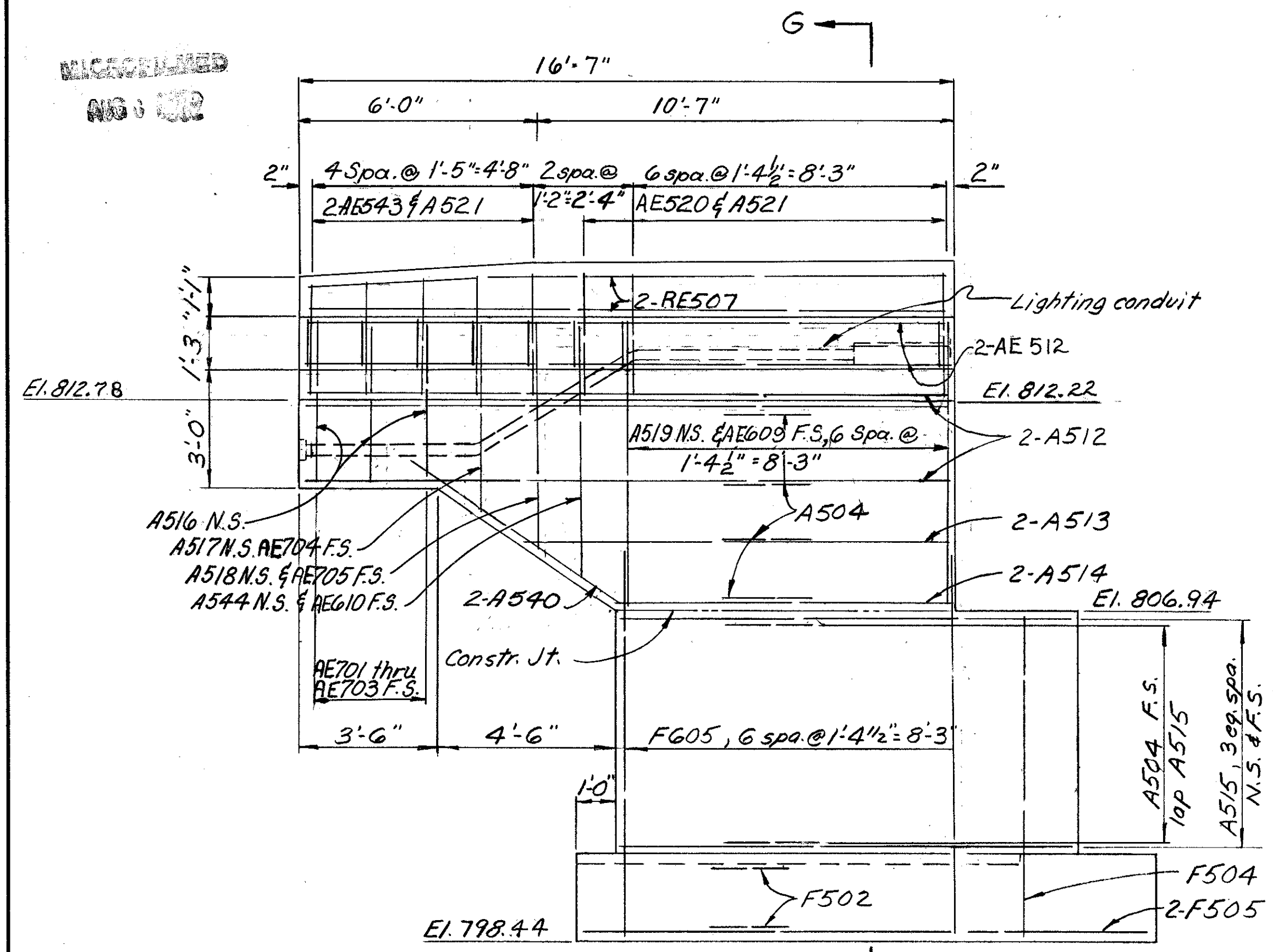
ELEVATION

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

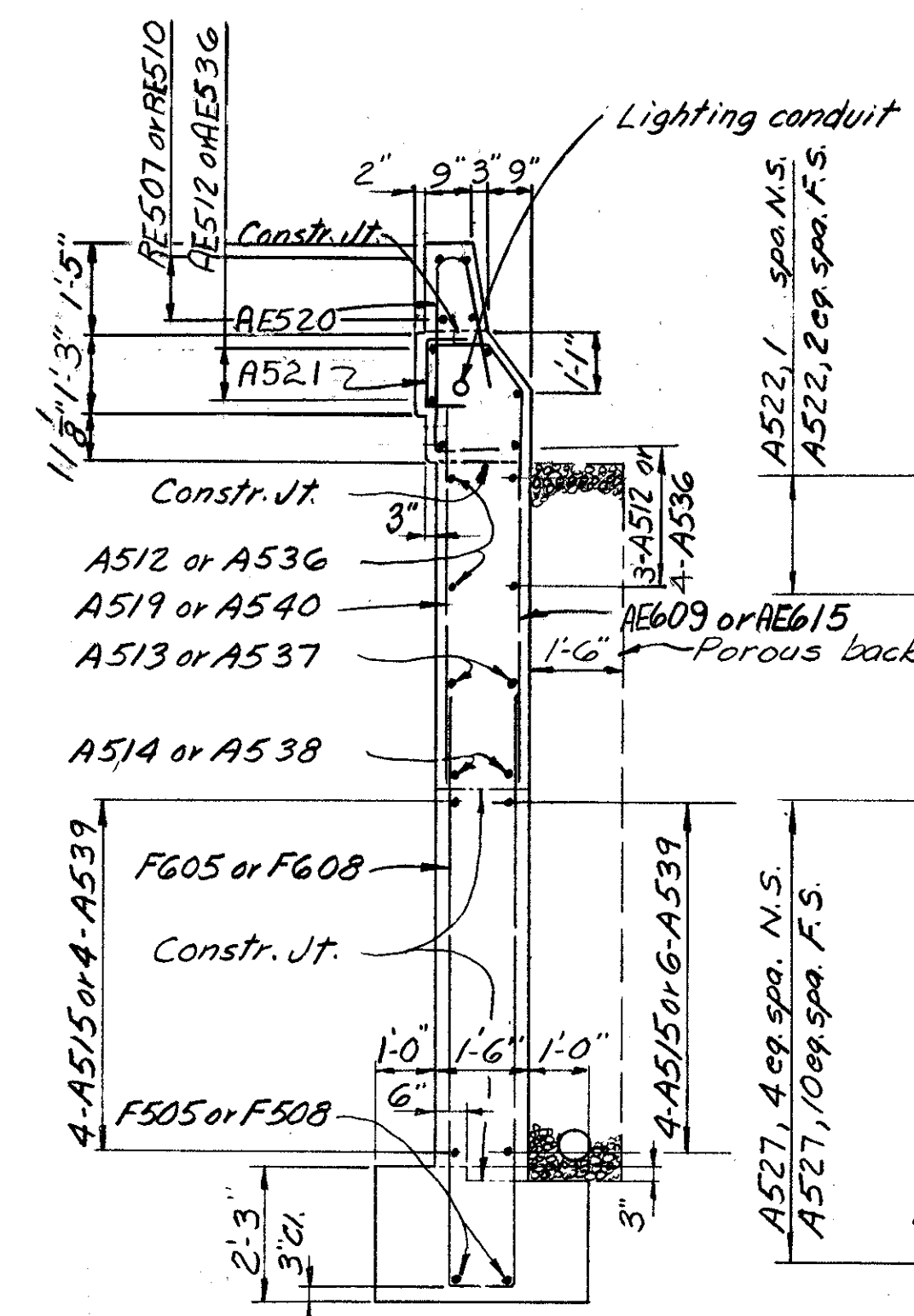
**NORTH ABUTMENT DETAILS**  
BRIDGE N<sup>o</sup> CUY-480-0873  
RAMP "T" OVER I-480

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

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

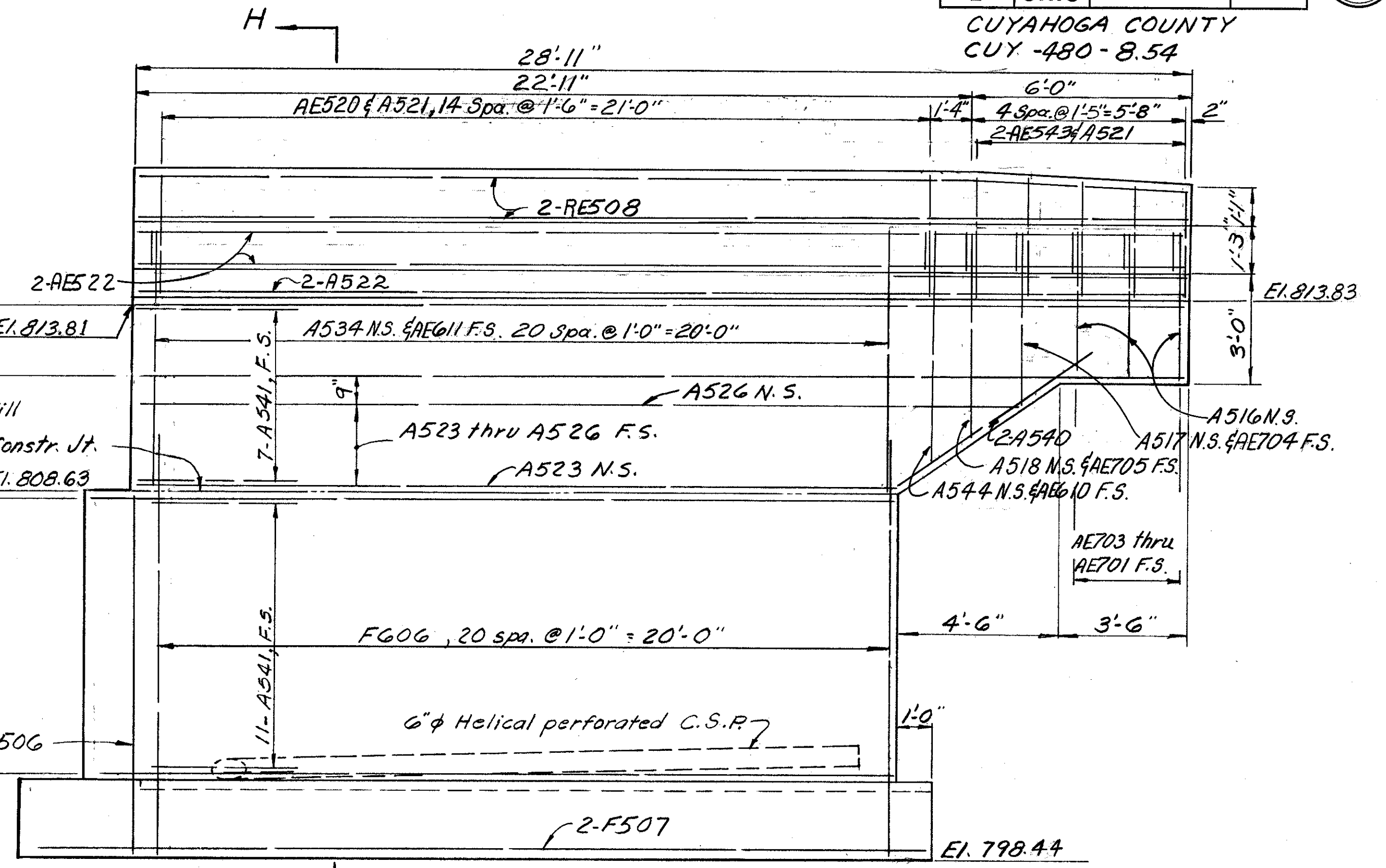


**ELEVATION B-B**  
VIEW OF S.E. WINGWALL



**SECTION G-G**

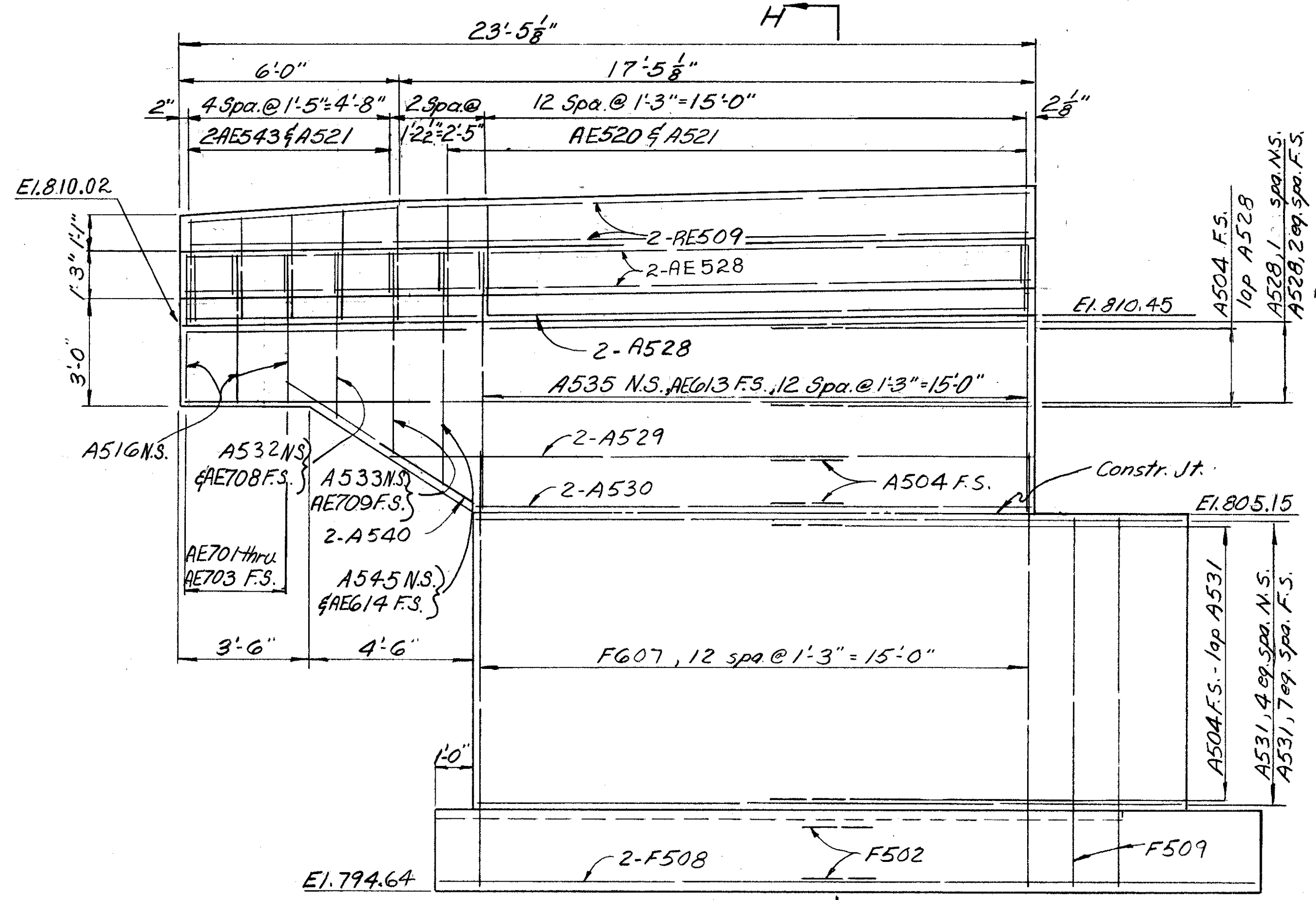
Note: Porous backfill & 6" C.S.P. behind N.E. Wingwall only.



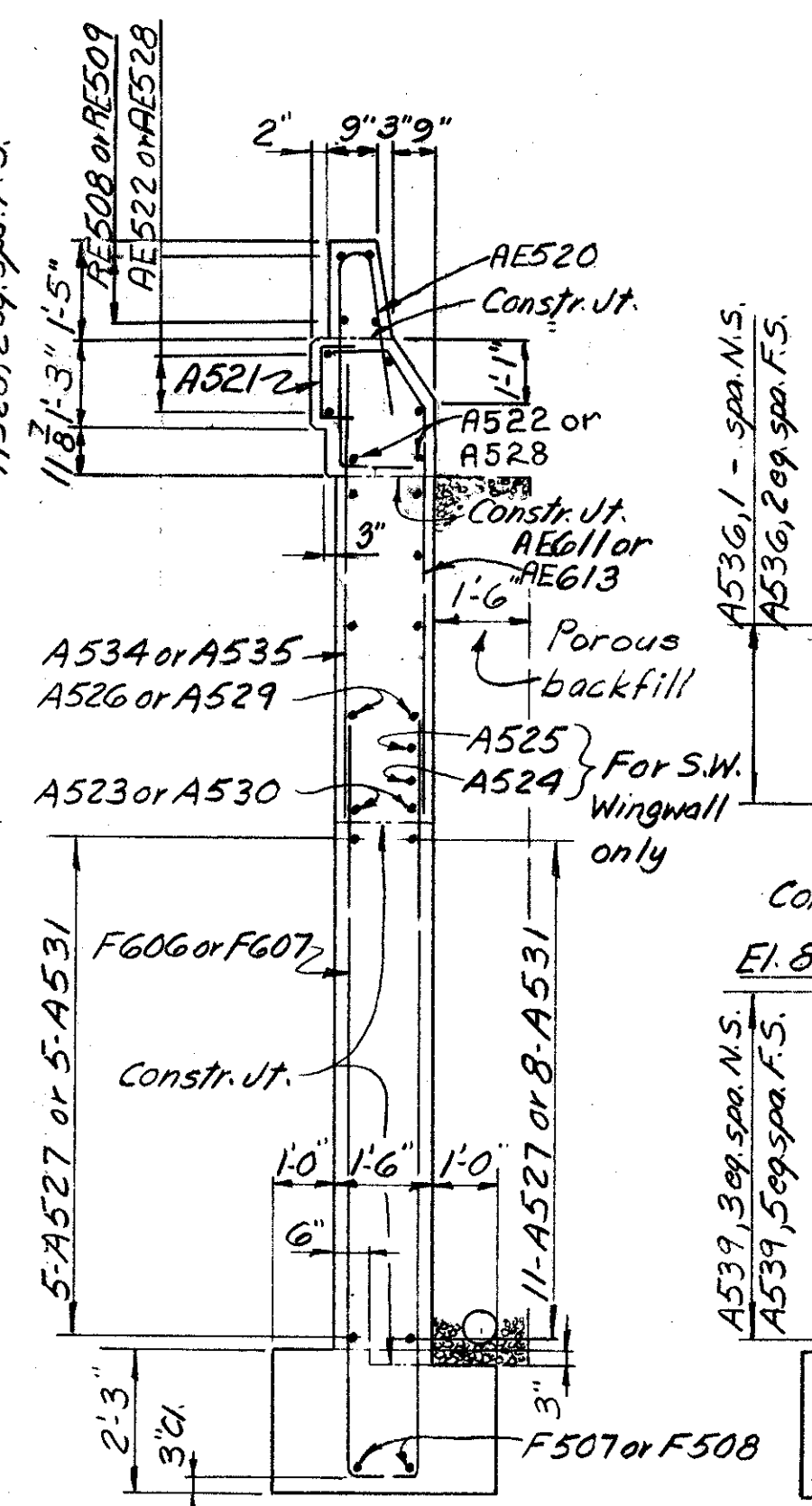
**ELEVATION C-C**  
VIEW OF S.W. WINGWALL

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

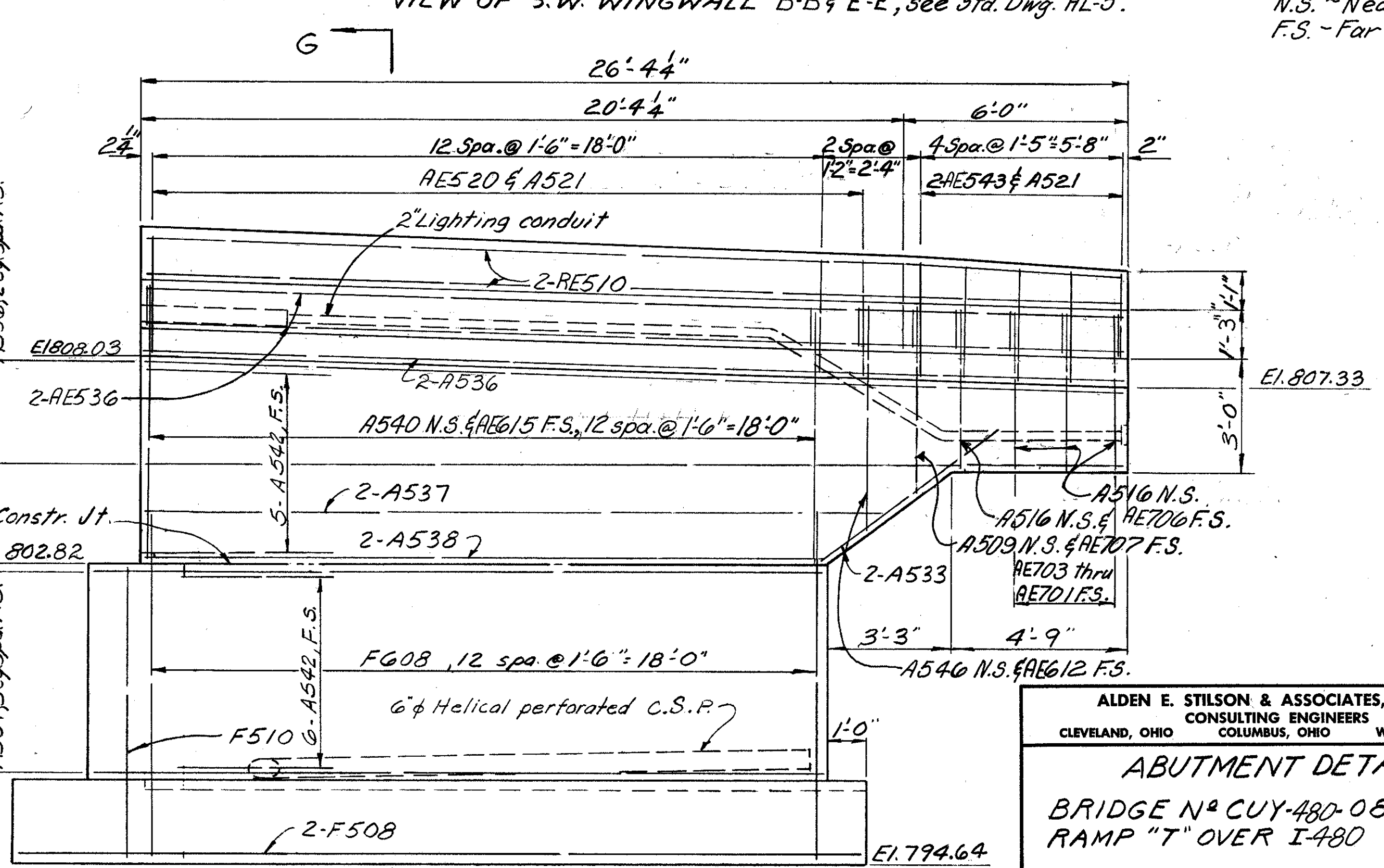


**ELEVATION D-D**  
VIEW OF N.W. WINGWALL



**SECTION H-H**

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



**ELEVATION E-E**  
VIEW OF N.E. WINGWALL

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

**ABUTMENT DETAILS**  
BRIDGE # CUY-480-0873  
RAMP "T" OVER I-480

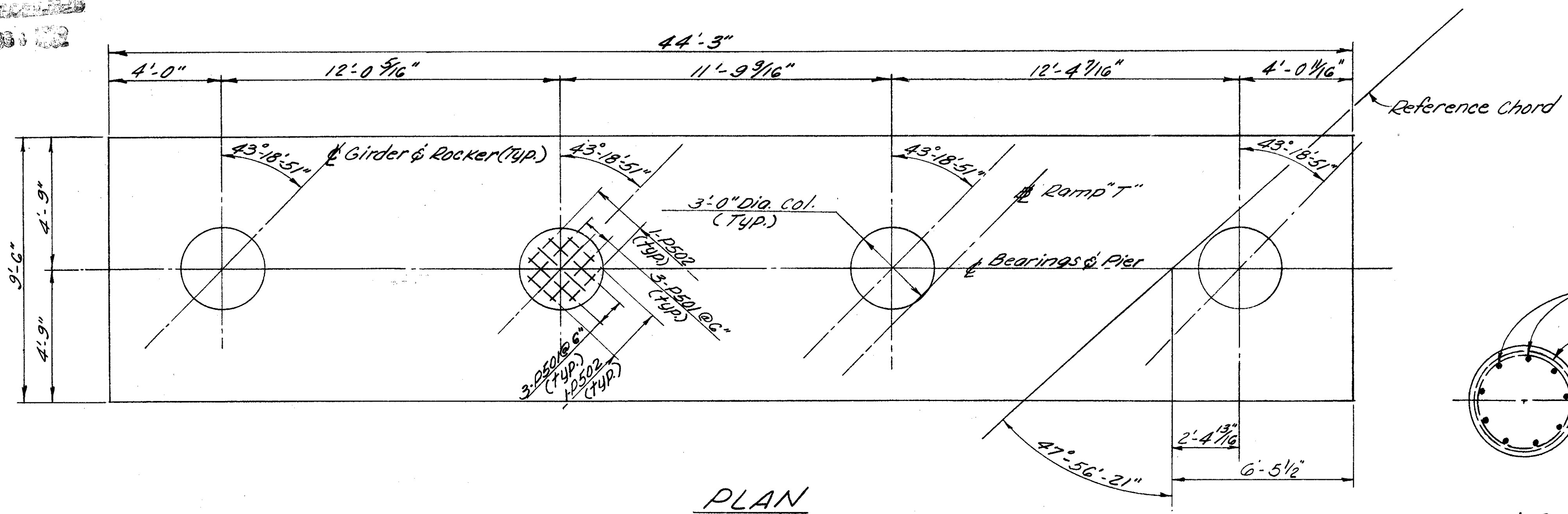
STA. 30+05.14  
CUYAHOGA COUNTY STA. 33+30.99

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

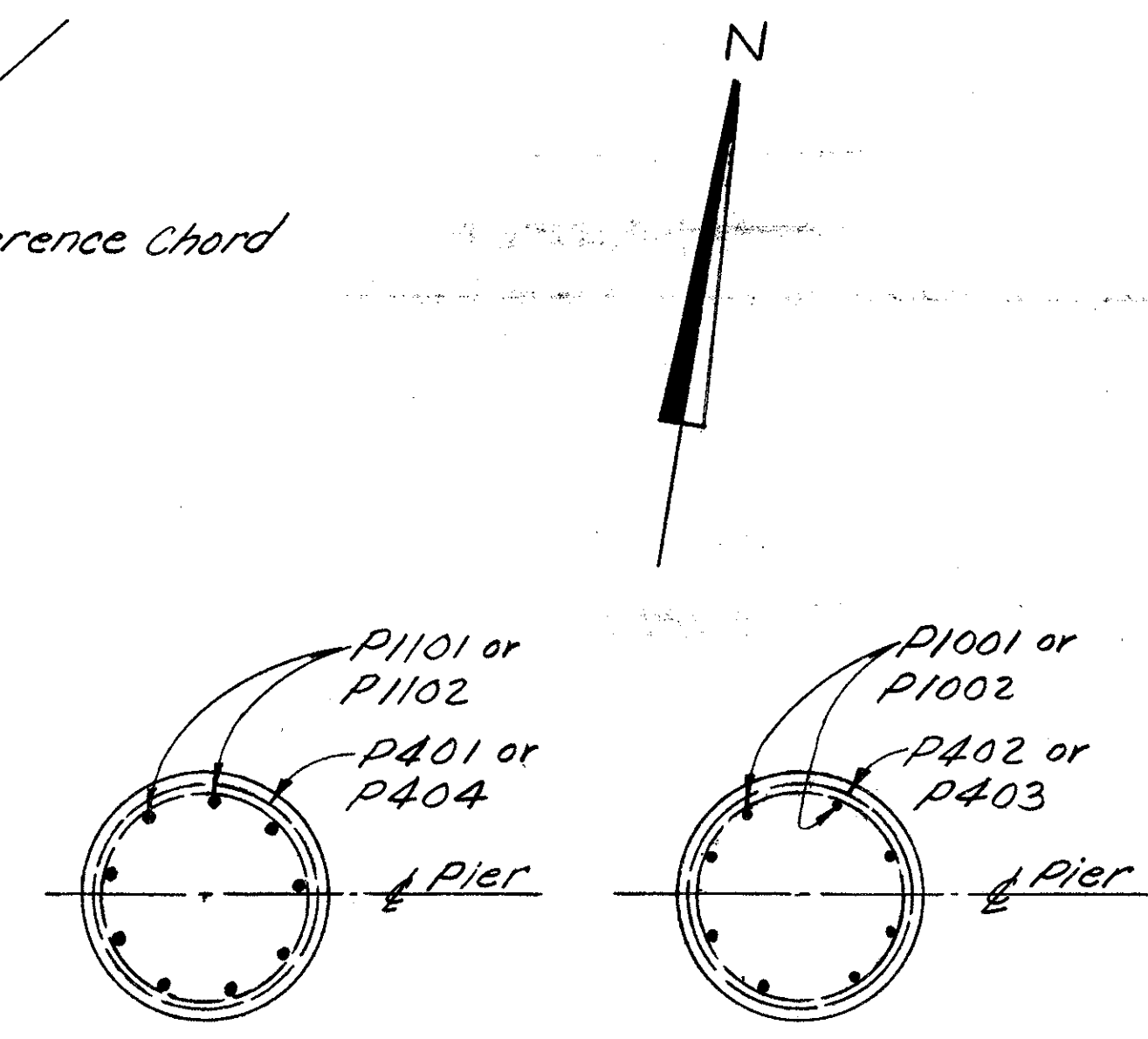
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

241  
346

CUYAHOGA COUNTY  
CUY-480-8.54

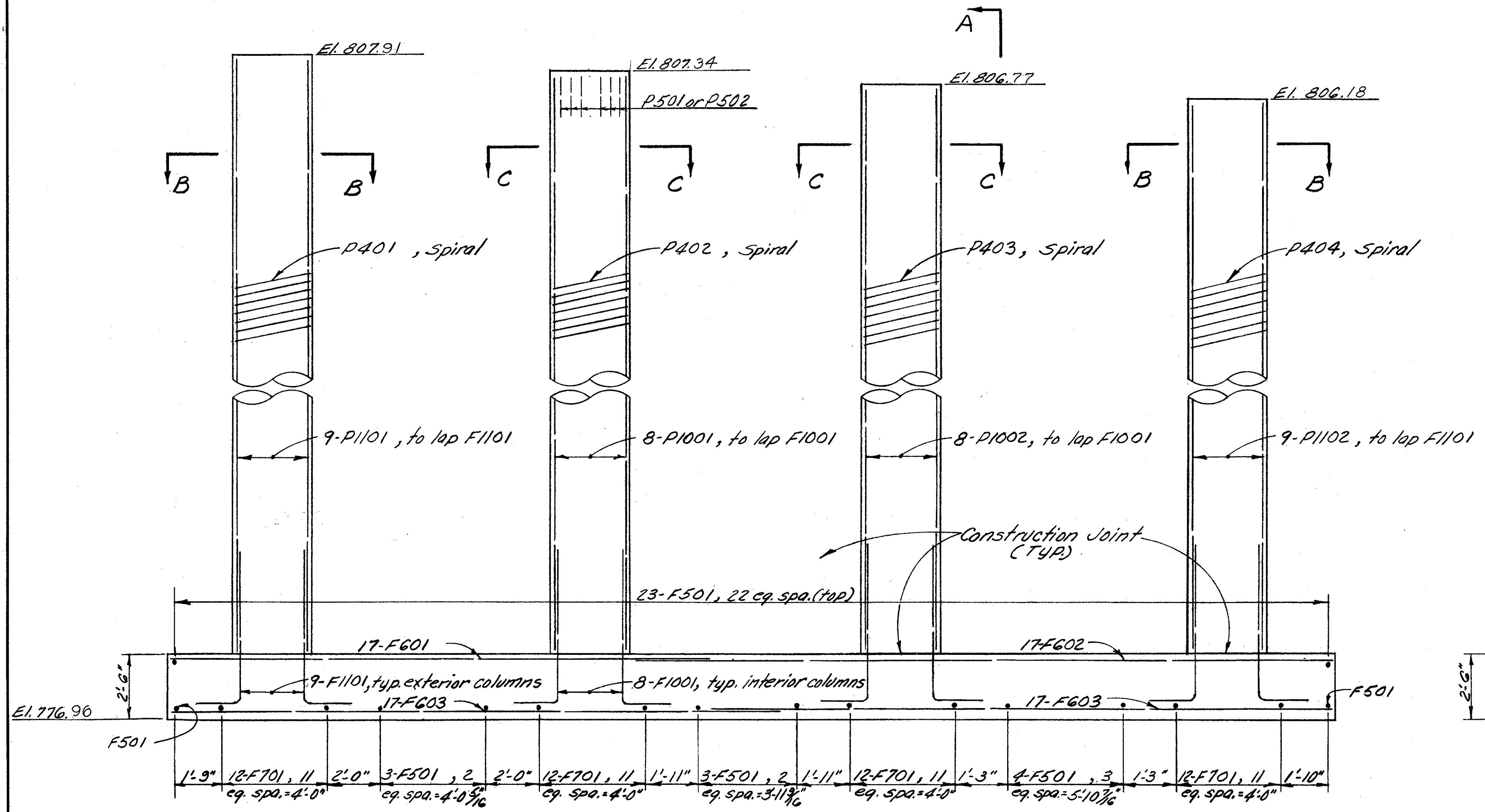


PLAN

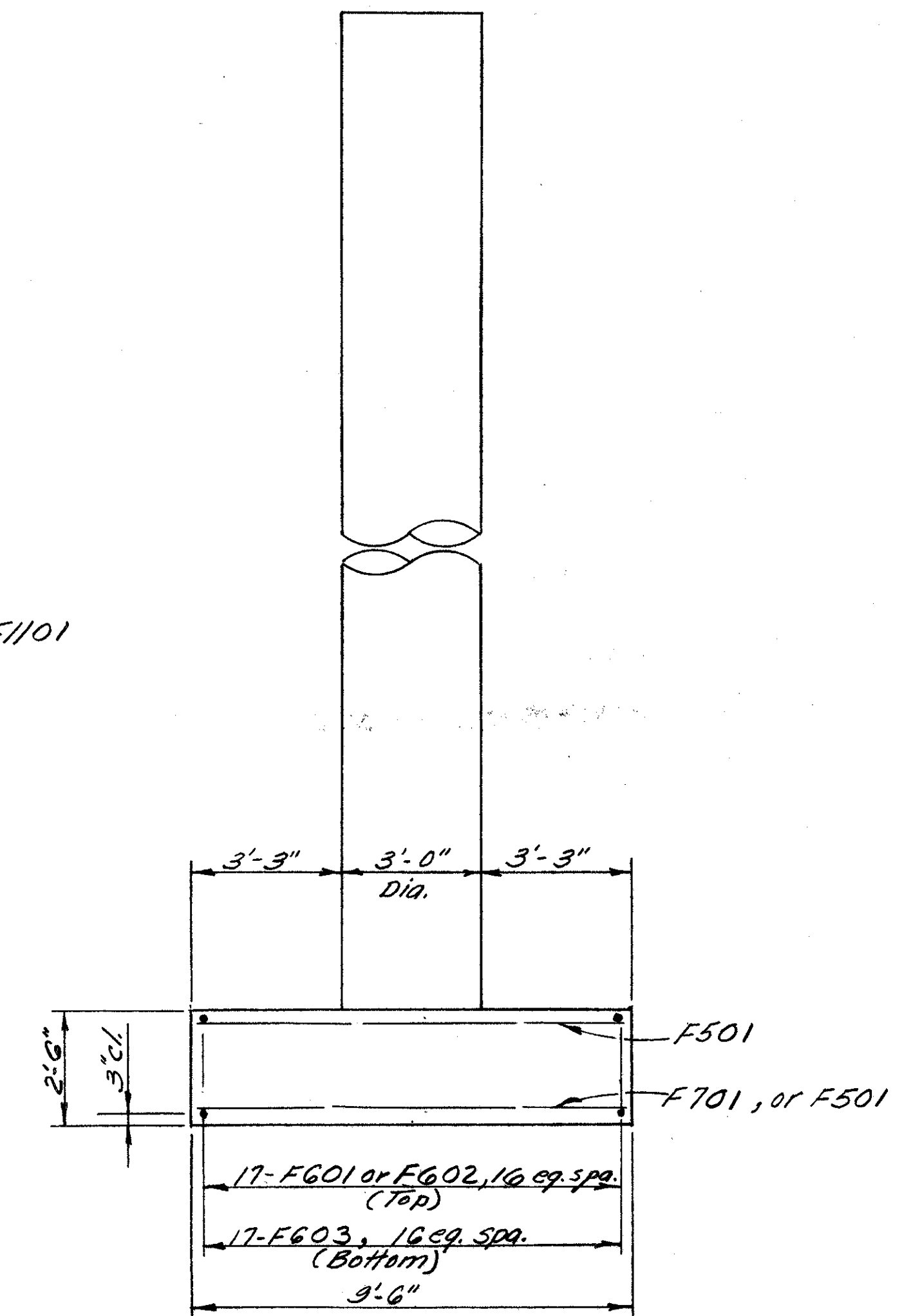


SECTION B-B

SECTION C-C



ELEVATION



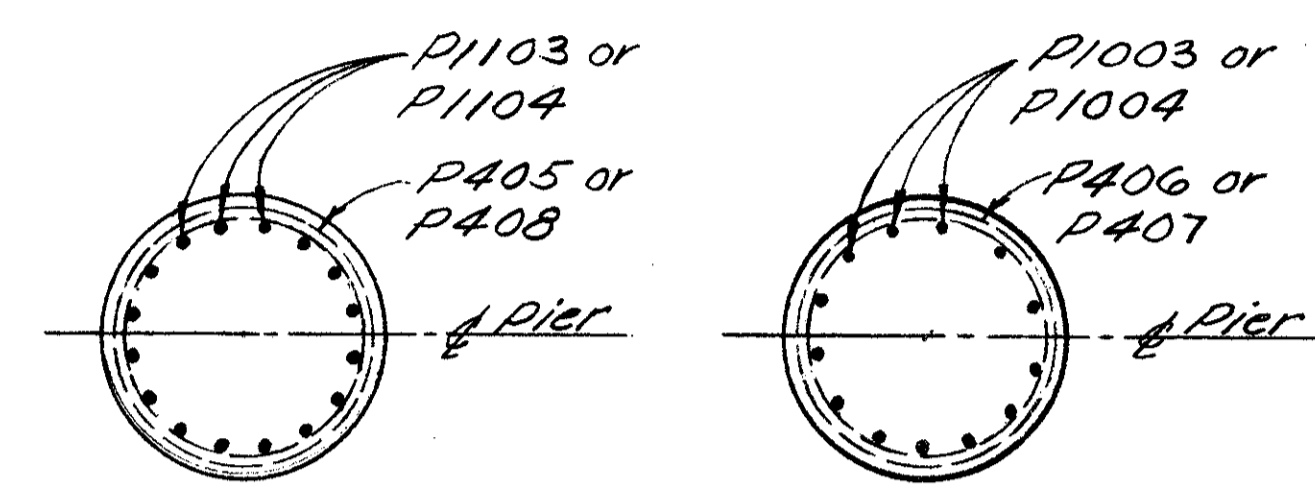
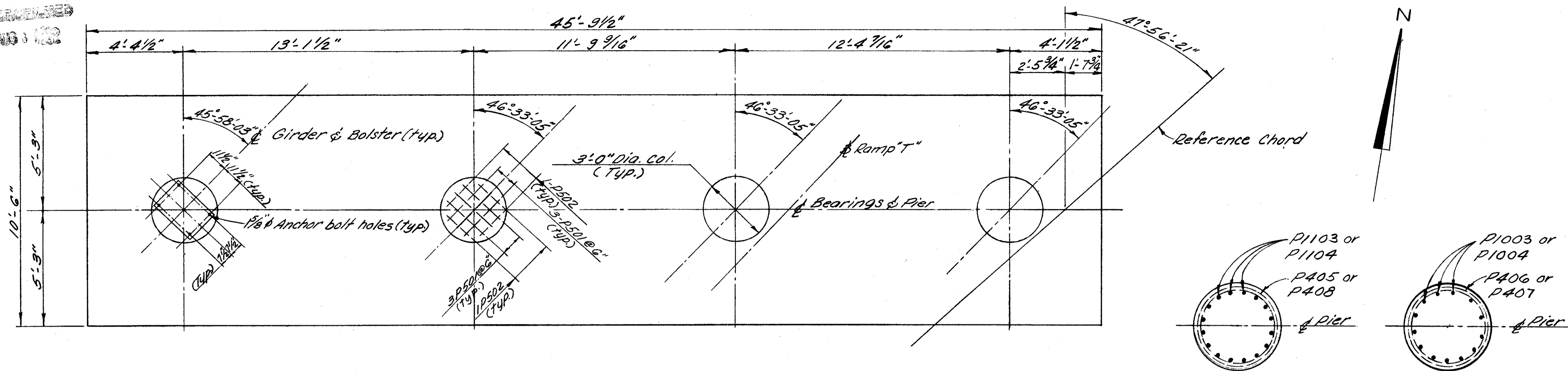
SECTION A-A

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.						
PIER NO. 1 DETAILS						
BRIDGE NO. CUY-480-0873 RAMP "T" OVER I-480 CUYAHOGA COUNTY STA. 30+05.14 STA. 33+30.99						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	R.T.		R.J.P.	G.W.M.	9/7/67	

FED. NO. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

242  
346

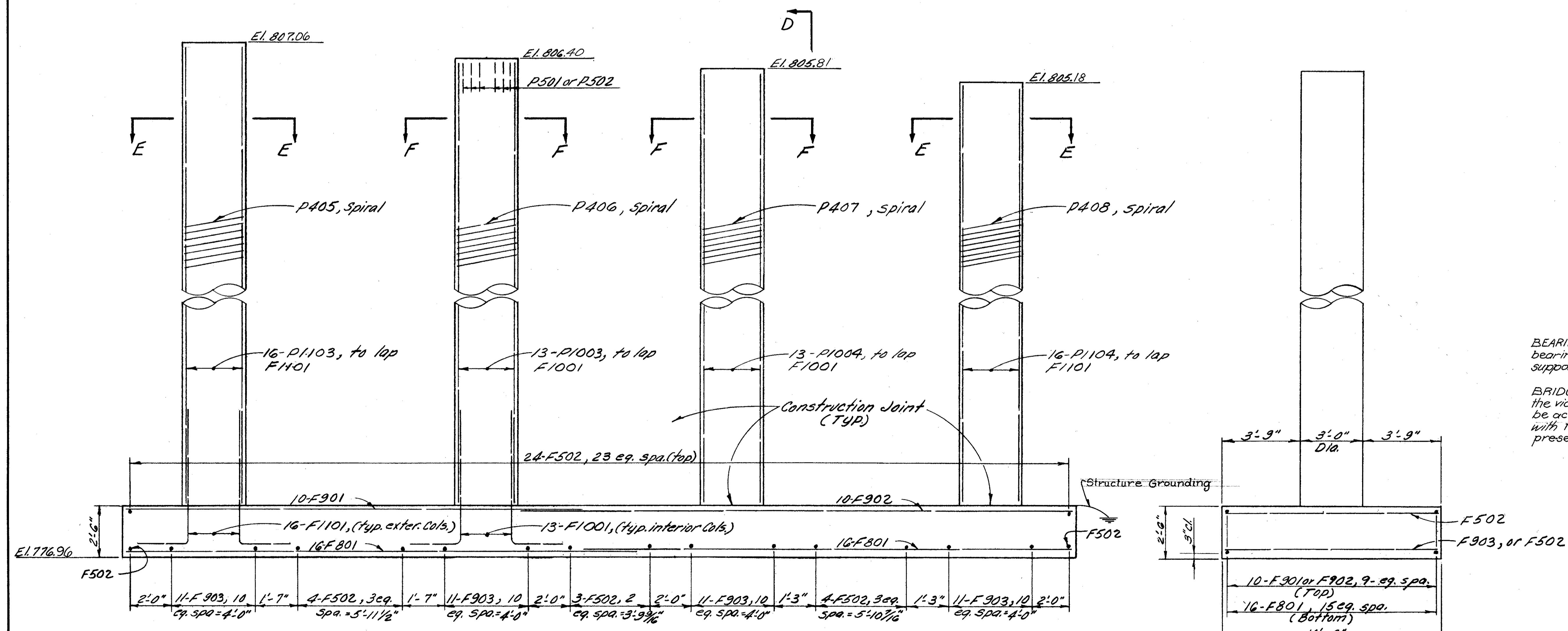
CUYAHOGA COUNTY  
CUY. 480-8.54



PLAN

SECTION E-E

SECTION F-F



ELEVATION

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 in the vicinity of the bridge seat at Pier No. 2 shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the presetting of bearing anchors.

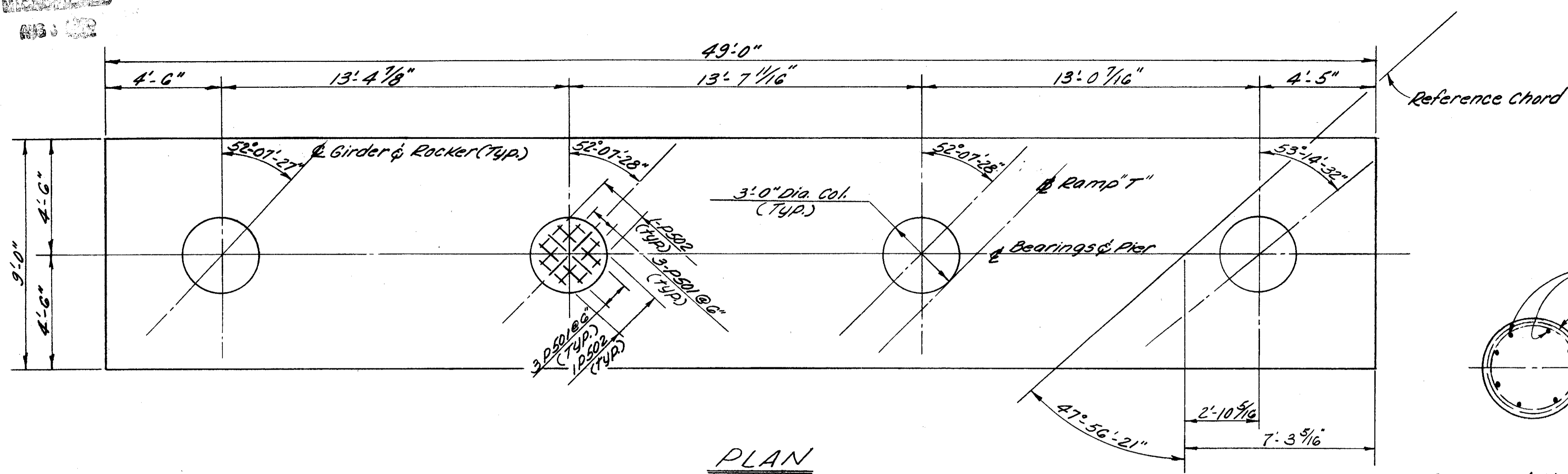
Note: Ground Center Pier.  
For Grounding Details, see  
Standard Drawing HL-7.

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.					
PIER No. 2 DETAILS					
BRIDGE No. CUY. 480-0873 RAMP "T" OVER I-480 CUYAHOGA COUNTY STA. 30+05.14 STA. 33+30.99					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
G.W.M.	R.T.		R.J.P.	G.W.M.	3/7/67

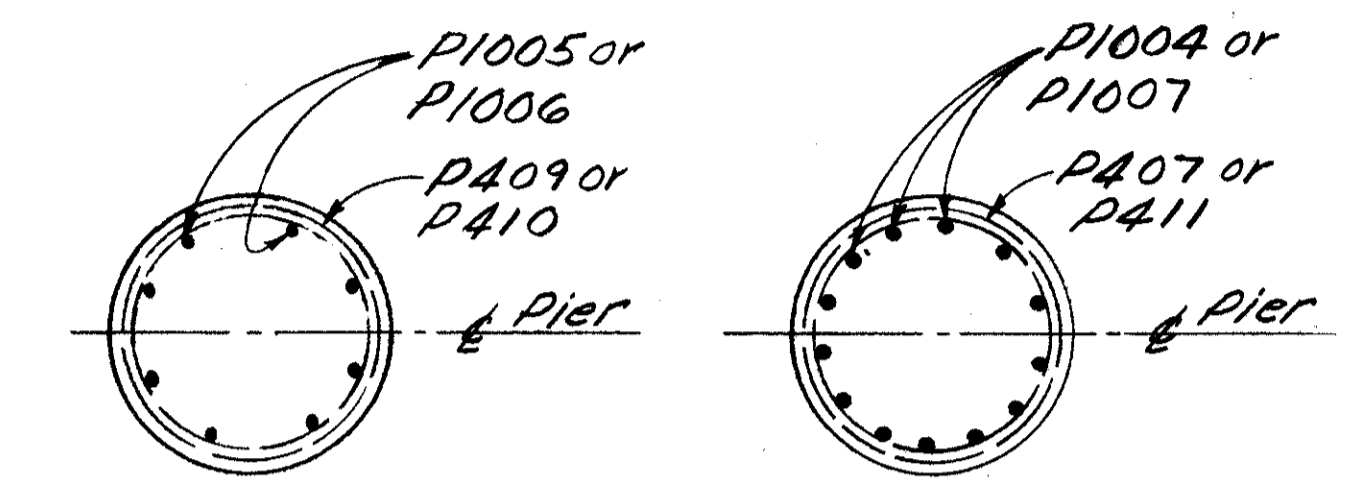
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

243  
346

CUYAHOGA COUNTY  
CUY-480-8.54

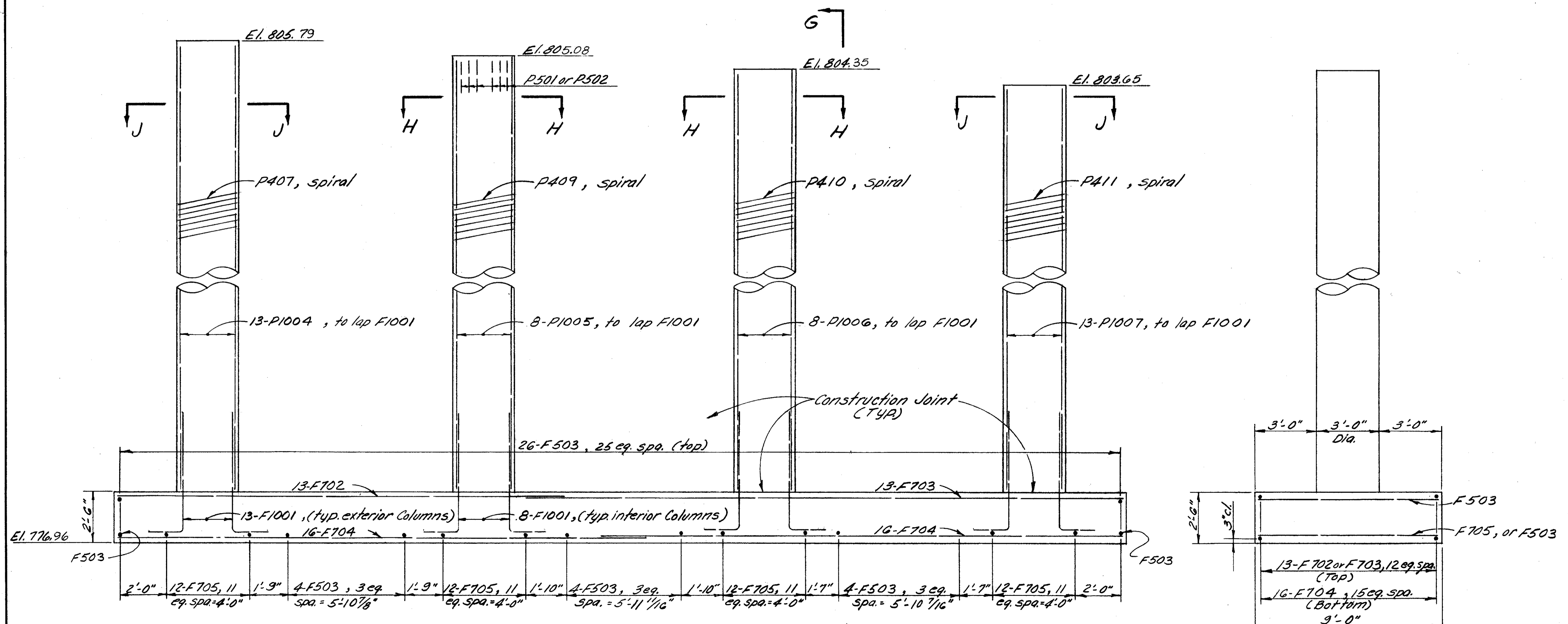


PLAN



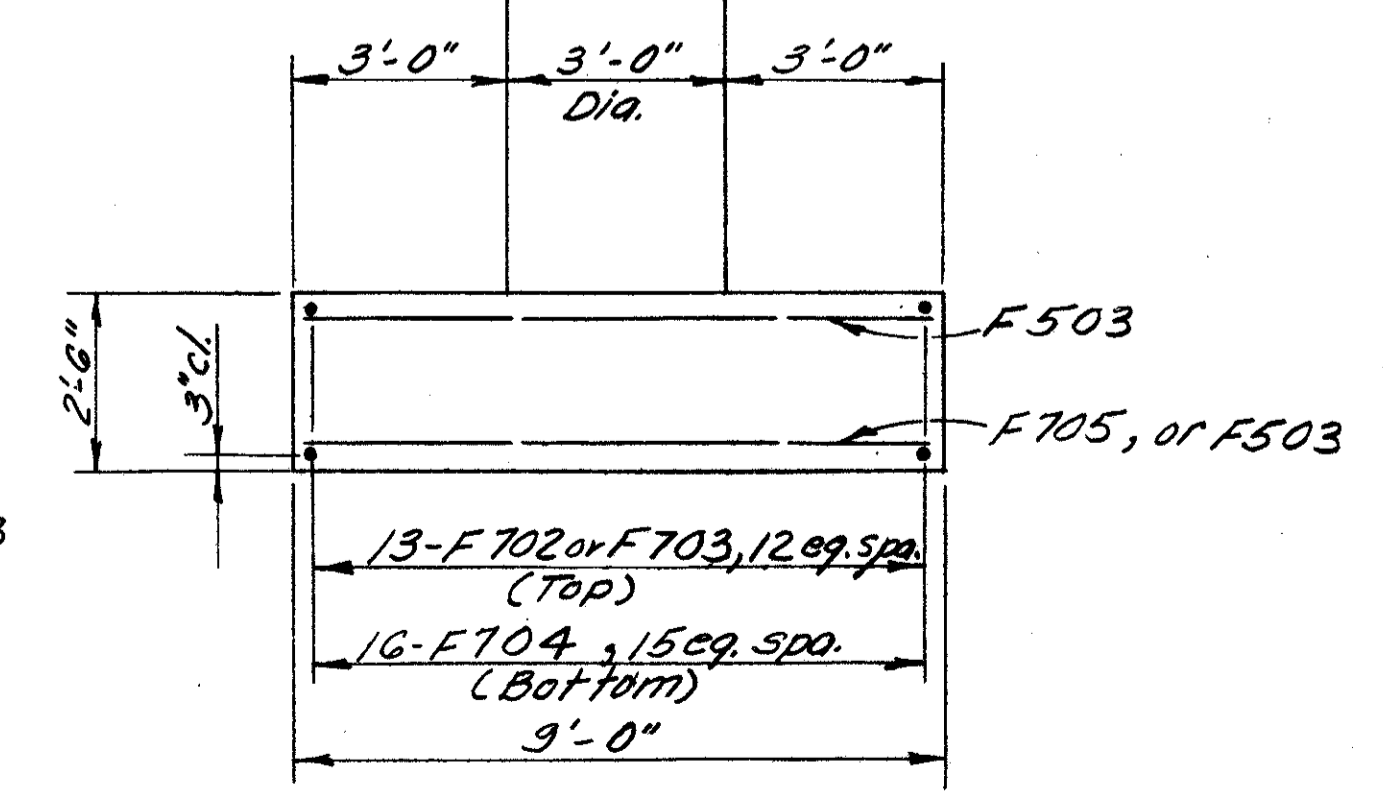
SECTION H-H

SECTION J-J



ELEVATION

SECTION G-G

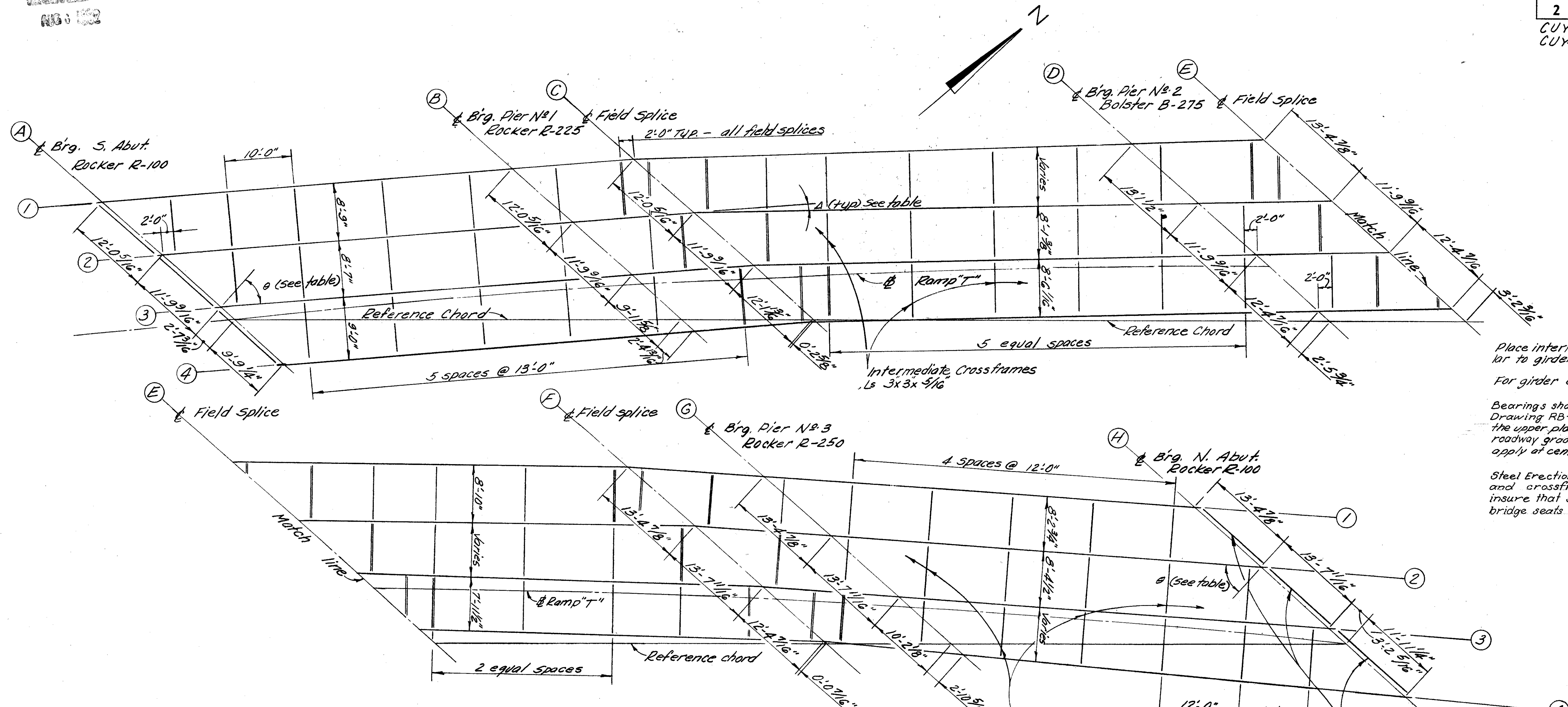


ALDEN E. STILSON & ASSOCIATES, LIMITED						
CLEVELAND, OHIO		CONSULTING ENGINEERS		COLUMBUS, OHIO		WHEELING, W. VA.
PIER No. 3 DETAILS						
BRIDGE No. CUY-480-0873						
RAMP 'T' OVER I-480						
CUYAHOGA COUNTY STA. 30+05.14						
STA. 33+30.99						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	R.T.		R.V.P.	G.W.M.	3/7/67	

9/15







**NOTES:**

Place intermediate crossframes perpendicular to girder row ① in each span.  
For girder details see Sht. 12/15

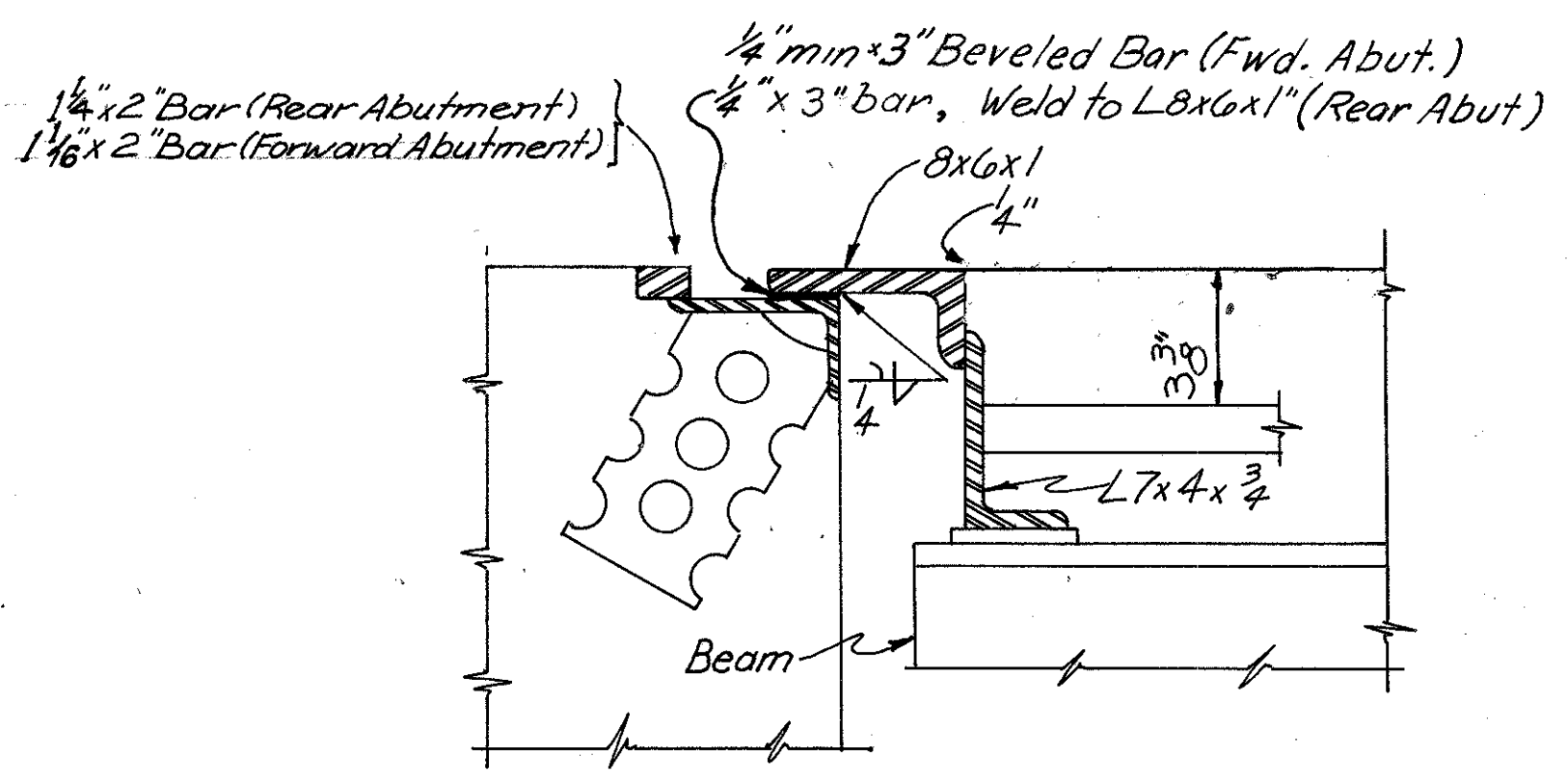
Bearings shall be in accordance with Standard Drawing RB-1-55 except that for the forward Abut. the upper plate element shall be beveled to match roadway grade. Tabulated plate thickness C shall apply at centerline of plate.

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

**FRAMING PLAN**

(Crossframes indicated by double line are 4-Ls 4x4x 3/8. See Transverse Section, Sheet 10/15 for details. These crossframes shall be placed immediately upon completion of all bolting of the adjacent field splices.)

TABLE OF DEFLECTION ANGLES & GIRDER LENGTHS				
	Girder Row ①	Girder Row ②	Girder Row ③	Girder Row ④
①	43°-18'-51"	43°-18'-51"	43°-18'-51"	43°-18'-51"
②	61'-2 1/2"	61'-2 1/2"	61'-2 1/2"	61'-2 1/2"
③	18'-1 1/4"	18'-1 1/4"	18'-1 1/4"	18'-1 1/4"
④	2°-39'-12"	3°-14'-14"	3°-14'-14"	3°-14'-14"
⑤	73'-11 9/16"	74'-9 1/16"	74'-9 1/16"	74'-9 1/16"
⑥	19'-2 9/16"	19'-5"	19'-5"	19'-5"
⑦	2°-49'-10"	2°-14'-09"	3°-23'-19"	3°-23'-19"
⑧	59'-0 1/8"	59'-0 1/8"	60'-4 7/8"	60'-4 7/8"
⑨	3°-20'-14"	3°-20'-14"	2°-11'-04"	3°-18'-08"
⑩	20'-5 7/16"	20'-5 7/16"	20'-5 7/16"	20'-11 13/16"
⑪	64'-1 13/16"	64'-1 13/16"	64'-1 13/16"	65'-9 3/4"
⑫	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. VA.

**SUPERSTRUCTURE DETAILS**

BRIDGE NO. CUY-480-0873  
RAMP "T" OVER I-480  
CUYAHOGA COUNTY STA. 30405.14  
STA. 33430.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	R.T.		R.J.A.	G.W.M.	3/17/67	





AUG 1962

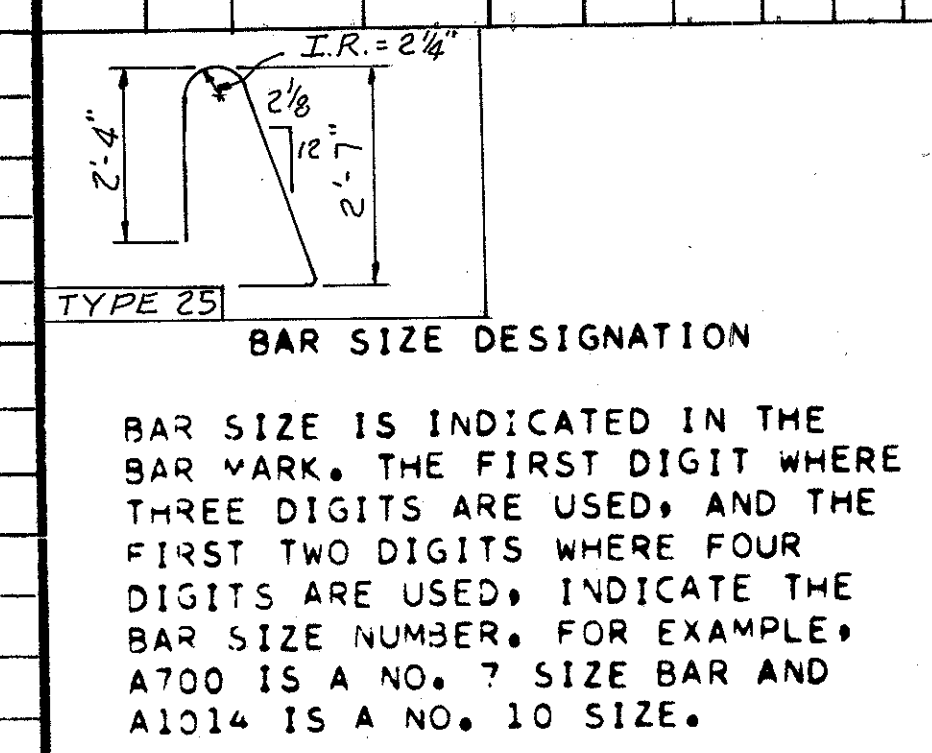
NOTES

- 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.
- DELETED
- COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.

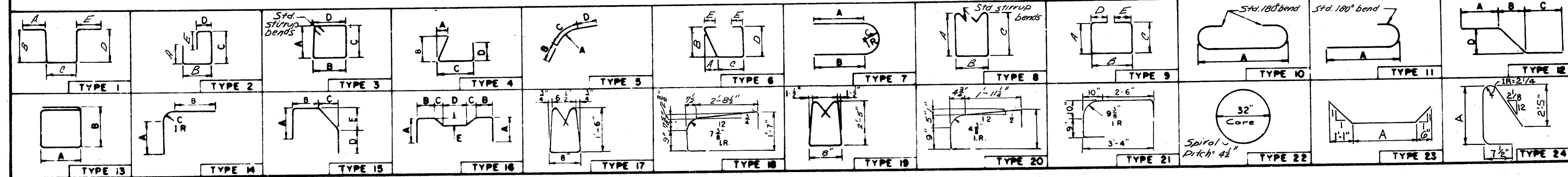
- LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
- END PREPARATION AND FIELD WELDING INCLUDED WITH ITEM 509.
- "LENGTH" SHOWN FOR SPIRAL BARS IS DISTANCE FROM TOP OF FOOTING TO BOTTOM OF PIER CAP.  
"NO. TURNS" SHOWN IS "LENGTH" DIVIDED BY PITCH, PLUS 3 TURNS (NUMBER OF CLOSED COILS), EXPRESSED 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	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	
ABUTMENTS											(CONTINUED)											PIER											(CONTINUED)											
A 501	40	4-11	205	1		1-6	2-2	1-6			D 801	11	6-3	184	23	4-2							P 1001	8	27-8	952	ST							A544	2	6-5	13	ST.						
A 502	16	19-3	321	ST							D 802	13	6-9	234	23	4-8							P 1002	8	27-1	922	ST							A545	1	6-3	7	ST.						
A 503	22	20-0	459	ST							A 601	37	18-10	1047	2	6-6	1-5	7-10	0-11	2-10		P 1003	13	26-9	1496	ST							A546	1	5-9	6	ST.							
A 504	21	5-11	130	6	0-5	0-11	5-0				A 602	46	19-10	1370	2	7-0	1-5	8-4	0-11	2-10		P 1004	26	26-2	2927	ST							EPOXY COATED REINFORCING STEEL - ABUTMENTS											
A 506	26	9-8	262	1		3-3	3-5	3-3			F 501	26	8-6	231	1		8-0	0-8				P 1005	8	25-5	875	ST							AE609	7	8-1	85	15	6-5	11 1/2	7 1/2				
A 507	16	23-10	398	ST							F 502	4	4-0	17	ST							P 1006	8	24-8	849	ST							AE610	2	7-1	21	15	5-5	11 1/2	7 1/2				
A 508	22	24-10	570	ST							F 503	32	8-2	273	1		7-8	0-8				P 1007	13	24-0	1343	ST							AE611	21	8-0	252	15	6-4	11 1/2	7 1/2				
A 509	1	4-10	5	ST							F 504	1	17-1	18	1		8-1	1-2	8-1			P 1101	9	28-3	1351	ST							AE612	1	6-5	10	15	4-9	11 1/2	7 1/2				
A 511	32	11-0	367	1		3-11	3-5	3-11			F 505	2	14-6	30	ST							P 1102	9	26-6	1267	ST							AE613	13	7-9	151	15	6-1	11 1/2	7 1/2				
A 512	6	16-3	102	ST							F 506	1	20-5	21	1		9-9	1-2	9-9			P 1103	16	27-5	2331	ST							AE614	1	6-11	10	15	5-3	11 1/2	7 1/2				
A 513	2	10-10	23	ST							F 507	2	24-8	51	ST							P 1104	16	25-6	2168	ST							AE615	13	7-6	146	15	5-10	11 1/2	7 1/2				
A 514	2	8-4	17	ST							F 508	4	22-3	93	ST							F 501	35	9-2	335	ST							AE701	4	4-11	40	11	4-1						
A 515	8	11-0	92	ST							F 509	2	21-1	44	1		10-1	1-2	10-1			F 502	37	10-2	392	ST							AE702	4	4-6	37	15	3-1	11 1/2	7 1/2				
A 516	13	4-1	55	ST							F 510	1	16-5	17	1		7-9	1-2	7-9			F 503	40	8-8	362	ST							AE703	4	4-7	37	15	3-1	11 1/2	7 1/2				
A 517	2	4-7	10	ST							F 601	26	13-3	517	1		8-0	5-5				F 601	17	19-3	492	ST							AE704	2	5-1	21	15	3-7	11 1/2	7 1/2				
A 518	2	5-7	12	ST							F 602	8	20-4	244	ST							F 602	17	26-7	679	ST							AE705	2	6-3	26	15	4-7	11 1/2	7 1/2				
A 519	7	7-5	54	ST							F 603	32	12-11	621	1		7-8	5-5				F 603	34	22-11	1170	ST							AE706	1	4-8	10	15	3-1	11 1/2	7 1/2				
A 521	71	2-3	167	1		0-7 1/2	1-3	0-7 1/2			F 604	8	25-0	300	ST							F 701	48	9-2	899	ST							AE707	1	5-6	11	15	3-10	11 1/2	7 1/2				
A 522	7	28-7	209	ST							F 605	7	21-2	223	1		10-2	1-2	10-2			F 702	13	21-5	569	ST							AE708	1	5-1	10	15	3-6	11 1/2	7 1/2				
A 523	2	20-7	43	ST							F 606	21	23-10	752	1		11-6	1-2	11-6			F 703	13	29-5	782	ST							AE709	1	6-1	12	15	4-5	11 1/2	7 1/2				
A 524	1	21-9	23	ST							F 607	13	25-2	491	1		12-2	1-2	12-2			F 704	32	25-5	1662	ST							AE512	4	16-3	68	ST							
A 525	1	22-11	24	ST							F 608	13	20-6	400	1		9-10	1-2	9-10			F 705	48	8-8	850	ST							AE520	51	6-5	341	24	3-4						
A 526	2	24-1	50	ST							PIER											F 801	32	24-0	2051	ST							AE522	4	28-7	119	ST							
A 527	16	21-11	366	ST							P 401	1	28-3	507	22	NO. TURNS=78			NO. SPACERS=4	6			F 901	10	21-8	737	ST							AE528	4	23-1	96	ST						
A 528	7	23-1	169	ST							P 402	1	27-8	500	22	NO. TURNS=77			NO. SPACERS=4	6			F 902	10	26-8	907	ST							AE536	4	26-0	108	ST						
A 529	2	17-3	36	ST							P 403	1	27-1	487	22	NO. TURNS=75			NO. SPACERS=4	6			F 903	44	10-2	1521	ST							AE543	40	3-3	136	ST						
A 530	2	15-1	31	ST							P 404	1	26-6	480	22	NO. TURNS=74			NO. SPACERS=4	6			SUPERSTRUCTURE											S 501	427	2-5	1076	1		1-11	0-7 1/2			
A 531	13	18-8	253	ST							P 405	1	27-5	494	22	NO. TURNS=76			NO. SPACERS=4	6			F 1001	84	6-7	2380	1		5-6	1-5				S 502	427	2-2	965	1		0-7 1/2	1-2	0-7 1/2		
A 532	1	4-6	5	ST							P 406	1	26-9	481	22	NO. TURNS=74			NO. SPACERS=4	6			F 1101	50	7-2	1904	1		5-10	1-8														
A 533	3	5-5	17	ST							P 407	2	26-2	948	22	NO. TURNS=73			NO. SPACERS=8	6																								
A 534	21	7-4	161	ST							P 408	1	25-6	461	22	NO. TURNS=71			NO. SPACERS=4	6																								
A 535	13	7-1	96	ST							P 409	1	25-5	461	22	NO. TURNS=71			NO. SPACERS=4	6																								
A 536	7	26-0	190	ST							P 410	1	24-8	448	22	NO. TURNS=69			NO. SPACERS=4	6																								
A 537	2	20-0	42	ST							P 411	1	24-0	435	22	NO. TURNS=67			NO. SPACERS=4	6																								
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																																					



BENDING DIAGRAMS



ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 14/15

REINFORCING STEEL LIST  
Bridge No. CUY-480-0873  
Ramp "T" over I-480  
Cuyahoga County Sta. 30 + 05.14  
Sta. 33 + 30.99

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



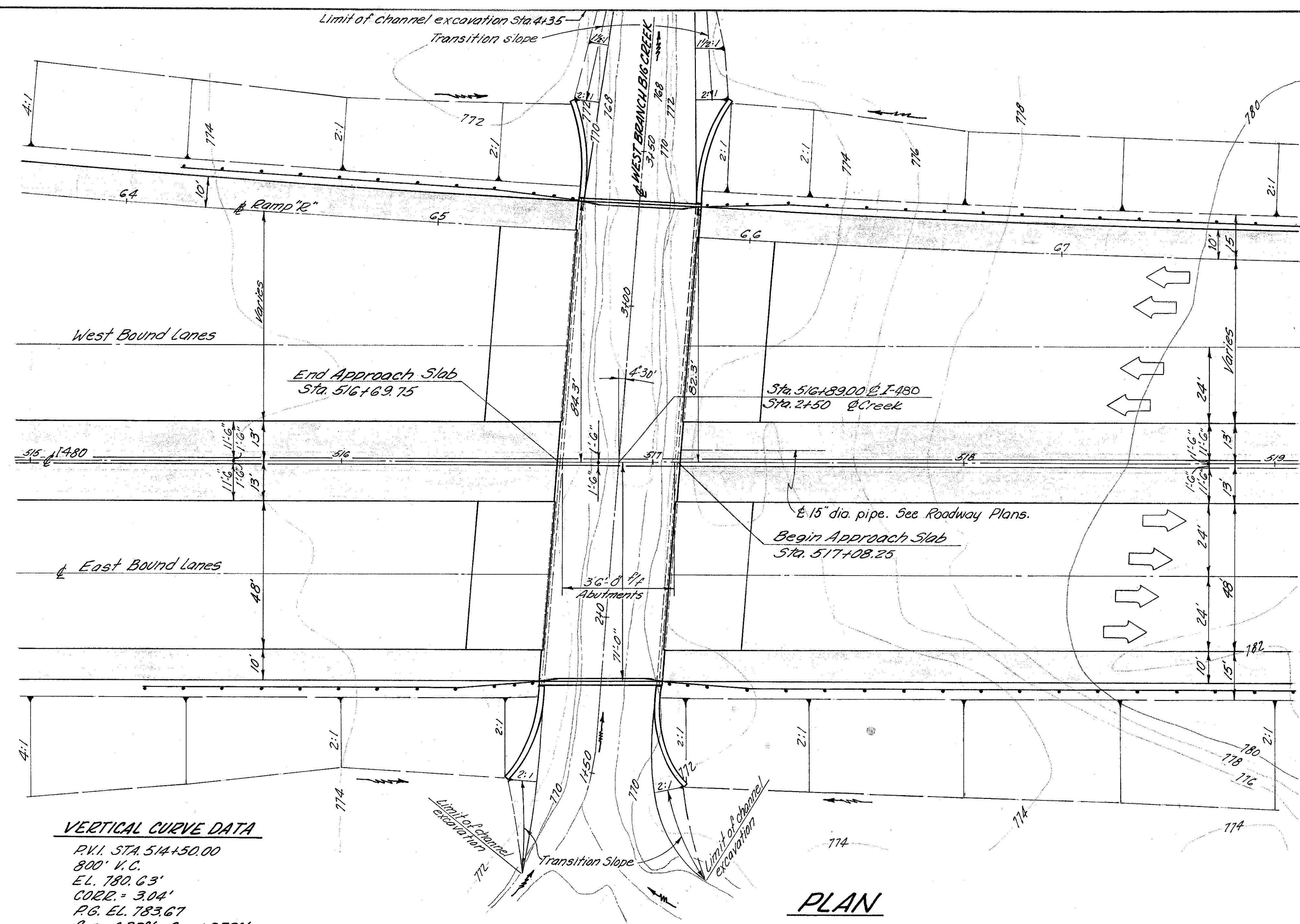
MICROFILMED  
AUG 7 1982



FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

250  
346

CUYAHOGA COUNTY  
CUY. 480-8.54



**EXISTING STRUCTURES**

BRIDGE N<sup>o</sup> CUY-17-0829  
800' ± Upstream.  
TYPE: Single span reinforced concrete slab with reinforced concrete substructure.  
SPAN: 30'-0" w/ abutments.  
CONDITION: New  
WATERWAY OPENING: 195 sq. ft.

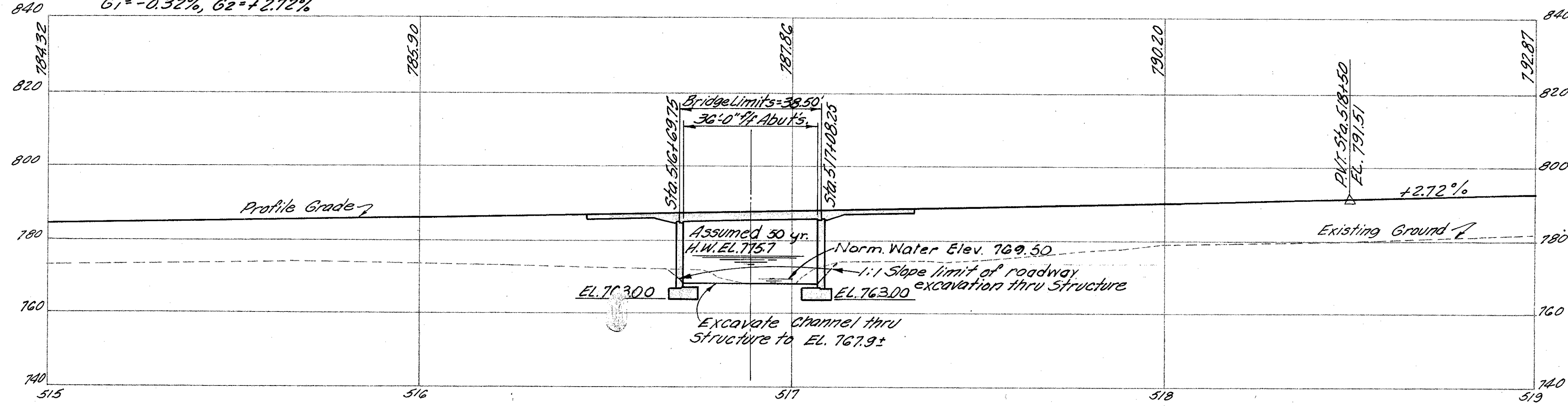
900' ± Downstream  
TYPE: Single span timber deck.  
SPAN: 20' ±  
CONDITION: Unknown.  
WATERWAY OPENING: 200 sq. ft.

**Curve Data-Ramp 'R'**

$\Delta = 05^{\circ}54'06''$   
 $D = 0^{\circ}40'00''$   
 $R = 8594.37'$   
 $T = 443.03'$   
 $L = 885.27'$   
 $PT = \text{Sta. } 70+23.45 \text{ @ Ramp 'R'}$   
 $\text{Sta. } 52+54.63 \text{ @ I-480}$

**VERTICAL CURVE DATA**

P.V.I. STA. 514+50.00  
 800' V.C.  
 EL. 780.63'  
 CORR. = 3.04'  
 P.G. EL. 783.67'  
 $G_1 = -0.32\%$ ,  $G_2 = +2.72\%$



**PROFILE**

**PROPOSED STRUCTURE**

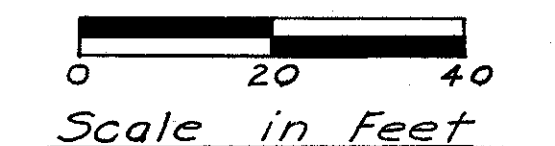
TYPE: Single span reinforced concrete slab with reinforced concrete substructure.  
 SPAN: 36'-0" w/ Abutments along & roadway  
 ROADWAY: E.B.-71'-0" @ I-480 to face of parapet.  
 W.B.-Varies 83.30' average. Deflector-Parapets & Concrete Median Barrier  
 LOADING: C.F.-2000 (1957) Adequate for AASHTO alternate loading.  
 SURFACE COURSE: Monolithic Concrete  
 SKEW: 4° 30' 00" L.F.  
 ALIGNMENT: Tangent  
 APPROACH SLABS: AS-1-72, Modified (25' long)

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

Channel excavation is included with Roadway Quantities.

**HYDROLOGICAL DATA**

Drainage Area = 2,000 acres  
 $Q_{50 \text{ years}} = 2,200 \text{ c.f.s.}$   
 $V = 7.6 \text{ ft}^3/\text{sec.}$   
 $Q_{100 \text{ years}} = 2,540 \text{ c.f.s.}$   
 $V = 8.5 \text{ ft}^3/\text{sec.}$



ALDEN E. STILSON & ASSOCIATES, LIMITED 1/10  
 CONSULTING ENGINEERS  
 CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

**SITE PLAN**  
 BRIDGE N<sup>o</sup> CUY-480-0930  
 I480 OVER WEST BRANCH BIG CREEK  
 CUYAHOGA COUNTY STA. 516+69.75  
 STA. 517+08.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.J.P.		R.C.	J.E.V.	9/20/60	



FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		251 346

CUYAHOGA COUNTY  
CUY-480-8.54

GENERAL NOTES

REFERENCES:

Standard Drawings:

- Railing Details - BR-1-67, Sheet 2  
Revised 10-15-71
- Approach Slab Details - AS-1-72 Dated 6-30-72
- Structure Grounding HL-7 Revised 1-21-76

Supplemental Specifications:

- Chemical Admixtures 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-2000 (57)
- Concrete, Class "C": Unit stress = 1200 p.s.i. for superstructure  
Unit stress = 1333 p.s.i. for substructure
- Reinforcing Steel, ASTM A615, A616, or A617  
Unit Stress = 20,000 p.s.i.

FOUNDATION BEARING PRESSURE: Abutment footings are designed for a maximum bearing pressure of 2.5 tons per square foot.

ATTACHMENT OF GUARDRAIL TO CONCRETE PARAPETS: Concrete insert anchor assemblies per Standard Construction Drawings GR-3 and GR-1 shall be placed during parapet construction.

Modify Std. Dwg. AS-1-72 as follows:

- a. Dimension W = 48'-0" for East Bound Lanes.  
Dimension W varies for West Bound Lanes.
- b. Change clearance for top reinforcing steel to 3" from 2"
- c. Jacking holes shall be omitted

*Monolithic Wearing Surface is assumed, for design purposes, to be 1".*

*Minimum Bar Lap shall be 30 diameters.*

*Deck Protection Method: Epoxy coated reinforcing steel, top mat only.*

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

ESTIMATED QUANTITIES									
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	WINGS	SUPER	GENERAL		
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP		
503	1118	C.Y.	UNCLASSIFIED EXCAVATION	690	428				
504	3451	S.F.	SHEET PILING LEFT IN PLACE (MINIMUM SECTION MODULUS OF 30.2) INCHES CUBED PER FOOT OF WALL	3451					
509	142,695	LB	REINFORCING STEEL	48581	11232	82882			
SPECIAL	12,777	LB	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)			12777			
511	479	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			479			
511	367	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	367					
511	507	C.Y.	CLASS C CONCRETE, FOOTINGS	379	128				
511	155	C.Y.	CLASS C CONCRETE, WALLS		155				
512	270	L.F.	PREMOLDED SEALING STRIP	265		5			
516	271	S.F.	1 INCH PREFORMED EXPANSION JOINT FILLER	271					
518	388	C.Y.	POROUS BACKFILL	276	112				
518	20	EACH	SCUPPERS, 4 INCH DIAMETER CAST IRON			20			
S625			SEE SHEET 203 FOR LIGHTING SUMMARY						
808	479	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D			479			

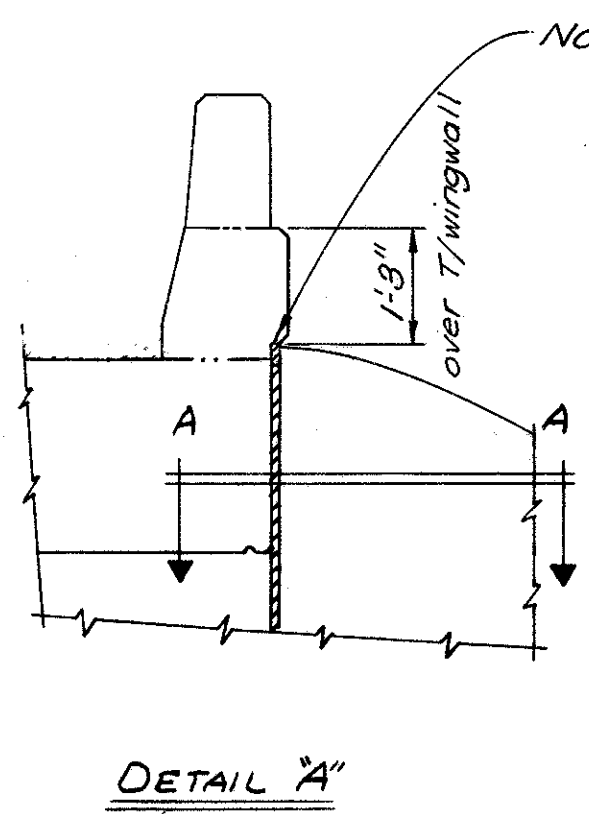
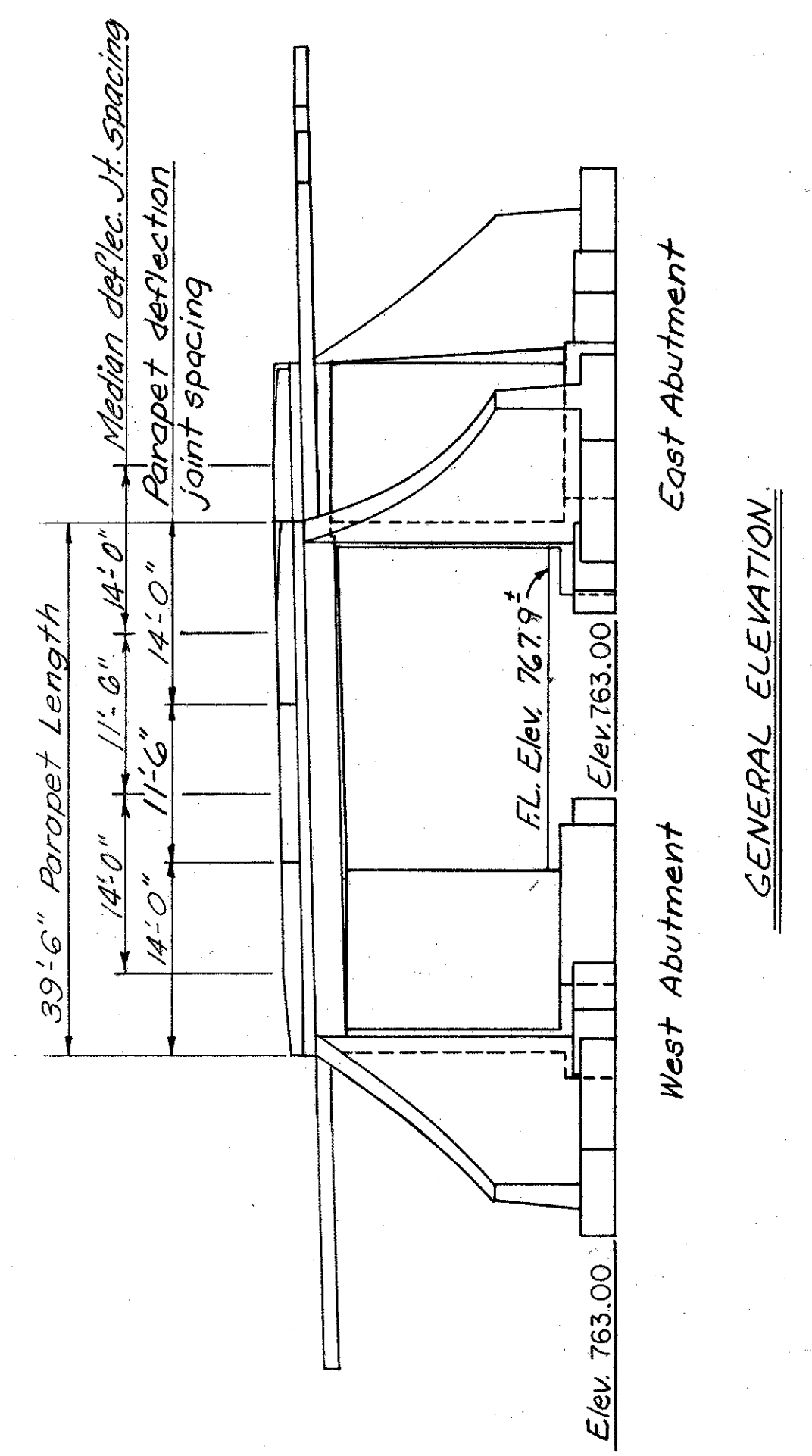
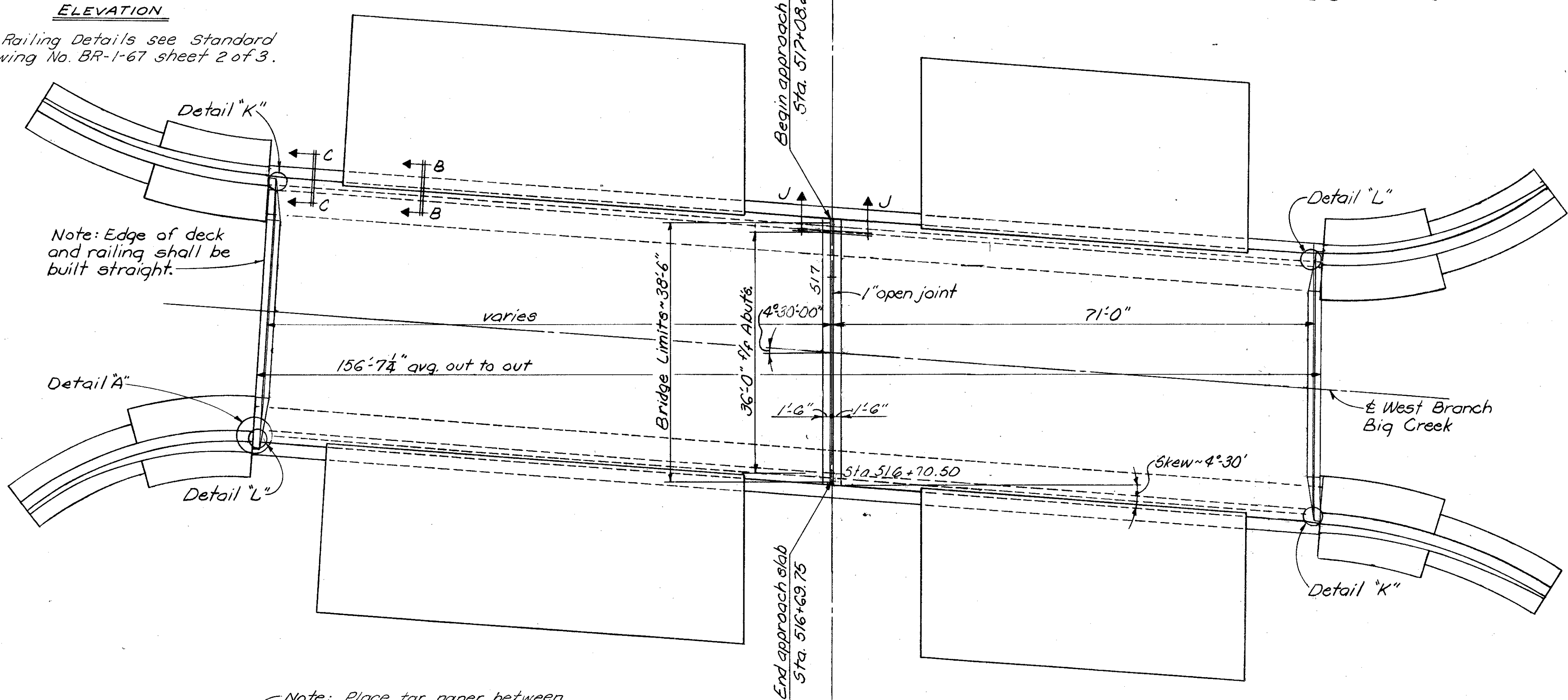
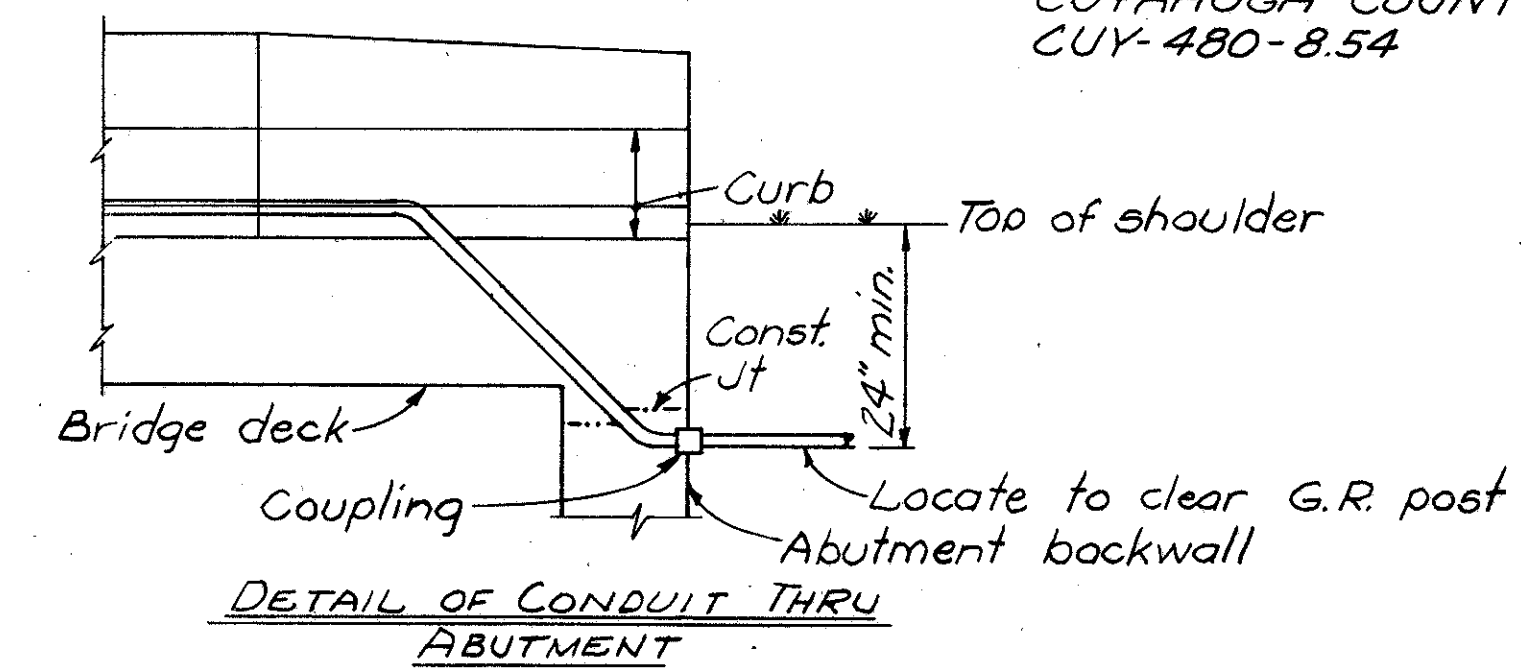
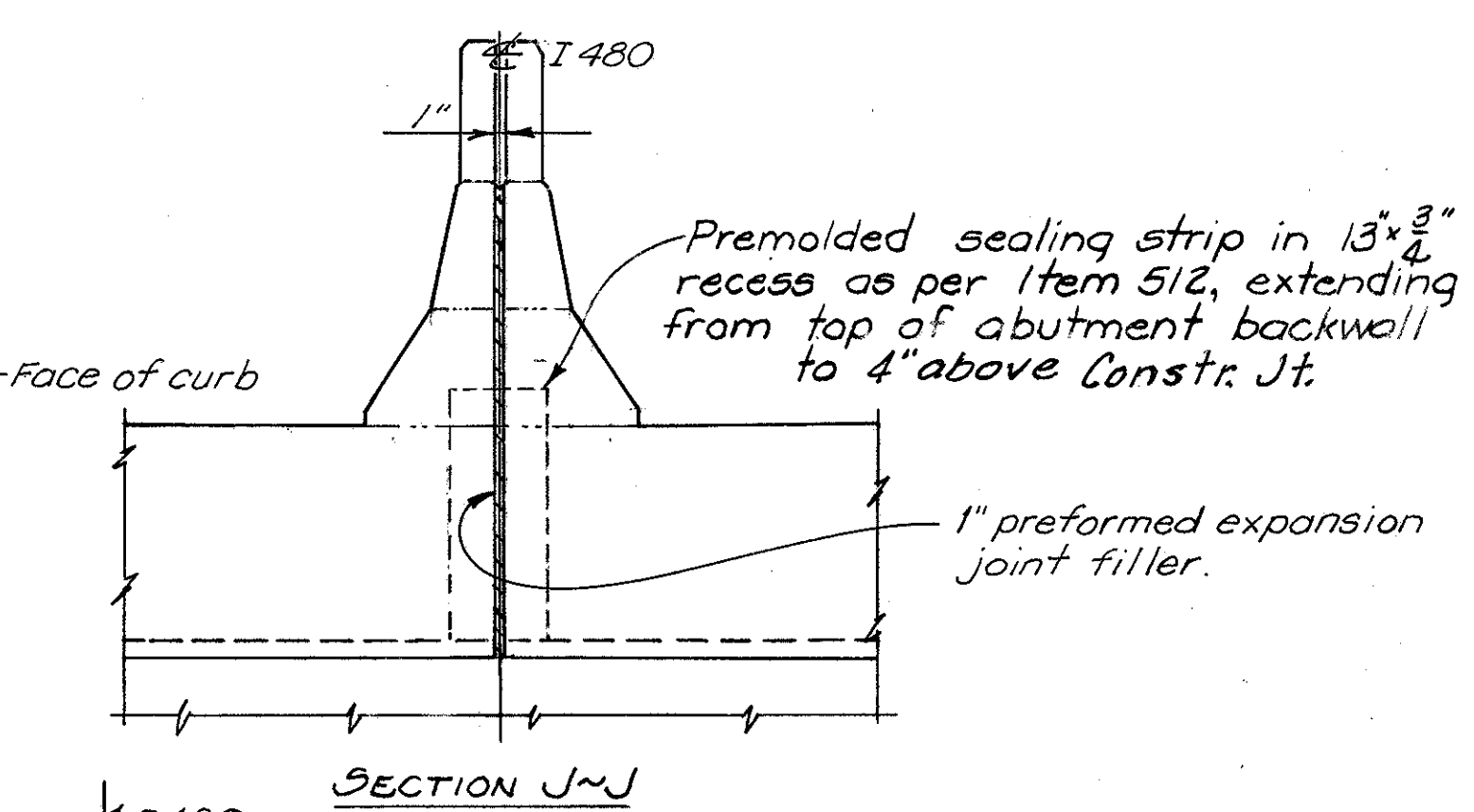
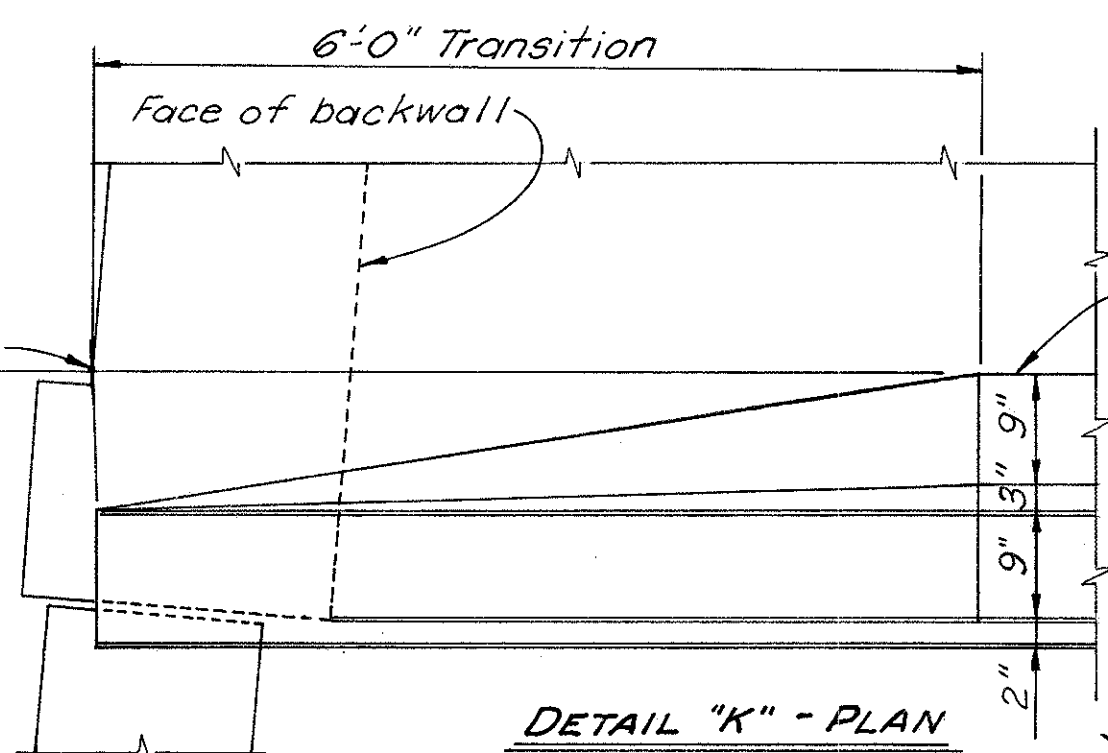
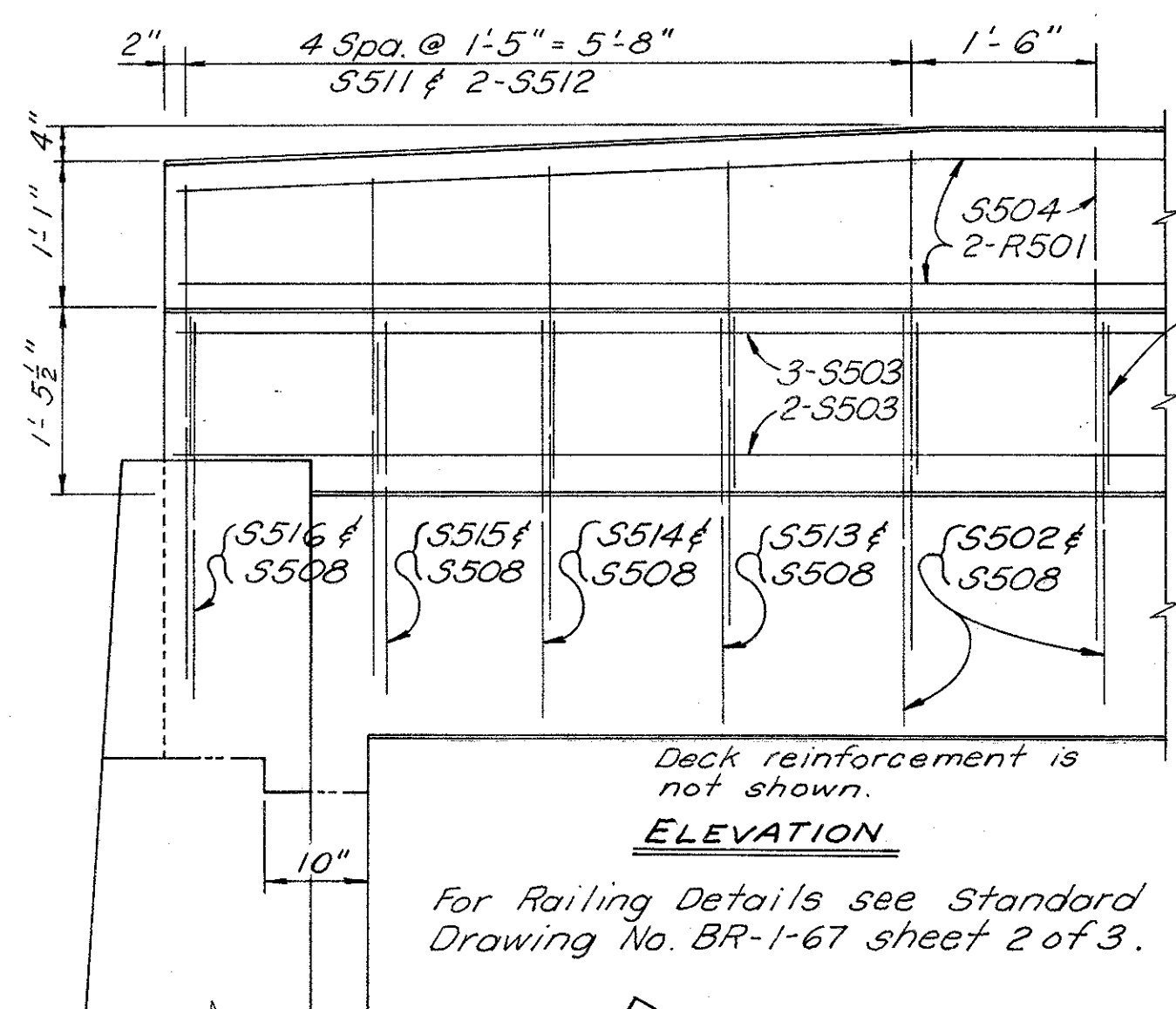
*ROADWAY FINISH: In lieu of the texturing specified in 511, the bridge deck shall be textured transversely to provide a relative uniform pattern of grooves spaced at approximately 3/4" centers. They shall be approximately 0.15" deep and 0.10" wide. A strip 9" to 12" wide adjacent to the curbs and barriers shall not be textured.*

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO							2/10
GENERAL NOTES AND ESTIMATED QUANTITIES BRIDGE NO. CUY-480-0930 I-480 OVER WEST BRANCH BIG CREEK CUYAHOGA COUNTY STA. 516+69.75 STA. 517+08.25							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
fwd			DL-NA 1/17/68	J.E.V.	9/23/68	7-17-78	

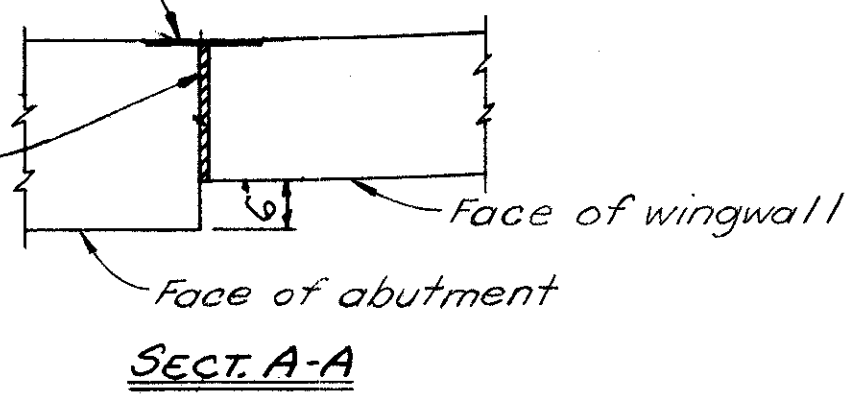
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

252  
346

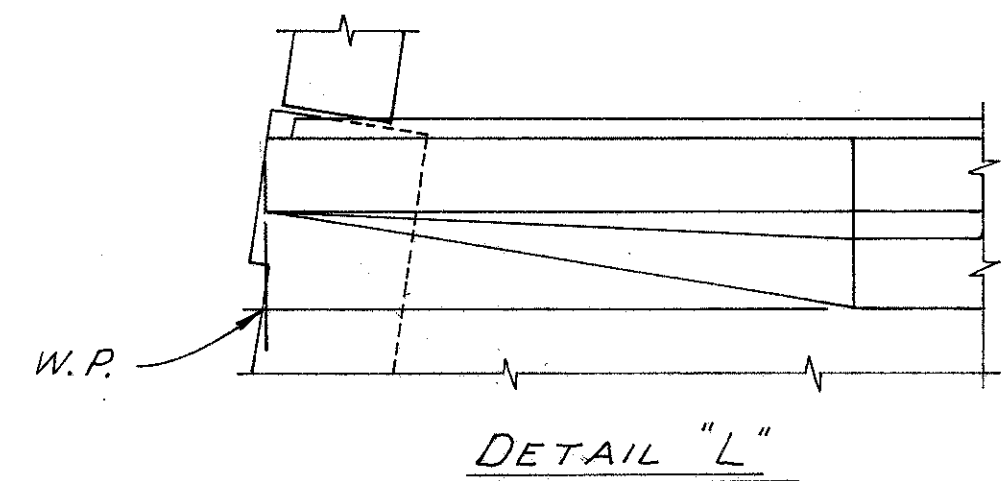
CUYAHOGA COUNTY  
CUY-480-8.54



Note: Place tar paper between underside of fascia and T/ wingwall.  
Premolded Sealing Strip in 13 3/4" recess as per Item 512, extending from top of footing to 6" below top of wingwall.



Note: Deflection Jt. filler material for the Median Barrier shall be the same as that for the railing parapet as listed on Std. Dwg. BR-1-67. For limits of same see Sht. 9/10. Include with Item 511 Class "C" Concrete Superstructure for payment.



NOTES:  
For pavement elevations see Roadway Plans.  
For Sections B~B and C~C, see Superstructure Details sheet 9/10

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO							3/10
GENERAL PLAN & ELEVATION BRIDGE N° CUY-480-0930 I-480 OVER WEST BRANCH BIG CREEK							
CUYAHOGA COUNTY STA. 516+69.75 STA. 517+08.25							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
fwd	G.T.R.		J.E.V.	J.E.V.	9/23/68		

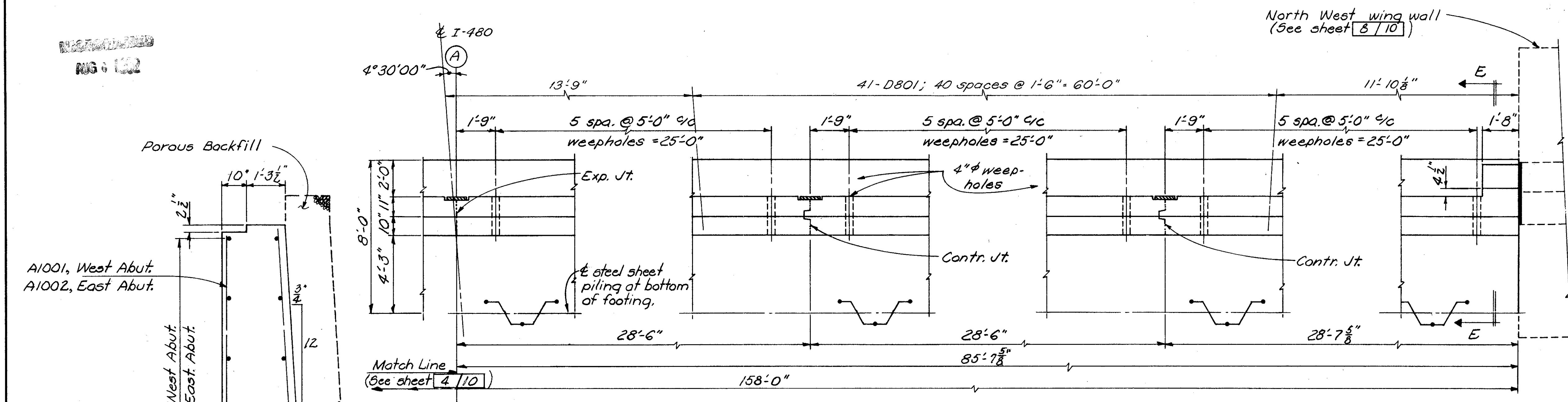




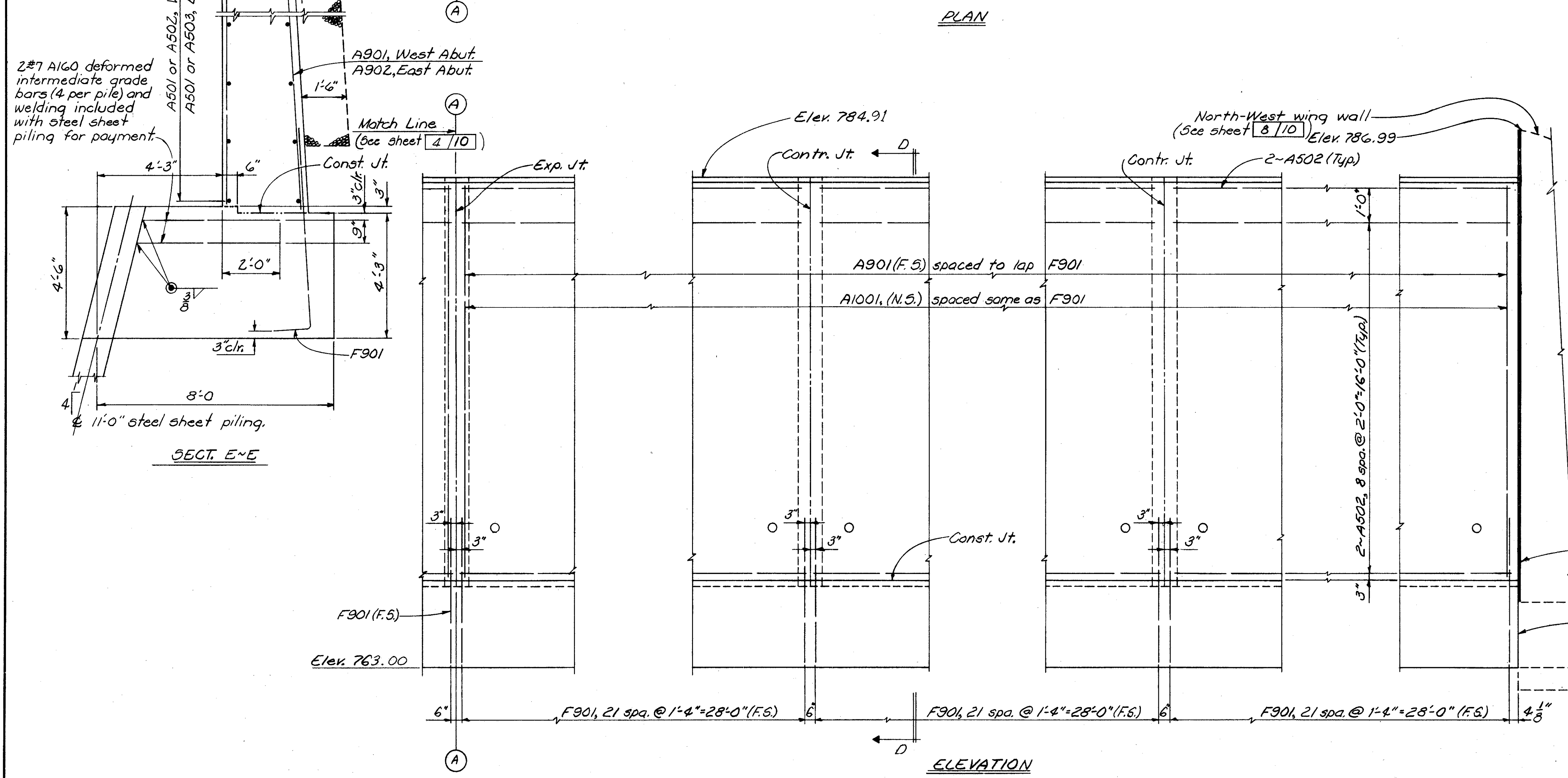
REG. NO. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

254  
346

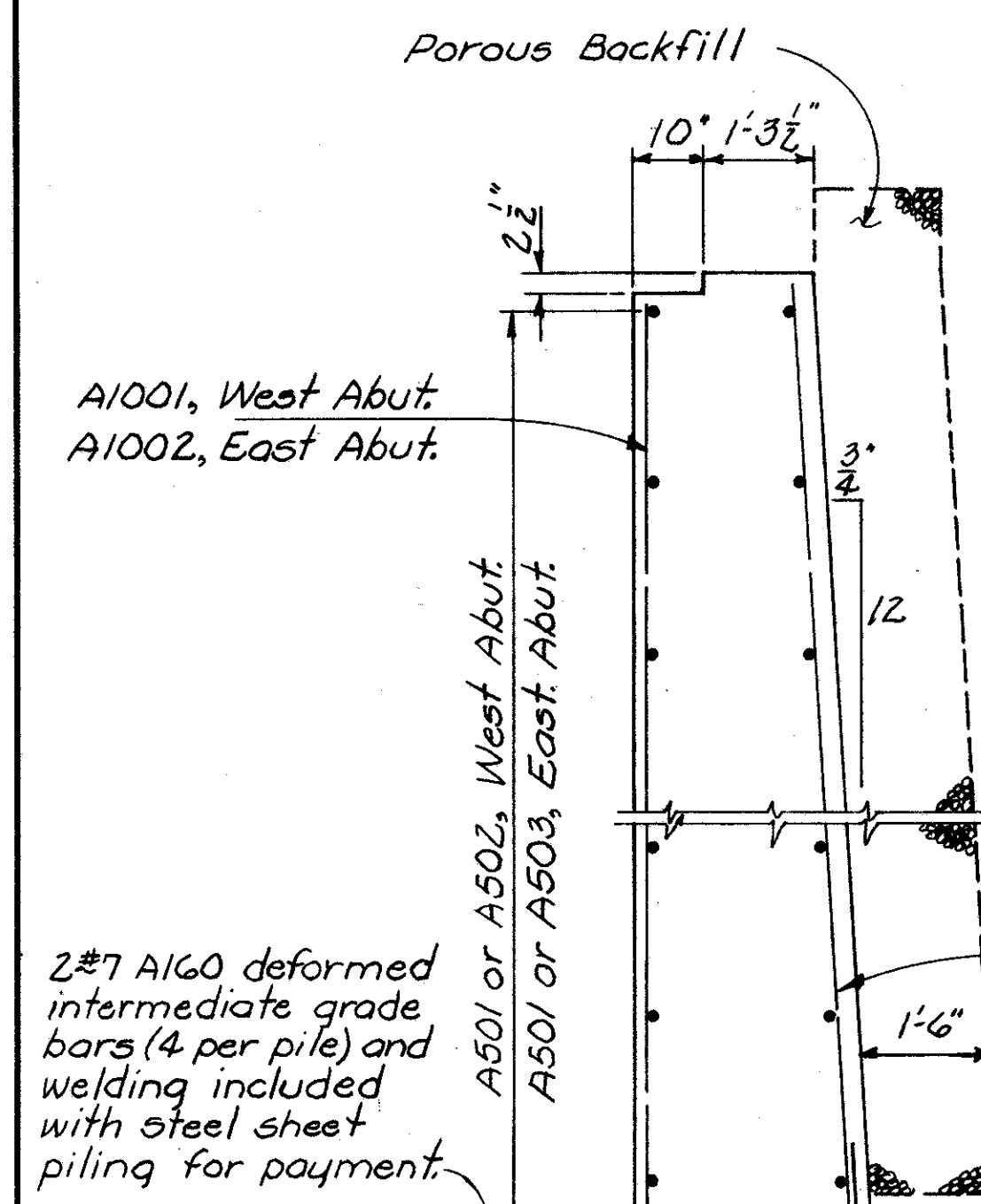
CUYAHOGA COUNTY  
CUI-480-8.54



PLAN



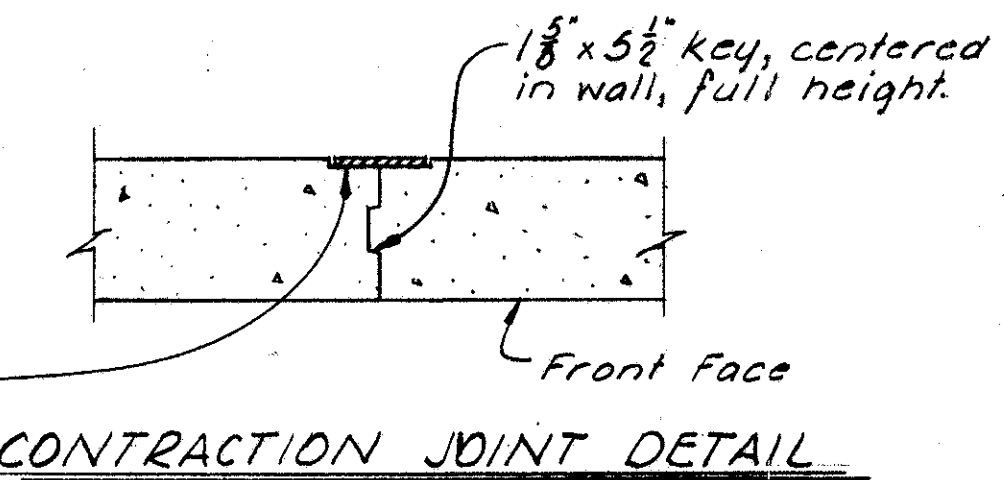
ELEVATION



SECT. E-E

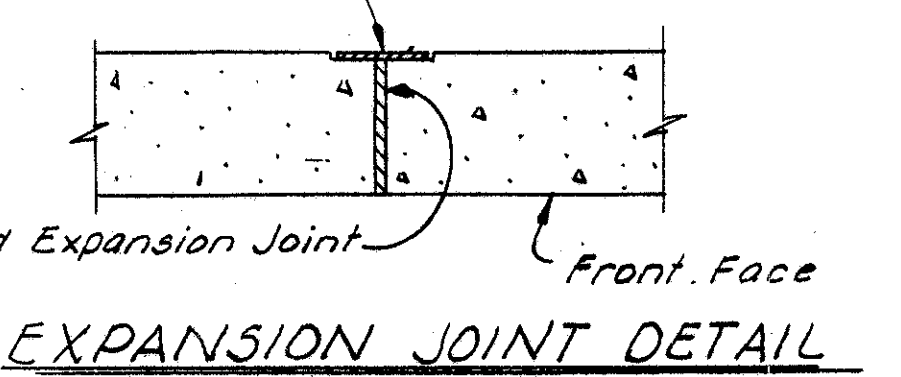
NOTES

- Reinforcing steel location; F.S.~ indicates far side. N.S.~ indicates near side.
- For additional details and notes see sheet 4/10



CONTRACTION JOINT DETAIL

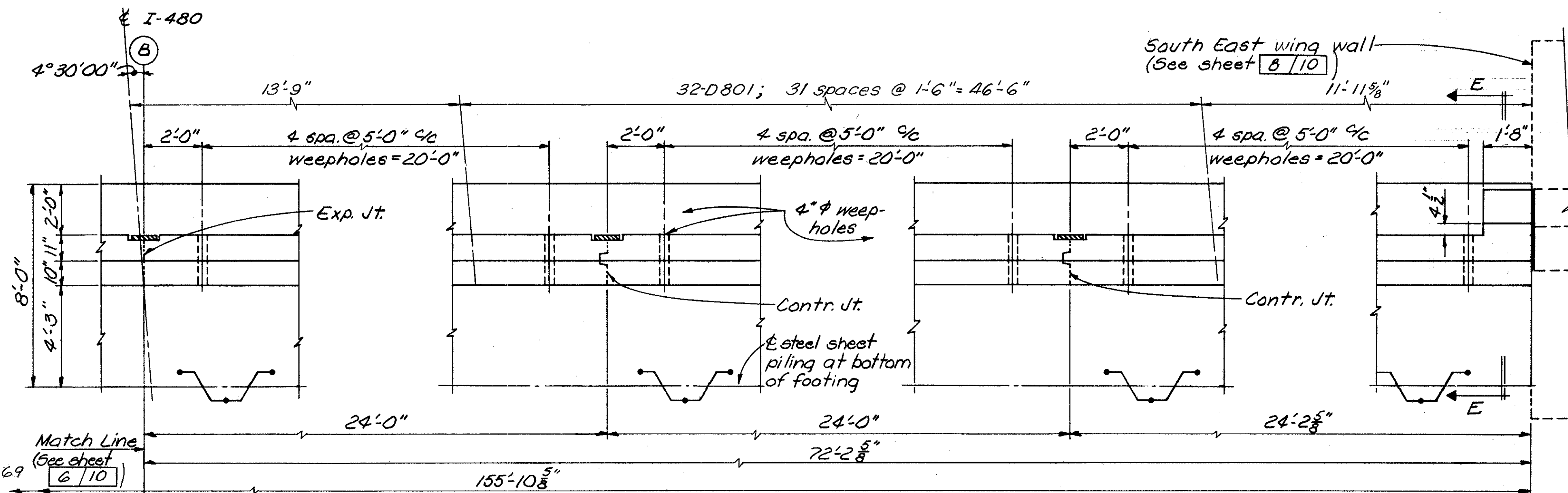
Premolded Sealing Strip in 1 1/2 x 3/4 recess as per Item 512 extending from top of footing to approach slab seat.



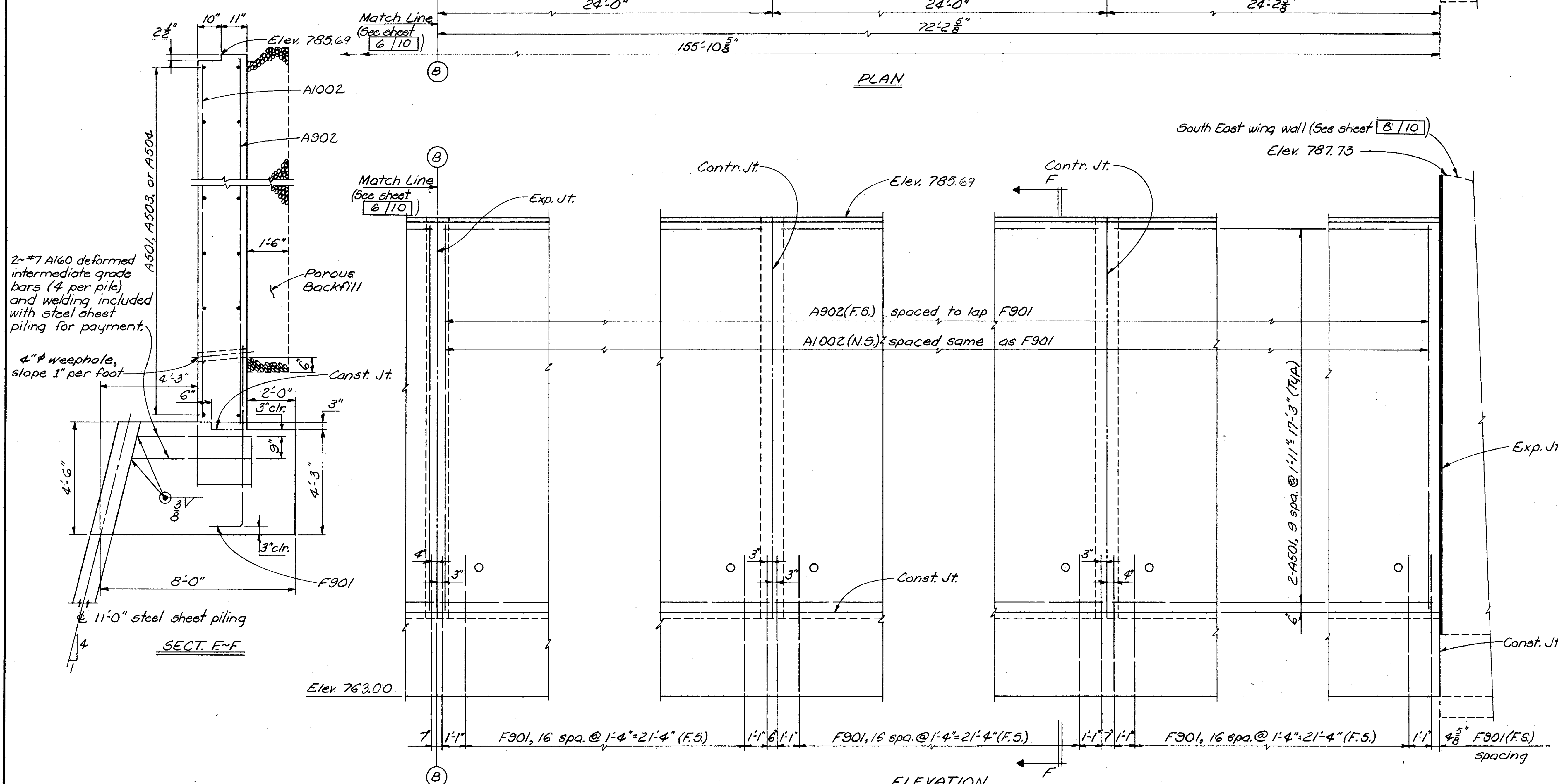
EXPANSION JOINT DETAIL

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						
						5/10
WEST ABUTMENT DETAILS BRIDGE NO CUY-480-0930 I-480 OVER WEST BRANCH BIG CREEK						
						STA. 516+69.75 STA. 517+08.25
CUYAHOGA COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
fnd	G.T.R.		J.E.V.	J.E.V.	9/24/68	





PLAN



ELEVATION



NOTES:

- Reinforcing steel locations: F.S.~ indicates for side, N.S.~ indicates near side
- For additional details and notes see sheet 6/10
- For Section E~E see sheet 5/10
- For expansion and contraction joint details, see sheet 5/10

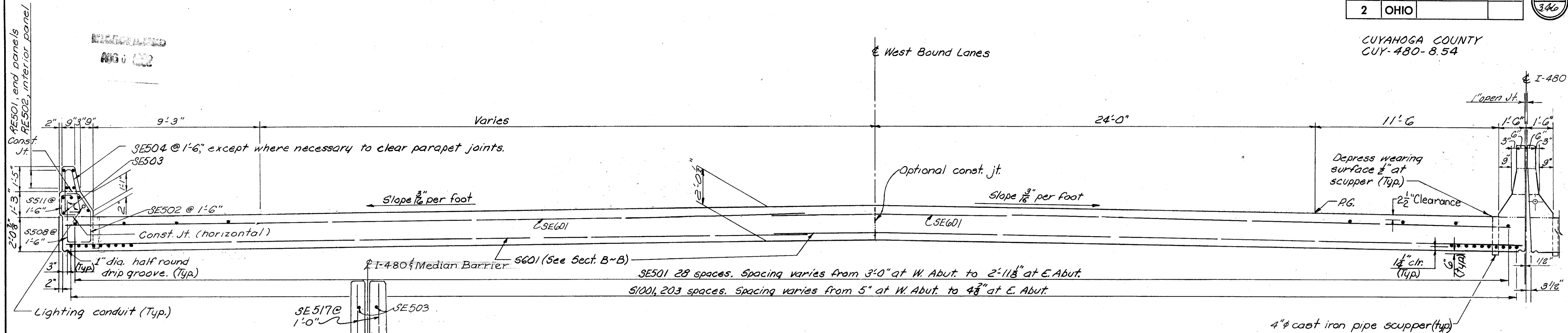
ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 7/10

EAST ABUTMENT DETAILS  
BRIDGE N<sup>o</sup> CUY-480-0930  
I-480 OVER WEST BRANCH BIG CREEK

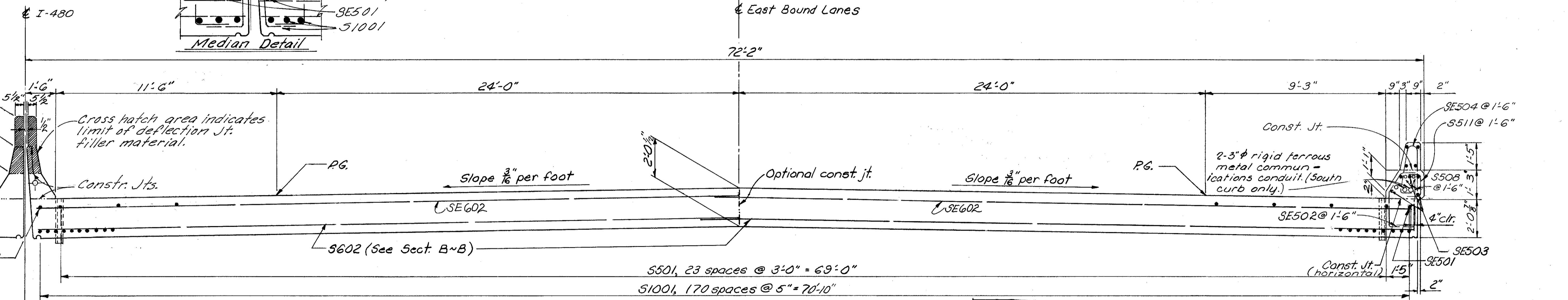
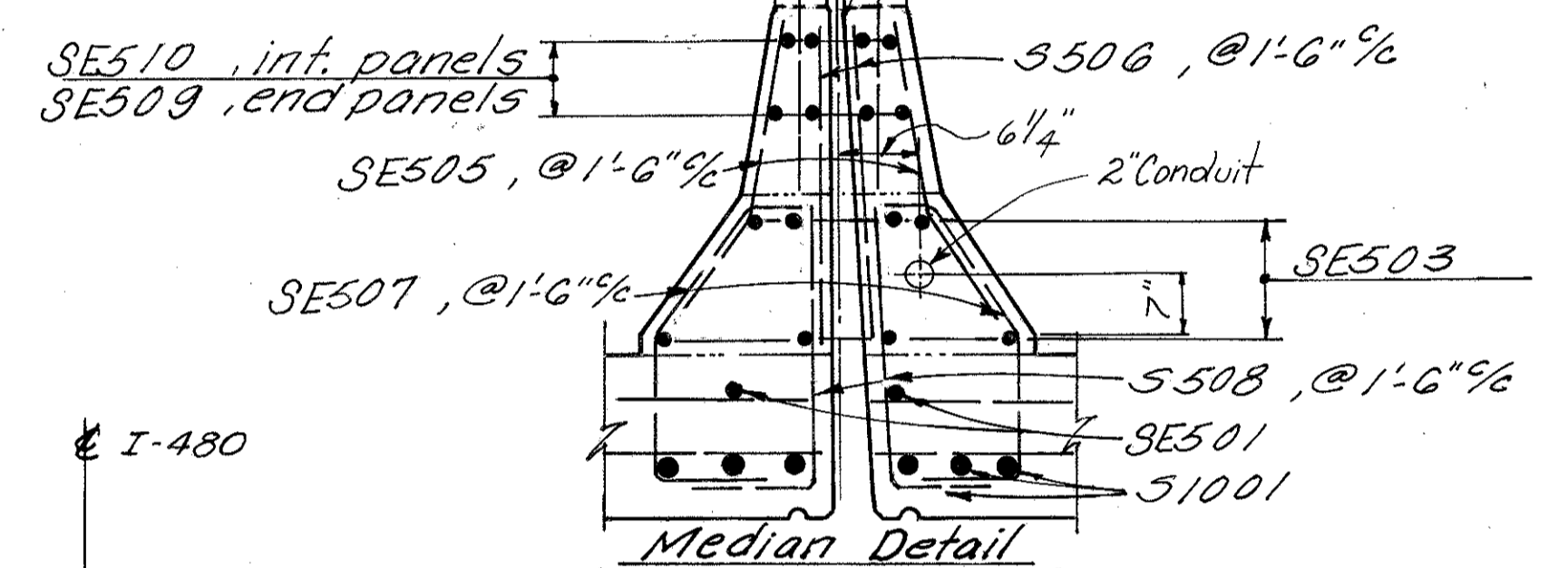
STA. 516+69.75  
CUYAHOGA COUNTY STA. 517+08.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
pnd	G.T.R.		J.E.V.	J.E.V.	9/23/68	



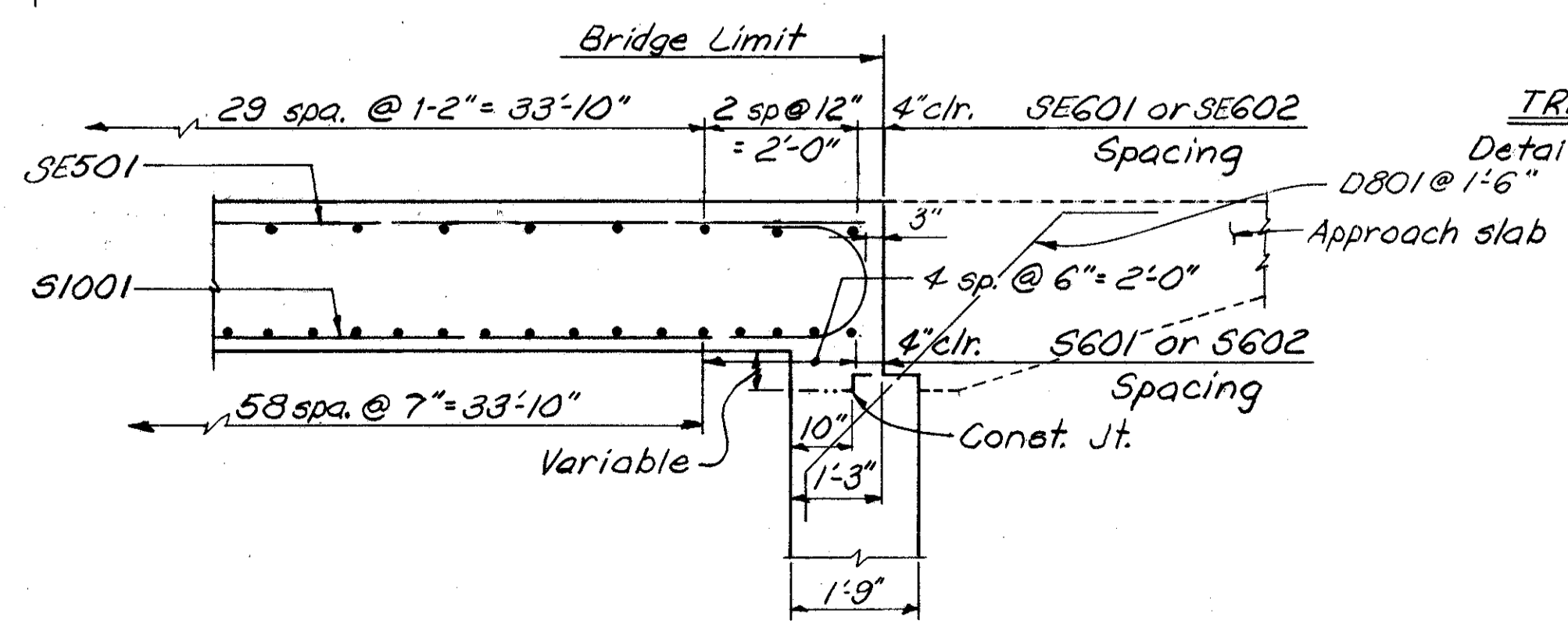


TRANSVERSE SECTION ~ WEST BOUND LANES



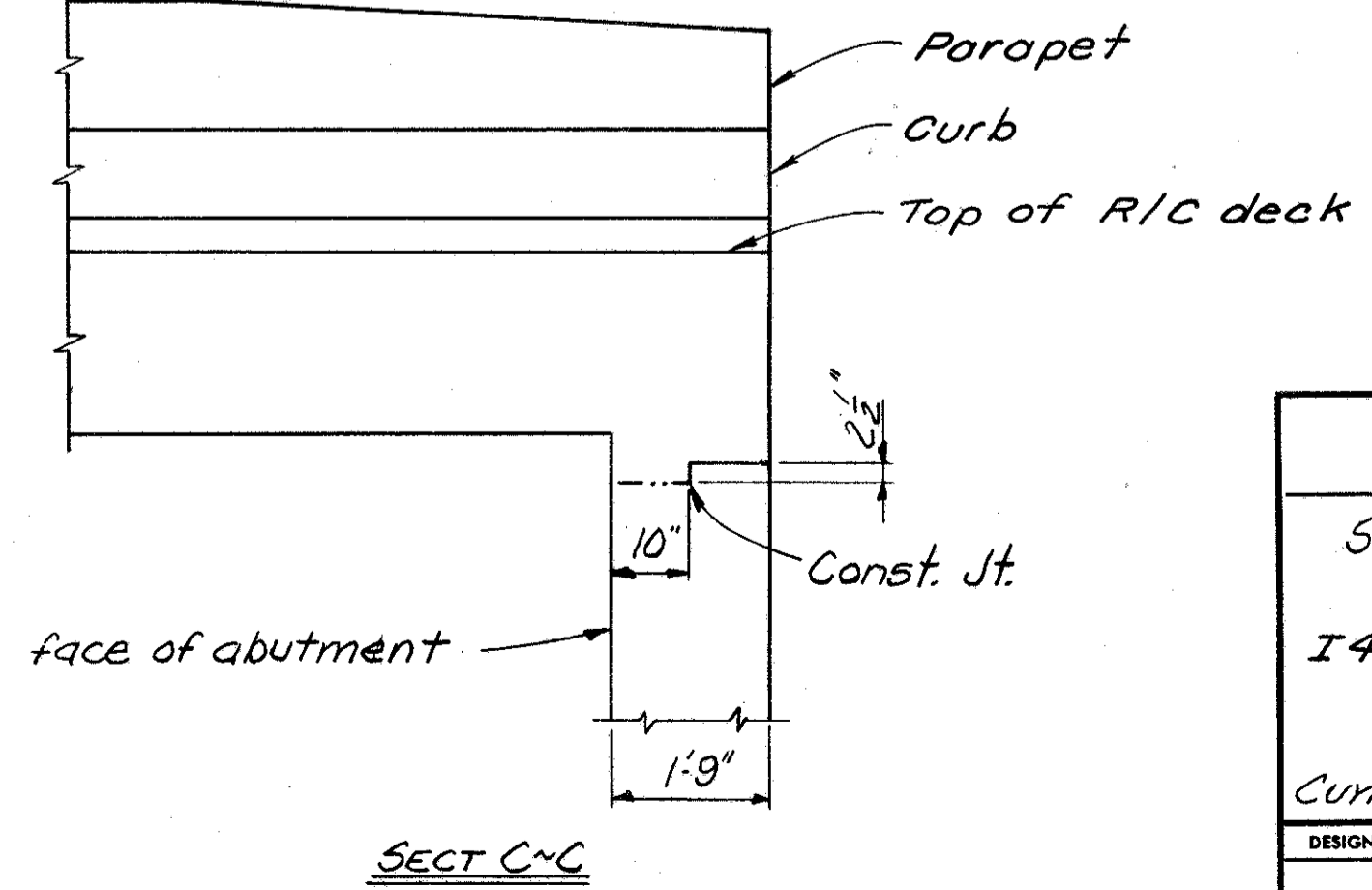
TRANSVERSE SECTION ~ EAST BOUND LANES

Details and dimensions not shown, same as West Bound Lane



SECT B-B  
Transverse Steel Spacing  
Typical at abutments

NOTES:  
Field bend transverse bars. Field bending to be included in Item 509 for payment.  
Deflection at center of span is 7/8"  
All conduits shall clear construction joints a minimum of 1". Clearance between conduits shall be a minimum of 2".



SECT C-C

Note: Longitudinal bars in curb and parapet same as these in left side.

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						
SUPERSTRUCTURE DETAILS BRIDGE N <sup>o</sup> CUY-480-0930 I-480 OVER WEST BRANCH BIG CREEK						
CUYAHOGA COUNTY						DATE
STA. 516+69.75						REVISED
STA. 517+08.25						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
fnd.	G.T.R.		J.E.V.	J.E.V.	9/23/68	

**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.

"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.

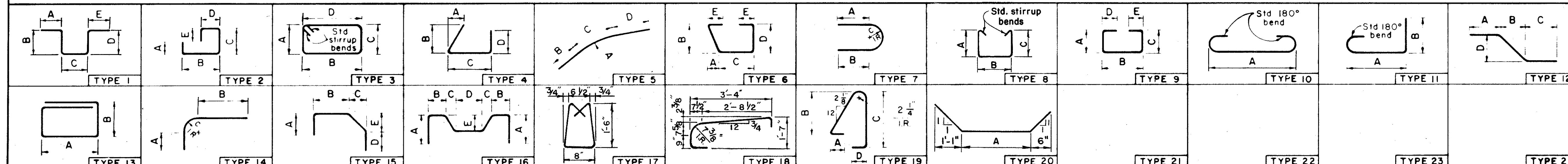
SPIRAL BARS SHALL NOT HAVE DEFORMATIONS BUT SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. 1/2" CLOSED COILS SHALL BE PROVIDED AT ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE, OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 LB. PER LIN. FT. OF SPACER SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG PERIPHERY OF COIL. WEIGHT OF SPACERS, AT 0.80 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	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE		
ABUTMENTS											WINGWALLS											( CONTINUED )												
F 901	244	7-7	6291	1	1-0	6-10					F 703	48	10-10	1063	4	0-6	10-0	1-0				W 508H	8	6-4	53	ST								
																						W 509	8	6-2	51	ST								
																						W 510A	2	6-10		ST							1	
A 501	120	23-8	2962	ST							W 501A	2	16-3	34	ST							THRU			165		VARY	LENGTH BY 1'-6 0/0"						
A 502	60	28-2	1763	ST							W 501B	2	17-7	37	ST							W 510G	2	15-10		ST							1	
A 503	20	28-8	598	ST							W 501C	2	18-11	39	ST							W 511A	2	7-8		ST							1	
A 504	40	27-0	1126	ST							W 501D	2	20-1	42	ST							THRU			178		VARY	LENGTH BY 1'-6 0/0"						
A 505	8	5-0	42	ST							W 501E	2	20-9	43	ST							W 511G	2	16-8		ST							1	
											W 501F	2	21-1	44	ST							W 512	8	39-0	325	ST								
											W 502A	2	17-1	36	ST							W 513	8	39-0	325	ST								
A 901	123	17-6	7318	ST							W 502B	2	18-5	38	ST							W 701	24	13-0	638	ST								
A 902	121	18-3	7508	ST							W 502C	2	19-9	41	ST								EPOXY COATED REINFORCING STEEL - SUPERSTRUCTURE											
											W 502D	2	20-10	43	ST																			
											W 502E	2	21-6	45	ST																			
A 1001	123	17-1	9042	ST							W 502F	2	21-10	46	ST																			
A 1002	121	17-10	9285	ST							W 503A	2	6-6		ST							1	SE 501	55	38-2	2189	ST							
D801	145	6'-10"	2646	20	4'-9"						THRU		128		VARY	LENGTH BY 1'-6 0/0"							SE 502	38	4-5	175	I5	0-7 1/2	2-1	0-11 1/2	2-9	0-9		
											W 503F	2	14-0		ST							1	SE 503	20	38-10	810	ST							
											W 503G	2	15-1	31	ST								SE 504	34	5-8	201	I9	0-7 1/2	2-7	2-4				
											W 503H	2	16-7	35	ST								SE 505	54	2-3	127	I2	1-5	0-9	0-6				
											W 503I	2	18-1	38	ST								SE 507	54	4-3	239	I5	0-9	2-1	0-11 1/2	0-6	0-9		
											W 503J	2	19-7	41	ST								SE 509	16	13-8	228	ST							
											W 503K	2	20-5	43	ST								SE 510	8	11-2	93	ST							
											W 503L	2	20-10	43	ST								SE 517	78	2-9	224	ST							
											W 504A	2	7-5		ST							1	RE 501	16	13-8	228	ST							
											THRU		140		VARY	LENGTH BY 1'-6 0/0"							RE 502	8	11-2	93	ST							
											W 504F	2	14-11		ST							1	SE 601	68	43-5	4434	ST							
											W 504G	2	16-0	33	ST								SE 602	68	36-7	3736	ST							
											W 504H	2	17-6	37	ST								SUPERSTRUCTURE											
											W 504I	2	19-0	40	ST								S511	54	2-2	122	I	0-7 1/2	1-2	0-7 1/2				
											W 504J	2	20-6	43	ST								S512	40	4-0	167	ST							
											W 504K	2	21-4	45	ST								S513	4	4-3	18	I5	0-7 1/2	2'-1"	0-7 1/2	0-9	0-6		
											W 504L	2	21-7	45	ST								S514	4	4-2	17	I5	0-7 1/2	2-1	0-7 1/2	0-9	0-4		
											W 505	8	5-3	44	ST								S515	4	4-1	17	I5	0-7 1/2	2-1	0-7 1/2	0-9	0-2		
											W 506	24	35-4	884	ST								S516	4	3-8	15	I1	3-1						
											W 507A	8	32-11		ST							1	S506	54	2-6	141	ST							
											THRU		1222		VARY	LENGTH BY 4'-0 0/0"							S508	108	3-6	394	2	2-11	0-9					
											W 507G	8	8-11		ST							1	S601	134	43-5	8738	ST							
											W 507H	8	4-0	33	ST								S602	134	36-7	7363	ST							
											W 508A	8	34-6		ST							1	S1001	375	40-10	65890	I0	38-0						
											THRU		1314		VARY	LENGTH BY 4'-0 0/0"																		
F 701	64	6-2	807	ST							W 508G	8	10-6		ST							1												
F 702	48	4-10	474	4	0-3	4-0	1-0																											

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.

**BAR SIZE DESIGNATION**  
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE 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**



10/10

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

**REINFORCING STEEL LIST**  
Bridge No. CUY-480-0930  
I-480 over West Branch Big Creek

Cuyahoga County Sta. 516 + 69.75  
Sta. 517 + 08.25

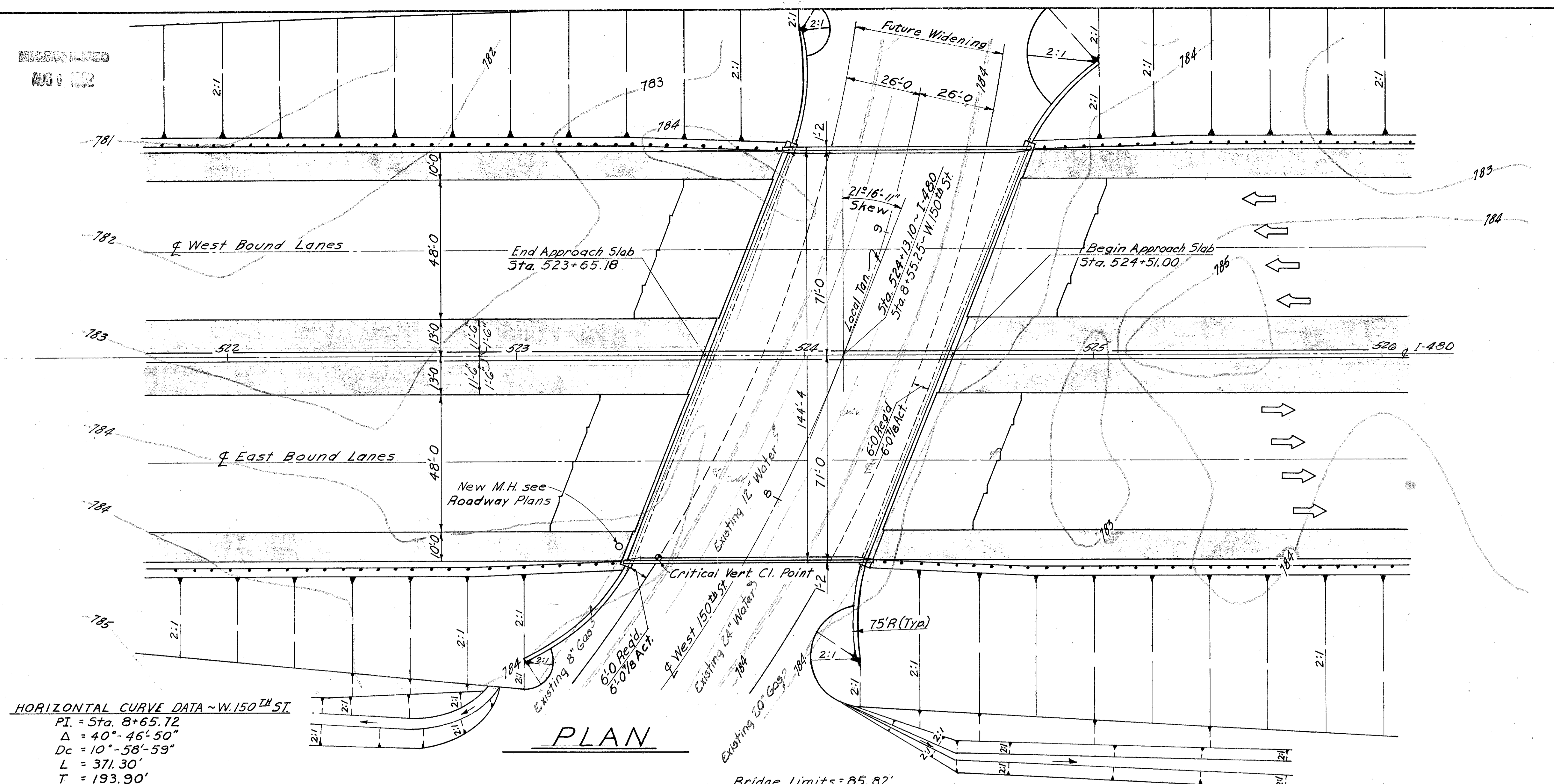
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
				J.E.V.	J.E.V. 9/23/68	

fwd

REVISIONS  
NO. 1 102

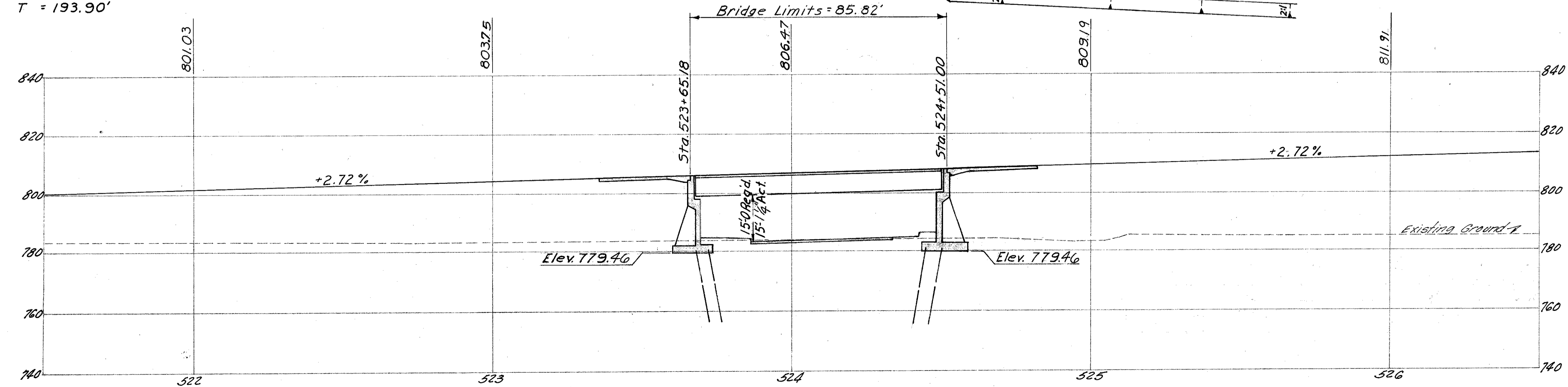
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-8.54



**HORIZONTAL CURVE DATA ~ W. 150<sup>TH</sup> ST.**  
 PI = Sta. 8+65.72  
 $\Delta = 40^\circ - 46' - 50''$   
 $D_c = 10^\circ - 58' - 59''$   
 $L = 371.30'$   
 $T = 193.90'$

**PLAN**



**PROFILE ALONG E I-480**

**PROPOSED STRUCTURE**  
 TYPE: Simple span steel girder with reinforced concrete deck and reinforced concrete substructure.  
 SPAN: 81'-0" 1/4 brg's  
 ROADWAY: 142'-0" 3/4 parapets with Conc. Median Barrier  
 LOADING: C.F-2000 (1957) Adequate for AASHTO alternate loading.  
 SURFACE COURSE: Monolithic Concrete.  
 SKEW: 21°-16'-11" Left forward  
 ALIGNMENT: Tangent  
 APPROACH SLABS: AS-1-72, 30' long (Modified)

All piles are HP10x42 steel piles. Estimated average pile pay length shall be 25'-0".  
 Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections.

**TRAFFIC ESTIMATE**  
 Design Year - 1987  
 Total A.D.T. - 82,716

Scale in Feet 1/20

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

**SITE PLAN**  
 BRIDGE NO CUY-480-0943  
 I-480 OVER W. 150<sup>TH</sup> ST.

CUYAHOGA COUNTY STA. 523+65.18  
 STA. 524+51.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
ANA	ANA		HT	G.W.M.	4/14/69	



GENERAL NOTES

D.R.S. 4-5-78

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

261  
346

CUYAHOGA COUNTY  
CUY.-480-8.54

**ESTIMATED QUANTITIES**

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	WINGWALLS	SUPER	GENERAL
503	1007	C.Y.	UNCLASSIFIED EXCAVATION	702	305		
506	LUMP	SUM	PILE TEST LOAD				LUMP
505	LUMP	SUM	TEST PILE				LUMP
506	1	EACH	SUBSEQUENT PILE TEST LOAD				1
507	4675	L.F.	STEEL PILES, HP 10 X 42	3600	1075		
509	188,190	LB	REINFORCING STEEL	111,284	21074	55,832	
SPECIAL	45,589	LB	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)	150		45,439	
511	382	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			382	
511	607	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	607			
511	543	C.Y.	CLASS C CONCRETE, FOOTINGS	395	148		
511	197	C.Y.	CLASS C CONCRETE, WALLS		197		
512	39	S.Y.	TYPE B WATERPROOFING	39			
512	237	L.F.	PREMOLDED SEALING STRIP	192	45		
513	396700	LB	STRUCTURAL STEEL, PRIMER PER 846 (SEE PROPOSAL NOTES)			396700	
846	396700	LB	FIELD PAINTING OF STRUCTURAL STEEL			396700	
516	8	S.F.	1/2 INCH PREFORMED EXPANSION JOINT FILLER	8			
516	239	S.F.	1 INCH PREFORMED EXPANSION JOINT FILLER	239			
838	3	HOUR	SPECIAL PILE TESTS				3
518	618	C.Y.	POROUS BACKFILL	496	122		
518	192	L.F.	8 INCH PERFORATED CSP AND CAP 707.01	192			
S 625			SEE SHEET 203 FOR LIGHTING SUMMARY				
808	382	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B or D			382	

REFERENCES:

- Standard Drawings:
- End Dam, End Crossframe & Scuppers SD-1-69, Sheets 1, 2, & 3 Dated 6-12-69
  - Railing Details BR-1-67 Sheets 1 & 3 Revised 10-15-71
  - Rocker & Bolster Details RB-1-55, Revised 2-2-59
  - Approach Slab Details AS-1-72 Dated 6-30-72
  - Lighting Conduit in Abutments HL-5 Dated 4-6-73
  - Underpass Lighting Structure Grounding HL-6 Revised 1-21-76
  - Supplemental Specifications: HL-7 Revised 1-21-76
  - Chemical Admixtures For Concrete 808, Dated 1-1-71
  - Concrete Curing & Protective Membrane 836, Dated 3-12-75
  - Special Pile Tests 838 Dated 1-13-77
  - Common Details:
    - Contraction Joints Sheet 328
    - Expansion Joints Sheet 328
    - Rustication Grooves Sheet 328

**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-2000 (57)
- Concrete, Class "C": Unit Stress - 1200 p. s. i. for superstructure  
Unit Stress - 1333 p. s. i. for substructure
- Structural Steel, ASTM A-36: Basic Unit Stress - 20,000 p. s. i.
- Reinforcing Steel, ASTM A615, A616 or A617: Unit Stress = 20,000 p. s. i.
- Earth Retaining Structures:
  - Equivalent Active Fluid Pressure = 40 p. s. f.
  - Ultimate Equivalent Passive Fluid Pressure = 230 p. s. f.

**EMBANKMENT:** Before the backwall is constructed, the embankment shall be constructed to the level of the subgrade, with a 1:1 slope from the bridge seat to the subgrade for a minimum distance of 200 feet back of the abutments.

**PILES** shall be driven to a minimum bearing capacity of 45 tons per pile for the abutments and wingwalls.

**UTILITY LINES:** All labor and expenses involved in relocating the affected utility lines shall be borne by the Owners. The Contractor and the Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

*Type B Waterproofing may be used in lieu of Premolded Sealing Strip.*

**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

DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, TOP MAT ONLY.  
MONOLITHIC WEARING SURFACE THICKNESS IS ASSUMED FOR DESIGN PURPOSES TO BE 1".

**STRIATED CONCRETE**  
The desired type of concrete finish may be obtained by using "Weldwood Formtex B" concrete form panels as manufactured by the U.S. Plywood Corporation or an approved equal.

ROADWAY FINISH: See Sheet No. 251.

*LAPS: Minimum bar lap shall be 30 diameters.*  
*ATTACHMENTS OF GUARDRAIL TO CONCRETE PARAPETS: Concrete insert anchor assemblies per standard construction drawings GA-3 and GA-7 shall be placed during parapet construction.*

*PREFORMED BEARING PADS: In lieu of the hardness requirement of 711.21, preformed bearing pads shall have a Shore A durometer of 80±10.*

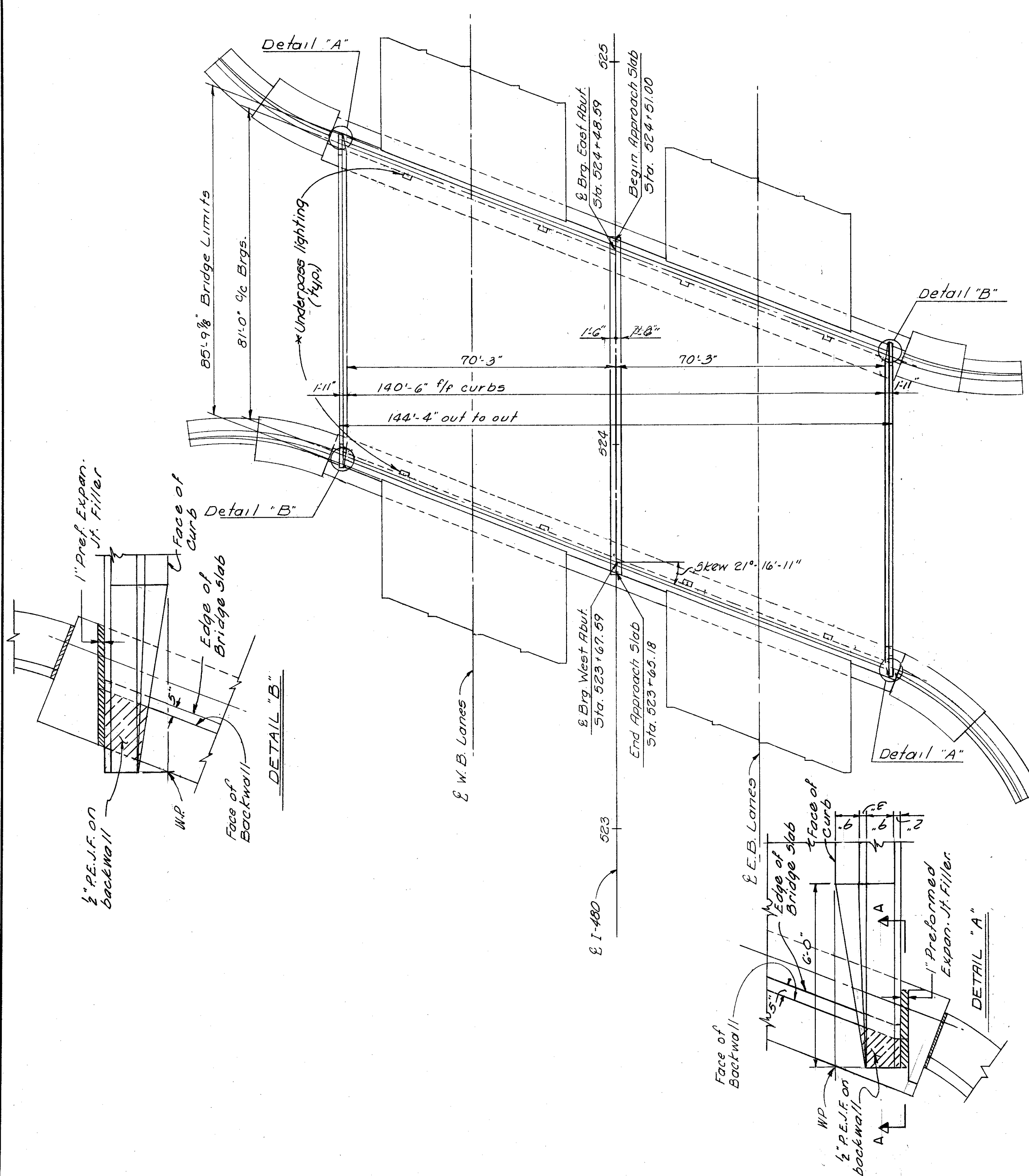
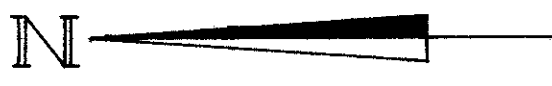
ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 2/20

**GENERAL NOTES AND ESTIMATED QUANTITIES**  
BRIDGE NO. CUY-480-0943  
1480 OVER W. 150th ST.  
CUYAHOGA COUNTY STA. 523+65.18  
STA. 524+51.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
ANA			TJ	G.W.M.	4/14/78	7/7/78

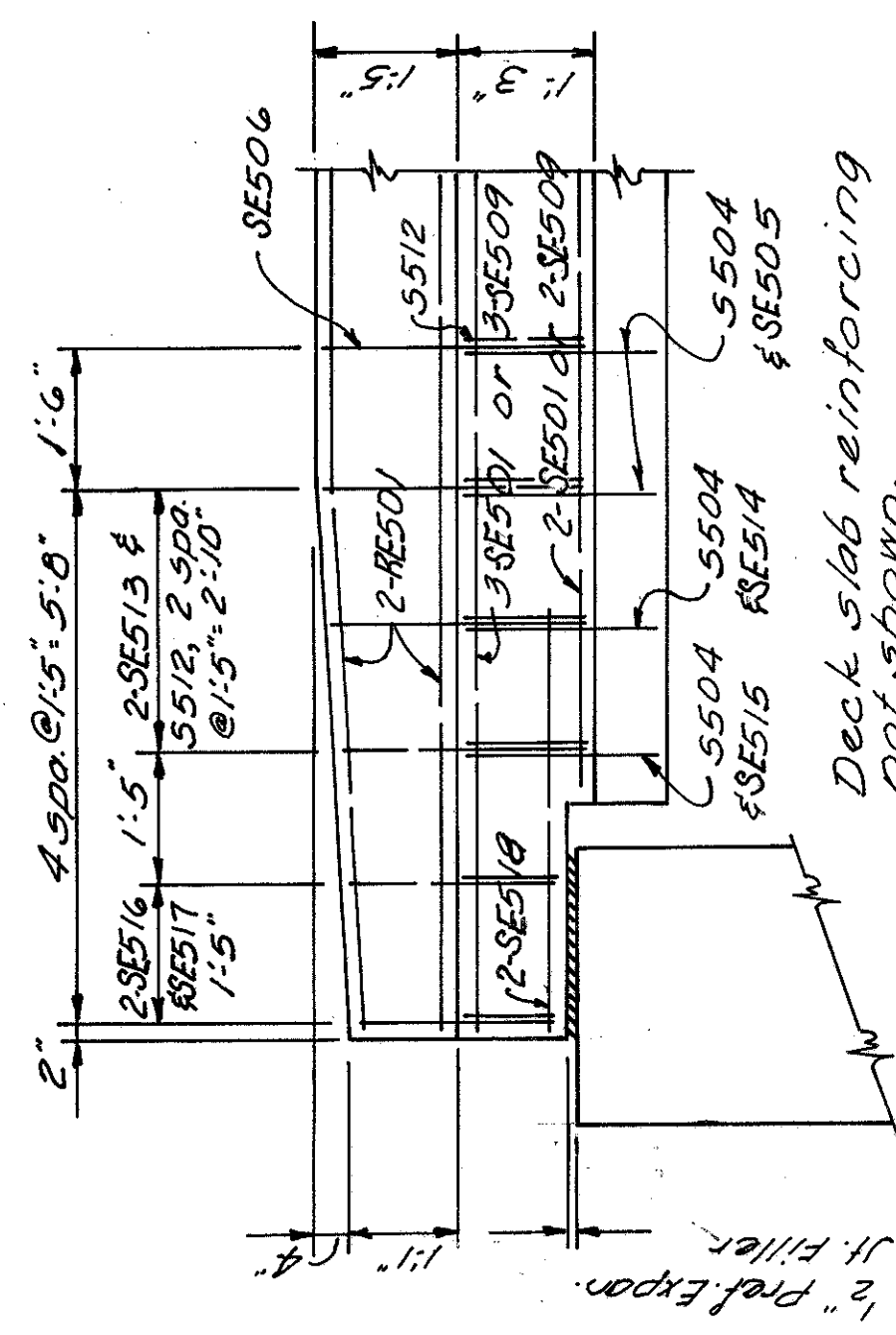
Rev 4-12-78

REVISIONS  
AUG 1978



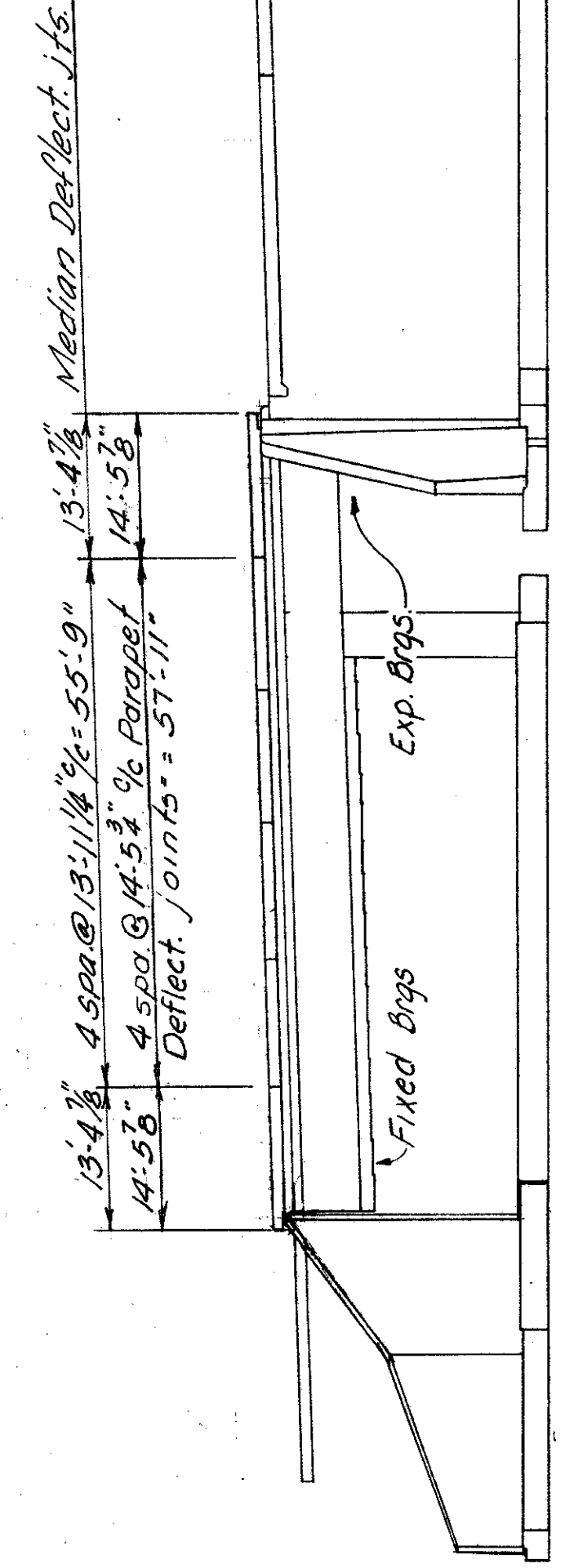
GENERAL PLAN

Note:  
\*For location and details of underpass lighting see sheet N<sup>o</sup> 215.



ELEVATION A-A

For additional parapet details see Std. Dwg. BE-1-67 Sht. No. 1 of 3.



GENERAL ELEVATION

Note:  
Deflection jt. filler material for the Barrier Median shall be the same as that for the railing parapets as listed on Std. Dwg. BR-1-67. For limits of same see Sht. 14/20. Include with Item 511 Class "C" concrete superstructure for payment.

- Modify Std. Dwg. AS-1-72 as follows:
- Dimension N = 48'-0"
  - Change clearance for top reinforcing steel to 3" from 2".
  - Jacking holes shall be omitted.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-8.54

262  
346

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	J.E.K.		pwa	G.W.M.	7/17-78	

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

GENERAL PLAN AND ELEVATION

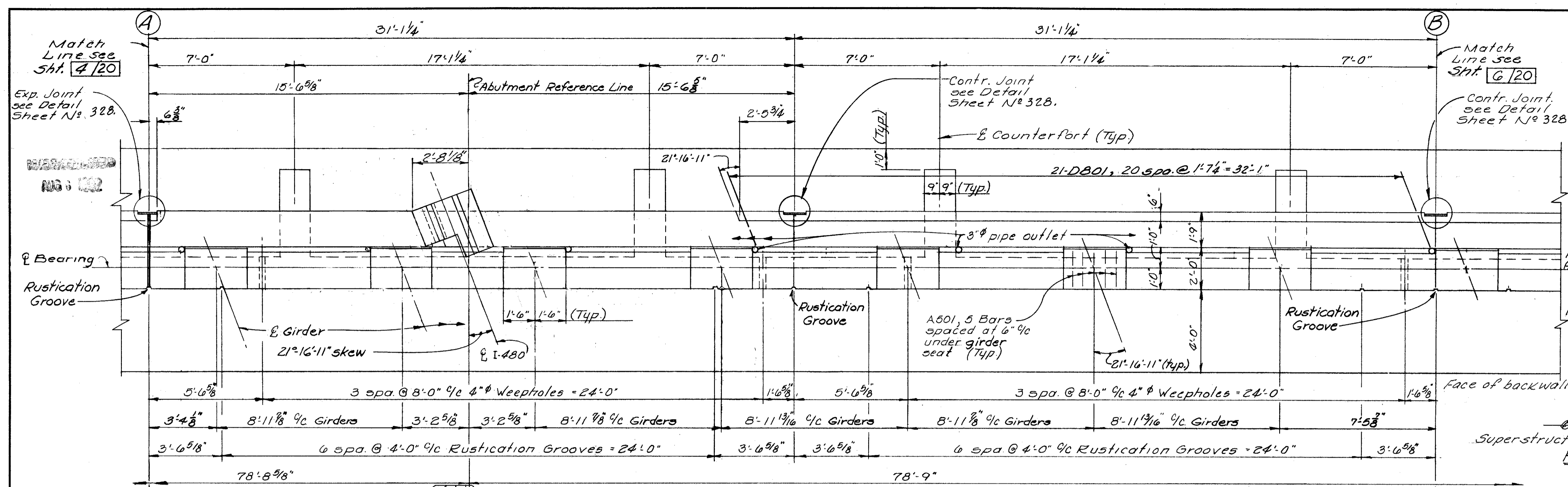
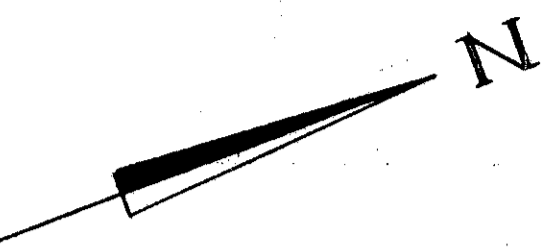
BRIDGE N<sup>o</sup> CUY-480-0943  
1480 OVER WEST 150<sup>th</sup> ST.

CUYAHOGA COUNTY STA. 523+65.18  
STA. 524+51.00

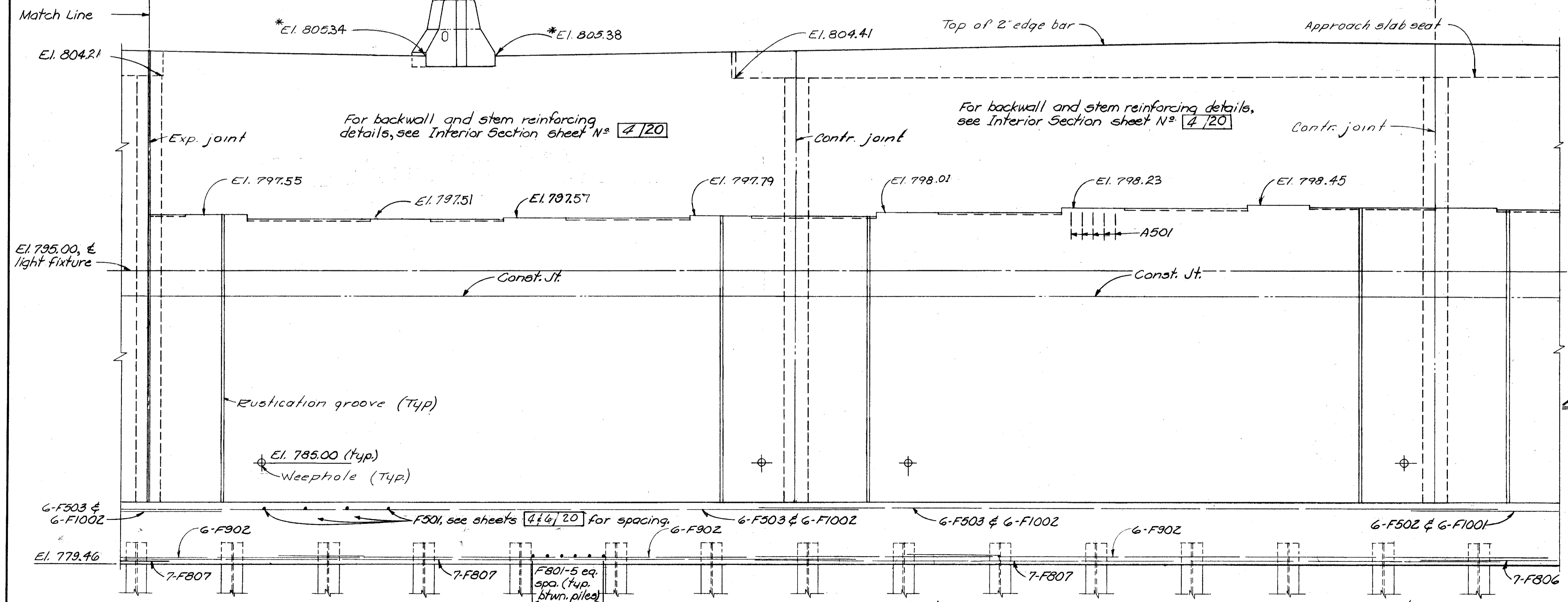
3/20



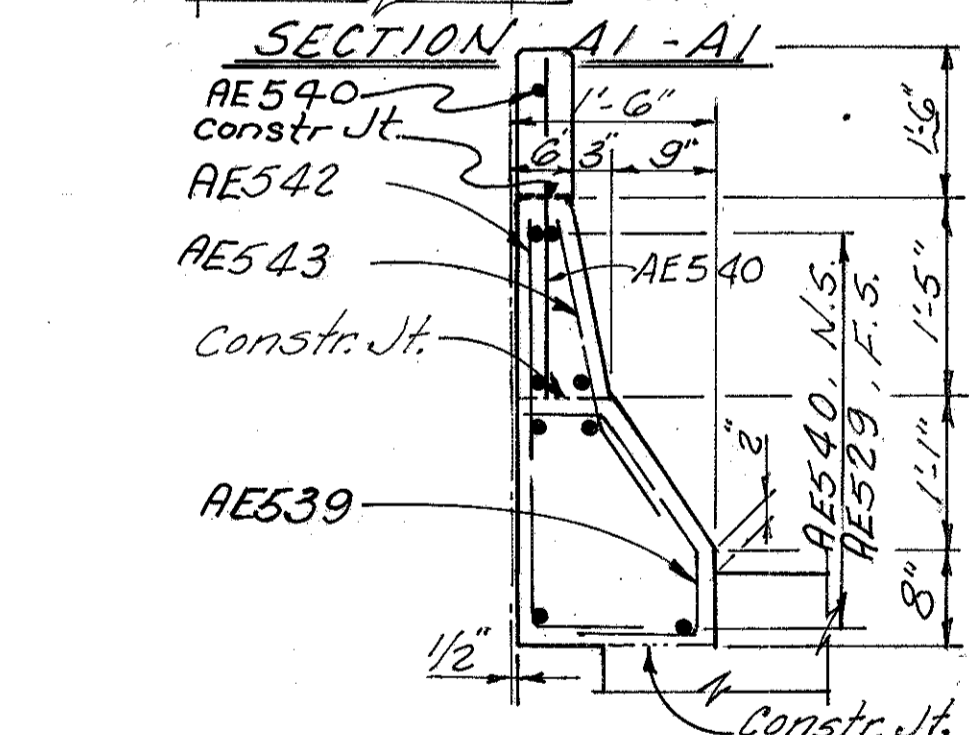
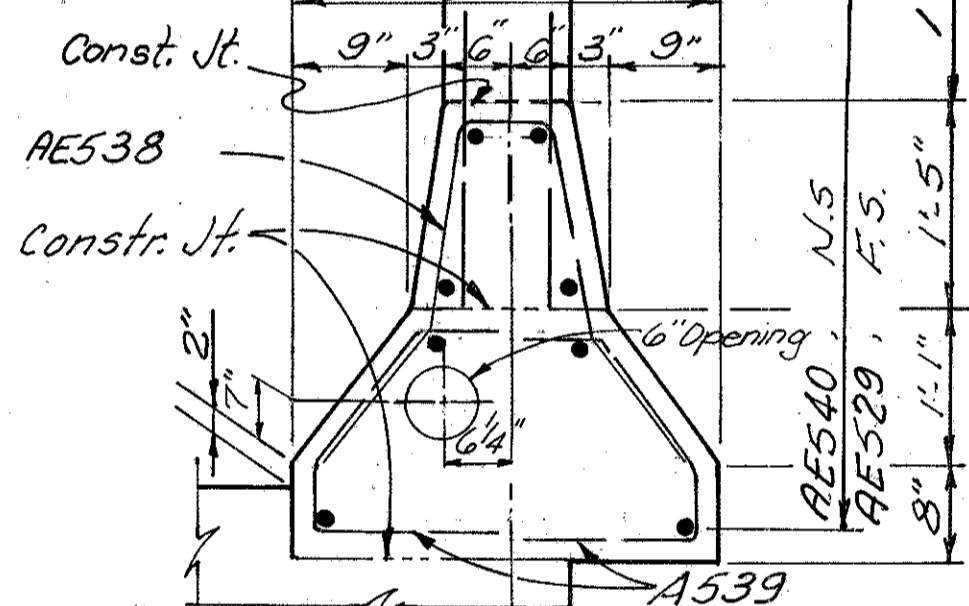
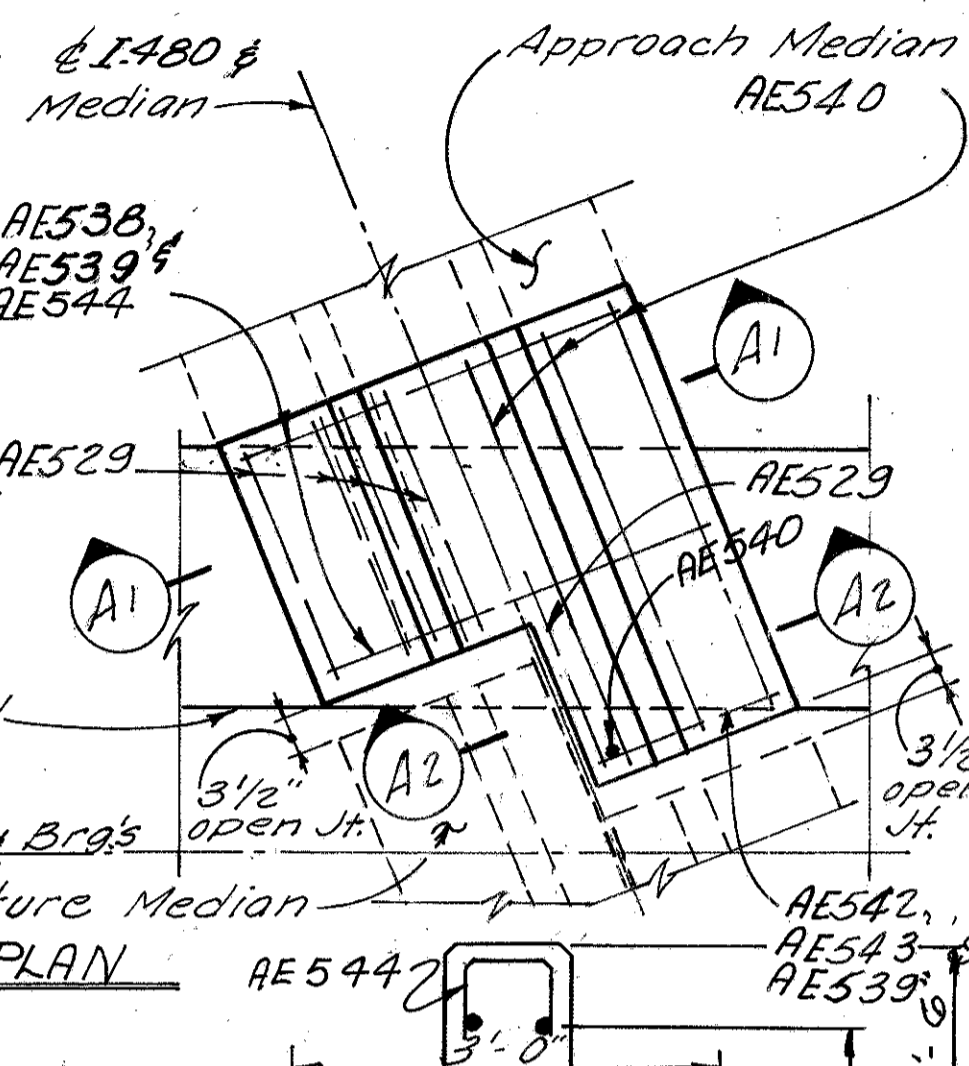
CUYAHOGA COUNTY  
CUY. 480-8.54



PARTIAL PLAN (Piles not shown)



PARTIAL ELEVATION



SECTION A1-A1  
SECTION A2-A2  
ABUTMENT MEDIAN DETAILS

NOTE: Median curb plates not shown. For details see Std. Dwg. SD-1-69, Sheet 2.

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO					5/20
WEST ABUTMENT DETAILS					
BRIDGE N <sup>o</sup> CUY-480-0943 I-480 OVER WEST 150 <sup>th</sup> ST					
CUYAHOGA COUNTY STA. 523+65.18 STA. 524+51.00					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
WT	J.E.K.		ANA	G.W.M.	4/14/69
					7-17-78











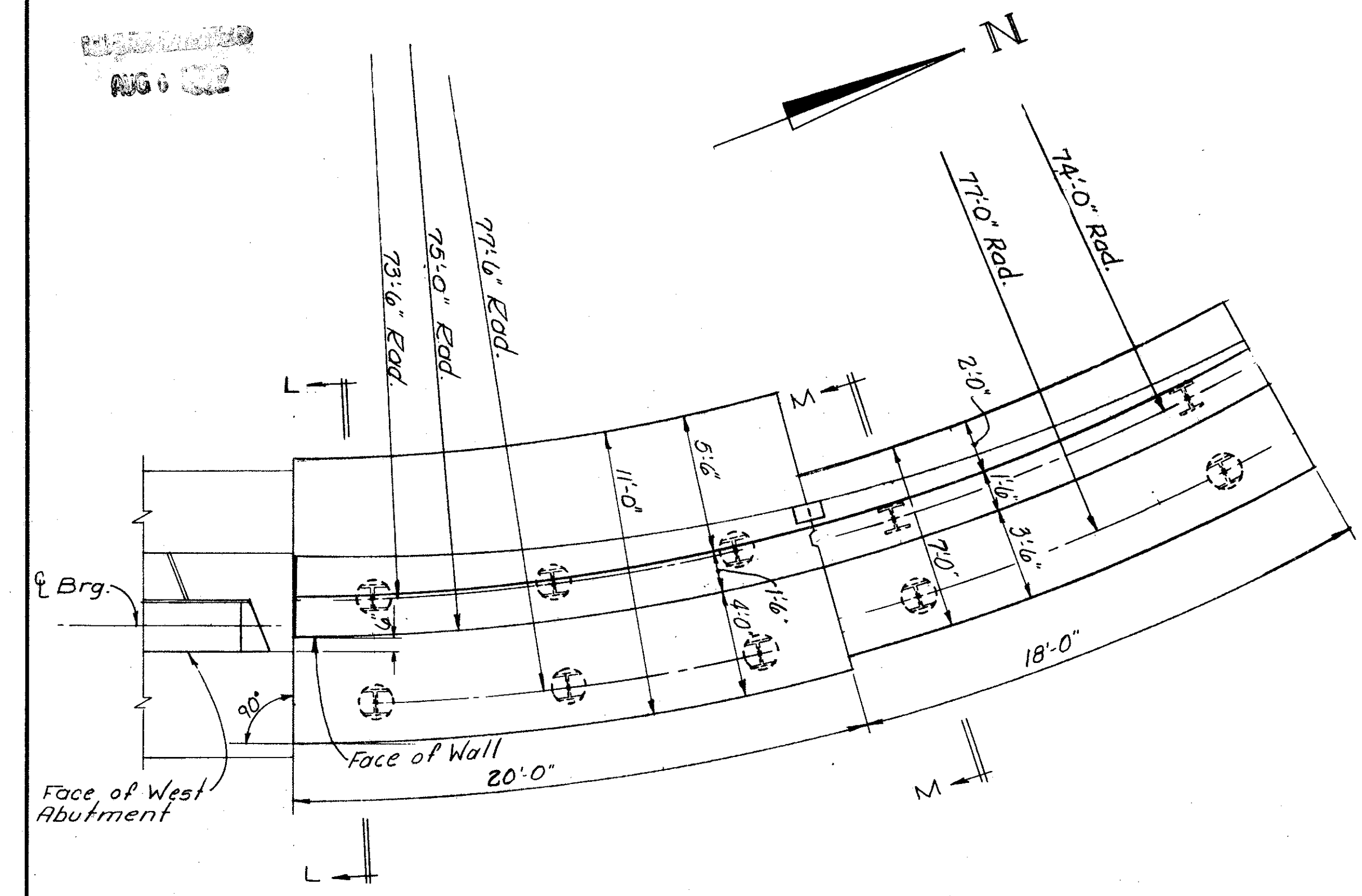
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-854

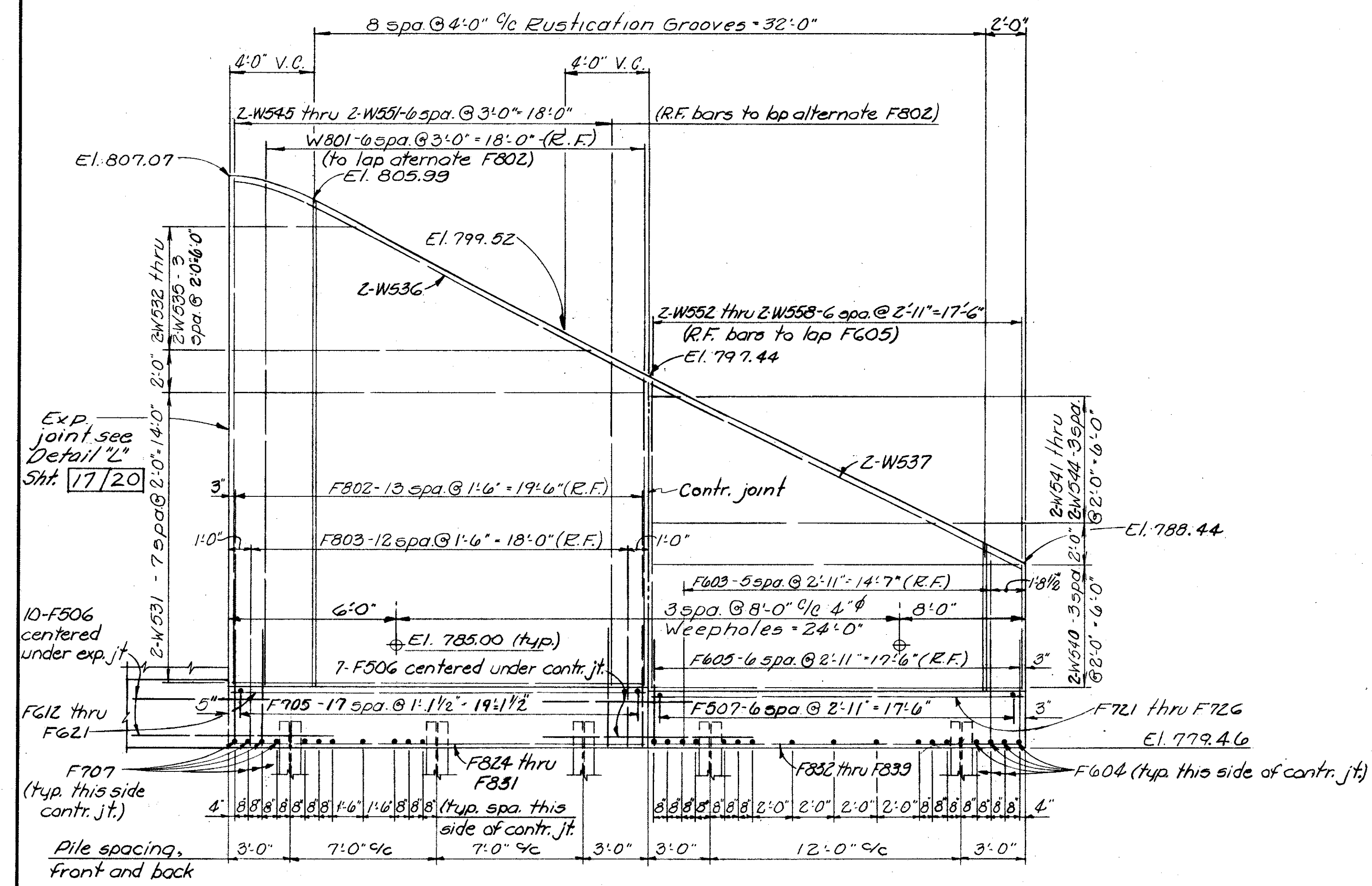
269  
346

**NOTES**

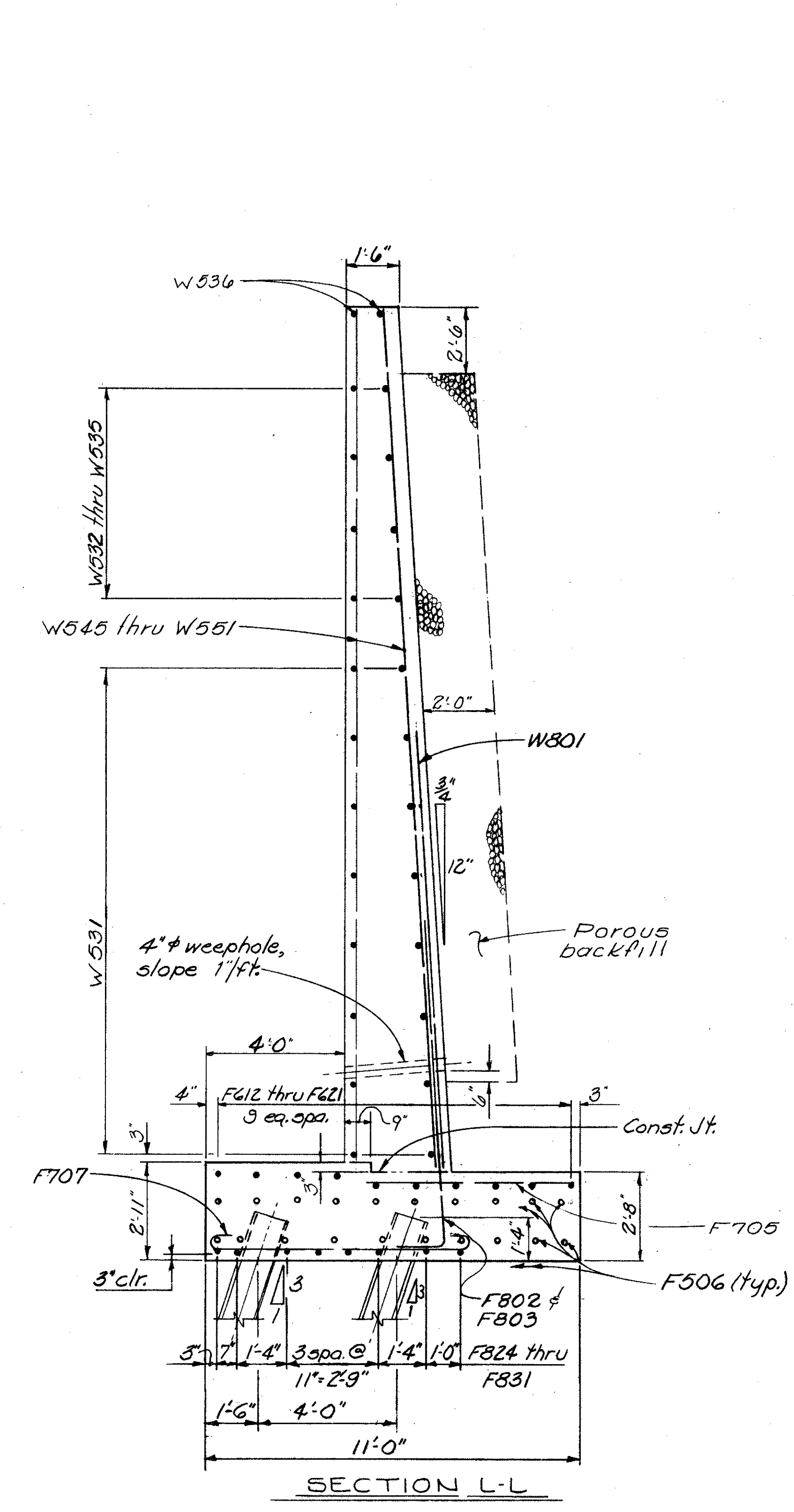
For Rustication Groove and Contraction joint Details see Sheet No. 17/20  
 Field bending of longitudinal steel shall be included in Item 509 for payment.  
 F.F. Indicates Front Face  
 R.F. Indicates Rear Face  
 ⊥ Indicates Pile Vertical  
 ⊕ Indicates Pile battered 1:3  
 All Piles shall be HP10x42 steel Piles  
 Horizontal dimensions and spacings are along face of wall.



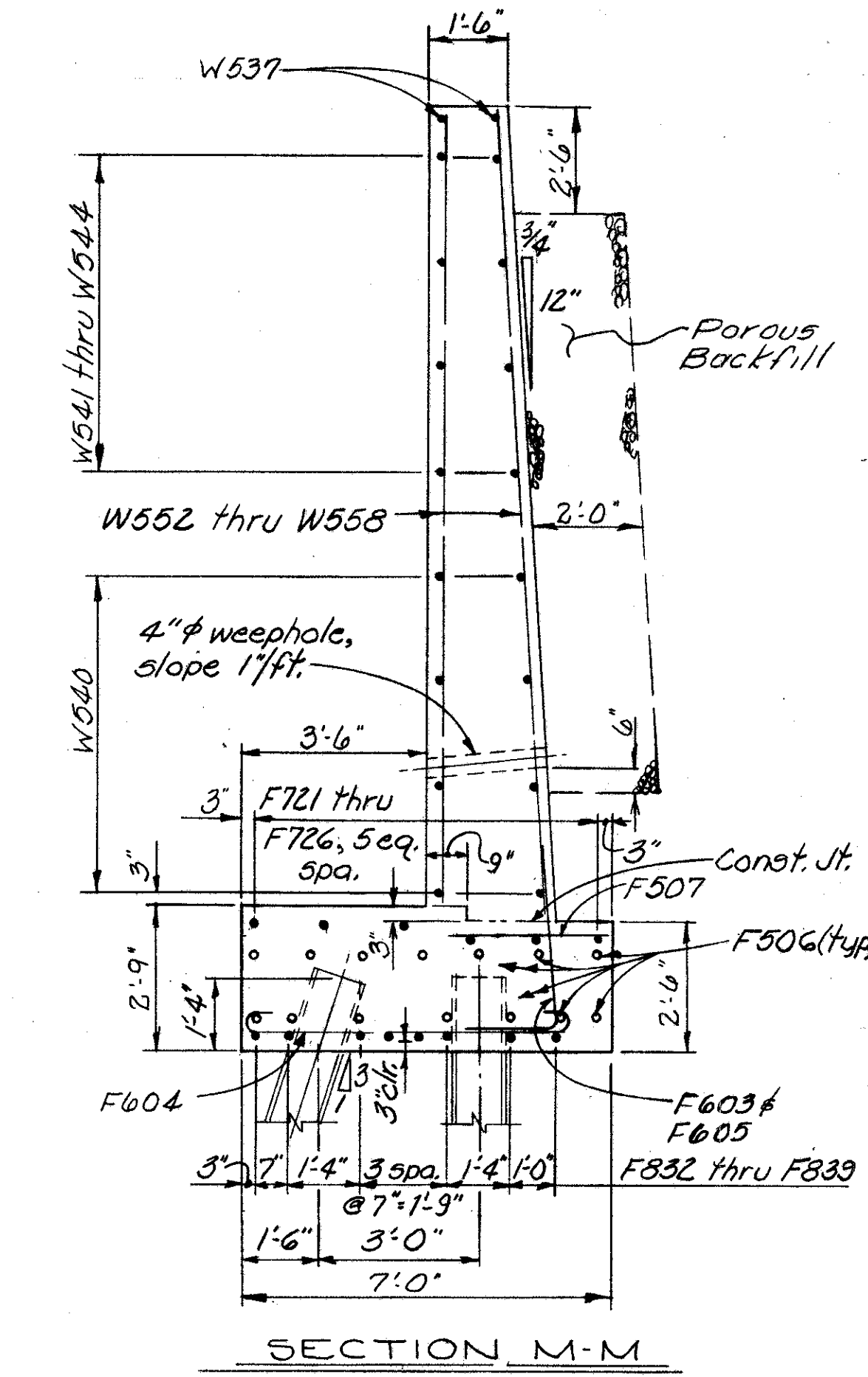
**NORTH WEST WING WALL PLAN**



**DEVELOPED ELEVATION OF NORTH WEST WING WALL**



**SECTION L-L**



**SECTION M-M**

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						
NORTH WEST WING WALL BRIDGE No. CUY-480-0943 1480 OVER WEST 150TH ST.						
CUYAHOGA COUNTY STA. 523+65.18 STA. 524+51.00						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TJ	J.E.K.		ANA	G.W.M.	4/14/69	

REVISIONS  
AUG 1 1969

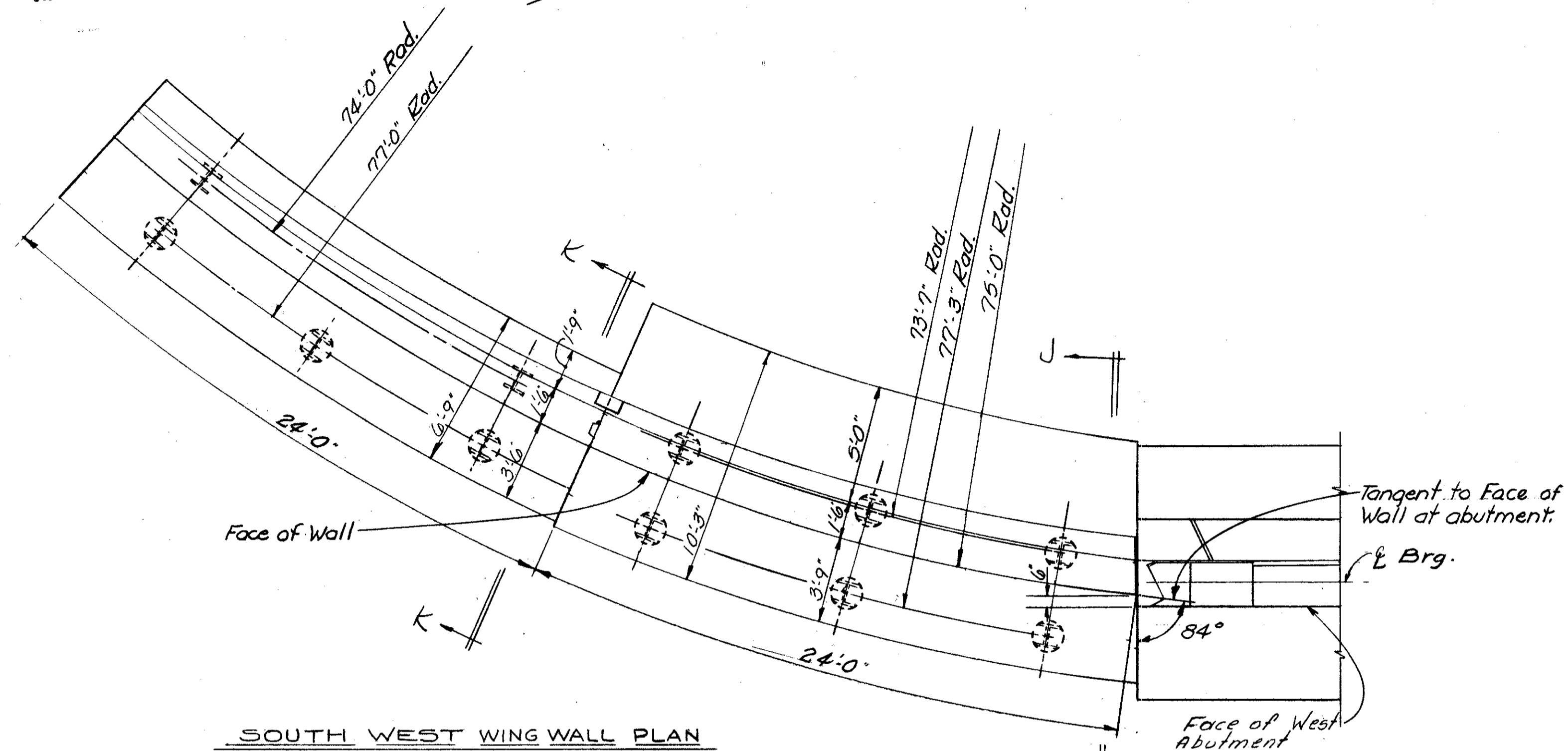


NOTE  
For NOTES see Sheet No. 10/20

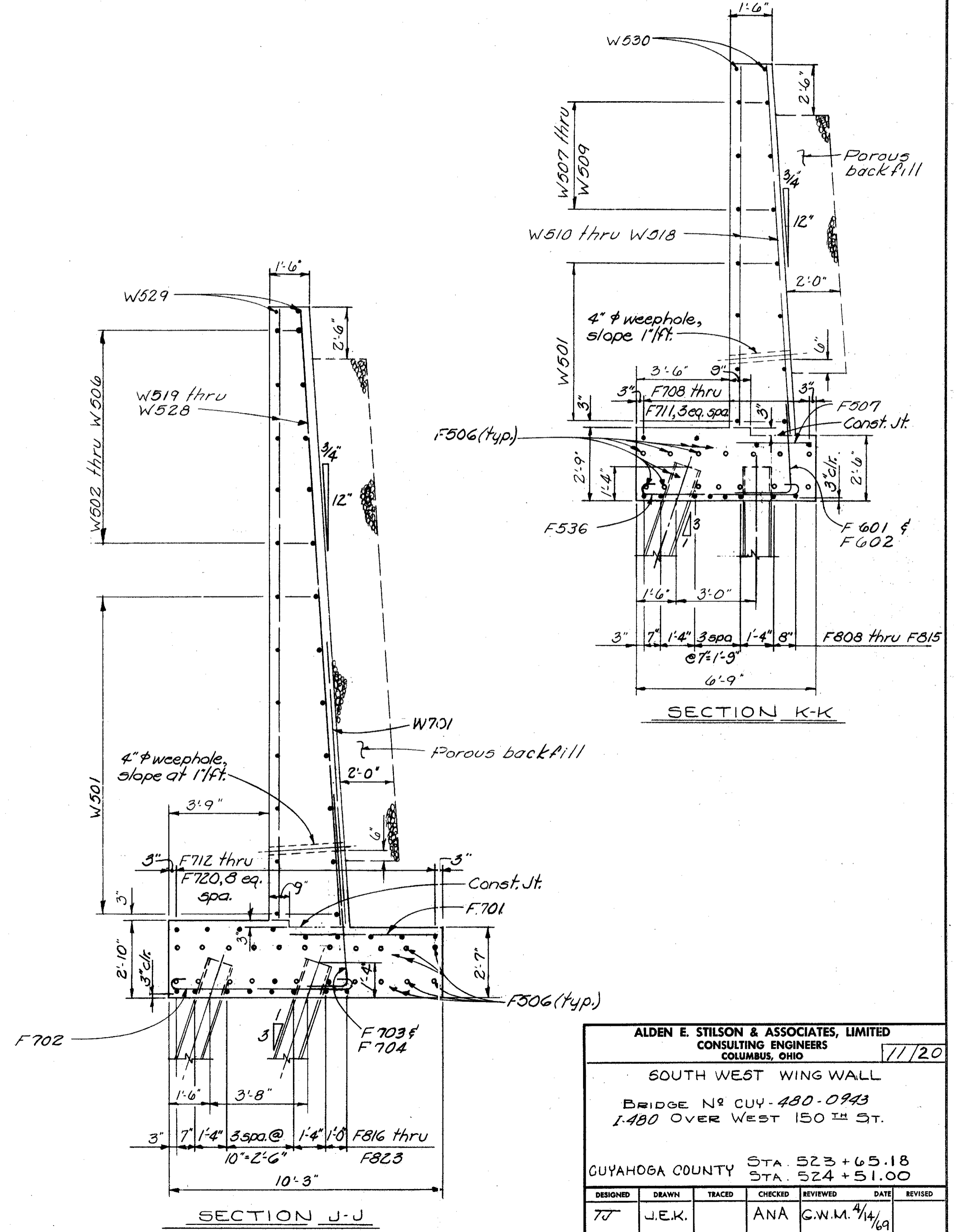
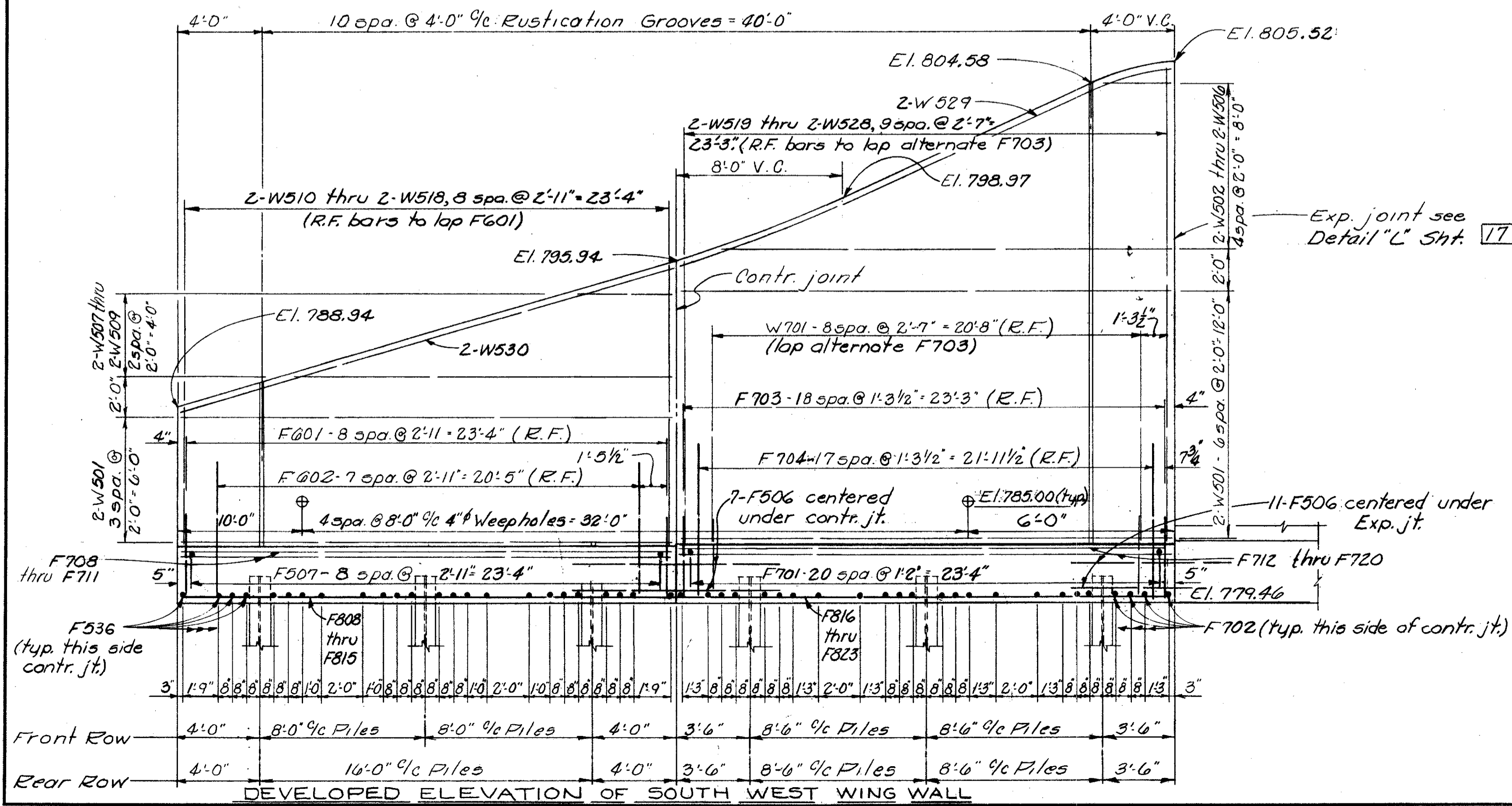
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-B.54

270  
346



SOUTH WEST WING WALL PLAN



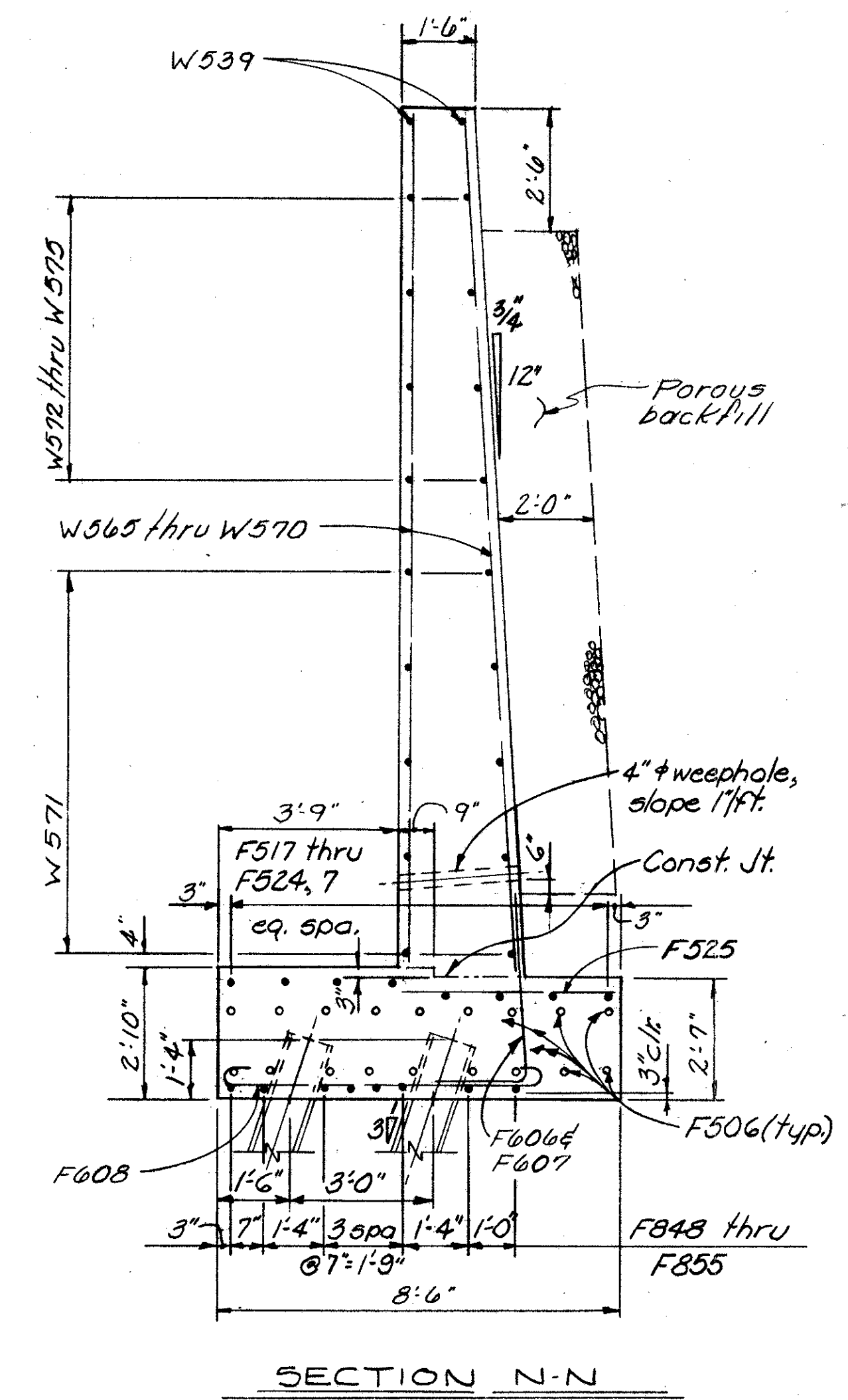
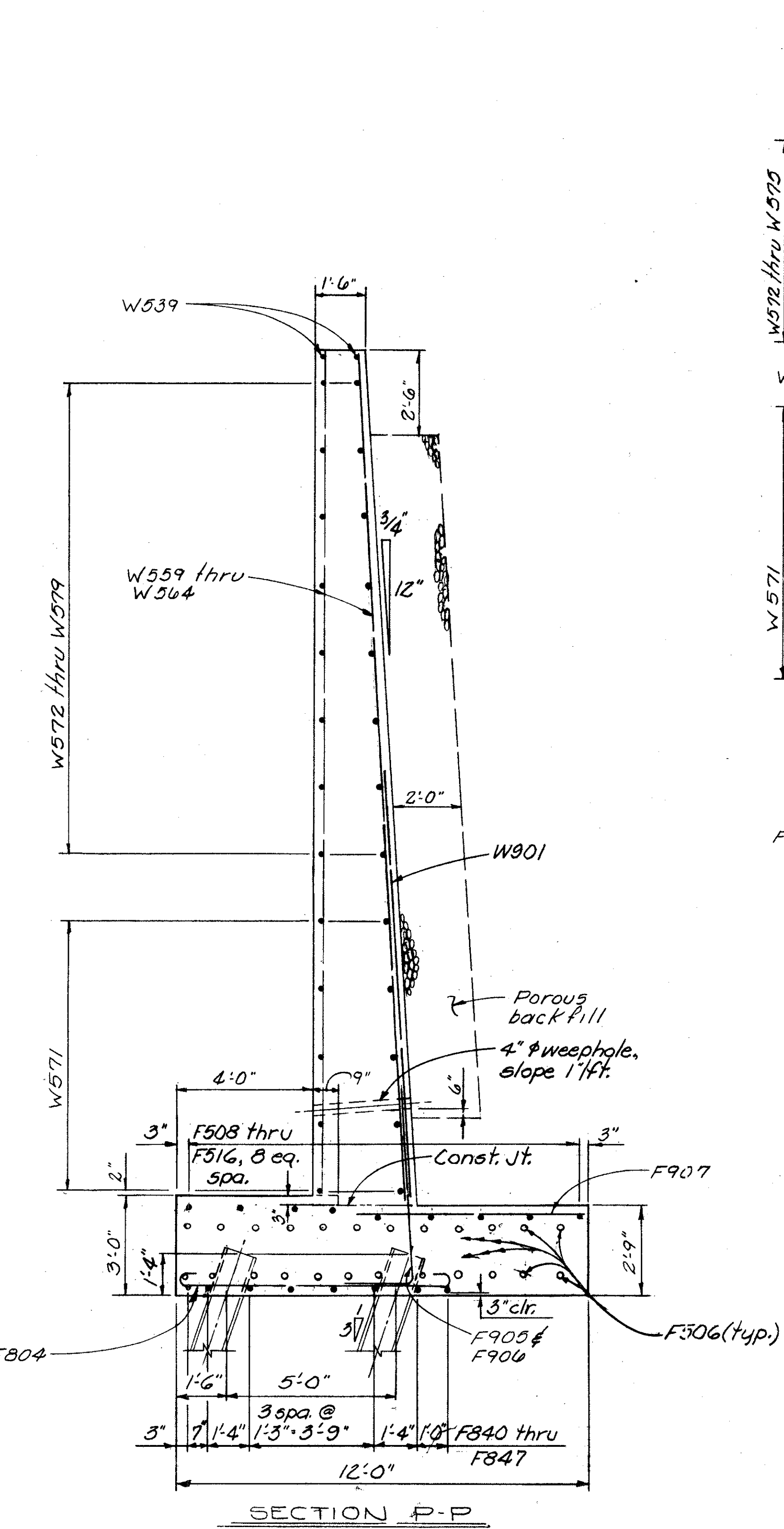
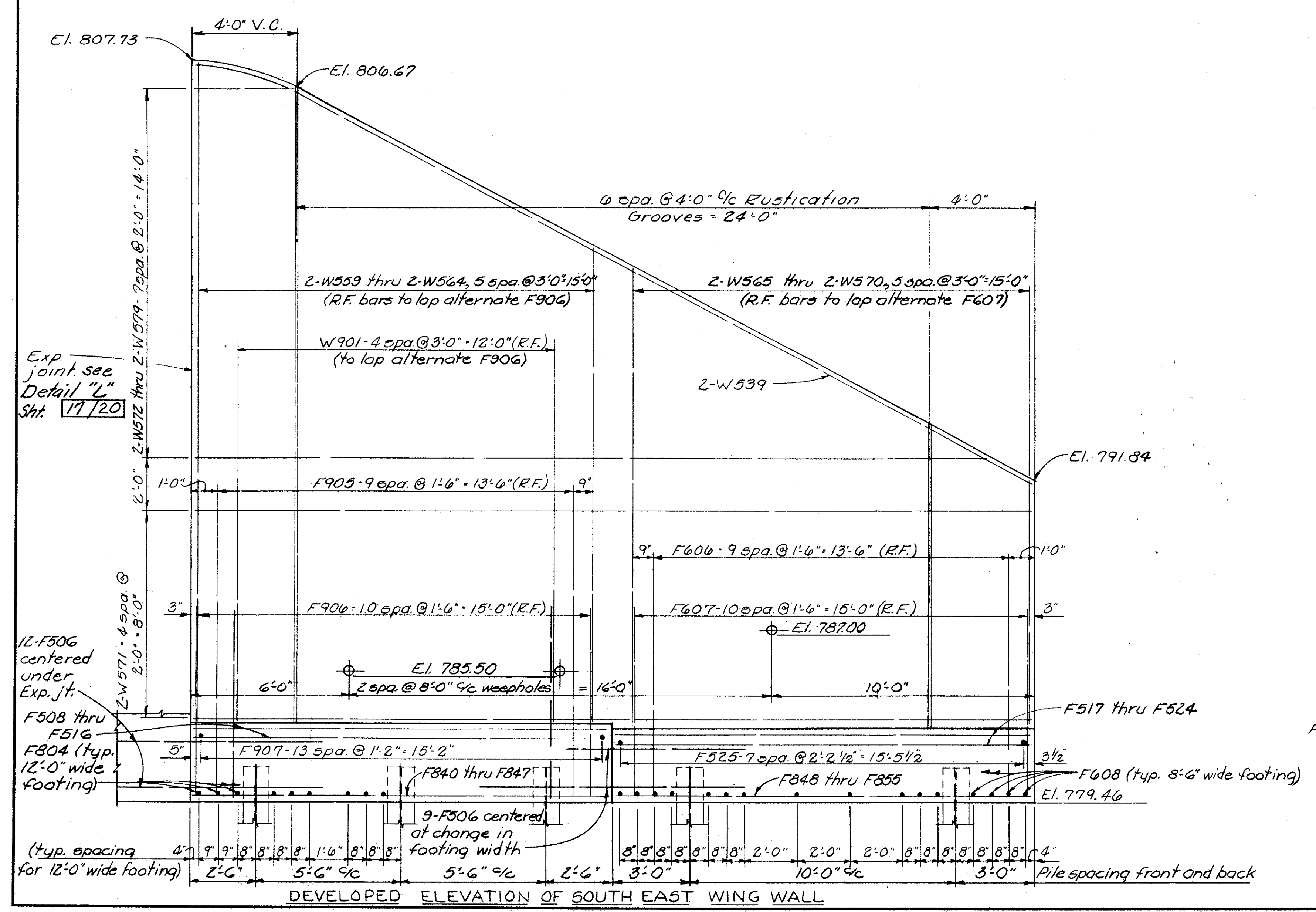
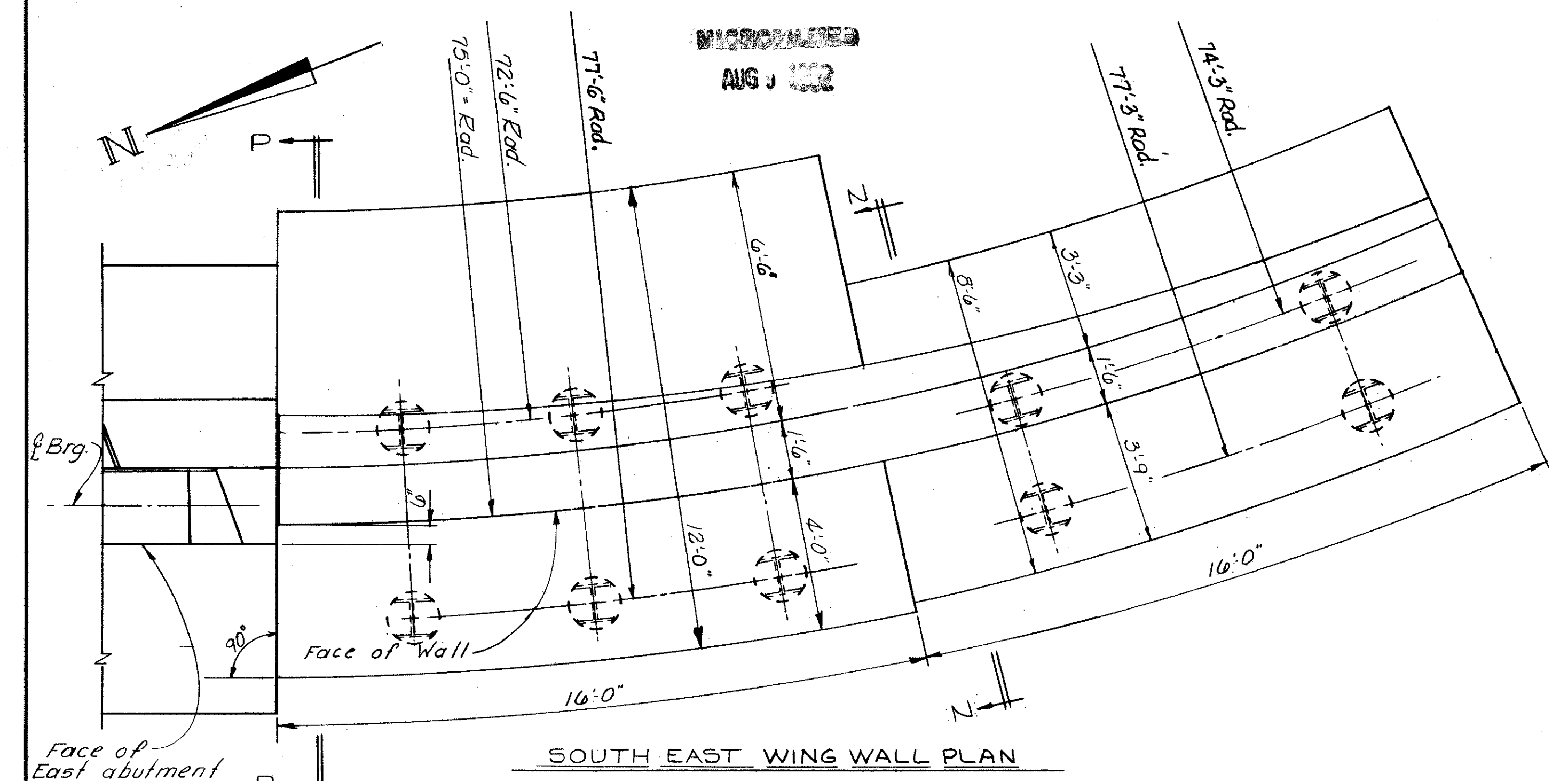
ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 11/20

SOUTH WEST WING WALL  
BRIDGE No. CUY-480-0943  
1-480 OVER WEST 150<sup>TH</sup> ST.

GUYAHOGA COUNTY STA. 523+65.18  
STA. 524+51.00

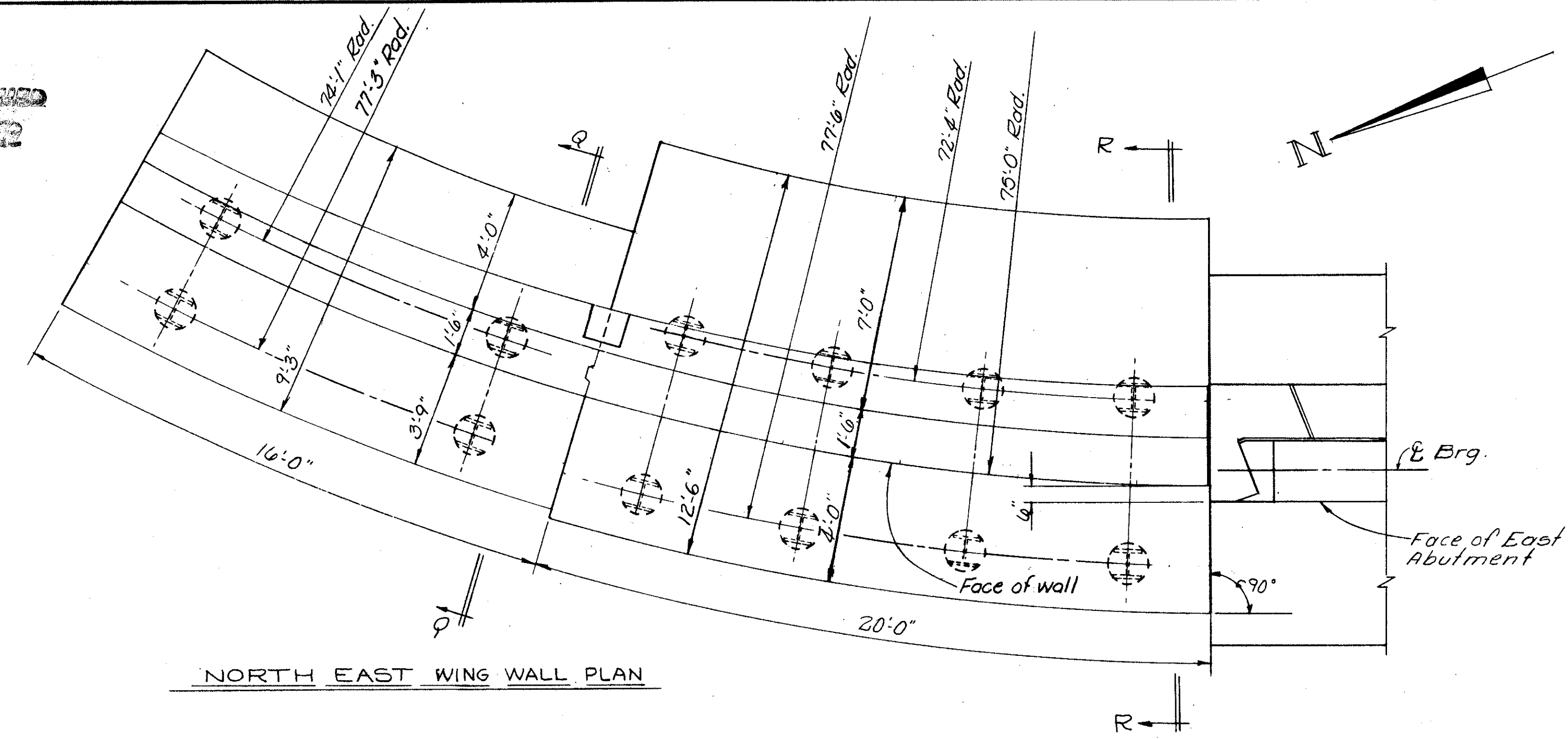
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
70	J.E.K.		ANA	C.W.M.	4/14/69	

NOTE  
For NOTES see Sheet No. 10/20



ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO					
12/20					
SOUTH EAST WING WALL					
BRIDGE No. CUY-480-0943 I 480 OVER WEST 150 <sup>TH</sup> ST.					
CUYAHOGA COUNTY STA. 523+65.18 STA. 524+51.00					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
JT	JEK		ANA	G.W.M.	4/11/69

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AUG 3 1962



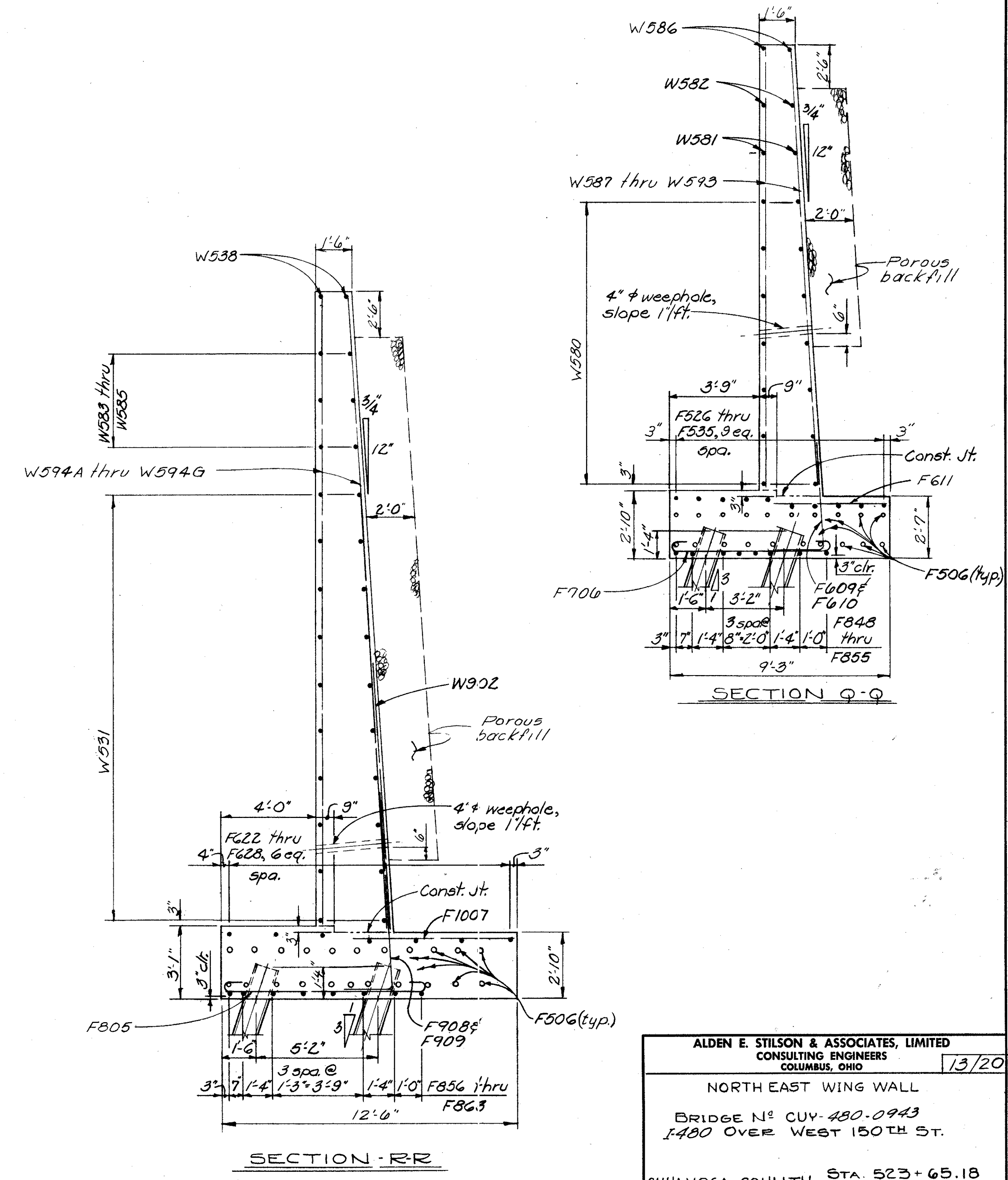
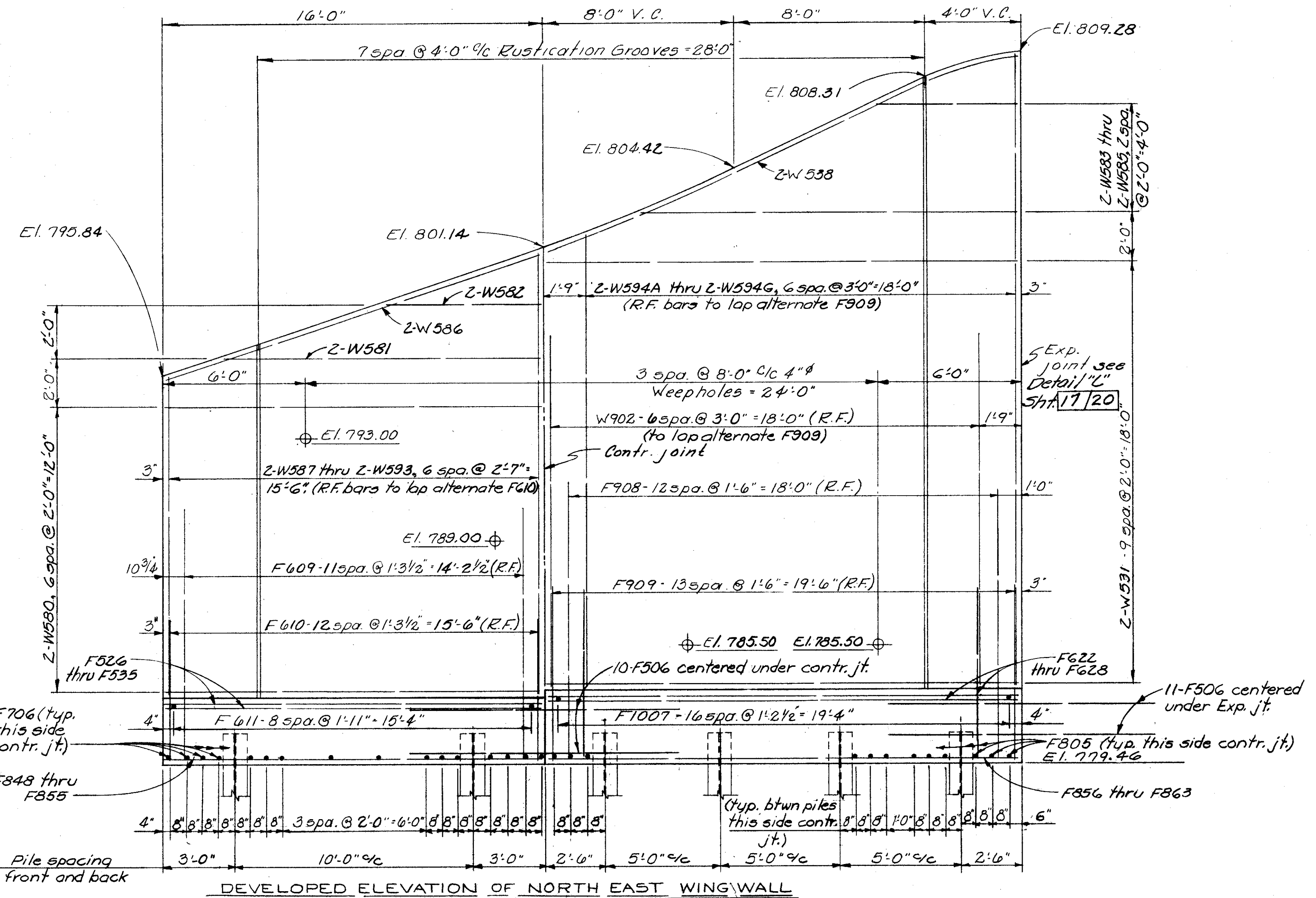
NORTH EAST WING WALL PLAN

NOTE  
For notes see Sheet No 10/20

FED. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-8.54

272  
346



ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 13/20

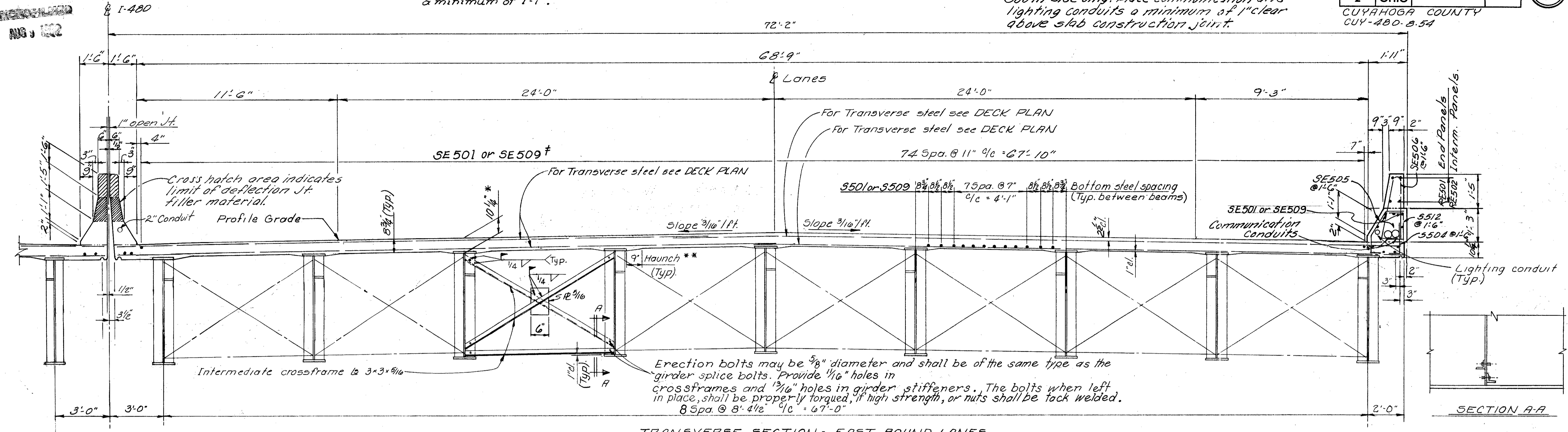
NORTH EAST WING WALL  
BRIDGE No CUY-480-0943  
I-480 OVER WEST 150TH ST.

CUYAHOGA COUNTY STA. 523+65.18  
STA. 524+51.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JT	J.E.K.		ANA	G.W.M.	4/14/69	

\* Each longitudinal run of deck reinforcing shall be comprised of 2-SE501 and 1-SE509 top or 2-S501 and 1-S501 bottom lapped a minimum of 1'-7".

Note: 2-3" rigid ferrous metal communication conduits are required in the curb, south side only. Place communication and lighting conduits a minimum of 1" clear above slab construction joint.



TRANSVERSE SECTION - EAST BOUND LANES

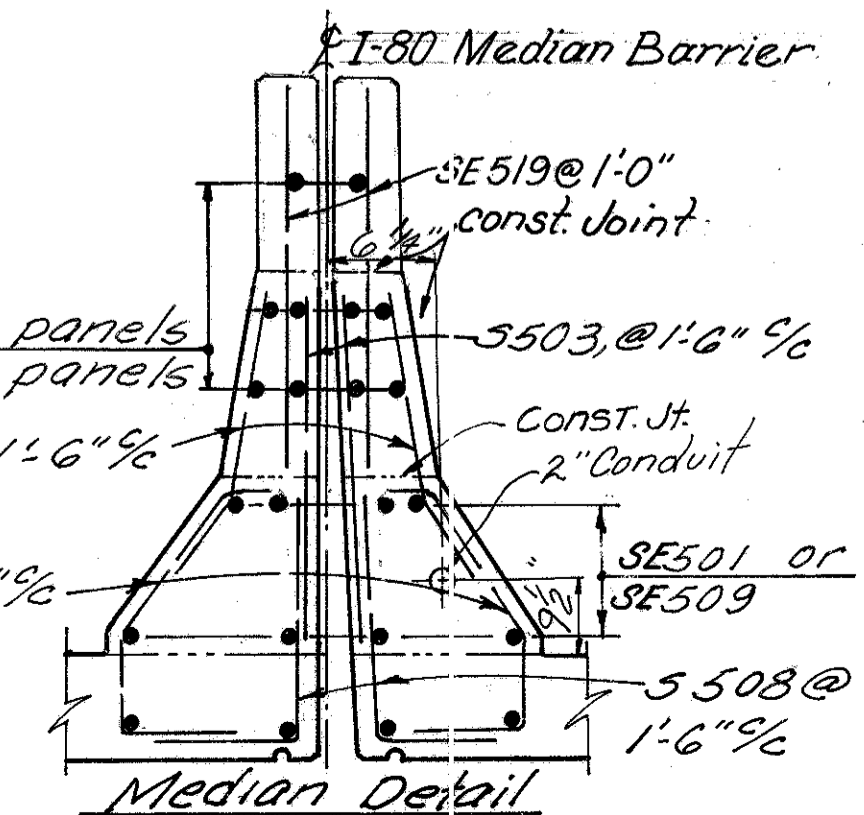
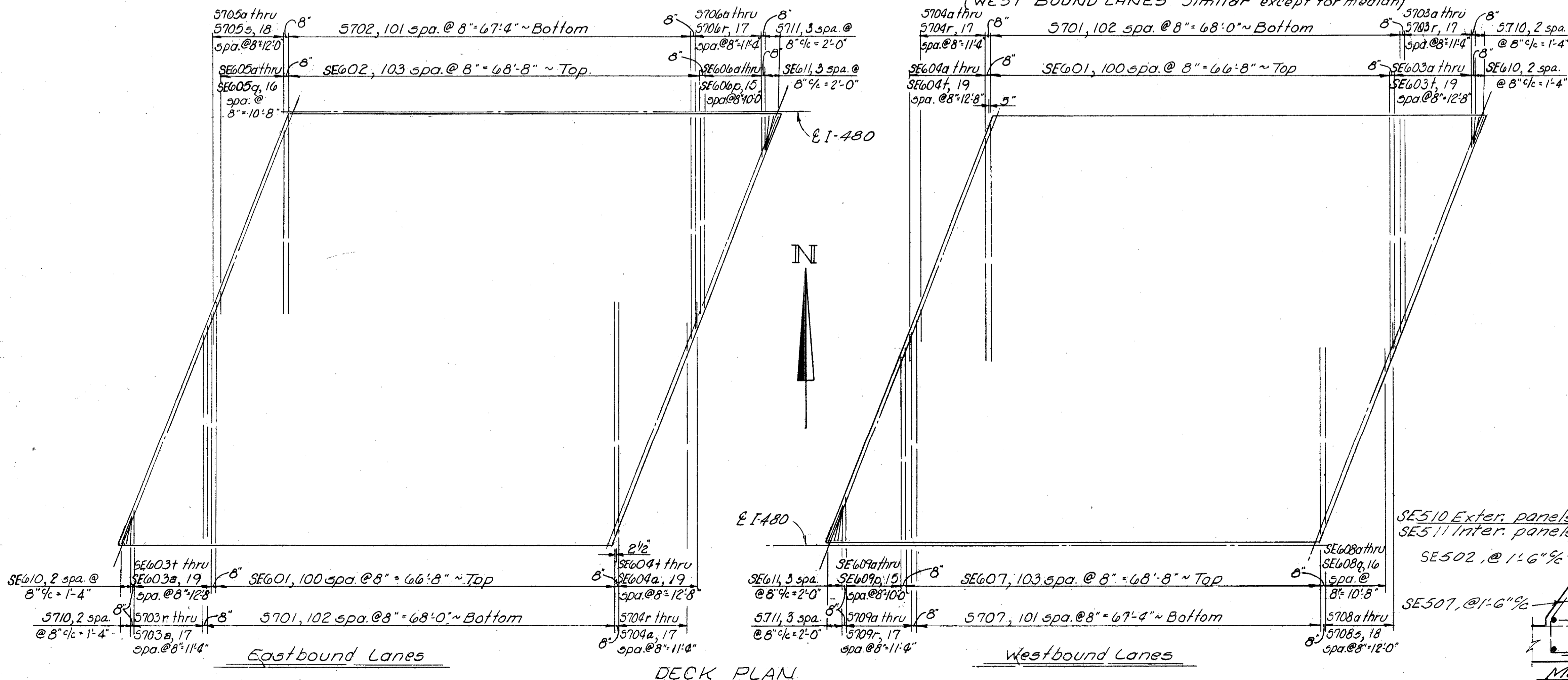
(WEST BOUND LANES similar except for median)

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.

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

For additional notes and details see Shts. 15/20 & 16/20



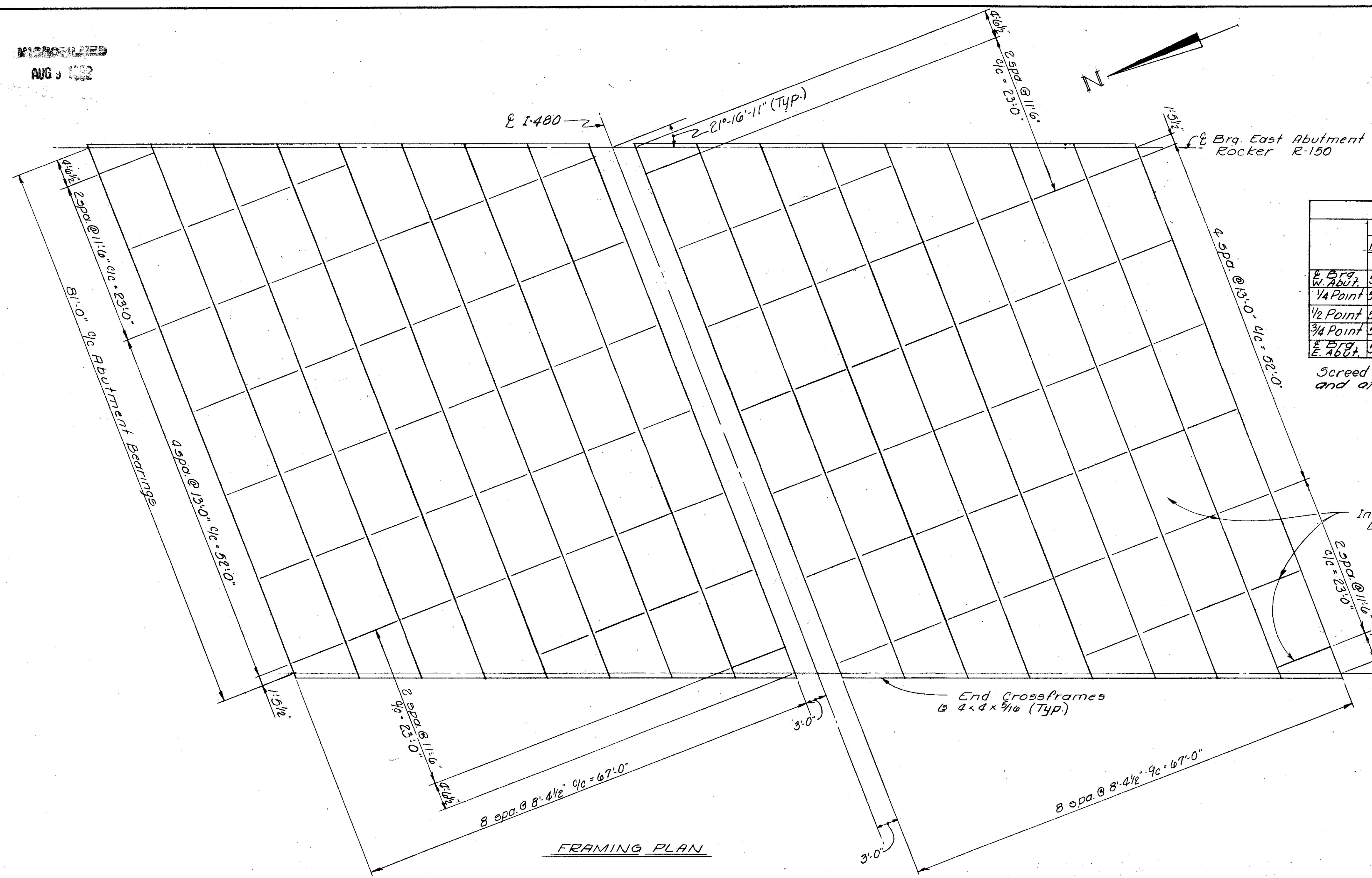
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SUPERSTRUCTURE DETAILS						
BRIDGE No CUY-480-0943						
1.480 OVER WEST 150 <sup>TH</sup> ST.						
CUYAHOGA COUNTY						STA. 523+65.18
						STA. 524+51.00
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H	J.E.K.		PWD	G.W.M.	4/14/69	7-17-78

MICROFILMED  
AUG 3 1982

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-8.54

274  
346



	Eastbound Lanes				Westbound Lanes			
	Face of Curb		3'-0" South of C		3'-0" North of C		Face of Curb	
	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
E. Brg. W. Abut.	523+40.34	804.71	523+66.42	805.40	523+68.76	805.46	523+94.84	806.19
1/4 Point	523+60.59	805.29	523+86.67	805.99	523+89.01	806.05	524+15.09	806.77
1/2 Point	523+80.84	805.86	524+06.92	806.56	524+09.26	806.62	524+35.34	807.34
3/4 Point	524+01.09	806.39	524+27.17	807.09	524+29.51	807.16	524+55.59	807.88
E. Brg. E. Abut.	524+21.34	806.91	524+47.42	807.60	524+49.76	807.67	524+75.84	808.39

Scree elevations are deck elevations before concrete is placed and at the top of the reinforced concrete slab.

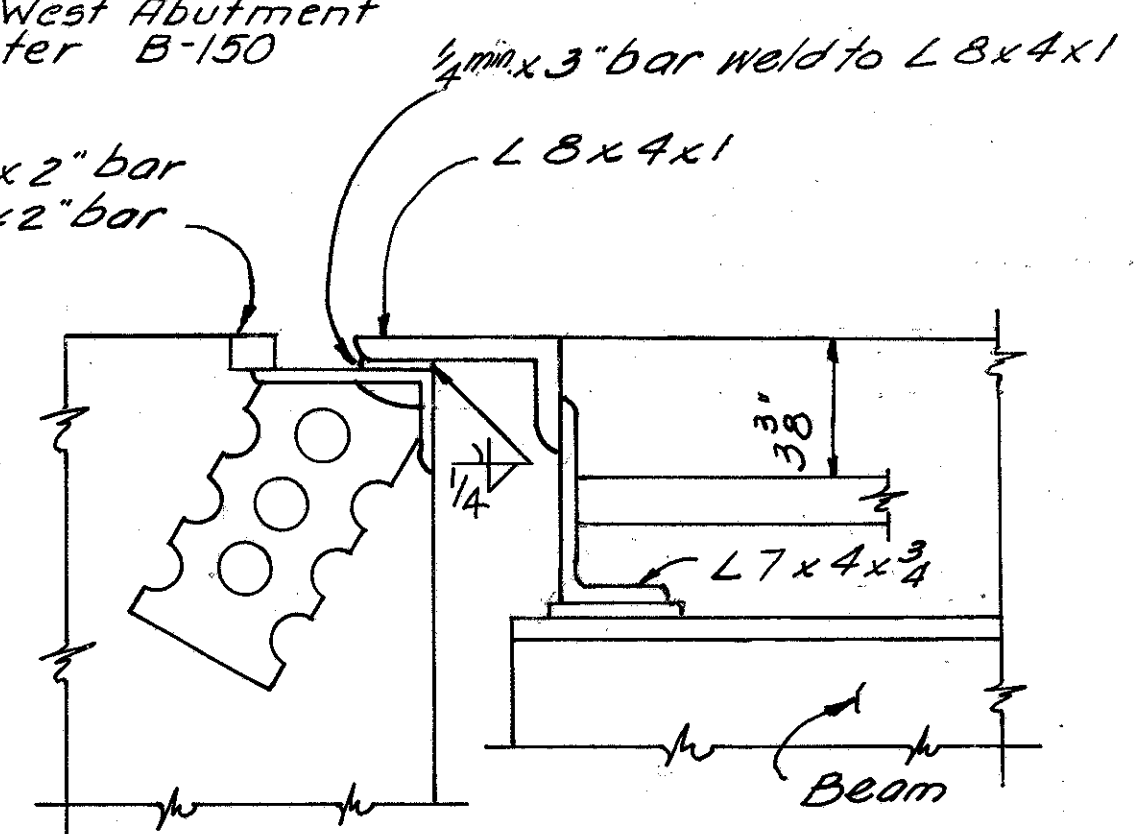
Notes:  
For additional notes and details see sheet 16/20

Intermediate Crossframes  
3' x 3' x 1/4" (Typ.)

End Crossframes  
4' x 4' x 1/4" (Typ.)

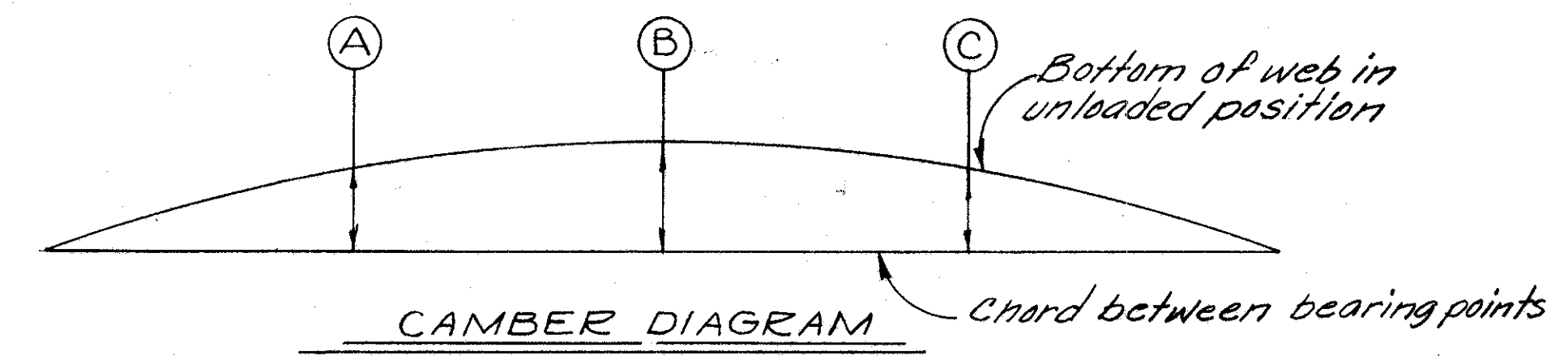
Brg. West Abutment  
Bolster B-150

R. Abut. 1 1/2" x 2" bar  
F. Abut. 1 3/8" x 2" bar



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

END DAM DETAILS



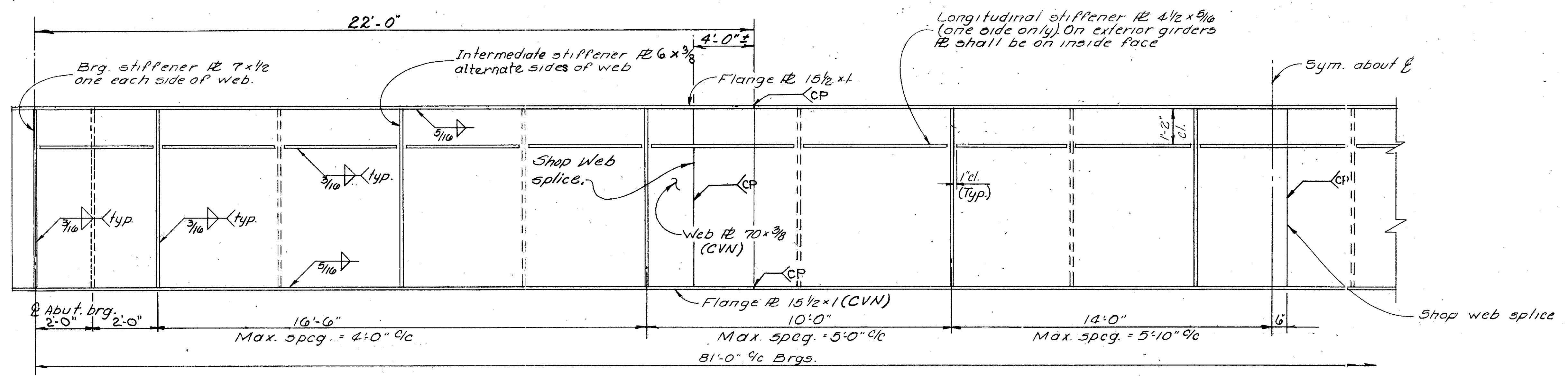
	Interior Girders			Exterior Girders			Median Girders		
	1/4 Pt. A	Center Pt. B	3/4 Pt. C	1/4 Pt. A	Center Pt. B	3/4 Pt. C	1/4 Pt. A	Center Pt. B	3/4 Pt. C
	Deflection due to weight of steel	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
Deflection due to Remaining dead load	7/16	5/8	7/16	3/8	9/16	3/8	7/16	5/8	7/16
Req'd shop Camber	9/16	3/4	9/16	1/2	11/16	1/2	9/16	3/4	9/16

ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 15/20

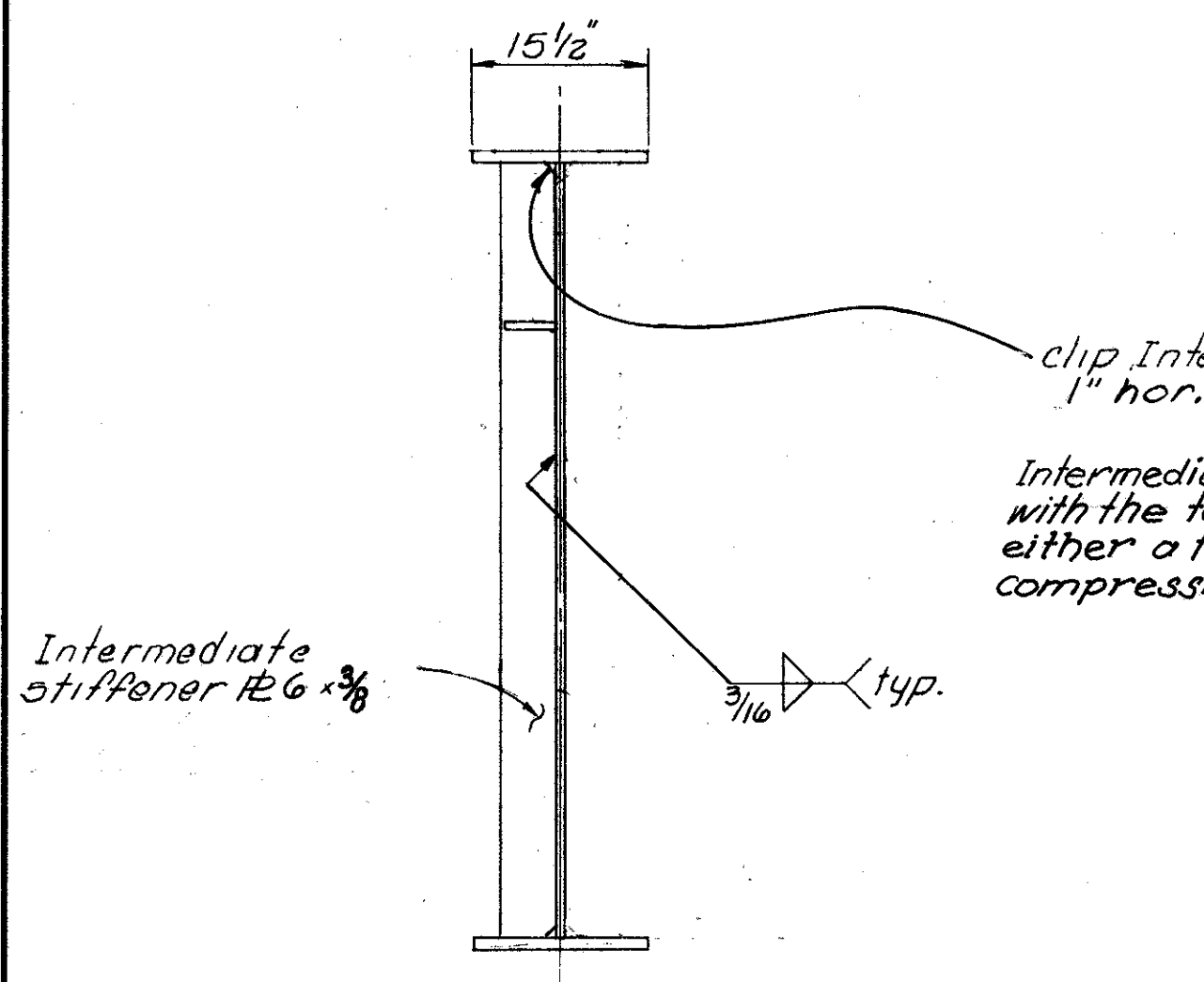
FRAMING PLAN AND SUPERSTRUCTURE DETAILS  
BRIDGE NO. CUY-480-0943  
1480 OVER WEST 150<sup>TH</sup> ST.  
CUYAHOGA COUNTY STA. 523+65.18  
STA. 524+51.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	J.E.K.		fwd	G.W.M.	1/15/82	

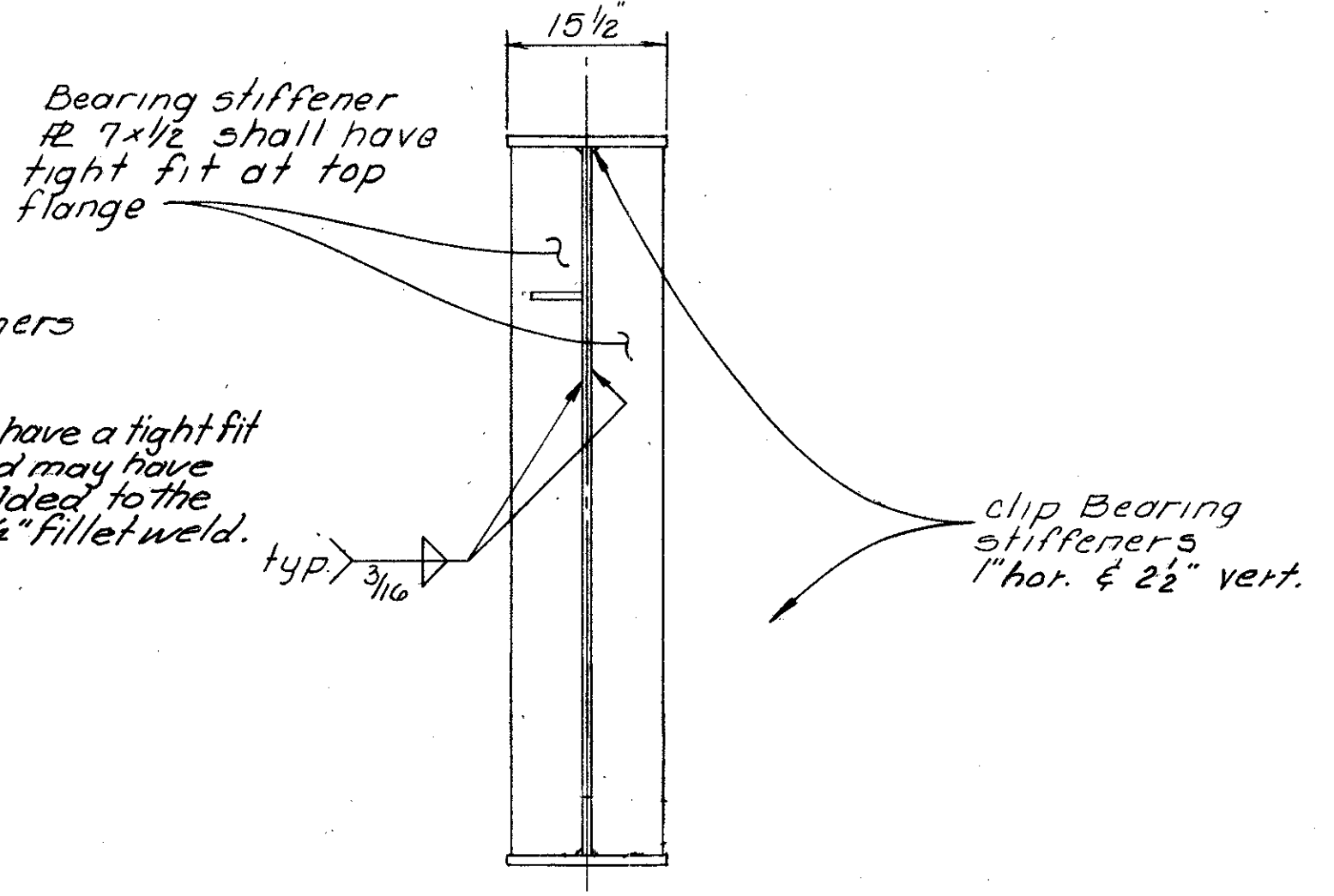
MICROFILMED  
AUG 1982



HALF GIRDER ELEVATION



INTERMEDIATE STIFFENER DETAILS



BEARING STIFFENER DETAILS

Notes

CP~ Complete Penetration 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.

INTERMEDIATE STIFFENERS: 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 at the stiffener spacing shown. Transverse web stiffeners shall be provided for the attachment of deck crossframes.

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

BEARINGS shall be in accordance with Std. Dwg. EB-1-55 except that upper plate element shall be beveled to match roadway grade. Tabulated plate thickness C shall apply at centerline of plate.

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

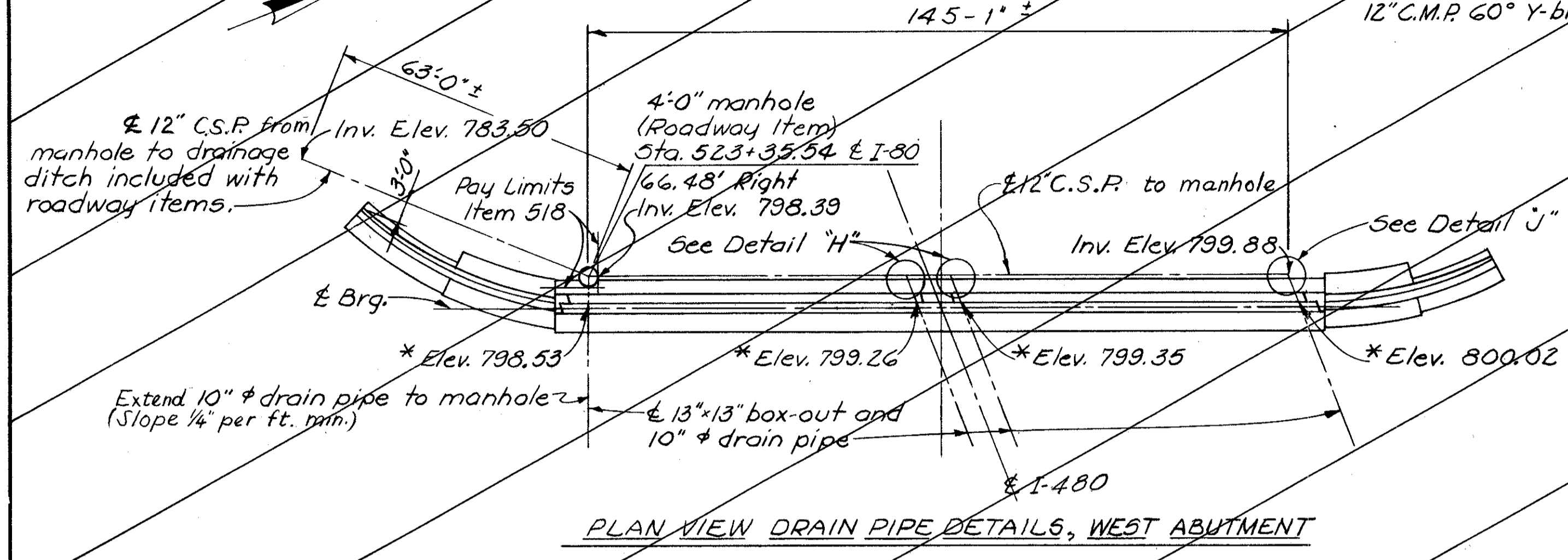
ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO							1/6/20
GIRDER DETAILS							
BRIDGE N <sup>o</sup> CUY-480-0943 1.480 OVER WEST 150 <sup>th</sup> ST.							
CUYAHOGA COUNTY STA. 523+65.18 STA. 524+51.00							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
H.T.	J.E.K.		fwd.	G.W.M.	4/15/69		

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

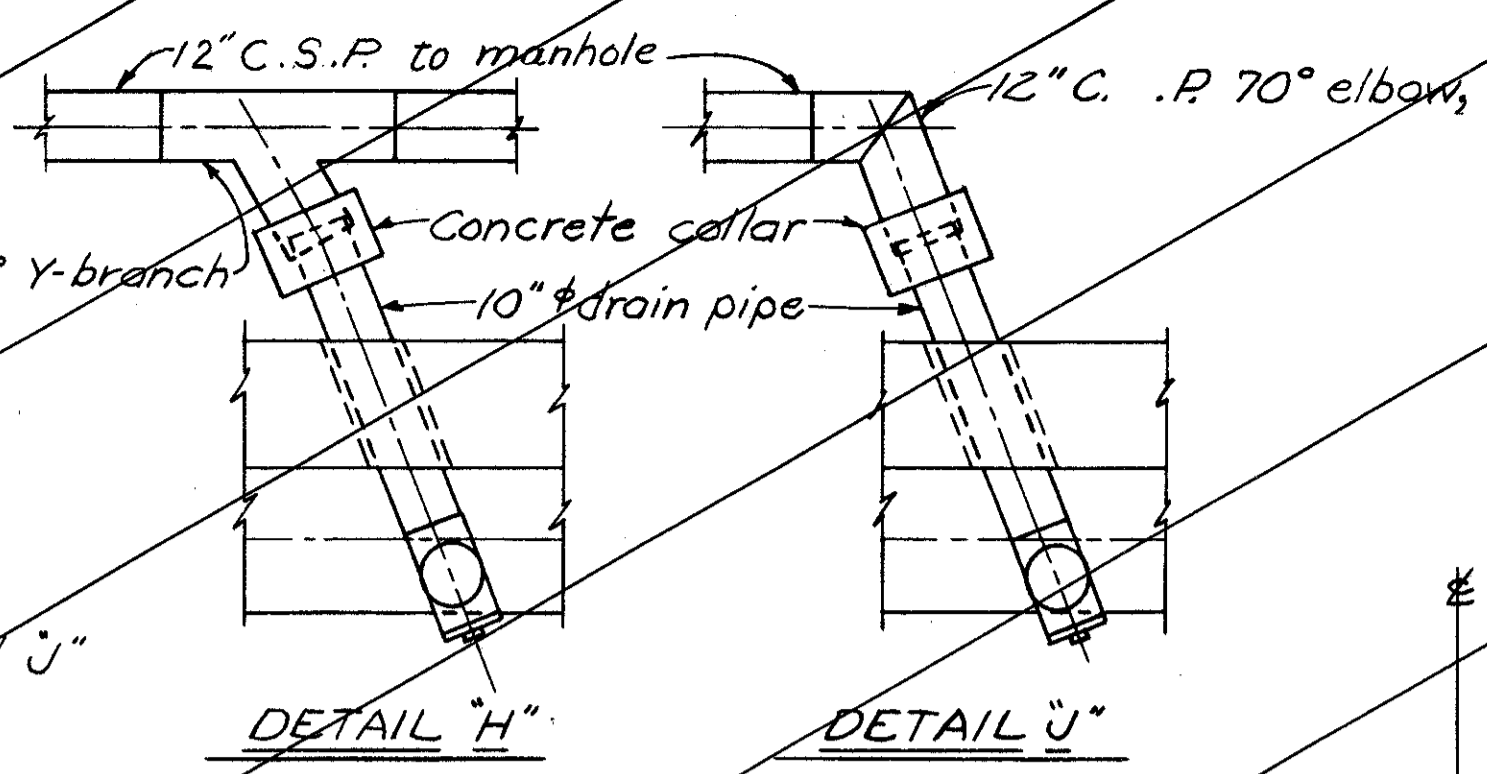
CUYAHOGA COUNTY  
CUY-480-B-54

276  
346

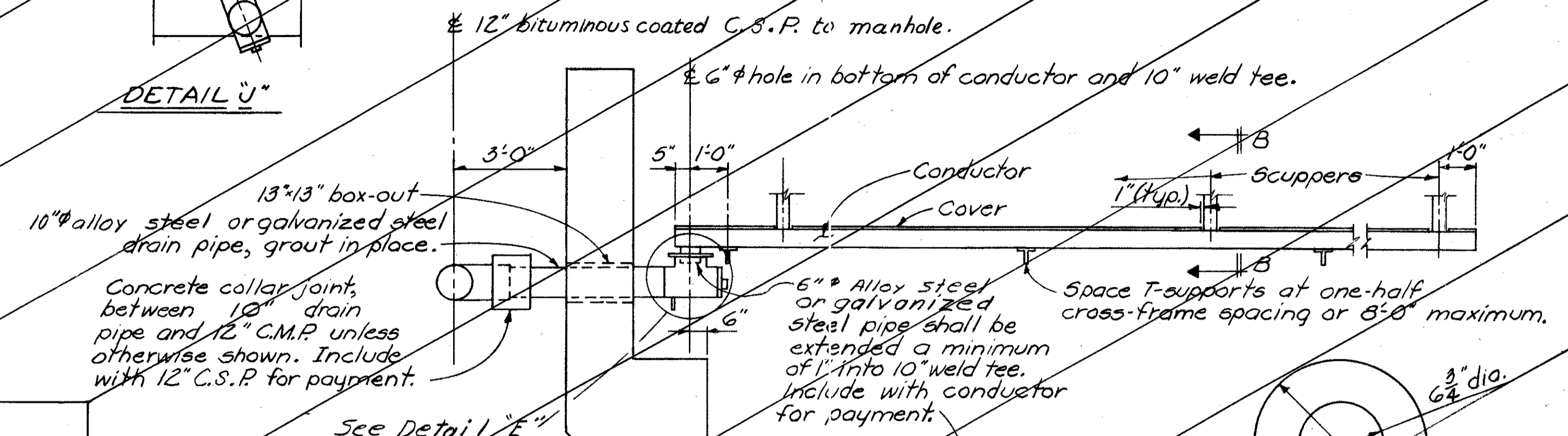
**NOTES**  
For location of 13"x13" box-outs see sheet N<sup>o</sup>s 4/20, 5/20 & 6/20  
\* Elevations marked with an asterisk are 10" drain pipe inverts at face of backwall.



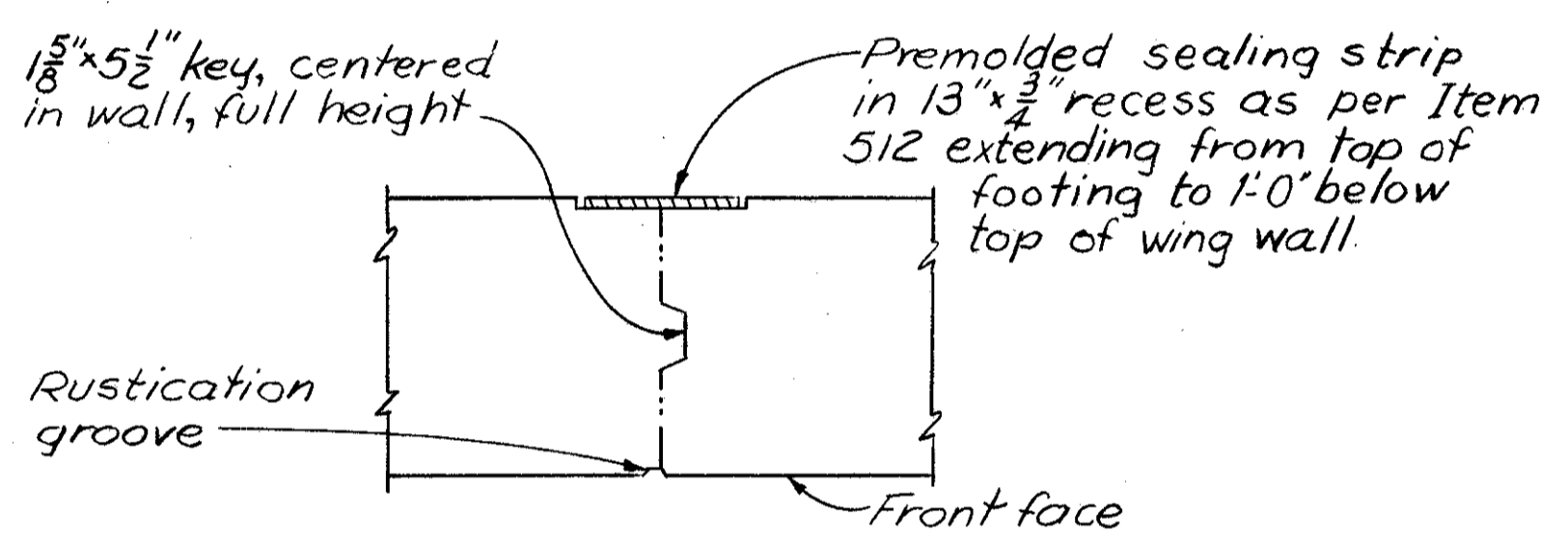
PLAN VIEW DRAIN PIPE DETAILS, WEST ABUTMENT



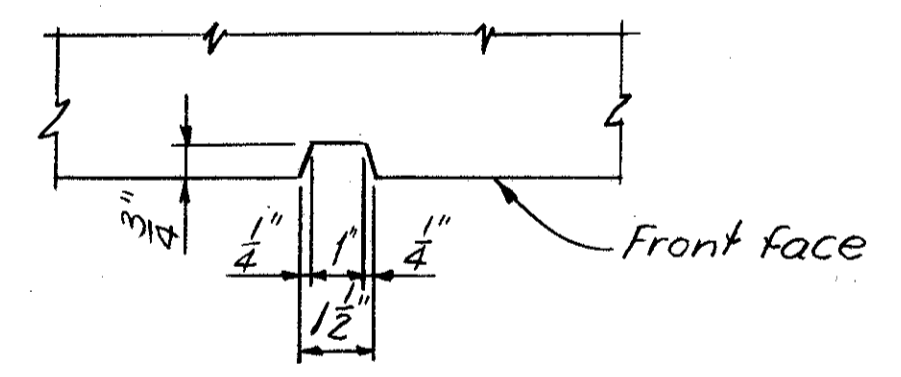
DETAIL H  
DETAIL U



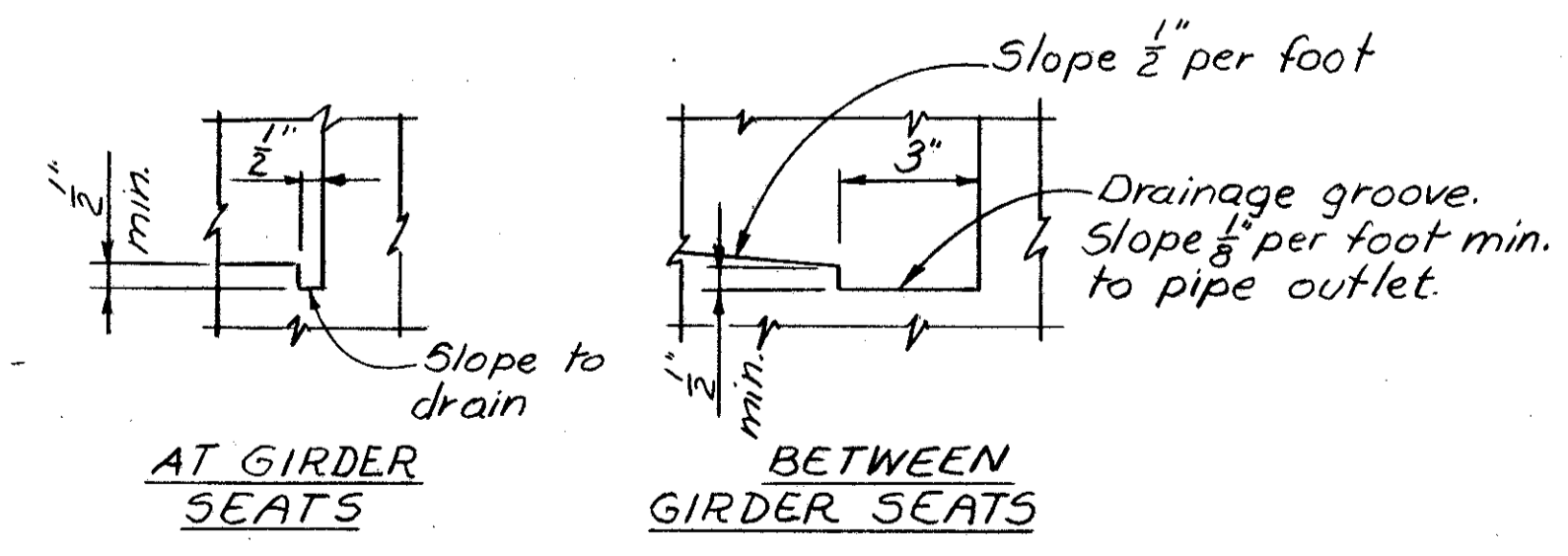
See Detail E



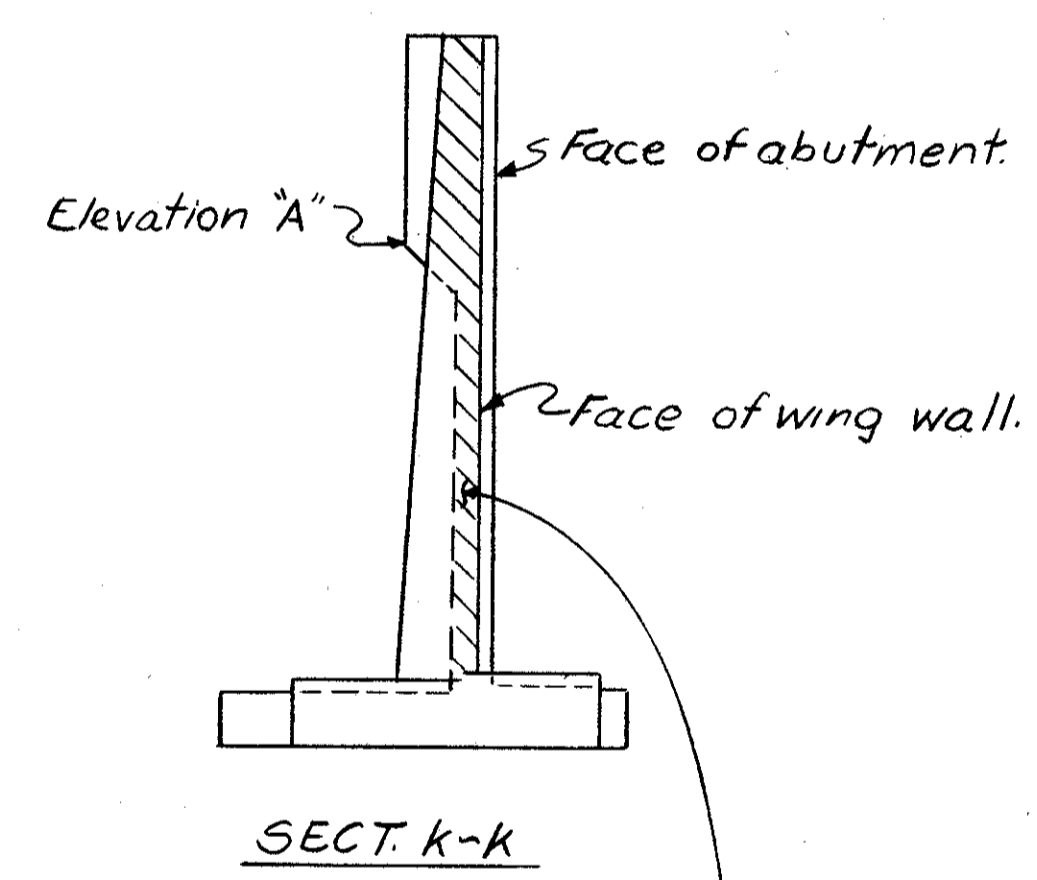
WING WALL CONTRACTION JOINT DETAIL



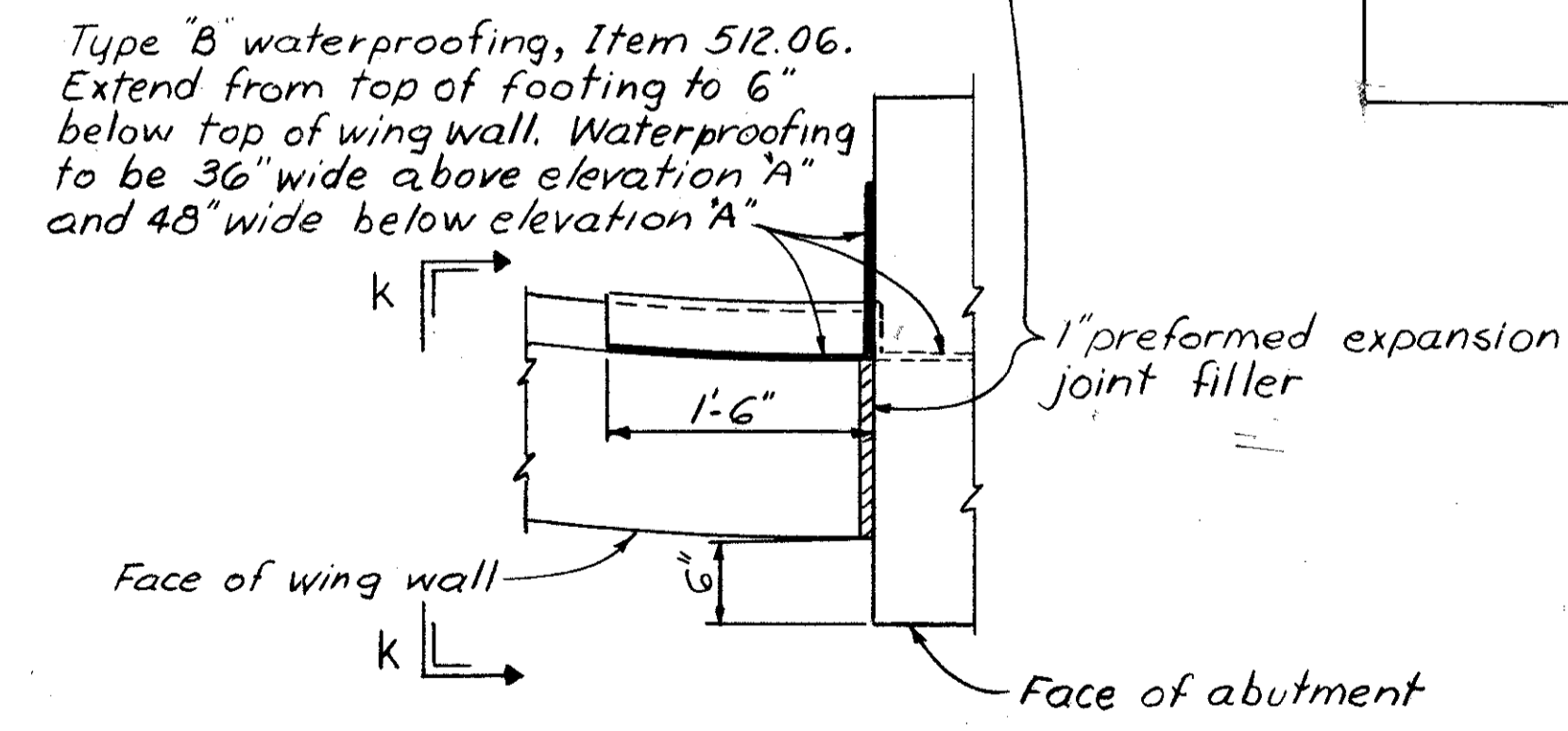
RUSTICATION GROOVE DETAIL  
SPACED HORIZONTAL & VERTICAL  
ON 4'-0" CENTERS



DRAINAGE GROOVE DETAILS



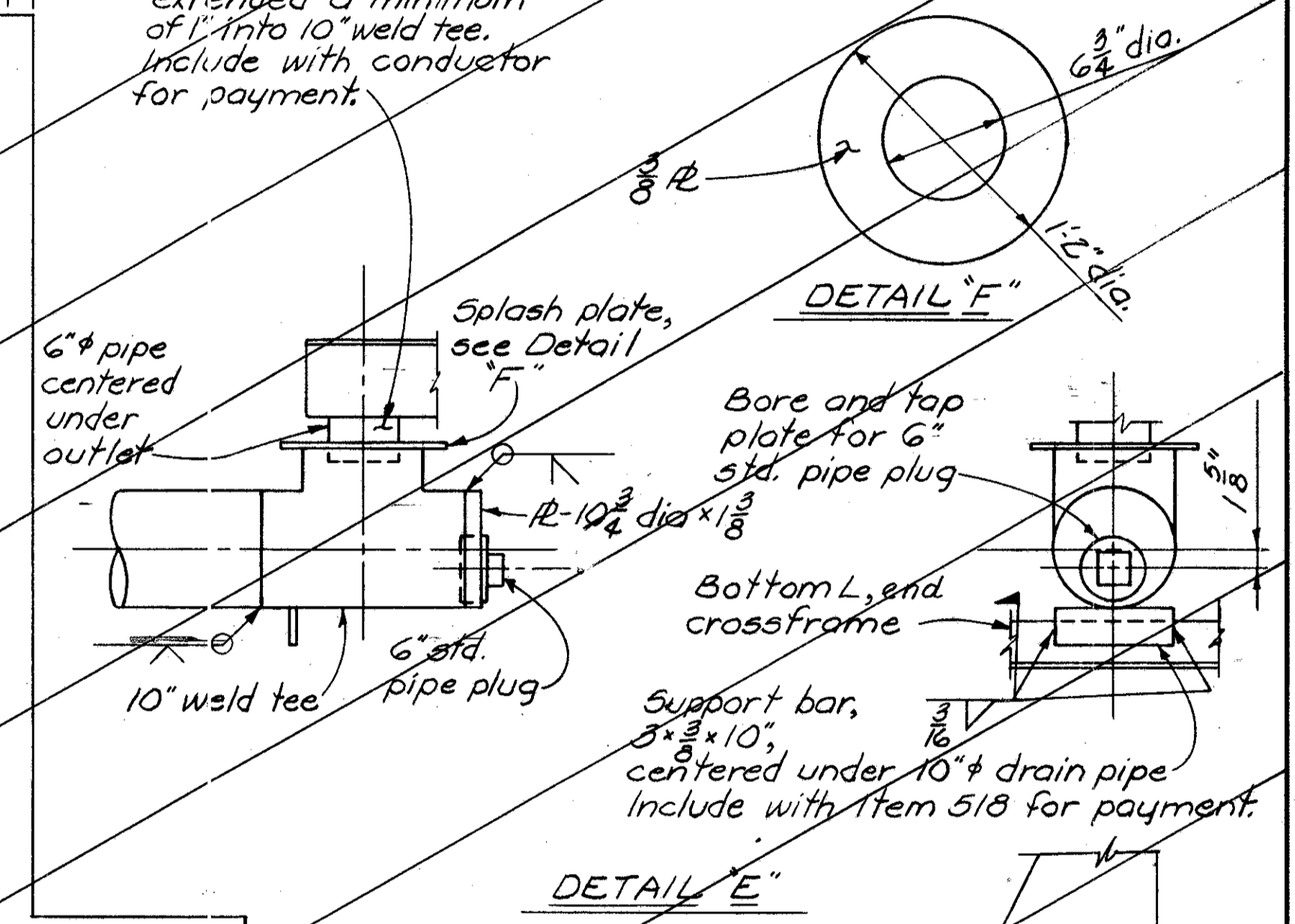
SECT. K-K



DETAIL L

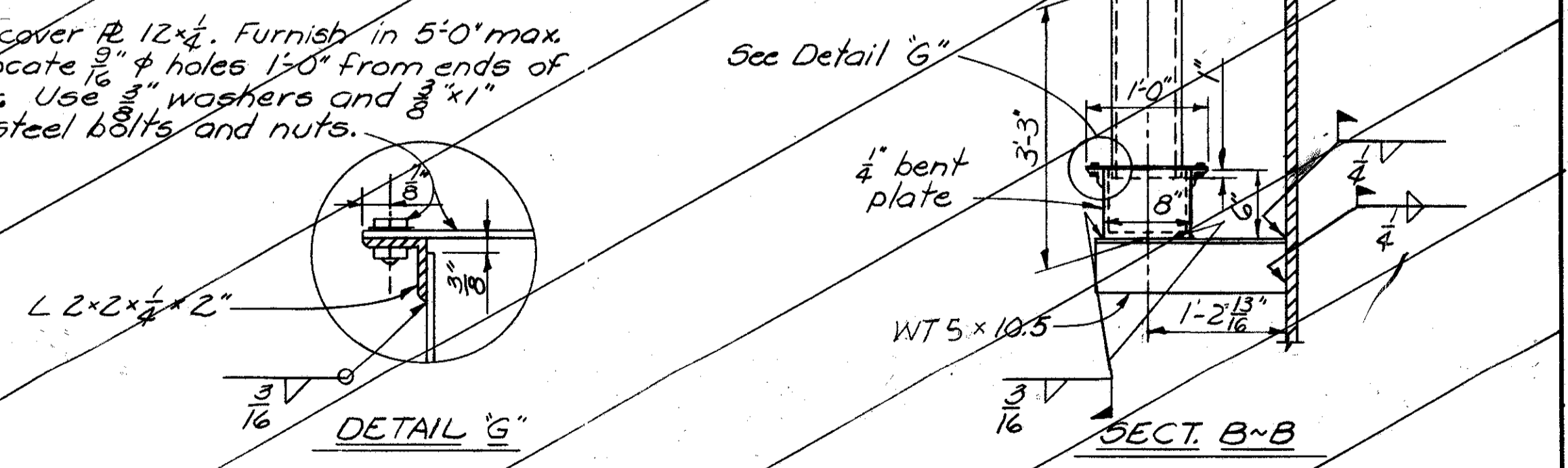
**NOTES**  
Conductor and cover shall be made of galvanized steel, or alloy steel. Slope conductor parallel to slope of deck.  
Those portions of the drainage system required to be galvanized shall be galvanized according to Section 711.02 after all welding is completed.  
Conductors and supports to be included with Item 518 for payment.

Removable cover @ 12"x4". Furnish in 5'-0" max. lengths. Locate 3/8" holes 1'-0" from ends of each cover. Use 3/8" washers and 3/8"x1" stainless steel bolts and nuts.



DETAIL E

DETAIL F



DETAIL G

SECT. B-B

DRAIN PIPE AND CONDUCTOR DETAILS

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						
MISCELLANEOUS DETAILS BRIDGE N <sup>o</sup> CUY-480-0943 1.480 OVER WEST 150 <sup>TH</sup> ST. CUYAHOGA COUNTY STA. 523+65.18 STA. 524+51.00						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
TJ	GTR		ANA	G.W.M.	4/15/78	7-17-78



AUG 1962

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

277  
346

CUYAHOGA COUNTY  
CUY. 480-8.54

**NOTES**

- 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.
- DELETED
- COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.

- LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
- END PREPARATION AND FIELD WELDING INCLUDED WITH ITEM 509.
- "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. FOUR STEEL CHANNEL, TEE, OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 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 0.80 LB. PER LIN. FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN TABULATED WEIGHT.

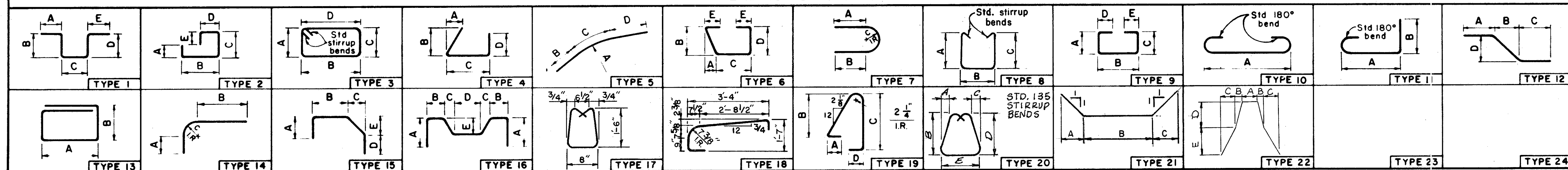
MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	
ABUTMENTS											(CONTINUED)																						
A 501	180	4-11	923	1		1-6	2-2	1-6			A 601	60	31-8	2854	ST							F 505	79	11-8	961	ST							
A 502	76	31-8	2510	ST							A 602	90	30-9	4157	ST																		
A 503	114	30-9	3656	ST							A 603	314	22-2	10454	2	7-9	1-5	9-6	0-11	3-3													
A 504	228	6-7	1566	1		1-9	3-4	1-9			A 604	10	15-0		1	1-11	5-4	1-2	5-4	1-11	1	F 801	204	11-6	6264	11	10-5						
A 505	90	15-0	1408	ST							THRU			1307		VARY	LENGTH	BY 0'	2 3/8"			F 806	28	33-2	2480	ST							
A 506	90	17-0	1596	ST												VARY	DIM. B	BY 0'	1 1/4"			F 807	42	33-8	3775	ST							
A 508	10	13-2		1	1-7	4-8	1-2	4-8	1-7	1						VARY	DIM. D	BY 0'	1 1/4"														
THRU			661		VARY	LENGTH	BY 0'	3 0/0"			A 609	10	14-0		1	1-11	4-10	1-2	4-10	1-11	1	F 901	6	40-6	826	ST							
					VARY	DIM. B	BY 0'	1 1/2"								VARY	DIM. B	BY 0'	1 1/2"			F 902	18	34-0	2081	ST							
					VARY	DIM. D	BY 0'	1 1/2"			A 610	10	14-3		1	1-11	4-11	1-3	4-11	1-11	1	F 903	6	26-1	532	ST							
A 512	10	12-2		1	1-7	4-2	1-2	4-2	1-7	1	THRU			816		VARY	LENGTH	BY 0'	5 3/8"			F 904	189	12-11	8300	11	11-8						
																VARY	DIM. B	BY 0'	2 5/8"														
																VARY	DIM. D	BY 0'	2 5/8"														
A 513	10	11-10	123	1	1-7	4-0	1-2	4-0	1-7		A 613	10	12-11		1	1-11	4-3	1-3	4-3	1-11	1	F 1001	24	33-10	3494	ST							
A 514	10	11-6		1	1-7	3-10	1-2	3-10	1-7	1												F 1002	36	34-10	5396	ST							
THRU			582		VARY	LENGTH	BY 0'	2 0/0"														F 1003	120	7-6	3873	11	6-1						
					VARY	DIM. B	BY 0'	1 0/0"			A 701	68	31-8	4401	ST								F 1004	5	41-0	882	ST						
					VARY	DIM. D	BY 0'	1 0/0"			A 702	102	30-9	6411	ST								F 1005	15	34-11	2254	ST						
A 518	10	10-10		1	1-7	3-6	1-2	3-6	1-7	1	A 703	10	17-2		1	2-3	6-1	1-3	6-1	2-3	1	F 1006	5	26-8	574	ST							
A 521	10	12-1	126	1	1-7	4-1	1-3	4-1	1-7		THRU			2313		VARY	LENGTH	BY 0'	4 0/0"														
																VARY	DIM. B	BY 0'	2 0/0"			F 1101	80	7-9	3294	11	6-2						
																VARY	DIM. D	BY 0'	2 0/0"														
A 522	10	11-9		1	1-7	3-11	1-3	3-11	1-7	1	A 709	10	15-2		1	2-3	5-1	1-3	5-1	2-3	1												
THRU			587		VARY	LENGTH	BY 0'	3 0/0"																									
					VARY	DIM. B	BY 0'	1 1/2"																									
					VARY	DIM. D	BY 0'	1 1/2"																									
A 526	10	10-9		1	1-7	3-5	1-3	3-5	1-7	1	A 1001	40	17-9	3055	11	16-4																	
A 527	40	3-5	143	ST							A 1002	40	12-2	2094	ST																		
A 528	18	8-5	158	ST							A 1003	40	7-0	1205	ST																		
A 530	2	3-1	6	ST							A 1101	30	16-0	2550	11	14-5																	
A 531	2	2-7	5	ST							A 1102	30	11-0	1753	ST																		
A 532	2	5-6	11	1		2-3	1-3	2-3			A 1103	20	6-3	664	ST																		
A 533	2	6-2	13	1		2-3	1-11	2-3																									
A 534	32	14-4	478	ST							D 801	128	5-7	1908	21	1-1	3-6	0-6															
A 535	32	15-10	528	ST																													
A 536	32	17-10	595	ST							F 501	79	10-5	858	ST																		
A 537	32	16-4	545	ST							F 502	28	32-10	959	ST																		
											F 503	42	32-11	1442	ST																		
											F 504	194	4-4	877	ST																		

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.

**BAR SIZE DESIGNATION**

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE 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, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 18/20

**REINFORCING STEEL LIST**  
BRIDGE NO CUY.-480-0943  
1480 OVER W. 150th ST.  
CUYAHOGA COUNTY STA. 523+65.18  
STA. 524+51.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ht			fwd	G.W.M.	4/15/69	

CUYAHOGA COUNTY  
CUY.-480-B-54

RECORDED  
AUG 1962

**NOTES**

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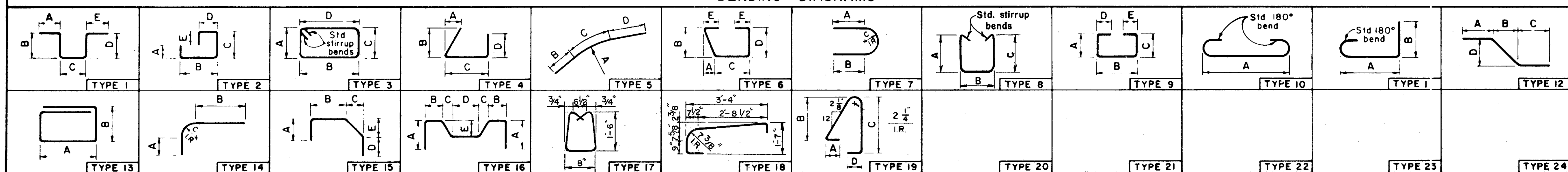
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MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE				
WING WALLS (CONTINUED)											WING WALLS (CONTINUED)											WING WALLS (CONTINUED)														
W 531	36	19-1	717	ST							3	W 701	9	10-6	193	ST							F 622	1	20-7	5	78-9			20-7			1			
W 532	2	17-0		ST							1														201		VARY	LENGTH	BY 0'-6 0/8"							
THRU			97		VARY	LENGTH	BY 3'-7 3/8"																				VARY	DIM. A	BY 2'-0 0/0"							
W 535	2	6-2		ST							1	W 901	7	12-6	234	ST												VARY	DIM. C	BY 0'-6 0/0"						
W 536	2	21-6	45	ST							3														F 628	1	17-7	5	66-9		17-7			1		
W 537	2	19-6	41	ST							3																									
W 538	2	21-0	44	ST							3	W 901	5	14-8	249	ST																				
W 539	2	34-10	73	ST							3	W 902	7	14-8	349	ST											F 701	21	6-2	265	ST					
W 540	8	17-3	144	ST							3															F 702	24	8-0	392	10	6-4					
W 541	2	13-5		ST							1															F 703	19	6-9	262	4	0-4	4-8	2-3			
THRU			62		VARY	LENGTH	BY 4'-0 3/8"					F 506	154	10-0	1606	ST										F 704	18	10-10	399	4	0-7	8-9	2-3			
W 544	2	1-4		ST							1	F 507	16	3-0	50	ST										F 705	18	6-7	242	ST						
W 545	2	24-4		ST							1	F 508	1	16-7		ST										F 706	16	7-6	245	10	5-10					
THRU			291		VARY	LENGTH	BY 1'-5 5/8"					THRU			143		VARY	LENGTH	BY 0'-4 0/0"						F 707	22	8-4	375	10	6-8						
W 551	2	15-6		ST							1	F 516	1	13-11		ST										F 708	1	24-8	5	78-3		24-8			1	
W 552	2	14-8		ST							1	F 517	1	16-6		ST										THRU			193		VARY	LENGTH	BY 0'-8 0/0"			
THRU			150		VARY	LENGTH	BY 1'-5 1/2"					THRU			130		VARY	LENGTH	BY 0'-3 0/0"											VARY	DIM. A	BY 2'-1 0/0"				
W 558	2	5-11		ST							1	F 524	1	14-9		ST														VARY	DIM. C	BY 0'-8 0/0"				
W 559	2	25-0		ST							1	F 525	8	4-1	34	ST										F 711	1	22-8	5	72-0		22-8			1	
THRU			269		VARY	LENGTH	BY 1'-5 0/0"					F 526	1	16-7		ST										F 712	1	25-3	5	78-6		25-3			1	
W 564	2	17-11		ST							1	THRU			163		VARY	LENGTH	BY 0'-2 1/2"						THRU			425		VARY	LENGTH	BY 0'-6 3/8"				
W 565	2	17-3		ST							1	F 535	1	14-8		ST														VARY	DIM. A	BY 1'-2 1/2"				
THRU			165		VARY	LENGTH	BY 1'-7 5/8"					F 536	24	6-10	171	10	5-8													VARY	DIM. C	BY 0'-6 3/8"				
W 570	2	9-1		ST							1															F 720	1	21-0	5	68-10		21-0			1	
W 571	10	30-8	320	ST							3															F 721	1	18-6	5	78-2		18-6			1	
W 572	2	29-3		ST							1	F 601	9	5-10	79	4	0-3	4-1	1-11						THRU			217		VARY	LENGTH	BY 0'-4 0/0"				
THRU			275		VARY	LENGTH	BY 3'-7 7/8"					F 602	8	6-8	80	4	0-4	4-11	1-11											VARY	DIM. A	BY 1'-3 0/0"				
W 579	2	3-8		ST							1	F 603	6	6-5	58	4	0-4	4-8	1-11											VARY	DIM. C	BY 0'-4 0/0"				
W 580	14	15-3	223	ST							3	F 604	17	7-0	179	10	5-8									F 726	1	16-10	5	71-11		16-10			1	
W 581	2	13-4	28	ST							3	F 605	7	5-9	60	4	0-3	4-0	1-11																	
W 582	2	7-4	15	ST							3	F 606	10	10-5	156	4	0-6	8-8	1-11																	
W 583	2	14-10	31	ST							3	F 607	11	6-9	112	4	0-4	5-0	1-11							F 802	14	7-4	274	4	0-4	5-1	2-6			
W 584	2	10-6	22	ST							3	F 608	16	7-1	170	10	5-9									F 803	13	12-11	448	4	0-8	10-8	2-6			
W 585	2	6-0	13	ST							3	F 609	12	12-5	224	4	0-8	10-8	1-11						F 804	18	9-10	473	10	7-8						
W 586	2	16-3	34	ST							3	F 610	13	7-9	151	4	0-5	6-0	1-11						F 805	24	10-0	641	10	7-10						
W 587	2	13-2		ST							1	F 611	9	4-11	66	ST										F 808	1	24-6	5	78-3		24-6			1	
THRU			229		VARY	LENGTH	BY 0'-10 0/0"																			THRU			505		VARY	LENGTH	BY 0'-3 0/0"			
W 593	2	18-2		ST							1	F 612	1	20-8		5	78-9		20-8										VARY	DIM. A	BY 0'-10 0/0"					
W 594A	2	18-8		ST							1	THRU			288		VARY	LENGTH	BY 0'-4 0/0"										VARY	DIM. C	BY 0'-3 0/0"					
THRU			329		VARY	LENGTH	BY 1'-3 1/2"										VARY	DIM. A	BY 1'-2 0/0"							F 815	1	22-9	5	72-5		22-9			1	
W 594G	2	26-5		ST							1						VARY	DIM. C	BY 0'-4 0/0"																	
												F 621	1	17-8		5	68-3		17-8																	

**BAR SIZE DESIGNATION**

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**BENDING DIAGRAMS**



ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 19/20

**REINFORCING STEEL LIST**

BRIDGE NO. CUY.-480-0943  
1-480 OVER W. 150th ST.  
CUYAHOGA COUNTY STA. 523+65.18  
STA. 524+51.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
			fwd	G.W.M.	4/15/69	



11-1

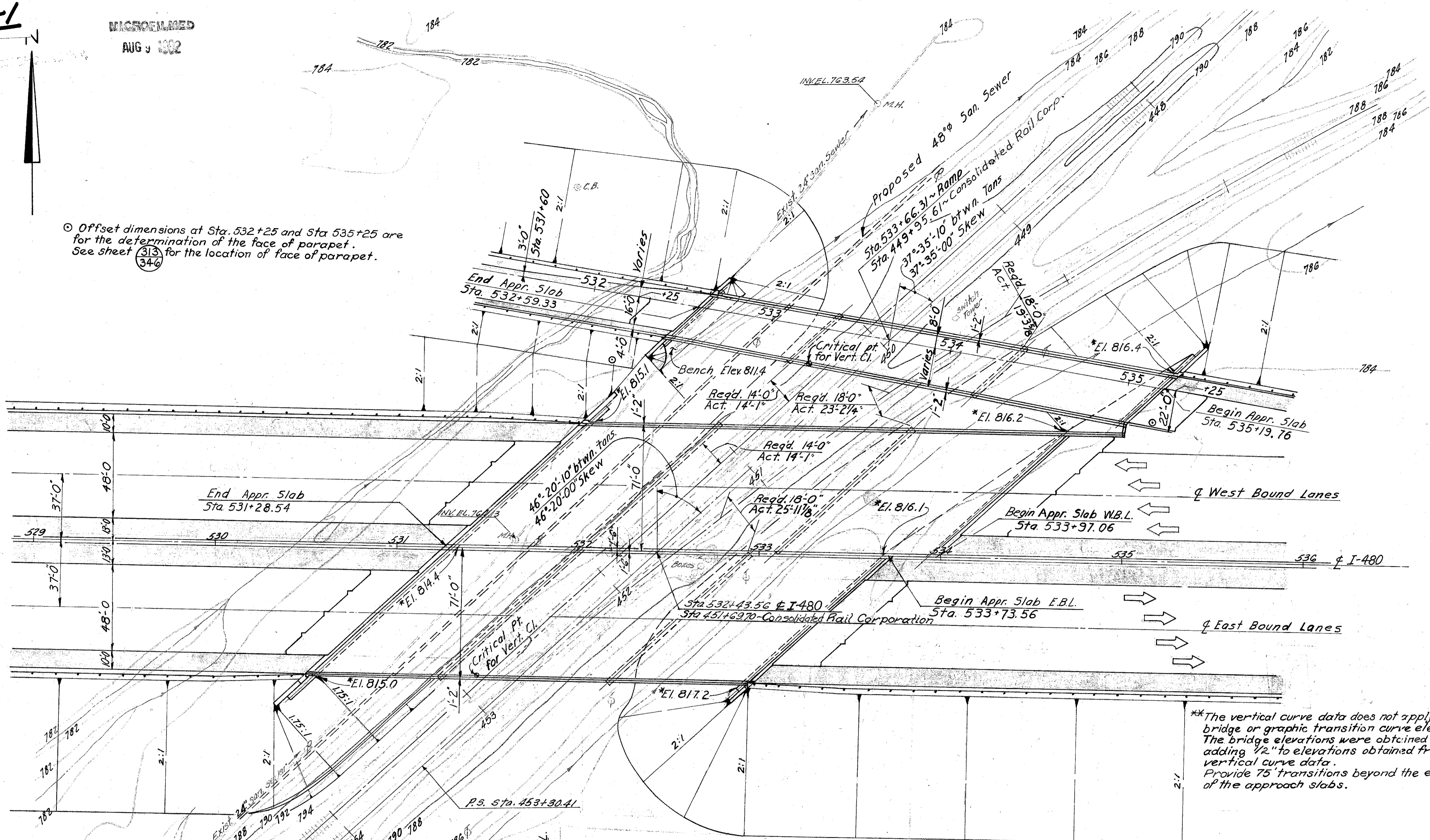
MICROFILMED  
AUG 1 1982

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-8.54

280  
346

Offset dimensions at Sta. 532+25 and Sta. 535+25 are for the determination of the face of parapet. See sheet 313 for the location of face of parapet.



**PROPOSED STRUCTURE ~ RAMP**  
 Type: Continuous steel plate girder with reinforced concrete deck and superstructure.  
 Spans: 67'-9" ~ 104'-0" ~ 83'-0" % brgs.  
 Roadway: Variable % 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" % 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 pile 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.

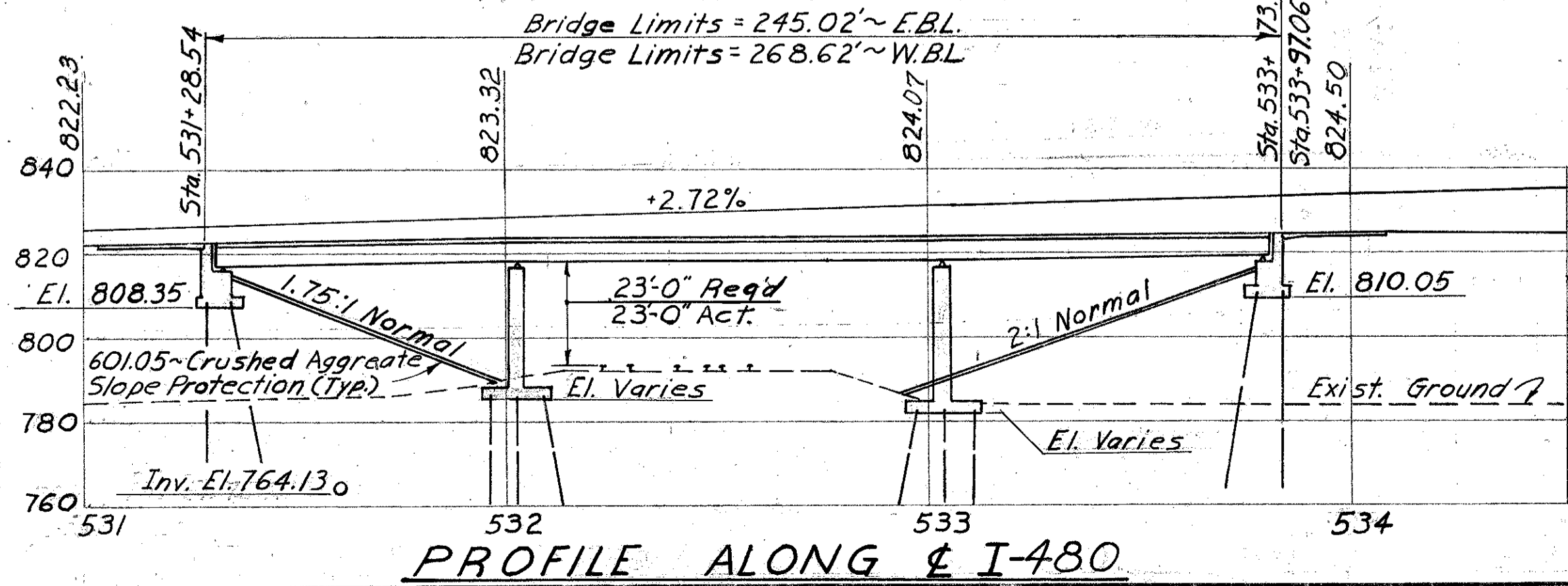
\*\*The vertical curve data does not apply to bridge or graphic transition curve elevations. V.C. DATA - RAMP  
 PVI - Sta. 533+50.00 Elev. - 825.20  
 V.C. = 560'  
 g<sub>1</sub> = +5.40%; g<sub>2</sub> = -0.60%  
 P.G. = 821.00  
 Corr. = -4.20'

\*\* V.C. DATA - I-480  
 PVI - Sta. 534+50.00 Elev. - 835.03  
 V.C. = 1600'  
 g<sub>1</sub> = +2.72%; g<sub>2</sub> = -2.52%  
 P.G. = 824.55  
 Corr. = -10.48'

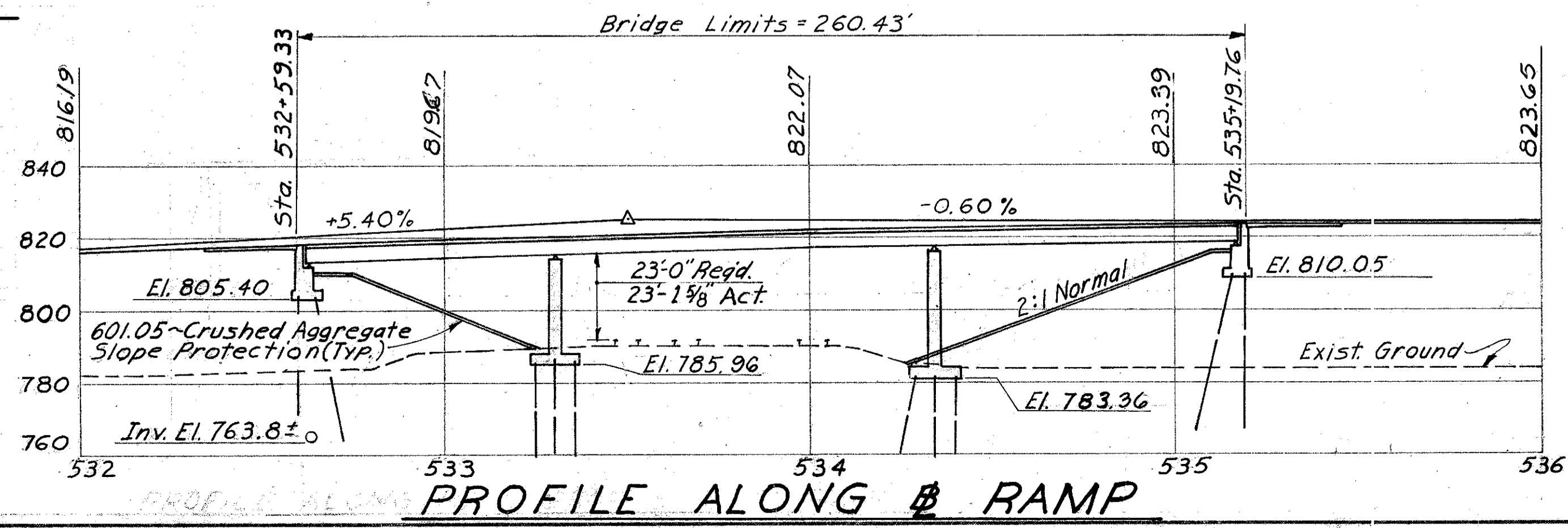
**TRAFFIC ESTIMATE**

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

### PLAN



PROFILE ALONG I-480



PROFILE ALONG RAMP

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 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
ANA	ANA		pwd	G.W.M.	6/3/69	

GENERAL NOTES

REFERENCES:

Standard Drawings:

End Dam, End Crossframe & Scuppers SD-1-69, Sheets 1, 2 & 3 Dated 6-12-69  
 Railing Details, BR-1-67, Sheet 1 Revised 10-15-71  
 Rocker & Bolster Details RB-1-55, Revised 2-2-59  
 Approach Slab Details AS-1-72, Dated 6-30-72  
 Highway Lighting HL-3, Dated 7-27-73  
 HL-4 and HL-7 Revised 1-21-76  
 HL-5 Dated 9-6-73

Supplemental Specifications:

Chemical Admixtures For Concrete, Type A, B or D 808, Dated 1-1-71

Concrete curing & protective Membrane 836, Dated 3-12-75  
 Special Pile Tests 838 Dated 3-18-70

PAINTING for New Structural Steel 846 Dated 10-7-75

Inorganic Zinc Silicate Paint 950 Dated 10-7-75

Blue-Green Vinyl Paint 951 Dated 10-7-75

Common Details:

Contraction Joints Sheet 328  
 Expansion Joints Sheet 328

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-2000 (57)

Concrete, Class "C": Basic Unit Stress = 1,333 p.s.i. For Substructure  
 1,200 p.s.i. For Superstructure

Structural Steel, ASTM A-36: Basic Unit Stress = 20,000 p.s.i.

Reinforcing Steel, ASTM A615, A616, A-617

Basic Unit Stress = 20,000 p.s.i.

EMBANKMENT: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the sub-grade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and for the earth bench and for piers that are set in the filled area.

EXCAVATION QUANTITY includes the removal of fill material required for the construction of the piers and abutments, and the removal of fill material above the level of the earth bench.

CRUSHED AGGREGATE SLOPE PROTECTION shall be provided under the structure as indicated on the General Plan.

PILES shall be driven to refusal on bedrock or to 20 blows per inch for the last few inches of penetration. The design load is 45 tons per pile for the abutment and the pier piles.

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

Modify Standard Drawing AS-1-72 as follows:

- Dimension W = 48'-0"
- Change clearance for top reinforcing steel from 2" to 3".
- Jacking Holes shall be omitted.

Preformed Bearing Pads: In lieu of the hardness requirements of 711.21, preformed bearing pads shall have a Shore A durometer of 80±10.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GENERAL
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP
503	1780	C.Y.	UNCLASSIFIED EXCAVATION	1190	590		
506	LUMP	SUM	PILE TEST LOAD				LUMP
505	LUMP	SUM	TEST PILE				LUMP
506	1	EACH	SUBSEQUENT PILE TEST LOAD				1
507	8520	L.F.	STEEL PILES, HPIOX42	4320	4200		
509	289463	L.B.	REINFORCING STEEL	54380	62603	172480	
SPECIAL	157297	L.B.	EPOXY COATED REINFORCING STEEL	1158		156139	
511	508	C.Y.	CLASS C CONCRETE, FOOTINGS	348	160		
511	520	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	520			
511	534	C.Y.	CLASS C CONCRETE, PIERS ABOVE FOOTINGS		534		
511	1172	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			1172	
512	95	L.F.	PREMOLDED SEALING STRIP	95			
513	1062300	LB	STRUCTURAL STEEL, PRIMER PER 846 (See Proposal Notes)			1062300	
846	1062300	LB	FIELD PAINTING OF STRUCTURAL STEEL			1062300	
516	13	S.F.	1/2 INCH PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	13			
516	100	S.F.	1 INCH PREFORMED EXPANSION JOINT FILLER	100			
516	6	L.F.	PREFORMED ELASTOMERIC JOINT SEALER, 705.11			6	
518	286	C.Y.	POROUS BACKFILL	286			
518	493	L.F.	6 INCH PERFORATED, HELICAL CSP, INCLUDING SPECIALS, 707.01	493			
518	298	L.F.	6 INCH NON-PERFORATED, HELICAL CSP, 707.01	298			
518	29	EA	SCUPPERS INCLUDING SUPPORTS				29
601	3279	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION				3279
8625			SEE SHEET 203 FOR LIGHTING SUMMARY				
838	3	HOUR	SPECIAL PILE TESTS				3
808	1172	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE TYPE A, B OR D			1172	

UTILITY LINES: All labor and expenses involved in relocating the affected utility lines shall be borne by the Owners. The Contractor and the Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

CONSTRUCTION CLEARANCE of 20 feet vertically above the top of the railroad tracks and 8 feet horizontally from the center of the tracks shall be maintained at all times.

RAILROAD AERIAL LINES shall 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.

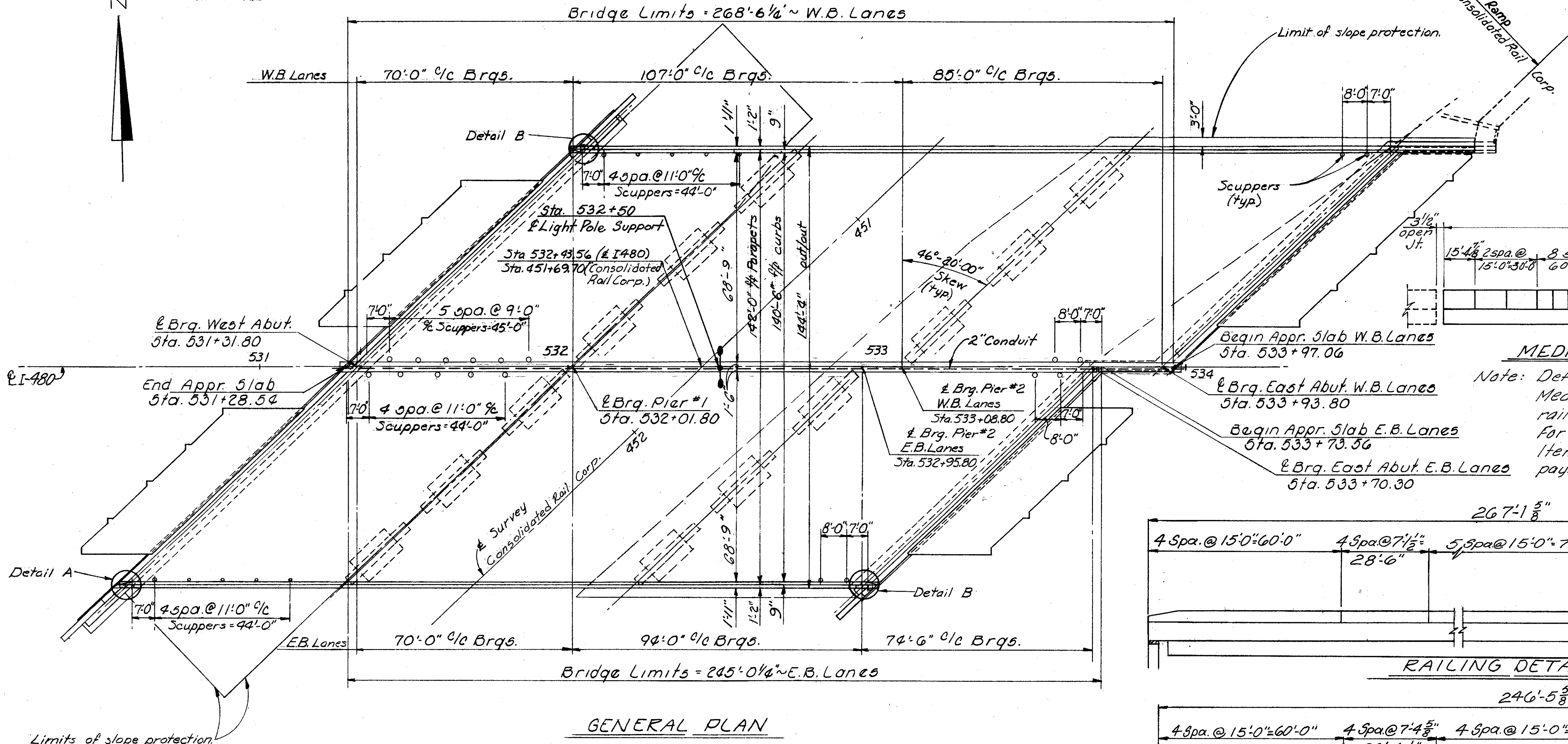
DECK PROTECTION METHOD: Epoxy Coated Reinforcing Steel, Top mat only  
 MONOLITHIC WEARING SURFACE: Thickness is assumed, for design purposes, to be 1".  
 MINIMUM BAR LAP shall be 30 diameters.

ATTACHMENT OF GUARDRAIL TO CONCRETE PARAPETS: Concrete Insert Anchor Assemblies Per Standard Construction Drawings GR-3 & GR-1 shall be placed during Parapet Construction.

ROADWAY FINISH: See Sheet No. 251.

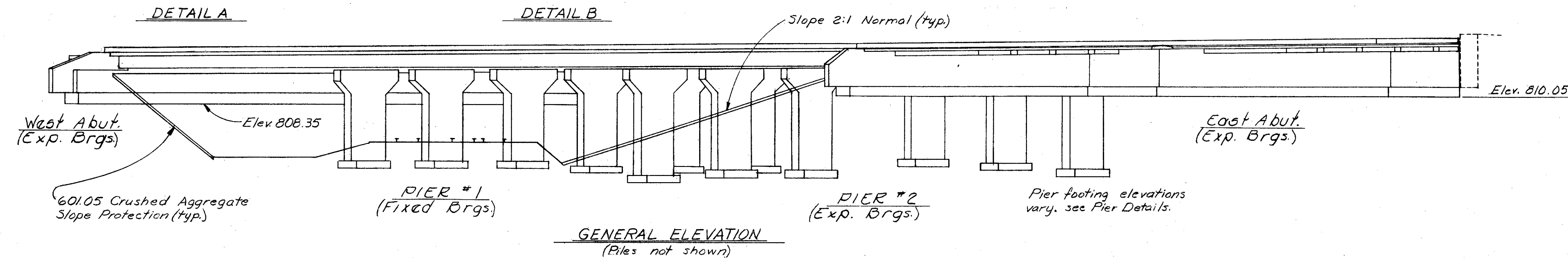
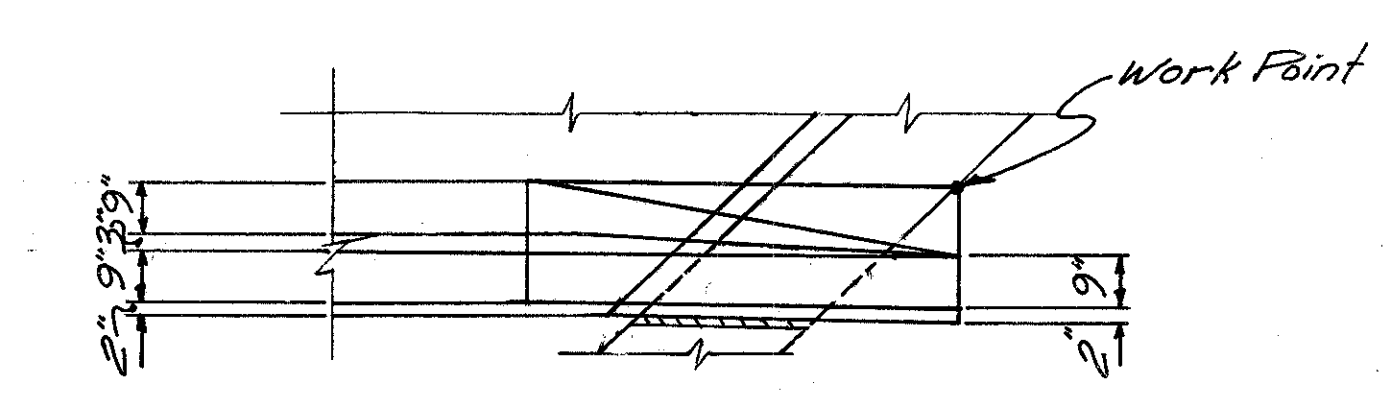
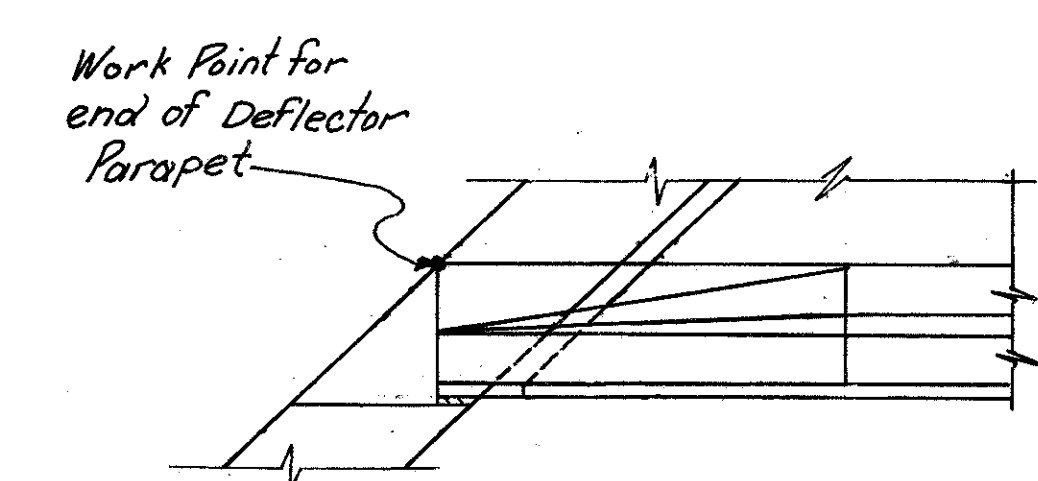
ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						2/26
GENERAL NOTES AND ESTIMATED QUANTITIES BRIDGE NO. CUY-480-0957 I-480 OVER PENN CENTRAL R.R. CUYAHOGA COUNTY STA. 531+28.54 STA. 533+97.06						
DESIGNED	DRAWN	TRACKED	CHECKED	REVIEWED	DATE	REVISED
HT			D.L.R. 8/1/67	G.W.M.	6/13/69	7-17-78

MICROFILMED  
AUG 1 1982



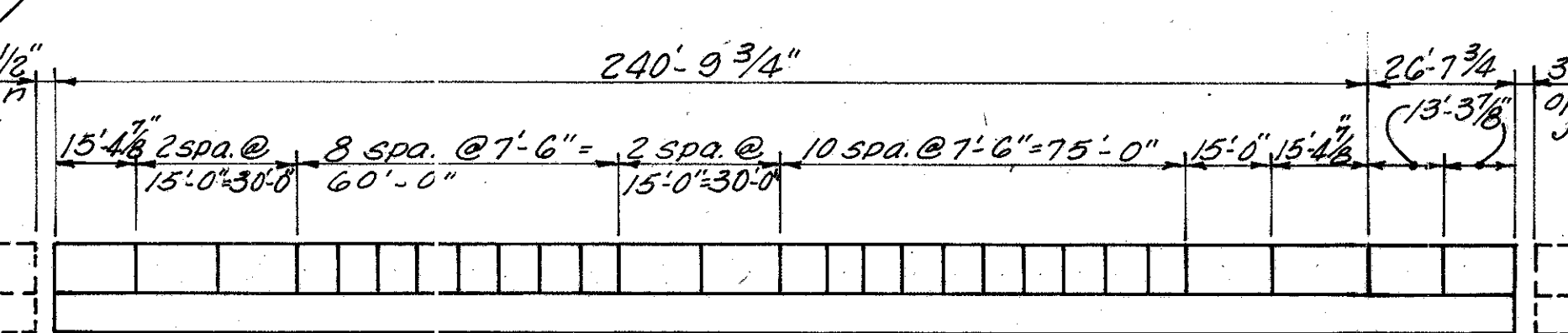
GENERAL PLAN

Limits of slope protection

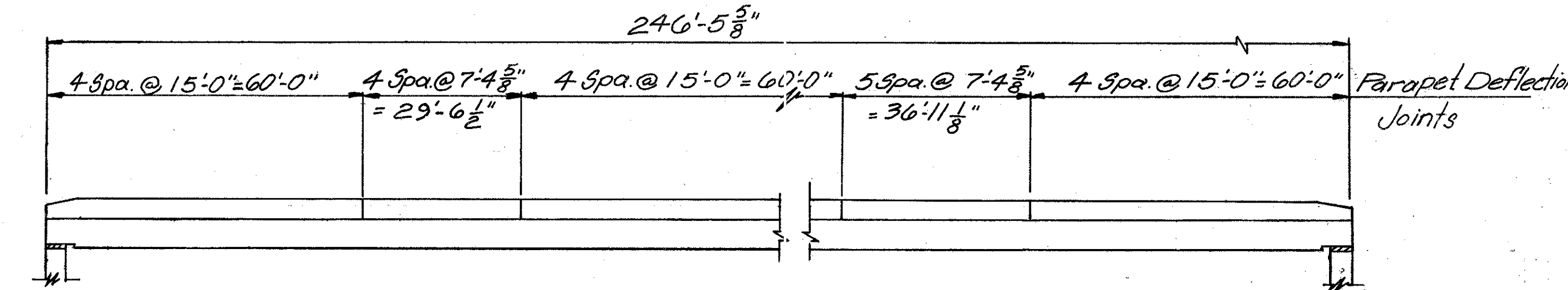
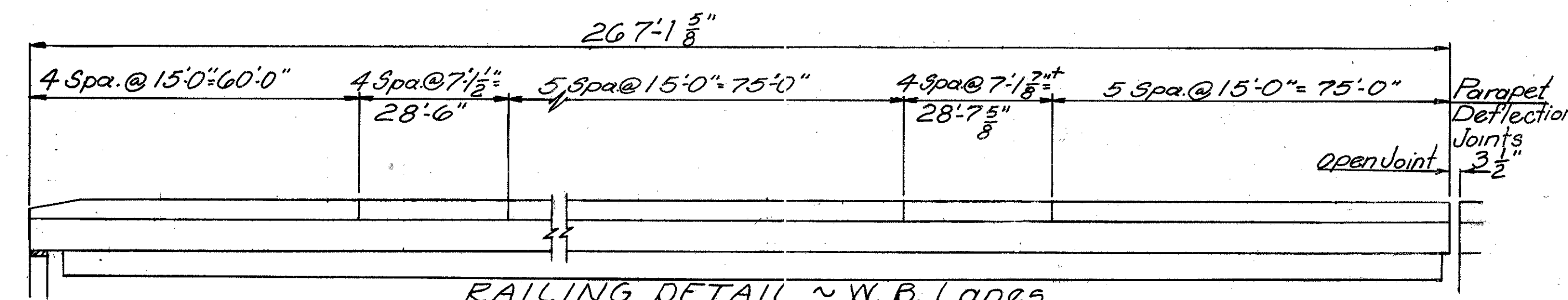


GENERAL ELEVATION

**NOTE**  
For light pole support reinforcing see std. Dwg. HL-4.



MEDIAN DEFLECTION JOINT SPACING



For details of couplings at ends of Deflector Curbs See Standard Drawing HL-5.

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						
GENERAL PLAN and ELEVATION						3/26
BRIDGE No. CUY-480-0957 I-80 OVER CONSOLIDATED RAIL CORP.						
CUYAHOGA COUNTY						Sta. 531+28.54 Sta. 533+97.06
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H	DEK		BSS	G.W.M.	9/2/69	

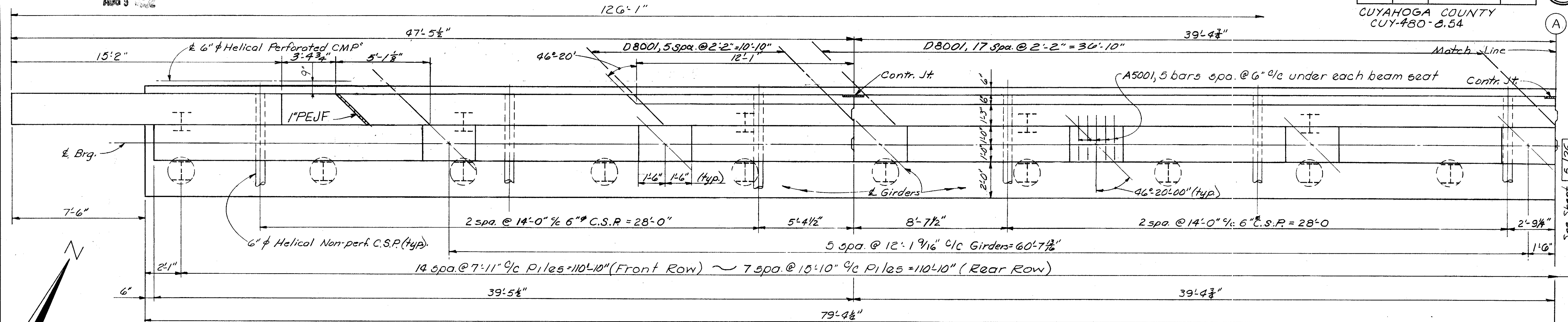
Rev. 6-22-78

APPROVED  
AUG 1962

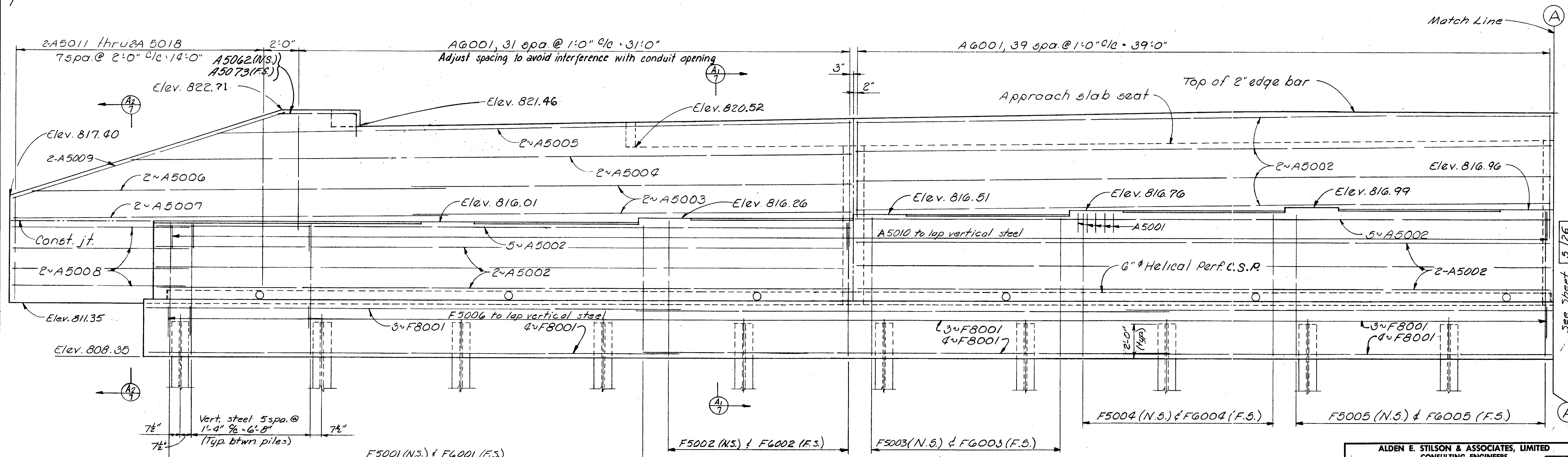
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-B.54

283  
346



PARTIAL PLAN



PARTIAL ELEVATION

PILES  
 I Vertical  
 ⊙ Batter 1:4

NOTES  
 Reinforcing steel location  
 N.S. indicates near side  
 F.S. indicates far side  
 For additional notes and details  
 see Sheets 5/26 thru 7/26

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

WEST ABUTMENT DETAILS

BRIDGE N<sup>o</sup> CUY-480-0957  
 I-480 OVER CONSOLIDATED RAIL CORP.  
 CUYAHOGA COUNTY Sta. 531+28.54  
 Sta. 533+97.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	OK		BSS	G.W.M.	4/3/69	

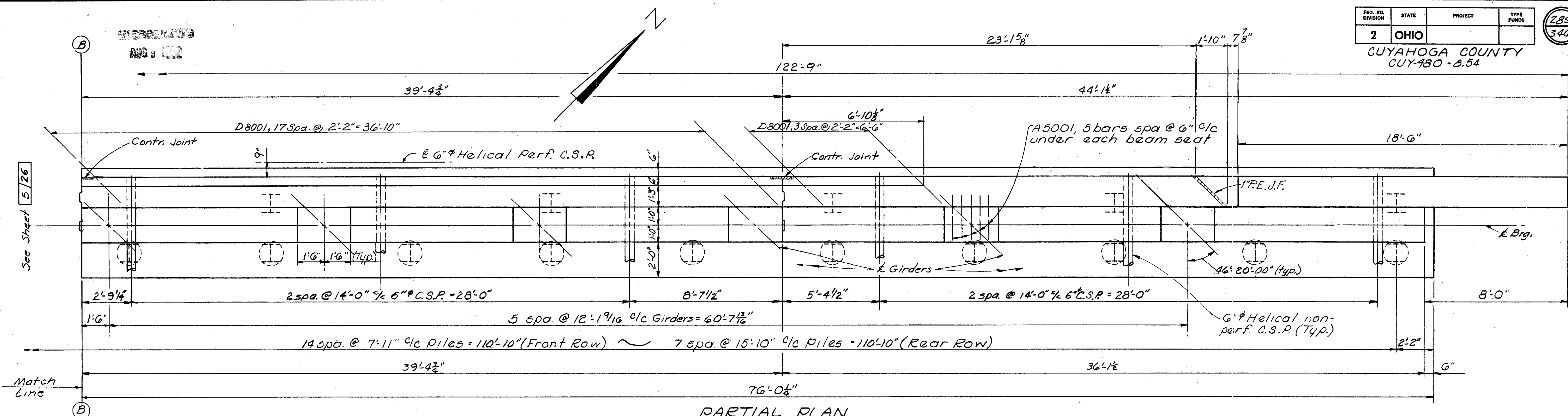
Rev. 6-22-78

See Sheet 5/26

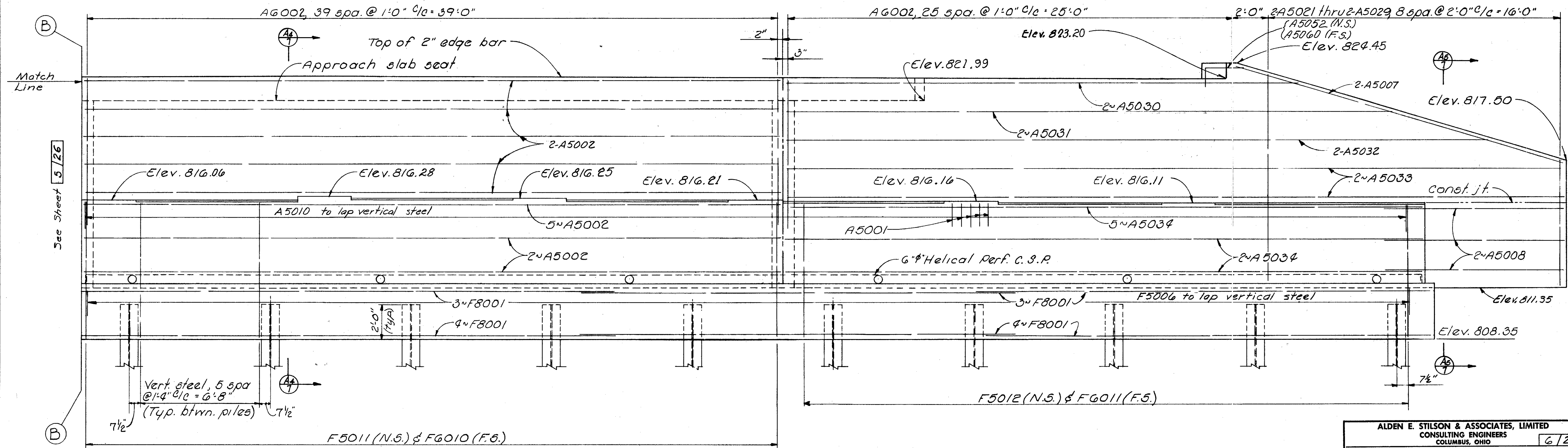
See Sheet 5/26







PARTIAL PLAN



PARTIAL ELEVATION

- NOTES**
- Reinforcing steel location  
N.S. Indicates near side  
F.S. Indicates far side
- For additional notes & details  
see sheets 4/26, 5/26 & 7/26.
- PILES**
- ⊞ Vertical
  - ⊕ Batter 1:4

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

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

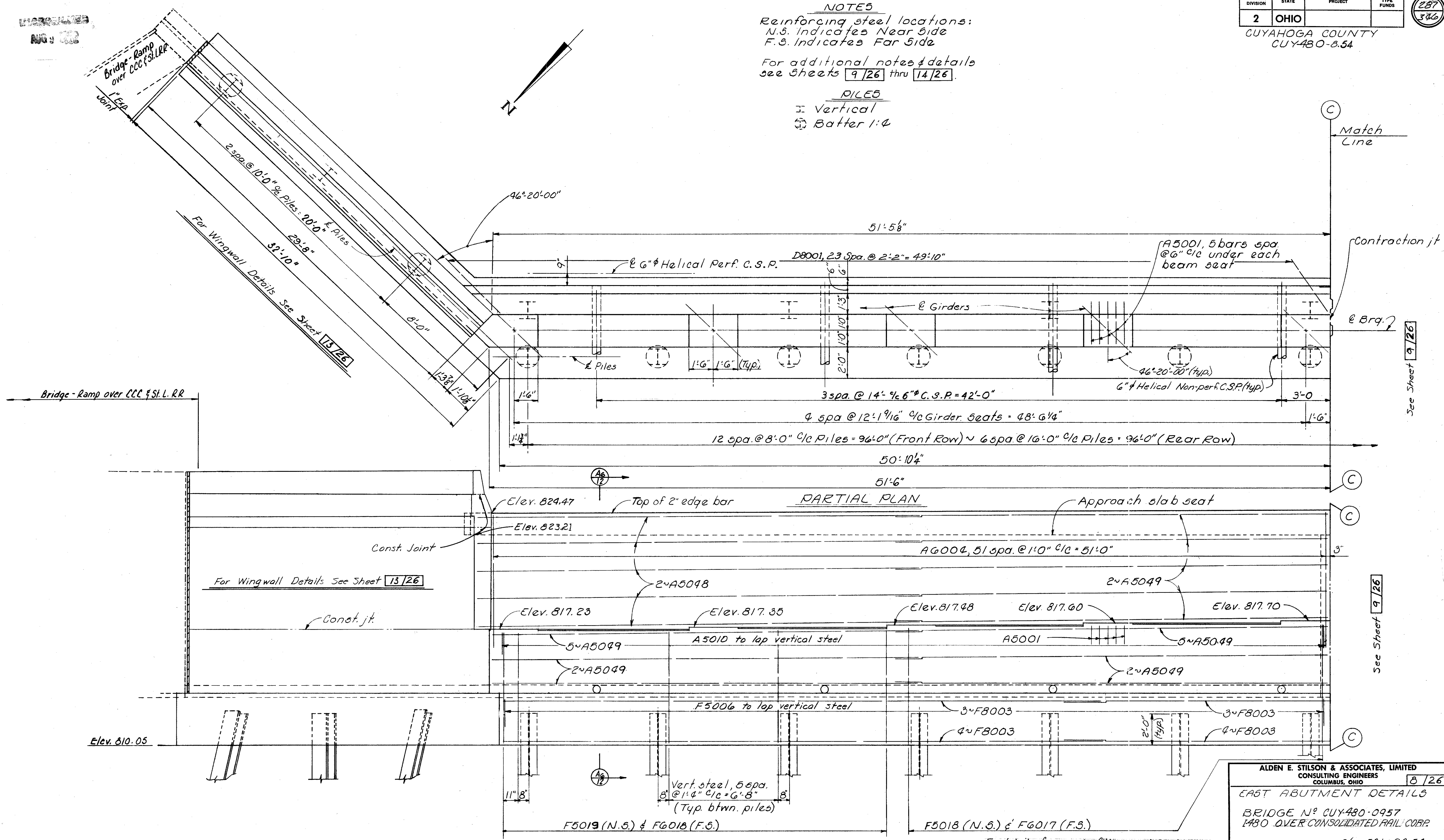
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	EK		BSS	G.W.M.	4/13/69	

Rev. 6-22-78



**NOTES**  
Reinforcing steel locations:  
N.S. Indicates Near Side  
F.S. Indicates Far Side  
For additional notes & details  
see Sheets 9/26 thru 14/26.

**PILES**  
⊥ Vertical  
⊕ Batter 1:4



ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 8/26

EAST ABUTMENT DETAILS  
BRIDGE N° CUY480-0957  
1480 OVER CONSOLIDATED RAIL CORP.  
CUYAHOGA COUNTY Sta 531+28.54  
Sta 533+97.06

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

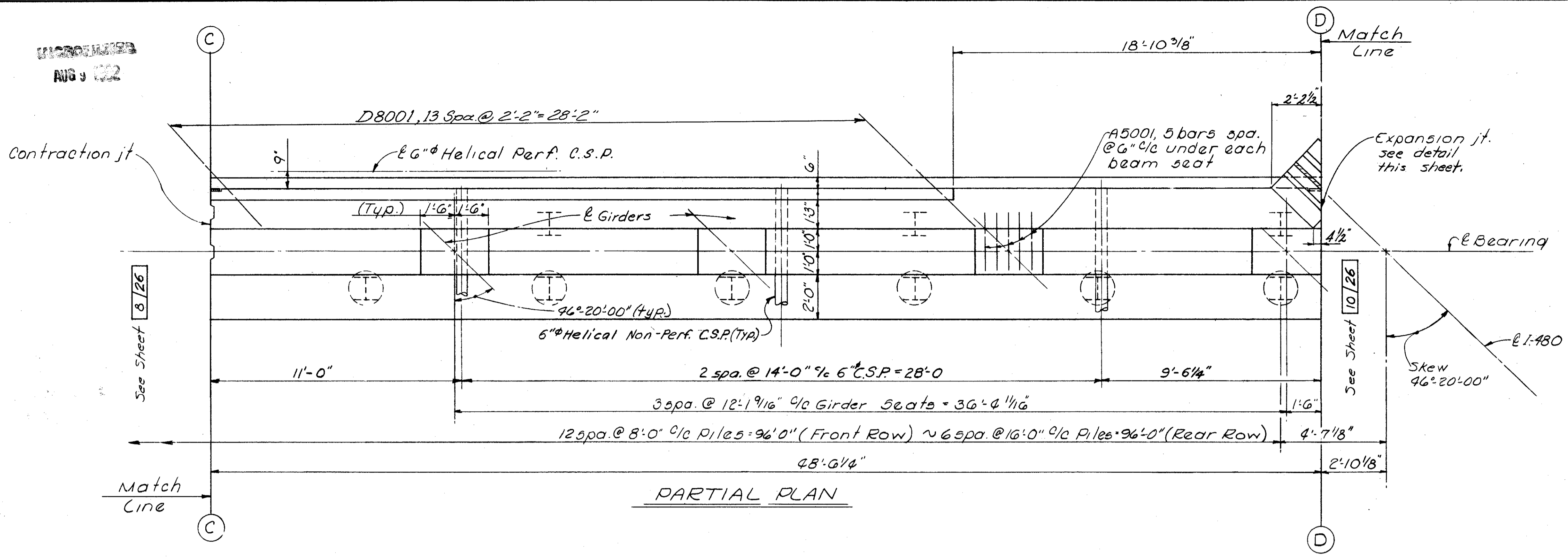
For details of expansion fittings and Couplings  
at abutment see Standard Drawing HL-5.

REVISIONS  
AUG 9 1962

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-8.54

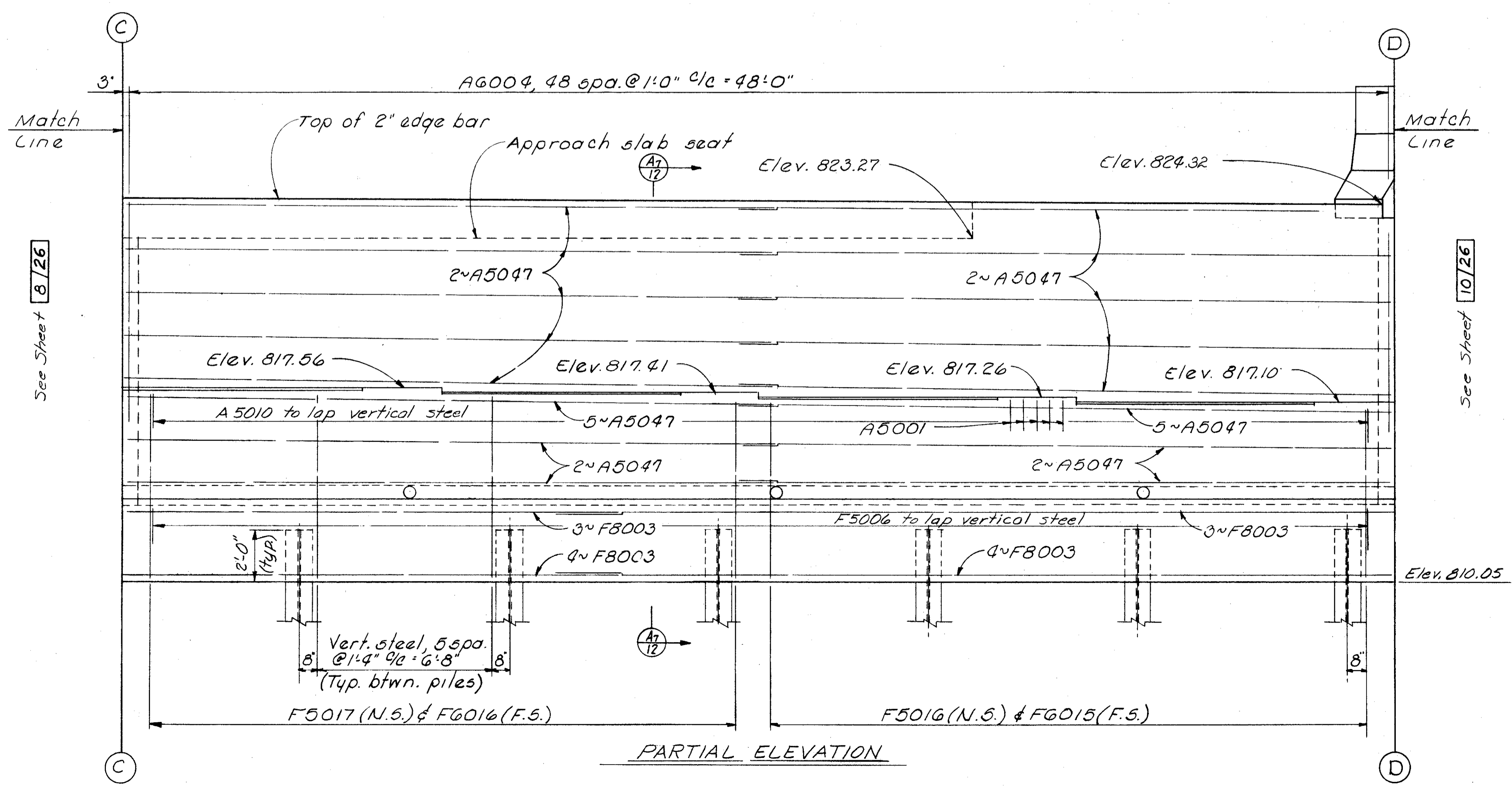
288  
346



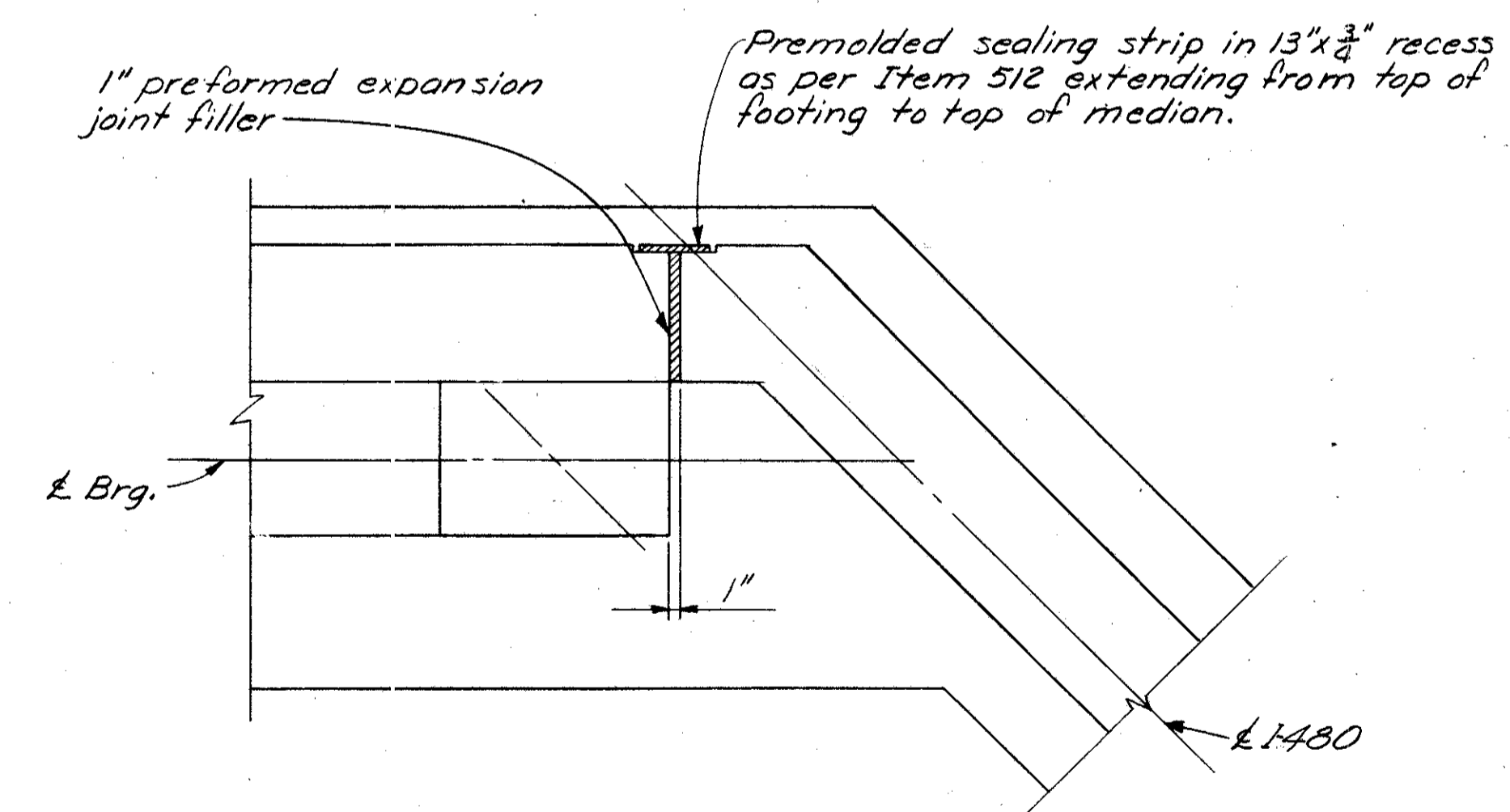
PARTIAL PLAN

NOTES  
Reinforcing steel locations:  
N.S. Indicates Near Side  
F.S. Indicates Far Side  
For additional notes & details  
see sheets 8/26, 10/26 thru 14/26.

PILES  
I Vertical  
⊙ Batter 1:4



PARTIAL ELEVATION



EXPANSION JOINT DETAIL  
NOTE: Median not shown

ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 9/26

EA5T ABUTMENT DETAILS

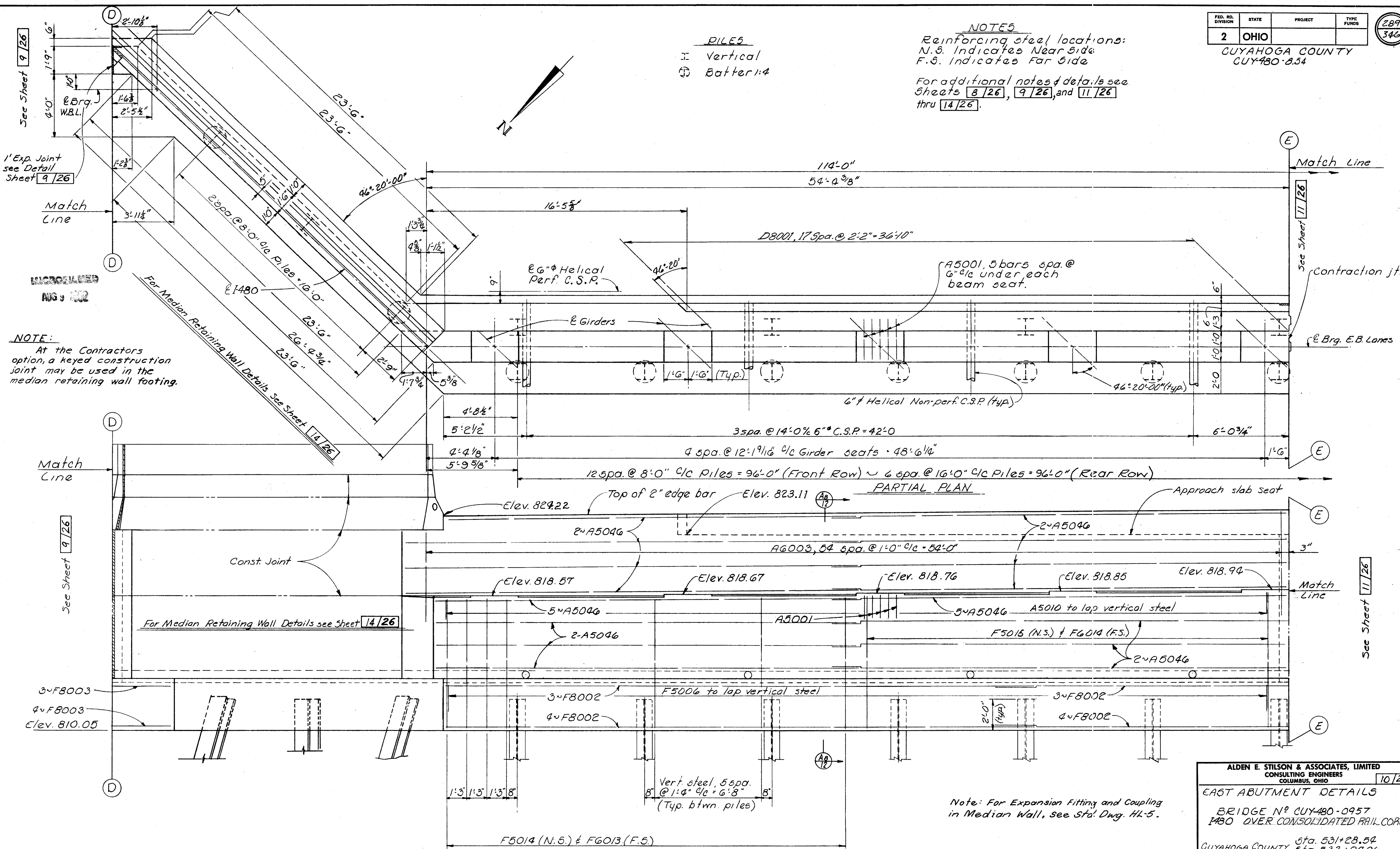
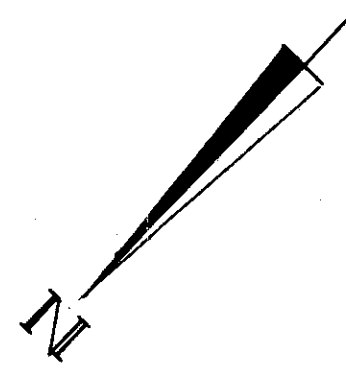
BRIDGE No CUY-480-0957  
I-480 OVER CONSOLIDATED RAIL CORP.  
CUYAHOGA COUNTY Sta. 531+28.54  
CUYAHOGA COUNTY Sta. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	DEK		BSS	G.W.M.	9/13/69	

**NOTES**

Reinforcing steel locations:  
N.S. Indicates Near Side  
F.S. Indicates Far Side  
For additional notes & details see  
Sheets 8/26, 9/26, and 11/26  
thru 14/26.

**PILES**  
I Vertical  
⊙ Batter 1:4



1' Exp. Joint see Detail Sheet 9/26

**NOTE:**  
At the Contractors option, a keyed construction joint may be used in the median retaining wall footing.

Note: For Expansion Fitting and Coupling in Median Wall, see Sta. Dwg. HL-5.

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO							10/26
EAST ABUTMENT DETAILS							
BRIDGE N <sup>o</sup> CUY-480-0957							
1480 OVER CONSOLIDATED RAIL CORP.							
GUYAHOGA COUNTY Sta. 531+28.54							
Sta. 533+97.06							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
Ht	DEK		BSS	G.W.M.	9/13/60		

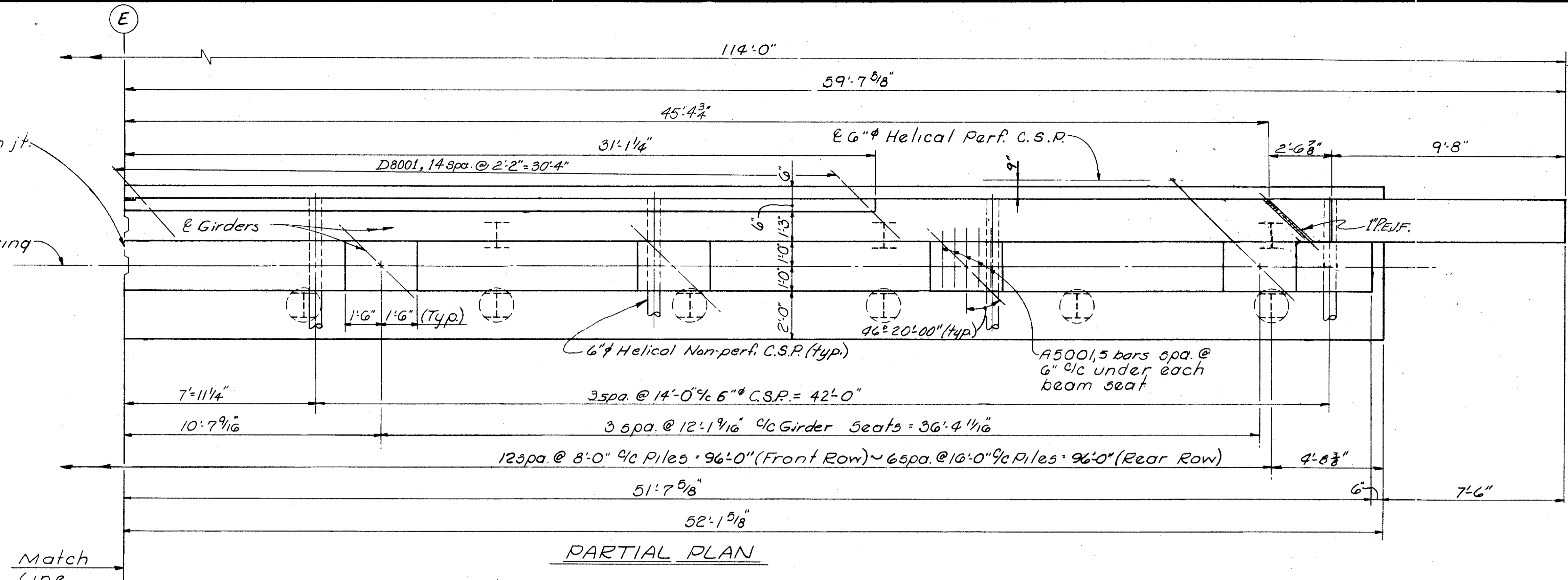
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

290  
346

CUYAHOGA COUNTY  
CUY-480-8.54

See Sheet 10/26

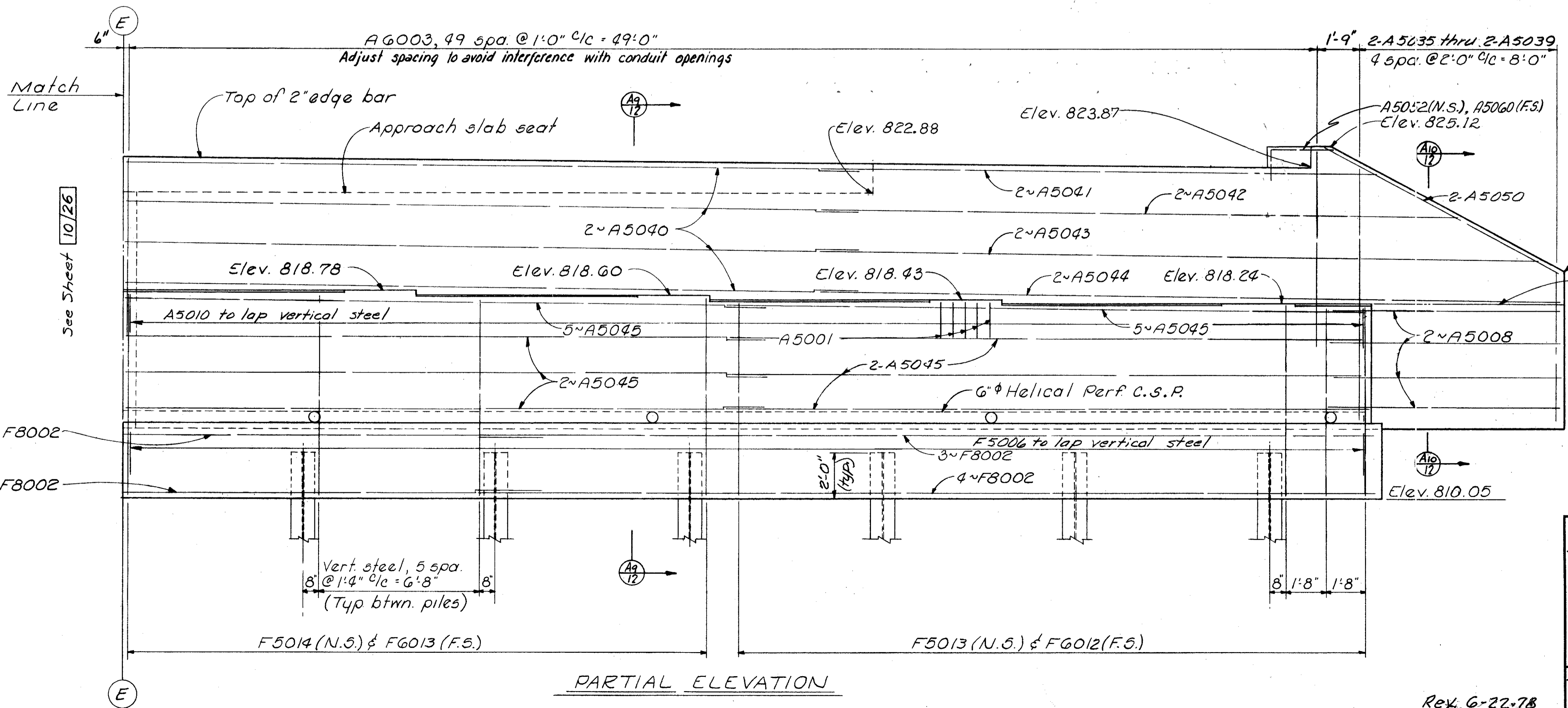
Contraction jt.  
Bearing



PARTIAL PLAN

**NOTES**  
Reinforcing steel locations:  
N.S. indicates Near Side.  
F.S. indicates Far Side  
For additional notes and details see Sheets 8/26 thru 10/26 and 12/26 thru 14/26.

**PILES**  
Vertical  
Batter 1:4



PARTIAL ELEVATION

ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 11/26

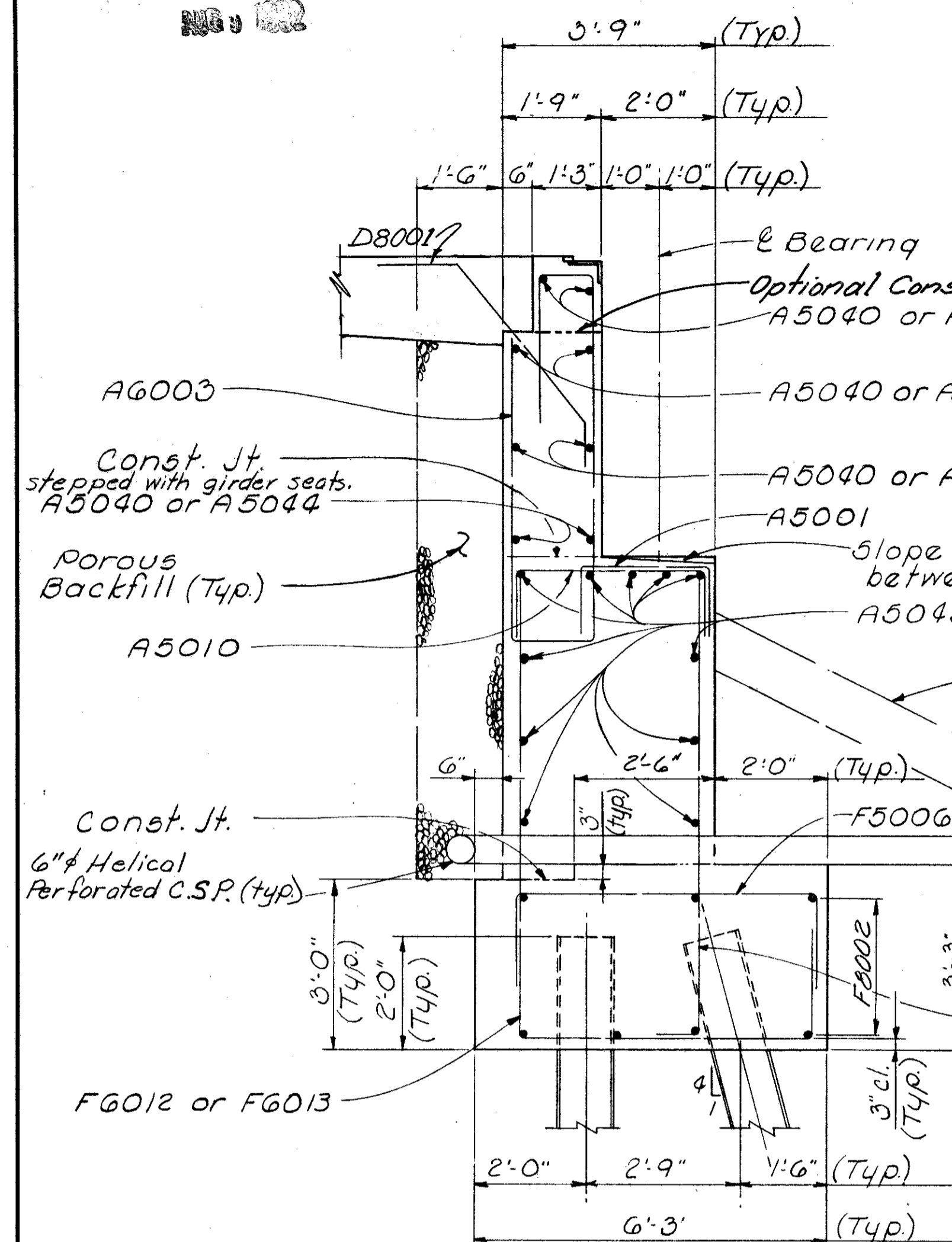
EAST ABUTMENT DETAILS

BRIDGE No CUY-480-0957  
1480 OVER CONSOLIDATED RAIL CORP.

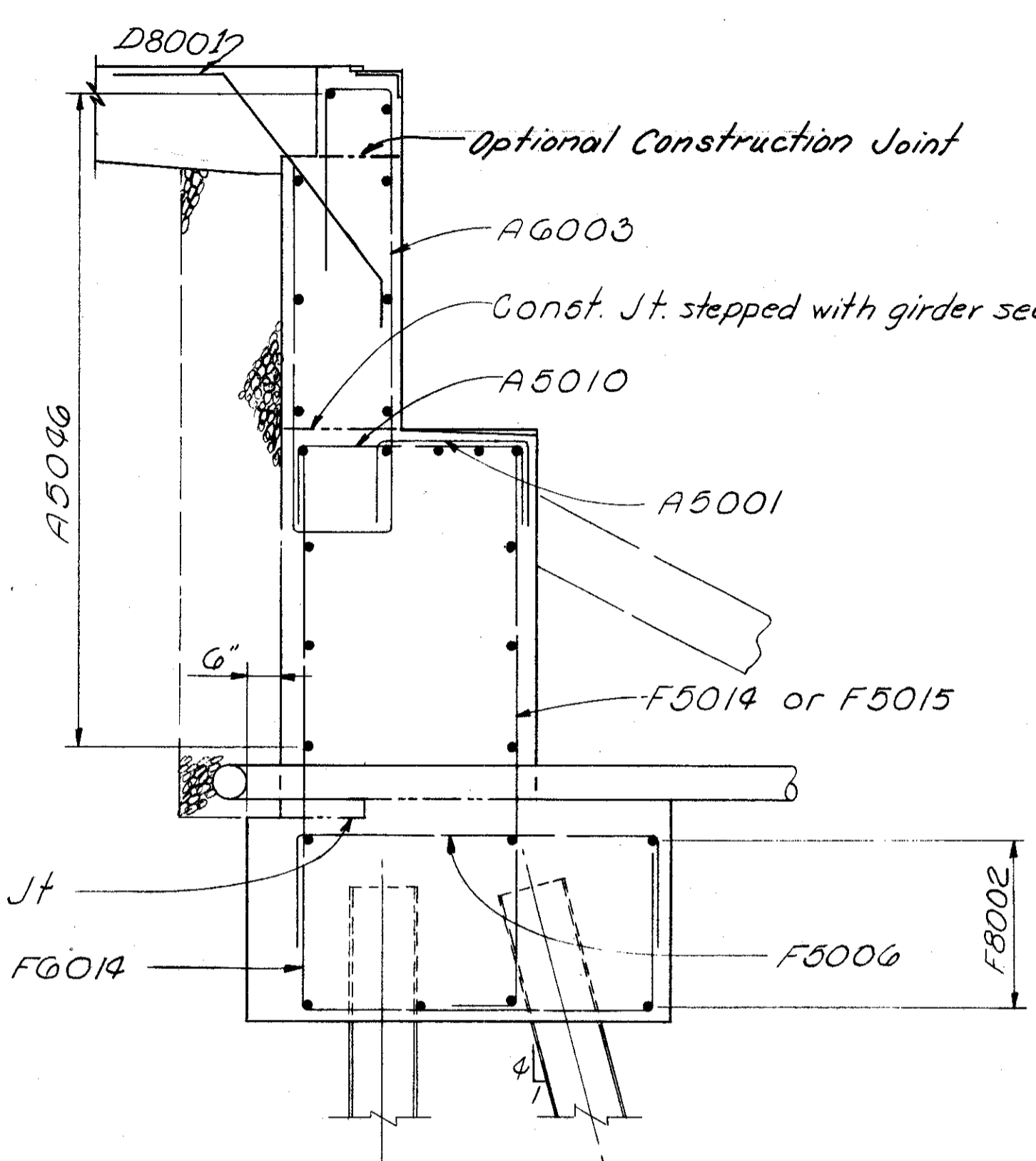
CUYAHOGA COUNTY Sta. 531+28.54  
Sta. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	DEK		BSS	G.N.M.	6/13/69	

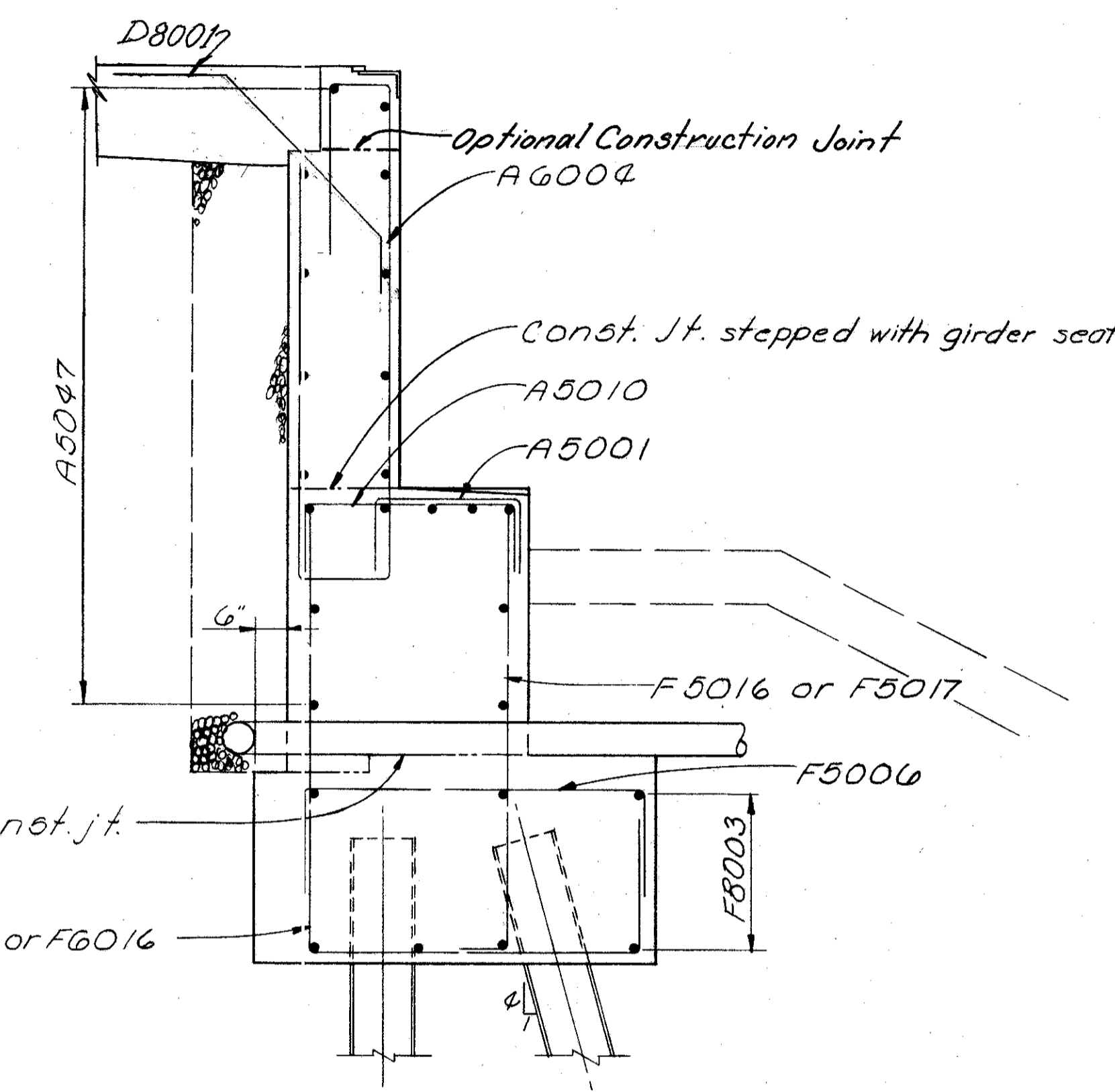
Rev. G-22-78



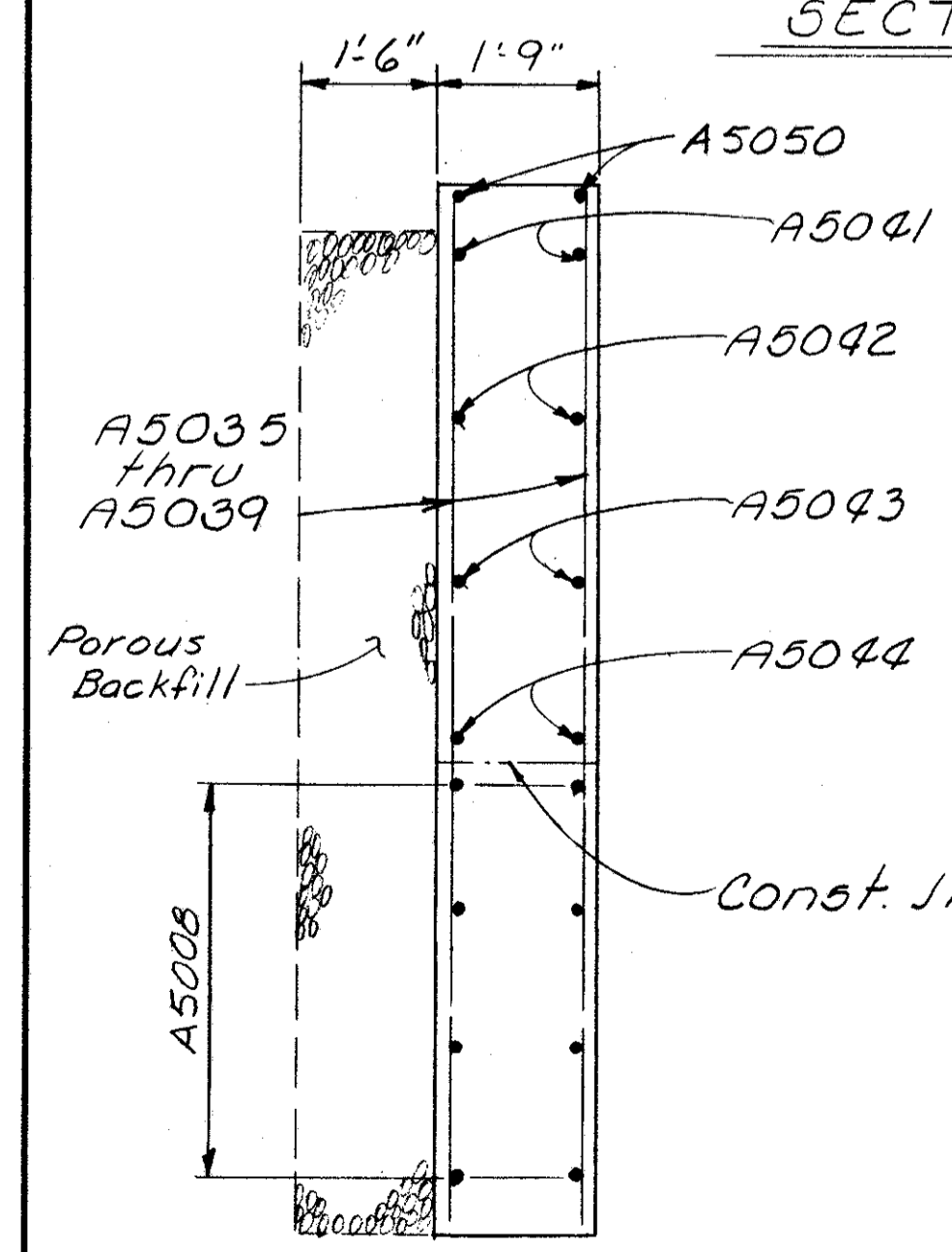
SECTION ~ A2-A2



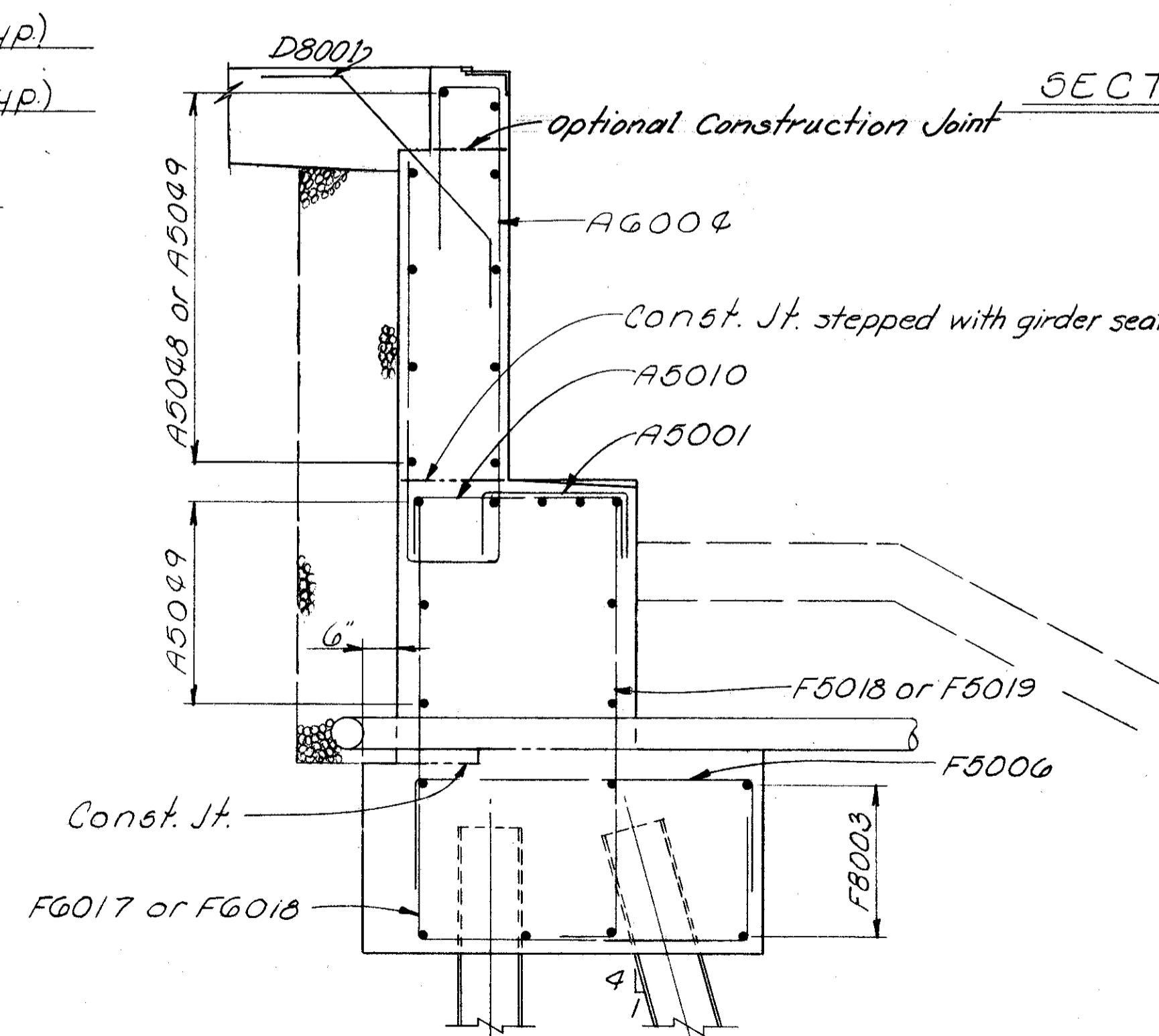
SECTION ~ A6-A6



SECTION ~ A7-A7



SECTION ~ A10-A10



SECTION ~ A6-A6

NOTES

6" helical perforated c.s.p. shall have all ends capped and shall not extend across expansion joint.

All piles shall be HP10x42 steel piles.

Porous backfill for the East Abutment, 1'-6" thick, shall extend from the top of the footing upward to the underside of the approach slab and to the stabilized shoulders, and outward to the embankment slope on the South side and to the expansion joint between this structure and the Ramp structure on the North side. Excavation therefor, in excess of that required for construction of the abutment shall be considered as paid for in the bid price per cubic yard paid for porous backfill.

For contraction joint details see Common Details, Sheet 328.

For detail of lighting conduit in abutment backwall of East Abutment see Standard Const. Drawing HL-5.

For additional details see Sheets 8/26 thru 11/26 and 13/26 & 14/26.

ADJUSTABLE TYPE ELBOWS meeting specification requirements for gage and coating are acceptable for making bends in perforated corrugated metal pipe. Elbows and the stem of tees need not be perforated.

BACKWALL CONCRETE: In addition to the provisions of 511.08 backwall concrete or backwall concrete above the optional construction joint shall not be placed until after the deck concrete in the span adjacent to the backwall has been placed.

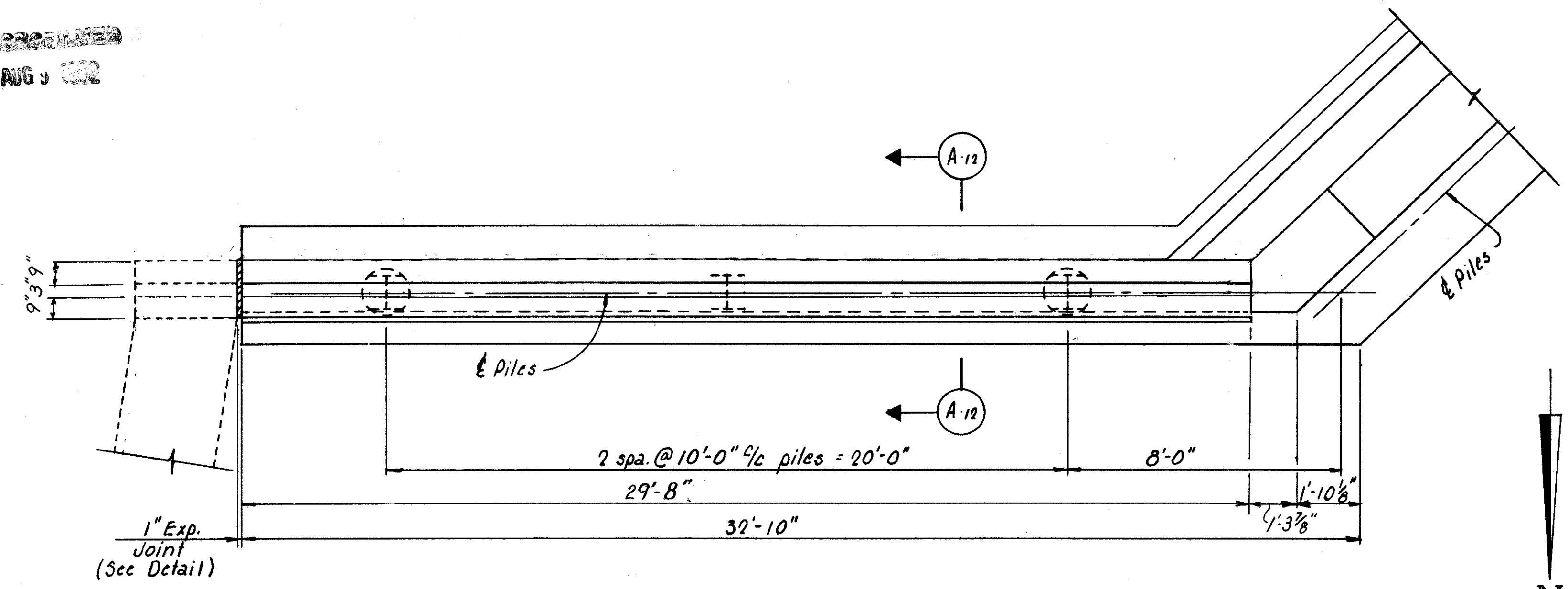
ALDEN E. STILSON & ASSOCIATES, LIMITED						
CONSULTING ENGINEERS						
COLUMBUS, OHIO						
						12/26
EAST ABUTMENT DETAILS						
BRIDGE NO. CUY480-0957						
1-480 OVER CONSOLIDATED RAIL CORP.						
CUYAHOGA COUNTY Sta. 531+28.54						
Sta. 533+97.06						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	DEK		BSS	G.W.M.	1/13/60	

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AUG 5 1962

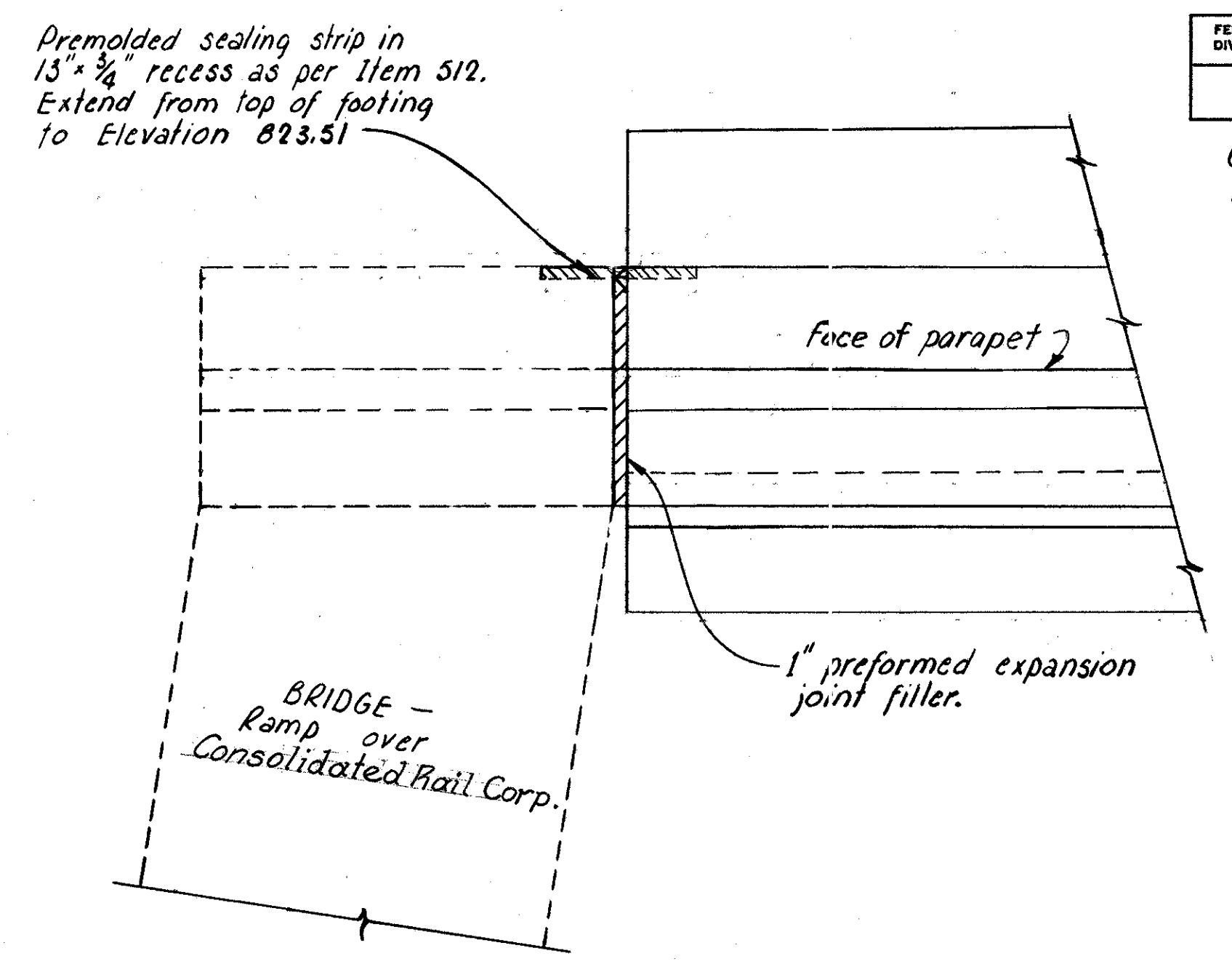
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

292  
346

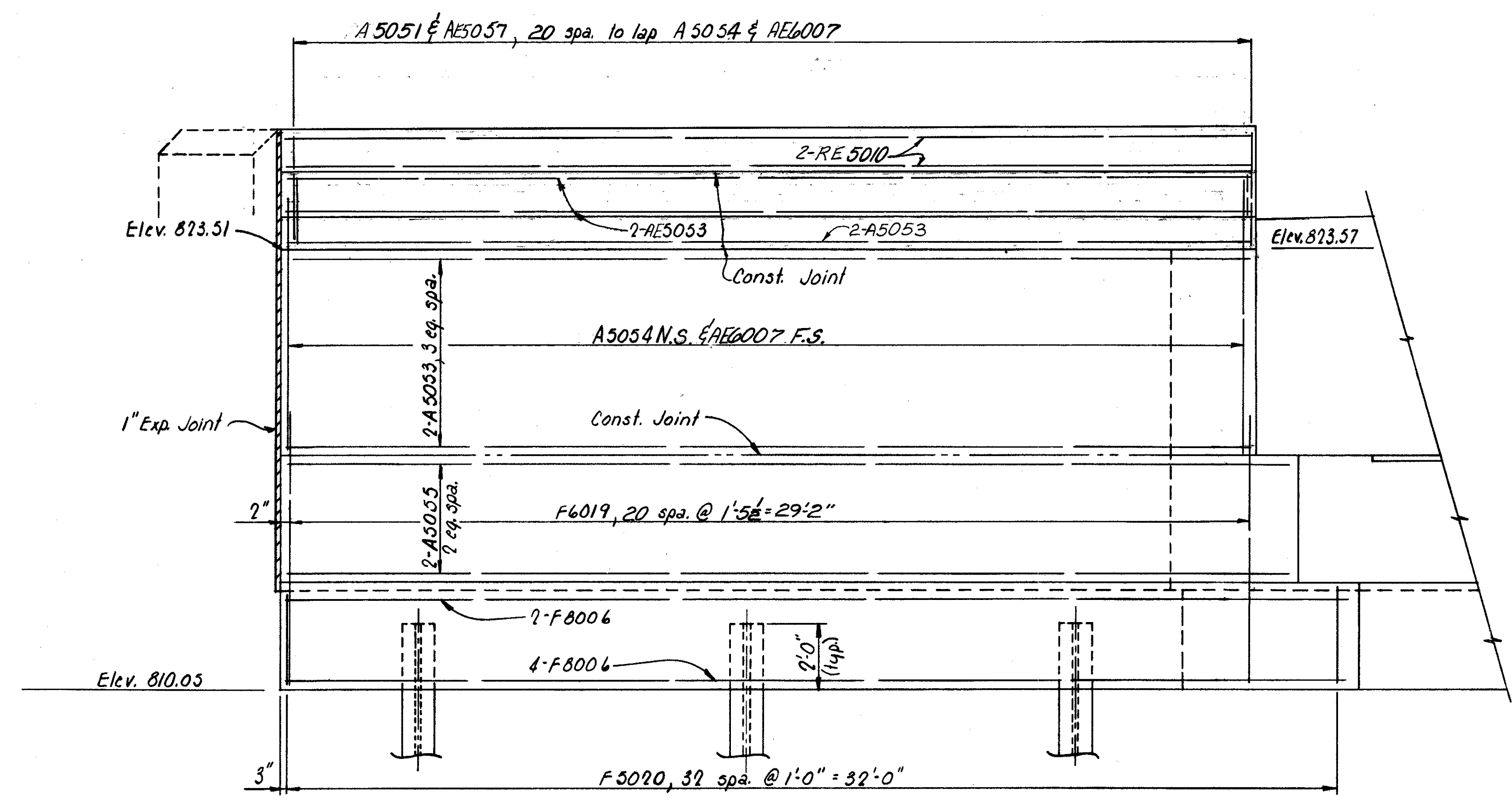
CUYAHOGA COUNTY  
CUY 480-8,54



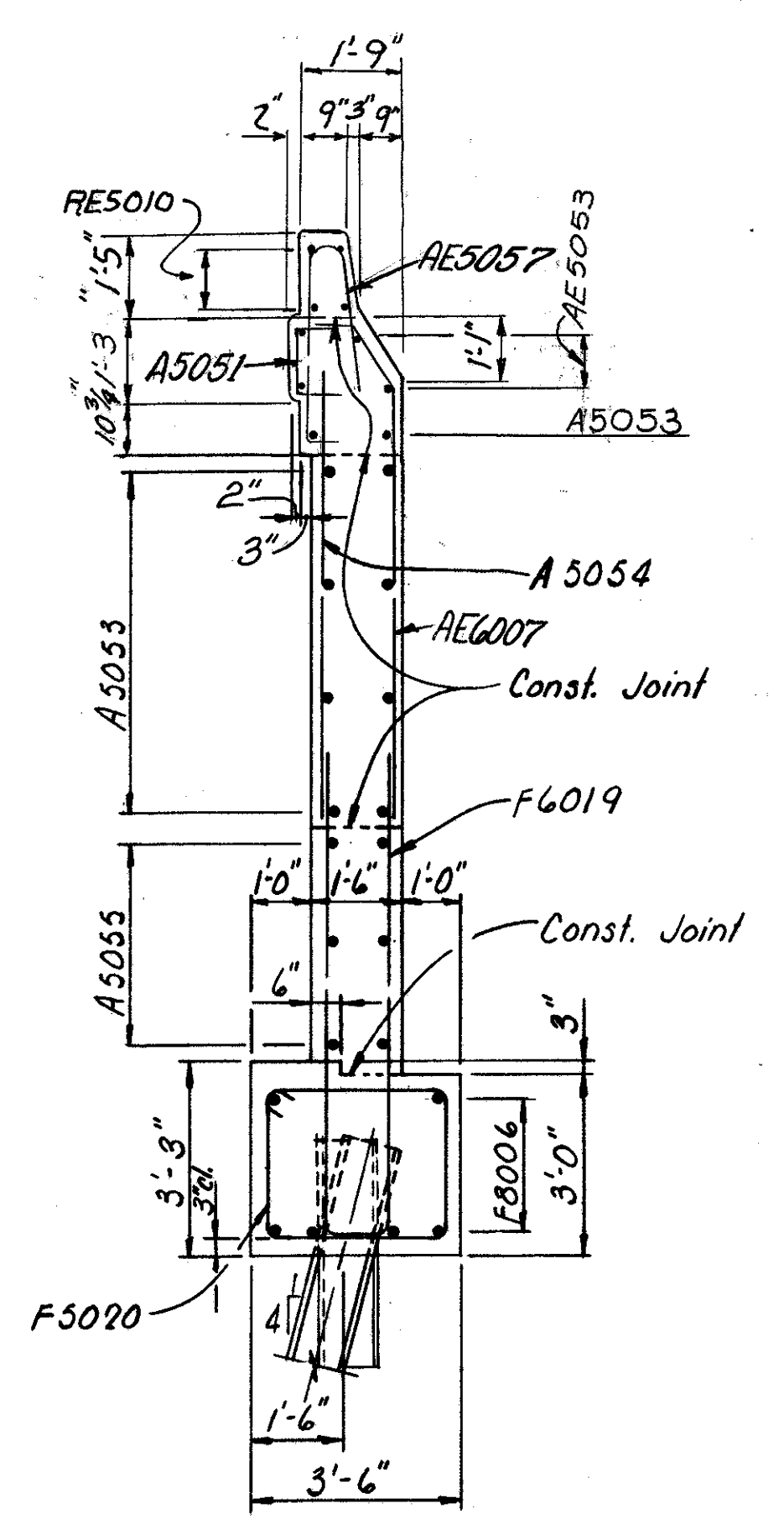
PLAN



EXPANSION JOINT DETAIL  
(Between Bridge CUY-480-0957 and  
Bridge-Ramp over Consolidated Rail Corp.)



ELEVATION



SECTION A12-A12

NOTES:

- PILES:  
 Vertical  
 Battered 1:4

For additional details see sheets  
8/26 thru 12/26 and 14/26

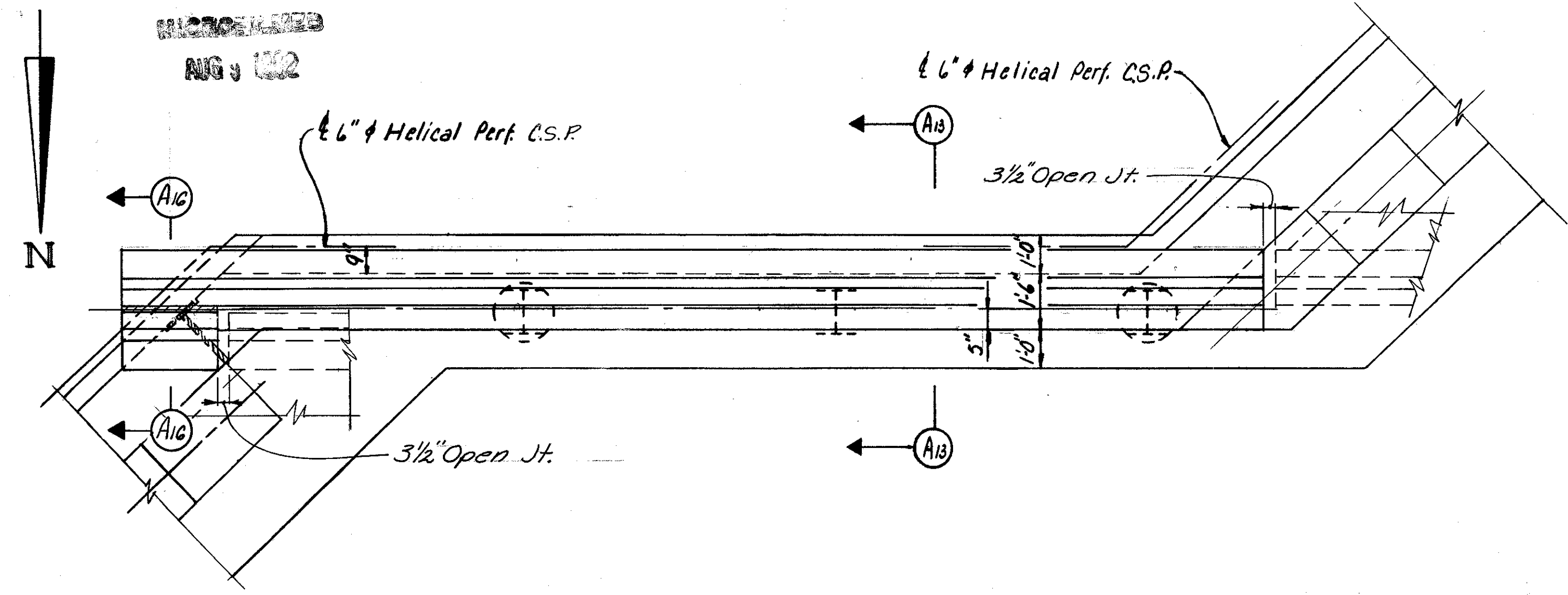
Reinforcing Steel Locations:  
N.S. indicates near side  
F.S. indicates far side.

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.						
ABUTMENT 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	EB		VB	G.W.M.	6/13/63	

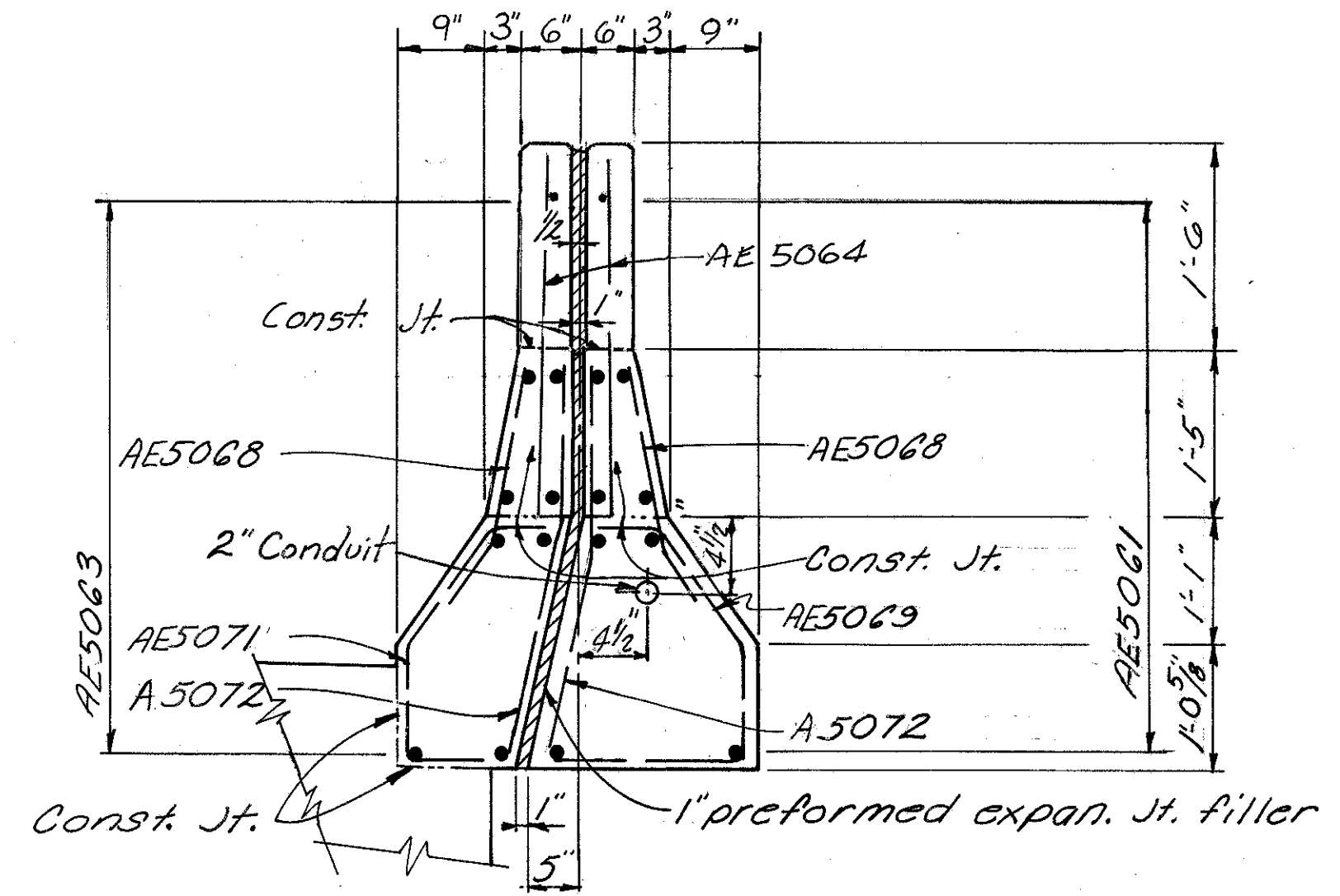


**NOTES:**

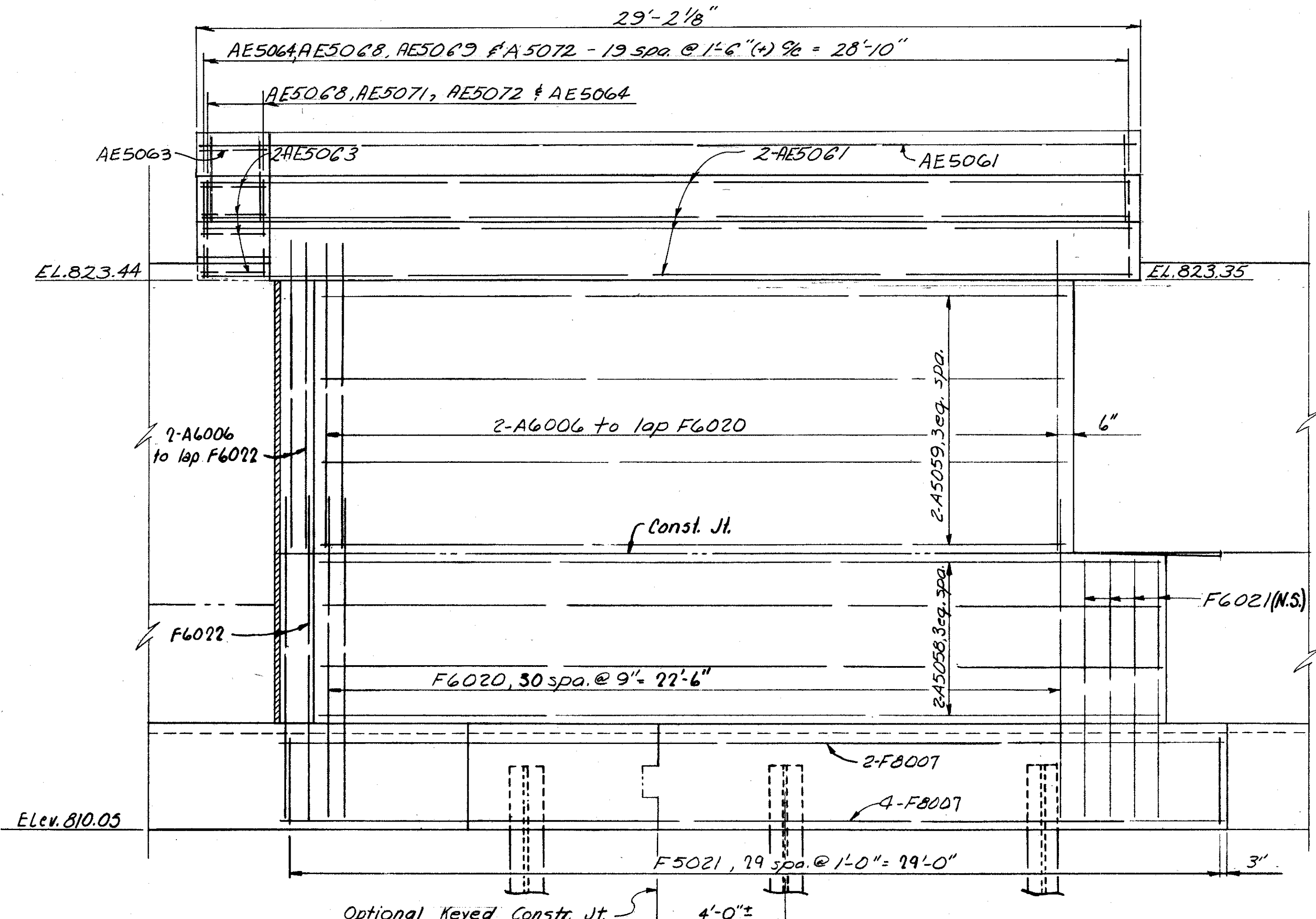
- Piles: Vertical
- Battered 1:4
- Reinforcing Steel Location: N.S. indicates near side
- For additional notes and details see sheets 8/26 thru 13/26
- For median curb plate details see Std. Dwg. SD-1-69 3rd. 2



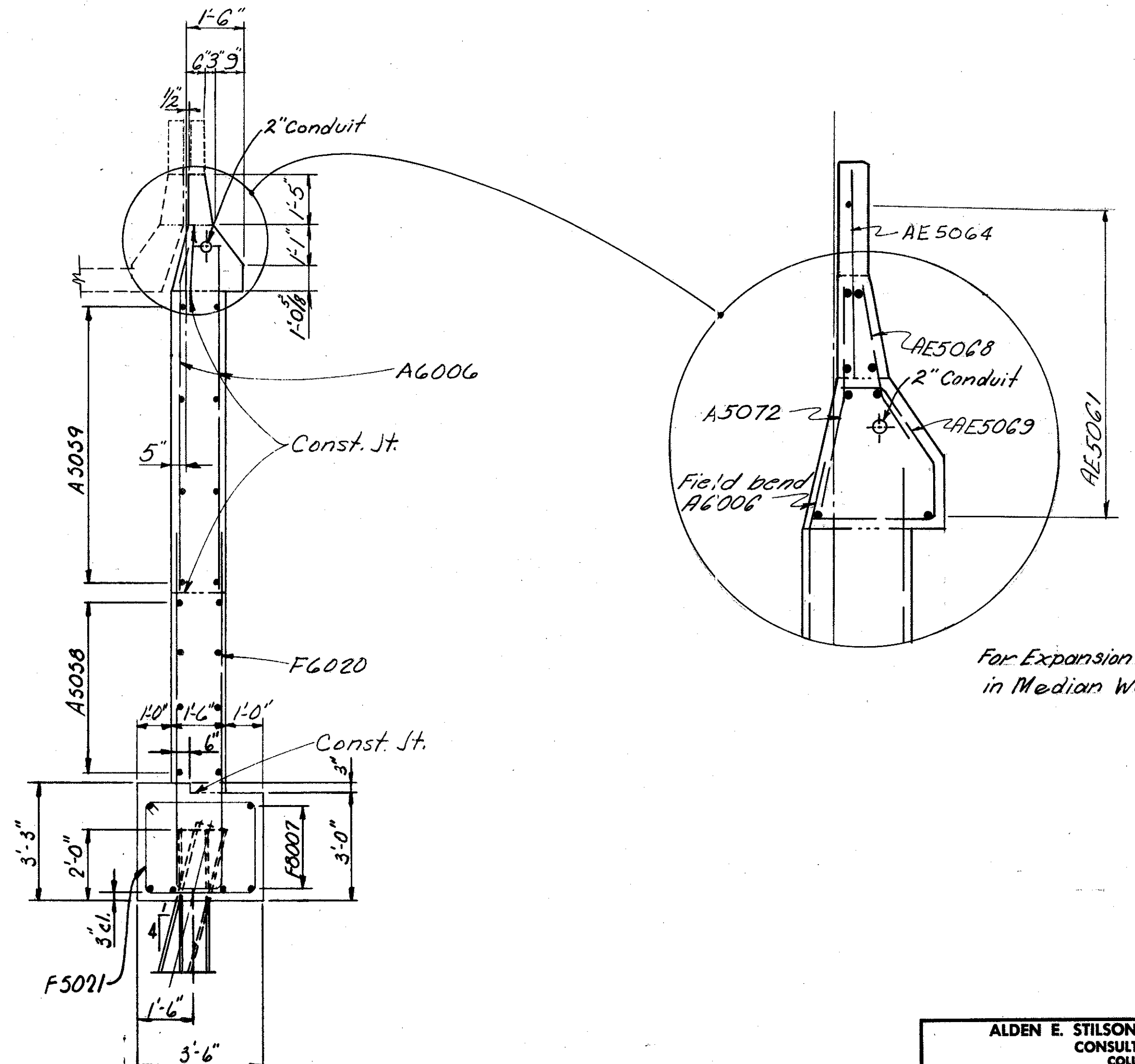
PLAN



SECTION A10-A10



DEVELOPED ELEVATION



SECTION A13-A13

For Expansion Fitting and Coupling in Median Wall, see std. Dwg. HL-5.

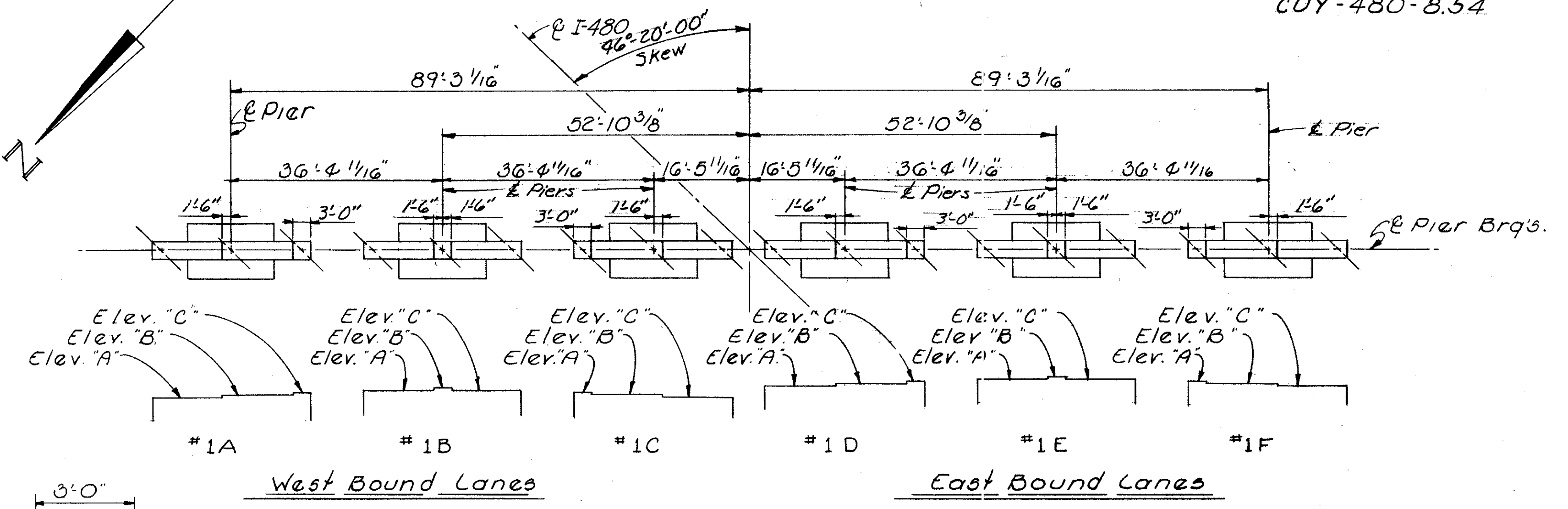
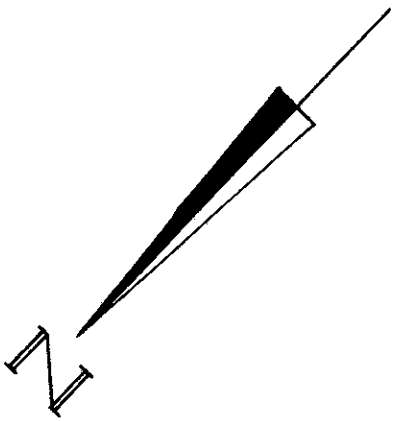
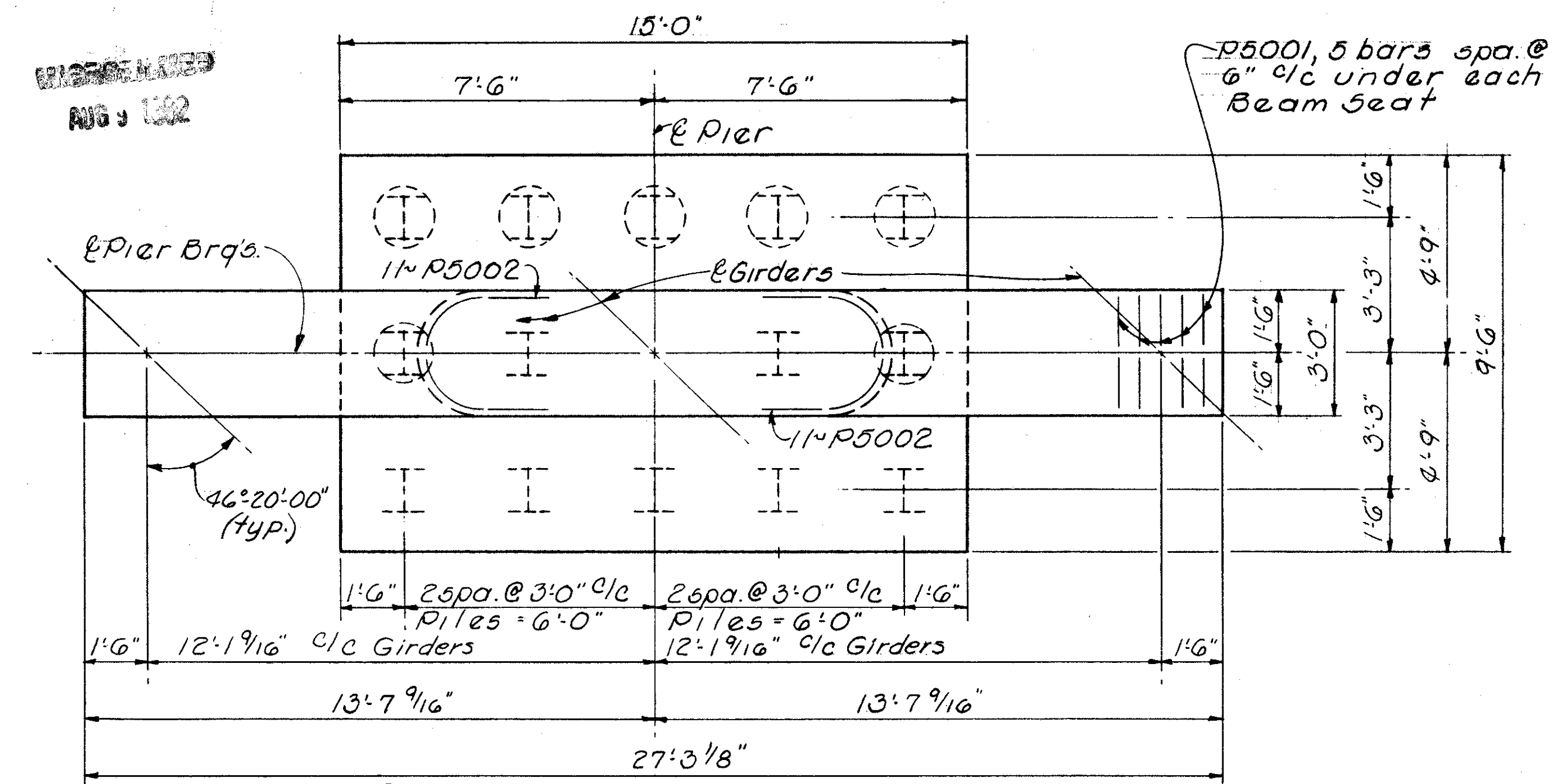
ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 14/26

ABUTMENT 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	DW		BSS	G.W.M.	9/13/69	

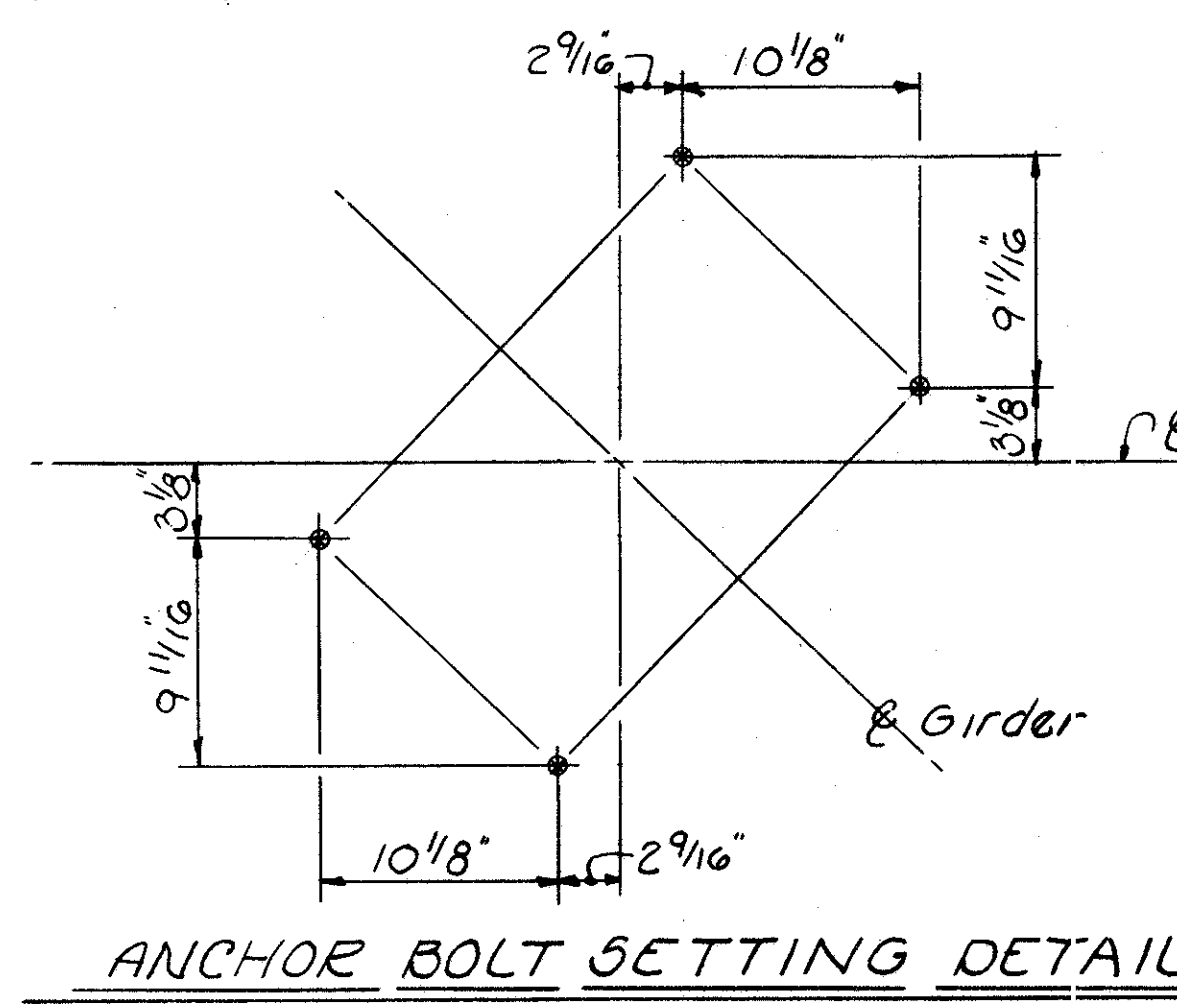
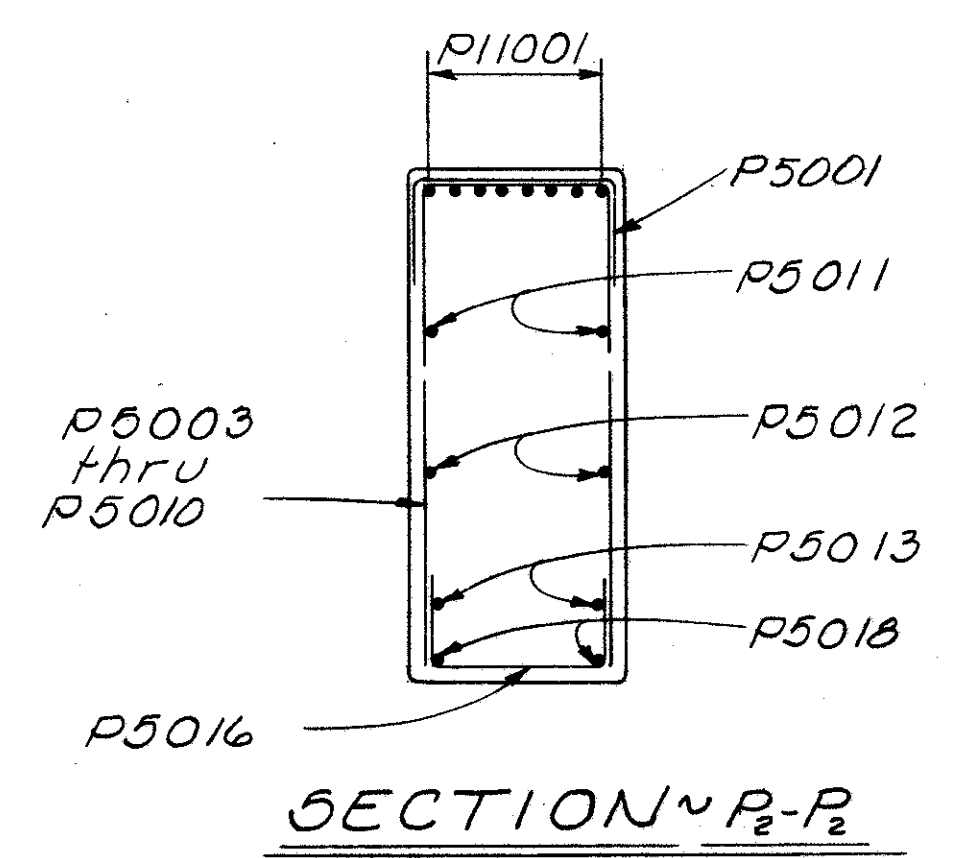
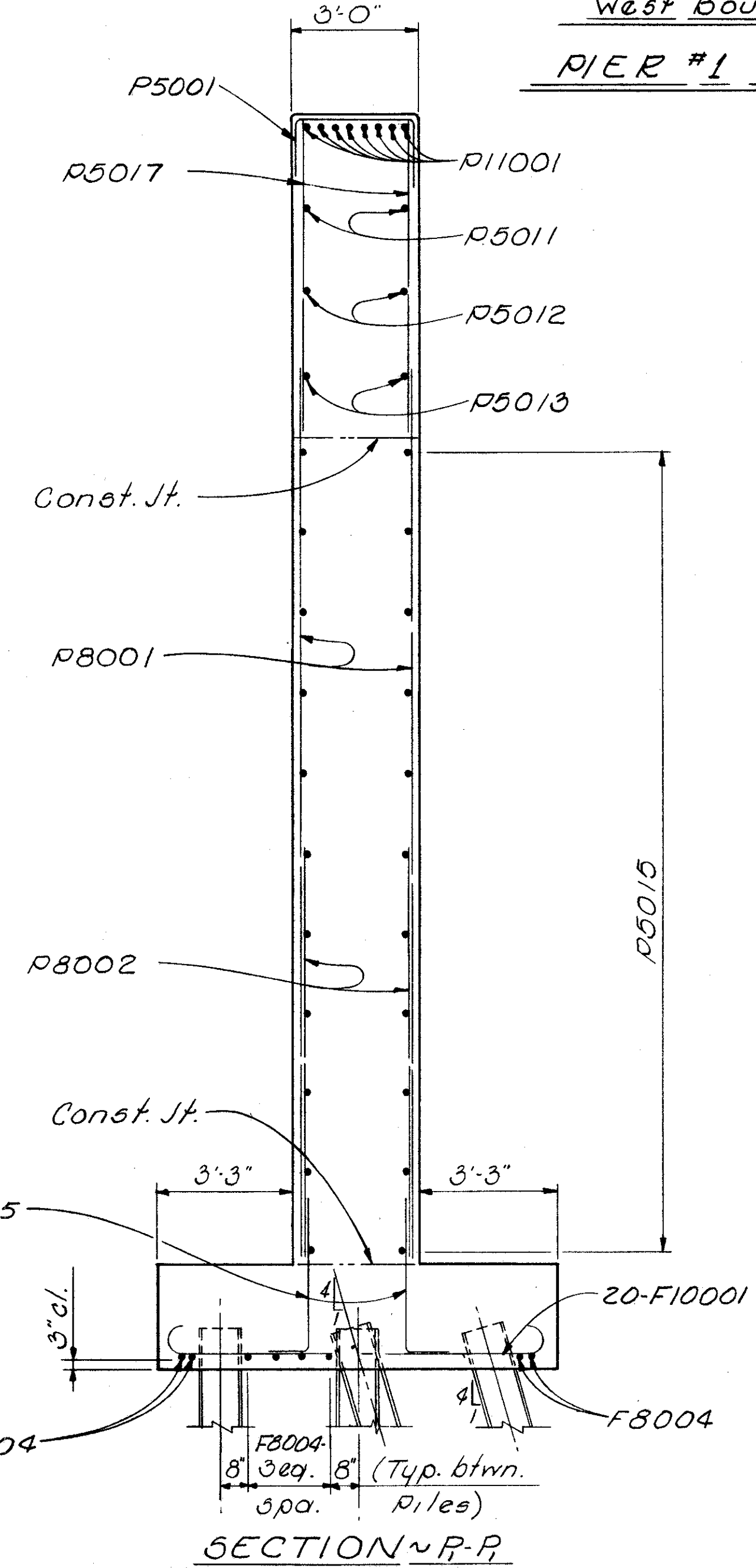
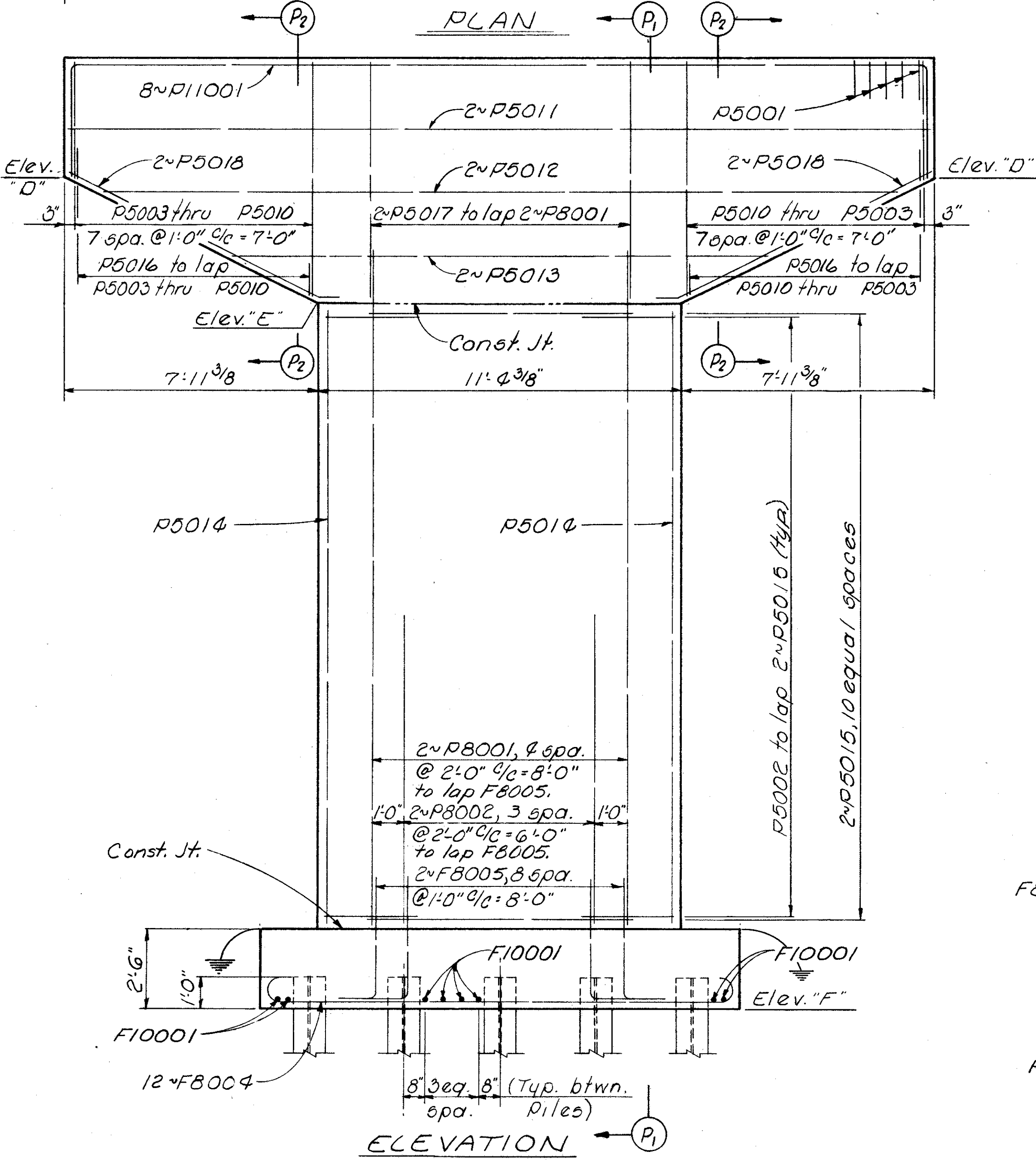
REVISIONS  
AUG 1 1962

294  
346



RIER ELEVATIONS

ELEV. PIER	A	B	C	D	E	F
1A	816.05	816.12	816.19	812.55	808.58	785.50
1B	816.25	816.30	816.10	812.60	808.63	785.50
1C	815.90	815.69	815.48	811.98	808.01	785.50
1D	816.97	817.02	817.07	813.47	809.50	787.00
1E	817.11	817.15	816.94	813.44	809.47	787.00
1F	816.72	816.49	816.26	812.76	808.79	787.00



The superstructure shall be grounded at the outside of Piers 1A & 1F.  
For Grounding Details, see Std. Dwg. HL-7  
BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the pre-setting of bearing anchors.  
BEARING ANCHORS: At the option of the Contractor, bearing anchors (or formed holes), located and supported by templates, may be cast in place.

NOTES  
All piles shall be HP10x42 steel piles  
Piles  
I Vertical  
Batter 1:4

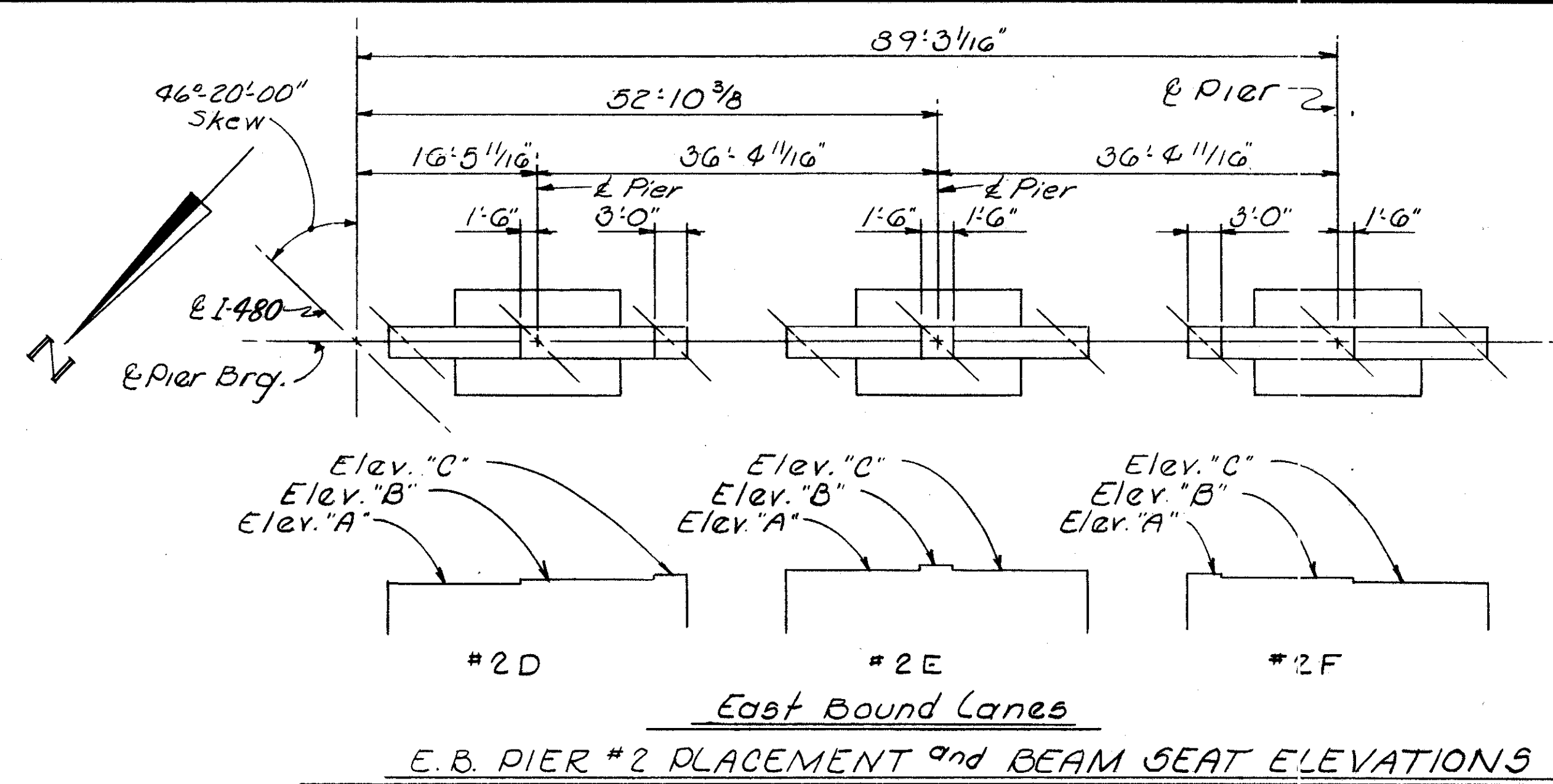
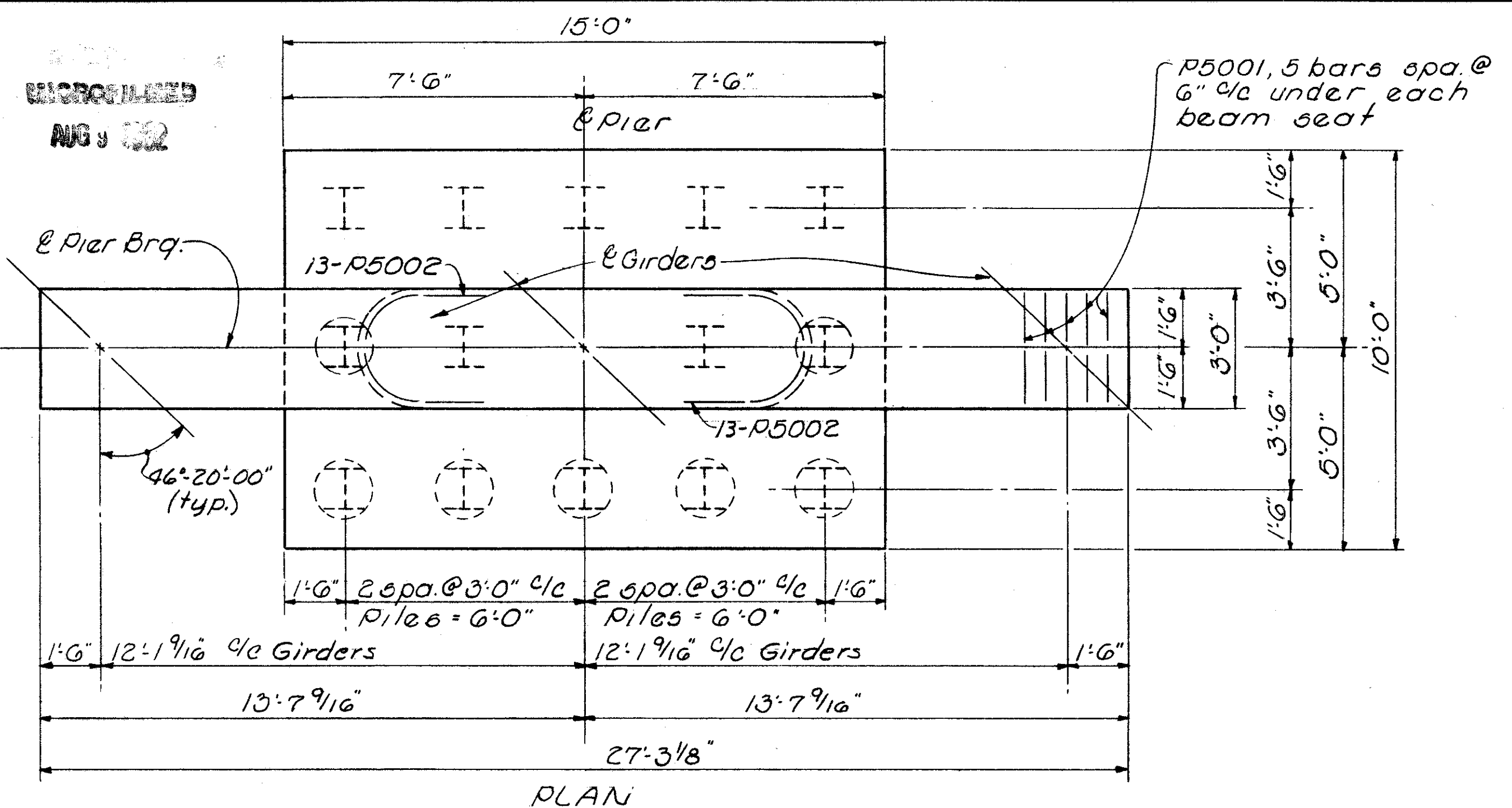
ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 15/26

PIER #1 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	DEK		BSS	G.W.M.	7/13/69	

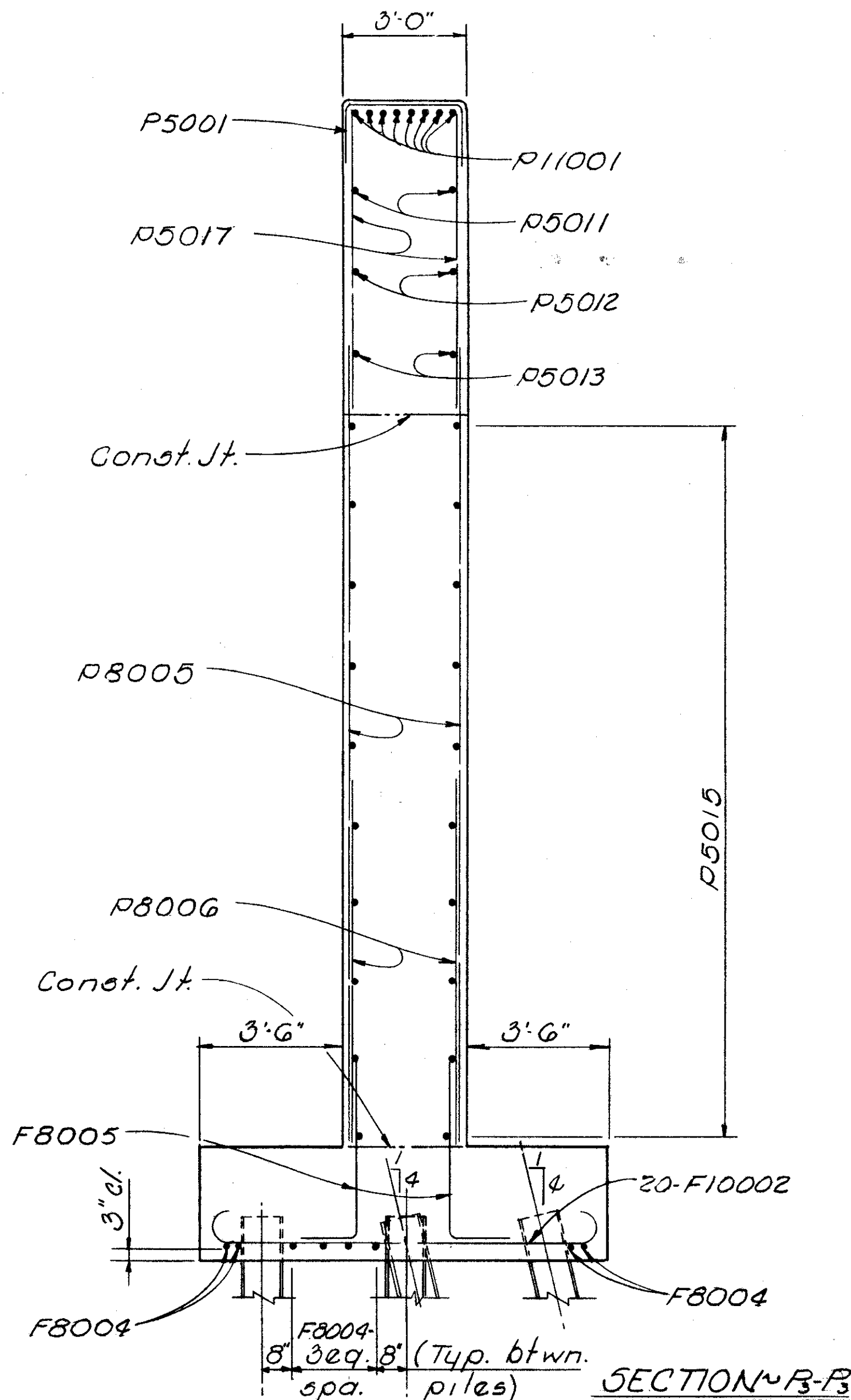
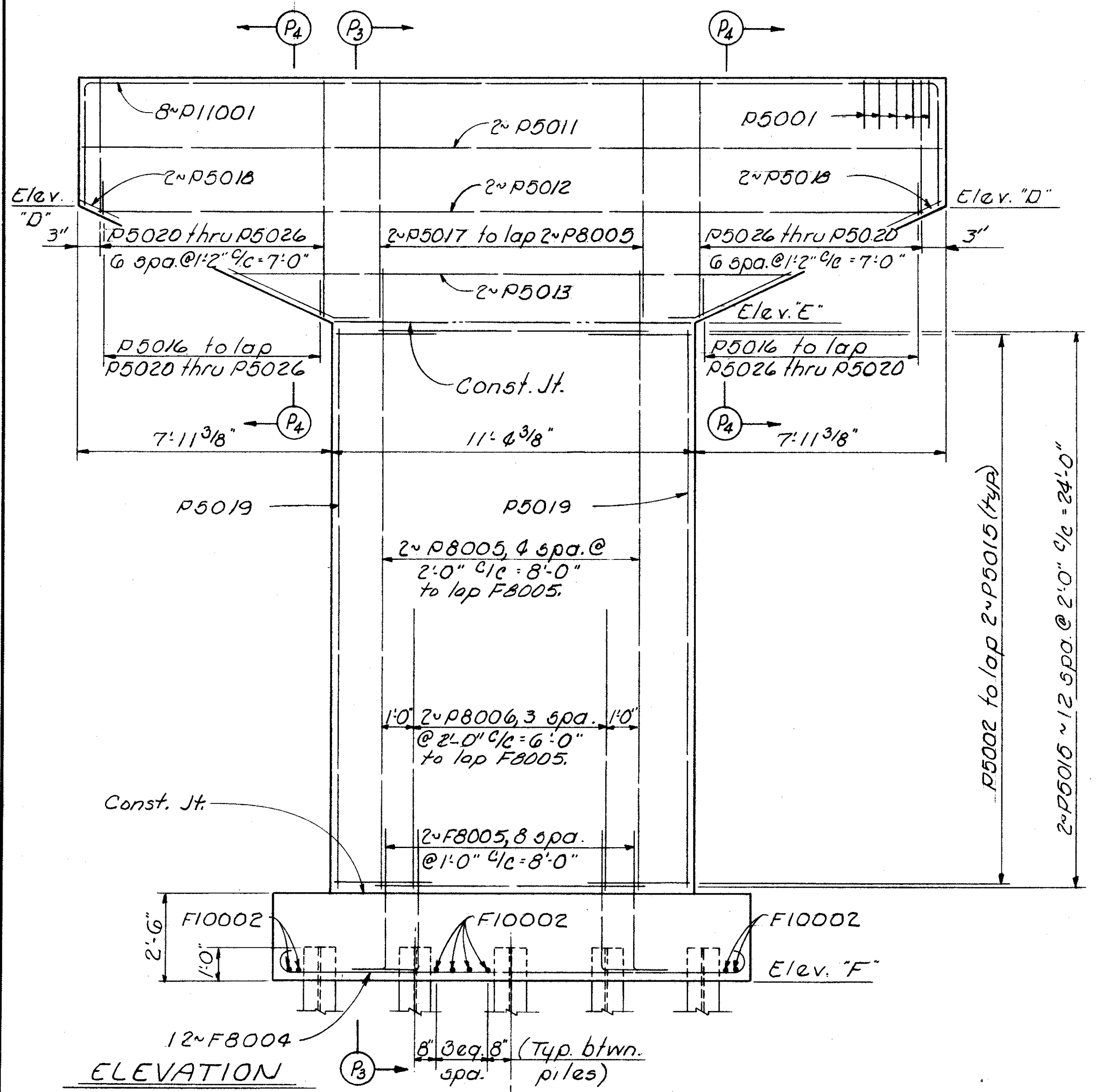
UNSCALED  
AUG 1962



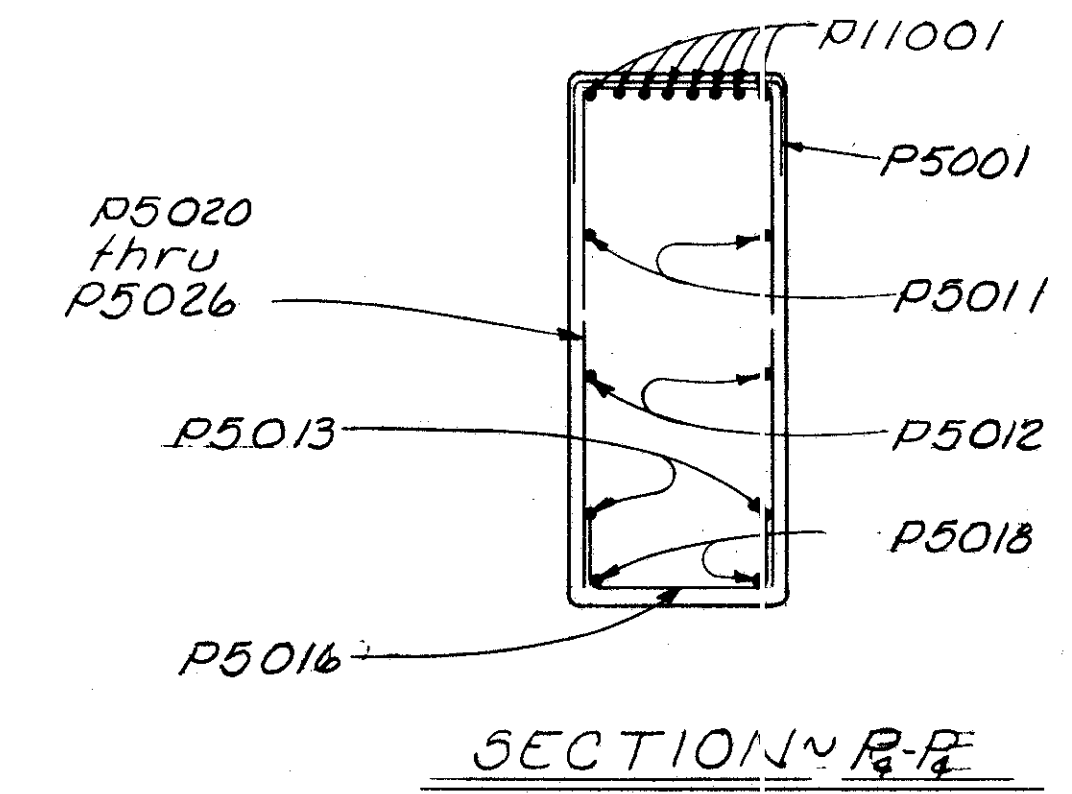
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

295  
346

CUYAHOGA COUNTY  
CUY-480-B.54



PIER ELEVATIONS						
PIER	A	B	C	D	E	F
2D	817.69	817.77	817.84	814.19	810.22	784.00
2E	817.91	817.98	817.80	814.30	810.53	784.00
2F	817.60	817.40	817.17	813.69	809.72	782.50



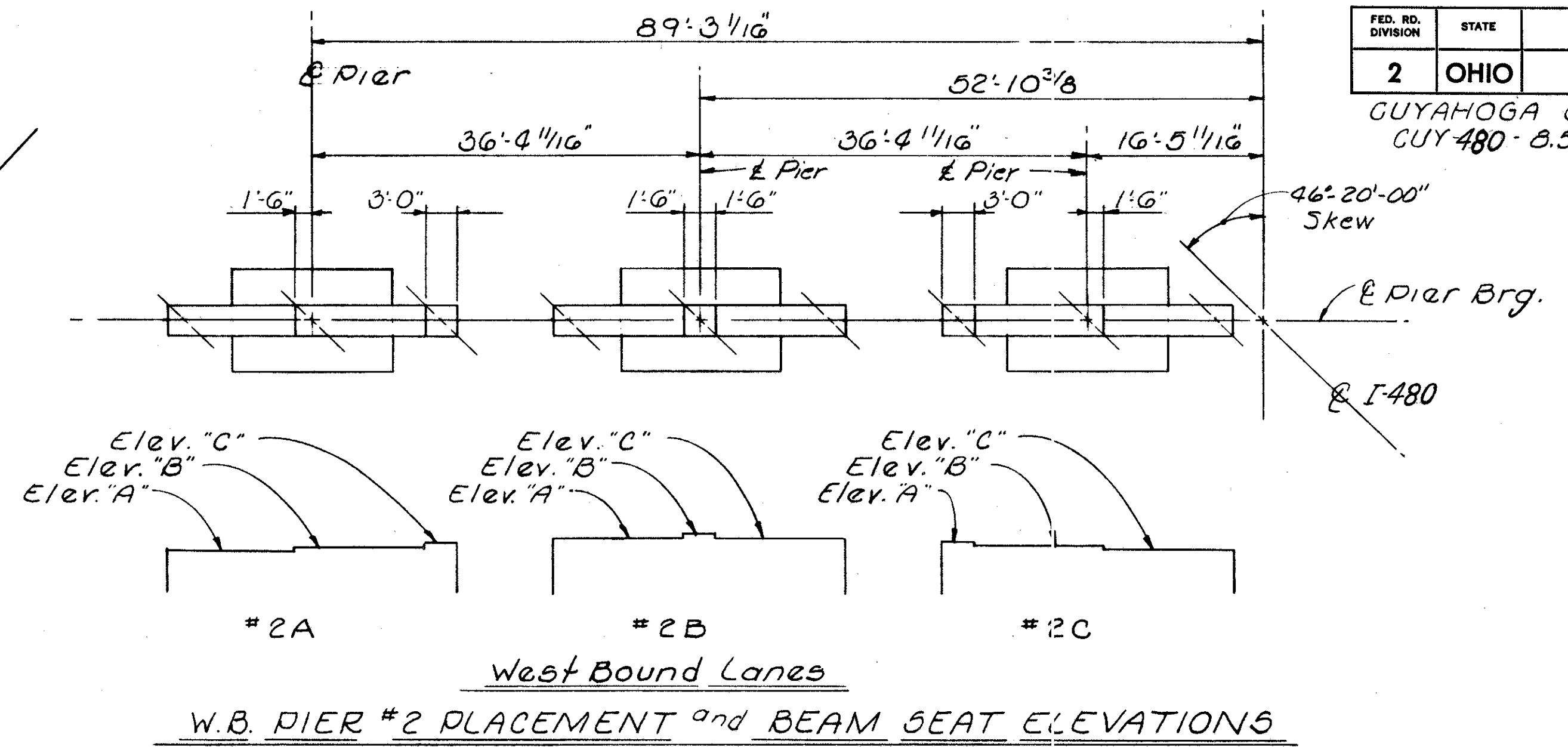
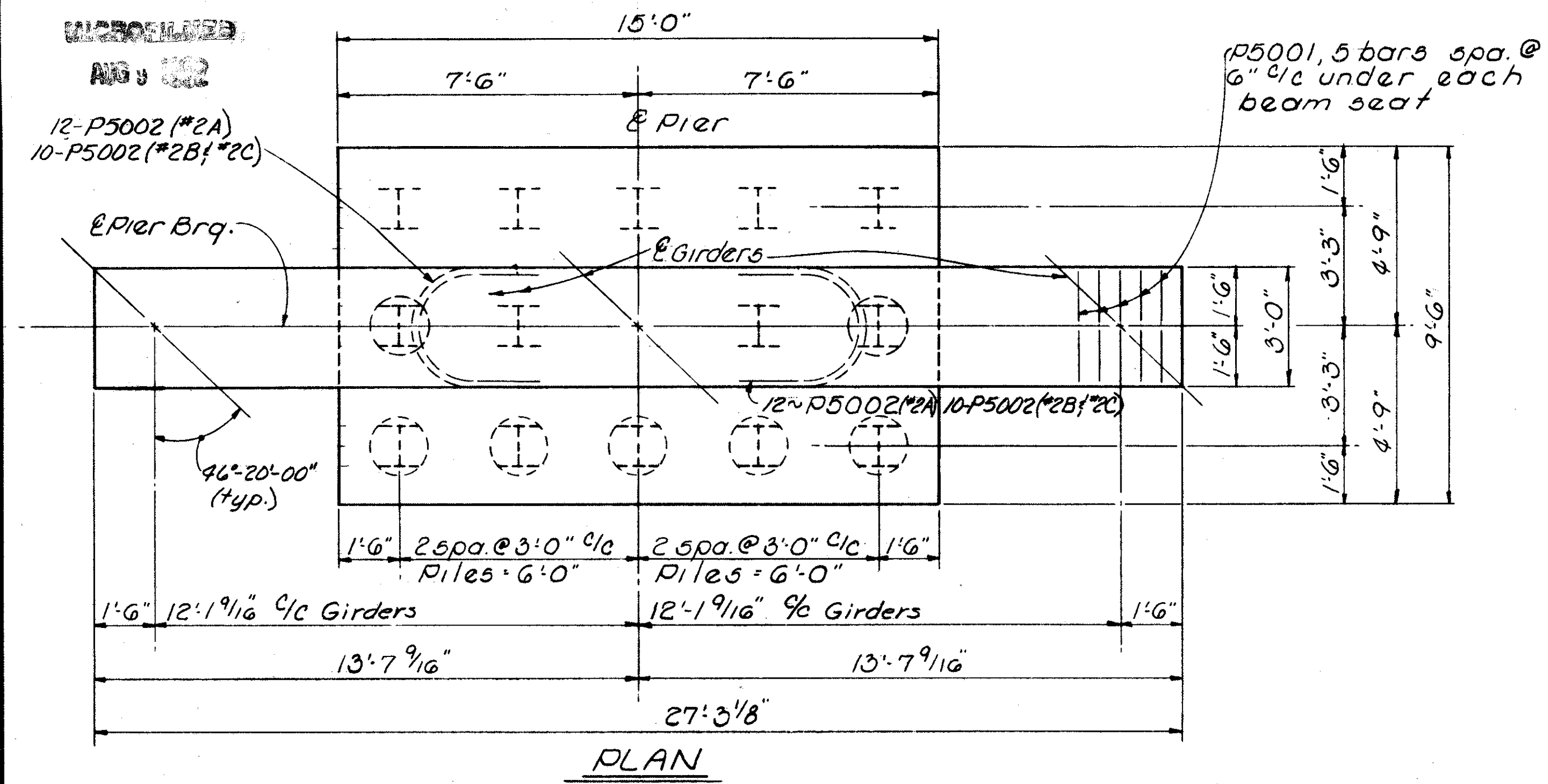
**NOTES**  
All piles shall be HP10x42 steel piles  
Piles  
⊥ Vertical  
⊙ Batter 1:4

ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 16/26

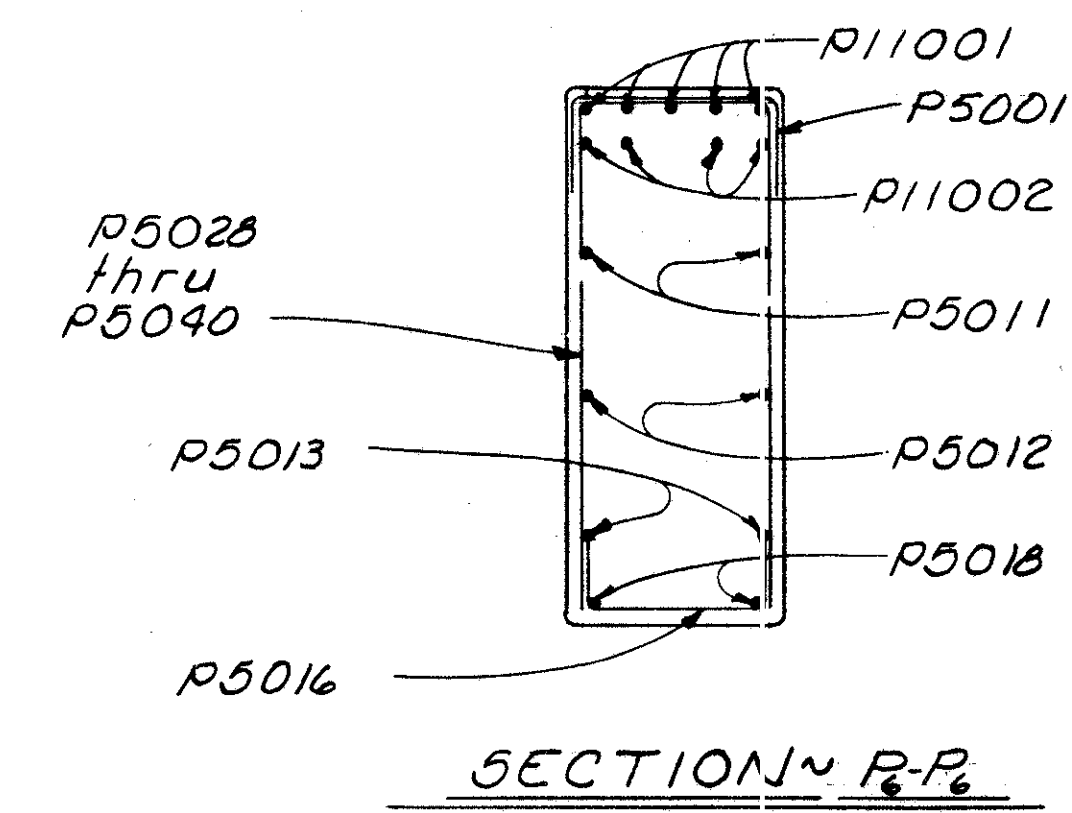
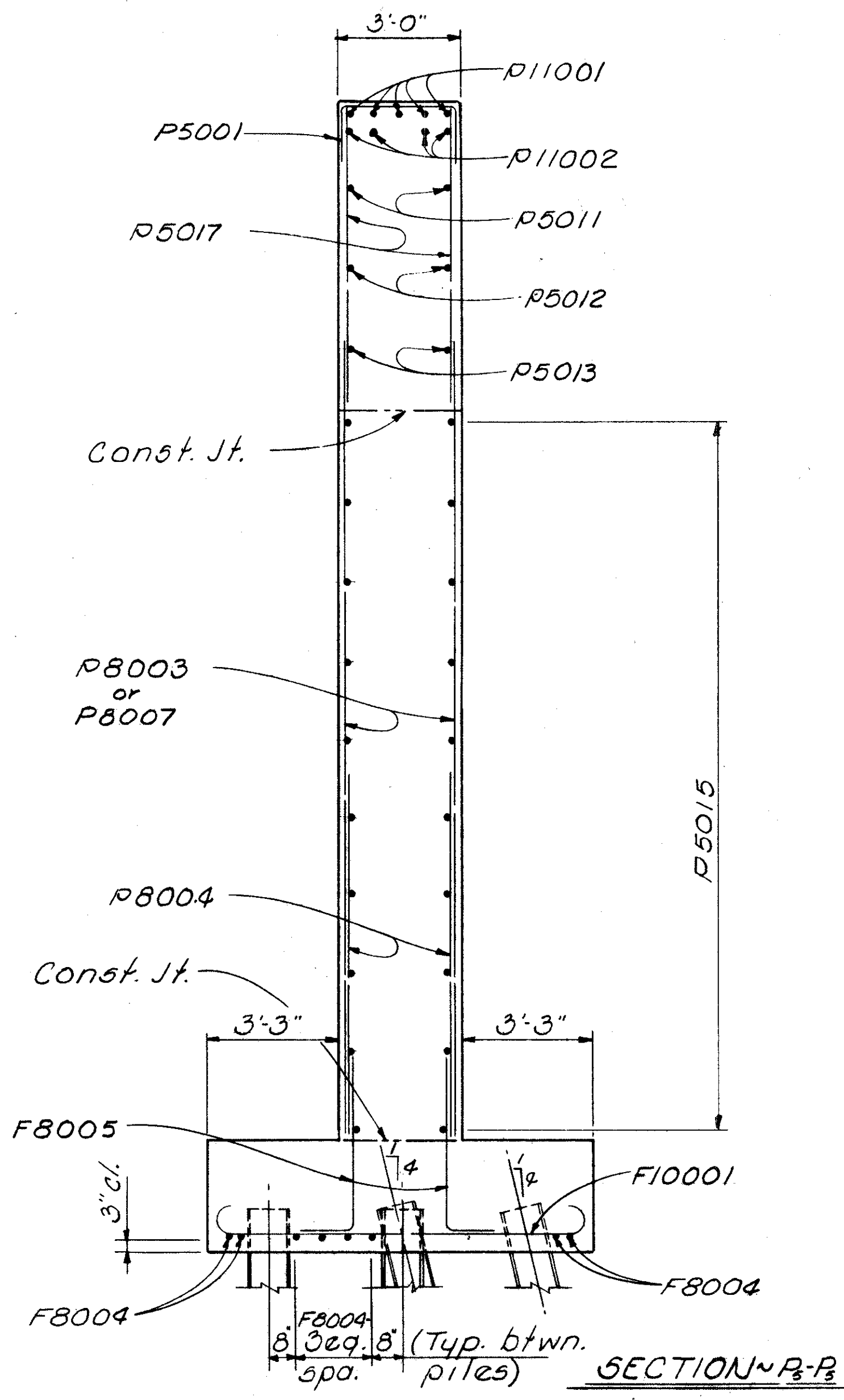
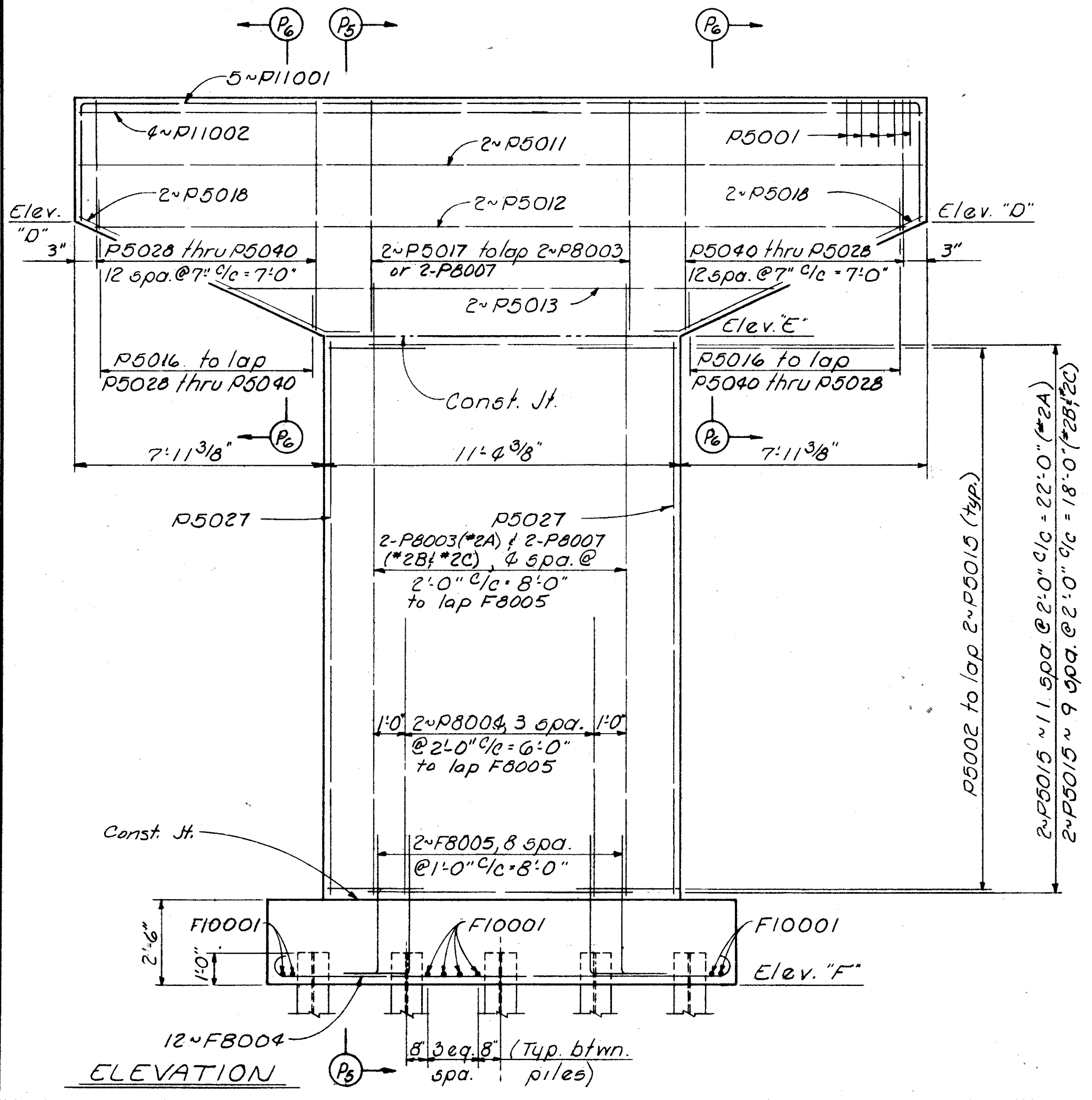
PIER #2 (E.B.) DETAILS

BRIDGE N° CUY-480-0957  
1-480 OVER CONSOLIDATED RAIL CORP.  
CUYAHOGA COUNTY Sta. 501+28.54  
Sta. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H	DEK		BSS	G.W.M.	6/13/69	



PIER ELEV.	A	B	C	D	E	F
2A	816.50	816.60	816.67	813.00	809.03	789.30
2B	816.79	816.87	816.70	813.20	809.23	786.80
2C	816.53	816.36	816.17	812.67	808.70	788.00



NOTES  
All piles shall be HP10x42 steel Piles  
Piles  
I Vertical  
B Batter 1:4

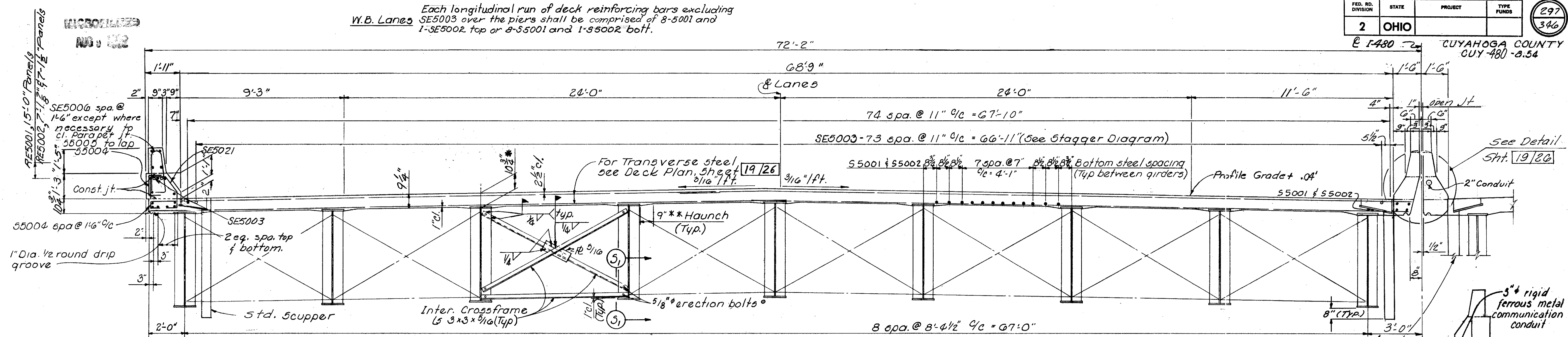
ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 17/26

PIER #2 (W.B.) DETAILS

BRIDGE N° CUY-480-0957  
I-480 OVER CONSOLIDATED RAIL CORP.  
GUYAHOGA COUNTY Sta. 531+28.54  
Sta. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	DEK		BSS	G.W.N.	6/13/69	

Each longitudinal run of deck reinforcing bars excluding SE5003 over the piers shall be comprised of 8-SE5001 and 1-SE5002 top or 8-SE5001 and 1-SE5002 bott.

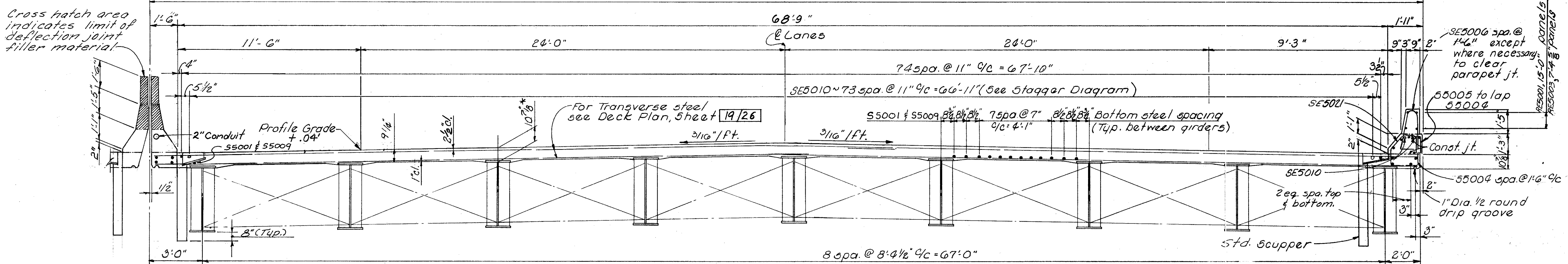


TRANSVERSE SECTION ~ WEST BOUND LANES  
(End Posts not shown)

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-G9

Each longitudinal run of deck reinforcing bars excluding E.B. Lanes SE5010 over the piers shall be comprised of 7-SE5001 and 1-SE5009 top or 7-SE5001 and 1-SE5009 bott.

Provide 1 1/8" holes in crossframes and 1 1/8" holes in stiffeners. The bolts when left in place shall be properly torqued, if high strength, or nuts shall be tack welded.



TRANSVERSE SECTION ~ EAST BOUND LANES  
Details not shown same as West Bound Lanes.

COMMUNICATION CONDUIT DETAIL  
(South curb only)

- 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 SE5001, SE5002 & SE5009 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.

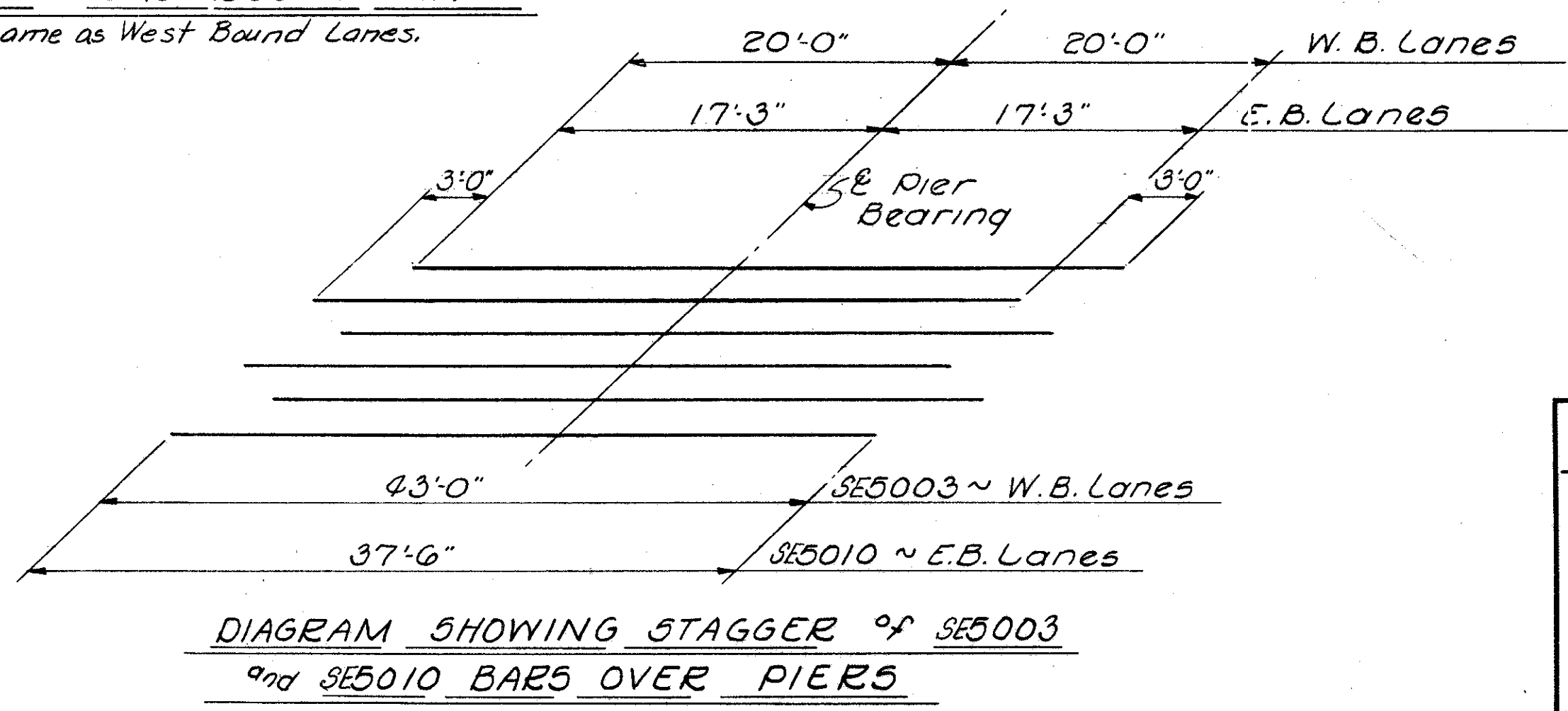
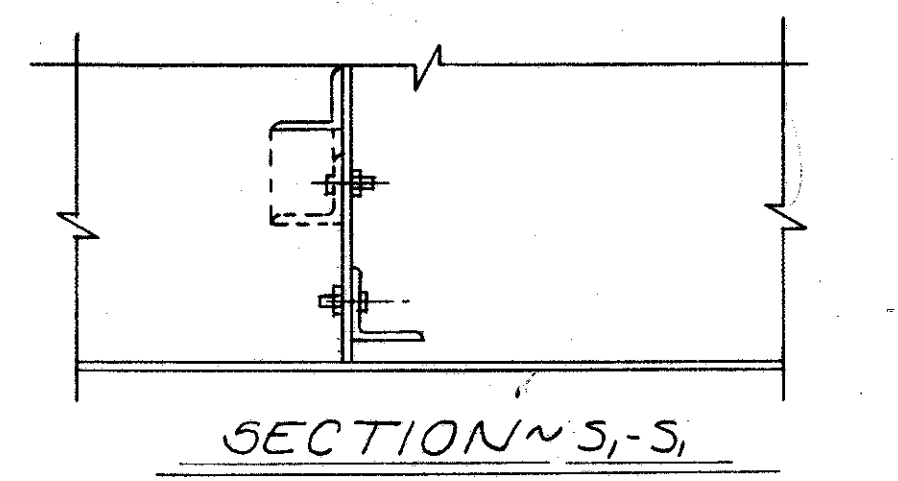


DIAGRAM SHOWING STAGGER OF SE5003 and SE5010 BARS OVER PIERS

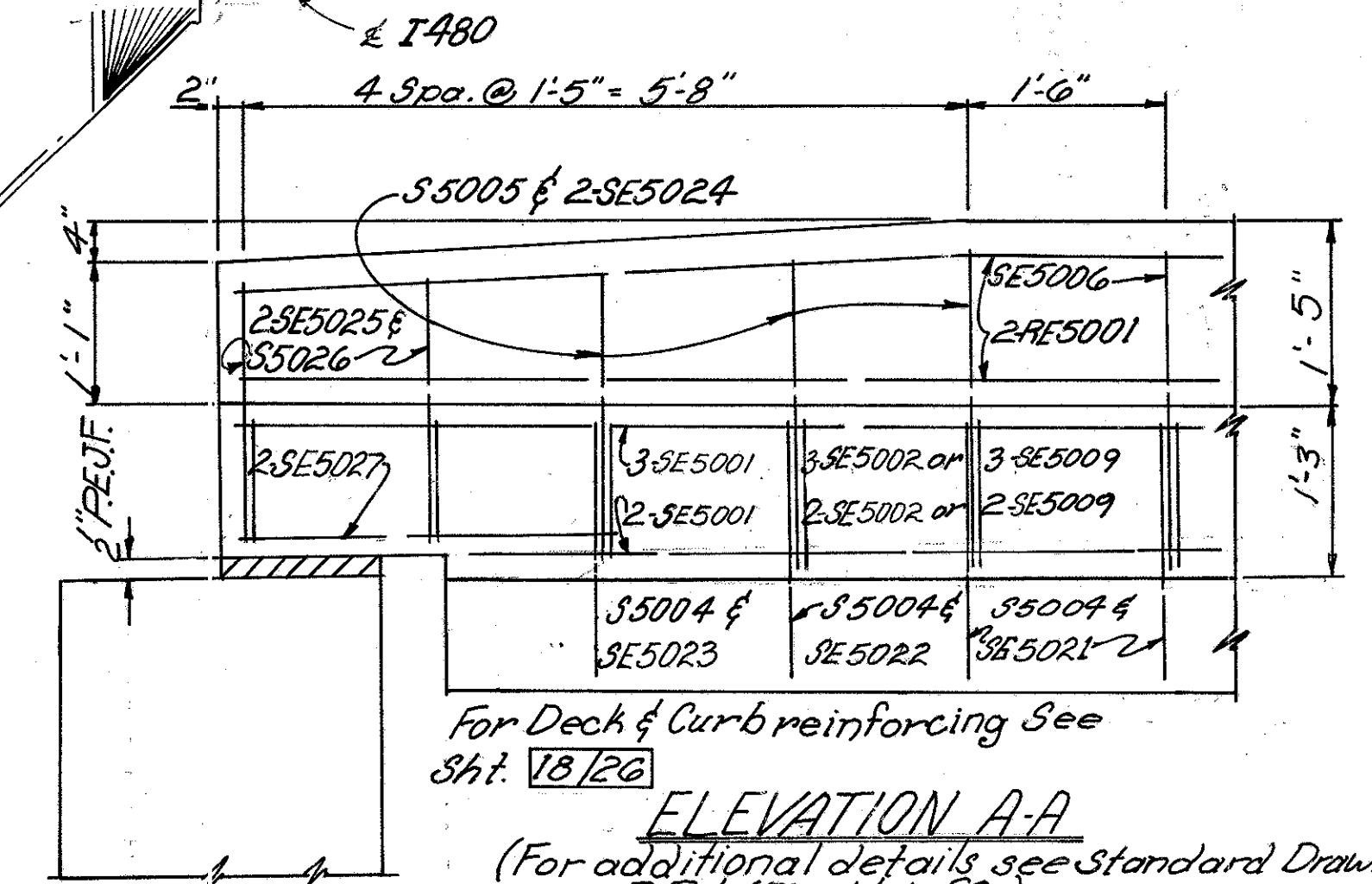
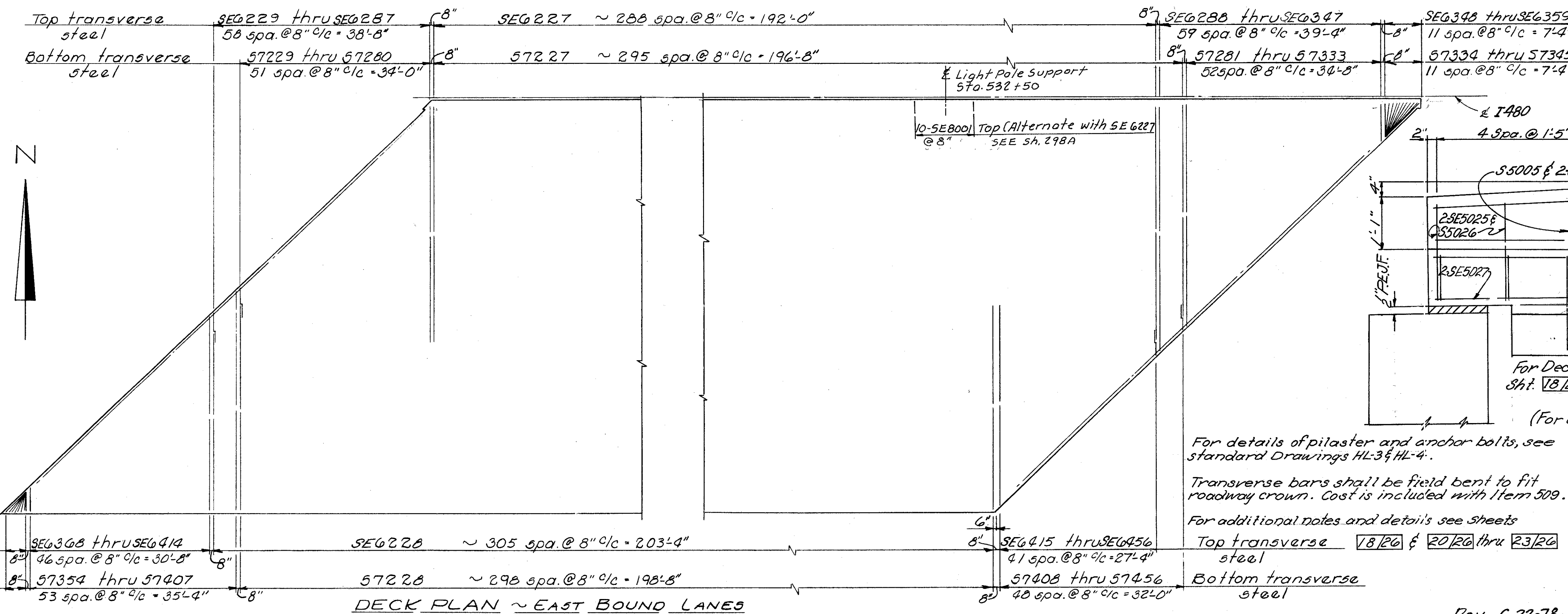
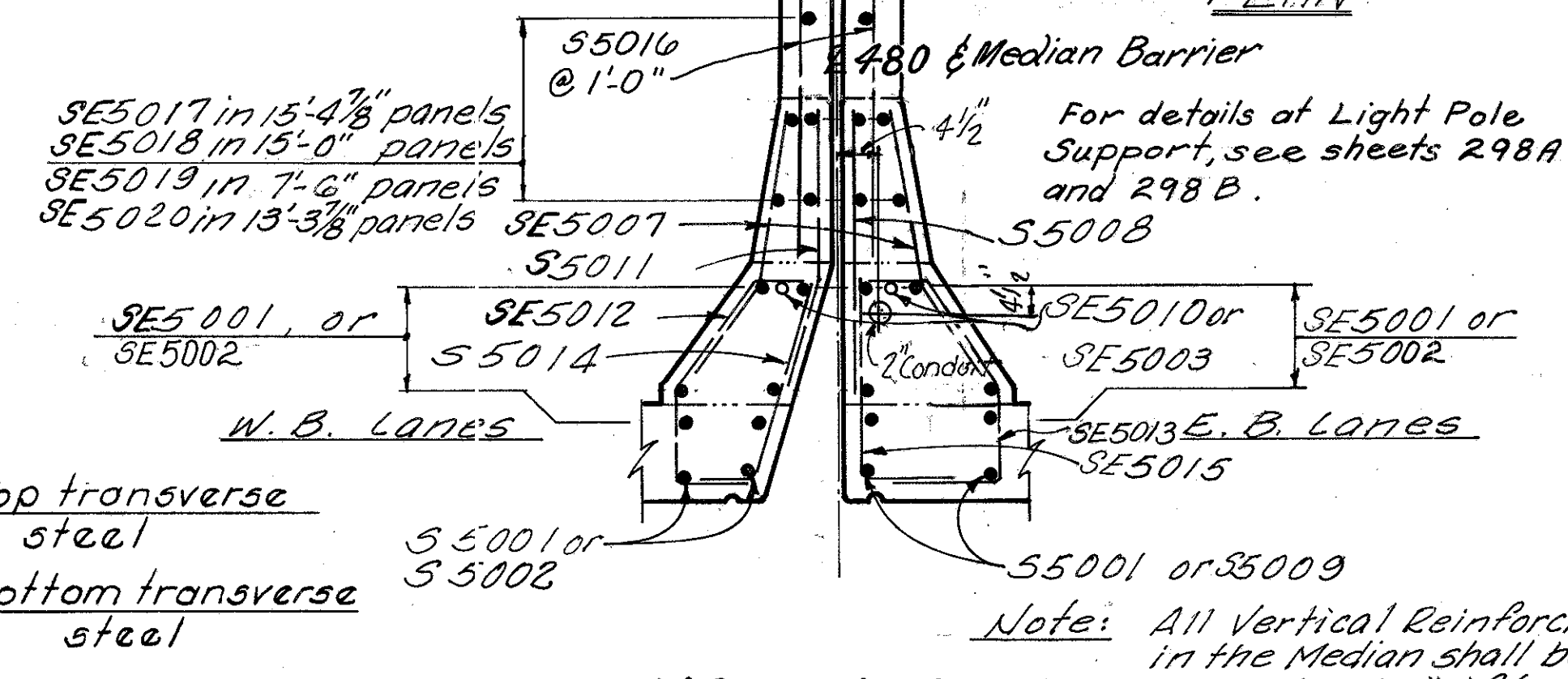
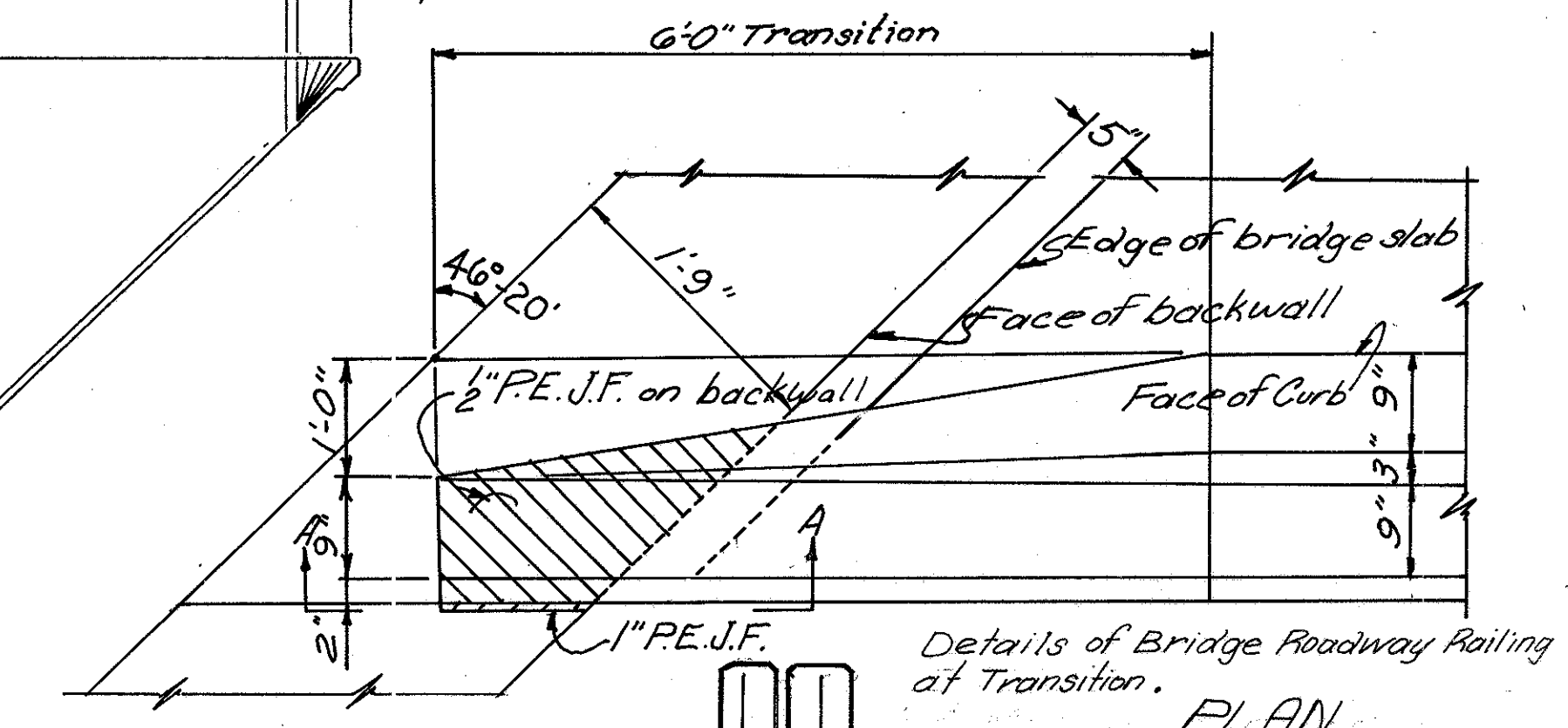
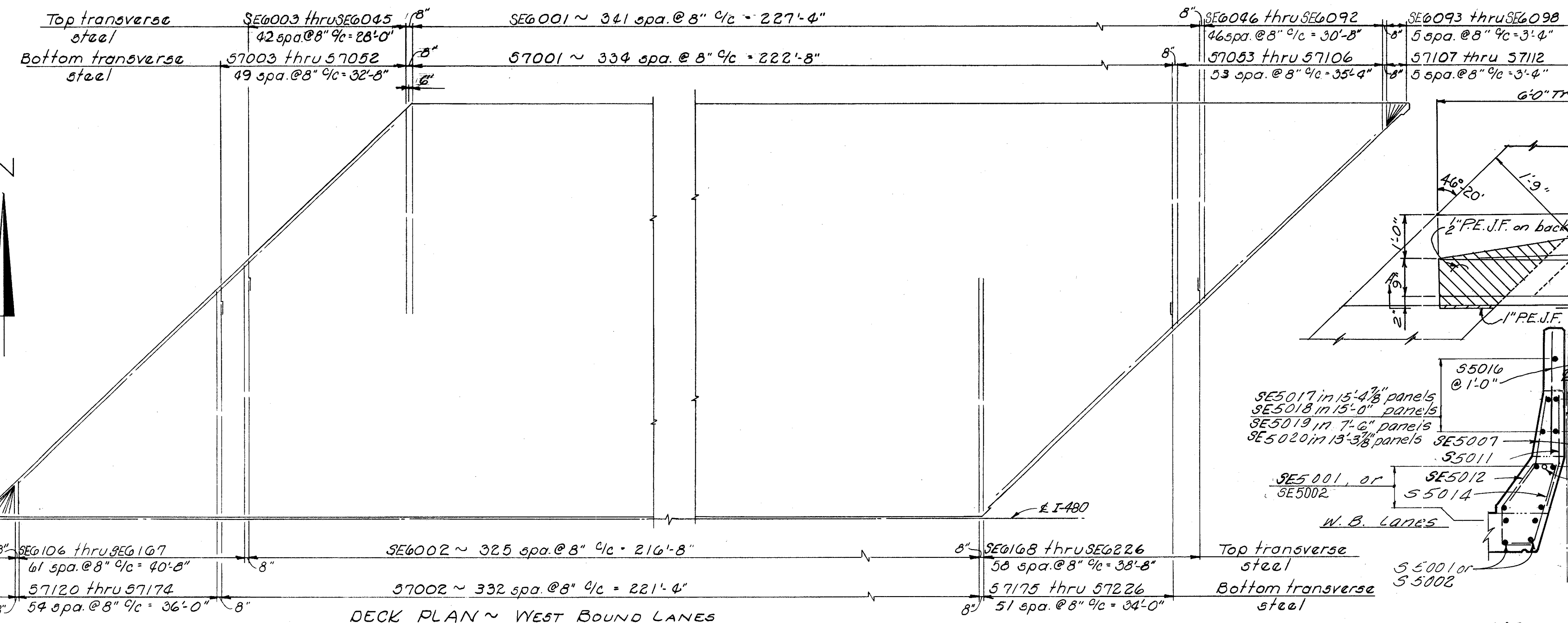


ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 18/26

TRANSVERSE SECTION  
BEIDGE N<sup>o</sup> CUY-480-0957  
E180 OVER CONSOLIDATED RAIL CORP.

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

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	H. DEK		FWD	G.W.M.	4/13/69	



For details of pilaster and anchor bolts, see standard Drawings HL-3 & HL-4.

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

For additional notes and details see sheets

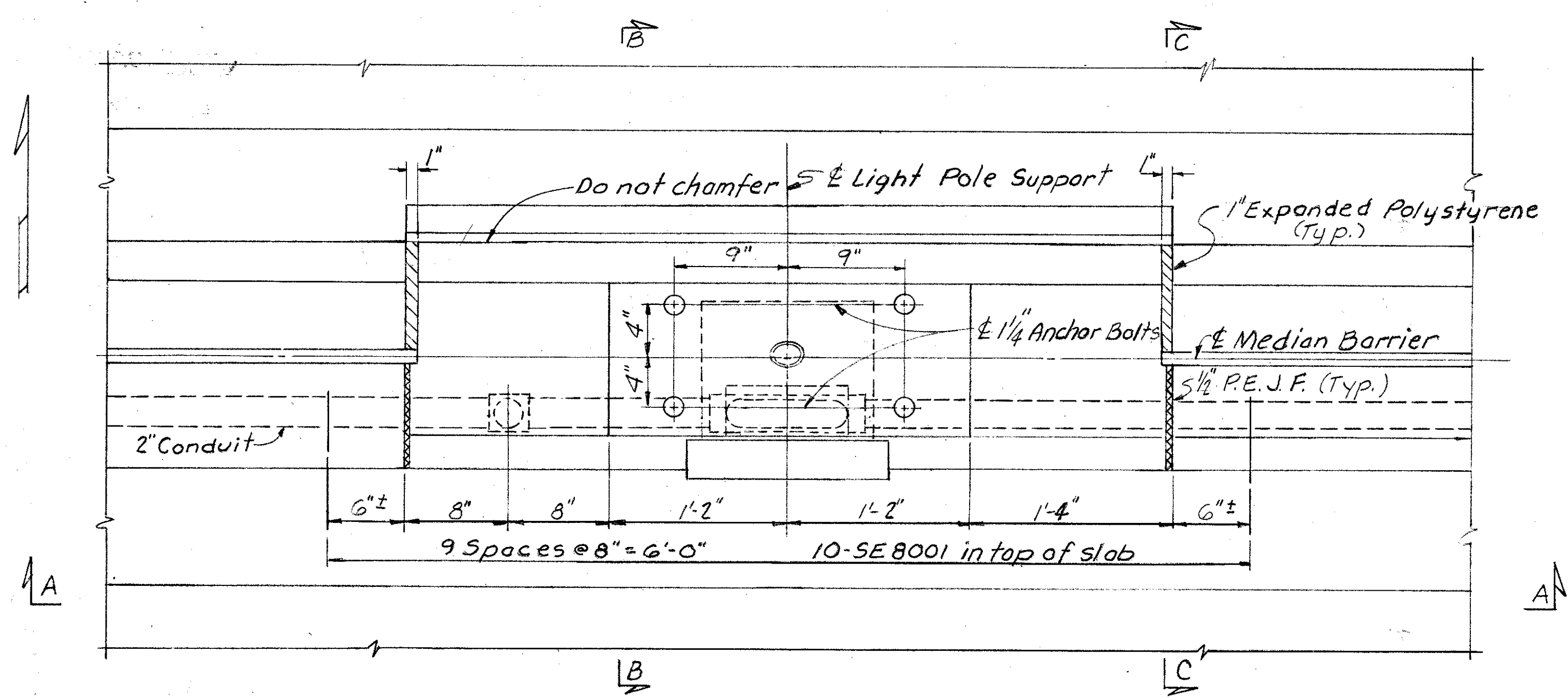
Top transverse 18/20 & 20/20 thru 23/20

Bottom transverse steel

Rev. 6-22-78

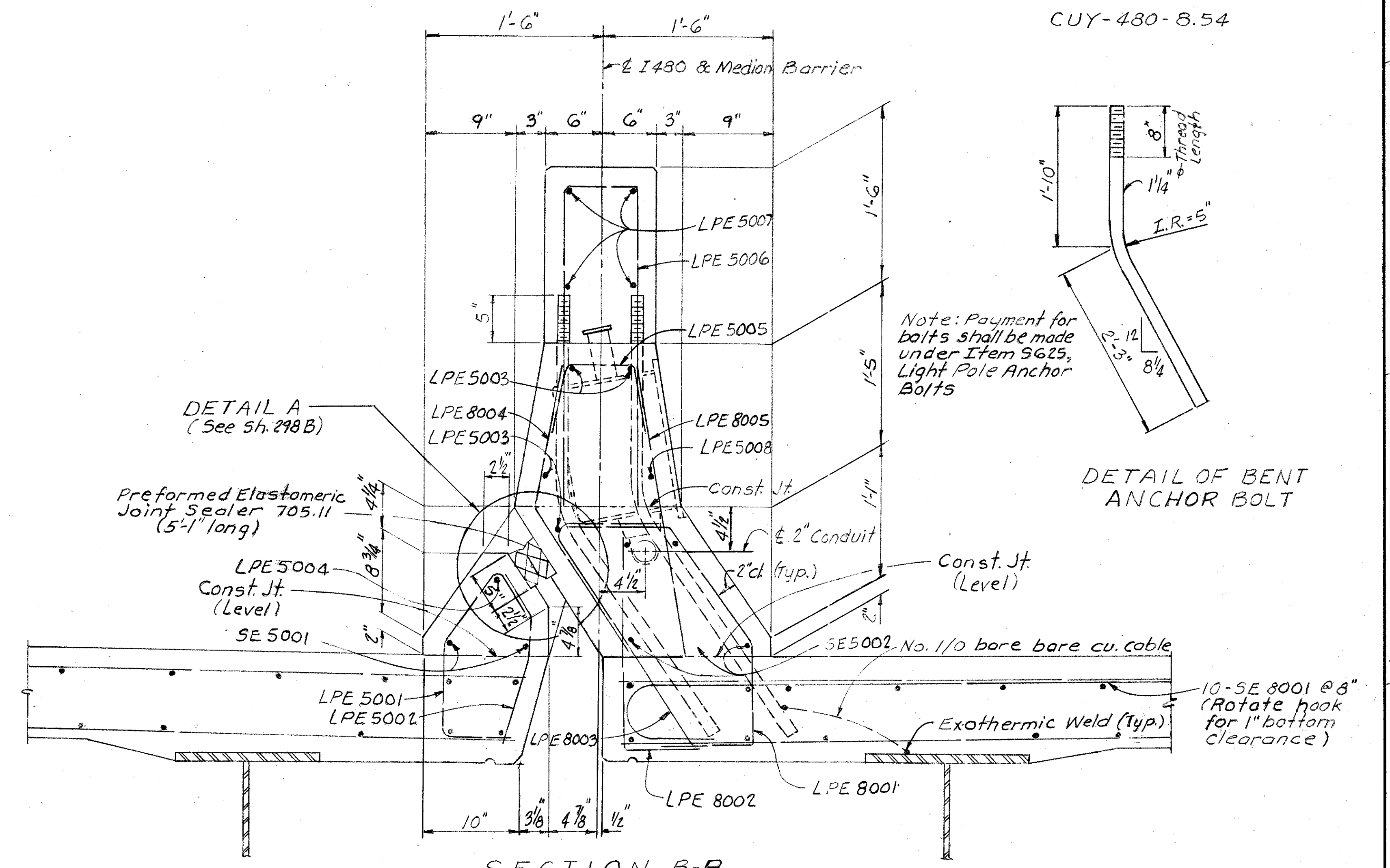
ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						
19/26						
DECK PLAN						
BRIDGE NO CUY-480-0957						
I-480 OVER CONSOLIDATED RAIL CORP.						
CUYAHOGA COUNTY Sta. 531 + 28.54						
Sta. 533 + 97.06						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	DEK		fwd	G.W.U.	6/13/69	

CUY-480-8.54

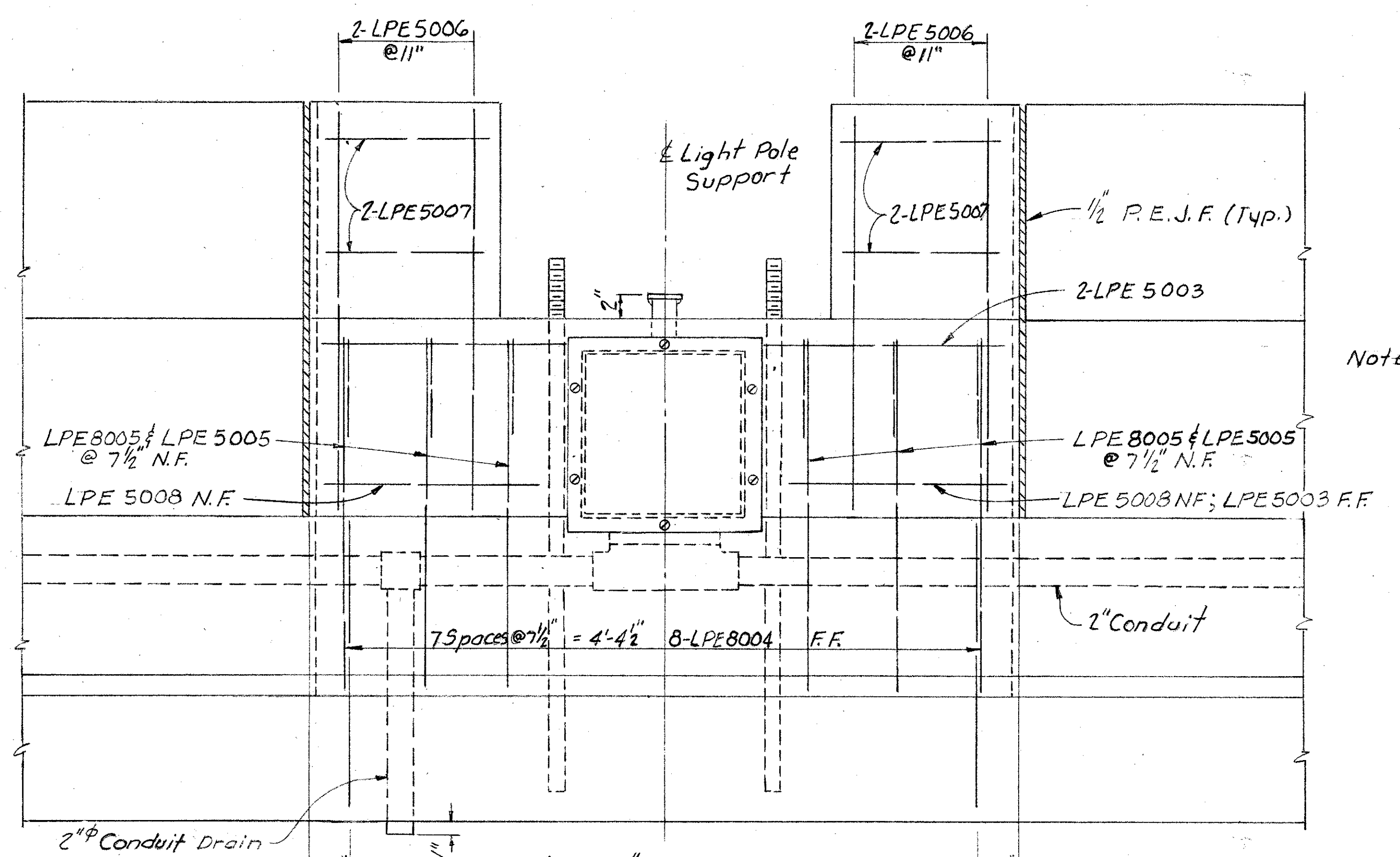


PLAN  
LIGHT POLE SUPPORT  
AT STA 532+50

MICROFILMED  
NOV 1982



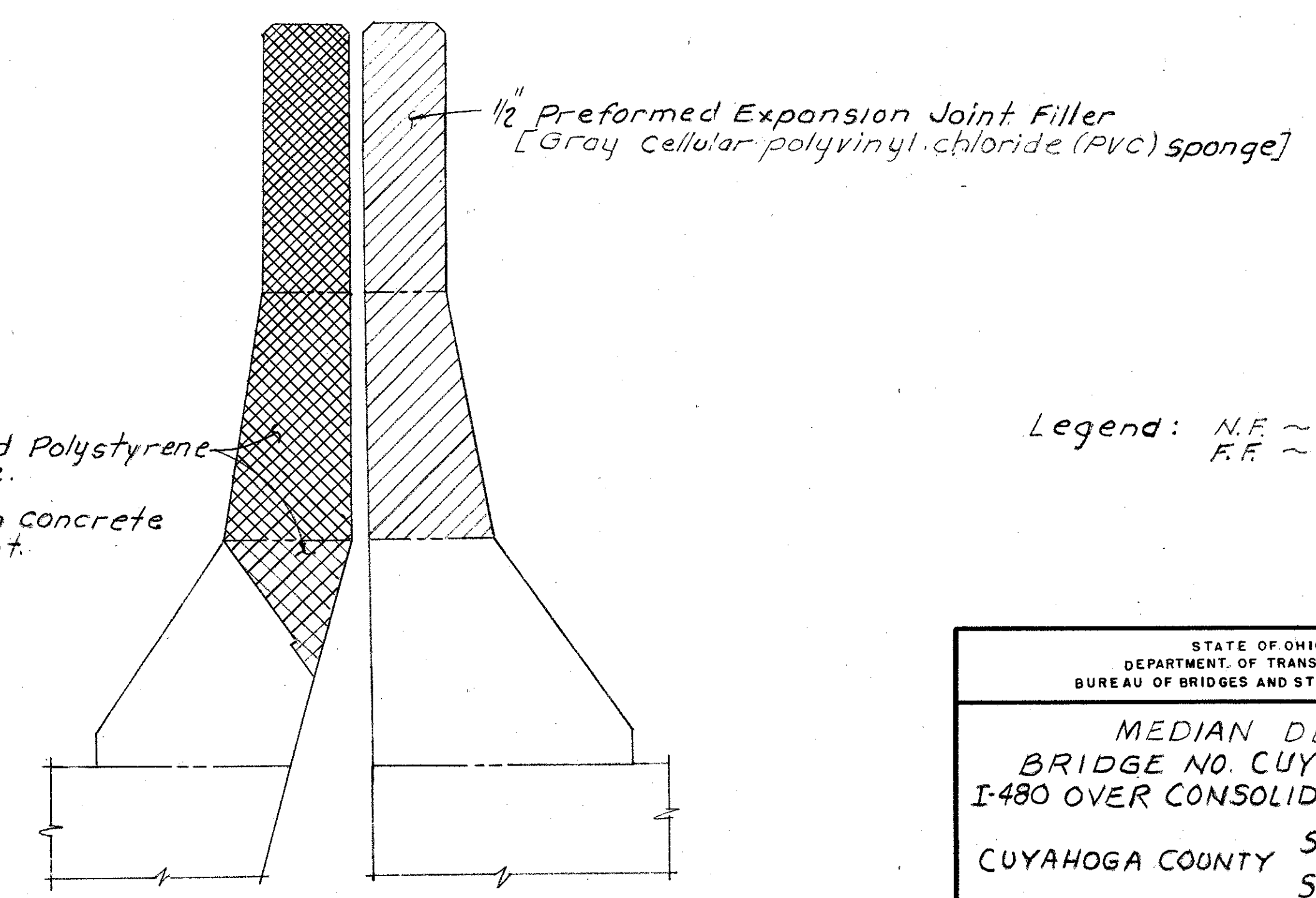
SECTION B-B



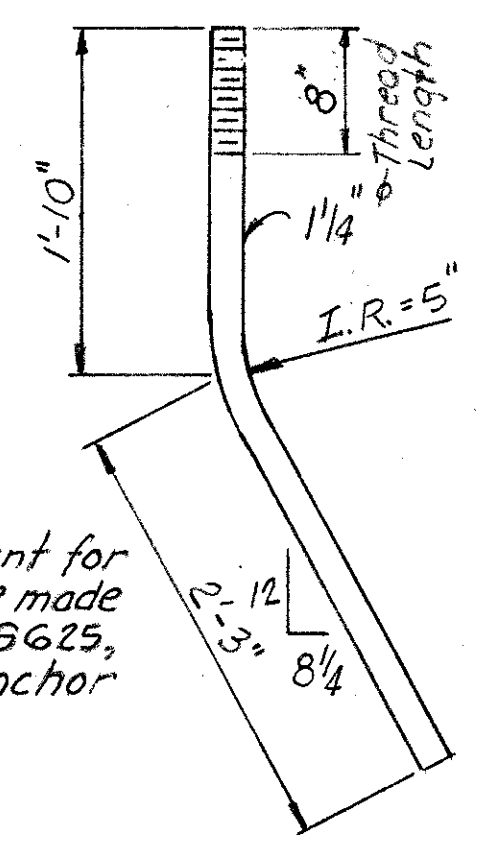
SECTION A-A

Note: Not all horizontal reinforcing bars shown.

1" Expanded Polystyrene left in place. Include with concrete for payment.



SECTION C-C



DETAIL OF BENT ANCHOR BOLT

Note: Payment for bolts shall be made under Item 5625, Light Pole Anchor Bolts

Legend: N.F. ~ Near Face  
F.F. ~ Far Face

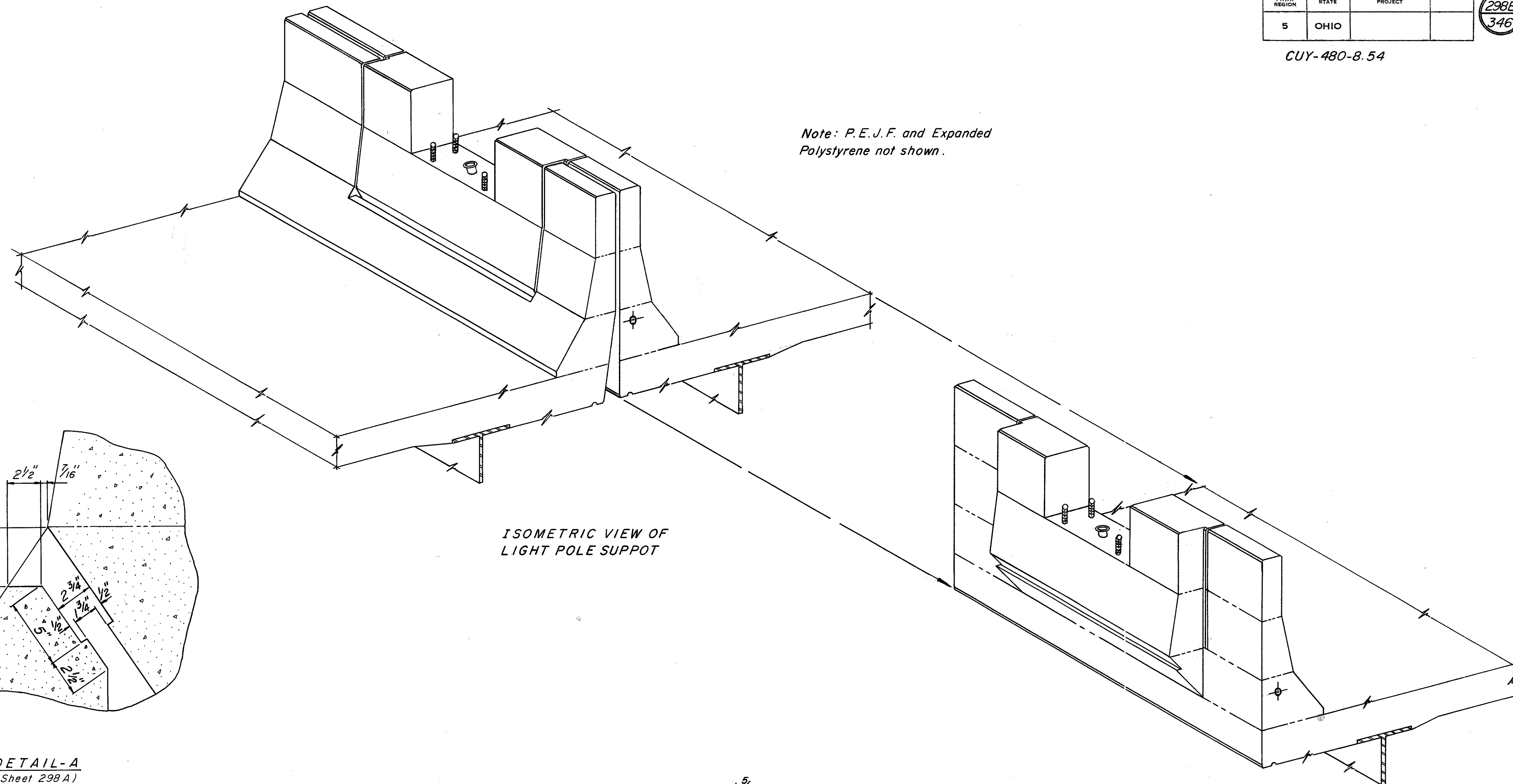
STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN						19A/26
MEDIAN DETAILS BRIDGE NO. CUY-480-0957 I-480 OVER CONSOLIDATED RAIL CORP						
CUYAHOGA COUNTY						STA. 531+28.54
						STA. 533+97.06
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF			WJW	1-13-78	

FWA REGION	STATE	PROJECT
5	OHIO	

298B  
346

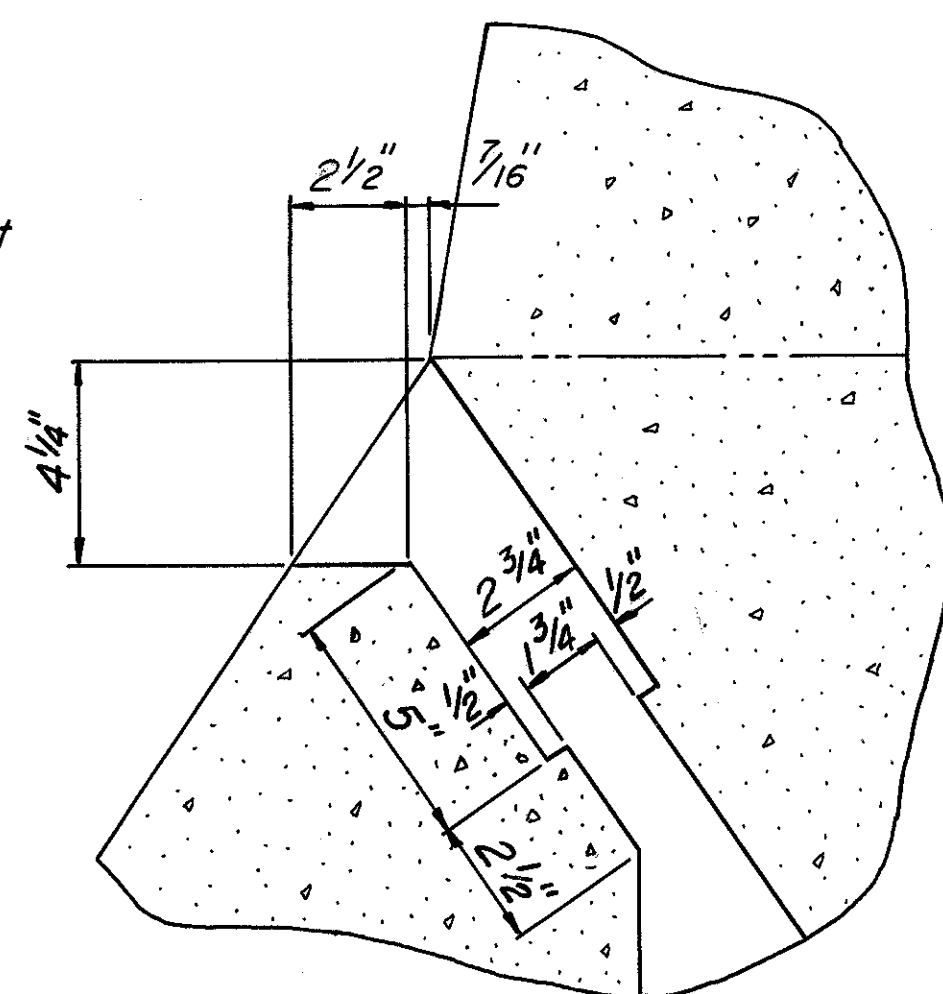
CUY-480-8.54

Note: P.E.J.F. and Expanded Polystyrene not shown.



ISOMETRIC VIEW OF LIGHT POLE SUPPORT

Note: Preformed Elastomeric Joint Sealer, 705.11 not shown.



DETAIL-A  
(Sheet 298 A)

LIGHT POLE SUPPORT NOTES

Longitudinal steel shall be field cut as required.

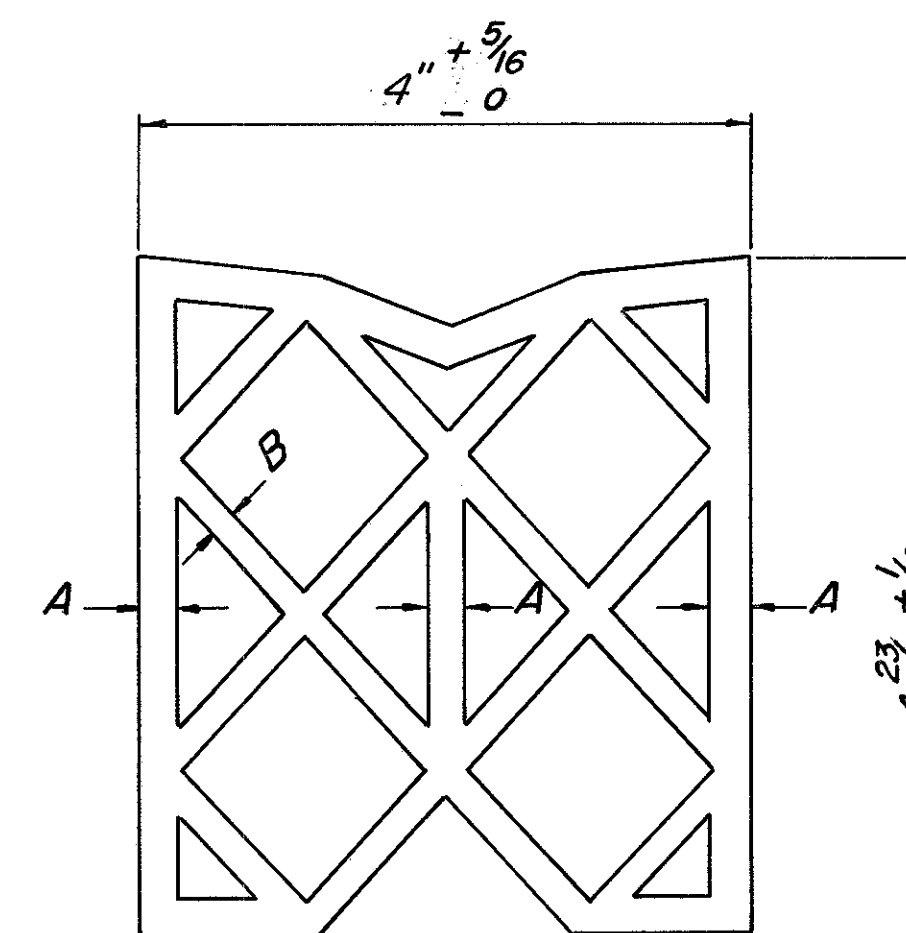
Provide reverse bends in Conduit within a distance of 10'-0" from each end of deck to change its location in the deck median to run it into the abutment median.

Field bending of conduit shall be permitted.

PREFORMED ELASTOMERIC JOINT SEALER NOTES

The Elastomeric Joint Sealer shall be made by Watson Bowman Associates, Inc. Buffalo, New York, Acme Highway Products Corporation of Buffalo, New York or D.S. Brown of North Baltimore, Ohio.

The adhesive shall be "Bon Lastic" distributed by Watson Bowman Associates, Inc. of Buffalo, New York, "Prima Lube" distributed by Acme Highway Products Corporation of Buffalo, New York or approved equal.



ELASTOMERIC JOINT SEALER

$$A = \frac{1}{4} + \frac{3}{64} - \frac{1}{32}$$

$$B = \frac{3}{16} + \frac{3}{64} - \frac{1}{64}$$

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
BUREAU OF BRIDGES

198/26

MEDIAN DETAILS

BR. NO. CUY-480-0957

1-480 OVER CONSOLIDATED RAIL CORP.

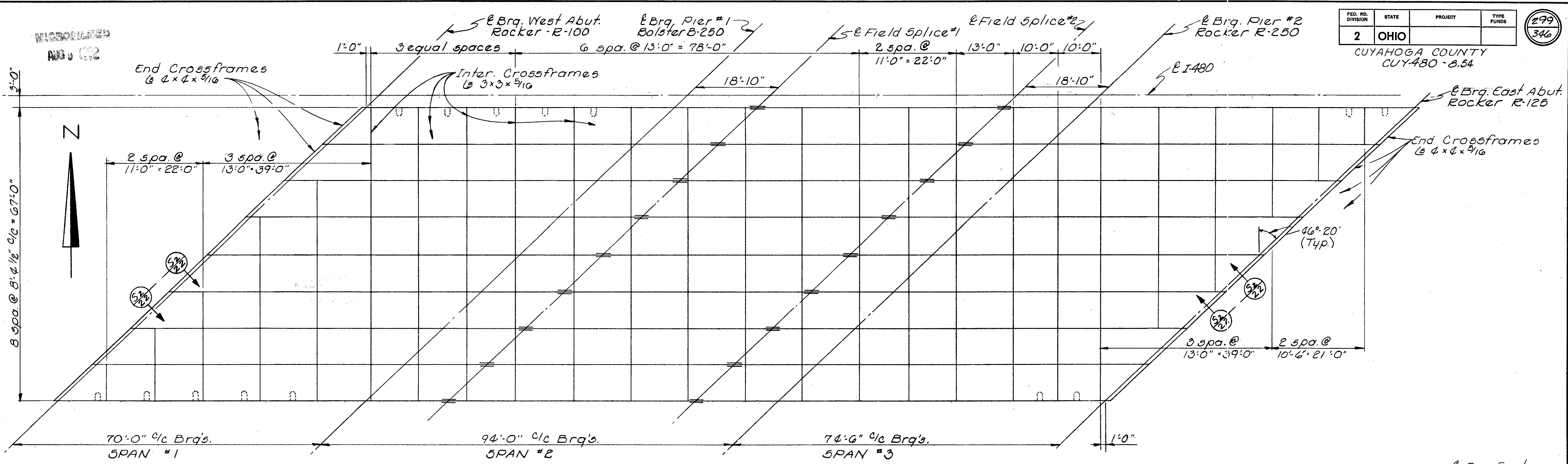
STA. 531+28.54

CUYAHOGA COUNTY

STA. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.T.F.	G.F.J.		W.T.F.	W.J.J.	1-13-78	

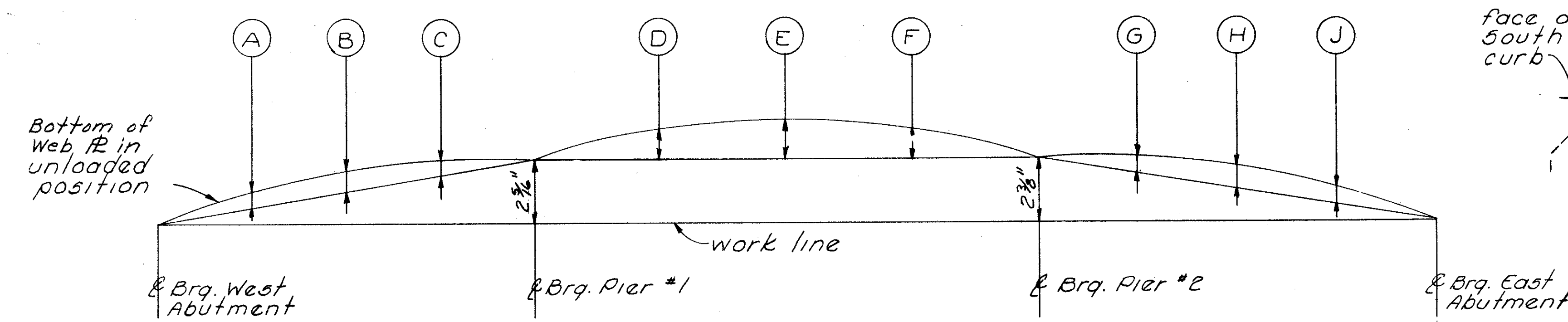




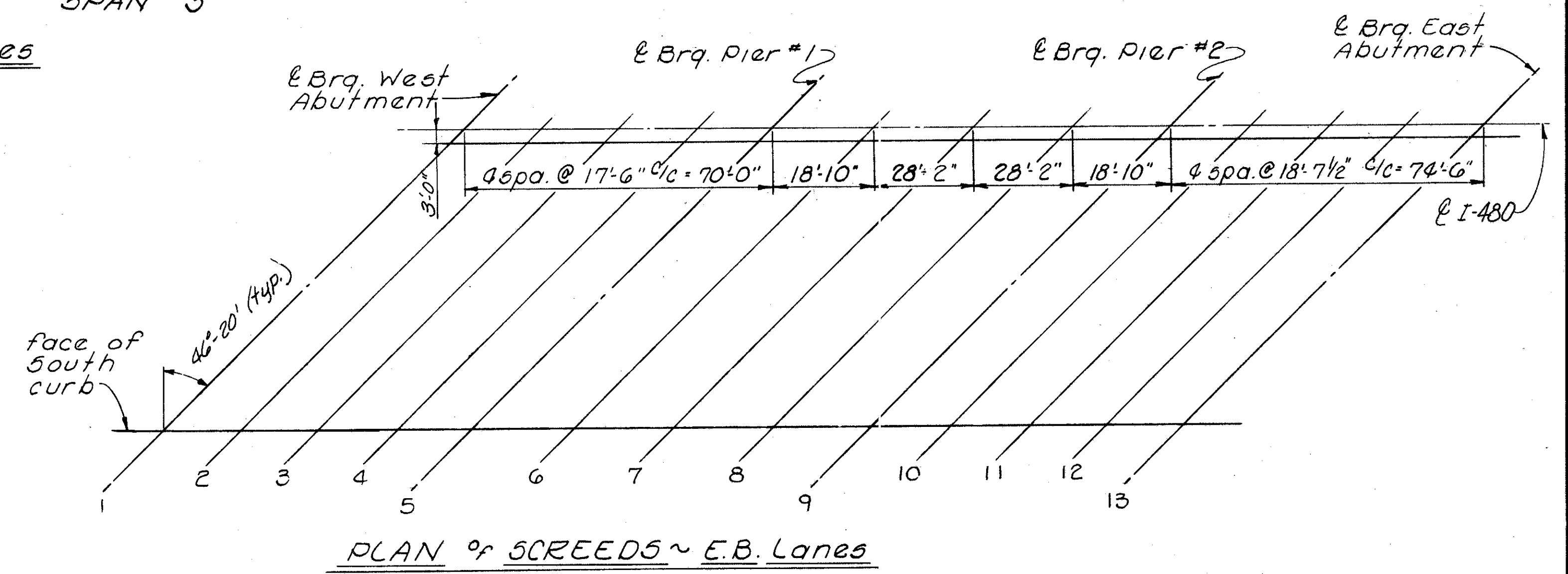
**NOTES**

Screed elevations shown are at the top of the reinforced concrete deck and at the face of curb and 3' South of E 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**

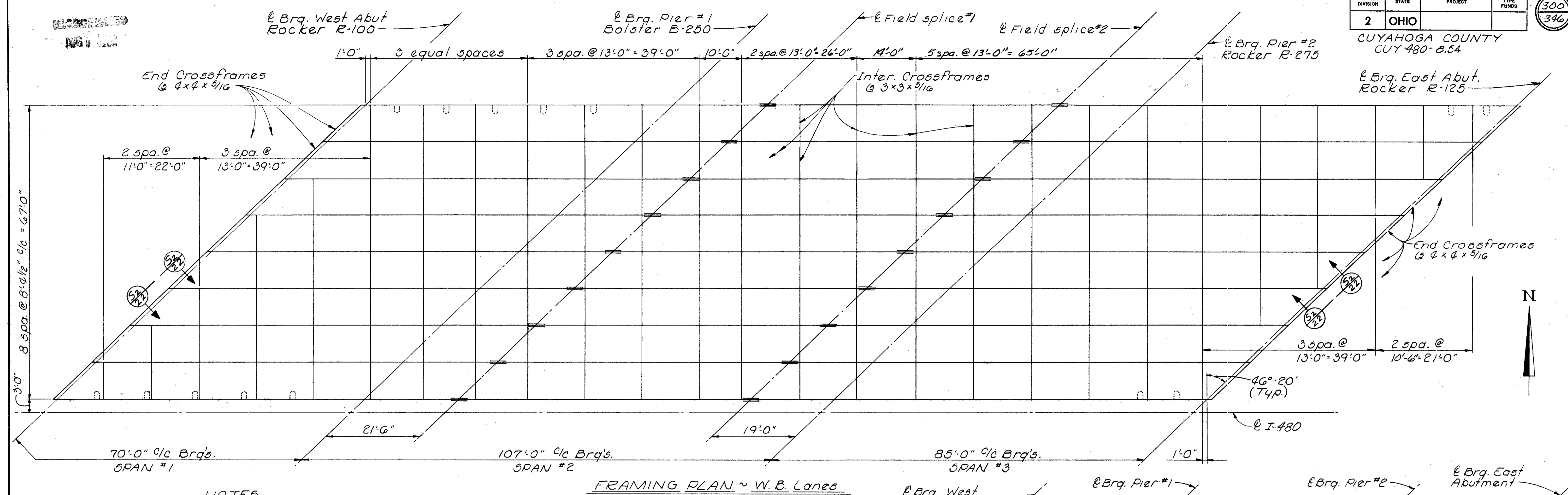
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	MEDIAN			EXTERIOR			MEDIAN			EXTERIOR			MEDIAN			INTERIOR			EXTERIOR								
	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	Splice	1/2 Pt.	Splice	Splice	1/2 Pt.	Splice	Splice	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.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

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

E.B. FRAMING PLAN and SUPERSTRUCTURE DETAILS

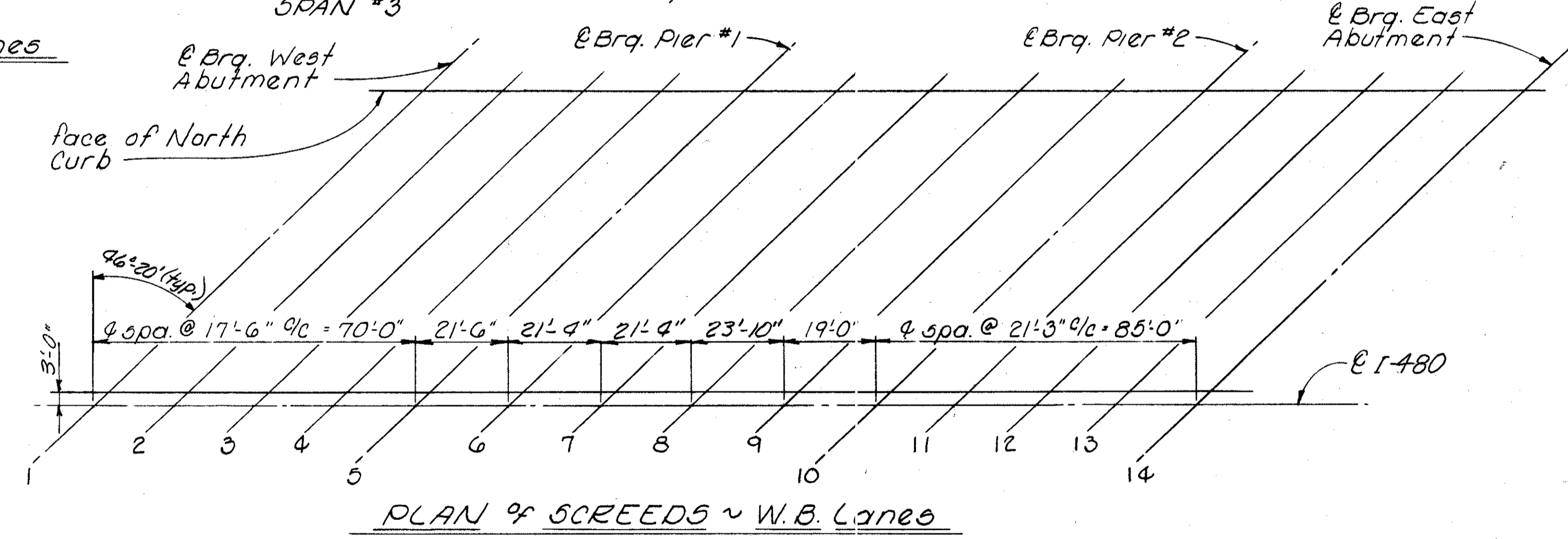
BRIDGE No CUY-480-0957  
I-480 OVER CONSOLIDATED RAIL CORP.  
Sta. 531+28.54  
CUYAHOGA COUNTY Sta. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	JEK		fwa	G.W.M.	4/13/03	



**NOTES**  
Screed elevations shown are at the top of the reinforced concrete deck and at the face of curb and 3'-0" North of  $\ell$  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.

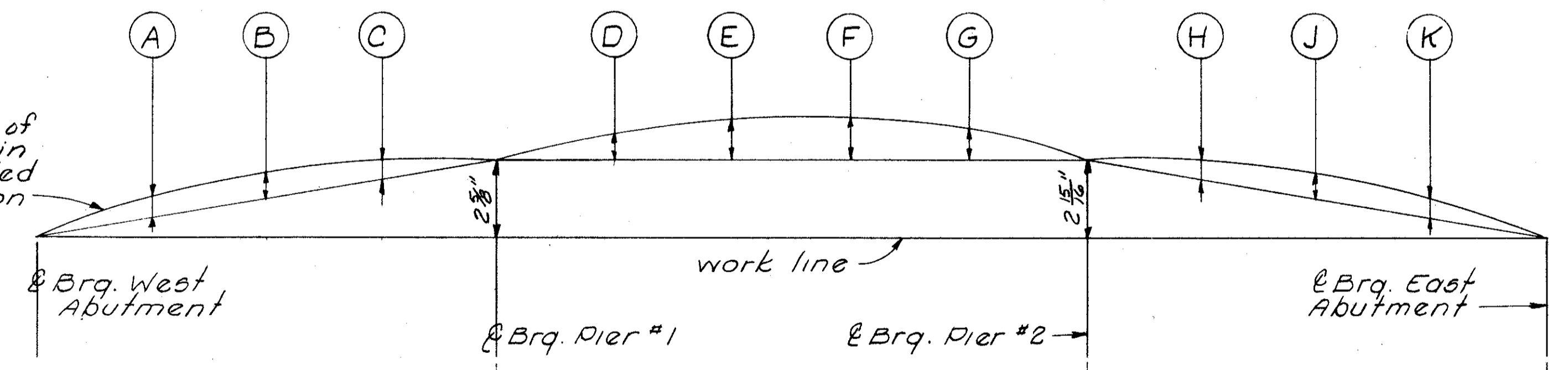
For additional notes and details see Sheets 18/26, 19/26 and 22/26.



**\*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 $\ell$ 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**

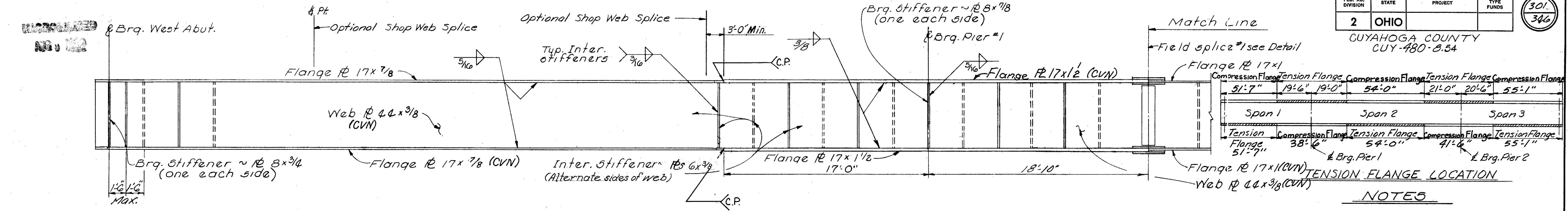
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	MEDIAN			INTERIOR			EXTERIOR			MEDIAN			INTERIOR			EXTERIOR			MEDIAN			INTERIOR			EXTERIOR				
	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	Splice	0.4 Pt.	0.6 Pt.	Splice	Splice	0.4 Pt.	0.6 Pt.	Splice	Splice	0.4 Pt.	0.6 Pt.	Splice	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.
Defl. due to wt. of steel	0	0	0	0	0	0	0	0	0	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	0	1/2	1/2	0	1/2	1/2	0	1/2	1/2
Defl. due to remaining O.L.	3/16	3/16	1/4	3/16	3/16	3/16	3/16	3/16	1/4	3/8	3/8	3/8	1/2	3/8	3/8	1/2	3/8	3/8	3/8	1/2	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	1/4	3/16	3/16	1/4	3/16	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	1/4	3/8	1/4	1/4	3/8	1/4	1/4	3/8	1/4
Req'd shop camber	3/8	1/4	1/4	3/8	1/4	1/4	3/8	3/8	1/4	1/2	1/2	3/8	3/8	1/2	1/2	3/8	3/8	1/2	1/2	3/8	1/2	3/8	1/4	3/8	1/4	1/4	3/8	1/4	

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

W.B. FRAMING PLAN and SUPERSTRUCTURE DETAILS  
BRIDGE N° CUY-480-0957  
T-480 OVER CONSOLIDATED RAIL CORP.

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

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	DEK		fnd	G.W.M.	6/13/68	

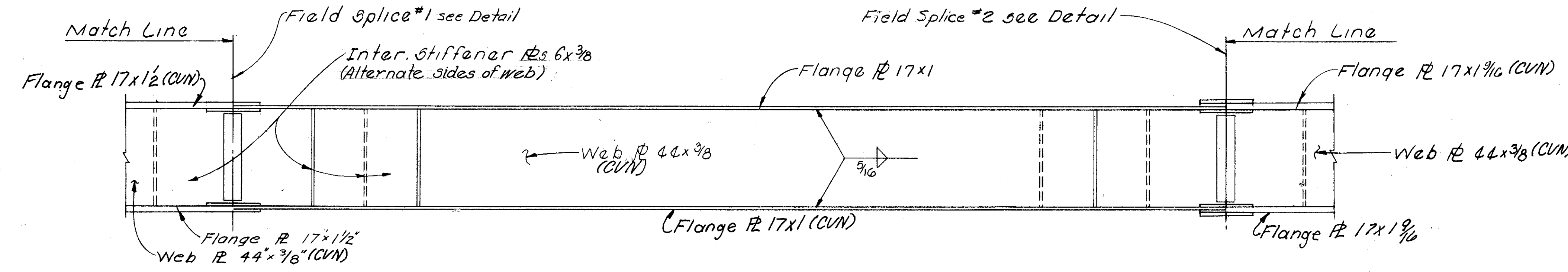


Optional Web Splices shall be made with complete penetration welds.

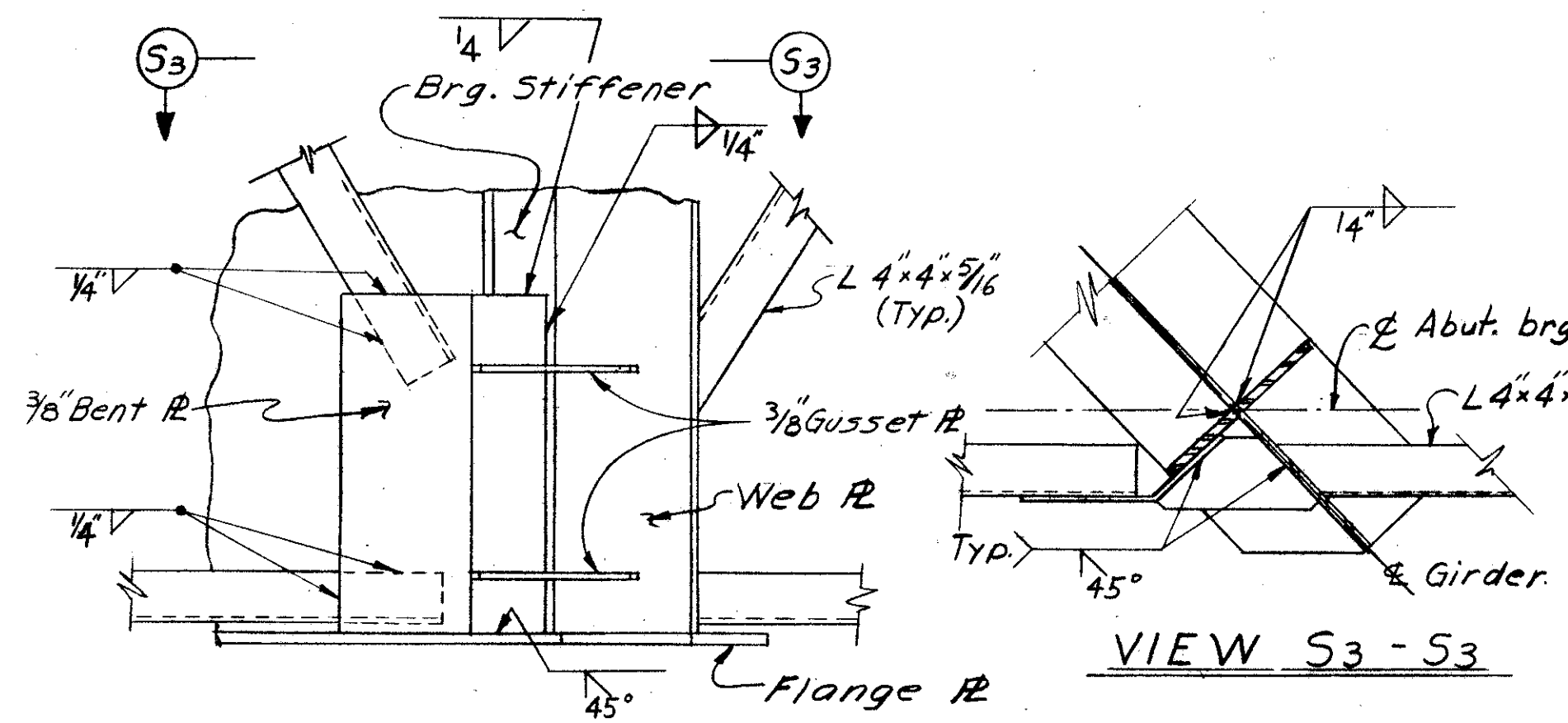
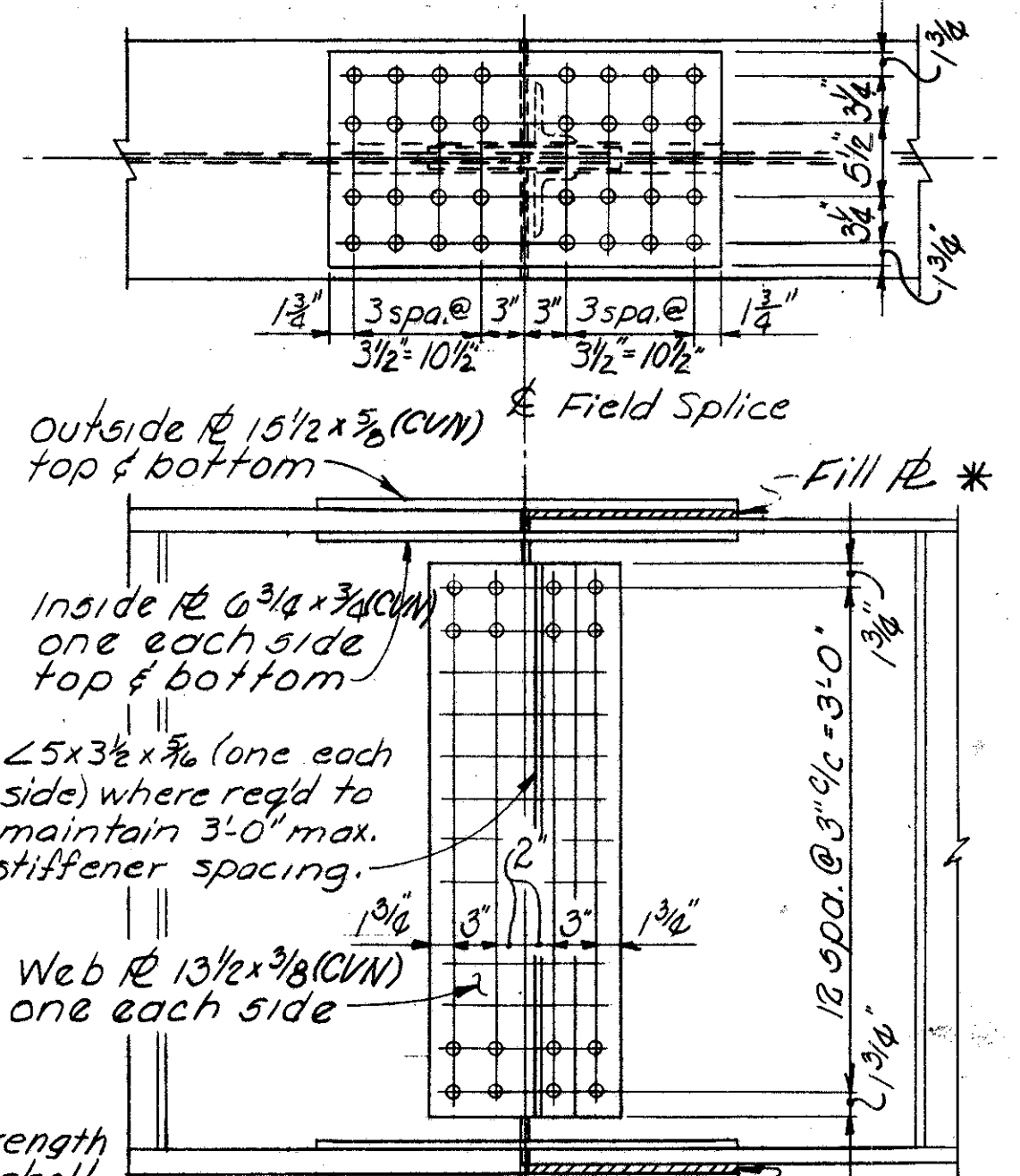
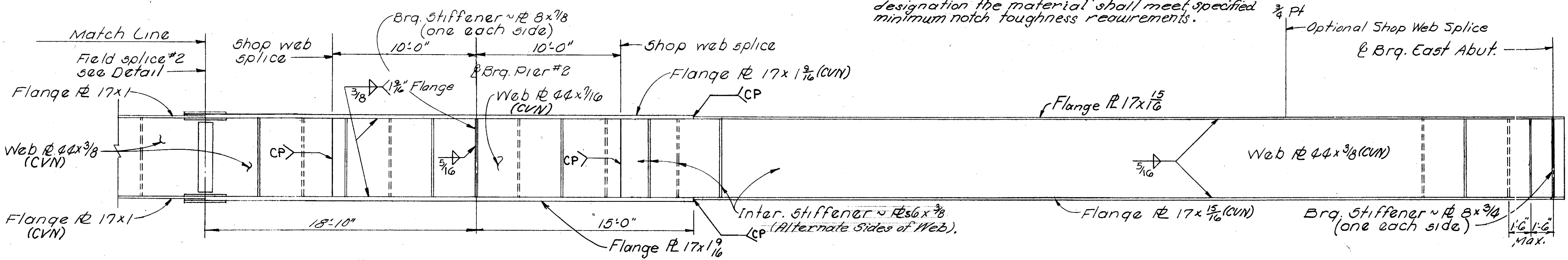
CP - Indicates Complete Penetration butt weld.

Maximum intermediate stiffener spacing is 3'-0" for E.B. girders, unless otherwise shown.

\*1/2" at Field Splice #1, 9/16" at Field Splice #2.  
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.

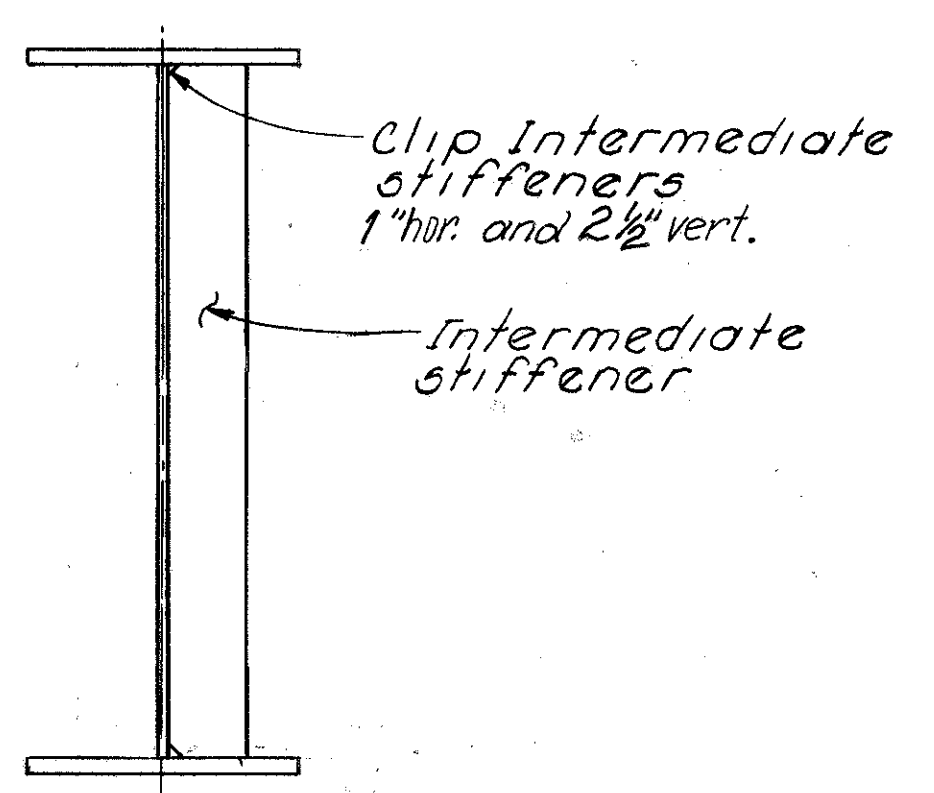


Where "CVN" follows a shape or plate size designation the material shall meet specified minimum notch toughness requirements.

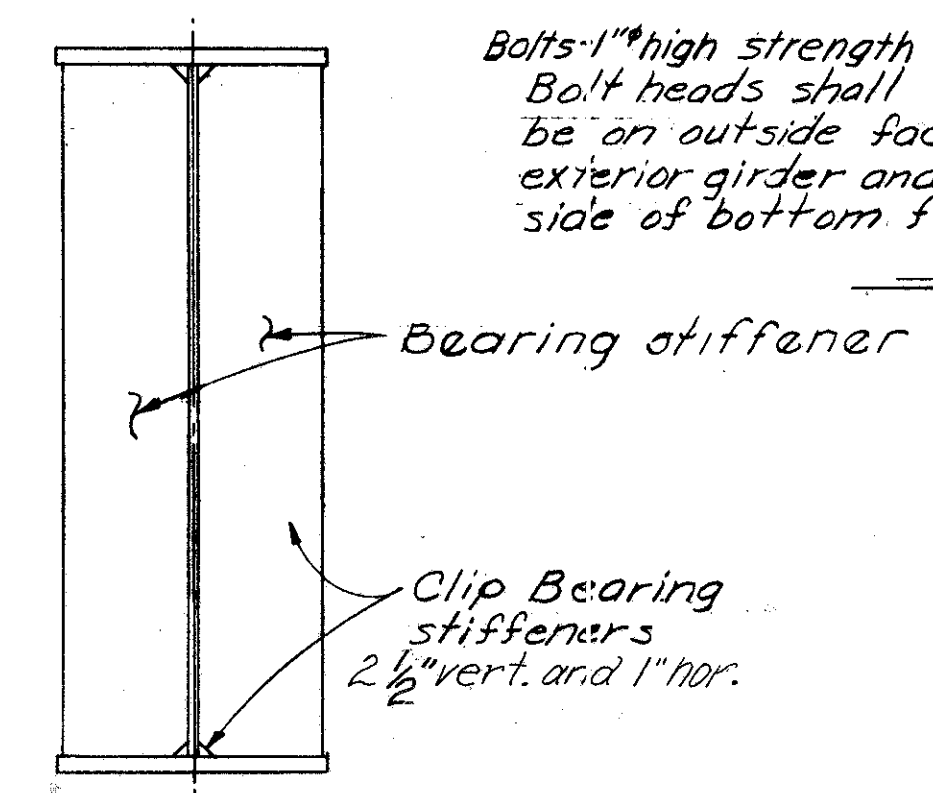


SECTION S2-S2  
Typical End Crossframe Detail  
(For details not shown see std. dwg. 5D-1-69 sht. 1)

INTERMEDIATE STIFFENERS: 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 at the stiffener spacing shown. Transverse Web Stiffeners shall be provided for the attachment of Deck Crossframes.

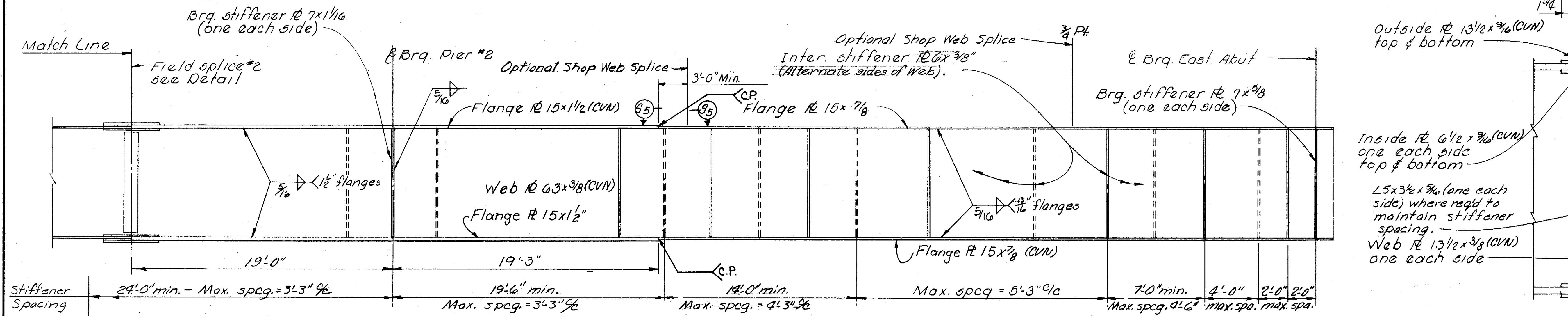
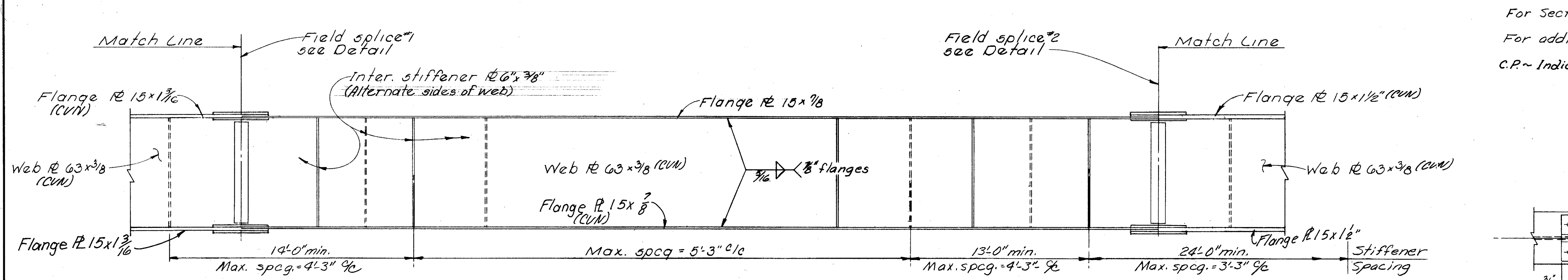
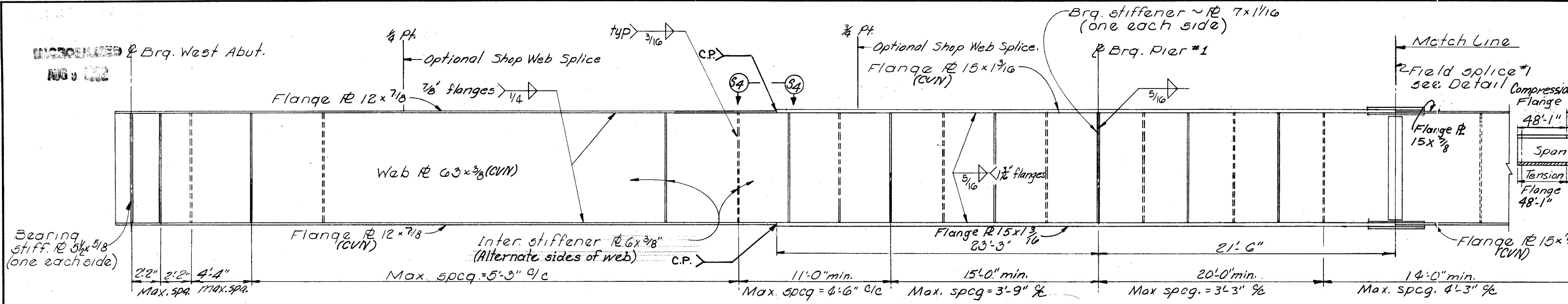
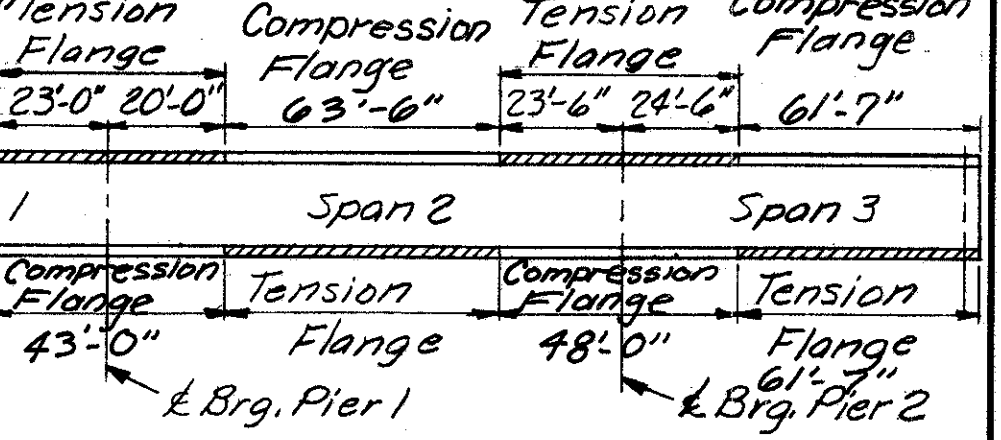


INTERMEDIATE STIFFENER DETAIL



BEARING STIFFENER DETAIL

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						22/26
E.B. GIRDER DETAILS						
BRIDGE N° CUY-480-0957						
I-480 OVER CONSOLIDATED RAIL CORP.						
CUYAHOGA COUNTY Sta. 531 + 28.54						
Sta. 533 + 97.04						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	J&K		fwd	G.W.M.	6/13/69	

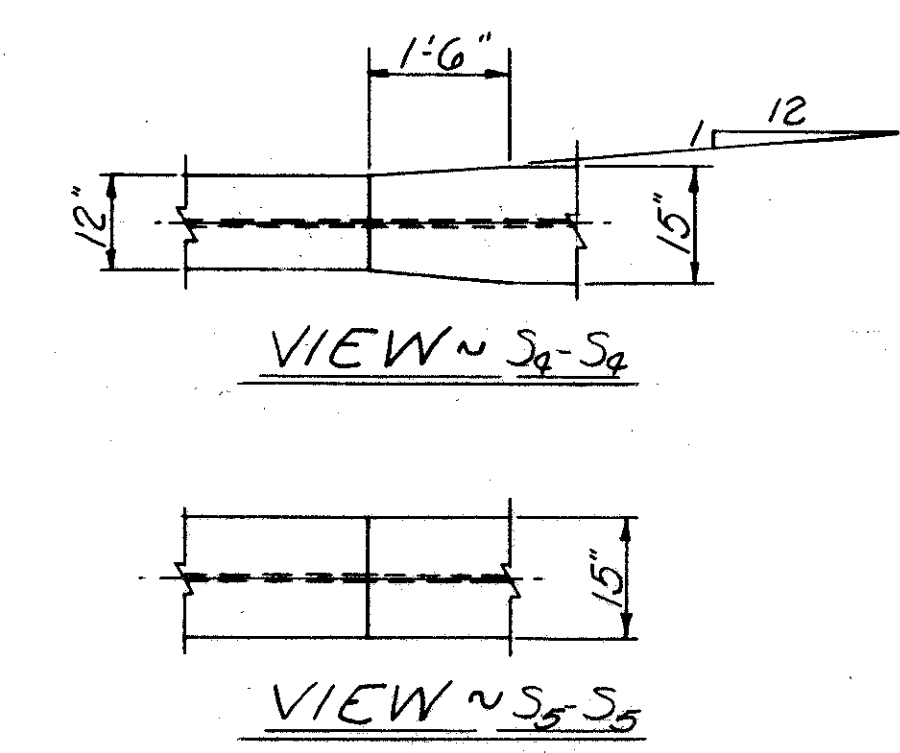
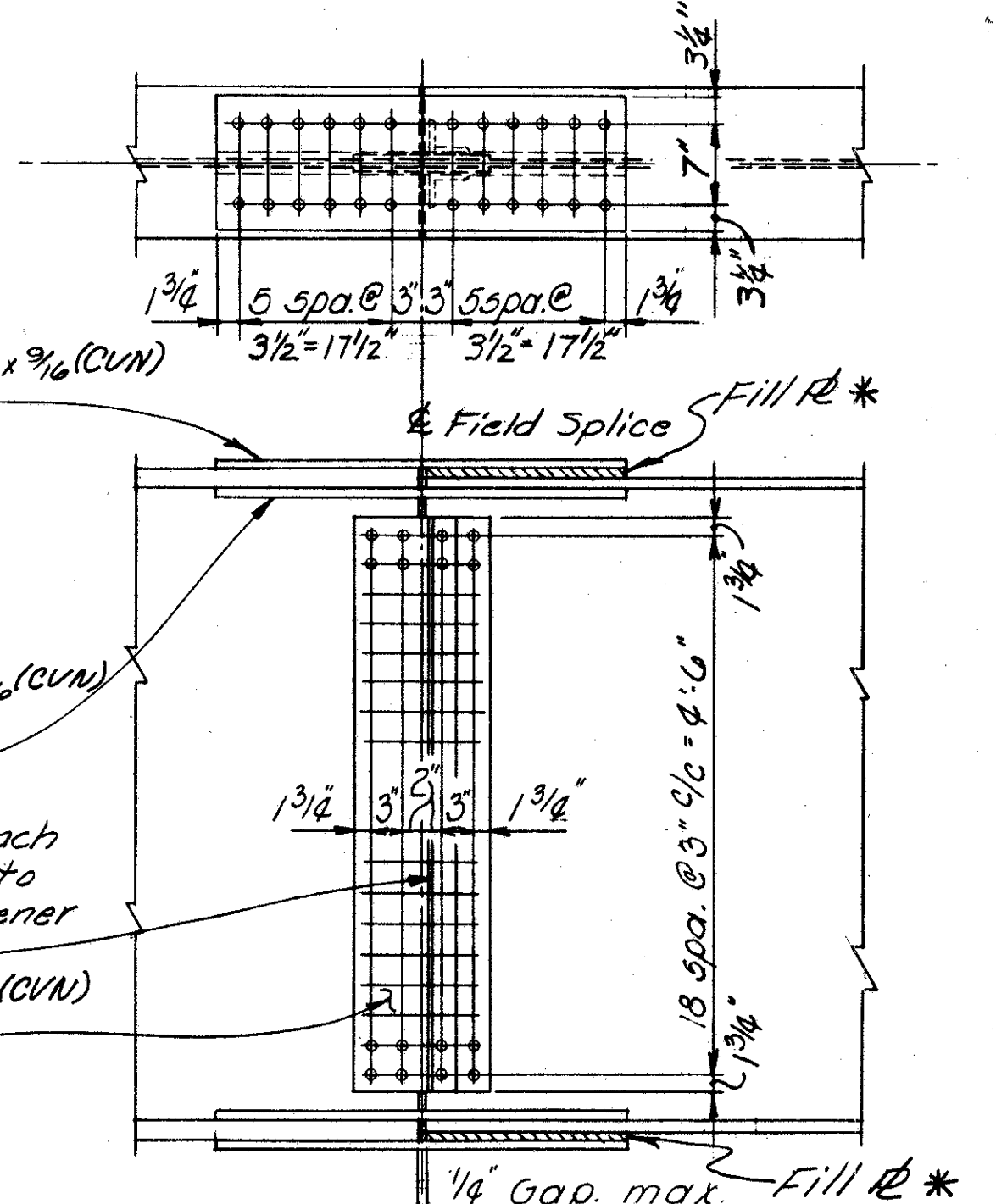


**NOTES**

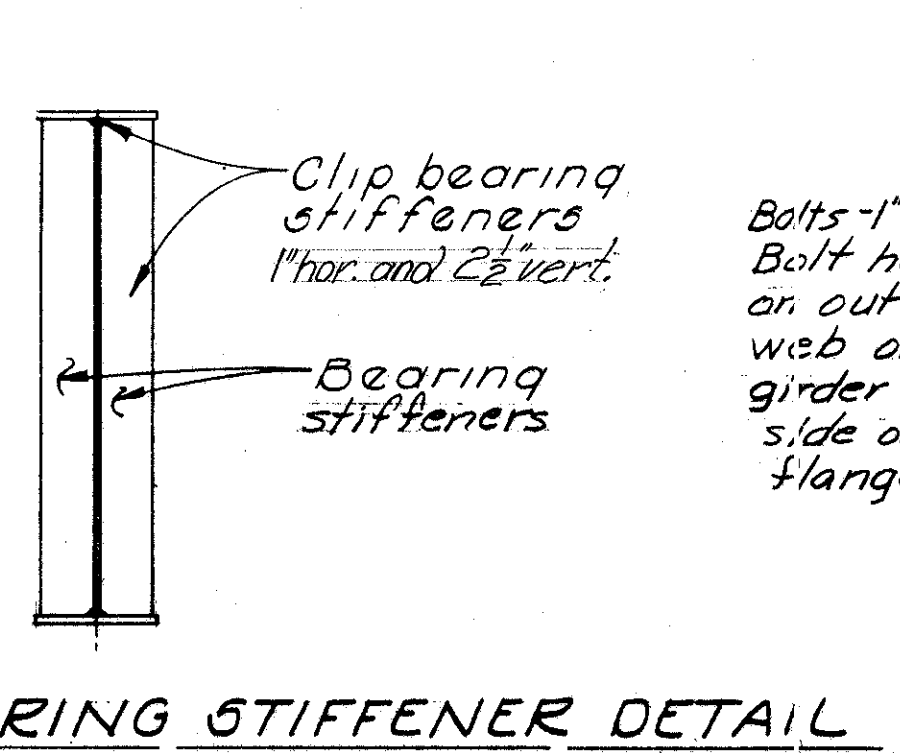
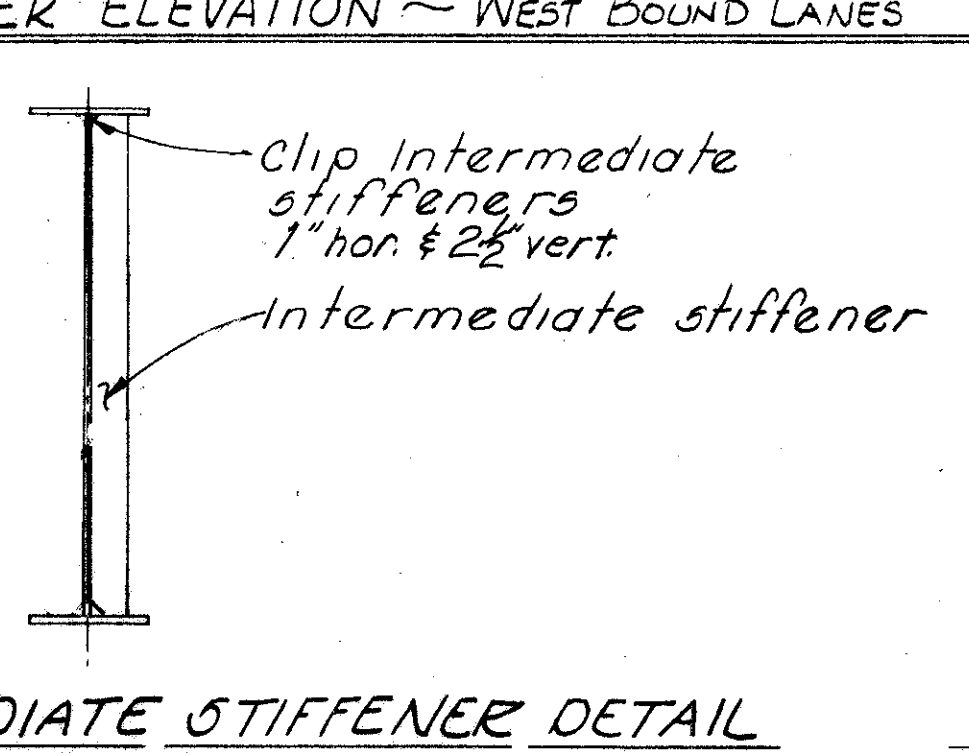
For Section S<sub>3</sub>-S<sub>3</sub> see Sheet [27/26].

For additional notes see sheet [27/26].

C.P.~ Indicates complete penetration butt welds.



Optional shop web splices shall be made with complete penetration welds.



Bolts-1" high strength Bolt heads shall be on outside face of web on exterior girder and on bottom side of bottom flanges.

**GIRDER FIELD SPLICE DETAIL**

\*  $\frac{5}{16}$ " at Field Splice #1  
\*  $\frac{5}{8}$ " at Field Splice #2

ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO [23/26]

**W.B. GIRDER DETAILS**

BRIDGE N<sup>o</sup> CUY-480-0957  
1-480 OVER CONSOLIDATED RAIL CORP.

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

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	DEK		FND	G.W.M.	6/13/59	



**NOTES**

- 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.
- DELETED
- COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.

- LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
- END PREPARATION AND FIELD WELDING INCLUDED WITH ITEM 509.
- "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.

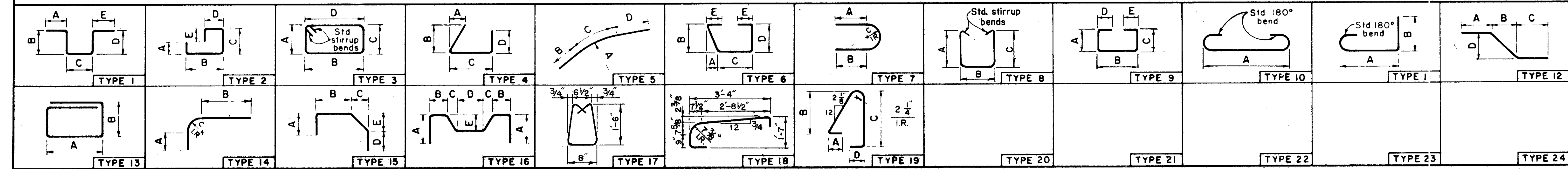
SPIRAL BARS SHALL NOT HAVE DEFORMATIONS BUT SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. 1 1/2 CLOSED COILS SHALL BE PROVIDED AT ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE, OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 LB. PER LIN. FT. OF SPACER SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG PERIPHERY OF COIL. WEIGHT OF SPACERS, AT 0.80 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	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	
PIERS (CONTINUED)											SUPERSTRUCTURE, EPOXY COATED (CONTINUED)											SUPERSTRUCTURE (CONTINUED)											
P 5020	6	8-9		1		3-2	2-8	3-2		1	SE6001	342	32-2	16523	ST.							S 7001	335	36-6	24993	ST							
THRU			537		VARY LENGTH BY 1"			2 0/0"			SE6002	326	40-8	19913	ST.							S 7002	333	36-6	24844	ST							
					VARY DIM. B BY 0"			7 0/0"			SE6003	1	5-5		ST.						1	S 7003	1	5-4		ST						1	
					VARY DIM. D BY 0"			7 0/0"			THRU			1214		VARY LENGTH BY 0'-7 5/8"						THRU			2138		VARY LENGTH BY 0'						
P 5026	6	15-9		1		6-8	2-8	6-8		1	SE6045	1	32-2		ST.							S 7052	1	36-6		ST							1
P 5027	6	22-0	138	ST							SE6046	1	33-8		ST.							S 7053	1	37-8		ST							1
P 5028	6	8-9		1		3-2	2-8	3-2		1	THRU			1344		VARY LENGTH BY 0'-7 5/8"						THRU			2322		VARY LENGTH BY 0'						
THRU			997		VARY LENGTH BY 0"			7 0/0"			SE6092	1	4-5		ST.							S 7106	1	4-5		ST							1
					VARY DIM. B BY 0"			3 1/2"			SE6093	1	3-9		ST.							S 7107	1	3-9		ST							1
					VARY DIM. D BY 0"			3 1/2"			THRU			39		VARY LENGTH BY 0'-3 1/2"						THRU			54		VARY LENGTH BY 0'						
P 5040	6	15-9		1		6-8	2-8	6-8		1	SE6098	1	5-0		ST.							S 7112	1	5-0		ST							1
											SE6099	1	5-6		ST							S 7113	1	5-6		ST							1
P 8001	60	22-3	3564	ST							THRU			50		VARY LENGTH BY 0'-3 0/0"					THRU			68		VARY LENGTH BY 0'							
P 8002	48	12-0	1538	ST							SE6105	1	4-0		ST							S 7119	1	4-0		ST							1
P 8003	10	23-10	636	ST							SE6106	1	4-8		ST							S 7120	1	4-8		ST							1
P 8004	24	12-10	822	ST							THRU			2243		VARY LENGTH BY 0'-7 5/8"						THRU			2450		VARY LENGTH BY 0'						
P 8005	30	26-4	2109	ST							SE6167	1	43-6		ST							S 7174	1	38-11		ST							1
P 8006	24	14-1	902	ST							SE6168	1	40-8		ST							S 7175	1	36-6		ST							1
P 8007	20	21-6	1148	ST							THRU			1968		VARY LENGTH BY 0'-7 5/8"						THRU			2157		VARY LENGTH BY 0'						
											SE6226	1	3-9		ST							S 7226	1	4-1		ST							1
P11001	87	32-7	15061	1		3-2	26-11	3-2			SE6227	289	41-0	18014	ST							S 7227	296	37-0	22088	ST							
P11002	12	26-11	1716	ST							SE6228	306	32-2	14784	ST							S 7228	299	36-6	22307	ST							
											SE6229	1	5-0		ST							S 7229	1	5-6		ST							1
F 8004	144	16-10	6472	10	14-8						THRU			2079		VARY LENGTH BY 0'-7 5/8"						THRU			2307		VARY LENGTH BY 0'						
F 8005	216	5-8	3268	1	1-2	4-9					SE6287	1	41-11		ST							S 7280	1	37-11		ST							1
											SE6288	1	45-0		ST							S 7281	1	40-7		ST							1
F10001	180	12-0	9294	10	9-2						THRU			2306		VARY LENGTH BY 0'-7 5/8"						THRU			2609		VARY LENGTH BY 0'						
F10002	60	12-6	3227	10	9-8						SE6347	1	7-0		ST							S 7333	1	7-0		ST							1
											SE6348	1	6-10		ST							S 7334	1	6-10		ST							1
											THRU			149		VARY LENGTH BY 0'-3 0/0"						THRU			200		VARY LENGTH BY 0'						
S 5001	1515	30-0	47404	ST							SE6359	1	9-7		ST							S 7345	1	9-0		ST							1
S 5002	101	36-0	3792	ST							SE6360	1	6-5		ST							S 7346	1	6-5		ST							1
S 5004	336	2-6	876	1		2-0	0-7 1/2				THRU			67		VARY LENGTH BY 0'-3 0/0"						THRU			91		VARY LENGTH BY 0'						
S 5005	336	2-1	730	1		0-7 1/2	1-1	0-7 1/2			SE6367	1	4-8		ST							S 7353	1	4-8		ST							1
S 5008	161	2-4	392	ST							SE6368	1	5-4		ST							S 7354	1	5-4		ST							1
S 5009	101	39-11	4205	ST							THRU			1412		VARY LENGTH BY 0'-7 5/8"						THRU			2451		VARY LENGTH BY 0'						
S 5011	179	2-5	451	12	1-5	0-11		0-4			SE6414	1	34-8		ST							S 7407	1	39-1		ST							1
S 5014	179	2-3	420	6	0-8	1-9	0-6				SE6415	1	32-2		ST							S 7408	1	36-6		ST							1
S 5015	161	2-4	392	1	0-9	1-9					THRU			1206		VARY LENGTH BY 0'-7 5/8"						THRU			2128		VARY LENGTH BY 0'						
											SE6456	1	6-1		ST							S 7456	1	6-0		ST							1
S 5026	6	1-10	11	1		0-7 1/2	0-10	0-7 1/2			SE8001	10	6-7	176	11	5-6	0																

**BAR SIZE DESIGNATION**

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE FOUR DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FIVE DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A7001 IS A NO.7 SIZE BAR AND A10140 IS A NO.10 SIZE.

**BENDING DIAGRAMS**



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COLUMBUS, OHIO

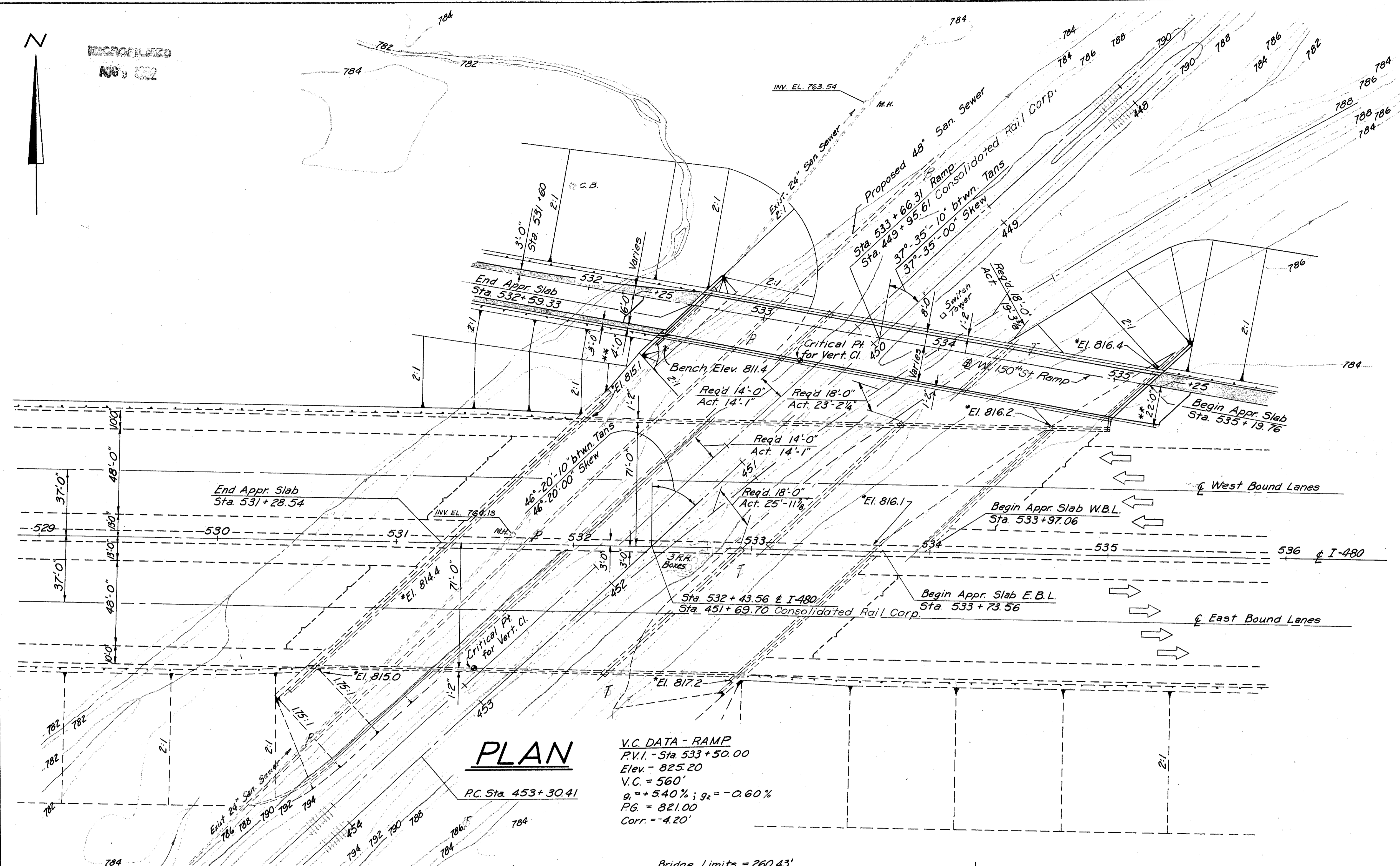
**REINFORCING STEEL LIST**  
BRIDGE NO. CUY-480-0957  
I-480-OVER-CONSOLIDATED RAIL CORP.  
CUYAHOGA COUNTY STA. 531+28.54  
STA. 533+97.06

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ht			fwd	G.W.M.	9/13/69	





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AUG 1982

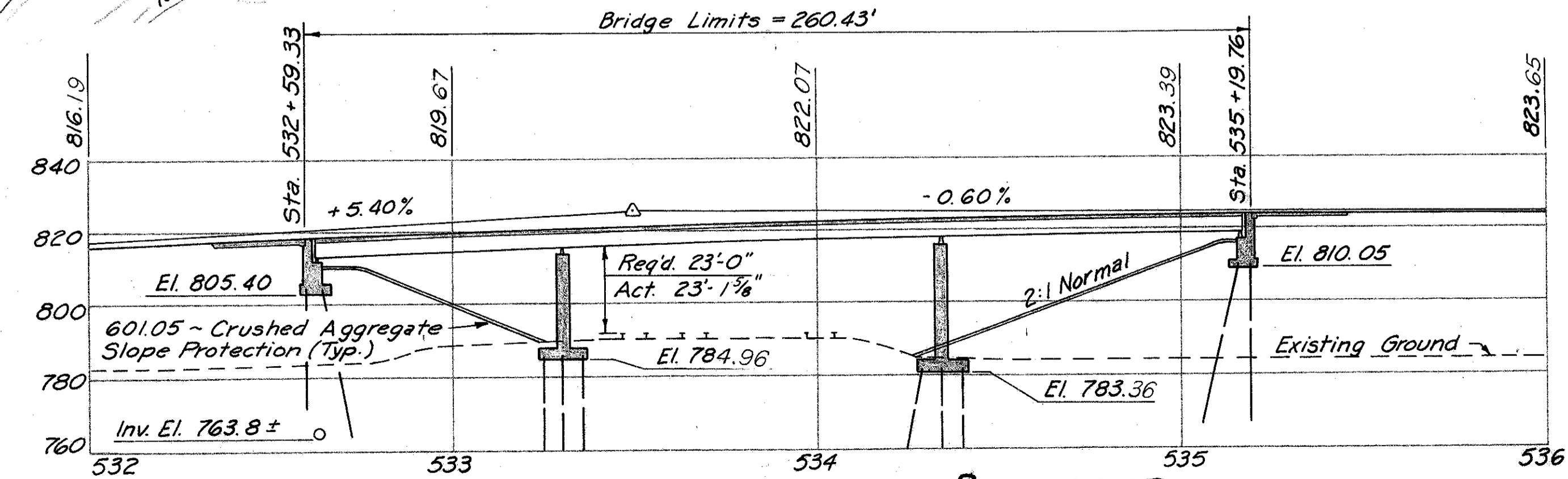


**PLAN**

V.C. DATA - RAMP  
P.V.I. - Sta. 533+50.00  
Elev. - 825.20  
V.C. = 560'  
g<sub>1</sub> = +5.40%; g<sub>2</sub> = -0.60%  
P.G. = 821.00  
Corr. = -4.20'

PC Sta. 453+30.41

Bridge Limits = 260.43'



**PROFILE ALONG RAMP**

**NOTES**

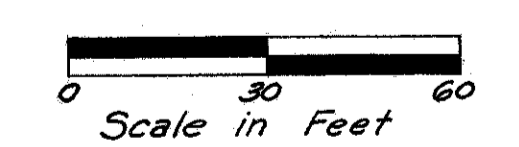
\*\* Offset dimensions at Sta. 532+25 and Sta. 535+25 are for the determination of the face of parapet; see sheet 313/346 for the identification of the face of parapet.  
All piles shall be HP10x42 steel piles.  
Estimated average pay lengths are:  
West Abutment -47'  
Pier #1 -30'  
Pier #2 -20'  
East Abutment -47'

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

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

**PROPOSED STRUCTURE ~ RAMP**  
Type: Continuous steel plate girder with reinforced concrete deck and substructure  
Spans: 67'-9" ~ 104'-0" ~ 83'-0" % brgs.  
Roadway: Variable 1/4 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

**TRAFFIC ESTIMATE**  
Design Year 1987  
Total A.D.T. 4,939 Ramp



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

**SITE PLAN  
BRIDGE**

RAMP OVER CONSOLIDATED RAIL CORP.  
CUYAHOGA COUNTY STA. 532+59.33  
STA. 535+19.76

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
ANA	ANA	DEM	fwd	G.W.M.	6/5/89	



ENCLOSURE  
NO. 1

GENERAL NOTES

REFERENCES:

Standard Drawings:

End Dam, End Crossframe & Scuppers SD-1-69, Sheets 1, 2 & 3 Dated 6-12-69  
Railing Details BR-1-67 Sheet 1 Revised 10-15-71  
Rocker & Bolster Details RB-1-55, Revised 2-2-59  
Approach Slab Details AS-1-72 Dated 6-30-72  
Highway Lighting HL-4, Revised 9-6-73

Supplemental Specifications:

PAINTING FOR NEW STRUCTURAL STEEL 846 DATED 4-25-77  
INORGANIC ZINC SILICATE PAINT 950 DATED 4-25-77  
Chemical Admixture  
For Concrete TYPE A, B or D 808, Dated 1-1-71  
BLUE-GREEN VINYL PAINT 951 DATED 4-25-77  
Concrete curing and Protective Membrane 836, Dated 3-12-75  
Special Pile Tests 838 Dated 3-18-70  
Common Details:

Lighting Sheet 329

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-2000 (57)  
Concrete, Class C : Basic Unit Stress = 1,333 p.s.i. For Substructure  
1,200 p.s.i. For Superstructure  
Structural Steel, ASTM A-36: Basic Unit Stress = 20,000 p.s.i.  
Reinforcing Steel, ASTM A615, A616, A617  
Basic Unit Stress = 20,000 p.s.i.

EMBANKMENT: 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 which excavation shall be made for the abutments and for the earth benches and for piers that are set in the filled area.

EXCAVATION QUANTITY includes the removal of fill material required for the construction of the piers and abutments and the removal of fill material above the level of the earth benches.

PILES shall be driven to bedrock. The bearing capacity shall be considered obtained by refusal on hard bedrock or by penetrating soft bedrock for several inches with a minimum resistance of 20 blows per inch. The design load is 45 tons per pile for the abutment and pier piles.

ATTACHMENT OF GUARDRAIL TO CONCRETE PARAPETS: Concrete insert anchor assemblies per Standard Construction Drawings GR-3 and GR-1 shall be placed during parapet construction.

DECK PROTECTION METHOD: Epoxy Coated reinforcing steel, top mat only.

UTILITY LINES: All labor and expenses involved in relocating the affected utility lines shall be borne by the Owners. The Contractor and the Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUND
2	OHIO		

307  
346

CUYAHOGA COUNTY  
CUY-480-8.54

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GENERAL		
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP		
503	426	C.Y.	UNCLASSIFIED EXCAVATION	302	124				
505	LUMP	SUM	TEST PILE				LUMP		
506	LUMP	SUM	PILE TEST LOAD				LUMP		
507	1970	L.F.	STEEL PILES, HP 10 X 42	1030	940				
506	1	EACH	SUBSEQUENT PILE TEST LOAD				1		
509	64,356	LB	REINFORCING STEEL	10186	14903	39267			
Special	40148	LB.	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)	8		40,140			
511	100	C.Y.	CLASS C CONCRETE, FOOTINGS	65	35				
511	107	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	107					
511	124	C.Y.	CLASS C CONCRETE, PIERS ABOVE FOOTINGS		124				
511	302	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			302			
513	275,000	LB	STRUCTURAL STEEL, PRIME PER 846 (SEE PROPOSAL NOTES)			275,000			
846	275,000	LB	FIELD PAINTING OF STRUCTURAL STEEL			275,000			
518	84	L.F.	6 INCH PERFORATED, HELICAL CSP, INCLUDING SPECIALS, 707.01	84					
518	87	L.F.	6 INCH NON-PERFORATED, HELICAL CSP, 707.01	87					
518	6	EA	SCUPPERS INCLUDING SUPPORTS			6			
518	59	C.Y.	POROUS BACKFILL	59					
601	1130	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION				1130		
838	3	HOUR	SPECIAL PILE TESTS				3		
5625			SEE SHEET 203 FOR LIGHTING SUMMARY						
808	302	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE TYPE A, B OR D			302			

PREFORMED BEARING PADS: In lieu of the hardness requirement of 711.20, preformed bearing pads shall have a Shore A durometer of 80±10.

ROADWAY FINISH: See Sheet No. 251

CONSTRUCTION CLEARANCE of 20 feet vertically above the top of the railroad tracks and 8 feet horizontally from the center of the tracks shall be maintained at all times.

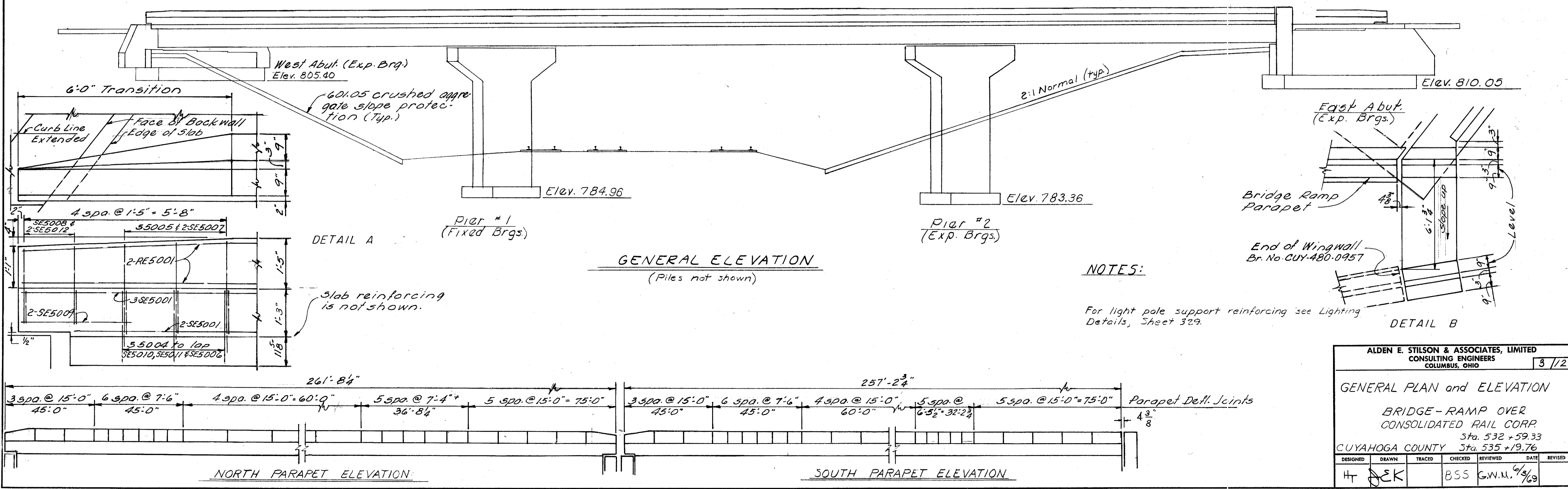
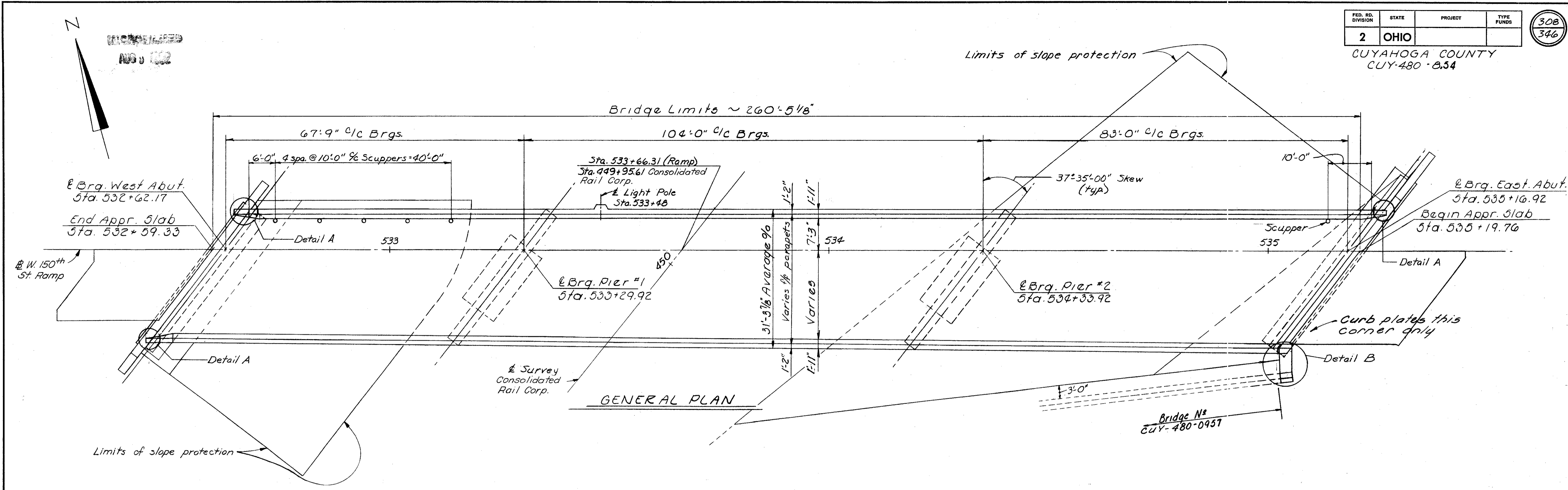
RAILROAD AERIAL LINES shall be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of the relocation shall be included in the railroad force account work.

- Modify AS-1-72
- 1 Rear abutment 16'-0"; Forward abutment 21'-3" Approach slab width
  - 2 Increase cover over the top reinforcing bars to 3" from 2"
  - 3 Omit jacking holes

MONOLITHIC WEARING SURFACE THICKNESS is assumed, for design purposes, to be 1".

MINIMUM BAR LAP shall be 30 diameters.

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						2 / 12
GENERAL NOTES AND ESTIMATED QUANTITIES						
BRIDGE-RAMP OVER CONSOLIDATED RAIL CORP. CUYAHOGA COUNTY STA. 532+59.33 STA. 535+19.76						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Hr			BSS 12/14/66	G.W.M.	6/3/69	7-17-78



**NOTES:**

For light pole support reinforcing see Lighting Details, Sheet 329.

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

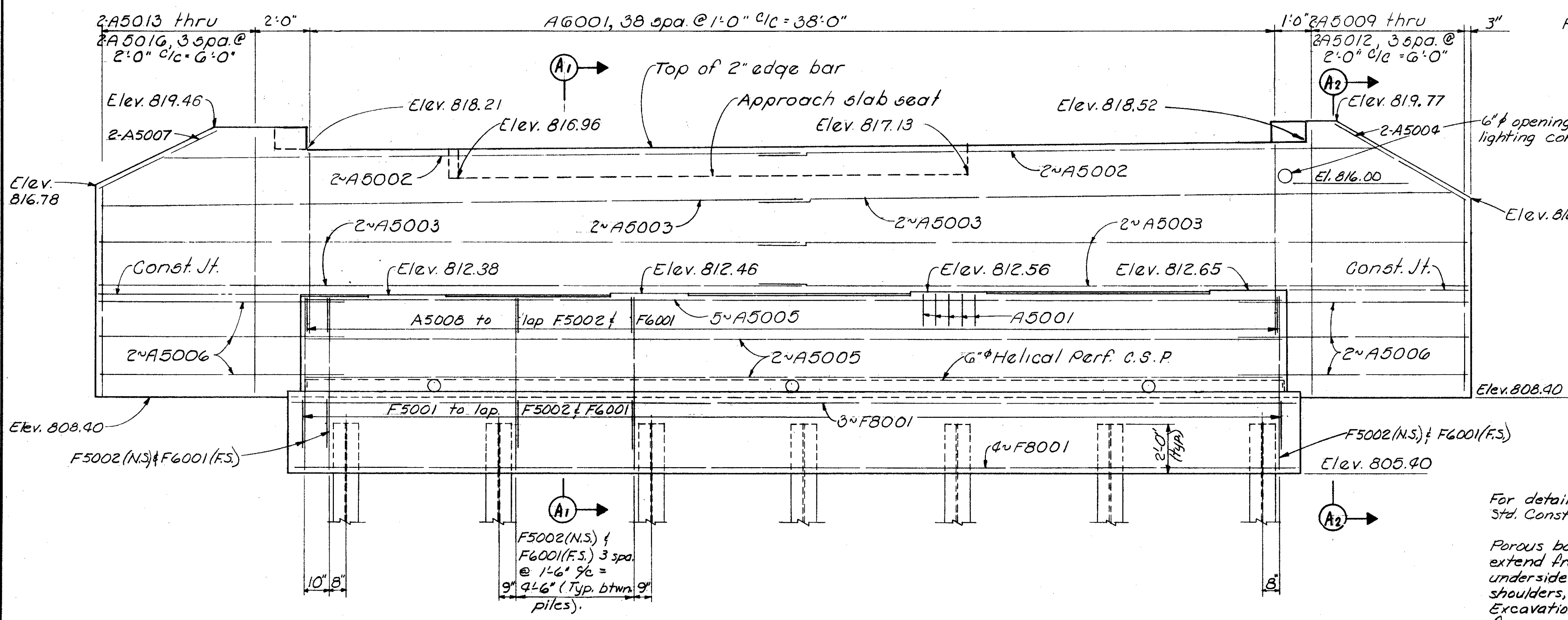
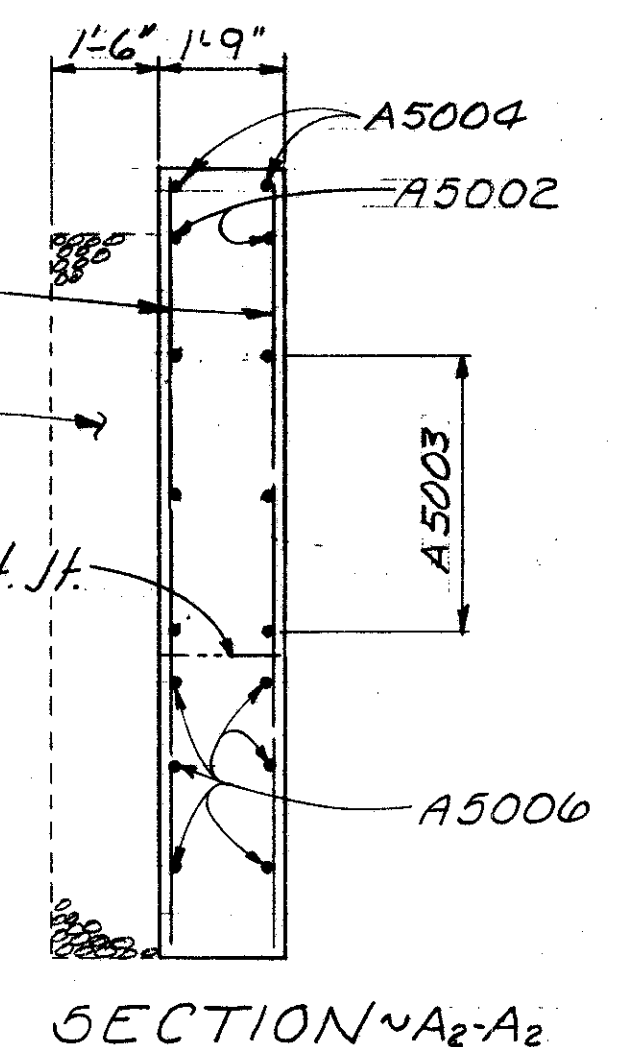
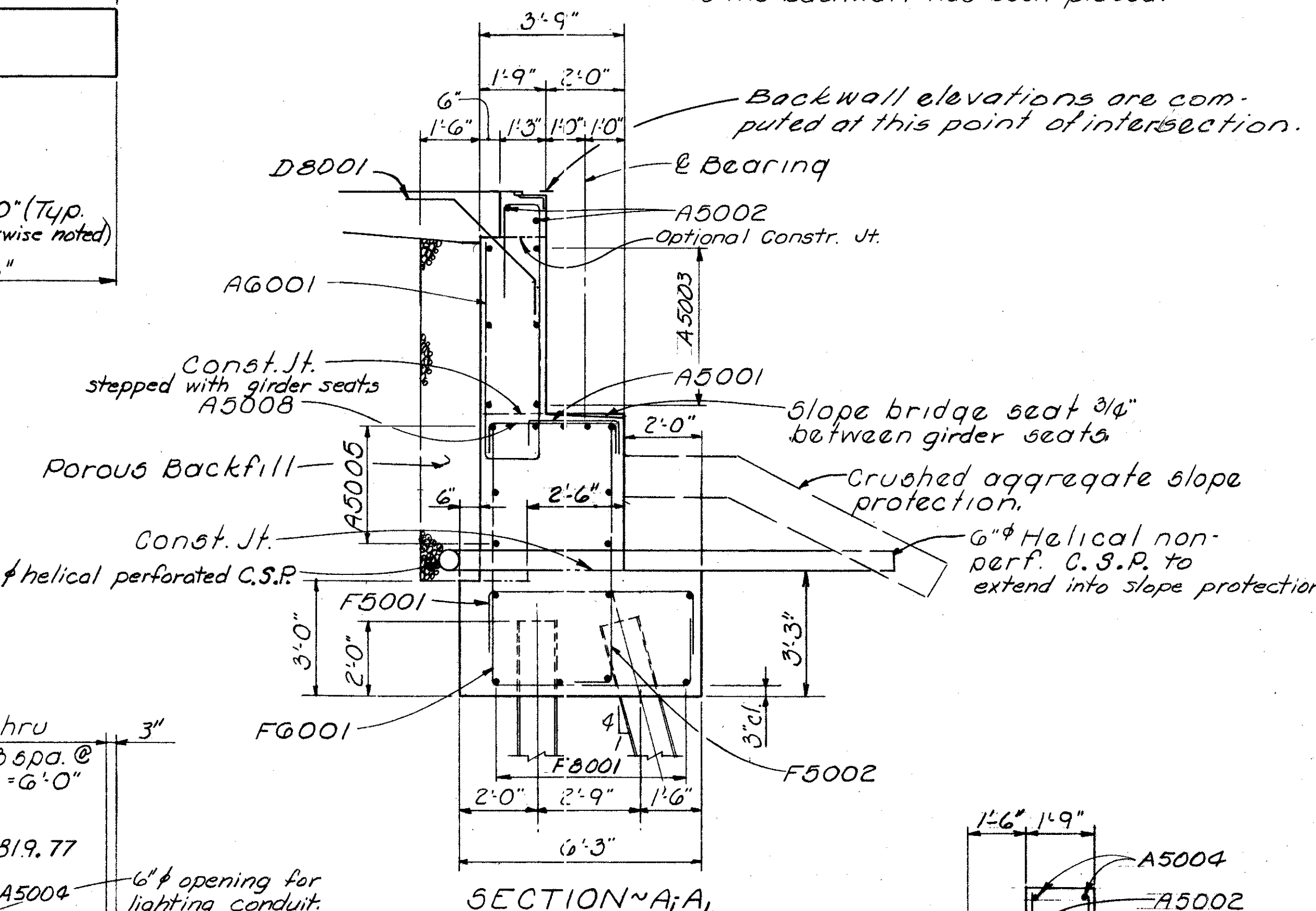
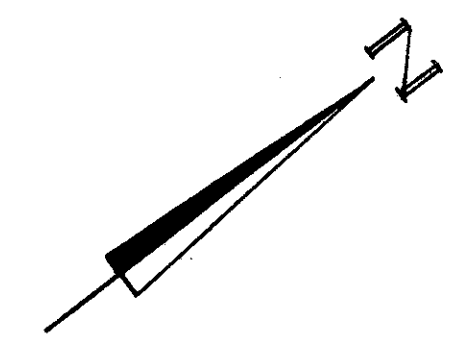
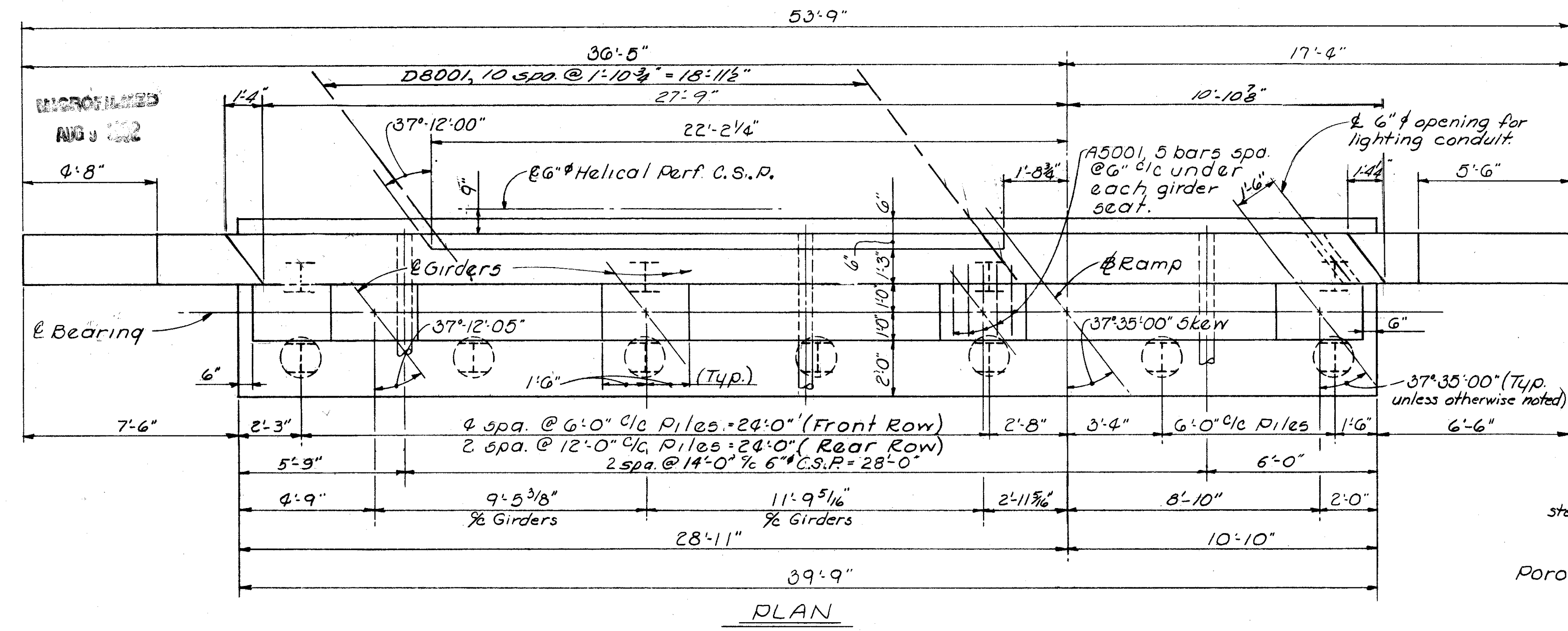
3 / 12

GENERAL PLAN and ELEVATION  
BRIDGE-RAMP OVER  
CONSOLIDATED RAIL CORP.  
Sta. 532+59.33  
CUYAHOGA COUNTY Sta. 535+19.76

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	DEK		BSS	G.W.M.	6/9/69	

CUYAHOGA COUNTY  
CUY-480-B.54

BACKWALL CONCRETE: In addition to the provisions of 511.08, backwall concrete or backwall concrete above the optional Construction Joint shall not be placed until after the deck in the span adjacent to the backwall has been placed.



NOTES

Piles: I Vertical  
⊙ Batter 1:4

Reinforcing steel location: N.S. indicates near side, F.S. indicates far side.

All piles shall be HP10x42 steel piles.

6" Helical perforated C.S.P. shall have all ends capped.

Elevations marked with an asterisk are roadway elevations at the face of backwall.

For details of lighting conduit in abutment backwall see Std. Const. Dwg. HL-5

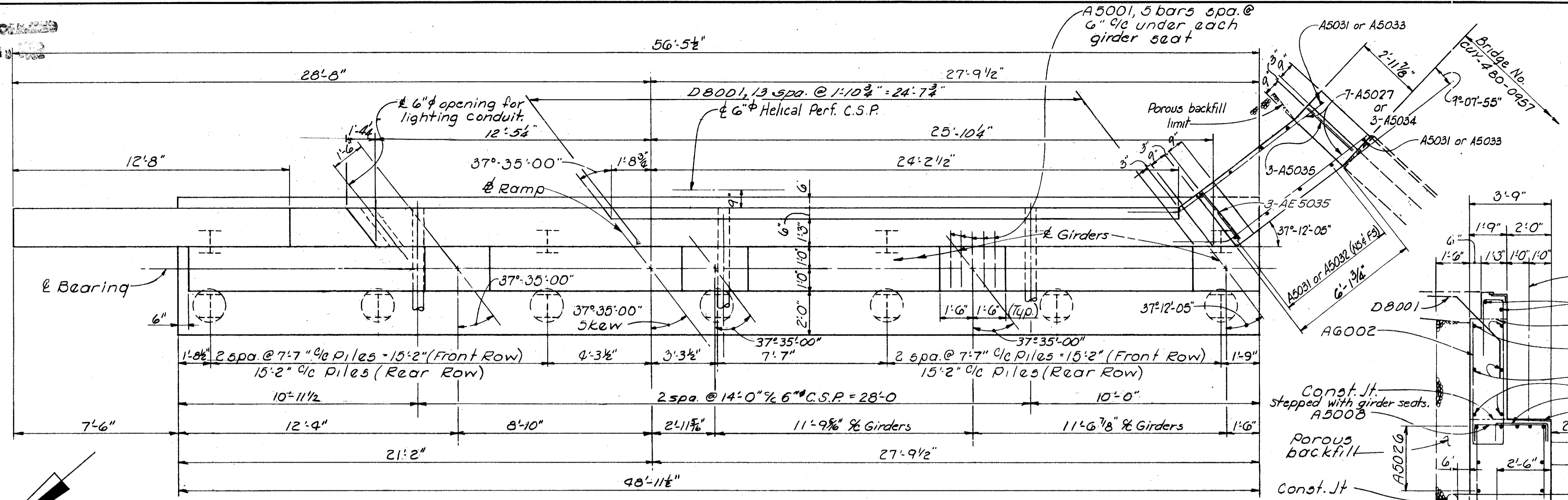
Porous backfill for the West Abutment, 1'-6" thick, shall extend from the top of the footing upward to the underside of the approach slab and stabilized shoulders, and outward to the embankment slopes. Excavation therefore, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cubic yard paid for porous backfill.

ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 4/12

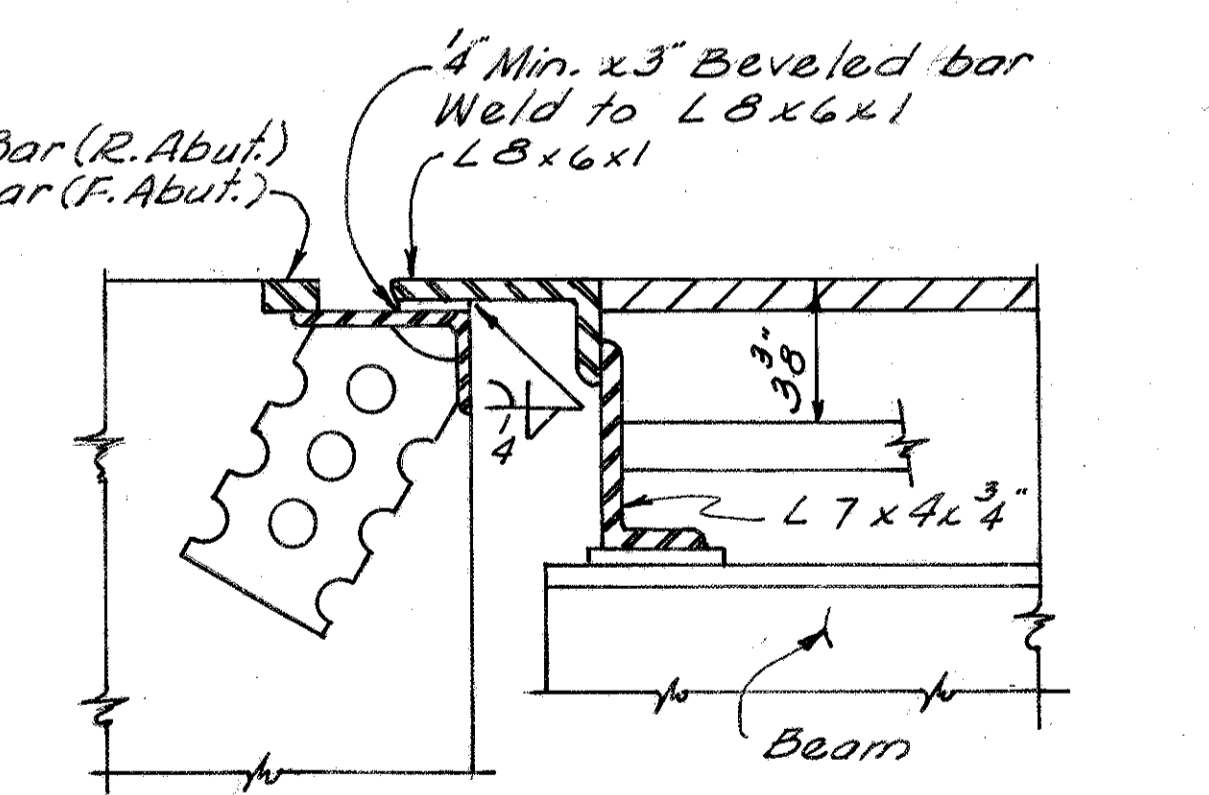
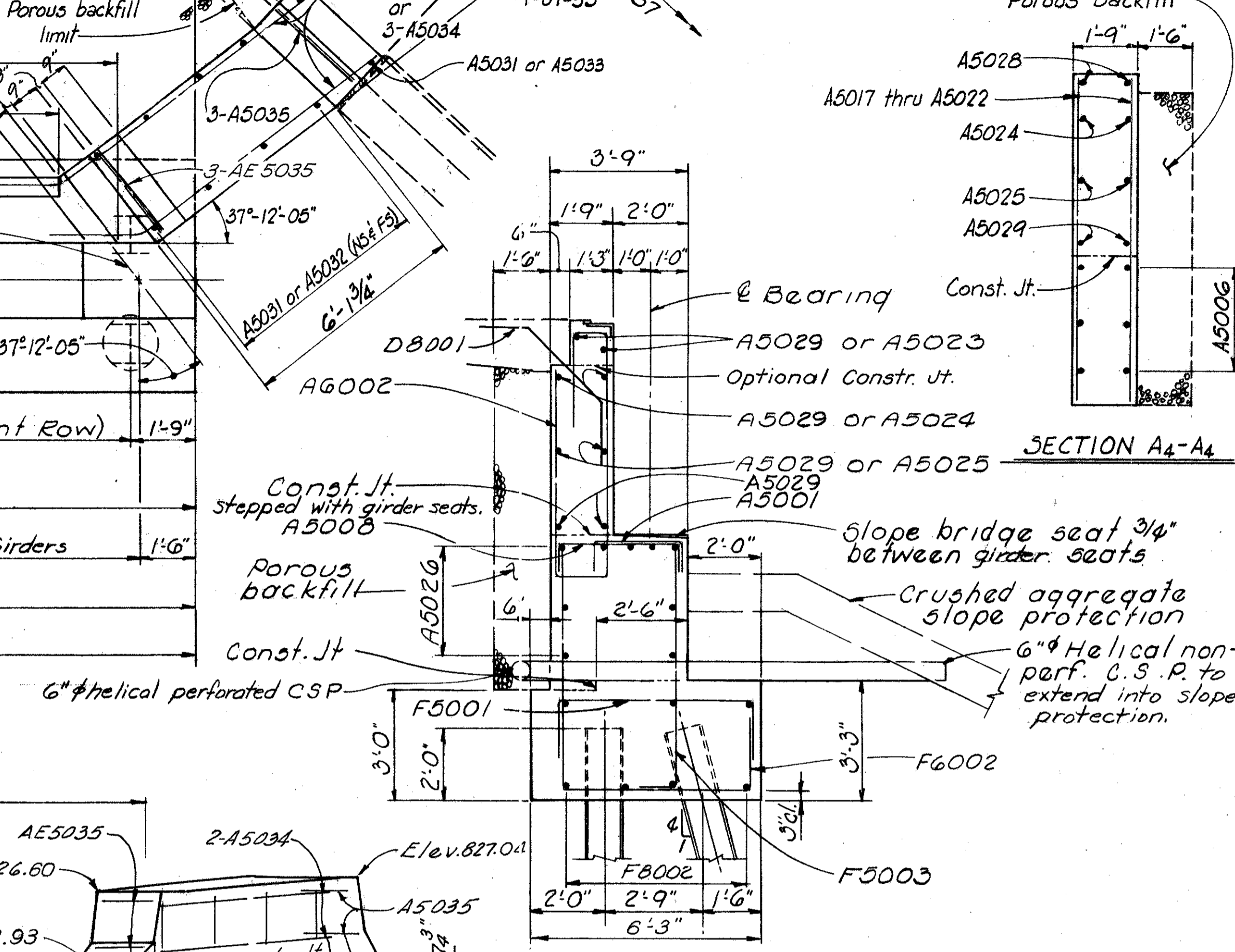
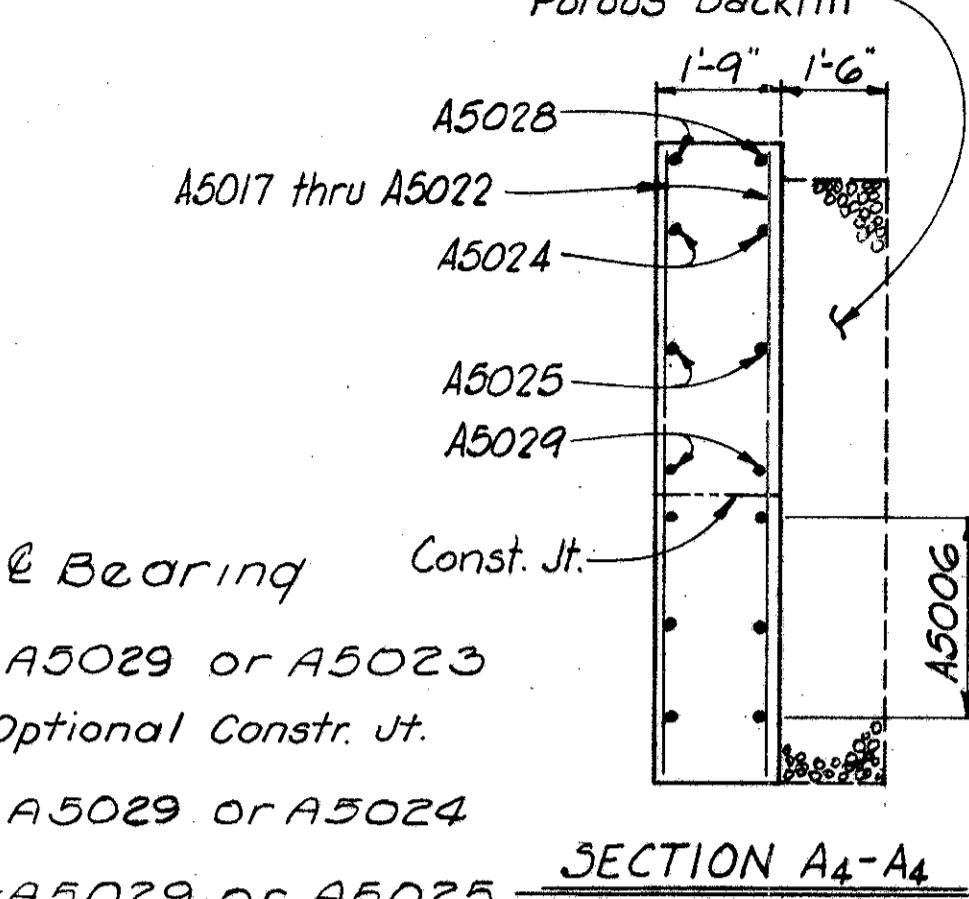
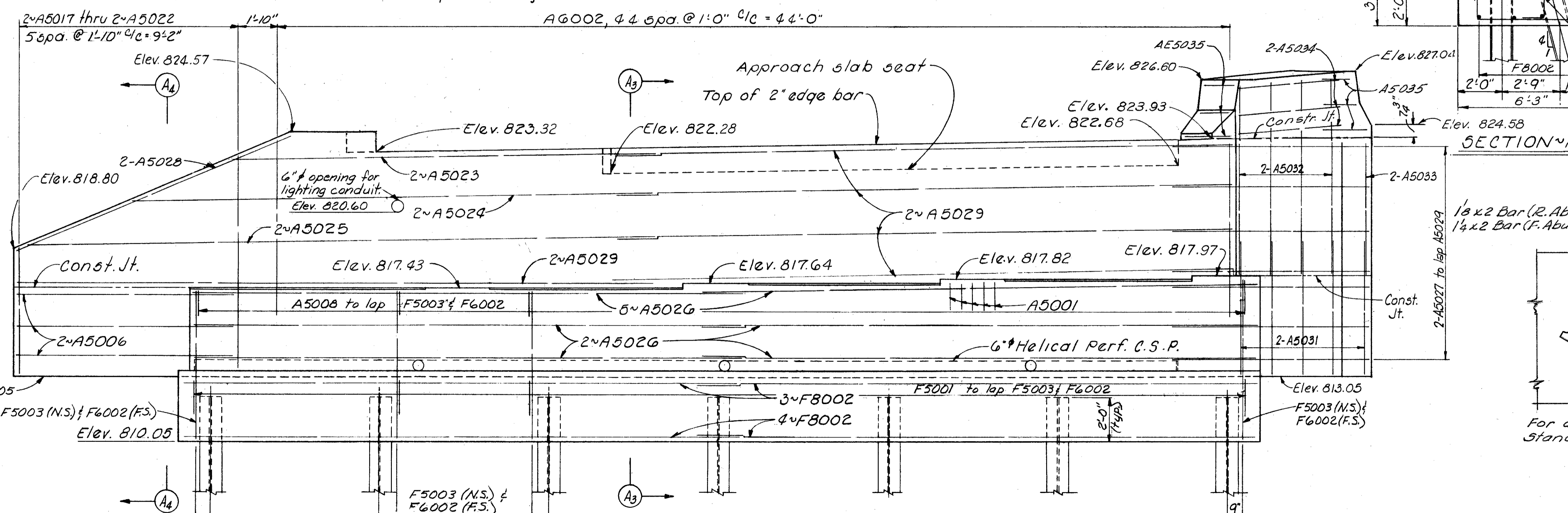
WEST ABUTMENT DETAILS

BRIDGE-RAMP OVER  
CONSOLIDATED RAIL CORP.  
CUYAHOGA COUNTY Sta. 532+59.33  
Sta. 535+19.76

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	DEK		BSS	G.W.U.	4/69	



See Sheet 3/12 for end post reinforcing



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

**NOTES**

Piles: I - Vertical  
    II - Batter 1:4

Reinforcing steel location:  
NS indicates near side  
FS indicates far side

Concrete end post on North end of abutment is included with Item 517 for payment.

Porous backfill for the East Abutment, 1'-6" thick, shall extend from the top of the footing upward to the underside of the approach slab and stabilized shoulder, and outward to the embankment slope on the North side and to the limit indicated on the South side. Excavation therefore, in excess of that required for construction of the abutment shall be considered as paid for in the bid price per cubic yard paid for porous backfill.

For details of lighting conduit in abutment backwall see Std. Const. Dwg. HL-5

For additional notes see Sheet 4/12.

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

5/12

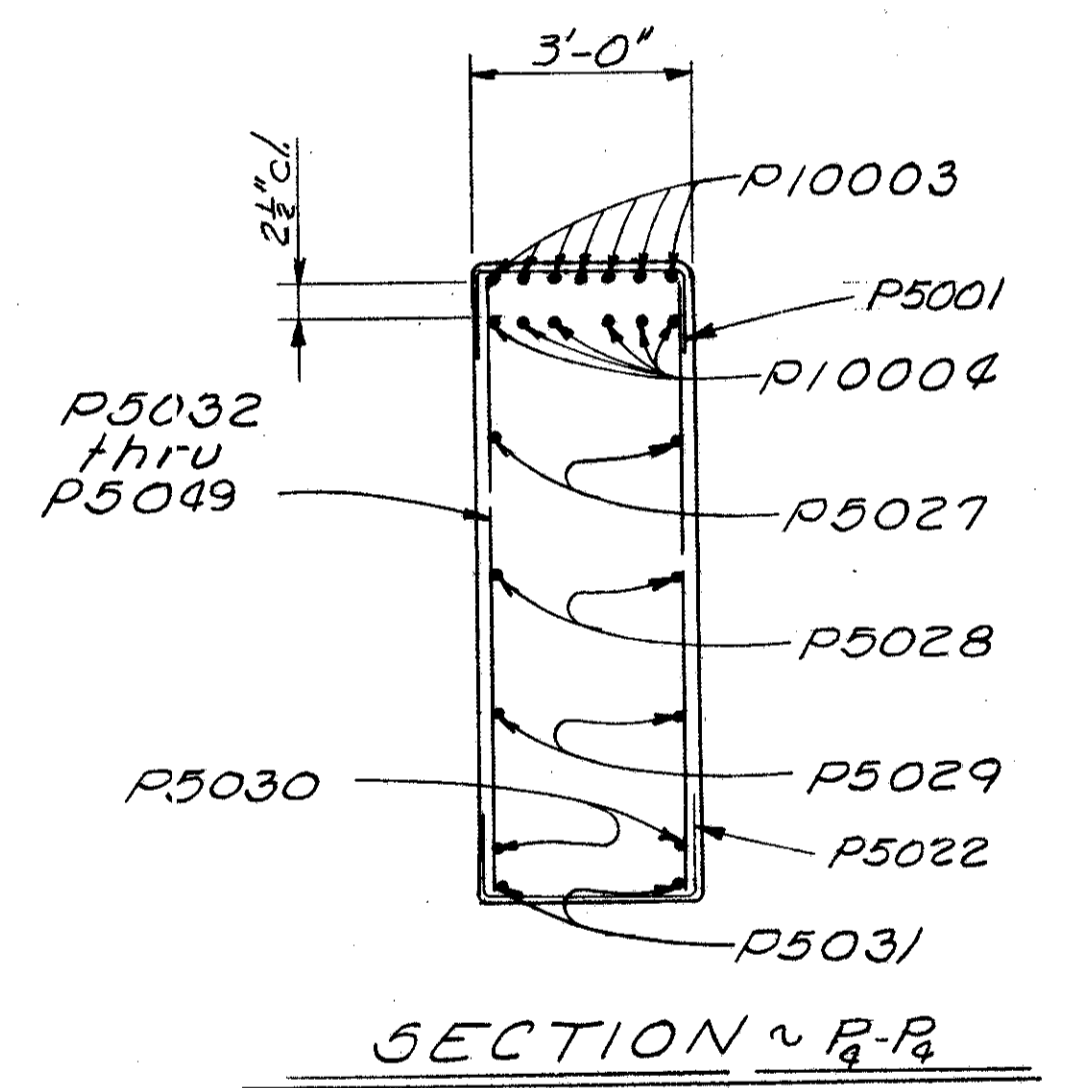
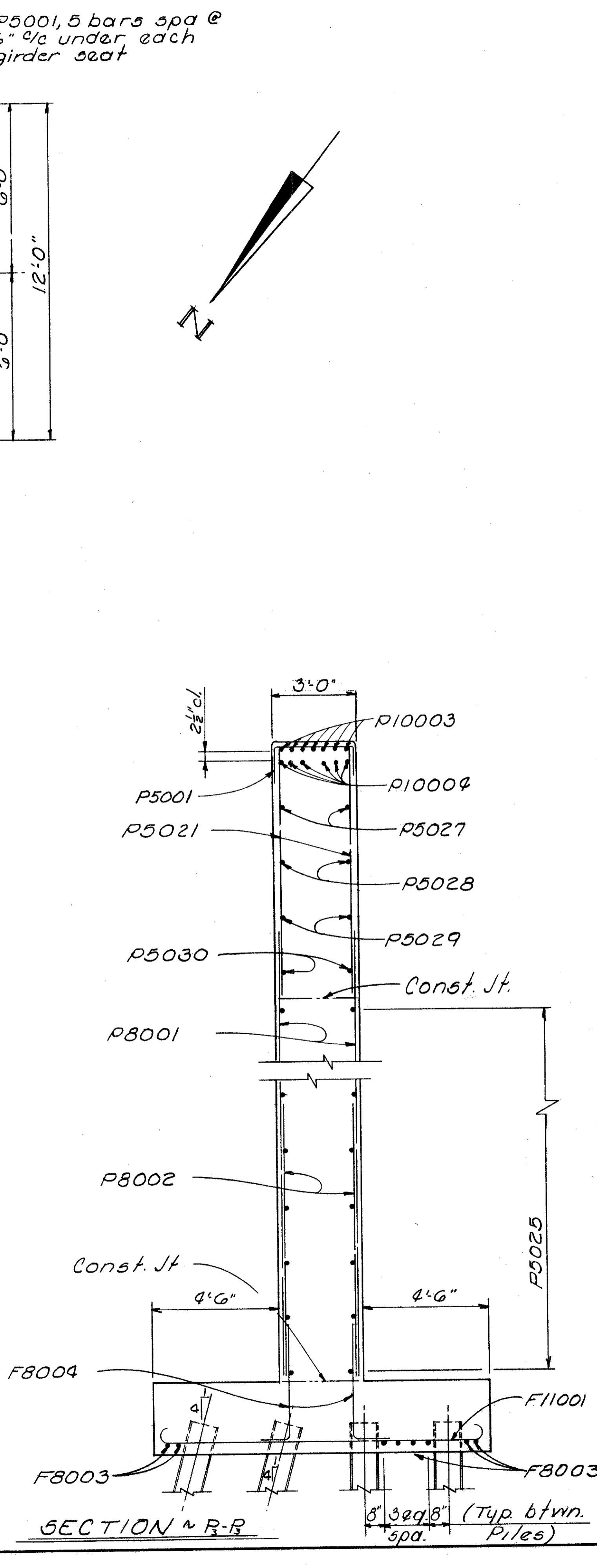
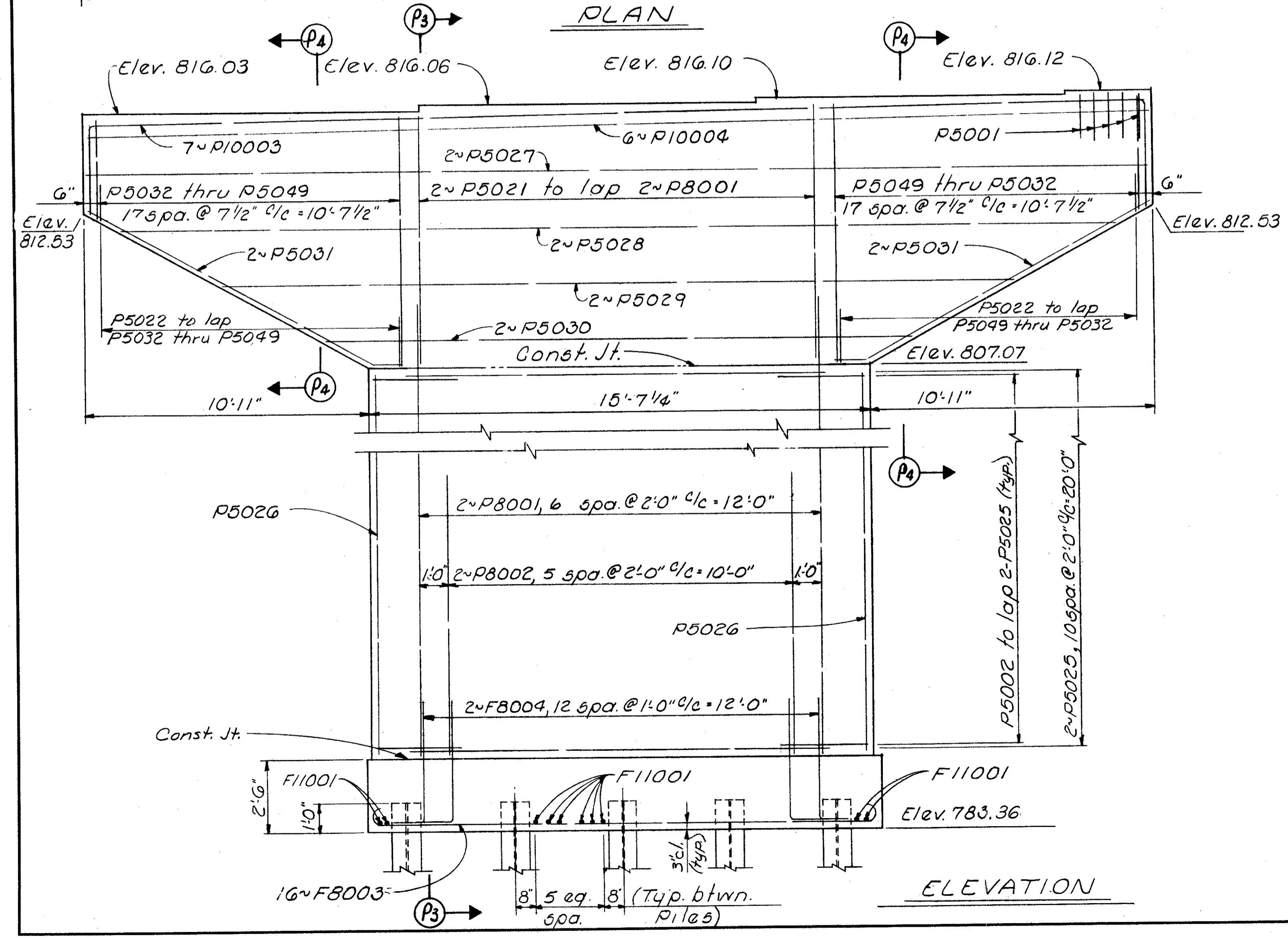
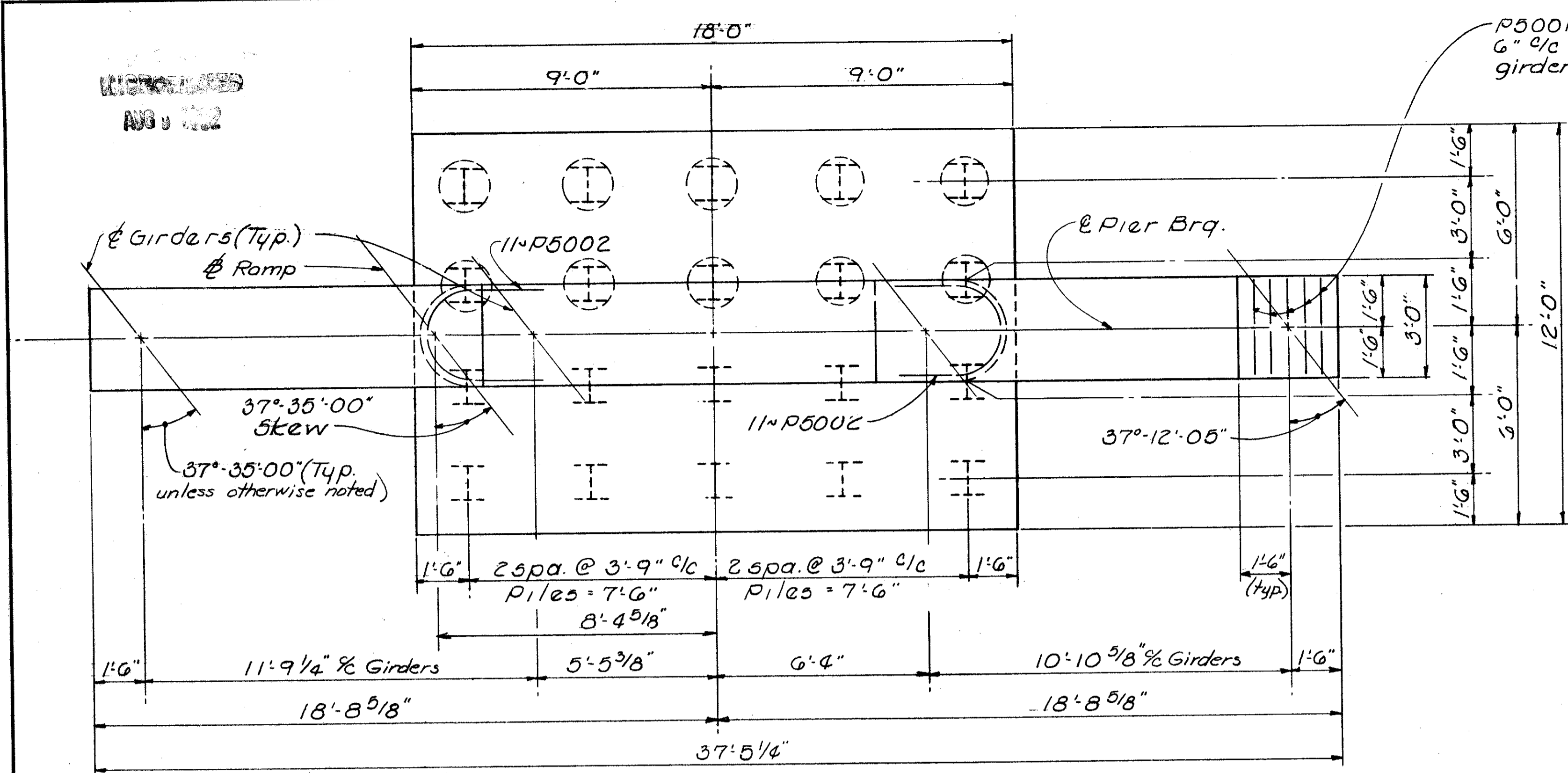
EAST ABUTMENT DETAILS

BRIDGE-RAMP OVER  
CONSOLIDATED RAIL CORP.

CUYAHOGA COUNTY Sta. 532+59.33  
Sta. 535+19.76

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	DEK		BSS	G.W.M.	6/3/69	





**NOTES**  
 All piles shall be HP10x42 steel Piles  
 Piles  
 Vertical  
 Batter 1:4

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						
PIER #2 DETAILS						
BRIDGE-RAMP Over CONSOLIDATED RAIL CORP.						
Sta. 532+59.33 CUYAHOGA COUNTY Sta. 535+19.76						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT	JK		BSS	G.W.M.	6/3/69	

**NOTES**

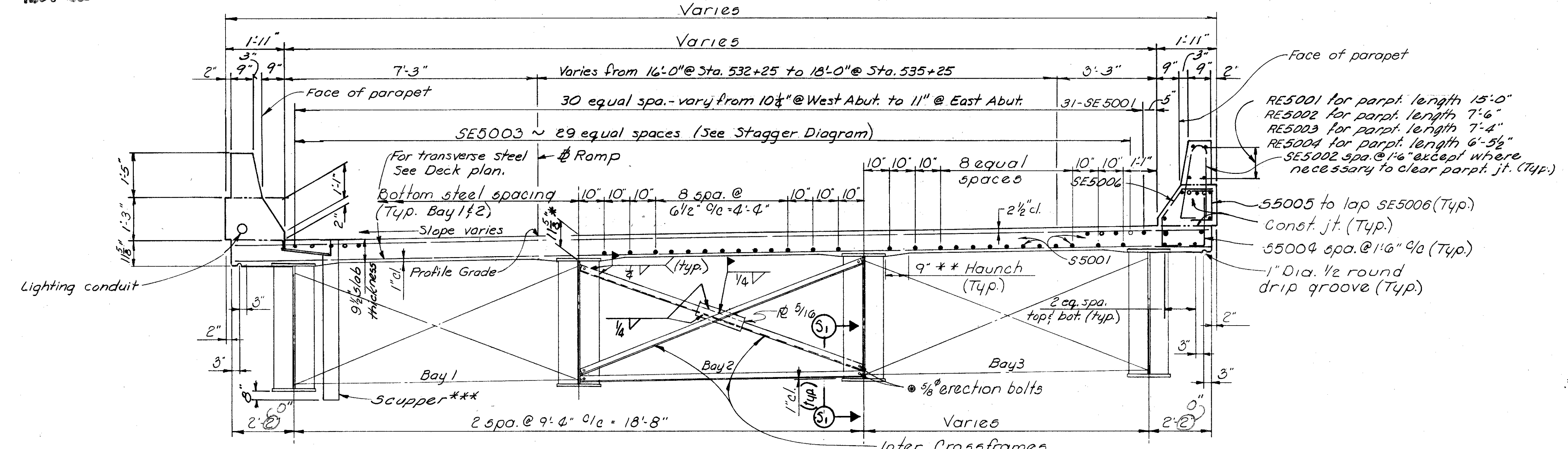
\* This is the design dimension. The quantity of deck concrete to be paid for shall be based upon this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction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

\*\*\* For Scupper details see Std. Dwg. 5D-1-69

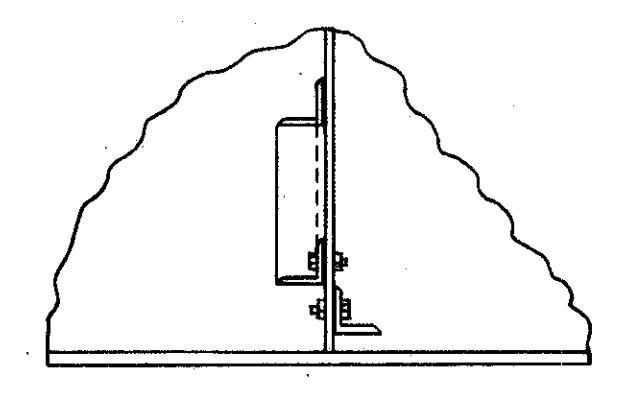
For additional notes & details see Sheets 9/12 and 10/12.

Each longitudinal line shall be comprised of 9-SE5001 top and 9-S5001 bottom lapped 1'-7" minimum.



**TRANSVERSE SECTION**

• Provide 1/8" holes in crossframes and 1/4" holes in girder stiffeners. The bolts when left in place shall be properly torqued, if high strength, or nuts shall be tack welded.



SECTION-S1-S1

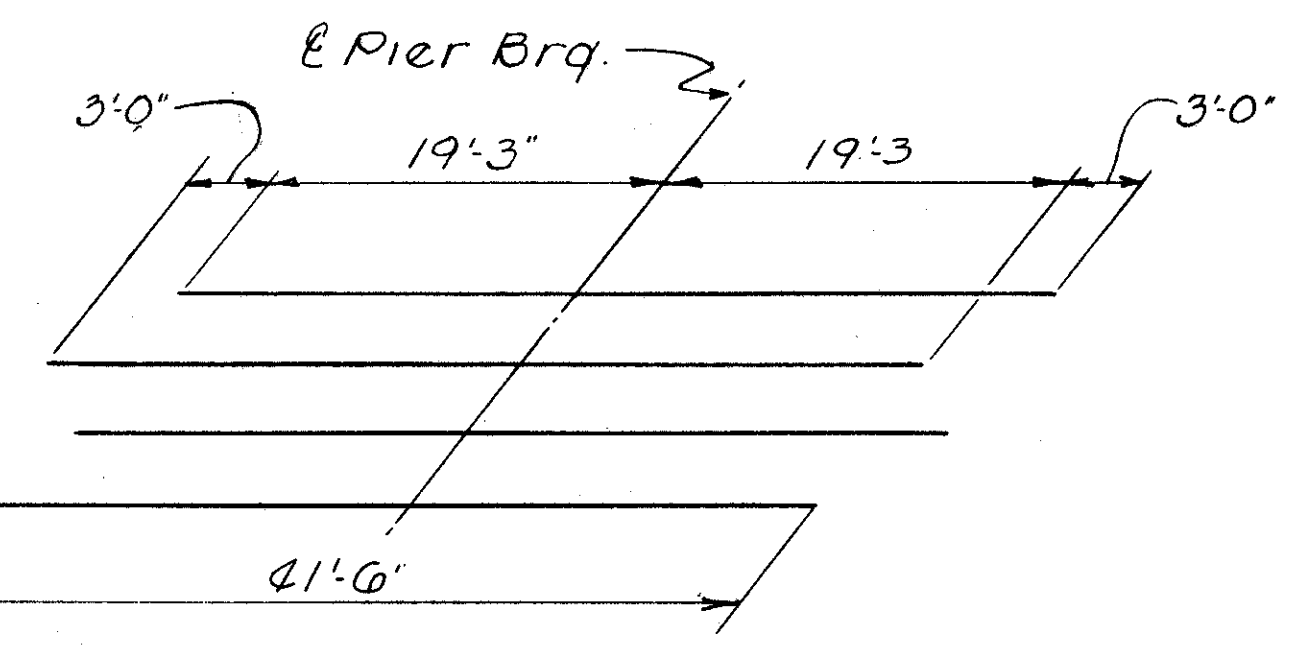
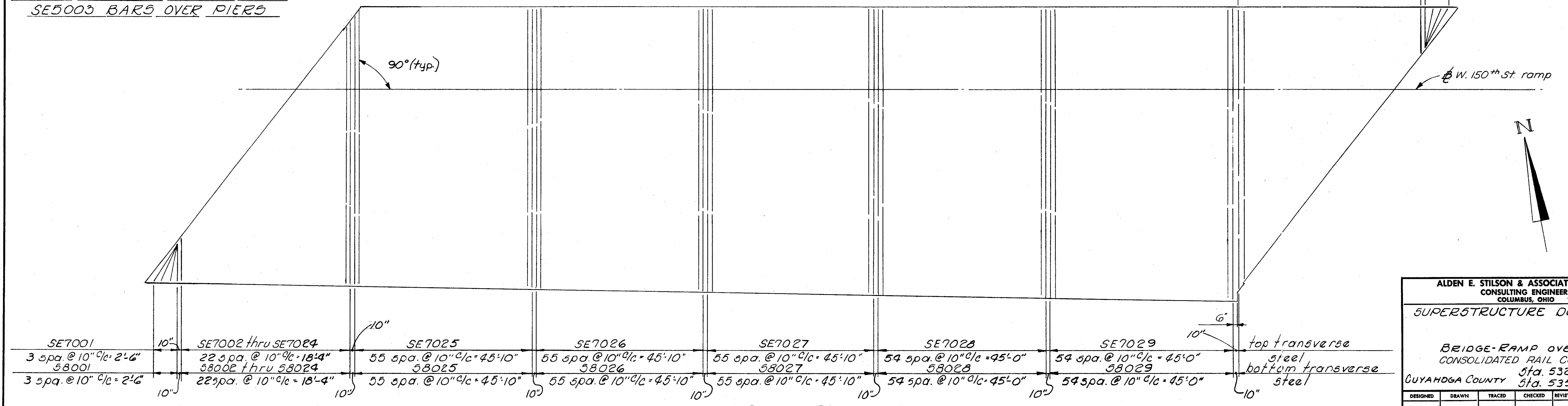


DIAGRAM SHOWING STAGGER OF SE5003 BARS OVER PIERS

top transverse steel	SE7030 thru SE7055	25 spa. @ 10" c/c = 20'-10"	SE7001	3 spa. @ 10" c/c = 2'-6"
bottom transverse steel	58030 thru 58055	25 spa. @ 10" c/c = 20'-10"	58001	3 spa. @ 10" c/c = 2'-6"



**DECK PLAN**

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

8/12

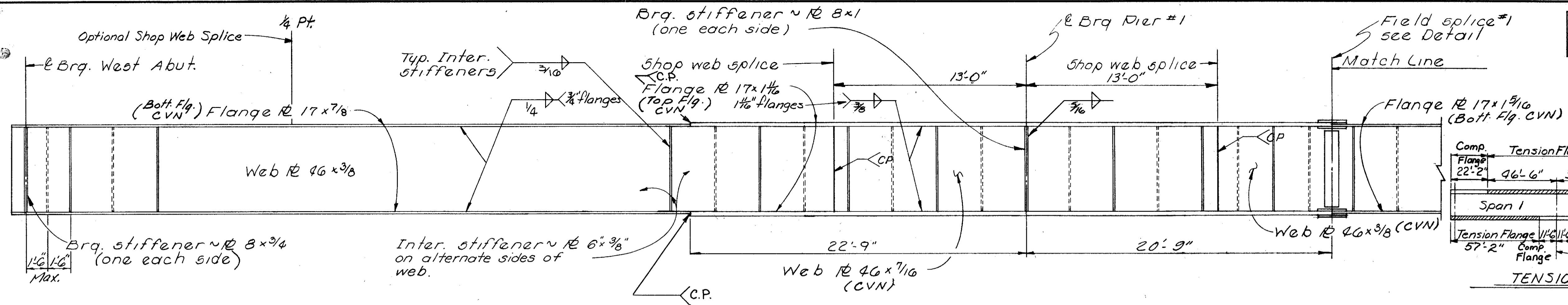
**SUPERSTRUCTURE DETAILS**

BRIDGE-RAMP OVER  
CONSOLIDATED RAIL CORP.  
CUYAHOGA COUNTY Sta. 532+59.33  
Sta. 535+19.76

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H	FEK		FWD	G.W.M.	6/6/69	10-24-79







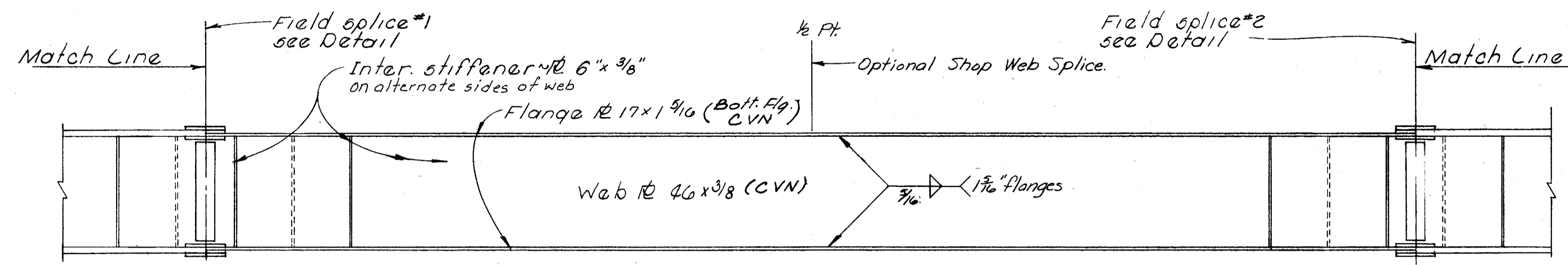
Span	Span 1	Span 2	Span 3
Flange	22'-2"	46'-6"	34'-6"
Tension Flange	11'-6"	28'-0"	41'-6"
Compression Flange	57'-2"	77'-6"	44'-0"
Flange	11'-6"	15'-0"	14'-0"
Tension Flange	57'-2"	77'-6"	44'-0"
Compression Flange	57'-2"	77'-6"	44'-0"

TENSION FLANGE LOCATION

**NOTES**

INTERMEDIATE STIFFENERS: 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 at the stiffener spacing shown. Transverse web stiffeners shall be provided for the attachment of deck crossframes. Maximum intermediate stiffener spacing is 3'-0" unless otherwise shown.

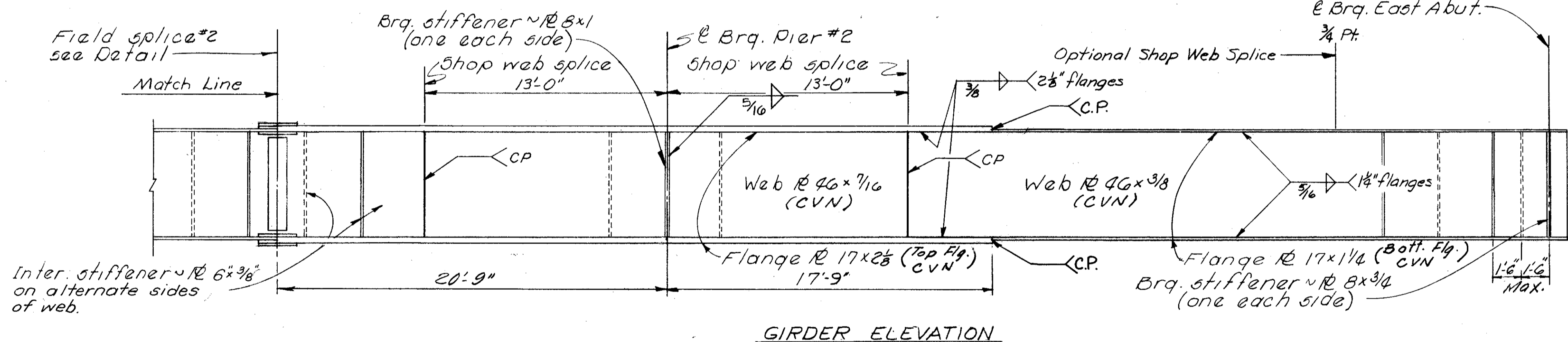
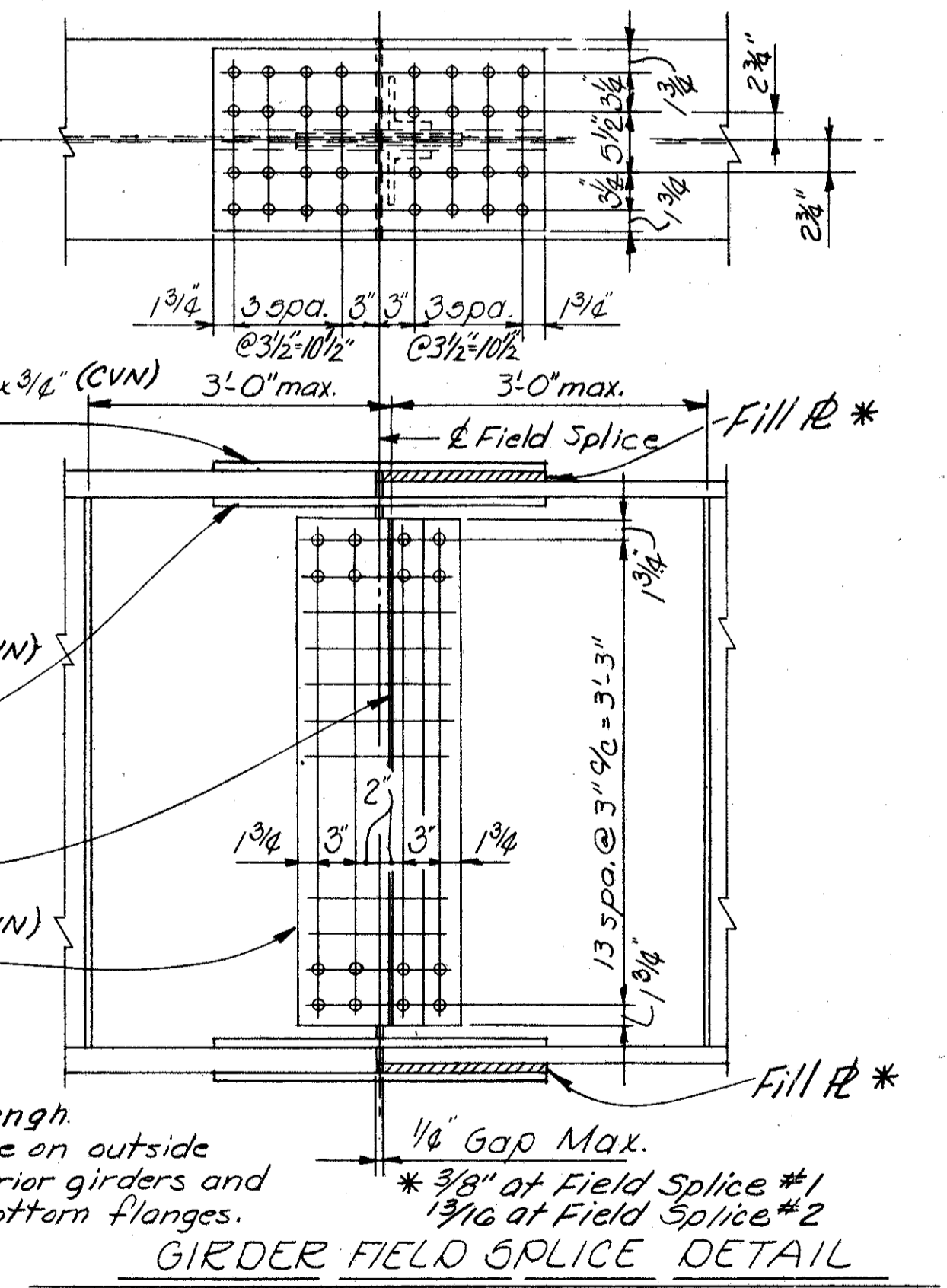
Where "(CVN)" follows a shape or plate size designation, the material shall meet specified minimum notch toughness requirements.



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

**LEGEND:**

C.P. = Complete Penetration Weld

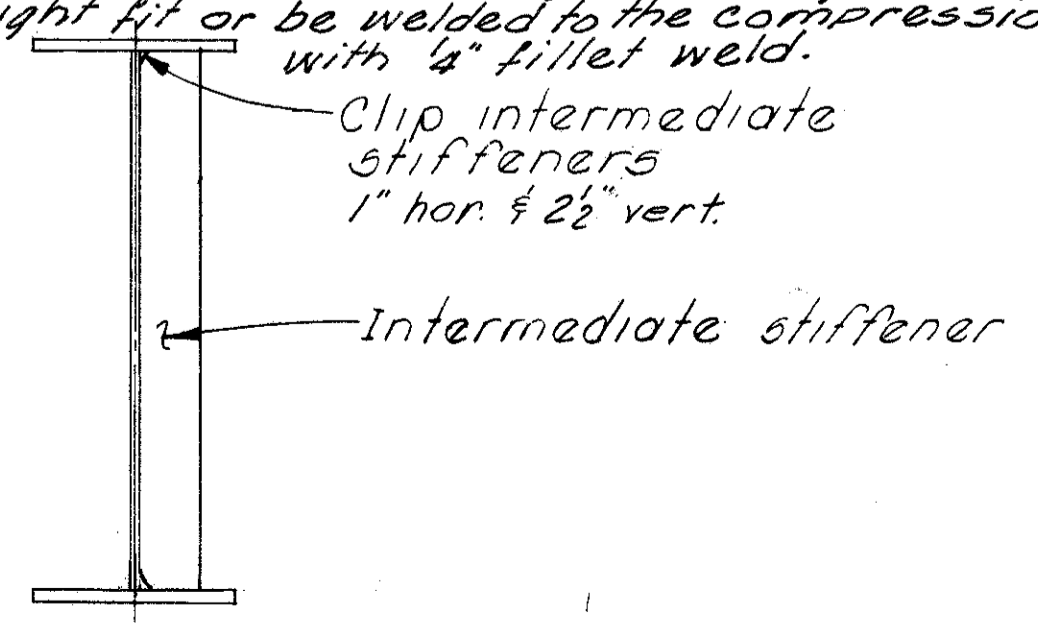


**GIRDER ELEVATION**

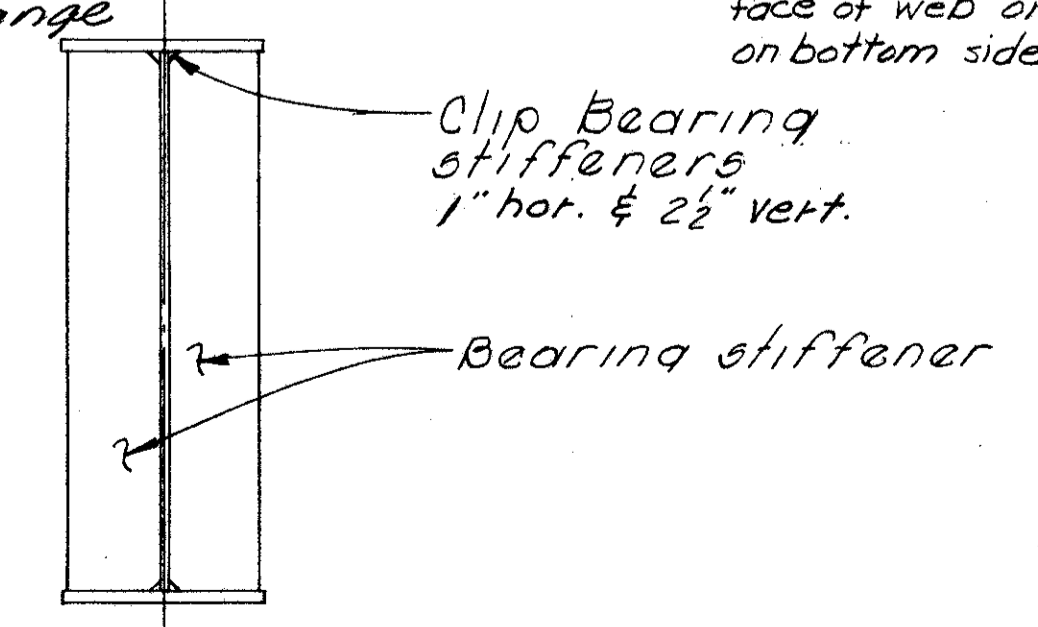
BEARINGS shall be in accordance with Std. Dwg. RB-1-55 except that upper plate element shall be beveled to match roadway grade. Tabulated plate thickness C shall apply at centerline of plate.

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.

NOTE: Butt welds on girder flange shall be ground flush, the finish grinding being parallel to the direction of stress. 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.



INTERMEDIATE STIFFENER DETAIL



BEARING STIFFENER DETAIL

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						10/12
GIRDER DETAILS						
BRIDGE-RAMP OVER CONSOLIDATED RAIL CORP.						
CUYAHOGA COUNTY Sta. 532+59.33 Sta. 535+19.76						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H	EK		FWD	G.W.M.	6/9/69	

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. BARS INCLUDED WITH ITEM 517, RAILING, FOR PAYMENT.
- 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. FOUR STEEL CHANNEL, TEE, OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 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 0.80 LB. PER LIN. FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN TABULATED WEIGHT.

FED. NO. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

3/16  
346

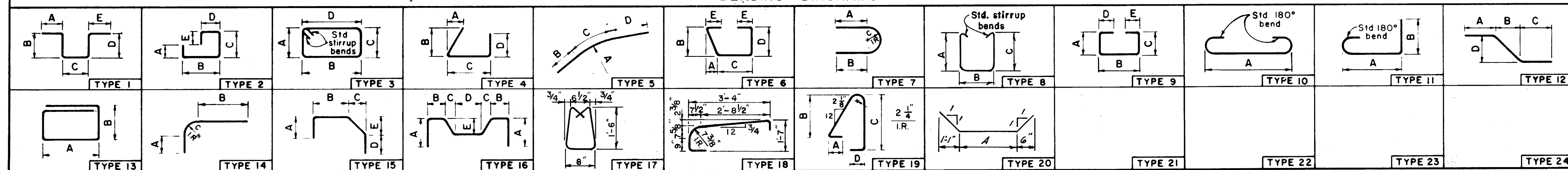
CUYAHOGA COUNTY  
CUY-480-8.54

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
ABUTMENTS											ABUTMENTS (CONTINUED)											PIERS (CONTINUED)										
A 5001	40	4-11	205	1		1-6	2-2	1-6			F 6002	38	14-7	832	1		6-11	5-5	2-7			P 8001	14	22-10	854	ST						
A 5002	4	24-8	103	ST																		P 8002	12	12-4	395	ST						
A 5003	12	27-8	346	ST																												
A 5004	2	6-0	13	ST							F 8001	7	39-5	737	ST																	
A 5005	9	38-5	361	ST							F 8002	14	25-7	956	ST																	
A 5006	18	9-7	180	ST																		P10001	8	41-11	1443	1		3-2	36-2	3-2		
A 5007	2	5-0	10	ST																		P10002	4	36-2	623	ST						
A 5008	65	7-4	497	1		2-1	3-5	2-1														P10003	7	42-10	1290	1		3-2	37-1	3-2		
A 5009	2	10-6		ST						1	P 5001	40	5-5	226	1		1-6	2-8	1-6			P10004	6	37-1	957	ST						
THRU			75		VARY	LENGTH	BY	1'-0 0/0"			P 5002	40	7-2	299	7	1-7	1-7	1-3														
A 5012	2	7-6		ST						1	P 5003	18	12-3	230	ST																	
A 5013	2	8-0		ST						1	P 5004	2	36-2	75	ST																	
THRU			76		VARY	LENGTH	BY	0'-9 0/0"			P 5005	2	33-0	69	ST																	
A 5016	2	10-3		ST						1	P 5006	2	25-0	52	ST																	
A 5017	2	5-4		ST						1	P 5007	2	16-9	35	ST							F 8003	28	19-10	1483	10		17-8				
THRU			95		VARY	LENGTH	BY	0'-11 0/0"		1	P 5008	4	13-4	56	12	11-10	1-4		0-8			F 8004	52	5-8	786	1		1-2	4-9			
A 5022	2	9-11		ST						1	P 5009	2	8-9		1		3-2	2-8	3-2													
A 5023	2	17-9	37	ST							THRU		321			VARY	LENGTH	BY	1'-0 5/8"													
A 5024	2	22-3	46	ST												VARY	DIM. B	BY	0'-6 1/4"			F 9001	29	11-2	1101	10		8-8				
A 5025	2	27-3	57	ST												VARY	DIM. D	BY	0'-6 1/4"													
A 5026	18	24-11	468	ST							P 5019	2	19-3		1		8-5	2-8	8-5		1											
A 5027	14	10-6	153	12	8-0	2-0		1-6			P 5020	22	5-11	136	1		1-9	2-8	1-9			F11001	28	14-10	2207	10		11-8				
A 5028	2	13-6	28	ST							P 5021	14	8-9	128	ST																	
A 5029	10	28-11	302	ST							P 5022	36	5-11	222	1		1-9	2-8	1-9													
A 5030	22	2-11	67	ST							P 5023	14	8-8	127	ST																	
A 5031	10	6-7	69	ST							P 5024	2	17-5	36	ST																	
A 5032	8	8-7	72	ST							P 5025	22	12-7	289	ST																	
A 5033	2	6-6	14	ST							P 5026	2	21-0	44	ST																	
A 5034	6	6-3	39	ST							P 5027	2	37-1	77	ST																	
A 5035	3	2-6	8	ST							P 5028	2	36-0	75	ST																	
											P 5029	2	26-0	54	ST																	
											P 5030	2	18-3	38	ST																	
A 6001	39	18-2	1064	2	6-2	1-5	7-6	0-11	2-10		P 5031	4	13-6	56	12	12-0	1-4		0-8													
A 6002	45	18-6	1250	2	6-4	1-5	7-8	0-11	2-10		P 5032	2	8-9		1		3-2	2-8	3-2		1											
D 8001	25	5-11	395	20	3-11						THRU		532			VARY	LENGTH	BY	0'-7 5/8"													
																VARY	DIM. B	BY	0'-3 7/8"													
																VARY	DIM. D	BY	0'-3 7/8"													
F 5001	65	8-4	565	1		1-7	5-5	1-7			P 5049	2	19-7		1		8-7	2-8	8-7		1											
F 5002	27	7-0	197	1	0-8	6-6																										
F 5003	38	7-5	294	1	0-8	6-11																										
											P 6001	14	19-3	405	ST																	
F 6001	27	14-2	575	1		6-6	5-5	2-7			P 6002	12	10-1	182	ST																	

BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE FOUR DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FIVE DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A7001 IS A NO.7 SIZE BAR AND A10140 IS A NO.10 SIZE.

BENDING DIAGRAMS



ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 11/12

**REINFORCING STEEL LIST**  
BRIDGE-RAMP OVER  
CONSOLIDATED RAIL CORP.

CUYAHOGA COUNTY STA.532+59.33  
STA.535+19.76

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ht			fwd	G.W.M.	6/29/69	

UNRECORDED  
NOV 3 1969

**NOTES**

- INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST  $\frac{1}{8}$ ". WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.
- BARS INCLUDED WITH ITEM 517, RAILING, FOR PAYMENT.
- COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.

- LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
- END PREPARATION AND FIELD WELDING INCLUDED WITH ITEM 509.
- "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.  $1\frac{1}{2}$  CLOSED COILS SHALL BE PROVIDED AT ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE, OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 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 0.80 LB. PER LIN. FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN TABULATED WEIGHT.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

317  
346

CUYAHOGA COUNTY  
CUY-480-8.54

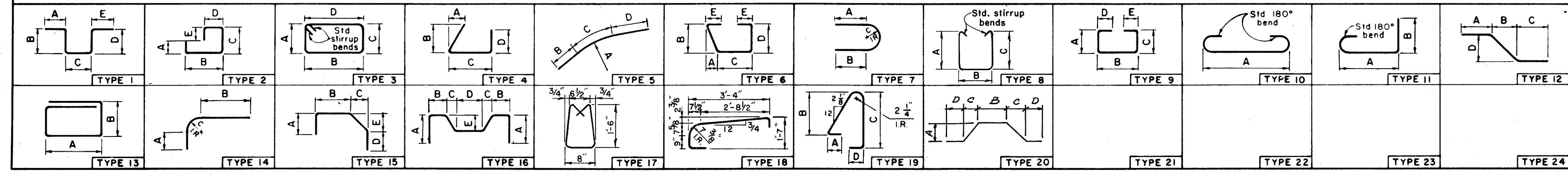
*Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08*

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE	MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
SUPERSTRUCTURE																					
S5001	405	30-0	12672	ST.							EPOXY COATED REINFORCING STEEL - SUPERSTRUCTURE										
S5004	336	2-6	876	1		2-0	0-7 $\frac{1}{2}$				SE5001	405	30-0	12672	ST.						
S5005	336	2-1	730	1		0-7 $\frac{1}{2}$	1-0	0-7 $\frac{1}{2}$			SE5002	327	5-7	1904	19	0-7 $\frac{1}{2}$	2-6	2-4			
											SE5003	68	41-6	2943	ST.						
											SE5006	330	3-4	1147	15	0-7 $\frac{1}{2}$	1-0	0-11 $\frac{1}{2}$	0-9	0-9	
											SE5007	18	3-0	56	ST.						
S 8001	8	3-8	78	ST							SE5008	6	1-10	11	1		0-7 $\frac{1}{2}$	0-10	0-7 $\frac{1}{2}$		
S 8002	1	4-9		ST						1	SE5009	6	3-0	19	ST.						
THRU			1026		VARY	LENGTH	BY 1'-	1 0/0''			SE5010	3	3-0	10	15	0-7 $\frac{1}{2}$	1-0	0-11 $\frac{1}{2}$	0-9	0-4	
S 8024	1	28-8		ST						1	SE5011	3	3-3	10	15	0-7 $\frac{1}{2}$	1-0	0-11 $\frac{1}{2}$	0-9	0-6	
S 8025	56	30-0	4486	ST							SE5012	12	2-0	25	ST.						
S 8026	56	30-3	4523	ST																	
S 8027	56	30-7	4573	ST							SE 7001	8	3-8	60	ST.						
S 8028	55	30-10	4528	ST							SE 7002	1	4-9		ST.						1
S 8029	55	31-2	4577	ST							THRU			785	Vary	length	by 1'-	1 0/0''			
S 8030	1	30-0		ST						1	SE 7024	1	28-8		ST.						1
THRU			1206		VARY	LENGTH	BY 1'-	0 1/8''			SE 7025	56	30-0	3434	ST.						
S 8055	1	4-9		ST						1	SE 7026	56	30-0	3463	ST.						
											SE 7027	56	30-7	3501	ST.						
											SE 7028	55	30-10	3466	ST.						
											SE 7029	55	31-2	3504	ST.						
											SE 7030	1	30-0		ST.						1
											THRU			923	Vary	length	by 1'-	0 1/8''			
											SE 7055	1	4-9		ST.						1
											RE 5001	96	14-8	1469	ST.						
											RE 5002	48	7-2	359	ST.						
											RE 5003	20	7-0	146	ST.						
											RE 5004	20	6-1	127	ST.						
EPOXY COATED REINFORCING STEEL - ABUTMENTS																					
											AE 5035	3	2-6	8	ST.						
LAMP STANDARD REINFORCING - EPOXY COATED																					
											LE 5005	4	2-10	12	1		0-7 $\frac{1}{2}$	1-0	0-7 $\frac{1}{2}$		
											LE 5006	4	8-5	36	4	0-6 $\frac{1}{2}$	3-2	2-4	3-2		
											LE 5007	6	7-3	45	20	1-10	1-4	1-10	0-6		
											LE 5008	4	3-2	13	ST.						

**BAR SIZE DESIGNATION**

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE FOUR DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FIVE DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A7001 IS A NO.7 SIZE BAR AND A10140 IS A NO.10 SIZE.

**BENDING DIAGRAMS**



ALDEN E. STILSON & ASSOCIATES, LIMITED  
CONSULTING ENGINEERS  
COLUMBUS, OHIO 12/12

**REINFORCING STEEL LIST**  
BRIDGE-RAMP OVER  
CONSOLIDATED RAIL CORP.

CUYAHOGA COUNTY STA. 532+59.33  
STA. 535+19.76

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HT			fwd	G.W.M.	4/16/9	



UNRECORDED  
AUG 8 1969

GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

319  
346

CUYAHOGA COUNTY  
CUY. 480-8.54

REFERENCES:

Standard Drawings:

Superstructure Details

End Dam, End Crossframe Scuppers, Moment Plates & Bolted Splices Railing Details	SD-1-69, Sheets 1, 2, 3 & 4 Dated 6-12-69 BR-1-67 Sheet 1 of 3 Revised 10-15-71
Rocker & Bolster Details Approach Slab Details Highway Lighting	RB-1-55, Revised 2-2-59 AS-1-72 Dated 6-30-72 HL-4, Revised 1-21-76 HL5 Dated 9-6-73 HL7 Revised 1-21-76

Supplemental Specifications:

Chemical Admixture For Concrete Type A,B or D	808, Dated 1-1-71
Concrete Curing & Protective Membrane	836, Dated 3-12-75
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
Common Details: Contraction Joints	Sheet 328
Expansion Joints	Sheet 328

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-2000 (57)

Concrete, Class "C": Unit Stress = 1200 p.s.i. for superstructure and piers above footings  
Unit Stress = 1333 p.s.i. for abutments and footings

Structural Steel, ASTM A-36: Unit Stress = 20,000 p.s.i.

Reinforcing Steel, ASTM A615, A616 or A617. Unit Stress = 20,000 p.s.i.

Spiral reinforcement shall be plain, bars ASTM A82 or A615

PILES shall be driven to bedrock. The bearing capacity shall be considered obtained by refusal on hard bedrock or by penetrating soft bedrock for several inches with a minimum resistance of 20 blows per inch. The design load is 35 tons per pile for the abutment piles and pier piles.

ATTACHMENT OF GUARDRAIL TO CONCRETE PARAPETS:

Concrete 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 hardness requirement of 711.21, preformed bearing pads shall have a shore A durometer of 80±10.

PILES shall be driven with a hammer of not less than 11,000 ft. lbs. per blow to firm contact with rock. If the length of penetration is approximately equal to the depth of rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Section 507.05 is not less than the following value for a pile hammer of the indicated energy rating:

For Abutment piles:

43 tons per pile using an 11,000 ft. lb. hammer  
36 tons per pile using a 15,000 ft. lb. hammer

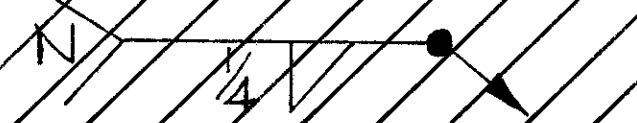
For pier piles:

50 tons per pile using an 11,000 ft. lb. hammer  
43 tons per pile using a 15,000 ft. lb. hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 35 tons per pile for the abutment piles and 35 tons per pile for the pier piles.

UTILITY LINES: All labor and expenses involved in relocating the affected utility lines shall be borne by the Owners. The Contractor and the Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

WELD on non-stress-carrying members are shown thus:



EMBANKMENT CONSTRUCTION: The embankment 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.

Modify Standard Drawing AS-1-72 as follows:

- a. Dimension W = 48'-0"
- b. Change clearance for top reinforcing steel to 3" from 2".
- c. omit jacking holes

MONOLITHIC WEARING SURFACE THICKNESS is assumed, for design purposes, to be 1".  
MINIMUM BAR LAP shall be 30 diameters.

DECK PROTECTION METHOD: Epoxy coated reinforcing steel, top mat only.

ROADWAY FINISH: See Sheet No. 251.

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						2/10
GENERAL NOTES						
BRIDGE NO. CUY-480-0979						
I 480 OVER ACCESS ROAD "C"						
STA. 542+51.75						
CUYAHOGA COUNTY						
STA. 543+99.25						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
GTR			SBP	G.W.M.	6/29/69	7-17-78

**REINFORCING**

Mark	N <sup>o</sup>	Length	Weight	Type	"A"	"B"	"C"	"D"	"E"	Shape
<b>ABUTMENTS</b>										
A501	200	4-11	1026	1		1-6	2-2	1-6		bt.
A502	248	7-4	1897	1		2-1	3-5	2-1		bt.
A503	72	25-4	1902							st.
A504	36	23-4	876							st.
A505	8	27-4	228							st.
A506	8	29-8	248							st.
A507	8	32-4	270							st.
A508	8	33-4	278							st.
A509	32	25-2	840							st.
A510	32	23-5	782							st.
A511	24	6-9	169							st.
A512	8	2-5	20							st.
A513	8	5-4								st.
Thru		Δ 0-11	299							
A517	8	9-0								st.
A518	24	9-7	240							st.
A519	8	8-6	71							st.
<b>PIERS</b>										
P501	200	5-5	1130	1		1-6	2-8	1-6		bt.
P502	8	34-10	291							st.
P503	8	36-1	301							st.
P504	280	8-9	2555	1		3-2	2-8	3-2		bt.
P701	24	35-8	1750	11		34-10				bt.
P702	24	34-10	1709							st.
P703	48	36-1	3540							st.
P1001	96	24-7	10,155							st.
P1002	96	26-0	10,740							st.
F901	288	11-2	10,935	10		8-8				bt.
F902	288	12-2	11,914	10		9-8				bt.
F1001	192	6-7	5,439	1		1-5	5-6			bt.

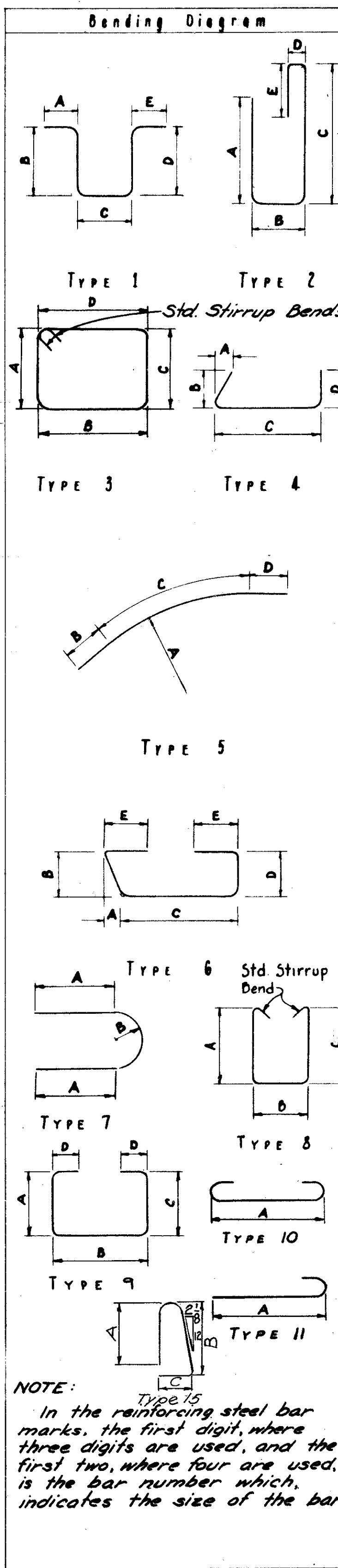
SPIRALS							
Mark	N <sup>o</sup>	Length	Core	Pitch	Turns	Spacers	Weight
P401	12	21-7	32	0-4 1/2	61	48	395
P402	12	23-0	32	0-4 1/2	64	48	416

**SPIRALS**  
 THE "LENGTH" SHOWN IN THE STEEL LIST FOR THE SPIRAL BARS IS THE DISTANCE FROM THE TOP OF THE FOOTING TO THE BOTTOM OF THE PIER CAP.  
 THE NO. OF TURNS SHOWN IN THE STEEL LIST FOR THE SPIRAL BARS IS THE "LENGTH" DIVIDED BY THE PITCH, PLUS 3 TURNS (TOTAL NUMBER OF CLOSED COILS), EXPRESSED AS THE NEAREST WHOLE NUMBER.  
 SPIRAL REINFORCING BARS SHALL NOT HAVE DEFORMATIONS BUT SHALL

**STEEL**

Mark	N <sup>o</sup>	Length	Weight	Type	"A"	"B"	"C"	"D"	"E"	Shape
<b>SUPERSTRUCTURE</b>										
S502	194	2-8	540							st.
S503	192	2-6	501	1	7 1/2	2-0				bt.
S504	192	2-2	434	1	7 1/2	1-2	7 1/2			bt.
S507	194	2-4"	472	1	1-9	0-9				bt.
S516	8	1-11	16	1	0-7 1/2	0-11	0-7 1/2			bt.
S601	536	30-0	24152							st.
S602	134	31-6	6340							st.
S701	434	40-3	35,706							st.
S702	434	33-8	29,866							st.
<b>EPOXY COATED REINFORCING STEEL - SUPERSTRUCTURE</b>										
MARK	NO	LENGTH	WT.	TYPE	A	B	C	D	E	SHR
SE501	194	2-5	490	6	0-11	0-6	1-5			bt.
SE505	180	5-8	1064	15	2-4	2-7	0-7 1/2			bt.
SE506	194	3-2	641	14	0-9	0-10	1-0	0-6	0-9	bt.
SE508	20	13-10	289							st.
SE509	40	14-2	591							st.
SE510	80	6-11	577							st.
SE511	184	3-4	640	14	0-7 1/2	1-0	11 1/2	0-9	0-9	bt.
SE512	24	2-6	63							st.
SE513	4	3-3	14	14	0-7 1/2	1-0	11 1/2	0-9	0-6	bt.
SE514	4	3-2	13	14	0-7 1/2	1-0	11 1/2	0-9	0-4	bt.
SE515	16	2-0	33							st.
SE517	290	2-9	832							st.
SE601	448	30-0	20187							st.
SE602	112	31-6	5299							st.
SE603	196	22-0	6477							st.
SE604	868	26-10	48,020							st.
SE605	8	3-8	44							st.
RE501	48	5-11	296							st.
RE502	72	12-0	901							st.
<b>EPOXY COATED REINFORCING STEEL - ABUTMENTS</b>										
MARK	NO	LENGTH	WT.	TYPE	A	B	C	D	E	SHR
AE520	20	1-5	24							st.
AE521	8	2-9	23	17	0-3	0-7	1-3	0-11	0-7	bt.
AE522	8	2-11	24	14	1-1	0-6	0-11	0-5	0-9	bt.
AE523	8	2-9	23							st.

**LIST**



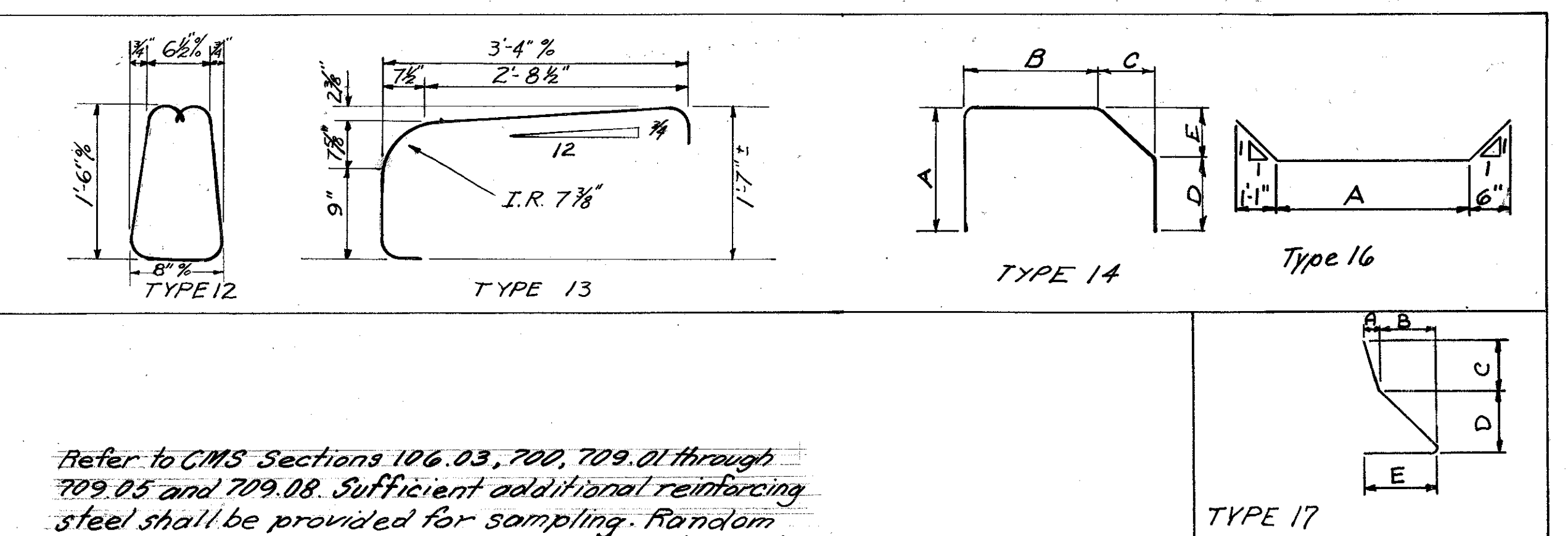
APPROXIMATELY  
 AUG 1962

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		320 346

CUYAHOGA COUNTY  
 CUY-480-8.54.

**ESTIMATED QUANTITIES**

ITEM	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPERS.	GENERAL
503	Lump	Sum	Cofferdams, Crips, and Sheeting		Lump		
503	1384	Cu. Yd.	Unclassified excavation	640	744		
505	Lump	sum	Test pile				Lump
507	5440	Lin. Ft.	Steel piles, HP10X42	2560	2880		
509	191815	Lb.	Reinforcing Steel	32518	61,270	98,027	
Special	86565	Lb.	Epoxy coated Reinforcing Steel (See Proposal Note)	94		86,471	
511	421	Cu. Yd.	Class C concrete, footings	222	199		
511	269	Cu. Yd.	Class C concrete, abutments above footings	269			
511	260	Cu. Yd.	Class C concrete, pier cap & columns		260		
511	664	Cu. Yd.	Class C concrete, superstructure (See proposal note.)				664
512	75	Lin. Ft.	Premolded sealing strip	75			
513	452,100	Lb.	Structural steel, primer per 846 (See Proposal Note)				452,100
846	452,100	Lb.	Field painting of structural steel				452,100
516	11	Sq. Ft.	1/2" preformed expansion joint filler	11			
516	61	Sq. Ft.	1" preformed expansion joint filler	61			
518	130	Cu. Yd.	Porous backfill	130			
518	301	Lin. Ft.	6" Helical perforated C.S.P. including specials 707.01	301			
518	170	Lin. Ft.	6" Helical non-perforated C.S.P. 707.01	170			
518	20	Each	Scuppers including supports	20			
601	1842	Sq. Yd.	Crushed aggregate slope protection				1842
862.5			See sheet No. 203 for lighting summary				
808	664	Units	Chemical Admixture for Concrete, Type A, B or D				664



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.  
 Δ INDICATES DIMENSION VARIES BY TABULATED AMOUNT.

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

REINFORCING STEEL LIST and ESTIMATED QUANTITIES  
 BRIDGE NO. CUY-480-0979  
 I-480 over ACCESS ROAD 'C'  
 STA. 542+51.75  
 STA. 543+99.25  
 CUYAHOGA COUNTY

DESIGNED: GTR  
 DRAWN: DW  
 TRACED: SBP  
 CHECKED: SBP  
 REVIEWED: J.E.V.  
 DATE: 9/18/68  
 REVISION: 3/10



MICROFILMED  
NO. 102

N ← East Abutment      West Abutment → N

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		
CUYAHOGA COUNTY CUY-480-B.54			

322  
346

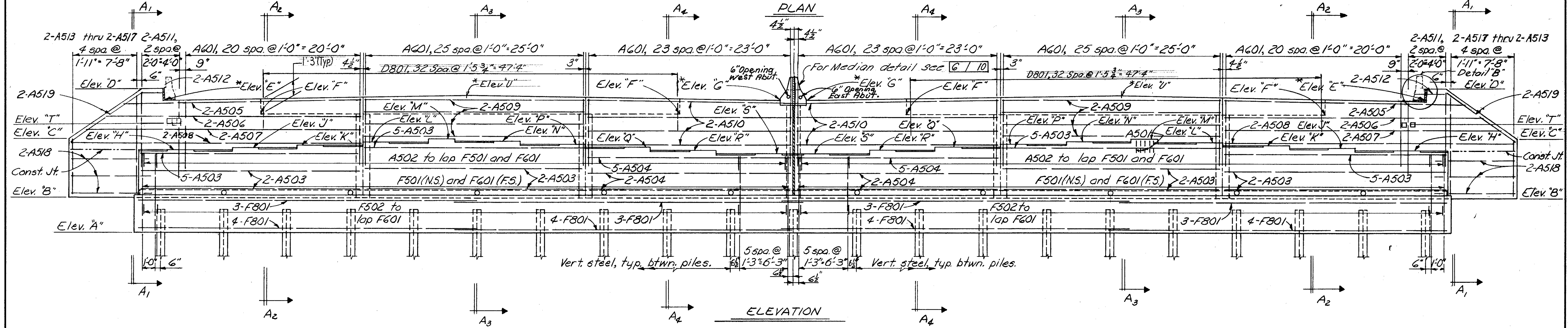
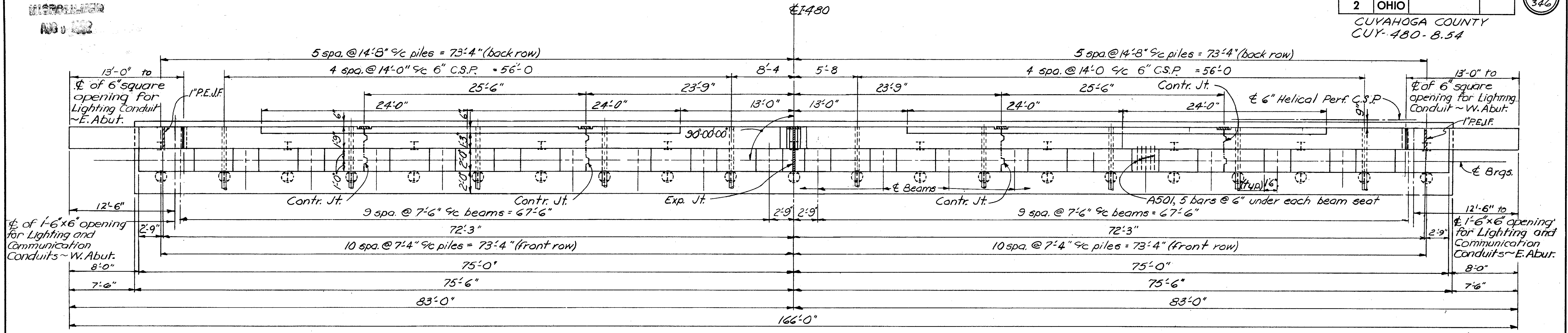
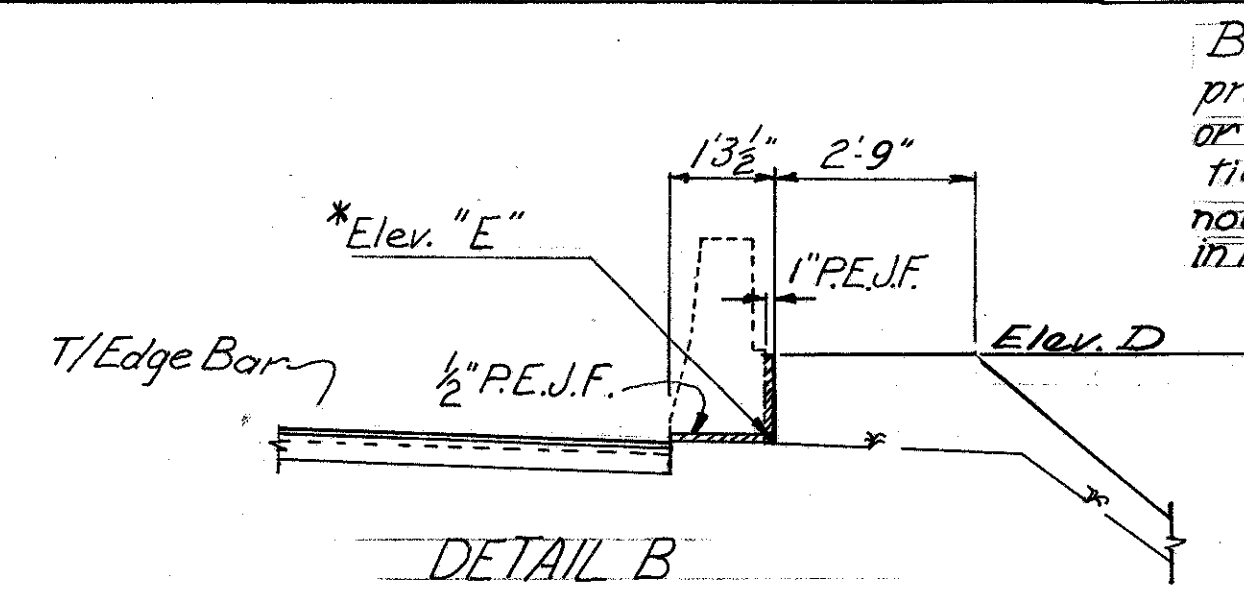


TABLE OF ELEVATIONS

	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
West Abut.	803.21	806.21	811.72	815.87	814.62	813.58	814.63	810.30	810.42	810.54	810.66	810.77	810.70	810.64	810.52	810.41	810.29	812.60	815.17
East Abut.	799.61	802.61	808.12	812.21	810.96	809.86	810.95	806.70	806.82	806.94	807.05	807.17	807.15	807.04	806.92	806.80	806.69	808.90	811.51

**NOTES:**  
 \* Elevations marked with an asterisk are to top of 2" edge bar at face of curb and face of backwall.  
 Back wall median curb shall conform to superstructure curb.  
 Reinforcing Steel location: N.S.-indicates near side. F.S.-indicates far side.  
 End Dam Joints: Joints shall be provided in the abutment portion of the end dam at contraction and expansion joints.  
 For expansion or contraction joint details, see Common Details sheet 328

All piles shall be HP10x42 steel piles.  
 Vertical piles.  
 Battered piles 1:4  
 6" Helical Perforated C.S.P. shall have all ends capped and shall not be continuous across the expansion joints.  
 For details of lighting and Communications conduit in abutment backwalls see Standard Construction Drawing HL-5.  
 For additional notes and details see sheet 6/10



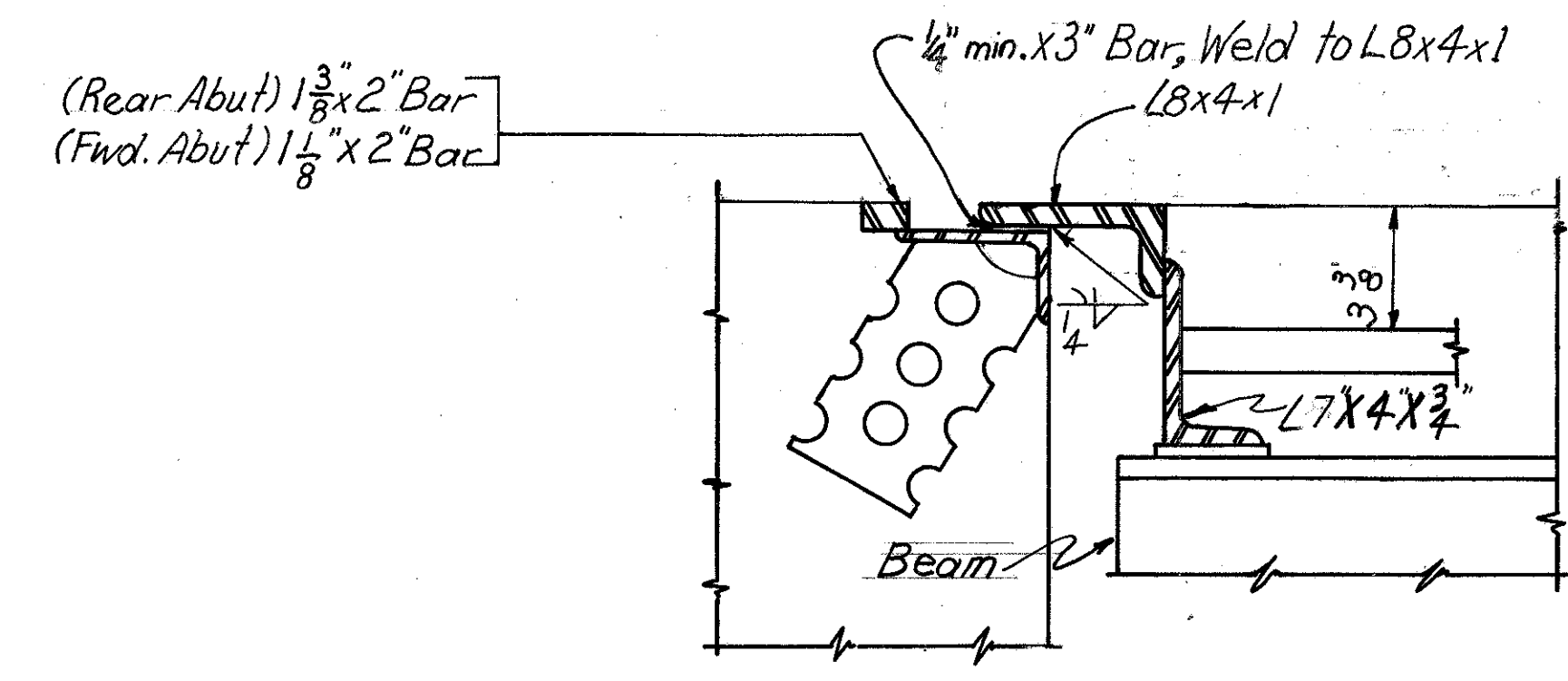
BACKWALL CONCRETE: In addition to the provisions of 511.08, backwall concrete or backwall concrete above the optional construction joint at the approach slab seat shall not be placed until after the deck concrete in the span adjacent to the backwall has been placed.

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO					5/10
EAST AND WEST ABUTMENT DETAILS BRIDGE N <sup>o</sup> CUY-480-0979 1480 OVER ACCESS ROAD "C"					
CUYAHOGA COUNTY			STA. 542+51.75 STA. 543+99.25		
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
DLM	G.T.R.		S.B.P.	J.E.V.	9/18/68



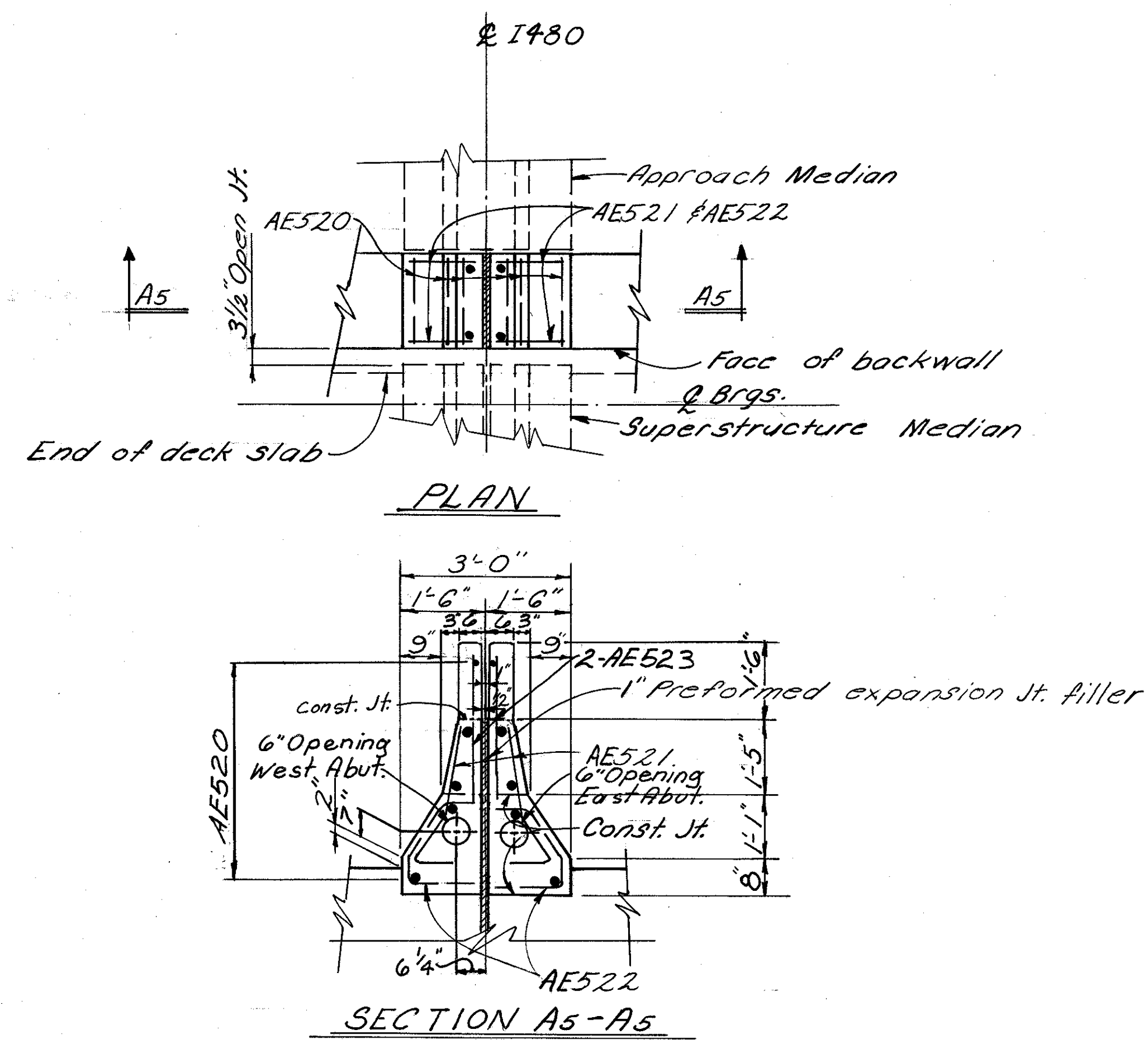
ENCLOSURE NO. 12

CUYAHOGA COUNTY  
CUI-480-B.54



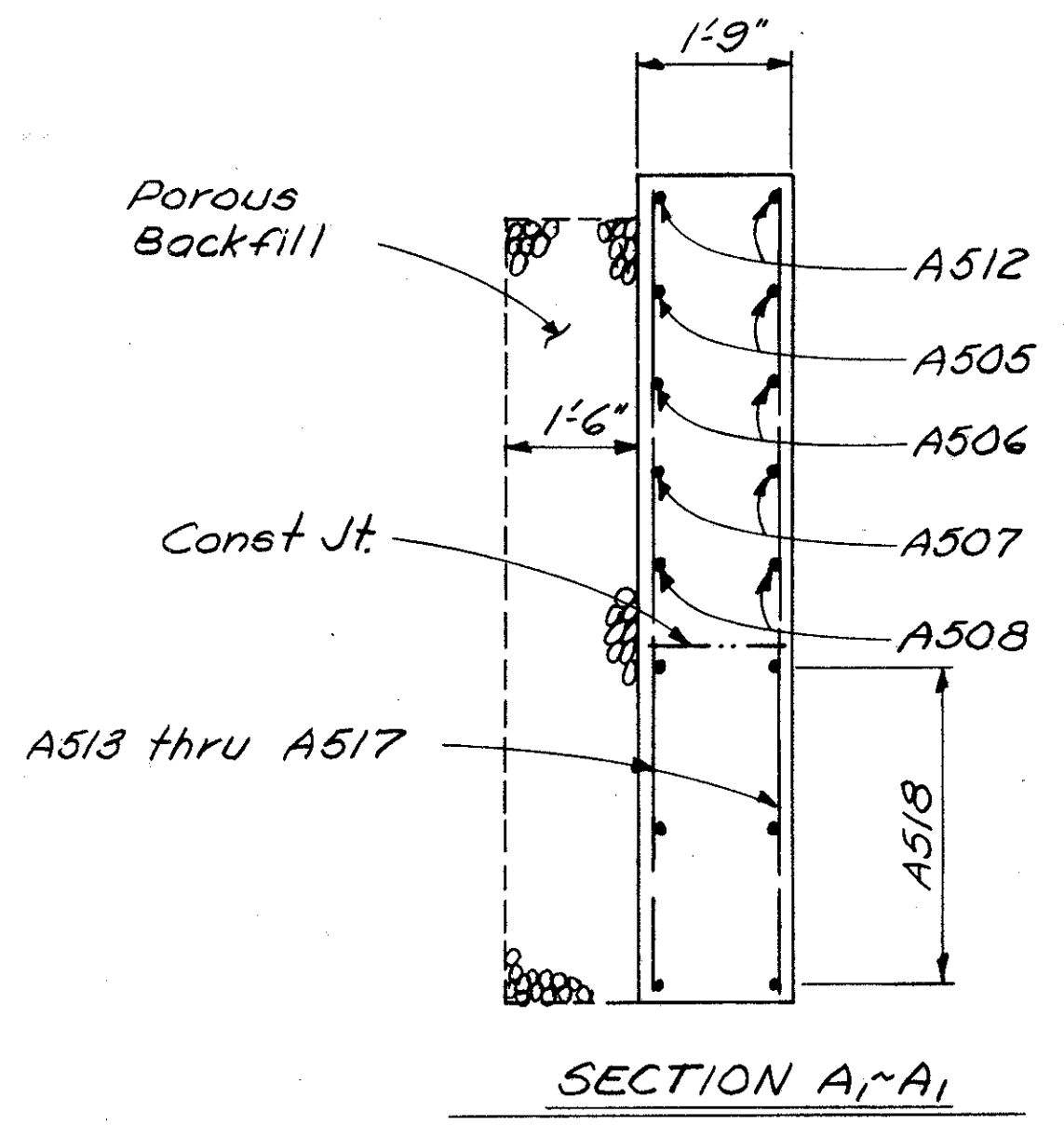
For additional end dam details see Standard Drawing SD-1-69, Sheet 1 of 4.

END DAM DETAILS

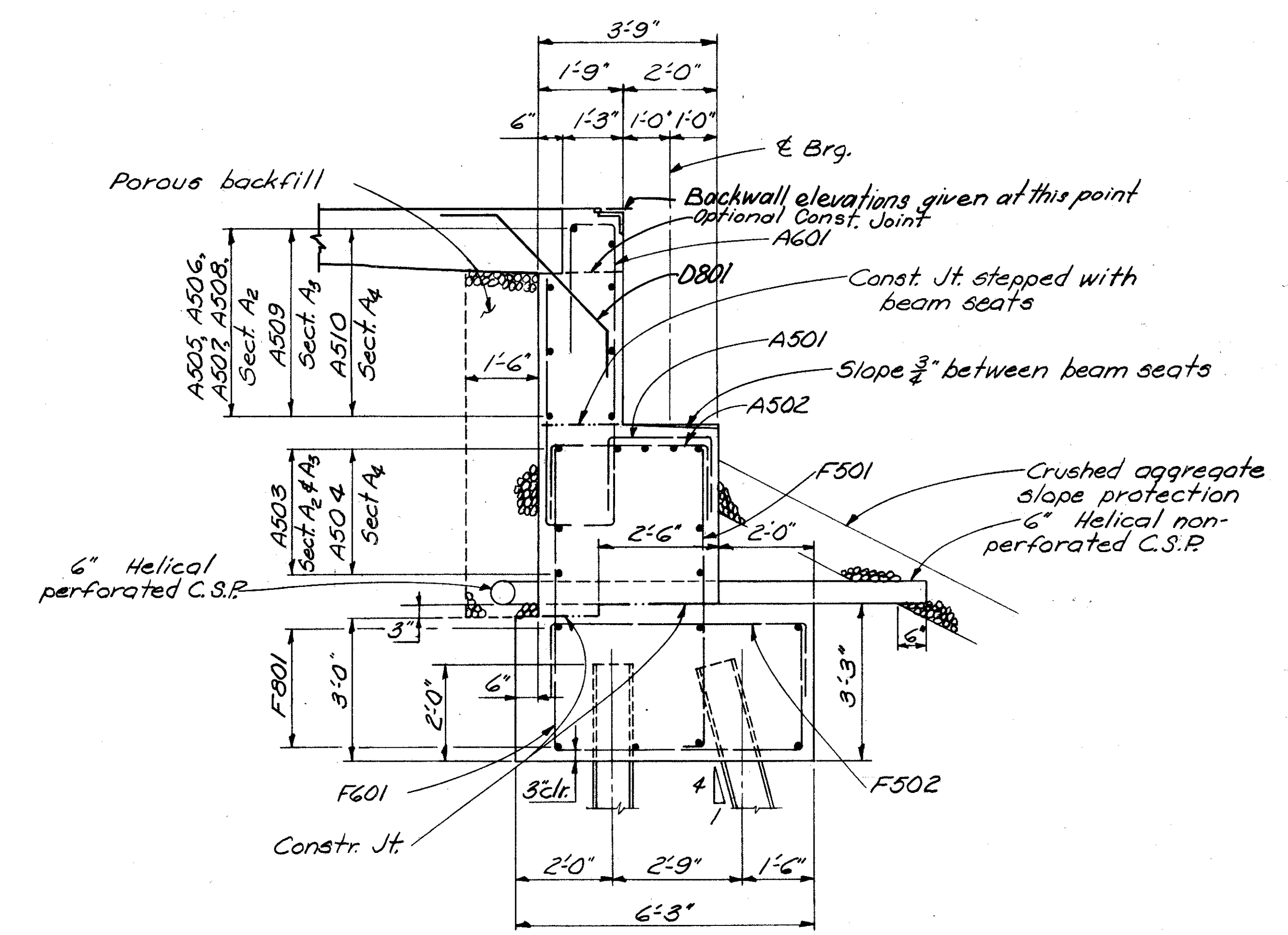


ABUTMENT MEDIAN DETAIL

Median curb plates not shown.  
For details see std. Dwg. SD-1-69, sht. 2



SECTION A1-A1



SECTIONS  
A2-A2, A3-A3, A4-A4

NOTES:

Porous backfill shall extend from the top of the footing upward to the underside of the approach slab and to the earth shoulders and outward to the embankment slopes. Excavation therefore in excess of that required for construction of the abutment shall be considered as paid for in the bid price per cubic yard paid for porous backfill.

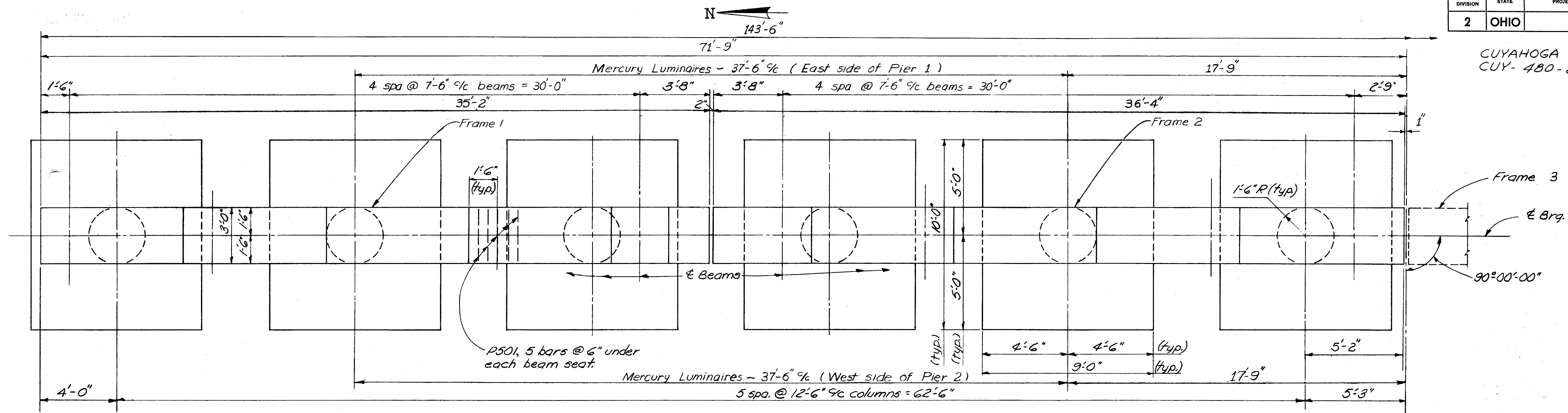
For additional notes and details see sheet 5/10

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						6/10
EAST AND WEST ABUTMENT DETAILS BRIDGE N <sup>o</sup> CUY-480-0979 I-480 OVER ACCESS ROAD "C"						
CUYAHOGA COUNTY						STA. 542+51.75 STA. 543+99.25
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DLM	G.T.R.		S.B.P.	J.E.V.	9/18/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

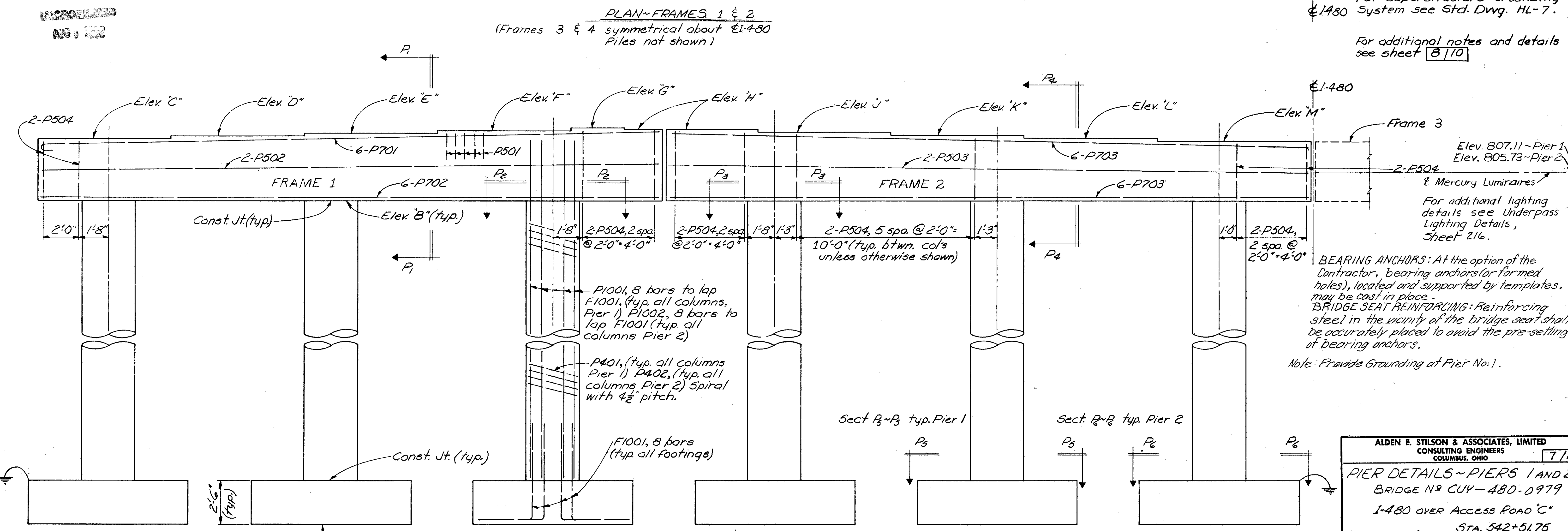
324  
346

CUYAHOGA COUNTY  
CUY-480-8.54



For Superstructure Grounding System see Std. Dwg. HL-7.

For additional notes and details see sheet B/10



Elev. 807.11 - Pier 1  
Elev. 805.73 - Pier 2

El. Mercury Luminaires

For additional lighting details see Underpass Lighting Details, Sheet 216.

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

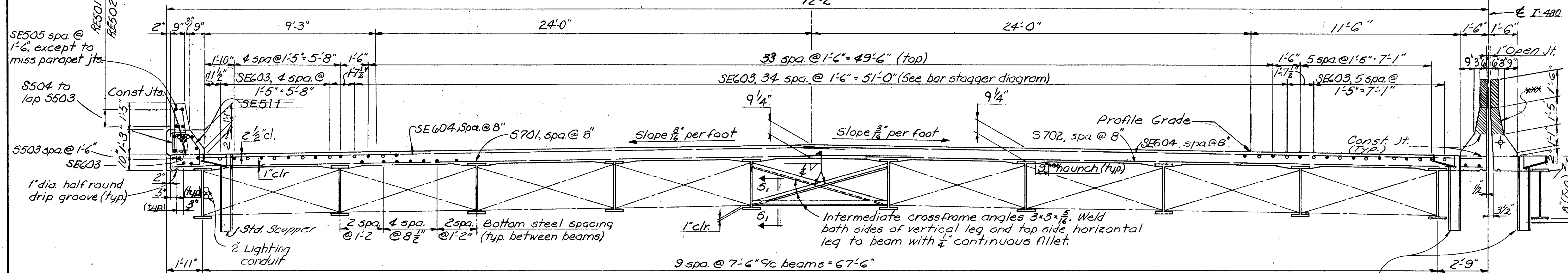
BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid the pre-setting of bearing anchors.

Note: Provide Grounding at Pier No. 1.

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						
						7/10
PIER DETAILS - PIERS 1 AND 2 BRIDGE N° CUY-480-0979 I-480 OVER ACCESS ROAD "C"						
						STA. 542+51.75 STA. 543+99.25
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DLM	G.T.R.		S.B.P.	J.E.V.	9/18/68	

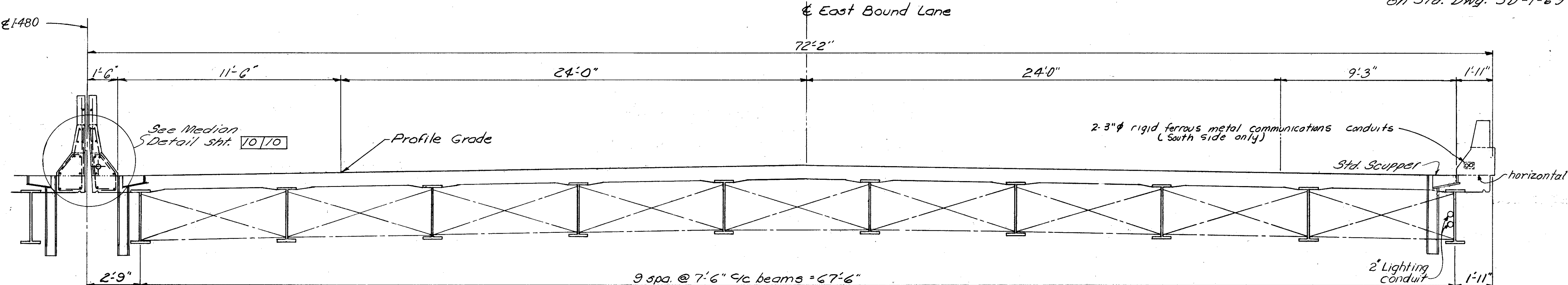


Each longitudinal run of deck reinforcing, excluding SE603 over piers, shall be comprised of 4-SE601 and 1-SE602 top and curbs and 4-SE601 and 1-SE602 bottom & West Bound Lanes lapped a minimum of 1'-11".



TRANSVERSE SECTION - WEST BOUND LANES  
(End Posts not shown)

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



TRANSVERSE SECTION - EAST BOUND LANES  
(Details, dimensions, and reinforcing not shown opposite hand to W.B.Lanes)  
(End Posts not shown)

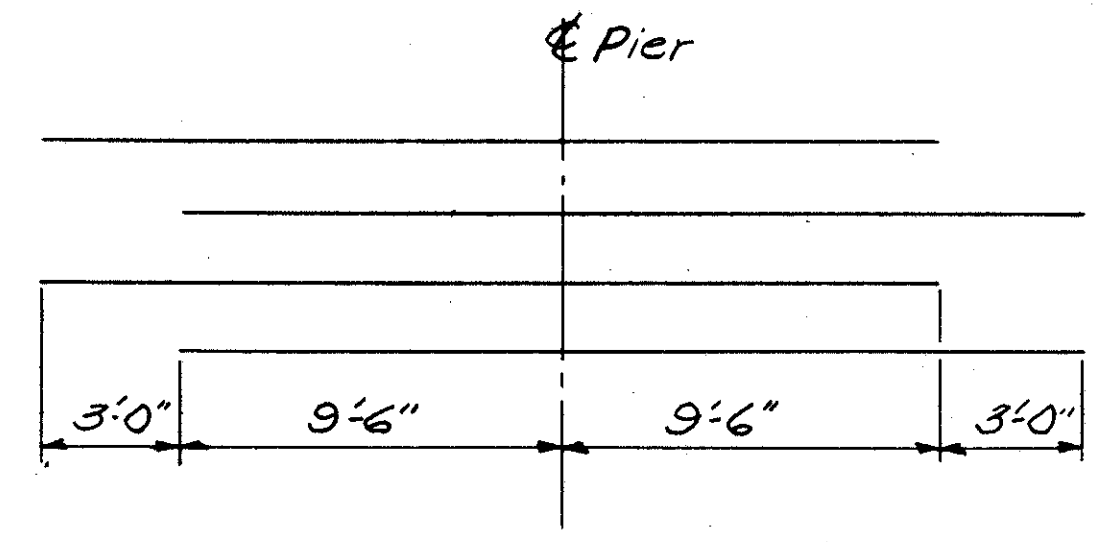
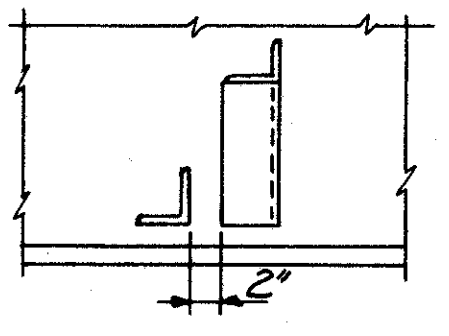


DIAGRAM SHOWING STAGGER OF SE603 BARS OVER PIERS



SECT. 5-5

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 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 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.

Field bend transverse bars to fit crown. Field bending to be included in Item 509 for payment.

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

For scupper details see Std. Dwg. SD-1-69

For additional notes and details see sheet 10/10

\*\*\* X-hatch area indicates limit of deflection jt. filler material.

Lighting Conduit Attachment - Conduits shall be suitably mounted on the beam webs at intervals of 10'-0" maximum. Cost of mountings shall be included with conduits for payment.

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

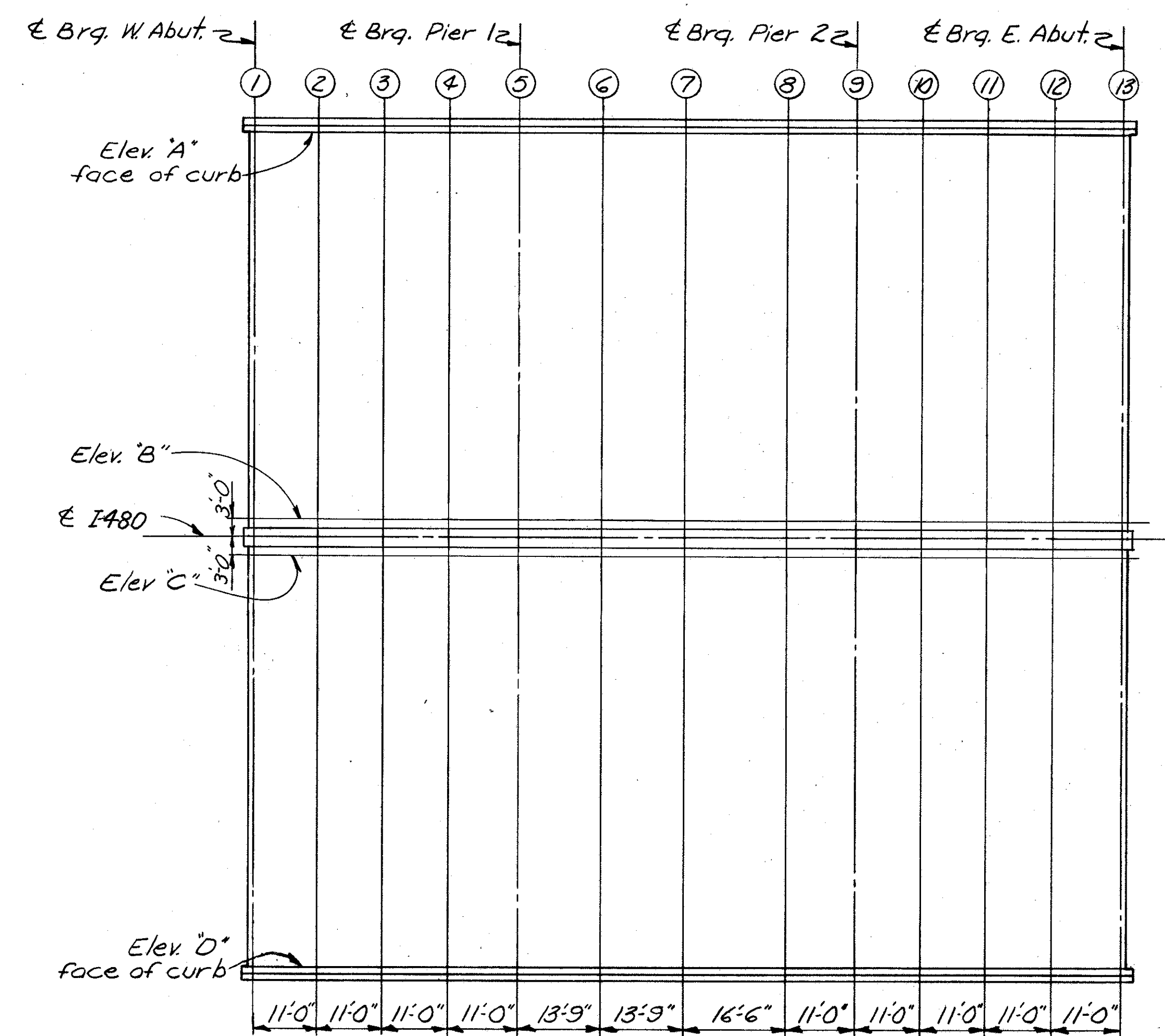
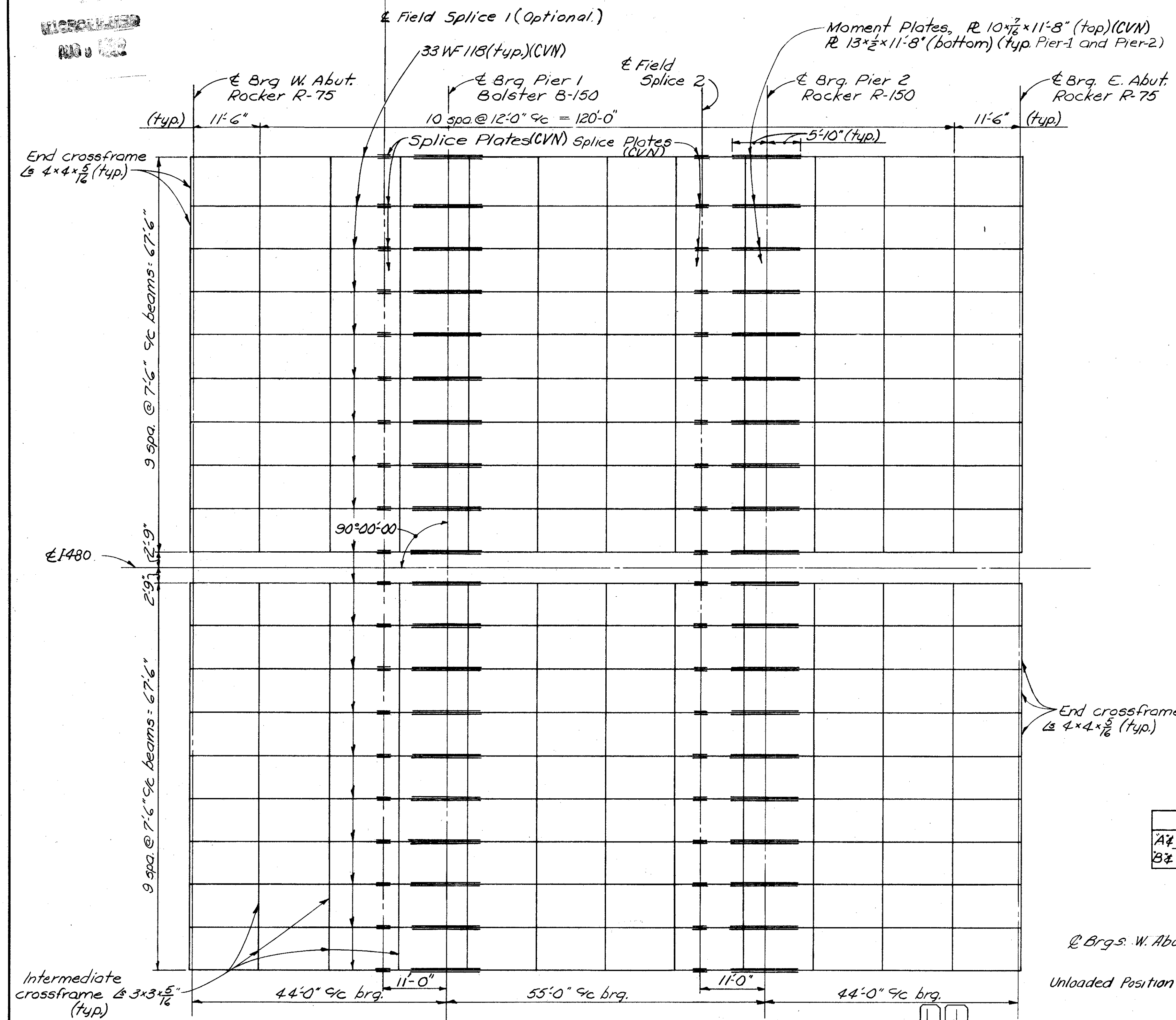
ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO						9/10
SUPERSTRUCTURE DETAILS						
BRIDGE N° CUY-480-0979						
I-480 OVER Access Road "C"						
CUYAHOGA COUNTY STA. 542+51.75						
STA. 543+99.25						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.B.P.	G.T.R.		D.L.M.	J.E.V.	9/18/68	

REVISIONS  
NO. 1

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY  
CUY-480-8.54

BEARINGS shall be in accordance with Std. Dwg. RB-1-55 except that upper plate element shall be beveled to match roadway grade. Tabulated plate thickness C shall apply at centerline of plate.



SCREED LINE LOCATIONS

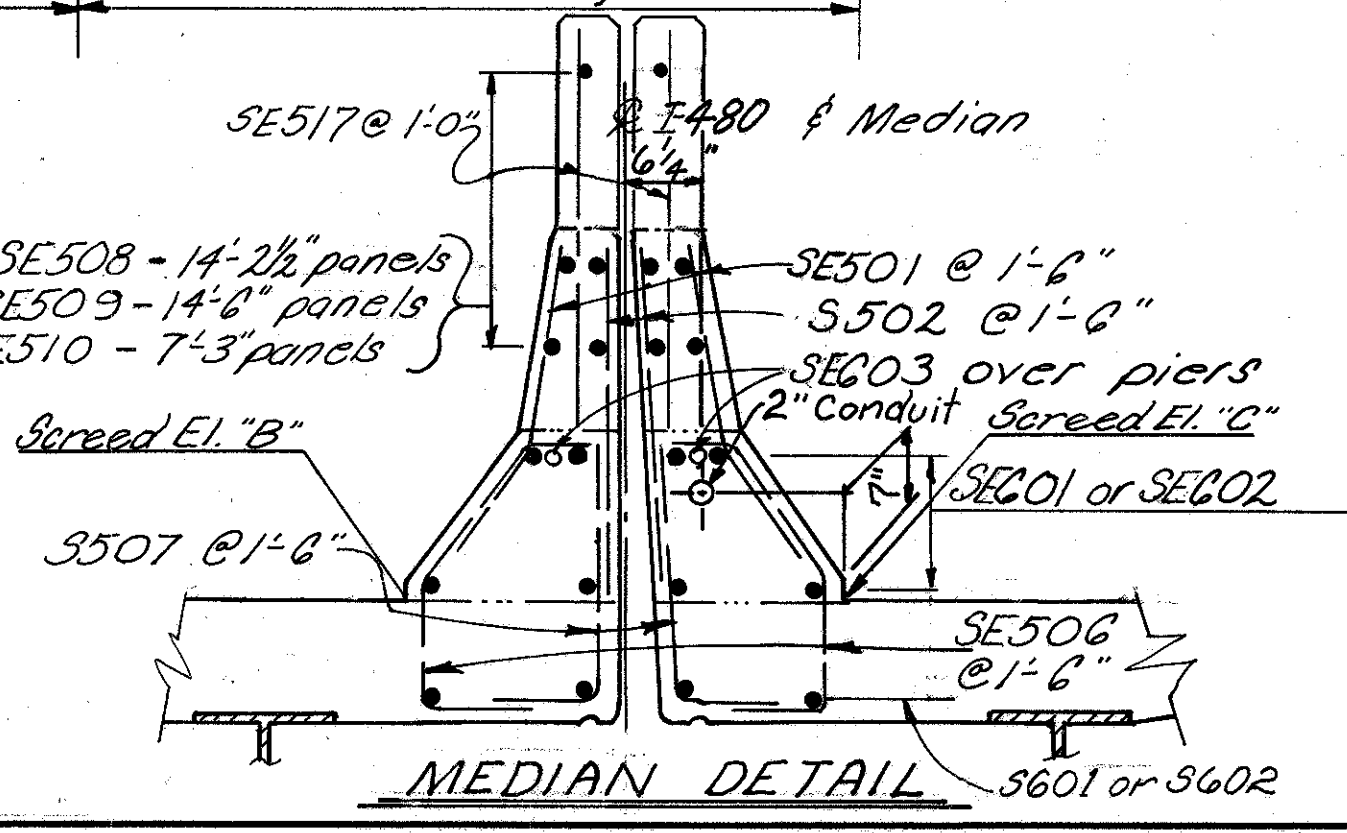
TABLE OF SCREED ELEVATIONS

	1	2	3	4	5	6	7	8	9	10	11	12	13
A±D	814.62	814.36	814.08	813.80	813.52	813.18	812.84	812.41	812.13	811.86	811.59	811.31	811.02
B±C	814.61	814.34	814.07	813.78	813.50	813.17	812.83	812.40	812.11	811.84	811.58	811.29	811.01

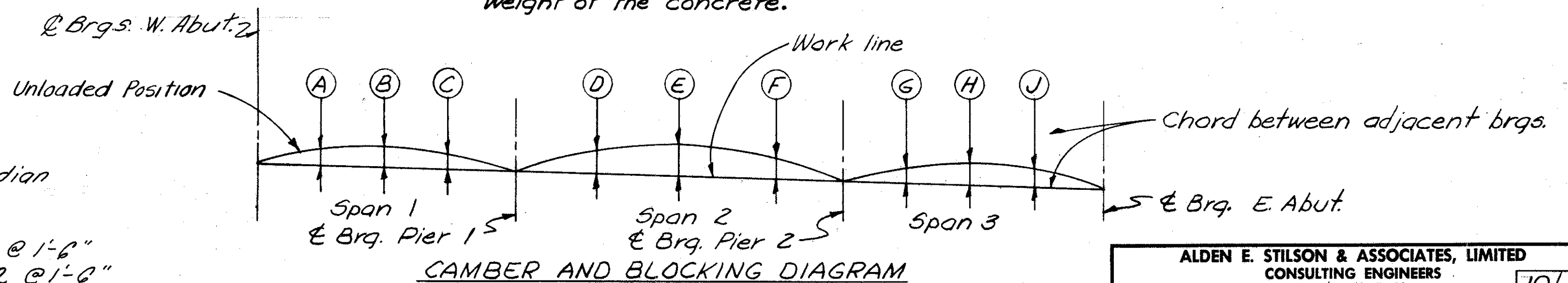
The elevations shown at the face of curbs are those which are required before concrete is placed. Proper allowance has been made for the Dead Load deflections caused by the weight of the concrete.

Notes:  
 All intermediate crossframes shall be normal to beams  
 For field splice and moment plate details see Std. Dwg. SD-1-69, sheets 3 and 4.  
 For additional notes and details see sheet 9/10  
 Where "(CVN)" follows a shape or plate size designation, the material shall meet specified minimum notch toughness requirements.  
 All splice material shall meet specified minimum notch toughness requirements.

FRAMING PLAN



MEDIAN DETAIL



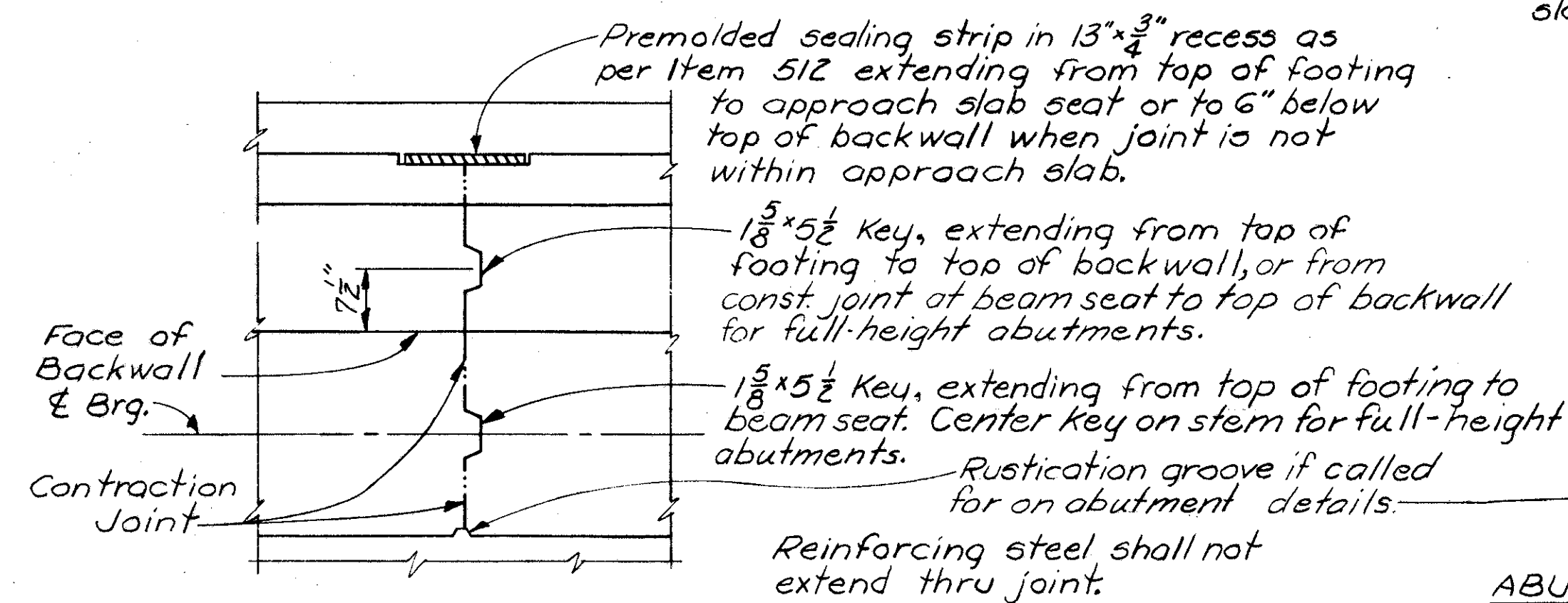
CAMBER AND BLOCKING DIAGRAM

DEFLECTION AND CAMBER	Span 1			Span 2			Span 3		
	1/4 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
All beams	A	B	C	D	E	F	G	H	J
Defl. due to wt. of steel	0	0	0	0	0	0	0	0	0
Defl. due to remaining D.L.	1/8	3/16	1/6	1/8	1/4	1/6	1/6	3/16	1/8
Reqd. shop camber	1/8	3/16	1/6	1/8	1/4	1/6	1/6	3/16	1/8

ALDEN E. STILSON & ASSOCIATES, LIMITED  
 CONSULTING ENGINEERS  
 COLUMBUS, OHIO 10/10

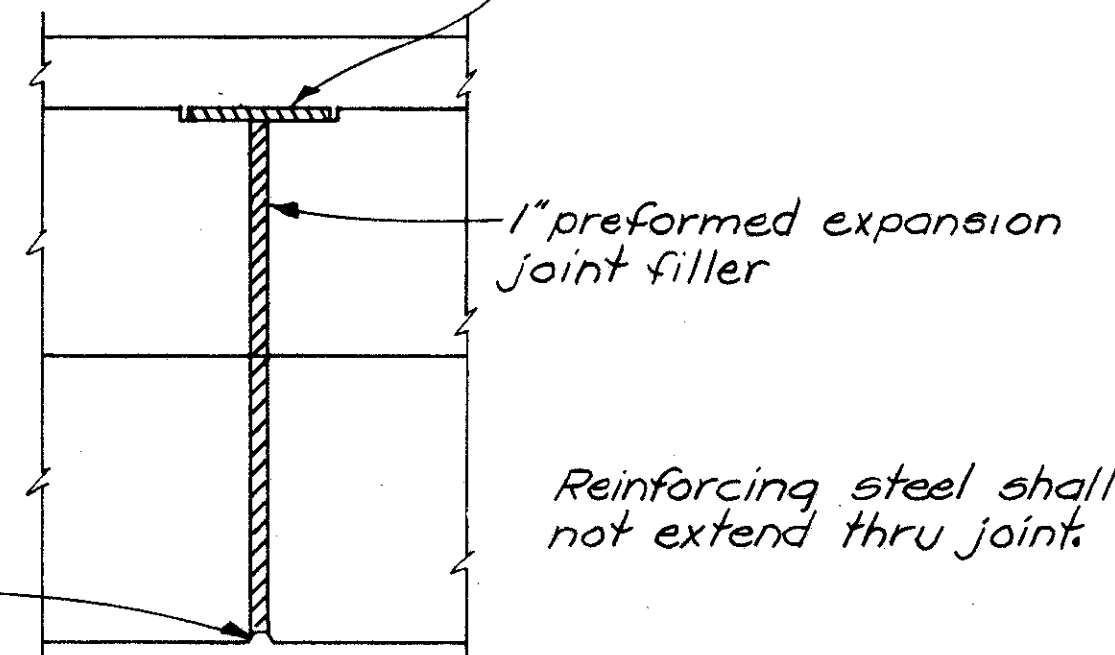
SUPERSTRUCTURE DETAILS  
 BRIDGE N° CUY-480-0979  
 I-480 OVER ACCESS ROAD "C"  
 CUYAHOGA COUNTY STA. 542+51.75  
 STA. 543+99.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.B.P.	G.T.R.		DLM	J.E.V.	9/18/68	

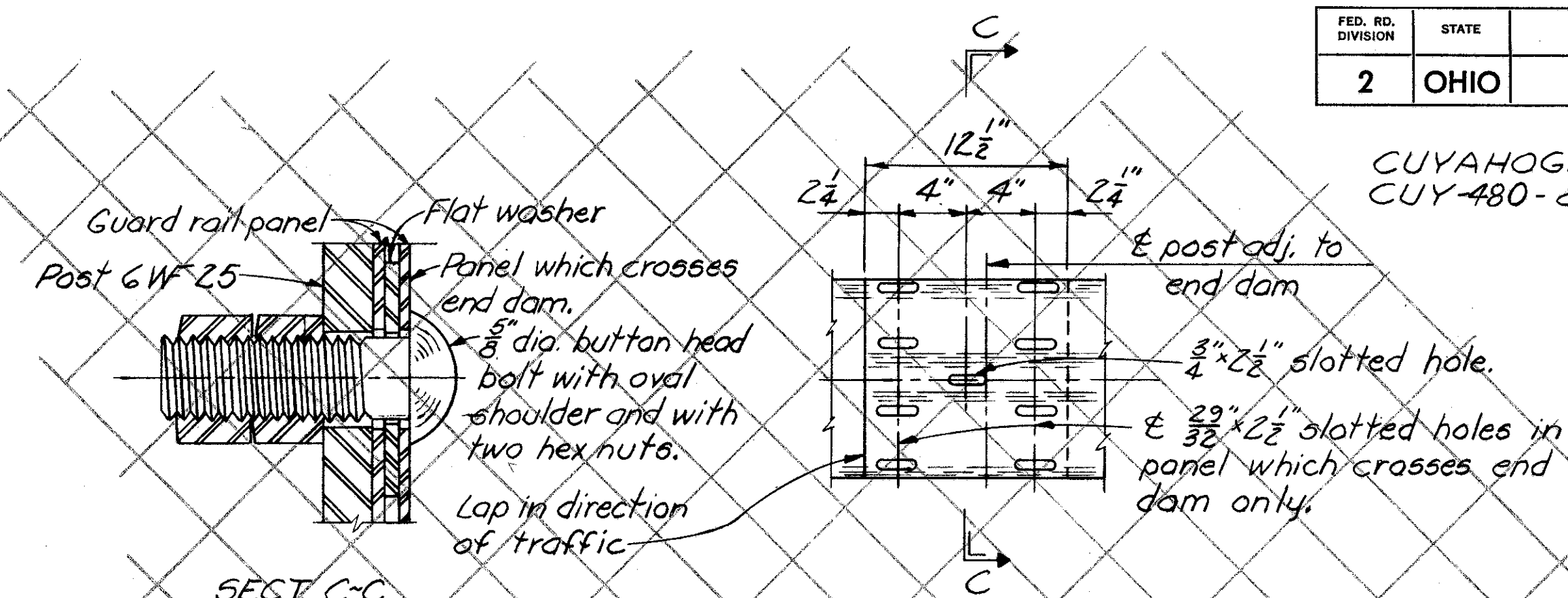


ABUTMENT CONTRACTION JOINT DETAIL  
BEAM AND GIRDER BRIDGES

Premolded sealing strip in  $1\frac{3}{4} \times \frac{3}{4}$ " recess as per Item 512 extending from top of footing to approach slab seat or to top of median.



ABUTMENT EXPANSION JOINT DETAIL  
BEAM AND GIRDER BRIDGES

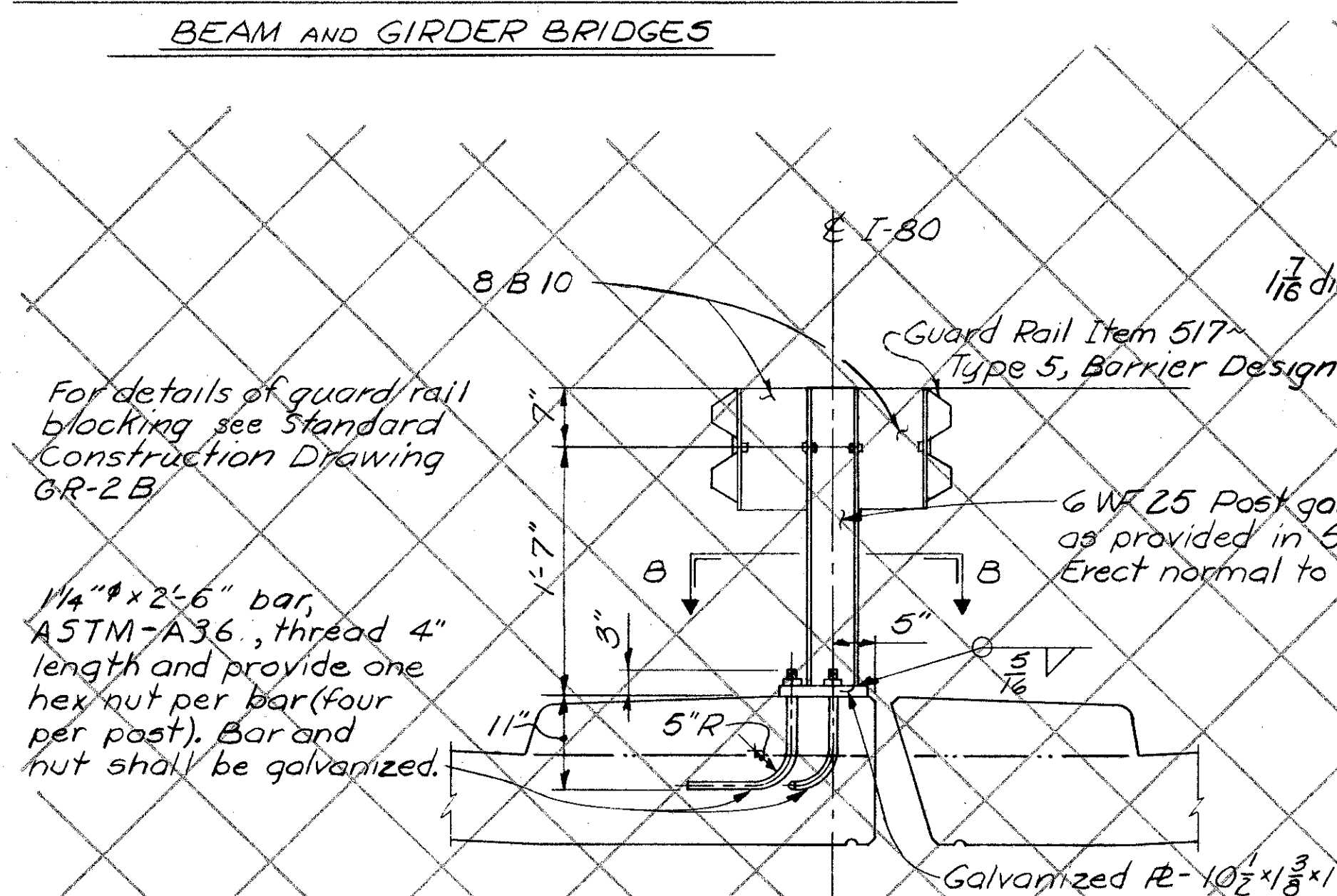


SECT. C-C

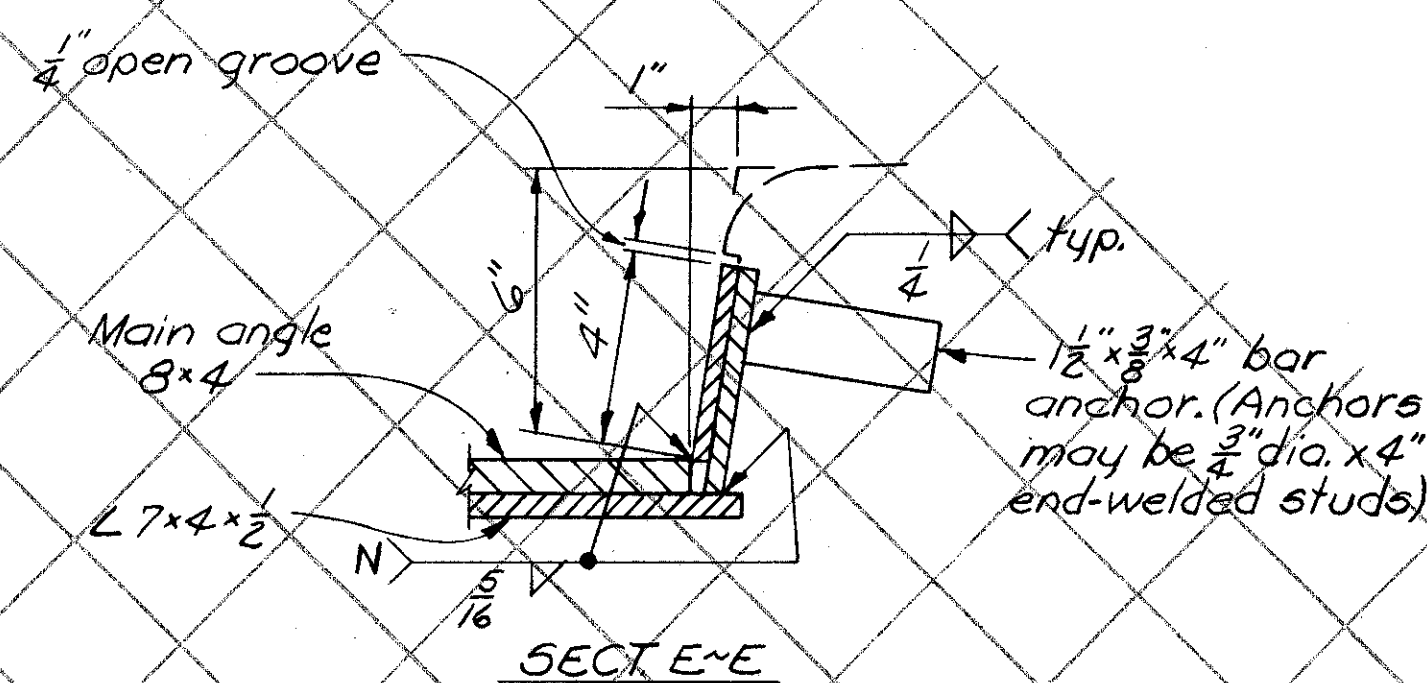
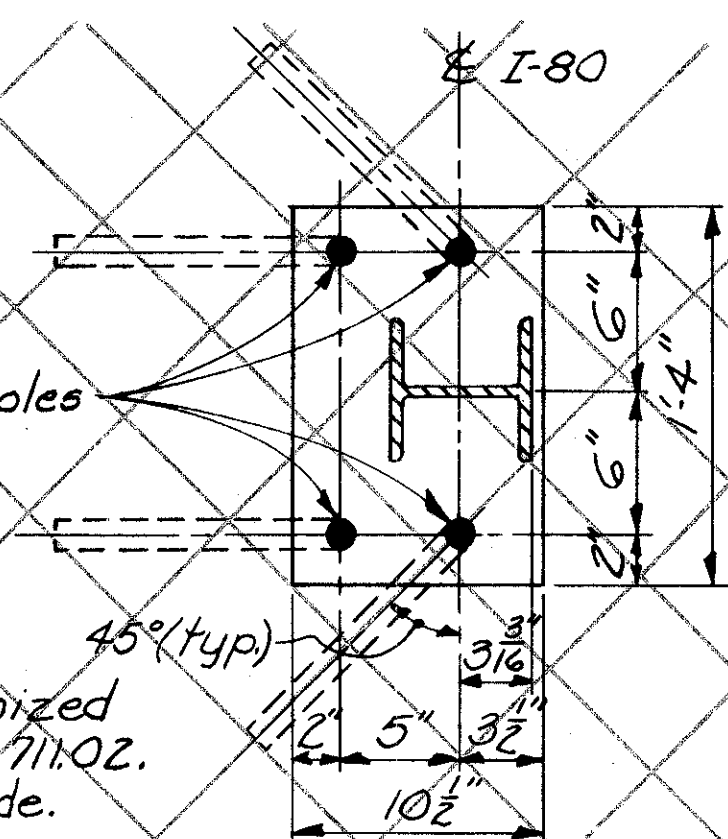
NOTES

- (1) When the panel which crosses the end dam is adjacent to the post an additional washer shall be inserted between the post and the panel.
- (2) The guard rail shall be erected so that at 68°F the bolts are located in the center of the slotted holes. The first nut on each bolt shall be tightened until all parts are in contact then released one half turn. The second nut shall be tightened to lock the first nut in place.
- (3) Bolts, nuts, and washers shall be galvanized.

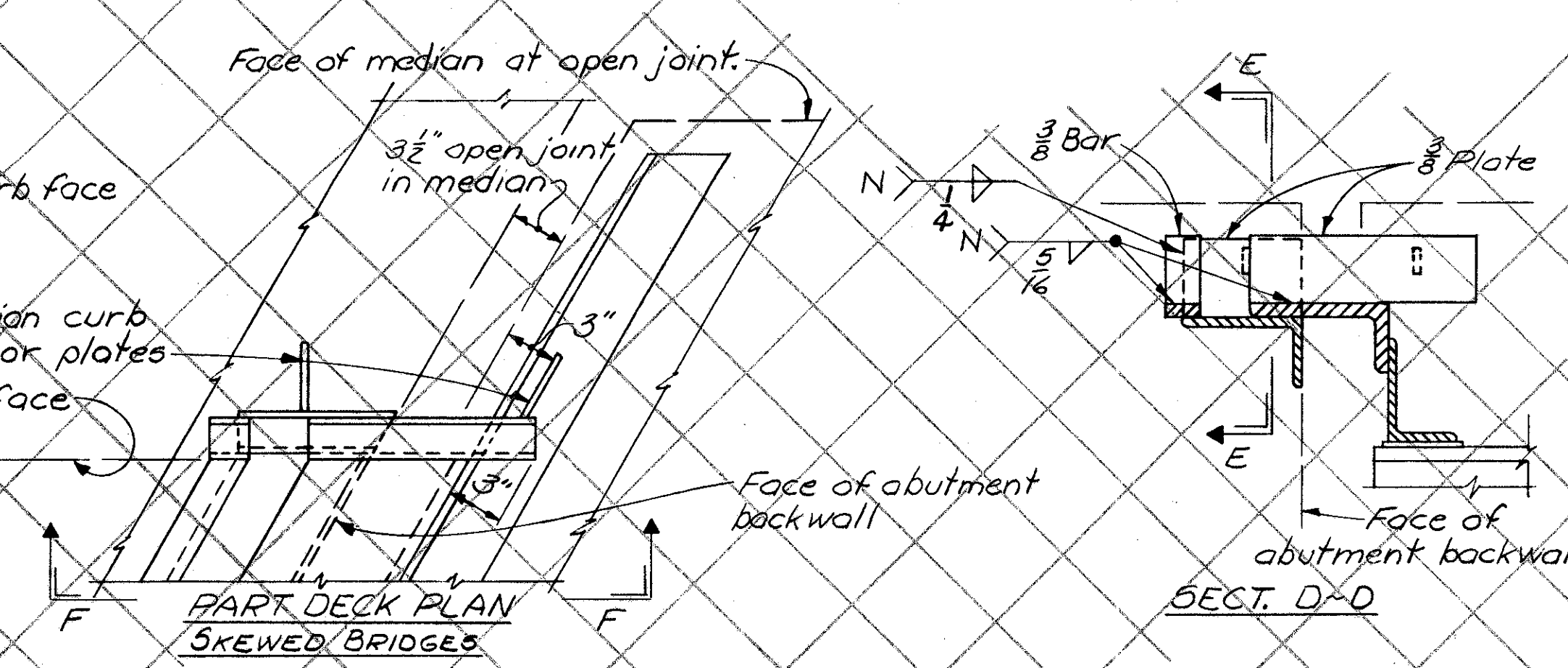
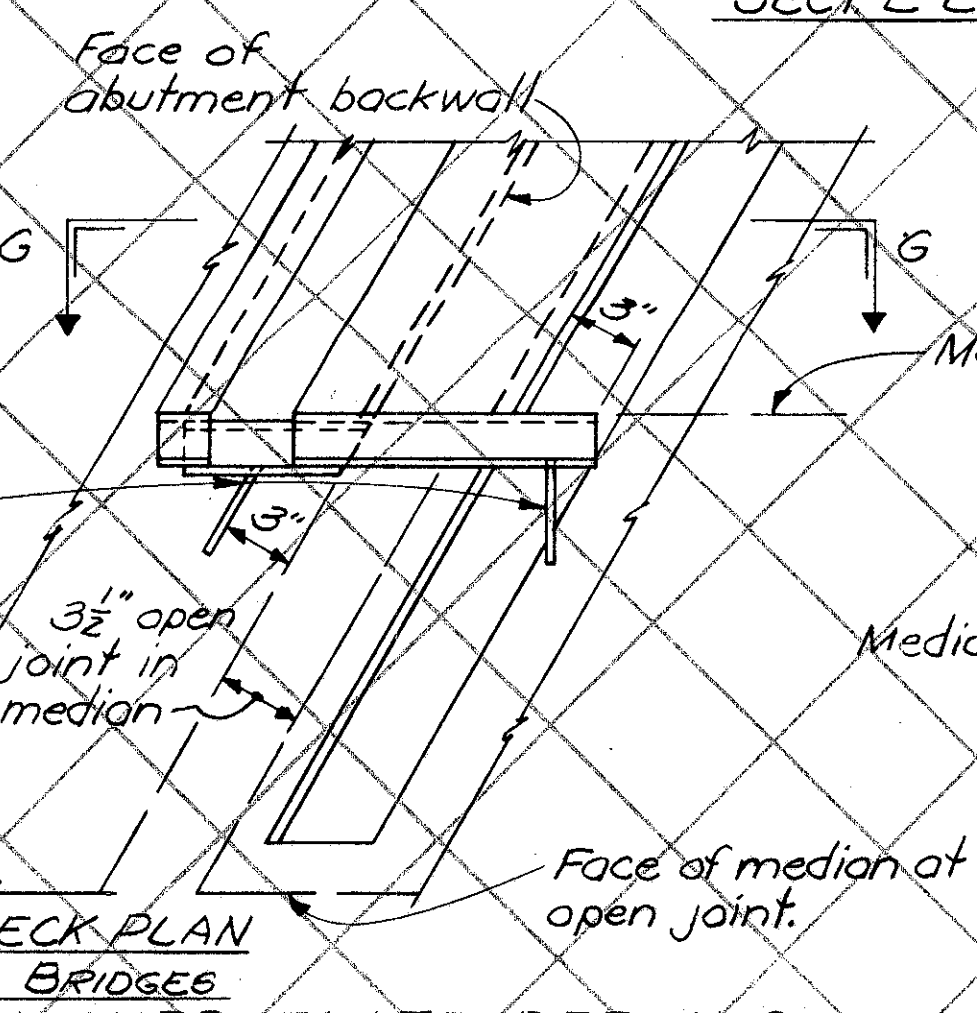
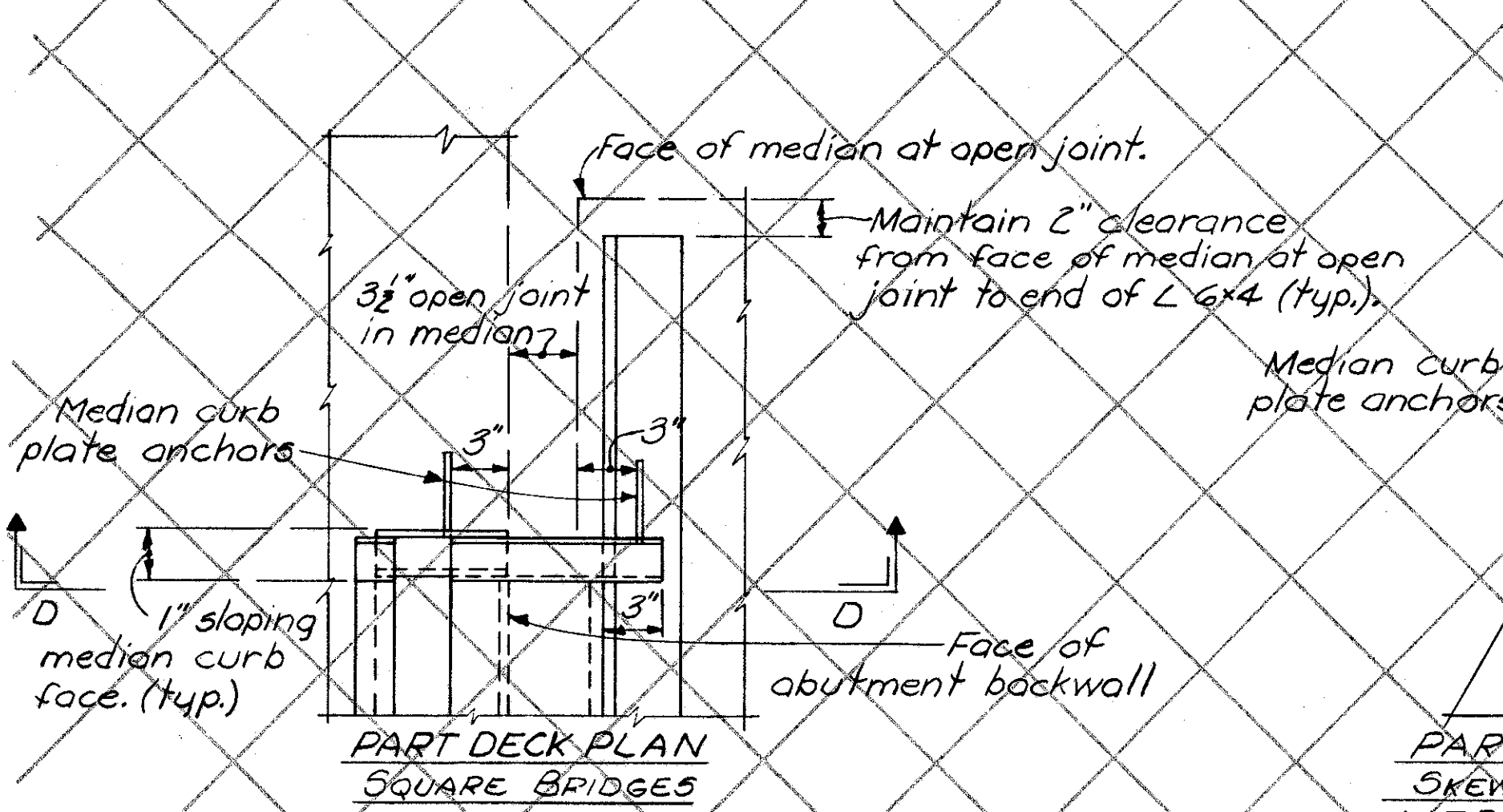
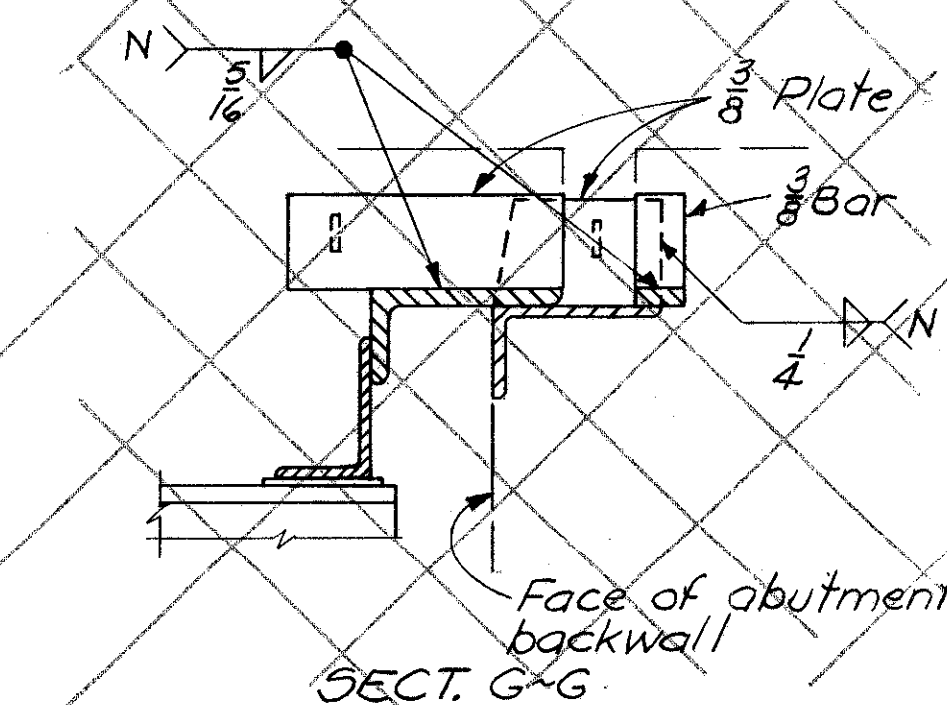
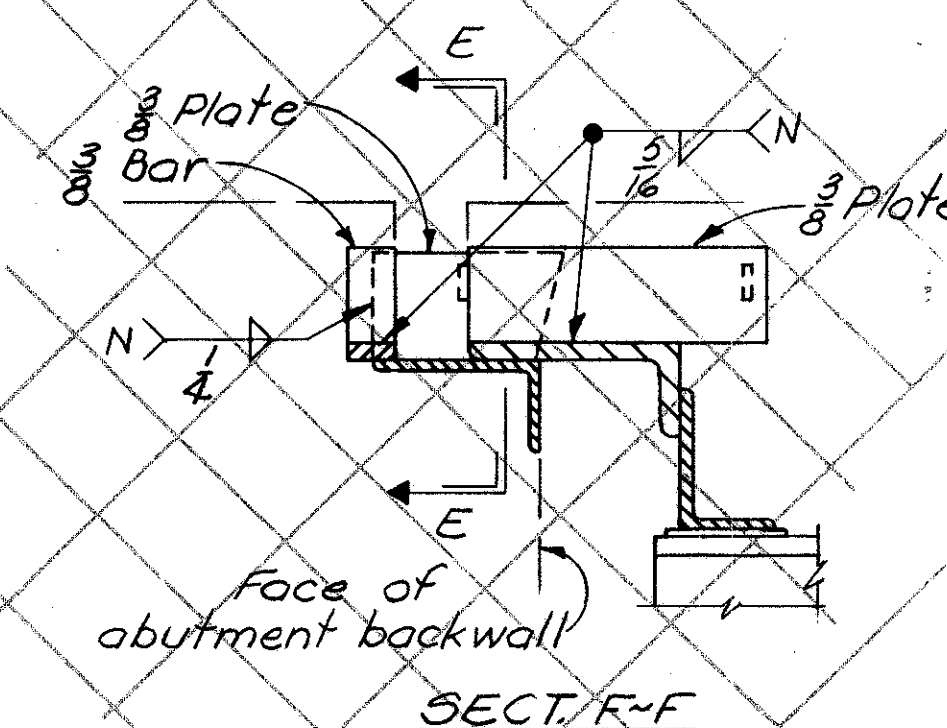
DETAIL OF SPLICE IN MEDIAN GUARD RAIL  
AT BOTH POSTS ADJACENT TO END DAM



GUARD RAIL POST SUPPORT AT MEDIAN  
FOR BRIDGES



RUSTICATION GROOVE DETAIL



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

COMMON DETAILS  
(BRIDGE)

CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GTR			H	J.E.V.	9/20/68	

# NOTES

(Bridge Nos. CUY-71-0995 and CUY-17-0821)

FHWA REGION	STATE	PROJECT
5	OHIO	

328A  
346

CUYAHOGA COUNTY  
CUY-480-8.54

## BRIDGE DECK REPAIR & OVERLAY WITH DENSE CONCRETE

Longitudinal joints in the dense concrete overlay are permitted but only to the extent necessary to facilitate changes in roadway crown, to accommodate the width of the finishing machine, and to permit maintenance of vehicular traffic. Except as approved by the Director, joints shall not be used in close proximity to raised curbs, barriers or edges of deck.

Prior to the scarification of the deck surface the Contractor shall establish periodic bench marks from the existing surface on the curbs, parapets or railings. Support rails for the finishing machine shall be set with reference to these bench marks so that the finished Dense Concrete surface generally will be  $1\frac{1}{2}$  (+0, - $\frac{1}{8}$ ) inches above the original deck surface except where low spots occur and the Dense Concrete overlay generally will not be less than  $1\frac{3}{4}$  (+0, - $\frac{1}{8}$ ) inches thick.

After the screed rails have been set to proper profile and prior to placing the overlay, the finishing machine with  $1\frac{1}{8}$  inch thick filler blocks attached to the bottom of the screed shall be passed over the entire area of the deck to be overlaid. Except where surface profile adjustments have been made, the filler blocks should generally clear the scarified deck surface by not more than  $\frac{1}{8}$  inch. Concrete which does not clear the filler blocks shall be removed. As an alternate to using the finishing machine to precheck the overlay thickness, approved templates supported on support rails may be used.

In areas where, in the opinion of the Engineer, obvious irregularities in the longitudinal surface profile would detrimentally affect the riding quality of the finished overlay surface, the screed rails and finishing machine supports shall be adjusted upward to achieve a satisfactory alignment. Where such upward adjustments, as directed, have been made, the plus overlay thickness tolerance limitation shall not apply.

The last sentence in the first paragraph on page 5 of Supplemental Specification 850 is void.

The following shall apply to 850.06: The placement of Dense Concrete overlay shall be performed and completed when the atmospheric temperature is between 45 and 75 degrees Fahrenheit, and during the night hours between sunset and sunrise. The Contractor shall submit a plan for providing adequate lighting for the work and receive written approval from the Engineer before placing the concrete. Cost of the lighting is to be included in the bid price paid per square yard for Item 850 Dense Concrete Overlay. The overlay shall not be placed when rain is imminent.

The Contractor shall suitably protect the expansion joints from the intrusion of concrete during the placement of the overlay. Adequate precautions shall be taken to protect freshly placed material from sudden or unexpected rain.

Reference shall be made to Supplemental Specification 850 dated 6-27-77 and to Std. Dwg. BP-5 dated 8-11-75.

## ITEM 516- VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS WITH SEAL, AS PER PLAN

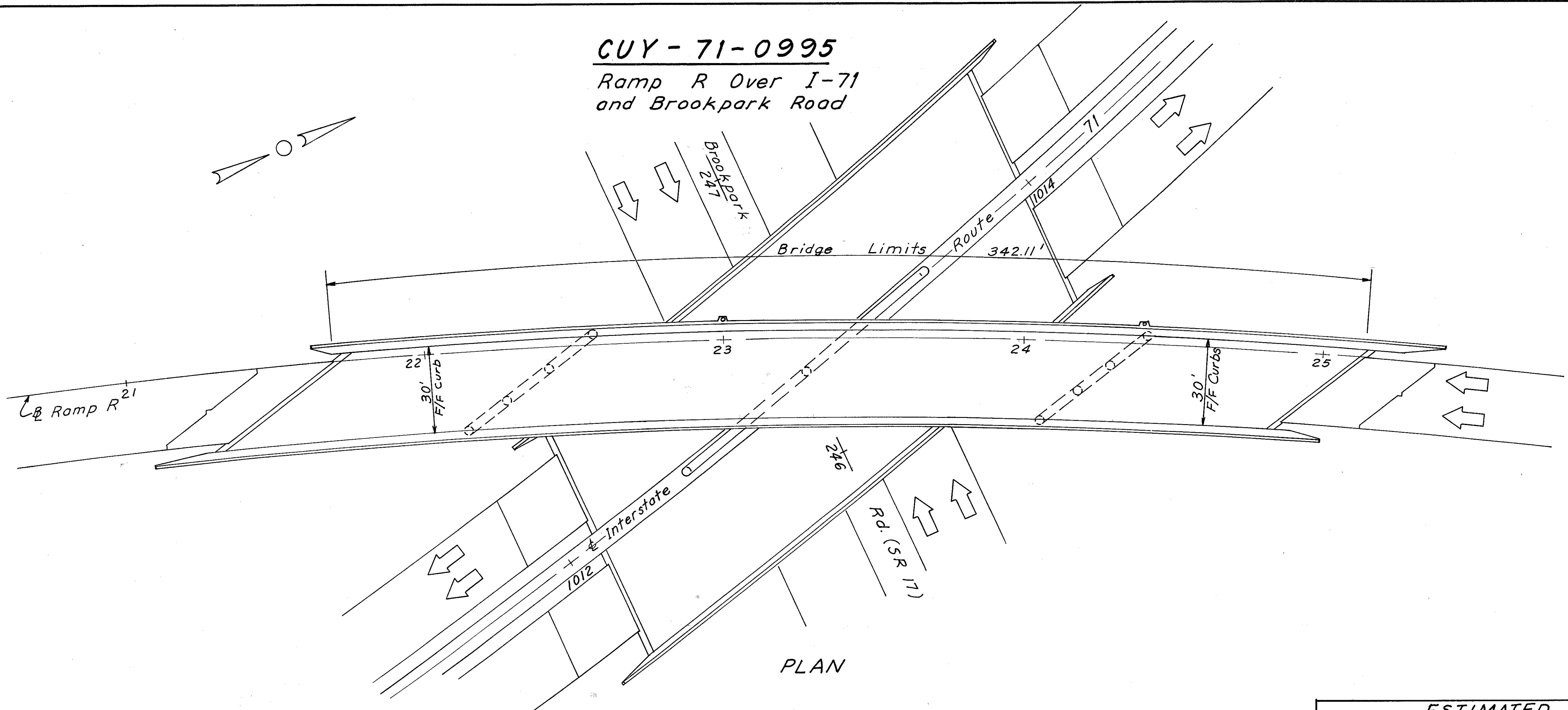
The Contractor shall furnish and weld with a continuous bead, steel bars to the existing end dam plates. Bars shall conform to the dimensions shown on the Miscellaneous Details Sheet No. 328D. See Standard Drawing BP-5 for additional details. All cost of materials, installation, cleaning the steel end dam plates, and placing the joint sealer shall be included in the unit price bid for Item 516 "Vertical Extension of Structural Expansion Joints with Seal, As Per Plan."

ambient temp of 76° - not relevant

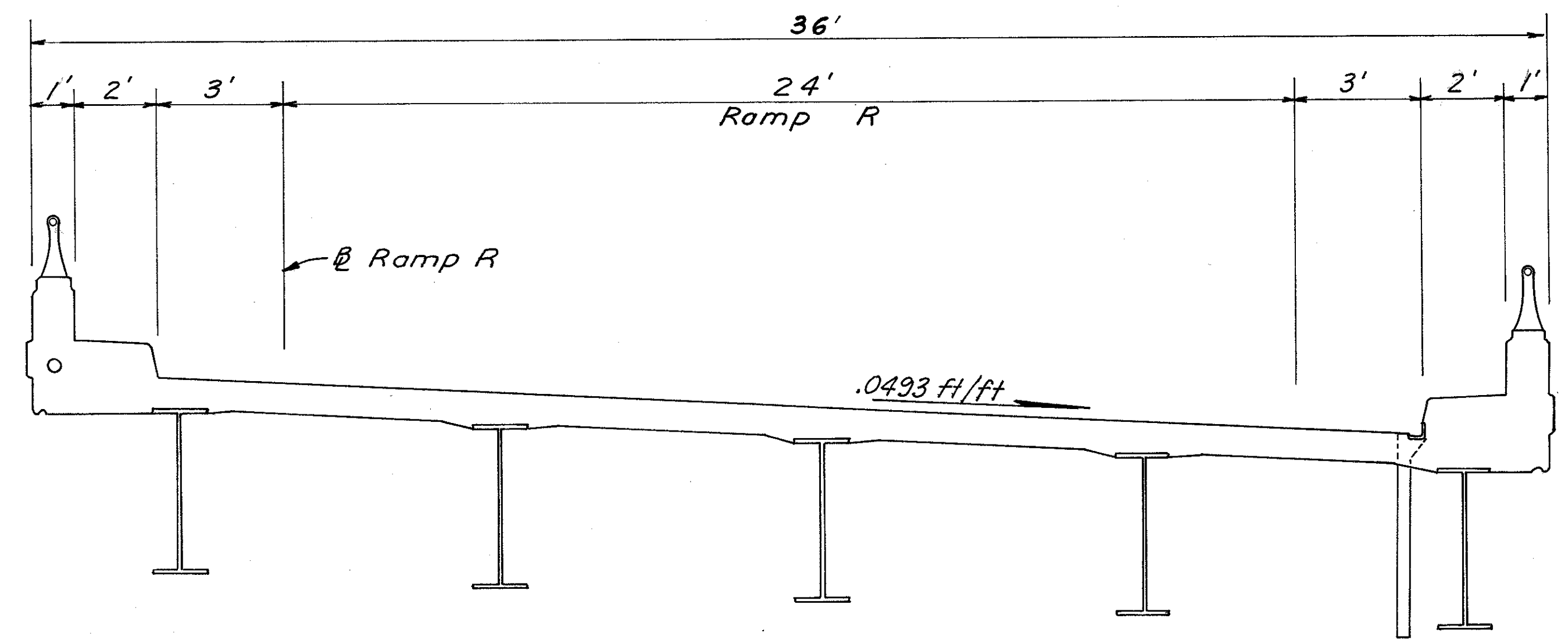
**CUY-71-0995**

Ramp R Over I-71  
and Brookpark Road

CUYAHOGA COUNTY  
CUY-480-8.54



PLAN



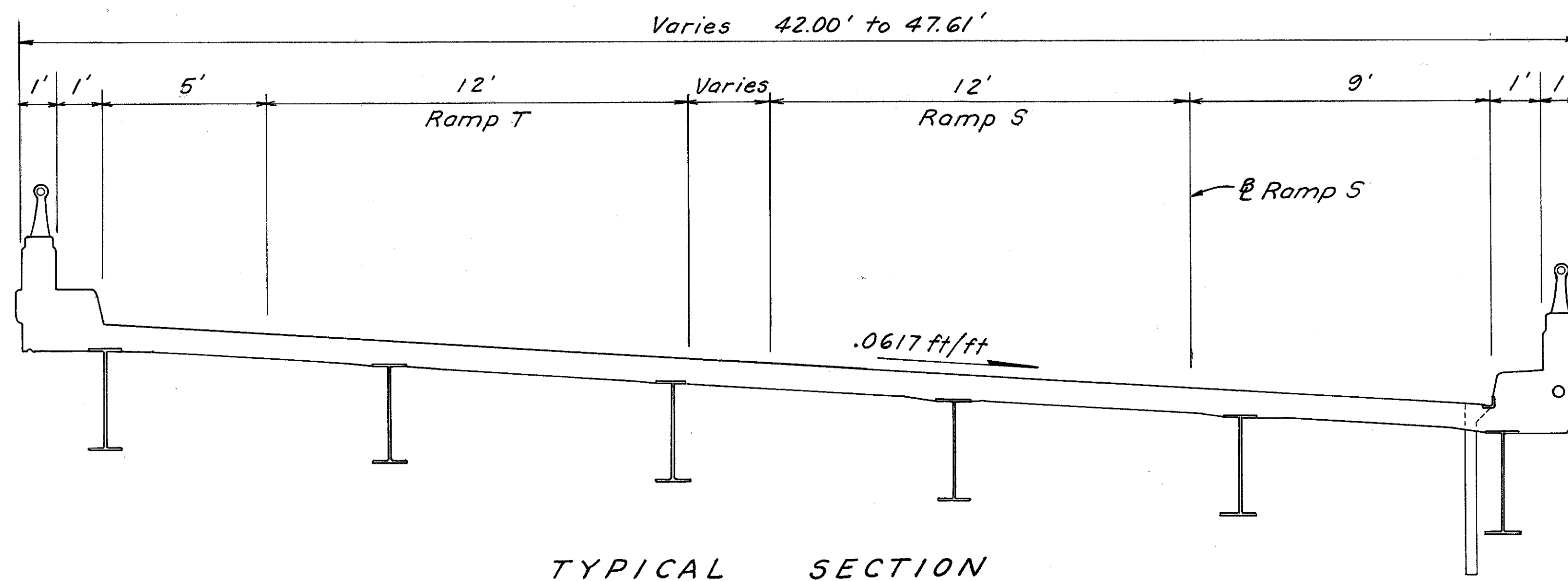
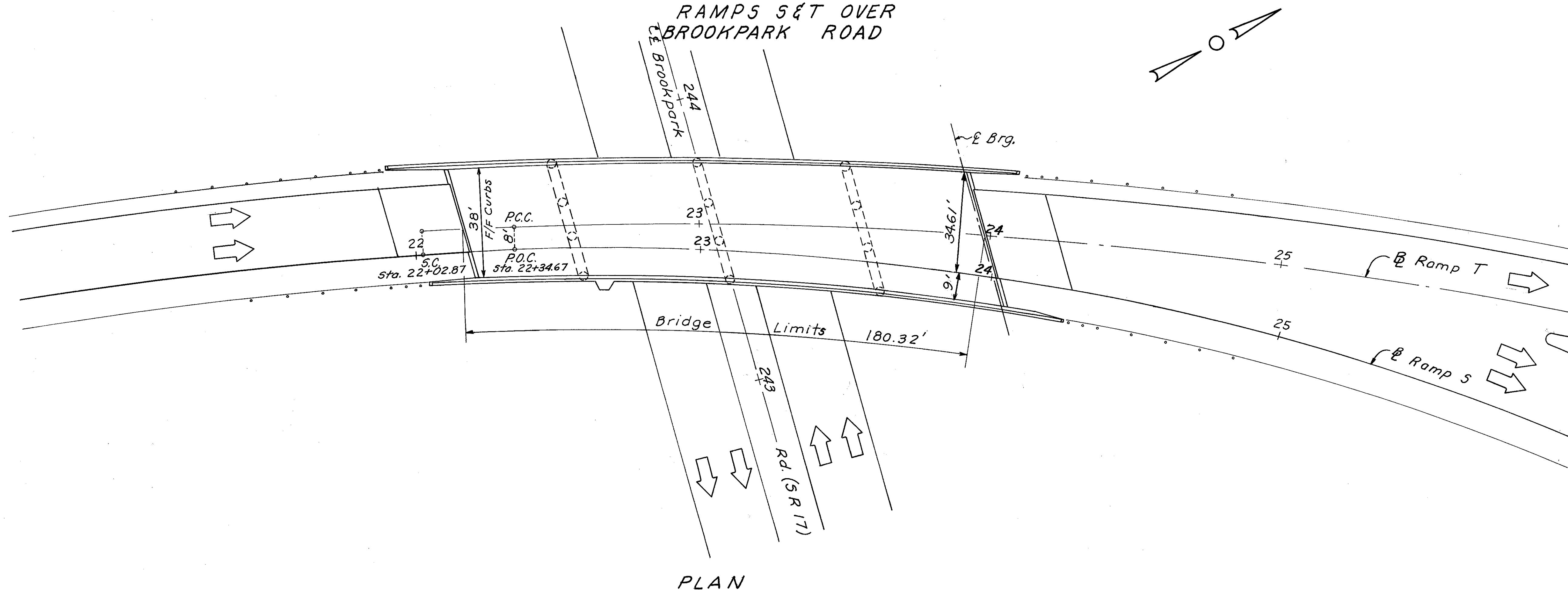
TYPICAL SECTION

ESTIMATED QUANTITIES		
ITEM 516	Vertical Extension of Structural Expansion Joints with Seal, As Per Plan	97 L.F.
ITEM 850	Dense Concrete Overlay (1 3/4 inches thick)	1132 S.Y.



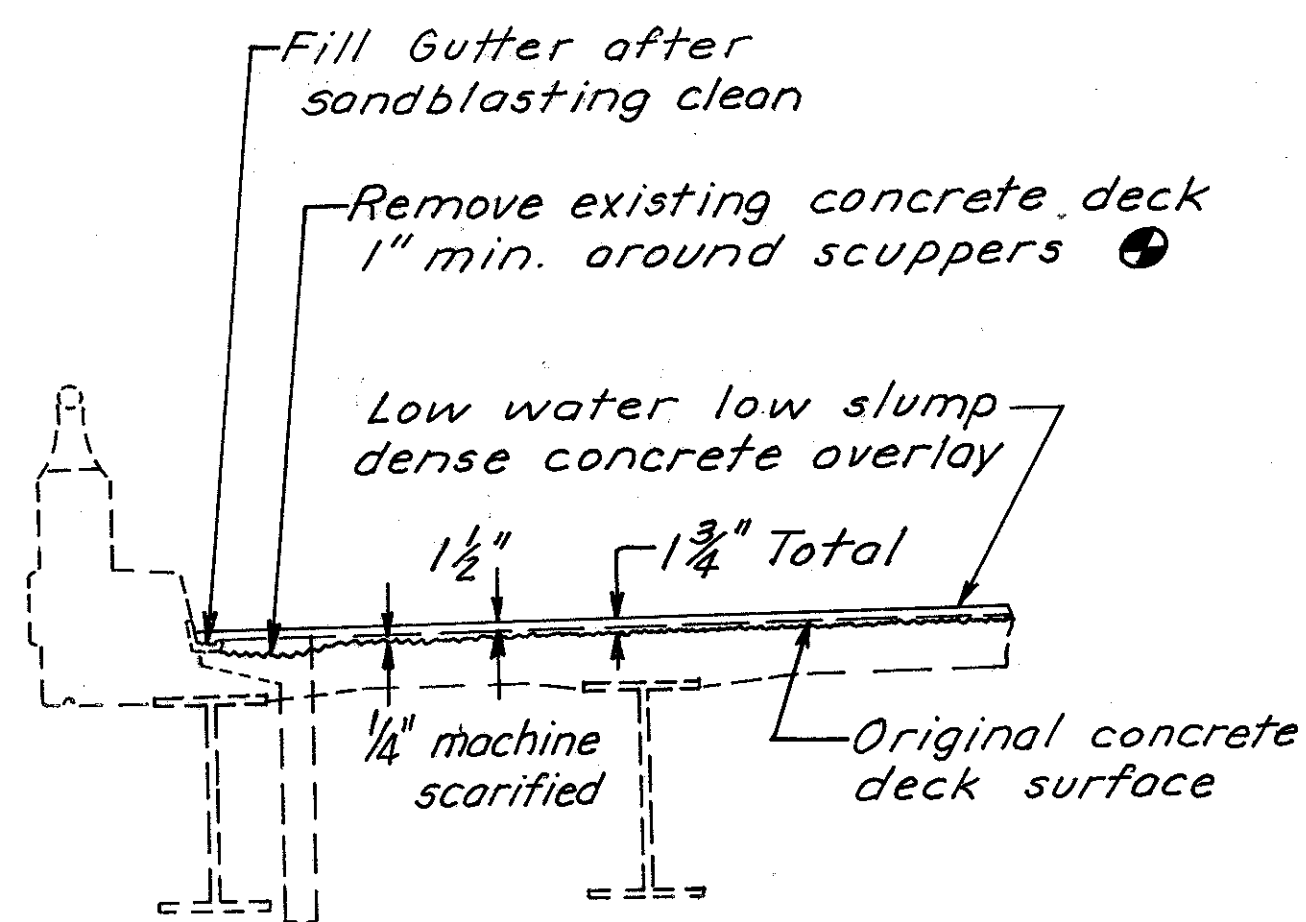
**CUY - 17 - 0821**

RAMPS S & T OVER  
BROOKPARK ROAD



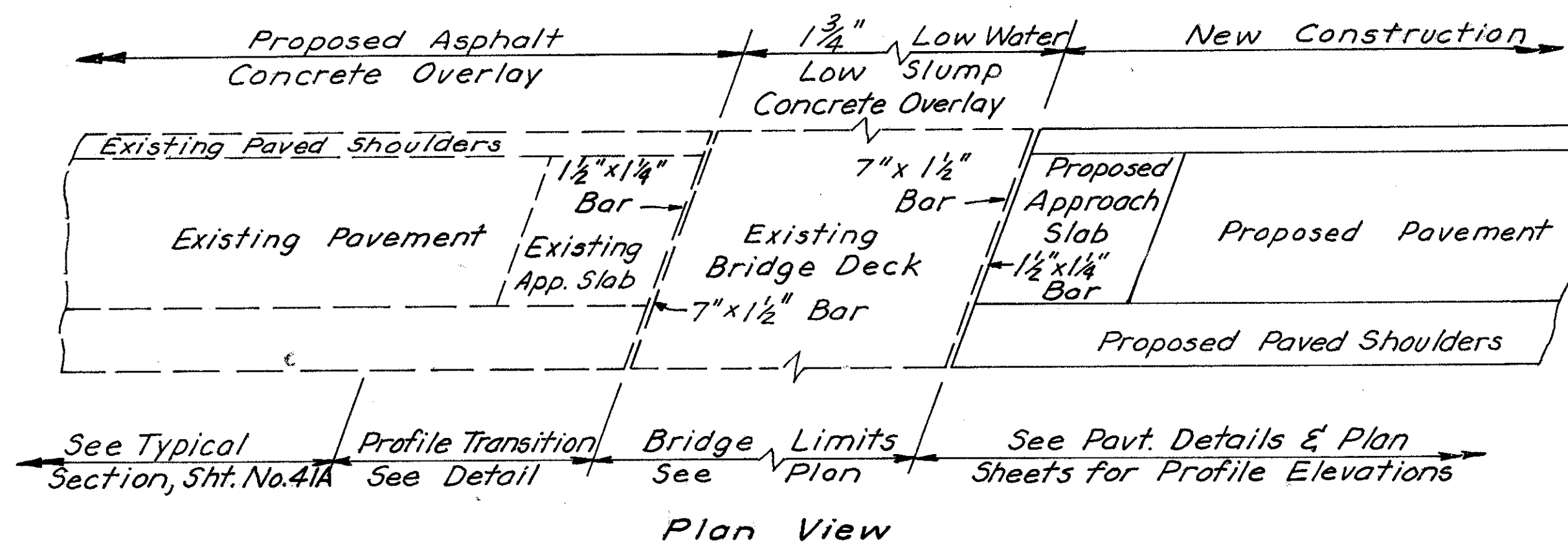
ESTIMATED QUANTITIES		
ITEM 516	Vertical Extension of Structural Expansion Joints with Seal, As Per Plan	87 L.F.
ITEM 850	Dense Concrete Overlay (1 3/4 inches thick)	802 S.Y.

TYPICAL SECTION



Typical Section - Bridge Deck

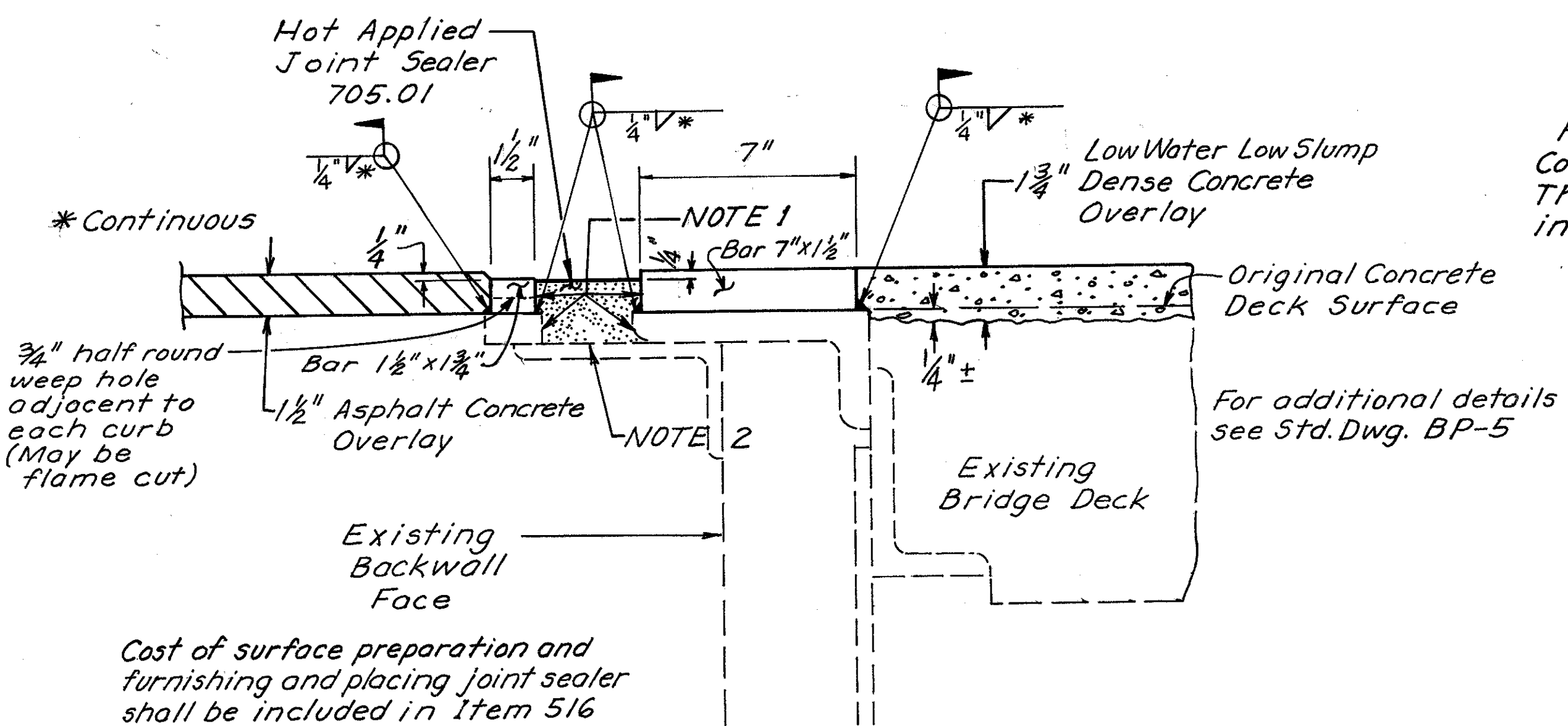
NOTE: Scuppers to be covered before placing Dense Concrete overlay. After placing overlay, remove covers and hand-finish pavement around scuppers to drain.



BRIDGE DECK OVERLAY - RAMP R & RAMP S

NOTE 1: Sandblast and wipe clean. Re-sandblast if rust forms before joint is filled.

NOTE 2: Bond to this surface shall be prevented by use of foil or other suitable bond-breaker barrier satisfactory to the Engineer. Care shall be taken not to displace barrier when placing joint sealer.



PROFILE TRANSITION  
ROADWAY APPROACH  
FROM THE EAST

Cost of surface preparation and furnishing and placing joint sealer shall be included in Item 516 for payment.

RAISING AND SEALING EXISTING  
BRIDGE END DAM