Sheet 253 revised 6-27-74 EBL
Sheets 215, 216, 229 & 230
revised 7-15-74 E.B.L.

MICROFILMED MAY 1 1981

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

U-447(8)

MICROFILMED MAY 8 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	U-447(8)	

JEFFERSON COUNTY
JEF-43-0.42

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway from sta. 829+33.44 to sta. 855+95.19 by action of the Director in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

JEF-43-0.42

DESIGN DESIGNATION

Current A.D.T. (1973)	14,200
Design Year A.D.T. (1993)	21,300
D.H.V.	2,340
D.	0.60
T.	0.05
V.	40 M.P.H.

CITY OF STEUBENVILLE
JEFFERSON COUNTY

CONVENTIONAL SIGNS

State Line
County Line
Corporation Line
Center Line
Township Line
Section Line
Fence Line
Guard Rail (existing)
Guard Rail (proposed)
Railroad
Power Poles
Telephone Poles
Trees or stumps (existing)
Trees or stumps (to be removed)
Limited Access Line — LA
Right of Way Line (existing) — RW
Right of Way Line (proposed) — RW
Gas Line — G
Water Line — W

INDEX SHEETS

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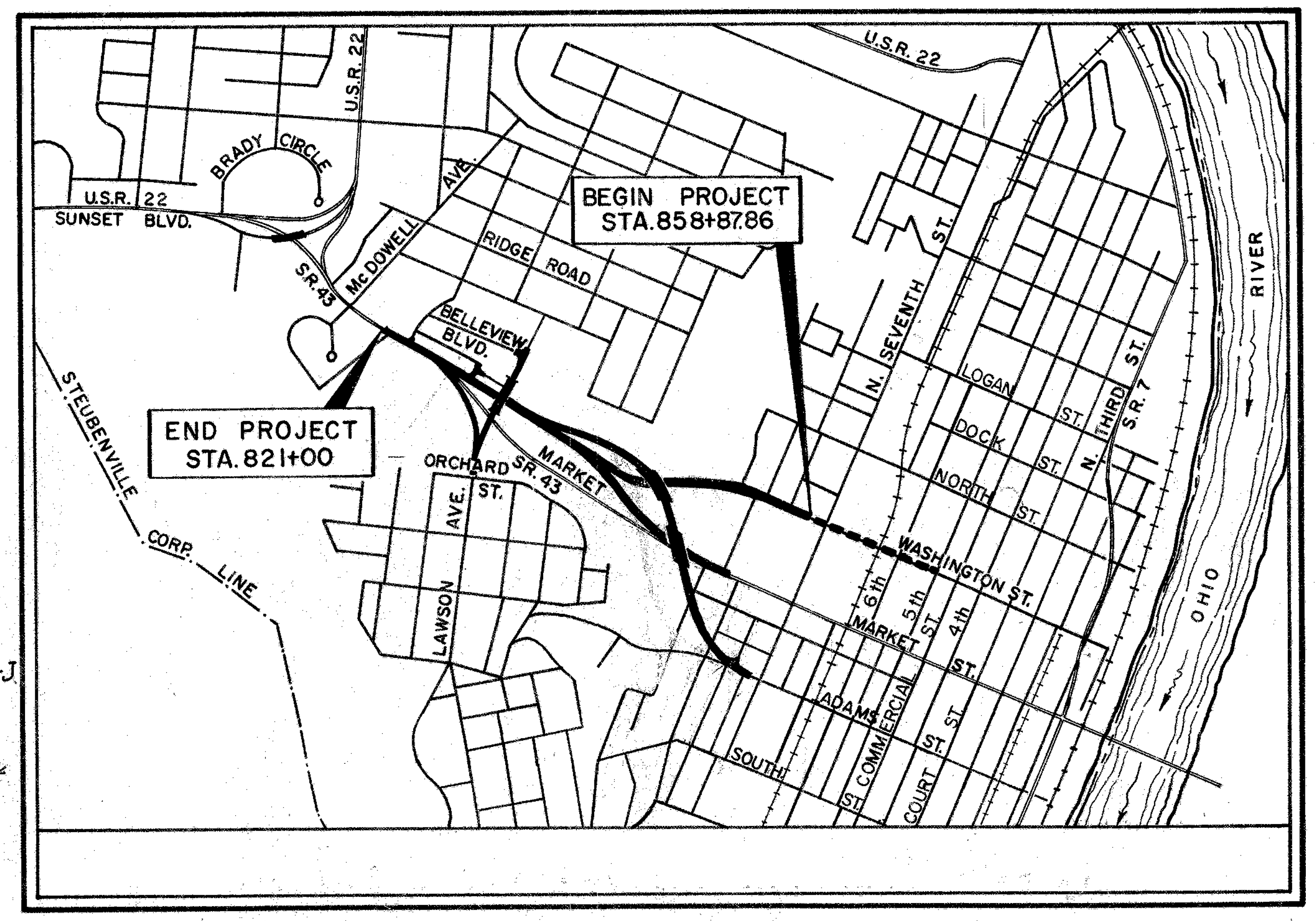
1973 SPECIFICATIONS

The standard specifications of The State of Ohio Department *of Transportation including changes and* supplemental specifications listed in the proposal shall govern this improvement.

The right of way for this improvement will be provided by The State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing of the highway to traffic and that provisions for the maintenance and safety of traffic will be as set forth on these plans and estimates.

Approved Robert J. Jenkins
Date 1-16-73 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION
APPROVED Robert B. Pfeifer
DATE 5/31/73 ENGINEER, BUREAU OF BRIDGES
APPROVED E. J. Schaeffer
DATE 6-1-73 ENGINEER, BUREAU OF ROADWAY DESIGN
APPROVED William E. Scholl
DATE 6-12-73 ASSISTANT DEPUTY DIRECTOR FOR HIGHWAY DESIGN
APPROVED Julius J. Gerwat
DATE 6-12-73 ASSISTANT DEPUTY DIRECTOR FOR REAL ESTATE
OK 5-31-73 HEN
APPROVED William Buckley
DATE 6-12-73 ASSISTANT DEPUTY DIRECTOR FOR PROGRAM DEVELOPMENT
APPROVED
DATE CHIEF ENGINEER, DIVISION OF HIGHWAYS
APPROVED William W. Baker
DATE 6-12-73 DEPUTY DIRECTOR, DIVISION OF HIGHWAYS
APPROVED William P. McKenna
DATE 6-12-73 ASSISTANT DIRECTOR, DEPARTMENT OF TRANSPORTATION
Approved Phillip Richley
Date 6/12/73 DIRECTOR, DEPARTMENT OF TRANSPORTATION
Approved Stanley F. Jazzabek
Date 4 Jan 73 City Engineer, City of Steubenville, Ohio
Approved Robert J. Amagor
Date 4 Jan 73 Service Director, City of Steubenville, Ohio
Approved William Crabbe
Date 1/4/73 Mayor, City of Steubenville, Ohio



LOCATION MAP

0 1000 2000 3000 4000
SCALE IN FEET

LEGEND

PORTION TO BE IMPROVED BY OTHERS
PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER ROADS

SCALES

PLAN 0 20 — HORIZONTAL 0 25 50
CROSS SECTION 0 10 — PROFILE VERTICAL 0 5

PLANS PREPARED BY
RACKOFF ASSOCIATES INC.
ENGINEERS – CONSULTANTS
COLUMBUS, OHIO
Melvin Rackoff
MELVIN RACKOFF

Line Data

Project

Begin Project	Sta. 858+87.86
End Project	Sta. 821+00.00
Net Length Project	3787.86 Lin. Ft. = 0.717 Mile

Work

S.R. 43	Sta. 821+00	To	Sta. 858+87.86	= 3787.86
Belleview Blvd.	0+75.82	To	11+24.35	= 1048.53
Line A	838+60	To	860+84.47	= 2224.47
Line B	843+16.72	To	852+86.00	= 969.28
Line E	1+75	To	11+65.00	= 990.00
				9,020.14 Lin. Ft. = 1.708 Mi.

File No.	JEFFERSON COUNTY JEF-43-0.42 Date of Letting .... 19 Contract No. ....

Supplemental Prints of Standard Construction Drawings

												Supplemental Specifications	
AS-1-67	6-12-69	BR-1-65	11-24-65	F-1	6-1-72	GR-6	1-1-71	L-1	6-1-65	MH-1	10-1-68		
		BR-2-67	10-15-71	F-3	3-10-69	F-6	10-1-66			MH-1A	10-1-68	836	1-1-71
BP-1	6-1-65	CB-2-2A & B	6-1-65	F-5	3-10-69	HW-4	1-1-70					808	1-1-71
BP-2	12-1-68			FACI-1	4-20-71			MC-1	6-13-69	RB-1-55	2-2-59	814	1-1-69
BP-3	1-1-71			FACI-2	4-20-71			MC-2	6-1-65			815	9-20-72
BP-4	1-1-71	CB-3	6-1-65					MC-3	6-1-73	SD-1-69 SH. 1,2,3	6-12-69	816	9-20-72
BP-5	6-1-72	CB-3A	6-1-65	GR-2A	1-1-71			MC-4	6-13-69				
BP-6	6-1-65	CB-5	9-1-69	GR-2B	11-9-71			MC-5	6-1-65				
BP-7	1-1-66	CB-458A	6-6-68					MC-6	6-1-65			941	11-25-70
				GR-4	11-9-71	I-2A	6-6-69	MC-7	10-1-68			839	11-25-70
				GR-5	1-1-71							1001	9-20-72

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ENGINEER — DATE

SCHEMATIC LAYOUT PLAN

0 50 100 200 300 400
SCALE IN FEET

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

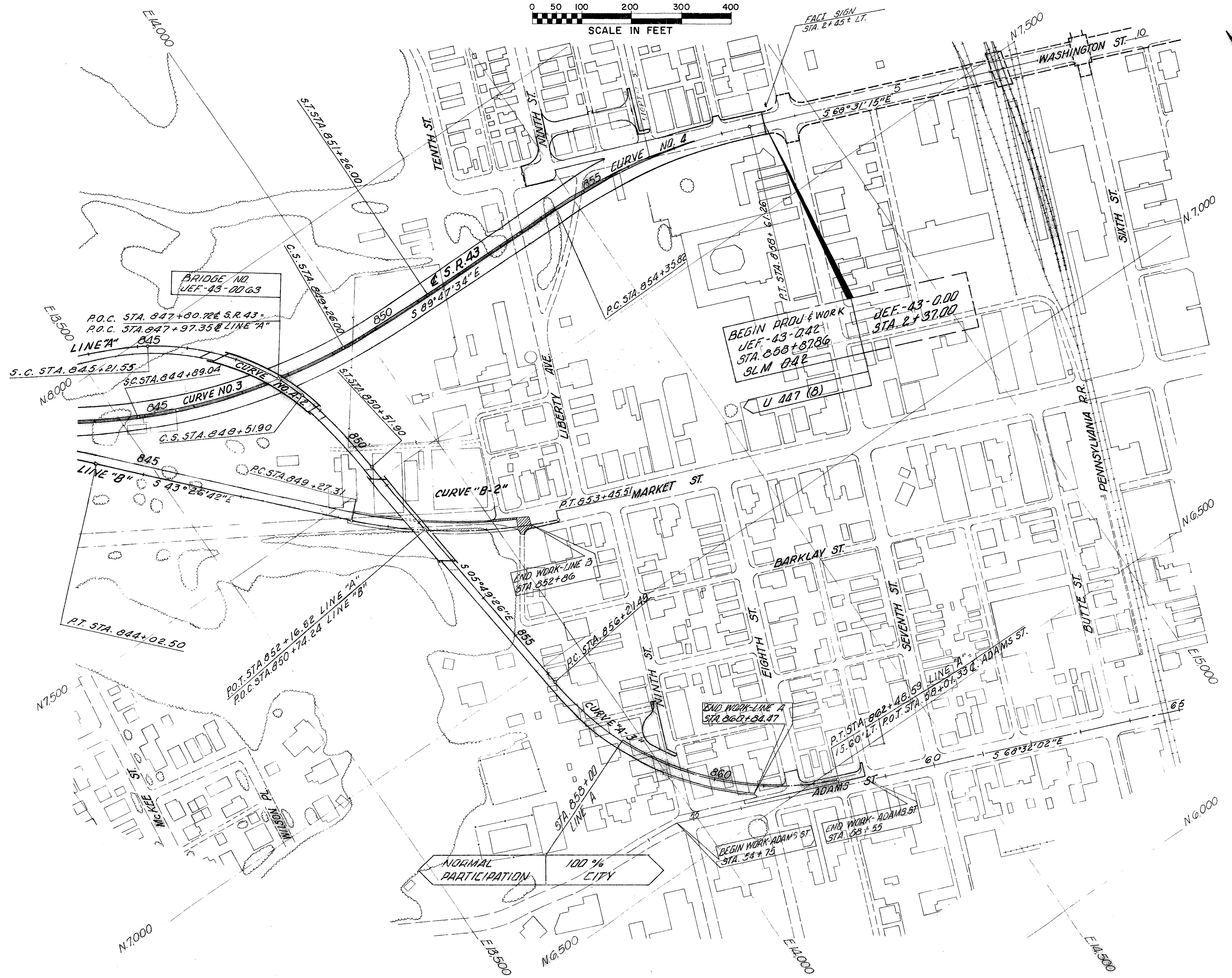
JEFFERSON COUNTY
JEF. 43 - 0.42

CURVE NO. 1	CURVE NO. 2	CURVE "A-1"	CURVE "B-1"	CURVE "D-1"	CURVE "E-1"
P.I. STA. 819+82.14	P.I. STA. 831+48.00	P.I. STA. 839+80.43	P.I. STA. 842+22.22	P.I. STA. 7+22.27	P.I. STA. 3+12.85
Δ - 23°21'40" LT.	Δ - 04°15'00" RT.	Δ - 09°36'42" LT.	Δ - 14°30'00" RT.	Δ - 67°14'07" RT.	Δ - 13°59'05" RT.
D - 05°00'00"	D - 01°28'00"	D - 04°00'00"	D - 04°00'00"	D - 10°00'00"	D - 09°00'00"
R - 1145.92'	R - 3906.53'	R - 1432.39'	R - 1432.39'	R - 572.96'	R - 636.62'
T - 236.90'	T - 144.95'	T - 120.43'	T - 182.22'	T - 380.93'	T - 78.08'
L - 467.22'	L - 289.77'	L - 240.29'	L - 362.50'	L - 672.35'	L - 155.39'
E - 24.23'	E - 2.69'	E - 5.05'	E - 11.54'	E - 115.07'	E - 4.77'

SCHEMATIC LAYOUT PLAN

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

JEFFERSON COUNTY
JEF-43-0.42



CURVE NO. 3

P.I. STA. 847+16.37
Δ = 31°50'52" LT.
Δc = 21°50'52" LT.
Dc = 05°00'00"
Rc = 1145.92'
Tc = 221.16'
Lc = 436.96'
Ec = 21.15'
Ls = 200'
θs = 05°00'00"
P = 1.45'
K = 99.98'
L.T. = 133.39'
S.T. = 66.72'
Es = 47.24'
T = 427.33'

CURVE NO. 4

P.I. STA. 856+51.02
Δ = 21°16'19" RT.
D = 05°00'00"
R = 1145.92'
T = 215.20'
L = 425.44'
E = 20.03'

CURVE "A-2"

P.I. STA. 847+19.85
Δ = 63°38'31" RT.
Δc = 39°38'31" RT.
Dc = 12°00'00"
Rc = 477.47'
Tc = 172.10'
Lc = 330.35'
Ec = 30.07'
Ls = 200'
θs = 12°00'00"
P = 3.49'
K = 99.65'
L.T. = 133.64'
S.T. = 66.95'
Es = 88.56'
T = 398.30'

CURVE "A-3"

P.I. STA. 859+70.61
Δ = 62°42'36" LT.
D = 10°00'00"
R = 572.96'
T = 349.12'
L = 627.10'
E = 97.99'

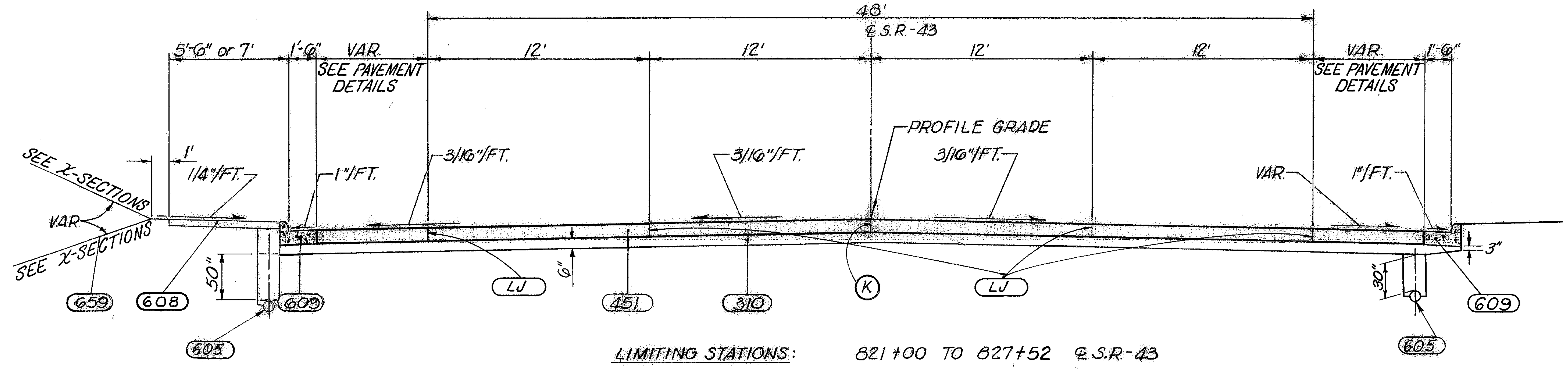
CURVE "B-2"

P.I. STA. 851+39.82
Δ = 25°05'31" LT.
D = 06°00'00"
R = 954.93'
T = 212.51'
L = 418.20'
E = 23.36'

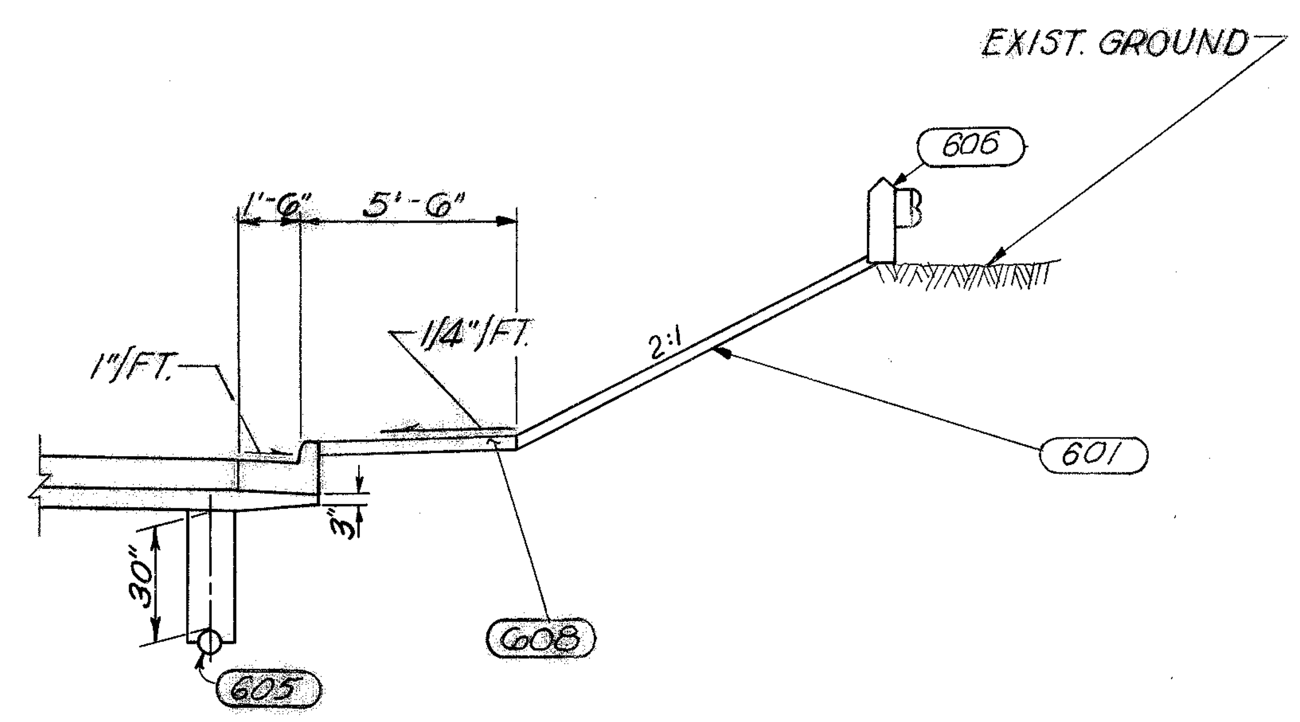
TYPICAL SECTIONS

TYPE 451

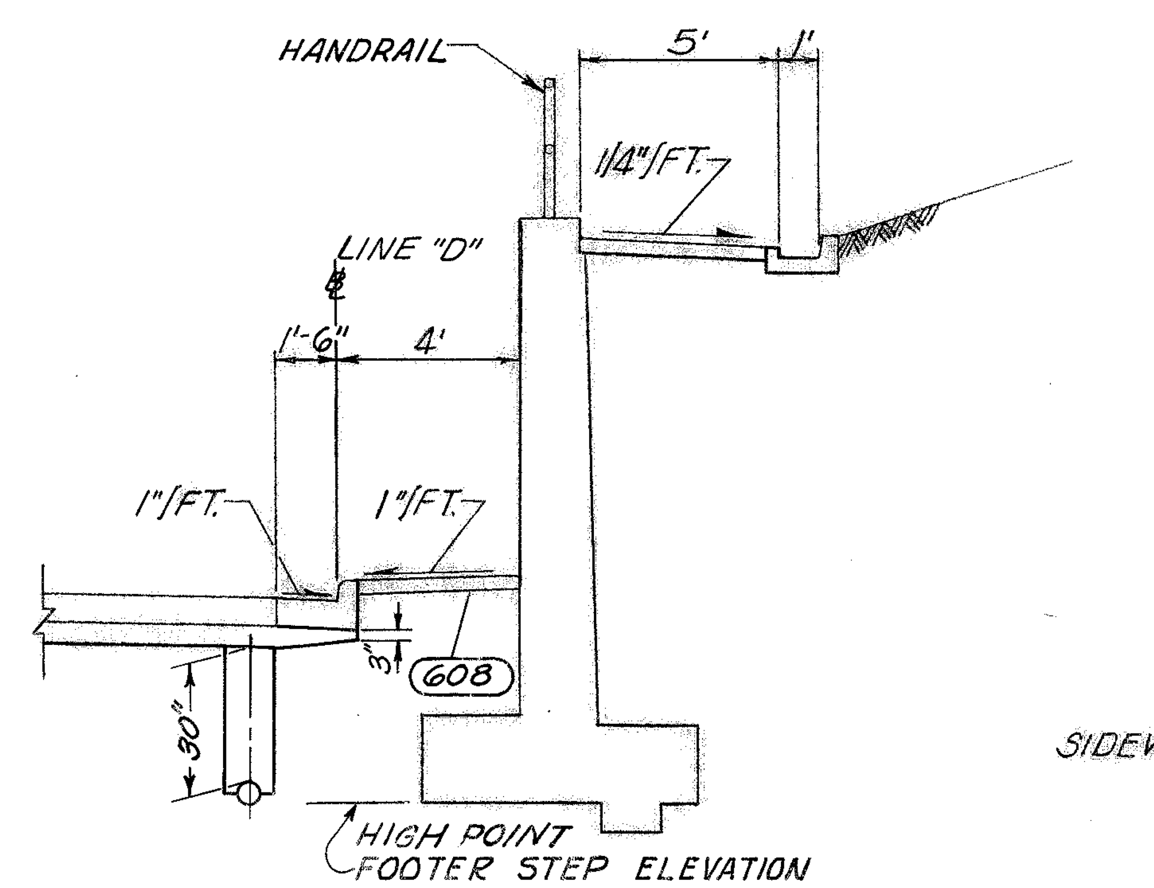
JEFFERSON COUNTY
JEF -43 - 0.42



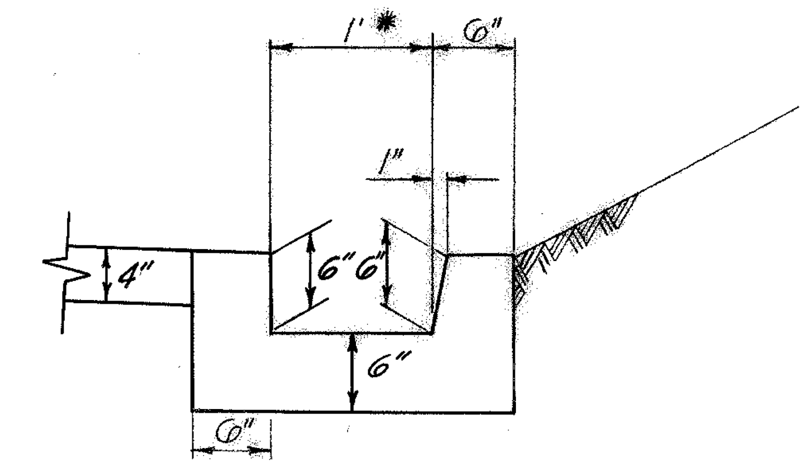
LIMITING STATIONS: 821+00 TO 827+52 ℄ S.R.-43
NOTE: SEE PAVEMENT DETAILS FOR EDGE ELEVATIONS AND JOINT LOCATIONS



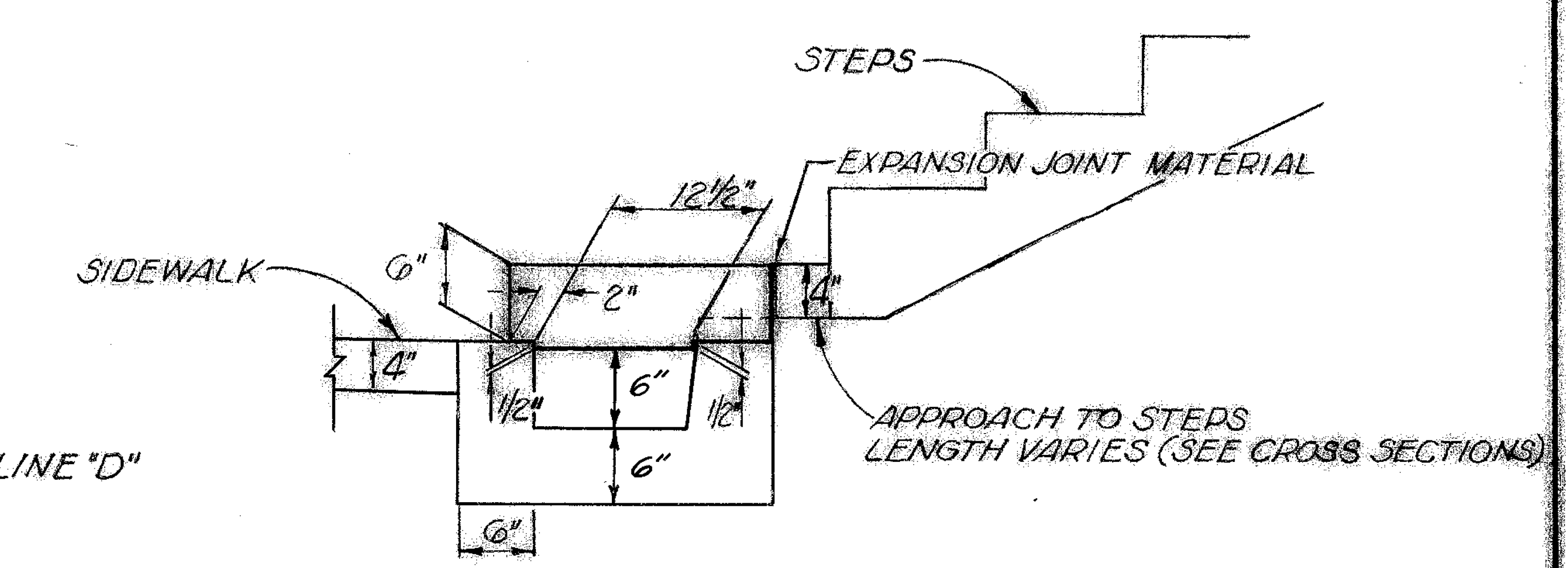
LIMITING STATIONS: 821+70 TO 823+51 ℄ S.R.-43



LIMITING STATIONS: 823+51 ℄ S.R.-43 TO 3+62 ℄ LINE "D"



DETAIL SPECIAL GUTTER



DETAIL SPECIAL GUTTER AT STEPS

* TRANSITION TO 2' IN 10' ON APPROACHES TO STANDARD No. 2-2-A CATCH BASIN.

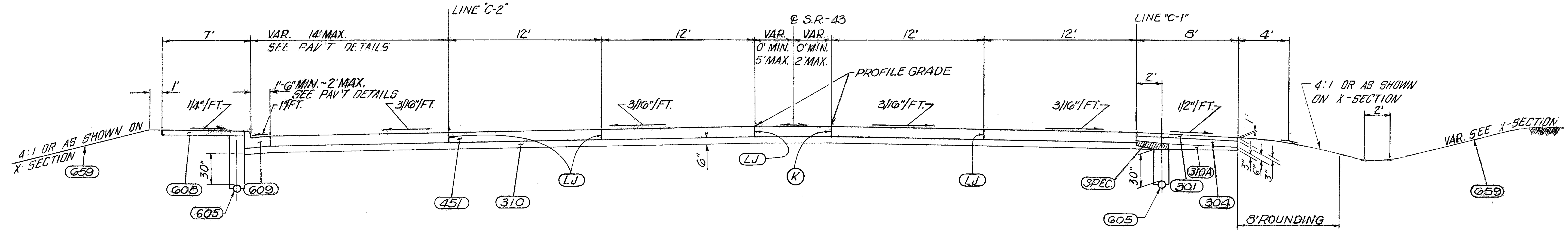
ITEM	DESCRIPTION
451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.
310	SUBBASE, GRADING A AS PER PLAN, (SEE GENERAL NOTES.)
609	COMBINATION CURB & GUTTER, STANDARD TYPE 2.
605	6" PIPE UNDERDRAINS.
601	RIP-RAP, USING 6" REINFORCED CONCRETE

ITEM	DESCRIPTION
608	4" CONCRETE WALK.
659	SEEDING AND MULCHING, (SEE GENERAL NOTE.)
LJ	STANDARD LONGITUDINAL JOINT.
K	KEY JOINT W/O TIE BARS
606	GUARD RAIL STANDARD TYPE 5

TYPICAL SECTIONS
TYPE 451

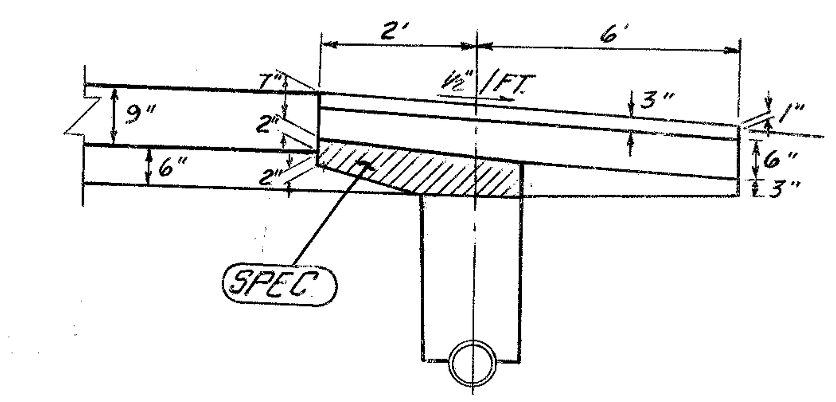
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42

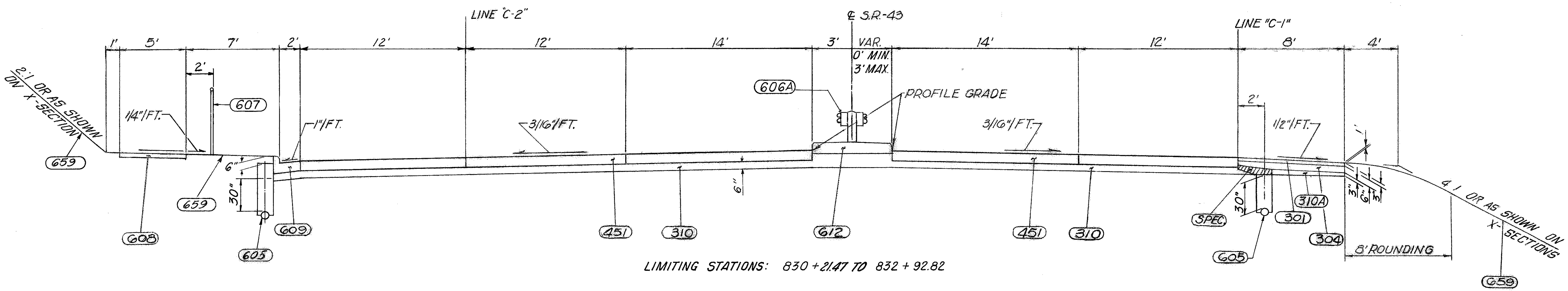


LIMITING STATIONS: 827+52 TO 830+21.47 ℄ S.R.-43

NOTE: SEE PAVEMENT DETAILS FOR EDGE ELEVATIONS AND JOINT LOCATIONS



DETAIL SPECIAL DRAINAGE CONNECTION



LIMITING STATIONS: 830+21.47 TO 832+92.82

ITEM	DESCRIPTION
451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.
310	SUBBASE, GRADING A AS PER PLAN, SEE GENERAL NOTES
310A	SUBBASE (THICKNESS AS SHOWN).
301	3" BITUMINOUS AGGREGATE BASE, 702.01 (85-100 or AC-20) or 702.09 P.-11 or RT-12 AS PER PLAN.
304	AGGREGATE BASE.
605	6" PIPE UNDERDRAINS.
606A	GUARD RAIL, STANDARD TYPE 5, BARRIER DESIGN.

ITEM	DESCRIPTION
SPEC	DRAINAGE CONNECTION, USING NO. 8 AGGREGATE.
609	COMBINATION CURB AND GUTTER, STANDARD TYPE 2.
607	FENCE, TYPE C.L.
608	4" CONCRETE WALK.
612	CONCRETE MEDIAN.
659	SEEDING AND MULCHING. SEE GENERAL NOTES
LJ	STANDARD LONGITUDINAL JOINT.
K	KEY JOINT W/O TIE BARS.

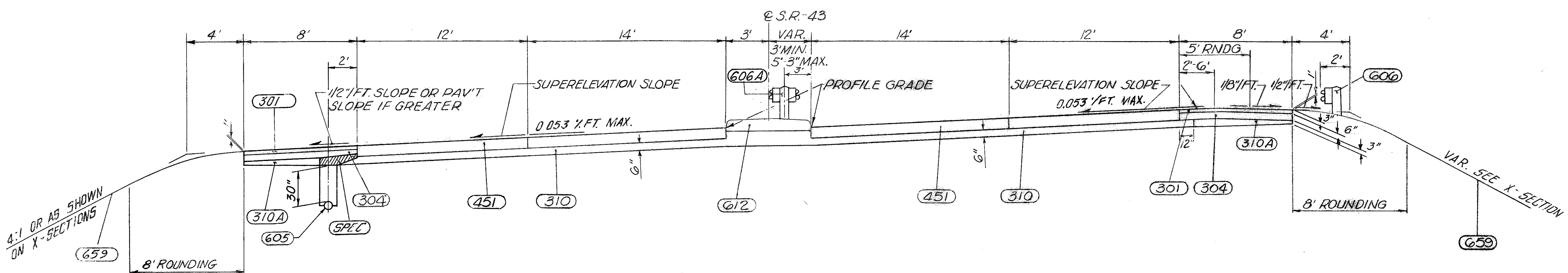
TYPICAL SECTIONS

TYPE 451

LIMITING STATIONS: 832 + 92.82 TO 843 + 00
851 + 26 ~ 854 + 35.82

✳ 12"	STA. 832 + 00	TO	STA. 834 + 55
12"	STA. 836 + 00	TO	STA. 837 + 25
30"	STA. 837 + 75	TO	STA. 843 + 00
30"	STA. 851 + 30	TO	STA. 852 + 50
50"	STA. 853 + 00	TO	STA. 854 + 08.53

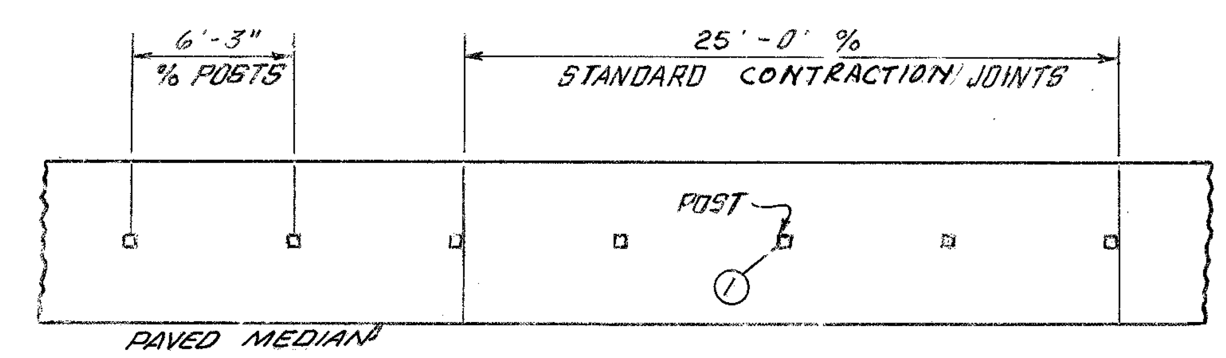
NOTE: SEE PAVEMENT DETAILS FOR EDGE ELEVATIONS AND JOINT LOCATIONS.



LIMITING STATIONS: 843 + 00 TO 851 + 26

ITEM	DESCRIPTION
451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.
310	SUBBASE, GRADING A AS PER PLAN (SEE GENERAL NOTES)
310A	SUBBASE. (THICKNESS AS SHOWN).
301	3" BITUMINOUS AGGREGATE BASE, 702.01 (85-100 or AC-20) or 702.09 RT-11 or RT-12 AS PER PLAN.
304	AGGREGATE BASE.
605	6" PIPE UNDERDRAINS.
SPEC.	DRAINAGE CONNECTION, USING NO. 8 AGGREGATE.

ITEM	DESCRIPTION
606A	GUARD RAIL, TYPE 5 BARRIER DESIGN.
609	COMBINATION CURB AND GUTTER, STANDARD TYPE 2.
606	GUARD RAIL, STANDARD TYPE 5.
607	FENCE, TYPE CL.
608	4" CONCRETE WALK.
612	CONCRETE MEDIAN.
659	SEEDING AND MULCHING. SEE GENERAL NOTE
LJ	STANDARD LONGITUDINAL JOINT.
K	KEY JOINT W/O TIE BARS.



JOINT DETAIL AT GUARDRAIL POSTS

NOTE IN LIEU OF THE SPACING REQUIREMENTS OF STANDARD DRAWING M-C-6, EXPANSION & CONTRACTION JOINTS SHALL BE PROVIDED IN THE CONCRETE MEDIAN AS REQUIRED HEREON WHENEVER GUARDRAIL IS SPECIFIED.

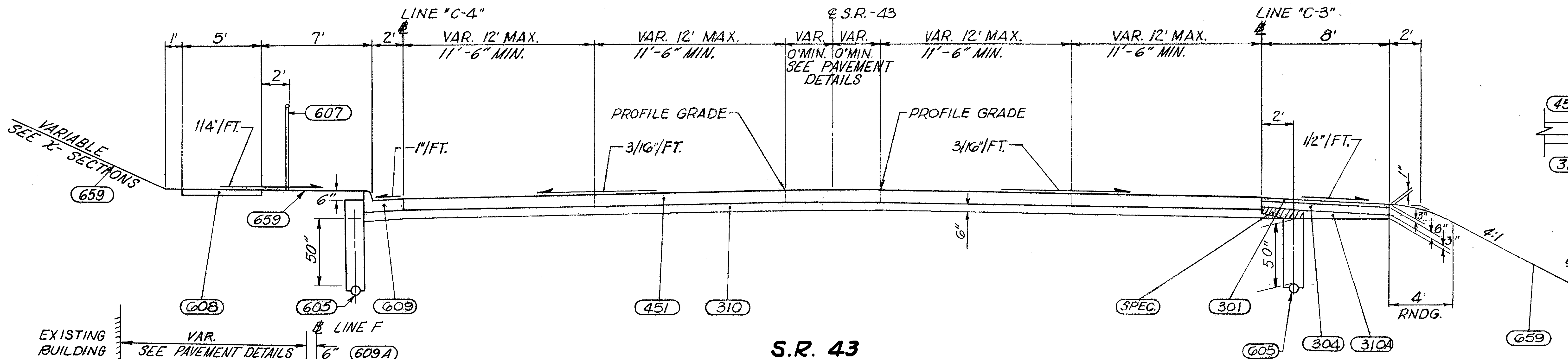
1/4" EXPANSION JOINTS, 705.03, SHALL BE PROVIDED AT EACH CONSTRUCTION JOINT AT EACH END OF EACH INLET. COST INCLUDED WITH 612 FOR PAYMENT. CONTRACTION JOINTS SHALL CONFORM WITH DETAILS SHOWN ON STANDARD DRAWING BP-4, 305 BASE, EXCEPT THAT SPACING SHALL BE 25'. CIRCULAR OR SQUARE OPENINGS MAY BE CAST 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 GROUT OR CLASS "C" CONCRETE.

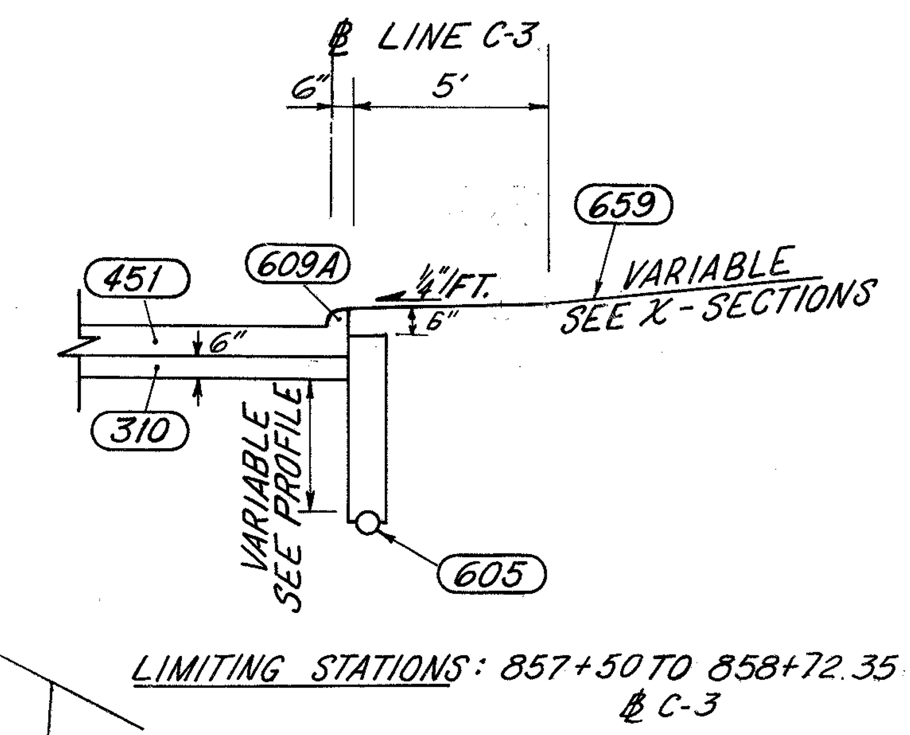
① FOR SQUARE-SAWED WOOD POSTS. 1/4" 705.03 EXPANSION JOINT MATERIAL SHALL BE USED ON ALL FOUR SIDES FOR THE DEPTH OF MEDIAN.

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.

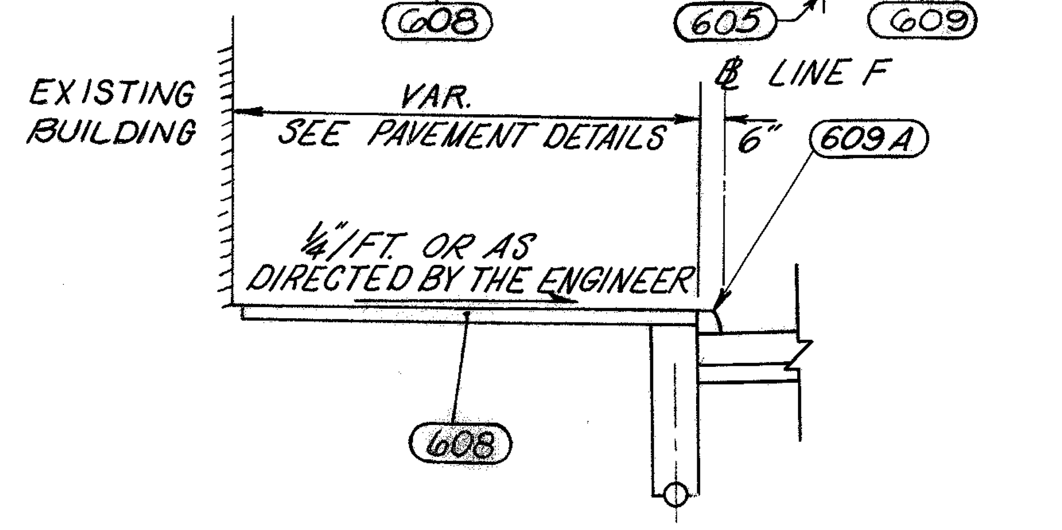
TYPICAL SECTIONS

TYPE 451





LIMITING STATIONS: 857+50 TO 858+72.35 ¢ C-3

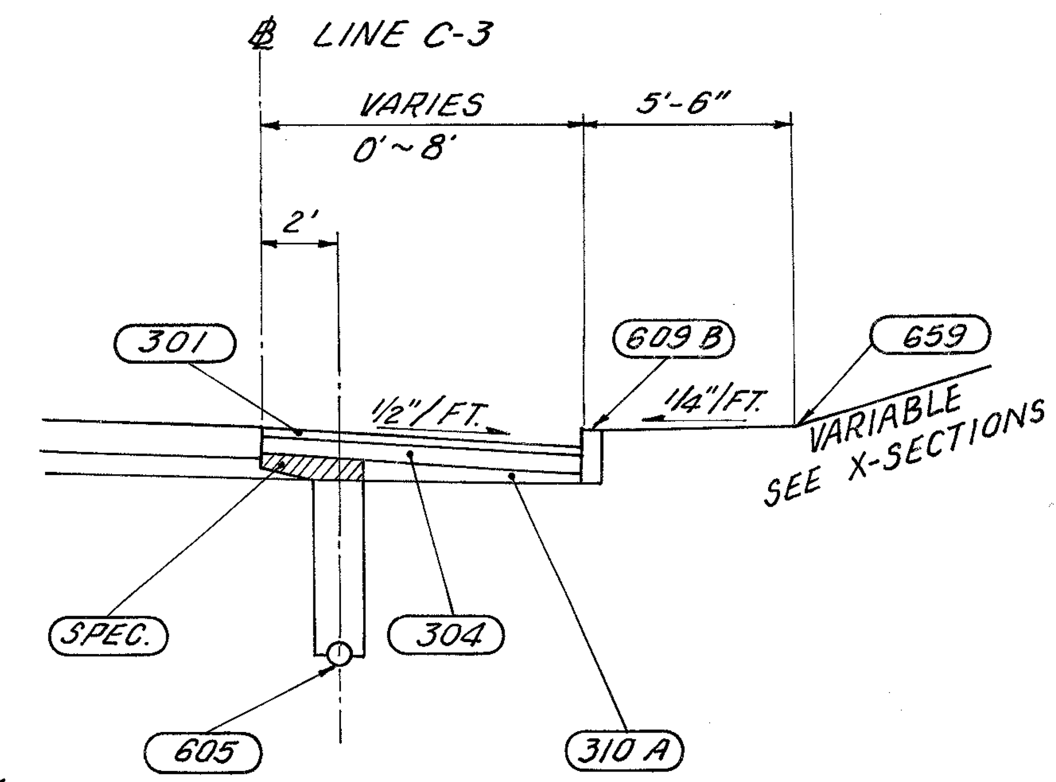


LIMITING STATIONS: 856 82.95 TO 858+72.44 LINE C-4

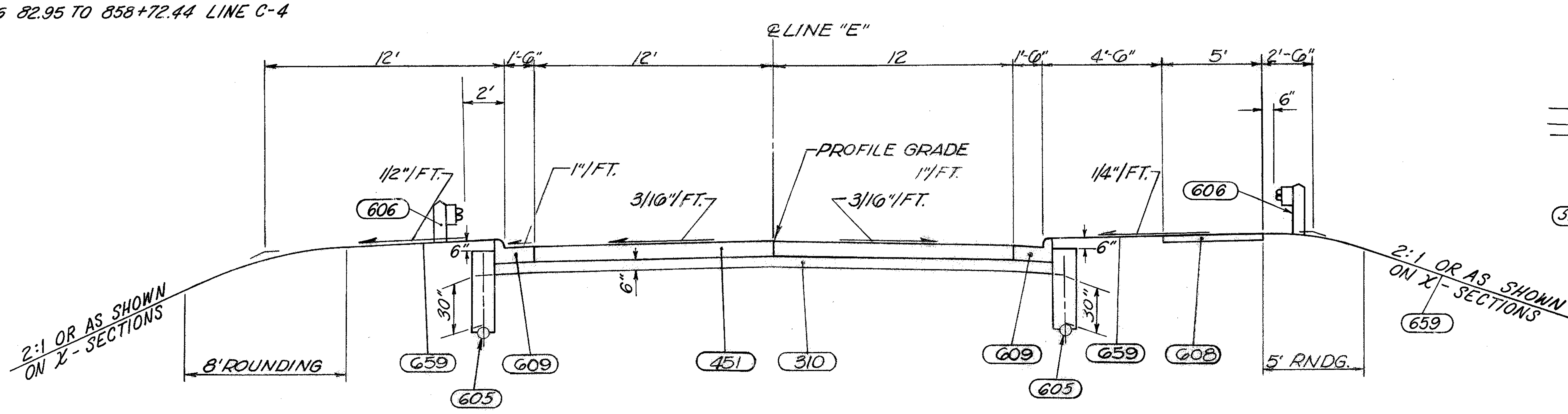
S.R. 43

LIMITING STATIONS: 854+35.82 TO 858+87.86 ¢ S.R. 43

NOTE : SEE PAVEMENT DETAILS FOR EDGE ELEVATIONS AND JOINT LOCATIONS



LIMITING STATIONS: 856+10 TO 857+50 ¢ C-3



LINE "E"

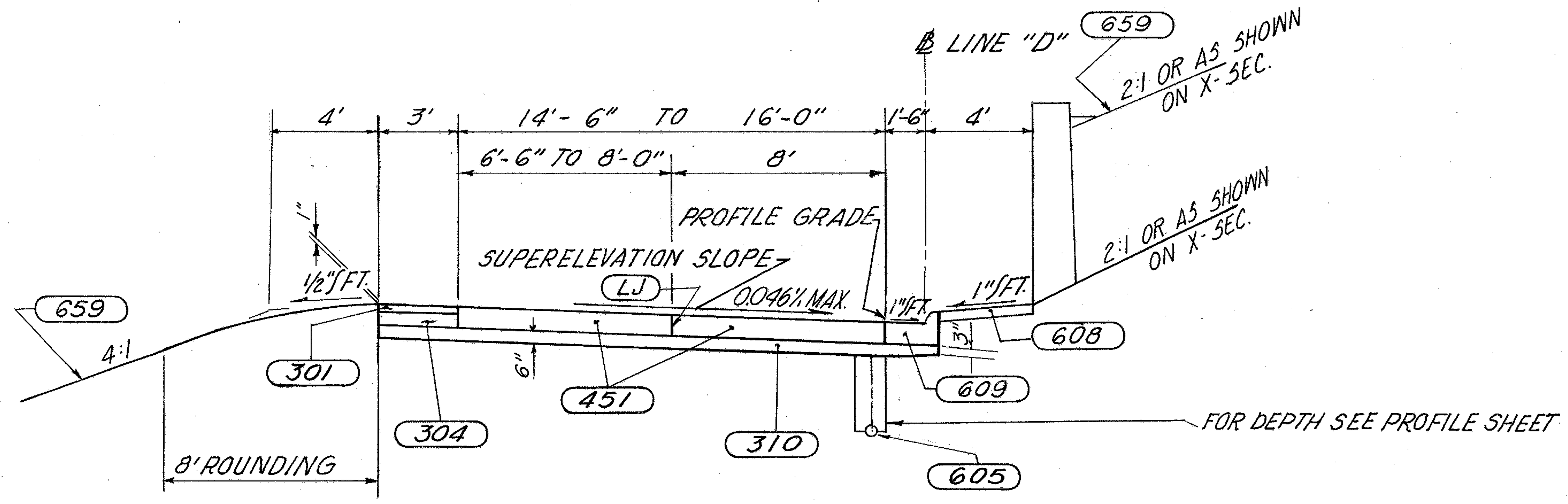
LIMITING STATIONS: 3+27.24 TO 5+40.18 & 8+83.43 TO 11+60.00

ITEM	DESCRIPTION
451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
310	SUBBASE, GRADING A AS PER PLAN (SEE GENERAL NOTES.)
310A	SUBBASE (THICKNESS AS SHOWN)
301	3" BITUMINOUS AGGREGATE BASE 702.01 (85-100 or AC-20) or 702.09 RT-11 or RT-12 AS PER PLAN.
304	AGGREGATE BASE
605	6" PIPE UNDERDRAINS
SPEC.	DRAINAGE CONNECTION USING NO. 8 AGGREGATE.
609A	CONCRETE CURB, STANDARD TYPE 2-A

ITEM	DESCRIPTION
609	COMBINATION CURB AND GUTTER STANDARD TYPE 2.
606	GUARD RAIL STANDARD TYPE 5.
607	FENCE TYPE CL.
608	4" CONCRETE WALK
659	SEEDING AND MULCHING, SEE GENERAL NOTE.
LJ	STANDARD LONGITUDINAL JOINT.
609B	CONCRETE CURB STANDARD TYPE 6.

TYPICAL SECTIONS

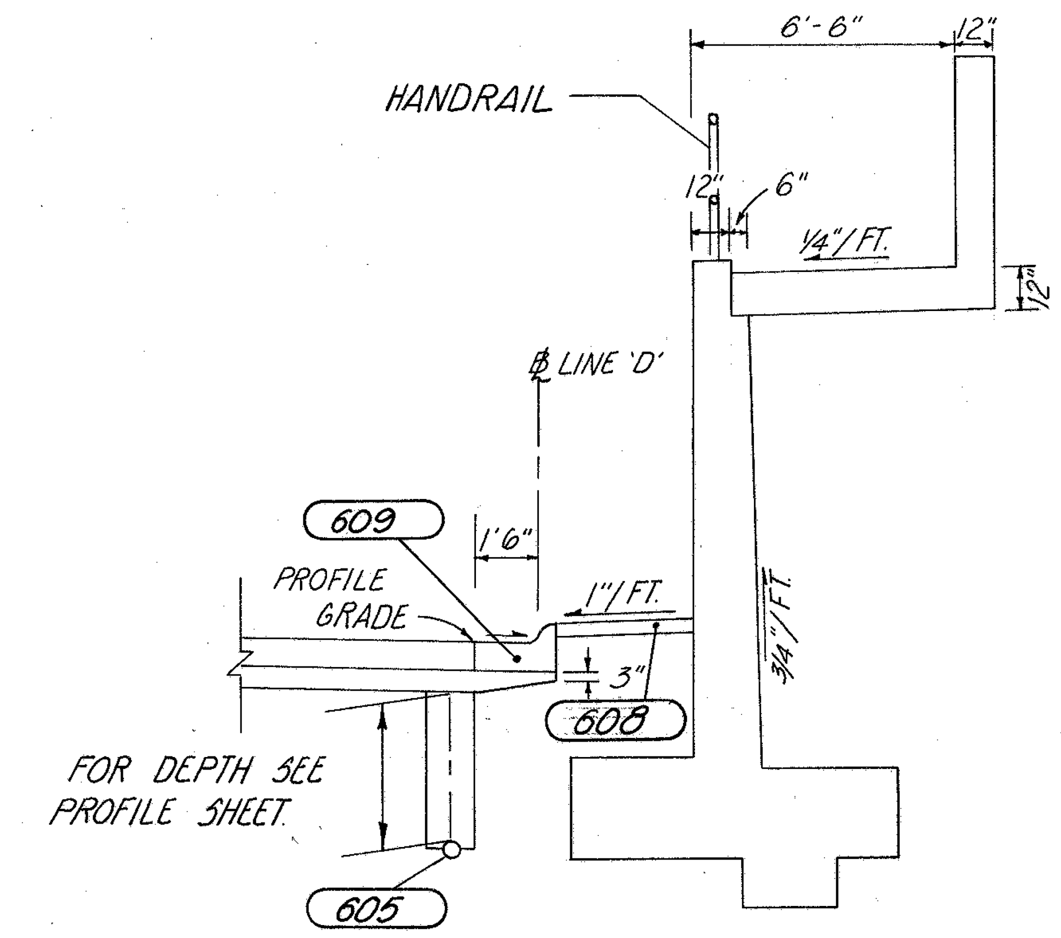
TYPE 451



LINE "D"

LIMITING STATIONS: 4+83.00 TO 9+70.88

NOTE : SEE PAVEMENT DETAILS FOR EDGE ELEVATIONS AND JOINT LOCATIONS.

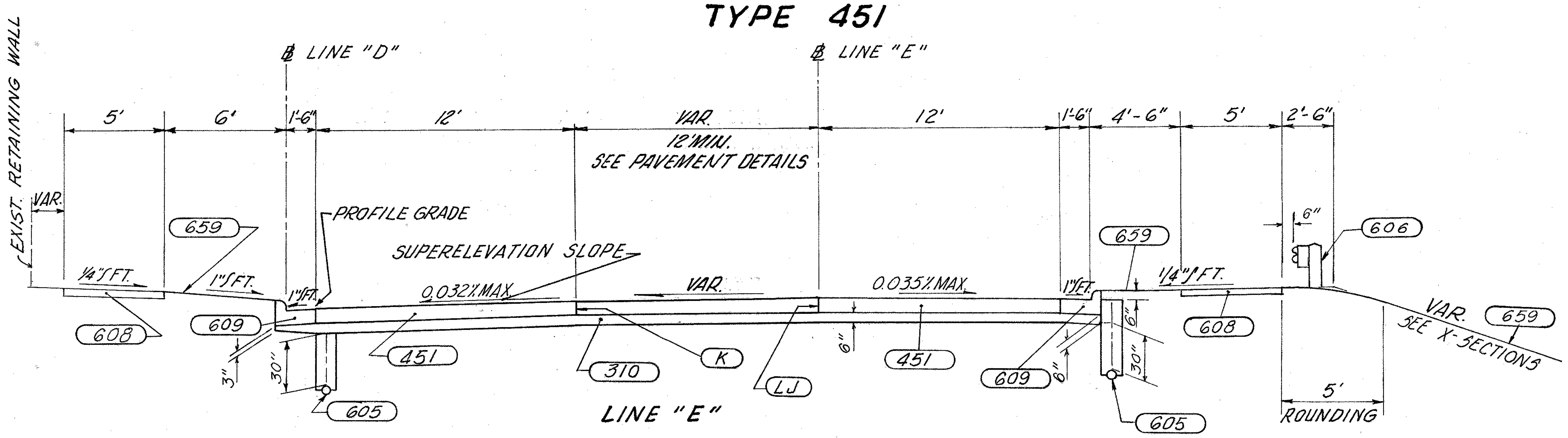


DOUBLE WALL TYPICAL

LINE "D"

LIMITING STATIONS: 8+08.17 TO 9+61.34

TYPE 451



LINE "E"

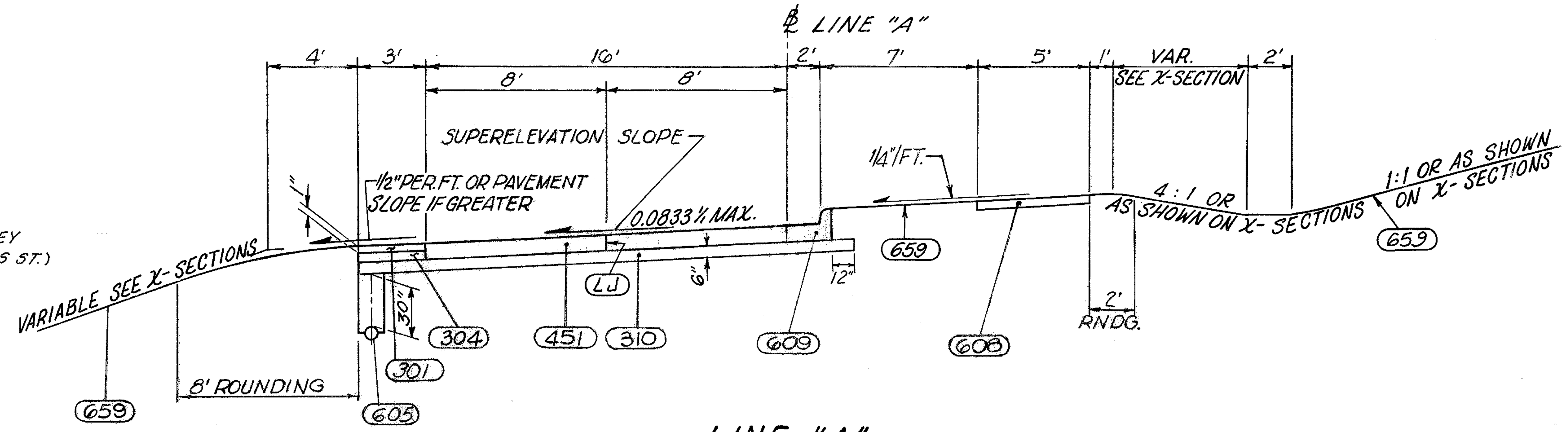
LIMITING STATIONS: 2+00 TO 3+27.24

ITEM	DESCRIPTION
451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
310	SUBBASE, GRADING A AS PER PLAN - SEE GENERAL NOTES.
301	3" BITUMINOUS AGGREGATE BASE 702.01(85-100 or AC-20) or 702.09 RT-11 or RT-12 AS PER PLAN.
304	6" AGGREGATE BASE
605	6" PIPE UNDERDRAINS.
606	GUARD RAIL, STANDARD TYPE 5.

ITEM	DESCRIPTION
608	4" CONCRETE WALK
609	COMBINATION CURB AND GUTTER STANDARD TYPE 2.
659	SEEDING AND MULCHING, SEE GENERAL NOTES.
LJ	STANDARD LONGITUDINAL JOINT.
K	KEY JOINT W/O DOWELS

TYPICAL SECTIONS

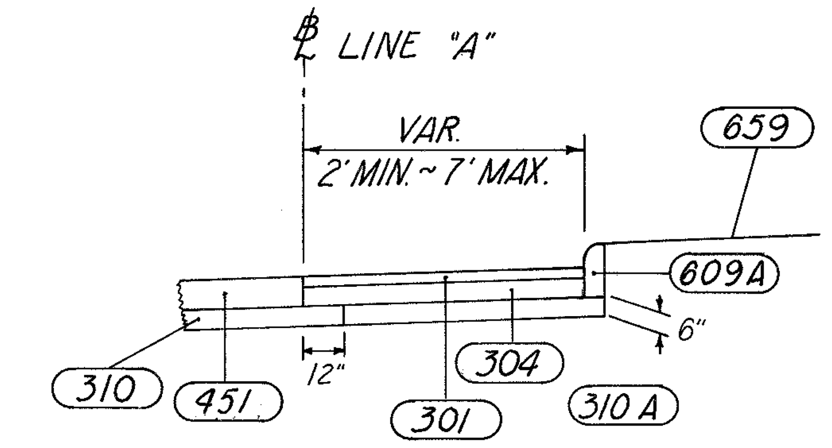
JEFFERSON COUNTY
JEF-43-0.42



LINE "A"

LIMITING STATIONS: 842+25.00 TO 846+52.02

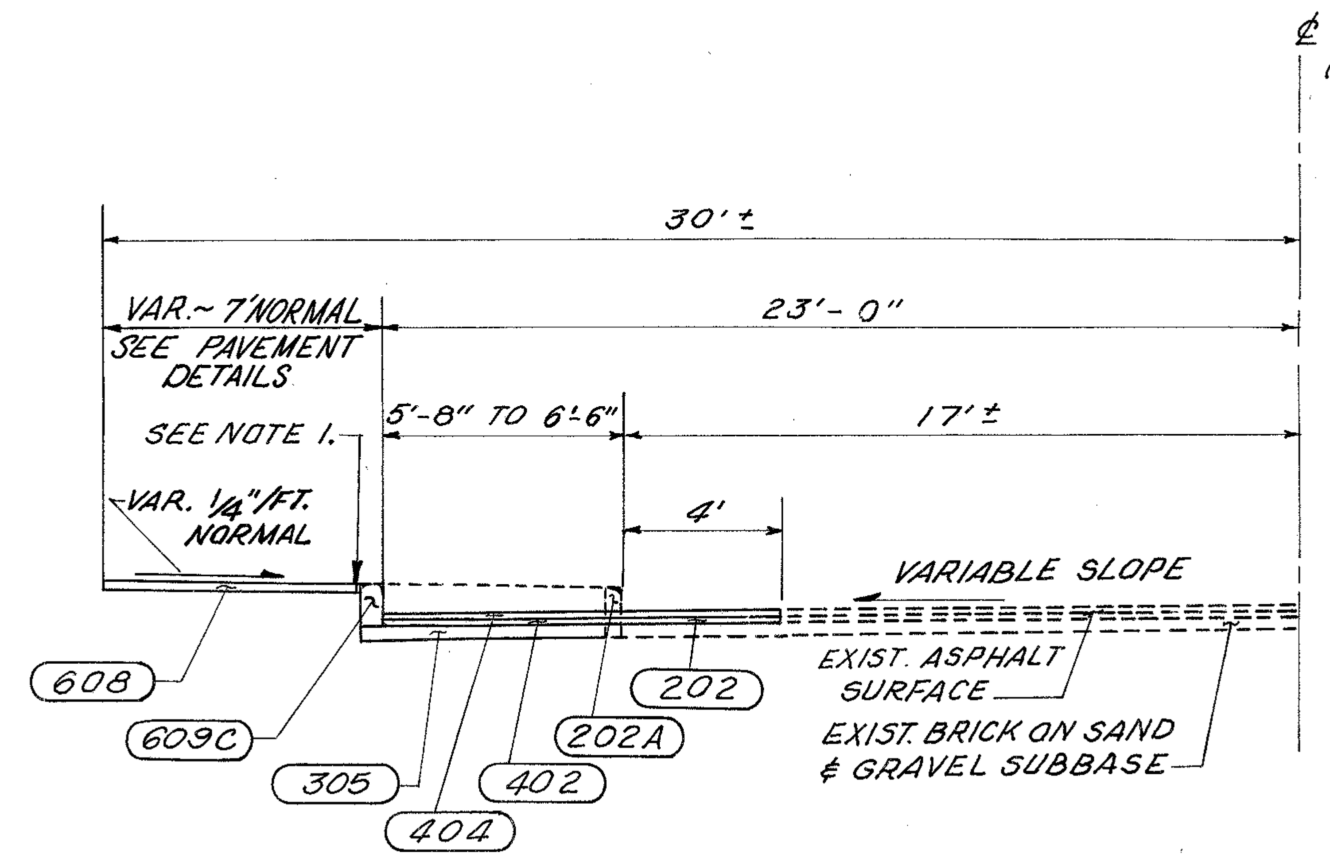
NOTE: SEE PAVEMENT DETAILS FOR EDGE ELEVATIONS AND JOINT LOCATIONS



LIMITING STATION : 845+55 TO 847+88

NOTE:

LEFT & RIGHT SIDE CONFIGURATIONS ARE REFERENCED TO DIRECTION OF TRAVEL INSTEAD OF DIRECTION OF STATIONING FOR LINE "A".

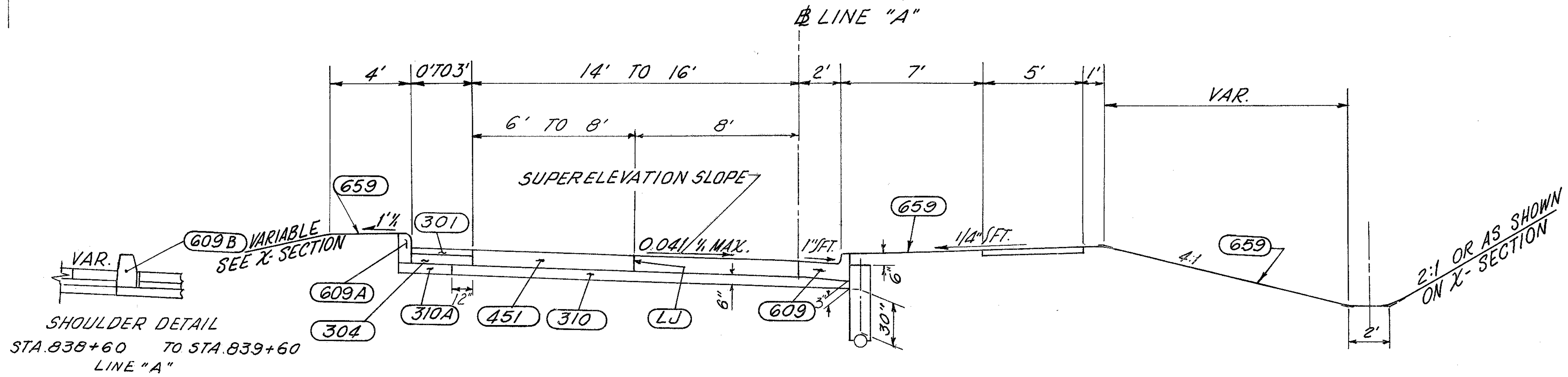


ADAMS STREET WIDENING SECTION

STA. 56+15 ± TO STA. 58+55±

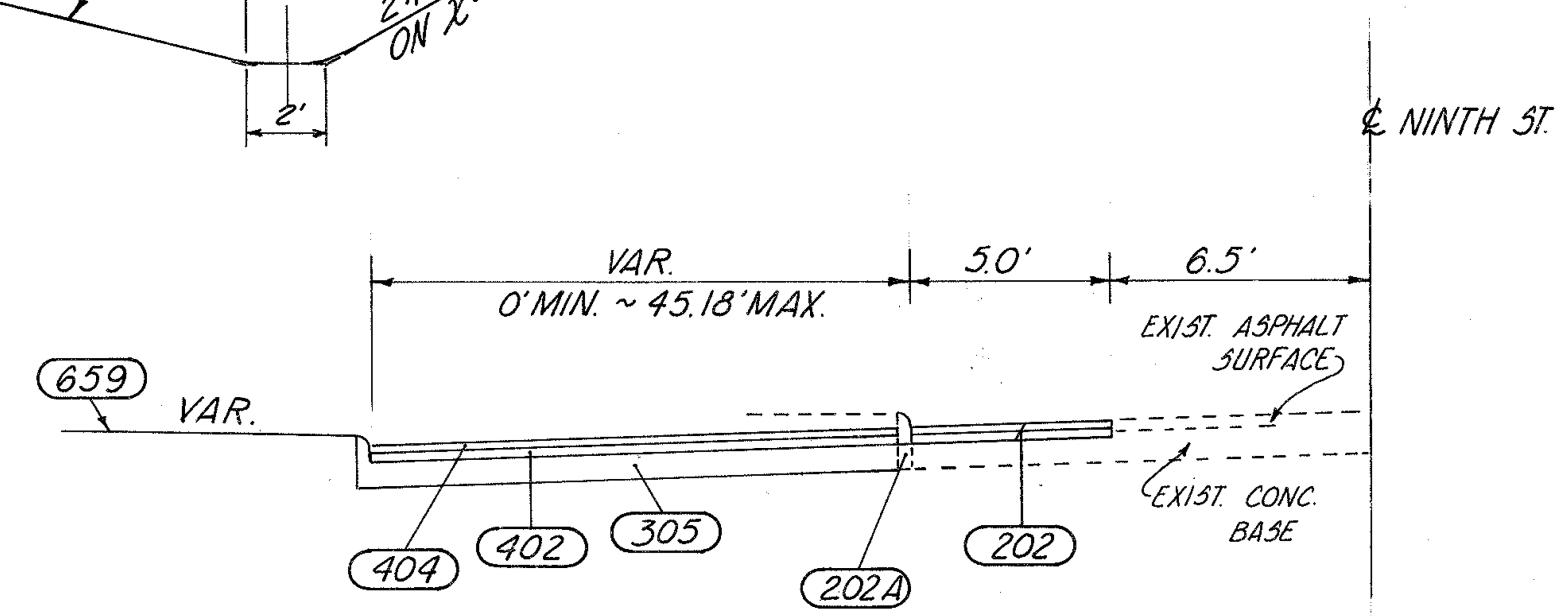
NOTE:

1. 1 1/4" PREMOULDED EXPANSION JOINT (705.03) PAYMENT INCLUDED IN : "ITEM 608 ~ 4" CONCRETE WALK."



LINE "A"

LIMITING STATIONS: 838+60.00 TO 842+25.00



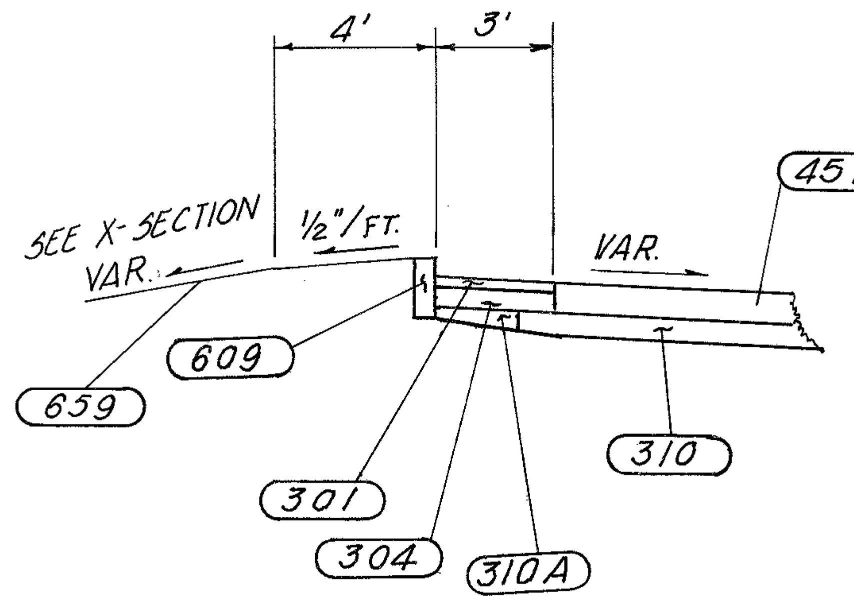
LIMITING STATION : 11+33.77 TO 12+50 NINTH ST. AT ADAMS (NINTH ST. CUL DE SAC)

ITEM	DESCRIPTION
451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.
310	SUBBASE, GRADING A AS PER PLAN (SEE GENERAL NOTES).
310A	SUBBASE (THICKNESS AS SHOWN).
301	3"BITUMINOUS AGGREGATE BASE, 702.01 (85-100 or AC-20) or 702.09, RT-11 or RT-12 AS PER PLAN.
304	6"AGGREGATE BASE.
605	6" PIPE UNDERDRAINS.
202	EXIST. WEARING COURSE REMOVED AND DISPOSED OF.
202A	EXIST. CURB REMOVED AND DISPOSED OF.

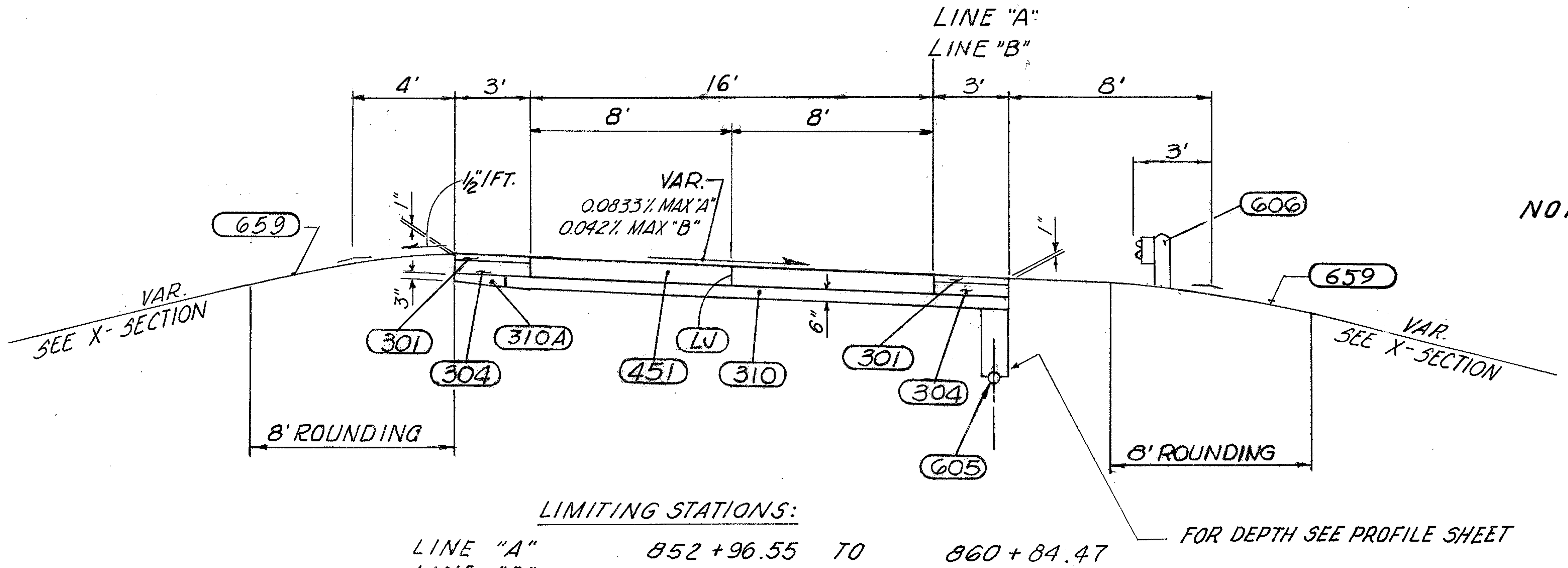
ITEM	DESCRIPTION
608	4" CONCRETE WALK.
609	COMBINATION CURB AND GUTTER, STANDARD TYPE 2.
609A	CONCRETE CURB, STANDARD TYPE 7.
609B	CONCRETE CURB, STANDARD TYPE 8.
659	SEEDING AND MULCHING, SEE GENERAL NOTE
LJ	STANDARD LONGITUDINAL JOINT.
305	9" PORTLAND CEMENT CONCRETE BASE.
609C	CONCRETE CURB, STANDARD TYPE 2-B.
404	1 1/4" ASPHALT CONCRETE (70-85 or AC-20)
402	1 1/2" ASPHALT CONCRETE (70-85 or AC-20)

TYPICAL SECTIONS

TYPE 451



LIMITING STATIONS : 859+00 TO 860+84.47 LINE "A"

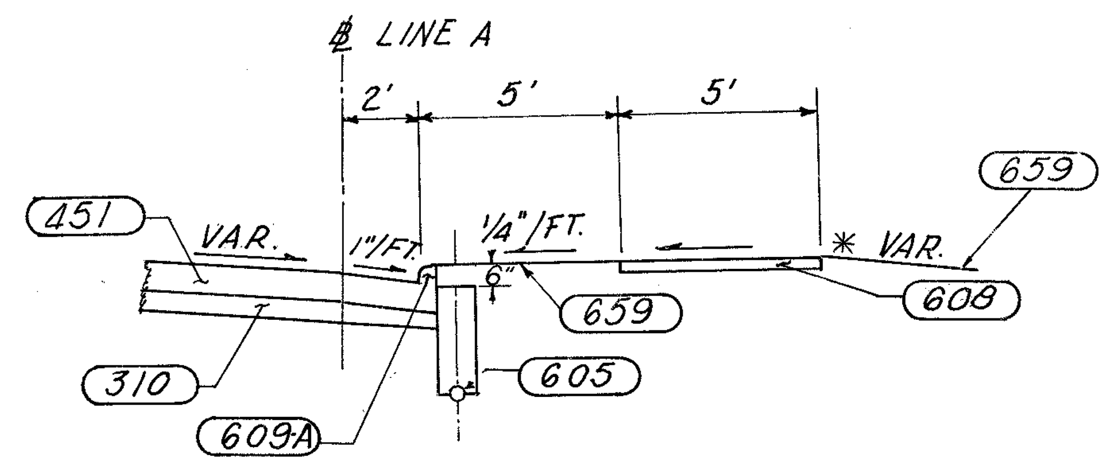


LIMITING STATIONS:

LINE "A"	852+96.55	TO	860+84.47
LINE "B"	844+16.72	TO	847+75.00

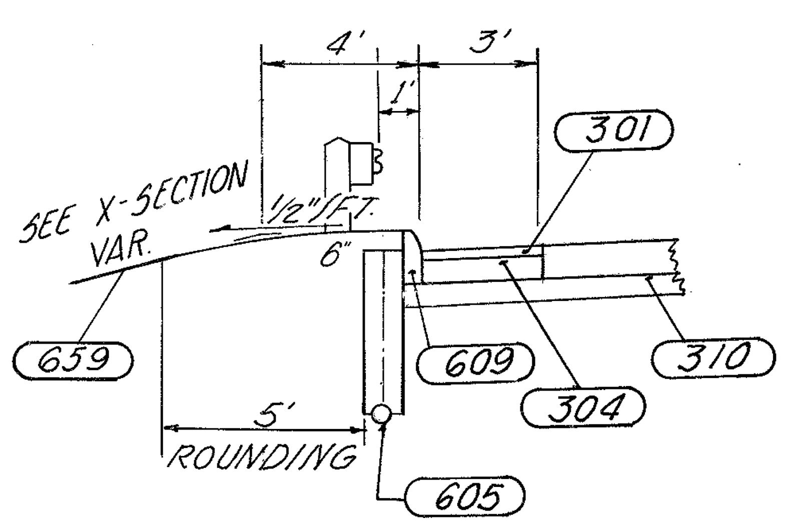
NOTE: SEE PAVEMENT DETAILS FOR EDGE ELEVATIONS AND JOINT LOCATIONS.

NOTE: LEFT SIDE & RIGHT SIDE CONFIGURATIONS ARE REFERENCED TO DIRECTION OF TRAVEL INSTEAD OF THE DIRECTION OF STATIONING, LINE "A" ONLY.



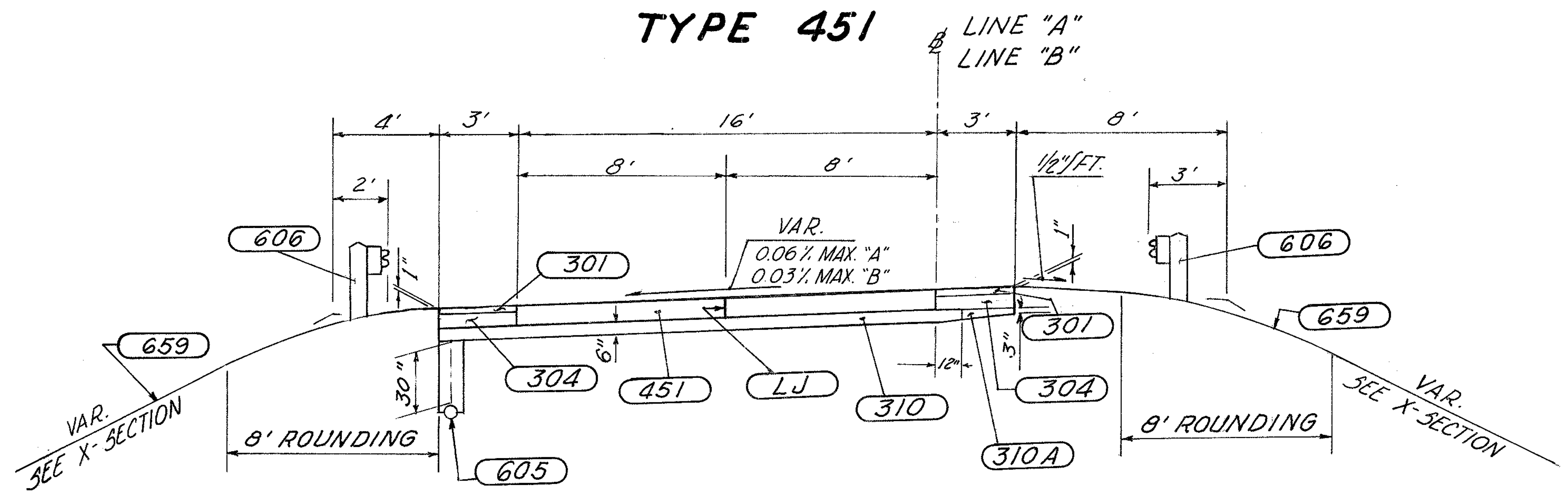
LIMITING STATIONS : 858+25 TO 861+23 LINE "A"

TYPE 451



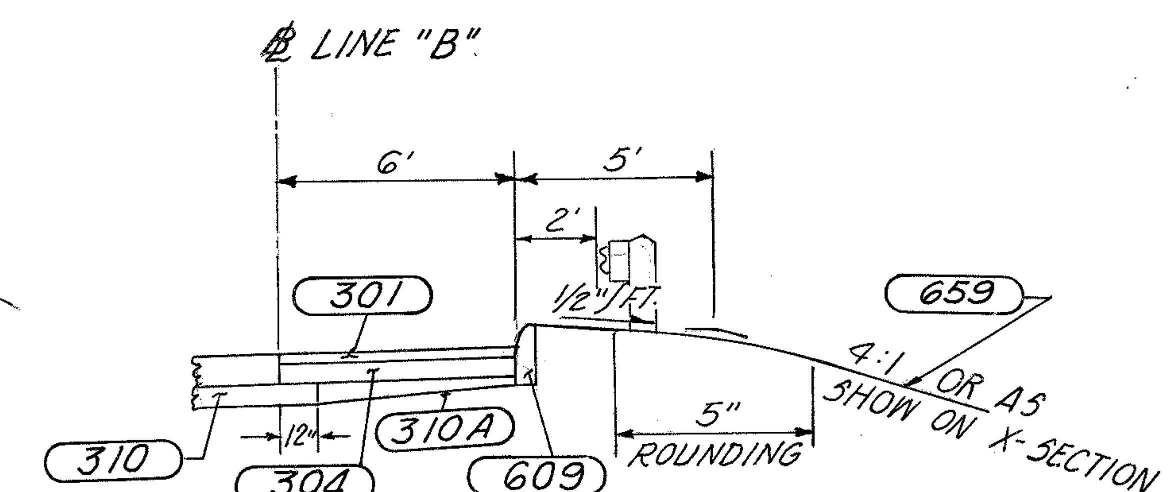
SHOULDER DETAIL

LIMITING STATIONS: 849+25.00 TO 852+13.00 LINE "B"



LIMITING STATIONS:

LINE "A"	849+15.36	TO	851+04.59
LINE "B"	847+75.00	TO	852+61.00



SHOULDER DETAIL

LIMITING STATIONS: 849+25.00 TO 852+61.00 LINE "B"

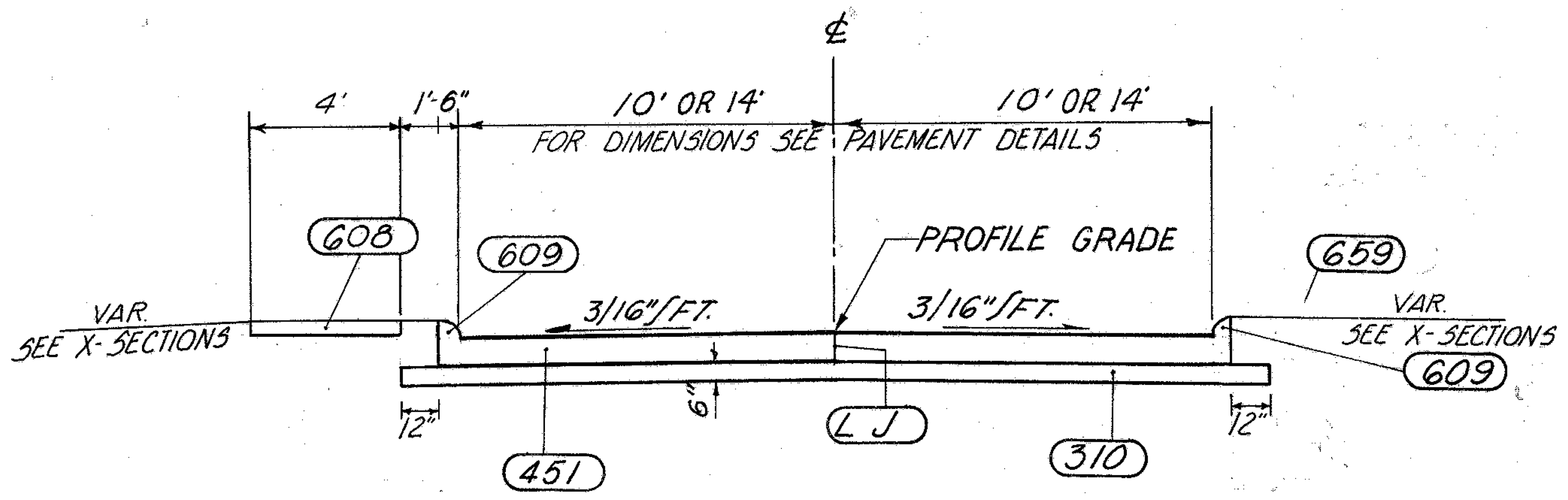
ITEM	DESCRIPTION
451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.
310	SUBBASE, GRADING A AS PER PLAN ~ SEE GENERAL NOTES
310A	SUBBASE (THICKNESS AS SHOWN)
301	3" BITUMINOUS AGGREGATE BASE: 702.01 (85-100 or AC-20), or 702.09, RT-11 or RT-12 AS PER PLAN.
304	6" AGGREGATE BASE.

ITEM	DESCRIPTION
605	6" PIPE UNDERDRAINS
606	GUARD RAIL, STANDARD TYPE 5.
609	CONCRETE CURB, STANDARD TYPE 6.
659	SEEDING AND MULCHING ~ SEE GENERAL NOTE
LJ	STANDARD LONGITUDINAL JOINT.
609A	COMBINATION CURB & GUTTER, STANDARD TYPE 2

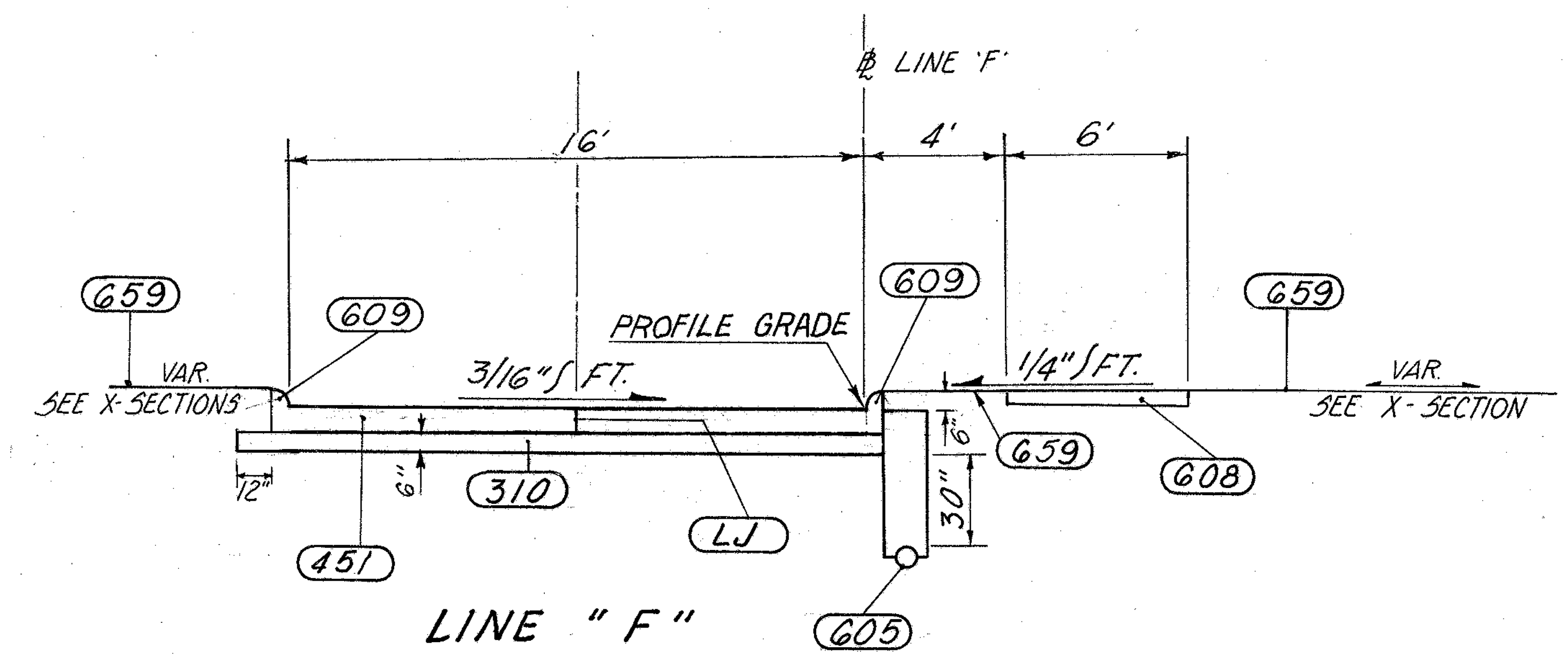
TYPICAL SECTIONS

TYPE 451

JEFFERSON COUNTY
JEF - 43 - 0.42



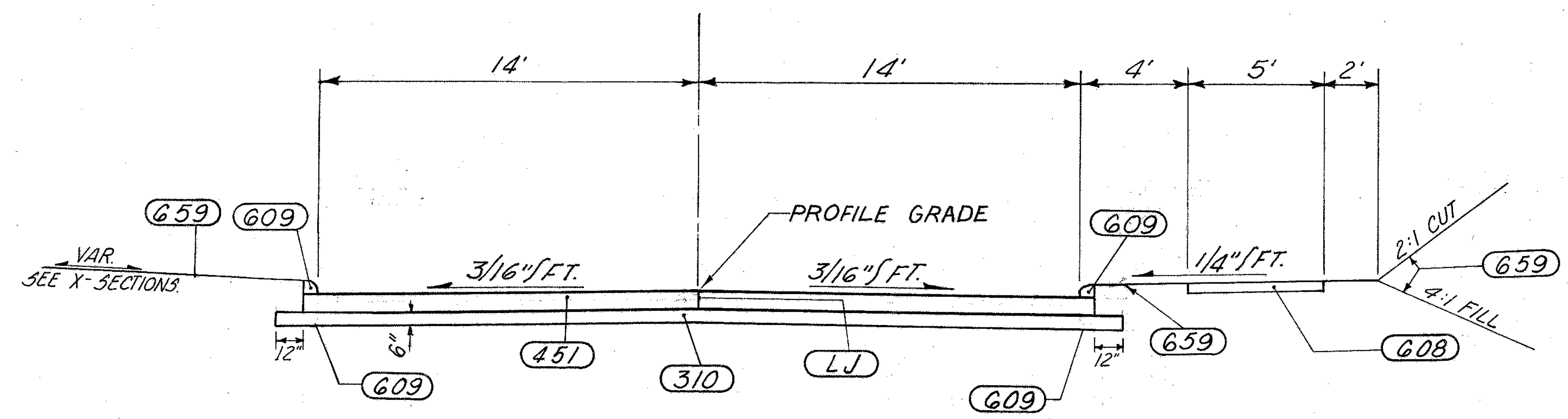
STEELE AVE.



LINE "F"

LIMITING STATIONS : 854+69.71 TO 856+82.95
(TYP. SECTION LOOKING IN THE DIRECTION OF TRAFFIC)

NOTE : SEE PAVEMENT DETAILS FOR EDGE ELEVATIONS AND JOINT LOCATIONS.



LINE "G"

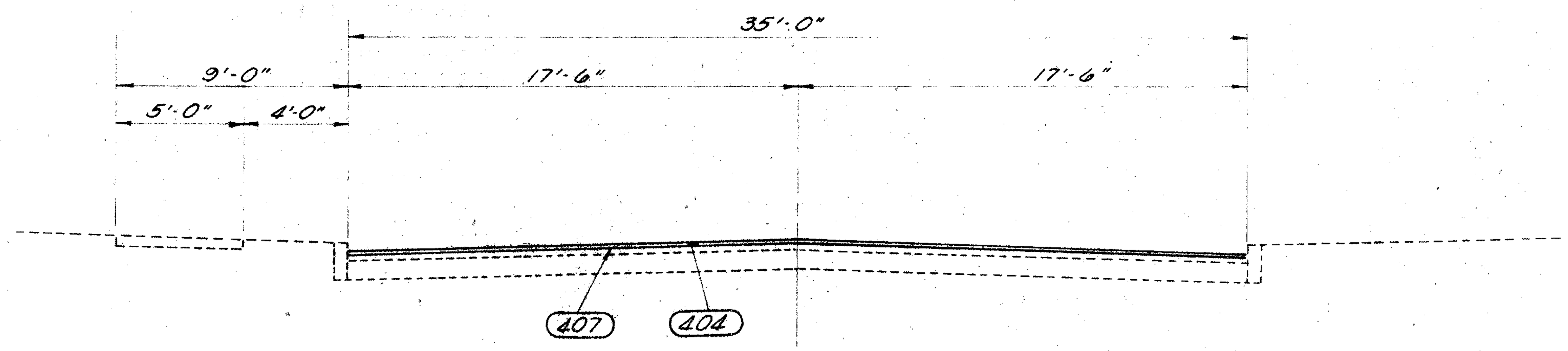
LIMITING STATIONS: 0+14.10 TO 1+92.65

ITEM	DESCRIPTION
451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
310	SUBBASE, GRADING A AS PER PLAN - SEE GENERAL NOTES
605	6" PIPE UNDERDRAINS
608	4" CONCRETE WALK
609	CONCRETE CURB, STANDARD TYPE 2-A
659	SEEDING AND MULCHING - SEE GENERAL NOTE
LJ	STANDARD LONGITUDINAL JOINT.

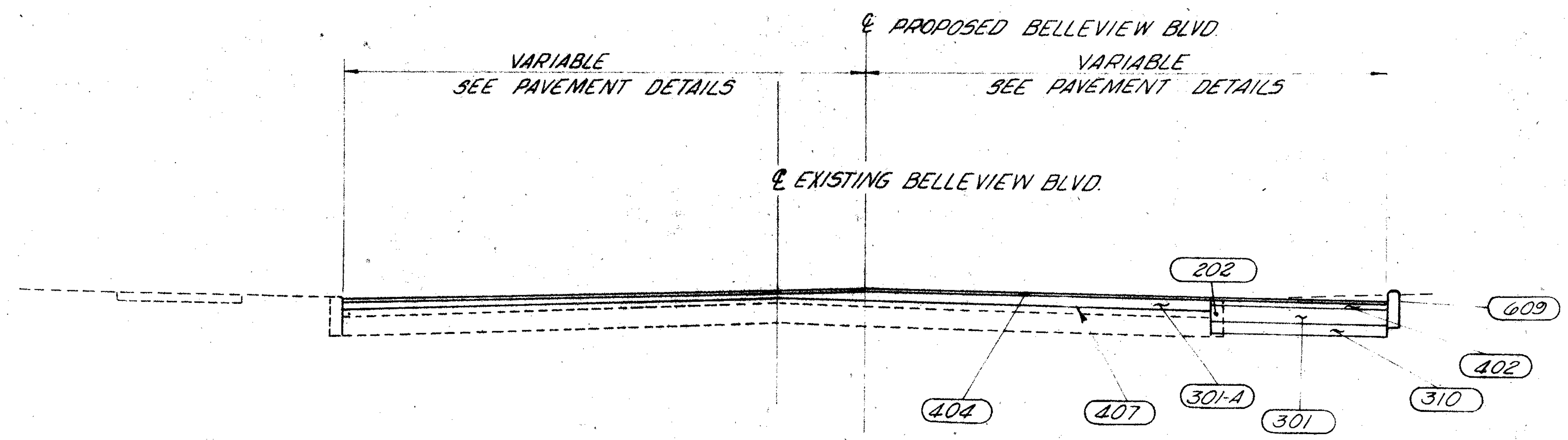
FED. RD. DIVISION	STATE	PROJECT			
2	OHIO				12/299

JEFFERSON COUNTY
JEF-43-0.42

TYPICAL SECTIONS
TYPE 404



LIMITING STATIONS: 0+75.82 TO 10+42.84 BELLEVIEW BLVD.



LIMITING STATIONS: 10+42.84 TO 11+24.35 BELLEVIEW BLVD.

ITEM	DESCRIPTION
404	1 1/4" ASPHALT CONCRETE (70-85 or AC-20)
402	1 1/2" ASPHALT CONCRETE (70-85 or AC-20)
407	TACK COAT: 702.04, MS-2 OR RS-1; OR 702.02, RC-70 OR RC-250, APPLIED AT 0.10 GAL. PER SQ. YD. *
301	8" BITUMINOUS AGGREGATE BASE
301-A	0" BITUMINOUS AGGREGATE BASE
310	6" SUBBASE, GRADING A AS PER PLAN
609	STANDARD CURB TYPE 6
202	EXISTING CURB REMOVED AND DISPOSED OF

* and cover aggregate

BRUNING 44-560 10943

TYPICAL SECTIONS BELLEVIEW BLVD.

GENERAL NOTES

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

FIELD OFFICE

ITEM 619 FIELD OFFICE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 800 SQUARE FEET 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.

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 OR COMPLETENESS.

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 MATERIALS SHALL NOT BE ORDERED FOR DELIVERY TO THE PROJECT UNLESS AUTHORIZED BY THE ENGINEER.

SUPERELEVATION

SUPERELEVATED CURVES SHALL BE BUILT WITHOUT CROWN. THE CROWN SHALL BE WORKED OUT OF THE PAVEMENT IN THE PORTION BETWEEN THE BEGINNING OF THE TRANSITION AND THE POINT WHERE THE SUPERELEVATION EQUALS TWICE THE CROWN.

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.

LOCATIONS OF GUARDRAIL

THE LOCATIONS OF GUARDRAIL RUNS AS SHOWN IN THESE PLANS ARE SUBJECT TO ADJUSTMENT TO ASSURE THAT THE PLANNED INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

SEEDING

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN LINES TEN (10) FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY LINE IF SUCH LINE IS LESS THAN TEN (10) FEET FROM THE WORK LIMITS.

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.

CONTRACTION AND EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN EXPANSION AND CONTRACTION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES AND THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS SHALL IN ALL CASES BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWINGS AND THE SPECIFICATIONS.

310 SUBBASE GRADING "A" AS PER PLAN

MATERIAL FOR THIS ITEM SHALL MEET THE REQUIREMENTS OF GRADING A OF 310.02 EXCEPT THAT NO MORE THAN 10% OF THE MATERIAL SHALL PASS A NO. 200 SIEVE AFTER ALL OPERATIONS OF PLACING AND COMPACTING HAVE BEEN COMPLETED.

REPLACEMENT

THE CONTRACTOR SHALL REPLACE AT HIS OWN EXPENSE ANY ITEM NOT SPECIFICALLY LISTED FOR REMOVAL THAT IS DAMAGED OR DESTROYED BY HIS OPERATIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND PRESERVATION OF CORNERSTONES AND MONUMENTS WITHIN THE CONSTRUCTION AREA AS REQUIRED BY SECTION 107.12. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203.

PROFILE BELLEVIEW BLVD. RESURFACING

THE PROFILE OF THE PROPOSED ASPHALT CONCRETE COURSE SHALL BE APPROXIMATELY 1 1/4 INCHES ABOVE THAT OF THE EXISTING PAVEMENT.

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"	144 *	
30"	87 *	1
48"	11	

* 1 each 100% City Participation

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.

BENCHING OF FOUNDATION SLOPES

ALTHOUGH CROSS SECTIONS ON THIS PLAN INDICATE SPECIFIC WIDTHS AND DEPTHS OF PROPOSED BENCHING OF THE EMBANKMENT FOUNDATION IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED AND ALL OTHER SLOPED FOUNDATION AREAS SHALL BE BENCHED AS SET FORTH IN 203.09. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED BY THE PROVISIONS OF 203.09.

WHERE SPECIAL BENCHING IS SHOWN ON THE PLANS, PAYMENT WILL BE MADE FOR THE ENTIRE WIDTH OF THE EXCAVATED AREA. THE PROVISIONS OF 203.09 SHALL APPLY TO ALL OTHER SLOPING FOUNDATION AREAS.

THE ELEVATION OF THE SPECIAL BENCH OF THE FORWARD SPILL THROUGH SLOPE OF THE LINE E STRUCTURE MAY BE RAISED OR LOWERED AS REQUIRED DURING CONSTRUCTION TO PROVIDE A MINIMUM BENCH WIDTH OF 25' ON SOUND ROCK.

MINE WASTE

BETWEEN STA. 847+50 TO STA. 849+00 ON SR 43, THOSE PORTIONS OF THE SUBGRADE IN CUT WILL BE IN MINE WASTE. THESE MINE WASTE MATERIALS WILL BE REMOVED TO A DEPTH OF 3 FEET BELOW SUBGRADE AND REPLACED WITH SUITABLE COMPACTED EMBANKMENT MATERIALS.

THE APPROACH EMBANKMENTS FOR THE STRUCTURE CARRYING LINE A OVER SR 43 WILL BE BUILT TO GRADE AND ALLOWED TO SETTLE FOR A PERIOD OF 60 DAYS PRIOR TO PLACEMENT OF THE BRIDGE ABUTMENTS OR PAVEMENT. HUBS OR OTHER SUITABLE DEVICES SHALL BE PLACED IN THE EMBANKMENT AND READINGS TAKEN PERIODICALLY TO GET A MEASURE OF THE AMOUNT OF EMBANKMENT SETTLEMENT DUE TO CONSOLIDATION OF THE MINE WASTE MATERIAL.

UTILITIES

THE CONTRACTOR SHALL NOTIFY, AT LEAST 7 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. ANY 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

OHIO BELL TELEPHONE COMPANY
111 N. FRONT STREET
COLUMBUS, OHIO

OHIO VALLEY GAS CO.
99 NORTH FRONT STREET
COLUMBUS, OHIO

Tele-Communication Inc.
300 N. Seventh St.
Steubenville, Ohio

OHIO POWER COMPANY
301 CLEVELAND AVENUE, SW.
CANTON, OHIO

CITY OF STEUBENVILLE
CITY HALL
STEUBENVILLE, OHIO

FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS

THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS AT EACH OF THE FOLLOWING APPROXIMATE LOCATIONS;

STA. 818+20 RT. SR. 43 STA. 2+45 LT. SR. 43

SIGN DETAILS SHALL BE AS SPECIFIED ON STANDARD DRAWING FACI-1, "CODE N-54(1)-96(3)" AND THE SIGNS SHALL BE ERECTED IN ACCORDANCE WITH STANDARD DRAWING FACI-2. ADDITIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH NOTES IN THE PROPOSAL.

EROSION CONTROL

ITEMS 601 AND 660 ARE PROVIDED IN THESE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER WILL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

MONUMENTS

MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS SHOWN ON STANDARD DRAWING MC-1. FOR LOCATIONS, SEE SHEET NO. 1 OF R/W

CONNECTIONS TO EXISTING SEWERS

AT PLACES WHERE THE PLANS PROVIDE FOR PROPOSED DRAINAGE PIPE TO BE CONNECTED TO EXISTING PIPES 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 SEWER. THE COST OF THIS OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PERTINENT PIPE ITEM.

EXISTING SEWER HOUSE DRAINS

ALL EXISTING HOUSE DRAINS, WHICH INCLUDE SANITARY, YARD, ROOF, BASEMENT AND ALL OTHER SIMILAR PIPE DRAINS NOW IN USE WHICH ARE DISTURBED BECAUSE OF THE HIGHWAY IMPROVEMENT, SHALL BE RELACED BY THE CONTRACTOR. IF THE EXISTING SEWER IS TO BE ABANDONED THEN A SATISFACTORY HOUSE CONNECTION SHALL BE PROVIDED. PAYMENT FOR THIS WORK SHALL BE FOR THE CONTRACT UNIT PRICE BID OF PERTINENT PIPE ITEM. UNRECORDED HOUSE DRAINS THAT ARE ENCOUNTERED DURING CONSTRUCTION AND REQUIRED TO BE REPLACED UNDER THE DIRECTION OF THE ENGINEER SHALL BE PAID FOR AS SPECIFIED.

ITEM 603 4" CONDUIT TYPE B 150 L.F.
ITEM 603 6" CONDUIT TYPE B 150 L.F.
ITEM 603 8" CONDUIT TYPE B 150 L.F.
ITEM 603 10" CONDUIT TYPE B 150 L.F.

NONE OF THE ABOVE MATERIAL WILL BE ORDERED UNLESS DIRECTED BY THE ENGINEER.

MAINTENANCE OF SEWER FLOWS

THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO MAINTAIN AT ALL TIMES SEWER FLOWS THROUGH EXISTING FACILITIES TO REMAIN IN PLACE AND THROUGH EXISTING FACILITIES TO BE REPLACED UNTIL NEW FACILITIES ARE COMPLETED AND PLACED INTO USE.

PAYMENT FOR ANY ADDITIONAL COSTS INVOLVED IN MAINTAINING THESE FLOWS BY PUMPING OR BY OTHER MEANS APPROVED BY THE ENGINEER SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE RESPECTIVE PIPE ITEMS.

REINFORCED CONCRETE CATCH BASINS

CATCH BASINS OVER 12 FEET IN DEPTH SHALL BE BUILT OF CLASS C CONCRETE REINFORCED BY PLACING 1/2" DIAMETER BARS 12" CENTER TO CENTER BOTH VERTICALLY AND HORIZONTALLY WITH A 2" CLEARANCE FROM THE INSIDE FACE OF THE WALL. PAYMENT FOR FURNISHING AND PLACING THE REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604 REINFORCED CONCRETE BASIN.

PLUGGING PIPE

THE UPSTREAM ENDS OF ALL PIPE OR TILE LINES INTERCEPTED BY EARTHWORK OPERATIONS AND WHERE INDICATED THE ENDS OF PIPE LINES TO BE ABANDONED IN PLACE SHALL BE EFFECTIVELY BLOCKED AND COVERED. BROKEN PIECES AND PORTIONS OF PIPE OR TILE SHALL BE REMOVED UNTIL A WHOLE UNDAMAGED LENGTH IS ENCOUNTERED WHICH SHALL BE BLOCKED WITH CONCRETE, FLAT STONE OR BRICK LAID IN MORTAR, OR A PRECAST CLAY OR CONCRETE STOPPER. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203, ROADWAY EXCAVATION.

EXTRA DEPTH CATCH BASINS

STANDARD MANHOLE STEPS SHALL BE PROVIDED AT ANY CATCH BASIN DEEPER THAN SIX (6) FEET. COST OF STEPS TO BE INCLUDED IN THE PRICE BID FOR ITEM 604 CATCH BASINS.

SPRING DRAINS

REFERENCE IS MADE TO THE DETAILED DRAWING ON STD. DWG. 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, AS PER PLAN 200 L.F.
ITEM 605 - AGGREGATE DRAINS FOR SPRINGS, AS PER PLAN 50 L.F.

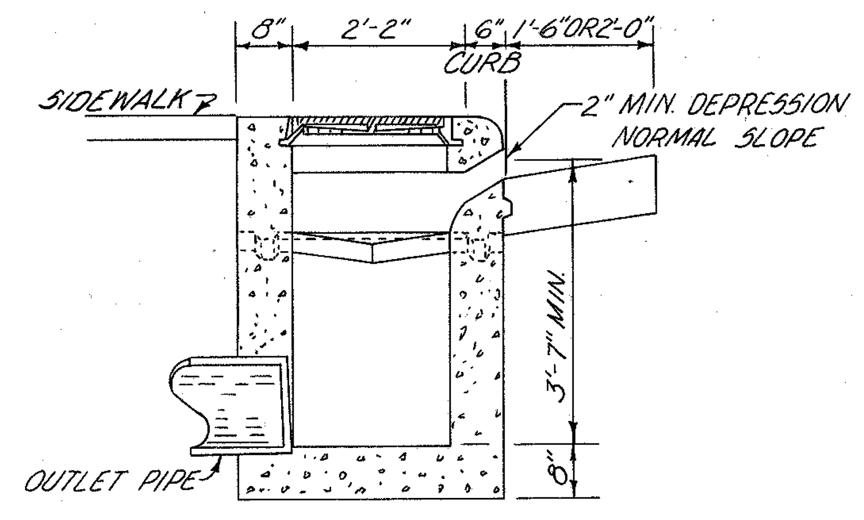
THE CONTRACTOR SHALL NOT ORDER MATERIALS FOR "SPRING DRAINS" UNTIL AUTHORIZED BY THE ENGINEER AND IN THE EVENT NO SPRINGS ARE ENCOUNTERED, THE ITEM SHALL BE NON- PERFORMED.

PAVED SHOULDER INLETS

THE TOP OF ALL 604 STANDARD NO. 2A PAVED SHOULDER INLETS CONSTRUCTED IN SIDEWALKS SHALL FIT FLUSH WITH THE SIDEWALK AND CONFORM TO THE SAME GRADE AND CROSS-SLOPE. MODIFY STD. "APRON" AS PER PLAN.

PIPE CONNECTIONS

THE COST OF CONNECTING PIPES TO JUNCTION CHAMBERS AND THE REMOVAL OF EXISTING BULKHEAD WALLS SHALL BE INCLUDED IN THE COST BID PER LIN. FT. OF PERTINENT PIPE.



PAVED SHOULDER INLET DETAIL
(SEE NOTE ABOVE)

ITEM 616 DUST CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR DUST CONTROL TO BE USED AS DIRECTED BY THE ENGINEER:

WATER 150 M GAL.
CALCIUM CHLORIDE 50 TONS

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY W.G.Y. 12-9-68
QUANTITIES CHECKED BY J.W.A. 12-11-68

BRUNING 44-560 10943

C.E. 1-5-70

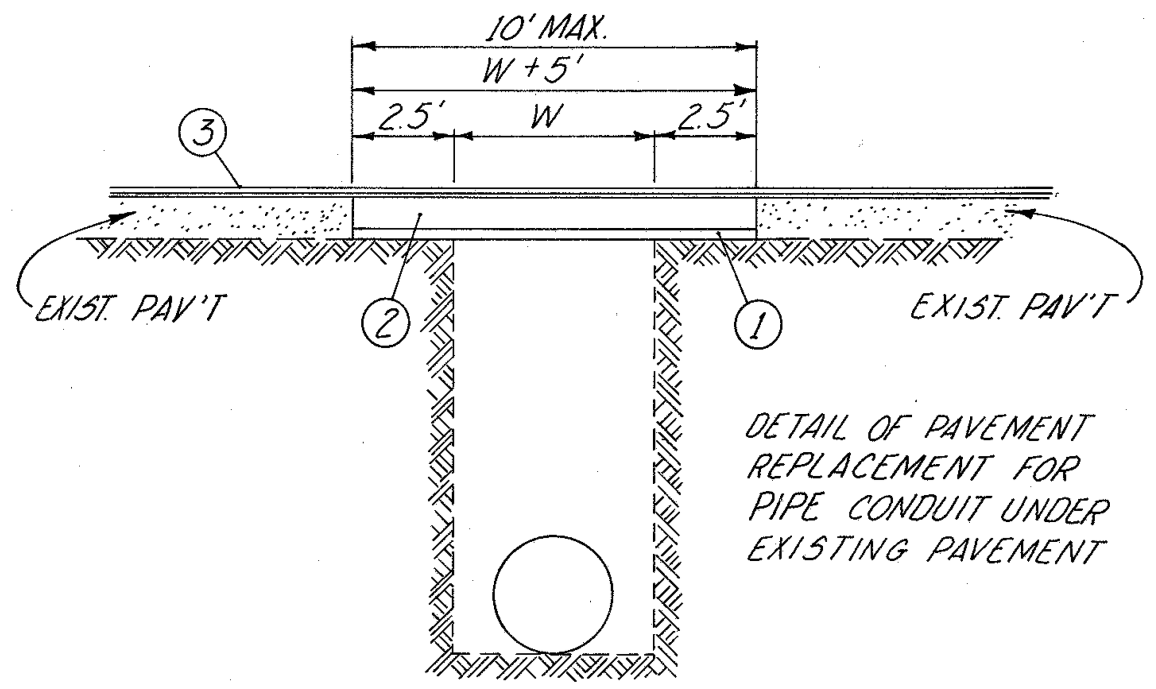
RACKOFF ASSOCIATES, INC.

QUANTITIES CALCULATED BY W.G.Y. 12-9-68

QUANTITIES CHECKED BY J.W.A. 12-11-68

JEFFERSON COUNTY
JEF-43-0.42

GENERAL NOTES



W (WIDTH OF TRENCH) = O.D. OF PIPE +24"

(1) ITEM 310 3" SUBBASE GRADING A AS PER PLAN

(2) ITEM 305 9" PORTLAND CEMENT CONCRETE BASE

(3) ITEM 404 1 1/4" ASPHALT CONCRETE (70-85 or AC-20)

THE FOLLOWING QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY FOR BASE REPLACEMENT FOR PIPE P-84 ON ADAMS ST.

ITEM 310 3" SUBBASE GRADING A - 2 C.Y.

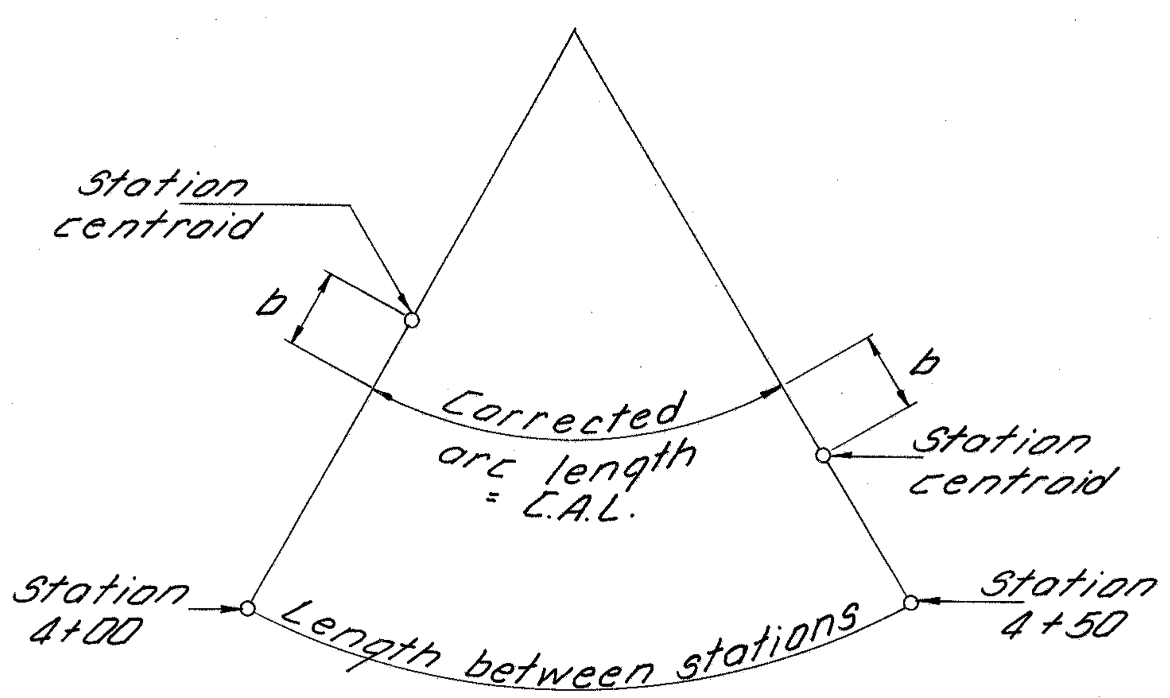
ITEM 305 9" PORTLAND CEMENT CONCRETE BASE - 27 S.Y.

ITEM 404 1 1/4" ASPHALT CONCRETE (70-85 or AC-20) - 1 C.Y.

BASE REPLACEMENT DETAIL

EARTHWORK COMPUTATIONS ON CURVED ALIGNMENT

WHERE INDICATED ON THE CROSS SECTIONS, A CORRECTED ARC LENGTH (C.A.L.) HAS BEEN FIGURED BY MEANS OF THE DIAGRAM SHOWN BELOW.



MAINTENANCE OF TRAFFIC

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES BY USE OF EITHER THE EXISTING PAVEMENT, THE PROPOSED PAVEMENT, TEMPORARY ROADWAYS AS SPECIFIED IN ITEM 615, CLASS A TEMPORARY PAVEMENT, OR WITH ITEM 410 AGGREGATE AND STABILIZED WITH ITEM 616 CALCIUM CHLORIDE.

ESTIMATED QUANTITIES FOR MAIN TENANCE OF TRAFFIC ARE BASED ON THE FOLLOWING STAGE CONSTRUCTION.

1. CONSTRUCT THAT PORTION OF THE PROJECT BETWEEN STA. 830+00± AND STA. 858+87.86. THIS SHALL BE DONE PRIOR TO THE CLOSING OF EXISTING MARKET STREET OR LAWSON AVENUE. ACCESS TO TENTH STREET SHALL BE PROVIDED AT ALL TIMES.

2. CONSTRUCT A TEMPORARY CLASS A ROADWAY BETWEEN EXISTING MARKET STREET (STA. 828+00 ±) AND THE NORTHBOUND LANES OF S.R. 43 IN THE VICINITY OF STA. 830+00±. DIVERT MARKET STREET TRAFFIC TO THE NORTHBOUND LANES OF THE NEW ROADWAY, VIA 7TH ST. MAINTAIN TWO-WAY TRAFFIC ON EXISTING LAWSON AVENUE. CONSTRUCT LINE E FROM STA. 4+00 TO STA. 11+50 WITH A TEMPORARY CLASS A ROADWAY FROM EXISTING LAWSON AVENUE TO LINE E AT ABOUT STA. 4+00±.

3. CLOSE LAWSON AVENUE FROM MARKET STREET TO LINE E AND DIVERT THAT TRAFFIC OVER BELLEVIEW BLVD. AND LINE E. CONSTRUCT LINE D AND THE SOUTH SIDE OF S.R. 43 FROM STA. 821+00 TO STA. 830+00 ±.

4. COMPLETE ALL OTHER WORK, INCLUDING CONSTRUCTION OF THE NORTH SIDE OF MARKET STREET FROM STA. 821+00 TO STA. 830+00±, PAVING BELLEVIEW BLVD., CONSTRUCTING THE 8TH - 9TH STREET CONNECTOR.

5. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN TRAFFIC AT ALL TIMES. SIDEWALKS AND ENTRANCES TO BUILDINGS SHALL BE KEPT FREE OF EQUIPMENT, MATERIALS AND ALL OTHER HINDRANCES TO PEDESTRIAN TRAFFIC. WHERE NEW SIDEWALK SLABS ARE BEING CONSTRUCTED, SAFE AND ADEQUATE WALKWAYS SHALL BE PROVIDED TO PERMIT PEDESTRIAN TRAFFIC TO ENTER THE BUILDINGS AND TO PASS AROUND THE NEW SLAB CONSTRUCTION.

PAYMENT FOR ALL OF THE ABOVE, INCLUDING LIGHTS, SIGNS, BARRICADES, WATCHMEN, TEMPORARY WALKWAYS AND PROTECTIVE DEVICES NECESSARY TO SERVICE THE FLOW OF TRAFFIC 24 HOURS DAILY, BUT EXCEPTING ITEMS 404, 410, 615, 616 SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC.

THE FOLLOWING ESTIMATED QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY.

100 CU. YDS.	404 ASPHALT CONCRETE OR APPROVED BITUMINOUS PREMIXED SURFACE COURSE.
250 CU. YDS.	410 TRAFFIC COMPACTED SURFACE COURSE, TYPE A OR B
750 CU. YDS.	410 TRAFFIC COMPACTED SURFACE COURSE, TYPE C
20 TONS	616 CALCIUM CHLORIDE
1,360 S.Y.	615 CLASS A TEMPORARY PAVEMENT
LUMP SUM	615 TEMPORARY ROADS

GUARD RAIL TERMINAL SECTION

The guard rail designated on the plan as (GR) located right of Sta. 821+24 to Sta. 827+97 shall be terminated by using a Terminal Section. This shall consist of bolting a standard terminal, as detailed on Standard Drawing GR-2A, to the rail element at the last post. Also the three end posts of each terminal section shall be encased in a minimum 4-inch thickness of Class C concrete for the full depth of the post below the ground line. Payment for the Terminal Section shall be included in the unit price bid for Item 606 Guard Rail, Type 5.

ALTERNATE METHODS

IF THE CONTRACTOR SO ELECTS HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE DIRECTOR.

LIGHTS AND SIGNS AT ADJACENT ROAD INTERSECTIONS

THE CONTRACTOR SHALL, IN ADDITION TO THE GENERAL REQUIREMENTS OF ITEM 614 ON THIS PROJECT PERFORM THE FOLLOWING:

PROVIDE, ERECT AND MAINTAIN STANDARD 48" x 30" SIZE "ROAD CLOSED" SIGNS, SIGN SUPPORTS, AND LIGHTS AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC:

1. MARKET STREET JUST WEST OF 7TH ST.
2. WASHINGTON STREET JUST WEST OF 7TH ST.
3. LIBERTY AVE. JUST NORTH OF MARKET STREET.
4. NINTH STREET JUST SOUTH OF MARKET STREET.

SIGN SUPPORTS AND LIGHTS FOR "ROAD CLOSED" SIGNS SHALL BE AS DETAILED IN THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS," CURRENT EDITION, LATEST REVISION. PAYMENT FOR PROVIDING, ERECTING, MAINTAINING AND REMOVING LIGHTS, SIGNS AND SIGN SUPPORTS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "ITEM 614 MAINTAINING TRAFFIC".

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.

	Normal	100% City	Total
Item 207 Temporary seeding and mulching	9,767	1,713	11,480 S.Y.
Item 207 Water	21	4	25 M.gal.
Item 207 Temporary slope drains	713	7	720 L.F.
Item 207 Temporary benches, dikes, dams & sediment basins	367	0	367 C.Y.
Item 207 Mowing	122	21	143 M.S.F.
Item 659 Repair seeding and mulching	2,442	428	2,870 S.F.
Item 659 Commercial Fertilizer (12-12-12)	2.25	.40	2.65 Tons

BRUNING 44-560 10943

GENERAL NOTES - WATER

WATER LINE RELOCATIONS SPECIFICATIONS

ALL WATER LINE RELOCATIONS SHALL BE MADE IN ACCORDANCE WITH DEPARTMENT OF HIGHWAYS SPECIFICATIONS NO. 814 ENTITLED "WATER MAINS AND SERVICE BRANCHES" DATED JAN. 1, 1969. THIS SPECIFICATION IS MODIFIED BY THE FOLLOWING SPECIAL PROVISIONS WHICH CONSIST OF THESE NOTES. IN ALL CASES OF CONFLICT WITH SUPPLEMENTAL SPECIFICATIONS 814, THESE NOTES SHALL GOVERN. THE FIGURES IN PARENTHESIS IN THESE NOTES REFER TO THE SECTION OF SUPPLEMENTAL SPECIFICATION 814 WHICH IS BEING MODIFIED. INSTRUCTIONS SHALL BE WORKED THROUGH THE PROJECT ENGINEER, STATE OF OHIO, DEPT. OF HIGHWAYS.

NOTIFICATION 814.04

THE CONTRACTOR SHALL NOTIFY THE CITY OF STEUBENVILLE WATER DEPARTMENT, THE CITY ENGINEER, AND THE FIRE DEPARTMENT BEFORE BEGINNING WORK ON ANY PART OF THE WATER LINE RELOCATIONS.

GATE VALVES 814.02

ALL VALVES TO HAVE DOUBLE "O" RING STEM SEALS WITH SEPARATE BOLTED SEAT PLATE, NON RISING STEM TO OPEN VALVE BY COUNTER-CLOCKWISE ROTATION. VALVES SIZES 12" AND SMALLER DESIGNED FOR VERTICAL DISC MOVEMENT AND STEM OPERATION. STEM OPERATOR TO BE STANDARD 2" x 2" NUT. VALVE TO BE DESIGNED FOR 200 P.S.I. WORKING PRESSURE AND 300 P.S.I. HYDROSTATIC TEST PRESSURE.

BUTTERFLY VALVES (814.02)

GENERAL

A. VALVES SHALL BE FURNISHED WITH MANUAL OPERATORS FOR BURIED SERVICE, AND THE VALVES AND OPERATORS SHALL BE DESIGNED FOR A MINIMUM WORKING PRESSURE OF 150 PSI.

B. VALVE, OPERATOR, EXTENSION STEM, CAST IRON STEM HOUSING AND VALVE BOX SHALL BE FURNISHED AS A COMPLETE UNIT BY THE VALVE MANUFACTURER.

C. EXTENSION STEM SHALL TERMINATE WITH A 2 INCH STANDARD AWWA NUT LOCATED AT THE TOP OF THE VALVE BOX, COVER SHALL BE MARKED "WATER" WITH AN ARROW SHOWING DIRECTION OF OPENING. COVER SHALL HAVE DEEP FLANGES OR PRONGS TO PREVENT TRAFFIC DISTURBANCE.

D. VALVES SHALL BE OF THE TIGHT CLOSING, RUBBER SEAT TYPE, MANUFACTURED IN ACCORDANCE WITH AWWA SPECIFICATION C 504-66, CLASS 150 B, EXCEPT AS MODIFIED HEREINAFTER.

CONSTRUCTION

A. BODY - CAST IRON, ASTM A 126 CLASS B, WITH INTEGRALLY CAST MECHANICAL JOINT ENDS AND TWO HUBS OR TRUNIONS FOR SHAFT BEARINGS. VALVES SHALL BE LONG BODY TYPE.

B. SHAFT - 18-8 TYPE 304 STAINLESS STEEL, EITHER ONE PIECE EXTENDING THROUGH THE VALVE DISC, OR TWO PIECE STUB SHAFT TYPE, SECURED TO THE DISC BY MEANS OF STAINLESS STEEL PINS.

C. DISC

1) ASTM A 48 CLASS 40 CAST IRON WITH AN ATTACHED BRONZE OR 18-8 STAINLESS STEEL DISC RING, OR ASTM B 61 OR B 143 CAST BRONZE. DISC RING SHALL BE ATTACHED BY SCREWING OR BOLTING TO THE IRON DISC. ALL NUTS AND SCREWS SHALL BE BRONZE OR STAINLESS STEEL.

2) DISC SHALL ROTATE 90° FROM THE FULL OPEN TO TIGHT SHUT POSITION.

3) MECHANICAL STOPS SHALL BE PROVIDED TO PREVENT OVER TRAVEL BY THE DISC.

D. SEAT

1) NATURAL OR SYNTHETIC RUBBER WITH FABRIC REINFORCING, AND CEMENTED OR BONDED AND CLAMPED IN A RECESS IN THE VALVE BODY ONLY. SEATS BONDED ONLY ARE NOT ACCEPTABLE.

2) SEAT SHALL BE ADJUSTABLE AND REPLACEABLE AT THE SITE WITHOUT DISASSEMBLY OF THE SHAFT AND DISC FROM THE VALVE.

E. BEARINGS - SLEEVE TYPE SELF-LUBRICATING CONTAINED IN THE HUB OF THE VALVE BODY. MAXIMUM BEARING LOAD SHALL NOT EXCEED THE PUBLISHED DESIGN LOAD FOR THE BEARING MATERIAL. AN ADJUSTABLE THRUST BEARING OR BEARINGS SHALL HOLD THE DISC IN THE CENTER OF THE SEAT. A BEARING SHALL ALSO BE PROVIDED BEYOND THE SHAFT SEAL IN THE OPERATOR HOUSING.

F. SHAFT SEAL - STUFFING BOX WITH FLAX PACKING OR STANDARD "O" RING SEAL.

MANUAL OPERATOR

A. TRAVELING NUT TYPE, TOTALLY ENCLOSED AND DESIGNED TO WITHSTAND 300 FT. LBS. OF INPUT TORQUE AT FULL OPEN OR CLOSED POSITIONS WITHOUT DAMAGE TO THE VALVE OR OPERATOR. MAXIMUM TORQUE REQUIRED FOR THE VALVE OPERATION SHALL BE 150 FT. LBS. ON THE OPERATING NUT. THE SCREW THREAD SHALL BE SELF LOCKING TO HOLD THE DISC IN ANY POSITION WITHOUT ANY ADDITIONAL LOCKING DEVICE. OPERATOR SCREWS SHALL BE TYPE 416 STAINLESS STEEL AND TRAVELING NUT SHALL BE BRONZE.

B. OPERATORS SHALL BE FULLY GASKETED AND GREASE PACKED AND DESIGNED TO WITHSTAND SUBMERSION TO 10 PSI.

C. VALVES SHALL OPEN WITH A COUNTER CLOCKWISE ROTATION OF THE AWWA NUT.

PAINTING AND TESTING

A. ALL SURFACES OF THE VALVE SHALL BE CLEAN, DRY, AND FREE FROM GREASE BEFORE PAINTING. THE VALVE INTERIOR SURFACES EXCEPT SEATING SURFACES SHALL BE EPOXY COATED. THE VALVE AND OPERATOR EXTERIOR SURFACES SHALL BE EVENLY COATED WITH TWO (2) COATS OF BLACK ASPHALT VARNISH COMPLYING WITH FEDERAL SPECIFICATION TT-V-51a AND AWWA C-504-66.

B. PERFORMANCE, LEAKAGE AND HYDROSTATIC TESTS SHALL BE CONDUCTED IN STRICT ACCORDANCE WITH AWWA C 504-66, SECTION 13, AND CERTIFIED TEST REPORTS SHALL BE FURNISHED TO THE OWNER.

PIPE AND FITTINGS (814.02 a AND b)

ALL WATER PIPE IN SIZES 4" THROUGH 30" SHALL BE MANUFACTURED OF DUCTILE IRON, IN ACCORDANCE WITH ASA SPECIFICATIONS A21.6 AND A21.8, EXCEPT AS HEREIN MODIFIED.

THE PHYSICAL PROPERTIES SHALL BE AS FOLLOWS:

TENSILE STRENGTH 60,000 PSI MINIMUM
YIELD STRENGTH 42,000 PSI MINIMUM
ELONGATION IN 2-INCH 10% MINIMUM
HARDNESS ROCKWELL B-90 MAXIMUM

PIPE SHALL BE SUBJECTED TO A MANUFACTURER'S TEST IN ACCORDANCE WITH ASTM DESIGNATION E-23-60, NOTCHED CHARPY TEST, EXCEPT THAT SPECIMENS SHALL BE 0.500" AND FULL THICKNESS OF PIPE WALL: IMPACT VALUES ARE TO BE CORRECTED TO 0.40" WALL THICKNESS BY CALCULATION AS FOLLOWS:

$$\text{IMPACT VALUE CORRECTED} = \frac{0.40'' \times \text{IMPACT VALUE}}{\text{WIDTH OF SPECIMEN IN INCHES}}$$

THE CORRECTED IMPACT VALUE OF THIS MANUFACTURER'S TEST SHALL BE A MINIMUM OF SEVEN FOOT POUNDS FOR TESTS CONDUCTED AT 70° F. + 10° F. AT LEAST ONE MANUFACTURER'S SAMPLE SHALL BE TAKEN DURING EACH CASTING PERIOD.

THE CHEMICAL CONSTITUENTS SHALL MEET THE PHYSICAL PROPERTY RECOMMENDATIONS OF ASTM A339-55 TO INSURE THAT THE IRON IS SUITABLE FOR SATISFACTORY DRILLING AND CUTTING.

WALL THICKNESS SHALL BE AS FOLLOWS:

SIZE	WALL THICKNESS
4"	0.29"
6"	0.31"
8"	0.33"

ALL PIPE SHALL HAVE A THIN BITUMINOUS COATED CEMENT LINING (ENAMELENE OR APPROVED EQUAL) COMPLYING WITH ASA A21.4 SPECIFICATIONS EXCEPT AS TO THICKNESS AND WITH AN OUTSIDE COATING OF BITUMASTIC ENAMEL OR APPROVED EQUAL.

ALL PIPE SHALL BE MADE IN ACCORDANCE WITH ASA A21.11 WITH THE SINGLE RUBBER GASKET JOINT, SIMILAR TO THE BELL-TITLE JOINT AS MANUFACTURED BY THE JAMES B. CLOW AND SONS CO. OR APPROVED EQUAL OR MECHANICAL JOINT ENDS ONLY WHERE NEEDED.

ALL FITTINGS IN SIZES 4" THRU 12" SHALL BE CLASS 260, AND OVER 12" CLASS 150 CAST IRON WITH MECHANICAL JOINT ENDS MADE IN ACCORDANCE WITH ASA A21.11.

FIRE HYDRANTS (814.02 d)

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL FIRE HYDRANTS SHOWN ON THE CONTRACT DRAWINGS, COMPLETE AND READY TO OPERATE, BRACED, TESTED AND PAINTED. THE CONTRACTOR SHALL INCLUDE FURNISHING ONE SET OF WRENCHES.

THE UNIT PRICE BID FOR EACH HYDRANT SHALL INCLUDE THE COST OF FURNISHING AND PLACING THE MATERIALS SPECIFIED FOR TYPE I OR TYPE II LISTED BELOW;

TYPE I:

MECHANICAL JOINT ANCHORING TEE (PLAIN END BRANCH W/INTEGRALLY CAST M.J. GLAND), 6" M.J. GATE VALVE, 6" P.E. PIPE OF LENGTH REQ'D., AND FIRE HYDRANT. FIRE HYDRANT TO BE TIED TO VALVE USING TWO 3/4" RODS TO REPLACE "T" BOLTS IN PIPE JOINTS, EIGHT NUTS & FOUR 3/4" I.P. SPACERS BEVELED TO CLEAR JOINT CASTING.

TYPE II:

MECHANICAL JOINT TEE, M.J. ANCHORING ELBOW (PLAIN ENDS W/INTEGRALLY CAST M.J. GLANDS), 6" M.J. GATE VALVE, ANCHORING COUPLING W/INTEGRALLY CAST M.J. GLANDS AND FIRE HYDRANT.

MATERIALS

ALL SIX INCH FIRE HYDRANTS SHALL CONFORM TO A.W.W.A. SPECIFICATIONS C 502-54 AND SHALL HAVE EITHER GATE OR COMPRESSION TYPE VALVES AS MANUFACTURED BY THE KENNEDY VALVE CO. OR THE LUDLOW-RENESSELAER CO. OR APPROVED EQUAL.

THE INLET CONNECTION SHALL BE A MECHANICAL JOINT AND HAVE A 5" VALVE OPENING. EACH HYDRANT BRANCH SHALL HAVE A SIX INCH GATE VALVE, MECHANICAL JOINT ENDS AND THE METHOD OF CONNECTING HYDRANTS TO BRANCH AND THE "BURY" LENGTH SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS.

EACH HYDRANT SHALL BE PROVIDED WITH ONE - 4 1/2 INCH PUMPER CONNECTION AND TWO - 2 1/2 INCH HOSE CONNECTIONS. THE CONNECTIONS SHALL HAVE A "PITTSBURGH" THREAD; FOUR THREADS PER INCH ON THE PUMPER CONNECTION, AND SIX THREADS PER INCH ON 2-1/2 INCH NOZZLE. ALL CONNECTIONS SHALL BE PROVIDED WITH A CAP GASKET AT HOSE AND PUMPER CONNECTIONS UNLESS OTHERWISE INDICATED.

THE OPERATING NUT SHALL BE THE STANDARD SET FORTH IN AWWA C 502-54.

A HYDRANT BARREL DRAIN SHALL BE PROVIDED.

DIRECTION OF OPENING SHALL BE COUNTER-CLOCKWISE.

WHERE HYDRANTS ARE TO BE INSTALLED AT GRADES VARYING FROM THE STREET OR SIDEWALK GRADE, THE CHANGE IN ELEVATION OF THE BRANCH LINE MAY BE ACCOMPLISHED BY USE OF 18 INCH OFFSETS WHICH MAY BE ROTATED.

TESTS

THE CONTRACTOR SHALL FURNISH A SWORN STATEMENT FROM THE MANUFACTURER THAT THE INSPECTION AND ALL TESTS REQUIRED FOR HYDRANTS HAVE BEEN MADE AS SPECIFIED. THE SWORN STATEMENT SHALL BE ACCOMPANIED BY A TRANSCRIPT OF ALL TEST RESULTS.

UPON COMPLETION OF ALL WORK EACH FIRE HYDRANT SHALL BE OPERATED BY OPENING AND CLOSING THE HYDRANT AT LEAST TWICE UNDER REGULAR SERVICE CONDITIONS.

PAINTING

ALL FIRE HYDRANTS SHALL BE PAINTED IN THE MANNER AND COLOR STIPULATED BY THE CITY OF STEUBENVILLE.

HYDRANT INSTALLATION SHALL BE TYPE I OR TYPE II AS CALLED FOR ON PLANS. MATERIALS REQUIRED ARE AS FOLLOWS:

FIRE HYDRANTS REMOVED AND DISPOSED OF (814.14).

THE CONTRACTORS SHALL CAREFULLY REMOVE THE FIRE HYDRANTS AND VALVE BOXES LISTED FOR REMOVAL ON THE PLANS AND DELIVER THEM TO THE CITY PUMP STATION LOCATED AT THE NORTHERLY CORPORATION LINE ON STATE ROUTE 7.

SERVICE BRANCHES (814.15).

THE LOCATIONS, SIZES AND NUMBER OF EXISTING SERVICE BRANCHES INVOLVED IN THE WORK AREA ARE NOT DEFINITELY KNOWN.

SERVICE BRANCHES FOR BUILDINGS BEING REMOVED SHALL BE CUT AT LOCATIONS BEYOND IMMEDIATE WORK AREA. PLUG END OF BRANCH CONNECTED TO MAIN SO TO BE WATER TIGHT.

A NEW SERVICE BRANCH CONNECTION SHALL BE MADE FOR THE PROPERTIES WHERE BUILDINGS HAVE BEEN REMOVED, THAT HAD PRIOR SERVICE. THE LOCATION OF THE SERVICE BRANCH AND PLACEMENT OF THE SERVICE STOP SHALL BE AS DIRECTED BY THE ENGINEER AND APPROVED BY THE CITY ENGINEER.

SERVICE BRANCHES FOR BUILDINGS NOT BEING REMOVED SHALL HAVE TEMPORARY SERVICE BRANCHES CONNECTED BEYOND ZONE OF CONSTRUCTION CONFLICT. TEMPORARY SERVICE BRANCHES SHALL BE PLACED TO PROVIDE CONTINUOUS WATER SERVICE: CONSIDERATION TO BE GIVEN FOR FREEZING, SUPPORT AND CONSTRUCTION DAMAGE. MATERIALS TO BE AS APPROVED BY THE ENGINEER. COSTS FOR TEMPORARY SERVICE BRANCHES SHALL BE INCLUDED WITH OTHER ITEMS OF WATER LINE COSTS (814).

PERMANENT SERVICE BRANCH CONNECTIONS TO BE MADE TO NEW MAINS WHEN THEY ARE STERILIZED, TESTED AND APPROVED FOR USE. SERVICE BRANCH PIPE TO BE COPPER PER (814.02e): CONNECT TO EXISTING SERVICE PIPING WITH FITTINGS AS REQUIRED. THIS WORK TO BE PAID FOR UNDER RESPECTIVE PAY ITEMS LISTED IN QUANTITIES.

THE UNIT PRICE BID FOR EACH SERVICE BRANCH ITEM SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR LOCATING, EXCAVATING, REMOVING SERVICE BRANCH IN MANNER MENTIONED ABOVE, AND BACKFILLING WITH GRANULAR MATERIAL UNDER PAVEMENT AND/OR SIDEWALKS.

EXISTING SERVICE BRANCHES WHICH ARE ON EXISTING LOW PRESSURE (L.P.) WATER MAIN ARE TO HAVE PRESSURE REGULATORS PLACED ON OWNER'S WATER SERVICE LINE IN BUILDING BEYOND BUILDING SHUT-OFF VALVE AND/OR METER. PRESSURE REGULATOR TO BE MUELLER H-9300, OR APPROVED EQUAL, CONNECT TO PLUMBING WITH UNION AND PIPE FITTINGS AS REQUIRED. PAYMENT FOR EACH PRESSURE REGULATOR INSTALLED SHALL CONSTITUTE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NEEDED TO MAKE A COMPLETE INSTALLATION.

SERVICE TAPS LARGER THAN 1" SHALL BE CONNECTED TO MAINS USING SERVICE CLAMPS WITH THREADED SADDLE.

ESTIMATED QUANTITIES FOR SERVICE BRANCHES

3/4"	NEW SERVICE BRANCHES	300 LIN FT.
1 1/4"	" " "	300 LIN FT.
2"	" " "	50 LIN FT.
3/4"	PRESSURE REDUCING VALVE	3 EACH
1 1/4"	" " "	3 EACH
2"	" " "	1 EACH

CORPORATION COCKS AND CURB STOPS (814.02 e)

CORPORATION COCKS SHALL BE MUELLER H-1500, CLOW F-4408, OR APPROVED EQUAL.

CURB STOPS SHALL BE MUELLER H-15175, CLOW F-4538-D, OR APPROVED EQUAL.

CURB BOXES SHALL BE CLOW F-4600/94 E, MUELLER H-10350, OR APPROVED EQUAL.

SERVICE STOPS AND BOXES: (814.16)

SERVICE STOPS AND BOXES SHALL BE INSTALLED AS PER 814.16, EXCEPT THAT IN LIEU OF REMOVING THE EXISTING SERVICE STOP AND BOX THE CONTRACTOR SHALL INSTALL A NEW SERVICE STOP AND BOX BEYOND THE NEW CURB LINE, AS DIRECTED BY THE ENGINEER, AND THE EXISTING SERVICE BOX SHALL BE REMOVED TO A MINIMUM DEPTH OF ONE FOOT BELOW THE EXISTING OR THE PROPOSED PAVEMENT. WHERE IRON PIPE IS ENCOUNTERED IN THE EXISTING SERVICE LINE IT SHALL BE REPLACED AS DIRECTED, WITH NEW SERVICE LINE AS PER 814.02e) FROM THE EXISTING SERVICE STOP TO THE NEW SERVICE STOP. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR SERVICE STOPS AND BOXES AS PER PLAN.

TAPPING SLEEVES AND VALVES (814.10)

THIS ITEM SHALL INCLUDE FURNISHING AND INSTALLING THE TAPPING SLEEVES AND VALVES COMPLETE AND IN SERVICE AT THE LOCATIONS SHOWN ON THE PLANS. THE INSTALLATION IS TO BE MADE WHILE THE TAPPED PIPE IS UNDER PRESSURE.

TAPPING SLEEVES AND VALVES TO BE AS MANUFACTURED BY A.P. SMITH MFG. CO., MUELLER CO. OR APPROVED EQUAL.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE PROPER SIZE SLEEVE TO FIT THE MAIN TO BE TAPPED.

TAPPING VALVES SHALL BE IRON BODY BRONZE MOUNTED, DOUBLE DISC, PARALLEL SEAT, AMERICAN WATERWORKS ASSOCIATION, 300 POUND TEST PRESSURE, 200 POUND WORKING PRESSURE, NOT OPERATED AND LEFT HAND OPEN.

THE SLEEVES AND VALVES SHALL BE TESTED AT 200 P.S.I. WATER PRESSURE TO CHECK FOR LEAKS PRIOR TO MAKING ANY CUTS.

DISINFECTION (814.09)

THE COMPLETED PIPE LINE WILL BE CHLORINATED BY THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH THE CHLORINE AND LABOR NECESSARY TO INTRODUCE THE CHLORINE INTO THE PIPE.

BLOCKING AND BACKING (814.06)

NO SEPARATE PAYMENTS WILL BE MADE FOR REINFORCING STEEL, STEEL PIPE STRAPS, STEEL BACKING PLATES, CONCRETE BACKING OR TIMBER BLOCKING, AS CALLED FOR IN DETAILS. COST SHALL BE INCLUDED WITH THE UNIT PRICE BID FOR ITEM 814 "NEW WATER MAINS AS PER PLAN". CONCRETE BACKING SHALL CONSIST OF CLASS "E" CONCRETE.

PAINTING

ALL PIPE ACCESSORIES SUCH AS STEEL, BOLTS, STRAPS, ETC., WHICH ARE NOT ENCASED IN CONCRETE, SHALL BE PAINTED WITH A BITUMASTIC PAINT SUCH AS GILSONITE, OR APPROVED EQUAL, AFTER ASSEMBLY IN THE WORK.

HYDROSTATIC TEST (814.07)

THE HYDROSTATIC TEST SHALL BE MADE AS SPECIFIED UNDER ALTERNATE "B" AT 250 PSI. THE COST OF ANY TEST PLUGS OR CAPS AND BLOCKING ON PIPE TESTED PRIOR TO CONNECTION TO EXISTING MAINS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "NEW WATER MAINS".

CUTTING AND PLUGGING (OR CAPPING) EXISTING MAINS (814.10)

WATER MAINS CALLED OUT TO BE CUT AND PLUGGED (OR CAPPED) AT POINTS ON EXISTING MAINS SHALL HAVE THE ABANDONED WATER MAINS CUT AND REMOVED AS REQUIRED TO ATTACH THE NEW FITTINGS AND PLACE BACKING. BLOCKING SHALL BE USED TO BRACE BETWEEN THE NEW PLUG (OR CAP) AND END OF ABANDONED PIPE. CONCRETE BACKING SHALL BE USED TO ENCASE BLOCKING AND SHALL BE AS SHOWN ON A WATER MAIN DETAIL SHEET FOR "DEAD END PIPE AND TEE BACKING".

AIR RELEASE AND TESTING TAPS (814.07)

WHEN A TAP IS MADE TO RELEASE AIR FROM A PIPE, OR TO TEST OR CHLORINATE A PIPE, THE CORPORATION COCK SHALL BE LEFT IN THE PIPE WHEN COMPLETED. THE COST OF THESE TAPS AND COCKS SHALL BE INCLUDED IN THE PRICE BID FOR PIPE.

SERVICE BRANCH TAPS (814.15)

SERVICE BRANCH TAPS SHALL BE MADE ON RADIUS 45° ABOVE HORIZONTAL CENTERLINES. COPPER PIPE TO BE BENT IN LOOP TO PRECLUDE ELONGATION DUE TO EARTH SETTLEMENT.

EXISTING UTILITIES

THE LOCATIONS OF THE 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 OR COMPLETENESS.

TEST PITS

THE CONTRACTOR SHALL DIG TEST PITS TO VERIFY THE LOCATION AND ELEVATION OF EXISTING MAINS TO BE CROSSED OR CONNECTED TO PRIOR TO STARTING CONSTRUCTION: THE EXISTING PIPE SHALL BE UNCOVERED AND THE PIPE CLASS AND DIMENSIONS VERIFIED BEFORE ORDERING MATERIALS. THE COST FOR ALL EXPLORATORY WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR NEW WATER MAIN.

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY WGY 12-9-68
QUANTITIES CHECKED BY JWA 12-11-68

DESCRIPTION | TOPOGRAPHY | PAVEMENT | R.O.W. | QUANTITIES — PLOTTED BY DATE — CHECKED BY DATE

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GENERAL NOTES-WATER (CONT'D)

CONNECTIONS TO EXISTING PIPE

AT PLACES WHERE THE PLANS PROVIDE FOR PROPOSED PIPE TO BE CONNECTED TO EXISTING PIPE 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 PIPE. THE COST OF THIS OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT PIPE ITEM.

LINES TO BE ABANDONED

WATER LINES TO BE ABANDONED NEED ONLY BE REMOVED TO THE LIMITS NECESSARY FOR THE CONTRACTOR TO COMPLETE HIS WORK.

PIPE REMOVAL

PAYMENT FOR THE REMOVAL OF ANY EXISTING WATER LINE SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR " NEW WATER MAIN AS PER PLAN".

NIGHT AND WEEK-END CONNECTIONS

IT WILL BE NECESSARY THAT CERTAIN MAINLINE CONNECTIONS BE MADE AT NIGHT AND/OR ON WEEK ENDS. THE WATER DEPARTMENT SHALL DETERMINE THE TIME AND PLACE OF SUCH CONNECTIONS AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THESE CONNECTIONS IN THE TIME ALLOTED. NO EXTRA PAYMENT WILL BE MADE FOR ANY WORK REQUIRED UNDER THIS NOTE.

NIGHT AND/OR WEEK END WORK WILL BE ORDERED ONLY WHEN SUCH WORK MUST BE DONE AT THESE TIMES IN ORDER TO PROTECT THE WATER SUPPLY OF THE CITY OF STEUBENVILLE.

BACKFILLING TRENCHES

TRENCHES SHALL BE BACKFILLED IN ACCORDANCE WITH SEC. 814.08. TRENCHES FOR WATER LINES WHICH WILL BE UNDER ROADWAYS OR PAVED AREAS SHALL BE BACKFILLED WITH GRANULAR MATERIAL IN THE SAME MANNER AS SPECIFIED IN SEC. 603.08 BACKFILLING.

IN LIEU OF PERFORMING THE TAMPING REQUIREMENTS OF SEC. 814.08 THE CONTRACTOR MAY BACKFILL THE WATER LINE TRENCHES WITH GRAVEL GRITS BACKFILL AND CRUSHED STONE OR GRAVEL, 46D, IN ACCORDANCE WITH THE TYPICAL TRENCH DETAIL. NO ADDITIONAL PAYMENT WILL BE MADE FOR GRAVEL GRITS BACKFILL OR CRUSHED STONE OR GRAVEL 46D SINCE ALL BACKFILLING IS INCLUDED IN THE PRICE BID FOR NEW WATER MAINS.

IN THE EVENT GRAVEL GRITS OR CRUSHED STONE OR GRAVEL, 46D ARE USED, THE MATERIAL SHALL MEET THE FOLLOWING SPECIFICATIONS:

GRAVEL GRITS SHALL CONSIST OF CLEAN, WASHING, UNCRUSHED GRAVEL, SO GRADED THAT 99.5% WILL PASS A 1/4-INCH SCREEN, AND NOT MORE THAN 2.5% WILL PASS A NO. 16 SCREEN.

THE "46D" SHALL BE 100% CRUSHED STONE OR GRAVEL MEETING THE FOLLOWING GRADING:

SCREEN	PASSING	SCREEN	PASSING
1"	100%	NO.4	20-50%
1/4"	95-100%	NO.200	5-20%
1/2"	75-95%		

WATER MAIN PIPE COVER

PIPE COVER FOR NEW WATER MAINS SHALL BE A MINIMUM OF 4 FEET BETWEEN TOP OF PIPE AND EXISTING GROUND OR FINISHED GRADE, WHICHEVER IS LOWER, OR AS CALLED FOR ON DRAWINGS. PIPE 2" AND UNDER SHALL BE LAID A MINIMUM OF 4'-6" BELOW FINAL GRADE.

ALTERATION OF PROPOSED WATER LINE ELEVATIONS

IN THE EVENT AN ADJUSTMENT OF PROPOSED WATER LINE ELEVATIONS IS ORDERED DURING CONSTRUCTION OF THIS PROJECT A SUPPLEMENTAL AGREEMENT WILL BE MADE AS CONTEMPLATED IN 603.03 WHERE THE PROPOSED WATER LINE IS RAISED OR LOWERED MORE THAN 1 FOOT.

VALVE BOXES

VALVE BOXES SHALL BE GOVERNED BY SPECIFICATION 814. VALVE BOXES SHALL MEET THE REQUIREMENTS OF 711.12.

DEPARTMENT OF WATER APPROVAL

THE CITY OF STEUBENVILLE SERVICE DEPARTMENT WILL HAVE THE RIGHT TO INSPECT THE WATER LINE RELOCATION WORK. CONSTRUCTION AND MATERIALS MUST MEET THE APPROVAL OF THE WATER DEPARTMENT AND CITY ENGINEER.

SEQUENCE OF CONSTRUCTION

IN ORDER THAT WATER SERVICES TO OTHER AREAS OF THE CITY OF STEUBENVILLE ARE NOT DISRUPTED DURING THE CONSTRUCTION OF THIS PROJECT THE FOLLOWING SEQUENCE OF CONSTRUCTION SHALL BE FOLLOWED IN THE AREAS SPECIFIED:

1. MARKET ST. (STA. 821+00 - STA. 830+00) - LAWSON AVENUE

THE 16" WATER LINE TO BE CONSTRUCTED FROM STATION 821+00 TO THE INTERSECTION OF LAWSON AVE. AND ORCHARD STREET AND THE 12" WATER LINE CONNECTING THE 16" WATER LINE WITH THE EXISTING 12" WATER LINE AT THE INTERSECTION OF MARKET STREET AND BELLEVIEW BLVD. SHALL BE COMPLETED AND IN OPERATION BEFORE THE EXISTING 12" WATER LINE RUNNING ALONG MARKET STREET AND LAWSON AVE MAY BE CUT AND PLUGGED. THE REMAINING WATER LINES ON MARKET STREET AND LAWSON AVE MAY THEN BE CONSTRUCTED.

2. RESERVOIR AREA RIGHT OF STA. 857+00 LINE "A"

THE CONTRACTOR SHALL FIRST LOCATE THE WATER LINES LEADING TO AND FROM THE RESERVOIR. THE NEW 20" WATER LINE SHALL BE CONSTRUCTED AND PLACED IN OPERATION BEFORE THE EXISTING 20" WATER LINE MAY BE CUT AND PLUGGED. THE CITY OF STEUBENVILLE WATER DEPARTMENT SHALL DETERMINE THE TIME FOR CUTTING AND PLUGGING THE EXISTING LINE.

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PLACEMENT						
DRAINAGE						
R O W						
QUANTITIES						

BRUNING 44-560 10943

GENERAL SUMMARY

JEFFERSON COUNTY
JEF-43-0.42

TYPE CODE 7221 - EXCEPT AS NOTED

ITEM	13	14	21	30	31	33	34	36	38	39	41	42	43	45	46	48	49	62	63	64	65	66	67	68	69	70	169	ROW 1	100% CITY 14	100% CITY 49	100% CITY 50	100% CITY 71	100% CITY 21	100% CITY ROW 1
201	LUMP																																	
202				438	1122	579	171	1691						911	366	701														138	393			
202				3675	8839	1732		4287						4030	2292	1745														932	2139			
202				4	6	1		2																										
202					2	3						1																			1			
202								95								40															23			
202					3	3				2			1																					
202				1661	4040	625	540	3616						863	800	1636															379			
202							19							114																	149			
202				LUMP	LUMP	LUMP		LUMP						LUMP																				
202				LUMP	LUMP			LUMP																										
203			124,698																														1290	
203			367,383																														24	
203			43,141																														739	
203			22																														1	
202								2						4		2														1	3			
604																												40						2
410		250																																
410		750																																
656																																	64	
606																		112.5	173	643	552	600	1153.8	224.5	75	600.9								
606																			225		550	600	237.5	500	275									
606																			1						1									
606																			1	4			5	1	2	6								
606																				4			3			4								
607			7143																														606	
607			1																														0	
608																		6614	6465	4665	2750	3000	1813	2500	4777							2571		
608																		152	150				350											
608																				125														
615		1360																																
615		LUMP																																
616	150																																	
616	50	20																																
202					3																													
607																											24							
607																											1							
659		2.25	4.40																										.40				0.77	
659			21.98																														3.86	
659			48835																														8563	
660					33	402	3	17	351	34	501	65	327	252		321	437													42				
660													103																					
601				153																														
601						18	40	45		339		258	72																					
601				26	600																													
601						273	10	50	138	100	252		344	557			210													94				
601												194																						
601						50																												
207		9767																											1713					
207		21																											4					
207		713																											7					
207		367																											0					
207		122																											21					
659		2442																											428					

ITEM	QUANTITY NORMAL PART.	QUANTITY 100% CITY	QUANTITY GRAND TOTAL	UNIT	DESCRIPTION TYPE CODE 7221
					ROADWAY
201	LUMP		LUMP	Lump	Clearing and Grubbing
202	5,979	531	6,510	Lin. Ft.	Curb Removed
202	26,600	3,071	29,671	Sq. Ft.	Sidewalk Removed
202	13	0	13	Each	Catch Basin Abandoned
202	6	1	7	Each	Manhole Removed
202	135	23	158	Lin. Ft.	Pipe Removed 24" and under
202	9	0	9	Each	Manhole Abandoned
202	13,801	379	14,180	Sq. Yds.	Pavement Removed
202	133	149	282	Sq. Yds.	Wearing Course Removed
202	LUMP	0	LUMP	Lump	Structures Removed, as per plan
202	LUMP	0	LUMP	Lump	Steps Removed, as per plan
203	124,698	1,290	125,988	Cu. Yds.	Excavation Not Including Embankment Construction
203	367,383	24	367,407	Cu. Yds.	Embankment, as per plan
203	43,141	739	43,880	Sq. Yds.	Subgrade Compaction
203	22	1	23	Hrs.	Proof Rolling
202	8	4	12	Each	Catch Basin Removed
604	40	2	42	Each	Centerline Reference Monument
410	250	0	250	Cu. Yds.	Traffic Compacted Surface, Type A or B
410	750	0	750	Cu. Yds.	Traffic Compacted Surface, Type C
656	0	64	64	M Sq. Ft.	Roadside Cleanup
606	4134.7	0	4134.7	Lin. Ft.	Guard Rail, Type 5
606	2387.5	0	2387.5	Lin. Ft.	Guard Rail, Type 5, Barrier Design
606	2	0	2	Each	Anchor Assembly, Barrier Design
606	19	0	19	Each	Anchor Assembly
606	11	0	11	Each	Bridge Terminal Assembly, Type F
607	7143	606	7749	Lin. Ft.	Fence, Type CL
607	1	0	1	Each	Gate, Type CL
608	32,584	2571	35,155	Sq. Ft.	4" Concrete Walk
608	652	0	652	Lin. Ft.	Concrete Steps, Type "A"
608	125	0	125	Lin. Ft.	Concrete Steps, Type "B"
615	1360	0	1360	S.Y.	CLASS A TEMPORARY PAVEMENT
615	LUMP	0	LUMP	LUMP	TEMPORARY ROADS
616	150	0	150	M. Gals.	Water
616	70	0	70	Tons	Calcium Chloride
202	3		3	Each	Underground Storage Tank Removed
607	24	0	24	Lin. Ft.	Fence, Type CL, Modified as per plan
607	1	0	1	Each	8' Gate, Type CL, Modified as per plan
					EROSION CONTROL - TYPE CODE Y005
659	6.65	1.17	7.82	Tons	Commercial Fertilizer (12-12-12)
659	21.98	3.86	25.84	Tons	Agricultural Liming
659	48,835	8,563	57,398	Sq. Yds.	Seeding and Mulching
660	2743	42	2785	Sq. Yds.	Sodding
660	103	0	103	Sq. Yds.	Sodding for Special Berm and Slope Protection, as per Plan
601	153	0	153	Sq. Yds.	Riprap, Using 6" Reinforced Concrete Slab
601	772	0	772	Cu. Yds.	Rock Channel Protection, Type "B"
601	626	0	626	Lin. Ft.	Paved Gutter, as per Plan
601	1934	94	2028	Lin. Ft.	Paved Gutter, Standard Type 1-2
601	194	0	194	Lin. Ft.	Paved Gutter, Standard Type 1-3
601	50	0	50	Lin. Ft.	Paved Gutter, Standard Type 1-4
207	9,767	1,713	11,480	Sq. Yd.	Temporary seeding and mulching
207	21	4	25	M. Gals.	Water
207	713	7	720	Lin. Ft.	Temporary slope drains
207	367	0	367	Cu. Yds.	Temporary benches, dikes, dams and sediment basins
207	122	21	143	M. Sq. Ft.	Mowing
659	2,442	428	2,870	Sq. Yds.	Repair seeding and mulching

GENERAL SUMMARY

★ TYPE CODE Y060

ITEM	13	30	31	33	34	36	38	39	41	42	43	45	46	48	49	75	100% CITY 49	100% CITY 50	100% CITY 75	ITEM	QUANTITY NORMAL PART.	QUANTITY 100% CITY	QUANTITY GRAND TOTAL	UNIT	DESCRIPTION TYPE CODE 7221
																									DRAINAGE
603	150																			603	150	0	150	Lin. Ft.	4" Conduit, Type B
603	150													26						603	176	0	176	Lin. Ft.	6" Conduit, Type B
603	150																			603	150	0	150	Lin. Ft.	8" Conduit, Type B
603	150																			603	150	0	150	Lin. Ft.	10" Conduit, Type B
																			56	603	0	56	★ 56	Lin. Ft.	8" Conduit, Type B, 706.02 CL. V w/ 706.11 Joints (Sanitary)
603																56				603	56	0	★ 56	Lin. Ft.	8" Conduit, Type B, 706.08 with 706.12 Joints (Sanitary)
603																			204	603	0	204	★204	Lin. Ft.	10" Conduit, Type B, 706.08 with 706.12 Joints (Sanitary)
																			24	603	0	24	★ 24	Lin. Ft.	8" Conduit, Type B, 706.02 CL. V w/ 706.11 Joints Encased as per Plan (Sanitary)
603																783			214	603	783	214	997	Lin. Ft.	12" Conduit, Type B
603																217			50	603	217	50	267	Lin. Ft.	15" Conduit, Type B
603																38			270	603	38	270	★308	Lin. Ft.	15" Conduit, Type B, 706.08 with 706.12 Joints (Sanitary)
603																0			137	603	0	137	★137	Lin. Ft.	15" Conduit, Type B, with 706.11 or 706.12 Joints, Encased as per plan (San)
603																138				603	138	0	138	Lin. Ft.	18" Conduit, Type B
603																102				603	102	0	102	Lin. Ft.	21" Conduit, Type B
603																349				603	349	0	349	Lin. Ft.	24" Conduit, Type B
603																625				603	625	0	625	Lin. Ft.	36" Conduit, Type B, 706.02 or 706.08
603																20				603	20	0	20	Lin. Ft.	42" Conduit, Type B
603																905				603	905	0	905	Lin. Ft.	48" Conduit, Type B, 706.02
603																192				603	192	0	192	Lin. Ft.	48" Conduit, Type B, 706.02 Class III
																			328	603	0	328	★328	Lin. Ft.	8" Conduit, Type C, 706.01 E.S., 706.02 or 706.08 E.S. with 706.11 or 706.12 Joints (Sanitary)
603																216				603	216	0	★216	Lin. Ft.	8" Conduit, Type C, 706.08 with 706.12 Joints (Sanitary)
603																356			79	603	356	79	435	Lin. Ft.	12" Conduit, Type C
603																18			197	603	18	197	215	Lin. Ft.	15" Conduit, Type C
603																226			1833	603	226	1833	★2059	Lin. Ft.	15" Conduit, Type C, 706.08 with 706.12 Joints (Sanitary)
603																115				603	115	0	115	Lin. Ft.	18" Conduit, Type C
603																18				603	18	0	18	Lin. Ft.	21" Conduit, Type C
603																28				603	28	0	28	Lin. Ft.	24" Conduit, Type C
603																2004				603	2004	0	2004	Lin. Ft.	48" Conduit, Type C, 706.02
603			40	30	20	50	40	10	30	10	20	40	32	30			10	10		603	352	20	372	Lin. Ft.	6" Conduit, Type F
603																197				603	197	0	197	Lin. Ft.	12" Conduit, Type F
605	200																			605	200	0	200	Lin. Ft.	6" Unclassified Pipe Underdrains, 707.01 Type III or 707.12, as per plan
605			698	729	370	595	440	553	959	600	515	354		493			25	165		605	6306	190	6496	Lin. Ft.	6" Shallow Pipe Underdrains
605		600	285									480								605	1365	0	1365	Lin. Ft.	6" Deep Pipe Underdrains
605			140	187		100	50		20			399	338							605	1234	0	1234	Lin. Ft.	6" Unclassified Pipe Underdrains
605				250		160	125							50	450		110			605	1035	110	1145	Lin. Ft.	6" Pipe Underdrains, 707.01 Type III or 707.12
605	50																			605	50	0	50	Lin. Ft.	Aggregate Drains for Springs, as per Plan
602																1.8				602	1.8	0	1.8	Cu. Yds.	Concrete Masonry
604		4	3		1							3		2				1		604	13	1	14	Each	Manhole Adjusted to Grade
604																1				604	1	0	★ 1	Each	Manhole Reconstructed to Grade (Sanitary)
604				1															1	604	1	1	2	Each	Standard No. 1 Manhole
604																3			11	604	3	11	★ 14	Each	Standard No. 1-A Manhole w/ 706.11 Joints (Sanitary)
604																7				604	7	0	7	Each	Standard No. 1-A Manhole
604																			1	604	0	1	★ 1	Each	Standard No. 1-A Manhole w/ 706.11 Joints and Drop Pipe (Sanitary)
604																LUMP				604	LUMP	0	LUMP	Lump	Special Separation Chamber
604																1				604	1	0	1	Each	Standard No. 2-A-14 Paved Shoulder Inlet, Modified as per plan
604																3				604	3	0	3	Each	Standard No. 2-A-6 Paved Shoulder Inlet, Modified as per Plan
604																4				604	4	0	4	Each	Standard No. 2-A-8 Paved Shoulder Inlet, Modified as per Plan
604																3				604	3	0	3	Each	Standard No. 2-A-10 Paved Shoulder Inlet, Modified as per Plan
604																2				604	2	0	2	Each	Standard No. 2-A-12 Paved Shoulder Inlet, Modified as per Plan
604																1				604	1	0	1	Each	Standard No. 2-A-18 Paved Shoulder Inlet, Modified as per Plan
604																1				604	1	0	1	Each	Standard No. 2-2-A Catch Basin
604																2				604	2	0	2	Each	Standard No. 2-2-A Catch Basin, Modified as per Plan
604																3				604	3	0	3	Each	Standard No. 3 Catch Basin
604																19			7	604	19	7	26	Each	Standard No. 3-A Catch Basin
604																10			2	604	10	2	12	Each	Standard No. 5 Catch Basin
604																8				604	8	0	8	Each	Standard No. 5-A Catch Basin

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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299

JEFFERSON COUNTY
JEF-43-0.42

ITEM	SHEET NUMBERS 13	14		21	62	63	64	65	66	67	68	69	70	100% CITY 13	14	21	71	
301				480	9											8		
304				829												16		
305		27														637		
310		2		7091												105		
310				332												11		
402				16												31		
404		101		195	2											26		
407				529														
407				19														
451				34,466												506		
452							40											
452					260													
609					1215	939	1360	539	580	195	484	164					298	
609					93		289			116		178	621				197	
609									101									
609									182									
609						537						1234						
609																	354	
611				72														
611				245														
612				1857														
612				53												16		
Special				128														
619	LUMP																	
623	LUMP																	
614		LUMP																

ITEM	QUANTITY NORMAL PART.	100% CITY	GRAND TOTAL	UNIT	DESCRIPTION TYPE CODE 7221
					PAVEMENT
301	489	8	497	Cu. Yds.	Bituminous Aggregate Base; 702.01 (85-100 or AC-20) or 702.09, RT-11 or RT-12
304	829	16	845	Cu. Yds.	Aggregate Base
305	27	637	664	Sq. Yds.	9" Portland Cement Concrete Base
310	7093	105	7198	Cu. Yds.	Subbase, Grading A as per plan
310	332	11	343	Cu. Yds.	Subbase
402	16	31	47	Cu. Yds.	Asphalt Concrete (70-85 or AC-20)
404	298	26	324	Cu. Yds	Asphalt Concrete (70-85 or AC-20)
407	529	0	529	Gals.	Tack Coat: 702.04, MS-2 or RS-1; or 702.02, RC-70 or RC-250
407	19	0	19	Tons	Cover Aggregate
451	34,466	506	34,972	Sq. Yds.	9" Reinforced Portland Cement Concrete Pavement
452	40	0	40	Sq. Yds.	7" Plain Portland Cement Concrete Pavement
452	260	0	260	Sq. Yds.	8" Plain Portland Cement Concrete Pavement
609	5476	298	5774	Lin. Ft.	Combination Curb and Gutter, Standard Type 2
609	1297	197	1,494	Lin. Ft.	Concrete Curb, Standard Type 6
609	101	0	101	Lin. Ft.	Concrete Curb, Standard Type 7
609	182	0	182	Lin. Ft.	Concrete Curb, Standard Type 8
609	1771	0	1771	Lin. Ft.	Concrete Curb, Standard Type 2A
609	0	354	354	Lin. Ft.	Concrete Curb, Standard Type 2-B
611	72	0	72	Sq. Yds.	Reinforced Concrete Approach Slabs (T=12")
611	245	0	245	Sq. Yds.	Reinforced Concrete Approach Slabs (T=13")
612	1857	0	1857	Sq. Yds.	Concrete Median
612	53	16	69	Sq. Yds.	Concrete Traffic Island
Special	128	0	128	Cu. Yds	Drainage Connection using No. 8 Aggregate
619	LUMP	LUMP	LUMP	Lump	Field Office
623	LUMP	LUMP	LUMP	Lump	Construction Layout Stakes
614	LUMP	LUMP	LUMP	Lump	Maintaining Traffic

STRUCTURES OVER 20' SPAN

BRIDGE NO.	FOR QUANTITIES SEE SHEET NO.
JEF-43-0111-S.R. 43 under Line "E"	No. 236
JEF-43-0063-S.R. 43 under Line "A"	No. 251
JEF-43- Line "B" under Line "A"	No. 267
For Retaining Walls	No. 215
For Lighting	No. 169
For Traffic Control	No. 186

DESCRIPTION	PLOTTED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY				
PAVEMENT				
DRAINAGE				
R.O.W.				
QUANTITIES	N.C.	1-13-70	W.O.Y.	1-16-71

GENERAL SUMMARY
WATER

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

19 / 299

JEFFERSON COUNTY
JEF-43-0.42

TYPE CODE Y0G0

ITEM	SHEET NUMBERS – NORMAL PARTICIPATION 15	30	31	33	34	36	39	42	45	46	48	49	44% CITY 56% NORM. 30	100% CITY 30	100% CITY 31	100% CITY 37	100% CITY 50	ITEM	QUANTITY NORMAL PART.	44% CITY 56% NORM	100% CITY	GRAND TOTAL	UNIT	DESCRIPTION
814									9									814	9	0	0	9	LIN. FT.	4" NEW WATER MAIN, DUCTILE IRON, AS PER PLAN
814			101						27			56						814	184	0	0	184	LIN. FT.	6" NEW WATER MAIN, DUCTILE IRON, AS PER PLAN
814									296	160								814	456	0	0	456	LIN. FT.	8" NEW WATER MAIN, DUCTILE IRON, AS PER PLAN
814		123	639			464						491	211					814	1717	211	0	1928	LIN. FT.	12" NEW WATER MAIN, DUCTILE IRON, AS PER PLAN
814														325	585	816		814	0	0	1726	1726	LIN. FT.	16" NEW WATER MAIN, DUCTILE IRON, AS PER PLAN
814												206						814	206	0	0	206	LIN. FT.	20" NEW WATER MAIN, DUCTILE IRON, AS PER PLAN
814	300																	814	300	0	0	300	LIN. FT.	3/4" NEW SERVICE BRANCHES
814	300																	814	300	0	0	300	LIN. FT.	1¼" NEW SERVICE BRANCHES
814	50																	814	50	0	0	50	LIN. FT.	2" NEW SERVICE BRANCHES
814	3																	814	3	0	0	3	EACH	3/4" PRESSURE REDUCING VALVE
814	3																	814	3	0	0	3	EACH	1¼" PRESSURE REDUCING VALVE
814	1																	814	1	0	0	1	EACH	2" PRESSURE REDUCING VALVE
814									1									814	1	0	0	1	EACH	4" 90° BEND
814			1															814	1	0	0	1	EACH	6" 11¼° BEND
814			1									1						814	2	0	0	2	EACH	6" 22½° BEND
814												1						814	1	0	0	1	EACH	6" 45° BEND
814													1					814	0	1	0	1	EACH	8" 90° BEND
814			1									5						814	6	0	0	6	EACH	12" 22½° BEND
814		2																814	2	0	0	2	EACH	12" 45° BEND
814						1						1						814	2	0	0	2	EACH	12" 90° BEND
814																2		814	0	0	2	2	EACH	16" 11¼° BEND
814															1	1		814	0	0	2	2	EACH	16" 22½° BEND
814														2				814	0	0	2	2	EACH	16" 45° BEND
814														2		4		814	0	0	6	6	EACH	16" 90° BEND
814												2						814	2	0	0	2	EACH	20" 11¼° BEND
814												2						814	2	0	0	2	EACH	20" 22½° BEND
814												2						814	2	0	0	2	EACH	20" 90° BEND
814		1	1	1	1	1			1					1	1	2	1	814	6	0	5	11	EACH	FIRE HYDRANT AS PER PLAN
814			1	1	1	2	1	1	1		1	1					1	814	10	0	1	11	EACH	FIRE HYDRANT REMOVED AND DISPOSED OF AS PER PLAN
814											1							814	1	0	0	1	EACH	FIRE HYDRANT MOVED AND RESET
814									1									814	1	0	0	1	EACH	4"× 4"× 4" TEE
814			1						1									814	2	0	0	2	EACH	6"× 6"× 6" TEE
814									1									814	1	0	0	1	EACH	8"× 8"× 4" TEE
814									1									814	1	0	0	1	EACH	8"× 8"× 6" TEE
814													1					814	0	1	0	1	EACH	8"× 8"× 8" TEE
814												1						814	1	0	0	1	EACH	12"×12"× 6" TEE
814													1					814	0	1	0	1	EACH	12"×12"× 8" TEE
814		2				1						2	1					814	5	1	0	6	EACH	12"×12"×12" TEE
814														1				814	0	0	1	1	EACH	16"×16"×12" TEE
814																1		814	0	0	1	1	EACH	16"×16"×16" TEE
814			1															814	1	0	0	1	EACH	12"× 6"×12" REDUCING LATERAL
814									1									814	1	0	0	1	EACH	4" GATE VALVE WITH BOX
814			2						1									814	3	0	0	3	EACH	6" GATE VALVE WITH BOX
814									1				2					814	1	2	0	3	EACH	8" GATE VALVE WITH BOX
814		3	1			1						2	2					814	7	2	0	9	EACH	12" BUTTERFLY VALVE WITH BOX
814														1	1	2		814	0	0	4	4	EACH	16" BUTTERFLY VALVE WITH BOX
814																								
814			2		1						3							814	6	0	0	6	EACH	VALVE BOX ADJUSTED TO GRADE
814				1														814	1	0	0	1	EACH	SERVICE BOX ADJUSTED TO GRADE
814																1		814	0	0	1	1	EACH	12"× 12"× 16" TAPPING SLEEVE AND VALVE WITH BOX
814												2						814	2	0	0	2	EACH	20"× 20"× 20" TAPPING SLEEVE AND VALVE WITH BOX

DESCRIPTION | PLOTTED BY DATE | N.I.C. BY DATE | CHECKED BY DATE
TOPOGRAPHY
PAVEMENT
DRAINAGE
R.O.W.
QUANTITIES | N/C 1-12-70 | | WGY

JRJ - 2-14-69

GENERAL SUMMARY

TYPE CODE 7221

ITEM	QUANTITY NORMAL PART.	100% CITY	GRAND TOTAL	UNIT	
					BUILDING REMOVAL
202	lump		lump	lump	Parcel No. 50-WD, Removal of one 2-story brick and concrete block building
202	lump		lump	lump	Parcel No. 55-WD, Removal of one 2-story frame residence
202	lump		lump	lump	Parcel No. 88-WD, Removal of one 2-story frame residence, garage with apartment overhead
202	lump		lump	lump	Parcel No. 104-WD, Removal of one 2-story brick residence
202	lump		lump	lump	Parcel No. 105-WL, Removal of one concrete block service station, one 2-story frame residence, frame building, two concrete block garages, tile block building, frame shed, corrugated metal shed, truck scale, underground fuel storage tanks
202	lump		lump	lump	Parcel No. 106-WL; Removal of one 1-story brick commercial building
202	lump		lump	lump	Parcel No. 137-WL, Removal of one 2-story frame residence, frame and block garage
202		lump	lump	lump	Parcel No. 175-WL, Removal of one 2-story frame residence, one 1-car tile block garage
202		lump	lump	lump	Parcel No. 176-WL, Removal of one 2-story frame residence
202		lump	lump	lump	Parcel No. 177-WL, Removal of one 2-story frame residence, one 1-car frame garage
202	lump		lump	lump	Parcel No. 186-WL, Removal of one 2-story frame residence, one 1½-story frame residence, one 1-story frame and concrete block residence, three frame sheds
202		lump	lump	lump	Parcel No. 189-WL, Removal of one church building, one 2-story frame residence

SUB - SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF - 43 - 0.42

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY P.G.P. 10-2-72
QUANTITIES CHECKED BY P.T.H. 10-3-72

EXCAVATION, EMBANKMENT & SEEDING

STATION TO STATION	NORMAL PARTICIPATION 203 EXCAV. CU. YDS.	NORMAL PARTICIPATION 203 EMBANK. CU. YDS.	NORMAL PARTICIPATION 659 SEEDING SQ. YDS.	100% CITY OF STEUBENVILLE 203 EXCAV. CU. YDS.	100% CITY OF STEUBENVILLE 203 EMBANK. CU. YDS.	100% CITY OF STEUBENVILLE 659 SEEDING SQ. YDS.
821+00 ~ 832+00	5,578	15,296	4,552			
832+00 ~ 847+00	38,764	220,559	31,870			
847+00 ~ 858+87.86	16,425	29,122	12,841			
LINE "A"	44,875	28,864	13,071	1,150	24	1,714
LINE "B"	12,826	19,433	8,986			
LINE "D"	4,510	1,507	2,377			
LINE "E"	1,197	51,940	9,399			
LINE "G"	226	381	1,048			
0+30 ~ 1+00 BELLEVIEW BLVD.	139	0	133			
10+00 ~ 10+67 BELLEVIEW BLVD.	2	2	0			
STEELE AVE.	156	279	403			
ADAMS STREET				140	0	0
DEDUCT FOR SOD			—(2,986)			— (42)
DEDUCT FOR ROCK CHANNEL PROTECTION			—(1,161)			0
DEDUCT FOR PAVED DITCHES			—(1,002)			— (42)
FROM LANDSCAPING PLANS - SUBSTRUCT. CROWN VETCH & PERENNIAL RYE MIX			—(30,696)			— (112)
FROM ITEM 656 ROADSIDE CLEANUP 63,403 S.F. / 9 SF/SY						7,045
TOTAL	124,698	367,383	48,835	1,290	24	8,563

203 SUBGRADE COMPACTION

	FROM 451 SQ. YDS.	FROM 609	FROM 611	FROM 612	FROM SHOULDER AREAS	TO GENERAL SUMMARY SQ. YDS.
NORMAL PARTICIPATION	34,466	1,530	317	1910	4918	43,141
100% CITY	506	114	—	16	103	739

203 PROOFROLLING
@ 2000 S.Y. PER HOUR

PARTICIPATION		TO GENERAL SUMMARY HOURS
	FROM SUBGRADE COMPACTION	
NORMAL	43,141 S.Y. ÷ 2000 S.Y./HR. = 21.6	22
100% CITY OF STEUBENVILLE	739 S.Y. ÷ 2000 S.Y./HR.	1

607 FENCE TYPE CL

	FROM R/W SHEET NO.	607 FENCE TYPE CL LIN. FT.	GATE EA.
NORMAL PARTICIPATION	9	119	
	12	1167	
	14	595	
	15	600	
	16	570	
	17	633	1
	18	670	
	19	726	
	20	945	
	22	932	
	23	186	
	TOTAL	7143	1
100% CITY	20	324	
	21	282	
	TOTAL	606	0

659 COMMERCIAL FERTILIZER (12-12-12)
@ 20# PER 1000 S.F.

PARTICIPATION		TONS
	FROM SEEDING	
NORMAL	(48,835 S.Y. × 9 SF/SY) × 0.01 TONS/1000 S.F.	4.40
100% CITY OF STEUBENVILLE	(8,563 S.Y. × 9 SF/SY) × 0.01 TONS/1000 S.F.	0.77

659 AGRICULTURAL LIMING
@ 100# PER 1000 S.F.

PARTICIPATION		TONS
	FROM SEEDING	
NORMAL	(48,835 S.Y. × 9 SF/SY) × 0.05 TONS/1000 S.F.	21.98
100% CITY OF STEUBENVILLE	(8,563 S.Y. × 9 SF/SY) × 0.05 TONS/1000 S.F.	3.86

656 ROADSIDE CLEAN UP
100% CITY OF STEUBENVILLE

FROM R/W SHEET NO.	PARCEL NO.	1000 S.F.
12	96 WD	1.469
12	97 WD	1.495
12	98 WD	1.521
15	99 WD	4.721
15	100 WD	1.364
15	101 WD	1.448
15	102 WD	1.536
15	114 WD	1.931
15	115 WD	2.776
15	116 WD	7.266
15	117 WD	2.604
15	118 WD	3.070
15	119 WD	2.263
15	120 WD	2.229
15	121 WD	2.920
15	122 WD	2.455
15	123 WD	3.994
17	124 WD	6.696
17	125 WD	2.214
17	126 WD	1.993
17	127 WD	4.896
17	128 WD	2.260
17	129 WD	0.282
TOTAL		63.403
TO GENERAL SUMMARY		64

★ on approach slabs

PAVEMENT SUBSUMMARY
NORMAL PARTICIPATION

FROM SHEET NO.	301 BITUMINOUS AGGREGATE BASE CU. YDS.	304 AGGREGATE BASE CU. YDS.	310 SUBBASE GRADING A AS PER PLAN CU. YDS.	310 SUBBASE CU. YDS.	404 ASPHALT CONCRETE CU. YDS.	407 Tack Coat @ 0.1 gal/S.Y. GALS.	407 Cover Aggr. TONS	451 9" REINFORCED PORTLAND CEMENT CONCRETE SQ. YDS.	611 REINFORCED CONCRETE APPROACH SLAB T = 12" SQ. YDS.	611 REINFORCED CONCRETE APPROACH SLAB T = 13" SQ. YDS.	612 CONCRETE MEDIAN SQ. YDS.	612 CONCRETE TRAFFIC ISLAND SQ. YDS.	SPECIAL DRAINAGE CONNECTION USING NO. 8 AGGREGATE CU. YDS.	PAVED SHOULDER AREA S.Y.	402 ASPHALT CONCRETE CU. YDS.	305 9" PORTLAND CEMENT CONC. BASE S.Y.
22			4,888	206				24,118						2722		
23	221	429									1857		88			
24			1,297	30				6,061						812		
25	80	160			★ 20	★32	★ 1.11		72	245		53				
26	179	240			175	497	17.40						40		16	
27			906	96				4,287						1384		
TOTAL	480	829	7,091	332	195	529	18.51 USE 19	34,466	72	245	1857	53	128	4918	16	
100% CITY OF STEUBENVILLE																
24			105	11				506						103		637
25	8	16			26							16			31	
TOTAL	8	16	105	11	26			506				16		103	31	637

PAVEMENT CALCULATIONS

JEFFERSON COUNTY
JEF-43-0.42

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

22/299

STATION TO STATION	310 SUBBASE GRADING A AS PER PLAN	C.Y.	310 SUBBASE	C.Y.	PAVED SHOULDER AREAS	S.Y.	451 "9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	S.Y.
S.R. 43								
821+00.00 ~ 827+52.00	(6/36 YD. x 3477.3 S.Y.)+3.70 C.Y./STA. x 4.4551 + 2.78 C.Y./STA x 3.78	606.6					1/9 (48' x 652')	3477.3
827+52.00 ~ 830+21.47	6/36 YD. x 1542.0	257.0					1 S.Y./9 S.F. [(+8'+55')/2] 269.47'	1542.0
S.R. 43 NORTH BOUND LANES								
830+21.47 ~ 832+92.82	6/36 YD. x 1145.7 S.Y. + 12/36 YD. x 135.7 S.Y. + 4.63 C.Y./STA. x 2.72 STA.	248.7					1/9 (38' x 271.35')	1145.7
832+92.82 ~ 836+20.00	6/36 YD. x 1381.4 S.Y. + 12/36 YD. x 218.1 S.Y. + 4.63 C.Y./STA. x 3.2718 STA.	316.8					1/9 (38' x 327.18')	1381.4
836+20.00 ~ 838+60.00	6/36 YD. x 1120.0 S.Y. + 12/36 YD. x 160.0 S.Y. + 4.63 C.Y./STA. x 2.40 STA.	251.1					1/18 (38'+46) 240'	1120.0
838+60.00 ~ 840+40.00	6/36 YD. x 520.0 S.Y. + 12/36 YD. x 120.0 S.Y. + (6/36 YD.) 1/2 (5+18)/3 YD. x 180/3 YD.	165.0			1/2 (5'+18')/3 YD. x 180'/3 YD.	230	1/9 (26' x 180')	520.0
840+40.00 ~ 848+10.00	6/36 YD. x 2224.4 S.Y. + 12/36 YD. x 565.4 S.Y. + 4.94 C.Y./STA. x 7.70 STA.	597.2	6.58 C.Y./STA. x 7.70 STA.	50.7	770' x 8' / 9 S.F./YD.	684	1/9 (26' x 770')	2224.4
848+10.00 ~ 854+35.82	6/36 YD. x 1807.9 S.Y. + 12/36 YD. x 442.7 S.Y. + 4.63 C.Y./STA. x 6.26 STA.	478.0					1/9 (26' x 625.82')	1807.9
854+35.82 ~ 855+72.10 LINE C-4	6/36 YD. x 393.7 S.Y. + 4.63 C.Y./STA. x 1.36 STA.	71.9					1/9 (26' x 136.28')	393.7
855+72.10 ~ 856+82.98 LINE C-4	6/36 YD. x 320.3 S.Y.	53.4					1/9 (26' x 110.88')	320.3
856+82.98 ~ 857+45.29 LINE C-4	6/36 YD. x 183.5 S.Y.	30.6					1/9 (26.5' x 62.31')	183.5
		71.5						
854+35.82 ~ 857+35.54 S.R. 43 (MEDIAN ONLY)	12"/36" YD. x 214.6 S.Y.							
S.R. 43								
857+35.54 ~ 858+87.86	6/36 YD. x 863.1 S.Y.	143.9					1/18 (55'+47') 152.32	863.1
S.R. 43 SOUTH BOUND LANES								
828+84.44 ~ 830+21.47 (SHOULDER ONLY)	4.94 C.Y./STA. 1.37 STA.	6.8	6.58 C.Y./STA. x 1.37 STA.	9.0	137.03 FT. x 8 FT./9 S.F./YD.	122		
830+21.47 ~ 834+94.99	6/36 YD. x 1367.9 S.Y. + 4.94 C.Y./STA. x 4.74 STA.	251.4	6.58 C.Y./STA. x 4.74 STA.	31.2	473.52 FT. x 8 FT./9 S.F./YD.	475	1/9 (26 x 473.52)	1367.9
834+94.99 ~ 843+18.65	6/36 YD. x 2379.5 S.Y.	396.6					1/9 (26 x 823.66)	2379.5
840+40.00 ~ 843+18.65	6/36 YD. x 278.5 S.Y.	46.4					CALC.	278.5
843+18.65 ~ 851+26.00	6/36 YD. x 2332.3 S.Y. + 1.85 C.Y./STA. x 8.07 STA.	403.6	9.72 C.Y./STA. x 8.07 STA.	78.4	8' x 807.35' ÷ 9 S.F./S.Y.	718	1/9 (26 x 807.35)	2332.3
851+26.00 ~ 857+35.54	6/36 YD. x 1760.9 S.Y.	293.5					1/9 (26 x 609.54)	1760.9
851+26.00 S.R. 43 ~ 856+10.00 LINE C-3 (SHOULDER ONLY)	4.94 C.Y./STA. x 4.84 STA.	23.9	6.58 C.Y./STA. x 4.84 STA.	31.9	8' x 484.00' ÷ 9 S.F./S.Y.	431		
856+10.00 S.R. 43 ~ 857+50.00 LINE C-3 (SHOULDER ONLY)	4.94 C.Y./STA. x 0.5 x 1.40 STA.	3.5	6.58 C.Y./STA. x 0.5 x 1.40 STA.	4.6	8' x 0.5 x 1.40 ÷ 9 S.F./S.Y.	62		
LINES F & G								
854+69.82 ~ 855+73.31 LINE F	6/36 YD. x 195.5 S.Y.	32.6					1/9 (17 x 103.49)	195.5
855+73.31 ~ 856+82.95 LINE F	6/36 YD. x 125.1 S.Y.	20.9					CALC.	125.1
FILLET AREA - LINE F - NINTH ST. - N.E. RETURN	6/36 YD x 14.3 S.Y.	2.4					CALC.	14.3
0+14 ~ 1+93 LINE G	6/36 YD. x 576.8 S.Y.	96.1					1/9 (29 x 179)	576.8
10+94.50 ~ 11+20 ALLEY NO. 6	6/36 YD. x 49.8 S.Y.	8.3					1/9 (14 x 25.5) + 10.1 S.Y. (FILLETS)	49.8
FILLET AREAS - LINE G @ EIGHTH & @ NINTH	6/36 YD. x 57.2 S.Y.	9.5					CALC.	57.2
NORMAL PARTICIPATION - TOTALS		4,887.2		205.8		2,722		24,117.1
NOTE: CARRY QUANTITIES TO SHEET 21		4,888.0		206.0		2,722		24,118

JEFFERSON COUNTY
JEF-43-0.42

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

PAVEMENT CALCULATIONS

STATION TO STATION	301		304				612		SPECIAL	
	BITUMINOUS AGGREGATE BASE	C.Y.	AGGREGATE BASE	C.Y.			CONCRETE MEDIAN	S.Y.	DRAINAGE CONNECTION USING NO. 8 AGGREGATE	C.Y.
S.R. 43 NORTH BOUND LANES										
830+21.47 ~ 832+92.82							1/18 (3'+6') 271.35	135.7		
832+92.82 ~ 836+20.00							1/9 (6'x 327.18')	218.1		
836+20.00 ~ 838+60.00							1/9 (6'x 240.00')	160.0		
838+60.00 ~ 840+40.00	FROM PAVED SHOULDER AREA 230 S.Y. x 3"/36" YD	19.2	230 S.Y. x 6"/36" YD.	38.3			1/9 (6'x 180.00')	120.0		
840+40.00 ~ 848+10.00	7.41 C.Y./STA. x 7.70 STA.	57.1	14.00 C.Y./STA. x 7.70 STA.	107.8			1/9(6'x770')+(1/2)(2.25')(225')/9 YD.+95.96'x2.25'/9 YD.	565.4	4.54 C.Y./STA. x 7.70 STA.	35.0
848+10.00 ~ 854+35.82							[6'x625.82'+15'x2.25'+1/2(2.25')(225')-19.33'x3']÷9 S.F./S.Y.	442.7		
854+35.82 ~ 857+35.54							CALC.	214.6		
S.R. 43 SOUTH BOUND LANES										
828+84.44 ~ 830+21.47	7.41 C.Y./STA. x 1.37 STA.	10.2	14.00 C.Y./STA. x 1.37 STA.	19.2					4.54 C.Y./STA. x 1.37 STA.	6.2
830+21.47 ~ 834+94.99	7.41 C.Y./STA. x 4.74 STA.	35.1	14.00 C.Y./STA. x 4.74 STA.	66.4					4.54 C.Y./STA. x 4.74 STA.	21.5
843+18.65 ~ 851+26.00	7.41 C.Y./STA. x 8.07 STA.	59.8	14.81 C.Y./STA. x 8.07 STA.	119.5						
851+26 S.R.43 ~ 856+10.00 LINE C-3	7.41 C.Y./STA. x 4.84 STA.	35.9	14.00 C.Y./STA. x 4.84 STA.	67.8					4.54 C.Y./STA. x 4.84 STA.	22.0
856+10 S.R.43 ~ 857+50.00 LINE C-3	7.41 C.Y./STA. x 0.5 x 1.40 STA.	5.2	14.00 C.Y./STA. x 0.5 x 1.40 STA.	9.8					4.54 C.Y./STA. x 0.5 x 1.40 STA.	3.2
NORMAL PARTICIPATION - TOTALS		220.5		428.8				1856.5		87.9
NOTE: CARRY QUANTITIES TO SHT. 21		221.0		429.0				1857.0		88.0

PAVEMENT CALCULATIONS — RAMPS — CONNECTIONS — DRIVEWAYS

STATION TO STATION	310 SUBBASE GRADING A AS PER PLAN	C.Y.	310 SUBBASE	C.Y.	PAVED SHOULDER AREAS	S.Y.	305 9" PORTLAND CEMENT CONCRETE BASE	S.Y.	451 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	S.Y.
LINE D										
0+77.35 ~ 3+41.34	6/36 YD. x 371.3 S.Y. + 2.78 C.Y./STA. x 2.64 STA.	69.2							1/18 (12.66' x 263.99')	371.3
3+41.34 ~ 4+80.85	6/36 YD. x 345.9 S.Y. + 2.78 C.Y./STA. x 1.40 STA.	61.5							CALC.	345.9
4+80.85 ~ 7+70.88	6/36 YD. x 515.6 S.Y. +(2.78+5.56) C.Y./STA. x 2.90 STA.	110.1			290.03 FT. x 3 FT./ 9 S.F./YD.	97			1/9 (16.00' x 290.03')	515.6
7+70.88 ~ 8+70.88	6/36 YD. x 169.4 S.Y. +(2.78+6.48) C.Y./STA. x 1.00 STA.	37.5			100.00 FT. x 3 FT./ 9 S.F./YD.	33			1/18 (16.00' x 14.50') 100'	169.4
8+70.88 ~ 9+70.88	6/36 YD. x 177.8 S.Y. + 2.78 C.Y./STA. x 1.00 STA. + 6"/36" YD. x 6"/36" YD. x 80/3 YD.	33.2							1/18 (17.50' x 14.50') 100'	177.8
9+45 ~ 9+70.88 (TRAFFIC ISLAND)	12/36 YD. x 21.0 S.Y.	7.0								
9+70.88 ~ 10+98.81	6/36 YD. x 170.6 S.Y. + 2.78 C.Y./STA. x 1.28 STA.	32.0							1/9 (12.00' x 127.93')	170.6
LINE E										
2+34.77 ~ 3+27.24 FILLET AREA @ NOSE	6/36 YD. x 34.9 S.Y.	5.8							CALC.	34.9
2+00.00 ~ 3+27.24	6/36 YD. x 339.3 S.Y. + 3.70 C.Y./STA. x 1.27 STA.	61.3							1/9 (24.00' x 127.24')	339.3
3+27.24 ~ 5+40.18	6/36 YD. x 567.8 S.Y. + 2(3.70 C.Y./STA. x 2.13 STA.)	110.4							1/9 (24.00' x 212.94')	567.8
5+40.18 ~ 5+65.18 (APPROACH SLAB)	6/36 YD. x 77.8 S.Y.	13.0								
BRIDGE										
8+58.43 ~ 8+83.43 (APPROACH SLAB)	6/36 YD. x 77.8 S.Y.	13.0								
8+83.43 ~ 11+60.00	6/36 YD. x 772.5 S.Y. + 3.70 C.Y./STA. (2.77 STA. + 1.08 STA.)	143.0							1/9 (24' x 276.57') + 1/18 (150' x 3.7') + 1/9 (10' x 3.7')	772.5
10+40.00 ~ 10+64 (TRAFFIC ISLAND)	12/36 YD. x 24.3 S.Y.	8.1								
LINE A										
838+60.00 ~ 842+25.00	6/36 YD. x 626.7 S.Y. + 3.47 C.Y./STA. x 3.65 STA. + 1.85 C.Y./STA. x 1.77 STA.	120.4	4.70 C.Y./STA. x 1.77 STA. + 2.47 C.Y./STA. x 0.88 STA.	10.5	[1/2 (2'+3') 80' + 3' x 165'] ÷ 9 S.F./S.Y.	77			2 x 1/18 (14'+16') x 100' + 1/9 (16' x 165')	626.7
842+25.00 ~ 846+52.02	6/36 YD. x 737.8 S.Y. + 5.56 C.Y./STA. x 4.31 STA. + 6.48 C.Y./STA. x 3.30 STA.	168.3			431.00 FT. x 3 FT./9 S.F./YD.	144			1/9 (16' x 427.02) − 1/18 (16' x 24')	737.8
846+52.02 ~ 846+77.02 (APPR. SLAB)	6/36 YD. x 44.4 S.Y.	7.4								
845+55 ~ 846+82 (LEFT SHOULDER)	1/27 [((2'+7.5)/2 x 100' x 0.5') + (7.5' x 27' x 0.5')]	12.5								
BRIDGE										
848+90.36 ~ 849+15.36 (APPR. SLAB)	6/36 YD. x 44.4 S.Y. + 5.56 C.Y./STA. x (0.25+0.10) STA. + 1/27 (15' x 7.5' x 0.5')	11.4								
849+15.36 ~ 851+04.59	6/36 YD. x 336.4 S.Y. + 5.56 C.Y./STA. x 1.89 STA. + 1.70 x 1.89	69.8	2.47 C.Y./STA. x 1.89 STA.	4.7	2 (189.23 FT. x 3 FT./9 S.F./YD.)	126			1/9 (16' x 189.23)	336.4
851+04.59 ~ 851+24.59 (APPR. SLAB)	6/36 YD. x 35.6 S.Y. + 5.56 C.Y./STA. x 0.17 STA. + 1.70 C.Y./STA. x 0.20 STA.	7.2	2.47 C.Y./STA. x 0.20 STA. + 1/2 (9'+12') (4') (0.5') ÷ 27 C.F./C.Y.	1.3						
BRIDGE										
852+76.55 ~ 852+96.55 (APPR. SLAB)	6/36 YD. x 35.6 S.Y. + 1.70 C.Y./STA. x 0.20 STA. + 16' AVERAGE x 7' x 0.5' ÷ 27 C.F./C.Y.	8.3	2.47 C.Y./STA. x 0.20 STA.	0.5						
852+96.55 ~ 858+00	(6/36 YD. x 895.0 S.Y.) + (1.70 C.Y./STA. + 5.56 C.Y./STA.) 5.03 STA.	185.7	2.47 C.Y./STA. x 5.03 STA.	12.4	2 (503.00 FT. x 3 FT./9 S.F./YD.)	335			1/9 (16' x 503.45)	895.0
TOTAL-NORMAL PARTICIPATION		1,296.10		29.4		812				6061.0
TO SHEET 21		1,297		30		812				6061
858+00 ~ 860+84.47	(6/36 YD. x 505.7 S.Y.) + 5.56 C.Y./STA. x 0.25 STA. + 3.47 C.Y./STA. x 2.59 STA.	99.7	2.47 C.Y./STA. x 1.00 STA. + 4.63 C.Y./STA. x 1.84 STA.	11.0	(285 FT. x 3 FT. + 25 FT. x 3 FT.)/9 S.F./YD.	103			1/9 (16' x 284.47)	505.7
	+ 1.70 C.Y./STA. x 1.00 STA. + 1.85 C.Y./STA. x 1.84 STA.	5.3								
860+66 ~ 860+84.47 (TRAFFIC ISLAND)										
56+15 ~ 58+55 ADAMS STREET							CALC.	344		
11+33.77 ~ 12+50 NINTH ST. (CUL-DE-SAC)							290 S.Y. + 5' x 5' ÷ 9 S.F./S.Y.	293		
TOTAL - 100% CITY		105.0		11.0		103		637		505.7
TO SHEET 21		105		11		103		637		506
NOTE: CARRY QUANTITIES TO SHEET 21										

DWM

PAVEMENT CALCULATIONS

STATION TO STATION	301 BITUMINOUS AGGREGATE BASE	301 C.Y.	304 AGGREGATE BASE	304 C.Y.	402 ASPHALT CONCRETE	402 C.Y.	404 ASPHALT CONCRETE	404 C.Y.	611 REINFORCED CONCRETE APPROACH SLAB	611 SQ YDS. T=12"	611 SQ YDS. T=13	612 CONCRETE TRAFFIC ISLAND	612 S.Y.
LINE D													
4+80.85 ~ 7+70.88	2.78 CY/STA. x 2.90 STA.	8.1	5.56 CY/STA. x 2.90 STA.	16.1									
7+70.88 ~ 8+70.88	2.78 CY/STA. x 1.00 STA.	2.8	5.56 CY/STA. x 1.00 STA.	5.6									
9+45 ~ 9+70.88 (TRAFFIC ISLAND)												27 FT. x 1/2 (10+4) FT. x SY/9 SF	21.0
LINE E													
5+40.18 ~ 5+65.18 (APPR. SLAB, T=13)							2.5/36 x 77.8	5.4	1/9 (28 x 25)		77.8		
BRIDGE													
8+58.43 ~ 8+83.43 (APPR. SLAB, T=13)							2.5/36 x 77.8	5.4	1/9 (28 x 25)		77.8		
10+40 ~ 10+64 (TRAFFIC ISLAND)												1/9 (219) AREA (PLANIMETERED)	32.0
LINE A													
839+60 ~ 842+25	2.78 CY/STA. x 2.65 STA.	7.4	5.56 CY/STA. x 2.65 STA.	14.7									
842+25 ~ 846+52.02	2.78 CY/STA x 4.27 STA.	11.9	5.56 CY/STA. x 4.27 STA.	23.7									
846+52.02 ~ 846+77.02 (APPR. SLAB T=13)							1.5/36 x 44.4	1.9	1/9 (16 x 25)		44.4		
845+55 ~ 846+82 (LEFT SHOULDER)	1/27 $\{(\frac{2+7.5}{2} \times 100 \times 0.25) + (7.5 \times 27 \times 0.25)\}$	6.3	1/27 $\{(\frac{2+7.5}{2} \times 100 \times 0.5) + (7.5 \times 27 \times 0.5)\}$	12.5									
BRIDGE													
848+90.36 ~ 849+15.36 (APPR. SLAB T=13)	2.78 CY/STA. x 0.35 STA. + 1/27 (15 x 7.5 x 0.25)	2.0	5.56 CY/STA. x 0.35 STA. + 1/27 (15 x 7.5 x 0.5)	4.0			1.5/36 x 44.4	1.9	1/9 (16 x 25)		44.4		
849+15.36 ~ 851+04.39	2.78 CY/STA. 1.89 STA. x 2	10.5	5.56 CY/STA. 1.89 STA. x 2	21.0									
851+04.59 ~ 851+24.59 (APPR. SLAB T=12)	2.78 CY/STA. x (0.18+0.21) STA. + 11 AVE x 4 x 0.25 ÷ 27 CF/CY	1.4	5.56 CY/STA. x (0.18+0.21) STA + 11 AVE x 4 x 0.5 ÷ 27 CF/CY	2.8			2.5/36 x 35.6	2.5	1/9 (16 x 20)	35.6			
BRIDGE													
852+76.55 ~ 852+96.55 (APPR. SLAB T=12)	1/27 (20 x 3 + 16 AVE. x 7) 0.25	1.6	1/27 (20 x 3 + 16 AVE. x 7) 0.5	3.2			2.5/36 x 35.6	2.5	1/9 (16 x 20)	35.6			
852+96.55 ~ 858+00	2.78 CY/STA. (5.03 x 5.03) STA.	28.0	5.56 CY/STA. (5.03+5.03) STA.	56.0									
TOTAL		80.0		159.6				19.6		71.2	244.4		53.0
TOTAL NORMAL PARTICIPATION TO SHEET 21		80.0		160				20		72	245		53.0
LINE A													
858+00 ~ 860+84.47	2.78 CY/STA x 2.84 STA.	7.9	5.56 CY/STA. x 2.84 STA.	15.8									
860+66 ~ 860+84.47 (TRAFFIC ISLAND)												20 x 1/2 (10+4) x SY/9 SF	16.0
56+15 ~ 58+55 (ADAMS ST.)					(344+107) SY x $\frac{1.5}{36}$ YD	18.8	344+107 SY $\frac{1.25}{36}$ YD	15.7					
11+33.77 TO 12+50 NINTH ST. (CUL DE SAC)					293 SY x $\frac{1.5}{36}$ YD	12.2	293 x $\frac{1.25}{36}$ YD	10.2					
TOTAL		7.9		15.8		31.0		25.9					16.0
TOTAL - 100% CITY TO SHEET 21		8		16		31		26					16

NOTE: CARRY QUANTITIES TO SHEET 21

PAVEMENT CALCULATIONS

JEFFERSON COUNTY
JEF - 43 - 0.42

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

	301		304		SPECIAL		402		404		407	
STATION TO STATION	BITUMINOUS AGGREGATE BASE	C.Y.	AGGREGATE BASE	C.Y.	DRAINAGE CONNECTION USING NO. 8 AGGREGATE	C.Y.	ASPHALT CONCRETE	C.Y.	ASPHALT CONCRETE	C.Y.	BITUMINOUS TACK COAT	GAL.
LINE B												
834+94.99 ~ 843+16.72	7.41 C.Y./STA. × 8.22 STA.	61.0	14.00 C.Y./STA. × 8.22 STA.	115.1	4.54 C.Y./STA. × 8.22 STA.	37.3						
843+16.72 ~ 844+16.72	5.10 C.Y./STA. × 1.00 STA. + 2.78 C.Y./STA. × 1.00 STA.	7.9	9.78 C.Y./STA. × 1.00 STA. + 5.56 C.Y./STA. × 1.00 STA.	15.3	2.22 C.Y./STA. × 1.00 STA.	2.2						
844+16.72 ~ 847+75.00	(2.78 C.Y./STA. × 3.58 STA.) 2	19.9	(5.56 C.Y./STA. × 3.58 STA.) 2	39.8								
847+75.00 ~ 849+25.00	(2.78 C.Y./STA. × 1.50 STA.) 2	8.3	(5.56 C.Y./STA. × 1.50 STA.) 2	16.7								
849+25.00 ~ 852+61.00	(5.56 C.Y./STA. × 3.36 STA.) + (2.78 C.Y./STA. × 2.83 STA.)	26.6	(11.11 C.Y./STA. × 3.36 STA.) + (5.56 C.Y./STA. × 2.83 STA.)	53.1								
BELLEVIEW BOULEVARD												
0+75.82 ~ 10+42.84									3,846 S.Y. (CALC.) × 1.25" ÷ 36"/YD.	133.6	3,846 S.Y. (CALC.) × 0.1 GAL./S.Y.	384.6
10+42.84 ~ 11+24.35	(201.3 S.Y. × 8" + 381.8 S.Y. × 1/2 × 2") ÷ 36"/YD.	55.3					381.8 S.Y. × 1.5" ÷ 36"/YD.	15.9	(381.8 S.Y. + 201.3 S.Y.) × 1 1/4" ÷ 36"/YD.	20.3	381.8 S.Y. × 0.1 GAL./S.Y.	38.2
FEATHER AREAS												
821+68 ~ 823+22 S.R. 43 LT.									(6' × 170' × 1") ÷ (9 S.F./S.Y. × 36"/YD.)	3.1	6' × 170' × 0.1 GAL./S.Y. ÷ 9 S.F./S.Y.	11.4
824+26 ~ 826+26 S.R. 43 LT.									(3' × 200' × 1") ÷ (9 S.F./S.Y. × 36"/YD.)	1.9	3' × 200' × 0.1 GAL./S.Y. ÷ 9 S.F./S.Y.	6.7
826+26 ~ 827+26 S.R. 43 LT.									[1/2 (13' + 21') × 100' × 1"] ÷ (9 S.F./S.Y. × 36"/YD.)	5.3	1/2 (13' + 21') × 100' × 0.1 GAL./S.Y. ÷ 9 S.F./S.Y.	18.9
1+75 ~ 2+00 LINE E									(39' × 25' × 1") ÷ (9 S.F./S.Y. × 36"/YD.)	3.0	39' × 25' × 0.1 GAL./S.Y. ÷ 9 S.F./S.Y.	10.8
11+60 ~ 11+65 LINE E									(34.5' × 5' × 1") ÷ (9 S.F./S.Y. × 36"/YD.)	0.6	34.5' × 5' × 0.1 GAL./S.Y. ÷ 9 S.F./S.Y.	1.9
7+39 ~ 7+44 WASH. ST.									(34' × 5' × 1") ÷ (9 S.F./S.Y. × 36"/YD.)	0.6	34' × 5' × 0.1 GAL./S.Y. ÷ 9 S.F./S.Y.	1.9
10+41.01 ~ 11+19.01 NINTH ST. (RT.)									(78' × 6' × 1") ÷ (9 S.F./S.Y. × 36"/YD.)	1.5	78' × 6' × 0.1 GAL./S.Y. ÷ 9 S.F./S.Y.	5.2
10+30 ~ 11+17 EIGHTH ST. (LT.)									[(89' + 23') 5' × 1"] ÷ (9 S.F./S.Y. × 36"/YD.)	1.8	[(89' + 23') 5' × 0.1 GAL./S.Y.] ÷ 9 S.F./S.Y.	5.7
852+61 ~ 852+86 LINE B									(25' × 39' × 1") ÷ (9 S.F./S.Y. × 36"/YD.)	3.0	25' × 39' × 0.1 GAL./S.Y. ÷ 9 S.F./S.Y.	10.8
TOTAL - NORMAL PARTICIPATION		179.0		240.0		39.5		15.9		174.7		496.1
TO SHEET 21		179		240		40		16		175		497

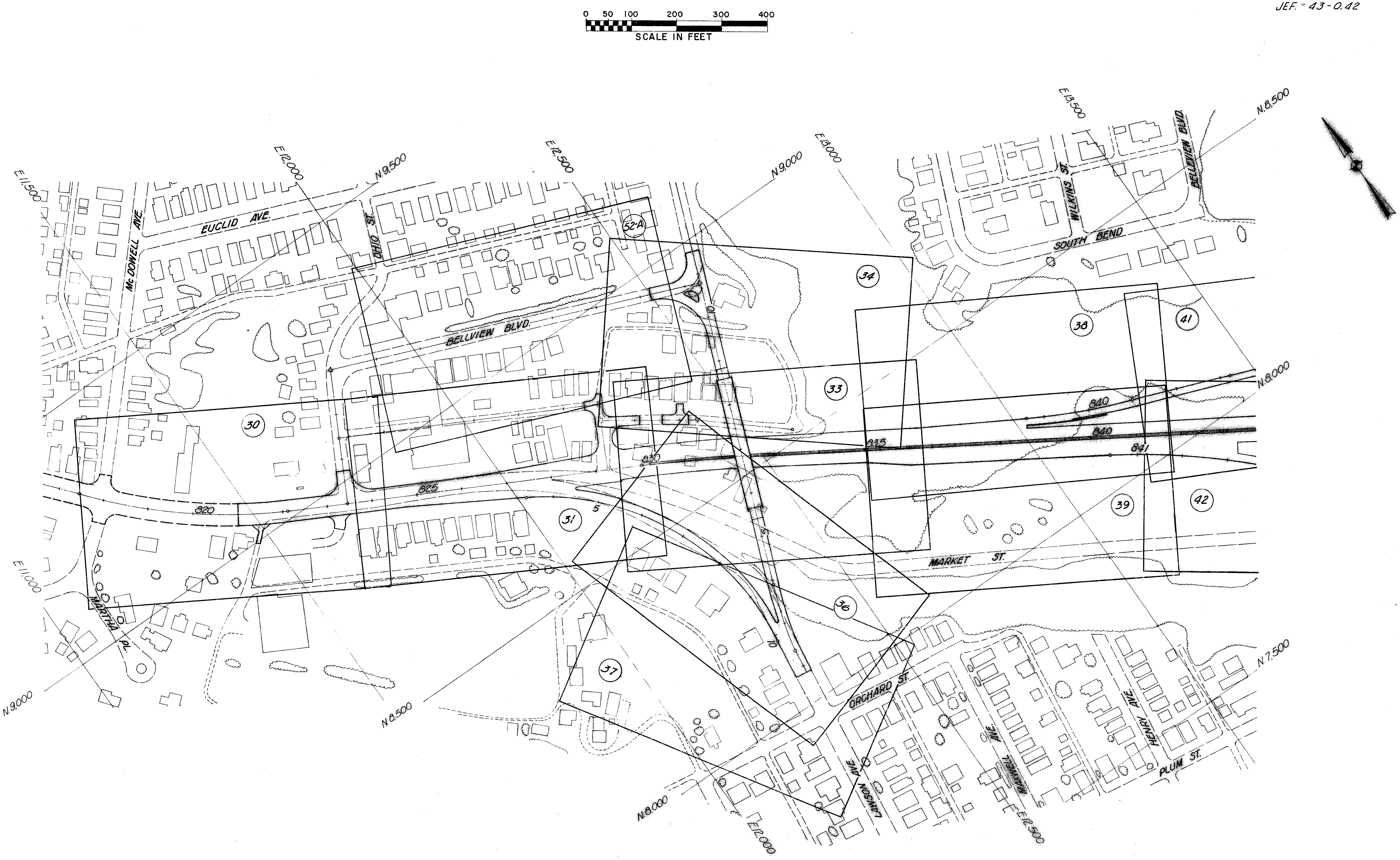
PAVEMENT CALCULATIONS – RAMPS – CONNECTIONS – DRIVEWAYS

JEFFERSON COUNTY
JEF-43-0.42

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

STATION TO STATION	310 SUBBASE GRADING A OR B AS PER PLAN	C.Y.	310 SUBBASE	C.Y.	PAVED SHOULDER AREAS	S.Y.			451 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	S.Y.
LINE B										
834+94.99 ~ 843+16.72	6/36 YD x 1029.0 S.Y. + 4.94 CY/STA. x 8.21 STA.	212.1	6.58 CY/STA. x 8.21 STA.	54.0	821.73' x 8' ÷ 9 SF/SY	731			1/9 (12/2) 100 + 1/9 (12 x 721.73	1029.0
843+16.72 ~ 844+16.72	6/36 YD x 177.8 SY + 5.25 + 1.70) CY/STA. x 1.00 STA.	36.4	(3.29 + 2.47) CY/STA. x 1.00 STA.	5.8	[3' x 100' + 1/2 (8' + 3') x 100] ÷ 9 SF/SY	95			1/9 (16 x 100)	177.8
844+16.72 ~ 847+75.00	6/36 YD x 636.9 SY + (1.70 + 5.56) CY/STA. x 3.58 STA.	132.1	(2.47 CY) STA. x 3.58 STA.	8.8	2 (3' x 358.28') ÷ 9 SF/SY	239			1/9 (16 x 358.28)	636.9
847+75.00 ~ 849+25.00	6/36 YD x 266.7 SY + (1.70 + 5.56) CY/STA. x 1.50 STA.	55.4	(2.47 CY) STA. x 1.50 STA.	3.7					1/9 (16 x 150	266.7
849+25.00 ~ 852+61.00	6/36 YD x 597.3 SY + (1.85 CY/STA. x 3.36) + 6.48 CY/STA 2.83	124.1	6.94 CY) STA. x 3.36 STA.	23.3	283' x 3' ÷ SF/SY + 336' x 6' ÷ 9 SF/SY	319			1/9 (16 x 336)	597.3
LINE C-2										
826+60.21 ~ 828+90.21	6/36 YD x 153.3 SY + 3.70 CY/STA. x 2.30 STA.	34.1							1/9 (0+12)/2 x 230	153.3
828+90.21 ~ 829+68.54	6/36 YD x 104.4 SY	17.4							1/9 (12 x 78.33)	104.4
829+68.54 ~ 830+21.61	6/36 YD x 70.8 SY + 4.63 CY/STA. x 0.53 STA.	14.2							1/9 (12 x 53.07)	70.8
STEEL AVENUE										
0+55 ~ 1+35	6/36 YD x 257.8 SY	43.0							1/9 (29 x 80)	257.8
FILLET AREA (WEST CORNER)	6/36 YD x 16.7 SY + 3.70 CY/STA. x 0.38 STA.	4.2							1/9 $(26.5)^2$ x 0.2146	16.7
FILLET AREA (EAST CORNER)	6/36 YD x 18.7 SY + 4.63 CY/STA. x 0.28 STA.	4.4							1/9 $(28)^2$ x 0.2146	18.7
FILLET AREA (NORTH CORNER)	6/36 YD x 24.7 SY	4.1							1/9 $(28)^2$ x 0.2838	24.7
1+40 ~ 2+08	6/36 YD x 158.7 SY	26.5							1/9 (21 x 68)	158.7
2+60 ~ 3+20	6/36 YD x 140.0 SY	23.3							1/9 (21 x 60)	140.0
TURN AROUND ~ LEFT STA. 3+00	6/36 YD x 35.9 SY	6.0							1/9 (14 x 20) + 1/9 (10^2 x 0.2146) 2	35.9
ALLEYS 1, 2, & 3	6/36 YD x 176.9 SY	29.5							1/9 (1592) (AREA PLAN/METERED)	176.9
BELLEVIEW BLVD.										
0+24 ~ 0+75.82	6/36 YD 180.5 SY + (3.70 CY/STA. x 1.46)	35.5							1/9 {(31.0 x 51.82) + (31.5^2 x 0.2146) + (51.5^2 x 0.2146)}	180.5
10+42.84 ~ 11+24.35	6/36 YD 381.8 SY	63.5								
WASHINGTON STREET										
7+45 ~ 8+08.70	6/36 YD x 150.9 SY	25.2							1/9 {28 x 63.20 - 15^2 x 0.2146}	150.9
NINTH ST. @ WASHINGTON										
10+16.00 ~ 10+41.09	6/36 YD x 76.2 SY	12.7							1/9 {(22' x 25.09) + 25^2 x 0.2146}	76.2
MARSH-ALLEY (857+95.88 ℄ S.R. 43)										
0+25 ~ 0+31.5	6/36 YD x 13.3 SY	2.2							1/9 {18 x 6.5 + 2 (5^2 x 0.2146)	13.3
TOTAL NORMAL PARTICIPATION		905.9		95.6		1384				4286.5
TO SHEET 21		906		96		1384				4287

PLAN SHEET LAYOUT



PLAN SHEET LAYOUT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42


FED. RD. DIVISION 2
STATE OHIO
PROJECT
NOTE:
1. FOR ROADWAY QUANTITIES SEE SHEET NO. 32
2. FOR PAVEMENT DETAILS SEE SHEET NO. 62
3. FOR DRAINAGE QUANTITIES SEE SHEET NO. 75
JEFFERSON COUNTY
JEF.-43-0.42
CURVE DATA NO. 1
P.I. STA. 819 + 82.14
Δ = 23°21'40" LT.
D = 05°00'00"
R = 1145.92'
T = 236.90'
L = 467.22'
E = 24.23'
END PROJECT
JEF. 22-15.20
JEF. 43-1.10
END PROJECT
JEF. 43-0.42
STA. 821+00
S.L.M. 1.14
U 447 (5)
U 447 (8)
N. 9,200
E. 11,600
Mc DOWELL ST.
2-St. Brick Comm.
2-St. Fr. Res.
STA. 1+48.15 BELLEVIEW
STA. 0+00 ALLEY NO. 1
ALLEY NO. 1
S 61°56'58" E
BELLEVIEW BLVD.
N 28°04'33" E
0+75.82 BELLEVIEW
END NEW CONSTRUCTION
BEGIN RESURFACING
CONSTRUCTION LIMITS
Pre-cast Conc. Curb
Tank
Pump Island
Service Station
Asphaltic Conc.
30' LT. STA. 823+11
NEW 12" BUTTERFLY VALVE,
12" ~ 45° BEND,
12" ~ TEE, 2-12" BUTTERFLY VALVES
8' LT. STA. 0+57.50 BELLEVIEW BLVD.
12" TEE ~ 12" 45° BEND
12" BUTTERFLY VALVE
13.5' LT. STA. 0+50 BELLEVIEW
NEW F.H. TYPE II
P.T. STA. 822 + 12.46
℄ PROP. S.R. 43
27' LT. STA. 821+57
NEW 12" TEE, 12" BUTTERFLY VALVE, & CAP
36" STORM SEWER
36" BRICK COMB. SEWER
℄ PROPOSED S.R. 43
Curve No. 1
S 38°50'02" E
818
819
820
821
822
823
824
8" W. 823 S 62°11'42" E
FIRE ALARM SYSTEM
JCT BOX
12" WATER
16" WATER
CONST. LIMITS
TEMP. R/W
R/W
ASPHALT DRIVE
Pump Island
Service Station
2-St. Br. Res. & Comm.
2-St. Fr. Dbl. Res. (Abandoned)
29' RT. STA. 821+05
NEW 16" BUTTERFLY VALVE & CAP
31' RT. STA. 821+62
NEW 12" BUTTERFLY VALVE & 16" x 16" x 12" TEE
30' RT. STA. 823+00
16" ~ 90° BEND
54' RT. STA. 823+00
16" ~ 90° BEND
55' RT. STA. 823+42
16" ~ 45° BEND
55' RT. STA. 823+55
16" ~ 45° BEND
52' RT. STA. 823+78
NEW F.H. TYPE II
2-St. Fr. Res. w/B'smt.
STA. 823+46.52 ℄ S.R. 43
STA. 0+00 ℄ BELLEVIEW
MATCH LINE STA. 824+00 S.R. 43
SEE SHEET NO. 31
S 47°49'48" W
164.05
2-St. Brick & Block Commercial
TYPICAL SECTION ADJOINING PAVEMENT
5' 2' 24' 24' 2' 5'
Sidewalk
Curb & Gutter
9" Concrete
6" Subbase
REF. P.I. STA. 819 + 82.14
REF. P.T. STA. 822 + 12.46
8"x8"x8" TEE
8" GATE VALVE
CUT & PLUG EXIST. 8"
8"-90° BEND
12"x12"x8" TEE
WATER LINE PARTICIPATION
NOTE: ITEMS 1/W, 2/W & 3/W ARE 100% CITY OF STEUBENVILLE PARTICIPATION.
ITEMS 4/W & 5/W ARE 44% CITY OF STEUBENVILLE AND 56% NORMAL PARTICIPATION.
ITEMS 6/W, 7/W & 8/W ARE NORMAL PARTICIPATION.
N. 8,800
E. 11,600

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42

NOTE:

1. FOR ROADWAY QUANTITIES SEE SHEET NO. 32
2. FOR PAVEMENT DETAILS SEE SHEET NO. 62,63
3. FOR DRAINAGE QUANTITIES SEE SHEET NO. 75

NOTE CAUTION, A BASEMENT WALL IS LOCATED 16'-8" FROM THE FACE OF THE BUILDING LEFT OF STA. 825+52 TO STA. 826+28. CARE SHALL BE EXERCISED WHEN WORKING IN THIS AREA TO AVOID DAMAGE TO THE BASEMENT WALL.

SHEET NO. 30 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 SIDEWALK REMOVED	202 CURB REMOVED	202 PAV'T REMOVED	202 STRUCTURE REMOVED	202 M.H., C.B. & INLET REMOVED	202 STEPS REMOVED	601 RIPRAP USING 6" REIN. CONC.	601 PAVED GUTTER AS PER PLAN	604 M. H. ADJUSTED TO GRADE	605 PIPE UNDERDRAINS SHALLOW 6"	605 PIPE UNDERDRAINS UN-CLASSIF'D 6"	605 PIPE UNDERDRAINS DEEP 6"		SEE SHEET NO.
			S.F.	L.F.	S.Y.	LUMP	EACH	LUMP	S.Y.	L.F.	EACH	L.F.	L.F.	L.F.		
1/R	821+00 SR.43~0+21± BELLEVIEW	LT.	1320	220												
2/R	0+21 - 0+75 BELLEVIEW	LT.	260	58												
3/R	0+75 BELLEVIEW-824+00 SR43	RT/LT	876	79												
4/R	821+00 - 824+00	RT/LT			1,394											
5/R	821+00 - 822+88	RT.	997	81												
6/R	821+75 - 822+90	RT.				LUMP										
7/R	821+64 (ALLEY)	RT.			44											
8/R	0+20 - 0+75 BELLEVIEW	LT/RT.			223											
1/DR	821+30	RT					1									
2/DR	823+19	LT					1									
3/DR	823+28	LT.					1									
4/DR	823+72	LT.					1									
1/SS	821+52	RT.									1					
2/SS	821+50	LT.									1					
3/SS	823+42	LT.									1					
4/SS	823+42	RT.									1					
1/D	823+74 - 824+00	RT.								26						
1/UD	821+00 - 824+00	LT.												300		
2/UD	821+00 - 824+00	RT.												300		
2/D	821+80 - 823+00	RT.							153							
9/R	823+60 - 824+00	RT.				LUMP										
10R	822+50 ~ 823+08	RT.				LUMP										
11 R	823+43 - 824+00	RT.				LUMP										
12 R	822+91	RT.						LUMP								
13 R	823+60	RT.						LUMP								
14 R	823+63 - 824+00	RT.	222													
	TOTALS		3,675	438	1,661	LUMP	4	LUMP	153	26	4			600		

SHEET NO. 30 WATER LINE

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	100% CITY OF STEUBENVILLE 814 16" NEW WATER MAIN	814 16" BUTTERFLY VALVE WITH BOX	814 TEE 16"x16"x12"	814 16" BENDS 45°	814 16" BENDS 90°	814 FIRE HYDRANT TYPE II	44% CITY OF STEUBENVILLE 56% NORMAL PARTICIPATION 12" NEW WATER MAIN	8" GATE VALVE W/BOX	8" BEND 90°	TEES 8"x8"x8"	TEES 12"x12"x8"	TEES 12"x12"x12"	12" BUTTERFLY VALVE W/BOX	NORMAL PARTICIPATION 12" NEW WATER MAIN	12" BUTTERFLY VALVE	FIRE HYDRANT AS PER PLAN	TEE 12"x12"x12"	12" 45° BEND
			L.F.	EA.	EA.	EA.		EA.	L.F.	EA	EA	EA	EA	EA	EA.	LF	EA	EA		
1-W	821+00 ~ 821+62	RT.	63	1	1															
2-W	821+62 ~ 824+00	RT.	262			2	2													
3-W	823+78	RT.						1												
4-W	821+58 ~ 821+62	LT/RT.							62	2	1	1	1							
5-W	821+57 ~ 823+11	LT.							149					1	2					
6-W	823+11 ~ 824+00	LT.														88	1		1	
7-W	823+11 SR43 ~ 0+57 BELLEVIEW	LT.														35	2		1	2
8-W	0+50 BELLEVIEW	LT.																1		
	TOTALS		325	1	1	2	2	1	211	2	1	1	1	1	2	123	3	1	2	2

SHEET NO. 31 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 SIDEWALK REMOVED	202 CURB REMOVED	202 PAV'T REMOVED	202 STRUCTURE REMOVED	202 CATCH BASIN ABANDONED	202 EXIST. M.H. ABAND.	202 EXIST. M.H. RE-MOVED	SPECIAL UNDERGROUND STORAGE TANKS REMOVED AND DISPOSED OF	601 PAVED GUTTER AS PER PLAN	603 CONDUIT TYPE "F" 6"	603	604 M. H. ADJUSTED TO GRADE	605 PIPE UNDERDRAINS SHALLOW 6"	605 PIPE UNDERDRAINS UN-CLASSIF'D 6"	605 PIPE UNDERDRAINS DEEP 6"	605	660 SODDING	202 STEPS REMOVED
			S.F.	L.F.	S.Y.	LUMP	EACH	EACH			L.F.	L.F.		EACH	L.F.	L.F.	L.F.		S.Y.	LUMP
1-R	824+00 - 829+09	LT.	3,669	514																
2-R	824+00 SR.43-6+00 LINE D	RT.	3,122																	
3-R	824+00 SR43-5+47 LINE D	RT.				LUMP														
4-R	824+00 - 828+42	RT/LT			2,109															
5-R	828+42 - 830+00	RT.				LUMP														
6-R	5+47 - 6+00 (LINE D)	RT.		52																
7-R	5+19 - 6+00 (LINE D)	LT.		87																
8-R	0+20 STEELE AVE.-5+25 ALLLY #1	LT/RT	360	164																
9-R	1+57-1+99 STEELE AVE.	RT.	164	41																
10-R	0+15-1+57 STEELE AVE.	RT.	876	103																
22-R	826+67 ~ 827+53	RT.				LUMP														
11-R	828+42-830+00	RT/LT			549															
12-R	4+30-6+00 LINE "D"	LT.			610															
13-R	0+15-1+99 STEELE AVE.	RT/LT.			679															
1-DR	827+13	RT.					1													
2-DR	828+04	RT.						1												
3-DR	828+20	RT.					1													
4-DR	829+25	RT.					1													
5-DR	829+55	RT.						1												
6-DR	828+00	LT.							1											
8-DR	0+85 (STEELE AVE.)	LT.					1													
9-DR	1+87 (STEELE AVE)	RT/LT.					2													
14-R	0+15 STEELE AVE.-830+00 ℄ SR.43	RT/LT	384	77																
15-R	1+29-1+95 STEELE AVE	LT	264	84																
16-R	825+90	LT.								LUMP										
17-R	829+90 ±	RT/LT								LUMP										
18-R	829+73-830+00 ℄ S.R.43	RT/LT			93															
1-SS	1+11 STEELE AVE	RT.												1						
2-SS	1+42 STEELE AVE.	LT.												1						
1-D	824+00-6+00 LINE D	RT.									600									
2-D	829+50-830+00	RT.																	33	
1-UD	824+00 - 825+10	LT.										10					100			
2-UD	824+00 - 825+10	RT.										10					100			
3-UD	1+15 -5+50 LINE D	RT.										10			375	40				
4-UD	825+15-828+88	LT.										10			178	100	85			
5-UD	829+65-830+00	LT.													35					
6-UD	828+90 - 830+00	RT.													110					
10-DR	3+88 LINE D	LT.						1												
7-DR	5+60 LINE D	LT.							1											
3-SS	825+38	RT.												1						
19-R	4+45 LINE D	RT.																		LUMP
20-R	5+48 LINE D	RT.																		LUMP
21-R	824+00-825+91	RT.				LUMP														
	TOTALS		8,839	1,122	4,040	LUMP	6	3	2	LUMP	600	40		3	698	140	285		33	LUMP

SHEET NO. 31 WATER LINE

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	814 NORMAL PARTICIPATION NEW WATER MAIN 6"	NEW WATER MAIN 12"		FIRE HYDRANT AS PER PLAN	FIRE HYDRANT REMOVED & DISPOSED OF	12"x6"x12" REDUCING LATERAL	6" GATE VALVE W/BOX	BUTTERFLY VALVE W/BOX 12"		6"x6"x6" TEE	BENDS 6" 11¼°	BENDS 6" 22½°	BENDS 12" 22½°		VALVE BOX ADJUSTED TO GRADE	814 100% CITY OF STEUBENVILLE 16" NEW WATER MAIN	FIRE HYDRANT TYPE II	16" BUTTERFLY VALVE	16" 22½° BEND
			L.F.	L.F.		EACH	EACH	EACH	EA.	EA.		EACH	EA.	EA.	EA.		EACH	LF	EA	EA	EA.
1-W	824+00 ~ 828+15	LT.		413				1													
2-W	826+75	LT.					1														
3-W	827+22	LT.				1															
4-W	828+15 ~ 6+00 "D"	LT.		226						1					1						
5-W	828+15 ~ 829+14	LT.	101						2			1	1	1							
6-W	824+00 ~ 3+24 "D"	RT.																328		1	1
7-W	826+40	RT.																	1		
8-W	3+24 "D" ~ 6+00 "D"	RT.																257			
10-W	1+33 STEELE AVE.	RT.															1				
11-W	5+71 ALLEY NO. 1	RT.															1				
	TOTALS		101	639		1	1	1	2	1		1	1	1	1		2	585	1	1	1

SR. 43 ~ STA. 830+00 TO STA. 836+00 LINE "E" STA. 4+48 TO STA. 8+74 LINE "D" STA. 6+00 TO STA. 8+0?

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF - 43 - 0.42

NOTE:
1. FOR ROADWAY QUANTITIES SEE SHEET NO. 35
2. FOR PAVEMENT DETAILS SEE SHEETS NOS. 63 & 64
3. FOR DRAINAGE QUANTITIES SEE SHEET NO. 75

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE						
R.O.W.	WGS	1-18-72			RE	1-18-72
QUANTITIES						

SHEET NO. 33 ROADWAY

REF. NO.	STATION TO STATION	SIDE	202 S.W. REMOVED	202 CURB REMOVED	202 PAV'T REMOVED	202 EXISTING M.H. ABAND'D	202 EXISTING C.B. ABAND'D	601 ROCK CHANNEL PROTECTION TYPE "B"	601 PAVED GUTTER TYPE 1-2	601 PAVED GUTTER TYPE 1-4	603 CONDUIT TYPE "F" 6"	202 STRUCTURE REMOVED	604 STD. NO. 1 MANHOLE	BENDS & BRANCHES	605 PIPE UNDERDRAINS SHALLOW 6"	605 PIPE UNDERDRAINS UNCLASSIFIED 6"	605 PIPE UNDERDRAINS DEEP 6"	605 PIPE UNDERDRAINS 707.01 TYPE III OR 707.12 6"	660 SODDING	SEE SHEET NO.
			S.F.	L.F.	S.Y.	EACH		C.Y.	L.F.		L.F.	LUMP	EACH	EACH	L.F.	L.F.	L.F.	L.F.	S.Y.	
1-R	1+98 - 2+10 (STEELE AVE)	RT/LT.			27															
2-R	1+97 - 2+10 (STEELE AVE)	LT.	52	13																
3-R	2+00 - 2+10 (STEELE AVE)	RT.	40	10																
4-R	2+60 - 5+38 (STEELE AVE)	RT.	528	278																
5-R	2+60 - 5+38 (STEELE AVE)	RT/LT.			618															
6-R	2+60 - 5+38 (STEELE AVE)	LT.	1,112	278																
7-R	2+87 - 5+38 (STEELE AVE)	LT.										LUMP								
1-DR	830+54 & SR 43	RT.				1														
2-DR	3+38 (STEELE AVE)	LT.				1														
1-D	830+00 - 831+40	RT.																	93	
2-D	832+50 - 835+00	LT.																	163	
1-SS	3+15 (STEELE AVE)	LT.											1							
3-D	835+00	LT.						18		50									17	
1-UD	830+00 - 831+42	LT.									10				132					
2-UD	830+00 - 831+42	RT.									10			1	145					
3-UD	831+48 - 835+00	LT.									10					92		250		
4-UD	831+48 - 836+00	RT.													452					
5-UD	835+05 - 836+00	LT.														95				
3-DR	833+29	RT.				1														
4-DR	835+75	RT.					1													
4-D	833+00 - 833+50	RT.																	38	
5-D	833+50 - 836+00	RT.							273										91	
	TOTALS		1,732	579	645	3	1	18	273	50	30	LUMP	1		729	187		250	402	

SHEET NO. 34 ROADWAY

REF. NO.	STATION TO STATION	SIDE	202 PAV'T REMOVED	202 CURB REMOVED	202 WEARING COURSE REMOVED	660 SODDING	601 PAVED GUTTER TYPE 1-2	601 ROCK CHANNEL PROTECTION TYPE "B"	603 COND. TYPE "F" 6"	604 M.H. ADJUST. TO GRADE	605 PIPE UNDERDRAINS SHALLOW 6"	605 PIPE UNDERDRAINS UNCLASSIFIED 6"	605 PIPE UNDERDRAINS DEEP 6"	605 PIPE UNDERDRAINS 707.01 OR 707.12 6"	SEE SHEET NO.
			S.Y.	L.F.	S.Y.	S.Y.	L.F.	C.Y.	L.F.	EA.	L.F.	L.F.	L.F.	L.F.	
1-D	7+75 - 9+00 LINE "E"	LT.				3	10	40							
2-D	11+31 LINE "E"	LT.								1					
1-UD	9+00 - 11+60 LINE "E"	RT.							10		250				
2-UD	9+00 - 10+25 LINE "E"	LT.							10		120				
1-R	10+85 - 11+60 LINE "E"	RT/LT.	540												
3-R	10+42 BELLEVIEW - 11+60 LINE "E"	RT.		171											
5-R	11+60 - 11+65 LINE "E"	LT./RT.			19										
	TOTALS		540	171	19	3	10	40	20	1	370				

SHEET NO. 33 WATER

REF. NO.	STATION TO STATION	SIDE	814	814 FIRE HYDRANT AS PER PLAN	814 FIRE HYDRANT REMOVED & DISPOSED OF AS PER PLAN	814 SERVICE BOX ADJUSTED TO GRADE							
				EACH	EACH	EACH							
1-W	3+19 STEELE AVE.	12' LT.		1									
2-W	5+44 STEELE AVE.	RT.			1								
3-W	2+86 STEELE AVE.	LT.				1							
	TOTALS			1	1	1							

SHEET NO. 34 WATER

REF. NO.	STATION TO STATION	SIDE	814	814 FIRE HYDRANT AS PER PLAN	814 FIRE HYDRANT REMOVED & DISPOSED OF AS PER PLAN		814 VALVE BOX ADJUSTED TO GRADE						
				EACH	EACH		EACH						
1-W	10+90 BELLEVIEW BLVD.	27' LT.		1									
2-W	11+22 BELLEVIEW BLVD.	LT.					1						
3-W	11+07 BELLEVIEW BLVD.	RT.			1								
	TOTALS			1	1		1						

DESCRIPTION	PLOTTED BY	PLOTTED DATE	INKED BY	INKED DATE	CHECKED BY	CHECKED DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE						
R.O.W.						
QUANTITIES	W.G.Y.	1-13-78			N.C.	1-13-78

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

JEFFERSON COUNTY
JEF-43-0.42

NOTE:
1. FOR ROADWAY QUANTITIES SEE SHEET NO. 40
2. FOR PAVEMENT DETAILS SEE SHEET NO. 64
3. FOR DRAINAGE QUANTITIES SEE SHEET NO. 75

CURVE DATA D-1
P I STA 7+22.27
Δ = 67°14'07" RT
D = 10°00'00"
R = 572.96'
T = 380.93'
L = 672.35'
E = 115.07'

CURVE DATA E-1
P.I. STA. 3+12.85
Δ = 13°59'05" RT.
D = 09°00'00"
R = 636.62'
T = 78.08'
L = 155.39'
E = 4.77'

LINE "D" STA. 6+00 TO STA. 11+00
LINE "E" STA. 1+99 TO STA. 6+00

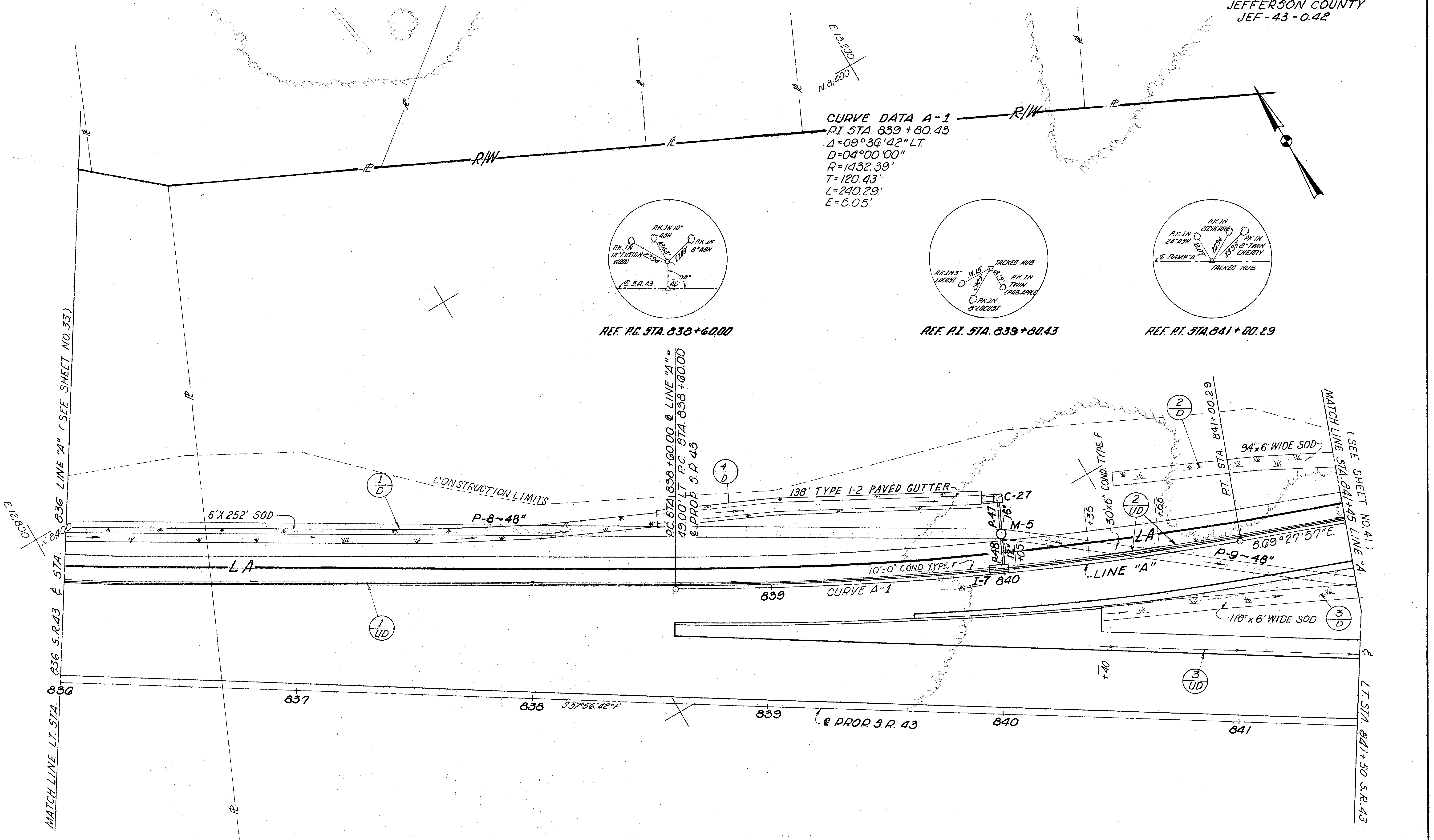
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR	SHEET
2	OHIO			37 / 299

JEFFERSON COUNTY
JEF-43-0.42

PLAN ~ WATER LINE LINE "D" TO ORCHARD & LAWSON STS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42



NOTE:
1. FOR ROADWAY QUANTITIES SEE SHEET NO. 40
2. FOR PAVEMENT DETAILS SEE SHEET NO. 65 & 66
3. FOR DRAINAGE QUANTITIES SEE SHEET NO. 77, 78, 81

SR 43 ~ STA. 836+00 TO STA. 841+50 (LEFT)
LINE "A" ~ STA. 836+00 TO STA. 841+45

S.R. 43 STA. 836+00 TO STA. 841+50 (RIGHT)
LINE "B" STA. 836+00 TO STA. 841+50

SHEET NO. 36 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 S.W. REMOVED	202 CURB REMOVED	202 PAV'T REMOVED	202 STRUCT. REMOVED	202 EX. C.B. REMOVED	202 EX. C.B. ABANDONED	202 EX. PIPE REMOVED & DISP'D OF 24" & UNDER	601 ROCK CHANNEL PROTECTION TYPE "B"	601 STD. TYPE 1-2 PAVED GUTTER	603 CONDUIT TYPE "F" 6"	202 STEPS REMOVED	605 PIPE UNDERDRAINS SHALLOW 6"	605 UNCLASSIFIED 6"	605 DEEP 6"	605 707.01 TYPE III OR 707.12 6"	660 SODDING	SEE SHEET NO.
			S.F.	L.F.	S.Y.	LUMP	EACH		L.F.	C.Y.	L.F.	L.F.	LUMP	L.F.	L.F.	L.F.	L.F.	S.Y.	
1-R	830+12 - 835+30 (MARKET ST)	RT/LT			1,564														
2-R	831+12 - 835+30 (MARKET ST)	LT.	3,077	400															
3-R	831+50 - 835+30 (MARKET ST)	RT.		352															
4-R	6+00 - 11+00 (LINE "D")	RT/LT			2,032														
5-R	6+00 - 11+00 (LINE "D")	RT.		412		LUMP													
6-R	7+64 - 10+00 (LINE "D")	RT/LT	1190																
7-R	6+00 - 11+00 (LINE "D")	LT.		527															
1-DR	8+85 (LINE "D")	LT.					1												
2-DR	8+85 (LINE "D")	LT.					1												
3-DR	7+90 - 8+70 (LINE "D")	RT/LT							95										
4-DR	834+10 EXIST. MARKET ST.	RT.						1											
5-DR	834+28 EXIST. MARKET ST.	LT.						1											
8-R	2+00 - 2+15 LINE "E"	RT.	20																
9-R	8+12 - 8+91 LINE "D"	RT.				LUMP													
1-D	5+95 - 6+42 LINE "E"	LT.									50							17	
2-D	4+50 - 5+95 LINE "E"	LT.								45									
1-UD	6+30 - 9+50 LINE "D"	RT.										10		50	100		160		
2-UD	9+65 - 11+00 LINE "D"	RT.										10		125					
3-UD	2+00 - 3+70 LINE "E"	RT.										10		160					
4-UD	4+00 - 5+40 LINE "E"	RT.										10		130					
5-UD	4+00 - 5+40 LINE "E"	LT.										10		130					
10-R	6+97 - LINE "D"	RT.											LUMP						
11-R	7+44 LINE "D"	RT.											LUMP						
	TOTALS		4,287	1,691	3,616	LUMP	2	2	95	45	50	50	LUMP	595	100		160	17	

SHEET NO. 36 WATER LINE

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	814 12" NEW WATER MAIN	12" BUTTERFLY VALVE WITH BOX	FIRE HYDRANT REMOVED & DISPOSED OF AS PER PLAN	12"x12"x12" TEE	FIRE HYDRANT AS PER PLAN			12" BEND 90°
			L.F.	EACH	EACH	EACH	EACH			EA.
1-W	6+00 ~ 10+47 "D"	LT.	464	1		1				1
2-W	8+08 "D"	℄			1					
3-W	834+85 EX. MARKET ST.	LT.			1					
4-W	10+45 LINE "D"	LT./RT.					1			
	TOTALS		464	1	2	1	1			1

SHEET NO. 37 WATER LINE

ESTIMATED QUANTITIES

814 (100 % CITY OF STEUBENVILLE)

REF. NO.	STATION TO STATION	SIDE	16" NEW WATER LINE		FIRE HYDRANT AS PER PLAN	16" BUTTERFLY VALVE W/ BOX	12"x12"x16" TAPPING SLEEVE & VALVE	TEE 16"x16"x16"	16" BENDS 11¼°	16" BENDS 22½°	16" BENDS 90°
			L.F.		EA.	EA.	EA.	EA.	EA.	EA.	EA.
1-W	6+00 "D" ~ 4+99 DRIVE	RT.	135						1		2
2-W	4+95 DRIVE	RT.			1						
3-W	4+99 ~ 0+16 DRIVE	RT.	485			1			1	1	1
5-W	0+23 DRIVE	RT.			1						
6-W	0+16 DRIVE ~ 9+79 ORCH. ST.	RT.	175			1		1			
7-W	36+30 ~ 36+50 LAWSON	LT.	21				1				1
	TOTALS		816		2	2	1	1	2	1	4

SHEET NO. 38 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE					601 PAVED GUTTER TYPE 1-2	603 CONDUIT TYPE "F" 6"		605 PIPE UNDERDRAINS SHALLOW 6"	605 UNCLASSIFIED 6"	605 DEEP 6"	605 707.01 TYPE III OR 707.12 6"	660 SODDING	SEE SHEET NO.
							L.F.	L.F.		L.F.	L.F.	L.F.	L.F.	S.Y.	
1-D	836+00 - 838+50	LT.												168	
2-D	840+50 S.R. 43 ~ 841+45 "A"	LT.												63	
3-D	840+40 S.R. 43 ~ 841+45 "A"	LT/RT.												74	
4-D	838+50 SR 43 - 839+93 LINE "A"	LT.					138							46	
1-UD	836+00 SR 43 - 840+00 LINE "A"	LT.						10		215	50		125		
2-UD	840+05 S.R. 43 ~ 841+45 "A"	LT.						30		115					
3-UD	840+40 - 841+50 S.R. 43	LT.								110					
	TOTALS						138	40		440	50		125	351	

SHEET NO. 39 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 EXIST. M.H. ABANDONED	601 PAVED GUTTER TYPE 1-2	601 ROCK CHANNEL PROTECTION TYPE B	660 SODDING		603 CONDUIT TYPE "F" 6"	603 CONDUIT TYPE "F" 8"	605 PIPE UNDERDRAINS SHALLOW 6"	605 UNCLASSIFIED 6"	605 DEEP 6"	605 707.01 TYPE III OR 707.12 6"	BENDS & BRANCHES	SEE SHEET NO.
			EACH	L.F.	C.Y.	S.Y.		L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EACH	
1-UD	836+00 - 841+08	RT.						10		508				1	
2-UD	841+05 - 841+50 LINE "B"	RT.								45					
1-DR	838+31	RT.	1												
2-DR	841+40	RT.	1												
1-D	836+00 ~ 837+00	RT.		100		34									
2-D	837+00 ~ 841+50	RT.			334										
3-D	839+02 MARKET ST.	LT.			5										
	TOTALS		2	100	339	34		10		553					

SHEET NO. 39 WATER LINE

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	814		FIRE HYDRANT REMOVED & DISPOSED OF AS PER PLAN							
1-W	839+17 EX. MARKET ST.	LT.			1							
	TOTALS				1							

DESCRIPTION	PLOTTED BY	PLOTTED DATE	INKED BY	INKED DATE	CHECKED BY	CHECKED DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE						
R. O. W.						
QUANTITIES	WGY	1-11-70			GH	1-12-70

LINE "A" ~ STA. 841+45 TO STA. 847+00
S.R. 43 ~ STA. 841+50 TO STA. 847+00 (LEFT)

SR-43 ~ STA. 841+50 TO STA. 847+00 (RIGHT)
LINE "B" STA. 841+50 TO STA. 847+50

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

43
299

JEFFERSON COUNTY
JEF - 43 - 0.42

NOTE:
1. FOR ROADWAY QUANTITIES SEE SHEET NO. 44
2. FOR PAVEMENT DETAILS SEE SHEET NO. 67&68
3. FOR DRAINAGE QUANTITIES SEE SHEET NO. 75
4. FOR SIDEWALK PLAN & PROFILE SEE SHEET NO. 52

CURVE DATA NO. 3
P.I. STA. 847 + 16.37
Δ = 31°50'52" LT.
Δc = 21°50'52"
Dc = 05°00'00"
Rc = 1145.92
Tc = 221.16
Lc = 436.96
Ec = 21.15
Ls = 200'
θs = 05°00'00"
P = 1.45
K = 99.98
LT = 133.39
ST = 66.72
Ts = 427.33
Es = 47.24

S.R. 43 - STA. 847+00 TO STA. 851+50
LINE 'A' STA. 847+00 TO STA. 850+00

SHEET NO. 41 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	601 PAVED GUTTER TYPE 1-2 L.F.	603 CONDUIT TYPE "F" 6" L.F.	BENDS & BRANCHES EACH	605 PIPE UNDERDRAINS SHALLOW 6" L.F.	605 PIPE UNDERDRAINS UNCLASSIFIED 6" L.F.	660 SODDING S.Y.	SEE SHEET NO
1-D	841+45-845+00 LINE "A"	LT.						240	
2-D	841+45-841+68 LINE "A"	RT.						12	
3-D	842+50-845+00 S.R. 43	LT.						164	
4-D	845+00-845+93 S.R. 43	LT.	88					30	
1-UD	841+45-841+75 LINE "A"	LT.		10		20			
2-UD	841+75-842+05 LINE "A"	LT.		10			20		
3-UD	842+05-846+10 LINE "A"	RT.		10	1	397			
4-UD	841+50-847+00 S.R. 43	LT.				542			
5-D	845+00-846+03 LINE "A"	LT.	109					37	
6-D	846+56-847+00 LINE "A"	LT.	55					18	
	TOTALS		252	30		959	20	501	

SHEET NO. 42 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 EXISTING M.H. REMOVED EACH	601 ROCK CHANNEL PROTECTION TYPE "B" C.Y.	601 PAVED GUTTER TYPE 1-3 L.F.	603 CONDUIT TYPE "F" 6" L.F.	BENDS & BRANCHES EACH	605 PIPE UNDERDRAINS SHALLOW 6" L.F.	660 SODDING S.Y.	SEE SHEET NO.
1-DR	844+46 LINE "B"	LT.	1							
1-D	841+50-845+00 LINE "B"	RT.		246						
2-D	845+00-846+93 LINE "B"	RT.			194				65	
3-D	844+97-845+08 MARKET ST.	LT.		12						
1-UD	841+50-847+00 LINE "B"	RT.				10	1	560		
2-UD	847+10-847+50 LINE "B"	RT.						40		
	TOTALS		1	258	194	10		600	65	

SHEET NO. 42 WATER

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	814 FIRE HYDRANT REMOVED & DISPOSED OF AS PER PLAN EACH
1-W	845+17 EX. MARKET ST.	LT.	1
	TOTAL		1

SHEET NO. 43 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 EXISTING M.H. ABANDONED EACH	660 SODDING FOR SPECIAL BERM & SLOPE PROTECTION S.Y.	601 PAVED GUTTER TYPE 1-2 L.F.	601 ROCK CHANNEL PROTECTION TYPE "B" C.Y.	603 CONDUIT TYPE "F" 6" L.F.	603 CONDUIT TYPE "F" 8" L.F.	BENDS & BRANCHES EACH	605 PIPE UNDERDRAINS SHALLOW 6" L.F.	605 UNCLASSIFIED 6" L.F.	605 DEEP 6" L.F.	605 707.01 TYPE III OR 707.12 6" L.F.	660 SODDING S.Y.	SEE SHEET NO.
1-D	847+00-847+96 S.R. 43	LT.												39	
2-D	848+50-849+00 S.R. 43	LT.												32	
3-D	849+00-850+93 S.R. 43	LT.			190									64	
1-UD	847+00-848+00 S.R. 43	LT.					10		1	96					
2-UD	848+10-851+00 S.R. 43	LT.					10			275					
3-UD	851+05-851+50 S.R. 43	LT.								45					
4-UD	849+00-850+00 LINE "A"	RT.								99					
10-D	850+00-851+50 S.R. 43	R.T.												104	
1-DR	849+48 LINE "A"	RT.	1												
4-D	847+00 LINE "A"-847+95 ℄ S.R. 43	LT.			38									13	
5-D	849+00 LINE "A"	RT.		44											
6-D	849+10 LINE "A"	LT.		59											
7-D	848+00-848+50 S.R. 43	RT.												36	
8-D	848+50-849+50 S.R. 43	RT.			116									39	
9-D	849+80 LINE "A"-850+00 S.R. 43	LT./RT.				72									
	TOTALS		1	103	344	72	20			515				327	

NOTE:
1. FOR ROADWAY QUANTITIES SEE SHEET NO. 47
2. FOR DRAINAGE QUANTITIES SEE SHEET NO. 75
3. FOR PAVEMENT DETAILS SEE SHEET NO. 68 & 69

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

JEFFERSON COUNTY
JEF.-43-0.42

REF. P.C. STA. 854+35.82

REF. P.I. STA. 856+51.02

CURVE DATA NO. 4
P.I. STA. 856+51.02 S.R.43
Δ = 21°16'19" RT.
D = 05°00'00"
R = 1145.92'
T = 215.20'
L = 425.44'
E = 20.03'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

46 / 299

JEFFERSON COUNTY
JEF - 43 - 0.42

11'-6" 11'-6" 11'-6" 11'-6"
℄ S.R. 43
LONGITUDINAL JOINT
(451) 9" REINF. PORTLAND CEMENT CONCRETE PAVEMENT
(310) 6" SUBBASE
(605) PIPE UNDERDRAIN

TYPICAL SECTION
ADJOINING PAVEMENT

NOTE:
1. FOR ROADWAY QUANTITIES SEE SHEET NO. 47
2. FOR PAVEMENT DETAILS SEE SHEET NO. 69
3. FOR DRAINAGE QUANTITIES SEE SHEET NO. 75

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE						
R. O. W.						
QUANTITIES	G.H.	1-12-70			W.G.M.	1-13-70

JEFFERSON COUNTY
JEF - 43 - 0.42

SHEET NO. 45 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 S.W. REMOVED	202 CURB REMOVED	202 PAV'T REMOVED	202 WRNG. COURSE REMOVED	202 C.B. REMOVED	202 STRUCTURE REMOVED	601 PAVED GUTTER TYPE 1-2	603 CONDUIT TYPE "F" 6"	604 M.H. ADJUST'D TO GRADE	BENDS & BRANCHES	605 PIPE UNDERDRAINS SHALLOW 6"	605 PIPE UNDERDRAINS UNCLASSIFIED 6"	605 PIPE UNDERDRAINS DEEP 6"	605 PIPE UNDERDRAINS 707.01 TYPE III OR 707.12 6"	660 SODDING	SEE SHEET NO.
			S.F.	L.F.	S.Y.	S.Y.	EACH	LUMP	L.F.	L.F.	EACH	EACH	L.F.	L.F.	L.F.	L.F.	S.Y.	
1-R	7+45-10+47 (WASHINGTON)	RT/LT.			863													
2-R	7+45(WASH. ST.)-10+41 (NINTH ST.)	LT.	357	65														
3-R	10+16-11+05 (NINTH ST.)	RT.	609	103														
4-R	8+17-8+94 (WASHINGTON)	LT.	539	77														
5-R	10+16.5-10+77.7 (ALLEY #6)	LT.	198	60														
6-R	10+61-11+04 (ALLEY #6)	LT.						LUMP										
7-R	11+05-11+20 (ALLEY #6)	RT.		15														
8-R	10+51.4-11+20 (ALLEY #6)	RT.						LUMP										
9-R	10+41 - 11+19 , (NINTH ST.)	RT.				52												
10-R	10+30-11+17 (8TH ST.)	LT.				62												
1-DR	7+83 (WASHINGTON)	LT.					1											
2-DR	8+09 (WASHINGTON)	LT.					1											
3-DR	9+85 (WASHINGTON)	LT.					1											
4-DR	9+05 (WASHINGTON)	RT.					1											
1-SS	855+64 S.R.43	LT.									1							
2-SS	856+50	LT.									1							
3-SS	7+94 (WASHINGTON)	LT.									1							
7-UD	855+67 LINE C-3 857+00 S.R.43	RT.												126				
1-UD	851+50 - 854+00 S.R. 43	LT.								10			100	50	88			
2-UD	854+00-854+20 S.R. 43	LT.								10				10				
3-UD	854+35-855+45 S.R. 43	LT.								10					113			
4-UD	854+92-856+56 LINE "F"	LT.											154	10				
5-UD	851+50-855+75, 855+67-857+00	RT.								10		1	100	183	279			
6-UD	856+80-857+00 S.R. 43	LT.												20				
1-D	851+50-852+00 S. R. 43	LT.															34	
2-D	852+00-853+97	LT.							197								64	
3-D	851+50-852+00	RT.															34	
4-D	852+00-855+68	RT.							360								120	
11-R	8+61 - 9+86 (WASHINGTON)	RT.	960	145														
12-R	7+22-8+45 (WASHINGTON)	RT.		143														
13-R	9+11 - 9+87 (WASHINGTON)	LT.	512	100														
14-R	10+29-11+19 (EIGHTH ST.)	LT.	588	90														
15-R	10+14-10+47 (WASHINGTON)	LT.	267	48														
16-R	10+14-10+47 (WASHINGTON)	RT.	-	65														
	TOTALS		4,030	911	863	114	4	LUMP	557	40	3		354	399	480		252	

SHEET NO. 45 WATER

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	814 NEW WATER MAIN 4"	NEW WATER MAIN 6"	NEW WATER MAIN 8"	GATE VALVE 4"	GATE VALVE 6"	GATE VALVE 8"	TEES 4"x4"x4"	TEES 6"x6"x6"	TEES 8"x8"x4"	TEES 8"x8"x6"	BENDS 4" 90°		FIRE HYDRANT AS PER PLAN	FIRE HYD. REMOVED & DISPOSED OF AS PER PLAN
			L.F.	L.F.	L.F.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.		EACH	EACH
1-W	7+47 WASHINGTON ST.	LT./RT.		27			1			1						
2-W	7+45 WASHINGTON-857+00 S.R. 43	LT.			296			1			1	1				
3-W	8+19 WASHINGTON ST.	LT.													1	
4-W	10+22 -10+31 NINTH ST.	RT.	9			1			1				1			
5-W	8+19 WASHINGTON ST.	LT.														1
	TOTALS		9	27	296	1	1	1	1	1	1	1	1		1	1

SHEET NO. 46 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 S.W. REMOVED	202 CURB REMOVED	202 PAV'T REMOVED		603 CONDUIT TYPE "F" 6"	603 CONDUIT TYPE "F" 8"		605 PIPE UNDERDRAINS SHALLOW 6"	605 PIPE UNDERDRAINS UNCLASSIFIED 6"	605 PIPE UNDERDRAINS DEEP 6"	605 PIPE UNDERDRAINS 707.01 TYPE III OR 707.12 6"			SEE SHEET NO.
			S.F.	L.F.	S.Y.		L.F.	L.F.		L.F.	L.F.	L.F.	L.F.			
1-R	10+47-12+37 (WASHINGTON)	RT/LT.			800											
2-R	10+47-11+35 (WASHINGTON)	LT.	894	100												
3-R	11+51-12+37 (WASHINGTON)	LT.	783	97												
4-R	10+47-11+40 (WASHINGTON)	RT.	440	114												
5-R	11+55-11+90 (WASHINGTON)	RT.	175	55												
1-UD	857+00 - 858+54 S.R.43	LT.									188					
2-UD	857+00 - 858+84 S.R.43	RT.					32				150					
	TOTALS		2,292	366	800		32				338					

SHEET NO. 46 WATER

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	814 8" NEW WATER MAIN							
			L.F.							
1-W	857+00 ~ 858+56	LT.	160							
	TOTALS		160							

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF.-43-0.42

NOTE:
1. FOR ROADWAY QUANTITIES SEE SHEET NO. 51
2. FOR PAVEMENT DETAILS SEE SHEET NO. 67 & 70
3. FOR DRAINAGE QUANTITIES SEE SHEET NO. 75

LINE "B" STA. 847+50 TO STA. 853+45.51
LINE "A" STA. 850+00 TO STA. 853+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42

NOTE:
1. FOR ROADWAY QUANTITIES SEE SHEET NO. 51
2. FOR PAVEMENT DETAILS SEE SHEET NO. 70&71
3. FOR DRAINAGE QUANTITIES SEE SHEET NO. 75

LINE "A" - STA. 853+50 TO STA. 859+50

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			50/299

JEFFERSON COUNTY
JEF - 43 - 0.42

▨ – INDICATES BASE REPLACEMENT SEE SHEET 14 FOR DETAILS

NOTE:
1. FOR ROADWAY QUANTITIES SEE SHEET NO. 51
2. FOR PAVEMENT DETAILS SEE SHEET NO. 71
3. FOR DRAINAGE QUANTITIES SEE SHEET NO. 75

CURVE DATA A-3
P.I. STA. 859 + 70.61
Δ=62°42'36" LT.
D=10°00'00"
R=572.96'
T=349.12'
L=627.10'
E=97.99'

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PAVEMENT			G.M.	2-22-66	W.G.K.	1-12-70
DRAINAGE						
R.O.W.						
QUANTITIES	G.W.	1-12-78				

LINE "A" STA. 859+50 TO STA. 862+50

SHEET NO. 48 ROADWAY

REF. NO.	STATION TO STATION	SIDE	202 S.W. REMOVED S.F.	202 CURB REMOVED L.F.	202 PAV'T REMOVED S.Y.	202 C.B. REMOVED EACH	202 PIPE REMOVED (24" & UNDER) L.F.	603 CONDUIT TYPE "B" 6" L.F.	603 CONDUIT TYPE "F" 6" L.F.	603 CONDUIT TYPE "F" 8" L.F.		604 EX. M.H. ADJUSTED TO GRADE EACH	BENDS & BRANCHES EACH	605 PIPE UNDERDRAINS SHALLOW 6" L.F.	605 UNCLASSIFIED 6" L.F.	605 DEEP 6" L.F.	605 707.01 TYPE III OR 707.12 6" L.F.	660 SODDING S.Y.
1-R	847+76-852+87 MARKET ST.	RT./LT.			1,636													
2-R	847+76-851+25 MARKET ST.	LT.	1,745	349														
3-R	849+35-852+87 MARKET ST.	RT.		352														
1-DR	852+12 LINE "B"	LT.				1	13											
2-DR	852+05 - 852+24 LINE "B"	LT.				1	27											
1-SS	852+24 LINE "B"	LT.										1						
2-SS	852+70 LINE "B"	LT.										1						
1-UD	847+50 - 849+20 LINE "B"	LT.						26	10				3	163				
2-UD	849+40 - 852+00 LINE "B"	LT.							10					250				
3-UD	850+00 - 850+84 LINE "A"	RT.							10				1	80				
4-UD	853+00 - 853+50 LINE "A"	LT.															50	
1-D	847+70-849+19 LINE "B"	RT.																100
2-D	847+87-849+19 LINE "B"	LT.																100
3-D	851+09-851+94 LINE "B"	RT.																57
4-D	850+95-851+94 LINE "B"	LT.																64
	TOTALS		1,745	701	1636	2	40	26	30			2		493			50	321

SHEET NO. 48 WATER LINE

REF. NO.	STATION TO STATION	SIDE		814 FIRE HYD. REMOVED & DISPOSED OF AS PER PLAN EACH	814 FIRE HYD. MOVED & RESET EACH	814 VALVE BOX ADJUSTED TO GRADE EACH
1-W	848+31 EX. MARKET ST.	LT.		1		
2-W	852+31 "B"	LT.				1
4-W	852+52 "B"	LT.				1
5-W	852+78 "B"	LT.				1
6-W	852+61 "B"	RT.			1	
	TOTALS			1	1	3

SEE SHEET 49 ROADWAY

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE		NORMAL PARTICIPATION 601 PAVED GUTTER TYPE 1-2 L.F.	NORMAL PARTICIPATION 605 PIPE U.D. 707.01 TYPE III OR 707.12 6" L.F.	NORMAL PARTICIPATION 660 SODDING S.Y.	100% CITY 202 S.W. REMOVED S.F.	100% CITY 202 CURB REMOVED L.F.	100% CITY 202 EX. C.B. REMOVED EACH	100% CITY 601 PAVED GUTTER TYPE 1-2 L.F.	100% CITY 603 CONDUIT TYPE "F" 6" L.F.	100% CITY 605 PIPE U.D. SHALLOW 6" L.F.	100% CITY 605 PIPE U.D. 707.01 TYPE III OR 707.12 6" L.F.	100% CITY 660 SODDING S.Y.	SEE SHEET NO.
2-R	11+03-12+33 9th. St.	LT.					932	138							
1-DR	12+23 9th. St.	LT.							1						
1-D	854+60-858+00 LINE "A"	LT.				224									
2-D	853+85-856+00 LINE "A"	RT.				143									
3-D	856+00-858+00 LINE "A"	RT.		210		70									
4-D	858+00-858+88 LINE "A"	RT.								94				32	
5-D	858+00-858+14 LINE "A"	LT.												10	
1-UD	853+50-858+00 " "	LT.			450										
2-UD	858+00-859+20 " "	LT.									10		110		
3-UD	859+25-859+50 " "	LT.										25			
	TOTALS			210	450	437	932	138	1	94	10	25	110	42	

SHEET NO. 49 WATER LINE

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	NEW WATER MAIN 6" L.F.	NEW WATER MAIN 12" L.F.	NEW WATER MAIN 20" L.F.			12" BUTTERFLY VALVE WITH BOX EACH	20"x20"x20" TAPPING SLEEVE & VALVE EACH	TEES 12"x12"x6" EA.	TEES 12"x12"x12" EA.	BENDS 6" 45° EA.	BENDS 6" 22½° EA.	BENDS 12" 22½° EA.	BENDS 12" 90° EA.	BENDS 20" 11¼° EA.	BENDS 20" 22½° EA.	BENDS 20" 90° EA.		FIRE HYD. REMOVED & DISPOSED OF AS PER PLAN EACH
1-W	854+96 LINE "A"	LT.																		1
2-W	856+72 857+73 LINE "A"	RT./LT.			206				2							2	2	2		
3-W	856+52 "A" 12+44 NINTH ST.	RT./LT.		272				1			1			5	1					
4-W	12+44 14+63 NINTH ST.	LT.		219				1			1									
5-W	854+50 855+06 "A"	LT.	56							1		1	1							
	TOTALS		56	491	206			2	2	1	2	1	1	5	1	2	2	2		1

SEE SHEET 50 ROADWAY

ESTIMATED QUANTITIES

100% CITY

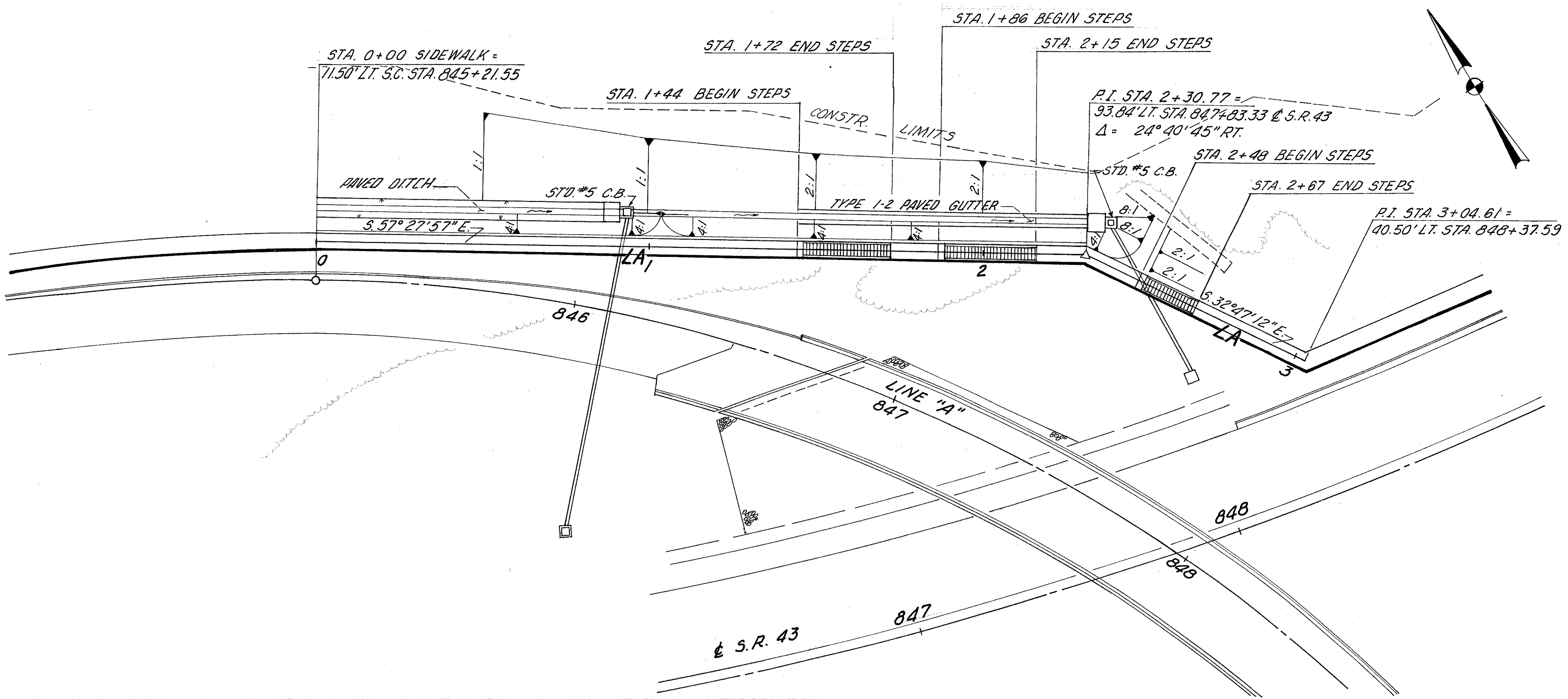
REF. NO.	STATION TO STATION	SIDE	202 S.W. REMOVED S.F.	202 CURB REMOVED L.F.	202 EX. C.B. REMOVED EACH	202 PIPE REMOVED (24" & UNDER) L.F.	202 PAVEMENT REMOVED S.Y.	202 WEARING COURSE REMOVED S.Y.	603 CONDUIT TYPE F 6" L.F.	604 M.H. ADJUSTED TO GRADE EACH	605 PIPE UNDERDRAINS SHALLOW 6" L.F.	605 UNCLASSIFIED 6" L.F.	605 DEEP 6" L.F.	605 707.01 OR 707.12 6" L.F.	202 EX. M.H. REMOVED OR ABANDONED EACH
1-DR	861+46-861+51 LINE "A"	RT.			1	7									
2-DR	861+70-861+73 LINE "A"	LT.			1	16									
3-DR	54+79 ADAMS ST.	LT.			1										
1-SS	861+60 LINE "A"	RT.								1					
4-DR	10+78 NINTH ST.	RT.													1
1-UD	859+50-861+25 LINE "A"	LT.							10		165				
1-R	56+16 (ADAMS) 10+57 (8th)	LT.	648	123											
2-R	10+57 (8th) 58+55 (ADAMS)	LT.	941	160											
3-R	10+26-11+36 (9th)	RT.	550	110											
4-R	10+26-11+45 (9th)	LT./RT.					379								
5-R	56+16 ~ 58+58 (ADAMS)	LT.						149							
	TOTALS		2139	393	3	23	379	149	10	1	165				1

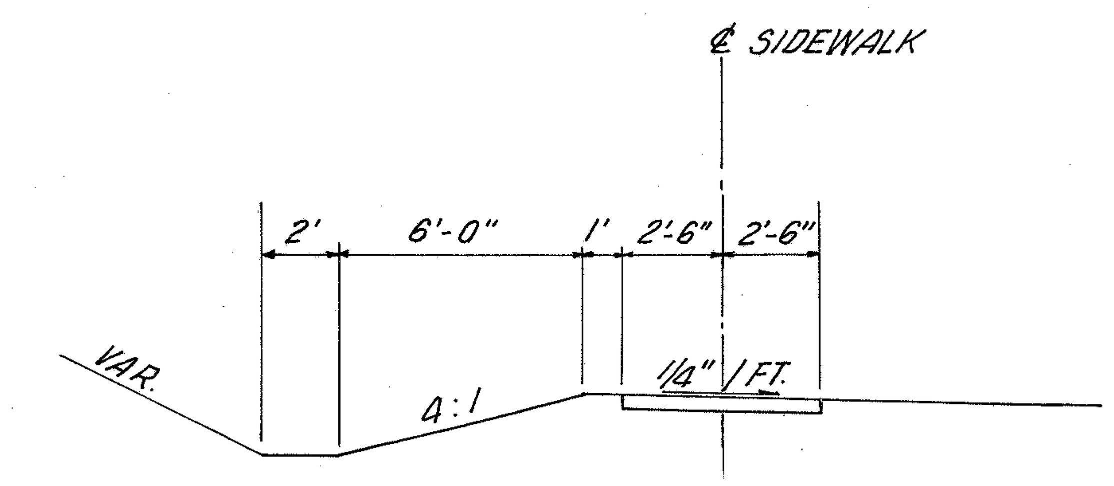
SHEET NO. 50 WATER LINE

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE		814 (100% CITY OF STEUBENVILLE) FIRE HYDRANT AS PER PLAN EACH	814 (100% CITY OF STEUBENVILLE) FIRE HYD. REMOVED & DISPOSED OF AS PER PLAN EACH
1-W	861+38 "A"	RT.			1
2-W	10+45 EIGHTH ST.	16' RT.		1	
	TOTALS			1	1

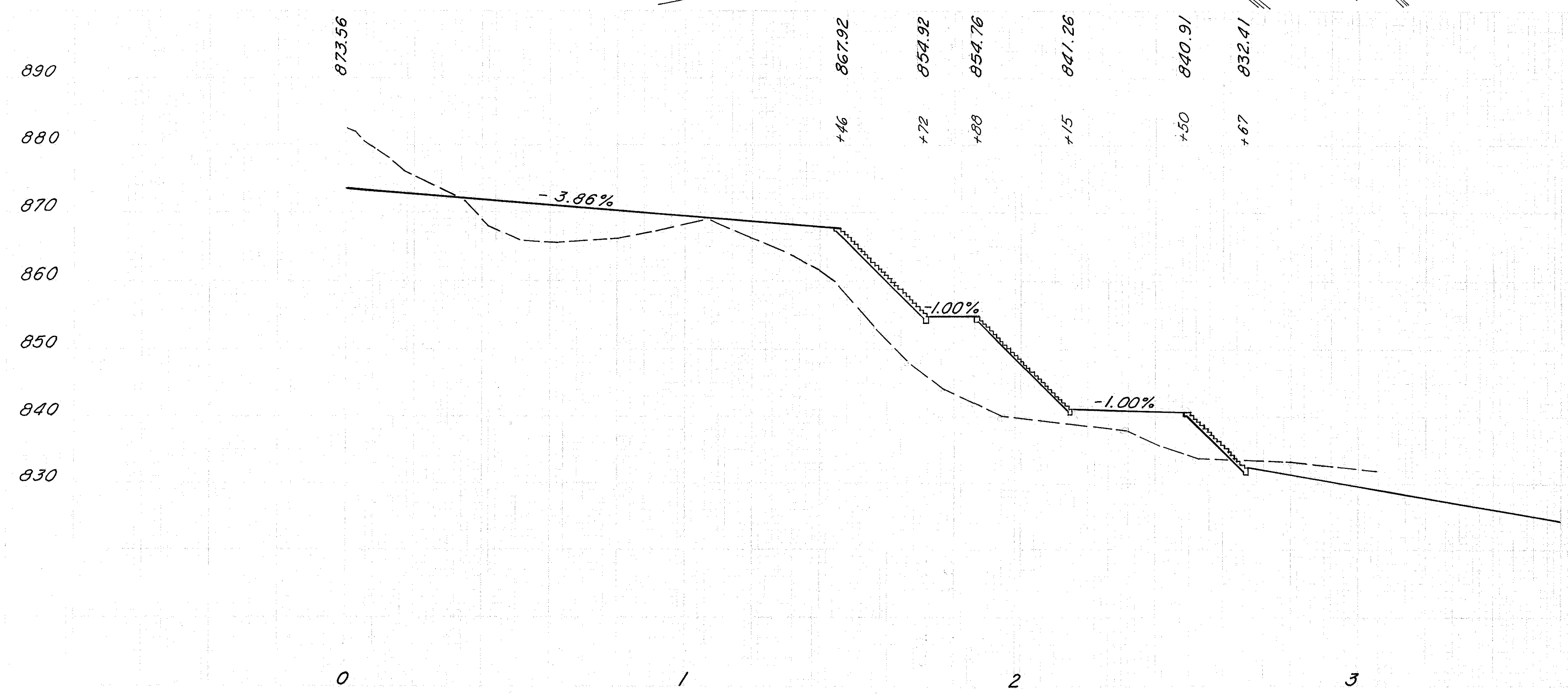
JEFFERSON COUNTY
JEF - 43 - 0.42





TYPICAL SECTION

FOR QUANTITIES, SEE SHEET NO. 67
FOR ROADWAY PLAN SEE SHEET NO. 41 & 43



SIDEWALK ~ PLAN & PROFILE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

52-A
299

JEFFERSON COUNTY
JEF - 43 - 0.42

PLAN~ BELLEVIEW BLVD.

JEFFERSON COUNTY
JEF 43-0.42

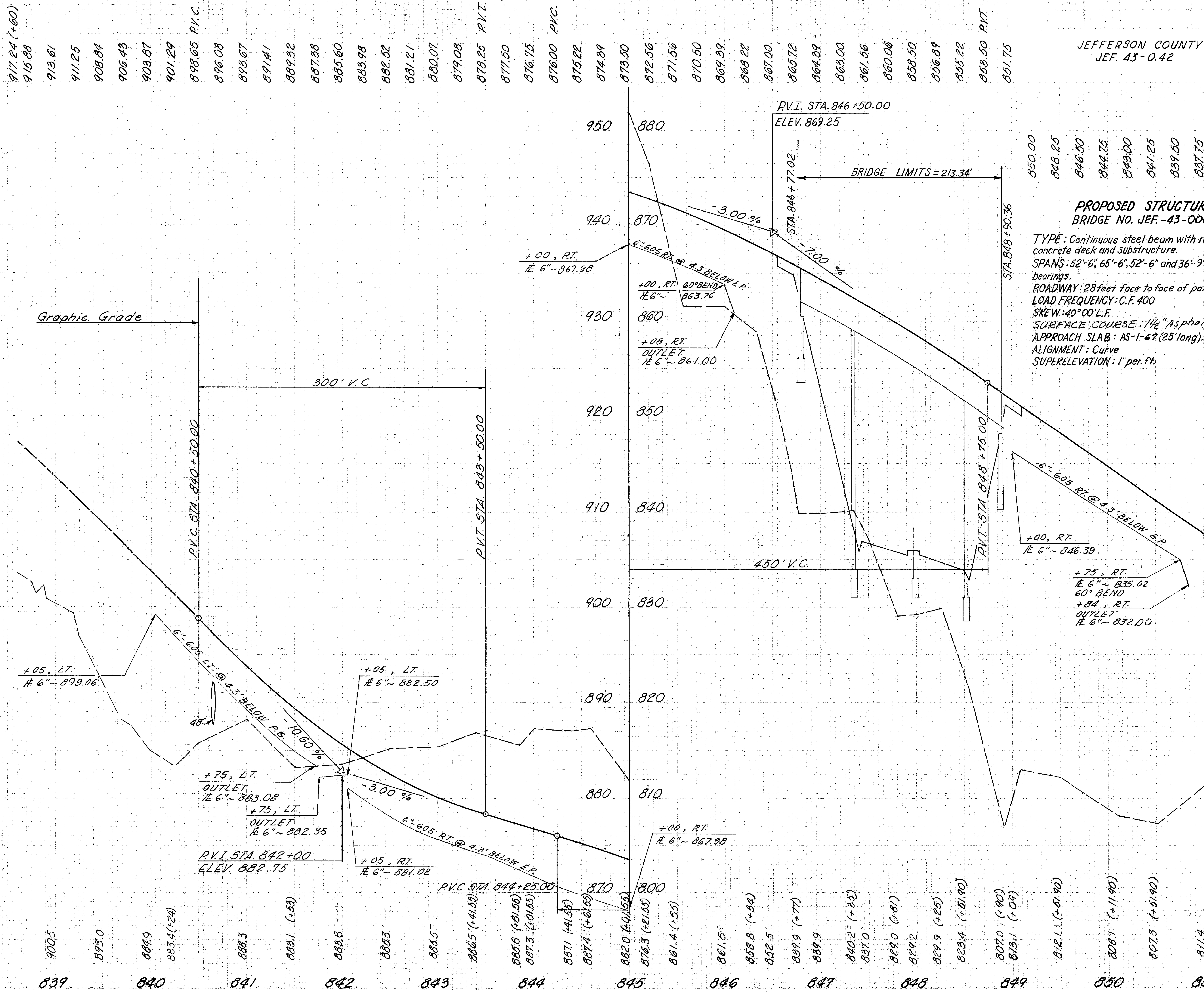
JEFFERSON COUNTY
JEF 43-0.42

S.R. 43 PROFILE ~ STA. 832+00 TO STA. 847+00

JEFFERSON COUNTY
JEF. 43 - 0.42

S.R. 43 PROFILE ~ STA. 847+00 TO STA. 15+00 WASHINGTON ST.

JEFFERSON COUNTY
JEF. 43-0.42



PROPOSED STRUCTURE
BRIDGE NO. JEF.-43-0063

TYPE: Continuous steel beam with reinforced concrete deck and substructure.
SPANS: 52'-6", 65'-6", 52'-6" and 36'-9" ℄ of bearings.
ROADWAY: 28 feet face to face of parapets.
LOAD FREQUENCY: C.F. 400
SKEW: 40°00' L.F.
SURFACE COURSE: 1½" Asphalt Concrete
APPROACH SLAB: AS-1-67 (25' long).
ALIGNMENT: Curve
SUPERELEVATION: 1" per. ft.

DESCRIPTION	PLOTTED BY	PLOTTED DATE	INKED BY	INKED DATE	CHECKED BY	CHECKED DATE
EXISTING GROUND						
PROFILE GRADE						
DRAINAGE						
BENCH MARKS						

LINE "A" PROFILE ~ STA. 839+00 TO STA. 851+00

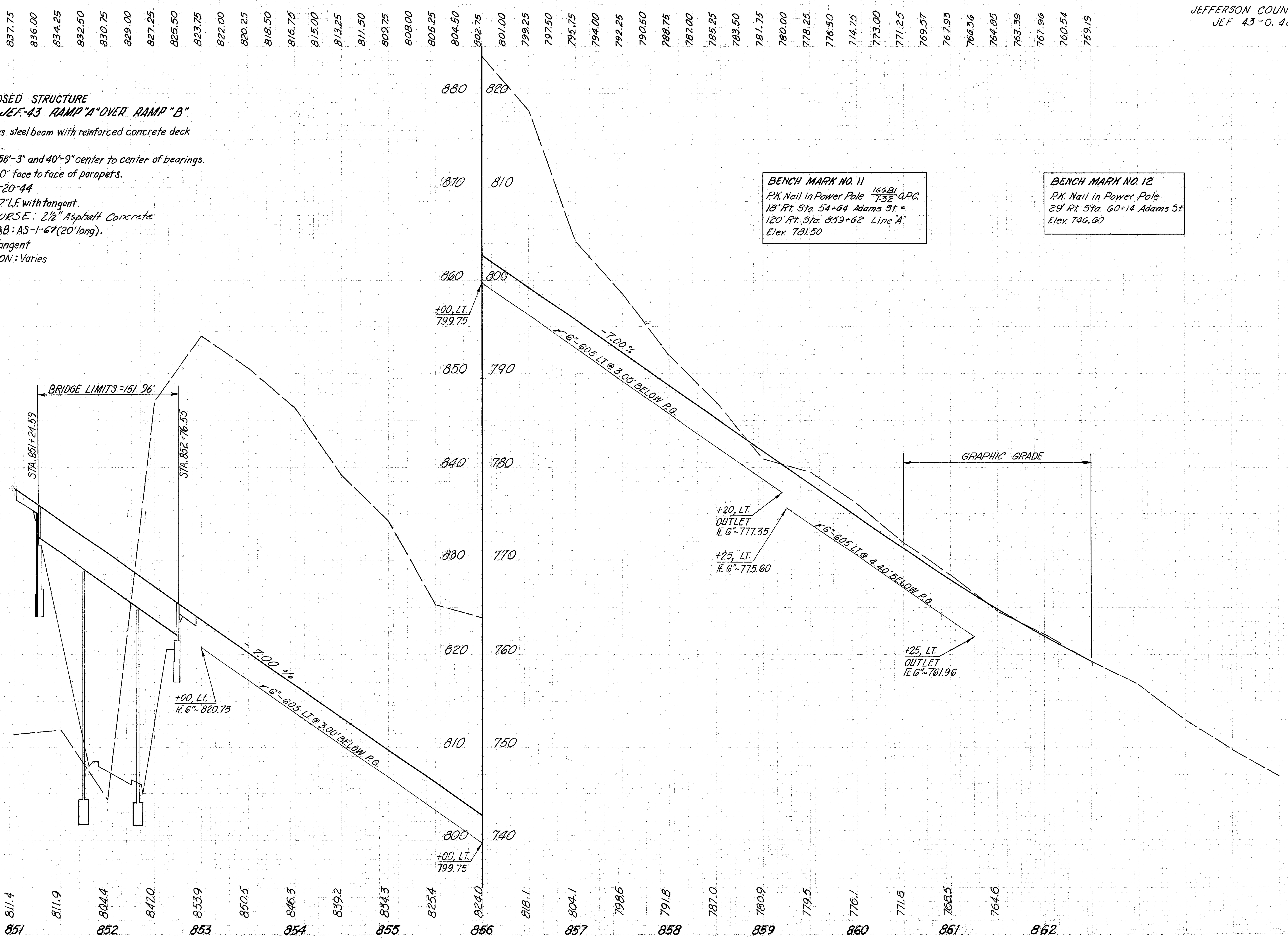
JEFFERSON COUNTY
JEF 43-0.42

PROPOSED STRUCTURE
BRIDGE NO. JEF-43 RAMP "A" OVER RAMP "B"

TYPE: Continuous steel beam with reinforced concrete deck and substructure.
SPANS: 46'-9", 58'-3" and 40'-9" center to center of bearings.
ROADWAY: 28'-0" face to face of parapets.
LOADING: H.S.-20-44
SKEW: 43°33'47" L.F. with tangent.
SURFACE COURSE: 2½" Asphalt Concrete
APPROACH SLAB: AS-1-67 (20' long).
ALIGNMENT: Tangent
SUPERELEVATION: Varies

BENCH MARK NO. 11
P.K. Nail in Power Pole $\frac{166B1}{T.32}$ O.P.C.
18' Rt. Sta. 54+64 Adams St. =
120' Rt. Sta. 859+62 Line "A"
Elev. 781.50

BENCH MARK NO. 12
P.K. Nail in Power Pole
29' Rt. Sta. 60+14 Adams St.
Elev. 746.60



LINE "A" PROFILE ~ STA. 851+00 TO STA. 862+00

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
EXISTING GROUND						
PROFILE GRADE						
DRAINAGE						
BENCH MARKS						

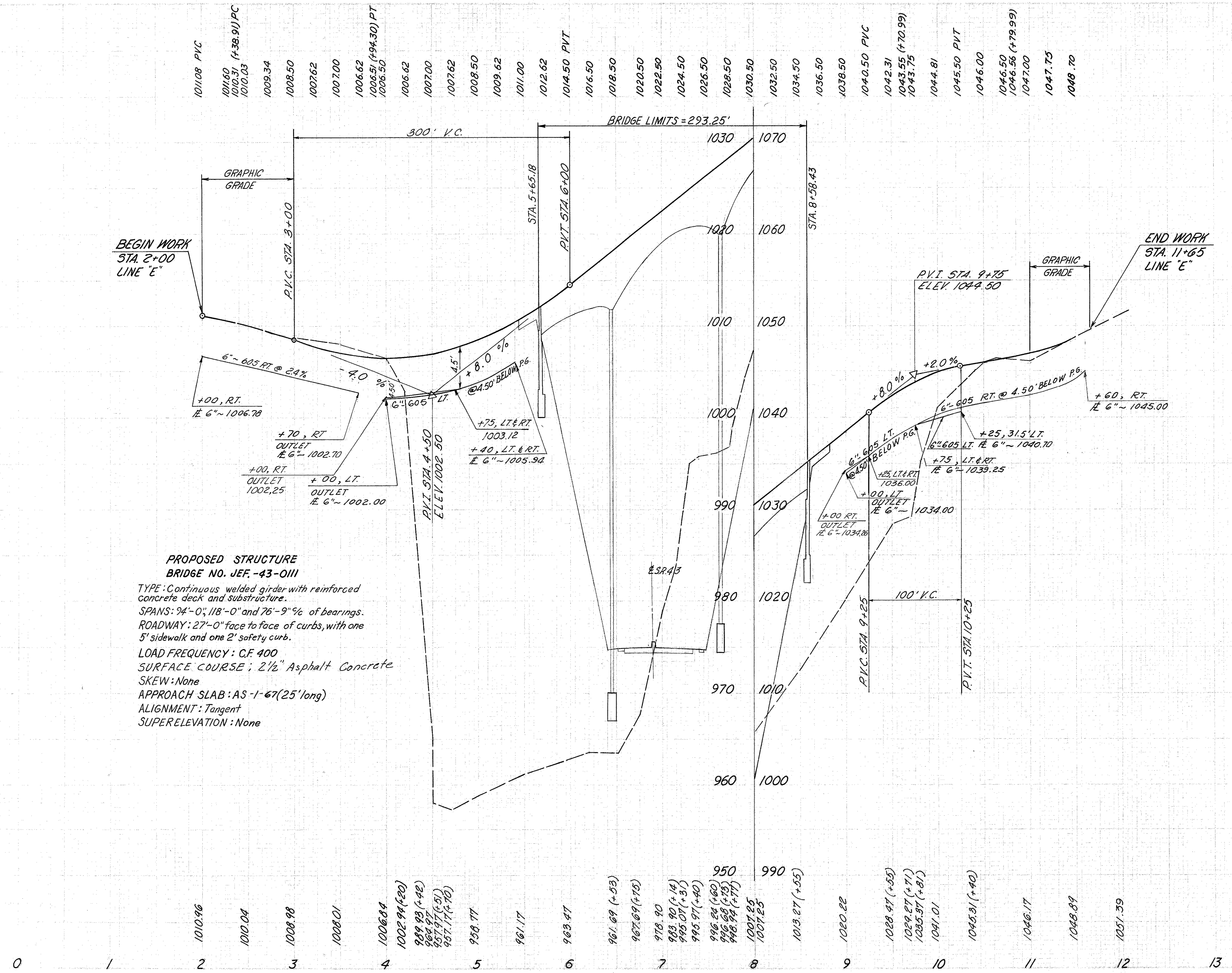
JEFFERSON COUNTY
JEF - 43 - 0.42

LINE "B" PROFILE ~ STA. 840 + 00 TO STA. 854 + 50

JEFFERSON COUNTY
JEF. 43-0.42

LINE "D" PROFILE ~ STA. 0+77.35 TO STA. 13+50

JEFFERSON COUNTY
JEF. 43-0.42

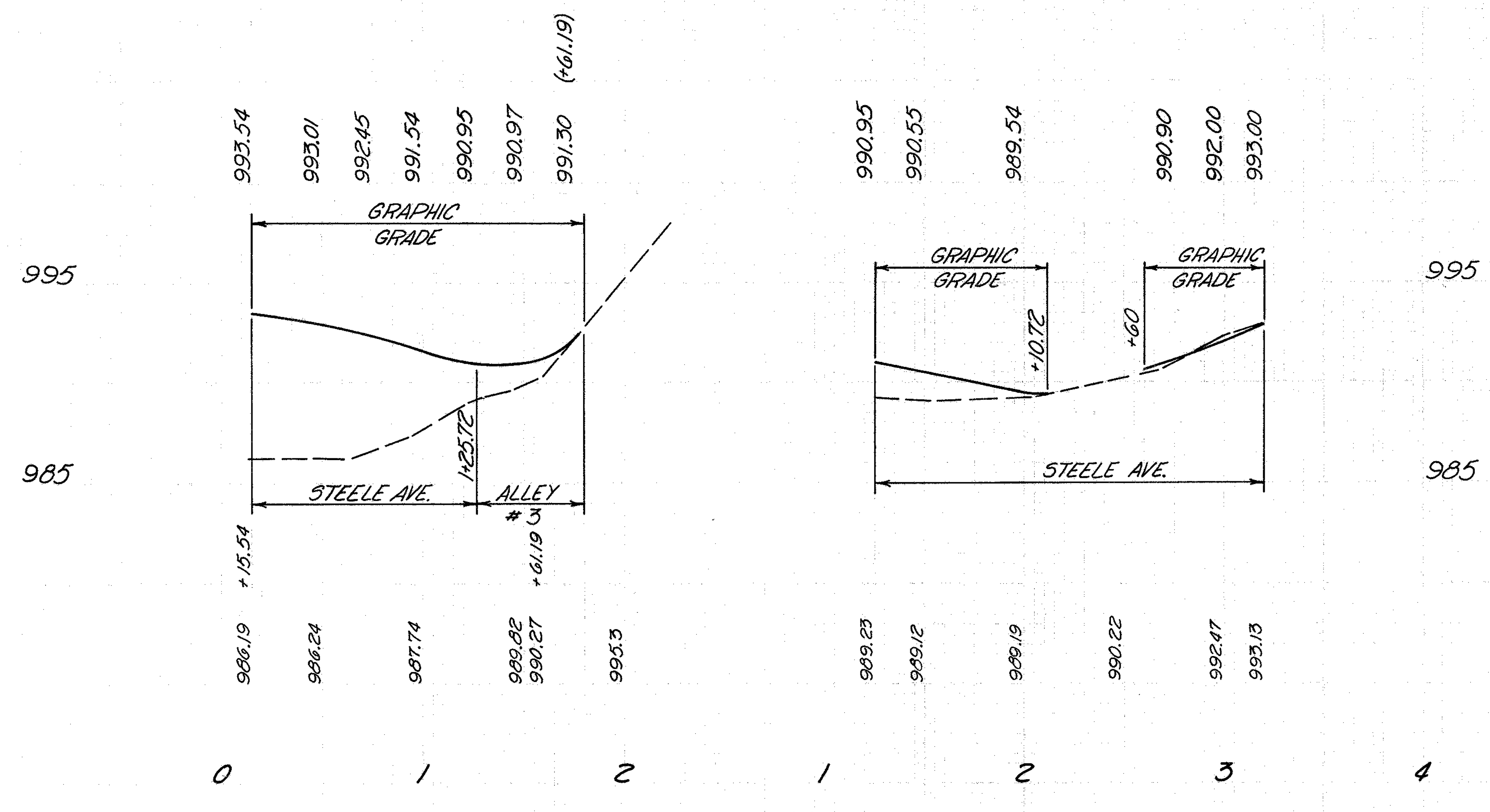


PROPOSED STRUCTURE
BRIDGE NO. JEF.-43-0111

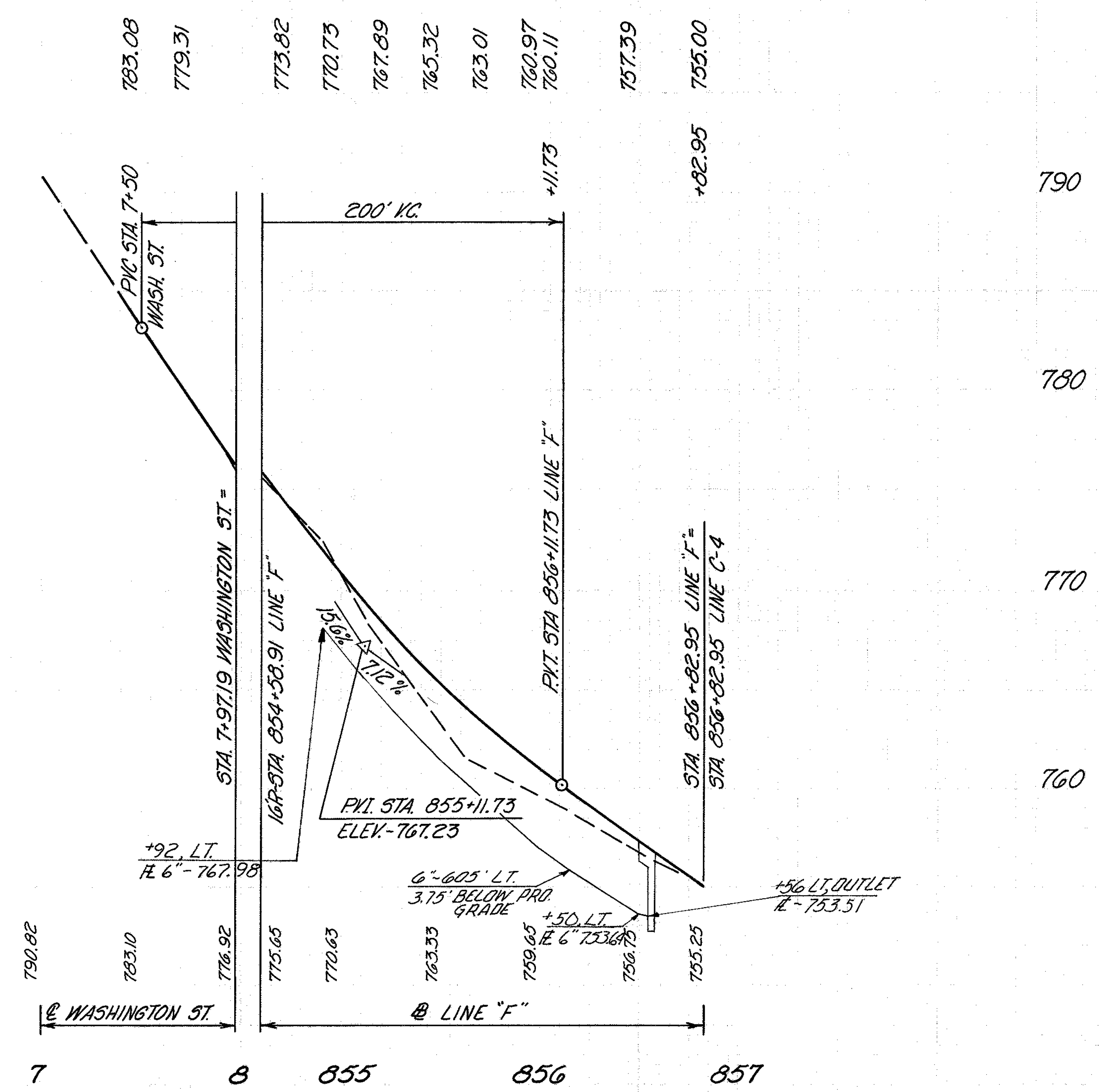
TYPE: Continuous welded girder with reinforced concrete deck and substructure.
SPANS: 94'-0", 118'-0" and 76'-9" c/c of bearings.
ROADWAY: 27'-0" face to face of curbs, with one 5' sidewalk and one 2' safety curb.
LOAD FREQUENCY: C.F. 400
SURFACE COURSE; 2½" Asphalt Concrete
SKEW: None
APPROACH SLAB: AS-1-67 (25' long)
ALIGNMENT: Tangent
SUPERELEVATION: None

LINE "E" PROFILE ~ STA. 0+00 TO STA. 13+00

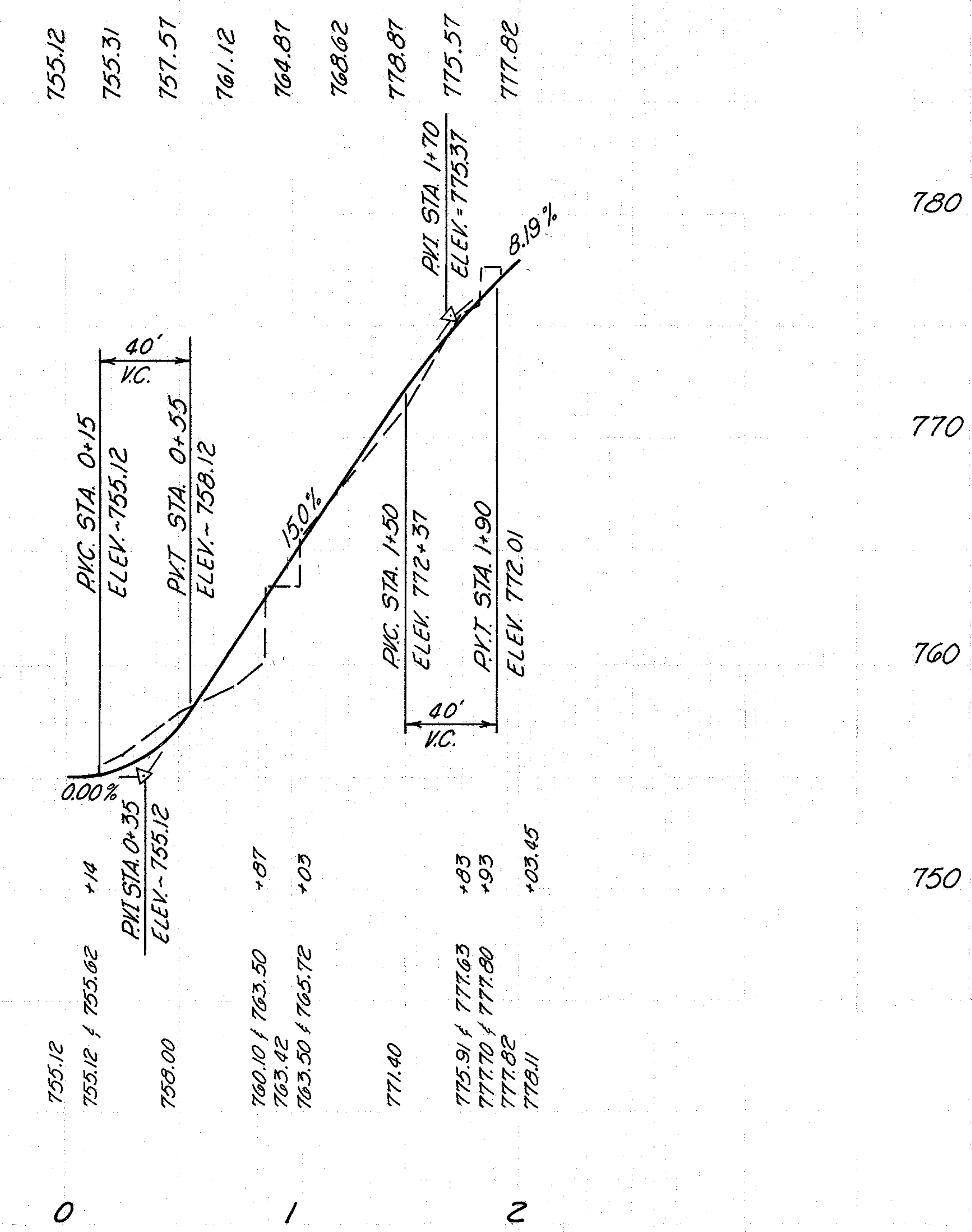
JEFFESON COUNTY
JEF 43-0.42



STEELE AVE.



LINE "F"



LINE "G"

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
EXISTING GROUND						
PROFILE GRADE						
DRAINAGE						
BENCH MARKS						

PROFILE: STEELE AVE., LINE "F", & LINE "G"

NOTE: FOR FEATHERING QUANTITIES [hatched] SEE PAVEMENT CALCULATION SHEETS NO. 26

JEFFERSON COUNTY
JEF. - 43 - 0.42

REF. NO.	STATION TO STATION	SIDE	452 8" PLAIN PORTLAND CEMENT CONCRETE	301 5" BITUMINOUS AGGREGATE BASE 702.01 (85-100 or AC 20) or 702.90 RT-10	404 1" ASPHALT CONC. (85-100 or AC-20)
			S.Y.	C.Y.	C.Y.
1P	821+66 ℄ S.R. 43	LT.	21.1		
2P	822+95 ℄ S.R.43	LT.	21.1		
3P	0+61.5 BELLEVIEW	LT.	22.2		
4P	825+35 ℄ S.R.43	LT.	28.8		
5P	826+50 ℄ S.R.43	LT.	21.0		
6P	827+00 ℄ S.R.43	LT.	21.0		
7P	821+64.40 ℄ S.R.43	RT.	82.6		
8P	823+38.52 ℄ S.R.43	RT.	42.6		
9P	823+38.52 ℄ S.R 43	RT.		8.5	1.7
	TOTALS	"	260.4	8.5	1.7

REF. NO.	STATION TO STATION	SIDE	608 CONCRETE WALK	608 CONC. STEPS TYPE A		609 CONC. CURB STANDARD TYPE 6	609 COMBINATION CURB & GUTTER TYPE 2	606 GUARD RAIL STANDARD TYPE 5 As per Plan
			S.F.	L.F.		L.F.	L.F.	L.F.
5SW	821+70 ~ 823+04	RT.	670					
1SW	821+00 S.R.43 ~ 0+75 BELLV.	LT.	860					
2SW	0+75 BELLV. ~ 827+00 S.R.43	LT.	1766					
3SW	823+41 ~ 827+00	RT.	1810					
4SW	821+00 ~ 821+45	RT.	248					
1D	821+00 ℄ S.R.43 ~ 0+75.82 BELLV.	LT.					254	
2D	0+75.82 BELLV. ~ 827+00	RT./LT.					356	
3D	821+00 ~ 827+00	RT.					605	
1CS	823+51 ~ 823+61	RT.		80				
2CS	823+65 ~ 823+74	RT.		72				
1GR	821+84 ~ 822+97	RT.						112.5
4-D	824+27 ~ 825+20	LT.				93		
6SW	823+41 ~ 827+00	RT.	1260					
	TOTALS		6614	152		93	1215	112.5

PAVEMENT JOINTS

STANDARD LONGITUDINAL JOINT ——— L ———
KEY JOINT W/O TIE BARS ——— K ———
STANDARD CONTRACTION JOINT ——— C ———
STANDARD EXPANSION JOINT W/O DOWELS ▬
STANDARD EXPANSION JOINT — — — — — — —

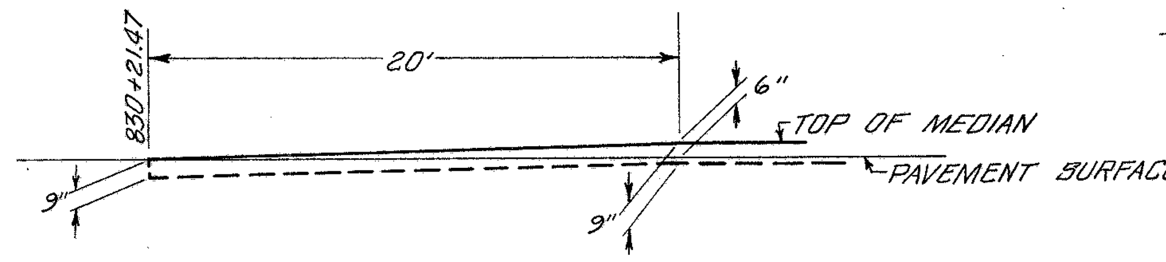
PAVEMENT DETAILS: S.R. 43 ~ STA. 820+00 TO STA. 827+00

JEFFERSON COUNTY
JEF - 43 - 0.42

CURVE DATA LINE C-2
CURVE C-2A
PI STA. 827+95.76 LINE C-2
Δ = 1°-45'-01" LT.
D = 2°-00'-00"
R = 2864.79
T = 43.76
L = 87.51
E = 0.33

CURVE DATA LINE C-2
CURVE C-2B
PI STA. 829+82.63 LINE C-2
Δ = 2°-34'-40" RT.
D = 1°-40'-00"
R = 3437.75
T = 77.35
L = 154.67
E = 0.87

CURVE DATA LINE C-1
PI STA. 830+79.63 LINE C-1
Δ = 4°-15'-00"
D = 1°-00'-00"
R = 5729.58
T = 212.60
L = 425.00
E = 3.94



MEDIAN NOSE PROFILE

REF. NO.	STATION TO STATION	SIDE	608 CONCRETE WALK	608 CONCRETE STEPS TYPE A	609 CONCRETE CURB TYPE 2A	609 COMBINATION CURB & GUTTER TYPE 2	606 GUARD RAIL TYPE 5	606 GUARD RAIL TYPE 5 BARRIER DESIGN	606 ANCHOR ASSEMBLY	606 ANCHOR ASSEM. BARRIER DESIGN
			S.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EACH	
1-SW	827+00 ~ 1+45 ℄ ALLEY 3	LT.	1458							
2-SW	2+08 ℄ STEELE AVE.-833+00	LT.	2145							
3-SW	827+00 ℄ SR43 ~ 6+00 LINE "D"	RT.	1315							
4-SW	1+32 ~ 2+08 STEELE AVE.	LT.	296							
1-D	827+00 ~ 0+80.91 ℄ STEELE AVE.	LT.				229				
2-D	0+80.91 ℄ STEELE AVE.-5+30 ℄ ALLEY	LT.&RT.			101					
3-D	0+72 ℄ STEELE AVE.-833+00 S.R.43	LT.&RT.				360				
4-D	0+72 ℄ STEELE AVE.-2+08 ℄ STEEL AVE.	RT.			95					
5-D	5+30 ℄ ALLEY 1 ~ 0+19 ℄ ALLEY 2	LT.			50					
6-D	0+19 ℄ ALLEY 2 ~ 2+08 ℄ STEEL AVE.	LT.&RT.			119					
7-D	2+60 ℄ STEEL AVE.-3+20 ℄ STEEL AVE.	LT.&RT.			172					
8-D	827+00 S.R. 43 ~ 6+50 LINE D	RT.				350				
1-CS	3+59 ~ 3+97 LINE "D"	RT.		150						
1-G	830+50 S.R.43 ~ 833+00 S.R. 43	℄						225		1
2-G	831+02 S.R.43 ~ 833+00 S.R. 43	RT.					173		1	
6-SW	827+00 S.R.43 ~ 6+50 LINE "D"	RT.	1125							
5 S.W.	2+60 ~ 2+91 STEELE AVE	LT.	126							
	TOTALS		6465	150	537	939	173	225	1	1

S.R. 43 ~ STA. 827+00 TO STA. 833+00

PAVEMENT DETAILS: LINE "D" ~ TO STA. 6+50
LINE "E" ~ STA. 5+41 TO STA. 8+37

NOTE: CURB ON APPROACH SLAB INCLUDED IN APPROACH SLAB QUANTITY.

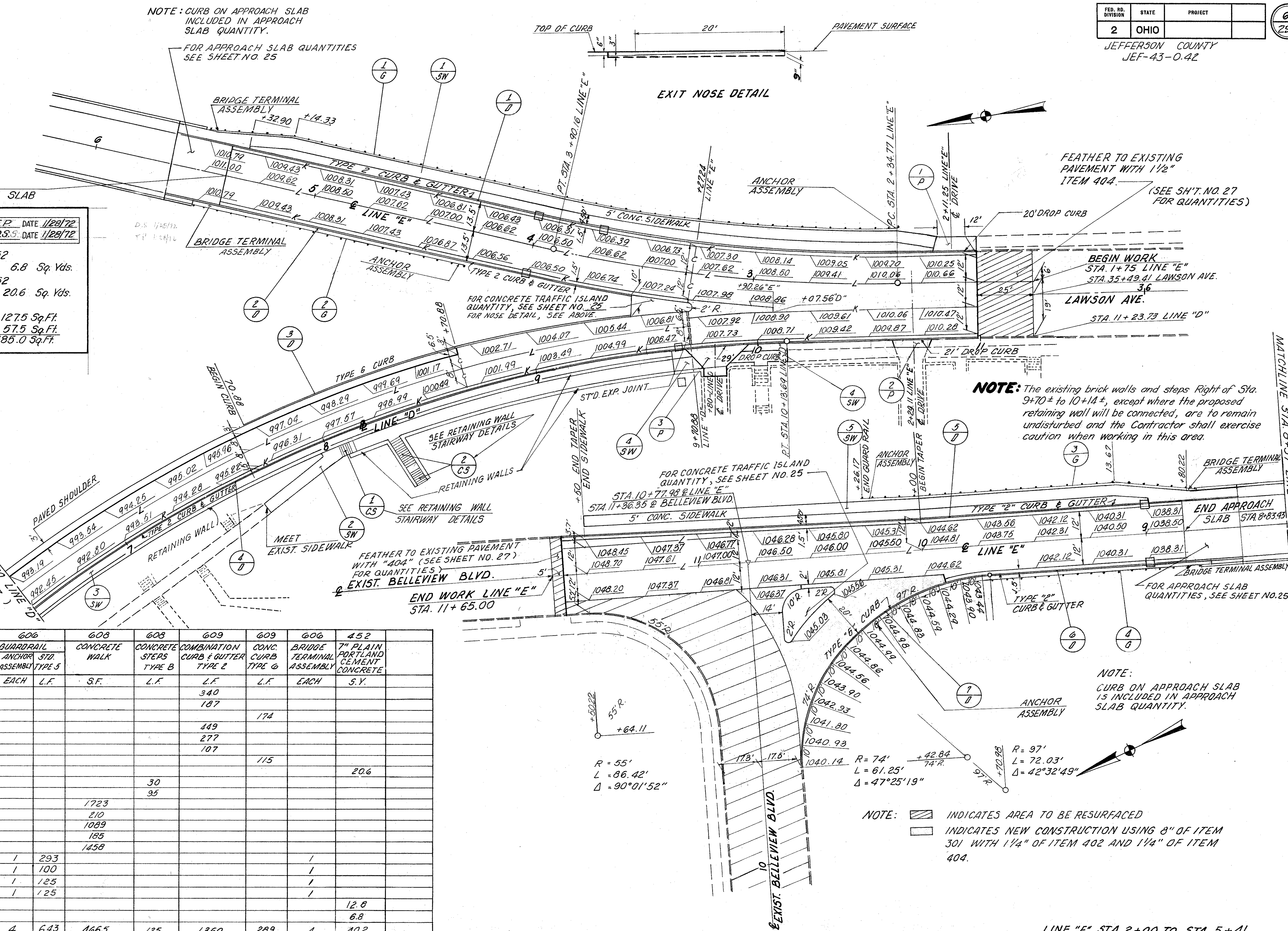
CALC. T.P.	DATE 1/28/72
CHK. D.S.S.	DATE 1/28/72

Revised Calculations

(2/P) Concrete Driveway - Item 452
$\left(\frac{14'+21'}{2}\right) \times 3.5' \div 9$ = 6.8 Sq. Yds.

(3/P) Concrete Driveway - Item 452
$\left(\frac{10'+29'}{2}\right) \times 9.5' \div 9$ = 20.6 Sq. Yds.

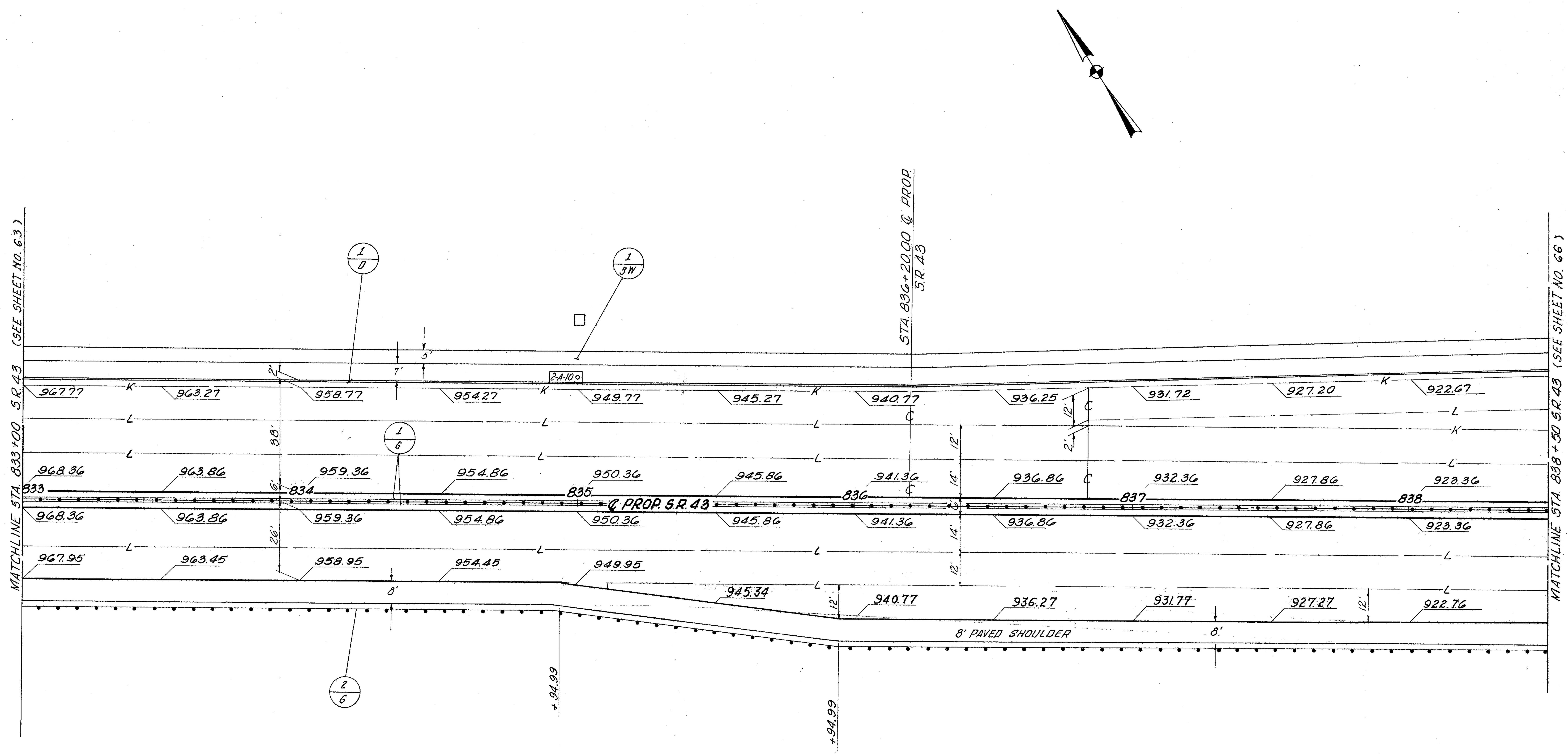
(4/SW) Concrete Walk - Item 608
$21' \times 5' + \frac{1}{2} \times 5' \times 5' + 5 \times 2$ = 127.5 Sq. Ft.
$9' \times 5' + \frac{1}{2} \times 5' \times 5'$ = 57.5 Sq. Ft.
185.0 Sq. Ft.



NOTE: [hatched] INDICATES AREA TO BE RESURFACED
[blank] INDICATES NEW CONSTRUCTION USING 8" OF ITEM 301 WITH 1¼" OF ITEM 402 AND 1¼" OF ITEM 404.

REF. NO.	STATION TO STATION	SIDE	606 GUARDRAIL ANCHOR ASSEMBLY	606 GUARDRAIL STD. TYPE 5	608 CONCRETE WALK	608 CONCRETE STEPS TYPE B	609 COMBINATION CURB & GUTTER TYPE 2	609 CONC. CURB TYPE 6	606 BRIDGE TERMINAL ASSEMBLY	452 7" PLAIN PORTLAND CEMENT CONCRETE	
			EACH	L.F.	S.F.	L.F.	L.F.	L.F.	EACH	S.Y.	
1-D	2+00 LINE E ~ 5+40.18 LINE E	RT.					340				
2-D	3+53.24 LINE E ~ 5+40.18 LINE E	LT.					187				
3-D	7+70.88 LINE D ~ 9+45 LINE D	LT.						174			
4-D	6+50.00 LINE D ~ 10+98.73	RT.					449				
5-D	8+83.43 LINE E ~ 11+60 LINE E	RT.					277				
6-D	8+83.43 LINE E ~ 9+90.73 LINE E	LT.					107				
7-D	9+90.73 LINE E ~ 10+42 BELLEV. BLVD.	LT. & RT.						115			
3-P	9+80.00 LINE - D	RT.								20.6	
1-CS	8+08 LINE D	RT.				30					
2-CS	8+32 LINE D	RT.				95					
1-SW	2+00 LINE E ~ 5+65.18 LINE E	RT.			1723						
2-SW	7+65 LINE D ~ 8+05 LINE D	RT.			210						
3-SW	6+50 LINE D ~ 9+61 LINE D	RT.			1089						
4-SW	9+61 LINE D ~ 10+14 LINE D	RT.			185						
5-SW	8+58.43 LINE E ~ 11+50 LINE E	RT.			1458						
1-G	2+33.59 LINE E ~ 5+51.50 LINE E	RT.	1	293					1		
2-G	4+26.50 LINE E ~ 5+51.50 LINE E	LT.	1	100					1		
3-G	8+76.50 LINE E ~ 10+26.17 LINE E	RT.	1	125					1		
4-G	8+76.50 LINE E ~ 10+22.85 LINE E	LT.	1	125					1		
1-P	2+11.25 LINE E	RT.								12.8	
2-P	2+29.11 LINE E	LT.								6.8	
	TOTALS		4	643	4665	125	1360	289	4	40.2	

PAVEMENT DETAILS: LINE "E" STA. 2+00 TO STA. 5+41
LINE "D" STA. 6+50 TO STA. 11+00
LINE "E" STA. 8+37 TO STA. 11+60



REF. NO.	STATION TO STATION	SIDE	606 GUARD RAIL TYPE 5 BARRIER DESIGN	606 GUARD RAIL STD. TYPE 5		608 CONCRETE WALK	609 COMBINATION CURB & GUTTER TYPE 2
			L.F.	L.F.		S.F.	L.F.
1-G	833+00 ~ 838+50	℄	550				
2-G	833+00 ~ 838+50	RT.		552			
1-D	833+00 ~ 838+50	LT.					539
1-SW	833+00 ~ 838+50	LT.				2750	
	TOTALS		550	552		2750	539

PAVEMENT DETAILS: S.R. 43 STA. 833+00 TO STA. 838+50

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

JEFFERSON COUNTY
JEF.-43-0.42

REF. NO.	STATION TO STATION	SIDE	606 GUARD RAIL TYPE 5 BARRIER DESIGN L.F.	606 GUARD RAIL STD. TYPE 5 L.F.		608 CONCRETE WALK S.F.	609 COMB. CURB & GUTTER TYPE 2 L.F.	609 CONCRETE CURB STD. TYPE 7	609 CONCRETE CURB STD. TYPE 8
1-SW	838+50 ~ 844+50 LINE A	LT.				3000			
1-D	838+50 ~ 844+50 LINE A	LT.					580		
2-D	838+60 ~ 840+39 LINE A	RT.							182
3-D	840+39 ~ 841+37 LINE A	RT.						101	
1-G	838+50 ~ 844+50	℄	600						
2-G	838+50 S.R. 43 ~ 844+50 LINE B	RT.		600					
	TOTALS		600	600		3000	580	101	182

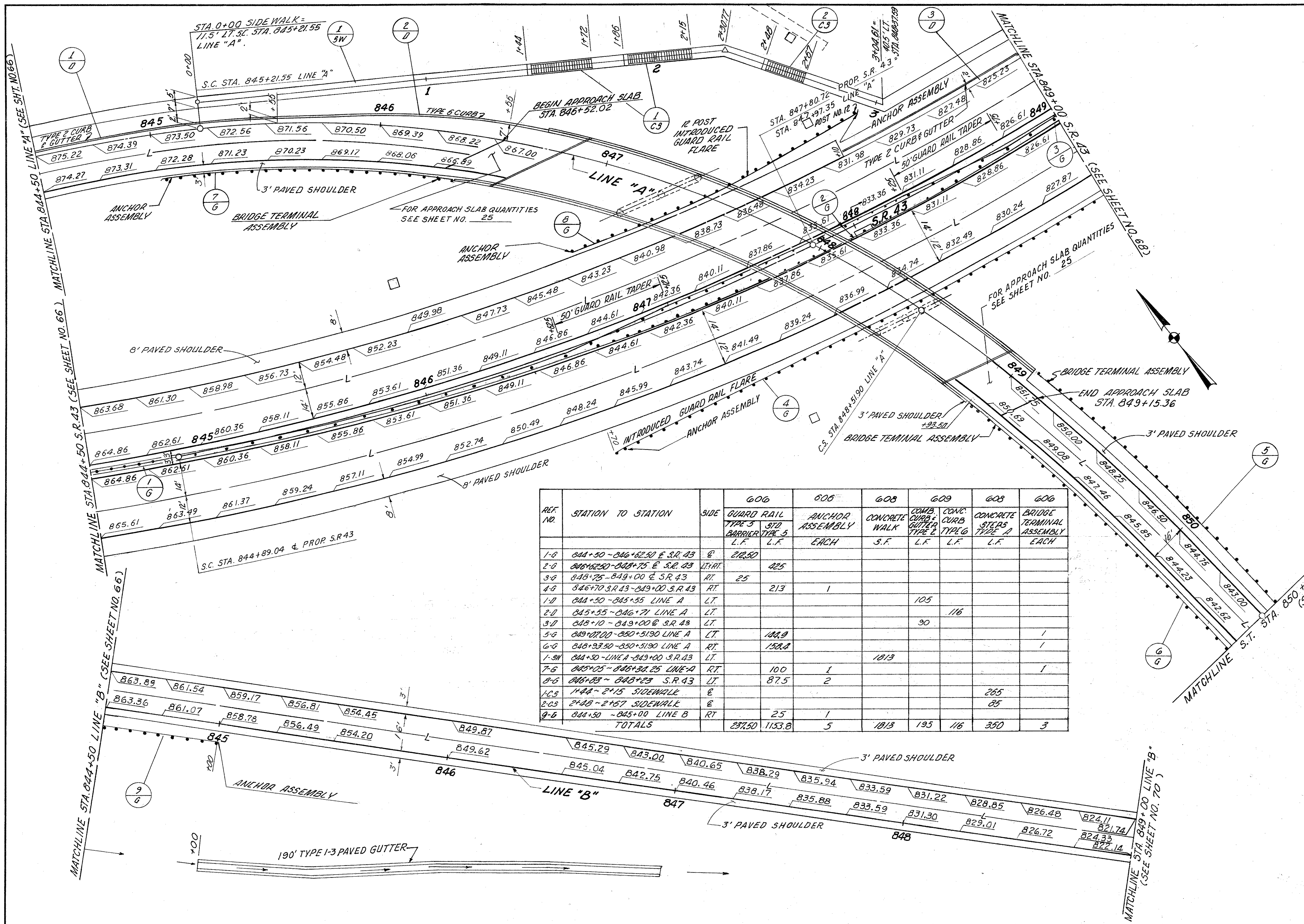
S.R. 43 ~ STA. 838+50 TO STA. 844+50

PAVEMENT DETAILS: LINE "A" ~ STA. 838+50 TO STA. 844+50
LINE "B" ~ STA. 838+50 TO STA. 844+50

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE						
R. O. W.						
QUANTITIES	W.G.T.	1-12-78			R.G.	1-12-78

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF.-43-0.42

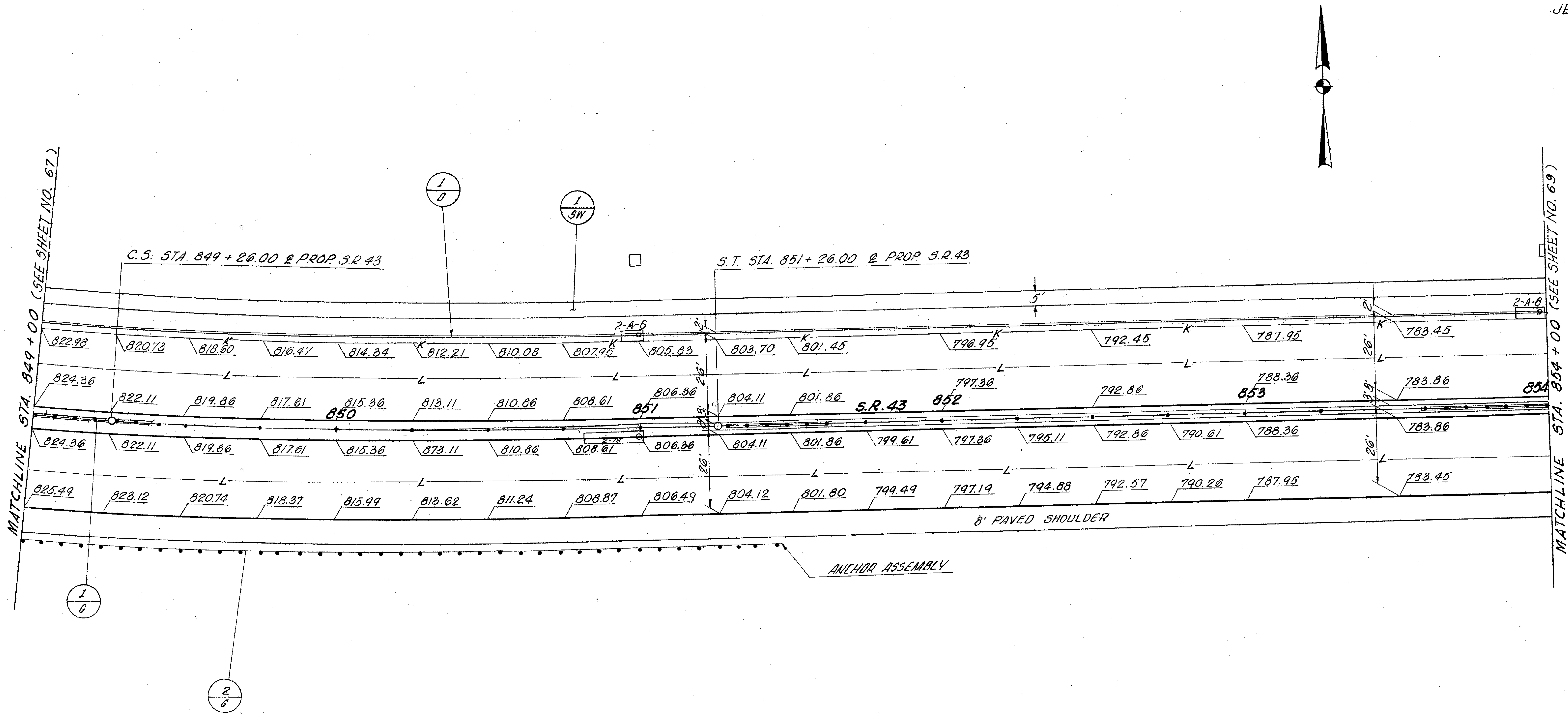


REF. NO.	STATION TO STATION	SIDE	606 GUARD RAIL TYPE 5 BARRIER	606 GUARD RAIL STD. TYPE 5	606 ANCHOR ASSEMBLY	608 CONCRETE WALK	609 COMB. CURB & GUTTER TYPE 2	609 CONC. CURB TYPE 6	608 CONCRETE STEPS TYPE A	606 BRIDGE TERMINAL ASSEMBLY
			L.F.	L.F.	EACH	S.F.	L.F.	L.F.	L.F.	EACH
1-G	844+50 ~ 846+62.50 ⊈ S.R. 43	⊈	212.50							
2-G	846+62.50 ~ 848+75 ⊈ S.R. 43	LT.&RT.		425						
3-G	848+75 ~ 849+00 ⊈ S.R. 43	RT.	25							
4-G	846+70 S.R. 43 ~ 849+00 S.R. 43	RT.		213	1					
1-D	844+50 ~ 845+55 LINE A	LT.					105			
2-D	845+55 ~ 846+71 LINE A	LT.						116		
3-D	848+10 ~ 849+00 ⊈ S.R. 43	LT.					90			
5-G	849+07.00 ~ 850+51.90 LINE A	LT.		144.9						1
6-G	848+93.50 ~ 850+51.90 LINE A	RT.		158.4						1
1-SW	844+50 ~ LINE A ~ 849+00 S.R. 43	LT.				1813				
7-G	845+05 ~ 846+34.25 LINE-A	RT.		100	1					1
8-G	846+83 ~ 848+23 S.R. 43	LT.		87.5	2					
1-CS	1+44 ~ 2+15 SIDEWALK	⊈							265	
2-CS	2+48 ~ 2+67 SIDEWALK	⊈							85	
9-G	844+50 ~ 845+00 LINE B	RT		25	1					
	TOTALS		237.50	1153.8	5	1813	195	116	350	3

MEDIAN TRANSITION

STATION	LT.	RT.
S.C. 844+89.04	3.00'	3.00'
845+00		3.11'
+25		3.36'
+50		3.61'
+75		3.86'
846+00		4.11'
+25		4.36'
+50		4.61'
+75		4.86'
847+00		5.11'
+14.04	3.00'	5.25'
848+25	3.00'	5.25'
+50		5.00'
+75		4.75'
849+00		4.50'
+25		4.25'
+50		4.00'
+75		3.75'
850+00		3.50'
+25		3.25'
+50	3.00'	3.00'

PAVEMENT DETAILS: S.R. 43 ~ STA. 844+50 TO STA. 849+00
LINE "A" ~ STA. 844+50 TO STA. 852+00
LINE "B" ~ STA. 844+50 TO STA. 850+59



FOR MEDIAN TRANSITION WIDTH
SEE SHEET 67

REF. NO.	STATION TO STATION	SIDE	606 GUARD RAIL TYPE 5 BARRIER	606 GUARD RAIL STD. TYPE 5	606 ANCHOR ASSEMBLY	608 CONCRETE WALK	609 COMBINATION CURB & GUTTER TYPE 2
			L.F.	L.F.		S.F.	L.F.
1-G	849+00 ~ 854+00	℄	500				
2-G	849+00 ~ 851+45	RT.		224.5	1		
1-SW	849+00 ~ 854+00	LT.				2500	
1-D	849+00 ~ 854+00	LT.					484
	TOTALS		500	224.5	1	2500	484

JEFFERSON COUNTY
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REF. NO.	STATION TO STATION	SIDE			608	609	609	609
					CONCRETE WALK	CONCRETE CURB TYPE 2-A	COMB. CURB & GUTTER TYPE 2	CONCRETE CURB TYPE 6
					S.F.	L.F.	L.F.	L.F.
11-D	10+31 ~ 10+41.02 EIGHTH ST.	RT./LT.						38
1-D	854+00 ~ 855+68 S.R. 43	LT.					164	
2-D	857+50 LINE C-3 ~ 858+87.86 S.R. 43	RT.				126		
3-D	858+06 ~ 858+87.86 S.R. 43	LT.				86		
4-D	856+82.98 ~ 857+99 LINE C-4	℄/LT.				119		
5-D	10+41.01 NINTH ~ 856+82.98 LINE F	℄/RT.				228		
6-D	6+97 WASH. ST. ~ 855+75 LINE "F"	RT.				200		
7-D	7+44 WASH. ST. ~ 10+41.09 NINTH ST.	LT.				56		
8-D	10+41.01 NINTH ~ 10+41.02 EIGHTH	RT./LT.				207		
9-D	11+19.01 NINTH ~ 11+09.02 ALLEY #6	RT./LT.				112		
1-SW	854+00 ~ 855+44 S.R. 43	LT.			704			
3-SW	858+18 LINE C-4 ~ 858+87.86 S.R. 43	LT.			491			
4-SW	856+80 ~ 857+99 LINE C-4	LT.			909			
5-SW	854+76 ~ 856+92.95 LINE F	LT.			1362			
6-SW	7+44 ℄ WASH. ST. ~ 10+41 NINTH ST.	LT.			295			
8-SW	1+15 ~ 1+90 LINE "G"	RT.			465			
9-SW	0+17 ~ 0+89 LINE "G"	RT.			412			
10-SW	10+27 ~ 10+57 EIGHTH ST.	LT.			139			
10-D	11+08.98 ALLEY #6 ~ 11+19.02 EIGHTH	RT./LT.				100		
12-D	856+10 LINE C-3 ~ 857+50 LINE C-3	RT.						140
	TOTALS				4777	1234	164	178

REF. NO.	STATION TO STATION	SIDE	606		606	606
			GUARD RAIL		ANCHOR ASSEM.	
			TYPE 5 BARRIER	STD. TYPE 5	BARRIER DESIGN	ANCHOR ASSEMBLY
			L.F.	L.F.	EA.	EA.
1-G	854+00 ~ 857+00 S.R. 43	℄	275		1	
2-G	6+96 ~ 8+10 WASHINGTON ST.	RT.		75		2
	TOTALS		275	75	1	2

PAVEMENT DETAILS ~ S.R. 43 ~ STA. 854+00 TO STA. 859+

Drawn By - J.R.J.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF.-43-0.42

REF. NO.	STATION TO STATION	SIDE	606 GUARD RAIL	606 GUARD RAIL STD. TYPE 5	606 BRIDGE TERMINAL ASSEMBLY	606 ANCHOR ASSEMBLY		609 CONCRETE CURB STD. TYPE 6
				L.F.	EA.	EA.		L.F.
1-D	849+30 ~ 852+13 LINE B	LT.						277
2-D	849+25 ~ 852+64 LINE B	RT.						344
1-G	850+51.90 ~851+14.70 LINE A	LT.		62.8	1			
2-G	850+51.90 ~850+90.00 LINE A	RT.		38.1	1			
3-G	852+96.85 ~854+34.35 LINE A	LT.		112.5	1	1		
4-G	852+72.00 ~854+09.50 LINE A	RT.		112.5	1	1		
5-G	849+37.00 ~851+23.00 LINE B	RT.		137.5		2		
6-G	848+90.00 ~850+80.00 LINE B	LT.		137.5		2		
	TOTALS			600.9	4	6		621

PAVEMENT DETAILS: LINE "A" STA 850+51.90 TO STA.856+50
LINE "B" STA 849+00 TO STA 854+00

REF. NO.	STATION TO STATION	SIDE			100% CITY 608 CONCRETE WALK	609 CONCRETE CURB STD. TYPE 6	609 CONCRETE CURB STANDARD TYPE 2-B	609 COMBINATION CURB & GUTTER TYPE 2
					S.F.	L.F.	L.F.	L.F.
1-D	858+25 ~ 861+23 LINE "A"	LT.						298
2-D	861+23 L."A"-10+58 EIGHTH ST.	LT.					35	
3-D	10+58 EIGHTH ST.~58+55 ADAMS ST.	RT./LT.					158	
4-D	11+33.77 ~ 12+50 NINTH ST.	RT./LT.					161	
1-SW	11+32 NINTH ST.~10+58 EIGHTH ST.	RT./LT.			1385			
2-SW	10+58 EIGHTH ST.~58+55 ADAM ST.	LT.			836			
3-SW	NINTH ST. TURN-AROUND				122			
4-SW	54+79 ~ 55+04 ADAMS	LT.			175			
5-SW	56+10 ~ 56+16 ADAMS	LT.			53			
5-D	54+75 ~ 55+06 ADAMS ST.	LT.				31		
6-D	859+00~860+66 LINE "A"	RT.				166		
	TOTALS -100% CITY				2571	197	354	298

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

72 / 299

JEFFERSON COUNTY
JEF. 43-0.42

PIPE INDEX PLAN

PIPE INDEX PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

74
299

JEFFERSON COUNTY
JEF. 43 - 0.42

PIPE INDEX PLAN

DESCRIPTION	PLOTTED	INKED	CHECKED
TOPOGRAPHY			
ALIGNMENT			
DRAINAGE			
R. O. W.			
QUANTITIES			

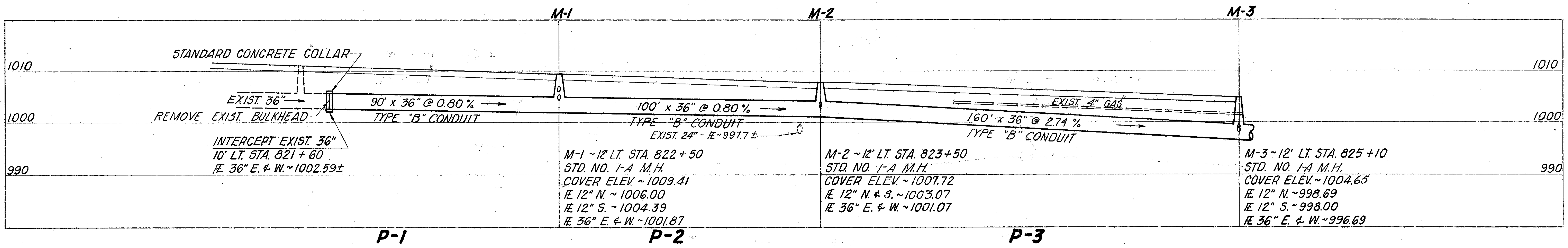
DRAINAGE SUB-SUMMARY

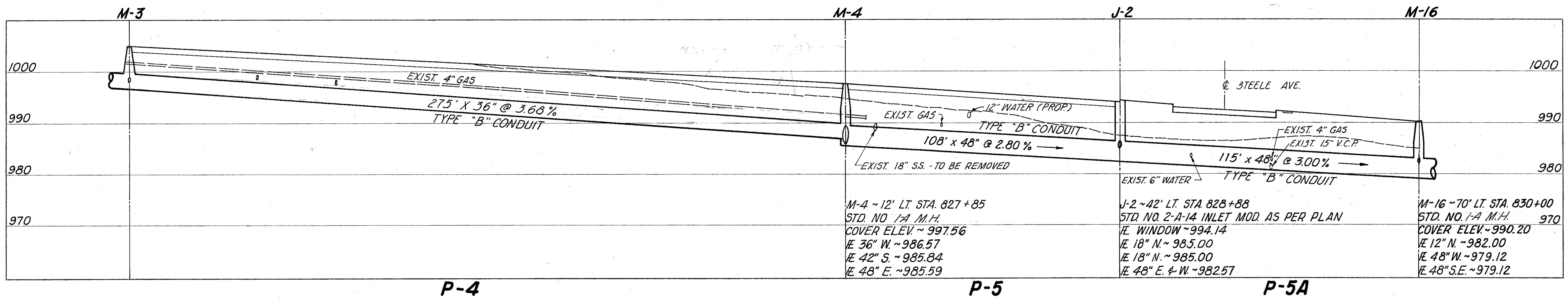
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42

ITEM	SHEET NUMBERS												100% CITY					ITEM	TO GENERAL SUMMARY QUANTITY			UNIT	DESCRIPTION TYPE CODE 7221
	76	77	78	79	80	81	82	83	85	86			86A	83	84	85	86		NORMAL PART.	100% CITY			
																							DRAINAGE
603													56					603	0	56		Lin. Ft.	8" Conduit, Type B, 706.02 Cl. V W/ 706.11 Joints
603								56										603	56	0		Lin. Ft.	8" Conduit, Type B, 706.08 with 706.12 Joints (Sanitary)
603														204				603	0	204		Lin. Ft.	10" Conduit, Type B, 706.08 with 706.12 Joints (Sanitary)
603													24					603	0	24		Lin. Ft.	8" Conduit, Type B, 706.02 Cl. V W/ 706.11 Joints encased as per plan
603				207	167	167	193		49								214	603	783	214		Lin. Ft.	12" Conduit, Type B
603						77	94		46								50	603	217	50		Lin. Ft.	15" Conduit, Type B
603								38								270		603	38	270		Lin. Ft.	15" Conduit, Type B, 706.08 with 706.12 Joints (Sanitary)
603																137		603	0	137		Lin. Ft.	15" Conduit, Type B w/ 706.11 or 706.12 Joints encased as per plan (Sanitary)
603					138													603	138	0		Lin. Ft.	18" Conduit, Type B
603					102													603	102	0		Lin. Ft.	21" Conduit, Type B
603							349											603	349	0		Lin. Ft.	24" Conduit, Type B
603	625																	603	625	0		Lin. Ft.	36" Conduit, Type B 706.02 or 706.08
603					20													603	20	0		Lin. Ft.	42" Conduit, Type B
603	223		176	506														603	905	0		Lin. Ft.	48" Conduit, Type B 706.02
603			192															603	192	0		Lin. Ft.	48" Conduit, Type B 706.02 Class III
603													328					603	0	328		Lin. Ft.	8" Conduit, Type C 706.01 E.S., 706.02 or 706.08 E.S. w/ 706.11 or 706.12 Joints
603								216										603	216	0		Lin. Ft.	8" Conduit, Type C 706.08 with 706.12 Joints (Sanitary)
603					63	47	152		42	52							79	603	356	79		Lin. Ft.	12" Conduit, Type C
603						18											197	603	18	197		Lin. Ft.	15" Conduit, Type C
603								226						384	1149	300		603	226	1833		Lin. Ft.	15" Conduit, Type C 706.08 with 706.12 Joints (Sanitary)
603					57	58												603	115	0		Lin. Ft.	18" Conduit, Type C
603					18													603	18	0		Lin. Ft.	21" Conduit, Type C
603						28												603	28	0		Lin. Ft.	24" Conduit, Type C
603		1005	699	300														603	2004	0		Lin. Ft.	48" Conduit, Type C 706.02
603																							
603					53	144												603	197	0		Lin. Ft.	12" Conduit, Type F
602					0.39	1.00				0.42								602	1.81	0		Cu. Yds.	Concrete Masonry
604								1										604	1	0		Each	Manholes Reconstructed to Grade (Sanitary)
604																	1	604	0	1		Each	Standard No.1 Manhole
604								3					2	3	4	2		604	3	11		Each	Standard No.1-A Manhole W/706.11 Joints (Sanitary)
604	5	1		1														604	7	0		Each	Standard No.1-A Manhole
604													1					604	0	1		Each	Standard No.1-A Manhole W/706.11 Joints and Drop Pipe
604					LUMP													604	LUMP	0		Lump	Special Separation Chamber,
604	1																	604	1	0		Each	Standard No. 2-A-14 Paved Shoulder Inlet, Modified as per plan
604					1	1	1											604	3	0		Each	Standard No. 2-A-6 Paved Shoulder Inlet, Modified as per Plan
604					1		3											604	4	0		Each	Standard No. 2-A-8 Paved Shoulder Inlet, Modified as per Plan
604				1		1	1											604	3	0		Each	Standard No. 2-A-10 Paved Shoulder Inlet, Modified as per Plan
604				1		1												604	2	0		Each	Standard No. 2-A-12 Paved Shoulder Inlet, Modified as per Plan
604							1											604	1	0		Each	Standard No. 2-A-18 Paved Shoulder Inlet, Modified as per Plan
604						1												604	1	0		Each	Standard No. 2-2A Catch Basin
604					2													604	2	0		Each	Standard No. 2-2A Catch Basin Modified as per Plan
604					1	2												604	3	0		Each	Standard No. 3 Catch Basin
604				3	7	4	3		2								7	604	19	7		Each	Standard No. 3-A Catch Basin
604					1	2	3		4								2	604	10	2		Each	Standard No 5 Catch Basin
604		2	4	2														604	8	0		Each	Standard No. 5-A Catch Basin

JEFFERSON COUNTY
JEF-43-0.42



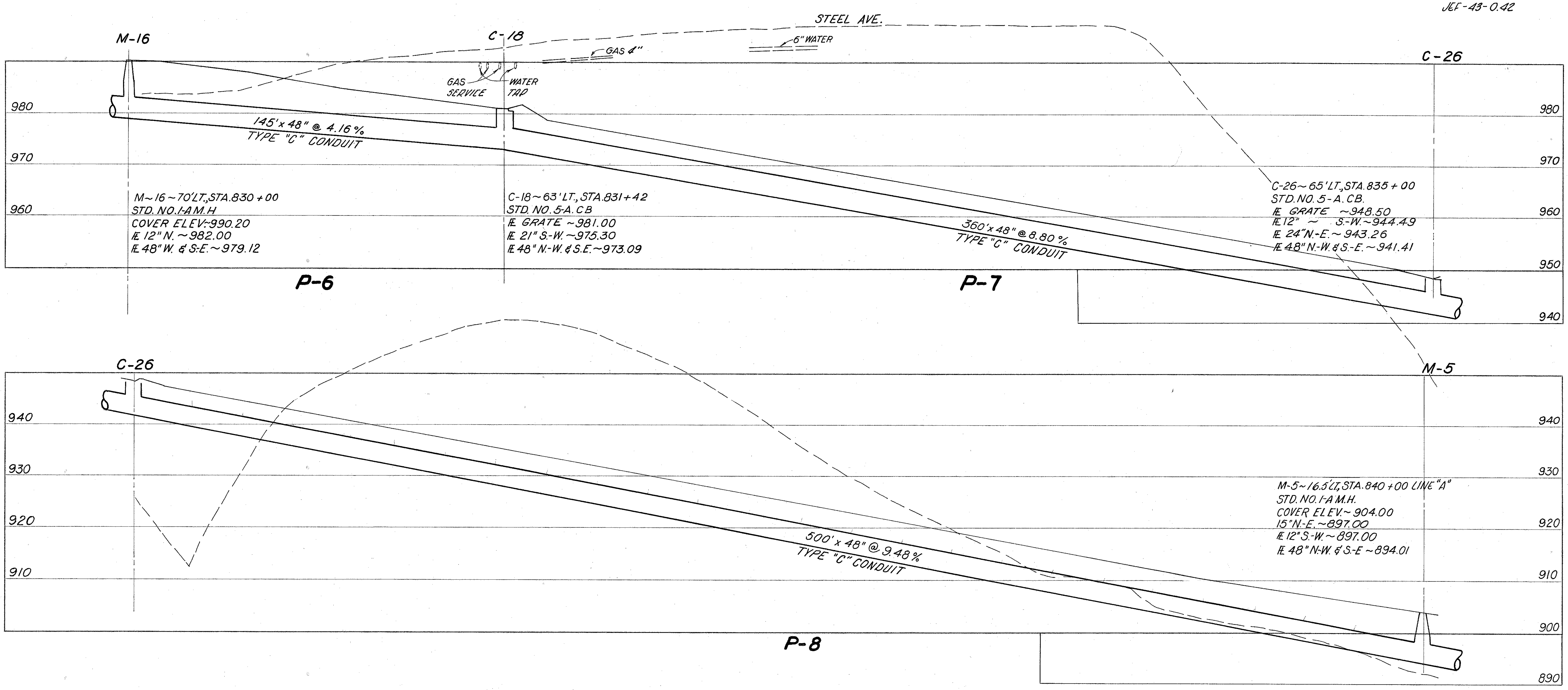


ESTIMATED QUANTITIES

PIPE REFERENCE	STRUCTURES INCLUDED	603 ~ CONDUIT TYPE "B" 706.08 OR 706.02 36" (LIN. FT.)	706.02 48" (LIN. FT.)	604 STD. MANHOLES	NO. 1-A (EACH)	STD. NO. 2-A-14 INLET MODIFIED AS PER PLAN (EACH)			SEE SHEET NO.
P-1	M-1	90			1				30
P-2	M-2	100			1				30
P-3	M-3	160			1				30&31
P-4	M-4	275			1				31
P-5	J-2		108			1			31
P-5A	M-16		115		1				31
TOTALS		625	223		5	1			

NOTE: CARRY QUANTITIES TO SHEET NO. 75

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE						
R.O.W.						
QUANTITIES	W.G.Y.	1-12-76			N.C.	1-13-76



ESTIMATED QUANTITIES

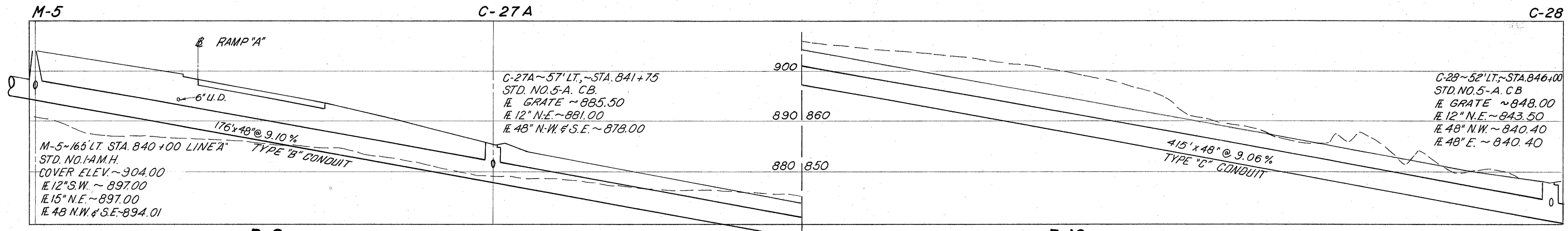
PIPE REFERENCE	STRUCTURES INCLUDED	603-CONDUIT TYPE "C" 706.02 48" LIN.FT.		604 STD. NO. 1-A MANHOLE (EACH)	STD. NO. 5-A CATCH BASIN (EACH)			SEE SHEET NO.
P-6	C-18	145			1			33
P-7	C-26	360			1			33
P-8	M-5	500		1				33,38
	TOTALS	1005		1	2			

NOTE: CARRY QUANTITIES TO SHEET NO. 75

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE						
R. O. W.						
QUANTITIES	WGY	1-12-78			N.C.	1-13-78

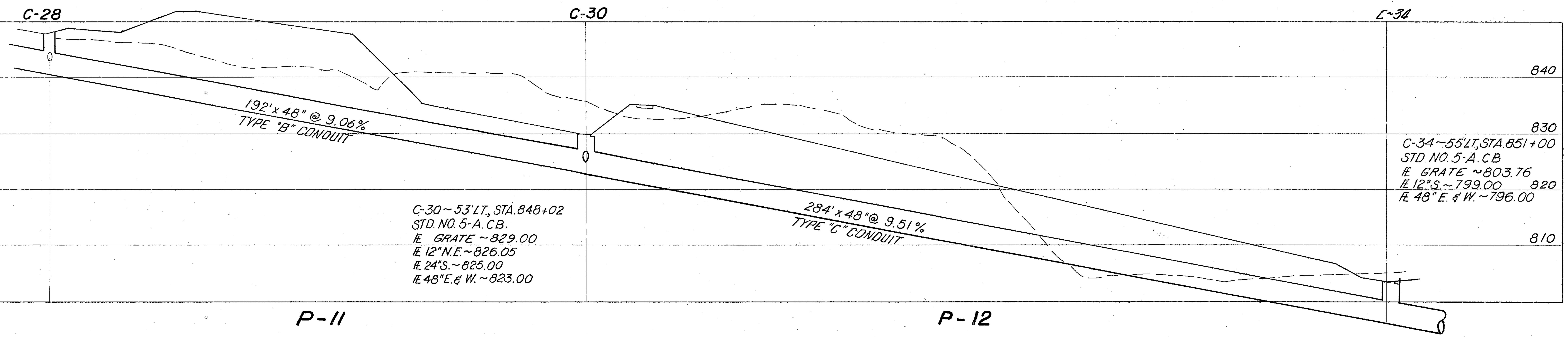
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42



P-9

P-10



P-11

P-12

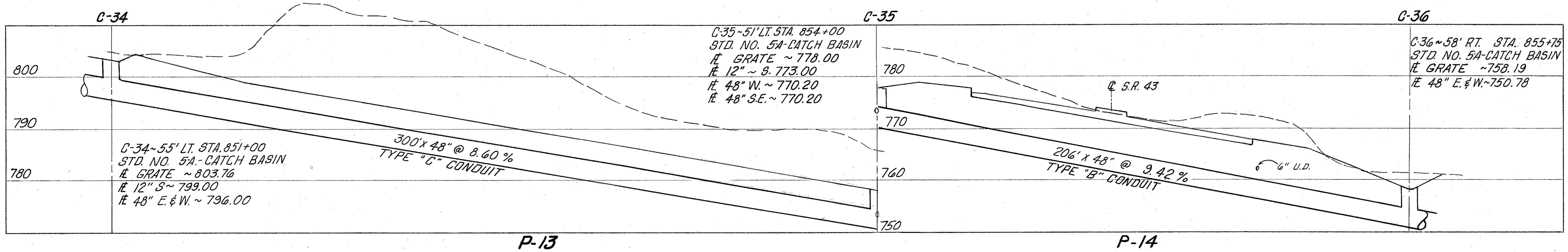
ESTIMATED QUANTITIES

PIPE REFERENCE	STRUCTURES INCLUDED	603 - CONDUIT TYPE "B" 706.02 48"	603 - CONDUIT TYPE "C" 706.02 48"	603 - CONDUIT TYPE "B" 706.02 CL. III 48"	604 STD. NO. 5-A CATCH BASIN			SEE SHEET NO.
		LIN. FT.			EACH			
P-9	C-27A	176			1			38,41
P-10	C-28		415		1			41
P-11	C-30			192	1			41,43
P-12	C-34		284		1			43
	TOTALS	176	699	192	4			

NOTE: CARRY QUANTITIES TO SHEET NO. 75

DESCRIPTION	PLOTTED BY	PLOTTED DATE	INKED BY	INKED DATE	CHECKED BY	CHECKED DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE						
R. O. W.						
QUANTITIES	WGY	1-12-70			KC	1-13-70

JEFFERSON COUNTY
JEF.-43-0.42

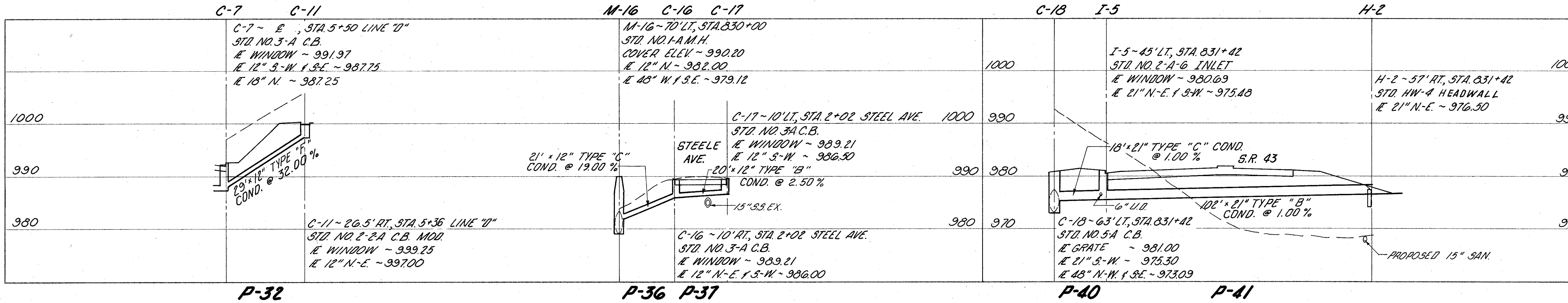


ESTIMATED QUANTITIES

PIPE REFERENCE	STRUCTURES INCLUDED	603 ~ CONDUIT TYPE "B" 12"	TYPE "B"	TYPE "B" 706.02 48"	TYPE "C"	TYPE "C" 706.02 48"	604 STD. MANHOLE NO. 1-A EA.	STD. CATCH BASINS NO. 3A EA.	STD. CATCH BASINS NO. 5A	STD. INLETS 2A-10 EA.	STD. INLETS 2A-12 EA.	SEE SHEET NO.
		LIN. FT.			LIN. FT.							
P-13	C-35					300			1			43,45
P-14	C-36			206					1			45
P-15	M-17			115			1					45
P-16	~			185								45,46
P-17	I-1	16									1	30
P-18	I-2	63								1		30
P-19	C-1	38						1				30
P-21	C-3	50						1				30
P-95	C-2	40						1				30
TOTALS		207		506		300	1	3	2	1	1	

NOTE: CARRY QUANTITIES TO SHEET NO. 75

PIPE PROFILES~ P-13 TO P-19, P-21, P-95, C-1, C-2, C-3, C-34 TO C-36, I-1, I-2, M-1, M-2, M-17,



ESTIMATED QUANTITIES

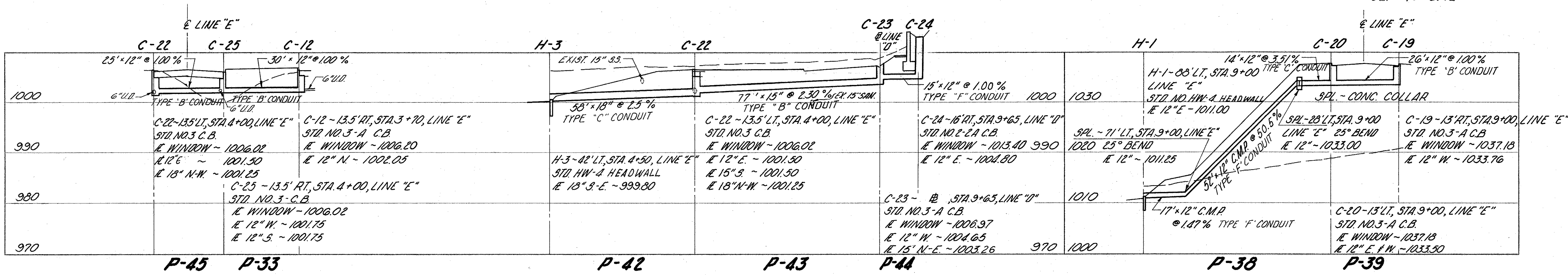
PIPE REFERENCE	STRUCTURES INCLUDED	603 ~ CONDUIT TYPE "B" 12"	TYPE "B" 18"	TYPE "B" 21"	TYPE "B" 42"	TYPE "C" 12"	TYPE "C" 18"	TYPE "C" 21"	TYPE "F" 12"	604 STD. NO. 2-A-6 INLET	STD. NO. 2-A-8 INLET	STD. NO. 2-2-A CATCH BASIN MOD. AS PER PLAN	STD. NO. 3 CATCH BASIN	STD. NO. 3-A CATCH BASIN	STD. NO. 5 CATCH BASIN	602 CONCRETE MASONRY	604 SPECIAL SEPARATION CHAMBER AS PER PLAN	BENDS & BRANCHES	SEE SHEET NO.
		LIN. FT.								EACH						C.Y.	LUMP	EACH	
P-23	I-4	15									1								31
P-24	C-4	38												1					31
P-25	C-5								24			1						2	31
P-26	J-1				20												LUMP		31
P-27	C-6						57								1				31
P-28	C-7		138											1					31
P-29	C-8	50											1						31
P-30	C-9	30												1					36
P-32	C-11								29			1							31
P-34	C-13					42								1					31
P-35	C-14	14												1					31
P-36	C-16					21								1					33
P-37	C-17	20												1					33
P-40	I-5							18		1									33
P-41	H-2			102												0.39			33
	TOTALS	167	138	102	20	63	57	18	53	1	1	2	1	7	1	0.39	LUMP		

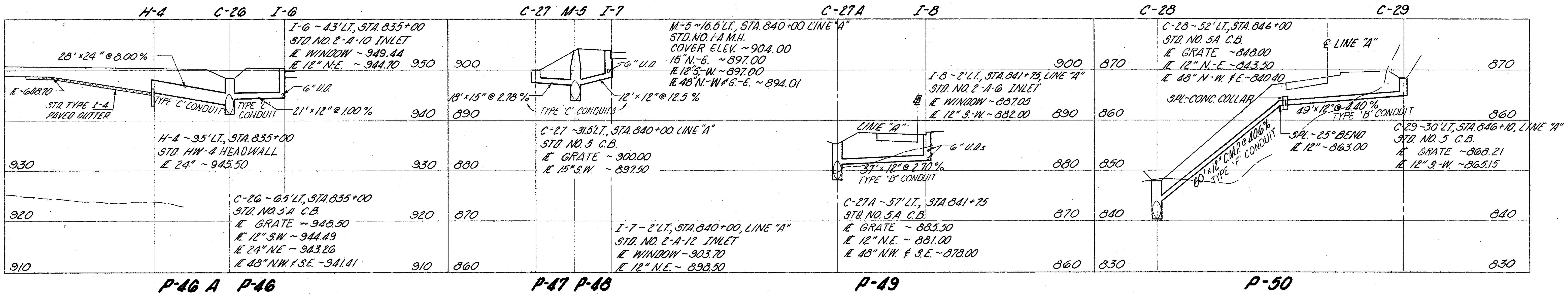
NOTE: CARRY QUANTITIES TO SHEET NO. 75

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE						
R.O.W.						
QUANTITIES	W.G.F.	1-13-76			N.C.	1-13-76

J.R.J.

PIPE PROFILES ~ P-23 TO P-30, P-32, P-34 TO P-37, P-40, P-41 ~ C-4 TO C-9, C-11, C-13, C-14, C-16 TO C-18, H-2, I-4, I-5, J-1, J-2, M-3, M-4, M-16





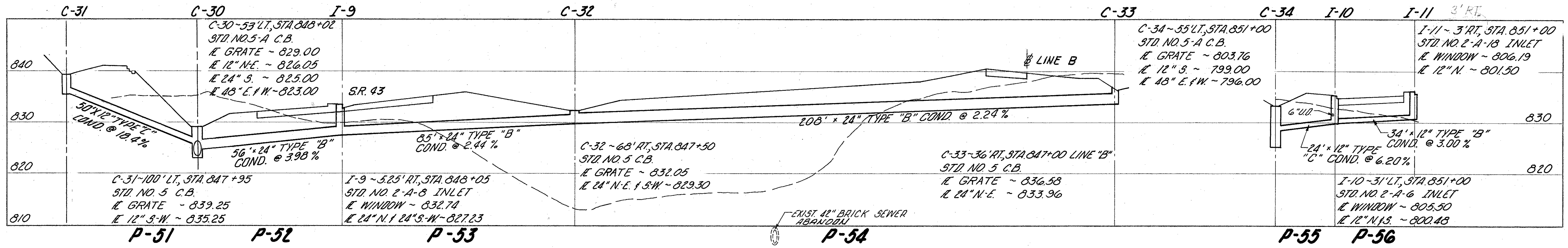
ESTIMATED QUANTITIES

PIPE REFERENCE	STRUCTURES INCLUDED	603 ~ CONDUIT TYPE "B" 12"	TYPE "B" 15"	TYPE "C" 12"	TYPE "C" 15"	TYPE "C" 18"	TYPE "C" 24"	TYPE "F" 12"	BENDS & BRANCHES	604 STD. NO. 2-A-6 INLET	STD. NO. 2-A-10 INLET	STD. NO. 2-A-12 INLET	STD. NO. 3 CATCH BASIN	STD. NO. 3-A CATCH BASIN	STD. NO. 5 CATCH BASIN	STD. NO. 2-2A CATCH BASIN	602 CONCRETE MASONRY					SEE SHEET NO.
		LIN. FT.		LIN. FT.		LIN. FT.		LIN. FT.		EA.	EA.	EA.	EA.	EA.	EA.	EA.	C.Y.					
P-45	C-25	25											1									36
P-33	C-12	30												1								36
P-42	H-3, C-22					58							1				0.33					36
P-43	C-23		77											1								36
P-44	C-24							15								1						36
P-38	H-1, C-20			14				69	2					1			0.21					34
P-39	C-19	26												1								34
P-46A	H-4						28										0.46					33
P-46	I-6			21							1											33
P-47	C-27				18										1							38
P-48	I-7			12								1										38
P-49	I-8	37								1												41
P-50	C-29	49						60	1						1							41
TOTALS		167	77	47	18	58	28	144		1	1	1	2	4	2	1	1.00					

NOTE: CARRY QUANTITIES TO SHEET NO. 75

DESCRIPTION	PLOTTED BY	DATE	BRED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE						
R.O.W.						
QUANTITIES	W.G.L.	11-15-73			K.E.	11-19-73

J.R.L.

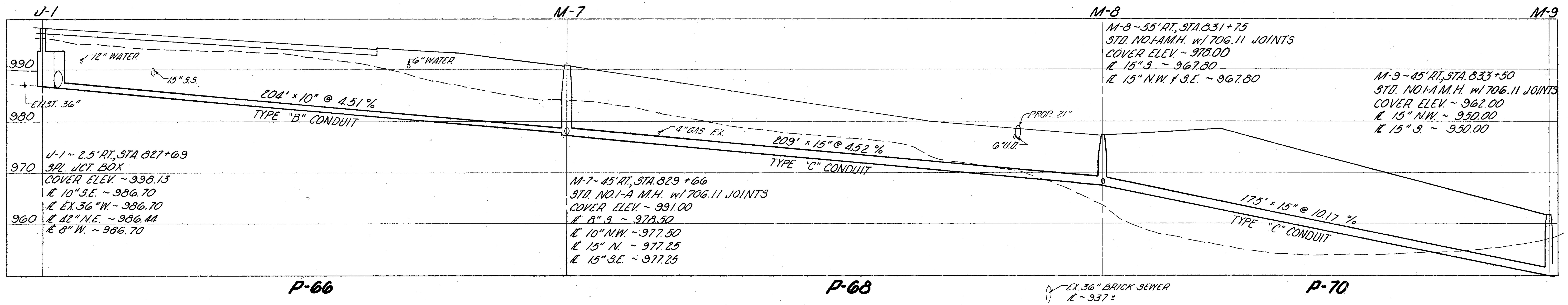


ESTIMATED QUANTITIES

PIPE REFERENCE	STRUCTURES INCLUDED	603 CONDUIT TYPE "B" 12" L.F.	603 CONDUIT TYPE "B" 15" L.F.	603 CONDUIT TYPE "B" 24" L.F.	603 CONDUIT TYPE "C" 12" L.F.		604 CONDUIT STD. NO. 2-A-6 INLET EACH	STD. NO. 2-A-8 INLET EACH	STD. NO. 2-A-10 INLET EACH	STD. NO. 2-A-18 INLET EACH	STD. NO. 3-A CATCH BASIN EACH	STD. NO. 5 CATCH BASIN EACH	SEE SHEET NO.
P-51	C-31				50							1	43
P-52	I-9			56				1					43
P-53	C-32			85								1	43
P-54	C-33			208								1	42,43
P-55	I-10				24		1						43
P-56	I-11	34								1			43
P-57	C-42	28									1		45
P-58	I-13				20			1					45
P-59	I-12	106						1					45
P-60	C-38	25									1		45
P-61	C-39				58						1		45
P-62	I-37		94						1				45
	TOTALS	193	94	349	152		1	3	1	1	3	3	

NOTE: CARRY QUANTITIES TO SHEET NO. 75

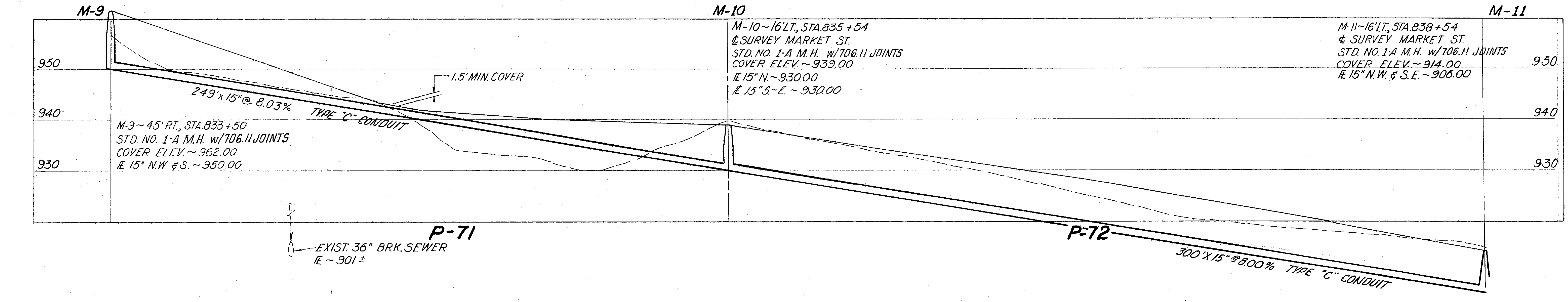
DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PAVEMENT						
DRAINAGE	W.G.Y.	1-11-71			N.E.	1-13-71
R. O. W.						
QUANTITIES						



ESTIMATED QUANTITIES

PIPE REFERENCE	STRUCTURES INCLUDED	603 ~ CONDUIT: SANITARY TYPE B 706.08 WITH 706.12 JOINTS 8" (LIN. FT.)	603 ~ CONDUIT: SANITARY TYPE B 706.08 WITH 706.12 JOINTS 15" (LIN. FT.)	603 ~ CONDUIT: SANITARY TYPE C 706.08 WITH 706.12 JOINTS 8" (LIN. FT.)	603 ~ CONDUIT: SANITARY TYPE C 706.08 WITH 706.12 JOINTS 15" (LIN. FT.)	604: SANITARY STD. NO. 1-A MANHOLE w/ 706.11 JOINTS (EACH)	604: SANITARY STD. NO. 1 MANHOLE RECONSTRUCTED TO GRADE (EACH)		100 % CITY OF STEUBENVILLE 603 ~ CONDUIT: SANITARY TYPE B 706.08 WITH 706.12 JOINTS 10" (LIN. FT.)	100 % CITY OF STEUBENVILLE 603 ~ CONDUIT: SANITARY TYPE B 706.08 WITH 706.12 JOINTS 15" (LIN. FT.)	100 % CITY OF STEUBENVILLE 603 ~ CONDUIT: SANITARY TYPE C 706.08 WITH 706.12 JOINTS 15" (LIN. FT.)	100 % CITY OF STEUBENVILLE 603 ~ CONDUIT: SANITARY TYPE C 706.08 WITH 706.12 JOINTS (LIN. FT.)	100 % CITY OF STEUBENVILLE 604: SANITARY STD. NO. 1-A MANHOLE w/ 706.11 JOINTS (EACH)		SEE SHEET NO.
P-31	M-6	56				1									31
P-31A	M-6B			146		1									31,36
P-31B	M-6A			70		1									36
P-66	M-7								204				1		31
P-67			38												31
P-68	M-8										209		1		31,33
P-69	M-8A				226		1								33,36
P-70	M-9										175		1		33,36
	TOTALS	56	38	216	226	3	1		204		384		3		

NOTE: CARRY QUANTITIES TO SHEET NO. 75

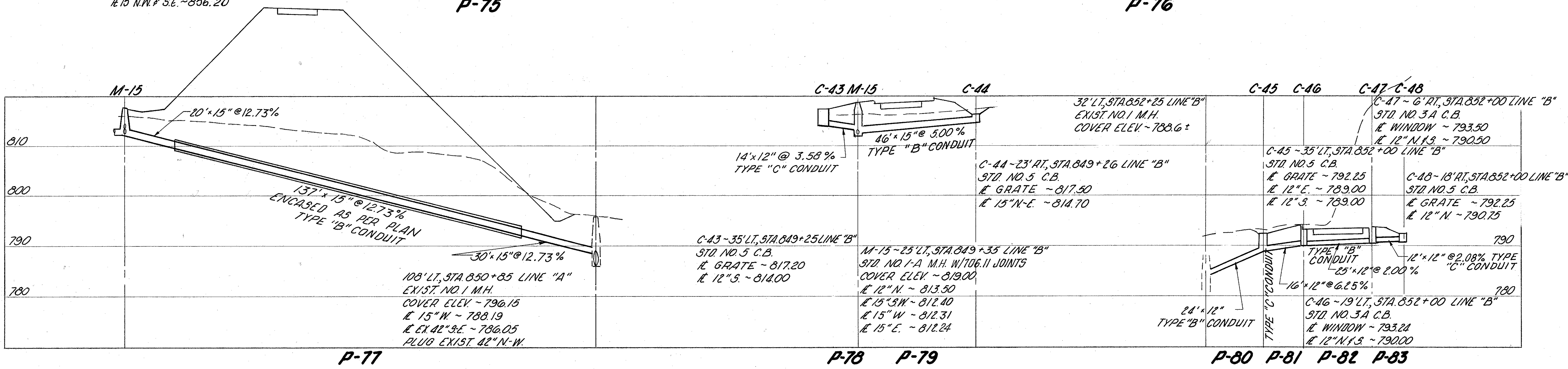


100 % CITY

ESTIMATED QUANTITIES

PIPE REFERENCE	STRUCTURES INCLUDED	603 CONDUIT: SANITARY-TYPE C WITH CLASS B BEDDING 706.08 WITH 706.12 JOINTS 15" LIN. FT.				604 SANITARY STD. NO. 1-A MANHOLE W/706.11 JOINTS EACH		SEE SHEET NO.
P-71	M-10	249				1		33,36
P-72	M-11	300				1		36,39
P-73	M-12	300				1		39
P-74	M-13	300				1		39,42
	TOTALS	1149				4		

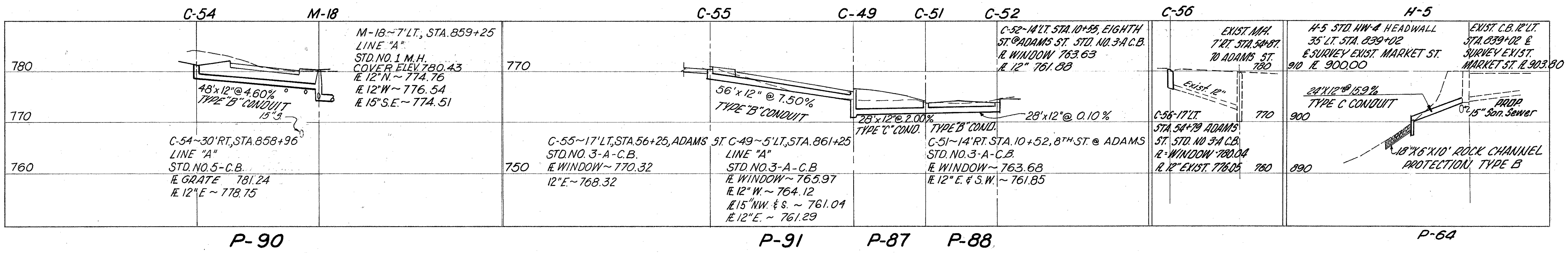
NOTE: CARRY QUANTITIES TO SHEET NO. 75

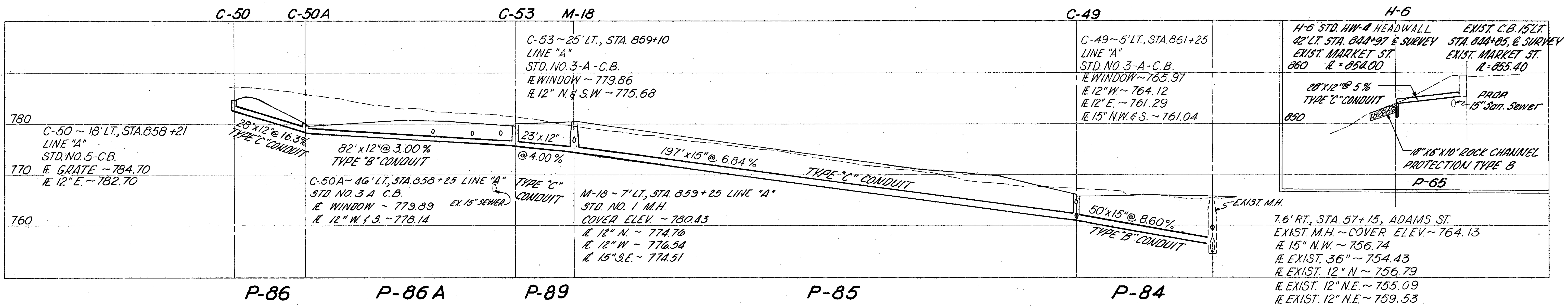


ESTIMATED QUANTITIES

PIPE REFERENCE	STRUCTURES INCLUDED	100% CITY OF STEUBENVILLE: 603 ~ CONDUIT: SANITARY TYPE B 706.08 WITH 706.12 JOINTS 15" LIN. FT.		SANITARY TYPE B WITH 706.12 JOINTS ENCASED AS PER PLAN 15" LIN. FT.		SANITARY TYPE C 706.08 WITH 706.12 JOINTS 15" LIN. FT.		604 SANITARY STD. NO. 1-A MANHOLE W/706.11 JOINTS EACH	NORMAL PARTICIPATION: 603 ~ CONDUIT WITH CLASS "B" BEDDING: TYPE B 12" LIN. FT.	TYPE B 15" LIN. FT.	TYPE C 12" LIN. FT.		604: STD. NO. 3A CATCH BASIN EACH	STD. NO. 5 CATCH BASIN EACH			SEE SHEET NO.
P-75	M-14					300		1									42
P-76	M-15	220						1									42,48
P-77		50		137													48
P-78	C-43										14			1			48
P-79	C-44									46				1			48
P-80	C-45								24					1			48
P-81	C-46										16		1				48
P-82	C-47								25				1				48
P-83	C-48										12			1			48
TOTALS		270		137		300		2	49	46	42		2	4			

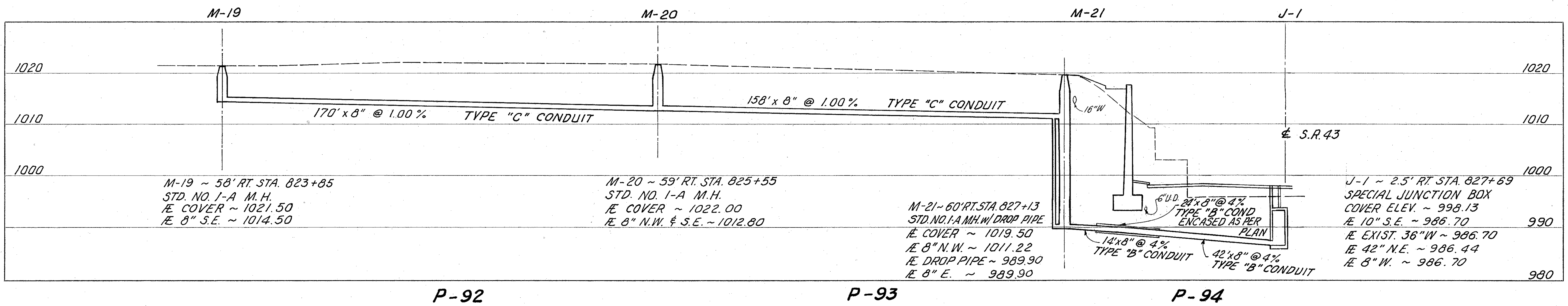
NOTE: CARRY QUANTITIES TO SHEET NO. 75





		100 % CITY OF STEUBENVILLE								NORMAL PARTICIPATION			
ESTIMATED QUANTITIES													
		603 ~ CONDUIT				604				603~ CONDUIT	602		
PIPE REFERENCE	STRUCTURES INCLUDED	TYPE B		TYPE C		STD. NO. 5 CATCH BASIN	STD. NO. 3-A CATCH BASIN	STD. NO. 1 MANHOLE		TYPE C 12"	CONCRETE MASONRY		SEE SHEET NO.
		12"	15"	12"	15"								
		LIN. FT.		LIN. FT.		EACH	EACH	EACH		LIN. FT.	CU. YDS.		
	C-56						1						
P-84	C-49		50				1						50
P-85	M-18				197			1					49,50
P-86	C-50			28		1							49,50
P-86A	C-50A	82					1						49,50
P-87	C-51			28			1						50
P-88	C-52	28					1						50
P-89	C-53			23			1						50
P-90	C-54	48				1							49,50
P-91	C-55	56					1						50
P-64	H-5									24	0.21		39
P-65	H-6									28	0.21		42
	TOTALS	214	50	79	197	2	7	1		52	0.42		

NOTE: CARRY QUANTITIES TO SHEET NO. 75



ESTIMATED QUANTITIES

PIPE REFERENCE	STRUCTURES INCLUDED	603 ~ CONDUIT: TYPE "B" 8" 706.02 CL. V W/706.12 JOINTS (LIN. FT.)	603 ~ CONDUIT: TYPE "B" ~ 8" 706.02 CL. V W/706.12 JOINTS ENCASED AS PER PLAN (LIN. FT.)	603 ~ CONDUIT: TYPE "C" 8" 706.01 OR 706.08 E.S. W/706.12 JOINTS (LIN. FT.)	604: STD. NO. 1-A M.H. WITH 706.11 JOINTS (EACH)	604: STD. NO. 1-A M.H. W/ 706.11 JOINTS AND DROP PIPE (EACH)		SEE SHEET NO.
P-92	M-19			170	1			30 & 31
P-93	M-20			158	1			31
P-94	M-21	56	24			1		31
	TOTALS	56	24	328	2	1		

JEFFERSON COUNTY
JEF - 43 - 0.42

FOR PLAN SEE SHEET NO. 49

PROFILE-20" & 12" WATER LINE

JEFFERSON COUNTY
JEF-43-0.42

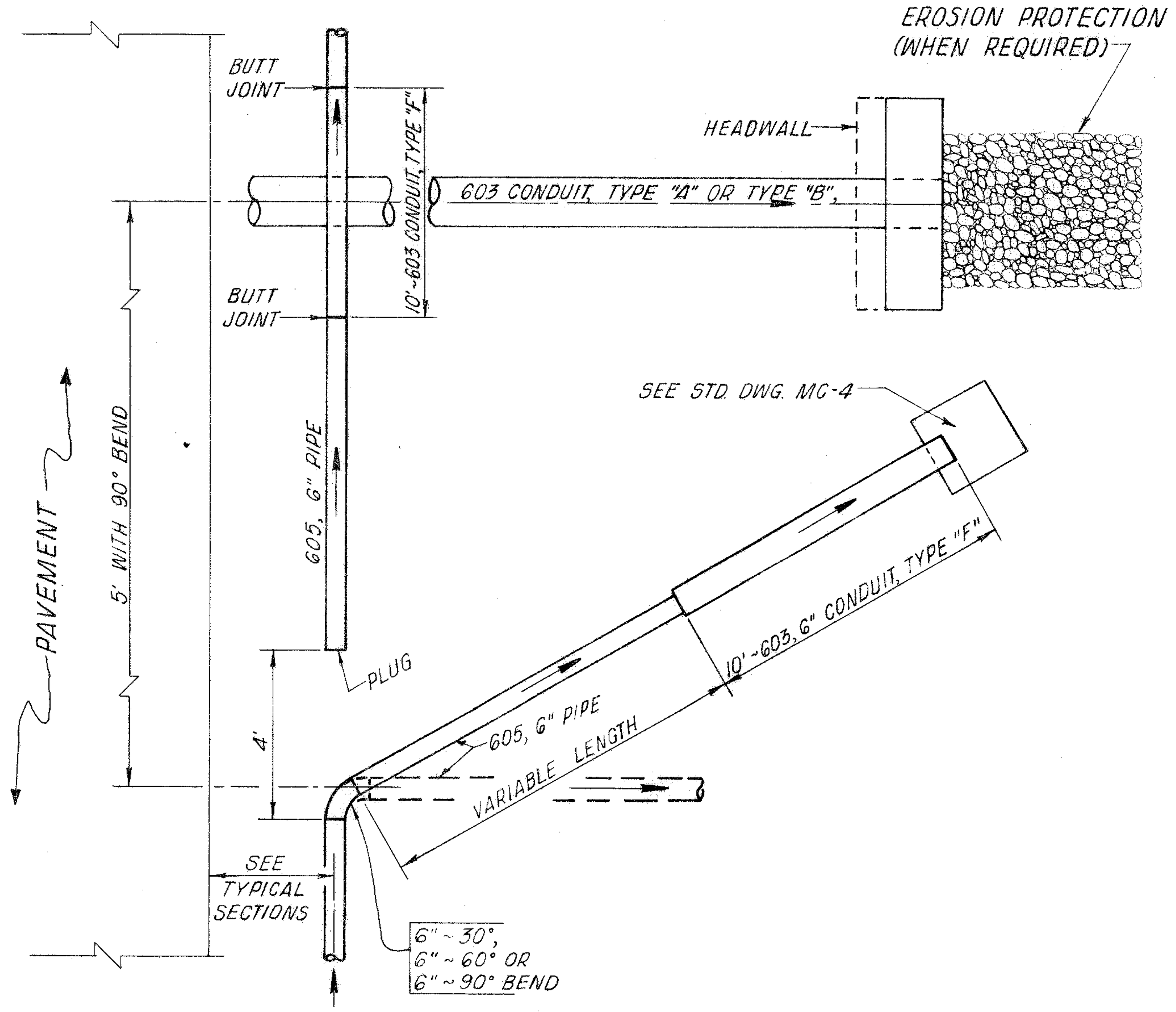
PROFILE ~ 16" WATER LINE

JEFFERSON COUNTY
JEF ~ 43 ~ 0.42

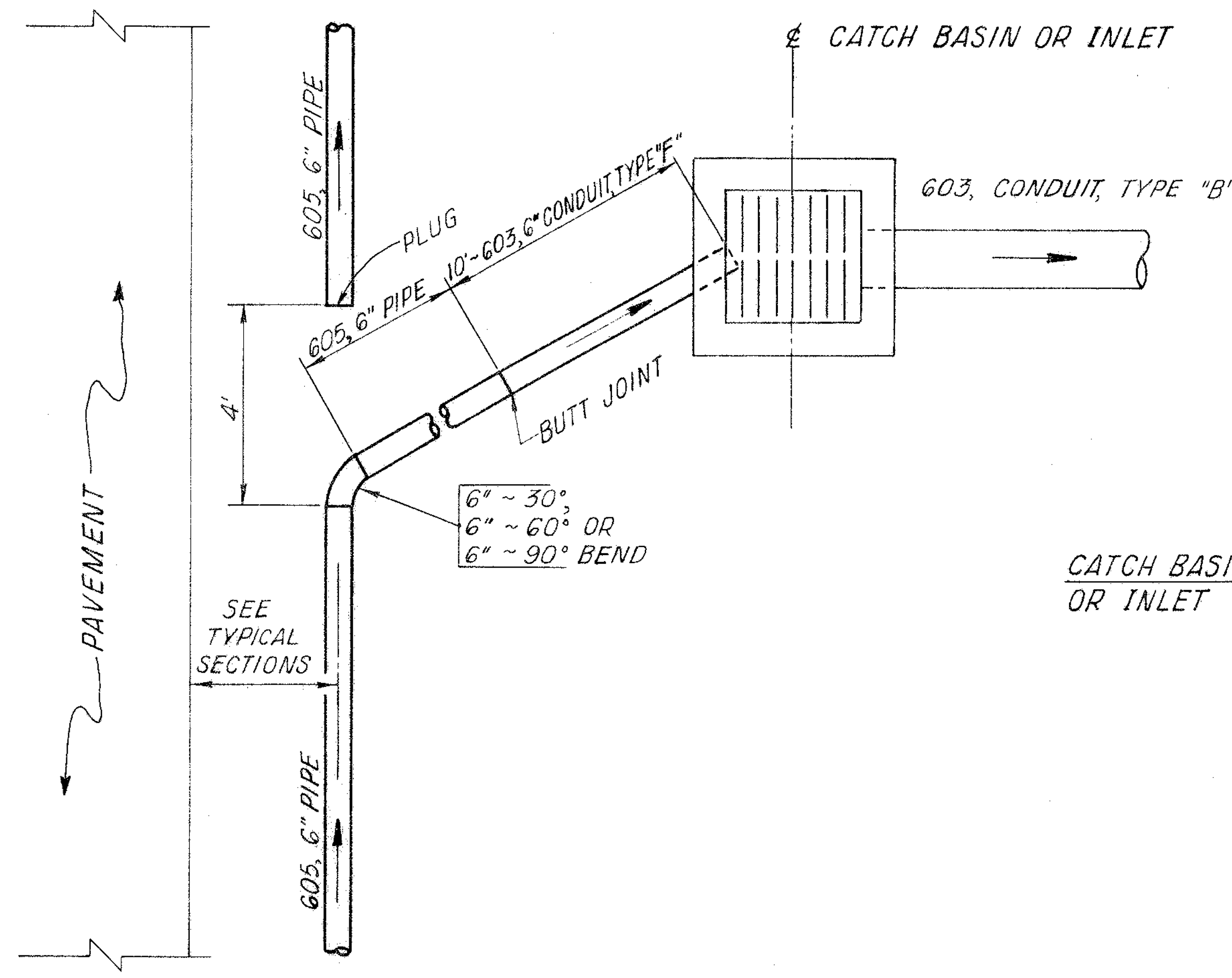
PROFILE ~ 16" WATER LINE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR	90 / 299
2	OHIO			

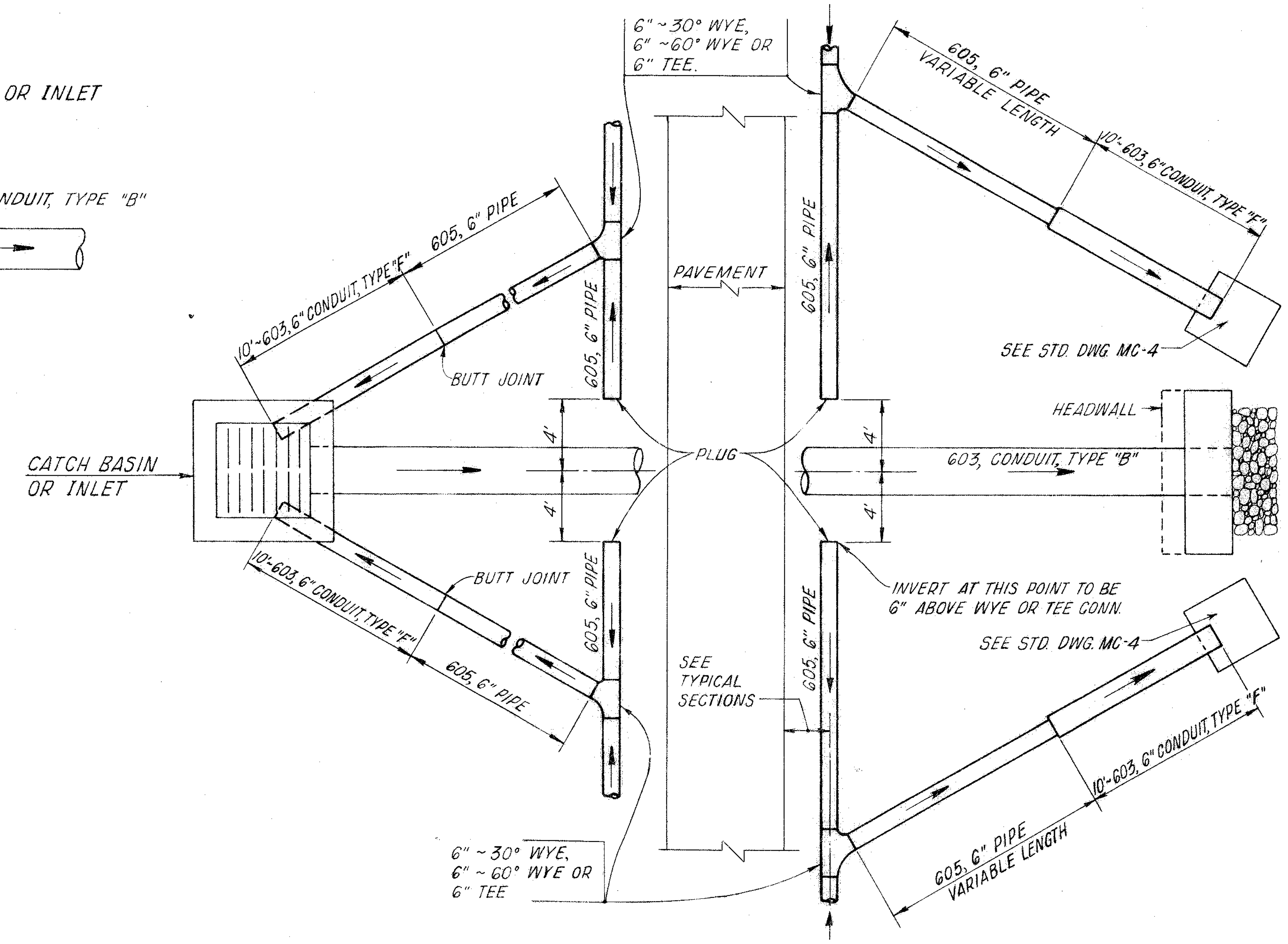
JEFFERSON COUNTY
JEF-43-0.42



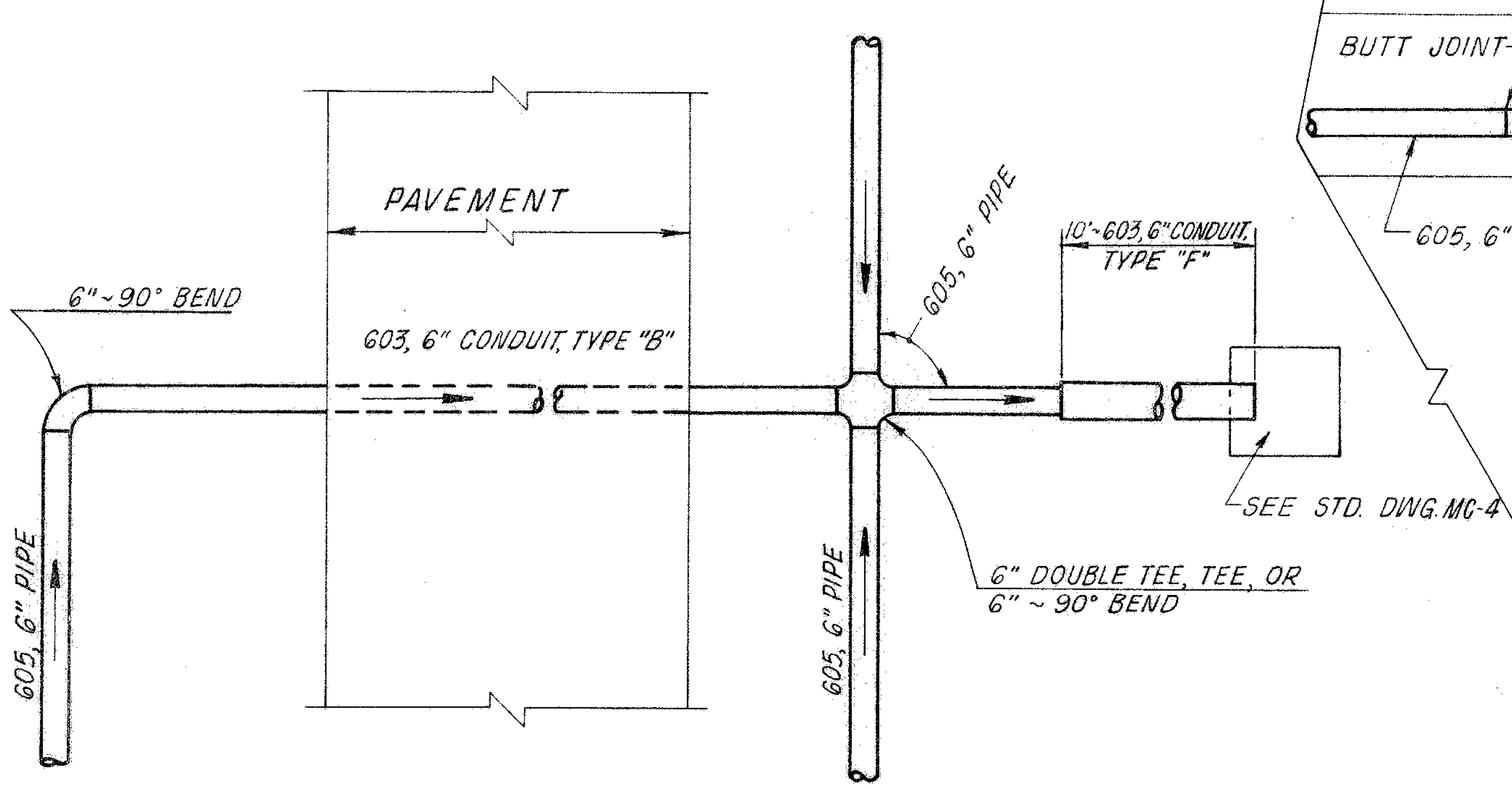
UNDERDRAIN OUTLET ~ DETAIL "A"



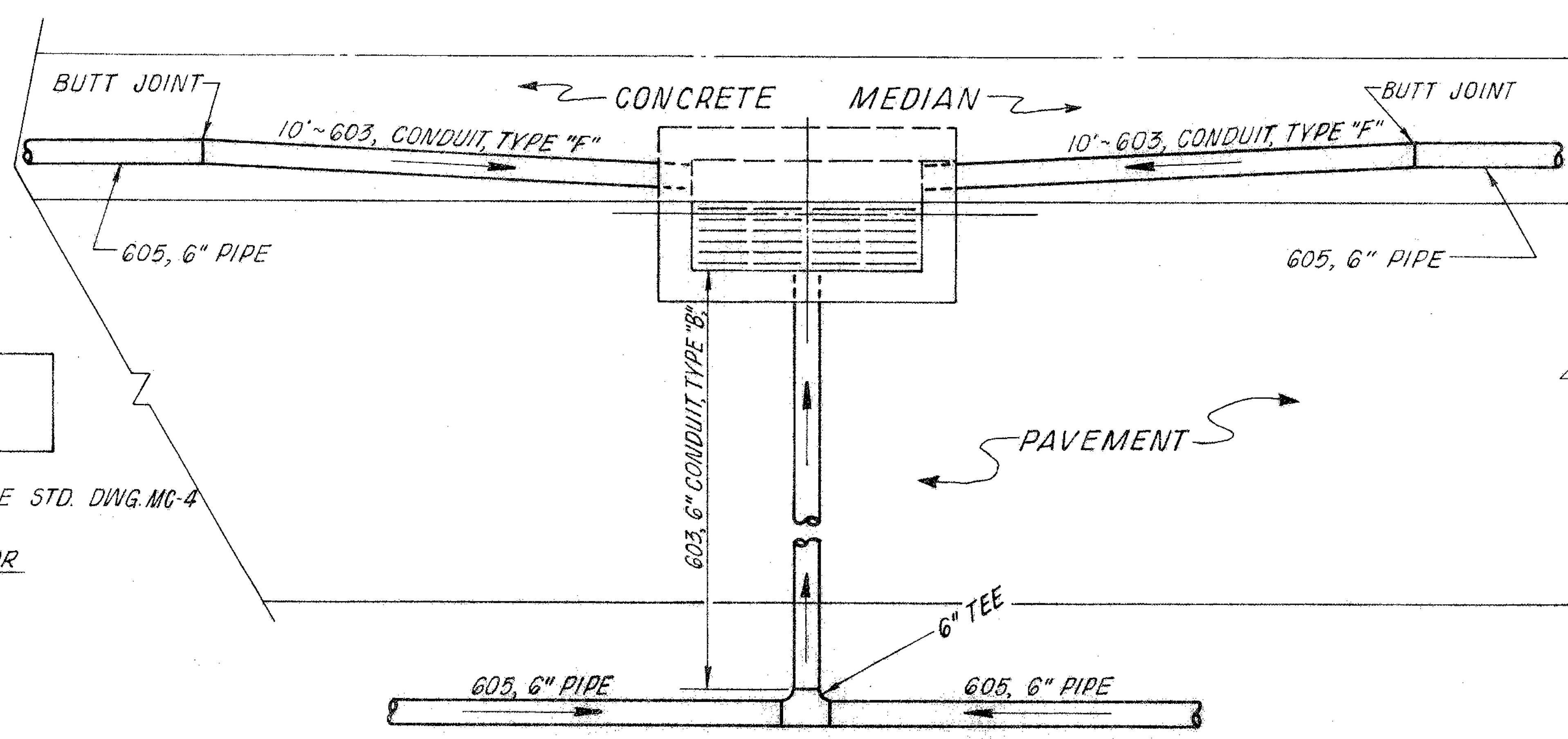
UNDERDRAIN OUTLET ~ DETAIL "B"



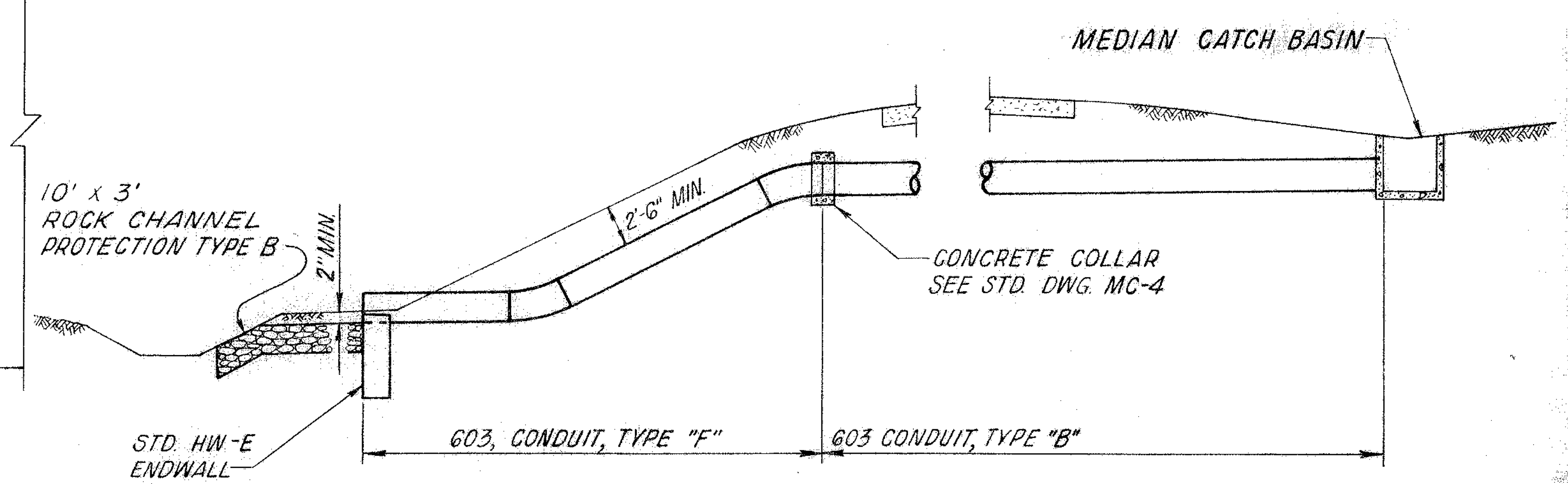
UNDERDRAIN OUTLET ~ DETAIL "C"



UNDERDRAIN OUTLET ~ DETAIL "D"



UNDERDRAIN OUTLET ~ DETAIL "E"

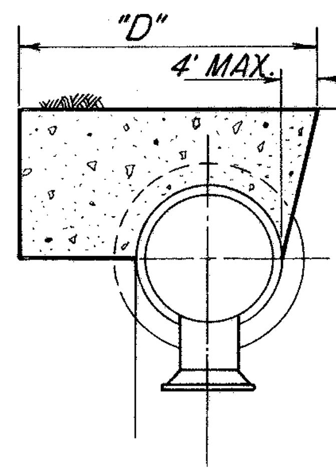


MEDIAN OUTLET DETAIL IN HIGH FILL

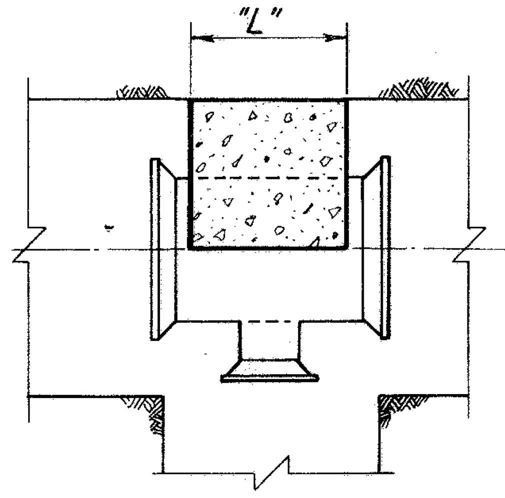
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42

STANDARD BACKING DETAILS



ELEVATION



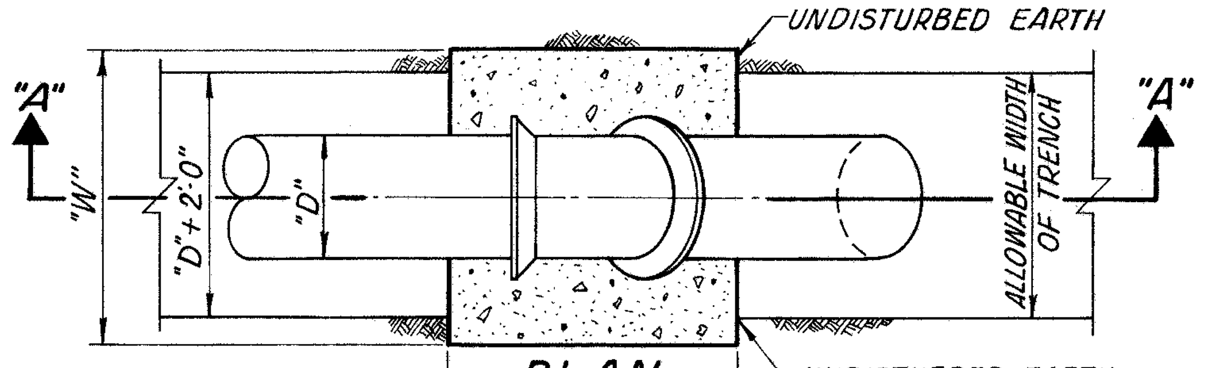
PLAN

RUN	BRANCH 6"		8"		12"		16"		20"	
	"L"	"D"	"L"	"D"	"L"	"D"	"L"	"D"	"L"	"D"
6"	16	7								
8"	14	8	18	12						
12"	9	12	18	12	24	18				
16"	8	16	14	16	28	16	30	26		
20"	8	20	10	20	22	20	36	22	36	42
24"	8	24	9	24	19	24	33	24	62	24

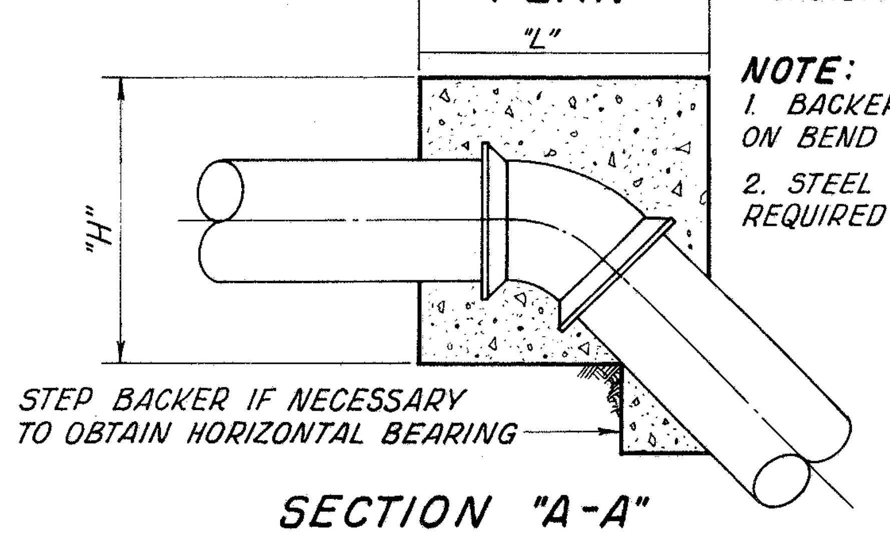
STEEL WILL BE USED AS REQUIRED BY THE ENGINEER

TEES

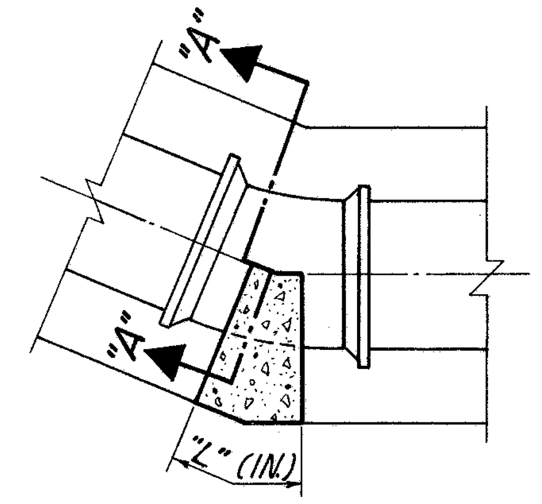
SIZE OF PIPE	DEGREE OF BEND 11 1/4 "L"	"W"	"H"	V CU.FT.	22 1/2 "L"	"W"	"H"	V CU.FT.	45 "L"	"W"	"H"	V CU.FT.
6"	12	48	18	5.8	15	43	36	13.2	28	55	24	21.0
8"	12	63	24	10.2	18	57	34	19.9	36	57	33	38.2
12"	20	54	36	21.0	37	62	37	46.6	48	62	51	85.2
16"	31	65	38	44.4	60	65	39	82.4	65	65	65	151.6
20"	45	70	40	64.9	56	70	60	126.2	72	76	78	234.0
24"	36	72	54	95.4	67	74	69	180.5	88	84	84	335.0



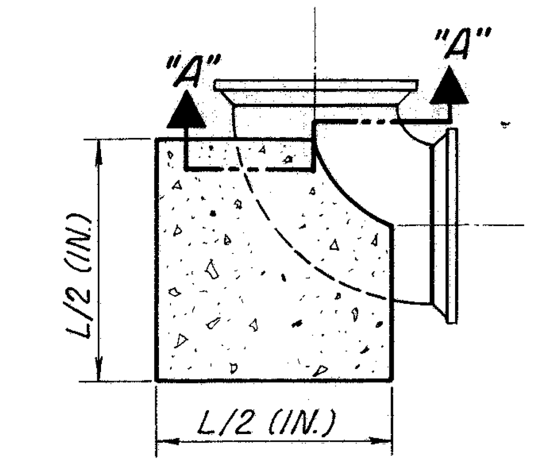
NOTE:
1. BACKER TO BE CENTERED ON BEND HORIZONTALLY.
2. STEEL WILL BE USED AS REQUIRED BY THE ENGINEER.



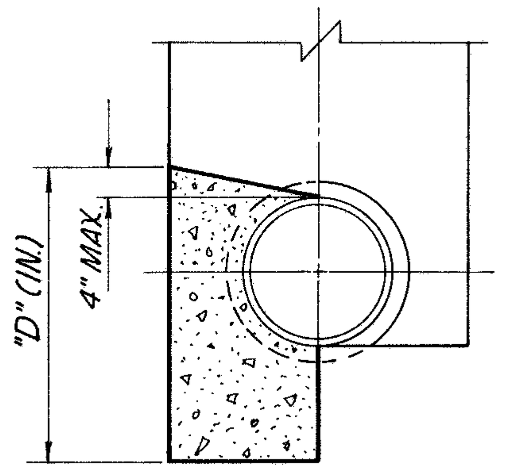
SECTION "A-A"
VERTICAL BENDS



PLAN



PLAN
90° BEND



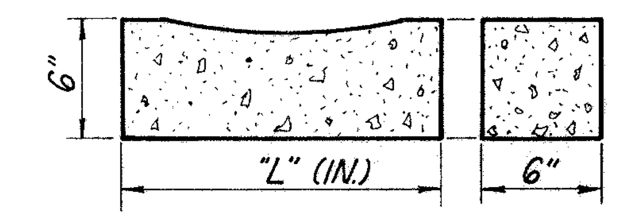
SECTION "A-A"
BENDS LESS THAN 90°

SIZE OF PIPE	DEGREE OF BEND 11 1/4 "L"	"D"	22 1/2 "L"	"D"	45 "L"	"D"	90 "L"	"D"
6"	8	6	10	6	20	6	36	6
8"	9	8	14	8	24	9	50	8
12"	14	12	22	12	30	16	60	15
16"	18	16	24	18	33	36	70	22
20"	25	20	28	29	38	42	80	30
24"	21	24	31	31	52	36	92	38

STEEL WILL BE USED AS REQUIRED BY ENGINEER

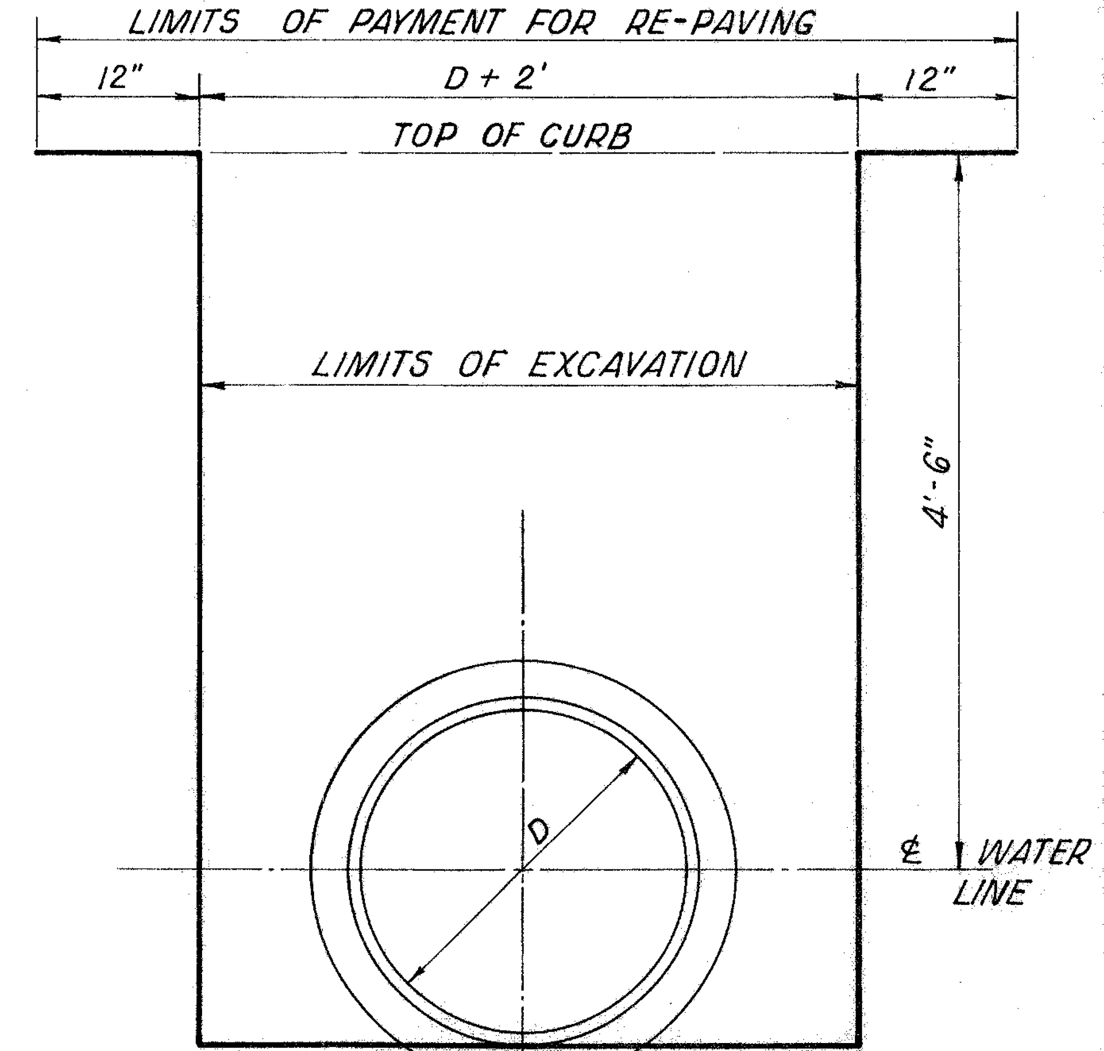
HORIZONTAL BENDS

STANDARD BACKING DETAILS

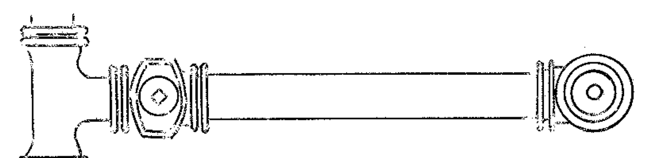


SIZE OF VALVE	"L"
6"	17
8"	20
12"	24
16"	30
20"	36

CONCRETE VALVE SUPPORT

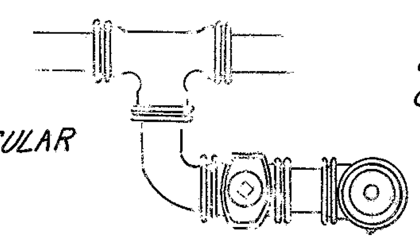


TYPICAL TRENCH DETAIL



TYPICAL INSTALLATION OF HYDRANT PERPENDICULAR TO MAIN USING M.J. ANCHORING TEE, M.J. VALVE, PIPE AND M.J. HYDRANT.

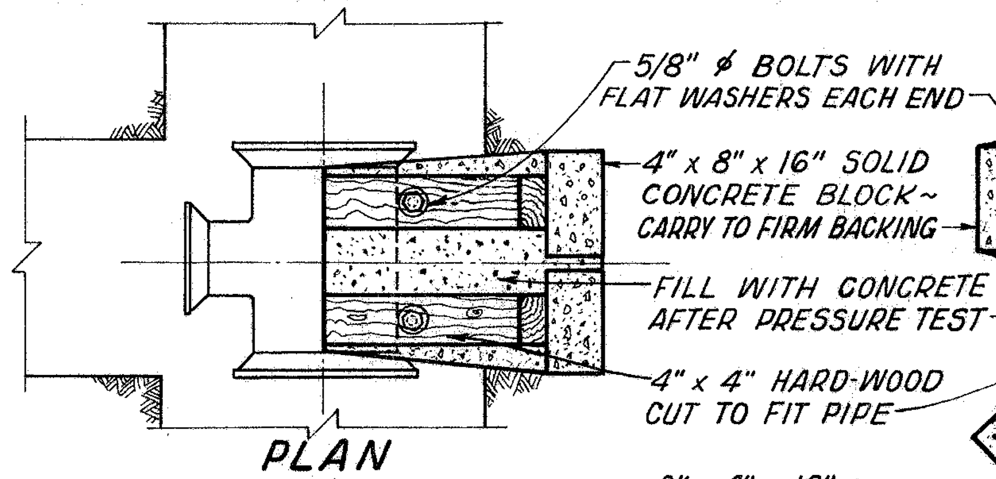
TYPE I



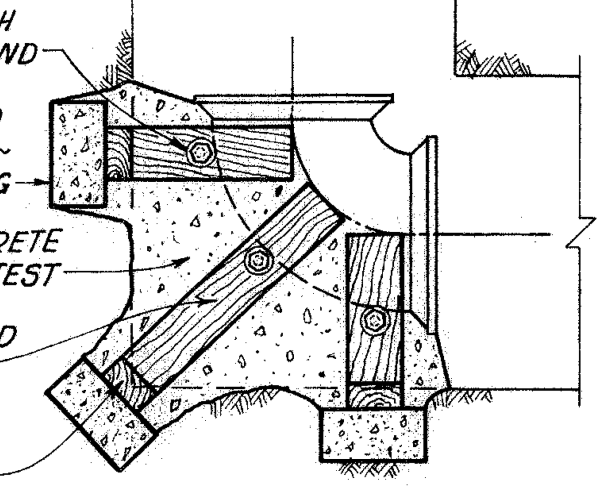
TYPICAL INSTALLATION PARALLEL TO THE MAIN, USING M.J. TEE, M.J. ELBOW, M.J. VALVE, ANCHORING COUPLING AND M.J. HYDRANT.

TYPE 2

FIRE HYDRANT INSTALLATION DETAIL

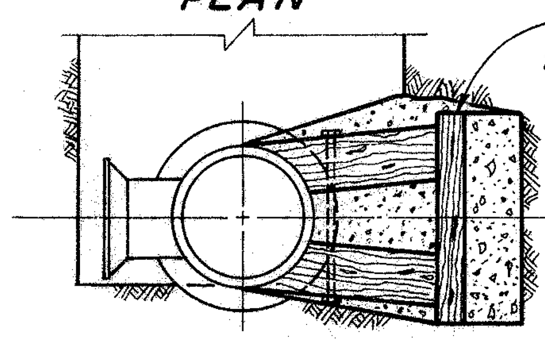


PLAN

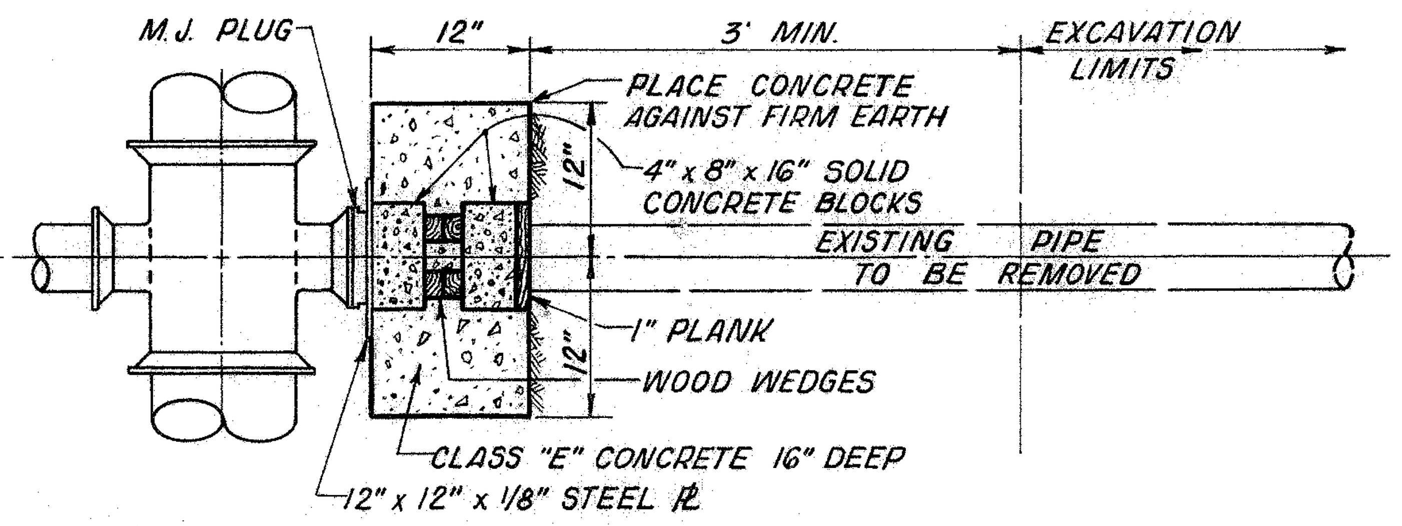


PLAN ~ 90° BEND

NOTE: DETAILS FOR 11 1/4°, 22 1/2° & 45° BENDS ARE SIMULAR TO THE 90° BEND DETAIL EXCEPT THE CENTER TIMBER BRACE UNIT IS OMITTED.

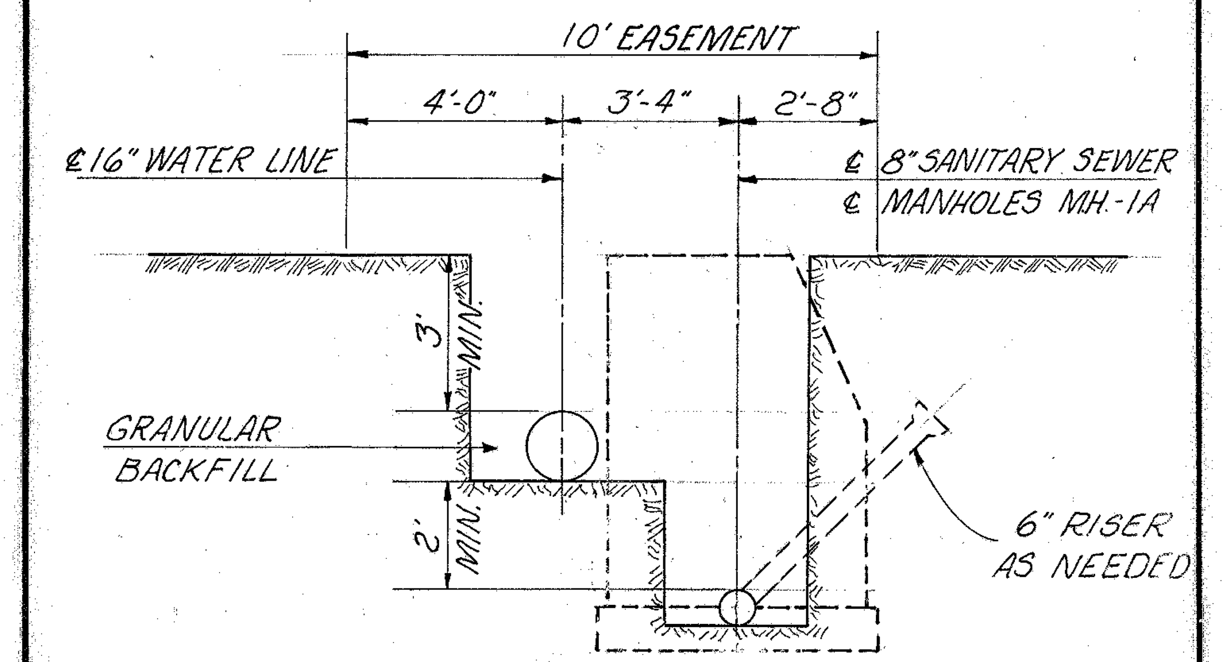


ELEVATION
TEE



DEAD-END PIPE

SPECIAL BACKING DETAILS

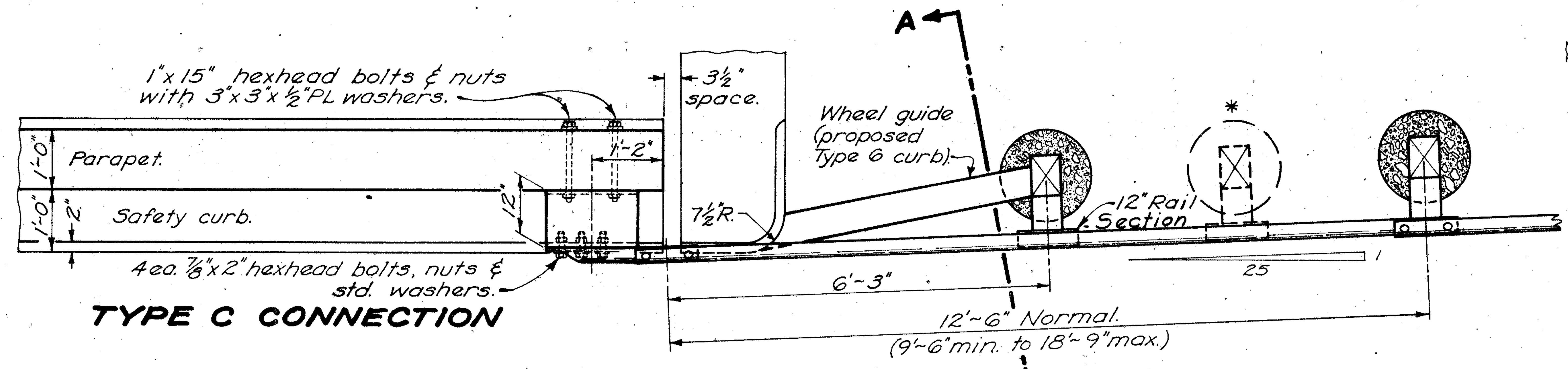


TYPICAL SECTION

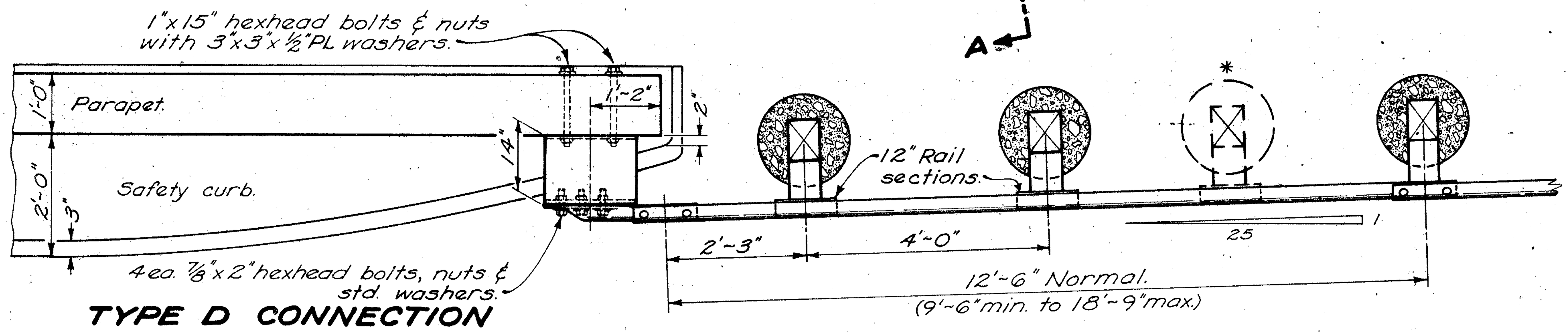
FHWA REGION	STATE	PROJECT	
5	OHIO		

92A / 299

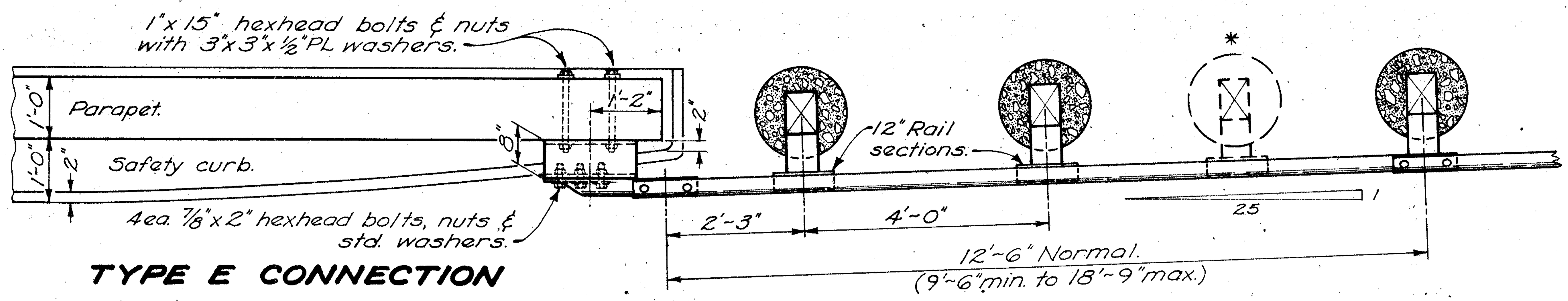
JEF-43-0.42



TYPE C CONNECTION

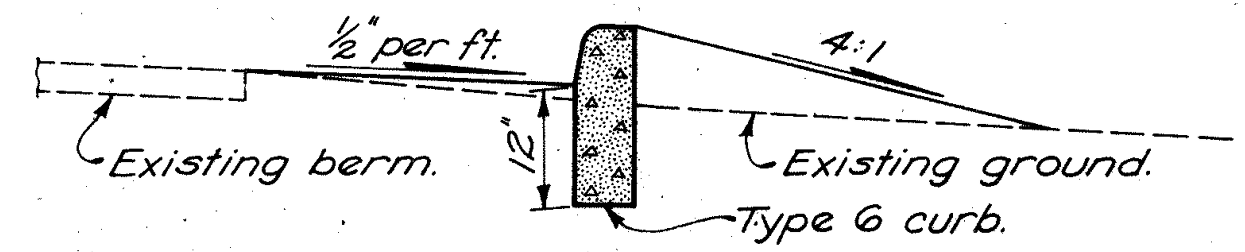


TYPE D CONNECTION

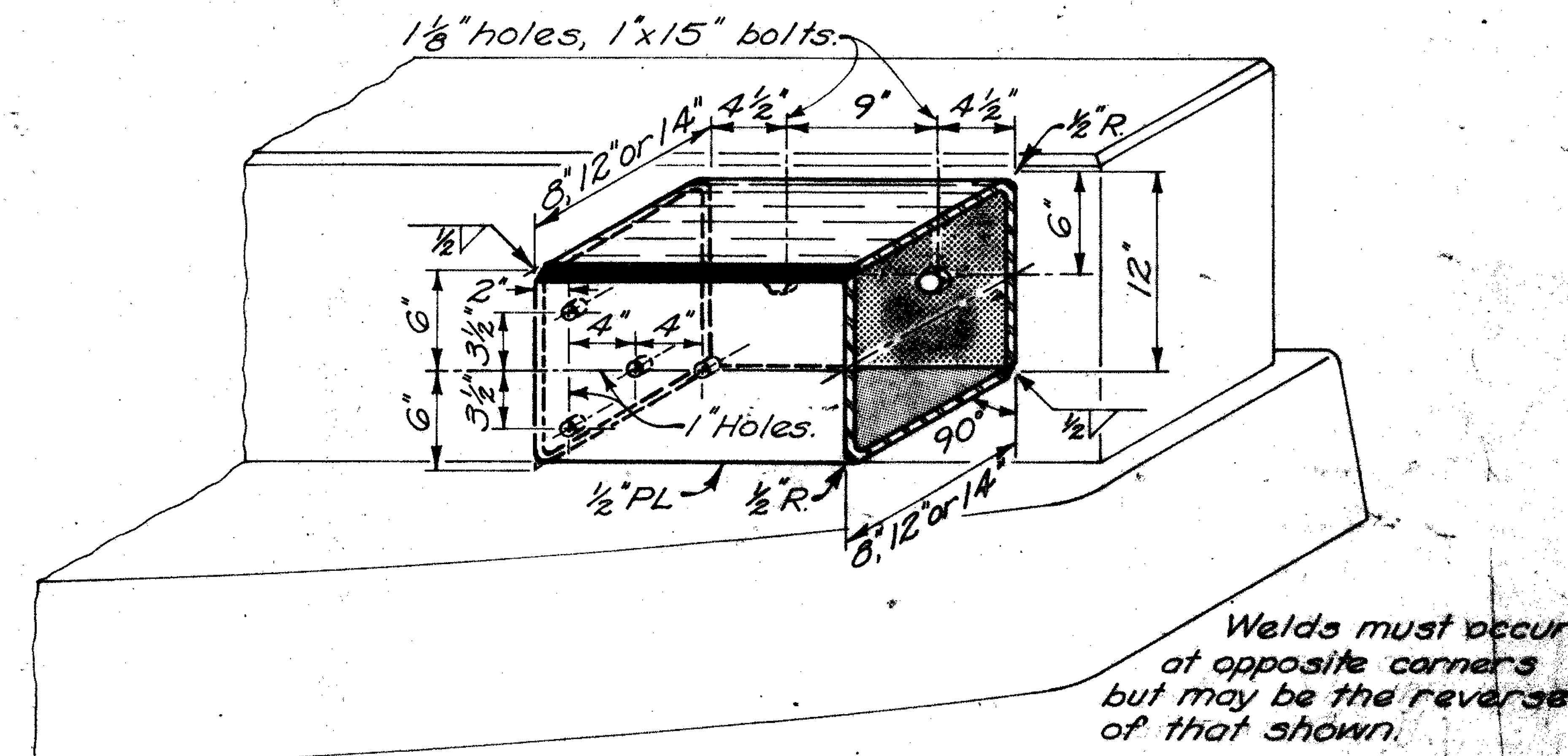


TYPE E CONNECTION

APPROACH ENDS

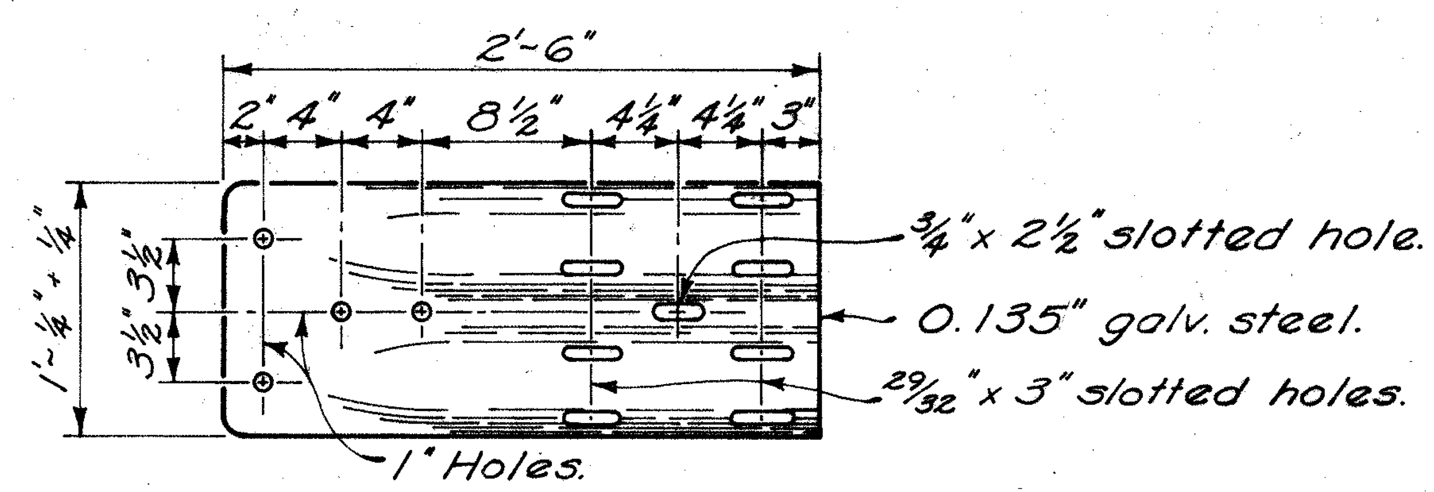


SECTION A-A

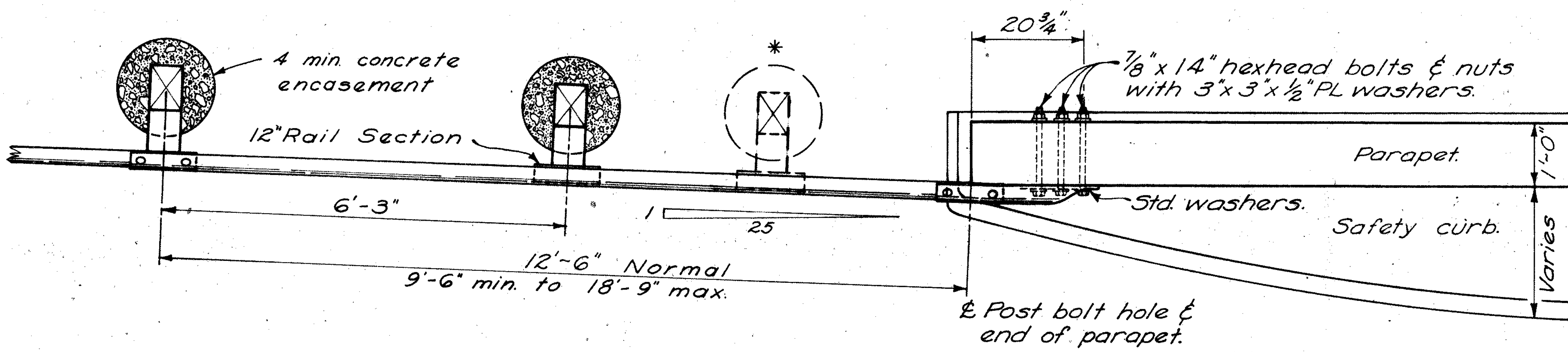


STEEL BOX DETAIL

A galv. steel box of the appropriate size (see connection type) shall be used on all approaches.



SPECIAL END SHOE



TYPE F CONNECTION

TRAILING END

NOTES

GENERAL: This drawing shall govern where a conflict arises. For details not shown, see Standard Drawings GR-2B & GR-4.

All steel parts shall be galvanized in accordance with 710.06 or 710.10, whichever may apply.

ANCHORS: Self-drilling anchors (of the appropriate size) may be substituted for the 1" and ⅞" hexhead bolts shown in the parapets. Anchors may be of the snap-off chuck-end type or of the flush-end type conforming to Federal Specification No. FF-S-325, Group III, Type 1(a) or (c), or Type 2.

Bolts for use with the self-drilling anchors shall be ⅞"x 1½" or 1"x2" as required.

***POSTS:** Place one additional encased post halfway between adjacent posts, or post and parapet, when panel length exceeds 12'-6".

All posts shall be 6"x8" wood or W6 x 15.5 steel.

GUARDRAIL TERMINATION, as directed by the Engineer. To avoid locating new posts of the adjacent run of guardrail in or near old backfilled post holes or to close existing gaps between rail and parapet, the 12'-6" normal rail section may vary as dimensioned. The horizontal dimensions (1'-2" or 20¾") of the end shoe location may be increased to avoid existing parapet steel.

PAYMENT: Price bid for bridge terminal assemblies shall include the additional cost, in excess of normal guardrail cost, for steel posts, concrete encasement, steel boxes, special end shoes, self-drilling anchors, curbing and embankment.

Connections shall be paid for as 606 Bridge terminal assembly, Type ___.

DATE
6-8-70
1-1-71
12-15-71
7-24-72

GUARDRAIL CONNECTIONS TO EXISTING BRIDGES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. MATCHLINE DIAGRAM & GRADING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42

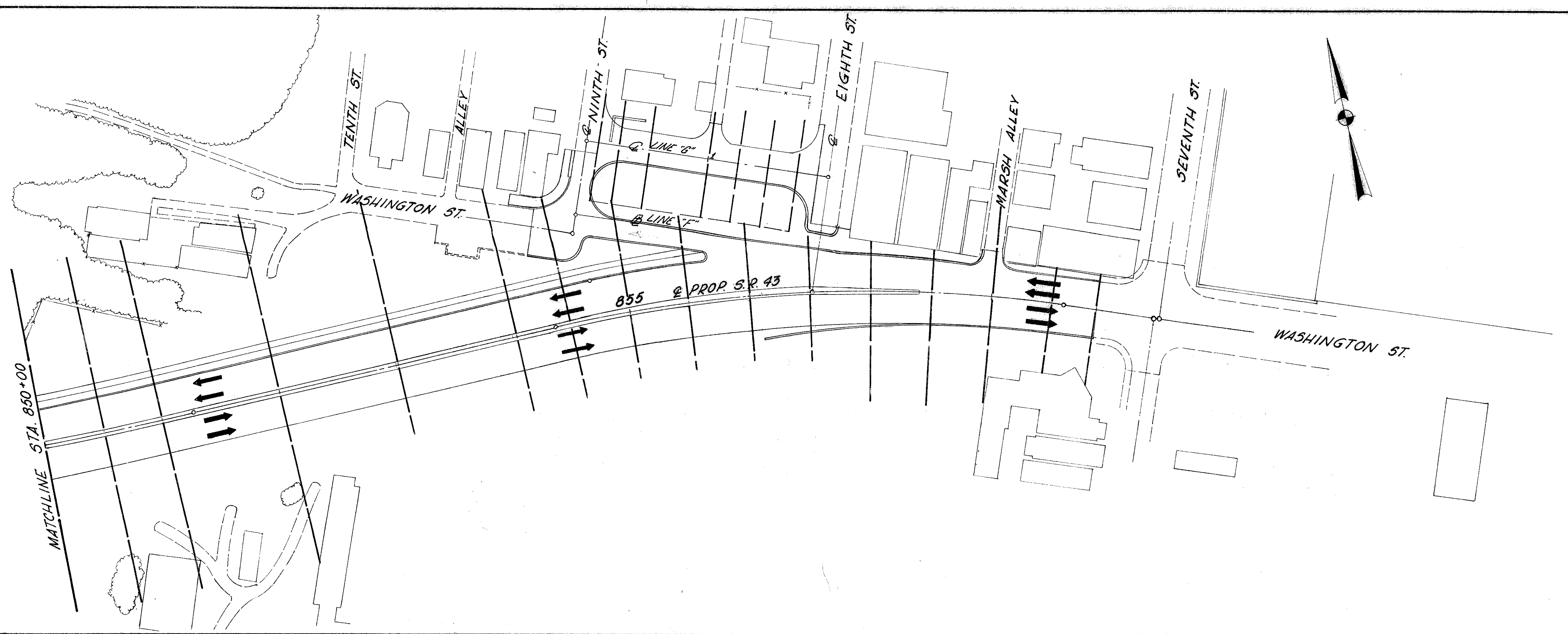
DESCRIPTION	PLOTTED	INKED	CHECKED

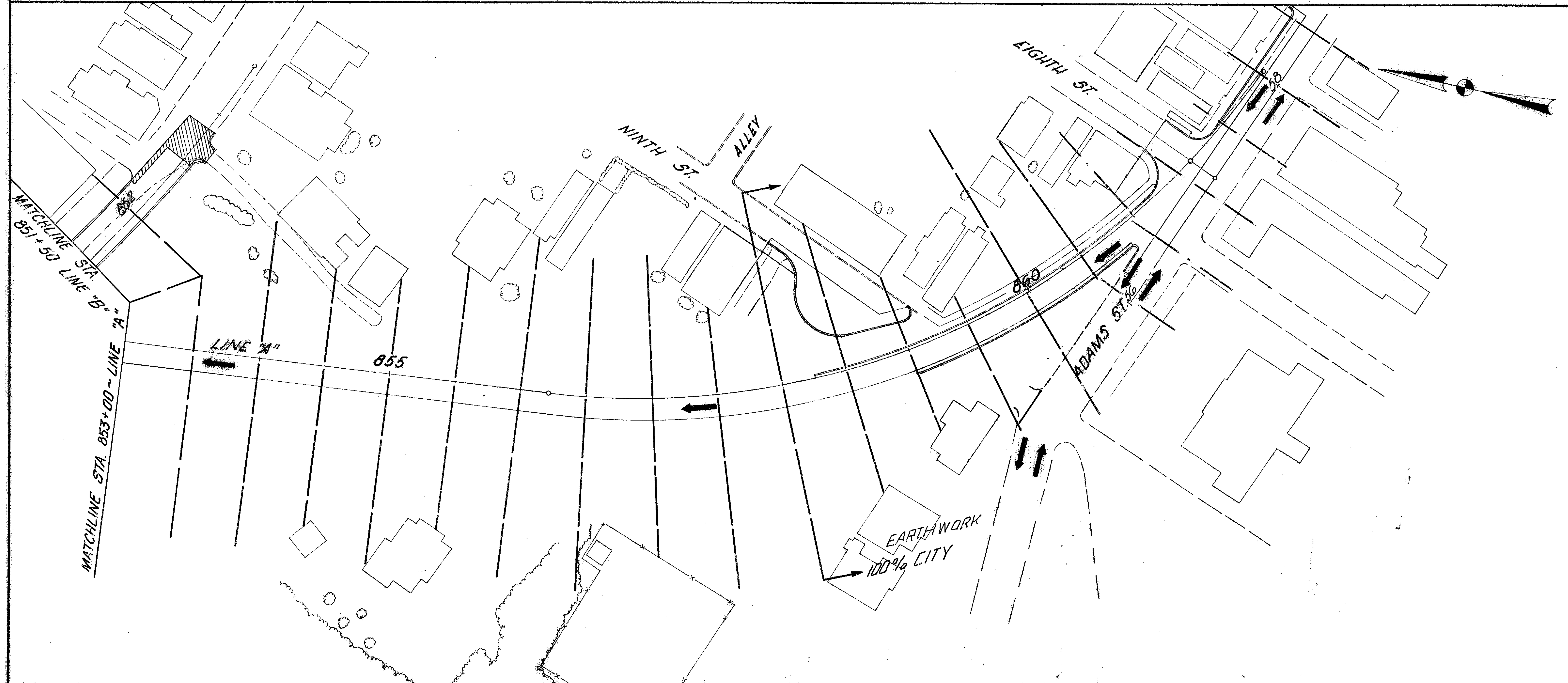
X-SEC. MATCHLINE DIAGRAM & GRADING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

95/299

JEFFERSON COUNTY
JEF.-43-0.42





SHEET 3 OF 3

X-SEC. MATCHLINE DIAGRAM & GRADING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF - 43 - 0.42

X-SEC. ~ S.R. 43 ~ STA. 820+50 TO STA. 821+50

JEFFERSON COUNTY
JEF. - 43 - 0.42

X - SEC. ~ S. R. 43 STA. 822+00 TO STA. 823+50

JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ S.R. 43 STA. 824+00 TO STA. 825+50

JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ S.R. 43 STA. 826+00 TO STA. 827+50

JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ S.R. 43 STA. 828+00 TO STA. 830+00

JEFFERSON COUNTY
JEF.-43-0.42

X-SEC. ~ S.R. 43 STA 831+00 TO STA. 833+00

JEFFERSON COUNTY
JEF.-43-0.42

X-SEC. ~ S.R. 43 STA. 833+50 TO STA 834+50

JEFFERSON COUNTY
JEF.- 43- 0.42

X-SEC. ~ S.R. 43 STA. 835+00 TO STA. 835+50

JEFFERSON COUNTY
JEF- 43- 0.42

X-SEC. S.R 43 STA. 834+50 TO STA. 835+50 RIGHT


105
299
JEFFERSON COUNTY
JEF.- 43- 0.42
Market St.
A
LA
2:1
12:1
2:1
901.0
2:1
12:1
15" SAN.
940
920
900
880
100
150
200
250
300
EXISTING 42" BRICK SEWER
A
960
940
LA
1:1
1:2
4:1
939.8
48" S.S.
Approx. Rock Line
2:1
A
960
940
920
900
880
941.36
836+00
921.6
181
1125
224
STA. 835+50
100
50
0
50
100
150
A
300 4910
325 10,374
STA. 835+50 51 6941
X-SEC. ~ S.R. 43 STA. 836+00

JEFFERSON COUNTY
JEF. - 43 - 0.42

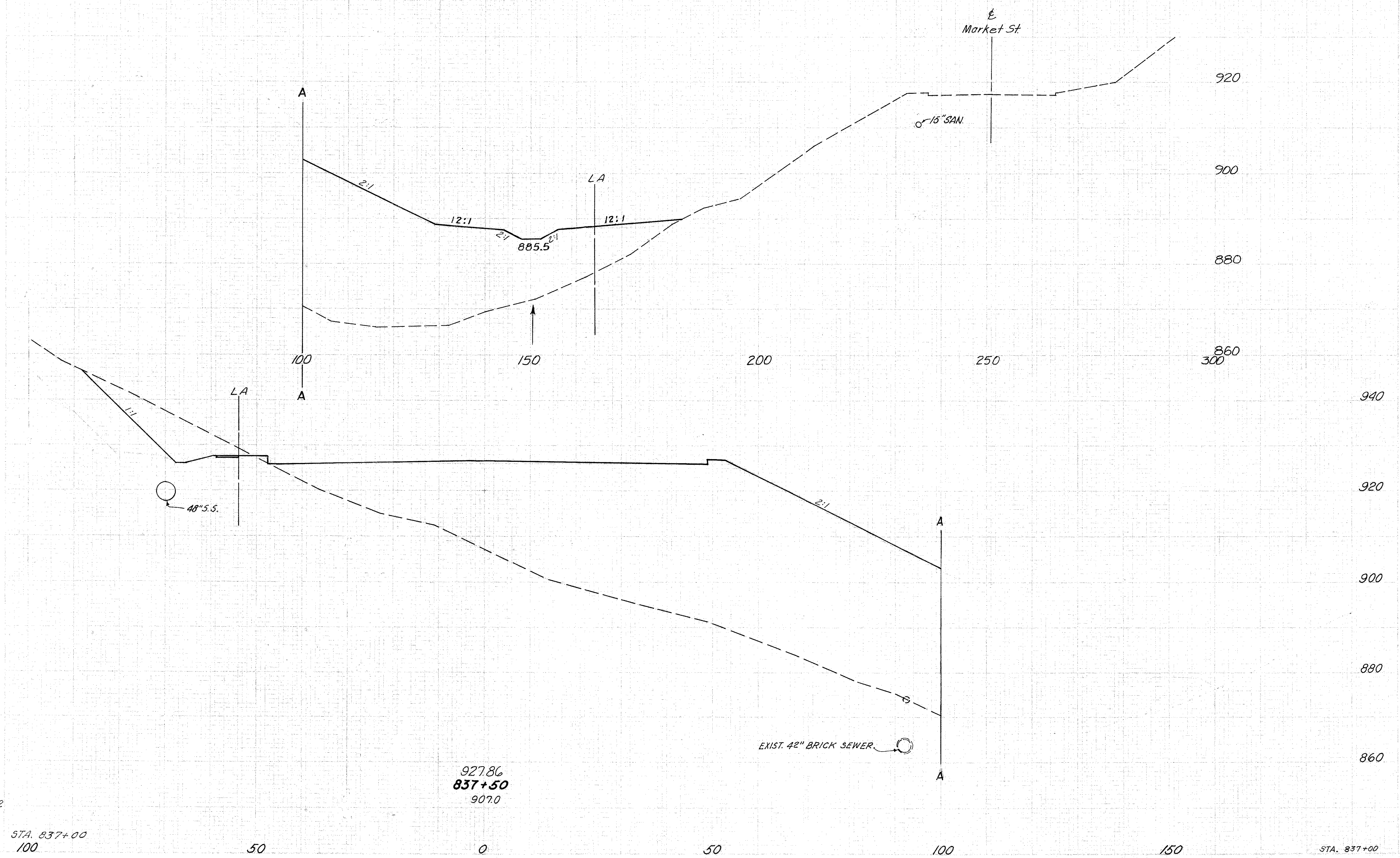
X-SEC. S.R. 43 ~ STA. 836+50

JEFFERSON COUNTY
JEF. - 43 - 0.42

X - SEC. - S.R. 43 STA. 837+00

108
299

JEFFERSON COUNTY
JEF. - 43 - 0.42



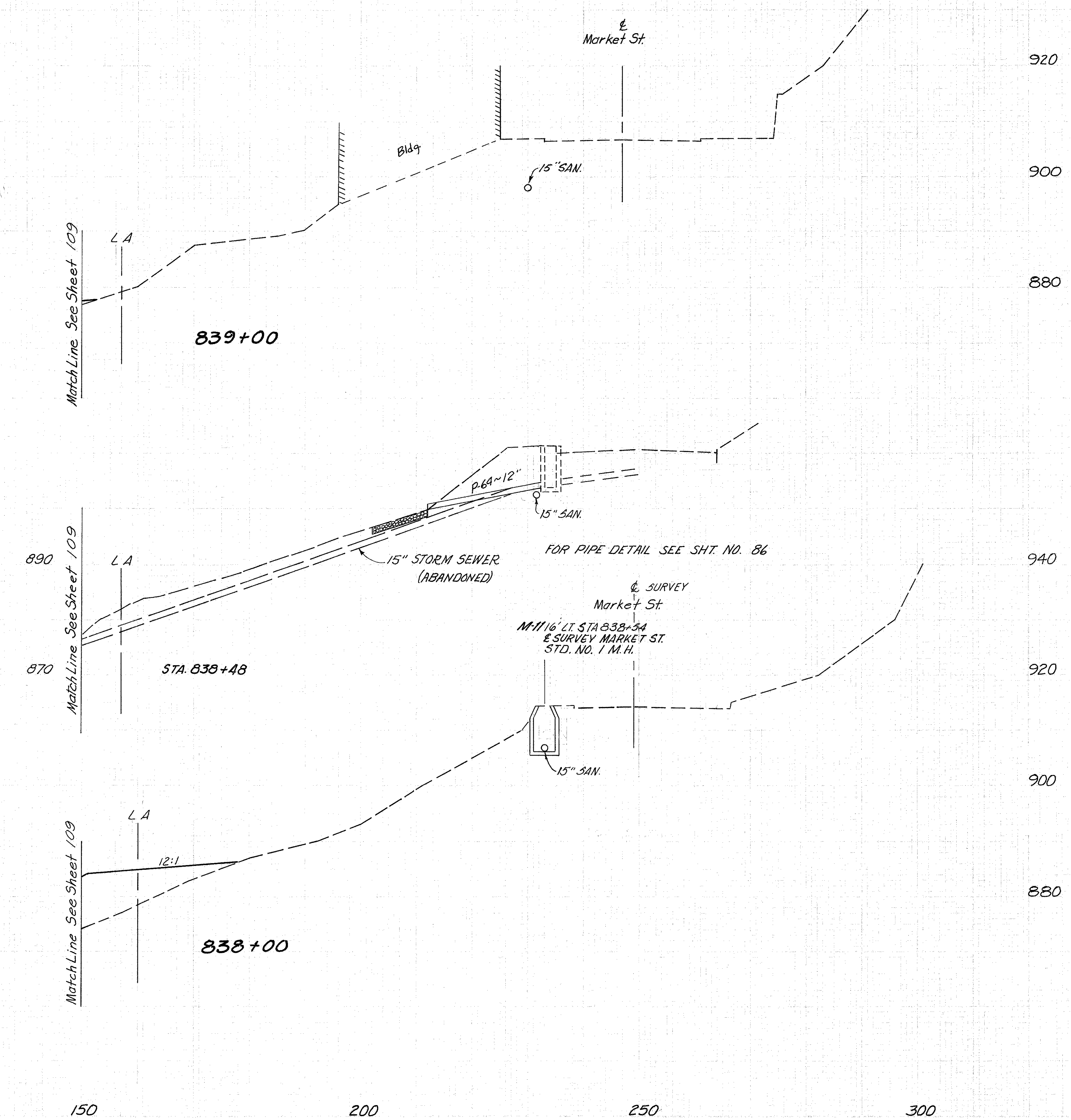
X-SEC. S.R. 43-STA. 837+50

JEFFERSON COUNTY
JEF.- 43 - 0.42

X-SEC ~ S.R. 43 STA. 838+00 TO STA. 839+00

JEFFERSON COUNTY
JEF. -43- 0.42

3 TO SHEET 109



10 TO SHEET 109

ADD TO SHEET NO. 109 0 160

X-SEC-S.R. 43 STA. 838+00 TO STA. 839+00 RIGHT

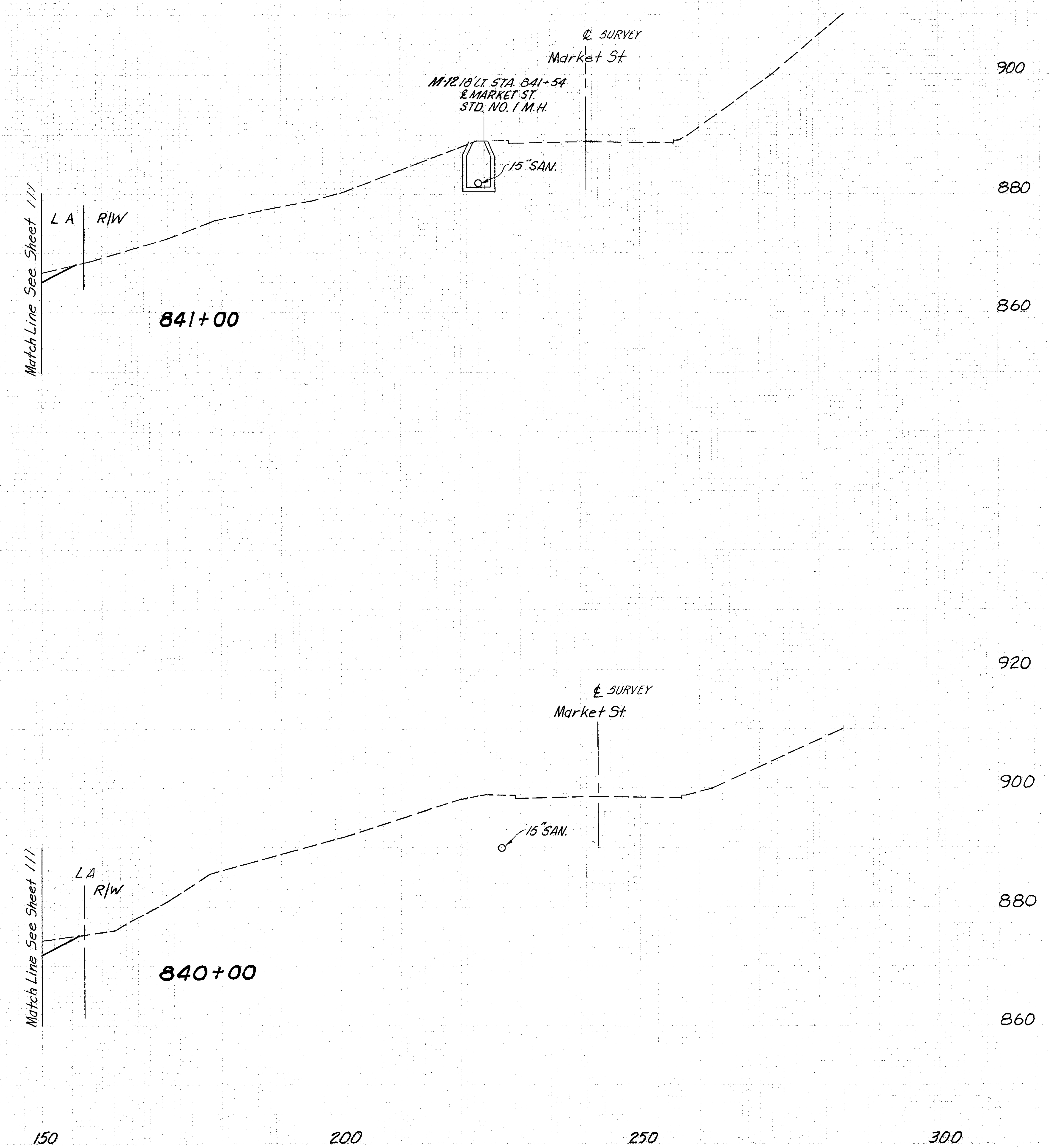
JEFFERSON COUNTY
JEF.- 43 - 0.42

X-SEC. ~ S.R. 43 STA. 840+00 TO STA. 841+00

JEFFERSON COUNTY
JEF - 43 - 0.42

7 TO SHEET 111

ADD TO SHEET NO. 111 4



8 TO SHEET 111

ADD TO SHEET NO. 111 6

X-SEC - S.R 43 STA. 840+00 TO STA. 841+00 RIGHT

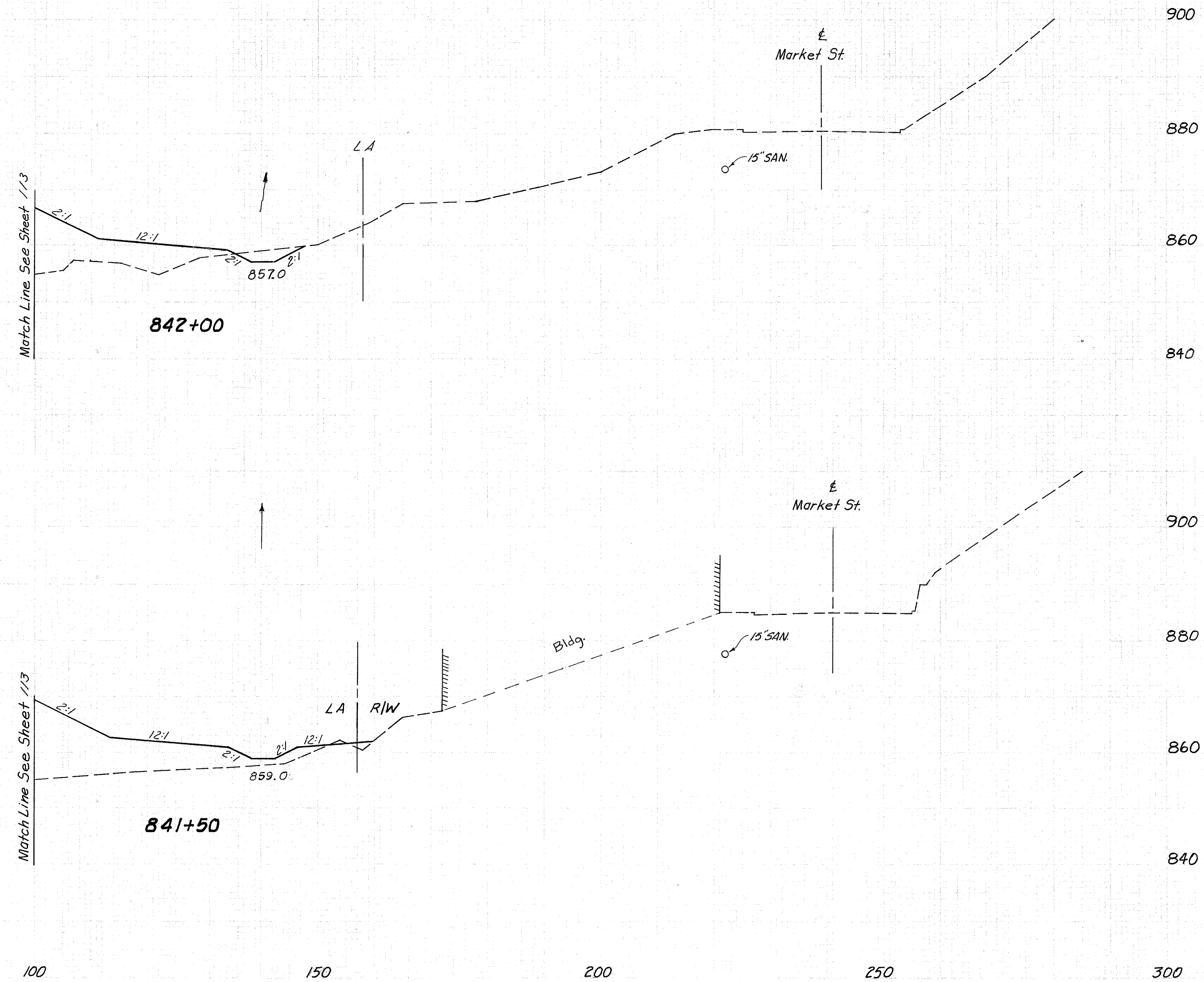
JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ S.R. 43 STA. 841+50 TO STA. 842+00

JEFFERSON COUNTY
JEF. - 43 - 0.42

61 TO SHEET 113

ADD TO SHEET NO. 113 20 175



63 TO SHEET 113

ADD TO SHEET NO. 113 2 383

X - SEC. - S.R. 43 STA. 841+50 TO STA. 842+00 RIGHT

JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ S.R. 43 STA 842+50 TO STA. 843+00

JEFFERSON COUNTY
JEF. - 43 - 0.42

X - SEC. - S.R. 43 STA. 842 + 50 TO STA. 843+00 RIGHT

JEFFERSON COUNTY
JEF.-43 - 0.42

X - SEC. ~ S. R. 43 STA. 844+00

JEFFERSON COUNTY
JEF-43-0.42

X-SEC.~S.R. 43 STA. 845+00

JEFFERSON COUNTY
JEF.-43-0.42

X-SEC. ~ S.R. 43 STA. 845+50

JEFFERSON COUNTY
JEF.-43-0.42

X-SEC. ~ S.R. 43 STA. 846+00

121
299

JEFFERSON COUNTY
JEF.-43-0.42

X-SEC. ~ S.R. 43 STA. 846+50

JEFFERSON COUNTY
JEF.-43-0.42

NOTE:
CROSS SECTIONS ARE SHOWN ON A SKEW CROSSING THE PROPOSED SIDEWALK. THE DITCH TO THE LEFT OF THIS SIDEWALK SHALL BE 18" BELOW THE ADJACENT SIDEWALK.

X-SEC. ~ S.R. 43 STA. 847+00 TO STA. 847+50

123
299

JEFFERSON COUNTY
JEF.-43-0.42

DESCRIPTION	PLOTTED-INKED BY	PLOTTED-INKED DATE	CALCULATED BY	CALCULATED DATE	CHECKED BY	CHECKED DATE
ORIGINAL GROUND						
TEMPLATES						
DRAINAGE						
END AREAS						
EARTHWORK					MH	12-17-69
SEEDING AREAS			BW	12-29-69	EN	12-29-69

X-SEC. ~ S. R. 43 STA. 848+00 TO STA. 848+50

JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ S. R. 43 STA. 849+00 TO STA. 850+00

JEFFERSON COUNTY
JEF. - 43 - 0.42

X - SEC. : S. R. 43 STA. 850+50 TO STA. 851+00

91
536
102
636
127
26 289
44 1004
21 795
57 2056
40 1424

DESCRIPTION	PLOTTED-INKED BY	DATE	CALCULATED BY	DATE	CHECKED BY	DATE
ORIGINAL GROUND						
TEMPLATE						
DRAINAGE					W.H.	12-17-63
R/W LINES					L.D.	12-23-63
EARTHWORK	B.W.	12-24-64			C.H.	12-24-63
SEEDING AREAS						

JEFFERSON COUNTY
JEF. - 43 - 0.42

X - SEC. - S.R. 43 STA. 852+00 TO STA. 854+00

127
299

JEFFERSON COUNTY
JEF - 43 - 0.42

X-SEC. ~ S.R. 43 STA. 854+50 TO STA. 856+00

JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ S.R. 43 STA. 856+50 TO STA. 858+01

JEFFERSON COUNTY
JEF.-43-0.42

X-SEC. ~ S.R. 43 STA. 858+51 TO STA. 858+88

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "A" STA. 849+00 TO STA. 849+50

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "A" STA. 850+00 TO STA. 851+50

JEFFERSON COUNTY
JEF-43-0.42

X - SEC. ~ LINE "A" STA. 852+50 TO STA. 853+00

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "A" STA. 853+50 TO STA. 854+00

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "A" STA. 854+50 TO STA. 855+00

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "A" STA. 855+50

136
299

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "A" STA. 856+00 TO STA. 857+50


JEFFERSON COUNTY
JEF-43-0.42
℄ ADAMS ST.
R/W
LA
15" S.S.
774.94
860+00
776.1
780
770
℄ EXIST. NINTH ST.
C-53
25' LT. STA. 859+10 LINE "A"
STD. NO. 3-A C.B.
778.30
859+50
M-18
779.5
7' LT. STA. 859+25 LINE "A"
STD. NO. 1 M.H.
12" S.S.
P-89
15" S.S.
790
C-54
30' RT. STA. 858+96 LINE "A"
STD. NO. 5 C.B.
781.75
859+00
780.9
800
4:1
2:1
785.25
858+50
787.0
C-50A
46' LT. STA. 858+25 LINE "A"
STD. NO. 3-A C.B.
C-50
18' LT. STA. 858+21 LINE "A"
STD. NO. 5 C.B.
P-86
810
788.75
858+00
791.8
BEGIN 100% CITY PARTICIPATION
STATION 858+00 END NORMAL PARTICIPATION
C.A.L. CUT 50.9'
40
367
92
403
53
297
54
386
85
519
102
48 0
96 0
55 0
96 12
48 13
306 12
282 0
539 0
300 0
846 0
STA. 857+50
100
50
0
50
100
150
STA. 857+50 597 0
X-SEC. ~ LINE "A" STA. 858+00 TO STA. 860+00

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "A" STA. 860+50 TO STA. 861+00

JEFFERSON COUNTY
JEF-43 - 0.42

X-SEC. LINE "B" STA. 844+50 TO 845+50

JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. LINE "B" STA. 846+00 TO 847+00

JEFFERSON COUNTY
JEF - 43 - 0.42

X-SEC. LINE "B" STA. 847+50 TO 848+50

JEFFERSON COUNTY
JEF.-43- 0.42

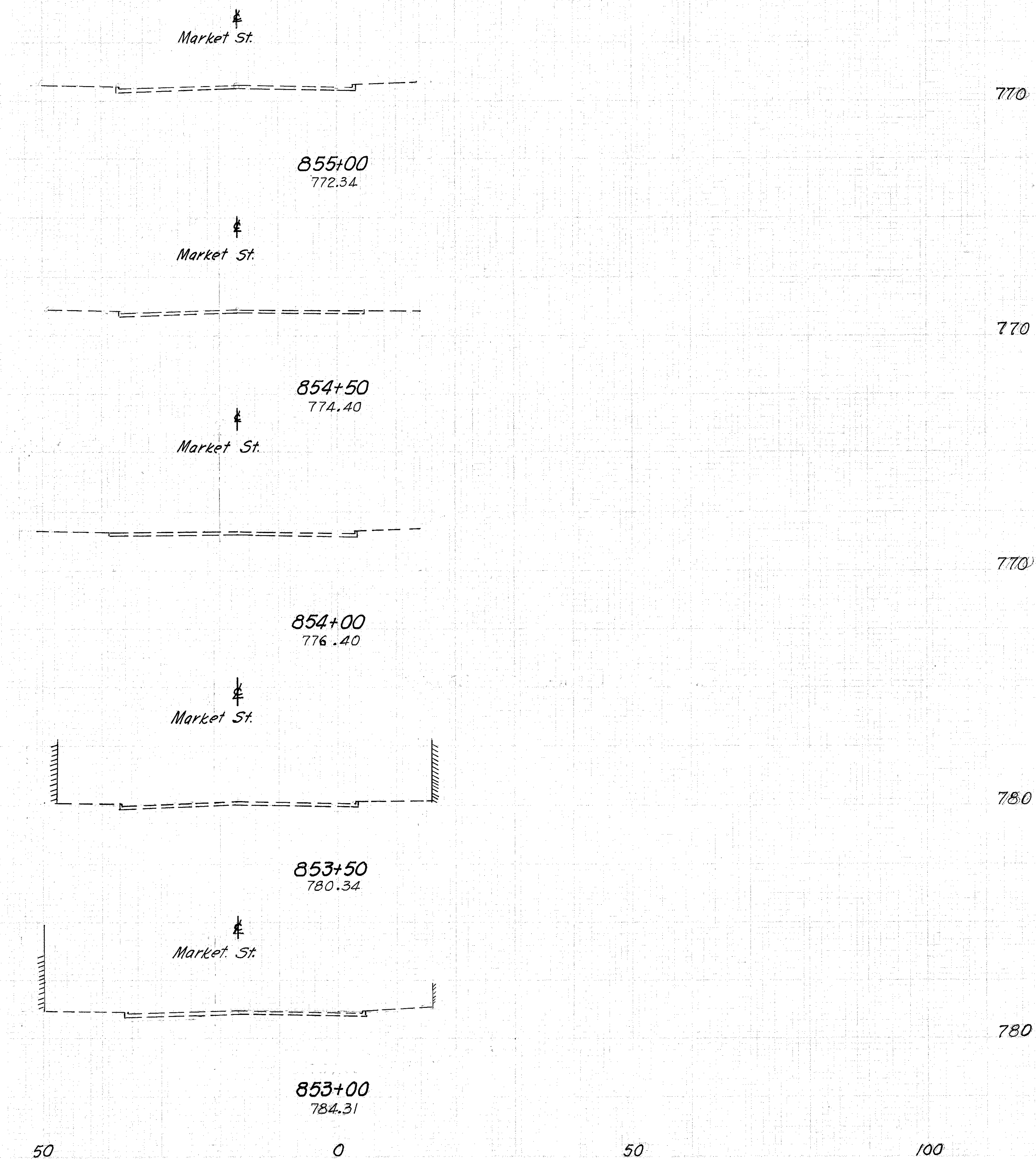
X-SEC. LINE "B" STA. 849+00 TO 850+00

JEFFERSON COUNTY
JEF.- 43 - 0.42

X-SEC. LINE 'B' STA. 850+50 TO STA. 851+00


144
299
JEFFERSON COUNTY
JEF.- 43- 0.42
STA. 852 + 86 END WORK LINE "B"
0 STA. 852+61
STA. 852+61 0 0
40
85 0
66
415 0
436
C.A.L. CUT 51.1
1,750 8
91
1370 8
469
C.A.L CUT 51.1
2,882 58
78
1675 54
350
C.A.L. CUT 50.8
2,289 93
48 STA. 851+00
STA. 851+00 758 46
830
810
790
830
810
790
850
830
810
790
LA
LA
Market St.
2:1
4:1
788.66
852+50
790.00
LINE "B" LINE "A"
LA
Market St.
C-45
C-46
C-47
C-48
1:1
4:1
12" S.S.
P-81
12" PIPE
P-82
12"
P-83
793.84
852+00
811.60
+00 CONST. STD. NO. 3-A C.B. 6' RT.
+00 CONST. STD. NO. 5 C.B. 18' RT.
+00 CONST. STD. 5 CATCH BASIN
35' LT.
+00 CONST. STD. 3 A CATCH BASIN
19' LT.
LA
Market St.
4:1
4:1
1:1
LINE "B" LINE "A"
799.12
851+50
820.00
50
0
50
100
X-SEC. LINE 'B' STA. 851+50 TO STA. 852+50

JEFFERSON COUNTY
JEF.-43-0.42



X-SEC. LINE 'B' STA. 853+00 TO STA. 855+00

JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ LINE "D" STA. 5+00 TO STA. 5+50

JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ LINE "D" STA. 6+00 TO STA. 6+50

JEFFERSON COUNTY
JEF.- 43 - 0.42

X-SEC. ~ LINE "D" STA. 7+00 TO STA. 7+50

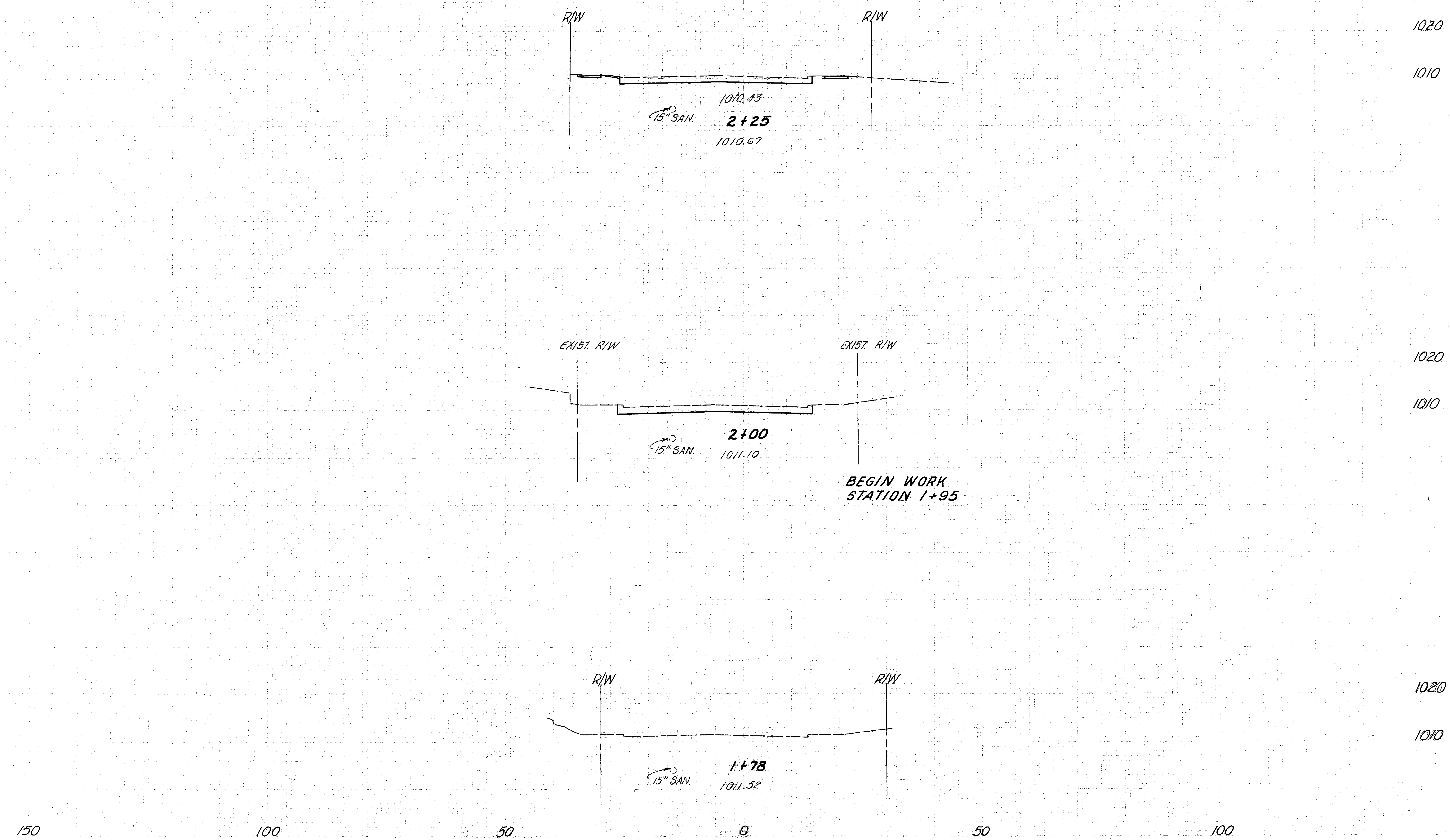
JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ LINE "D" STA. 8+00

JEFFERSON COUNTY
JEF. - 43 - 0.42

X-SEC. ~ LINE "D" STA. 8+50 TO STA. 9+50

JEFFERSON COUNTY
JEF-43-0.42



X-SEC. ~ LINE "E" STA. 1+78 TO STA. 2+25

JEFFERSON COUNTY
JEF-43-0.42

X - SEC. ~ LINE "E" STA. 3+00 TO STA. 3+50

JEFFERSON COUNTY
JEF-43-0.42

X- SEC. ~ LINE "E" STA. 4+00 TO STA. 4+50

154
299

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "E" STA. 5+00 TO STA. 5+50

JEFFERSON COUNTY
JEF-43-0.42

X - SEC. ~ LINE "E" STA. 6+00

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "E" STA. 8+55 TO STA. 9+00

157
299

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "E" STA. 10+00 TO STA. 11+00

JEFFERSON COUNTY
JEF - 43-0.42

DESCRIPTION	PLOTTED-INKED BY	DATE	CALCULATED BY	DATE	CHECKED BY	DATE
ORIGINAL GROUND						
TEMPLATES						
AREAS						
CUT AREAS						
EARTHWORK						

LINE "E" ~ X-SEC. ~ STA. 11+50 TO STA. 11+65

JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "G" ~ STA. 0+25 TO STA. 0+75

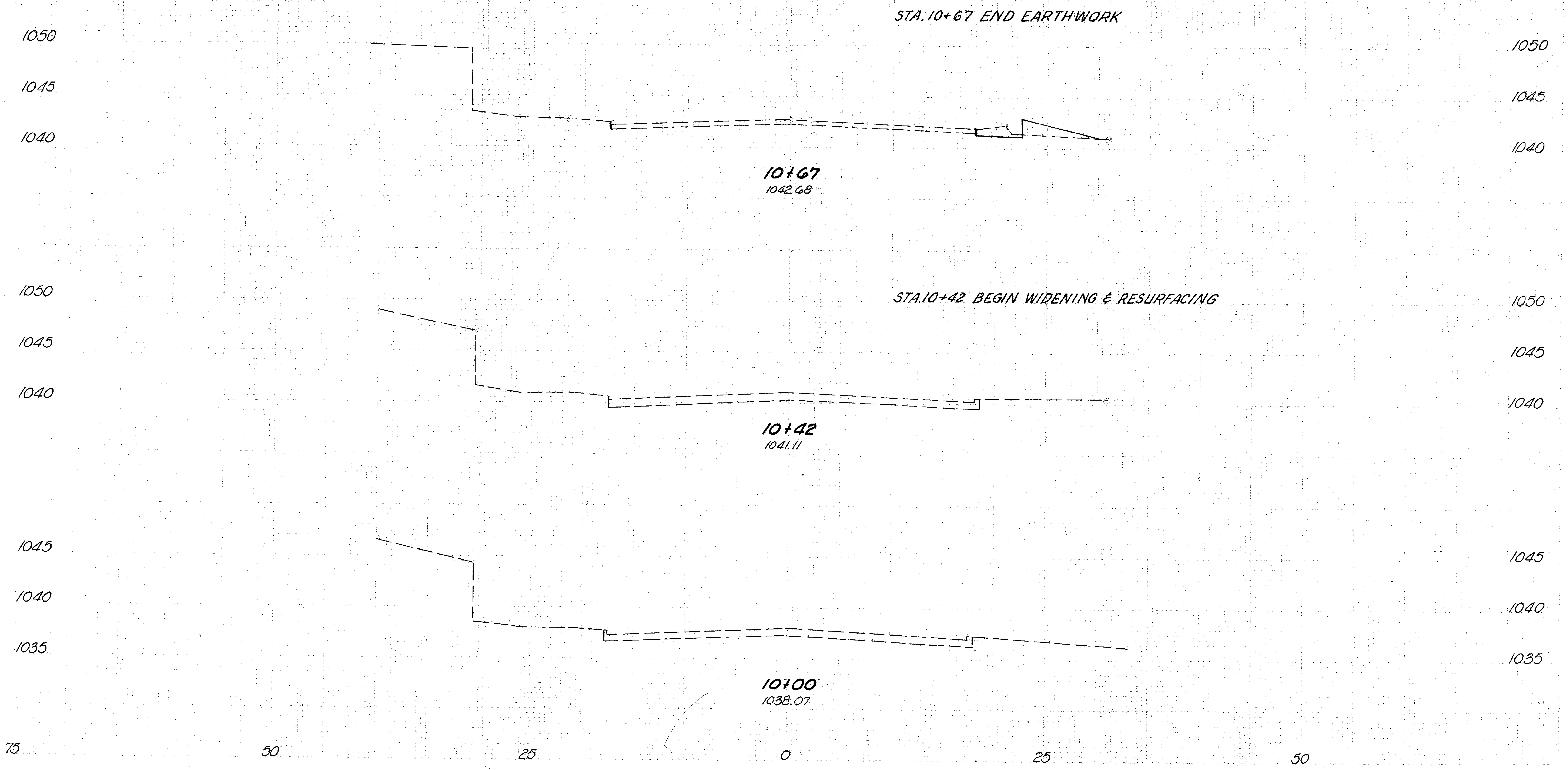
JEFFERSON COUNTY
JEF-43-0.42

X-SEC. ~ LINE "G" ~ STA. 1+00 TO STA. 1+93

JEFFERSON COUNTY
JEF-43-0.42

X-SECT.-BELLEVIEW BLVD. STA. 0+30 TO

JEFFERSON COUNTY
JEF. - 43 - 0.14

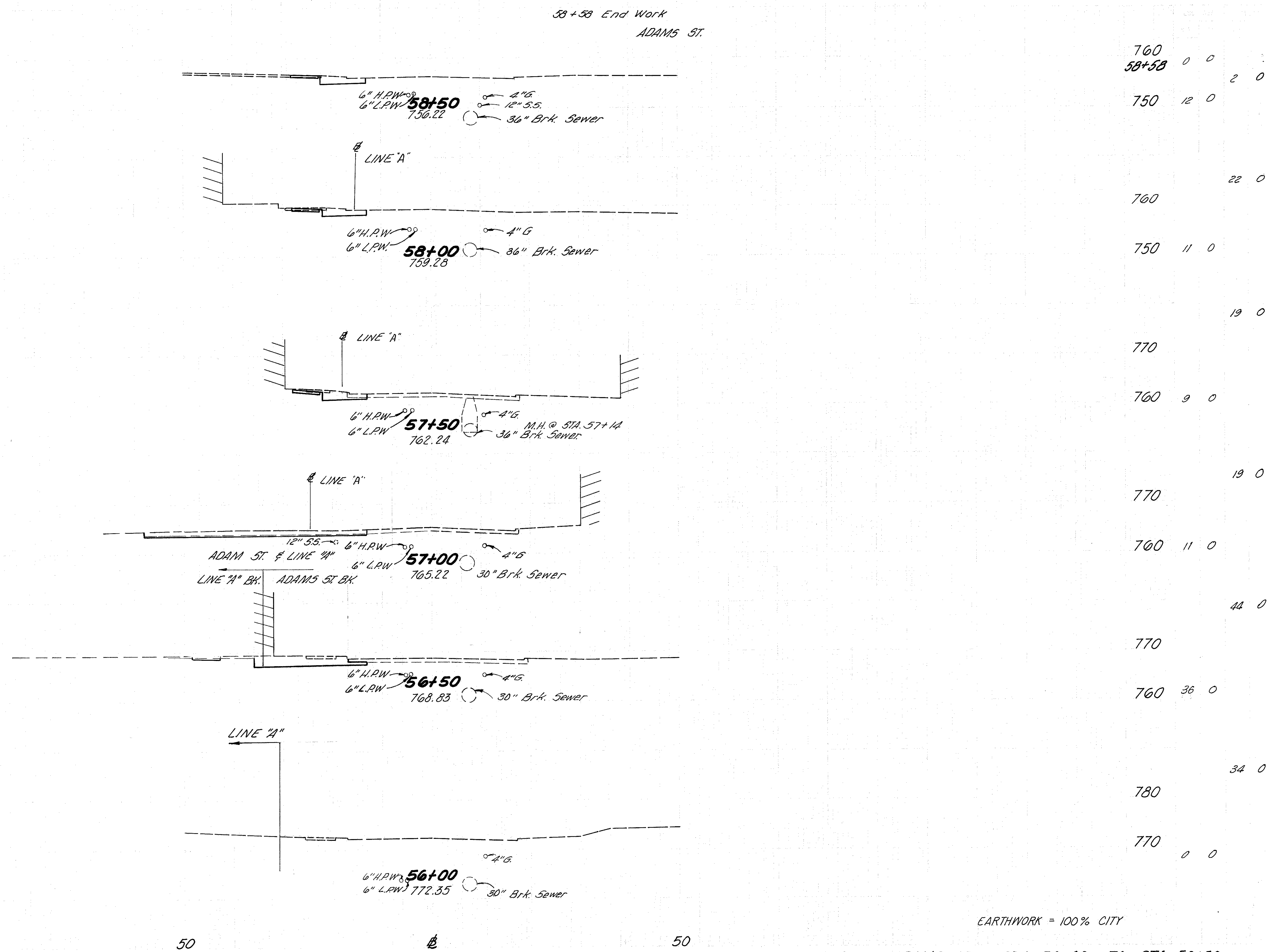


X-SEC.-BELLEVIEW BLVD. STA. 10+00 TO STA. 10+67

JEFFERSON COUNTY
JEF - 43 - 0.14

50
STEELE AVE X SEC. STA. 0+93 TO STA. 3+00

JEFFERSON COUNTY
JEF-43-0.42



EARTHWORK = 100% CITY

X-SEC. ~ ADAMS ST. ~ STA. 56+00 TO STA. 58+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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299

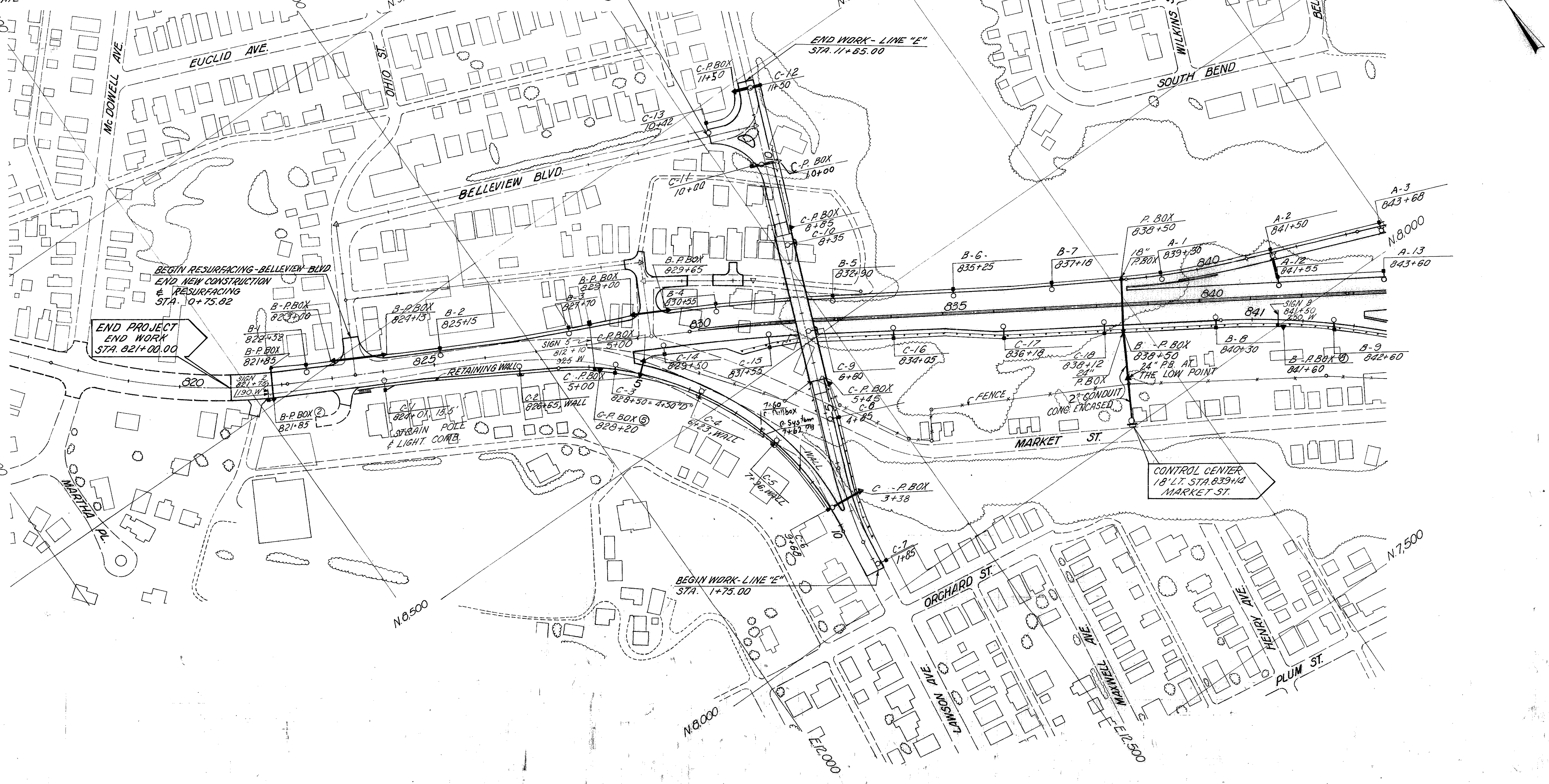
JEFFERSON COUNTY
JEF-43-0.42

LEGEND

- 1000 W LUMINAIRE WITH 700 W MERCURY CLEAR LAMP - IES TYPE III, MEDIUM CUT OFF ~ 36.7' M.H.
- 400 W. LUMINAIRE WITH 400 W LAMP-IES TYPE III MEDIUM CUT OFF ~ 34.2' M.H.
- 400 W. LUMINAIRE WITH 400 W. LAMP-IES TYPE II MEDIUM CUT OFF - 34.2' M.H.
- (E) EXISTING LIGHT POLE-LUMINAIRE AS DESIGNATED
- PULL-BOX
- RIGID METAL CONDUIT
- PREASSEMBLED DUCT-CABLE, 2-#4 UNLESS OTHERWISE NOTED
- SERVICE POLE AND CONTROL CENTER
- OR OVERHEAD ILLUMINATED SIGN
- #4 DENOTES AWG CABLE SIZE
- GUARD RAIL

DESIGN CRITERIA: FROM THE EXISTING INTENSITY OF 5.0 F.C. ON THE ADJACENT EASTERN PROJECT AT STA. 858+88, A TRANSITIONAL INTENSITY OF 2.5 TO STA. 848+00 AND THEREAFTER INITIAL INTENSITY 1.2 F.C. TO STA. 821+00; UNIFORMITY 6:1 MAX., POWER 1 ϕ 480 VOLTS 2 WIRE.

C.-3 — CIRCUIT LETTER — POLE NUMBER IN THE CIRCUIT
4+50 — STATION



LIGHTING SCHEMATIC LAYOUT PLAN

LIGHTING SCHEMATIC LAYOUT PLAN

LIGHTING GENERAL NOTES

SPECIFICATIONS

THESE NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 713 OF THE STATE OF OHIO DIVISION OF HIGHWAYS CONSTRUCTION AND MATERIAL SPECIFICATIONS.

625.03 GENERAL

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS: THE OHIO POWER COMPANY
EASTERN DIVISION
STEUBENVILLE, OHIO

THE COMPANY WILL SUPPLY 480 VOLT, 2-WIRE, SINGLE PHASE, GROUNDED NEUTRAL SERVICE.

625.07 - 713.11 LUMINAIRES (POLE - MOUNTED)

400 - WATT LUMINAIRES SHALL HAVE DUAL RATED 240/480 VOLT INTEGRAL REGULATOR BALLASTS AND SHALL BE GENERAL ELECTRIC M 400, WESTING-HOUSE OV - 25, McGRAW - EDISON "UNISTYLE", OR EQUAL APPROVED BY THE ENGINEER.

1000 - WATT LUMINAIRES SHALL HAVE SINGLE RATED 480 - VOLT, 700 - WATT INTEGRAL REGULATOR BALLASTS AND SHALL BE GENERAL ELECTRIC M - 1000, WESTINGHOUSE OV - 50, McGRAW - EDISON "UNISTYLE", OR EQUAL APPROVED BY THE ENGINEER.

625.08 - 713.14 LAMPS

MERCURY LAMPS SHALL BE GENERAL ELECTRIC "BONUS LINE", WESTINGHOUSE "LIFEGUARD", SYLVANIA "ROUGH SERVICE", OR EQUAL APPROVED BY THE ENGINEER.

LIGHT POLE ANCHOR BOLTS FOR BRIDGES AND RETAINING WALLS

ANCHOR BOLTS FOR MOUNTING LIGHT POLES ON BRIDGES RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF 713.01 AND DETAILS SHOWN ON THE PLANS, 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 BOLTS OF THE SIZE REQUIRED AND NECESSARY TO INSTALL ONE POLE AND THIS PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND PLACING THE BOLTS.

CONDUIT ON STRUCTURES

EXPANSION FITTINGS FOR CONDUIT ON STRUCTURES SHALL BE OZ TYPE "AX-4", SPRING CITY TYPE AF, APPLETON TYPE XJ-4, OR EQUAL APPROVED BY THE ENGINEER FOR BRIDGE NUMBERS 0111, 0063, 0.77.

EACH EXPANSION FITTING SHALL HAVE A COPPER EXTERNAL BONDING JUMPER.

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.

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 UNTILL 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 CONTRACT UNIT PRICE BID FOR ITEM 607 FENCE TYPE CL AND ITEM 607 GATE TYPE CL SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS SHOWN ON DRAWINGS, INCLUDING LABOR AND INCIDENTALS NECESSARY TO MAKE A COMPLETE INSTALLATION.

LIGHT POLE DATA

REFERENCE NUMBER	POLE DESIGN NUMBER	TRANSFORMER BASE STYLE	FOUNDATION ANCHOR BOLTS: SIZE - DIA. x LENGTH	FOUNDATION ANCHOR BOLTS: DIA. BOLT CIRCLE
7	T8B34.2	T	1" x 40"	15"
8	T10B34.2	T	1" x 40"	15"
6	T10B34.2 D	T	1" x 40"	15"
4	AT8B36.7	AT-A	1" x 40"	15"
5	AT15B36.7	AT-A	1" x 40"	15"
3	T15B36.7	AT-A	1" x 40"	15"
9	AT6B34.2	AT-A	1" x 40"	15"
10	AT10B34.2	AT-A	1" x 40"	15"
11	AT12B34.2	AT-A	1" x 40"	15"
1	T12B34.2	AT-A	1" x 40"	15"
12	AT15B34.2	AT-A	1" x 40"	15"
2	T15B34.2	AT-A	1" x 40"	15"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

168A
299

JEFFERSON COUNTY
JEF ~ 43 ~ 0.42

GENERAL NOTES — GAMEWELL FIRE ALARM SYSTEM

GENERAL

INSTALLATION OF THE GAMEWELL FIRE ALARM SYSTEM SHALL BE IN ACCORDANCE WITH THE REQUIREMENT OF THE CITY OF STEUBENVILLE TO MATCH THE EXISTING AERIAL AND UNDERGROUND SYSTEM.

CONDUCTORS

TWELVE CONDUCTORS #14, 600 VOLTS IN DUCT SHALL BE USED FOR UNDERGROUND WIRING.
REFERENCE SHALL BE MADE TO INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION SPECIFICATION NO. 19-1 FROM 1967.

TRENCH

IN PLACES WHERE ONLY THE GAMEWELL UNDERGROUND CABLE RUNS, A TRENCH SIMILAR TO ONE USED FOR LIGHTING SHOULD BE USED.

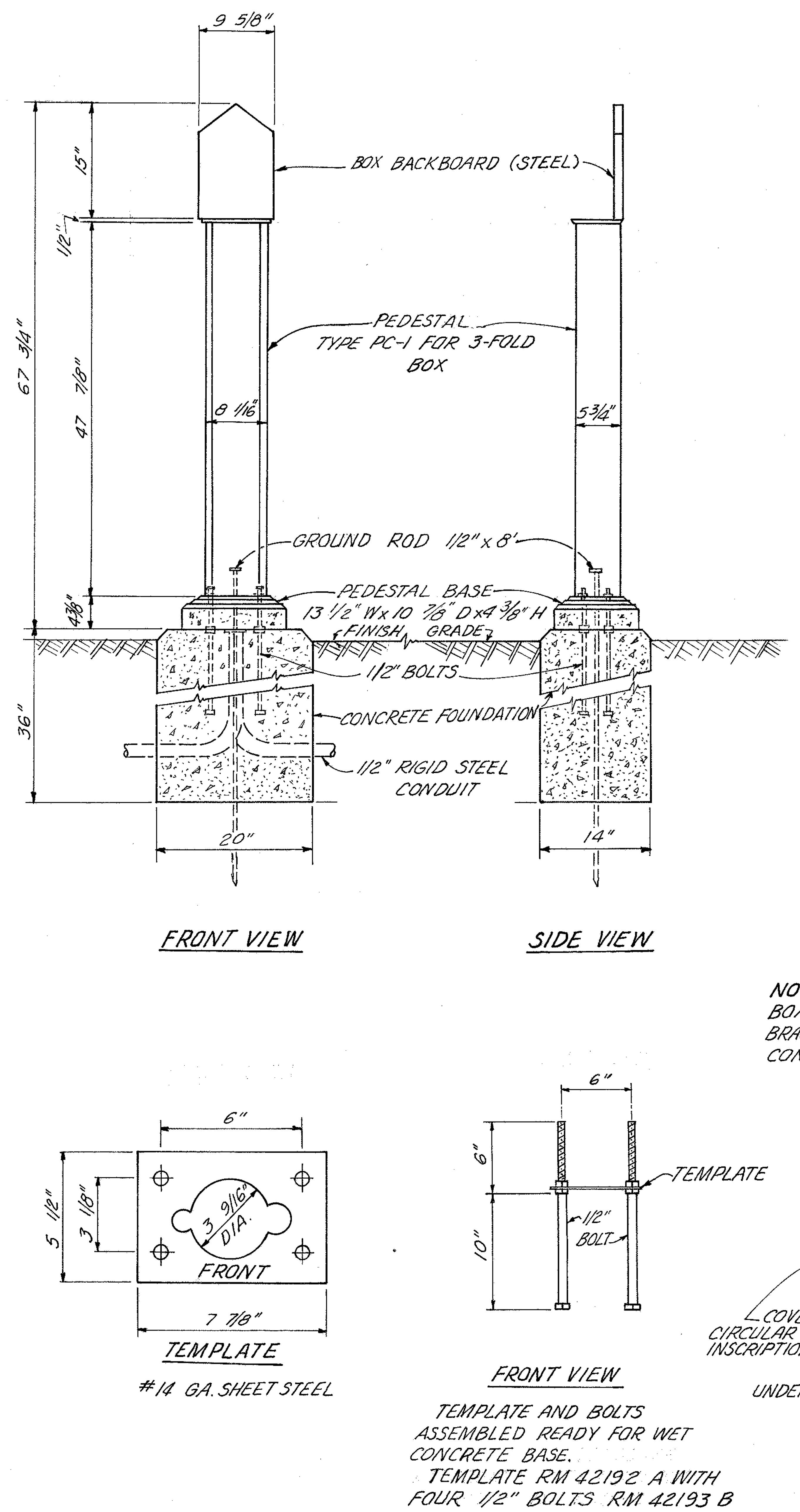
IN THE COMMON TRENCH, THE CABLE FOR THE GAMEWELL SYSTEM SHALL BE BURIED A MINIMUM OF 18" DEEP. A MINIMUM OF 6" SEPARATION SHOULD BE MAINTAINED BETWEEN THE CABLES OF THE TWO SYSTEMS.
SEE COMMON TRENCH DETAIL ON THIS SHEET FOR CABLE LOCATION.
THE COMMON TRENCH 12" WIDE AND 24" DEEP LOCATION IS SHOWN IN THE LIGHTING SUB-SUMMARY SHEETS. IT IS ALSO SHOWN IN THE LIGHTING GENERAL SUMMARY SHEET AS A SEPARATE PAY ITEM.
PAYMENT FOR "COMMON TRENCH, 12" WIDE BY 24" DEEP" SHALL INCLUDE LABOR AND SPECIFIED MATERIALS NECESSARY TO INSURE THE 6 INCH MINIMUM SEPARATION OF THE CABLES DURING TRENCH BACKFILLING OPERATIONS.
THE GAMEWELL SYSTEM CONDUCTORS UNDER PAVED SURFACE SHALL BE ENCLOSED IN 3 INCH CONDUIT IDENTICAL TO THE CONDUIT USED FOR LIGHTING. SEPARATE CONDUIT FOR EACH SYSTEM WIRING SHALL BE USED_ (713.04).

PULL BOXES

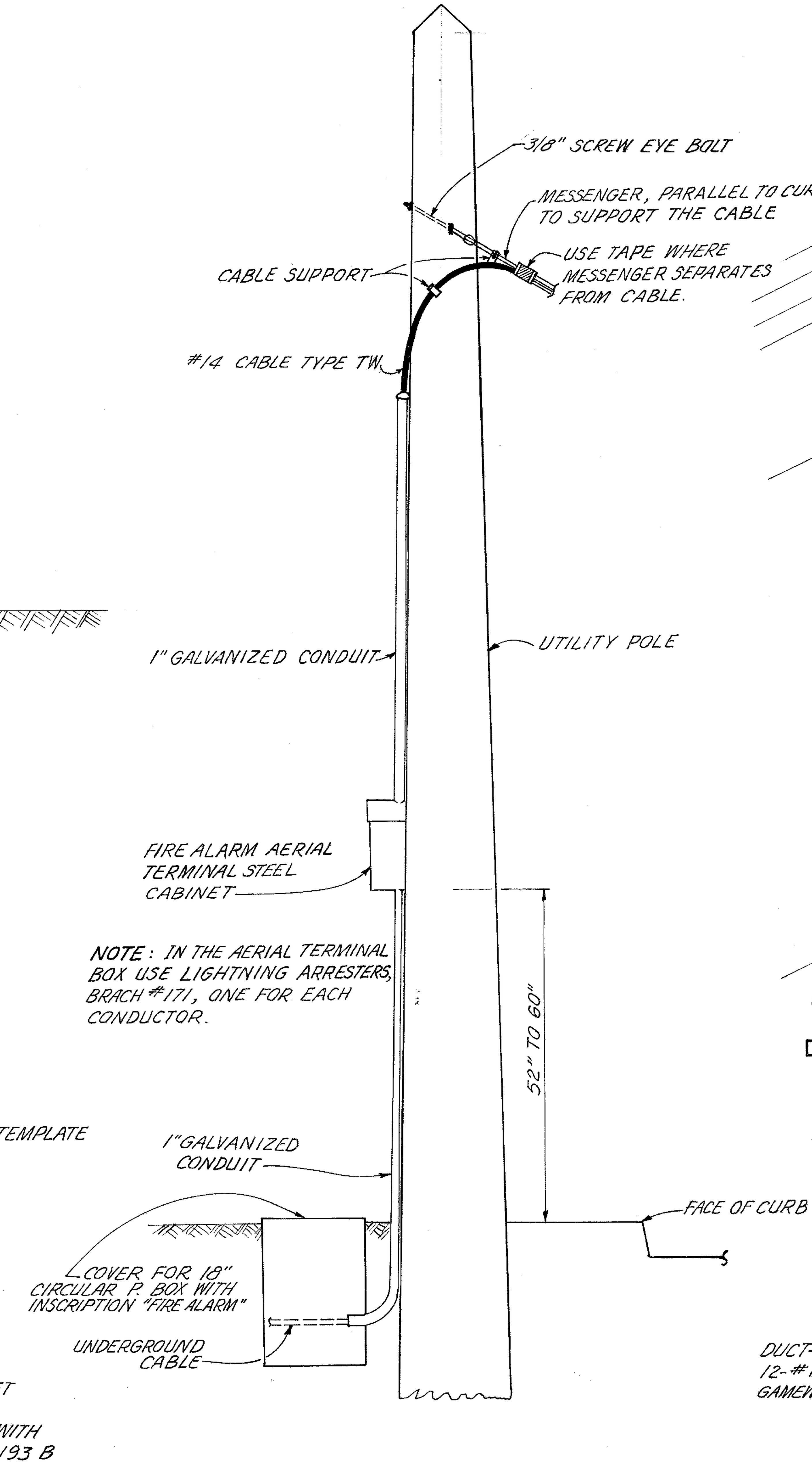
PULL BOXES USED FOR THE GAMEWELL SYSTEM SHALL BE IDENTICAL TO THE PULL BOXES USED FOR LIGHTING_ (713.09).

FIRE ALARM BOX

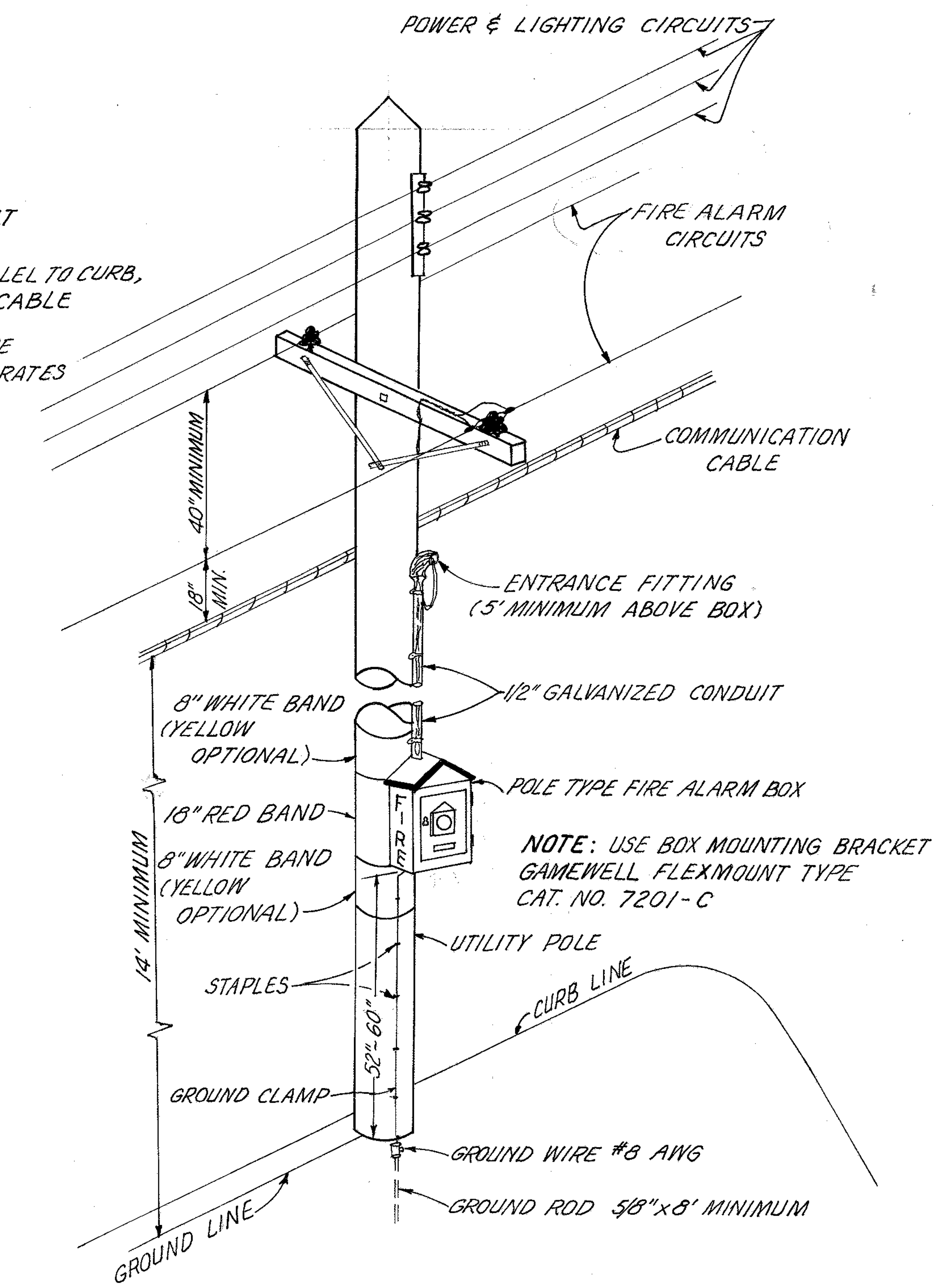
THE FIRE ALARM BOXES, INSTALLED AT LOCATIONS SHOWN ON THE PLAN SHEETS NO. 173 AND 174, SHALL BE CLOSELY RESEMBLING THE "COTTAGE" STYLE AND SHOULD HAVE INSTRUCTIONS FOR USE PLAINLY MARKED ON THE OUTER DOOR. THE THREE-FOLD BOX, CATALOG NO. 7000 BLISS-GAMEWELL IS ACCEPTABLE OR OTHER EQUIVALENT APPROVED BY THE ENGINEER.
ALSO BOX MOUNTING PEDESTALS TYPE PC-1 CATALOG NO. 74301 AND BOX MOUNTING BRACKET CATALOG NO. 7201-C BOTH MADE BY BLISS-GAMEWELL OR OTHER EQUIVALENT SHALL BE USED.
BEFORE ANY EQUIPMENT IS ORDERED OR INSTALLATION OF FIRE ALARM BOXES IS BEGUN, A COMPLETE SCHEDULE OF MATERIALS AND EQUIPMENT SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER. THE SCHEDULE SHALL INCLUDE EIGHT (8) SETS OF CATALOG CUTS, DIAGRAMS, DRAWINGS, BROCHURES, DATA SHEETS, MANIFACTURER'S CERTIFICATES OF COMPLIANCE OR OTHER DESCRIPTIVE DATA AS MAY BE REQUIRED AND SHALL INCLUDE COMPLETE DESCRIPTIVE DATA ON THE ALARM BOXES, WIRING, DIAGRAMS, TEST DATA, MAKE AND CAPACITY.
THE CONTRACTOR SHALL IDENTIFY THE ITEM ON EACH SHEET AND SHALL MARK ALL PRINTS "RECORD DRAWING". ONE COPY WILL BE RETURNED MARKED "APPROVED", IF FOUND SATISFACTORY. IN THE EVENT ANY ITEMS OF MATERIAL OR EQUIPMENT CONTAINED IN THE SCHEDULE FAIL TO COMPLY WITH THE SPECIFICATION REQUIREMENTS, SUCH ITEMS WILL BE REJECTED.
ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW, FIRST QUALITY, OF THE LATEST DESIGN, AND FREE FROM DEFECTS AND POOR WORKMANSHIP.
THE LUMP SUM BID FOR GAMEWELL FIRE ALARM SYSTEM SHALL INCLUDE PAYMENT FOR ALL MATERIALS, EQUIPMENT, LABOR AND TESTING TO COMPLETE THE WORK AS DESCRIBED ABOVE AND AS DIRECTED EXCEPT FOR COMMON TRENCHING, PAYMENT FOR WHICH IS PROVIDED UNDER THE COMMON TRENCH, 12" WIDE x 24" DEEP ITEM.



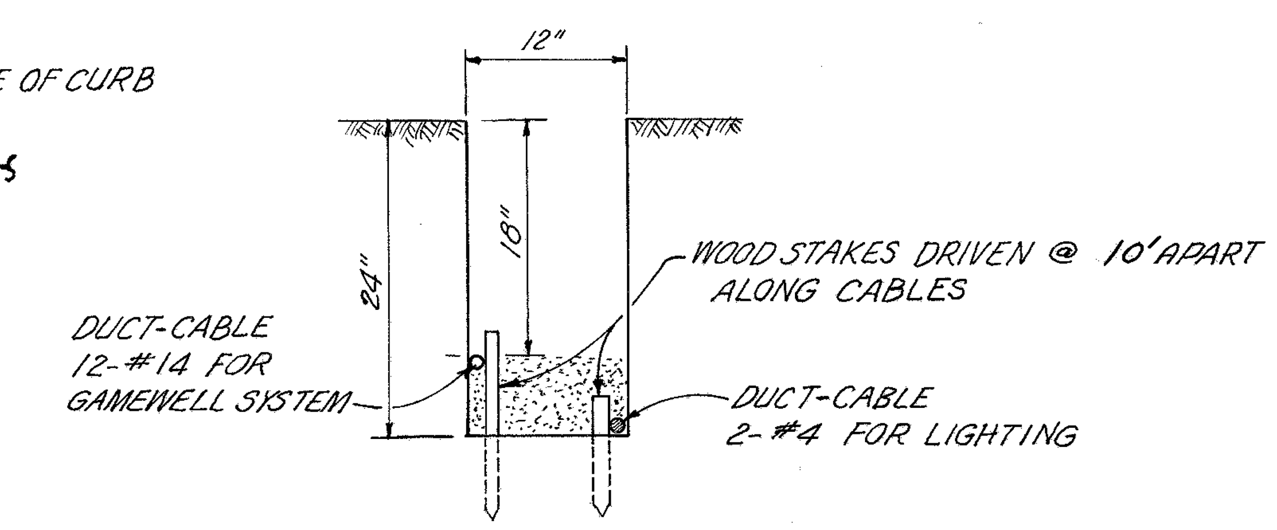
DETAILS FOR PC-1 PEDESTAL



DETAILS OF TRANSITION FROM UNDERGROUND TO AERIAL



DETAILS OF FIRE ALARM BOX MOUNTED ON UTILITY POLE



COMMON TRENCH DETAIL

[B] + [C] = [D]

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY M.R. 9-22-72
QUANTITIES CHECKED BY P.G.P. 9-27-72

REFERENCE	STRUCTURES NORMAL PARTICIPATION: RETAINING WALL A	RETAINING WALL B	JEF-43-0111	JEF-43-0063	JEF ~ 43 ~ 0.77	JEF ~ 43 ~ 0.77		SUB TOTAL	ROADWAY: 100% CITY OF STEUBENVILLE	ROADWAY: NORMAL PARTICIPATION	NORMAL PARTICIPATION	NORMAL PARTICIPATION	TOTAL [B] 100% CITY OF STEUBENVILLE	TOTAL [C] NORMAL PARTICIPATION	[D] GRAND TOTAL	ITEM	UNIT	DESCRIPTION	REFERENCE
SHEET NUMBER	173	173	173	174	174	175			175	173	174	175							
1											3	1		4	4	625	EACH	LIGHT POLE, DESIGN T 12B 34.2	1
2										2	4			6	6		EACH	LIGHT POLE, DESIGN T 15B 34.2	2
3											1	1		2	2		EACH	LIGHT POLE, DESIGN T 15B 36.7	3
4											1	5		6	6		EACH	LIGHT POLE, DESIGN AT 8B 36.7	4
5												4		4	4		EACH	LIGHT POLE, DESIGN AT 15B 36.7	5
6	1	2						3						3	3		EACH	LIGHT POLE, DESIGN, T 10B 34.2D – "Wall-Mounted"	6
7			2					2						2	2		EACH	LIGHT POLE, DESIGN, T8B 34.2 – "Bridge-Mounted"	7
8				1				1						1	1		EACH	LIGHT POLE, DESIGN, T10B 34.2 – "Bridge-Mounted"	8
9										6	5			11	11		EACH	LIGHT POLE, DESIGN, AT 8B 34.2	9
10										2				2	2		EACH	LIGHT POLE, DESIGN, AT 10B 34.2	10
11									1	3	3	2	1	8	9		EACH	LIGHT POLE, DESIGN, AT 12B 34.2	11
12										3	6			9	9		EACH	LIGHT POLE, DESIGN, AT 15B 34.2	12
13									1				1		1		EACH	LIGHT POLE BRACKET, 15 FT.	13
14										1				1	1		EACH	LIGHT POLE BRACKET, 18 FT.	14
15									1	16	23	13	1	52	53		EACH	LIGHT POLE FOUNDATION, 24"X6'	15
16											2	10		12	12		EACH	LUMINAIRE, TYPE III, 1000 WATT, 713.11	16
17	1		2					3	1	17	11		1	31	32		EACH	LUMINAIRE, TYPE III, 400 WATT, 713.11	17
18		2		1				3	1		10	3	1	16	17		EACH	LUMINAIRE, TYPE II, 400 WATT, 713.11	18
19											2	10		12	12		EACH	LAMP, 700 WATT, 713.14 MERCURY	19
20	1	2	2	1				6	2	17	21	3	2	47	49		EACH	LAMP, 400 WATT, 713.14 MERCURY	20
21	1	2						3	1	16	23	13	1	55	56		EACH	GROUND ROD,	21
22			1					1						1	1		EACH	STRUCTURE GROUNDING SYSTEM for Bridge # 0111	22
23				1				1						1	1		EACH	STRUCTURE GROUNDING SYSTEM for Bridge # 0063	23
24									1	15	4	1	1	20	21		EACH	PULL BOX, 18" CIRCULAR, 713.09	24
25											3			3	3		EACH	PULL BOX, 24" CIRCULAR, 713.09	25
26					1			1						1	1		EACH	STRUCTURE GROUNDING SYSTEM for Bridge # 0.77	26
26A										1921	1,450			3371	3371		LIN. FT.	COMMON TRENCH, 12" WIDE BY 24" DEEP	26A
27			20	20	15	5		60	305	1856	3,290	2,000	305	7,206	7511	625	LIN. FT.	TRENCH, 2'-0" DEEP	27
28			2	1				3						3	3		EACH	JUNCTION BOX 18"x 8"x 6"	28
29	444	208	340	250	188	5		1,435		992	438			2,865	2,865		LIN. FT.	CONDUIT, 2" TYPE III, 713.04	29
30										441	233	47		721	721		LIN. FT.	CONDUIT, 3" TYPE III, 713.04	30
31											193			193	193		LIN. FT.	CONDUIT, 2" TYPE III, CONCRETE ENCASED	31
32									320	3129	4529	2,053	320	9,711	10,031		LIN. FT.	1½" DUCT ~ CABLE WITH 2-NO. 4 AWG., 600 V CABLES	32
33	928	456	740	540	396	10		3,070		3146	2934	114		9,264	9,264		LIN. FT.	NO. 4 AWG, 600 V, DISTRIBUTION CABLE	33
34	85	170	162	85				502	192	1984	2246	1,249	192	5,981	6,173		LIN. FT.	POLE & BRACKET CABLE, NO. 10 AWG.	34
35									2	24	12	2	2	38	40		EACH	CONNECTOR KIT, TYPE I	35
36	1	2	2	1				6	1	22	24	13	1	65	66		EACH	CONNECTOR KIT, TYPE II	36
37	1	2	2	1				6	1	22	24	13	1	65	66		EACH	CONNECTOR KIT, TYPE III	37
38									2	6	10		2	16	18		EACH	CONNECTOR KIT, TYPE VII B	38
39	1	2	2	1				6						6	6		SET	LIGHT POLE ANCHOR BOLTS for STRUCTURES, 713.01	39
40											LUMP			LUMP	LUMP	625	LUMP	SERVICE POLE & CONTROL CENTER	40
														LUMP	LUMP	625	LUMP	GAMEWELL FIRE ALARM SYSTEM	40A
41													LUMP	LUMP	LUMP	839	LUMP	HIGH VOLTAGE TEST	41
42											24			24	24	607	LIN. FT.	FENCE MODIFIED CL, AS PER PLAN ‡	42
43											1			1	1	607	EACH	8' GATE MODIFIED CL, AS PER PLAN ‡	43

‡ CARRIED FORWARD TO GENERAL SUMMARY, SHEET NO. 16

DESCRIPTION	PLOTTED	CHECKED
TOPOGRAPHY		
PROFILE		
PAVEMENT		
DRAINAGE		
QUANTITIES	9-4-72	PH 7-27-72

BRUNING 44-560 10943

LIGHTING GENERAL SUMMARY

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY MR 9-25-72
QUANTITIES CHECKED BY P.G.P. 9-27-72

JEFFERSON COUNTY
JEF - 43 - 0.42

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

REFERENCE NO.	LOCATION	SIDE	STATION	STATION	LIGHT POLE DESIGN T 15 B 36.1	DESIGN AT 8 B 36.7	DESIGN AT 15 B 36.7	DESIGN AT 8 B 34.2	DESIGN AT 10 B 34.2	DESIGN AT 12 B 34.2	DESIGN T 8 B 34.2	DESIGN T 10 B 34.2	DESIGN AT 15 B 34.2	DESIGN T 10 B 34.2 D	DESIGN T 12 B 34.2	DESIGN T 15 B 34.2	L.P. BRACKET 18 FT.	LIGHT POLE FOUNDATION 24" x 6'	LIGHT POLE BRACKET 15 FT.	LUMINAIRE TYPE III 1000 W	LUMINAIRE TYPE III 400 W	LUMINAIRE TYPE II 400 W	LAMP 700 W	LAMP 400 W	GROUND ROD	STRUCTURE GROUNDING SYSTEM - 0111	PULL BOX 18" CIRCULAR	STRUCTURE JUNCTION BOX 18"x8"x6"	STRUCTURE GROUNDING SYSTEM - 0063	STRUCTURE GROUNDING SYSTEM - 0.77	COMMON TRENCH 12" WIDE X 24" DEEP	24" DEEP TRENCH	CONDUIT - 2" TYPE III	CONDUIT - 3" TYPE III	CONDUIT - 2" TYPE III CONCRETE ENCASED	PREASSEMBLED DUCT - CABLE 600 V. 2 - NO. 4	DISTRIBUTION CIRCUIT CABLE 600 V. 1/C NO. 4	POLE & BRACKET CABLE NO. 10	CONNECTOR KIT TYPE I	CONNECTOR KIT TYPE II	CONNECTOR KIT TYPE III	CONNECTOR KIT TYPE VII B	PULL BOX 24" CIRCULAR	LIGHT POLE ANCHOR BOLTS for STRUCT.	SERVICE POLE & CONTROL CENTER
					EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	SET	LUMP
	SHEET NO.	173																																											
1	S.R. 43	LT.	822+52						1									1			1			1	1													89		1	1				
2	" "	LT.	822+52	823+00																											48					58									
3	" "	LT.	823+00																								1												2						
4	" "	LT.	823+00	824+13																											113			113			246								
5	" "	LT.	824+13																								1												2						
6	" "	LT.	824+13	825+15																											102					112									
7	" "	LT.	825+15							1								1			1			1	1													93		1	1				
8	" "	LT.	825+15	827+70																											255					265									
9	" "	LT.	827+70							1								1			1			1	1													93		1	1				
10	" "	LT.	827+70	829+00																											130					140									
11	S.R. 43	LT.	829+00																								1												2						
12	S.R. 43	LT.	829+00	829+65																												65		65			150								
13	" "	LT.	829+65																								1												2						
14	" "	LT.	829+65	830+55																												90				100									
15	" "	LT.	830+55					1										1			1			1	1													85		1	1				
16	" "	LT.	830+55	832+90																												235				245									
17	" "	LT.	832+90					1										1			1			1	1													85		1	1				
18	" "	LT.	832+90	835+25																												235				245									
19	" "	LT.	835+25					1										1			1			1	1													85		1	1				
20	" "	LT.	835+25	835+50																												25				35									
21	S.R. 43	RT./LT.	821+85	821+85																							2				62			62			144		4						
22	S.R. 43	LT.	821+85	822+52																											67					77									
23	" "	RT.	824+01														1				1			1														105		1	1				
24	" "	RT.	824+01	826+65																												244	244				508								
25	" "	RT.	826+65											1							1			1	1													85		1	1			1	
26	" "	RT.	826+65	828+20																												200	200				420								
27	" "	RT.	828+20																								1															2			
28	S.R. 43	RT.	828+20	4+50, LINE "D"																												30				40									
29	LINE "D"	RT.	4+50					1										1			1			1	1													85		1	1				
30	LINE "D"	RT.	4+50	5+00																												50				60									
31	" "	RT.	5+00																								1															2			
32	" "	RT.	5+00	6+23																											123					133									
33	" "	RT.	6+23											1								1		1	1													85		1	1			1	
34	" "	RT.	6+23	7+60																											137					147									
35	" "	RT.	7+96											1								1		1	1													85		1	1			1	
36	" "	RT.	7+96	9+68																											172		172				364								
37	LINE "D"	RT.	9+68					1										1			1			1	1													85		1	1				
	" "	RT.	7+60																								1												2						
	" "	RT.	7+60	7+96																											36		36				92								
38	LINE "D"	RT.	9+68	3+38, LINE "E"																												66		66			152								
39	" "	LT.	5+00																								1												2						
40	" "	L/R.	5+00	5+00																											31			31			82								
41	LINE "D"	L/R.	5+00	829+50 S.R. 43																											45					55									
42	S.R. 43	RT.	829+50										1					1			1			1	1													99		1	1				
43	S.R. 43	RT.	829+50	831+55																											205					215									
44	" "	RT.	831+55										1					1			1			1	1													99		1	1				
45	" "	RT.	831+55	834+05																											250					260									
46	" "	RT.	834+05													1		1			1			1	1													99		1	1				
47	S.R. 43	RT.	834+05	835+50																											145					155									
48	LINE "E"	RT.	1+85						1									1			1			1	1													89		1	1				
49	LINE "E"	RT.	1+85	3+38																												153				163									
50	" "	RT.	3+38																								1															2			
51	" "	RT.	3+38	4+85																												147				157									
52	" "	RT.	4+85													1		1			1			1	1													99		1	1				
53	" "	RT.	4+85	5+45																												60				70									
54	" "	RT.	5+45																								1												2						
55	" "	RT.	5+45	6+60																												10	115				250								
56	" "	RT.	6+60								1										1			1				1										81		1	1			1	
57	" "	RT.	6+60	8+35																													175				370								
58	" "	RT.	8+35								1										1			1				1										81		1	1			1	
59	" "	RT.	8+35	8+85																												10	50				120								
60	" "	RT.	8+85																								1												2						
61	" "	RT.	8+85	10+00																												115				125									
62																																													
63	LINE "E"	L/R.	10+00	10+00																												45		45			110								
64	" "	RT.	7+63																							1																			
65	LINE "E"	RT.	10+00																								1												2						
66	" "																																												
67	" "	LT.	10+00					1										1			1			1	1													85		1	1				
68	LINE "E"	RT.	10+00	11+50																												170				180									

DESCRIPTION | PLOTTED | INKED | CHECKED
GKS 4-8-70

BRUNING 44-560 10943

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY M.R. 9-25-72
QUANTITIES CHECKED BY P.G.P. 9-28-72

JEFFERSON COUNTY
JEF - 43 - 0.42

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

REFERENCE NO.	LOCATION	SIDE	STATION	STATION	LIGHT POLE DESIGN T15B 36.7	DESIGN AT8B 36.7	DESIGN AT15B 36.7	DESIGN AT8B 34.2	DESIGN AT10B 34.2	DESIGN AT12B 34.2	DESIGN T8B 34.2	DESIGN T10B 34.2	DESIGN AT15B 34.2	DESIGN T10B 34.2D	DESIGN T12B 34.2	DESIGN T15B 34.2	L.P. BRACKET 18 FT.	LIGHT POLE FOUNDATION 24" x 6'	LIGHT POLE BRACKET 15 FT.	LUMINAIRE TYPE III 1000 W	LUMINAIRE TYPE III 400 W	LUMINAIRE TYPE II 400 W	LAMP 700 W	LAMP 400 W	GROUND ROD	STRUCTURE GROUNDING SYSTEM - 0111	PULL BOX 18" CIRCULAR	STRUCTURE JUNCTION BOX 18"x8"x6"	STRUCTURE GROUNDING SYSTEM - 0063	STRUCTURE GROUNDING SYSTEM - 0.77	COMMON TRENCH 12" WIDE X 24" DEEP	24" DEEP TRENCH	CONDUIT - 2" TYPE III	CONDUIT - 3" TYPE III	CONDUIT - 2" TYPE III CONCRETE ENCASED	PREASSEMBLED DUCT - CABLE 600 V. 2 - NO. 4	DISTRIBUTION CIRCUIT CABLE 600 V. 1/C NO. 4	POLE & BRACKET CABLE NO. 10	CONNECTOR KIT TYPE I	CONNECTOR KIT TYPE II	CONNECTOR KIT TYPE III	CONNECTOR KIT TYPE VII B	PULL BOX 24" CIRCULAR	LIGHT POLE ANCHOR BOLTS for STRUCT.	SERVICE POLE & CONTROL CENTER
					EACH												EACH			EACH					EACH						LIN. FT.		LIN. FT.			LIN. FT.		LIN. FT.	EACH				EACH	SET	LUMP
	SHEET NO.	173	CONTINUED																																										
69	LINE "E"																																												
70	" "																																												
71	" "	RT.	11+50										1					1			1			1	1													99		1	1				
72	" "	L/R	11+50	11+50																												59		59			138								
73	" "	LT.	11+50																								1												2						
74	LINE "E"	LT.	11+50	10+42 BELLEVIEW BLVD.																												82				92									
75	BELLEVIEW BLVD.	LT.	10+42							1								1			1			1	1													93		1	1				
	TOTALS ~ SHEET NO. 173							6	2	3	2		3	3		2	1	16			20	2		22	19	1	15	2			1921	1856	992	441		3129	3146	1984	24	22	22	6		5	
	SHEET NO.	174																																											
76	S.R. 43	LT.	835+50	837+18																												168				168									
77	" "	LT.	837+18					1										1			1			1	1													85		1	1				
78	" "	LT.	837+18	838+50																												132				142									
79	" "	LT.	838+50																								1												4						
80	S.R. 43	LT.	838+50	839+30 LINE "A"																												80				90									
81	LINE "A"	LT.	848+04																										1																
82	LINE "A"	LT.	839+30					1										1			1			1	1													85		1	1				
83	" "	LT.	839+30	840+70																												140				150									
84	" "																																												
85	" "	LT.	840+70	841+50																												80				90									
86	" "	LT.	841+50					1										1				1		1	1													85		1	1	2			
87	" "	LT.	841+50	843+68																												218				228									
88	" "	LT.	843+68					1										1				1		1	1													85		1	1				
89	" "	LT.	843+68	845+65																												197				207									
90	" "	LT.	845+65					1										1				1		1	1													85		1	1				
91	" "	LT.	845+65	846+65																												100				110									
92	" "	LT.	846+65																								1												2						
93	" "	LT.	846+65	847+40																												10	75				170								
94	" "	LT.	847+40									1										1		1				1										85		1	1			1	
95	" "	LT.	847+40	849+15																												10	175				370								
96	" "																																												
97	" "																																												
98	" "	LT.	849+25												1			1				1		1	1													93		1	1				
99	" "	LT.	849+25	850+92																												167				177									
100	" "	LT.	850+92												1			1				1		1	1													93		1	1				
101	" "	LT.	850+92	851+12																												20				30									
102	" "	LT.	851+12																								1												2						
103	" "	LT.	851+12	853+00																												15	188				396								
104	" "																																												
105	LINE "A"	L/R	841+50	841+55																												55		55			130								
105A	LINE "A"	LT.	852+39																											1															
106	S.R. 43																																												
107	" "	LT.	841+55										1					1			1			1	1													99		1	1	2			
108	" "	LT.	841+55	843+60																												205				215									
109	" "	LT.	843+60										1					1			1			1	1													99		1	1				
110	" "	LT.	843+60	845+80																												220				230									
111	" "	LT.	845+80										1					1			1			1	1													99		1	1				
112	" "	LT.	845+80	848+31																												251				261									
113	" "	LT.	848+31			1												1		1			1		1													90		1	1				
114	" "	LT.	848+31	850+00																												169				179									
115	" "	RT.	835+50	836+18																											68					68									
116	" "	RT.	836+18													1		1			1			1	1													99		1	1				
117	" "	RT.	836+18	838+12																											194					204									
118	" "	RT.	838+12													1		1			1			1	1													99		1	1				
119	" "	RT.	838+12	838+50																											38					48									
120	" "	RT.	838+50																																				4			2	1		
121	S.R. 43	L/R	838+50	838+50																												108		108			472								
122	MARKET ST.	LT.	839+14																																										1
123	" "	L/R	839+14	838+50 S.R. 43																												193			193		1,236						4		
124	S.R. 43	RT.	838+50	840+30																											180					190									
125	" "	RT.	840+30													1		1			1			1	1													99		1	1				
126	" "	RT.	840+30	841+60																											130					140									
127	" "	RT.	841+60																								1															2			
128	" "	RT.	841+60	842+60																											100					110									
129	" "	RT.	842+60													1		1			1			1	1													99		1	1				
130	S.R. 43	RT.	842+60	844+33 LINE "B"																											173					173									
131	LINE "B"																																												
132	" "																																												
133	LINE "B"	RT.	844+33												1			1				1		1	1													93		1	1				
134	LINE "B"	RT.	844+33	846+13																											180					190									

BRUNING 44-560 10943

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY M.R. 9-25-72
QUANTITIES CHECKED BY P.G.P. 9-28-72

JEFFERSON COUNTY
JEF - 43 - 0.42

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

Reference No.	Location	Side	Station	Station	Light Pole Design T15B 36.7	Design AT8B 36.7	Design AT15B 36.7	Design AT8B 34.2	Design AT10B 34.2	Design AT12B 34.2	Design T8B 34.2	Design T10B 34.2	Design AT15B 34.2	Design T10B 34.2D	Design T12B 34.2	Design T15B 34.2	L.P. Bracket 18 Ft.	Light Pole Foundation 24" x 6'	Light Pole Bracket 15 Ft.	Luminaire Type III 1000 W	Luminaire Type III 400 W	Luminaire Type II 400 W	Lamp 700 W	Lamp 400 W	Ground Rod	Structure Grounding System - 0111	Pull Box 18" Circular	Structure Junction Box 18" x 8" x 6"	Structure Grounding System - 0063	Structure Grounding System - 0.77	Common Trench 12" Wide x 24" Deep	24" Deep Trench	Conduit - 2" Type III	Conduit - 3" Type III	Conduit 2" Type III Concrete Encased	Preassembled Duct - Cable 600 V. 2 - No. 4	Distribution Circuit Cable 600 V. 1/C No. 4	Pole & Bracket Cable No. 10	Connector Kit Type I	Connector Kit Type II	Connector Kit Type III	Connector Kit Type VII B	Pull Box 24" Circular	Light Pole Anchor Bolts for Struct.	Service Pole & Control Center
					EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	SET	LUMP
	SHEET NO.	174	CONTINUED																																										
135	LINE "B"	RT.	846+13							1								1				1		1	1													93		1	1				
136	" "	RT.	846+13	847+93																											180					190									
137	" "	RT.	847+93							1								1				1		1	1													93		1	1				
138	" "	RT.	847+93	849+74																											181					191									
139	" "	RT.	849+74										1					1				1		1	1													93		1	1				
140	" "	RT.	849+74	851+32																											26	132				168									
141	" "	RT.	851+32							1								1				1		1	1													93		1	1				
142	" "	L/R	844+	844+																												70		70			160								
143	" "																																												
144	LINE "B"																																												
145	S.R. 43	RT.	844+50										1					1			1			1	1													99		1	1				
146	" "	RT.	844+50	847+10																												260				270									
147	" "	RT.	847+10										1					1			1			1	1													99		1	1	2			
148	" "	RT.	847+10	849+30																												220				230									
149	" "	RT.	849+30		1													1		1			1		1													104		1	1				
150	S.R. 43	RT.	849+30	850+00																												70				80									
	TOTALS ~ SHEET NO.174				1	1		5		3		1	6		3	4		23		2	11	11	2	22	23		4	1	1	1	1450	3290	438	233	193	4529	2934	2246	12	24	24	10	3	1	1
	SHEET NO.	175																																											
151	S.R. 43	LT.	850+00	850+10																												10				10									
152	" "	LT.	850+10			1												1		1			1		1													90		1	1				
153	" "	LT.	850+10	851+80																												170				180									
154	" "	LT.	851+80			1												1		1			1		1													90		1	1				
155	" "	LT.	851+80	853+50																												170				180									
156	" "	LT.	853+50			1												1		1			1		1													90		1	1				
157	" "	LT.	853+50	855+10																												160				170									
158	" "	LT.	855+10			1												1		1			1		1													90		1	1				
159	" "	LT.	855+10	855+14 LINE "F"																												47		47			114								
162	LINE "F"	LT.	855+14																								1												2						
163	LINE "F"	LT.	855+14	856+81 S.R. 43																												173				183									
164	S.R. 43	LT.	856+81				1											1		1			1		1													104		1	1				
165	" "	RT.	850+00	850+95																												95				95									
166	" "	RT.	850+95		1													1		1			1		1													104		1	1				
167	" "	RT.	850+95	852+65																												170				180									
168	" "	RT.	852+65				1											1		1			1		1													104		1	1				
169	" "	RT.	852+65	854+35																												170				180									
170	" "	RT.	854+35				1											1		1			1		1													104		1	1				
171	" "	RT.	854+35	855+95																												160				170									
172	" "	RT.	855+95				1											1		1			1		1													104		1	1				
177	S.R. 43	RT.	855+95	857+80																												185				195									
178	S.R. 43	RT.	857+80			1												1		1			1		1													90		1	1				
179	LINE "A"	LT.	853+00	853+05																												5	5				10								
180	" "																																												
181	" "																																												
182	" "	LT.	853+15												1			1				1		1	1													93		1	1				
183	" "	LT.	853+15	855+30																												215				225									
184	" "	LT.	855+30							1								1				1		1	1													93		1	1				
185	" "	LT.	855+30	857+30																												200				210									
186	" "	LT.	857+30							1								1				1		1	1													93		1	1				
187	" "	LT.	857+30	858+00																												70				75									
188	" "	LT.	859+18							**1								**1				**1		**1	**1													**93		**1	**1				
189	" "	LT.	859+18	861+05																												**187				**197									
190	" "	LT.	861+05																								**1												**2						
191	LINE "A"	LT.	861+15																**1		**1			**1														**99				**2			
192	LINE "A"	LT.	858+00	859+18																												**118				**123									
	TOTALS of 100% City Steubenville									**1								**1	**1		**1	**1		**2	**1		**1					**305				**320		**192	**2	**1	**1	**2			
	TOTALS SHEET NO.175				1	5	4			2					1			13		10		3	10	3	13		1					2,000	5	47		2053	124	1,249	2	13	13				

** Denotes 100% City of Steubenville

BRUNING 44-560 10943

LIGHTING SUB SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42

~LEGEND~

- 1000 W. LUMINAIRE WITH 700 W MERCURY CLEAR LAMP - IES TYPE III, MEDIUM CUT OFF ~ 36.7' M.H.
- 400 W LUMINAIRE WITH 400 W LAMP-IES TYPE III MEDIUM CUT OFF ~ 34.2' M.H.
- 400 W LUMINAIRE WITH 400 W LAMP - IES TYPE II MEDIUM CUT OFF ~ 34.2' M.H.
- EXISTING LIGHT POLE ~ LUMINAIRE AS DESIGNATED
- PULL BOX
- RIGID METAL CONDUIT
- PREASSEMBLED DUCT-CABLE, 2-#4 UNLESS OTHERWISE NOTED
- SERVICE POLE AND CONTROL CENTER
- OVERHEAD ILLUMINATED SIGN
- #4 DENOTES AWG CABLE SIZE
- GUARD RAIL
- STRUCTURE GROUND POINT

CIRCUIT LETTER
POLE NUMBER IN THE CIRCUIT
C-3
4+50, 6.5'
OFFSET OF ℄ OF POLE FROM EDGE OF PAVEMENT
STATION

AT8B 34.2 D = LIGHT POLE DESIGN NUMBER
See Sheet No. 176

DESIGN CRITERIA: FROM THE EXISTING INTENSITY OF 5.0 F.C. ON THE ADJACENT EASTERN PROJECT AT STA. 858+88, A TRANSITIONAL INTENSITY OF 2.5 F.C. TO STA. 848+00 AND THEREAFTER INITIAL INTENSITY 1.2 F.C. TO STA. 821+00; UNIFORMITY 6:1 MAX., POWER 1 φ 480 VOLTS 2 WIRE.

GAMEWELL, FIRE ALARM SYSTEM

- EXISTING UNDERGROUND CABLE
- PROPOSED UNDERGROUND CABLE
- F — EXISTING AERIAL CABLE TO BE USED
- EXISTING POLE TO BE USED
- NEW UTILITY POLE
- FIRE ALARM BOX PEDESTAL TYPE
- × FIRE ALARM BOX POLE TYPE

NOTE: FOR GAMEWELL, FIRE ALARM SYSTEM GENERAL NOTES AND DETAILS SEE SHEET 168 A.

LIGHTING PLAN - S.R. 43 - STA 820+00 TO STA 835+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42

LIGHTING PLAN ~ S.R. 43 ~ STA. 835+00 TO STA. 850+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

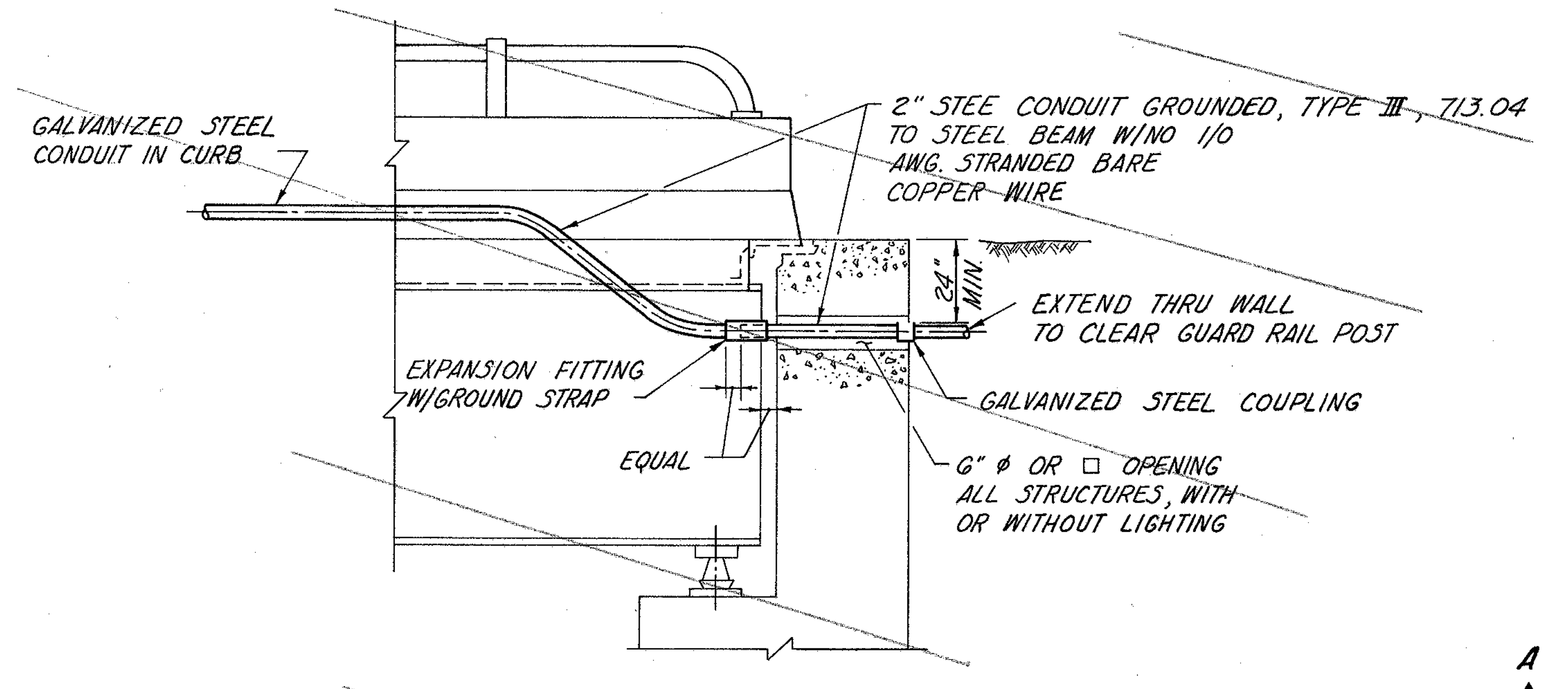
JEFFERSON COUNTY
JEF-43-0.42

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
ALIGNMENT			G.M.	5-2-66		
DRAINAGE			G.M.	5-2-66		
R/W						
QUANTITIES						

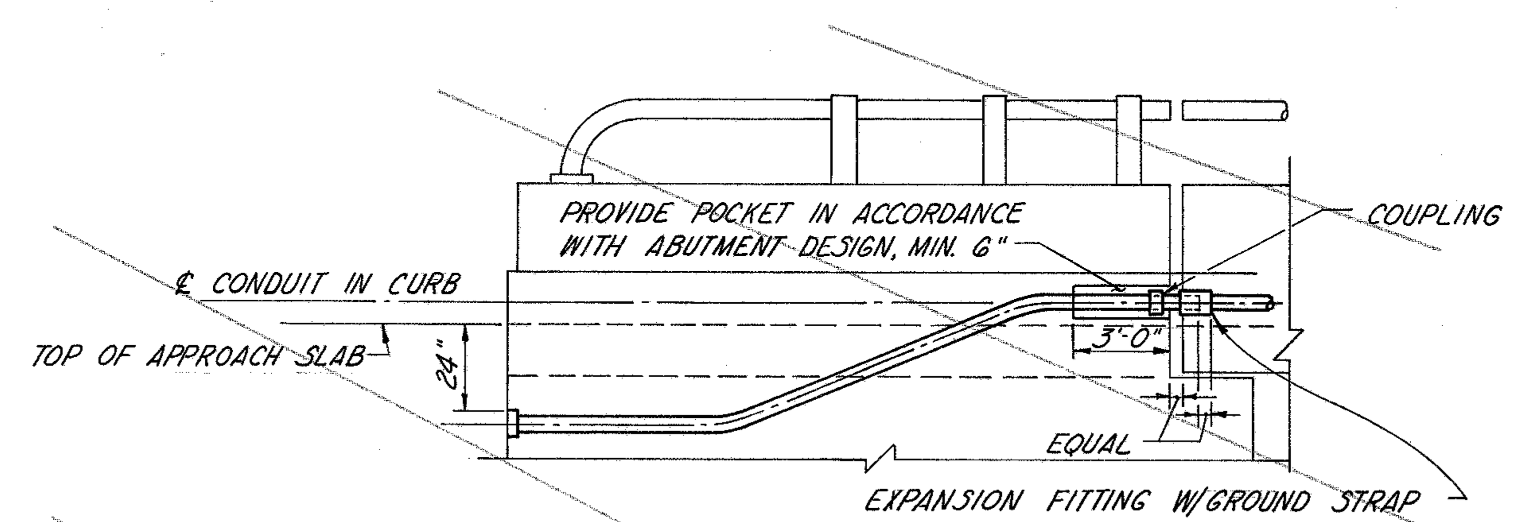
LIGHTING PLAN ~ S.R. 43 STA. 850+00 TO STA. 858+87.86
AND STA. 853+00 TO ADAMS STREET

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

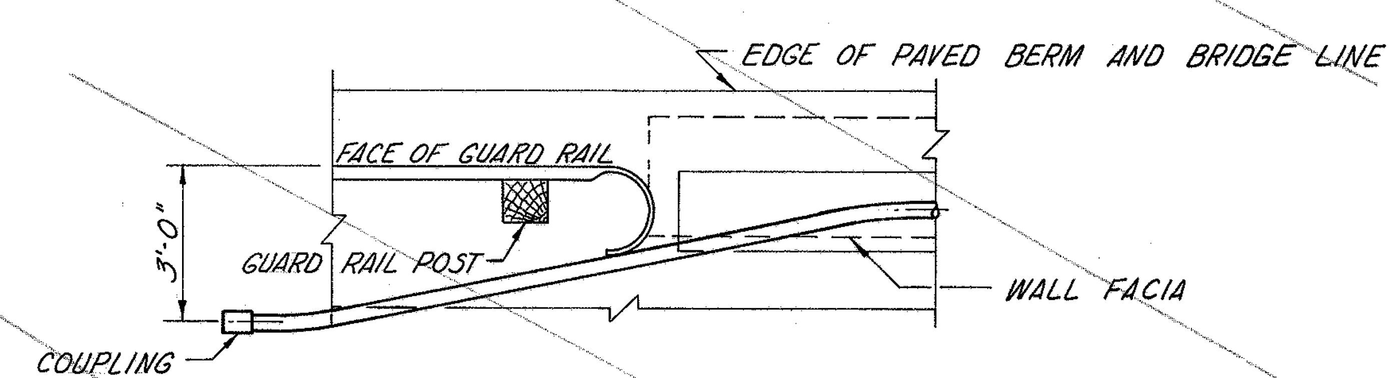
JEFFERSON COUNTY
JEF ~ 43 ~ 0.42



ELEVATION WITHOUT WINGWALL

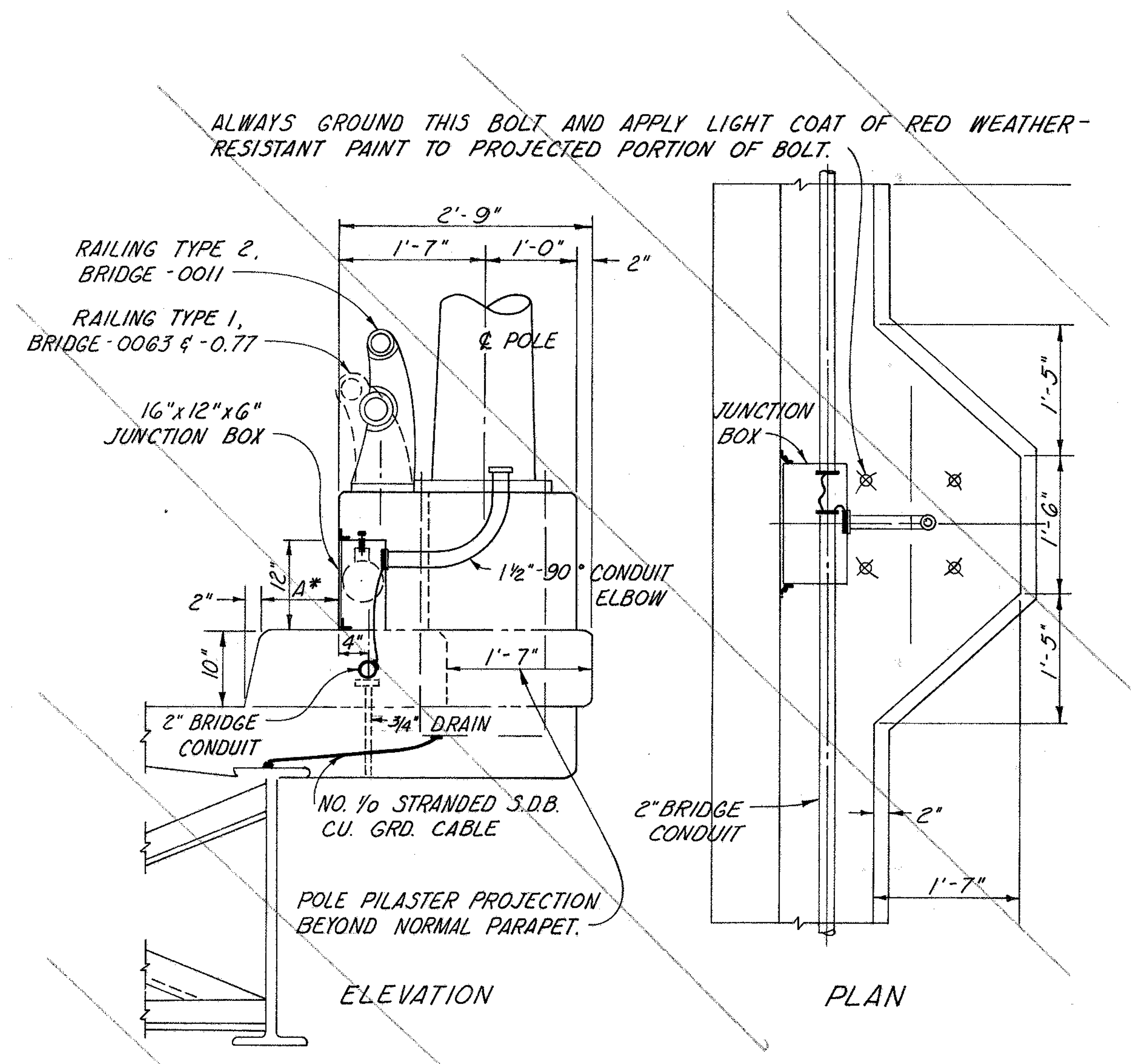


ELEVATION WITH WINGWALL



PLAN ~ CONDUIT ENTERING BRIDGE ABUTMENT

SUPER - STRUCTURE ABUTMENT CONDUIT

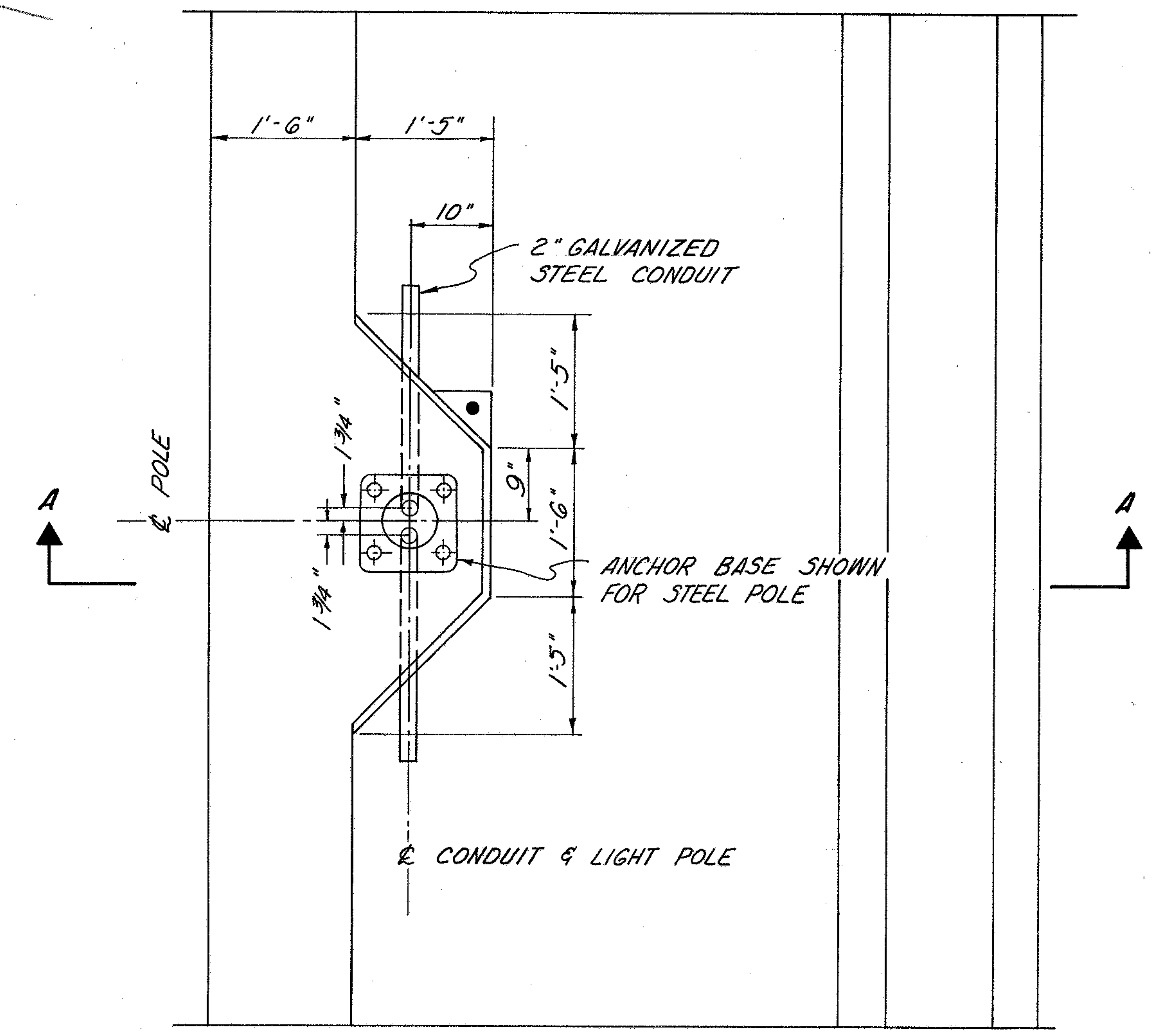


* A = 5'-0" FOR BRIDGE JEF-43-0111
A = 1'-0" FOR BRIDGE JEF-43-0063 & 0.77

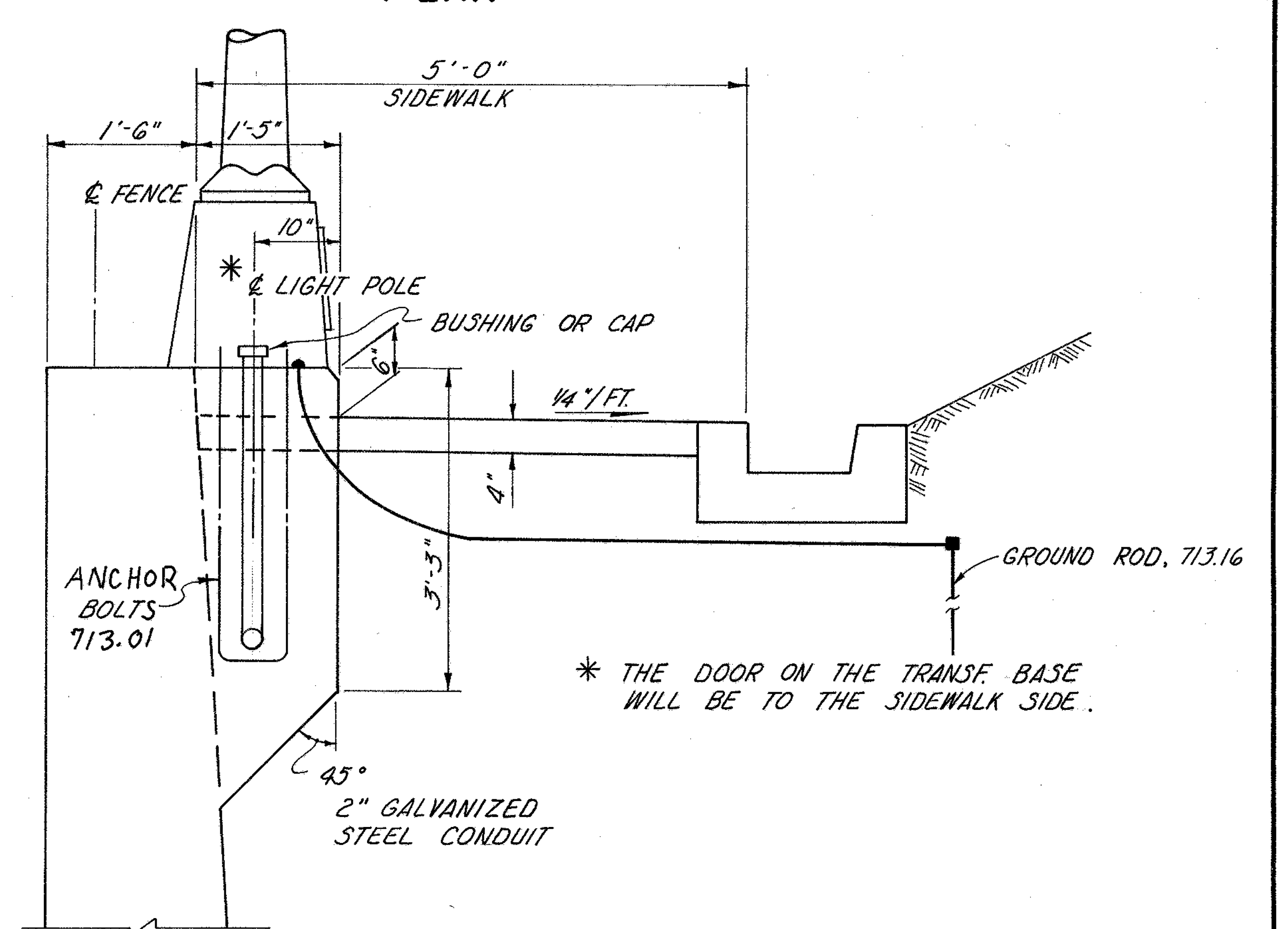
NOTE :
SEE SHEET # 179 FOR ANCHOR BOLT DIMENSIONS.

LIGHT POLE FOUNDATION FOR BRIDGE WITH SIDEWALK

TYPE "B" RACEWAY

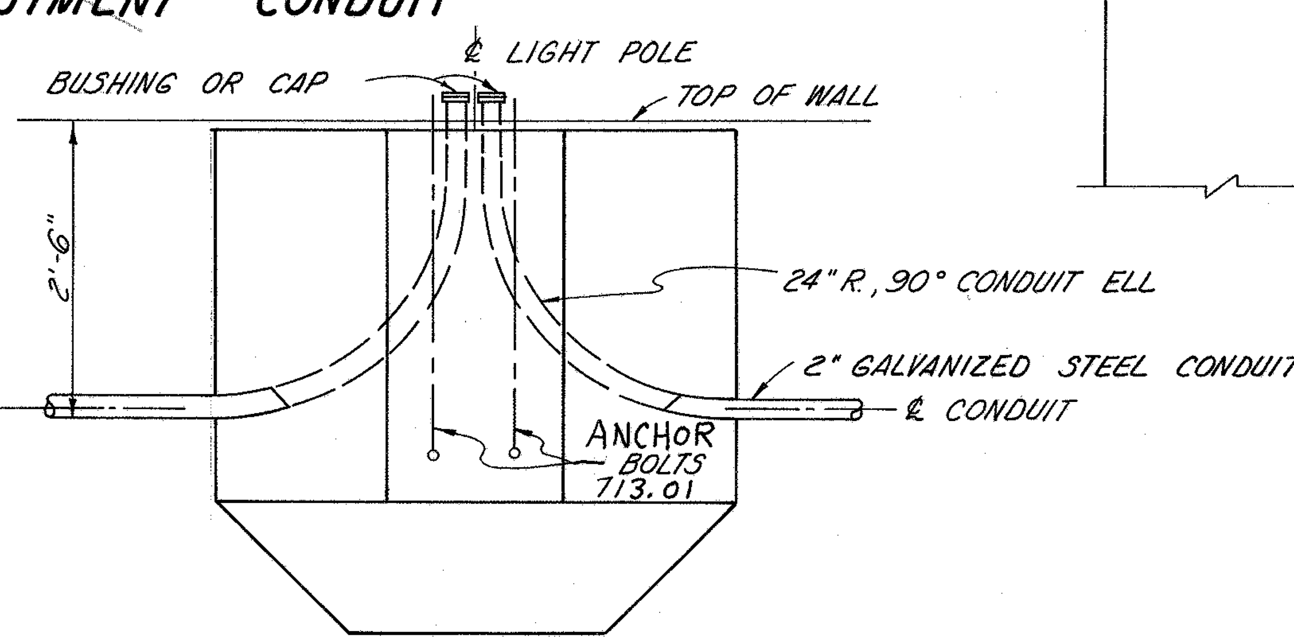


PLAN



* THE DOOR ON THE TRANSF. BASE WILL BE TO THE SIDEWALK SIDE.

SECTION A ~ A



BACK SIDE ELEVATION

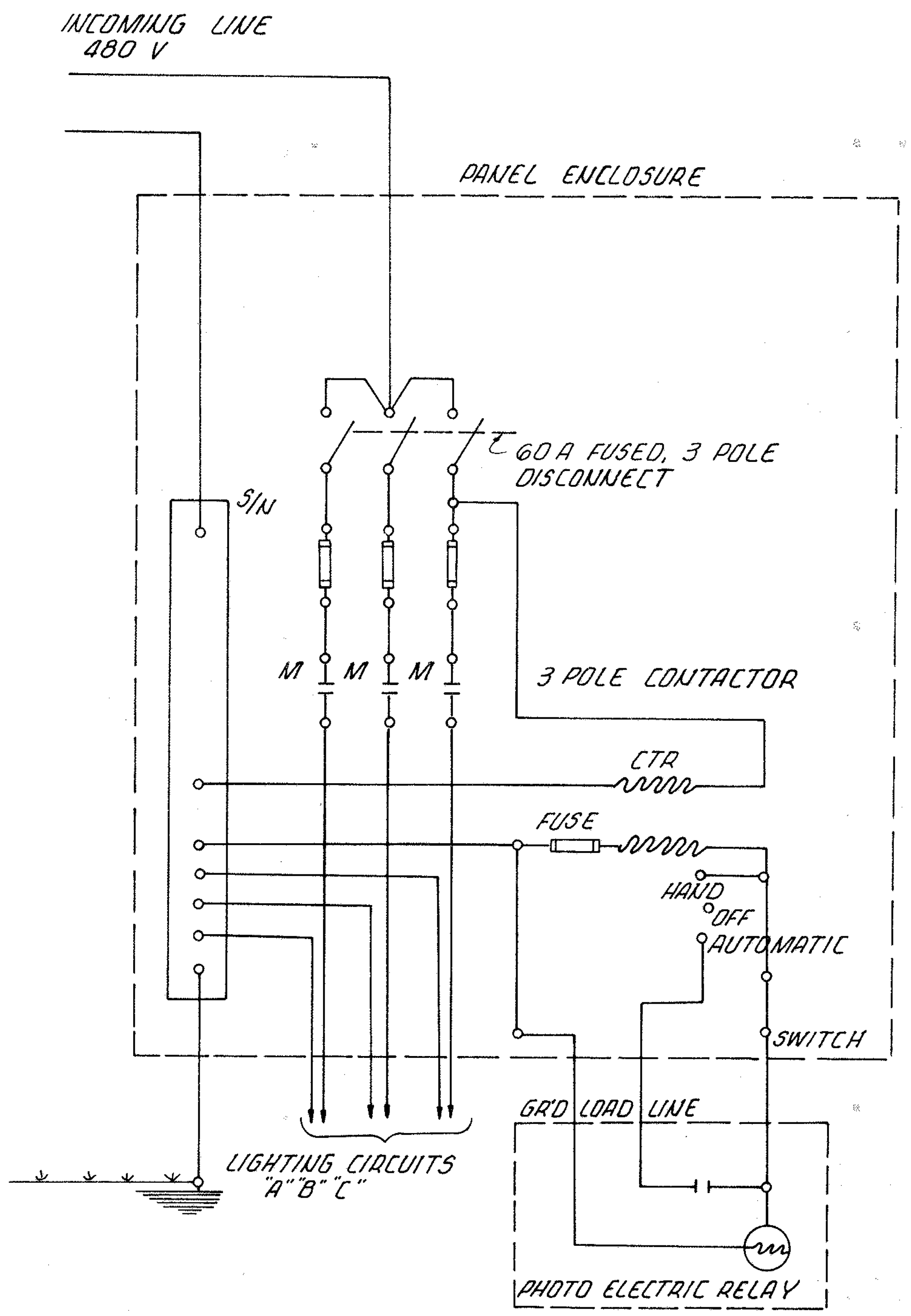
FOR LIGHTS C-2, C-4 & C-5 POLES MADE FROM SHAFT SIZE 8.0"x 3.87"x 29'-6"

LIGHT C-2 : SHAFT SIZE 8.0" x 6.21" x 12'-9"
LIGHT C-4 : " " 8.0" x 4.32" x 26'-3"
LIGHT C-5 : " " 8.0" x 5.10" x 20'-9"

RETAINING WALL LIGHT POLE MOUNTING

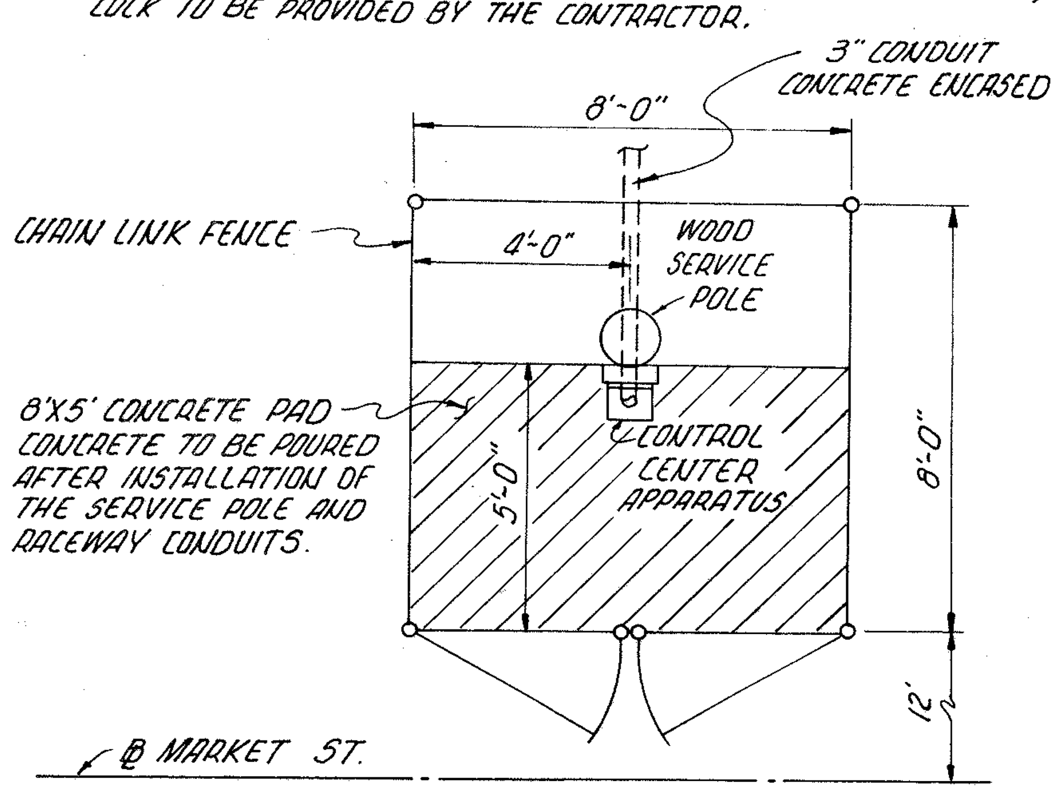
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF ~43~ 0.42

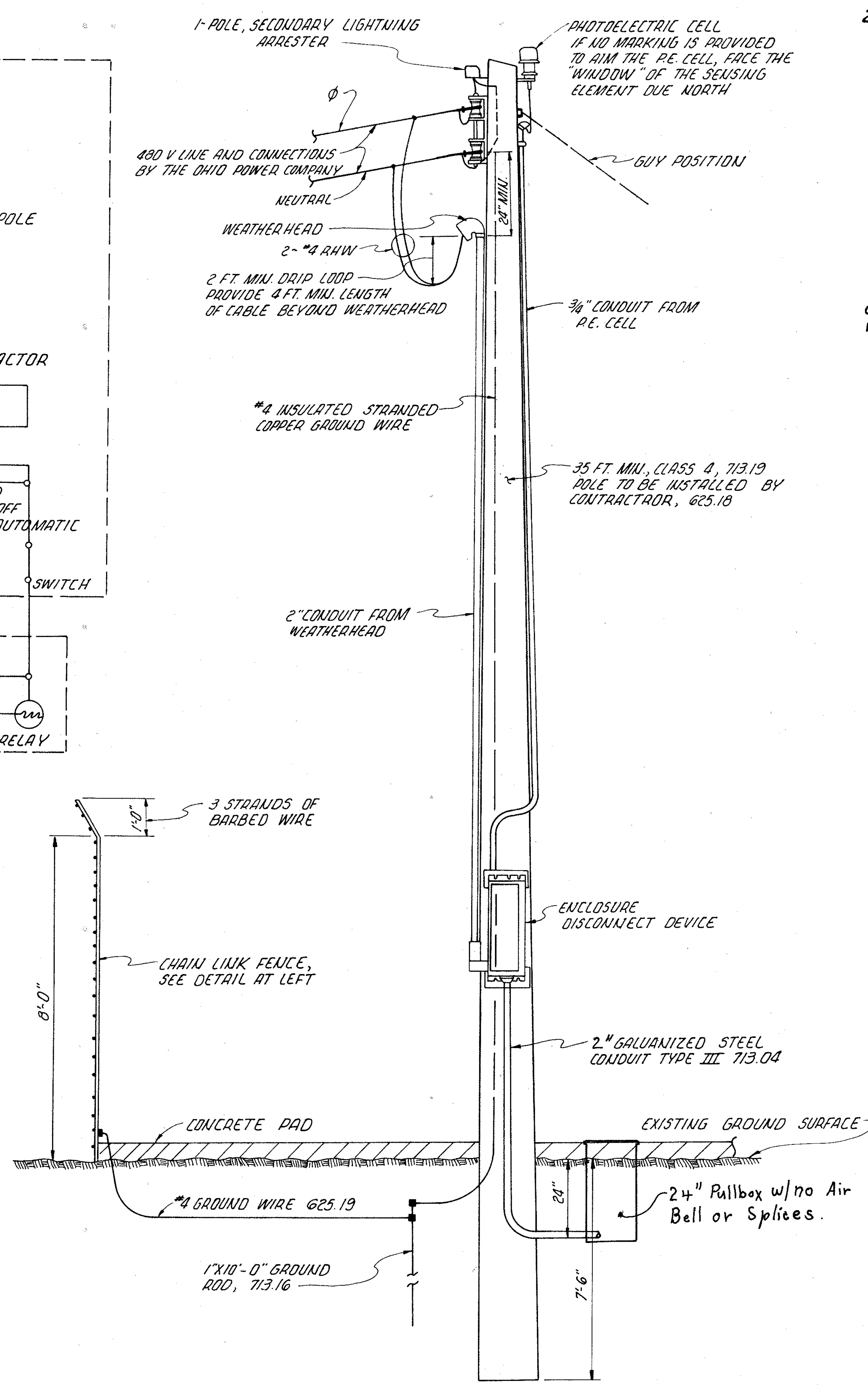


SCHEMATIC WIRING DIAGRAM CONTROLLER

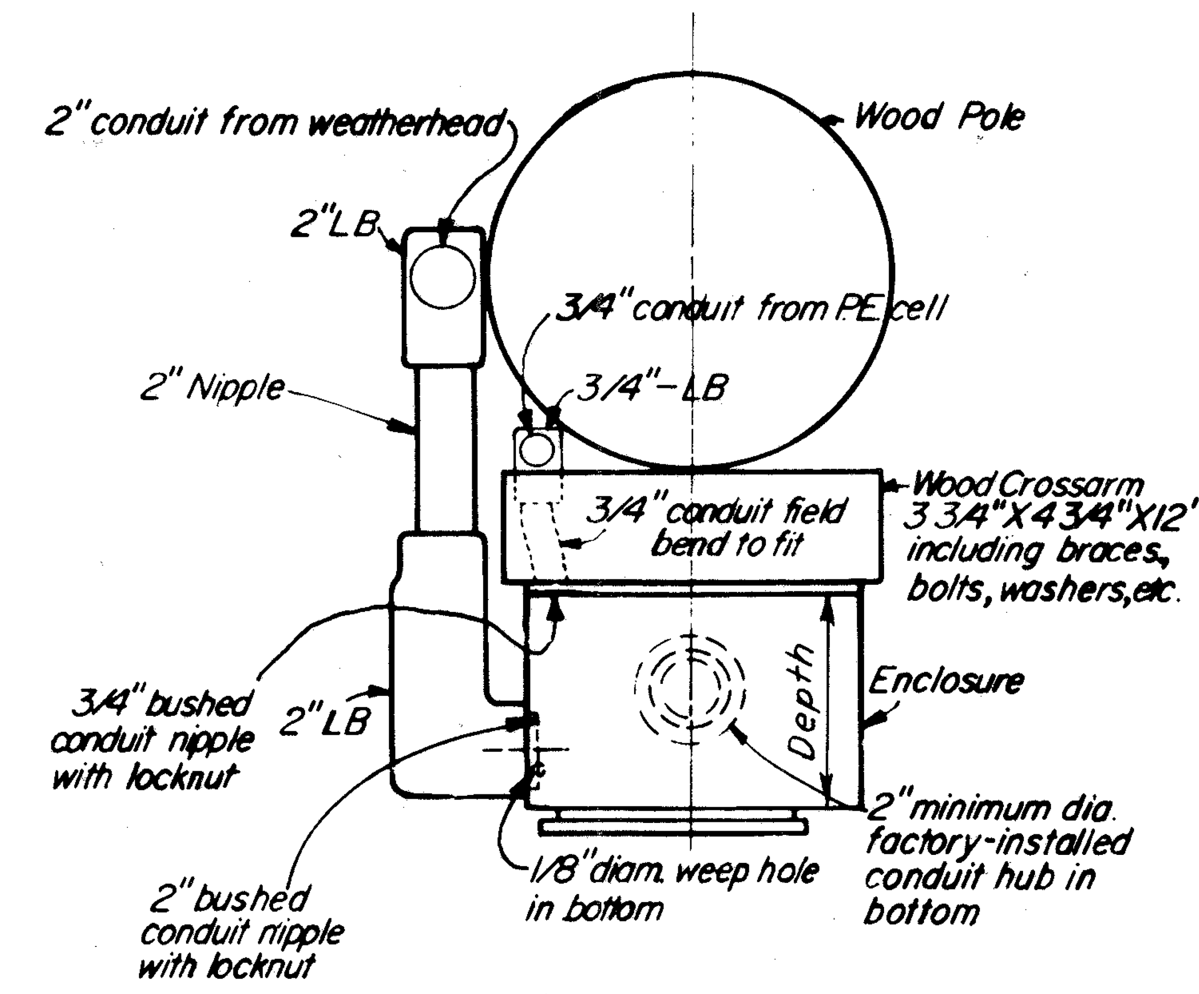
NOTE:
FENCE SHALL BE AN 8'X8' ENCLOSURE AND 8' WIDE DOUBLE GATE. THE CHAIN LINK FENCE AND GATE SHALL BE 8' HIGH PLUS A 1' ARM WITH 3 STRAND BARBED WIRE MOUNTED 45° AT THE TOP AS PER 710.01.
MATERIAL AND CONSTRUCTION SHALL CONFORM TO ITEM 607, LOCK TO BE PROVIDED BY THE CONTRACTOR.



GATE FACING TO MARKET ST.
CHAIN LINK FENCE LAYOUT
FOR CONTROL CENTER



SERVICE POLE AND CONTROL CENTER
WITH 1-60 AMP. CONTROLLER



PLAN
SINGLE ENCLOSURE

NOTES

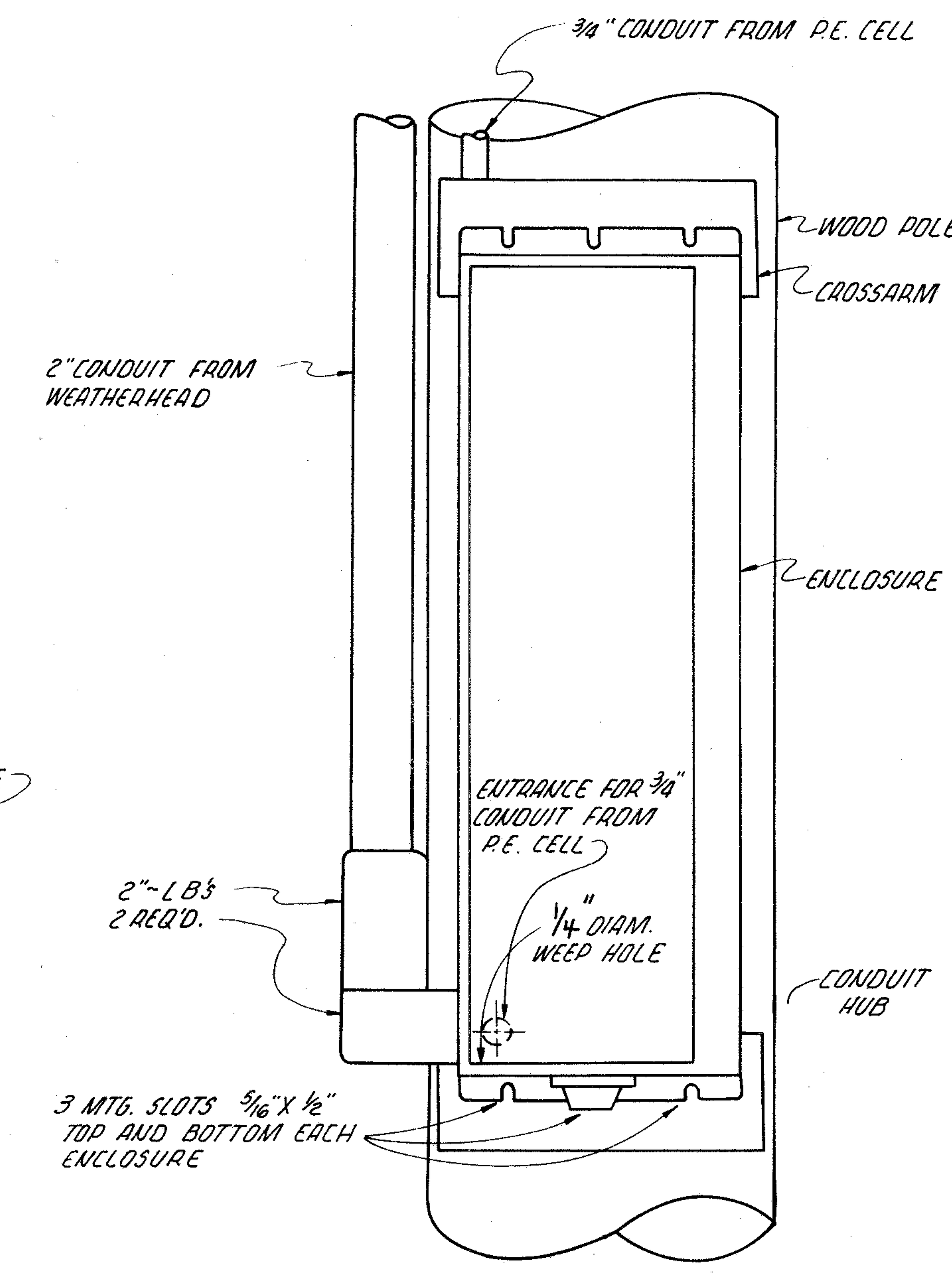
1. All openings in enclosures shall be made by fabricator.

ENCLOSURE TYPES

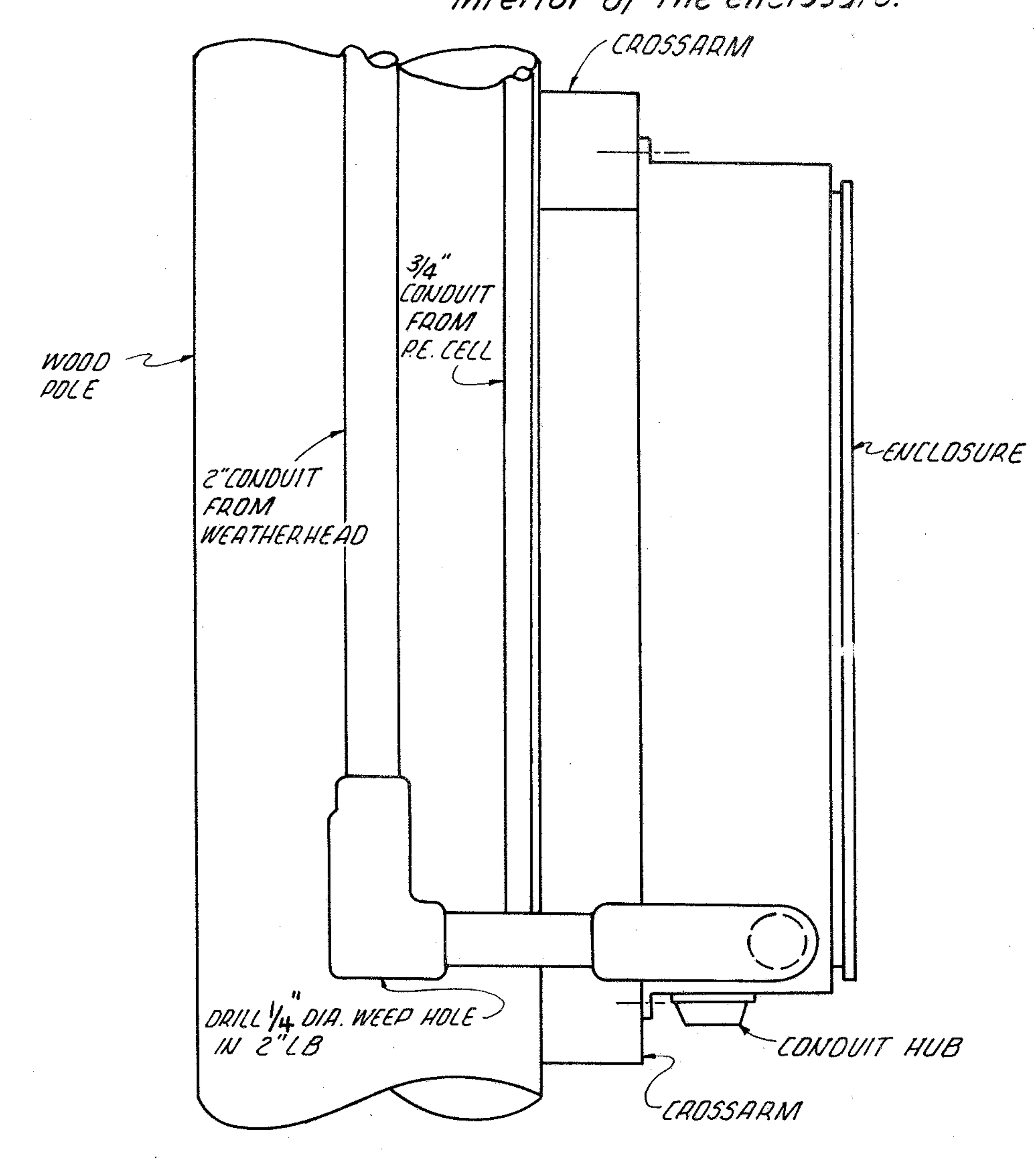
MINIMUM INTERIOR DIMENSIONS

TYPE NO.	PRINCIPLE CONTENTS	WIDTH	HEIGHT	DEPTH*
S-30/60	30 or 60 ampere fused switch.	10 1/2"	18"	6 9/16"
S-100	100 ampere fused switch.	14"	20"	8"
SC-30/60	30 or 60 ampere combination fused switch & contactor.	10 7/16"	32 7/16"	7 5/8"
SC-100	100 ampere combination fused switch & contactor.	14"	41"	8 1/8"

*See "PLAN" view of Single Enclosure. The interior depth dimension shall not include any part of the enclosure door which may protrude into the interior of the enclosure.



FRONT ELEVATION

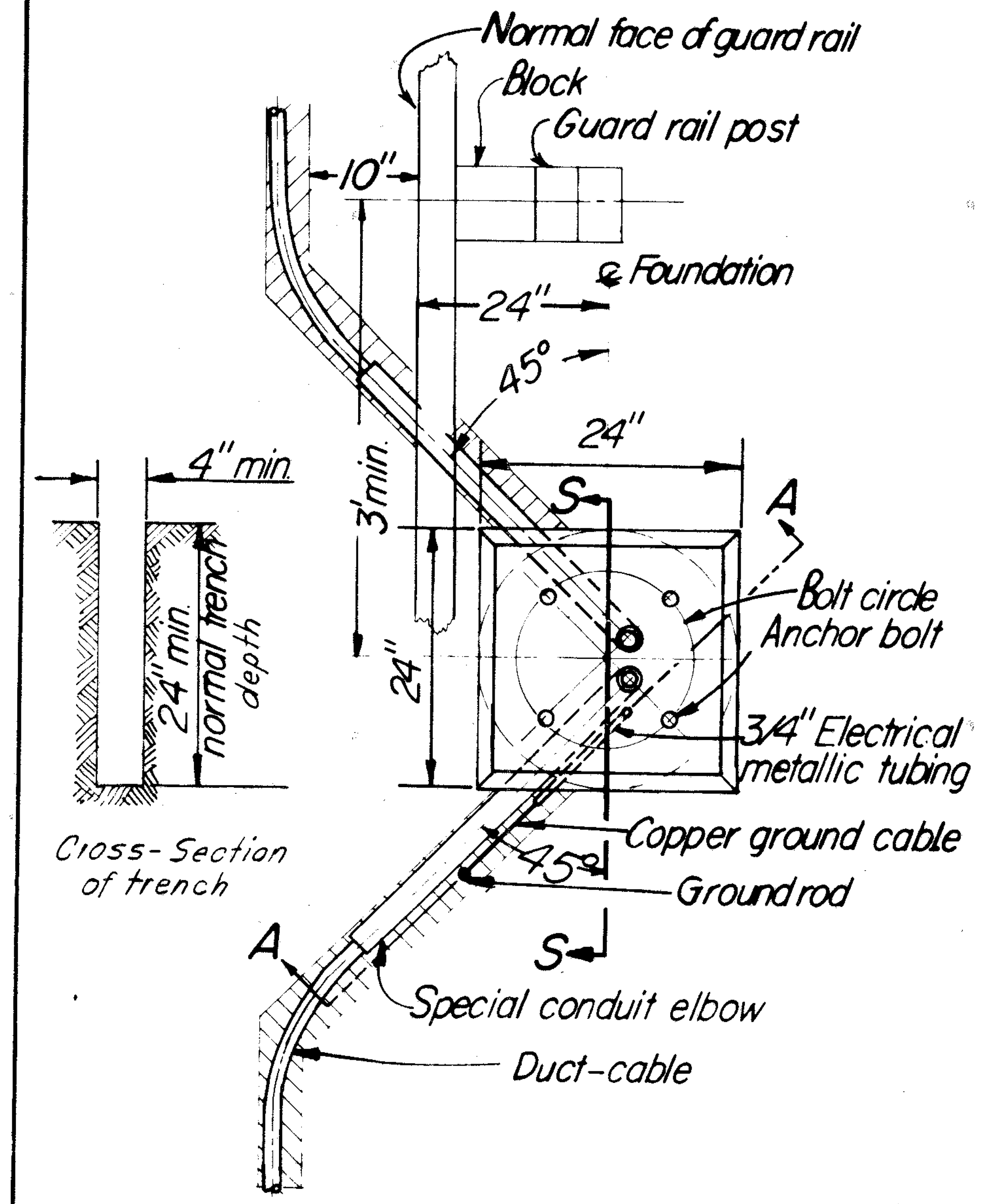


LEFT SIDE VIEW

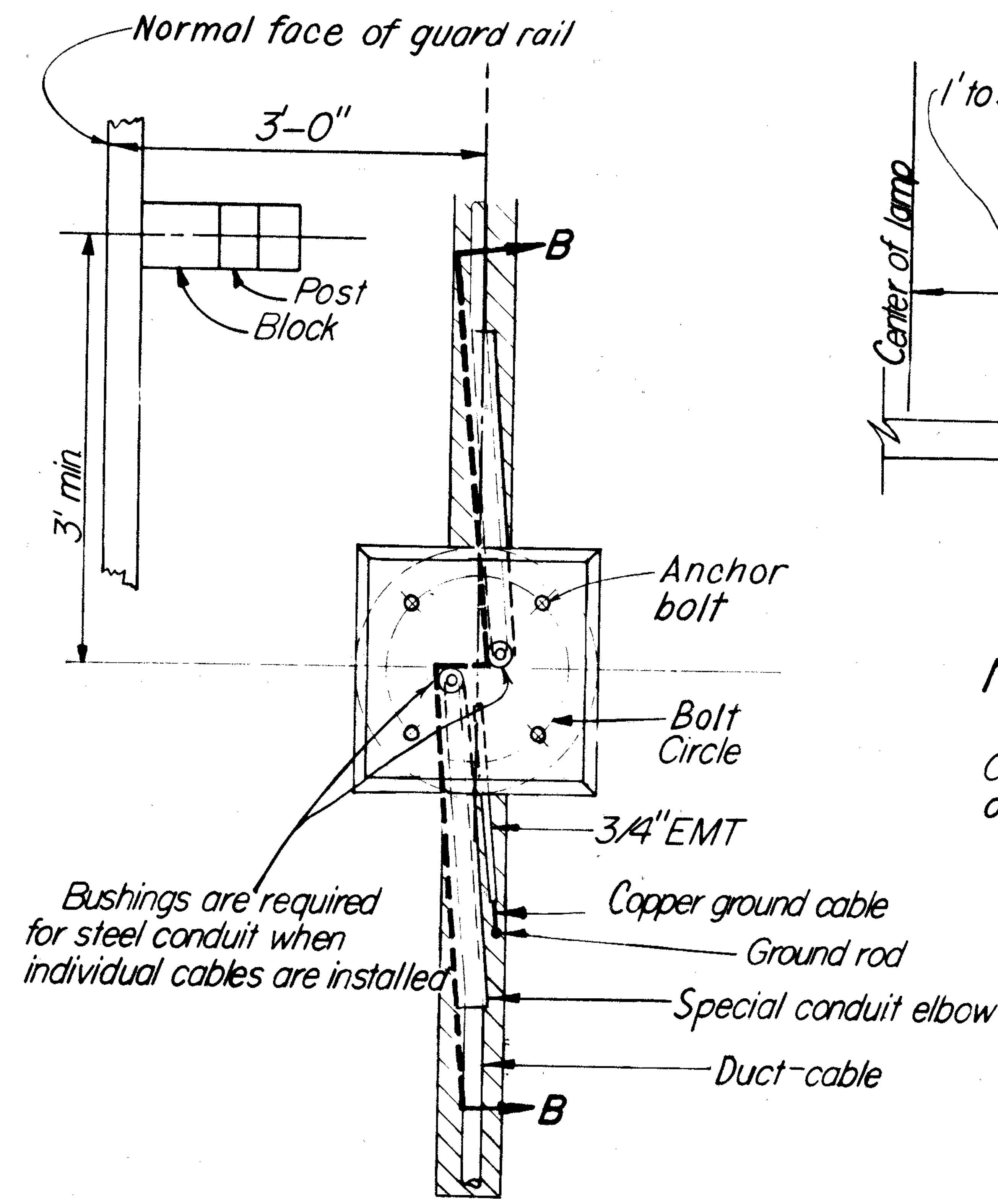
SERVICE POLE AND CONTROL CENTER

FOUNDATION AND TRENCH DETAILS

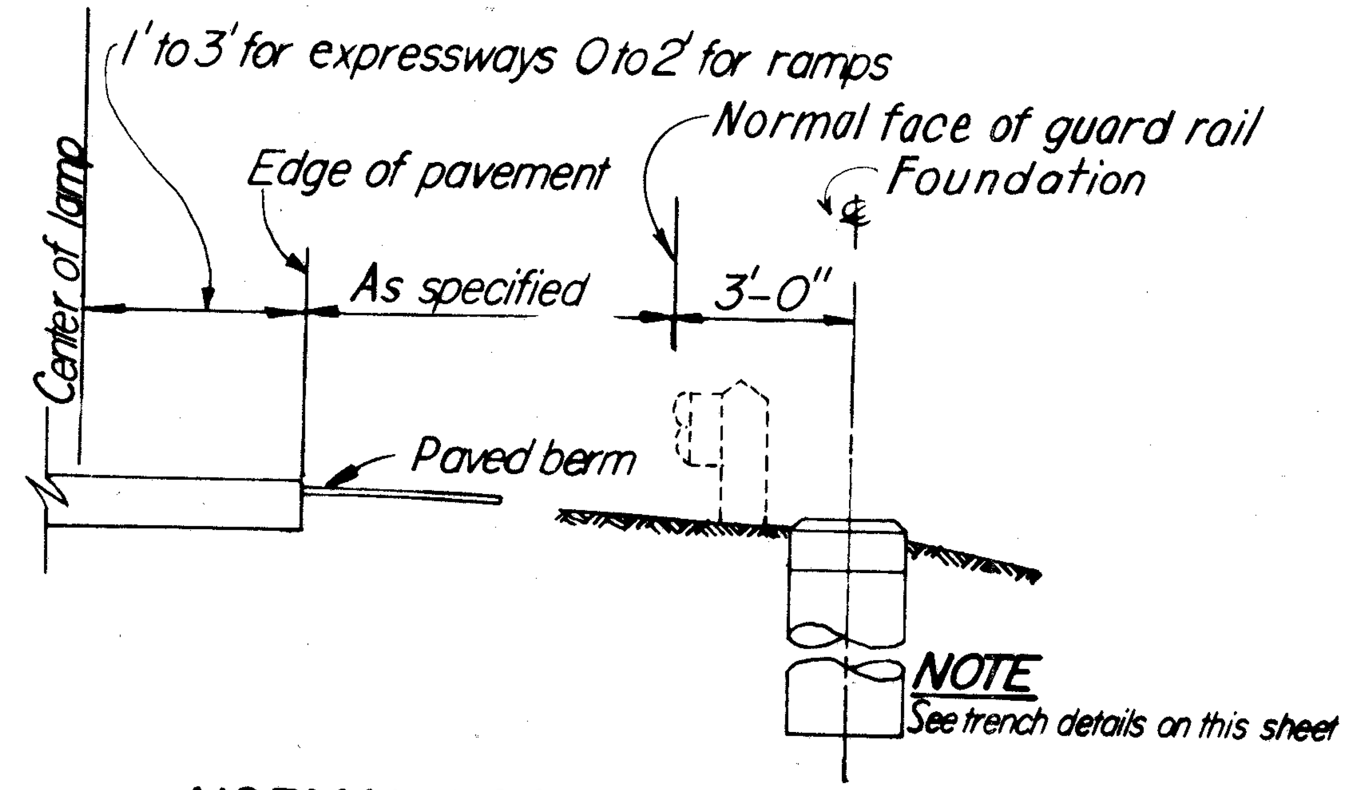
JEF-43-0.42



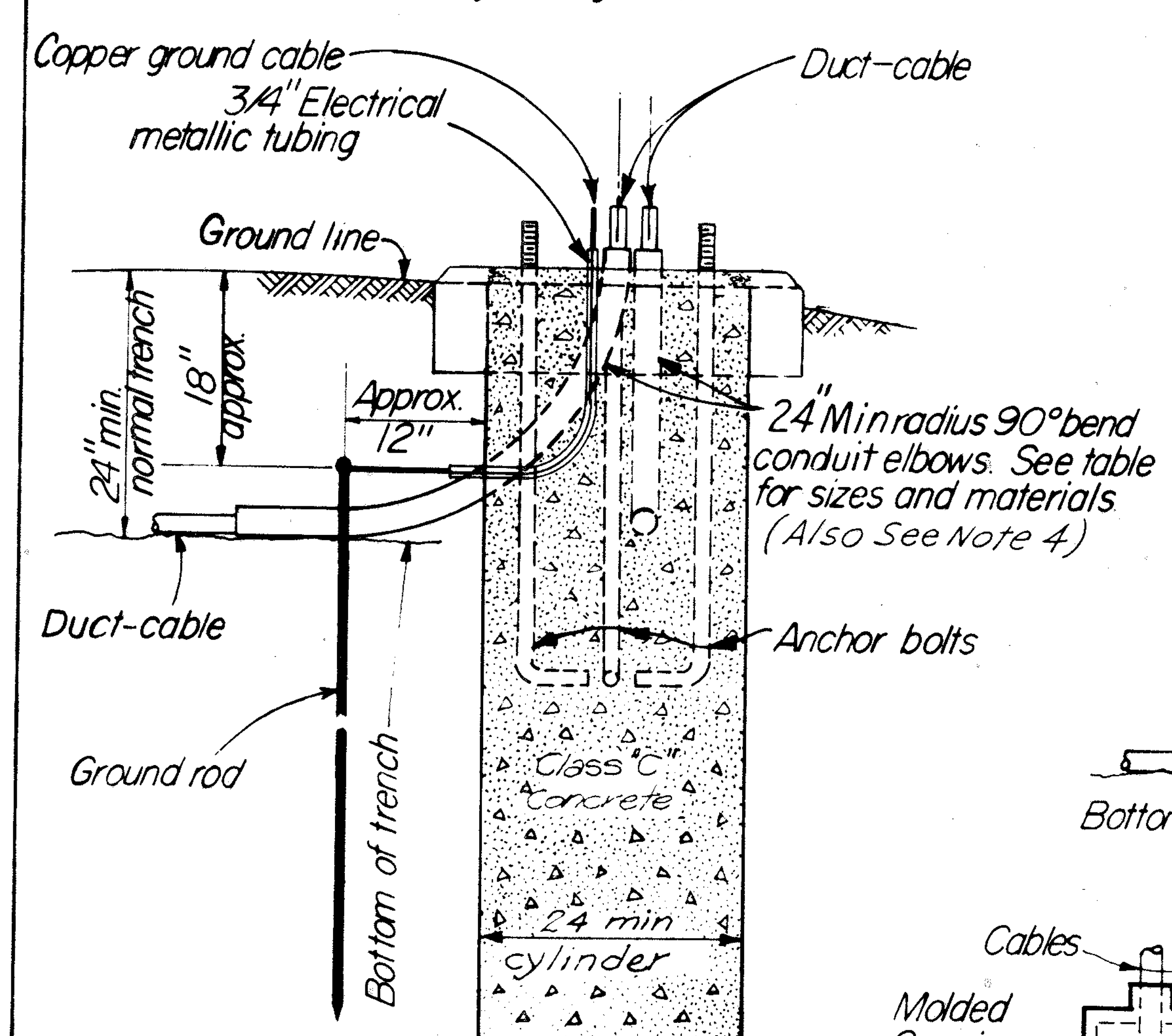
ALTERNATE **TRENCH ALIGNMENT**
(Use when specified or directed by the Engineer)



NORMAL **TRENCH ALIGNMENT**

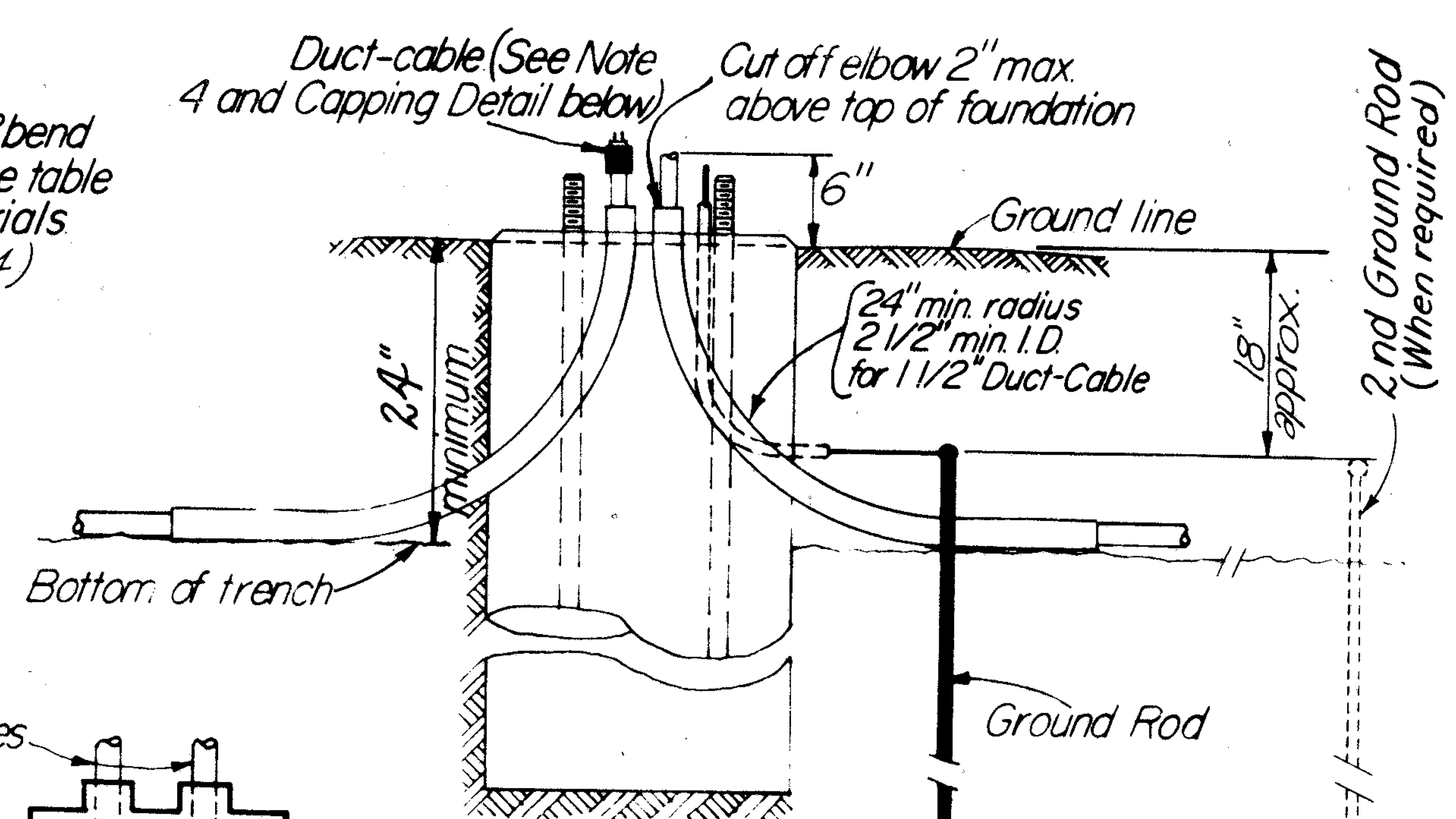


NORMAL LOCATION OF LIGHT POLE FOUNDATION
Opposite hand for poles mounted on left side of pavement.

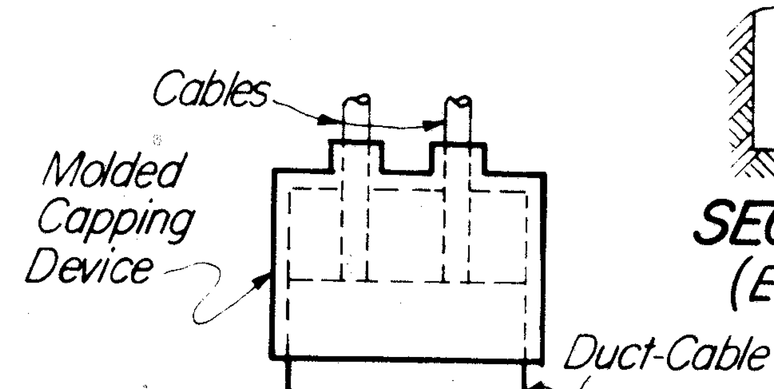


See SECTION B-B for location of Second ground rod when required

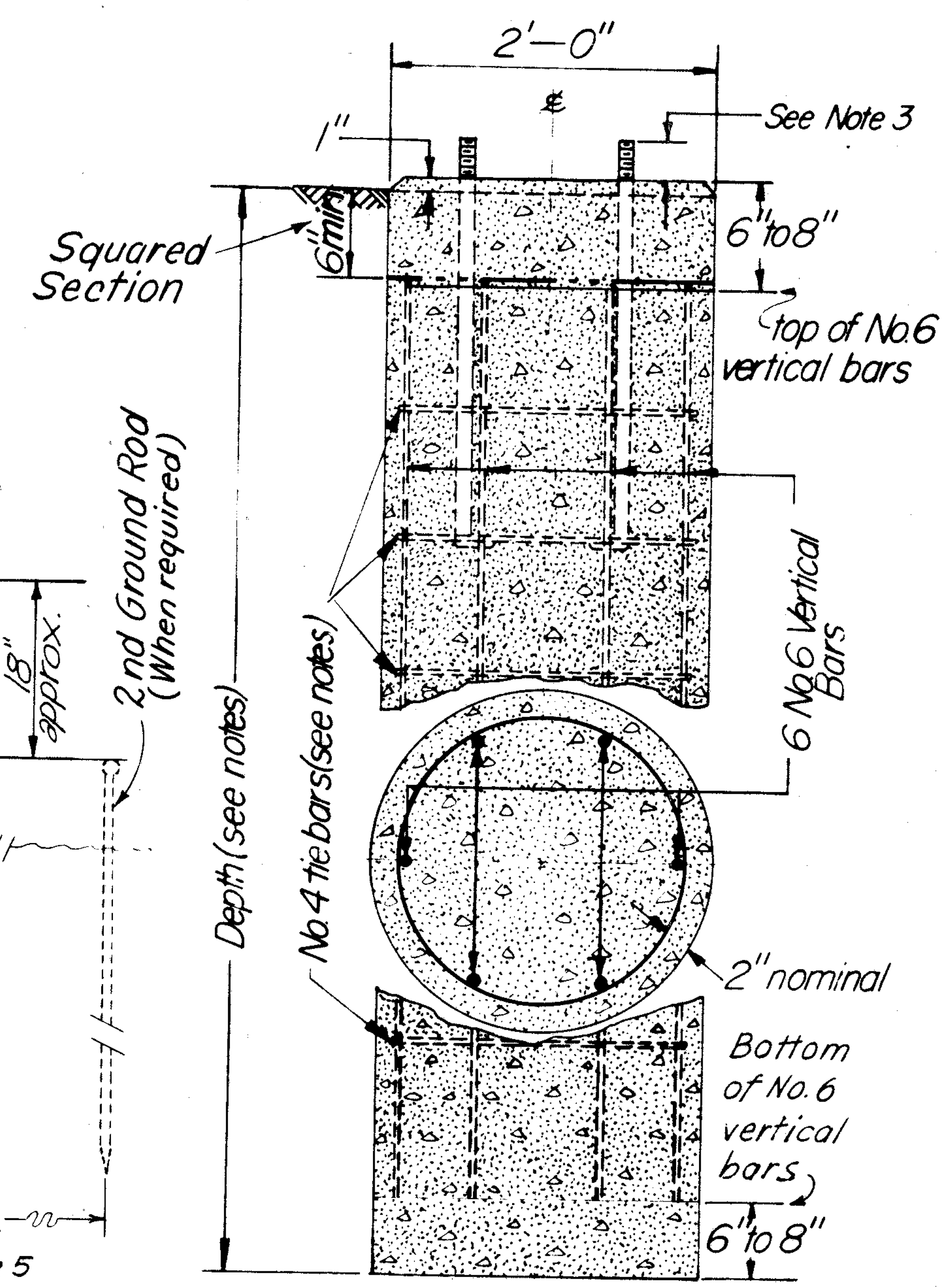
SECTION A-A



SECTION B-B
(Expanded)



CAPPING DETAIL

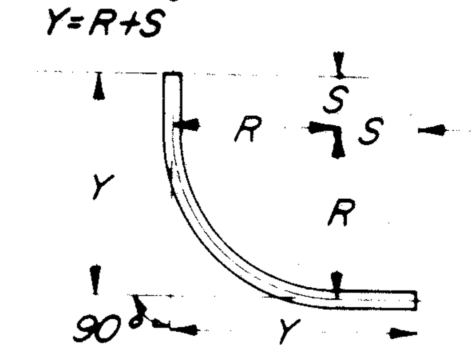


SECTION S-S
REINFORCING STEEL

NOTES

1. FOUNDATION
   Minimum depths to be as follows:
   6 feet for poles having a mounting height less than 40 ft.
   8 feet for poles having a mounting height 40 ft. thru 44 ft.
   9 feet for poles having a mounting height 45 ft. thru 49 ft.
   10 feet for poles having a mounting height of 50 ft. thru 55 ft.
   No. 4 Tie bars required as follows:
   4 No. 4 tie bars for 6 ft. depth
   5 No. 4 tie bars for 8 and 9 ft. depth
   6 No. 4 tie bars for 10 ft. depth
   Rotate bars to clear conduits.
2. COPPER GROUND CABLE:
   No. 4 AWG, stranded insulated copper ground cable shall be used. Exothermically weld cable to ground rod, run free end through 3/4" EMT and connect as shown on "POLE WIRING."
   Use two coats of insulating varnish over exothermic weld and exposed conductor.
3. ANCHOR BOLT DATA:
   For anchor bolt data see "POLE BASE DETAILS."
4. CONDUIT:
   Where 2" or 3" diameter conduit terminates in a foundation the conduit elbows in the foundation shall be the same size as the conduit. The ends of conduit elbows containing distribution cable shall be closed as described in 625.13
   When the terminating conduit is steel the conduit elbows in the pole foundation shall also be steel.
   At the last light pole on a circuit the vacant conduit elbow in the light pole foundation shall be stubbed out and capped.
5. GROUND RODS:
   When a second ground rod is required it shall be installed in the cable trench as shown in **SECTION B-B**.
6. REINFORCING STEEL:
   Reinforcing steel may be assembled in cages by approved welding of bars.

R = bending radius
S = straight section
Y = R + S



SPECIAL CONDUIT ELBOWS 90° BENDS					
2", 2 1/2" & 3" 713.04			3"–713.05 or 713.06		
R	S	Y	R	S	Y
24"	11"	35"	24"	8"	32"
30"	11"	41"			
36"	11"	47"	36"	2"	38"
42"	12"	54"			
48"	12"	60"			

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

FOUNDATION AND TRENCH DETAILS

DATE

1

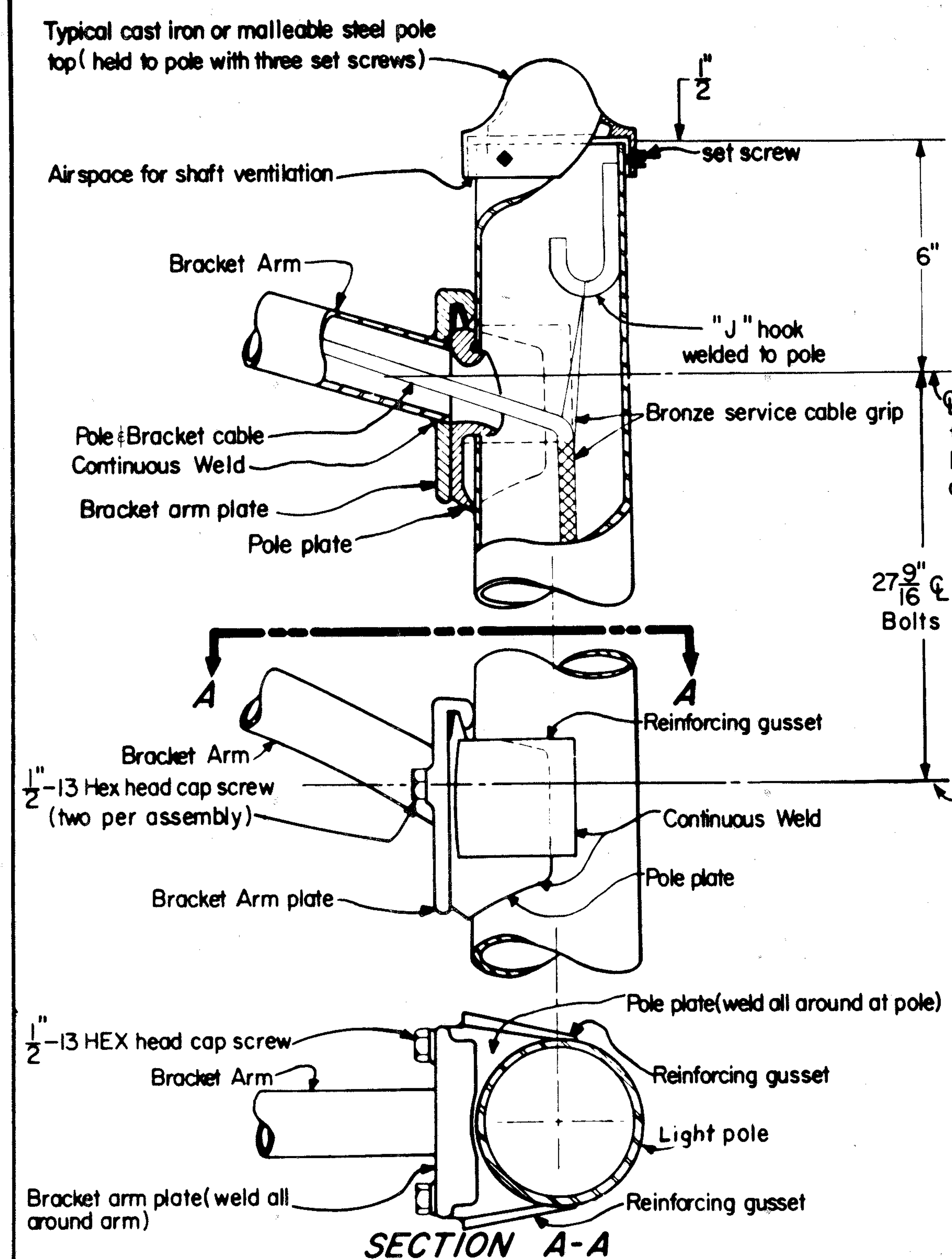
APPROVED: [signature] Engineer of Design Services

LIGHT POLE DETAILS

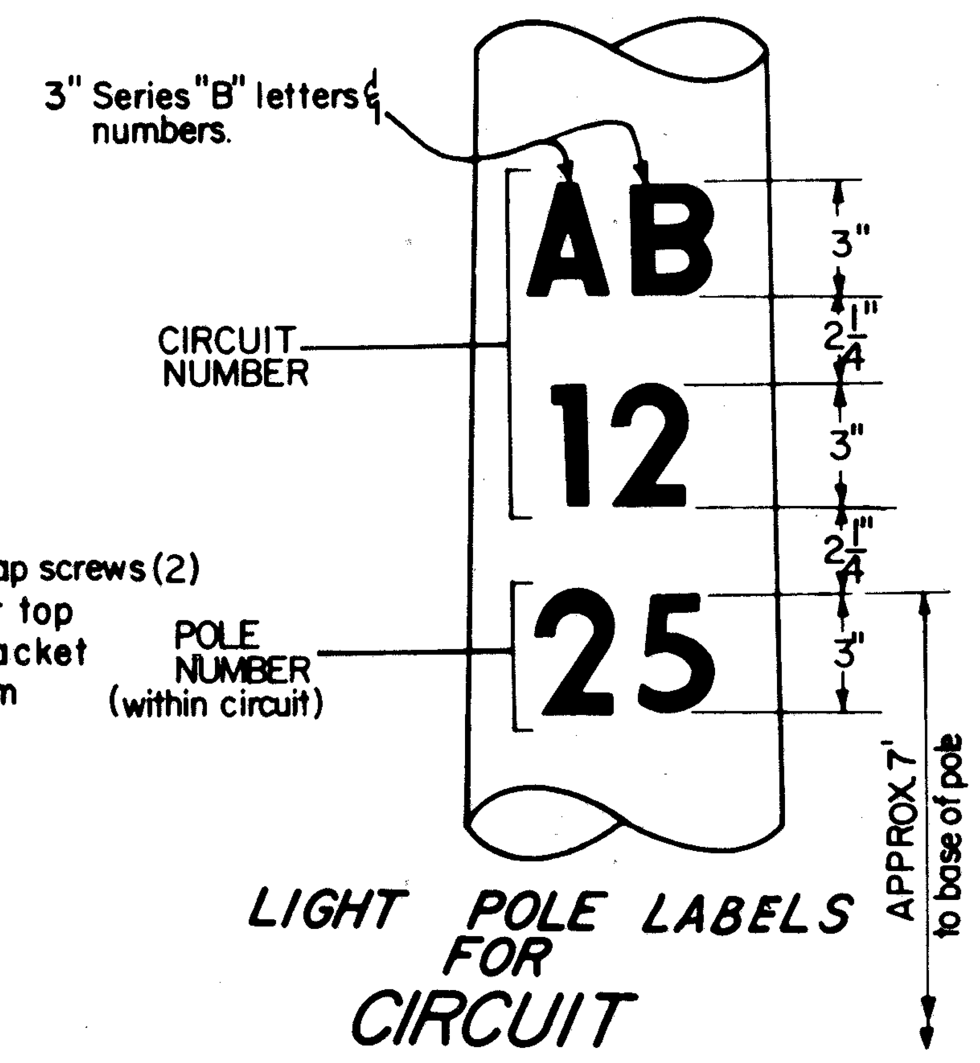
JEFFERSON COUNTY
JEF-43-0.42

NOTES

1. Hand holes are not required on poles with transformer bases.
2. Hand holes shall be opposite the roadway unless such location renders them inaccessible. (See NOTE 6)
3. Use of Reinforcing gussets is optional.
4. Circuit and light pole numbers shall be as scheduled on light plan sheets. Labels shall meet the requirements of 713.18 and shall contain 3 series "B" letters and numbers as per the "Standard Alphabets for Highway Signs" published by the Federal Highway Adminstration.
5. Hand holes for bridge poles shall be on roadway side and 17" from center of hand hole to bottom of base.
6. All light poles mounted on raised concrete median barriers shall be equipped with handholes. Handholes shall be located beneath the bracket arm extending over the Northbound or Westbound traffic lanes.

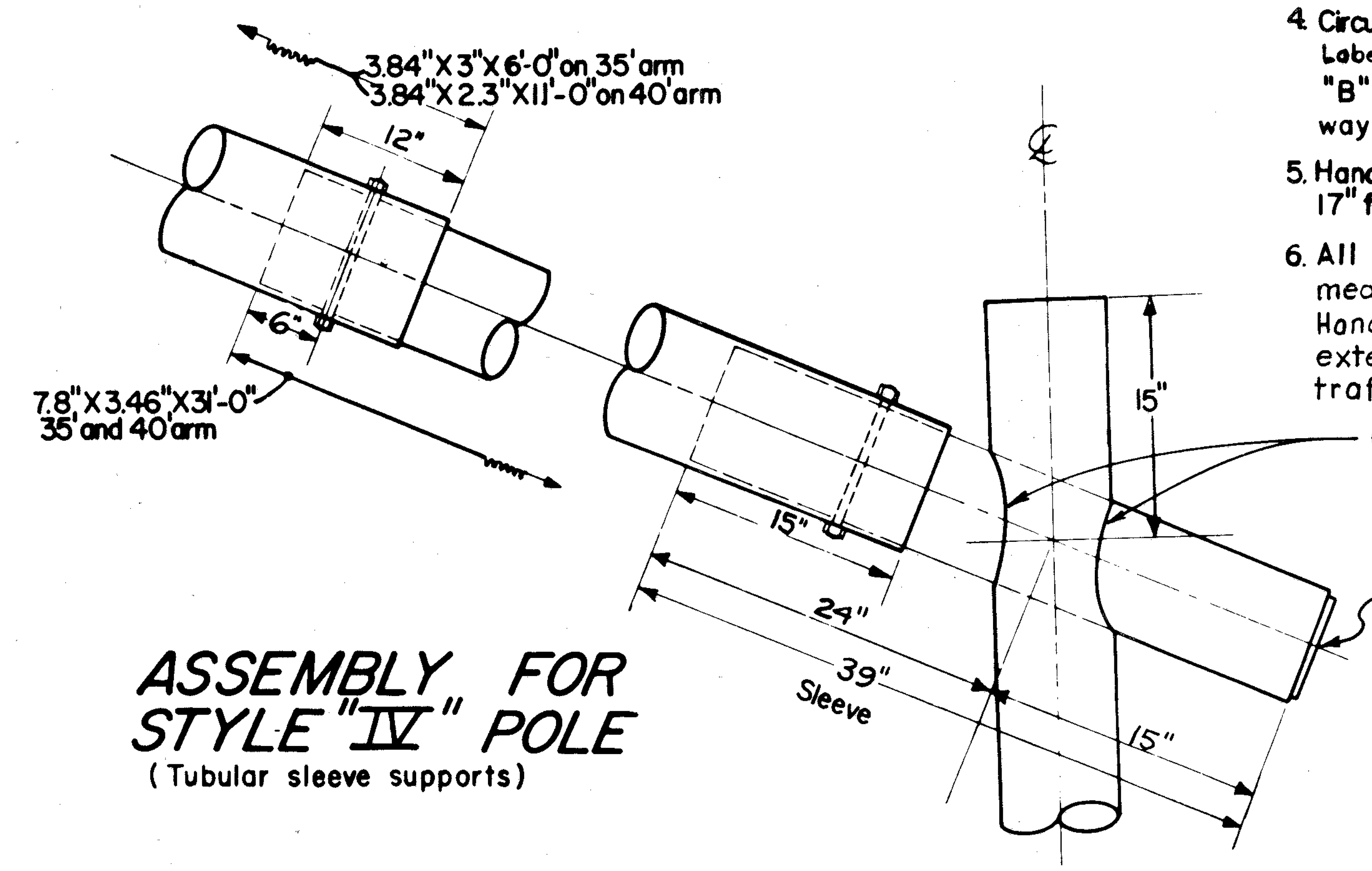


POLE TOP and BRACKET ARM ASSEMBLIES



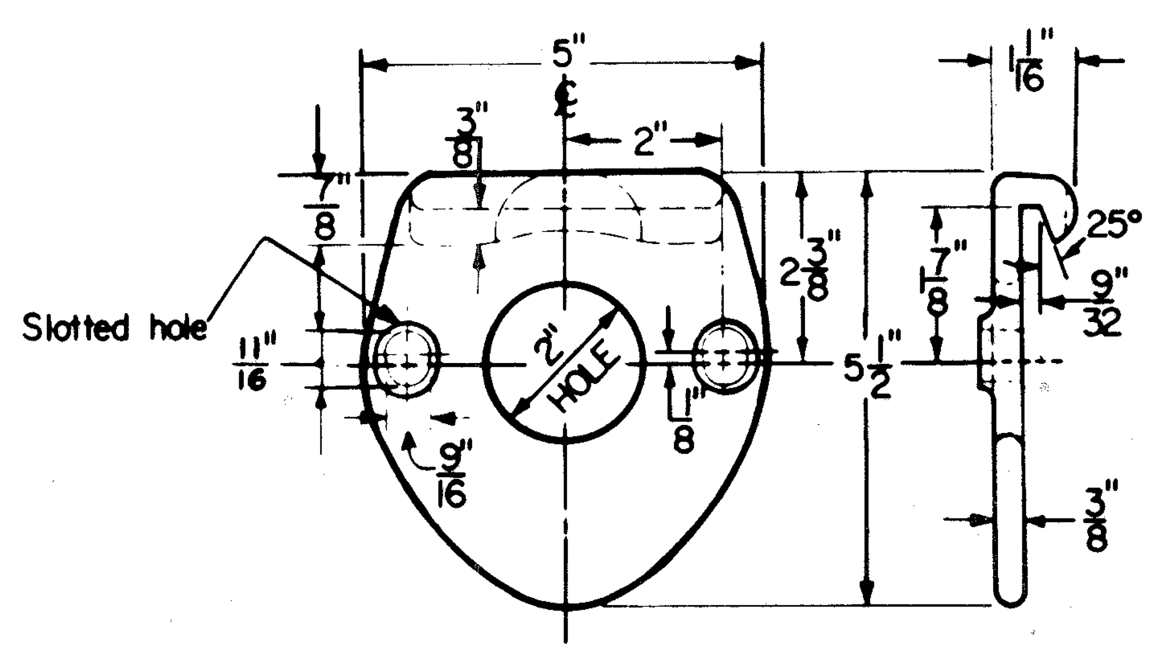
LIGHT POLE LABELS FOR CIRCUIT IDENTIFICATION

(See note 4)



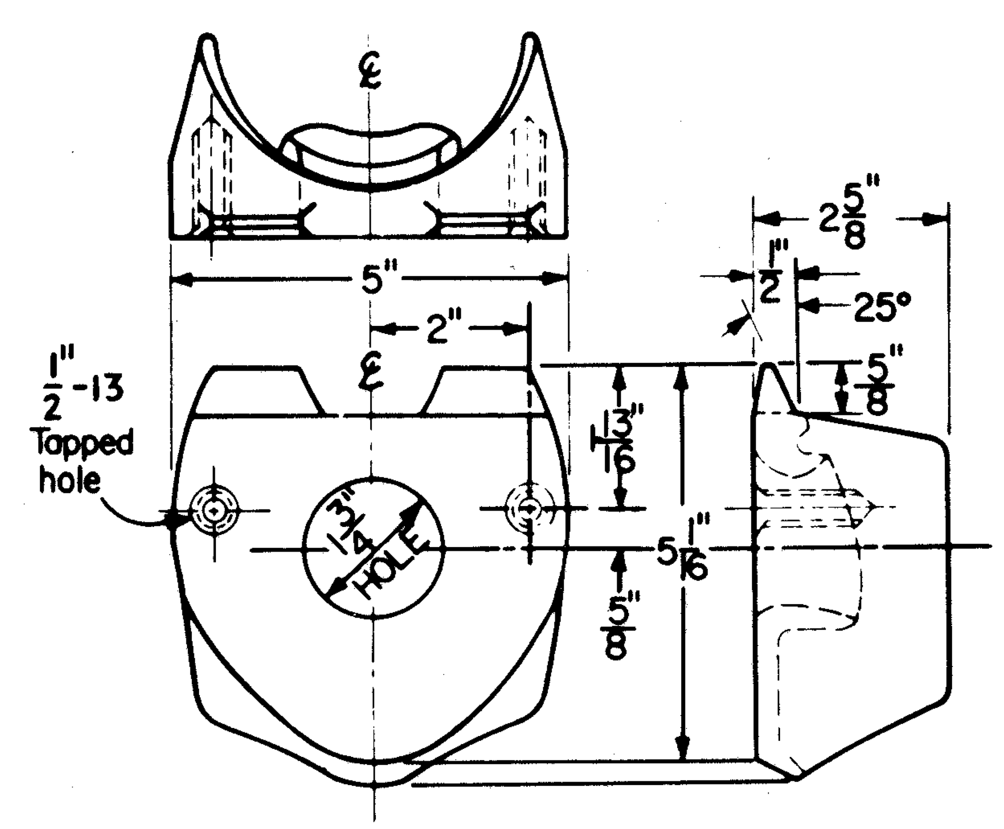
ASSEMBLY FOR STYLE "IV" POLE

(Tubular sleeve supports)



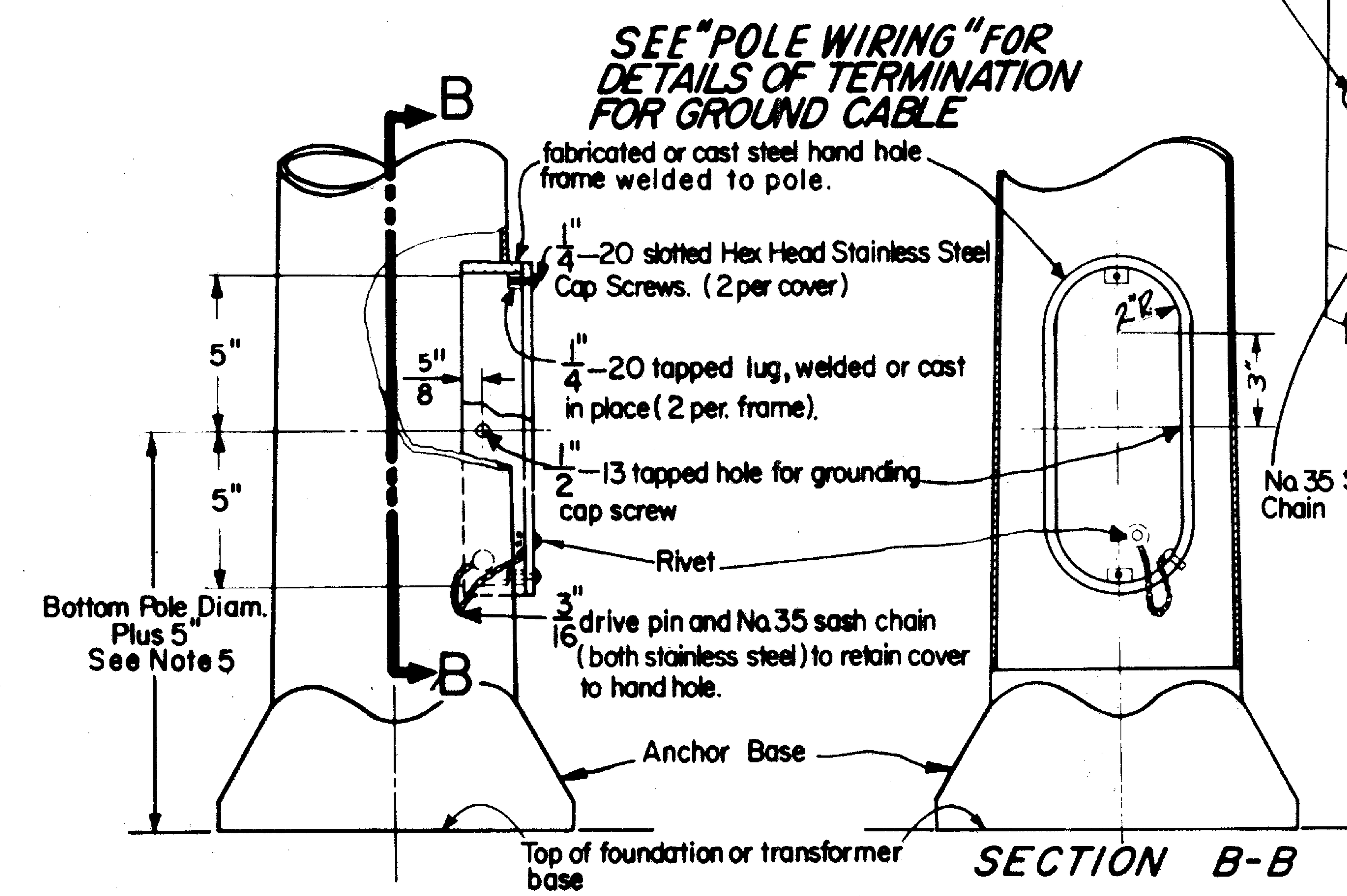
BRACKET ARM PLATE

(CAST STEEL)



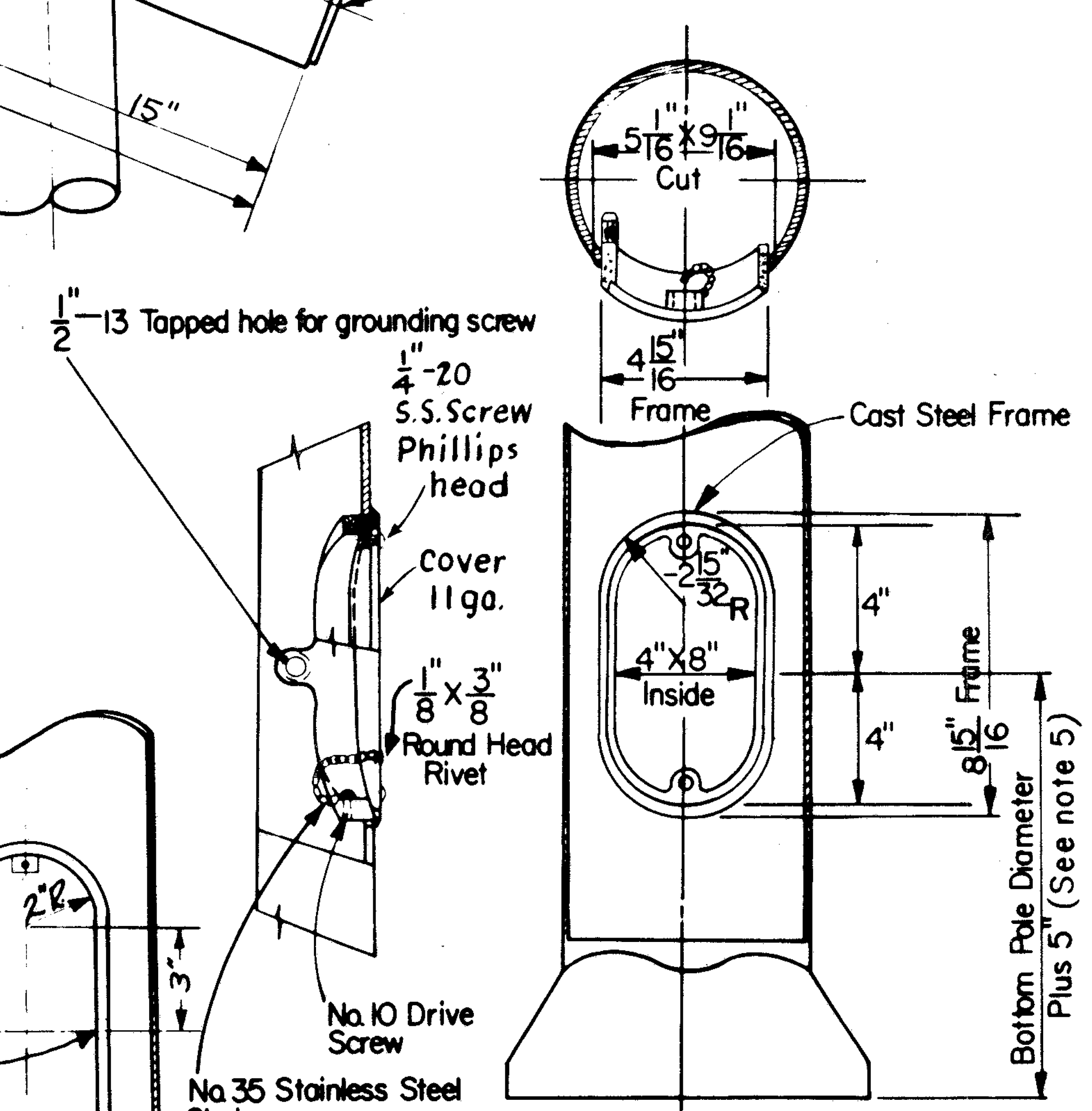
POLE PLATE

(CAST STEEL)



HAND HOLE WITH COVER

See Notes 1 & 2



ALTERNATE HAND HOLE

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

LIGHT POLE DETAILS

DATE

2

APPROVED: [signature] Engineer of Design Services

POLE BASE DETAILS

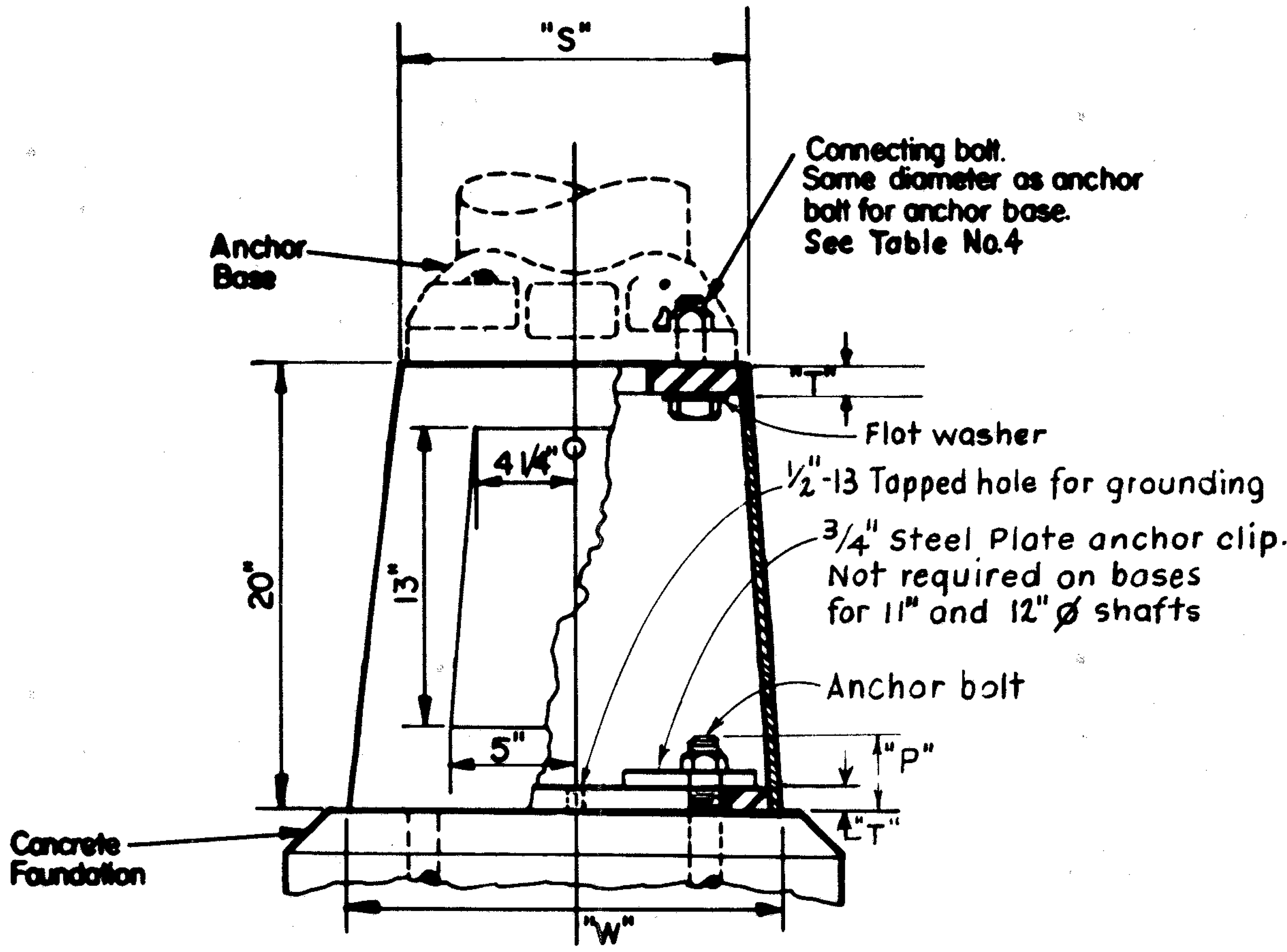
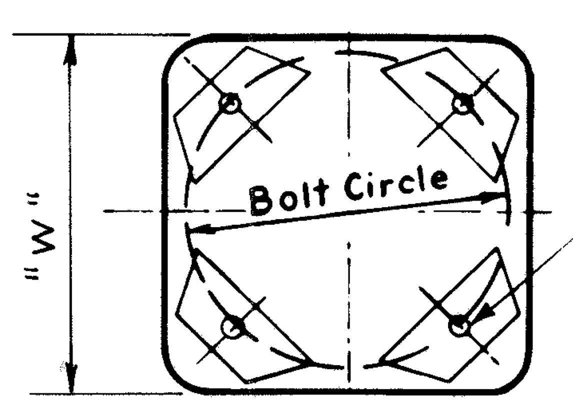


TABLE NO. 1					
STEEL TRANSFORMER BASES					
SHAFT SIZE	"T"	"S"	"W"	BOLT CIRCLE	"P"
6.0" thru 9.2"	3/4" min.	13" sq.	16" sq.	15"	4½"
8.5" thru 10"	1 1/4" min.	15" sq.	18" sq.	17 1/4"	4½"
11" and 12"	1¼"	17" sq.	25" sq.	22"	4½"



BASE FRAME

STEEL TRANSFORMER BASES

TABLE NO. 2			
TRANSFORMER BASE ANCHOR BOLTS			
SHAFT SIZE	POLE GUAGE NO. 11	7	3
6.5"	1" ø X 40"	1" ø X 40"	1" ø X 40"
7"	1" ø X 40"	1" ø X 40"	1" ø X 40"
7.5"	1" ø X 40"	1" ø X 40"	1" ø X 40"
8"	1" ø X 40"	1" ø X 40"	1¼" ø X 48"
8.5"	1" ø X 40"	1" ø X 40"	1¼" ø X 48"
9"	1" ø X 40"	1" ø X 40"	1¼" ø X 48"
9.5	1" ø X 40"	1¼" ø x 48"	1¼" ø X 48"
10"	1" ø X 40"	1¼" ø x 48"	1¼" ø X 48"
11"		1¼" ø x 48"	1½" ø x 60"
12"		1¼" ø x 48"	1½" ø x 60"

40" bolts include 4" bend
48" and 60" bolts include 6" bend

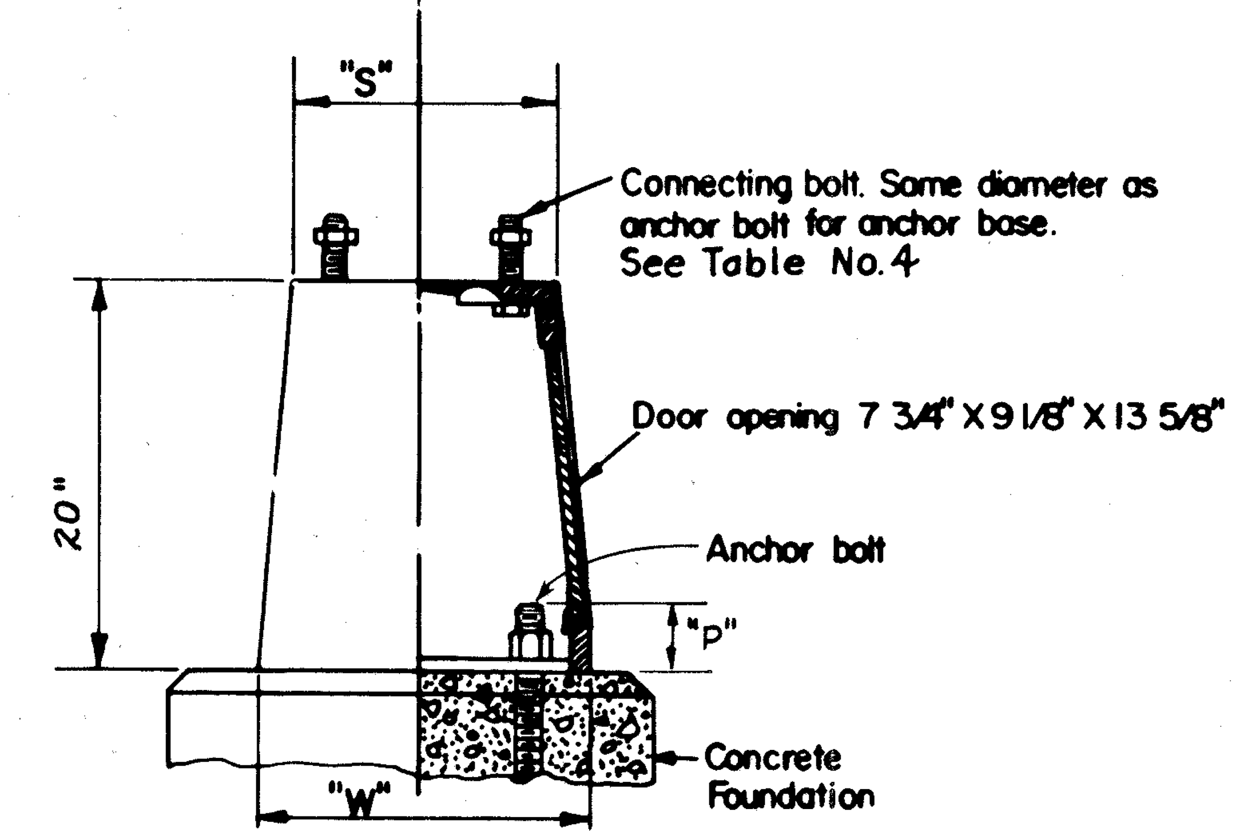
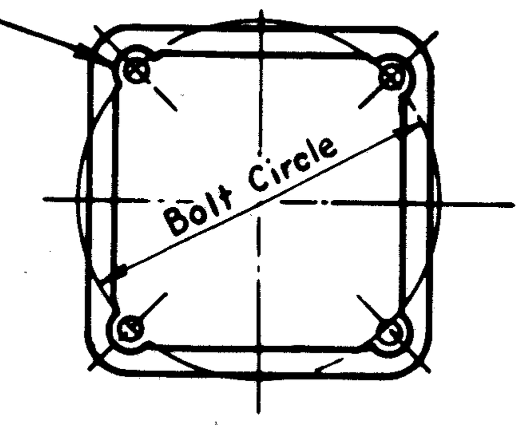


TABLE NO. 3					
ALUMINUM TRANSFORMER BASES					
TYPE	"P"	"S"	"W"	BOLT CIRCLE	SHAFT SIZE
AT–A	4½"	13"	16 3/8"	15"	SEE NOTE (2)
AT–C	4½"	14 5/8"	17 1/4"	17 1/4"	SEE NOTE (3)



BASE FRAME

CAST ALUMINUM TRANSFORMER BASES

SHALL NOT BE USED WHERE OVERHEAD WIRING IS REQUIRED

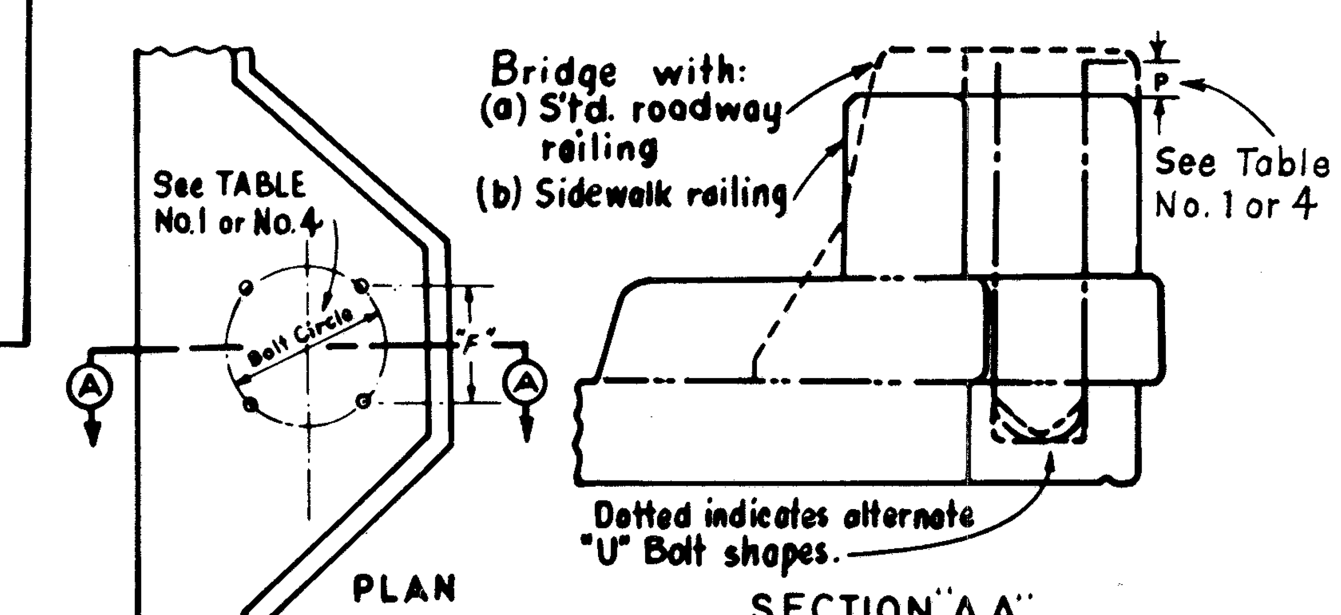
NOTES

1. For pole grounding details see "POLE WIRING," No. 9
2. Type AT-A base shall normally be used with anchor base poles having diameters of 6 inches through 9.2, inches inclusive, and mounting heights through 41.7 feet.
3. Type AT-C base must be used for anchor base poles having diameters of 9.5 inches and 10 inches and mounting heights through 51.7 except for exclusions listed below:
   a. All double-arm poles with mounting heights of 50 feet.
   b. All single-arm poles with mounting heights of 50 feet and arm lengths of 25 feet and 30 feet.
   c. All double-arm poles with mounting heights of 45 feet and arm lengths of 25 feet and 30 feet.
   d. All single-arm poles with mounting heights of 45 feet and arm length of 30 feet.

   On excepted poles above, transformer bases of material other than cast aluminum shall be used.
4. U-bolt lengths shown in TABLE NO.5 are developed lengths and may vary ±½". Lengths are for 1", 1¼", 1½" and 1¾" diam. bolts. Lengths shown are for bridges with sidewalk railing. For bridges having a standard roadway railing increase these lengths by 7 inches.
5. For anchor bolt data when transformer bases are to be mounted on bridge pilasters see TABLE NO.1 and TABLE NO.2.
6. For median-mounted pole base details See No. 17A or No. 17B

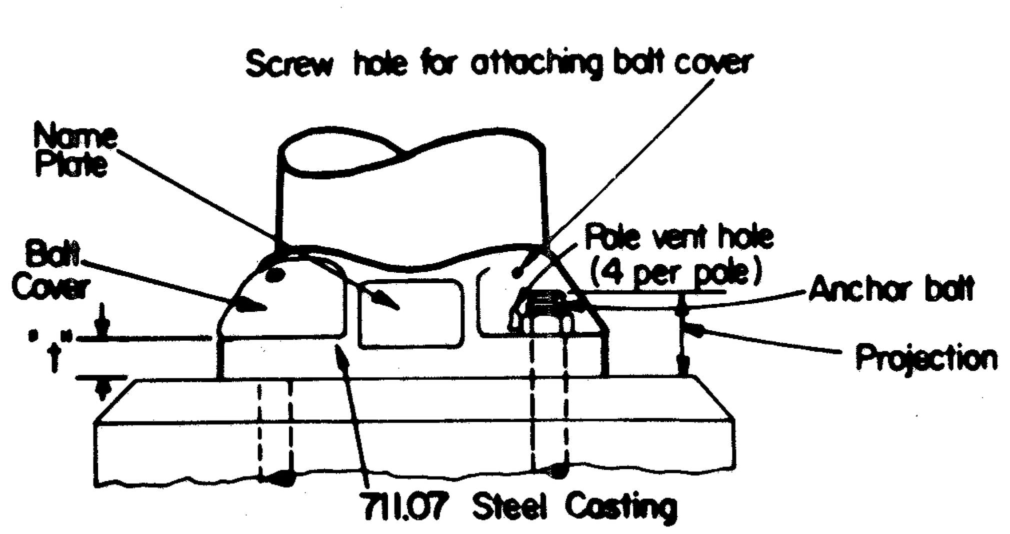
TABLE NO. 5		
SHAFT SIZE	"F"	U-BOLT * LENGTH
6.5"	6 3/4"	75"
7.0"	7 1/16"	75"
7.5"	7 7/16"	76 1/2"
8.0"	7 3/4"	76 1/2"
8.5"	8 1/8"	76 1/2"
9.0"	8 7/8"	78"
9.5"	9 3/16"	78"
10.0"	9 9/16"	79 1/2"
11.0"	10 5/8"	79 1/2"
12.0"	11 5	81"

* See *NOTE 4*



LIGHT POLE PILASTER

BRIDGE MOUNTED POLES

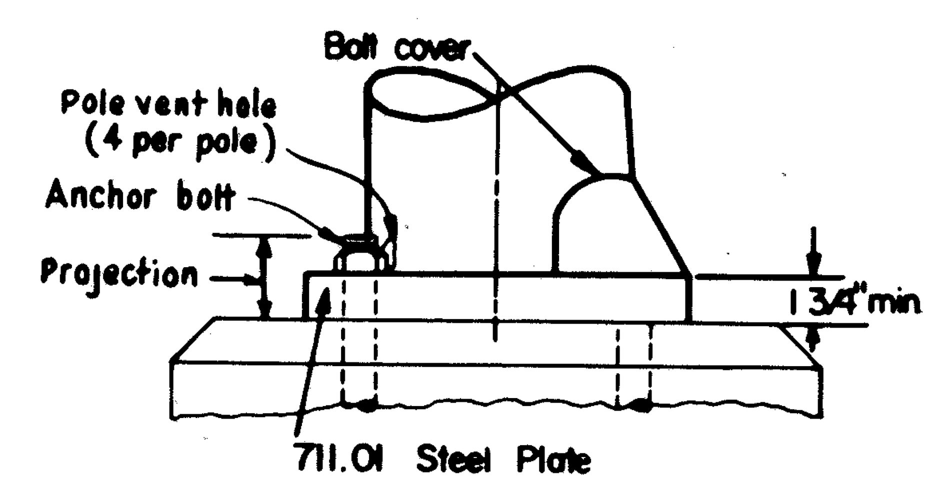


CAST STEEL

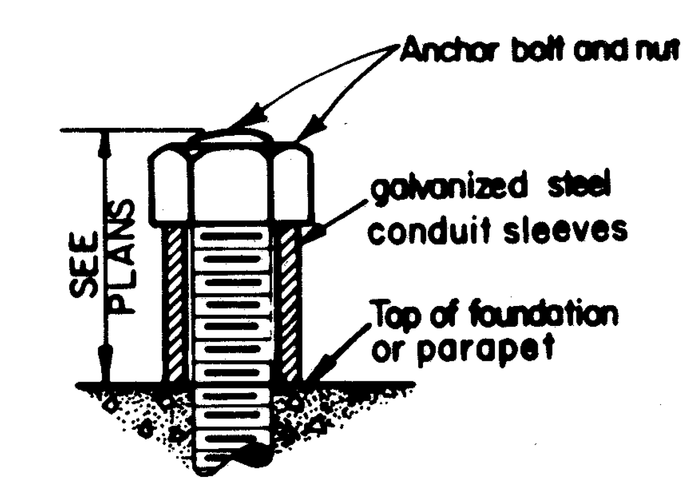
TABLE NO. 4						
ANCHOR BOLTS FOR STEEL ANCHOR BASES						
SHAFT SIZE	BOLT CIRCLE	BOLT* PROJ.	"t"	POLE GUAGE NO. 11	NO. 7	NO. 3
6.5"	9 1/2"	2 1/8"	7/8"	1" x 40"	1 1/4" x 48"	1 1/4" x 48"
7"	10"	2 1/4"	1"	1" x 40"	1 1/4" x 48"	1 1/4" x 48"
7.5"	10 1/2"	2 5/8"	1 1/8"	1" x 40"	1 1/4" x 48"	1 1/4" x 48"
8"	11"	2 5/8"	1 3/16"	1" x 40"	1 1/4" x 48"	1 1/4" x 48"
8.5"	11 1/2"	2 3/4"	1 1/4"	1" x 40"	1 1/4" x 48"	1 1/4" x 48"
9"	12 1/2"	3"	1 5/16"	1" x 40"	1 1/4" x 48"	1 1/2" x 60"
9.5	13"	3 1/8"	1 3/8"	1 1/4" x 48"	1 1/4" x 48"	1 1/2" x 60"
10"	13 1/2"	3 3/8"	1 7/16"	1 1/4" x 48"	1 1/2" x 60"	1 1/2" x 60"
11"	15"	3 5/8"	1 5/8"		1 1/2" x 60"	1 3/4" x 90"
12"	16"	4	1 11/16"		1 1/2" x 60"	1 3/4" x 90"

* Based on cast steel anchor bases only. Plate bases may deviate.

STEEL ANCHOR BASES



STEEL PLATE



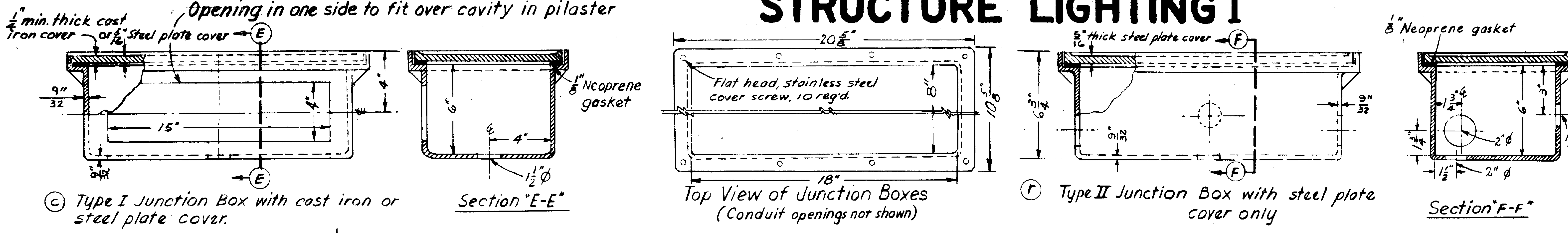
ANCHOR BOLT COVER

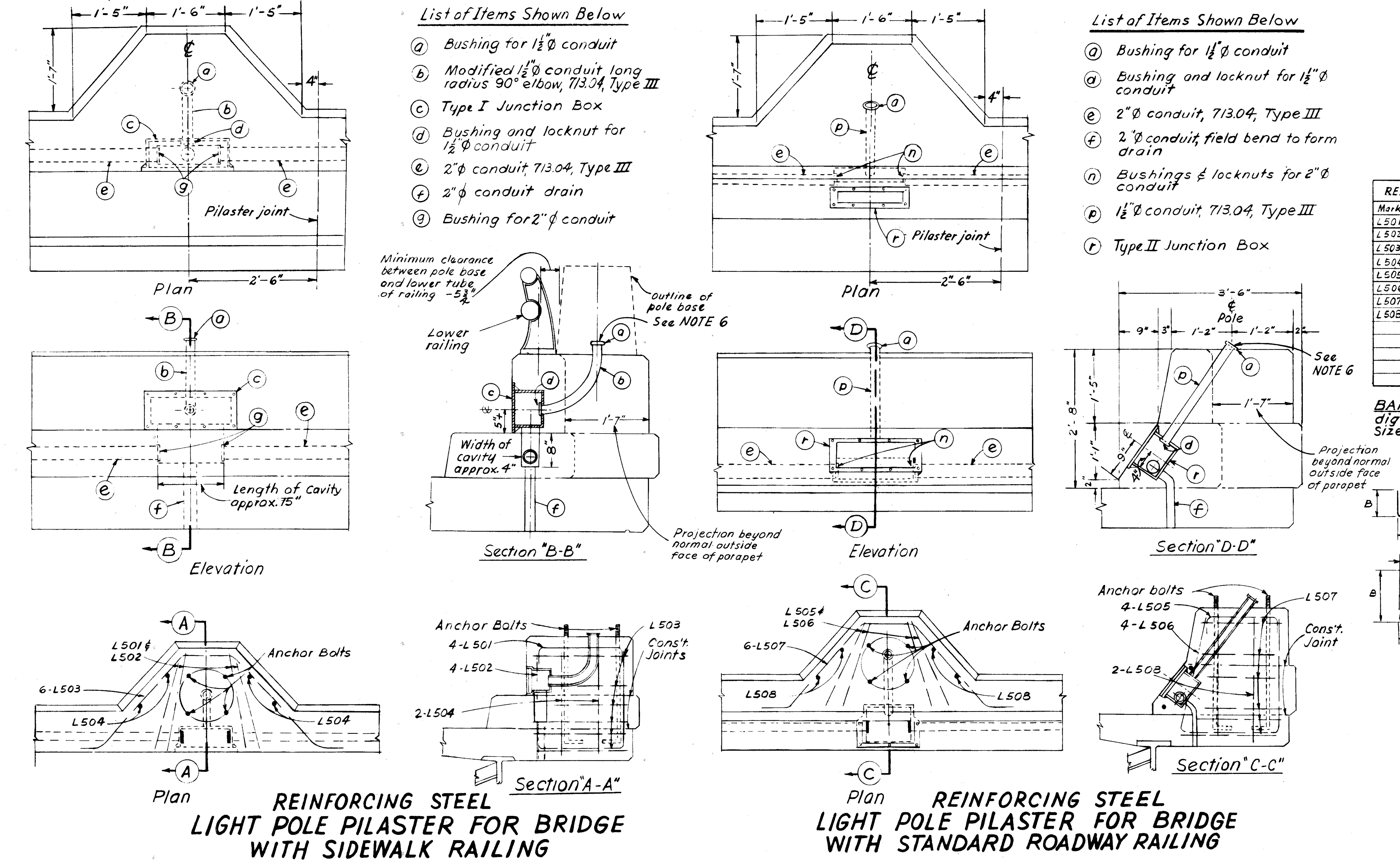
Note: To be placed on all light pole anchor bolts provided for future lighting installations.

BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
HIGHWAY LIGHTING	DATE 11-1-65 4-6-73
POLE BASE DETAILS	
3	
APPROVED: [signature] Engineer of Design Services	

STRUCTURE LIGHTING I

JEF-43-0.42





REINFORCING STEEL
LIGHT POLE PILASTER FOR BRIDGE WITH SIDEWALK RAILING

REINFORCING STEEL
LIGHT POLE PILASTER FOR BRIDGE WITH STANDARD ROADWAY RAILING

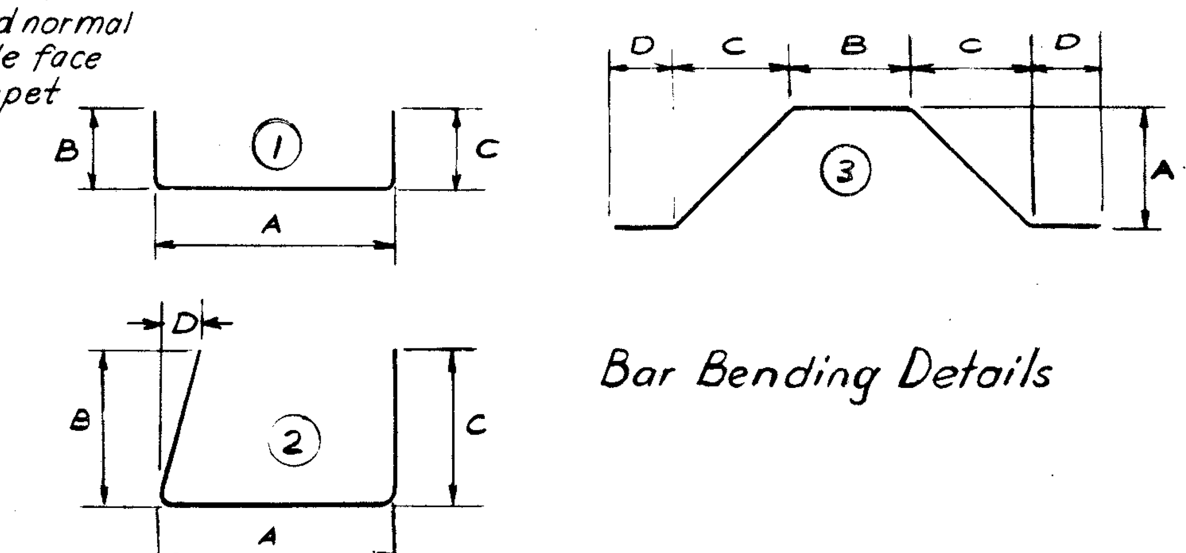
NOTES

1. For grounding details see "STRUCTURE GROUNDING."
2. For anchor bolt details see "POLE BASE DETAILS"
3. Junction Boxes shall conform to 713.10, except that base material composition of galvanized steel plate covers shall conform to ASTM A-242 or A-36.
4. All conduit openings in junction boxes shall be bossed, drilled and tapped.
5. Payment for pilaster reinforcing steel and concrete shall be included in 509 and 511 items for the structure.
6. Where conduit is provided for future installation of poles the conduit shall be capped.

REINFORCING STEEL LIST - ONE PILASTER

Mark	No.	Length	Weight	Shape	Type	A	B	C	D
L501	4	3'-1"	13	B	1	2'-1"			
L502	4	7'-4"	31	B	1	2'-1"	2'-9"	2'-9"	
L503	6	8'-0"	50	B	3	2'-1"	1'-4"	2'-1"	0'-6"
L504	4	2'-9"	11	S					
L505	4	2'-10"	12	B	1	1'-10"			
L506	4	8'-1"	34	B	2	2'-4"	3-0"	3'-0"	0'-6½"
L507	6	7'-3"	45	B	3	1'-10"	1'-4"	1'-10"	0'-6"
L508	4	3'-0"	13	S					

BAR SIZE is indicated in the bar mark. The first digit where three digits are used indicates the bar size number. For example: L501 is a No. 5 size bar.



Bar Bending Details

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HIGHWAY LIGHTING

STRUCTURE LIGHTING I

4

DATE 1-1-66 4-6-73

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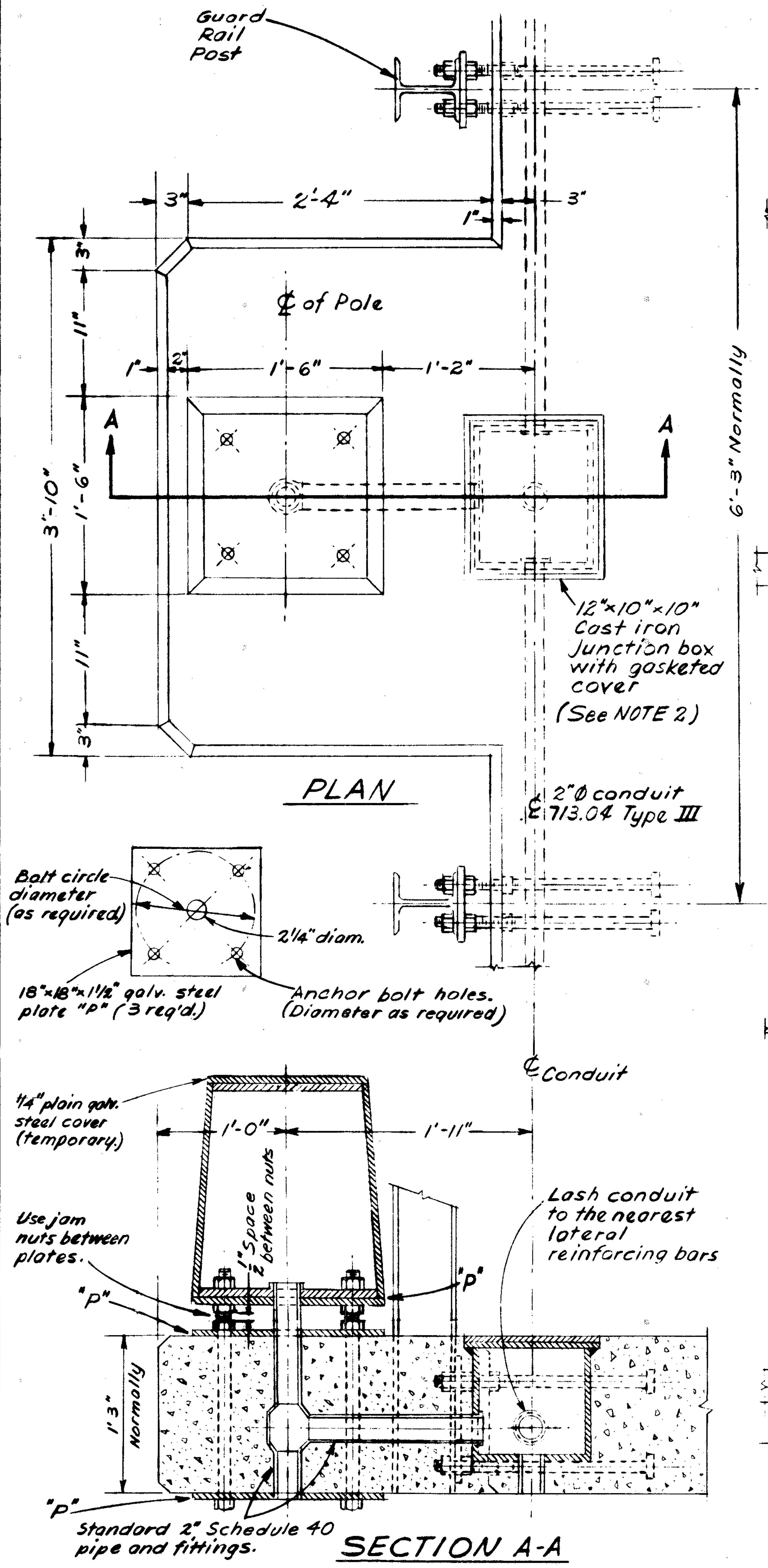
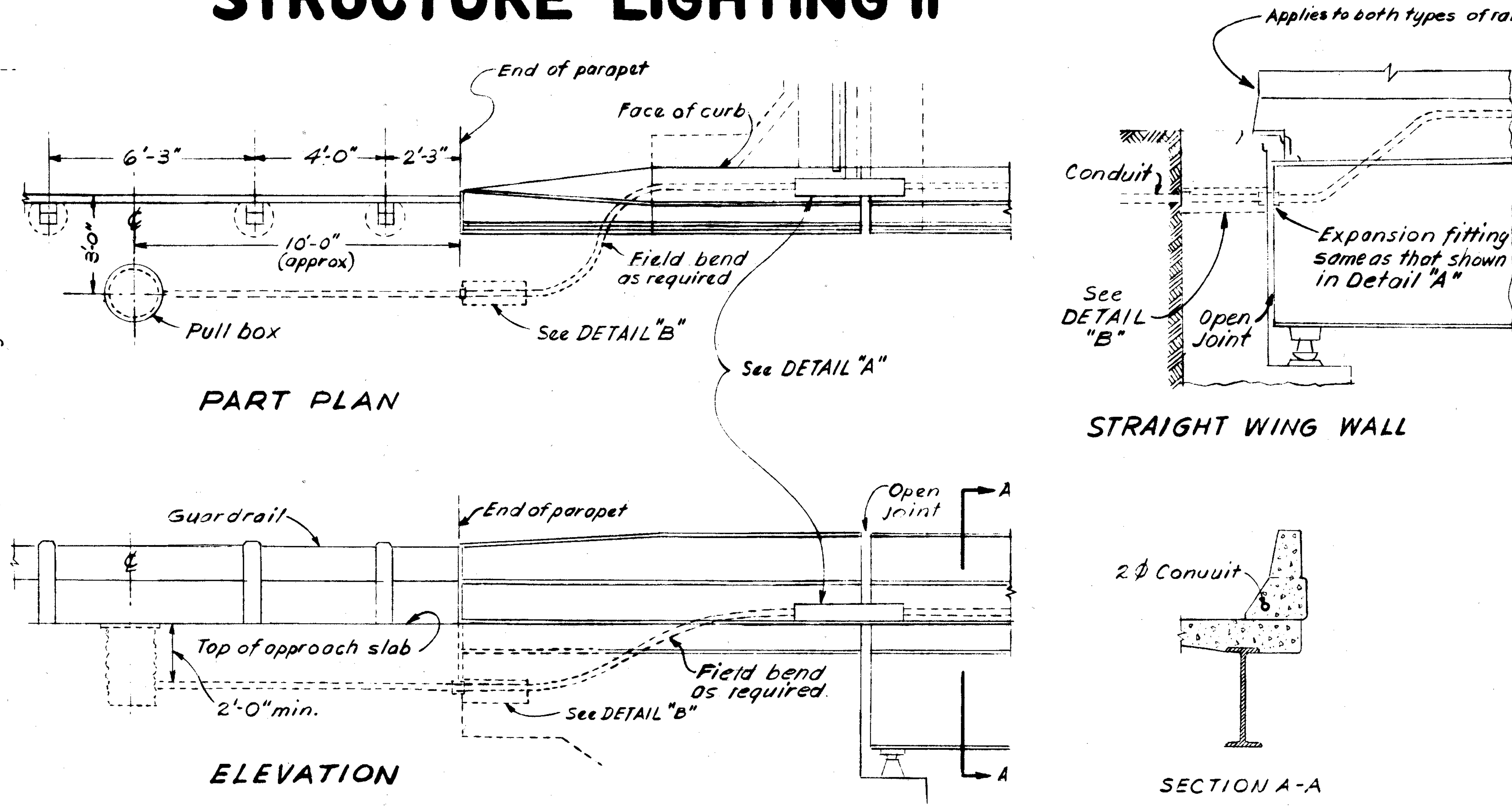
STRUCTURE LIGHTING II

NOTES

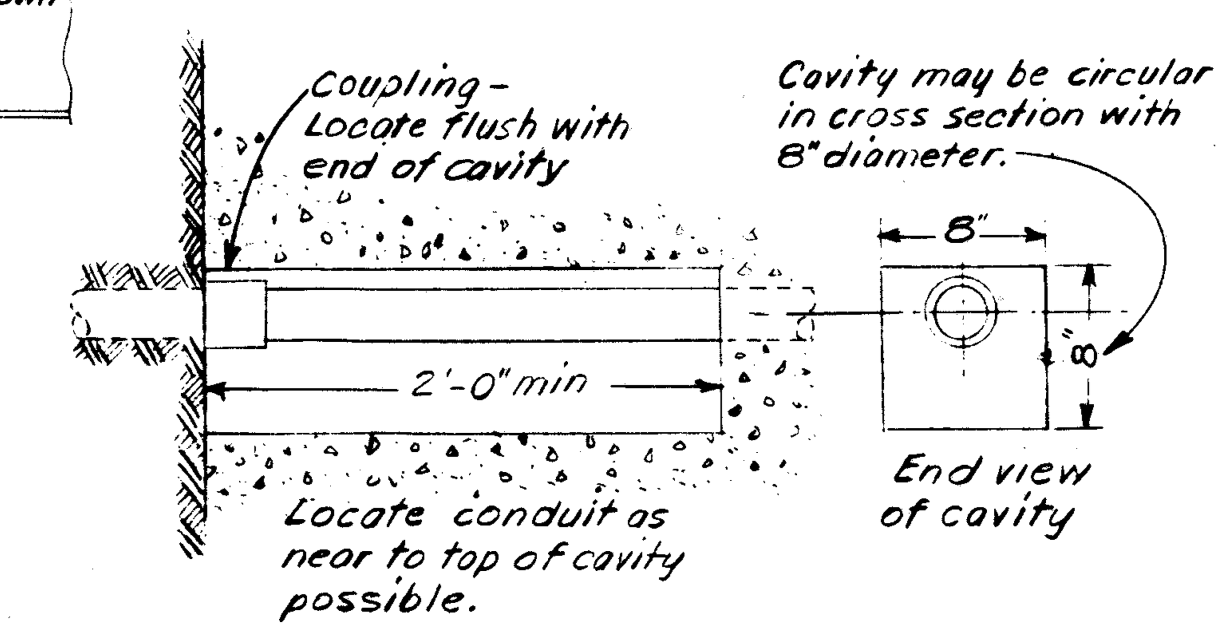
1. Fill space around the conduit and/or fittings within the cavity with an approved synthetic, compressable material.
2. All conduit openings in junction boxes shall be bossed drilled and tapped. Covers shall be 1/4" min. thick cast iron.



LIGHT POLE PILASTER FOR BRIDGE WITHOUT CURBS AND WITH HIGHWAY GUARD RAIL



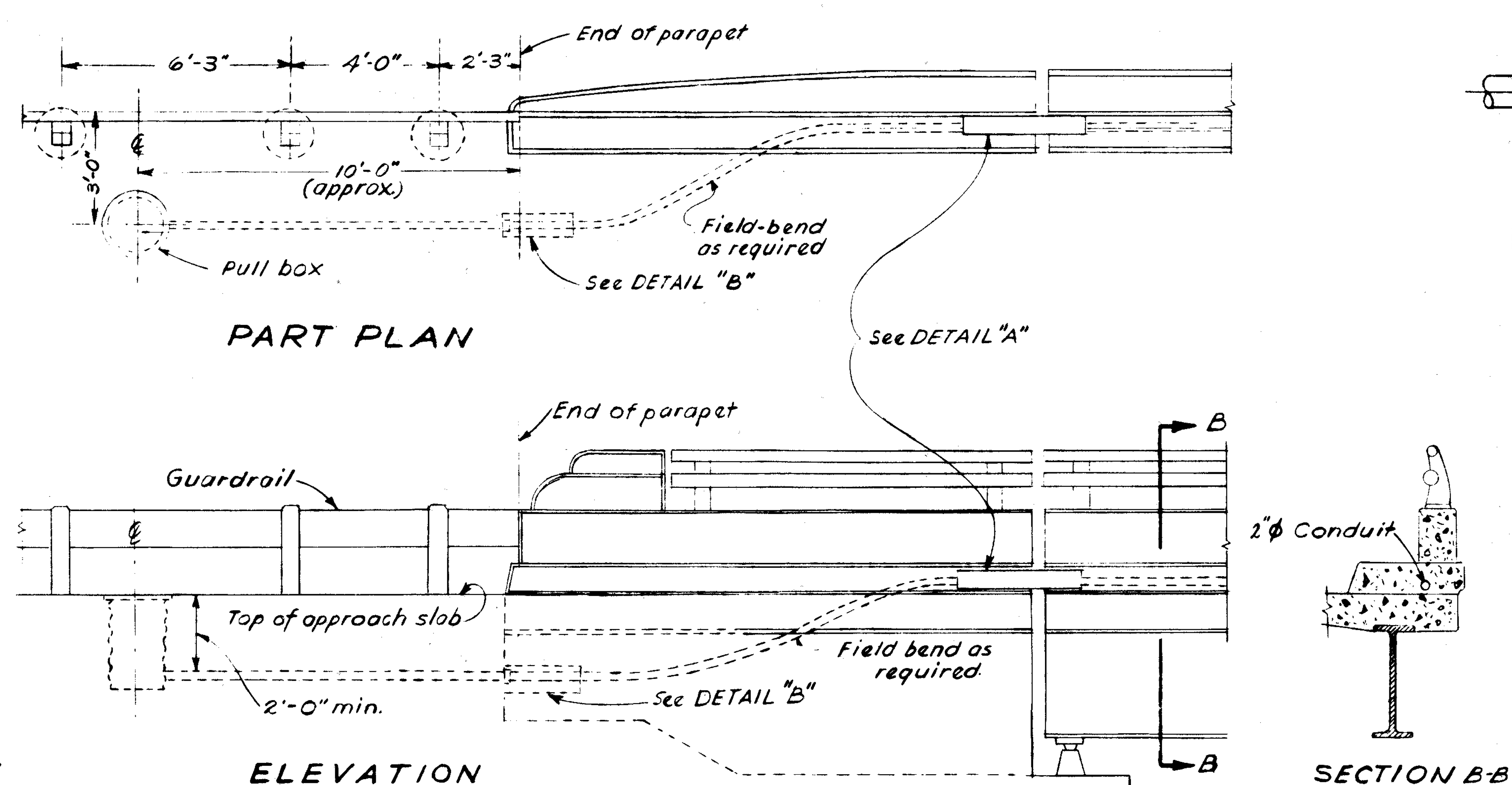
CONDUIT DETAILS FOR BRIDGE WITH STANDARD ROADWAY RAILING



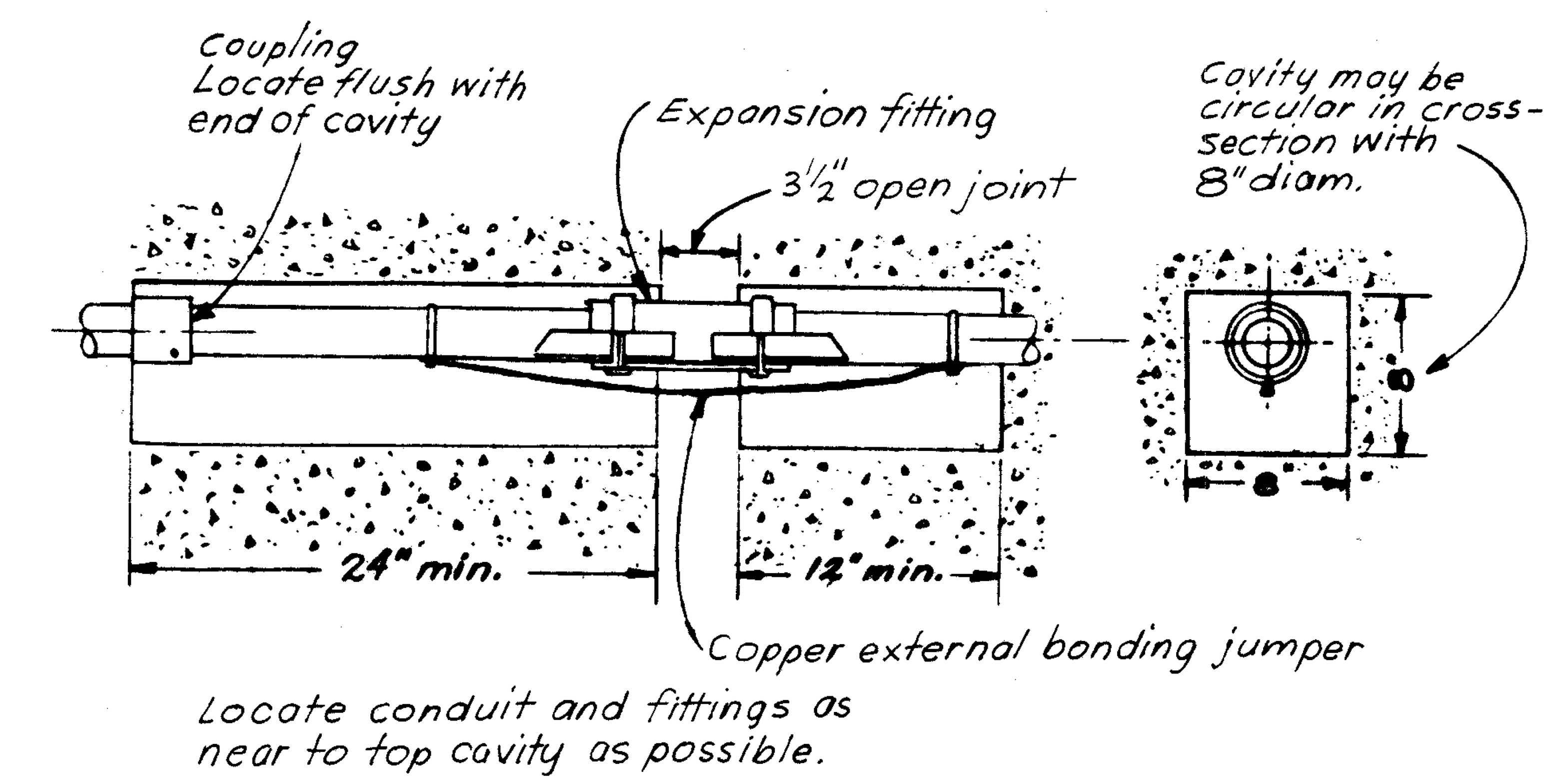
DETAIL "B"

CAVITY FOR CONDUIT CONNECTION AT BRIDGE ABUTMENTS

Dimensions may be altered to fit abutment design



CONDUIT DETAILS FOR BRIDGE WITH SIDEWALK RAILING



DETAIL "A"

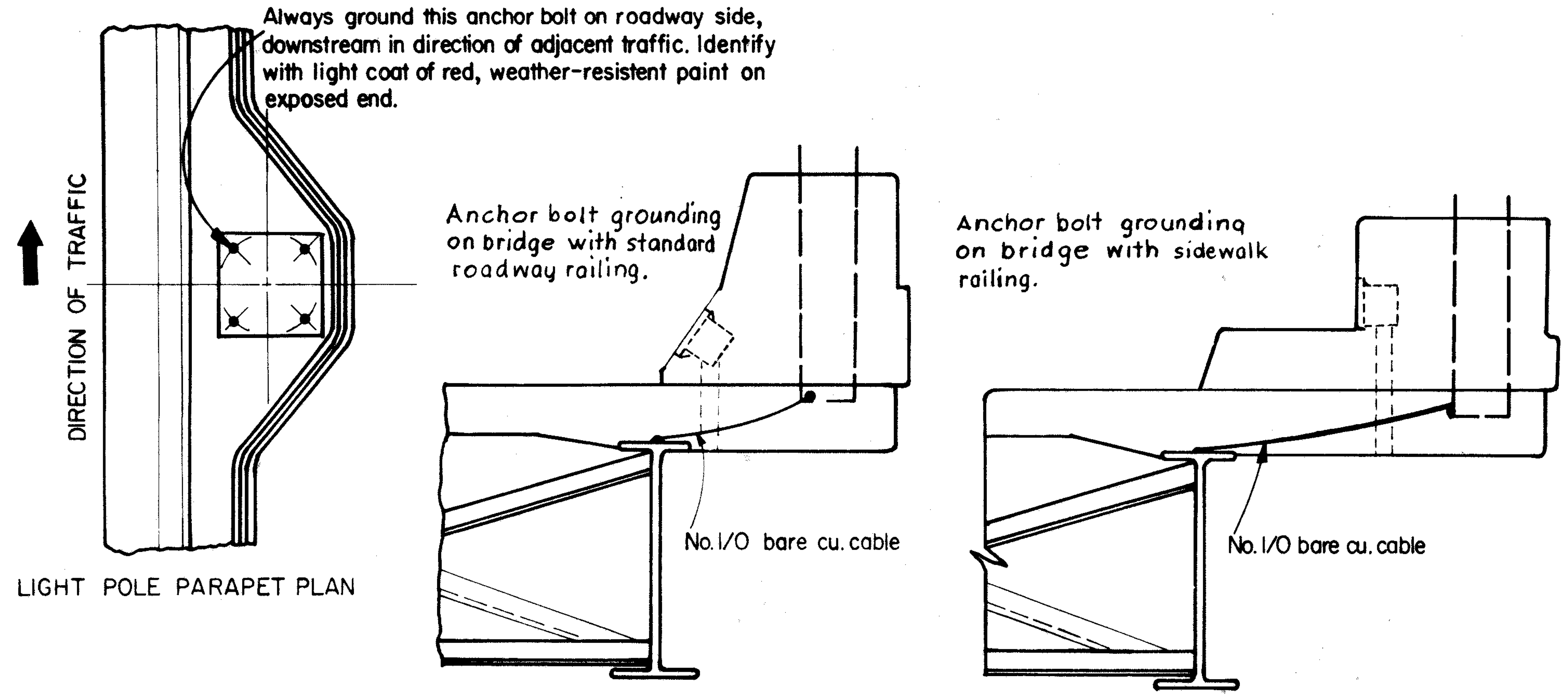
CAVITY FOR CONDUIT EXPANSION FITTING

Dimensions may be altered to fit abutment design.

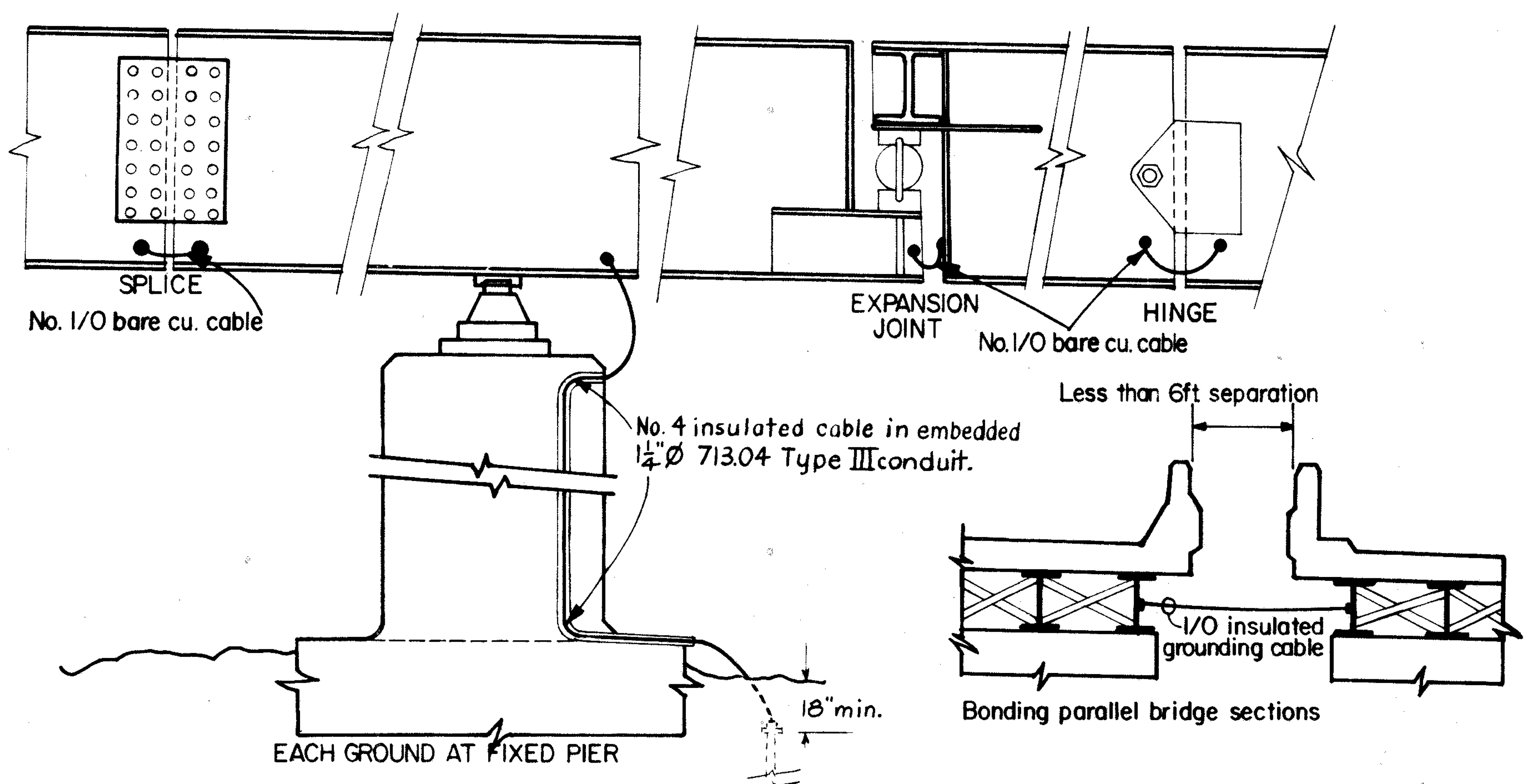
BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
HIGHWAY LIGHTING	DATE 4-6-73
STRUCTURE LIGHTING II	
5	
APPROVED: W. J. Cunningham Engineer of Design Services	

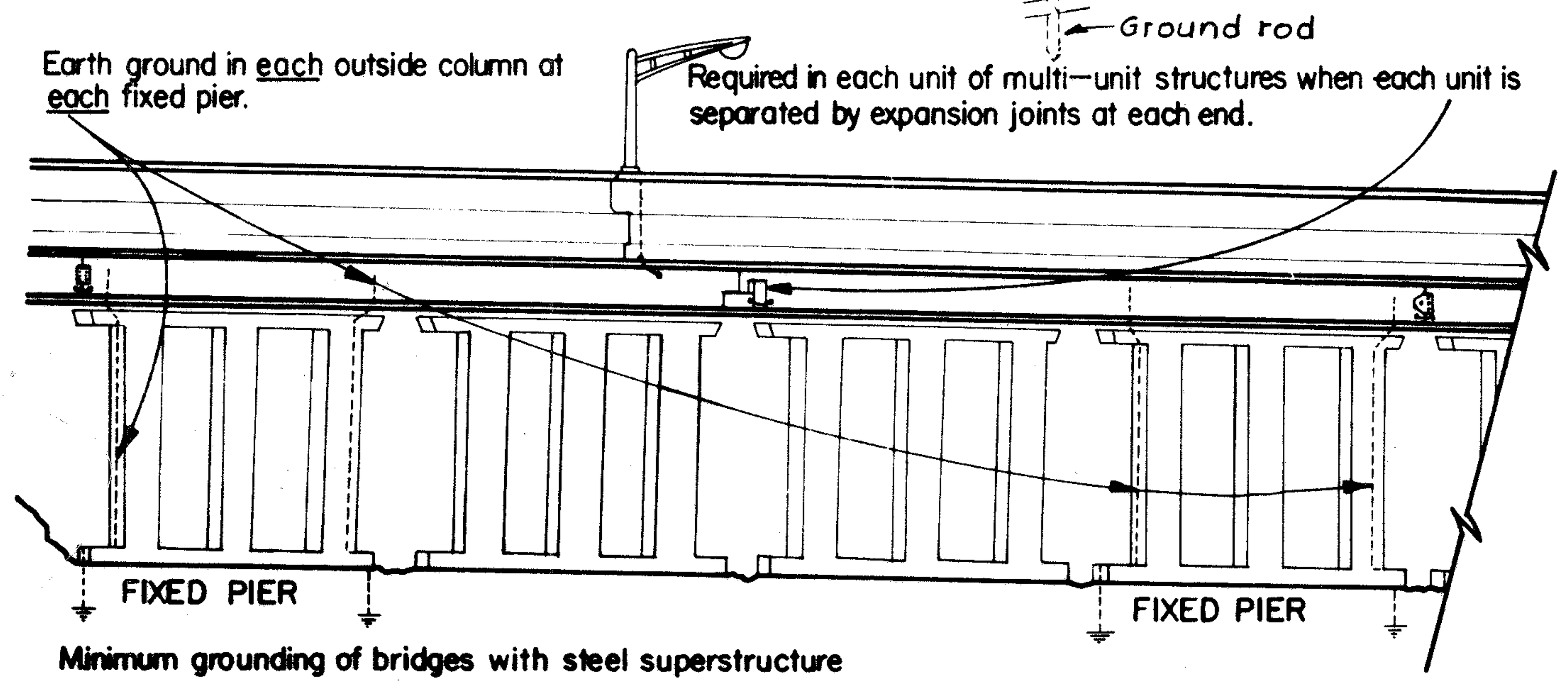
STRUCTURE GROUNDING

JEF-43-0.42

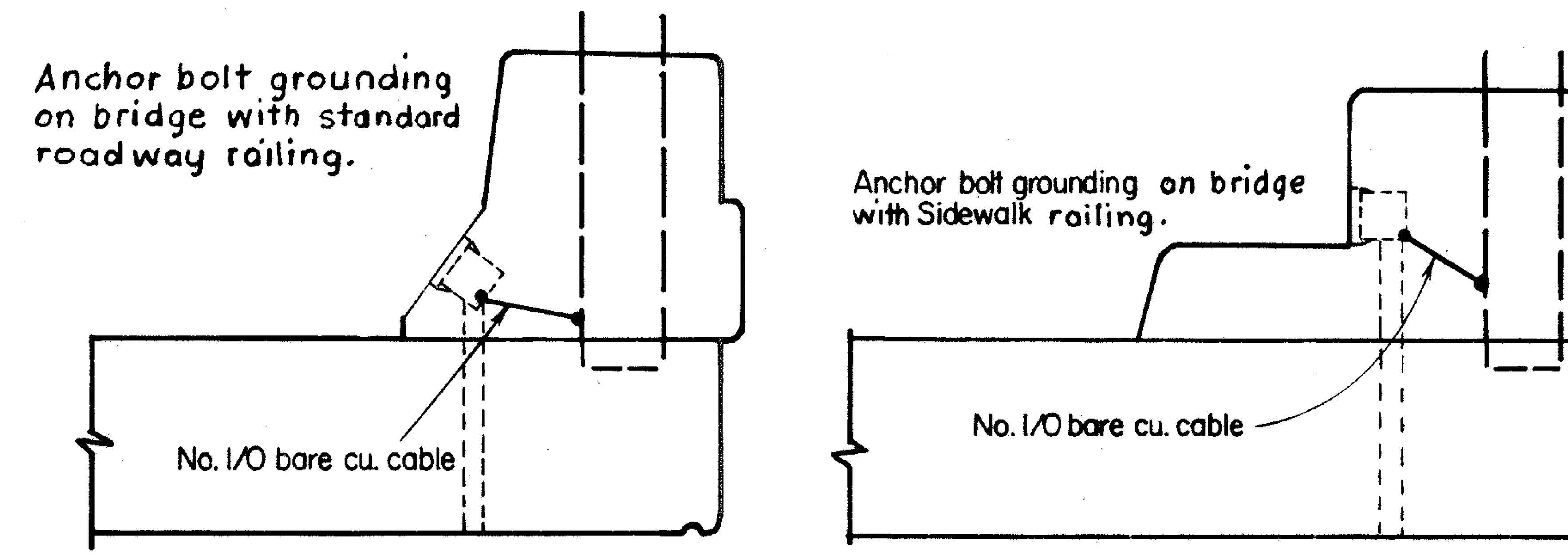


STEEL BEAM BRIDGES





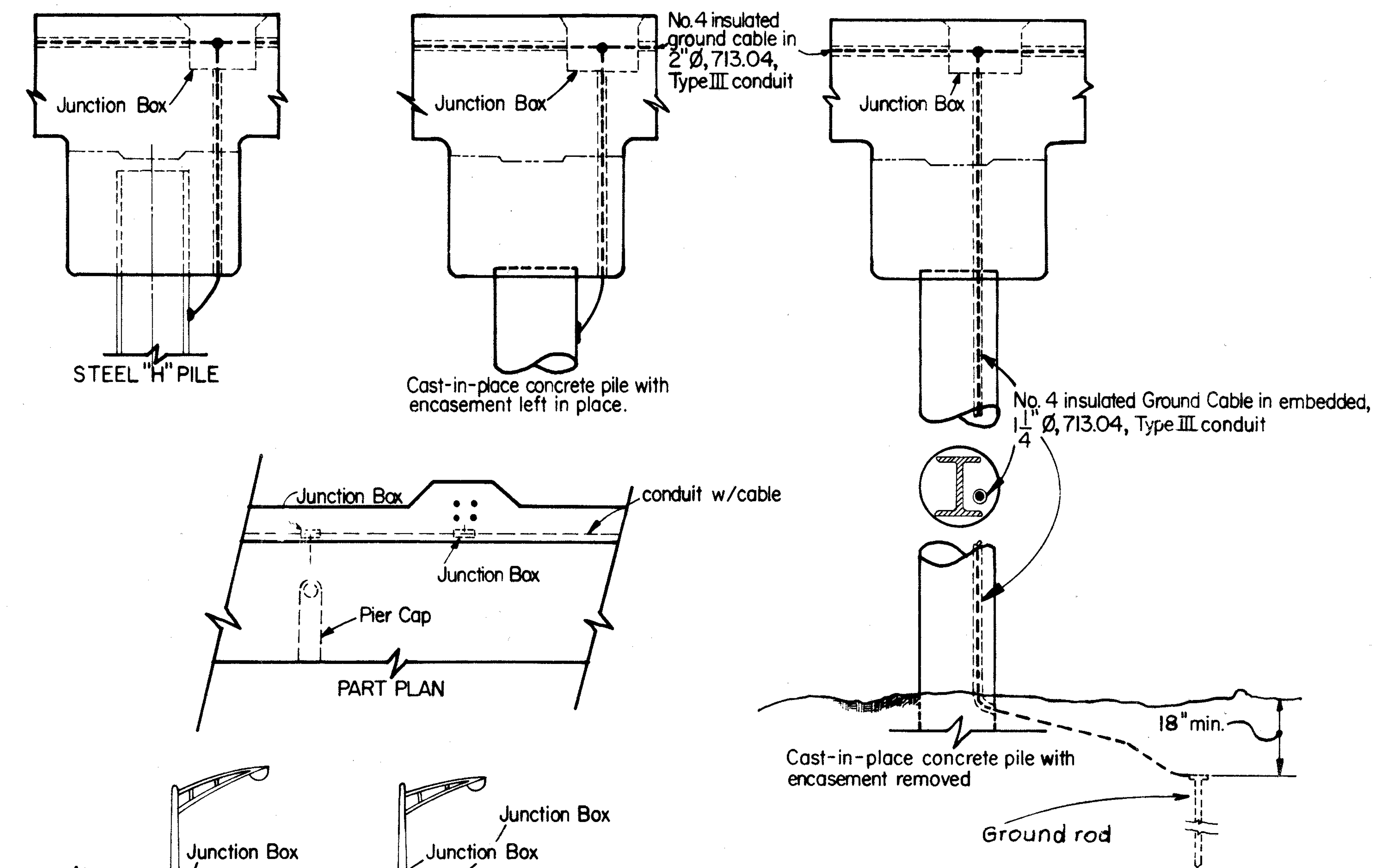
Minimum grounding of bridges with steel superstructure

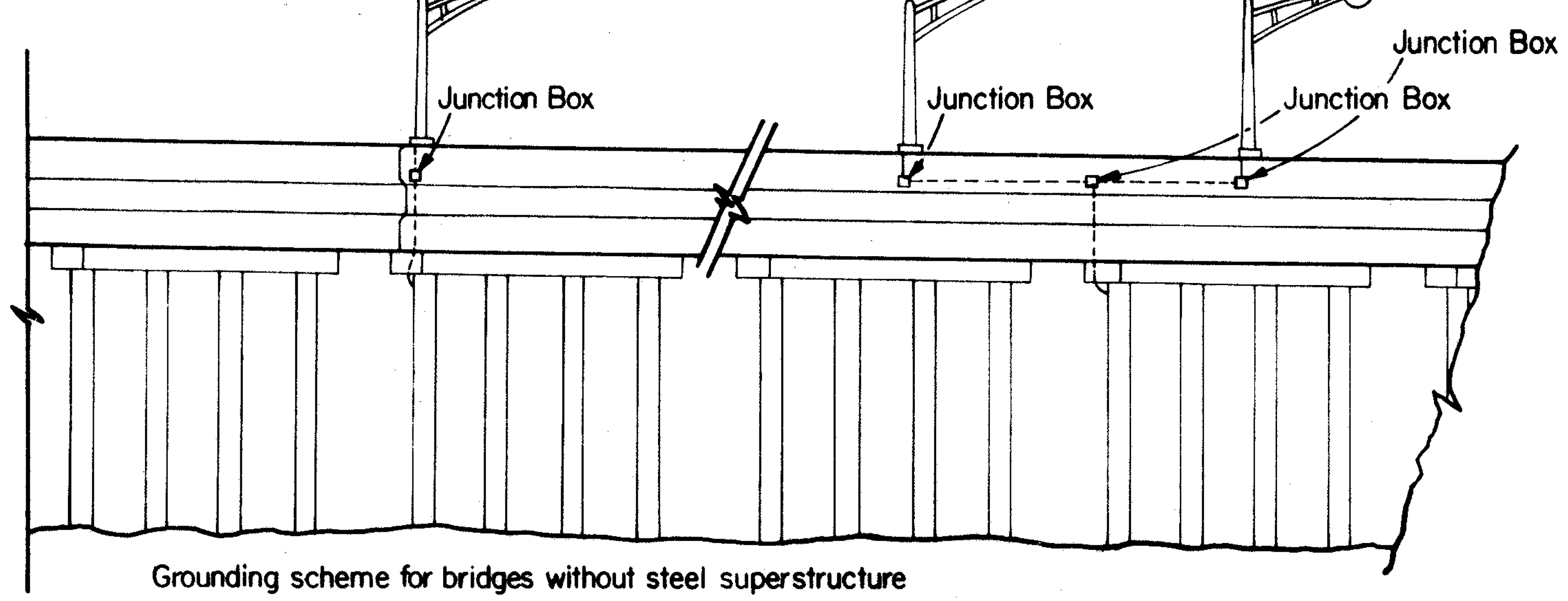


NOTES

1. Copper grounding cable shall be connected to structural steel, pile encasement, piling, ground rods and/or light pole anchor bolts by means of exothermic welding. Two coats of insulating varnish shall be applied over the exothermic weld and exposed cable.

CONCRETE SLAB BRIDGES





Grounding scheme for bridges without steel superstructure

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HIGHWAY LIGHTING

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STRUCTURE GROUNDING

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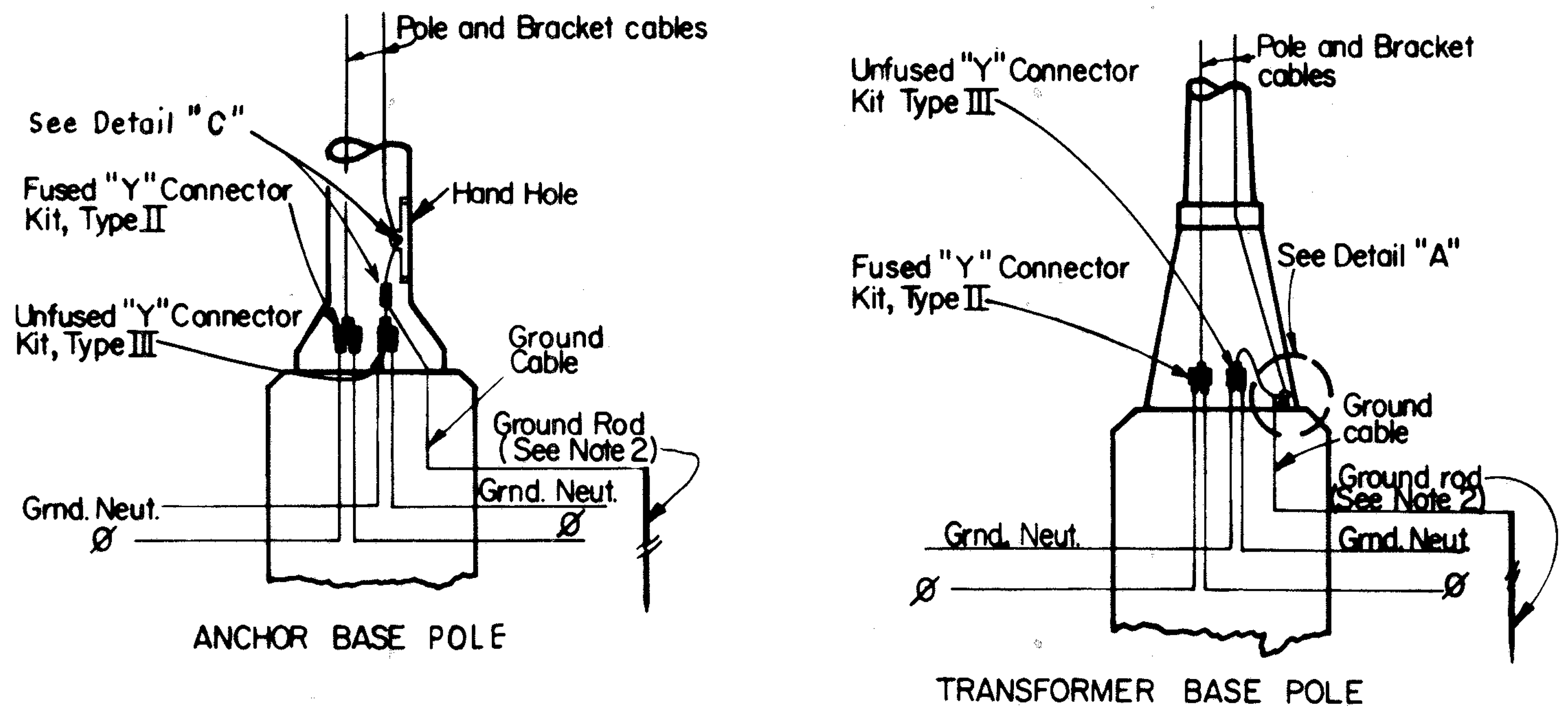
BRUNING 44-560 10943

LIGHT POLE STYLES

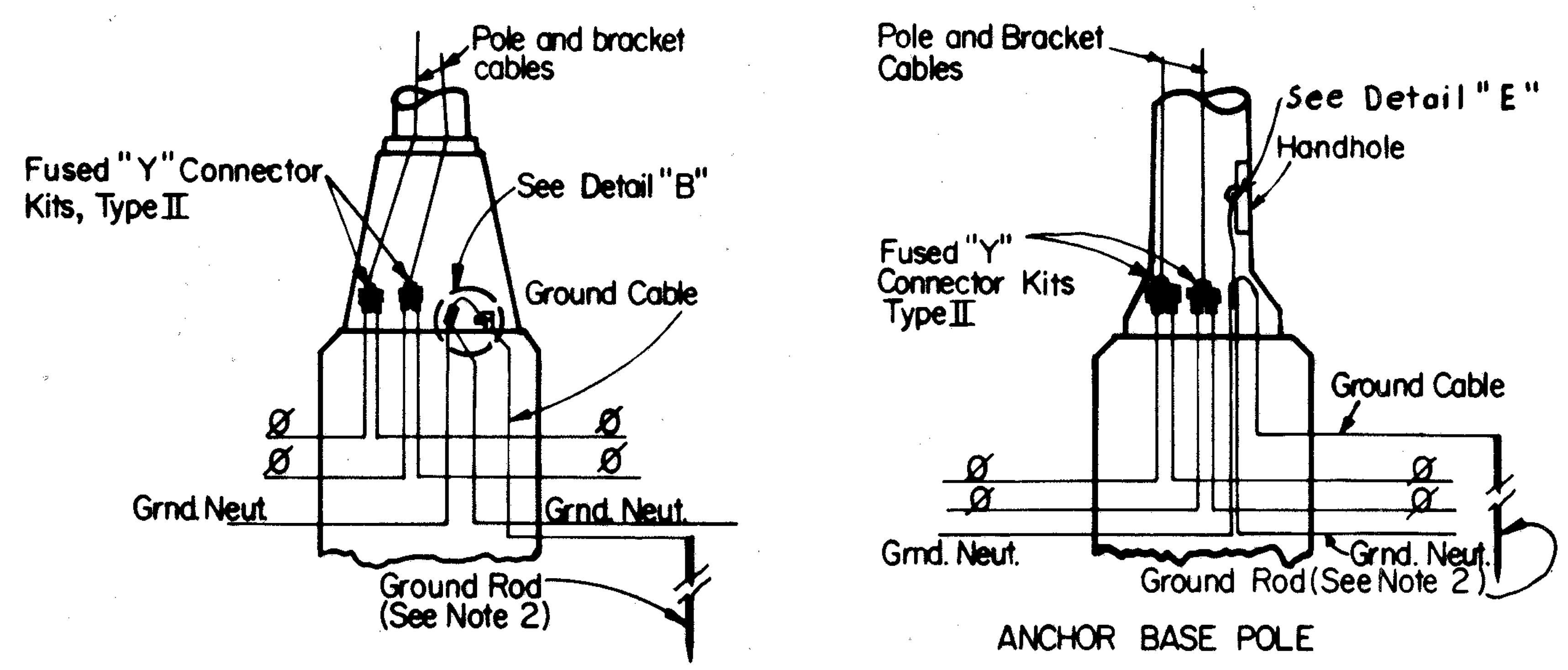
POLE WIRING

JEF-43-0.42

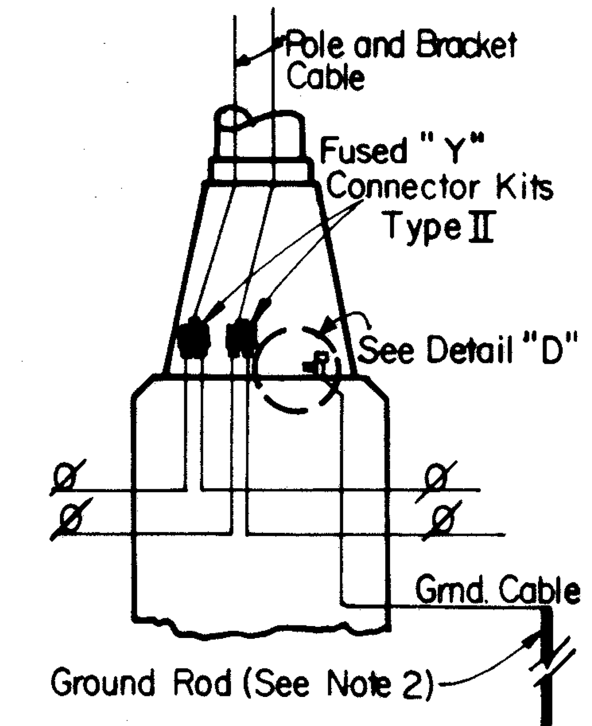
180E
299



480 VOLT, TWO-WIRE, GROUNDED NEUTRAL



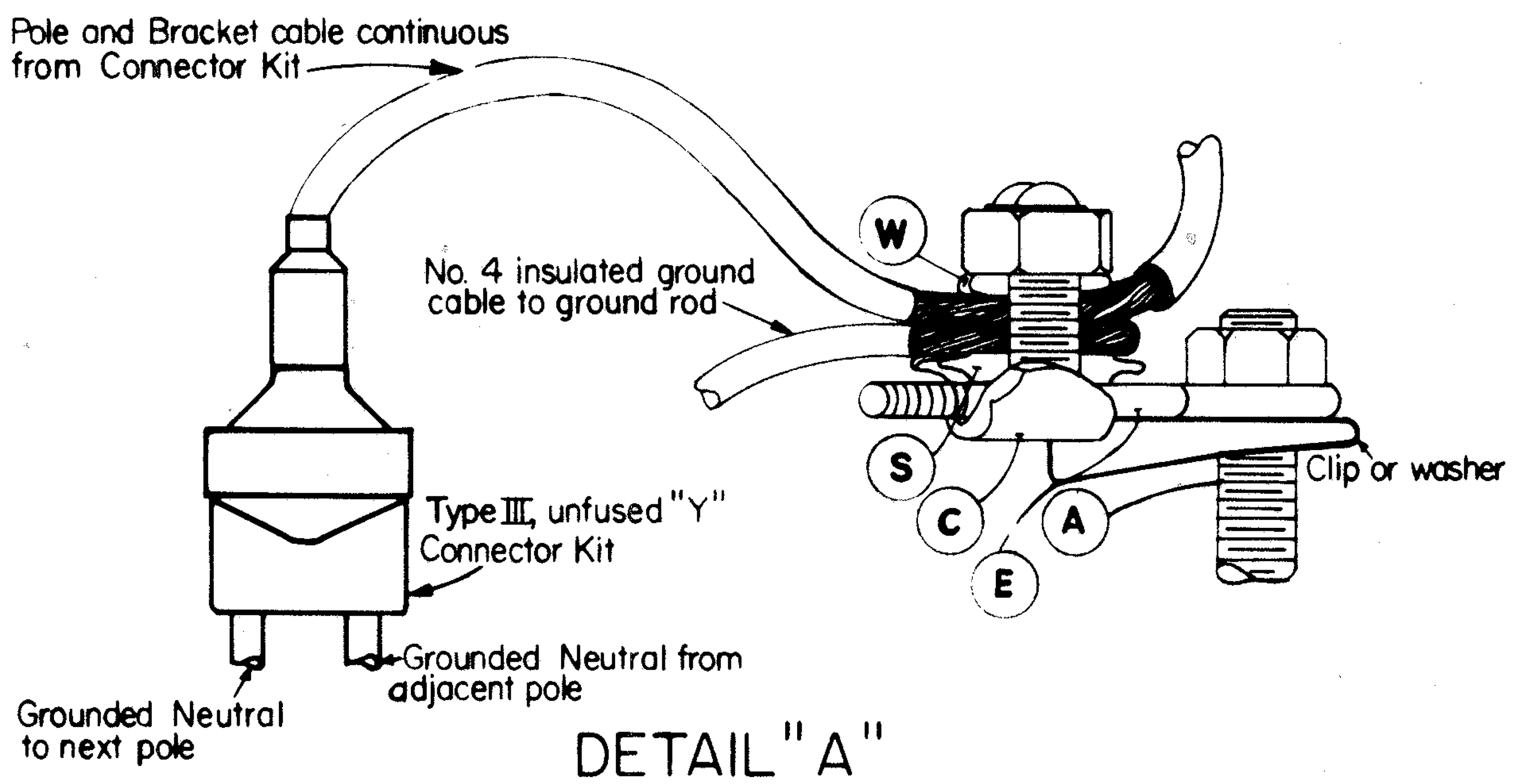
120/240 VOLTS, THREE WIRE, GROUNDED NEUTRAL



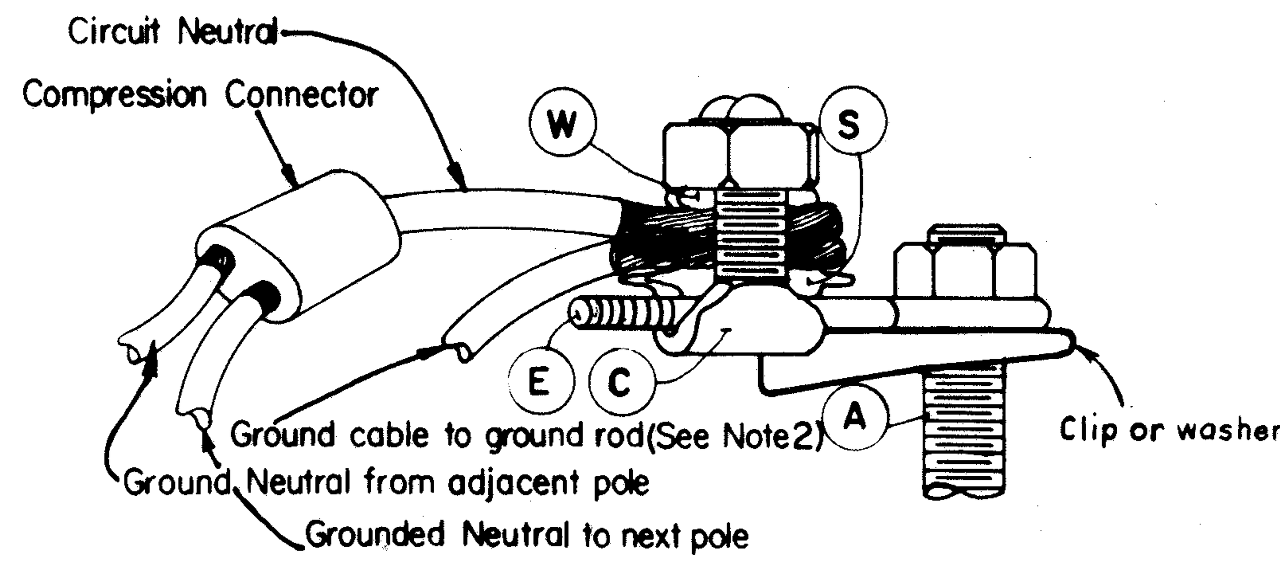
240 or 480 VOLTS, TWO-WIRE, UNGROUNDED

NOTES

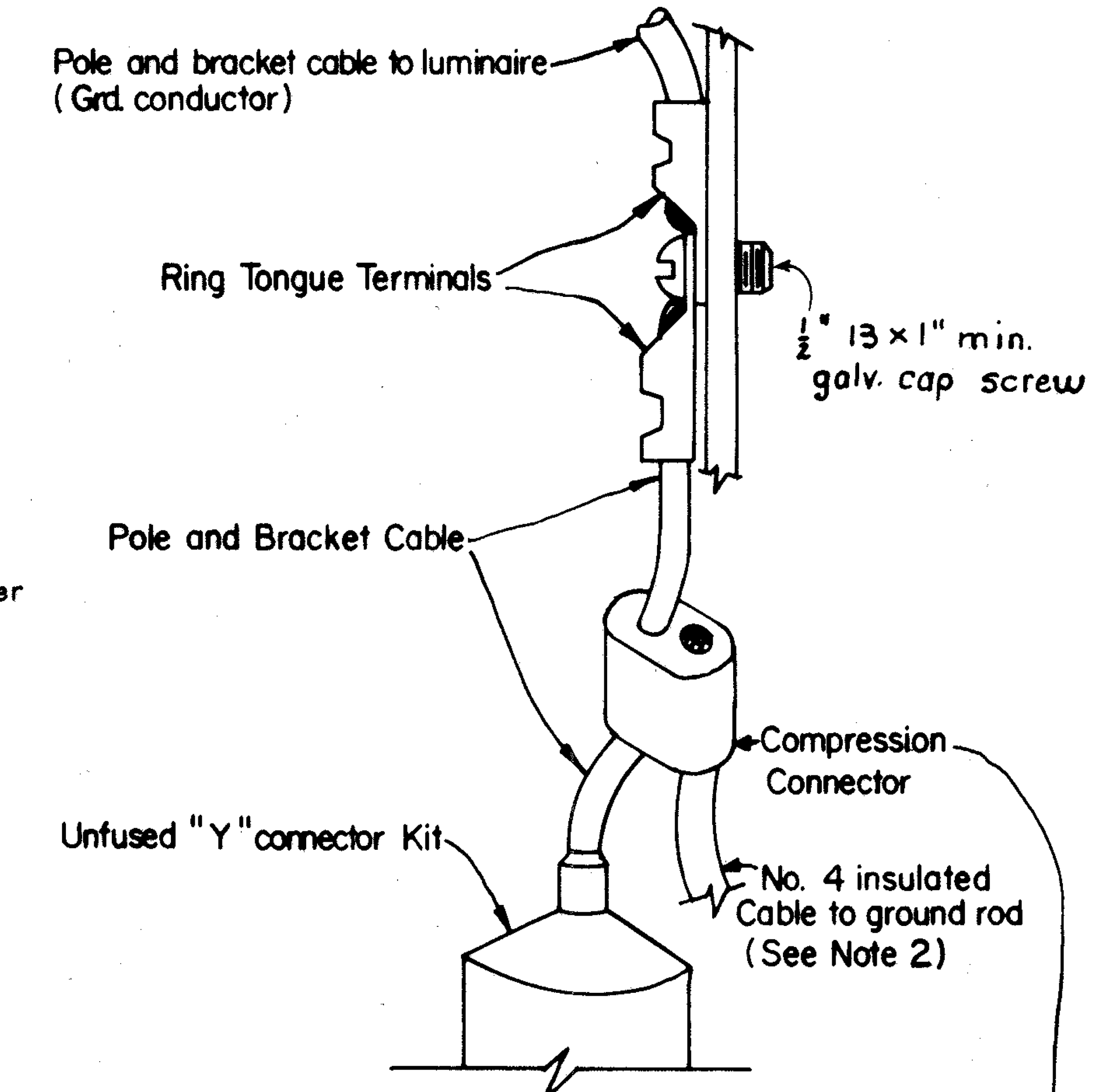
1. Provide sufficient slack in all cables to permit bringing Kits outside of pole base through handhole of anchor base poles or door in transformer base poles.
2. For structure-mounted poles substitute "Structure grounding system" for "ground rod."
3. See Drawing No. 13 for fusing details.



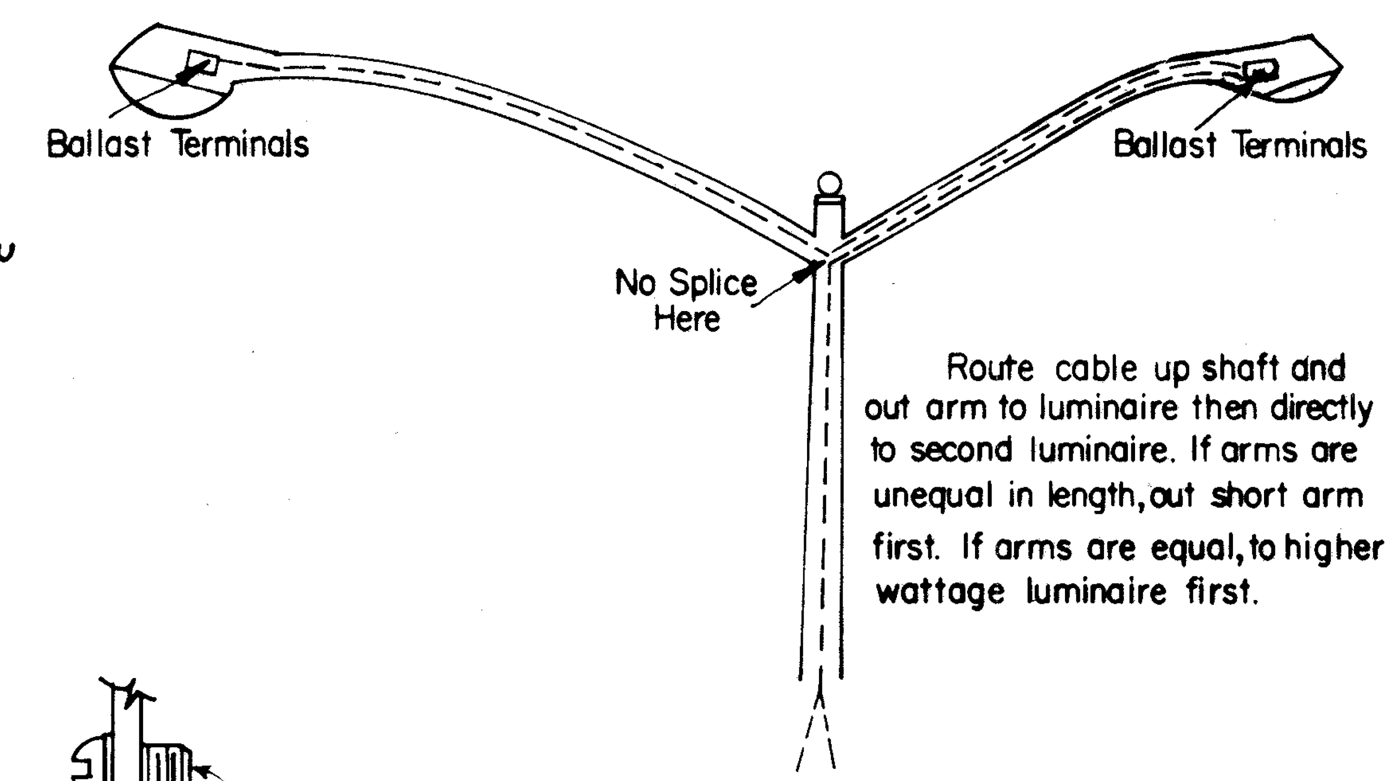
DETAIL "A"
2-Wire Grounded Neutral
Transformer Base Pole



DETAIL "B"
3-WIRE, GROUNDED NEUTRAL
Transformer Base Pole



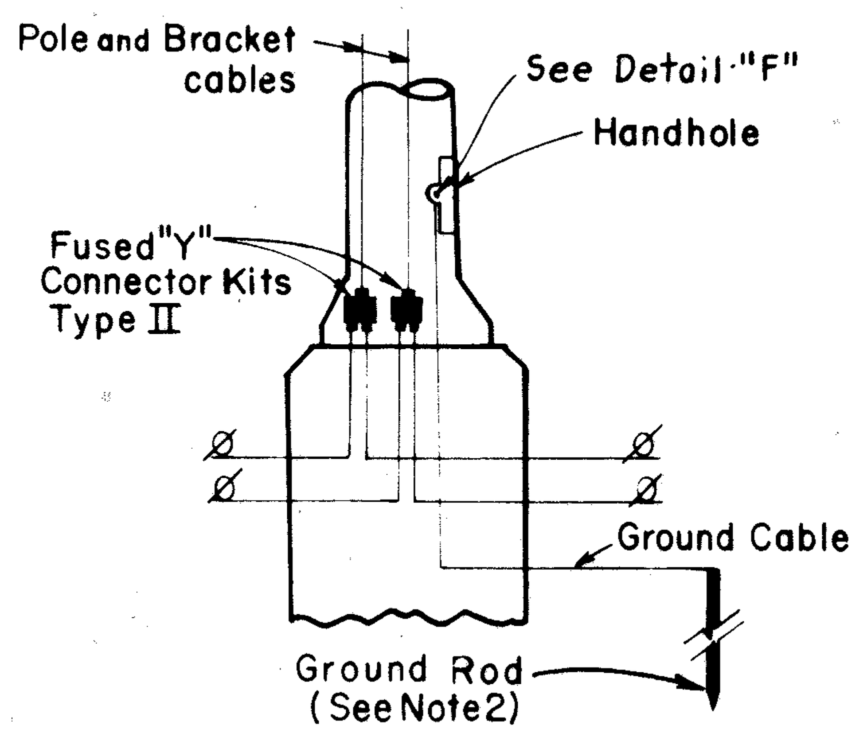
DETAIL "C"
2-Wire, Grounded Neutral
Anchor Base Pole



WIRING FOR TWIN-LUMINAIRE POLES

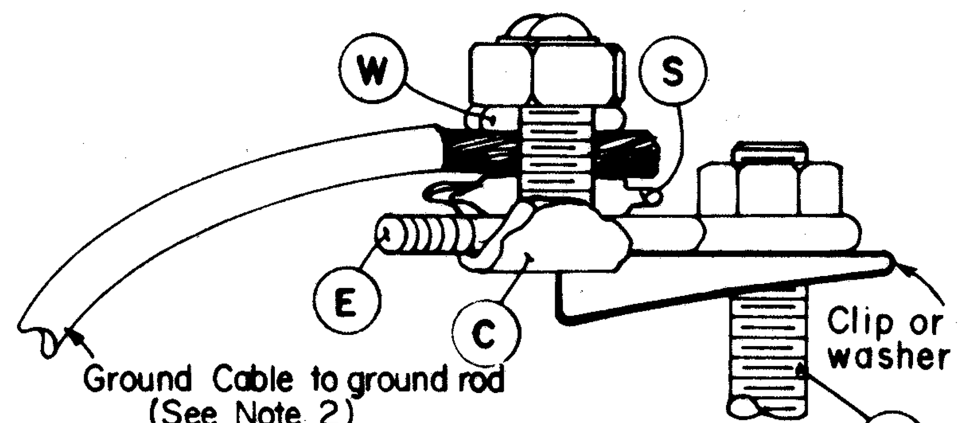
LEGEND of ITEMS COMMON TO DETAILS "A", "B", & "D"

- (A) Anchor Bolt
- (C) Tin Plated Copper Split Bolt Connector with the following components:
  - (S) Spacer (Tin plated)
  - (W) Washer
  - (E) 3/8" X 4" Galv. Steel eyebolt

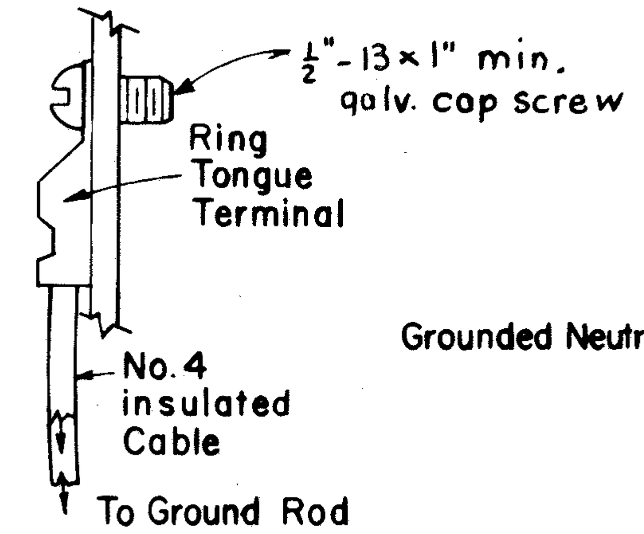


Anchor Base Pole

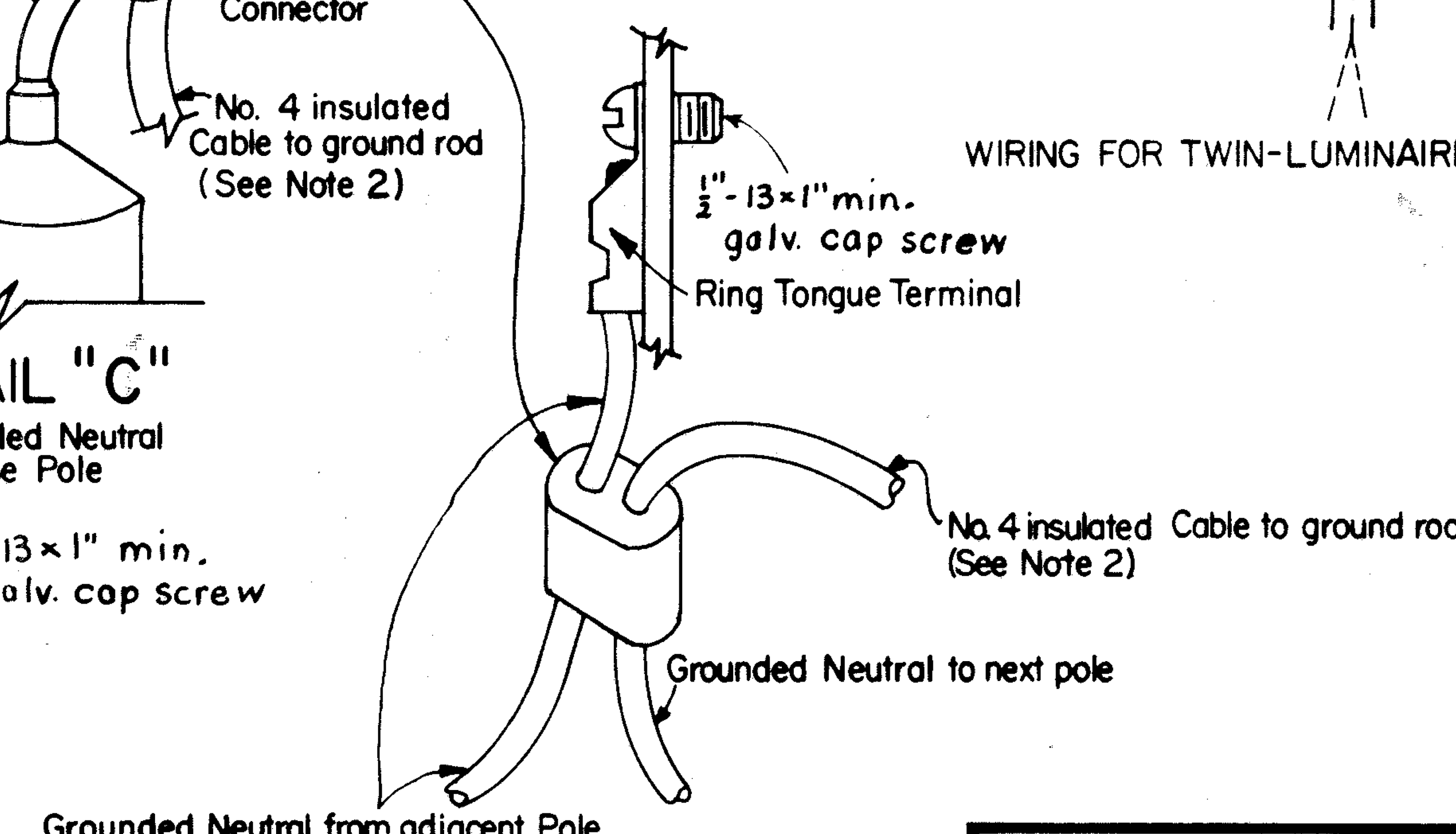
240 or 480 VOLTS, TWO-WIRE, UNGROUNDED



DETAIL "D"
2-Wire, Ungrounded Circuit
Transformer Base Pole



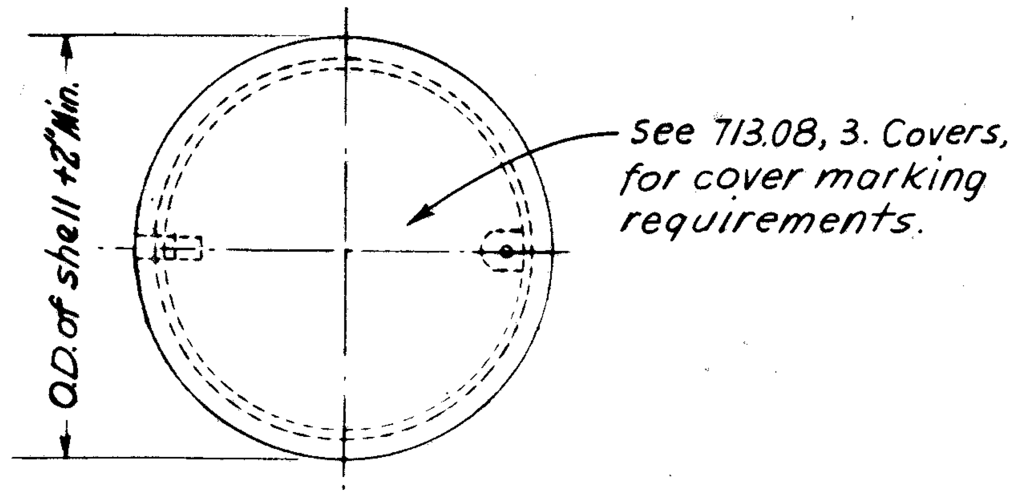
DETAIL "F"
2-WIRE UNGROUNDED



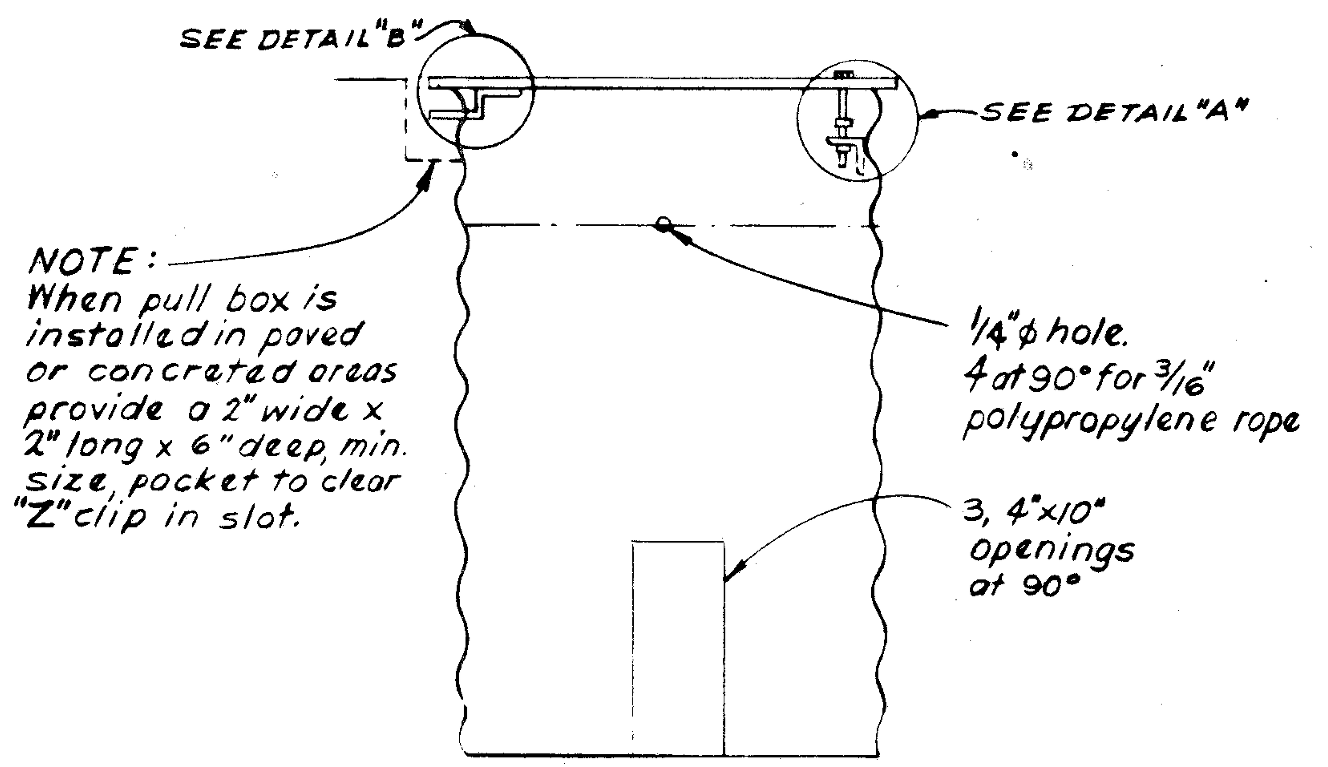
DETAIL "E"
3-Wire, Grounded Neutral
Anchor Base Pole

BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
HIGHWAY LIGHTING	DATE 4-6-73
POLE WIRING	
9	
APPROVED: [signature] Engineer of Design Services	

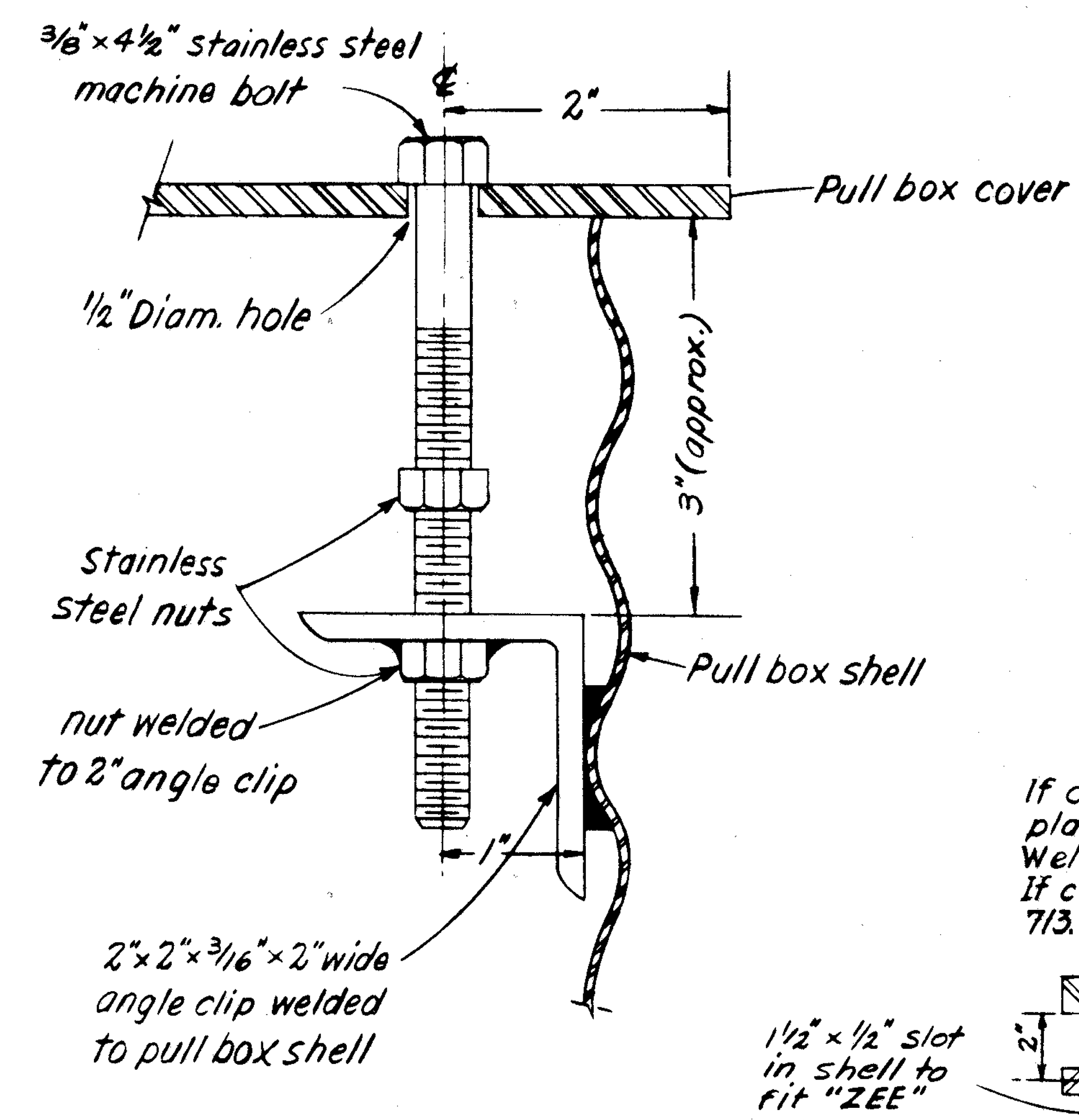
PULL BOX DETAILS



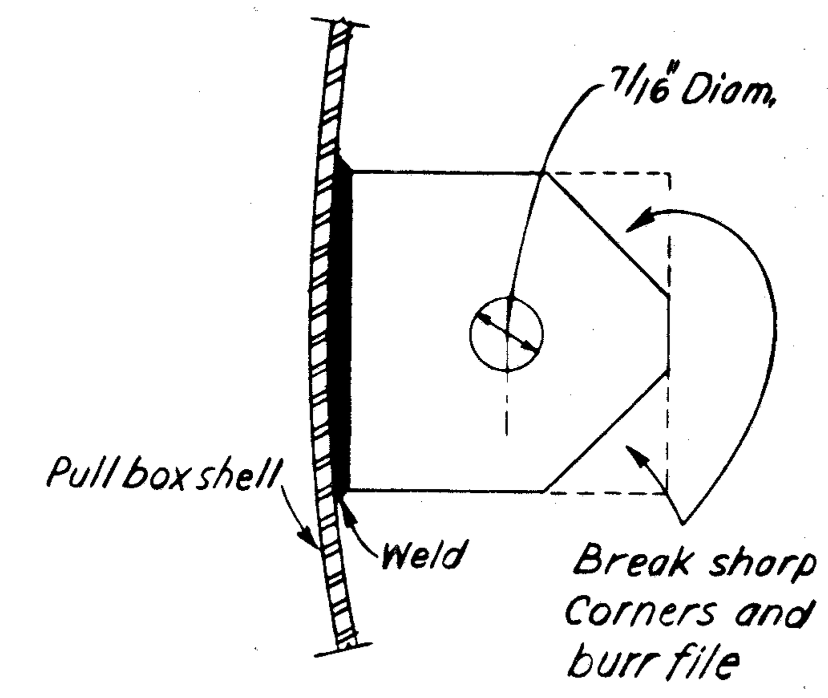
PLAN



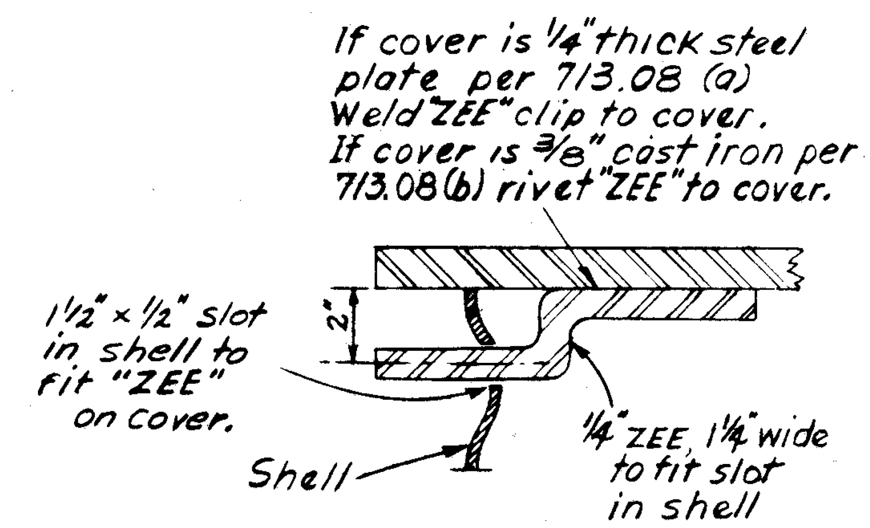
ELEVATION



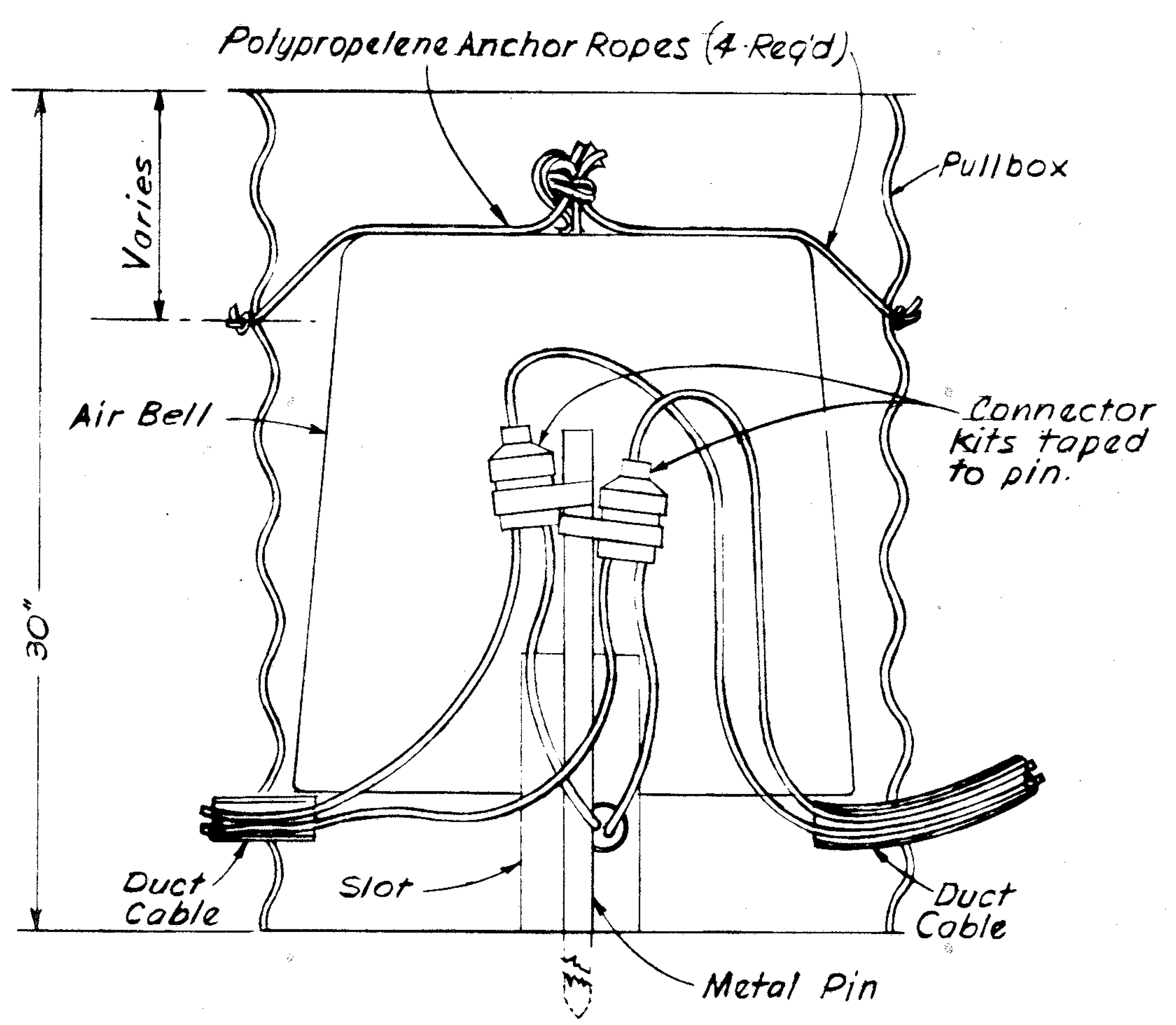
DETAIL "A"



PLAN OF ANGLE CLIP



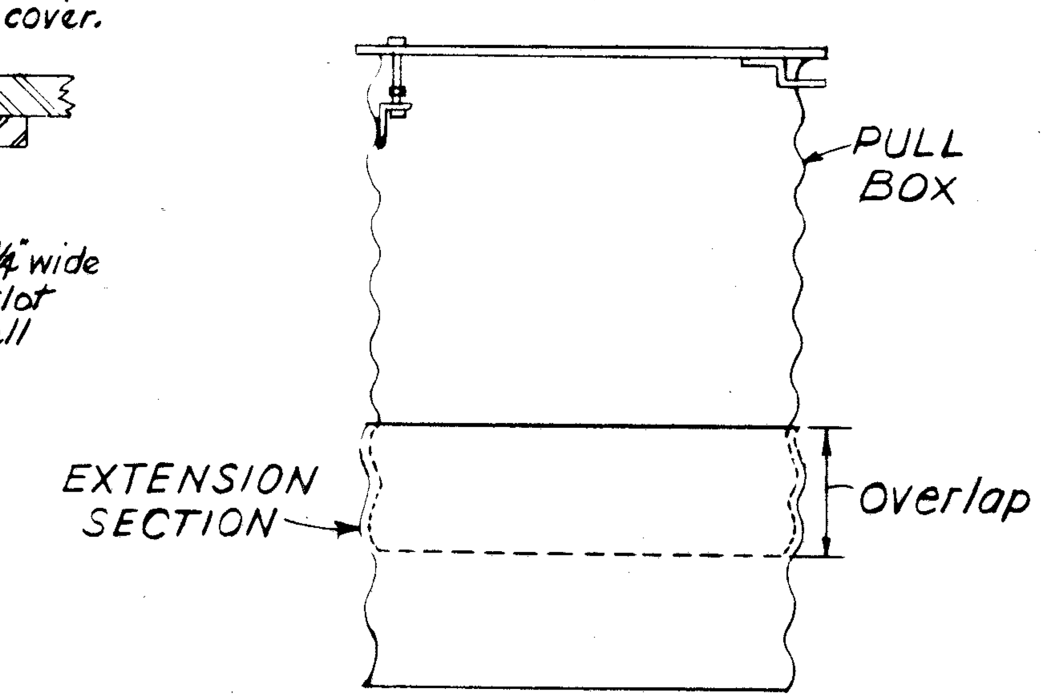
DETAIL "B"



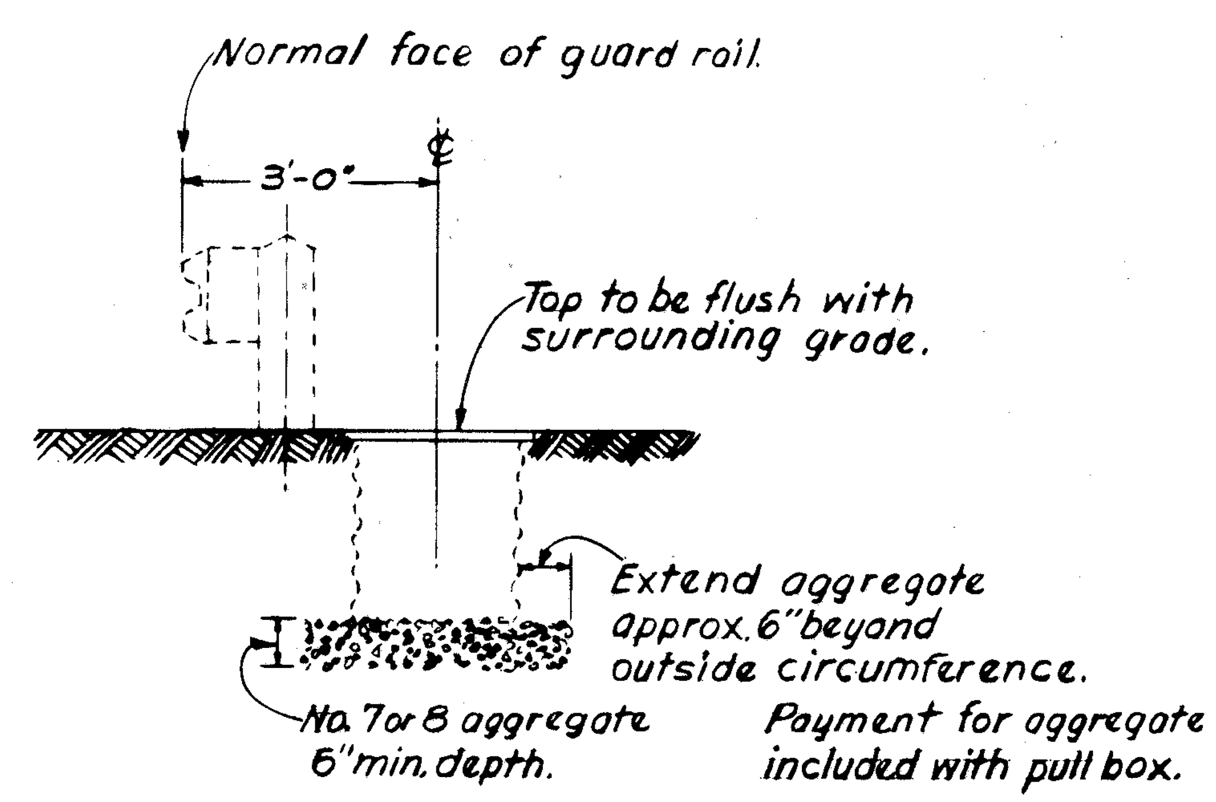
INTERIOR VIEW OF PULLBOX SHOWING ANCHORED AIR BELL AND SUPPORT FOR CONNECTOR KITS.

(See Notes 1 and 2)

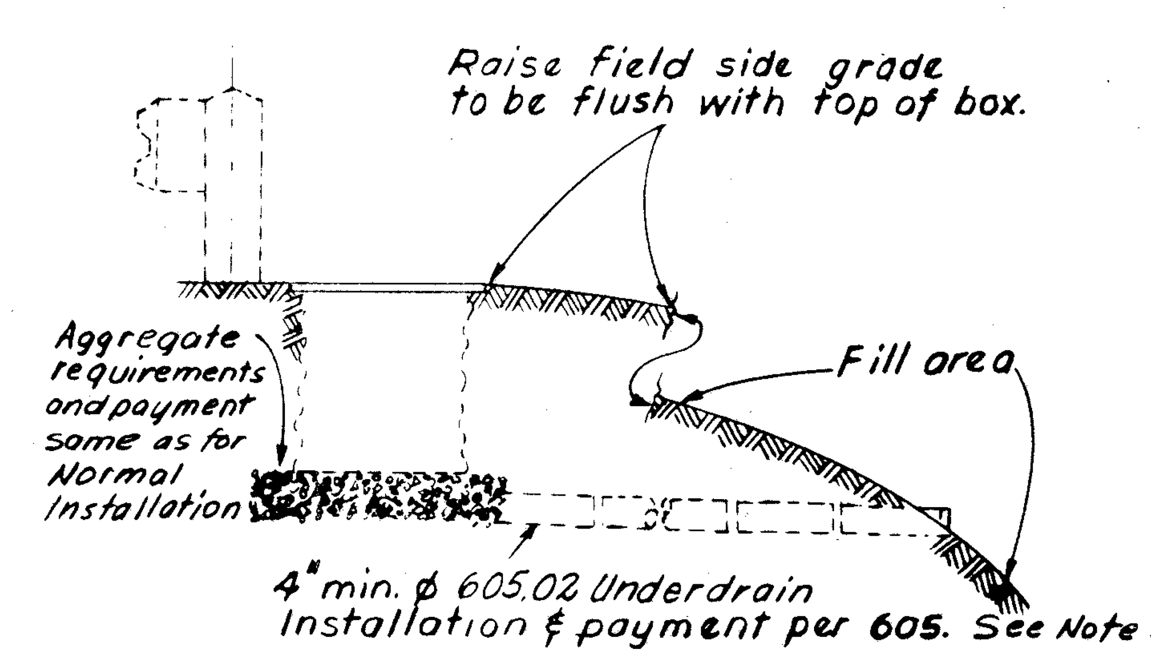
CORRUGATED STEEL PULL BOX



GRADE ADJUSTMENT EXTENSION SECTION



NORMAL INSTALLATION



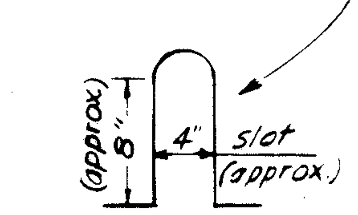
ADJACENT TO FILL AREA

NOTES

1. Approximate Air Bell sizes:

Pullbox Diameter	Air Bell Diameter	Air Bell Height
18"	16¾"	20½"
24"	20½"	28½"

2. When required to provide a clear opening for the duct cable the air bell for the 24" diameter pullbox shall be notched as shown



3. Underdrain tile shall be installed only when specified or directed by the Engineer.

BUREAU OF DESIGN SERVICES
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PULL BOX DETAILS

10

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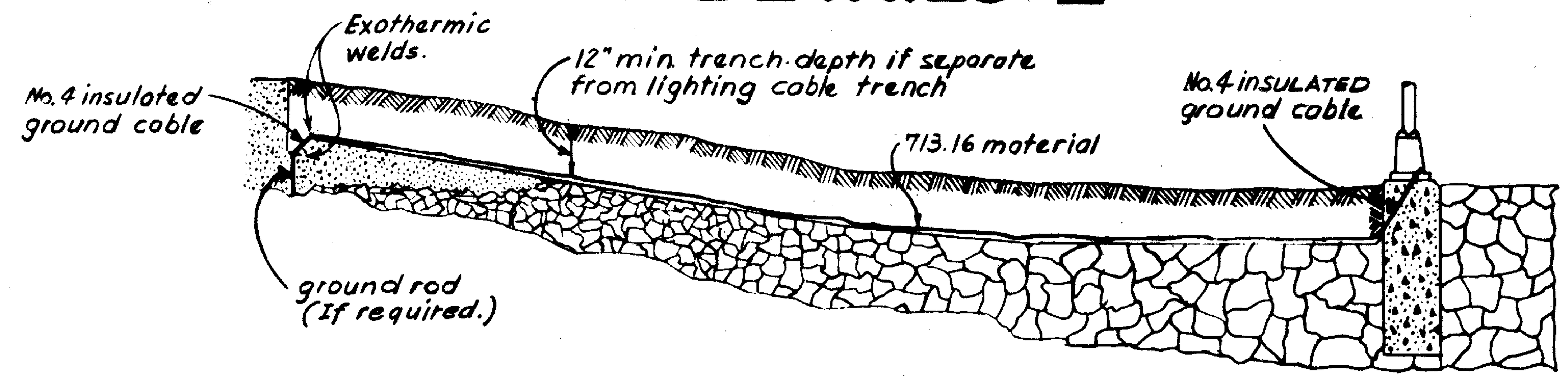
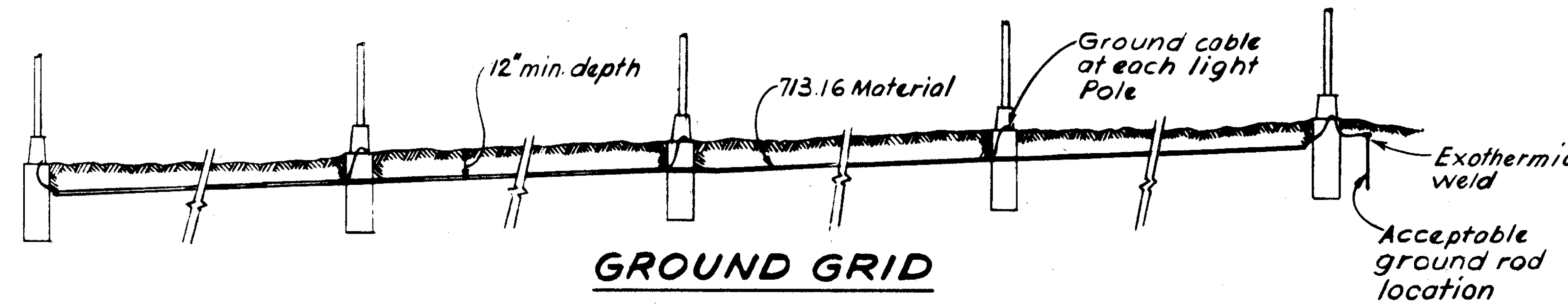
MISCELLANEOUS DETAILS I

JEF-43-0.42



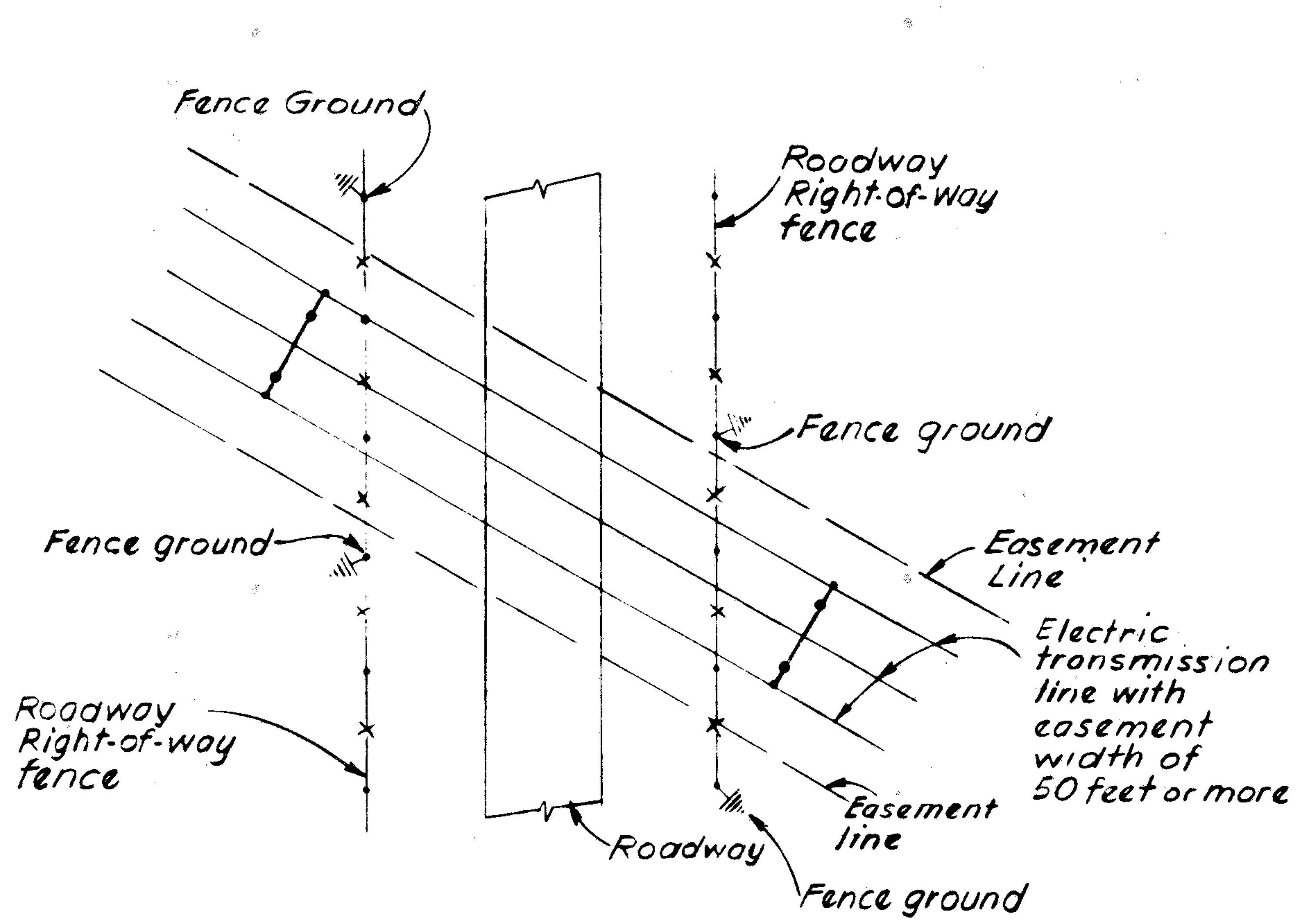
MODIFIED GROUND GRID FOR INDIVIDUAL POLE GROUND



GROUND GRID

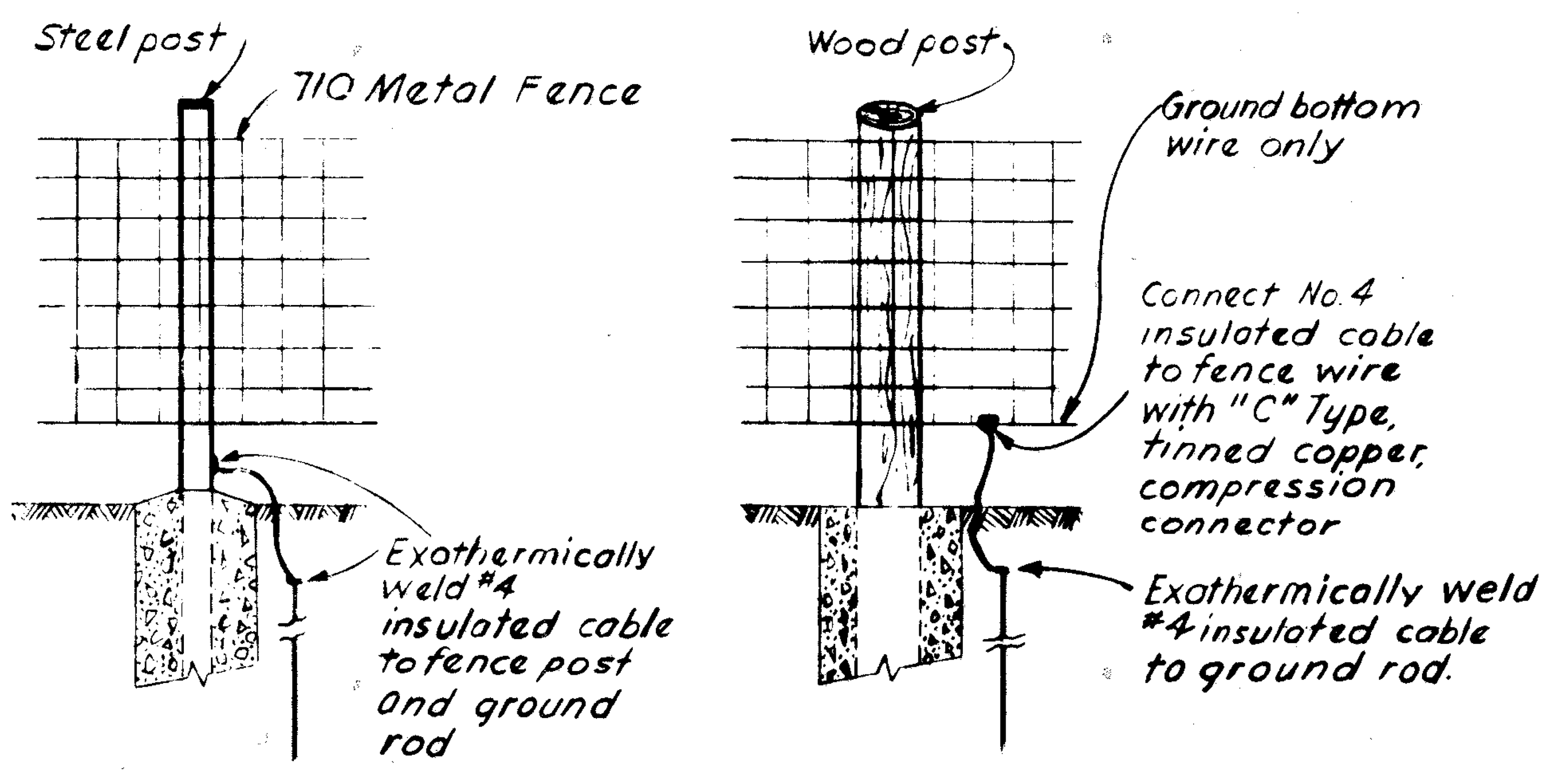
NOTES

1. Where overhead transmission line easements 50 feet or more in width cross a fenced roadway right-of-way, each fence shall be grounded as shown hereon.
2. Where overhead electric power line easements less than 50 feet in width cross a fenced roadway right-of-way, each fence shall be grounded directly below the centerline of the power line crossing.
3. Where overhead transmission lines rated 110 KV or higher are parallel to roadway fences and the transmission line easement is contiguous to the roadway right-of-way the roadway fences shall be grounded at least every 300 ft.
4. Fence grounds will be paid for at unit price bid for Ground Rods, item 625.
5. Apply two coats of insulating varnish over all exothermic welds and exposed cable.



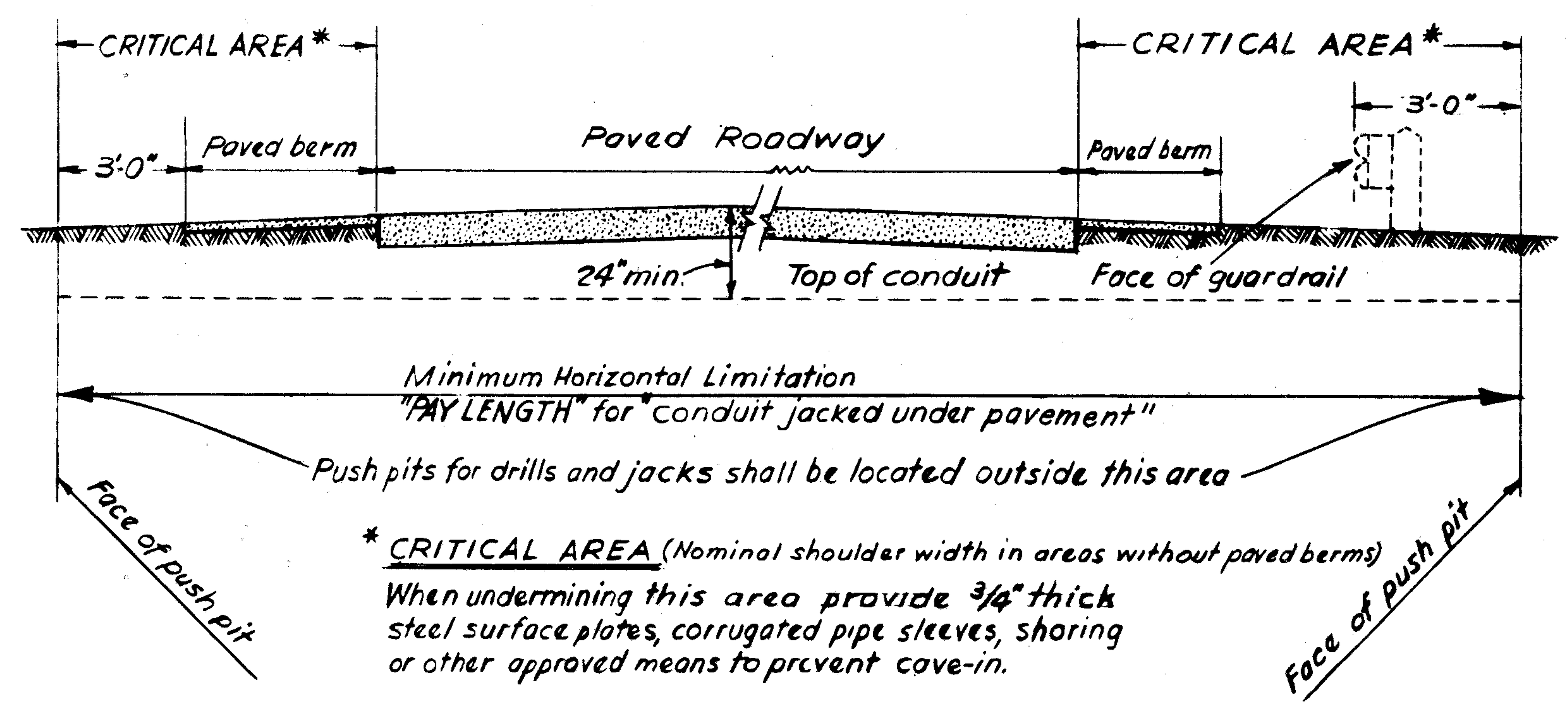
CROSSING OF ROADWAY R/W & TRANSMISSION LINE EASEMENT

(See Note 1)

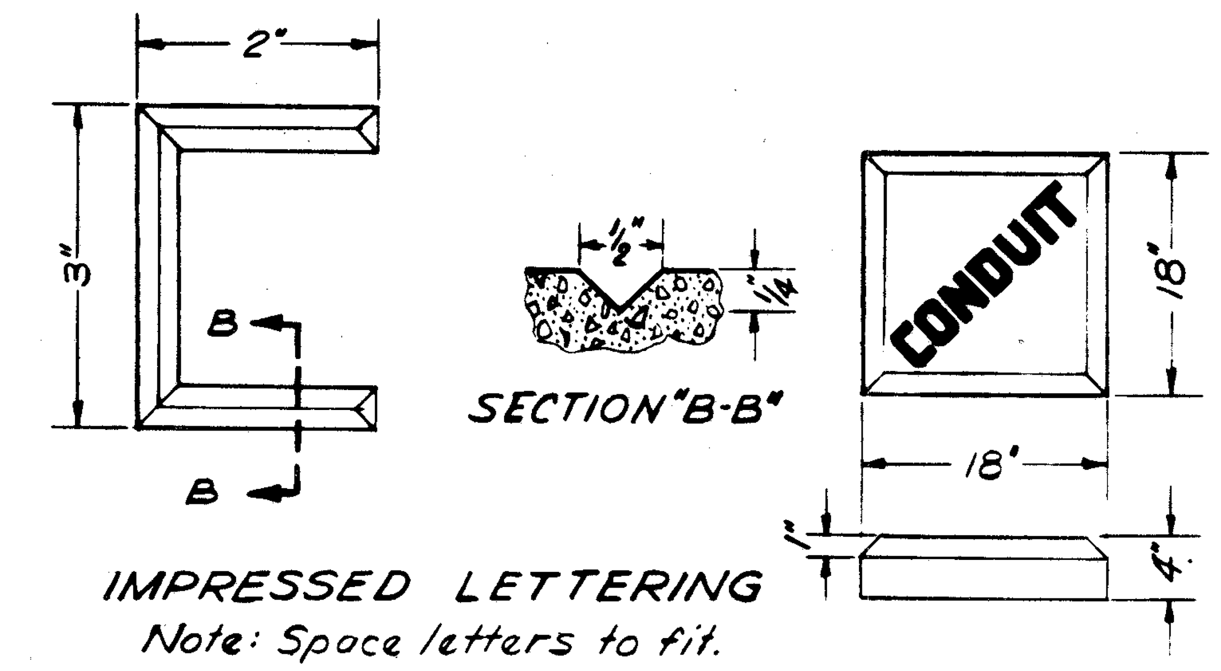


FENCE GROUND DETAILS

When specified, roadway right-of-way fences shall be grounded as shown hereon. (See also, Notes 1, 2, 3, & 4)



DETAIL FOR CONDUIT JACKED UNDER PAVEMENT

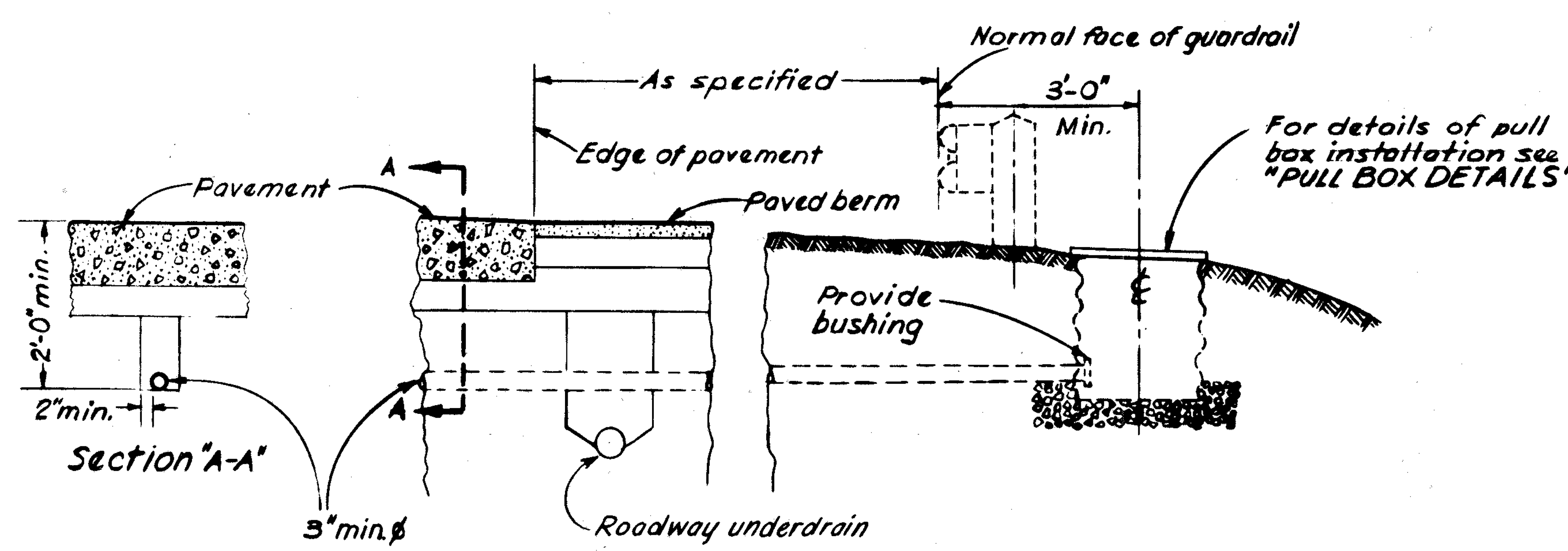


"CONDUIT" - to indicate conduit for future cable or wire.

"CABLE" - to indicate abrupt change in direction of cable

CONCRETE MARKER

(625.16)



TYPICAL CONDUIT CROSSOVER DETAIL

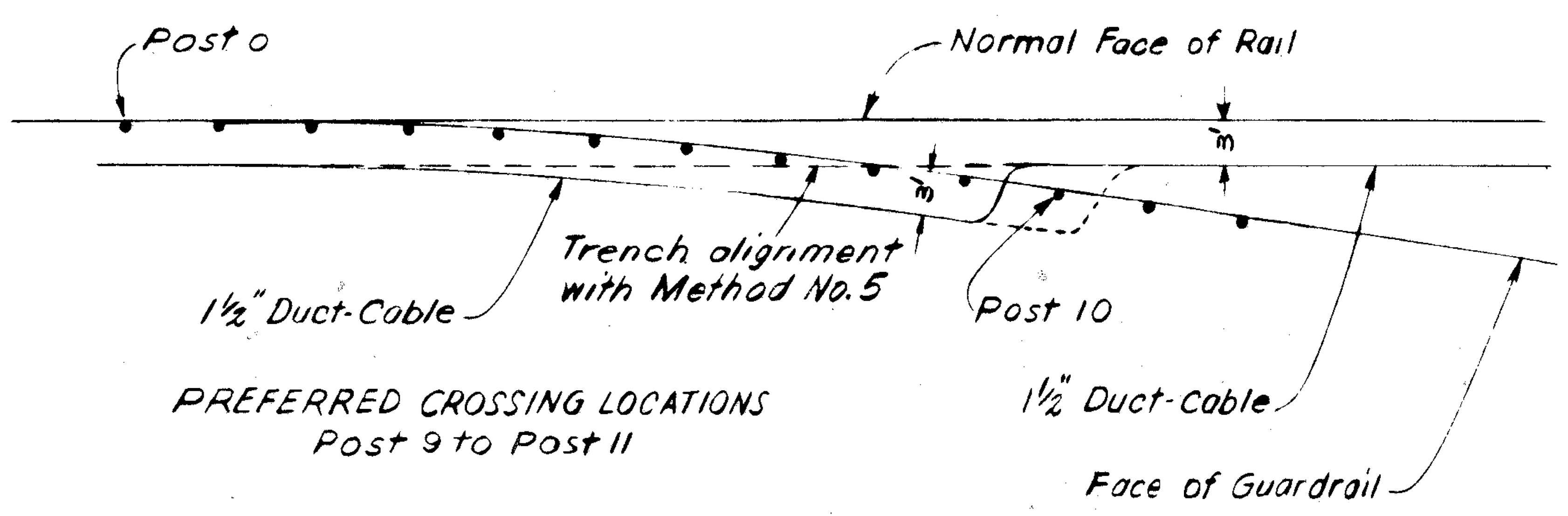
BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
HIGHWAY LIGHTING	DATE 4-6-73
MISCELLANEOUS DETAILS I	
11	
APPROVED: W. J. Cunningham Engineer of Design Services	

MISCELLANEOUS DETAILS II

JEF-43-0.42

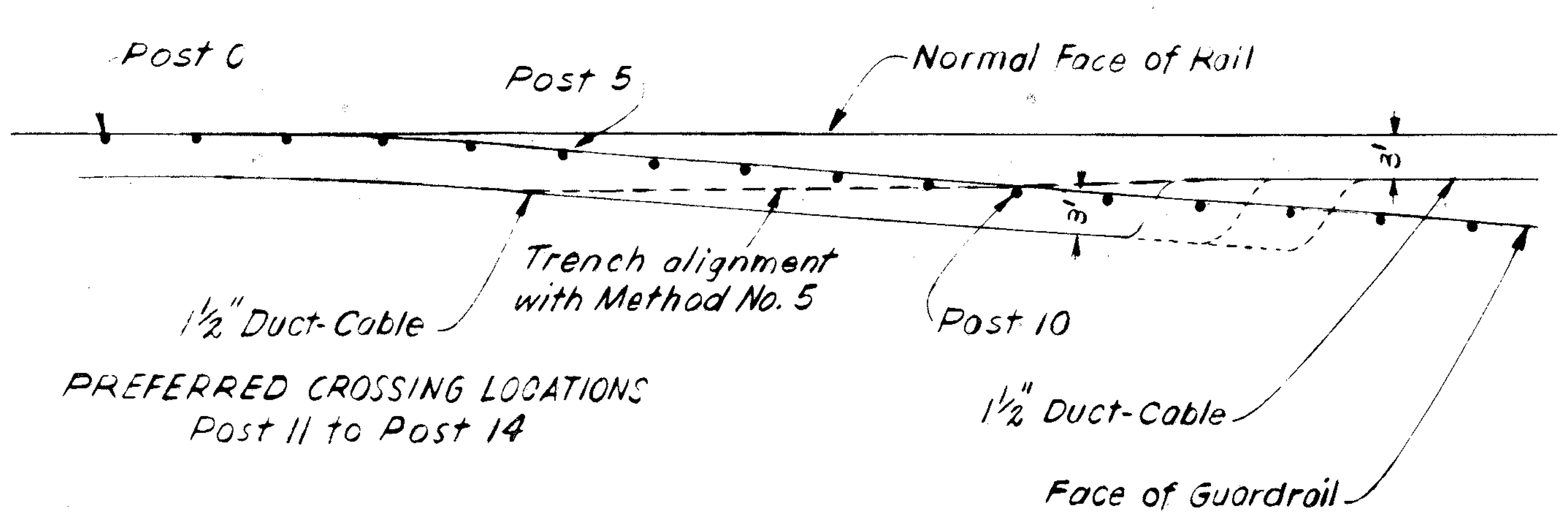
180H
299

STANDARD GUARDRAIL FLARE
FOR CUT TO FILL AND FILL TO FILL AREAS
1" = 10'

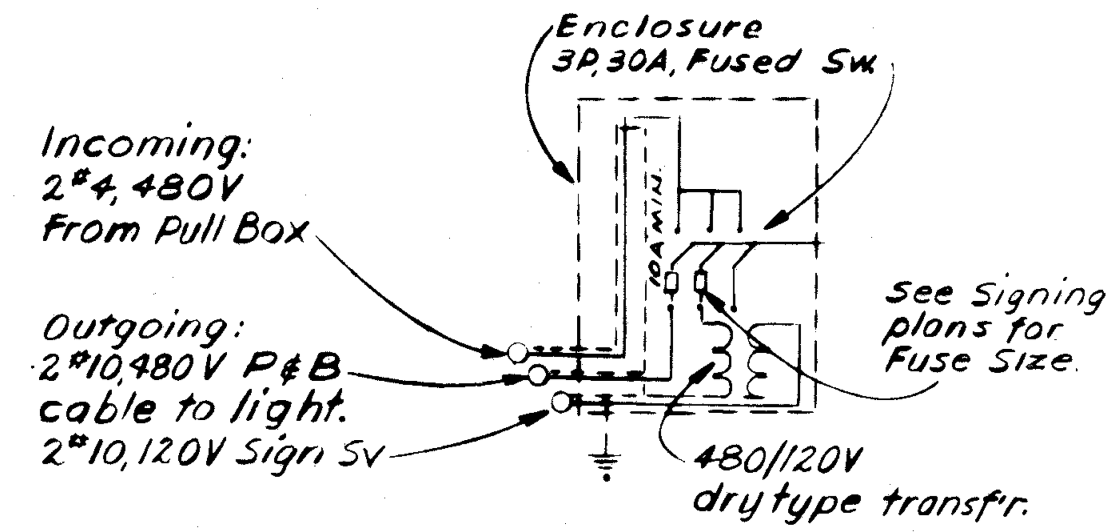


PREFERRED CROSSING LOCATIONS
Post 9 to Post 11

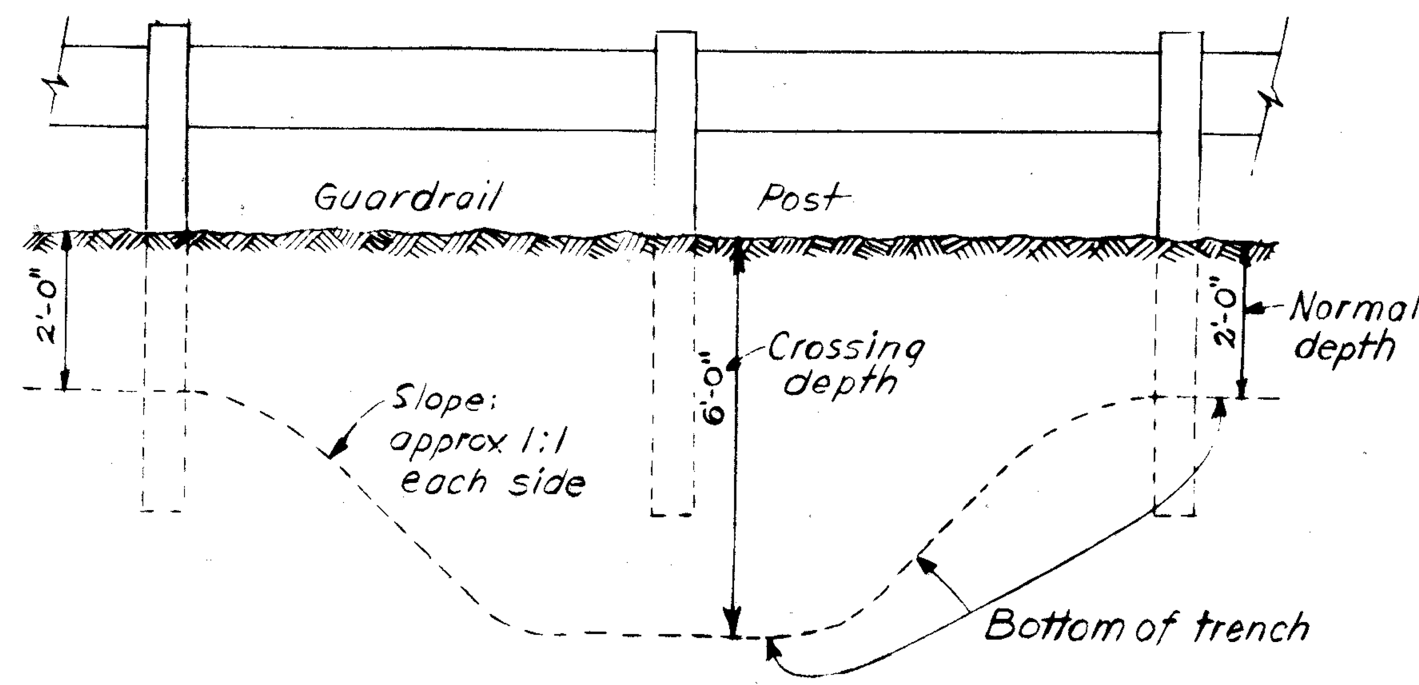
INTRODUCED GUARDRAIL FLARE
BECAUSE OF OBSTRUCTION
1" = 10'



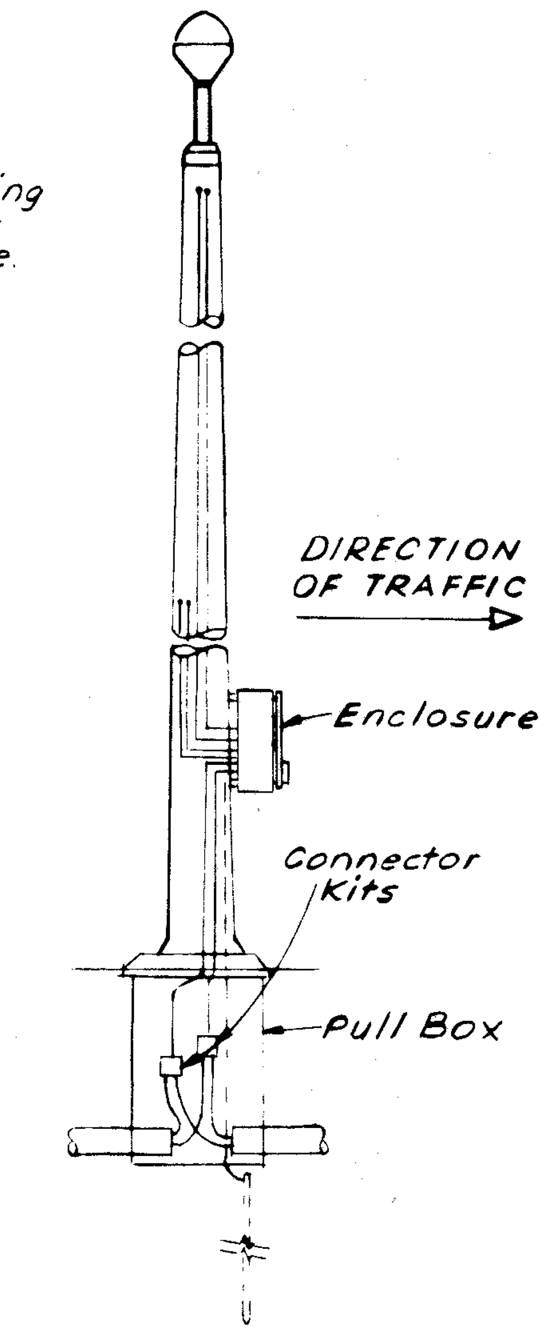
PREFERRED CROSSING LOCATIONS
Post 11 to Post 14



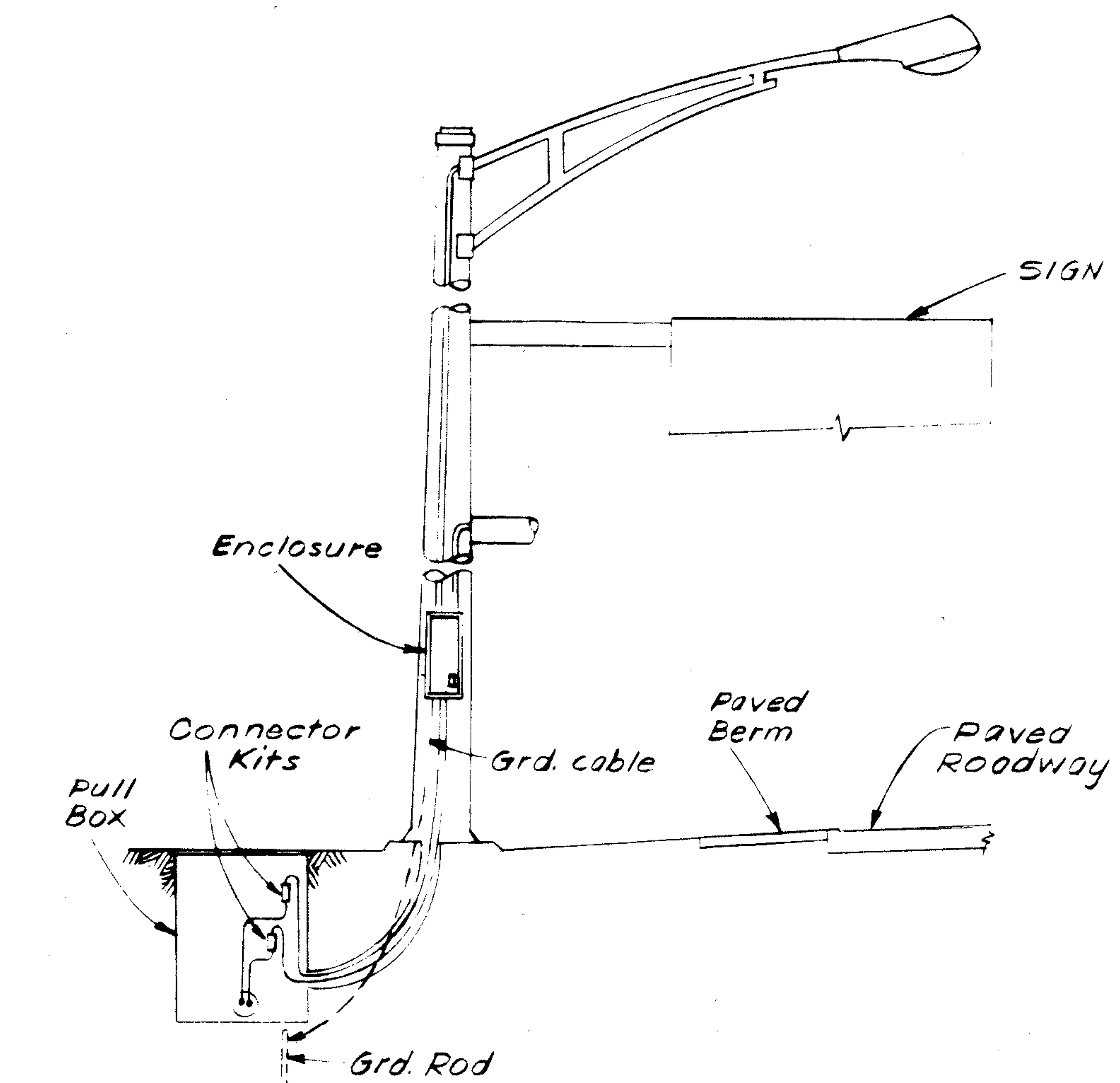
WIRING DIAGRAM
(See Note 2.)



METHOD NO. 5 for PROTECTING DUCT-CABLE UNDER GUARD RAIL
Increased depth of cable trench at point of crossing.
To be used whenever trench alignment is within 1'-6" of posts.
(See NOTE No. 1)



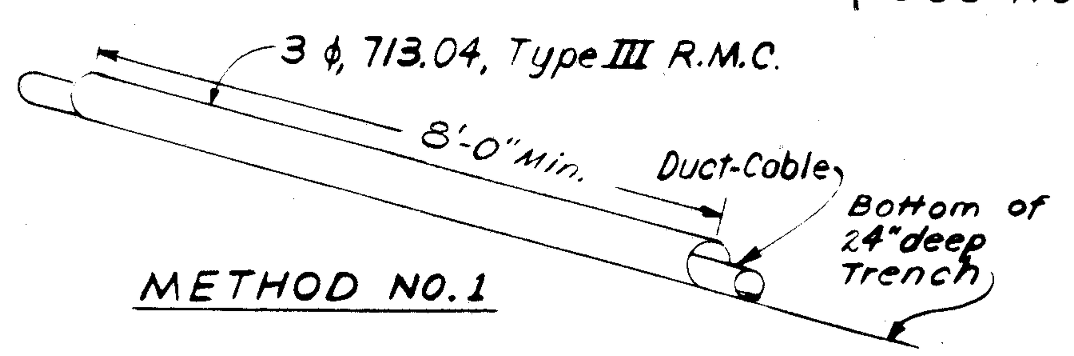
ELEVATION
PARALLEL
TO ROADWAY



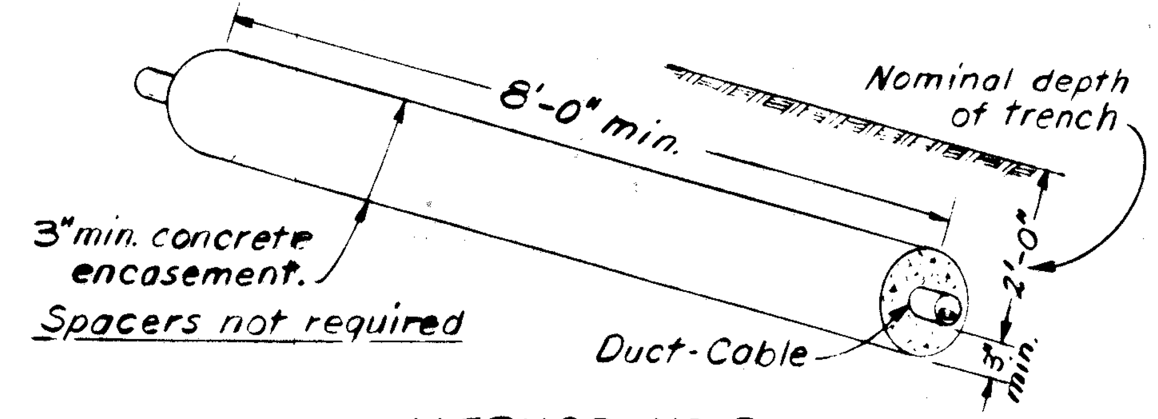
ELEVATION
PERPENDICULAR
TO ROADWAY

WIRING FOR COMBINATION LIGHT AND SIGN POLE

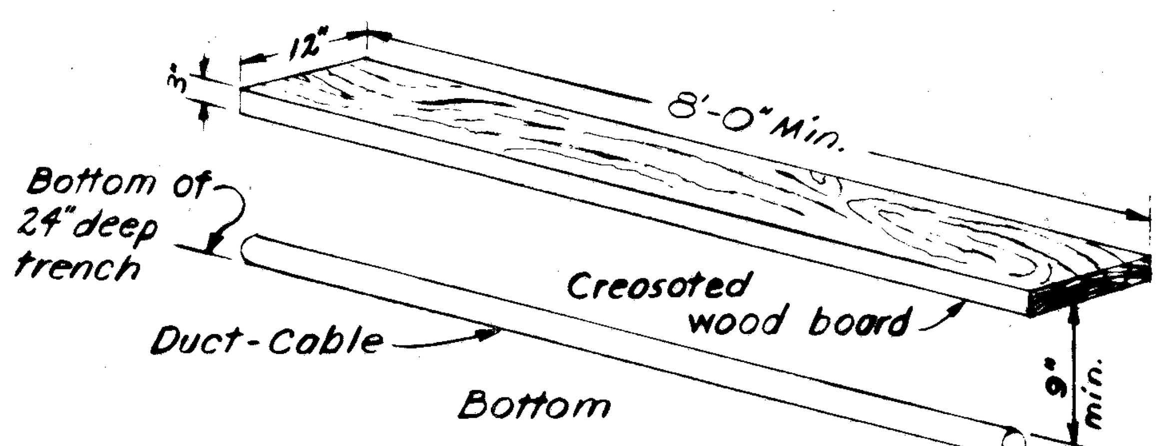
METHODS OF PROTECTING DUCT-CABLE UNDER GUARD RAIL
(See NOTE No. 1)



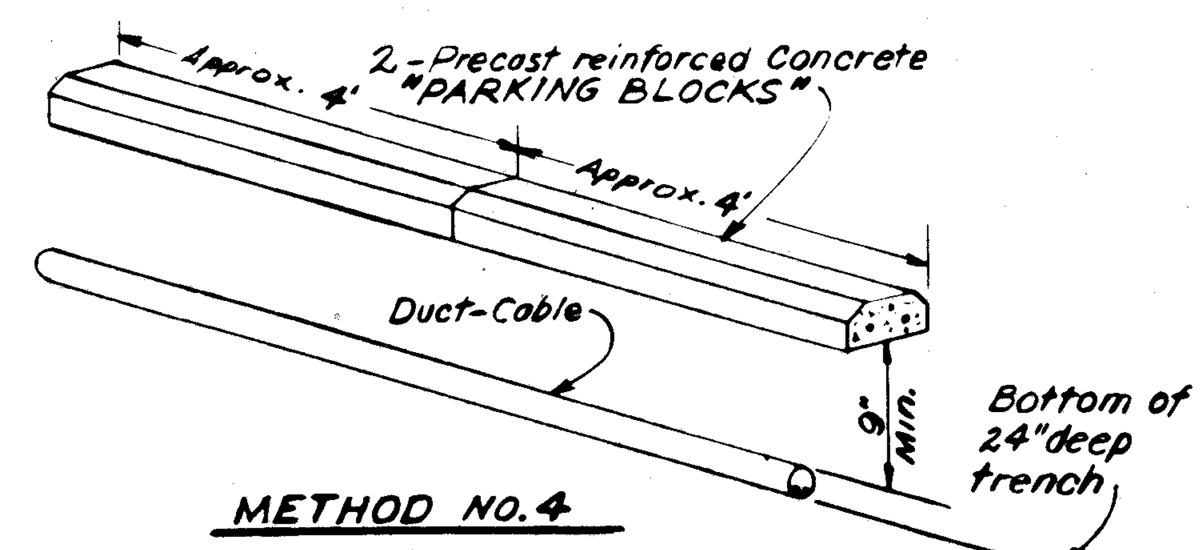
METHOD NO. 1



METHOD NO. 3



METHOD NO. 2

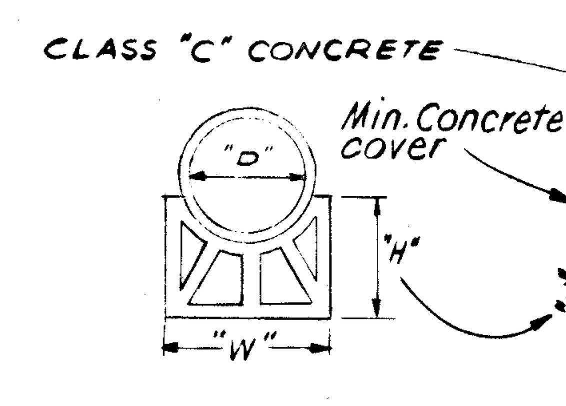


METHOD NO. 4

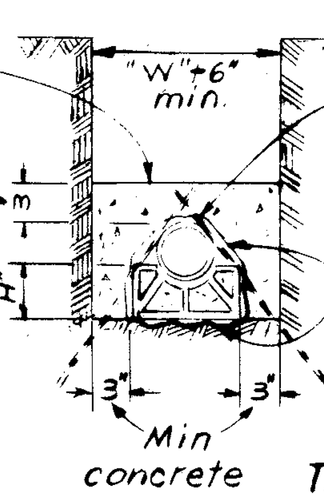
CONCRETE ENCASED CONDUIT

"D"	"H"	"W"
2"	3⅝"	5½"
3"	3⅞"	6½"
4"	4⅛"	7⅝"
5"	4½"	8⅞"

Nominal spacer dimensions

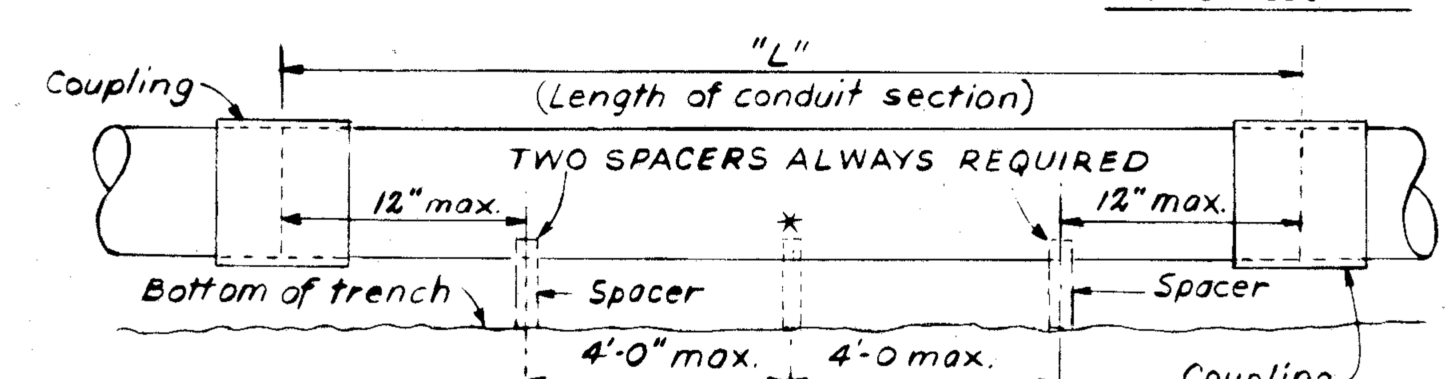


TYPICAL SPACER
("D" = Nom. I.D. of conduit)



** See NOTE:
½" ⌀ or larger × 18" re-rod anchors.
1 pair per conduit section.
Bind conduit, spacer, and anchor with No. 9 AWG galv. wire.

TRENCH SECTION



*Intermediate spacer required when "L" equals 10'-0"
Additional spacers shall be required when "L" exceeds 10'-0"

SIDE ELEVATION

** NOTE: DELETE ANCHORS AND BINDING WIRE WHEN USING STEEL CONDUIT.

NOTES

1. Payment for protection of duct-cable and distribution cable under guard rail, as detailed in Methods 1 thru 5, shall be included in the unit prices bid for the affected cable and trench items.
2. Wiring diagram shown is required when illuminated signs are flourescent type. For mercury vapor type delete the 480/120 volt dry type transformer and change sign service to read "2 #10, 480V"

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

DATE 4-6-73

MISCELLANEOUS DETAILS II

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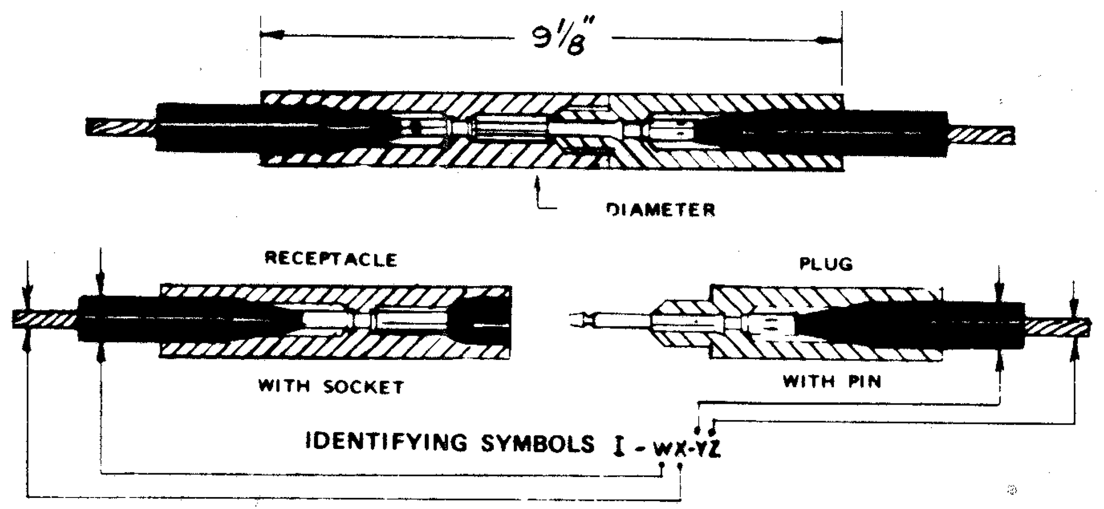
APPROVED: [signature] Engineer of Design Services

CABLE CONNECTOR KITS TYPE I THRU TYPE VI.

JEF-43-0.42

180I / 299



To specify the proper kit for an installation, select from the tables below the symbols which coincide with the requirements and substitute for (W, X) and (Y, Z) respectively.

CABLE DIAMETER Min	CABLE DIAMETER Max	Symbol for W and Y
.195"	.260"	B*
.250"	.330"	C*
.320"	.430"	D*
.420"	.585"	E
.575"	.785"	F
.775"	.985"	G
.975"	1.125"	H

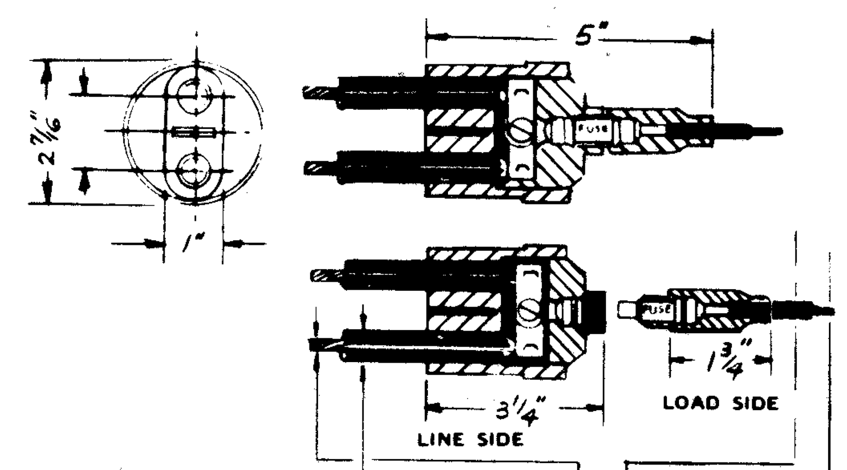
CONDUCTOR SIZE AWG Concentric Stranded	CONDUCTOR SIZE AWG Solid	Symbol for X and Z
#10, #12	#8, #10	6
#8	#6	4
#6	#4	3
#4	–	2
#2	–	1

* Molded rubber adapters are a part of these kits for small diameter cables

EXAMPLE

If the installation requires a receptacle for no. 6 stranded conductor and a cable diameter of .660" and a plug for no. 8 solid conductor and a cable diameter of .460", the kit required will be I - F3 - E6.

TYPE I
INLINE SELF LOCKING CONNECTOR KIT FOR PULL BOX INSTALLATION.



IDENTIFYING SYMBOLS I - (W) (X) (Y) (Z)

CABLE DIAMETER Min.	CABLE DIAMETER Max.	Symbol for (W)
.195"	.260"	B
.250	.330	C
.320	.380	DA
.370	.430	DB
.420	.505	EA
.495	.585	EB
.575	.685	FA
.675	.785	FB

COPPER CONDUCTOR (AWG) Concentric Stranded	COPPER CONDUCTOR (AWG) Solid	Symbol for (X)
–	#8	6
#8	#6	4
#6	#4	3
#4	–	2
#2	–	1
#1	–	0
#1/0	–	10
#2/0	–	20

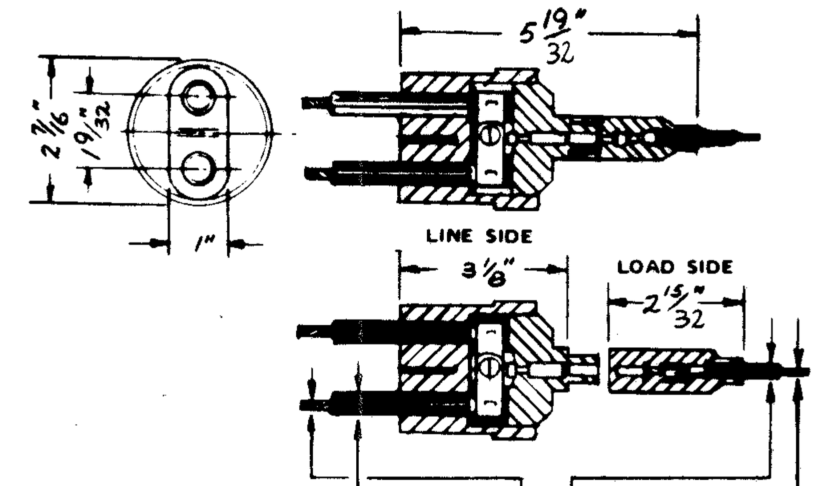
CABLE DIAMETER Min.	CABLE DIAMETER Max.	Symbol for (Y)
.120"	.160"	S
.155	.205	A
.195	.260	B
.250	.330	C
.320	.430	D

COPPER CONDUCTOR (AWG) Concentric Stranded	COPPER CONDUCTOR (AWG) Solid	Symbol for (Z)
#14, #16	#12, #14	8
#10, #12	#8, #10	6
#8	#6	4
#6	#4	3

EXAMPLE

If the line outside diameter (W) is .42" and the conductor (X) is no. 6 stranded, and the load side outside diameter (Y) is .29" and the conductor (Z) is no. 12 stranded, the kit required will be II - DB3 - C6.

TYPE II
FUSED "Y" CONNECTOR KIT FOR POLE BASE INSTALLATION.



IDENTIFYING SYMBOLS III (W) (X) (Y) (Z)

CABLE DIAMETER Min.	CABLE DIAMETER Max.	Symbol for (W)
.195"	.260"	B
.250	.330	C
.320	.380	DA
.370	.430	DB
.420	.505	EA
.495	.585	EB
.575	.685	FA
.675	.785	FB .

COPPER CONDUCTOR (AWG) Concentric Stranded	COPPER CONDUCTOR (AWG) Solid	Symbol for (X)
–	#8	6
#8	#6	4
#6	#4	3
#4	–	2
#2	–	1
#1	–	0
#1/0	–	10
#2/0	–	20

CABLE DIAMETER Min.	CABLE DIAMETER Max.	Symbol for (Y)
.120"	.160"	S
.155	.205	A
.195	.260	B
.250	.330	C
.320	.430	D

COPPER CONDUCTOR (AWG) Concentric Stranded	COPPER CONDUCTOR (AWG) Solid	Symbol for (Z)
#14, #16	#12, #14	8
#10, #12	#8, #10	6
#8	#6	4
#6	#4	3

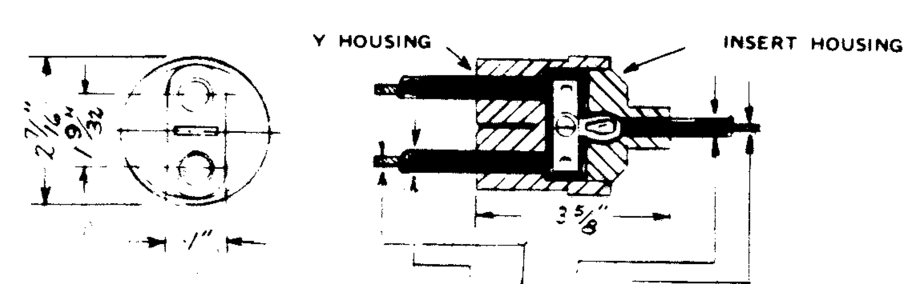
EXAMPLE

If the line side cable outside diameter (W) is .54" and the conductor (X) is no.2 stranded, and the load side cable outside diameter (Y) is .29" and the conductor (Z) is no. 12 stranded, the kit required will be III - EBI - C6.

TYPE III
UNFUSED "Y" CONNECTOR KIT FOR POLE BASE INSTALLATION.

NOTES

1. Diameters usually vary along cable lengths. Take several measurements and select the symbols for "W" and "Y" which will insure a tight fit rather than a loose fit between the cables and the openings in the housings of the connector kits.
2. Where a light is located at the end of the lighting circuit one opening of the "Y" connector kit shall be plugged. The plug shall be of insulating material and have the same overall diameter of the lighting circuit cable occupying the other opening of the "Y" connector kit.
3. If the cable has a nylon jacket the jacket shall be peeled back to a point where no part of the jacket is encased in the boot with the insulated cable.



IDENTIFYING SYMBOLS IV (W) (X) (Y) (Z)

TABLE (X)

CABLE DIAMETER Min	CABLE DIAMETER Max	Symbol for (W)
195	260"	B
250"	330"	C
320"	380"	DA
370"	430"	DB
420"	505"	EA
495"	585"	EB
575"	685"	FA
675"	785"	FB

COPPER CONDUCTOR AWG Concentric Stranded	COPPER CONDUCTOR AWG Solid	Symbol for (X)
–	#8	6
#8	#6	4
#6	#4	3
#4	–	2
#2	–	1
#1	–	0
#1 0	–	10
#2/0	–	20

TABLE (Y)

CABLE DIAMETER Min	CABLE DIAMETER Max	Symbol for (Y)
120"	.160"	S
155"	.205"	A
.195"	260"	B
.250"	330"	C
.320"	.430"	D
.420"	585"	E
.575"	785"	F

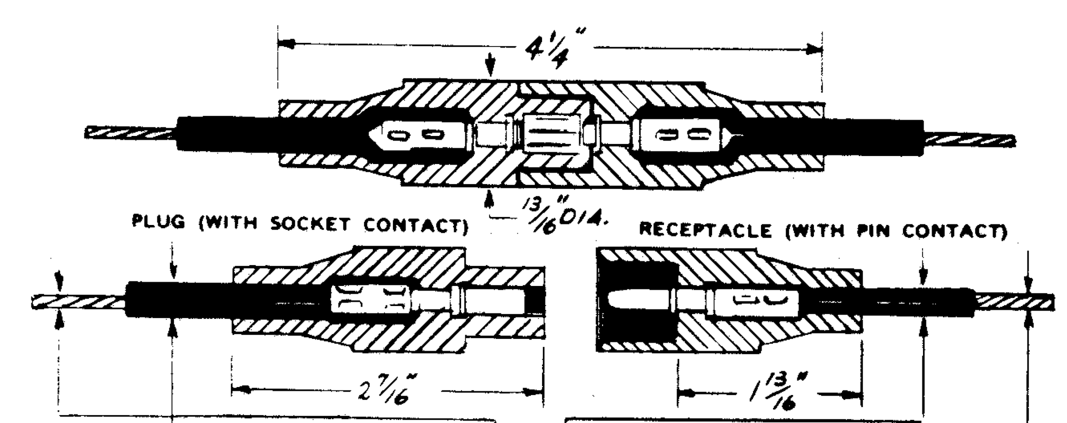
TABLE (Z)

COPPER CONDUCTOR AWG Concentric Stranded	COPPER CONDUCTOR AWG Solid	Symbol for (Z)
#14, #16	#12, #14	8
#10, #12	#8, #10	6
#8	#6	4
#6	#4	3
#4	–	2
#2	–	1
#1	–	0
#1/0	–	10
#2/0	–	20

EXAMPLE

If the twin cable outside diameter (W) is .54" and their conductor (X) is no. 2 stranded, and the single cable outside diameter (Y) is .29" and the conductor (Z) is no. 12 stranded, the kit required will be IV - EBI - C6.

TYPE IV
UNFUSED "Y" CONNECTOR KIT FOR PULL BOX INSTALLATION



IDENTIFYING SYMBOLS V (W) (X) (Y) (Z)

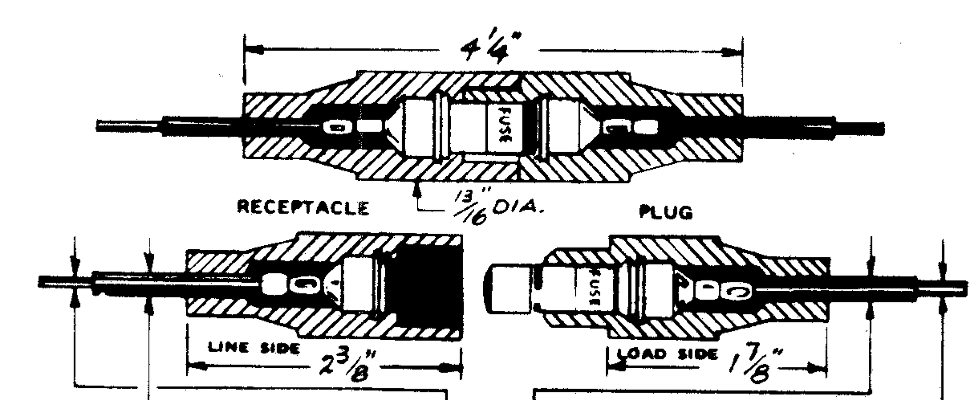
CABLE DIAMETER Min	CABLE DIAMETER Max.	Symbol for (W) and (Y)
.120"	.160"	S
.155"	.205"	A
.195"	.260"	B
.250"	.330"	C
.320"	.430"	D

CONDUCTOR SIZE AWG Concentric Stranded	CONDUCTOR SIZE AWG Solid	Symbol for (X) and (Z)
#14, #16	#12, #14	8
#10, #12	#8, #10	6
#8	#6	4
#6	#4	3

EXAMPLE

If the installation requires a plug for a cable diameter of .38", and a no. 8 stranded conductor, and a receptacle for a cable diameter of .27", and a no. 14 stranded conductor, the kit required will be V - D4 - C8.

TYPE V
UNFUSED INLINE CONNECTOR KIT FOR JUNCTION BOX INSTALLATION.



ORDERING SYMBOLS: 64 (W) (X) (Y) (Z)

TABLE A

CABLE DIAMETER Min.	CABLE DIAMETER Max.	Symbol for (W) and (Y)
.110"	.110"	T
.120	.160	S
.155	.205	A
.195	.260	B
.250	.330	C
.320	.430	D

TABLE B

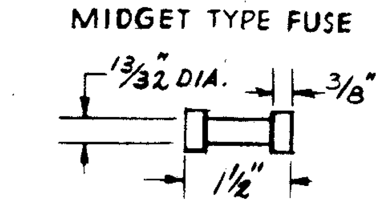
CONDUCTOR SIZE AWG Concentric Stranded	CONDUCTOR SIZE AWG Solid	Symbol for (X) and (Z)
#14, #16	#12, #14	8
#10, #12	#8, #10	6
#8	#6	4
#6	#4	3

EXAMPLE

If the line outside diameter (W) is .42" and the conductor (X) is no. 6 stranded, and the load side outside diameter (Y) is .29" and the conductor (Z) is no. 12 stranded, the kit required will be VI - D3 - C6.

TYPE VI
FUSED INLINE CONNECTOR KIT FOR JUNCTION BOX INSTALLATION.

MIDGET TYPE FUSE



Any standard Midget, Ferrule type fuse, (except glass tube) may be used in this connector.

Fuses rated 600 volts and 10 amperes, minimum shall be used unless otherwise specified.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

DATE 4-6-73

CONNECTOR KITS I

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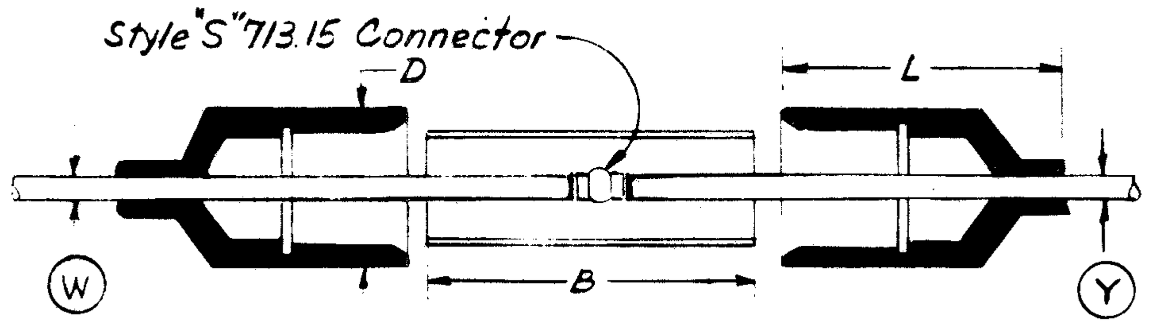
APPROVED: [signature] Engineer of Design Services

CABLE CONNECTOR KITS TYPES VII, VIII & IX

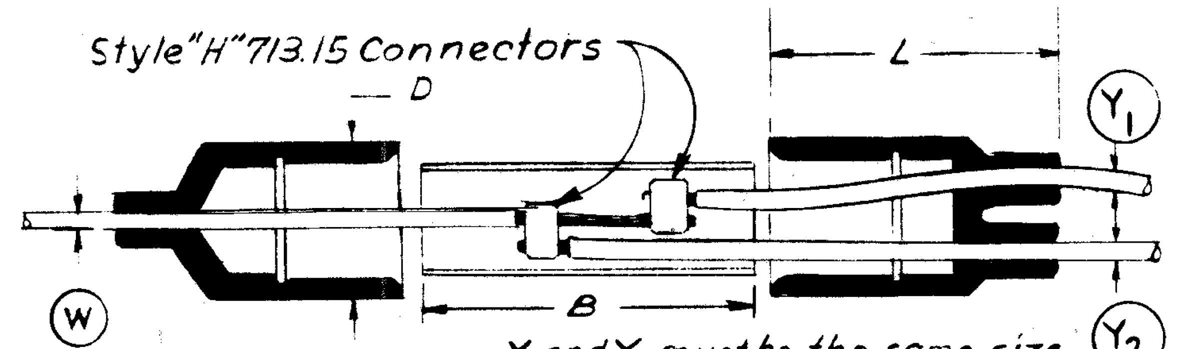
JEF-43-0.42

180J
299

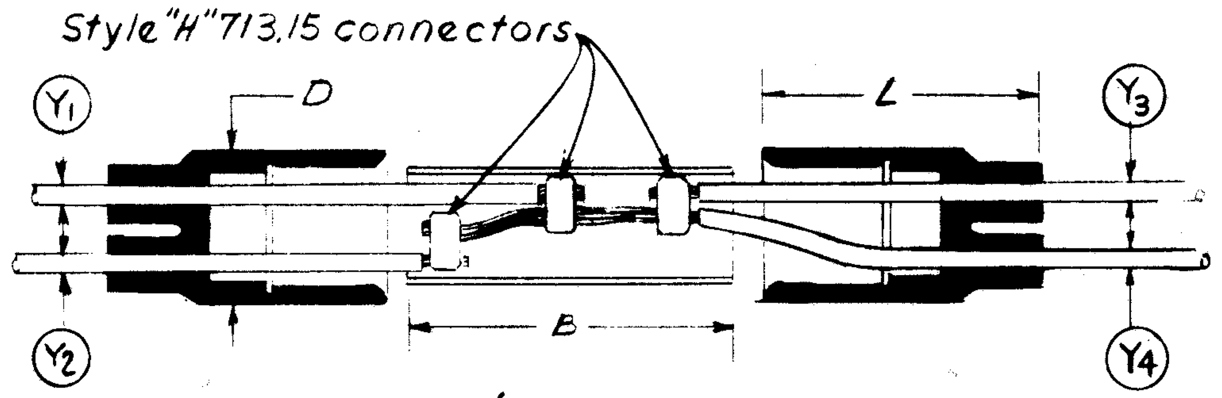
TYPES VII CABLE CONNECTOR KITS
SPLICE INSULATING KITS



TYPE VII A
Straight line Splice



TYPE VII B
Two-way Splice



Y_1 and Y_2 must be the same size Y_3 and Y_4 must be the same size

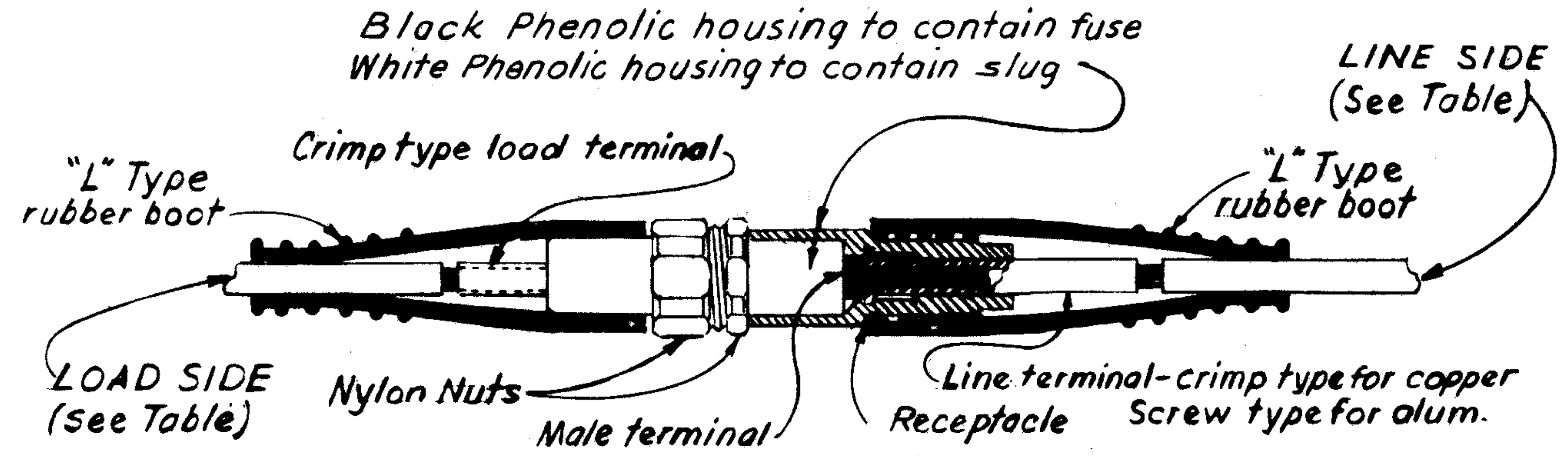
TYPE VII C
Three-way Splice

TABLE OF NOMINAL TYPE VII KIT STYLE VARIATIONS REQUIRED

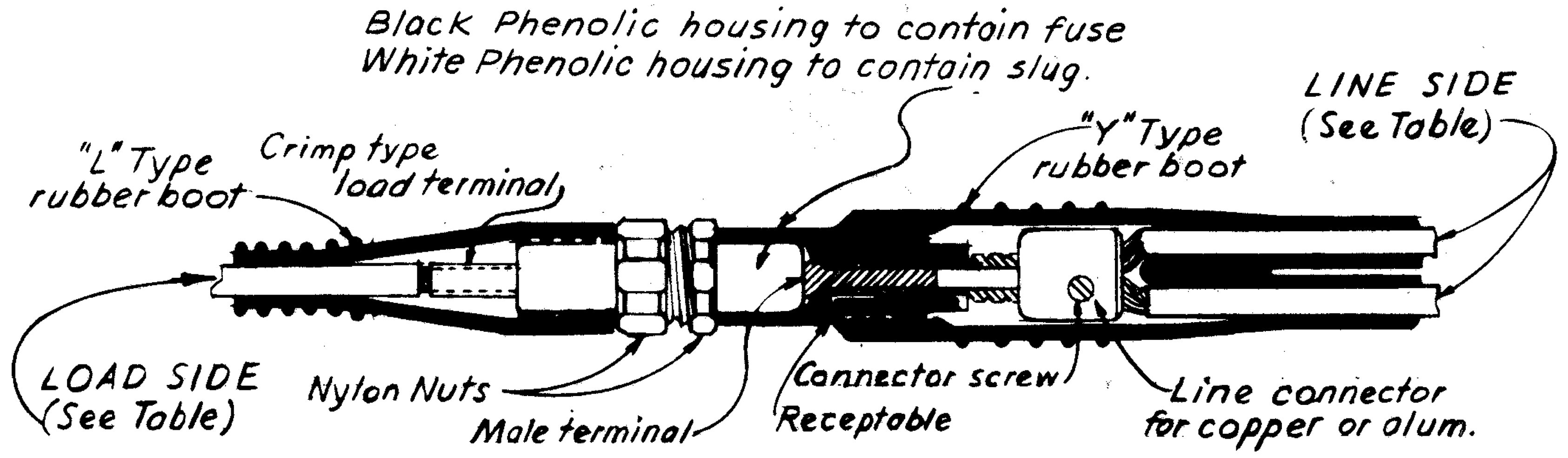
B	D	L	Cable Diameter min.	Cable Diameter max.	AWG 600V cable per 713.02
3" and 7"	$1\frac{29}{32}$"	$4\frac{1}{16}$"	.320"	.430"	No.6 and No.4
	"	"	.420"	.585"	No.2 and No.2/0
	"	"	.575"	.785"	No.3/0 - 250 MCM*
	"	"	.775"	.985"	200 MCM - 400 MCM
	"	$4\frac{3}{16}$"	.975"	1.185"	500 MCM
	"	$4\frac{5}{16}$"	1.175"	1.385"	600 MCM - 750 MCM

*Maximum "Y" cable size. See catalogs or design drawings for specific kit symbolization required in each application.

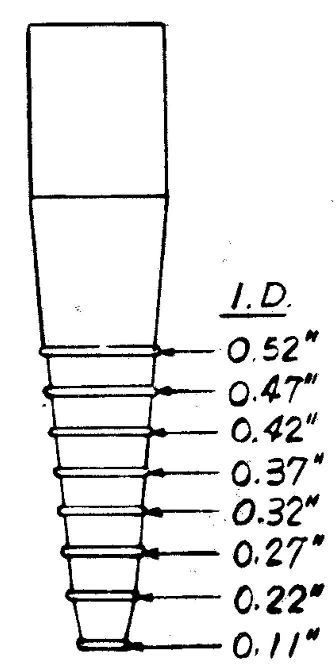
TYPES VIII & IX CABLE CONNECTOR KITS
BREAKAWAY FUSEHOLDER KITS



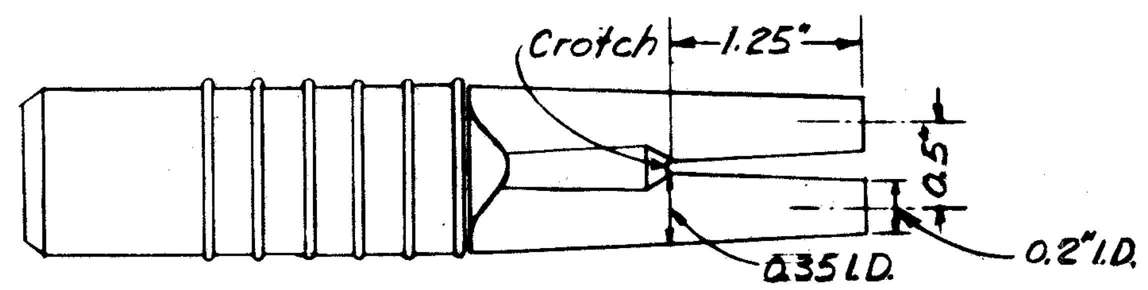
TYPE VIII "AL" for IN-LINE ALUMINUM
TYPE VIII "CU" for IN-LINE COPPER



TYPE IX "AL" for TEE TAP ALUMINUM
TYPE IX "CU" for TEE TAP COPPER



"L" TYPE RUBBER BOOT



"Y" TYPE RUBBER BOOT

NOTES
FOR BREAKAWAY FUSEHOLDER KITS

1. Acceptable cable size ranges are as follows:

CABLE MAT'L.	LOAD SIDE	LINE SIDE
Copper	No. 14 thru No. 2	No. 12 thru No. 2
Aluminum	No. 12 thru No. 2	No. 12 thru No. 2

2. See catalogs or design drawings for kit symbolization in specific combinations of load and line cable sizes.
3. The fuseholder shall be capable of retaining a 13/32" diametеter by 1½" long fuse rated up to 600 volts and a minimum of 10 amperes.
4. To secure a satisfactory interference fit between a rubber boot and the cable, the outside diameter of the cable should be approximately 0.0625" (1/16") larger than the inside diameter of the boot.
5. When a lubricant is used on the outside of the cable insulation the outside diameter of the cable may be 0.125" (1/8) larger than the inside diameter of the boot in lieu of 1/16" larger without lubrication.
6. Where the "L" type boot is used the maximum inside diameter of the boot shall not be more than 0.42". The upper two rings, namely 0.47" and 0.52" shall not be used.
7. The "Y" type boot shall not be cut beyond the crotch where the inside diameter of each leg is 0.35". Use of a cable of 0.48" O.D. in the "Y" type boot may require the application of a lubricating compound on the cable insulation for it to slide into the boot.
8. If the cable has a nylon jacket the jacket shall be peeled back to a point where no part of the jacket is encased in the boot with the insulated cable.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

DATE 4-6-73

CONNECTOR KITS II

APPROVED: W. J. Cunningham Engineer of Design Services

GENERAL NOTES - SIGNING

816 STRUCTURAL SUPPORTS, STEEL BEAM (TYPE)

THE STRUCTURAL STEEL BEAM SUPPORTS INCLUDING 8 AND 6 POUND BEAMS, 4 POUND DRIVE POST AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-123 AND A-153 RESPECTIVELY. ALL FABRICATION SHALL BE COMPLETED PRIOR TO GALVANIZING.

QUANTITIES FOR ITEM 816 "STRUCTURAL SUPPORTS, STEEL BEAM (TYPE)", APPEARING IN THE QUANTITY TABLES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT SUPPORT LENGTHS PRIOR TO FABRICATION AND GALVANIZING OF SUPPORTS. PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE BID PER LIN. FT. WHICH PRICE AND PAYMENT SHALL INCLUDE ALL COSTS IN CONNECTION WITH THE EMBEDMENT OF THE SUPPORTS.

THE COST OF THE CONCRETE USED FOR EMBEDMENT WILL BE A SEPARATE PAY ITEM.

816 OVERHEAD SIGN SUPPORT, BY TYPE

ALL COMPONENT PARTS OF THE OVERHEAD SIGN SUPPORTS SHALL BE STEEL, EXCEPT FOR THE TRUSS AND COMPONENTS FOR THE NUMBER 7 SERIES WHICH SHALL BE ALUMINUM. FOR SPECIFIC DETAILS AND MATERIALS, SEE SHEET NUMBERS 195 THROUGH 196.

COST OF FURNISHING AND INSTALLING THE SIGN BRACKETS AND THE FIXTURE SUPPORT ARM, LENGTH "G" WITH MOUNTING HOLES AND HARDWARE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

MODIFYING SUPPLEMENTAL SPECIFICATION 816 SWITCH ENCLOSURE MOUNTING BRACKETS INCLUDING MOUNTING BOLTS AND DRILLED HOLES SHALL BE FURNISHED AND INSTALLED UNDER PAYMENT FOR 816 OVERHEAD SIGN SUPPORT STRUCTURES AT THE CONTRACT PRICE PER OVERHEAD SIGN SUPPORT, BY TYPE.

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH OVERHEAD SIGN SUPPORT, BY TYPE, INSTALLED IN PLACE AND ACCEPTED, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL ANCHOR BOLTS, 2" AND 3/4" EHT CONDUIT ELLS (FOR INSTALLATION UNDER 816 CONCRETE FOR OVERHEAD SIGN SUPPORT FOUNDATIONS), AND FOR FURNISHING AND INSTALLING EACH OVERHEAD SIGN SUPPORT STRUCTURE SHOWN ON SHEET 192 INCLUDING FIXTURE SUPPORT ARMS, SWITCH ENCLOSURE MOUNTING BRACKET, SIGN BRACKETS AND ALL COMPONENT PARTS NECESSARY TO MAKE A COMPLETE WORKABLE INSTALLATION READY FOR SIGN ERECTION, INSTALLATION OF DISCONNECT SWITCH AND ENCLOSURE, GROUND ROD AND WIRE CONNECTIONS AND SIGN WIRING.

ERECTION OF THESE SUPPORTS SHALL BE ACCOMPLISHED IN A MANNER MEETING THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 816.

816 CONCRETE FOUNDATIONS, FOR SIGN SUPPORTS

PAYMENT FOR THIS ITEM SHALL BE BASED ON PLAN DIMENSIONS (OR DIMENSIONS AS MODIFIED BY THE ENGINEER IN LIEU OF PLAN QUANTITIES) AS REQUIRED IN SUPPLEMENTAL SPECIFICATION 816.

PAYMENT FOR REINFORCING STEEL AND INSTALLATION ONLY OF ANCHOR BOLTS AND CONDUIT ELLS SHALL BE INCLUDED IN THE COST OF CONCRETE FOUNDATIONS FOR OVERHEAD SIGN SUPPORTS. CONCRETE SHALL BE CLASS "C".

BASIS OF PAYMENT SHALL BE AS FOLLOWS:

1. CONCRETE FOUNDATIONS FOR OVERHEAD SIGN SUPPORTS, PER CUBIC YARD.
2. CONCRETE FOUNDATIONS FOR GROUND MOUNTED SIGN SUPPORTS, PER CUBIC YARD.

815 SIGN ERECTION, EXTRUSHEET OR FLAT SHEET TYPE

THE CONTRACTOR SHALL ERECT SIGN PANELS AS INDICATED ON THE SCHEMATIC SIGNING PLAN SHEET NUMBER(S) 189 THROUGH 191. THE PANELS WILL BE FURNISHED BY OTHERS AND SHALL BE MOUNTED ON THE BRACKETS OR BEAM SUPPORTS PROVIDED IN THE PLANS.

ALL SIGN MATERIAL AND ACCESSORIES WILL BE FURNISHED AND TRANSPORTED BY OTHERS TO A DELIVERY POINT DESIGNATED BY THE CONTRACTOR ON OR NEAR THE SUBJECT PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE HANDLING, PROTECTION AND STORAGE OF THE SIGN PANELS AND ACCESSORIES FROM THE TIME OF UNLOADING BY OTHERS AT THE DELIVERY POINT.

LARGE GUIDE SIGNS (OVER 8 FEET IN HEIGHT) MAY BE DELIVERED UNASSEMBLED. WORK SHALL ALSO CONSIST OF ASSEMBLY OF THESE PANELS INCLUDING ATTACHMENT OF DEMOUNTABLE SIGN LEGEND, WHERE NECESSARY, AND ERECTION OF SIGNS IN CONFORMANCE WITH THE SCHEMATIC SIGN PLAN.

THE CONTRACTOR SHALL SUBMIT, IN THREE COPIES, 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 DIVISION TRAFFIC ENGINEER AND TO THE ENGINEER OF DESIGN SERVICES, 25 SOUTH FRONT STREET, COLUMBUS, OHIO, 43215.

THE PRICE BID PER SQUARE FOOT FOR "ITEM 815, SIGN ERECTION, BY TYPE", SHALL INCLUDE PAYMENT FOR ALL NECESSARY EQUIPMENT, LABOR, AND TOOLS TO STORE, ASSEMBLE, AND ERECT THE SIGNS AS SPECIFIED.

ELECTRICAL - GENERAL

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY MATERIAL, LABOR AND FACILITIES REQUIRED TO COMPLETE THE ELECTRICAL INSTALLATION IN ACCORDANCE WITH THE DESIGNS, DIMENSIONS AND DETAILS SHOWN IN THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

ALL MATERIAL, WORKMANSHIP AND CONSTRUCTION METHODS, EXCEPT AS MODIFIED HEREIN, SHALL CONFORM TO THE GENERAL REQUIREMENTS OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, CONSTRUCTION AND MATERIALS SPECIFICATIONS, JANUARY 1, 1971.

625 WIRE AND CABLE

WIRE AND CABLE INSTALLATION SHALL CONFORM TO SECTION 625.14 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS AND SHALL BE OF THE SIZES AND TYPES SHOWN ON THE PLANS.

WIRE OR CABLE INSTALLED IN CONDUIT ON OR WITH SIGN STRUCTURES SHALL BE # 10, 600 VOLT STANDARD COPPER WIRE (POLE AND BRACKET CABLE).

CABLE INSTALLED UNDERGROUND LEADING FROM THE PULLBOX TO THE DISCONNECT SWITCH SHALL BE #4 OR 6 SINGLE CONDUCTOR CIRCUIT CABLE, RHW OR THWN/THHN.

625 SIGN SERVICE

THIS ITEM SHALL CONSIST OF THE COMPLETION OF THE ELECTRICAL SYSTEM AND COMPONENTS FROM THE CONNECTORS IN THE PULL BOX (INCLUDED WITHIN THE ROADWAY LIGHTING QUANTITIES) TO THE PRIMARY SIDE OF THE DISCONNECTING SWITCH.

WORK WILL INCLUDE THE FURNISHING AND INSTALLING (INCLUDING TRENCHING AND BACKFILLING) OF THE 2 INCH GALVANIZED STEEL CONDUIT AND COUPLINGS FROM THE PULL BOX TO THE CONDUIT ELL IN THE SIGN SUPPORT FOUNDATION.

THIS ITEM WILL ALSO INCLUDE THE FURNISHING AND INSTALLING OF THE 1/C 600 VOLT SERVICE WIRE FROM THE CONNECTORS TO THE DISCONNECT SWITCH.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT CONTRACT UNIT PRICE PER EACH, WHICH SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED TO COMPLETE THIS ITEM OF WORK

625 DISCONNECT SWITCH WITH TYPE "Y" OR "Z" ENCLOSURE

THIS ITEM SHALL INCLUDE FURNISHING OF A 30 AMP, 600 VOLT FUSED DISCONNECT SWITCH OF TYPE AND MAKE AS INDICATED ON SHEET 198 AND SHALL BE MOUNTED IN A NEMA 4 STAINLESS STEEL ENCLOSURE TYPE "Y" OR "Z" AND ATTACHED TO EACH SIGN SUPPORT BY MEANS OF A MOUNTING BRACKET AS DESCRIBED IN DETAIL ON THE ABOVE SHEET.

EACH SWITCH ENCLOSURE SHALL BE FURNISHED WITH ONE PADLOCK. PADLOCKS SHALL HAVE A BRASS BODY AND WROUGHT IRON SHACKLE EQUAL TO RUSSWIN NO. 2882 KA OR MASTER NO. 4 KA OR APPROVED EQUAL.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE PER EACH AT CONTRACT UNIT PRICE, WHICH SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT TO COMPLETE THIS ITEM AT WORK.

625 TRANSFORMER, BY TYPE

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING TRANSFORMERS AS DETAILED AND SPECIFIED ON SHEET 198.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT CONTRACT UNIT PRICE PER EACH, WHICH SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THIS COMPLETE ITEM OF WORK.

625 BALLAST, BY TYPE

BALLAST FOR FIXTURES SHALL BE WEATHER-PROOF OUTDOOR TYPE FOR A 120 VOLT 60 CYCLE SYSTEM AND SHALL PROVIDE LAMP STARTING AT AN AMBIENT TEMPERATURE OF -20 DEGREES F.

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING ALL BALLAST TYPES A THROUGH D AS DETAILED AND SPECIFIED ON SHEET 198.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT CONTRACT UNIT PRICE PER EACH, FURNISHED TO THE JOB FOR INSTALLATION UNDER ITEM 625 "SIGNS, WIRED, COMPLETE".

625 LIGHT FIXTURE WITH LAMP, BY TYPE AND SIZE

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING ALL LIGHT FIXTURES AND LAMPS, TYPES AND SIZES AS SPECIFIED ON SHEET 198.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT CONTRACT UNIT PRICE PER EACH, FURNISHED TO THE JOB FOR INSTALLATION UNDER ITEM 625 SIGNS WIRED, COMPLETE.

625 GROUND ROD UNITS

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING GROUND ROD AND CABLE AS DETAILED AND SPECIFIED ON SHEET 199.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT CONTRACT UNIT PRICE PER EACH, WHICH SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO COMPLETE THIS ITEM OF WORK.

625 SIGNS WIRED, COMPLETE

THIS ITEM SHALL CONSIST OF THE COMPLETION OF THE ELECTRICAL SIGN LIGHTING SYSTEM FOR EACH ILLUMINATED SIGN.

WORK SHALL INCLUDE INSTALLATION OF LIGHT FIXTURES AND BALLASTS, AND FURNISHING AND INSTALLATION OF ALL RIGID AND FLEXIBLE CONDUIT, CONDULETS, JUNCTION BOXES, CABLE, FASTENERS, HARDWARE, AND ALL OTHER ITEMS REQUIRED TO ENERGIZE THE SIGN LIGHTING SYSTEM. SEE DETAILS ON SHEETS 197 THROUGH 199.

THE COST OF FURNISHING AND INSTALLING CABLE, CABLE GRIPS, CABLE SPLICE UNITS, AND NECESSARY FASTENERS FROM THE DISCONNECT SWITCH TO THE SIGNS (OR BETWEEN SIGNS) WITHIN SIGN SUPPORT MEMBERS SHALL BE INCLUDED IN THIS ITEM OF WORK.

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH SIGN WIRED WHICH PRICE SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS TO PROVIDE A COMPLETE AND ACCEPTED ITEM OF WORK.

ILLUMINATED SIGNS REQUIRING TWO (2) BALLASTS SHALL BE CONSIDERED AS AN EQUIVALENT OF TWO (2) SEPARATE SIGNS FOR DETERMINATION OF PAYMENT QUANTITIES.

625 INSPECTION AND TESTING OF SIGN LIGHTING

THE CONTRACTOR SHALL FURNISH ALL LABOR, ELECTRICAL POWER, AND EQUIPMENT NECESSARY TO DEMONSTRATE TO THE ENGINEER THAT NO SHORT CIRCUITS AND UNSPECIFIED GROUNDS EXIST AND THAT THE SIGN CIRCUITS ARE PROPERLY CONNECTED AND OPERABLE PRIOR TO ACCEPTANCE

THIS DEMONSTRATION SHALL INCLUDE A MEGGARING TEST TO SHOW THAT THE POWER CONDUCTORS ARE NOT GROUNDED AND THAT THE RESISTANCE TO GROUND FOR THE GROUND CONDUCTOR IS NOT MORE THAN 25 OHMS. WHERE RESISTANCE EXCEEDS 25 OHMS, ADDITIONAL LENGTH AND/OR NUMBERS OF RODS SHALL BE INSTALLED PER REQUIREMENTS OF 625.10.

A VOLTAGE AND AMPERAGE MEASUREMENT SHALL BE MADE AT THE SIGN SUPPORT SWITCH.

WHERE A LOW VOLTAGE TAP TRANSFORMER IS USED THE VOLTAGE MEASUREMENT SHALL BE USED TO DETERMINE THE APPLICABLE TAP.

AFTER THE SIGN LIGHTING SYSTEM IS COMPLETED, THE ENTIRE SYSTEM SHALL BE OPERATED CONTINUOUSLY EACH NIGHT UNTIL SEVEN (7) CONSECUTIVE DAYS ELAPSE WITHOUT FAILURE OR DEFECT. THE CONTRACTOR SHALL RECORD AND SUBSEQUENTLY CORRECT ANY DEFECTS WHICH MAY DEVELOP AT NO EXTRA COST TO THE STATE.

DURING THE TEST PERIOD, ADJUSTMENTS TO FIXTURE ARMING ANGLES SHALL BE MADE TO OBTAIN MAXIMUM UNIFORMITY AS DIRECTED BY THE ENGINEER.

THE ABOVE MEASUREMENTS, VOLTAGE TAP SELECTION NOTATIONS, AND METHODS OF DEFECT CORRECTION SHALL BE RECORDED AND DELIVERED TO THE ENGINEER FOR INCLUSION IN THE PROJECT RECORDS.

INSPECTION AND TESTING OF THE SIGN LIGHTING SYSTEM SHALL BE CONSIDERED A SUBSIDARY WORK ITEM AND PAYMENT THEREFOR SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE RESPECTIVE ITEMS TESTED.

UNDERGROUND UTILITIES

EXTREME CAUTION SHOULD BE EXERCISED IN AREAS WITH UNDERGROUND ELECTRICAL CONDUIT OR CABLE, SEWERS, DRAINS, WATER LINES, OR OTHER UNDERGROUND UTILITIES.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ALL DAMAGE INFLICTED ON (UNDERGROUND) UTILITIES IN THE EXCAVATION AND PLACEMENT OF SIGN SUPPORT FOUNDATIONS, PROTECTIVE GUARDRAIL, DELINEATORS AND THE LIKE.

GENERAL NOTES - SIGNING

CERTIFICATION AND APPROVAL OF SIGN SUPPORT AND SIGN LIGHTING ITEMS

THE CONTRACTOR SHALL SUBMIT THROUGH PROPER CHANNELS THE DRAWINGS, INFORMATION, AND SAMPLES AS REQUIRED BELOW:

A. 8 COPIES OF SHOP DRAWINGS AND MATERIAL LISTS FOR APPROVAL:
   1. OVERHEAD SIGN SUPPORTS
   2. SIGN LIGHTING LAYOUT PLAN AND DETAILS FOR WIRING, CONDUIT SIZE AND PLACEMENT FROM SIGN DISCONNECT SWITCH TO FIXTURE.

B. 8 COPIES OF CATALOG CUTS DESCRIPTIONS OF SAMPLES OF FABRICATORS STANDARD ITEMS AS SHOWN IN THE PLANS OR THEIR EQUALS FOR APPROVAL OF THEIR USE.

C. CERTIFICATIONS AND/OR SAMPLES FOR ALL MATERIAL WHICH HAVE BEEN APPROVED ABOVE UNDER "A" AND "B".

D. APPROVAL OF ITEMS UNDER "A" AND "B" SHALL BE IN THE HAND OF THE CONTRACTOR PRIOR TO ANY PURCHASE OR INSTALLATION.

E. CERTIFICATIONS OF SAMPLES UNDER "C" MUST BE IN HAND AND APPROVED PRIOR TO CONTRACT COMPLETION.

815 INTERIM COVERING FOR SIGNS

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN INTERIM COVER AND ATTACHMENT MATERIALS FOR SIGNS SO INDICATED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL ALSO INCLUDE THE SUBSEQUENT REMOVAL OF COVERS WHEN DIRECTED BY THE ENGINEER.

MATERIAL FOR COVERING SHALL BE PLASTIC COATED BURLAP BLANKETS IN CONFORMANCE WITH 705.09.

THE ENGINEER SHALL APPROVE THE METHOD PROPOSED FOR ATTACHING INTERIM COVERS TO SIGNS PRIOR TO INSTALLATION OF COVERS.

WORK SHALL INCLUDE ALL NECESSARY MATERIAL, HARDWARE, LABOR AND EQUIPMENT REQUIRED TO PERFORM THE REQUIRED ITEM OF WORK.

BASIS OF PAYMENT SHALL BE INTERIM COVERING FOR SIGNS, PER SQUARE FOOT.

IN ADDITION TO THE SQ.FT. REFERRED TO IN THE PLANS AND ADDITIONAL QUANTITY OF SQ.FT. FOR ITEM 815, INTERIM COVERING FOR SIGNS, HAVE BEEN INCLUDED TO COVER SIGNS AS DIRECTED BY THE ENGINEER.

816 ALTERNATE DESIGNS FOR OVERHEAD SIGN SUPPORTS

IF THE CONTRACTOR DESIRES TO FURNISH AN ALTERNATE DESIGN FOR OVERHEAD 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. ALTERNATE DESIGNS MUST UTILIZE TUBULAR STRUCTURAL MEMBERS. SUBMISSIONS SHALL BE MADE TO OHIO DEPARTMENT OF HIGHWAYS, DESIGN SERVICES, 25 SOUTH FRONT STREET, COLUMBUS, OHIO 43215.

816 INTERIM STEEL DRIVE POSTS, 4 LBS. PER FOOT, AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING 4 POUND PER LINEAR FOOT STEEL DRIVE POSTS AS SPECIFIED FOR INTERIM LANE WIDTH TRANSITIONS.

THIS ITEM SHALL INCLUDE 4 POUNDS PER FOOT STEEL DRIVE POSTS 11'-0" LONG BOLTED TO THE INSIDE OF INTERIM BARRELS FURNISHED UNDER 606 USING A MINIMUM OF THREE 5/16" STEEL BOLTS SPACED ON 12" CENTERS.

POST FLANGES SHALL BE 90 DEGREES TO INTERIM EDGE LINES FACING APPROACHING TRAFFIC. STEEL BEARING PLATES 3" x 2" SHALL BE USED AT EACH BOLT OUTSIDE THE BARREL TO PREVENT PULL THROUGH. MOUNTING OF SIGNS ON THE DRIVE POSTS WITH THE BOTTOM OF THE SIGNS 7' ABOVE THE PAVEMENT SHALL BE INCLUDED IN ITEM 815.

THE QUANTITY FURNISHED AND INSTALLED WILL BE PAID FOR AT THE PRICE BID PER LIN.FT. WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING DRIVE POSTS INCLUDING NECESSARY HARDWARE, LABOR AND EQUIPMENT.

816 STRUCTURAL SUPPORTS, 6 LB. BEAM, AS PER PLAN DRIVEN

THIS ITEM SHALL CONSIST OF THE FURNISHING, ASSEMBLY, AND INSTALLATION OF TWO (2) 3 LB. PER FOOT DRIVE POSTS (6 LB. BEAM) IN COMBINATION WITH A SQUARE SEAMLESS TUBULAR POST EXTENSION SPLICED TO THE TOP OF THE 6 LB. BEAM. DETAILS ARE SHOWN ON SHEET S.O.W.

SQUARE TUBULAR POST MATERIAL SHALL CONFORM TO ASTM A-570 GRADE "B" AFTER FABRICATION

WORK SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND HARDWARE NECESSARY TO PERFORM THE REQUIRED ITEM OF WORK.

BASIS OF PAYMENT SHALL BE FOR STRUCTURAL SUPPORTS, 6 LB BEAM, AS PER PLAN PER LINEAR FOOT MEASURED BY TOTAL LENGTH OF COMBINATION BEAM FROM END TO END.

GALVANIZED SUPPORTS

THE STRUCTURAL STEEL BEAM SUPPORTS INCLUDING THE 8 AND 6 POUND BEAMS AND THE 4 POUND DRIVE POST SHALL BE GALVANIZED, AFTER PUNCHING, IN ACCORDANCE WITH ASTM A-153 EXCEPT WHERE ALUMINUM OR STAINLESS STEEL IS SPECIFIED.

816 ROCK EXCAVATION

WHERE SOLID ROCK IS ENCOUNTERED IN EXCAVATION FOR SIGN SUPPORT FOUNDATIONS, THE DEPTH TO BE EXCAVATED BELOW ROCK SURFACE MAY BE DECREASED AS DIRECTED BY THE ENGINEER TO A MAXIMUM OF THIRTY FIVE (35) PERCENT OF DEPTH SPECIFIED IN THE PLANS.

EXISTING SIGNS

EXISTING SIGNS LOCATED WITHIN THE ROADWORK AREAS WHICH ARE NECESSARY FOR INTERIM OR PERMANENT TRAFFIC CONTROL SHALL BE REMOVED AND RE-ERECTED IN LOCATIONS INDICATED BY THE PLANS OR AS APPROVED BY THE ENGINEER. STOP SIGNS WILL BE MAINTAINED AT ALL TIMES WHILE TRAFFIC IS MAINTAINED. THE COST OF REMOVAL, RE-ERECTION AND SUBSEQUENT REMOVAL IF REQUIRED SHALL BE CONSIDERED A SUBSIDIARY WORK ITEM, THE COST OF WHICH SHALL BE INCLUDED IN THE PRICE BID FOR THE ROADWAY WORK ITEMS. THE SIGNS WHICH ARE TO BE RE-ERECTED ON THE BERMS SHALL BE LOCATED WITH THE CENTERLINE OF SUPPORT ON THE P.I. OF THE SHOULDER.

620 INTERIM MONO-DIRECTIONAL DELINEATORS, AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING INTERIM DELINEATORS AS SPECIFIED ON PLAN SHEETS.

THIS ITEM SHALL INCLUDE 2 POUNDS PER FOOT STEEL DRIVE POSTS 4'-0" LONG BOLTED TO INSIDE OF INTERIM BARRELS FURNISHED UNDER 606 USING A MINIMUM OF THREE 5/16" STEEL BOLTS SPACED ON 12" CENTERS. POST FLANGES SHALL BE 90 DEGREES TO INTERIM EDGE LINES FACING APPROACHING TRAFFIC. TYPE C2 DELINEATORS SHALL BE MOUNTED ON THE DRIVE POST FLANGES WITH THE TOP OF THE DELINEATOR 4' ABOVE THE PAVEMENT.

THE QUANTITY FURNISHED AND INSTALLED WILL BE PAID FOR AT THE PRICE BID PER EACH WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING DRIVE POSTS AND DELINEATORS INCLUDING NECESSARY HARDWARE, LABOR AND EQUIPMENT.

CAPPING OF CONDUIT

ALL CONDUIT IN FOUNDATIONS WHICH WILL NOT HAVE WIRE OR CABLE PULLED INTO IT DURING CONSTRUCTION SHALL HAVE THE ENDS CLOSED WITH CAPPED BUSHINGS OR OTHERWISE SEALED IN AN APPROVED MANNER TO COMPLETELY KEEP ALL MOISTURE AND FOREIGN MATTER OUT OF THE CONDUIT.

SIGN LOCATIONS

ALL SIGNS SHALL BE PLACED NORMAL TO THE ROADWAY ON WHICH THEY ARE STATIONED UNLESS OTHERWISE NOTED ON THE PLANS.

INTERIM PAVEMENT MARKING, BY TYPE

THIS WORK SHALL CONSIST OF THE FURNISHING AND INSTALLATION OF INTERIM REMOVABLE MARKINGS AS SPECIFIED HEREIN AND SHOWN ON THE PLANS.

1. MATERIAL

MATERIAL SHALL CONSIST OF A BACKING COATED WITH A PRESSURE-SENSITIVE ADHESIVE AND A WEATHER AND TRAFFIC RESISTANT REFLECTIVE WHITE OR YELLOW COLORED SURFACE AND ADDITIONAL REQUIREMENTS AS FOLLOWS:

A. REFLECTION - THE WHITE AND YELLOW STRIPING MATERIAL SHALL BE REFLEX-REFLECTIVE, REFLECTING WHITE OR YELLOW RESPECTIVELY AND SHALL BE READILY VISIBLE WHEN VIEWED WITH AUTOMOBILE HEADLIGHTS AT NIGHT.

B. ADHESIVE - THE STRIPING MATERIAL SHALL HAVE A PRECOATED PRESSURE-SENSITIVE ADHESIVE WHICH SHALL NOT REQUIRE A LINER FOR PROTECTION FROM CONTAMINATION, PREADHESION, OR BLOCKING WITHIN THE ROLL AS DELIVERED.

C. CONFORMABILITY - THE STRIPING MATERIAL SHALL BE THIN, FLEXIBLE, FORMABLE, AND FOLLOWING APPLICATION, SHALL REMAIN CONFORMED TO THE TEXTURE OF THE PAVEMENT SURFACE.

D. REMOVABILITY - THE STRIPING MATERIAL BACKING SHALL PERMIT REMOVAL WITHOUT REQUIRING SANDBLAST, SOLVENT, OR GRINDING METHODS.

E. DURABILITY - THE STRIPING MATERIAL APPLIED IN ACCORDANCE WITH RECOMMENDED PROCEDURES SHALL BE WEATHER RESISTANT AND SHOW NO APPRECIABLE FADING, LIFTING OR SHRINKAGE, PRIOR TO COMPLETION OF THIS PROJECT.

F. GENERAL - THE STRIPING MATERIAL AS SUPPLIED SHALL BE OF GOOD APPEARANCE, FREE FROM CRACKS, AND EDGES SHALL BE TRUE, STRAIGHT, AND UNBROKEN. THE STRIPING MATERIAL SHALL BE SUPPLIED IN ROLLS AND THERE SHALL BE NO MORE THAN 3 SPLICES PER 60 YARDS OF LENGTH.

THE STRIPING MATERIAL SHALL BE PREPARED FOR DELIVERY IN STANDARD COMMERCIAL CONTAINERS SO CONSTRUCTED AS TO INSURE ACCEPTANCE BY THE CARRIER AND PREVENT DAMAGE DURING PROPER SHIPMENT AND STORAGE.

THE CONTRACTOR SHALL STORE THE MATERIAL IN A COOL, DRY LOCATION WHERE TEMPERATURE WILL NOT EXCEED 100 DEGREES F. PRIOR TO APPLICATION OF MARKING ON ROADWAY SURFACES.

2. ROAD SURFACE PREPARATION

THE ROAD SURFACE MUST BE CLEAN AND DRY, FREE OF OILS AND GREASE, DUST OR DIRT. ALL SURFACES MUST BE PRIMED.

CONCRETE PAVEMENT SHALL BE SURFACE TREATED IN ACCORDANCE WITH SECTION 621.04. SURFACE SHALL THEN BE GENEROUSLY FLUSHED WITH CLEAN WATER AND ALLOWED TO DRY THOROUGHLY PRIOR TO APPLICATION OF PRIMER AND INTERIM MARKINGS.

3. PRIMING

METHOD OF PRIMING SHALL BE AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A PROPOSAL FOR TYPE OF PRIMING TO BE USED. COST FOR PRIMING SURFACE SHALL BE INCIDENTAL TO THE COST OF VARIOUS ITEMS INCLUDED IN ITEM 615, TEMPORARY ROADS, AS PER PLAN.

4. APPLICATION

INTERIM LINES SHALL BE APPLIED TO THE ROAD SURFACE WITH A ROLLER TYPE APPLICATOR AND ROLLED IMMEDIATELY AFTERWARDS BY RUBBER-TIRED ROLLER WITH APPROXIMATE SINGLE WHEEL LOAD BETWEEN ONE THOUSAND (1000) AND TWO THOUSAND (2000) POUNDS.

5. SPECIAL PLAN DETAILS

DETAILS FOR LOCATION OF INTERIM MARKINGS ARE SHOWN ON SIGN LOCATION PLAN SHEETS.

6. BASIS OF PAYMENT

COST OF FURNISHING AND INSTALLATION OF INTERIM PAVEMENT MARKING SHALL BE INCLUDED AT THE CONTRACT UNIT PRICE PER LINEAR FOOT.

ERECTION OF OVERHEAD SPAN TYPE SIGN SUPPORTS (7 SERIES)

IN ALL CASES, SPAN TYPE OVERHEAD SIGN SUPPORTS AND SIGNS SHALL BE ERECTED CONCURRENTLY. AT NO TIME SHALL THE BOX TRUSSES BE ERECTED WITHOUT THE SIGN BEING IN PLACE WITHIN EIGHT (8) HOURS.

ITEM 621 EXISTING PAVEMENT MARKINGS REMOVED

THIS ITEM SHALL CONSIST OF THE REMOVAL OR OBLITERATION OF PAINTED PAVEMENT MARKINGS FROM THE PAVEMENT.

THE MARKINGS MAY BE REMOVED EITHER MECHANICALLY, OR BY ANY OTHER METHOD APPROVED BY THE ENGINEER EXCEPT THAT THE METHOD SHALL NOT BE INJURIOUS TO THE APPEARANCE, SMOOTHNESS OR STRENGTH OF THE PAVEMENT.

PAYMENT FOR ITEM "EXISTING PAVEMENT MARKINGS REMOVED" SHALL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT AND SHALL CONSTITUTE FULL COMPENSATION FOR ALL WORK, INCLUDING MATERIALS, EQUIPMENT, LABOR, INCIDENTALS AND DISPOSAL OF SURPLUS MATERIALS.

GENERAL NOTES - SIGNING

816 BREAKAWAY SIGN SUPPORT CONNECTION

THIS ITEM CONSISTS OF CUTTING AND DRILLING THE STRUCTURAL SUPPORT; FURNISHING AND ATTACHING THE FUSE PLATE; AND FURNISHING AND ATTACHING THE BASE PLATES FOR EACH STRUCTURAL SIGN SUPPORT AS INDICATED ON THE PLANS.

ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED TO FABRICATE AND INSTALL THIS ITEM FOR EACH SIGN SUPPORT (EXCLUSIVE OF THE STRUCTURAL SIGN SUPPORT) WILL BE MEASURED AND PAID FOR AT THE UNIT PRICE BID FOR ITEM 816 EACH BREAKAWAY SIGN SUPPORT CONNECTION.

620 MONO-DIRECTIONAL DELINEATORS, AS PER PLAN

THE CONTRACTOR SHALL HAVE THE OPTION OF DRIVING OR CONCRETE EMBEDDING THE DELINEATOR POST IN ACCORDANCE WITH DETAILS OF SHEET 205.

POSTS MAY BE TRIMMED ON THE EMBEDDED ENDS TO ADJUST FOR GRADE AND REQUIRED DELINEATOR MOUNTING HEIGHT. CONCRETE SHALL BE CLASS "C".

IN EITHER CASE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO UNDERGROUND UTILITIES OR CABLE DURING PERFORMANCE OF THIS ITEM OF WORK.

THE QUANTITY FURNISHED AND INSTALLED SHALL BE PAID FOR AT THE PRICE BID PER EACH WHICH PRICE SHALL BE FULL COMPENSATION FOR EITHER TYPE OF INSTALLATION.

816 CONSTRUCTION LAYOUT STAKES FOR SIGNS AND TRAFFIC SIGNALS

THE CONTRACTOR SHALL STAKE OUT ALL SIGN AND TRAFFIC SIGNAL SUPPORTS IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 PRIOR TO INSTALLATION OF ANY FOUNDATIONS OR SUPPORTS.

AFTER STAKEOUT THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF SEVEN (7) DAYS IN ADVANCE OF SCHEDULED WORK. SUPPORT LOCATIONS FOR EACH SUPPORT WILL BE FIELD CHECKED AND APPROVED BY THE ENGINEER AND DIVISION TRAFFIC ENGINEER AND/OR CITY TRAFFIC ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION WORK REQUIRED.

IF BOTH MAJOR AND MINOR TYPE SUPPORTS ARE INCLUDED WITHIN THE PROJECT IT WILL BE PERMISSIBLE TO PERFORM THE CONSTRUCTION STAKEOUT AND FIELD INSPECTION IN TWO (2) STAGES, ONE FOR MAJOR SUPPORTS AND ONE FOR MINOR SUPPORTS.

COST FOR THIS ITEM OF WORK WILL BE INCIDENTAL TO THE VARIOUS 816 ITEMS OF WORK CONTAINED IN THE PROJECT.

816 OVERHEAD SIGN AND TRAFFIC SIGNAL SUPPORT FABRICATION

IN LIEU OF PLAN DETAILS THE FOLLOWING ARE FABRICATION REQUIREMENTS FOR SUPPORTS IN THIS PROJECT:

ALL HANDHOLES FABRICATED FOR SUPPORTS SHALL BE 4"X8" IN SIZE WITH FACE FLUSH WITH POLE EXTERIOR AT THE REQUIRED LOCATIONS DESCRIBED IN PLANS.

THE ELECTRICAL SERVICE ENTRY THROUGH EACH VERTICAL SIGN SUPPORT POLE SHALL BE PROVIDED BY MEANS OF A TWO INCH (2") HALF-COUPLING CENTERED AT A HEIGHT OF 5'-0" ABOVE THE BOTTOM OF THE BASE PLATE.

THE TYPE "Y" OR "Z" DISCONNECT SWITCH ENCLOSURE SHALL BE MOUNTED IN SUCH A MANNER THAT THE BOTTOM OF THE ENCLOSURE WILL BE 4'-9 1/2" (± 1/4") ABOVE BOTTOM OF BASE PLATE.

PAYMENT FOR THE FABRICATION REQUIREMENT SPECIFIED ABOVE SHALL BE INCIDENTAL TO THE COST OF EACH SUPPORT STRUCTURE.

816 POLE MOUNTED SIGN ATTACHMENT, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE FURNISHING AND INSTALLATION OF STAINLESS STEEL STRAPS, MOUNTING BRACKETS, AND HARDWARE AS DETAILED ON SHEET 192.

BASIS OF PAYMENT SHALL BE AT THE CONTRACT BID PRICE PER EACH POLE MOUNTED SIGN ATTACHMENT, AS PER PLAN WHICH PRICE SHALL INCLUDE ALL LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED ITEM OF WORK.

RETAINING WALL MOUNTED SIGN BRACKET, (BY TYPE) AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE FURNISHING AND INSTALLATION OF SQUARE STEEL TUBE OR ROLLED BEAM FOR SIGN BRACKETS A AND HARDWARE AS DETAILED ON SHEET 192.

BASIS OF PAYMENT SHALL BE AT THE CONTRACT BID PRICE PER EACH RETAINING WALL MOUNTED SIGN BRACKET, (BY TYPE) AS PER PLAN WHICH PRICE SHALL INCLUDE ALL LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED ITEMS OF WORK.

816 STRUCTURAL SUPPORTS, DRIVEN, TYPE

DRIVEN TYPE STRUCTURAL SUPPORTS WILL BE DRIVEN TO A DEPTH OF FIVE FEET (5'-0") MINIMUM BELOW GROUND LINE IN SUCH A MANNER THAT NO DEFORMATION WITHIN THE LENGTH OF THE SUPPORT, OR DAMAGE TO THE SUPPORT, WILL OCCUR.

PRIOR TO INSTALLATION EACH SUPPORT SHALL BE SIGNIFICANTLY MARKED WITH PAINT AT A LOCATION ON THE SUPPORT 5'-6" FROM THE EMBEDDED END AND APPROVED BY THE ENGINEER.

ALL 4 LB POST AND 6 LB BEAM PLACED IN CONCRETE MEDIANS SHALL BE DRIVEN THROUGH A SIX INCH DIAMETER HOLE IN THE CONCRETE. THE HOLE IN THE CONCRETE SHALL BE FILLED WITH ASPHALT OR PORTLAND CONCRETE AFTER THE POST IS IN THE PROPER POSITION. SEE SHEET 194A FOR DETAILS.

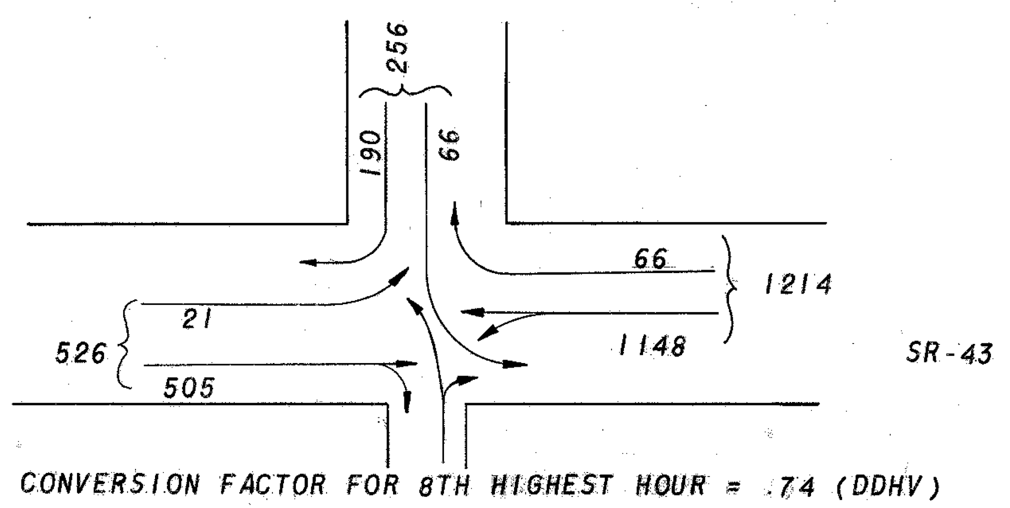
STRUCTURAL SUPPORTS 6LB BEAM, DRIVEN AND 6LB BEAM AS PER PLAN, DRIVEN" WILL INCLUDE THE 10" x 12" x 1/4" SOIL PLATE DETAILED IN THE PLANS.

PAYMENT FOR INSTALLATION OF SIGN SUPPORTS BY THE ABOVE METHOD SHALL BE INCLUDED IN THE COST OF THE VARIOUS SUPPORT TYPES SPECIFIED INCLUDING ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED.

GENERAL NOTES - TRAFFIC SIGNALS

TRAFFIC SIGNAL JUSTIFICATION

PROPOSED SR - 43 AND BELLEVIEW ROAD



CONVERSION FACTOR FOR 8TH HIGHEST HOUR = .74 (DDHV)

APPROACH	TRAFFIC VOLUMES				WARRANTS	
	DESIGN YEAR DDHV	DESIGN YEAR 8TH HIGHEST VOLUME	OPENING YEAR PEAK HOUR	OPENING YEAR 8TH HIGHEST HOUR	#1 VOL.	#2 VOL.
SR-43 (TOTAL BOTH APPR)			1740	1290	600	900
BELLEVIEW			256	190	150	75

THE ABOVE ANALYSIS INDICATES THAT A TRAFFIC SIGNAL IS JUSTIFIED FOR THE DESIGN YEAR AND THE YEAR OF OPENING UNDER WARRANT #1, MINIMUM VEHICULAR VOLUME AND WARRANT #2 INTERRUPTION OF CONTINUOUS TRAFFIC FOR THE INTERSECTION OF PROPOSED SR-43 AND BELLEVIEW BLVD.

TRAFFIC SIGNAL SPECIFICATIONS

I. GENERAL

A. SCOPE OF WORK

THE CONTRACTOR SHALL INSTALL TRAFFIC SIGNALS AT THE INTERSECTIONS SHOWN IN THE PLANS.

THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY SO THAT THE TRAFFIC SIGNALS WILL BE COMPLETE, ACCEPTED AND READY FOR SERVICE.

B. GENERAL

ANY ITEMS OF LABOR, MATERIALS, AND EQUIPMENT REQUIRED, BUT NOT SHOWN AS A SEPARATE PAY ITEM IN THE PROPOSAL SHALL BE FURNISHED AND INSTALLED AS INCIDENTAL TO THE CONTRACT.

THE REFERENCE TO ANY NAME, MAKE AND MODEL NUMBER IS INTENDED TO BE DESCRIPTIVE AND NOT RESTRICTIVE AND IS TO INDICATE TO BIDDERS THE DESIGN THAT WILL BE ACCEPTABLE. BIDS ON OTHER NAMES, MAKES AND NUMBERS WILL BE CONSIDERED. BEFORE ANY EQUIPMENT IS ORDERED OR INSTALLATION OFATRAFFIC SIGNAL SYSTEM IS BEGUN, A COMPLETE SCHEDULE OF MATERIALS AND EQUIPMENT SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER. THE SCHEDULE SHALL INCLUDE EIGHT (8) SETS OF CATALOG CUTS, DIAGRAMS, DRAWINGS, BROCHURES, DATA SHEETS, MANUFACTURER'S CERTIFICATES OF COMPLIANCE OR OTHER DESCRIPTIVE DATA AS MAY BE REQUIRED AND SHALL INCLUDE COMPLETE DESCRIPTIVE DATA ON THE SIGNALS, WIRING DIAGRAMS, COMPLETE CABLE DESCRIPTIONS, TEST DATA, MAKE AND CAPACITY OF ALL APPARATUS. THE CONTRACTOR SHALL IDENTIFY THE ITEM ON EACH SHEET AND SHALL MARK ALL PRINTS "RECORD DRAWING". ONE COPY WILL BE RETURNED MARKED "APPROVED", IF FOUND SATISFACTORY. IN THE EVENT ANY ITEMS OF MATERIAL OR EQUIPMENT CONTAINED IN THE SCHEDULE FAIL TO COMPLY WITH THE SPECIFICATION REQUIREMENTS, SUCH ITEMS WILL BE REJECTED.

ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THESE SPECIFICATIONS SHALL BE NEW, FIRST QUALITY, OF THE LATEST DESIGN, AND FREE FROM DEFECTS AND POOR WORKMANSHIP.

ALL MAJOR ITEMS OF EQUIPMENT SUCH AS CONTROLLERS, SIGNALS, DETECTORS, POLES, TYPES OF CABLES, ETC. SHALL BE OF THE SAME MANUFACTURE AND SAME TYPE IN ORDER TO ASSURE UNIFORMITY, INTERCHANGEABILITY OF COMPONENTS, SINGLE RESPONSIBILITY AND MOST SATISFACTORY SERVICE.

II. SIGNAL SPECIFICATIONS

A. INSTALLATION

1. THE CONTRACTOR SHALL CONFORM TO THE NATIONAL ELECTRIC CODE AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS IN PERFORMING CONTRACT WORK. HE SHALL OBSERVE THE REGULATIONS OF UTILITIES IN THE AREA OF THEIR EQUIPMENT AND EXERCISE DUE CAUTION IN CONSTRUCTION WORK NEAR THEIR FACILITIES.
2. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT ALL UTILITIES HAVING INSTALLATIONS IN THE AREA TO SECURE AND AFFIRM DATA ON UTILITY LOCATIONS. THESE AGENCIES AND UTILITIES SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO ANY EXCAVATION IN AREAS CONTAINING THEIR INSTALLATIONS.
3. THE CONTRACTOR SHALL INSTALL THE POWER TO THE CONTROLLER CABINET AND PROVIDE 120/240 VOLTS, 30 AMP SERVICE AS REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING AND PROVIDING THE POWER IN THE MANNER SHOWN IN THE PLANS THROUGH THE OHIO POWER ELECTRIC COMPANY. THE COST OF OBTAINING THE POWER SHALL BE INCLUDED IN THE BID PRICE FOR "POWER CABLE".
4. TRAFFIC SIGNAL CABLE SHALL ENTER THE CONTROLLER CABINETS AND RUN CONTINUOUSLY FROM SIGNAL HEAD TO SIGNAL HEAD WITHOUT SPLICES. PRESSURE TYPE CONNECTORS WILL BE USED TO MAKE CONNECTIONS INSIDE THE CONTROLLER CABINET. CABLE ENTRANCES SHALL BE PROTECTED BY A SUITABLE WEATHER HEAD AND DRIP LOOP WHEN ENTERING TRAFFIC FIXTURES.
5. ALL WIRES IN THE CONTROLLER CABINET SHALL BE LABELED, NEATLY LASHED AND FASTENED TO THE CABINET WITH CLAMPS. THIS SHALL INCLUDE WIRES TO THE DETECTORS, SIGNAL HEADS, PEDISTRIAN UNITS, INTERCONNECT EQUIPMENT AND ALL MISCELLANEOUS EQUIPMENT.
6. ALL SPLICES IN PULL BOXES SHALL BE OF THE WEATHER-PROOF POURED TYPE.
7. ALL CURRENT CARRYING WIRES SHALL BE COPPER UNLESS OTHERWISE SPECIFIED.
8. NO SPLICES SHALL BE PERMITTED IN ANY ELECTRICAL CONDUCTOR WITH THE EXCEPTION OF DETECTOR LOOP WIRE TO DETECTOR LEAD-IN CABLE SPLICES IN PULL BOXES.

B. EQUIPMENT

1. ALL EQUIPMENT SHALL BE FURNISHED WITH TWO WIRING DIAGRAMS, SERVICE MANUAL AND INSTRUCTIONS ON INSTALLATION AND MAINTENANCE.

CONTROLLERS WITH CABINETS

PRETIMED SIGNAL CONTROLLER 2 PHASE WITH CABINET.

THE CONSTRUCTION, DESIGN, WORKMANSHIP AND OPERATING FEATURES OF THE CONTROLLER SHALL BE OF ACCEPTABLE DESIGN AND SHALL PROVIDE A 1 DIAL, 3 OFFSET OPERATION.

THE CONTROLLERS SHALL OPERATE ON 115 VOLT, 60 CYCLE, AC, SINGLE PHASE CURRENT. CONTROLLERS SHALL BE OF THE EXPANSIBLE TYPE AND HAVE 1 TIMING DIAL AND PROVISIONS FOR A FLASHING OPERATION. THE FLASHER SHALL BE INCLUDED. THE DIALS AND OFFSETS SHALL BE CAPABLE OF SELECTION FROM A REMOTE CONTROL OR FROM SELECTOR SWITCHES IN THE CONTROLLER CABINET.

IT SHALL BE POSSIBLE TO SET OR ADJUST THE TIME CYCLE OF THE DIAL UNIT ACCURATELY BETWEEN THE LIMITS OF 30 AND 120 SECONDS. THE CHANGE IN TIME CYCLE SHALL BE ACCOMPLISHED BY THE CHANGE OF A SINGLE GEAR. 55, 60, 65, 70, 75, 80, 85, 90, 100, 110, AND 120 SECOND CYCLE GEARS SHALL BE PROVIDED WITH EACH CONTROLLER. ALL TIME CYCLE GEARS SHALL BE PERMANENTLY MARKED TO SHOW THE TIME SYCLE IN SECONDS. THE DIAL UNIT SHALL BE JACK MOUNTED SO THAT A SINGLE SCREW FASTENING SHALL SECURE THE UNIT IN PLACE AS WELL AS MAKE THE NECESSARY ELECTRICAL CONNECTIONS.

CYCLE LENGTH GEARS SHALL BE REMOVABLE WITHOUT THE USE OF TOOLS. INDEXING OF THE CYCLE GEAR AND THE MOTOR DRIVE GEARS SHALL BE AUTOMATIC AND SHALL SHOW A VISABLE INDICATION OF THE CYCLE IN USE. DIAL CONTACT SWITCHES SHALL BE OF THE POSITIVE CONTACT TYPE, CONTACT PRESSURE BEING MAINTAINED WITHOUT THE USE OF SEPARATE SPRINGS. DIAL KEYS SHALL BE OF THE SELF-LOCKING TYPE REMOVABLE WITHOUT THE USE OF TOOLS.

ALL SIGNAL SWITCHING SHALL BE ACCOMPLISHED USING A CAMSHAFT UNIT. THE CAMSHAFT SHALL BE OF THE HORIZONTALLY-MOUNTED TYPE AND THE SIGNAL SWITCHING ASSEMBLY SHALL CONTAIN A MINIMUM OF 18 SIGNAL CIRCUITS WIRED IN PLACE.

SIGNAL CIRCUIT CONTACTS SHALL BE 10 AMPERE RATING FINE SILVER CONTACTS. CONTACTS SHALL BE OF SUFFICIENT CROSS SECTION TO PERFORM THEIR NORMAL FUNCTION WITH MINIMUM PITTING OR BURNING UNDER MAXIMUM CURRENT OPERATION. CONTACT PRESSURE SHALL BE FACTORY PRESET WITH NO REQUIREMENT FOR READJUSTMENT NECESSARY. THE CAMSHAFT ASSEMBLY SHALL BE PROVIDED WITH THE NECESSARY SEGMENTS TO PROVIDE FOR A 16-INTERVAL OPERATION.

THE TIME MECHANISM CONSISTING OF THE SWITCHING UNIT, DIAL UNITS AND THEIR MOUNTINGS SHALL BE CARRIED ON A BASE OR IN A SMALL INNER CABINET. THE UNIT SHALL BE MOUNTED IN SUCH A MANNER THAT IT CAN BE WITHDRAWN FROM THE CABINET WITH THE CONTROLLER IN OPERATION. IT SHALL NOT BE NECESSARY TO REMOVE ANY WIRING TO REMOVE THE TIMER FROM THE CONTROLLER.

THE CONTROLLER SHALL BE FURNISHED IN A CAST ALUMINUM CABINET OF CLEAN CUT DESIGN AND APPEARANCE. THE CABINET DOOR SHALL BE EQUIPPED WITH A SUITABLE GASKET, CLOSELY SEATED SO AS TO RENDER THE CABINET DUST TIGHT. THE CABINET SHALL BE PROVIDED WITH A STANDARD POLICE LOCK AND KEY. THE CABINET SHALL BE PAINTED DARK "TRAFFIC GREEN" AND SHALL BE PROVIDED WITH FITTINGS FOR STEEL OR WOOD POLE MOUNTING. THE CABINET SHALL BE FURNISHED WITH THE PROPER RADIO INTERFERENCE FILTERS AND ANY MISCELLANEOUS EQUIPMENT TO PROVIDE FOR A SATISFACTORY OPERATION.

THE CABINET SHALL BE WIRED FOR AND INCLUDE A TWO CIRCUIT FLASHER WHICH SHALL PROVIDE 60 FLASHES PER MINUTE WITH EQUAL ON-OFF PERIODS. FLASHER CONTACTS SHALL BE HEAVY DUTY, 5/8" DIAMETER AND CONSERVATIVELY RATED AT 10 AMP CAPACITY.

PAYMENT FOR ITEM 625 "PRETIMED SIGNAL CONTROLLER 2 PHASE WITH CABINET" SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH CONTROLLER WITH CABINET INCLUDING ALL WIRING AND INCIDENTALS REQUIRED.

3. TRAFFIC SIGNAL HEADS

TRAFFIC SIGNAL HEADS SHALL BE OF CAST ALUMINUM OF THE SIZE SPECIFIED ON THE PLAN AND EQUIPPED WITH STANDARD VISORS UNLESS OTHERWISE SPECIFIED. THE OPTICAL UNIT LENSES AND REFLECTORS SHALL CONFORM TO THE STANDARDS OF THE AMERICAN STANDARD ASSOCIATION AND THE INSTITUTE OF TRAFFIC ENGINEERS. ALL SIGNAL HEADS SHALL BE THREE OR FOUR SECTION, ONE WAY UNITS WITH TURN ARROWS AS REQUIRED. TRAFFIC SIGNAL HEADS SHALL BE MOUNTED NOT LESS THAN 15 FEET AND NOT MORE THAN 17 FEET FROM THE BOTTOM OF THE HEAD TO THE PAVEMENT SURFACE.

THE EXTERNAL FINISH OF THE SIGNAL HEADS AND THE OUTSIDE OF THE HOODS SHALL BE PAINTED WITH A STANDARD FEDERAL YELLOW LACQUER OR ENAMEL. THE UNDERSIDE OF THE VISOR SHALL BE PAINTED FLAT BLACK.

PAYMENT FOR ITEM 615 "TRAFFIC SIGNAL HEADS" WILL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH SIGNAL HEAD BY TYPE COMPLETELY ASSEMBLED, MOUNTED IN PLACE BY USE OF FITTINGS SHOWN ON THE TYPICAL SIGNAL INSTALLATION DETAIL, WIRED IN ACCORDANCE WITH TYPICAL SIGNAL HEAD WIRING DIAGRAM, TESTED AND ACCEPTED.

4. SIGNAL STRAIN POLES (BY SIZE)

SIGNAL STRAIN POLES SHALL CONSIST OF A CONTINUOUS ROUND TAPERED GALVANIZED STEEL SHAFT HAVING A CAST STEEL ANCHOR BASE, HAND HOLE WITH COVER, POLE TOP AND ANCHOR BOLTS AND NUTS. THE ROUND TAPERED SHAFT SHALL BE THE SIZE SPECIFIED ON THE PLANS, ONE PLY, BEST GRADE, HOT ROLLED BASIC OPEN HEARTH STEEL. IT SHALL BE FORMED, WELDED AND LONGITUDINALLY COLD ROLLED UNDER SUFFICIENT PRESSURE TO FLATTEN THE WELD, FORM A ROUND TAPERED TUBE AND IMPROVE THE PHYSICAL CHARACTERISTICS OF THE METAL TO INSURE A YIELD STRENGTH IN EXCESS OF 55,000 PSI. THE SHAFT SHALL BE MADE FROM ONE LENGTH OF STEEL SHEET.

A 4" X 8" HAND HOLE SHALL BE WELDED INTO THE SHAFT TO FACILITATE WIRING. THE HAND HOLE SHALL BE COMPLETE WITH A REINFORCING FRAME WITH 1/2" -13-NC2 TAPERED LUG INSIDE FOR GROUND ATTACHMENT. A CURVED 11 GAUGE COVER PLATE WITH 2 STAINLESS STEEL 1/4" -20 PHILLIPS HEAD SCREWS AND A #35 STAINLESS SASH CHAIN CONNECTING THE COVER TO THE FRAME.

A GALVANIZED CAST IRON OR MALLEABLE STEEL POLE TOP COMPLETE WITH 3/4" CAP SCREW AND J HOOK FOR SUPPORT OF INTERNAL WIRING SHALL BE FURNISHED. A GROUNDING NUT FOR ACCOMODATION OF A 1/2" - 13 UNC THREADED BOLT OR STUD SHALL BE PROVIDED ON THE INSIDE OF THE SHAFT IMMEDIATELY ABOVE THE BOTTOM WELD JOINING THE SHAFT TO THE BASE.

THE BASE SHALL BE A ONE PIECE CAST STEEL ANCHOR BASE ASTM SPECIFICATION #A-27-58, GRADE 65-35 OF ADEQUATE STRENGTH, SHAPE AND SIZE AND HAVING A SCALLOPED TOP FLANGE SECURED TO THE LOWER END OF THE SHAFT BY TWO CONTINUOUS ELECTRIC ARC WELDS. THE BASE SHALL TELESCOPE THE SHAFT AND ONE WELD SHALL BE NOT LESS THAN 2 INCHES APART FROM THE OTHER WELD. ONE WELD SHALL BE ON THE INSIDE AT THE TOP OF THE BASE. THE DESIGN SHALL BE SUCH THAT THE WELDED CONNECTIONS SHALL DEVELOP THE FULL STRENGTH OF THE ADJACENT SHAFT SECTION TO RESIST BENDING ACTION.

GALVANIZED POLES AND ACCESSORIES SHALL BE HOT DIPPED AFTER FABRICATION IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM #A-123. AFTER ERECTION, POLES SHALL BE INSPECTED FOR MINOR SCRATCHES IN THE GALVANIZED SURFACES. SUCH SCRATCHES AND ALL HOLES DRILLED IN THE POLES SHALL BE GIVEN TWO COATS OF A ZINC RICH BASED PAINT. THE SECOND COAT SHALL BE APPLIED AFTER THE FIRST COAT HAS COMPLETELY DRIED. POLES HAVING MAJOR SCRATCHES OR DEFECTS IN THE GALVANIZED SURFACES WILL NOT BE ACCEPTED.

GENERAL NOTES - TRAFFIC SIGNALS

FOUR HIGH GRADE STEEL ANCHOR BOLTS EACH FITTED WITH TWO HEXAGON NUTS SHALL BE FURNISHED. EACH ANCHOR BOLT SHALL HAVE A L-BEND AT THE BOTTOM AND SHALL BE THREADED AT THE TOP. THE THREADED END OF THE BOLTS AND THE NUTS SHALL BE GALVANIZED. THE ANCHOR BOLTS SHALL BE CAPABLE OF RESISTING, AT YIELD STRENGTH STRESS, THE BENDING MOMENT OF THE SHAFT AT ITS YIELD STRENGTH STRESS. EACH ANCHOR BOLT SHALL BE AS TABULATED CONDUIT ELLS SHALL BE FURNISHED FOR INSTALLATION IN FOUNDATIONS.

PAYMENT FOR ITEM 816 "SIGNAL STRAIN POLE (BY SIZE)" WILL BE MADE FOR EACH POLE ERECTED IN ACCORDANCE WITH THE TYPICAL SIGNAL INSTALLATION DETAIL AND SHALL INCLUDE THE POLES, ANCHOR BOLTS, CONDUIT ELLS AND ALL ACCESSORIES.

5. CONCRETE FOR SIGNAL SUPPORT FOUNDATION

POLE FOUNDATIONS SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS. THE CONTRACTOR SHALL STAKE THE LONGITUDINAL AND LATERAL LOCATION AND THE ELEVATION FOR THE TOP OF EACH FOUNDATION SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER ELEVATION, OFFSET AND LEVEL OF EACH FOUNDATION. EXCAVATIONS SHALL BE MADE TO THE DIMENSIONS SHOWN ON THE PLANS AND SHALL BE PERFORMED BY MEANS OF AN EARTH AUGER OF THE SPECIFIED DIAMETER UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WHERE SUB-SURFACE OBSTRUCTIONS ARE ENCOUNTERED, THE ENGINEER MAY REQUIRE THE CONTRACTOR TO REMOVE THE OBSTRUCTION OR TO REPLACE THE EXCAVATED MATERIAL AND RELOCATE THE FOUNDATION. IF CAVING OF THE FOUNDATION OCCURS, THE CONTRACTOR SHALL EXCAVATE THE SPECIFIED DEPTH, MAINTAINING THE SIDEWALLS AS NEARLY VERTICAL AS POSSIBLE. NO PAYMENT SHALL BE MADE FOR ANY EXCAVATION, CONCRETE OR REINFORCING STEEL USED IN EXCESS OF THE PLANNED QUANTITIES.

PORTLAND CEMENT CONCRETE SHALL BE USED AND SHALL CONFORM WITH CLASS "C" OF THE CONSTRUCTION OF MATERIAL SPECIFICATIONS PREPARED BY THE DEPARTMENT OF HIGHWAYS OF THE STATE OF OHIO, DATED JANUARY 1, 1970- THE CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL OR COMPACTED EMBANKMENT. THE FOUNDATION SHALL HAVE ANCHOR BOLTS AND CONDUIT ACCURATELY HELD IN POSITION WITH A TEMPLET WHEN CONCRETE IS POURED. FORMS SHALL BE USED FOR THE UPPER PORTION OF ALL FOUNDATIONS AND NO BACKFILLING SHALL BE PERMITTED FROM THE BOTTOM TO WITHIN 6 INCHES BELOW GROUND LEVEL. NO GROUTING OF CONCRETE SHALL BE PERMITTED BETWEEN THE FOUNDATION AND THE STEEL POLE.

PAYMENT FOR ITEM 816 "CONCRETE FOR SIGNAL SUPPORT FOUNDATION" WILL BE MADE PER CUBIC YARD FOR EACH FOUNDATION CONSTRUCTED AND SHALL INCLUDE CONCRETE, REINFORCING STEEL, EXCAVATION AND BACKFILL.

6. SIGNAL CABLE #14 AWG, BY TYPE

TRAFFIC SIGNAL CABLE SHALL BE WEATHERPROOF AND SHALL CONSIST OF THE NUMBER OF CONDUCTORS AS SPECIFIED ON THE PLANS. ALL CONDUCTORS SHALL BE AWG #14. CABLES SHALL BE INSULATED, JACKETED, RATED 600 VOLTS FOR USE IN UNDERGROUND CONDUIT OR AN AERIAL CABLE SUPPORTED BY A MESSENGER. IT SHALL BE COLOR CODED AND IN EVERY RESPECT FOLLOW THE INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION SPECIFICATION NUMBER 19-1-1967. WIRES MAY BE SOLID OR STRANDED.

PAYMENT FOR ITEM 625 "SIGNAL CABLE #14 AWG BY TYPE" WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT BY TYPE, IN PLACE, COMPLETED AND ACCEPTED INCLUDING WIRING, TERMINALS, CONNECTIONS, SPLICING, TESTING AND ALL NECESSARY INCIDENTALS.

7. 625 MESSENGER WIRE BY SIZE 7-STRAND WITH ACCESSORIES

MESSENGER WIRE SHALL BE UTILITY GRADE GALVANIZED STEEL AS PER ASTM A-363-65. IT SHALL CONSIST OF SEVEN STRAND (3/8" NOMINAL DIAMETER WITH A BREAKING LOAD OF 11,500 LBS.) GALVANIZED STEEL LASHING RODS SHALL BE USED TO SUSPEND THE SIGNAL CABLE FROM THE MESSENGER WIRE, TIGHTLY SECURED. WET-PORCELAIN STRAIN INSULATORS (600 VOLT), GUY CLAMPS, AND GALVANIZED PERFORMED GUY GRIP DEAD ENDS, THIMBLES AND BULL RINGS (WHEN REQUIRED) WITH A RATED LOADING STRENGTH EQUAL TO OR GREATER THAN THE BREAKING LOAD OF THE MESSENGER WIRE SHALL BE INSTALLED AS SHOWN ON THE PLANS AND/OR SPECIFIED BY THE ENGINEER. THE MESSENGER WIRE SHALL BE INSTALLED SO THAT THE ENTIRE LOAD OF THE SIGNAL EQUIPMENT WILL NOT CAUSE SAG TO EXCEED A MAXIMUM OF 5% OR A MINIMUM OF 3% OF THE SPAN.

PAYMENT FOR ITEM 625 "MESSENGER WIRE (BY SIZE) 7 STRAND WITH ACCESSORIES" WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT (MEASURED TO CENTER OF POLE OR AERIAL CORNERS) COMPLETELY ASSEMBLED IN ACCORDANCE WITH THE TYPICAL SIGNAL INSTALLATION DETAILS AND SHALL INCLUDE MESSENGER WIRE, LASHING RODS, STRAIN INSULATORS, PREFORMED GUY GRIPS, THIMBLES, GUY CLAMPS, AND AERIAL CORNER BULL RINGS, AS DESCRIBED ABOVE AND SHOWN ON THE DETAILS ON SHEET 207.

8. 625 POWER CABLE 3/C #8 AWG - RHW (OR RHW TYPE) STRANDED

POWER CABLE SHALL BE WEATHERPROOF AND SHALL BE 3 CONDUCTOR AWG #8 RHW (OR RHW TYPE) STRANDED COPPER. POWER CABLE SHALL BE INSTALLED FROM THE CONTROLLER CABINET THROUGH THE APPROPRIATE CONDUIT, SIGNAL POLE, AND WEATHERHEAD. IT SHALL BE ATTACHED BY THE OHIO POWER COMPANY TO THE SERVICE CABLE WITH PRESSURE CONNECTORS COVERED WITH MASTIC INSULATION.

PAYMENT FOR ITEM 625 "POWER CABLE" WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT, IN PLACE, COMPLETE AND ACCEPTED, INCLUDING WIRING, TERMINALS, CONNECTIONS, TESTING, AND ALL INCIDENTALS NECESSARY AND SHALL ALSO INCLUDE ANY COSTS INCURRED TO ARRANGE THE SERVICE INSTALLATION BY THE OHIO POWER COMPANY IN CONFORMANCE WITH THE PLANS.

III TESTING OF TRAFFIC SIGNALS

THE CONTRACTOR SHALL FURNISH ALL PERSONNEL, EQUIPMENT AND APPLIANCES REQUIRED TO SUCCESSFULLY TEST THE COMPLETED INSTALLATIONS.

THE CONTRACTOR SHALL TEST AND DEMONSTRATE TO THE SATISFACTION OF THE ENGINEER OR HIS AUTHORIZED REPRESENTATIVE, THAT THE CIRCUITS ARE PROPERLY CONNECTED, CONTINUOUS AND FREE FROM SHORT CIRCUITS, CROSSES AND UNSPECIFIED GROUNDS, AND THAT THEY ARE CONNECTED IN ACCORDANCE WITH THE WIRING INSTRUCTIONS AND THAT EACH CIRCUIT IS OPERABLE CORRECTLY AND INDEPENDENTLY OF ANY OTHER CIRCUIT.

THE CONTRACTOR SHALL TEST EACH UNGROUNDED CIRCUIT AND SPACE WIRES TERMINATING AT THE TRAFFIC CONTROLLER CABINET FOR RESISTANCE TO GROUND. THIS RESISTANCE TO GROUND SHALL BE NOT LESS THAN TEN (10) MEGOHMS. THE CONTRACTOR SHALL FURNISH A COMPLETE REPORT OF ALL MEGOHM READINGS OF EACH CIRCUIT AND SPARE CONDUCTORS IN CABLES APPEARING AT THE CONTROLLER BASE. THE GROUND ROD AT THE TRAFFIC CONTROLLER SHALL HAVE A RESISTANCE OF NOT MORE THAN 15 OHMS TO GROUND.

AFTER ALL CIRCUITS AND SPARE CONDUCTORS HAVE BEEN TESTED THE CONTRACTOR WILL INSTALL THE TRAFFIC CONTROLLER AND CONNECT THE FIELD WIRING TO THE TERMINAL CONTACTS OF THE TRAFFIC CONTROLLER. THE COMPLETED INSTALLATION SHALL OPERATE CONTINUOUSLY FOR A PERIOD OF ONE WEEK WITHOUT INTERRUPTION OR FAILURE ATTRIBUTABLE TO POOR WORKMANSHIP OR DEFECTIVE MATERIAL PRIOR TO ACCEPTANCE AND AFTER ANY DEFECTIVE PARTS HAVE BEEN REPLACED AND ALL FAULTS CORRECTED.

THE CONTRACTOR SHALL HAVE THE RESPONSIBILITY OF CORRECTING MALFUNCTIONS OF THE INSTALLATION. POWER FOR THE TEST WILL BE FURNISHED FROM THE SERVICE INSTALLED AS A PART OF THIS CONTRACT. THE COST OF THE POWER TO CONDUCT THE TEST WILL BE BORNE BY THE CONTRACTOR. COSTS OF CONDUCTING TESTS BY THE CONTRACTOR SHALL BE INCLUDED IN THE BID PRICE FOR THE ITEM TESTED.

IV HOURS OF WORK

HOURS OF WORK ON THE SIGNALIZATION CONSTRUCTION SHALL BE LIMITED TO 8:30 AM TO 4:00 PM AND 6:00 PM TO 7:00 AM WEEKDAYS, OR AS APPROVED BY THE ENGINEER.

625 CABLE SUPPORT ASSEMBLY

A CABLE SUPPORT ASSEMBLY FOR EACH TRAFFIC SIGNAL CABLE PASSING THROUGH THE WIRE OUTLET NEAR THE TOP OF POLE SHALL BE ATTACHED TO THE "J" HOOK AS SHOWN IN THE PLANS AND SHALL CONSIST OF THE FOLLOWING MAJOR ITEMS:

1. ONE PIECE OF THREE-STRAND COPPER-CLAD MESSENGER, LENGTH AS REQUIRED.
2. TWO COPPER-CLAD THIMBLES.
3. TWO # 6 COPPER-CLAD SPLIT BOLT CONNECTORS.
4. ONE BRONZE CABLE GRIP, DOUBLE EYE LUFFING TYPE.
5. ALL OTHER MISCELLANEOUS ITEMS THAT MAY BE NECESSARY TO MAKE THE ASSEMBLY COMPLETE.

THE MESSENGER SHALL BE 0.164 INCHES IN DIAMETER CONSISTING OF THREE STRANDS OF 0.075 INCH COPPER-COVERED STEEL WIRES TWISTED IN THE FORM OF A CABLE. THE CABLE GRIP FOR SUPPORTING CABLES INSIDE POLES SHALL BE BRONZE OR COPPER-CLAD STEEL CONSTRUCTION. THEY SHALL HAVE A DOUBLE EYE LUFFING ARRANGEMENT TO PERMIT EASY INSTALLATION OF THE CABLE. THE GRIPS SHALL BE OF THE PROPER SIZE TO FIT THE CABLE AND SHALL BE THE DOUBLE WEAVE TYPE APPROXIMATELY 18" LONG. GUY THIMBLES SHALL BE GROOVED TO FIT THE GUY STRAND AND BENT TO THE PROPER RADIUS TO PREVENT THE STRAND FROM BEING SHARPLY BENT. THE UNIT SHALL BE MADE OF STEEL WITH A COPPER-CLAD OR BRONZE FINISH.

PAYMENT FOR ITEM 625 CABLE SUPPORT ASSEMBLY WILL BE MADE AT THE CONTRACT UNIT PRICE EACH COMPLETELY ASSEMBLED IN PLACE AND ACCEPTED.

DESCRIPTION	PLOTTED BY	DATE	INKED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY						
PLACEMENT						
DRAINAGE						
R.O.W.						
QUANTITIES						

GENERAL SUMMARY

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY M.R. 10-2-72
QUANTITIES CHECKED BY P.G.P. 10-4-72

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

JEFFERSON COUNTY
JEF ~ 43 ~ 0.42

Sheet 187	Sheet 188	Sheet 193	ITEM	QUANTITY: NORMAL PARTICIPATION	QUANTITY: 100% CITY	QUANTITY: GRAND TOTAL	UNIT	DESCRIPTION
								TRAFFIC CONTROL TYPE CODE 7221
	46		620	46		46	EACH	DELINEATORS, TYPE D POST MOUNTED
	4.11		621	3.98	0.13	4.11	MILES	4" EDGE LINE
	0.74		621	0.74	—	0.74	MILES	4" CENTER LINE
	1.64		621	1.64	—	1.64	MILES	4" LANE LINE
	2,243		621	2,119	124	2,243	LIN. FT.	8" CHANNELIZING LINE
	670		621	640	30	670	LIN. FT.	24" BROAD TRANSVERSE LINES
	235		621	221	14	235	LIN. FT	24" STOP LINE
	388		621	330	58	388	LIN. FT.	12" CROSS WALK LINES
	1,096		621	836	260	1,096	LIN. FT	CURB MARKING
	617		621	440	177	617	SQ. FT.	ISLAND MARKING
2			625	2	—	2	EACH	72" FIXTURE WITH SHO LAMP
1			625	1	—	1	EACH	BALLAST, TYPE "D"
6			625	5	1	6	EACH	SIGNS WIRED, COMPLETE
4			625	3	1	4	EACH	SIGN SERVICE
7			625	6	1	7	EACH	72" FIXTURE WITH HO LAMP
1			625	1	—	1	EACH	96" FIXTURE WITH HO LAMP
2			625	1	1	2	EACH	BALLAST, TYPE "A"
3			625	3	—	3	EACH	BALLAST, TYPE "B"
2			625	1	1	2	EACH	TRANSFORMER, TYPE I
1			625	1	—	1	EACH	TRANSFORMER, TYPE II
1			625	1	—	1	EACH	TRANSFORMER, TYPE V
4		4	625	7	1	8	EACH	GROUND ROD
3			625	2	1	3	EACH	DISCONNECT SWITCH WITH "Y" ENCLOSURE
1			625	1	—	1	EACH	DISCONNECT SWITCH WITH "Z" ENCLOSURE
247			815	241	6	247	SQ. FT.	SIGN ERECTION FLAT SHEET TYPE
563			815	528	35	563	SQ. FT.	SIGN ERECTION EXTRU SHEET TYPE
434.5			816	421.5	13.0	434.5	LIN. FT.	STRUCTURAL SUPPORT, 4# POST DRIVEN,
92.5			816	92.5	—	92.5	LIN. FT.	STRUCTURAL SUPPORT, 6# BEAM DRIVEN
59.5			816	59.5	—	59.5	LIN. FT.	STRUCTURAL SUPPORT, 6# BEAM, AS PER PLAN, DRIVEN
4			816	4	—	4	LIN. FT.	POLE MOUNTED SIGN ATTACHMENT
1			816	1	—	1	EACH	OVERHEAD SIGN SUPPORT, NO. 7.3, DESIGN #4, 93'-6" SPAN
1			816	1	—	1	EACH	OVERHEAD SIGN SUPPORT, NO. 12.24, DESIGN #1, 16' ARM
1			816	—	1	1	EACH	COMBINATION SIGN SUPPORT, NO. 12.24, DESIGN #2 22' ARM (MODIFIED)
1			816	1	—	1	EACH	OVERHEAD SIGN SUPPORT, NO. 12.24, DESIGN #4 25' ARM
2.7			816	2.7	—	2.7	CU. YDS.	CONCRETE FOR GROUND MOUNTED SIGN SUPPORT FOUNDATIONS
18.3			816	15.8	2.5	18.3	CU. YDS.	CONCRETE FOR OVERHEAD SIGN SUPPORT FOUNDATIONS
		4	625	4	—	4	EACH	TRAFFIC SIGNAL HEADS, 3 SECTION, 12" LENS, ONE WAY
		4	625	2	2	4	EACH	TRAFFIC SIGNAL HEADS, 3 SECTION, 8" LENS, ONE WAY
		310	625	310	—	310	LIN. FT.	MESSENGER WIRE, 3/8" DIA., WITH ACCESSORIES
		123	625	123	—	123	LIN. FT.	SIGNAL CABLE 8/C, #14 AWG, 600 V IMSA 19-1-67
		68	625	68	—	68	LIN. FT.	SIGNAL CABLE 5/C, #14 AWG, 600 V IMSA 19-1-67
		27	625	27	—	27	LIN. FT.	POWER CABLE 3/C, #8 AWG, RHW OR RHW TYPE, STRANDED
		1	625	1	—	1	EACH	PRETIMED 2 PHASE SIGNAL CONTROLLER WITH CABINET
		2	625	2	—	2	EACH	CABLE SUPPORT ASSEMBLIES
		3	816	3	—	3	EACH	SIGNAL STRAIN POLE 3 GAGE 12"X28'
		1	816	1	—	1	EACH	SIGNAL STRAIN POLE 3 GAGE 10"X18', WITH LIGHT
		10.8	816	10.8	—	10.8	CU. YDS.	CONCRETE FOR SIGNAL SUPPORT FOUNDATION

SIGNING SUB - SUMMARY

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY M.R. 10-2-72
QUANTITIES CHECKED BY P.G.P. 10-4-72

JEFFERSON COUNTY
JEF ~ 43 ~ 0.42

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

				ITEM 815 SIGN ERECTION			ITEM 816 SIGN SUPPORTS, GROUND MOUNTED							ITEM 816 SIGN SUPPORTS, OVERHEAD						ITEM 625 ELECTRICAL																	
																				BALLAST TYPE				FIXTURE & LAMP SIZE & TYPE				TRANSFORMER TYPE									
SHEET NUMBER	REFERENCE NUMBER	STATION AND LOCATION	SIGN SIZE	FLAT SHEET	EXTRUSHEET			6" BEAM DRIVEN		6" BEAM AS PER PLAN DRIVEN	4" POST DRIVEN			7-3 DESIGN #4 93'-6" SPAN	12.24 DESIGN #1 16' ARM	COMBINATION SIGN SUPPORT 12.24 DESIGN #2 22' ARM (MOD.)	12.24 DESIGN #4 25' ARM (MOD)	POLE MOUNTED SIGN ATTACHMENT	FOUNDATION CONCRETE	TYPE "A"	TYPE "B"		TYPE "D"	72" FIXTURE W/400 LAMP	72" FIXTURE W/250 LAMP	96" FIXTURE W/400 LAMP		TYPE I	TYPE II		TYPE II	GROUND ROD	SIGN WIRED COMPLETE	SIGN SERVICE	DISCONNECT SWITCH WITH "Y" ENCLOSURE	DISCONNECT SWITCH WITH "Z" ENCLOSURE	REMARKS
				SQUARE FEET			LINEAL FEET							EACH					CU. YDS.	EACH												EACH					
189	1	819+0 S.B. S.R. 43	6'X1'		6.0						1.0‡							2																			MOUNTED ON EXIST. LIGHT POLE @ STA. 819+0 (ABOUT.) SEE DETAIL ON SHEET No. 192
189	2	821+75, S.B. S.R. 43	8'X7'		56.0										1				2.89	1				1				1				1	1	1	1		
189	3	827+25 N.B. " "	2-(6'X1')		12.0						25.5																										
189	4A	825+00 S.B. " "	3'X3' 2'x1½"	12.0																																	MOUNTED ON RETAINING WALL.
189	4B	822+70 S.B. " "	3'X3', 2'x1'	11.0				15.5																													
189	5	828+10 S.B. " "	16'X7', 12'X8', 13'X6'		286.0									1					9.56		2		1	3	2	1					1	1	3	1		1	
189	6	830+50 ℄ " "	2'X 2.5', 2'x1.5	8.0							13.5																										
190	8	841+50 S.B. " "	14'X6'		84.0												1		3.33		1			2					1			1	1	1	1		
190	9	843+29 S.B. " "	6'X5'		30.0			32.5																													
190	10	844+50 S.B. " "	2'X2', 2'X1'	6.0							3.0‡							2																			MOUNTED ON LIGHT POLE
190	11	849+00 S.B. " "	3'X3', 2'x1.5'	12.0				15.5																													
189	12	823+10 N.B. S.R. 43	3-(6'X1')		18.0						25.0																										
189	13	833+00 N.B. " "	3'X3'	9.0				14.5																													
190	14	836+00 N.B. " " ℄	3'X3', 2'x1.5'	12.0						14.5																											
190	14'	836+00 N.B. " "	3'X3', 2'x1.5'	12.0				14.5																													
190	15	838+00 N.B. " " ℄	2'X2', 2'X1'	6.0							13.5																										
190	15'	838+00 N.B. " "	2'X2', 2'X1'	6.0							13.5																										
189	16	5+02 RT. LINE "D"	2'X2.5'	5.0							12.5																										
189	17	9+62 RT. LINE "D"	3'X3'X3'	3.9							13.0																										℄ OF POST TO BE 4.0' FROM FACE OF CURB
189	18	3+25 LT. BELLEVIEW BLVD.	2-(6'X1')		12.0						25.0																										
189	19	10+95 RT. BELLEVIEW BLVD.	2.5'X2.5'	6.25							13.0																										
189	19	11+12 BELLEVIEW BLVD.	2.5'X2.5'	6.25							13.0																										ON THE ISLAND
189	20	10+70 RT. LINE "E"	2-(6'X1')		12.0						25.0																										SIGNS FACING BELLEVIEW BLVD.
189	21	11+00 RT. " "	(6'X1')(1.67'X1.25') 2'X2', 2'X1'	8.1	6.0						28.0																										
189	22	4+30 LT. " "	2.5'X2.5', 2'x1.	8.25							14.0																										
189	23	9+65 RT. ORCHARD ST.	2.5'X2.5'	6.25							13.0																										
189	24	10+35 LT. " "	2.5'X2.5'	6.25							13.0																										
190	25	843+00 RT. LINE "B"	2'X2.5'	5.0							14.0																										
191	26	852+10 RT. " "	2'X2'	4.0							12.5																										
191	26'	852+10 LT. " "	2'X2'	4.0							12.5																										
191	27	852+55 LT. " "	1.5'X2'	3.0							12.5																										
189	28	0+81 LT. STEELE AVE.	3'X3'	9.0						13.5																											
191	31	0+25 LT. LINE "G"	2.5'X2.5'	6.25							13.0																										
191	32	1+78 RT. " "	2.5'X2.5'	6.25							13.0																										
191	33	10+30 LT. NINTH ST.	2'X2.5', 2.5'X2.5', 2'x1.5'	14.25						15.5																											
191	34	7+80 RT. WASHINGTON ST.	2'X2.5', 3'X3'	14.0						16.0																											
191	35	854+90 RT. LINE "F"	2-(3'X1'), 2'X2'	10.0							13.5																										
191	35'	854+90 LT. " "	2-(3'X1'), 2'X2'	10.0							13.5																										
191	36	861+15 LT. LINE "A"	7'X5'		35.0*											1*			2.53*	1*				1*				1*				1*	1*	1*	1*		
191	37	10+58 LT. EIGHTH ST.	2.5'X2.5'	6.25*							13.0*																										
189	38	823+44 S.B. S.R. 43	4'X1.5'		6.0						26.0																										
191	39	854+70 N.B. S.R. 43	2'X2', 2'X1'	6.0							13.0																										
191	40	857+25 MEDIAN S.R. 43	2'X2.5'	5.0							13.5																										
		SUB ~ TOTAL	(NORMAL PARTICIPATION)	241.00	528.0			92.5		59.5	421.5			1	1	—	1	4	15.78	1	3		1	6	2	1		1	1		1	3	5	3	2	1	
		SUB ~ TOTAL	(100% CITY)	6.25	35.0		—	—		—	13.0	—		—	—	1	—	—	2.53	1	—		—	1	—	—		1	—		—	1	1	1	1	—	
		TOTALS		247.25	563.0			92.5		59.5	434.5			1	1	1	1	4	18.31	2	3		1	7	2	1		2	1		1	4	6	4	3	1	

* 100% CITY OF STEUBENVILLE

BRUNING 44-560 10943

DELINEATORS & STRIPING SUB-SUMMARY

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY M.R. 10-2-72
QUANTITIES CHECKED BY P.G.P. 10-4-72

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			188/299

JEFFERSON COUNTY
JEF - 43 - 0.42

LOCATION	SIDE	STATION FROM	STATION TO	4" EDGE LINE	4" LANE LINE	8" CHANNELIZING LINE	4" CENTER LINE CONTINUOUS WHITE	24" BROAD TRANSVERSE STRIPES	24" STOP LINE	12" CROSS WALK LINES	CURB MARKING	ISLAND MARKING
				LIN. FT.								SQ. FT.
S.R. 43	℄	821+00	822+98				396					
" "	℄	824+05	828+50				890					
SOUTH BOUND S.R. 43	LT.	828+50	830+20			170	170	50				
" " " "	LT.	830+20	857+40	2,720							50	50
" " " "	LT.	857+40	858+88			148	148	40				
" " " "	RT.	821+00	828+00	700								
SOUTH BOUND S.R. 43	RT.	835+00	842+00	700								
12' FROM LEFT EDGE		821+00	858+88		3,788							
24' " " "		827+85	828+85			100		85				
24' " " "		828+85	835+00	615								
24' " " "		838+80	841+60		280							
24' " " "		841+60	843+20			160		150				
24' FROM LEFT EDGE		843+20	856+20	1,300								
NORTH BOUND S.R. 43	RT.	821+00	823+25	225								
" " " "	RT.	823+88	829+13	525								
" " " "	RT.	829+45	838+60	915								
" " " "	LT.	828+50	830+20			170	170	50				
" " " "	LT.	830+20	857+40	2,720							50	50
NORTH BOUND S.R. 43	LT.	857+40	858+88			148	148	40				
12' FROM LEFT EDGE		821+00	858+88		3,788							
24' " " "		829+70	837+60		790							
24' " " "		837+60	855+40	1,780							60	
24' FROM LEFT EDGE		855+40	855+92			52		15				163
DRIVE AT STA. 821+64 S.R. 43	RT.						25		10			
BELLEVIEW BLVD. INTERSECTION									72	150		
BELLEVIEW BLVD.	LT.	0+55	0+76	21								
BELLEVIEW BLVD.	℄	0+35	0+76				41					
STEELE AVE. INTERSECTION							50		15	84		
STEELE AVE.	RT.	1+70	2+08	38								
STEELE AVE	LT.	0+80	1+35	55								
ALLEY	RT.	5+30	5+47	17								
LINE "D"	RT.	4+00	11+00	700								
" "	LT.	3+85	4+85			100						
" "	LT.	4+85	8+71	386								
LINE "D"	LT.	8+71	10+21			150					80	177
LAWSON AVE.	RT.	35+25	36+30	105								
LAWSON AVE.	LT.	35+25	36+30	105								
LAWSON AVE & ORCHARD ST. INTERSECTION	L/R								24	96		
LAWSON AVE. FROM ℄	LT.	36+60	37+30			70						
LAWSON AVE. FROM ℄	RT.	36+60	38+10				800					
LINE "E" FROM ℄	L/R	1+00	2+50			300	300	130				
LINE "E"	℄	2+50	11+65				915					
" "	RT.	2+00	11+65	965								
" "	LT.	2+60	4+00			140					50	
LINE "E"	LT.	4+00	10+00	600								
LINE "E" & BELLEVIEW INTERSECTION				40			70		34		80	
LINE "A"	LT.	838+60	858+00	1,940								
LINE "A" & EIGHTH ST. INTERSECTION									14*	58*		
LINE "A"	LT.	858+00	861+15	315*								
ADAMS ST.	LT.	54+80	56+08	128*							100*	
" "	LT.	56+08	56+70			62*		30*				177*
LINE "A"	RT.	837+60	838+60			100						
" "	RT.	838+60	858+00	1,940							180	
" "	RT.	858+00	860+60	260*							160*	
" "	RT.	860+60	861+22			62*						
LINE "B"	LT.	841+60	843+20			160						
" "	LT.	843+20	852+14	894							60	
LINE "B" INTERSECTION	LT.			25								
" "	RT.	842+00	851+60	960								
LINE "B"	RT.	851+60	852+61			101		80			101	
WASHINGTON ST.	℄	6+85	7+85				100					
" "	RT.	7+85							18			
" "	RT.	7+85	8+90								125	
LINE "F"	RT.	855+42	855+92			50						
NINTH ST.	LT.	10+30							14			
LINE "G"	LT.	0+25							18			
" "	℄	0+25	1+78				153					
" "	RT.	1+78							16			
SUB-TOTAL (NORMAL PARTICIPATION) — FT.				20,991	8,646	2,119	3876	640	221	330	836	440
SUB-TOTAL (100% CITY) — FT.				703	—	124	—	30	14	58	260	177
TOTAL — FT.				21,694	8,646	2,243	3876	670	235	388	1,096	617
SUB-TOTAL (NORMAL PARTICIPATION) - MILES				3.98	1.64		.74					
SUB-TOTAL (100% CITY) - MILES				0.13	—		—					
TOTAL - MILES				4.11	1.64		.74					

ITEM 620 ~ DELINEATORS

LOCATION	SIDE	STATION FROM	STATION TO	SPACING (FT.)	D POST	D BRACKET
LINE "D"	RT.	0+80	2+80	100	3	
" "	RT.	2+80	3+60	80	1	
" "	RT.	3+60	5+10	50	3	
LINE "D"	LT.	5+10	9+10	50	9	
LINE "A"	LT.	836+00	838+00	100	3	
" "	LT.	838+00	838+80	80	1	
" "	RT.	838+80	841+20	80	4	
" "	RT.	841+20	844+20	100	3	
" "	RT.	844+20	844+90	70	1	
LINE "A"	RT.	844+90	845+30	40	1	
S.R. 43	RT.	835+00	840+00	100	6	
S.R. 43 TO LINE "B"	RT.	840+00	843+20	80	4	
LINE "B"	LT.	843+20	844+00	80	2	
LINE "B"	LT.	844+00	849+00	100	5	
TOTAL					46	

* 100% CITY OF STEUBENVILLE

DELINEATORS & STRIPING SUB ~ SUMMARY

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

189
299

JEFFERSON COUNTY
JEF-43-0.42

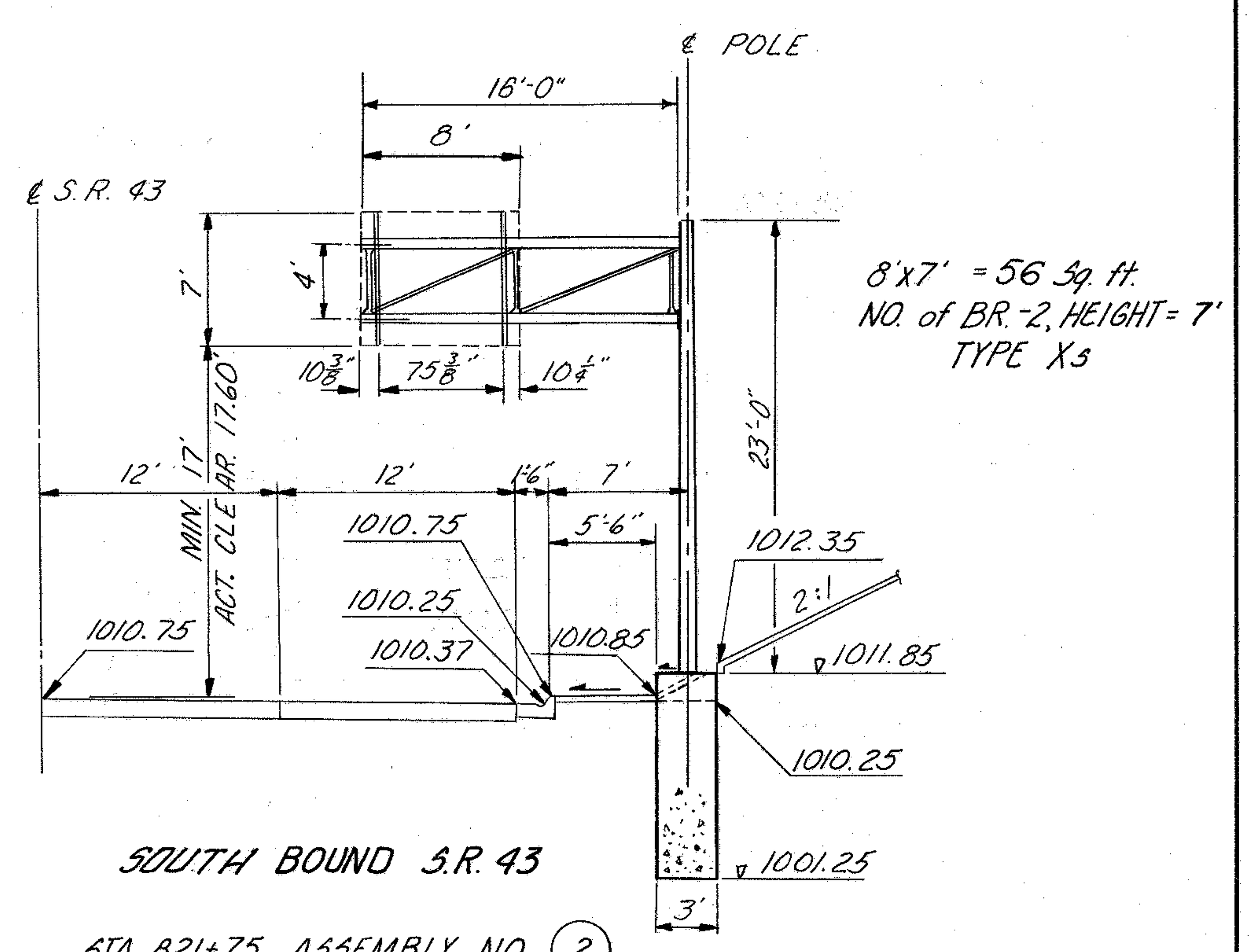
TRAFFIC CONTROL PLAN LOCATION OF TRAFFIC CONTROL DEVICES

TRAFFIC CONTROL PLAN LOCATION OF TRAFFIC CONTROL DEVICES

TRAFFIC CONTROL PLAN   LOCATION OF TRAFFIC CONTROL DEVICES

JEFFERSON COUNTY
JEF ~ 43 ~ 0.42

(2)

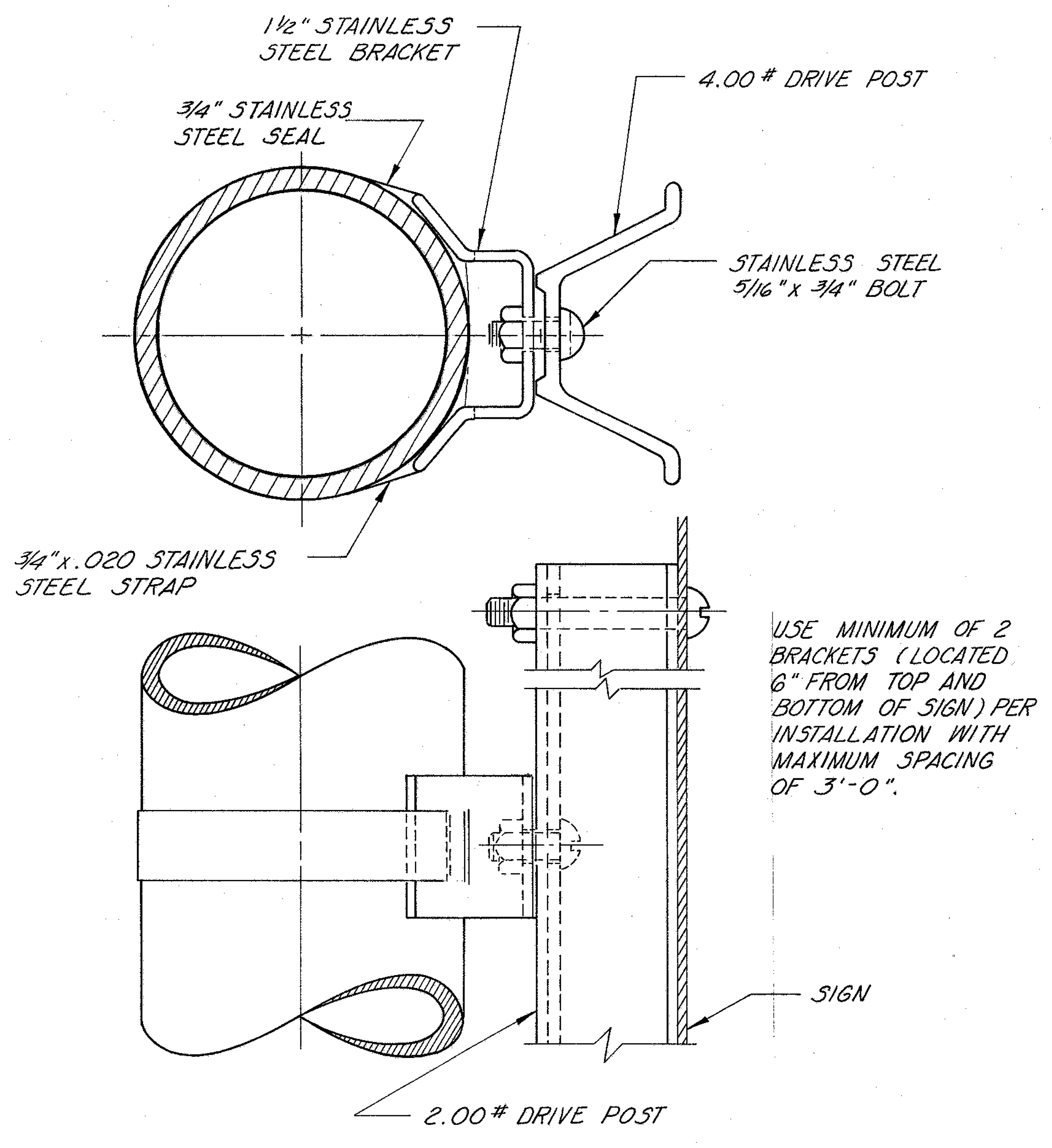


SOUTH BOUND S.R. 43

STA. 821+75, ASSEMBLY NO. (2)
816, NO. 12.24, DESIGN 1, ARM 16'

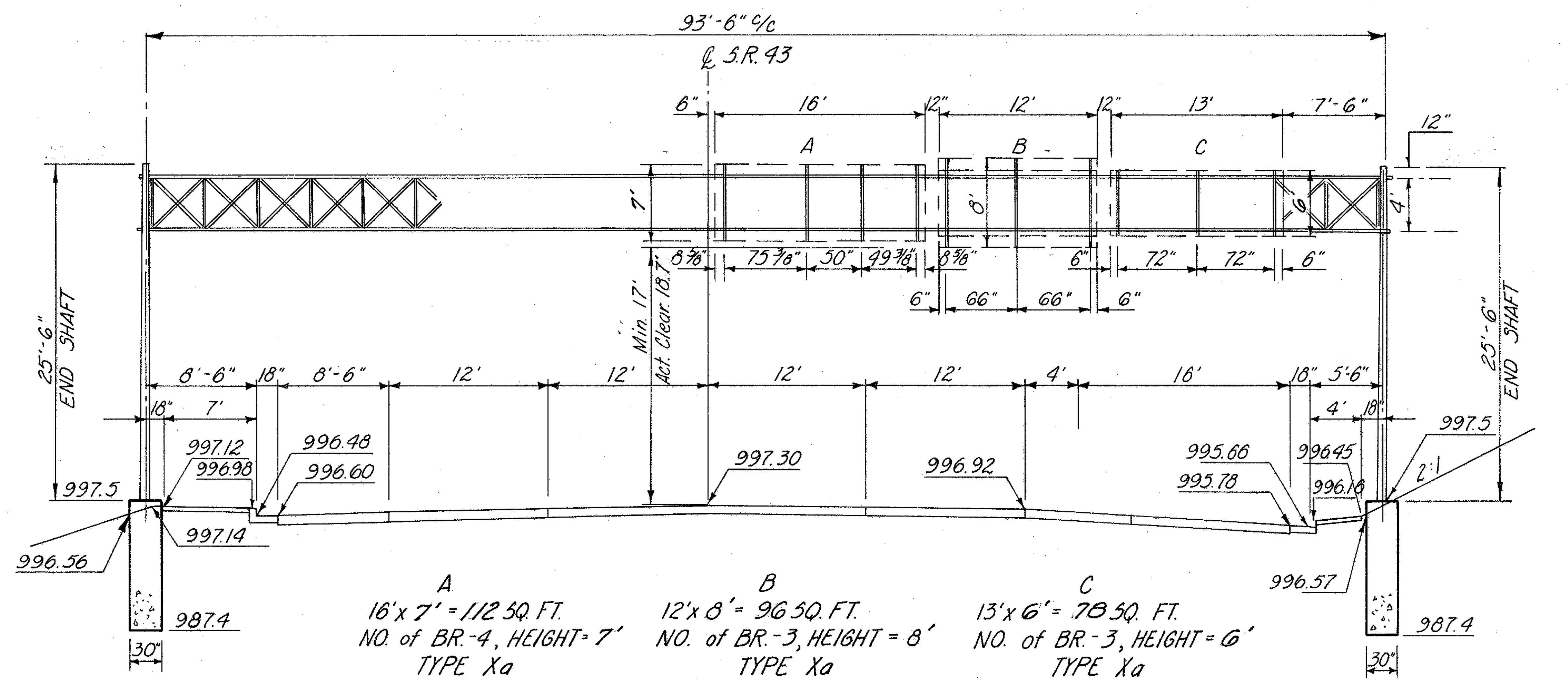
Scale : 1/8" = 1'

FOOTING : 2.89 C.Y.



POLE MOUNTED SIGNS

(5)



A
16'x 7' = 112 SQ. FT.
NO. of BR.-4, HEIGHT = 7'
TYPE Xa

B
12'x 8' = 96 SQ. FT.
NO. of BR.-3, HEIGHT = 8'
TYPE Xa

C
13'x 6' = 78 SQ. FT.
NO. of BR.-3, HEIGHT = 6'
TYPE Xa

SOUTH BOUND S.R. 43

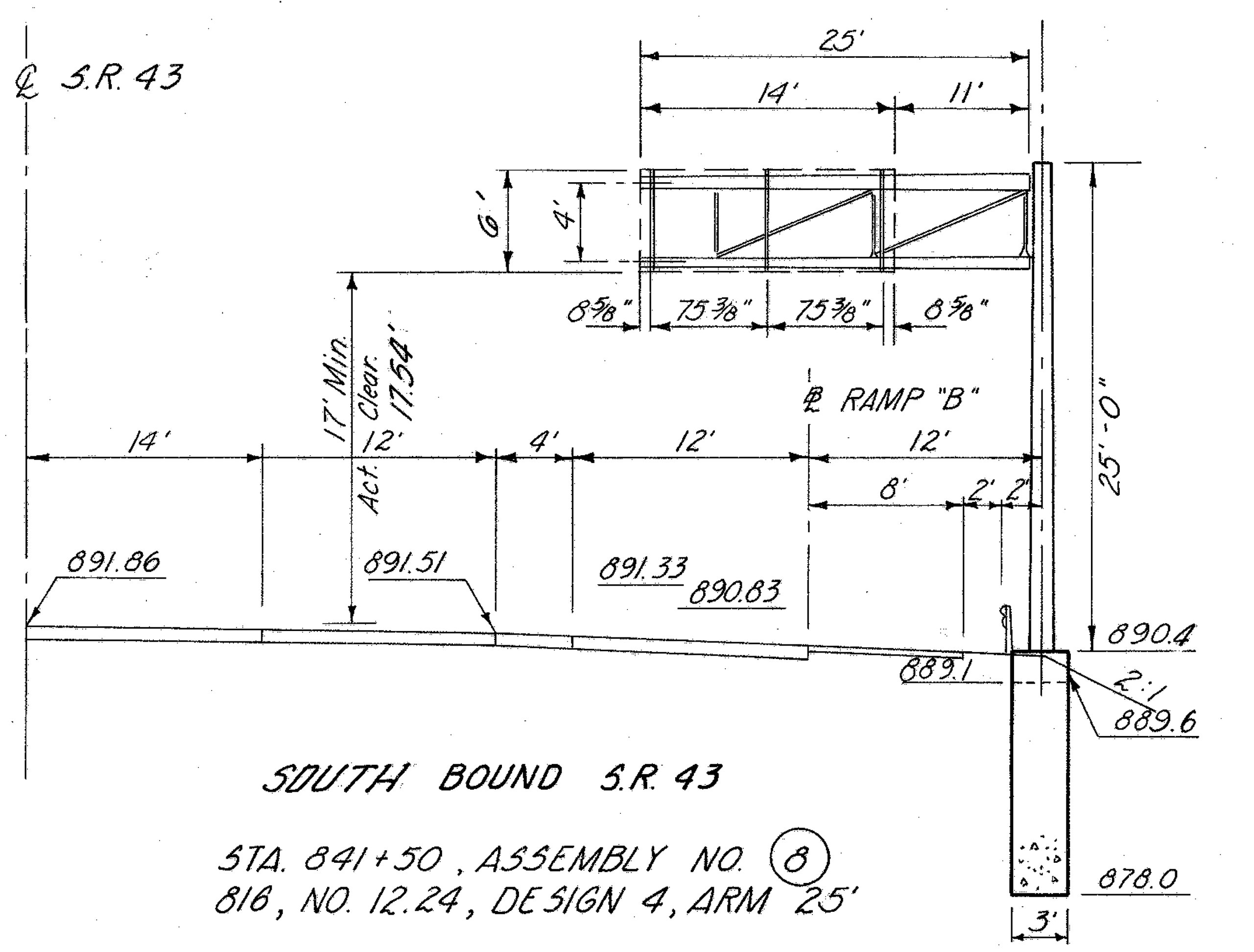
STA. 828+10, ASSEMBLY NO. (5)
816, NO. 7.3, DESIGN 4, SPAN 93'-6"

FOOTING : 2x4.78 = 9.56 C.Y.

Scale : 1/8" = 1'

(8)

14'x 6' = 84 SQ. FT.
NO. of BR.-3, HEIGHT = 6'-0"
TYPE X3

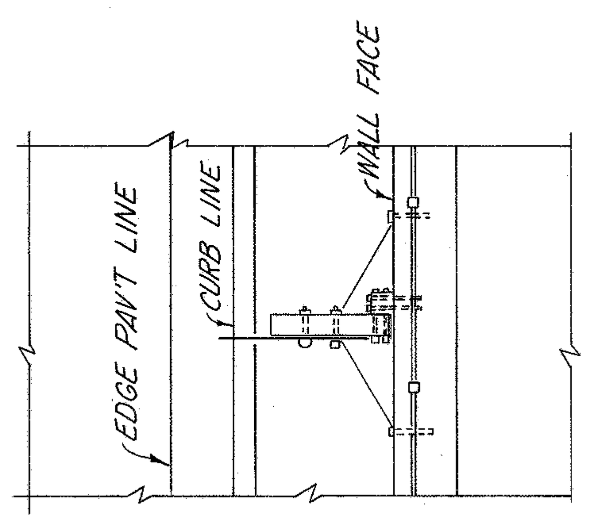


SOUTH BOUND S.R. 43

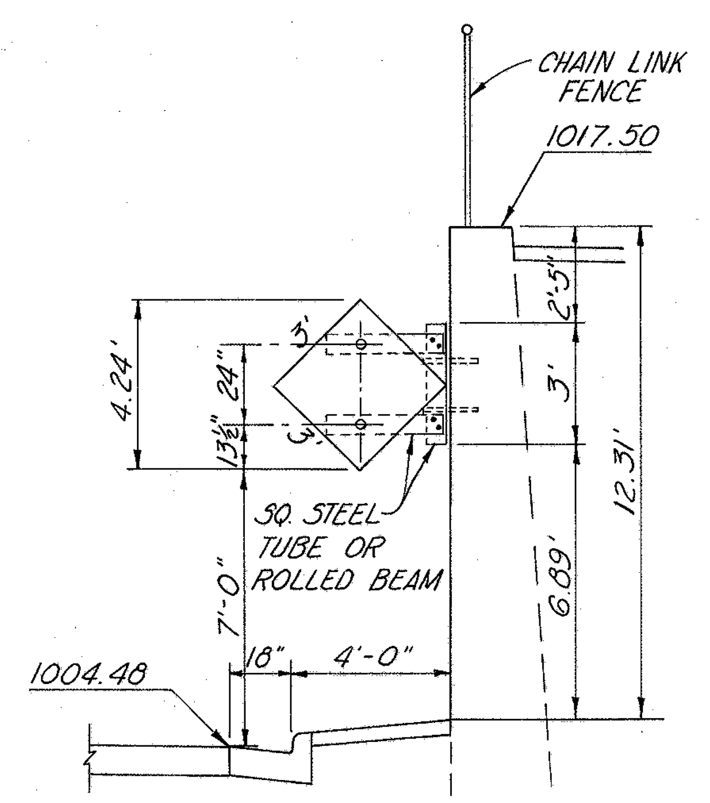
STA. 841+50, ASSEMBLY NO. (8)
816, NO. 12.24, DESIGN 4, ARM 25'

FOOTING : 3.33 C.Y.

Scale : 1/8" = 1'

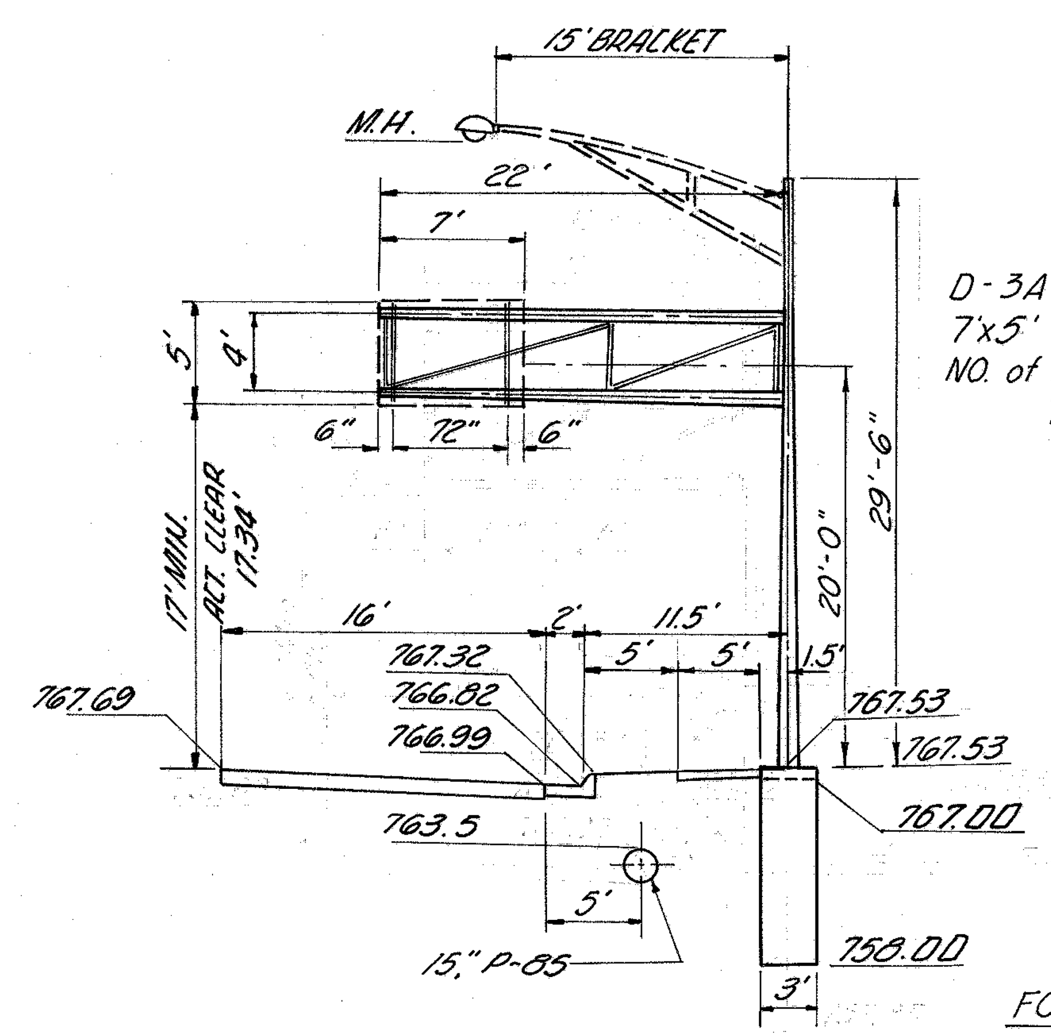


PLAN VIEW



ELEVATION
BRACKET "A"
FOR SIGN (4A) AT STA. 825+00
W-58-36

(36)



FOOTING : 2.53 C.Y.

LINE "A"

STA. 861+15 LT., ASSEMBLY NO. (36)
COMBINATION SIGN SUPPORT, NO. 12.24, DESIGN 2,
ARM 22' (MOD.), 29'-6" POLE

Scale : 1/8" = 1'

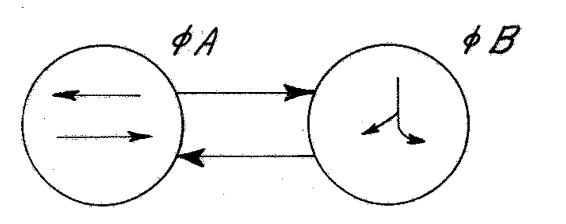
BRUNING 44-560 10943

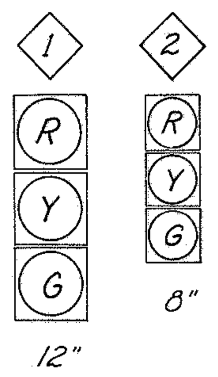
OVERHEAD SIGN SUPPORTS; ELEVATION VIEW

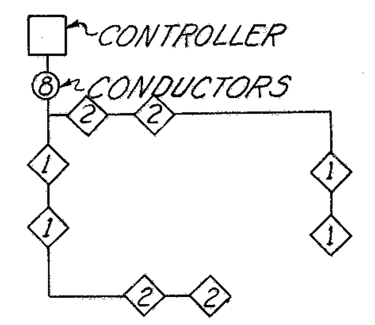
SEQUENCE - TIMING DIAGRAM

PHASE		A			B		FLASH
INTERVAL		RW	C1	C2	RW	C	
SIGNAL	1	G	Y	R	R	R	Y
	2	R	R	R	G	Y	R
TIMING 60 SEC CYCLE	%	55	7	2	30	6	
	SEC.	33	4.2	1.2	18	3.6	
PIN SETTING		0	55	62	64	94	

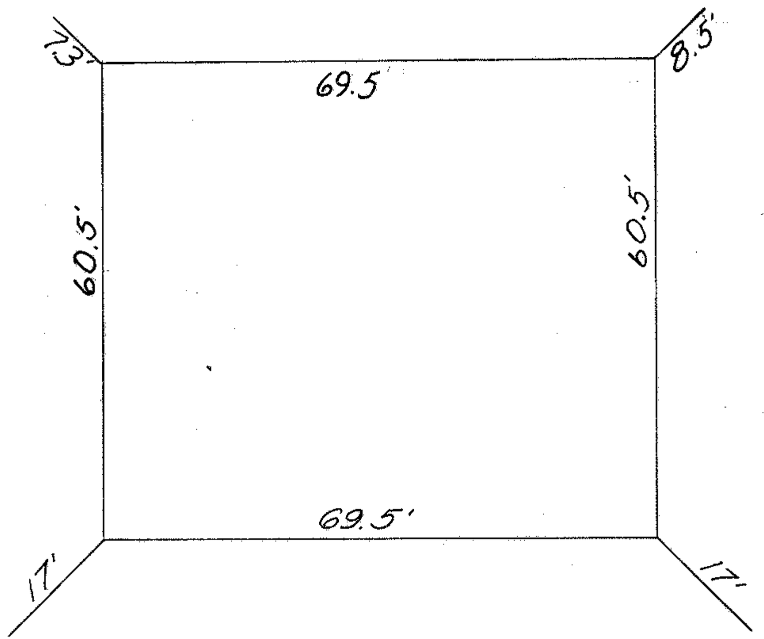
PHASING DIAGRAM



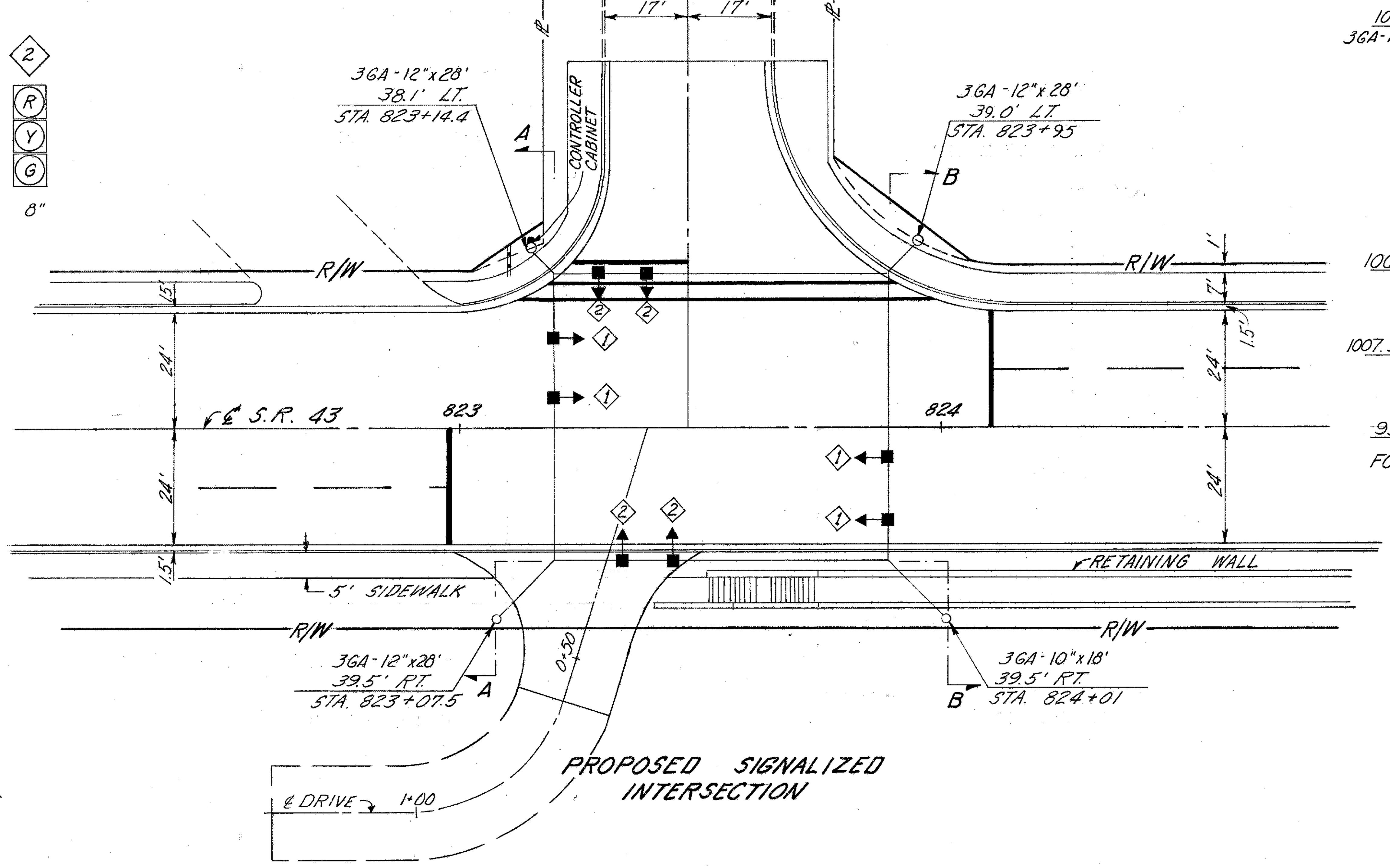




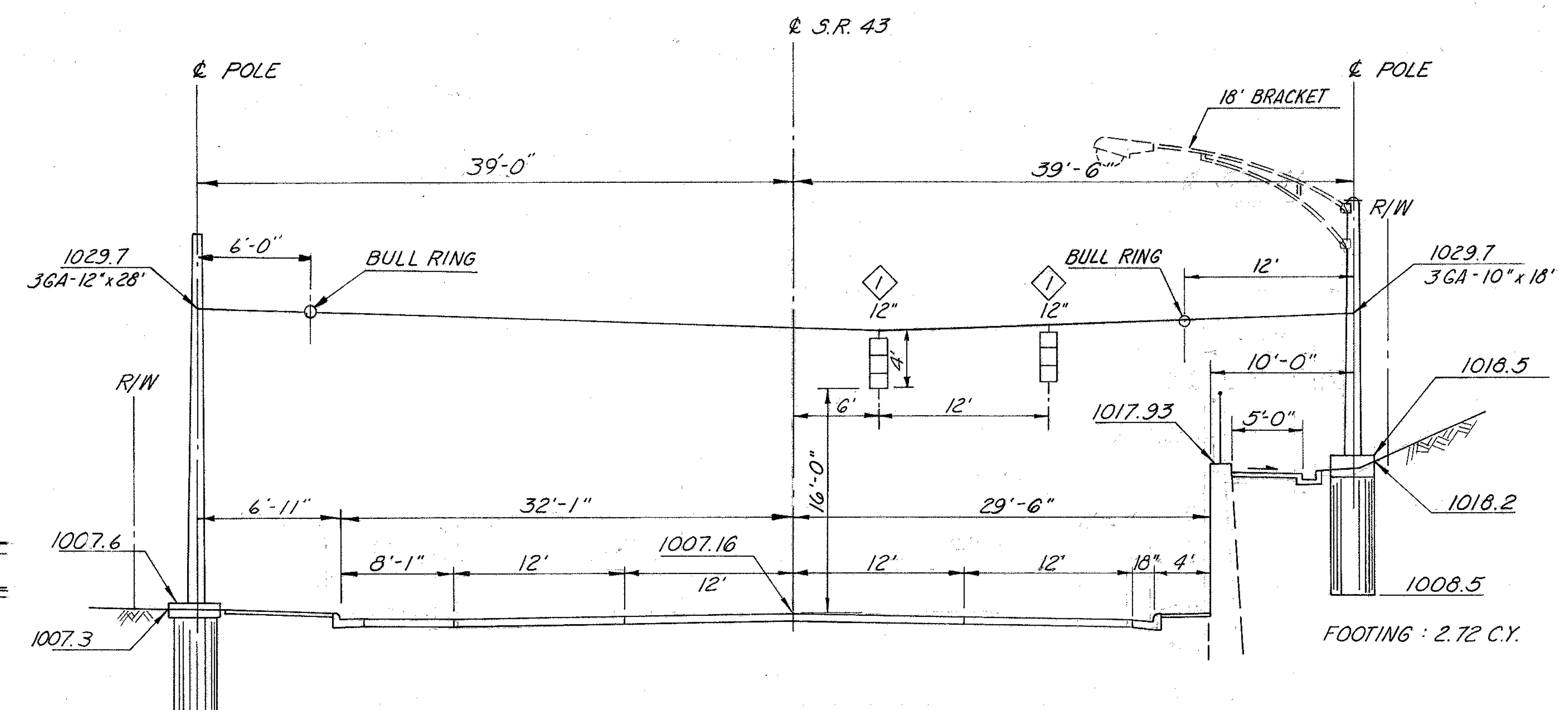
WIRING DIAGRAM



SPAN DIAGRAM



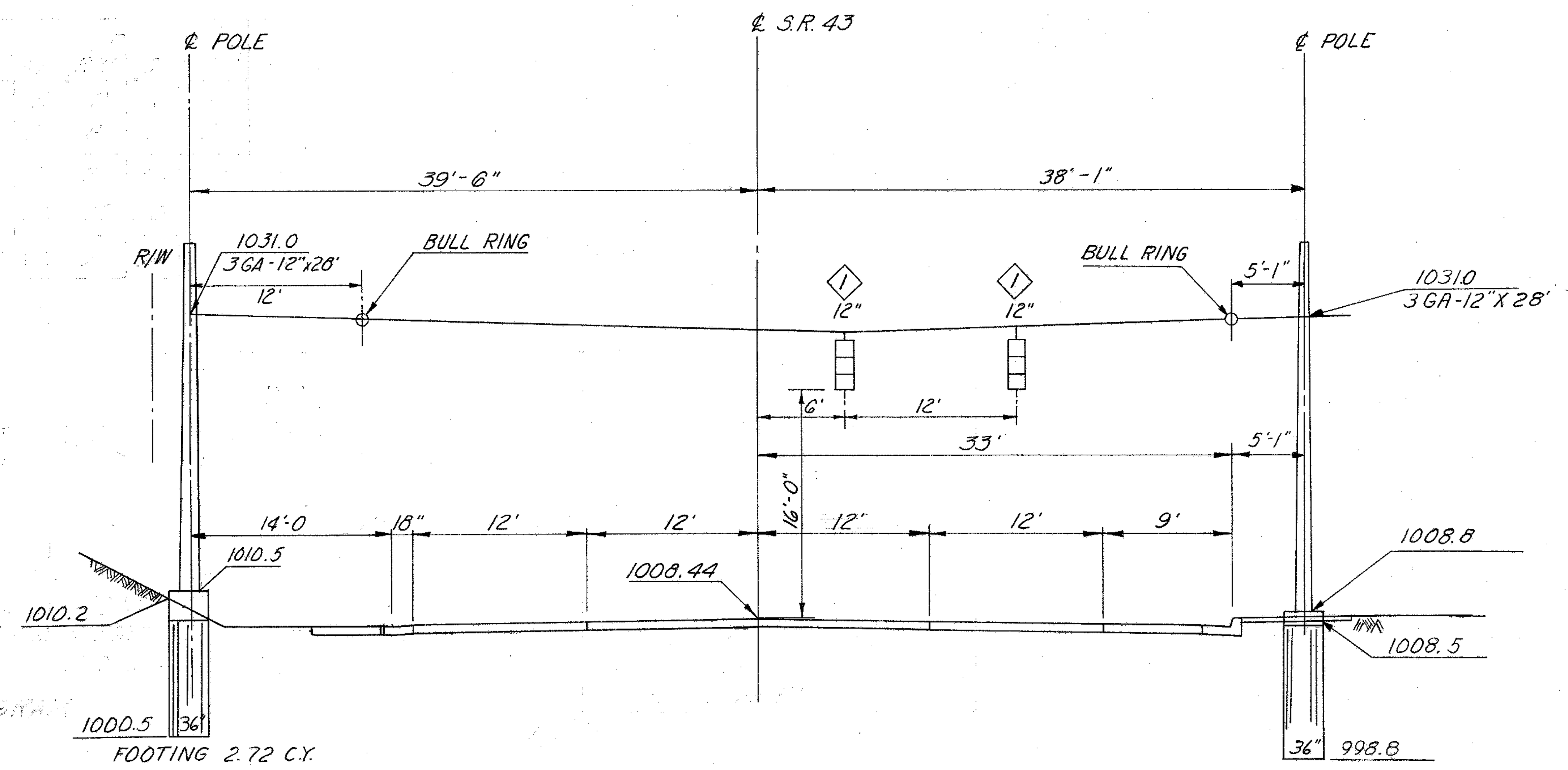
PROPOSED SIGNALIZED INTERSECTION



ELEVATION FOR SIGNALS AT SOUTH BOUND
VIEW B-B

ITEM	QUANTITY		UNIT	DESCRIPTION
		TOTAL		
625	4	4	EACH	TRAFFIC SIGNAL HEADS, 3 SECTION, 12" LENS, ONE WAY
625	4 *	4	EACH	TRAFFIC SIGNAL HEADS, 3 SECTION, 8" LENS, ONE WAY
625	310	310	LIN. FT.	MESSENGER WIRE, 3/8" DIA., WITH ACCESSORIES
625	123	123	LIN. FT.	SIGNAL CABLE 8/C, #14 AWG, 600 V IMSA 19-1-67
625	68	68	LIN. FT.	SIGNAL CABLE 5/C, #14 AWG, 600 V IMSA 19-1-67
625	27	27	LIN. FT.	POWER CABLE 3/C, #8 AWG, RHW (OR RHW TYPE) STRANDED
625			LIN. FT.	SERVICE CABLE
625	1	1	EACH	PRETIMED 2 PHASE SIGNAL CONTROLLER WITH CABINET
625	2	2	EACH	CABLE SUPPORT ASSEMBLIES
625	4	4	EACH	GROUND ROD
816	3	3	EACH	SIGNAL STRAIN POLE 3 GAGE 12"x28'
816	1	1	EACH	SIGNAL STRAIN POLE 3 GAGE 10"x18', COMBINATION WITH LIGHT
816	10.80	10.80	CU. YDS.	CONCRETE FOR SIGNAL SUPPORT FOUNDATION

* 2 TRAFFIC SIGNAL HEADS TO BE 100% CITY.

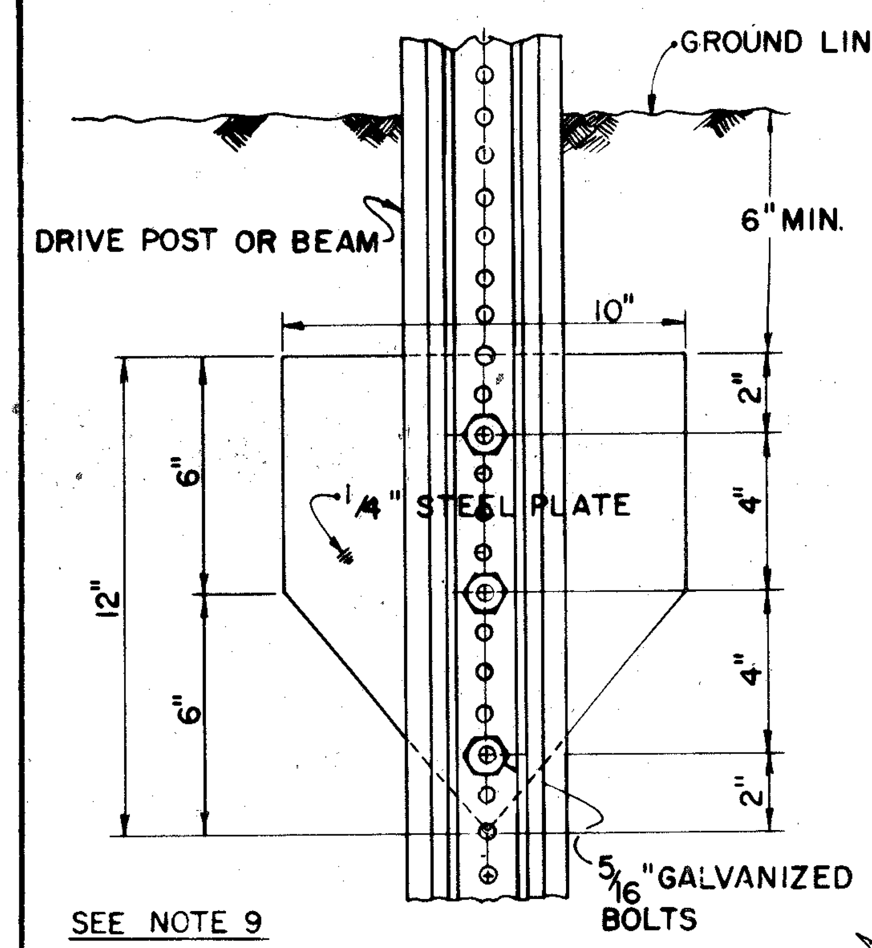


ELEVATION FOR SIGNALS AT NORTH BOUND
VIEW A-A

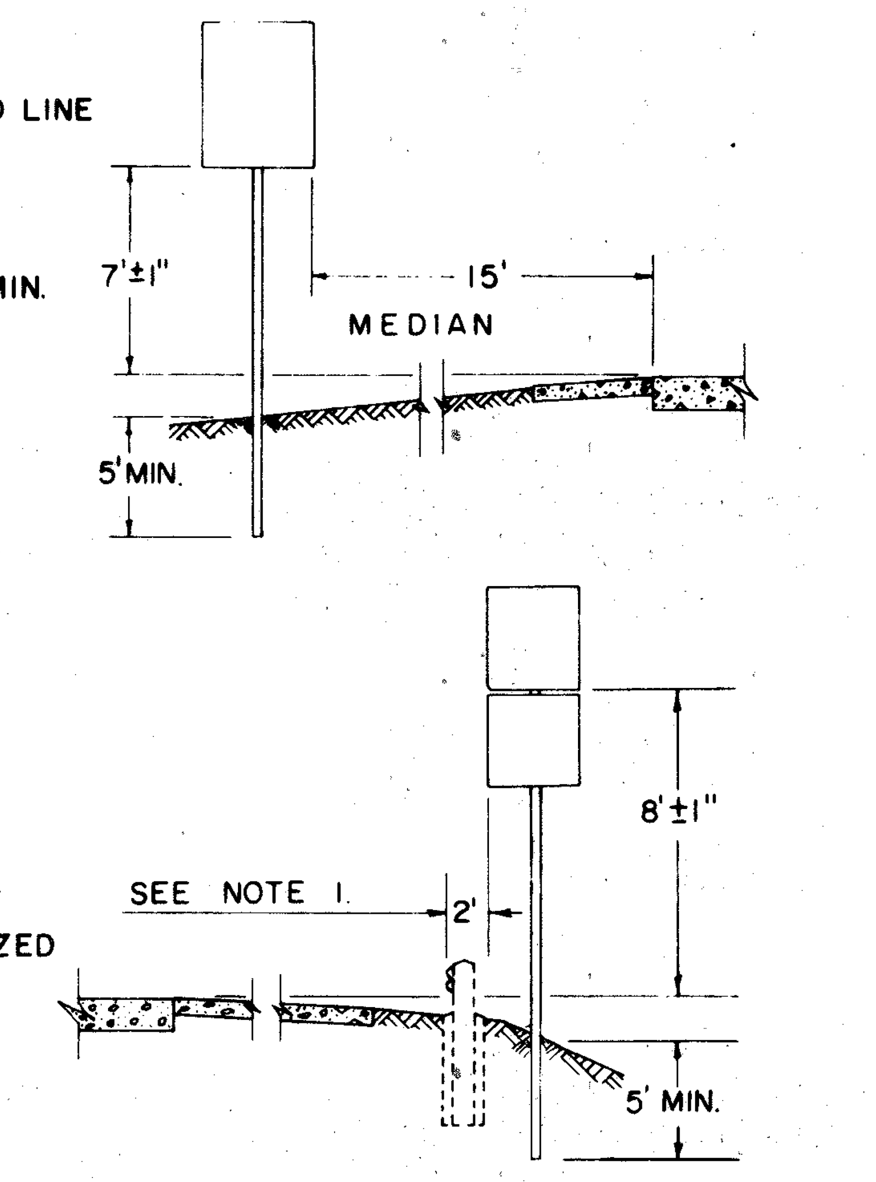
BRUNING 44560 10943

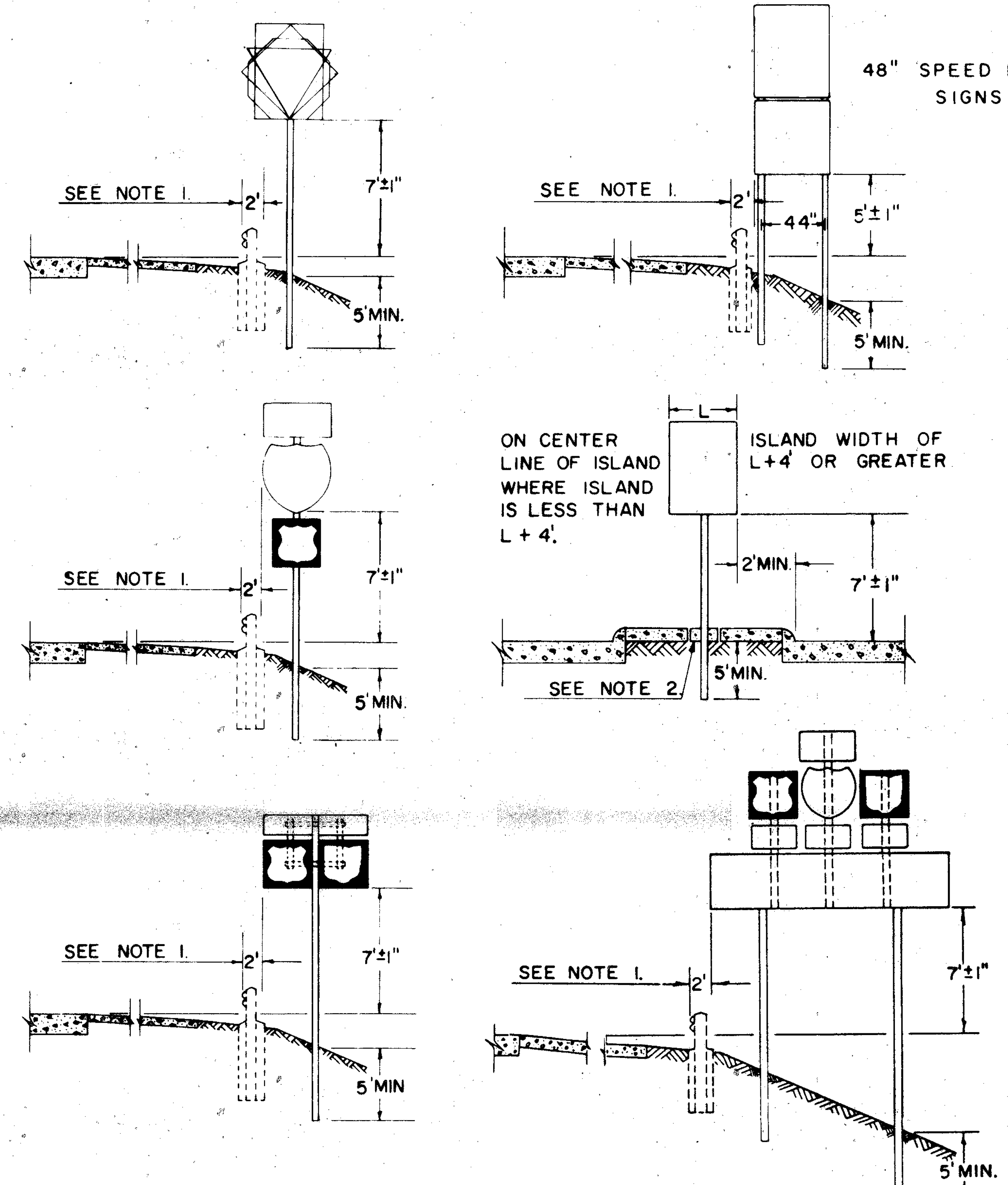
FED. RD. DIVISION	STATE	PROJ.	
2	OHIO		

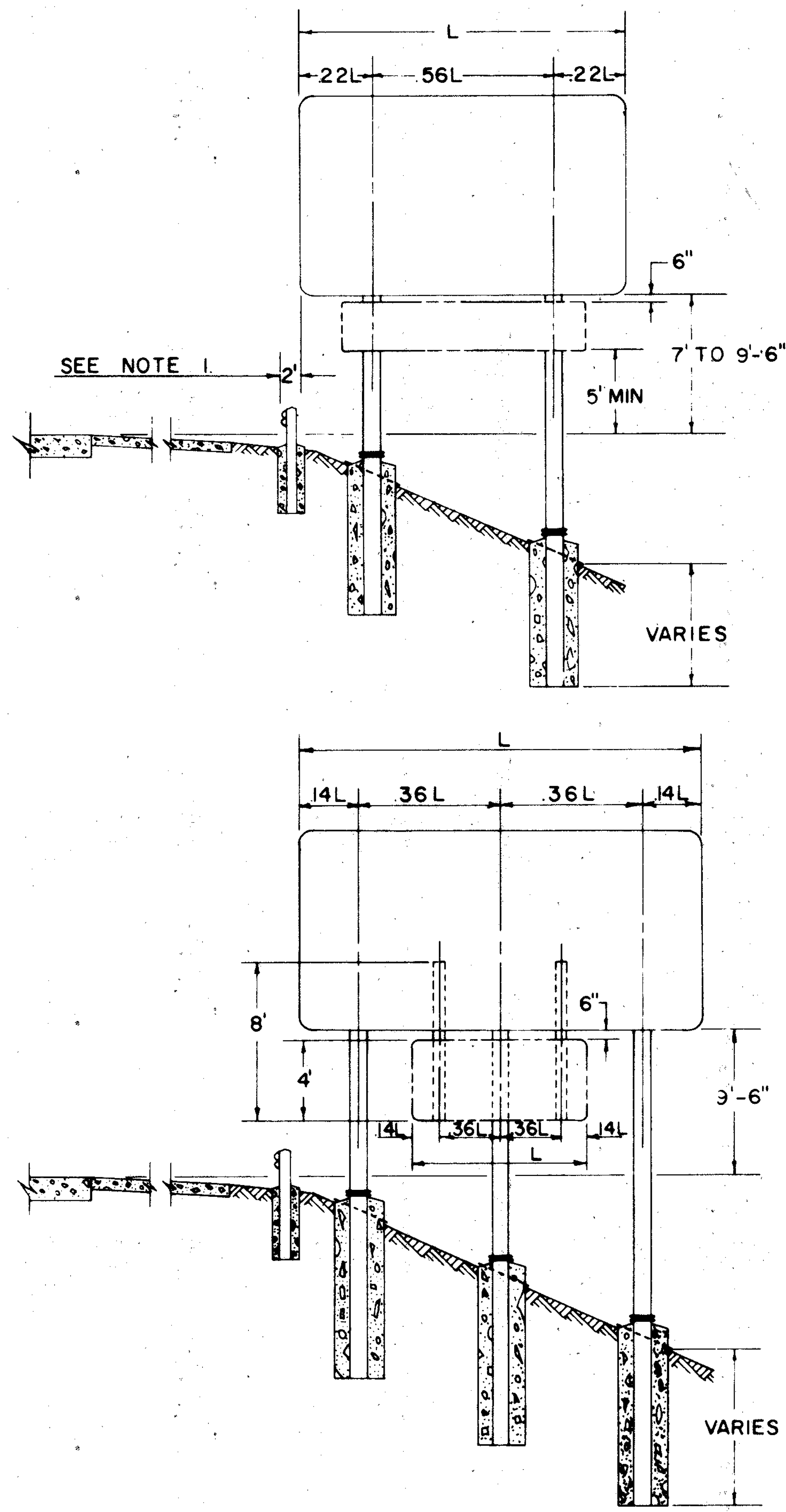
JEFFERSON COUNTY
JEF-43-0.42

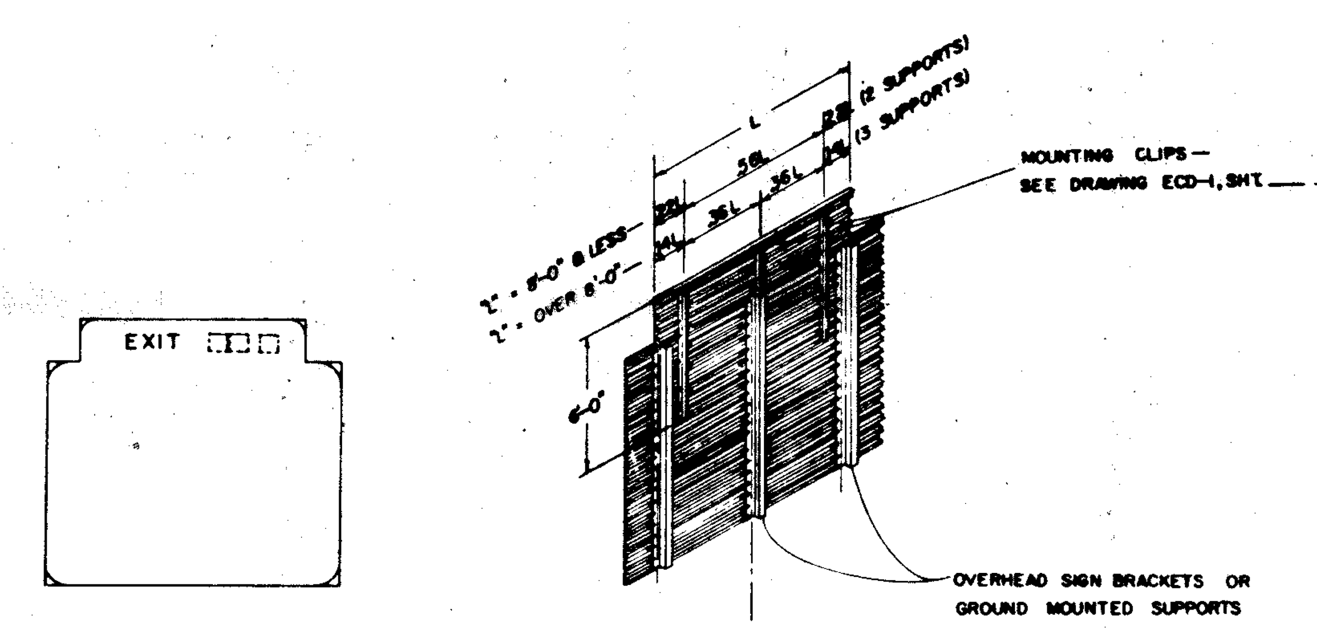


SOIL PLATE DETAIL

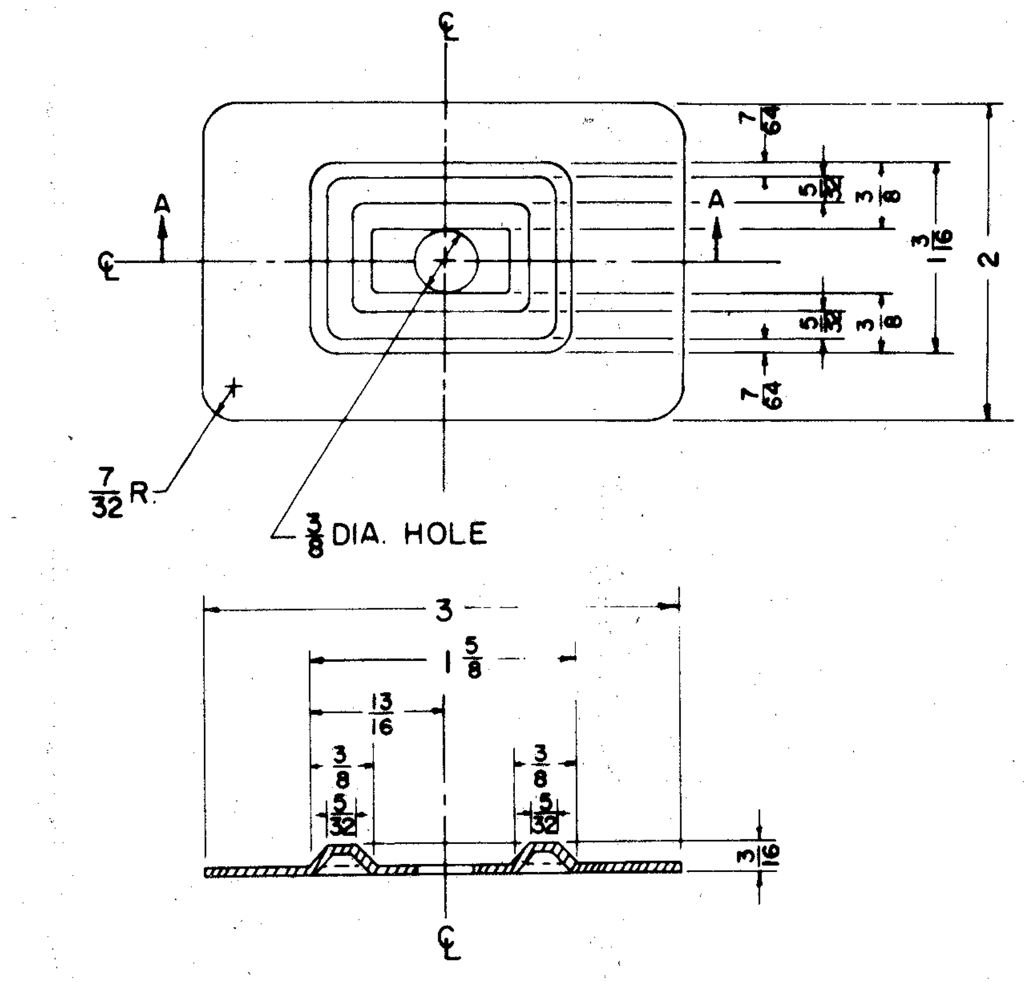








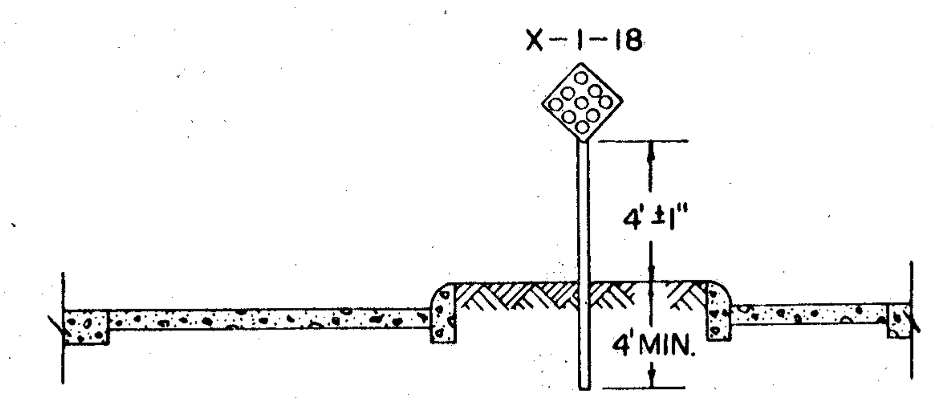
"EXIT" SIGN ATTACHMENT DETAIL



SECTION AA

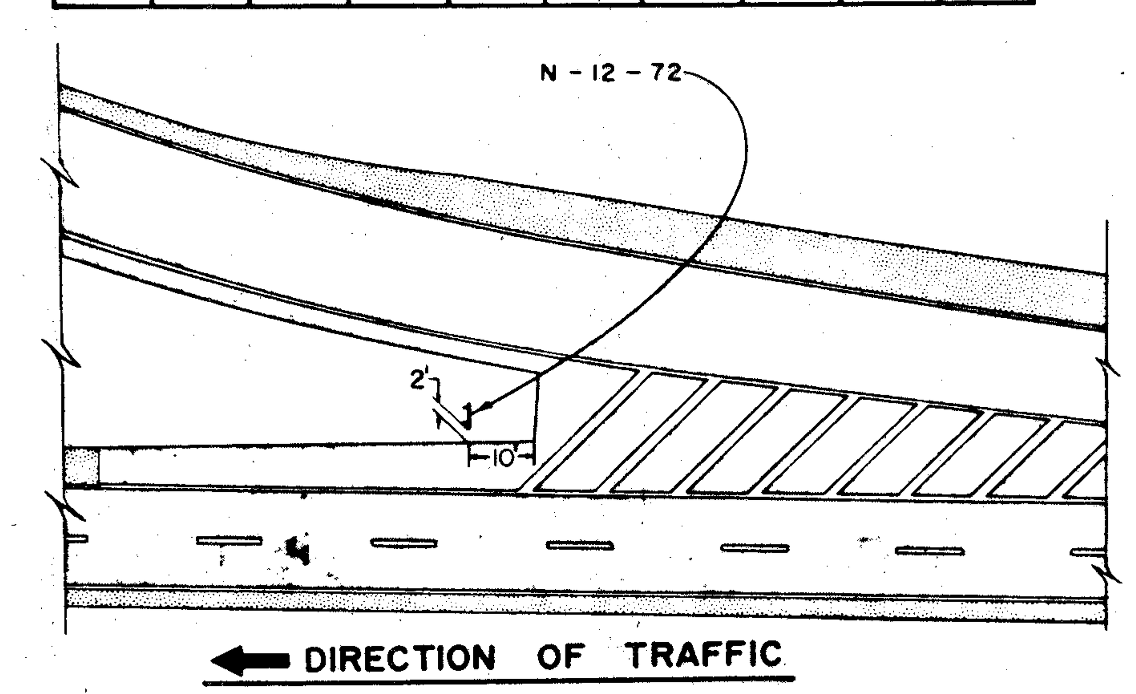
NOTE:
THE PLATE IS SYMMETRICAL ABOUT EITHER CENTERLINE.
METAL SHALL BE 16 GAUGE STEEL.
ALL DIMENSIONS ARE IN INCHES.

BEARING PLATE DETAIL



SIGN SUPPORT SPACING

L = FT	2 SUPPORTS		3 SUPPORTS		L = FT	2 SUPPORTS		3 SUPPORTS	
	.22	.56	.14	.36		.22	.56	.14	.36
5.0	1.10	2.80	0.70	1.80	17.0	3.74	9.52	2.38	6.12
6.0	1.32	3.36	0.84	2.16	18.0	3.96	10.08	2.52	6.48
7.0	1.54	3.92	0.98	2.52	19.0	4.18	10.64	2.66	6.84
8.0	1.76	4.48	1.12	2.88	20.0			2.80	7.20
9.0	1.98	5.04	1.26	3.24	21.0			2.94	7.56
10.0	2.20	5.60	1.40	3.60	22.0			3.08	7.92
11.0	2.42	6.16	1.54	3.96	23.0			3.22	8.28
12.0	2.64	6.72	1.68	4.32	24.0			3.36	8.64
13.0	2.86	7.28	1.82	4.68	25.0			3.50	9.00
14.0	3.08	7.84	1.96	5.04	26.0			3.64	9.36
15.0	3.30	8.40	2.10	5.40	27.0			3.78	9.72
16.0	3.52	8.96	2.24	5.76	28.0			3.92	10.08



NOTES

1. THE NEAR EDGE OF ALL MAIN LINE SIGNS, EXCEPT GORE INSTALLATIONS, SHALL BE LOCATED TWO FEET (2') BACK OF GUARD RAIL FACE. THIS DIMENSION SHALL BE DETERMINED BY ROADWAY TYPICAL SECTION & USED WHETHER OR NOT GUARD RAIL IS PRESENT.
   ON RAMPS THE NEAR EDGE OF SIGNS SHALL BE LOCATED TWO FEET (2') BACK OF GUARD RAIL FACE. THIS DIMENSION WILL BE DETERMINED AND USED AS FOR MAIN LINE ABOVE.
   ON APPROACHES THE NEAR EDGE OF SIGNS SHALL BE
   (A) TWO FOOT (2') BEHIND EXISTING GUARD RAIL
   (B) TWO FEET (2') FROM THE EDGE OF PAVED OR TRAVELED SHOULDER WITH A MINIMUM OF 6' FROM EDGE OF ROADWAY PAVEMENT.

2. POSTS PLACED IN CONCRETE MEDIANS SHALL BE INSTALLED BY DRIVING THROUGH A 6" SLEEVE OR CORE DRILLED HOLE. THE HOLE SHALL BE FILLED WITH ASPHALTIC CONCRETE AFTER THE POST IS IN THE PROPER POSITION.

3. HORIZONTAL BACK BRACING SHALL ALWAYS BE MOUNTED ON THE FRONT FLANGE OF THE SUPPORT EXCEPT WHERE SIGNS ARE MOUNTED BACK TO BACK. BACK BRACING SHALL NEVER EXTEND ABOVE TOP EDGE OF UPPERMOST SIGN PLATE AND SHALL BE ATTACHED TO SUPPORTS USING 5/16" GALVANIZED STEEL BOLTS.

4. SCREWS, NUTS, AND WASHERS FOR SIGN ERECTION SHALL BE ALUMINUM EXCEPT AS NOTED ABOVE. 5/16" TRUSS HEAD SLOTTED MACHINE SCREWS WITH HEX. NUTS PLAIN AND LOCKWASHERS SHALL BE USED. PLAIN WASHERS SHALL BE 5/16" "WIDE", USED ON SIGN FACE ONLY.

5. SIGN INSTALLATIONS SHALL BE PLACED SO THAT SUPPORTS ARE NOT PLACED IN DRAINAGE DITCHES.

6. HORIZONTAL CLEARANCES SHOWN PERTAIN TO NON-CURBED SECTIONS. SECTIONS WITH UNMOUNTABLE CURB SHALL HAVE A HORIZONTAL CLEARANCE OF 2'-0" MINIMUM FROM THE CURB FACE TO THE SIGN EDGE.

7. VERTICAL AND HORIZONTAL CLEARANCE BETWEEN SIGNS ON ONE ASSEMBLY SHALL BE A MAXIMUM OF 2" AND A MINIMUM OF 1".

8. GALVANIZED STEEL BEARING PLATES SHALL BE INCLUDED BETWEEN ALL SHEET ALUMINUM SIGNS ATTACHED TO VERTICAL SUPPORTS AT EACH SIGN BOLT LOCATION.

9. SOIL PLATES SHALL BE ATTACHED TO ALL 6 LB. BEAMS BETWEEN POSTS AS DETAILED ON THIS SHEET, EXCEPT WHERE BEAMS ARE PLACED IN CONCRETE MEDIANS AS COVERED IN NOTE 2.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

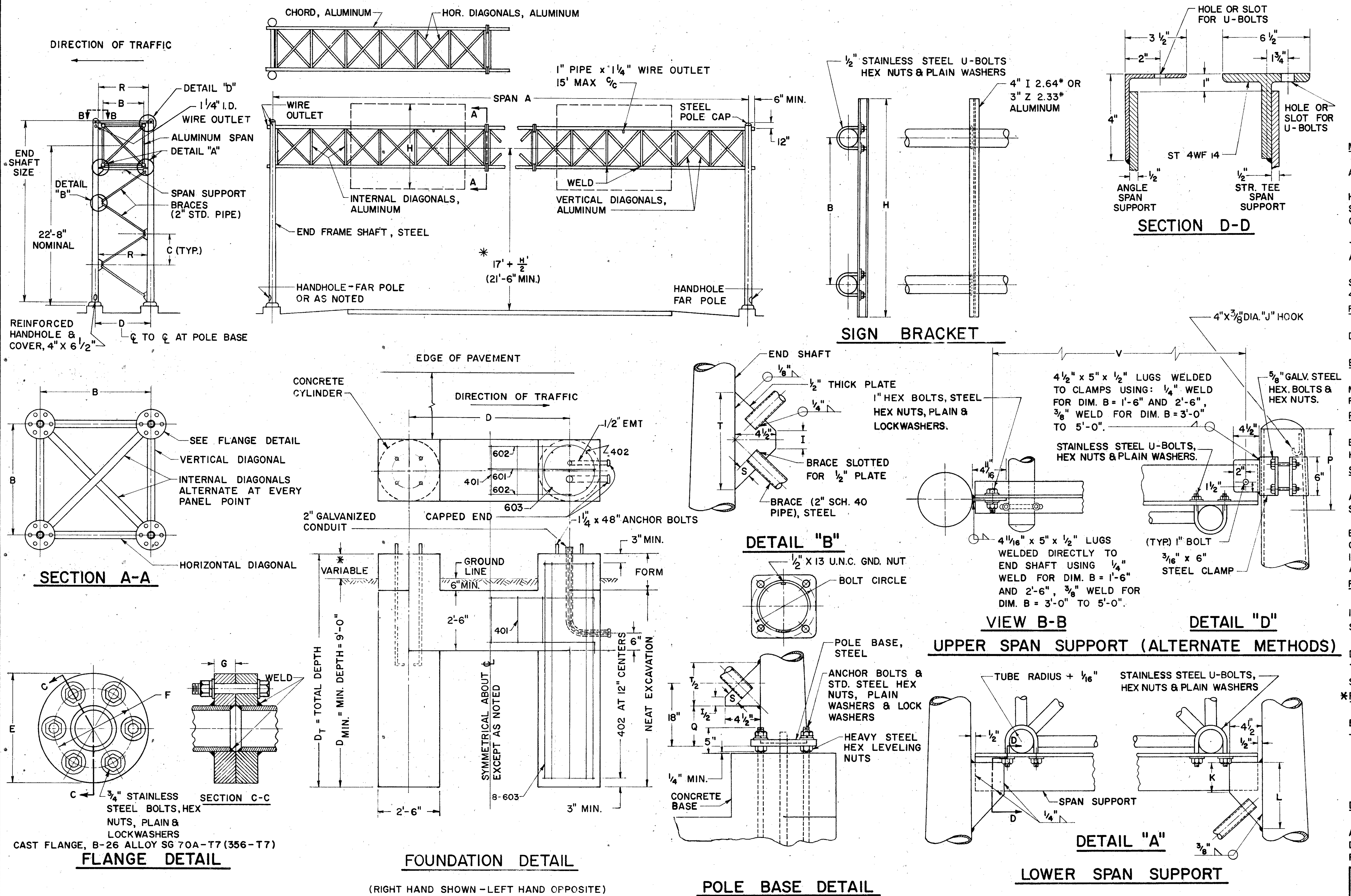
TYPICAL PLACEMENT OF SIGNS	TPS-1	DATE 9-27-67 7-12-68 5-13-69 3-5-71 12-21-71 3-7-72

APPROVED ______________
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

195 / 299

JEFFERSON COUNTY
JEF ~ 43 ~ 0.42



NOTES

MATERIALS

THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.

SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION

THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. M-7.4(d).

MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION

USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

PAYMENT

PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

SOILS

THE FOUNDATION DETAILS 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.

REINFORCING STEEL

COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

***FOUNDATION ELEVATION**

ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

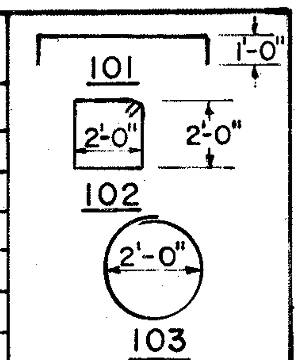
DESIGN

THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' Thru 55'	3'-0"	4'-11 3/4"	4'-5"	7"	8"x4.5"x25'-0", 3GA	5'-10 13/16"	5 1/2"	1 1/4"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	3 1/2" x .188"	1.660"x .140"	1.660"x .140"
2	56' Thru 80'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8"x4.5"x25'-0", 3GA	5'-10 13/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4 3/4" x .188"	1.900"x .145"	1.660"x .140"
3	81' Thru 90'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8"x6.22"x25'-6", 3GA	6'-7 1/8"	7 7/16"	1 3/8"	5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5/8"	4'-5 5/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	1.900"x .145"	1.900"x .145"
4	91' Thru 105'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8"x6.22"x25'-6", 3GA	6'-7 1/8"	7 7/16"	1 3/8"	5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5/8"	4'-5 5/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	2" x .188"	1.900"x .145"

REINFORCEMENT SCHEDULE

MARK	NO.	LENGTH	TYPE
401	12" C/C	8'-6"	102
402	12" C/C	7'-6"	103
601	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	D_T - 6"	STR.



BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS

816 No. 7.3

DATE
7-25-62
5-5-64

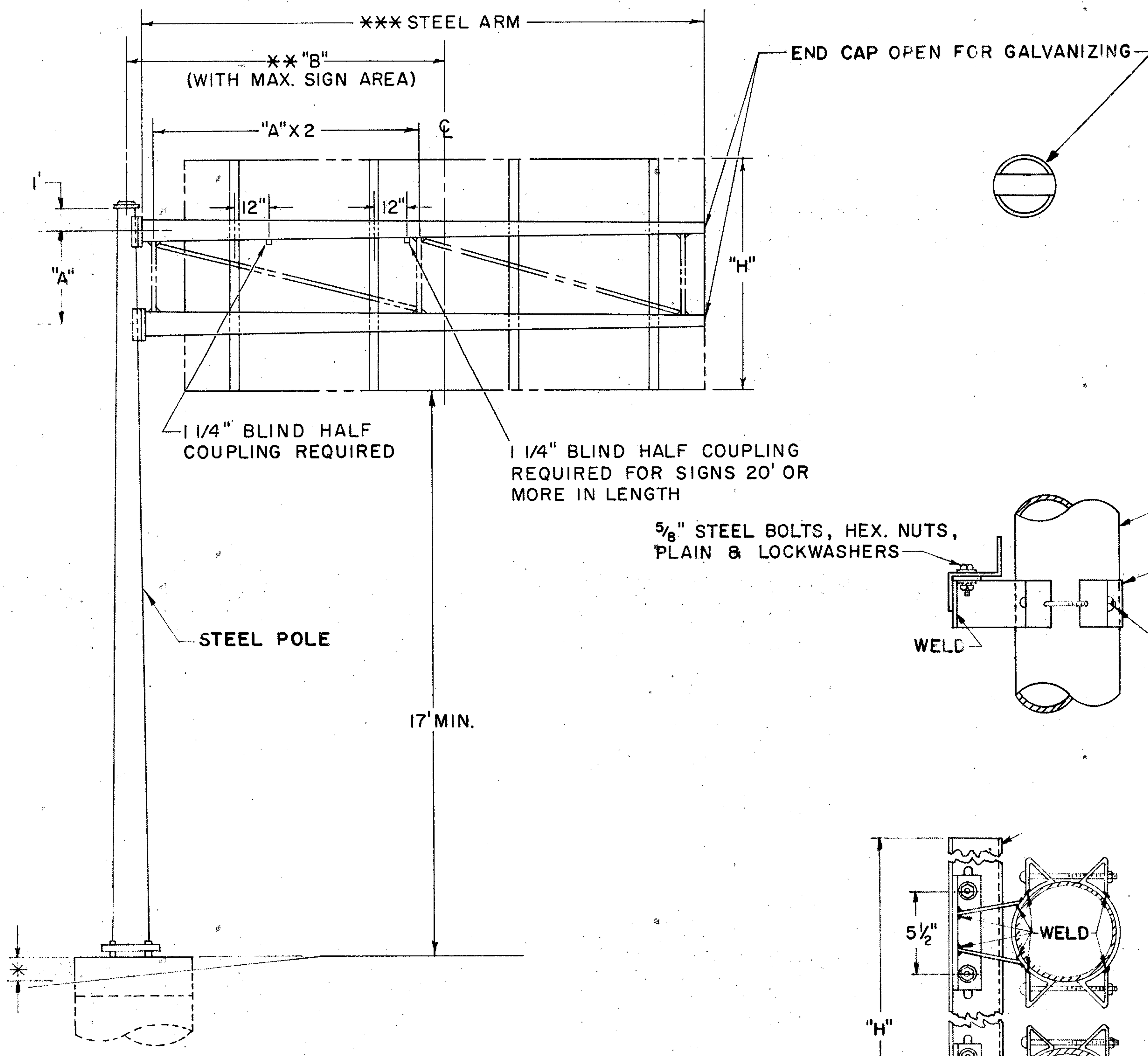
APPROVED Robert E. Conner
ENGINEER OF TRAFFIC

300 SQ. FT. SIGN AREA   OVERHEAD SIGN SUPPORT, 816 NO. 7.3

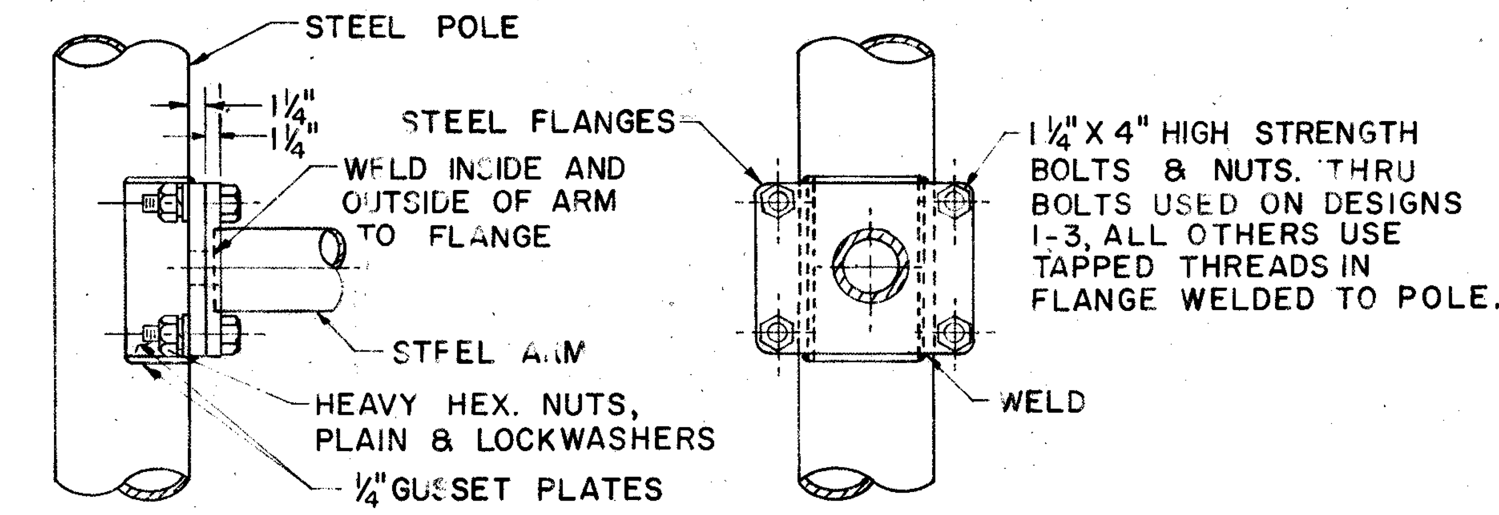
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

196
299

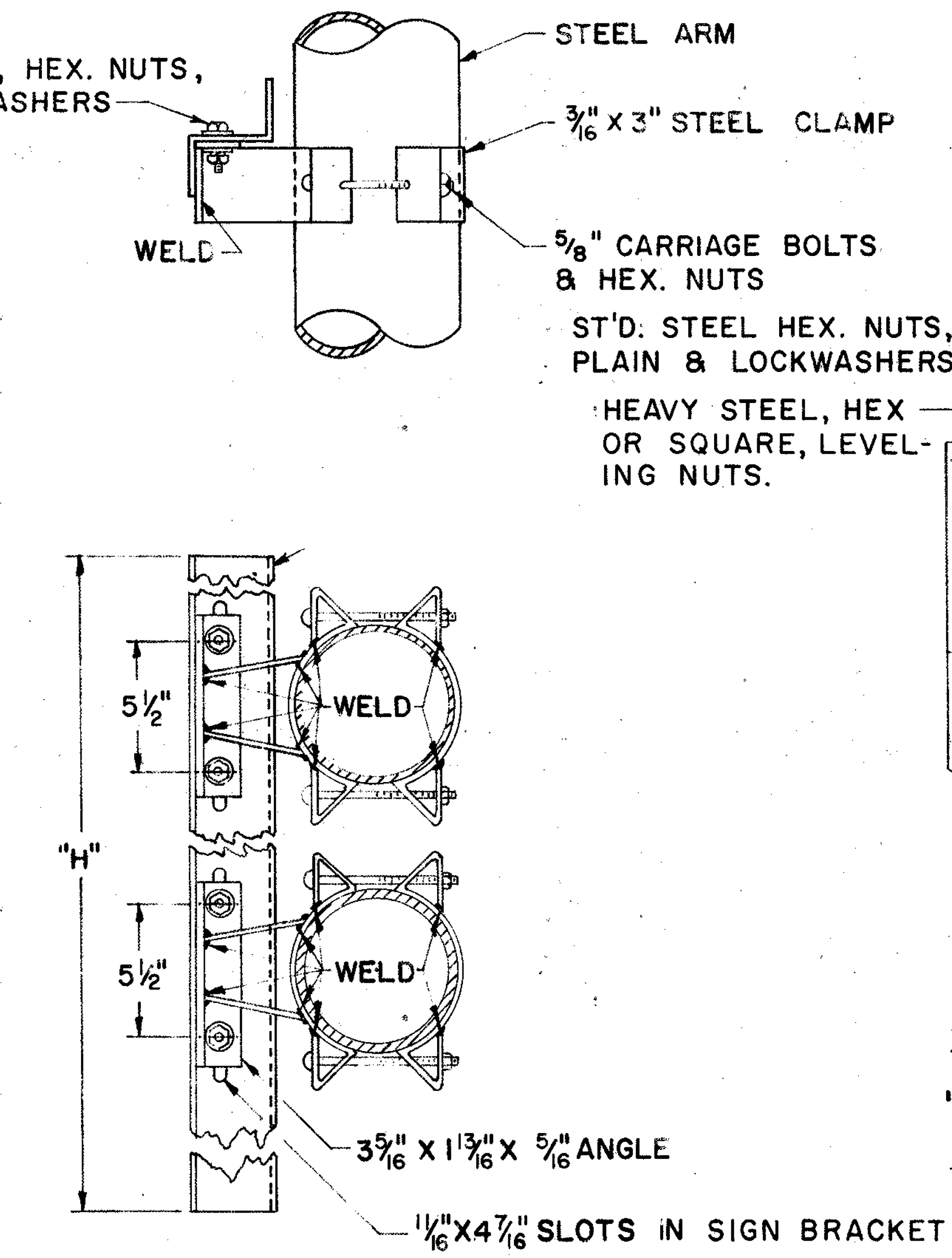
JEFFERSON COUNTY
JEF ~ 43 ~ 0.42



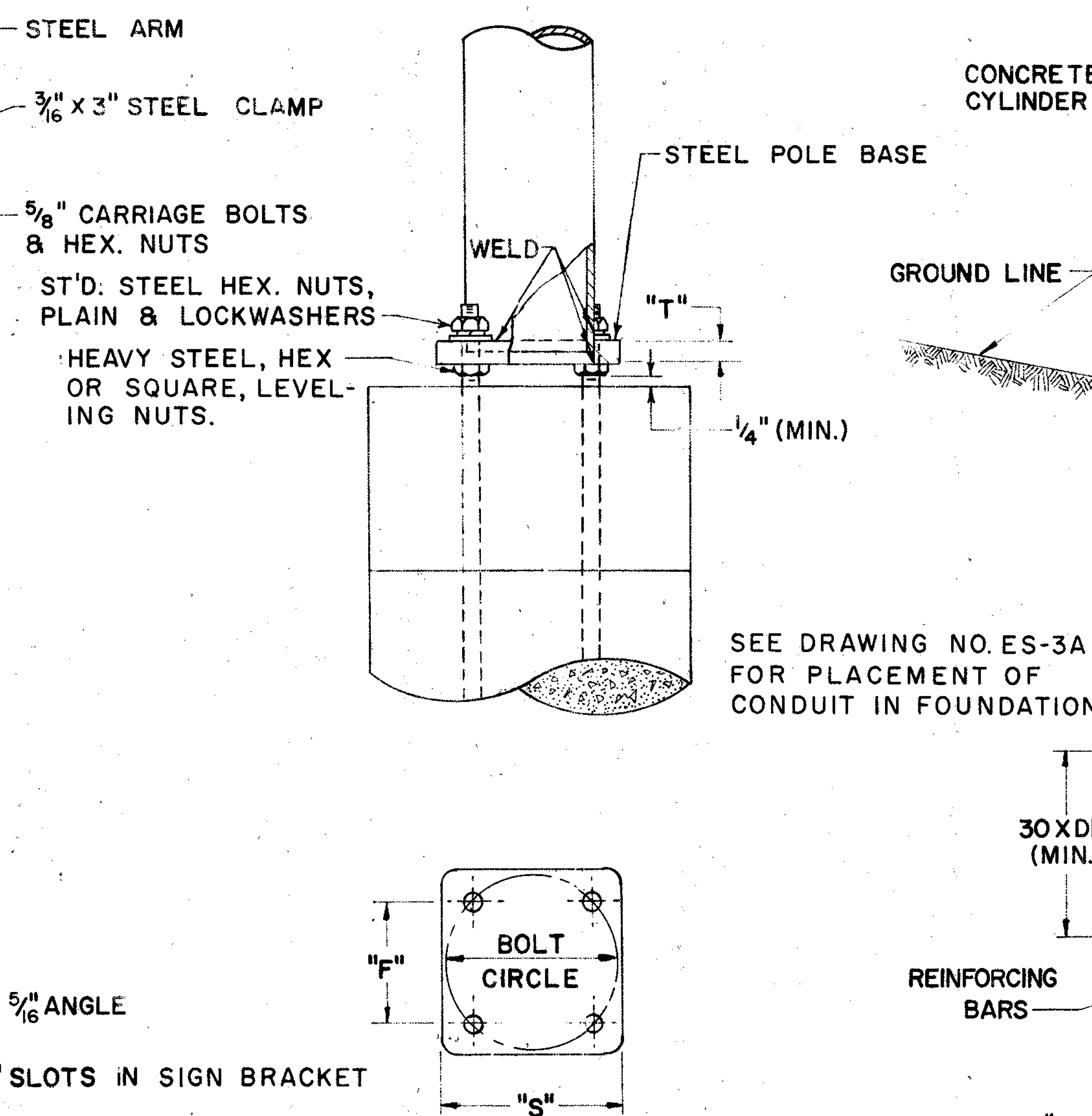
NOTE:
THE 12" DIMENSION SHOWN FOR BLIND HALF COUPLINGS MAY BE INCREASED OR DECREASED WHEN NECESSARY TO TO PREVENT INTERFERENCE WITH OTHER MEMBERS.



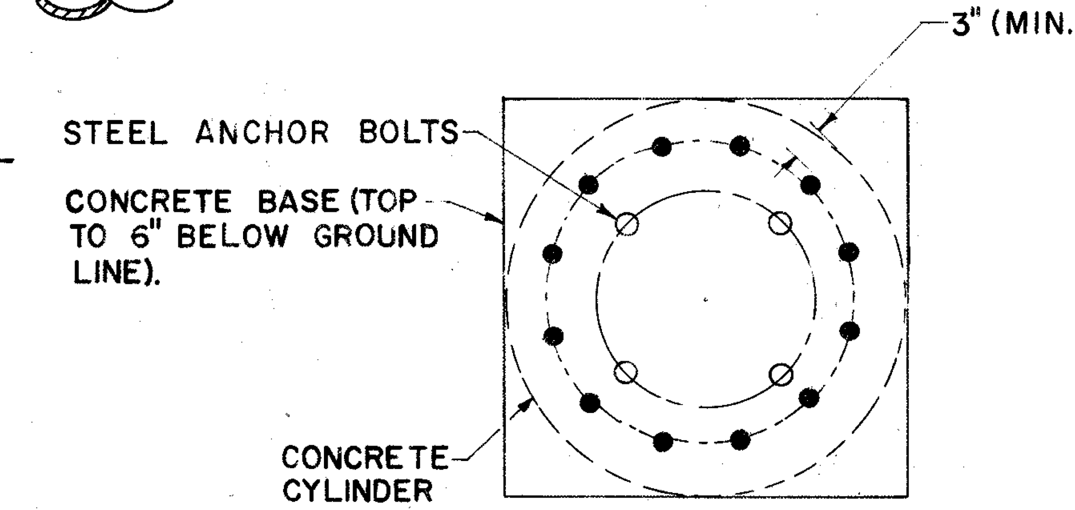
ARM ATTACHMENT

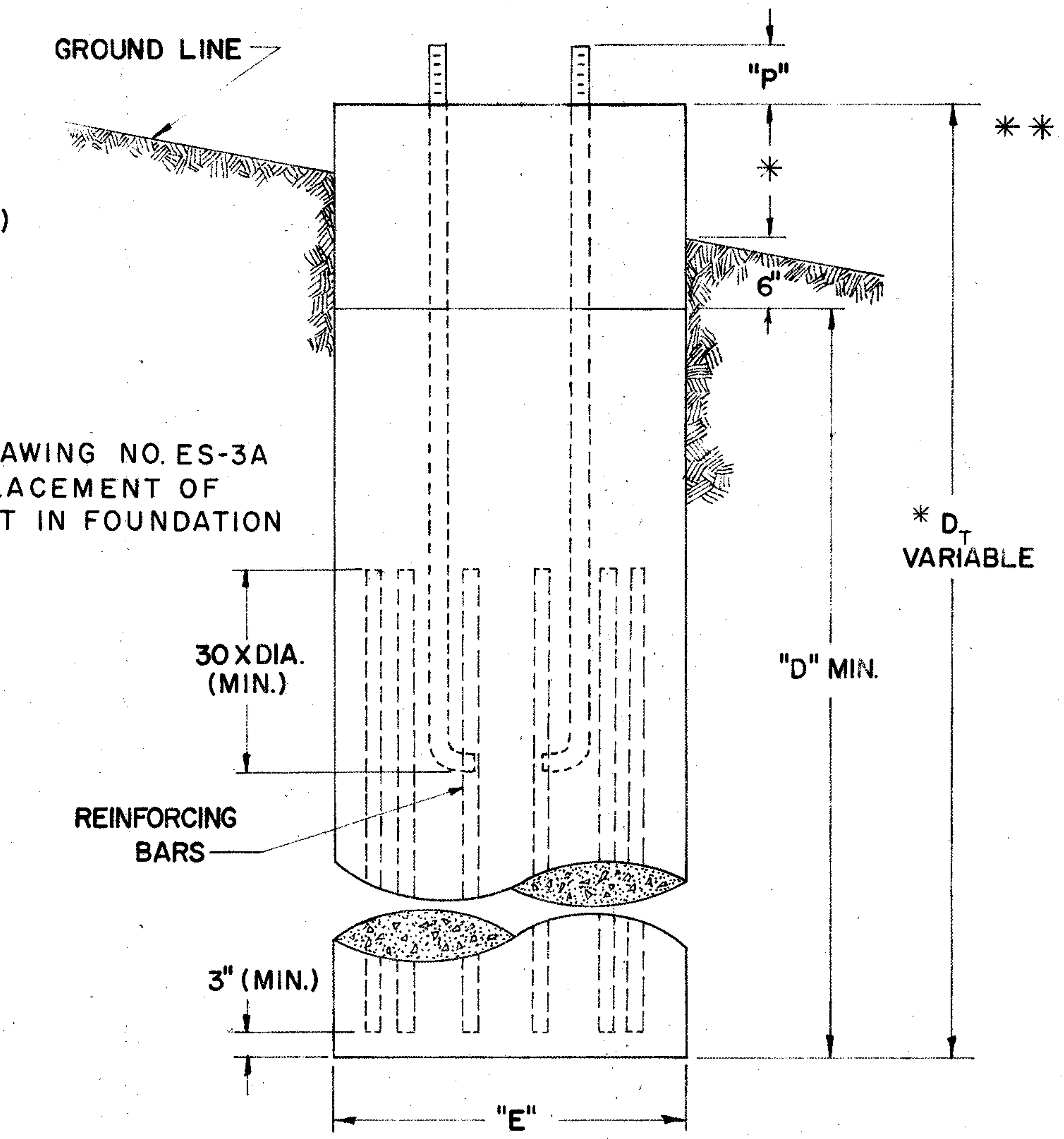


SIGN ATTACHMENT DETAIL



POLE BASE DETAIL





FOUNDATION DETAIL

DESIGN NO.	POLE SIZE	*** ARM SIZE	DIM A	DIM ** B	DIM "D" MIN.	DIM E	DIM F	DIM P	DIM * S	DIM T	BOLT CIRCLE	ANCHOR BOLT SIZE	MAX SIGN AREA	REINF. BARS SIZE	REINF. BARS # REQ'D
1	3 Ga, 12" X 8.78" X 23'-0"	7Ga, 6.9" X 4.66" X16'-0"	4'	12'	9'	3'-0"	11 5/16"	7¾"	17"	2"	16"	1¾" X 90"	80	¾"	12
2	3 Ga, 12" X 8.78" X 23'-0"	7 Ga, 8" X 5.2" X 20'-0"	4'	16'	9'	3'-0"	11 5/16"	7¾"	17"	2"	16"	1¾" X 90"	80	¾"	12
3	3 Ga, 15" X 11.5" X 25'-0"	7 Ga, 8.3" X 6.06" X 16'-0"	4'	12'	11'	3'-0"	15½"	8⅜"	23"	2"	22"	2" X 96"	120	1"	12
4	3 Ga, 16" X 12.5" X 25'-0"	3 Ga, 9.2" X 6.40" X 20'-0"	4'	16'	11'	3'-0"	16⅝"	8⅜"	24½"	2"	23½"	2" X 96"	120	1"	12
5	0 Ga, 18" X 14.36" X 26'-0"	7 Ga, 11" X 7.92" X 22'-0"	6'	14'	13'	3'-0"	18"	9⅜"	26½"	2½"	25½"	2¼" X 120"	180	1⅛"	12
6	0 Ga, 18" X 14.36" X 26'-0"	7 Ga, 12.5" X 8.86" X 26'-0"	6'	18'	13'	3'-0"	18"	9⅜"	26½"	2½"	25½"	2¼" X 120"	180	1⅛"	12
7	2 PLY 7 Ga, 18" X 14.36" X 26'-0"	7 Ga, 12.5" X 9.14" X 24'-0"	6'	14'	15'	3'-0"	18"	9¾"	26½"	2½"	25½"	2½" X 144"	240	1¼"	12
8	2 PLY ¼", 18" X 14.36" X 26'-0"	3 Ga, 12.5" X 8.58" X 28'-0"	6'	18'	15'	3'-0"	18"	11¼"	26½"	3"	25½"	3" X 144"	240	1¼"	12

NOTES

FABRICATION - ALL PORTIONS OF THE SIGN SUPPORT, INCLUDING SIGN ATTACHMENTS, SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF A.S.T.M. DESIGNATIONS A-123 AND A-153. THE CONDUIT SHALL BE GALVANIZED IN ACCORDANCE WITH SEC. 625.13 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS FOR PAYMENT.

* FOUNDATION - THE TOP ELEVATION OF FOUNDATIONS SHALL BE VARIED SO AS TO MAINTAIN A MINIMUM CLEARANCE OF 17' BETWEEN THE BOTTOM OF THE SIGN AND THE HIGHWAY CROWN.

** ERECTION - VALUES OF "B" MAY BE EXCEEDED PROVIDED THE PRODUCT OF ACTUAL SIGN AREA TIMES THE DISTANCE FROM ℄ OF POLE TO ℄ OF SIGN DOES NOT EXCEED THE MAX. SIGN AREA TIMES "B".

*** ARMS 20' LONG OR LONGER ARE TO BE TRUSS TYPE WITH 3" X 3" X ⅜" ANGLES WELDED TO GUSSET PLATES.

MATERIAL - STEEL POLE BASES, FLANGES, AND END CAPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 30 GRADE B.
HIGH STRENGTH STEEL BOLTS SHALL CONFORM TO ASTM SPECIFICATION A193 GRADE B7
AFTER FABRICATION TAPERED POLES AND ARMS SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

SOILS - THE FOUNDATION DETAILS 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.

REINFORCING STEEL - REINFORCING STEEL AS SHOWN IN TABLE SHALL BE INSTALLED WHEN "D_T" EXCEEDS THE ANCHOR BOLT LENGTH BY MORE THAN 3 FT. THE COST AND PLACEMENT OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

DESIGN

THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

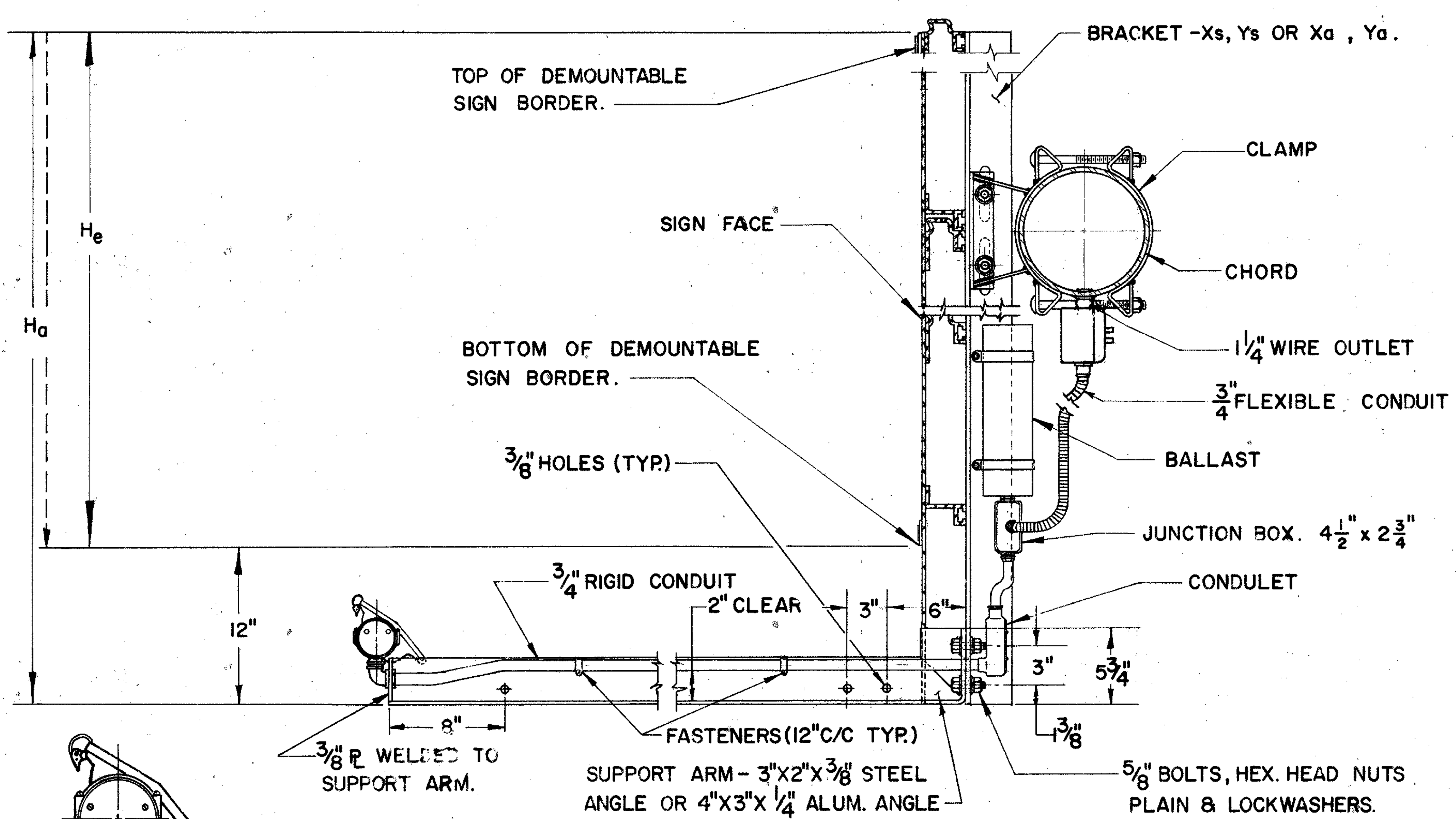
OVERHEAD SIGN SUPPORT	816 No. 12.24	DATE 8-18-61 4-11-62 4-18-67

APPROVED Robert E. Conner
ENGINEER OF TRAFFIC

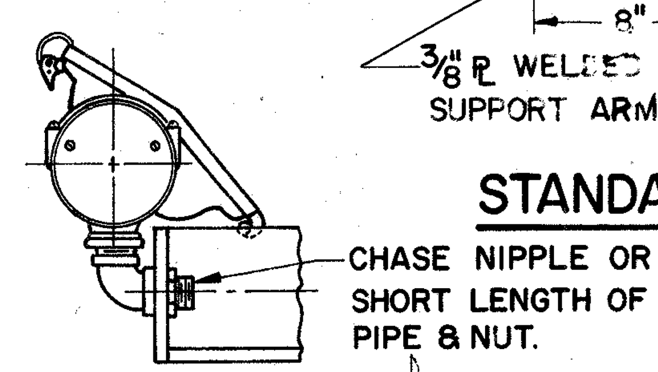
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

197/299

JEFFERSON COUNTY
JEF - 43 - 0.42



STANDARD FIXTURE LOCATION (BELOW)



FIXTURE CONNECTION WHERE WIRING CONDUIT IS NOT NEEDED.

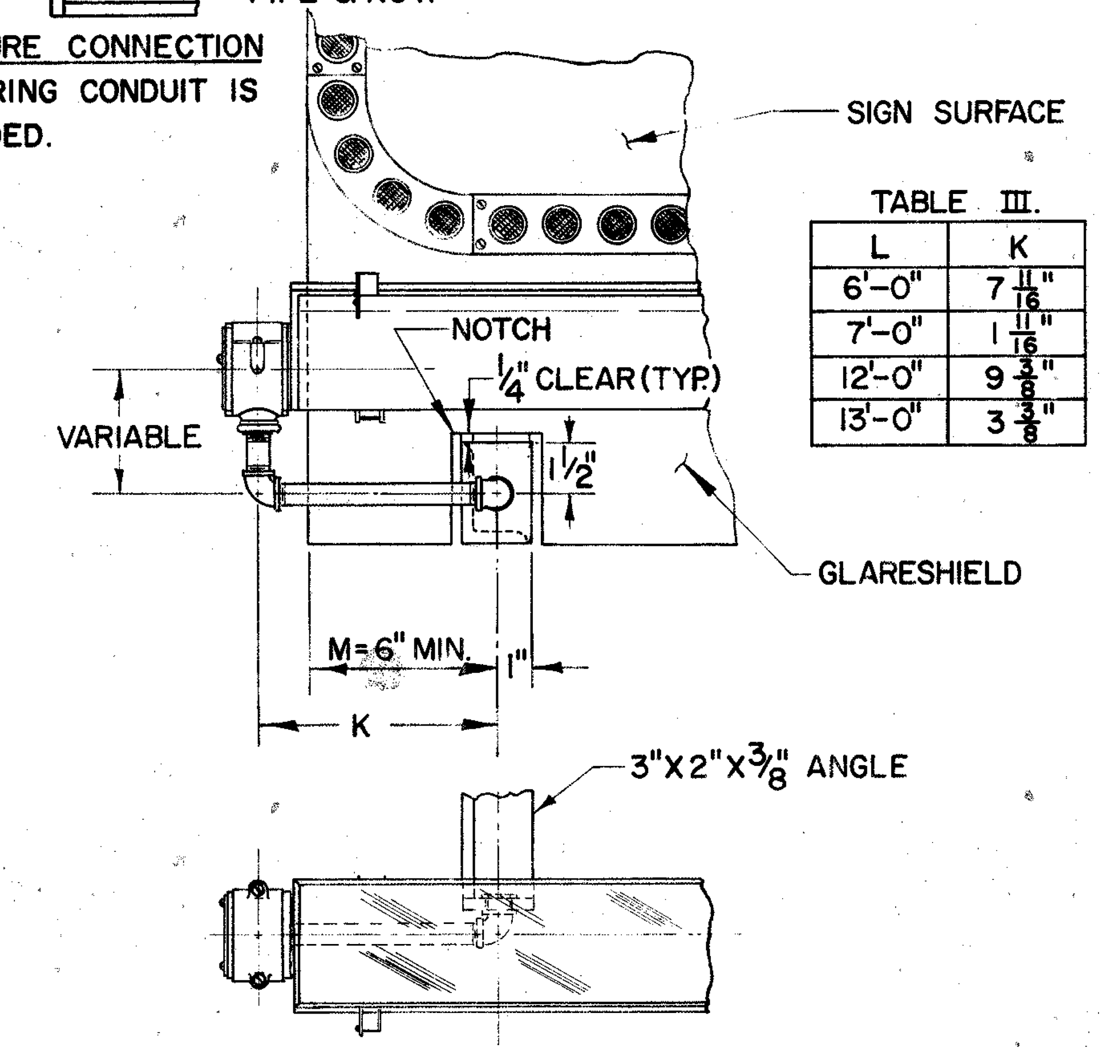
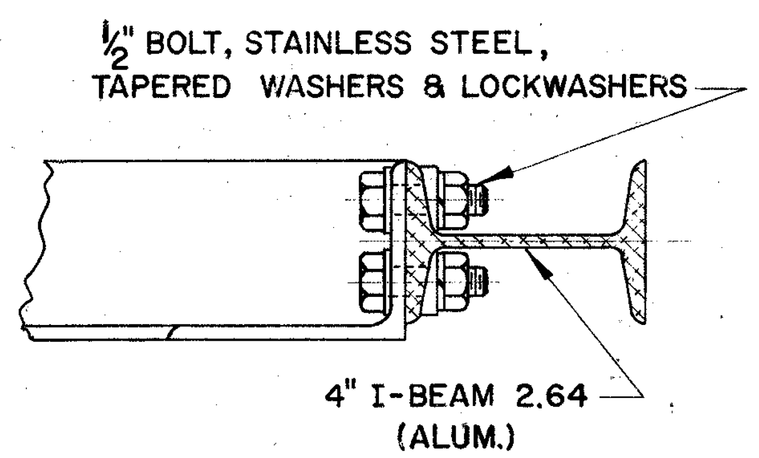


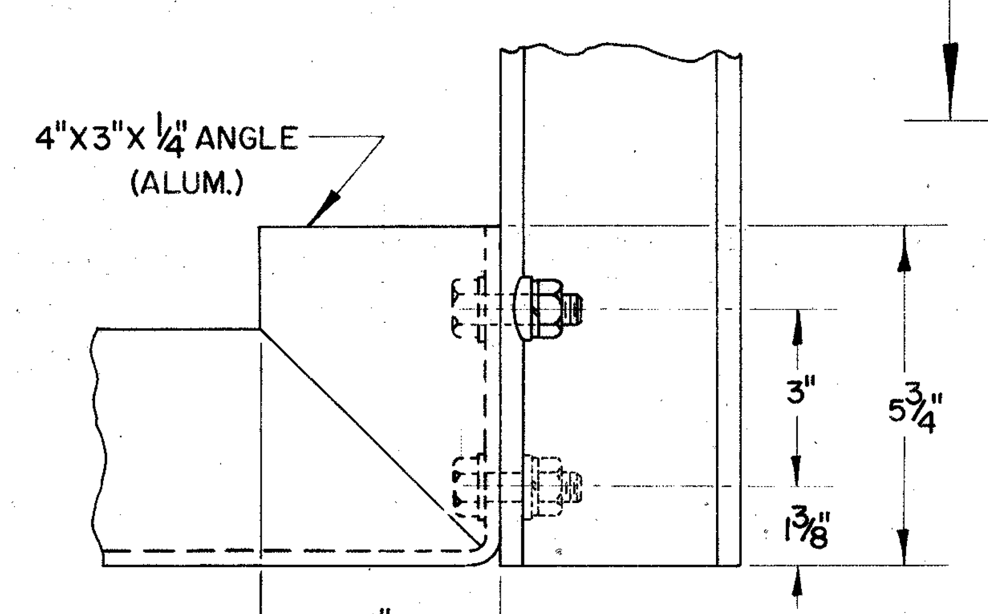
TABLE III.

L	K
6'-0"	$7\frac{11}{16}$"
7'-0"	$1\frac{11}{16}$"
12'-0"	$9\frac{3}{8}$"
13'-0"	$3\frac{3}{8}$"

ALTERNATE FIXTURE CONNECTIONS FOR SIGN 6', 7', 12' & 13' IN LENGTH.

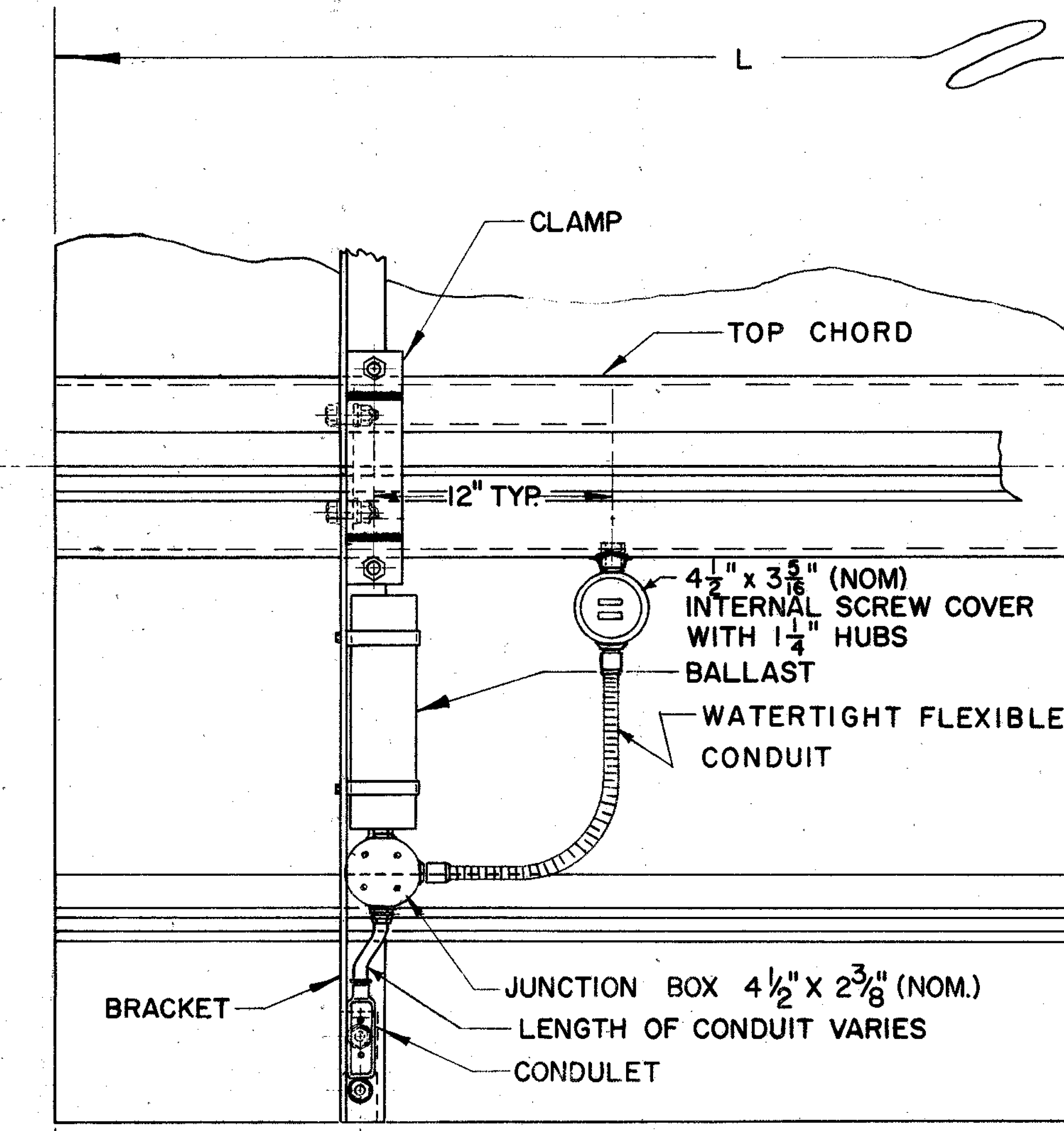
DETAIL A.



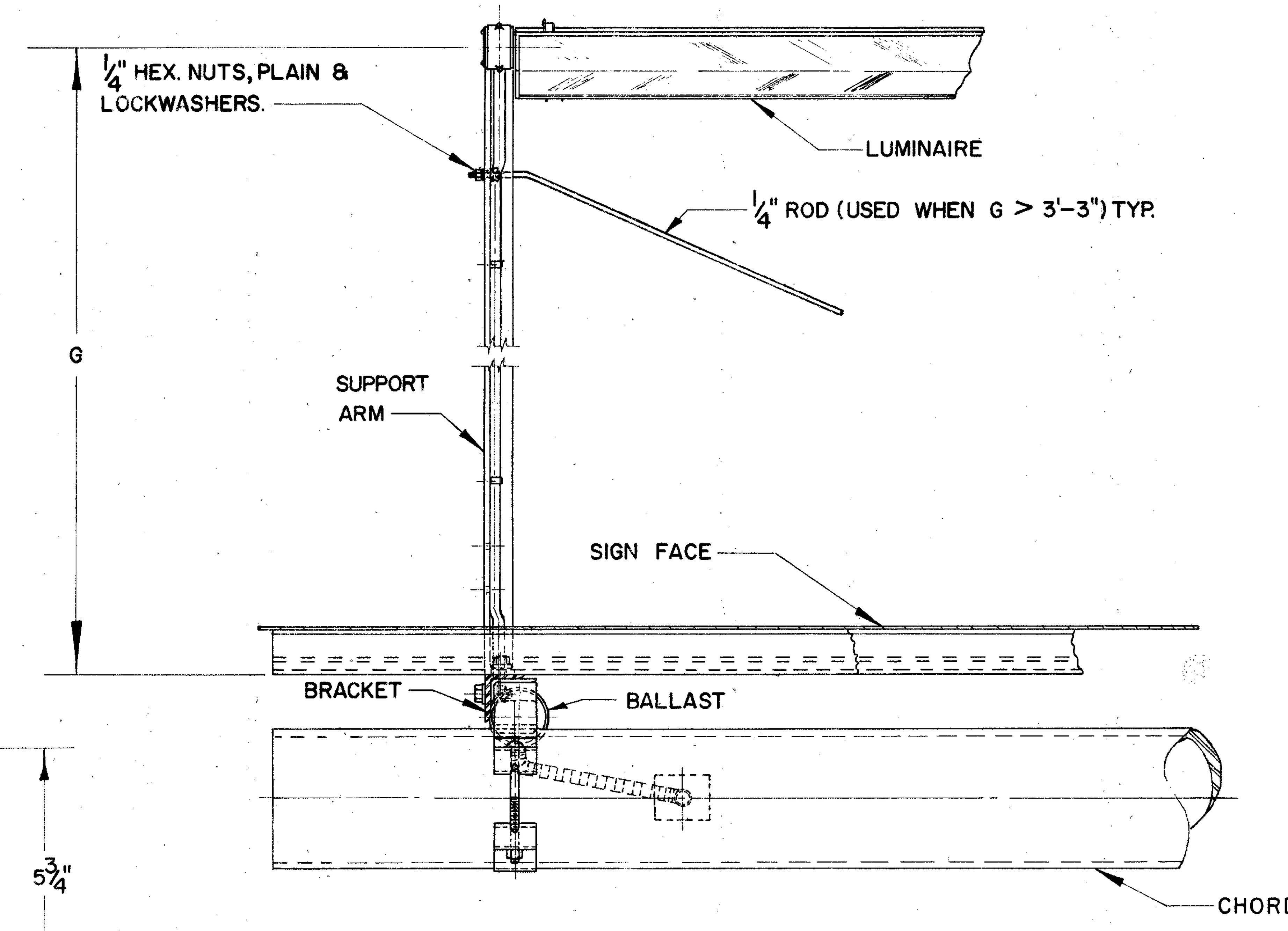


FOR SUPPORTS 7.2-7.6

DETAIL B.



REAR VIEW



TOP VIEW

FABRICATION — ALL STRUCTURAL COMPONENTS SHOWN ON THIS SHEET SHALL CONFORM TO SUPPLEMENT SPECIFICATIONS 816.

MATERIALS — THE MATERIALS USED IN THE COMPONENTS SHOWN ON THIS SHEET SHALL BE IN CONFORMANCE WITH THE MATERIALS USED IN THE SIGN SUPPORT

TABLE I.

"L" SIGN LENGTH		NUMBER OF FIXTURES		"M" EDGE DISTANCE				NO. BALLAST
				A		B		
A	B	$75\frac{3}{8}$	$99\frac{3}{8}$	LT.	RT.	LT.	RT.	
6'-0"	7'-0"	1		6"	6"	6"	6"	1
8'-0"	9'-0"	1		$10\frac{3}{8}$	$10\frac{1}{4}$	$16\frac{3}{8}$	$16\frac{1}{4}$	1
10'-0"	11'-0"		1	$10\frac{3}{8}$	$10\frac{1}{4}$	$16\frac{3}{8}$	$16\frac{1}{4}$	1
12'-0"	13'-0"	2		6"	6	6	6	1
14'-0"	15'-0"	2		$8\frac{5}{8}$	$8\frac{5}{8}$	$14\frac{5}{8}$	$14\frac{5}{8}$	1
16'-0"	17'-0"	1	1	$8\frac{5}{8}$	$8\frac{5}{8}$	$14\frac{5}{8}$	$14\frac{5}{8}$	1
18'-0"	19'-0"		2	$8\frac{5}{8}$	$8\frac{5}{8}$	$14\frac{5}{8}$	$14\frac{5}{8}$	1
20'-0"	21'-0"	3		7"	$6\frac{7}{8}$	13	$12\frac{7}{8}$	2
22'-0"	23'-0"	2	1	7"	$6\frac{7}{8}$	13	$12\frac{7}{8}$	2
24'-0"	25'-0"	1	2	7"	$6\frac{7}{8}$	13	$12\frac{7}{8}$	2
26'-0"	27'-0"		3	7"	$6\frac{7}{8}$	13	$12\frac{7}{8}$	2

Sn= Nominal Fixture Length, 72" & 96" respectively.
Sa= Actual Fixture Length, for mounting purposes, $75\frac{3}{8}$" and $99\frac{3}{8}$" respectively. (Slight variation for different manufacturers.)
M= Distance from edge of sign to ℄ of notch, min. 6". When the length of the sign minus 1'-0" is less than the sum of the actual fixture lengths, an offset "K" is used. For additional details see detail A and table III.

TABLE II
MAX. BRACKET SPACING FOR EXTERNALLY ILLUMINATED SIGNS

ACTUAL SIGN HEIGHT "Ha"	SUPPORT TYPES			
	9.12, 11.08, 13.2, 7.2	9.24, 10.48, 12.24, 14.5, 15.8, 7.2 to 7.6		
	SINGLE TUBE DOUBLE TUBE LESS 36" C/C	DOUBLE TUBE		
		C/C 36"-42"	C/C 48"-54"	C/C 60"-72"
	MAXIMUM BRACKET SPACING			
to 5'-0"	6'-4" with X 8'-4" with Y	8'-4" with X	8'-4" with X	8'-4" with X
5'-6" to 8'-0"	6'-4" with Y	4'-2" with X 6'-4" with Y	6'-4" with X 8'-4" with Y	8'-4" with X
8'-6" to 10'-0"	3'-2" with X 4'-2" with Y	6'-4" with Y	6'-4" with Y	8'-4" with Y
10'-6" to 12'-0"	—	4'-2" with Y	6'-4" with Y	6'-4" with Y
12'-6" to 14'-0"	—	3'-2" with Y	3'-2" with Y	4'-2" with Y

Ha= ACTUAL SIGN HEIGHT
He= EFFECTIVE SIGN HEIGHT
BRACKET SIZE: Xs = $3\frac{1}{2}$" X $2\frac{1}{2}$" X $\frac{5}{16}$" — L @ 6.1 LB. STEEL
Ys = 4" X $3\frac{1}{16}$" X $\frac{1}{4}$" — Z @ 8.2 LB. STEEL } 9.12, 10.48, 11.08, 12.24, 14.5 & 15.8
Xa = 3" X $2\frac{11}{16}$" X $\frac{1}{4}$" — Z @ 2.33 LB. ALUM.
Ya = 4" X $2\frac{21}{32}$" X $\frac{3}{16}$" — I @ 2.64 LB. ALUM. } 7.2 Thru 7.6

WHEN MAX. ALLOWABLE SPACING IS LESS THAN ACTUAL FIXTURE LENGTHS, Sa, ADDITIONAL STANDARD BRACKETS MUST BE FURNISHED, EQUAL IN HEIGHT TO "Ha".

SUPPORTS 7.2 THROUGH 7.6 SHALL HAVE AN ALUMINUM FIXTURE ARM, 4"X3"X $\frac{1}{4}$" ANGLE. SEE DETAIL B. BOLTS AND ACCESSORIES SHALL BE STAINLESS STEEL.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

STRUCTURAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

EI-1

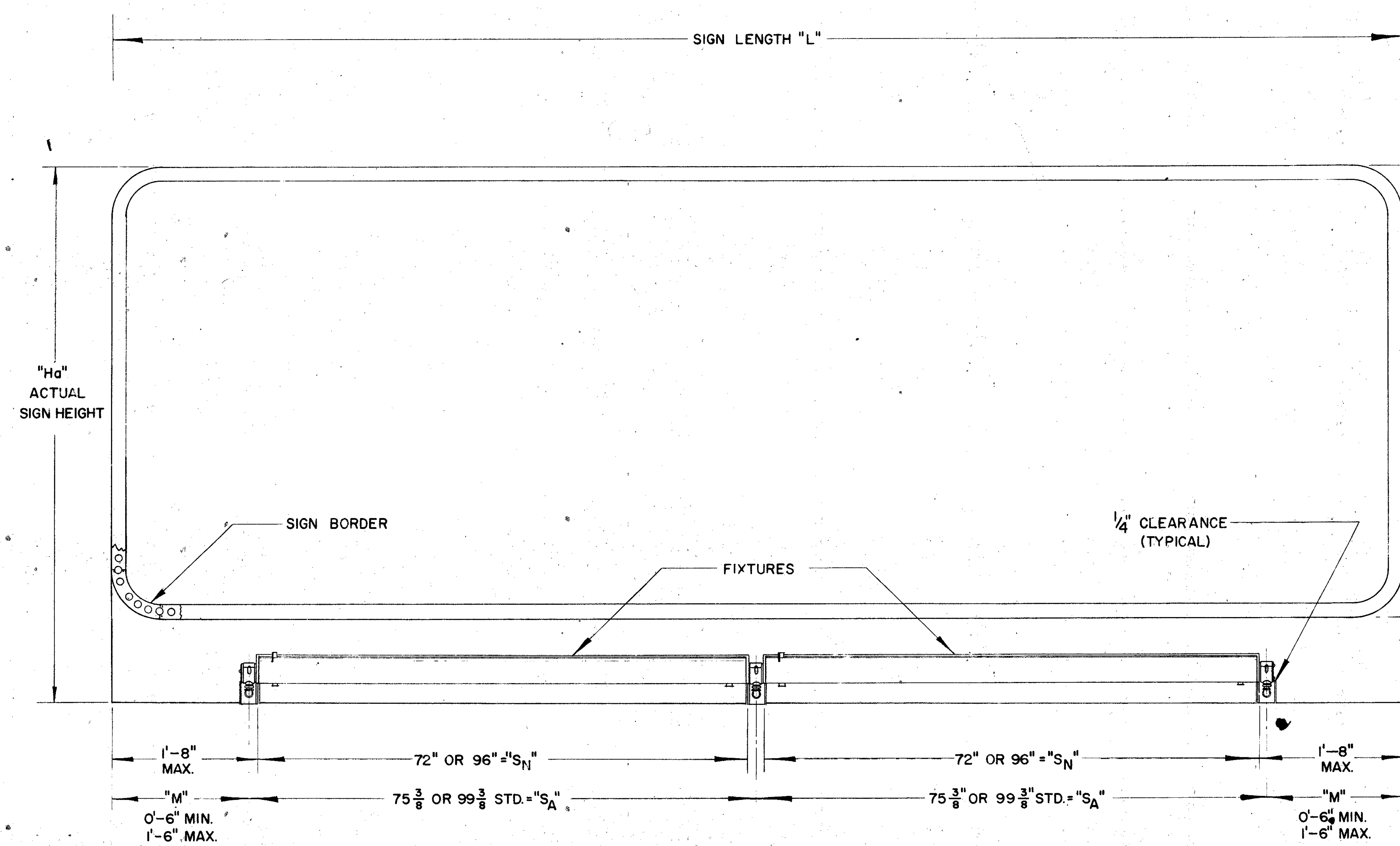
DATE 10-16-63 5-5-64 10-29-64 6-21-66 03-29-67

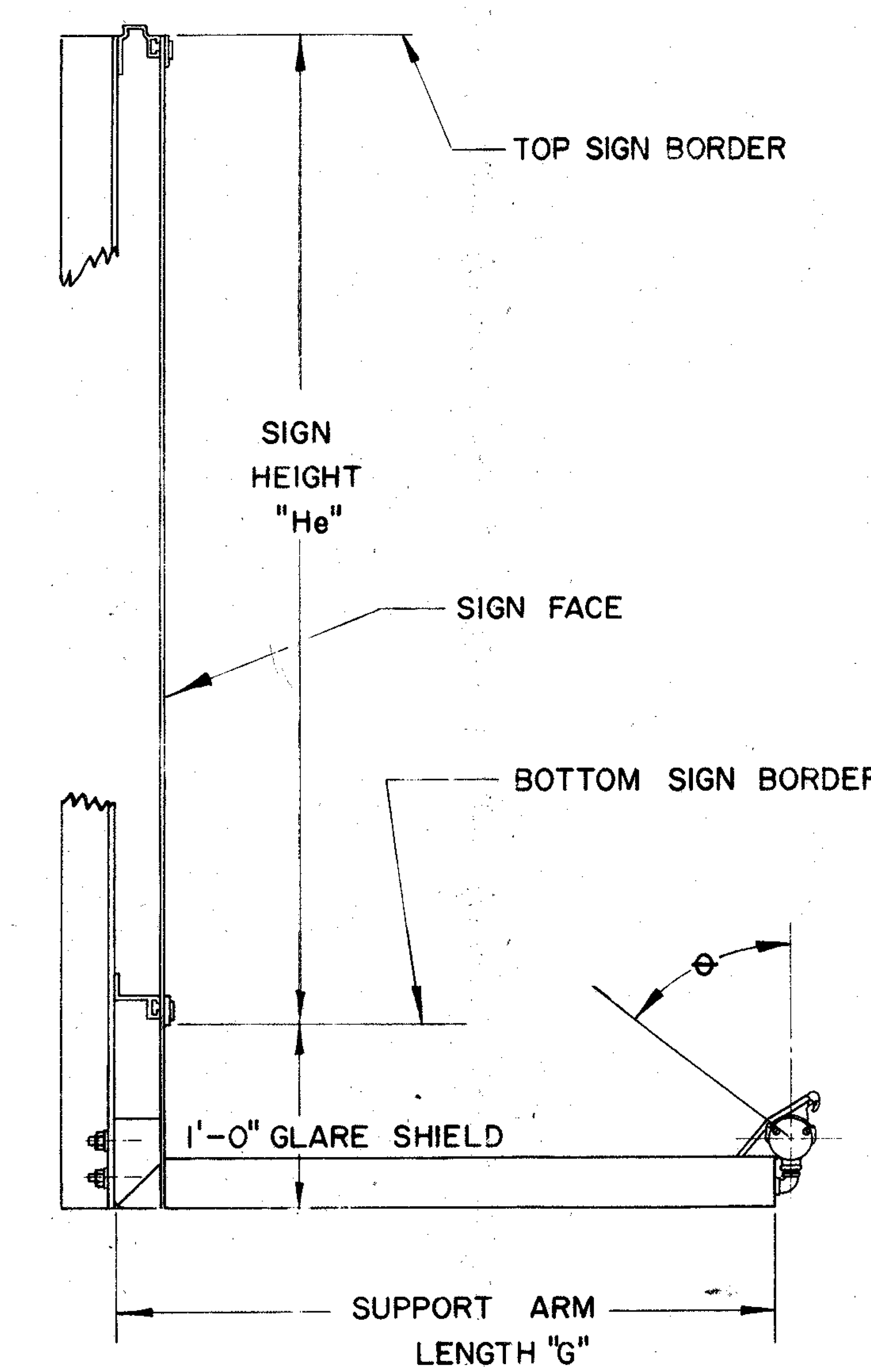
APPROVED Fred C. Tarbox
ENGINEER OF TRAFFIC

STRUCTURAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF-43-0.42





SIGN LIGHTING NOTES

SIGN ILLUMINATION

SIGN ILLUMINATION SHALL BE BY ATTACHED FLUORESCENT FIXTURES AS SHOWN ON ILLUMINATED SIGN DETAIL SHEETS.

LAMPS

LAMPS SHALL BE TYPE F72 OR F96-T12/CW/HO AS MANUFACTURED BY WESTINGHOUSE, GENERAL ELECTRIC OR APPROVED EQUAL FOR SIGNS TO A MAXIMUM HEIGHT OF 6'-6". LAMP TYPE SHALL BE F72 OR F96-T12/CW/SHO AS MANUFACTURED BY WESTINGHOUSE, F72 OR F96-T12/CW/1500 AS MANUFACTURED BY GENERAL ELECTRIC OR APPROVED EQUAL FOR SIGNS THAT ARE 7'-0" OR GREATER IN HEIGHT.

LAMP FIXTURES

LIGHTING FIXTURES SHALL BE CONSTRUCTED OF CORROSION RESISTANT MATERIALS OR WITH HIGH QUALITY CORROSION RESISTANT FINISH. ALL FIXTURES SHALL BE SPECIFICALLY DESIGNED FOR OUTDOOR SIGN LIGHTING SERVICE. MAJOR COMPONENTS SHALL INCLUDE WEATHERPROOF CAST ALUMINUM MOUNTING HUBS DESIGNED TO SECURELY LOCK THE FIXTURES AT ANY ANGLE THROUGH 360 DEGREES. INDICATORS IN 10 DEGREE INCREMENTS SHALL BE STAMPED OR CAST INTO THE HUB TO FACILITATE PROPER AIMING OF THE FIXTURE. FINAL ADJUSTMENT OF FIXTURE SHALL BE DONE AT NIGHT UNDER THE PROJECT ENGINEER'S DIRECTION.

THE BODY DESIGN OF THE FIXTURE SHALL PROVIDE AN ASYMMETRIC SPECULAR ALZAK REFLECTOR TO GIVE A HIGH LEVEL OF UNIFORM ILLUMINATION AND SHALL PROVIDE A WIREWAY FROM END TO END. WHEN ADJACENT FIXTURES ARE WIRED TOGETHER THROUGH THE WIREWAY, WIRE BETWEEN FIXTURES SHALL BE ENTIRELY ENCLOSED.

EXTERIOR FINISH OF THE FIXTURE BODY SHALL BE INTERSTATE GREEN COLOR, HEAT RESISTANT BAKED ENAMEL AS #8950 UNIVERSAL PAINT AND VARNISH INC., OR MIDWESTERN COLOR WORKS, OR APPROVED EQUAL. REFLECTOR, LAMP AND SOCKETS SHALL BE PROTECTED BY A HINGED DOOR OF CLEAR ACRYLIC PLASTIC WITH ALUMINUM OR STAINLESS STEEL FRAME AND NEOPRENE GASKETING.

BALLASTS

BALLASTS FOR FIXTURES SHALL BE WEATHER-PROOF OUTDOOR TYPE FOR A 120 VOLT 60 CYCLE SYSTEM AND SHALL PROVIDE LAMP STARTING AT AN AMBIENT TEMPERATURE OF -20°F. BALLASTS SHALL BE MOUNTED ON SIGN BRACKET ONLY. WIRING SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT THE SIGN MAY BE REMOVED WITHOUT DISTURBING THE ELECTRICAL WIRING.

EFFECTIVE SIGN HEIGHT "H"	SUPPORT ARM LENGTH "G"	APPROX. AIMING ANGLE θ
3'-0" to 5'-0"	2'-9"	25°
5'-0" to 6'-6"	3'-3"	25°
7'-0" to 10'-0"	4'-3"	17°
10'-6" to 13'-0"	5'-9"	23°

"L" SIGN LENGTH	NO. OF FIXTURES			He=3'-0" to 6'-6" LAMP=T12/cw/ho			He=7'-0" to 13'-0" LAMP=T12/cw/sho		
		72	96	BALLAST NO.	BALLAST TYPE	WATTAGE PER SIGN	BALLAST NO.	BALLAST TYPE	WATTAGE PER SIGN
6'-0" to 7'-0"		1		1	A	190	1	C	250
8'-0" to 9'-0"		1		1	A	190	1	C	250
10'-0" to 11'-0"			1	1	A	190	1	C	250
12'-0" to 13'-0"		2		1	B	250	1	D	425
14'-0" to 15'-0"		2		1	B	250	1	D	425
16'-0" to 17'-0"		1	1	1	B	250	1	D	425
18'-0" to 19'-0"			2	1	B	250	1	D	425
20'-0" to 21'-0"		3		2	A&B	440	2	C&D	675
22'-0" to 23'-0"		2	1	2	A&B	440	2	C&D	675
24'-0" to 25'-0"		1	2	2	A&B	440	2	C&D	675
26'-0" to 27'-0"			3	2	A&B	440	2	C&D	675

BALLASTS

TYPE	MANUFACTURERS G.E.	MANUFACTURERS JEFFERSON	WATTAGE
A	GG 3583	257-321	190
B	GG 3535	257-331	250
C	GG 3585	257-361	250
D	GG 3588	257-371	425

BALLASTS SHALL BE GENERAL ELECTRIC, JEFFERSON AS SPECIFIED ABOVE OR EQUAL.

TRANSFORMERS

TYPE	MANUFACTURERS G.E.	MANUFACTURERS JEFFERSON	OUTPUT K.V.A.	SWITCH TRANSFORMER ENCLOSURE
I	9T51Y7	211-041	.25	Y
II	9T51Y8	211-051	.50	Y
III	9T51Y9	211-061	.75	Y
IV	9T51Y10	211-071	1.00	Z
V	9T51Y11	211-081	1.50	Z
VI	9T51Y12	211-091	2.00	Z
VII	9T51Y13	211-2102	3.00	Z

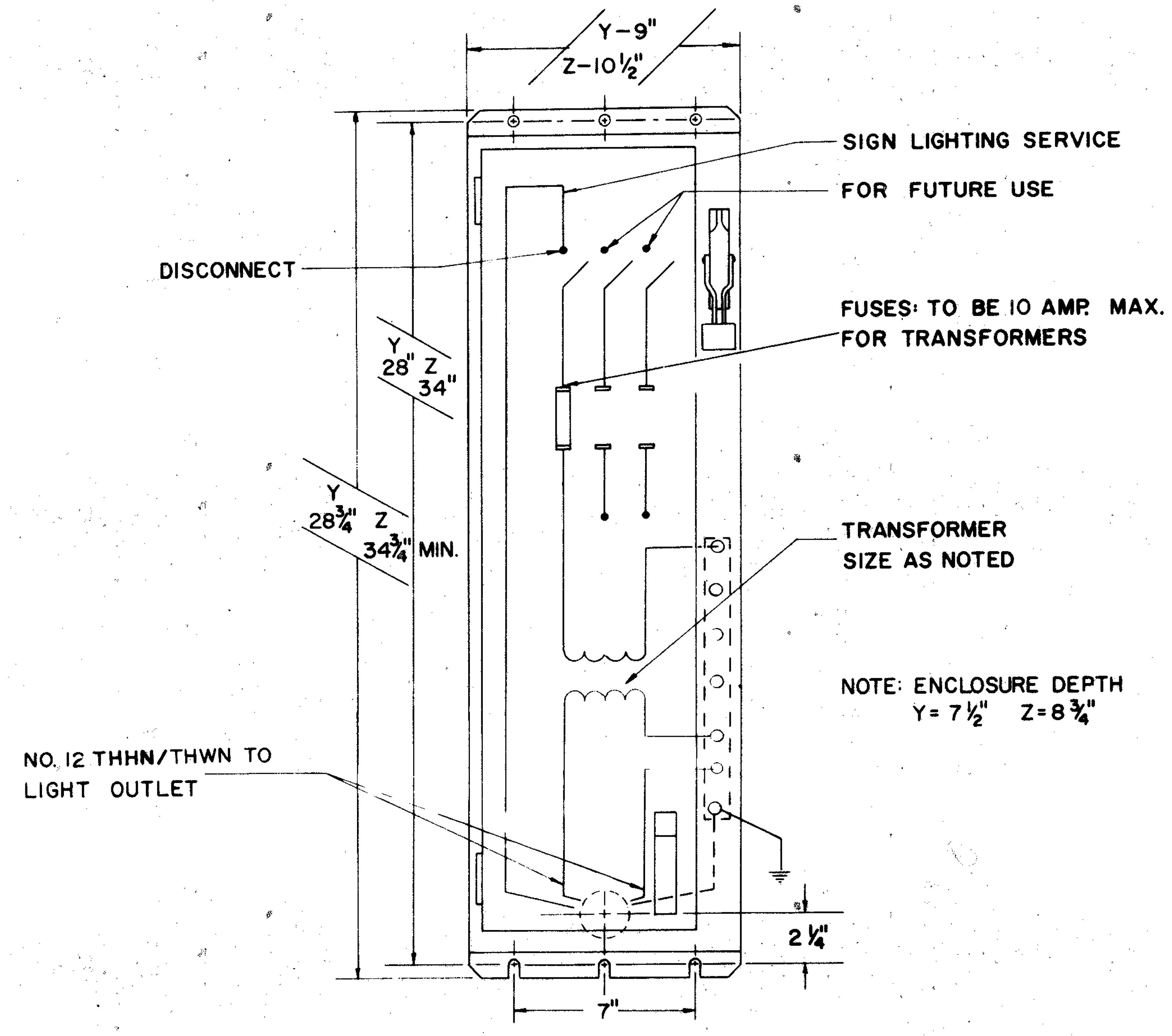
BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ELECTRICAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

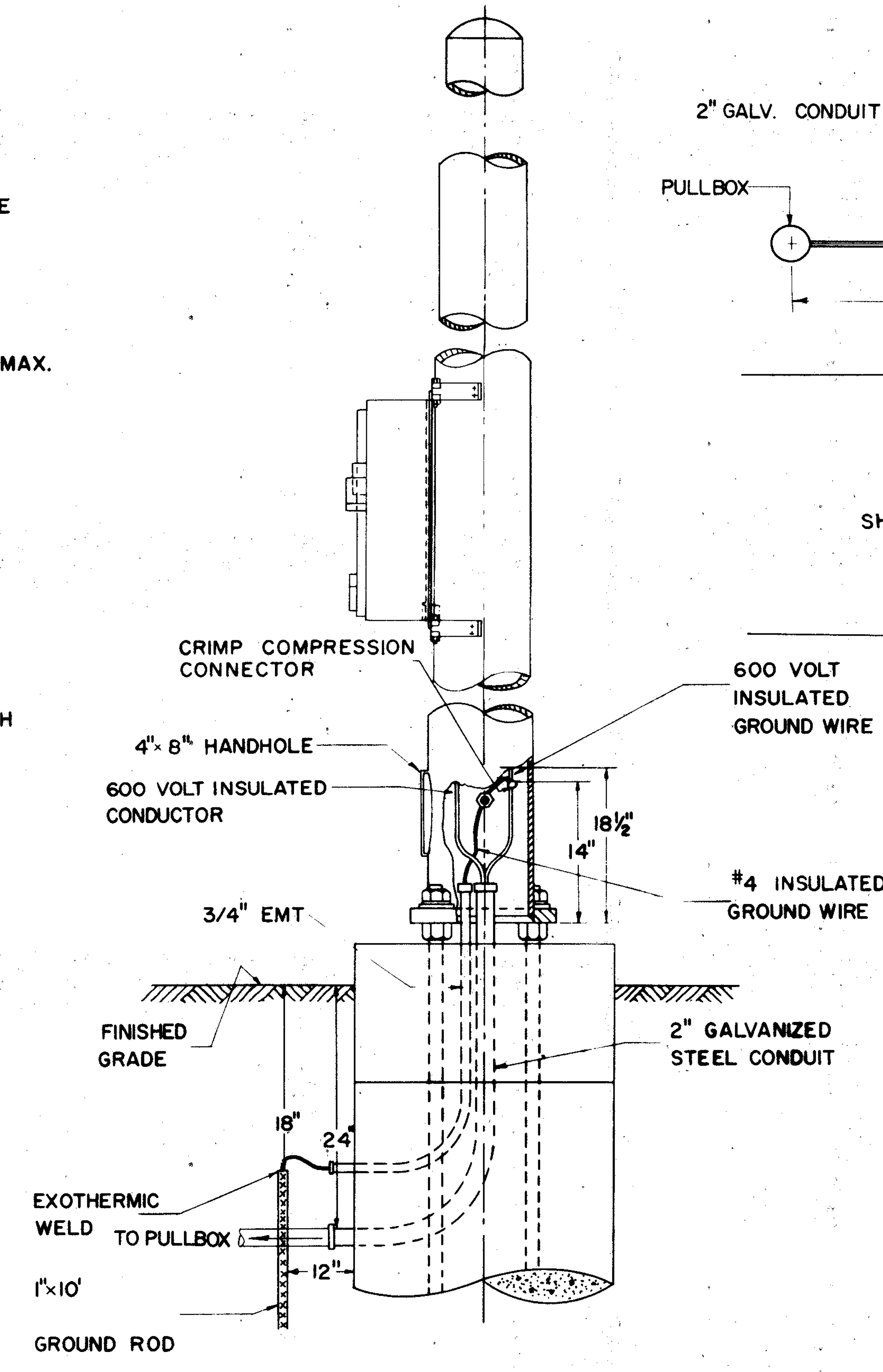
EI-2

DATE
10-31-63
5-6-64
10-29-64
03-29-67
1-4-72

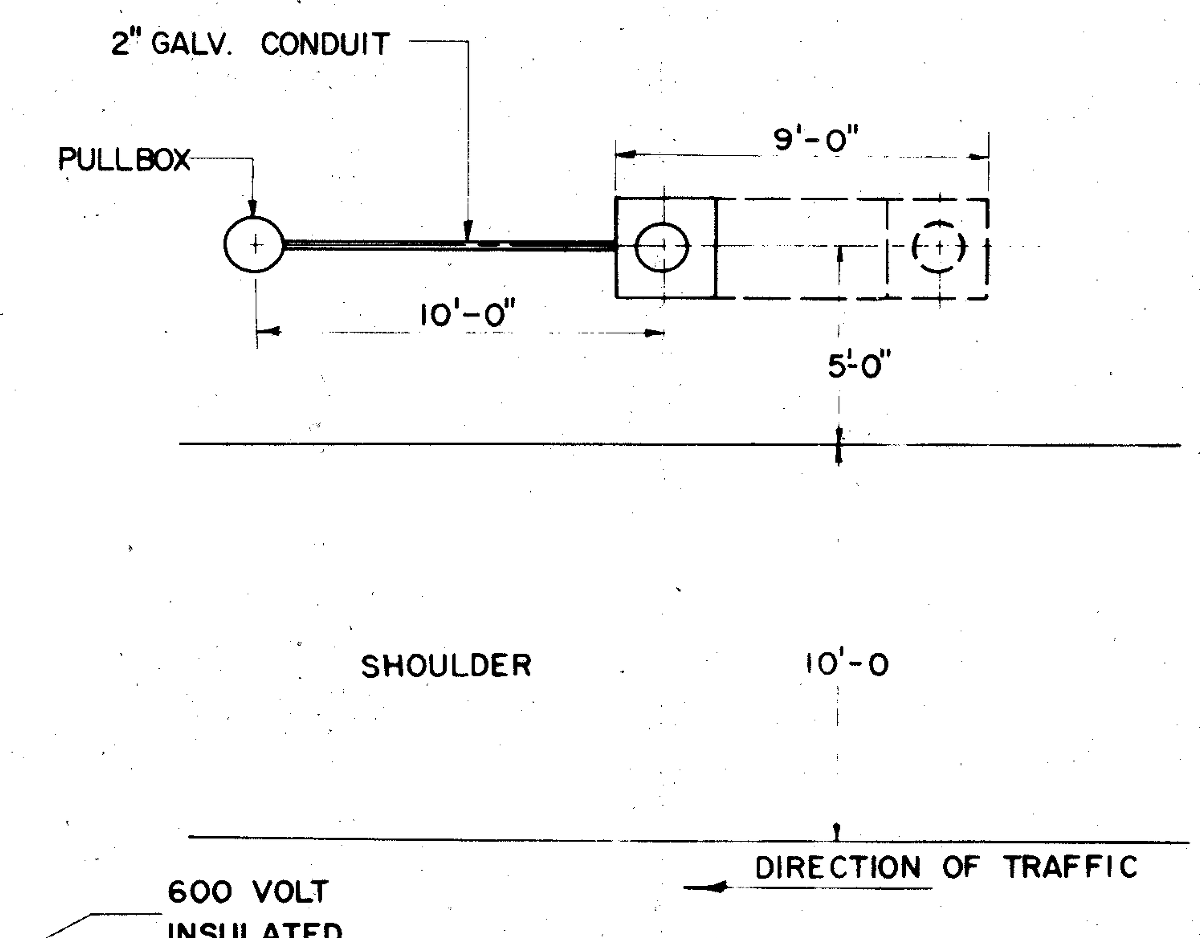
APPROVED Fred C. Talbot
ENGINEER OF TRAFFIC



TYPICAL ENCLOSURE DETAIL
480 VOLT SIGN LIGHTING SERVICE



SIGN SUPPORT DETAIL FOR ILLUMINATED SIGNS



PULLBOX LOCATION

NOTES

GENERAL

DETAILS OF THIS SHEET SHALL APPLY TO EACH OVERHEAD SIGN STRUCTURE TO SUPPORT EXTERNALLY ILLUMINATED SIGNS.

SERVICE

ELECTRIC SERVICE SHALL ENTER THROUGH A 2" GALVANIZED RIGID STEEL CONDUIT INSTALLED IN STRUCTURE FOUNDATION AS PER DETAIL. SIGN SERVICE OR CIRCUITRY SHALL BE CONTROLLED AS REQUIRED BY THE SYSTEM DESIGN AT THE PRIMARY SOURCE.

SERVICE CONDUCTORS SHALL BE THE SIZE AND TYPE AS SPECIFIED.

COMBINATION SWITCH AND TRANSFORMER

(TYPE Y OR Z ENCLOSURE REQUIRED AS PER SCHEDULE ON THIS SHEET)

THIS COMBINATION SHALL BE A 30 OR 60 AMPERE 600 VOLT SWITCH WITH A .25 TO 3.0 KVA TRANSFORMER. THE COMBINATION AND ENCLOSURE SHALL BE AS SQUARE D CLASS 9421, COLUMBUS ELECTRIC WORKS CLASS 101, PANALS INCORPORATED-CLASS 9400, OR APPROVED EQUAL.

TRANSFORMER

THE TRANSFORMER SHALL BE DRY TYPE SINGLE PHASE 240/480 VOLT PRIMARY 120/240 VOLT SECONDARY, THE TYPE AND CAPACITY AS SPECIFIED IN DETAILED SCHEDULE ON THIS SHEET.

ENCLOSURE

THE ENCLOSURE SHALL BE NEMA #4 WATER TIGHT .063 GAGE STAINLESS STEEL ASTA 302-303. A DISCONNECT HANDLE SHALL BE FLANGE MOUNTED AND CAPABLE OF BEING LOCKED IN EITHER POSITION. THE ENCLOSURE SHALL BE EQUIPPED WITH A DOOR LOCKING MECHANISM WITH A DEFEATER THAT NECESSITATES TWO HANDS TO OPERATE MECHANISM WITH THE SWITCH IN OFF POSITION. SPACE FOR A 2" INSULATED CHASE NIPPLE SHALL BE PROVIDED APPROXIMATELY 2¼" ABOVE THE CENTER LINE OF THE LOWER MOUNTING SLOT. THIS ENCLOSURE AND STRUCTURE SHALL BE FIELD DRILLED AND TAPPED FOR THE REQUIRED NIPPLE AS SHOWN ON THE DETAIL ON THIS SHEET.

THIS ENCLOSURE SHALL BE FLANGE MOUNTED ON BRACKETS WITH 5/16-18x¾" HEX HEAD CADMIUM PLATED MACHINE BOLTS. ENCLOSURES SHALL BE TYPE Y OR Z AS SPECIFIED AND DIMENSIONED ON THIS SHEET.

ENCLOSURE MOUNTING BRACKET

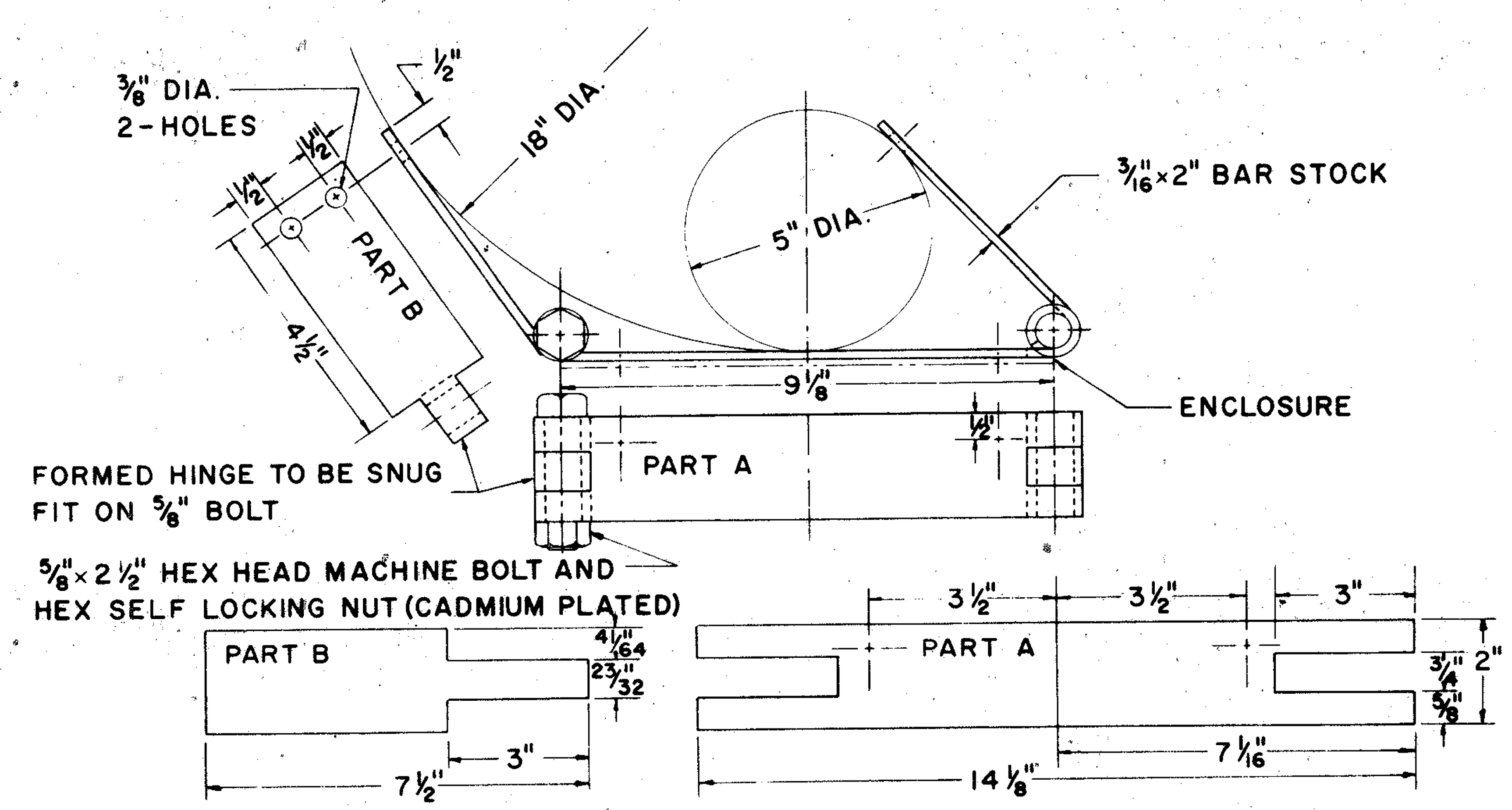
THE ENCLOSURE MOUNTING BRACKET SHALL BE FABRICATED THEN GALVANIZED BEFORE ASSEMBLY. THE BRACKET SHALL BE FIELD MOUNTED WITH 5/16 HEX HEAD SELF TAPPING CADMIUM PLATED SCREWS. THE SIGN SUPPORT SHALL BE FIELD DRILLED, AS PER DETAIL.

WIRE AND CABLE

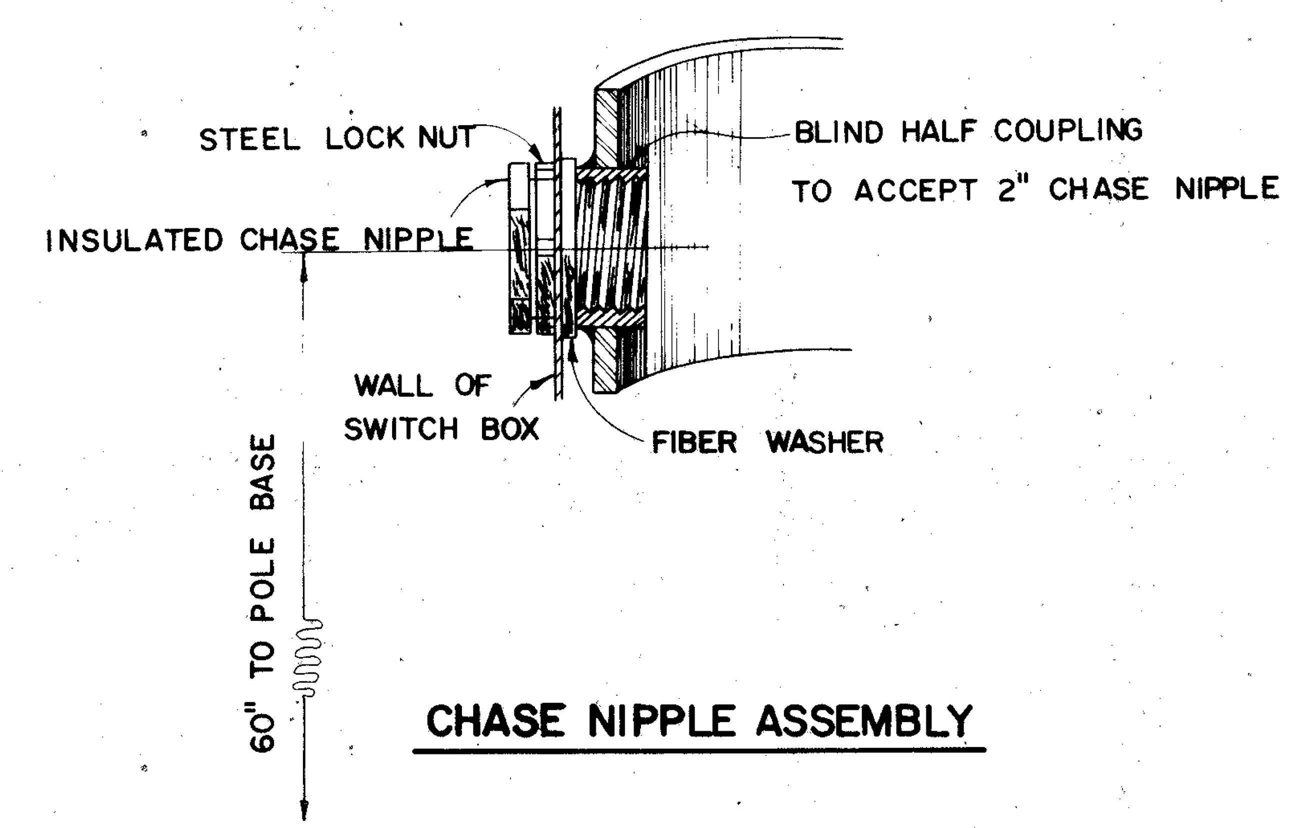
ALL WIRE AND CABLE SHALL BE 600 VOLT AND CONFORM TO SECTION 713.02

GROUNDING

EACH SIGN SUPPORT OR STRUCTURE SHALL BE GROUNDED WITH A #4 INSULATED CONDUCTOR. THE GROUNDING CONDUCTOR SHALL BE CONNECTED TO THE SWITCH THEN TO THE COMPRESSION CONNECTOR IN THE SIGN SUPPORT THEN TO A 1"x10' GROUND ROD. GROUND CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO GROUND ROD AND THEN TAPED WITH PLASTIC ELECTRICAL TAPE AT EACH EXPOSED PORTION OF CONDUCTOR. THE WELDED CONNECTION AND TAPED PORTION SHALL BE PAINTED 2 COATS OF INSULATING ENAMEL.



ENCLOSURE MOUNTING BRACKET



CHASE NIPPLE ASSEMBLY

TRANSFORMERS

TYPE	MANUFACTURERS G.E.	MANUFACTURERS JEFFERSON	OUTPUT K.V.A.	SWITCH TRANSFORMER ENCLOSURE
I	9T51Y7	211 - 041	.25	Y
II.	9T51Y8	211 - 051	.50	Y
III	9T51Y9	211 - 061	.75	Y
IV	9T51Y10	211 - 071	1.00	Z
V	9T51Y11	211 - 081	1.50	Z
VI	9T51Y12	211 - 091	2.00	Z
VII	9T51Y13	211-2102	3.00	Z

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

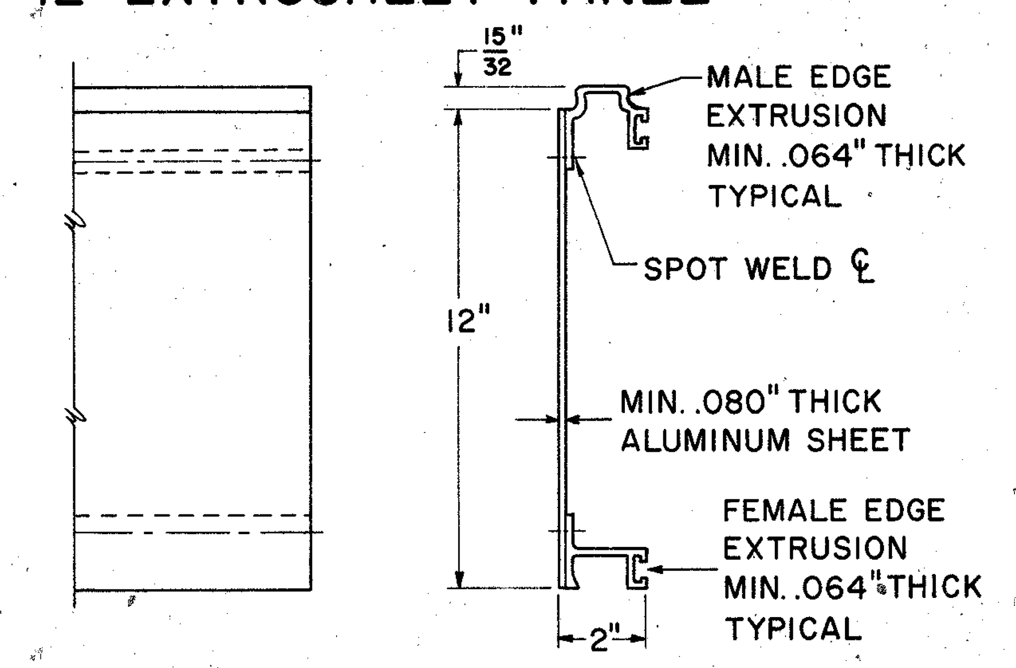
ELECTRICAL SIGN SERVICE DETAILS 480 VOLT SYSTEM

ES-3A

DATE
6-18-64
9-15
7-31-70
2-03-72

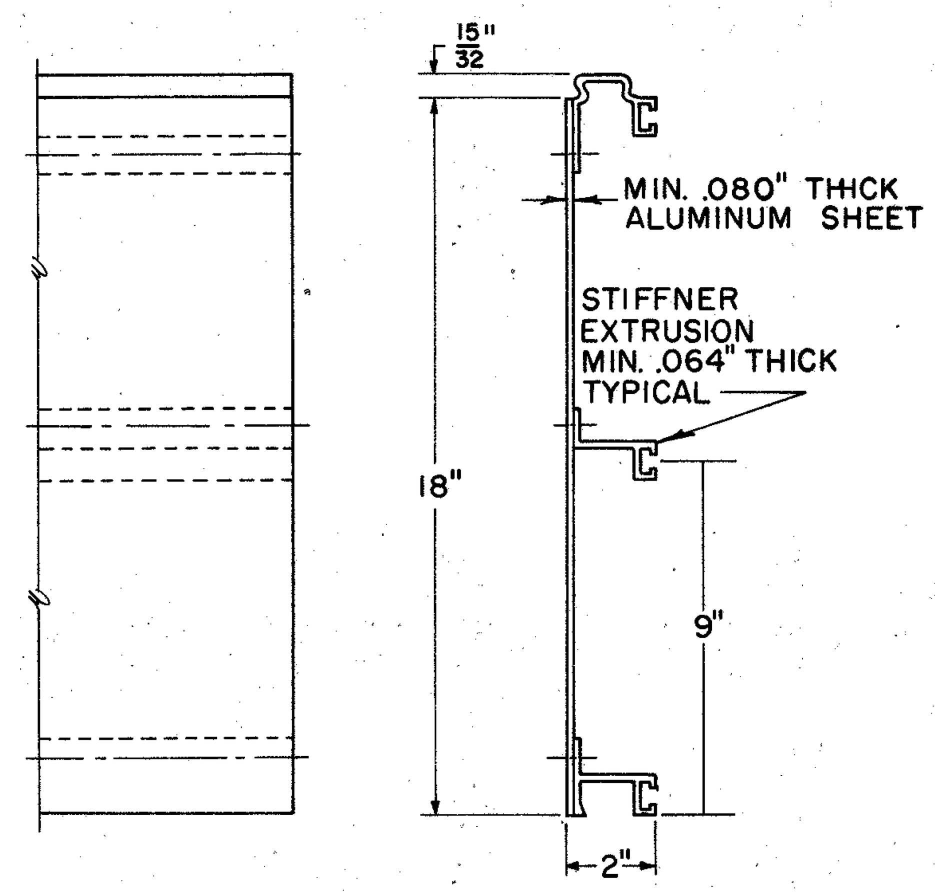
APPROVED ____________
ENGINEER OF TRAFFIC

12" EXTRUSHEET PANEL



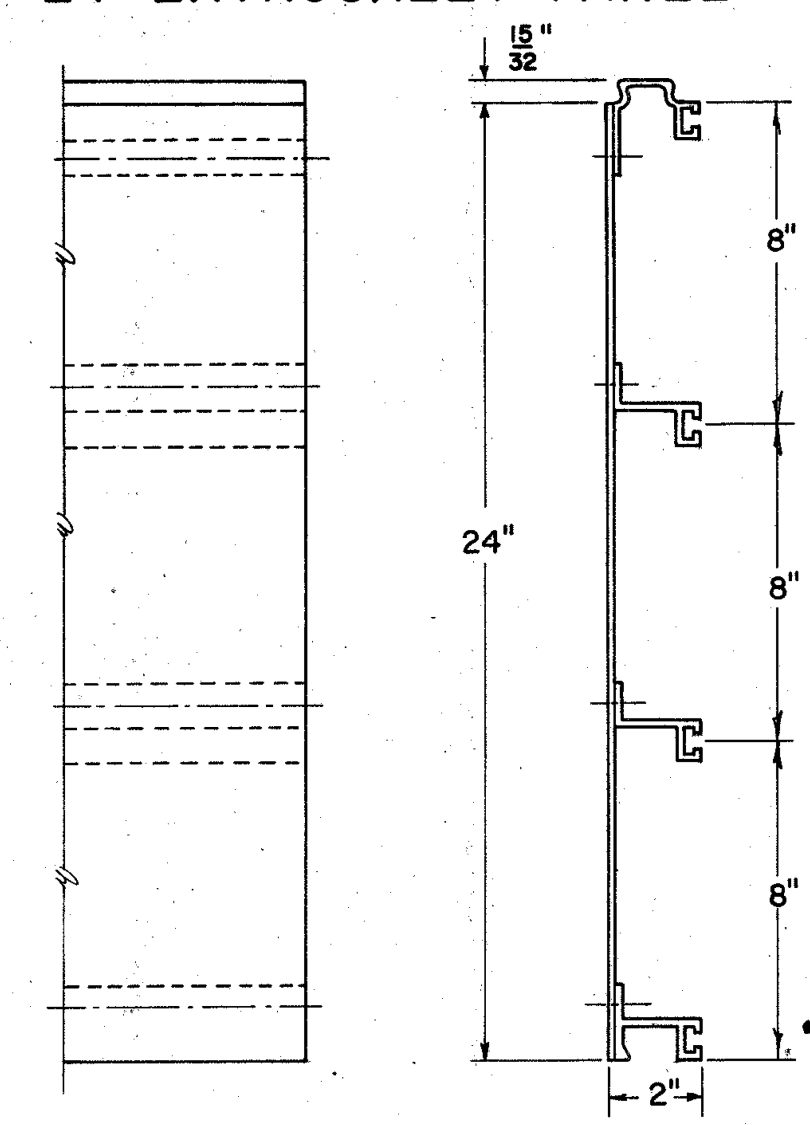
FRONT VIEW   SIDE VIEW

18" EXTRUSHEET PANEL



FRONT VIEW   SIDE VIEW

24" EXTRUSHEET PANEL



FRONT VIEW   SIDE VIEW

NOTES:

EXTRUSHEET PANELS SHALL BE ALUMINUM; SPOT WELDING AND ALL MATERIALS SHALL CONFORM WITH SUPPLEMENTAL SPECIFICATION

COMBINATIONS OF 12", 18", AND 24" PANELS ARE USED TO ATTAIN REQUIRED SIGN HEIGHT.

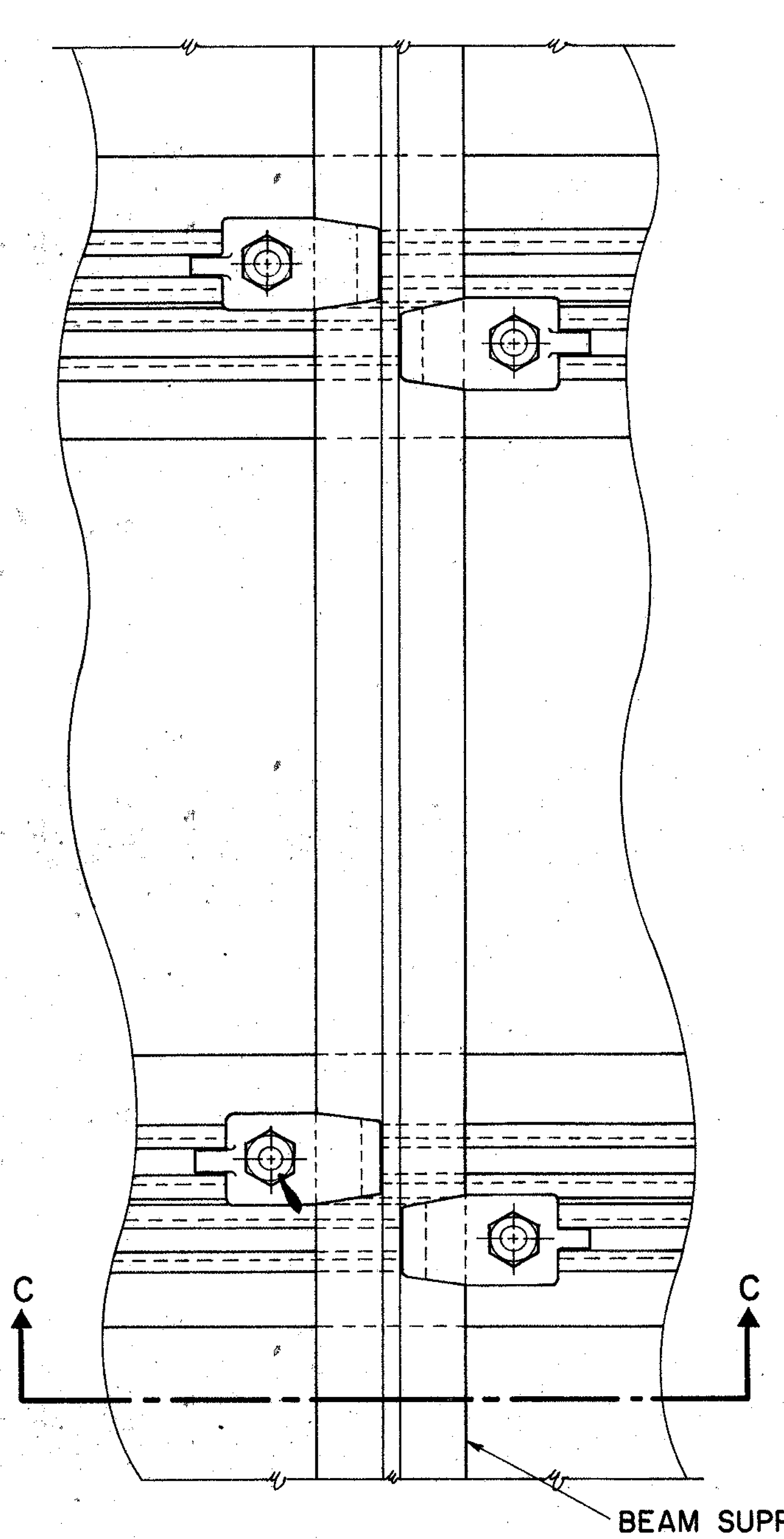
INDIVIDUAL PANELS SHALL BE THE SAME LENGTH AS THE HORIZONTAL LENGTH OF SIGN WITH NO SPLICES.

PANELS SHALL BE INTERLOCKED AND ERECTED WITH THE MALE EXTRUSION LOCATED AT THE TOP EDGE OF THE SIGN.

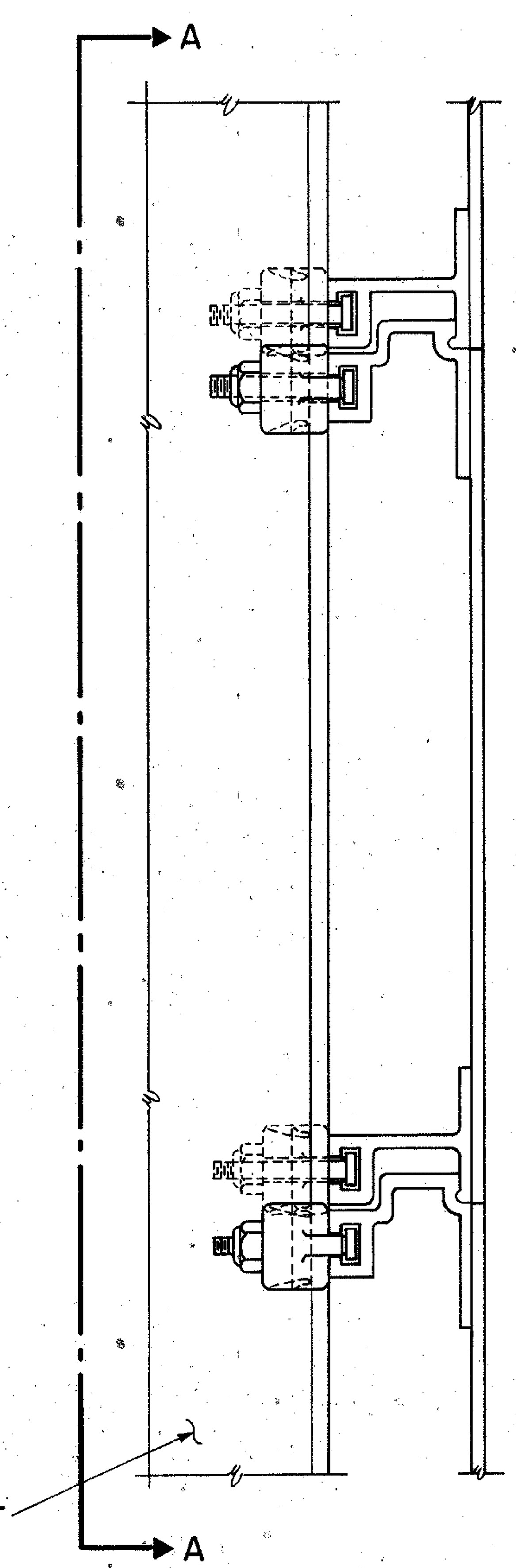
EXTRUSHEET PANELS SHALL BE FASTENED TO EACH VERTICAL SUPPORT MEMBER WITH MOUNTING CLIPS; ALTERNATELY AT EACH HORIZONTAL EXTRUSION; BOTH SIDES AT EACH JOINT, AND ON BOTH SIDES AT TOP AND BOTTOM EDGE OF SIGN.

THE PANELS SHALL BE DESIGNED TO WITHSTAND A WIND LOAD OF 35 POUNDS PER SQUARE FOOT, IN ACCORDANCE WITH THE A.A.S.H.O. SPECIFICATION FOR DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS.

THE MAXIMUM SIGN LENGTH FOR TWO SUPPORTS IS 19'-0".
THE MAXIMUM SIGN LENGTH FOR THREE SUPPORTS IS 29'-0".

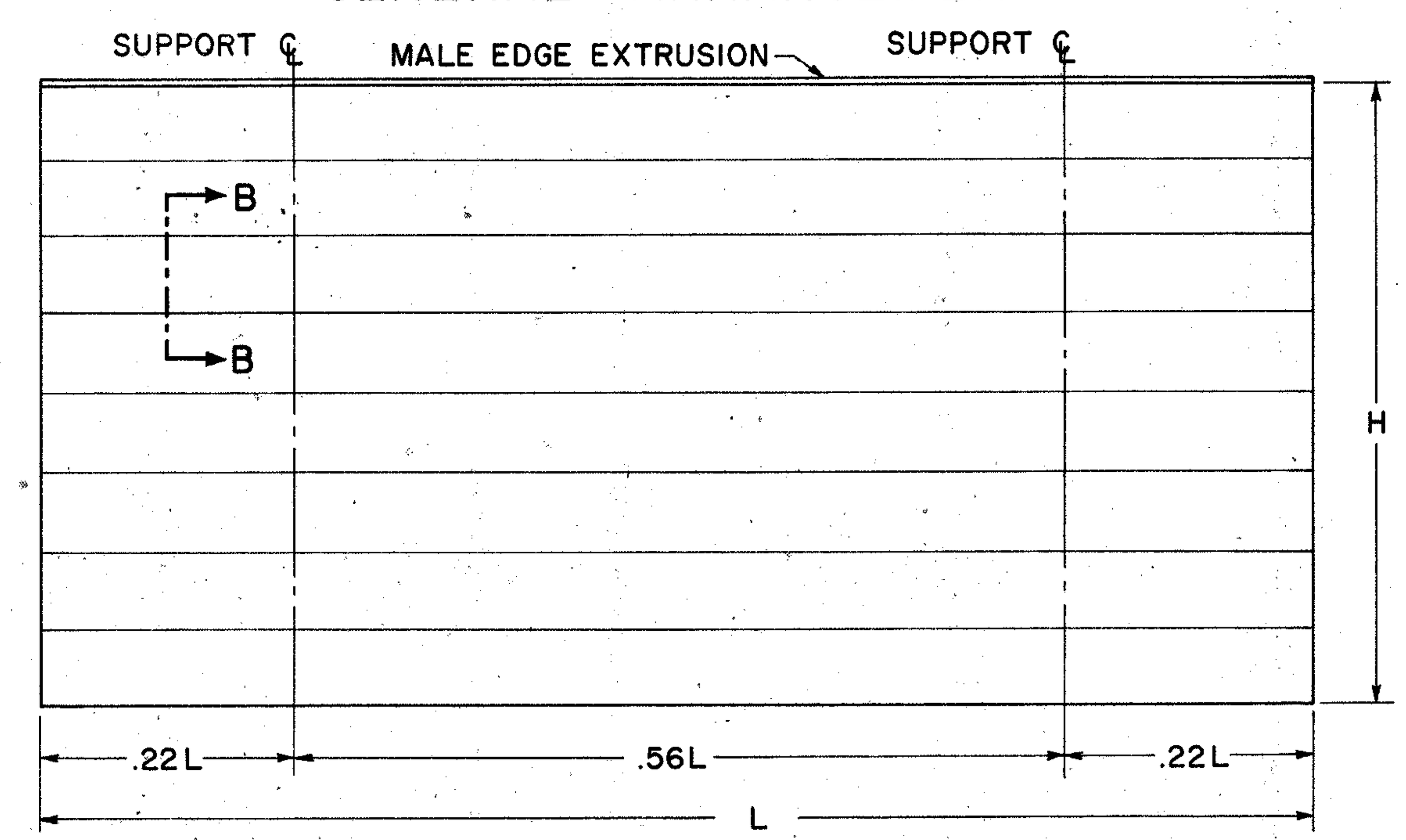


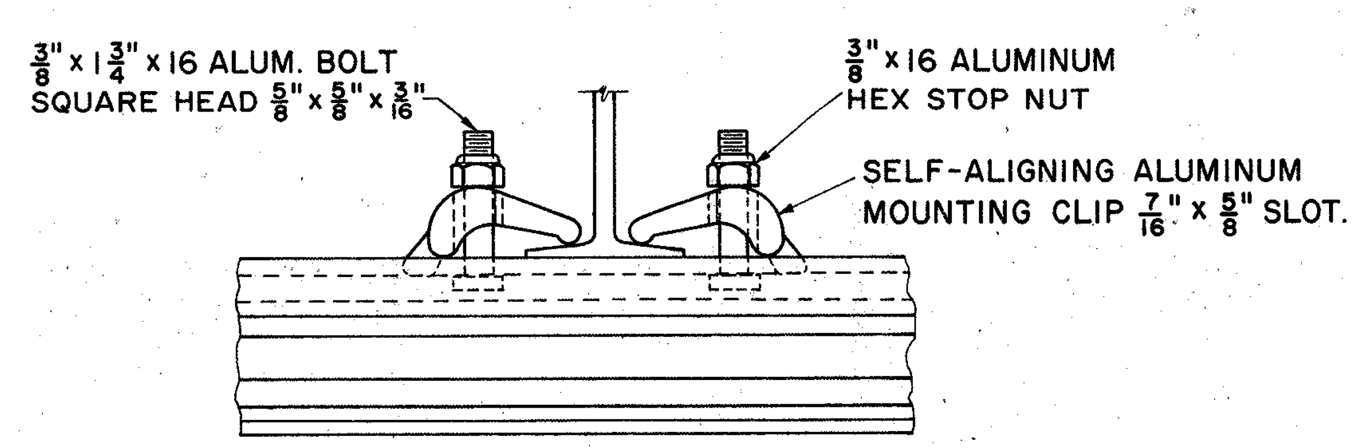
SECTION A-A



SECTION B-B

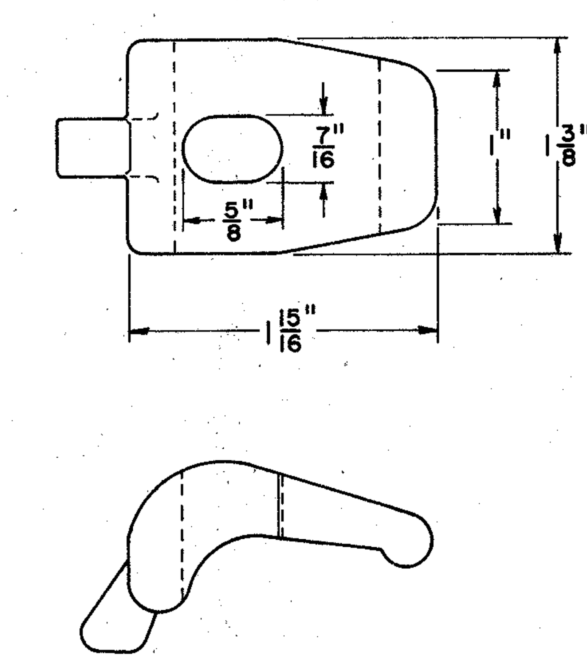
GENERAL ARRANGEMENT





SECTION C-C

CLIP DETAIL



SPOT WELDS

PANEL SIZE	MAXIMUM SPOT WELD SPACING CENTER TO CENTER	BETWN ROWS
12 INCH	4 INCH	10 INCH
18 & 24 INCH	4 INCH	8 INCH

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ALUMINUM EXTRUSHEET PANEL SIGN

ECD 1

DATE
9-25-63
5-19-64
10-21-65
5-24-67

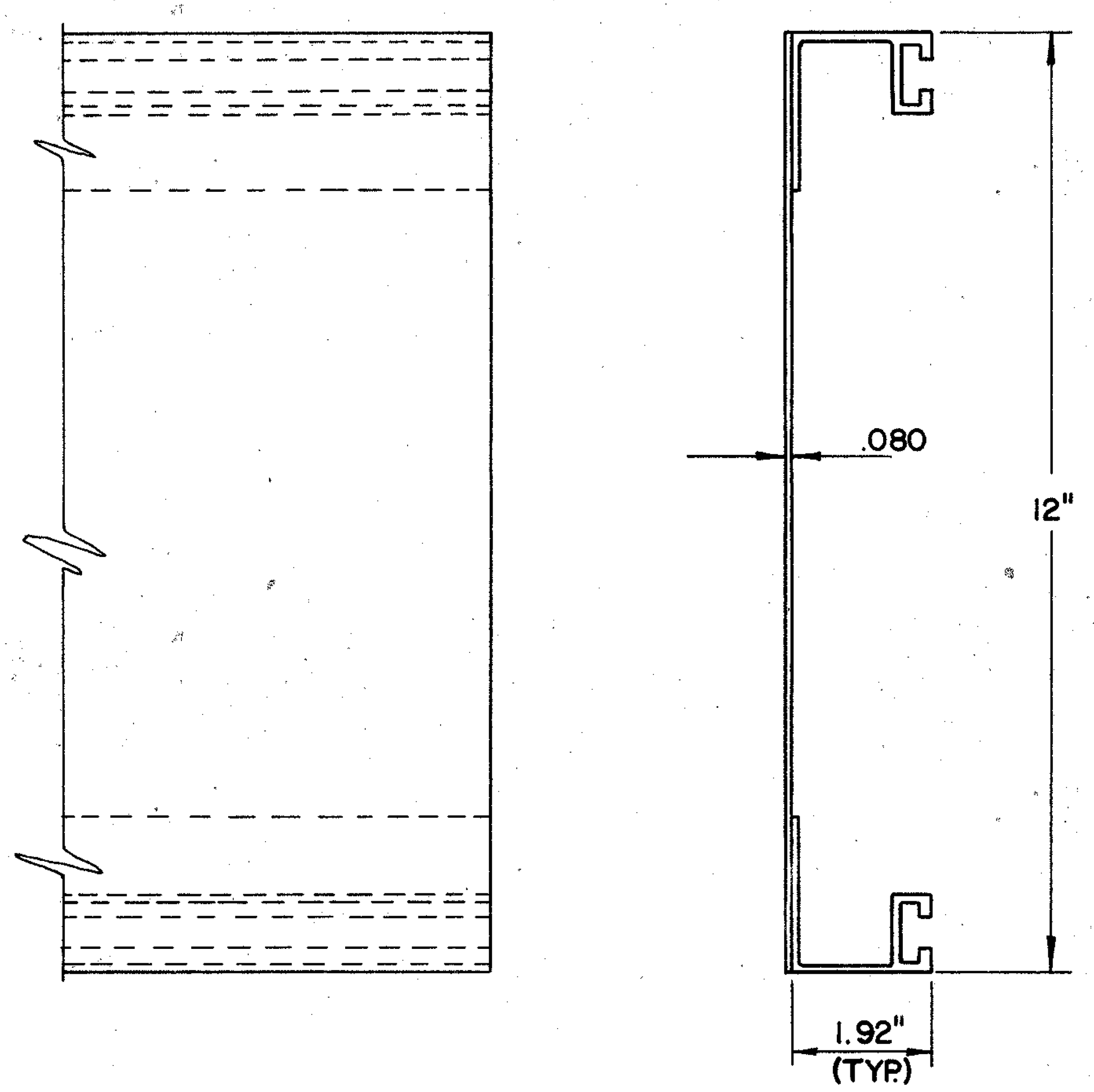
APPROVED Fred C. Sarbys
ENGINEER OF TRAFFIC

ALUMINUM EXTRUSHEET PANEL SIGN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		201 / 299

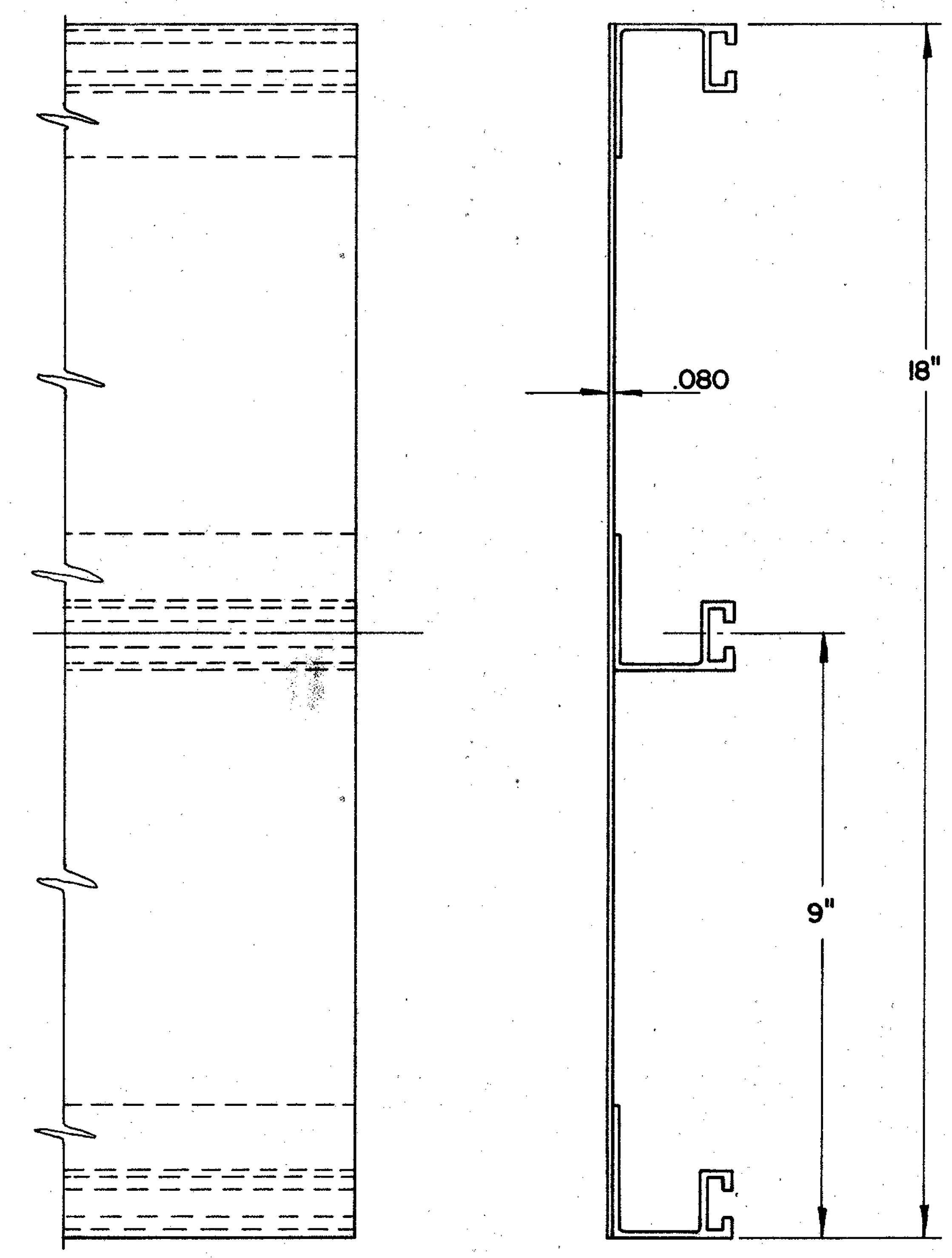
JEFFERSON COUNTY
JEF ~ 43 ~ 0.42

12" BOLTED-EXTRUSHEET PANEL



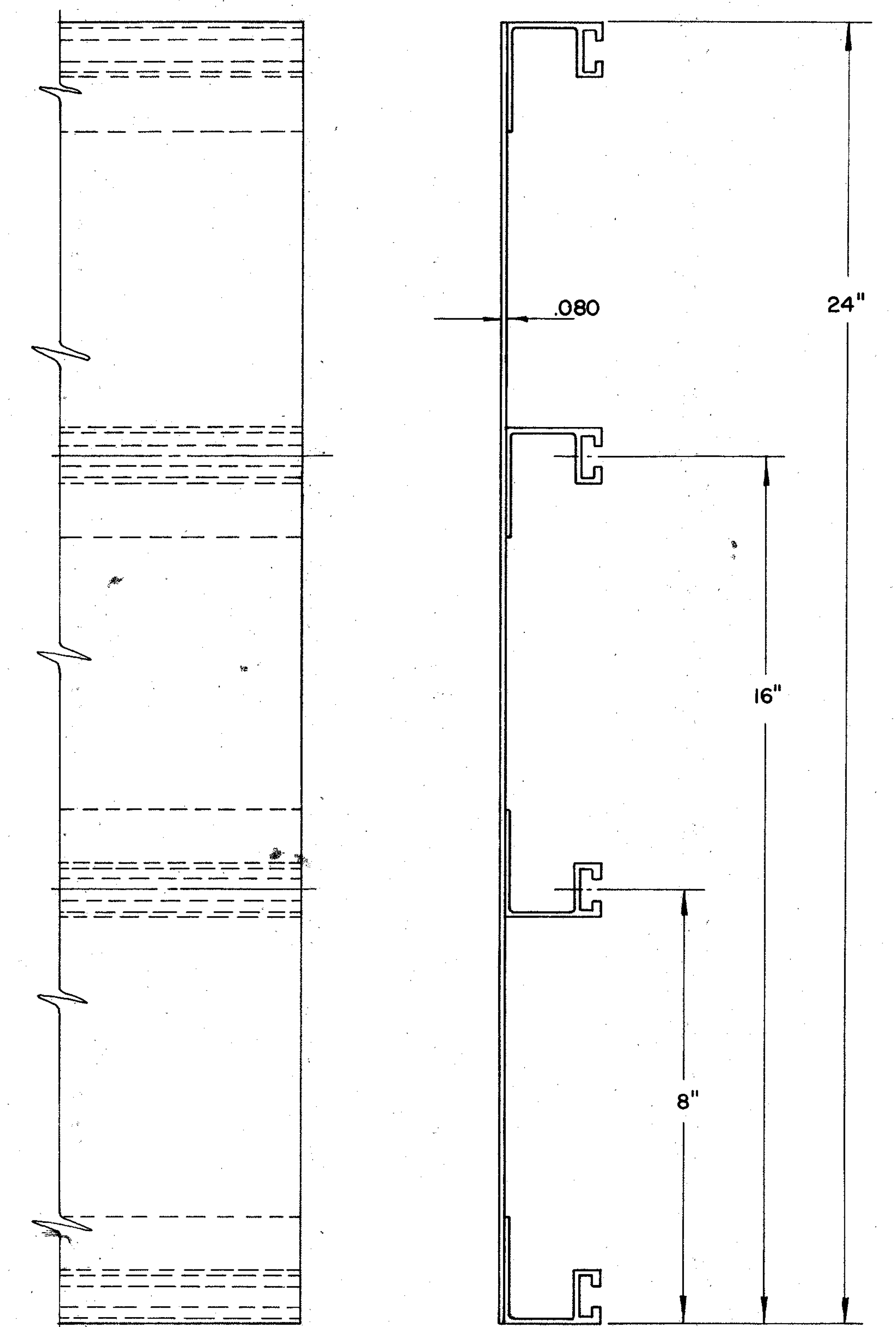
FRONT VIEW   SIDE VIEW

18" BOLTED-EXTRUSHEET PANEL



FRONT VIEW   SIDE VIEW

24" BOLTED-EXTRUSHEET PANEL



FRONT VIEW   SIDE VIEW

NOTES

EXTRU-SHEET PANELS SHALL BE ALUMINUM; SPOT WELDING, MATERIALS AND HARDWARE SHALL CONFORM WITH SPECIFICATION NO. 815

COMBINATIONS OF 12", 18" AND 24" PANELS ARE TO BE USED TO ATTAIN REQUIRED SIGN HEIGHT.

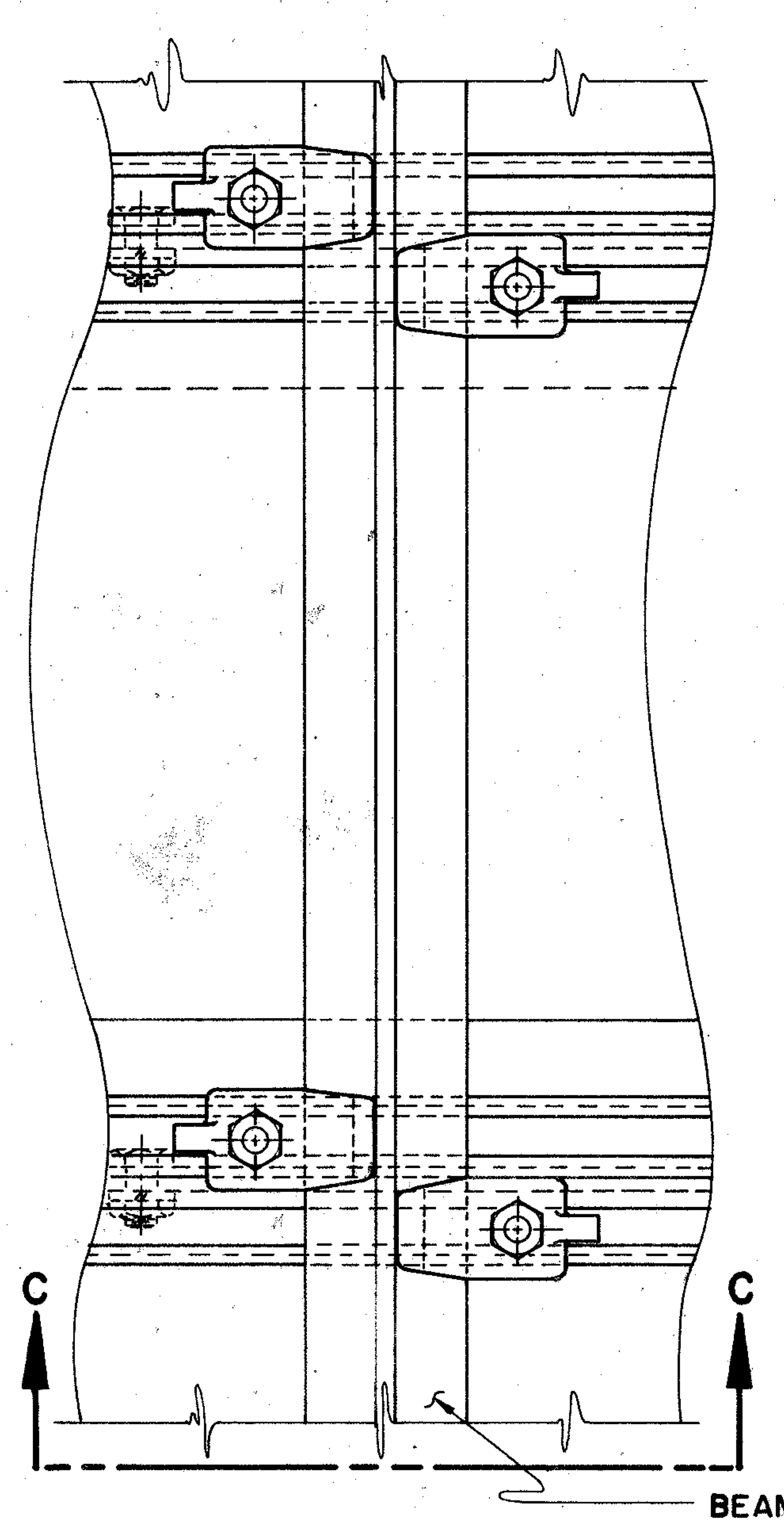
INDIVIDUAL PANELS SHALL BE THE SAME LENGTH AS THE HORIZONTAL LENGTH OF SIGN, WITH NO SPLICES.

THE PANELS SHALL BE ERECTED HORIZONTALLY AND BOLTED ON 24" CENTERS.

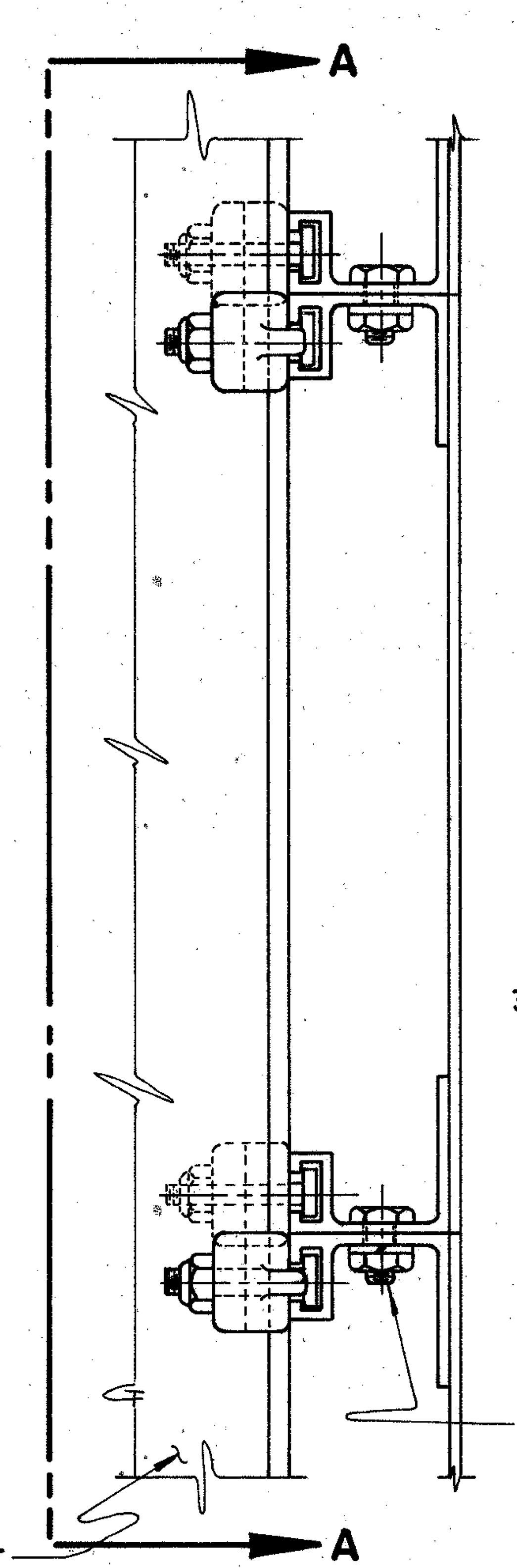
THE PANELS SHALL BE FASTENED TO EACH VERTICAL SUPPORT MEMBER WITH MOUNTING CLIPS; ALTERNATELY AT EACH HORIZONTAL EXTRUSION; BOTH SIDES AT EACH JOINT, AND BOTH SIDES AT TOP AND BOTTOM EDGES OF SIGN.

THE PANELS SHALL BE DESIGNED IN ACCORDANCE WITH THE A.A.S.H.O SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, BASE ON A WIND LOAD OF 35#/SQ.FT.

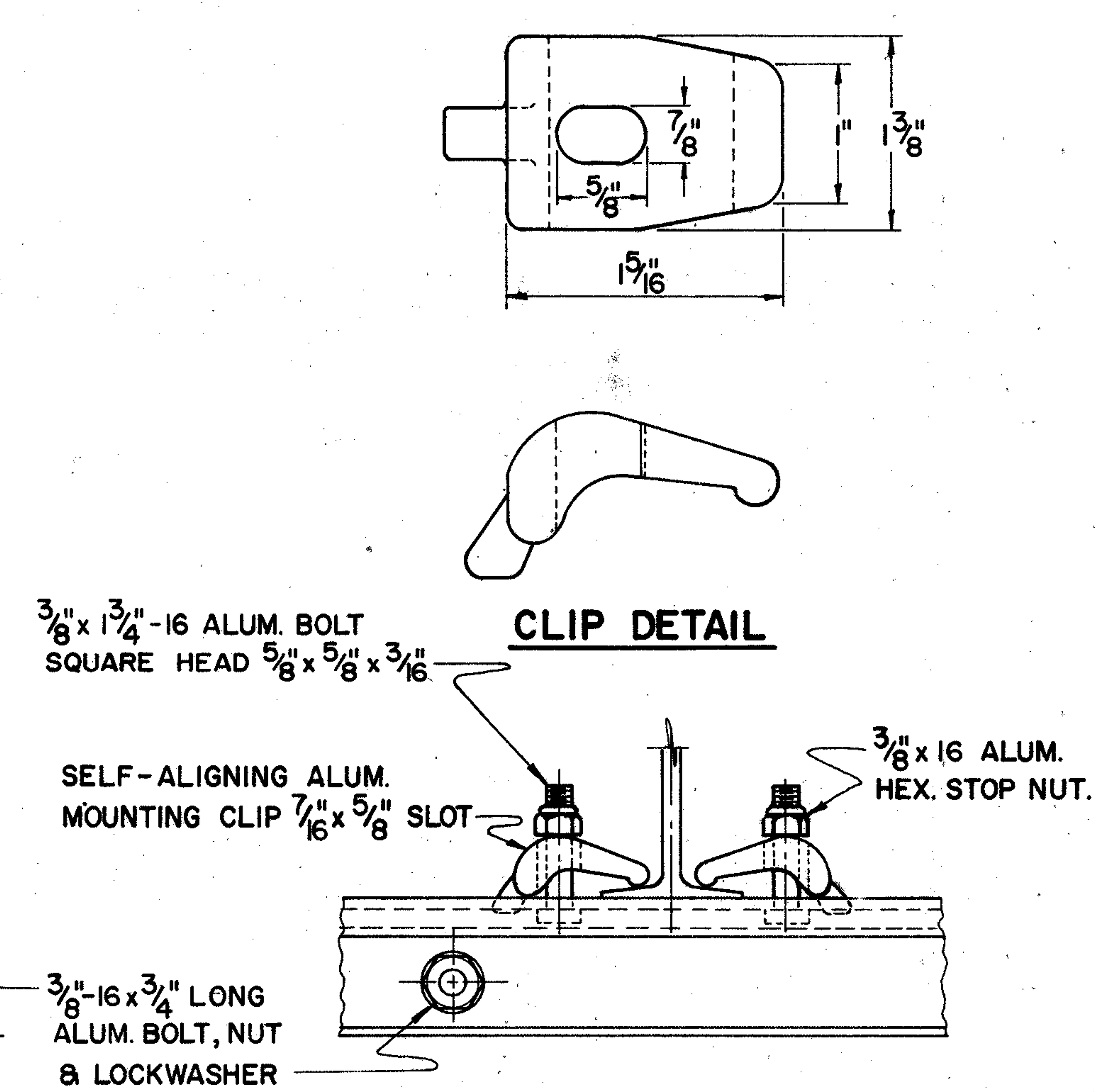
THE MAXIMUM SIGN LENGTH FOR TWO SUPPORTS IS 19'-0". THE MAXIMUM SIGN LENGTH FOR THREE SUPPORTS IS 29'-0".



SECTION A-A

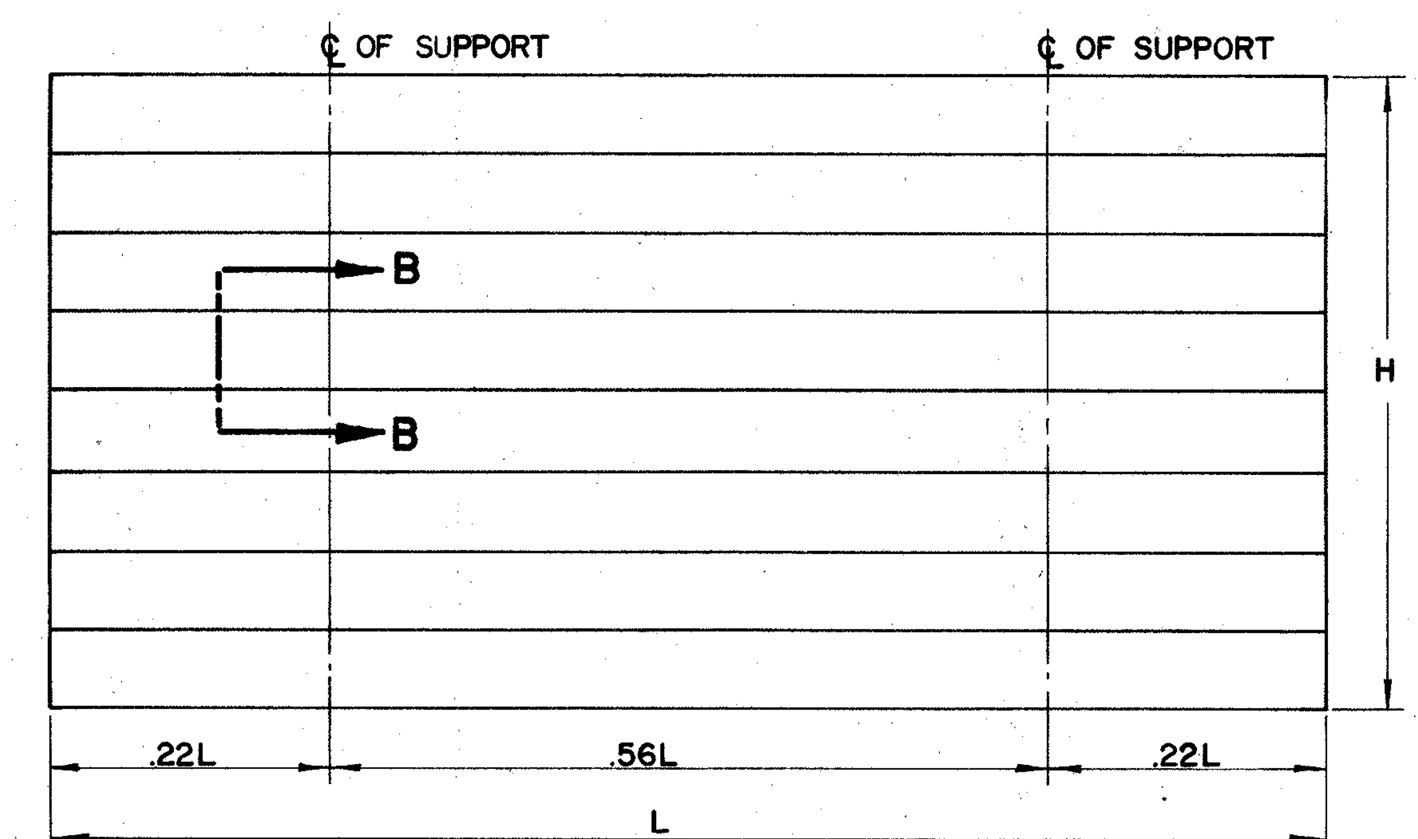


SECTION B-B



CLIP DETAIL

SECTION C-C



GENERAL ARRANGEMENT

SPOT WELDS

PANEL SIZE	MAXIMUM SPOT WELD SPACING	
	CENTER TO CENTER	BETWN ROWS
12 INCH	4 INCH	10 INCH
18 & 24 INCH	4 INCH	8 INCH

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ALUMINUM BOLTED EXTRUSHEET PANEL SIGN	ECD 2	DATE 10-14-65

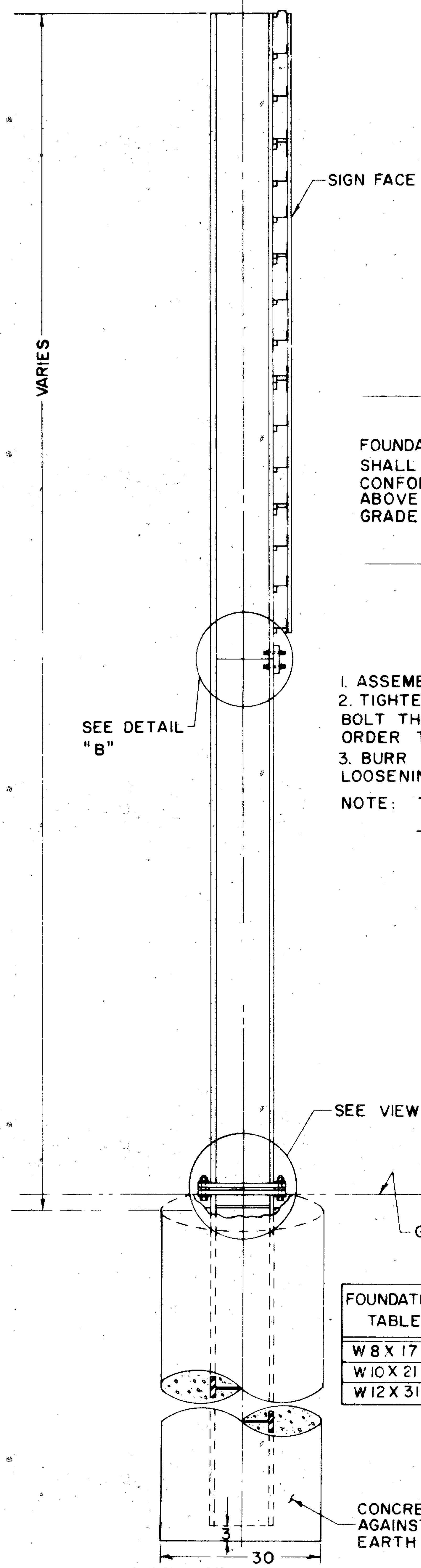
APPROVED Fred C. Tarbox
ENGINEER OF TRAFFIC

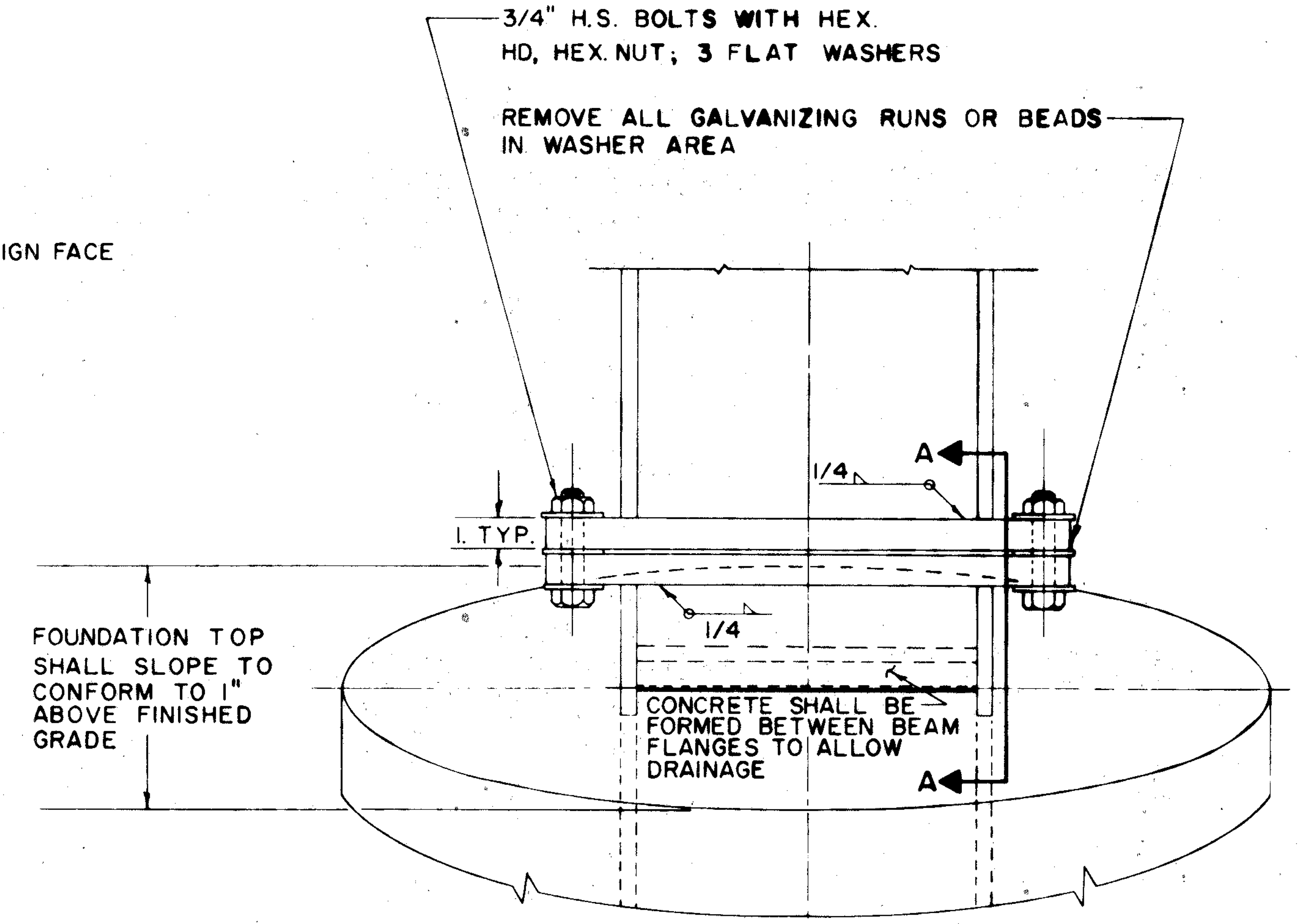
ALUMINUM BOLTED-EXTRUSHEET PANEL SIGN

FED RD DIVISION	STATE	PROJECT		
2	OHIO			

202
299

JEFFERSON COUNTY
JEF-43-0.42



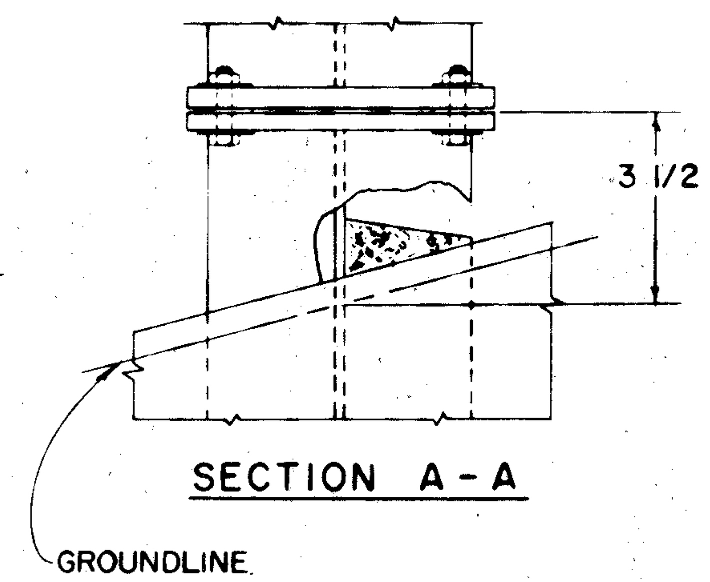


BOLTING PROCEDURE

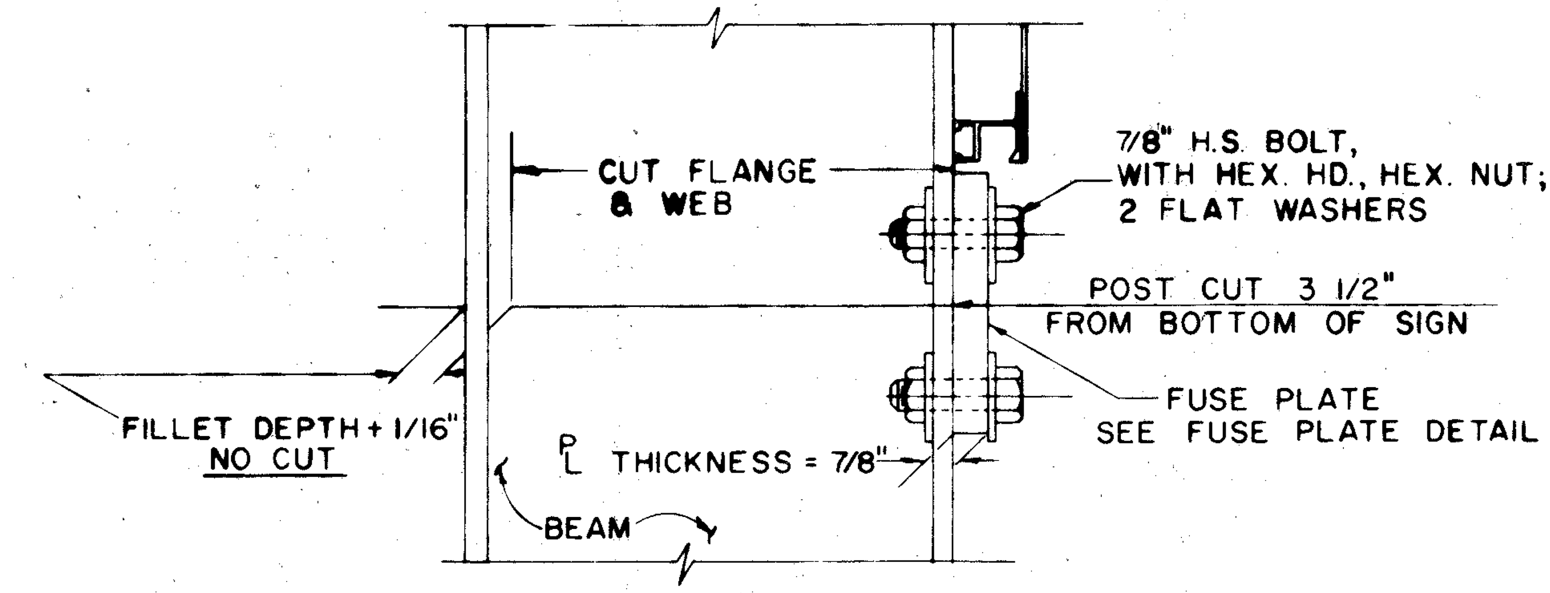
1. ASSEMBLE POST TO STUB W/BOLTS & ONE FLAT WASHER ON EACH BOLT BETWEEN PLATES.
2. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE W/12" TO 15" WRENCH TO BED & TO CLEAN BOLT THREADS. LOOSEN EACH BOLT IN TURN & RETIGHTEN BOLTS IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE OF 750 IN. LBS.
3. BURR THREADS AT JUNCTION W/NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE: TIGHTEN THE H.S. BOLTS IN THE BASE CONNECTION ONLY TO GIVEN TORQUE DO NOT OVER TIGHTEN

VIEW "A" ROTATED 180°



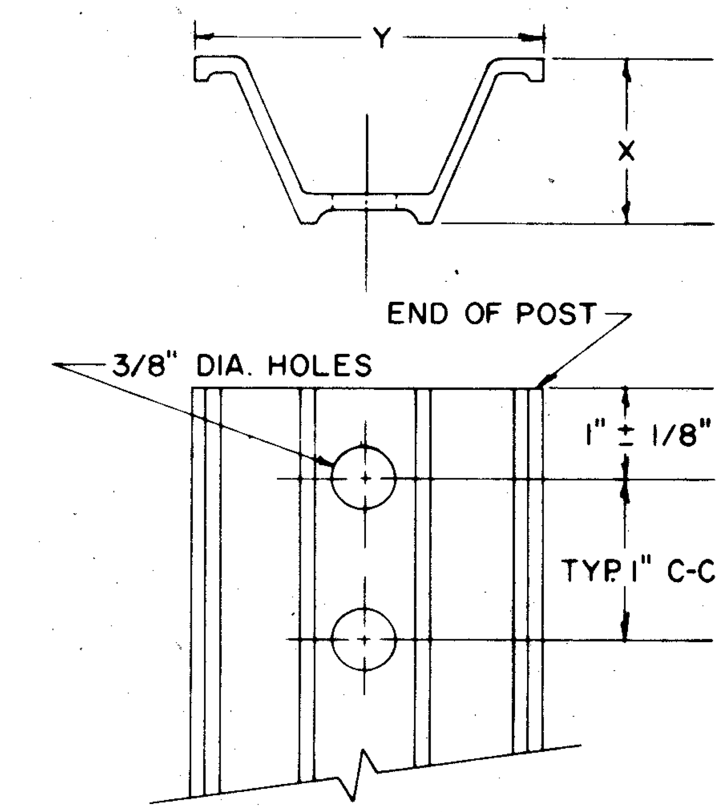
SECTION A-A



FABRICATOR NOTE: ALL FRICTION FUSE BOLTS SHALL BE TIGHTENED IN THE SHOP FOLLOWING A METHOD APPROVED BY THE ENGINEER. TIGHTENING SHALL BE TO SUCH A DEGREE AS TO OBTAIN MINIMUM RESIDUAL TENSION IN EACH BOLT OF 36,050 LBS.

NOTE: INSTALL FUSE PLATE WITH NOTCHES TOWARD BASE

DETAIL "B"



WEIGHT PER FOOT	X ± 3/32"	Y ± 1/8"
2.00 #	1 15/32"	3 1/16"
3.00 #	1 7/8"	3 1/2"
4.00 #	2"	3 5/8"

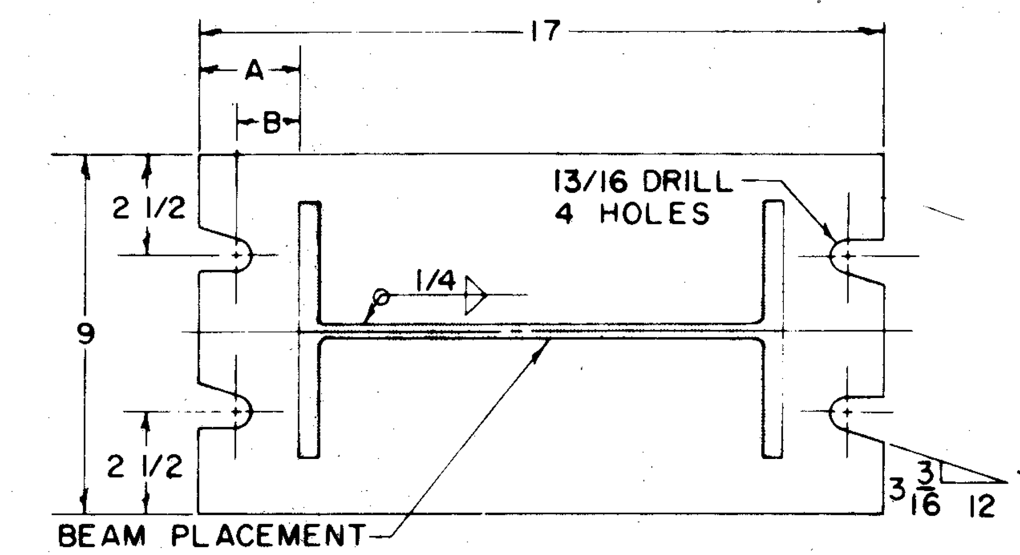
DRIVE POST DETAIL

SUPPLEMENTING THE DRIVE POST DETAILS SHOWN, ALTERNATE POST SECTIONS MAY BE FURNISHED. ANY ALTERNATE SECTION FURNISHED SHALL MEET ALL THE MATERIAL REQUIREMENTS OF 816, HAVE A SHAPE APPROXIMATELY AS DETAILED, AND HAVE A MOMENT OF INERTIA EQUAL TO OR GREATER THAN THE SECTION DETAILED. THE REQUIREMENTS OF 712.20 RELATIVE TO MAXIMUM WEIGHT TOLERANCE ARE HEREBY WAIVED. NO ALTERNATE SECTION FURNISHED SHALL EXCEED THE WEIGHT OF THE CORRESPONDING SECTION BY MORE THAN 10 PERCENT.

NOTES: ALL MATERIALS SHALL CONFORM TO THE STATE OF OHIO, CONSTRUCTION & MATERIALS SPECIFICATIONS OR AS OTHERWISE SPECIFIED

1.) 511 FOUNDATIONS
2.) 711.01 STRUCTURAL STEEL SHAPES & PLATES
3.) 711.09 H.S. STEEL BOLTS, NUTS & WASHERS

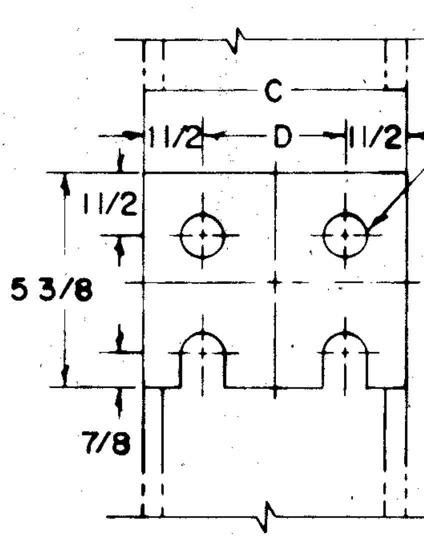
ALL DIMENSIONS IN INCHES UNLESS OTERWISE SHOWN



BEAM SIZE	A	B
W 8 X 17	4 1/2"	3 5/8"
W 10 X 21	3 1/2"	2 5/8"
W 12 X 31	2 1/2"	1 5/8"

BASE PLATE DETAIL

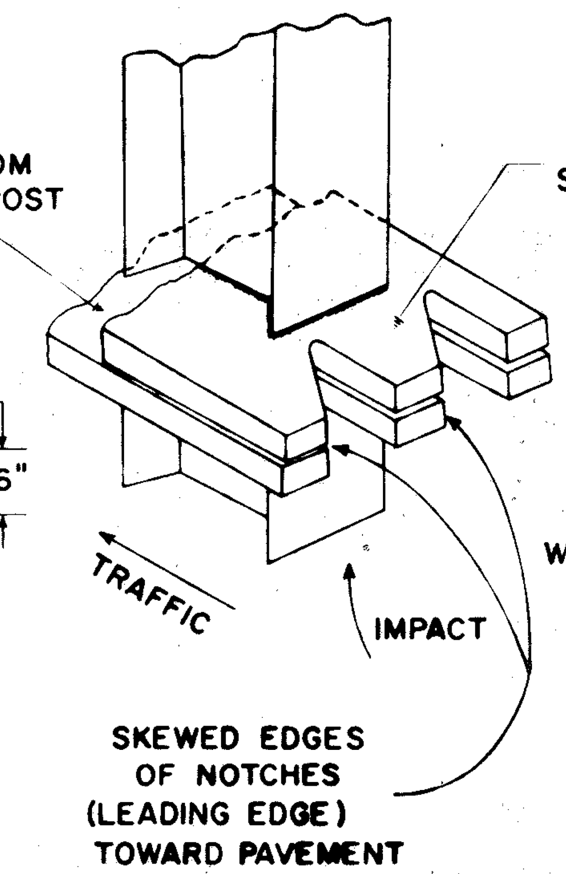
(TOP VIEW)

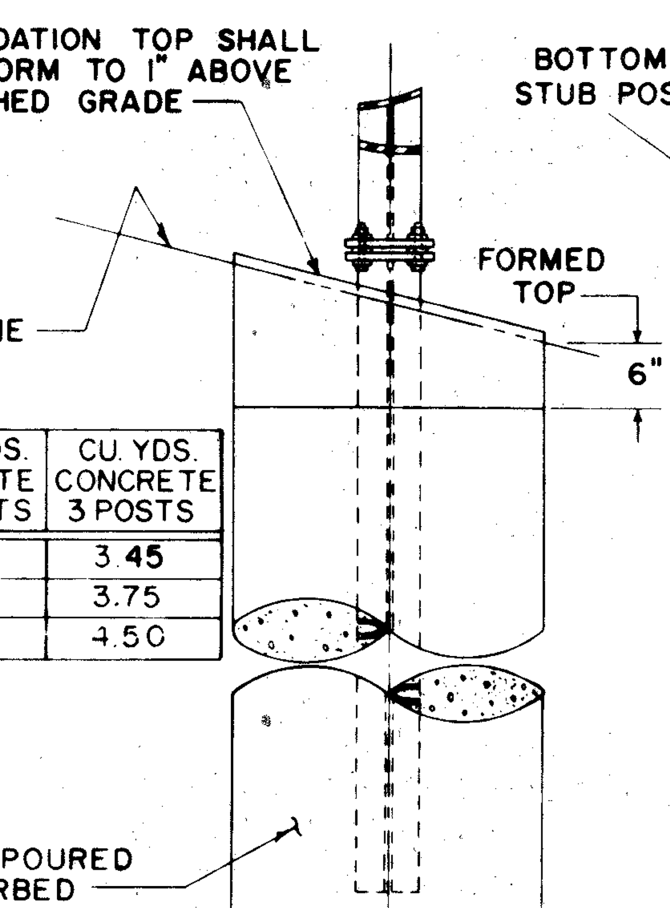


BEAM SIZE	C	D
W 8 X 17	5 1/4"	2 1/4"
W 10 X 21	5 3/4"	2 3/4"
W 12 X 31	6 1/2"	3 1/2"

FUSE PLATE DETAIL

BREAKAWAY SIGN SUPPORT BASE PLATE ORIENTATION

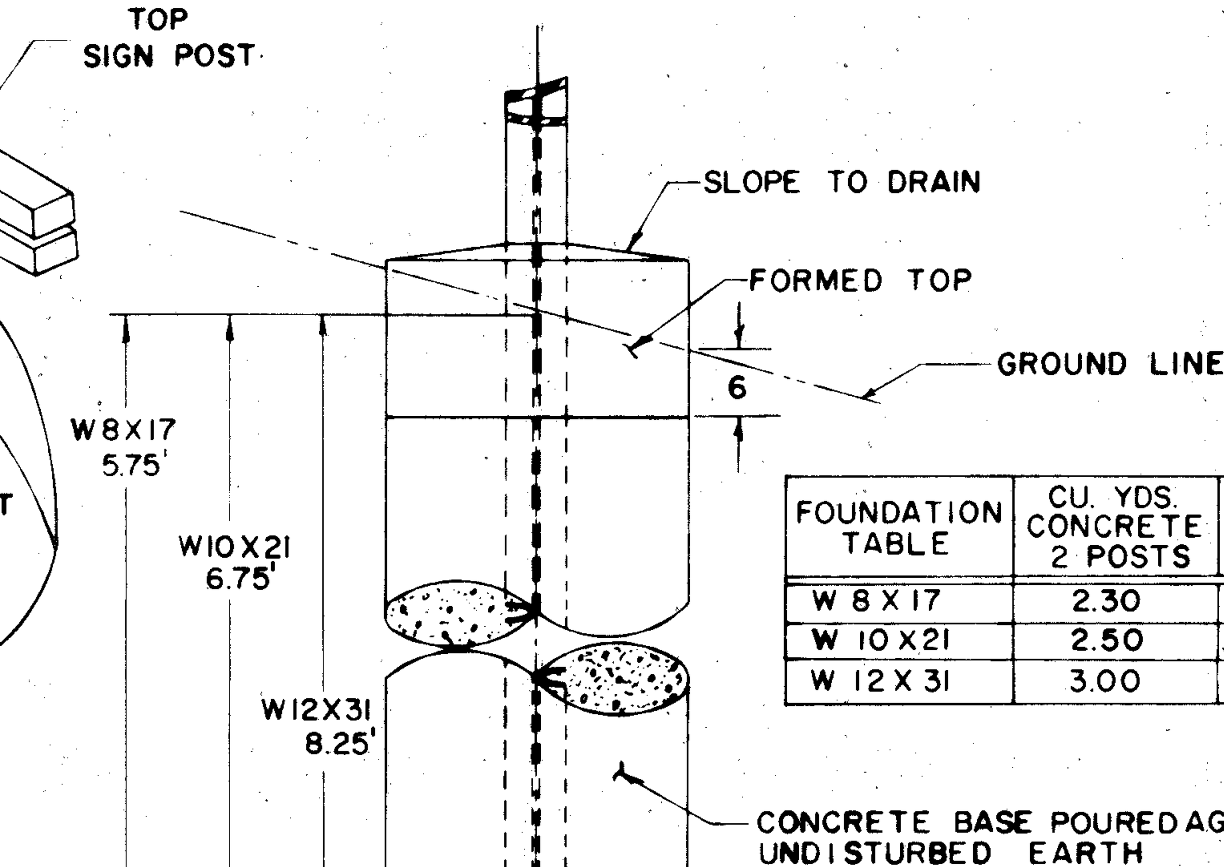




FOUNDATION TABLE	CU. YDS. CONCRETE 2 POSTS	CU. YDS. CONCRETE 3 POSTS
W 8 X 17	2.30	3.45
W 10 X 21	2.50	3.75
W 12 X 31	3.00	4.50

SIDE ELEVATION FRONT ELEVATION

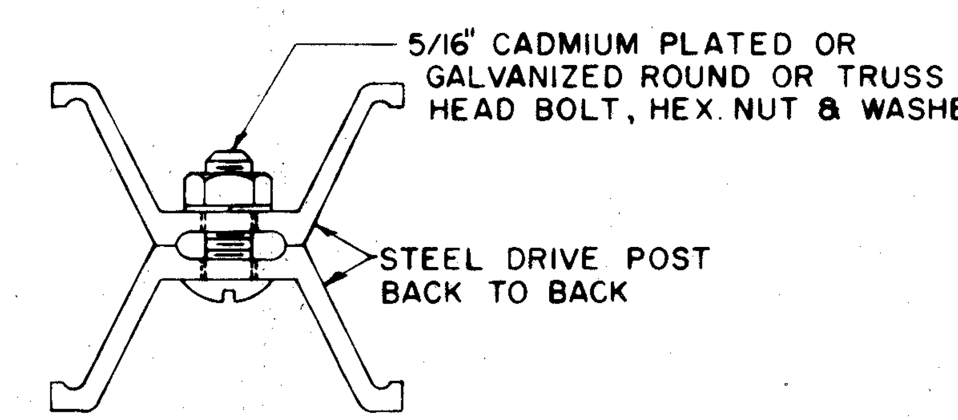
BREAK-AWAY SUPPORT

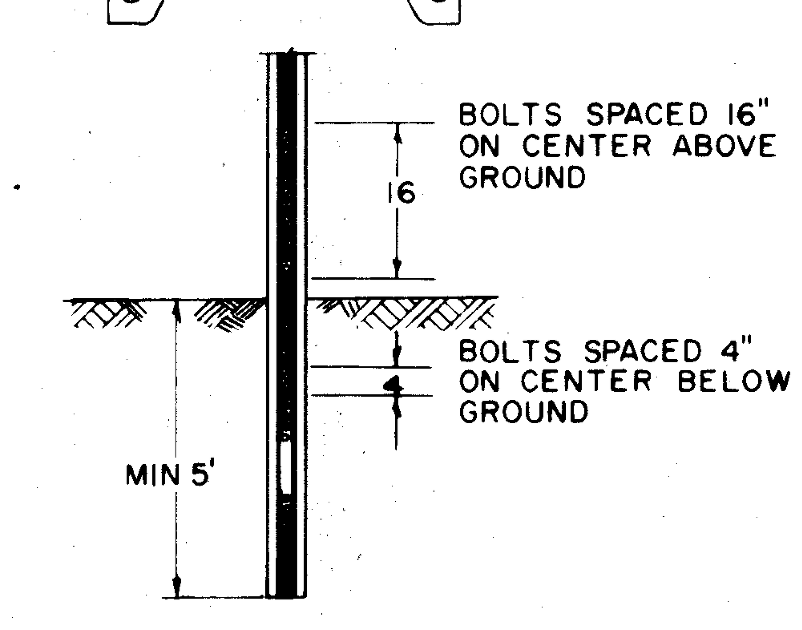


FOUNDATION TABLE	CU. YDS. CONCRETE 2 POSTS	CU. YDS. CONCRETE 3 POSTS
W 8 X 17	2.30	3.45
W 10 X 21	2.50	3.75
W 12 X 31	3.00	4.50

FRONT ELEVATION
STANDARD SUPPORT

STRUCTURAL SUPPORTS





6# BEAM DETAIL

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

GROUND MOUNTED SIGN SUPPORTS

GMSS

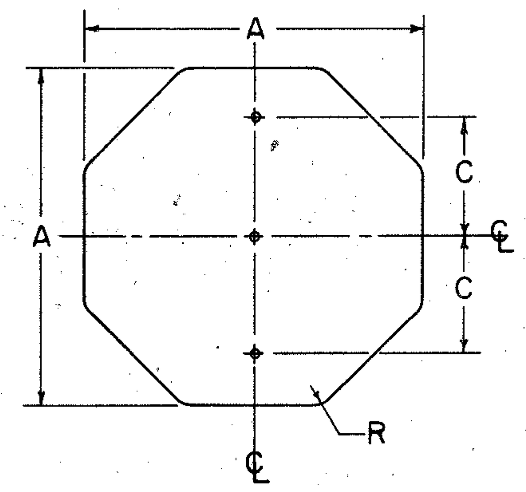
DATE
5-10-68
7-12-68
5-23-69
9-16-69
12-20-71

APPROVED ____________
ENGINEER OF TRAFFIC

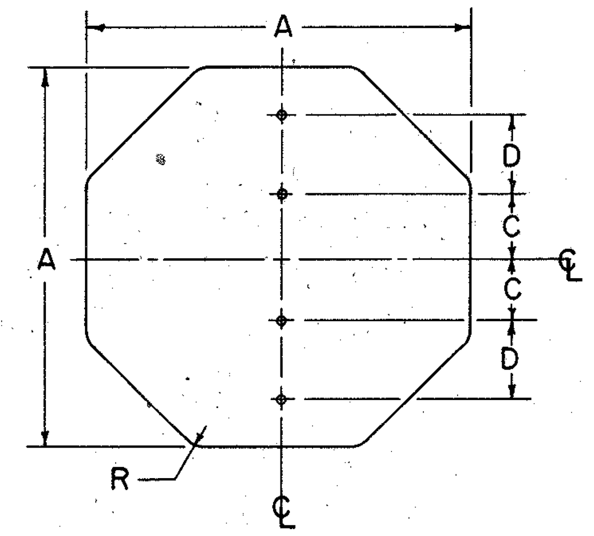
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

203/299

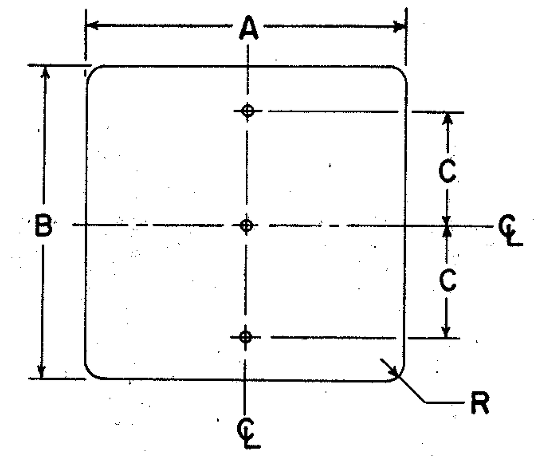
JEFFERSON COUNTY
JEF- 43 - 0.42



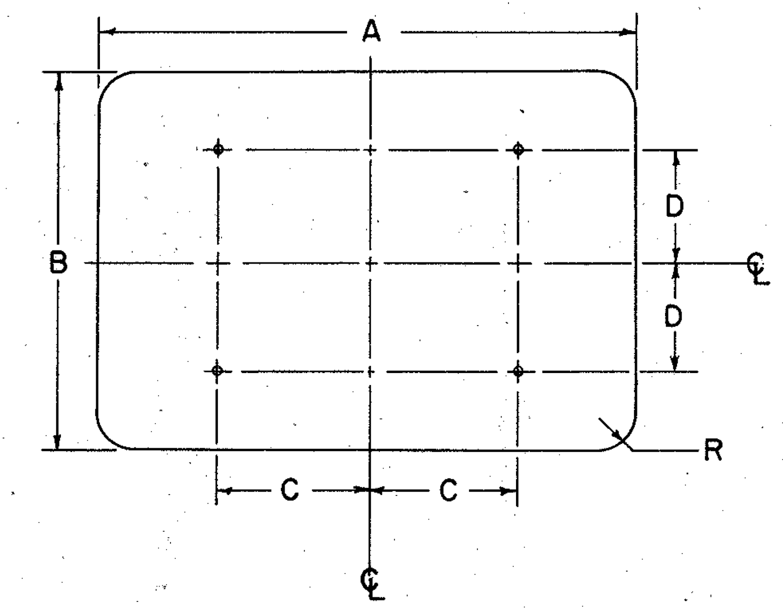
A	C	R	GAUGE
30	8	1 1/2	.080
36	8	1 1/2	.080



A	C	D	R	GAUGE
48	8	10	1 1/2	.100

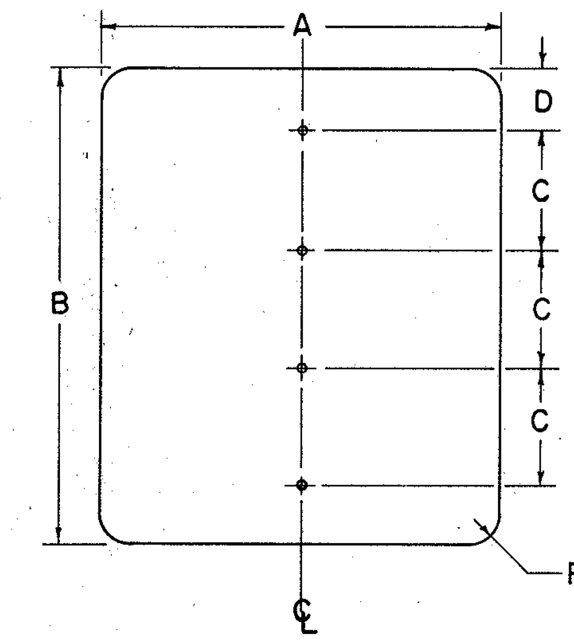


A	B	C	R	GAUGE
24	30	8	1 1/2	.063
24	48	15	1 1/2	.100
30	36	11	1 1/2	.080
30	42	12	1 1/2	.080
36	36	11	1 1/2	.080
36	42	15	1 1/2	.080
36	48	15	1 1/2	.080
48	24	10	3	.100
48	36	13	3	.100

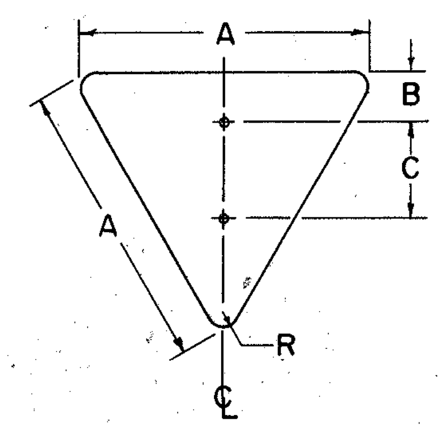


A	B	C	D	R	GAUGE
48	48	22	16	3	.100
48	60	22	22	3	.100

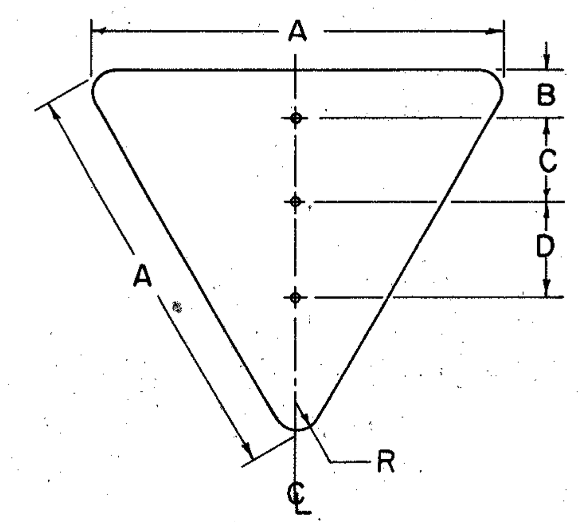
SPEED LIMIT SIGNS ON TWO SUPPORTS



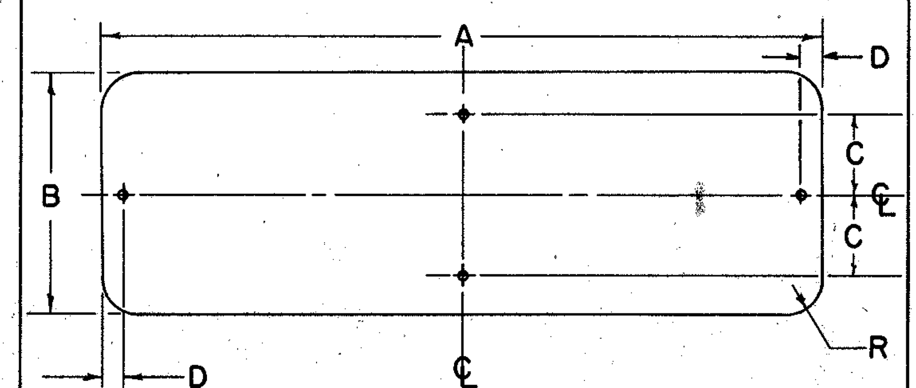
A	B	C	D	R	GAUGE
48	48	12	6	3	.100
48	60	15	7 1/2	3	.100



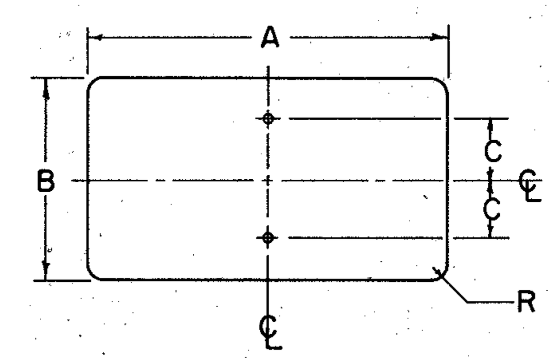
A	B	C	R	GAUGE
36	3	16	2 1/2	.080



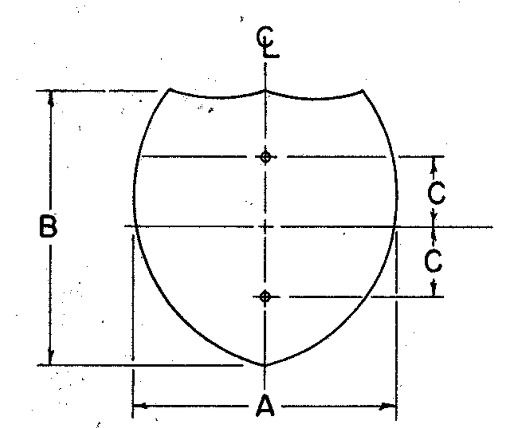
A	B	C	D	R	GAUGE
48	4	10	15	3	.100
60	5	10	15	4	.100



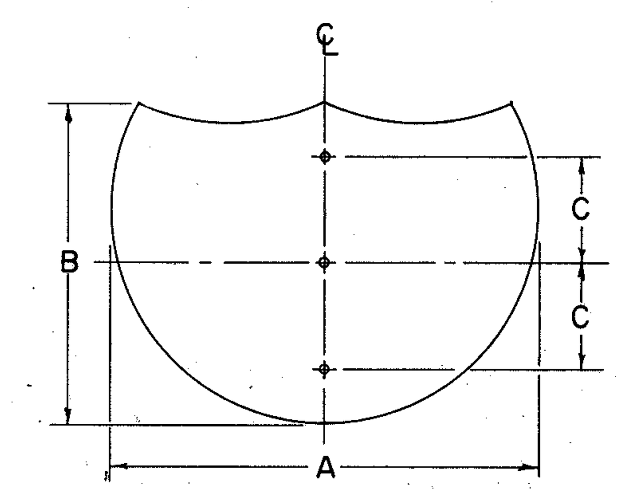
A	B	C	D	R	GAUGE
36	12	4	1	1 1/2	.080
72	12	—	16	1 1/2	.100
60	12	—	13	1 1/2	.100



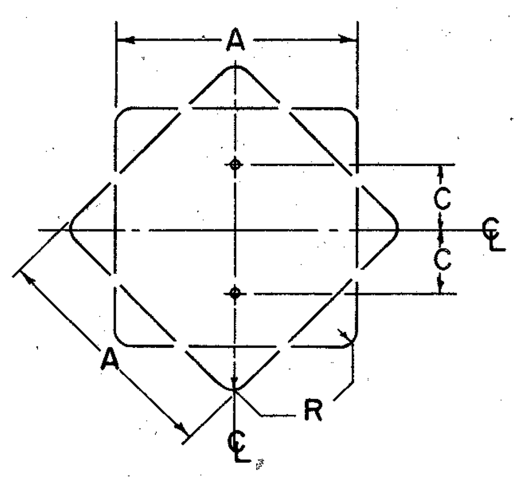
A	B	C	R	GAUGE
12	6	1 1/2	1 1/2	.063
20	15	6	1 1/2	.063
24	12	4 1/2	1 1/2	.063
24	18	7 1/2	1 1/2	.063
8	26	8	1	.063
36	18	7 1/2	1 1/2	.080



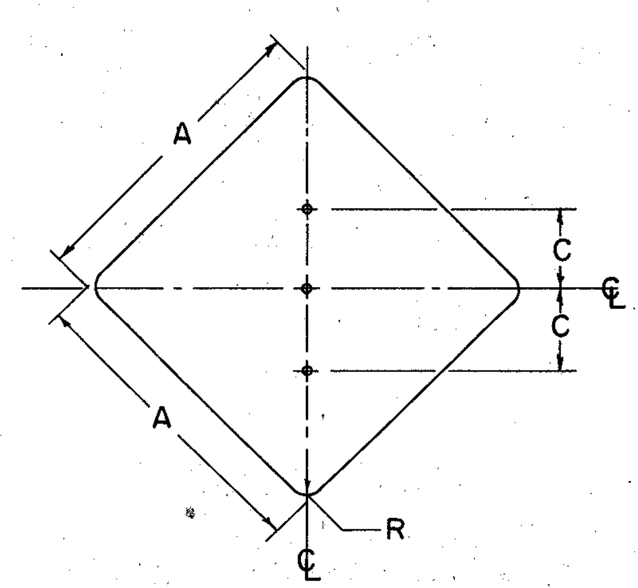
A	B	C	GAUGE
24	24	8	.063
30	24	8	.080



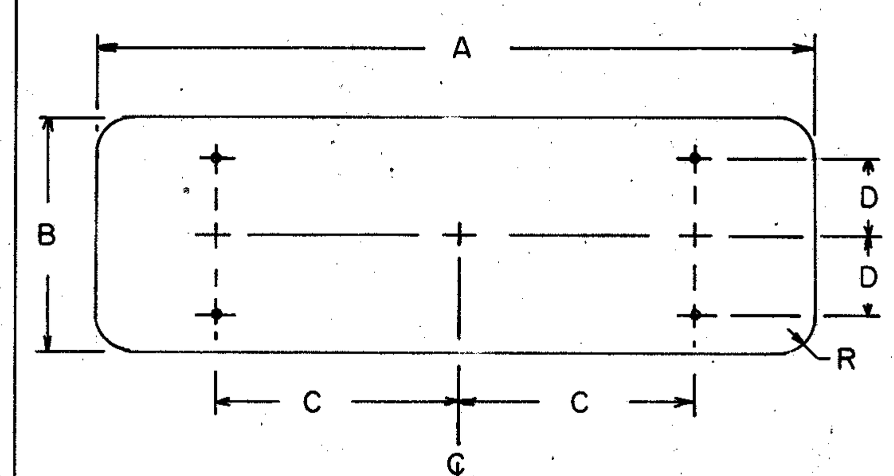
A	B	C	GAUGE
36	36	11	.080
48	36	11	.100



A	C	R	GAUGE
18	7 1/2	1 1/2	.063
24	8	1 1/2	.063
30	8	1 1/2	.080

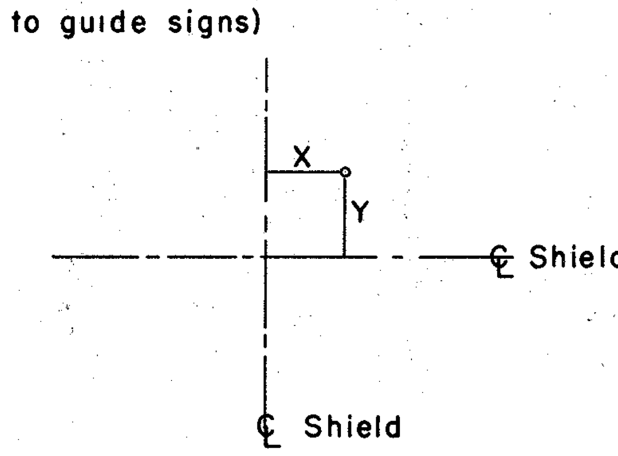


A	C	R	GAUGE
36	12	1 1/2	.080
48	14	3	.100



A	B	C	D	R	GAUGE
72	18	20	6	1 1/2	.100
72	24	20	8	1 1/2	.100
60	30	17	10	1 1/2	.100
96	18	27	6	1 1/2	.100

Location of holes on "Demountable Shields" (attached to guide signs)



SIZE	NO. HOLES	X	Y
(26) 24X24	4	7	7
30X24	4	8	8
(39) 36X36	4	10	10
		0	10
48X36	6	15	10

For notes on fastening see drawing for miscellaneous "Signing Items" sheet.

NOTES:

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

MATERIAL

FLAT SIGN BLANKS SHALL BE FURNISHED IN ALUMINUM ALLOY 6061-T6, (ASTM-B209, GS11A-T6) WITH MILL FINISH.

BOLT HOLES

THE BOLT HOLES SHALL BE 3/8" IN DIAMETER, AND MAY BE DRILLED, BLANKED OR PUNCHED TO FINISHED SIZE.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

SIGN BLANK DETAILS

SBD

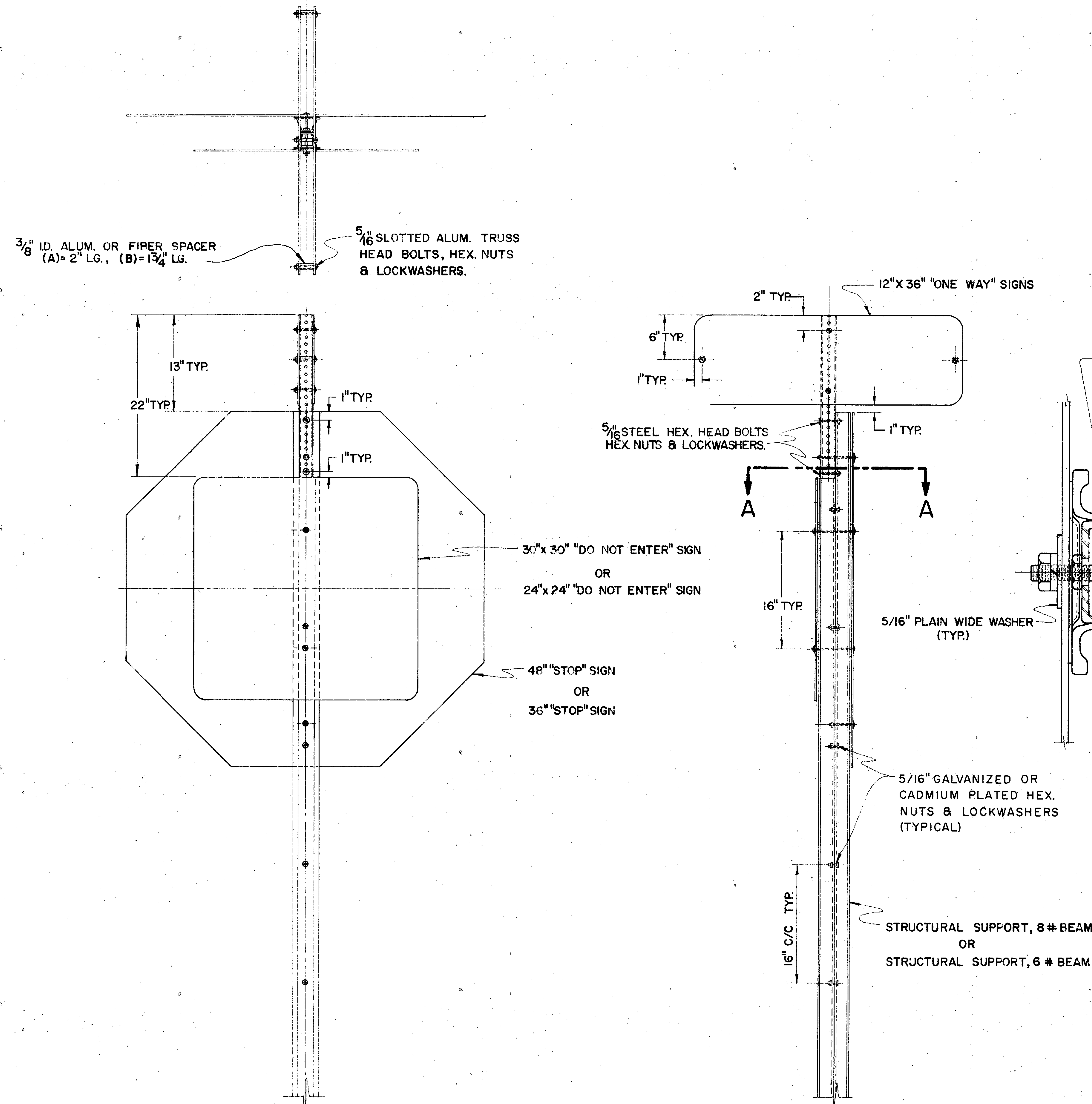
DATE
4-14-67
5-10-68
10-1-68
5-27-69
6-18-69

APPROVED__________
ENGINEER OF TRAFFIC

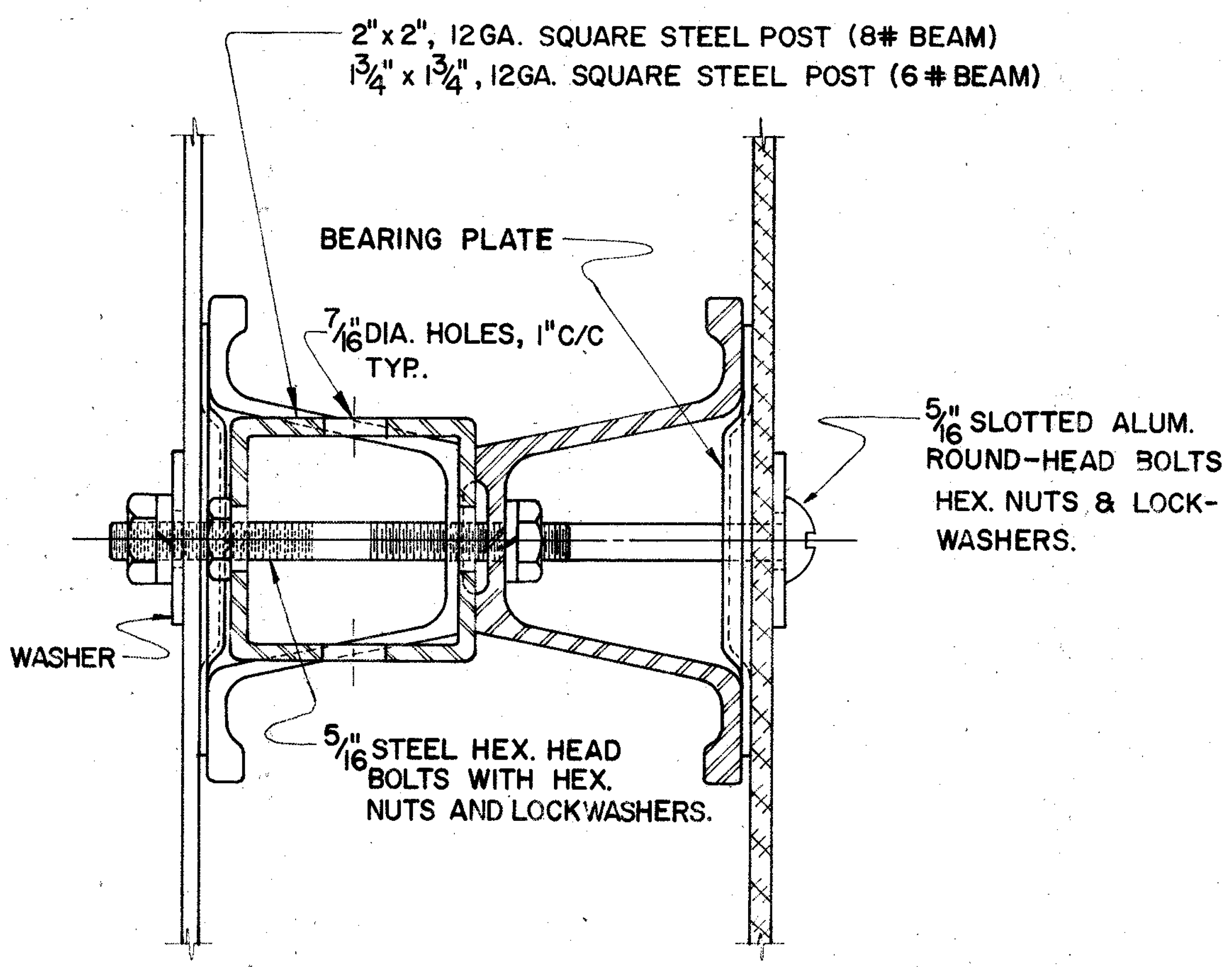
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

204
299

JEFFERSON COUNTY
JEF ~ 43 ~ 0.42



"ONE WAY", "STOP", "DO NOT ENTER", SIGN INSTALLATION.



SECTION A-A

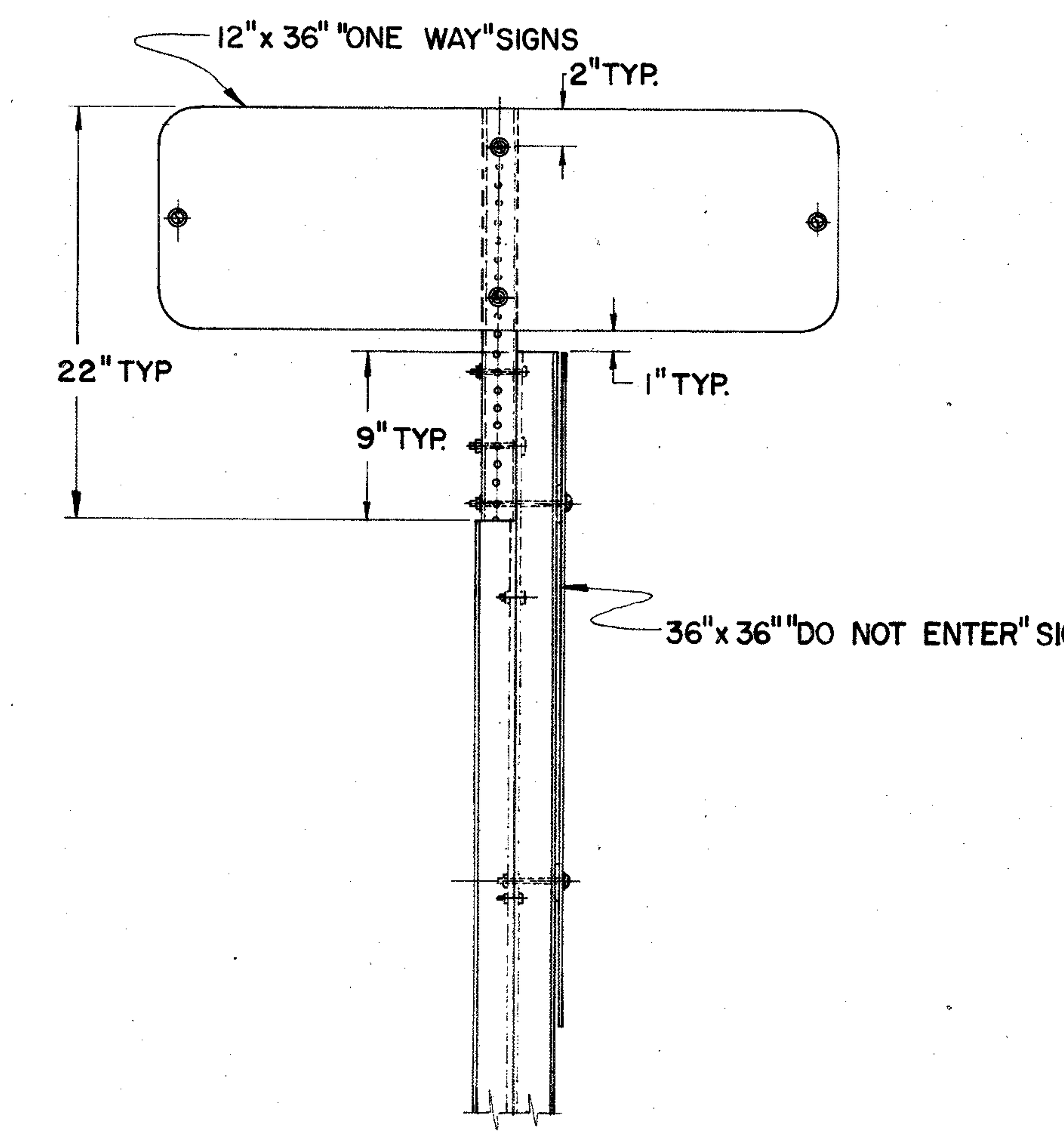
NOTES

MATERIALS

ALL SIGN MATERIALS SHALL BE IN ACCORDANCE WITH SUPPLEMENT SPECIFICATION 815.

ALL STRUCTURAL MATERIALS SHALL BE IN ACCORDANCE WITH SUPPLEMENT SPECIFICATION 816.

FOR SPECIFICATIONS FOR THE 2" & 1 3/4" SQUARE STEEL POST SEE GENERAL NOTES, SHEET NO.____.



"ONE WAY", "DO NOT ENTER" SIGN INSTALLATION

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

SPECIAL "ONE WAY" SIGN SUPPORT DETAILS	SOW	DATE 2-7-66 4-18-67

APPROVED ____________
ENGINEER OF TRAFFIC

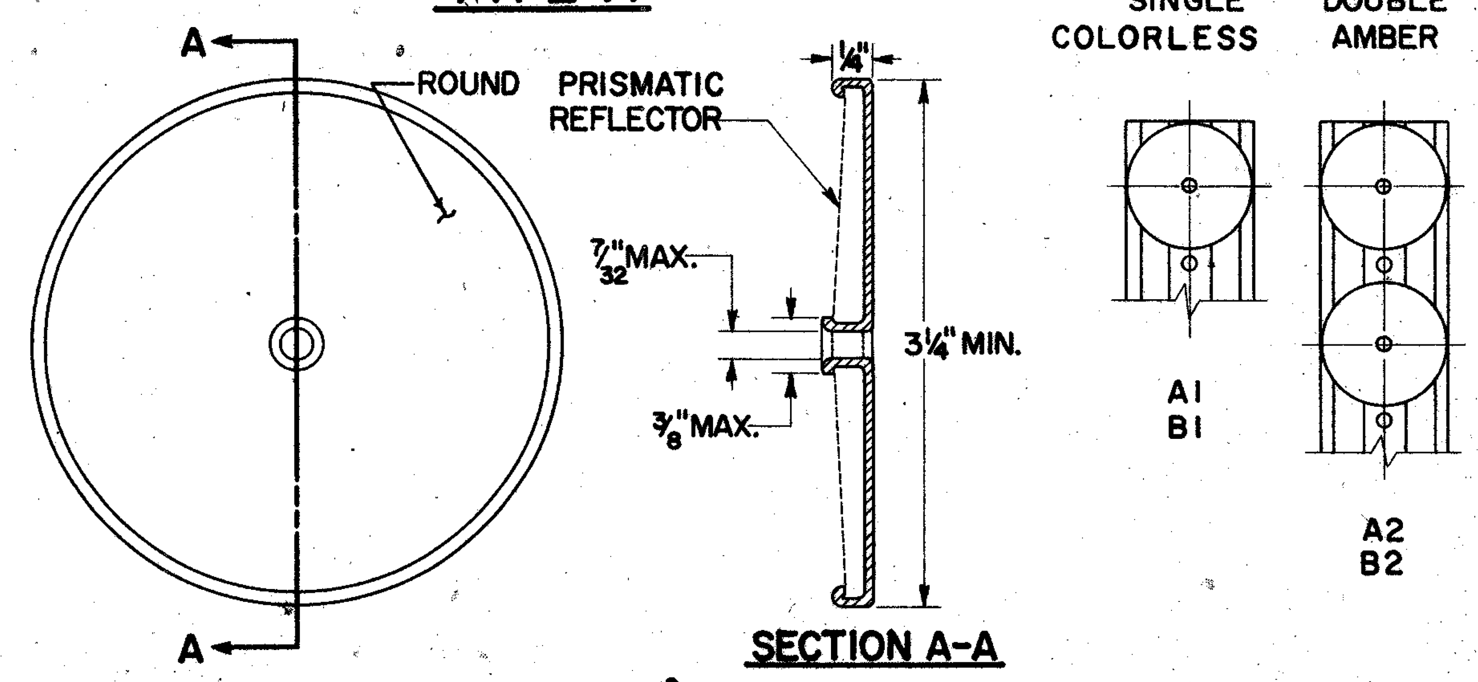
SPECIAL "ONE WAY" SIGN SUPPORT DETAILS

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

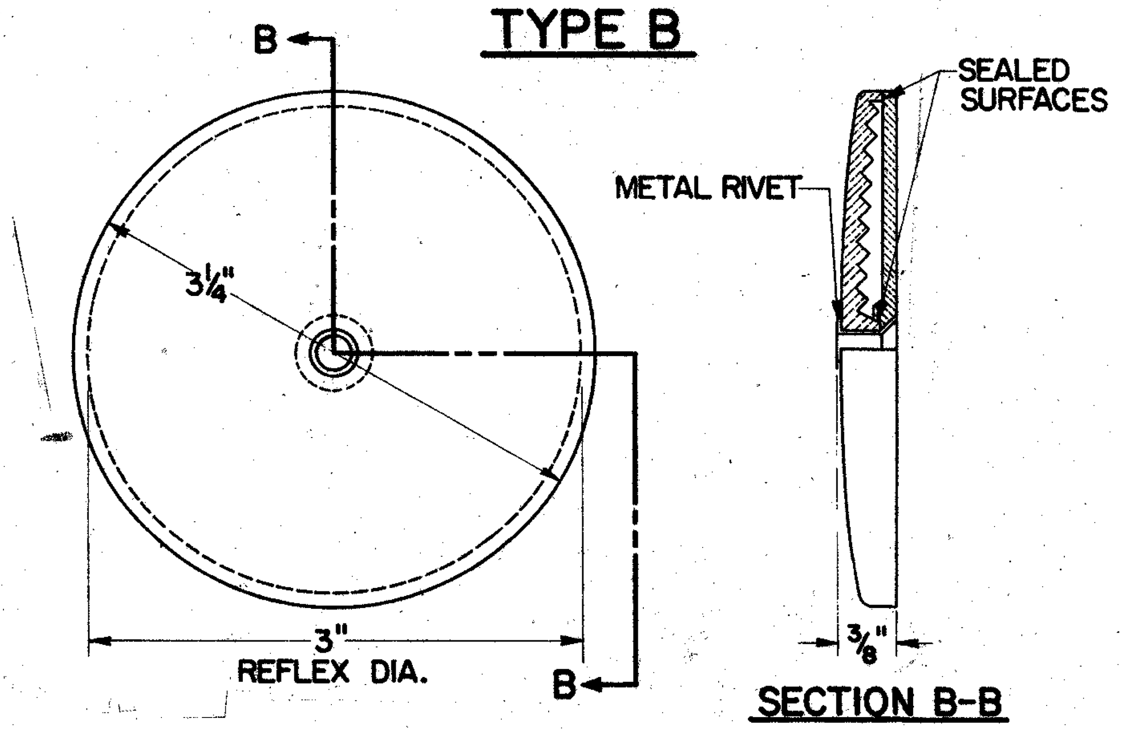
205/299

JEFFERSON COUNTY
JEF ~ 43 ~ 0.42

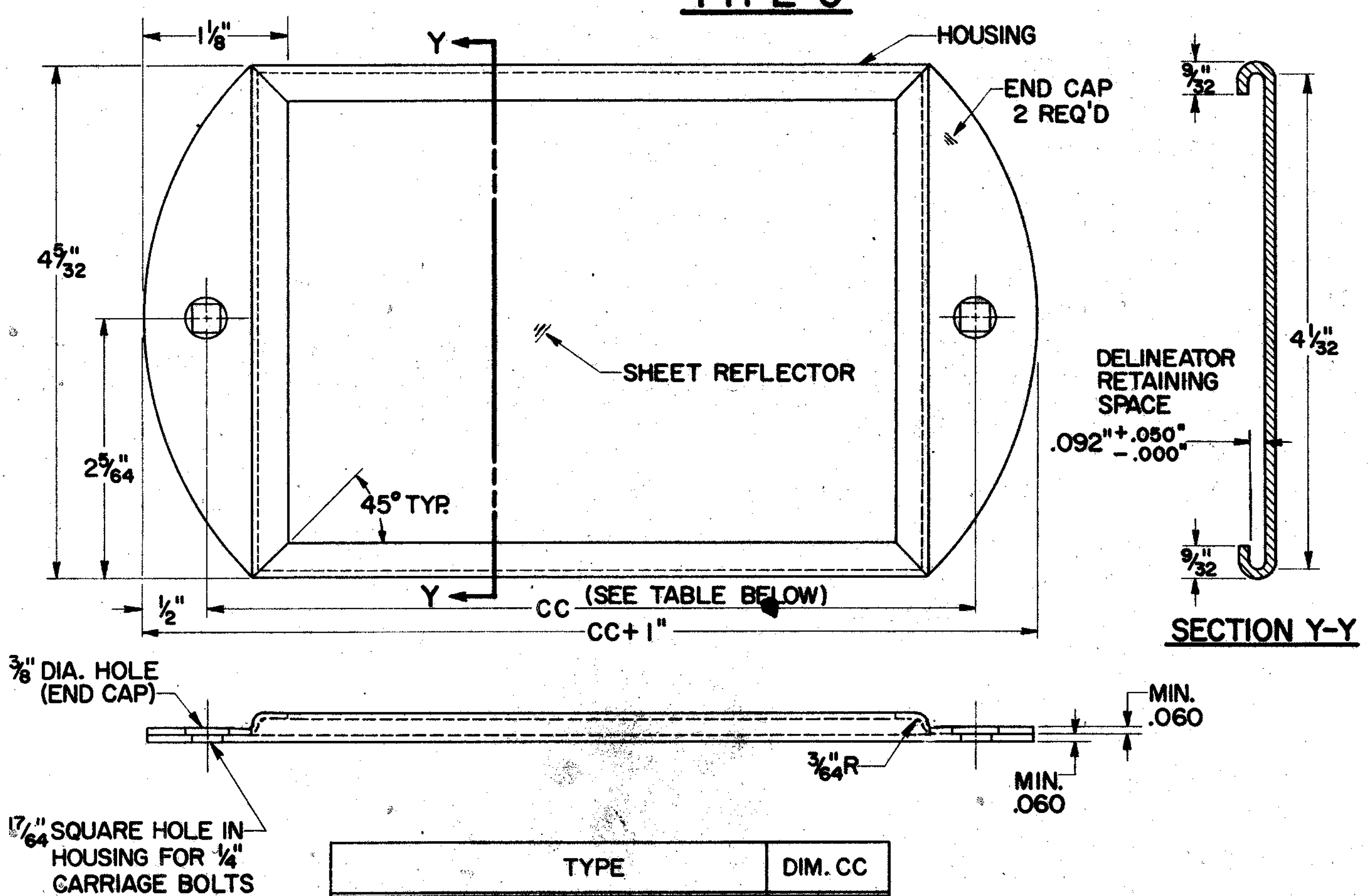
TYPE A



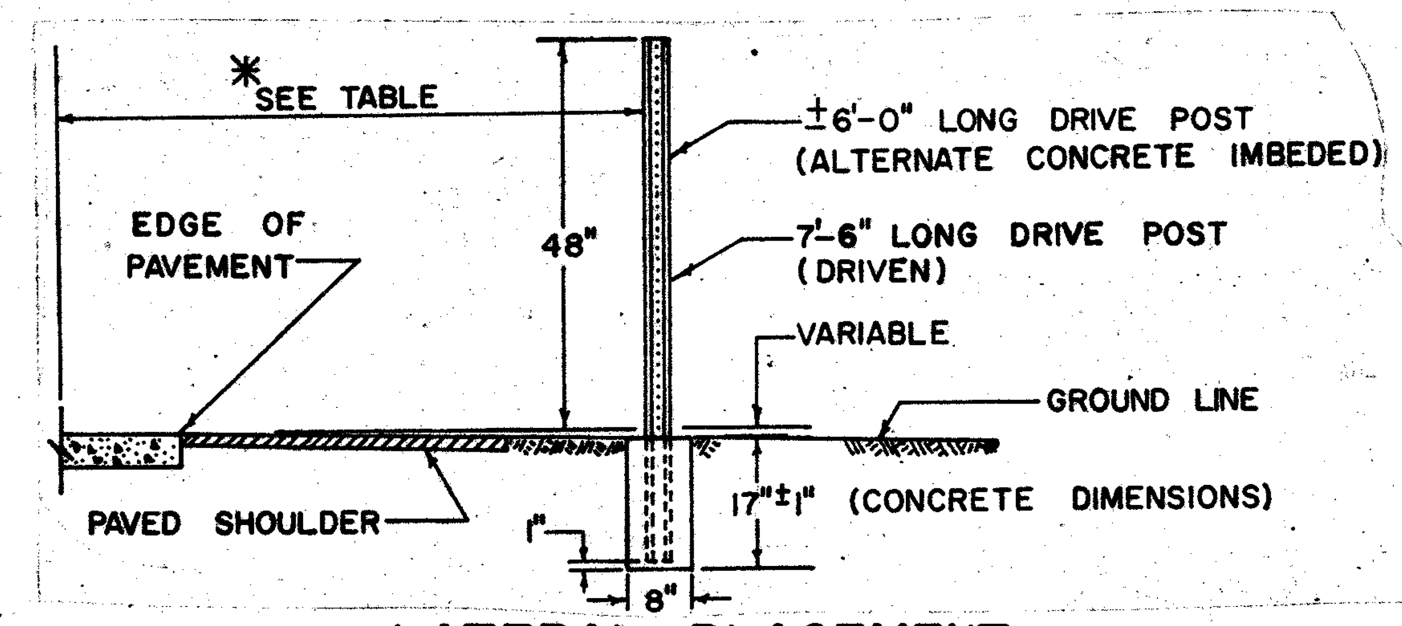
TYPE B



TYPE C



TYPE	DIM. CC
C1 – SINGLE COLORLESS	6"
C2 – DOUBLE AMBER	11"



LATERAL PLACEMENT OF DELINEATORS

* TABLE

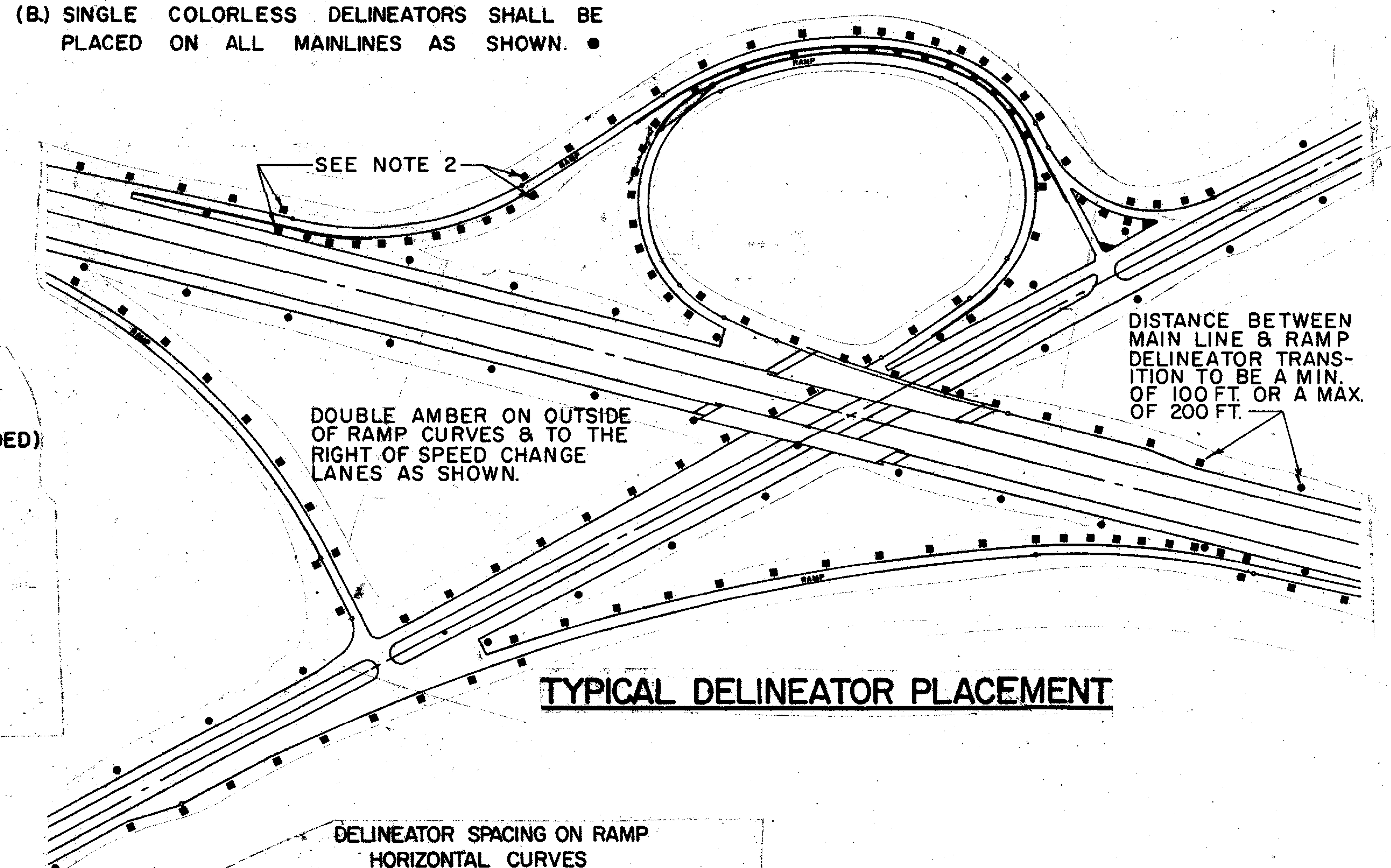
TYPE DELINEATOR	NO GUARDRAIL	GUARDRAIL
SINGLE COLORLESS	12'-6"	6" OUTSIDE
DOUBLE AMBER RIGHT SIDE	** 8'-6"	6" OUTSIDE
DOUBLE AMBER LEFT SIDE	4'-6"	6" OUTSIDE

** THIS DIMENSION SHALL VARY ON SPEED CHANGE LANES TO MAINTAIN MINIMUM DISTANCE OF 2'-6" FROM EDGE OF PAVED SHOULDER.

NOTE:

(A) DOUBLE AMBER DELINEATORS SHALL BE PLACED ON ALL RAMPS AS SHOWN. ■

(B.) SINGLE COLORLESS DELINEATORS SHALL BE PLACED ON ALL MAINLINES AS SHOWN. ●



TYPICAL DELINEATOR PLACEMENT

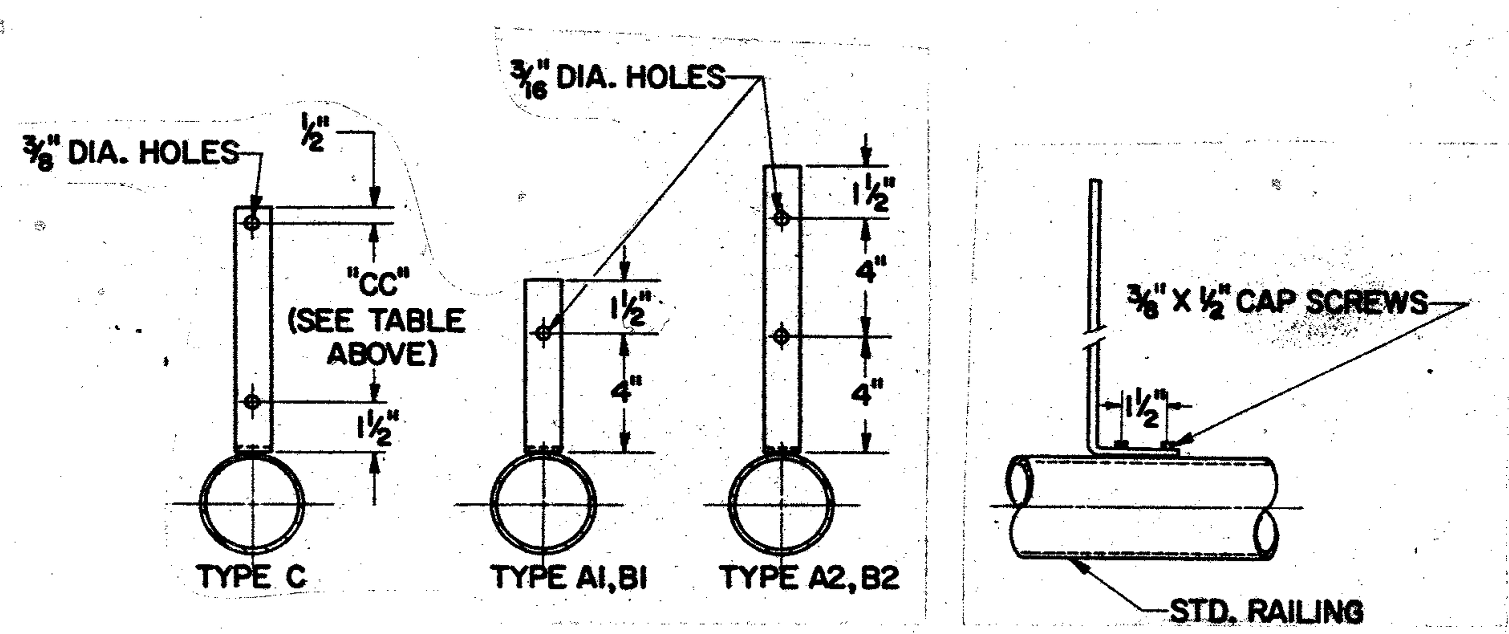
DELINEATOR SPACING ON RAMP HORIZONTAL CURVES

RADII, FT. FROM	RADII, FT. TO	SPACING ON CURVE	* TRANSITION SPACING	
TANGENT	1,801	100'	100'	100'
1,800	1,401	80'	100'	100'
1,400	1,001	70'	100'	100'
1,000	751	60'	100'	100'
750	551	50'	80'	100'
550	326	40'	70'	100'
325	——	30'	60'	100'

* SUCH AS 40' TO 70' TO 100' OR 100' TO 80' TO 50' OR ANY OTHER COMBINATION SHOWN ABOVE.

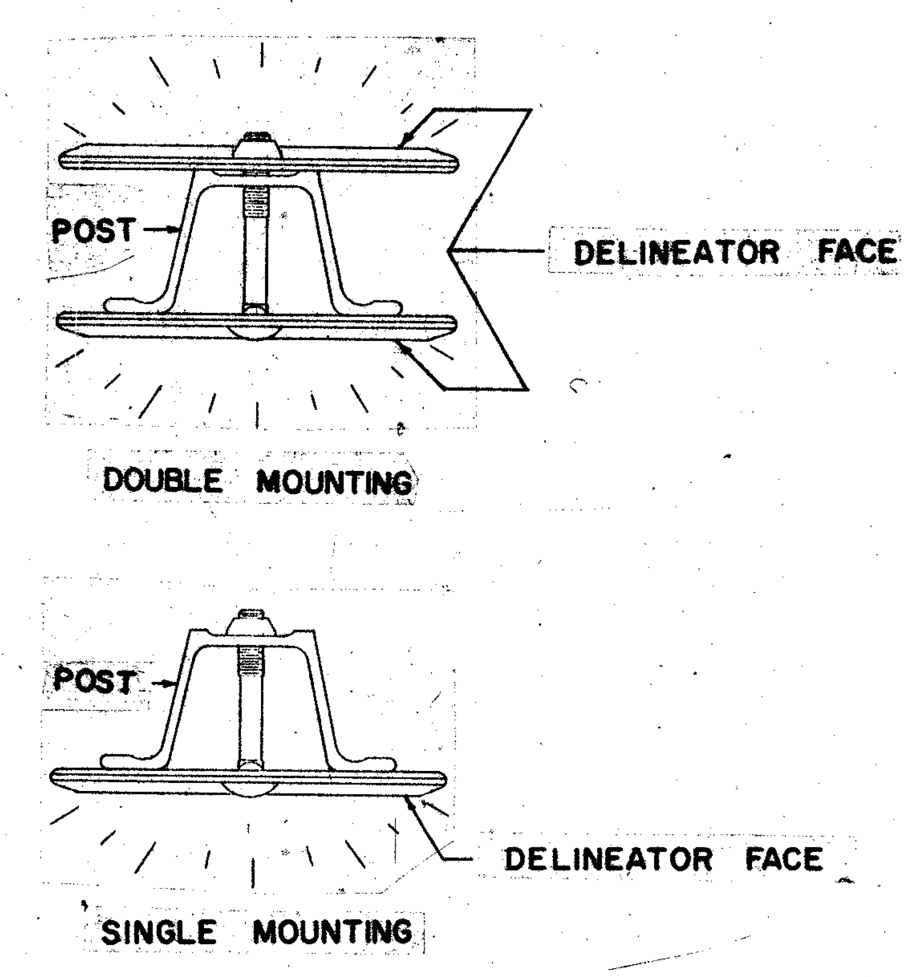
NOTES

1. TYPE A1 OR B1 DELINEATORS ON THE RIGHT OF THE THROUGH ROADWAY ARE TO BE SPACED AT 200 FT. INTERVALS THROUGHOUT, REGARDLESS OF CURVES.
2. WHEN CROSSING FROM LEFT TO RIGHT OR FROM RIGHT TO LEFT ON THE RAMPS, THE DELINEATORS AT THE POINT OF CROSSOVER ARE TO BE AT THE SAME STATION ON EACH SIDE.
3. NO DELINEATORS ARE TO BE PLACED IN PAVED BERM
4. WHEN RADII OF CURVE ON RAMPS REQUIRE 100' SPACING THE DELINEATORS SHALL BE PLACED ON THE RIGHT IN RELATION TO THE FLOW OF TRAFFIC.

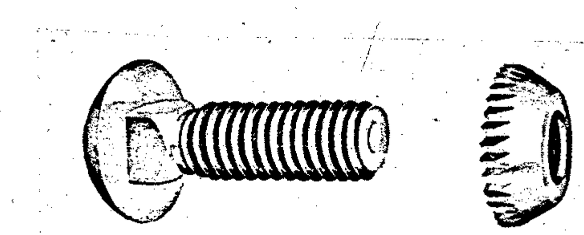


ALL BRACKETS 1/4" x 1 1/4" STAINLESS STEEL

BRIDGE RAIL BRACKET

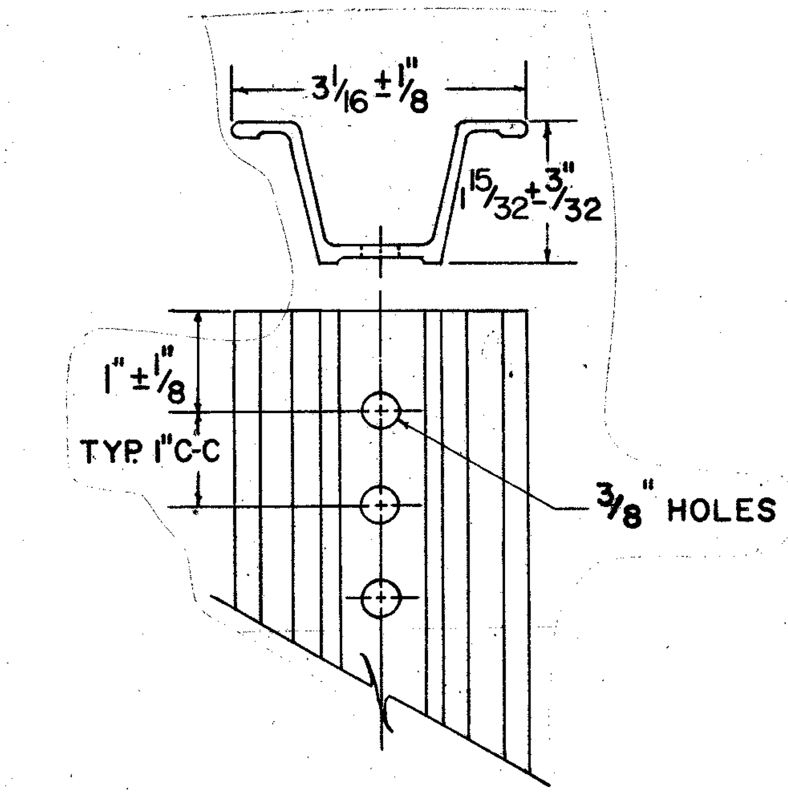


DELINEATOR MOUNTING



TAMPER RESISTANT FASTENERS SHALL BE USED TO FASTEN DELINEATORS TO POST AS/OR SIMILAR TO ONE SHOWN ABOVE.

TAMPER RESISTANT FASTENERS



2 LB./FT. DELINEATOR DRIVE POST

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

DELINEATOR DETAILS	620	DATE 9-25-62 5-24-65 9-12-67

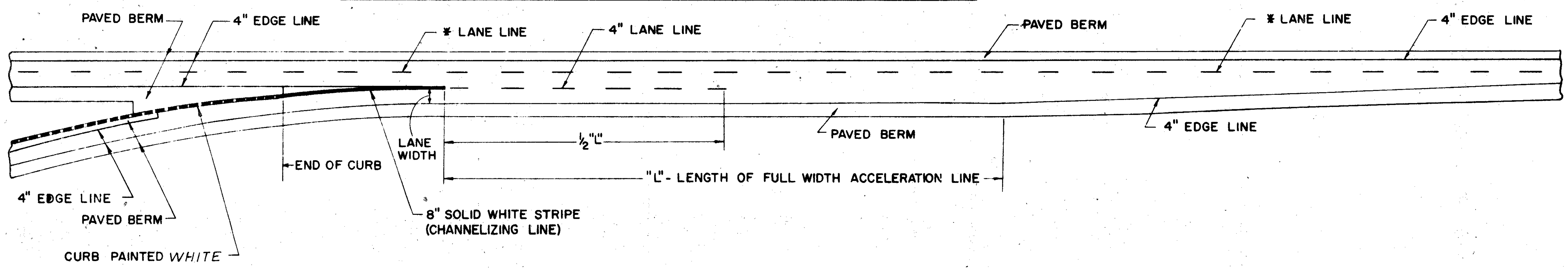
APPROVED Robert E. Conner
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

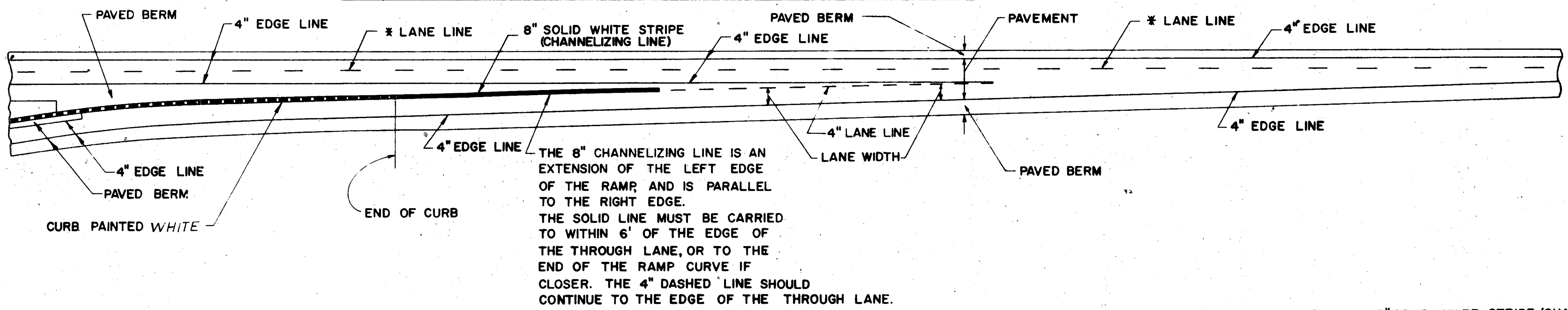
JEFFERSON COUNTY
JEF-43-0.42

206
299

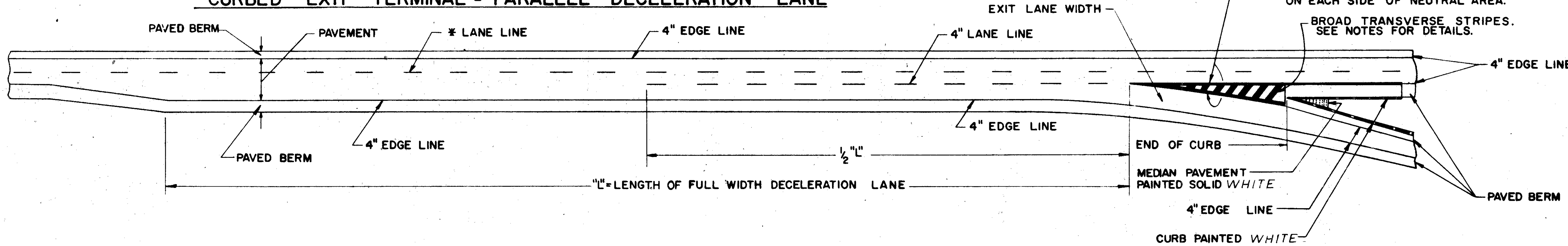
ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE



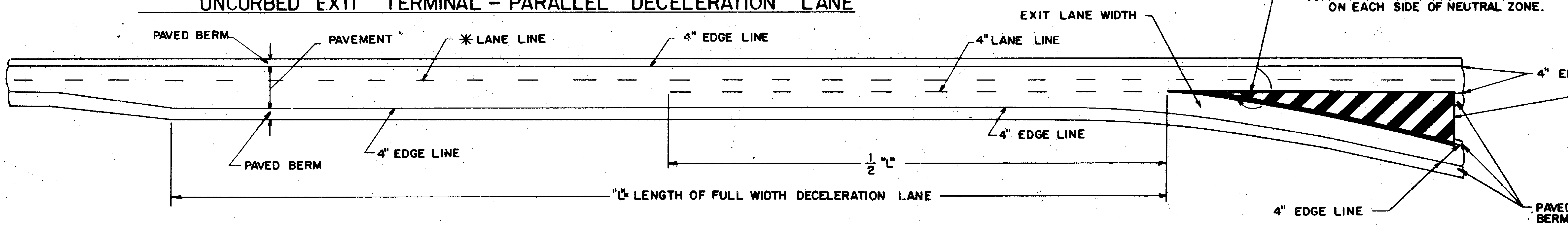
ENTRANCE TERMINAL - TAPERED ACCELERATION LANE



CURBED EXIT TERMINAL - PARALLEL DECELERATION LANE



UNCURBED EXIT TERMINAL - PARALLEL DECELERATION LANE



NOTES

DIAGONAL STRIPES AT EXIT RAMPS SHALL BE 24" BROAD TRANSVERSE STRIPES, 621.11, WITH A 6' SPACE BETWEEN STRIPES.

* 6" LANE LINE ON INTERSTATE HIGHWAYS ONLY.
4" LANE LINE ON ALL OTHER HIGHWAYS.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT MARKING | **621**

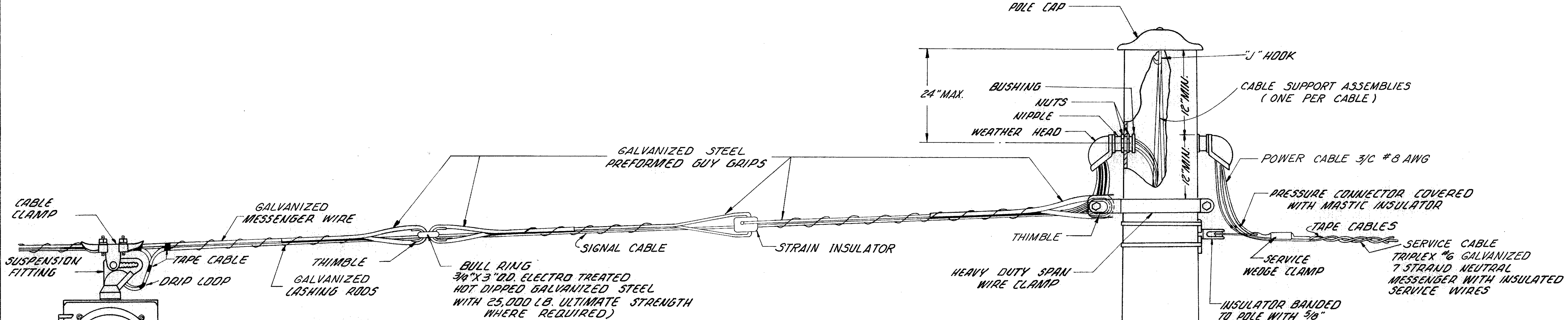
DATE
7-17-61
4-6-62
5-24-65
9-2?-67
4-17-68
1-11-72

APPROVED Robert E. Lower
ENGINEER OF TRAFFIC

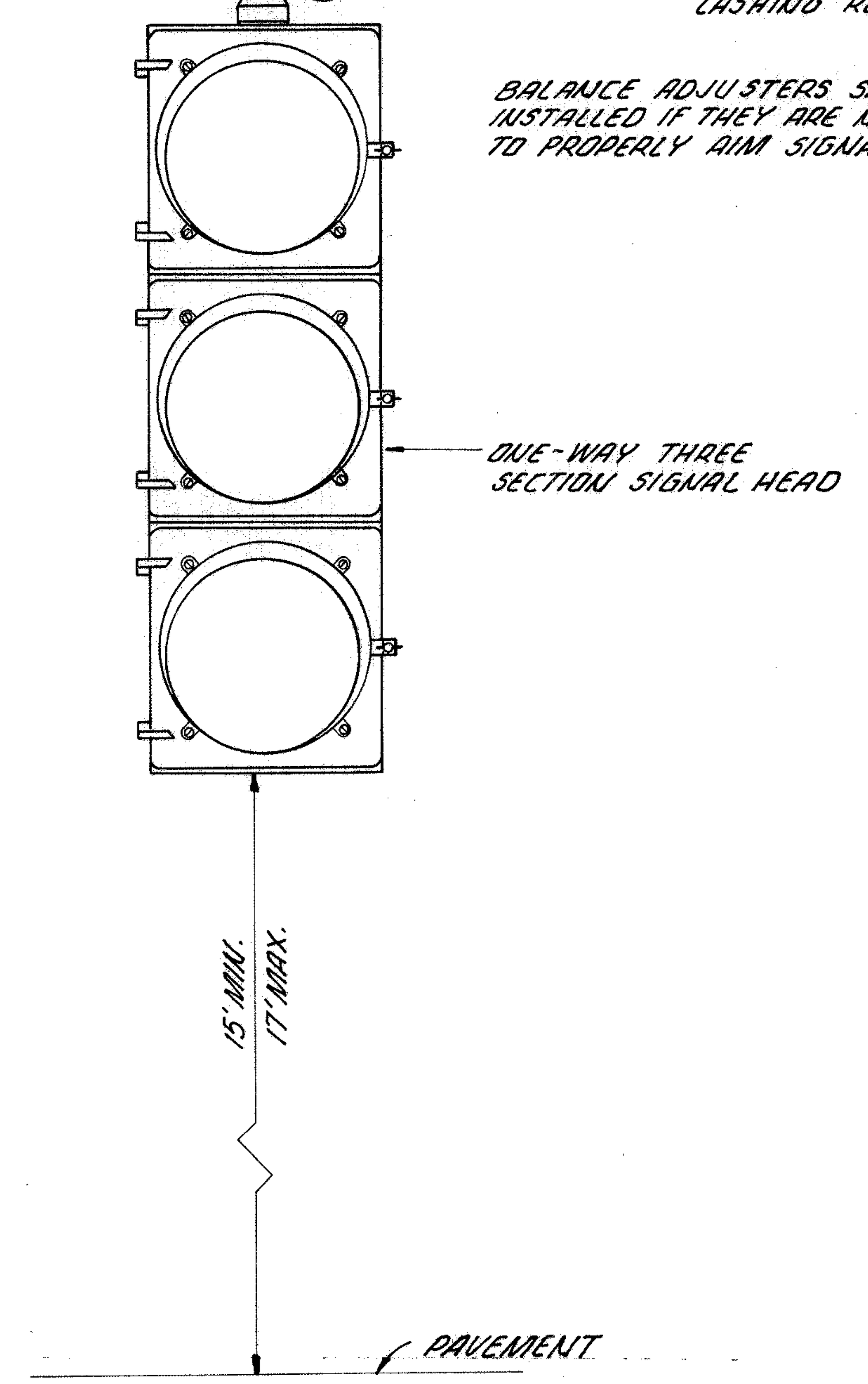
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

207
299

JEFFERSON COUNTY
JEF - 43 - 0.42

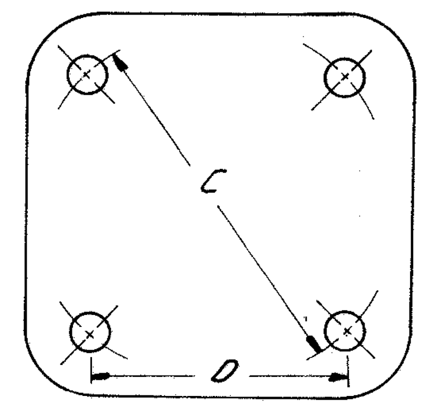


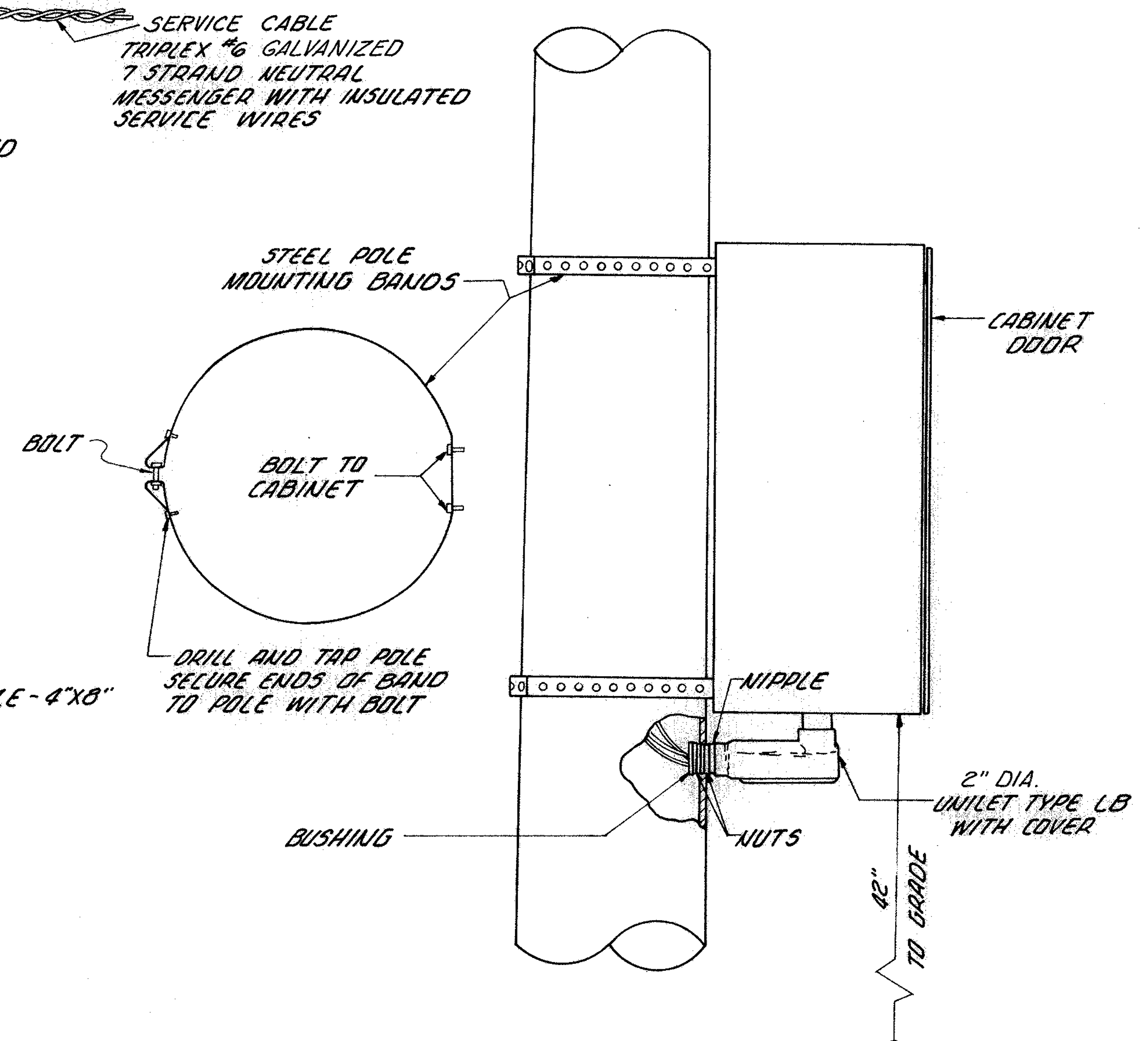
SPAN WIRE DETAIL



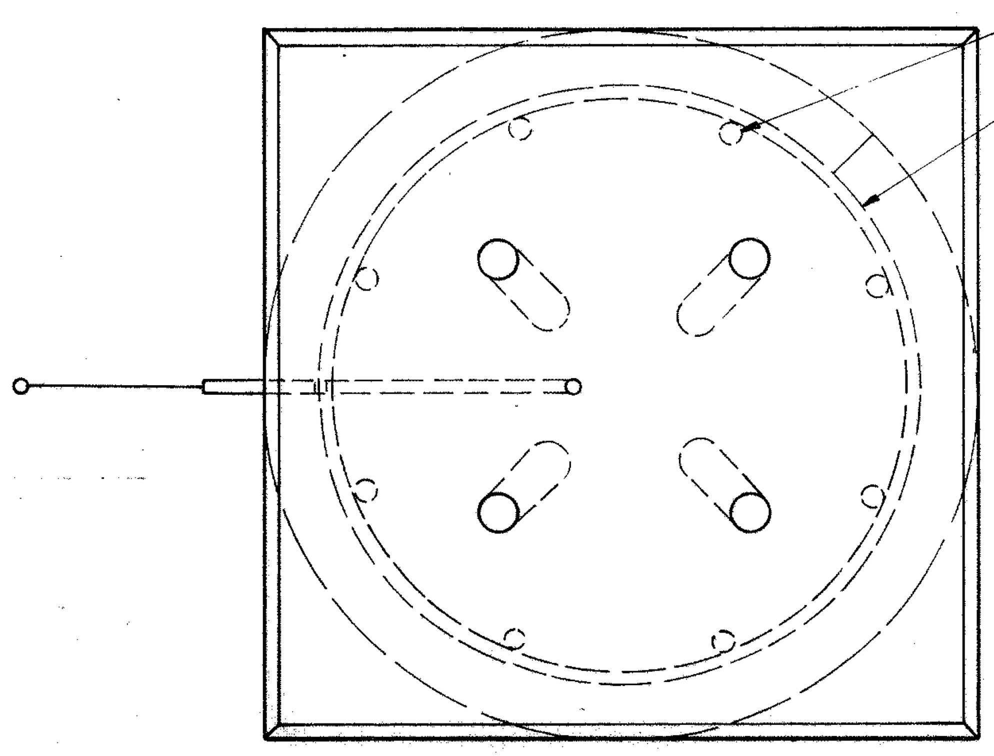
SIGNAL STRAIN POLE BASE PLATE DIMENSIONS

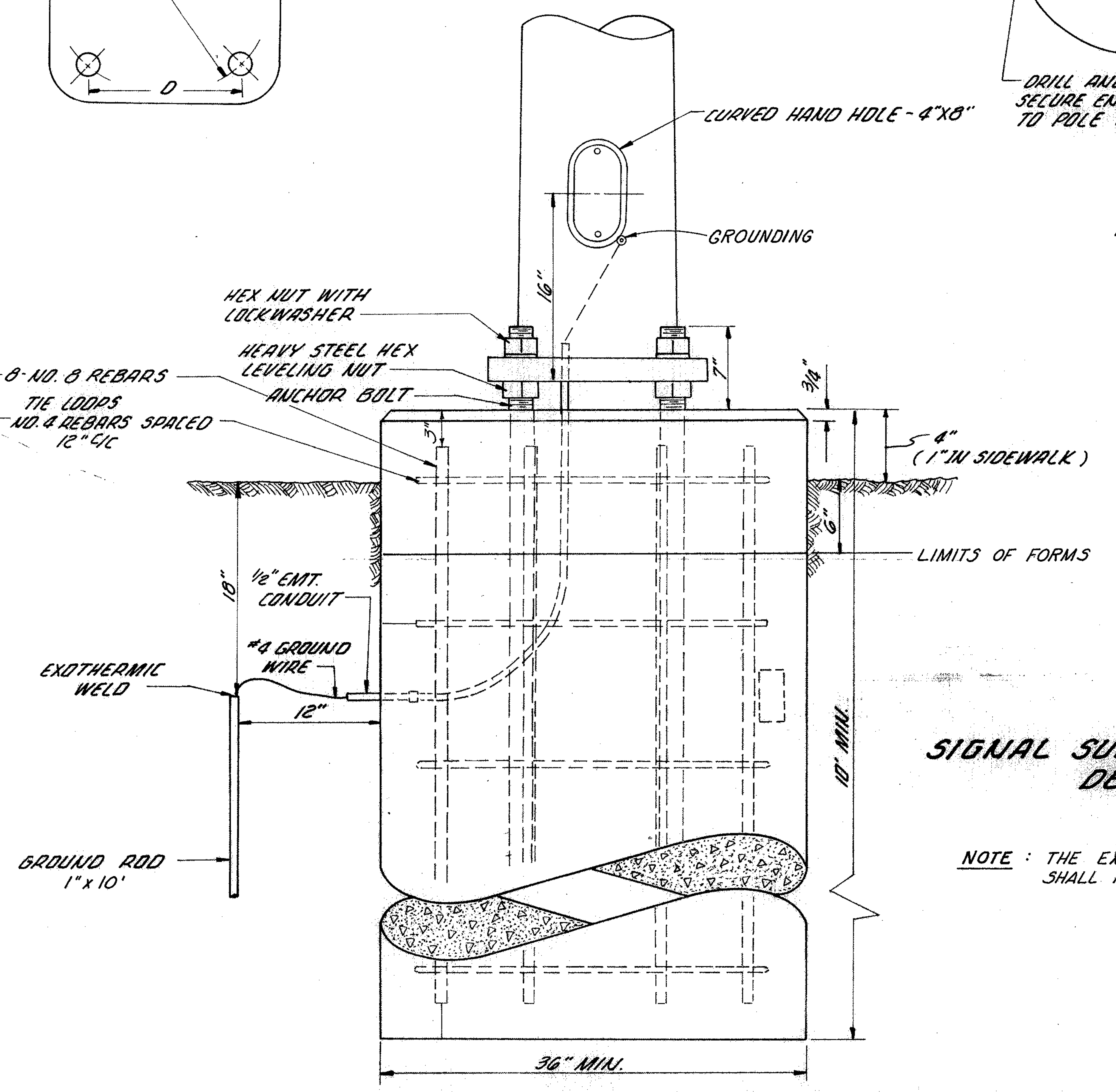
POLE SIZE	C	D	ANCHOR BOLT
11'-3 OR 0 GAUGE	15"	10 5/8"	1 3/4" X 90"
12'-3 OR 0 GAUGE	16"	11 5/16"	1 3/4" X 90"
13'-3 GAUGE	18"	12 3/4"	1 3/4" X 90"
13'-0 GAUGE	18"	12 3/4"	2" X 96"





CONTROLLER CABINET MOUNTING DETAIL





SIGNAL SUPPORT FOUNDATION DETAIL

NOTE : THE EXPOSED SURFACE OF THE SUPPORT FOUNDATION SHALL HAVE A RUBBED FINISH.

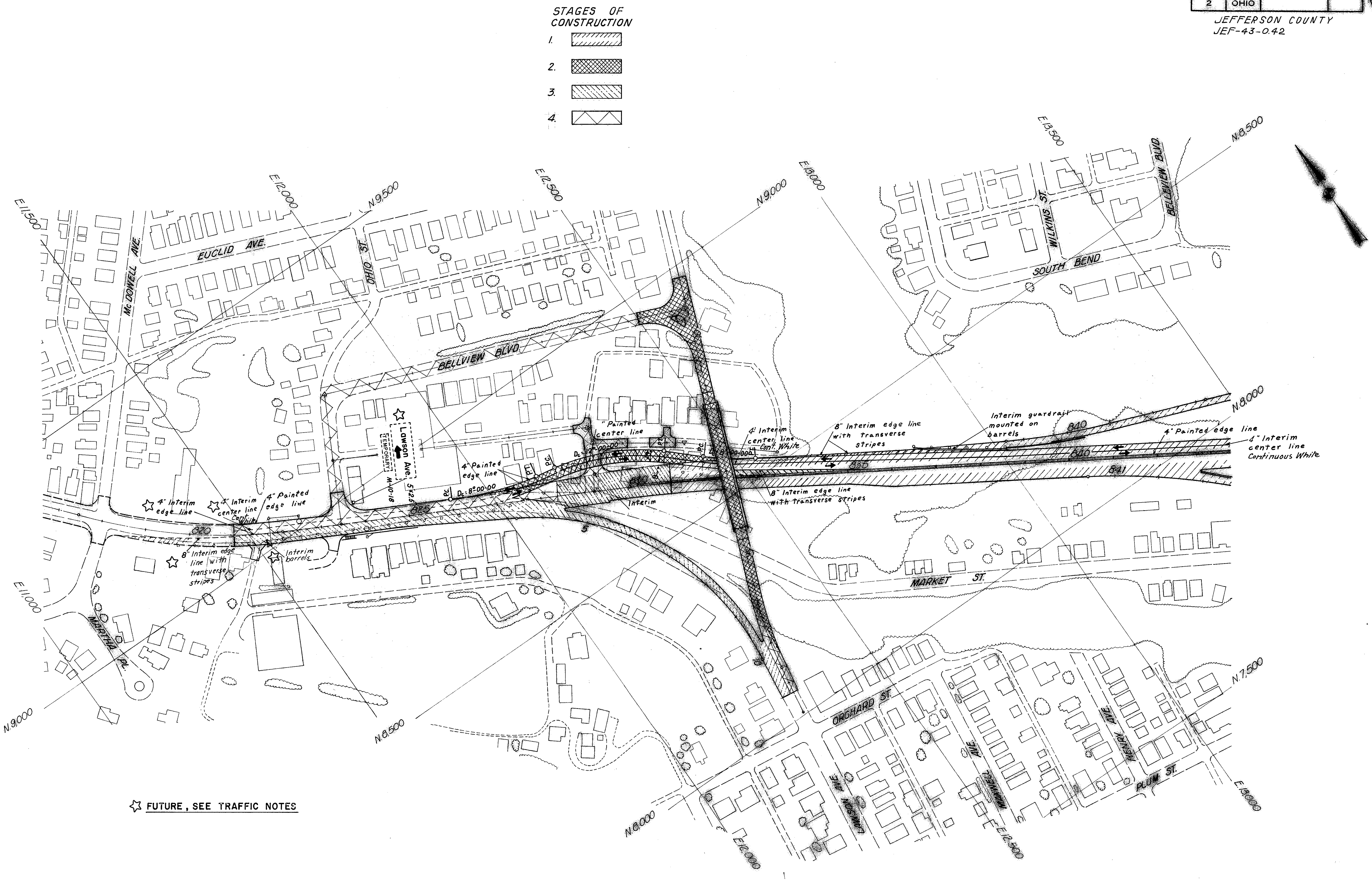
BRUNING 44-560 10943

TRAFFIC CONTROL DETAILS

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

208
299

JEFFERSON COUNTY
JEF-43-0.42



☆ FUTURE, SEE TRAFFIC NOTES

TRAFFIC CONTROL PLAN

TRAFFIC MAINTENANCE

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

JEFFERSON COUNTY
JEF-43-0.42

TRAFFIC CONTROL PLAN

TRAFFIC MAINTENANCE

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

214
299

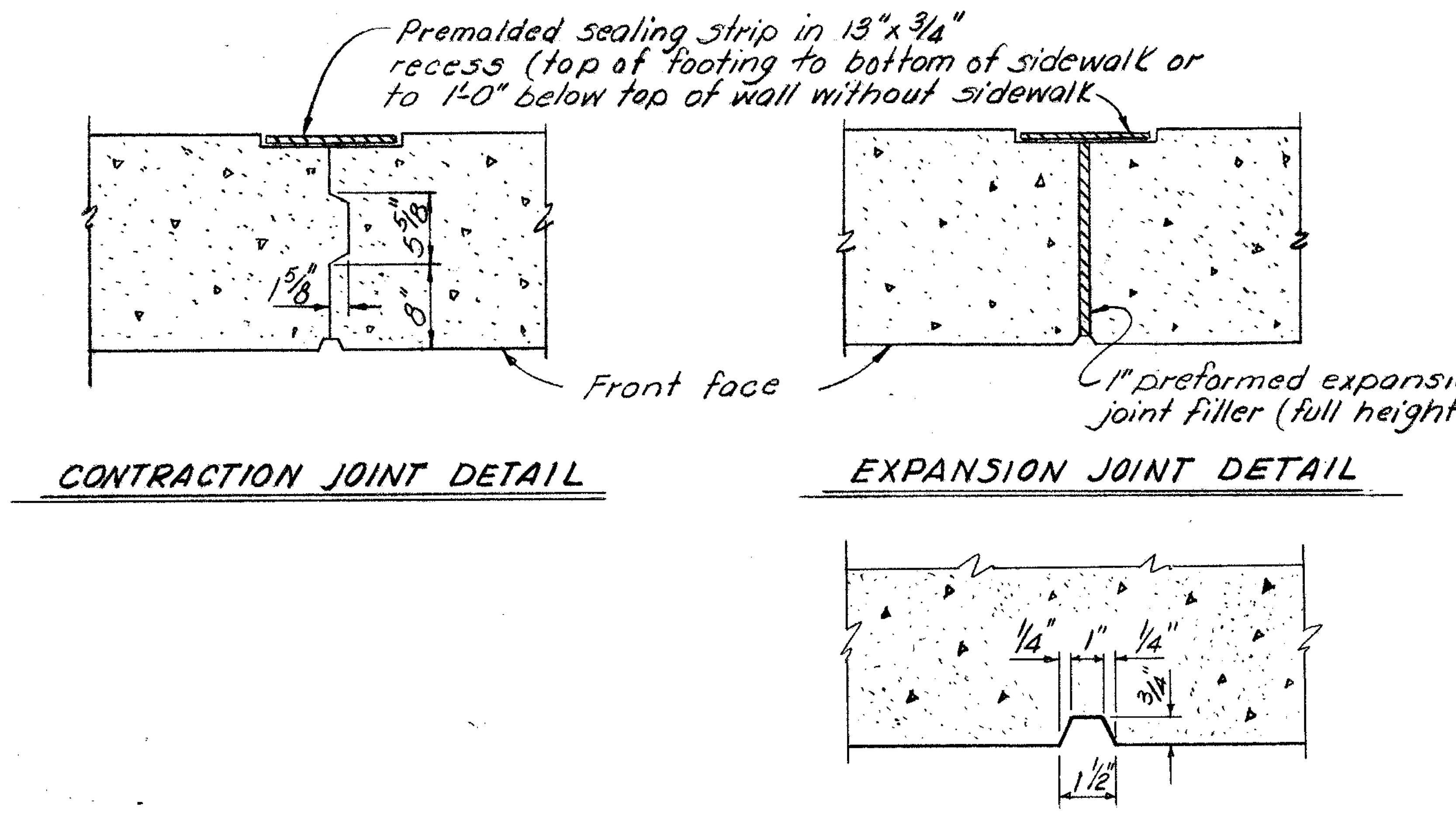
JEFFERSON COUNTY
JEF-43-0.42

RACKOFF ASSOCIATES ENGINEERS COLUMBUS, OHIO
1/16

SITE PLAN
RETAINING WALL
JEF – 43 – 00.42

JEFFERSON COUNTY

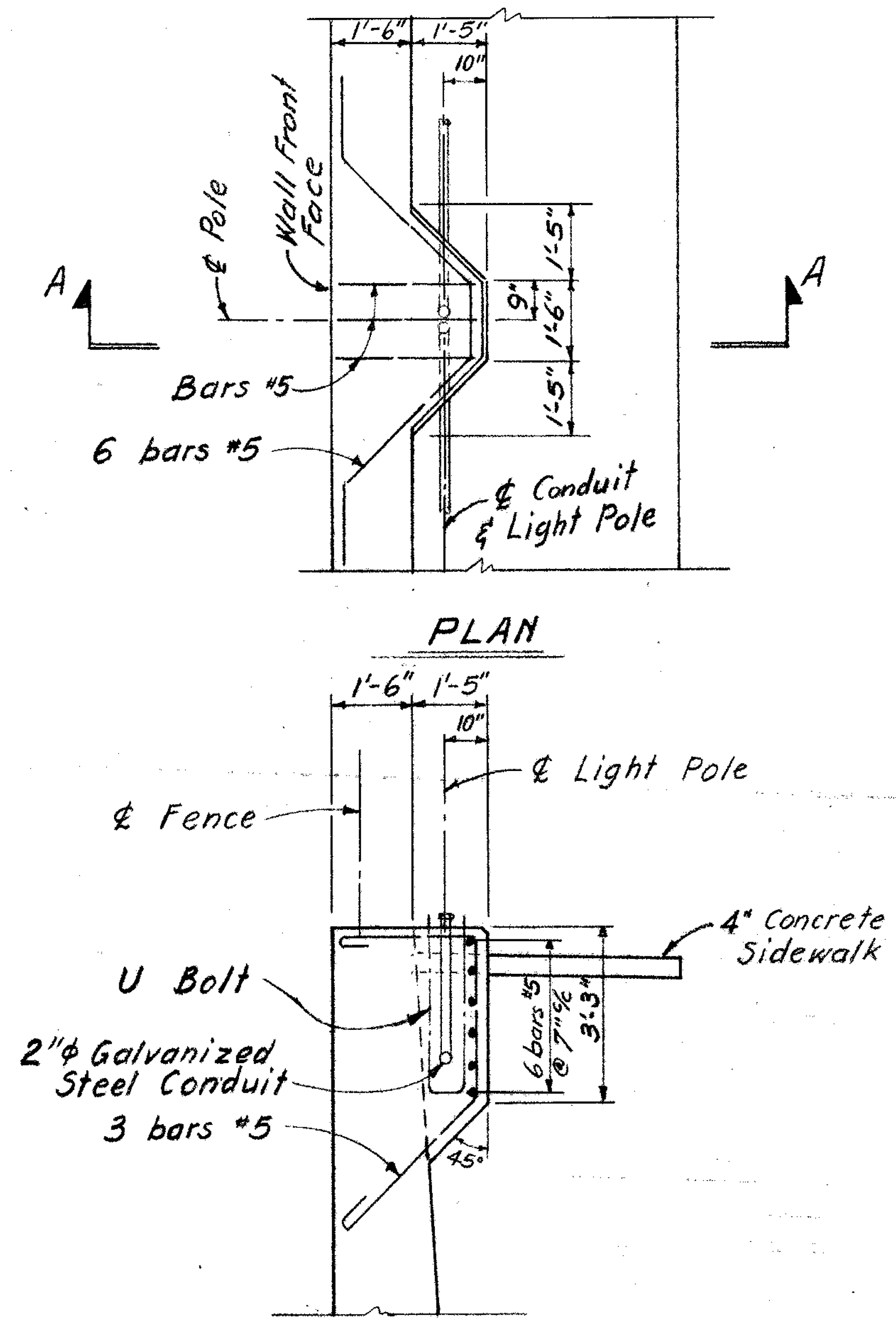
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
M.R.	M.R.		B.V.	50	4.21.67	7-12-72



CONTRACTION JOINT DETAIL

EXPANSION JOINT DETAIL

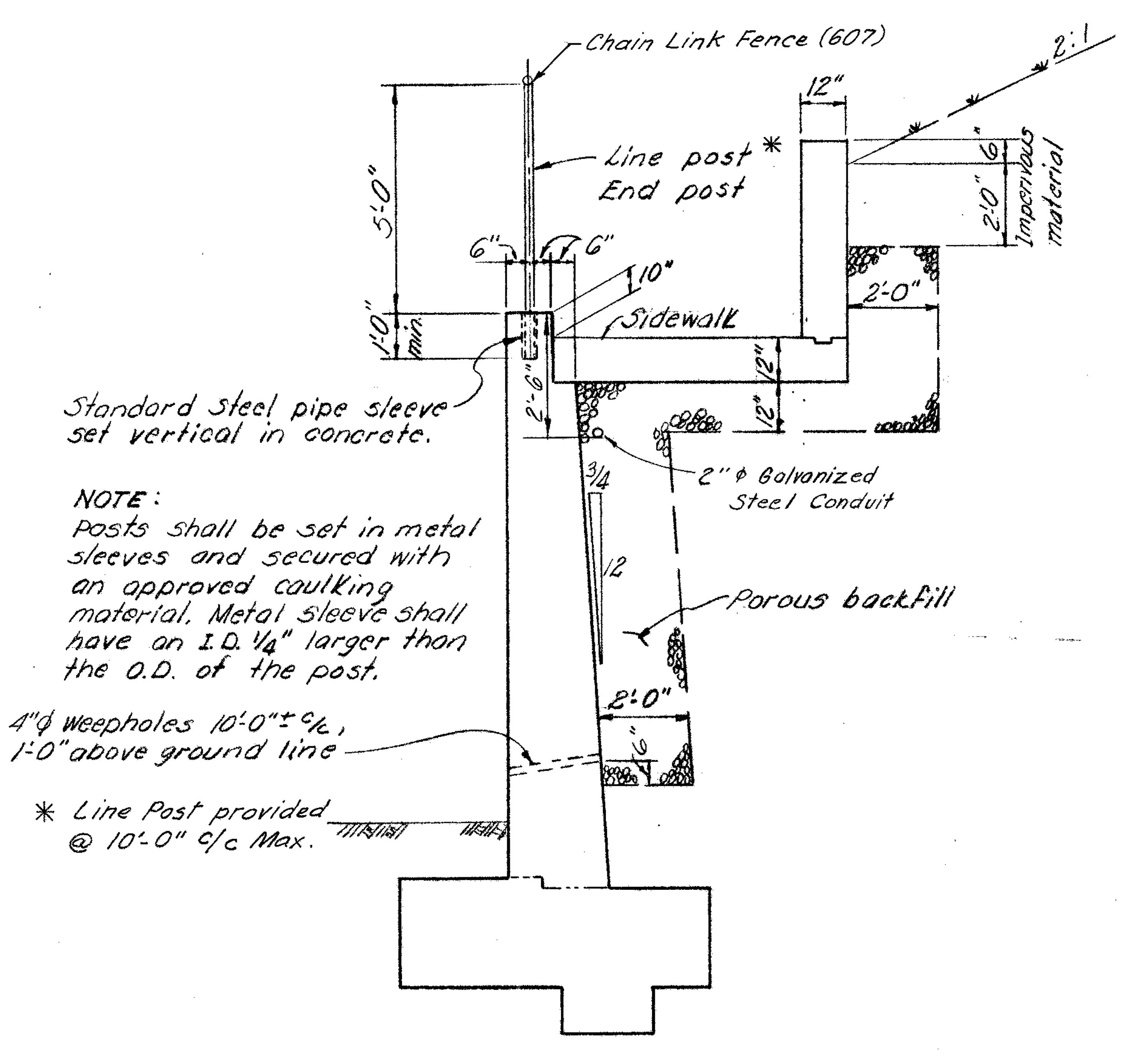
VERTICAL RUSTICATION GROOVE



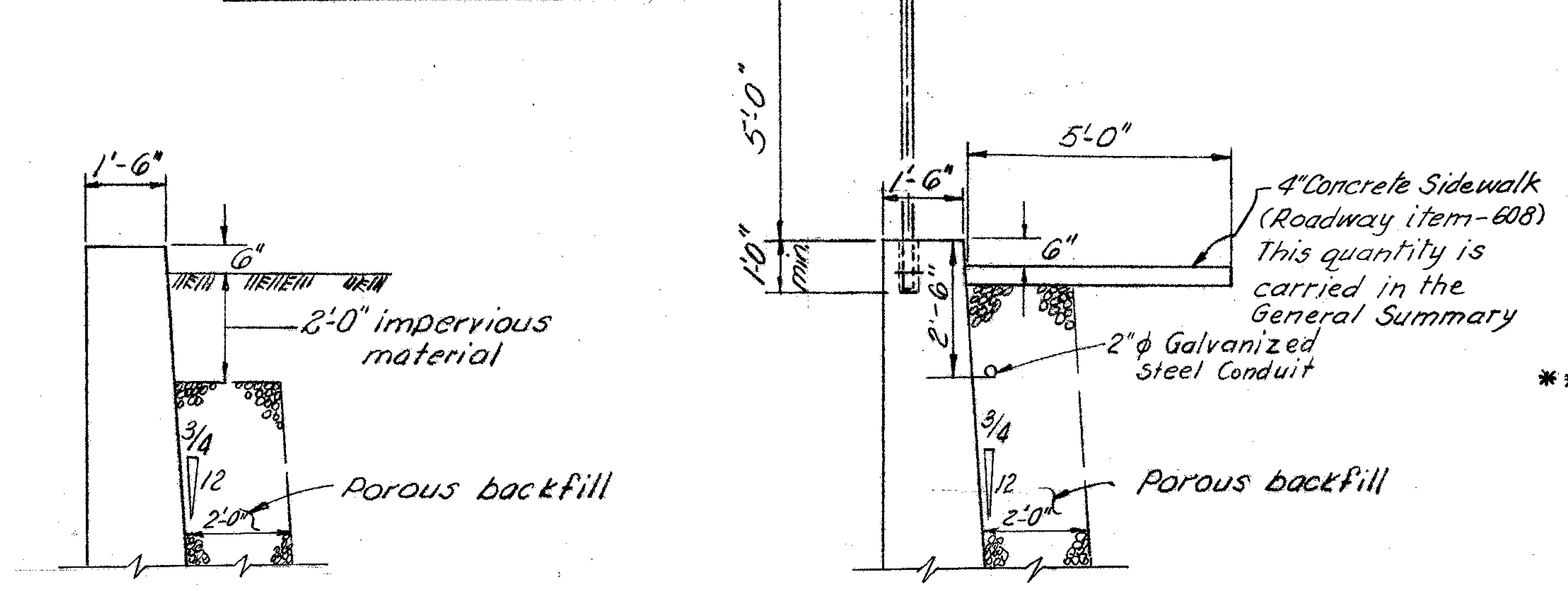
PLAN

SECTION A-A

RETAINING WALL LIGHT POLE MOUNTING

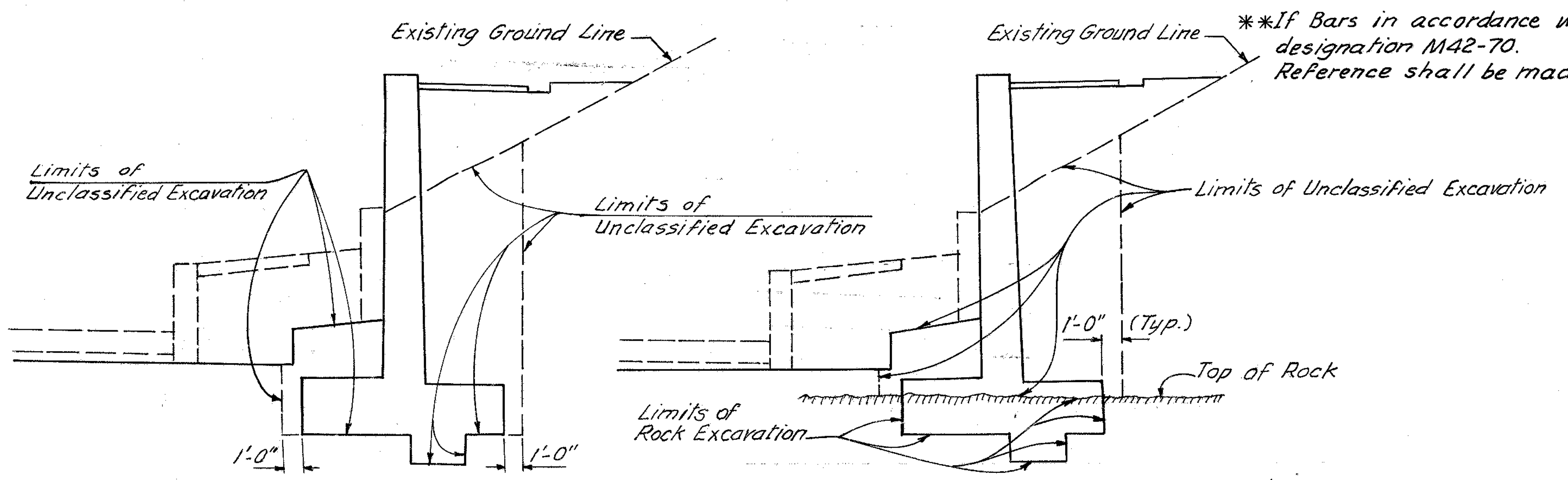


TYPICAL SECTION OF RETAINING WALL
With special Sidewalk



TYPICAL SECTION OF RETAINING WALL
Without Sidewalk

TYPICAL SECTION OF RETAINING WALL
with Sidewalk



TYPICAL SECTIONS SHOWING EXCAVATION LIMITS

TYPE CODE 7221

ESTIMATED QUANTITIES				AS BUILT
ITEM	TOTAL	UNIT	DESCRIPTION	
503	Lump	Sum	Cofferdams, cribs and sheeting	
503	3,540	Cu. Yds.	Unclassified excavation	
503	435	Cu. Yds.	Rock excavation	
	84,076			
509	(77,853)	Lbs.	Reinforcing Steel	
511	872	Cu. Yds.	Class "C" concrete above footings	
511	853	Cu. Yds.	Class "C" concrete footings	
512	390	Lin. Ft.	Premolded sealing strip	
516	235	Sq. Ft.	1" Preformed expansion Joint filler	
518	555	Cu. Yds.	Porous Backfill	
602	0.6	cu. yds.	brick masonry, as per plan	
607	610	Lin. Ft.	Fence, Type CL	
602	0.2	cu. yds.	block masonry	
625			See Sheet 169 for Lighting Summary	
Computed By Badaw Date 8/22/66. Checked By M.R. Date 9-23-66				

Revised By V.A.P. Date 9-12-72

GENERAL NOTES

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.

CONCRETE shall be class "C" concrete- basic unit stress 1,333 psi

** REINFORCING STEEL shall be ASTM A615, A616 or A617.
unit stress 20,000 p.s.i. The steel shall have a clearance of 3" from the bottom of footing and 2" clearance from face of concrete at other places.

FOUNDATION BEARING PRESSURE: The footings are designed for a maximum bearing pressure of 2.5 tons per sq. ft. for panels 1 thru 17 and panels 33 thru 37, and 4.0 tons per sq. ft. for panels 18 thru 32.

FOOTING KEY For footings on soil shall be placed in a carefully made trench against undisturbed earth.

**If Bars in accordance with ASTM A616 are provided they shall be subject to bend test as per AASHO designation M42-70.
Reference shall be made to Standard Drawing MC-2, dated 6-1-65

Revised
7-15-74

RACKOFF ASSOCIATES
ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO

2/16

GENERAL NOTES, ESTIMATED QUANTITIES
AND COMMON DETAILS
RETAINING WALLS
JEF - 43 - 00.42
JEFFERSON COUNTY

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
M.R.	E.D.A.		S.C.		4.21.67	9-12-72

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

216
299

JEFFERSON COUNTY
JEF. - 43 - 0.42

R.F. = Rear Face
F.F. = Front Face
E.F. = Each Face

* Hand Rail connected with concrete wall @ 5'-0" c/c max.
See also Standard Drawing MC-2 dated 6-1-65.

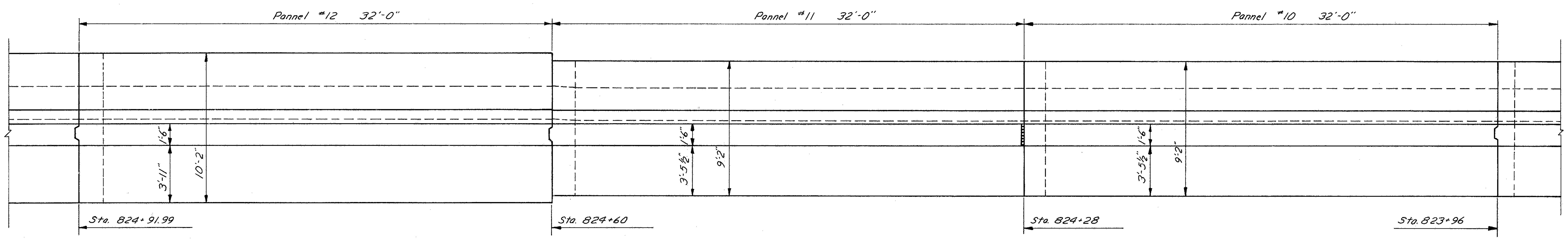
RACKOFF ASSOCIATES, INC. ENGINEERS · CONSULTANTS COLUMBUS, OHIO						3/16
RETAINING WALL PANELS 8 THRU 9 JEF.-43-0.42						
JEFFERSON COUNTY						
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised.
V.A.P.	V.A.P.	M.K.B.	W.B.D.	W.B.D.	9-12-72	7-15-74

H. COLE CO.

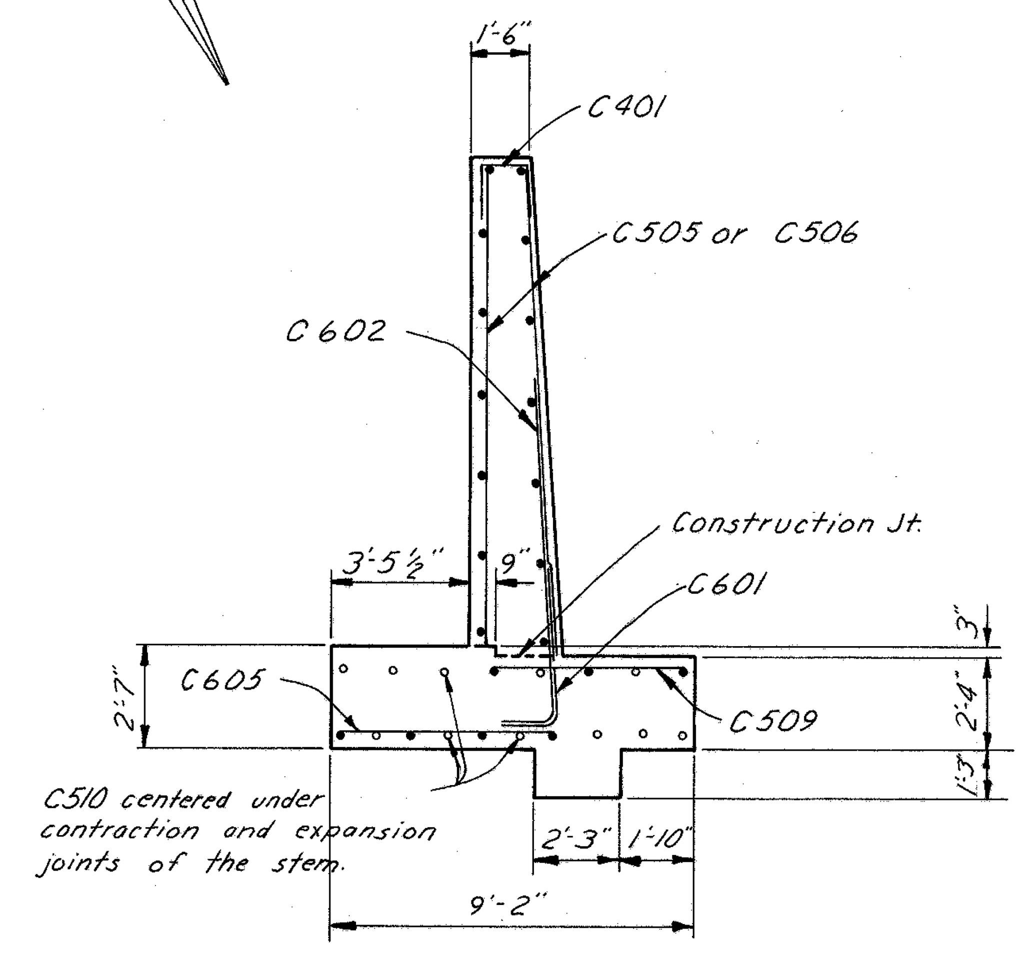
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

217
299

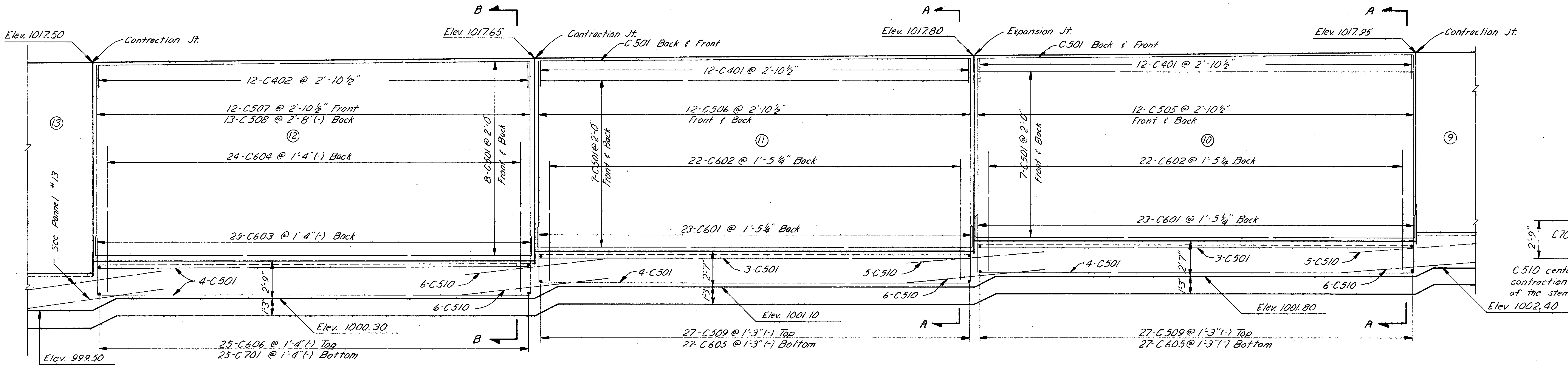
JEFFERSON COUNTY
JEF - 43 — 0.42



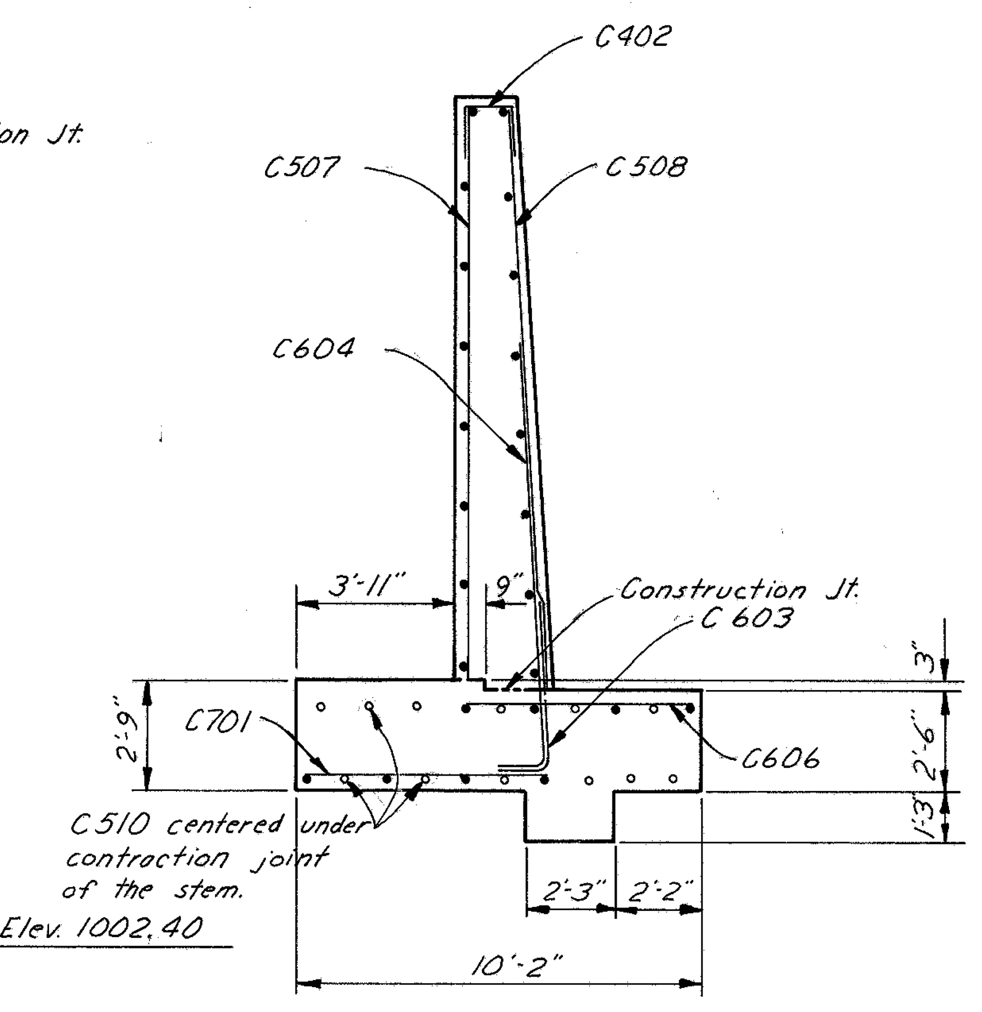
PLAN



SECTION A-A



ELEVATION



SECTION B-B

RACKOFF ASSOCIATES, INC.
ENGINEERS - CONSULTANTS
COLUMBUS, OHIO

4/16

RETAINING WALL
PANELS 10 THRU 12
JEF- 43 — 00.42

JEFFERSON COUNTY

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised.
M. R.	M. R.		B. V.	V. K.	4.21.67	9/12/72

H. COLE CO.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

219/299

JEFFERSON COUNTY
JEF-43-0.42

RACKOFF ASSOCIATES 5/16
ENGINEERS COLUMBUS, OHIO

RETAINING WALL
PANELS 13 THRU 15
JEF-43-00.42

JEFFERSON COUNTY

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
M.R.	M.R.		B.V.	[signature]	4.21.67	

FED. RD. DIVISION 2
STATE OHIO
PROJECT
TYPE FUNDS
220
299
JEFFERSON COUNTY
JEF-43-0.42
Panel #18 32'-0"
Panel #17 32'-0"
Panel #16 32'-0"
℄ Light Pole
Sta. 826+65
PLAN
12-E401 @ 2'-10½
12-E401 @ 2'-10½"
Elev. 1017.86
Contraction jt.
E501 back & front
Elev. 1017.97
Contraction joint
E501 back & front
Elev. 1018.08
Expansion jt.
E501 back & front
Contraction joint
Elev. 1018.08
12-E506 @ 2'-10½" front
13-E507 @ 2'-8"(-) back
12-E504 @ 2'-10½" front
13-E505 @ 2'-8"(-) back
12-E502 @ 2'-10½" front
13-E503 @ 2'-8"(-) back
12-E803 @ 2'-8"(-) back
10-E501 @ 2'-0" back & front
9-E501 @ 2'-0" back & front
24-E802 @ 1'-4"(-) back
24-E802 @ 1'-4"(-) back (dowels)
25-E801 @ 1'-4"(-) back
25-E801 @ 1'-4"(-) back (dowels)
See Panel #19
4-E501
7-E508
8-E508
Elev. 995.20
Elev. 996.10
Elev. 997.00
Elev. 997.90
Elev. 994.10
2 (typ.)
39-E602 @ 10" top
39-E702 @ 10" bottom
44-E601 @ 9"(-) top
44-E701 @ 9"(-) bottom
ELEVATION
E401 (only for Panel #17)
E502 or E504
E503 or E505
E803
E802
All longitudinal bars are E501.
Construction jt.
E601
E701
E801
E508 centered under Contraction and Expansion joint of the stem.
12'-2"
SECTION A-A
E401
E506
E507
Construction joint
E602
E702
E508 centered under Contraction joint of the stem.
10'-9"
SECTION B-B
RACKOFF ASSOCIATES
ENGINEERS
COLUMBUS, OHIO
6/16
RETAINING WALL
PANELS 16 THRU 18
JEF-43-00.42
JEFFERSON COUNTY
Designed M.R.
Drawn M.R.
Traced
Checked B.V.
Reviewed
Date 4.21.67
Revised

JEFFERSON COUNTY
JEF-43-0.42

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

221/299

NOTE: Stairway #3, behind panels #21 & #22 are not shown here. (See "site plan" and "Stairway Detail" sheet)

NOTE: For details of section A-A and B-B, see next sheet.

RACKOFF ASSOCIATES 7/16
ENGINEERS COLUMBUS, OHIO

RETAINING WALL
PANELS 19 THRU 22
JEF-43-00.42

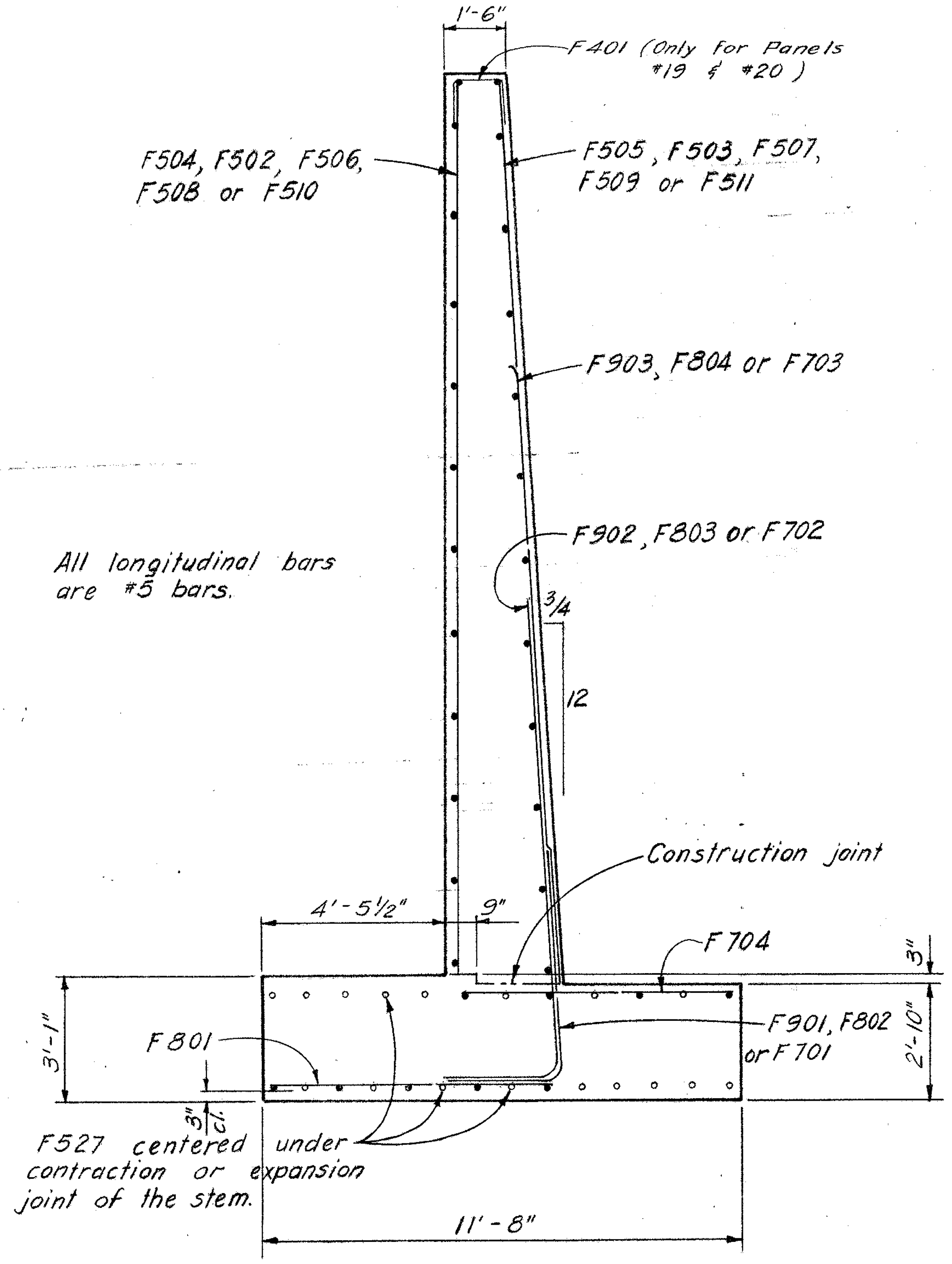
JEFFERSON COUNTY

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
L.F.L.	M.R.		B.V.	[illegible]	4.21.67	

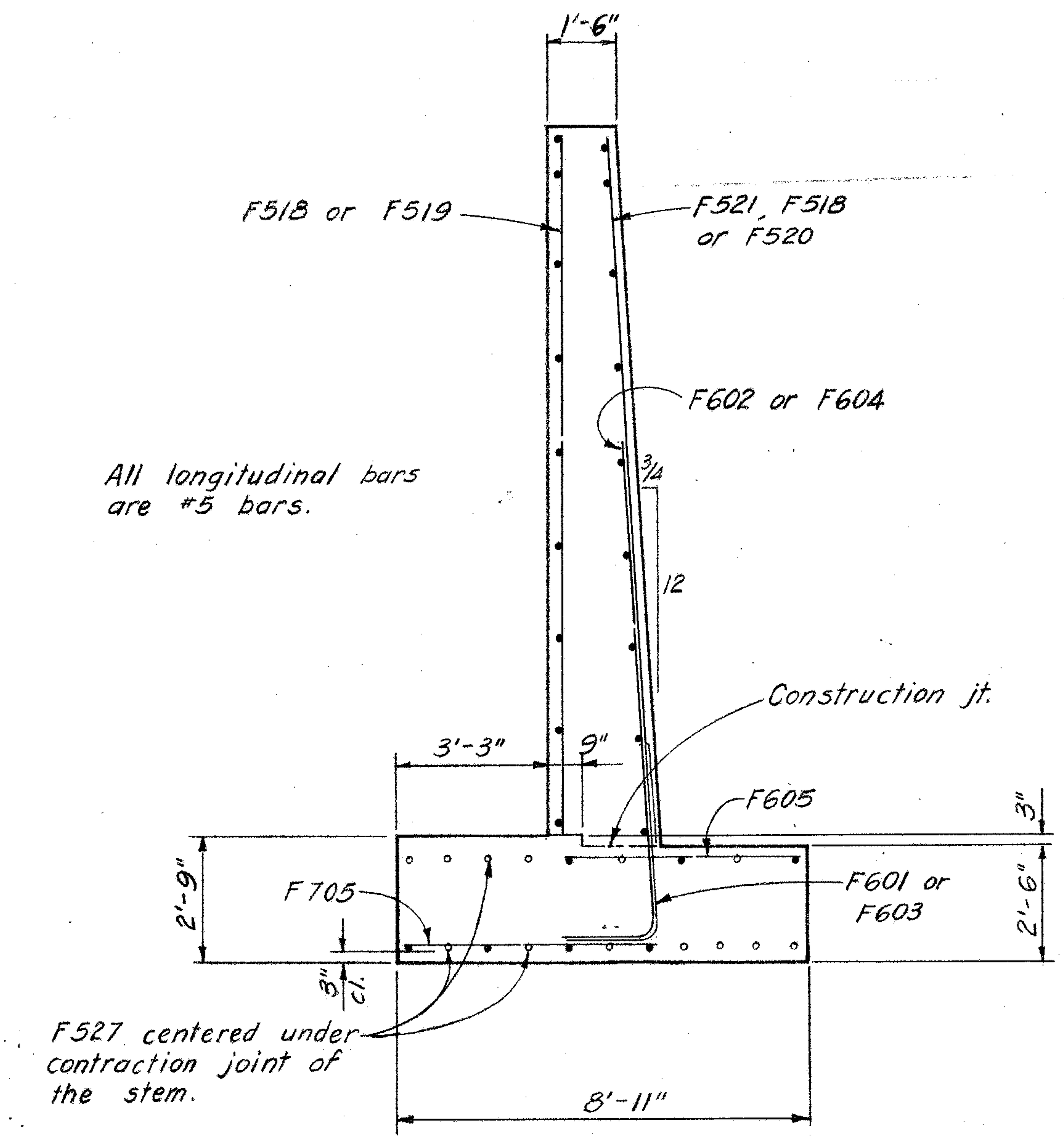
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

222/299

JEFFERSON COUNTY
JEF-43-0.42



SECTION A-A
Panels #19 - #21



SECTION B-B
Panel #22

RACKOFF ASSOCIATES 8/16
ENGINEERS COLUMBUS, OHIO

RETAINING WALL DETAILS
PANELS 19 THRU 22
JEF-43-00.42

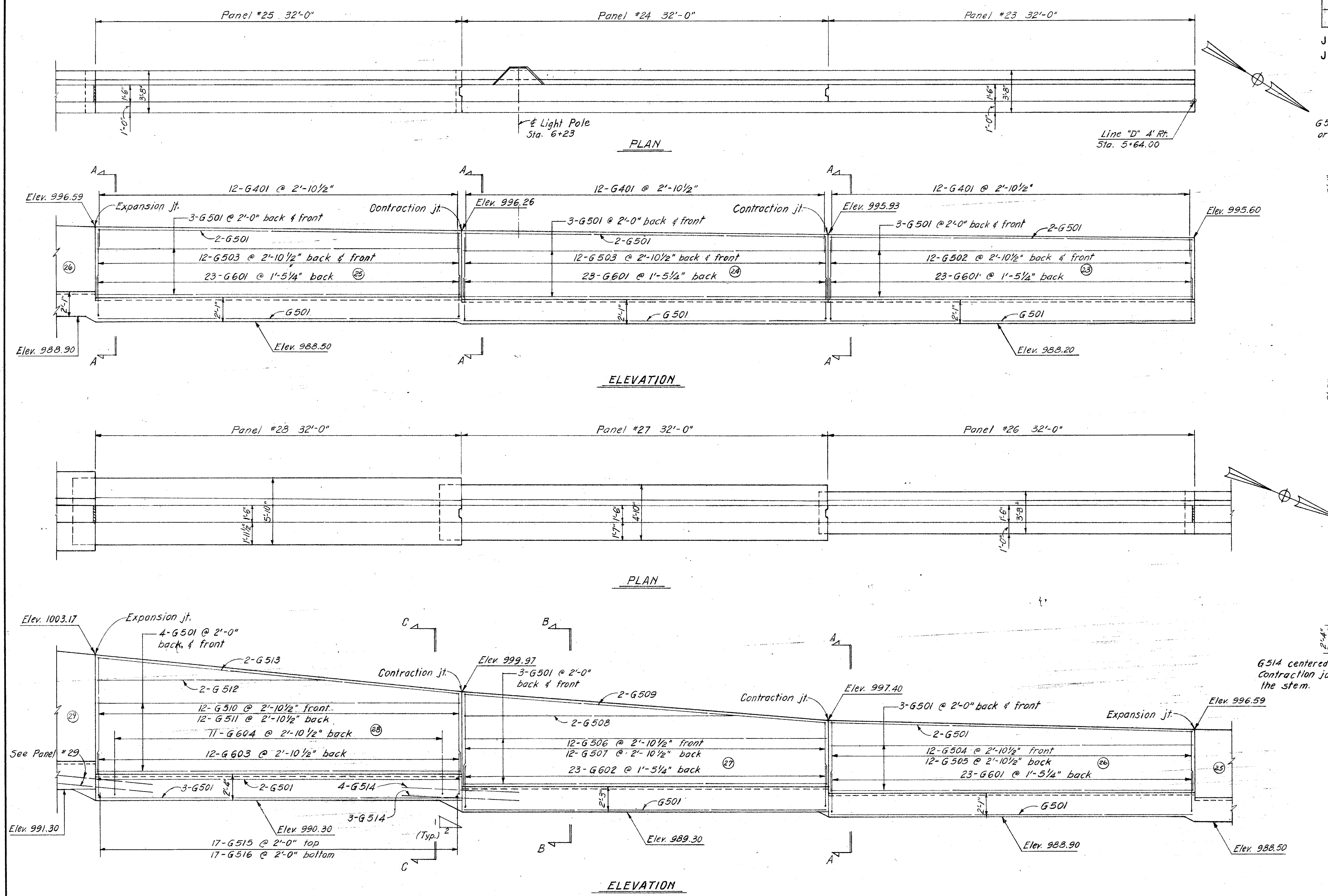
JEFFERSON COUNTY

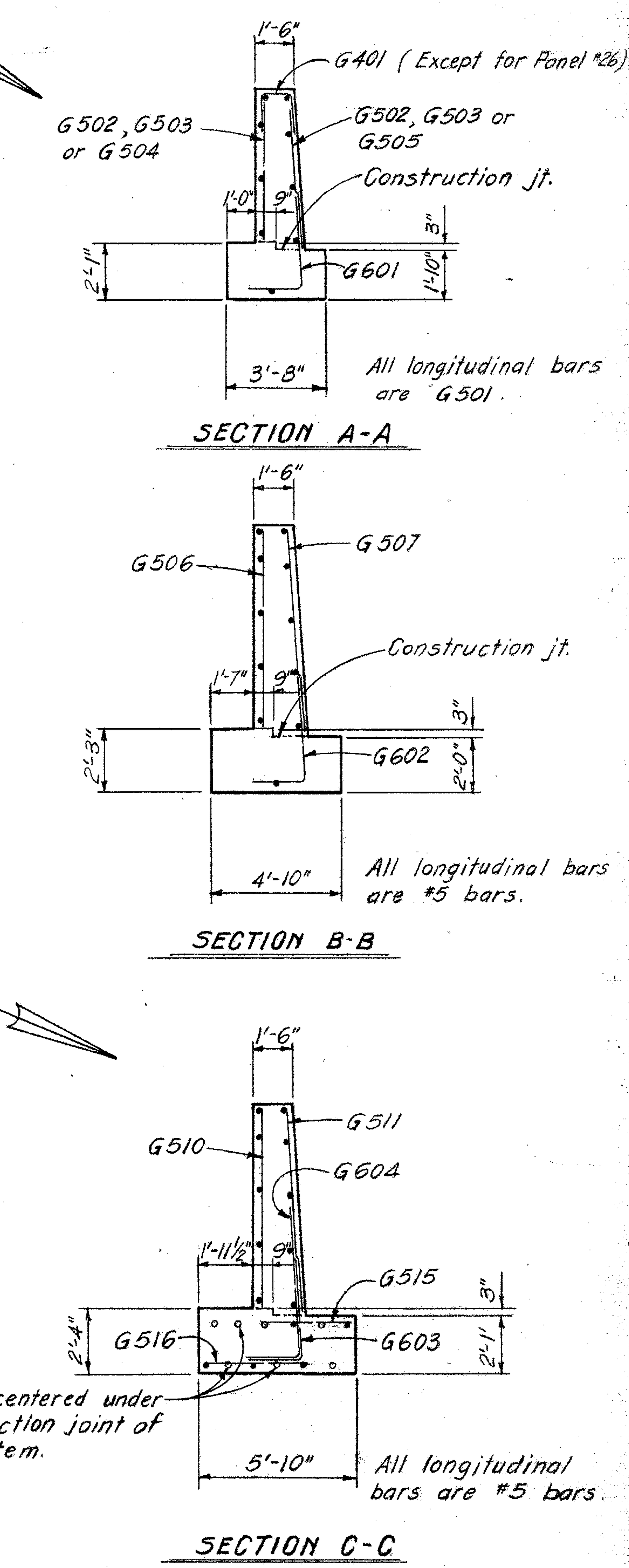
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
M.R.	M.R.		B.V.	JB	4-21-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

223
299

JEFFERSON COUNTY
JEF- 43 - 0.42





RACKOFF ASSOCIATES
ENGINEERS COLUMBUS, OHIO

9/16

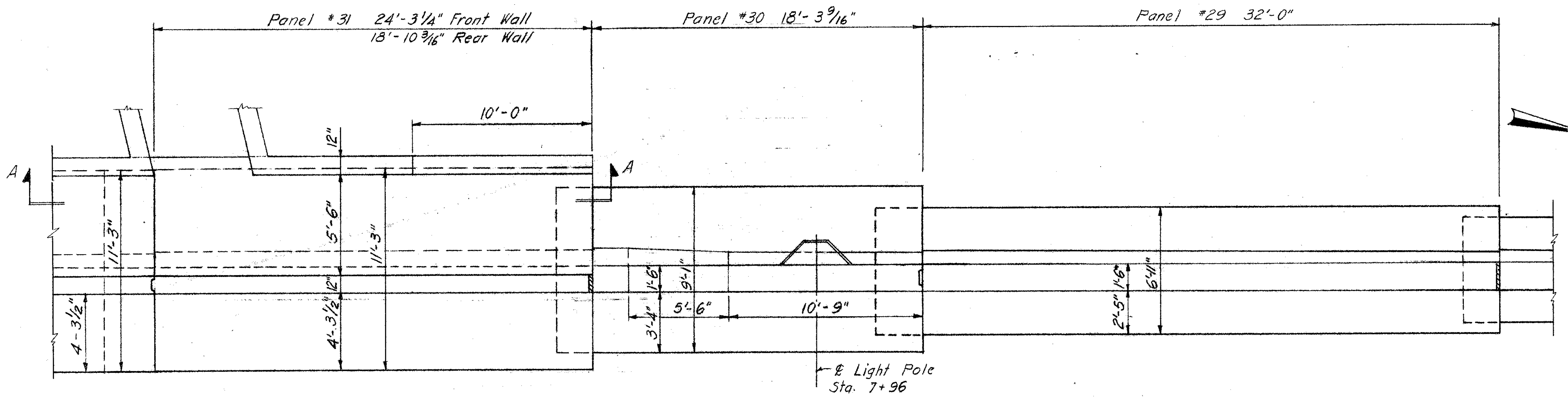
RETAINING WALL
PANELS 23 THRU 28
JEF - 43 - 00.42

JEFFERSON COUNTY

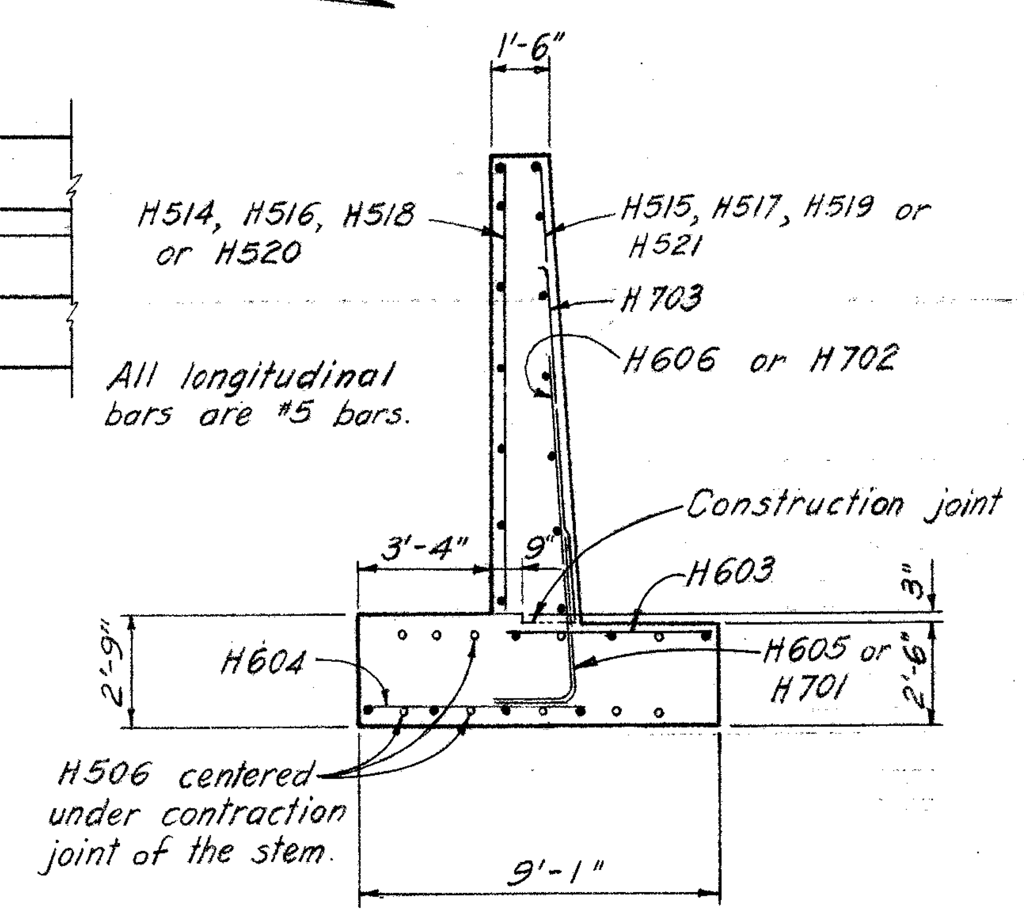
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
M.R.	M.R.		B.V.		4.21.67	

JEFFERSON COUNTY
JEF-43-0.42

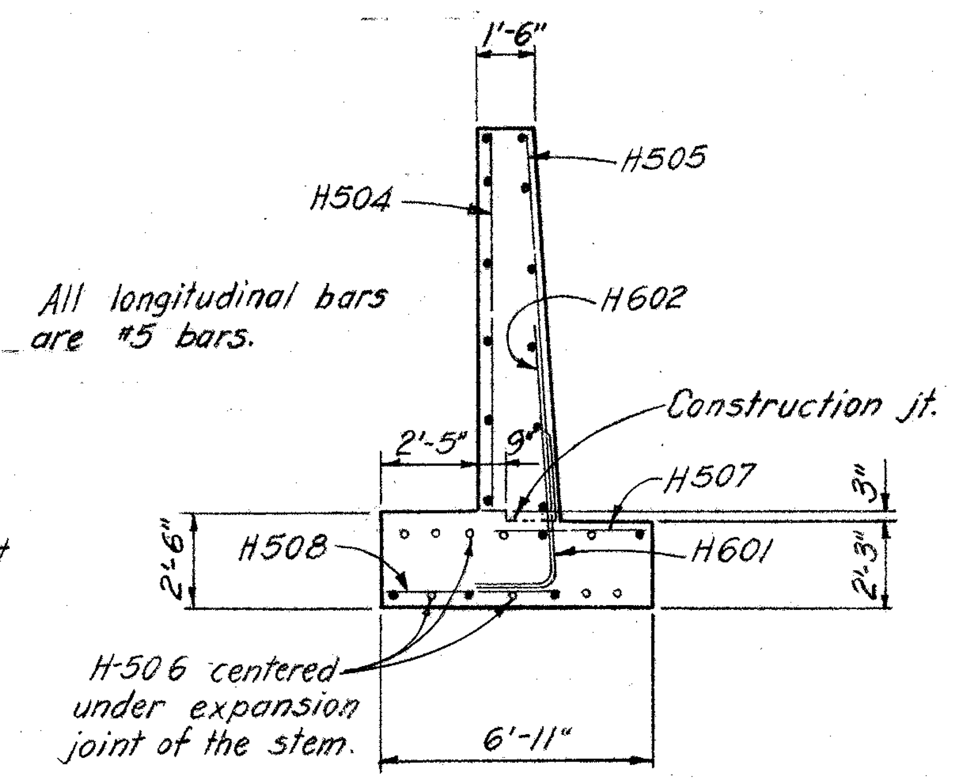
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		



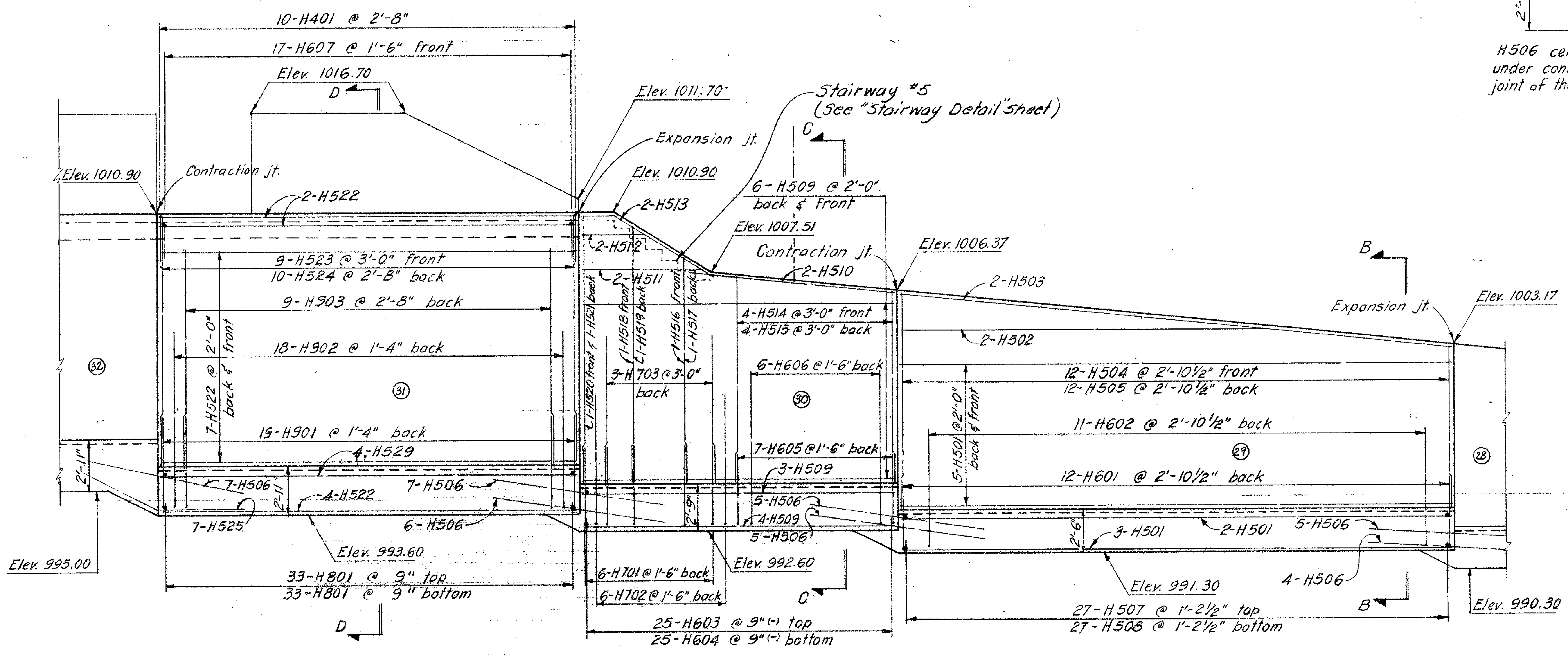
PLAN



SECTION C-C



SECTION B-B



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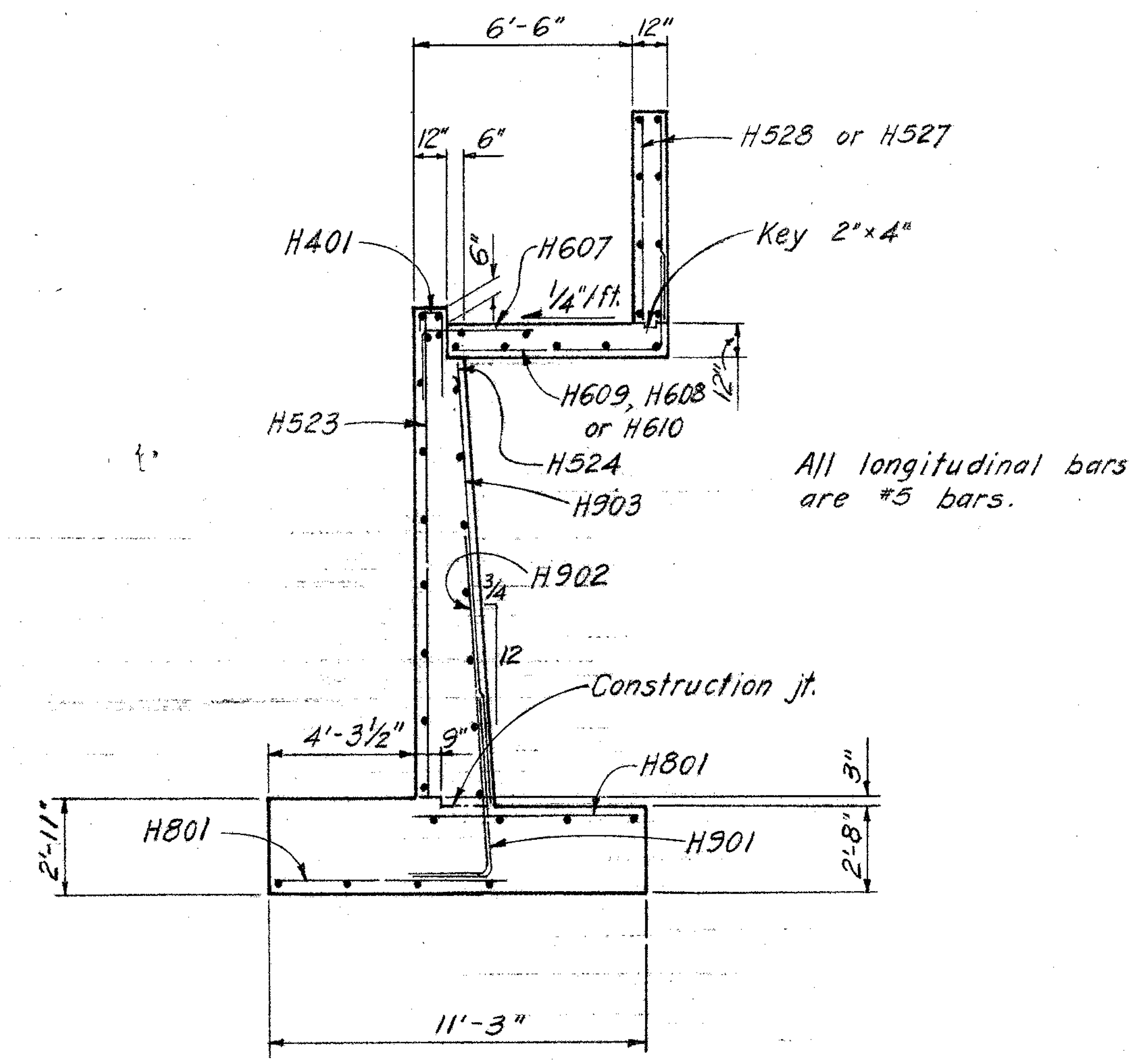
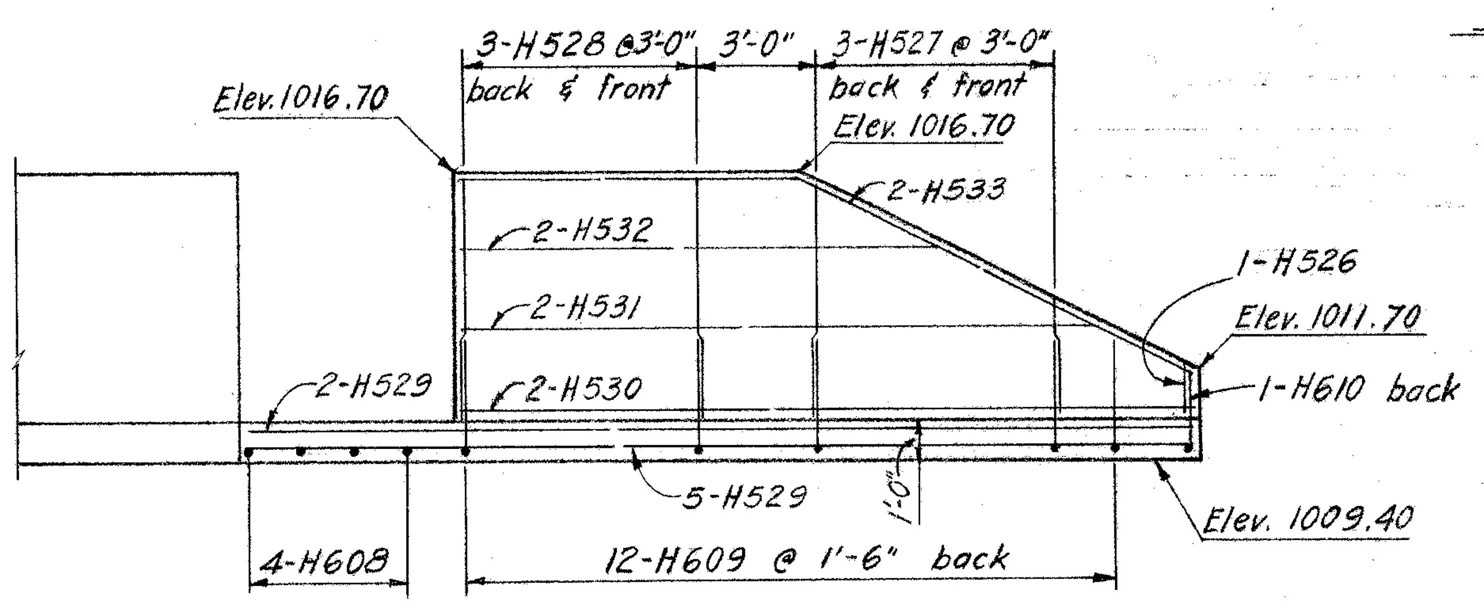


SECTION D-D



ELEVATION A-A
(Stairway not shown)

RACKOFF ASSOCIATES
ENGINEERS
CLEVELAND, OHIO — COLUMBUS, OHIO
10/16

RETAINING WALL
PANELS 29 THRU 31
JEF-43-0042

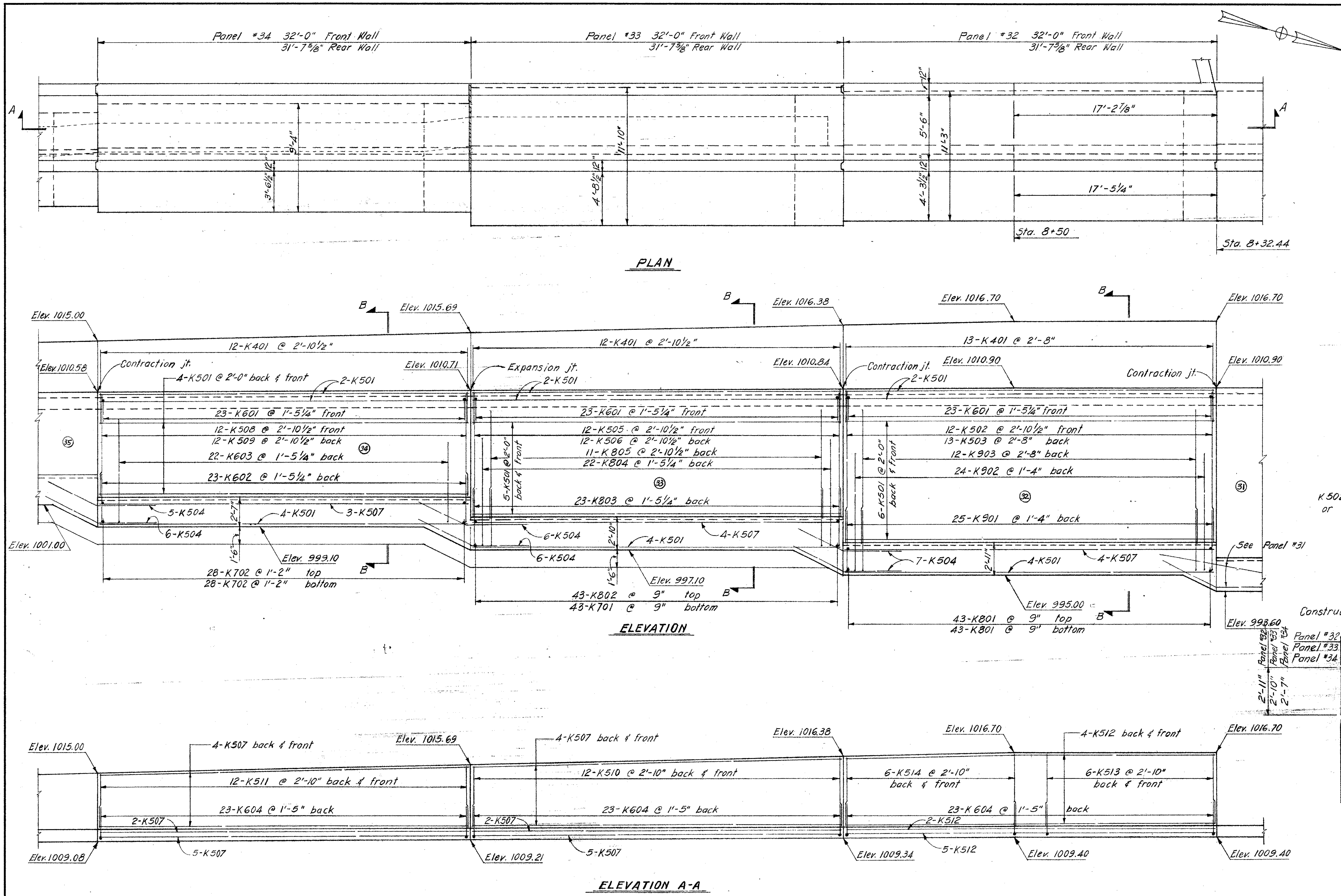
JEFFERSON COUNTY

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.C.	M.R.		B.V.		4-21-67	

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

225
299

JEFFERSON COUNTY
JEF-43-0.42



RACKOFF ASSOCIATES
ENGINEERS
CLEVELAND, OHIO — COLUMBUS, OHIO

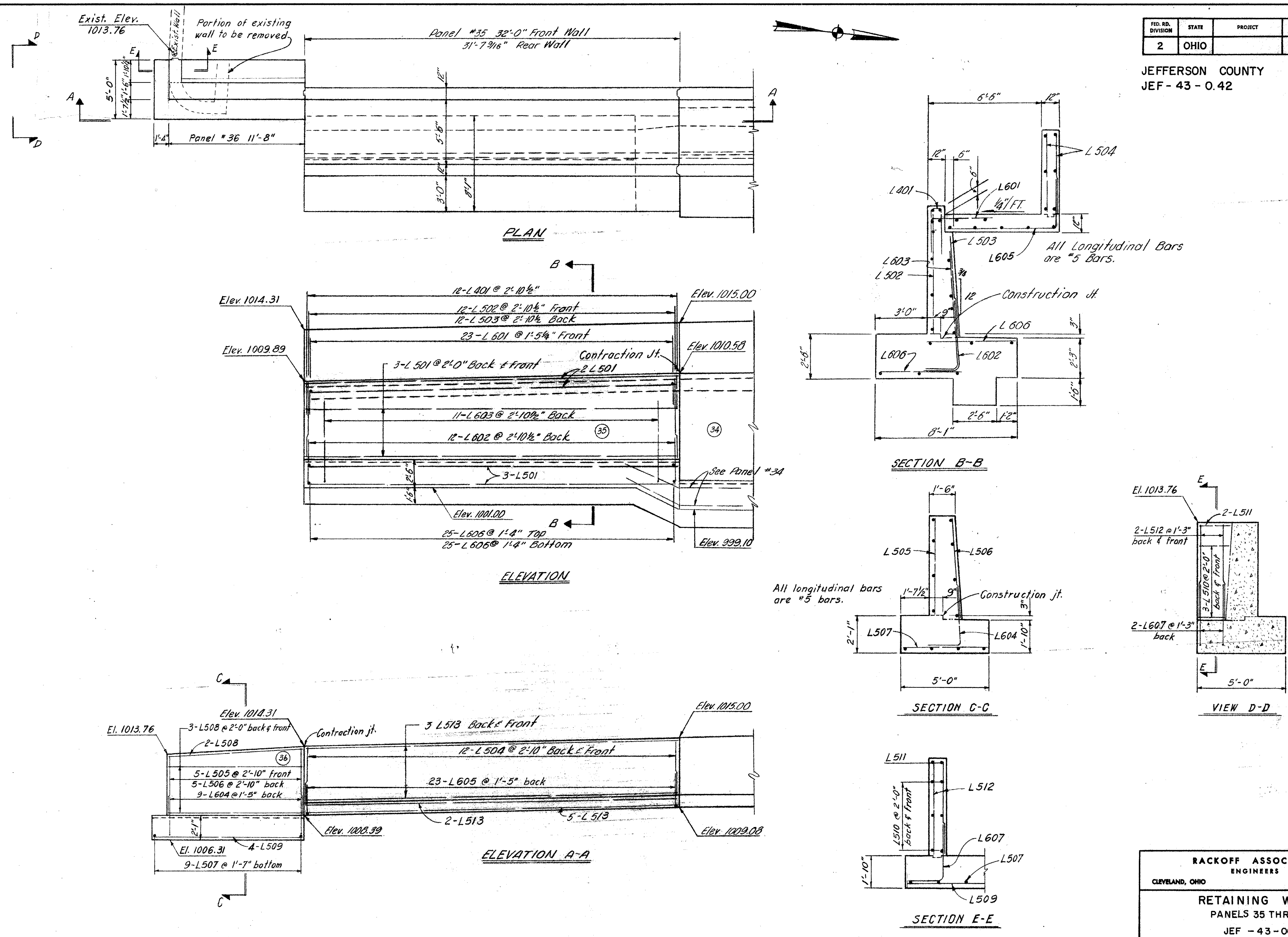
11/16

RETAINING WALL
PANELS 32 THRU 34
JEF - 43 - 00.42

JEFFERSON COUNTY

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.C.	M.R.		B.V.	[illegible]	4.21.67	

JEFFERSON COUNTY
JEF - 43 - 0.42



RACKOFF ASSOCIATES — 12/16
ENGINEERS
CLEVELAND, OHIO — COLUMBUS, OHIO

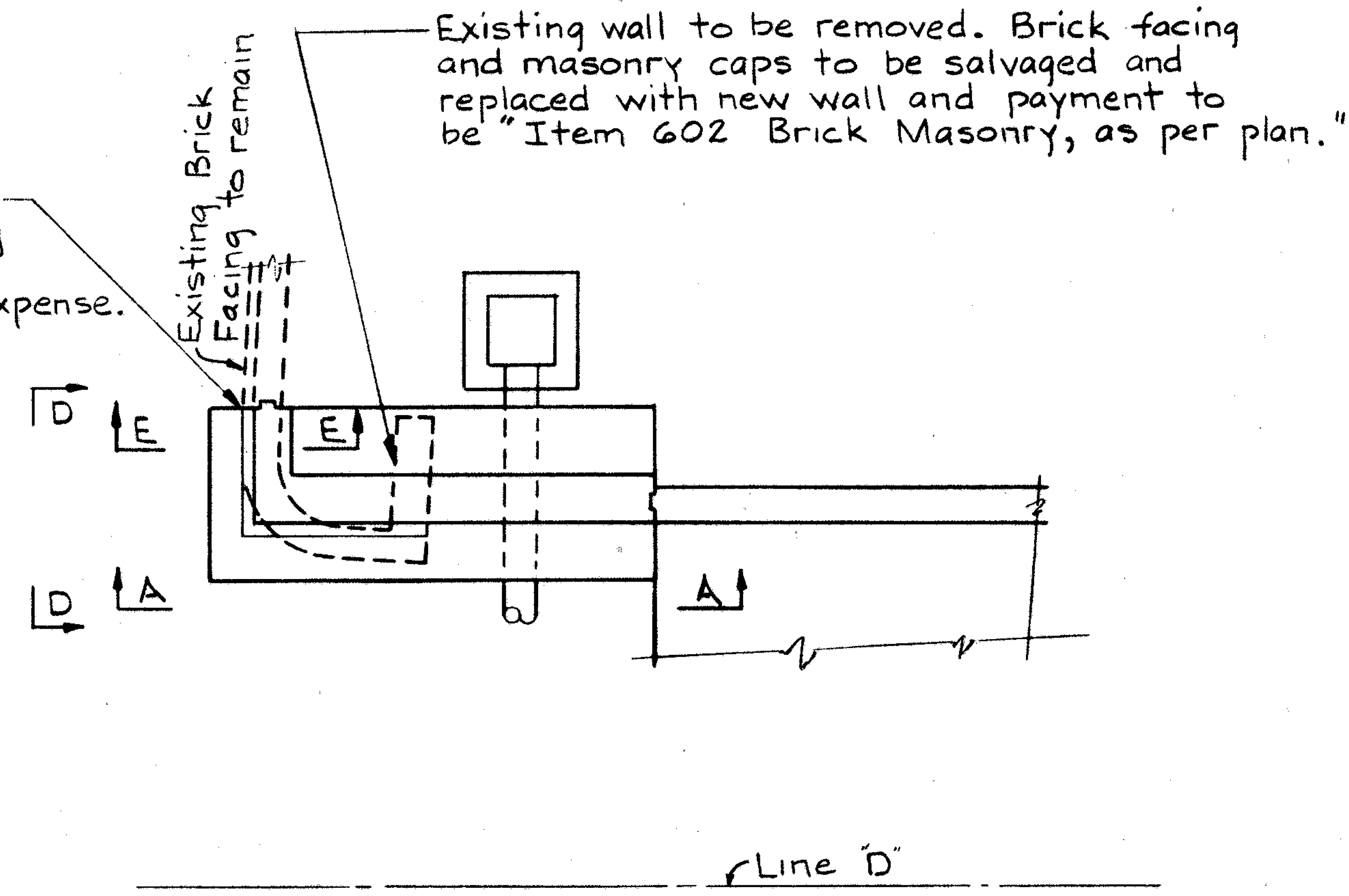
RETAINING WALL
PANELS 35 THRU 36
JEF - 43 - 00.42

JEFFERSON COUNTY

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
M.R.	M.R.					

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

JEFFERSON COUNTY
JEF - 43 - 0.42



PLAN
1/4" = 1'-0

NOTE
The Contractor shall use salvaged brick and mason material to complete brick masonry as shown on the plan. If quantity of salvaged material is insufficient to complete the work called for on the plan, contractor shall furnish new material of similar color and texture.

Masonry Calculations

Brick

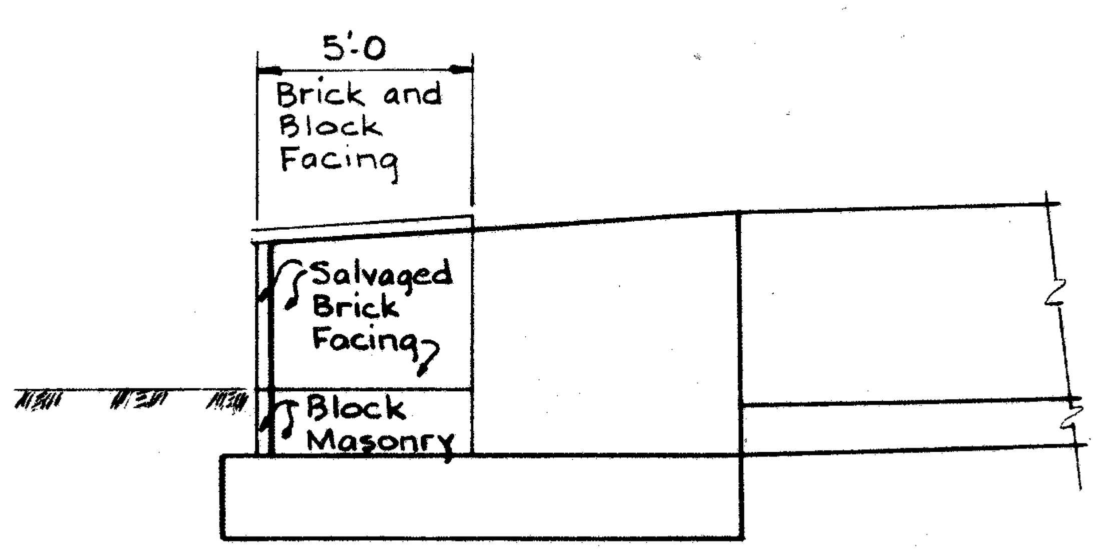
5.0' × 3.67' × 0.33' ÷ 27 =	0.23 C.Y.
3.75' × 3.67' × 0.33' ÷ 27 =	0.17 C.Y.
5.08' × 2.0' × 0.33' ÷ 27 =	0.13 C.Y.
1.83' × 1.5' × 0.33' ÷ 27 =	0.03 C.Y.
Total	0.56 C.Y.
Say	0.60 C.Y.

Block

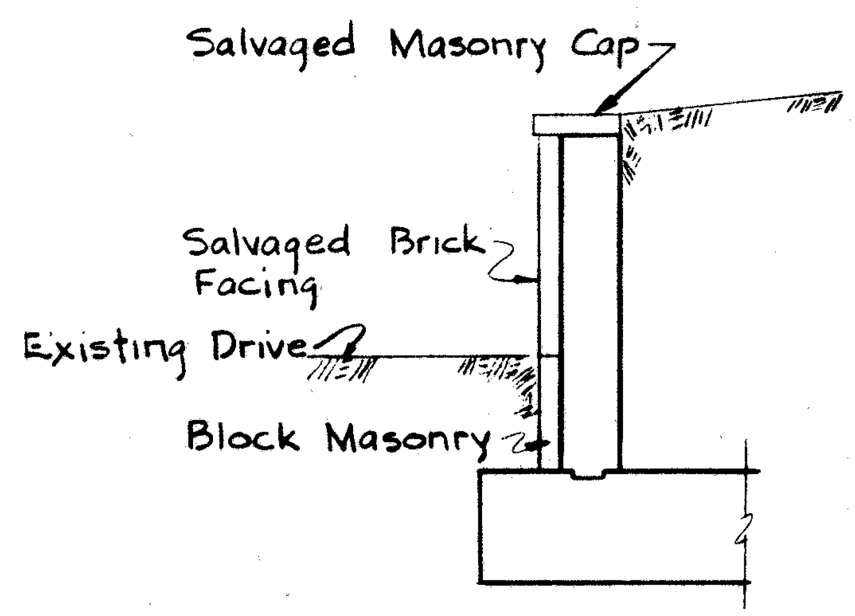
5.0' × 1.7' × 0.33' ÷ 27 =	0.10 C.Y.
3.75' × 1.7' × 0.33' ÷ 27 =	0.08 C.Y.
Total	0.18 C.Y.
Say	0.20 C.Y.

Quantities (Carried to Sheet № 215)

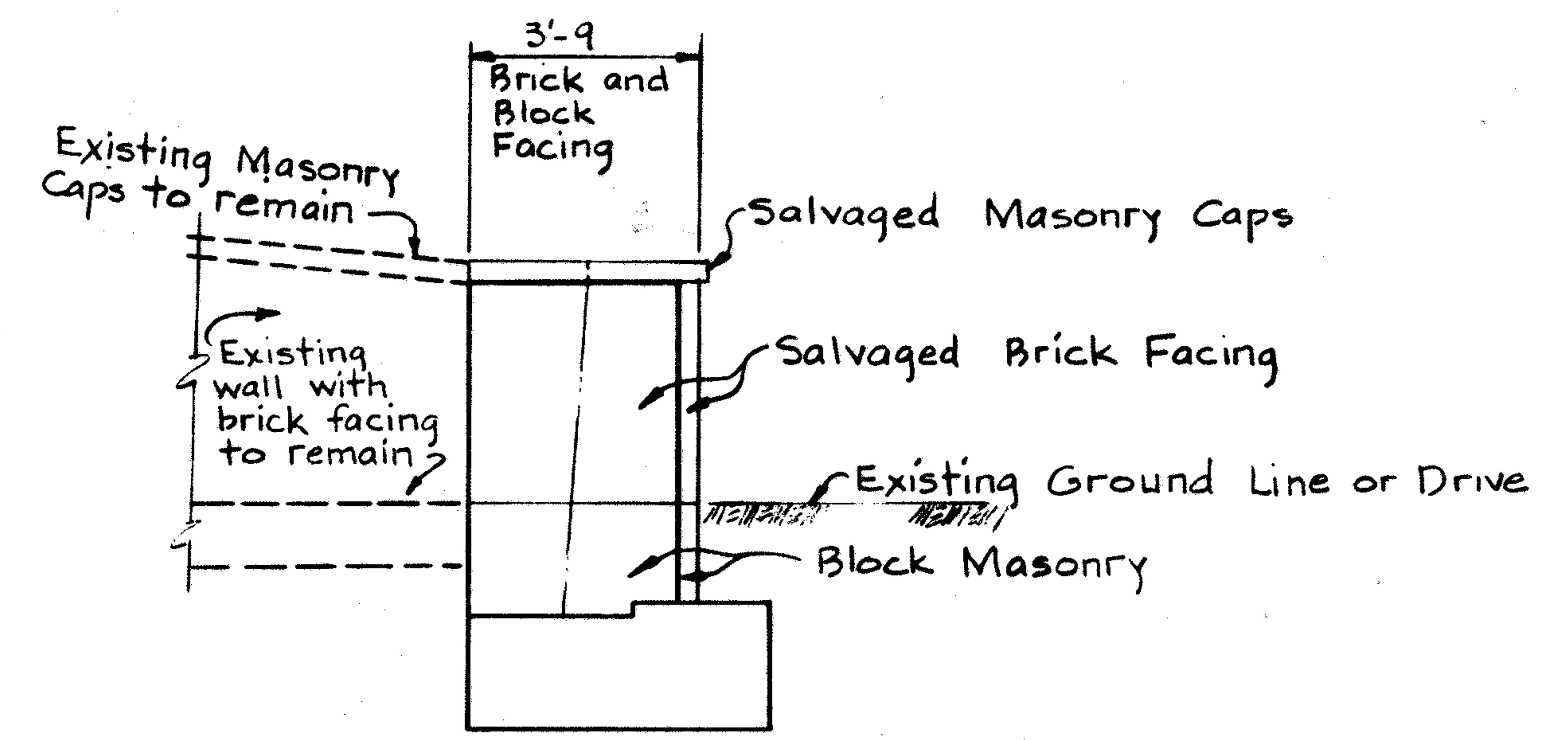
602	Brick Masonry, as per plan	0.60 C.Y.
602	Block Masonry	0.20 C.Y.



ELEVATION A-A
1/4" = 1'-0



SECTION E-E
3/8" = 1'-0



VIEW D-D
3/8" = 1'-0

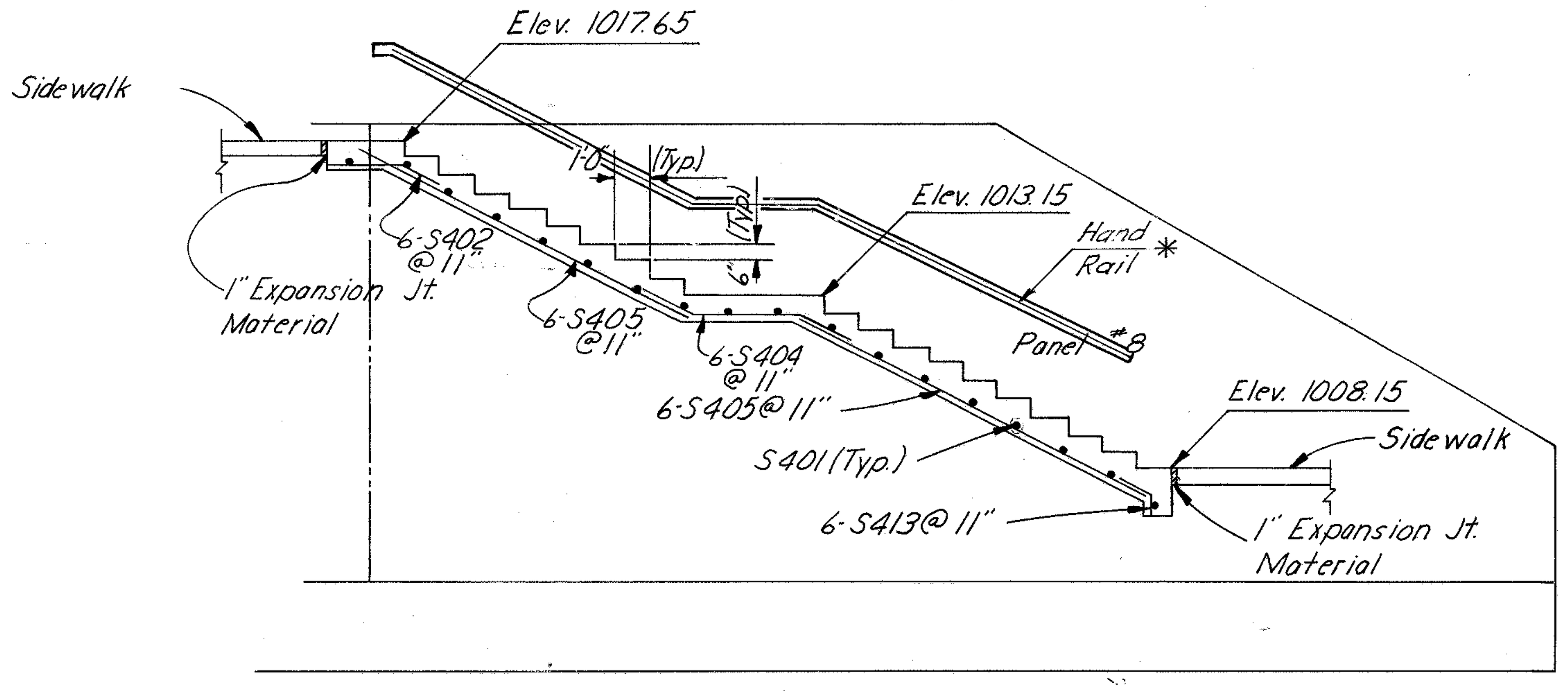
NOTE:
The sectional views shown on this sheet reflect the same views shown on sheet №. 226.
It is noted that the plan view on sheet №. 226 does not reflect the brick facing as shown on this sheet.
No revision in the design of the retaining wall is required to construct the brick and block masonry.

PLAN Revision to Retaining Wall - Panel # 36
Sheet No. 226

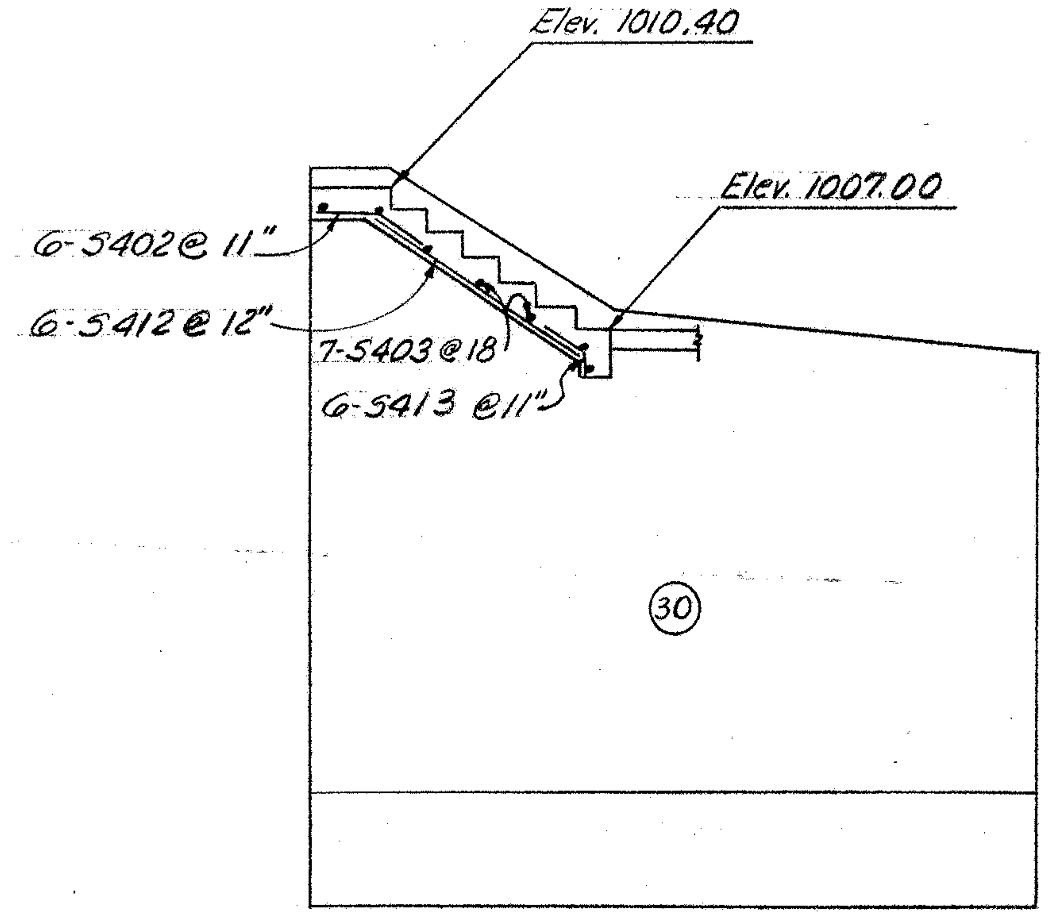
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

227 / 299

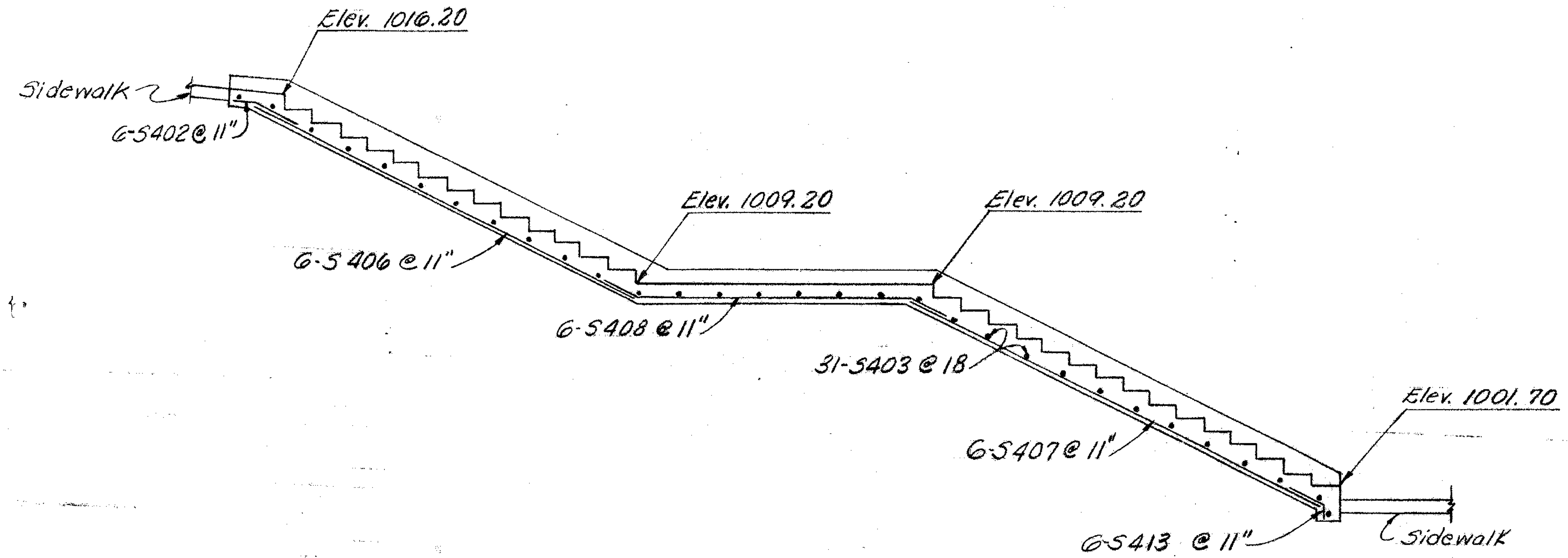
JEFFERSON COUNTY
JEF-43-0.42



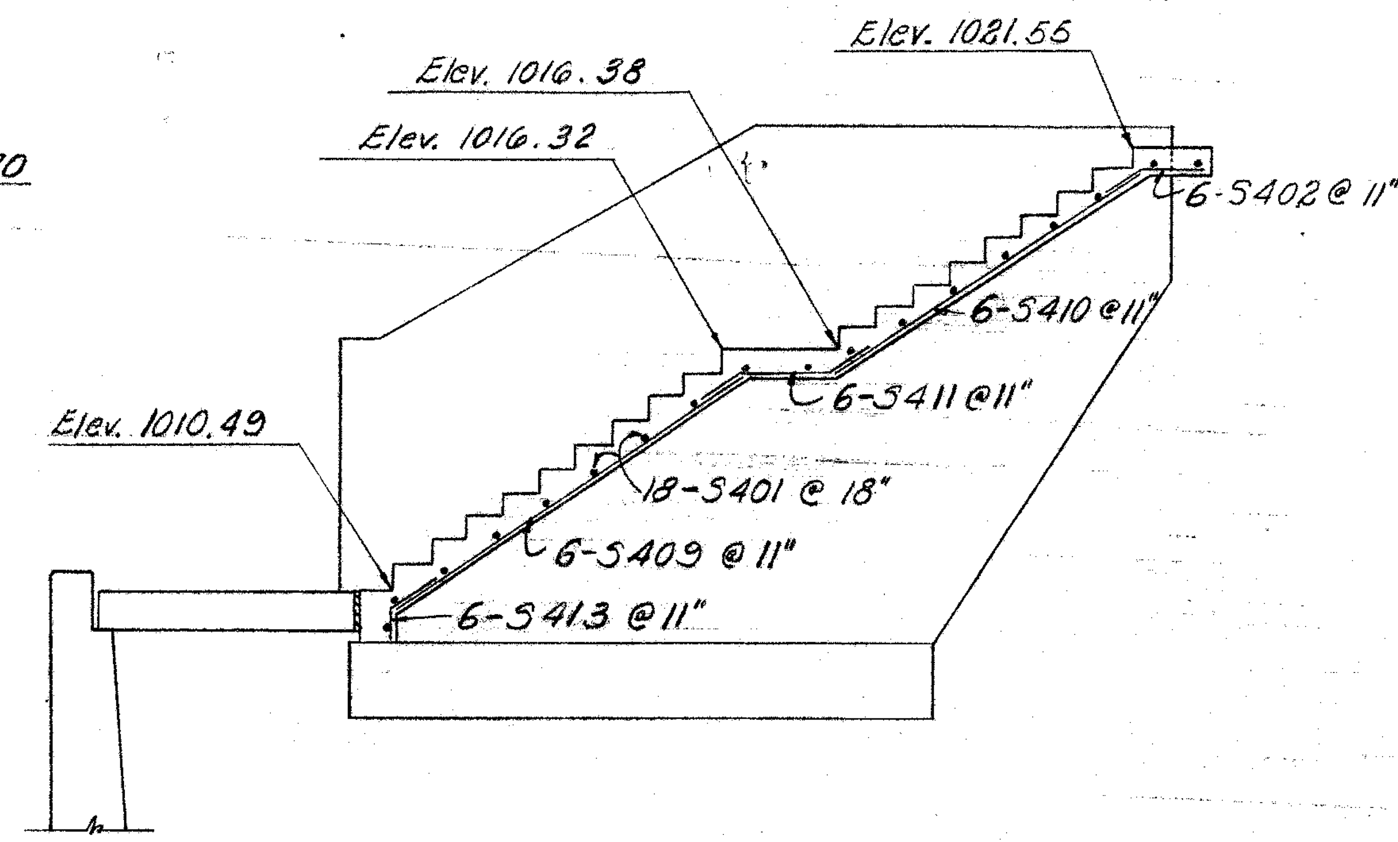
SECTION - STAIRWAY #2



SECTION - STAIRWAY #5



SECTION — STAIRWAY #3



SECTION - STAIRWAY #4

NOTE

For all other details and dimensions, see panel details and refer to Standard Construction Drawing MC-2 dated 6-1-65.

* Hand Rail to be included in 608 for payment.

RACKOFF ASSOCIATES
ENGINEERS
CLEVELAND, OHIO — COLUMBUS, OHIO

13/16

RETAINING WALL
STAIRWAY DETAILS
JEF. - 43 - 0042

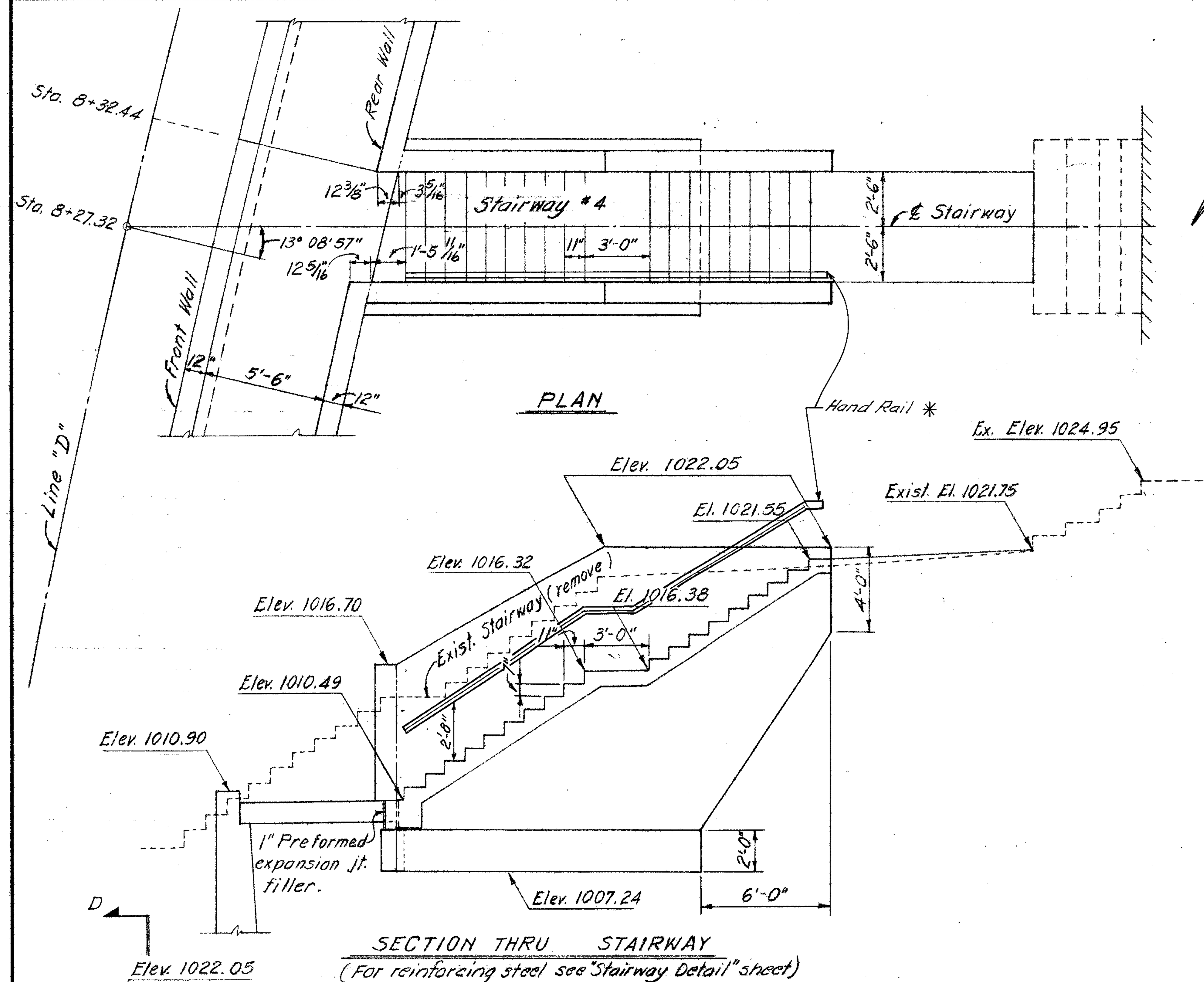
JEFFERSON COUNTY

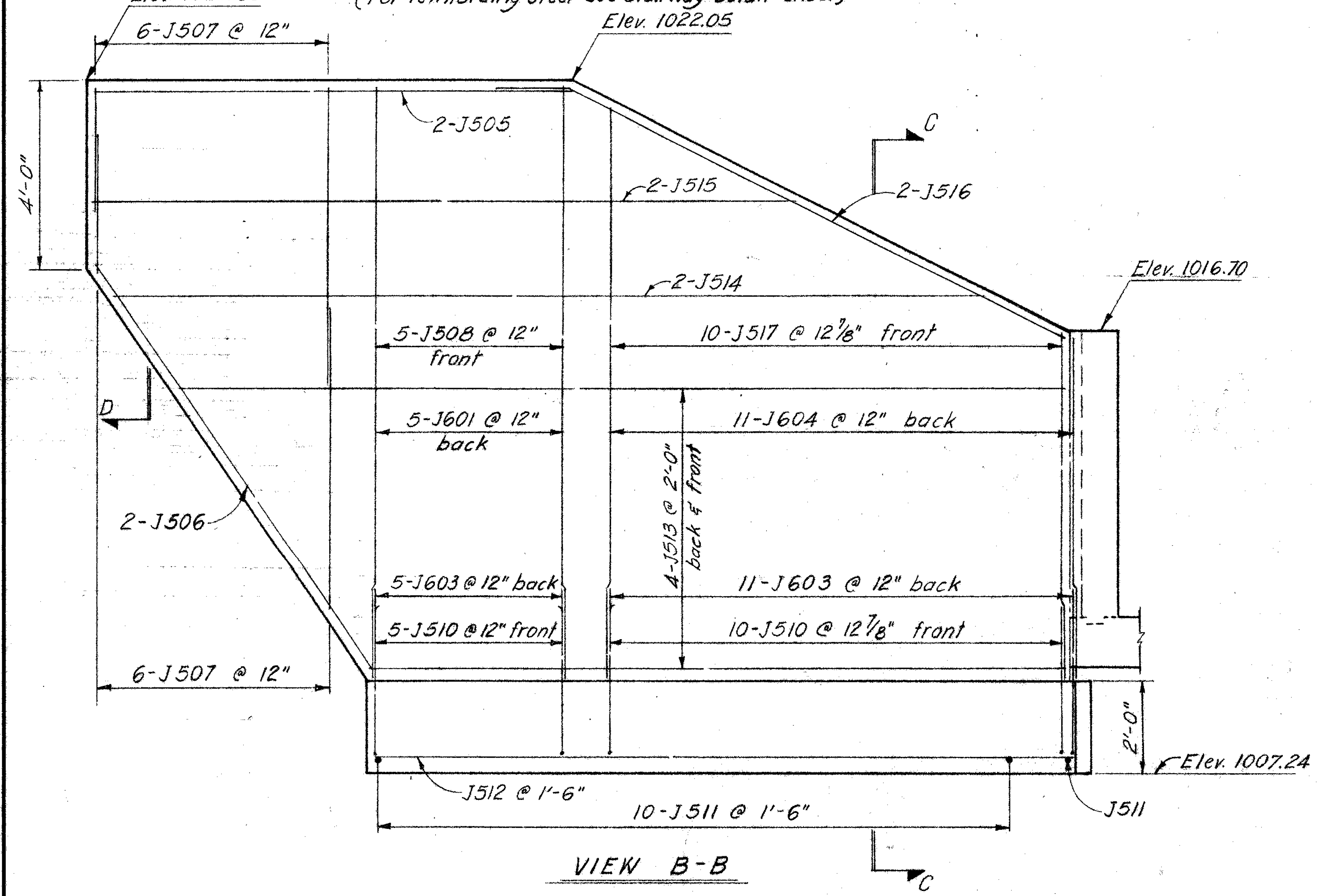
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.C.	S.C.	E.D.A.	B.V.	[illegible]	4.21.67	9/12/72

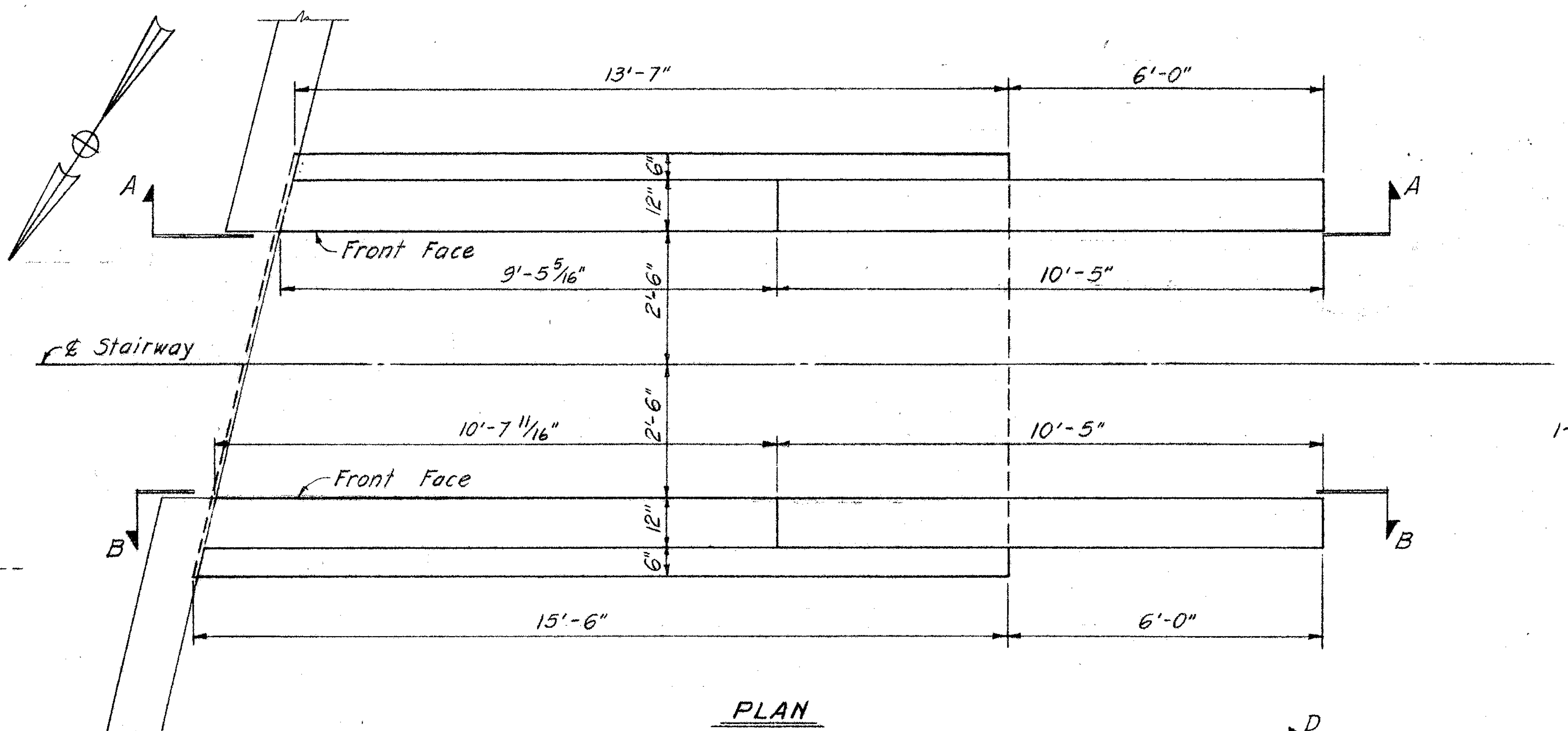
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

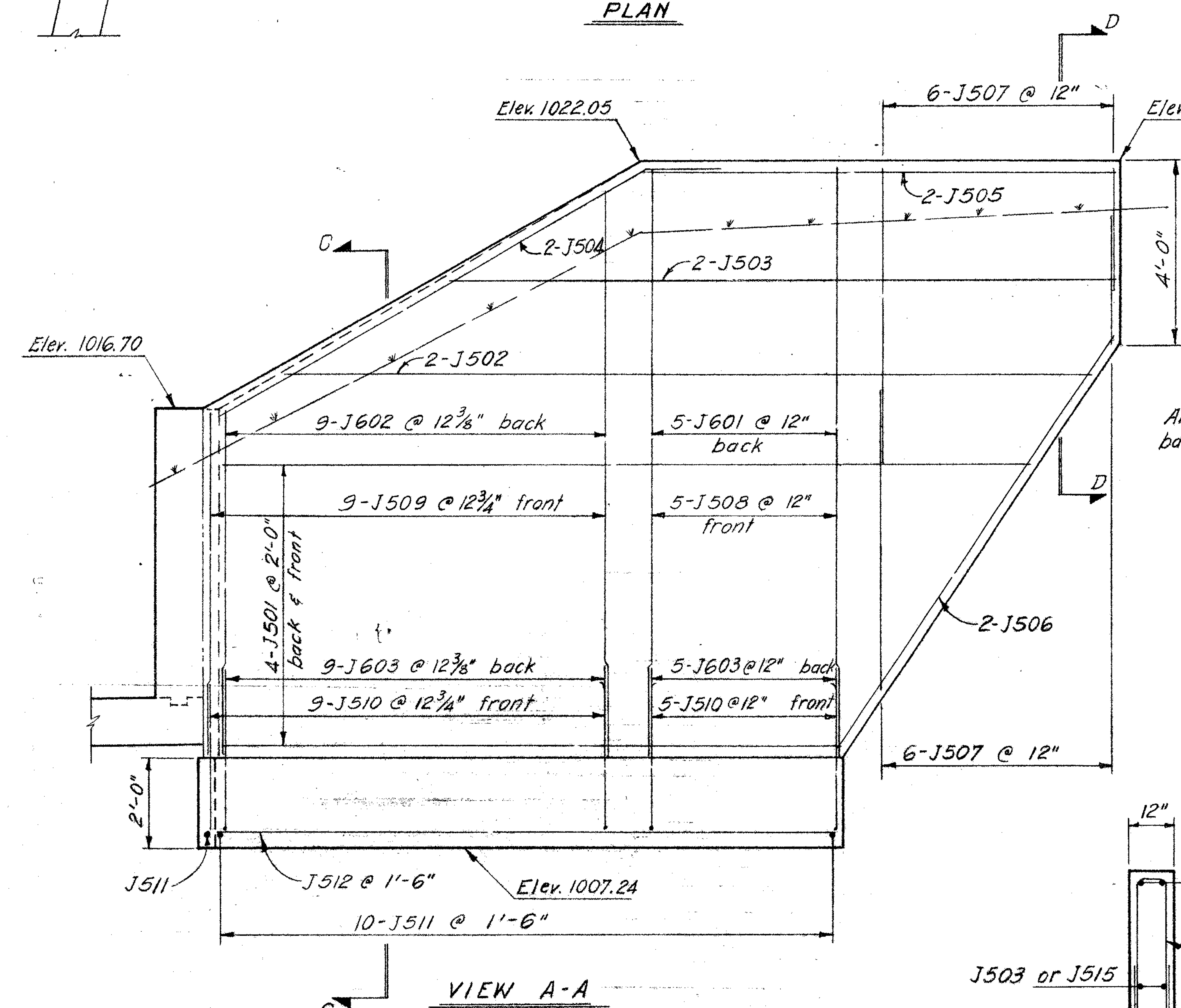
228
299

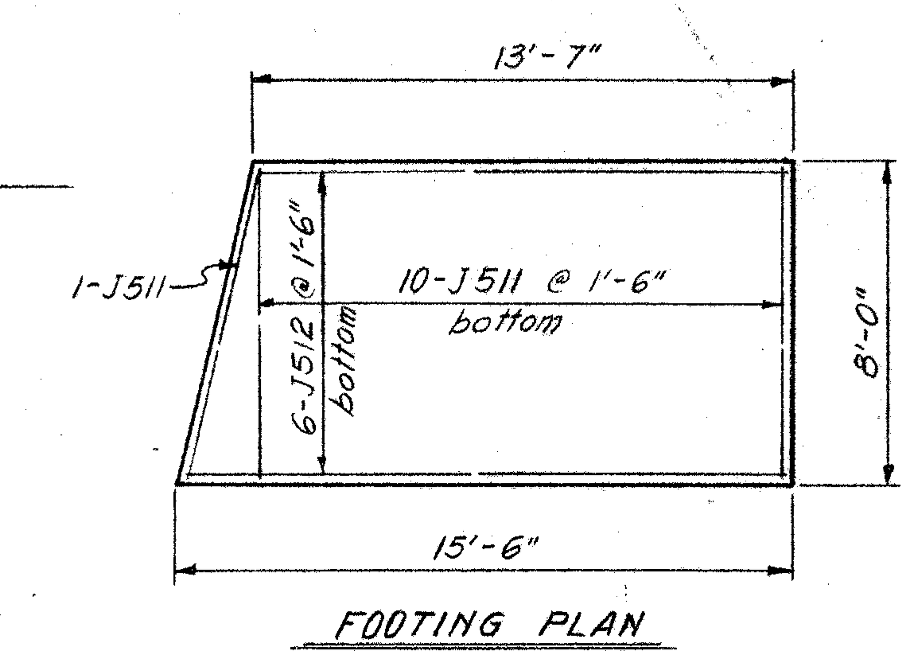
JEFFERSON COUNTY
JEF- 43 - 0.42

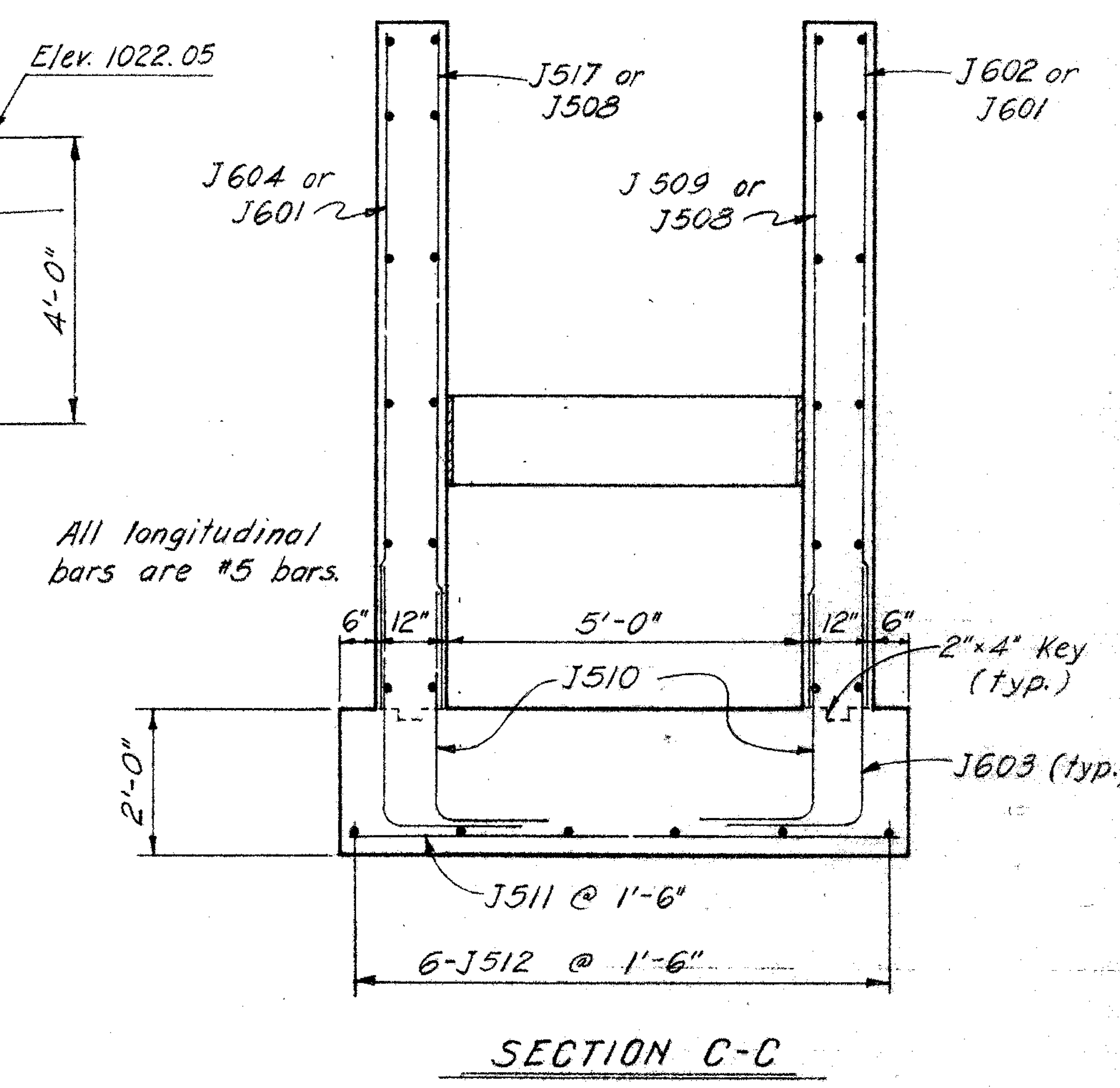


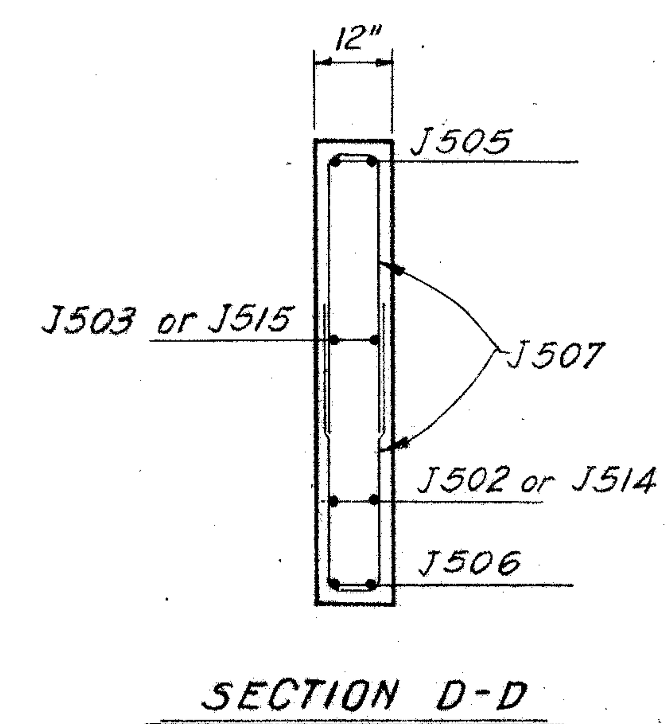












* Hand Rail connected with concrete wall @ 5'-0" c/c max.
See also Standard Drawing MC-2 dated 6-1-65.

RACKOFF ASSOCIATES
ENGINEERS
CLEVELAND, OHIO — COLUMBUS, OHIO

14/16

RETAINING WALL
STAIRWAY DETAILS
JEF. - 43 - 00.42

JEFFERSON COUNTY

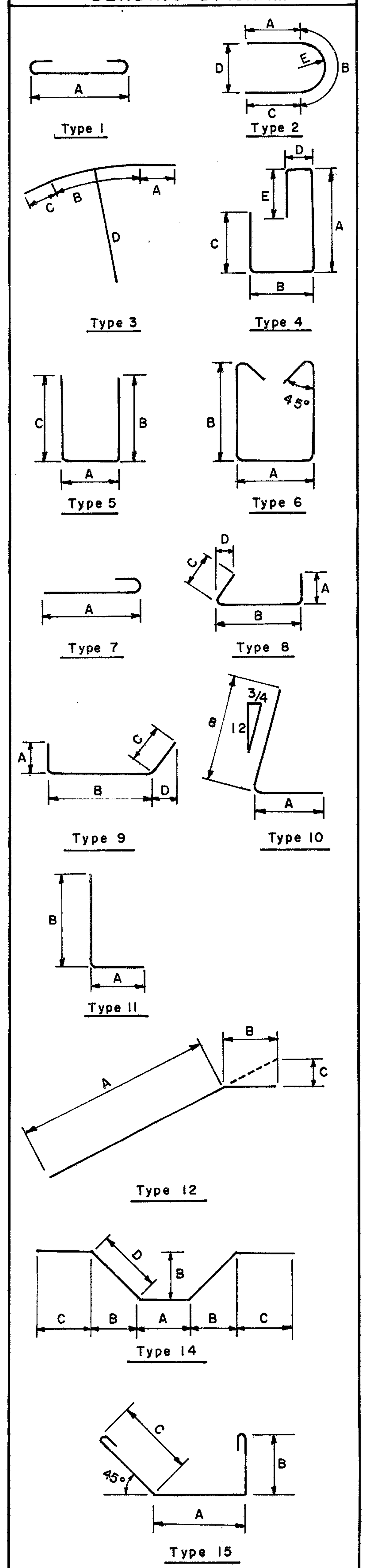
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
M.R.	M.R.		B.V.		4.21.67	

REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			229 / 299

JEFFERSON COUNTY
JEF-43-0.42

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		PANELS #8-#8A							
A 401	44	4-11	145	5	1-1	2-0	2-0		
A 501	8	8-5½ to 12-10	89	S	Each vary by		7½"		
A 502	3	8-6 9	27	S					
A 503	7	3-4 5 to 7-10 1	40 41	S	Each vary by		9"		
A 504	2	7-0	15	S					
A 505	2	13-6	28	S					
A 506	2	17-6	37	S					
A 507	2	21-0 6	44	S 45					
A 508	4	22-8	95	S					
A 509	2	13-6 3	28	12	12-0	1-6 4	0-10 8		
A 510	2	17-0	35	12	11-0	6-0	3-0 2-9		
A 511	14	13-0	190	S					
A 512	12	3-6¾ to 12-0½	98	S	Each vary by		9¼"		
A 513	2	17 18-0 9	37 38	S					
A 514	2	20-6	43	S					
A 515	2	22-6	47	S					
A 516	2	25-9	54	S					
A 517	2	29-6	62	S					
A 518	2	33-0	69	S					
A 519	4	33-8	140	S					
A 520	2	19-8	41	12	18-0	1-8	1-0		
A 521	2	23-6 3	48 49	S					
A 522	2	28-0	58	S					
A 523	2	32-6	68	S					
A 524	6	33-8	211	S					
A 525	34	10-6	372	S					
A 526	9	5-8 to 10-4	75	S	Each vary by		7"		
A 601	15	8-5½ to 12-10	240	S	Each vary by		3¾"		
A 602	3	5 8-6 9	38	S					
A 603	7	3-4 to 7-10	57 59	S	Each vary by		9"		
A 604	51	5-9	440	10	1-11	4-0			
A 605	17	10-6	268	10	1-11	8-9			
A 606	14	13-3	279	S					
A 607	12	3-9¾ to 12-3½	145	S	Each vary by		9¼"		
A 608	34	10-6	536	S					
A 609	9	5-8 to 10-4	108	S	Each vary by		7"		
		SUB-TOTAL:	4,312 4308						
		PANEL #9							
B 401	17 9	3-11	24 45	5	1-1	1-6	1-6		
B 501	17 18	12-10	228 241	S					
B 502	17	4-11	87	S					
B 503	16	21-8	362	S					
B 504	12	10-0	125	S					
B 505	7	22-0	161	S					
B 601	16	10-6	252	10	1-11	8-9			
B 602	17	5-9	147	10	1-11	4-0			
~~B 603~~	~~17~~	~~13-1~~	~~334~~	~~S~~					
B 604	17	5-6	140	S					
		SUB-TOTAL:	1,881 1539						
K701	43	6-11	608	S					
K702	56	5-8	649	S					
K801	86	6-9	1550	S					
K802	43	7-1	813	S					
K803	23	7-2	440	10	2-6	4-10			
K804	22	11-5	671	10	2-6	9-1			
K805	11	10-5	306						
K901	25	7-10	666	10	2-10	5-3			
K902	24	12-7	1027	10	2-10	10-0			
K903	12	11-6	469	S					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		PANELS #10-#12							
C 401	24	3-7	57	5	1-1	1-4	1-4		
C 402	12	3-1	25	5	1-1	1-1	1-1		
C 501	70	31-8	2,312	S					
C 505	24	13-3	332	S					
C 506	24	13-9	344	S					
C 507	12	14-3	178	S					
C 508	13	14-6	197	S					
C 509	54	4-11	277	S					
C 510	34	10-0	355	S					
C 601	46	5-9	397	10	1-11	4-0			
C 602	44	10-6	694	10	1-11	8-9			
C 603	25	5-11	222	10	1-11	4-2			
C 604	24	12-6	451	10	1-11	10-9			
C 605	54	5-6	447	S					
C 606	25	5-9	216	S					
C 701	25	6-0	307	S					
		SUB-TOTAL:	6,811						
		PANELS #13-#15							
D 401	24	3-5	55	5	1-1	1-3	1-3		
D 501	80	31-8	2,642	S					
D 502	12	15-1	189	S					
D 503	13	15-4	208	S					
D 504	12	15-9	197	S					
D 505	13	16-0	217	S					
D 506	12	16-11	212	S					
D 507	13	17-2	233	S					
D 508	40	10-0	417	S					
D 601	25	5-11	222	10	1-11	4-2			
D 602	24	12-6	451	10	1-11	10-9			
D 603	25	5-9	216	S					
D 604	66	6-2	611	S					
D 701	50	6-7	673	10	2-2	4-7			
D 702	48	11-0	1,079	10	2-2	9-0			
D 703	24	10-7	519	S					
D 704	25	6-0	307	S					
D 705	66	6-7	888	S					
		SUB-TOTAL	9,336						
		PANELS #16-#18							
E 401	24	3-1	49	5	1-1	1-1	1-1		
E 501	88	31-8	2,906	S					
E 502	12	18-0	225	S					
E 503	13	18-3	247	S					
E 504	12	18-9	235	S					
E 505	13	19-0	258	S					
E 506	12	19-7	245	S					
E 507	13	19-10	269	S					
E 508	44	10-0	459	S					
E 601	88	6-8	881	S					
E 602	39	5-11	347	S					
E 701	88	7-1	1,274	S					
E 702	39	6-5	512	S					
E 801	75	7-3	1,452	10	2-6	4-11			
E 802	72	12-9	2,451	10	2-6	10-5			
E 803	36	12-9	1,226	S					
		SUB-TOTAL:	13,036						

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		PANELS #19-#22							
F 401	24	3-1	49	5	1-1	1-1	1-1		
F 501	89	31-8	2,940	S					
F 502	12	20-5	256	S					
F 503	13	20-8	280	S					
F 504	12	21-4	267	S					
F 505	13	21-7	293	S					
F 506	5	21-6 to 22-4	114	S	Each	vary	by 2½"		
F 507	5	21-9 to 22-7	116	S	Each	vary	by 2½"		
F 508	5	14-10 to 20-7	92	S	Each	vary	by 1'-5¼"		
F 509	6	14-9 to 21-5	113	S	Each	vary	by 1'-4"		
F 510	2	14-4	30	S					
F 511	2	14-7	30	S					
F 512	2	23-0	48	S					
F 513	2	19-0	40	S					
F 514	2	15-0	31	S					
F 515	2	14-4	30	12	12-10	1-7½	0-8		
F 516	2	17-2	36	12	15-8	1-7½	0-10		
F 517	15	19-8	308	S					
F 518	3	15-2	47	S					
F 519	6	7-9 to 14-10	71	S	Each	vary	by 1'-5"		
F 520	5	8-0 to 13-8	56	S	Each	vary	by 1'-5"		
F 521	2	15-5	32	S					
F 522	2	18-10	39	S					
F 523	2	14-10	31	S					
F 524	2	10-10	23	S					
F 525	2	6-10	14	S					
F 526	2	21-3	44	12	16-7	4-9½	2-5		
F 527	62	10-0	647	S					
F 601	6	5-11	53	10	1-11	4-2			
F 602	6	12-6	113	10	1-11	10-9			
F 603	9	5-9	78	10	1-11	4-0			
F 604	8	10-6	126	10	1-11	8-9			
F 605	14	5-1	107	S					
F 701	8	6-7	108	10	2-2	4-7			
F 702	7	11-0	157	10	2-2	9-0			
F 703	4	10-7	87	S					
F 704	117	6-7	1,574	S					
F 705	14	5-5	155	S					
F 801	117	6-10	2,135	S					
F 802	3	7-3	58	10	2-6	4-11			
F 803	3	12-9	102	10	2-6	10-5			
F 804	1	12-9	34	S					
F 901	64	8-2	1,777	10	2-10	5-7			
F 902	62	14-3	3,004	10	2-10	11-8			
F 903	31	14-10	1,563	S					
		SUB-TOTAL	17,308						
		BARS FOR LIGHT POLE MOUNTING							
		~~PANEL #10~~							
~~C 511~~	~~6~~	~~12-0~~	~~75~~	~~14~~	~~1-4~~	~~2-5~~	~~1-7~~	~~3-5~~	
~~C 512~~	~~3~~	~~9-8~~	~~30~~	~~15~~	~~3-0~~	~~2-6~~	~~3-3~~		
		~~SUB-TOTAL:~~	~~105~~						
		PANEL #18							
E 509	6	12 11-0	69 75	14	1-4	2-5	1-7	3-5	
E 510	3	9-8	30	15	3-0	2-6	3-3		
		SUB-TOTAL:	105 99						

NOTES

BAR SIZE is indicated in bar mark. The first digit where three digits are used, and the first two where four are used indicate the bar size number.

RACKOFF ASSOCIATES, INC.
QUANTITIES CALCULATED BY VAP 10-4-72
QUANTITIES CHECKED BY R.S. 10-5-72

RACKOFF ASSOCIATES, INC. 15/16
ENGINEERS · CONSULTANTS
COLUMBUS, OHIO

REINFORCING BAR LIST
PANELS 8 THRU 22
JEF - 43 -00.42

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised.
M.R.	M.R.		V. B.	V.K.	4.21.67	9/12/72 7-15-74

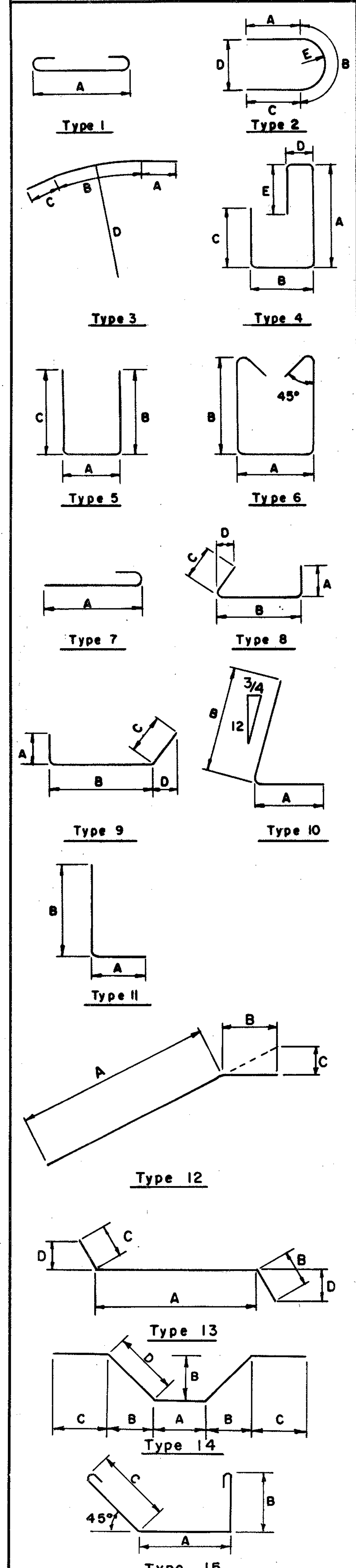
H. COLE CO.

REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			230/299

JEFFERSON COUNTY
JEF - 43 - 0.42

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		PANELS #23-#28							
G401	36	3 - 9	90	5	1-1	1-5	1-5		
G501	56	31 - 8	1,850	S					
G502	24	5 - 2	129	S					
G503	48	5 - 6	275	S					
G504	12	5-5 to 6-3	73	S	each	vary	by 7/8"		
G505	12	5-8 to 6-6	76	S	each	vary	by 7/8"		
G506	12	5-8 to 8-3	87	S	each	vary	by 2 3/4"		
G507	12	5-11 to 8-6	90	S	each	vary	by 2 3/4"		
G508	2	23 - 6	49	S					
G509	2	31 - 9	66	S					
G510	12	7-2 to 10-4	110	S	each	vary	by 3 1/2"		
G511	12	7-5 to 10-7	113	S	each	vary	by 3 1/2"		
G512	2	19 - 3	40	S					
G513	2	31 - 10	66	S					
G514	7	10 - 0	73	S					
G515	17	3 - 4	59	S					
G516	17	3 - 9	66	S					
G601	92	5 - 3	725	10	1-11	3-6			
G602	23	5 - 5	187	10	1-11	3-8			
G603	12	5 - 6	99	10	1-11	3-9			
G604	11	7 - 6	124	10	1-11	5-9			
		SUB-TOTAL	4,447						
		PANELS #29-#31							
H401	10	3 - 5	23	5	0-7	0-6	2-7		
H501	15	31 - 8	495	S					
H502	2	21 - 0	44	S					
H503	2	31 - 10	66	S					
H504	12	9-2 to 12-5	135	S	each	vary	by 3 1/2"		
H505	12	9-5 to 12-8	138	S	each	vary	by 3 1/2"		
H506	39	10 - 0	407	S					
H507	27	3 - 10	108	S					
H508	27	4 - 4	122	S					
H509	19	18 - 0	357	S					
H510	2	12 - 0	25	S					
H511	2	7 - 0	15	S					
H512	2	3 - 8	8	S					
H513	2	8 - 5	18	12	6-8 1/2	1-10	1-3		
H514	4	10-10 to 11-10	47	S	each	vary	by 4"		
H515	4	11-1 to 12-1	48	S	each	vary	by 4"		
H516	1	12 - 11	13	S					
H517	1	13 - 2	14	S					
H518	1	14 - 7	15	S					41
H519	1	14 - 10	15	S					
H520	1	15 - 4	16	S			5'-3" to 5'-10"		
H521	1	15 - 7	16	S					24
H522	22	24 - 0	551	S					24
H523	9	14 - 3	134	S			4'-9" to 5'-4"		
H524	10	13 - 0	136	S					
H525	7	10 - 0	73	12	5-0 3/4	5-0 3/4	2-6		
H526	1	1 - 2	1	S					
H527	6	2-11 to 5-11	28	S	2 each,	vary	by 1'-6"		
H528	6	6 - 1	38	S					
H529	11	23 - 9	272	S					
H530	2	18 - 6	39	S					
H531	2	16 - 2	34	S					
H532	2	12 - 2	25	S					10-2
H533	2	19 - 7	41	12	11-1	8-7 1/2	4-3		69
H601	12	5 - 8	102	10	1-11	3-11			
H602	11	8 - 6	140	10	1-11	6-9			
H603	25	5 - 2	194	S					
H604	25	5 - 6	207	S					
H605	7	5 - 9	60	10	1-11	4-0			
H606	6	10 - 6	95	10	1-11	8-9			
H607	17	5 - 0	128	11	3-3	1-11			
H608	29 4	6 - 2	37 269	S					
H609	12	8 - 8	156	11	6-2	2-8			
H610	1	7 - 11	12	11	6-2	1-11			

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
H701	6	6 - 6	80	10	2-2	4-6			
H702	6	9 - 6	117	10	2-2	7-6			
H703	3	8 - 4	51	S					
~~H704~~	~~19~~	~~6 - 7~~	~~256~~	~~10~~	~~2-2~~	~~4-7~~			
~~H705~~	~~18~~	~~11 - 0~~	~~405~~	~~10~~	~~2-2~~	~~9-0~~			
~~H706~~	~~9~~	~~10 - 7~~	~~195~~	~~S~~					
~~H707~~	~~25~~	~~6 - 7~~	~~336~~	~~S~~					
		SUB-TOTAL	6,320 7746		See other	bars	this sheet		
		STAIRWAY							
J501	8	13-4 to 17-4	128	S	2 each,	vary	by 1'-4"		
J502	2	17 - 3	36	S					
J503	2	14 - 4	30	S					
J504	2	12 - 0	25	12	10-6	1-7 1/2	0-10		
J505	4	10 - 3	43	S					
J506	4	10 - 7	44	S					
J507	24	5-8 to 13-2	236	5	0-7	2-8	2-8	4 each	vary "B"
						to 6-5	to 6-5	and "C"	by 9"
J508	10	12 - 8	132	S					
J509	9	7-4 to 12-2	92	S	each	vary	by 7 1/4"		
J510	29	4 - 10	146	11	1-7	3-4 1/2			
J511	11	7 - 8	88	S					
J512	6	13-3 to 15-2	89	S	each	vary	by 4 5/8"		
J513	8	14-11 to 18-11	141	S	2 each,	vary	by 1'-4"		
J514	2	18 - 6	39	S					
J515	2	14 - 10	31	S					
J516	2	13 - 4	28	12	11-10	1-7 1/2	0-10		
J517	10	7-4 to 12-2	102	S	each	vary	by 6 1/2"		
J601	10	12 - 8	190	S					
J602	9	7-4 to 12-2	132	S	each	vary	by 7 1/4"		
J603	30	5 - 5	244	11	1-11	3-8			
J604	11	7-4 to 12-2	161	S	each	vary	by 5 3/4"		
		SUB-TOTAL	2,157						
		PANELS #32-#34							
K401	37	3 - 5	84	5	0-7	0-6	2-7		
			1784						
K501	53	31 - 8	1,751	S					
K502	12	12 - 11 9	162	S	160				
K503	13	11 - 8 6	158	S	156				
K504	32 37	10 - 0	334	12	5-0 3/4	5-0 3/4	2-6		
K505	12	10 - 10 7	136	S	132	386			
K506	12	9 - 7 4	120	S	117				
K507	27	4 - 11	138	S	31'-4"		1340		
K508	12	8 - 10 9	111	S	110				
K509	12	7 - 7 6	95	S	94				
K510	23	4 - 6	139 108	S	2 each, vary by 5/8"				
K511	23	5 - 0	126 120	S	2 each, vary by 5/8"				
K512	15	31 - 1	486	S					
K513	12	6 - 1	76	S					
K514	12	5-10 to 6-1 11	75	S	2 each,	vary	by 5/8"		
~~K515~~	~~24~~	~~5-3 to 5-10~~	~~139~~	~~S~~	~~2 each,~~	~~vary~~	~~by 5/8"~~		
~~K516~~	~~24~~	~~4-9 to 5-4~~	~~126~~	~~S~~	~~2 each,~~	~~vary~~	~~by 5/8"~~		
~~K517~~	~~40~~	~~31 - 4~~	~~1,037~~	~~S~~					
			336						
K601	69	5 - 0	518	11	3-3	1-11			
K602	25 23	5 - 11 9	222	10	1-11	4-2	199	0	
K603	24 22	12 - 6	451	10	1-11	10-9	7	8'-9	
K604	25	8 5 - 9 8	216	S 11	6-2	2-8	898		
~~K605~~	~~23~~	~~5 - 9~~	~~199~~	~~10~~	~~1-11~~	~~4-0~~			
~~K606~~	~~22~~	~~10 - 6~~	~~347~~	~~10~~	~~1-11~~	~~8-9~~			
~~K607~~	~~27~~	~~5 - 6~~	~~223~~	~~S~~					
~~K608~~	~~12~~	~~5 - 8~~	~~102~~	~~10~~	~~1-11~~	~~3-11~~			
~~K609~~	~~11~~	~~8 - 6~~	~~140~~	~~10~~	~~1-11~~	~~6-9~~			
~~K610~~	~~69~~	~~8 - 8~~	~~898~~	~~11~~	~~6-2~~	~~2-8~~			
~~K701~~	~~25~~	~~6 - 0~~	~~307~~	~~S~~					
		SUB-TOTAL	9,149		See other	bars on			
					sheet 229				
			14,415						

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		PANELS #35-#36							
L401	12	3 - 5	27	5	0-7	0-6	2-7		
L501	16	31 - 8	528	S					
L502	12	6-2 to 6-10	81	S	each	vary	by 3/4"		
L503	12	4-11 to 5-7	66	S	each	vary	by 3/4"		
L504	24	4 - 9	119	S					
L505	5	5-2 to 5-9	28	S	each	vary	by 1 3/4"		
L506	5	5-5 to 6-0	30	S	each	vary	by 1 3/4"		
L507	9	4 - 8	44	S					
L508	8	11 - 4	95	S					
L509	4	12 - 8	53	S					
L510	6	1-4 to 1-7	9	S	2 each,	vary	by 1 1/2"		
L511	2	1 - 8	3	S					
L512	4	5 - 5	23	S					
L513	13	31 - 4	425	S					
L601	23	5 - 0	173	11	3-3	1-11			
L602	12	5 - 6	99	10	1-11	3-9			
L603	11	7 - 6	124	10	1-11	5-9			
L604	9	5 - 3	71	10	1-11	3-6			
L605	23	8 - 8	299	11	6-2	2-8			
L606	50	4 - 10	363	S					
L607	2	5 - 3	16	11	1-11	3-6			
		SUB-TOTAL	2,676						
H801	66	6-9	1189	S					
H901	19	7-10	506	10	2-10	5-3			
H902	18	12-7	770	10	2-10	10-0			
H903	9	12-7	385	S					
S401	36	4-8	112	S					
S402	24	2-0	32	9	0	1-3 1/2	0-10	0-9	
S403	38	5-2	131	S					
S404	6	6-0	24	13	3-0	1-6	1-6	0-8	
S405	12	10-9	86	S					
S406	6	16-0	64	S					
S407	6	17-0	68	S					
S408	6	12-3	49	13	10-0	1-3	1-3	0-7 1/2	
S409	6	10-6	42	S					
S410	6	9-6	38	S					
S411	6	4-3	17	13	2-0	1-3	1-3	0-7 1/2	
S412	6	6-6	26	S					
S413	24	1-5	23	9	0	1-3 1/2	0-3	0-2 1/2	
		SUB-TOTAL	712						
		REPLACEMENT BARS							
RE401	1	5 - 3	—	S					
RE501	3	5 - 7	—	S					
RE601	1	5 - 11	—	S					
RE701	1	6 - 2	—	S					
RE801	1	6 - 6	—	S					
RE901	1	6 - 10	—	S					
		BARS FOR LIGHT POLE MOUNTING							
		PANEL #24							
G517	6	11 12 - 0	69 75	14	1-4	2-5	1-7	3-5	
G518	3	9 - 8	30	15	3-0	2-6	3-3		
		SUB-TOTAL	105		99				
		PANEL #30							
H534	6	11 12 - 0	69 75	14	1-4	2-5	1-7	3-5	
H535	3	9 - 8	30	15	3-0	2-6	3-3		
		SUB-TOTAL	105		99				
		TOTAL	77,853						
			84,076						

PANELS #29 - #31

STAIRWAYS
INCLUDED WITH CONCRETE
STEPS (608) FOR PAYMENT. ✱

NOTES

BAR SIZE is indicated in bar mark. The first digit where three digits are used, and the first two where four are used indicate the bar size number.

✱ This quantity item (608) is carried in the General Summary.

RACKOFF ASSOCIATES
ENGINEERS
CLEVELAND, OHIO — COLUMBUS, OHIO

16/16

REINFORCING BAR LIST
PANELS 23 THRU 36
JEF - 43-00.42

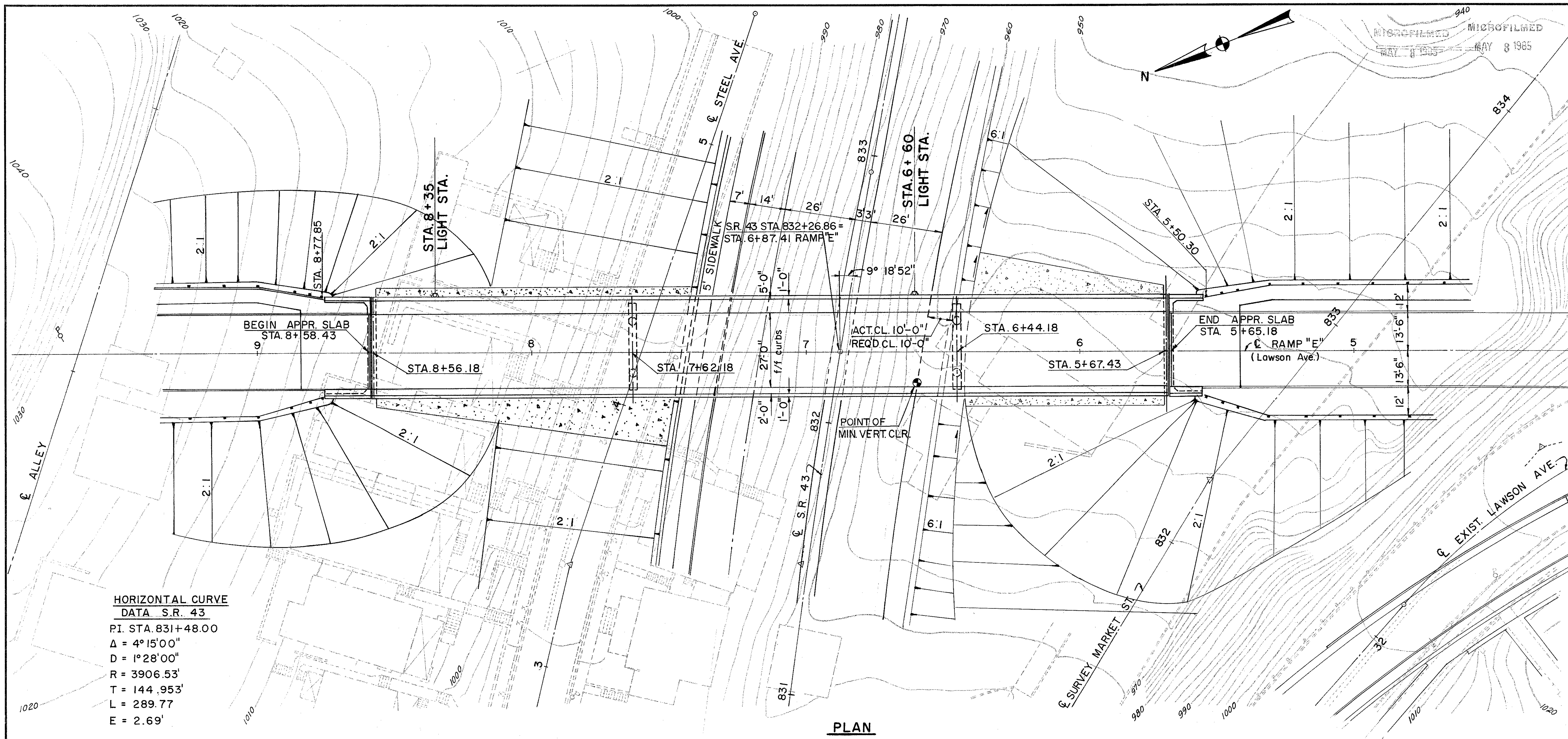
JEFFERSON COUNTY

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
M.R.	M.R.		V. B.	[illegible]	4-21-67	9-12-72 7-15-74

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

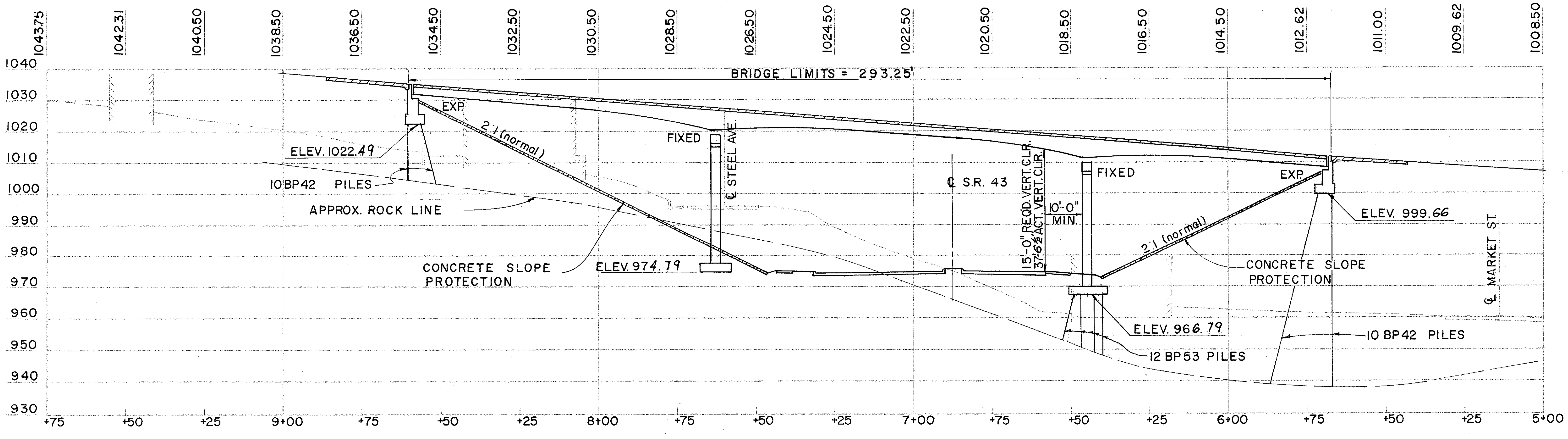
234/299

JEFFERSON COUNTY
JEF-43-0.42



HORIZONTAL CURVE DATA S.R. 43
P.I. STA. 831+48.00
Δ = 4° 15' 00"
D = 1° 28' 00"
R = 3906.53'
T = 144.953'
L = 289.77
E = 2.69'

PLAN



PROFILE ALONG ℄

VERTICAL CURVE DATA
RAMP E

P.V.I. STA. 4+50 ELEV. = 1002.50
G_1 = −4.00% G_2 = +8.00%
V.C. = 300'

ABUTMENT PILES ARE 10BP42 STEEL H PILES. AVERAGE ESTIMATED PAY LENGTH IS:
ABUTMENT NO. 1 20 FEET
ABUTMENT NO. 2 63 FEET

PIER PILES ARE 12BP53 STEEL H PILES. AVERAGE ESTIMATED PAY LENGTH IS:
PIER NO. 2 25 FEET

1985 ADT: LAWSON AVE. 5,150
S.R. 43 15,120

PROPOSED STRUCTURE

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

SPANS: 94'-0", 118'-0" and 76'-9" c/c of bearings.

ROADWAY: 27'-0" face to face of curbs, with one 5' sidewalk and one 2' safety curb.

LOAD FREQUENCY: CF 400

SURFACE COURSE: 2½" Asphalt Concrete

SKEW: 0°00'00"

APPROACH SLAB: AS-1-67 (25' long)

ALIGNMENT: Tangent

SUPERELEVATION: None

RACKOFF ASSOCIATES
ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO
1/11

SITE PLAN
BRIDGE NO. JEF-43-0111
S.R. 43 UNDER RAMP E

JEFFERSON COUNTY STA. 832+26.86

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
B. S.	E.DA.		S. S.		6-28-66	9-27-72

JEFFERSON COUNTY
JEF - 43 - 0.42

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

RACKOFF ASSOCIATES
ENGINEERS COLUMBUS, OHIO

2/11

GENERAL PLAN AND ELEVATION

BRIDGE NO. JEF. - 43 - 0111
S. R. 43 UNDER RAMP E

JEFFERSON COUNTY STA. 832+26.86

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
B. S.	E.D.A.		S. S.	[illegible]	6-28-66	

MICROFILMED MAY 8 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

236 / 299

JEFFERSON COUNTY
JEF-43-0.42

GENERAL NOTES

REFERENCE SHALL BE MADE TO:

Standard Drawing BR-1-65 Revised 11-24-65 Sheet 2
Standard Drawing RB-1-55 Revised 2-2-59
Standard Drawing SD-1-69 Dated 6-12-69 Sheet 1, 2 and 3
Supplemental Specification 808 Dated 1-1-71

Supplemental Specification 836 Dated 1-1-71
Standard Drawing BR-2-67, Revised 10-15-71

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 400 (57)
Concrete Class "C" — basic unit stress 1,333 p.s.i. (Superstruct. & Substruct.)

Structural Steel — ASTM A36 — basic unit stress 20,000 p.s.i.
Reinforcing Steel — ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i. Except, spiral reinforcement may be plain, structural grade with basic unit stress of 18,000 p.s.i.

EXCAVATION QUANTITY:
Excavation Quantity includes the removal of fill material required for construction of the abutments and piers. The contractor shall remove all walls and floors in such a manner that no remaining material will interfere with the driving of the piles.

PILES: Piles shall be driven to firm contact with rock with a hammer of not less than 11,000 ft. lbs. per blow. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. 507.05 is not less than the following value for a pile hammer of the indicated energy rating:

For the Abutment No.1 piles:
42 tons per pile using an 11,000 ft. lb. hammer
37 tons per pile using a 15,000 ft. lb. or greater hammer

For the Abutment No.2 piles:
35 tons per pile using an 11,000 ft. lb. hammer
35 tons per pile using a 15,000 ft. lb. or greater hammer

For the Pier No.2 piles:
45 tons per pile using an 11,000 ft. lb. hammer
43 tons per pile using a 15,000 ft. lb. or greater 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 40 tons per pile for the pier piles.

FOUNDATION BEARING PRESSURE: Pier No.1 footings are designed for a maximum bearing pressure of 7.5 tons per sq. ft.

FOOTINGS: Pier no.1 footings shall extend a minimum of 3" into undisturbed rock or to the elevation shown, whichever is lower.

UTILITY LINES: All expense involved in relocation (installing) of the affected utility lines shall be borne by the owners. The Contractor and owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

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 which excavation shall be made for the abutments and for pier 1 and pier 2.

DECK FINISHING: Texturing of the deck surface as provided in 451.09 shall not be done.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIER	GEN.	AS BUILT	
503	310	cu. yds.	Unclassified excavation		235	75			
503	56	cu. yds.	Rock excavation			56			
505	Lump	Sum	First test pile				Lump		
507	996	lin. ft.	Steel piles 10BP42		996				
507	550	lin. ft.	Steel piles 12BP53			550			
509	129,733	lbs.	Reinforcing steel	89,859	11,039	28,835			
511	395	cu. yds.	Class "C" concrete, superstructure	395					
511	87	cu. yds.	Class "C" concrete, piers above footings			87			
511	46	cu. yds.	Class "C" concrete, pier footings			46			
511	97	cu. yds.	Class "C" concrete, abutments above footings		97				
511	67	cu. yds.	Class "C" concrete, abutment footings		67				
513	358,000	lbs.	Structural steel	358,000					
514	358,000	lbs.	Field painting of structural steel	358,000					
517	647.17	lin. ft.	Bridge railing Type 2	581.50	65.67				
518	25	cu. yds.	Porous backfill		25				
518	56	lin. ft.	6" Perforated, helical C.M.P., including specials, 707.01		56				
518	60	lin. ft.	6" Non-perforated, helical C.M.P., 707.01		60				
518	12	each	Scuppers including supports and modification	12					
601	1,120	sq. yds.	Concrete slope protection				1,120		
625			See sheet 169 for Lighting Summary						
404	48	cu. yd.	Asphalt concrete (70-85 or AC-20)	48					
808	395	units	Chemical admixture for concrete, type A, B or D	395					
Special	12	cu. yd.	Sand Asphalt (See Proposal Note)	12					
Special	886	sq. yds	Membrane waterproofing (See Proposal Note)	886					

COMPUTED BY W.S. DATE 6-21-66 CHECKED BY SSE. DATE 6-22-66

RAILING: Refer to BR-1-65 for details of the concrete parapet and end post. For the remaining details (posts, tubes, anchors, joints filler, ect) refer to BR-2-67. Do not use the Guard Rail Connection Bracket shown on BR-2-67.

For Lighting details, See Sheet

RACKOFF ASSOCIATES
ENGINEERS COLUMBUS, OHIO

3/11

GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. JEF.-43-0111
S.R. 43 UNDER RAMP E

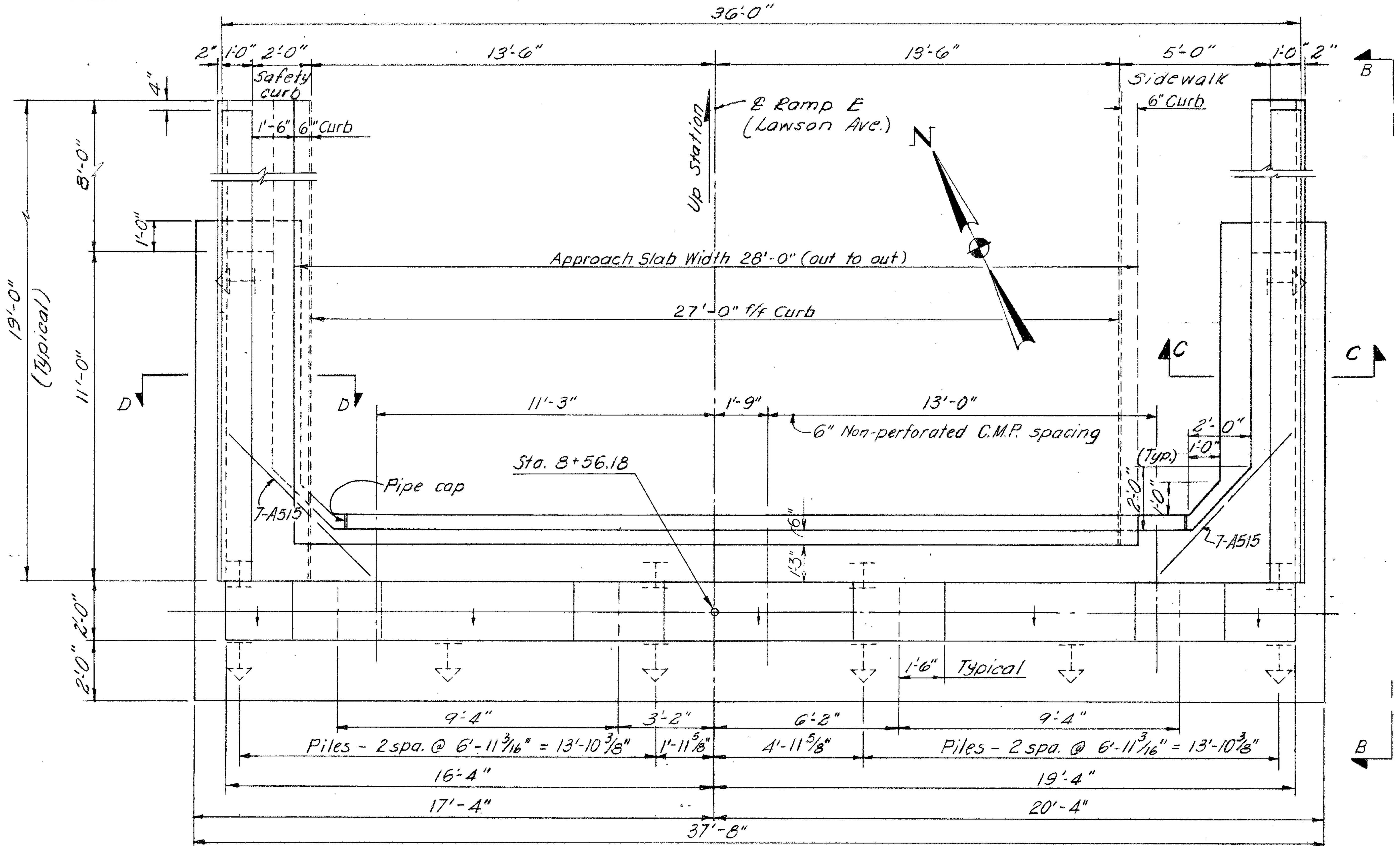
JEFFERSON COUNTY STA. 832+26.86

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.S.	M.R.		B.S.		6-28-66	9-27-72

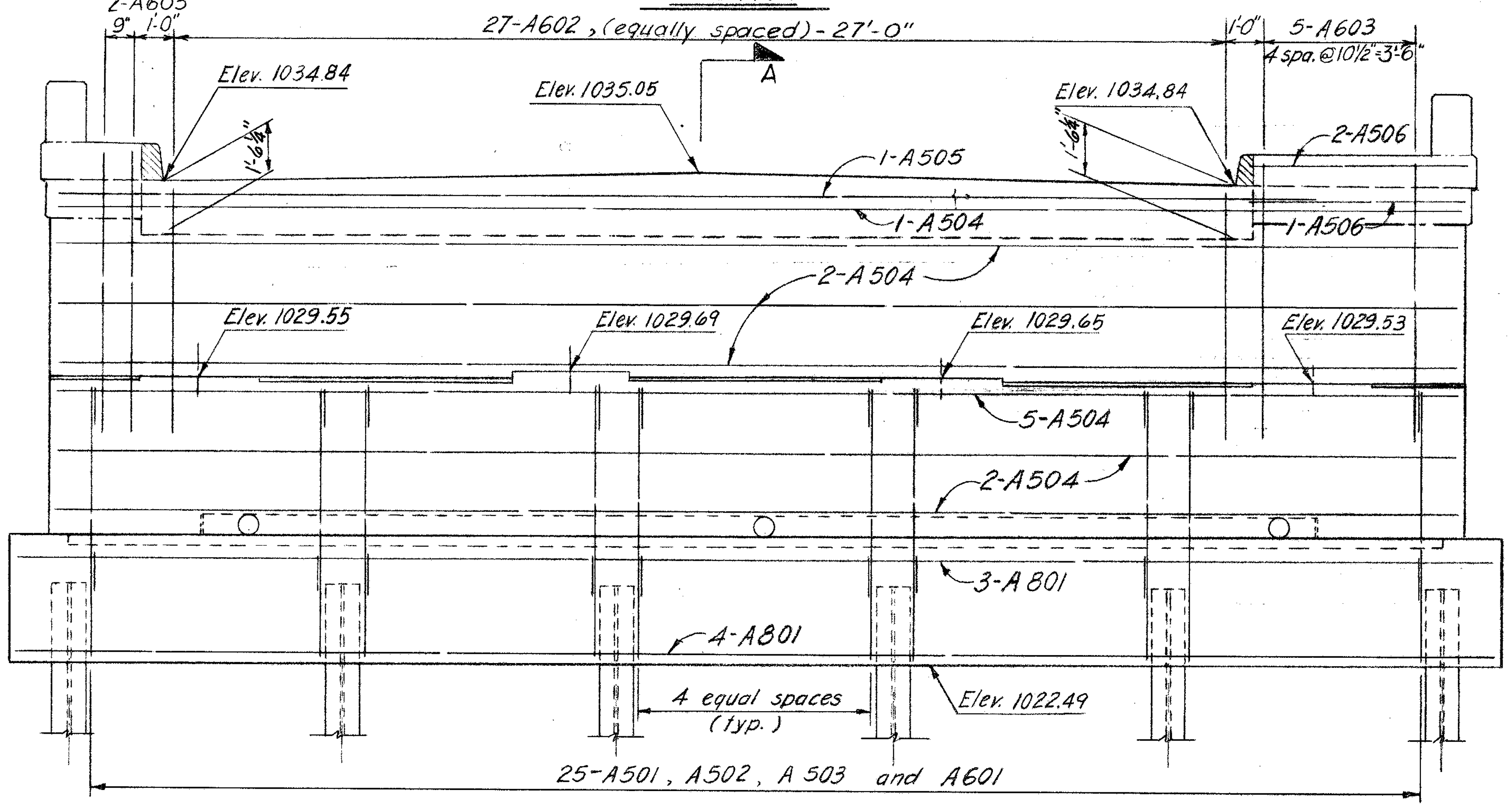
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

237 / 299

JEFFERSON COUNTY
JEF - 43 - 0.42

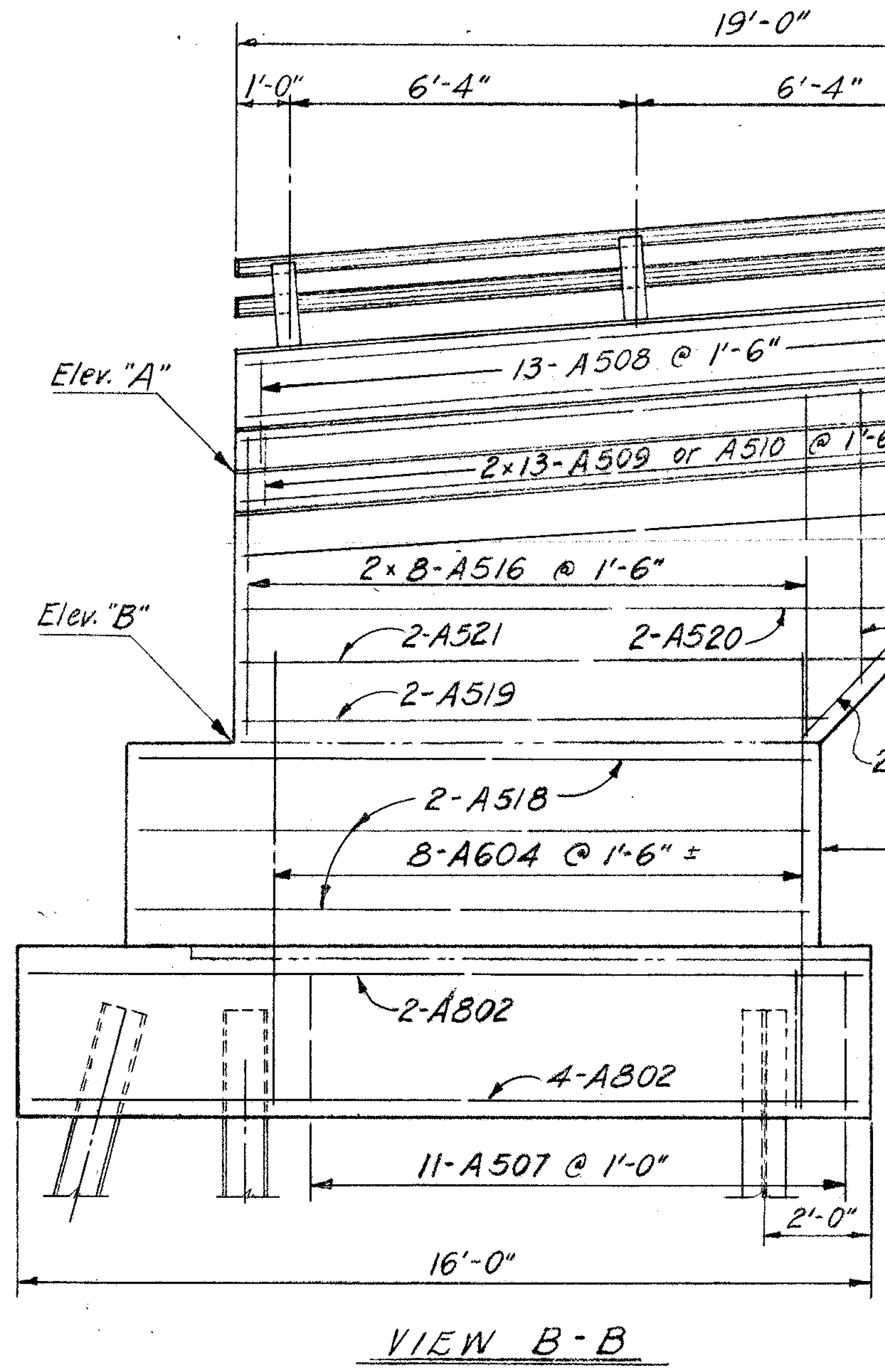


PLAN

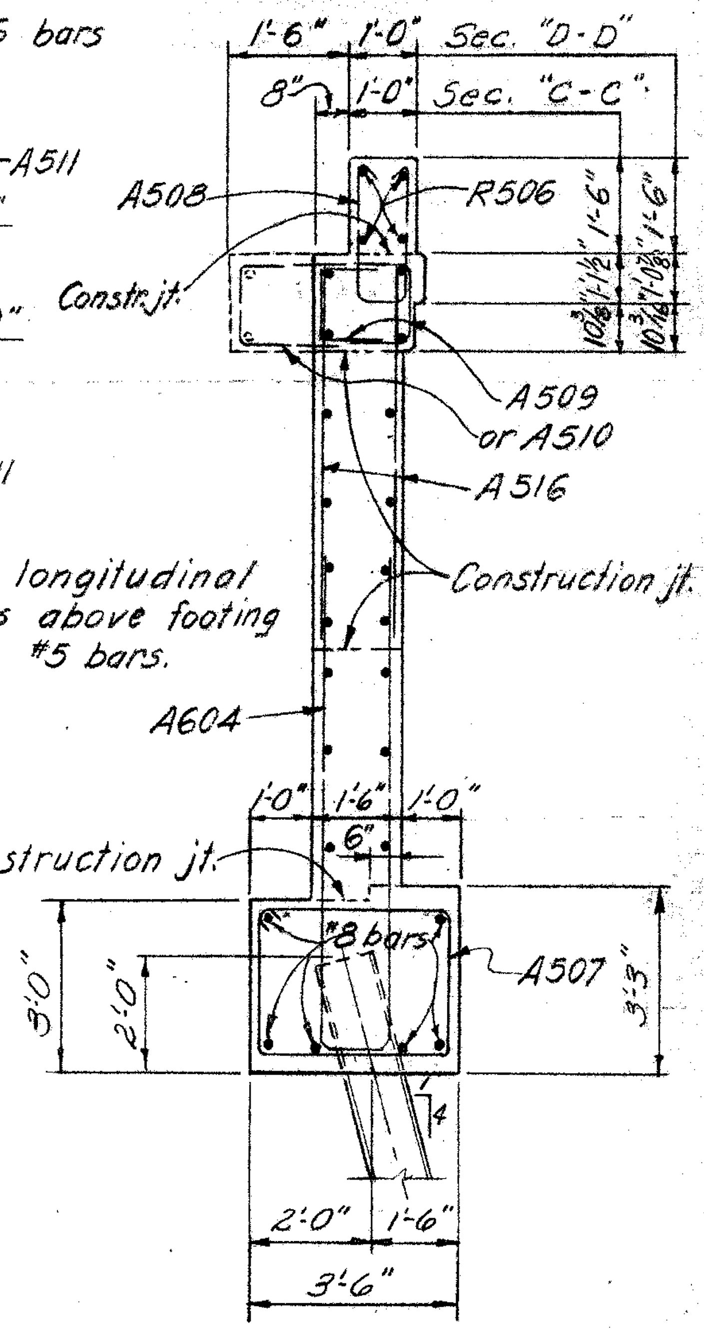


ELEVATION

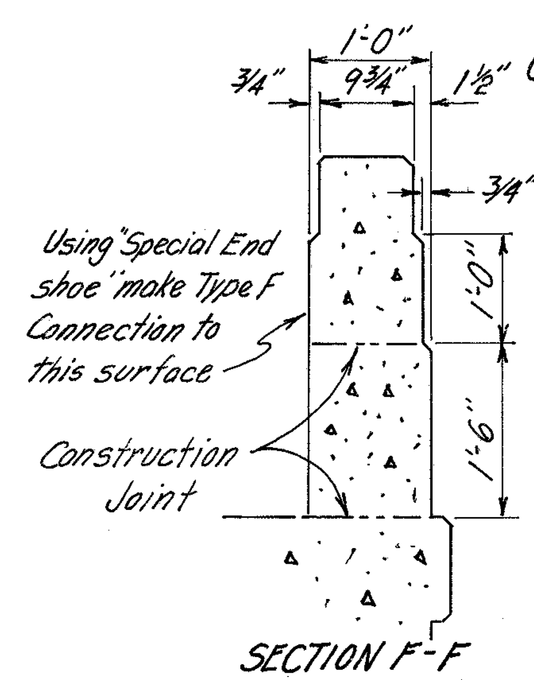
NOTE:
All piles are steel 10BP42 piles.



VIEW B-B



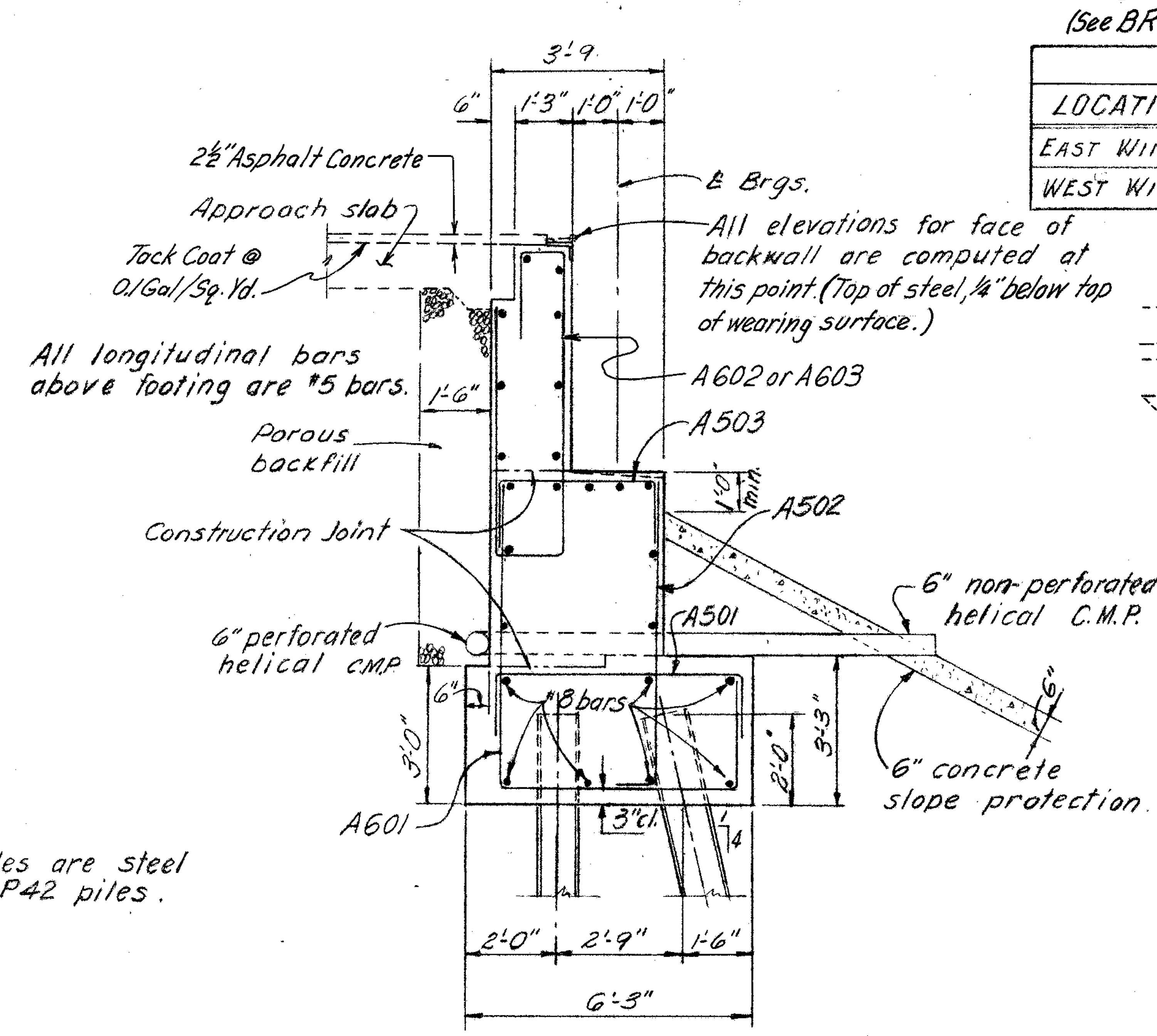
SECTION C-C
(SECTION "D-D" SIMILAR as shown)



SECTION F-F
(See BR-1-65)

ELEVATIONS					
LOCATION	"A"	"B"	"C"	"D"	"E"
EAST WING	1034.65	1029.53	1036.17	1034.09	1033.74
WEST WING	1034.65	1029.55	1036.17	1034.09	1033.74

NOTE
Indicates vertical pile
Indicates battered pile, battered at 1:4 in the direction of arrow.



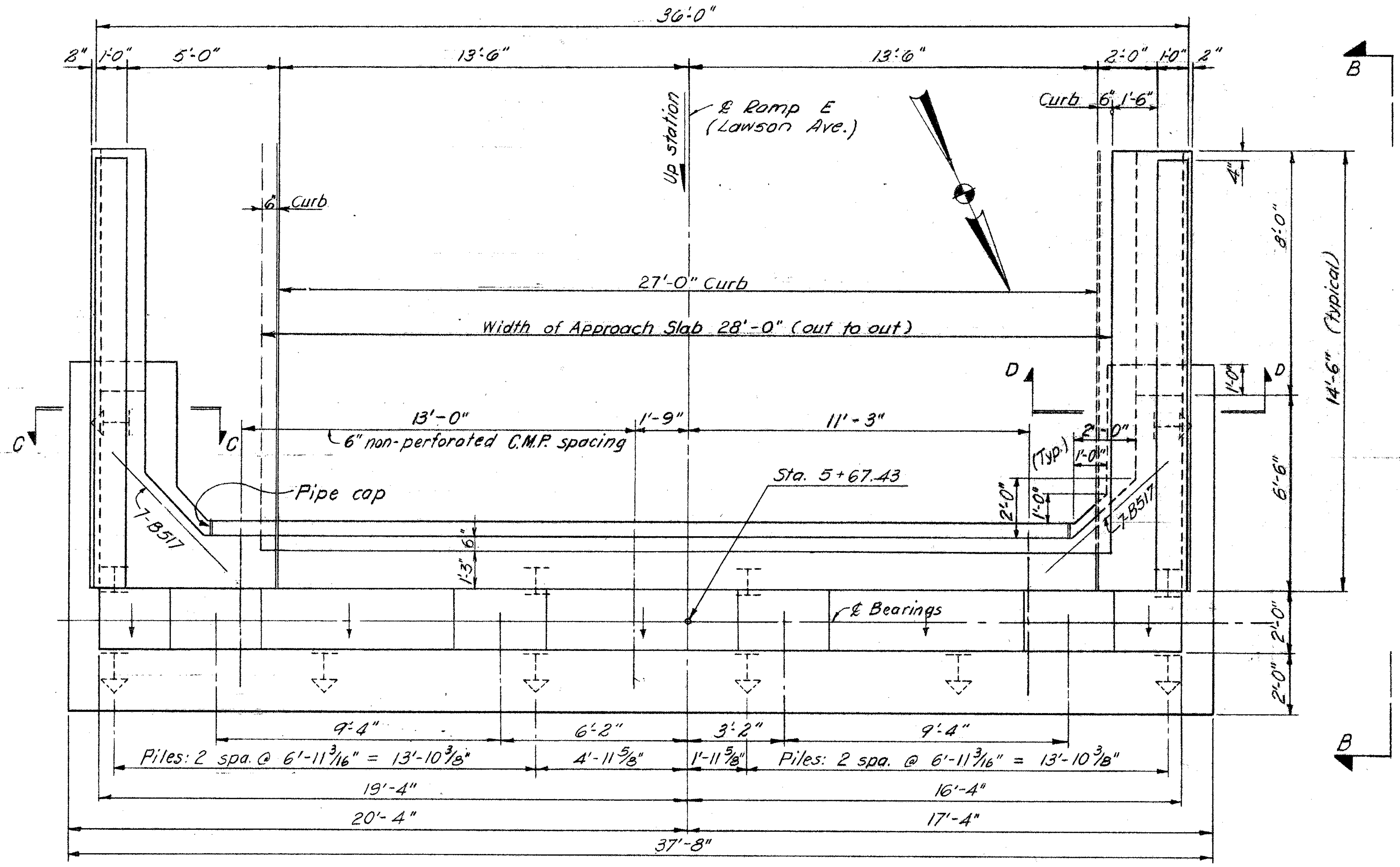
SECTION A-A

RACKOFF ASSOCIATES 4/11
ENGINEERS COLUMBUS, OHIO

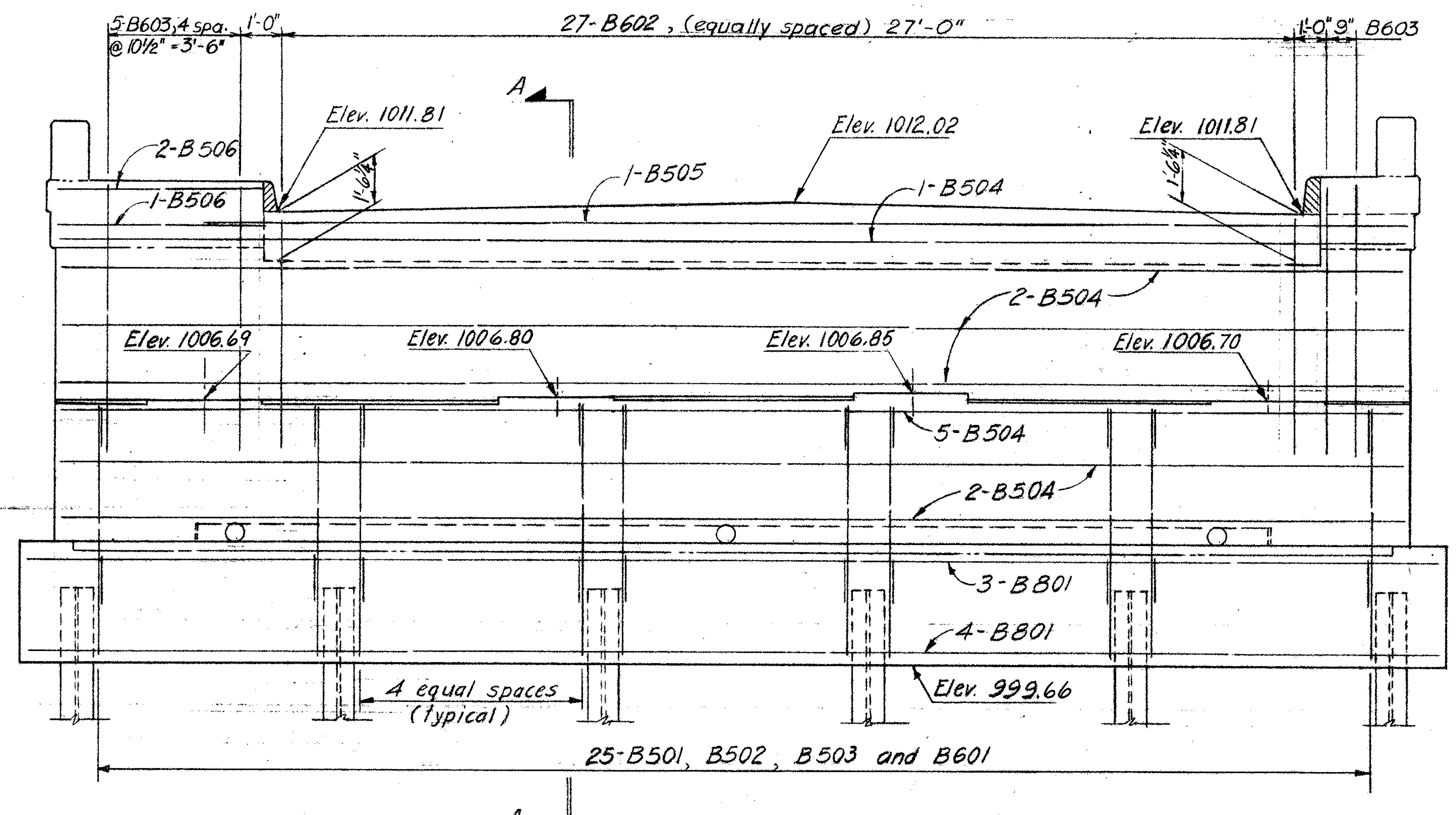
ABUTMENT NO. 1 DETAILS
BRIDGE NO. JEF.-43-0111
S.R. 43 UNDER RAMP E

JEFFERSON COUNTY STA. 832+26.86

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.S.	E.D.A.		B.S.		6-28-66	

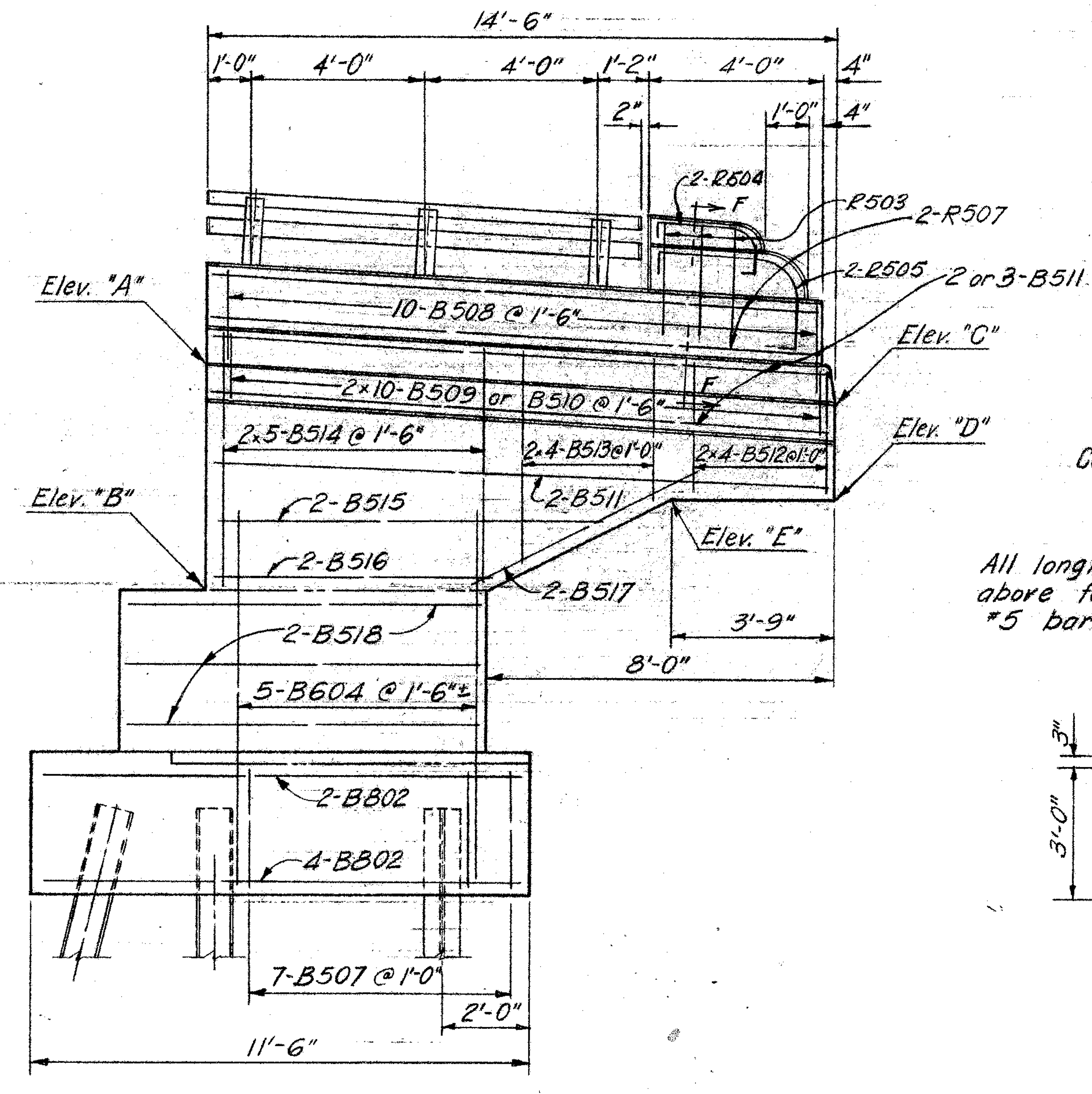


PLAN

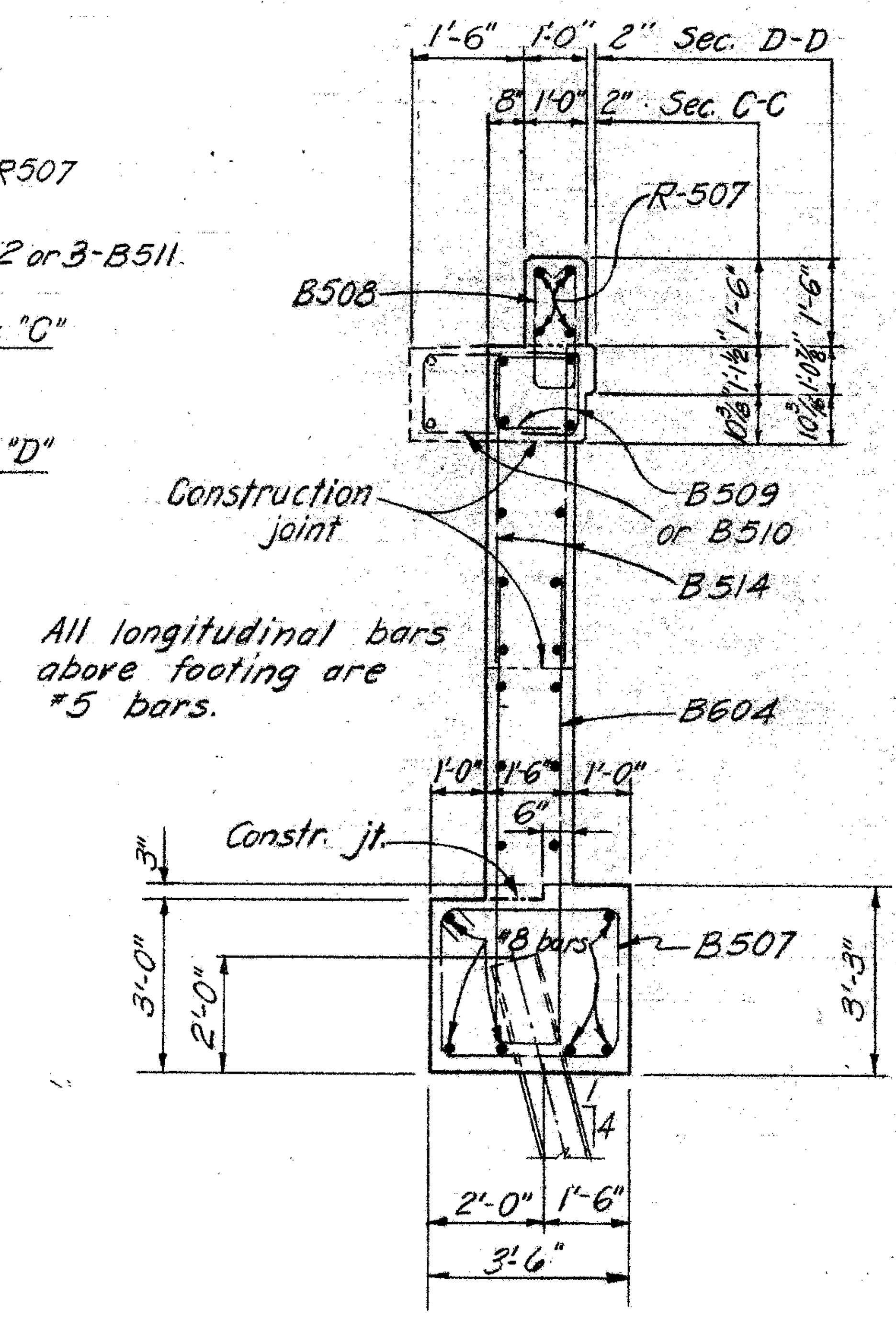


ELEVATION

NOTE: All piles are steel 10BP42 piles.



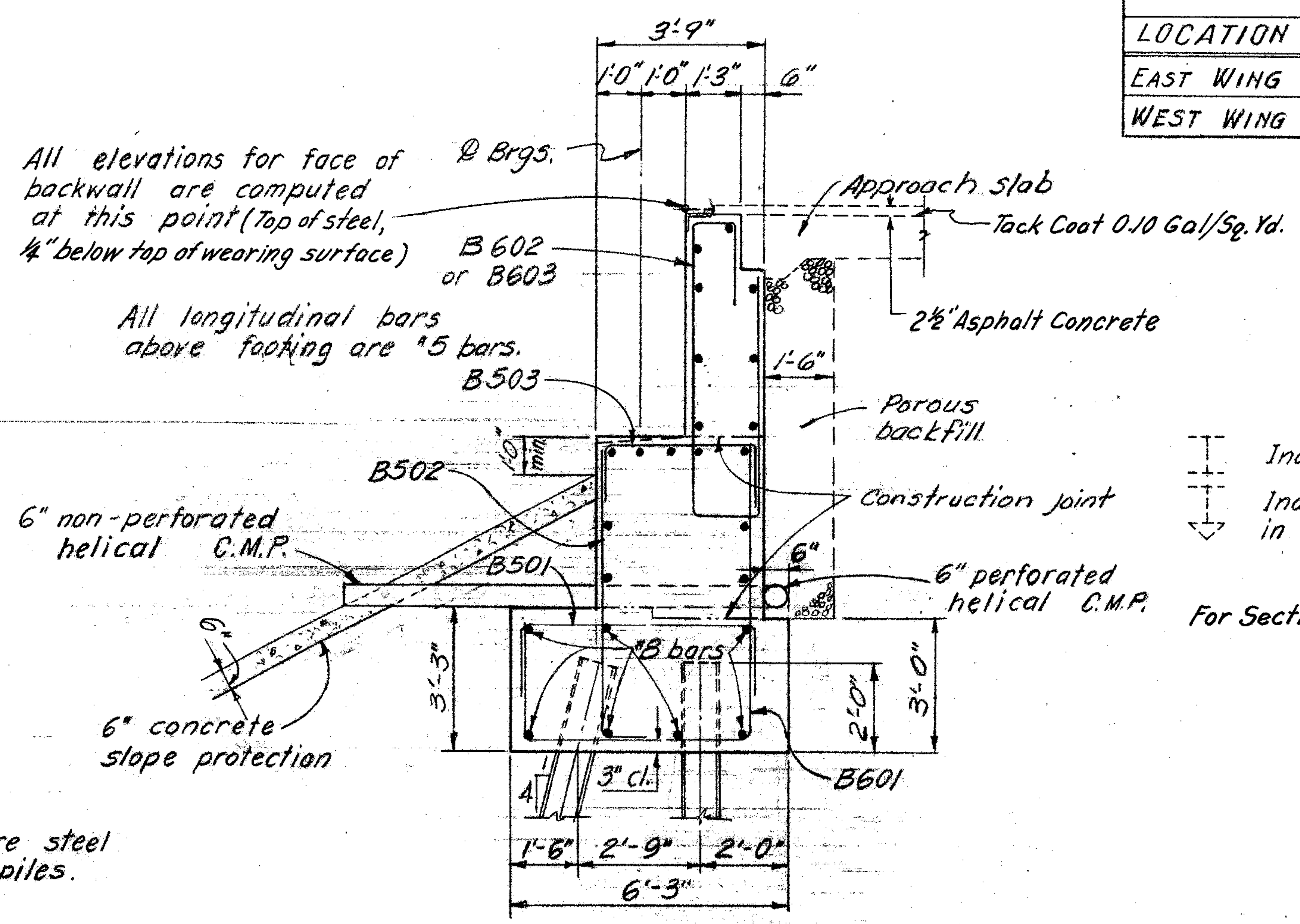
VIEW B-B



SECTION C-C
(SECTION D-D SIMILAR) AS SHOWN

LOCATION	"A"	"B"	"C"	"D"	"E"
EAST WING	1011.62	1006.69	1010.95	1008.79	1008.79
WEST WING	1011.62	1006.70	1010.95	1008.79	1008.79

ELEVATIONS



SECTION A-A

NOTE

Indicates vertical pile.

Indicates battered pile, battered at 1:4 in the direction of arrow.

For Section F-F refer to Sheet 4/11

RACKOFF ASSOCIATES 5/11
ENGINEERS COLUMBUS, OHIO

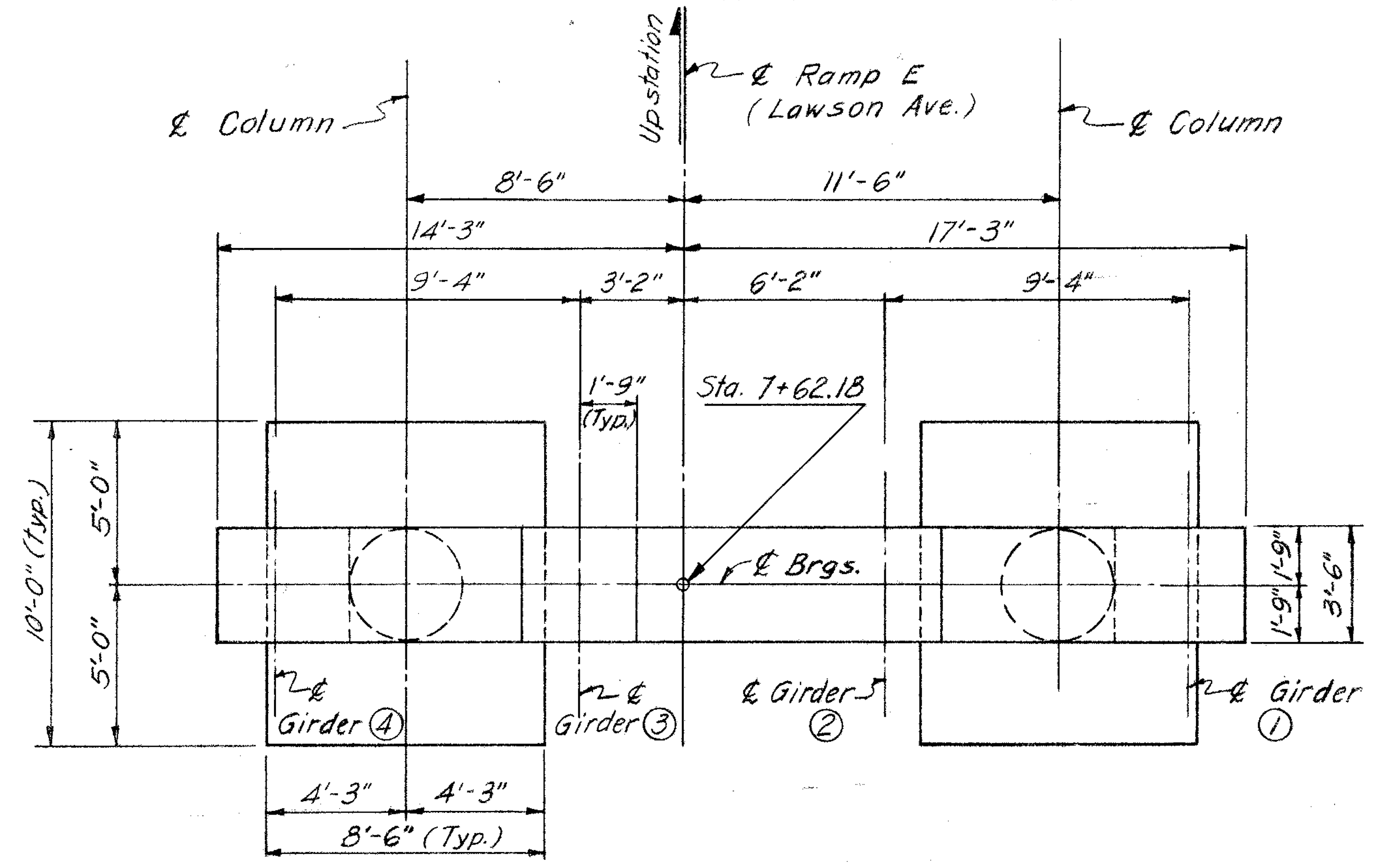
ABUTMENT NO. 2 DETAILS
BRIDGE NO. JEF.-43-0111
S.R. 43 UNDER RAMP E

JEFFERSON COUNTY STA. 832+26.86

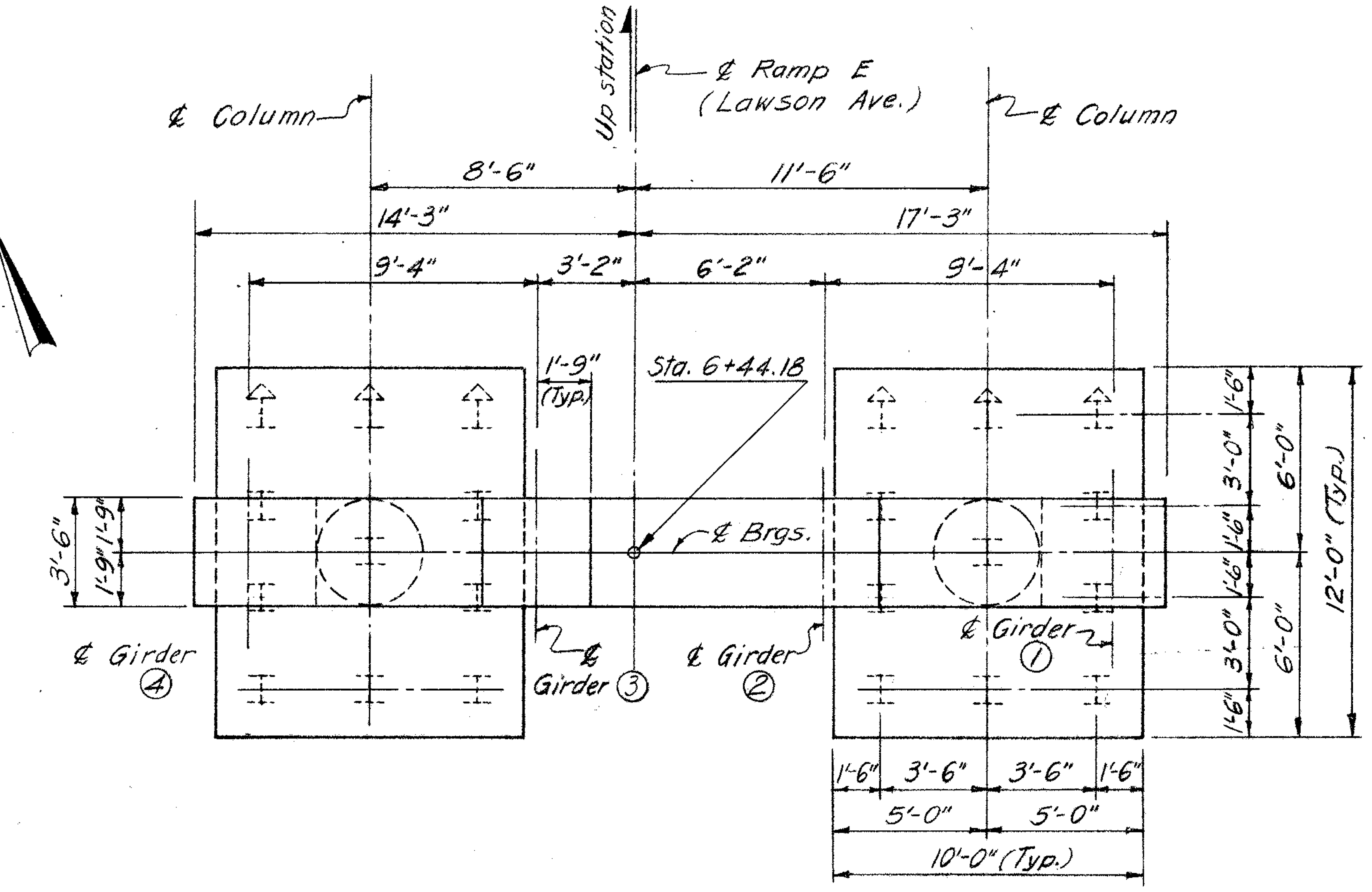
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.S.	E.D.A.		B.S.		6-28-66	

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			239/299

JEFFERSON COUNTY
JEF- 43 - 0.42



PLAN - PIER No. 1



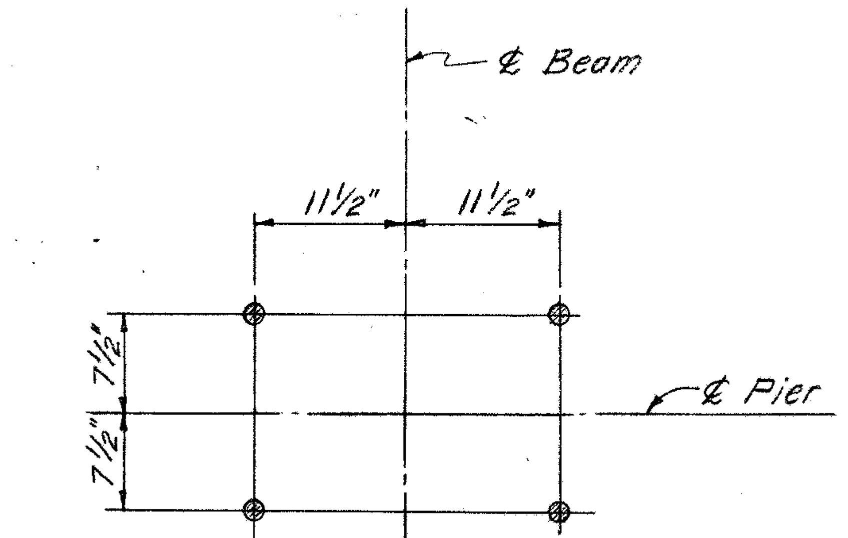
PLAN - PIER No. 2

NOTES

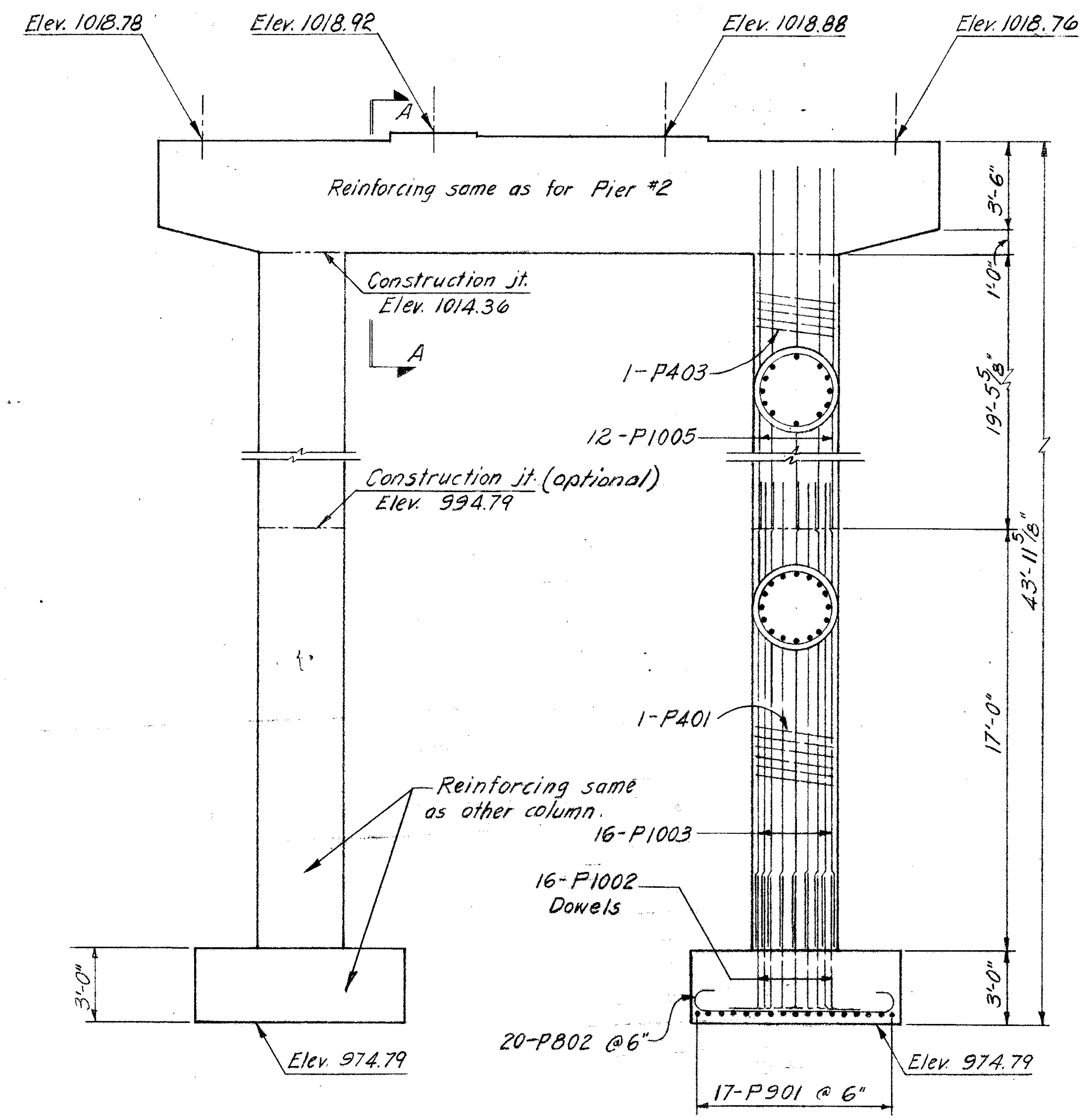
- BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bolt holes.

Indicates vertical piles

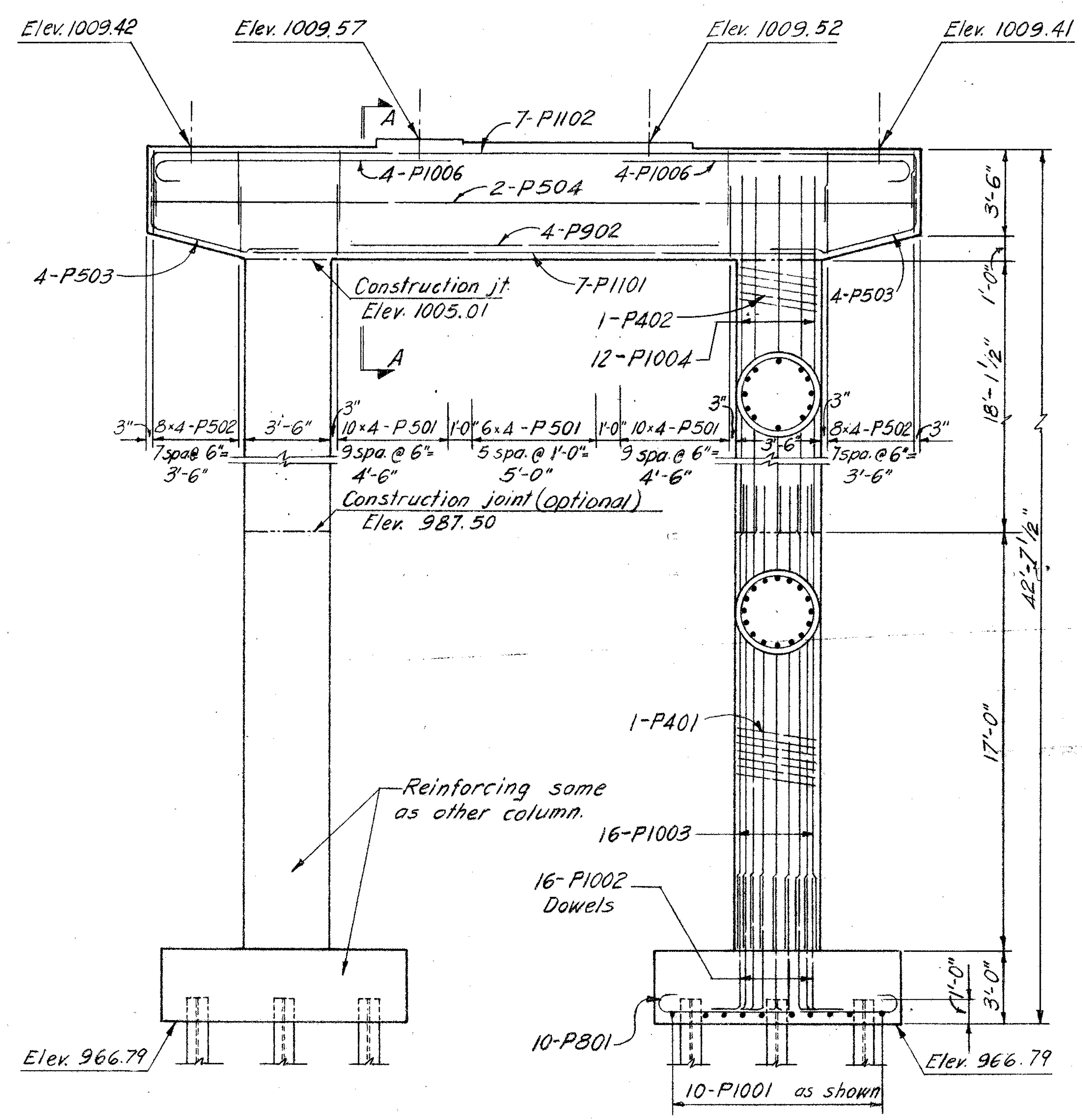
Indicates battered piles, battered at 1:4 in the direction of arrow.



ANCHOR BOLT LAYOUT
(Pier #2)

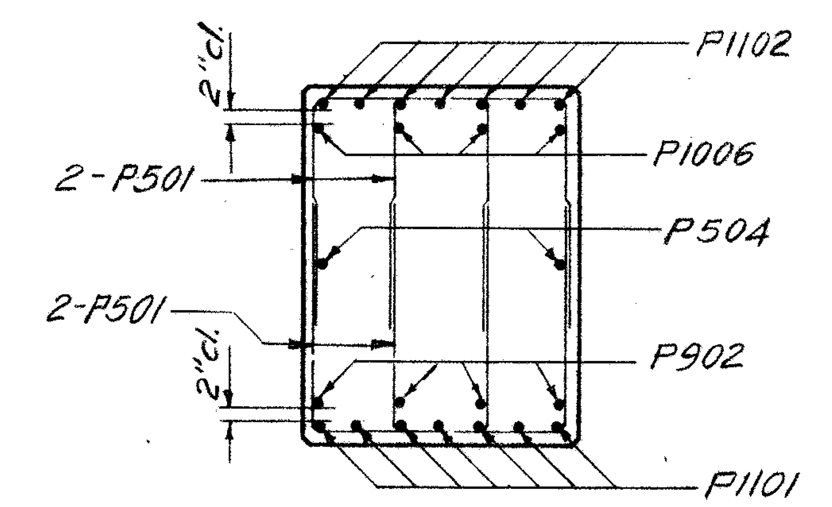


ELEVATION PIER No. 1



ELEVATION PIER No. 2

NOTE:
All piles are steel 12 BP 53 piles.



SECTION A-A

RACKOFF ASSOCIATES 6/11
ENGINEERS COLUMBUS, OHIO

PIER DETAILS
BRIDGE NO. JEF.- 43-0111
S.R. 43 UNDER RAMP E

JEFFERSON COUNTY STA. 832 + 26.86

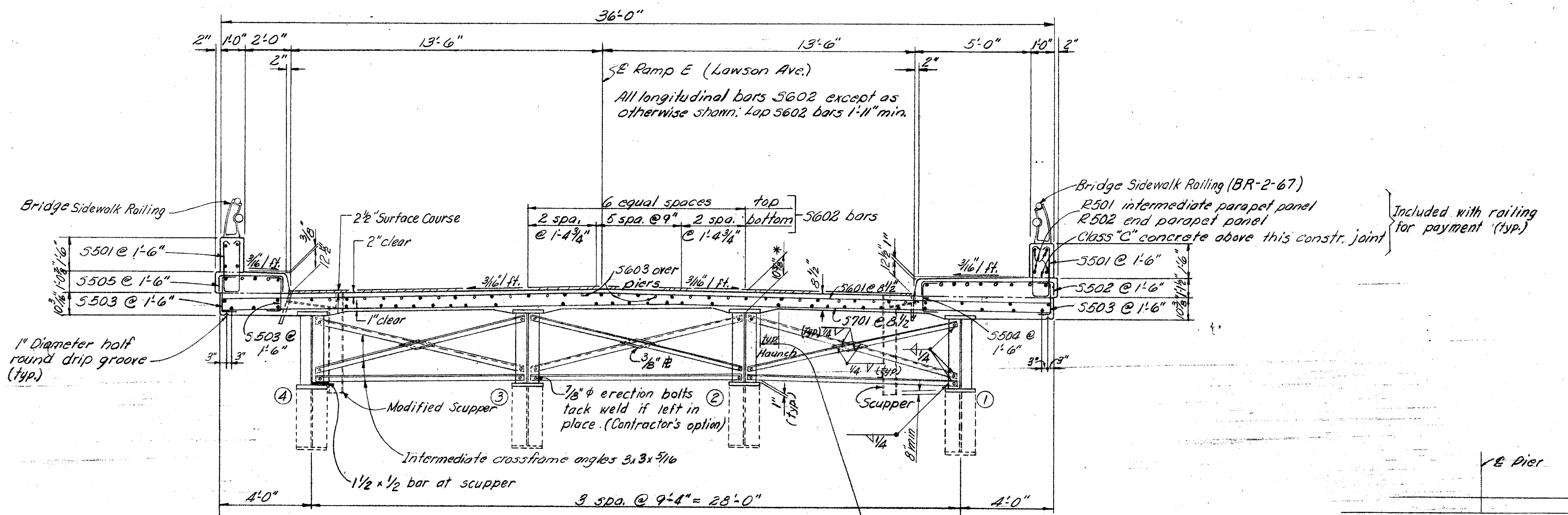
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S. S.	M.R.		B. S.		6-28-66	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

240 / 299

JEFFERSON COUNTY
JEF - 43 - 0.42

FRAMING PLAN



* This is the nominal 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 at encased steel plates as per Sec. 511.18 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" wide.

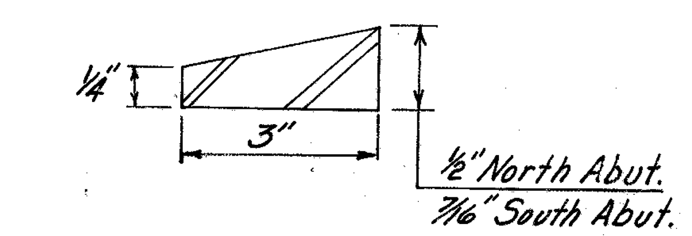
TRANSVERSE SECTION "A-A"

For Details of Surface Course and Subdrainage see sheet 10/11

NOTES

- Reference shall be made to:
  Standard Drawing BR-1-65 sheet 2, for Parapet Details, and BR-2-67 for Post & Tube details
  Standard Drawing RB-1-55 for Rockers and Bolster.
  Standard Drawings SD-1-69 for ‡scuppers, *end dams, and end crossframes.
- See other sheet "Superstructure Details" for field splice, camber, girder details, and other details not shown on this sheet.

* Provide 3" beveled bar for end dams, both roadway and sidewalk.



‡ Scupper pipes shall extend below bottom flange 8" instead of 2", and vertical box dimensions shall be increased 2".

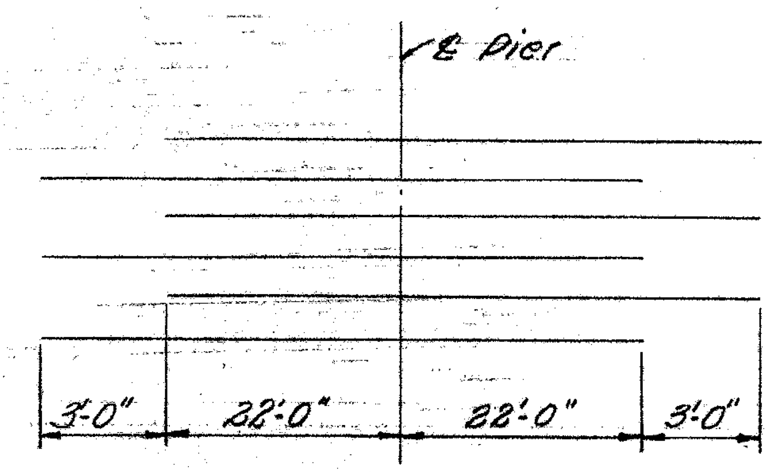


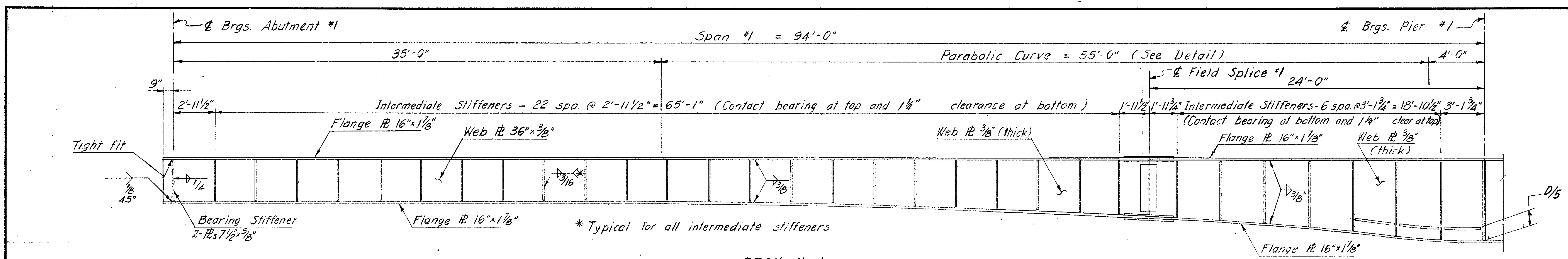
DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS

RACKOFF ASSOCIATES ENGINEERS, COLUMBUS, OHIO — 7/11

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF.-43-0111
S. R. 43 UNDER RAMP E

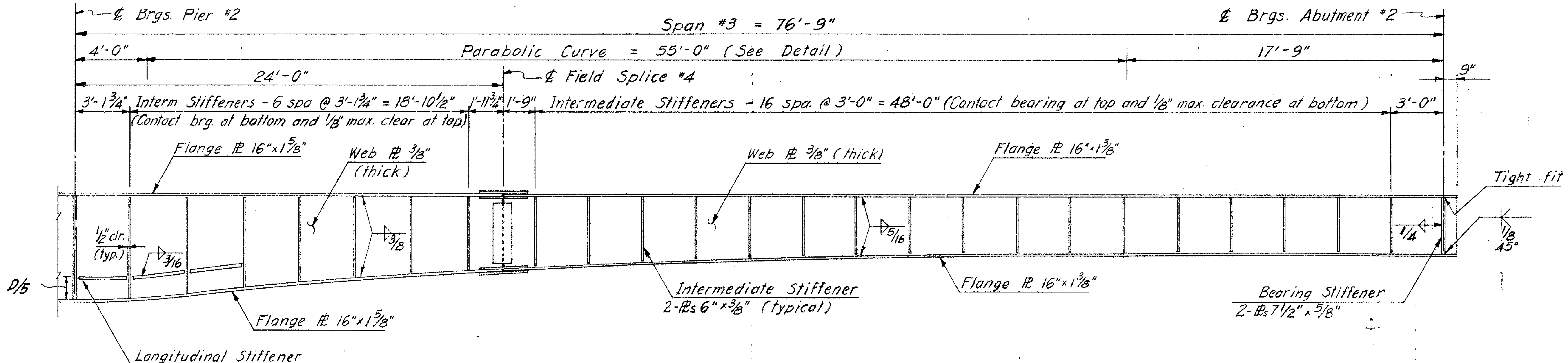
JEFFERSON COUNTY — STA. 832 + 26.86

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.S.	E.D.A.		B.S.		6-28-66	9-27-72

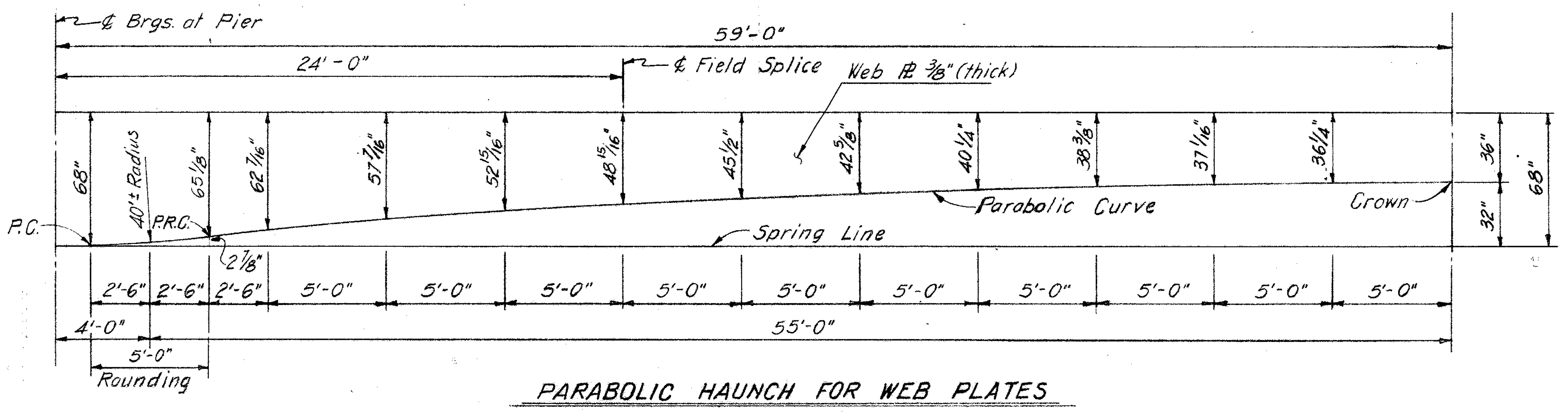


SPAN No. 1

SPAN No. 2



SPAN No. 3

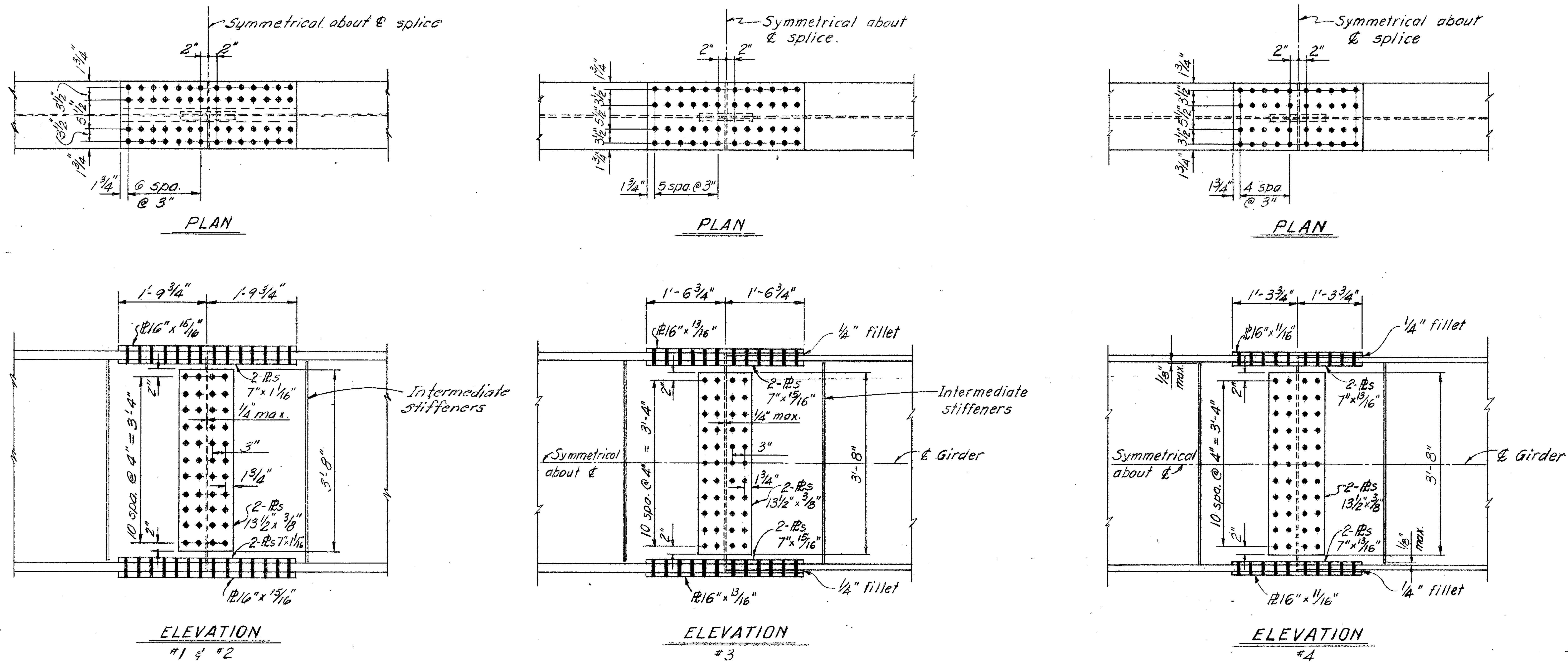


PARABOLIC HAUNCH FOR WEB PLATES

NOTES

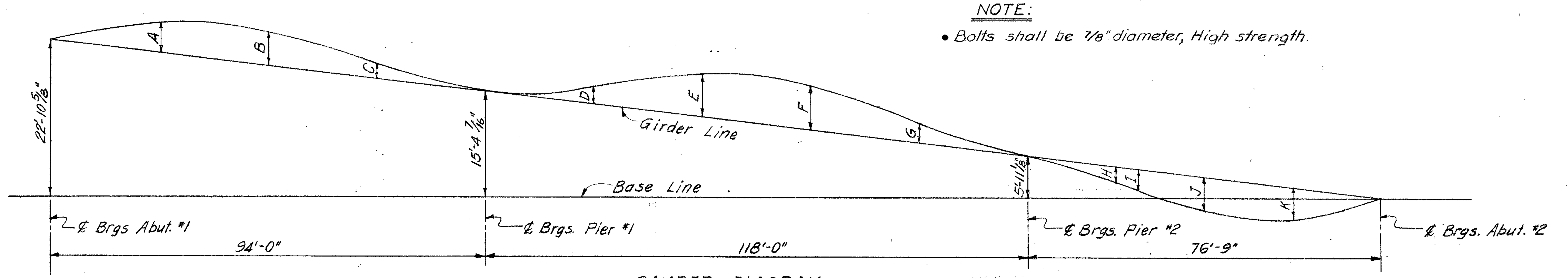
- The Contractor should submit to the Director, for approval, 3 prints showing his proposed erection procedure for the plate girders.
- See other "Superstructure Details" sheet for field splice details.
- Longitudinal stiffeners should be on the interior face (only) of the girders.

JEFFERSON COUNTY
JEF - 43 - 0.42

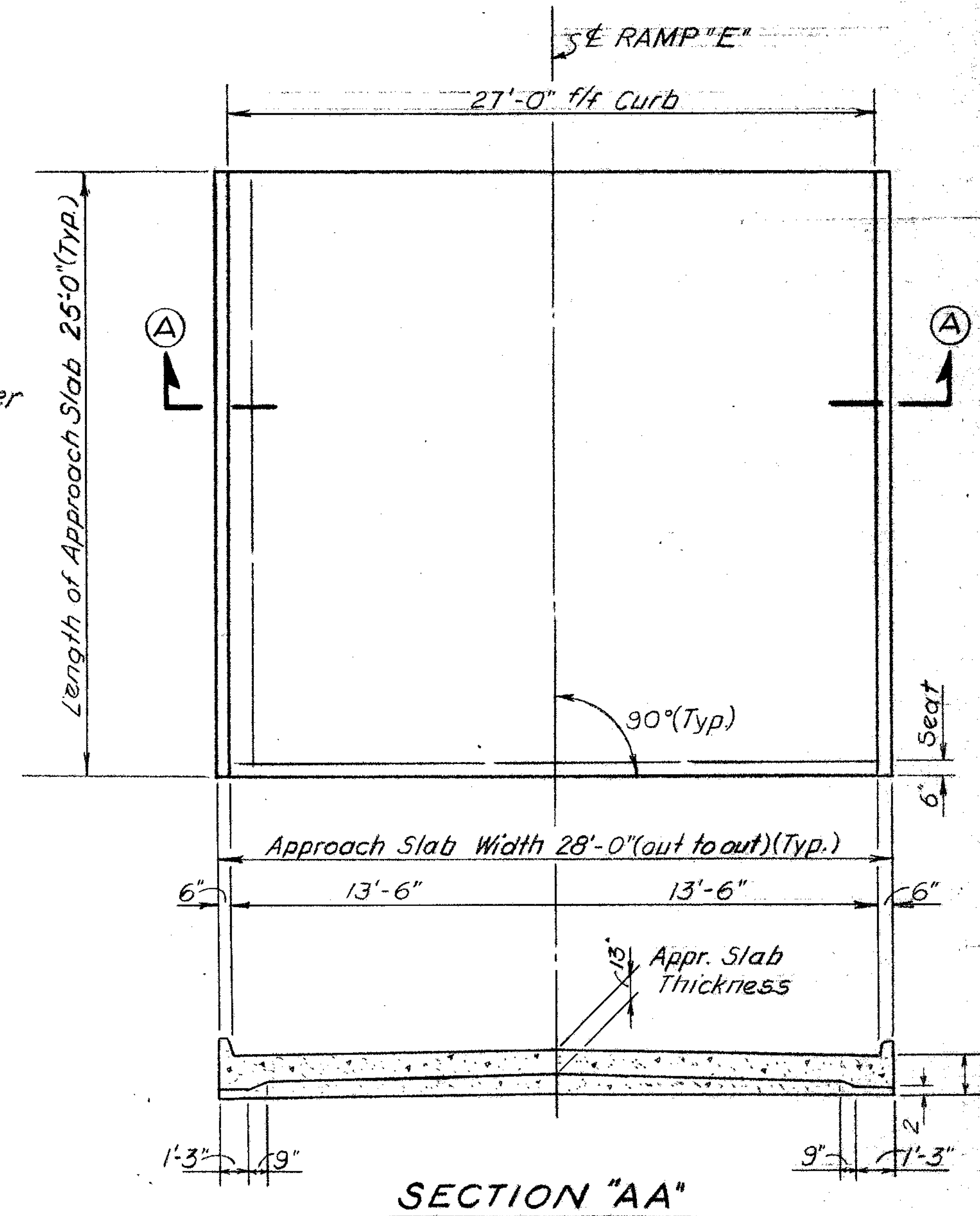


FIELD SPLICE DETAILS

NOTE:
• Bolts shall be 7/8" diameter, High strength.



CAMBER DIAGRAM



SECTION "AA"

PLAN AND SECTION OF APPROACH SLAB (TYPICAL)

NOTE:
For other Details see Std. Dwg. AS-1-67 Revised 6-12-69. Do not provide jacking holes.

DEFLECTION AND CAMBER

EXTERIOR RIGHT GIRDER (#1)

LOCATION / ITEM	Span No. 1: 1/4 Point A	1/2 Point B	3/4 Point C	Span No. 2: 1/5 Point D	2/5 Point E	3/5 Point F	4/5 Point G	Span No. 3: 1/4 Point H	Splice Point I	1/2 Point J	3/4 Point K
Deflection due to weight of steel	1/8	1/8	1/16	1/16	3/16	3/16	1/16	0	0	1/16	1/16
Deflection due to remaining dead load	15/16	1	3/8	1/2	1 1/4	1 3/8	5/8	1/16	1/8	3/8	7/16
Adjustment required for vertical curve	0	0	0	0	0	0	0	-5/8	-13/16	-1 1/4	-1 1/2
Required Shop Camber	1 1/16"	1 1/8"	7/16"	9/16"	1 7/16"	1 9/16"	11/16"	-9/16"	-11/16"	-13/16"	-1"

INTERIOR GIRDERS (#2 & #3)

LOCATION / ITEM	Span No. 1: 1/4 Point A	1/2 Point B	3/4 Point C	Span No. 2: 1/5 Point D	2/5 Point E	3/5 Point F	4/5 Point G	Span No. 3: 1/4 Point H	Splice Point I	1/2 Point J	3/4 Point K
Deflection due to weight of steel	1/8	1/8	1/16	1/16	3/16	3/16	1/16	0	0	1/16	1/16
Deflection due to remaining dead load	3/4	13/16	5/16	3/8	1	1 1/16	1/2	1/16	1/8	1/4	5/16
Adjustment required for vertical curve	0	0	0	0	0	0	0	-5/8	-13/16	-1 1/4	-1 1/2
Required Shop Camber	7/8"	15/16"	3/8"	7/16"	1 3/16"	1 1/4"	9/16"	-9/16"	-11/16"	-15/16"	-1 1/8"

EXTERIOR LEFT GIRDER (#4)

LOCATION / ITEM	Span No. 1: 1/4 Point A	1/2 Point B	3/4 Point C	Span No. 2: 1/5 Point D	2/5 Point E	3/5 Point F	4/5 Point G	Span No. 3: 1/4 Point H	Splice Point I	1/2 Point J	3/4 Point K
Deflection due to weight of steel	1/8	1/8	1/16	1/16	3/16	3/16	1/16	0	0	1/16	1/16
Deflection due to remaining dead load	13/16	15/16	5/16	7/16	1 3/16	1 1/4	9/16	1/16	1/8	5/16	3/8
Adjustment required for vertical curve	0	0	0	0	0	0	0	-5/8	-13/16	-1 1/4	-1 1/2
Required Shop Camber	15/16"	1 1/16"	3/8"	1/2"	1 3/8"	1 7/16"	5/8"	-9/16"	-11/16"	-7/8"	-1 1/16"

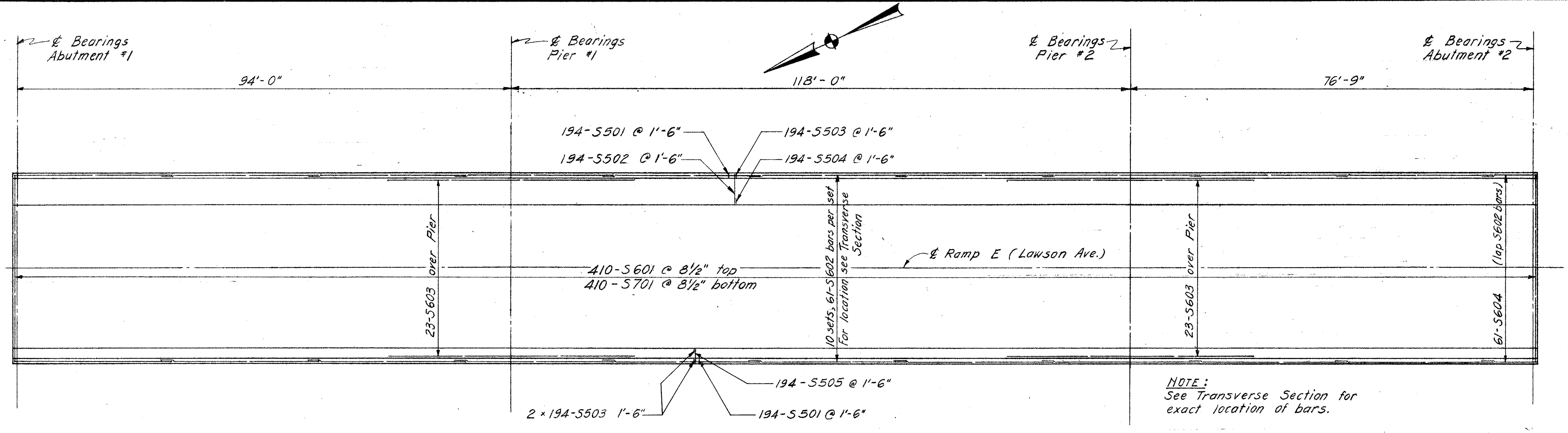
RACKOFF ASSOCIATES — ENGINEERS — COLUMBUS, OHIO — 9/11

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF.-43-0111
S. R. 43 UNDER RAMP E

JEFFERSON COUNTY — STA. 832+26.86

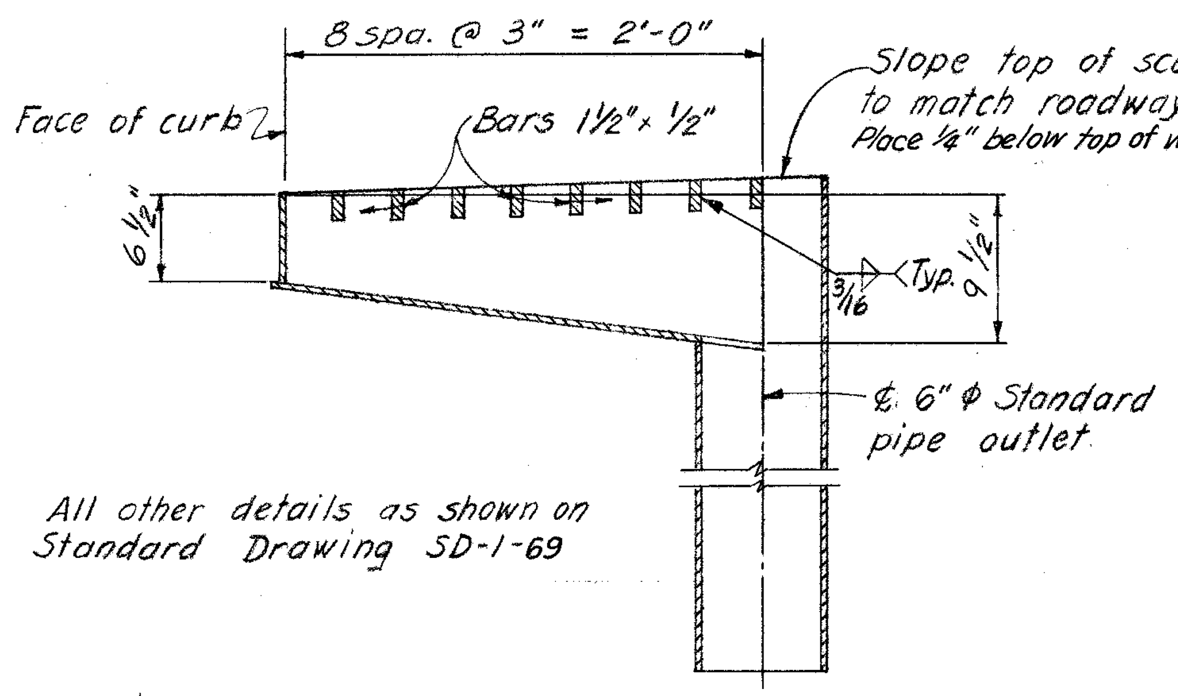
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S. S.	E.D.A.	[signature]	B. S.	[signature]	6-28-66	9-27-72

JEFFERSON COUNTY
JEF- 43 - 0.42



NOTE:
See Transverse Section for exact location of bars.

PLAN — DECK REINFORCEMENT

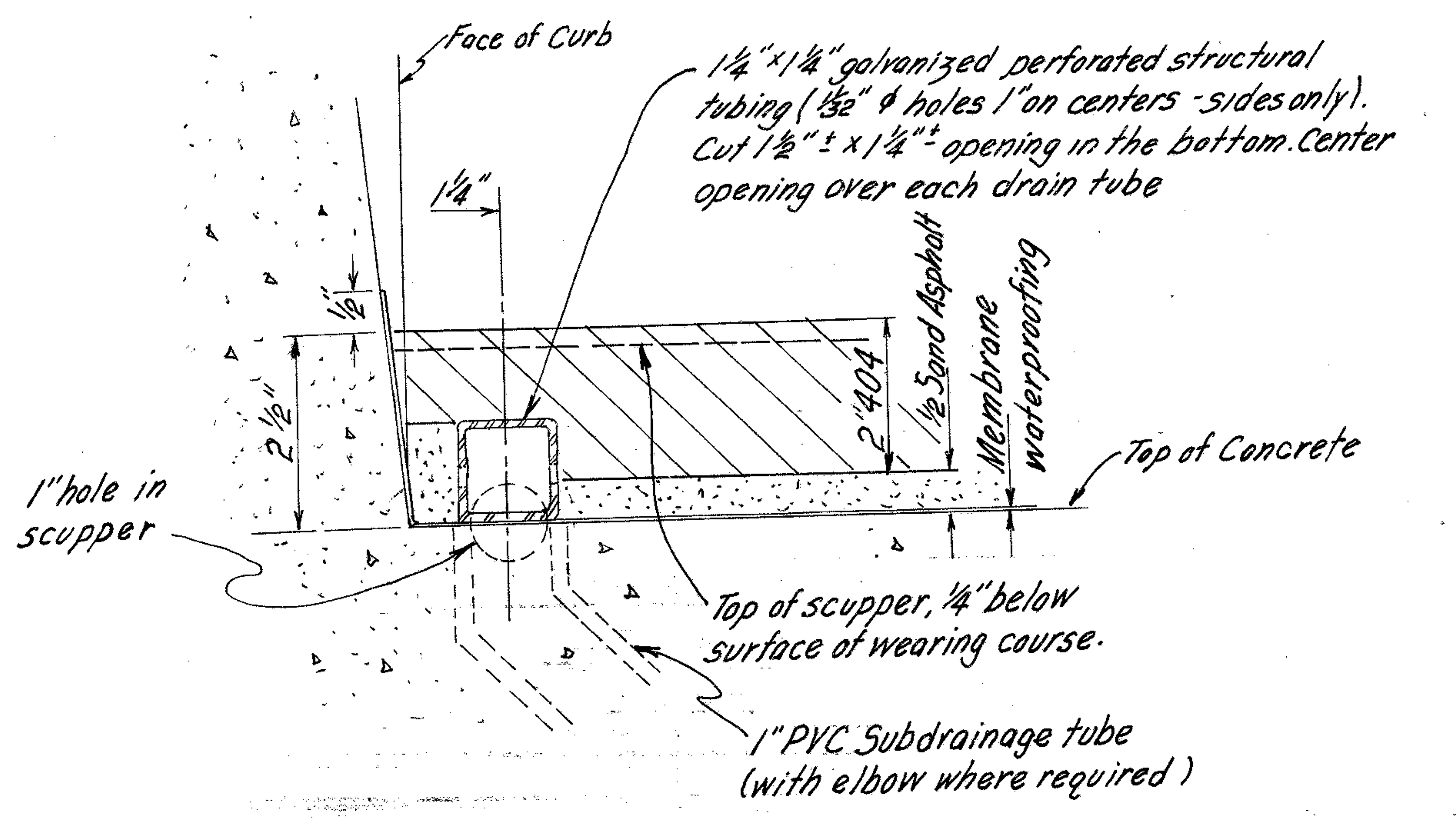


All other details as shown on Standard Drawing SD-1-69

MODIFIED SCUPPER DETAIL

DECK ELEVATIONS		
LOCATION	STATION	ELEVATION AT FACE OF CURB
℄ Brgs. Abut. #1	8 + 56.18	1034.57
¼ Point	8 + 32.68	1032.76
½ Point	8 + 09.18	1030.88
¾ Point	7 + 85.68	1028.96
℄ Brgs. Pier #1	7 + 62.18	1027.05
1/5 Point	7 + 38.58	1025.20
2/5 Point	7 + 14.98	1023.36
3/5 Point	6 + 91.38	1021.48
4/5 Point	6 + 67.78	1019.55
℄ Brgs. Pier #2	6 + 44.18	1017.61
¼ Point	6 + 24.99	1016.08
½ Point	6 + 05.80	1014.57
¾ Point	5 + 86.61	1013.07
℄ Brgs. Abut. #2	5 + 67.43	1011.69

The elevations shown are for both sides of roadway. These are the control elevations to which screeds must be set to make allownce for anticipated dead load deflection due to weight of deck concrete. They are to top of the reinforced concrete deck.



SUB DRAINAGE and SURFACE COURSE DETAILS

In addition to the location and spacing provisions of 518.07, the PVC subdrainage tubes shall be located so that discharge from them will clear all structural members, such as crossbracing, conduit support angles and diaphrams, by at least 6". Place the top of the tube flush with the concrete surface. Place membrane over tube, puncturing if membrane is a sheet type, with the hole sealed around the lip of the tube. Openings in the bottom of the structural tube may be cut in the field, to match, drain tube locations.

Include subdrainage with Item 404, Asphalt Concrete, for payment.

RACKOFF ASSOCIATES — ENGINEERS — COLUMBUS, OHIO — 10/11

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF.-43-0111
S.R. 43 UNDER RAMP E

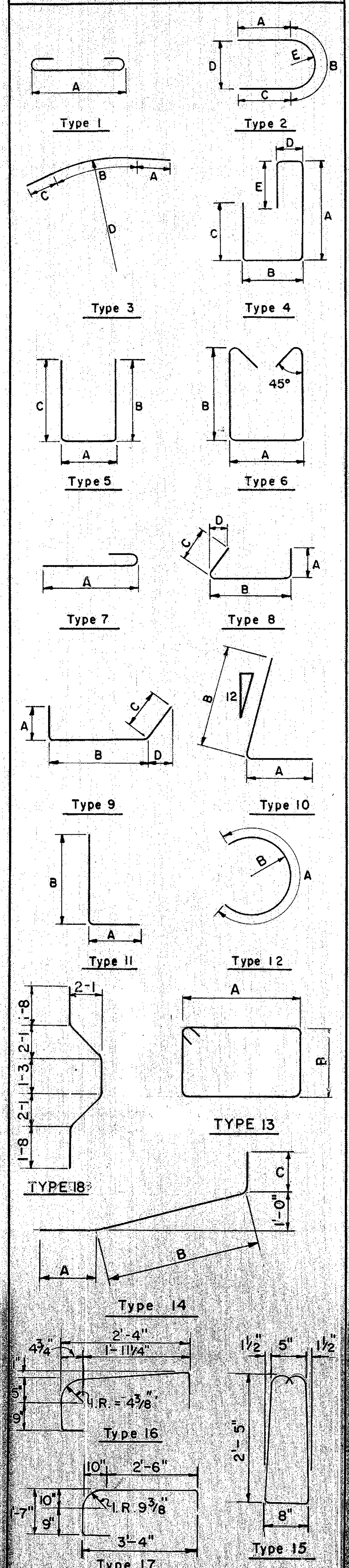
JEFFERSON COUNTY — STA. 832 + 26.86

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
B. S.	M. R.		S. S.		6-28-66	9-27-72

REINFORCING STEEL LIST

JEFFERSON COUNTY
JEF-43-0.42

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS

ABUTMENT NO. 1

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
A501	25	8-3	215	5	5-4	1-7	1-7		
A502	25	7-1	185	11	0-7½	6-7			
A503	25	6-3	163	5	3-4	1-7	1-7		
A504	16	35-4	590	S					
A505	1	31-6	33	S					
A506	3	5-8	18	S					
A507	22	12-0	275	13	3-2	2-7			
A508	26	5-7	151	6	0-8	2-2			
A509	26	3-9	102	5	1-4	1-4	1-4		
A510	26	5-5	149	5	1-4	2-2	2-2		
A511	14	18-8	273	S					
A512	20	2-7	54	S					
A513	4	3-7	15	S					
A514	4	4-7	19	S					
A515	18	5-7	105	S					
A516	32	5-8 to 6-6	203	S	4 each,	vary	by 1½"(−)		
A517	4	6-6	27	S					
A518	12	12-8	159	S					
A519	4	11-0	46	S					
A520	4	13-0	54	S					
A521	4	18-0	75	S					
A601	25	14-2	532	5	5-4	2-7	6-7		
A602	27	17-1	693	4	6-9	1-5	5-5	0-11	3-3
A603	7	16-3	171	5	1-5	7-7			
A604	16	17-6	421	5	1-2	8-4			
A801	7	37-4	698	S					
A802	12	15-8	502	S					
		SUB-TOTAL	5,928						

ABUTMENT NO. 2

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
B501	25	8-3	215	5	5-4	1-7	1-7		
B502	25	7-1	185	11	0-7½	6-7			
B503	25	6-3	163	5	3-4	1-7	1-7		
B504	16	35-4	590	S					
B505	1	31-6	33	S					
B506	3	5-8	18	S					
B507	14	12-0	175	13	3-2	2-7			
B508	20	5-7	116	6	0-8	2-2			
B509	20	3-9	78	5	1-4	1-4	1-4		
B510	20	5-5	113	5	1-4	2-2	2-2		
B511	14	14-2	207	S					
B512	16	2-7	43	S					
B513	16	3-2 to 4-8	65	S	4 each,	vary	by 6"		
B514	20	5-6	115	S					
B515	4	9-0	38	S					
B516	4	6-6	27	S					
B517	18	6-0	113	S					
B518	12	8-2	102	S					
B601	25	14-2	532	5	5-4	2-7	6-7		
B602	27	17-1	693	4	6-9	1-5	5-5	0-11	3-3
B603	7	16-3	171	5	1-5	7-7			
B604	10	17-6	263	5	1-2	8-4			
B801	7	37-4	698	S					
B802	12	11-2	358	S					
		SUB-TOTAL	5,111						
TOTAL		ABUTMENTS	11,039						

PIER NO. 1

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
P501	104	8-0	868	5	2-3	3-0	3-0		
P502	64	6-3 to 8-0	476	5	2-3	2-1½	2-1½	8 each,	vary
						to 3-0	to 3-0	B & C	by 1½"
P503	8	7-0	58	14	1-7	4-0	1-7		
P504	2	31-2	65	S					
P802	40	10-4	2,172	1	8-2				
P901	34	12-2	1,407	1	9-8				
P902	4	15-0	204	S					
P1002	32	7-0	964	11	1-4½	5-11			
P1003	32	20-2	2,777	S					
P1005	24	22-9	2,349	S					
P1006	8	13-5	462	7	12-0				
P1101	7	23-0	855	S					
P1102	7	33-6	1,246	5	3-2	1-5½	1-5½		
		SUB-TOTAL	13,721						

PIER NO. 2

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
P501	104	8-0	868	5	2-3	3-0	3-0		
P502	64	6-3 to 8-0	476	5	2-3	2-1½	2-1½	8 each,	vary
						to 3-0	to 3-0	B & C	by 1½"
P503	8	7-0	58	14	1-7	4-0	1-7		
P504	2	31-2	65	S					
P801	20	11-10	632	1	9-8				
P902	4	15-0	204	S					
P1001	20	14-6	1,248	1	11-8				
P1002	32	7-0	964	11	1-4½	5-11			
P1003	32	20-2	2,777	S					
P1004	24	21-6	2,220	S					
P1006	8	13-5	462	7	12-0				
P1101	7	23-0	855	S					
P1102	7	33-6	1,246	5	3-2	1-5½	1-5½		
		SUB-TOTAL	12,075						
		SPIRALS	3,039						
		TOTAL PIERS	28,835						

LIGHT PEDESTAL BARS

MARK	NO.	LENGTH	WEIGHT	TYPE
L501	8	3'-1"	26	*
L502	8	7'-4"	62	*
L503	12	8'-0"	100	*
L504	8	2'-9"	22	S
			210	

*See Sheet for Bending Diagrams

SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
S501	388	5-7	2,259	6	0-8	2-2			
S502	194	6-7	1,332	5	5-6	0-8	0-8		
S503	582	2-5	1,467	5	1-4	0-8	0-8		
S504	194	2-2	438	5	1-1	0-8	0-8		
S505	194	3-7	725	5	2-6	0-8	0-8		
S601	410	35-8	21,964	S					
S602	610	30-0	27,487	S					
S603	46	47-0	3,247	S					
S604	61	9-2	840	S					
S701	410	35-8	29,890	S					
		SUB-TOTAL	89,649						
		LIGHT PEDESTALS	210						
		TOTAL	89,859						

RAILING BARS

MARK	NO.	LENGTH	WEIGHT	TYPE	
R501	136	15-3	—	S	Included with railing for payment
R502	16	12-3	—	S	
R503	12	6-1	—	15	
R504	8	4-2	—	16	
R505	8	5-5	—	17	
R506	8	18-4	—	S	
R507	8	13-10	—	S	

REPLACEMENT BARS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B
RE401	1	5-3	—	12	5-3	1-7
RE501	1	5-7	—	S		
RE601	3	5-11	—	S		
RE701	2	6-2	—	S		
RE801	1	6-6	—	S		
RE901	1	6-10	—	S		
RE1001	1	7-2	—	S		
RE1101	1	7-6	—	S		

NOTES

BAR SIZE is indicated in bar mark. The first digit where three digits are used, and the first two where four are used indicate the bar size number.

SPIRAL REINFORCING BARS; 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 is the "Length" divided by the pitch, plus three turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to item 509. 1½ closed coils shall be provided at the ends of each spiral unit. Four 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 the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

SPIRAL REINFORCEMENT

MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS	WEIGHT
P401	4	17-0	38	4½	48	4	1,444
P402	2	18-1½	38	4½	51	4	767
P403	2	19-5⅝	38	4½	55	4	828
					SUB-TOTAL		3,039

RACKOFF ASSOCIATES
ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO

REINFORCING STEEL LIST
BRIDGE NO JEF-43-0111
S.R. 43 UNDER RAMP E

JEFFERSON COUNTY STA 832+26.86

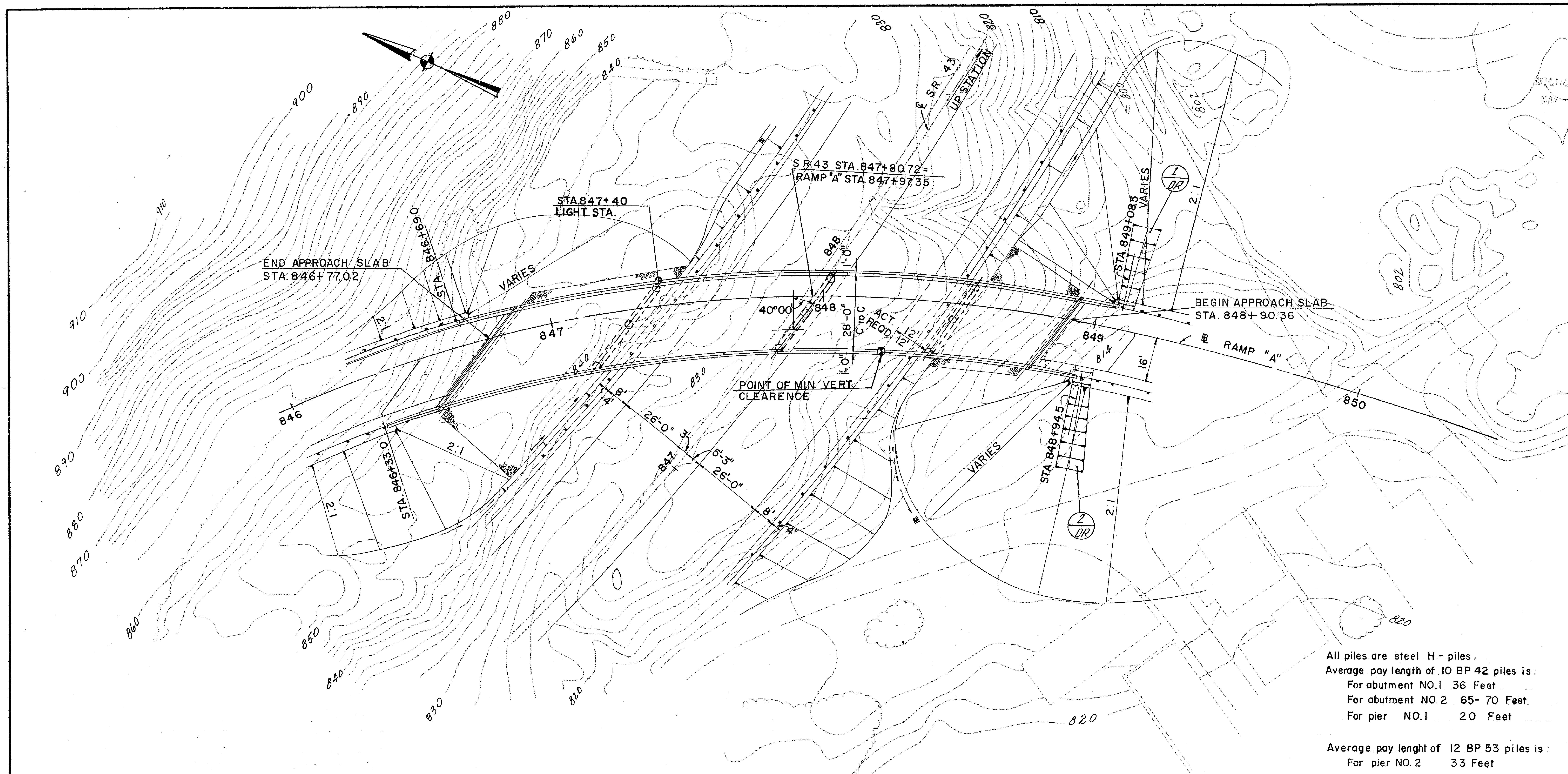
11/11

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S S	M R		B S	[signature]	6-28-66	

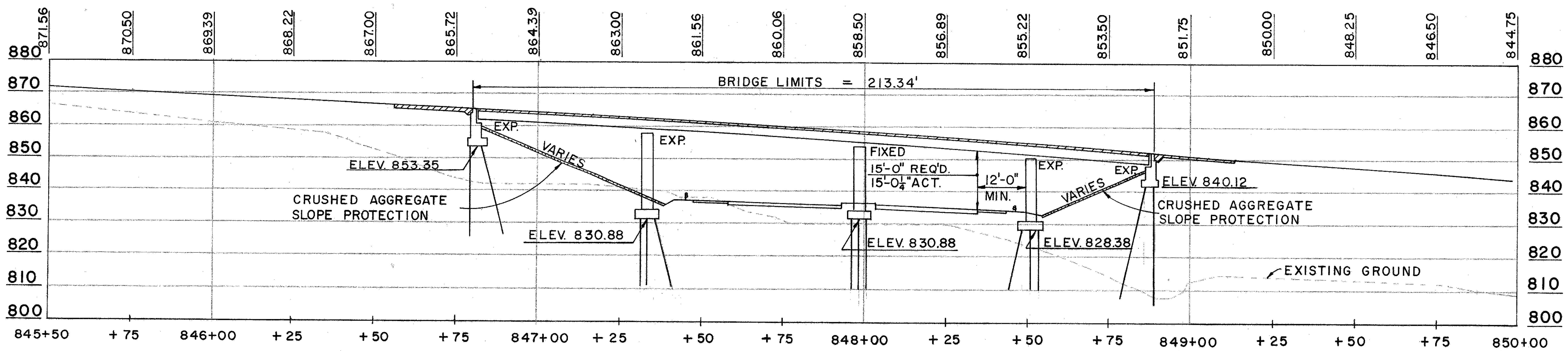
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

249/299

JEFFERSON COUNTY
JEF - 43 - 0.42



PLAN



PROFILE

HORIZONTAL CURVE DATA

S. R. 43

P.I. STA. 847+16.37

Δ = 31° 50' 52"L	θs = 05° 00' 00"
Δc = 21° 50' 52"	Ls = 200'
Dc = 05° 00' 00"	L.T. = 133.387'
Lc = 436.956'	S.T. = 66.715'
Rc = 1,145.916'	Ts = 427.329'
Tc = 221.164'	Es = 47.239'
Ec = 21.147'	

RAMP "A"

P. I. STA. 847+19.85

Δ = 63° 38' 31"R	θs = 12° 00' 00"
Δc = 39° 38' 31"	Ls = 200'
Dc = 12° 00' 00"	L.T. = 133.641'
Lc = 330.350'	S.T. = 66.946'
Rc = 477.465'	Ts = 398.299'
Tc = 172.095'	Es = 88.558'
Ec = 30.068'	

VERTICAL CURVE DATA RAMP "A"

P.V.I. STA. 846+50 ELEV. 869.25
G_1 = -3.00% G_2 = -7.00%
V.C. = 450'

1985 ADT: RAMP "A" 6,620
S.R. 43 15,120

All piles are steel H - piles.
Average pay length of 10 BP 42 piles is:
For abutment NO. 1 36 Feet
For abutment NO. 2 65 - 70 Feet
For pier NO. 1 20 Feet

Average pay lenght of 12 BP 53 piles is:
For pier NO. 2 33 Feet
For pier NO. 3 48 Feet

PROPOSED STRUCTURE

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

SPANS: 52'-6", 65'-6", 52'-6" and 36'-9" c/c of bearings.

ROADWAY: 28 feet face to face of parapets.

LOAD FREQUENCY: C.F. 400

SKEW: 40°00' L.F.

SURFACE COURSE: 1½" Asphalt concrete

APPROACH SLAB: AS-1-67 (25' long)

ALIGNMENT: Curve

SUPERELEVATION: 1" per ft.

RACKOFF ASSOCIATES
ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO

1/12

SITE PLAN
BRIDGE NO. JEF.-43-0063
S.R. 43 UNDER RAMP A

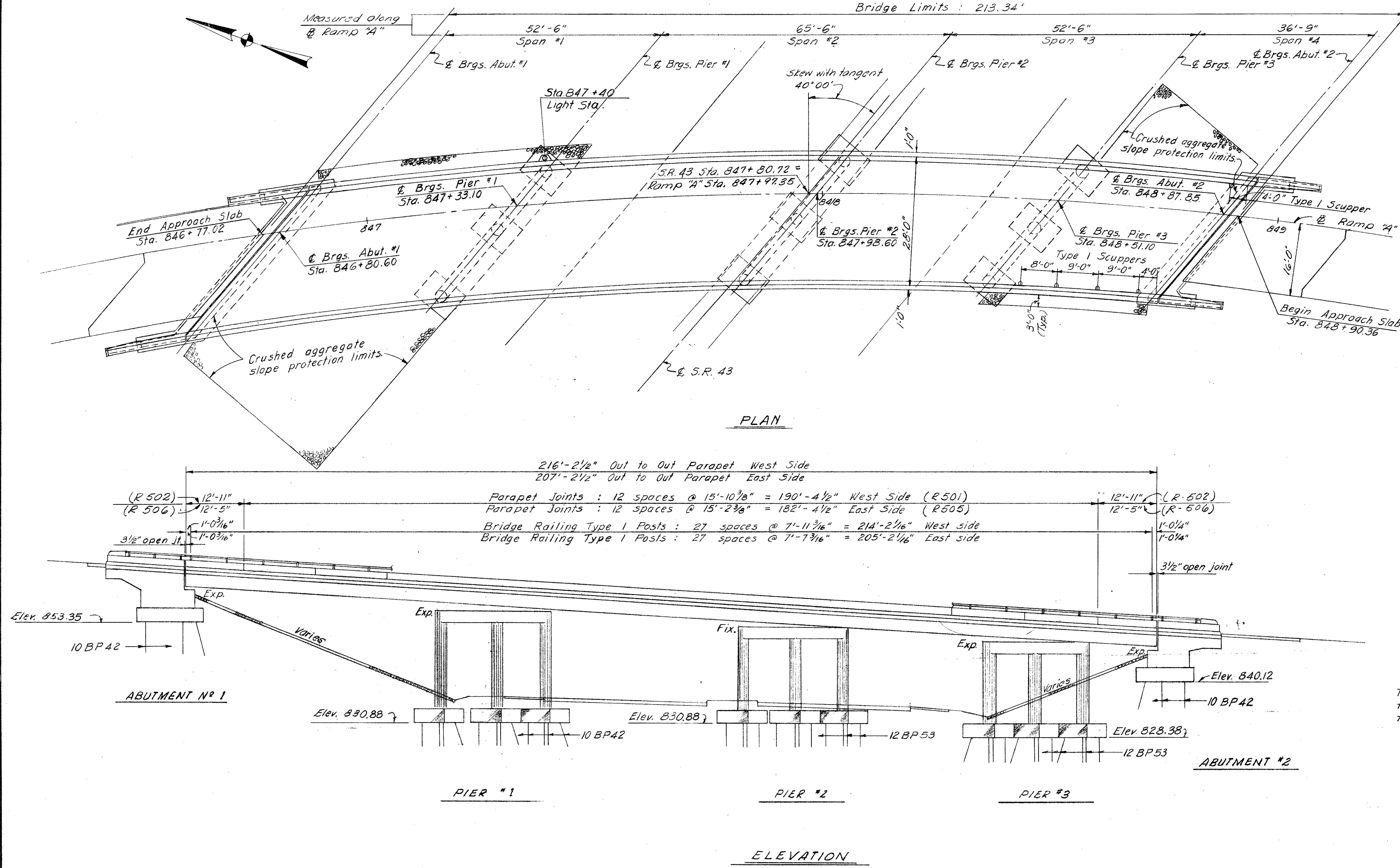
JEFFERSON COUNTY STA. 847+80.72

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S. S.	E.D.A.		W. S.		10-20-66	9-27-72

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

250 / 299

JEFFERSON COUNTY
JEF-43-0.42



SCREED ELEVATIONS

	LOCATION	AT LEFT CURB FACE	AT RIGHT CURB FACE
SPAN #1	℄ Brgs. Abut. #1	864.88	865.02
	¼ Point	864.21	864.30
	½ Point	863.51	863.54
	¾ Point	862.79	862.76
SPAN #2	℄ Brgs. Pier #1	862.05	861.96
	¼ Point	861.13	860.98
	½ Point	860.18	859.97
	¾ Point	859.19	858.91
SPAN #3	℄ Brgs. Pier #2	858.17	857.82
	¼ Point	857.34	856.95
	½ Point	856.50	856.07
	¾ Point	855.65	855.16
SPAN #4	℄ Brgs. Pier #3	854.77	854.23
	¼ Point	854.14	853.59
	½ Point	853.51	852.99
	¾ Point	852.87	852.38
	℄ Brgs. Abut. #2	852.26	851.76

The above are screed elevations before the deck is placed. (Elevations at top of reinforced concrete slab).

RACKOFF ASSOCIATES 2/12
ENGINEERS COLUMBUS, OHIO

GENERAL PLAN AND ELEVATION
BRIDGE NO. JEF.-43-0063
S.R. 43 UNDER RAMP A

JEFFERSON COUNTY STA. 847+80.72

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.S.	E.D.A.		W.S.		10-20-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

251/299

JEFFERSON COUNTY
JEF-43-0.42

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

Standard Drawing BR-1-65 revised 11-24-65
Standard Drawing RB-1-55 revised 2-2-59
Standard Drawing SD-1-69 dated 6-12-69
Supplemental Specification 808 dated 1-1-71
Standard Drawing BR-2-67 revised 10-15-71
Supplemental Specification 836 dated 1-1-71

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 400 (57)
Concrete Class C — basic unit stress 1,333 p.s.i.

Structural steel — ASTM A36 — basic unit stress 20,000 p.s.i.
Reinforcing steel — ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i., except spiral reinforcement may be plain, Structural Grade with basic unit stress of 18,000 p.s.i.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments and piers.

PILES shall be driven to firm contact with rock with a hammer of not less than 11,000 ft. lbs. per blow. If the length 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 capacity according to the formula in Sec. 507.05 is not less than the following value for a pile hammer of the indicated energy rating.

For the Abutment No. 1 piles.

43 tons per pile using an 11,000 ft. lb. hammer
36 tons per pile using a 15,000 ft. lb. or greater hammer

For the Pier No. 1. piles.

50 tons per pile using an 11,000 ft. lb. hammer
45 tons per pile using a 15,000 ft. lb. or greater hammer

For the Pier No. 2 and No. 3 piles.

50 tons per pile using an 11,000 ft. lb. hammer
45 tons per pile using a 15,000 ft. lb. or greater hammer

For the Abutment No. 2 piles.

40 tons per pile using an 11,000 ft. lb. hammer
35 tons per pile using a 15,000 ft. lb. or greater hammer

If the energy rating of the hammer is between the rating as shown above, the required formula capacity shall be determined by interpolation. The design load is 35 tons per pile for the abutments and pier No. 1, and 40 tons per pile for the pier No. 2 and pier No. 3

UTILITY LINES: All expense involved in relocation (installing) the affected utility lines shall be borne by the owners. The contractor and owners are requested to coorpate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIER	GEN.	AS BUILT	
503	415	Cu. Yds.	Unclassified excavation		265	150			
505	Lump	Sum	First test pile				LUMP		
507	1407	Lin. Ft.	Steel piles, 10 BP 42		1107	300			
507	1215	Lin. Ft.	Steel piles, 12 BP 53			1215			
509	90,719	Lbs.	Reinforcing steel	58,673	11,197	20,849			
511	204	Cu. Yds.	Class "C" concrete, superstructure	204					
511	85	Cu. Yds.	Class "C" concrete, piers above footing			85			
511	63	Cu. Yds.	Class "C" concrete, piers footings			63			
511	94	Cu. Yds.	Class "C" concrete, abutment above footings		94				
511	74	Cu. Yds.	Class "C" concrete, abutment footing		74				
513	167,100	Lbs.	Structural steel	167,100					
514	167,100	Lbs.	Field painting of structural steel	167,100					
517	485.75	Lin. Ft.	Railing Type I	423.42	62.33				
518	30	Cu. Yds.	Porous backfill		30				
518	65	Lin. Ft.	6" Perforated, helical C.M.P. including special, 707.01		65				
518	58	Lin. Ft.	6" Non-perforated, helical C.M.P., 707.01		58				
518	5	Each	Scuppers including supports	5					
601	720	Sq. Yds.	Crushed aggregate slope protection				720		
625			See sheet 169 for lighting summary						
404	25	Cu. Yds.	Asphalt concrete (70-85 or AC-20)	25					
808	204	Units	Chemical admixture for concrete, type A, B or D	204					
SPECIAL	13	Cu. Yds.	Sand-asphalt (See Proposal Note)	13					
SPECIAL	614	Sq. Yds.	Membrane waterproofing (See Proposal Note)	614					

COMPUTED BY S.S.C. DATE 8-9-1966 CHECKED BY W.S. DATE 8-17-1966

DECK FINISHING: Texturing of the deck surface as provided in 451.09 shall not be done.

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 which excavation shall be made for the abutments and for Pier 1, Pier 2 and Pier 3.

RAILING: Refer to BR-1-65 for details of the concrete parapet and end post, and the dimensions of the aluminum post and tube.
Refer to BR-2-67 for aluminum material notes and tube splice detail.
Do not use the Guard Rail Connection Bracket shown on BR-2-67.

For lighting details, see sht.

RACKOFF ASSOCIATES 3/12
ENGINEERS COLUMBUS, OHIO

GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. JEF.-43-0063
S.R. 43 UNDER RAMP A

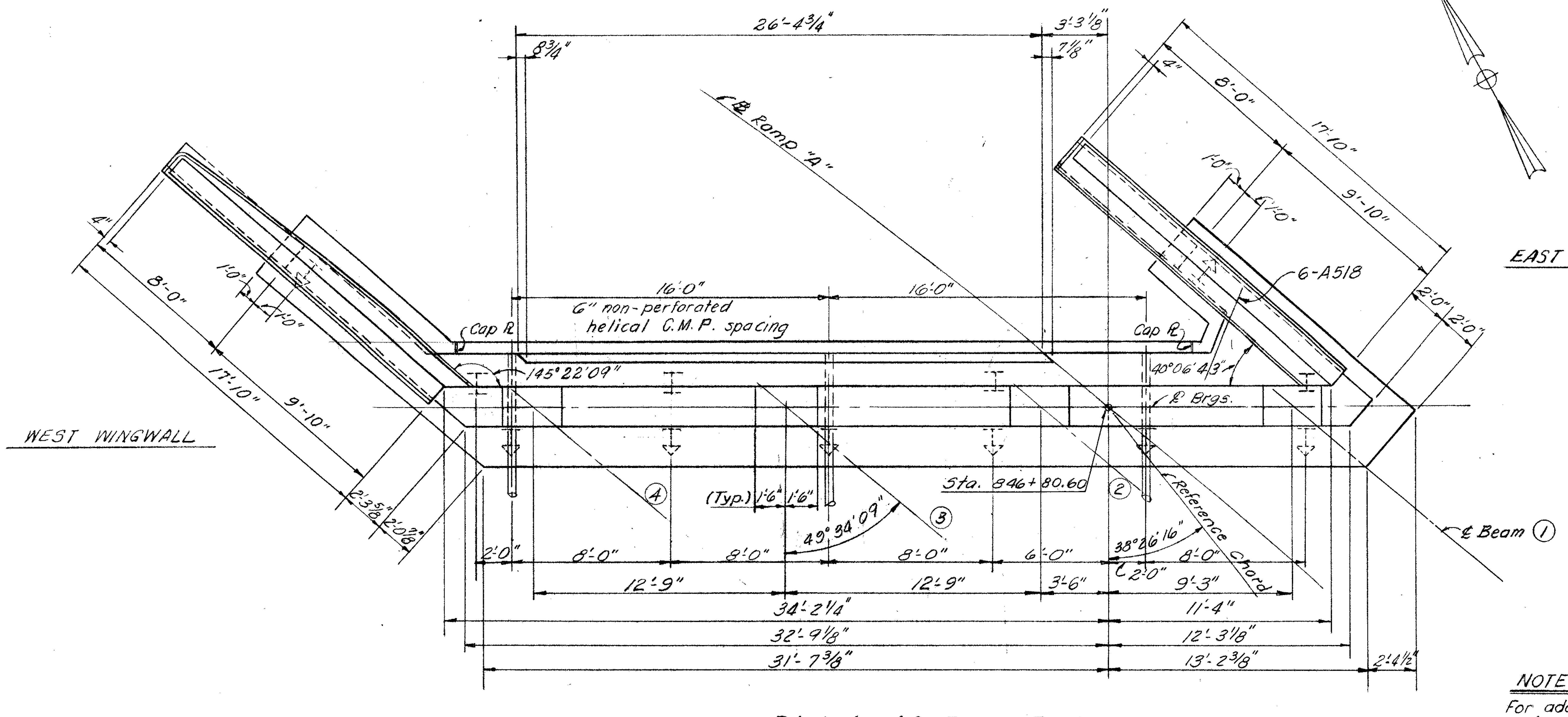
JEFFERSON COUNTY STA. 847+80.72

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.S.	E.D.A.		W.S.	[signature]	10-20-66	8-27-72

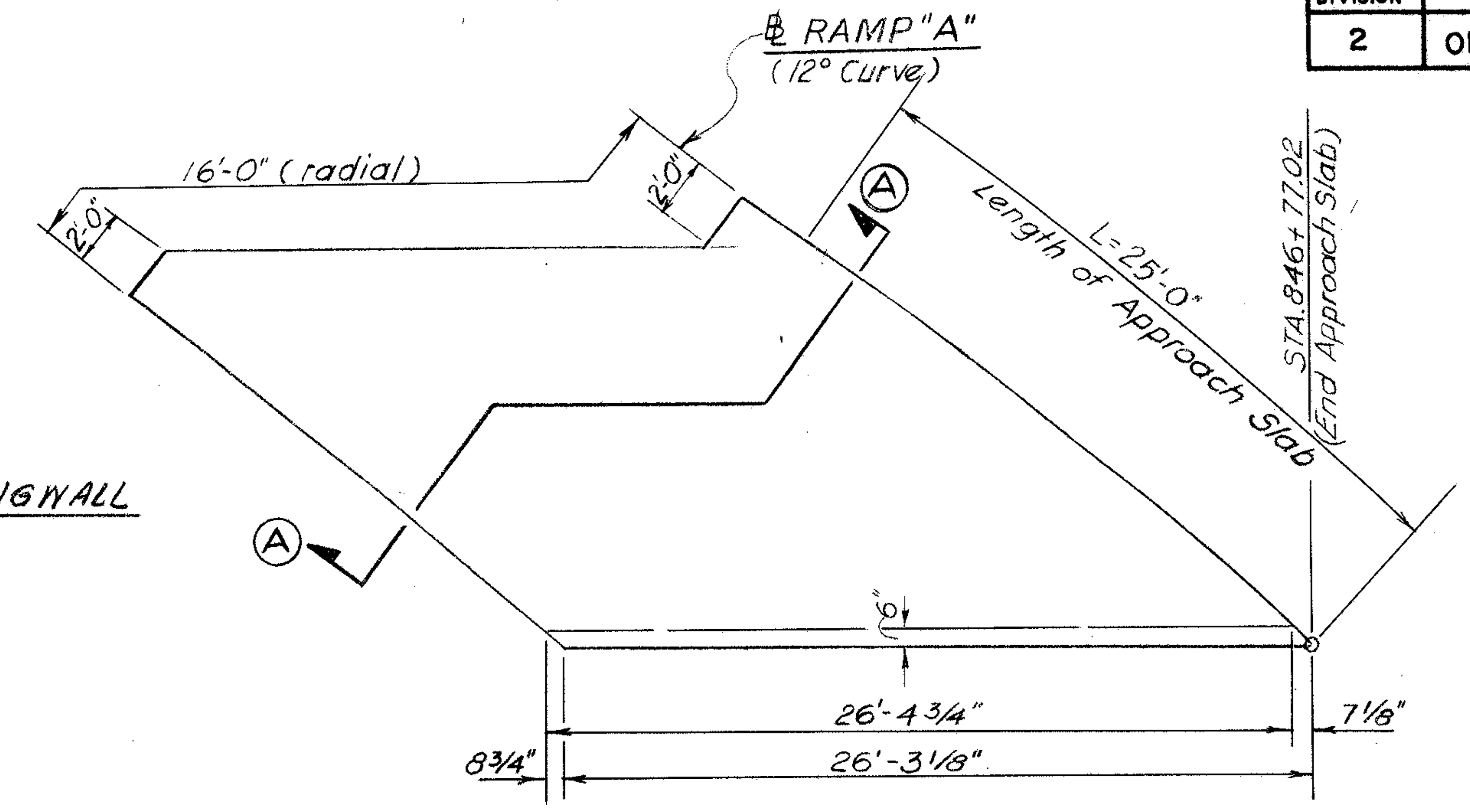
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

252 / 299

JEFFERSON COUNTY
JEF - 43 - 0.42

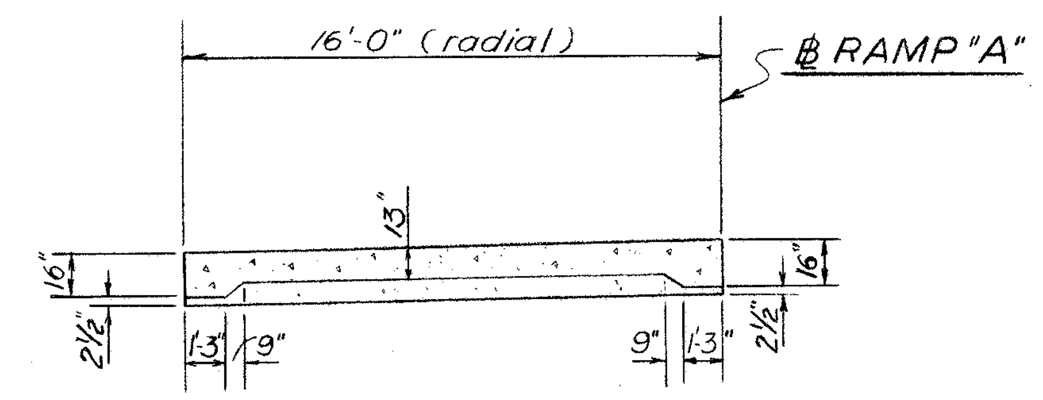


PLAN - ABUTMENT NO. 1



APPROACH SLAB @ ABUTMENT NO.1

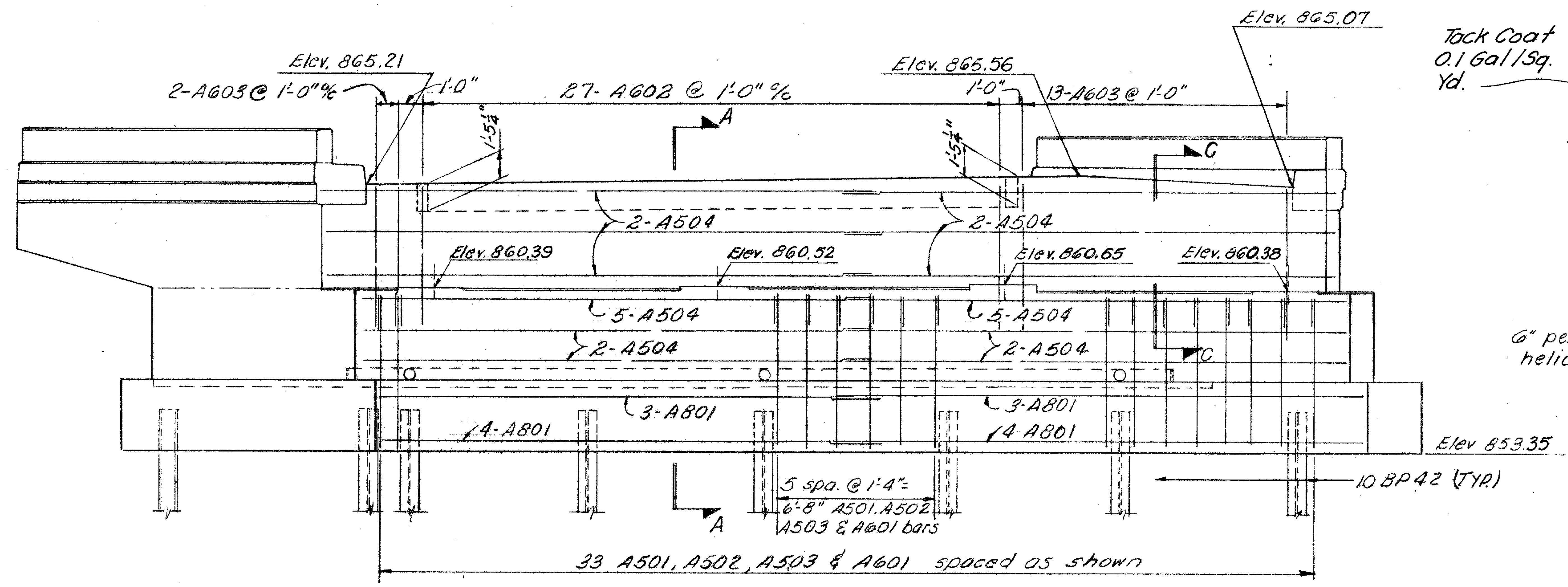
NOTE:
For additional Details see Std. Dwg. AS-1-67, Revised 6-12-69. (Typ. for Appr. Slab @ Abut. No. 1 & 2) Approach Slab @ Abutment No. 2, see Sheet No. 11 / 12 (Do not provide jacking holes)



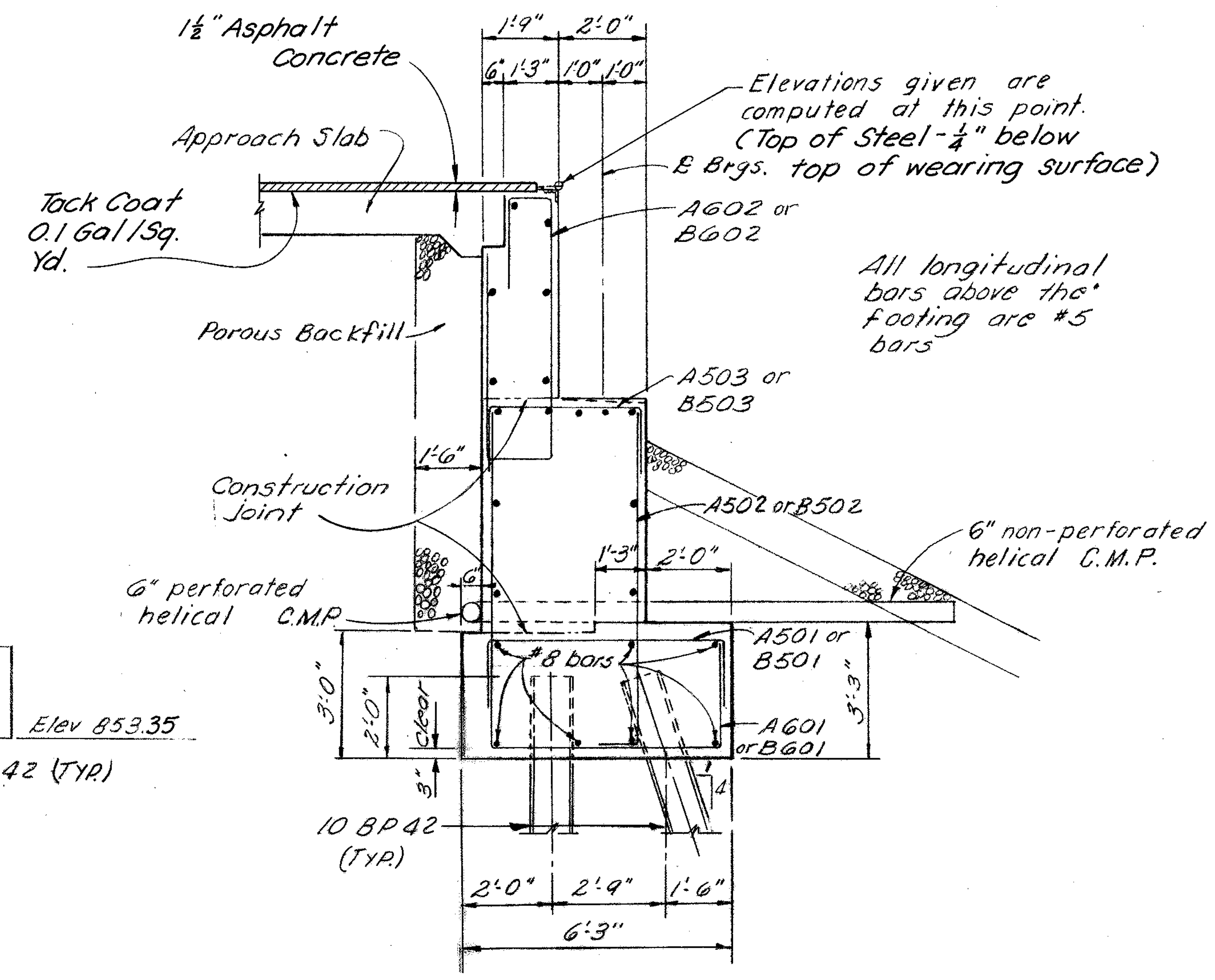
SECTION "AA"

NOTE:

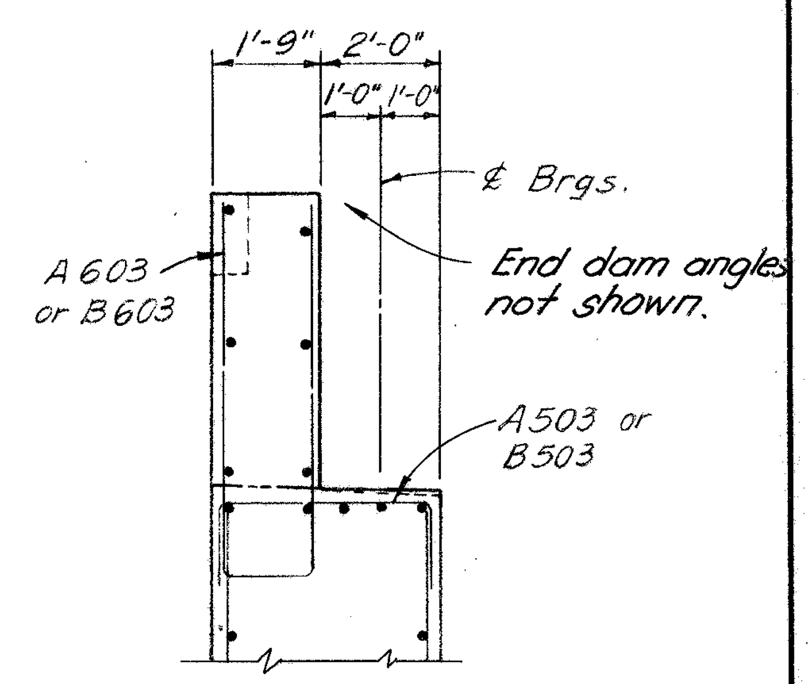
- For Wingwall details, see sheet for "Abutment No. 2 Details"



ELEVATION



SECTION A-A

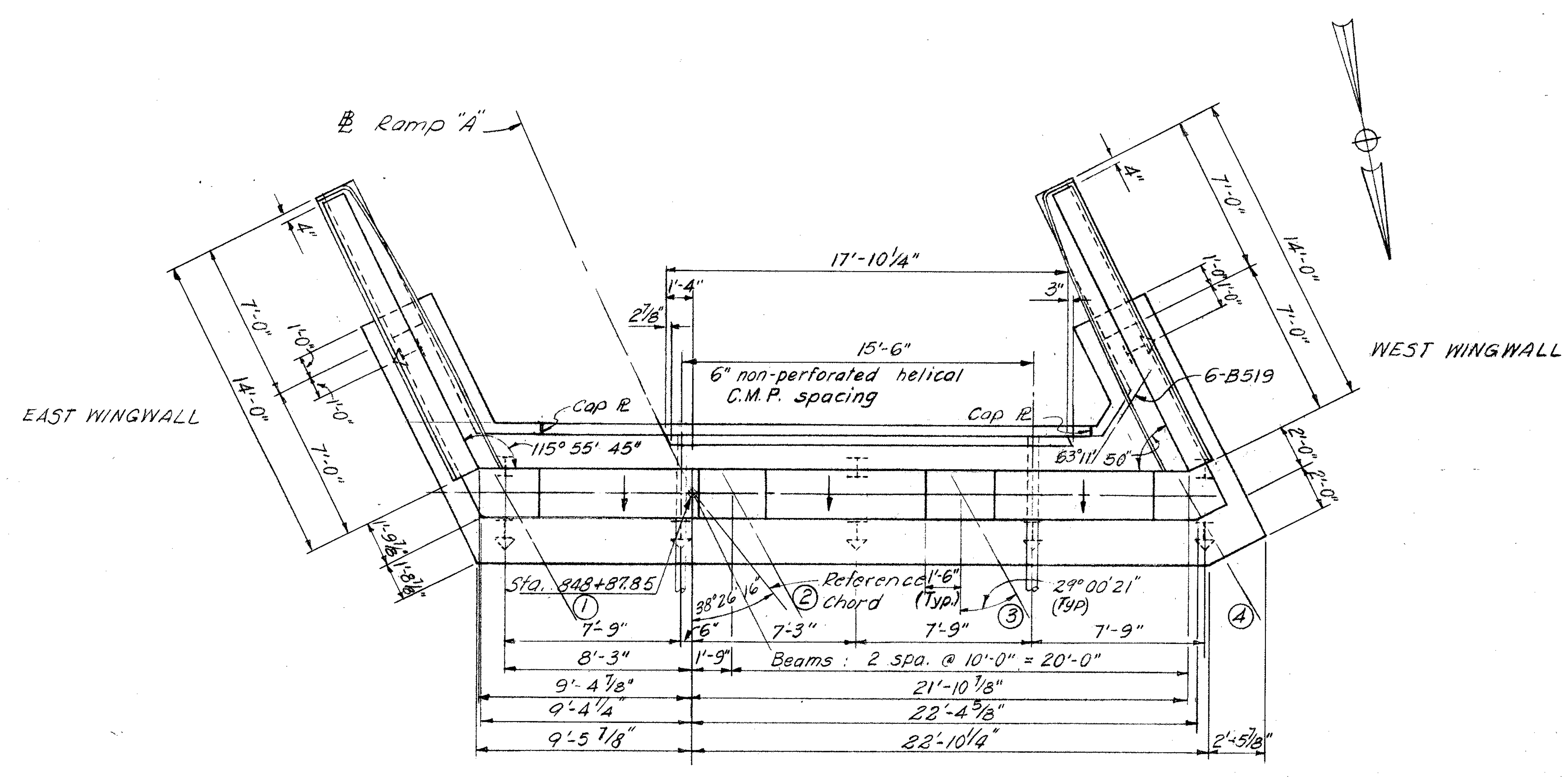


SECTION C-C

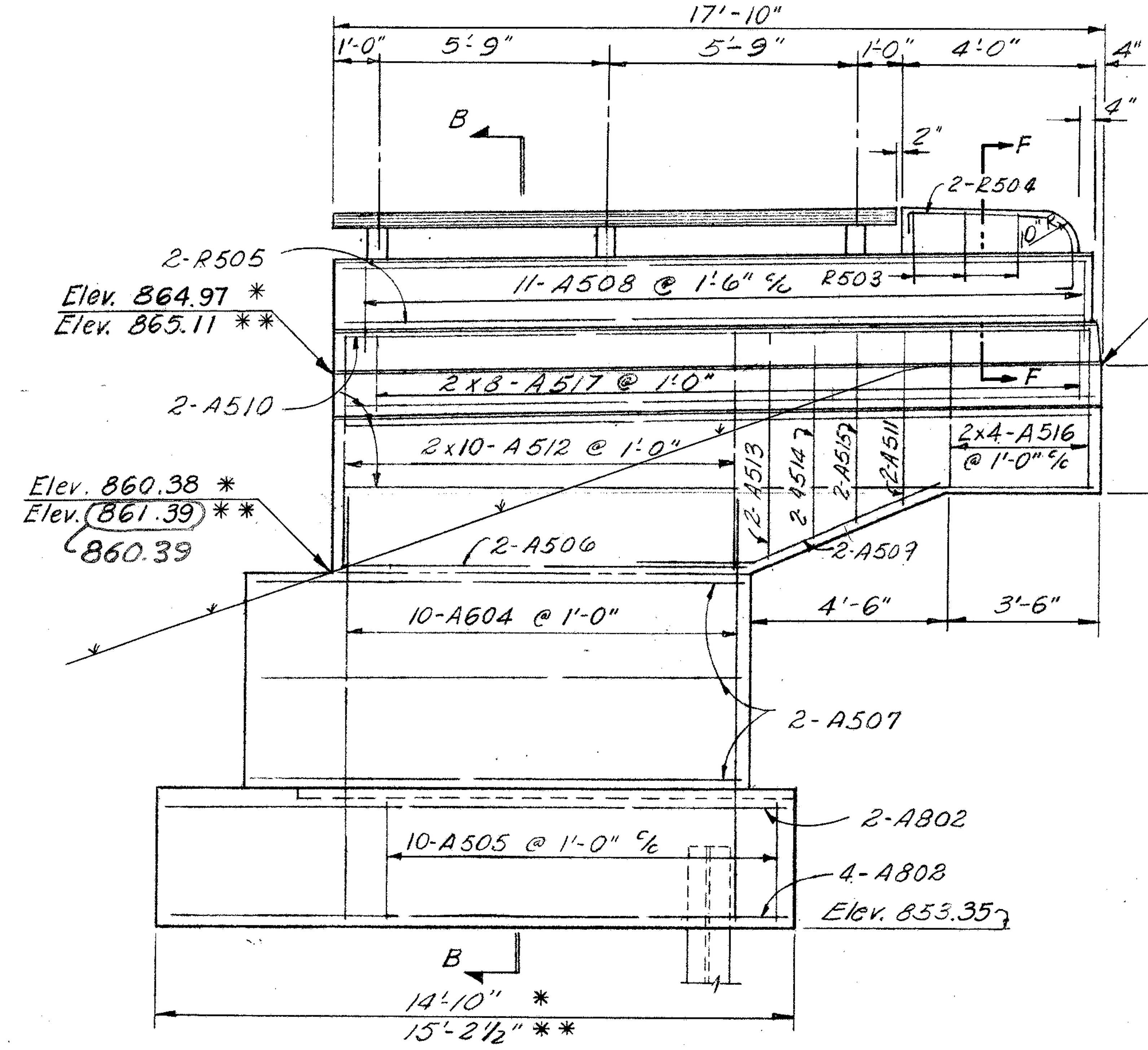
RACKOFF ASSOCIATES ENGINEERS COLUMBUS, OHIO							4 / 12
ABUTMENT NO.1 DETAILS							
BRIDGE NO. JEF.-43-0063							
S.R. 43 UNDER RAMP A							
JEFFERSON COUNTY				STA. 847+80.72			
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised	
W.S.	E.D.A.		S.S.		10-20-66	9-27-72	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF - 43 - 0.42



PLAN - ABUTMENT NO. 2

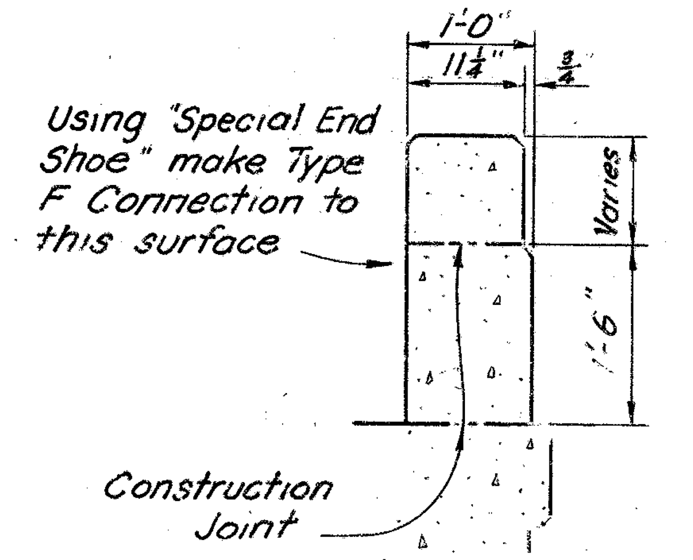


ABUTMENT NO. 1 WINGWALL
(East Wingwall shown, West Wingwall similar)

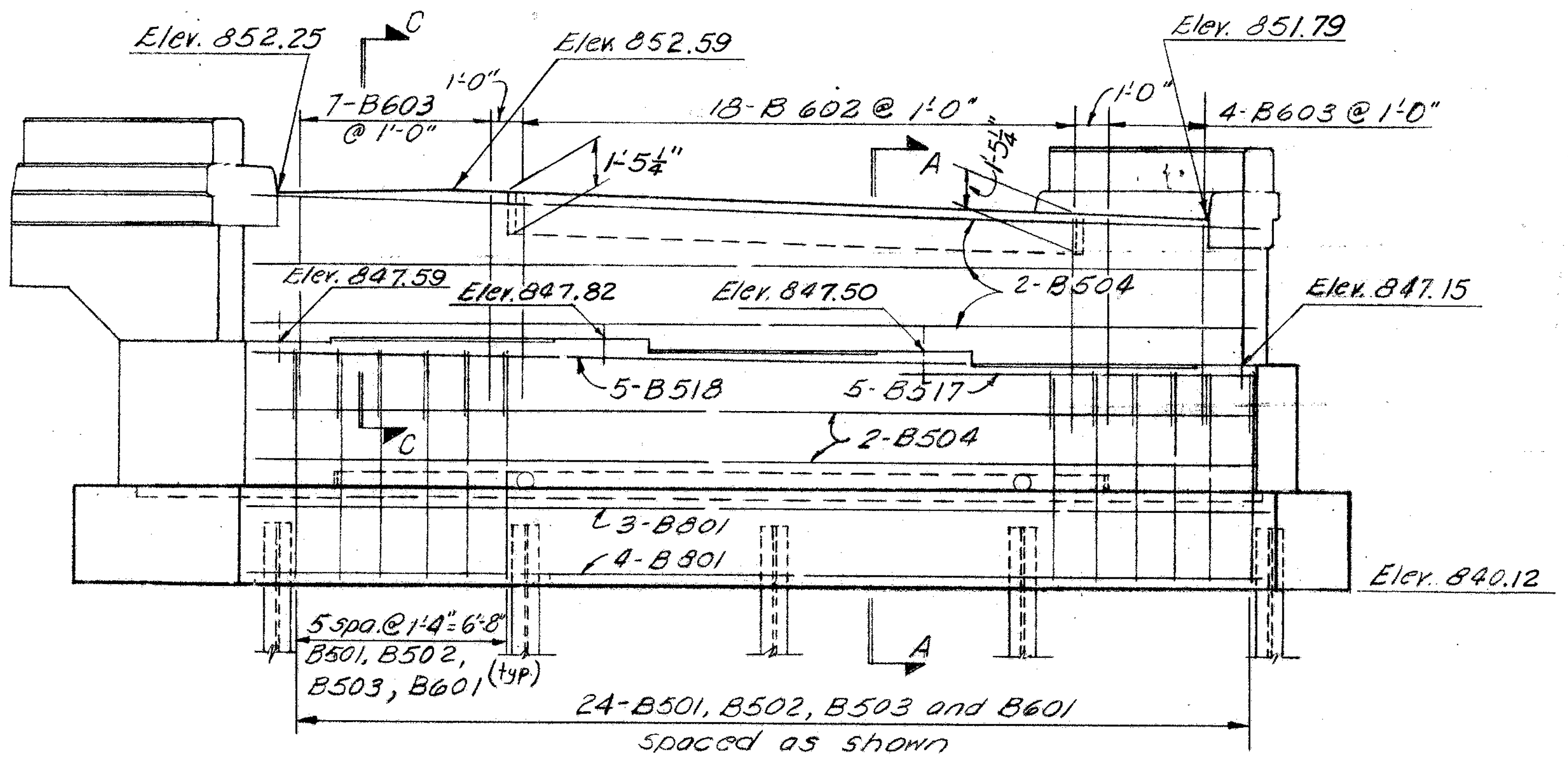
NOTES

- For all other details, sections and notes, see sheet for "Abutment No. 1 Details".

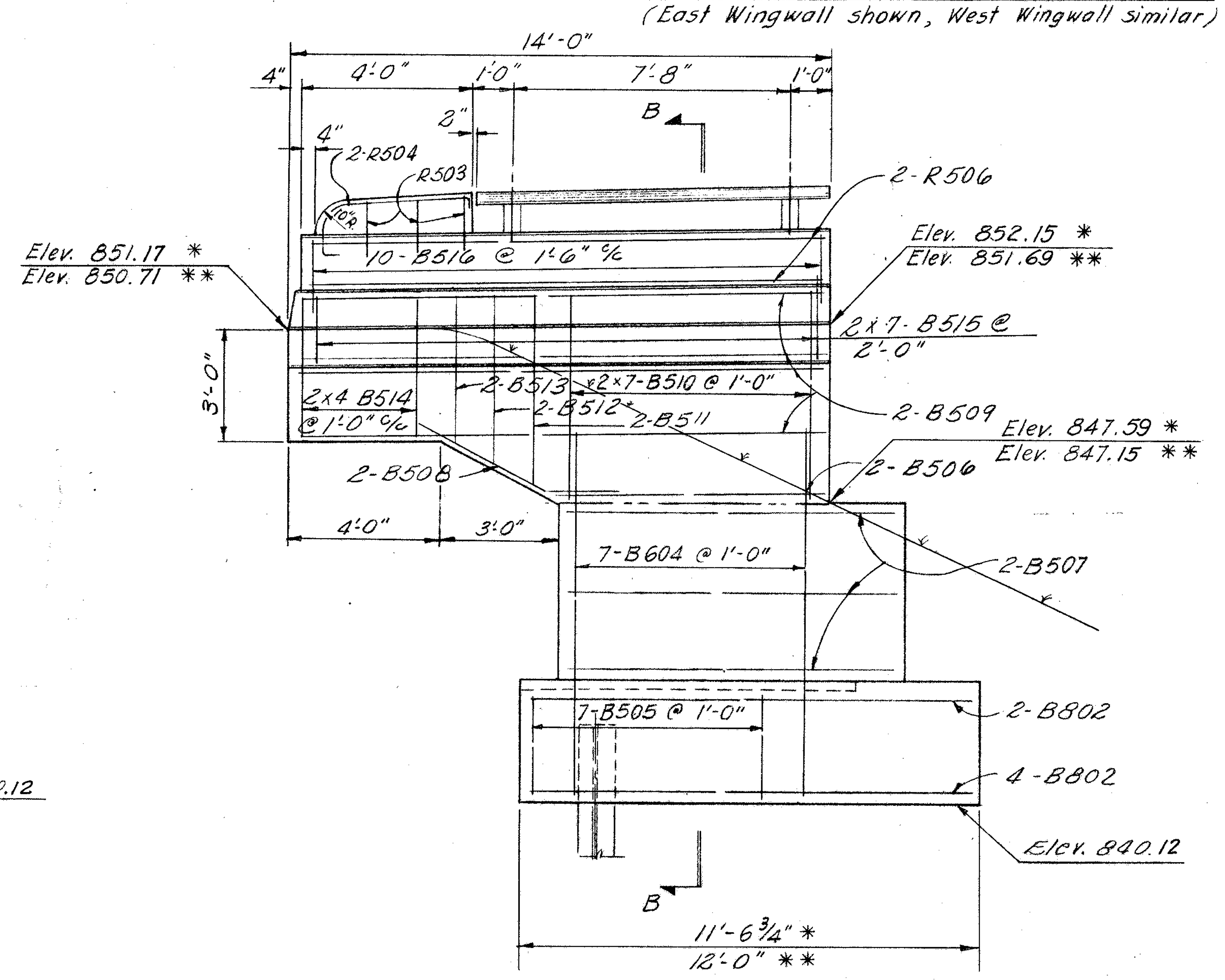
* Indicates East Wingwall
** Indicates West Wingwall



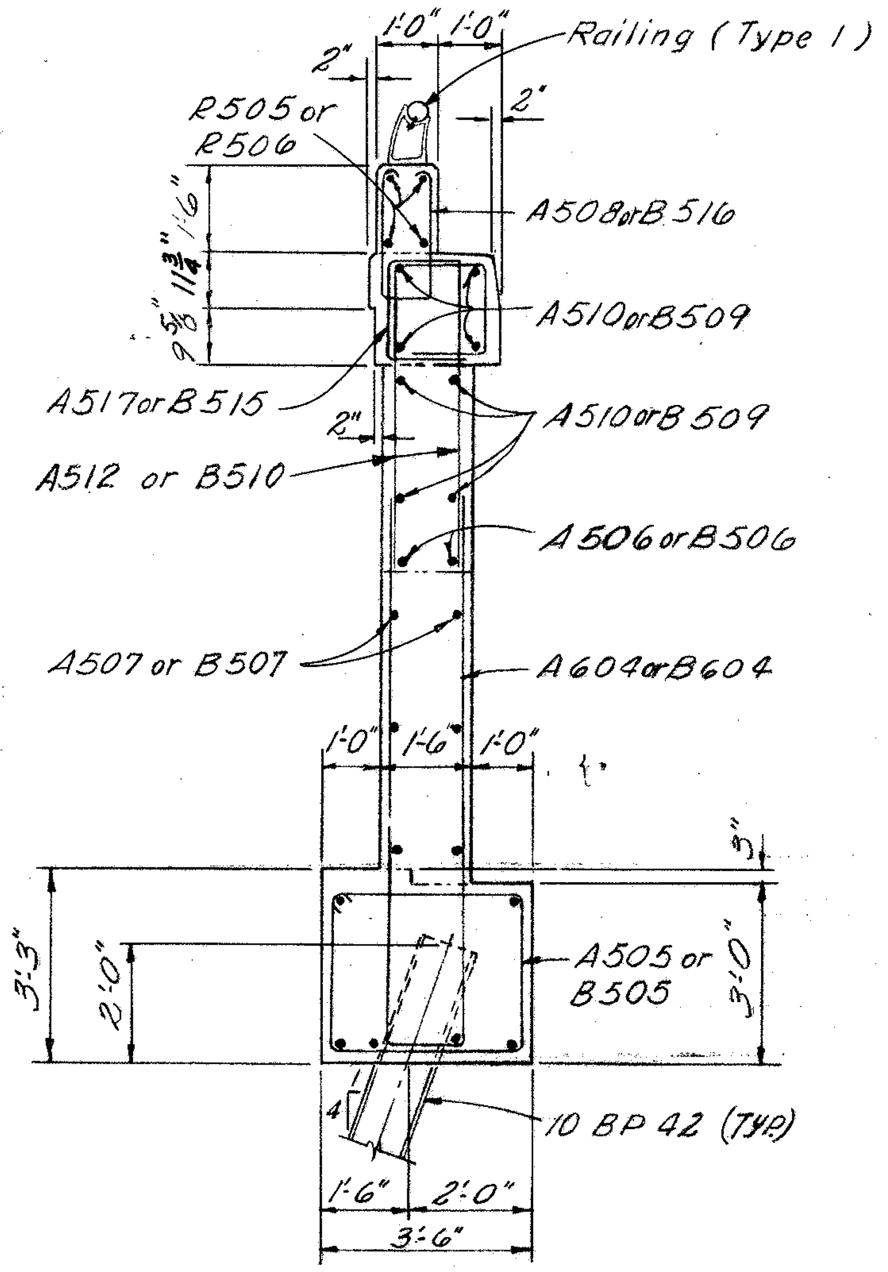
SECTION F-F
(See BR-1-65)



ELEVATION



ABUTMENT NO. 2 WINGWALL
(East Wingwall shown, West Wingwall similar)



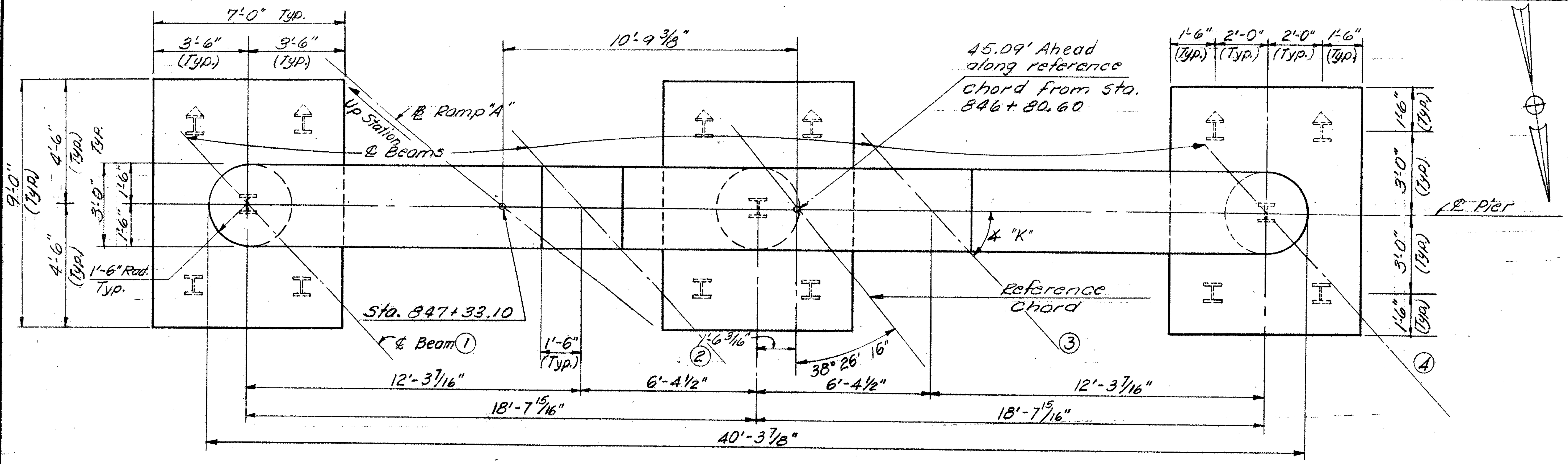
SECTION B-B

RACKOFF ASSOCIATES ENGINEERS COLUMBUS, OHIO					5/12
ABUTMENT NO. 2 DETAILS BRIDGE NO. JEF - 43 - 0063 S.R. 43 UNDER RAMP A					
JEFFERSON COUNTY			STA 847+80.72		
Designed	Drawn	Traced	Checked	Reviewed / Date	Revised
W.S.	E.D.A.		S.S.	10-20-66	6-27-74

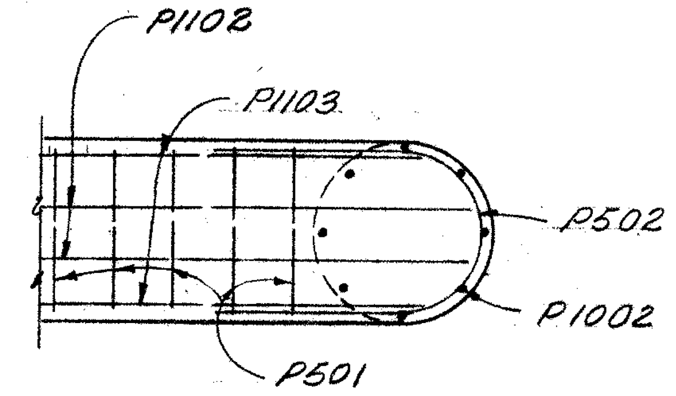
JEFFERSON COUNTY
JEF - 43 - 0.42

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

254
299



PLAN - PIER NO. 1



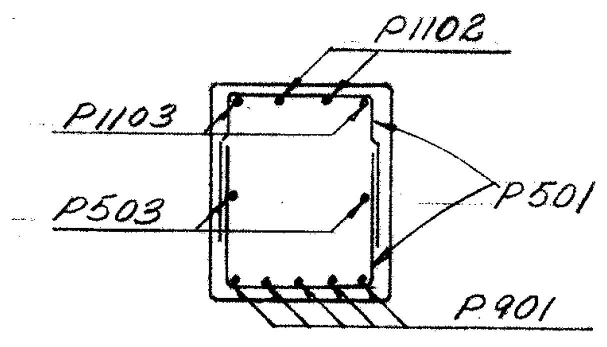
VIEW D-D

NOTES:

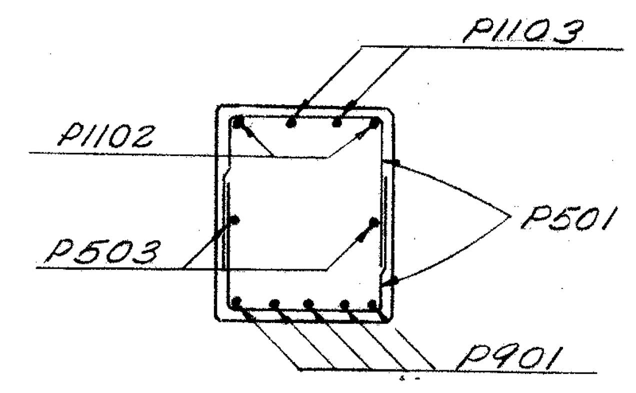
Indicates vertical piles

Indicates battered (1:4) piles

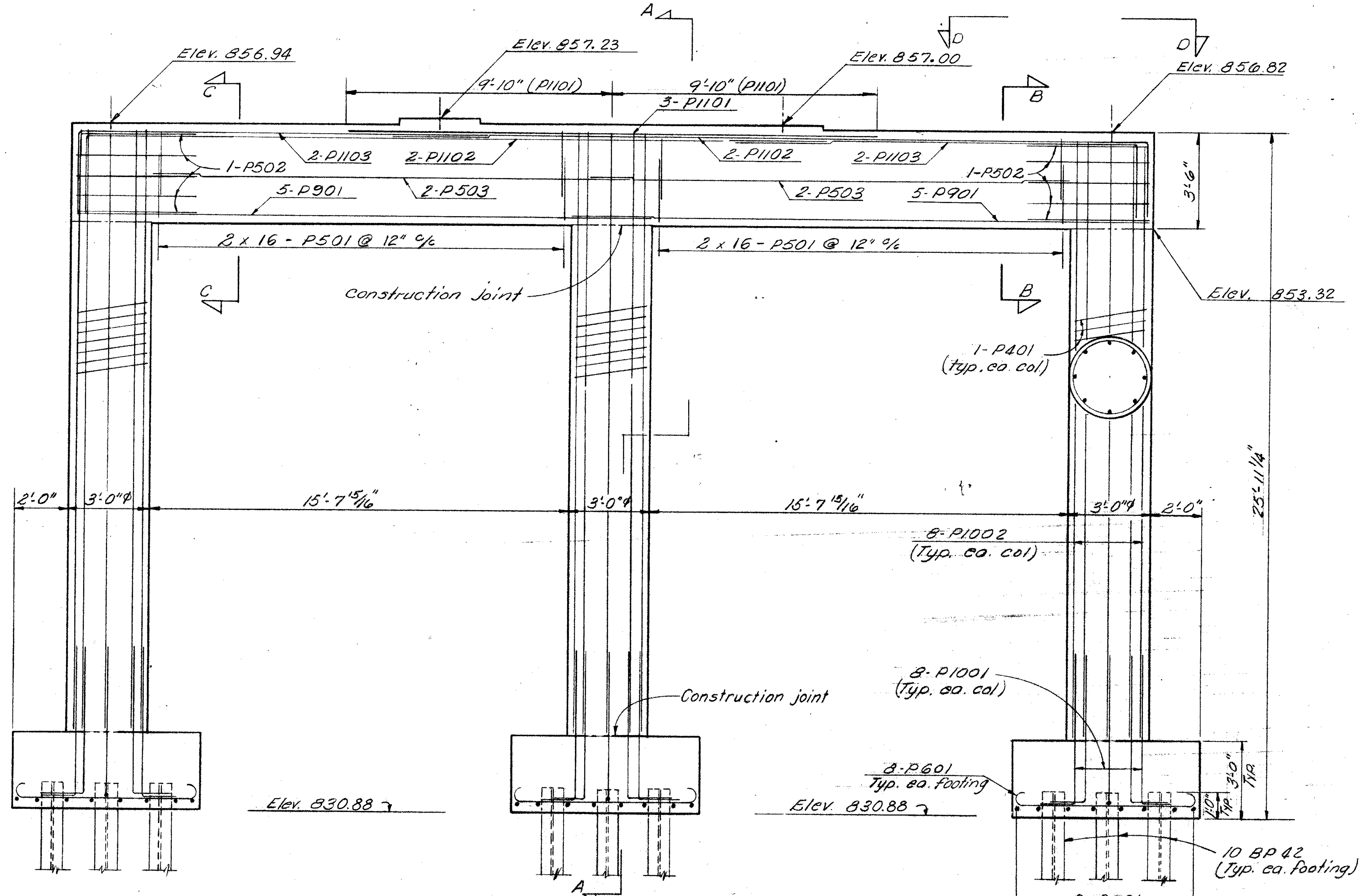
• For angle "K" see Framing Plan.



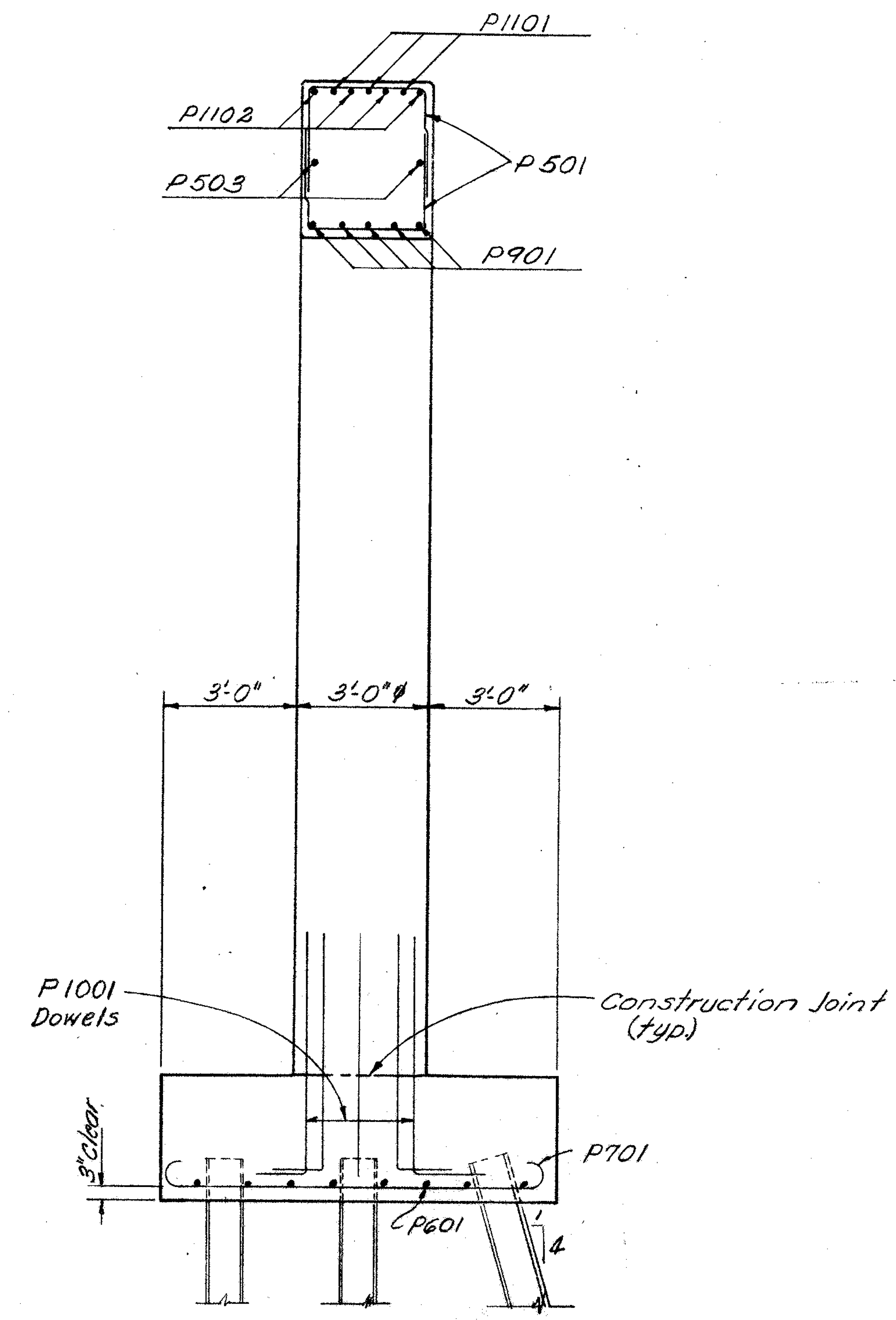
SECTION C-C



SECTION B-B



ELEVATION PIER NO. 1



SECTION A-A

RACKOFF ASSOCIATES 6/12
ENGINEERS COLUMBUS, OHIO

PIER NO. 1 DETAILS
BRIDGE NO. JEF - 43 - 0063
S.R. 43 UNDER RAMP A

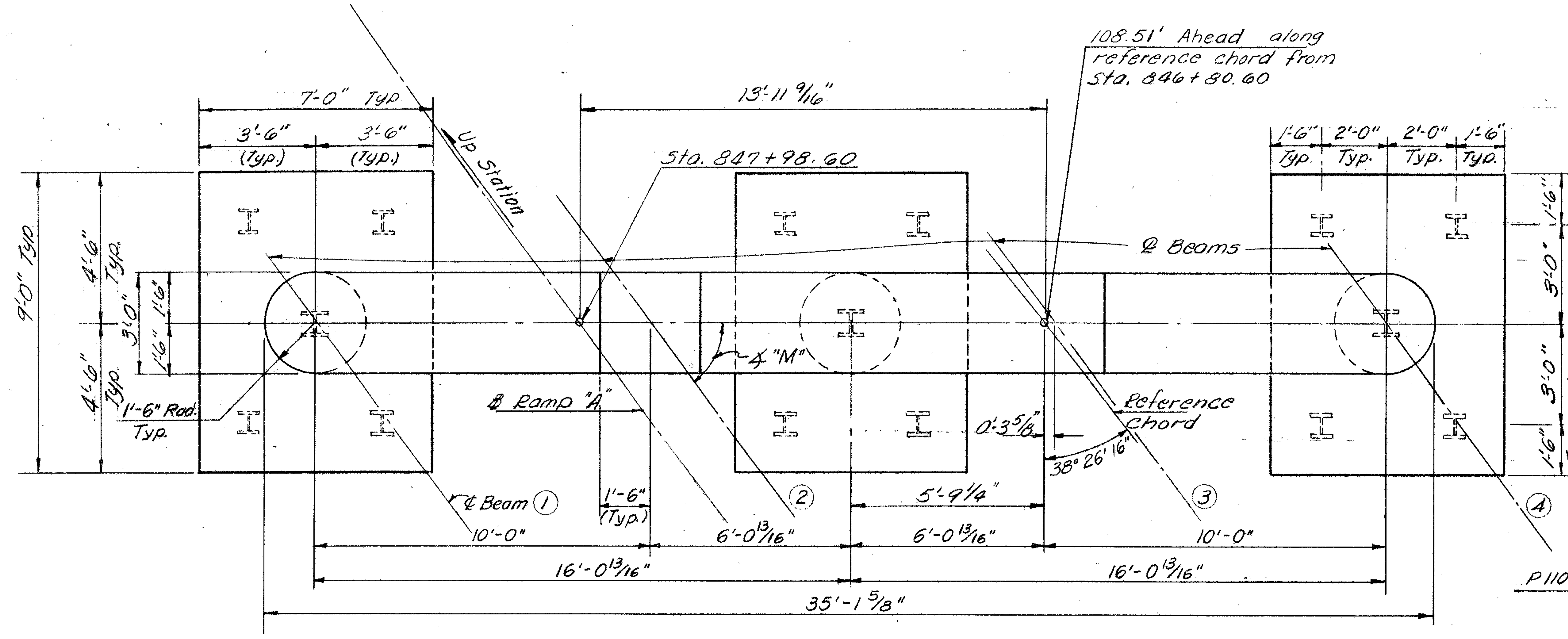
JEFFERSON COUNTY STA. 847 + 80.72

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
W.S.	E.D.A.		S.S.	[illegible]	10-20-66	

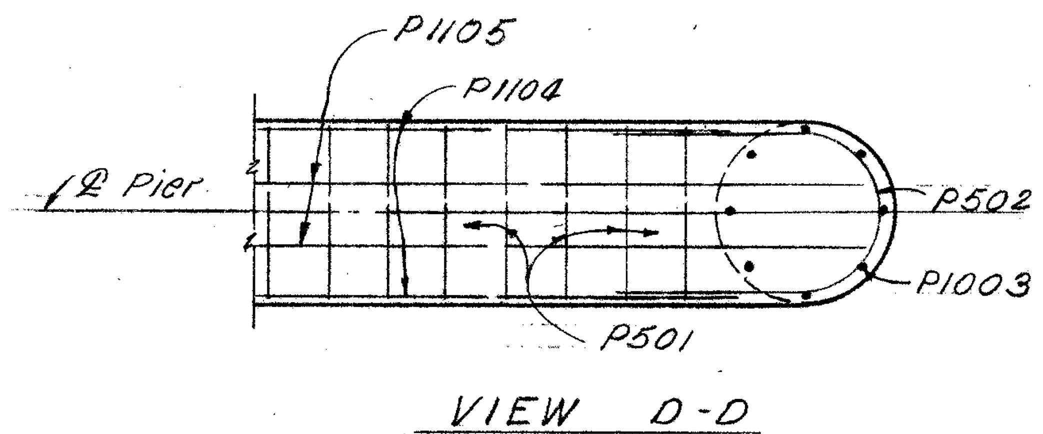
JEFFERSON COUNTY
JEF - 43 - 0.42

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

255
299



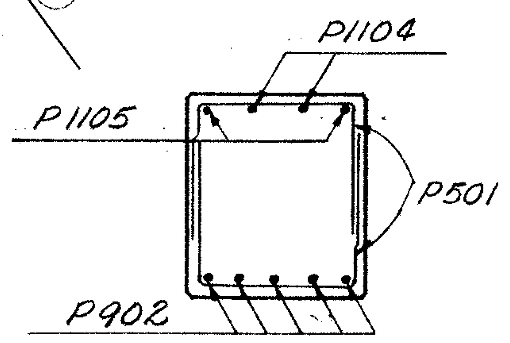
PLAN - PIER NO. 2



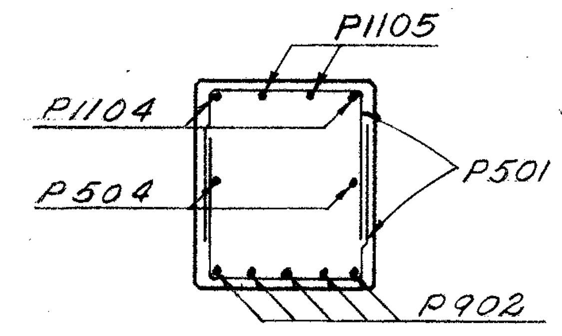
VIEW D-D

NOTES

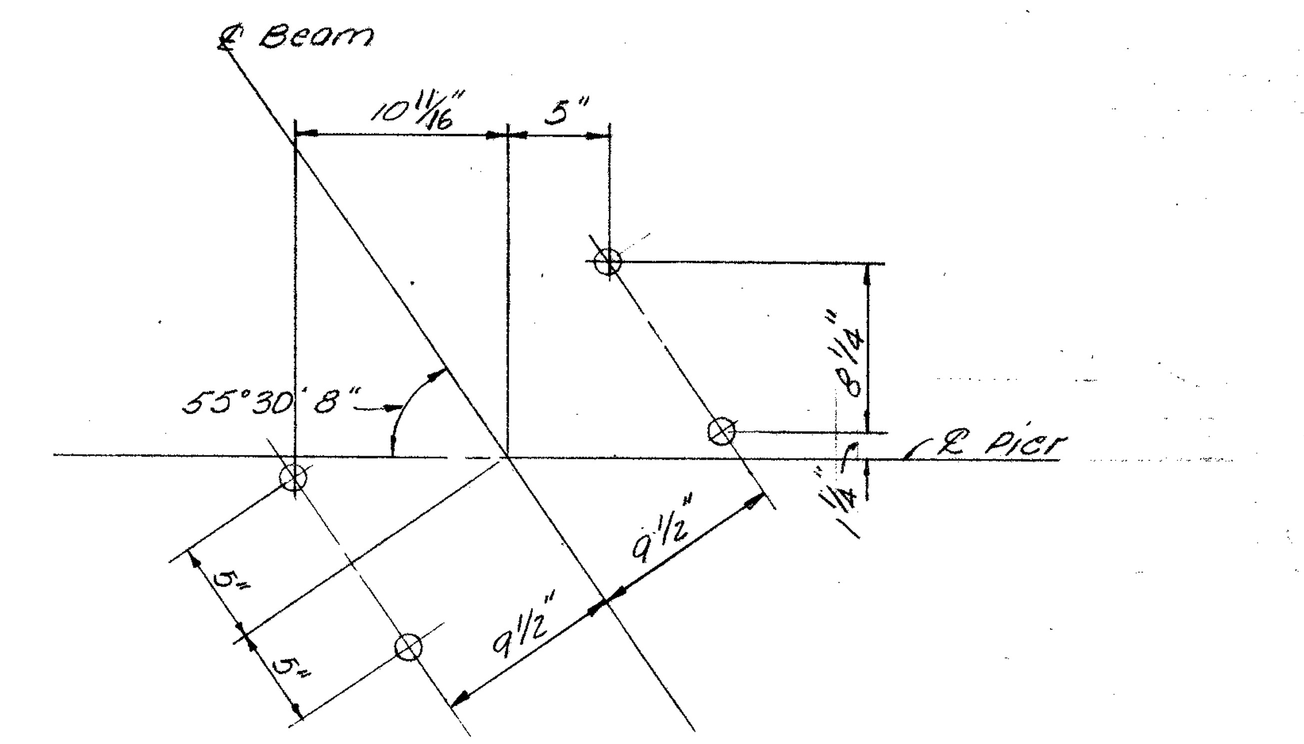
- Bridge seat reinforcing ; special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat to avoid interference with the drilling of the anchor bolt holes.
- For angle "M" see Framing Plan.



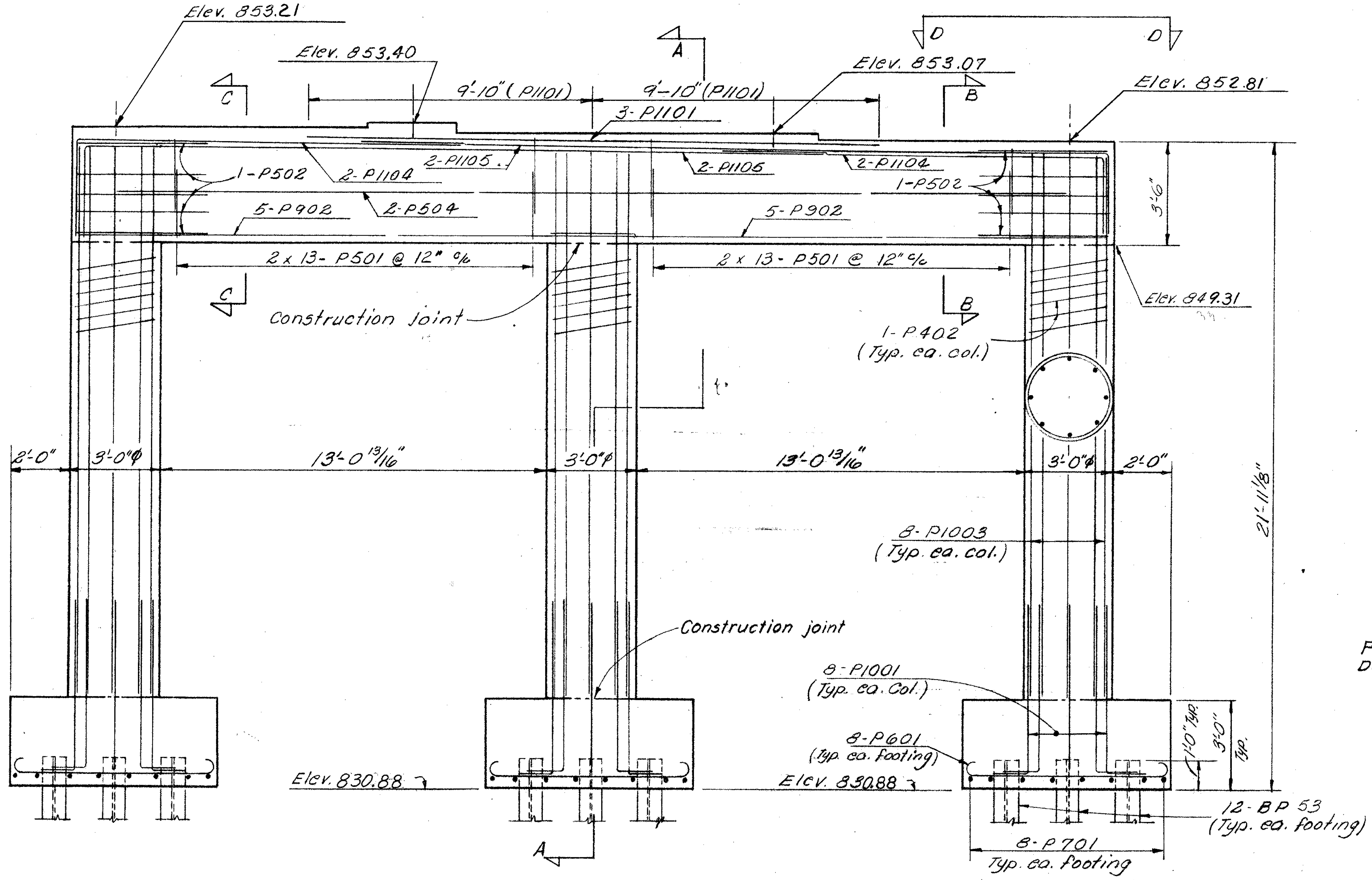
SECTION C-C



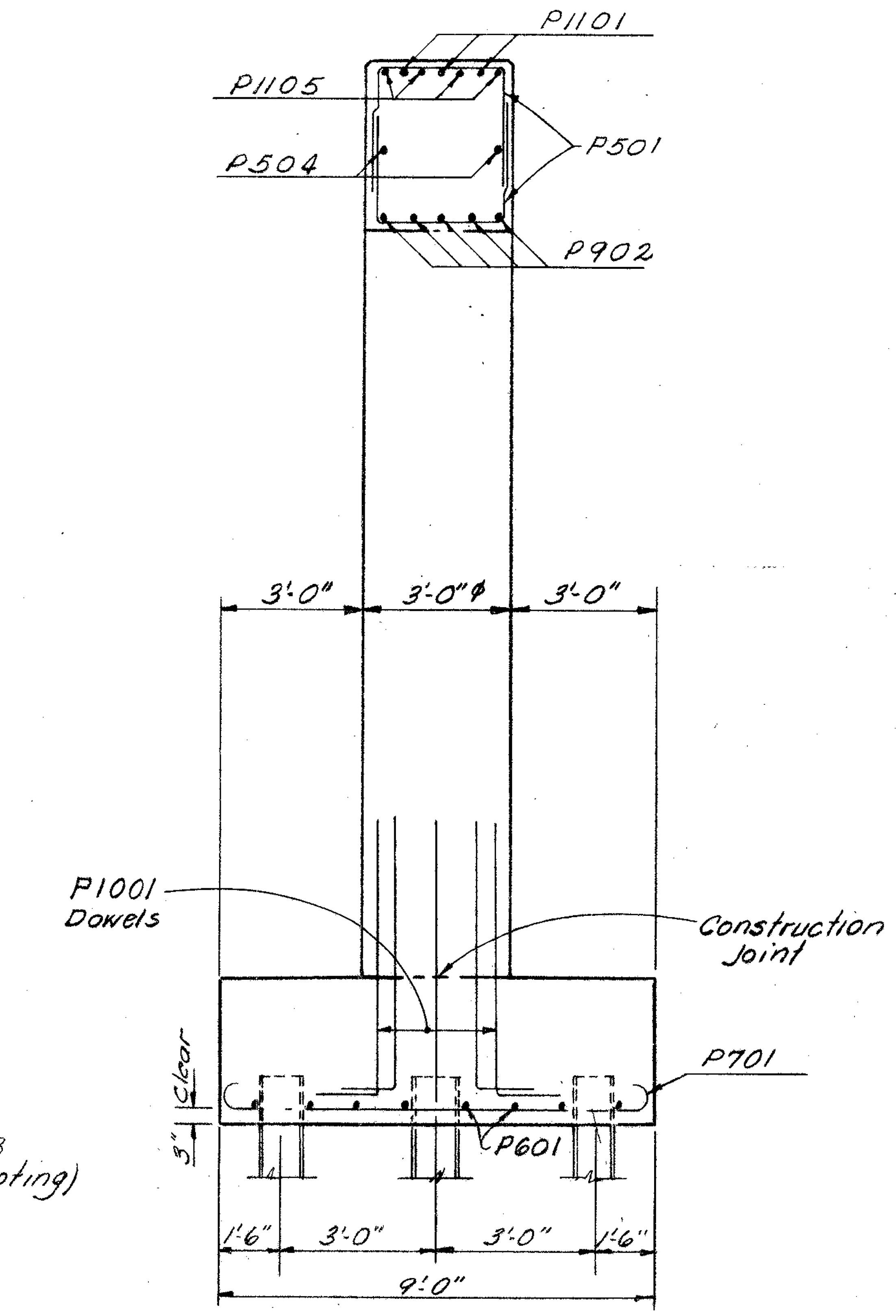
SECTION B-B



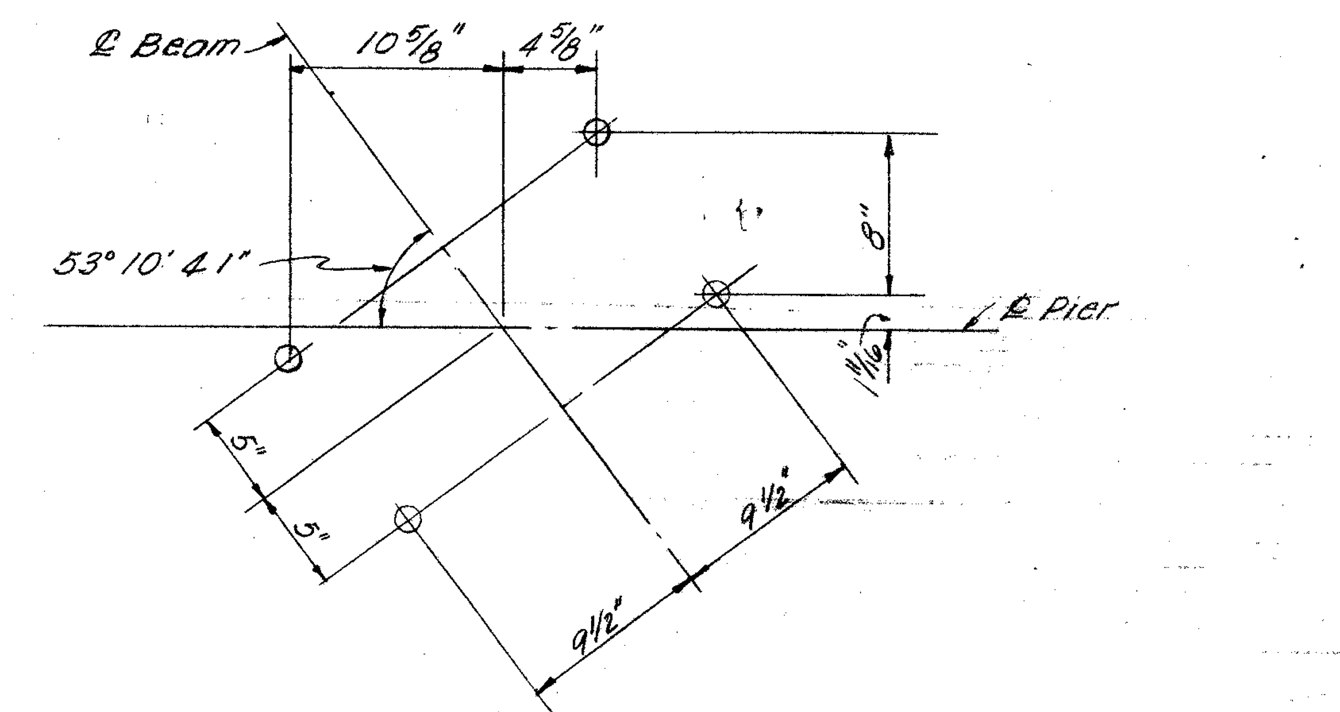
ANCHOR BOLT LAYOUT FOR BEAM NOS. 1 & 2



ELEVATION NO. 2



SECTION A-A

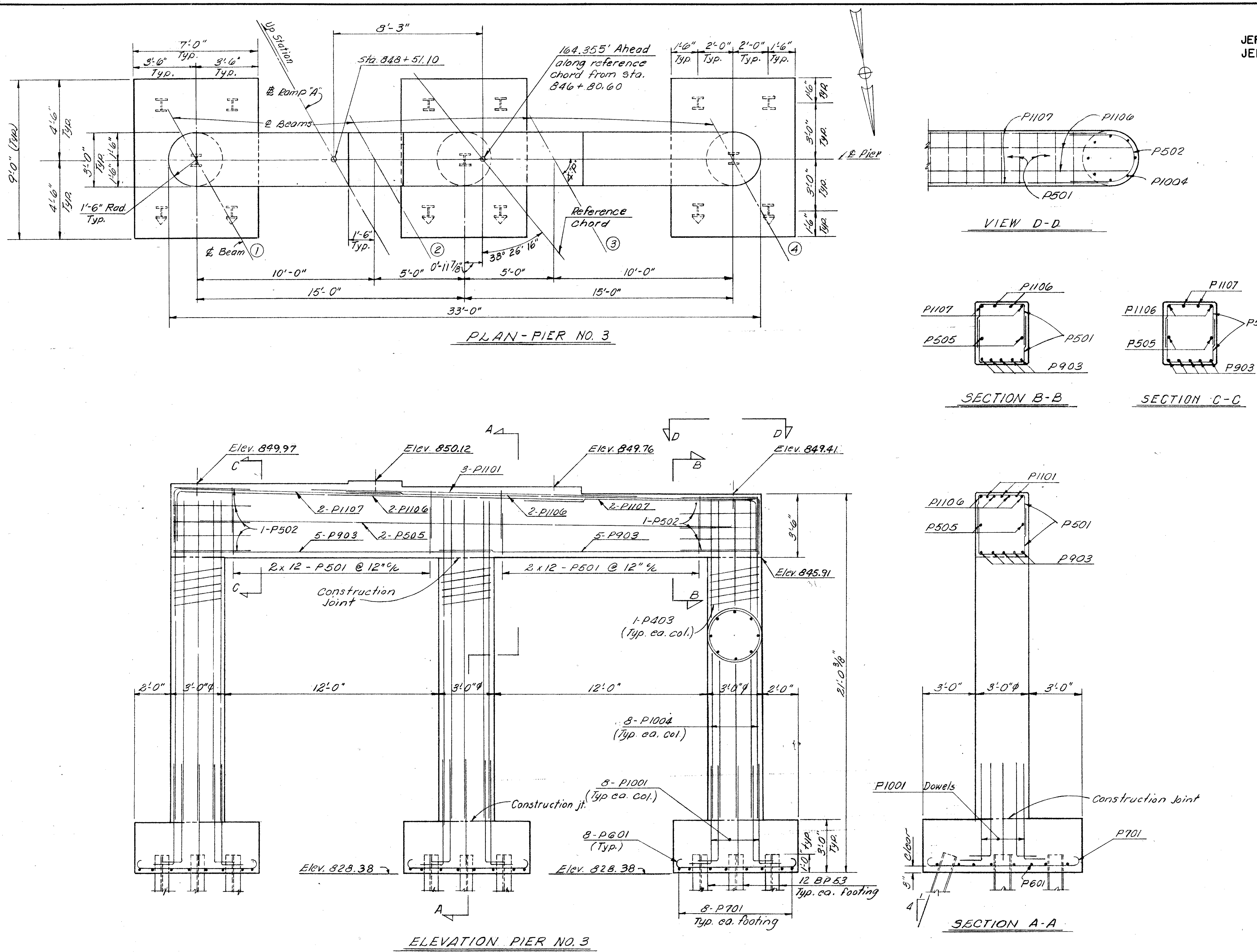


ANCHOR BOLT LAYOUT FOR BEAM NOS. 3 & 4

RACKOFF ASSOCIATES ENGINEERS COLUMBUS, OHIO					7/12
PIER NO. 2 DETAILS					
BRIDGE NO. JEF - 43 - 0063					
S.R. 43 UNDER RAMP A					
JEFFERSON COUNTY			STA. 847+80.72		
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised.
W. S.	E.D.A.		S. S.	SK.	10-20-66	

JEFFERSON COUNTY
JEF - 43 - 0.42

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		



NOTES:

- Indicates vertical piles
- Indicates battered (1:4) piles
- For angle "P" see Framing Plan.

RACKOFF ASSOCIATES — ENGINEERS — COLUMBUS, OHIO — 8/12

PIER NO. 3 DETAILS
BRIDGE NO. JEF - 43 - 0063
S.R. 43 UNDER RAMP A

JEFFERSON COUNTY — STA. 847+80.72

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
W.S.	E.D.A.		S.S.	[signature]	10-20-66	

FRAMING PLAN

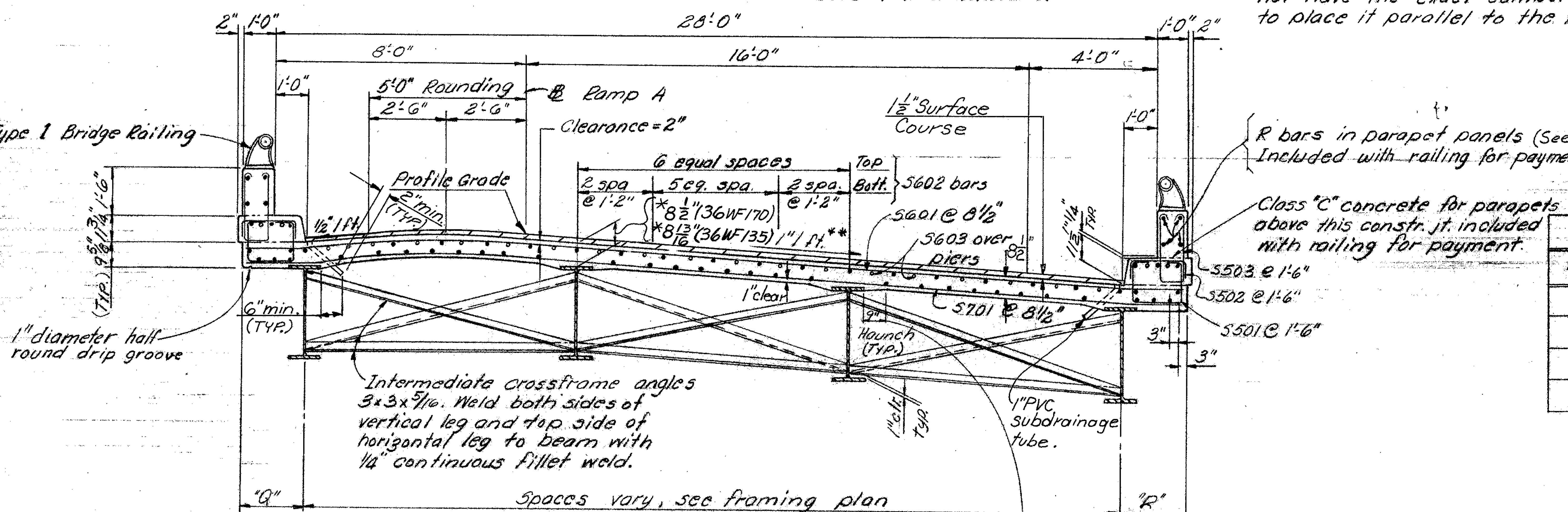
NOTES

- Intermediate crossframes between beams 1, 2 and 3 are perpendicular to beam 2 and those between beams 3 and 4 are perpendicular to beam 3.
- For field splice and special crossframe details see sheet for "superstructure details."

Refer to SD-1-69 for scupper details. Scupper pipes shall extend 8" below bottom flange instead of 2" and vertical box dimensions shall be increased by 1".

* This is the nominal 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.

All longitudinal bars S602 except as otherwise shown. Lap S602 bars 1'-11" minimum.



TRANSVERSE SECTION

For details of subdrainage and surface course see sheet 10/12

** Varies from .0833'/ft. at Sta. 848+50 to .0156'/ft. at sta. 850+50 and thereafter.

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.

FRAMING DATA

BEAM	DIMENSION "A"	"B"	"C"	"D"	"E"	"F"	"G"	ANGLE "H"	"J"	"K"	"L"	"M"	"N"	"P"
①	42'-1 7/16"	10'-6 3/4"	52'-4 11/16"	12'-1 5/8"	42'-1 3/4"	10'-3 1/2"	36'-11 13/16"	40°25'51"	8°47'59"	49°13'50"	6°16'18"	55°30'08"	5°29'31"	60°59'39"
②	42'-1 7/16"	10'-10 7/16"	53'-10 15/16"	12'-1 5/8"	42'-1 3/4"	10'-3 1/2"	36'-11 13/16"	40°25'51"	6°57'27"	47°23'18"	8°06'50"	55°30'08"	5°29'31"	60°59'39"
③	42'-1 7/16"	10'-10 7/16"	53'-10 15/16"	12'-5 7/8"	43'-4 3/4"	10'-3 1/2"	36'-11 13/16"	40°25'51"	6°57'27"	47°23'18"	5°47'23"	53°10'41"	7°48'58"	60°59'39"
④	42'-1 7/16"	11'-2 1/4"	55'-5 7/8"	12'-5 7/8"	43'-4 3/4"	10'-3 1/2"	36'-11 13/16"	40°25'51"	5°13'06"	45°38'57"	7°31'44"	53°10'41"	7°48'58"	60°59'39"

DIMENSIONS

LOCATION	"Q"	"R"
℄ Brgs. Abut. Nº 1	3'-1 1/4"	3'-2 7/8"
Mid-span Nº 1	2'-7"	2'-1 3/8"
℄ Brgs. Pier Nº 1	2'-3 1/8"	2'-4 3/4"
Mid-Span Nº 2	2'-10 1/2"	1'-2 1/2"
℄ Brgs. Pier Nº 2	2'-8"	1'-9 1/4"
Mid-Span Nº 3	2'-8 1/2"	1'-9 1/4"
℄ Brgs. Pier Nº 3	2'-3 7/8"	1'-11 1/4"
Mid-span Nº 4	2'-3 1/4"	1'-4 7/8"
℄ Brgs. Abut. Nº 2	1'-7 1/4"	1'-7 1/8"

RACKOFF ASSOCIATES 9/12
ENGINEERS COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF - 43 - 0063
S.R. 43 UNDER RAMP A

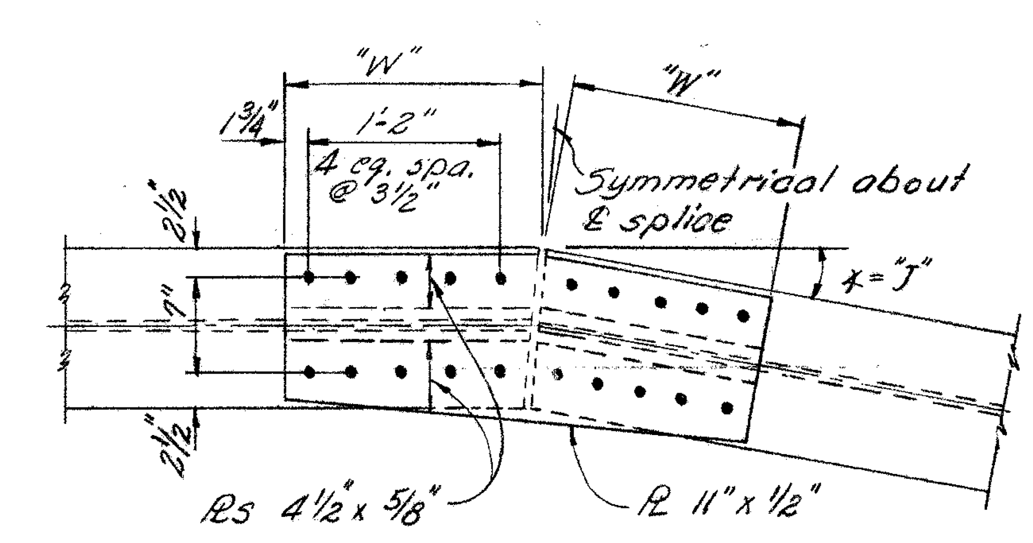
JEFFERSON COUNTY STA. 847+80.72

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.S.	E.D.A.		W.S.		10-20-66	

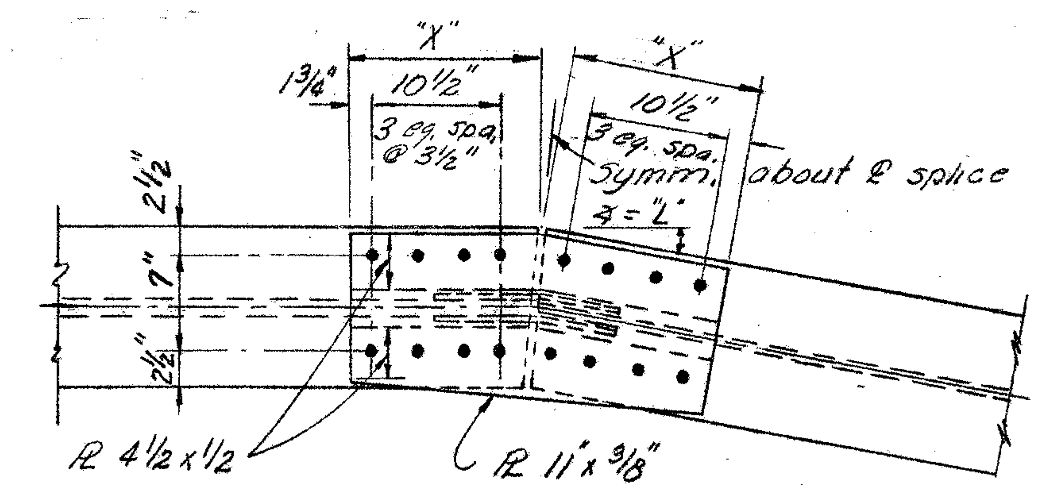
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

258 / 299

JEFFERSON COUNTY
JEF - 43 - 0.42



PLAN



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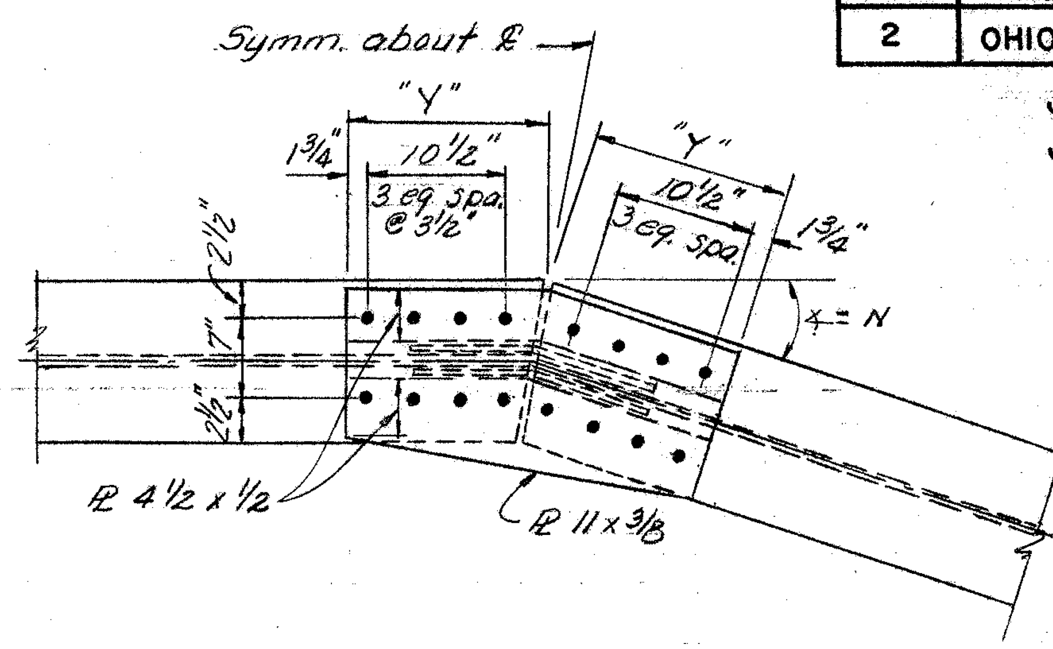
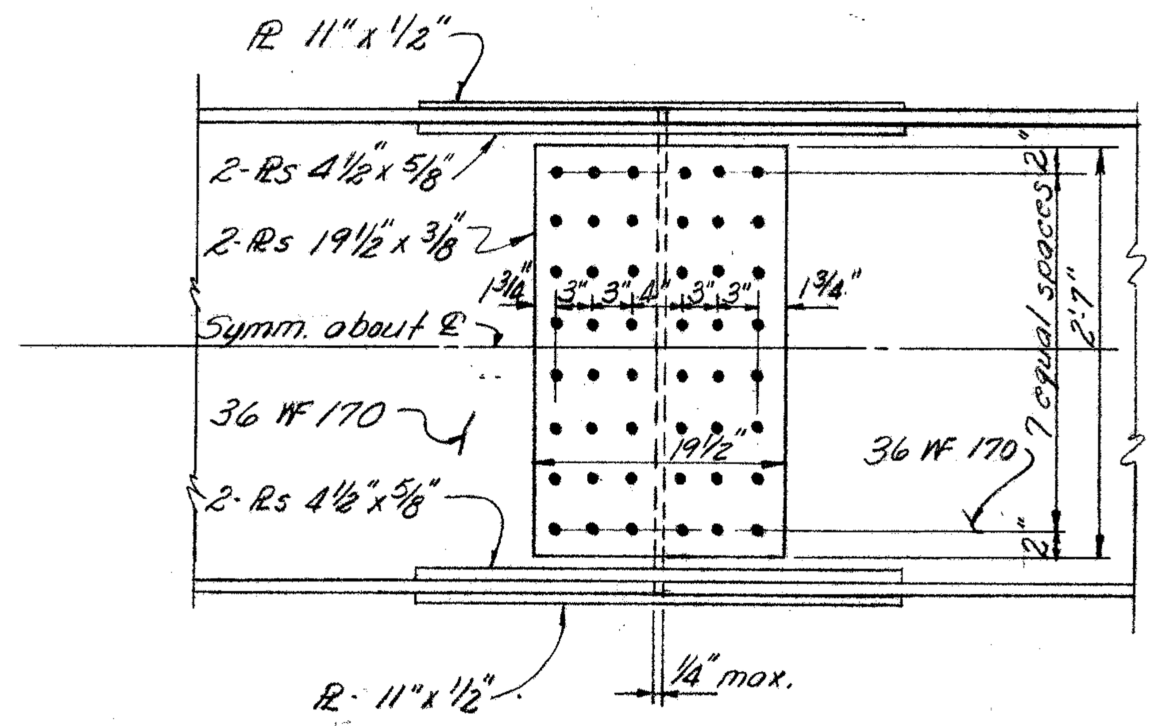
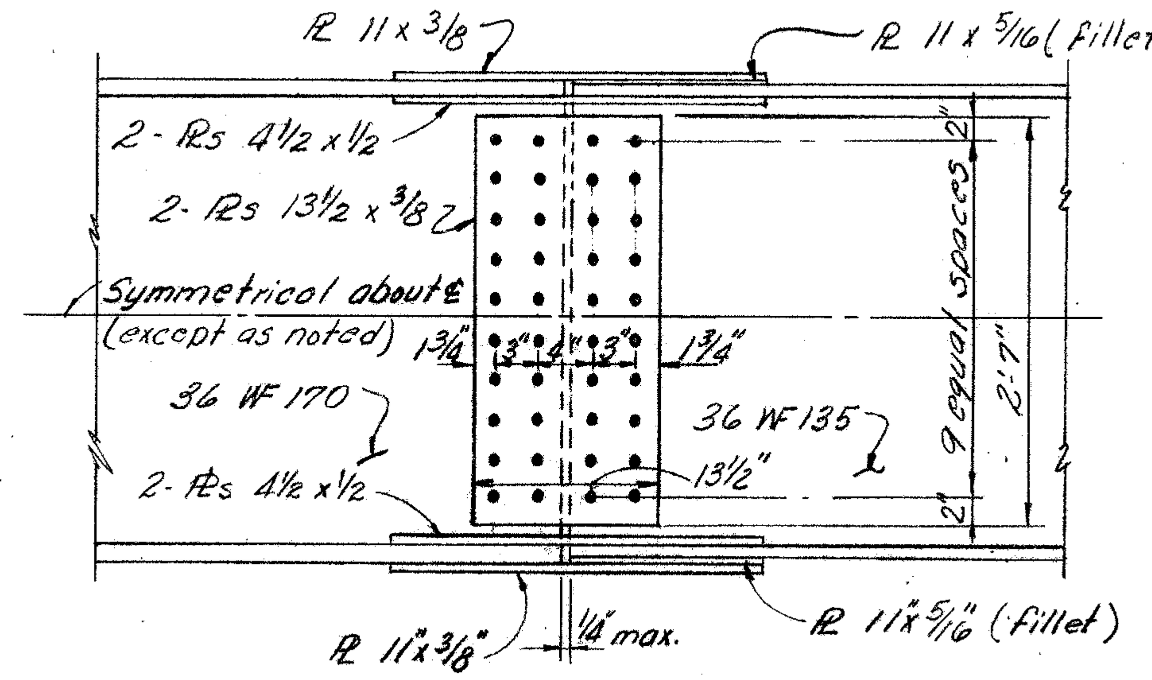


PLAN



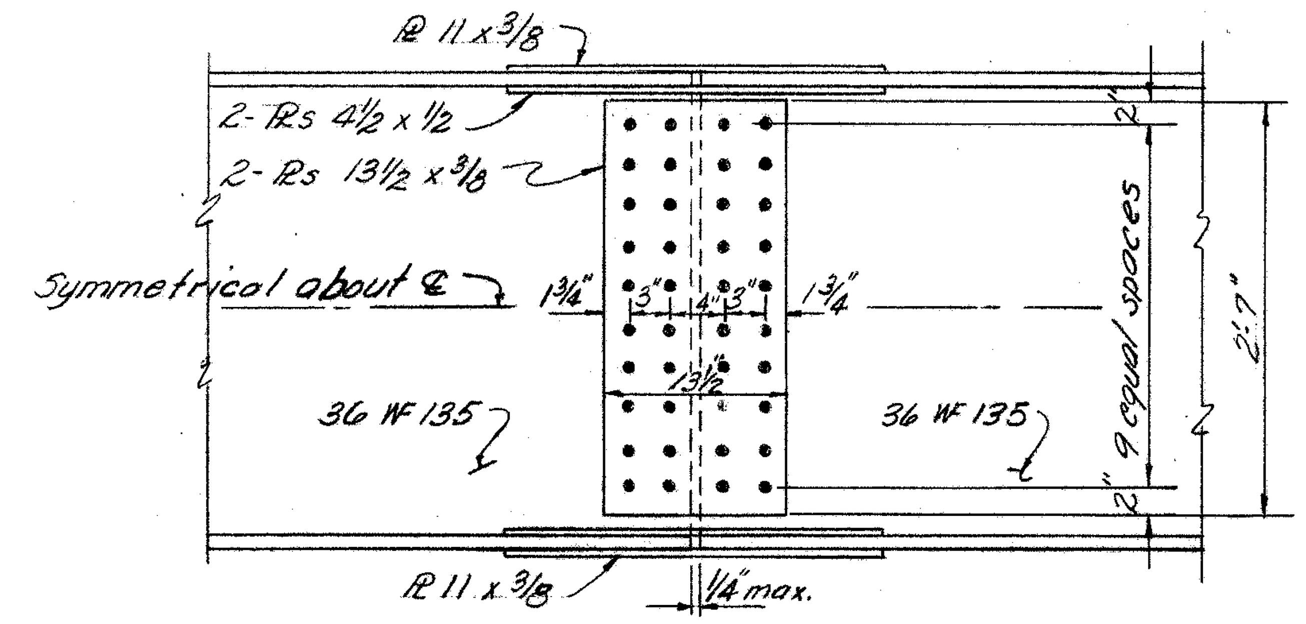
ELEVATION

36 WF 170 WITH 36 WF 170



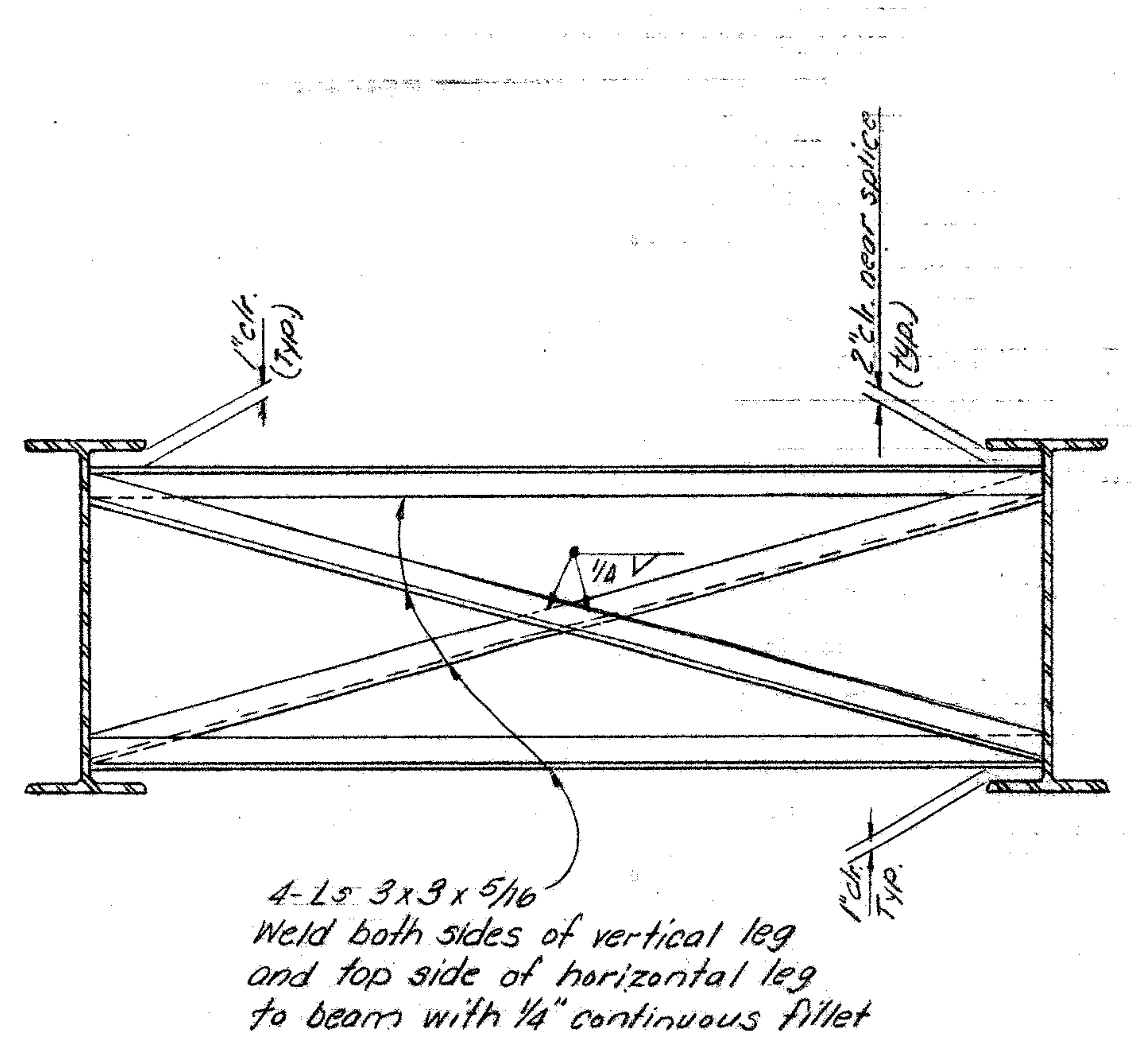
ELEVATION

36 WF 170 WITH 36 WF 135

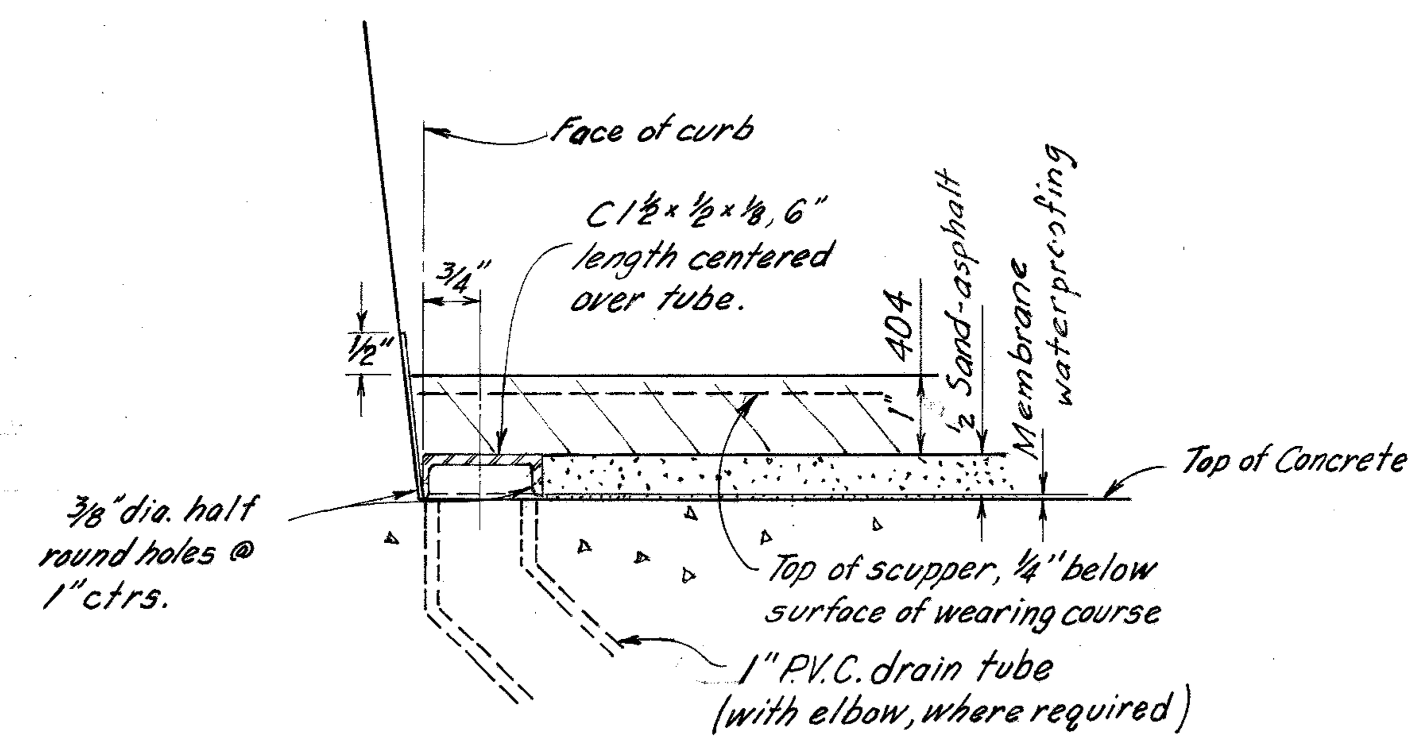


ELEVATION

36 WF 135 WITH 36 WF 135



SPECIAL CROSSFRAME DETAIL



SUBDRAINAGE and SURFACE COURSE DETAILS

In addition to the location and spacing provisions of 518.07, the P.V.C. subdrainage tubes shall be located so that discharge from them will clear all structural members, such as crossbracing, by at least 6". Place the top of the tube, flush with the concrete surface. Place membrane over tube, puncturing if membrane is a sheet type, with the hole sealed around the lip of the tube. Include subdrainage with item 404, Asphalt Concrete, for payment.

NOTE:
Reference shall be made to standard Drawing SD-1-69 for all other notes and details, unless otherwise noted. Provide 3" beveled bars at both end dams.

3/8" North Abutment
7/16" South Abutment

BEAM	ANGLE			DIMENSION		
	"U"	"L"	"N"	"W"	"X"	"Y"
1	8°47'59"	6°16'18"	5°29'31"	1'-6 5/8"	1'-2 7/8"	1'-2 7/8"
2	6°57'27"	8°06'50"	5°29'31"	1'-6 1/2"	1'-3"	1'-2 7/8"
3	6°57'27"	5°47'23"	7°48'58"	1'-6 1/2"	1'-2 7/8"	1'-3"
4	5°13'06"	7°31'44"	7°48'58"	1'-6 1/4"	1'-3"	1'-3"

RACKOFF ASSOCIATES
ENGINEERS COLUMBUS, OHIO

10/12

SUPERSTRUCTURE DETAILS

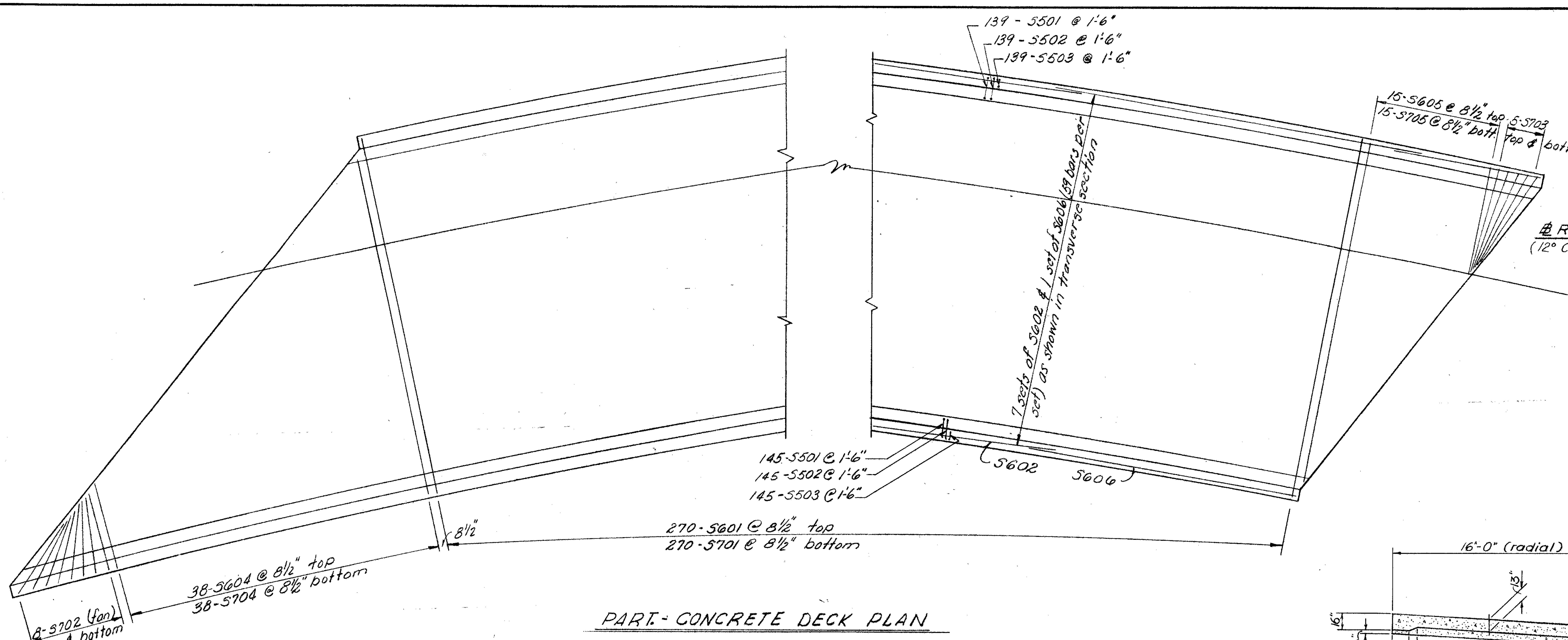
BRIDGE NO. JEF. - 43 - 0063

S.R. 43 UNDER RAMP A

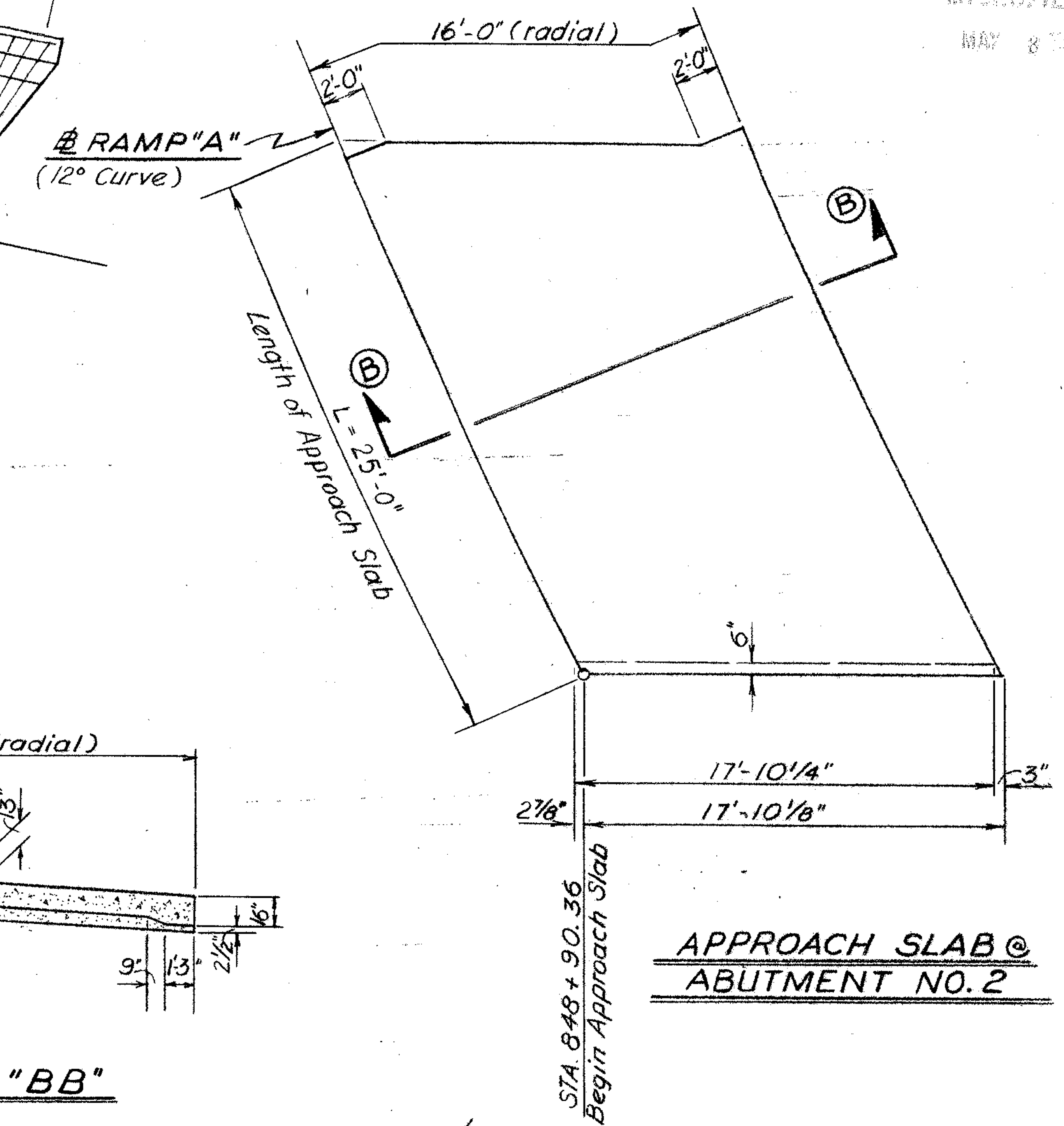
JEFFERSON COUNTY STA. 847+80.72

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.S.	E.D.A.		W.S.		10-20-66	9-27-72

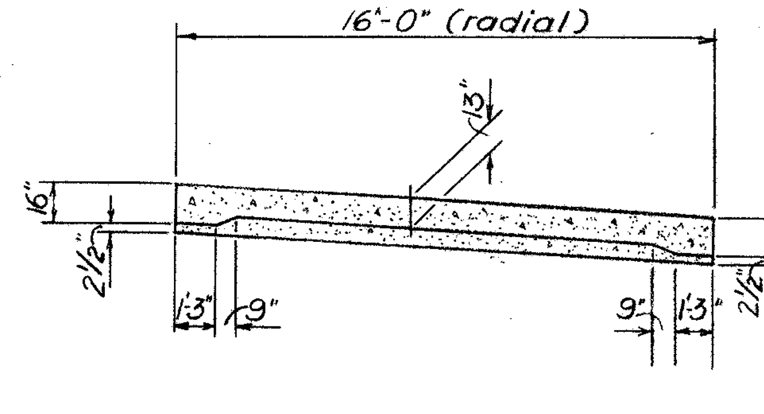
JEFFERSON COUNTY
JEF - 43 - 0.42



PART.- CONCRETE DECK PLAN

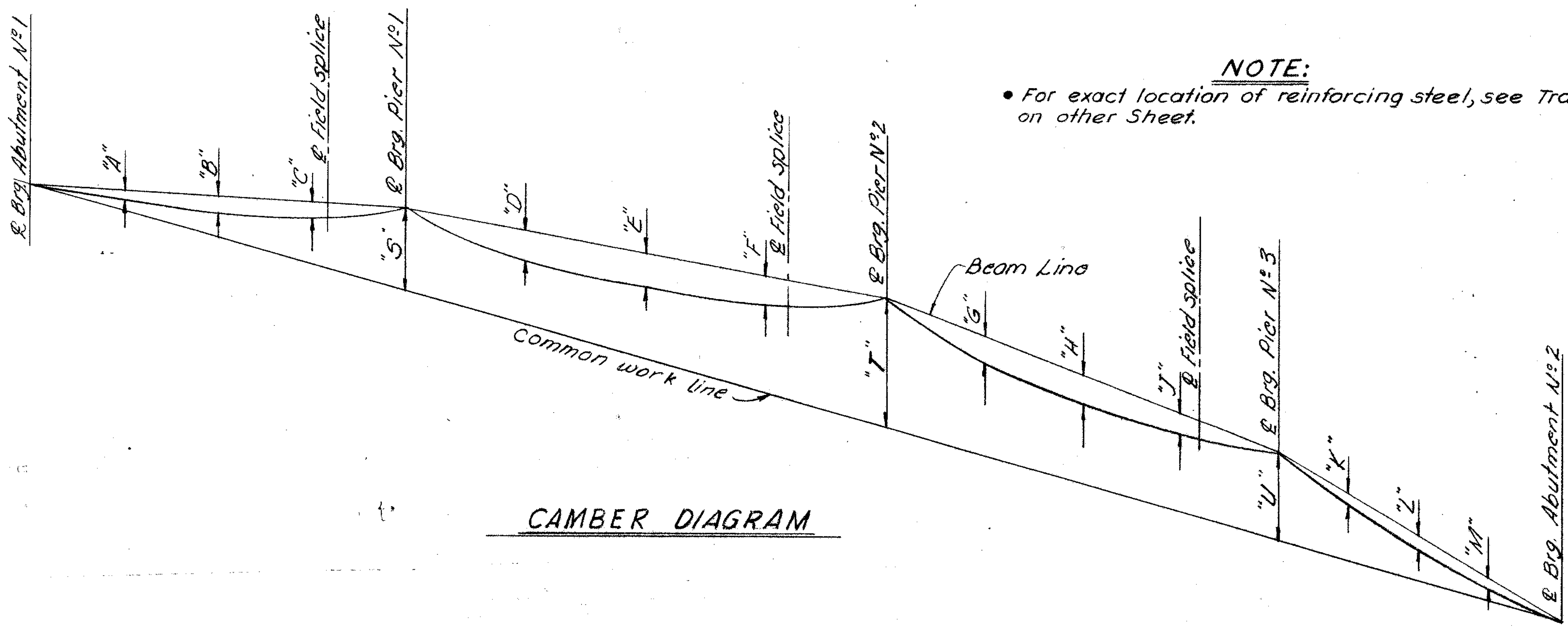


APPROACH SLAB @ ABUTMENT NO. 2



SECTION "BB"

NOTE:
• For exact location of reinforcing steel, see Transverse Section on other Sheet.



CAMBER DIAGRAM

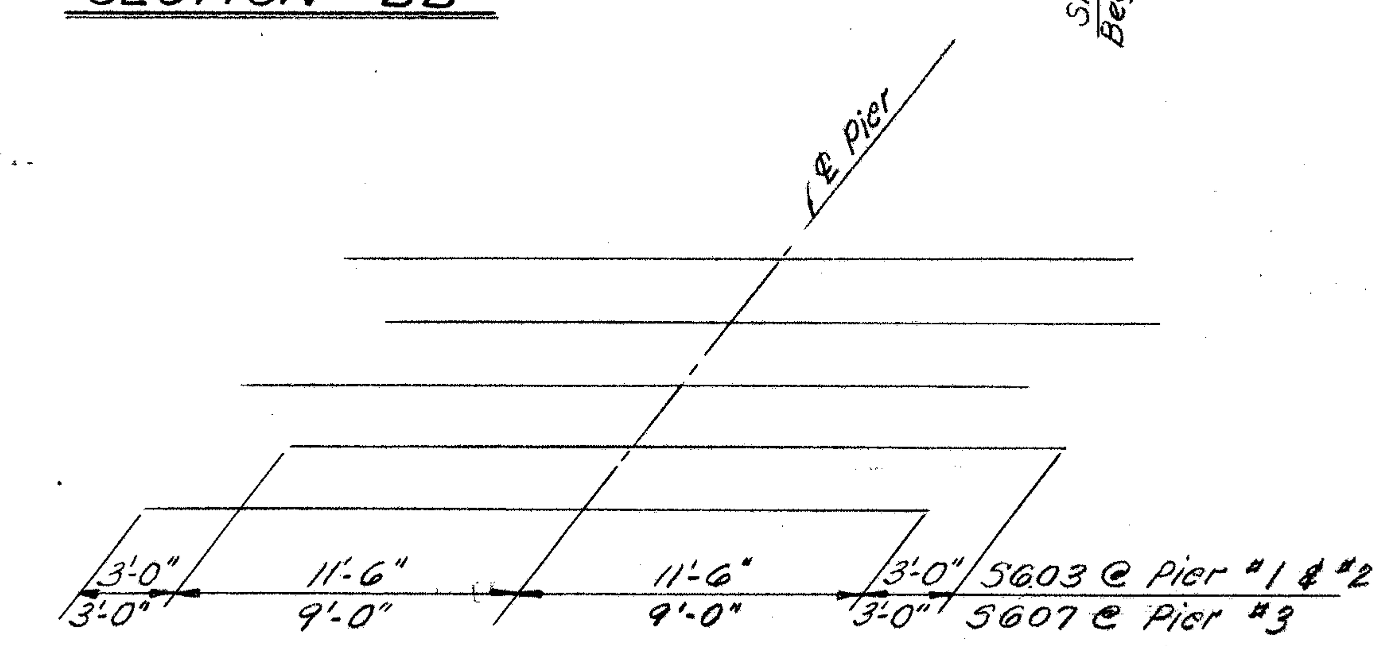


DIAGRAM SHOWING STAGGER OF 5603 & 5607 BARS OVER PIERS
22 bars @ each pier

DEFLECTION AND CAMBER

	SPAN Nº 1			SPAN Nº 2			SPAN Nº 3			SPAN Nº 4		
	¼ Point "A"	Center Point "B"	¾ Point "C"	¼ Point "D"	Center Point "E"	¾ Point "F"	¼ Point "G"	Center Point "H"	¾ Point "J"	¼ Point "K"	Center Point "L"	¾ Point "M"
Deflection due to weight of steel	1/32	1/32	—	1/32	1/16	1/32	—	1/32	1/32	—	—	—
Deflection due to remaining dead load	5/32	3/16	3/32	3/16	11/32	7/32	1/32	3/32	1/16	1/32	1/16	1/16
Adjustment required for vertical curve	9/32	3/8	9/32	7/16	19/32	7/16	9/32	3/8	9/32	1/8	5/32	3/32
Adjustment required for horizontal curve	-17/32	-23/32	-17/32	-7/8	-1 5/32	-7/8	-17/32	-23/32	-17/32	-1/4	-11/32	-1/4
TOTAL	-1/16	-1/8	-1/8	-1/4	-3/16	-3/16	-3/16	-1/4	-3/16	-1/16	-1/8	-1/16

BEAM	DIMENSION S	DIMENSION T	DIMENSION U
1	4⅛"	5⅞"	3¾"
2	4⅜"	5¾"	2 15/16"
3	3½"	4 3/16"	2 5/16"
4	3 5/16"	4 11/16"	2 1/16"

RACKOFF ASSOCIATES
ENGINEERS COLUMBUS, OHIO

11/12

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF. — 43 — 0063
S.R. 43 UNDER RAMP A

JEFFERSON COUNTY STA. 847+80.72

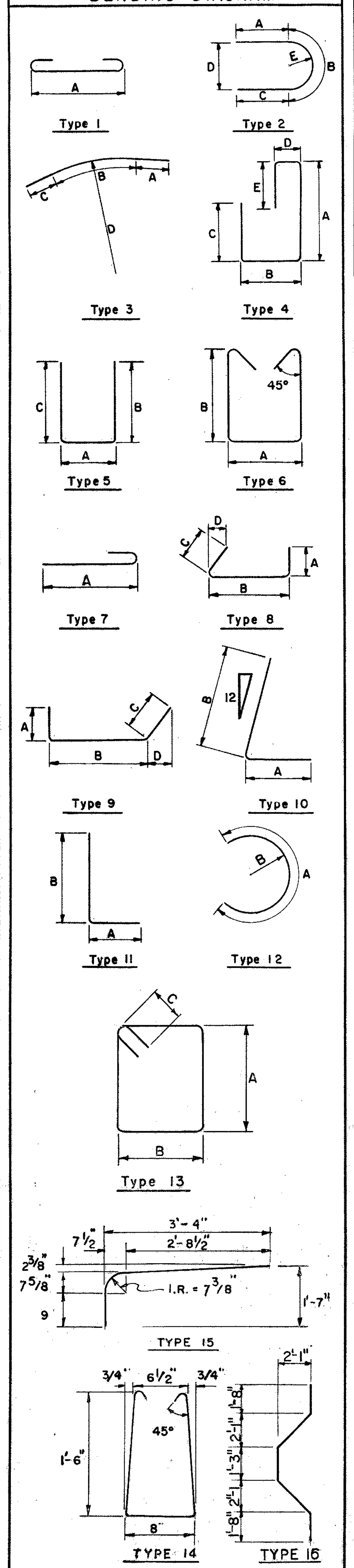
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
S.S.	E.D.A.		B.S.	[signature]	10-20-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

REINFORCING STEEL LIST

JEFFERSON COUNTY
JEF - 43 - 0.42

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

ABUTMENT No. 1

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
A501	33	8 - 4	287	5	5-5	1-7	1-7		
A502	33	7 - 1	244	11	0-7½	6-7			
A503	33	6 - 10	235	5	3-5	1-10	1-10		
A504	30	23 - 3	727	S					
A505	20	12 - 0	250	13	2-7	3-2	0-5		
A506	4	9 - 6	40	S					
A507	12	11 - 6	144	S					
A508	22	5 - 7	128	6	0-8	2-2			
A509	4	6 - 5	28	9	0	1-7	4-10	4 6	
A510	16	17 - 6	292	S					
A511	4	3 - 10	16	S					
A512	40	5 - 3	219	S					
A513	4	4 - 10	20	S					
A514	4	4 - 6	19	S					
A515	4	4 - 2	17	S					
A516	16	3 - 6	58	S					
A517	32	3 - 5	114	5	1-4	1-2	1-2		
A518	6	5 - 0	31	S					
A601	33	14 - 3	706	5	5-5	2-7	6-7		
A602	27	16 - 0	649	4	6-3	1-5	4-10	0-11	3-3
A603	15	14 - 7	329	5	1-5	6-9	6-9		
A604	20	19 - 6	586	5	1-2	9-4	9-4		
A801	14	23 - 9	888	S					
A802	12	14 - 6	465	S					
		SUB-TOTAL	6,492						

ABUTMENT No. 2

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
B501	24	8 - 4	209	5	5-5	1-7	1-7		
B502	24	7 - 1	177	11	0-7½	6-7			
B503	24	6 - 10	171	5	3-5	1-10	1-10		
B504	10	31 - 7	329	S					
B505	14	12 - 0	175	13	2-7	3-2	0-5		
B506	4	6 - 10	29	S					
B507	12	8 - 6	106	S					
B508	4	5 - 1	21	9	0	1-7	3-6	3-3	
B509	16	13 - 8	228	S					
B510	28	5 - 3	153	S					
B511	4	4 - 9	20	S					
B512	4	4 - 3	18	S					
B513	4	3 - 9	16	S					
B514	16	3 - 6	58	S					
B515	28	3 - 5	100	5	1-4	1-2	1-2		
B516	20	5 - 7	116	6	0-8	2-2			
B517	5	12 - 0	63	S					
B518	5	22 - 0	115	S					
B519	6	5 - 0	31	S					
B601	24	14 - 3	514	5	5-5	2-7	6-7		
B602	18	16 - 0	433	4	6-3	1-5	4-10	0-11	3-3
B603	11	14 - 7	241	5	1-5	6-9	6-9		
B604	14	18 - 6	389	5	1-2	8-10	8-10		
B801	7	34 - 0	635	S					
B802	12	11 - 2	358	S					
		SUB-TOTAL	4,705						
		TOTAL	11,197						

PIERS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
P501	164	7 - 5	1,269	5	2-8	2-6	2-6		
P502	30	7 - 0	219	2	1-7	3-10	1-7	2-5	1-2½
P503	4	19 - 6	81	S					
P504	2	32 - 0	67	S					
P505	2	30 - 0	63	S					
P601	72	8 - 0	865	1	6-8				
P701	72	10 - 4	1,521	1	8-8				
P901	10	21 - 5	728	S					
P902	10	18 - 10	640	S					
P903	10	17 - 8	601	S					
P1001	72	7 - 0	2,169	11	1-5	5-11			
P1002	24	22 - 8	2,341	S					
P1003	24	18 - 8	1,928	S					
P1004	24	17 - 9	1,833	S					
P1101	9	19 - 8	940	S					
P1102	4	32 - 1	682	11	3-0	29-5			
P1103	4	16 - 9	356	11	3-0	14-1			
P1104	4	15 - 9	335	11	3-0	13-1			
P1105	4	27 - 10	592	11	3-0	25-2			
P1106	4	25 - 9	547	11	3-0	23-1			
P1107	4	15 - 10	336	11	3-0	13-2			
		SUB-TOTAL	18,113						
		SPIRALS	2,736						
		TOTAL	20,849						

LIGHT PEDESTAL BARS

MARK	NO.	LENGTH	WEIGHT	TYPE
L501	4	3-1	13	*
L502	4	7-4	31	*
L503	6	8-0	50	*
L504	4	2-9	11	S
			105	

*SEE SHEET FOR BENDING DIAGRAMS

SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
S501	284	4 - 11	1,456	4	1-6	1-4	0-8	1-4	0-8
S502	284	2 - 6	741	5	1-6	0-8	0-8		
S503	284	5 - 7	1,654	6	0-8	2-2			
S601	270	29 - 8	12,031	S					
S602	413	30 - 0	18,610	S					
S603	44	26 - 0	1,718	S					
S604	38	6-11 to 28-6	1,011	S	1 each vary by 7"				
S605	15	8-8 to 28-6	419	S	1 each vary by 1'-5"				
S606	59	12-4 to 22-0	1,521	S	1 each vary by 2"				
S607	22	21-0	694	S					
S701	270	29 - 8	16,373	S					
S702	16	6 - 9	221	S					
S703	10	8 - 6	174	S					
S704	38	6-11 to 28-6	1,375	S	1 each vary by 7"				
S705	15	8-8 to 28-6	570	S	1 each vary by 1'-5"				
		SUB TOTAL	58,568						
		LIGHT PEDESTAL	105						
		TOTAL	58,673						

REPLACEMENT BARS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B
RE401	1	5 - 3	—	12	5-3	1-4
RE501	1	5 - 7	—	S		
RE601	2	5 - 11	—	S		
RE701	2	6 - 2	—	S		
RE801	1	6 - 6	—	S		
RE901	1	6 - 10	—	S		
RE1001	1	7 - 2	—	S		
RE1101	1	7 - 6	—	S		

RAILING BARS

MARK	NO.	LENGTH	WEIGHT	TYPE	
R501	48	15 - 6	—	S	Included with railing for payment.
R502	8	12 - 7	—	S	
R503	12	4 - 2	—	14	
R504	8	5 - 4	—	15	
R505	48	14 - 10	—	S	
R506	8	12 - 1	—	S	
R507	8	17 - 2	—	S	
R508	8	13 - 4	—	S	

NOTES

BAR SIZE is indicated in bar mark. The first digit where three digits are used, and the first two where four are used indicate the bar size number.

SPIRAL REINFORCING BARS: 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 is the "Length" divided by the pitch, plus three turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to item 509. 1½ closed coils shall be provided at the ends of each spiral unit. Four 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 the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

SPIRAL REINFORCEMENT

MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS	WEIGHT
P401	3	19 - 5	32	4½	55	4	1,069
P402	3	15 - 5	32	4½	44	4	853
P403	3	14 - 6	32	4½	42	4	814
						TOTAL	2,736

RACKOFF ASSOCIATES
ENGINEERS
CLEVELAND, OHIO — COLUMBUS, OHIO

12/12

REINFORCING STEEL LIST
BRIDGE NO. JEF - 43 - 0063
S.R. 43 UNDER RAMP A

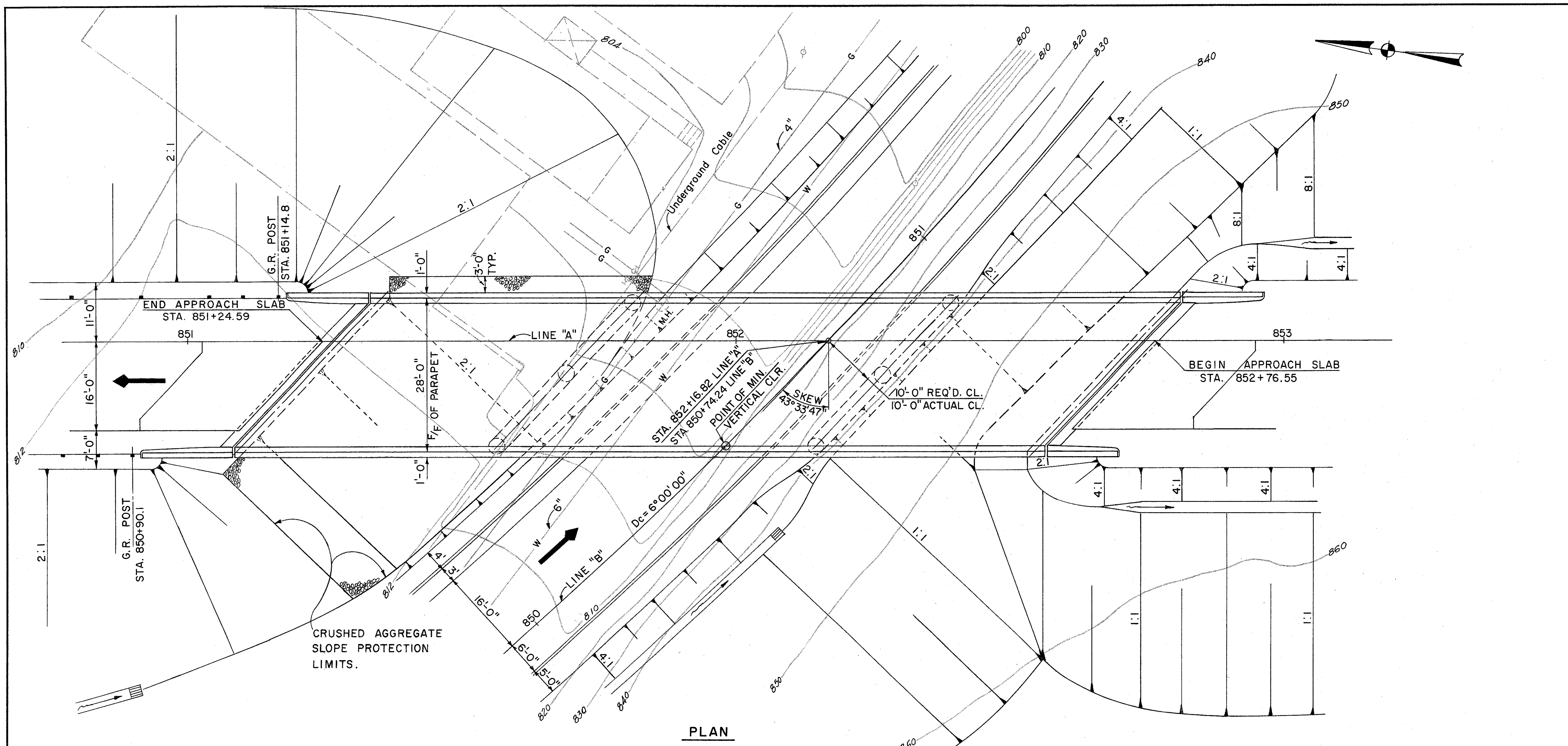
JEFFERSON COUNTY — STA 847 + 80.72

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
W. S.	M. R. E.D.A.		S. S		10-20-66	

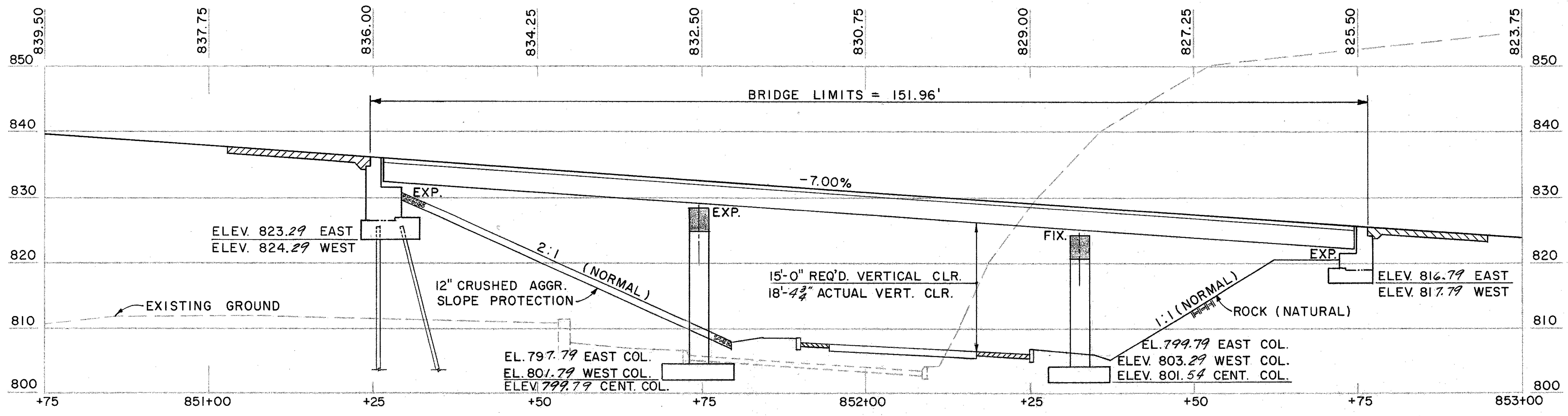
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

265/299

JEFFERSON COUNTY
JEF - 43 - 0.42



PLAN



PROFILE ALONG LINE "A"

All piles are 10 BP 42 steel piles. Average estimated pay length is 40 ft. each.

PROPOSED STRUCTURE

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

SPANS : 46'-9", 58'-3" and 40'-9" center to center of bearings.

ROADWAY : 28'-0" face to face of parapets.

LOADING : HS - 20 - 44

SKEW : 43° 33' 47" L.F. With Tangent.

SURFACE COURSE: 2½" Asphalt Conc.

APPROACH SLAB : AS-1-67 (20' long).

ALIGNMENT : Tangent

SUPERELEVATION : Varies

RACKOFF ASSOCIATES 1/9
ENGINEERS COLUMBUS, OHIO

SITE PLAN

BRIDGE NO. JEF 43 RAMP "A"
OVER RAMP "B"

JEFFERSON COUNTY STA. 852+16.82

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
SC.	M.R.		V.A.P.		1.3.68.	9-27-72

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

JEFFERSON COUNTY
JEF - 43 - 0.42

RACKOFF ASSOCIATES
ENGINEERS COLUMBUS, OHIO

2/9

GENERAL PLAN AND ELEVATION

BRIDGE NO. JEF 43 RAMP "A"
OVER RAMP "B"

JEFFERSON COUNTY STA. 852+16.82

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
V.A.P.	M.R.		S.L.	R.	1-3-68	

GENERAL NOTES

REFERENCE SHALL BE MADE TO:

- Standard Drawing SD – 1 – 69 Dated 6 – 12 – 69
- Standard Drawing BR – 1 – 65 Sheet 1 Revised 11 - 24 - 65
- Standard Drawing RB – 1 – 55 Revised 2 – 2 – 59
- *Standard Drawing BR-2-67 Revised 10-15-71*
- Supplemental Specifications 808 Dated 1 - 1 - 71
- Supplemental Specifications *836* Dated 1 – 1 – 71

DESIGN SPECIFICATIONS : This structure conforms to the requirements of "Standard Specifications for Highway Bridges", Ninth Edition, 1965, adopted by the American Association of State Highway Officials. For design matters not covered by the above Specifications, reference shall be made to "Design Specifications for Highway Structures", State of Ohio, September 1, 1957 and current revisions thereof.

DESIGN DATA :

- Design Load – HS – 20 – 44 (AASHO)
- Concrete Class "C" Superstructure – basic unit stress 1,200 p.s.i.
- Concrete Class "C" Substructure – basic unit stress 1,333 p.s.i.
- Structural Steel – ASTM A36 – basic unit stress 20,000 p.s.i.
- Reinforcing Steel – ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i. Except, Spiral reinforcement may be plain, structural grade with basic unit stress of 18,000 p.s.i.

EXCAVATION : Excavation Quantity includes the removal of fill material required for the construction of Abutment #1 and Pier #1, and removal of material (shale or rock) required for the construction of Pier #2 and Abutment #2.

PILES : Piles shall be driven to firm contact with rock. If the length of penetration is approximately equal to the depth to rock, according to the Bridge Foundation Investigation Report, the firm contact shall be considered as attained when the capacity, according to the formula in Sec. 507.05, is not less than the following value for a pile hammer of the indicated energy rating :

For Abutment #1 piles

- 40 tons per pile using a 7,000 ft–lb hammer
- 32 tons per pile using a 11,000 ft–lb hammer
- 30 tons per pile using a 15,000 ft–lb or greater 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 30 tons per pile.

FOUNDATION BEARING PRESSURE : The footings are designed for a maximum bearing pressure of 3.5 tons per sq. ft. for Pier #1, 5.0 tons per sq. ft. for Pier #2 and 4.0 tons per sq. ft. for Abutment #2.

DECK FINISHING : Texturing of the deck surface as provided in 451.09 shall not be done.

UTILITY LINES : All expense involved in relocation (installing or abandoning) the affected utility lines shall be borne by the owners. The Contractor and owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

WELDS on secondary stress carrying members are shown thus : S>————

RAILING : Refer to BR-1-65 for details of the concrete parapet and end post, and dimensions of the aluminum post and tube. Refer to BR-2-67 for aluminum material notes and the tube splice detail.

Do not use the Guard Rail Connection Bracket shown on BR-2-67

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIER	GEN.	AS BUILT	
503	182	cu. yds.	Unclassified excavation		127	55			
503	56	cu. yds.	Rock (or Shale) excavation		37	19			
505	lump	sum	First test pile		lump				
507	440	lin. ft.	Steel H Piles, 10 BP 42		440				
509	59,716	lbs.	Reinforcing steel	37,242	8,840	13,634			
511	*136*	cu. yds.	Class "C" concrete, superstructure	*136*					
511	61	cu. yds.	Class "C" concrete, piers above footing			61			
511	25	cu. yds.	Class "C" concrete, pier footings			25			
511	79	cu. yds.	Class "C" concrete, abutments above footing		79				
511	56	cu. yds.	Class "C" concrete, abutment footings		56				
513	103,800	lbs.	Structural steel	103,800					
514	103,800	lbs.	Field painting of structural steel	103,800					
517	354	lin. ft.	Railing Type I	296	58				
518	16	cu. yds.	Porous backfill		16				
518	32	lin. ft.	6" Perforated, Helical C.M.P. Including specials, 707.01		32				
518	36	lin. ft.	6" Non – Perforated, Helical C.M.P., 707.01		36				
518	4	each	Scuppers Type I including supports	4					
601	300	sq. yds.	Crushed aggregate slope protection				300		
625			See Sheet 169 for Lighting Summary						
808	*136*	Units	Chemical admixture for concrete, Type A, B or D	*136*					
404	*24*	*cu.yds*	*Asphalt concrete (70-85 or AC-20)*	*24*					
Special	*6*	*cu.yds*	*Sand Asphalt (see proposal note)*	*6*					
Special	*435*	*sq.yds.*	*Membrane waterproofing (see proposal note)*	*435*					

CALCULATED BY : *V. A. P.* DATE : *12-21-'67.* CHECKED BY : *RPg* DATE : *12-21-67*

RACKOFF ASSOCIATES 3/9
ENGINEERS COLUMBUS, OHIO

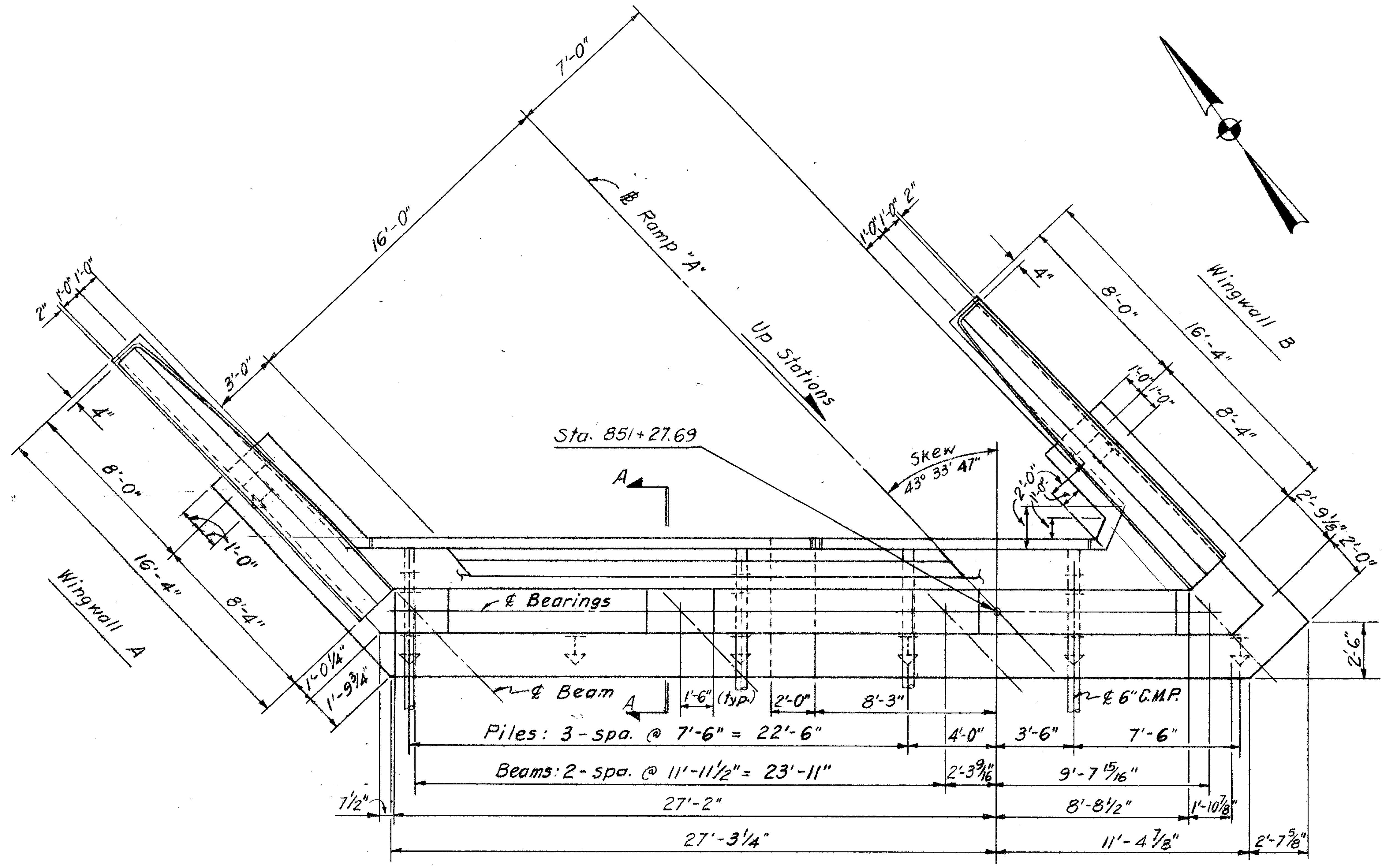
GENERAL NOTES AND QUANTITIES

BRIDGE NO. JEF 43 RAMP "A"
OVER RAMP "B"

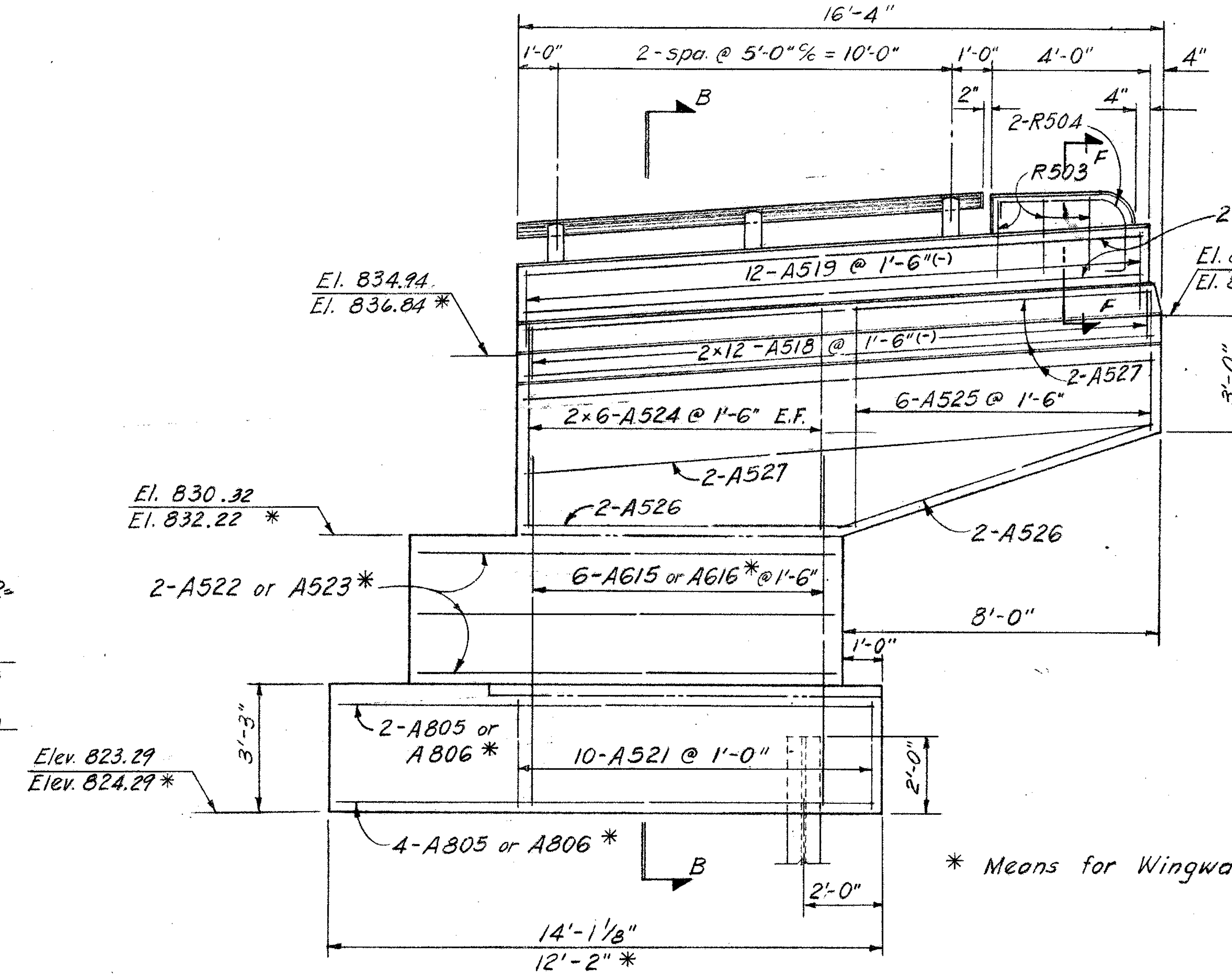
JEFFERSON COUNTY STA. 852+16.82

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
[illegible]	*M.R.*		*V.A.P.*	*[illegible]*	*1.3.68.*	*9-27-72*

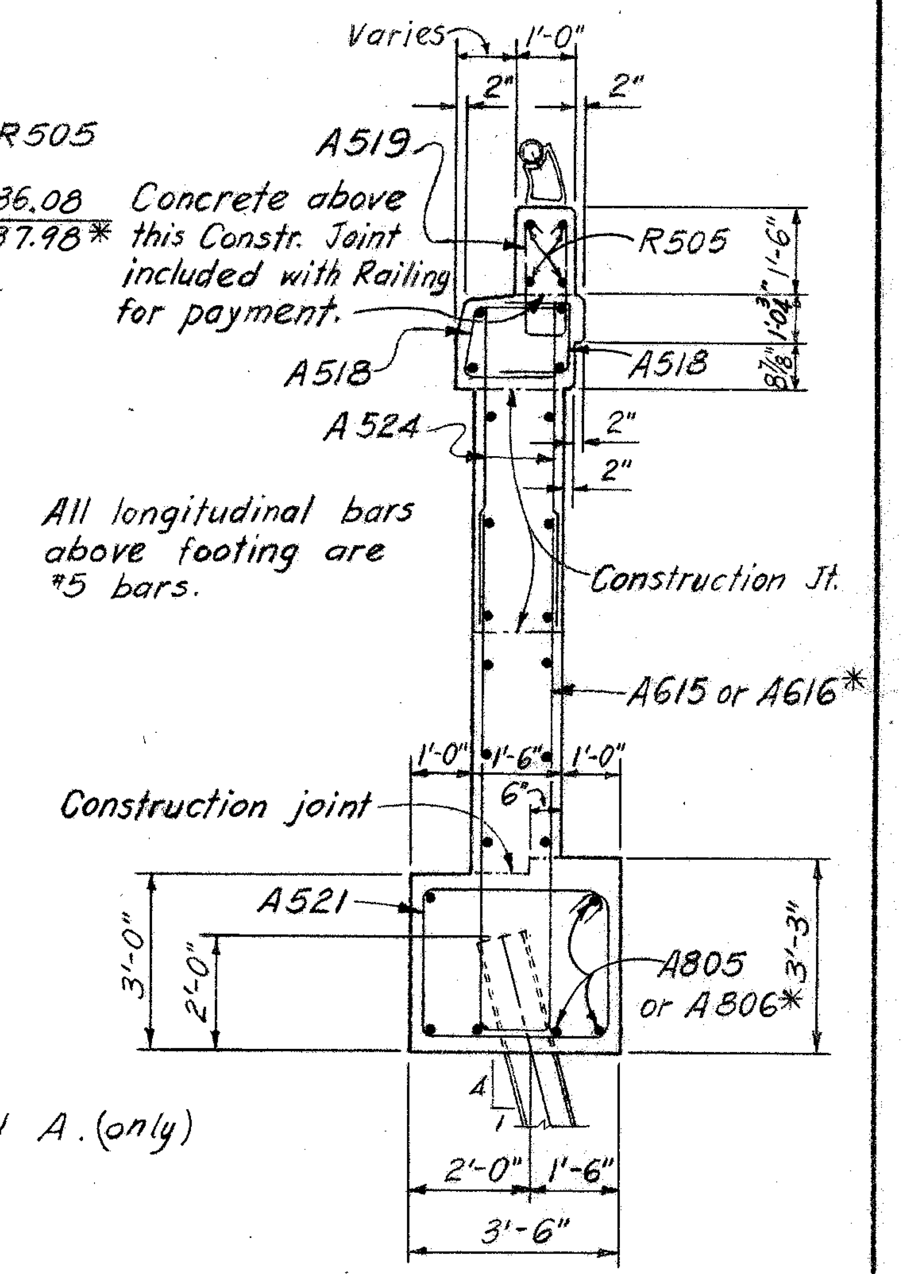
JEFFERSON COUNTY
JEF - 43 - 0.42



PLAN - ABUTMENT No. 1

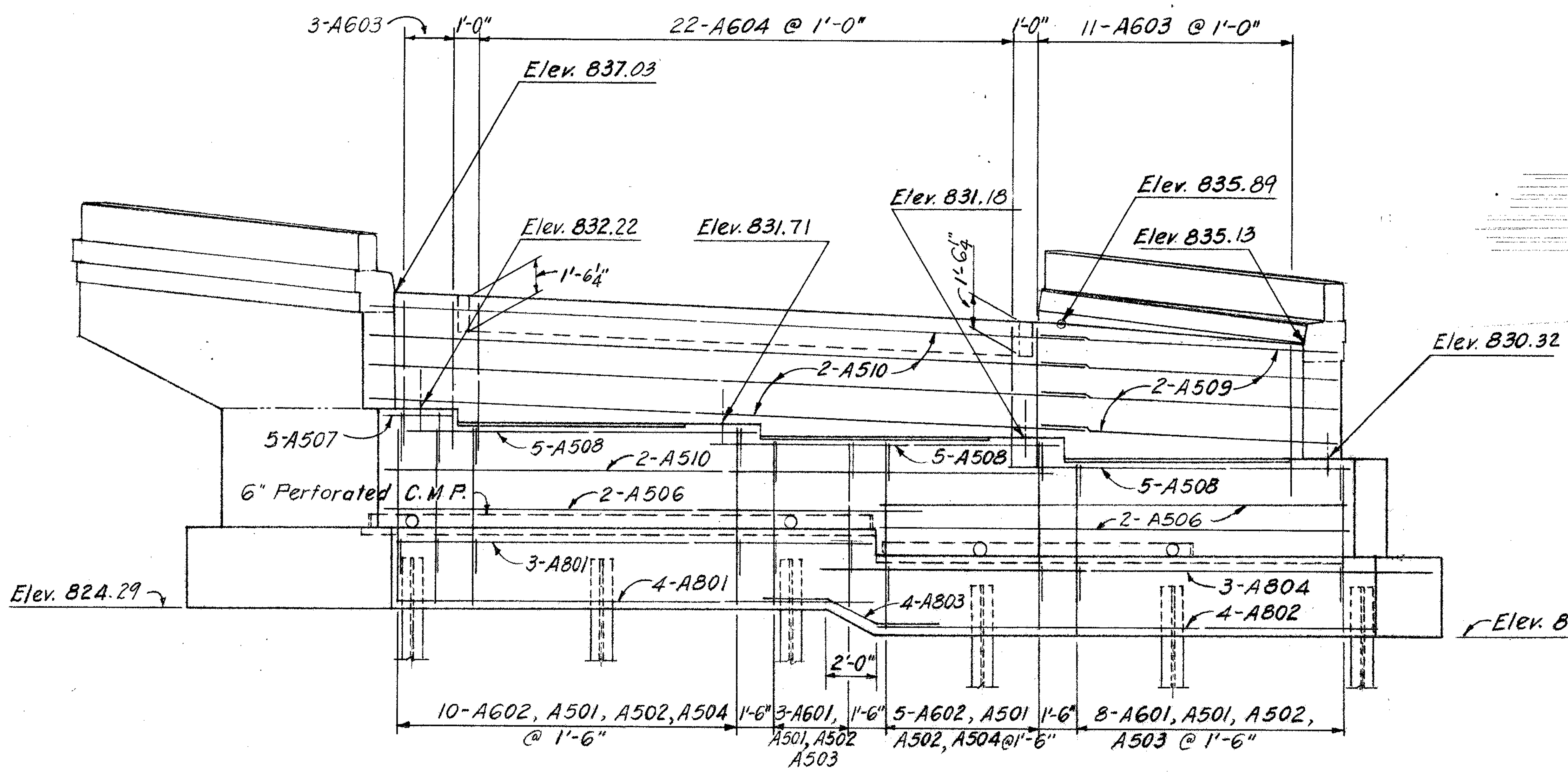


ELEVATION - WINGWALL B
(WINGWALL "A" AS NOTED)

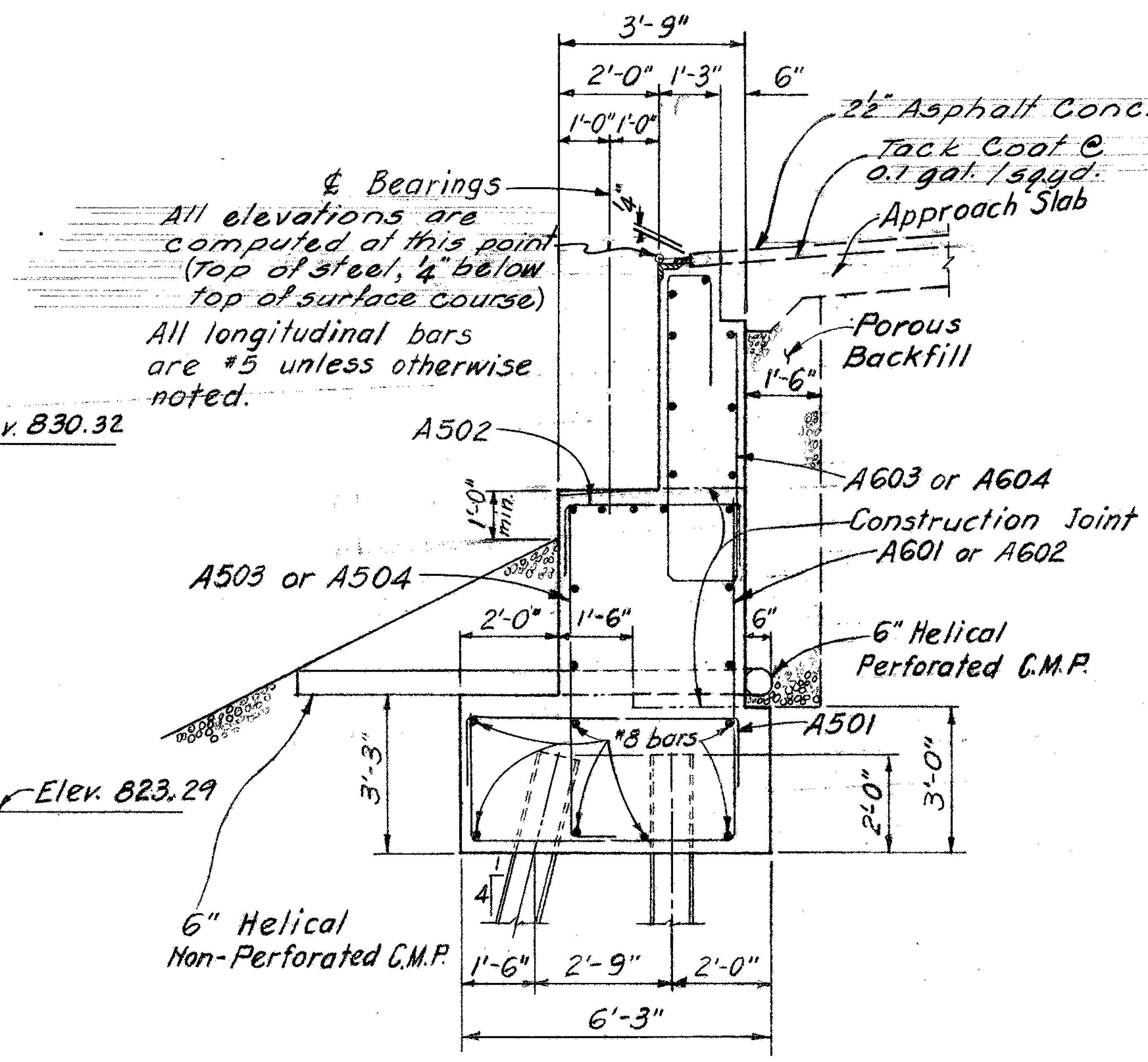


SECTION B-B

* Means for Wingwall A (only)



ELEVATION - ABUTMENT No. 1



SECTION A-A

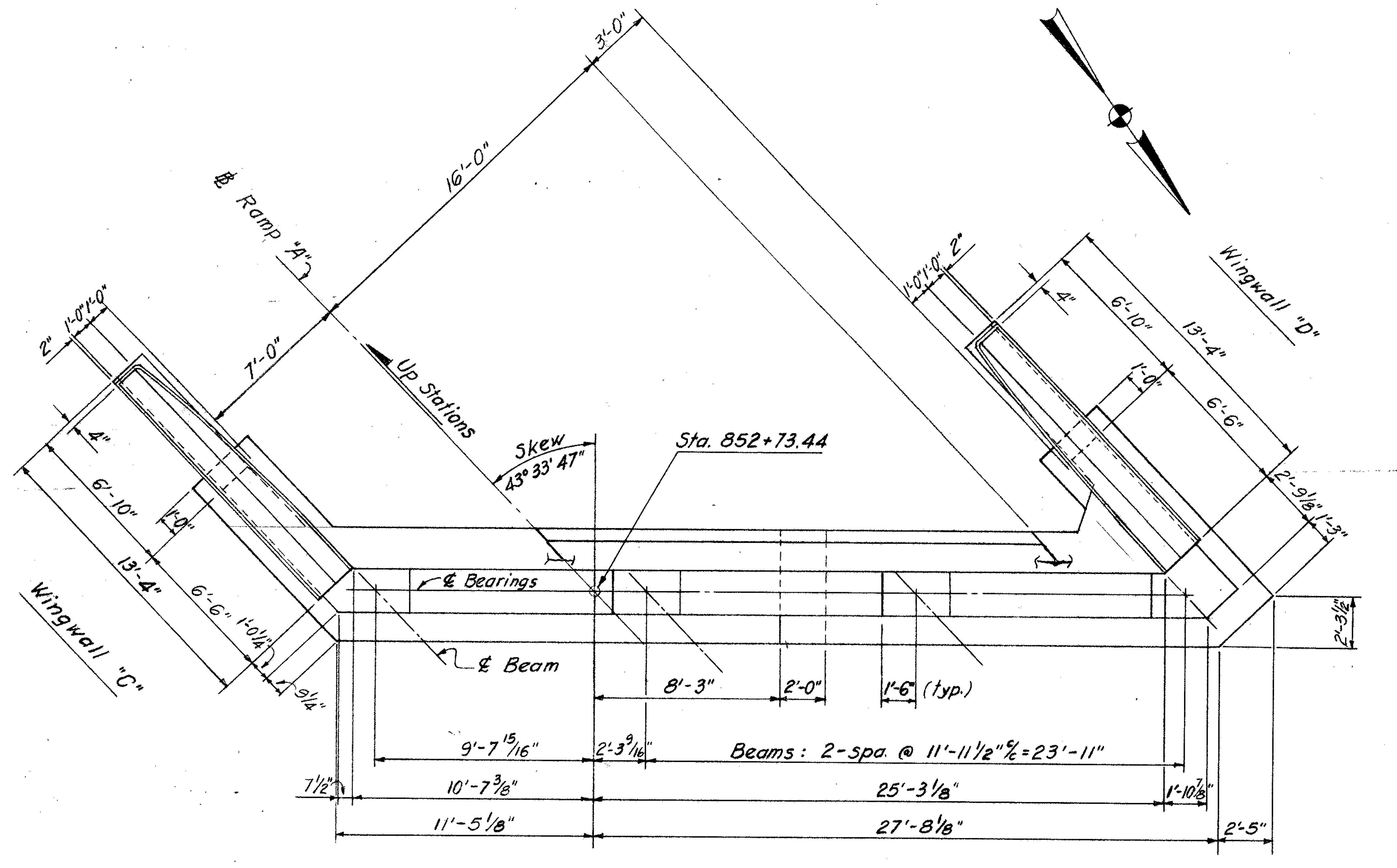
NOTES

PROCEDURE : The embankment shall be placed and compacted upto the finished spill-thru slope and to the level of subgrade after which excavation shall be made for the abutment (and piles driven)

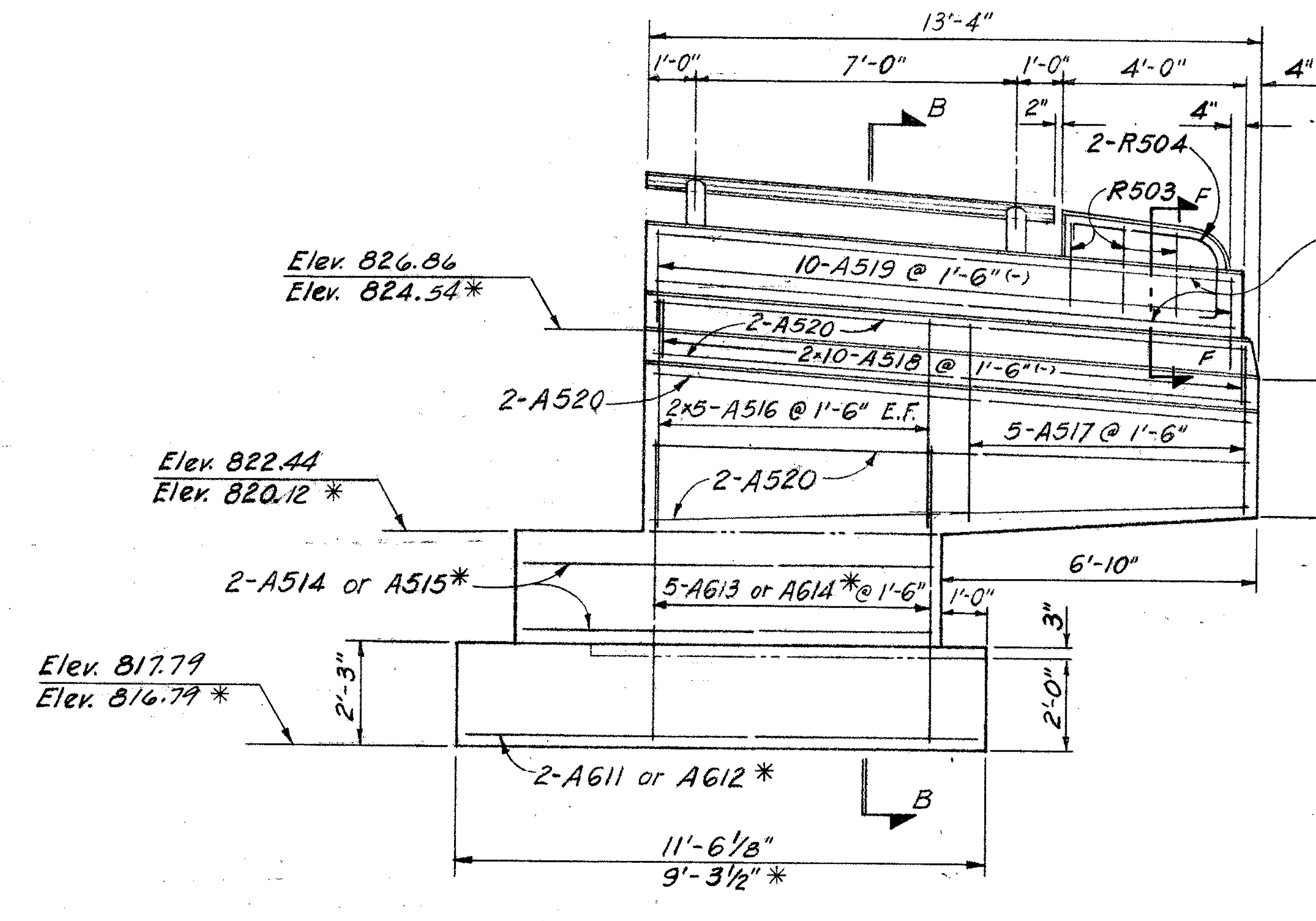
For Section F-F see sheet 5/12
Bridge No. JEF-43-0063

RACKOFF ASSOCIATES ENGINEERS COLUMBUS, OHIO					4/9	
ABUTMENT No. 1 DETAILS						
BRIDGE NO. JEF 43 RAMP "A" OVER RAMP "B"						
JEFFERSON COUNTY				STA. 852+16.82		
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
V.A.P.	M.R.				1.3.68	

JEFFERSON COUNTY
JEF-43-0.42

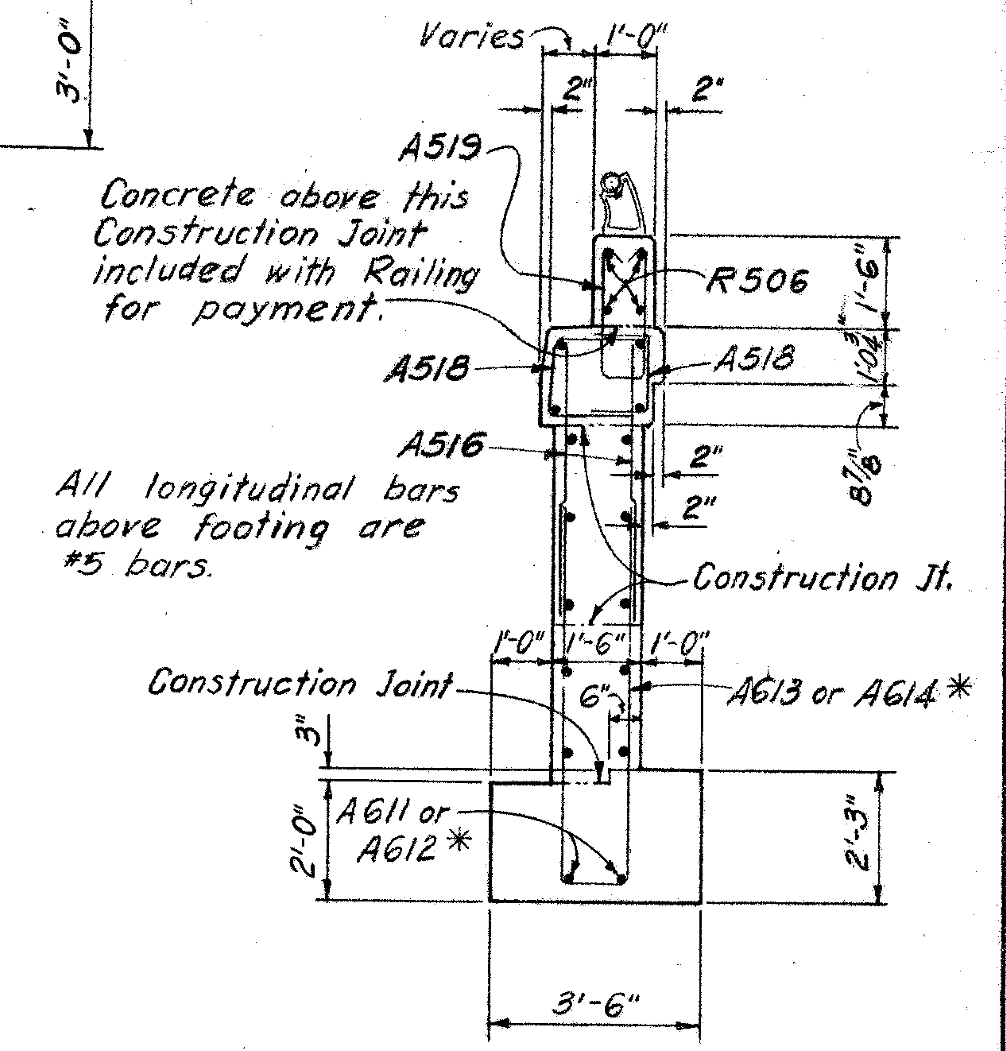


PLAN - ABUTMENT No. 2

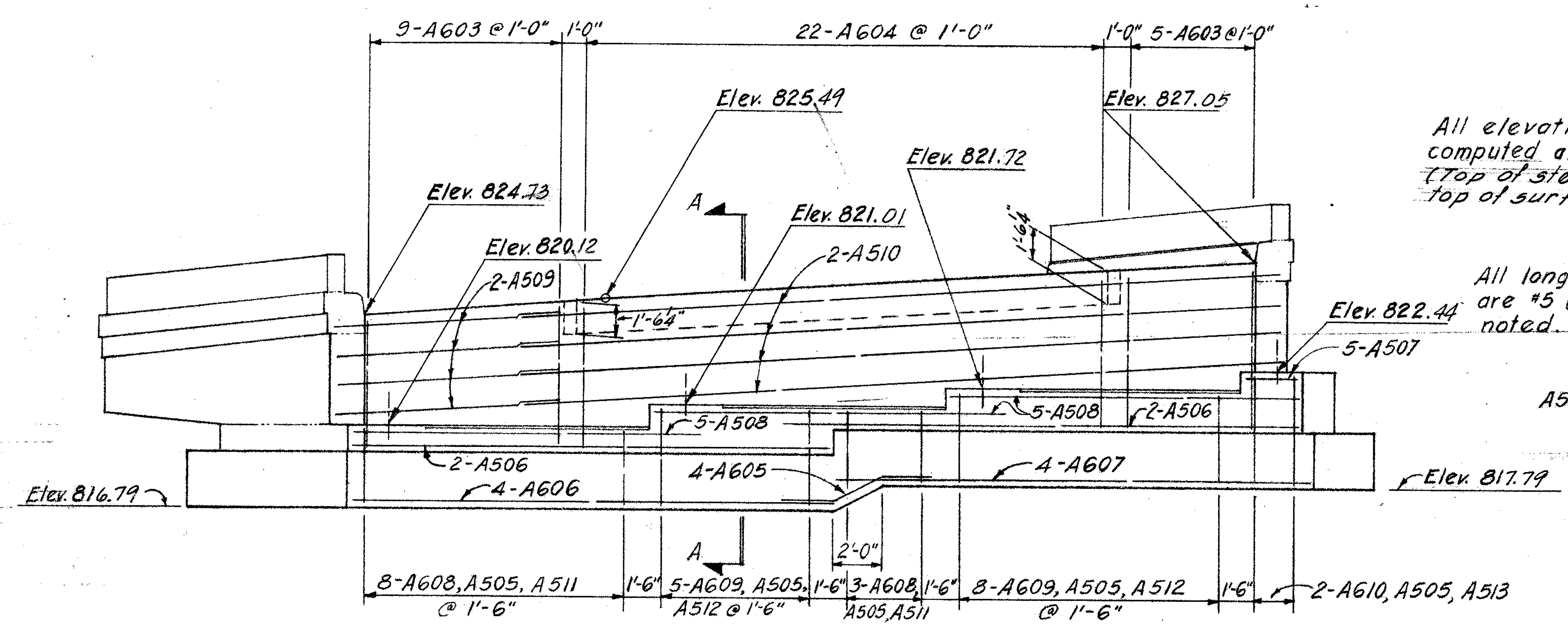


ELEVATION - WINGWALL D
(WINGWALL C AS NOTED)

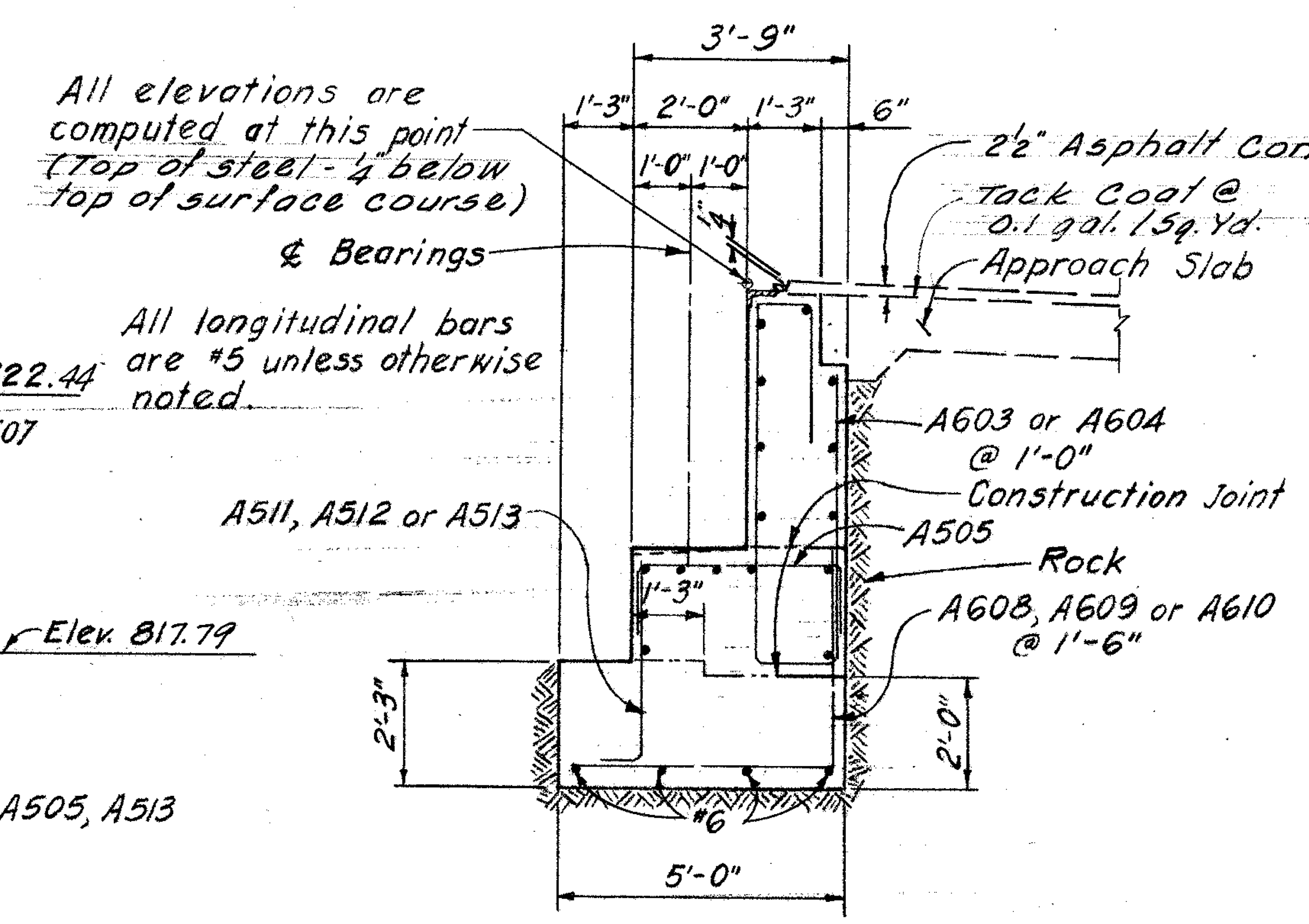
* Means for Wingwall C (only).



SECTION B-B



ELEVATION - ABUTMENT No. 2



SECTION A-A

NOTE

The structural excavation shall be done to the neat lines of Abutment and concrete shall be placed against the rock without forms.

For Section F-F see sheet 5/12 Bridge No. JEF-43-0063

RACKOFF ASSOCIATES ENGINEERS COLUMBUS, OHIO 5/9

ABUTMENT No. 2 DETAILS

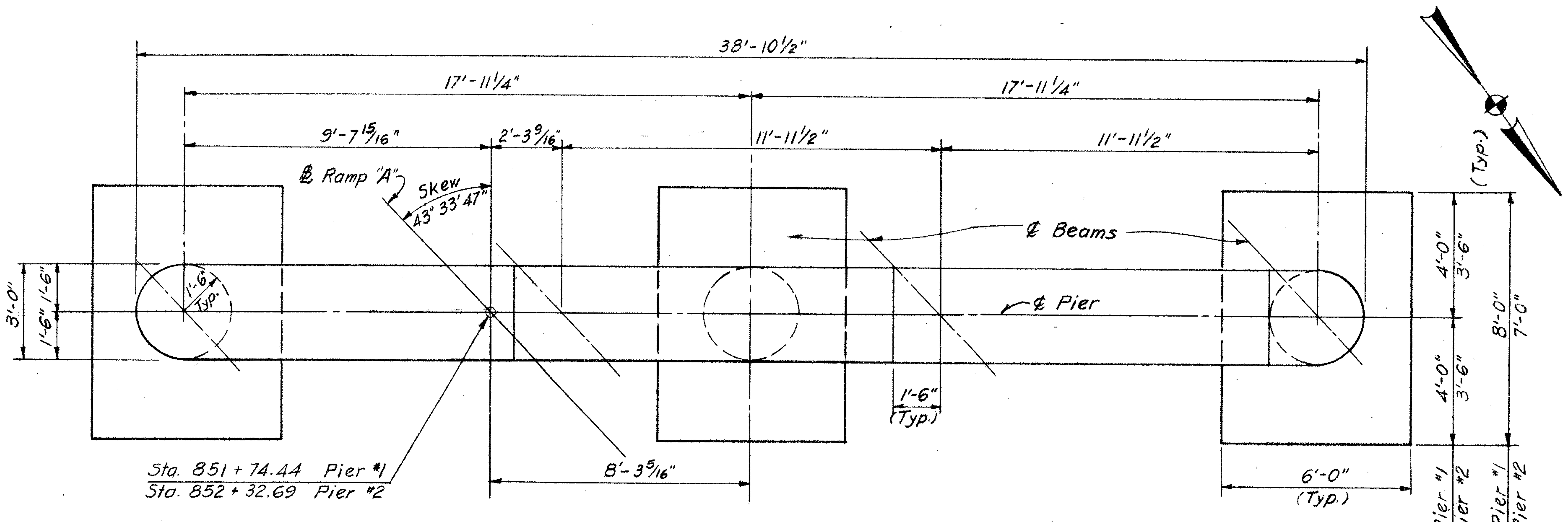
BRIDGE NO. JEF 43 RAMP "A" OVER RAMP "B"

JEFFERSON COUNTY STA. 852+16.82

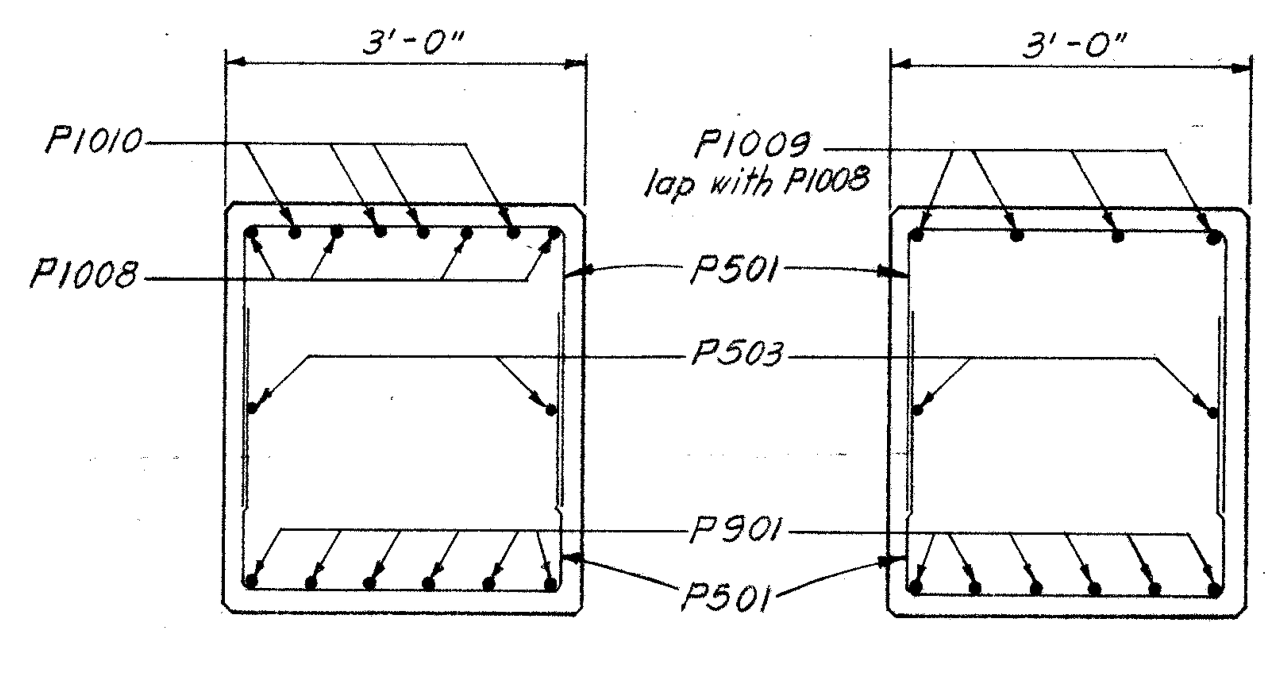
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
V.A.P.	M.R.				1.3.68	

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

JEFFERSON COUNTY
JEF - 43 - 0.42

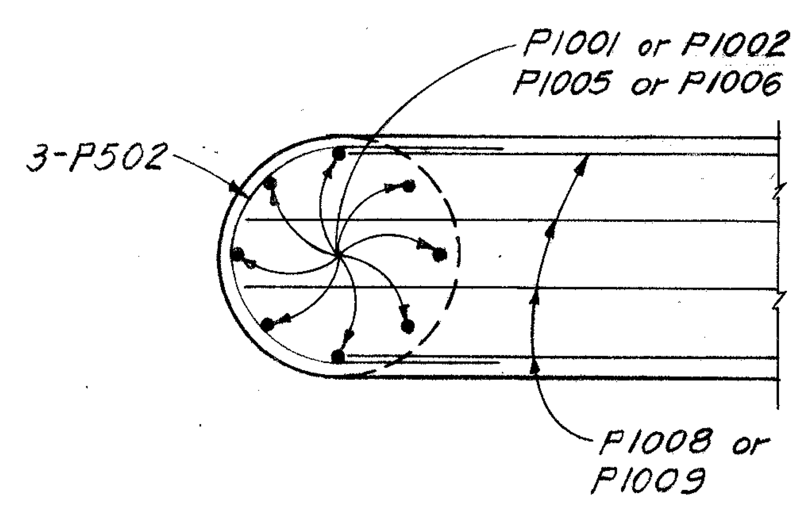


PIER – PLAN

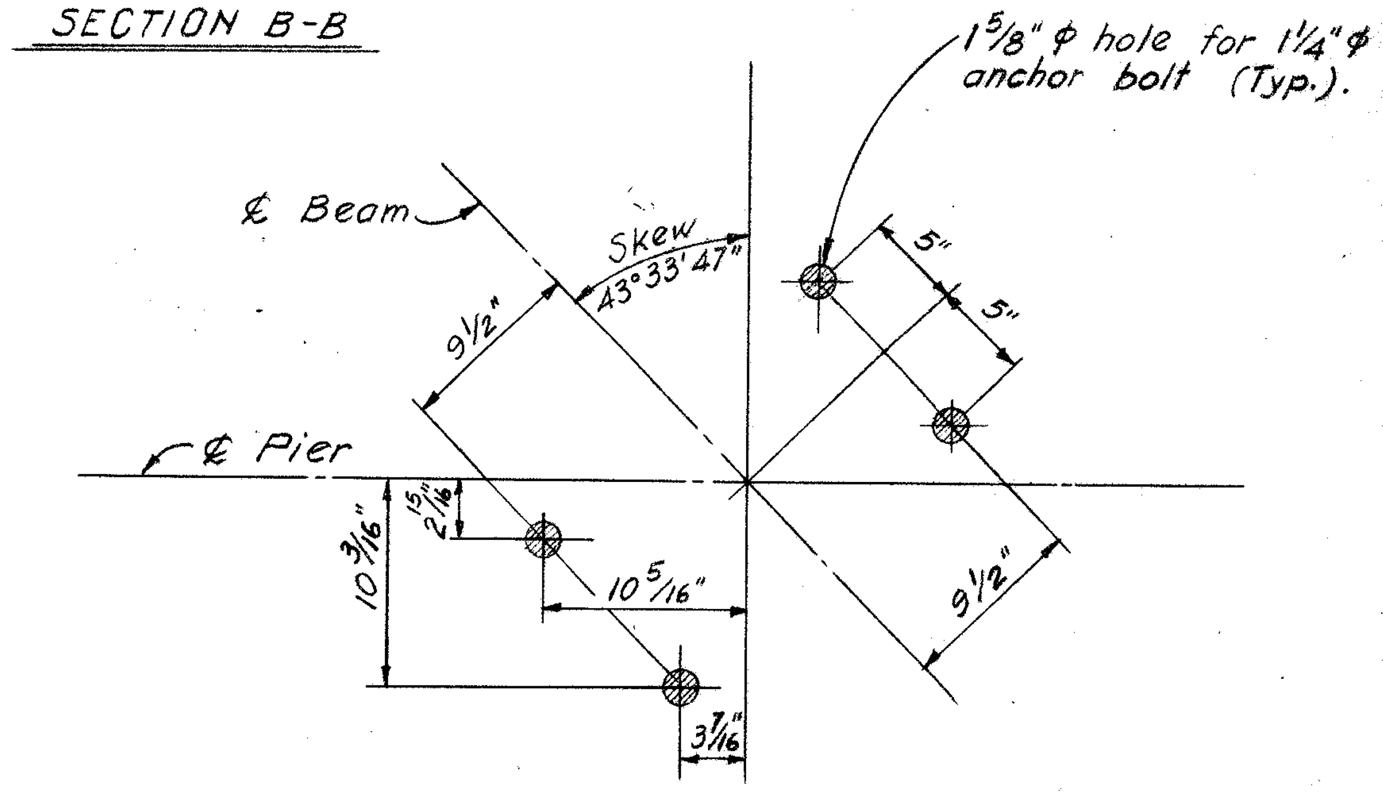


SECTION A-A

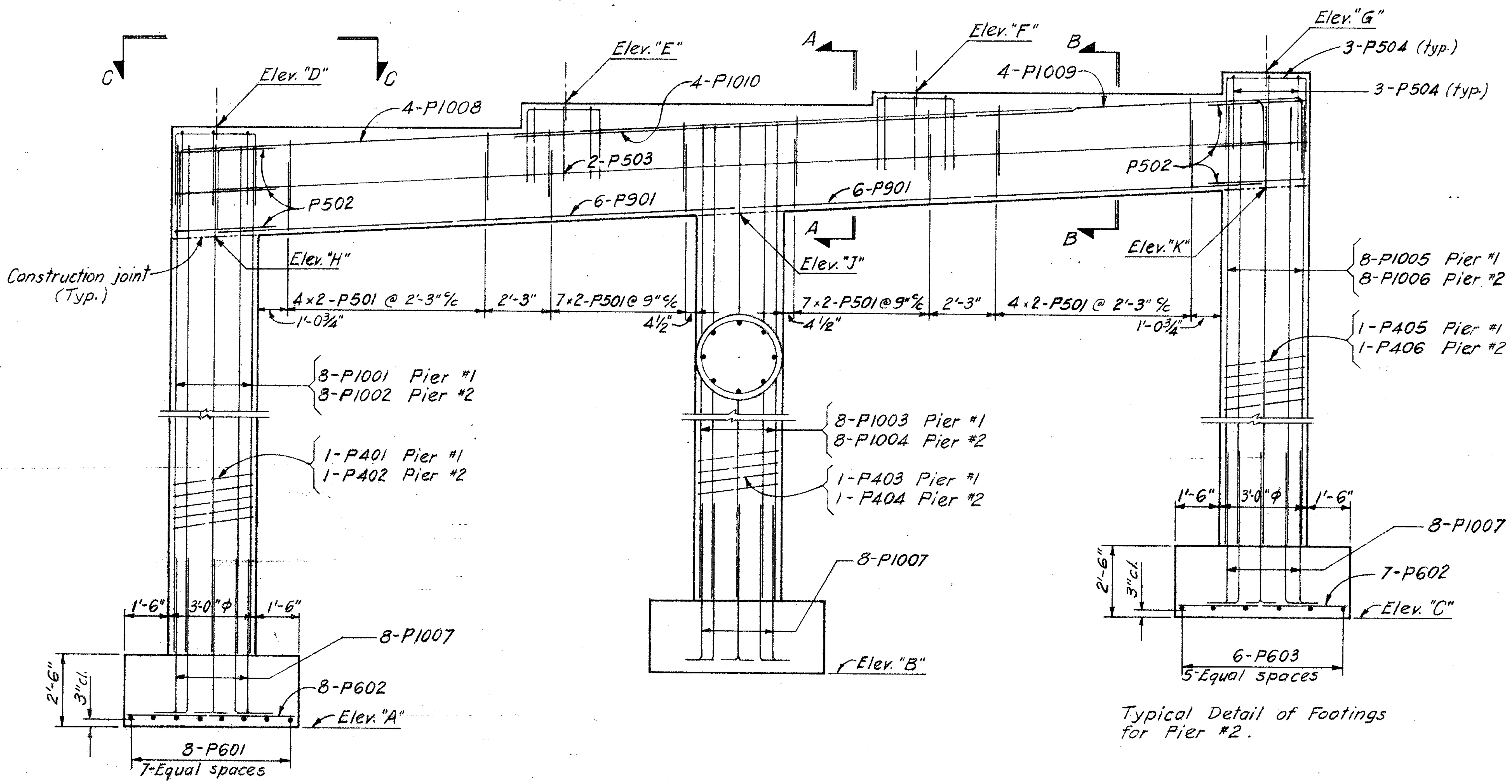
SECTION B-B



VIEW C-C



ANCHOR BOLT LAYOUT
(Only for Pier #2)



Typical Detail of Footings for Pier #2.

Typical Detail of Footings for Pier #1.

ELEVATION

ELEVATIONS										
LOCATION	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"
PIER #1	797.79	799.79	801.79	826.63	827.50	828.10	828.67	822.74	823.84	824.94
PIER #2	799.79	801.54	803.29	822.59	823.48	824.16	824.81	818.65	819.83	821.01

NOTES

- BRIDGE SEAT REINFORCING : Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bolt holes, (for Pier #2 only).

RACKOFF ASSOCIATES 6/9
ENGINEERS COLUMBUS, OHIO

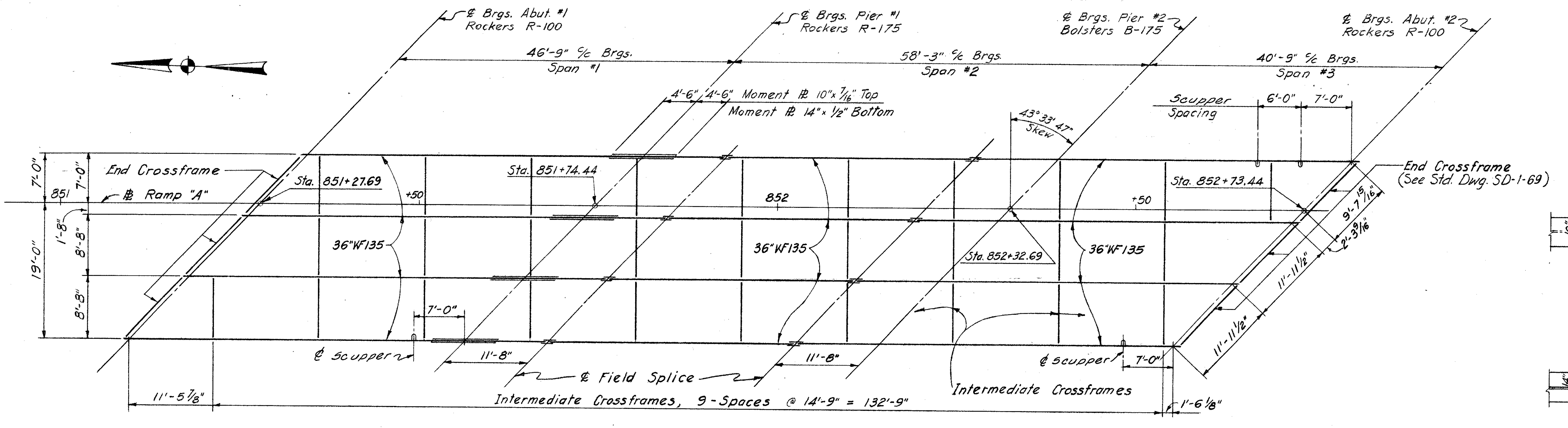
PIER DETAILS

BRIDGE NO. JEF 43 RAMP "A"
OVER RAMP "B"

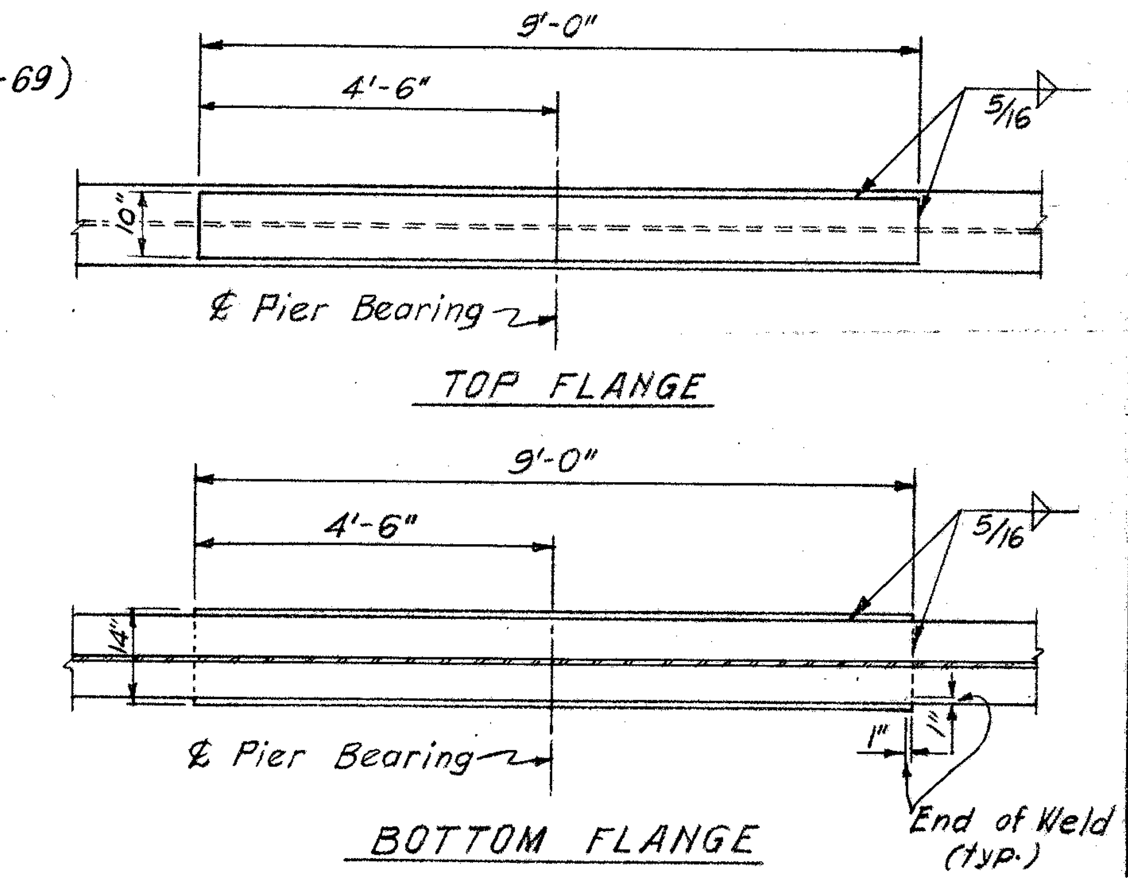
JEFFERSON COUNTY STA. 852+16.82

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
V.A.I.	M.R.				1.3.60	

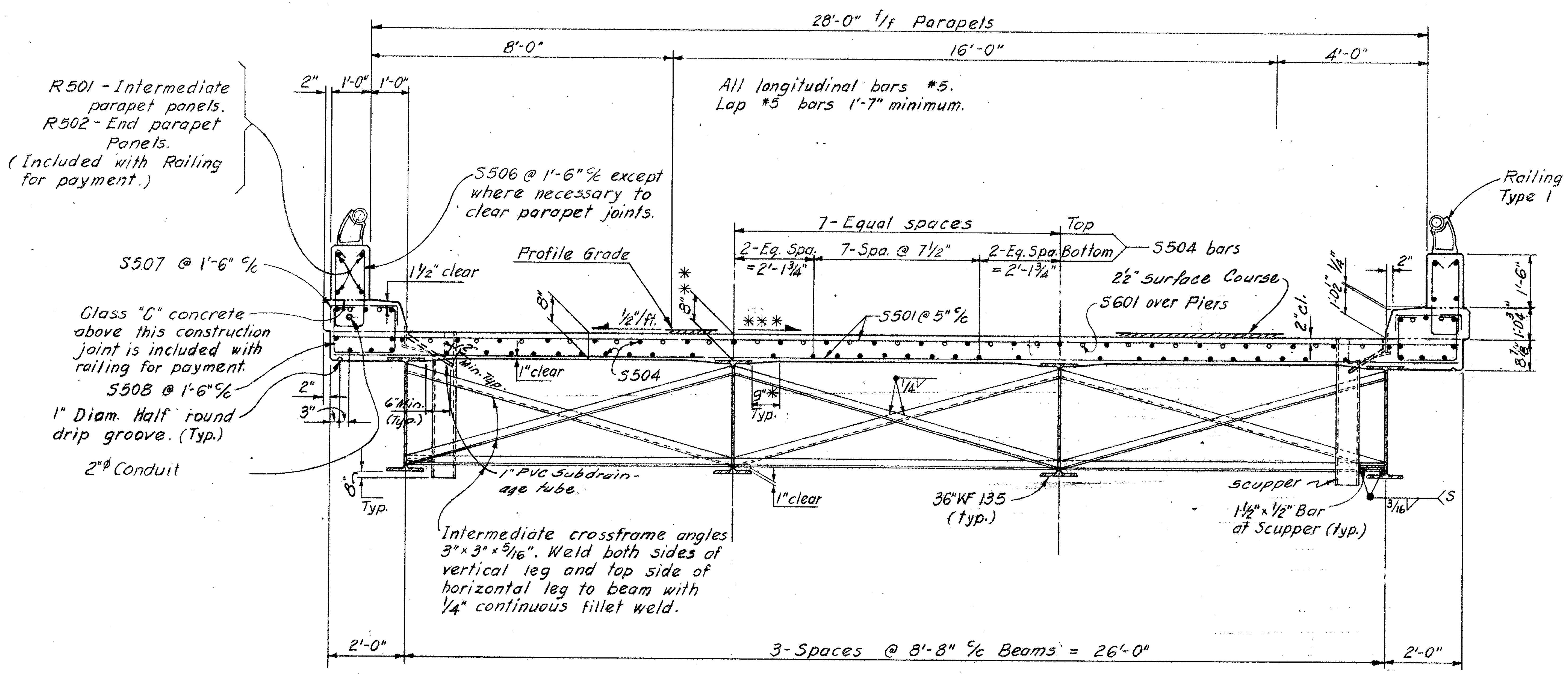
JEFFERSON COUNTY
JEF - 43 - 0.42



FRAMING PLAN



MOMENT PLATE WELD DETAILS



TRANSVERSE SECTION

For detail of subdrainage and surface course see sheet 10/11 Bridge No. JEF-43-0111

NOTES

* 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.

** This is the nominal 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 exact camber or conformation required to place it parallel to the finished grade.

*** The slope varies as follows:
( ) .0833'/ft. at Sta. 848+50 to ( ).0156'/ft. at Sta. 850+50
( ) .0156'/ft. at Sta. 850+50 to ( ).0156'/ft. at Sta. 852+50 and thereafter.

Refer to SD-1-69, sheet 1 for end dam details.
Provide 3" beveled bar:

Scuppers to be similar to SD-1-69 except pipe shall extend 8" below bottom flange instead of 2" and vertical box dimensions shall be increased 2"

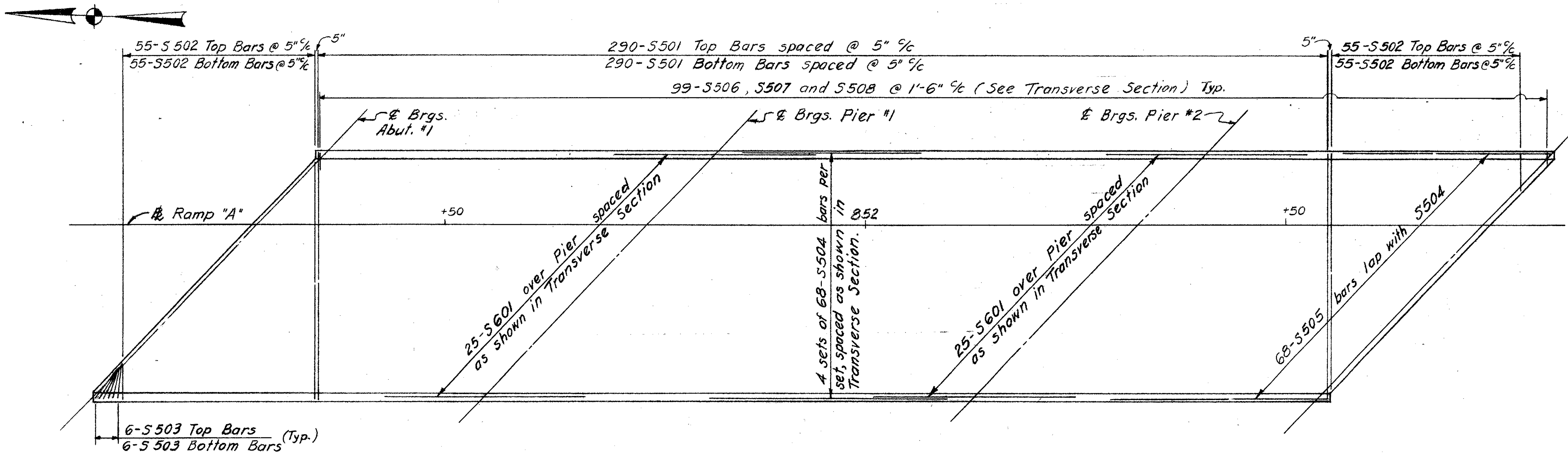
RACKOFF ASSOCIATES 7/9
ENGINEERS COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF 43 RAMP "A" OVER RAMP "B"

JEFFERSON COUNTY STA. 852+16.82

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
V.A.P.					1.3.68	9-27-72



CONCRETE DECK - PLAN
(For exact location of bars, see Transverse Section)

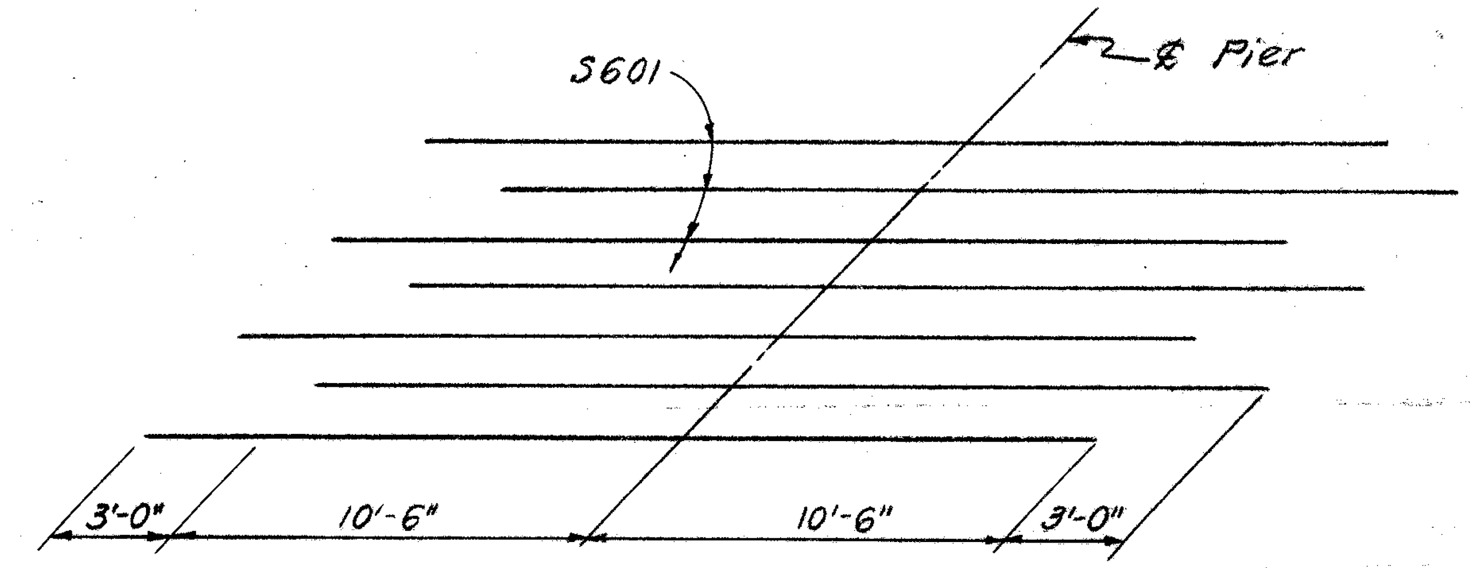
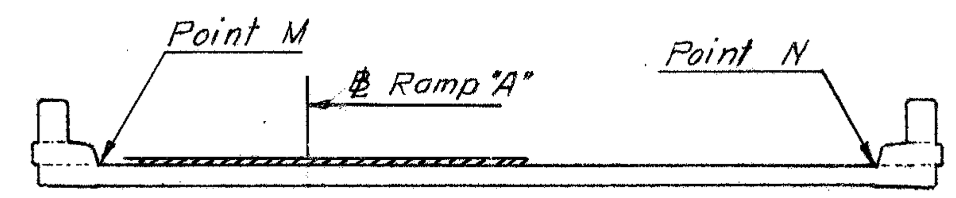


DIAGRAM SHOWING STAGGER OF S601 BARS OVER PIERS



SCREED ELEVATIONS					
LOCATION		POINT M		POINT N	
		Station	Elevation	Station	Elevation
Span #1	℄ Brgs. Abutment #1	851+34.35	834.84	851+09.62	836.75
	1/4 Point	851+46.04	834.04	851+21.31	835.98
	1/2 Point	851+57.73	833.23	851+33.00	835.20
	3/4 Point	851+69.41	832.40	851+44.68	834.41
	℄ Brgs. Pier #1	851+81.10	831.57	851+56.37	833.61
Span #2	1/4 Point	851+95.67	830.57	851+70.93	832.65
	1/2 Point	852+10.23	829.57	851+85.50	831.69
	3/4 Point	852+24.79	828.54	852+00.06	830.71
	℄ Brgs. Pier #2	852+39.35	827.49	852+14.62	829.71
Span #3	1/4 Point	852+49.54	826.79	852+24.81	829.03
	1/2 Point	852+59.73	826.08	852+35.00	828.35
	3/4 Point	852+69.91	825.36	852+45.18	827.67
	℄ Brgs. Abutment #2	852+80.10	824.64	852+55.37	826.96

NOTE: The elevations, shown at the face of the 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 reinforced concrete.

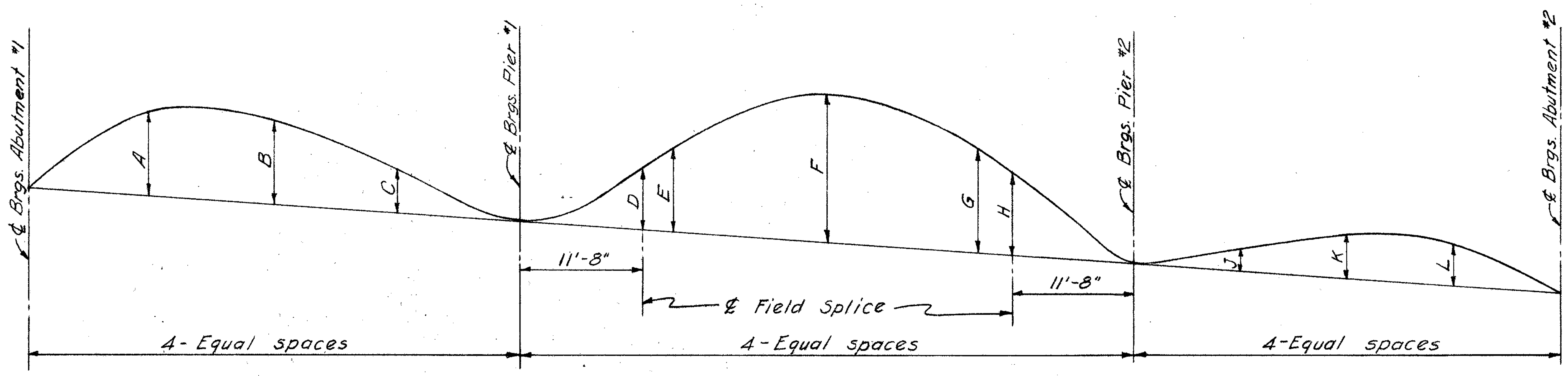


DIAGRAM SHOWING CAMBER

DEFLECTION AND CAMBER											
ITEM / LOCATION	SPAN No. 1			SPAN No. 2					SPAN No. 3		
	1/4 Point A	Center Point B	3/4 Point C	Field Splice D	1/4 Point E	Center Point F	3/4 Point G	Field Splice H	1/4 Point J	Center Point K	3/4 Point L
Deflection due to weight of steel	1/32"	1/32"	—	1/32"	1/32"	1/32"	1/32"	1/32"	—	—	—
Deflection due to remaining dead load	7/32"	7/32"	1/8"	5/32"	7/32"	13/32"	9/32"	7/32"	1/16"	1/8"	1/8"
Required Shop Camber	1/4"	1/4"	1/8"	3/16"	1/4"	7/16"	5/16"	1/4"	1/16"	1/8"	1/8"

RACKOFF ASSOCIATES 8/9
ENGINEERS COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF 43 RAMP "A" OVER RAMP "B"

JEFFERSON COUNTY STA. 852+16.82

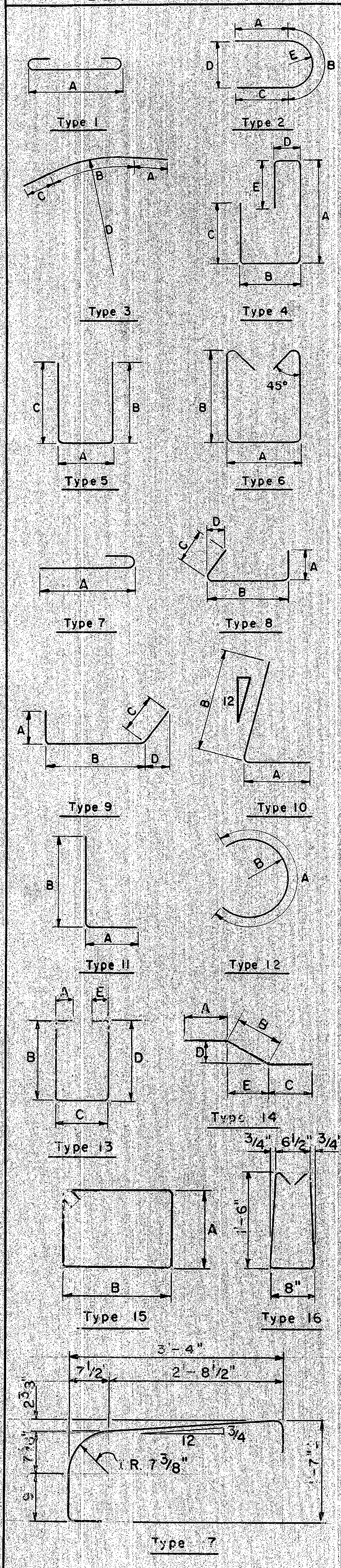
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
V.A.P.	[illegible]		[illegible]	[illegible]	1-3-68	

REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEFFERSON COUNTY
JEF - 43 - 0.42

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

ABUTMENTS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
A501	26	8-4	226	5	5-5	1-7	1-7		
A502	26	7-2	194	5	3-5	2-0	2-0		
A503	11	7-0	80	11	0-7 1/2	6-6			
A504	15	7-6	117	11	0-7 1/2	7-0			
A505	26	4-10	131	5	3-5	0-10	0-10		
A506	10	21-6	224	S					
A507	10	3-0	31	S					
A508	30	14-0	438	S					
A509	16	11-6	192	S					
A510	18	31-6	591	S					
A511	11	3-3	37	11	0-7 1/2	2-9			
A512	13	4-0	54	11	0-7 1/2	3-6			
A513	2	4-9	10	11	0-7 1/2	4-3			
A514	4	8-10	37	S					
A515	4	7-0	29	S					
A516	20	4-8	97	S					
A517	10	7-11 to 9-3	90	5	1-2	3-6 to 4-2	3-6 to 4-2	2 each, vary B & C	by 2"
A518	88	2-9	252	5	1-0	1-0	1-0		
A519	44	5-7	256	6	0-8	2-2			
A520	20	13-0	271	S					
A521	20	12-2	254	15	2-7	3-2			
A522	6	10-8	67	S					
A523	6	8-8	54	S					
A524	24	5-4	133	S					
A525	12	7-11 to 12-1	125	5	1-2	3-6 to 5-7	3-6 to 5-7	2 each, vary B & C	by 5"
A526	8	8-6	71	S					
A527	16	16-0	267	S					
A601	11	14-2	234	5	5-5	2-7	6-6		
A602	15	14-8	330	5	5-5	2-7	7-0		
A603	28	12-1	508	5	1-5	5-6	5-6		
A604	44	14-7	964	4	5-6	1-5	4-2	0-11	3-3
A605	4	6-3	38	14	2-0	2-3	2-0	1-0	2-0
A606	4	19-0 to 23-6	128	S		Each	vary	by 1'-6"	
A607	4	20-0	120	S					
A608	11	8-3	136	11	4-8	3-9			
A609	13	8-3	161	11	4-8	3-9			
A610	2	8-11	27	11	4-8	4-5			
A611	2	11-0	33	S					
A612	2	9-0	27	S					
A613	5	13-6	101	5	1-2	6-4	6-4		
A614	5	10-10	81	5	1-2	5-0	5-0		
A615	6	18-2	164	5	1-2	8-8	8-8		
A616	6	20-0	180	5	1-2	9-7	9-7		
A801	7	19-0 to 24-0	402	S		Each	vary	by 10"	
A802	4	19-0 to 21-0	214	S		2 each,	vary	by 2'-0"	
A803	4	7-3	77	14	2-6	2-3	2-6	1-0	2-0
A804	3	24-0	192	S					
A805	6	13-8	219	S					
A806	6	11-0	176	S					
		TOTAL	8,840						

PIERS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
P501	88	6-11	635	5	2-8	2-3	2-3		
P502	12	7-4	92	2	1-7	4-2	1-7	2-8	1-4
P503	4	36-0	150	S					
P504	48	7-5	371	5	2-8	2-6	2-6		
P601	24	7-8	276	S					
P602	45	5-8	383	S					
P603	18	6-8	180	S					
P901	24	18-0	1,469	S					
P1001	8	25-9	886	S					
P1002	8	19-7	674	S					
P1003	8	24-6	843	S					
P1004	8	19-0	654	S					
P1005	8	23-11	823	S					
P1006	8	18-6	637	S					
P1007	48	6-6	1,343	11	1-4 1/2	5-5			
P1008	8	33-3	1,145	11	3-0	30-6			
P1009	8	13-11	479	11	3-0	11-2			
P1010	8	15-6	534	S					
		SUB-TOTAL	11,574						
		SPIRAL	2,060						
		TOTAL	13,634						

SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
S501	580	29-8	17,947	S					
S502	220	28-5 to 4-10	3,815	S	4 each, very	by 5 1/4"			
S503	24	4-6	113	S					
S504	272	30-0	8,511	S					
S505	68	33-5	2,370	S					
S506	198	5-7	1,153	6	0-8	2-2			
S507	198	2-6	516	5	1-6	0-7 1/2	0-7 1/2		
S508	198	4-11	1,015	13	0-7 1/2	1-4	1-6	1-4	0-7 1/2
S601	50	24-0	1,802	S					
		TOTAL	37,242						

RAILING BARS

MARK	NO.	LENGTH	WEIGHT	TYPE		
R501	64	15-0	—	S	Included with Railing for payment	
R502	16	12-3	—	S		
R503	12	4-2	—	16		
R504	8	5-4	—	17		
R505	8	15-8	—	S		
R506	8	12-8	—	S		

REPLACEMENT BARS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B
RE401	1	5-3	—	12	4-11	1-4
RE501	3	5-7	—	S		
RE601	1	5-11	—	S		
RE801	1	6-6	—	S		
RE901	1	6-10	—	S		
RE1001	1	7-2	—	S		

NOTES

BAR SIZE is indicated in bar mark. The first digit where three digits are used, and the first two where four are used indicate the bar size number.

SPIRAL REINFORCING BARS: 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 is the "Length" divided by the pitch, plus three turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to item S-4. 1 1/2 closed coils shall be provided at the ends of each spiral unit. Four 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 the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

SPIRAL REINFORCEMENT

MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS	WEIGHT
SP401	1	22-6	32"	4 1/2"	63	4	409
SP402	1	16-5	32"	4 1/2"	47	4	304
SP403	1	21-7	32"	4 1/2"	61	4	396
SP404	1	15-10	32"	4 1/2"	45	4	291
SP405	1	20-8	32"	4 1/2"	58	4	376
SP406	1	15-3	32"	4 1/2"	44	4	284
						TOTAL	2,060

RACKOFF ASSOCIATES 9/9
ENGINEERS
COLUMBUS, OHIO

REINFORCING STEEL LIST

BRIDGE NO JEF 43 RAMP "A"
OVER RAMP "B"

JEFFERSON COUNTY STA 852+16.82

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
V.A.P.	U.R.				1.3.68.	

GENERAL INFORMATION

INTRODUCTION

The project consists of the relocation of 0.7 mile of SR 43 in Steubenville, beginning on SR 43, 200 feet west of Ohio Street, extending eastward, north of existing SR 43, and terminating at the intersection of SR 43 (Seventh Street) and Washington Street. Included in the report are profiles of Line A (an access ramp to Adams Street) and Lines D and E.

Proposed grades indicate maximum proposed cuts and fills as follows:

	CUTS (MAX.)	FILL EMBANKMENTS (MAX.)
SR 43	36'	51'
Line A	43'	45'
Line D	15'	21'
Line E	4'	54'

Most of the cuts and fills are side-hill.

EXPLORATION

Borings were made by truck-mounted mechanical soil auger, hand auger (in areas of difficult access), and rotary type drill rig, on May 10 and between May 24, and June 3, 1966. Included in this report are logs of borings from the preliminary investigation and structure foundation investigations along the project. Two borings were also made in the vicinity of a razed coke oven near SR 43 station 849+00.

GEOLOGY AND OBSERVATIONS OF THE PROJECT

The alignment traverses a portion of the upland east of the Ohio River, descends the dissected valley wall, and terminates on the terraced floodplain of the Ohio River. Thin to moderately deep residual soils on the uplands and valley walls, and alluvium on the floodplain, overlie coals, indurated clay, shale, sandstone, and limestone, of the Conemaugh formation, Pennsylvanian age.

Several rock exposures were noted and measured. A spring was noted left of station 838+50. Several areas of sloughing and soil creep were also noted, as well as two razed coke ovens in the vicinty SR 43 station 849+00 and Line A station 850+00.
Mine waste from a deep drift mine (since abandoned) has been used to fill excavations made for materials used for brick manufacturing, in the vicinity of approximate stations 840+00 and 855+00.

INVESTIGATIONAL FINDINGS

Materials encountered immediately below proposed grade consist predominantly of bedrock and silts (A-4a and A-4b).

Bedrock is anticipated in the excavations at the following stations:

SR 43 - Stations 832+00 to 833+00 - sandstone in the left ditch and lower portion of the left backslope.

Stations 833+00 to 834+50 - sandstone at grade and in the left ditch and lower portion of the left backslope. Shale in the upper portion of the left backslope above approximate elevation 885'.

Stations 835+50 to 837+90 - sandstone in the left ditch and backslope.

Stations 851+30 to 852+20 - possibly shale in the left ditch.

Line A - Stations 842+00 to 844+00 - shale at grade and in the left ditch and backslope.

Stations 852+20 to 857+50 - shale at grade and in the ditches and backslopes.

Line D - Stations 5+25 to 8+50 - sandstone at grade and in the right ditch and backslope.

Frost susceptible silts (A-4b) were encountered within three feet below proposed grades at SR 43 station 854+00 and Line A station 860+90.

Mine waste, predominantly comprised of shale and coal fragments with soil, will be encountered at grade in the vicinity of stations 847+50 to 849+00 and between approximately stations 843+00 to 849+00 in the ditches and backslopes.

Embankment foundation materials are composed of sandy silts (A-4a) with silt clays (A-6a) and clays (A-7-6), having generally low moisture contents, and moisture contents in the lower portions of, or below the plastic range, as well as mine waste.

Wet materials were encountered at SR 43 stations 829+00 and 839+00, Line A station 850+50, and Line E station 5+65.

Mine waste, reportedly as much as 40 feet deep was encountered between SR 43 and Line A approximate stations 840+00 and 850+00, and at SR 43 stations 855+25.

It is noted that areas of the embankment foundations (portions of which presently show evidence of minor sloughing) comprise shallow soil cover overlying sloping bedrock surface.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS— 77 SAMPLES TESTED

DESCRIPTION	H.R.B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Stone fragments	A-1-a(0)	A-1-a	72	5	10	8	5	22	2	9	2
Stone fragments with sand	A-1-b(0)	A-1-b	61	7	13	10	9	NP	NP	12	3
Stone fragments with sand and silt	A-2-4(0)	A-2-4	43	8	19	16	14	24	5	12	3
Sandy silt	A-4(4)	A-4a	10	10	26	23	31	25	6	18	24
Silt	A-4(8)	A-4b	0	3	8	56	33	30	7	18	7
Silt and clay	A-6(9)	A-6a	5	5	12	37	42	33	12	15	11
Silty clay	A-6(8)	A-6b	15	10	15	20	40	39	18	23	2
Clay	A-7-6(13)	A-7-6	3	4	6	32	55	45	19	21	9
Random fill			VISUAL CLASSIFICATION								
Coal			VISUAL CLASSIFICATION								
Indurated clay			VISUAL CLASSIFICATION								
Weathered shale			VISUAL CLASSIFICATION								14
Weathered sandstone			VISUAL CLASSIFICATION								2
Shale			VISUAL CLASSIFICATION								
Sandstone			VISUAL CLASSIFICATION								
Limestone			VISUAL CLASSIFICATION								
Various other materials; Bouldery zone			VISUAL CLASSIFICATION								

Auger boring-plan view.

Drive sample and/or core boring-plan view.

Auger boring plotted to vertical scale only.

Drive sample and/or core boring plotted to vertical scale only.

NOTE: Figures beside borings indicate water content in percent.e.g. *15*

Water content nearly equal to or greater than liquid limit.

Indicates a non-plastic material with a high water content.

Free water.

Number of blows for "Standard Penetration" test.
X=number of blows for first 6 inches.
Y=number of blows for second 6 inches.

Revised 7/21/66

SOIL PROFILE

1/27

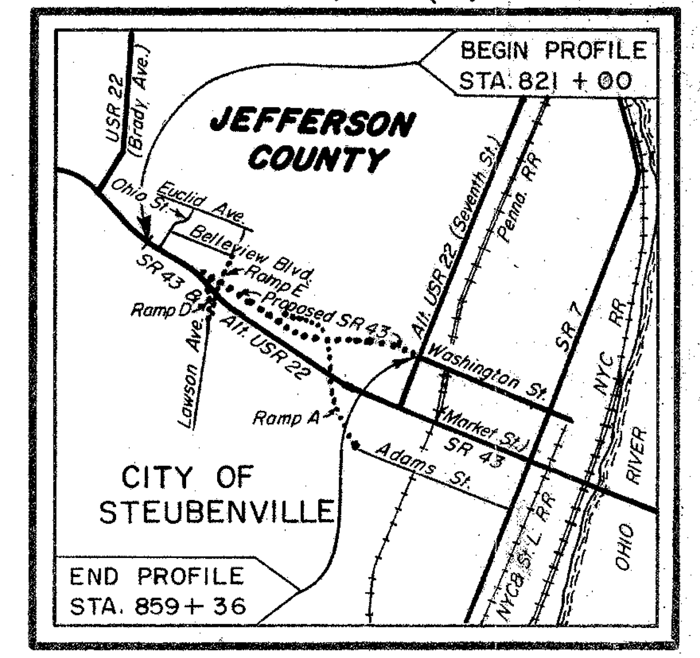
JEFFERSON COUNTY
JEF-43-0.42

1/13

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23. OHIO

NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.

Fed. No. U- 447(8)



LOCATION MAP

Recon - J.S.M. - 4/15/66

Drilling — Auger - T.R.S. - 5/24/66 to 5/31/66, and 6/3/66
Core - W.L.T. - 5/10/66

Drafting - C.L.I., A.F., R.K. - 6/17/66

REVISED

Drilling - Core - C.F.C - 7/5/66 - 7/7/66

Drafting - R.C.B. - 7/21/66

SOIL PROFILE

JEFFERSON COUNTY

JEF-43-0.42

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

2/27

2/13

Revised 7/21/66

SUMMARY OF SOIL TEST DATA

NOTE: NP shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.
*Denotes sample taken at or near grade.

SR 43

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
829+00	10'Lt	0.0-2.0	0	11	51	16	22	NP	NP	13	A-4a
		2.0-6.0	24	5	24	21	26	24	4	14	A-4a
		6.0-10.0	0	7	29	30	34	27	4	26	A-4a
834+50	CL	0.0-1.5	(78	1	9	5	7	NP	NP	8)	
			Brown Sandy Silt W/Sandstone Frags.								Visual *
836+00	100'Rt	0.0-5.0	18	12	26	26	18	31	7	18	A-4a
		5.0-10.5	13	13	21	28	25	27	6	17	A-4a
836+25	25'Lt	0.0-3.5	(54	8	19	9	10	-	-	8)	
			Brown Weathered Sandstone								Visual
837+75	100'Rt	0.0-4.0	0	6	8	52	34	32	9	15	A-4b
		4.0-9.0	0	2	10	52	36	29	9	13	A-4b
		9.0-10.0	(0	4	12	50	34	30	9	12)	
			Gray Weathered Shale								Visual
838+00	CL	0.0-6.0	(47	14	7	14	18	33	9	8)	
			Brown Weathered Shale								Visual
		6.0-8.0	(47	20	7	13	13	-	-	8)	
			Brown Weathered Shale								Visual
839+00	65'Lt	0.0-6.0	0	6	10	37	47	41	16	24	A-7-6
		6.0-11.0	0	5	5	34	56	49	20	24	A-7-6
839+00	85'Rt	0.0-4.0	0	7	44	22	27	NP	NP	22	A-4a
		4.0-8.0	0	1	8	50	41	30	9	12	A-4a
		8.0-9.0	22	4	6	33	35	30	11	14	A-6a
840+00	95'Lt	0.0-5.0	(57	13	5	11	14	35	12	5)	
			Brownish-Gray Weathered Shale								Visual
		5.0-8.0	(59	13	6	10	12	PL = 20		5)	
			Brown Weathered Shale								Visual
840+00	50'Lt	0.0-4.0	(42	14	11	16	17	-	-	24)	
			Mine Waste-Coal and Shale Frags. W/Soil								Visual
		4.0-9.0	0	7	12	39	42	35	12	24	A-6a
		9.0-12.0	21	9	9	28	33	36	13	12	A-6a
840+00	CL	0.0-5.0	(40	25	12	11	12	-	-	9)	
			Mine Waste-Coal and Shale Frags. W/Soil								Visual
		5.0-10.0	0	4	10	27	59	49	23	29	A-7-6
		10.0-15.0	0	4	4	40	52	32	12	16	A-6a
		15.0-21.0	0	4	14	39	43	34	15	14	A-6a
840+00	75'Rt	0.0-3.0	(51	11	14	13	11	NP	NP	17)	
			Mine Waste-Stone Frags., Sand, and Soil								Visual
		3.0-6.0	Mine Waste-Stone Frags.							8	Visual
		6.0-11.0	59	5	16	9	11	21	5	14	A-1-b
		11.0-16.0	0	3	10	40	47	31	14	16	A-6a
842+00	97'Lt	0.0-5.0	0	2	3	29	66	52	23	23	A-7-6
		5.0-9.0	(0	4	8	45	43	35	11	12)	
			Brown Weathered Shale								Visual
842+00	10'Rt	0.0-5.0	(63	14	6	7	10	32	9	10)	
			Mine Waste-Coal and Shale Frags. W/Soil								Visual
		5.0-9.0	29	16	7	16	32	41	17	19	A-7-6
		9.0-13.0	(0	4	13	36	47	32	14	13)	
			Reddish-Brown Weathered Shale								Visual
		13.0-14.0	(0	22	15	30	33	32	10	9)	
			Brown Weathered Shale								Visual
842+00	55'Rt	0.0-5.0	(43	24	15	9	9	NP	NP	14)	
			Mine Waste-Shale and Coal Frags. W/Soil								Visual
		5.0-10.0	0	10	21	22	47	39	17	26	A-6b
		10.0-16.0	30	10	8	18	34	40	18	21	A-6b
		16.0-18.0	26	18	12	24	20	28	10	13	A-4a
846+00	130'Lt	0.0-5.0	(49	13	7	13	18	34	7	15)	
			Mine Waste-Shale Frags. and Soil								Visual
		5.0-10.0	(36	21	10	13	20	-	-	8)	
			Mine Waste-Shale and Coal Frags. W/Soil								Visual
		10.0-15.0	(30	20	10	15	25	35	11	16)	
			Mine Waste-Coal and Shale Frags. W/Soil								Visual
		15.0-20.0	(47	19	8	11	15	28	7	9)	
			Mine Waste-Shale and Coal Frags. W/Soil and Wood								Visual
846+00	60'Lt	0.0-5.0	(40	23	10	8	19	34	7	13)	
			Mine Waste-Shale and Coal Frags. W/Soil								Visual
		5.0-10.0	(40	21	10	10	19	32	8	10)	
			Mine Waste-Shale and Coal Frags. W/Soil								Visual
		10.0-16.0	(39	19	10	14	18	32	6	14)	
			Mine Waste-Shale and Coal Frags. W/Soil								Visual
846+00	CL	0.0-3.0	(50	20	9	9	12	30	5	9)	
			Mine Waste-Shale and Coal Frags. W/Soil								Visual
		3.0-8.0	19	6	34	21	20	23	5	12	A-4a
		8.0-11.0	16	7	23	25	29	25	6	15	A-4a
846+00	100'Rt	0.0-4.0	(27	29	18	15	13	NP	NP	23)	
			Tile, Stone Frags., and Soil								Visual
		4.0-10.0	12	11	36	17	24	23	4	17	A-4a
		10.0-15.0	0	6	26	37	31	24	7	18	A-4a
		15.0-20.0	0	12	40	25	23	20	4	17	A-4a
		20.0-23.0	(31	17	18	19	15	-	-	16)	
			Brown Weathered Shale								Visual
848+00	CL	0.0-5.0	(34	32	14	9	11	NP	NP	6)	
			Mine Waste-Coal and Shale Frags., and Soil								Visual
		5.0-10.0	(44	18	9	12	17	PL = 24		14)	
			Mine Waste-Coal and Shale Frags., and Soil								Visual
		10.0-15.0	(48	21	12	7	12	NP	NP	18)	
			Mine Waste-Coal and Stone Frags., W/Soil								Visual
		15.0-21.0	(51	17	8	8	16	35	11	7)	
			Mine Waste-Shale and Coal Frags., W/Soil								Visual
		21.0-25.0	(63	11	6	10	10	NP	NP	17)	
			Gray Weathered Shale								Visual
848+80	CL	0.0-5.0	(37	17	9	12	25	36	13	24)	
			Mine Waste-Coal and Shale Frags. W/Soil								Visual
		5.0-10.0	(59	15	6	7	13	34	8	11)	
			Mine Waste-Coal and Shale Frags. W/Soil								Visual
		10.0-15.0	(65	10	6	5	14	34	10	14)	
			Mine Waste-Coal and Shale Frags. W/Soil								Visual
		15.0-20.0	(62	14	6	7	11	-	-	11)	
			Mine Waste-Coal and Shale Frags. W/Soil								Visual
		20.0-21.0	(52	16	8	8	16	38	16	13)	
			Mine Waste-Shale Frags. and Soil								Visual
852+00	50'Lt	0.0-5.0	0	22	18	34	26	27	5	16	A-4a
		5.0-10.0	20	10	5	42	23	27	7	15	A-4a
		10.0-12.5	0	12	22	41	25	23	4	18	A-4a
852+00	CL	0.0-5.0	57	14	6	12	11	PL = 23		9	A-1-b *
		5.0-11.0	(32	21	9	19	19	29	6	10)	
			Brown Weathered Shale								Visual *
		11.0-14.0	(74	7	4	6	9	PL = 21		9)	
			Brown Weathered Shale								Visual
854+00	CL	0.0-7.0	(34	2	6	39	14	-	-	24)	
			Mine Waste-Coal and Shale Frags. W/Soil								Visual *
		7.0-12.0	0	5	9	52	34	27	5	21	A-4b *
		12.0-15.0	27	12	28	14	19	25	8	18	A-2-4
855+25	CL	0.0-6.0	(42	19	14	11	14	-	-	16)	
			Mine Waste-Coal and Sandstone Frags. W/Soil								Visual *
		6.0-11.0	(44	22	16	9	9	-	-	23)	
			Mine Waste-Coal and Shale Frags. W/Sand and Soil								Visual
		11.0-15.0	0	28	23	8	31	26	4	22	A-4a
856+30	90'Rt	0.0-6.0	0	6	23	33	33	34	12	19	A-6a *
		6.0-10.0	0	2	8	44	46	42	19	24	A-7-6
857+00	40'Rt	0.0-6.0	13	9	18	23	32	32	10	17	A-4a *
		6.0-10.0	0	2	8	55	35	38	10	24	A-4b

Line A

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
850+50	BL	0.0-4.0	(57	8	12	13	10	-	-	11)	
			Bricks, Cinders, Glass, and Soil								Visual
		4.0-10.0	54	10	9	15	13	27	5	9	A-2-4
		10.0-16.0	38	12	12	20	18	25	7	7	A-4a
		16.0-21.0	0	1	6	66	27	22	3	24	A-4b
		21.0-25.0	18	9	23	28	22	23	5	16	A-4a

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
853+00	52'Rt	0.0-5.0	0	1	3	23	73	41	19	22	A-7-6
		5.0-11.0	(30	16	10	20	24	30	8	7)	
			Brown Weathered Shale								Visual
854+85	50'Rt	0.0-5.0	0	3	14	30	53	33	14	18	A-6a
		5.0-10.5	(59	10	7	14	10	28	9	6)	
			Brown Weathered Shale								Visual
860+90	10'Rt	0.0-2.0	0	1	4	56	39	30	7	22	A-4b*
		2.0-7.0	0	5	15	43	37	25	7	18	A-4a*
		7.0-10.0	0	2	26	26	46	30	10	18	A-4a

Line E

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
11+50	20'Rt	0.0-5.0	0	15	26	33	26	23	3	16	A-4a *
		5.0-10.0	(0	25	53	8	14	NP	NP	11)	
			Brown Weathered Sandstone								Visual

DRIVE SAMPLE SOIL TEST DATA

SR 43

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
821+69	45'Rt	5.0-6.0	2	20	13	26	34	39	12	24	A-6a
		10.0-11.0	7	21	17	30	25	30	8	13	A-4a
837+06	192'Lt	5.0-6.0	0	0	16	40	44	32	11	9	A-6a
837+06	82'Lt	5.0-6.0	76	4	9	7	4	-	-	13	A-1-a

Line A

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
853+50	64'Rt	5.0-6.0	0	1	2	33	64	43	19	17	A-7-6
		10.0-11.0	7	9	4	35	45	35	12	15	A-6a

Line D

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
4+10	3'Rt	5.0-6.0	0	19	21	36	24	27	7	17	A-4a
8+50	BL	5.0-5.6	14	11	12	33	30	31	9	11	A-4a
10+00	6'Rt	5.0-6.0	0	6	28	29	37	27	8	25	A-4a
		10.0-11.0	0	3	13	32	52	40	17	29	A-6b
		15.0-16.0	0	1	6	47	46	32	8	14	A-4a

Line E

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
5+65	1.5'Rt	5.0-6.0	(56	10	12	12	10	26	10	24)	
			Brown Sandy Clayey Silt and Slag with Brickbats								Visual
		10.0-11.0	69	5	12	8	6	22	4	5	A-1-a
		15.0-16.0	49	3	20	18	10	20	3	10	A-2-4
		20.0-21.0	67	2	16	9	6	NP	NP	14	A-1-b
7+33	5'Rt	5.0-6.0	0	4	17	46	33	26	11	14	A-6a
		10.0-11.0	Brown Silty Clay and Sandy Shale Frags.							7	Visual
8+07	6'Rt	5.0-6.0	0	3	12	57	28	28	8	10	A-4b
		10.0-11.0	29	6	17	31	17	27	7	24	A-4a
9+04	1.5'Rt	5.0-6.0	0	1	4	42	53	44	19	11	A-7-6
		10.0-10.3	Brown and Gray Silty Clay and Shale Frags.							14	Visual

SUPPLEMENTAL DRIVE SAMPLE SOIL TEST DATA

SR 43

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
843+63	13'Lt	5.0-6.0	(49	14	5	9	23	PL = 24		25)	
			Mine Waste-Gray Silty Clay W/Shale and Coal Frags.								Visual
		10.0-11.0	(38	13	13	16	15	32	6	22)	
			Mine Waste-Gray Silty Clay W/Shale and Coal Frags.								Visual
		15.0-16.0	(31	27	14	13	15	32	5	22)	
			Mine Waste-Gray Silty Clay W/Shale and Coal Frags.								Visual
		20.0-21.0	(47	16	6	12	19	32	6	16)	
			Mine Waste-Gray Silty Clay W/Shale and Coal Frags.								Visual
		25.0-25.8	(58	15	10	9	8	NP	NP	14)	
			Mine Waste-Shale and Coal Frags. W/Soil								Visual
848+79	28'Lt	5.0-6.0	(33	25	15	12	15	NP	NP	22)	
			Mine Waste-Shale and Coal Frags. W/Soil								Visual
		10.0-11.0	(48	14	9	15	14	31	6	15)	
			Mine Waste-Gray Silty Clay W/Shale and Coal Frags.								Visual
		15.0-16.0	(49	12	8	10	21	PL = 21		13)	
			Mine Waste-Shale and Coal Frags. W/Soil								Visual
		20.0-25.0	(51	20	9	2	9	NP	NP	21)	
			Mine Waste-Shale and Coal Frags. W/Soil								Visual

SOIL PROFILE

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JEFFERSON COUNTY
JEF-43-0.42

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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Revised 7/21/66

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SOIL PROFILE

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1620 W. BROAD ST. COLUMBUS 23, OHIO

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JEFFERSON COUNTY
JEF-43-0.42

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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SOIL PROFILE

JEFFERSON COUNTY
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OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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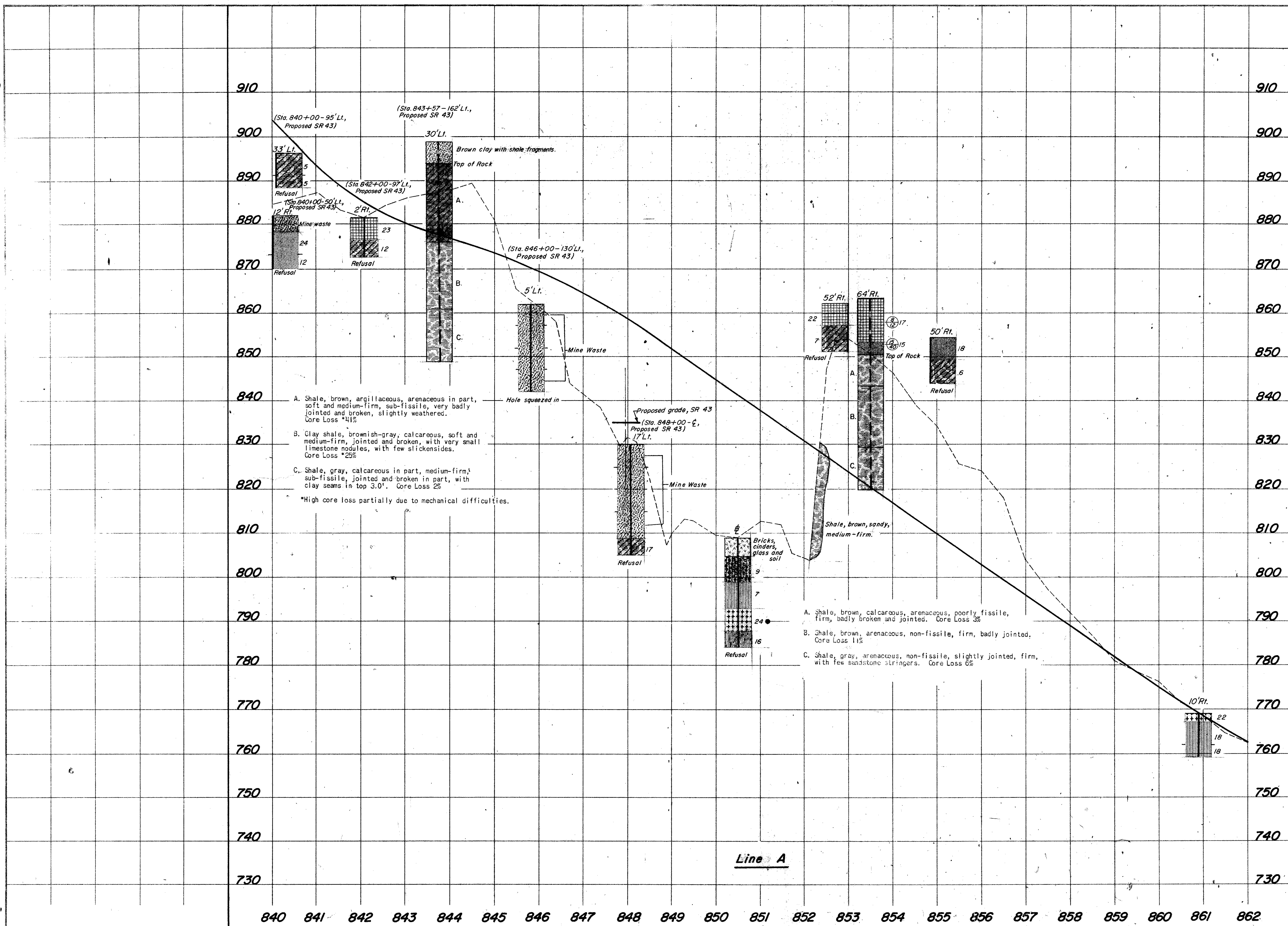

SOIL PROFILE

JEFFERSON COUNTY

JEF-43-0.42

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23. OHIO

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SOIL PROFILE
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JEFFERSON COUNTY
JEF-43-0.42
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23. OHIO
8/13
Sta. 837+00
(Sta. 837+06)
Top of Rock
A.
B.
STA. 837+06, 192'LT
A. Shale, gray, calcareous, non-fissile, medium-firm, badly jointed and broken. Core Loss 35%
B. Sandstone, gray, fine-grained, micaceous, thin-bedded, firm, slightly jointed, with few shale stringers. Core Loss 2%
(Sta. 837+06)
Top of Rock
A.
B.
C.
D.
E
* = Refusal
STA. 837+06, 82'LT.
A. Sandstone, brown, fine-grained, firm, medium-bedded, jointed. Core Loss 6%
B. Shale, gray, arenaceous, sub-fissile, medium-firm, jointed. Core Loss 3%
C. Shale, black, arenaceous, carbonaceous, fissile, medium-firm. Core Loss 2%
D. Coal, black, blocky, with carbonaceous shale seams. Core Loss 25%
E. Indurated Clay, gray, calcareous, medium-firm, jointed with slickensides. Core Loss 9%
(Sta. 837+75)
15
13
12
Refusal
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890
880
870
860
850
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120

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JEFFERSON COUNTY
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OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23. OHIO

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SOIL PROFILE

JEFFERSON COUNTY

JEF-43-0.42

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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SOIL PROFILE

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OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23. OHIO

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STA. 843+56: 362'LT.

Proposed SR 43

A. Sandstone, brown, fine-grained, thin-bedded, slightly argillaceous, micaceous in part, firm, slightly jointed, with few weathered shale seams, slightly weathered and friable in part. Core Loss 5%

B. Sandstone Conglomerate, gray, coarse-grained, with sub-angular shale pebbles, firm. No Core Loss.

C. Sandstone, brown and gray, medium-grained, medium-to thin-bedded, firm, slightly jointed, slightly friable and weathered in part. No Core Loss

STA. 843+56. 270'LT.

Proposed SR 43

A. Sandstone, brown, fine-to medium-grained, massive, firm, jointed and broken in part, slightly friable and weathered. Core Loss 10%

B. Shale, brownish-gray, soft to medium-firm, slightly arenaceous, fissile, jointed, moderately weathered in top 2.0'. Core Loss 2%

C. Shale, black, carbonaceous, with few limestone stringers, soft and medium-firm, jointed, slightly weathered. Core Loss 9%

D. Coal, black, blocky. Core Loss 10%

E. Shale, gray, slightly calcareous, non-fissile, medium-firm, jointed and very badly broken, with few thin clay seams. Core Loss 24%

F. Limestone, gray, hard. No Core Loss.

G. Shale, gray, argillaceous, medium-firm, fissile, with limy stringers, very badly broken and jointed in bottom 10.0'. Core Loss 14%

H. Indurated Clay, gray, very soft and crumbly, very badly broken. Core Loss 47%

STA. 843+57 162'LT.

Proposed SR 43

A. Shale, brown, argillaceous, arenaceous in part, soft and medium-firm, sub-fissile, very badly jointed and broken, slightly weathered. Core Loss *41%

B. Clay shale, brownish-gray, calcareous, soft and medium-firm, jointed and broken, with very small limestone nodules, with few slickensides. Core Loss *25%

C. Shale, gray, calcareous in part, medium-firm, sub-fissile, jointed and broken in part, with clay seams in top 3.0'. Core Loss 2%

*High core loss partially due to mechanical difficulties.

SOIL PROFILE

JEFFERSON COUNTY

JEF-43-0.42

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23. OHIO

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JEFFERSON COUNTY
JEF - 43 - 0.42

GEOLOGY AND OBSERVATIONS OF THE SITE

The structure site is located in the unglaciated Allegheny Plateau Region, on a steeply sloping valley wall of the Ohio River, in an area where shallow to moderately deep soil cover overlies shale bedrock of the Conemaugh formation, Pennsylvanian age.

EXPLORATION

The exploration consisted of five drive sample-core borings, made between May 4 and 11, 1966.

INVESTIGATIONAL FINDINGS

The borings disclosed that irregular bedrock surface encountered at elevations 1003 and 993 feet, is overlain by 5 to 15 feet of loose and dense silts and stiff and very stiff clays. Borings were terminated 10 and 15 feet below bedrock surface, elevations 991 and 980 feet.

If it is the intention to found the retaining walls on bedrock, it is considered advisable that the open excavations be inspected in the field, in order to insure that the excavations have been extended to rock throughout the entire founding area.

Unconfined compression tests on similar shale and sandstone bedrock indicates a crushing strength on the order of 100 and 150 tons per square foot, respectively.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock

- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
  X = Number of Blows for First 6 inches.
  Y = Number of Blows for Second 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W — Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system-and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

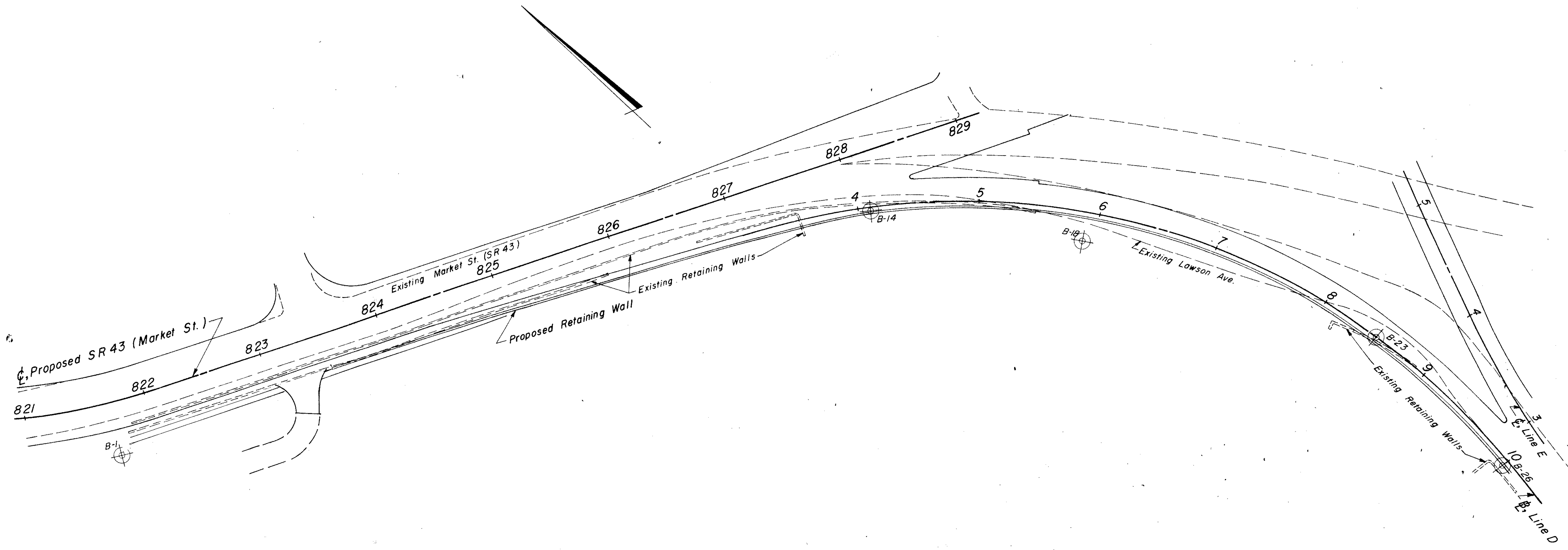
Boulders	8"	Cobbles	3"	Gravel	2.0mm (No. 10 sieve)	Coarse Sand	0.42mm (No. 40 sieve)	Fine Sand	0.074mm (No. 200 sieve)	Silt	0.005mm	Clay

NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF - 43 -
SR 43 AND LINE "D" RETAINING WALL
SEC. JEF - 43 - 0.42

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	5/27/66



SCALE: HOR. = 1" = 50'
VERT. = 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF - 43 -
SR 43 AND LINE "D" RETAINING WALL
SEC. JEF - 43 - 0.42

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
R.L.D.	L.N.L.	R.D.R.	5/27/66

LOG OF BORING

Date Started 5-10-66
Date Completed 5-11-66
Boring No. B-1
Sampler Type SS Dia. 1 3/8"
Casing: Length 14' Dia. 3 1/2"
Station & Offset 821+69, 45' Rt. (Retaining Wall)
Water Elev.
Surface Elev. 1016.2'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1016.2	0														
	2														
	4														
1011.2	6	3/5			Brown Sandy Clay	1	2	20	18	26	34	39	12	24	A-6a
	8														
1006.2	10														
	12	18/42			Brown Sandy Silt	2	7	21	17	30	25	30	8	13	A-4a
1003.2	14		1.9	3.1	TOP OF ROCK										
	16		1.5	0.5	Shale, brown, slightly argillaceous, medium-firm, very badly broken and jointed, slightly weathered, with few clay seams. Core Loss 23%.										
	18		2.3	0.7											
	20														
	22		2.0	0.5											
991.2	24		1.6	0.9	BOTTOM OF BORING										

LOG OF BORING

Date Started 5-10-66
Date Completed 5-10-66
Boring No. B-14
Sampler Type SS Dia. 1 3/8"
Casing: Length Dia.
Station & Offset 4+10, 3' Rt. (Retaining Wall)
Water Elev.
Surface Elev. 1000.7'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1000.7	0														
	2														
	4														
995.7	6	50/*			Brown Sandy Silt	1	0	19	21	36	24	27	7	17	A-4a
993.1	8		2.4	2.6	TOP OF ROCK										
					Shale, brown, very arenaceous, slightly calcareous, medium-firm, very badly broken and jointed, slightly weathered. No Core Loss.										
990.7	10														
989.7					Sandstone, gray, calcareous, fine-grained, very hard, jointed. Core Loss 20%.										
	12														
	14		4.5	0.5	Shale, brown, arenaceous, calcareous in part, fissile, very badly broken and jointed, with many thin clay seams, slightly weathered. Core Loss 3%.										
	16														
	18		5.0	0.0											
980.7	20				BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 5-5-66
Date Completed 5-6-66
Boring No. B-18
Sampler Type SS Dia. 1 3/8"
Casing: Length 10' Dia. 3 1/2"
Station & Offset 5+90, 24' Rt. (Retaining Wall)
Water Elev.
Surface Elev. 1002.0'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1002.0	0														
	2				Brown Sandy Clay.										
	4				TOP OF ROCK										
997.0	6	35* (0.6)													
	8		3.6	0.8	Sandstone, brown, very fine-grained and very argillaceous, calcareous in part, badly jointed and broken, medium-firm, moderately to slightly weathered with clay seams. Core Loss 10%										
	10														
	12														
	14		5.0	5.0											
	16														
	18		4.4	0.6											
982.0	20				BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 5-5-66
Date Completed 5-5-66
Boring No. B-23
Sampler Type SS Dia. 1 3/8"
Casing: Length 10' Dia. 3 1/2"
Station & Offset 8+50, CL (Retaining Wall)
Water Elev.
Surface Elev. 1008.8'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1008.8	0														
	2														
	4														
1003.8	6	50* (0.6)			Brown Sandy Silt	1	14	11	12	33	30	31	9	11	A-4a
	8														
998.8	10				TOP OF ROCK										
	12	50* (0.3)													
	14		3.9	0.8	Sandstone, brown, very fine-grained, very argillaceous, calcareous in part, medium-firm, badly jointed and broken, with few thin clay seams, moderately to slightly weathered. Core Loss 8%										
	16														
	18		5.0	0.0											
988.8	20				BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 5-4-66
Date Completed 5-5-66
Boring No. B-26
Sampler Type SS Dia. 1 3/8"
Casing: Length 10' Dia. 3 1/2"
Station & Offset 10+00, 6' Rt. (Retaining Wall)
Water Elev.
Surface Elev. 1010.3'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1010.3	0														
	2														
	4														
1005.3	6	3/4			Brown Sandy Silt	1	0	6	28	29	37	27	8	25	A-4a
	8														
1000.3	10	4/7			Brown Silty Clay	2	0	3	13	32	52	40	17	29	A-6b
	12														
	14														
995.3	16	25/32			Brown Clayey Silt	3	0	1	6	47	46	32	8	14	A-4a
993.3					TOP OF ROCK										
	18		2.3	1.7	Clay shale, brown, soft and crumbly, jointed and very badly broken, extremely weathered with clay seams. Core Loss 33%										
	20														
989.3	22														
	24		4.9	0.1	Sandstone, brown, very fine-grained and very argillaceous, calcareous in part, medium-firm, badly jointed and broken, with few thin clay seams, moderately to slightly weathered. Core Loss 2%										
	26														
	28		4.8	0.2											
980.3	30				BOTTOM OF BORING										

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF-43-
SR 43 AND LINE "D" RETAINING WALL
SEC. JEF-43-0.42

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S.A.J.	L.N.L.	R.D.R.	5/27/66

GEOLOGY OF THE SITE

The structure site is located in the unglaciated Allegheny Plateau Region, on a steep valley wall of the Ohio River, in an area where soil cover overlies sloping shale and sandstone bedrock of the Conemaugh formation, Pennsylvanian age.

EXPLORATION

The exploration consisted of eight drive rod penetration tests, made on May 3 and 4, 1966. Also included in this report are the logs of borings for six borings made in conjunction with the roadway foundation investigation.

INVESTIGATIONAL FINDINGS

Borings disclosed that sloping bedrock surface, encountered at 10-foot depth, elevation 1011 feet, in the rear portion of the structure site, and at 23-foot depth, elevation 939 feet in the forward portion of the structure site, is overlain by dense and very dense silts and stiff clays, with boulders immediately overlying bedrock surface in the forward area. Borings were terminated 11 and 27 feet below bedrock surface, elevations 996 to 912 feet.

Rod soundings encountered erratic rapid increase in penetration resistance with increase in depth and were terminated upon encounter with rather abrupt refusal to penetration at 8 to 39-foot depths, elevations 1010 to 927 feet, considered to be on bedrock surface at the rear abutment and pier locations, and below bedrock surface in the forward abutment area, as disclosed by the borings.

No free water was observed in the rod sounding holes.

If it is the intention to found rear abutment and pier substructure units on bedrock, it is considered advisable that the open excavations be inspected in the field in order to insure that the excavations have been extended to rock throughout the entire founding area.

Unconfined compression tests on similar Sandstone bedrock indicates a crushing strength on the order of 150 tons per square foot.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
  X = Number of Blows for First 6 inches.
  Y = Number of Blows for Second 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W— Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Boulders and /or Cobbles
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140-pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system-and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders | 8" | Cobbles | 3" | Gravel | 2.0mm (No. 10 sieve) | Coarse Sand | 0.42mm (No. 40 sieve) | Fine Sand | 0.074mm (No. 200 sieve) | Silt | 0.005mm | Clay

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF - 43 - 0111
SR 43 UNDER LAWSON AVE.
SEC. JEF - 43 - 0.42

CHECKED BY	REVIEWED BY	DATE
R.H.P.	R.D.R.	5/18/66

SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS TESTING LABORATORY 1620 WEST BROAD STREET, COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. JEF - 43 - 0111 SR 43 UNDER LAWSON AVE. SEC. JEF - 43 - 0.42			
PLAN AND PROFILE			
DRAWN BY R.L.D.	CHECKED BY R.H.P.	REVIEWED BY R.D.R.	DATE 5/18/66

TE - 122
600 - 11 - 64

19/27

JEF - 43 - 0.42

3/4

From JEF - 43 - 0.42

LOG OF BORING

Date Started 7-14-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev.
Date Completed 7-14-65 — Casing: Length — Dia.
Boring No. B-6 — Station & Offset 9+04, 1.5' Rt. Ramp E — Surface Elev. 1020.8'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1020.8	0														
1015.8	6	8/9			Brown Silty Clay	1	0	1	4	42	53	44	19	11	A-7-6
1010.8															
1010.5	10	50* (0.3)			Brown and Gray Silty Clay and Shale Fragments		V	I		S	U	A		L	
					TOP OF ROCK										
1005.8	14		3.5	1.2	Shale, brownish-gray, arenaceous, calcareous, non-fissile, very badly broken and weathered in part, jointed. Core Loss 13%										
1000.8	20		4.7	0.3											
995.8	24		4.6	0.4	BOTTOM OF BORING										

*Refusal

From JEF - 43 - 0.42

LOG OF BORING

Date Started 7-14-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev.
Date Completed 7-14-65 — Casing: Length — Dia.
Boring No. B-7 — Station & Offset 8+07, 6' Rt. (Ramp E) — Surface Elev. 1007.8'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1007.8	0														
1002.8	6	6/9			Greenish-Brown Clayey Silt	1	0	3	12	57	28	28	8	10	A-4b
997.8	10														
996.8		50* (0.6)			Greenish-Brown Sandy Gravelly Silt	2	29	6	17	31	17	27	7	24	A-4a
					TOP OF ROCK										
992.8	14		3.3	0.7	Shale, brown, very arenaceous, calcareous in part, poorly fissile, firm, badly jointed and broken, slightly weathered. Core Loss 4%										
987.8	18		5.0	0.0											
982.8	24		5.0	0.0											
977.8	30		5.0	0.0	Sandstone, grayish-brown, argillaceous, fine-grained, firm, slightly jointed. No Core Loss.										

*Refusal

BOTTOM OF BORING

From JEF - 43- 0.42

LOG OF BORING

Date Started 7-13-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev.
Date Completed 7-13-65 — Casing: Length — Dia.
Boring No. B-8 — Station & Offset 7+38, 5' Rt. (Ramp E.) — Surface Elev. 996.6'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
996.6	0														
991.6	6	13/20			Brown Sandy Clay	1	0	4	17	46	33	26	11	14	A-6a
986.6	10	6/4			Brown Silty Clay and Sandy Shale Fragments		V	I	S	U		A	L		
981.6	16	50* (0.4)			TOP OF ROCK										
976.6	20		4.2	0.4	Sandstone, brown, fine-grained, micaceous, firm, badly jointed and broken, slightly weathered and friable. Core Loss 4%.										
971.6	24		4.9	0.1											
966.6	28		4.5	0.5											
961.6	34		5.0	0.0											
956.6	40		5.0	0.0	BOTTOM OF BORING										

*Refusal

From JEF - 43 - 0.42

LOG OF BORING

Date Started 7-15-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev.
Date Completed 7-15-65 — Casing: Length 3' — Dia. 3 1/2"
Boring No. B-9 — Station & Offset 6+68, 3' Rt. (Ramp E.) — Surface Elev. 968.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
968.5	0				Brown silty sand.										
965.5					TOP OF ROCK										
963.5	4		1.6	0.4											
	8		1.5	3.5	Sandstone, brown, fine-grained, argillaceous, jointed and badly broken, firm, slightly weathered and friable. Core Loss 26%										
958.5	10														
959.5	14		4.5	0.5											
948.5	20		5.0	0.0	BOTTOM OF BORING										

From JEF - 43 - 0.42

LOG OF BORING

Date Started 7-13-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev.
Date Completed 7-14-65 — Casing: Length 25' — Dia. 3 1/2"
Boring No. B-10 — Station & Offset 5+65, 1.5' Rt. (Ramp E.) — Surface Elev. 961.6'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
961.6	0														
956.6	6	7/11			Brown Silty Sand and Slag with Brickbats/ (Fill Material)	1	56	10	12	12	10	26	10	24	VISUAL
951.6	10														
	12	8/31			Brown Silty Sandy Gravel (Sandstone boulders, cobbles and fragments.)	2	69	5	12	8	6	22	4	5	A-1a
	14		0.7	4.3											
946.6	16	15/16			Brown Silty Sandy Gravel	3	49	3	20	18	10	20	3	10	A-2-4
	18		0.7	4.3											
941.6	20	20/15			Brown Silty Sandy Gravel	4	67	2	16	9	6	NP	NP	14	A-1-b
938.6	24		1.1	3.9	TOP OF ROCK										
936.6	26														
	28		3.6	1.4	Sandstone, brown, fine-grained, firm, jointed and broken, slightly weathered and friable. Core Loss 43%										
931.6	30														
	34		0.6	4.4	Shale, gray, very arenaceous, calcareous in top 6.0' medium-firm, poorly fissile, jointed and badly broken, with clay seams. Core Loss 40% High core loss partially due to mechanical difficulties.										
926.6	38		2.3	2.7											
921.6	40														
	42		5.0	0.0											
916.6	46														
911.6	50		5.0	0.0	Shale, black, carbonaceous, arenaceous, fissile, medium-firm, broken, with many sandstone stringers, with few coal stringers in bottom 1.0' No Core Loss										

BOTTOM OF BORING

From JEF - 43 - 0.42

LOG OF BORING

Date Started 7-13-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev.
Date Completed 7-13-65 — Casing: Length — Dia.
Boring No. B-11 — Station & Offset 4+77, 3' Lt. (Ramp E.) — Surface Elev. 957.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
957.5	0				Brown Silty Clay (Driller's Description)										
953.5	4		0.7	0.3											
951.0	6				Sandstone, cobbles and gravel.										
					TOP OF ROCK										
947.5	10		4.1	0.9	Sandstone, gray, fine-grained, micaceous, firm, slightly weathered and friable. No Core Loss.										
942.5	14		4.6	0.4	Shale, gray, arenaceous, poorly fissile, with sandstone seams, medium-firm, jointed and broken. Core Loss 12%										
939.0	18		3.5	0.0	Sandstone, gray, fine-grained, micaceous, firm. No Core Loss.										

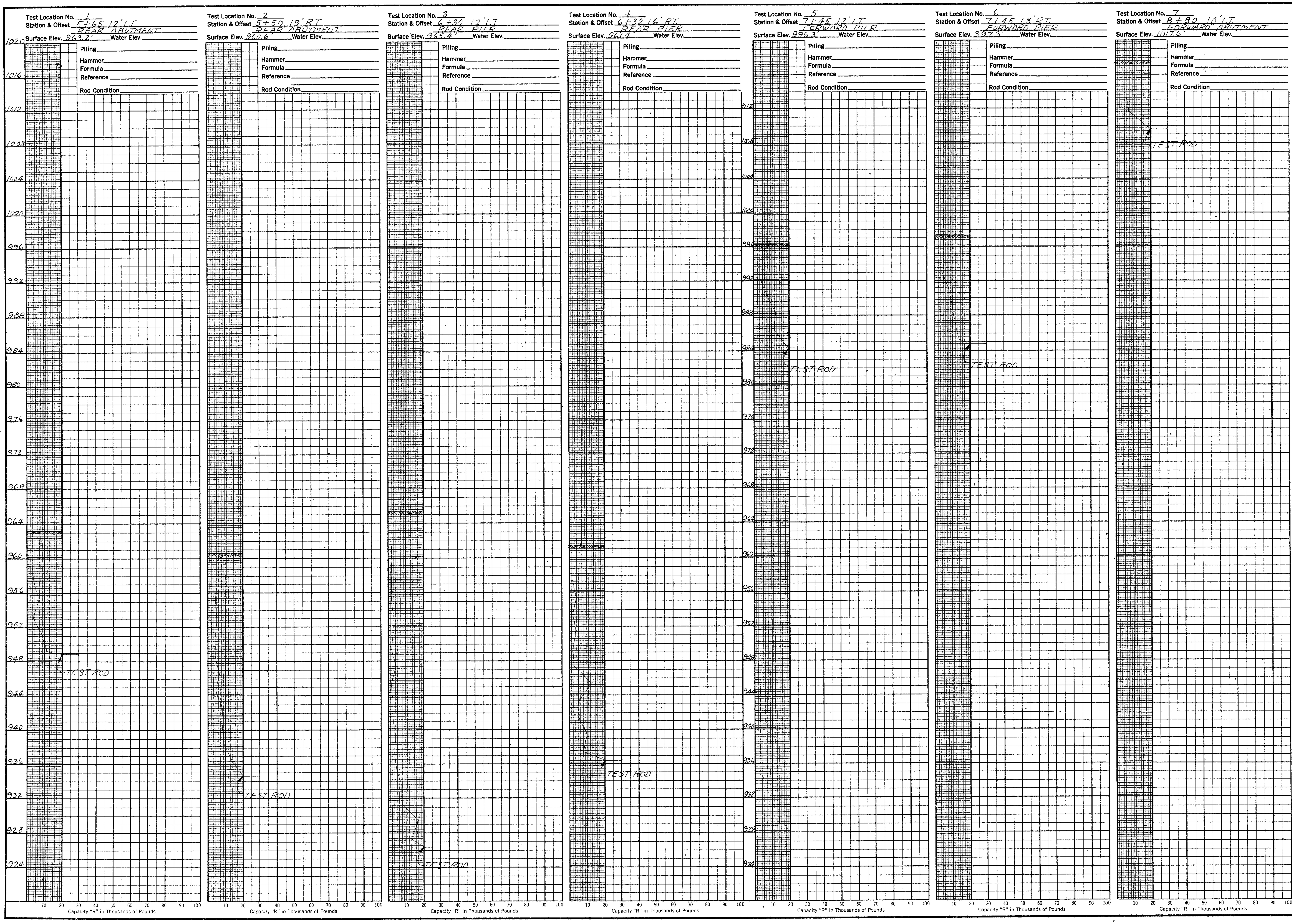
BOTTOM OF BORING

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF - 43 - 0111
SR 43 UNDER LAWSON AVE.
SEC. JEF - 43 - 0.42

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S.A.J.	R.H.P.	R.D.R.	5/18/66



OHIO STATE HIGHWAY TESTING LABORATORY

1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. JEF-43-0111

SR 43 UNDER LAWSON AVE.

SEC. JEF-43-0.42

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	R.H.P.	R.D.R.	5/18/66

GEOLOGY OF THE SITE

The structure site is located in the unglaciated Allegheny Plateau Region, on a steeply sloping valley wall of the Ohio River in an area where moderately deep soil cover overlies shale bedrock of the Conemaugh formation, Pennsylvanian age.

EXPLORATION

The exploration consisted of two drive sample-core borings and five drive rod penetration tests, made between April 28 and May 4, 1966.

INVESTIGATIONAL FINDINGS

The borings disclosed that sloping bedrock surface is overlain by a t-surface loose to dense fill material comprised of sands, silts, gravels, cinders, boulders, slag, and coal fragments to a depth of 28 feet, in the rear portion of the structure site and 25-foot depth in the forward portion of the structure site.

Dense and very dense gravels and sands immediately overlie sloping bedrock surface encountered at 30-foot depth, elevation 813 feet, in the rear portion of the structure site, and 50-foot depth, elevation 773 feet, in the forward portion of the structure site. Borings were terminated 10 feet below bedrock surface, elevations 802 and 763 feet.

Rod soundings encountered erratic, gradual increase in penetration resistance with increase in depth and were terminated upon abrupt refusal to penetration at 24 and 41-foot depths, elevations 820 and 775 feet, considered to be on bedrock surface at the rear abutment and pier locations, and slightly above bedrock surface at the center and forward piers and forward abutment, as revealed by the borings.

No free water was encountered in any of the rod sounding holes.

LEGEND

Symbol	Description
⊕	Auger Boring Location - Plan View.
⊕	Press and / or Drive Sample and / or Core Boring Location - Plan View.
●	Drive Rod Penetration Resistance Sounding Location - Plan View.
	Capped Pile
	Footing
	Footing on Pile
TR	Top of Rock
H	Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
X/Y	Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test. X = Number of Blows for First 6 inches. Y = Number of Blows for Second 6 inches.
	Drive Rod Penetration Resistance Sounding Log - Profile
	Casing
	Resistance "R" $<$ 10,000 lbs.
	Resistance "R" $>$ 10,000 lbs.
Z	Indicates Final Measurement of Penetration, in Inches.
W	Indicates Free Water Elevation.
▼	Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

Coal	Weathered Sandstone
Weathered Indurated Clay	Sandstone
Indurated Clay	Leached Dolomite
Weathered Shale	Dolomite
Shale	Leached Limestone
	Limestone

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	8"	Cobbles	3"	Gravel	2.0mm (No. 10 sieve)	Coarse Sand	0.42mm (No. 40 sieve)	Fine Sand	0.074mm (No. 200 sieve)	Silt	0.005mm	Clay

NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. JEF-43-0063
UNDER RAMP "A"
SEC. JEF-43-0.42

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	5/18/66

TE - 122
600 - 11 - 64

JEF-43-0.42

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. JEF-43-0063
UNDER RAMP "A"
SEC. JEF-43-0.42

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
R.L.F.	L.N.L.	R.D.R.	5/18/66

LOG OF BORING

Date Started 5-3-66 | Date Completed 5-4-66 | Boring No. B-3
Sampler Type SS | Dia. 1 3/8" | Casing: Length 30' | Dia. 3 1/2" | Station & Offset 847+05, 12' Rt.(Rear Pier)
Water Elev. 817.0' | Surface Elev. 843.0'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
843.0	0														
838.0	6	3/4			Gray Silty Sand and Coal Fragments	1	64	16	7	6	7	29	3	14	
833.0	10	2/4			Gray Silty Sand and Coal Fragments	2	53	14	9	11	13	PL=	23	17	
830.5	14	3/4			Gray Silty Sand and Coal Fragments	3	53	19	8	8	14	NP	NP	16	
828.0	16	2/3			Gray Silty Sand and Coal Fragments	4	58	16	7	8	11	NP	NP	20	
825.5	18	3/4			Gray Silty Sand and Coal and Stone Fragments	5	50	16	7	14	13	PL=	25	14	
823.0	20	3/3			Brown and Gray Sand and Coal and Stone Fragments	6	58	17	21	2	2	33	9	17	A-2-4
820.5	24	4/6			Gray Sandy Silt with Coal Fragments	7	28	8	8	23	33	35	9	23	A-4a
818.0	26	3/4			Gray Clay and Coal and Stone Fragments	8	63	9	5	10	13	35	11	20	A-2-6
815.5 / 813.0	28	2/3			Gray Silty Sand and Coal Fragments	9	54	10	6	15	15	33	7	17	
812.8	30	50*(0.2)			TOP OF ROCK Brownish-Gray Silty Sand and Shale Fragments	10	49	13	5	18	15	19	10	14	
	32–34		4.5	0.3	Shale, gray, slightly arenaceous, fissile, badly jointed and broken, with sandstone seams and stringers. Core Loss 3%										
	36–38		5.0	0.0											
802.0	40		1.0	0.0	BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 4-28-66 | Date Completed 4-28-66 | Boring No. B-8
Sampler Type SS | Dia. 1 3/8" | Casing: Length 43' | Dia. 3 1/2" | Station & Offset 848+52, 8' Lt. (Forward Pier)
Water Elev. ____ | Surface Elev. 823.4'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
823.4	0														
820.9	4	4/3			Brown Sandy Gravelly Clay with Slag	1	32	17	11	14	26	PL=	26	20	
818.4	6	3/4			Gray Silty Gravel with Slag and Boulders	2	64	10	5	4	17	NP	NP	16	
815.9	8	9/21			Gray Silty Sandy Gravel with Slag and Boulders	3	54	14	14	6	12	NP	NP	11	
813.4	10	5/8			Gray Clayey Sandy Gravel with Slag and Boulders	4	52	10	7	11	20	39	13	19	A-2-6
810.9	14	6/8			Gray Silty Sandy Gravel with Slag and Cinders	5	47	14	9	12	18	30	8	28	A-2-4
808.4	16	5/13			Brown Silty Gravelly Sand with Brickbats	6	39	26	20	7	8	NP	NP	15	
805.9	18	15/8			Brown Silty Sandy Gravel with Boulders	7	53	19	11	7	10	NP	NP	28	A-1-b
803.4	20	5/10			Brown and Gray Silty Sandy Gravel with Coal Fragments	8	44	7	21	11	17	25	8	17	A-2-4
798.4	26	12/13			Brown Silty Sandy Gravel	9	44	8	26	7	15	NP	NP	19	A-1-b
793.4	30	6/11			Brown Silty Sandy Gravel	10	71	4	15	2	8	NP	NP	14	A-1-a
788.4	36	10/15			Brown Silty Sandy Gravel	11	59	6	16	9	10	22	5	13	A-1-b
783.4	40	21/35			Brown Clayey Silt	12	0	4	11	49	36	31	9	14	A-4a
778.4	46	50* (0.4)			Brown Silty Sandy Gravel	13	45	15	8	10	22	PL=	22	11	
	48	40/86			Brown Gravelly Clay	14	19	3	8	37	33	39	14	11	
773.4	50	50*(0.4)			TOP OF ROCK Brownish-Gray Silt and Clay	15	0	4	5	44	47	38	13	10	
	52		1.0	1.5	Shale, gray, argillaceous, medium-firm, fissile, jointed with slicken-sides, broken in part. Core Loss 20%										
	54		1.6	0.9											
	56–58		5.0	0.0											
763.4	60				BOTTOM OF BORING										

*Refusal

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF - 43 - 0063
UNDER RAMP "A"
SEC. JEF - 43 - 0.42

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S.A.J.	L.N.L.	R.D.R.	5/18/66

Test Location No.	Station & Offset	Surface Elev.	Water Elev.	Piling	Hammer	Formula	Reference	Rod Condition
1	846+42 20' RT. REAR ABUTMENT	844.9'	DRY-Hole open					GOOD
4	847+33 7' LT. REAR PIER	839.2'	DRY-Hole Closed at El. 819.2'					GOOD
5	847+81 19 RT. CENTER PIER	829.6'	DRY-Hole Closed at El. 817.6'					
8	848+52 7' LT. FORWARD PIER	825.2'	DRY-Hole Closed at El. 805.2'					GOOD
9	848+78 20' RT. FORWARD ABUTMENT	811.7'	DRY-Hole closed at El. 793.7'					GOOD

24. / 27

4 / 4

JEF-43-0.42

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF-43-0063
UNDER RAMP "A"
SEC. JEF-43-0.42

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	5/18/66

GEOLOGY AND OBSERVATIONS OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE UNGLACIATED ALLEGHENY PLATEAU REGION, ON A STEEPLY SLOPING VALLEY WALL OF THE OHIO RIVER, IN AN AREA WHERE ABSENT TO SHALLOW SOIL COVER OVERLIES SHALE BEDROCK OF THE CONEMAUGH FORMATION, PENNSYLVANIAN AGE. A STRATIGRAPHIC ROCK SECTION WAS MEASURED ALONG THE SLOPE AT APPROXIMATELY STATION 852+00.

EXPLORATION

THE EXCAVATION CONSISTED OF ONE DRIVE SAMPLE-CORE BORING, MADE BETWEEN JULY 26 AND 29, 1967, AND TWO DRIVE ROD PENETRATION TESTS, MADE ON SEPTEMBER 7 AND 8, 1967. ALSO INCLUDED IN THIS REPORT ARE THE LOGS OF TWO DRIVE SAMPLE-CORE BORINGS, TWO MECHANICALLY DRIVEN ROD PENETRATION TESTS, AND ONE HAND DRIVEN PROBE, MADE BETWEEN MAY 4 AND 6, 1966, FOR THE ADJACENT RETAINING WALL STRUCTURE.

INVESTIGATIONAL FINDINGS

THE BORINGS DISCLOSED THAT SLOPING BEDROCK SURFACE IS OVERLAIN BY AT-SURFACE FILL MATERIAL COMPRISED OF SAND AND CONCRETE, AND LOOSE TO DENSE SANDY GRAVELLY SILTS, TO A DEPTH OF 20-FEET, ELEVATION 792 FEET, IN THE REAR PORTION OF THE STRUCTURE SITE. BEDROCK SURFACE OCCURS AT GROUND SURFACE IN THE FORWARD PORTION OF THE STRUCTURE SITE. THE BORINGS WERE TERMINATED 3 TO 15 FEET BELOW BEDROCK SURFACE, ELEVATIONS 783 TO 754 FEET.

THE ROD SOUNDINGS ENCOUNTERED ERRATIC, GRADUAL INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED UPON ABRUPT REFUSAL OR NEAR-REFUSAL TO PENETRATION AT 10 TO 31-FOOT DEPTHS, ELEVATIONS 801 TO 773 FEET, CONSIDERED TO BE ON BEDROCK SURFACE, AS REVEALED BY THE BORINGS.

NO FREE WATER WAS ENCOUNTERED IN ANY OF THE ROD SOUNDING HOLES.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
  X = Number of Blows for First 6 inches.
  Y = Number of Blows for Second 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W — Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Boulders
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with post performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	8"	Cobbles	3"	Gravel	2.0mm (No. 10 sieve)	Coarse Sand	0.42mm (No. 40 sieve)	Fine Sand	0.074mm (No. 200 sieve)	Silt	0.005mm	Clay

LOG OF BORING

Date Started 7-26-67 Sampler Type SS Dia. 1 3/8" Water Elev. ____
Date Completed 7-27-67 Casing: Length 10' Dia. 3 1/2"
Boring No. B-1 Station & Offset 851+09, 20' Rt. (Rear Abutment) Surface Elev. 811.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
811.5	0														
	2				Concrete and sand fill (Driller's Description)										
806.5	6	7/9			Brown Clayey Silt	1	0	3	8	50	39	30	7	13	A-4b
801.5	10	6/7			Brown Sandy Gravelly Silt	2	32	4	12	28	24	29	9	16	A-4a
799.0	14	6/9			Brown Sandy Silt	3	0	5	21	48	26	26	7	16	A-4a
796.5	16	7/12			Brown Sandy Gravelly Silt	4	38	6	11	26	19	28	7	14	A-4a
794.0	18	8/12			Brown Sandy Gravelly Silt TOP OF WEATHERED ROCK	5	36	9	7	27	21	29	9	12	A-4a
791.5 / 790.8	20	50* (0.7)			Brown Extremely Weathered Shale — TOP OF ROCK	6	32	7	7	29	25	30	8	12	N.C.
	22–26		4.3	0.0	Shale, brownish-gray, medium-firm, slightly weathered, carbonaceous, with arenaceous intervals and clay seams, very badly broken and jointed. Core Loss 3%.										
783.5 / 783.4	28		4.7	0.3	**										
781.5	30				Underclay, light-gray, soft and crumbly. Core Loss 5%.										
780.0	32				Shale, gray, medium-firm, broken. Core Loss 13%.										
	34		4.0	1.0	Clay bedrock, brownish-gray, soft and crumbly. Core Loss 23%.										
776.5					BOTTOM OF BORING										

*Refusal
**Coal, black, broken, bituminous, blockey. No Core Loss.

LOG OF BORING

Date Started 5-5-66 Sampler Type SS Dia. 1 3/8" Water Elev. ____
Date Completed 5-6-66 Casing: Length 15' Dia. 3 1/2"
Boring No. R B-1 Station & Offset 851+13, 95' Lt. (Retaining Wall) Surface Elev. 798.7'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
798.7	0														
793.7	6	10/10			Brown Silt with Brickbats, Stone Fragments and Fill Material	1	43	3	3	37	14	NP	NP	23	-
788.7	10	6/7			Brown Silty Gravelly Sand with Boulders	2	38	14	27	11	10	NP	NP	14	A-1-b
783.7	16	8/9			Brown Clayey Silt	3	0	1	3	60	36	30	9	24	A-4b
778.7	20	4/5			Brown Clayey Silt	4	0	4	7	50	39	27	8	21	A-4b
773.7	26	4/7			Brown Sandy Gravelly Silt	5	18	10	7	38	27	30	9	15	A-4a
768.7	30				No Sample Recovered - Boulders (Driller's Des.)		V		I		S	U	A	L	-
763.7	36	6/11			Brown Silty Gravelly Sand	6	22	10	35	16	17	22	5	16	A-2-4
758.7	40	[illegible]			TOP OF ROCK										
754.7	42		1.8	1.7	Shale, brown, argillaceous, poorly fissile, firm, very badly jointed and broken, slightly weathered. Core Loss 49%										
754.[illegible]	44	100*([illegible])			*Refusal — BOTTOM OF BORING										

LOG OF BORING

Date Started 5-5-66 Sampler Type SS Dia. 1 3/8" Water Elev. ____
Date Completed 5-5-66 Casing: Length ____ Dia. ____
Boring No. R B-3 Station & Offset 851+94, 31' Lt. (Retaining Wall) Surface Elev 803.1'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
803.1	0														
798.1 / 797.1	6	33/50			Gray Sandy Silt — TOP OF ROCK	1	7	10	8	43	32	32	10	12	A-4-a
	8–10		1.8	2.2	Shale, gray, argillaceous, firm, badly jointed and very badly broken. Core Loss 45%										
	12–14		3.9	1.1											
	16–18		2.0	3.0											
783.1	20				BOTTOM OF BORING										

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF-43-
LINE 'A' OVER LINE 'B'
SEC. JEF-43-0.42

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	9/15/67

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

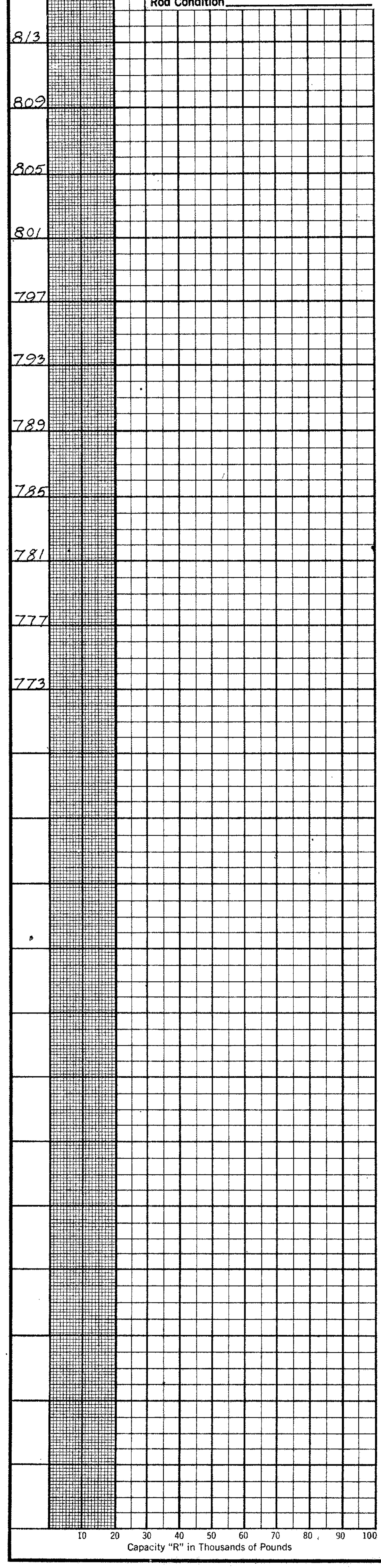
STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF - 43 -
LINE 'A' OVER LINE 'B'
SEC. JEF - 43 - 0.42

PLAN AND PROFILE

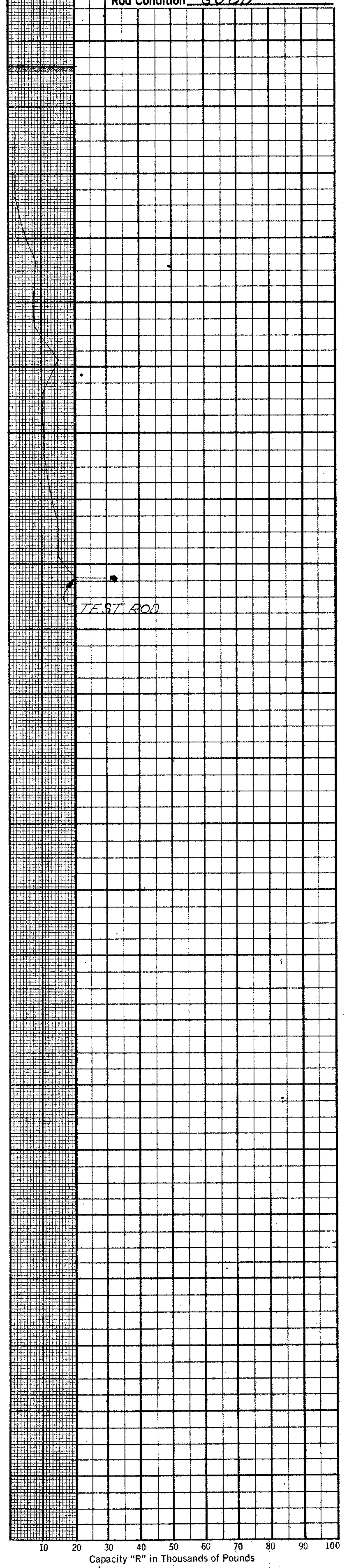
DRAWN BY	CHECKED BY	REVIEWED BY	DATE
L.N.L.	L. N. L.	R. D. R.	9/15/67

TC-114
1000-1-64

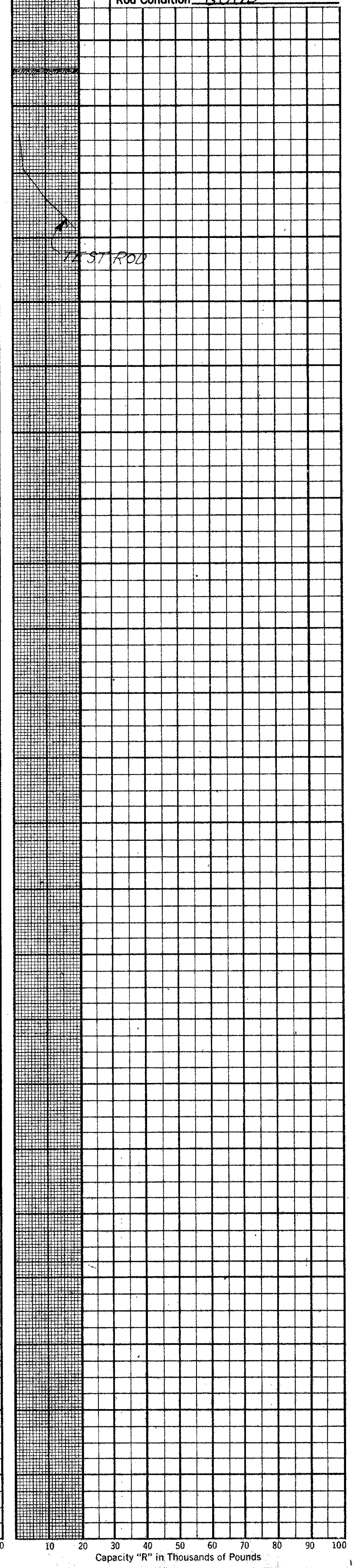
Test Location No.
Station & Offset
Surface Elev. Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition



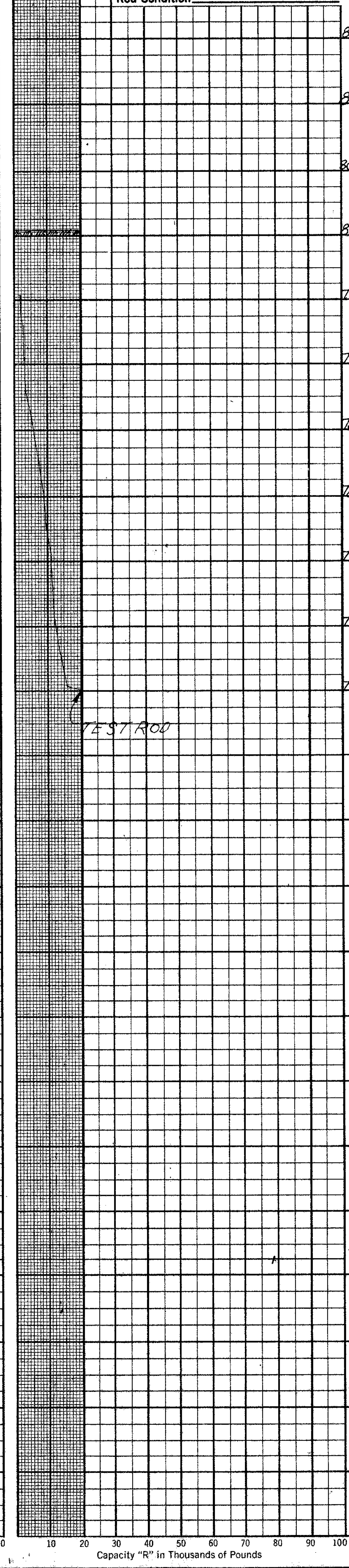
Test Location No. 2
Station & Offset 851+35, 8' LT.
REAR ABUTMENT
Surface Elev. 811.5' Water Elev. DRY-Hole Closed @El. 795.5'
Piling
Hammer
Formula
Reference
Rod Condition GOOD



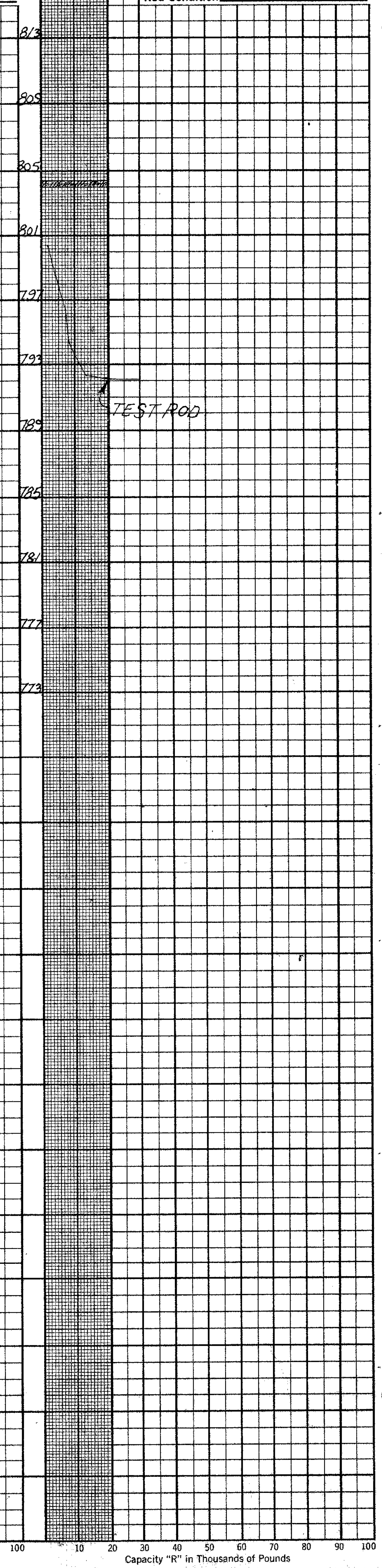
Test Location No. 3
Station & Offset 851+56, 20' RT.
REAR PIER
Surface Elev. 811.3' Water Elev. DRY-Hole Open
Piling
Hammer
Formula
Reference
Rod Condition GOOD



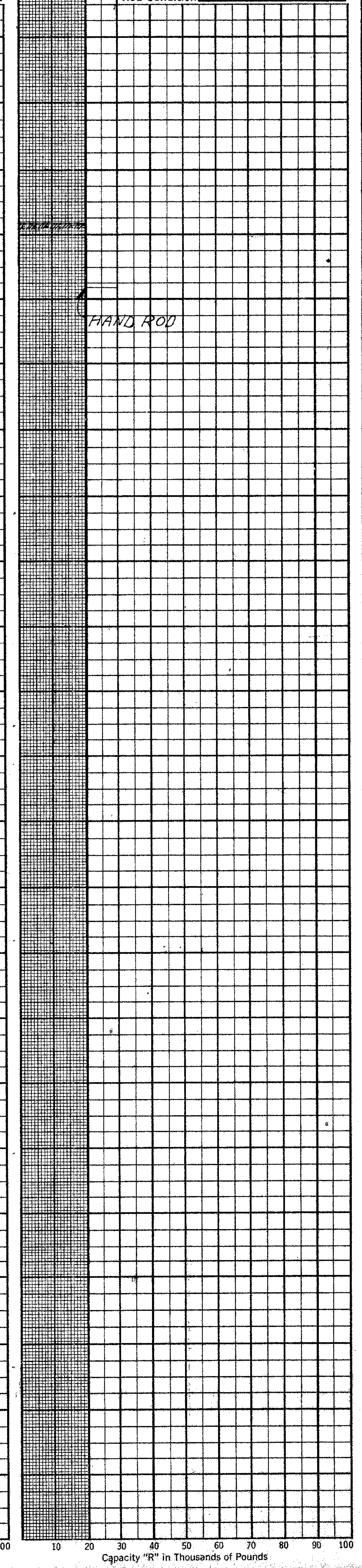
Test Location No. R2
Station & Offset 851+53, 66' LT.
RETAINING WALL
Surface Elev. 801.3' Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition



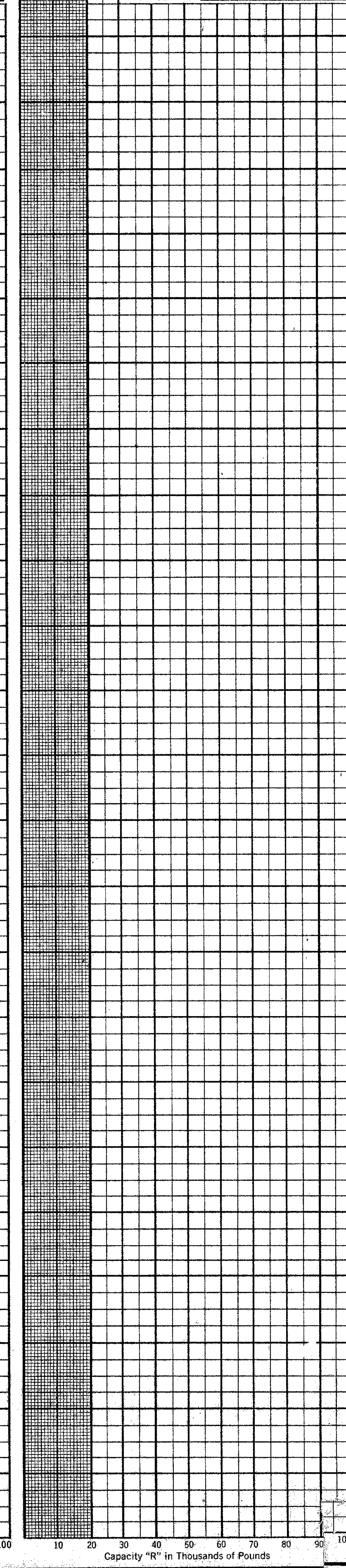
Test Location No. R3
Station & Offset 851+94 35' LT.
RETAINING WALL
Surface Elev. 804.4' Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition



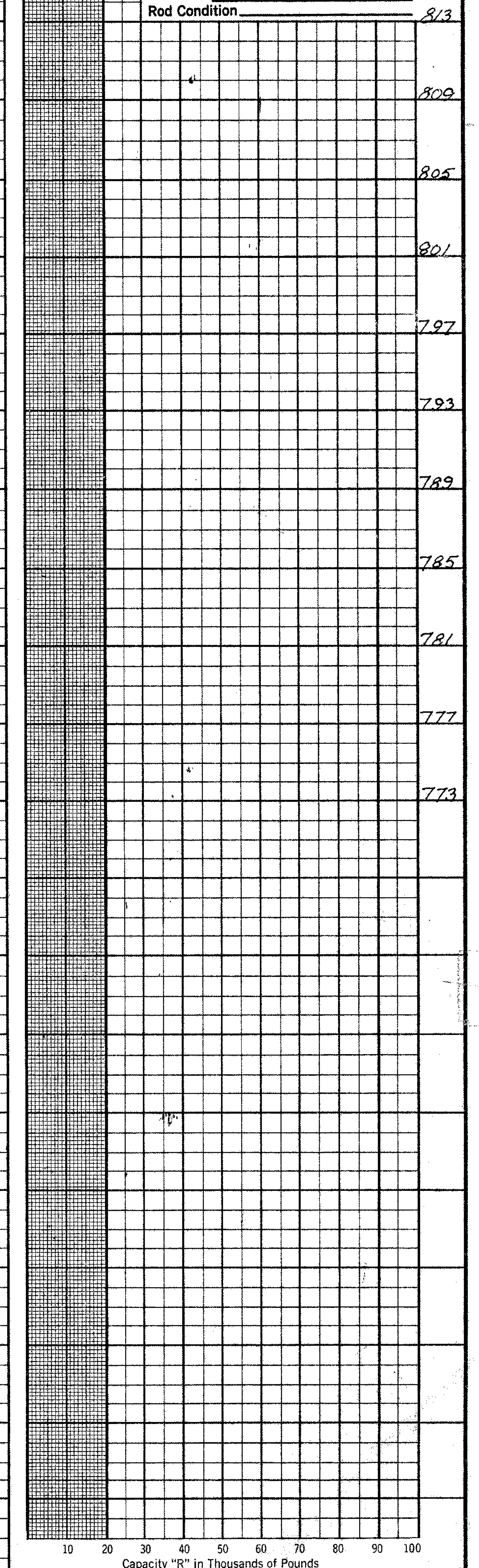
Test Location No. R4
Station & Offset 852+36 34' LT.
RETAINING WALL
Surface Elev. 801.7' Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition



Test Location No.
Station & Offset
Surface Elev. Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition



Test Location No.
Station & Offset
Surface Elev. Water Elev.
JEF - 43 - 0.42
Piling
Hammer
Formula
Reference
Rod Condition



27
27

3
3

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF - 43 -
LINE 'A' OVER LINE 'B'
SEC. JEF - 43 - 0.42

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R. C.	L.N.L.	R.D.R.	9/15/67